

# Main catalogue 2017





# HAUPA

## System supplier to specialist electrical wholesalers.

The foundation of the **HAUPA** group were laid in 1961 in Remscheid, the centre of the German tool manufacturing industry. Hans-Udo Paas founded **HAUPA** with the aim of providing high-quality tools for the requirements of the electrical trade.



**HAUPA founder and CEO**  
Hans-Udo Paas

The combination of tradition and progress is the basis for our consistent, stable expansion strategy. A mix of **experience**, **professional competence** and **innovation** is our recipe for success. Our daily aim is to create quality products that will increase your productivity and competitiveness.

Constant discussions with industry and trade are important to us. We have our own **HAUPA** branches in Europe which address the country-specific requirements of our customers. Subsidiaries and general importers throughout the whole of Europe ensure a wide-ranging network of distribution partners who are **close to our customers** and can guarantee a constant **readiness to deliver**.

**HAUPA** is specialist for the product groups

- around the cable
- working under tension
- standard program



**CEO**  
Jens-Ole Paas

This year we have also increased our product range in all product areas. Numerous innovations, such as the crimping pliers **HUPcompact** line with 100% parallel feed and the innovative cable pulling system **CableGo**, are waiting for you. Also expanded was the **heat shrinkable tubes** range. We now offer a full and broad range of shrinking tubes. The HAUPA Bit Boxes **BitBox+** and **FlexBox** impress with their robustness, functionality as well as their great design. Also new in our product range are our **connecting clamps** with up to eight clamping points for solid conductors. Our **ElektroCombo** Toolbox comes with a complete range of tools and is the ideal companion for electricians. We have further developed the HAUPA **assortment boxes**. The plastic casing with metal fasteners and the small parts boxes made from ABS are distinguished by increased stability.



Discover our comprehensive range which is bound to also have a convincing solution for your needs.

Your **HAUPA** team



It is unwise to pay too much, but it is unwise to pay too little. When you pay too much, you lose a little money; that is all. When you pay too little you sometimes lose everything. Because the thing you bought was incapable of doing the thing you bought it to do. The common law of business balance prohibits paying a little and getting a lot. It cannot be done. If you deal with the lowest bidder, it is well to add something for the risk you run and if you do that, you will have enough to pay for something better.

John Ruskin  
English social reformer 1819 - 1900

# Quality

HAUPA has been certified according to DIN EN ISO 9000 since 1996 (2003 DIN EN ISO 9001).

In order to incorporate a true quality standard the quality management department of HAUPA decided at a very early stage to apply for ISO 9000 certification, which controls and covers the complete internal working and monitoring procedures.

From goods reception to dispatch – all working processes are carried out according to defined procedures.

All HAUPA employees receive regular training in order to comply with these standards and to encourage them to actively suggest ways of improving the processes. Special, so-called QMB employees analyse modified structures and integrate these into the defined standards. Independent auditors carry out audits at regular intervals to ensure compliance.

## DIN EN ISO 9001:2000 - certificate



german



english



spanish



polish



hungarian














netherlands



russian

## HAUPA Productcertification:



- 
**1000V IEC 60900:2004**
- 
**VPA**
- 
**GOST**
- 
**Germanischer Lloyd**
- 
**UL**
- 
**DNV**
- 
**CSA**
- 
**RoHS**
- 
**VDE**
- 
**Brunel**
- 
**EAC**

# Content

| page      |  |  |  |  |  |  |  |  |  | page      |
|-----------|--|--|--|--|--|--|--|--|--|-----------|
| 3 - 20    |  |  |  |  |  |  |  |  |  |           |
| 33 - 84   |  |  |  |  |  |  |  |  |  | 21 - 32   |
| 101 - 128 |  |  |  |  |  |  |  |  |  | 85 - 100  |
| 165 - 172 |  |  |  |  |  |  |  |  |  | 129 - 164 |
| 192 - 200 |  |  |  |  |  |  |  |  |  | 173 - 191 |
| 206 - 208 |  |  |  |  |  |  |  |  |  | 201 - 205 |
| 210 - 211 |  |  |  |  |  |  |  |  |  | 208 - 209 |
| 224       |  |  |  |  |  |  |  |  |  | 212 - 223 |
| 233 - 242 |  |  |  |  |  |  |  |  |  | 227 - 232 |
| 252 - 253 |  |  |  |  |  |  |  |  |  | 243 - 251 |
| 254 - 258 |  |  |  |  |  |  |  |  |  | 254       |
| 271 - 276 |  |  |  |  |  |  |  |  |  | 259 - 270 |
| 283 - 286 |  |  |  |  |  |  |  |  |  | 277 - 282 |
| 291 - 292 |  |  |  |  |  |  |  |  |  | 287 - 290 |
| 295 - 297 |  |  |  |  |  |  |  |  |  | 292 - 294 |
| 299 - 304 |  |  |  |  |  |  |  |  |  | 298       |
| 307 - 314 |  |  |  |  |  |  |  |  |  | 305 - 306 |
| 321 - 364 |  |  |  |  |  |  |  |  |  | 315 - 320 |
| 377 - 391 |  |  |  |  |  |  |  |  |  | 365 - 376 |








## Cutting



## External Ø of wires and cables (average)

| No. of wires<br>Cross-section<br>in mm <sup>2</sup> | External-Ø<br><b>NYM</b><br>mm | External-Ø<br><b>NYY</b><br>(ca.) mm | External-Ø<br><b>NYCY</b><br>(ca.) mm | External-Ø<br><b>H05RR-F</b><br>(ca.) mm | External-Ø<br><b>H07RN-F</b><br>(ca.) mm |
|---|--------------------------------|--------------------------------------|---------------------------------------|--|--|
| 2 x 1,5   | 8,4 - 8,9                      | 11                                   | 12                                    | 10,5                                     | 11,5                                     |
| 2 x 2,5   | 9,6 - 11                       | 13                                   | 13                                    | 12,5                                     | 13,5                                     |
| 2 x 4   | 11 - 12,5                      | 14                                   | 15                                    | 11                                       | 12,5                                     |
| 2 x 6   | 12 - 13,5                      | 15                                   | 16                                    | 13                                       | 14,5                                     |
| 2 x 10  | 15 - 17                        | 17                                   | 17,5                                  | -  | 16                                       |
| 2 x 16  | 17 - 20                        | 19                                   | 20                                    | -  | 20                                       |
| 2 x 25  | 21 - 24                        | 23                                   | -                                     | -  | 25,5                                     |
| 2 x 35  | 23,5 - 27,5                    | -                                    | -                                     | -  | 29                                       |
| 3 x 1,5   | 8,8 - 10,5                     | 12                                   | 13                                    | -  | -  |
| 3 x 2,5   | 10 - 11,5                      | 13                                   | 14                                    | -  | -  |
| 3 x 4   | 11,5 - 13                      | 15                                   | 15                                    | -  | -  |
| 3 x 6   | 12 - 15                        | 16                                   | 17                                    | -  | -  |
| 3 x 10  | 16 - 18                        | 19                                   | 18,5                                  | -  | -  |
| 3 x 16  | 18,5 - 22                      | 20                                   | 20,5                                  | -  | -  |
| 3 x 25  | 22,5 - 26                      | 24                                   | 26,5                                  | -  | -  |
| 3 x 35  | 25 - 29,5                      | 23                                   | 28                                    | -  | -  |
| 3 x 35/16   | -                              | 26                                   | 25                                    | -  | -  |
| 3 x 50/25   | -                              | 30                                   | 32                                    | -  | -  |
| 3 x 70/35   | -                              | 31                                   | 32                                    | -  | -  |
| 3 x 95/50   | -                              | 36                                   | 37                                    | -  | -  |
| 3 x 120/70  | -                              | 39                                   | 39                                    | -  | -  |
| 3 x 150/70  | -                              | 43                                   | 43                                    | -  | -  |
| 4 x 1,5   | 9,5 - 11                       | 13                                   | 14                                    | 12,5                                     | 13,5                                     |
| 4 x 2,5   | 11 - 12,5                      | 14                                   | 15                                    | 14                                       | 15,5                                     |
| 4 x 4   | 12,5 - 14,5                    | 16                                   | 16                                    | -  | 18                                       |
| 4 x 6   | 14,5 - 16,5                    | 17                                   | 18                                    | -  | 22                                       |
| 4 x 10  | 17 - 19,5                      | 19                                   | 20,5                                  | -  | 28                                       |
| 4 x 16  | 20,5 - 23,5                    | 22                                   | 24                                    | -  | 32                                       |
| 4 x 25  | 25 - 28,5                      | 27                                   | 29                                    | -  | 37                                       |
| 4 x 35  | 27,5 - 32                      | 26                                   | 31                                    | -  | 42                                       |
| 4 x 50  | -                              | 35                                   | 34                                    | -  | 48                                       |
| 4 x 70  | -                              | 40                                   | 37                                    | -  | 54                                       |
| 4 x 95  | -                              | 45                                   | 42                                    | -  | 60                                       |
| 4 x 120   | -                              | 50                                   | 47                                    | -  | -  |
| 5 x 1,5   | 9,9 - 12                       | 13                                   | 15                                    | 13,5                                     | 15                                       |
| 5 x 2,5   | 11,5 - 13,5                    | 14                                   | 17                                    | 15,5                                     | 17                                       |
| 5 x 4   | 14 - 16,5                      | 16                                   | 18                                    | -  | 19                                       |
| 5 x 6   | 15,5 - 18                      | 18                                   | 20                                    | -  | 24                                       |
| 5 x 10  | 18,5 - 21,5                    | 21                                   | -                                     | -  | 30                                       |
| 5 x 16  | 22,5 - 26                      | 24                                   | -                                     | 35                                       | -  |
| 5 x 25  | 27,5 - 31,5                    | -                                    | -                                     | -  | -  |
| 5 x 35  | 30,5 - 35,5                    | -                                    | -                                     | -  | -  |

| Cutting diameters of cable cutters Profi Line                                       | art.  | 200111              | 200112              | 200113              | 200177              | 200114              | 200116               | 200115               | 200119               | 200179              | 200124              | 200126              | 200131              | 200151              | 200089              | 200183              | 200199              |
|---|---|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|   |  | Ø                   | page 9              | page 9              | page 10             | page 10             | page 10              | page 10              | page 11              | page 11             | page 11             | page 13             | page 13             | page 13             | page 13             | page 9              | page 9              |
|  | Cu/Al   | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al                | Cu/Al                | Cu/Al                | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               |
|  | 185 mm <sup>2</sup>   | 400 mm <sup>2</sup> | 240 mm <sup>2</sup> | 300 mm <sup>2</sup> | 400 mm <sup>2</sup> | 50 mm <sup>2</sup>  | 1000 mm <sup>2</sup> | 1400 mm <sup>2</sup> | 120 mm <sup>2</sup>  | 185 mm <sup>2</sup> | 240 mm <sup>2</sup> | 550 mm <sup>2</sup> | 185 mm <sup>2</sup> | 400 mm <sup>2</sup> | 45 mm Ø             | 45 mm Ø             | 45 mm Ø             |
|  | 34 mm Ø   | 52 mm Ø             | 35 mm Ø             | 45 mm Ø             | 52 mm Ø             | 62 mm Ø             | 80 mm Ø              | 100 mm Ø             | 25 mm Ø              | 34 mm Ø             | 35 mm Ø             | 55 mm Ø             | 32 mm Ø             | 52 mm Ø             | 45 mm Ø             | 45 mm Ø             | 45 mm Ø             |
|  | Cu/Al   | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al                | Cu/Al                | Cu/Al                | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               |
|  | 240 mm <sup>2</sup>   | 400 mm <sup>2</sup> | 240 mm <sup>2</sup> | 240 mm <sup>2</sup> | 480 mm <sup>2</sup> | 750 mm <sup>2</sup> | 1000 mm <sup>2</sup> | 1400 mm <sup>2</sup> | 120 mm <sup>2</sup>  | 185 mm <sup>2</sup> | 240 mm <sup>2</sup> | 550 mm <sup>2</sup> | 185 mm <sup>2</sup> | 240 mm <sup>2</sup> | 45 mm Ø             | 45 mm Ø             | 45 mm Ø             |
|  | 34 mm Ø   | 52 mm Ø             | 35 mm Ø             | 45 mm Ø             | 52 mm Ø             | 62 mm Ø             | 80 mm Ø              | 100 mm Ø             | 25 mm Ø              | 34 mm Ø             | 35 mm Ø             | 55 mm Ø             | 32 mm Ø             | 52 mm Ø             | 45 mm Ø             | 45 mm Ø             | 45 mm Ø             |
|  | Cu/Al   | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al                | Cu/Al                | Cu/Al                | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               | Cu/Al               |
|  | 240 mm <sup>2</sup>   | 450 mm <sup>2</sup> | 300 mm <sup>2</sup> | 300 mm <sup>2</sup> | 500 mm <sup>2</sup> | 300 mm <sup>2</sup> | 750 mm <sup>2</sup>  | 1000 mm <sup>2</sup> | 1400 mm <sup>2</sup> | 120 mm <sup>2</sup> | 240 mm <sup>2</sup> | 300 mm <sup>2</sup> | 550 mm <sup>2</sup> | 240 mm <sup>2</sup> | 450 mm <sup>2</sup> | 450 mm <sup>2</sup> | 450 mm <sup>2</sup> |
|  | 34 mm Ø   | 52 mm Ø             | 35 mm Ø             | 45 mm Ø             | 52 mm Ø             | 75 mm Ø             | 62 mm Ø              | 80 mm Ø              | 100 mm Ø             | 25 mm Ø             | 34 mm Ø             | 35 mm Ø             | 55 mm Ø             | 32 mm Ø             | 52 mm Ø             | 52 mm Ø             | 52 mm Ø             |



## PVC pipe cutters

### PVC pipe cutter

for PVC pipes and all materials made from plastics and rubber, exchangeable blade, knife made from tool steel hardened in oil.

- little effort through special cutting geometry
- optimal transmission
- effortless work through ergonomically shaped handle
- incremental knife feed



| Art. no. | Ø            | kg    | PU |
|----------|--------------|-------|----|
| 200214   | 35           | 0,235 | 1  |
| 200215   | spare blades | 0,040 | 1  |

### PVC pipe cutter

for PVC pipes and all materials made from plastics and rubber, exchangeable blade, knife made from tool steel hardened in oil, retractable by the press of a button.

- little effort through special cutting geometry
- optimal transmission
- effortless work through ergonomically shaped handle
- incremental knife feed



| Art. no. | Ø            | kg    | PU |
|----------|--------------|-------|----|
| 200216   | 42           | 0,270 | 1  |
| 200217   | spare blades | 0,055 | 1  |

### PVC pipe cutter (with ratchet)

for PVC pipes and all materials made from plastics and rubber, exchangeable blade, knife made from tool steel hardened in oil, retractable by the press of a button.

- little effort through special cutting geometry
- optimal transmission
- effortless work through ergonomically shaped handle
- incremental knife feed
- suitable for wiring ducts



| Art. no. | Ø                 | kg    | PU |
|----------|-------------------|-------|----|
| 200218   | 0 - 63            | 0,270 | 1  |
| 200219   | replacement blade | 0,055 | 1  |

## Cable cutters

### Kevlar cutter

to cut Kevlar fibre on optical fibre cables. Precision cut with cogs prevents the fibres from slipping and ensures a clean cut.

- Micro-meshing
- riveted joint
- specially coated blade



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 200153   | 160 | 0,085 | 1  |

## Cable scissors

### Allround soft-grip scissors

The new allround Soft - Grip scissors with its relatively short blades and special handles are designed to fulfil the needs of the professional electrical installers. The impressive cutting performance and the tough construction make this new scissors a special tool.

- ergonomic design (2 component)
- slipping free handle - Soft - Grip
- high cutting performance by low cutting force
- precision toothing
- cable stripping device • stainless



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 200155   | 140 | 25              | 0,086 | 1  |

### Allround soft-grip scissors

The new allround Soft - Grip scissors with its relatively short blades and special handles are designed to fulfil the needs of the professional electrical installers. The impressive cutting performance and the tough construction make this new scissors a special tool.

- ergonomic design (2 component)
- slipping free handle - Soft - Grip
- high cutting performance by low cutting force
- precision toothing
- cable stripping device • stainless



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 200185   | 150 | 50              | 0,083 | 1  |

### Electricians' scissors, straight

with wire cutter, bright nickel-plated, plain cutting edge, straight, strong insulation.

- with stripping device
- micro-toothing
- stainless



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 200062   | 130 | 0,096 | 1  |

### Electricians' scissors, angled

with wire cutter, bright nickel-plated, bent cutting edge, angled, strong insulation.

- with stripping device
- micro-toothing
- stainless



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 200064   | 130 | 0,094 | 1  |

### Combination scissors

stainless special steel, shock-proof plastic handles, one cutting edge slightly serrated, for cutting of cable, thin plate, wire, leather, cardboard, plastic, Al, Ms and Cu foils.

- opening spring and locking blade
- Jam protection
- adjustable screw joint



| Art. no. | TL  | Ø  | kg    | PU |
|----------|-----|----|-------|----|
| 200072   | 190 | 10 | 0,110 | 1  |

**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



# Cable cutters

## Cable cutter

- for cutting copper/aluminium cables, fine wire, multiple-core and solid copper
- Chrome vanadium steel, dip-insulated handles
- insulating function in upper head area
- Cable measuring function thanks to the 180 degree crossover of the legs
- not for solid conductors
- Data, telephone and control cable, maximum  $\varnothing$  8 mm
- Cu single wire, maximum 16 mm<sup>2</sup>
- Cu fine wire, maximum 16 mm<sup>2</sup>
- Cu multi-wire, maximum 16 mm<sup>2</sup>
- Al single wire, maximum 16 mm<sup>2</sup>
- Al multi-wire, maximum  $\varnothing$  8 mm = 16 mm<sup>2</sup>



| Art. no. | TL  | $\varnothing$ | mm <sup>2</sup> | kg    | PU |
|----------|-----|---------------|-----------------|-------|----|
| 201085   | 160 | 8             | 16              | 0,177 | 1  |

## Cable cutter

- for cutting copper/aluminium cables, fine wire, multiple-core and solid copper
- Chrome vanadium steel, dip-insulated handles
- insulating function in upper head area
- Cable measuring function thanks to the 180 degree crossover of the legs
- not for solid conductors
- Data, telephone and control cable, maximum  $\varnothing$  12 mm
- Cu single wire, maximum 16 mm<sup>2</sup>
- Cu fine wire, maximum 35 mm<sup>2</sup>
- Cu multi-wire, maximum 25 mm<sup>2</sup>
- Al single wire, maximum 25 mm<sup>2</sup>
- Al multi-wire, maximum  $\varnothing$  8 mm = 25 mm<sup>2</sup>



| Art. no. | TL  | $\varnothing$ | mm <sup>2</sup> | kg    | PU |
|----------|-----|---------------|-----------------|-------|----|
| 201087   | 200 | 12            | 35              | 0,289 | 1  |

## Cable cutter

- for cutting copper/aluminium cables, fine wire, multiple-core and solid copper
- Chrome vanadium steel, plug-on handles
- insulating function in upper head area
- Cable measuring function thanks to the 180 degree crossover of the legs
- not for solid conductors
- Data, telephone and control cable, maximum  $\varnothing$  8 mm
- Cu single wire, maximum 16 mm<sup>2</sup>
- Cu fine wire, maximum 16 mm<sup>2</sup>
- Cu multi-wire, maximum 16 mm<sup>2</sup>
- Al single wire, maximum 16 mm<sup>2</sup>
- Al multi-wire, maximum  $\varnothing$  8 mm = 16 mm<sup>2</sup>



| Art. no. | TL  | $\varnothing$ | mm <sup>2</sup> | kg    | PU |
|----------|-----|---------------|-----------------|-------|----|
| 201086   | 180 | 8             | 16              | 0,216 | 1  |

## Cable cutter

- for cutting copper/aluminium cables, fine wire, multiple-core and solid copper
- Chrome vanadium steel, plug-on handles
- insulating function in upper head area
- Cable measuring function thanks to the 180 degree crossover of the legs
- not for solid conductors
- Data, telephone and control cable, maximum  $\varnothing$  12 mm)
- Cu single wire, maximum 16 mm<sup>2</sup>
- Cu fine wire, maximum 35 mm<sup>2</sup>
- Cu multi-wire, maximum 25 mm<sup>2</sup>
- Al single wire, maximum 25 mm<sup>2</sup>
- Al multi-wire, maximum  $\varnothing$  8 mm = 25 mm<sup>2</sup>



| Art. no. | TL  | $\varnothing$ | mm <sup>2</sup> | kg    | PU |
|----------|-----|---------------|-----------------|-------|----|
| 201088   | 240 | 12            | 35              | 0,361 | 1  |

## Cable cutters with spring joint

- for cutting Cu/Al cables, fine and multi-wiring
- not suitable for steel wire and wire rope
- Chrome vanadium steel
- self-opening joint spring
- enormous cutting power with reduced force expenditure
- not for solid conductors



| Art. no. | TL  | $\varnothing$ | mm <sup>2</sup> | kg    | PU |
|----------|-----|---------------|-----------------|-------|----|
| 200086   | 170 | 10            | 25              | 0,266 | 1  |
| 200088   | 230 | 15            | 70              | 0,475 | 1  |

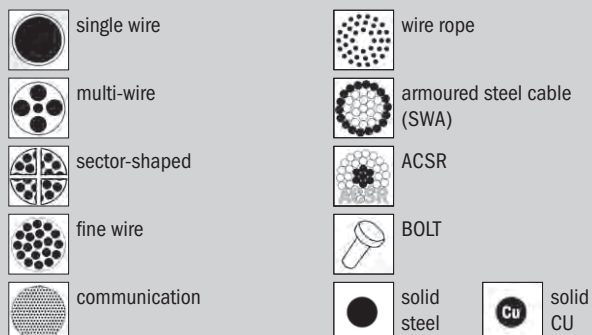
## Cable cutter

for cutting Cu/Al cables.

- Data, telephone and control cable, maximum  $\varnothing$  25 mm
- Cu single wire, maximum 16 mm<sup>2</sup>
- Cu fine wire, maximum 70 mm<sup>2</sup>
- Cu multi-wire, maximum 25 mm<sup>2</sup>



| Art. no. | TL  | $\varnothing$ | mm <sup>2</sup> | kg    | PU |
|----------|-----|---------------|-----------------|-------|----|
| 200105   | 215 | 20            | 70              | 0,281 | 1  |





## One-hand cable cutters

### Cable cutter with a snap

- one-hand cable cutter for fine wire cables only
- low force required
- Laser-cut components
- CNC-ground cutting
- inductively hardened blades
- adjustable screw joint
- Cu fine wire cable, maximum  $\varnothing$  16.9 mm = 70 mm<sup>2</sup>



| Art. no. | TL  | $\varnothing$ | mm <sup>2</sup> | kg    | PU |
|----------|-----|---------------|-----------------|-------|----|
| 201002   | 180 | 16,9          | 70              | 0,241 | 1  |

### Cable cutter with a snap

- one-handed cable cutters for fine wire cables only
- two-stage adjustment mechanism (patent)
- Low force required
- Laser-cut components
- CNC-ground cutting
- inductively hardened blades
- adjustable screw joint
- Telephone cable maximum  $\varnothing$  26.1 mm
- Cu fine wire cable, maximum  $\varnothing$  18.9 mm = 120 mm<sup>2</sup>



| Art. no. | TL  | $\varnothing$ | mm <sup>2</sup> | kg    | PU |
|----------|-----|---------------|-----------------|-------|----|
| 201000   | 230 | 18,9          | 120             | 0,514 | 1  |

## Cable cutters

### Cable cutter

- for cutting Cu/Al cables, fine and multi-wiring
- not suitable for steel wire and wire rope
- Low force required thanks to best blade geometry and translation ratios
- Vanadium electro-steel, forged, oil-hardened
- Aluminium legs
- hardened blades with precision grinding
- adjustable screw joint



| Art. no. | TL  | $\varnothing$ | mm <sup>2</sup> | kg    | PU |
|----------|-----|---------------|-----------------|-------|----|
| 200087   | 500 | 27            | 150             | 1,026 | 1  |

### Cable cutters

- for cutting Cu/Al cables, fine and multi-wiring
- Surface-ground, rust-protected blades made from annealed chrome vanadium steel
- Impact-proof coated, hardened handle tubes, sickle-shaped rounded blades
- highest stability with the lowest own weight



| Art. no.  | TL  | $\varnothing$ | mm <sup>2</sup> | kg    | PU |
|-----------|-----|---------------|-----------------|-------|----|
| 200073    | 300 | 20            | 120             | 0,620 | 1  |
| 200073/MK |     |               | cutting head    | 0,190 | 1  |
| 200095    | 530 | 35            | 185             | 1,652 | 1  |
| 200095/MK |     |               | cutting head    | 0,610 | 1  |
| 200099    | 780 | 50            | 400             | 3,380 | 1  |
| 200099/MK |     |               | cutting head    | 1,202 | 1  |

### Cable cutter

- for cutting Cu/Al cables, fine and multi-wiring
- not suitable for steel wire and wire rope
- hardened blades with precision grinding
- Dual lever ensures easy cutting
- adjustable screw joint
- Blade head in chrome vanadium steel, forged and oil-hardened



| Art. no. | TL  | $\varnothing$ | mm <sup>2</sup> | kg    | PU |
|----------|-----|---------------|-----------------|-------|----|
| 200076   | 600 | 24            | 120             | 0,940 | 1  |
| 200102   |     |               | cutting head    | 0,349 | 1  |

**haupa**<sup>®</sup>

...convincing solutions

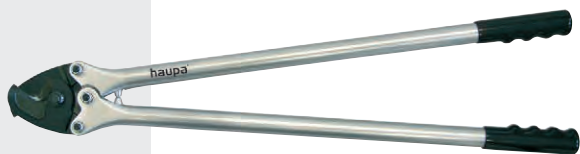
Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



## Wire cutters (ACSR)

### Cable cutters „Super light“

- for cutting Cu and Al cables, fine and multi-wiring
- not suitable for steel wire and wire rope
- Extremely light thanks to full aluminium handles
- Dual lever ensures easy cutting
- hardened blades with precision grinding
- adjustable screw joint
- Blade head in chrome vanadium steel, forged and oil-hardened



| Art. no. | TL  | Ø  | mm <sup>2</sup> | kg    | PU |
|----------|-----|----|-----------------|-------|----|
| 200197   | 700 | 24 | 120             | 1,839 | 1  |

### Cable cutter

- for cutting Cu and Al cables, fine and multi-wiring
- not suitable for steel wire and wire rope
- Dual lever ensures easy cutting
- hardened blades with precision grinding
- adjustable screw joint
- Blade head in chrome vanadium steel, forged and oil-hardened



| Art. no. | TL  | Ø  | mm <sup>2</sup> | kg    | PU |
|----------|-----|----|-----------------|-------|----|
| 200100   | 980 | 40 | 400             | 3,920 | 1  |
| 200104   |     |    | cutting head    | 0,606 | 1  |

## Bolt cutters

### Bolt cutter

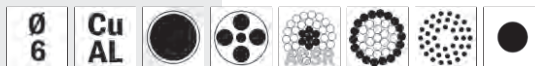
- cuts soft and hard wires, piano wire
- cuts bolts, nails, rivets etc. up to Ø 3,6 mm
- particularly high cutting performance with low force required thanks to extremely effective joint construction
- Blades are also inductively hardened, blade hardness approximately 64 HRC
- Chrome vanadium high-performance steel, forged, oil-hardened



| Art. no. | TL  | Ø   | kg    | PU |
|----------|-----|-----|-------|----|
| 200170   | 200 | 3,6 | 0,111 | 1  |

### Wire cutter

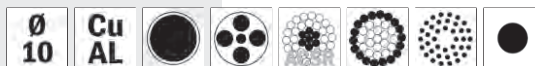
- Cu and Al cables 10 mm<sup>2</sup>
- ACSR Ø 6 mm
- solid Ø 4 mm
- also suitable for cable and round steel
- suitable for separating open wires with pull relief wire
- with opening spring and latch
- special cutting geometry prevents the wire from unsplicing



| Art. no. | TL  | Ø | mm <sup>2</sup> | kg    | PU |
|----------|-----|---|-----------------|-------|----|
| 200173   | 180 | 6 | 10              | 0,306 | 1  |

### Wire cutter

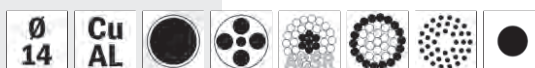
- Cu and Al cable 95 mm<sup>2</sup>
- ACSR Ø 10 mm
- solid Ø 6 mm
- also suitable for cables and round bars
- special cutting geometry prevents the wire from unsplicing
- suitable for separating open wires with pull relief wire
- exchangeable milling head



| Art. no. | TL  | Ø  | mm <sup>2</sup> | kg    | PU |
|----------|-----|----|-----------------|-------|----|
| 200175   | 180 | 10 | 95              | 0,752 | 1  |

### Wire cutter

- Cu and Al cable 150 mm<sup>2</sup>
- ACSR Ø 14 mm
- solid Ø 9 mm
- also suitable for cables and round bars
- special cutting geometry prevents the wire from unsplicing
- suitable for separating open wires with pull relief wire
- angled cutting tip allows you to cut individual cables
- optimal transmission for excellent cutting performance
- exchangeable milling head



| Art. no. | TL  | Ø  | mm <sup>2</sup> | kg    | PU |
|----------|-----|----|-----------------|-------|----|
| 200181   | 700 | 14 | 150             | 2,390 | 1  |

## Cable cutters

### Hand cable cutter

ratchet action type, with spare blade, for copper and alu cable



Art. no.  
**200089**

|                |  | mm <sup>2</sup> | Ø     |
|----------------|--|-----------------|-------|
| Cutting range: | Cu/Al wire multi wiring                        | 185             | 32    |
|                | Cu/Al wire sector format                       | 185             | 32    |
|                | Cu wire fine wiring                            | 240             | 32    |
|                | Cu wire fine wiring or telecommunication cable |                 | 32    |
| Length:        |  |                 | 230   |
| Weight:        |  |                 | 0,615 |

### Hand cable cutter

ratchet action type, with spare blade, for copper and alu cable



Art. no.  
**200183**

|                |  | mm <sup>2</sup> | Ø     |
|----------------|--|-----------------|-------|
| Cutting range: | Cu/Al wire multi wiring                        | 400             | 52    |
|                | Cu/Al wire sector format                       | 240             |       |
|                | Cu wire fine wiring                            | 450             | 52    |
|                | Cu wire fine wiring or telecommunication cable |                 | 52    |
| Length:        |  |                 | 280   |
| Weight:        |  |                 | 0,914 |

### Ratchet two handed cable cutter „SCAR45“ for SWA cable

Cutting capacity: Steel reinforced Cu-Al cables up to Ø 45 mm maximum



Art. no.  
**200199**

|                |                               | mm <sup>2</sup> | Ø     |
|----------------|-------------------------------|-----------------|-------|
| Cutting range: | Steel reinforced Cu-Al cables |                 | 45    |
| Length:        |                               |                 | 430   |
| Weight:        |                               |                 | 1,700 |

## INFO

### Cable cutters

#### Precise cut!

The blade joints (screw connection on rotation blade) are adjusted to 0.05 mm!

#### Durable and strong

Serrations on the blade and the transport handle are milled! The contact pressure is thus lower than for cast teeth.

#### 200111, 200112:

- One-handed cable cutter
- Lever joint bolts, thickness 6.5 mm
- 16 mm Full material, milled knee lever



### Cable cutter

Handy one-hand device with smooth-running and robust drive technology up to 34 mm Ø, all moveable parts made from hardened steel



Art. no.  
**200111**

|                |  | mm <sup>2</sup> | Ø     |
|----------------|--|-----------------|-------|
| Cutting range: | Cu/Al wire multi wiring                        | 185             | 34    |
|                | Cu/Al wire sector format                       | 240             | 34    |
|                | Cu wire fine wiring                            | 240             | 34    |
|                | Cu wire fine wiring or telecommunication cable |                 | 34    |
| Length:        |  |                 | 250   |
| Weight:        |  |                 | 0,790 |

### Cable cutter

Handy one- and two-hand tool with smooth-running and robust drive technology up to 52 mm Ø, all moving parts made from hardened steel



Art. no.  
**200112**

|                |  | mm <sup>2</sup> | Ø     |
|----------------|--|-----------------|-------|
| Cutting range: | Cu/Al wire multi wiring                        | 400             | 52    |
|                | Cu/Al wire sector format                       | 400             | 52    |
|                | Cu wire fine wiring                            | 450             | 52    |
|                | Cu wire fine wiring or telecommunication cable |                 | 52    |
| Length:        |  |                 | 320   |
| Weight:        |  |                 | 1,122 |

**haupa**<sup>®</sup>

...convincing solutions

# INFO

## Cable cutters

### 200113, 200177, 200114, 200116:

- One-hand cable cutters
- Dual needle-bearing offset lever 14 mm
- Particularly easy to move, thanks to reduction of friction on joint
- Considerable reduction of manual force
- Lever joint bolts, thickness 8 mm
- For the toughest of usage conditions
- Locking with a locking shaft
- Accidental opening of handles in tool case is prevented
- Transport handle play is fixed

### Cable cutter

Particularly smooth-running cable cutter with needle bearing eccentric drive up to 35 mm Ø. Extremely durable tool



#### Art. no. 200113

|                |  | mm <sup>2</sup> | Ø     |
|----------------|--|-----------------|-------|
| Cutting range: | Cu/Al wire multi wiring                        | 240             | 35    |
|                | Cu/Al wire sector format                       | 240             | 35    |
|                | Cu wire fine wiring                            | 300             | 35    |
|                | Cu wire fine wiring or telecommunication cable |                 | 35    |
| Length:        |  |                 | 250   |
| Weight:        |  |                 | 0,976 |

### Cable cutter

Particularly smooth-running cable cutter with needle bearing eccentric drive for everyday use up to 45 mm Ø. Extremely durable tool



#### Art. no. 200177

|                |  | mm <sup>2</sup> | Ø     |
|----------------|--|-----------------|-------|
| Cutting range: | Cu/Al wire multi wiring                        | 300             | 45    |
|                | Cu/Al wire sector format                       | 240             | 45    |
|                | Cu wire fine wiring                            | 300             | 45    |
|                | Cu wire fine wiring or telecommunication cable |                 | 45    |
| Length:        |  |                 | 260   |
| Weight:        |  |                 | 0,900 |

## Cable cutters with eccentric drive

### Cable cutter

Particularly smooth-running cable cutter with needle bearing eccentric drive up to 52 mm Ø. Extremely durable tool



#### Art. no. 200114

|                |  | mm <sup>2</sup> | Ø     |
|----------------|--|-----------------|-------|
| Cutting range: | Cu/Al wire multi wiring                        | 400             | 52    |
|                | Cu/Al wire sector format                       | 480             | 52    |
|                | Cu wire fine wiring                            | 500             | 52    |
|                | Cu wire fine wiring or telecommunication cable |                 | 52    |
| Length:        |  |                 | 325   |
| Weight:        |  |                 | 1,340 |

### Special cable cutter

for data and telephone cables up to 75 mm Ø, high cutting quality through special cutting geometry, smooth-running due to needle-bearing drive mechanics, not suitable for steel wire and very wiry conductors of power supply (EVU etc.)



#### Art. no. 200116

|                |  | mm <sup>2</sup> | Ø     |
|----------------|--|-----------------|-------|
| Cutting range: | Cu/Al wire multi wiring                        | 300             | 75    |
|                | Cu/Al wire sector format                       | 240             | 75    |
|                | Cu wire fine wiring                            | 240             | 75    |
|                | Cu wire fine wiring or telecommunication cable |                 | 75    |
| Length:        |  |                 | 370   |
| Weight:        |  |                 | 1,585 |

# INFO

## Cable cutters

### 200115, 200119, 200179:

- Two-hand cable cutters for armoured steel cable
- Dual needle-bearing offset lever 14 mm
- Particularly easy to move, thanks to reduction of friction on joint
- Considerable reduction of manual force
- Lever joint bolts, thickness 12 mm
- Extremely well reinforced version for particularly tough uses
- Locking with a locking shaft
- Accidental opening of handles is prevented
- Integrated toothed comb for cleaning in handle
- Transport handle play is fixed

## Cable cutter

Almost maintenance-free two-hand cable cutter up to 62 mm Ø, smooth-running through needle-bearing eccentric drive, great range of application, comes with cog comb to clean cogs



### Art. no. 200115

|                |  | mm <sup>2</sup> | Ø     |
|----------------|--|-----------------|-------|
| Cutting range: | Cu/Al wire multi wiring                        | 750             | 62    |
|                | Cu/Al wire sector format                       | 750             | 62    |
|                | Cu wire fine wiring                            | 750             | 62    |
|                | Cu wire fine wiring or telecommunication cable |                 | 62    |
| Length:        |  |                 | 410   |
| Weight:        |  |                 | 2,224 |

# Cable cutters with eccentric drive

## Cable cutter

Almost maintenance-free quality tool up to 80 mm Ø. Smooth-running due to needle-bearing eccentric drive, also suitable for cables with steel plate jacket and soft steel wire reinforcement, ST 52. Comes with cog comb to clean cogs, integrated in the handle



### Art. no. 200119

|                |  | mm <sup>2</sup> | Ø     |
|----------------|--|-----------------|-------|
| Cutting range: | Cu/Al wire multi wiring                        | 1000            | 80    |
|                | Cu/Al wire sector format                       | 1000            | 80    |
|                | Cu wire fine wiring                            | 1000            | 80    |
|                | Cu wire fine wiring or telecommunication cable |                 | 80    |
| Length:        |  |                 | 610   |
| Weight:        |  |                 | 3,322 |

## Cable cutter

Almost maintenance-free quality tool up to 100 mm Ø. Smooth-running due to needle-bearing eccentric drive, also suitable for cables with steel plate jacket and soft steel wire reinforcement, ST 52. Comes with cog comb to clean cogs, integrated in the handle



### Art. no. 200179

|                |  | mm <sup>2</sup> | Ø     |
|----------------|--|-----------------|-------|
| Cutting range: | Cu/Al wire multi wiring                        | 1400            | 100   |
|                | Cu/Al wire sector format                       | 1400            | 100   |
|                | Cu wire fine wiring                            | 1400            | 100   |
|                | Cu wire fine wiring or telecommunication cable |                 | 100   |
| Length:        |  |                 | 610   |
| Weight:        |  |                 | 3,322 |



**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Special cable cutters

## Universal cable cutter with eccentric drive

- one-hand universal- and steel rope cutter with exchangeable cutting segments
- in the case of wear or changing requirements only the cutting segment need to be replaced
- Cleaner included
- double needle bearing excenter lever 14mm
- very easy to use through reduction of the attrition of the joint
- strong reduction of the manual force
- Lever joint bolt strength 9mm
- central lubrication
- Cone fitting in the bolt with cross drilling on the bearing points
- adjustable level of the transport plugs
- opening of the cutter possible at any time, also suitable for the highest demands without additives

### Separable materials:

- Cable AL /Cu
- Cable with soft steel cover
- Steel covered ropes
- Steel armoured ropes
- Niro ropes
- Flexible steel ropes
- Tracking rope cable
- Steel armoured hose
- ACSR DIN 48 204
- Constructional steel 235JR+AR
- Screws

### Complete set:

- Universal cable cutter
- 1 pair of cutting segments S1 (art. 200178/S1)
- ACSR



| Art. no. | TL  | mm <sup>2</sup> | fine wiring mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-----------------------------|-------|----|
| 200178   | 230 | 300             | 240                         | 1,140 | 1  |

## Further accessories for cable cutter item no. 200178



**Application:** AL/CU: Cross-section 300 mm<sup>2</sup>, Ø 50 mm  
Flexible steel cables: Cross-section 95 mm<sup>2</sup>, Ø 14 mm  
Niro cables Ø 8 mm, 19/1  
ACSR DIN 48 204: Cross-section 150/25 mm<sup>2</sup>, Ø 20 mm, 7/2.1 mm  
Steel armoured tubing: Ø 50 mm

| Art. no.  | mm <sup>2</sup> | kg    | PU |
|-----------|-----------------|-------|----|
| 200178/S1 | 300             | 0,100 | 1  |



**Application:** AL/CU: Cross-section 150 mm, Ø 30 mm  
Flexible steel cables: Cross-section 70 mm, Ø 12 mm  
Supporting cable: Cross-section 70/300 mm<sup>2</sup>, Ø 12/30 mm, Type 8  
ACSR DIN 48 204: Cross-section 70/12 mm<sup>2</sup>, Ø 11.7 mm, 7/1.44 mm

| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 200178/B | 150             | 0,100 | 1  |



**Application:** AL/CU: Cross-section: 350 mm, Ø 50 mm  
Clean cut and low handgrip with large cross sections  
suitable for highly flexible conductors  
not for steel

| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 200178/C | 350             | 0,100 | 1  |



**Application:** AL/CU: Cross-section 350 mm, Ø 50 mm  
Flexible steel cables: Cross-section 95 mm<sup>2</sup>, Ø 16 mm  
Cable with soft steel sleeve: Cross-section 240 mm<sup>2</sup>, Ø 50 mm  
Clean cut and normal handgrip

| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 200178/S | 350             | 0,100 | 1  |



**Application:** AL/CU: Cross-section 200 mm<sup>2</sup>, Ø 50 mm  
Flexible steel cables: Cross-section 95 mm<sup>2</sup>, Ø 14 mm  
Niro cables: Ø 8 mm, 19/1  
ACSR DIN 48 204: Cross-section 300/50 mm<sup>2</sup>, Ø 24.5, 7/3 mm  
Steel armoured tubing: Ø 50 mm  
Construction steel 235JR+AR: Ø 10 mm, full material  
Screws: Ø 8 mm, 8.8  
Can lead to crimping of steel cables are highly flexible, slightly edgy  
cutaway section, increased handgrip

| Art. no.  | mm <sup>2</sup> | kg    | PU |
|-----------|-----------------|-------|----|
| 200178/S2 | 200             | 0,100 | 1  |



## INFO

### Cable cutters

#### Precise cut!

The blade joints (screw connection on rotation blade) are adjusted to 0.05 mm!

#### Durable and strong

Serrations on the blade and the transport handle are milled! The contact pressure is thus lower than for cast teeth.

#### 200124, 200126:

- One-handed cable cutter
- Lever joint bolts, thickness 6.5 mm.
- 16 mm Full material, milled knee lever.
- Transport handle play can be set (2 grub screws 3 mm in lever)

### Front cable cutter

for Copper and Alu-cable 25 mm Ø, squeeze-free cutting, optimized lever-transmission



#### Art. no.

**200124**

|                |  | mm <sup>2</sup> | Ø     |
|----------------|--|-----------------|-------|
| Cutting range: | Cu/Al wire multi wiring                        | 120             | 25    |
|                | Cu/Al wire sector format                       | 120             | 25    |
|                | Cu wire fine wiring                            | 120             | 25    |
|                | Cu wire fine wiring or telecommunication cable |                 | 25    |
| Length:        |  |                 | 245   |
| Weight:        |  |                 | 1,020 |

### Front cable cutter

for Copper and Alu-cable 34 mm Ø, squeeze-free cutting, optimized lever-transmission by eccentric drive system



#### Art. no.

**200126**

|                |  | mm <sup>2</sup> | Ø     |
|----------------|--|-----------------|-------|
| Cutting range: | Cu/Al wire multi wiring                        | 185             | 34    |
|                | Cu/Al wire sector format                       | 240             | 34    |
|                | Cu wire fine wiring                            | 240             | 34    |
|                | Cu wire fine wiring or telecommunication cable |                 | 34    |
| Length:        |  |                 | 330   |
| Weight:        |  |                 | 1,541 |

### Front cable cutter with eccentric drive

Very easy to use precision one-handed front cutter, excellent crush-free cutting quality even with fine wired cables, tried and tested and almost wear-free offset drive, rotation blade can be locked in any position, cutting range up to a diameter of 35 mm.

- One-handed cable cutter
- Dual needle-bearing offset lever 14 mm
- Particularly easy to move, thanks to reduction of friction on joint
- Considerable reduction of manual force
- Lever joint bolts, thickness 8 mm
- For the toughest of usage conditions
- Locking with a locking shaft
- Accidental opening of handles in tool case is prevented
- Transport handle play is fixed



#### Art. no.

**200131**

|                |  | mm <sup>2</sup> | Ø     |
|----------------|--|-----------------|-------|
| Cutting range: | Cu/Al wire multi wiring                        | 240             | 35    |
|                | Cu/Al wire sector format                       | 240             | 35    |
|                | Cu wire fine wiring                            | 300             | 35    |
|                | Cu wire fine wiring or telecommunication cable |                 | 35    |
| Length:        |  |                 | 330   |
| Weight:        |  |                 | 1,673 |

### Front cable cutter with eccentric drive

Easy to use two-handed front cutter with patented offset drive, excellent crush-free cutting quality even for large cross-sections, rotation blade can be locked in any position, cutting range up to a diameter of 55 mm.

- Two-handed cable cutter for armoured steel cable
- Dual needle-bearing offset lever 14 mm
- Particularly easy to move, thanks to reduction of friction on joint
- Considerable reduction of manual force
- Lever joint bolts, thickness 12 mm
- Extremely well reinforced version for particularly tough uses
- Locking with a locking shaft
- Accidental opening of handles is prevented
- Integrated toothed comb for cleaning in handle



#### Art. no.

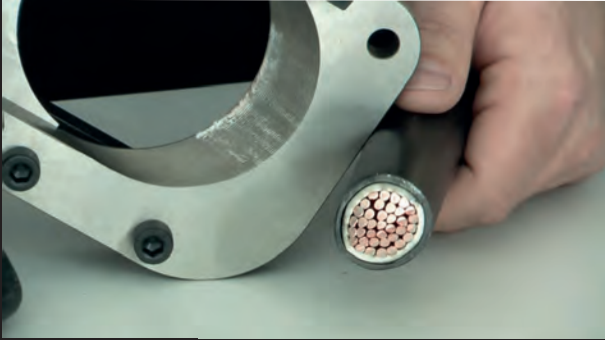
**200151**

|                |  | mm <sup>2</sup> | Ø     |
|----------------|--|-----------------|-------|
| Cutting range: | Cu/Al wire multi wiring                        | 550             | 55    |
|                | Cu/Al wire sector format                       | 550             | 55    |
|                | Cu wire fine wiring                            | 550             | 55    |
|                | Cu wire fine wiring or telecommunication cable |                 | 55    |
| Length:        |  |                 | 485   |
| Weight:        |  |                 | 3,493 |

**haupa®**

...convincing solutions









## Hydraulic cutting



## Hydraulic cable cutters

### Hydraulic cable cutter „HH 32-ST“

- in case • cutting head can be rotated 180°
- for copper and aluminium cable • ACSR: Ø 28 mm
- soft CU round bar: Ø 25 mm • soft AL round bar: Ø 22 mm
- soft steel round bar: Ø 16 mm
- CU/AL wire stranded: Ø 32 mm



| Art. no. | TL  | Ø  | kg    | PU |
|----------|-----|----|-------|----|
| 216402   | 580 | 32 | 5,300 | 1  |

### Hydraulic cutter „HH 85-ST“

- in case • cutting head can be rotated 180°
- with hydraulic quick connections • copper and aluminium cable
- armoured steel cable

For technical data, see page 20



| Art. no. | TL  | Ø  | kg    | PU |
|----------|-----|----|-------|----|
| 216404   | 690 | 85 | 7,000 | 1  |

## Hydraulic cutting headstocks

### Hydraulic cutting headstock

- in bag • with hydraulic quick connections
- copper and aluminium cable • armoured steel cable

For technical data, see page 20



| Art. no. | Ø  | kg     | PU |
|----------|----|--------|----|
| 216408   | 85 | 11,300 | 1  |

### Hydraulic cutting headstock

- in bag • with hydraulic quick connections
- copper and aluminium cable • armoured steel cable

For technical data, see page 20



| Art. no. | Ø   | kg     | PU |
|----------|-----|--------|----|
| 216410   | 120 | 14,600 | 1  |

### Hydraulic cutting headstock

- in bag • with hydraulic quick connections
- copper and aluminium cable • armoured steel cable

For technical data, see page 20



| Art. no. | Ø  | kg     | PU |
|----------|----|--------|----|
| 216415   | 95 | 11,300 | 1  |

# Safety cutting equipment

## Hydraulic safety life line cable cutter

used for working under voltage acc. to VDE 0105, part 100.



### Consisting of:

- Hydraulic shear with high pressure hose of 10 m, with leak-free coupling system and earth harness acc. to EN 50340
- Double piston pump mounted on foot-pedal, with foot-operated switch
- Transport case
- Fully operational and filled with special oil

According to VDE 0105 Part 1 Para. 9.6.4 the cable cutter 216416 is used for cutting low and medium voltage cables up to 60 KV AC. If a live wire is cut by accident, the operator is not in any danger.

The 10 m long high pressure hydraulic hose, which connects the pump to the cutting head, guarantees the highest standard of safety due to its special insulating features. The cutting process is controlled by watching the manometer attached to the pump, since, in general, the cutting head cannot be seen when a cable is cut. This process has been tested repeatedly at medium voltage, with live wires and continuing main supply.

The cutting range goes up to 85 mm. The 12 mm cutting blades are made of high yield point steel and are polished, thus wear- and tear-resistant. A strongly dimensioned guidance of the blades guarantees a high degree of mechanical stability. Even in the event of a short circuit, a safe cutting of the wires is guaranteed, since the individual blades overlap by approx. 20 mm. The blades open themselves when pressure is reduced. The high pressure hose bursts at 2700 bar. The pressure relief safety system of the pump has been adjusted at a 625 bar level.



| Art. no. | Ø  | NP  | kg     | PU |
|----------|----|-----|--------|----|
| 216417   | 85 | 625 | 32,000 | 1  |

## Hydraulic safety life line cable cutter



| Art. no. | Ø  | NP  | kg     | PU |
|----------|----|-----|--------|----|
| 216421   | 95 | 625 | 33,000 | 1  |

## Hydraulic safety life line cable cutter



| Art. no.   | Ø   | NP  | kg     | PU |
|------------|-----|-----|--------|----|
| 216416     | 120 | 625 | 36,600 | 1  |
| 216416/850 | 120 | 850 | 36,600 | 1  |



**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Battery powered cable cutters

### Battery powered cable cutter „AS-52“

- for copper and aluminium cable, multi wire
- diameter up to 52 mm

#### Scope of delivery:

1 cutting tool, 1 quick charger, 1 battery 18V Li-Ion, 3 Ah, in plastic case



| Art. no. | Ø  | kg    | PU |
|----------|----|-------|----|
| 216434   | 52 | 3,000 | 1  |

### Battery powered cable cutter „AS-52ACSR“

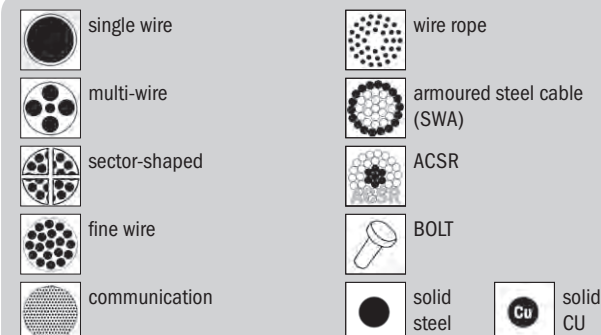
- Diameter 18,6 mm / 120 mm<sup>2</sup>
- ACSR 19 mm
- not suitable for Cu/Al

#### Scope of delivery:

1 cutting tool, 1 quick charger, 1 battery 18V Li-Ion, 3 Ah, in a plastic case



| Art. no. | Ø  | kg    | PU |
|----------|----|-------|----|
| 216436   | 52 | 3,000 | 1  |



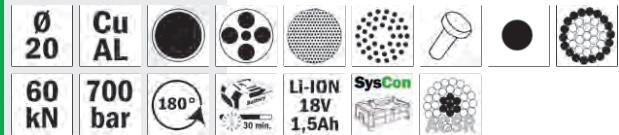
## Hydraulic cable cutters

### Battery powered cable cutter „AS6-S20“

hydraulic for cutting telecommunications cables, cutting head can be rotated by 180°, manual return after the cut has been completed.

**Scope of delivery:** 1 cutting tool, 1 quick charger, 1 battery, 1 carry strap loop, in SysCon stacking box.

- Pressing force kN: 60 kN
- Working pressure in bar: 700
- Cutting width Ø: 20
- Battery charging time in minutes: 30
- Battery type: Li-Ion, 18 V, 1,5 Ah
- ACSR
- Sheet and wire armouring Cu
- Wire rope, bracing wire
- Soft rod steel
- Lead sleeve cable



| Art. no. | Ø  | kg    | PU |
|----------|----|-------|----|
| 216418   | 20 | 8,100 | 1  |

### Battery powered wire cutter „AS6-S32“

Hydraulic for cutting telecommunications cables, cutting head can be rotated by 180°, manual return after the cut has been completed.

**Scope of delivery:** 1 crimping tool, 1 quick charger, 1 battery, 1 carry strap loop, in SysCon stacking box.

- Pressing force kN: 60 kN
- Working pressure in bar: 700
- Cutting width Ø: 32
- Battery charging time in minutes: 30
- Battery type: Li-Ion, 18 V, 1,5 Ah



| Art. no. | Ø  | kg    | PU |
|----------|----|-------|----|
| 216419   | 32 | 8,100 | 1  |

# Hydraulic cable cutters

## Battery powered cable cutter „AS6-40“

Cutting head can be rotated by 180°, manual return, LED for battery control, 1 quick charger, 1 battery, carrying belt, for copper and aluminium cable. The unit also has 2 white LED's to illuminate the respective work area.

**Scope of delivery:**

- 1 crimping tool, 1 quick charger, 1 battery, carrying belt in plastic case.
- Pressing force kN: 60
- Working pressure in bar: 700
- Cutting width Ø: 40
- Battery charging time in minutes: 60
- Battery type: Li-Ion, 18 V, 3 Ah



|       |         |      |  |                |
|-------|---------|------|--|----------------|
| Ø 40  | Cu AL   |      |  |                |
| 60 kN | 700 bar | 180° |  | LI-ION 18V 3Ah |

| Art. no. | Ø  | TL  | kg    | PU |
|----------|----|-----|-------|----|
| 216422   | 40 | 385 | 8,100 | 1  |

## Battery powered cable cutter „AS12-52“

Cutting head can be rotated by 180°, manual return, LED for battery control, 1 quick charger, 1 battery, carrying belt, for copper and aluminium cable as well as armoured steel cable. The unit also has 2 white LED's to illuminate the respective work area.

**Scope of delivery:**

- 1 crimping tool, 1 quick charger, 1 battery, carrying belt in plastic case.
- Pressing force kN: 120
- Working pressure in bar: 700
- Cutting width Ø: 52
- ACSR
- Battery charging time in minutes: 60 • Battery type: Li-Ion, 18 V, 3 Ah



|        |         |      |  |                |  |
|--------|---------|------|--|----------------|--|
| Ø 52   | Cu AL   |      |  |                |  |
| 120 kN | 700 bar | 180° |  | LI-ION 18V 3Ah |  |

| Art. no. | Ø  | TL  | kg    | PU |
|----------|----|-----|-------|----|
| 216424   | 52 | 385 | 8,500 | 1  |

## Battery powered cable cutter „AS6-85“

Cutting head can be rotated by 180°, manual return, LED for battery control, 1 quick charger, 1 battery, carrying belt, for copper and aluminium cable, telephon cable. The unit also has 2 white LED's to illuminate the respective work area.

**Scope of delivery:** 1 crimping tool, 1 quick charger, 1 battery, carrying belt in plastic case.

- Pressing force kN: 60 • Working pressure in bar: 700
- Cutting width Ø: 85 • Battery charging time in minutes: 60
- Battery type: Li-Ion, 18 V, 3 Ah



|       |         |      |  |                |  |
|-------|---------|------|--|----------------|--|
| Ø 85  | Cu AL   |      |  |                |  |
| 60 kN | 700 bar | 180° |  | LI-ION 18V 3Ah |  |

| Art. no. | Ø  | TL  | kg    | PU |
|----------|----|-----|-------|----|
| 216428   | 85 | 385 | 9,000 | 1  |

## Battery powered cable cutter „SAS6-85“

Cutting head can be rotated by 180°, manual return, LED for battery control, 1 quick charger, 1 battery, carrying belt, for copper and aluminium cable as well as armoured steel cable, telephon cable. The unit also has 2 white LED's to illuminate the respective work area.

**Scope of delivery:**

- 1 crimping tool, 1 quick charger, 1 battery, carrying belt in plastic case.
- Pressing force kN: 60 • Working pressure in bar: 700
- Cutting width Ø: 85 • Armoured steel cable
- Battery charging time in minutes: 60 • Battery type: Li-Ion, 18 V, 3 Ah



|       |         |      |  |                |  |
|-------|---------|------|--|----------------|--|
| Ø 85  | Cu AL   |      |  |                |  |
| 60 kN | 700 bar | 180° |  | LI-ION 18V 3Ah |  |

| Art. no. | Ø  | TL  | kg     | PU |
|----------|----|-----|--------|----|
| 216430   | 85 | 385 | 14,000 | 1  |

**haupa®**

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



### Hydraulic cutting tools



|      |          |         |        |         |        |         |    |    |
|------|----------|---------|--------|---------|--------|---------|----|----|
| Art  | 216418   | 216419  | 216422 | 216424  | 216428 | 216430  | -- | -- |
| Type | AS6ST-20 | AS6S-32 | AS6-40 | AS12-52 | AS6-85 | SAS6-85 | -- | -- |

### Hand hydraulic cutting tools

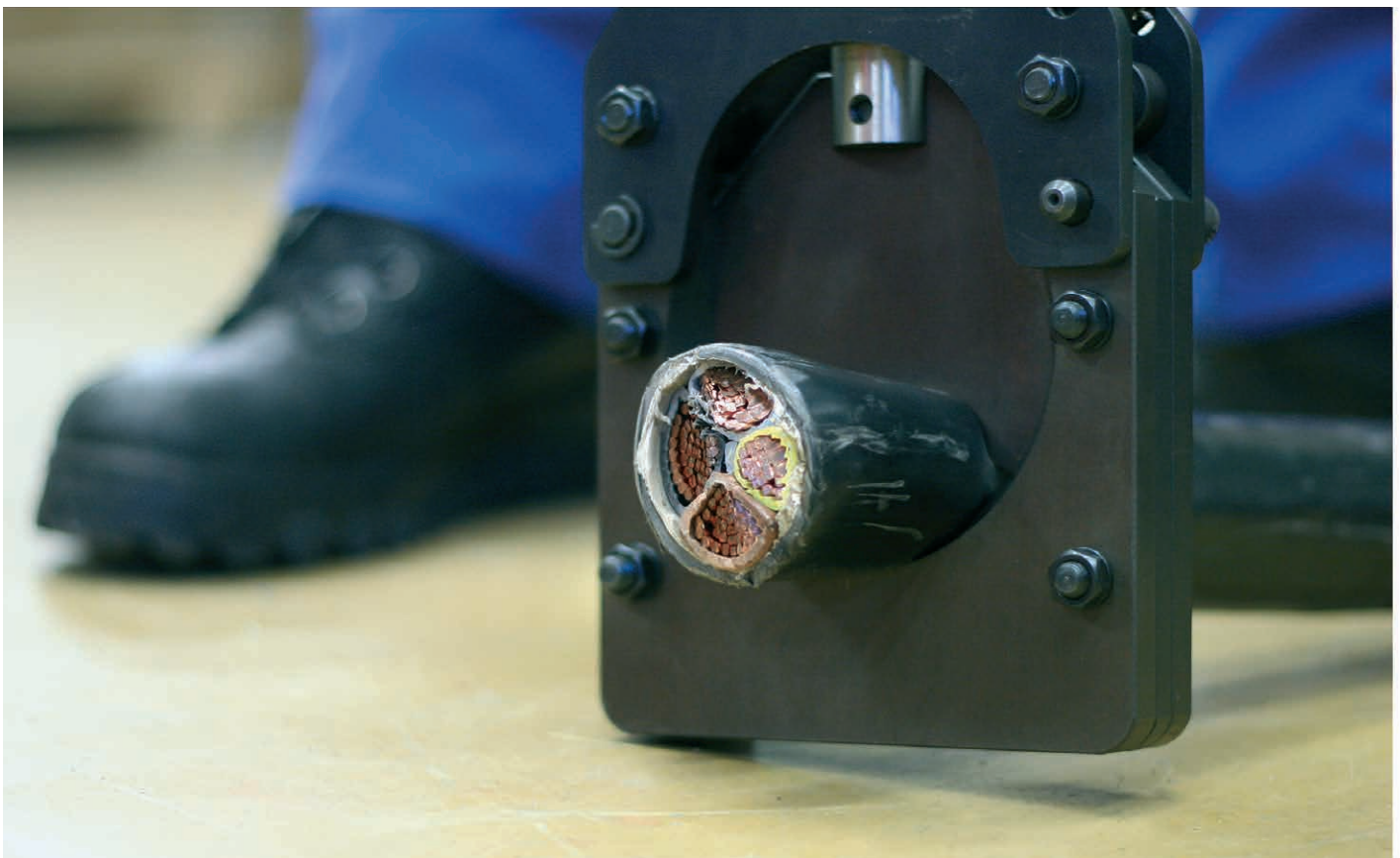
|      |    |    |    |    |    |        |    |    |
|------|----|----|----|----|----|--------|----|----|
| Art  | -- | -- | -- | -- | -- | 216404 | -- | -- |
| Type | -- | -- | -- | -- | -- | HS-85  | -- | -- |

### Hydraulic cutting heads

|                        |        |      |        |        |        |         |         |               |
|------------------------|--------|------|--------|--------|--------|---------|---------|---------------|
| Art                    | --     | --   | --     | --     | --     | 216408  | 216415  | 216410        |
| Type                   | --     | --   | --     | --     | --     | KS-85   | KS-95   | KS120         |
| Diameter               | 20     | 32   | 40     | 52     | 85     | 85      | 95      | 120           |
| Head                   | swivel | open | swivel | swivel | swivel | swivel  | open    | swivel        |
| Output force           | 6      | 6    | 6      | 12     | 6      | 700 bar | 700 bar | 700 - 850 bar |
| Immediately motor-stop | ●      | ●    | ●      | ●      | ●      | ●       | ●       | ●             |

### Material

|                                |                    |    |    |    |    |    |    |     |
|--------------------------------|--------------------|----|----|----|----|----|----|-----|
| Copper                         | 20                 | 32 | 40 | 52 | 46 | 85 | 95 | 120 |
| Aluminium                      | 20                 | 28 | 40 | 52 | 28 | 85 | 95 | 120 |
| Underground cable              | --                 | -- | 40 | 52 | 50 | 85 | 95 | 120 |
| Telephone cable                | --                 | -- | 40 | -- | 85 | 85 | 95 | 120 |
| ACSR                           | ●                  | -- | -- | 32 | -- | -- | -- | --  |
| Wire rope                      | ●                  | -- | ●  | ●  | -- | -- | ●  | ●   |
|                                | 16                 | -- | 22 | ●  | -- | -- | 22 | 22  |
|                                | 20                 | -- | 25 | ●  | -- | -- | 25 | 25  |
|                                | 20                 | -- | 25 | ●  | -- | -- | 25 | 25  |
| Guy wire                       | ●                  | -- | -- | ●  | -- | -- | ●  | ●   |
|                                | 20                 | -- | 20 | ●  | -- | -- | 15 | 15  |
|                                | 20                 | -- | 25 | ●  | -- | -- | 20 | 20  |
| Soft steel bar                 | (under SS41) 13 mm | -- | 16 | 25 | -- | -- | -- | --  |
| Sheetmetal & Wire armouring, C | 20                 | -- | -- | ●  | -- | 85 | 95 | 120 |
| Lead sheathed cable            | 20                 | -- | 40 | 52 | 85 | 85 | 95 | 120 |



Stripping



# INFO

## Cable strippers

### Information for strippers

Stripping removes the outer sleeve of a installation cable. For cables that have already been installed in installation sockets and are thus difficult to access, you use a round stripper. When stripping, open the stripper and place it on the cable in such a way as to ensure that the round blade is position at the point of the sleeve you wish to remove. Turn the stripper a quarter turn to the left and to the right, bend the cable a little, and open up the stripper. Place the tool closer to the end of the cable, close again, and stripper the sleeve away easily. There is a variety of strippers available for the various types of cable.

**Important:** Important, when stripping the insulation of inner wires may not be damaged.

### Cable stripper „Kabifix“

- For cutting opening and stripping cables from Ø 6 - 25 mm
- Longitudinal and round cut (swivel lever)
- Ø 6 - 28 mm • NYY 4 - 16 mm<sup>2</sup> • NYM 5 - 16 mm<sup>2</sup>
- Coaxial and bell round cable
- Isoflex and PVC piping maximum Ø 25 mm
- Interior adjustment screw for adjusting the cutting depth
- Exchangeable blades



| Art. no. | Ø      | kg           | PU      |
|----------|--------|--------------|---------|
| 200022   | 6 - 28 | 0,096        | 1       |
| 200024   | 6 - 28 | spare blades | 0,010 1 |

### Cable stripper „Kabifix LWL“

- For cutting opening and stripping fibre-optic and coaxial cables from Ø 6 - 25 mm
- Longitudinal and round cut (swivel lever)
- Interior adjustment screw for adjusting the cutting depth
- Exchangeable blades



| Art. no. | Ø      | kg           | PU      |
|----------|--------|--------------|---------|
| 200023   | 6 - 25 | 0,136        | 1       |
| 200023/M | 6 - 25 | spare blades | 0,003 1 |

### Cable stripping knife

- For removing the sleeve from all current round cables
- Blades, titanium nitride coated, thanks to the higher cutting speed
- Lower wear, increased durability
- Cutting depth can be adjusted using the setting screw on the end of the handle
- Automatic adjustment to round and lengthwise cuts
- Handle security thanks to soft component insert on the bar and handle
- Titanium nitride coated replacement blade in the housing
- Housing made from high-quality, hard wearing polyamide
- With titanium nitride coated hook blade
- TÜV / GS tested



| Art. no. | Ø      | kg           | PU      |
|----------|--------|--------------|---------|
| 200031   | 8 - 28 | 0,100        | 1       |
| 200046   |        | spare blades | 0,004 1 |

### Cable stripping knife

- For removing the sleeve from all current round cables
- Blades, titanium nitride coated, thanks to the higher cutting speed
- Lower wear, increased durability
- Cutting depth can be adjusted using the setting screw on the end of the handle
- Automatic adjustment to round and lengthwise cuts
- Handle security thanks to soft component insert on the bar and handle
- Titanium nitride coated replacement blade in the housing
- Housing made from high-quality, hard wearing polyamide
- TÜV / GS tested



| Art. no. | Ø       | kg           | PU      |
|----------|---------|--------------|---------|
| 200038   | 4 - 16  | 0,090        | 1       |
| 200040   | 8 - 28  | 0,091        | 1       |
| 200042   | 28 - 35 | 0,101        | 1       |
| 200044   | 35 - 50 | 0,108        | 1       |
| 200046   | 35 - 50 | Spare blades | 0,004 1 |

### Stripper „All-rounder“

- Cable stripper for round cables from Ø 4 - 15 mm and flat cables up to 15 mm width
- Stripping 1.5 - 2.5 mm<sup>2</sup> single wire • Lengthwise cut



| Art. no. | Ø      | kg    | PU |
|----------|--------|-------|----|
| 200050   | 4 - 15 | 0,111 | 1  |

### Stripper standard

- For removing the sleeve from all current round cables
- Blades, titanium nitride coated, thanks to the higher cutting speed
- Lower wear, increased durability
- No need to set blades required to cutting depth
- Fixture clip for safe storage
- Housing made from high-quality, hard wearing polyamide
- TÜV / GS tested



| Art. no. | Ø      | kg    | PU |
|----------|--------|-------|----|
| 200036   | 8 - 13 | 0,065 | 1  |

### Universal stripper

- Stripper for removing the sleeve from all current round cables Ø 8 to 13 mm
- Removing the insulation on various cable types, e.g. NYM 3 x 1.5 mm<sup>2</sup> to 5 x 2.5 mm<sup>2</sup>
- Contoured blades for stripping wires 0.2-0.3-0.8-1.5-2.5-4.0 mm<sup>2</sup>
- Ideal for working in distribution and junction boxes
- Longer cable lengths can be stripped using the lengthwise cutting mechanism
- Safe hold thanks to the inclusion of anti-slip handle zones
- No need to set blades required to cutting depth
- Additional titanium nitride coated retractable blade
- TÜV / GS tested



| Art. no. | Ø         | kg    | PU |
|----------|-----------|-------|----|
| 200043   | 0,2 - 4,0 | 0,063 | 1  |



### Flatcable stripper

For stripping round cables with rubber or hard plastic sleeves and flat cables up to 12 mm in width (e.g. NYM cable 4 x 1.5 to 5 x 2.5 mm<sup>2</sup>, insulated flat cables of flexible cables).

- Stripping tool for cables and litz wire 0.8 - 1.5 - 2.5 mm<sup>2</sup>
- Ideal for working in tight and difficult to access areas
- Additional blade for lengthwise cut
- Fixture clip for safe storage
- TÜV / GS tested



| Art. no. | Ø         | kg    | PU |
|----------|-----------|-------|----|
| 200037   | 0,8 - 2,5 | 0,068 | 1  |

### Stripper "Coaxi"

- For removing the sleeve from all current coax cables
- Blades, titanium nitride coated, thanks to the higher cutting speed
- Lower wear, increased durability
- 2 blade pairs for two-stage stripping
- Cutting depth does not need to be set
- No damage to the inner sheath and inner cable elements
- Embossed scale for precise stripping length
- No limitation on the stripping length
- With fixture at the end of the handle
- TÜV / GS tested



| Art. no. | Ø         | kg    | PU |
|----------|-----------|-------|----|
| 200035   | 4,8 - 7,5 | 0,039 | 1  |

### Stripper for coaxial cable

- For removing the sleeve from all current coaxial cables Ø 4,8 to 7.5 mm
- For stripping various cable types, e.g. TV coax, RG 58 / RG 59, PVC flex 3 x 0.75 mm<sup>2</sup>
- New closure system
- Safe hold thanks to the 2-component handle shells
- Blades, titanium nitride coated, thanks to the higher cutting speed
- Lower wear, increased durability
- 2 blade pairs for two-stage stripping
- Cutting depth does not need to be set
- No damage to the inner sheath and inner cable elements
- Easily recognised, internal length scale
- TÜV / GS tested



| Art. no. | Ø         | kg    | PU |
|----------|-----------|-------|----|
| 200636   | 4,8 - 7,5 | 0,041 | 1  |

### Cable strippers for short-circuit proof lines



- For stripping current energy and safety cables
- For stripping short-circuited and grounded, flame retardant, halogen-free cables, e.g. NSGAFÖU, VER H07RN-F
- With lengthwise stop 8 - 10 - 12 mm for even stripping lengths
- For stripping safety and energy cables
- No need to set blades required to cutting depth
- For stripping dual insulated solar cables
- TÜV / GS tested



| Art. no. | Ø       | kg    | PU |
|----------|---------|-------|----|
| 200630   | 1,5     | 0,054 | 1  |
| 200632   | 2,5 - 6 | 0,054 | 1  |
| 200634   | 10 - 16 | 0,054 | 1  |

### PC-Strip

- For stripping round cables Ø 5 - 15 mm
- For stripping various cable types, e.g. IBM Type 1, Type 2, flexible cables, etc.
- For stripping PVC insulated data, communication and control cables
- With stripping tool for cables and litz wire from 0.2 - 4 mm<sup>2</sup>
- Blades, titanium nitride coated, thanks to the higher cutting speed
- Lower wear, increased durability
- No need to set blades required to cutting depth
- TÜV / GS tested



| Art. no. | Ø        | kg    | PU |
|----------|----------|-------|----|
| 200039   | 5,5 - 15 | 0,064 | 1  |

### Stripper for coaxial cable

- For coaxial cables, RG-58, RG-59/62, RG-6 and 6QS
- With 3 replaceable and individually adjustable blades
- Cutting distance of 8 and 4 mm



| Art. no. | crimp         | kg    | PU |
|----------|---------------|-------|----|
| 200069   | RG 58-59-62-6 | 0,048 | 1  |

**haupa®**

**...convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

### PC Cat

- For stripping round cables Ø 4.5 - 10 mm
- Stripping various cable types, e.g. CAT 5, CAT 6, CAT 7, Twisted-Pair cable
- With stripping tool for cables and litz wire from 0.2 - 0.8 mm<sup>2</sup>
- For stripping PVC insulated CAT and network cables
- Blades, titanium nitride coated, thanks to the higher cutting speed
- Lower wear, increased durability
- No need to set blades required to cutting depth
- TÜV / GS tested



| Art. no. | TL  | Ø        | kg    | PU |
|----------|-----|----------|-------|----|
| 200637   | 125 | 4,5 - 10 | 0,062 | 1  |

### PC-Cat

- For stripping PVC insulated data, communication and control cables Ø 4.8 - 10.0 mm
- Cat5, Cat6, Cat7, Twisted-Pair cable
- Blades, titanium nitride coated, thanks to the higher cutting speed
- Lower wear, increased durability
- 2 blade pairs for outer sleeve and foil sheath
- Cutting depth does not need to be set
- With length scale
- TÜV / GS tested



| Art. no. | TL  | Ø        | kg    | PU |
|----------|-----|----------|-------|----|
| 200638   | 128 | 4,8 - 10 | 0,050 | 1  |

### Stripper for UTP-/STP-data cable

Universal tool for cutting, stripping and removing the sleeve from round and flat cables, sheathed and unsheathed cables.

- Cutting depth can be set
- Exchangeable blades
- For cable with a diameter of 3.5 to 9 mm



| Art. no. | Ø       | kg    | PU |
|----------|---------|-------|----|
| 200068   | 3,5 - 9 | 0,060 | 1  |

### Precision stripper PWS Plus

Areas of application: Data processing equipment, control device production, telecommunication, 3 integrated functions:

- Precise stripping from AWG 30 (0.25 mm<sup>2</sup> Ø) to AWG 20 (0.8 mm<sup>2</sup> Ø)
- Adjustable straight dog up to 15 mm
- Wire cutter up to 0.8 mm Ø (CU cable)



| Art. no. | Ø          | kg    | PU |
|----------|------------|-------|----|
| 200033   | 0,25 - 0,8 | 0,039 | 1  |

### Sensor Tool LSA

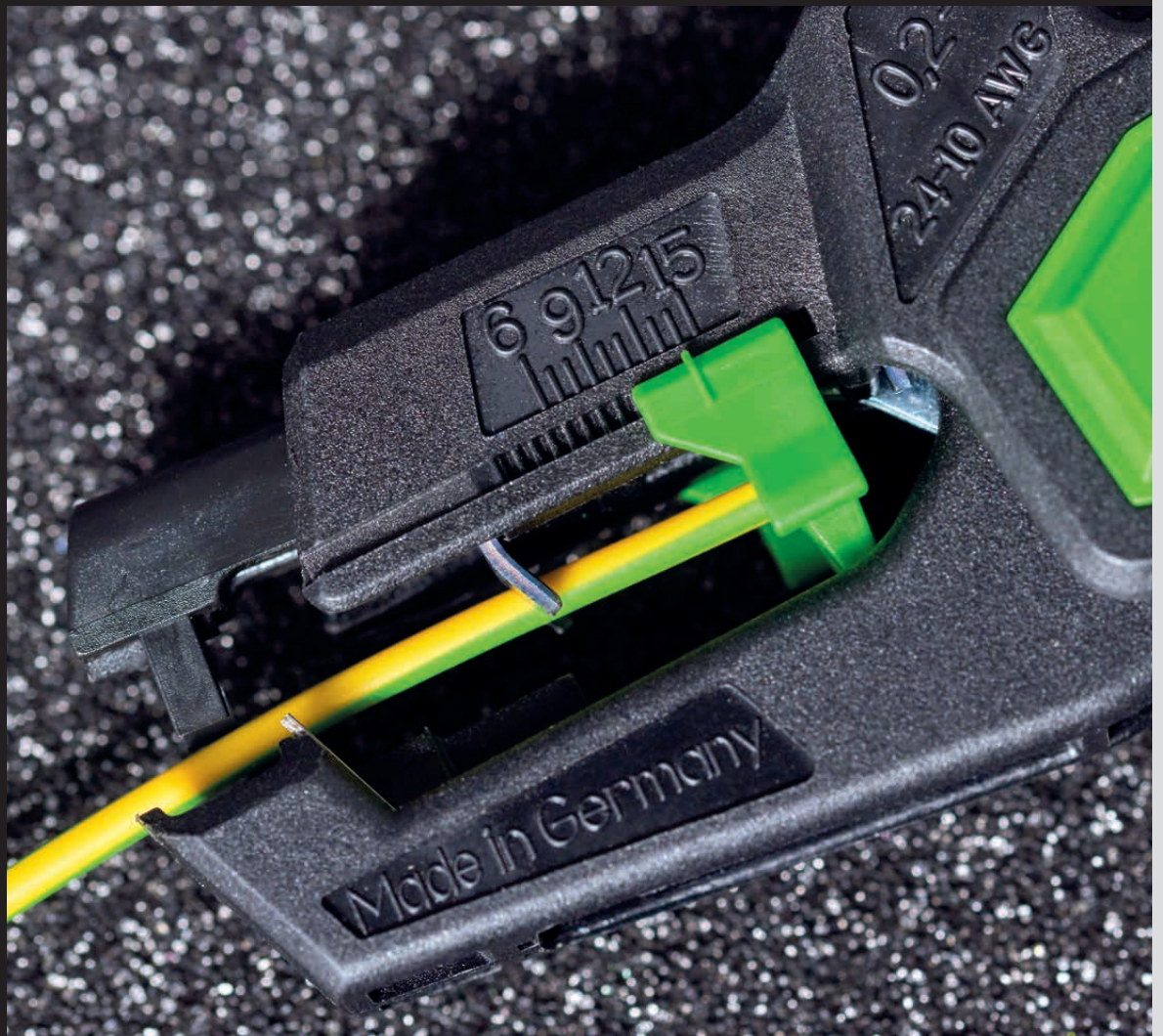
Standard tool for all data, information and telecommunication cables with cutting mechanisms, hook and blade

- Cable diameter: 0.35 - 0.9 mm
- Core diameter: 0.7 - 2.6 mm



| Art. no. | Ø          | kg    | PU |
|----------|------------|-------|----|
| 300322   | 0,35 - 0,9 | 0,078 | 1  |

Stripping pliers



# INFO

## Wire strippers

Stripping is the removal the insulation on an electrical cable (wire). The following stripping pliers are used to do this:

### Manually adjustable stripping pliers

Are set by hand to the stripping diameter by eye. The risk of damaging the cable is thus very high.

### Automatic or self-adjusting stripping pliers

For fast and precise cutting and stripping. These tools automatically adjust to the required cable cross-section or insulation thickness. Thus it is not possible to damage the cable or the insulation. A lengthwise stop makes serial insulation easier.

### Micro-precision stripping tools

These are used when fine wires are to be stripped. Data technology, network technology, controller construction, telecommunications, electronics, model construction.

### Stripping tools for special insulation types

Teflon insulations are a rubber-like insulation type which make removing the insulation of an electrical cable more difficult. In such tough situations we recommend stripping tools that cut the insulation sleeve.

### Advantages

- Constant safe stripping results
- Fault free processing
- Precision in every cut
- Serial stripping is made easier by lengthwise stop
- Automatic stripping pliers = 3 in 1 = cut + remove sleeve + strip

## Cable stripper, manual

Multi-functional tool including cable cutter for copper cable.

- Comfortable handles
- Precise removal of sleeve thanks to formed blade
- Cutting function
- Gripping function
- With handle lock



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 210620   | 175 | 0,5 - 2,5       | 0,158 | 1  |
| 210624   | 175 | 0,25 - 0,75     | 0,161 | 1  |

## Cable stripper, manual optical fibre

Multi-functional tool for fibre optic cables.

- For slicing open and cutting cables
- Cutting depth can be set
- Specially designed for use with fibre optic cables (outer sleeves and buffer)
- With handle lock



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 200057   | 150 | 0 - 0,18        | 0,120 | 1  |

# Wire strippers

## Cable stripper, automatic

- No damage to the cable
- Sleeve is removed according to standard from fine wire cables
- Replaceable blade made from special steel
- Robust metal body
- A pressure spring returns the cutters to the starting position
- Also ideally suited for use with fibre optic cables.



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 210691   | 165 | 0,5 - 2         | 0,340 | 1  |
| 210692   | 165 | 1 - 4           | 0,350 | 1  |

## Wire stripper „High Strip“

- Suitable for cables with problematic insulation types, e.g. rubber, silicone, TPE, etc.
- For cable sized 0.5 - 0.75 - 1.5 - 2.5 - 4.0 mm<sup>2</sup>,
- Adjustable lengthwise stop 5 to 15 mm,
- TÜV / GS tested



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 210684   | 170 | 0,5 - 4         | 0,130 | 1  |

## Super wire stripper

- Automatic setting to the cross-section
- Working range of 0.5 to 4 mm<sup>2</sup>
- Integrated side cutter up to 2.5 mm<sup>2</sup>



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 210683   | 170 | 0,5 - 4         | 0,119 | 1  |

# Wire strippers

## Automatic wire stripper Super Plus

for solid and flexible conductors and strands between 0.2 and 6.0 mm<sup>2</sup> (AWG 24 - 10)

- For fast and precise stripping even of difficult - to-access places
- No adjustment to wire cross section necessary
- Suitable for cables with insulation made from PVC and other materials
- Special scanning system, therefore no damage to conductors
- Adjustable longitudinal stop from 6.0 to 15.0 mm for even serial stripping
- External side cutters for conductors up to 2.5 mm<sup>2</sup>
- Body of pliers made from fibre-glass reinforced polyamide
- Handle of pliers with elongated hole at the bottom for mounting
- TÜV / GS tested



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 210695   | 170 | 0,2 - 6         | 0,088 | 1  |
| 210695/E |     | spare blades    | 0,010 | 1  |

## Automatic wire stripper

- For single, multiple and fine wire cables from 0.2 to 6.0 mm<sup>2</sup>
- Ergonomic, automatic strippers
- Increased operating comfort thanks to anti-slip soft components on the stripper handle
- Automatic, energy-saving scanning system
- Cable cross-section does not need to be set
- Optimally positioned side cutter for up to 2.5 mm<sup>2</sup>
- Adjustable lengthwise stop 6 to 18 mm for same sleeve removal lengths when carrying out series work
- Exchangeable blades
- TÜV / GS tested



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 210696   | 180 | 0,2 - 6         | 0,151 | 1  |
| 210696/2 |     | spare blades    | 0,030 | 1  |

## Automatic wire stripper HAUPA-Special

- Ergonomic, automatic strippers
- For cable from 0.5 to 6.0 mm<sup>2</sup>
- Automatic scanning system
- Cable cross-section does not need to be set
- Optimally positioned side cutter for Cu wires up to Ø 2.8 mm
- Adjustable lengthwise stop to 18 mm
- TÜV / GS tested



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 210681   | 170 | 0,5 - 6         | 0,179 | 1  |

## Wire stripper / Solar



- For cables with large cross-sections from 6.0 to 16 mm<sup>2</sup>
- Also for stripping PVC flex 3 x 0.75 mm<sup>2</sup> or solar cables Solarflex-X PV1-F
- Automatic strippers
- Optical lengthwise stop to 20 mm
- Cable cross-section does not need to be set
- Any stripping length can be selected as needed
- Exchangeable blades
- TÜV / GS tested



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 210685   | 160 | 6 - 16          | 0,147 | 1  |

## Flat cable pliers

- For PVC insulated flat cables up to a maximum of 12 mm in width and a cross-section of 0.75 x 2.5 mm<sup>2</sup>
- Automatic strippers
- Optical lengthwise stop to 20 mm
- Strippers do not need to be set
- Any stripping length can be selected as needed
- Exchangeable blades
- TÜV / GS tested



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 210686   | 160 | 0,75 - 2,5      | 0,148 | 1  |

**haupa®**

**...convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Wire strippers

### Wire stripper Sensor Mini

The HAUPA Sensor Mini has a specially designed blade geometry with a working area as of 3.2 mm Ø for sensor cables with smaller cross-sections.

- Automatic wire strippers for stripping combination wires for connecting sensor actuators, distribution boxes/bus couplings
- Any length can be stripped
- No need to make setting to the cable cross-section
- Blades can be replaced
- TÜV/GS tested



| Art. no. | Ø     | kg    | PU |
|----------|-------|-------|----|
| 210730   | > 3,2 | 0,121 | 1  |

### Wire stripper sensor special

Automatic stripper for stripping combination cables for connection of sensor actuators, distribution boxes/bus couplings. For stripping halogen-free screened or unscreened sensor actuator cables with PUR or PVC exterior sleeve and a cable construction with 3 to 8 cores.

- e.g. sensor cable 3 x 0.34 mm<sup>2</sup> unscreened up to 8 x 0.25 mm<sup>2</sup> screened
- Any stripping length
- Cable cross-section does not need to be set
- Exchangeable blades
- TÜV / GS tested



| Art. no. | TL  | Ø         | kg    | PU |
|----------|-----|-----------|-------|----|
| 210729   | 180 | 4,4 - 7,0 | 0,122 | 1  |

### Cable stripper ASI, automatic

For stripping AS interface cables with TPE/PUR exterior insulation. For use in connecting actuator-sensor interface components.

- Blade contour designed for use with the AS interface cable
- Strippers do not need to be set
- Any stripping length can be selected as needed
- Exchangeable blades
- TÜV / GS tested



| Art. no. | TL           | kg    | PU |
|----------|--------------|-------|----|
| 210693   | 160          | 0,117 | 1  |
| 210693/1 | spare blades | 0,030 | 1  |

### Cable stripper Outlet 20/55

#### Article number 210697

- For stripping round cable Ø 7.5 to 9 mm
- Insulation thickness of cable maximum 1.2 mm
- Ideal for processing NYM cables 3 x 1.5 mm to 5 x 1.5 mm<sup>2</sup>
- Compatible with the Cable Outlet laying system from OBO Bettermann or R & M

#### Article number 210699

- For stripping round cable Ø 7.5 to 9 mm
- Insulation thickness of cable maximum 1.65 mm
- Ideal for processing NYM cables 3 x 1.5 mm to 5 x 1.5 mm<sup>2</sup>
- Coaxial cable, screened or unscreened measuring control and control cables

Suitable for connecting potential equalising, screened connection system or grounding clips.



| Art. no. | TL  | Ø       | kg    | PU |
|----------|-----|---------|-------|----|
| 210697   | 160 | 7,5 - 9 | 0,104 | 1  |
| 210699   | 160 | 7,5 - 9 | 0,100 | 1  |

## Automatic cable stripper

### Automatic cable stripper

- For stripping fine wires and solid cables 0.08 – 2.5 mm<sup>2</sup>
- Stripping length, maximum 15 mm
- Automatic setting to the cross-section
- Integrated side cutter of up to 6 mm<sup>2</sup>
- With stripping lengthwise stop



| Art. no. | TL           | mm <sup>2</sup> | kg    | PU |
|----------|--------------|-----------------|-------|----|
| 211928   | 160          | 0,08 - 2,5      | 0,156 | 1  |
| 211928/1 | spare blades |                 | 0,005 | 1  |

### Automatic cable stripper

- For stripping fine wires and solid cables 0.03 – 6 mm<sup>2</sup>
- For stripping and cutting dual insulated cables
- For stripping and cutting 4-6-8-pole telephone or data cables
- Automatic setting to the cross-section
- Integrated side cutter of up to 6 mm<sup>2</sup>
- With stripping lengthwise stop



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 210690   | 200 | 0,03 - 6        | 0,184 | 1  |

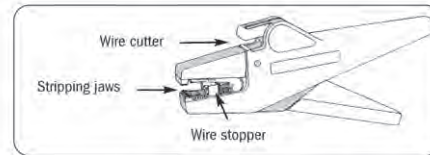
# Automatic cable strippers

## Automatic cable stripper

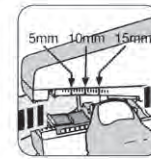
- for stripping fine wires and solid cables 0.08 – 6 mm<sup>2</sup>
- automatic setting to the cross-section
- integrated side cutter of up to 6 mm<sup>2</sup>
- With stripping lengthwise stop



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 211930   | 205 | 0,08 - 6        | 0,255 | 1  |
| 211930/1 |     | spare blades    | 0,005 | 1  |



Squeeze wire stopper from both sides



Set the required stripping length

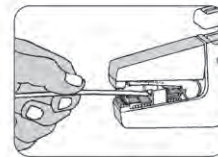
## Automatic cable stripper

- for stripping fine wires and solid cables 6 – 16 mm<sup>2</sup>
- automatic setting to the cross-section
- integrated side cutter of up to 6 mm<sup>2</sup>
- With stripping lengthwise stop

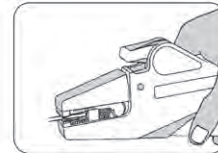


| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 211932   | 205 | 6 - 16          | 0,250 | 1  |
| 211932/1 |     | spare blades    | 0,005 | 1  |

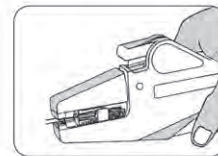
## Set the stripping length



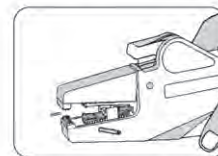
Feed wire to the wire stopper with pliers



Squeeze pliers handles, pliers close automatically



Stripping slide returns



Release handles, pliers open automatically

## Automatic cable stripper

- for stripping fine wires and solid cables 0.03 – 10 mm<sup>2</sup>
- automatic setting to the cross-section
- integrated side cutter of up to 10 mm<sup>2</sup>
- with stripping lengthwise stop



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 211934   | 205 | 0,03 - 10       | 0,413 | 1  |

**Automatic Wire stripping pliers Wiring**  
• Switch/Socket  
Art. 219696



**PC Strip PV/solar cables**  
Art. 200630/32/34



**Wire stripping pliers PV/solar cables**  
Art. 210685



**Cable stripping knife with hook blade Cable installation**  
• Main cable feed  
• Sub-distribution  
Art. 200031



**Universal stripper House installation**  
• Cavity wall sockets  
Art. 200043



**PC Cat House network**  
Art. 200637



**Stripper for coaxial cable TV, hi-fi systems**  
Art. 200636



**Precision stripper PWS Plus Intercom systems, alarm systems, leisure activities, bicycle illumination Model railways**  
Art. 200033



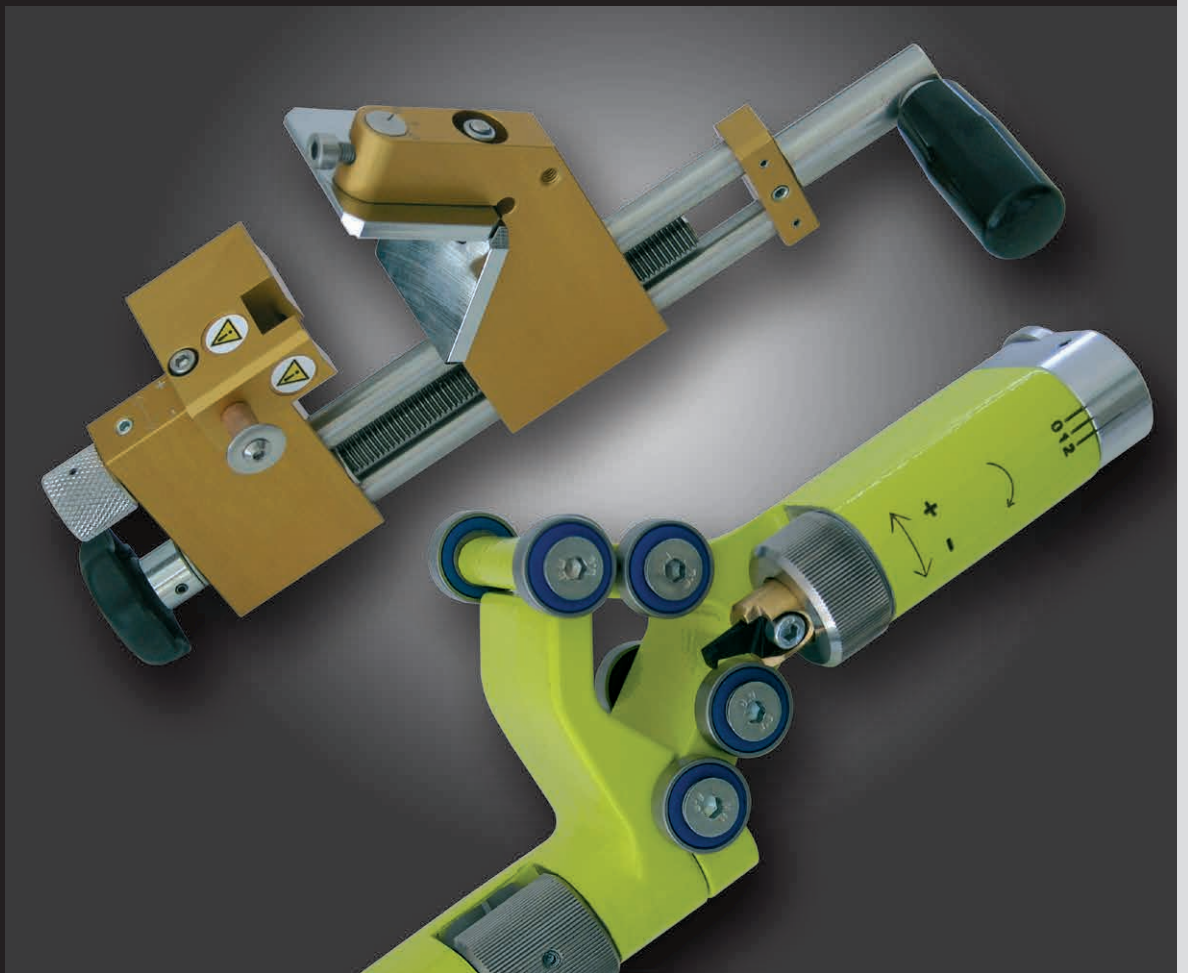
**„Coaxi“ stripper TV, hi-fi systems**  
Art. 200035



## Strippers for building installation work



Stripping



# INFO

## Cable strippers

Stripping refers to the removal of the outer sleeve of the cable. A special tool is used to first cut in a ring around and then along the length of the cable. Cable sleeve cutters are available in a wide variety of versions.

### Important:

When stripping, the insulation of the inner wires and the wires themselves may not be damaged.

## Cable sheath cutter

for removing all insulating layers from cables with diameters as of 25 mm

- Replaceable dual blade
- Cutting depth can be set
- Suitable for lengthwise and circular cuts



| Art. no. | Ø            | kg    | PU |
|----------|--------------|-------|----|
| 110567   | >25          | 0,220 | 1  |
| 110569   | spare blades | 0,040 | 1  |

## Stripping pliers

For cutting and removing the cable sheathing of low and medium-high voltage cables

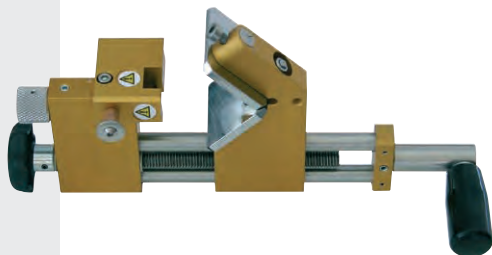


| Art. no. | TL  | Ø       | kg    | PU |
|----------|-----|---------|-------|----|
| 200187   | 260 | 26 - 52 | 0,760 | 1  |
| 200188   | 290 | 47 - 75 | 1,100 | 1  |

## Stripping tool for medium-high voltage cable

A universal tool for controlled and safe stripping of the firm extruded exterior semi-conductor layer of medium-high voltage cable with 10-30 KV and for greater voltage levels. Working range 10-50 mm.

- Stripping depth can be set
- Defined round cut
- Automatic work feed



| Art. no. | Ø               | kg    | PU |
|----------|-----------------|-------|----|
| 200520   | 10 - 50         | 0,800 | 1  |
| 200520/1 | repl. blade set | 0,100 | 5  |

# Cable sheath strippers

## Cable Sheath Stripper

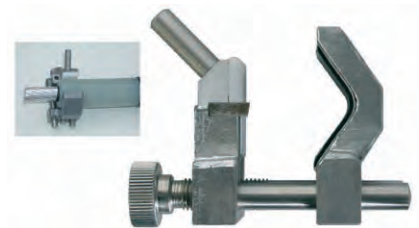
A combination tool for all standard cross-sections in the medium-high voltage range for VPE single-core cables..

Cutting and stripping the exterior sleeve and the inner cable insulation. Two feeds and a zero setting can be set to ensure precise stripping. The sleeve is lifted at the cutting point and this prevents damage to the construction elements below.



| Art. no. | Ø            | kg    | PU |
|----------|--------------|-------|----|
| 200524   | 35 - 500     | 0,800 | 1  |
| 200524/1 | spare blades | 0,020 | 1  |

## Edge cutter



| Art. no. | Ø  | kg    | PU |
|----------|----|-------|----|
| 200526   | 40 | 0,100 | 1  |
| 200528   | 60 | 0,100 | 1  |

## Complete assembly case

### Content:

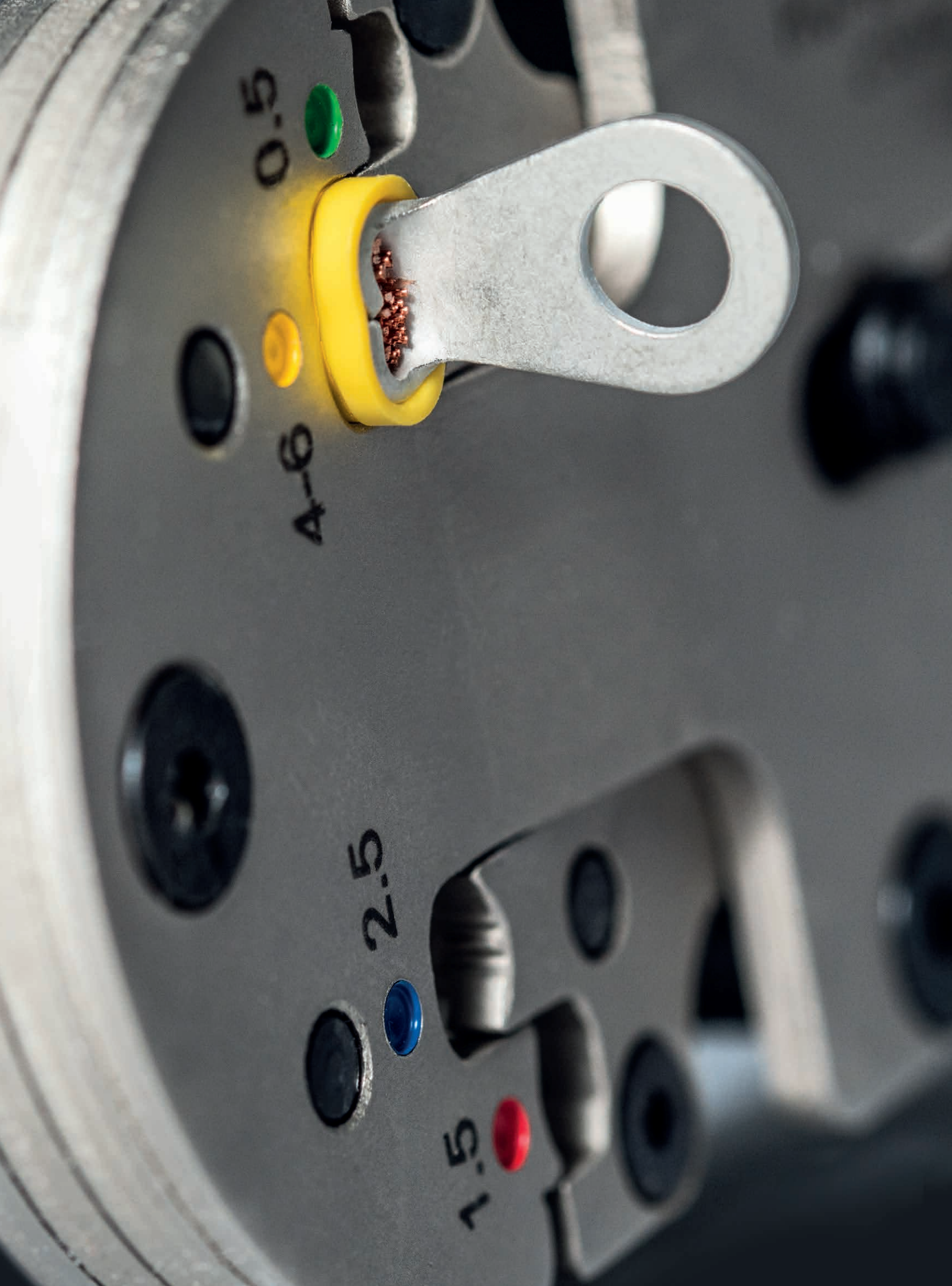
- Sleeve cutter
- Plastic prism
- Stripping device
- Silicone paste
- Edge cutter
- Key for changing blades



| Art. no. | mm²      | kg    | PU |
|----------|----------|-------|----|
| 200522   | 35 - 500 | 0,800 | 1  |

Pressing and crimping





0.5

A-6

2.5

1.5

# INFO

## HUPcompact

The new HUPcompact is a handy, compact crimp tool that will be available in 4 variations:

- for end sleeves
- for insulated cable lugs and connectors
- for non insulated cable lugs and connectors
- for open brass tab connectors

Tool frame is from hardened steel with matt silver coating and clearly indicated crimp values. Ratchet system with unblocking option secures safe crimping process. Tool can fit into one hand and it is easy to crimp.

### Features:

- easy achievement of high crimping force due to optimized leverage system
- sure achievement of full crimping range and depth
- metal parts made of quality steel
- precise and quality manufacturing of all elements
- possibility of crimping force regulation via eccentric axle
- safety relief
- for use in series production
- small gripping distance (suitable also for smaller hands)

### Technical data:

- length: 198 mm
- width: 50 mm
- handle force: 5 kN
- life span: 50,000 crimp cycles



- **100% parallel crimp**
- **precision crimp**
- **handle force: 5 kN**
- **small compact construction**



### HUPcompact „HC01”

for insulated cable lugs and connectors, 100% parallel crimp, precision crimp, handle force: 5 kN, small compact construction, life span: 50,000 crimp cycles, **oval pressing**



| Art. no. | Ø       | kg    | PU |
|----------|---------|-------|----|
| 213090   | 0,1 - 6 | 0,578 | 1  |

### HUPcompact „HC02”

for end sleeves, 100% parallel crimp, precision crimp, handle force: 5 kN, small compact construction, life span: 50,000 crimp cycles, **trapezoidal pressing**, (10 + 16 mm<sup>2</sup> wave profile/ 0.5-6 mm<sup>2</sup> trapezoidal profile)



| Art. no. | Ø         | kg    | PU |
|----------|-----------|-------|----|
| 213088   | 0,25 - 16 | 0,480 | 1  |

### HUPcompact „HC03”

for non insulated cable lugs and connectors, 100% parallel crimp, precision crimp, handle force: 5 kN, small compact construction, life span: 50,000 crimp cycles, **mandrel shape pressing**



| Art. no. | Ø         | kg    | PU |
|----------|-----------|-------|----|
| 213092   | 0,75 - 10 | 0,480 | 1  |

### HUPcompact „HC04”

for open brass tab connectors, 100% parallel crimp, precision crimp, handle force: 5 kN, small compact construction, life span: 50,000 crimp cycles, with locator, **roll pressing**



| Art. no. | Ø       | kg    | PU |
|----------|---------|-------|----|
| 213094   | 0,5 - 6 | 0,490 | 1  |

**haupa**®

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

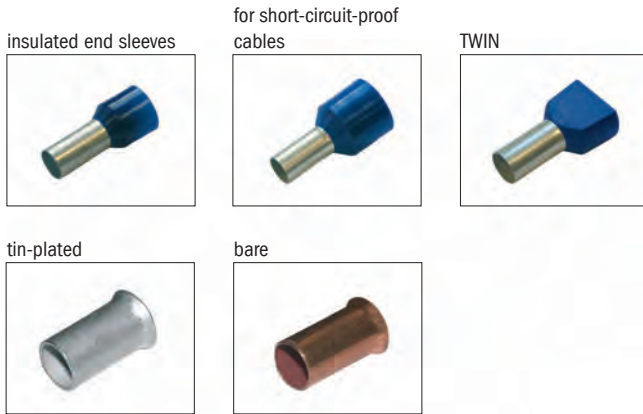
# INFO

## Crimping pliers for end sleeves

When crimping end sleeves a distinction is made between sleeves with and without plastic collars and between trapezoid, square and hexagon pressing.

The sleeves with a plastic collar make it easier to insert individual stranded wires. The coloured marking on the wire end sleeves is used to classify the cross section.

Pliers with a square crimp ensure better contact in the terminal strip. The square crimp also facilitates alignment and assembly, as clamps can be attached to each of the surfaces.



## Crimping pliers

for end sleeves, with cutting and stripping mechanism, matt, chrome-plated



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 210820   | 140 | 0,25 - 2,5      | 0,202 | 1  |
| 210824   | 220 | 0,75 - 16       | 0,304 | 1  |
| 210826   | 225 | 10 - 35         | 0,277 | 1  |

## Crimping pliers

for end sleeves, short construction, 20% angled handy form, with locking device, with adjustable crimp pressure, **trapezoid pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 211650   | 0,14 - 2,5      | 0,371 | 1  |
| 210841   | 0,25 - 6        | 0,380 | 1  |
| 211652   | 6 - 16          | 0,374 | 1  |

## Crimping pliers for twin end sleeves

with locking device, with adjustable crimp pressure, chrome plated, **trapezoid pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 211676   | 0,5 - 6         | 0,576 | 1  |
| 211678   | 6 - 16          | 0,604 | 1  |

## Crimping pliers

for end sleeves, with locking device, with adjustable crimp pressure, chrome plated, **trapezoid pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210763   | 0,5 - 4         | 0,578 | 1  |
| 210842   | 1 - 10          | 0,553 | 1  |
| 210765   | 6 - 16          | 0,582 | 1  |
| 211672   | 10 - 25         | 0,580 | 1  |
| 210768   | 10 - 35         | 0,606 | 1  |
| 211674   | 25 - 50         | 0,600 | 1  |

## HUPcompact „HC02“

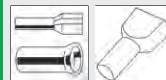
for end sleeves, 100% parallel crimp, precision crimp, handle force: 5 kN, small compact construction, life span: 50,000 crimp cycles, **trapezoid pressing**, (10 + 16 mm<sup>2</sup> wave profile/ 0.5-6 mm<sup>2</sup> trapezoidal profile)



| Art. no. | ∅         | kg    | PU |
|----------|-----------|-------|----|
| 213088   | 0,25 - 16 | 0,480 | 1  |

## Crimping pliers

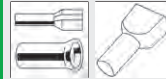
for end sleeves, precise **square pressing** profile, automatic setting to the conductor cross-section, unlockable forced lock, guarantees connections that meet DIN, high transmission and ergonomically shaped plastic handles for fatigue free working, **square pressing**.  
2 grooved and 2 smooth jaws for better insertion of the sleeve.



| Art. no. | mm <sup>2</sup>  | kg    | PU |
|----------|------------------|-------|----|
| 210804   | 0,08 - 10 square | 0,413 | 1  |

## Crimping pliers

for end sleeves, precise crimping profile, automatic setting to the conductor cross-section, unlockable forced lock, guarantees connections that meet DIN, high transmission and ergonomically shaped plastic handles for fatigue free working. **Square pressing**



| Art. no. | mm <sup>2</sup>  | kg    | PU |
|----------|------------------|-------|----|
| 211816   | 0,08 - 16 square | 0,413 | 1  |

## Crimping pliers for end sleeves

### Crimping pliers

for end sleeves, precise hexagonal crimping profile, automatic setting to the conductor cross-section, unlockable forced lock, guarantees connections that meet DIN, high transmission and ergonomically shaped plastic handles for fatigue free working, **hexagon pressing**



| Art. no. | mm <sup>2</sup> |           | kg    | PU |
|----------|-----------------|-----------|-------|----|
| 211805   | 0,08 - 6        | hexagonal | 0,413 | 1  |

### Crimping pliers

for end sleeves, precise crimping profile, automatic setting to the conductor crosssection, unlockable forced lock, guarantees connections that meet DIN, high transmission and ergonomically shaped plastic handles for fatigue free working, **hexagon pressing**



| Art. no. | mm <sup>2</sup> |           | kg    | PU |
|----------|-----------------|-----------|-------|----|
| 211818   | 0,08 - 10       | hexagonal | 0,413 | 1  |

### Front-Crimping pliers

for end sleeves, precise **square pressing** profile, automatic adjustment on wire diameter, frontal approach allows working in small areas, sidewise approach for end sleeves up to 2.5 mm<sup>2</sup>, with locking device, high transmission and ergonomically formed plastic handle, **square pressing**



| Art. no. | mm <sup>2</sup> |        | kg    | PU |
|----------|-----------------|--------|-------|----|
| 210819   | 0,08 - 10       | square | 0,489 | 1  |
| 211810   | 0,08 - 16       | square | 0,489 | 1  |

### Front-Crimping pliers

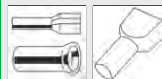
for end sleeves, automatic adjustment of crimp-profile, with locking device, with adjustable crimp pressure, **trapezoid pressing**



| Art. no. | mm <sup>2</sup> |  | kg    | PU |
|----------|-----------------|--|-------|----|
| 210979   | 0,14 - 6        |  | 0,575 | 1  |
| 210979/B | 10 - 16         |  | 0,584 | 1  |

### Crimping pliers

for end sleeves, lever translated version for better transmission of force, with unlockable locking mechanism, **trapezoidal pressing**



| Art. no. | mm <sup>2</sup> |  | kg    | PU |
|----------|-----------------|--|-------|----|
| 210788   | 10 - 50         |  | 0,732 | 1  |
| 210789   | 50 - 95         |  | 0,800 | 1  |

### Quadro with magazine

Integration of four functions for precise crimping of connector sleeves from tapes, 0.5 - 2.5 mm Ø.

- Insulation stripping: 0.5 - 2.5 mm Ø
- Twisting: 0.5 - 2.5 mm Ø
- Cutting: cables and cords 0.5 - 2.5 mm Ø
- Crimping: 0.5 - 2.5 mm Ø



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 210682/1 | 170 | 0,5 - 2,5       | 0,056 | 1  |

### Quadro complete set in case

- in case:
- 1 „Quadro“-pliers incl. magazine
  - 2 spare magazines
- Box for end sleeve strips



| Art. no. | TL  | mm <sup>2</sup>     | kg    | PU |
|----------|-----|---------------------|-------|----|
| 210682   | 170 | 0,5 - 2,5           | 0,713 | 1  |
| 210682/2 |     | Magazine for Quadro | 0,020 | 1  |
| 210682/3 |     | Box for end sleeves | 0,010 | 1  |

**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Pneumatic crimpers

### HAUPA Pneumatic Crimpers

for end sleeves, pneumatic crimpers crimp wire end sleeves quickly and without effort. Table top versions are actuated by a foot switch, allowing the operator to use both hands. The Pneumatic Crimpers are lightweight and easy to use. The crimping mechanism is easily activated, making it perfectly suited for work in control cabinets and electrical equipment. These tools are maintenance free - they require no routine calibration - only 60 - 90 psi to allow proper operation. Incl. spiral hose 2 m



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 217030   | 200 | 0,25 - 2,5      | 0,720 | 1  |
| 217040   | 200 | 4 - 10          | 0,739 | 1  |

### HAUPA Pneumatic crimpers table top versions

for end sleeves, table top versions are actuated by a foot switch, allowing the operator to use both hands. Incl. spiral hose, foot switch and table clamp



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 217010   | 200 | 0,25 - 2,5      | 5,000 | 1  |
| 217020   | 200 | 4 - 10          | 5,000 | 1  |





haupa<sup>®</sup>

MADE IN GERMANY

2 0804

# Crimping pliers for insulated crimp cable lugs

## INFO

### Crimping pliers for insulated crimp cable lugs

Insulated cable lugs and crimp cable lugs are crimped in an oval form.

The coloured marking of the wire cross section to the insulated cable lug is defined in DIN 46245, Parts 1, 2 and 3.

- Red => stands for 0.5 to 1 mm<sup>2</sup>
- Blue => stands for >1.5 to 2.5 mm<sup>2</sup>
- Yellow => stands for >2.5 to 6 mm<sup>2</sup>

As the cable lug is rolled from a metal sheet, attention should be paid to the position of the butted edge. It should be in the middle of the top profile. If it is on the side, the edge opens up and the wire is not gastight or adequately clamped.

Butted edge



Ring terminals



Fork terminals



Shrinkable connectors



Round terminals



Flat terminals



Socket sleeves (female)



Round sleeves



Round pins



Socket sleeves (male)



Butt connectors



Parallel connectors



End connectors



### Crimping pliers

for insulated crimp cable lugs, short construction, 20% angled handy form, with locking device, with adjustable crimp pressure, **oval pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210845   | 0,08 - 2,5      | 0,343 | 1  |

### Crimping pliers

for insulated crimp cable lugs, with locking device, with adjustable crimp pressure, chrome plated, **oval pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210761   | 0,5 - 6         | 0,566 | 1  |

### Crimping pliers

for shrink connectors, with locking device, with adjustable crimp pressure, chrome plated, **oval pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 211695   | 0,5 - 10        | 0,566 | 1  |

### HUPcompact „HC01“

for insulated cable lugs and connectors, 100% parallel crimp, precision crimp, handle force: 5 kN, small compact construction, life span: 50,000 crimp cycles, **oval pressing**



| Art. no. | ∅       | kg    | PU |
|----------|---------|-------|----|
| 213090   | 0,1 - 6 | 0,578 | 1  |

### Crimping pliers

for insulated crimp cable lugs, lever translated version for better transmission of force, with unlockable locking mechanism, **oval pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210827   | 10 - 16         | 0,472 | 1  |

### Crimping pliers

for insulated crimp cable lugs with wire-and bolt-cutters and wire stripper with threaded bolt-cutter, **oval pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210802   | 0,5 - 6         | 0,178 | 1  |

### Combi-Crimping pliers

for insulated and uninsulated crimp cable lugs and connectors from 0.5 - 6 mm<sup>2</sup>, C 45, cutting edges induction hardened, with wire-and bolt-cutters and wire stripper with threaded bolt-cutter, **oval pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210808   | 0,75 - 6        | 0,198 | 1  |

# Crimping pliers for uninsulated crimp cable lugs

## INFO

### Crimping pliers for uninsulated terminals

Important when crimping uninsulated terminals and butt space connectors: Uninsulated crimping terminals are pressed together by means of so-called piercing compression. The crimp sleeve is compressed in the middle. The pressing thorn should be set to the separating seam of the sleeve.

Crimping terminals  
Ring type



Crimping terminals  
Fork type



Crimping terminals  
Pin type



Crimping terminals  
Butt connectors



Crimping terminals  
Parallel connectors



### Crimping pliers

for non insulated crimp cable lugs, short construction, 20% angled handy form, with locking device, with adjustable crimp pressure, **mandrel shape pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210778   | 0,25 - 2,5      | 0,363 | 1  |
| 210779   | 1,25 - 6        | 0,366 | 1  |

### Crimping pliers

for non insulated crimp cable lugs, with locking device, with adjustable crimp pressure, chrome plated, **mandrel shape pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210764   | 1,5 - 10        | 0,565 | 1  |

### HUPcompact „HC03“

for non insulated cable lugs and connectors, 100% parallel crimp, precision crimp, handle force: 5 kN, small compact construction, life span: 50,000 crimp cycles, **mandrel shape pressing**



| Art. no. | Ø         | kg    | PU |
|----------|-----------|-------|----|
| 213092   | 0,75 - 10 | 0,480 | 1  |

### Crimping pliers

for non insulated crimp cable lugs, lever translated version for better transmission of force, with mandrel pressing, for standard tubular cable lugs and connectors. Particularly well suited to nickel tubular cable lugs and connectors



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210772   | 1-2,5-4 > 6-10  | 0,478 | 1  |
| 210774   | 1 > 2-6-10-16   | 0,503 | 1  |

### Crimping pliers

for non insulated crimp cable lugs, lever translated version for better transmission of force, with mandrel pressing, for standard tubular cable lugs and connectors



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210799   | 0,5 - 16        | 0,903 | 1  |

**haupa**

...convincing solutions

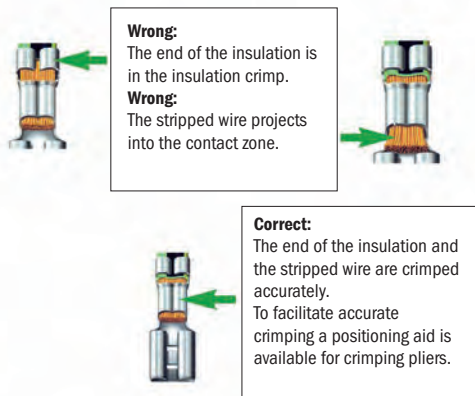
Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Crimping pliers for uninsulated open brass cable lugs

## INFO

### Crimping pliers for uninsulated open brass cable lugs

We distinguish between wire crimps and insulation crimps. The end of the wire should be flush with the wire crimp or extend beyond it no further than 1 mm, so that the plug function is not affected. The insulation end must not project into the wire crimp, however it must also not lie just half beneath the insulation crimp. Only in this way can a standard-compliant crimp be ensured. In a good crimp the wire must be deformed. In this case one talks of a "gastight crimp".



Socket sleeves (female) with cable stop



Socket sleeves (female) with cable stop and side cable connection



Flat terminals



Precision-ground crimp profiles => clean crimp

Adjustable crimping pressure => Wear compensation via adjusting screw

Forced block, unblockable => guaranteed DIN-compliant crimped connection

Ergonomically formed plastic handles => low fatigue work



### Crimping pliers

for open brass cable lugs, short construction, 20% angled handy form, with locking device, with adjustable crimp pressure, **roll pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210777   | 0,5 - 1,5       | 0,366 | 1  |

### Crimping pliers

for open brass cable lugs, with locking device, with adjustable crimp pressure, chrome plated, **roll pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 211682   | 0,5 - 2,5       | 0,568 | 1  |
| 210762   | 0,5 - 6         | 0,575 | 1  |

### Crimping pliers

for open brass cable lugs, with locking device, with adjustable crimp pressure, chrome plated, **roll pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210785   | 0,05 - 1        | 0,537 | 1  |
| 210786   | 1,5 - 2,5       | 0,535 | 1  |

### HUPcompact „HC04"

for open brass tab connectors, 100% parallel crimp, precision crimp, handle force: 5 kN, small compact construction, life span: 50,000 crimp cycles, with locator, **roll pressing**



| Art. no. | ∅       | kg    | PU |
|----------|---------|-------|----|
| 213094   | 0,5 - 6 | 0,490 | 1  |

## Crimping pliers for coaxial connections

### Crimping pliers

for coax-connections, short construction, 20% angled handy form, with locking device, with adjustable crimp pressure, **hexagon pressing**



| Art. no. | crimp          | kg    | PU |
|----------|----------------|-------|----|
| 210849   | RG 55-58-59-62 | 0,303 | 1  |

### Crimping pliers

for coax-connections, with locking device, with adjustable crimp pressure, chrome plated, **hexagon pressing**



| Art. no. | crimp              | kg    | PU |
|----------|--------------------|-------|----|
| 210767   | RG 55-58-59-62     | 0,567 | 1  |
| 211680   | RG 55-58-59-62-5-6 | 0,578 | 1  |

### Crimping pliers HUPstar Coax

for coaxial connectors. Crimp pliers for industrial users, revolving precision impression dies with parallel feed, changeable dies.

#### Pressing star 213082/E

##### Coax:

Hexagon crimp, BNC, TNC, SNB, SNC, SMS, SMA, MCX, 1.07 to 10.9 mm



| Art. no. | TL   | kg    | PU |
|----------|------|-------|----|
| 213082   | 230  | 0,650 | 1  |
| 213082/E | dies | 0,160 | 1  |

## Crimping pliers for contacts and connectors

## INFO

### Crimping pliers for contacts and connectors

**D-Sub plugs** are open plug-in connectors that are connected with the wire via a rolling crimp. D-Sub plugs are used in modern office and communication technology.

**Rolled contacts** are open plug-in connectors that are connected with the wire via a rolling crimp. It is important to choose the correct plug for the cross section of the wire. No single wire may project from the crimp.

**Twisted contacts** are used to connect computer interfaces, power and control wires in multi-pole plug-in connections and flexible assembly lines in the automotive industry.

### Crimping pliers

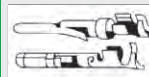
short construction, for twisted contacts, 20% angled handy form, with locking device, with adjustable crimp pressure, **square pressing**



| Art. no. | crimp  | kg    | PU |
|----------|--------|-------|----|
| 211656   | 0,14-4 | 0,367 | 1  |
| 211658   | 1,5-6  | 0,372 | 1  |

### Crimping pliers

short construction, for rolled contacts, 20% angled handy form, with locking device



| Art. no. | crimp   | kg    | PU |
|----------|---------|-------|----|
| 211660   | 0,5-1,5 | 0,370 | 1  |

### Crimping pliers

short construction, for D-Sub-connectors, 20% angled handy form, with locking device



| Art. no. | crimp    | kg    | PU |
|----------|----------|-------|----|
| 211662   | 0,08-0,5 | 0,365 | 1  |



**haupa**<sup>®</sup>

**...convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Crimping pliers for Photovoltaik

## INFO

### Photovoltaik

The photovoltaic energy conversion is carried out with the assistance of solar cells that are connected in order to form solar modules in photovoltaic plants. The generated electricity can be stored on site in accumulators or fed into the power network. If the energy is fed into the public power network then the direct current generated by the solar cells will be converted by a converter into alternating current. In order to constantly make energy available, the energy must be stored.



### Crimping pliers



with locking device, with adjustable crimp pressure, chrome plated square crimp (MC 3), roll crimp (MC 4)



| Art. no. | mm <sup>2</sup> |     | kg    | PU |
|----------|-----------------|-----|-------|----|
| 211657   | 2,5 - 6         | MC3 | 0,560 | 1  |
| 211659   | 2,5 - 6         | MC4 | 0,560 | 1  |

### Crimpset „MULTI Photovoltaik“



Innovative crimping tool with rapid change system - one tool for almost all crimping applications

**Contents of set:** Crimping plier Multi (211962)  
Crimping dies for „Multi - Contact“ connectors MC3  
2,5 + 4 + 6 mm<sup>2</sup>, AWG 13/11/10  
Crimping dies for „Multi - Contact“ connectors MC4  
2,5 + 4 + 6 mm<sup>2</sup>, AWG 13/11/10

#### Other advantages:

- Screw less fast change system for crimping dies
- Single hand operation with expenditure energy
- With ratchet and built-in safety release, guarantees proper electrical connection
- Adjustable crimp pressure
- Chrome plated tool frame
- Additional purchase of other crimping dies possible
- Handy box protects pliers and dies



| Art. no. | width | height | depth | kg    | PU |
|----------|-------|--------|-------|-------|----|
| 212005   | 260   | 40     | 200   | 1,150 | 1  |

### Crimping pliers HUPstar Photovoltaic



for photovoltaic connectors. Crimp pliers for industrial users, revolving precision impression dies with parallel feed, changeable dies.

#### Pressing star 213084/E

#### Photovoltaics:

Amphenol Helios H4: 2.5 / 2.5 / 6, Multi-Contact MC3: 2.5 / 2.5 / 6  
Multi-Contact MC4: 2.5 / 2.5 / 6, Tyco Solarlok: 1.5 / 1.5 / 4.6



| Art. no. | TL  | mm <sup>2</sup> | kg      | PU    |   |
|----------|-----|-----------------|---------|-------|---|
| 213084   | 230 | 1,5 - 6         | 0,650   | 1     |   |
| 213084/E |     | dies            | 1,5 - 6 | 0,160 | 1 |

### HAUPA Crimp System for Photovoltaics



#### Crimp System Pliers for Photovoltaics

The basic hardware of the carrying case consists of:

- one pair of pliers, chromium-plated without crimping pliers insert
- one allen wrench (A/F 2.5 mm) • one open-jawed wrench (A/F 7)
- 2 pieces spare screws (M4 x 10/M4 x 16 mm)

#### Specifications:

- Special crimping pliers for crimping solar contacts of almost all types of connector systems
- Guaranteed exact, solder-free, electric connections
- Parallel closing of the crimping dies
- 30 % reduction of hand force through optimized leverage
- Forced latching for reliable crimping, releasable
- Crimp pressure adjustable
- Long lever arm allowing single-hand and two-hand control
- Easy change of the crimping pliers inserts, Locator fitting option for the determination of the connector position
- Several crimping positions in one crimp die assembly
- Design: chromium-plated with black plastic handle
- Material: specially heat-treated special steel



| Art. no. | mm <sup>2</sup> | kg     | PU    |
|----------|-----------------|--------|-------|
| 212200   | 6               | 6 pcs. | 0,998 |

#### Crimp inserts for "Huber & Suhner" contacts

|        |                                     |   |
|--------|-------------------------------------|---|
| 212206 | 2,5 + 4 mm <sup>2</sup> , AWG 13/11 | 1 |
| 212208 | 4 + 6 mm <sup>2</sup> , AWG 13/11   | 1 |

#### Crimp inserts for "multi-contact" contacts

|        |   |   |
|--------|---|---|
| 212210 | MC3, 2,5 + 4 + 6 mm <sup>2</sup> , AWG 13/11/10 | 1 |
| 212212 | MC3, Locator                                    | 1 |

#### Crimp inserts for "multi-contact" contacts

|        |   |   |
|--------|---|---|
| 212214 | MC4, 2,5 + 4 + 6 mm <sup>2</sup> , AWG 13/11/10 | 1 |
| 212216 | MC4, Locator                                    | 1 |

#### Crimp insert for "Hirschmann" contacts

|        |  |   |
|--------|--|---|
| 212218 | 2,5 + 4 + 6 mm <sup>2</sup> , AWG 13/11/10 | 1 |
|--------|--|---|

#### Crimp insert for "Tyco" contacts

|        |  |   |
|--------|--|---|
| 212220 | Tyco 1,5 + 2,5 + 4 + 6 mm <sup>2</sup> | 1 |
| 212222 | Locator for Tyco                       | 1 |

#### Dies for Solar contacts Amphenol

|        |                                     |   |
|--------|-------------------------------------|---|
| 212226 | 2,5 + 4 mm <sup>2</sup> , AWG 13/11 | 1 |
| 212228 | 2,5 + 4 mm <sup>2</sup> , AWG 13/11 | 1 |

## Crimping pliers for modular plugs

### INFO

#### Crimping pliers for modular plugs

Stripping and crimping in one step. The following distinctions can be made between Western plugs:

- 4pole plug for telephone, power supply
- 6pole plug for fax and telephone connection
- 8pole plug for ISDN and PC connections

#### Crimping pliers for modular plugs

for unshielded modular plugs, inexpensive. lightweight tool for the casual usage



| Art. no. | crimp                | kg    | PU |
|----------|----------------------|-------|----|
| 210867   | RJ10 4(4), RJ14      | 0,218 | 1  |
| 210865   | RJ11 6(4), RJ12 6(4) | 0,220 | 1  |
| 210869   | RJ45                 | 0,233 | 1  |

#### Crimping pliers for modular plugs

for unshielded modular plugs, with cable cutter and stripper, light construction (6p, 8p, 6DEC, 4p)



| Art. no. | crimp  | kg    | PU |
|----------|--|-------|----|
| 213050   | RJ11 6(4), RJ12 6(4),<br>RJ45, RJ10 4(4), RJ14 | 0,300 | 1  |

#### Crimping pliers for modular plugs

for unshielded modular plugs, with cable cutter and stripper. Exactly crimp process through parallel crimping, even crimping quality by means of safety catch



| Art. no. | crimp                 | kg    | PU |
|----------|-----------------------|-------|----|
| 210857   | RJ11, RJ12 6(4), RJ45 | 0,471 | 1  |

#### Crimping pliers for modular plugs

for unshielded modular plugs 4-,6- and 8pole plug, 6DEC, heavy construction, with linear stroke and locking device, with cable cutter and stripper. Exactly crimp process through parallel crimping, even crimping quality by means of safety catch



| Art. no. | crimp  | kg    | PU |
|----------|--|-------|----|
| 210871   | RJ11 6(4), RJ12 6(4), RJ45,<br>RJ10 4(4), RJ14 | 0,520 | 1  |

#### Crimping pliers for modular plugs

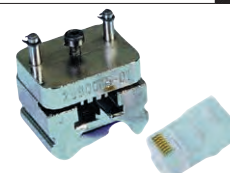
Semi-professional crimping pliers for shielded and unshielded Western plugs, with replaceable crimping dies, easy to use, light on the arms due to optimum leverage, optimum crimping, pliers body made of hardened quality steel, quick and simple replacement of crimping dies, adjustable crimping pressure and depth, application area for small and medium series, 50.000 working processes guaranteed, without dies



| Art. no. | kg    | PU |
|----------|-------|----|
| 213000   | 0,420 | 1  |

#### Dies

for crimping pliers 213000



| Art. no. | crimp                 | kg    | PU |
|----------|-----------------------|-------|----|
| 213002   | RJ10 4(4)             | 0,082 | 1  |
| 213004   | RJ11 6(4), RJ12 6(4)  | 0,081 | 1  |
| 213006   | 6DEC                  | 0,080 | 1  |
| 213008   | RJ45                  | 0,076 | 1  |
| 213010   | RJ50                  | 0,074 | 1  |
| 213012   | 8pole, shielded       | 0,076 | 1  |
| 213014   | 10pole plug, shielded | 0,071 | 1  |

**haupa**

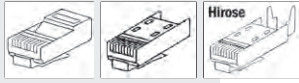
...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Crimping pliers for modular plugs



Professional crimping pliers for screened and unscreened Western plugs, with replaceable crimping dies, easy to use, light on the arms due to optimum leverage, optimum crimping, pliers body made of hardened quality steel, quick and simple replacement of crimping dies, adjustable crimping pressure and depth, application area for medium to large series, 50.000 working processes guaranteed, without dies



| Art. no. | kg    | PU |
|----------|-------|----|
| 213020   | 0,474 | 1  |

## Network range

Case with insert. With tools for cable stripping, cutting, crimping and applying to strips, sockets or fields.

### Content:

- 1 crimping pliers for Western plugs (213050)
- 1 wire stripper for UTP/STP data cable (200068)
- 1 Sensor input tool LSA for UTP and STP cable (300322)



| Art. no. | kg    | PU |
|----------|-------|----|
| 300033   | 0,700 | 1  |

## Dies



for crimping pliers 213020



| Art. no. | crimp                | kg    | PU |
|----------|----------------------|-------|----|
| 213022   | 8pole, shielded      | 0,103 | 1  |
| 213024   | 10pole, shielded     | 0,102 | 1  |
| 213026   | RJ10 4(4)            | 0,096 | 1  |
| 213028   | RJ11 6(4), RJ12 6(4) | 0,093 | 1  |
| 213030   | 6DEC                 | 0,091 | 1  |
| 213032   | RJ45                 | 0,106 | 1  |
| 213034   | RJ50                 | 0,102 | 1  |
| 213036   | 8pole, CAT 5         | 0,106 | 1  |
| 213038   | 6pole, shielded      | 0,106 | 1  |
| 213040   | 8pole, shielded      | 0,113 | 1  |
| 213042   | Ø 3,7 mm             | 0,030 | 1  |
| 213044   | Ø 4,5 mm             | 0,030 | 1  |
| 213046   | Ø 5,2 mm             | 0,030 | 1  |
| 213048   | Ø 6,0 mm             | 0,030 | 1  |



213000



213020

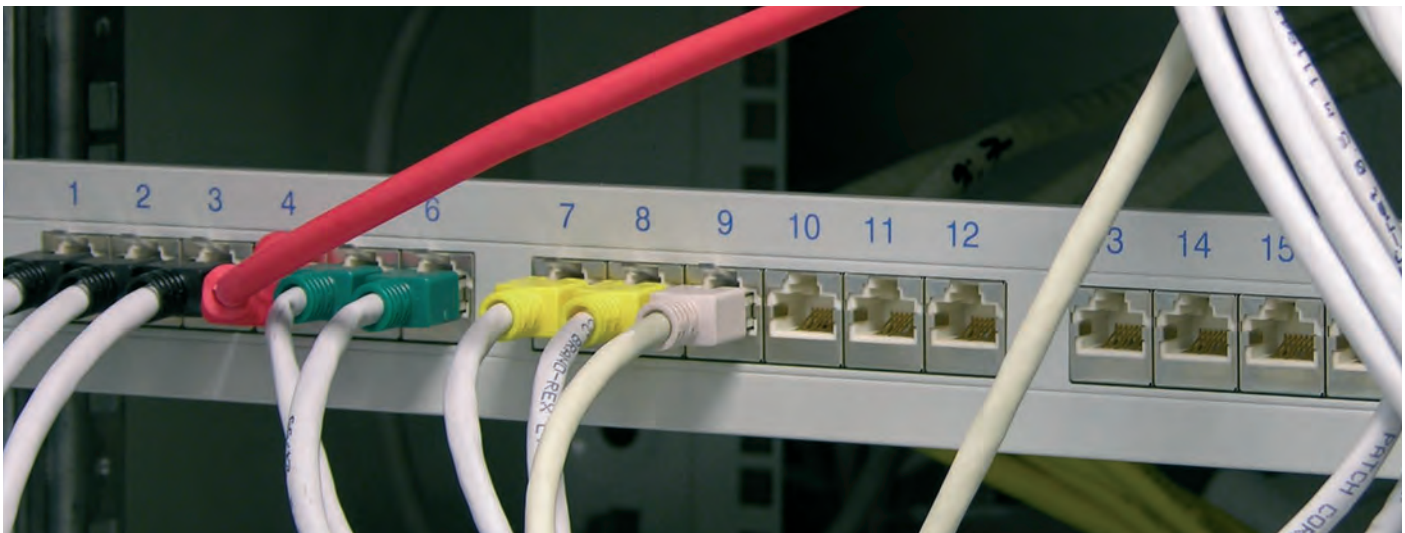
### Reference list for western plugs on the Internet:

#### Short to medium runs

[http://www.haupa.com/documents/html/d/katalog/ruk/crimp/datenblatt/referenzliste\\_westernstecker\\_k.htm](http://www.haupa.com/documents/html/d/katalog/ruk/crimp/datenblatt/referenzliste_westernstecker_k.htm)

#### Medium to large runs

[http://www.haupa.com/documents/html/d/katalog/ruk/crimp/datenblatt/referenzliste\\_westernstecker\\_g.htm](http://www.haupa.com/documents/html/d/katalog/ruk/crimp/datenblatt/referenzliste_westernstecker_g.htm)





Multi-functional pliers



# INFO

## Crimp stars for open and closed tool frames

### Crimping pliers HUPstar from HAUPA

When it comes to high-end crimping technology for professional, industrial users, with the HUPstar HAUPA has succeeded in introducing a range which uses 3 different frame types to handle all common connection pressings simply by quickly and reliably replace the relevant star. Thus making it the ideal complete tool for your tool case and in the workshop.

#### 7 versions of HUPstar are already permanent components of the range:

##### 1. End sleeves

Insulated crimp-style cable lugs

Ring cable lugs (DIN 46234 / DIN 46341)

##### 2. End sleeves 0.14 - 16 mm<sup>2</sup>

Open brass cable lugs

##### 3. Coaxial:

##### 4. Photovoltaics / Solar

##### 5. Fibre Optic Connector

##### 6. Twisted contacts, square

##### 7. Automotive contacts

The star can be changed in just 30 seconds!

The colour code on the stars enables fast and correct assignment.

The extremely precise parallel feed and the eroded precision crimp profile mean that this product has been very well received by the industry. Not just thanks to the high quality processing of the crimp star which is, thanks to the surface properties, TÜV guaranteed for around 80,000 precision crimps. After all a precise and safe normed crimp is the guarantee for complication-free, high quality and long-lasting connections.

Ergonomically, the HUPstar can, thanks to the short construction of the handles and the rather small opening angle, also be operated quickly, safely and gentle to joints even with small hands.

Due to the innovative manufacturing procedure, individual stars, designed for industrial customers, can also be made without additional costs.

## Multi-function pliers

### Tool frame „HUPstar” – closed

Tool frame without star crimp, closed design for all of the following pressing stars



|          |       |    |
|----------|-------|----|
| Art. no. | kg    | PU |
| 213077   | 0,400 | 1  |

### Tool frame „HUPstar” – open

Tool frame without star crimp, open design specifically for connectors



|          |       |    |
|----------|-------|----|
| Art. no. | kg    | PU |
| 213078   | 0,510 | 1  |



| 213086/E |          |                      |
|----------|----------|----------------------|
|          |          | DIN46234<br>DIN46341 |
|          |          |                      |
| 0,5      | 0,1-0,25 | 0,25                 |
| 0,75     | 0,5-1,0  | 0,5                  |
| 1,5      | 1,5      | 1,0                  |
| 2,5      | 2,5      | 1,5                  |
| 4,0      | 4,0      | 2,5                  |
| 6,0      | 6,0      | 4,0                  |
| 10,0     | -        | 6,0                  |
| -        | -        | 10,0                 |

| 213080/E  |           |
|-----------|-----------|
|           |           |
| 0,14-0,25 | 0,14-0,25 |
| 0,25-0,5  | 0,25-0,5  |
| 0,75      | 0,75      |
| 1,0       | 1,0       |
| 1,5       | 1,5       |
| 2,5       | 2,5       |
| 4,0       | 2,54      |
| 6,0       | 6,0       |
| 10,0      | -         |
| 16,0      | -         |

| 213082/E |
|----------|
|          |
| 1,07     |
| 1,2      |
| 1,46     |
| 1,69     |
| 1,72     |
| 1,75     |
| 2,54     |
| 3,25     |
| 6,48     |
| 7,0      |
| 8,1      |
| 8,23     |
| 9,73     |
| 10,9     |

| 213098/E    |
|-------------|
| Fibre Optic |
|             |
| 1,69        |
| 2,5         |
| 3,0         |
| 3,25        |
| 3,65        |
| 4,2         |
| 4,52        |
| 4,95        |
| 5,0         |
| 6,5         |
| 10,9        |

| 213102/E    |
|-------------|
|             |
| 0,1         |
| 0,14        |
| 0,25        |
| 0,34        |
| 0,5         |
| 1,0         |
| 1,5         |
| 2,5         |
| 4,0         |
| 6,0         |
| 10          |
| Locator for |
| ø 1,6       |
| ø 2,5       |
| ø 4,0       |

| 213100/E   |
|--|
| Automotive   |
|  |
| Hirose<br>DF1B-2428SC UL1007<br>Litz wire                  |
| Hirose<br>DF1B-2428PC<br>UL1007<br>Litz 0,08; 0,14; 0,25   |
| Hirose<br>DF1B-30SC UL1007<br>Litz wire                    |
| Hirose<br>DF1B-30PC UL1007<br>Litz 0,05                    |
| Hirose<br>DF1B-2022SC,<br>Hirose DF1B-2022PC<br>0,34; 0,50 |

| 213084/E - Photovoltaik |               |               |      |
|-------------------------|---------------|---------------|------|
| Amphenol                | Multi Contact | Multi Contact | Tyco |
|                         |               |               |      |
| 2,5                     | 2,5           | 2,5           | 1,5  |
| 2,5                     | 2,5           | 2,5           | 1,5  |
| 6,0                     | 6,0           | 6,0           | 4,6  |

## Dies for HUPstar

### HUPstar

End sleeves 0.5 - 10 mm<sup>2</sup>  
 Insulated cable lugs 0.1 - 6 mm<sup>2</sup>  
 Ring cable lugs (DIN 46234 / DIN 46341) 0.25 - 10 mm<sup>2</sup>



| Art. no. | kg    | PU |
|----------|-------|----|
| 213086/E | 0,160 | 1  |

### HUPstar

End sleeves 0.14 - 16 mm<sup>2</sup>  
 Socket sleeves 0,14 - 6 mm 0.14 - 6 mm



| Art. no. | kg    | PU |
|----------|-------|----|
| 213080/E | 0,160 | 1  |

### HUPstar „Coaxial”

Coaxial  
 BNC, TNC, SNB, SNC, SMS, SMA, MCX, 1.07 - 10.9 mm



| Art. no. | kg    | PU |
|----------|-------|----|
| 213082/E | 0,160 | 1  |

### HUPstar „Photovoltaic”

Photovoltaics / Solar  
 Amphenol Helios H4, multi-contact MC3/ MC4 2.5 - 6.0  
 Tyco Solarlok, 1.5 - 4.6 mm<sup>2</sup>



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 213084/E | 1,5 - 6         | 0,160 | 1  |

#### CONTACT SYSTEMS

Timer Contact System: Micro Timer I, Micro Timer II, Micro Timer III,  
 Junior Power Timer, Standard Timer, Maxi Power Timer including Tab and  
 Receptacle contacts from 0.2 - 10 mm<sup>2</sup>

#### APPLICATION DELPHI AUTOMOTIVE CONNECTION SYSTEMS

Ducon Series 0.8, 1.5, 2.8, 4.8, 6.3, 9.5 mm; GT 150 cable range from 0.35 - 1.00 mm.  
 GT 280 cable range from 0.75 - 5.00mm; Metri-Pack 150, Metri-Pack 280, Metri-Pack 480,  
 Metri-Pack 630, Micro 64, Micro-Pack 100, HES 1.0, HES 1.6, HES 2.4, HES 6, Molex MX64

### HUPstar „Fibre Optic Connector”

Fibre Optic Connector  
 1.69; 2.5; 3; 3.25; 3.65; 4.2; 4.52; 4.95; 5; 6.5; 10.9



| Art. no. | kg    | PU |
|----------|-------|----|
| 213098/E | 0,170 | 1  |

### HUPstar „Twisted contacts, square”

Twisted contacts, square  
 0.1; 0.14; 0.25; 0.34; 0.5 1; 1.5; 2.5; 4; 6; 10  
 Locator for Ø 1.6; 2.5; 4



| Art. no. | kg    | PU |
|----------|-------|----|
| 213102/E | 0,170 | 1  |

## HUPstar automotive

### Tool frame „HUPstar” – automotive

Tool frame without star crimp, closed design for the automotive network



| Art. no. | kg    | PU |
|----------|-------|----|
| 213079   | 0,300 | 1  |

### HUPstar

#### Automotive contacts

Hirose DF1B-2428SC UL1007  
 Litz wire

Hirose DF1B-2428PC UL1007  
 Litz wire 0.08; 0.14; 0.25

Hirose DF1B-30SC UL1007  
 Litz wire

Hirose DF1B-30PC UL1007  
 Litz wire 0.05

Hirose DF1B-2022SC, Hirose DF1B-2022PC  
 0.34; 0.50



| Art. no. | kg    | PU |
|----------|-------|----|
| 213100/E | 0,170 | 1  |

**haupa**

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



## Multi-function pliers

### Crimping pliers Combi-Crimp

crimping pliers for insulated terminals 0,5 - 2,5 mm<sup>2</sup> and end sleeves 0,5 - 6 mm<sup>2</sup>



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210784   | 0,5 - 4,0       | 0,560 | 1  |

### Crimpset X-Crimp including nylon bag

Crimping pliers used to quickly change HAUPA precision pressing inserts. Supplied in robust nylon bag (article 220260).

- Reliable crimping results just like with fixed pressing inserts
- Forced lock ensures standardised pressing actions
- Flat construction enables you to work precisely even when space is at a premium



#### Content:

Art. 211690  
Art. 210763/E  
Art. 210764/E  
Art. 210765/E  
Art. 210761/E



| Art. no. |     | kg    | PU |
|----------|-----|-------|----|
| 211692   | set | 0,900 | 1  |
| 220250   | bag | 6     | 1  |

### Crimping pliers X-Crimp

Crimping pliers used to quickly change HAUPA precision pressing inserts, including dies article 210761/E. Supplied in robust nylon bag (art. 220260).

- Reliable crimping results just like with fixed pressing inserts
- Forced lock ensures standardised pressing actions
- Flat construction enables you to work precisely even when space is at a premium



| Art. no. | kg    | PU |
|----------|-------|----|
| 211690   | 0,566 | 1  |

### Crimping dies for insulated crimp cable lugs

for insulated crimp cable lugs, oval pressing



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210761/E | 0,5 - 6,0       | 0,053 | 1  |

### Crimping dies for uninsulated terminals

for uninsulated terminals, mandrel shape pressing



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210764/E | 1 - 10          | 0,111 | 1  |

### Crimping dies for flat connectors

for flat connectors, uninsulated open brass cable lugs, roll pressing



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210762/E | 0,5 - 6         | 0,111 | 1  |

### Crimping dies for TWIN end sleeves

for TWIN-end sleeves, trapezoid pressing



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 211676/E | 0,5 - 6         | 0,050 | 1  |

### Crimping dies for end sleeves

for end sleeves, trapezoid pressing



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210763/E | 0,5 - 4         | 0,072 | 1  |
| 210842/E | 1 - 10          | 0,054 | 1  |
| 210765/E | 1 - 10          | 0,111 | 1  |
| 211672/E | 10 - 25         | 0,050 | 1  |

### Crimping dies for coaxial cable

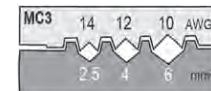
for coaxial cable, hexagon pressing



| Art. no. | crimp         | kg    | PU |
|----------|---------------|-------|----|
| 210767/E | RG 58-59-62-6 | 0,050 | 1  |

### Crimping dies for Photovoltaik

for „multi-contact“ contacts



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 211657/E | 2,5 - 6 MC3     | 0,050 | 1  |

### Crimping dies for Photovoltaik MC4

for „multi-contact“ contacts



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 211659/E | 2,5 - 6 MC4     | 0,050 | 1  |

### Crimping dies for cable lugs / end sleeves

for end sleeves 0,5 - 6 mm<sup>2</sup> / cable lugs 0,5 - 2,5 mm<sup>2</sup>



| Art. no. | mm <sup>2</sup> | kg   | PU |
|----------|-----------------|------|----|
| 210784/E | 0,5 - 6,0       | 0,56 | 1  |

## Multi-function pliers

### Crimpset MULTI

**Innovative crimping tool with rapid change system for the expert - tools for almost all crimping applications**

#### Contents:

- crimping plier MULTI

Dies for:

- (211998) insulated terminals 0.5 - 6 mm<sup>2</sup>
- (211963) insulated and uninsulated end sleeves 0.5 - 16 mm<sup>2</sup>
- (211999) uninsulated terminals 0.5 - 10 mm<sup>2</sup>
- (210000) dies for BNC and TNC coaxial connectors RG 58-59-62-71

#### Product specifications

- fast change system • easy changing of crimp dies by means of thumb screws
- easy interlock • Nickel plated surface
- no big strength required
- with ratchet and built-in safety release, guarantees proper electrical connection
- adjustable crimp pressure
- Pliers body from 3 mm, specially compensated, hardened sheet steel
- ergonomic 2 component handle with soft synthetic material insert



| Art. no. | width | height | depth | kg    | PU |
|----------|-------|--------|-------|-------|----|
| 211960   | 260   | 40     | 200   | 1,119 | 1  |

### Crimping pliers „Multi“

Long version, also suitable for two-handed operation, no dies



| Art. no. | kg    | PU |
|----------|-------|----|
| 211962   | 0,582 | 1  |

### More possibilities of dies - please, order separately

|        |  |   |
|--------|--|---|
| 211963 | End sleeves 0,5 - 16 mm <sup>2</sup>                   | 1 |
| 211964 | End sleeves 16 - 35 mm <sup>2</sup>                    | 1 |
| 211965 | Sockets 0.5 - 2.5 mm <sup>2</sup>                      | 1 |
| 211990 | Coax, Thinnet, Mini-UHF, BNC/TNC RG 58, RG 174         | 1 |
| 211991 | Coax, BNC/TNC RG 174, RG 179, small coaxial connectors | 1 |
| 211992 | SMA, SMB, Mini-59, Mini-UHF, BNC/TNC RG 6, RG 6 Quad   | 1 |
| 211993 | Coax, CATV "F" Typ, BNC/TNC RG 6, RG 6 Quad            | 1 |
| 211994 | N-Typ RG 8, RG 11                                      | 1 |
| 211995 | Coax, N-Typ RG 8, RG 11, RG 213, RG 216                | 1 |
| 211996 | Fibre Optic, SMA Typ                                   | 1 |
| 211997 | Fibre Optic, SMA, SMB, SFR, ST, SC Typ                 | 1 |
| 211968 | RJ 45 - 8P8K, Steward Connectors, 22-24 AWG            | 1 |
| 211969 | RJ 11, RJ 12 - 6P6K, Steward Connectors, 22-24 AWG     | 1 |
| 211970 | Telefon 4P4K, AMP+Steward Connectors, 22-24 AWG        | 1 |
| 211971 | RJ 45 - 8P8K, AMP, 22-24 AWG                           | 1 |
| 211972 | RJ 11, RJ 12 - 6P6C, AMP, 22-24 AWG                    | 1 |
| 211973 | RJ 11, DEC MMJ - 6P6K, AMP, 22-24 AWG                  | 1 |
| 211974 | RJ 50 - 10P10K, AMP, 22-24 AWG                         | 1 |
| 211980 | RJ 45 - 8P8K, short, Steward Connectors, STP 22-24 AWG | 1 |
| 211981 | RJ 45 - 8P8K, long, Hirose, STP 22-24 AWG              | 1 |
| 211982 | RJ 45 - 8P8K, short, Hirose, STP 22-24 AWG             | 1 |
| 211985 | RJ 45 - 8P8K, AMP, Molex, for Ø 6.0 mm, STP 22-24 AWG  | 1 |
| 211998 | insulated terminals 0,5-6,0 mm <sup>2</sup>            | 1 |
| 211999 | uninsulated terminals 0,5-6,0 mm <sup>2</sup>          | 1 |
| 212000 | Coax RG58-59-62-71                                     | 1 |
| 212007 | MC3  | 1 |
| 212008 | MC4  | 1 |

## Elektrik crimper

### HAUPA electric crimper

The Electric crimper is an ideal device to securely crimp wires and cable terminals such as:

- insulated cable lugs to 6 mm<sup>2</sup>/10 AWG
- Tubular cable lugs, solderl. terminals to 10 mm<sup>2</sup>/8 AWG
- Flat tab terminals to 6 mm<sup>2</sup>/10 AWG
- Wire end sleeves to 50 mm<sup>2</sup>/1 AWG

The Electric Crimper can be operated in one of two modes:

**Mode 1:** controls the entire crimp process by pressing down the pedal switch.

**Mode 2:** allows the user to fix the terminal on the cable by actuating the foot switch once. To finish the crimping process, he presses down the foot switch once again. Mode 2 is used for more complex terminals.

The onset of compression force can be adjusted for each new terminal to satisfy crimp integrity. That way, damage to dies and terminals can be minimised. Simply press a button to select the opening for each die. Since some female terminals are more difficult to crimp, a moveable locator can be utilised to ensure proper crimping. Various standard dies are available, as well as dies designed to customer specifications.

Technical Data Art. No. 217050: Dimensions (w x h x d): 140 x 220 x 320 mm  
Weight: 10 kg / Weight of foot pedal: 1.2 kg / Max. press capacity: 10 kN  
Pressing time: 1 s / Counter: -digit LCD display /  
Mains connection: 30 V/50 Hz (120 V/60 Hz) / Power consumption: 160 VA



| Art. no. | mm <sup>2</sup> | kg     | PU |
|----------|-----------------|--------|----|
| 217050   | 6 - 50          | 10,000 | 1  |

### Dies for elektro crimper 217050

|        |  |   |
|--------|--|---|
| 217052 | Rolled contacts 0.14-1/1,5/2.5/4 mm <sup>2</sup>               | 1 |
| 217056 | Rolled contacts 0.1-1.5 mm <sup>2</sup>                        | 1 |
| 217058 | Rolled crimp contacts 0.1-1.5 mm <sup>2</sup>                  | 1 |
| 217060 | Rolled crimp contacts 0.5-6 mm <sup>2</sup>                    | 1 |
| 217062 | End sleeves 0.25-6 mm <sup>2</sup>                             | 1 |
| 217064 | Insolated terminals 0.5-6 mm <sup>2</sup> symmetric            | 1 |
| 217066 | Insolated terminals 0.5-6 mm <sup>2</sup> asymmetric           | 1 |
| 217068 | Tube terminals 0.34-2.5 mm <sup>2</sup>                        | 1 |
| 217070 | Tube terminals "super flex" 4-10 mm <sup>2</sup>               | 1 |
| 217072 | Tube terminals "standard" 4-10 mm <sup>2</sup>                 | 1 |
| 217074 | Crimping terminals 4-10 mm <sup>2</sup>                        | 1 |
| 217076 | Crimping terminals 0.5-10 mm <sup>2</sup>                      | 1 |
| 217078 | Protection cover to 21 70 56, 21 70 60                         | 1 |
| 217080 | Protection cover to 21 70 70, 21 70 72, 21 70 74, 21 70 76     | 1 |
| 217082 | Protection cover to 21 70 68                                   | 1 |
| 217084 | Protection cover to 21 70 62                                   | 1 |
| 217086 | Protection cover to 21 70 64, 21 70 66                         | 1 |
| 217088 | Locator to 21 70 60, socket sleeves 6.3 mm                     | 1 |
| 217090 | Locator to 21 70 56, 21 70 58, 21 70 60, socket sleeves 4.8 mm | 1 |
| 217092 | Locator to 21 70 56, socket sleeves (female) 2.8 x 5 mm        | 1 |
| 217094 | Locator to 21 70 56, socket sleeves (female) 2.8 x 6 mm        | 1 |
| 217096 | Locator to 21 70 60, socket (male) 6.3 mm                      | 1 |
| 217098 | Locator to 21 70 60, socket (male) 6.3 mm HN                   | 1 |

**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



# INFO

## Crimping pliers for uninsulated tubular cable lugs

### 1. Choosing the connector

To achieve a standard-compliant connection it is necessary to choose the correct connector for the application and the right cable cross section.

### 2. Stripping

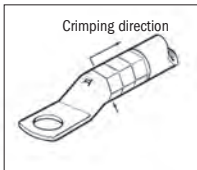
Before notching, the cable must be stripped according to the insertion length (+10% due to change in length of the crimping sleeve).

### 3. Cleaning

The ends of the wire must be cleaned thoroughly to remove all traces of dirt and oxidation before being assembled.

### 4. Assembly

Insert the cable into the cable lug or connector to its full insertion length. Crimp the cable lug or connector with the correct tool, taking account of the crimping direction (see figure).



Tube cable lugs



with inspection



DIN cable lugs



Butt connectors, DIN



## Crimping pliers

for non insulated crimp cable lugs, lever translated version for better transmission of force, with **mandrel pressing**, for standard tubular cable lugs and connectors. Particularly well suited to nickel tubular cable lugs and connectors



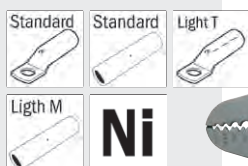
**Ni**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210772   | 1-2,5-4 > 6-10  | 0,478 | 1  |
| 210774   | 1 > 2-6-10-16   | 0,503 | 1  |

## Crimping pliers

Lever translated version for better transmission of force, with **mandrel pressing**, for standard tubular cable lugs and connectors. Particularly well suited to nickel tubular cable lugs and connectors



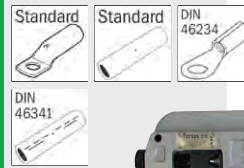
**Ni**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210830   | 0,75 - 16       | 0,574 | 1  |

## Crimping pliers

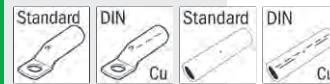
with punch and adjustable screw for different cross-sections, for standard tube terminals and connectors, **mandrel shape pressing**



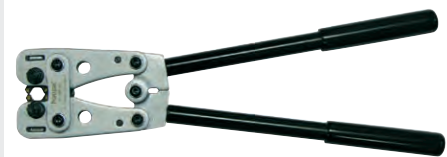
| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210791   | 10 - 120        | 3,040 | 1  |

## Crimping pliers

with built-in rotatable profile disk, **hexagon pressing**



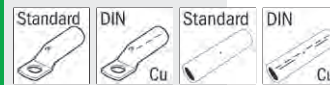
Video 210805



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210805   | 6 - 50          | 1,351 | 1  |
| 210805 K | 6 - 50          | 1,352 | 1  |

## Crimping pliers

with built-in rotatable profile disk, **hexagon pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210850   | 10 - 120        | 3,970 | 1  |
| 210853   | 10 - 120        | 4,016 | 1  |

## Crimping pliers

for uninsulated "Standard" tube terminals/connectors and tube terminals for fine-wire cables, with integrated rotatable profile disc, **mandrel shape pressing**, with telescopic grips



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 210834   | 6 - 50          | 2,588 | 1  |
| 210836   | 50 - 120        | 5,280 | 1  |
| 210838   | 120 - 240       | 5,200 | 1  |
| 210840   | 185 - 400       | 5,200 | 1  |

# INFO

## Mechanical crimping pliers for tubular cable lugs

Mechanical crimping tool characterised by its compact design. It is possible to make crimps even in confined working conditions, where conventional large tools cannot be used.

The mature construction of the drive has proven its reliability many times over in practice. In this manual crimping tool very little wear can be seen even after many years of use, this is decisive for the reliable repetition of the required crimping depth. After all, today's highly stressed crimped connections only comply with safety regulations when the required electrical and mechanical values are achieved over long periods.

Another safety aspect is that the crimping tool can only be detached from the crimped lug when the required crimping depth has been reached. By turning the wheel on the handle in an anti-clockwise direction the crimping inset can be set in position on the lug. Only then does the actual crimping process begin with the one-hand lever.

The quality of the crimped connection is dependent on the choice of cable lug, the crimp inset and the correct choice of cable cross section.

## Crimping pliers

one hand precise tool, with ratchet and built-in-force-blocking device, crimping pressure 20 kN, interchangeable dies, easy to remove from the crimped lug by opening the crimping head, special small design for working in small areas



- Product-specific features**
- outstanding manageability
  - compact construction
  - precision drive
  - fast forward feed
  - can be used anywhere



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 215000   | 6 - 50          | 1,531 | 1  |

## Metal box

for storing of crimping pliers and dies

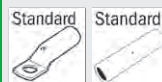


| Art. no. | kg    | PU |
|----------|-------|----|
| 215002   | 0,934 | 1  |

## Crimping dies

for standard cable lugs and compacted cables, suitable for compacted cables

### WM pressing



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 215004   | 10              | 0,041 | 1  |
| 215006   | 16              | 0,040 | 1  |
| 215008   | 25              | 0,037 | 1  |
| 215010   | 35              | 0,036 | 1  |
| 215012   | 50              | 0,033 | 1  |

## Crimping dies

for crimping terminals DIN, hexagon pressing



| Art. no. | Cu | Al | ld. | kg    | PU |
|----------|----|----|-----|-------|----|
| 215030   | 6  | -  | 5   | 0,100 | 1  |
| 215032   | 10 | -  | 6   | 0,100 | 1  |
| 215034   | 16 | 10 | 8   | 0,100 | 1  |
| 215036   | 25 | 16 | 10  | 0,150 | 1  |
| 215038   | 35 | 25 | 12  | 0,150 | 1  |
| 215040   | 50 | 35 | 14  | 0,150 | 1  |

## Crimping dies

noninsulated crimping terminals, mandrel shape pressing, DIN 46234



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 215014   | 6               | 0,018 | 1  |
| 215016   | 10              | 0,190 | 1  |
| 215018   | 16              | 0,190 | 1  |
| 215020   | 25              | 0,190 | 1  |
| 215022   | 35              | 0,020 | 1  |
| 215024   | 6 - 35          | 0,020 | 1  |

## Crimping dies

noninsulated crimping terminals, mandrel shape pressing, DIN 46234



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 215026   | 10              | 0,039 | 1  |
| 215028   | 16              | 0,039 | 1  |

## Crimping dies

for end sleeves, trapezoid pressing



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 215042   | 6               | 0,150 | 1  |
| 215044   | 10              | 0,150 | 1  |
| 215046   | 16              | 0,150 | 1  |
| 215048   | 25              | 0,200 | 1  |
| 215050   | 35              | 0,200 | 1  |

**haupa**

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



# INFO

## Mechanical crimping pliers for tubular cable lugs

These mechanical manual crimping pliers are modern, high performance tools. They can be used anywhere in the wide range of solder-free connection technology thanks to a comprehensive range of crimping dies.

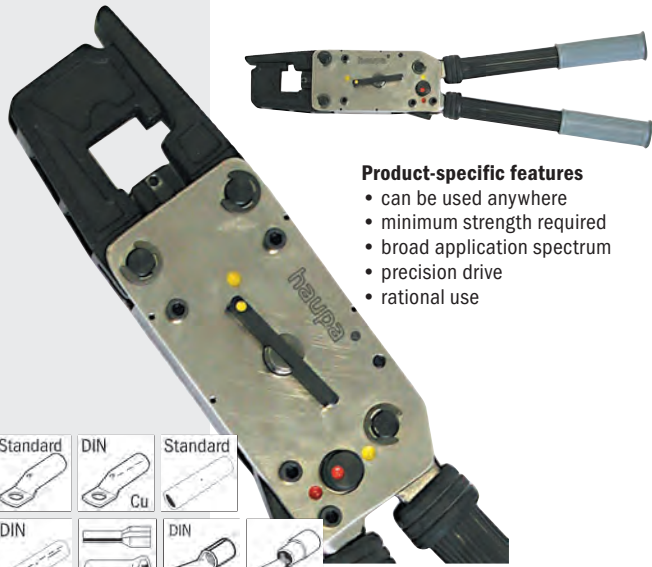
Crimping stroke and pressure (to approx. 5.5 t) are created by several hand lever movements. The manual force required is low due to the high efficiency of the system. The press and the connecting parts can only be separated from one another when the crimp is complete. This drive system ensures that the required crimping depth is always achieved. The hinged cover guarantees comfortable handling of the press, even in awkward-to-reach positions such as in control cabinets.

By turning the fast forward feed lever to place the crimp inset on the cable lug, the number of manual lever movements is considerably reduced and rational work is guaranteed.

Only then does the actual crimping process begin with the hand lever. When the required crimping depth has been reached the press releases pressure spontaneously and the hinged cover can be opened to remove the connector. The crimping process can be interrupted if an error has been made in the choice of the inset, cable lug or cable. To do this swing the hand lever completely out, depress the ratchet and turn the forward feed lever backwards.

### Crimping pliers

precise tool with ratchet and built-in-force-locking device, crimping pressure 50 kN, interchangeable dies, easy to remove from the crimped lug by opening the crimping head



#### Product-specific features

- can be used anywhere
- minimum strength required
- broad application spectrum
- precision drive
- rational use



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 215100   | 6 - 120         | 2,100 | 1  |

### Metal box

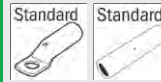
for storing of crimping pliers and dies



| Art. no. | kg    | PU |
|----------|-------|----|
| 215102   | 1,700 | 1  |

### Crimping dies

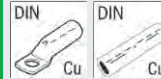
for standard cable lugs and compacted cables, **WM pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 215104   | 10 - 70         | 0,130 | 1  |
| 215106   | 16 - 35         | 0,132 | 1  |
| 215108   | 25 - 50         | 0,126 | 1  |
| 215110   | 95              | 0,138 | 1  |
| 215112   | 120             | 0,136 | 1  |

### Crimping dies

for crimping terminals DIN, **hexagonal pressing**



| Art. no. | Cu      | Al      | ld.     | kg    | PU |
|----------|---------|---------|---------|-------|----|
| 215142   |         | 10 - 50 | 6 - 16  | 0,128 | 1  |
| 215144   | 16 - 35 | -25     | 8 - 12  | 0,130 | 1  |
| 215146   | 25 - 50 | 16 - 35 | 10 - 14 | 0,130 | 1  |
| 215148   | 95      | 70      | 18      | 0,130 | 1  |
| 215150   | 120     |         | 20      | 0,130 | 1  |

### Crimping dies

for uninsulated crimping terminals, for up to four diameter, **mandrel shape pressing**, DIN 46234 + DIN 46341



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 215114   | 6 - 70          | 0,080 | 1  |
| 215116   | 10 - 35         | 0,060 | 1  |
| 215118   | 16 - 50         | 0,055 | 1  |
| 215120   | 6 - 50          | 0,150 | 1  |
| 215122   | 70              | 0,150 | 1  |

### Crimping dies

for insulated crimping terminals, **oval pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 215124   | 10              | 0,147 | 1  |
| 215126   | 16              | 0,152 | 1  |
| 215128   | 25              | 0,153 | 1  |
| 215130   | 35              | 0,154 | 1  |

### Crimping dies

for rounding of square copper and aluminium



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 215152   | 25 - 35         | 0,155 | 1  |
| 215154   | 35 - 70         | 0,150 | 1  |
| 215156   | 95              | 0,150 | 1  |

### Crimping dies

for end sleeves, **trapezoid pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 215164   | 25              | 0,059 | 1  |
| 215166   | 35              | 0,059 | 1  |
| 215168   | 50              | 0,059 | 1  |
| 215170   | 70              | 0,059 | 1  |
| 215172   | 95              | 0,059 | 1  |



# INFO

## Mechanical crimping pliers for tubular cable lugs

In this hand press the crimping stroke is produced by a number of hand lever movements. The transport ratchet starts the eccentric wheel moving and con-rods convert the eccentric turning motion into a straight-line stroke of the guide that runs in grooves.

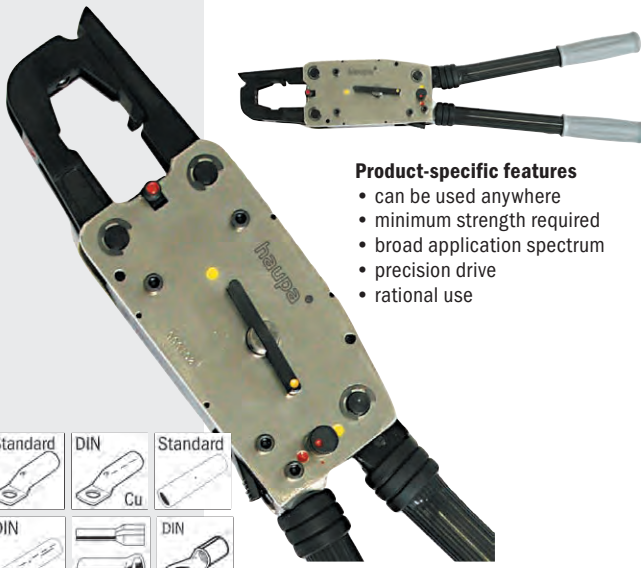
The bottom crimping inset is placed in the guide. It sits on an adjustment plate that is screwed on to the guide. This plate compensates for all the tolerances resulting from the manufacturing process or wear and tear.

By turning the wheel on the handle in an anti-clockwise direction the crimping inset can be transported directly to the installation on the connecting part. Only then does the actual crimping process begin with the hand lever. When the required crimping depth has been reached the press releases the pressure spontaneously and the hinged cover can be opened to remove the connector.

The crimping process can be interrupted if an error has been made in the classification of the inset, cable lug or cable. To do this swing the hand lever completely out, depress the ratchet and turn the forward feed lever backwards. The quality of the crimped connection is dependent on the choice of cable lug, the crimp inset and the correct choice of cable cross section.

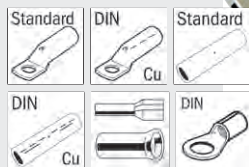
## Crimping pliers

precise tool with ratchet and built-in-force-locking device, interchangeable dies, easy to remove from the crimped lug by opening the crimping head



### Product-specific features

- can be used anywhere
- minimum strength required
- broad application spectrum
- precision drive
- rational use



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 215200   | 10 - 240        | 4,500 | 1  |

## Metal box

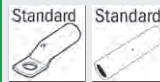
for storing of crimping pliers and dies



| Art. no. | kg    | PU |
|----------|-------|----|
| 215202   | 3,700 | 1  |

## Crimping dies

for standard cable lugs and compacted cables, **WM pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 215204   | 10 - 25         | 0,221 | 1  |
| 215206   | 16 - 35         | 0,320 | 1  |
| 215208   | 50              | 0,349 | 1  |
| 215210   | 70              | 0,331 | 1  |
| 215212   | 95              | 0,330 | 1  |
| 215201   | 120             | 2,486 | 1  |
| 215203   | 150             | 0,308 | 1  |
| 215205   | 185             | 0,317 | 1  |
| 215207   | 240             | 0,300 | 1  |

## Crimping dies

for crimping terminals DIN, **hexagon pressing**



| Art. no. | Cu  | Al     | ld. | kg    | PU |
|----------|-----|--------|-----|-------|----|
| 215230   | 10  |        | 6   | 0,350 | 1  |
| 215232   | 16  |        | 8   | 0,330 | 1  |
| 215234   | 25  | 16     | 10  | 0,328 | 1  |
| 215236   | 35  | 25     | 12  | 0,330 | 1  |
| 215238   | 50  | 35     | 14  | 0,326 | 1  |
| 215240   | 70  | 50     | 16  | 0,326 | 1  |
| 215242   | 95  | 70     | 18  | 0,321 | 1  |
| 215244   | 120 |        | 20  | 0,300 | 1  |
| 215246   | 150 | 95-120 | 22  | 0,305 | 1  |
| 215248   | 185 | 150    | 25  | 0,305 | 1  |
| 215250   | 240 | 185    | 28  | 0,290 | 1  |

## Crimping dies

for uninsulated crimping terminals, **mandrel shape pressing**, DIN 46234 + DIN 46341



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 215214   | 10 - 70         | 0,178 | 1  |
| 215216   | 95 - 150        | 0,169 | 1  |
| 215218   | 10 - 70         | 0,163 | 1  |
| 215220   | 16 - 35         | 0,170 | 1  |
| 215222   | 25 - 50         | 0,163 | 1  |
| 215224   | 95              | 0,161 | 1  |
| 215226   | 120             | 0,152 | 1  |
| 215228   | 150             | 0,144 | 1  |

## Crimping dies

for end sleeves, **trapezoid pressing**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 215252   | 16              | 0,400 | 1  |
| 215254   | 25              | 0,380 | 1  |
| 215256   | 35              | 0,381 | 1  |
| 215258   | 50              | 0,361 | 1  |
| 215260   | 70              | 0,400 | 1  |
| 215262   | 95              | 0,363 | 1  |
| 215264   | 120             | 0,401 | 1  |

















**haupa**

















...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



# Pictogram cable connectors












|   |  |
|---|--|
|    | <b>End sleeves</b>                             |
|    | <b>TWIN end sleeves</b>                        |
|    | <b>Insulated crimp-style cable lugs</b>        |
|    | <b>Insulated shrink connectors</b>             |
|    | <b>non-insulated cable lugs</b>                |
|    | <b>Socket sleeves (female)</b>                 |
|   | <b>Socket sleeves (female) with cable stop</b> |
|  | <b>Coaxial connectors</b>                      |
|  | <b>for twisted contacts and connectors</b>     |
|  | <b>for rolled contacts and connectors</b>      |
|  | <b>for D-Sub connectors</b>                    |
|  | <b>Multi-contact M3 for Photovoltaics</b>      |
|  | <b>Multi-contact M4 for Photovoltaics</b>      |
|  | <b>Amphenol for Photovoltaics</b>              |
|  | <b>Tyco-Solar for Photovoltaics</b>            |
|  | <b>Connectors for modular connectors</b>       |

|   |  |
|---|--|
|    | <b>Stewart connectors for modular connectors</b> |
|    | <b>Hirose connectors for modular connectors</b>  |
|    | <b>non-insulated cable lugs DIN 46234</b>        |
|    | <b>non-insulated connectors DIN 46341</b>        |
|    | <b>standard tubular terminals</b>                |
|    | <b>DIN tubular terminals CU</b>                  |
|   | <b>DIN tubular terminals AL</b>                  |
|  | <b>standard tubular terminals, light</b>         |
|  | <b>Nylon-insulated tubular cable terminals</b>   |
|  | <b>standard connectors CU</b>                    |
|  | <b>DIN connectors CU</b>                         |
|  | <b>DIN connectors AL</b>                         |
|  | <b>standard connectors, light</b>                |
|  | <b>F-type</b>                                    |
|  | <b>Deep indent connectors</b>                    |
|  | <b>Four thorn pressing without inserts</b>       |

# Pictogram press-profiles

Technical notes for the various pressing formats for the pressing of cables using HAUPA cable lugs and connectors.

The following pressing formats are available:

|   |  |
|---|--|
|    | <b>Hexagonal pressing</b><br>for pressing standard CU tubular terminals and connectors, tubular terminals for switching device connections, pressing cable lugs and connectors DIN 46235/DIN 46267, Al pressing cable lugs and connectors and end sleeves  |
|    | <b>Mandrel shape pressing</b><br>for pressing of standard CU tubular terminals and connectors, tubular terminals for switching device connections, crimp-style cable lugs DIN 46234 and pin cable lugs DIN 46230, insulated crimp-style cable lugs, conduit terminals for fine-wired conductors, nickel tubular terminals and connectors |
|   | <b>Oval pressing</b><br>for pressing of dual pressing cable lugs, C clamps, insulated tubular terminals and connectors, insulated pin cable lugs, press connectors DIN 48217, insulated cable connections  |
|  | <b>Trapezoidal pressing</b><br>for pressing of end sleeves ends and twin end sleeves   |
|  | <b>Square pressing</b><br>for pressing of end sleeves ends and twin end sleeves  |
|  | <b>Hexagonal pressing</b><br>for pressing of end sleeves   |
|  | <b>Square pressing</b><br>Multi-contact<br>Application area:<br>Photovoltaics, twisted contacts  |
|  | <b>Roll pressing</b><br>for pressing of brass cable lugs, D-Sub, MC4   |
|  | <b>WM pressing</b><br>for standard cable lugs and compacted cables   |
|  | <b>Round pressing</b><br>of sector-shaped conductors 90° and 120°  |
|  | <b>Four thorn pressing</b><br>for pressing standard tubular terminals and connectors - also on sealed conductors - F-type tubular terminals and connectors<br>Light cable lugs and connectors<br>Tubular terminals = Switching device connections  |

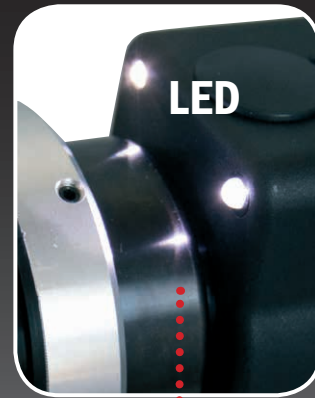
Hydraulic crimping tools






# Battery powered crimping tools with sensor technology

- Pressing force in kN: 60 - 120
- Working pressure in bar: 700
- Pressing time, battery-operated in seconds: 4 - 10
- Battery charging time in minutes: 30 - 60
- Battery type: Li-Ion, 18 V, 1,5 - 3 Ah

Working area illumination



-  Light is green: Pressing completed in accordance with standard, motor stopped
-  Light is orange: Battery voltage not sufficient
-  Light is red: Pressing interrupted before completed

# Hydraulic crimping tools

## Hydraulic hand pliers „HHs-6“

Crimping head can be rotated by 180°, manual return after completed pressing, light and compact construction in black plastic case, without dies.

- Pressing force in kN: 60
- Working pressure in bar: 700
- Head can be opened
- Pressing width: slim
- Cable lugs: standard Cu 10-240
- DIN Cu 10-185 • DIN Al 16-150
- Connectors: standard Cu 10-240
- DIN Cu 10-185 • DIN Al 16-150



**185-H6**

|              |                 |                   |       |    |  |  |
|--------------|-----------------|-------------------|-------|----|--|--|
|              |                 |                   |       |    |  |  |
| <b>60 kN</b> | <b>700 bar</b>  | <b>180°</b>       |       |    |  |  |
| Art. no.     | mm <sup>2</sup> | dimension         | kg    | PU |  |  |
| 215765       | 10 - 240        | 370 x 140 x 75 mm | 7,900 | 1  |  |  |

## Battery powered crimping tool „SHs-6“

for interchangeable interchangeable dies, Crimping head can be rotated by 180°, manual return flow after perfect pressure.

**Extent of supply:** 1 crimping tool, 1 charger, 1 battery, 1 strap, in light plastic box, without crimping headstock.

- Pressing force in kN: 60 kN
- Working pressure in bar: 700
- Head can be opened
- Pressing width: slim
- Cable lugs: standard Cu 10-240 • DIN Cu 10-185 • DIN Al 16-150
- Connectors: standard Cu 10-240 • DIN Cu 10-185 • DIN Al 16-150
- Pressing time, battery-operated in seconds: 5
- Battery charging time in minutes: 30
- Battery type: Li-Ion, 18 V, 1,5 Ah
- Weight in kg without batterie: 2,1
- Weight of set in kg with batterie: 7,9



**185-H6**

|              |                 |             |       |    |  |  |
|--------------|-----------------|-------------|-------|----|--|--|
|              |                 |             |       |    |  |  |
| <b>60 kN</b> | <b>700 bar</b>  | <b>180°</b> |       |    |  |  |
| Art. no.     | mm <sup>2</sup> | dimension   | kg    | PU |  |  |
| 215770       | 10 - 185        | 398 x 75 mm | 7,900 | 1  |  |  |

## Battery powered crimping tool „SHs-6M“

Sensor

Technical data and scope of delivery, see 215770.

With the different colours of the sensor LED, it shows whether the pressing has been completed successfully or which errors have occurred:

- Light is green: Pressing completed as standard, motor stopped.
- Light is orange: Battery voltage not sufficient
- Light is red: Pressing interrupted before completed

The device also has 1 white LED designed to illuminate the working area.



**185-H6**

|              |                 |             |       |    |  |  |
|--------------|-----------------|-------------|-------|----|--|--|
|              |                 |             |       |    |  |  |
| <b>60 kN</b> | <b>700 bar</b>  | <b>180°</b> |       |    |  |  |
| Art. no.     | mm <sup>2</sup> | dimension   | kg    | PU |  |  |
| 215770/M     | 10 - 185        | 398 x 75 mm | 7,900 | 1  |  |  |

## Crimping dies standard

standard copper tube terminals and connectors, **hexagonal pressing**

**185-H6**

|          |                 |    |       |    |  |
|----------|-----------------|----|-------|----|--|
|          |                 |    |       |    |  |
| Art. no. | mm <sup>2</sup> | PW | kg    | PU |  |
| 215641   | 10/16           | 5  | 0,157 | 1  |  |
| 215642   | 25/35           | 5  | 0,155 | 1  |  |
| 215643   | 50/70           | 5  | 0,150 | 1  |  |
| 215644   | 95/120          | 5  | 0,145 | 1  |  |
| 215645   | 150             | 5  | 0,159 | 1  |  |
| 215646   | 185             | 5  | 0,156 | 1  |  |
| 215648   | 240             | 5  | 0,156 | 1  |  |

## Crimping dies DIN

DIN Cu/Al tube terminals and connectors, **hexagonal pressing**

**185-H6**

|          |                 |    |       |       |    |
|----------|-----------------|----|-------|-------|----|
|          |                 |    |       |       |    |
| Art. no. | mm <sup>2</sup> | PW | ld.   | kg    | PU |
| 215650   | 10/16           | 5  | 6/8   | 0,155 | 1  |
| 215651   | 25/35           | 5  | 10/12 | 0,151 | 1  |
| 215652   | 50/70           | 5  | 14/16 | 0,149 | 1  |
| 215653   | 95/120          | 5  | 18/20 | 0,129 | 1  |
| 215654   | 150             | 5  | 22    | 0,145 | 1  |
| 215655   | 185             | 5  | 25    | 0,147 | 1  |

haupa®

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Hydraulic crimping tools

## Battery powered crimping tool „SH-6“

Hydraulic for interchangeable dies, crimping head can be rotated by 180°, with fast opening, manual return flow after perfect pressure.

**Extent of supply:** 1 crimping tool, 1 charger, 1 battery, 1 strap, in SysCon stacking box without dies.

- Pressing force in kN: 60 kN
- Working pressure in bar: 700
- Head can be opened yes
- Opening/ Hub: 17 mm
- Pressing width: slim
- Cable lugs: standard Cu 10-240 • DIN Cu 10-240 • DIN Al 16-185
- Connectors: Cu 10-240 • DIN Cu 10-240 • DIN Al 16-185
- Pressing time, battery-operated in seconds: ca. 5
- Battery charging time in minutes: 30
- Battery type: Li-Ion, 18 V, 1,5 Ah
- Weight in kg without batterie: 2,4
- Weight of set in kg with batterie: 7,9



**240-H6**



| Art. no. | mm <sup>2</sup> | dimension   | kg    | PU |
|----------|-----------------|-------------|-------|----|
| 215881   | 10 - 240        | 415 x 75 mm | 7,900 | 1  |

## Battery powered crimping tool „SH-6M“

Sensor

Technical data and scope of delivery, see 215881.

With the different colours of the sensor LED, it shows whether the pressing has been completed successfully or which errors have occurred:

- Light is green: Pressing completed as standard, motor stopped.
- Light is orange: Battery voltage not sufficient
- Light is red: Pressing interrupted before completed

The device also has 1 white LED designed to illuminate the working area.



**240-H6**



| Art. no. | mm <sup>2</sup> | dimension   | kg    | PU |
|----------|-----------------|-------------|-------|----|
| 215881/M | 10 - 240        | 415 x 75 mm | 7,900 | 1  |

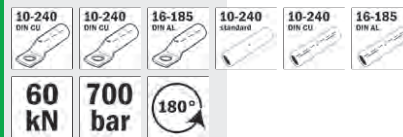
## Hydraulic hand pliers „HH-6“

Crimping head can be rotated by 180°, manual return after completed pressing, light and compact construction, in SysCon stacking box, without dies.

- Pressing force in kN: 60
- Working pressure in bar: 700
- Opening / Hub: 17 mm
- Head can be opened
- Pressing width: slim
- Cable lugs: standard Cu 10-240 • DIN Cu 10-240 • DIN Al 16-185
- Connectors: standard Cu 10-240 • DIN Cu 10-240 • DIN Al 16-185
- Dual-piston pump
- Weight in kg: 3,0
- Weight of set in kg: 4,5



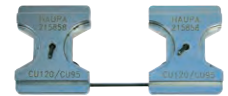
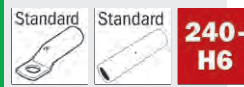
**240-H6**



| Art. no. | mm <sup>2</sup> | dimension         | kg    | PU |
|----------|-----------------|-------------------|-------|----|
| 215800   | 10 - 240        | 400 x 150 x 65 mm | 4,500 | 1  |

## Crimping dies

standard copper tube terminals and connectors, hexagonal pressing



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 215852   | 10 - 16         | 0,157 | 1  |
| 215854   | 25 - 35         | 0,155 | 1  |
| 215856   | 50 - 70         | 0,150 | 1  |
| 215858   | 95 - 120        | 0,145 | 1  |
| 215859   | 150             | 0,159 | 1  |
| 215860   | 185             | 0,156 | 1  |
| 215861   | 240             | 0,156 | 1  |

## Crimping dies DIN Cu + Al

DIN Cu/Al tube terminals and connectors, hexagonal pressing



| Art. no. | mm <sup>2</sup> | Al       | ld.     | kg    | PU |
|----------|-----------------|----------|---------|-------|----|
| 215862   | 10 - 16         | -        | 6-8     | 0,155 | 1  |
| 215864   | 25 - 35         | 16 - 25  | 10 - 12 | 0,151 | 1  |
| 215866   | 50 - 70         | 35 - 50  | 14 - 16 | 0,149 | 1  |
| 215868   | 95 - 120        | 70       | 18 - 20 | 0,129 | 1  |
| 215869   | 150             | 95 - 120 | 22      | 0,145 | 1  |
| 215870   | 185             | 150      | 25      | 0,147 | 1  |
| 215872   | 240             | 185      | 28      | 0,114 | 1  |

# Hydraulic crimping tools

## Battery powered crimping tool „S0-6“

Hydraulic for interchangeable dies, crimping head can be rotated by 180°, Head can be opened, manual return flow after perfect pressure.

**Extent of supply:** 1 crimping tool, 1 charger, 1 battery, 1 strap, in SysCon stacking box „SysCon M“ 220372 without dies.

- Pressing force in kN: 60 kN
- Working pressure in bar: 700
- Head can be opened
- Opening/ Hub: 17 mm
- Pressing width: slim
- Pressing time, battery-operated in seconds: ca. 5
- Battery charging time in minutes: 30
- Battery type: Li-Ion, 18 V, 1,5 Ah
- Cable lugs: standard Cu 6-300 • DIN Cu 6-300 • DIN Al 16-240
- Connectors: Cu 6-300 • DIN Cu 6-300 • DIN Al 16-240



|              |                |             |  |                         |               |
|--------------|----------------|-------------|--|-------------------------|---------------|
|              |                |             |  |                         |               |
| <b>60 kN</b> | <b>700 bar</b> | <b>180°</b> |  | <b>LI-ION 18V 1,5Ah</b> | <b>SysCon</b> |

| Art. no. | mm <sup>2</sup> | dimension   | kg    | PU |
|----------|-----------------|-------------|-------|----|
| 216801   | 6 - 300         | 383 x 75 mm | 7,900 | 1  |

## Battery powered crimping tool „S0-6M“

Sensor

Technical data and scope of delivery, see 216801.

With the different colours of the sensor LED, it shows whether the pressing has been completed successfully or which errors have occurred:

- Light is green: Pressing completed as standard, motor stopped.
- Light is orange: Battery voltage not sufficient
- Light is red: Pressing interrupted before completed

The device also has 1 white LED designed to illuminate the working area.



|              |                |             |  |                         |               |               |                       |
|--------------|----------------|-------------|--|-------------------------|---------------|---------------|-----------------------|
|              |                |             |  |                         |               |               |                       |
| <b>60 kN</b> | <b>700 bar</b> | <b>180°</b> |  | <b>LI-ION 18V 1,5Ah</b> | <b>SysCon</b> | <b>Sensor</b> | <b>Video 216801/M</b> |

| Art. no. | mm <sup>2</sup> | dimension   | kg    | PU |
|----------|-----------------|-------------|-------|----|
| 216801/M | 6 - 300         | 383 x 75 mm | 7,900 | 1  |

## Battery powered crimping tool „A0-6“

Sensor

2 step hydraulic for replaceable pressing dies, crimping head can be rotated by 180°, can be opened, with quick opening, manual return after completed pressing, LED to check battery status.

**Included in delivery:** 1 crimping tool, 1 charger, 1 battery, 1 carry strap, in plastic case, without dies.

- Pressing force in kN: 60
- Working pressure in bar: 700
- Opening/ Hub: 17 mm
- Head can be opened
- Pressing width: slim
- Cable lugs: standard Cu 6-300 • DIN Cu 6-300 • DIN Al 16-240
- Connectors: standard Cu 6-300 • DIN Cu 6-300 • DIN Al 16-240
- Pressing time, battery-operated in seconds: 4
- Battery charging time in minutes: 60
- Battery type: Li-Ion 18 V, 3 Ah
- Dual-piston pump
- Weight in kg: 4,5
- Weight of set in kg: 9,5

With the different colours of the sensor LED, it shows whether the pressing has been completed successfully or which errors have occurred:

- Light is green: Pressing completed as standard, motor stopped.
- Light is orange: Battery voltage not sufficient
- Light is red: Pressing interrupted before completed

The device also has 2 white LED designed to illuminate the working area.



|              |                |             |  |                       |               |               |                     |
|--------------|----------------|-------------|--|-----------------------|---------------|---------------|---------------------|
|              |                |             |  |                       |               |               |                     |
| <b>60 kN</b> | <b>700 bar</b> | <b>180°</b> |  | <b>LI-ION 18V 3Ah</b> | <b>SysCon</b> | <b>Sensor</b> | <b>Video 216800</b> |

| Art. no. | mm <sup>2</sup> | dimension         | kg    | PU |
|----------|-----------------|-------------------|-------|----|
| 216800   | 6 - 300         | 375 x 343 x 75 mm | 9,500 | 1  |

**haupa**

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Hydraulic crimping tools

## Hydraulic hand pliers „HO-6“

Crimping head can be rotated by 180°, manual return after completed pressing, light and compact construction in black plastic case, without dies.

- Pressing force in kN: 60
- Working pressure in bar: 700
- Head can be opened
- Opening / Hub: 17 mm
- Pressing width: slim
- Cable lugs: standard Cu 6-300 • DIN Cu 6-300 • DIN Al 16-240
- Connectors: standard Cu 6-300 • DIN Cu 6-300 • DIN Al 16-240
- Dual-piston pump
- Weight in kg: 3,5
- Weight of set in kg: 5,0



| Art. no. | mm <sup>2</sup> | dimension         | kg    | PU |
|----------|-----------------|-------------------|-------|----|
| 216802   | 6 - 300         | 500 x 170 x 80 mm | 5,000 | 1  |

## Hand pliers „MO-6“ for exchangeable dies

Extent of supply: 1 crimping tool, in metal suitcase.

- Crimping range cable lugs: Cu 6-300 • DIN Cu 6-300 / DIN Al 16-240
- Crimping range connectors: Cu 6-300 • DIN Cu 6-300 / DIN Al 16-240



| Art. no. | mm <sup>2</sup> | dimension    | kg     | PU |
|----------|-----------------|--------------|--------|----|
| 216804   | 10 - 300        | 765 x 175 mm | 11,800 | 1  |

## Crimping headstock „KO-6“

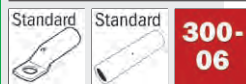
in plastic case, without dies.

- Pressing force in kN: 60
- Working pressure in bar: 700
- Head can be opened
- Opening/ Hub: 17 mm
- Pressing width: slim
- Cable lugs: standard Cu 6-300 • DIN Cu 6-300 • DIN Al 16-240
- Connectors: standard Cu 6-300 • DIN Cu 6-300 • DIN Al 16-240
- Quick coupling
- Weight in kg: 3,2
- Weight of set in kg: 4,2



| Art. no. | mm <sup>2</sup> | dimension          | kg    | PU |
|----------|-----------------|--------------------|-------|----|
| 216807   | 6 - 300         | 235 x 91,5 x 57 mm | 4,200 | 1  |

## Dies for terminals and connectors standard



| Art. no. | mm <sup>2</sup> | PW | kg    | PU |
|----------|-----------------|----|-------|----|
| 216806   | 6               | 5  | 0,136 | 1  |
| 216808   | 10              | 5  | 0,12  | 1  |
| 216810   | 16              | 5  | 0,136 | 1  |
| 216812   | 25              | 5  | 0,135 | 1  |
| 216814   | 35              | 5  | 0,135 | 1  |
| 216816   | 50              | 5  | 0,134 | 1  |
| 216818   | 70              | 5  | 0,132 | 1  |
| 216820   | 95              | 5  | 0,132 | 1  |
| 216822   | 120             | 5  | 0,130 | 1  |
| 216824   | 150             | 5  | 0,128 | 1  |
| 216826   | 185             | 5  | 0,125 | 1  |
| 216828   | 240             | 5  | 0,121 | 1  |
| 216830   | 300             | 5  | 0,118 | 1  |

## Dies for terminals and connectors DIN



| Art. no. | Cu  | Al       | Id. | PW | kg    | PU |
|----------|-----|----------|-----|----|-------|----|
| 216832   | 6   | -        | 5   | 5  | 0,123 | 1  |
| 216834   | 10  | -        | 6   | 5  | 0,122 | 1  |
| 216836   | 16  | -        | 8   | 5  | 0,125 | 1  |
| 216838   | 25  | -        | 10  | 5  | 0,120 | 1  |
| 216840   | 35  | 16 - 25  | 12  | 5  | 0,120 | 1  |
| 216842   | 50  | 35       | 14  | 5  | 0,119 | 1  |
| 216844   | 70  | 50       | 16  | 5  | 0,120 | 1  |
| 216846   | 95  | 70       | 18  | 5  | 0,120 | 1  |
| 216848   | 120 | -        | 20  | 5  | 0,120 | 1  |
| 216850   | 150 | 95 - 120 | 22  | 5  | 0,120 | 1  |
| 216852   | 185 | 150      | 25  | 5  | 0,120 | 1  |
| 216854   | 240 | 185      | 28  | 5  | 0,115 | 1  |
| 216856   | 300 | 240      | 32  | 5  | 0,120 | 1  |





## Dies for end sleeves



for end sleeves and compacted connectors (wave form)



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 216950   | 6               | 0,120 | 1  |
| 216952   | 10              | 0,120 | 1  |
| 216954   | 16              | 0,120 | 1  |
| 216956   | 25              | 0,120 | 1  |
| 216958   | 35              | 0,120 | 1  |
| 216960   | 50              | 0,120 | 1  |
| 216962   | 70              | 0,120 | 1  |
| 216964   | 95              | 0,120 | 1  |
| 216966   | 120             | 0,120 | 1  |
| 216968   | 150             | 0,120 | 1  |
| 216970   | 185             | 0,120 | 1  |
| 216972   | 240             | 0,120 | 1  |

## Dies for tubular terminals „F-Type“



| Art. no. | mm <sup>2</sup> | PW | kg    | PU |
|----------|-----------------|----|-------|----|
| 216876   | 6               | 8  | 0,120 | 1  |
| 216878   | 10              | 8  | 0,146 | 1  |
| 216880   | 16              | 9  | 0,153 | 1  |
| 216882   | 25              | 11 | 0,162 | 1  |
| 216884   | 35              | 13 | 0,171 | 1  |
| 216886   | 50              | 13 | 0,167 | 1  |
| 216888   | 70              | 13 | 0,160 | 1  |
| 216890   | 95              | 13 | 0,164 | 1  |
| 216892   | 120             | 20 | 0,174 | 1  |
| 216894   | 150             | 20 | 0,162 | 1  |
| 216896   | 185             | 8  | 0,124 | 1  |
| 216898   | 240             | 8  | 0,119 | 1  |
| 216899   | 300             | 8  | 0,089 | 1  |

## Dies for rounding of round conductors



| Art. no. | mm <sup>2</sup> | sm  | se  | kg    | PU |
|----------|-----------------|-----|-----|-------|----|
| 216926   | 10              | 10  | -   | 0,120 | 1  |
| 216928   | 16              | 16  | -   | 0,120 | 1  |
| 216930   | 25 - 35         | 25  | 35  | 0,120 | 1  |
| 216932   | 35 - 50         | 35  | 50  | 0,120 | 1  |
| 216934   | 50 - 70         | 50  | 70  | 0,120 | 1  |
| 216936   | 70 - 95         | 70  | 95  | 0,120 | 1  |
| 216938   | 95 - 120        | 95  | 120 | 0,120 | 1  |
| 216940   | 120 - 150       | 120 | 150 | 0,240 | 1  |
| 216942   | 150 - 185       | 150 | 185 | 0,197 | 1  |
| 216944   | 185 - 240       | 185 | 240 | 0,120 | 1  |
| 216946   | 240 - 300       | 240 | 300 | 0,120 | 1  |

## Dies for terminals and compacted connectors

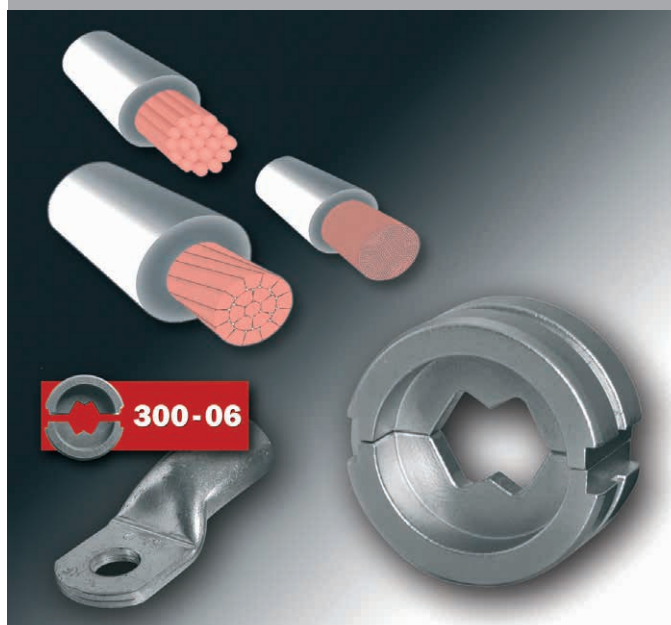


for standard tube terminals and compacted connectors



| Art. no. | mm <sup>2</sup> | PW | kg    | PU |
|----------|-----------------|----|-------|----|
| 216806/V | 6               | 5  | 0,136 | 1  |
| 216808/V | 10              | 5  | 0,136 | 1  |
| 216810/V | 16              | 5  | 0,136 | 1  |
| 216812/V | 25              | 5  | 0,135 | 1  |
| 216814/V | 35              | 5  | 0,135 | 1  |
| 216816/V | 50              | 5  | 0,134 | 1  |
| 216818/V | 70              | 5  | 0,132 | 1  |
| 216820/V | 95              | 5  | 0,132 | 1  |
| 216822/V | 120             | 5  | 0,130 | 1  |
| 216824/V | 150             | 5  | 0,128 | 1  |
| 216826/V | 185             | 5  | 0,125 | 1  |
| 216828/V | 240             | 5  | 0,121 | 1  |
| 216830/V | 300             | 5  | 0,118 | 1  |

## Dies for compacted connectors



# Hydraulic crimping tools

## Battery powered crimping tool „AC25-12“

**Sensor**

2 step hydraulic for replaceable pressing dies, crimping head can be rotated by 180°, can be opened, with quick opening, manual return after completed pressing, LED to check battery status.

**Included in delivery:** 1 crimping tool, 1 charger, 1 battery, 1 carry strap, in plastic case, without dies.

- Pressing force in kN: 120
- Working pressure in bar: 700
- Opening/ Hub: 25 mm
- Pressing width: wide
- Cable lugs: standard Cu 10-400 • DIN Cu 10-300 • DIN Al 16-240
- Connectors: standard Cu 10-185 • DIN Cu 10-150 • DIN Al 16-120
- Pressing time, battery-operated in sec.: 6 - 12
- Battery charging time in min.: 60
- Battery type: Li-Ion, 18 V, 3 Ah
- Dual-piston pump
- Weight in kg: 7 • Weight of set in kg: 12

With the different colours of the sensor LED, it shows whether the pressing has been completed successfully or which errors have occurred:

- Light is green: Pressing completed as standard, motor stopped.
- Light is orange: Battery voltage not sufficient
- Light is red: Pressing interrupted before completed

The device also has 2 white LED designed to illuminate the working area.



**400-C12**

|               |                |             |  |                       |  |
|---------------|----------------|-------------|--|-----------------------|--|
|               |                |             |  |                       |  |
| <b>120 kN</b> | <b>700 bar</b> | <b>180°</b> |  | <b>LI-ION 18V 3Ah</b> |  |

| Art. no. | mm <sup>2</sup> | dimension         | kg | PU |
|----------|-----------------|-------------------|----|----|
| 216601   | 10 - 400        | 375 x 375 x 75 mm | 12 | 1  |

## Hydraulic hand pliers „HC25-12“

Crimping head can be rotated by 180°, manual return after completed pressing, light and compact construction in black plastic case, without dies.

- Pressing force in kN: 120
- Working pressure in bar: 700
- Opening/ Hub: 25 mm
- Pressing width: wide
- Cable lugs: standard Cu 10-400 • DIN Cu 10-300 • DIN Al 16-240
- Connectors: standard Cu 10-185 • DIN Cu 10-150 • DIN Al 16-120
- Dual-piston pump
- Weight in kg: 6,2
- Weight of set in kg: 7,7



**400-C12**

|               |                |             |  |  |  |
|---------------|----------------|-------------|--|--|--|
|               |                |             |  |  |  |
| <b>120 kN</b> | <b>700 bar</b> | <b>180°</b> |  |  |  |

| Art. no. | mm <sup>2</sup> | dimension         | kg    | PU |
|----------|-----------------|-------------------|-------|----|
| 216124   | 10 - 400        | 585 x 180 x 72 mm | 7,700 | 1  |

## Hydraulic crimping headstock „KC25-12“

in plastic case, without dies.

- Pressing force in kN: 120
- Working pressure in bar: 700
- Cable lugs: standard Cu 10-400 • DIN Cu 10-300 • DIN Al 16-240
- Connectors: standard Cu 10-185 • DIN Cu 10-150 • DIN Al 16-120
- Opening/ Hub: 25 mm
- Pressing width: wide
- Quick coupling
- Weight in kg: 3,6
- Weight of set in kg: 4,6



**400-C12**

|               |                |  |  |  |  |
|---------------|----------------|--|--|--|--|
|               |                |  |  |  |  |
| <b>120 kN</b> | <b>700 bar</b> |  |  |  |  |

| Art. no. | mm <sup>2</sup> | dimension         | kg    | PU |
|----------|-----------------|-------------------|-------|----|
| 216004   | 10 - 400        | 245 x 130 x 72 mm | 4,600 | 1  |

# Hydraulic crimping tools

## Battery powered crimping tool „AC42-12“

**Sensor**

2 step hydraulic for replaceable pressing dies, crimping head can be rotated by 180°, can be opened, with quick opening, manual return after completed pressing, LED to check battery status.

**Included in delivery:** 1 crimping tool, 1 charger, 1 battery, 1 carry strap, in plastic case, without dies.

- Pressing force in kN: 120
- Working pressure in bar: 700
- Opening/ Hub: 42 mm
- Pressing width: wide
- Cable lugs: standard Cu 10-400 • DIN Cu 10-300 • DIN Al 16-240
- Connectors: standard Cu 10-400 • DIN Cu 10-300 • DIN Al 16-240
- Pressing time, battery-operated in sec.: 7 - 13
- Battery charging time in min.: 60
- Battery type: Li-Ion, 18 V, 3 Ah
- Dual-piston pump
- Weight in kg: 8,5 • Weight of set in kg: 13

With the different colours of the sensor LED, it shows whether the pressing has been completed successfully or which errors have occurred:

- Light is green: Pressing completed as standard, motor stopped.
- Light is orange: Battery voltage not sufficient
- Light is red: Pressing interrupted before completed

The device also has 2 white LED designed to illuminate the working area.



**400-C12**



| Art. no. | mm <sup>2</sup> | dimension         | kg     | PU |
|----------|-----------------|-------------------|--------|----|
| 216622   | 10 - 400        | 430 x 340 x 75 mm | 13,000 | 1  |

## Hydraulic hand pliers „HC42-12“

Crimping head can be rotated by 180°, manual return after completed pressing, light and compact construction in black plastic case, without dies.

- Pressing force in kN: 120
- Working pressure in bar: 700
- Opening/ Hub: 42 mm
- Pressing width: wide
- Cable lugs: standard Cu 10-400 • DIN Cu 10-300 • DIN Al 16-240
- Connectors: standard Cu 10-400 • DIN Cu 10-300 • DIN Al 16-240
- Dual-piston pump
- Weight in kg: 8,2
- Weight of set in kg: 9,7



**400-C12**



| Art. no. | mm <sup>2</sup> | dimension         | kg    | PU |
|----------|-----------------|-------------------|-------|----|
| 216125   | 10 - 400        | 640 x 170 x 77 mm | 9,700 | 1  |

## Hydraulic crimping headstock „KC42-12“

in plastic case, without dies.

Pressing force in kN: 120

- Working pressure in bar: 700
- Opening/ Hub: 42 mm
- Pressing width: wide
- Cable lugs: standard Cu 10-400 • DIN Cu 10-300 • DIN Al 16-240
- Connectors: standard Cu 10-400 • DIN Cu 10-300 • DIN Al 16-240
- Quick coupling
- Weight in kg: 5,3
- Weight of set in kg: 6,3



**400-C12**



| Art. no. | mm <sup>2</sup> | dimension         | kg    | PU |
|----------|-----------------|-------------------|-------|----|
| 216005   | 10 - 400        | 320 x 130 x 76 mm | 6,300 | 1  |

**haupa®**

**...convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Hydraulic crimping tools

## Battery powered crimping tool „AH-12“

**Sensor**

2 step hydraulic for replaceable pressing dies, crimping head can be rotated by 180°, can be opened, with quick opening, manual return after completed pressing, LED to check battery status.

Pressing tool for deep indent pressing.

**Included in delivery:** 1 crimping tool, 1 charger, 1 battery, 1 carry strap, in plastic case, without dies.

- Pressing force in kN: 120
- Working pressure in bar: 700
- Head can be opened
- Opening/ Hub: 20 mm
- Pressing width: wide
- Cable lugs: standard Cu 10-400 • DIN Cu 10-300 • DIN Al 16-240
- Connectors: standard Cu 10-400 • DIN Cu 10-300 • DIN Al 16-240
- Pressing time, battery-operated in sec.: 6 - 13
- Battery charging time in minutes: 60
- Battery type: Li-Ion, 18 V, 3 Ah
- Dual-piston pump
- Weight in kg: 7 • Weight of set in kg: 12

With the different colours of the sensor LED, it shows whether the pressing has been completed successfully or which errors have occurred:

- Light is green: Pressing completed as standard, motor stopped.
- Light is orange: Battery voltage not sufficient
- Light is red: Pressing interrupted before completed

The device also has 2 white LED designed to illuminate the working area.



**400-C12**

|                 |                |               |                 |                       |               |  |
|-----------------|----------------|---------------|-----------------|-----------------------|---------------|--|
|                 |                |               |                 |                       |               |  |
| 10-400 standard | 10-300 DIN CU  | 16-240 DIN AL | 10-400 standard | 10-300 DIN CU         | 16-240 DIN AL |  |
| <b>120 kN</b>   | <b>700 bar</b> | <b>180°</b>   |                 | <b>LI-ION 18V 3Ah</b> |               |  |

| Art. no. | mm <sup>2</sup> | dimension         | kg     | PU |
|----------|-----------------|-------------------|--------|----|
| 216503   | 10 - 400        | 405 x 353 x 75 mm | 12,000 | 1  |

## Hydraulic hand pliers „HH-12“

Crimping head can be rotated by 180°, manual return flow after perfect pressure, in black metal suitcase, without dies.

- Pressing force in kN: 120
- Working pressure in bar: 700
- Head can be opened
- Opening/ Hub: 20 mm
- Pressing width: wide
- Cable lugs: standard Cu 10-400 • DIN Cu 10-300 • DIN Al 16-240
- Connectors: standard Cu 10-400 • DIN Cu 10-300 • DIN Al 16-240
- Dual-piston pump
- Weight in kg: 4,0
- Weight set in kg: 5,0



**400-C12**

|                 |                |               |                 |               |               |
|-----------------|----------------|---------------|-----------------|---------------|---------------|
|                 |                |               |                 |               |               |
| 10-400 standard | 10-300 DIN CU  | 16-240 DIN AL | 10-400 standard | 10-300 DIN CU | 16-240 DIN AL |
| <b>120 kN</b>   | <b>700 bar</b> | <b>180°</b>   |                 |               |               |

| Art. no. | mm <sup>2</sup> | dimension         | kg    | PU |
|----------|-----------------|-------------------|-------|----|
| 215946   | 10 - 400        | 615 x 180 x 76 mm | 7,500 | 1  |

## Crimping headstock „KH-12“

in plastic case, without dies.

- Pressing force in kN: 120
- Working pressure in bar: 700
- Head can be opened
- Opening/ Hub: 20 mm
- Pressing width: wide
- Cable lugs: standard Cu 10-400 • DIN Cu 10-300 • DIN Al 16-240
- Connectors: standard Cu 10-400 • DIN Cu 10-300 • DIN Al 16-240
- Quick coupling
- Weight in kg: 4
- Weight of set in kg: 5



**400-C12**

|                 |                |               |                 |               |               |
|-----------------|----------------|---------------|-----------------|---------------|---------------|
|                 |                |               |                 |               |               |
| 10-400 standard | 10-300 DIN CU  | 16-240 DIN AL | 10-400 standard | 10-300 DIN CU | 16-240 DIN AL |
| <b>120 kN</b>   | <b>700 bar</b> |               |                 |               |               |

| Art. no. | mm <sup>2</sup> | dimension        | kg    | PU |
|----------|-----------------|------------------|-------|----|
| 215980   | 10 - 400        | 275 x 90 x 76 mm | 5,000 | 1  |

## Crimping dies

Standard copper tube terminals and connectors, **hexagonal pressing**



**400-C12**



| Art. no. | mm <sup>2</sup> | PW | kg    | PU |
|----------|-----------------|----|-------|----|
| 216008   | 10              | 10 | 0,211 | 1  |
| 216010   | 16              | 10 | 0,212 | 1  |
| 216012   | 25              | 10 | 0,210 | 1  |
| 216014   | 35              | 13 | 0,207 | 1  |
| 216016   | 50              | 13 | 0,224 | 1  |
| 216018   | 70              | 14 | 0,221 | 1  |
| 216020   | 95              | 14 | 0,226 | 1  |
| 216022   | 120             | 14 | 0,200 | 1  |
| 216024   | 150             | 11 | 0,200 | 1  |
| 216026   | 185             | 11 | 0,191 | 1  |
| 216028   | 240             | 11 | 0,186 | 1  |
| 216030   | 300             | 11 | 0,200 | 1  |
| 216032   | 400             | 11 | 0,200 | 1  |

## Crimping dies DIN Cu + Al

Standard copper tube terminals and connectors, **hexagonal pressing**



**400-C12**



| Art. no. | mm <sup>2</sup> | PW | Al       | ld. | kg    | PU |
|----------|-----------------|----|----------|-----|-------|----|
| 216036   | 10              | 10 |          | 6   | 0,248 | 1  |
| 216038   | 16              | 10 |          | 8   | 0,248 | 1  |
| 216040   | 25              | 13 |          | 10  | 0,244 | 1  |
| 216042   | 35              | 13 | 16 - 25  | 12  | 0,235 | 1  |
| 216044   | 50              | 13 | 35       | 14  | 0,231 | 1  |
| 216046   | 70              | 13 | 50       | 16  | 0,226 | 1  |
| 216048   | 95              | 14 | 70       | 18  | 0,229 | 1  |
| 216050   | 120             | 14 |          | 20  | 0,225 | 1  |
| 216052   | 150             | 10 | 95 - 120 | 22  | 0,197 | 1  |
| 216054   | 185             | 10 | 150      | 25  | 0,193 | 1  |
| 216056   | 240             | 10 | 185      | 28  | 0,185 | 1  |
| 216060   | 300             | 10 |          | 32  | 0,142 | 1  |

## Dies for compacted connectors

for standard cable lugs and compacted connectors



**400-C12**



| Art. no. | mm <sup>2</sup> | PW | kg    | PU |
|----------|-----------------|----|-------|----|
| 216008/V | 10              | 10 | 0,211 | 1  |
| 216010/V | 16              | 10 | 0,212 | 1  |
| 216012/V | 25              | 10 | 0,210 | 1  |
| 216014/V | 35              | 13 | 0,207 | 1  |
| 216016/V | 50              | 13 | 0,224 | 1  |
| 216018/V | 70              | 14 | 0,221 | 1  |
| 216020/V | 95              | 14 | 0,226 | 1  |
| 216022/V | 120             | 14 | 0,200 | 1  |
| 216024/V | 150             | 11 | 0,200 | 1  |
| 216026/V | 185             | 11 | 0,191 | 1  |
| 216028/V | 240             | 11 | 0,186 | 1  |
| 216030/V | 300             | 11 | 0,200 | 1  |
| 216032/V | 400             | 11 | 0,200 | 1  |



## Crimping dies

Standard copper tube terminals and connectors, **mandrel shape crimping**



**400-C12**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 216064   | 10              | 0,200 | 1  |
| 216066   | 16              | 0,120 | 1  |
| 216068   | 25              | 0,118 | 1  |
| 216070   | 35              | 0,116 | 1  |
| 216072   | 50              | 0,118 | 1  |
| 216074   | 70              | 0,131 | 1  |
| 216076   | 95              | 0,119 | 1  |
| 216078   | 120             | 0,111 | 1  |
| 216080   | 150             | 0,107 | 1  |
| 216082   | 185             | 0,095 | 1  |
| 216084   | 240             | 0,085 | 1  |
| 216086   | 300             | 0,060 | 1  |
| 216065   | 10 - 25         | 0,112 | 1  |
| 216067   | 35 - 50         | 0,121 | 1  |
| 216069   | 70 - 120        | 0,136 | 1  |
| 216071   | 150 - 300       | 0,125 | 1  |

## Crimping dies for cable class 5+6, F-Type

tubular terminals and connectors, F-Type



**400-C12**



| Art. no. | mm <sup>2</sup> | PW | kg    | PU |
|----------|-----------------|----|-------|----|
| 216160   | 10              | 8  | 0,211 | 1  |
| 216162   | 16              | 8  | 0,216 | 1  |
| 216164   | 25              | 11 | 0,227 | 1  |
| 216168   | 50              | 13 | 0,232 | 1  |
| 216166   | 35              | 13 | 0,234 | 1  |
| 216170   | 70              | 13 | 0,111 | 1  |
| 216172   | 95              | 13 | 0,230 | 1  |
| 216174   | 120             | 20 | 0,247 | 1  |
| 216176   | 150             | 20 | 0,235 | 1  |
| 216178   | 185             | 8  | 0,190 | 1  |
| 216180   | 240             | 8  | 0,179 | 1  |
| 216182   | 300             | 8  | 0,126 | 1  |

## Crimping dies

for rounding of square connectors

**400-C12**



| Art. no. | mm <sup>2</sup> | sm  | se  | kg    | PU |
|----------|-----------------|-----|-----|-------|----|
| 216088   | 50              | 50  | 70  | 0,518 | 1  |
| 216090   | 70              | 70  | 95  | 0,505 | 1  |
| 216092   | 95              | 95  | 120 | 0,489 | 1  |
| 216094   | 120             | 120 | 150 | 0,474 | 1  |
| 216096   | 150             | 150 | 185 | 0,463 | 1  |
| 216098   | 185             | 185 | 240 | 0,441 | 1  |
| 216100   | 240             | 240 | 300 | 0,406 | 1  |

# Dies

## Crimping dies



for end sleeves and compacted conductors, **wave form**



**400-C12**



| Art. no. | mm <sup>2</sup> | PW | kg    | PU |
|----------|-----------------|----|-------|----|
| 216112   | 50              | 26 | 0,194 | 1  |
| 216114   | 70              | 26 | 0,200 | 1  |
| 216116   | 95              | 26 | 0,188 | 1  |
| 216118   | 120             | 26 | 0,200 | 1  |
| 216120   | 150             | 26 | 0,200 | 1  |
| 216122   | 185             | 26 | 0,200 | 1  |
| 216123   | 240             | 26 | 0,200 | 1  |

## Crimping dies



for insulated tube terminals, **oval pressing**



**400-C12**



| Art. no. | mm <sup>2</sup> | PW | kg    | PU |
|----------|-----------------|----|-------|----|
| 216126   | 10              | 5  | 0,200 | 1  |
| 216128   | 16              | 5  | 0,200 | 1  |
| 216130   | 25              | 5  | 0,220 | 1  |
| 216132   | 35              | 5  | 0,218 | 1  |
| 216134   | 50              | 5  | 0,200 | 1  |
| 216136   | 70              | 5  | 0,200 | 1  |
| 216138   | 95              | 5  | 0,200 | 1  |
| 216140   | 120             | 5  | 0,200 | 1  |
| 216142   | 150             | 5  | 0,200 | 1  |

## Crimping dies



C-connectors, **oval pressing**

**400-C12**



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 216148   | 16 - 25         | 0,218 | 1  |
| 216150   | 35              | 0,208 | 1  |
| 216152   | 50 - 70         | 0,260 | 1  |
| 216154   | 95              | 0,217 | 1  |
| 216156   | 120             | 0,261 | 1  |

## Pressing inserts „Deep Indend“ (AH-12/KH-12/HH-12)



for conduit terminals and connectors, **thorn pressing**



| Art. no. | mm <sup>2</sup> |            | kg    | PU |
|----------|-----------------|------------|-------|----|
| 216552   | 50 - 70         | cable lugs | 0,211 | 1  |
| 216554   | 95 - 185        | cable lugs | 0,211 | 1  |
| 216556   | 240             | cable lugs | 0,211 | 1  |
| 216562   | 50 - 70         | connectors | 0,211 | 1  |
| 216564   | 95 - 185        | connectors | 0,211 | 1  |
| 216566   | 240             | connectors | 0,211 | 1  |

## Adapter pressing thorn



| Art. no. | size  | kg    | PU |
|----------|-------|-------|----|
| 216570   | 1 - 4 | 0,211 | 1  |

## Pressing thorn



| Art. no. | mm <sup>2</sup> | size | kg    | PU |
|----------|-----------------|------|-------|----|
| 216574   | 50 - 70         | 1    | 0,211 | 1  |
| 216576   | 95 - 185        | 2    | 0,211 | 1  |
| 216578   | 240             | 4    | 0,211 | 1  |

## Holder for „Deep Indend“ pressing inserts



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 216580   | 50 - 185        | 0,211 | 1  |
| 216582   | 240             | 0,211 | 1  |

# Hydraulic crimping tools

## Battery powered crimping tool „SD300-6“

Crimping head can be rotated by 360°, manual return flow after perfect pressure, mandrel shape pressing.

**Extent of supply:** 1 crimping tool, 1 charger, 1 battery, 1 strap, in SysCon stacking box „SysCon M“ 220372.

- Pressing force in kN: 60
- Working pressure in bar: 700
- Pressing width: thorn
- Cable lugs: standard Cu 16-300
- Connectors: standard Cu 16-120
- Pressing time, battery-operated in sec.: 6-12
- Battery charging time in min.: 30
- Battery type: Li-Ion, 18 V, 1,5 Ah
- Weight in kg: 2,4
- Weight of set in kg: 7,9



| Art. no. | mm <sup>2</sup> | dimension   | kg    | PU |
|----------|-----------------|-------------|-------|----|
| 216663   | 16 - 300        | 443 x 75 mm | 7,900 | 1  |

## Battery powered crimping tool „SD300-6M“ Sensor

Technical data and scope of delivery, see 216663.

With the different colours of the sensor LED, it shows whether the pressing has been completed successfully or which errors have occurred:

- Light is green: Pressing completed as standard, motor stopped.
- Light is orange: Battery voltage not sufficient
- Light is red: Pressing interrupted before completed

The device also has 1 white LED designed to illuminate the working area.



| Art. no. | mm <sup>2</sup> | dimension   | kg    | PU |
|----------|-----------------|-------------|-------|----|
| 216663/M | 16 - 300        | 443 x 75 mm | 7,900 | 1  |

**Test pin and gauge, see page 70**

## Hydraulic hand pliers „HD300-6“

Crimping head can be rotated by 360°, manual return after completed pressing, light and compact construction in black plastic case.

- Pressing force in kN: 60
- Working pressure in bar: 700
- Cable lugs: standard Cu 16-300
- Connectors: standard Cu 16-120
- Dual-piston pump
- Weight in kg: 5,0
- Weight of set in kg: 6,5

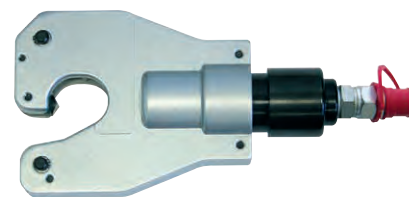


| Art. no. | mm <sup>2</sup> | dimension         | kg    | PU |
|----------|-----------------|-------------------|-------|----|
| 216660   | 16 - 300        | 570 x 160 x 60 mm | 6,500 | 1  |

## Crimping headstock „KD300-6“

in plastic case.

- Pressing force in kN: 60
- Working pressure in bar: 700
- Cable lugs: standard Cu 16-300
- Connectors: standard Cu 16-120
- Quick coupling
- Weight in kg: 2,8
- Weight of set in kg: 3,8



| Art. no. | mm <sup>2</sup> | dimension         | kg    | PU |
|----------|-----------------|-------------------|-------|----|
| 216665   | 16 - 300        | 375 x 343 x 75 mm | 3,800 | 1  |

Hydraulic 4-thorn pressing tool for pressing ordinary conduit terminals and connectors, wide pressing. Reliable, robust, hydraulic pressing tool. The solution for your tough jobs!



- Tool adjusts automatically to the conductor cross-section being pressed
- Guaranteed DIN suitable connection
- No need to purchase further pressing inserts
- No need to change insert for each conductor cross-section
- Ideally suited for pressing extremely flexible finest-wired conductors of the cable classes 5 & 6
- Ideally suited to pressing of compacted conductors (no sleeve, no special cable shoe)
- Test thorn and guide for fast, simple, optical pressing pressure control

Note:  
DIN pressing cable shoes must be processed in accordance with

**haupa**<sup>®</sup>

**...convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Hydraulic crimping tools

## Battery powered crimping tool „SD400-6“

Crimping head can be rotated by 360°, manual return flow after perfect pressure, mandrel shape pressing.

**Extent of supply:** 1 crimping tool, 1 charger, 1 battery, 1 strap, in SysCon stacking box „SysCon M“ 220372.

- Pressing force in kN: 60
- Working pressure in bar: 700
- Head can be opened
- Cable lugs: standard Cu 25-400
- Connectors: standard Cu 25-400
- Pressing time, battery-operated in sec.: 6-12
- Battery charging time in min.: 30
- Battery type: Li-Ion, 18 V, 1,5 Ah
- Weight in kg: 2,4
- Weight of set in kg: 7,9



|                 |                 |             |         |                  |        |
|-----------------|-----------------|-------------|---------|------------------|--------|
|                 |                 |             |         |                  |        |
| 25-400 standard | 25-400 standard |             | 30 min. | LI-ION 18V 1,5Ah | SysCon |
| <b>60 kN</b>    | <b>700 bar</b>  | <b>360°</b> |         |                  |        |

| Art. no. | mm <sup>2</sup> | dimension   | kg    | PU |
|----------|-----------------|-------------|-------|----|
| 216667   | 25-400          | 455 x 75 mm | 7,900 | 1  |

## Battery powered crimping tool „SD400-6M“

**Sensor**

Technical data and scope of delivery, see 216667.

With the different colours of the sensor LED, it shows whether the pressing has been completed successfully or which errors have occurred:

- Light is green: Pressing completed as standard, motor stopped.
- Light is orange: Battery voltage not sufficient
- Light is red: Pressing interrupted before completed

The device also has 1 white LED designed to illuminate the working area.



|                 |                 |             |         |                  |        |        |                |
|-----------------|-----------------|-------------|---------|------------------|--------|--------|----------------|
|                 |                 |             |         |                  |        |        |                |
| 25-400 standard | 25-400 standard |             | 30 min. | LI-ION 18V 1,5Ah | Sensor | SysCon | Video 216667/M |
| <b>60 kN</b>    | <b>700 bar</b>  | <b>360°</b> |         |                  |        |        |                |

| Art. no. | mm <sup>2</sup> | dimension   | kg    | PU |
|----------|-----------------|-------------|-------|----|
| 216667/M | 25-400          | 455 x 75 mm | 7,900 | 1  |

## Test pin

Test pin for hydraulic four mandrel pressing tools



Video 216660

| Art. no. | kg    | PU |
|----------|-------|----|
| 216660/B | 0,566 | 1  |

## Hydraulic hand pliers „HD400-6“

Crimping head can be rotated by 360°, manual return after completed pressing, light and compact construction in black plastic case.

- Pressing force in kN: 60
- Working pressure in bar: 700
- Head can be opened
- Cable lugs: standard Cu 25-400
- Connectors: standard Cu 25-400
- Dual-piston pump
- Weight in kg: 5,2
- Weight of set in kg: 6,7



|                 |                 |             |
|-----------------|-----------------|-------------|
|                 |                 |             |
| 25-400 standard | 25-400 standard |             |
| <b>60 kN</b>    | <b>700 bar</b>  | <b>360°</b> |

| Art. no. | mm <sup>2</sup> | dimension         | kg    | PU |
|----------|-----------------|-------------------|-------|----|
| 216661   | 25-400          | 585 x 160 x 75 mm | 6,700 | 1  |

## Crimping headstock „HKD400“

in plastic case.

- Pressing force in kN: 60
- Working pressure in bar: 700
- Head can be opened
- Cable lugs: standard Cu 25-400
- Connectors: standard Cu 25-400
- Quick coupling
- Weight in kg: 3
- Weight of set in kg: 4



|                 |                 |  |
|-----------------|-----------------|--|
|                 |                 |  |
| 25-400 standard | 25-400 standard |  |
| <b>60 kN</b>    | <b>700 bar</b>  |  |

| Art. no. | mm <sup>2</sup> | dimension         | kg    | PU |
|----------|-----------------|-------------------|-------|----|
| 216666   | 400             | 375 x 343 x 75 mm | 4,000 | 1  |

## Template for four mandrel pressing

Template for hydraulic four mandrel pressing tools



| Art. no. | kg    | PU |
|----------|-------|----|
| 216660/L | 0,566 | 1  |



## Hydraulic crimping tools

### Battery powered crimping tool „SDE240-6“

Crimping head can be rotated by 180°, with fast opening, return manually once compressing is complete, no inserts required, mandrel shape pressing.

**Extent of supply:** 1 crimping tool, 1 charger, 1 battery, 1 strap, in SysCon stacking box.

- Pressing force in kN: 60
- Working pressure in bar: 700
- Pressing width: thorn
- Cable lugs: standard Cu 10-240
- Connectors: standard Cu 10-240
- Pressing time, battery-operated in sec.: 6-12
- Battery charging time in min.: 30
- Battery type: Li-Ion, 18 V, 1,5 Ah
- Weight in kg: 2,4
- Weight of set in kg: 7,9



| Art. no. | mm <sup>2</sup> | dimension   | kg    | PU |
|----------|-----------------|-------------|-------|----|
| 216669   | 10 - 240        | 455 x 75 mm | 7,900 | 1  |

### Battery powered crimping tool „SDE240-6M“ **Sensor**

Technical data and scope of delivery, see 216669.

With the different colours of the sensor LED, it shows whether the pressing has been completed successfully or which errors have occurred:

- Light is green: Pressing completed as standard, motor stopped.
- Light is orange: Battery voltage not sufficient
- Light is red: Pressing interrupted before completed

The device also has 1 white LED designed to illuminate the working area.



| Art. no. | mm <sup>2</sup> | dimension   | kg    | PU |
|----------|-----------------|-------------|-------|----|
| 216669/M | 10 - 240        | 455 x 75 mm | 7,900 | 1  |



## Accessories

### Battery Li-Ion 18 V

for all 18 Volt Li-Ion battery tools



| Art. no. | kg    | PU |
|----------|-------|----|
| 215503   | 0,859 | 1  |

### Battery Li-Ion 18 V, 3 Ah

for all 18 Volt Li-Ion battery tools



| Art. no. | kg    | PU |
|----------|-------|----|
| 215511   | 0,859 | 1  |

### \* Quick charger Li-Ion 18 V

for all 18 Volt Li-Ion battery tools



| Art. no. | kg    | PU |
|----------|-------|----|
| 215513   | 0,819 | 1  |

### Hydraulic oil

0,5 l



| Art. no. | kg    | PU |
|----------|-------|----|
| 216254   | 1,000 | 1  |

\* Only HAUPA batteries can be charged.



**haupa**<sup>®</sup>

...convincing solutions

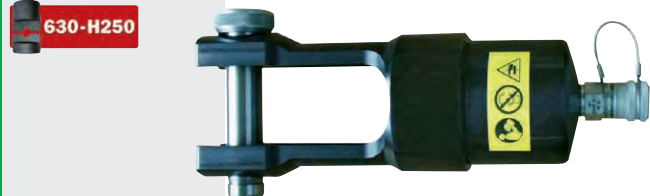
Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Hydraulic crimping headstocks

## Hydraulic crimping headstock „KH-25“

for uninsulated terminals 95 - 630 mm<sup>2</sup>, pressure 250 kN, for crimping dies hexagon shape according to DIN 48083 page 3 and 4.

- Pressing force in kN: 250
- Working pressure in bar: 700
- Opening/ Hub: Pin
- Pressing width: wide
- Pressing area Cu/Al: 95-630
- Dual-piston pump
- Quick coupling
- Weight in kg: 6,4
- Weight of set in kg: 9



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 216236   | 185 | 95 - 630        | 9,000 | 1  |

## Crimping dies DIN-connection, Cu/Al

hexagon pressing dies according DIN 48083 page 4 suitable for DIN-connection material according to DIN. Cu ze (free of tensile)



| Art. no. | mm <sup>2</sup> | Al     | ld. | kg    | PU |
|----------|-----------------|--------|-----|-------|----|
| 212372   | 95              | 70     | 18  | 1,340 | 1  |
| 212376   | 120             | -      | 20  | 1,340 | 1  |
| 212380   | 150             | 95-120 | 22  | 1,335 | 1  |
| 212382   | 185             | 150    | 25  | 1,325 | 1  |
| 212384   | 240             | 185    | 28  | 1,250 | 1  |
| 212388   | 300             | 240    | 32  | 1,275 | 1  |
| 212390   | 300             | 300    | 34  | 1,180 | 1  |
| 212392   | 400             | 400    | 38  | 1,160 | 1  |
| 212394   | -               | -      | 42  | 1,110 | 1  |
| 212396   | 625             | 500    | 44  | 1,100 | 1  |

## Crimping dies, standard, Cu

standard, hexagonal pressing

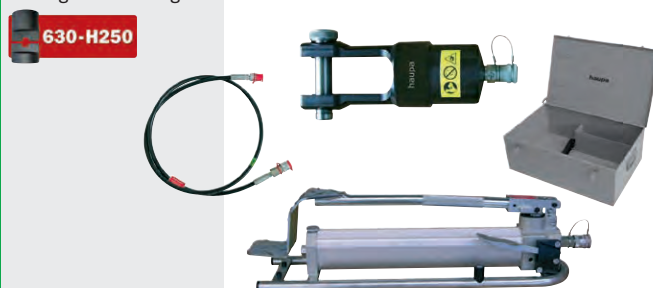


| Art. no. | Cu  | kg    | PU |
|----------|-----|-------|----|
| 212580   | 95  | 1,340 | 1  |
| 212581   | 120 | 1,340 | 1  |
| 212582   | 150 | 1,335 | 1  |
| 212583   | 185 | 1,325 | 1  |
| 212584   | 240 | 1,250 | 1  |
| 212585   | 300 | 1,275 | 1  |
| 212586   | 400 | 1,160 | 1  |
| 212587   | 500 | 1,110 | 1  |
| 212588   | 625 | 1,100 | 1  |

## Hydraulic crimping headstock set

**Content:** Art. No. 216236 Hydraulic crimping headstock, Art. No. 216238 Hydraulic high-pressure hose, 2 m, Art. No. 216348 Hydraulic foot pump, Art. No. 216251 Carrycase.

- Pressing force in kN: 250
- Working pressure in bar: 700
- Opening/ Hub: Pin
- Pressing width: wide
- Pressing area Cu/Al: 95-630
- Dual-piston pump
- Quick coupling
- Weight in kg: 18,4
- Weight of set in kg: 21

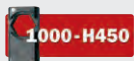


| Art. no. | mm <sup>2</sup> | kg     | PU |
|----------|-----------------|--------|----|
| 216250   | 95 - 630        | 21,000 | 1  |

## Hydraulic crimping headstock + cylinder „KH-45“

for terminals and butt connectors to 1000 mm<sup>2</sup>, together with an adapter it is possible to use all other crimping dies of the other crimping headstock, low weight in comparison to the crimping range, excellent price relation, snap head, extensionable system to bend and punch electric bus bars socket-joint connection.

- Pressing force in kN: 450
- Working pressure in bar: 700
- Pressing width: wide
- Pressing area Cu/Al: 120-1000
- Quick coupling
- Weight of set in kg: 13,5



| Art. no. | TL  | mm <sup>2</sup> | kg     | PU |
|----------|-----|-----------------|--------|----|
| 216355   | 185 | 120 - 1000      | 13,500 | 1  |

## Crimping dies, standard

standard, hexagon pressing



for crimping terminals and connectors DIN 46235 and for Al terminals and Al connectors

| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 216304   | 120             | 2,635 | 1  |
| 216306   | 150             | 2,600 | 1  |
| 216308   | 185             | 2,620 | 1  |
| 216310   | 240             | 2,580 | 1  |
| 216312   | 300             | 2,580 | 1  |
| 216314   | 400             | 2,235 | 1  |
| 216316   | 500             | 2,300 | 1  |
| 216318   | 625             | 2,300 | 1  |

## Crimping dies, DIN

DIN, hexagon pressing for terminals and connectors DIN 46235 and for Al terminals and Al connectors



| Art. no. | mm <sup>2</sup> | Al     | ld. | kg    | PU |
|----------|-----------------|--------|-----|-------|----|
| 216320   | 120             | -      | 20  | 2,635 | 1  |
| 216322   | 150             | 95-120 | 22  | 2,600 | 1  |
| 216324   | 185             | 150    | 25  | 2,620 | 1  |
| 216326   | 240             | 185    | 28  | 2,580 | 1  |
| 216328   | 300             | 240    | 32  | 2,580 | 1  |
| 216330   | 300             | 300    | 34  | 2,380 | 1  |
| 216332   | 400             | -      | 38  | 2,325 | 1  |
| 216334   | 500             | -      | 42  | 2,300 | 1  |
| 216336   | 625             | -      | 44  | 2,300 | 1  |
| 216338   | 800             | -      | 52  | 2,300 | 1  |
| 216340   | 1000            | -      | 58  | 2,040 | 1  |

**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



## Pumps for hydraulic crimping headstocks

### Hydraulic foot pump „F-700“

material: aluminium alloy, light design, twin-cam pump, automatic switching from closing (ca. 25 ccm/Hub) to working feed rate (ca. 2.5 ccm/Hub), security valve, max. working pressure 700 bar (+ 10/- 30 bar), without hose, **with quick coupling**



| Art. no. | NP  | kg     | PU |
|----------|-----|--------|----|
| 216348   | 700 | 12,000 | 1  |

### Hydraulic high-pressure hose

steel-reinforced with rapid coupling to foot pump art. 216348 and electro-hydraulic pump art. 216352



| Art. no. | m | kg    | PU |
|----------|---|-------|----|
| 216238   | 2 | 0,950 | 1  |
| 216240   | 3 | 1,100 | 1  |
| 216242   | 4 | 1,600 | 1  |
| 216244   | 5 | 2,000 | 1  |

### Electro-hydraulic pump „PN700 I“

electric foot switch, completely self-acting, also the release of the dies at the end of the operation, 2 m high pressure tube and hydraulic connectors, for industrial uses, where a high level of production is needed, 230 volt, with foot switch control, pump for working outside



| Art. no. | NP            | kg     | PU |
|----------|---------------|--------|----|
| 216352   | 700 230V      | 20,000 | 1  |
| 216358   | 700 Akku/230V | 20,000 | 1  |

### Battery-hydraulic pump „PA-700“

**Sensor**

2 stage hydraulics, manual control switch, manual return flow after perfect pressure, LED for battery control, 1 quick charger, 1 battery Li-Ion, 3 Ah, carrying belt, max. operating pressure: 700 bar with 1,8 m hose, **with quick coupling**.

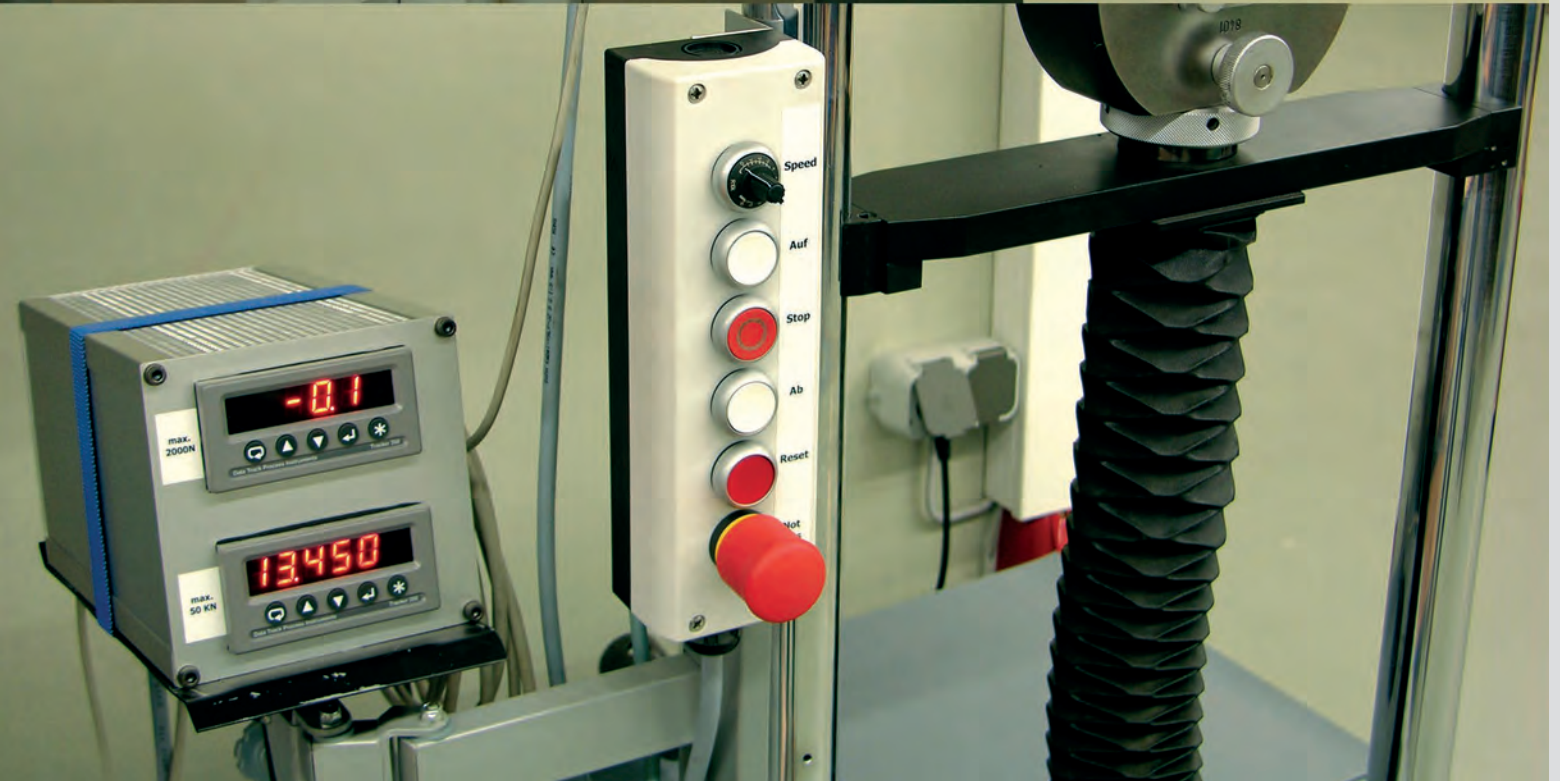
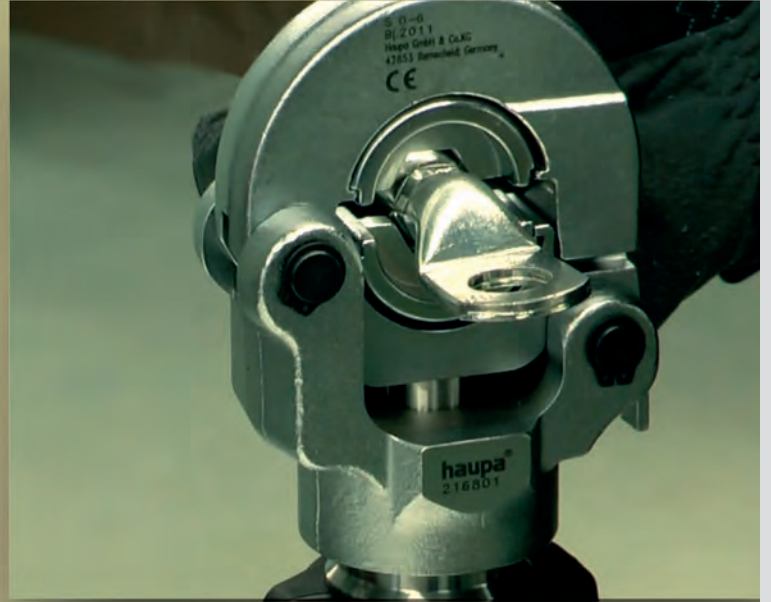
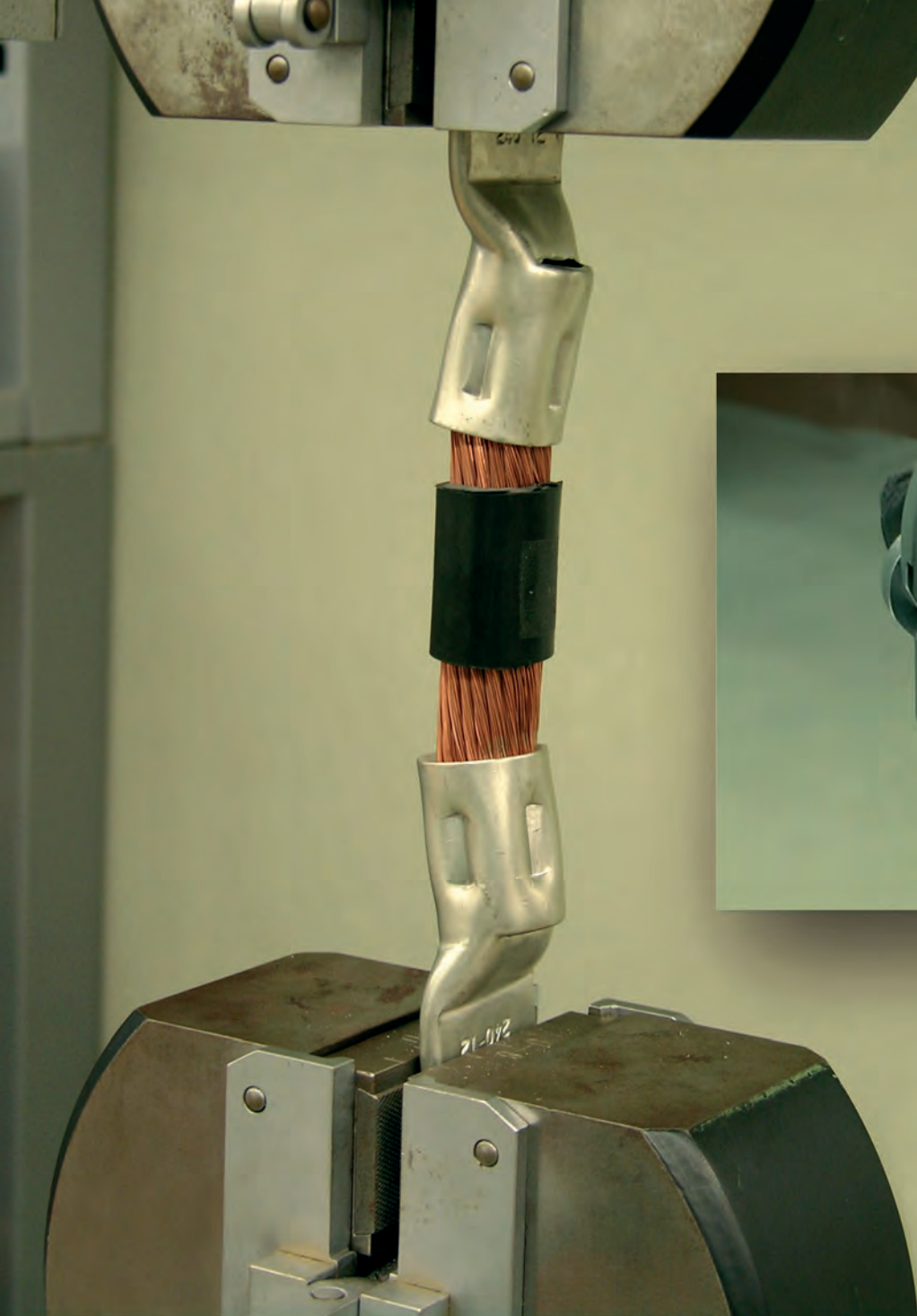
With the different colours of the sensor LED, it shows whether the pressing has been completed successfully or which errors have occurred:

- Light is green: Pressing completed as standard, motor stopped.
- Light is orange: Battery voltage not sufficient
- Light is red: Pressing interrupted before completed

### Cutting/Pressing/Punching














| Art. no. | NP            | kg    | PU |
|----------|---------------|-------|----|
| 216357   | 700 Bat./230V | 8,000 | 1  |



# 6 tonne pressing tools

| Tool | Article No. | Type     | Insert range | Pressing width | Sensor technology | Pressing width thorn | Pressing force kN | Working pressure in bar | Head can be opened | Quick coupling | HUB/ opening mm | Pressing range for cable lugs |        |        |        |                |                     | Pressing range for connectors |        |        |        |                |                     | Dual piston pump | kg     | Set kg            | Battery | Pressing time in sec. |
|------|-------------|----------|--------------|----------------|-------------------|----------------------|-------------------|-------------------------|--------------------|----------------|-----------------|-------------------------------|--------|--------|--------|----------------|---------------------|-------------------------------|--------|--------|--------|----------------|---------------------|------------------|--------|-------------------|---------|-----------------------|
|      |             |          |              |                |                   |                      |                   |                         |                    |                |                 | Cu                            | Cu DIN | F-Type | Al DIN | Cu standard PL | CU standard light T | Cu                            | Cu DIN | F-Type | Al DIN | Cu standard PL | Cu standard light M |                  |        |                   |         |                       |
|      | 215765      | HHc-6    | 185 H6       | slim           | -                 | -                    | 60                | 700                     | ●                  | -              | 17              | 10-240                        | 10-185 | -      | 10-185 | 10-185         | 10-185              | 10-185                        | 10-185 | 10-185 | 10-185 | 10-185         | -                   | 3,000            | 7,900  | -                 | -       |                       |
|      | 215770      | SHc-6    | 185 H6       | slim           | -                 | -                    | 60                | 700                     | ●                  | -              | 17              | 10-240                        | 10-185 | -      | 10-240 | 10-240         | 10-240              | 10-240                        | 10-240 | 10-240 | 10-240 | 10-240         | -                   | 2,400            | 7,900  | Li-Ion 18V 1,5 Ah | 5       |                       |
|      | 215770/M    | SHc-6    | 185 H6       | slim           | ●                 | -                    | 60                | 700                     | ●                  | -              | 17              | 10-240                        | 10-185 | -      | 10-240 | 10-240         | 10-240              | 10-240                        | 10-240 | 10-240 | 10-240 | 10-240         | -                   | 2,400            | 7,900  | Li-Ion 18V 1,5 Ah | 5       |                       |
|      | 215800      | HH-6     | 240 H6       | slim           | -                 | -                    | 60                | 700                     | ●                  | -              | 17              | 10-240                        | 10-240 | -      | 10-240 | 10-240         | 10-240              | 10-240                        | 10-240 | 10-240 | 10-240 | 10-240         | ●                   | 3,000            | 4,500  | -                 | -       |                       |
|      | 215881      | SH-6     | 240 H6       | slim           | -                 | -                    | 60                | 700                     | ●                  | -              | 17              | 10-240                        | 10-240 | -      | 10-240 | 10-240         | 10-240              | 10-240                        | 10-240 | 10-240 | 10-240 | 10-240         | -                   | 2,400            | 7,900  | Li-Ion 18V 1,5 Ah | 5       |                       |
|      | 215881/M    | SH-6     | 240 H6       | slim           | ●                 | -                    | 60                | 700                     | ●                  | -              | 17              | 10-240                        | 10-240 | -      | 10-240 | 10-240         | 10-240              | 10-240                        | 10-240 | 10-240 | 10-240 | 10-240         | -                   | 2,400            | 7,900  | Li-Ion 18V 1,5 Ah | 5       |                       |
|      | 216807      | KO-6     | 300 O6       | slim           | -                 | -                    | 60                | 700                     | ●                  | ●              | 17              | 6-300                         | 6-300  | 6-240  | 6-300  | 6-300          | 6-300               | 6-300                         | 6-300  | 6-240  | 6-300  | 6-300          | -                   | 3,200            | 4,200  | -                 | -       |                       |
|      | 216804      | MO-6     | 300 O6       | slim           | -                 | -                    | 60                | 700                     | ●                  | -              | 17              | 6-300                         | 6-300  | 6-240  | 6-300  | 6-300          | 6-300               | 6-300                         | 6-240  | 6-300  | 6-300  | 6-300          | -                   | 8,100            | 11,800 | -                 | -       |                       |
|      | 215802      | HO-6     | 300 O6       | slim           | -                 | -                    | 60                | 700                     | ●                  | -              | 17              | 6-300                         | 6-300  | 6-240  | 6-300  | 6-300          | 6-300               | 6-300                         | 6-240  | 6-300  | 6-300  | 6-300          | ●                   | 3,500            | 5,000  | -                 | -       |                       |
|      | 215801      | SO-6     | 300 O6       | slim           | -                 | -                    | 60                | 700                     | ●                  | -              | 17              | 6-300                         | 6-300  | 6-240  | 6-300  | 6-300          | 6-300               | 6-300                         | 6-240  | 6-300  | 6-300  | 6-300          | -                   | 2,400            | 7,900  | Li-Ion 18V 1,5 Ah | 5       |                       |
|      | 215801/M    | SO-6     | 300 O6       | slim           | ●                 | -                    | 60                | 700                     | ●                  | -              | 17              | 6-300                         | 6-300  | 6-240  | 6-300  | 6-300          | 6-300               | 6-300                         | 6-240  | 6-300  | 6-300  | 6-300          | -                   | 2,400            | 7,900  | Li-Ion 18V 1,5 Ah | 5       |                       |
|      | 216800/M    | AO-6     | 300 O6       | slim           | ●                 | -                    | 60                | 700                     | ●                  | -              | 17              | 6-300                         | 6-300  | 6-240  | 6-300  | 6-300          | 6-300               | 6-300                         | 6-240  | 6-300  | 6-300  | 6-300          | ●                   | 4,500            | 9,500  | Li-Ion 18V 3 Ah   | 4       |                       |
|      | 216665      | KD300-6  |              | wide           | -                 | ●                    | 60                | 700                     | -                  | ●              | -               | 16-300                        | 16-240 | -      | 16-300 | 16-300         | 16-120              | 16-120                        | 16-95  | 16-120 | 16-120 | 16-120         | -                   | 2,800            | 3,800  | -                 | -       |                       |
|      | 216660      | HD300-6  |              | wide           | -                 | ●                    | 60                | 700                     | -                  | -              | -               | 16-300                        | 16-240 | -      | 16-300 | 16-300         | 16-120              | 16-120                        | 16-95  | 16-120 | 16-120 | 16-120         | ●                   | 5,000            | 6,500  | -                 | -       |                       |
|      | 216663/M    | AD300-6  |              | wide           | ●                 | ●                    | 60                | 700                     | -                  | -              | -               | 16-300                        | 16-240 | -      | 16-300 | 16-300         | 16-120              | 16-120                        | 16-95  | 16-120 | 16-120 | 16-120         | -                   | 4,500            | 9,500  | Li-Ion 18V 1,5 Ah | 6       |                       |
|      | 216666      | KD400-6  |              | wide           | -                 | ●                    | 60                | 700                     | ●                  | ●              | -               | 25-400                        | 25-400 | -      | 25-400 | 25-400         | 25-400              | 25-400                        | 25-400 | 25-400 | 25-400 | 25-400         | -                   | 3,000            | 4,000  | -                 | -       |                       |
|      | 216661      | HD400-6  |              | wide           | -                 | ●                    | 60                | 700                     | ●                  | -              | -               | 25-400                        | 25-400 | -      | 25-400 | 25-400         | 25-400              | 25-400                        | 25-400 | 25-400 | 25-400 | 25-400         | ●                   | 5,200            | 6,700  | -                 | -       |                       |
|      | 216667/M    | AD400-6  |              | wide           | ●                 | ●                    | 60                | 700                     | ●                  | -              | -               | 25-400                        | 25-400 | -      | 25-400 | 25-400         | 25-400              | 25-400                        | 25-400 | 25-400 | 25-400 | 25-400         | -                   | 4,800            | 9,800  | Li-Ion 18V 1,5 Ah | 6       |                       |
|      | 216669/M    | SDE240-6 |              | wide           | ●                 | ●                    | 60                | 700                     | ●                  | -              | -               | 6-240                         | 6-240  | -      | 6-240  | 6-240          | 6-240               | 6-240                         | 6-240  | 6-240  | 6-240  | 6-240          | -                   | 2,900            | 7,900  | Li-Ion 18V 1,5 Ah | 5       |                       |

# 12 tonne pressing tools

| Tool  | Article No. | Type    | Insert range | Pressing width | Sensor technology | Pressing force kN | Working pressure in bar | Head can be opened | Quick coupling | HUB/ opening mm | Pressing range for cable lugs |            |            |          |                |                     |           |           |            |           | Pressing range for connectors |                     |    |        |        |                   |                |                     |          |          | Dual piston pump | kg | Set kg | Battery | Pressing time in sec. |
|---|-------------|---------|--------------|----------------|-------------------|-------------------|-------------------------|--------------------|----------------|-----------------|-------------------------------|------------|------------|----------|----------------|---------------------|-----------|-----------|------------|-----------|-------------------------------|---------------------|----|--------|--------|-------------------|----------------|---------------------|----------|----------|------------------|----|--------|---------|-----------------------|
|   |             |         |              |                |                   |                   |                         |                    |                |                 | Cu                            | Cu DIN     | F-type     | Al DIN   | CU standard PL | CU standard light T | Cu        | Cu DIN    | F-type     | Al DIN    | Cu standard PL                | Cu standard light M | Cu | Cu DIN | F-type | Al DIN            | Cu standard PL | Cu standard light M |          |          |                  |    |        |         |                       |
|   |             |         |              |                |                   |                   |                         |                    |                |                 |                               |            |            |          |                |                     |           |           |            |           |                               |                     |    |        |        |                   |                |                     | 10 - 400 | 10 - 300 |                  |    |        |         |                       |
|    | 216004      | KC25-12 | 400 C12      | wide           | -                 | 120               | 700                     | -                  | ●              | 25              | 10 - 400                      | 10 - 300   | 10 - 300   | 16 - 240 | 10 - 400       | 10 - 300            | 10 - 185  | 10 - 150  | 10 - 150   | 16 - 120  | 10 - 185                      | 10 - 150            | -  | 3,600  | 4,600  | -                 | -              |                     |          |          |                  |    |        |         |                       |
|    | 216124      | HC25-12 | 400 C12      | wide           | -                 | 120               | 700                     | -                  | -              | 25              | 10 - 400                      | 10 - 300   | 10 - 300   | 16 - 240 | 10 - 400       | 10 - 300            | 10 - 185  | 10 - 150  | 10 - 150   | 16 - 120  | 10 - 185                      | 10 - 150            | -  | 6,200  | 7,700  | -                 | -              |                     |          |          |                  |    |        |         |                       |
|    | 216601      | AC25-12 | 400 C12      | wide           | ●                 | 120               | 700                     | -                  | -              | 25              | 10 - 400                      | 10 - 300   | 10 - 300   | 16 - 240 | 10 - 400       | 10 - 300            | 10 - 185  | 10 - 150  | 10 - 150   | 16 - 120  | 10 - 185                      | 10 - 150            | -  | 7,000  | 12,000 | Li-Ion 18V 1,5 Ah | 6              |                     |          |          |                  |    |        |         |                       |
|    | 216005      | KH42-12 | 400 C12      | wide           | -                 | 120               | 700                     | -                  | ●              | 42              | 10 - 400                      | 10 - 300   | 10 - 300   | 16 - 240 | 10 - 400       | 10 - 300            | 10 - 400  | 10 - 400  | 10 - 300   | 16 - 240  | 10 - 400                      | 10 - 300            | -  | 5,300  | 6,300  | -                 | -              |                     |          |          |                  |    |        |         |                       |
|    | 216125      | HC42-12 | 400 C12      | wide           | -                 | 120               | 700                     | -                  | -              | 42              | 10 - 400                      | 10 - 300   | 10 - 300   | 16 - 240 | 10 - 400       | 10 - 300            | 10 - 400  | 10 - 400  | 10 - 300   | 16 - 240  | 10 - 400                      | 10 - 300            | -  | 8,200  | 9,700  | -                 | -              |                     |          |          |                  |    |        |         |                       |
|    | 216622      | AC42-12 | 400 C12      | wide           | ●                 | 120               | 700                     | -                  | -              | 42              | 10 - 400                      | 10 - 300   | 10 - 300   | 16 - 240 | 10 - 400       | 10 - 300            | 10 - 400  | 10 - 400  | 10 - 300   | 16 - 240  | 10 - 400                      | 10 - 300            | -  | 8,500  | 13,000 | Li-Ion 18V 1,5 Ah | 7              |                     |          |          |                  |    |        |         |                       |
|  | 215980      | KH-12   | 400 C12      | wide           | -                 | 120               | 700                     | ●                  | ●              | 20              | 10 - 400                      | 10 - 300   | 10 - 300   | 16 - 240 | 10 - 400       | 10 - 300            | 10 - 400  | 10 - 400  | 10 - 300   | 16 - 240  | 10 - 400                      | 10 - 300            | ●  | 4,000  | 5,000  | -                 | -              |                     |          |          |                  |    |        |         |                       |
|  | 215946      | HH-12   | 400 C12      | wide           | -                 | 120               | 700                     | ●                  | -              | 20              | 10 - 400                      | 10 - 300   | 10 - 300   | 16 - 240 | 10 - 400       | 10 - 300            | 10 - 400  | 10 - 400  | 10 - 300   | 16 - 240  | 10 - 400                      | 10 - 300            | ●  | 6,000  | 7,500  | -                 | -              |                     |          |          |                  |    |        |         |                       |
|  | 216603      | AH-12   | 400 C12      | wide           | ●                 | 120               | 700                     | ●                  | -              | 20              | 10 - 400                      | 10 - 300   | 10 - 300   | 16 - 240 | 10 - 400       | 10 - 300            | 10 - 400  | 10 - 400  | 10 - 300   | 16 - 240  | 10 - 400                      | 10 - 300            | ●  | 7,000  | 12,000 | Li-Ion 18V 1,5 Ah | 6              |                     |          |          |                  |    |        |         |                       |
|  | 216236      | KH-25   | 630 - H250   | wide           | -                 | 250               | 700                     | ●                  | ●              | 20              | -                             | -          | -          | 70 - 500 | -              | -                   | -         | -         | -          | 95 - 630  | -                             | -                   | -  | 6,400  | 9,000  | -                 | -              |                     |          |          |                  |    |        |         |                       |
|  | 216355      | KH-45   | 1000 - H450  | wide           | -                 | 450               | 700                     | ●                  | ●              | -               | 120 - 625                     | 120 - 1000 | 120 - 1000 | 95 - 300 | 120 - 625      | 120 - 625           | 120 - 625 | 120 - 625 | 120 - 1000 | 120 - 625 | 120 - 1000                    | 120 - 625           | -  | 10,300 | 13,500 | -                 | -              |                     |          |          |                  |    |        |         |                       |







Hydraulic punching tools



# Hydraulic punching tools

## Electro-hydraulic punching tool „AS-6M“ Sensor

in SysCon stacking box including 1 charger, 1 battery, 1 carry strap, without inserts.

With the different colours of the sensor LED, it shows whether the pressing has been completed successfully or which errors have occurred:

- Light is green: Punching completed as standard, motor stopped.
- Light is orange: Battery voltage not sufficient
- Light is red: Punching interrupted before completed

The device also has 2 white LED designed to illuminate the working area.

**Extent of supply:** 1 hydraulic punch: 1 connecting rod 3/8-24 UNF (article no. 217660), 1 connecting rod 3/4-16 UNF (article no. 217662), 1 adapter (article no. 217664), 1 spacer bushing (article no. 217666), 1 SysCon stacking box.

### Advantages:

- Head can be rotated by 360°
- Flexible aluminium head
- Automatic end switch off
- Non-slip handle area
- Slim and compact construction
- LED to illuminate the area you are working in
- Li-ion technology

### Punching capacity:

Shaped holes 138 x 138 mm (ST37 2.5 mm)  
Round holes 150 mm (ST37 3 mm) / 63 mm (VA 2 mm)

### Technical data:

- Pressing force: 60 kN
- Working pressure: 700 bar
- Battery charge time: 30 minutes
- Battery voltage: 18 V
- Battery capacity: 1,5 Ah
- Weight: 3.64 kg
- Weight of set: 4.7 kg



| Art. no. | dimension   | kg    | PU |
|----------|-------------|-------|----|
| 217600   | 455 x 75 mm | 4,700 | 1  |

## SysCon set metric SysCon

**Content:** 8 punches

- 1 220372 ABS plastic box „SysCon M“ (insert including)
- 1 270600 Electro-hydraulic punching tool „AS-6M“

- 1 217610 M16
- 1 217612 M20
- 1 217614 M25
- 1 217616 M32
- 1 217618 M40
- 1 217620 M50
- 1 217622 M63
- 1 217636 PG16



| Art. no. | kg    | PU |
|----------|-------|----|
| 217600/M | 4,300 | 1  |

## SysCon set PG SysCon

**Content:** 9 punches

- 1 220372 ABS plastic box „SysCon M“ (insert including)
- 1 217600 Electro-hydraulic punching tool „AS-6M“

- 1 217630 PG9
- 1 217632 PG11
- 1 217634 PG13,5
- 1 217636 PG16
- 1 217638 PG21
- 1 217640 PG29
- 1 217642 PG36
- 1 217644 PG42
- 1 217646 PG48



| Art. no.  | kg    | PU |
|-----------|-------|----|
| 217600/PG | 4,300 | 1  |



# Hydraulic punching tools

## Hydraulic hand-punching tool „HS-8“

Punches precise holes with almost no burring. Ideal for fast, frontal punching of control panels.

**Extent of supply:** 1 hydraulic hand punch, 1 connecting rod 3/8-24 UNF (article no. 217660), 1 connecting rod 3/4-16 UNF (article no. 217662), 1 adapter (article no. 217664), 1 spacer bushing (article no. 217666), 1 transport case.

- Punching performance: Steel sheet of up to a maximum of 3 mm
- Pressing force: 80 kN
- Length: 308 mm
- Weight: 2,4 kg
- Weight Set: 3,8 kg



**80  
kN**

| Art. no. | kg    | PU |
|----------|-------|----|
| 217604   | 3,800 | 1  |

## Hydraulic hand-punch-cutter „HS-6“

Punches accurate slugs nearly free of burs. Usable for building and maintaining control boxes, for car retrofitting and for sanitary application.

**Extent of supply:** 1 hydraulic punching tool, 1 rod 3/8-24 UNF (art. 217660), 1 rod 3/4-16 UNF (art. 217662), 1 adapter (art. 217664), 1 sleeve (art. 217666), 1 plastic case with insert.

- Punching capacity: Steel plates up to max. 3 mm
- Pressing force: 60 kN
- Length: 230 mm
- Weight: 2,4 kg
- Weight Set: 3,8 kg



**60  
kN**

| Art. no. | kg    | PU |
|----------|-------|----|
| 217602   | 3,800 | 1  |

## Punching dies, metric

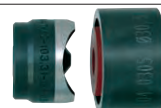
- ST37, 3 mm
- VA 2 mm



| Art. no. | ∅    |        | kg    | PU |
|----------|------|--------|-------|----|
| 217610   | 16,5 | ISO 16 | 0,070 | 1  |
| 217612   | 20,5 | ISO 20 | 0,090 | 1  |
| 217614   | 25,5 | ISO 25 | 0,150 | 1  |
| 217616   | 32,5 | ISO 32 | 0,220 | 1  |
| 217618   | 40,5 | ISO 40 | 0,900 | 1  |
| 217620   | 50,5 | ISO 50 | 0,640 | 1  |
| 217622   | 63,5 | ISO 63 | 0,950 | 1  |

## Punching dies, PG

- ST37, 3 mm
- VA 2 mm



| Art. no. | ∅    |        | kg    | PU |
|----------|------|--------|-------|----|
| 217630   | 15,2 | PG9    | 0,060 | 1  |
| 217632   | 18,6 | PG11   | 0,084 | 1  |
| 217634   | 20,4 | PG13,5 | 0,091 | 1  |
| 217636   | 22,5 | PG16   | 0,120 | 1  |
| 217638   | 28,3 | PG21   | 0,170 | 1  |
| 217640   | 37   | PG29   | 0,330 | 1  |
| 217642   | 47   | PG36   | 0,536 | 1  |
| 217644   | 54   | PG42   | 0,731 | 1  |
| 217646   | 60   | PG48   | 0,896 | 1  |

## Punching dies, square

- ST37, 2,5 mm
- UNF



| Art. no. | height/width | kg    | PU |
|----------|--------------|-------|----|
| 217650   | 46           | 1,862 | 1  |
| 217652   | 68           | 1,500 | 1  |
| 217654   | 92           | 2,000 | 1  |

## Connecting rod

- Art. 217660 - 3/8-24 UNF
- Art. 217662 - 3/4-16 UNF



| Art. no. |   | kg    | PU |
|----------|---|-------|----|
| 217660   | 1 | 0,040 | 1  |
| 217662   | 2 | 0,203 | 1  |

## Adapter

- for connecting rod art. 217660
- UNF



| Art. no. |  | kg    | PU |
|----------|--|-------|----|
| 217664   |  | 0,100 | 1  |

## Spacer bushing



| Art. no. |  | kg    | PU |
|----------|--|-------|----|
| 217666   |  | 0,100 | 1  |



**haupa®**

**...convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Punch and bending centre

## Basic unit

Basic unit to accommodate bending, hole-making, cutting and cranking tools. The processing of lamellar copper rails is possible! Hydraulic tool for connection to a hydraulic pump with 700 bar (10,000 PSI).

The universal tool system is particularly suited for use in workshops and on building sites. Copper and aluminium rails can be processed up to dimension of 12 x 120 mm. The changing of the individual tools is carried out in seconds thanks to the user-friendly construction. The compact construction and light weight enable transportation in any car.

### Bending:

Thanks to an integrated proximity switch a 100% repeat accuracy is achieved. The maximum bending angle is 110°.

### Hole-making:

The height-adjustable table with side stopper makes working easier. Marking out and measuring is not necessary. Holes from 6.5 to 21.0 mm in diameter can be punched.

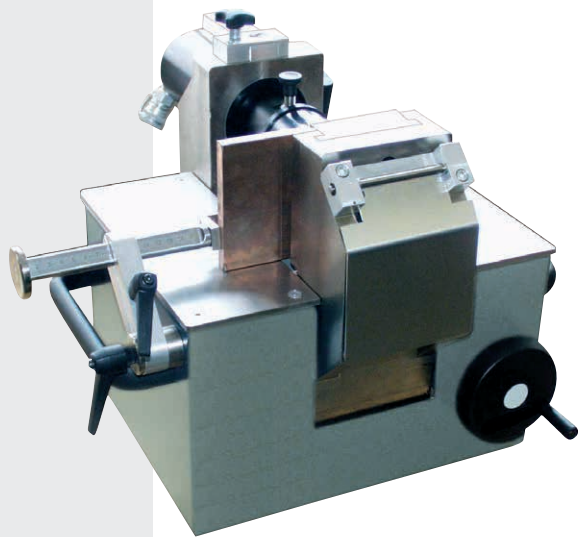
Slotted holes up to 14 x 20 mm. With the hole tool II holes can be made in lamellar copper rails and grounding bands.

### Cutting:

Our cutting blade geometry enables clean and burr-free cutting.

### Cranking:

The offsetting (stepped bending) by a material thickness is carried out in a single process.



| Art. no. | kg     | PU |
|----------|--------|----|
| 216770   | 51,000 | 1  |

## Hole-making tools

For punching round and slotted holes.

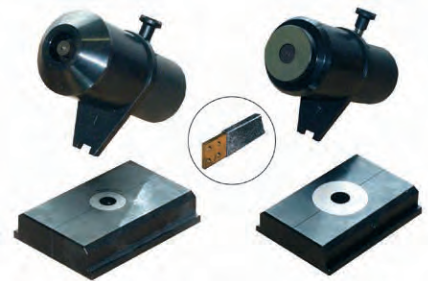
- Maximum material thickness: 12 mm
- Maximum diameter: 21 mm
- Maximum slotted hole: 17 x 20 mm

### 216776:

Hole tool for solid copper and aluminium rails

### 216777:

Hole-making tool for solid copper and aluminium rails as well as for laminated copper rails and grounding bands



| Art. no. | kg    | PU |
|----------|-------|----|
| 216776   | 4,300 | 1  |
| 216777   | 4,300 | 1  |

## Hole inserts for round holes

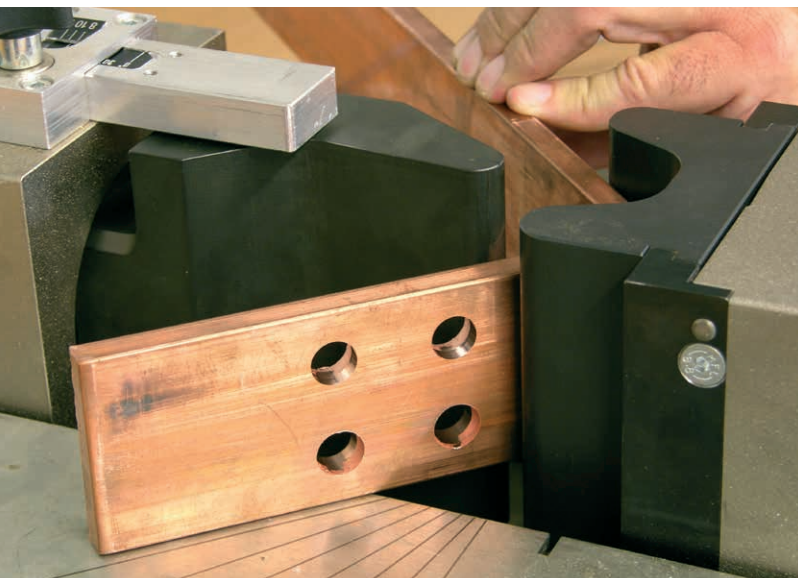
For both hole-making tools, the following diameters can be supplied

| Art. no. | Ø    |              | kg    | PU |
|----------|------|--------------|-------|----|
| 216778   | 6,5  | M6 > 216776  | 0,118 | 1  |
| 216778/L | 6,5  | M6 > 216777  | 0,421 | 1  |
| 216779   | 9,0  | M8 > 216776  | 0,114 | 1  |
| 216779/L | 9,0  | M8 > 216777  | 0,420 | 1  |
| 216780   | 10,5 | M8 > 216776  | 0,110 | 1  |
| 216780/L | 10,5 | M8 > 216777  | 0,419 | 1  |
| 216781   | 11,0 | M10 > 216776 | 0,106 | 1  |
| 216781/L | 11,0 | M10 > 216777 | 0,418 | 1  |
| 216782   | 12,7 | M10 > 216776 | 0,102 | 1  |
| 216782/L | 12,7 | M10 > 216777 | 0,416 | 1  |
| 216783   | 13,0 | M12 > 216776 | 0,098 | 1  |
| 216783/L | 13,0 | M12 > 216777 | 0,414 | 1  |
| 216784   | 17,0 | M16 > 216776 | 0,094 | 1  |
| 216784/L | 17,0 | M16 > 216777 | 0,412 | 1  |
| 216785   | 21,0 | M20 > 216776 | 0,090 | 1  |
| 216785/L | 21,0 | M20 > 216777 | 0,411 | 1  |

## Hole inserts for slotted holes

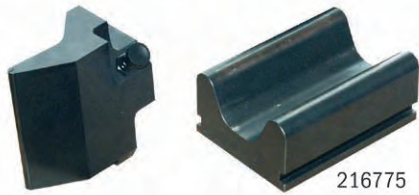
For both hole-making tools, the following diameters can be supplied

| Art. no. | Ø     |              | kg    | PU |
|----------|-------|--------------|-------|----|
| 216786   | 9x18  | M8 > 216776  | 0,098 | 1  |
| 216786/L | 9x18  | M8 > 216777  | 0,423 | 1  |
| 216787   | 11x20 | M10 > 216776 | 0,095 | 1  |
| 216787/L | 11x20 | M10 > 216777 | 0,421 | 1  |
| 216788   | 13x20 | M12 > 216776 | 0,092 | 1  |
| 216788/L | 13x20 | M12 > 216777 | 0,419 | 1  |
| 216789   | 17x20 | M16 > 216776 | 0,089 | 1  |
| 216789/L | 17x20 | M16 > 216777 | 0,417 | 1  |



### Bending tool

For bending of solid copper or aluminium rails up to 12 x 120 mm. The bending matrix suits all bending radii



216775

| Art. no. |                           | kg    | PU |
|----------|---------------------------|-------|----|
| 216771   | 5                         | 4,000 | 1  |
| 216772   | 8                         | 4,100 | 1  |
| 216773   | 10                        | 4,200 | 1  |
| 216774   | 20                        | 4,500 | 1  |
| 216775   | universal (counterholder) | 3,200 | 1  |

### Cutting tool

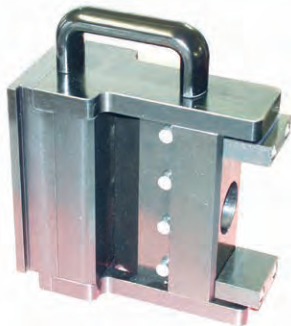
for separating solid copper and aluminium rails up to 12 x 120 mm



| Art. no. | mm       | kg    | PU |
|----------|----------|-------|----|
| 216790   | 12 x 120 | 5,500 | 1  |

### Cutting tool for lamellar rails

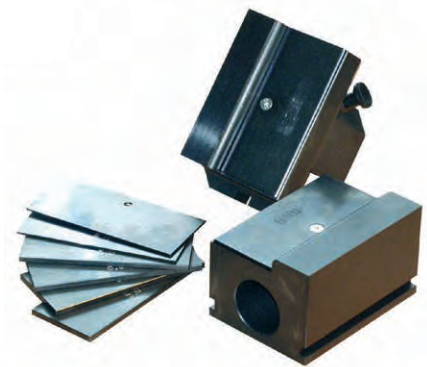
for separating lamellar rails made from copper, maximum dimensions: 12 x 120 mm



| Art. no. | mm       | kg    | PU |
|----------|----------|-------|----|
| 216791   | 12 x 120 | 9,000 | 1  |

### Cranking tool for stepped bending of power rails

for creating a material offset in rail thicknesses on a length of just 30 mm. Possible offset 5, 6, 8, 10 and 12 mm



| Art. no. | kg     | PU |
|----------|--------|----|
| 216792   | 10,000 | 1  |

### Tool cases

Stable metal sheet case for accommodation of hole-making tool with inserts (1) or two tools (2)

| Art. no. | quantity | kg    | PU |
|----------|----------|-------|----|
| 216793   | 1        | 2,000 | 1  |
| 216794   | 2        | 2,000 | 1  |

### Electro-hydraulic pump „Special“

electric foot switch, completely self-acting, also the release of the dies at the end of the operation, 2 m high pressure tube and hydraulic connectors, for industrial uses, where a high level of production is needed, 230 volt, with foot switch control, pump for working outside



| Art. no. | 230V | kg     | PU |
|----------|------|--------|----|
| 216359   |      | 22,000 | 1  |

**haupa**<sup>®</sup>

**...convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com





Nur zum Bearb.  
max. B x H 1  
max. Betrie

Fish tapes  
Cable pulling device system



## Fish tapes

### Perlon fish tapes

made from stretched „Bayer-Perlon wire“, black, with solid steel end pieces, with additional pilot spring, approx. 120 mm length



| Art. no. | TL | Ø | kg/100 | PU | PE |
|----------|----|---|--------|----|----|
| 150220   | 5  | 3 | 6,000  | 1  | 1  |
| 150222   | 10 | 3 | 10,300 | 1  | 1  |
| 150224   | 15 | 3 | 14,100 | 1  | 1  |
| 150226   | 20 | 3 | 18,800 | 1  | 1  |
| 150228   | 25 | 3 | 24,600 | 1  | 1  |
| 150230   | 30 | 3 | 24,400 | 1  | 1  |
| 150241   | 10 | 4 | 16,000 | 1  | 1  |
| 150243   | 15 | 4 | 23,400 | 1  | 1  |
| 150245   | 20 | 4 | 30,300 | 1  | 1  |
| 150247   | 25 | 4 | 38,600 | 1  | 1  |

### Perlon fish tapes

made from stretched „Bayer-Perlon wire“, black, with solid steel end pieces, without additional pilot spring, strip size 4 mm



| Art. no. | TL | Ø | kg/100 | PU | PE |
|----------|----|---|--------|----|----|
| 150232   | 10 | 4 | 15,200 | 1  | 1  |
| 150234   | 15 | 4 | 23,600 | 1  | 1  |
| 150236   | 20 | 4 | 30,300 | 1  | 1  |
| 150238   | 25 | 4 | 40,200 | 1  | 1  |
| 150239   | 30 | 4 | 44,500 | 1  | 1  |

### Perlon fish tapes

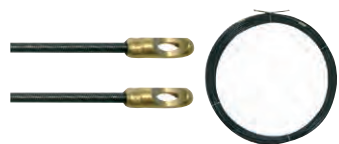
made from stretched „Bayer-Perlon wire“, black, with solid steel end pieces, with 2 eyes, strip size 3 mm



| Art. no. | TL | Ø | kg/100 | PU | PE |
|----------|----|---|--------|----|----|
| 150450   | 5  | 3 | 4,800  | 1  | 1  |
| 150452   | 10 | 3 | 9,900  | 1  | 1  |
| 150454   | 15 | 3 | 13,900 | 1  | 1  |
| 150456   | 20 | 3 | 16,300 | 1  | 1  |
| 150458   | 25 | 3 | 21,800 | 1  | 1  |
| 150462   | 5  | 4 | 8,000  | 1  | 1  |
| 150464   | 10 | 4 | 15,800 | 1  | 1  |
| 150466   | 15 | 4 | 24,000 | 1  | 1  |
| 150468   | 20 | 4 | 29,200 | 1  | 1  |
| 150470   | 25 | 4 | 38,900 | 1  | 1  |

### Perlon fish tapes

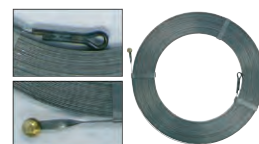
made from stretched „Bayer-Perlon wire“, black, with solid steel end pieces, with 2 spring and 2 eyes, strip size 4 mm



| Art. no. | TL | Ø | kg/100 | PU | PE |
|----------|----|---|--------|----|----|
| 150476   | 10 | 4 | 18,000 | 1  | 1  |
| 150478   | 15 | 4 | 26,000 | 1  | 1  |
| 150480   | 20 | 4 | 33,200 | 1  | 1  |
| 150482   | 25 | 4 | 41,200 | 1  | 1  |

### Steel fish tapes

with eyelet and brass rolling ball, without additional pilot spring



| Art. no. | TL | Ø   | kg/100 | PU | PE |
|----------|----|-----|--------|----|----|
| 150152   | 10 | 3,5 | 13,100 | 1  | 1  |
| 150154   | 15 | 3,5 | 20,800 | 1  | 1  |
| 150156   | 20 | 3,5 | 26,800 | 1  | 1  |
| 150158   | 25 | 3,5 | 32,300 | 1  | 1  |

### Spiral fish tapes

made from steel spirals, fourfold twisted, with solid steel end pieces, strip size 4 mm



| Art. no. | TL | Ø | kg/100  | PU | PE |
|----------|----|---|---------|----|----|
| 150200   | 5  | 4 | 31,200  | 1  | 1  |
| 150202   | 10 | 4 | 69,100  | 1  | 1  |
| 150204   | 15 | 4 | 98,800  | 1  | 1  |
| 150206   | 20 | 4 | 134,300 | 1  | 1  |
| 150208   | 25 | 4 | 182,000 | 1  | 1  |
| 150210   | 30 | 4 | 185,900 | 1  | 1  |



## Fibreglas section fish rods kits

### Fibre glass push rod set

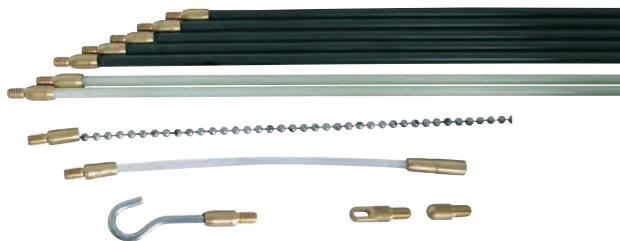
in nylon bag.

#### Scope of delivery:

Push rod length: 7 m  
5 rods 8 mm Ø black  
2 rods 8 mm Ø white

#### Accessories:

1 hook, 1 chain, 1 magnet, 1 starting block, 1 pulling knob



| Art. no. | TL |         | kg    | PU |
|----------|----|---------|-------|----|
| 150560   | 7  | 12 pcs. | 0,500 | 1  |

### Fibre glass push rod set

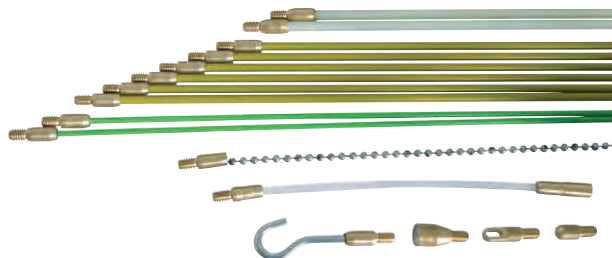
in nylon bag.

#### Scope of delivery:

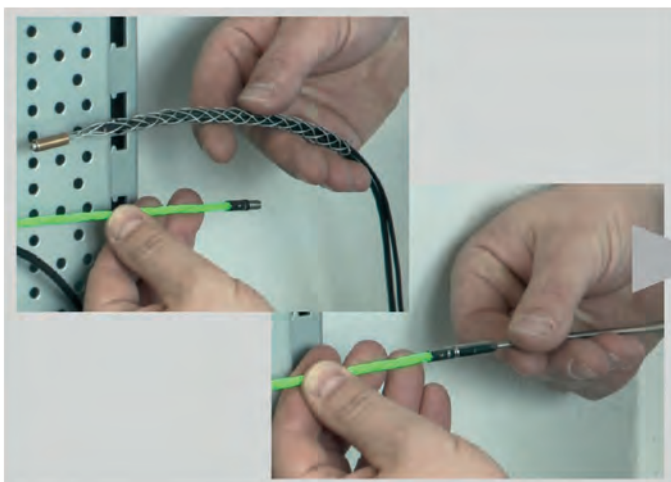
Push rod length: 10 m  
2 rods 6 mm Ø white  
6 rods 5 mm Ø yellow  
2 rods 4 mm Ø green

#### Accessories:

1 hook, 1 chain, 1 magnet, 1 starting block, 1 pulling knob, 1 LED lamp



| Art. no. | TL |         | kg    | PU |
|----------|----|---------|-------|----|
| 150562   | 10 | 16 pcs. | 0,700 | 1  |



## HAUPA PullTec

### Cable pulling device HAUPA PullTec

with special plastic coating, M5 thread and probe, in durable plastic housing, colour: black  
„Single Composite“, 4 mm green

#### The advantages of the HAUPA PullTec at a glance:

- Material: Coated with a special plastic
- Slides very well and is highly elastic
- Low friction • Does not break or bend
- M5 thread • With probe
- In durable plastic housing • Breaking load: 300 kg



| Art. no. | TL | M5 | Ø |                 | kg    | PU |
|----------|----|----|---|-----------------|-------|----|
| 143500   | 20 | M5 | 4 |                 | 1,300 | 1  |
| 143502   | 30 | M5 | 4 |                 | 1,500 | 1  |
| 143501   | 20 | M5 | 4 | replacement rod | 1,000 | 1  |
| 143503   | 30 | M5 | 4 | replacement rod | 1,200 | 1  |
| 143508   |    | M5 | 6 | guiding head    | 0,200 | 1  |

### Cable pulling device HAUPA PullTec

with special plastic coating, M5 thread and probe, in durable plastic housing, colour: black  
„Single Composite“, 5,2 mm black

#### The advantages of the HAUPA PullTec at a glance:

- Material: Coated with a special plastic
- Slides very well and is highly elastic
- Low friction • Does not break or bend
- M5 thread • With probe
- In durable plastic housing • Breaking load: 350 kg



| Art. no. | TL | M5 | Ø   |                 | kg    | PU |
|----------|----|----|-----|-----------------|-------|----|
| 143504   | 20 | M5 | 5,2 |                 | 1,500 | 1  |
| 143506   | 30 | M5 | 5,2 |                 | 1,700 | 1  |
| 143505   | 20 | M5 | 5,2 | replacement rod | 1,100 | 1  |
| 143507   | 30 | M5 | 5,2 | replacement rod | 1,300 | 1  |
| 143509   |    | M5 | 6   | guiding head    | 0,200 | 1  |

Additional accessories, see HAUPA fibre, page 88



**naupa**

...convincing solutions

# Cable pulling device, accessories

## Cable pulling device HAUPA-FIBRE

Cable pulling device with glass fibre rod  $\varnothing$  3 mm, with PP casing, including front/end sleeve M5, 143010, 143024.

### 143000/143002 including:

- 143008 (2x)
- 143016 (2x)
- 143018 (2x)
- 143012
- 143014
- 143020
- 143026

### 143002/ECO including:

- 143008 (1x)



| Art. no.   | TL | $\varnothing$ |   | kg               | PU      |
|------------|----|---------------|---|------------------|---------|
| 143000     | 20 | M5            | 3 | HAUPA-FIBRE 20 m | 1,199 1 |
| 143002     | 30 | M5            | 3 | HAUPA-FIBRE 30 m | 1,500 1 |
| 143002/ECO | 30 | M5            | 3 | HAUPA-FIBRE 30 m | 1,198 1 |

## Pulling unit with loop M5



| Art. no. | $\varnothing$ | kg    | PU |
|----------|---------------|-------|----|
| 143008   | M5 6          | 0,020 | 1  |

## Guiding head with loop M5



| Art. no. | $\varnothing$ | kg    | PU |
|----------|---------------|-------|----|
| 143010   | M5 6          | 0,200 | 1  |

## Guiding head M5



| Art. no. | $\varnothing$ | kg    | PU |
|----------|---------------|-------|----|
| 143012   | M5 7          | 0,010 | 1  |

## Guiding head M5



| Art. no. | $\varnothing$ | kg    | PU |
|----------|---------------|-------|----|
| 143014   | M5 10         | 0,011 | 1  |

## Guiding head $\varnothing$ 13 mm M5



| Art. no. | $\varnothing$ | kg    | PU |
|----------|---------------|-------|----|
| 143030   | M5 13         | 0,017 | 1  |

## Front/end sleeve M5



| Art. no. | kg       | PU |
|----------|----------|----|
| 143016   | M5 0,005 | 1  |

## Connection sleeve for probes $\varnothing$ 3 mm



| Art. no. | $\varnothing$ | kg    | PU |
|----------|---------------|-------|----|
| 143018   | M5 3          | 0,003 | 1  |

## Cable grips



| Art. no. | TL  | $\varnothing$ | kg    | PU |
|----------|-----|---------------|-------|----|
| 143020   | 200 | M5 4-6        | 0,007 | 1  |

## Special pulling aid

for fast pulling of glass fibre rods  $\varnothing$  3 mm



| Art. no. | $\varnothing$ | kg    | PU |
|----------|---------------|-------|----|
| 143024   | 3 - 6         | 0,047 | 1  |

## Special fast glue for glass fibre rod $\varnothing$ 3 mm



| Art. no. | kg    | PU |
|----------|-------|----|
| 143026   | 0,012 | 1  |

## Replacement glass fibre rod

$\varnothing$  3 mm, length 20/30 m, including front/end sleeve M5



| Art. no. | TL | $\varnothing$ | kg    | PU |
|----------|----|---------------|-------|----|
| 143004   | 20 | 3             | 0,022 | 1  |
| 143006   | 30 | 3             | 0,034 | 1  |

## Service set for HAUPA-FIBRE

5 front sleeves, 5 guiding heads, 3 connection sleeves, 1 special fast glue



| Art. no. | kg       | PU |
|----------|----------|----|
| 143028   | M5 0,041 | 1  |

## Cable pulling device, accessories

### Cable pulling device FOX

Cable pulling device FOX with glass fibre rod  $\varnothing$  4.5 mm and green PP coating RAL 6018, with zinc steel winder  $\varnothing$  330 mm, standing version, complete with front/end sleeve M5 and pulling head M5 with loop



| Art. no. | TL |    | $\varnothing$ | kg    | PU |
|----------|----|----|---------------|-------|----|
| 143050   | 40 | M5 | 4,5           | 3,900 | 1  |
| 143052   | 60 | M5 | 4,5           | 4,400 | 1  |
| 143054   | 80 | M5 | 4,5           | 4,800 | 1  |

### Replacement glass fibre rod FOX

$\varnothing$  4.5 mm, complete with front/end sleeve M5



| Art. no. | TL |    | $\varnothing$ | kg    | PU |
|----------|----|----|---------------|-------|----|
| 143056   | 40 | M5 | 4,5           | 0,900 | 1  |
| 143058   | 60 | M5 | 4,5           | 1,400 | 1  |
| 143060   | 80 | M5 | 4,5           | 1,800 | 1  |

### Guiding head with loop M5



| Art. no. |    | kg    | PU |
|----------|----|-------|----|
| 143062   | M5 | 0,011 | 1  |

### Front bulb with shackle M5



| Art. no. |    | kg    | PU |
|----------|----|-------|----|
| 143064   | M5 | 0,100 | 1  |

### Guiding role made from aluminium M5



| Art. no. |    | kg    | PU |
|----------|----|-------|----|
| 143066   | M5 | 0,100 | 1  |

### Guiding head M5



| Art. no. |    | $\varnothing$ | kg    | PU |
|----------|----|---------------|-------|----|
| 143012   | M5 | 7             | 0,010 | 1  |
| 143014   | M5 | 10            | 0,011 | 1  |
| 143030   | M5 | 13            | 0,017 | 1  |

### Guiding head set with heads $\varnothing$ 7, 10, 13 mm M5



| Art. no. |    |          | kg    | PU |
|----------|----|----------|-------|----|
| 143068   | M5 | 3-pieces | 0,038 | 1  |

### Front/end sleeve M5



| Art. no. |    | kg    | PU |
|----------|----|-------|----|
| 143070   | M5 | 0,100 | 1  |

### Connection sleeve for probes $\varnothing$ 4.5 mm



| Art. no. | $\varnothing$ | kg    | PU |
|----------|---------------|-------|----|
| 143072   | 4,5           | 0,002 | 1  |



**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Cable pulling device, accessories

### Cable pulling device SIX

Cable pulling device SIX with glass fibre rod  $\varnothing$  6.0 mm and green PP coating RAL 6018, with zinced steel winder  $\varnothing$  550 mm, in lying and standing version with wheels, complete with front/end sleeve M6 and pulling head M6 with loop



#### lying version

| Art. no. | TL     | $\varnothing$ | kg    | PU |
|----------|--------|---------------|-------|----|
| 143100   | 40 M6  | 6             | 5,200 | 1  |
| 143102   | 60 M6  | 6             | 5,900 | 1  |
| 143104   | 80 M6  | 6             | 6,800 | 1  |
| 143105   | 100 M6 | 6             | 7,700 | 1  |

#### standing version

| Art. no. | TL     | $\varnothing$ | kg     | PU |
|----------|--------|---------------|--------|----|
| 143106   | 40 M6  | 6             | 7,200  | 1  |
| 143108   | 60 M6  | 6             | 8,300  | 1  |
| 143110   | 80 M6  | 6             | 9,400  | 1  |
| 143111   | 100 M6 | 6             | 10,300 | 1  |

#### standing version with wheels

| Art. no. | TL     | $\varnothing$ | kg     | PU |
|----------|--------|---------------|--------|----|
| 143112   | 40 M6  | 6             | 7,400  | 1  |
| 143114   | 60 M6  | 6             | 8,500  | 1  |
| 143116   | 80 M6  | 6             | 9,600  | 1  |
| 143117   | 100 M6 | 6             | 10,500 | 1  |

### Replacement glass fibre rod SIX

$\varnothing$  6 mm, including front/end sleeve M5



| Art. no. | TL     | $\varnothing$ | kg    | PU |
|----------|--------|---------------|-------|----|
| 143118   | 40 M6  | 6             | 1,700 | 1  |
| 143120   | 60 M6  | 6             | 2,500 | 1  |
| 143122   | 80 M6  | 6             | 3,250 | 1  |
| 143124   | 100 M6 | 6             | 4,150 | 1  |

### Guiding head with loop M6



| Art. no. | $\varnothing$ | kg    | PU |
|----------|---------------|-------|----|
| 143126   | M6 6          | 0,018 | 1  |

### Front bulb with shackle M6



| Art. no. | $\varnothing$ | kg    | PU |
|----------|---------------|-------|----|
| 143128   | M6 6          | 0,022 | 1  |

### Guiding role made from aluminium M6



| Art. no. | $\varnothing$ | kg    | PU |
|----------|---------------|-------|----|
| 143130   | M6 6          | 0,026 | 1  |

### Guiding head M6



| Art. no. | $\varnothing$ | kg    | PU |
|----------|---------------|-------|----|
| 143132   | M6 6          | 0,017 | 1  |

### Front/end sleeve M6



| Art. no. | $\varnothing$ | kg    | PU |
|----------|---------------|-------|----|
| 143134   | M6 6          | 0,013 | 1  |

### Connection shackle for probes $\varnothing$ 6 mm



| Art. no. | $\varnothing$ | kg    | PU |
|----------|---------------|-------|----|
| 143136   | 6             | 0,012 | 1  |

## Cable pulling device, accessories

### Cable pulling device FIX

Cable pulling device FIX with glass fibre rod  $\varnothing$  7.5 mm ad green PP coating RAL 6018, with zinc steel winder  $\varnothing$  630 mm, in standing version and with wheels, including front/end sleeve M12 and front bulb with shackle M12



#### standing version

| Art. no. | TL      | $\varnothing$ | kg     | PU |
|----------|---------|---------------|--------|----|
| 143150   | 40 M12  | 7,5           | 8,100  | 1  |
| 143152   | 60 M12  | 7,5           | 9,400  | 1  |
| 143154   | 80 M12  | 7,5           | 10,700 | 1  |
| 143156   | 100 M12 | 7,5           | 11,900 | 1  |
| 143158   | 120 M12 | 7,5           | 13,100 | 1  |

#### standing version with wheels

| Art. no. | TL      | $\varnothing$ | kg     | PU |
|----------|---------|---------------|--------|----|
| 143160   | 40 M12  | 7,5           | 9,100  | 1  |
| 143162   | 60 M12  | 7,5           | 10,400 | 1  |
| 143164   | 80 M12  | 7,5           | 11,700 | 1  |
| 143166   | 100 M12 | 7,5           | 12,900 | 1  |
| 143168   | 120 M12 | 7,5           | 14,100 | 1  |

### Replacement glass fibre rod FIX

$\varnothing$  7.5 mm, including front/end sleeve M12



| Art. no. | TL      | $\varnothing$ | kg    | PU |
|----------|---------|---------------|-------|----|
| 143170   | 40 M12  | 7,5           | 1,500 | 1  |
| 143172   | 60 M12  | 7,5           | 2,000 | 1  |
| 143174   | 80 M12  | 7,5           | 3,000 | 1  |
| 143176   | 100 M12 | 7,5           | 3,700 | 1  |
| 143178   | 120 M12 | 7,5           | 4,500 | 1  |

### Front bulb with shackle M12



| Art. no.   | kg    | PU |
|------------|-------|----|
| 143180 M12 | 0,010 | 1  |

### Guiding role made from aluminium M12



| Art. no.   | kg    | PU |
|------------|-------|----|
| 143182 M12 | 0,200 | 1  |

### Guiding role made from aluminium, length 80 mm M12



| Art. no.   | $\varnothing$ | kg    | PU |
|------------|---------------|-------|----|
| 143184 M12 | 40            | 0,220 | 1  |

### Front/end sleeve M12



| Art. no.   | kg    | PU |
|------------|-------|----|
| 143186 M12 | 0,004 | 1  |

### Connection sleeve for probes $\varnothing$ 9 + 11 mm



| Art. no. | $\varnothing$ | kg    | PU |
|----------|---------------|-------|----|
| 143187   | 7,5           | 0,003 | 1  |

### Connection sleeve with rotator



| Art. no. | TL     | $\varnothing$ | kg    | PU |
|----------|--------|---------------|-------|----|
| 143190   | 83 M12 | 30            | 0,006 | 1  |

### Catch device made from zinc steel

Catch device made from zinc steel to connect glass fibre rods from two opposite sides with M12 connections on both sides



| Art. no. | $\varnothing$ | $\varnothing$ St. | $\varnothing$ tu/mm | kg    | PU    |   |
|----------|---------------|-------------------|---------------------|-------|-------|---|
| 143192   | M12           | 7,5               | 7,5                 | 60-80 | 0,300 | 1 |

### Catch device made from zinc steel

Catch device made from zinc steel to connect glass fibre rods from two opposite sides with M12 connections on both sides



| Art. no. | $\varnothing$ St. | $\varnothing$ tu/mm | kg    | PU |
|----------|-------------------|---------------------|-------|----|
| 143194   | M12 7,5/9/11/14,5 | 80-100              | 0,350 | 1  |
| 143196   | M12 7,5/9/11/14,5 | 100-125             | 0,046 | 1  |
| 143198   | M12 7,5/9/11/14,5 | 125-160             | 0,090 | 1  |

### Pipe cleaning brush



| Art. no. | $\varnothing$ | kg    | PU |
|----------|---------------|-------|----|
| 143200   | 80 mm         | 0,200 | 1  |
| 143202   | 97 mm         | 0,098 | 1  |
| 143204   | 117 mm        | 0,400 | 1  |

**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Cable pulling device, accessories

### Cable pulling device STRONG

Cable pulling device STRONG with glass fibre rod  $\varnothing$  9 mm and green PP coating RAL 6018, with zinc steel winder  $\varnothing$  795 mm (1000 with wheels), in standing version and with wheels, including front/end sleeve M12 and front bulbs with shackle M12



#### standing version

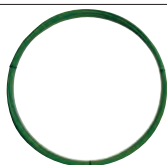
| Art. no. | TL     | $\varnothing$ | kg     | PU |
|----------|--------|---------------|--------|----|
| 143210   | 40 M12 | 9             | 9,100  | 1  |
| 143212   | 60 M12 | 9             | 12,900 | 1  |
| 143214   | 80 M12 | 9             | 14,820 | 1  |

#### standing version with wheels

| Art. no. | TL      | $\varnothing$ | kg     | PU |
|----------|---------|---------------|--------|----|
| 143216   | 100 M12 | 9             | 29,400 | 1  |
| 143218   | 120 M12 | 9             | 31,300 | 1  |
| 143220   | 150 M12 | 9             | 33,900 | 1  |

### Replacement glass fibre rod STRONG

$\varnothing$  9 mm, including front/end sleeve M12



| Art. no. | TL      | $\varnothing$ | kg     | PU |
|----------|---------|---------------|--------|----|
| 143222   | 40 M12  | 9             | 3,800  | 1  |
| 143224   | 60 M12  | 9             | 5,500  | 1  |
| 143226   | 80 M12  | 9             | 7,500  | 1  |
| 143228   | 100 M12 | 9             | 9,400  | 1  |
| 143230   | 120 M12 | 9             | 11,300 | 1  |
| 143232   | 150 M12 | 9             | 13,900 | 1  |

### Cable pulling device POWER

Cable pulling device POWER with glass fibre rod  $\varnothing$  11 mm and green PP coating RAL 6018, with zinc steel winder  $\varnothing$  1000 mm, width 150 mm, standing version with wheels, including front/end sleeve M12 and front bulb with shackle M12

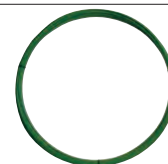


#### standing version with wheels

| Art. no. | TL      | $\varnothing$ | kg     | PU |
|----------|---------|---------------|--------|----|
| 143250   | 150 M12 | 11            | 43,000 | 1  |
| 143252   | 200 M12 | 11            | 50,000 | 1  |
| 143254   | 250 M12 | 11            | 56,500 | 1  |
| 143256   | 300 M12 | 11            | 64,500 | 1  |

### Replacement glass fibre rod POWER

$\varnothing$  9 mm, including front/end sleeve M12



| Art. no. | TL      | $\varnothing$ | kg     | PU |
|----------|---------|---------------|--------|----|
| 143258   | 150 M12 | 11            | 21,900 | 1  |
| 143260   | 200 M12 | 11            | 29,200 | 1  |
| 143262   | 250 M12 | 11            | 36,400 | 1  |
| 143264   | 300 M12 | 11            | 43,900 | 1  |

### Cable pulling device KING

Cable pulling device KING with glass fibre rod  $\varnothing$  14.5 mm and black PP coating, with steel winder  $\varnothing$  1500 mm with wheels, including front/end sleeve M12 and front bulb with shackle M12



#### standing version with wheels

| Art. no. | TL      | $\varnothing$ | kg      | PU |
|----------|---------|---------------|---------|----|
| 143270   | 150 M12 | 14,5          | 85,000  | 1  |
| 143272   | 200 M12 | 14,5          | 99,000  | 1  |
| 143274   | 250 M12 | 14,5          | 113,000 | 1  |
| 143276   | 300 M12 | 14,5          | 127,000 | 1  |
| 143278   | 350 M12 | 14,5          | 141,000 | 1  |
| 143280   | 400 M12 | 14,5          | 156,000 | 1  |

## Cable pulling device, accessories

### Front bulb with shackle M12



| Art. no. |     | kg    | PU |
|----------|-----|-------|----|
| 143180   | M12 | 0,010 | 1  |

### Guiding role made from aluminium M12



| Art. no. |     | kg    | PU |
|----------|-----|-------|----|
| 143182   | M12 | 0,200 | 1  |

### Guiding role made from aluminium, length 80 mm M12



| Art. no. | Ø      | kg    | PU |
|----------|--------|-------|----|
| 143184   | M12 40 | 0,220 | 1  |

### Front/end sleeve M12



| Art. no. |     | kg    | PU |
|----------|-----|-------|----|
| 143186   | M12 | 0,004 | 1  |

### Connection sleeve for probes



| Art. no. | Ø  | kg    | PU |
|----------|----|-------|----|
| 143188   | 9  | 0,150 | 1  |
| 143266   | 11 | 0,075 | 1  |

### Connection sleeve with rotator



| Art. no. | TL     | Ø  | kg    | PU |
|----------|--------|----|-------|----|
| 143190   | 83 M12 | 30 | 0,006 | 1  |

### Catch device made from zinced steel

Catch device made from zinced steel to connect glass fibre rods from two opposite sides with M12 connections on both sides



| Art. no. | M12 | Ø St.         | Øtu/mm  | kg    | PU |
|----------|-----|---------------|---------|-------|----|
| 143194   | M12 | 7,5/9/11/14,5 | 80-100  | 0,350 | 1  |
| 143196   | M12 | 7,5/9/11/14,5 | 100-125 | 0,046 | 1  |
| 143198   | M12 | 7,5/9/11/14,5 | 125-160 | 0,090 | 1  |

### Pipe cleaning brush



| Art. no. | Ø      | kg    | PU |
|----------|--------|-------|----|
| 143200   | 80 mm  | 0,200 | 1  |
| 143202   | 97 mm  | 0,098 | 1  |
| 143204   | 117 mm | 0,400 | 1  |



**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Accessories

### Cable grips for electrical installations

Hand-braided cable grips made from zinc-plated steel braid with a flexible Towing ring with front unit M5 and integrally moulded Talurit ferrule



| Art. no. | TL  | M5 | Ø     | kg    | PU |
|----------|-----|----|-------|-------|----|
| 143300   | 200 | M5 | 4-6   | 0,009 | 1  |
| 143302   | 210 | M5 | 6-9   | 0,013 | 1  |
| 143304   | 350 | M5 | 9-12  | 0,024 | 1  |
| 143306   | 350 | M5 | 12-15 | 0,029 | 1  |
| 143308   | 500 | M5 | 15-19 | 0,200 | 1  |
| 143310   | 500 | M5 | 19-25 | 0,052 | 1  |
| 143312   | 450 | M5 | 25-31 | 0,400 | 1  |

### Cord und cable grips

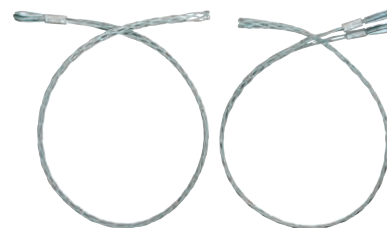


| Art. no. | TL   | Ø     | kg    | PU |
|----------|------|-------|-------|----|
| 143336   | 2000 | 8-16  | 0,250 | 1  |
| 143338   | 2000 | 10-20 | 0,250 | 1  |
| 143340   | 2000 | 20-30 | 0,250 | 1  |
| 143342   | 2000 | 30-40 | 0,250 | 1  |

### Cable grips for subterranean cable laying

Hand-braided cable grips made from zinc-plated steel braid with 1 loop or 2 loops and integrally moulded Talurit ferrule.

Cable stocking with 2 loops enables, both the pulling of cables and the tightening of cables by way of relocating the stocking on the pulled cable.



| Art. no. | TL   | Ø     | Q | kg    | PU |
|----------|------|-------|---|-------|----|
| 143314   | 1250 | 10-20 | 1 | 0,378 | 1  |
| 143318   | 1250 | 20-30 | 1 | 0,380 | 1  |
| 143322   | 1250 | 30-40 | 1 | 0,424 | 1  |
| 143326   | 1250 | 40-50 | 1 | 0,430 | 1  |
| 143330   | 1250 | 50-65 | 1 | 0,388 | 1  |
| 143334   | 1250 | 65-80 | 1 | 1,120 | 1  |
| Art. no. | TL   | Ø     | Q | kg    | PU |
| 143316   | 1250 | 10-20 | 2 | 0,465 | 1  |
| 143320   | 1250 | 20-30 | 2 | 0,460 | 1  |
| 143324   | 1250 | 30-40 | 2 | 0,510 | 1  |
| 143328   | 1250 | 40-50 | 2 | 0,200 | 1  |
| 143332   | 1250 | 50-65 | 2 | 0,520 | 1  |

## Legend cable pulling device

| Rod diameter   | Pipe diameter | Pushing energy | Min. bending radius | Breaking strength | Pulling strength with starting/ ending | Advised length    |      |
|----------------|---------------|----------------|---------------------|-------------------|--|-------------------|------|
| Ø mm           | Ø mm          | kg             | mm                  | kg                | kg                                     | m                 | page |
|                |               |                |                     |                   |  |                   |      |
| FIBRE 3,0 mm   | 16-32         | +++            | 160                 | 400               | 110                                    | 20-30 (+ 2-3 m)   | 88   |
| PullTec 4,0 mm | 16-32         | +++            | 100                 | 300               | 130                                    | 10-30 (+ 3-5 m)   | 87   |
| PullTec 5,2 mm | 20-32         | +++            | 100                 | 350               | 140                                    | 10-40 (+ 3-5 m)   | 87   |
| FOX 4,5 mm     | 40-60         | +++            | 310                 | 1200              | 170                                    | 20-40 (+ 3-5 m)   | 89   |
| SIX 6,0 mm     | 50-80         | ++++           | 400                 | 2000              | 230                                    | 30-60 (+ 3-5 m)   | 90   |
| FIX 7,5 mm     | 63-100        | ++++           | 500                 | 3200              | 290                                    | 40-70 (+ 3-5 m)   | 91   |
| STRONG 9,0 mm  | 63-125        | ++++           | 620                 | 4400              | 340                                    | 60-150 (+ 3-5 m)  | 92   |
| POWER 11,0 mm  | 63-150        | ++++           | 770                 | 6250              | 500                                    | 100-300 (+ 3-5 m) | 92   |
| KING 15,0 mm   | 100-250       | ++++           | 1150                | 15000             | 550                                    | 150-450 (+ 3-5 m) | 92   |
| PERLON® 3,0 mm | 16            | +              | 80                  | 200               | 110                                    | 5-15 (+ 2-3 m)    | 86   |
| SPIRAL 4,0 mm  | 20-32         | +              | 180                 | 115               | 115                                    | 10-25 (+ 3-5 m)   | 86   |



Decoiler



## Cable unwinder

### Cable unwinder

4 box cable unwinder.

Carton size 240 x 240 mm



| Art. no. | drum/width | drum-Ø | drum/kg | kg  | PU |
|----------|------------|--------|---------|-----|----|
| 143406   | 600        | 130    | 50      | 5,5 | 1  |

### Cable unwinder

Length: 400 mm

Width: 400 mm

Height: 390 mm



| Art. no. | drum-Ø  | drum/kg | kg | PU |
|----------|---------|---------|----|----|
| 143404   | 150-600 | 50      | 8  | 1  |

## Decoiler

### Decoiler 600

The new HAUPA decoiler have been designed for daily intensive use. The most important characteristics of this product are the ease of operation and the light weight. The side elements are made from galvanised powder-coated steel. The ball bearing drums can be adjusted without the need for specialist tools. Four vibration-damping feet prevent unwanted movement of the roller and protect the floor.

#### Technical data

Length: 350 mm

Width: 350 mm

Height: 105 mm



| Art. no. | drum/width | drum-Ø | drum/kg | kg  | PU |
|----------|------------|--------|---------|-----|----|
| 143398   | 330        | 600    | 50      | 3,5 | 1  |

### Decoiler 1200

The new HAUPA cable decoilers are developed for intensive use. Ease of use and a low weight are fundamental characteristics of this product. The front and the rear sides are made of anodized aluminum with antiskid ribs. For the left and the right side, sink steel with powder coating has been used. Because of this construction, the decoilers are strong, flexible to use, and resistant against heavy circumstances. The roles have bearings and a sliding axis, which make it easy to change the position of the roles without any special tools. Four antiskid buffers ensure that vibrations are subdued and floors remain intact.

#### Technical data

Length: 610 mm

Width: 570 mm

Height: 115 mm



| Art. no. | drum/width | drum-Ø | drum/kg | kg | PU |
|----------|------------|--------|---------|----|----|
| 143400   | 560        | 1200   | 175     | 9  | 1  |

### Decoiler 1200 +

The new HAUPA cable decoilers are developed for intensive use. Ease of use and a low weight are fundamental characteristics of this product. The front and the rear sides are made of anodized aluminum with antiskid ribs. For the left and the right side, sink steel with powder coating has been used. Because of this construction, the decoilers are strong, flexible to use, and resistant against heavy circumstances. The roles have bearings and a sliding axis, which make it easy to change the position of the roles without any special tools. Four antiskid buffers ensure that vibrations are subdued and floors remain intact.

#### Technical data

Length: 705 mm

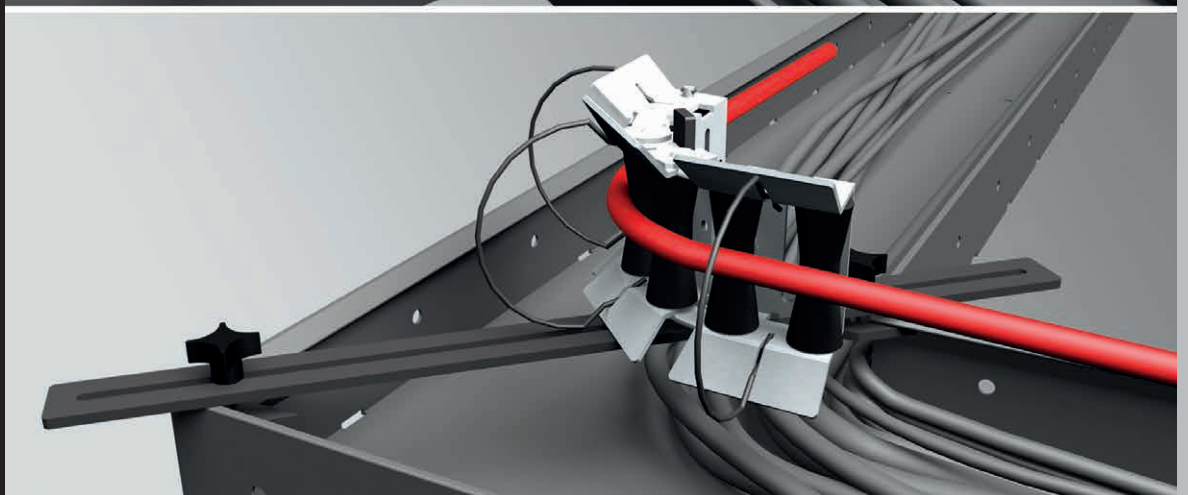
Width: 570 mm

Height: 115 mm



| Art. no. | drum/width | drum-Ø | drum/kg | kg   | PU |
|----------|------------|--------|---------|------|----|
| 143402   | 660        | 1200   | 300     | 10,5 | 1  |

CableGo



# INFO

## CableGo

### An innovation in the cable pulling device technology

- suitable for all cable pulling devices
- quick and easy, with just one person
- reduced force expenditure
- no damage to cables, thus particularly suitable for cables in the field of data technology (for example, fiber optic cables)



## CableGo

### Cable pulling device „CableGo profi“

#### Content in plastik case:

- 3 x basic module „CableGo“ + 3 wire brackets
- 3 x table clamp „CableGo“
- 3 x mounting bracket „CableGo“
- 1 x connection set and several mounting parts „CableGo“

Video 143422



| Art. no. |         | kg    | PU |
|----------|---------|-------|----|
| 143422   | 14 pcs. | 4,800 | 1  |

### Cable pulling device „CableGo master“

#### Content in plastik case:

- 5 x basic module „CableGo“ + 3 wire brackets
- 5 x table clamp „CableGo“
- 5 x mounting bracket „CableGo“
- 1 x connection set and several mounting parts „CableGo“

### Cable pulling device „CableGo starter“

#### Content in plastik case:

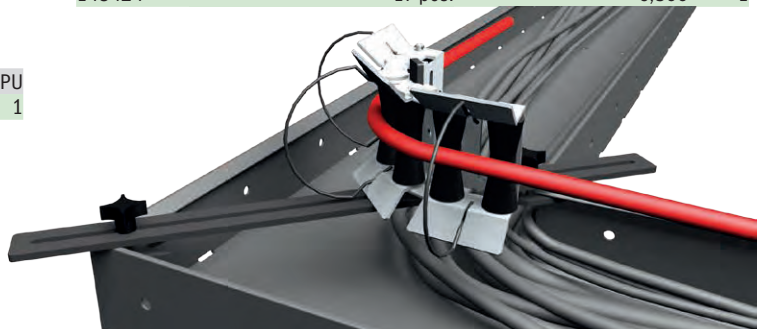
- 1 x basic module „CableGo“ + 3 wire brackets
- 1 x table clamp „CableGo“
- 1 x mounting bracket „CableGo“



| Art. no. |        | kg    | PU |
|----------|--------|-------|----|
| 143420   | 6 pcs. | 9,000 | 1  |



| Art. no. |         | kg    | PU |
|----------|---------|-------|----|
| 143424   | 17 pcs. | 6,800 | 1  |



## SysCon CableGo

### SysCon cable pulling device „CableGo starter“

**Content in SysCon stacking box art. 220372:**

- 1 x basic module „CableGo“ + 3 wire brackets
- 1 x table clamp „CableGo“
- 1 x connection set and several mounting parts „CableGo“



| Art. no. |        | kg    | PU |
|----------|--------|-------|----|
| 143430   | 6 pcs. | 3,700 | 1  |

### SysCon cable pulling device „CableGo profi“

**Content in SysCon stacking box art. 220372:**

- 3 x basic module „CableGo“ + 3 wire brackets
- 3 x table clamp „CableGo“
- 3 x mounting bracket „CableGo“
- 1 x connection set and several mounting parts „CableGo“

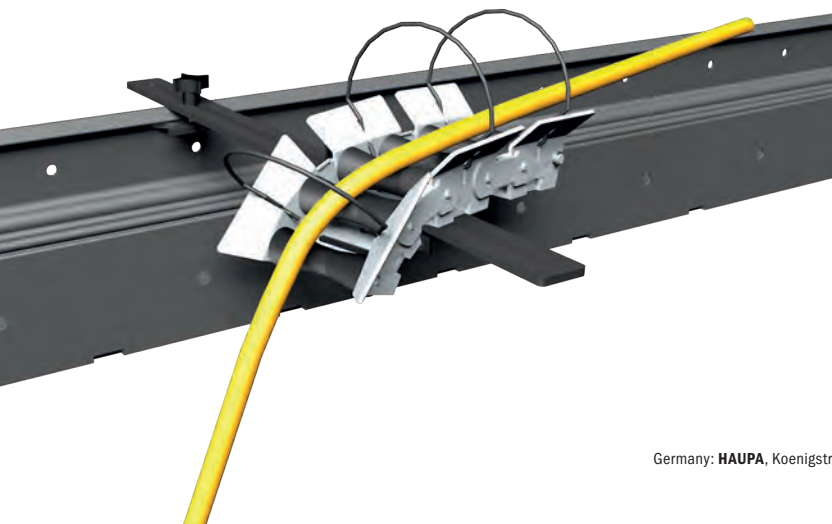
| Art. no. |         | kg    | PU |
|----------|---------|-------|----|
| 143432   | 14 pcs. | 5,700 | 1  |

### SysCon cable pulling device „CableGo master“

**Content in SysCon stacking box art. 220372:**

- 5 x basic module „CableGo“ + 3 wire brackets
- 5 x table clamp „CableGo“
- 5 x mounting bracket „CableGo“
- 1 x connection set basic module „CableGo“

| Art. no. |         | kg    | PU |
|----------|---------|-------|----|
| 143434   | 17 pcs. | 7,700 | 1  |



## CableGo, accessories

### Basic module „CableGo“ + 3 wire brackets

Basic module for easy cable penetrations in corners and roundings.



| Art. no. |        | kg    | PU |
|----------|--------|-------|----|
| 143440   | 4 pcs. | 0,500 | 1  |

### Table clamp „CableGo“

Table clamp for fixing basic modules.



| Art. no. |        | kg    | PU |
|----------|--------|-------|----|
| 143441   | 1 pcs. | 0,080 | 1  |

### Mounting bracket „CableGo“

Mounting bracket for fixing basic modules.



| Art. no. |        | kg    | PU |
|----------|--------|-------|----|
| 143442   | 7 pcs. | 0,360 | 1  |

### Connection set basic module „CableGo“

Connection set for connecting several basic modules.



| Art. no. |        | kg    | PU |
|----------|--------|-------|----|
| 143443   | 2 pcs. | 0,025 | 1  |

### Set 3 wire brackets „CableGo“

Wire brackets for basic modules.

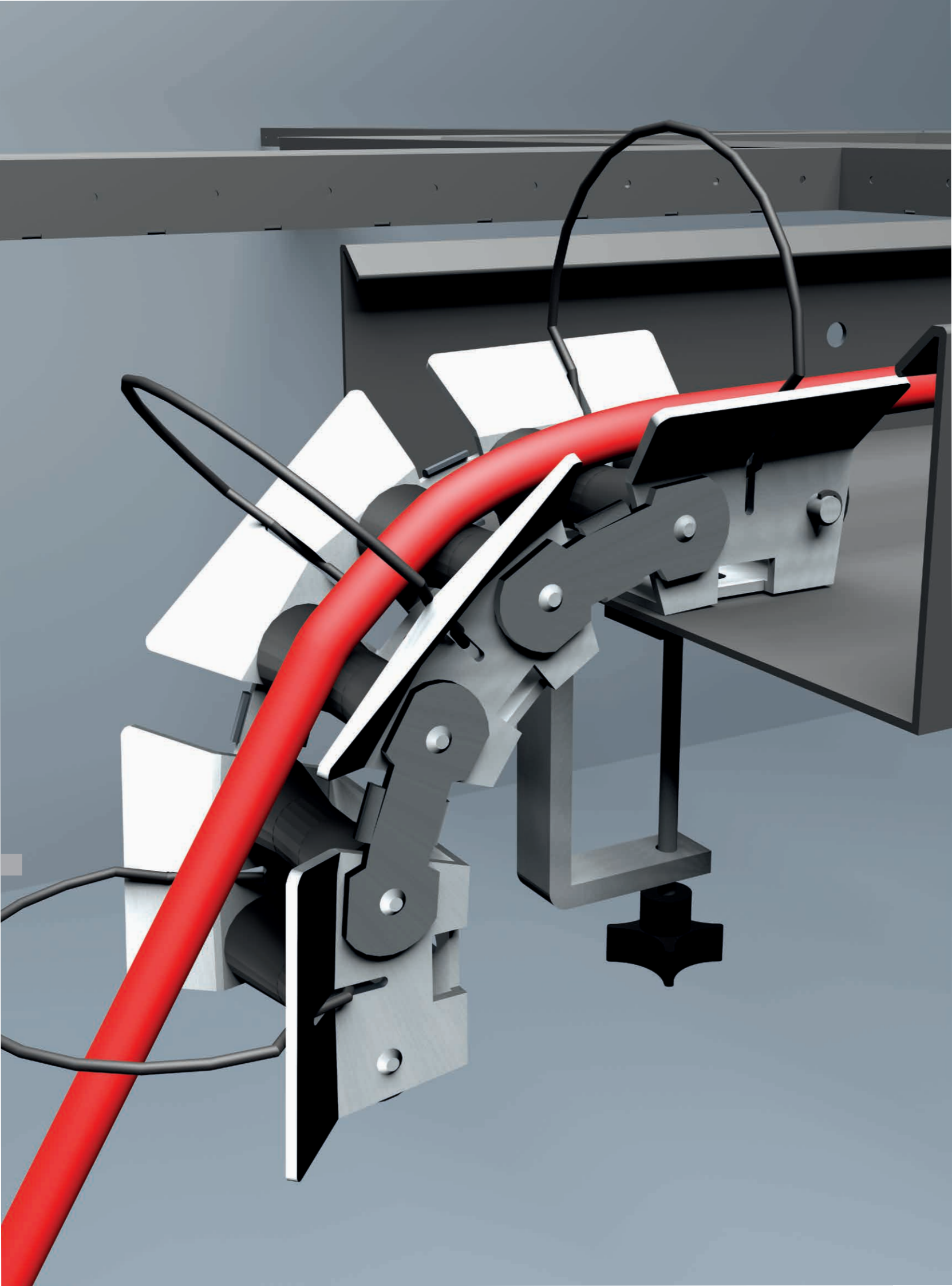


| Art. no. |        | kg    | PU |
|----------|--------|-------|----|
| 143444   | 3 pcs. | 0,045 | 1  |

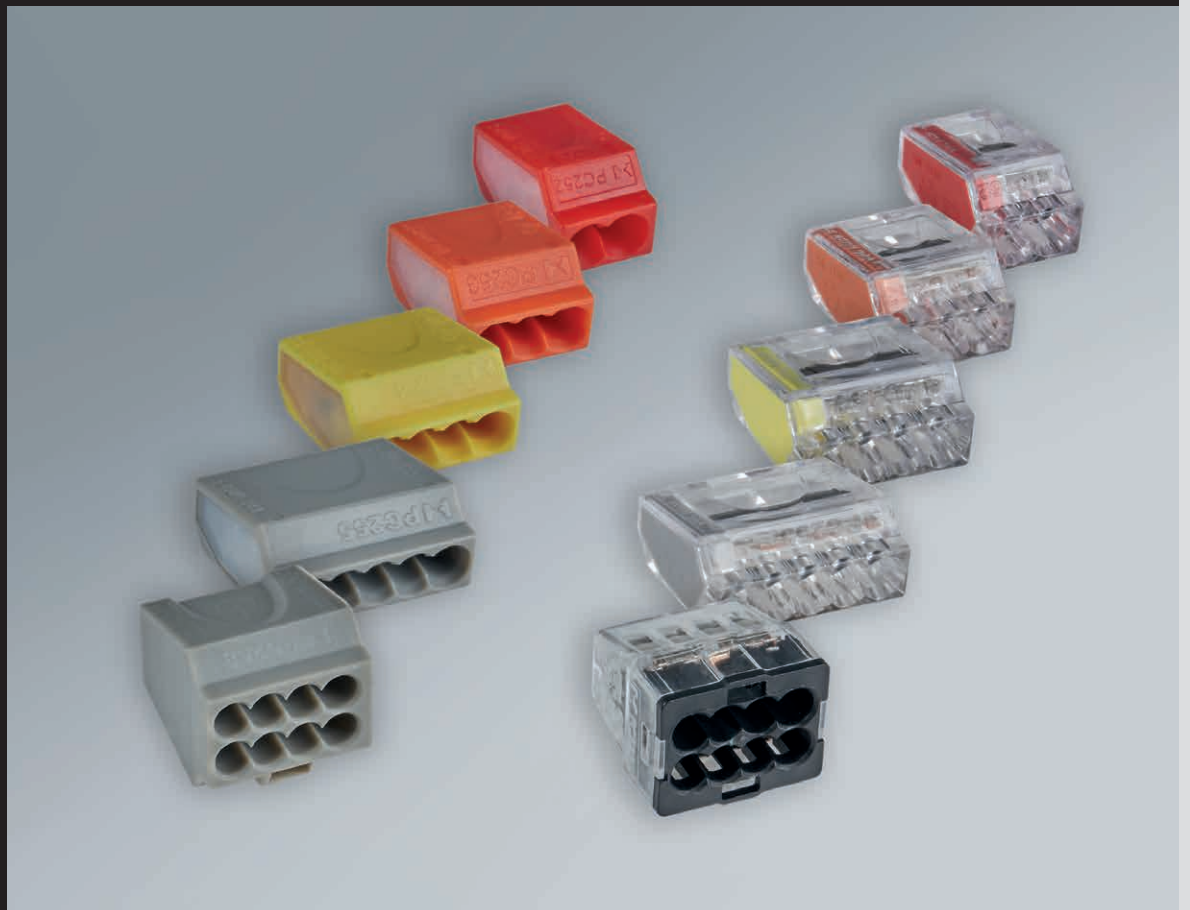
**haupa®**

**...convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



## Connecting clamps



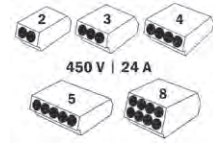
## Connecting clamps PC

PC

Transparent connecting clamps 2-8 pin, polycarbonate



| Art. no. | CSS       | Pol | Volt | A  | kg/100 | PU  |
|----------|-----------|-----|------|----|--------|-----|
| 265013   | 1,0 - 2,5 | 2   | 450  | 24 | 0,013  | 100 |
| 265014   | 1,0 - 2,5 | 3   | 450  | 24 | 0,013  | 100 |
| 265015   | 1,0 - 2,5 | 4   | 450  | 24 | 0,013  | 100 |
| 265016   | 1,0 - 2,5 | 5   | 450  | 24 | 0,013  | 100 |
| 265017   | 1,0 - 2,5 | 8   | 450  | 24 | 0,013  | 100 |



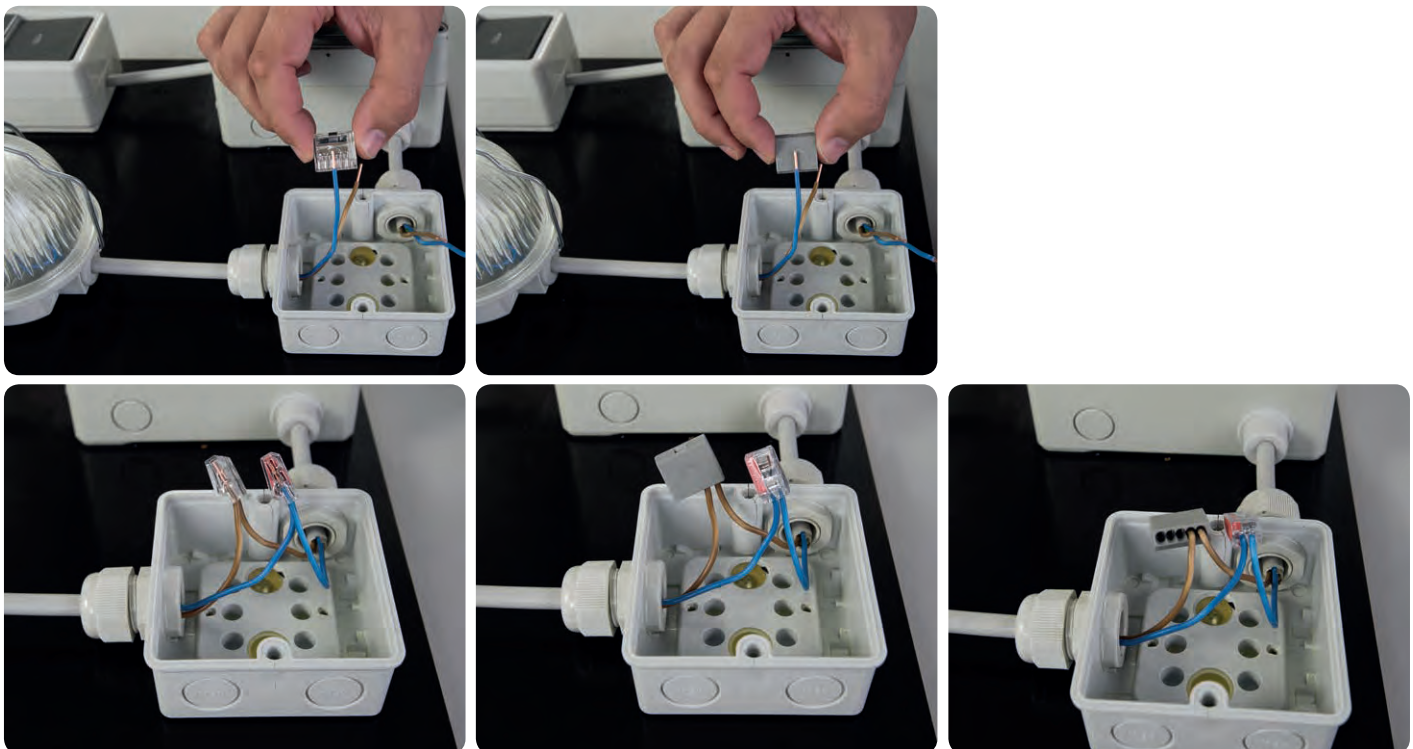
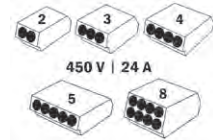
## Connecting clamps, Nylon

Nylon

Connecting clamps, 2-8 pin, Nylon



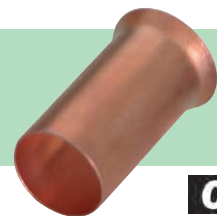
| Art. no. | CSS       | Pol | Volt | A  | kg/100 | PU  |
|----------|-----------|-----|------|----|--------|-----|
| 265033   | 1,0 - 2,5 | 2   | 450  | 24 | 0,013  | 100 |
| 265034   | 1,0 - 2,5 | 3   | 450  | 24 | 0,013  | 100 |
| 265035   | 1,0 - 2,5 | 4   | 450  | 24 | 0,013  | 100 |
| 265036   | 1,0 - 2,5 | 5   | 450  | 24 | 0,013  | 100 |
| 265037   | 1,0 - 2,5 | 8   | 450  | 24 | 0,013  | 100 |





End sleeves



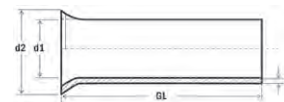


Cu

End sleeves

- of electrolytic copper, bare
- Dimensions to DIN 46228, Part 1

| Art. no.   | CSS  | d1   | d2   | s    | TL | kg/100 | PU   |
|------------|------|------|------|------|----|--------|------|
| 270141     | 0,34 | 0,85 | 1,8  | 0,15 | 5  | 0,003  | 1000 |
| 270140     | 0,5  | 1,0  | 2,1  | 0,15 | 6  | 0,004  | 1000 |
| 270140/500 |      | 1,0  | 2,1  | 0,15 | 6  | 0,002  | 500  |
| 270142     | 0,75 | 1,2  | 2,3  | 0,15 | 6  | 0,005  | 1000 |
| 270142/500 |      | 1,2  | 2,3  | 0,15 | 6  | 0,003  | 500  |
| 270143     |      | 1,2  | 2,3  | 0,15 | 10 | 0,005  | 1000 |
| 270143/500 |      | 1,2  | 2,3  | 0,15 | 10 | 0,005  | 500  |
| 270144     |      | 1,2  | 2,3  | 0,15 | 12 | 0,007  | 1000 |
| 270146     | 1    | 1,4  | 2,5  | 0,15 | 6  | 0,005  | 1000 |
| 270146/500 |      | 1,4  | 2,5  | 0,15 | 6  | 0,004  | 500  |
| 270148     |      | 1,4  | 2,5  | 0,15 | 10 | 0,007  | 1000 |
| 270148/500 |      | 1,4  | 2,5  | 0,15 | 10 | 0,006  | 500  |
| 270149     |      | 1,4  | 2,5  | 0,15 | 12 | 0,009  | 1000 |
| 270149/500 |      | 1,4  | 2,5  | 0,15 | 12 | 0,009  | 500  |
| 270150     | 1,5  | 1,7  | 2,8  | 0,15 | 7  | 0,005  | 1000 |
| 270150/500 |      | 1,7  | 2,8  | 0,15 | 7  | 0,005  | 500  |
| 270152     |      | 1,7  | 2,8  | 0,15 | 10 | 0,009  | 1000 |
| 270152/500 |      | 1,7  | 2,8  | 0,15 | 10 | 0,008  | 500  |
| 270154     |      | 1,7  | 2,8  | 0,15 | 12 | 0,012  | 1000 |
| 270154/500 |      | 1,7  | 2,8  | 0,15 | 12 | 0,009  | 500  |
| 270156     |      | 1,7  | 2,8  | 0,15 | 18 | 0,014  | 1000 |
| 270156/500 |      | 1,7  | 2,8  | 0,15 | 18 | 0,014  | 500  |
| 270158     | 2,5  | 2,5  | 3,4  | 0,15 | 7  | 0,008  | 1000 |
| 270158/500 |      | 2,5  | 3,4  | 0,15 | 7  | 0,010  | 500  |
| 270159     |      | 2,5  | 3,4  | 0,15 | 10 | 0,013  | 1000 |
| 270159/500 |      | 2,5  | 3,4  | 0,15 | 10 | 0,013  | 500  |
| 270160     |      | 2,5  | 3,4  | 0,15 | 12 | 0,012  | 1000 |
| 270160/500 |      | 2,5  | 3,4  | 0,15 | 12 | 0,011  | 500  |
| 270164     | 4    | 2,8  | 4,0  | 0,2  | 9  | 0,018  | 1000 |
| 270164/500 |      | 2,8  | 4,0  | 0,2  | 9  | 0,014  | 500  |
| 270166     |      | 2,8  | 4,0  | 0,2  | 12 | 0,019  | 1000 |
| 270166/500 |      | 2,8  | 4,0  | 0,2  | 12 | 0,018  | 500  |
| 270168     |      | 2,8  | 4,0  | 0,2  | 18 | 0,030  | 1000 |
| 270168/500 |      | 2,8  | 4,0  | 0,2  | 18 | 0,030  | 500  |
| 270170     | 6    | 3,5  | 4,7  | 0,2  | 10 | 0,020  | 250  |
| 270172     |      | 3,5  | 4,7  | 0,2  | 12 | 0,022  | 250  |
| 270174     |      | 3,5  | 4,7  | 0,2  | 15 | 0,034  | 250  |
| 270176     |      | 3,5  | 4,7  | 0,2  | 18 | 0,034  | 250  |
| 270178     | 10   | 4,5  | 5,8  | 0,2  | 12 | 0,028  | 250  |
| 270180     |      | 4,5  | 5,8  | 0,2  | 15 | 0,054  | 250  |
| 270182     |      | 4,5  | 5,8  | 0,2  | 18 | 0,068  | 250  |
| 270184     | 16   | 5,8  | 7,5  | 0,2  | 12 | 0,045  | 250  |
| 270186     |      | 5,8  | 7,5  | 0,2  | 15 | 0,057  | 250  |
| 270188     |      | 5,8  | 7,5  | 0,2  | 18 | 0,059  | 250  |
| 270190     | 25   | 7,3  | 9,5  | 0,2  | 12 | 0,058  | 250  |
| 270192     |      | 7,3  | 9,5  | 0,2  | 18 | 0,080  | 250  |
| 270194     | 35   | 8,3  | 11,0 | 0,2  | 18 | 0,114  | 100  |
| 270195     |      | 8,3  | 11,0 | 0,2  | 20 | 0,108  | 100  |
| 270196     |      | 8,3  | 11,0 | 0,2  | 22 | 0,100  | 100  |
| 270198     |      | 8,3  | 11,0 | 0,2  | 26 | 0,110  | 100  |





**Cu**

End sleeves

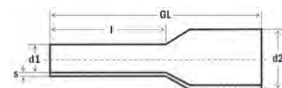
- of electrolytic copper, tin-plated
- Dimensions to DIN 46228, Part 1

| Art. no.   | CSS  | d1   | d2   | s    | TL | kg/100 | PU   |
|------------|------|------|------|------|----|--------|------|
| 270066     | 0,25 | 0,75 | 1,7  | 0,15 | 5  | 0,003  | 1000 |
| 270066/500 |      | 0,75 | 1,7  | 0,15 | 5  | 0,002  | 500  |
| 270068     | 0,34 | 0,85 | 1,8  | 0,15 | 5  | 0,003  | 1000 |
| 270068/500 |      | 0,85 | 1,8  | 0,15 | 5  | 0,001  | 500  |
| 270070     | 0,5  | 1,0  | 2,1  | 0,15 | 6  | 0,003  | 1000 |
| 270070/500 |      | 1,0  | 2,1  | 0,15 | 6  | 0,003  | 500  |
| 270072     | 0,75 | 1,2  | 2,3  | 0,15 | 6  | 0,003  | 1000 |
| 270072/500 |      | 1,2  | 2,3  | 0,15 | 6  | 0,003  | 500  |
| 270074     |      | 1,2  | 2,3  | 0,15 | 12 | 0,007  | 1000 |
| 270074/500 |      | 1,2  | 2,3  | 0,15 | 12 | 0,003  | 500  |
| 270076     | 1    | 1,4  | 2,5  | 0,15 | 6  | 0,004  | 1000 |
| 270077     |      | 1,4  | 4,0  | 0,15 | 8  | 0,005  | 1000 |
| 270078     |      | 1,4  | 2,5  | 0,15 | 10 | 0,007  | 1000 |
| 270078/500 |      | 1,4  | 2,5  | 0,15 | 10 | 0,003  | 500  |
| 270079     |      | 1,4  | 2,5  | 0,15 | 12 | 0,008  | 1000 |
| 270079/500 |      | 1,4  | 2,5  | 0,15 | 12 | 0,004  | 500  |
| 270080     | 1,5  | 1,7  | 2,8  | 0,15 | 7  | 0,006  | 1000 |
| 270082     |      | 1,7  | 2,8  | 0,15 | 10 | 0,009  | 1000 |
| 270082/500 |      | 1,7  | 2,8  | 0,15 | 10 | 0,005  | 500  |
| 270084     |      | 1,7  | 2,8  | 0,15 | 12 | 0,010  | 1000 |
| 270084/500 |      | 1,7  | 2,8  | 0,15 | 12 | 0,005  | 500  |
| 270086     |      | 1,7  | 2,8  | 0,15 | 18 | 0,010  | 1000 |
| 270086/500 |      | 1,7  | 2,8  | 0,15 | 18 | 0,010  | 500  |
| 270087     |      | 1,7  | 2,8  | 0,15 | 20 | 0,018  | 1000 |
| 270088     | 2,5  | 2,2  | 3,4  | 0,15 | 7  | 0,008  | 1000 |
| 270089     |      | 2,2  | 3,4  | 0,15 | 10 | 0,017  | 1000 |
| 270089/500 |      | 2,2  | 3,4  | 0,15 | 10 | 0,017  | 500  |
| 270090     |      | 2,2  | 3,4  | 0,15 | 12 | 0,011  | 1000 |
| 270090/500 |      | 2,2  | 3,4  | 0,15 | 12 | 0,011  | 500  |
| 270091     |      | 2,2  | 3,4  | 0,15 | 15 | 0,015  | 1000 |
| 270091/500 |      | 2,2  | 3,4  | 0,15 | 15 | 0,015  | 500  |
| 270092     |      | 2,2  | 3,4  | 0,15 | 18 | 0,023  | 1000 |
| 270092/500 |      | 2,2  | 3,4  | 0,15 | 18 | 0,023  | 500  |
| 270093     |      | 2,2  | 3,4  | 0,15 | 20 | 0,020  | 1000 |
| 270093/500 |      | 2,2  | 3,4  | 0,15 | 20 | 0,020  | 500  |
| 270094     | 4    | 2,8  | 4,0  | 0,2  | 9  | 0,015  | 1000 |
| 270096     |      | 2,8  | 4,0  | 0,2  | 12 | 0,020  | 1000 |
| 270097     |      | 2,8  | 4,0  | 0,2  | 15 | 0,024  | 1000 |
| 270098     |      | 2,8  | 4,0  | 0,2  | 18 | 0,030  | 1000 |
| 270100     | 6    | 3,5  | 4,7  | 0,2  | 10 | 0,020  | 250  |
| 270102     |      | 3,5  | 4,7  | 0,2  | 12 | 0,024  | 250  |
| 270104     |      | 3,5  | 4,7  | 0,2  | 15 | 0,031  | 250  |
| 270106     |      | 3,5  | 4,7  | 0,2  | 18 | 0,036  | 250  |
| 270107     |      | 3,5  | 4,7  | 0,2  | 20 | 0,040  | 250  |
| 270108     | 10   | 4,5  | 5,8  | 0,0  | 12 | 0,032  | 250  |
| 270110     |      | 4,5  | 5,8  | 0,2  | 15 | 0,039  | 250  |
| 270112     |      | 4,5  | 5,8  | 0,2  | 18 | 0,045  | 250  |
| 270114     | 16   | 5,8  | 7,5  | 0,2  | 12 | 0,044  | 250  |
| 270116     |      | 5,8  | 7,5  | 0,2  | 15 | 0,056  | 250  |
| 270118     |      | 5,8  | 7,5  | 0,2  | 18 | 0,068  | 250  |
| 270119     |      | 5,8  | 7,5  | 0,2  | 24 | 0,104  | 250  |
| 270120     | 25   | 7,3  | 9,5  | 0,2  | 12 | 0,063  | 250  |
| 270121     |      | 7,3  | 9,5  | 0,2  | 15 | 0,075  | 250  |
| 270122     |      | 7,3  | 9,5  | 0,2  | 18 | 0,085  | 250  |
| 270123     |      | 7,3  | 9,5  | 0,2  | 25 | 0,121  | 100  |
| 270124     | 35   | 8,3  | 11,0 | 0,2  | 18 | 0,112  | 100  |
| 270126     |      | 8,3  | 11,0 | 0,2  | 22 | 0,132  | 100  |
| 270128     |      | 8,3  | 11,0 | 0,2  | 25 | 0,143  | 100  |
| 270130     |      | 8,3  | 11,0 | 0,2  | 30 | 0,155  | 100  |
| 270131     | 50   | 10,3 | 13,0 | 0,3  | 22 | 0,202  | 100  |
| 270132     | 70   | 12,5 | 15,0 | 0,4  | 25 | 0,259  | 100  |
| 270134     | 95   | 14,5 | 17,0 | 0,4  | 30 | 0,500  | 50   |
| 270135     | 120  | 16,5 | 19,0 | 0,5  | 32 | 0,660  | 50   |
| 270136     | 150  | 18,5 | 21,0 | 0,5  | 38 | 0,529  | 50   |
| 270137     | 185  | 20,0 | 23,5 | 0,6  | 40 | 1,350  | 25   |



End sleeves DIN colour range

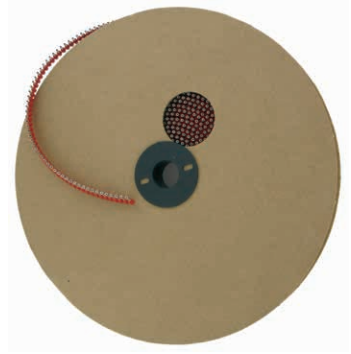
- insulated
- Electrolytic copper, tin-plated
- Dimensions to DIN 46228. Part 4
- DIN colour range III



| Art. no. | CSS  |        | d1   | d2   | s    | TL   | l  | kg/100 | PU  |
|----------|------|--------|------|------|------|------|----|--------|-----|
| 270800   | 0,5  | white  | 1,1  | 3,1  | 0,15 | 14,0 | 8  | 0,010  | 100 |
| 270801   |      | white  | 1,1  | 3,1  | 0,15 | 14,0 | 8  | 0,009  | 500 |
| 270802   | 0,75 | grey   | 1,25 | 3,3  | 0,15 | 14,0 | 8  | 0,009  | 500 |
| 270803   |      | grey   | 1,25 | 3,3  | 0,15 | 14,0 | 8  | 0,013  | 100 |
| 270804   | 1    | red    | 1,5  | 3,5  | 0,15 | 14,6 | 8  | 0,014  | 100 |
| 270805   |      | red    | 1,5  | 3,5  | 0,15 | 14,6 | 8  | 0,009  | 500 |
| 270806   |      | red    | 1,5  | 3,5  | 0,15 | 18,0 | 12 | 0,013  | 500 |
| 270807   | 1,5  | black  | 1,7  | 4,0  | 0,15 | 14,6 | 8  | 0,013  | 500 |
| 270808   |      | black  | 1,7  | 4,0  | 0,15 | 14,6 | 8  | 0,014  | 100 |
| 270809   |      | black  | 1,7  | 4,0  | 0,15 | 14,6 | 10 | 0,111  | 100 |
| 270810   | 2,5  | blue   | 2,3  | 4,9  | 0,15 | 15,0 | 8  | 0,020  | 100 |
| 270811   |      | blue   | 2,3  | 4,9  | 0,15 | 15,0 | 8  | 0,017  | 500 |
| 270812   |      | blue   | 2,3  | 4,9  | 0,15 | 16,5 | 10 | 0,018  | 500 |
| 270813   |      | blue   | 2,3  | 4,9  | 0,15 | 25,0 | 18 | 0,030  | 500 |
| 270814   | 4    | grey   | 2,9  | 5,6  | 0,2  | 17,7 | 10 | 0,030  | 100 |
| 270815   |      | grey   | 2,9  | 5,6  | 0,2  | 17,7 | 10 | 0,030  | 500 |
| 270816   |      | grey   | 2,9  | 5,6  | 0,2  | 25,7 | 18 | 0,040  | 100 |
| 270818   | 6    | yellow | 3,6  | 7,0  | 0,2  | 20,0 | 12 | 0,045  | 100 |
| 270820   |      | yellow | 3,6  | 7,0  | 0,2  | 26,0 | 18 | 0,055  | 100 |
| 270822   | 10   | red    | 4,6  | 8,4  | 0,2  | 21,5 | 12 | 0,057  | 100 |
| 270824   |      | red    | 4,6  | 8,4  | 0,2  | 27,5 | 18 | 0,072  | 100 |
| 270826   | 16   | blue   | 6,0  | 9,6  | 0,2  | 22,2 | 12 | 0,082  | 100 |
| 270828   |      | blue   | 6,0  | 9,6  | 0,2  | 28,2 | 18 | 0,103  | 100 |
| 270830   | 25   | yellow | 7,3  | 12,0 | 0,2  | 30,0 | 16 | 0,142  | 50  |
| 270832   |      | yellow | 7,3  | 12,0 | 0,2  | 32,0 | 18 | 0,152  | 50  |
| 270834   |      | yellow | 7,3  | 12,0 | 0,2  | 36,0 | 22 | 0,168  | 50  |
| 270836   | 35   | red    | 8,3  | 13,5 | 0,2  | 30,0 | 16 | 0,168  | 50  |
| 270838   |      | red    | 8,3  | 13,5 | 0,2  | 32,0 | 18 | 0,178  | 50  |
| 270840   |      | red    | 8,3  | 13,5 | 0,2  | 39,0 | 25 | 0,218  | 50  |
| 270842   | 50   | blue   | 10,3 | 15,0 | 0,3  | 36,0 | 20 | 0,344  | 50  |
| 270844   |      | blue   | 10,3 | 15,0 | 0,3  | 40,0 | 25 | 0,404  | 50  |

**End sleeves in tape form, to DIN 46228 P. 4**

- insulated
- Copper/plastic, tin-plated surface
- DIN color range III



| Art. no. | CSS  |       | l | coils    | kg/100 | PU   |
|----------|------|-------|---|----------|--------|------|
| 272250   | 0,5  | white | 8 | Ø 250 mm | 0,010  | 3000 |
| 272254   | 0,75 | grey  | 8 | Ø 250 mm | 0,030  | 3000 |
| 272260   | 1,0  | red   | 8 | Ø 250 mm | 0,010  | 3000 |
| 272264   | 1,5  | black | 8 | Ø 250 mm | 0,010  | 2500 |
| 272268   | 2,5  | blue  | 8 | Ø 250 mm | 0,010  | 1500 |

**End sleeves in tape form, to DIN 46228 P. 4**

- insulated
- Copper/plastic, tin-plated surface



| Art. no. | CSS  |       | l | dispenser     | kg/100 | PU   |
|----------|------|-------|---|---------------|--------|------|
| 272280   | 0,5  | white | 8 | 150x150x18 mm | 0,070  | 1000 |
| 272284   | 0,75 | grey  | 8 | 150x150x18 mm | 0,100  | 1000 |
| 272290   | 1    | red   | 8 | 150x150x18 mm | 0,120  | 1000 |
| 272294   | 1,5  | black | 8 | 150x150x18 mm | 0,120  | 1000 |
| 272298   | 2,5  | blue  | 8 | 150x150x18 mm | 0,140  | 500  |

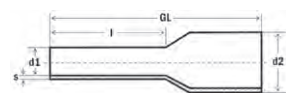


End sleeves, colour range I, (french)

- insulated
- Electrolytic copper, tin-plated
- Dimensions to DIN 46228. Part 4
- Colour range I, french



| Art. no. | CSS         | d1   | d2   | s    | TL   | l  | kg/100 | PU  |
|----------|-------------|------|------|------|------|----|--------|-----|
| 270014   | 0,25 yellow | 0,8  | 2,3  | 0,15 | 10,4 | 6  | 0,005  | 100 |
| 270015   | 0,25 yellow | 0,8  | 2,3  | 0,15 | 10,4 | 6  | 0,023  | 500 |
| 270016   | 0,34 green  | 0,8  | 2,5  | 0,15 | 12,4 | 6  | 0,022  | 500 |
| 270800   | 0,5 white   | 1,1  | 3,1  | 0,15 | 14,0 | 8  | 0,010  | 100 |
| 270801   | 0,5 white   | 1,1  | 3,1  | 0,15 | 14,0 | 8  | 0,009  | 500 |
| 270021   | 0,75 blue   | 1,25 | 3,3  | 0,15 | 14,5 | 8  | 0,021  | 100 |
| 270022   | 0,75 blue   | 1,25 | 3,3  | 0,15 | 14,5 | 8  | 0,021  | 500 |
| 270804   | 1 red       | 1,5  | 3,5  | 0,15 | 14,6 | 8  | 0,014  | 100 |
| 270805   | 1 red       | 1,5  | 3,5  | 0,15 | 14,6 | 8  | 0,009  | 500 |
| 270808   | 1,5 black   | 1,7  | 4,0  | 0,15 | 14,6 | 8  | 0,014  | 100 |
| 270027   | 1,5 black   | 1,7  | 4,0  | 0,15 | 24,4 | 18 | 0,022  | 100 |
| 270028   | 1,5 black   | 1,7  | 4,0  | 0,15 | 24,4 | 18 | 0,022  | 500 |
| 270029   | 2,5 grey    | 2,3  | 4,9  | 0,15 | 15,0 | 8  | 0,020  | 100 |
| 270030   | 2,5 grey    | 2,3  | 4,9  | 0,15 | 15,0 | 8  | 0,020  | 500 |
| 270031   | 2,5 grey    | 2,3  | 4,9  | 0,15 | 21,0 | 18 | 0,028  | 100 |
| 270032   | 2,5 grey    | 2,3  | 4,9  | 0,15 | 21,0 | 18 | 0,028  | 500 |
| 270033   | 4 orange    | 2,9  | 5,6  | 0,2  | 17,7 | 10 | 0,029  | 100 |
| 270034   | 4 orange    | 2,9  | 5,6  | 0,2  | 17,7 | 10 | 0,029  | 500 |
| 270036   | 4 orange    | 2,9  | 5,6  | 0,2  | 25,7 | 18 | 0,040  | 100 |
| 270038   | 6 green     | 3,6  | 7,0  | 0,2  | 20,0 | 12 | 0,043  | 100 |
| 270040   | 6 green     | 3,6  | 7,0  | 0,2  | 26,0 | 18 | 0,065  | 100 |
| 270042   | 10 brown    | 4,6  | 8,4  | 0,2  | 21,5 | 12 | 0,046  | 100 |
| 270044   | 10 brown    | 4,6  | 8,4  | 0,2  | 27,5 | 18 | 0,073  | 100 |
| 270046   | 16 ivory    | 6,0  | 9,6  | 0,2  | 24,2 | 12 | 0,081  | 100 |
| 270048   | 16 ivory    | 6,0  | 9,6  | 0,2  | 28,2 | 18 | 0,103  | 100 |
| 270049   | 25 black    | 7,3  | 12,0 | 0,2  | 30,0 | 16 | 0,070  | 50  |
| 270050   | 25 black    | 7,3  | 12,0 | 0,2  | 32,0 | 18 | 0,079  | 50  |

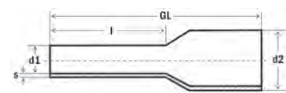


End sleeves, colour range II, (german)

- insulated
- Electrolytic copper, tin-plated
- Colour range II, german



| Art. no. | CSS             | d1   | d2   | s    | TL   | l  | kg/100 | PU  |
|----------|-----------------|------|------|------|------|----|--------|-----|
| 270714   | 0,25 light blue | 0,8  | 2,3  | 0,15 | 10,4 | 6  | 0,007  | 100 |
| 270715   | 0,25 light blue | 0,8  | 2,3  | 0,15 | 10,4 | 6  | 0,005  | 500 |
| 270716   | 0,34 emerald    | 0,8  | 2,5  | 0,15 | 10,4 | 6  | 0,005  | 500 |
| 270719   | 0,5 orange      | 1,1  | 3,1  | 0,15 | 14,0 | 8  | 0,010  | 100 |
| 270720   | 0,5 orange      | 1,1  | 3,1  | 0,15 | 14,0 | 8  | 0,009  | 500 |
| 270721   | 0,75 white      | 1,25 | 3,3  | 0,15 | 14,6 | 8  | 0,012  | 100 |
| 270722   | 0,75 white      | 1,25 | 3,3  | 0,15 | 14,6 | 8  | 0,011  | 500 |
| 270723   | 1 yellow        | 1,5  | 3,5  | 0,15 | 14,6 | 8  | 0,013  | 100 |
| 270724   | 1 yellow        | 1,5  | 3,5  | 0,15 | 14,6 | 8  | 0,011  | 500 |
| 270725   | 1,5 red         | 1,7  | 4,0  | 0,15 | 14,6 | 8  | 0,015  | 100 |
| 270726   | 1,5 red         | 1,7  | 4,0  | 0,15 | 14,6 | 8  | 0,013  | 500 |
| 270727   | 1,5 red         | 1,7  | 4,0  | 0,15 | 24,4 | 18 | 0,023  | 100 |
| 270728   | 1,5 red         | 1,7  | 4,0  | 0,15 | 24,4 | 18 | 0,023  | 500 |
| 270810   | 2,5 blue        | 2,3  | 4,9  | 0,15 | 15,0 | 8  | 0,020  | 100 |
| 270811   | 2,5 blue        | 2,3  | 4,9  | 0,15 | 15,0 | 8  | 0,017  | 500 |
| 270813   | 2,5 blue        | 2,3  | 4,9  | 0,15 | 25,0 | 18 | 0,030  | 500 |
| 270732   | 2,5 blue        | 2,3  | 4,9  | 0,15 | 25,0 | 18 | 0,030  | 500 |
| 270814   | 4 grey          | 2,9  | 5,6  | 0,2  | 17,7 | 10 | 0,030  | 100 |
| 270815   | 4 grey          | 2,9  | 5,6  | 0,2  | 17,7 | 10 | 0,030  | 500 |
| 270816   | 4 grey          | 2,9  | 5,6  | 0,2  | 25,7 | 18 | 0,040  | 100 |
| 270738   | 6 black         | 3,6  | 7,0  | 0,2  | 20,0 | 12 | 0,050  | 100 |
| 270740   | 6 black         | 3,6  | 7,0  | 0,2  | 26,0 | 18 | 0,062  | 100 |
| 270742   | 10 ivory        | 4,6  | 8,4  | 0,2  | 21,5 | 12 | 0,066  | 100 |
| 270744   | 10 ivory        | 4,6  | 8,4  | 0,2  | 27,5 | 18 | 0,081  | 100 |
| 270746   | 16 green        | 6,0  | 9,6  | 0,2  | 22,2 | 12 | 0,080  | 100 |
| 270748   | 16 green        | 6,0  | 9,6  | 0,2  | 28,2 | 18 | 0,104  | 100 |
| 270750   | 25 brown        | 7,3  | 11,2 | 0,2  | 29,0 | 16 | 0,132  | 50  |
| 270754   | 35 beige        | 8,3  | 12,7 | 0,2  | 30,0 | 16 | 0,170  | 50  |
| 270756   | 35 beige        | 8,3  | 12,7 | 0,2  | 39,0 | 25 | 0,400  | 25  |
| 270758   | 50 olive        | 10,3 | 15,0 | 0,3  | 36,4 | 20 | 0,328  | 25  |
| 270760   | 50 olive        | 10,3 | 15,0 | 0,3  | 41,0 | 25 | 0,300  | 25  |
| 270762   | 70 yellow       | 13,5 | 17,2 | 0,4  | 37,0 | 21 | 0,536  | 25  |



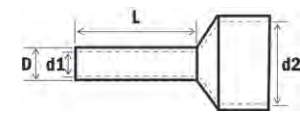
End sleeves for short-circuit-proof cables

- for short-circuit-proof cables with extra thick insulation (NSFGAFÖU)

Application: Infeed or branches in front of mains switch, in switching stations, distributors or with rail vehicles, solar heating units, ignition cables

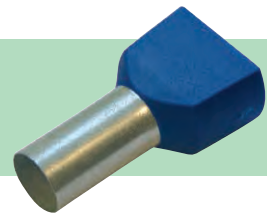


| Art. no. | CSS |        | d1  | d2   | l  | kg/100 | PU  |
|----------|-----|--------|-----|------|----|--------|-----|
| 270900   | 1,5 | black  | 1,8 | 6,8  | 8  | 0,026  | 100 |
| 270902   |     | black  | 1,8 | 6,8  | 10 | 0,024  | 100 |
| 270904   | 2,5 | blue   | 2,3 | 7,8  | 8  | 0,033  | 100 |
| 270906   |     | blue   | 2,3 | 7,8  | 12 | 0,360  | 100 |
| 270908   | 4   | grey   | 2,9 | 7,8  | 10 | 0,046  | 100 |
| 270910   | 6   | yellow | 3,8 | 7,3  | 12 | 0,062  | 100 |
| 270912   | 10  | red    | 4,5 | 9,8  | 12 | 0,081  | 100 |
| 270914   | 16  | blue   | 6,0 | 12,2 | 12 | 0,107  | 100 |

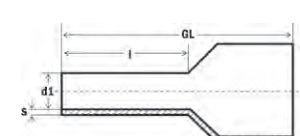


Twin-end sleeves two cables DIN

- tube section of electrolytic copper
- galvanically tin-plated
- plastic collar of PP
- heat-resistant to 105°C

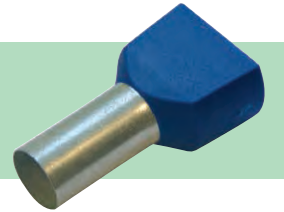


| Art. no. | CSS  |        | d1   | s    | TL   | l  | kg/100 | PU  |
|----------|------|--------|------|------|------|----|--------|-----|
| 270778   | 0,5  | white  | 1,5  | 0,15 | 15,0 | 8  | 0,011  | 100 |
| 270780   | 0,75 | grey   | 1,8  | 0,15 | 15,0 | 8  | 0,013  | 100 |
| 270782   |      | grey   | 1,8  | 0,15 | 17,0 | 10 | 0,014  | 100 |
| 270784   | 1    | red    | 2,05 | 0,15 | 15,0 | 8  | 0,014  | 100 |
| 270787   |      | red    | 2,05 | 0,15 | 17,0 | 10 | 0,015  | 100 |
| 270788   | 1,5  | black  | 2,3  | 0,15 | 16,0 | 8  | 0,017  | 100 |
| 270790   |      | black  | 2,3  | 0,15 | 20,0 | 12 | 0,022  | 100 |
| 270792   | 2,5  | blue   | 2,9  | 0,2  | 18,5 | 10 | 0,029  | 100 |
| 270794   |      | blue   | 2,9  | 0,2  | 21,5 | 13 | 0,033  | 100 |
| 270796   | 4    | grey   | 3,8  | 0,2  | 23,0 | 12 | 0,049  | 100 |
| 270797   | 6    | yellow | 4,9  | 0,2  | 25,0 | 14 | 0,072  | 100 |
| 270798   | 10   | red    | 6,5  | 0,2  | 26,0 | 14 | 0,090  | 100 |
| 270799   | 16   | blue   | 8,3  | 0,2  | 31,0 | 16 | 0,078  | 50  |

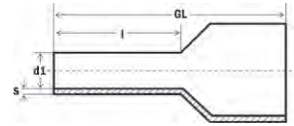


## Twin-end sleeves, colour series II (German)

- insulated
- Copper/plastic, tin-plated surface
- Colour range II, german



| Art. no. | CSS  |        | d1   | s    | TL   | l  | kg/100 |  | PU  |
|----------|------|--------|------|------|------|----|--------|--|-----|
| 273350   | 0,5  | orange | 1,5  | 0,15 | 15,0 | 8  | 0,031  |  | 100 |
| 273352   | 0,75 | white  | 1,8  | 0,15 | 15,0 | 8  | 0,031  |  | 100 |
| 273354   |      | white  | 1,8  | 0,15 | 17,0 | 10 | 0,031  |  | 100 |
| 273356   | 1    | yellow | 2,05 | 0,15 | 15,0 | 8  | 0,031  |  | 100 |
| 273358   |      | yellow | 1,7  | 0,15 | 17,0 | 12 | 0,031  |  | 100 |
| 273360   | 1,5  | red    | 2,3  | 0,15 | 16,0 | 8  | 0,031  |  | 100 |
| 273362   |      | red    | 2,3  | 0,15 | 20,0 | 12 | 0,031  |  | 100 |
| 273392   | 2,5  | blue   | 2,9  | 0,2  | 18,5 | 10 | 0,029  |  | 100 |
| 273394   |      | blue   | 2,9  | 0,2  | 21,5 | 13 | 0,029  |  | 100 |
| 273396   | 4    | grey   | 3,8  | 0,2  | 23,0 | 12 | 0,049  |  | 100 |
| 273364   | 6    | black  | 4,9  | 0,2  | 25,0 | 14 | 0,031  |  | 100 |
| 273366   | 10   | ivory  | 6,5  | 0,2  | 26,0 | 14 | 0,031  |  | 100 |
| 273368   | 16   | green  | 8,3  | 0,2  | 31,0 | 16 | 0,031  |  | 50  |





## Empty dispenser box



| Art. no. | kg    | PU |
|----------|-------|----|
| 270870   | 0,049 | 5  |

## Dispenser box with uninsulated end sleeves

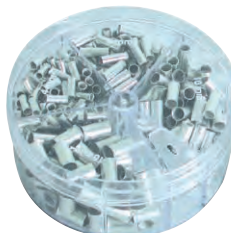
**Contents:** tīn-plated end sleeves  
 700 pcs. 0.5 mm<sup>2</sup>, art. 270070  
 1000 pcs. 0.75 mm<sup>2</sup>, art. 270072  
 800 pcs. 1.0 mm<sup>2</sup>, art. 270076  
 500 pcs. 1.5 mm<sup>2</sup>, art. 270080  
 450 pcs. 2.5 mm<sup>2</sup>, art. 270088



| Art. no. | kg    | PU |
|----------|-------|----|
| 270217   | 0,240 | 1  |

## Dispenser box with uninsulated end sleeves

**Contents:** tīn-plated end sleeves  
 200 pcs. 4 mm<sup>2</sup>, art. 270094  
 100 pcs. 6.0 mm<sup>2</sup>, art. 270102  
 50 pcs. 10.0 mm<sup>2</sup>, art. 270108  
 50 pcs. 16.0 mm<sup>2</sup>, art. 270114



| Art. no. | kg    | PU |
|----------|-------|----|
| 270218   | 0,158 | 1  |

## Dispenser box with insulated end sleeves (DIN)

**Contents:** Colour range III, DIN  
 50 pcs. white, 0.5 mm<sup>2</sup>, art. 270800  
 100 pcs. grey, 0.75 mm<sup>2</sup>, art. 270802  
 100 pcs. red, 1.0 mm<sup>2</sup>, art. 270804  
 100 pcs. black, 1.5 mm<sup>2</sup>, art. 270807  
 50 pcs. blue, 2.5 mm<sup>2</sup>, art. 270810



| Art. no. | kg    | PU |
|----------|-------|----|
| 270854   | 0,090 | 1  |

## Dispenser box with insulated end sleeves (DIN)

**Contents:** Colour range III, DIN  
 50 pcs. grey, 4 mm<sup>2</sup>, art. 270815  
 20 pcs. yellow, 6 mm<sup>2</sup>, art. 270818  
 20 pcs. red, 10 mm<sup>2</sup>, art. 270822  
 10 pcs. blue, 16 mm<sup>2</sup>, art. 270826



| Art. no. | kg    | PU |
|----------|-------|----|
| 270858   | 0,089 | 1  |

## Dispenser box with Twin end sleeves (DIN)

**Contents:**  
 50 pcs. grey, 0.75 mm<sup>2</sup>, art. 270780  
 50 pcs. red, 1.0 mm<sup>2</sup>, art. 270784  
 50 pcs. black, 1.5 mm<sup>2</sup>, art. 270788  
 50 pcs. blue, 2.5 mm<sup>2</sup>, art. 270792



| Art. no. | kg    | PU |
|----------|-------|----|
| 270795   | 0,080 | 1  |

## Dispenser box with insulated end sleeves (german)

**Contents:** Colour range II  
 50 pcs. orange, 0.5 mm<sup>2</sup>, art. 270719  
 100 pcs. white, 0.75 mm<sup>2</sup>, art. 270721  
 100 pcs. yellow, 1.0 mm<sup>2</sup>, art. 270723  
 100 pcs. red, 1.5 mm<sup>2</sup>, art. 270725  
 50 pcs. blue, 2.5 mm<sup>2</sup>, art. 270810



| Art. no. | kg    | PU |
|----------|-------|----|
| 270852   | 0,089 | 1  |

## Dispenser box with insulated end sleeves (german)

**Contents:** Colour range II  
 50 pcs. grey, 4 mm<sup>2</sup>, art. 270814  
 20 pcs. black, 6 mm<sup>2</sup>, art. 270738  
 20 pcs. ivory, 10 mm<sup>2</sup>, art. 270742  
 10 pcs. green, 16 mm<sup>2</sup>, art. 270746



| Art. no. | kg    | PU |
|----------|-------|----|
| 270856   | 0,087 | 1  |

## Dispenser box with insulated end sleeves (french)

**Contents:** Colour range I  
 50 pcs. white, 0.5 mm<sup>2</sup>, art. 270800  
 100 pcs. blue, 0.75 mm<sup>2</sup>, art. 270021  
 100 pcs. red, 1.0 mm<sup>2</sup>, art. 270804  
 100 pcs. black, 1.5 mm<sup>2</sup>, art. 270808  
 50 pcs. grey, 2.5 mm<sup>2</sup>, art. 270029



| Art. no. | kg    | PU |
|----------|-------|----|
| 270850   | 0,090 | 1  |



## Slide Box with DIN end sleeves

The transparent sliding lids enable easy access and prevent the contents from becoming mixed up.

### Product features:

Handy plastic box with Euro holes, 5 separate compartments, simple access through sliding lids, no mixing of contents.  
Dimensions: 165 x 58 x 38 mm (L x W x H)

**Content:** Colour range III DIN  
50 pcs white, 0.5 mm<sup>2</sup>, art. 270800  
100 pcs. grey, 0.75 mm<sup>2</sup>, art. 270802  
100 pcs. red, 1.0 mm<sup>2</sup>, art. 270804  
100 pcs. black, 1.5 mm<sup>2</sup>, art. 270807  
50 pcs. blue, 2.5 mm<sup>2</sup>, art. 270810



| Art. no. | kg    | PU |
|----------|-------|----|
| 270864   | 0,109 | 1  |

## Slide Box with DIN TWIN end sleeves

### Content:

50 pcs. white, 2 x 0,5 mm<sup>2</sup>, art. 270778  
50 pcs. grey, 2 x 0,75 mm<sup>2</sup>, art. 270780  
50 pcs. red, 2 x 1,0 mm<sup>2</sup>, art. 270784  
50 pcs. black, 2 x 1,5 mm<sup>2</sup>, art. 270788  
25 pcs. blue, 2 x 2,5 mm<sup>2</sup>, art. 270792



| Art. no. | kg    | PU |
|----------|-------|----|
| 270866   | 0,104 | 1  |

## Assortments of wire-end sleeves

**Content:** 5.000 insulated wire-end sleeves, 1 crimping pliers (21 08 04), crimping range 0,08 - 10 mm<sup>2</sup> in plastic bulk storage chest 415 x 335 x 90 mm.  
100 Twin end sleeves 8/0,5, white, art. 270778  
100 Twin end sleeves 8/0,75, grey, art. 270780  
100 Twin end sleeves 8/1, red, art. 270784  
100 Twin end sleeves 8/1,5, black, art. 270788  
100 Twin end sleeves 10/2,5, blue, art. 270792  
100 Twin end sleeves 12/4,0, grey, art. 270796  
100 Twin end sleeves 14/6,0, yellow, art. 270797  
500 insulated end sleeves 8/0,5, white, art. 270801  
500 insulated end sleeves 8/0,75, grey, art. 270802  
1.000 insulated end sleeves 8/1, red, art. 270805  
1.000 insulated end sleeves 8/1,5, black, art. 270807  
500 insulated end sleeves 8/2,5, blue, art. 270811  
500 insulated end sleeves 10/4, grey, art. 270815  
200 insulated end sleeves 12/6, yellow, art. 270818  
200 insulated end sleeves 12/10, red, art. 270822



| Art. no. | Content | type | kg    | PU |
|----------|---------|------|-------|----|
| 270888   | 5100    | DIN  | 2,150 | 1  |
| 270890   | 5100    | II   | 2,150 | 1  |

## Assortments of wire-end sleeves

**Content:** 5.300 insulated wire-end sleeves, 1 crimping pliers (21 08 42), crimping range 1 - 10 mm<sup>2</sup>, in plastic bulk storage chest 415 x 335 x 90 mm.  
1.000 insulated end sleeves 8/1, red, art. 270805  
1.000 insulated end sleeves 8/1,5, black, art. 270807  
1.000 insulated end sleeves 8/2,5, blue, art. 270811  
500 insulated end sleeves 10/4, grey, art. 270815  
200 insulated end sleeves 12/6, yellow, art. 270818  
200 insulated end sleeves 12/10, red, art. 270822  
500 insulated end sleeves 12/1, red, art. 270806  
300 insulated end sleeves 18/1,5, black, art. 270027  
250 insulated end sleeves 18/2,5, blue, art. 270813  
200 insulated end sleeves 18/4, grey, art. 270816  
100 insulated end sleeves 18/6, yellow, art. 270820  
50 insulated end sleeves 18/10, red, art. 270824



| Art. no. | Content | type | kg    | PU |
|----------|---------|------|-------|----|
| 270891   | 5300    | DIN  | 2,100 | 1  |
| 270892   | 5300    | I    | 2,100 | 1  |

## Assortment for Combi-Crimp – DIN

**Content:** 1 crimping pliers (210784) for insulated terminals 0,5 - 2,5 mm<sup>2</sup> and end sleeves 0,5 - 6 mm<sup>2</sup>, 2.700 insulated end sleeves, 1.100 insulated terminals in plastic bulk storage chest 415 x 335 x 90 mm.  
 500 insulated end sleeves 0,5/8, white, art. 270801  
 500 insulated end sleeves 0,75/8, grey, art. 270802  
 500 insulated end sleeves 1/8, red, art. 270805  
 500 insulated end sleeves 1,5/8, black, art. 270807  
 500 insulated end sleeves 2,5/8, blue, art. 270811  
 100 insulated end sleeves 4/10, grey, art. 270814  
 100 insulated end sleeves 6/12, yellow, 270818  
 200 insulated butt connectors 0,25-1,5, art. 260350  
 200 insulated butt connectors 1,5-2,5, art. 260352  
 100 insulated socket sleeves 0,25-1,5/6,3x0,8, art. 260392  
 100 insulated socket sleeves 1,5-2,5/6,3x0,8, art. 260394  
 100 insulated ring terminals 0,25-1,5, M5, art. 260258  
 100 insulated ring terminals 1,5-2,5, M4, art. 260270  
 100 insulated ring terminals 1,5-2,5, M5, art. 260272  
 100 insulated ring terminals 1,5-2,5, M6, art. 260274  
 100 insulated ring terminals 0,25-1,5, M4, art. 260256



| Art. no. | Content | type | kg    | PU |
|----------|---------|------|-------|----|
| 270895   | 3800    | DIN  | 4,300 | 1  |
| 270896   | 3800    | I    | 4,300 | 1  |
| 270897   | 3800    | II   | 4,300 | 1  |

## End sleeve assortment – serie DIN

**Content:** 4.700 insulated end sleeves, in plastic bulk storage chest 415 x 335 x 90 mm.  
 100 Twin end sleeves 8/0,5, white, art. 270778  
 100 Twin end sleeves 8/0,75, grey, art. 270780  
 100 Twin end sleeves 8/1, red, art. 270784  
 100 Twin end sleeves 8/1,5, black, art. 270788  
 100 Twin end sleeves 8/2,5, blue, art. 270792  
 100 Twin end sleeves 12/4, grey, art. 270796  
 100 Twin end sleeves 14/6, yellow, art. 270797  
 100 Twin end sleeves 14/10, red, art. 270798  
 500 insulated end sleeves 8/0,5, white, art. 270801  
 500 insulated end sleeves 8/0,75, grey, art. 270802  
 500 insulated end sleeves 8/1, red, art. 270805  
 1000 insulated end sleeves 8/1,5, black, art. 270807  
 500 insul. end sleeves 8/2,5, blue, art. 270811  
 500 insulated end sleeves 10/4, grey, art. 270815  
 200 insul. end sl. 10/6, yellow, art. 270818  
 200 insul. end sl. 12/10, red, art. 270822



| Art. no. | Content | kg    | PU |
|----------|---------|-------|----|
| 270899   | 4700    | 2,150 | 1  |

## End sleeve assortment – serie DIN

**Content:** 1.150 insulated end sleeves crimping pliers (art. no. 210824), crimp 0,75 - 16,0 mm<sup>2</sup>, in plastic bulk storage chest 415 x 335 x 90 mm.  
 200 insulated end sleeves 8/0,75, grey, art. 270803  
 200 insulated end sleeves 8/1, red, art. 270804  
 200 insulated end sleeves 8/1,5, black, art. 270808  
 200 insulated end sleeves 8/2,5, blue, art. 270810  
 100 insulated end sleeves 10/4, grey, art. 270814  
 100 insulated end sleeves 12/6, yellow, art. 270818  
 100 insulated end sleeves 18/10, red, art. 270824  
 50 insulated end sleeves 18/16, blue, art. 270828



| Art. no.   | Content | type | kg    | PU |
|------------|---------|------|-------|----|
| 270882/DIN | 1150    | DIN  | 1,740 | 1  |
| 270882     | 1150    | I    | 1,700 | 1  |
| 270894     | 1150    | II   | 2,150 | 1  |



# Assortments of end sleeves - SysCon

## SysCon end sleeves & 210804



**Content:** 4100 insulated end sleeves

- 1 220370 ABS plastic box „SysCon S“
- 1 220375 Assortment insert „SysCon“
- 1 220399 Foam „SysCon“ 400 x 300 x 10 mm
- 1 210804 Crimping pliers for end sleeves 0,08 - 10 mm²

|      |        |                               |        |
|------|--------|-------------------------------|--------|
| 1000 | 270805 | insulated end sleeves, red    | 1/8    |
| 1000 | 270802 | insulated end sleeves, grey   | 0,75/8 |
| 500  | 270807 | insulated end sleeves, black  | 1,5/8  |
| 500  | 270811 | insulated end sleeves, blue   | 2,5/8  |
| 500  | 270815 | insulated end sleeves, grey   | 4/10   |
| 100  | 270818 | insulated end sleeves, yellow | 6/12   |
| 200  | 270788 | Twin-end sleeves, black       | 1,5/8  |
| 200  | 270792 | Twin-end sleeves, blue        | 2,5/10 |
| 100  | 270796 | Twin-end sleeves, grey        | 4,0/12 |



| Art. no. | Content | kg    | PU |
|----------|---------|-------|----|
| 220382   | 4100    | 4,300 | 1  |

## SysCon end sleeves & 210842



**Content:** 4950 insulated end sleeves

- 1 220370 ABS plastic box „SysCon S“
- 1 220399 Foam „SysCon“ 400 x 300 x 10 mm
- 1 220375 Assortment insert „SysCon“
- 1 210842 Crimping pliers for end sleeves 1 - 10 mm²

|      |        |                               |        |
|------|--------|-------------------------------|--------|
| 1000 | 270805 | insulated end sleeves, red    | 1/8    |
| 1000 | 270807 | insulated end sleeves, black  | 1,5/8  |
| 1000 | 270811 | insulated end sleeves, blue   | 2,5/8  |
| 500  | 270815 | insulated end sleeves, grey   | 4/10   |
| 200  | 270818 | insulated end sleeves, yellow | 6/12   |
| 200  | 270822 | insulated end sleeves, red    | 10/12  |
| 500  | 270806 | insulated end sleeves, red    | 1/12   |
| 300  | 270027 | insulated end sleeves, black  | 1,5/18 |
| 250  | 270813 | insulated end sleeves, blue   | 2,5/18 |



| Art. no. | Content | kg    | PU |
|----------|---------|-------|----|
| 220390   | 4950    | 4,300 | 1  |



Insulated crimp terminals



## INFO

The Quality

The elimination of every need to weld complicated operations to effect an electrical connection, the high productivity in cable termination, the low contact resistance as well as the high connection reliability are only some of the multiple advantages guaranteed by the HAUPA crimp systems.

### Variety

The wide and complete range of crimp terminals satisfies the most different connection requirements with the widest application field even referring to the hardest and least favourable conditions of operation.

### Materials

The high conductivity and the top mechanical characteristics are guaranteed by the purity (up to 99,9%) of the copper utilized for the production of crimp terminals.

#### Hot treatment

In order to ensure the maximum malleability of materials during the crimping operations all copper terminals undergo a hot treatment with forced ventilation and controlled temperature.

### Surface treatment

The crimp terminals are treated with processes of electrolytic tin plating. This method guarantees the maximum adhesion of tin to the crimp terminal surface in order to reduce the electrical resistance to a minimum and to maximize the protection against corrosion.

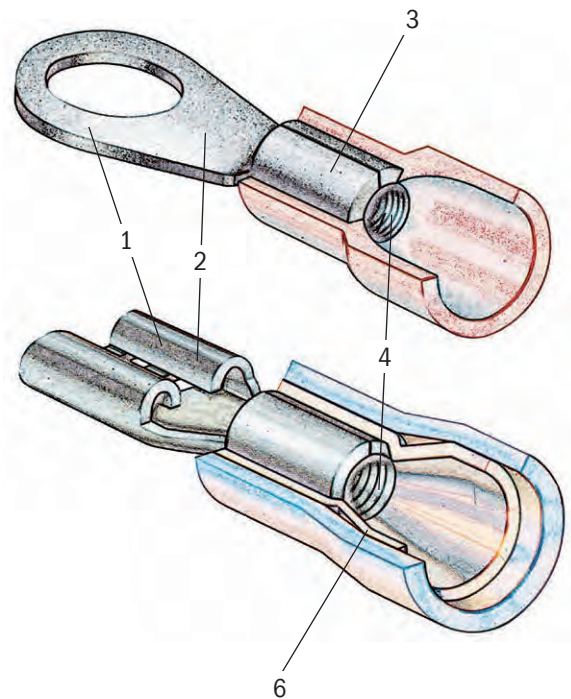
### Insulation

The standard models are available with insulation in special self-extinguishing PVC or in Nylon and in colours according to International Standards. The high quality of the insulation materials employed for all crimp terminals ensure a high degree of resistance to the mechanical solicitations that they must undergo during the crimping operations without alteration of their insulation characteristics.

### PVC Insulated crimp terminals Easy Entry

1. Sleeves, made of purest copper
2. Treated with processes of electrolytic tin plating
3. Hot treatment
4. Internal serration for the best most electric contact
5. Insulation Easy Entry sleeve
6. Copper sleeve Easy Entry: for quick wire insertions with no strand turn-back and a strong mechanical retention.

### Funnel shaped insulating sleeve

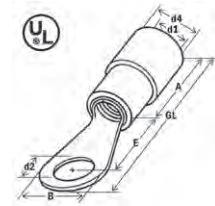


Underwriters Laboratories Inc.  
Listed File E338116, E336314

Ring terminals DIN 46237

- of electrolytic copper, tin-plated, soldered • Easy Entry
- PVC-insulated, with expanded insulating sleeve, suitable for harmonised cables

PVC  
•75°/600V

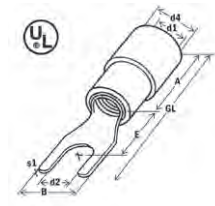


| Art. no. | CSS       | M    | d2   | d1   | d4  | s1   | A    | TL   | E    | B     | kg/100 | PU  | PU  |
|----------|-----------|------|------|------|-----|------|------|------|------|-------|--------|-----|-----|
| 260250   | 0,5 - 1,0 | 2,5  | 2,6  | 1,95 | 4,2 | 0,8  | 10,4 | 22,2 | 8,6  | 8,0   | 0,710  | 500 | 100 |
| 260252   |           | 3    | 3,2  | 1,95 | 4,2 | 0,8  | 10,4 | 15,4 | 4,4  | 5,5   | 0,072  | 500 | 100 |
| 260254   |           | 3,5  | 3,6  | 1,95 | 4,2 | 0,8  | 10,4 | 22,2 | 7,8  | 8,0   | 0,065  | 500 | 100 |
| 260256   |           | 4    | 4,2  | 1,95 | 4,2 | 0,8  | 10,4 | 22,0 | 7,5  | 8,0   | 0,079  | 500 | 100 |
| 260258   |           | 5    | 5,2  | 1,95 | 4,2 | 0,8  | 10,4 | 22,4 | 8,0  | 8,0   | 0,096  | 500 | 100 |
| 260260   |           | 6    | 6,2  | 1,95 | 4,2 | 0,8  | 10,4 | 23,7 | 8,6  | 10,0  | 0,106  | 500 | 100 |
| 260262   | 8         | 8,3  | 1,95 | 4,2  | 0,8 | 10,4 | 30,0 | 12,6 | 14,0 | 0,136 | 500    | 100 |     |
| 260264   | 10        | 10,4 | 1,95 | 4,2  | 0,8 | 10,4 | 30,0 | 12,8 | 14,0 | 0,190 | 500    | 100 |     |
| 260267   | 1,5 - 2,5 | 3    | 3,2  | 2,45 | 4,8 | 0,8  | 11,0 | 18,5 | 4,3  | 6,4   | 0,078  | 500 | 100 |
| 260268   |           | 3,5  | 3,7  | 2,45 | 4,8 | 0,8  | 11,0 | 23,0 | 8,0  | 8,0   | 0,078  | 500 | 100 |
| 260270   |           | 4    | 4,2  | 2,45 | 4,8 | 0,8  | 11,0 | 23,0 | 8,0  | 8,0   | 0,092  | 500 | 100 |
| 260272   |           | 5    | 5,2  | 2,45 | 4,8 | 0,8  | 11,0 | 26,0 | 9,8  | 10,0  | 0,111  | 500 | 100 |
| 260274   |           | 6    | 6,2  | 2,45 | 4,8 | 0,8  | 11,0 | 28,0 | 11,7 | 11,0  | 0,123  | 500 | 100 |
| 260276   |           | 8    | 8,2  | 2,45 | 4,8 | 0,8  | 11,0 | 33,0 | 14,5 | 15,0  | 0,147  | 500 | 100 |
| 260278   | 10        | 10,5 | 2,45 | 4,8  | 0,8 | 11,0 | 33,0 | 14,5 | 15,0 | 0,200 | 500    | 100 |     |
| 260282   | 4 - 6     | 3,5  | 3,7  | 3,5  | 6,6 | 1,0  | 14,0 | 26,5 | 8,4  | 8,0   | 0,163  | 500 | 100 |
| 260284   |           | 4    | 4,2  | 3,5  | 6,6 | 1,0  | 14,0 | 26,5 | 8,4  | 8,0   | 0,168  | 500 | 100 |
| 260286   |           | 5    | 5,2  | 3,5  | 6,6 | 1,0  | 14,0 | 29,6 | 10,2 | 10,0  | 0,186  | 500 | 100 |
| 260288   |           | 6    | 6,2  | 3,5  | 6,6 | 1,0  | 14,0 | 30,6 | 11,0 | 11,0  | 0,196  | 500 | 100 |
| 260290   |           | 8    | 8,2  | 3,5  | 6,6 | 1,0  | 14,0 | 37,0 | 15,3 | 15,0  | 0,243  | 500 | 100 |
| 260292   |           | 10   | 10,5 | 3,5  | 6,6 | 1,0  | 14,0 | 40,0 | 16,5 | 19,0  | 0,299  | 500 | 100 |

Fork terminals DIN 46237

- of electrolytic copper, tin-plated, soldered • Easy Entry
- PVC-insulated, with expanded insulating sleeve, suitable for harmonised cables

PVC  
•75°/600V

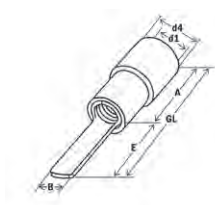


| Art. no. | CSS       | M         | d2   | d1   | d4   | s1  | A    | TL   | E    | B    | kg/100 | PU    | PU  |
|----------|-----------|-----------|------|------|------|-----|------|------|------|------|--------|-------|-----|
| 260300   | 0,5 - 1,0 | 3         | 3,2  | 1,95 | 4,2  | 0,8 | 10,4 | 20,0 | 6,7  | 5,6  | 0,065  | 500   | 100 |
| 260302   |           | 3,5       | 3,7  | 1,95 | 4,2  | 0,8 | 10,4 | 19,4 | 6,5  | 6,5  | 0,065  | 500   | 100 |
| 260304   |           | 4         | 4,2  | 1,95 | 4,2  | 0,8 | 10,4 | 20,9 | 6,3  | 6,4  | 0,070  | 500   | 100 |
| 260306   |           | 5         | 5,2  | 1,95 | 4,2  | 0,8 | 10,4 | 21,2 | 8,0  | 8,0  | 0,092  | 500   | 100 |
| 260308   |           | 6         | 6,2  | 1,95 | 4,2  | 0,8 | 10,4 | 22,4 | 8,3  | 9,2  | 0,101  | 500   | 100 |
| 260310   |           | 1,5 - 2,5 | 3    | 3,2  | 2,45 | 4,8 | 0,8  | 11,0 | 23,0 | 8,4  | 5,6    | 0,079 | 500 |
| 260312   | 3,5       |           | 3,7  | 2,45 | 4,8  | 0,8 | 11,0 | 20,3 | 5,3  | 6,6  | 0,085  | 500   | 100 |
| 260314   | 4         |           | 4,2  | 2,45 | 4,8  | 0,8 | 11,0 | 20,3 | 5,3  | 6,6  | 0,084  | 500   | 100 |
| 260316   | 5         |           | 5,2  | 2,45 | 4,8  | 0,8 | 11,0 | 25,0 | 9,5  | 9,1  | 0,109  | 500   | 100 |
| 260318   | 6         |           | 6,3  | 2,45 | 4,8  | 0,8 | 11,0 | 27,0 | 11,2 | 10,0 | 0,118  | 500   | 100 |
| 260320   | 4,0 - 6,0 |           | 4    | 4,2  | 3,5  | 6,6 | 1,0  | 14,0 | 26,0 | 7,2  | 8,1    | 0,116 | 500 |
| 260322   |           | 5         | 5,2  | 3,5  | 6,6  | 1,0 | 14,0 | 28,5 | 10,5 | 9,0  | 0,179  | 500   | 100 |
| 260324   |           | 6         | 6,3  | 3,5  | 6,6  | 1,0 | 14,0 | 29,5 | 11,0 | 11,0 | 0,188  | 500   | 100 |
| 260326   |           | 8         | 8,2  | 3,5  | 6,6  | 1,0 | 14,0 | 35,2 | 15,0 | 15,2 | 0,229  | 500   | 100 |
| 260328   |           | 10        | 10,5 | 3,5  | 6,6  | 1,0 | 14,0 | 38,0 | 16,6 | 19,0 | 0,291  | 500   | 100 |

Socket sleeves (male) DIN 46231

- of electrolytic copper, tin-plated, soldered • Easy Entry
- PVC-insulated, with expanded insulating sleeve, suitable for harmonised cables

PVC  
•75°/600V



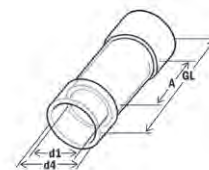
| Art. no. | CSS       | d1  | d4  | A    | TL   | E    | B   | kg/100 | PU  | PU  |
|----------|-----------|-----|-----|------|------|------|-----|--------|-----|-----|
| 260330   | 0,5 - 1,0 | 1,7 | 4,2 | 10,4 | 19,4 | 9,0  | 2,8 | 0,058  | 500 | 100 |
| 260331   |           | 1,7 | 4,2 | 10,4 | 24,9 | 14,5 | 3,0 | 0,070  | 500 | 100 |
| 260332   | 1,5 - 2,5 | 2,3 | 4,8 | 10,4 | 19,4 | 9,0  | 2,8 | 0,066  | 500 | 100 |
| 260333   |           | 2,3 | 4,8 | 10,4 | 26,4 | 16,0 | 2,8 | 0,080  | 500 | 100 |
| 260334   | 4 - 6     | 3,4 | 6,8 | 13,5 | 23,5 | 10,0 | 2,8 | 0,120  | 500 | 100 |
| 260335   |           | 3,4 | 6,8 | 13,5 | 31,7 | 18,2 | 4,5 | 0,170  | 500 | 100 |

## Butt connectors

- of electrolytic copper, tin-plated • Easy Entry
- PVC-insulated, with expanded insulating sleeve, suitable for harmonised cables



| Art. no. | CSS       | d1  | d4  | A  | TL   | kg/100 | PU  | PU  |
|----------|-----------|-----|-----|----|------|--------|-----|-----|
| 260350   | 0,5 - 1,0 | 1,7 | 4,0 | 15 | 22,7 | 0,110  | 500 | 100 |
| 260352   | 1,5 - 2,5 | 2,3 | 4,5 | 15 | 22,7 | 0,130  | 500 | 100 |
| 260354   | 4,0 - 6,0 | 3,4 | 6,8 | 15 | 26,7 | 0,230  | 500 | 100 |

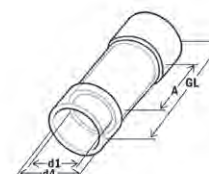


## Parallel connectors

- of electrolytic copper, tin-plated • Easy Entry
- PVC-insulated, with expanded insulating sleeve, suitable for harmonised cables



| Art. no. | CSS       | d1  | d4  | A   | TL   | kg/100 | PU  | PU  |
|----------|-----------|-----|-----|-----|------|--------|-----|-----|
| 260360   | 0,5 - 1,0 | 1,7 | 4,0 | 8,0 | 16,0 | 0,060  | 500 | 100 |
| 260362   | 1,5 - 2,5 | 2,3 | 4,5 | 8,0 | 16,0 | 0,080  | 500 | 100 |
| 260364   | 4,0 - 6,0 | 3,4 | 6,8 | 8,0 | 20,5 | 0,140  | 500 | 100 |

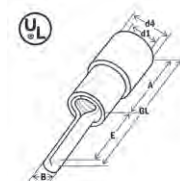


## Round pins

- of electrolytic copper, tin-plated • Easy Entry
- PVC-insulated, with expanded insulating sleeve, suitable for harmonised cables



| Art. no. | CSS       | d1   | d4   | A    | TL   | E    | B   | kg/100 | PU  | PU  |
|----------|-----------|------|------|------|------|------|-----|--------|-----|-----|
| 260370   | 0,5 - 1,0 | 1,95 | 4,20 | 10,4 | 22,4 | 12,0 | 1,8 | 0,070  | 500 | 100 |
| 260371   |           | 1,95 | 4,20 | 10,4 | 20,0 | 9,0  | 1,8 | 0,060  | 500 | 100 |
| 260372   | 1,5 - 2,5 | 2,45 | 4,8  | 11,0 | 23,0 | 12,0 | 1,8 | 0,080  | 500 | 100 |
| 260373   |           | 2,45 | 4,8  | 11,0 | 20,0 | 9,0  | 1,8 | 0,070  | 500 | 100 |
| 260374   | 4,0 - 6,0 | 3,5  | 6,6  | 14,0 | 28,0 | 14,0 | 2,6 | 0,170  | 500 | 100 |
| 260376   | 10        | 4,5  | 8,3  | 21,5 | 38,0 | 15,0 | 4,0 | 0,300  | 500 | 100 |



## Socket sleeves (female)

- Brass, tin-plated, PVC-insulated
- with vibration-free copper sleeve • Easy Entry



| Art. no. | CSS       | plug    | d1  | A    | TL   | c    | B    | Material | kg/100 | PU  | PU  |
|----------|-----------|---------|-----|------|------|------|------|----------|--------|-----|-----|
| 260380   | 0,5 - 1,0 | 2,8x0,5 | 3,5 | 9,5  | 17,9 | 6,4  | 3,2  | PVC      | 0,070  | 500 | 100 |
| 260382   |           | 2,8x0,8 | 3,5 | 9,5  | 17,9 | 6,4  | 3,2  | PVC      | 0,070  | 500 | 100 |
| 260384   |           | 4,8x0,5 | 3,5 | 9,5  | 18,7 | 6,0  | 5,0  | PVC      | 0,080  | 500 | 100 |
| 260386   |           | 4,8x0,8 | 3,5 | 9,5  | 18,7 | 6,0  | 5,0  | PVC      | 0,080  | 500 | 100 |
| 260400   |           | 5,2x0,8 | 3,5 | 9,5  | 18,7 | 6,4  | 5,5  | PVC      | 0,090  | 500 | 100 |
| 260392   |           | 6,3x0,8 | 3,5 | 9,5  | 20,5 | 7,8  | 6,6  | PVC      | 0,100  | 500 | 100 |
| 260388   | 1,5 - 2,5 | 4,8x0,5 | 4,3 | 9,5  | 18,7 | 6,0  | 5,0  | PVC      | 0,090  | 500 | 100 |
| 260390   |           | 4,8x0,8 | 4,3 | 9,5  | 18,7 | 6,0  | 5,0  | PVC      | 0,090  | 500 | 100 |
| 260402   |           | 5,2x0,8 | 4,3 | 9,5  | 18,7 | 6,4  | 5,5  | PVC      | 0,090  | 500 | 100 |
| 260394   |           | 6,3x0,8 | 4,3 | 9,5  | 20,5 | 7,8  | 6,6  | PVC      | 0,120  | 500 | 100 |
| 260396   | 4,0 - 6,0 | 6,3x0,8 | 6,2 | 13,5 | 24,5 | 7,8  | 6,6  | PVC      | 0,190  | 500 | 100 |
| 260404   |           | 9,8x1,1 | 6,2 | 13,5 | 29,2 | 12,0 | 10,0 | PVC      | 0,260  | 500 | 100 |



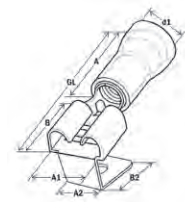


## Socket sleeves (female) with branch

- Brass, tin-plated, PVC-insulated
- with vibration-free copper sleeve • Easy Entry



| Art. no. | CSS       | plug    | d1  | A   | TL   | A1  | A2  | B   | B2  | Material | kg/100 | PU  | PU  |
|----------|-----------|---------|-----|-----|------|-----|-----|-----|-----|----------|--------|-----|-----|
| 260410   | 0,5 - 1,0 | 6,3x0,8 | 3,5 | 9,5 | 22,2 | 6,6 | 6,3 | 7,8 | 8,0 | PVC      | 0,140  | 500 | 100 |
| 260412   | 1,5 - 2,5 | 6,3x0,8 | 4,3 | 9,5 | 22,2 | 6,8 | 6,3 | 7,8 | 8,0 | PVC      | 0,150  | 500 | 100 |
| 260411   | 4,0 - 6,0 | 6,3x0,8 | 4,3 | 9,5 | 22,2 | 6,8 | 6,3 | 7,8 | 8,0 | PVC      | 0,280  | 500 | 100 |



## Socket sleeves (female), fully-insulated

- Brass, tin-plated, PVC-insulated
- with vibration-free copper sleeve • Easy Entry



| Art. no. | CSS       | plug    | d1  | A    | TL   | c   | B   | Material | kg/100 | PU  | PU  |
|----------|-----------|---------|-----|------|------|-----|-----|----------|--------|-----|-----|
| 260414   | 0,5 - 1,0 | 6,3x0,8 | 2,7 | 11,0 | 22,0 | 6,8 | 6,6 | PVC      | 0,129  | 500 | 100 |
| 260415   |           | 4,8x0,8 | 2,7 | 11,0 | 20,0 | 6,0 | 5,0 | PVC      | 0,100  | 500 | 100 |
| 260416   | 1,5 - 2,5 | 6,3x0,8 | 3,2 | 11,0 | 22,0 | 6,8 | 6,6 | PVC      | 0,130  | 500 | 100 |
| 260417   |           | 4,8x0,8 | 3,2 | 11,0 | 20,0 | 6,0 | 5,0 | PVC      | 0,110  | 500 | 100 |
| 260418   | 4,0 - 6,0 | 6,3x0,8 | 3,8 | 14,0 | 25,0 | 6,8 | 6,6 | PVC      | 0,220  | 500 | 100 |

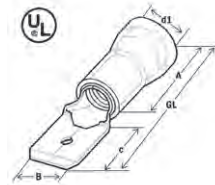


## Flat terminals

- Brass, tin-plated, PVC-insulated
- with vibration-free copper sleeve • Easy Entry



| Art. no. | CSS       | plug    | d1  | A    | TL   | c   | B   | Material | kg/100 | PU  | PU  |
|----------|-----------|---------|-----|------|------|-----|-----|----------|--------|-----|-----|
| 260510   | 0,5 - 1,0 | 2,8x0,5 | 3,8 | 10,5 | 19,2 | 6,5 | 2,8 | PVC      | 0,060  | 500 | 100 |
| 260512   |           | 2,8x0,8 | 3,8 | 10,5 | 19,2 | 6,5 | 2,8 | PVC      | 0,065  | 500 | 100 |
| 260514   |           | 4,8x0,5 | 3,8 | 10,5 | 19,2 | 6,5 | 4,8 | PVC      | 0,075  | 500 | 100 |
| 260516   |           | 4,8x0,8 | 3,8 | 10,5 | 19,2 | 6,7 | 4,8 | PVC      | 0,080  | 500 | 100 |
| 260422   |           | 6,3x0,8 | 3,5 | 10,0 | 20,5 | 7,7 | 6,3 | PVC      | 0,090  | 500 | 100 |
| 260518   | 1,5 - 2,5 | 4,8x0,5 | 3,8 | 10,5 | 19,2 | 6,5 | 4,8 | PVC      | 0,085  | 500 | 100 |
| 260520   |           | 4,8x0,8 | 3,8 | 10,5 | 19,2 | 6,7 | 4,8 | PVC      | 0,090  | 500 | 100 |
| 260424   |           | 6,3x0,8 | 4,0 | 10,0 | 20,5 | 7,7 | 6,3 | PVC      | 0,100  | 500 | 100 |
| 260426   | 4,0 - 6,0 | 6,3x0,8 | 5,5 | 13,5 | 24,5 | 7,7 | 6,3 | PVC      | 0,180  | 500 | 100 |

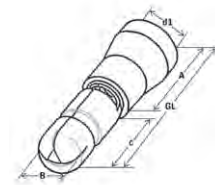


## Round terminals

- of electrolytic copper, tin-plated • Easy Entry
- PVC-insulated, with expanded insulating sleeve, suitable for harmonised cables



| Art. no. | CSS       | plug | d1  | A    | TL   | c    | B   | Material | kg/100 | PU  | PU  |
|----------|-----------|------|-----|------|------|------|-----|----------|--------|-----|-----|
| 260446   | 0,5 - 1,0 | 4 mm | 3,5 | 9,5  | 20,2 | 8,7  | 4,0 | PVC      | 0,090  | 500 | 100 |
| 260448   | 1,5 - 2,5 | 5 mm | 4,3 | 9,5  | 20,7 | 8,7  | 5,0 | PVC      | 0,110  | 500 | 100 |
| 260449   |           | 4 mm | 4,3 | 9,5  | 20,2 | 8,7  | 4,0 | PVC      | 0,100  | 500 | 100 |
| 260450   | 4,0 - 6,0 | 5 mm | 6,5 | 13,5 | 25,0 | 10,0 | 5,0 | PVC      | 0,170  | 500 | 100 |



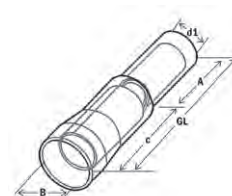
## Round sleeves

- of electrolytic copper, tin-plated • Easy Entry
- PVC-insulated, with expanded insulating sleeve, suitable for harmonised cables

**PVC**  
75°/600V



| Art. no. | CSS       | plug | d1  | A    | TL   | c    | B   | material | kg/100 | PU  | PU  |
|----------|-----------|------|-----|------|------|------|-----|----------|--------|-----|-----|
| 260440   | 0,5 - 1,0 | 4 mm | 3,5 | 9,5  | 20,2 | 8,7  | 4,0 | PVC      | 0,130  | 500 | 100 |
| 260442   | 1,5 - 2,5 | 5 mm | 4,3 | 9,5  | 20,7 | 8,7  | 5,0 | PVC      | 0,150  | 500 | 100 |
| 260443   | 1,5 - 2,5 | 4 mm | 4,3 | 9,5  | 20,2 | 8,7  | 4,0 | PVC      | 0,130  | 500 | 100 |
| 260444   | 4,0 - 6,0 | 5 mm | 6,5 | 13,0 | 25,0 | 12,0 | 5,0 | PVC      | 0,250  | 500 | 100 |



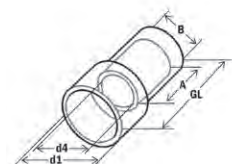
## End connectors

- of electrolytic copper, tin-plated
- Nylon-insulated

**PVC**  
75°/600V



| Art. no. | CSS       | d1   | d4  | A   | TL   | B   | kg/100 | PU  | PU  |
|----------|-----------|------|-----|-----|------|-----|--------|-----|-----|
| 260427   | 0,5 - 1,0 | 6,2  | 2,2 | 8,0 | 15,2 | 5,0 | 0,060  | 500 | 100 |
| 260428   | 1,5 - 2,5 | 6,5  | 2,5 | 8,0 | 15,2 | 5,9 | 0,065  | 500 | 100 |
| 260430   | 4,0 - 6,0 | 9,4  | 3,5 | 8,5 | 17,8 | 7,3 | 0,125  | 500 | 100 |
| 260431   | 10        | 12,0 | 4,6 | 9,5 | 22,2 | 9,3 | 0,260  | 500 | 100 |



## Rapid connectors

- of electrolytic copper, tin-plated
- Polypropylene

| Art. no. | CSS       | A    | TL   | kg/100 | PU  | PU  |
|----------|-----------|------|------|--------|-----|-----|
| 260336   | 0,5 - 1,0 | 13,5 | 20,0 | 0,130  | 100 | 100 |
| 260500   |           | 13,5 | 20,5 | 0,100  | 100 | 100 |
| 260337   | 1,5 - 2,5 | 13,5 | 20,5 | 0,130  | 100 | 100 |
| 260502   |           | 17,0 | 10,0 | 0,120  | 100 | 100 |
| 260338   | 4,0 - 6,0 | 17,0 | 10,0 | 0,290  | 100 | 100 |
| 260504   |           | 17,0 | 10,0 | 0,140  | 100 | 100 |



## Small packages

### INFO

#### Counter display for small packages

Small package in resealable, transparent plastic packaging with blister hanger.

Ideally suited to sale on space-saving counter stands and small display units.



## Crimp terminals, PVC-insulated

### Ring terminals DIN 46237 „SmallPack“

- of electrolytic copper, tin-plated • Easy Entry
- PVC-insulated, with expanded insulating sleeve, suitable for harmonised cables

**PVC**  
75°/600V

| Art. no.  | CSS       | M | d2  | d1   | d4  | s1  | A    | TL   | E    | B    | kg/100 | PU  | PU |
|-----------|-----------|---|-----|------|-----|-----|------|------|------|------|--------|-----|----|
| 260256/10 | 0,5 - 1,0 | 4 | 4,2 | 1,95 | 4,2 | 0,8 | 10,4 | 22,0 | 7,5  | 8,0  | 0,096  | 100 | 10 |
| 260258/10 |           | 5 | 5,2 | 1,95 | 4,2 | 0,8 | 10,4 | 22,4 | 8,0  | 8,0  | 0,096  | 100 | 10 |
| 260270/10 | 1,5 - 2,5 | 4 | 4,2 | 2,45 | 4,8 | 0,8 | 11,0 | 23,0 | 8,0  | 8,0  | 0,092  | 100 | 10 |
| 260272/10 |           | 5 | 5,2 | 2,45 | 4,8 | 0,8 | 11,0 | 26,0 | 9,8  | 10,0 | 0,111  | 100 | 10 |
| 260274/10 |           | 6 | 6,2 | 2,45 | 4,8 | 0,8 | 11,0 | 28,0 | 11,7 | 11,0 | 0,123  | 100 | 10 |
| 260288/10 | 4 - 6     | 6 | 6,2 | 3,5  | 6,6 | 1,0 | 14,0 | 30,6 | 11,0 | 11,0 | 0,196  | 100 | 10 |
| 260290/10 |           | 8 | 8,2 | 3,5  | 6,6 | 1,0 | 14,0 | 37,0 | 15,3 | 15,0 | 0,243  | 100 | 10 |



### Butt connectors „SmallPack“

- of electrolytic copper, tin-plated • Easy Entry
- PVC-insulated, with expanded insulating sleeve, suitable for harmonised cables

**PVC**  
75°/600V

| Art. no.  | CSS       | d1  | d4  | A  | TL   | kg/100 | PU  | PU |
|-----------|-----------|-----|-----|----|------|--------|-----|----|
| 260350/10 | 0,5 - 1,0 | 1,7 | 4,0 | 15 | 22,7 | 0,110  | 100 | 10 |
| 260352/10 | 1,5 - 2,5 | 2,3 | 4,5 | 15 | 22,7 | 0,130  | 100 | 10 |
| 260354/10 | 4,0 - 6,0 | 3,4 | 6,8 | 15 | 26,7 | 0,230  | 100 | 10 |



### Socket sleeves (female) „SmallPack“

- Brass, tin-plated, PVC-insulated
- with vibration-free copper sleeve • Easy Entry

**PVC**  
75°/600V

| Art. no.  | CSS       | plug    | d1  | A    | TL   | c   | B   | material | kg/100 | PU  | PU |
|-----------|-----------|---------|-----|------|------|-----|-----|----------|--------|-----|----|
| 260392/10 | 0,5 - 1,0 | 6,3x0,8 | 3,5 | 9,5  | 20,5 | 7,8 | 6,6 | PVC      | 0,100  | 100 | 10 |
| 260394/10 | 1,5 - 2,5 | 6,3x0,8 | 4,3 | 9,5  | 20,5 | 7,8 | 6,6 | PVC      | 0,120  | 100 | 10 |
| 260396/10 | 4,0 - 6,0 | 6,3x0,8 | 6,2 | 13,5 | 24,5 | 7,8 | 6,6 | PVC      | 0,190  | 100 | 10 |



**haupa**®

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

Socket sleeves (female), fully-insulated „SmallPack“

- Messing, verzinkt, PVC-isoliert
- mit vibrationsfreier Kupferhülse • Easy Entry



| Art. no.  | CSS       | plug    | d1  | A    | TL   | c   | B   | material | kg/100 | PU  | PU |
|-----------|-----------|---------|-----|------|------|-----|-----|----------|--------|-----|----|
| 260414/10 | 0,5 - 1,0 | 6,3x0,8 | 2,7 | 11,0 | 22,0 | 6,8 | 6,6 | PVC      | 0,129  | 100 | 10 |
| 260416/10 | 1,5 - 2,5 | 6,3x0,8 | 3,2 | 11,0 | 22,0 | 6,8 | 6,6 | PVC      | 0,130  | 100 | 10 |



Flat terminals „SmallPack“

- Brass, tin-plated, PVC-insulated
- with vibration-free copper sleeve • Easy Entry



| Art. no.  | CSS       | plug    | d1  | A    | TL   | c   | B   | material | kg/100 | PU  | PU |
|-----------|-----------|---------|-----|------|------|-----|-----|----------|--------|-----|----|
| 260422/10 | 0,5 - 1,0 | 6,3x0,8 | 3,5 | 10,0 | 20,5 | 7,7 | 6,3 | PVC      | 0,090  | 100 | 10 |
| 260424/10 | 1,5 - 2,5 | 6,3x0,8 | 4,0 | 10,0 | 20,5 | 7,7 | 6,3 | PVC      | 0,100  | 100 | 10 |
| 260426/10 | 4,0 - 6,0 | 6,3x0,8 | 5,5 | 13,5 | 24,5 | 7,7 | 6,3 | PVC      | 0,180  | 100 | 10 |



Shrinkable connectors

Butt connectors „SmallPack“

- Copper, tin-plated • Insulating cover: Polyolefin with inside adhesive
- RoHS conform

| Art. no.  | CSS       | A  | TL | kg/100 | PU  | PU |
|-----------|-----------|----|----|--------|-----|----|
| 363500/10 | 0,5 - 1,0 | 14 | 36 | 0,120  | 100 | 10 |
| 363502/10 | 1,5 - 2,5 | 15 | 36 | 0,132  | 100 | 10 |
| 363504/5  | 4,0 - 6,0 | 15 | 41 | 0,300  | 50  | 5  |



End sleeves

End sleeves DIN colour range „SmallPack“

- insulated
- Electrolytic copper, tin-plated
- Dimensions to DIN 46228. Part 4
- DIN colour range III

| Art. no.  | CSS  |        | d1   | d2   | s    | TL   | l  | kg/100 | PU  | PU |
|-----------|------|--------|------|------|------|------|----|--------|-----|----|
| 270800/25 | 0,5  | white  | 1,1  | 3,1  | 0,15 | 14,0 | 8  | 0,010  | 250 | 25 |
| 270803/25 | 0,75 | grey   | 1,25 | 3,3  | 0,15 | 14,0 | 8  | 0,013  | 250 | 25 |
| 270804/25 | 1    | red    | 1,5  | 3,5  | 0,15 | 14,6 | 8  | 0,014  | 250 | 25 |
| 270808/25 | 1,5  | black  | 1,7  | 4,0  | 0,15 | 14,6 | 8  | 0,014  | 250 | 25 |
| 270810/25 | 2,5  | blue   | 2,3  | 4,9  | 0,15 | 15,0 | 8  | 0,020  | 250 | 25 |
| 270814/25 | 4    | grey   | 2,9  | 5,6  | 0,2  | 17,7 | 10 | 0,030  | 250 | 25 |
| 270818/10 | 6    | yellow | 3,6  | 7,0  | 0,2  | 20,0 | 12 | 0,045  | 100 | 10 |
| 270822/10 | 10   | red    | 4,6  | 8,4  | 0,2  | 21,5 | 12 | 0,057  | 100 | 10 |
| 270826/10 | 16   | blue   | 6,0  | 9,6  | 0,2  | 22,2 | 12 | 0,082  | 100 | 10 |
| 270830/5  | 25   | yellow | 7,3  | 12,0 | 0,2  | 30,0 | 16 | 0,142  | 50  | 5  |
| 270836/5  | 35   | red    | 8,3  | 13,5 | 0,2  | 30,0 | 16 | 0,168  | 50  | 5  |



Twin-end sleeves two cables DIN „SmallPack“

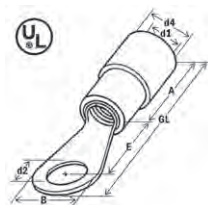
- tube section of electrolytic copper
- galvanically tin-plated
- plastic collar of PP
- heat-resistant to 105°C

| Art. no.  | CSS  |        | d1   | s    | TL   | l  | kg/100 | PU  | PU |
|-----------|------|--------|------|------|------|----|--------|-----|----|
| 270778/25 | 0,5  | white  | 1,5  | 0,15 | 15,0 | 8  | 0,011  | 250 | 25 |
| 270780/25 | 0,75 | grey   | 1,8  | 0,15 | 15,0 | 8  | 0,013  | 250 | 25 |
| 270784/25 | 1    | red    | 2,05 | 0,15 | 15,0 | 8  | 0,014  | 250 | 25 |
| 270788/25 | 1,5  | black  | 2,3  | 0,15 | 16,0 | 8  | 0,017  | 250 | 25 |
| 270792/25 | 2,5  | blue   | 2,9  | 0,2  | 18,5 | 10 | 0,029  | 250 | 25 |
| 270796/10 | 4    | grey   | 3,8  | 0,2  | 23,0 | 12 | 0,049  | 100 | 10 |
| 270797/10 | 6    | yellow | 4,9  | 0,2  | 25,0 | 14 | 0,072  | 100 | 10 |
| 270798/10 | 10   | red    | 6,5  | 0,2  | 26,0 | 14 | 0,090  | 100 | 10 |
| 270799/5  | 16   | blue   | 8,3  | 0,2  | 31,0 | 16 | 0,078  | 50  | 5  |



Ring terminals DIN 46237

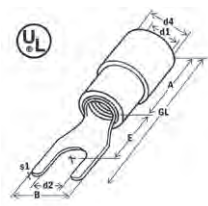
- of electrolytic copper, tin-plated, soldered • Easy Entry
- Nylon-insulated, with expanded insulating sleeve, suitable for harmonised cables



| Art. no. | CSS       | M   | d2   | d1   | d4  | s1  | A    | TL   | E    | B    | kg/100 | PU  | PU  |
|----------|-----------|-----|------|------|-----|-----|------|------|------|------|--------|-----|-----|
| 260650   | 0,5 - 1,0 | 2,5 | 2,6  | 1,95 | 4,2 | 0,8 | 10,4 | 22,2 | 8,6  | 8,0  | 0,072  | 500 | 100 |
| 260651   |           | 3   | 3,2  | 1,95 | 4,2 | 0,8 | 10,4 | 22,2 | 8,6  | 8,0  | 0,070  | 500 | 100 |
| 260654   |           | 3,5 | 3,6  | 1,95 | 4,2 | 0,8 | 10,4 | 22,2 | 7,8  | 8,0  | 0,067  | 500 | 100 |
| 260656   |           | 4   | 4,2  | 1,95 | 4,2 | 0,8 | 10,4 | 22,0 | 7,5  | 8,0  | 0,079  | 500 | 100 |
| 260658   |           | 5   | 5,2  | 1,95 | 4,2 | 0,8 | 10,4 | 22,4 | 8,0  | 8,0  | 0,096  | 500 | 100 |
| 260660   |           | 6   | 6,2  | 1,95 | 4,2 | 0,8 | 10,4 | 23,7 | 8,6  | 10,0 | 0,105  | 500 | 100 |
| 260662   |           | 8   | 8,3  | 1,95 | 4,2 | 0,8 | 10,4 | 30,0 | 12,6 | 14,0 | 0,136  | 500 | 100 |
| 260664   |           | 10  | 10,4 | 1,95 | 4,2 | 0,8 | 10,4 | 30,0 | 12,8 | 14,0 | 0,103  | 500 | 100 |
| 260665   | 1,5 - 2,5 | 2,5 | 2,6  | 2,45 | 4,8 | 0,8 | 11,0 | 23,0 | 8,0  | 8,0  | 0,100  | 500 | 100 |
| 260666   |           | 3   | 3,2  | 2,45 | 4,8 | 0,8 | 11,0 | 23,0 | 8,0  | 8,0  | 0,110  | 500 | 100 |
| 260667   |           | 3,5 | 3,7  | 2,45 | 4,8 | 0,8 | 11,0 | 23,0 | 8,0  | 8,0  | 0,080  | 500 | 100 |
| 260670   |           | 4   | 4,2  | 2,45 | 4,8 | 0,8 | 11,0 | 23,0 | 8,0  | 8,0  | 0,088  | 500 | 100 |
| 260672   |           | 5   | 5,2  | 2,45 | 4,8 | 0,8 | 11,0 | 26,0 | 9,8  | 10,0 | 0,107  | 500 | 100 |
| 260674   |           | 6   | 6,2  | 2,45 | 4,8 | 0,8 | 11,0 | 28,0 | 11,7 | 11,0 | 0,120  | 500 | 100 |
| 260676   |           | 8   | 8,2  | 2,45 | 4,8 | 0,8 | 11,0 | 33,0 | 14,5 | 15,0 | 0,142  | 500 | 100 |
| 260678   |           | 10  | 10,5 | 2,45 | 4,8 | 0,8 | 11,0 | 33,0 | 14,5 | 15,0 | 0,133  | 500 | 100 |
| 260682   | 4,0 - 6,0 | 3,5 | 3,7  | 3,5  | 6,6 | 1,0 | 14,0 | 26,5 | 8,4  | 8,0  | 0,150  | 500 | 100 |
| 260684   |           | 4   | 4,2  | 3,5  | 6,6 | 1,0 | 14,0 | 26,5 | 8,4  | 8,0  | 0,165  | 500 | 100 |
| 260686   |           | 5   | 5,2  | 3,5  | 6,6 | 1,0 | 14,0 | 29,6 | 10,2 | 10,0 | 0,182  | 500 | 100 |
| 260688   |           | 6   | 6,2  | 3,5  | 6,6 | 1,0 | 14,0 | 30,6 | 11,0 | 11,0 | 0,190  | 500 | 100 |
| 260690   |           | 8   | 8,2  | 3,5  | 6,6 | 1,0 | 14,0 | 37,0 | 15,3 | 15,0 | 0,237  | 500 | 100 |
| 260692   |           | 10  | 10,5 | 3,5  | 6,6 | 1,0 | 14,0 | 40,0 | 16,5 | 19,0 | 0,311  | 500 | 100 |

Fork terminals DIN 46237

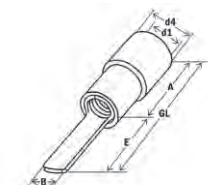
- of electrolytic copper, tin-plated, soldered • Easy Entry
- Nylon-insulated, with expanded insulating sleeve, suitable for harmonised cables



| Art. no. | CSS       | M   | d2   | d1   | d4  | s1  | A    | TL   | E    | B    | kg/100 | PU  | PU  |
|----------|-----------|-----|------|------|-----|-----|------|------|------|------|--------|-----|-----|
| 260700   | 0,5 - 1,0 | 3   | 3,2  | 1,95 | 4,2 | 0,8 | 10,4 | 20,0 | 6,7  | 5,6  | 0,068  | 500 | 100 |
| 260702   |           | 3,5 | 3,7  | 1,95 | 4,2 | 0,8 | 10,4 | 19,4 | 6,5  | 6,5  | 0,066  | 500 | 100 |
| 260704   |           | 4   | 4,2  | 1,95 | 4,2 | 0,8 | 10,4 | 20,9 | 6,3  | 6,4  | 0,071  | 500 | 100 |
| 260706   |           | 5   | 5,2  | 1,95 | 4,2 | 0,8 | 10,4 | 21,2 | 8,0  | 8,0  | 0,092  | 500 | 100 |
| 260708   |           | 6   | 6,2  | 1,95 | 4,2 | 0,8 | 10,4 | 22,4 | 8,3  | 9,2  | 0,080  | 500 | 100 |
| 260710   | 1,5 - 2,5 | 3   | 3,2  | 2,45 | 4,8 | 0,8 | 11,0 | 23,0 | 8,4  | 5,6  | 0,079  | 500 | 100 |
| 260712   |           | 3,5 | 3,7  | 2,45 | 4,8 | 0,8 | 11,0 | 20,3 | 5,3  | 6,6  | 0,086  | 500 | 100 |
| 260714   |           | 4   | 4,2  | 2,45 | 4,8 | 0,8 | 11,0 | 20,3 | 5,3  | 6,6  | 0,084  | 500 | 100 |
| 260716   |           | 5   | 5,2  | 2,45 | 4,8 | 0,8 | 11,0 | 25,0 | 9,5  | 9,1  | 0,110  | 500 | 100 |
| 260718   |           | 6   | 6,3  | 2,45 | 4,8 | 0,8 | 11,0 | 27,0 | 11,2 | 10,0 | 0,170  | 500 | 100 |
| 260721   | 4,0 - 6,0 | 4   | 4,2  | 3,5  | 6,6 | 1,0 | 14,0 | 26,0 | 7,2  | 8,1  | 0,157  | 500 | 100 |
| 260722   |           | 5   | 5,2  | 3,5  | 6,6 | 1,0 | 14,0 | 28,5 | 10,5 | 9,0  | 0,179  | 500 | 100 |
| 260724   |           | 6   | 6,3  | 3,5  | 6,6 | 1,0 | 14,0 | 29,5 | 11,0 | 11,0 | 0,190  | 500 | 100 |
| 260726   |           | 8   | 8,2  | 3,5  | 6,6 | 1,0 | 14,0 | 35,2 | 15,0 | 15,2 | 0,230  | 500 | 100 |
| 260728   |           | 10  | 10,5 | 3,5  | 6,6 | 1,0 | 14,0 | 38,0 | 16,6 | 19,0 | 0,273  | 500 | 100 |

Socket sleeves (male) DIN 46231

- of electrolytic copper, tin-plated, soldered • Easy Entry
- Nylon-insulated, with expanded insulating sleeve, suitable for harmonised cables



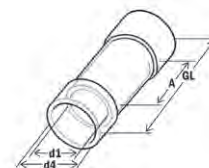
| Art. no. | CSS       | d1  | d4  | A    | TL   | E    | B   | kg/100 | PU  | PU  |
|----------|-----------|-----|-----|------|------|------|-----|--------|-----|-----|
| 260730   | 0,5 - 1,0 | 1,7 | 4,2 | 10,4 | 19,4 | 9,0  | 2,8 | 0,059  | 500 | 100 |
| 260731   |           | 1,7 | 4,2 | 10,4 | 24,9 | 14,5 | 3,0 | 0,072  | 500 | 100 |
| 260732   | 1,5 - 2,5 | 2,3 | 4,8 | 10,4 | 19,4 | 9,0  | 2,8 | 0,067  | 500 | 100 |
| 260733   |           | 2,3 | 4,8 | 10,4 | 26,4 | 16,0 | 2,8 | 0,084  | 500 | 100 |
| 260734   | 4,0 - 6,0 | 3,4 | 6,8 | 13,5 | 23,5 | 10,0 | 2,8 | 0,160  | 500 | 100 |
| 260735   |           | 3,4 | 6,8 | 13,5 | 31,7 | 18,2 | 4,5 | 0,173  | 500 | 100 |

## Butt connectors

- of electrolytic copper, tin-plated • Easy Entry
- Nylon-insulated, with expanded insulating sleeve, suitable for harmonised cables



| Art. no. | CSS       | d1  | d4  | A    | TL   | kg/100 | PU  | PU  |
|----------|-----------|-----|-----|------|------|--------|-----|-----|
| 260750   | 0,5 - 1,0 | 1,7 | 4,0 | 15,0 | 22,7 | 0,103  | 500 | 100 |
| 260752   | 1,5 - 2,5 | 2,3 | 4,5 | 15,0 | 22,7 | 0,128  | 500 | 100 |
| 260754   | 4,0 - 6,0 | 3,4 | 6,8 | 15,0 | 26,7 | 0,221  | 500 | 100 |

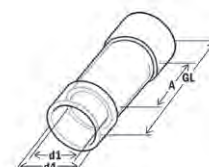


## Parallel connectors

- of electrolytic copper, tin-plated • Easy Entry
- Nylon-insulated, with expanded insulating sleeve, suitable for harmonised cables



| Art. no. | CSS       | d1  | d4  | A   | TL   | kg/100 | PU  | PU  |
|----------|-----------|-----|-----|-----|------|--------|-----|-----|
| 263360   | 0,5 - 1,0 | 1,7 | 4,0 | 8,0 | 16,0 | 0,069  | 500 | 100 |
| 263362   | 1,5 - 2,5 | 2,3 | 4,5 | 8,0 | 16,0 | 0,080  | 500 | 100 |
| 263364   | 4,0 - 6,0 | 3,4 | 6,8 | 8,0 | 16,0 | 0,150  | 500 | 100 |

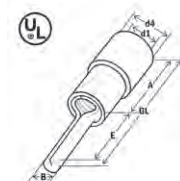


## Round pins

- of electrolytic copper, tin-plated • Easy Entry
- Nylon-insulated, with expanded insulating sleeve, suitable for harmonised cables



| Art. no. | CSS       | d1   | d4  | A    | TL   | E    | B   | kg/100 | PU  | PU  |
|----------|-----------|------|-----|------|------|------|-----|--------|-----|-----|
| 260770   | 0,5 - 1,0 | 1,95 | 4,2 | 10,4 | 22,0 | 12   | 1,9 | 0,072  | 500 | 100 |
| 260771   |           | 1,95 | 4,2 | 10,4 | 20,0 | 9,0  | 1,9 | 0,064  | 500 | 100 |
| 260772   | 1,5 - 2,5 | 2,45 | 4,8 | 11,0 | 23,0 | 12,0 | 1,9 | 0,079  | 500 | 100 |
| 260773   |           | 2,45 | 4,8 | 11,0 | 20,0 | 9,0  | 1,9 | 0,074  | 500 | 100 |
| 260774   | 4,0 - 6,0 | 3,6  | 6,6 | 14,0 | 28,0 | 14,0 | 2,7 | 0,078  | 500 | 100 |

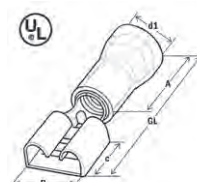


## Socket sleeves (female)

- Brass, tin-plated, Nylon-insulated
- with vibration-free copper sleeve • Easy Entry



| Art. no. | CSS       | plug    | d1  | A    | TL   | c    | B    | material | kg/100 | PU  | PU  |
|----------|-----------|---------|-----|------|------|------|------|----------|--------|-----|-----|
| 263380   | 0,5 - 1,0 | 2,8x0,5 | 3,5 | 9,5  | 17,9 | 6,4  | 3,2  | Nylon    | 0,070  | 500 | 100 |
| 263382   |           | 2,8x0,8 | 3,5 | 9,5  | 17,9 | 6,4  | 3,2  | Nylon    | 0,077  | 500 | 100 |
| 263384   |           | 4,8x0,5 | 3,5 | 9,5  | 18,7 | 6,0  | 5,0  | Nylon    | 0,080  | 500 | 100 |
| 263386   |           | 4,8x0,8 | 3,5 | 9,5  | 18,7 | 6,0  | 5,0  | Nylon    | 0,080  | 500 | 100 |
| 263400   |           | 5,2x0,8 | 3,5 | 9,5  | 18,7 | 6,4  | 5,5  | Nylon    | 0,090  | 500 | 100 |
| 263392   |           | 6,3x0,8 | 3,5 | 9,5  | 20,5 | 7,8  | 6,6  | Nylon    | 0,100  | 500 | 100 |
| 263388   | 1,5 - 2,5 | 4,8x0,5 | 4,3 | 9,5  | 18,7 | 6,0  | 5,0  | Nylon    | 0,090  | 500 | 100 |
| 263393   |           | 4,8x0,8 | 4,3 | 9,5  | 18,7 | 6,0  | 5,0  | Nylon    | 0,100  | 500 | 100 |
| 263402   |           | 5,2x0,8 | 4,3 | 9,5  | 18,7 | 6,4  | 5,5  | Nylon    | 0,090  | 500 | 100 |
| 263394   |           | 6,3x0,8 | 4,3 | 9,5  | 20,5 | 7,8  | 6,6  | Nylon    | 0,110  | 500 | 100 |
| 263396   | 4,0 - 6,0 | 6,3x0,8 | 6,2 | 13,5 | 24,5 | 7,8  | 6,6  | Nylon    | 0,190  | 500 | 100 |
| 263404   |           | 9,8x1,1 | 6,2 | 13,5 | 29,2 | 12,0 | 10,0 | Nylon    | 0,260  | 500 | 100 |

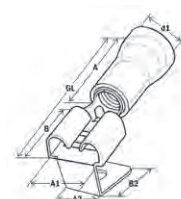


## Socket sleeves (female) with branch

- Brass, tin-plated, Nylon-insulated
- with vibration-free copper sleeve • Easy Entry



| Art. no. | CSS     | plug    | d1  | A   | TL   | A1 A2   | B   | B2  | material | kg/100 | PU  | PU  |
|----------|---------|---------|-----|-----|------|---------|-----|-----|----------|--------|-----|-----|
| 263410   | 0,5-1,0 | 6,3x0,8 | 3,5 | 9,5 | 22,2 | 6,8 6,3 | 7,8 | 8   | Nylon    | 0,140  | 500 | 100 |
| 263412   | 1,5-2,5 | 6,3x0,8 | 4,3 | 9,5 | 22,2 | 6,8 6,3 | 7,8 | 8,0 | Nylon    | 0,150  | 500 | 100 |
| 263413   | 4,0-6,0 | 6,3x0,8 | 4,3 | 9,5 | 22,2 | 6,8 6,3 | 7,8 | 8,0 | Nylon    | 0,200  | 500 | 100 |

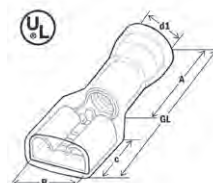


## Socket sleeves (female), fully-insulated

- Brass, tin-plated, Nylon-insulated
- with vibration-free copper sleeve - Easy Entry



| Art. no. | CSS       | plug    | d1  | A    | TL   | c   | B   | material | kg/100 | PU  | PU  |
|----------|-----------|---------|-----|------|------|-----|-----|----------|--------|-----|-----|
| 263451   | 0,5 - 1,0 | 2,8x0,5 | 4,0 | 11,0 | 19,5 | 6,5 | 3,2 | Nylon    | 0,085  | 500 | 100 |
| 263452   |           | 2,8x0,8 | 4,0 | 11,0 | 19,5 | 6,5 | 3,2 | Nylon    | 0,086  | 500 | 100 |
| 263453   |           | 4,8x0,5 | 4,0 | 11,0 | 20,2 | 6,4 | 5,0 | Nylon    | 0,088  | 500 | 100 |
| 263414   |           | 6,3x0,8 | 4,0 | 11,0 | 21,5 | 7,5 | 6,6 | Nylon    | 0,120  | 500 | 100 |
| 263415   |           | 4,8x0,8 | 4,0 | 11,0 | 20,2 | 6,4 | 5,0 | Nylon    | 0,100  | 500 | 100 |
| 263456   | 1,5 - 2,5 | 4,8x0,5 | 5,0 | 11,0 | 20,2 | 6,4 | 5,0 | Nylon    | 0,104  | 500 | 100 |
| 263416   |           | 6,3x0,8 | 5,0 | 11,0 | 21,5 | 7,5 | 6,6 | Nylon    | 0,130  | 500 | 100 |
| 263417   |           | 4,8x0,8 | 5,0 | 11,0 | 20,2 | 6,4 | 5,0 | Nylon    | 0,110  | 500 | 100 |
| 263418   | 4,0 - 6,0 | 6,3x0,8 | 6,5 | 13,0 | 24,2 | 7,5 | 6,6 | Nylon    | 0,220  | 500 | 100 |



## Flat terminals

- Brass, tin-plated, Nylon-insulated
- with vibration-free copper sleeve - Easy Entry



| Art. no. | CSS       | plug    | d1  | A    | TL   | c   | B   | material | kg/100 | PU  | PU  |
|----------|-----------|---------|-----|------|------|-----|-----|----------|--------|-----|-----|
| 263510   | 0,5 - 1,0 | 2,8x0,5 | 3,8 | 10,5 | 19,2 | 6,5 | 2,8 | Nylon    | 0,068  | 500 | 100 |
| 263512   |           | 2,8x0,8 | 3,5 | 10,5 | 19,2 | 6,5 | 2,8 | Nylon    | 0,066  | 500 | 100 |
| 263514   |           | 4,8x0,5 | 3,8 | 10,5 | 10,5 | 6,5 | 4,8 | Nylon    | 0,076  | 500 | 100 |
| 263516   |           | 4,8x0,8 | 3,8 | 10,5 | 19,2 | 6,7 | 4,8 | Nylon    | 0,077  | 500 | 100 |
| 263422   |           | 6,3x0,8 | 3,5 | 10,0 | 20,5 | 7,7 | 6,3 | Nylon    | 0,090  | 500 | 100 |
| 263518   | 1,5 - 2,5 | 4,8x0,5 | 3,8 | 10,5 | 19,2 | 6,5 | 4,8 | Nylon    | 0,080  | 500 | 100 |
| 263520   |           | 4,8x0,8 | 3,8 | 10,5 | 19,2 | 6,7 | 4,8 | Nylon    | 0,086  | 500 | 100 |
| 263424   |           | 6,3x0,8 | 4,0 | 10,0 | 20,5 | 7,7 | 6,3 | Nylon    | 0,100  | 500 | 100 |
| 263426   | 4,0 - 6,0 | 6,3x0,8 | 5,5 | 13,5 | 24,5 | 7,7 | 6,3 | Nylon    | 0,180  | 500 | 100 |

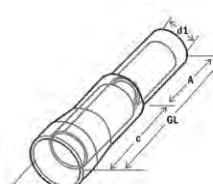


## Round sleeves

- of electrolytic copper, tin-plated • Easy Entry
- Nylon-insulated, with expanded insulating sleeve, suitable for harmonised cables



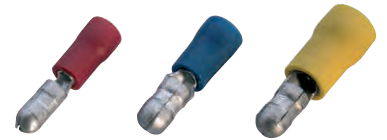
| Art. no. | CSS       | plug | d1  | A    | TL   | c    | B   | material | kg/100 | PU  | PU  |
|----------|-----------|------|-----|------|------|------|-----|----------|--------|-----|-----|
| 263440   | 0,5 - 1,0 | 4 mm | 3,5 | 9,5  | 20,2 | 8,7  | 4,0 | Nylon    | 0,130  | 500 | 100 |
| 263442   | 1,5 - 2,5 | 5 mm | 4,3 | 9,5  | 20,7 | 8,7  | 5,0 | Nylon    | 0,150  | 500 | 100 |
| 263443   |           | 4 mm | 4,3 | 9,5  | 20,2 | 8,7  | 4,0 | Nylon    | 0,130  | 500 | 100 |
| 263444   | 4,0 - 6,0 | 5 mm | 6,5 | 13,0 | 25,0 | 12,0 | 5,0 | Nylon    | 0,200  | 500 | 100 |



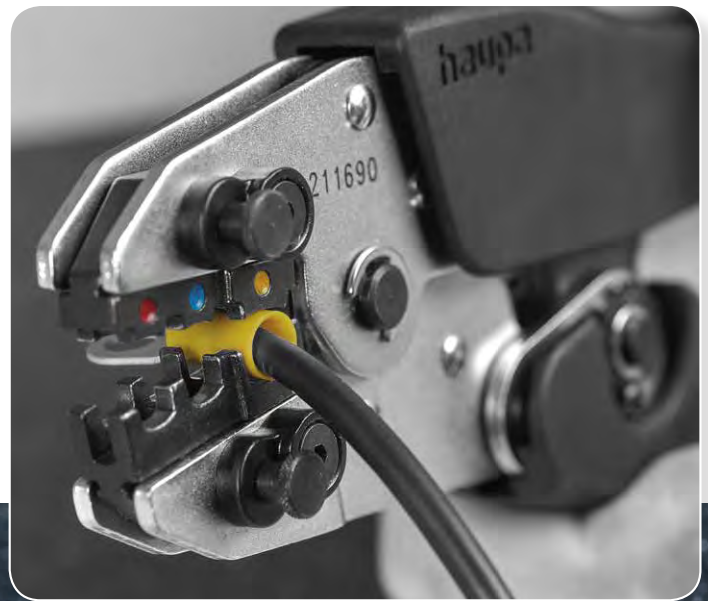
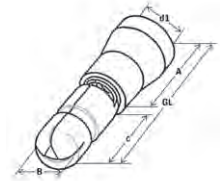
# Crimp terminals, Nylon-insulated

## Round terminals

- of electrolytic copper, tin-plated • Easy Entry
- Nylon-insulated, with expanded insulating sleeve, suitable for harmonised cables



| Art. no. | CSS       | plug | d1  | A    | TL   | c    | B   | material | kg/100 | PU      |
|----------|-----------|------|-----|------|------|------|-----|----------|--------|---------|
| 263446   | 0,5 - 1,0 | 4 mm | 3,5 | 9,5  | 20,2 | 8,7  | 4,0 | Nylon    | 0,090  | 500 100 |
| 263448   | 1,5 - 2,5 | 5 mm | 4,3 | 9,5  | 20,7 | 8,7  | 5,0 | Nylon    | 0,110  | 500 100 |
| 263449   | 4 mm      | 4 mm | 4,3 | 9,5  | 20,2 | 8,7  | 4,0 | Nylon    | 0,100  | 500 100 |
| 263450   | 4,0 - 6,0 | 5 mm | 6,5 | 13,5 | 25,0 | 10,0 | 5,0 | Nylon    | 0,200  | 500 100 |





# INFO

## Shrinkable connectors

These shrinkable connectors are an insulated connecting element for the production of cable connections and circuit points. Their outstanding properties are based on the use of a Polyolefin shrinkable tube, which is coated with a special adhesive on the inside, which protects the metal crimp connections from environmental influences. These connectors or terminal clamps are used wherever a reliable connection is needed under severe environmental conditions.

The shrinkable connectors of the HAUPA-SHRINK series combine crimp technology with the completely waterproof shrink technology in one part: crimp first – **then shrink and make waterproof!**

**USE:** To create simple, durable and weatherproof electrical connections. Particularly suitable well as in the motor vehicle, agricultural machinery and commercial vehicle sector.

**SPECIAL FEATURE:** The fusible inside adhesive cover provides excellent durability and is safer than traditional connectors.

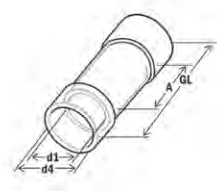
- SUITABLE FOR MAKING WATERPROOF CONNECTIONS:**
- Shrink ratio 3:1 • Shrink temperature: >+125°C
  - Temperature resistance: -55°C to + 125°C • Insulating sleeve: Polyolefin with inside adhesive
  - Non-halogen • RoHS conform • No additional insulating and sealing required • Waterproof splice connection
  - Space-saving and compact • Extremely high strain relief • Easy installation • Full visual testing possible

**INSTRUCTIONS:** The connector is crimped and then shrunk using a hot air blower (with deflector page 174). The connection Check whether the fusible inside adhesive comes out on the sides to ensure optimal tightness.

## Butt connectors

- Copper, tin-plated • Insulating cover: Polyolefin with inside adhesive
- RoHS conform

| Art. no. | CSS       | A  | TL | kg/100 | PU      |
|----------|-----------|----|----|--------|---------|
| 363500   | 0,5 - 1,0 | 14 | 36 | 0,120  | 500 100 |
| 363502   | 1,5 - 2,5 | 15 | 36 | 0,132  | 500 100 |
| 363504   | 4,0 - 6,0 | 15 | 41 | 0,300  | 500 100 |



## Socket sleeves (female)

- Brass, tin-plated • Insulating cover: Polyolefin with inside adhesive
- RoHS conform

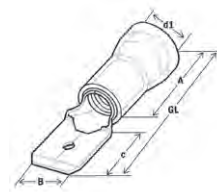
| Art. no. | CSS       | plug    | TL   | B   | kg/100 | PU      |
|----------|-----------|---------|------|-----|--------|---------|
| 363510   | 0,5 - 1,0 | 6,3x0,8 | 30,0 | 6,6 | 0,129  | 500 100 |
| 363512   | 1,5 - 2,5 | 6,3x0,8 | 30,0 | 6,6 | 0,138  | 500 100 |
| 363514   | 4,0 - 6,0 | 6,3x0,8 | 30,0 | 6,6 | 0,200  | 500 100 |



## Flat terminals

- Brass, tin-plated • Insulating cover: Polyolefin with inside adhesive
- RoHS conform

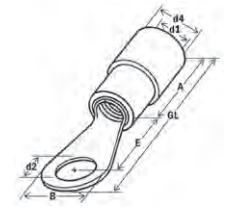
| Art. no. | CSS       | plug    | TL   | B   | kg/100 | PU      |
|----------|-----------|---------|------|-----|--------|---------|
| 363520   | 0,5 - 1,0 | 6,3x0,8 | 30,0 | 6,6 | 0,092  | 500 100 |
| 363522   | 1,5 - 2,5 | 6,3x0,8 | 30,0 | 6,6 | 0,106  | 500 100 |
| 363524   | 4,0 - 6,0 | 6,3x0,8 | 30,0 | 6,6 | 0,159  | 500 100 |



## Ring terminals

- Copper, tin-plated • Insulating cover: Polyolefin with inside adhesive
- RoHS conform

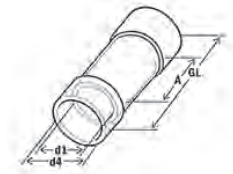
| Art. no. | CSS       | M  | d2   | TL   | B    | kg/100 | PU  |
|----------|-----------|----|------|------|------|--------|-----|
| 363530   | 0,5 - 1,0 | 4  | 4,3  | 28,5 | 8,0  | 0,073  | 100 |
| 363532   |           | 5  | 5,3  | 28,5 | 8,0  | 0,066  | 100 |
| 363534   |           | 6  | 6,5  | 34,5 | 11,6 | 0,104  | 100 |
| 363536   |           | 8  | 8,4  | 34,5 | 11,6 | 0,089  | 100 |
| 363538   |           | 10 | 10,5 | 37,5 | 13,6 | 0,112  | 100 |
| 363540   | 1,5 - 2,5 | 4  | 4,3  | 30,5 | 8,5  | 0,085  | 100 |
| 363542   |           | 5  | 5,3  | 30,5 | 9,5  | 0,083  | 100 |
| 363544   |           | 6  | 6,5  | 35,5 | 12,0 | 0,122  | 100 |
| 363546   |           | 8  | 8,4  | 35,5 | 12,0 | 0,118  | 100 |
| 363548   |           | 10 | 10,5 | 37,5 | 13,6 | 0,128  | 100 |
| 363550   | 4,0 - 6,0 | 4  | 4,3  | 34,2 | 9,5  | 0,173  | 100 |
| 363552   |           | 5  | 5,3  | 34,0 | 9,5  | 0,172  | 100 |
| 363554   |           | 6  | 6,5  | 37,5 | 12,0 | 0,201  | 100 |
| 363556   |           | 8  | 8,4  | 42,0 | 15,0 | 0,251  | 100 |
| 363558   |           | 10 | 10,5 | 42,0 | 15,0 | 0,226  | 100 |



## Welded shrink connectors

- Copper, tin-plated • Insulating cover: Polyolefin with inside adhesive
- RoHS conform

| Art. no. | CSS       | kg/100 | PU |
|----------|-----------|--------|----|
| 363600   | 0,5 - 1,0 | 0,090  | 1  |
| 363602   | 1,5 - 2,5 | 0,110  | 1  |
| 363604   | 4,0 - 6,0 | 0,160  | 1  |



## Welded shrink connectors, transparent

- Copper, tin-plated • Insulating cover: Polyolefin with inside adhesive
- RoHS conform • transparent

| Art. no. | CSS       | kg/100 | PU |
|----------|-----------|--------|----|
| 363606   | 0,5 - 1,0 | 0,090  | 1  |
| 363607   | 1,5 - 2,5 | 0,110  | 1  |
| 363608   | 4,0 - 6,0 | 0,160  | 1  |



## Assortment of insulated terminals

**Content:** 1.250 crimping terminals, crimping pliers (art. no. 210761), crimp 0,5 - 6,0 mm<sup>2</sup>, in plastic bulk storage chest 415 x 335 x 90 mm.  
 100 insulated ring terminals 0,25-1,5 M3 260252  
 100 insulated ring terminals 0,25-1,5 M4 260256  
 100 insulated ring terminals 0,25-1,5 M5 260258  
 100 insulated ring terminals 1,5-2,5 M4 260270  
 100 insulated ring terminals 1,5-2,5 M5 260272  
 50 insulated ring terminals 1,5-2,5 M6 260274  
 100 insulated ring terminals 2,5-6 M5 260286  
 50 insulated ring terminals 2,5-6 M6 260288  
 50 insulated fork type 0,25-1,5 M4 260304  
 50 insulated fork type 1,5-2,5 M4 260314  
 50 insulated fork type 2,5-6 M5 260322  
 50 insulated butt connectors 0,25-1,5 260350  
 50 insulated butt connectors 1,5-2,5 260352  
 50 insulated butt connectors 2,5-6 260354  
 50 insulated round pin 0,25-1,5 260370  
 50 insulated round pin 1,5-2,5 260372  
 50 insulated round pin 2,5-6 260374  
 50 insul. socket sl. 1,5-2,5/6,3x0,8 260394  
 50 insul. flat term. 1,5-2,5/6,3x0,8 260424



| Art. no. | Content | Insulation | kg    | PU |
|----------|---------|------------|-------|----|
| 260762   | 1250    | PVC        | 3,139 | 1  |

## Assortment of insulated terminals

**Content:** 1250 insulated terminals, 1 crimping pliers (art. 210802), press range 1.5 - 6 mm<sup>2</sup>, in plastic bulk storage chest.  
 100 insulated ring terminals 0,25-1,5, M3, art. 260252  
 100 insulated ring terminals 0,25-1,5, M4, art. 260256  
 100 insulated ring terminals 0,25-1,5, M5, art. 260258  
 100 insulated ring terminals 1,5-2,5, M4, art. 260270  
 100 insulated ring terminals 1,5-2,5, M5, art. 260272  
 50 insulated ring terminals 1,5-2,5, M6, art. 260274  
 100 insulated ring terminals 2,5-6, M5, art. 260286  
 50 insulated ring terminals 2,5-6, M6, art. 260288  
 50 insulated fork type 0,25-1,5, M4, art. 260304  
 50 insulated fork type 1,5-2,5, M4, art. 260314  
 50 insulated fork type 2,5-6, M5, art. 260322  
 50 insulated butt connectors 0,25-1,5, art. 260350  
 50 insulated butt connectors 1,5-2,5, art. 260352  
 50 insulated butt connectors 2,5-6, art. 260354  
 50 insulated round pin 0,25-1,5, art. 260370  
 50 insul. round pin 1,5-2,5, art. 260372  
 50 insul. round pin 2,5-6, art. 260374  
 50 insul. socket sleeves 1,5-2,5/6,3x0,8, art. 260394  
 50 insul. flat terminals 1,5-2,5/6,3x0,8, art. 260424



| Art. no. | Content | Insulation | kg           | PU |
|----------|---------|------------|--------------|----|
| 260764   | 1250    | PVC        | 210802 3,278 | 1  |
| 262048   | 1250    | PVC        | - 3,400      | 1  |

## Assortment of insulated terminals

**Content:** 1.200 Crimping terminals, 1 crimping pliers for insulated crimping terminals (art. 210761), range 0.5 - 6 mm<sup>2</sup> in plastic bulk storage chest.  
 100 insulated ring terminals 0,25-1,5, M4, art. 260256  
 100 insulated ring terminals 0,25-1,5, M5, art. 260258  
 100 insulated ring terminals 0,25-1,5, M6, art. 260260  
 100 insulated ring terminals 1,5-2,5, M4, art. 260270  
 100 insulated ring terminals 1,5-2,5, M5, art. 260272  
 100 insulated ring terminals 1,5-2,5, M6, art. 260274  
 100 insulated ring terminals 2,5-6, M5, art. 260286  
 100 insulated ring terminals 2,5-6, M6, art. 260288  
 100 insulated ring terminals 2,5-6, M8, art. 260290  
 100 insulated butt connectors 0,25-1,5, art. 260350  
 100 insulated butt connectors 1,5-2,5, art. 260352  
 100 insulated butt connectors 2,5-6, art. 260354



| Art. no. | Content | Insulation | kg    | PU |
|----------|---------|------------|-------|----|
| 260765   | 1200    | PVC        | 3,367 | 1  |

## Assortment of insulated terminals

**Content:** 1.200 crimping terminals, crimping pliers (art. 210802), crimp 0,5 - 6,0 mm<sup>2</sup>, in plastic bulk storage chest 415 x 335 x 90 mm.  
 100 insulated ring terminals 0,25-1,5, M4, art. 260256  
 100 insulated ring terminals 0,25-1,5, M5, art. 260258  
 100 insulated ring terminals 0,25-1,5, M6, art. 260260  
 100 insulated ring terminals 1,5-2,5, M4, art. 260270  
 100 insulated ring terminals 1,5-2,5, M5, art. 260272  
 100 insulated ring terminals 1,5-2,5, M6, art. 260274  
 100 insulated ring terminals 2,5-6, M5, art. 260286  
 100 insulated ring terminals 2,5-6, M6, art. 260288  
 100 insulated ring terminals 2,5-6, M8, art. 260290  
 100 insulated butt connectors 0,25-1,5, art. 260350  
 100 insulated butt connectors 1,5-2,5, art. 260352  
 100 insulated butt connectors 2,5-6, art. 260354



| Art. no. | Content | Insulation | kg    | PU |
|----------|---------|------------|-------|----|
| 260777   | 1200    | PVC        | 2,980 | 1  |



## SysCon insulated terminals & 210761



**Content:** 1500 insulated terminals

- 1 220370 ABS plastic box „SysCon S”
- 1 220375 Assortment insert „SysCon“
- 1 220399 Foam „SysCon” 400 x 300 x 10 mm
- 1 210761 Crimping pliers for insulated terminals 0,5 – 6 mm<sup>2</sup>

|     |        |                         |         |        |
|-----|--------|-------------------------|---------|--------|
| 200 | 260350 | Butt connectors, red    | 0,5/1,0 | PVC    |
| 200 | 260352 | Butt connectors, blue   | 1,5/2,5 | PVC    |
| 100 | 260354 | Butt connectors, yellow | 4,0/6,0 | PVC    |
| 200 | 260256 | Ring terminals, red     | 0,5/1,0 | M4 PVC |
| 200 | 260258 | Ring terminals, red     | 0,5/1,0 | M5 PVC |
| 200 | 260270 | Ring terminals, blue    | 1,5/2,5 | M4 PVC |
| 200 | 260272 | Ring terminals, blue    | 1,5/2,5 | M5 PVC |
| 100 | 260288 | Ring terminals, yellow  | 4,0/6,0 | M6 PVC |
| 100 | 260290 | Ring terminals, yellow  | 4,0/6,0 | M8 PVC |



| Art. no. | Content | kg    | PU |
|----------|---------|-------|----|
| 220381   | 1500    | 4,300 | 1  |

## SysCon insulated terminals / end sleeves & 210784



**Content:** insulated terminals and end sleeves

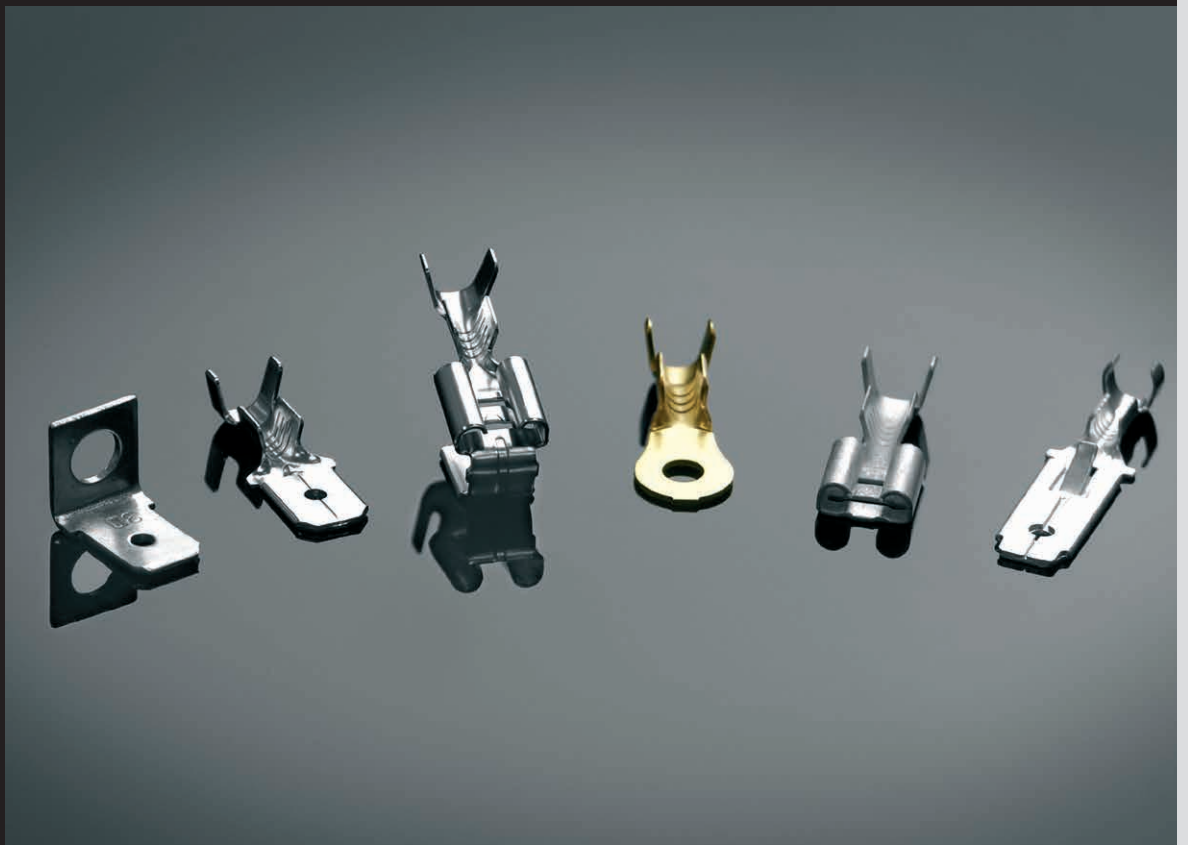
- 1 220370 ABS plastic box „SysCon S”
- 1 220375 Assortment insert „SysCon“
- 1 220399 Foam „SysCon” 400 x 300 x 10 mm
- 1 210784 Crimping pliers for insulated terminals and end sleeves

|      |        |                       |         |        |
|------|--------|-----------------------|---------|--------|
| 200  | 260350 | Butt connectors, red  | 0,5-1,0 | PVC    |
| 200  | 260352 | Butt connectors, blue | 1,5-2,5 | PVC    |
| 200  | 260256 | Ring terminals, red   | 0,5-1,0 | M4 PVC |
| 200  | 260272 | Ring terminals, blue  | 1,5-2,5 | M5 PVC |
| 200  | 260274 | Ring terminals, blue  | 1,5-2,5 | M6 PVC |
| 1000 | 270807 | End sleeves, black    | 1,5/8   |        |
| 1000 | 270811 | End sleeves, blue     | 2,5/8   |        |
| 500  | 270815 | End sleeves, grey     | 4/10    |        |
| 200  | 270818 | End sleeves, yellow   | 6/12    |        |



| Art. no. | Content | kg    | PU |
|----------|---------|-------|----|
| 220391   | 3700    | 4,300 | 1  |

Socket sleeves

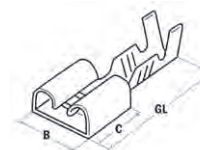


## Socket sleeves (female)

- bare brass
- not insulated, to DIN 46247/part 1 - 3 and similar



| Art. no. | CSS        | plug    | TL   | c   | B    | kg/100 | PU  |
|----------|------------|---------|------|-----|------|--------|-----|
| 280000   | 0,5 - 1    | 6,3x0,8 | 19,2 | 7,6 | 7,6  | 0,073  | 200 |
| 280004   | 1 - 2,5    | 6,3x0,8 | 19,2 | 7,6 | 7,6  | 0,079  | 200 |
| 280008   | 0,5 - 1,25 | 4,8x0,8 | 15,0 | 6,4 | 5,6  | 0,075  | 200 |
| 280012   |            | 4,8x0,5 | 15,0 | 6,4 | 5,6  | 0,043  | 200 |
| 280016   |            | 2,8x0,8 | 16,0 | 6,4 | 3,75 | 0,040  | 200 |
| 280020   |            | 2,8x0,5 | 16,0 | 6,4 | 3,75 | 0,020  | 200 |

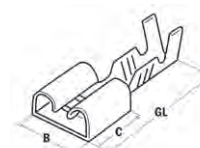


## Socket sleeves (female)

- bare brass
- not insulated, to DIN 46247/part 1 - 3 and similar



| Art. no. | CSS        | plug    | TL   | c   | B    | kg/100 | PU  |
|----------|------------|---------|------|-----|------|--------|-----|
| 280030   | 0,5 - 1,0  | 6,3x0,8 | 19,2 | 7,6 | 7,6  | 0,073  | 200 |
| 280034   | 1,0 - 2,5  | 6,3x0,8 | 19,2 | 7,6 | 7,6  | 0,038  | 200 |
| 280038   | 0,5 - 1,25 | 4,8x0,8 | 15,0 | 6,4 | 5,6  | 0,0410 | 200 |
| 280042   |            | 4,8x0,5 | 15,0 | 6,4 | 5,6  | 0,027  | 200 |
| 280046   |            | 2,8x0,8 | 16,0 | 6,4 | 3,75 | 0,023  | 200 |
| 280050   |            | 2,8x0,5 | 16,0 | 6,4 | 3,75 | 0,027  | 200 |

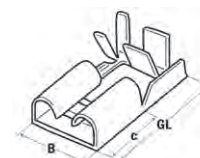


## Socket sleeves (female)

- bare brass
- not insulated, to DIN 46247/part 1 - 3 and similar



| Art. no. | CSS       | plug    | TL   | c   | B   | kg/100 | PU  |
|----------|-----------|---------|------|-----|-----|--------|-----|
| 280060   | 0,5 - 1,0 | 6,3x0,8 | 14,1 | 7,6 | 7,6 | 0,073  | 200 |
| 280064   | 1,0 - 2,5 | 6,3x0,8 | 14,1 | 7,6 | 7,6 | 0,078  | 200 |

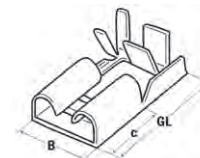


## Socket sleeves (female)

- bare brass
- not insulated, to DIN 46247/part 1 - 3 and similar



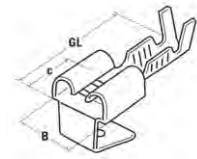
| Art. no. | CSS       | plug    | TL   | c   | B   | kg/100 | PU  |
|----------|-----------|---------|------|-----|-----|--------|-----|
| 280070   | 0,5 - 1,0 | 6,3x0,8 | 14,1 | 7,6 | 7,6 | 0,075  | 200 |
| 280074   | 1,0 - 2,5 | 6,3x0,8 | 14,1 | 7,6 | 7,6 | 0,078  | 200 |



## Socket sleeves (female) with branch

- bare brass
- not insulated, to DIN 46247/part 1 - 3 and similar

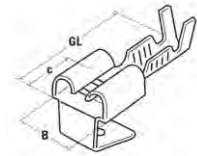
| Art. no. | CSS       | plug    | TL   | c   | B   | kg/100 | PU  |
|----------|-----------|---------|------|-----|-----|--------|-----|
| 280080   | 0,5 - 1,0 | 6,3x0,8 | 19,6 | 7,7 | 7,6 | 0,108  | 200 |
| 280084   | 1,0 - 2,5 | 6,3x0,8 | 16,2 | 7,7 | 7,6 | 0,103  | 200 |



## Socket sleeves (female) with branch

- bare brass
- not insulated, to DIN 46247/part 1 - 3 and similar

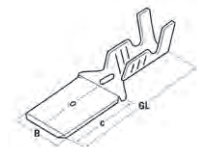
| Art. no. | CSS       | plug    | TL   | c   | B   | kg/100 | PU  |
|----------|-----------|---------|------|-----|-----|--------|-----|
| 280090   | 0,5 - 1,0 | 6,3x0,8 | 19,6 | 7,7 | 7,6 | 0,110  | 200 |
| 280094   | 1,0 - 2,5 | 6,3x0,8 | 16,2 | 7,7 | 7,6 | 0,112  | 200 |



## Flat terminals

- bare brass
- uninsulated

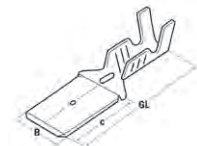
| Art. no. | CSS       | plug    | TL   | c    | B   | kg/100 | PU  |
|----------|-----------|---------|------|------|-----|--------|-----|
| 280100   | 0,5 - 1,0 | 6,3x0,8 | 20,6 | 6,35 | 6,3 | 0,055  | 200 |
| 280104   | 1,0 - 2,5 | 6,3x0,8 | 17,2 | 6,35 | 6,3 | 0,057  | 200 |



## Flat terminals

- tin-plated brass
- uninsulated

| Art. no. | CSS       | plug    | TL   | c    | B   | kg/100 | PU  |
|----------|-----------|---------|------|------|-----|--------|-----|
| 280110   | 0,5 - 1,0 | 6,3x0,8 | 20,6 | 6,35 | 6,3 | 0,054  | 200 |
| 280114   | 1,0 - 2,5 | 6,3x0,8 | 17,2 | 6,35 | 6,3 | 0,057  | 200 |

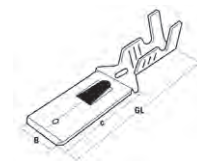


## Socket sleeves (male) with latching tongue

- bare brass
- uninsulated



| Art. no. | CSS       | plug    | TL   | c    | B   | kg/100 | PU  |
|----------|-----------|---------|------|------|-----|--------|-----|
| 280101   | 0,5 - 1,0 | 6,3x0,8 | 20,6 | 6,35 | 6,3 | 0,200  | 200 |
| 280105   | 1,0 - 2,5 | 6,3x0,8 | 17,2 | 6,35 | 6,3 | 0,085  | 200 |

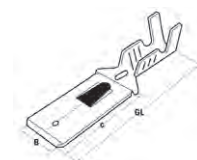


## Socket sleeves (male) with latching tongue

- tin-plated brass
- uninsulated



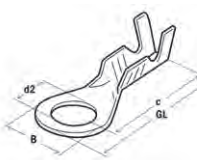
| Art. no. | CSS       | plug    | TL   | c    | B   | kg/100 | PU  |
|----------|-----------|---------|------|------|-----|--------|-----|
| 280111   | 0,5 - 1,0 | 6,3x0,8 | 20,6 | 6,35 | 6,3 | 0,082  | 200 |
| 280115   | 1,0 - 2,5 | 6,3x0,8 | 17,2 | 6,35 | 6,3 | 0,089  | 200 |



## Ring terminals

- bare brass
- uninsulated

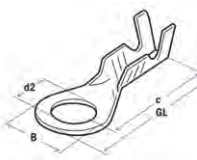
| Art. no. | CSS       | M | d2   | TL   | B   | kg/100 | PU  |
|----------|-----------|---|------|------|-----|--------|-----|
| 280120   | 0,5 - 1,0 | 3 | 3,2  | 21,0 | 8,0 | 0,054  | 200 |
| 280124   |           | 4 | 4,3  | 21,0 | 8,0 | 0,038  | 200 |
| 280128   |           | 5 | 5,08 | 22,0 | 9,5 | 0,068  | 200 |
| 280132   | 1,0 - 2,5 | 3 | 3,2  | 21,0 | 8,0 | 0,076  | 200 |
| 280136   |           | 4 | 4,3  | 21,0 | 8,0 | 0,046  | 200 |
| 280140   |           | 5 | 5,08 | 22,0 | 9,5 | 0,045  | 200 |



## Ring terminals

- tin-plated brass
- uninsulated

| Art. no. | CSS       | M | d2   | TL   | B   | kg/100 | PU  |
|----------|-----------|---|------|------|-----|--------|-----|
| 280150   | 0,5 - 1,0 | 3 | 3,2  | 21,0 | 8,0 | 0,057  | 200 |
| 280154   |           | 4 | 4,3  | 21,0 | 8,0 | 0,040  | 200 |
| 280158   |           | 5 | 5,08 | 22,0 | 9,5 | 0,056  | 200 |
| 280162   | 1,0 - 2,5 | 3 | 3,2  | 21,0 | 8,0 | 0,076  | 200 |
| 280166   |           | 4 | 4,3  | 21,0 | 8,0 | 0,046  | 200 |
| 280170   |           | 5 | 5,08 | 22,0 | 9,5 | 0,043  | 200 |

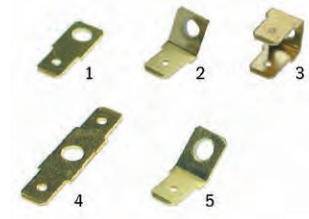




## Flat terminals

- bare brass
- uninsulated

| Art. no. | plug    | d2  | TL    | form |     | kg/100 | PU  |
|----------|---------|-----|-------|------|-----|--------|-----|
| 280180   | 6,3x0,8 | 4,2 | 19,2  | 1    | 0°  | 0,076  | 200 |
| 280182   | 6,3x0,8 | 4,2 | 10,2  | 5    | 45° | 0,082  | 200 |
| 280184   | 6,3x0,8 | 4,2 | 11,3  | 2    | 90° | 0,085  | 200 |
| 280186   | 6,3x0,8 | 4,2 | 30,3  | 4    | 0°  | 0,136  | 200 |
| 280188   | 6,3x0,8 | 4,2 | 11,45 | 3    | 90° | 0,134  | 200 |



## Flat terminals

- tin-plated brass
- uninsulated

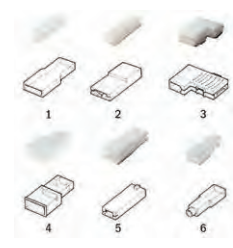
| Art. no. | plug    | d2  | TL    | form |     | kg/100 | PU  |
|----------|---------|-----|-------|------|-----|--------|-----|
| 280190   | 6,3x0,8 | 4,2 | 19,2  | 1    | 0°  | 0,083  | 200 |
| 280192   | 6,3x0,8 | 4,2 | 10,2  | 5    | 45° | 0,084  | 200 |
| 280194   | 6,3x0,8 | 4,2 | 11,3  | 2    | 90° | 0,095  | 200 |
| 280196   | 6,3x0,8 | 4,2 | 30,3  | 4    | 0°  | 0,137  | 200 |
| 280198   | 6,3x0,8 | 4,2 | 11,45 | 3    | 90° | 0,272  | 200 |



## Insulating sleeves

- of PVC and nylon

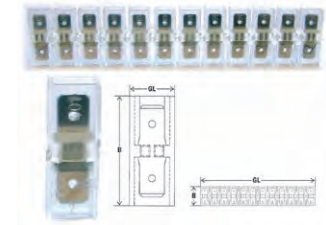
| Art. no. | plug    | form | material | kg/100 | PU  |
|----------|---------|------|----------|--------|-----|
| 280200   | 6,3x0,8 | 1    | PVC      | 0,056  | 100 |
| 280202   | 6,3x0,8 | 2    | Nylon    | 0,069  | 100 |
| 280204   | 4,8x0,8 | 6    | PVC      | 0,047  | 100 |
| 280206   | 4,8x0,8 | 2    | Nylon    | 0,071  | 100 |
| 280208   | 2,8x0,8 | 6    | PVC      | 0,036  | 100 |
| 280210   | 2,8x0,8 | 5    | Nylon    | 0,043  | 100 |
| 280212   | 6,3x0,8 | 4    | PVC      | 0,063  | 100 |
| 280214   | 6,3x0,8 | 3    | Nylon    | 0,048  | 100 |



## Elastic connectors with socket sleeves (male)

- 1 - 12 pole
- PVC, natural colour

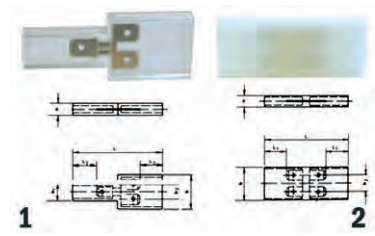
| Art. no. | plug    | TL    | form | B    | material | kg/100 | PU  |
|----------|---------|-------|------|------|----------|--------|-----|
| 280460   | 2,8x0,8 | 7,5   | 1    | 35,0 | PVC      | 0,157  | 100 |
| 280482   | 2,8x0,8 | 88,0  | 12   | 35,0 | PVC      | 1,770  | 10  |
| 280490   | 4,8x0,8 | 12,5  | 1    | 28,0 | PVC      | 0,200  | 100 |
| 280512   | 4,8x0,8 | 147,0 | 12   | 28,0 | PVC      | 2,800  | 10  |
| 280520   | 6,3x0,8 | 12,5  | 1    | 28,0 | PVC      | 0,240  | 100 |
| 280542   | 6,3x0,8 | 147,0 | 12   | 28,0 | PVC      | 2,850  | 10  |
| 280550   | 2,8x0,8 | 12,5  | 1    | 28,0 | PVC      | 0,250  | 100 |
| 280572   | 2,8x0,8 | 147,0 | 12   | 28,0 | PVC      | 0,440  | 50  |



## Elastic cable distributors

- PVC, natural colour

| Art. no. | plug    | TL   | form | c    | material | kg/100 | PU |
|----------|---------|------|------|------|----------|--------|----|
| 280580   | 6,3x0,8 | 53,0 | A    | 15,0 | PVC      | 0,500  | 50 |
| 280582   | 6,3x0,8 | 51,0 | B    | 13,0 | PVC      | 0,500  | 50 |





Cable lugs and connectors



# INFO

## Instructions

### 1. The choice of the connector

In order to obtain a connection that can be guaranteed for a long time it is necessary to select the connectors suitable to the application field and strictly conform to the section of the cable to be crimped.

In the large range of Haupa products you will certainly find the ideal solution for every requirement.

### 2. Stripping

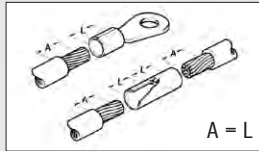
Every crimping operation requires first that the cable is stripped without deforming the wires (+10% - since length expansion of crimp sleeve).

### 3. Cleaning

The conductor ends have to be solidly cleaned from oxidation and every rest of dirt before mounting.

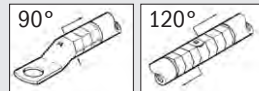
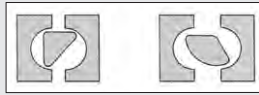
### 4. Assembling

- Fit the connector to the cable with a round section in the complete length of the stripped area.
- Verify that there are no wires outside the connector. If you need to use sectoral cables you must arrange a previous rounding crimping operation of the cable.



### 5. Choice of the crimping tool

All dies and punchings of the Haupa crimp system guarantee a high degree of connection between connector and cable. Exercise the crimping operation as shown in drawing 1 on the terminals and as drawing 2 on the butt connectors. The elevated pressure exerted by dies on terminals cause a uniform deformation on the whole crimping area.



### 6. Caution

For aluminium cables shoes and connectors, excess, escaped pressing additives must be wiped away.

### 7. Tensile strength

When correctly processed in accordance with the HAUPA pressing instructions and using HAUPA pressing tools, a tensile strength is ensured in accordance with DIN EN61238-1.

### Pressing number for HAUPA conduit terminals and connectors

| conductor cross section<br>CSS | HAUPA<br>standard tubular cable lugs<br>"commonly-available version"<br>VDE 0295 class 2 |   | HAUPA<br>F-Type<br>tubular cable lugs<br>Cable class 5 / 6 |
|--------------------------------|--|---|--|
|                                | quantity<br>crimpings<br>slim<br>5 mm  | quantity<br>crimpings<br>wide<br>> 8 mm | quantity<br>crimpings                                      |
| 0,75                           | 1  | -                                       | -  |
| 1,5                            | 1  | -                                       | -  |
| 2,5                            | 1  | -                                       | -  |
| 4                              | 1  | -                                       | -  |
| 6                              | 1  | -                                       | -  |
| 10                             | 1  | 1                                       | -  |
| 16                             | 1  | 1                                       | 1  |
| 25                             | 2  | 1                                       | 1  |
| 35                             | 2  | 1                                       | 1  |
| 50                             | 2  | 1                                       | 1  |
| 70                             | 2  | 1                                       | 1  |
| 95                             | 2  | 1                                       | 1  |
| 120                            | 2  | 1                                       | 1  |
| 150                            | 2  | 1                                       | 2  |
| 185                            | 2  | 1*                                      | 2  |
| 240                            | 4  | 2                                       | 2  |
| 300                            | 4  | 2                                       | 2  |
| 400                            | 4  | 2                                       | -  |
| 500                            | 4  | 2                                       | -  |
| 625                            | 4  | 2                                       | -  |

\* when using the four thorn pressing, number of pressings:

AD300-6, SD300-6, HD300-6, KD300-6 /

AD400-6, SD400-6, HD400-6, KD400-6

(page 69 - 70)

## Temperature resistance

| Connector  | Temperature                        |
|--|------------------------------------|
| Cable lugs & connectors copper                                 | max. 120° C (in acc. to DIN 46234) |
| Cable lugs & connectors aluminium                              | max. 120° C (in acc. to IEC 61238) |
| Cable lugs & connectors of pure nickel                         | max. 500° C                        |
| End sleeves without insulation                                 | max. 120° C (in acc. to DIN 46234) |
| End sleeves insulated  | max. 105° C                        |
| Insulated terminals PVC  | - 10° C --> + 75° C                |
| Insulated terminals Nylon                                      | - 55° C --> + 105° C               |
| Shrinking terminals  | - 55° C --> + 105° C               |
| Socket sleeves male & female,<br>tin-coated brass, uninsulated | - 55° C --> + 100° C               |

## HAUPA cable connections with insulated cables, maximum power loads

| Core cross-section<br>mm <sup>2</sup> | Duct-laid<br>single core<br>cables |     | Multi-core<br>cables |     | Exposed air laid<br>single core<br>(gap corresponds<br>to diameter<br>at the least) |     |
|---------------------------------------|------------------------------------|-----|----------------------|-----|---|-----|
|                                       | AL                                 | CU  | AL                   | CU  | AL  |     |
|                                       | (A)                                | (A) | (A)                  | (A) | (A)   |     |
| 0,75                                  | -                                  | -   | 12                   | -   | 15  | -   |
| 1                                     | 11                                 | -   | 15                   | -   | 19  | -   |
| 1,5                                   | 15                                 | -   | 15                   | -   | 19  | -   |
| 2,5                                   | 20                                 | -   | 26                   | -   | 32  | -   |
| 4                                     | 25                                 | -   | 34                   | -   | 42  | -   |
| 6                                     | 33                                 | -   | 44                   | -   | 54  | -   |
| 10                                    | 45                                 | -   | 61                   | 48  | 73  | 57  |
| 16                                    | 61                                 | 48  | 82                   | 64  | 98  | 77  |
| 25                                    | 83                                 | 65  | 108                  | 85  | 129   | 103 |
| 35                                    | 103                                | 81  | 135                  | 105 | 158   | 124 |
| 50                                    | 132                                | 103 | 168                  | 132 | 198   | 155 |
| 70                                    | 165                                | -   | 207                  | 163 | 245   | 193 |
| 95                                    | 197                                | -   | 250                  | 197 | 292   | 230 |
| 120                                   | 235                                | -   | 292                  | 230 | 344   | 268 |
| 150                                   | -                                  | -   | 335                  | 263 | 391   | 310 |
| 185                                   | -                                  | -   | 383                  | 301 | 448   | 353 |
| 240                                   | -                                  | -   | 453                  | 357 | 528   | 414 |
| 300                                   | -                                  | -   | 504                  | 409 | 608   | 479 |
| 400                                   | -                                  | -   | -                    | -   | 726   | 569 |
| 500                                   | -                                  | -   | -                    | -   | 830   | 649 |

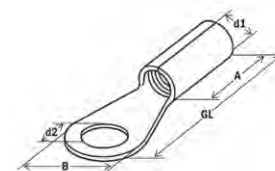
Valid at ambient temperatures of 30 degrees Celsius

**Crimp ring terminals without insulation DIN 46234**

- Material: 99,9% electrolytic copper • Surface: tin-plated
- Ring type • For conductors, e.g. to VDE 0295 class 2,5,6
- Hard soldered in crimping area
- Grooved profile for improved contact characteristics



**Cu**



| Art. no. | CSS       | M         | d2   | d1   | A    | TL    | B     | kg/100 | PU    |     |
|----------|-----------|-----------|------|------|------|-------|-------|--------|-------|-----|
| 290619   | 0,5 - 1,0 | 2,5       | 2,6  | 1,95 | 5,2  | 17,25 | 8,0   | 0,056  | 100   |     |
| 290620   |           | 3         | 3,2  | 1,95 | 5,2  | 17,25 | 8,0   | 0,055  | 100   |     |
| 290621   |           | 3,5       | 3,7  | 1,95 | 5,2  | 17,25 | 8,0   | 0,039  | 100   |     |
| 290622   |           | 4         | 4,2  | 1,95 | 5,2  | 16,65 | 8,0   | 0,065  | 100   |     |
| 290624   |           | 5         | 5,2  | 1,95 | 5,2  | 17,25 | 8,0   | 0,082  | 100   |     |
| 290623   |           | 6         | 6,2  | 1,95 | 5,2  | 18,5  | 10,0  | 0,091  | 100   |     |
| 290625   |           | 8         | 8,2  | 1,95 | 5,2  | 25,0  | 14,0  | 0,121  | 100   |     |
| 290617   |           | 10        | 10,5 | 1,95 | 5,2  | 25,0  | 14,0  | 0,178  | 100   |     |
| 290626   |           | 1,5 - 2,5 | 3    | 3,2  | 2,45 | 5,2   | 17,25 | 8,0    | 0,065 | 100 |
| 290627   |           |           | 3,5  | 3,7  | 2,45 | 5,2   | 17,25 | 8,0    | 0,058 | 100 |
| 290628   | 4         |           | 4,2  | 2,45 | 5,2  | 17,25 | 8,0   | 0,076  | 100   |     |
| 290630   | 5         |           | 5,2  | 2,45 | 5,2  | 20,0  | 10,0  | 0,097  | 100   |     |
| 290632   | 6         |           | 6,2  | 2,45 | 5,2  | 22,0  | 11,0  | 0,110  | 100   |     |
| 290634   | 8         |           | 8,2  | 2,45 | 5,2  | 26,8  | 15,0  | 0,132  | 100   |     |
| 290635   | 10        |           | 10,5 | 2,45 | 5,2  | 26,8  | 15,0  | 0,138  | 100   |     |
| 290636   | 4,0 - 6,0 | 4         | 4,2  | 3,5  | 6,5  | 18,7  | 8,0   | 0,131  | 100   |     |
| 290637   |           | 3,5       | 3,7  | 3,5  | 6,5  | 18,7  | 8,0   | 0,058  | 100   |     |
| 290646   |           | 5         | 5,3  | 3,6  | 6,0  | 15,0  | 10,0  | 0,157  | 100   |     |
| 290648   |           | 6         | 6,5  | 3,6  | 6,0  | 16,0  | 11,0  | 0,166  | 100   |     |
| 290650   |           | 8         | 8,4  | 3,6  | 6,0  | 19,0  | 14,0  | 0,214  | 100   |     |
| 290652   |           | 10        | 10,5 | 3,6  | 6,0  | 21,0  | 18,0  | 0,281  | 100   |     |
| 290654   |           | 12        | 13,0 | 3,6  | 6,0  | 21,0  | 18,0  | 0,219  | 100   |     |
| 290656   |           | 10        | 5    | 5,3  | 4,5  | 8,0   | 16,0  | 10,0   | 0,216 | 100 |
| 290658   | 6         |           | 6,4  | 4,5  | 8,0  | 17,0  | 11,0  | 0,227  | 100   |     |
| 290660   | 8         |           | 8,4  | 4,5  | 8,0  | 20,0  | 14,0  | 0,280  | 100   |     |
| 290662   | 10        |           | 10,5 | 4,5  | 8,0  | 21,0  | 18,0  | 0,339  | 100   |     |
| 290663   | 12        | 13,0      | 4,5  | 8,0  | 23,0 | 22,0  | 0,300 | 100    |       |     |
| 290664   | 16        | 5         | 5,3  | 5,8  | 10,0 | 20,0  | 10,0  | 0,353  | 100   |     |
| 290666   |           | 6         | 6,4  | 5,8  | 10,0 | 20,0  | 11,0  | 0,362  | 100   |     |
| 290668   |           | 8         | 8,4  | 5,8  | 10,0 | 22,0  | 14,0  | 0,404  | 100   |     |
| 290670   |           | 10        | 10,5 | 5,8  | 10,0 | 24,0  | 18,0  | 0,477  | 100   |     |
| 290672   |           | 12        | 13,0 | 5,8  | 10,0 | 26,0  | 22,0  | 0,565  | 100   |     |
| 290676   | 25        | 6         | 6,4  | 7,5  | 11,0 | 25,0  | 12,0  | 0,706  | 50    |     |
| 290678   |           | 8         | 8,4  | 7,5  | 11,0 | 25,0  | 16,0  | 0,776  | 50    |     |
| 290680   |           | 10        | 10,5 | 7,5  | 11,0 | 26,0  | 18,0  | 0,764  | 50    |     |
| 290682   |           | 12        | 13,0 | 7,5  | 11,0 | 31,0  | 22,0  | 0,886  | 50    |     |
| 290684   | 16        | 17,0      | 7,5  | 11,0 | 35,0 | 28,0  | 1,190 | 50     |       |     |
| 290686   | 35        | 8         | 8,4  | 9,0  | 12,0 | 26,0  | 16,0  | 0,896  | 50    |     |
| 290688   |           | 10        | 10,5 | 9,0  | 12,0 | 27,0  | 18,0  | 0,900  | 50    |     |
| 290690   |           | 12        | 13,0 | 9,0  | 12,0 | 31,0  | 22,0  | 1,000  | 50    |     |
| 290692   |           | 16        | 17,0 | 9,0  | 12,0 | 36,0  | 28,0  | 1,400  | 50    |     |
| 290694   | 50        | 8         | 8,4  | 11,0 | 16,0 | 34,0  | 18,0  | 1,600  | 40    |     |
| 290696   |           | 10        | 10,5 | 11,0 | 16,0 | 34,0  | 18,0  | 1,600  | 40    |     |
| 290698   |           | 12        | 13,0 | 11,0 | 16,0 | 36,0  | 22,0  | 1,700  | 40    |     |
| 290700   |           | 16        | 17,0 | 11,0 | 16,0 | 40,0  | 28,0  | 2,000  | 25    |     |
| 290701   | 70        | 8         | 8,4  | 13,0 | 18,0 | 38,0  | 22,0  | 2,500  | 25    |     |
| 290702   |           | 10        | 10,5 | 13,0 | 18,0 | 38,0  | 22,0  | 2,500  | 25    |     |
| 290704   |           | 12        | 13,0 | 13,0 | 18,0 | 38,0  | 22,0  | 2,400  | 20    |     |
| 290707   | 95        | 8         | 8,4  | 15,0 | 20,0 | 42,0  | 24,0  | 3,800  | 20    |     |
| 290708   |           | 10        | 10,5 | 15,0 | 20,0 | 42,0  | 24,0  | 3,800  | 20    |     |
| 290710   |           | 12        | 13,0 | 15,0 | 20,0 | 42,0  | 24,0  | 3,700  | 20    |     |
| 290712   |           | 16        | 17,0 | 15,0 | 20,0 | 44,0  | 28,0  | 3,900  | 20    |     |
| 290713   | 120       | 10        | 10,5 | 16,5 | 22,0 | 44,0  | 24,0  | 5,200  | 25    |     |
| 290714   |           | 12        | 13,0 | 16,5 | 22,0 | 44,0  | 24,0  | 5,200  | 25    |     |
| 290716   |           | 16        | 17,0 | 16,5 | 22,0 | 48,0  | 28,0  | 6,200  | 25    |     |
| 290717   |           | 20        | 21,0 | 16,5 | 22,0 | 53,0  | 32,0  | 5,900  | 25    |     |
| 290719   | 150       | 10        | 10,5 | 19,0 | 24,0 | 50,0  | 30,0  | 7,500  | 25    |     |
| 290721   |           | 12        | 13,0 | 19,0 | 24,0 | 50,0  | 30,0  | 7,400  | 25    |     |
| 290718   |           | 16        | 17,0 | 19,0 | 24,0 | 50,0  | 30,0  | 6,800  | 25    |     |
| 290720   | 185       | 16        | 17,0 | 21,0 | 25,0 | 50,0  | 36,0  | 9,400  | 20    |     |

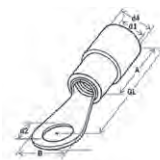


Insulated crimp cable lugs

- Nylon-insulated • Material: 99,9% E-Cu • Surface: tin-plated
- Ring type • For conductors, e.g. to VDE 0295 class 2, 5, 6
- Hard soldered in crimping area • Grooved profile for improved contact characteristics
- Crimp direct with insulation



| Art. no. | CSS | M  | d2   | d1   | d4   | A    | TL   | kg/100 | PU  |
|----------|-----|----|------|------|------|------|------|--------|-----|
| 260902   | 10  | 5  | 5,3  | 4,5  | 8,0  | 16,5 | 24,5 | 0,283  | 100 |
| 260904   |     | 6  | 6,5  | 4,5  | 8,0  | 16,5 | 25,5 | 0,240  | 100 |
| 260906   |     | 8  | 8,4  | 4,5  | 8,0  | 16,5 | 28,5 | 0,200  | 100 |
| 260908   |     | 10 | 10,5 | 4,5  | 8,0  | 16,5 | 29,5 | 0,400  | 100 |
| 260910   |     | 12 | 13,0 | 4,5  | 8,0  | 16,5 | 31,5 | 0,420  | 100 |
| 260912   | 16  | 5  | 5,3  | 5,8  | 11,0 | 21,5 | 31,5 | 0,400  | 100 |
| 260914   |     | 6  | 6,5  | 5,8  | 11,0 | 21,5 | 31,5 | 0,400  | 100 |
| 260916   |     | 8  | 8,4  | 5,8  | 11,0 | 21,5 | 33,5 | 0,500  | 100 |
| 260918   |     | 10 | 10,5 | 5,8  | 11,0 | 21,5 | 35,5 | 0,600  | 100 |
| 260920   |     | 12 | 13,0 | 5,8  | 11,0 | 21,5 | 37,5 | 0,600  | 100 |
| 260922   | 25  | 5  | 5,3  | 7,5  | 13,0 | 24,0 | 38,0 | 0,800  | 100 |
| 260924   |     | 6  | 6,5  | 7,5  | 13,0 | 24,0 | 38,0 | 0,800  | 100 |
| 260926   |     | 8  | 8,4  | 7,5  | 13,0 | 24,0 | 38,0 | 0,900  | 100 |
| 260928   |     | 10 | 10,5 | 7,5  | 13,0 | 24,0 | 39,0 | 1,000  | 100 |
| 260930   |     | 12 | 13,0 | 7,5  | 13,0 | 24,0 | 44,0 | 1,100  | 100 |
| 260932   |     | 16 | 17,0 | 7,5  | 13,0 | 24,0 | 48,0 | 1,300  | 100 |
| 260934   | 35  | 6  | 6,5  | 9,0  | 14,5 | 27,0 | 41,0 | 1,100  | 100 |
| 260936   |     | 8  | 8,4  | 9,0  | 14,5 | 27,0 | 41,0 | 1,000  | 100 |
| 260938   |     | 10 | 10,5 | 9,0  | 14,0 | 27,0 | 42,0 | 1,000  | 100 |
| 260940   |     | 12 | 13,0 | 9,0  | 14,5 | 27,0 | 46,0 | 1,260  | 100 |
| 260942   |     | 16 | 17,0 | 9,0  | 14,5 | 27,0 | 51,0 | 1,550  | 100 |
| 260944   | 50  | 6  | 6,5  | 11,0 | 16,5 | 29,5 | 47,5 | 3,300  | 50  |
| 260946   |     | 8  | 8,4  | 11,0 | 16,5 | 29,5 | 47,5 | 3,300  | 50  |
| 260948   |     | 10 | 10,5 | 11,0 | 16,5 | 29,5 | 47,5 | 3,200  | 50  |
| 260950   |     | 12 | 13,0 | 11,0 | 16,5 | 29,5 | 49,5 | 3,600  | 50  |
| 260952   |     | 16 | 17,0 | 11,0 | 16,5 | 29,5 | 53,5 | 4,200  | 50  |
| 260954   | 70  | 6  | 6,5  | 13,0 | 18,7 | 31,5 | 51,0 | 5,200  | 50  |
| 260956   |     | 8  | 8,4  | 13,0 | 18,7 | 31,5 | 51,0 | 5,000  | 50  |
| 260960   |     | 12 | 13,0 | 13,0 | 18,7 | 31,5 | 51,0 | 5,000  | 50  |
| 260962   |     | 16 | 17,0 | 13,0 | 18,7 | 31,5 | 55,0 | 5,400  | 50  |
| 260964   | 95  | 8  | 8,4  | 15,0 | 21,7 | 35,5 | 57,5 | 8,000  | 50  |
| 260966   |     | 10 | 10,5 | 15,0 | 21,7 | 35,5 | 57,5 | 8,200  | 50  |
| 260968   |     | 12 | 13,0 | 15,0 | 21,7 | 35,5 | 57,5 | 7,800  | 50  |
| 260970   |     | 16 | 17,0 | 15,0 | 21,7 | 35,5 | 59,5 | 8,200  | 50  |
| 260972   | 120 | 8  | 8,4  | 16,5 | 24,2 | 40,0 | 62,0 | 10,600 | 25  |
| 260974   |     | 10 | 10,5 | 16,5 | 24,2 | 40,0 | 62,0 | 11,200 | 25  |
| 260976   |     | 12 | 13,0 | 16,5 | 24,2 | 40,0 | 62,0 | 10,800 | 25  |
| 260978   |     | 16 | 17,0 | 16,5 | 24,2 | 40,0 | 66,0 | 11,600 | 25  |
| 260980   | 150 | 10 | 10,5 | 19,0 | 27,2 | 44,0 | 70,0 | 16,800 | 25  |
| 260982   |     | 12 | 13,0 | 19,0 | 27,2 | 44,0 | 70,0 | 16,800 | 25  |
| 260984   |     | 16 | 17,0 | 19,0 | 27,2 | 44,0 | 70,0 | 16,800 | 25  |

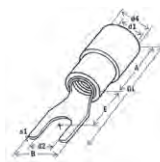


Solderless terminals for meter connection

- Nylon-insulated • Material: 99,9% E-Cu • Surface: tin-plated
- Fork type • For conductors, e.g. to VDE 0295 class 2, 5, 6
- Hard soldered in crimping area • Grooved profile for improved contact characteristics
- Crimp direct with insulation



| Art. no. | CSS | M | kg/100 | PU  |
|----------|-----|---|--------|-----|
| 260858   | 10  | 5 | 0,302  | 100 |
| 260860   |     | 6 | 0,320  | 100 |
| 260862   | 16  | 5 | 0,584  | 100 |
| 260863   |     | 8 | 0,630  | 100 |



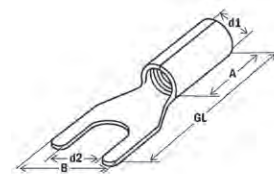
Fork terminals without insulation

- Material: 99,9% E-Cu • Surface: tin-plated
- Fork type • For conductors, e.g. to VDE 0295 class 2, 5, 6
- Hard soldered in crimping area
- Grooved profile for improved contact characteristics



Cu

| Art. no. | CSS       | M   | d2   | d1   | A    | TL    | B     | kg/100 | PU  |
|----------|-----------|-----|------|------|------|-------|-------|--------|-----|
| 290730   | 0,5 - 1,0 | 3   | 3,2  | 1,95 | 5,2  | 14,6  | 5,6   | 0,076  | 100 |
| 290731   |           | 3,5 | 3,7  | 1,95 | 5,2  | 14,9  | 6,5   | 0,077  | 100 |
| 290732   |           | 4   | 4,2  | 1,95 | 5,2  | 15,0  | 6,4   | 0,058  | 100 |
| 290734   |           | 5   | 5,2  | 1,95 | 5,2  | 16,25 | 8,0   | 0,086  | 100 |
| 290735   |           | 6   | 6,2  | 1,95 | 5,2  | 17,5  | 9,2   | 0,087  | 100 |
| 290736   | 1,5 - 2,5 | 3   | 3,2  | 2,45 | 5,2  | 17,25 | 5,6   | 0,088  | 100 |
| 290739   |           | 3,5 | 3,7  | 2,45 | 5,2  | 14,3  | 6,6   | 0,083  | 100 |
| 290738   |           | 4   | 4,2  | 2,45 | 5,2  | 14,3  | 6,6   | 0,082  | 100 |
| 290740   |           | 5   | 5,2  | 2,45 | 5,2  | 19,25 | 9,1   | 0,095  | 100 |
| 290742   | 6         | 6,2 | 2,45 | 5,2  | 21,0 | 10,0  | 0,120 | 100    |     |
| 290744   | 4,0 - 6,0 | 4   | 4,2  | 3,5  | 6,5  | 18,6  | 8,0   | 0,152  | 100 |
| 290746   |           | 5   | 5,2  | 3,5  | 6,5  | 21,1  | 9,0   | 0,176  | 100 |
| 290748   |           | 6   | 6,2  | 3,5  | 6,5  | 22,3  | 11,0  | 0,161  | 100 |
| 290750   |           | 8   | 8,2  | 3,5  | 6,5  | 27,3  | 15,2  | 0,252  | 100 |
| 290751   |           | 10  | 10,5 | 3,5  | 6,5  | 30,2  | 19,0  | 0,319  | 100 |
| 290752   | 10        | 5   | 5,2  | 4,7  | 8,5  | 20,8  | 9,0   | 0,248  | 100 |
| 290754   |           | 6   | 6,4  | 4,7  | 8,5  | 20,8  | 10,3  | 0,260  | 100 |
| 290756   | 16        | 6   | 6,4  | 5,8  | 10,5 | 25,5  | 11,0  | 0,513  | 100 |



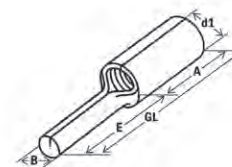
Pin terminals without insulation DIN 46230

- Material: 99,9% E-Cu • Surface: tin-plated
- Pin type • For conductors, e.g. to VDE 0295 class 2, 5, 6
- Hard soldered in crimping area
- Grooved profile for improved contact characteristics



Cu

| Art. no. | CSS       | d1    | A    | TL   | E    | B    | kg/100 | PU  |
|----------|-----------|-------|------|------|------|------|--------|-----|
| 290770   | 0,5 - 1,0 | 1,85  | 5,0  | 17,3 | 12,0 | 1,8  | 0,083  | 100 |
| 290771   |           | 1,85  | 5,0  | 17,3 | 9,0  | 1,8  | 0,078  | 100 |
| 290773   | 1,5 - 2,5 | 2,4   | 5,0  | 17,3 | 9,0  | 1,8  | 0,065  | 100 |
| 290775   |           | 2,4   | 5,0  | 17,3 | 9,0  | 1,8  | 0,058  | 100 |
| 290777   | 4,0 - 6,0 | 3,6   | 6,0  | 24,5 | 12,5 | 2,6  | 0,157  | 100 |
| 290776   | 10        | 4,5   | 8,5  | 20,5 | 14,0 | 4,0  | 0,300  | 100 |
| 290778   | 16        | 5,8   | 10,5 | 26,5 | 14,0 | 4,5  | 0,411  | 100 |
| 290780   | 25        | 7,0   | 14,0 | 33,0 | 15,0 | 7,0  | 0,600  | 100 |
| 290782   | 35        | 8,2   | 16,0 | 40,0 | 20,0 | 8,0  | 1,238  | 100 |
| 290784   | 50        | 9,5   | 19,0 | 45,0 | 20,0 | 9,5  | 1,800  | 100 |
| 290786   | 70        | 11,2  | 24,0 | 55,0 | 25,0 | 11,5 | 3,053  | 50  |
| 290788   | 95        | 13,59 | 24,0 | 55,0 | 25,0 | 13,5 | 4,100  | 50  |



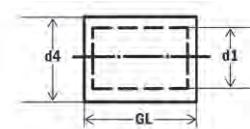
## Parallel connectors DIN 46341 part 1, type A

- Material: 99,9% electrolytic copper • Surface: tin-plated
- For connecting different conductor cross-sections
- Hard soldered in crimping area
- Grooved profile for improved contact characteristics



**Cu**

| Art. no. | CSS       | d1   | d4   | TL | kg/100 |      | PU  |
|----------|-----------|------|------|----|--------|------|-----|
| 291090   | 0,5 - 1,0 | 1,6  | 3,3  | 7  | 0,064  | 2000 | 100 |
| 291092   | 1,5 - 2,5 | 2,3  | 4,2  | 7  | 0,070  | 2000 | 100 |
| 291096   | 4 - 6     | 3,6  | 5,5  | 7  | 0,090  | 1800 | 100 |
| 291098   | 10        | 4,5  | 7,0  | 9  | 0,165  | 2000 | 100 |
| 291100   | 16        | 5,5  | 8,5  | 10 | 0,274  | 1000 | 100 |
| 291102   | 25        | 7,0  | 10,0 | 13 | 0,500  | 600  | 100 |
| 291104   | 35        | 8,5  | 12,0 | 16 | 0,800  | 300  | 50  |
| 291106   | 50        | 10,0 | 14,0 | 19 | 1,200  | 300  | 50  |
| 291108   | 70        | 12,0 | 16,5 | 19 | 1,600  | 200  | 50  |
| 291110   | 95        | 13,5 | 18,0 | 20 | 2,400  | 150  | 25  |
| 291112   | 120       | 15,0 | 19,5 | 22 | 3,500  | 100  | 25  |
| 291114   | 150       | 16,5 | 21,0 | 26 | 3,000  | 80   | 20  |



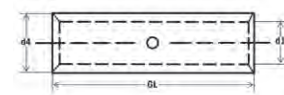
## Solderless butt connectors DIN 46341 part 1, type B

- Material: 99.9% electrolytic copper
- Surface: tin-plated • annealing for easier crimping
- For stranded conductors e.g. VDE 0295 class 2, 5, 6
- With buttmarks for precise cable insertion



**Cu**

| Art. no. | CSS       | d1   | d4   | TL | kg/100 |      | PU  |
|----------|-----------|------|------|----|--------|------|-----|
| 291119   | 0,5 - 1,0 | 1,6  | 3,3  | 15 | 0,200  | 2000 | 100 |
| 291120   | 1,5 - 2,5 | 2,3  | 4,2  | 15 | 0,127  | 2000 | 100 |
| 291124   | 4 - 6     | 3,6  | 5,5  | 15 | 0,200  | 2000 | 100 |
| 291126   | 10        | 4,5  | 7,0  | 21 | 0,300  | 800  | 100 |
| 291128   | 16        | 5,5  | 8,5  | 26 | 0,600  | 500  | 50  |
| 291130   | 25        | 7,0  | 10,0 | 29 | 1,100  | 400  | 50  |
| 291132   | 35        | 8,5  | 12,0 | 32 | 1,500  | 150  | 25  |
| 291134   | 50        | 10,0 | 14,0 | 48 | 2,300  | 150  | 25  |
| 291136   | 70        | 12,0 | 16,5 | 48 | 3,400  | 100  | 25  |
| 291138   | 95        | 13,5 | 18,0 | 48 | 5,800  | 50   | 25  |
| 291140   | 120       | 15,0 | 19,5 | 48 | 8,500  | 50   | 25  |
| 291142   | 150       | 16,5 | 21,0 | 48 | 11,100 | 40   | 20  |





Tubular terminals, Light „T“ series

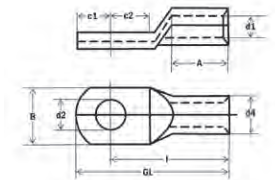
light

- Material: 99.9% electrolytic copper E-CU DIN 40500
- Surface: tin-plated
- with sight hole



Cu

| Art. no. | CSS | M  | d2   | d1   | d4   | A    | TL   | kg/100 | PU   | PU  |
|----------|-----|----|------|------|------|------|------|--------|------|-----|
| 294000   | 1,5 | 4  | 4,3  | 2,4  | 4,0  | 7,0  | 19,0 | 0,105  | 2000 | 100 |
| 294002   |     | 5  | 5,3  | 2,4  | 4,0  | 7,0  | 19,0 | 0,101  | 2000 | 100 |
| 294004   |     | 6  | 6,4  | 2,4  | 4,0  | 7,0  | 20,0 | 0,101  | 2000 | 100 |
| 294006   | 2,5 | 4  | 4,3  | 2,7  | 4,3  | 7,0  | 19,0 | 0,117  | 2000 | 100 |
| 294008   |     | 5  | 5,3  | 2,7  | 4,3  | 7,0  | 19,0 | 0,113  | 2000 | 100 |
| 294010   |     | 6  | 6,4  | 2,7  | 4,3  | 7,0  | 21,0 | 0,119  | 2000 | 100 |
| 294012   |     | 8  | 8,3  | 2,7  | 4,3  | 7,0  | 23,0 | 0,121  | 2000 | 100 |
| 294014   | 4   | 4  | 4,3  | 3,1  | 4,8  | 9,5  | 21,5 | 0,162  | 2000 | 100 |
| 294016   |     | 5  | 5,3  | 3,1  | 4,8  | 9,5  | 21,5 | 0,152  | 2000 | 100 |
| 294018   |     | 6  | 6,4  | 3,1  | 4,8  | 9,5  | 23,5 | 0,100  | 2000 | 100 |
| 294020   |     | 8  | 8,3  | 3,1  | 4,8  | 9,5  | 28,5 | 0,200  | 2000 | 100 |
| 294022   | 6   | 4  | 4,3  | 3,8  | 5,5  | 10,0 | 26,0 | 0,200  | 1800 | 100 |
| 294024   |     | 5  | 5,3  | 3,8  | 5,5  | 10,0 | 26,0 | 0,200  | 1800 | 100 |
| 294026   |     | 6  | 6,4  | 3,8  | 5,5  | 10,0 | 26,0 | 0,300  | 1400 | 100 |
| 294028   |     | 8  | 8,3  | 3,8  | 5,5  | 10,0 | 29,0 | 0,200  | 1400 | 100 |
| 294034   | 10  | 5  | 5,3  | 4,7  | 6,9  | 11,5 | 27,5 | 0,300  | 1000 | 100 |
| 294036   |     | 6  | 6,4  | 4,7  | 6,9  | 11,5 | 27,5 | 0,300  | 1000 | 100 |
| 294038   |     | 8  | 8,3  | 4,7  | 6,9  | 11,5 | 30,5 | 0,300  | 800  | 100 |
| 294040   |     | 10 | 10,5 | 4,7  | 6,9  | 11,5 | 30,5 | 0,300  | 600  | 100 |
| 294044   | 16  | 5  | 5,3  | 5,6  | 7,8  | 12,0 | 27,5 | 0,400  | 600  | 100 |
| 294046   |     | 6  | 6,4  | 5,6  | 7,8  | 12,0 | 27,5 | 0,400  | 600  | 100 |
| 294048   |     | 8  | 8,3  | 5,6  | 7,8  | 12,0 | 31,0 | 0,500  | 400  | 100 |
| 294050   |     | 10 | 10,5 | 5,6  | 7,8  | 12,0 | 32,0 | 0,400  | 400  | 100 |
| 294052   |     | 12 | 13,2 | 5,6  | 7,8  | 12,0 | 37,5 | 0,500  | 400  | 100 |
| 294054   | 25  | 6  | 6,4  | 7,1  | 9,5  | 13,5 | 34,0 | 0,700  | 400  | 50  |
| 294056   |     | 8  | 8,3  | 7,1  | 9,5  | 13,5 | 34,0 | 0,700  | 400  | 50  |
| 294058   |     | 10 | 10,5 | 7,1  | 9,5  | 13,5 | 37,0 | 0,700  | 300  | 50  |
| 294060   |     | 12 | 13,2 | 7,1  | 9,5  | 13,5 | 40,0 | 0,800  | 300  | 50  |
| 294062   | 35  | 6  | 6,4  | 8,2  | 11,0 | 16,0 | 39,0 | 1,300  | 240  | 50  |
| 294064   |     | 8  | 8,3  | 8,2  | 11,0 | 16,0 | 39,0 | 2,900  | 240  | 50  |
| 294066   |     | 10 | 10,5 | 8,2  | 11,0 | 16,0 | 43,0 | 1,300  | 160  | 50  |
| 294068   |     | 12 | 13,2 | 8,2  | 11,0 | 16,0 | 43,0 | 1,200  | 160  | 50  |
| 294070   |     | 14 | 14,5 | 8,2  | 11,0 | 16,0 | 48,0 | 1,300  | 160  | 50  |
| 294080   | 50  | 6  | 6,4  | 9,5  | 12,5 | 20,0 | 45,0 | 1,700  | 150  | 40  |
| 294082   |     | 8  | 8,3  | 9,5  | 12,5 | 20,0 | 45,0 | 1,700  | 150  | 40  |
| 294084   |     | 10 | 10,5 | 9,5  | 12,5 | 20,0 | 49,0 | 1,900  | 150  | 40  |
| 294086   |     | 12 | 13,2 | 9,5  | 12,5 | 20,0 | 49,0 | 1,800  | 100  | 40  |
| 294088   |     | 14 | 14,5 | 9,5  | 12,5 | 20,0 | 54,0 | 1,900  | 100  | 30  |
| 294094   | 70  | 8  | 8,3  | 11,5 | 15,0 | 20,0 | 47,6 | 2,700  | 100  | 25  |
| 294096   |     | 10 | 10,5 | 11,5 | 15,0 | 20,0 | 51,6 | 2,800  | 100  | 25  |
| 294098   |     | 12 | 13,2 | 11,5 | 15,0 | 20,0 | 51,6 | 2,600  | 100  | 25  |
| 294100   |     | 14 | 14,5 | 11,5 | 15,0 | 20,0 | 62,6 | 3,300  | 100  | 20  |
| 294102   |     | 16 | 16,5 | 11,5 | 15,0 | 20,0 | 62,6 | 3,100  | 100  | 20  |
| 294106   | 95  | 8  | 8,3  | 13,5 | 17,0 | 22,0 | 55,8 | 3,500  | 100  | 20  |
| 294108   |     | 10 | 10,5 | 13,5 | 17,0 | 22,0 | 55,8 | 3,500  | 100  | 20  |
| 294110   |     | 12 | 13,2 | 13,5 | 17,0 | 22,0 | 55,8 | 2,900  | 100  | 20  |
| 294112   |     | 14 | 14,5 | 13,5 | 17,0 | 22,0 | 66,8 | 4,000  | 40   | 15  |
| 294114   |     | 16 | 16,5 | 13,5 | 17,0 | 22,0 | 66,8 | 3,900  | 40   | 15  |
| 294118   | 120 | 10 | 10,5 | 15,6 | 20,0 | 27,0 | 71,5 | 6,900  | 80   | 10  |
| 294120   |     | 12 | 13,2 | 15,6 | 20,0 | 27,0 | 71,5 | 6,800  | 80   | 10  |
| 294122   |     | 14 | 14,5 | 15,6 | 20,0 | 27,0 | 71,5 | 6,600  | 72   | 10  |
| 294124   |     | 16 | 16,5 | 15,6 | 20,0 | 27,0 | 71,5 | 6,400  | 72   | 10  |
| 294128   | 150 | 10 | 10,5 | 16,5 | 21,0 | 32,0 | 78,0 | 8,000  | 72   | 10  |
| 294130   |     | 12 | 13,2 | 16,5 | 21,0 | 32,0 | 78,0 | 8,000  | 72   | 10  |
| 294132   |     | 14 | 14,5 | 16,5 | 21,0 | 32,0 | 78,0 | 7,800  | 72   | 10  |
| 294134   |     | 16 | 16,5 | 16,5 | 21,0 | 32,0 | 78,0 | 7,500  | 48   | 10  |
| 294138   | 185 | 10 | 10,5 | 18,4 | 23,6 | 34,0 | 84,0 | 11,200 | 40   | 10  |
| 294140   |     | 12 | 13,2 | 18,4 | 23,6 | 34,0 | 84,0 | 11,200 | 40   | 10  |
| 294142   |     | 14 | 14,5 | 18,4 | 23,6 | 34,0 | 84,0 | 10,800 | 40   | 10  |
| 294144   |     | 16 | 16,5 | 18,4 | 23,6 | 34,0 | 84,0 | 10,800 | 40   | 10  |



## Tubular terminals, Light „T“ series

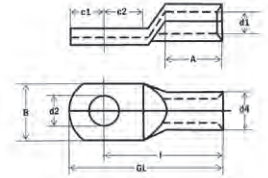
light

- tubular
- Material: 99.9% electrolytic copper E-CU DIN 40500
- Surface: tin-plated
- with sight hole



Cu

| Art. no. | CSS | M  | d2   | d1   | d4   | A    | TL    | kg/100 | PU | PE |
|----------|-----|----|------|------|------|------|-------|--------|----|----|
| 294150   | 240 | 12 | 13,2 | 21,2 | 26,4 | 37,0 | 90,0  | 13,300 | 30 | 10 |
| 294152   |     | 14 | 14,5 | 21,2 | 26,4 | 37,0 | 90,0  | 13,000 | 30 | 10 |
| 294154   |     | 16 | 16,5 | 21,2 | 26,4 | 37,0 | 90,0  | 15,000 | 30 | 10 |
| 294160   | 300 | 12 | 13,2 | 23,4 | 28,6 | 40,0 | 96,0  | 15,400 | 16 | 8  |
| 294162   |     | 14 | 14,5 | 23,4 | 28,6 | 40,0 | 96,0  | 15,000 | 16 | 8  |
| 294164   |     | 16 | 16,5 | 23,4 | 28,6 | 40,0 | 96,0  | 2,900  | 16 | 8  |
| 294174   | 400 | 16 | 16,5 | 26,8 | 32,8 | 37,0 | 104,7 | 22,700 | 10 | 5  |
| 294176   |     | 20 | 21,0 | 26,8 | 32,8 | 37,0 | 104,7 | 22,000 | 10 | 5  |
| 294184   | 500 | 16 | 16,5 | 29,8 | 38,4 | 46,5 | 115,5 | 42,000 | 8  | 3  |
| 294196   | 630 | 20 | 21,0 | 34,5 | 44,7 | 50,0 | 133,0 | 66,800 | 6  | 3  |



## Butt connectors, Light „M“ series

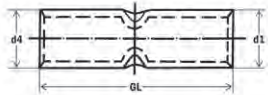
light

- Material: 99.9% electrolytic copper E-CU DIN 40500
- Surface: tin-plated • annealing for easier crimping
- for stranded conductors e.g. VDE 0295 class 2
- with buttmarks for precise cable insertion



Cu

| Art. no. | CSS | d1   | d4   | TL    | kg/100 | PU   | PE  |
|----------|-----|------|------|-------|--------|------|-----|
| 294200   | 1,5 | 2,4  | 4,0  | 22,0  | 0,080  | 2000 | 200 |
| 294202   | 2,5 | 2,7  | 4,3  | 22,0  | 0,080  | 2000 | 200 |
| 294204   | 4   | 3,1  | 4,8  | 25,0  | 0,300  | 1000 | 100 |
| 294206   | 6   | 3,8  | 5,5  | 25,0  | 0,300  | 1000 | 100 |
| 294208   | 10  | 4,7  | 6,9  | 25,0  | 0,400  | 600  | 100 |
| 294210   | 16  | 5,6  | 7,8  | 29,0  | 0,500  | 500  | 100 |
| 294212   | 25  | 7,1  | 9,5  | 29,0  | 0,700  | 200  | 50  |
| 294214   | 35  | 8,2  | 11,0 | 35,0  | 1,200  | 200  | 50  |
| 294218   | 50  | 9,5  | 12,5 | 35,0  | 1,400  | 100  | 40  |
| 294220   | 70  | 11,5 | 15,0 | 45,0  | 2,700  | 50   | 20  |
| 294222   | 95  | 13,5 | 17,0 | 47,0  | 3,200  | 50   | 20  |
| 294224   | 120 | 15,6 | 20,0 | 52,0  | 5,500  | 50   | 20  |
| 294226   | 150 | 16,5 | 21,0 | 59,0  | 6,500  | 50   | 20  |
| 294228   | 185 | 18,4 | 23,6 | 65,0  | 9,200  | 36   | 20  |
| 294230   | 240 | 21,2 | 26,4 | 75,0  | 11,900 | 12   | 10  |
| 294232   | 300 | 23,4 | 28,6 | 90,0  | 14,500 | 6    | 5   |
| 294234   | 400 | 26,8 | 32,8 | 106,0 | 24,200 | 6    | 5   |



## Tubular cable lugs, standard series

HUPtype

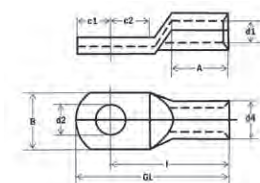
- For stranded round shaped conductors e.g. VDE 0295 class 2
- For preround sector shaped conductors • Annealed material for easier crimping
- Material: 99.9% electrolytic copper E-CU DIN 40500 • Surface: tin-plated
- Vibration and shock proofing DIN EN 61373:1999-11, Cat. 1, Cl. B



Cu

available with and without sight hole e.g. 29 09 00/S (add xx xx xx/s when ordering)

| Art. no. | CSS  | M  | d2   | d1   | d4   | A    | v1 | v2 | l    | B    | c1   | c2   | kg/100 | PU   | PU  |
|----------|------|----|------|------|------|------|----|----|------|------|------|------|--------|------|-----|
| 290900   | 0,75 | 3  | 3,2  | 1,3  | 2,8  | 6,0  | 1  | -  | 12,0 | 6,0  | 3,25 | 4,0  | 0,073  | 2000 | 100 |
| 290902   |      | 4  | 4,3  | 1,3  | 2,8  | 6,0  | 1  | -  | 13,0 | 6,5  | 4,0  | 5,0  | 0,064  | 2000 | 100 |
| 290904   | 1,5  | 3  | 3,2  | 1,8  | 3,3  | 6,0  | 1  | -  | 12,0 | 6,5  | 3,25 | 4,0  | 0,060  | 2000 | 100 |
| 290906   |      | 4  | 4,3  | 1,8  | 3,3  | 6,0  | 1  | -  | 13,0 | 6,5  | 4,0  | 5,0  | 0,066  | 2000 | 100 |
| 290908   |      | 5  | 5,3  | 1,8  | 3,3  | 6,0  | 1  | -  | 14,0 | 7,5  | 4,75 | 5,5  | 0,087  | 2000 | 100 |
| 290910   |      | 6  | 6,5  | 1,8  | 3,3  | 6,0  | 1  | -  | 16,0 | 9,0  | 6,5  | 6,5  | 0,097  | 2000 | 100 |
| 290912   | 2,5  | 3  | 3,2  | 2,3  | 4,2  | 6,0  | 1  | -  | 12,0 | 7,5  | 3,25 | 4,0  | 0,103  | 2000 | 100 |
| 290914   |      | 4  | 4,3  | 2,3  | 4,2  | 6,0  | 1  | -  | 13,0 | 7,5  | 4,0  | 5,0  | 0,112  | 2000 | 100 |
| 290916   |      | 5  | 5,3  | 2,3  | 4,2  | 6,0  | 1  | -  | 14,0 | 8,5  | 4,75 | 5,5  | 0,121  | 2000 | 100 |
| 290918   |      | 6  | 6,5  | 2,3  | 4,2  | 6,0  | 1  | -  | 16,0 | 9,5  | 6,5  | 6,5  | 0,143  | 2000 | 100 |
| 290920   |      | 8  | 8,5  | 2,3  | 4,2  | 6,0  | 1  | -  | 20,0 | 13,0 | 7,75 | 9,5  | 0,151  | 2000 | 100 |
| 290922   | 4    | 4  | 4,3  | 3,0  | 5,0  | 8,0  | 1  | -  | 17,0 | 8,5  | 4,75 | 5,5  | 0,200  | 2000 | 100 |
| 290924   |      | 5  | 5,3  | 3,0  | 5,0  | 8,0  | 1  | -  | 17,0 | 9,0  | 4,75 | 6,0  | 0,161  | 2000 | 100 |
| 290926   |      | 6  | 6,5  | 3,0  | 5,0  | 8,0  | 1  | -  | 19,0 | 10,0 | 6,5  | 6,5  | 0,220  | 2000 | 100 |
| 290928   |      | 8  | 8,5  | 3,0  | 5,0  | 8,0  | 1  | -  | 22,0 | 13,0 | 8,5  | 9,5  | 0,300  | 2000 | 100 |
| 290930   | 6    | 4  | 4,3  | 3,5  | 6,5  | 9,0  | 1  | -  | 18,0 | 8,5  | 5,0  | 5,5  | 0,452  | 1800 | 100 |
| 290932   |      | 5  | 5,3  | 3,5  | 6,5  | 9,0  | 1  | -  | 21,0 | 10,0 | 6,5  | 7,5  | 0,475  | 1800 | 100 |
| 290934   |      | 6  | 6,5  | 3,5  | 6,5  | 9,0  | 1  | -  | 21,0 | 12,0 | 6,5  | 7,5  | 0,400  | 1400 | 100 |
| 290936   |      | 8  | 8,5  | 3,5  | 6,5  | 9,0  | 1  | -  | 23,0 | 15,0 | 10,0 | 10,0 | 0,500  | 1400 | 100 |
| 290938   | 10   | 5  | 5,3  | 4,5  | 7,0  | 10,0 | 1  | -  | 22,0 | 12,0 | 6,5  | 7,5  | 0,400  | 1000 | 100 |
| 290940   |      | 6  | 6,5  | 4,5  | 7,0  | 10,0 | 1  | -  | 22,0 | 12,0 | 6,5  | 7,5  | 0,400  | 1000 | 100 |
| 290942   |      | 8  | 8,5  | 4,5  | 7,0  | 10,0 | 1  | -  | 25,0 | 15,0 | 10,0 | 10,0 | 0,540  | 800  | 100 |
| 290944   |      | 10 | 10,5 | 4,5  | 7,0  | 10,0 | 1  | -  | 27,0 | 17,0 | 12,0 | 12,0 | 0,573  | 600  | 100 |
| 290946   |      | 12 | 13,0 | 4,5  | 7,0  | 10,0 | 1  | -  | 29,0 | 19,0 | 13,0 | 13,0 | 0,600  | 600  | 100 |
| 290948   | 16   | 5  | 5,3  | 5,5  | 8,5  | 13,0 | 1  | 1  | 26,0 | 12,0 | 5,5  | 6,5  | 0,800  | 600  | 100 |
| 290950   |      | 6  | 6,5  | 5,5  | 8,5  | 13,0 | 1  | 1  | 27,0 | 12,0 | 6,25 | 7,5  | 0,700  | 600  | 100 |
| 290952   |      | 8  | 8,5  | 5,5  | 8,5  | 13,0 | 1  | 1  | 29,0 | 15,0 | 8,5  | 9,5  | 0,800  | 400  | 100 |
| 290954   |      | 10 | 10,5 | 5,5  | 8,5  | 13,0 | 1  | 1  | 31,0 | 17,0 | 10,5 | 11,5 | 0,950  | 400  | 100 |
| 290956   |      | 12 | 13,0 | 5,5  | 8,5  | 13,0 | 1  | 1  | 33,0 | 19,0 | 12,0 | 13,0 | 1,000  | 400  | 100 |
| 290958   | 25   | 6  | 6,5  | 7,0  | 10,0 | 15,0 | 2  | 1  | 30,0 | 14,0 | 7,5  | 7,5  | 1,100  | 400  | 50  |
| 290960   |      | 8  | 8,5  | 7,0  | 10,0 | 15,0 | 2  | 1  | 32,0 | 16,0 | 10,0 | 10,0 | 1,200  | 400  | 50  |
| 290962   |      | 10 | 10,5 | 7,0  | 10,0 | 15,0 | 2  | 1  | 34,0 | 18,0 | 12,0 | 12,0 | 1,200  | 300  | 50  |
| 290964   |      | 12 | 13,0 | 7,0  | 10,0 | 15,0 | 2  | 1  | 35,0 | 19,0 | 13,0 | 13,0 | 1,300  | 300  | 50  |
| 290966   | 35   | 6  | 6,5  | 8,5  | 12,0 | 17,0 | 2  | 1  | 32,0 | 17,0 | 7,5  | 7,5  | 1,900  | 240  | 40  |
| 290968   |      | 8  | 8,5  | 8,5  | 12,0 | 17,0 | 2  | 1  | 34,0 | 17,0 | 10,0 | 10,0 | 1,900  | 240  | 40  |
| 290970   |      | 10 | 10,5 | 8,5  | 12,0 | 17,0 | 2  | 1  | 37,0 | 19,0 | 12,0 | 12,0 | 2,100  | 160  | 40  |
| 290972   |      | 12 | 13,0 | 8,5  | 12,0 | 17,0 | 2  | 1  | 38,0 | 21,0 | 13,0 | 13,0 | 2,000  | 160  | 40  |
| 290974   |      | 16 | 17,0 | 8,5  | 12,0 | 17,0 | 2  | 1  | 42,0 | 26,0 | 16,0 | 16,0 | 2,100  | 160  | 40  |
| 290976   | 50   | 6  | 6,5  | 10,0 | 14,0 | 19,0 | 2  | 1  | 37,0 | 20,0 | 10,0 | 10,0 | 2,900  | 160  | 40  |
| 290978   |      | 8  | 8,5  | 10,0 | 14,0 | 19,0 | 2  | 1  | 37,0 | 20,0 | 10,0 | 10,0 | 2,700  | 160  | 40  |
| 290980   |      | 10 | 10,5 | 10,0 | 14,0 | 19,0 | 2  | 1  | 39,0 | 20,0 | 12,0 | 12,0 | 2,900  | 160  | 25  |
| 290982   |      | 12 | 13,0 | 10,0 | 14,0 | 19,0 | 2  | 1  | 43,0 | 23,0 | 13,0 | 13,0 | 3,300  | 100  | 25  |
| 290984   |      | 16 | 17,0 | 10,0 | 14,0 | 19,0 | 2  | 1  | 46,0 | 28,0 | 16,0 | 16,0 | 3,100  | 100  | 25  |
| 290985   | 70   | 6  | 6,5  | 12,0 | 16,5 | 21,0 | 2  | 1  | 43,0 | 23,0 | 10,0 | 10,0 | 4,200  | 100  | 25  |
| 290986   |      | 8  | 8,5  | 12,0 | 16,5 | 21,0 | 2  | 1  | 43,0 | 23,0 | 10,0 | 10,0 | 4,200  | 100  | 25  |
| 290988   |      | 10 | 10,5 | 12,0 | 16,5 | 21,0 | 2  | 1  | 44,0 | 23,0 | 12,0 | 12,0 | 4,300  | 100  | 25  |
| 290990   |      | 12 | 13,0 | 12,0 | 16,5 | 21,0 | 2  | 1  | 46,0 | 23,0 | 13,0 | 13,0 | 4,500  | 100  | 25  |
| 290991   |      | 14 | 15,0 | 12,0 | 16,5 | 21,0 | 2  | 1  | 48,0 | 23,0 | 14,5 | 14,5 | 4,600  | 100  | 25  |
| 290992   |      | 16 | 17,0 | 12,0 | 16,5 | 21,0 | 2  | 1  | 50,0 | 28,0 | 16,0 | 16,0 | 5,100  | 100  | 25  |
| 290994   | 95   | 8  | 8,5  | 13,5 | 18,0 | 25,0 | 2  | 1  | 48,0 | 26,0 | 12,0 | 12,0 | 5,300  | 100  | 25  |
| 290996   |      | 10 | 10,5 | 13,5 | 18,0 | 25,0 | 2  | 1  | 48,0 | 26,0 | 12,0 | 12,0 | 5,100  | 100  | 25  |
| 290998   |      | 12 | 13,0 | 13,5 | 18,0 | 25,0 | 2  | 1  | 49,0 | 26,0 | 13,0 | 13,0 | 5,200  | 100  | 25  |
| 290999   |      | 14 | 15,0 | 13,5 | 18,0 | 25,0 | 2  | 1  | 51,0 | 26,0 | 14,5 | 14,5 | 5,400  | 60   | 15  |
| 291000   |      | 16 | 17,0 | 13,5 | 18,0 | 25,0 | 2  | 1  | 54,0 | 28,0 | 16,0 | 16,0 | 5,600  | 60   | 15  |
| 291002   |      | 20 | 21,0 | 13,5 | 18,0 | 25,0 | 2  | 1  | 60,0 | 36,0 | 22,0 | 22,0 | 6,000  | 60   | 15  |



**Brunel**  
access to excellence



## Tubular terminals, standard series

HUPtype

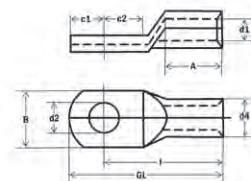
- For stranded round shaped conductors e.g. VDE 0295 class 2
- For preround sector shaped conductors • Annealed material for easier crimping
- Material: 99.9% electrolytic copper E-CU DIN 40500 • Surface: tin-plated
- Vibration and shock proofing DIN EN 61373:1999-11, Cat. 1, Cl. B



Cu

available with and without sight hole e.g. 29 00 04/S (add xx xx xx/s when ordering)

| Art. no. | CSS | M  | d2   | d1   | d4   | A    | v1 | v2 | l     | B    | c1   | c2   | kg/100 | PU | PU |
|----------|-----|----|------|------|------|------|----|----|-------|------|------|------|--------|----|----|
| 290004   | 120 | 8  | 8,5  | 15,0 | 19,5 | 26,0 | 2  | 1  | 51,0  | 28,0 | 14,0 | 14,0 | 6,300  | 20 | 15 |
| 290006   |     | 10 | 10,5 | 15,0 | 19,5 | 26,0 | 2  | 1  | 51,0  | 28,0 | 14,0 | 14,0 | 6,200  | 80 | 15 |
| 290008   |     | 12 | 13,0 | 15,0 | 19,5 | 26,0 | 2  | 1  | 51,0  | 28,0 | 14,0 | 14,0 | 6,100  | 80 | 15 |
| 290009   |     | 14 | 15,0 | 15,0 | 19,5 | 26,0 | 2  | 1  | 52,0  | 28,0 | 15,0 | 15,0 | 5,900  | 72 | 18 |
| 290010   |     | 16 | 17,0 | 15,0 | 19,5 | 26,0 | 2  | 1  | 54,0  | 30,0 | 16,0 | 16,0 | 6,200  | 60 | 15 |
| 290012   |     | 20 | 21,0 | 15,0 | 19,5 | 26,0 | 2  | 1  | 63,0  | 36,0 | 22,0 | 22,0 | 7,900  | 60 | 15 |
| 290014   | 150 | 10 | 10,5 | 16,5 | 21,0 | 30,0 | 2  | 1  | 56,0  | 31,0 | 14,0 | 14,0 | 7,500  | 60 | 15 |
| 290016   |     | 12 | 13,0 | 16,5 | 21,0 | 30,0 | 2  | 1  | 57,0  | 31,0 | 15,0 | 15,0 | 7,300  | 60 | 15 |
| 290017   |     | 14 | 15,0 | 16,5 | 21,0 | 30,0 | 2  | 1  | 57,0  | 31,0 | 15,0 | 15,0 | 7,900  | 60 | 15 |
| 290018   |     | 16 | 17,0 | 16,5 | 21,0 | 30,0 | 2  | 1  | 58,0  | 31,0 | 16,0 | 16,0 | 7,500  | 60 | 15 |
| 290020   |     | 20 | 21,0 | 16,5 | 21,0 | 30,0 | 2  | 1  | 66,0  | 36,0 | 22,0 | 22,0 | 8,800  | 48 | 12 |
| 290022   | 185 | 12 | 13,0 | 19,0 | 24,0 | 30,0 | 2  | 1  | 65,0  | 35,0 | 18,0 | 18,0 | 11,100 | 40 | 20 |
| 290023   |     | 14 | 15,0 | 19,0 | 24,0 | 30,0 | 2  | 1  | 65,0  | 35,0 | 18,0 | 18,0 | 11,800 | 40 | 20 |
| 290024   |     | 16 | 17,0 | 19,0 | 24,0 | 30,0 | 2  | 1  | 65,0  | 35,0 | 18,0 | 18,0 | 10,700 | 40 | 20 |
| 290026   |     | 20 | 21,0 | 19,0 | 24,0 | 30,0 | 2  | 1  | 69,0  | 39,0 | 22,0 | 22,0 | 10,700 | 40 | 20 |
| 290028   | 240 | 12 | 13,0 | 21,0 | 26,0 | 35,0 | 4  | 2  | 72,0  | 39,0 | 21,5 | 19,0 | 13,700 | 30 | 15 |
| 290029   |     | 14 | 15,0 | 21,0 | 26,0 | 35,0 | 4  | 2  | 72,0  | 39,0 | 21,5 | 19,0 | 13,400 | 30 | 15 |
| 290030   |     | 16 | 17,0 | 21,0 | 26,0 | 35,0 | 4  | 2  | 72,0  | 39,0 | 21,5 | 19,0 | 13,400 | 30 | 15 |
| 290034   | 300 | 12 | 13,0 | 23,5 | 29,5 | 44,0 | 4  | 2  | 87,0  | 43,0 | 24,0 | 24,0 | 22,000 | 16 | 8  |
| 290036   |     | 14 | 15,0 | 23,5 | 29,5 | 44,0 | 4  | 2  | 87,0  | 43,0 | 24,0 | 24,0 | 21,700 | 16 | 8  |
| 290038   |     | 16 | 17,0 | 23,5 | 29,5 | 44,0 | 4  | 2  | 87,0  | 43,0 | 24,0 | 24,0 | 21,300 | 16 | 8  |
| 290040   |     | 20 | 21,0 | 23,5 | 29,5 | 44,0 | 4  | 2  | 87,0  | 43,0 | 24,0 | 24,0 | 21,400 | 16 | 8  |
| 290046   | 400 | 16 | 17,0 | 27,0 | 34,0 | 44,0 | 4  | 2  | 90,0  | 49,0 | 24,0 | 24,0 | 31,800 | 10 | 5  |
| 290048   |     | 20 | 21,0 | 27,0 | 34,0 | 44,0 | 4  | 2  | 90,0  | 49,0 | 24,0 | 24,0 | 30,500 | 10 | 5  |
| 290041   | 500 | 16 | 17,0 | 31,0 | 38,0 | 70,0 | 4  | 2  | 103,0 | 55,0 | 24,0 | 24,0 | 45,000 | 12 | 6  |
| 290043   |     | 20 | 21,0 | 31,0 | 38,0 | 70,0 | 4  | 2  | 103,0 | 55,0 | 24,0 | 24,0 | 45,000 | 12 | 6  |
| 290045   | 625 | 16 | 17,0 | 34,0 | 41,0 | 70,0 | 4  | 2  | 108,0 | 60,0 | 24,0 | 24,0 | 49,200 | 6  | 3  |
| 290047   |     | 20 | 21,0 | 34,0 | 41,0 | 70,0 | 4  | 2  | 108,0 | 60,0 | 24,0 | 24,0 | 49,200 | 6  | 3  |



**Brunel**  
access to excellence

## Angled tubular cable lugs 90°, standard series

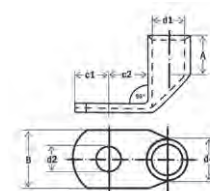
HUPtype

- For stranded round shaped conductors e.g. VDE 0295 class 2
- For preround sector shaped conductors • Annealed material for easier crimping
- Material: 99.9% electrolytic copper E-CU DIN 40500
- Surface: tin-plated



Cu

| Art. no.  | CSS | M  | d2   | d1  | d4   | A    | v1 | v2 | l    | B    | c1   | c2   | kg/100 | PU   | PU  |
|-----------|-----|----|------|-----|------|------|----|----|------|------|------|------|--------|------|-----|
| 290932/90 | 6   | 5  | 5,3  | 3,5 | 6,5  | 9,0  | 1  | -  | 21,0 | 10,0 | 6,5  | 7,5  | 0,475  | 1800 | 100 |
| 290934/90 |     | 6  | 6,5  | 3,5 | 6,5  | 9,0  | 1  | -  | 21,0 | 12,0 | 6,5  | 7,5  | 0,400  | 1400 | 100 |
| 290936/90 |     | 8  | 8,5  | 3,5 | 6,5  | 9,0  | 1  | -  | 23,0 | 15,0 | 10,0 | 10,0 | 0,500  | 1400 | 100 |
| 290938/90 | 10  | 5  | 5,3  | 4,5 | 7,0  | 10,0 | 1  | -  | 22,0 | 12,0 | 6,5  | 7,5  | 0,400  | 1000 | 100 |
| 290940/90 |     | 6  | 6,5  | 4,5 | 7,0  | 10,0 | 1  | -  | 22,0 | 12,0 | 6,5  | 7,5  | 0,500  | 1000 | 100 |
| 290942/90 |     | 8  | 8,5  | 4,5 | 7,0  | 10,0 | 1  | -  | 25,0 | 15,0 | 10,0 | 10,0 | 0,540  | 800  | 100 |
| 290944/90 |     | 10 | 10,5 | 4,5 | 7,0  | 10,0 | 1  | -  | 27,0 | 17,0 | 12,0 | 12,0 | 0,573  | 600  | 100 |
| 290948/90 | 16  | 5  | 5,3  | 5,5 | 8,5  | 13,0 | 1  | 1  | 26,0 | 12,0 | 5,5  | 6,5  | 0,800  | 600  | 100 |
| 290950/90 |     | 6  | 6,5  | 5,5 | 8,5  | 13,0 | 1  | 1  | 27,0 | 12,0 | 6,25 | 7,5  | 0,700  | 600  | 100 |
| 290952/90 |     | 8  | 8,5  | 5,5 | 8,5  | 13,0 | 1  | 1  | 29,0 | 15,0 | 8,5  | 9,5  | 0,800  | 400  | 100 |
| 290954/90 |     | 10 | 10,5 | 5,5 | 8,5  | 13,0 | 1  | 1  | 31,0 | 17,0 | 10,5 | 11,5 | 0,950  | 400  | 100 |
| 290956/90 |     | 12 | 13,0 | 5,5 | 8,5  | 13,0 | 1  | 1  | 33,0 | 19,0 | 12,0 | 13,0 | 1,000  | 400  | 100 |
| 290958/90 | 25  | 6  | 6,5  | 7,0 | 10,0 | 15,0 | 2  | 1  | 30,0 | 14,0 | 7,5  | 7,5  | 1,100  | 400  | 50  |
| 290960/90 |     | 8  | 8,5  | 7,0 | 10,0 | 15,0 | 2  | 1  | 32,0 | 16,0 | 10,0 | 10,0 | 1,200  | 400  | 50  |
| 290962/90 |     | 10 | 10,5 | 7,0 | 10,0 | 15,0 | 2  | 1  | 34,0 | 18,0 | 12,0 | 12,0 | 1,250  | 300  | 50  |
| 290964/90 |     | 12 | 13,0 | 7,0 | 10,0 | 15,0 | 2  | 1  | 35,0 | 19,0 | 13,0 | 13,0 | 1,300  | 300  | 50  |



## Angled tubular cable lugs 90°, standard series

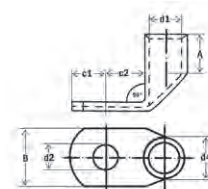
HUPtype

- For stranded round shaped conductors e.g. VDE 0295 class 2
- For preround sector shaped conductors • Annealed material for easier crimping
- Material: 99.9% electrolytic copper E-CU DIN 40500
- Surface: tin-plated



Cu

| Art. no.  | CSS | M  | d2   | d1   | d4   | A    | v1 | v2 | l    | B    | c1   | c2   | kg/100 | PU  | PU |
|-----------|-----|----|------|------|------|------|----|----|------|------|------|------|--------|-----|----|
| 290966/90 | 35  | 6  | 6,5  | 8,5  | 12,0 | 17,0 | 2  | 1  | 32,0 | 17,0 | 7,5  | 7,5  | 1,900  | 240 | 40 |
| 290968/90 |     | 8  | 8,5  | 8,5  | 12,0 | 17,0 | 2  | 1  | 34,0 | 17,0 | 10,0 | 10,0 | 1,900  | 240 | 40 |
| 290970/90 |     | 10 | 10,5 | 8,5  | 12,0 | 17,0 | 2  | 1  | 37,0 | 19,0 | 12,0 | 12,0 | 2,100  | 160 | 40 |
| 290972/90 |     | 12 | 13,0 | 8,5  | 12,0 | 17,0 | 2  | 1  | 38,0 | 21,0 | 13,0 | 13,0 | 2,000  | 160 | 40 |
| 290976/90 | 50  | 6  | 6,5  | 10,0 | 14,0 | 19,0 | 2  | 1  | 37,0 | 20,0 | 10,0 | 10,0 | 2,900  | 160 | 40 |
| 290978/90 |     | 8  | 8,5  | 10,0 | 14,0 | 19,0 | 2  | 1  | 37,0 | 20,0 | 10,0 | 10,0 | 2,700  | 160 | 40 |
| 290980/90 |     | 10 | 10,5 | 10,0 | 14,0 | 19,0 | 2  | 1  | 39,0 | 20,0 | 12,0 | 12,0 | 2,900  | 150 | 25 |
| 290982/90 |     | 12 | 13,0 | 10,0 | 14,0 | 19,0 | 2  | 1  | 43,0 | 23,0 | 13,0 | 13,0 | 3,300  | 100 | 25 |
| 290986/90 | 70  | 8  | 8,5  | 12,0 | 16,5 | 21,0 | 2  | 1  | 43,0 | 23,0 | 10,0 | 10,0 | 4,200  | 100 | 25 |
| 290988/90 |     | 10 | 10,5 | 12,0 | 16,5 | 21,0 | 2  | 1  | 44,0 | 23,0 | 12,0 | 12,0 | 4,300  | 100 | 25 |
| 290990/90 |     | 12 | 13,0 | 12,0 | 16,5 | 21,0 | 2  | 1  | 46,0 | 23,0 | 13,0 | 13,0 | 4,500  | 100 | 25 |
| 290992/90 |     | 16 | 17,0 | 12,0 | 16,5 | 21,0 | 2  | 1  | 50,0 | 28,0 | 16,0 | 16,0 | 5,100  | 100 | 25 |
| 290994/90 | 95  | 8  | 8,5  | 13,5 | 18,0 | 25,0 | 2  | 1  | 48,0 | 26,0 | 12,0 | 12,0 | 5,300  | 100 | 25 |
| 290996/90 |     | 10 | 10,5 | 13,5 | 18,0 | 25,0 | 2  | 1  | 48,0 | 26,0 | 12,0 | 12,0 | 5,100  | 100 | 25 |
| 290998/90 |     | 12 | 13,0 | 13,5 | 18,0 | 25,0 | 2  | 1  | 49,0 | 26,0 | 13,0 | 13,0 | 5,200  | 100 | 25 |
| 291000/90 |     | 16 | 17,0 | 13,5 | 18,0 | 25,0 | 2  | 1  | 54,0 | 28,0 | 16,0 | 16,0 | 5,600  | 60  | 15 |
| 291002/90 |     | 20 | 21,0 | 13,5 | 18,0 | 25,0 | 2  | 1  | 60,0 | 36,0 | 22,0 | 22,0 | 6,000  | 60  | 15 |
| 290006/90 | 120 | 10 | 10,5 | 15,0 | 19,5 | 26,0 | 2  | 1  | 51,0 | 28,0 | 14,0 | 14,0 | 6,200  | 60  | 15 |
| 290008/90 |     | 12 | 13,0 | 15,0 | 19,5 | 26,0 | 2  | 1  | 51,0 | 28,0 | 14,0 | 14,0 | 6,100  | 60  | 15 |
| 290010/90 |     | 16 | 17,0 | 15,0 | 19,5 | 26,0 | 2  | 1  | 54,0 | 30,0 | 16,0 | 16,0 | 6,200  | 60  | 15 |
| 290014/90 | 150 | 10 | 10,5 | 16,5 | 21,0 | 30,0 | 2  | 1  | 56,0 | 31,0 | 14,0 | 14,0 | 7,500  | 72  | 15 |
| 290016/90 |     | 12 | 13,0 | 16,5 | 21,0 | 30,0 | 2  | 1  | 57,0 | 31,0 | 15,0 | 15,0 | 7,300  | 72  | 15 |
| 290018/90 |     | 16 | 17,0 | 16,5 | 21,0 | 30,0 | 2  | 1  | 58,0 | 31,0 | 16,0 | 16,0 | 7,500  | 48  | 15 |
| 290020/90 |     | 20 | 21,0 | 16,5 | 21,0 | 30,0 | 2  | 1  | 66,0 | 36,0 | 22,0 | 22,0 | 8,800  | 48  | 12 |
| 291004/90 | 185 | 10 | 10,5 | 19,0 | 24,0 | 30,0 | 2  | 1  | 65,0 | 35,0 | 18,0 | 18,0 | 11,100 | 40  | 20 |
| 290022/90 |     | 12 | 13,0 | 19,0 | 24,0 | 30,0 | 2  | 1  | 65,0 | 35,0 | 18,0 | 18,0 | 11,100 | 40  | 20 |
| 290024/90 |     | 16 | 17,0 | 19,0 | 24,0 | 30,0 | 2  | 1  | 65,0 | 35,0 | 18,0 | 18,0 | 10,700 | 40  | 20 |
| 290028/90 | 240 | 12 | 13,0 | 21,0 | 26,0 | 35,0 | 4  | 2  | 72,0 | 39,0 | 21,5 | 19,0 | 13,700 | 30  | 15 |
| 290030/90 |     | 16 | 17,0 | 21,0 | 26,0 | 35,0 | 4  | 2  | 72,0 | 39,0 | 21,5 | 19,0 | 13,400 | 30  | 15 |



## Butt connectors, standard series

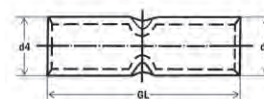
HUPtype

- Material: 99.9% E-CU DIN 40500
- Surface: tin-plated • Annealed material for easier crimping
- For stranded conductors e.g. VDE 0295 class 2
- with buttmarks for precise cable insertion



Cu

| Art. no. | CSS  | d1   | d4   | v1 | v2 | TL  | kg/100 | PU   | PU  |
|----------|------|------|------|----|----|-----|--------|------|-----|
| 291050   | 0,75 | 1,3  | 2,8  | 1  | -  | 14  | 0,051  | 2000 | 100 |
| 291052   | 1,5  | 1,8  | 3,3  | 1  | -  | 14  | 0,074  | 2000 | 100 |
| 291054   | 2,5  | 2,3  | 4,2  | 1  | -  | 16  | 0,150  | 2000 | 100 |
| 291056   | 4    | 3,0  | 5,0  | 1  | -  | 19  | 0,195  | 1000 | 100 |
| 291058   | 6    | 3,5  | 6,5  | 1  | -  | 19  | 0,350  | 1000 | 100 |
| 291060   | 10   | 4,5  | 7,0  | 1  | -  | 30  | 0,558  | 600  | 100 |
| 291062   | 16   | 5,5  | 8,5  | 1  | 1  | 35  | 0,984  | 500  | 50  |
| 291064   | 25   | 7,0  | 10,0 | 2  | 1  | 40  | 1,350  | 200  | 50  |
| 291066   | 35   | 8,5  | 12,0 | 2  | 1  | 45  | 2,150  | 200  | 50  |
| 291068   | 50   | 10,0 | 14,0 | 2  | 1  | 50  | 3,100  | 100  | 25  |
| 291070   | 70   | 12,0 | 16,5 | 2  | 1  | 55  | 4,700  | 50   | 25  |
| 291072   | 95   | 13,5 | 18,0 | 2  | 1  | 60  | 5,600  | 50   | 25  |
| 291074   | 120  | 15,0 | 19,5 | 2  | 1  | 65  | 6,800  | 50   | 15  |
| 291076   | 150  | 16,5 | 21,0 | 2  | 1  | 70  | 7,800  | 50   | 20  |
| 291078   | 185  | 19,0 | 24,0 | 2  | 1  | 80  | 11,700 | 36   | 5   |
| 291080   | 240  | 21,0 | 26,0 | 4  | 2  | 90  | 13,900 | 12   | 10  |
| 291082   | 300  | 23,5 | 29,5 | 4  | 2  | 100 | 22,300 | 6    | 5   |
| 291084   | 400  | 27,0 | 34,0 | 4  | 2  | 100 | 29,000 | 6    | 5   |



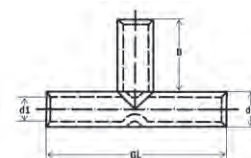
## T-connectors, standard series

HUPtype

- Material: 99.9% E-CU DIN 40500
- Annealed material for easier crimping
- Surface: tin-plated
- For stranded conductors e.g. VDE 0295 class 2



| Art. no. | CSS | d1   | d4   | A  | TL  | kg/100 | PU |
|----------|-----|------|------|----|-----|--------|----|
| 291330   | 1,5 | 1,9  | 3,9  | 12 | 30  | 0,400  | 25 |
| 291332   | 2,5 | 2,4  | 4,4  | 12 | 30  | 0,400  | 25 |
| 291334   | 4   | 3,0  | 5,0  | 12 | 30  | 0,600  | 25 |
| 291336   | 6   | 3,7  | 5,5  | 14 | 35  | 1,100  | 25 |
| 291338   | 10  | 4,3  | 6,7  | 14 | 35  | 1,500  | 25 |
| 291340   | 16  | 5,4  | 7,8  | 21 | 50  | 2,300  | 25 |
| 291342   | 25  | 6,9  | 9,4  | 23 | 55  | 2,200  | 25 |
| 291344   | 35  | 8,3  | 11,3 | 30 | 70  | 3,800  | 25 |
| 291348   | 50  | 9,6  | 13,1 | 34 | 80  | 6,000  | 25 |
| 291350   | 70  | 11,5 | 15,3 | 35 | 85  | 10,100 | 25 |
| 291352   | 95  | 13,5 | 17,5 | 36 | 90  | 11,600 | 25 |
| 291354   | 120 | 15,5 | 20,0 | 38 | 95  | 17,800 | 10 |
| 291356   | 150 | 16,8 | 21,3 | 44 | 110 | 17,900 | 10 |
| 291358   | 185 | 19,0 | 24,0 | 45 | 115 | 28,300 | 1  |
| 291360   | 240 | 21,0 | 26,0 | 52 | 130 | 31,200 | 1  |



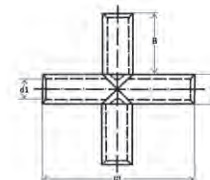
## Cross connectors, standard series

HUPtype

- Material: 99.9% E-CU DIN 40500
- Annealed material for easier crimping
- Surface: tin-plated
- For stranded conductors e.g. VDE 0295 class 2



| Art. no. | CSS | d1   | d4   | A  | TL  | kg/100 | PU  |
|----------|-----|------|------|----|-----|--------|-----|
| 291370   | 1,5 | 1,9  | 3,9  | 12 | 30  | 0,450  | 100 |
| 291372   | 2,5 | 2,4  | 4,4  | 12 | 30  | 0,520  | 100 |
| 291374   | 4   | 3,0  | 5,0  | 12 | 30  | 0,480  | 25  |
| 291376   | 6   | 3,7  | 5,5  | 14 | 30  | 0,700  | 25  |
| 291378   | 10  | 4,3  | 6,7  | 14 | 35  | 0,800  | 25  |
| 291380   | 16  | 5,4  | 7,8  | 21 | 50  | 1,650  | 25  |
| 291382   | 25  | 6,9  | 9,4  | 23 | 55  | 3,000  | 25  |
| 291384   | 35  | 8,3  | 11,3 | 30 | 70  | 5,100  | 10  |
| 291386   | 50  | 9,6  | 13,1 | 34 | 80  | 8,050  | 10  |
| 291388   | 70  | 11,5 | 15,3 | 35 | 85  | 10,700 | 10  |
| 291390   | 95  | 13,5 | 17,5 | 36 | 90  | 15,700 | 10  |
| 291392   | 120 | 15,5 | 20,0 | 38 | 95  | 23,400 | 10  |
| 291394   | 150 | 16,8 | 21,3 | 44 | 110 | 18,900 | 1   |
| 291396   | 185 | 19,0 | 24,0 | 45 | 115 | 25,000 | 1   |
| 291398   | 240 | 21,0 | 26,0 | 52 | 130 | 31,100 | 1   |



Tubular cable lugs, nylon-insulated, standard series

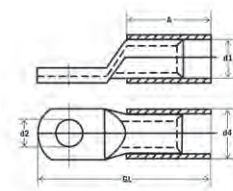
Nylon

- Material: 99.9% E-CU DIN 40500
- Surface: tin-plated • annealed material for easier crimping
- For stranded conductors e.g. VDE 0295 class 2
- With inspection hole • crimp directly with insulation



Cu

| Art. no. | CSS | M  | d2   | d1   | d4   | A    | TL    | kg/100 | PU  |
|----------|-----|----|------|------|------|------|-------|--------|-----|
| 290800   | 10  | 5  | 5,5  | 7,0  | 9,0  | 17,0 | 35,5  | 0,400  | 100 |
| 290801   |     | 6  | 6,5  | 7,0  | 9,0  | 17,0 | 35,5  | 0,600  | 100 |
| 290802   |     | 8  | 8,5  | 7,0  | 9,0  | 17,0 | 42,0  | 0,500  | 100 |
| 290804   |     | 10 | 10,5 | 7,0  | 9,0  | 17,0 | 46,0  | 0,700  | 50  |
| 290806   | 16  | 5  | 5,5  | 8,5  | 10,5 | 21,0 | 39,5  | 0,600  | 100 |
| 290810   |     | 6  | 6,5  | 8,5  | 10,5 | 21,0 | 41,3  | 0,900  | 50  |
| 290812   |     | 8  | 8,5  | 8,5  | 10,5 | 21,0 | 45,5  | 1,000  | 50  |
| 290814   |     | 10 | 10,5 | 8,5  | 10,5 | 21,0 | 49,5  | 1,000  | 50  |
| 290816   |     | 12 | 13,0 | 8,5  | 10,5 | 21,0 | 54,0  | 1,000  | 50  |
| 290818   | 25  | 6  | 6,5  | 10,0 | 12,0 | 24,0 | 46,5  | 1,200  | 25  |
| 290820   |     | 8  | 8,5  | 10,0 | 12,0 | 24,0 | 51,0  | 1,300  | 25  |
| 290822   |     | 10 | 10,5 | 10,0 | 12,0 | 24,0 | 55,0  | 1,500  | 25  |
| 290824   |     | 12 | 13,0 | 10,0 | 12,0 | 24,0 | 57,0  | 1,400  | 25  |
| 290826   | 35  | 6  | 6,5  | 12,0 | 14,0 | 27,0 | 49,5  | 2,100  | 25  |
| 290830   |     | 8  | 8,5  | 12,0 | 14,5 | 27,0 | 54,0  | 2,100  | 25  |
| 290832   |     | 10 | 10,5 | 12,0 | 14,5 | 27,0 | 59,0  | 2,300  | 25  |
| 290834   |     | 12 | 13,0 | 12,0 | 14,5 | 27,0 | 61,0  | 2,300  | 25  |
| 290836   | 50  | 6  | 6,5  | 14,0 | 16,5 | 32,0 | 59,0  | 3,100  | 25  |
| 290840   |     | 8  | 8,5  | 14,0 | 16,5 | 32,0 | 59,0  | 3,100  | 25  |
| 290842   |     | 10 | 10,5 | 14,0 | 16,5 | 32,0 | 63,0  | 3,300  | 25  |
| 290844   |     | 12 | 13,0 | 14,0 | 16,5 | 32,0 | 68,0  | 3,400  | 25  |
| 290846   |     | 14 | 15,0 | 14,0 | 16,5 | 32,0 | 71,5  | 3,600  | 20  |
| 290848   | 70  | 8  | 8,5  | 16,4 | 18,9 | 33,5 | 65,5  | 3,100  | 15  |
| 290850   |     | 10 | 10,5 | 16,4 | 18,9 | 33,5 | 66,5  | 5,000  | 15  |
| 290852   |     | 12 | 13,0 | 16,4 | 18,9 | 33,5 | 70,5  | 5,000  | 15  |
| 290854   |     | 14 | 15,0 | 16,4 | 18,9 | 33,5 | 73,5  | 5,000  | 15  |
| 290856   |     | 16 | 17,0 | 16,4 | 18,9 | 33,5 | 78,5  | 5,000  | 15  |
| 290858   | 95  | 8  | 8,5  | 17,8 | 20,8 | 40,0 | 74,0  | 5,800  | 25  |
| 290860   |     | 10 | 10,5 | 17,8 | 20,8 | 40,0 | 74,0  | 5,800  | 25  |
| 290862   |     | 12 | 13,0 | 17,8 | 20,8 | 40,0 | 76,0  | 5,200  | 25  |
| 290864   |     | 14 | 15,0 | 17,8 | 20,8 | 40,0 | 79,5  | 6,200  | 25  |
| 290866   |     | 16 | 17,0 | 17,8 | 20,8 | 40,0 | 84,0  | 6,200  | 25  |
| 290868   | 120 | 8  | 8,5  | 19,3 | 22,3 | 41,5 | 80,5  | 6,500  | 25  |
| 290870   |     | 10 | 10,5 | 19,3 | 22,3 | 41,5 | 80,5  | 7,000  | 25  |
| 290872   |     | 12 | 13,0 | 19,3 | 22,3 | 41,5 | 80,5  | 6,200  | 20  |
| 290874   |     | 14 | 15,0 | 19,3 | 22,3 | 41,5 | 82,5  | 6,600  | 20  |
| 290876   |     | 16 | 17,0 | 19,3 | 22,3 | 41,5 | 85,5  | 6,500  | 20  |
| 290878   | 150 | 10 | 10,5 | 20,8 | 23,8 | 48,0 | 88,0  | 8,800  | 20  |
| 290880   |     | 12 | 13,0 | 20,8 | 23,8 | 48,0 | 89,0  | 8,400  | 20  |
| 290882   |     | 14 | 15,0 | 20,8 | 23,8 | 48,0 | 90,0  | 8,500  | 20  |
| 290884   |     | 16 | 17,0 | 20,8 | 23,8 | 48,0 | 92,0  | 8,100  | 20  |
| 290886   |     | 20 | 21,0 | 20,8 | 23,8 | 48,0 | 106,0 | 8,100  | 20  |



## Tubular cable lugs for fine-wired, high flexible conductors

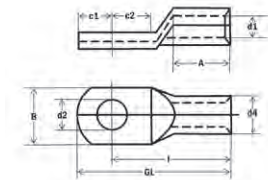
**F-type**

- For fine stranded conductors, DIN VDE 60228 e.g. VDE 0295 class 5/6
- Material: 99.9% E-CU DIN 40500
- Surface: tin-plated
- With inspection hole



**Cu**

| Art. no. | CSS | M  | d2   | d1   | d4   | A    | l    | c1   | c2   | kg/100 | PU   | PU  |
|----------|-----|----|------|------|------|------|------|------|------|--------|------|-----|
| 290250   | 10  | 6  | 6,4  | 5,0  | 8,0  | 16,0 | 23,0 | 6,0  | 7,0  | 0,700  | 1000 | 100 |
| 290252   |     | 8  | 8,4  | 5,0  | 8,0  | 17,0 | 26,0 | 7,0  | 9,0  | 0,700  | 800  | 100 |
| 290254   |     | 10 | 10,5 | 5,0  | 8,0  | 16,0 | 26,0 | 8,0  | 10,0 | 0,800  | 600  | 100 |
| 290256   |     | 12 | 13,0 | 5,0  | 8,0  | 17,0 | 31,0 | 10,0 | 14,0 | 0,800  | 600  | 100 |
| 290258   | 16  | 6  | 6,4  | 6,0  | 9,0  | 17,0 | 26,0 | 7,0  | 9,0  | 0,900  | 600  | 100 |
| 290260   |     | 8  | 8,4  | 6,0  | 9,0  | 17,0 | 26,0 | 7,0  | 9,0  | 0,900  | 400  | 100 |
| 290262   |     | 10 | 10,5 | 6,0  | 9,0  | 16,0 | 28,0 | 10,0 | 12,0 | 1,000  | 400  | 100 |
| 290264   |     | 12 | 13,0 | 6,0  | 9,0  | 22,0 | 35,0 | 12,0 | 13,0 | 1,000  | 400  | 100 |
| 290266   | 25  | 6  | 6,4  | 8,0  | 11,0 | 20,0 | 30,0 | 7,0  | 10,0 | 1,300  | 400  | 50  |
| 290268   |     | 8  | 8,4  | 8,0  | 11,0 | 20,0 | 30,0 | 8,0  | 10,0 | 1,300  | 400  | 50  |
| 290270   |     | 10 | 10,5 | 8,0  | 11,0 | 20,0 | 32,0 | 10,0 | 12,0 | 1,500  | 300  | 50  |
| 290272   |     | 12 | 13,0 | 8,0  | 11,0 | 22,0 | 35,0 | 12,0 | 13,0 | 1,500  | 300  | 50  |
| 290276   | 35  | 8  | 8,4  | 9,0  | 13,0 | 25,0 | 35,0 | 10,0 | 10,0 | 2,500  | 240  | 40  |
| 290278   |     | 10 | 10,5 | 9,0  | 13,0 | 24,0 | 35,0 | 10,0 | 11,0 | 2,500  | 16,0 | 40  |
| 290280   |     | 12 | 13,0 | 9,0  | 13,0 | 26,0 | 40,0 | 12,0 | 14,0 | 2,600  | 16,0 | 40  |
| 290282   | 50  | 8  | 8,4  | 11,0 | 14,5 | 27,0 | 39,0 | 11,0 | 12,0 | 3,000  | 15   | 25  |
| 290284   |     | 10 | 10,5 | 11,0 | 14,5 | 27,0 | 39,0 | 11,0 | 12,0 | 2,900  | 150  | 25  |
| 290286   |     | 12 | 13,0 | 11,0 | 14,5 | 27,0 | 41,0 | 12,0 | 14,0 | 2,900  | 100  | 25  |
| 290288   |     | 16 | 17,0 | 11,0 | 14,5 | 27,0 | 44,0 | 15,0 | 17,0 | 3,000  | 100  | 25  |
| 290290   | 70  | 8  | 8,4  | 13,0 | 17,0 | 32,0 | 44,0 | 11,0 | 12,0 | 4,400  | 100  | 25  |
| 290292   |     | 10 | 10,5 | 13,0 | 17,0 | 32,0 | 44,0 | 11,0 | 12,0 | 4,000  | 100  | 25  |
| 290294   |     | 12 | 13,0 | 13,0 | 17,0 | 32,0 | 46,0 | 12,0 | 14,0 | 4,400  | 100  | 25  |
| 290296   |     | 16 | 17,0 | 13,0 | 17,0 | 32,0 | 49,0 | 15,0 | 17,0 | 4,500  | 100  | 25  |
| 290300   | 95  | 10 | 10,5 | 15,0 | 20,0 | 37,0 | 54,0 | 15,0 | 17,0 | 7,700  | 100  | 25  |
| 290302   |     | 12 | 13,0 | 15,0 | 20,0 | 37,0 | 54,0 | 15,0 | 17,0 | 7,400  | 100  | 25  |
| 290304   |     | 16 | 17,0 | 15,0 | 20,0 | 37,0 | 54,0 | 15,0 | 17,0 | 7,000  | 40   | 25  |
| 290306   | 120 | 10 | 10,5 | 17,0 | 22,0 | 41,0 | 58,0 | 15,0 | 17,0 | 9,400  | 80   | 20  |
| 290308   |     | 12 | 13,0 | 17,0 | 22,0 | 41,0 | 58,0 | 15,0 | 17,0 | 8,900  | 80   | 20  |
| 290310   |     | 16 | 17,0 | 17,0 | 22,0 | 41,0 | 58,0 | 15,0 | 17,0 | 8,700  | 72   | 18  |
| 290316   | 150 | 12 | 13,0 | 19,0 | 25,0 | 48,0 | 65,0 | 15,0 | 17,0 | 13,300 | 70   | 12  |
| 290318   |     | 16 | 17,0 | 19,0 | 25,0 | 48,0 | 65,0 | 15,0 | 17,0 | 12,700 | 48   | 12  |
| 290320   |     | 20 | 21,0 | 19,0 | 25,0 | 48,0 | 68,0 | 19,0 | 20,0 | 8,200  | 48   | 10  |
| 290322   | 185 | 12 | 13,0 | 21,0 | 27,0 | 54,0 | 71,0 | 15,0 | 17,0 | 16,200 | 40   | 20  |
| 290324   |     | 16 | 17,0 | 21,0 | 27,0 | 54,0 | 71,0 | 15,0 | 17,0 | 15,800 | 40   | 20  |
| 290326   |     | 20 | 21,0 | 21,0 | 27,0 | 54,0 | 74,0 | 19,0 | 20,0 | 14,200 | 40   | 15  |
| 290328   | 240 | 12 | 13,0 | 24,0 | 30,0 | 56,0 | 76,0 | 19,0 | 20,0 | 20,300 | 30   | 15  |
| 290330   |     | 16 | 17,0 | 24,0 | 30,0 | 56,0 | 76,0 | 19,0 | 20,0 | 20,700 | 30   | 15  |
| 290332   |     | 20 | 21,0 | 24,0 | 30,0 | 56,0 | 76,0 | 19,0 | 20,0 | 18,300 | 30   | 15  |
| 290334   | 300 | 12 | 13,0 | 26,0 | 32,0 | 62,0 | 93,0 | 21,0 | 31,0 | 30,000 | 16   | 8   |
| 290336   |     | 16 | 17,0 | 26,0 | 32,0 | 62,0 | 93,0 | 21,0 | 31,0 | 28,100 | 16   | 8   |
| 290338   |     | 20 | 21,0 | 26,0 | 32,0 | 62,0 | 93,0 | 21,0 | 31,0 | 26,200 | 16   | 8   |



## Butt-connector for fine stranded high flexible conductors

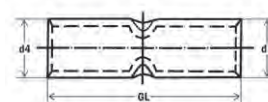
**F-type**

- For fine stranded conductors, DIN VDE 60228 e.g. VDE 0295 class 5/6
- Material: 99.9% E-CU DIN 40500
- Surface: tin-plated
- With buttmarks for precise cable insertion



**Cu**

| Art. no. | CSS | d1   | d4   | TL  | kg/100 | PU  | PU |
|----------|-----|------|------|-----|--------|-----|----|
| 290350   | 10  | 5,0  | 8,0  | 30  | 0,800  | 600 | 50 |
| 290352   | 16  | 6,0  | 9,0  | 35  | 1,000  | 500 | 50 |
| 290354   | 25  | 8,0  | 11,0 | 35  | 1,300  | 200 | 50 |
| 290356   | 35  | 9,0  | 13,0 | 35  | 2,100  | 200 | 25 |
| 290358   | 50  | 11,0 | 14,5 | 45  | 3,700  | 100 | 25 |
| 290360   | 70  | 13,0 | 17,0 | 45  | 4,600  | 50  | 25 |
| 290362   | 95  | 15,0 | 20,0 | 45  | 7,300  | 50  | 50 |
| 290364   | 120 | 17,0 | 22,0 | 55  | 6,900  | 50  | 25 |
| 290366   | 150 | 19,0 | 25,0 | 65  | 9,800  | 50  | 18 |
| 290368   | 185 | 21,0 | 27,0 | 70  | 13,600 | 36  | 18 |
| 290370   | 240 | 24,0 | 30,0 | 70  | 16,000 | 12  | 6  |
| 290372   | 300 | 26,0 | 32,0 | 75  | 7,000  | 6   | 6  |
| 290374   | 400 | 30,0 | 36,0 | 100 | 11,100 | 6   | 6  |





Cable lugs acc. to DIN 46235

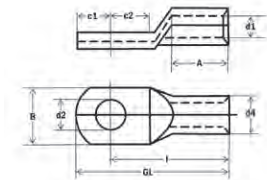
DIN

- Material: 99,9% E-Cu DIN 40500
- Tube dimension acc. to DIN 46235 • Surface: bare
- With marks for correct crimping
- Annealed material for easier crimping



Cu

| Art. no. | CSS  | M  | ld. | d2   | d1   | d4   | A     | v1 | v2 | l     | c1   | c2   | B    | kg/100  | PU  | PU  |
|----------|------|----|-----|------|------|------|-------|----|----|-------|------|------|------|---------|-----|-----|
| 290001   | 6    | 5  | 5   | 5,3  | 3,8  | 5,5  | 10,0  | 2  | -  | 24,0  | 6,5  | 7,5  | 8,5  | 0,300   | 800 | 100 |
| 290003   |      | 6  | 5   | 6,4  | 3,8  | 5,5  | 10,0  | 2  | -  | 24,0  | 7,5  | 8,0  | 8,5  | 0,300   | 800 | 100 |
| 290005   |      | 8  | 5   | 8,4  | 3,8  | 5,5  | 10,0  | 2  | -  | 24,0  | 10,0 | 10,0 | 13,0 | 0,300   | 800 | 100 |
| 290007   | 10   | 5  | 6   | 5,3  | 4,5  | 6,0  | 10,0  | 2  | -  | 27,0  | 7,0  | 8,5  | 9,0  | 0,700   | 800 | 100 |
| 290011   |      | 6  | 6   | 6,4  | 4,5  | 6,0  | 10,0  | 2  | -  | 27,0  | 7,5  | 8,5  | 9,0  | 0,600   | 800 | 100 |
| 290013   |      | 8  | 6   | 8,4  | 4,5  | 6,0  | 10,0  | 2  | -  | 27,0  | 10,0 | 10,0 | 13,0 | 0,300   | 800 | 100 |
| 290015   |      | 10 | 6   | 10,5 | 4,5  | 6,0  | 10,0  | 2  | -  | 28,0  | 10,0 | 10,0 | 15,0 | 0,500   | 800 | 100 |
| 290019   | 16   | 6  | 8   | 6,4  | 5,5  | 8,5  | 20,0  | 2  | 1  | 36,0  | 7,5  | 8,0  | 13,0 | 1,100   | 500 | 50  |
| 290021   |      | 8  | 8   | 8,4  | 5,5  | 8,5  | 20,0  | 2  | 1  | 36,0  | 10,0 | 10,0 | 13,0 | 1,100   | 400 | 50  |
| 290025   |      | 10 | 8   | 10,5 | 5,5  | 8,5  | 20,0  | 2  | 1  | 36,0  | 12,0 | 12,0 | 17,0 | 1,200   | 400 | 50  |
| 290027   |      | 12 | 8   | 13,0 | 5,5  | 8,5  | 20,0  | 2  | 1  | 36,0  | 13,0 | 13,0 | 18,0 | 1,200   | 400 | 50  |
| 290031   | 25   | 6  | 10  | 6,4  | 7,0  | 10,0 | 20,0  | 2  | 1  | 38,0  | 7,5  | 8,0  | 14,0 | 1,300   | 300 | 50  |
| 290033   |      | 8  | 10  | 8,4  | 7,0  | 10,0 | 20,0  | 2  | 1  | 38,0  | 10,0 | 10,0 | 16,0 | 1,400   | 300 | 50  |
| 290035   |      | 10 | 10  | 10,5 | 7,0  | 10,0 | 20,0  | 2  | 1  | 38,0  | 12,0 | 12,0 | 17,0 | 1,600   | 300 | 50  |
| 290037   |      | 12 | 10  | 13,0 | 7,0  | 10,0 | 20,0  | 2  | 1  | 38,0  | 13,0 | 13,0 | 19,0 | 1,400   | 300 | 50  |
| 290039   | 35   | 6  | 12  | 6,4  | 8,2  | 12,5 | 20,0  | 2  | 1  | 42,0  | 7,5  | 8,0  | 17,0 | 2,700   | 150 | 25  |
| 290042   |      | 8  | 12  | 8,4  | 8,2  | 12,5 | 20,0  | 2  | 1  | 42,0  | 10,0 | 10,0 | 17,0 | 2,900   | 150 | 15  |
| 290044   |      | 10 | 12  | 10,5 | 8,2  | 12,5 | 20,0  | 2  | 1  | 42,0  | 12,0 | 12,0 | 19,0 | 3,000   | 150 | 25  |
| 290049   |      | 12 | 12  | 13,0 | 8,2  | 12,5 | 20,0  | 2  | 1  | 42,0  | 13,0 | 13,0 | 21,0 | 2,800   | 150 | 25  |
| 290050   | 50   | 8  | 14  | 8,4  | 10,0 | 14,5 | 28,0  | 3  | 1  | 52,0  | 10,0 | 10,0 | 20,0 | 4,500   | 100 | 25  |
| 290051   |      | 10 | 14  | 10,5 | 10,0 | 14,5 | 28,0  | 3  | 1  | 52,0  | 12,0 | 12,0 | 22,0 | 4,400   | 100 | 25  |
| 290052   |      | 12 | 14  | 13,0 | 10,0 | 14,5 | 28,0  | 3  | 1  | 52,0  | 13,0 | 13,0 | 24,0 | 4,400   | 100 | 25  |
| 290053   |      | 16 | 14  | 17,0 | 10,0 | 14,5 | 28,0  | 3  | 1  | 52,0  | 16,0 | 16,0 | 28,0 | 4,300   | 100 | 20  |
| 290054   | 70   | 8  | 16  | 8,4  | 11,5 | 16,5 | 28,0  | 3  | 1  | 55,0  | 10,0 | 10,0 | 24,0 | 5,900   | 100 | 25  |
| 290055   |      | 10 | 16  | 10,5 | 11,5 | 16,5 | 28,0  | 3  | 1  | 55,0  | 12,0 | 12,0 | 24,0 | 6,000   | 100 | 25  |
| 290056   |      | 12 | 16  | 13,0 | 11,5 | 16,5 | 28,0  | 3  | 1  | 55,0  | 13,0 | 13,0 | 24,0 | 5,300   | 100 | 25  |
| 290057   |      | 16 | 16  | 17,0 | 11,5 | 16,5 | 28,0  | 3  | 1  | 55,0  | 16,0 | 16,0 | 30,0 | 5,600   | 80  | 20  |
| 290058   | 95   | 10 | 18  | 10,5 | 13,5 | 19,0 | 35,0  | 4  | 2  | 65,0  | 12,0 | 12,0 | 28,0 | 8,900   | 60  | 15  |
| 290059   |      | 12 | 18  | 13,0 | 13,5 | 19,0 | 35,0  | 4  | 2  | 65,0  | 13,0 | 13,0 | 28,0 | 8,500   | 60  | 15  |
| 290060   |      | 16 | 18  | 17,0 | 13,5 | 19,0 | 35,0  | 4  | 2  | 65,0  | 16,0 | 16,0 | 32,0 | 8,700   | 60  | 15  |
| 290061   | 120  | 10 | 20  | 10,5 | 15,5 | 21,0 | 35,0  | 4  | 2  | 70,0  | 15,0 | 16,0 | 32,0 | 11,100  | 40  | 20  |
| 290063   |      | 12 | 20  | 13,0 | 15,5 | 21,0 | 35,0  | 4  | 2  | 70,0  | 16,0 | 17,0 | 32,0 | 11,000  | 40  | 20  |
| 290064   |      | 16 | 20  | 17,0 | 15,5 | 21,0 | 35,0  | 4  | 2  | 70,0  | 19,0 | 20,0 | 32,0 | 10,600  | 40  | 20  |
| 290065   |      | 20 | 20  | 21,0 | 15,5 | 21,0 | 35,0  | 4  | 2  | 70,0  | 21,0 | 22,0 | 38,0 | 11,100  | 30  | 20  |
| 290066   | 150  | 10 | 22  | 10,5 | 17,0 | 23,5 | 35,0  | 4  | 2  | 78,0  | 15,0 | 16,0 | 34,0 | 15,800  | 30  | 15  |
| 290067   |      | 12 | 22  | 13,0 | 17,0 | 23,5 | 35,0  | 4  | 2  | 78,0  | 16,0 | 17,0 | 34,0 | 15,600  | 30  | 15  |
| 290068   |      | 16 | 22  | 17,0 | 17,0 | 23,5 | 35,0  | 4  | 2  | 78,0  | 19,0 | 20,0 | 34,0 | 15,700  | 30  | 15  |
| 290069   |      | 20 | 22  | 21,0 | 17,0 | 23,5 | 35,0  | 4  | 2  | 78,0  | 21,0 | 22,0 | 40,0 | 15,800  | 24  | 12  |
| 290070   | 185  | 10 | 25  | 10,5 | 19,0 | 25,5 | 40,0  | 4  | 2  | 82,0  | 15,0 | 16,0 | 37,0 | 17,200  | 24  | 10  |
| 290071   |      | 12 | 25  | 13,0 | 19,0 | 25,5 | 40,0  | 4  | 2  | 82,0  | 16,0 | 17,0 | 37,0 | 18,300  | 24  | 10  |
| 290072   |      | 16 | 25  | 17,0 | 19,0 | 25,5 | 40,0  | 4  | 2  | 82,0  | 19,0 | 20,0 | 37,0 | 17,700  | 24  | 10  |
| 290073   |      | 20 | 25  | 21,0 | 19,0 | 25,5 | 40,0  | 4  | 2  | 82,0  | 21,0 | 22,0 | 40,0 | 18,900  | 20  | 10  |
| 290074   | 240  | 12 | 28  | 13,0 | 21,5 | 29,0 | 40,0  | 5  | 2  | 92,0  | 16,0 | 17,0 | 42,0 | 26,400  | 16  | 8   |
| 290075   |      | 16 | 28  | 17,0 | 21,5 | 29,0 | 40,0  | 5  | 2  | 92,0  | 19,0 | 20,0 | 42,0 | 26,900  | 16  | 8   |
| 290076   |      | 20 | 28  | 21,0 | 21,5 | 29,0 | 40,0  | 5  | 2  | 92,0  | 21,0 | 22,0 | 45,0 | 26,900  | 16  | 8   |
| 290077   | 300  | 16 | 32  | 17,0 | 24,5 | 32,0 | 50,0  | -  | 2  | 100,0 | 19,0 | 22,0 | 46,0 | 33,000  | 8   | 4   |
| 290078   |      | 20 | 32  | 21,0 | 24,5 | 32,0 | 50,0  | -  | 2  | 100,0 | 19,0 | 22,0 | 46,0 | 33,000  | 8   | 4   |
| 290079   | 400  | 16 | 38  | 17,0 | 27,5 | 38,5 | 70,0  | -  | 3  | 115,0 | 25,0 | 25,0 | 55,0 | 70,200  | 6   | 6   |
| 290080   |      | 20 | 38  | 21,0 | 27,5 | 38,5 | 70,0  | -  | 3  | 115,0 | 25,0 | 25,0 | 54,0 | 45,100  | 6   | 6   |
| 290081   | 500  | 20 | 42  | 21,0 | 31,0 | 42,0 | 70,0  | -  | 3  | 125,0 | 25,0 | 25,0 | 60,0 | 76,600  | 6   | 6   |
| 290082   | 625  | 20 | 44  | 21,0 | 34,5 | 44,0 | 80,0  | -  | 3  | 125,0 | 25,0 | 25,0 | 64,0 | 78,000  | 1   | 1   |
| 290083   | 800  | 20 | 52  | 21,0 | 40,0 | 52,0 | 100,0 | -  | 3  | 165,0 | 30,0 | 30,0 | 75,0 | 148,600 | 1   | 1   |
| 290084   | 1000 | 20 | 58  | 21,0 | 44,0 | 58,0 | 100,0 | -  | 3  | 165,0 | 30,0 | 30,0 | 83,0 | 195,200 | 1   | 1   |



## Compression joints acc. to DIN 46267 Part 1 (for non-tension connections)

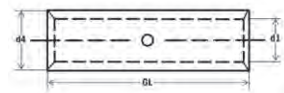
DIN

- Material: 99.9% E-Cu DIN 40500
- Surface: bare
- With marks for correct crimping
- Annealed material for easier crimping



Cu

| Art. no. | CSS  | ld. | d1   | d4   | v1 | v2 | TL   | kg/100  | PU   | PU  |
|----------|------|-----|------|------|----|----|------|---------|------|-----|
| 291520   | 6    | 5   | 3,8  | 5,5  | 2  | -  | 30   | 0,300   | 1600 | 100 |
| 291522   | 10   | 6   | 4,5  | 6,0  | 2  | -  | 30   | 0,600   | 1000 | 100 |
| 291524   | 16   | 8   | 5,5  | 8,5  | 2  | 1  | 50   | 1,450   | 300  | 50  |
| 291526   | 25   | 10  | 7,0  | 10,0 | 2  | 1  | 50   | 1,700   | 300  | 50  |
| 291528   | 35   | 12  | 8,2  | 12,5 | 2  | 1  | 50   | 3,100   | 200  | 50  |
| 291530   | 50   | 14  | 10,0 | 14,5 | 3  | 1  | 55   | 4,400   | 100  | 25  |
| 291532   | 70   | 16  | 11,5 | 16,5 | 3  | 1  | 55   | 5,300   | 100  | 25  |
| 291534   | 95   | 18  | 13,5 | 19,0 | 4  | 2  | 70   | 8,400   | 50   | 15  |
| 291536   | 120  | 20  | 15,5 | 21,0 | 4  | 2  | 70   | 9,600   | 50   | 25  |
| 291538   | 150  | 22  | 17,0 | 23,5 | 4  | 2  | 80   | 14,500  | 30   | 15  |
| 291540   | 185  | 25  | 19,0 | 25,5 | 4  | 2  | 85   | 16,200  | 30   | 5   |
| 291542   | 240  | 28  | 21,5 | 29,0 | 5  | 2  | 90   | 22,400  | 20   | 10  |
| 291544   | 300  | 32  | 24,5 | 32,0 | -  | 2  | 100  | 29,500  | 10   | 5   |
| 291546   | 400  | 38  | 27,5 | 38,5 | -  | 3  | 150  | 72,500  | 6    | 8   |
| 291548   | 500  | 42  | 31,0 | 42,0 | -  | 3  | 160  | 85,600  | 8    | 5   |
| 291550   | 625  | 44  | 34,5 | 44,0 | -  | 3  | 160  | 79,900  | 6    | 1   |
| 291552   | 800  | 52  | 40,0 | 52,0 | -  | 3  | 200  | 151,000 | 6    | 1   |
| 291554   | 1000 | 58  | 44,0 | 58,0 | -  | 3  | 1000 | 198,000 | 6    | 1   |



## Compression joints acc. to DIN 48085, Part 1 (for full-tension cable connections)

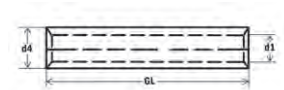
DIN

- Material: 99.9% E-Cu DIN 40500 • Surface: bare
- With marks for correct crimping
- Annealed material for easier crimping
- For full-tension cable connections, overhead line construction



Cu

| Art. no. | CSS | ld. | d1   | d4   | v1 | v2 | TL  | kg/100  | PU | PU |
|----------|-----|-----|------|------|----|----|-----|---------|----|----|
| 291440   | 6   | 6   | 3,8  | 6,5  | 8  | -  | 65  | 1,200   |    | 50 |
| 291442   | 10  | 8   | 4,5  | 8,5  | 10 | -  | 80  | 2,800   |    | 50 |
| 291444   | 16  | 8   | 5,5  | 8,5  | 10 | -  | 95  | 2,300   |    | 50 |
| 291446   | 25  | 10  | 7,0  | 10,0 | 10 | -  | 95  | 2,600   |    | 50 |
| 291448   | 35  | 12  | 8,2  | 12,5 | 10 | -  | 95  | 5,800   |    | 25 |
| 291450   | 50  | 14  | 10,0 | 14,5 | 10 | -  | 110 | 7,000   |    | 25 |
| 291452   | 70  | 16  | 11,5 | 16,5 | 10 | -  | 110 | 9,000   |    | 25 |
| 291454   | 95  | 20  | 13,5 | 21,0 | 16 | 8  | 145 | 8,600   |    | 10 |
| 291456   | 120 | 22  | 15,0 | 23,5 | 16 | 8  | 160 | 29,200  |    | 10 |
| 291458   | 150 | 25  | 16,5 | 25,5 | 16 | 8  | 180 | 117,100 |    | 10 |
| 291460   | 185 | 32  | 18,5 | 31,5 | -  | 10 | 260 | 17,000  |    | 5  |
| 291462   | 240 | 34  | 21,0 | 34,5 | -  | 12 | 310 | 163,700 |    | 5  |
| 291464   | 300 | 38  | 23,5 | 38,5 | -  | 14 | 360 | 29,200  |    | 5  |



Cable lugs acc. to DIN 46235

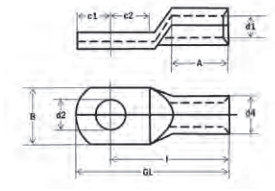
DIN

- Material: 99,9% E-Cu DIN 40500
- Tube dimension acc. to DIN 46235 • Surface: tin-plated
- With marks for correct crimping
- Annealed material for easier crimping



Cu

| Art. no. | CSS  | M  | ld. | d2   | d1   | d4   | A     | v1 | v2 | l     | c1   | c2   | B    | kg/100  | PU  | PU  |
|----------|------|----|-----|------|------|------|-------|----|----|-------|------|------|------|---------|-----|-----|
| 290404   | 6    | 6  | 5   | 6,4  | 3,8  | 5,5  | 10,0  | 2  | -  | 24,0  | 7,5  | 8,0  | 8,5  | 0,300   | 800 | 100 |
| 290406   |      | 8  | 5   | 8,4  | 3,8  | 5,5  | 10,0  | 2  | -  | 24,0  | 10,0 | 10,0 | 13,0 | 0,300   | 800 | 100 |
| 290408   | 10   | 5  | 6   | 5,3  | 4,5  | 6,0  | 10,0  | 2  | -  | 27,0  | 7,0  | 8,5  | 9,0  | 0,400   | 800 | 100 |
| 290410   |      | 6  | 6   | 6,4  | 4,5  | 6,0  | 10,0  | 2  | -  | 27,0  | 7,5  | 8,5  | 9,0  | 0,400   | 800 | 100 |
| 290412   |      | 8  | 6   | 8,4  | 4,5  | 6,0  | 10,0  | 2  | -  | 27,0  | 10,0 | 10,0 | 13,0 | 0,400   | 800 | 100 |
| 290414   |      | 10 | 6   | 10,5 | 4,5  | 6,0  | 10,0  | 2  | -  | 28,0  | 10,0 | 10,0 | 15,0 | 0,400   | 800 | 100 |
| 290416   | 16   | 6  | 8   | 6,4  | 5,5  | 8,5  | 20,0  | 2  | 1  | 36,0  | 7,5  | 8,0  | 13,0 | 1,200   | 500 | 50  |
| 290418   |      | 8  | 8   | 8,4  | 5,5  | 8,5  | 20,0  | 2  | 1  | 36,0  | 10,0 | 10,0 | 13,0 | 1,200   | 400 | 50  |
| 290420   |      | 10 | 8   | 10,5 | 5,5  | 8,5  | 20,0  | 2  | 1  | 36,0  | 12,0 | 12,0 | 17,0 | 1,100   | 400 | 50  |
| 290422   |      | 12 | 8   | 13,0 | 5,5  | 8,5  | 20,0  | 2  | 1  | 36,0  | 13,0 | 13,0 | 18,0 | 1,200   | 400 | 50  |
| 290424   | 25   | 6  | 10  | 6,4  | 7,0  | 10,0 | 20,0  | 2  | 1  | 38,0  | 7,5  | 8,0  | 14,0 | 1,300   | 300 | 50  |
| 290426   |      | 8  | 10  | 8,4  | 7,0  | 10,0 | 20,0  | 2  | 1  | 38,0  | 10,0 | 10,0 | 16,0 | 1,400   | 300 | 50  |
| 290428   |      | 10 | 10  | 10,5 | 7,0  | 10,0 | 20,0  | 2  | 1  | 38,0  | 12,0 | 12,0 | 17,0 | 1,600   | 300 | 50  |
| 290430   |      | 12 | 10  | 13,0 | 7,0  | 10,0 | 20,0  | 2  | 1  | 38,0  | 13,0 | 13,0 | 19,0 | 1,500   | 300 | 50  |
| 290432   | 35   | 6  | 12  | 6,4  | 8,2  | 12,5 | 20,0  | 2  | 1  | 42,0  | 7,5  | 8,0  | 17,0 | 2,700   | 150 | 25  |
| 290434   |      | 8  | 12  | 8,4  | 8,2  | 12,5 | 20,0  | 2  | 1  | 42,0  | 10,0 | 10,0 | 17,0 | 2,900   | 150 | 25  |
| 290436   |      | 10 | 12  | 10,5 | 8,2  | 12,5 | 20,0  | 2  | 1  | 42,0  | 12,0 | 12,0 | 19,0 | 2,900   | 150 | 25  |
| 290438   |      | 12 | 12  | 13,0 | 8,2  | 12,5 | 20,0  | 2  | 1  | 42,0  | 13,0 | 13,0 | 21,0 | 2,700   | 150 | 25  |
| 290440   | 50   | 8  | 14  | 8,4  | 10,0 | 14,5 | 28,0  | 3  | 1  | 52,0  | 10,0 | 10,0 | 20,0 | 4,400   | 100 | 25  |
| 290442   |      | 10 | 14  | 10,5 | 10,0 | 14,5 | 28,0  | 3  | 1  | 52,0  | 12,0 | 12,0 | 22,0 | 4,500   | 100 | 25  |
| 290444   |      | 12 | 14  | 13,0 | 10,0 | 14,5 | 28,0  | 3  | 1  | 52,0  | 13,0 | 13,0 | 24,0 | 4,400   | 100 | 25  |
| 290446   |      | 16 | 14  | 17,0 | 10,0 | 14,0 | 28,0  | 3  | 1  | 52,0  | 16,0 | 16,0 | 28,0 | 4,200   | 100 | 20  |
| 290448   | 70   | 8  | 16  | 8,4  | 11,5 | 16,5 | 28,0  | 3  | 1  | 55,0  | 10,0 | 10,0 | 24,0 | 5,900   | 100 | 25  |
| 290450   |      | 10 | 16  | 10,5 | 11,5 | 16,5 | 28,0  | 3  | 1  | 55,0  | 12,0 | 12,0 | 24,0 | 5,900   | 100 | 25  |
| 290452   |      | 12 | 16  | 13,0 | 11,5 | 16,5 | 28,0  | 3  | 1  | 55,0  | 13,0 | 13,0 | 24,0 | 5,900   | 100 | 25  |
| 290454   |      | 16 | 16  | 17,0 | 11,5 | 16,5 | 28,0  | 3  | 1  | 55,0  | 16,0 | 16,0 | 30,0 | 5,800   | 80  | 20  |
| 290456   | 95   | 10 | 18  | 10,5 | 13,5 | 19,0 | 35,0  | 4  | 2  | 65,0  | 12,0 | 12,0 | 28,0 | 8,800   | 60  | 15  |
| 290458   |      | 12 | 18  | 13,0 | 13,5 | 19,0 | 35,0  | 4  | 2  | 65,0  | 13,0 | 13,0 | 28,0 | 8,900   | 60  | 15  |
| 290460   |      | 16 | 18  | 17,0 | 13,5 | 19,0 | 35,0  | 4  | 2  | 65,0  | 16,0 | 16,0 | 32,0 | 8,700   | 60  | 15  |
| 290462   | 120  | 10 | 20  | 10,5 | 15,5 | 21,0 | 35,0  | 4  | 2  | 70,0  | 15,0 | 16,0 | 32,0 | 11,000  | 40  | 20  |
| 290464   |      | 12 | 20  | 13,0 | 15,5 | 21,0 | 35,0  | 4  | 2  | 70,0  | 16,0 | 17,0 | 32,0 | 11,100  | 40  | 20  |
| 290466   |      | 16 | 20  | 17,0 | 15,5 | 21,0 | 35,0  | 4  | 2  | 70,0  | 19,0 | 20,0 | 32,0 | 10,500  | 40  | 20  |
| 290468   |      | 20 | 20  | 21,0 | 15,5 | 21,0 | 35,0  | 4  | 2  | 70,0  | 21,0 | 22,0 | 38,0 | 11,300  | 25  | 15  |
| 290470   | 150  | 10 | 22  | 10,5 | 17,0 | 23,5 | 35,0  | 4  | 2  | 78,0  | 15,0 | 16,0 | 34,0 | 15,600  | 30  | 15  |
| 290472   |      | 12 | 22  | 13,0 | 17,0 | 23,5 | 35,0  | 4  | 2  | 78,0  | 16,0 | 17,0 | 34,0 | 15,700  | 30  | 15  |
| 290474   |      | 16 | 22  | 17,0 | 17,0 | 23,5 | 35,0  | 4  | 2  | 78,0  | 19,0 | 20,0 | 34,0 | 15,900  | 30  | 15  |
| 290476   |      | 20 | 22  | 21,0 | 17,0 | 23,5 | 35,0  | 4  | 2  | 78,0  | 21,0 | 22,0 | 40,0 | 16,000  | 25  | 15  |
| 290478   | 185  | 10 | 25  | 10,5 | 19,0 | 25,5 | 40,0  | 4  | 2  | 82,0  | 15,0 | 16,0 | 37,0 | 18,000  | 24  | 10  |
| 290480   |      | 12 | 25  | 13,0 | 19,0 | 25,5 | 40,0  | 4  | 2  | 82,0  | 16,0 | 17,0 | 37,0 | 18,400  | 24  | 10  |
| 290482   |      | 16 | 25  | 17,0 | 19,0 | 25,5 | 40,0  | 4  | 2  | 82,0  | 19,0 | 20,0 | 37,0 | 18,400  | 24  | 10  |
| 290484   |      | 20 | 25  | 21,0 | 19,0 | 25,5 | 40,0  | 4  | 2  | 82,0  | 21,0 | 22,0 | 40,0 | 17,700  | 20  | 10  |
| 290486   | 240  | 12 | 28  | 13,0 | 21,5 | 29,0 | 40,0  | 5  | 2  | 92,0  | 16,0 | 17,0 | 42,0 | 26,500  | 16  | 8   |
| 290488   |      | 16 | 28  | 17,0 | 21,5 | 29,0 | 40,0  | 5  | 2  | 92,0  | 19,0 | 20,0 | 42,0 | 26,600  | 16  | 8   |
| 290490   |      | 20 | 28  | 21,0 | 21,5 | 29,0 | 40,0  | 5  | 2  | 92,0  | 21,0 | 22,0 | 45,0 | 27,600  | 10  | 8   |
| 290492   | 300  | 16 | 32  | 17,0 | 24,5 | 32,0 | 50,0  | -  | 2  | 100,0 | 19,0 | 22,0 | 46,0 | 34,300  | 10  | 5   |
| 290494   |      | 20 | 32  | 21,0 | 24,5 | 32,0 | 50,0  | -  | 2  | 100,0 | 19,0 | 22,0 | 46,0 | 33,100  | 10  | 5   |
| 290496   | 400  | 16 | 38  | 17,0 | 27,5 | 38,5 | 70,0  | -  | 3  | 115,0 | 25,0 | 25,0 | 54,0 | 69,800  | 8   | 3   |
| 290498   |      | 20 | 38  | 21,0 | 27,5 | 38,5 | 70,0  | -  | 3  | 115,0 | 25,0 | 25,0 | 54,0 | 66,400  | 8   | 1   |
| 290516   | 500  | 20 | 42  | 21,0 | 31,0 | 42,0 | 70,0  | -  | 3  | 125,0 | 25,0 | 25,0 | 60,0 | 82,600  | 8   | 1   |
| 290518   | 625  | 20 | 44  | 21,0 | 34,5 | 44,0 | 80,0  | -  | 3  | 125,0 | 25,0 | 25,0 | 64,0 | 79,000  | 6   | 1   |
| 290520   | 800  | 20 | 52  | 21,0 | 40,0 | 52,0 | 100,0 | -  | 3  | 165,5 | 30,0 | 30,0 | 75,0 | 139,400 | 10  | 1   |
| 290522   | 1000 | 20 | 58  | 21,0 | 44,0 | 58,0 | 100,0 | -  | 3  | 165,0 | 30,0 | 30,0 | 83,0 | 195,000 | 10  | 1   |



Cable lugs with 2 oval holes acc. to DIN 46235

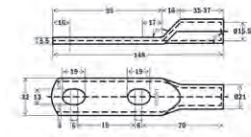
DIN

- Material: 99,9% E-Cu DIN 40500
- Tube dimension acc. to DIN 46235 • Surface: tin-plated
- With marks for correct crimping • version with 2 oval holes
- Annealed material for easier crimping



Cu

| Art. no. | CSS | M  | ld. | d2   | d1   | d4   | A    | l    | c1   | c2   | kg/100 | PU |
|----------|-----|----|-----|------|------|------|------|------|------|------|--------|----|
| 290550   | 70  | 12 | 16  | 13,0 | 11,5 | 16,5 | 28,0 | 55,0 | 13,0 | 13,0 | 10,800 | 25 |
| 290552   | 95  | 12 | 18  | 13,0 | 13,5 | 19,0 | 35,0 | 65,0 | 13,0 | 13,0 | 14,800 | 20 |
| 290554   | 120 | 12 | 20  | 13,0 | 15,5 | 21,0 | 35,0 | 70,0 | 16,0 | 17,0 | 18,600 | 25 |
| 290556   | 150 | 12 | 22  | 13,0 | 17,0 | 23,5 | 35,0 | 78,0 | 16,0 | 17,0 | 26,200 | 25 |
| 290558   | 185 | 12 | 25  | 13,0 | 19,0 | 25,5 | 40,0 | 82,0 | 16,0 | 17,0 | 26,800 | 10 |
| 290560   | 240 | 12 | 28  | 13,0 | 21,5 | 29,0 | 40,0 | 92,0 | 16,0 | 17,0 | 40,200 | 10 |



Angled cable lugs 90° acc. to DIN 46325

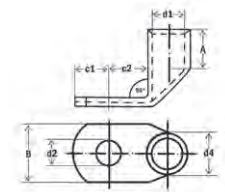
DIN

- Material: 99,9% E-Cu DIN 40500
- Tube dimension acc. to DIN 46235 • Surface: tin-plated
- With marks for correct crimping
- Annealed material for easier crimping



Cu

| Art. no. | CSS | M  | ld. | d2   | d1   | d4   | A    | v1 | v2 | c1   | c2   | kg/100 | PU  |
|----------|-----|----|-----|------|------|------|------|----|----|------|------|--------|-----|
| 291700   | 6   | 5  | 5   | 5,3  | 3,8  | 5,5  | 10,0 | 2  | -  | 6,5  | 9,0  | 0,400  | 100 |
| 291702   |     | 6  | 5   | 6,4  | 3,8  | 5,5  | 10,0 | 2  | -  | 7,5  | 10,0 | 0,300  | 100 |
| 291704   | 10  | 5  | 6   | 5,3  | 4,5  | 6,0  | 10,0 | 2  | -  | 7,0  | 10,0 | 0,400  | 100 |
| 291706   |     | 6  | 6   | 6,4  | 4,5  | 6,0  | 10,0 | 2  | -  | 7,5  | 10,0 | 0,500  | 100 |
| 291708   |     | 8  | 6   | 8,4  | 4,5  | 6,0  | 10,0 | 2  | -  | 10,0 | 13,0 | 1,100  | 100 |
| 291710   | 16  | 6  | 8   | 6,4  | 5,5  | 8,5  | 20,0 | 2  | 1  | 7,5  | 11,0 | 1,200  | 50  |
| 291712   |     | 8  | 8   | 8,4  | 5,5  | 8,5  | 20,0 | 2  | 1  | 10,0 | 13,0 | 1,100  | 50  |
| 291714   |     | 10 | 8   | 10,5 | 5,5  | 8,5  | 20,0 | 2  | 1  | 12,0 | 15,0 | 1,200  | 50  |
| 291716   |     | 12 | 8   | 13,0 | 5,5  | 8,5  | 20,0 | 2  | 1  | 13,0 | 18,0 | 1,200  | 50  |
| 291718   | 25  | 6  | 10  | 6,4  | 7,0  | 10,0 | 20,0 | 2  | 1  | 7,5  | 11,0 | 1,500  | 50  |
| 291720   |     | 8  | 10  | 8,4  | 7,0  | 10,0 | 20,0 | 2  | 1  | 10,0 | 13,0 | 1,500  | 50  |
| 291722   |     | 10 | 10  | 10,5 | 7,0  | 10,0 | 20,0 | 2  | 1  | 12,0 | 15,0 | 1,500  | 50  |
| 291724   |     | 12 | 10  | 13,0 | 7,0  | 10,0 | 20,0 | 2  | 1  | 13,0 | 18,0 | 1,500  | 50  |
| 291726   | 35  | 8  | 12  | 8,4  | 8,2  | 12,5 | 20,0 | 2  | 1  | 10,0 | 13,0 | 2,600  | 25  |
| 291728   |     | 10 | 12  | 10,5 | 8,2  | 12,5 | 20,0 | 2  | 1  | 12,0 | 15,0 | 2,900  | 25  |
| 291730   |     | 12 | 12  | 13,0 | 8,2  | 12,5 | 20,0 | 2  | 1  | 13,0 | 18,0 | 2,900  | 25  |
| 291732   | 50  | 8  | 14  | 8,4  | 10,0 | 14,0 | 28,0 | 3  | 1  | 10,0 | 16,0 | 4,100  | 25  |
| 291734   |     | 10 | 14  | 10,5 | 10,0 | 14,0 | 28,0 | 3  | 1  | 12,0 | 16,0 | 4,200  | 20  |
| 291736   |     | 12 | 14  | 13,0 | 10,0 | 14,5 | 28,0 | 3  | 1  | 13,0 | 18,0 | 4,500  | 20  |
| 291738   |     | 16 | 14  | 17,0 | 10,0 | 14,5 | 28,0 | 3  | 1  | 16,0 | 22,0 | 4,100  | 20  |
| 291740   | 70  | 8  | 16  | 8,4  | 11,5 | 16,5 | 28,0 | 3  | 1  | 10,0 | 14,0 | 5,400  | 30  |
| 291742   |     | 10 | 16  | 10,5 | 11,5 | 16,5 | 28,0 | 3  | 1  | 12,0 | 16,0 | 5,500  | 30  |
| 291744   |     | 12 | 16  | 13,0 | 11,5 | 16,5 | 28,0 | 3  | 1  | 13,0 | 18,0 | 6,000  | 15  |
| 291746   |     | 16 | 16  | 17,0 | 11,5 | 16,5 | 28,0 | 3  | 1  | 16,0 | 22,0 | 5,600  | 30  |
| 291748   | 95  | 10 | 18  | 10,5 | 13,5 | 19,0 | 35,0 | 4  | 2  | 12,0 | 17,0 | 8,400  | 10  |
| 291750   |     | 12 | 18  | 13,0 | 13,5 | 19,0 | 35,0 | 4  | 2  | 13,0 | 18,0 | 8,700  | 10  |
| 291752   |     | 16 | 18  | 17,0 | 13,5 | 19,0 | 35,0 | 4  | 2  | 16,0 | 22,0 | 8,700  | 10  |
| 291754   | 120 | 10 | 20  | 10,5 | 15,5 | 21,0 | 35,0 | 4  | 2  | 15,0 | 17,0 | 10,000 | 20  |
| 291756   |     | 12 | 20  | 13,0 | 15,5 | 21,0 | 35,0 | 4  | 2  | 16,0 | 18,0 | 10,000 | 20  |
| 291758   |     | 16 | 20  | 17,0 | 15,5 | 21,0 | 35,0 | 4  | 2  | 18,0 | 22,0 | 10,200 | 20  |
| 291760   |     | 20 | 20  | 21,0 | 15,5 | 21,0 | 35,0 | 4  | 2  | 21,0 | 24,0 | 9,800  | 15  |
| 291762   | 150 | 10 | 22  | 10,5 | 17,0 | 23,5 | 35,0 | 4  | 2  | 15,0 | 17,0 | 13,100 | 15  |
| 291764   |     | 12 | 22  | 13,0 | 17,0 | 23,5 | 35,0 | 4  | 2  | 16,0 | 18,0 | 13,200 | 15  |
| 291766   |     | 16 | 22  | 17,0 | 17,0 | 23,5 | 35,0 | 4  | 2  | 19,0 | 22,0 | 14,100 | 15  |
| 291768   |     | 20 | 22  | 21,0 | 17,0 | 23,5 | 35,0 | 4  | 2  | 21,0 | 24,0 | 13,700 | 10  |
| 291770   | 185 | 10 | 25  | 10,5 | 19,0 | 25,5 | 40,0 | 4  | 2  | 15,0 | 22,0 | 16,400 | 10  |
| 291772   |     | 12 | 25  | 13,0 | 19,0 | 25,5 | 40,0 | 4  | 2  | 16,0 | 22,0 | 15,600 | 10  |
| 291774   |     | 16 | 25  | 17,0 | 19,0 | 25,5 | 40,0 | 4  | 2  | 19,0 | 22,0 | 18,600 | 10  |
| 291776   |     | 20 | 25  | 21,0 | 19,0 | 25,5 | 40,0 | 4  | 2  | 21,0 | 24,0 | 17,500 | 10  |
| 291778   | 240 | 12 | 28  | 13,0 | 21,5 | 29,0 | 40,0 | 5  | 2  | 16,0 | 22,0 | 22,400 | 10  |
| 291780   |     | 16 | 28  | 17,0 | 21,5 | 29,0 | 40,0 | 5  | 2  | 19,0 | 22,0 | 22,900 | 10  |
| 291782   |     | 20 | 28  | 21,0 | 21,5 | 29,0 | 40,0 | 5  | 2  | 21,0 | 24,0 | 21,000 | 10  |



## Compression joints acc. to DIN 46267, Part 1 (for non-tension connections)

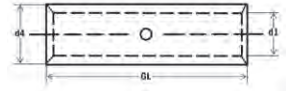
**DIN**

- Material: 99.9% E-CU DIN 40500 • Tube dimension acc. to DIN
- Surface: tin-plated • Annealed material for easier crimping
- For stranded conductors e.g. VDE 0295 class 2
- With buttmarks for precise cable insertion



**Cu**

| Art. no. | CSS  | ld. | d1   | d4   | v1 | v2 | TL   | kg/100  |      | PU  |
|----------|------|-----|------|------|----|----|------|---------|------|-----|
| 291521   | 6    | 5   | 3,8  | 5,5  | 2  | -  | 30   | 0,300   | 1600 | 100 |
| 291523   | 10   | 6   | 4,5  | 6,0  | 2  | -  | 30   | 0,600   | 1000 | 100 |
| 291525   | 16   | 8   | 5,5  | 8,5  | 2  | 1  | 50   | 1,450   | 300  | 50  |
| 291527   | 25   | 10  | 7,0  | 10,0 | 2  | 1  | 50   | 1,600   | 300  | 50  |
| 291529   | 35   | 12  | 8,2  | 12,5 | 2  | 1  | 50   | 3,000   | 200  | 50  |
| 291531   | 50   | 14  | 10,0 | 14,5 | 3  | 1  | 55   | 4,100   | 100  | 25  |
| 291533   | 70   | 16  | 11,5 | 16,5 | 3  | 1  | 55   | 5,400   | 100  | 25  |
| 291535   | 95   | 18  | 13,5 | 19,0 | 4  | 2  | 70   | 8,300   | 50   | 25  |
| 291537   | 120  | 20  | 15,5 | 21,0 | 4  | 2  | 70   | 9,500   | 50   | 25  |
| 291539   | 150  | 22  | 17,0 | 23,5 | 4  | 2  | 80   | 14,200  | 30   | 15  |
| 291541   | 185  | 25  | 19,0 | 25,5 | 4  | 2  | 85   | 16,900  | 30   | 5   |
| 291543   | 240  | 28  | 21,5 | 29,0 | 5  | 2  | 90   | 22,600  | 20   | 10  |
| 291545   | 300  | 32  | 24,5 | 32,0 | -  | 2  | 100  | 29,700  | 10   | 5   |
| 291547   | 400  | 38  | 27,5 | 38,5 | -  | 3  | 150  | 74,000  | 8    | 8   |
| 291549   | 500  | 42  | 31,0 | 42,0 | -  | 3  | 160  | 89,100  | 5    | 5   |
| 291551   | 625  | 44  | 34,5 | 44,0 | -  | 3  | 160  | 79,000  | 1    | 1   |
| 291553   | 800  | 52  | 40,0 | 52,0 | -  | 3  | 200  | 151,300 | 1    | 1   |
| 291555   | 1000 | 58  | 44,0 | 58,0 | -  | 3  | 1000 | 198,000 | 1    | 1   |



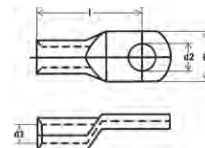
**Tubular cable lugs of pure nickel, ring type**

- Material: nickel
- Temperature resistant to 500° C



Ni

| Art. no. | CSS | M | d2  | d1  | A    | l   | kg/100 | PU  |
|----------|-----|---|-----|-----|------|-----|--------|-----|
| 292560   | 0,5 | 4 | 4,3 | 1,6 | 13,0 | 6,0 | 0,105  | 100 |
| 292562   |     | 5 | 5,3 | 1,6 | 14,0 | 6,0 | 0,086  | 100 |
| 292564   | 1,5 | 4 | 4,3 | 2,3 | 13,0 | 6,0 | 0,109  | 100 |
| 292566   |     | 5 | 5,3 | 2,3 | 14,0 | 6,0 | 0,122  | 100 |
| 292568   |     | 6 | 6,5 | 2,3 | 16,0 | 6,0 | 0,134  | 100 |
| 292570   | 4   | 4 | 4,3 | 3,6 | 18,0 | 8,0 | 0,300  | 100 |
| 292572   |     | 5 | 5,3 | 3,6 | 19,0 | 8,0 | 0,200  | 100 |
| 292574   |     | 6 | 6,5 | 3,6 | 19,0 | 8,0 | 0,300  | 100 |



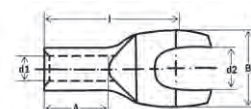
**Tubular terminals of pure nickel, forke type**

- Material: nickel
- Temperature resistant to 500° C



Ni

| Art. no. | CSS | M | d2  | d1  | A    | l   | kg/100 | PU  |
|----------|-----|---|-----|-----|------|-----|--------|-----|
| 292580   | 0,5 | 4 | 4,3 | 1,6 | 13,0 | 6,0 | 0,073  | 100 |
| 292582   |     | 5 | 5,3 | 1,6 | 14,0 | 6,0 | 0,070  | 100 |
| 292584   | 1,5 | 4 | 4,3 | 2,3 | 13,0 | 6,0 | 0,100  | 100 |
| 292586   |     | 5 | 5,3 | 2,3 | 14,0 | 6,0 | 0,100  | 100 |
| 292588   |     | 6 | 6,5 | 2,3 | 16,0 | 6,0 | 0,110  | 100 |
| 292590   | 4,0 | 4 | 4,3 | 3,6 | 18,0 | 8,0 | 0,300  | 100 |
| 292592   |     | 5 | 5,3 | 3,6 | 19,0 | 8,0 | 0,300  | 100 |



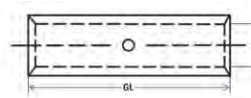
**Butt-connectors, made from pure nickel**

- Material: nickel
- Temperature resistant to 500° C
- With buttmarks for precise able insertion



Ni

| Art. no. | CSS       | d1  | TL | kg/100 | PU  |
|----------|-----------|-----|----|--------|-----|
| 292596   | 0,5 - 1   | 1,6 | 15 | 0,101  | 100 |
| 292598   | 1,5 - 2,5 | 2,3 | 15 | 0,110  | 100 |
| 292600   | 4 - 6     | 3,6 | 15 | 0,190  | 100 |



Al compression cable lugs

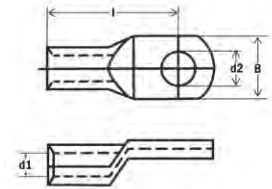
DIN

- Material: Al 99,5% • Surface: bare • Tube dimension to DIN 46329
- With marks for correct crimping
- For non-tension connections of Al-cables DIN 48201, part 1 and DIN EN 50182
- For pre-rounded sm/se sector shaped conductors • including contact grease



Al

| Art. no. | CSS rm/sm | se  | M  | ld. | d2   | d1   | v1 | v2 | l     | B    | kg/100 | PU |
|----------|-----------|-----|----|-----|------|------|----|----|-------|------|--------|----|
| 292904   | 16        | 25  | 8  | 12  | 8,5  | 5,8  | 4  | 2  | 52,0  | 18,0 | 1,400  | 50 |
| 292906   |           |     | 10 | 12  | 10,5 | 5,8  | 4  | 2  | 52,0  | 18,0 | 1,400  | 50 |
| 292908   | 25        | 35  | 8  | 12  | 8,5  | 6,8  | 4  | 2  | 60,0  | 18,0 | 1,400  | 50 |
| 292910   |           |     | 10 | 12  | 10,5 | 6,8  | 4  | 2  | 60,0  | 18,0 | 1,400  | 50 |
| 292912   | 35        | 50  | 10 | 14  | 10,5 | 8,0  | 5  | 2  | 67,0  | 21,0 | 2,100  | 50 |
| 292914   |           |     | 12 | 14  | 13,0 | 8,0  | 5  | 2  | 67,0  | 21,0 | 2,000  | 50 |
| 292916   | 50        | 70  | 10 | 16  | 10,5 | 9,8  | 5  | 2  | 72,0  | 25,0 | 2,700  | 50 |
| 292918   |           |     | 12 | 16  | 13,0 | 9,8  | 5  | 2  | 72,0  | 25,0 | 2,700  | 50 |
| 292920   | 70        | 95  | 10 | 18  | 10,5 | 11,2 | 6  | 3  | 86,0  | 28,0 | 4,400  | 40 |
| 292922   |           |     | 12 | 18  | 13,0 | 11,2 | 6  | 3  | 86,0  | 28,0 | 4,200  | 40 |
| 292924   | 95        | 120 | 10 | 22  | 10,5 | 13,2 | 6  | 3  | 90,0  | 32,0 | 6,300  | 25 |
| 292926   |           |     | 12 | 22  | 13,0 | 13,2 | 6  | 3  | 90,0  | 32,0 | 6,400  | 30 |
| 292928   |           |     | 16 | 22  | 17,0 | 13,2 | 6  | 3  | 90,0  | 34,0 | 6,400  | 25 |
| 292930   | 120       | 150 | 12 | 22  | 13,0 | 14,7 | 6  | 3  | 91,0  | 32,0 | 6,700  | 25 |
| 292932   |           |     | 16 | 22  | 17,0 | 14,7 | 6  | 3  | 91,0  | 34,0 | 7,000  | 25 |
| 292934   | 150       | 185 | 12 | 25  | 13,0 | 16,3 | 6  | 3  | 103,0 | 35,0 | 9,400  | 20 |
| 292936   |           |     | 16 | 25  | 17,0 | 16,3 | 6  | 3  | 103,0 | 35,0 | 8,300  | 20 |
| 292938   |           |     | 20 | 25  | 21,0 | 16,3 | 6  | 3  | 103,0 | 41,0 | 9,100  | 20 |
| 292940   | 185       | 240 | 12 | 28  | 13,0 | 18,3 | 6  | 3  | 106,0 | 40,0 | 11,700 | 15 |
| 292942   |           |     | 16 | 28  | 17,0 | 18,3 | 6  | 3  | 106,0 | 40,0 | 11,600 | 15 |
| 292944   |           |     | 20 | 28  | 21,0 | 18,3 | 6  | 3  | 106,0 | 40,0 | 12,000 | 15 |
| 292946   | 240       | 300 | 12 | 32  | 13,0 | 21,0 | 8  | 3  | 116,0 | 45,0 | 16,900 | 10 |
| 292948   |           |     | 16 | 32  | 17,0 | 21,0 | 8  | 3  | 116,0 | 45,0 | 16,900 | 12 |
| 292950   |           |     | 20 | 32  | 21,0 | 21,0 | 8  | 3  | 116,0 | 45,0 | 16,200 | 10 |



Al compression cable lugs acc. to DIN 46329

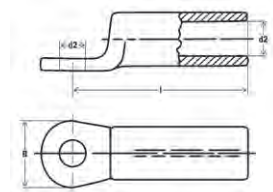
DIN

- Material: Al 99,5% • Surface: bare • Design with oil stop
- Tube dimension to DIN 46329 • With marks for correct crimping
- For non-tension connections of Al-cables DIN 48201, part 1 and DIN EN 50182
- For pre-rounded sm/se sector shaped conductors • Including contact grease



Al

| Art. no. | CSS rm/sm | se  | M  | ld. | d2   | d1   | v1 | v2 | l     | B    | kg/100 | PU |
|----------|-----------|-----|----|-----|------|------|----|----|-------|------|--------|----|
| 292770   | 35        | 50  | 10 | 14  | 10,5 | 8,0  | 5  | 2  | 62,0  | 25,0 | 2,000  | 50 |
| 292772   |           |     | 12 | 14  | 13,0 | 8,0  | 5  | 2  | 62,0  | 25,0 | 2,000  | 50 |
| 292774   | 50        | 70  | 10 | 16  | 10,5 | 9,8  | 5  | 2  | 62,0  | 25,0 | 2,800  | 50 |
| 292776   |           |     | 12 | 16  | 13,0 | 9,8  | 5  | 2  | 62,0  | 25,0 | 2,600  | 50 |
| 292778   | 70        | 95  | 10 | 18  | 10,5 | 11,2 | 6  | 3  | 72,0  | 25,0 | 3,900  | 25 |
| 292780   |           |     | 12 | 18  | 13,0 | 11,2 | 6  | 3  | 72,0  | 25,0 | 3,500  | 25 |
| 292782   | 95        | 120 | 10 | 22  | 10,5 | 13,2 | 6  | 3  | 75,0  | 25,0 | 5,900  | 25 |
| 292784   |           |     | 12 | 22  | 13,0 | 13,2 | 6  | 3  | 75,0  | 25,0 | 5,600  | 25 |
| 292786   | 120       | 150 | 12 | 22  | 13,0 | 14,7 | 6  | 3  | 80,0  | 30,0 | 6,400  | 25 |
| 292788   |           |     | 16 | 22  | 17,0 | 14,7 | 6  | 3  | 80,0  | 30,0 | 6,600  | 25 |
| 292790   | 150       | 185 | 10 | 25  | 10,5 | 16,3 | 6  | 3  | 90,0  | 30,0 | 8,400  | 25 |
| 292792   |           |     | 12 | 25  | 13,0 | 16,3 | 6  | 3  | 90,0  | 30,0 | 8,300  | 25 |
| 292794   |           |     | 16 | 25  | 17,0 | 16,3 | 6  | 3  | 90,0  | 30,0 | 8,200  | 20 |
| 292796   | 185       | 240 | 10 | 28  | 10,5 | 18,3 | 6  | 3  | 91,0  | 30,0 | 10,400 | 20 |
| 292798   |           |     | 12 | 28  | 13,0 | 18,3 | 6  | 3  | 91,0  | 30,0 | 10,500 | 20 |
| 292800   |           |     | 16 | 28  | 17,0 | 18,3 | 6  | 3  | 91,0  | 30,0 | 12,000 | 20 |
| 292802   | 240       | 300 | 12 | 32  | 13,0 | 21,0 | 8  | 3  | 103,0 | 38,0 | 16,100 | 10 |
| 292804   |           |     | 16 | 32  | 17,0 | 21,0 | 8  | 3  | 103,0 | 38,0 | 15,900 | 10 |
| 292806   |           |     | 20 | 32  | 21,0 | 21,0 | 8  | 3  | 103,0 | 38,0 | 15,200 | 10 |
| 292808   | 300       | -   | 12 | 34  | 13,0 | 23,3 | 8  | 3  | 103,0 | 38,0 | 17,200 | 10 |
| 292810   |           |     | 16 | 34  | 17,0 | 23,3 | 8  | 3  | 103,0 | 38,0 | 18,500 | 10 |
| 292812   |           |     | 20 | 34  | 21,0 | 23,3 | 8  | 3  | 103,0 | 38,0 | 17,300 | 10 |
| 292814   | 400       | -   | 12 | 38  | 13,0 | 26,0 | -  | 4  | 116,0 | 38,0 | 24,700 | 10 |
| 292816   |           |     | 16 | 38  | 17,0 | 26,0 | -  | 4  | 116,0 | 38,0 | 23,000 | 10 |
| 292818   |           |     | 20 | 38  | 21,0 | 26,0 | -  | 4  | 116,0 | 38,0 | 23,500 | 10 |
| 292820   | 500       | -   | 12 | 44  | 13,0 | 29,0 | -  | 4  | 122,0 | 44,0 | 43,600 | 6  |
| 292822   |           |     | 16 | 44  | 17,0 | 29,0 | -  | 4  | 155,0 | 44,0 | 33,200 | 6  |
| 292824   |           |     | 20 | 44  | 21,0 | 29,0 | -  | 4  | 122,0 | 44,0 | 43,000 | 6  |



haupa®

...convincing solutions

**Al-Crimp connector DIN 46267 Part 2**

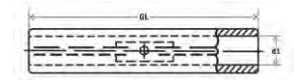
**DIN**

- Material: Al 99,5% • Surface: bare • Design with oil stop
- Manufactured DIN 46267, part 2 • With marks for correct crimping
- For non-tension connections of Al conductors to DIN 48201, DIN EN 50182
- For pre-rounded sm/se sector shaped conductors • Including contact grease



**Al**

| Art. no. | CSS mm/sm  | se  | d1   | v1 | v2 | TL  | ld./Al | kg/100 | PU  |
|----------|------------|-----|------|----|----|-----|--------|--------|-----|
| 293542   | <b>25</b>  | 35  | 6,8  | 8  | 4  | 70  | 12     | 1,600  | 100 |
| 293544   | <b>35</b>  | 50  | 8,0  | 10 | 4  | 85  | 14     | 2,700  | 100 |
| 293546   | <b>50</b>  | 70  | 9,8  | 10 | 4  | 85  | 16     | 3,300  | 50  |
| 293548   | <b>70</b>  | 95  | 11,2 | 12 | 6  | 105 | 18     | 5,800  | 50  |
| 293550   | <b>95</b>  | 120 | 13,2 | 12 | 6  | 105 | 22     | 8,200  | 25  |
| 293552   | <b>120</b> | 150 | 14,7 | 12 | 6  | 105 | 22     | 7,900  | 25  |
| 293554   | <b>150</b> | 185 | 16,3 | 12 | 6  | 125 | 25     | 11,500 | 25  |
| 293556   | <b>185</b> | 240 | 18,3 | 12 | 6  | 125 | 28     | 12,300 | 20  |
| 293558   | <b>240</b> | 300 | 20,0 | 16 | 6  | 145 | 32     | 21,200 | 15  |

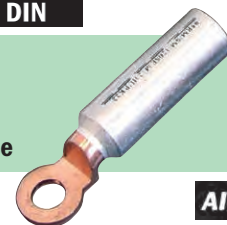




Al and Cu cable lugs, longitudinally sealed

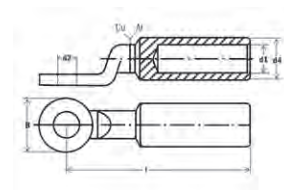
DIN

- Material: Al 99,5% copper screw-on palm E-Cu 99,9%
- Surface: bare • With marking for correct crimping • Barrier design with oil stop
- For pre-rounded sector shaped conductors
- For non-tension connections of Al-cables DIN 48201, part 1 and DIN EN 50182 • including contact grease



Al.Cu

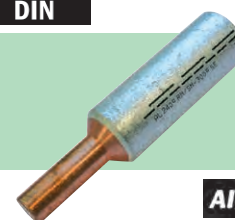
| Art. no. | CSS rm/sm | se  | M  | ld. | d2   | d1   | v1 | v2 | l     | B    | kg/100 | PU |
|----------|-----------|-----|----|-----|------|------|----|----|-------|------|--------|----|
| 293300   | 25        | 35  | 8  | 12  | 10,5 | 6,8  | 4  | 2  | 61,0  | 23,0 | 2,600  | 50 |
| 293302   |           |     | 10 | 12  | 10,5 | 6,8  | 4  | 2  | 61,0  | 23,0 | 2,500  | 50 |
| 293304   |           |     | 12 | 12  | 13,0 | 6,8  | 4  | 2  | 61,0  | 23,0 | 2,900  | 50 |
| 293306   | 35        | 50  | 10 | 14  | 10,5 | 8,0  | 5  | 2  | 71,0  | 23,0 | 3,200  | 50 |
| 293308   |           |     | 12 | 14  | 13,0 | 8,0  | 5  | 2  | 71,0  | 23,0 | 3,500  | 50 |
| 293310   | 50        | 70  | 10 | 16  | 10,5 | 9,8  | 5  | 2  | 72,0  | 25,0 | 3,400  | 50 |
| 293312   |           |     | 12 | 16  | 13,0 | 9,8  | 5  | 2  | 72,0  | 25,0 | 4,100  | 50 |
| 293314   | 70        | 95  | 10 | 18  | 10,5 | 11,2 | 6  | 3  | 82,0  | 26,0 | 6,100  | 50 |
| 293316   |           |     | 12 | 18  | 13,0 | 11,2 | 6  | 3  | 82,0  | 26,0 | 5,500  | 50 |
| 293318   | 95        | 120 | 12 | 22  | 13,0 | 13,2 | 6  | 3  | 85,0  | 30,0 | 8,200  | 25 |
| 293320   |           |     | 16 | 22  | 17,0 | 13,2 | 6  | 3  | 85,0  | 30,0 | 8,500  | 25 |
| 293322   | 120       | 150 | 12 | 22  | 13,0 | 14,7 | 6  | 3  | 87,0  | 30,0 | 8,500  | 25 |
| 293324   |           |     | 16 | 22  | 17,0 | 14,7 | 6  | 3  | 87,0  | 30,0 | 8,700  | 25 |
| 293326   | 150       | 185 | 12 | 25  | 13,0 | 16,3 | 6  | 3  | 104,0 | 36,0 | 11,000 | 25 |
| 293328   |           |     | 16 | 25  | 17,0 | 16,3 | 6  | 3  | 104,0 | 36,0 | 11,200 | 25 |
| 293330   | 185       | 240 | 12 | 28  | 13,0 | 18,3 | 6  | 3  | 105,0 | 36,0 | 14,100 | 10 |
| 293332   |           |     | 16 | 28  | 17,0 | 18,3 | 6  | 3  | 105,0 | 36,0 | 14,300 | 10 |
| 293334   | 240       | 300 | 12 | 32  | 13,0 | 21,0 | 8  | 3  | 120,0 | 36,0 | 18,000 | 5  |
| 293336   |           |     | 20 | 32  | 17,0 | 21,0 | 8  | 3  | 120,0 | 36,0 | 29,000 | 5  |
| 293338   | 300       | 300 | 12 | 34  | 13,0 | 23,3 | 8  | 3  | 120,0 | 38,0 | 35,000 | 5  |



Al/Cu non-tension compression joints with Cu bolt

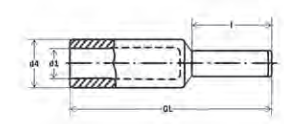
DIN

- Material: Al 99,5% E-Cu 99,9% • Surface: bare • Marking for correct crimping
- Barrier design with oil stop • For pre-rounded sector shaped conductors
- For non-tension connections of Al-cables DIN 48201, part 1 and DIN EN 50182
- For non-tension Al-connections in Cu clamps • including contact grease



Al.Cu

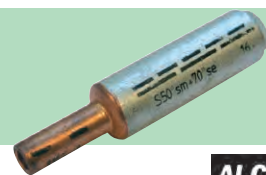
| Art. no. | CSS rm/sm | se  | d1   | d4   | TL  | l    | Øbo. | Ørope | ld./Al | kg/100 | PU |
|----------|-----------|-----|------|------|-----|------|------|-------|--------|--------|----|
| 293960   | 25        | 35  | 6,8  | 12,0 | 58  | 20,0 | 6    | 6,3   | 12     | 1,600  | 1  |
| 293962   | 35        | 35  | 8,0  | 14,0 | 71  | 22,0 | 7    | 7,5   | 14     | 2,800  | 1  |
| 293964   | 50        | 50  | 10,0 | 16,0 | 74  | 25,0 | 8    | 9,0   | 16     | 3,800  | 1  |
| 293966   | 70        | 70  | 11,5 | 18,5 | 87  | 30,0 | 10   | 10,0  | 18     | 5,400  | 1  |
| 293968   | 95        | 120 | 13,2 | 23,0 | 91  | 33,0 | 12   | 12,5  | 22     | 10,600 | 1  |
| 293970   | 120       | 150 | 15,0 | 23,0 | 97  | 38,0 | 12   | 14,0  | 22     | 9,000  | 1  |
| 293972   | 150       | 185 | 16,5 | 25,5 | 108 | 38,0 | 12   | 15,8  | 25     | 10,900 | 1  |
| 293974   | 185       | 240 | 18,5 | 28,5 | 116 | 44,0 | 14   | 17,5  | 28     | 15,700 | 1  |
| 293976   | 240       | 300 | 21,5 | 32,5 | 128 | 44,0 | 16   | 20,3  | 32     | 17,000 | 1  |
| 293978   | 300       | -   | 23,5 | 34,5 | 131 | 46,0 | 18   | 22,5  | 34     | 23,200 | 1  |



Al-Cu reducing connectors

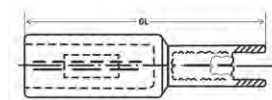
DIN

- for connections with tension relief of Al/Cu conductors to DIN 28201
- Material: Al 99,5%, DIN 40501, E-Cu DIN 40500
- Surface: bare pickled • including contact grease



Al.Cu

| Art. no. | CSS rm/sm | rm/sm CU | se  | TL    | Cu   | Al   | ld./Cu | ld./Al | kg/100 | PU |
|----------|-----------|----------|-----|-------|------|------|--------|--------|--------|----|
| 293578   | 25        | 16       | 35  | 61    | 5,5  | 7,6  | 8      | 12     | 1,600  | 10 |
| 293582   | 35        | 16       | 50  | 71    | 5,5  | 8,0  | 8      | 14     | 2,100  | 10 |
| 293584   |           | 25       |     | 71    | 7,0  | 8,0  | 10     | 14     | 2,500  | 10 |
| 293598   | 50        | 25       | 70  | 71,5  | 7,0  | 9,8  | 10     | 16     | 3,100  | 10 |
| 293600   |           | 35       |     | 71,5  | 8,2  | 9,8  | 12     | 16     | 3,300  | 10 |
| 293606   | 70        | 25       | 95  | 79    | 7,0  | 11,2 | 10     | 18     | 4,400  | 10 |
| 293608   |           | 35       |     | 79    | 8,2  | 11,2 | 12     | 18     | 5,500  | 10 |
| 293610   |           | 50       |     | 85    | 10,0 | 11,2 | 14     | 18     | 5,700  | 10 |
| 293622   | 95        | 35       | 120 | 79    | 8,2  | 13,2 | 12     | 22     | 6,000  | 5  |
| 293624   |           | 50       |     | 85    | 10,0 | 13,2 | 14     | 22     | 8,900  | 5  |
| 293626   |           | 70       |     | 87    | 11,5 | 13,2 | 16     | 22     | 8,200  | 5  |
| 293634   | 120       | 50       | 150 | 87    | 10,0 | 14,7 | 14     | 22     | 7,900  | 5  |
| 293636   |           | 70       |     | 89    | 11,5 | 14,7 | 16     | 22     | 9,500  | 5  |
| 293638   |           | 95       |     | 97    | 13,5 | 14,7 | 18     | 22     | 10,000 | 5  |
| 293652   | 150       | 95       | 185 | 107,5 | 13,5 | 16,3 | 18     | 25     | 11,700 | 5  |
| 293654   |           | 120      |     | 107,5 | 15,5 | 16,3 | 20     | 25     | 14,200 | 5  |
| 293656   |           | 150      |     | 124,0 | 17,5 | 16,3 | 22     | 25     | 16,700 | 5  |
| 293664   | 185       | 120      | 240 | 108   | 15,5 | 18,3 | 20     | 28     | 16,930 | 5  |
| 293666   |           | 150      |     | 113   | 17,0 | 18,3 | 22     | 28     | 19,500 | 5  |
| 293678   | 240       | 150      | 300 | 124   | 17,0 | 21,0 | 22     | 32     | 23,300 | 5  |
| 293680   |           | 185      |     | 127   | 19,0 | 21,0 | 25     | 32     | 25,500 | 5  |
| 293688   | 300       | 185      | 400 | 128   | 18,5 | 19,0 | 25     | 34     | 32,700 | 5  |
| 293690   |           | 240      |     | 128   | 21,5 | 23,5 | 28     | 34     | 37,500 | 5  |



Cupal washer

- Compound material made from aluminium and copper
- Galvanic isolation between Cu and Al
- Processing only in a dry environment
- Al-sided plated with Cu



Al.Cu

| Art. no. | ∅  | s1 | kg/100 | PU |
|----------|----|----|--------|----|
| 293810   | 10 | 1  | 11,100 | 50 |
| 293812   | 12 | 2  | 11,100 | 50 |
| 293814   | 14 | 2  | 11,100 | 50 |
| 293816   | 16 | 2  | 11,100 | 50 |

Screw terminals



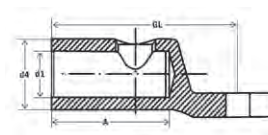
AL screw terminals medium voltage 10-30 KV

- Material: AL 99,5%
- for tension relief connections of Al medium-voltage cables
- Tin-plated surface



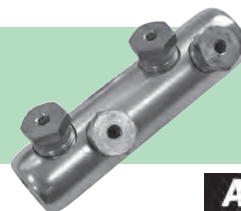
AL

| Art. no. | CSS       | M  | d1   | d4   | A    | TL  | ⊙ | kg/100 | PU |
|----------|-----------|----|------|------|------|-----|---|--------|----|
| 293140   | 16 - 95   | 12 | 12,5 | 24,0 | 32,0 | 60  | 1 | 6,400  | 1  |
| 293142   | 50 - 150  | 12 | 15,5 | 30,0 | 35,0 | 79  | 1 | 13,900 | 1  |
| 293144   |           | 16 | 15,5 | 30,0 | 35,0 | 79  | 1 | 14,500 | 1  |
| 293146   | 95 - 240  | 12 | 20,0 | 33,0 | 56,0 | 95  | 2 | 23,700 | 1  |
| 293148   |           | 16 | 20,0 | 33,0 | 56,0 | 95  | 2 | 24,400 | 1  |
| 293150   | 120 - 300 | 12 | 25,0 | 38,0 | 67,0 | 100 | 2 | 33,300 | 1  |
| 293152   |           | 16 | 25,0 | 38,0 | 67,0 | 100 | 2 | 32,700 | 1  |
| 293154   | 185 - 400 | 12 | 26,0 | 42,0 | 82,0 | 115 | 3 | 48,000 | 1  |
| 293156   |           | 16 | 26,0 | 42,0 | 82,0 | 115 | 3 | 48,200 | 1  |



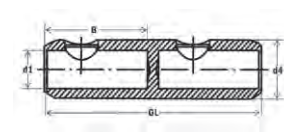
AL screw connectors medium voltage

- Material: AL 99,5%
- Screws: Tin-galvanised brass
- Tin-plated surface



AL

| Art. no. | CSS       | d1   | d4   | TL  | ⊙ | kg/100 | PU |
|----------|-----------|------|------|-----|---|--------|----|
| 293130   | 16 - 95   | 12,5 | 24,0 | 70  | 2 | 9,800  | 1  |
| 293132   | 50 - 150  | 15,5 | 30,0 | 85  | 2 | 17,700 | 1  |
| 293134   | 95 - 240  | 20,0 | 33,0 | 120 | 4 | 33,500 | 1  |
| 293136   | 120 - 300 | 25,0 | 38,0 | 142 | 4 | 49,000 | 1  |
| 293138   | 185 - 400 | 26,0 | 42,0 | 170 | 6 | 78,900 | 1  |



|  |            | CSS           |               |           |           |           |   |
|--|------------|---------------|---------------|-----------|-----------|-----------|---|
|  |            | AL            |               |           | CU        |           |   |
|  | Terminals  | rm            | re            | sm        | rm        | sm        |   |
|  |            | 16 - 95       | 16.50/95      | 25 - 70   | 16 - 95   | 25 - 70   | 1 |
|  | 50 - 150   | 50 - 150      | 50 - 120      | 35 - 120  | 50 - 120  | 1         |   |
|  | 95 - 240   | 95 - 240      | 95 - 185      | 95 - 240  | 95 - 185  | 2         |   |
|  | 120 - 300  | 120 - 300     | 120 - 240     | 120 - 300 | 120 - 240 | 2         |   |
|  | 155 - 400  | 185 - 240/400 | 185 - 300     | 185 - 300 | 185 - 300 | 3         |   |
|  | Connectors | 16 - 95       | 16.50/95      | 25 - 70   | 16 - 95   | 25 - 70   | 2 |
|  |            | 50 - 150      | 50 - 150      | 50 - 120  | 35 - 120  | 50 - 120  | 2 |
|  |            | 95 - 240      | 95 - 240      | 95 - 185  | 95 - 240  | 95 - 185  | 4 |
|  |            | 120 - 300     | 120 - 300     | 120 - 240 | 120 - 300 | 120 - 240 | 4 |
|  |            | 155 - 400     | 185 - 240/400 | 185 - 300 | 185 - 300 | 185 - 300 | 6 |

Screw lugs and connectors

Screw connectors are a reliable and economic way of connecting identical or different conductor cross-sections. They can be used up to 36kV. All lugs and connectors are fitted with torque-limited shear-off screws.

The actual cross-section of the cable does not need to be known, because each screw lug or connector covers many cable sizes. This results in simplified logistics, a small stock of lugs will cover a wide range of applications.

Also, the tin-plated surface means that they can be used on both copper and aluminium cables.

The principle of multiple tear-off screws

The screws of the Haupa screw lugs and connectors have a hexagon head and socket, which clamps the conductor cross-section with optimal clamping torque and therefore reduces assembly time.

As the screw is tightened it will shear off when correct torque is reached and a good joint is made.

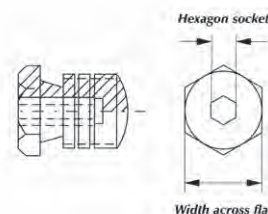
Advantages of the tear-off screw

- simple assembly
- the screw head shears off when clamping torque is right
- no torque key required
- screw can be detached using the hexagon socket

1. The screw is fitted with several tear-off spots, with different shear-off torque, a hexagon head and socket.

2. The tear-off torques are defined in such way that generally the biggest conductor cross-section is clamped with the biggest clamping torque and the smaller conductor cross-section with the smaller clamping torque. This happens by allocating hexagon head and socket.

3. Assembly is much simpler than with the telescopic screw, because each screw needs to be pulled and torn off only once.



## Tubular cable lugs assortment standard

**Content:** 380 crimping terminals, crimping pliers (art. 210805), crimp standard 6 - 50 mm<sup>2</sup>, hexagon crimping, in plastic bulk storage chest 415 x 335 x 90 mm.

- 50 crimping terminal, 6, M6, art. 290934
- 50 crimping terminal, 6, M8, art. 290936
- 50 crimping terminal, 10, M6, art. 290940
- 50 crimping terminal, 10, M8, art. 290942
- 30 crimping terminal, 16, M8, art. 290952
- 40 crimping terminal, 16, M10, art. 290954
- 25 crimping terminal, 25, M8, art. 290960
- 25 crimping terminal, 25, M10, art. 290962
- 20 crimping terminal, 35, M8, art. 290968
- 20 crimping terminal, 35, M10, art. 290970
- 20 crimping terminal, 50, M8, art. 290978



| Art. no. | Content | type     | kg    | PU |
|----------|---------|----------|-------|----|
| 290380   | 380     | standard | 6,000 | 1  |

## Tubular cable lugs assortment DIN 46235

**Content:** 380 crimping terminals crimping pliers (art. 210805K), crimp DIN 6 - 50 mm<sup>2</sup>, hexagon crimping, in plastic bulk storage chest 415 x 335 x 90 mm.

- 50 Crimping terminal DIN 46235, 6, M6, art. 290404
- 50 Crimping terminal DIN 46235, 6, M8, art. 290406
- 50 Crimping terminal DIN 46235, 10, M6, art. 290410
- 50 Crimping terminal DIN 46235, 10, M8, art. 290412
- 30 Crimping terminal DIN 46235, 16, M8, art. 290418
- 40 Crimping terminal DIN 46235, 16, M10, art. 290420
- 25 Crimping terminal DIN 46235, 25, M8, art. 290426
- 25 Crimping terminal DIN 46235, 25, M10, art. 290428
- 20 Crimping terminal DIN 46235, 35, M8, art. 290434
- 20 Crimping terminal DIN 46235, 35, M10, art. 290436
- 20 Crimping terminal DIN 46235, 50, M8, art. 290440



| Art. no. | Content | type | kg    | PU |
|----------|---------|------|-------|----|
| 290382   | 380     | DIN  | 6,600 | 1  |



## SysCon cable lugs DIN & 210805 K SysCon

**Content:** 380 cable lugs DIN 46235, tinned

- 1 220370 ABS plastic box „SysCon S”
- 2 220376 Foam „SysCon” 400 x 300 x 15 mm
- 1 500270 Foam for sets 160 x 400 mm
- 1 210805 K Crimping pliers hexagonal crimping 6 - 50 mm<sup>2</sup>

|    |        |                |    |     |
|----|--------|----------------|----|-----|
| 50 | 290404 | Cable lugs DIN | 6  | M6  |
| 50 | 290406 | Cable lugs DIN | 6  | M8  |
| 50 | 290410 | Cable lugs DIN | 10 | M6  |
| 50 | 290412 | Cable lugs DIN | 10 | M8  |
| 30 | 290418 | Cable lugs DIN | 16 | M8  |
| 40 | 290420 | Cable lugs DIN | 16 | M10 |
| 25 | 290426 | Cable lugs DIN | 25 | M8  |
| 25 | 290428 | Cable lugs DIN | 25 | M10 |
| 20 | 290434 | Cable lugs DIN | 35 | M8  |
| 20 | 290436 | Cable lugs DIN | 35 | M10 |
| 20 | 290440 | Cable lugs DIN | 50 | M8  |

## SysCon cable lugs standard & 210805 SysCon

**Content:** 380 cable lugse standard, tinned

- 1 220370 ABS plastic box „SysCon S”
- 2 220376 Foam „SysCon” 400 x 300 x 15 mm
- 1 500270 Foam for sets 160 x 400 mm
- 1 210805 Crimping plier hexagonal crimping 6 - 50 mm<sup>2</sup>

|    |        |                     |    |     |
|----|--------|---------------------|----|-----|
| 50 | 290934 | Cable lugs standard | 6  | M6  |
| 50 | 290936 | Cable lugs standard | 6  | M8  |
| 50 | 290940 | Cable lugs standard | 10 | M6  |
| 50 | 290942 | Cable lugs standard | 10 | M8  |
| 30 | 290952 | Cable lugs standard | 16 | M8  |
| 40 | 290954 | Cable lugs standard | 16 | M10 |
| 25 | 290960 | Cable lugs standard | 25 | M8  |
| 25 | 290962 | Cable lugs standard | 25 | M10 |
| 20 | 290968 | Cable lugs standard | 35 | M8  |
| 20 | 290970 | Cable lugs standard | 35 | M10 |
| 20 | 290978 | Cable lugs standard | 50 | M8  |



| Art. no. | Content | type | kg    | PU |
|----------|---------|------|-------|----|
| 220385   | 380     | DIN  | 4,300 | 1  |

| Art. no. | Content | type     | kg    | PU |
|----------|---------|----------|-------|----|
| 220386   | 380     | standard | 4,300 | 1  |

## SysCon cable lugs DIN 46235 SysCon

**Content:** 389 cable lugs DIN, tinned

|     |        |                                 |     |     |
|-----|--------|---------------------------------|-----|-----|
| 1   | 220370 | ABS plastic box „SysCon S”      |     |     |
| 2   | 220376 | Foam „SysCon” 400 x 300 x 15 mm |     |     |
| 100 | 290404 | Cable lugs DIN                  | 6   | M6  |
| 100 | 290412 | Cable lugs DIN                  | 10  | M8  |
| 50  | 290418 | Cable lugs DIN                  | 16  | M8  |
| 50  | 290426 | Cable lugs DIN                  | 25  | M8  |
| 25  | 290434 | Cable lugs DIN                  | 35  | M8  |
| 18  | 290442 | Cable lugs DIN                  | 50  | M10 |
| 12  | 290450 | Cable lugs DIN                  | 70  | M10 |
| 10  | 290458 | Cable lugs DIN                  | 95  | M12 |
| 12  | 290464 | Cable lugs DIN                  | 120 | M12 |
| 4   | 290472 | Cable lugs DIN                  | 150 | M12 |
| 4   | 290480 | Cable lugs DIN                  | 185 | M12 |
| 4   | 290486 | Cable lugs DIN                  | 240 | M12 |

## SysCon cable lugs standard SysCon

**Content:** 389 cable lugs standard

|     |        |                                 |     |     |
|-----|--------|---------------------------------|-----|-----|
| 1   | 220370 | ABS plastic box „SysCon S”      |     |     |
| 2   | 220376 | Foam „SysCon” 400 x 300 x 15 mm |     |     |
| 100 | 290934 | Cable lugs standard             | 6   | M6  |
| 100 | 290942 | Cable lugs standard             | 10  | M8  |
| 50  | 290952 | Cable lugs standard             | 16  | M8  |
| 50  | 290960 | Cable lugs standard             | 25  | M8  |
| 25  | 290968 | Cable lugs standard             | 35  | M8  |
| 18  | 290980 | Cable lugs standard             | 50  | M10 |
| 12  | 290988 | Cable lugs standard             | 70  | M10 |
| 10  | 290998 | Cable lugs standard             | 95  | M12 |
| 12  | 290008 | Cable lugs standard             | 120 | M12 |
| 4   | 290016 | Cable lugs standard             | 150 | M12 |
| 4   | 290022 | Cable lugs standard             | 185 | M12 |
| 4   | 290028 | Cable lugs standard             | 240 | M12 |



| Art. no. | Content | type | kg    | PU |
|----------|---------|------|-------|----|
| 220387   | 389     | DIN  | 4,300 | 1  |

| Art. no. | Content | type     | kg    | PU |
|----------|---------|----------|-------|----|
| 220388   | 389     | standard | 4,300 | 1  |







Cable ties, accessories



## INFO

## Cable ties

HAUPA cable ties are characterised by their tightness, high tensile strength of the loop and extreme flexibility of the cord.

As a result of these characteristics, HAUPA cable ties are able to cope with even the most extreme installation practices, which conventional cable ties would not be able to cope with. All HAUPA cable ties conform to WEEE/RoHS guidelines.

## The cable ties product range includes:

- **cable ties**  
colour: transparent/black
- **cable ties**  
colour: black (UV-resistant)
- **releasable ties**  
colour: black
- **double-locking cable ties**  
colour: black
- **cable ties with fixing eye**  
colour: transparent
- **cable ties with label**  
colour: transparent
- **hook and loop ties**  
colour: black, green

## Accessories:

- adhesive base, screw base, plug mount base

## Ideal storage conditions for cable ties made from nylon

Cable ties are made from high-quality nylon. This technical plastic is usually processed through injection moulding, but it can also be extruded. Nylon is a hygroscopic plastic that absorbs water and can release it. In order to process the ties optimally, it is important that the material is in a balanced state with a water content of approx. 2.5%. The original HAUPA cable tie packaging provides constant water content in the material.

The cable ties should be stored as follows:



Storage in a closed plastic bag made from polyethylene



No direct sunlight



Storage without direct exposure to heat (radiator etc.)



Ideal storage temperature (standard Central European climatic conditions) up to 23° with 50% humidity 23°C

All HAUPA cable ties are made from plastic and are recyclable. The internal toothing of the ties gives you the necessary strength to tie the material. The cable ties can be simply used by hand or with a HAUPA cable tie tool. The slightly bent end allows the tie to be inserted into the head easily.

**Use:** For bundling and fastening cables, wires and tubes. NH (non-halogen) – RoHS conform



## Cable ties

material: nylon, colour transparent, quick and simple to fix by hand or with tensioning tools, extremely resistant to sea water, oil, grease, etc., manufactured in accordance with UL and MIL specification requirements, - 40° C to 85° C



| Art. no. | TL   | width | 15  | 8   | kg/100 | PU  | PE  |        |
|----------|------|-------|-----|-----|--------|-----|-----|--------|
| 262500/1 | 75   | 2,4   | 15  | 8   | 0,040  | 100 | 100 | 30.000 |
| 262500   | 96   | 2,5   | 23  | 8   | 0,028  | 100 | 100 | 30.000 |
| 262502   | 100  | 2,5   | 25  | 8   | 0,030  | 100 | 100 | 25.000 |
| 262504   | 142  | 2,5   | 35  | 8   | 0,044  | 100 | 100 | 25.000 |
| 262506   | 203  | 2,5   | 55  | 8   | 0,065  | 100 | 100 | 13.000 |
| 262508   | 142  | 3,2   | 35  | 18  | 0,083  | 100 | 100 | 10.000 |
| 262509/1 | 203  | 3,6   | 53  | 18  | 0,100  | 100 | 100 | 10.000 |
| 262510/1 | 250  | 3,6   | 68  | 18  | 0,150  | 100 | 100 | 6.000  |
| 262510   | 292  | 3,6   | 85  | 18  | 0,155  | 100 | 100 | 7.000  |
| 262512/1 | 120  | 4,8   | 52  | 22  | 0,080  | 100 | 100 | 10.000 |
| 262515   | 157  | 4,8   | 40  | 22  | 0,040  | 100 | 100 | 6.000  |
| 262512   | 190  | 4,8   | 52  | 22  | 0,143  | 100 | 100 | 8.000  |
| 262516   | 203  | 4,8   | 55  | 22  | 0,145  | 100 | 100 | 7.000  |
| 262518   | 250  | 4,8   | 74  | 22  | 0,203  | 100 | 100 | 6.000  |
| 262520   | 310  | 4,8   | 89  | 22  | 0,220  | 100 | 100 | 5.000  |
| 262522   | 368  | 4,8   | 102 | 22  | 0,274  | 100 | 100 | 4.000  |
| 262523   | 430  | 4,8   | 125 | 22  | 0,290  | 100 | 100 | 4.000  |
| 262528   | 203  | 7,6   | 55  | 55  | 0,300  | 100 | 100 | 2.000  |
| 262530   | 280  | 7,6   | 78  | 55  | 0,400  | 100 | 100 | 2.000  |
| 262532   | 380  | 7,6   | 110 | 55  | 0,540  | 100 | 100 | 2.500  |
| 262536   | 450  | 8,8   | 133 | 80  | 0,760  | 50  | 100 | 500    |
| 262537   | 523  | 8,8   | 150 | 80  | 0,105  | 50  | 100 | 500    |
| 262538   | 610  | 8,8   | 185 | 80  | 1,270  | 50  | 100 | 500    |
| 262535   | 774  | 8,8   | 220 | 80  | 1,050  | 50  | 100 | 600    |
| 262540   | 812  | 8,8   | 246 | 80  | 1,600  | 20  | 100 | 500    |
| 262542   | 914  | 8,8   | 270 | 80  | 0,860  | 50  | 100 | 500    |
| 262543   | 1219 | 9,0   | 374 | 80  | 1,100  | 20  | 100 | 500    |
| 262545   | 246  | 12,4  | 64  | 114 | 0,860  | 50  | 100 | 500    |
| 262546   | 550  | 12,7  | 166 | 114 | 1,770  | 50  | 100 | 500    |
| 262547   | 1030 | 12,7  | 312 | 114 | 3,200  | 20  | 100 | 500    |



## Cable ties

material: nylon - colour black, all other data and properties like No. 262500 - 46, weather- and UV-resistant



| Art. no. | TL   | width | mm  | kg  | kg/100 | PU  | PE  |        |
|----------|------|-------|-----|-----|--------|-----|-----|--------|
| 262600/1 | 75   | 2,4   | 15  | 8   | 0,035  | 100 | 100 | 30.000 |
| 262600   | 96   | 2,5   | 23  | 8   | 0,040  | 100 | 100 | 30.000 |
| 262602   | 100  | 2,5   | 25  | 8   | 0,040  | 100 | 100 | 25.000 |
| 262604   | 142  | 2,5   | 35  | 8   | 0,040  | 100 | 100 | 20.000 |
| 262606   | 203  | 2,5   | 55  | 8   | 0,080  | 100 | 100 | 10.000 |
| 262608   | 142  | 3,2   | 35  | 18  | 0,080  | 100 | 100 | 10.000 |
| 262609/1 | 203  | 3,6   | 53  | 18  | 0,100  | 100 | 100 | 10.000 |
| 262610/1 | 250  | 3,6   | 68  | 18  | 0,150  | 100 | 100 | 6.000  |
| 262610   | 292  | 3,6   | 85  | 18  | 0,160  | 100 | 100 | 7.000  |
| 262616   | 203  | 4,6   | 52  | 22  | 0,150  | 100 | 100 | 6.000  |
| 262612/1 | 120  | 4,8   | 27  | 22  | 0,080  | 100 | 100 | 10.000 |
| 262615   | 157  | 4,8   | 40  | 22  | 0,100  | 100 | 100 | 6.000  |
| 262618   | 250  | 4,8   | 74  | 22  | 0,200  | 100 | 100 | 6.000  |
| 262620   | 310  | 4,8   | 89  | 22  | 0,240  | 100 | 100 | 5.000  |
| 262622   | 368  | 4,8   | 102 | 22  | 0,270  | 100 | 100 | 4.000  |
| 262623   | 430  | 4,8   | 125 | 22  | 0,290  | 100 | 100 | 4.000  |
| 262628   | 203  | 7,6   | 55  | 55  | 0,300  | 100 | 100 | 2.000  |
| 262630   | 280  | 7,6   | 78  | 55  | 0,400  | 100 | 100 | 2.000  |
| 262632   | 380  | 7,6   | 110 | 55  | 0,540  | 100 | 100 | 2.500  |
| 262636   | 450  | 8,8   | 133 | 80  | 0,880  | 50  | 100 | 500    |
| 262637   | 523  | 8,8   | 150 | 80  | 1,050  | 50  | 100 | 500    |
| 262638   | 610  | 8,8   | 185 | 80  | 1,280  | 50  | 100 | 500    |
| 262635   | 774  | 8,8   | 220 | 80  | 1,050  | 50  | 100 | 600    |
| 262640   | 812  | 8,8   | 246 | 80  | 1,600  | 20  | 100 | 500    |
| 262642   | 914  | 8,8   | 270 | 80  | 0,880  | 50  | 100 | 500    |
| 262643   | 1219 | 9,0   | 374 | 80  | 1,100  | 20  | 100 | 500    |
| 262645   | 246  | 12,4  | 64  | 114 | 0,860  | 50  | 100 | 500    |
| 262646   | 550  | 12,7  | 166 | 114 | 1,600  | 50  | 100 | 500    |
| 262647   | 1030 | 12,7  | 312 | 114 | 0,040  | 20  | 100 | 500    |

## Cable ties "UVplus"

Long-term weather resistant, for industrial uses, black, UV resistant, material - polyamide, **7 year guarantee**



| Art. no. | TL  | width | mm  | kg | kg/100 | PU  | PE  |
|----------|-----|-------|-----|----|--------|-----|-----|
| 262950   | 100 | 2,5   | 25  | 8  | 0,030  | 100 | 100 |
| 262952   | 202 | 2,5   | 50  | 8  | 0,070  | 100 | 100 |
| 262954   | 150 | 3,3   | 38  | 18 | 0,070  | 100 | 100 |
| 262956   | 201 | 3,6   | 57  | 18 | 0,150  | 100 | 100 |
| 262958   | 290 | 3,6   | 82  | 18 | 0,160  | 100 | 100 |
| 262960   | 199 | 4,8   | 56  | 22 | 0,150  | 100 | 100 |
| 262962   | 250 | 4,8   | 72  | 22 | 0,200  | 100 | 100 |
| 262964   | 290 | 4,8   | 83  | 22 | 0,220  | 100 | 100 |
| 262966   | 371 | 4,8   | 129 | 22 | 0,270  | 100 | 100 |
| 262968   | 290 | 7,6   | 82  | 54 | 0,410  | 100 | 100 |
| 262970   | 370 | 7,6   | 108 | 54 | 0,550  | 100 | 100 |
| 262972   | 542 | 7,6   | 162 | 54 | 0,750  | 100 | 100 |
| 262974   | 523 | 8,8   | 156 | 79 | 1,000  | 50  | 100 |
| 262976   | 709 | 8,8   | 213 | 79 | 1,000  | 50  | 100 |
| 262978   | 774 | 8,8   | 233 | 79 | 1,000  | 50  | 100 |
| 262980   | 920 | 8,8   | 279 | 79 | 1,000  | 50  | 100 |

## Cable ties

material: polyamide 6,6 - colour transparent, resistant to mildew and rotting, extremely resistant to sea water, oil, grease, hydrocarbons and hydraulic fluids, operating temperature: -40° to +85° C, these binders meet the requirements of the military specification Mil.-Spec. 23 190C (WEP) MS-3367



| Art. no. | TL  | width | mm  | kg  | kg/100 | PU  | PE  |
|----------|-----|-------|-----|-----|--------|-----|-----|
| 262100   | 100 | 2,5   | 23  | 8   | 0,031  | 100 | 100 |
| 262102   | 142 | 3,2   | 35  | 18  | 0,074  | 100 | 100 |
| 262101   | 203 | 3,6   | 55  | 18  | 0,131  | 100 | 100 |
| 262106   | 203 | 4,6   | 55  | 22  | 0,150  | 100 | 100 |
| 262108   | 310 | 4,8   | 89  | 22  | 0,228  | 100 | 100 |
| 262110   | 368 | 4,8   | 102 | 22  | 0,227  | 100 | 100 |
| 262114   | 380 | 7,6   | 110 | 55  | 0,560  | 50  | 100 |
| 262116   | 550 | 12,7  | 166 | 114 | 1,600  | 50  | 100 |

## Cable ties

material: polyamide 6,6 - colour black, all other data and properties like No. 26 21 00 - 16, resistant to sea water, oil, grease, etc., not UV-resistant



| Art. no. | TL  | width | mm  | kg  | kg/100 | PU  | PE  |
|----------|-----|-------|-----|-----|--------|-----|-----|
| 262120   | 100 | 2,5   | 25  | 8   | 0,003  | 100 | 100 |
| 262122   | 142 | 3,2   | 35  | 18  | 0,065  | 100 | 100 |
| 262124   | 203 | 3,6   | 55  | 18  | 0,116  | 100 | 100 |
| 262126   | 203 | 4,6   | 55  | 22  | 0,145  | 100 | 100 |
| 262128   | 302 | 4,8   | 84  | 22  | 0,248  | 100 | 100 |
| 262130   | 368 | 4,8   | 102 | 22  | 0,269  | 100 | 100 |
| 262132   | 280 | 7,6   | 78  | 55  | 0,397  | 100 | 100 |
| 262134   | 380 | 7,6   | 110 | 55  | 0,580  | 50  | 100 |
| 262136   | 550 | 12,7  | 166 | 114 | 1,600  | 50  | 100 |

## Cable ties

material: nylon - colour transparent, all other data and properties like No. 262500 - 46, big packing unit 1000 pcs.



| Art. no. | TL  | width | mm | kg | kg/100 | PU   | PE  |
|----------|-----|-------|----|----|--------|------|-----|
| 262501   | 96  | 2,5   | 23 | 8  | 0,028  | 1000 | 100 |
| 262503   | 100 | 2,5   | 25 | 8  | 0,026  | 1000 | 100 |
| 262505   | 142 | 2,5   | 35 | 8  | 0,0310 | 1000 | 100 |
| 262507   | 203 | 2,5   | 55 | 8  | 0,065  | 1000 | 100 |
| 262509   | 142 | 3,2   | 35 | 18 | 0,070  | 1000 | 100 |
| 262511   | 292 | 3,6   | 85 | 18 | 0,158  | 1000 | 100 |
| 262513   | 190 | 4,8   | 52 | 22 | 0,140  | 1000 | 100 |
| 262517   | 203 | 4,6   | 55 | 22 | 0,140  | 1000 | 100 |



## Releasable cable ties for frequent opening and closing

for temporary wiring and sub-assembly, material: polyamide 6,6 - colour black, operation temperature: -40° to +85° C, UL E 341152



| Art. no. | TL  | width | Ø  | kg | kg/100 | PU  | PE  |
|----------|-----|-------|----|----|--------|-----|-----|
| 262140   | 150 | 7,6   | 35 | 22 | 0,201  | 100 | 100 |
| 262142   | 200 | 7,6   | 50 | 22 | 0,249  | 100 | 100 |
| 262144   | 300 | 7,6   | 80 | 22 | 0,349  | 100 | 100 |

## Double-locking-cable ties

material: nylon - colour black, (262710 Nylon 12).

### Benefits:

- Flat head geometry
- Exterior
- Smooth side is up against the insulation - no dents or damages
- Wide contact surface protects the cable loom from damages

### Application:

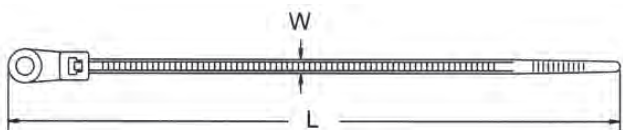
- Bundling of tubes in narrow shafts
- Cable bundling in hollow wall spaces
- Pull-out forces are well distributed thanks to the extra-wide tie



| Art. no. | TL  | width | Ø   | kg | kg/100 | PU  | PE  |
|----------|-----|-------|-----|----|--------|-----|-----|
| 262700   | 180 | 9,0   | 45  | 55 | 0,319  | 100 | 100 |
| 262702   | 300 | 9,0   | 88  | 55 | 0,512  | 100 | 100 |
| 262704   | 360 | 9,0   | 100 | 55 | 0,629  | 100 | 100 |
| 262710   | 300 | 9,0   | 88  | 55 | 0,463  | 100 | 100 |

## Cable ties with fixing eye

material: nylon, colour transparent, quick and simple to fix by hand or with tensioning tools, extremely resistant to sea water, oil, grease, etc., manufactured in accordance with UL and MIL specification requirements, - 40° C bis 85° C



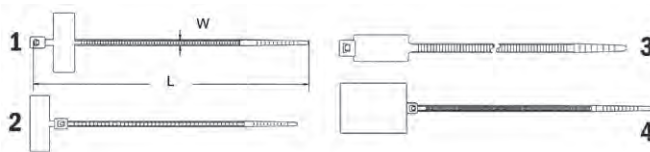
| Art. no. | TL  | width | Ø   | kg  | kg/100 | PU    | PE  |
|----------|-----|-------|-----|-----|--------|-------|-----|
| 262820   | 100 | 2,5   | 3,0 | 25  | 8      | 0,044 | 100 |
| 262822   | 170 | 3,7   | 4,8 | 40  | 18     | 0,100 | 100 |
| 262824   | 170 | 3,7   | 4,0 | 40  | 18     | 0,105 | 100 |
| 262826   | 205 | 4,2   | 4,6 | 60  | 22     | 0,133 | 100 |
| 262828   | 300 | 4,8   | 4,8 | 85  | 22     | 0,224 | 100 |
| 262830   | 300 | 7,8   | 6,0 | 80  | 55     | 0,443 | 100 |
| 262832   | 370 | 4,8   | 4,9 | 102 | 22     | 0,276 | 100 |
| 262834   | 398 | 7,9   | 6,1 | 122 | 55     | 0,595 | 100 |

## Cable ties with marking space

These cable ties are suitable for simple labelling and simultaneous bundling of cable loops. This saves one work step. Material: nylon, colour natural, can be fastened quickly and easily using a tool or by hand. Extremely resistant to sea water, oil, fats etc, manufactured according to UL gema tested nylon.

Technical data: material polyamide 6.6 (N66), operating temperature -40 to +85 C.

Group features: HF (non-halogen), RoHS-conform



| Art. no. | TL | width | label | Ø       | kg | kg/100 | PU    | PE  |
|----------|----|-------|-------|---------|----|--------|-------|-----|
| 262840   | 1  | 100   | 2,5   | 25 x 8  | 25 | 8      | 0,049 | 100 |
| 262842   | 4  | 130   | 2,5   | 28 x 20 | 25 | 8      | 0,093 | 100 |
| 262844   | 2  | 110   | 2,5   | 25 x 8  | 25 | 8      | 0,058 | 100 |
| 262846   | 3  | 200   | 4,6   | 28 x 13 | 50 | 22     | 0,147 | 100 |
| 262848   | 1  | 200   | 2,5   | 30 x 15 | 50 | 8      | 0,128 | 100 |
| 262850   | 3  | 270   | 4,6   | 28 x 13 | 75 | 22     | 0,198 | 100 |

## Self adhesive sockets

for cable ties and a quick and reliable fastening of line or cable bundles and other objects



| Art. no. | TL |         | width | kg/100 | PU    | PE  |
|----------|----|---------|-------|--------|-------|-----|
| 262160   | 19 | natural | 3,6   | 19     | 0,078 | 100 |
| 262161   | 19 | black   | 3,6   | 19     | 0,075 | 100 |
| 262162   | 28 | natural | 4,8   | 28     | 0,178 | 100 |
| 262163   | 28 | black   | 4,8   | 28     | 0,190 | 100 |

## Screw type sockets

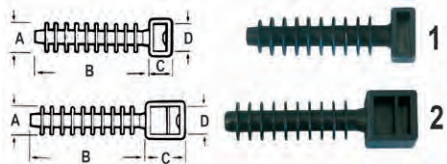
for cable ties and a quick and reliable fastening of large diam. Cable bundles and other objects, not UV-resistant



| Art. no. | TL  |         | width | kg/100 | PU    | PE  |
|----------|-----|---------|-------|--------|-------|-----|
| 262164   | 1,5 | natural | 7,8   | 1      | 0,121 | 100 |
| 262165   | 1,5 | black   | 7,8   | 1      | 0,136 | 100 |

## Dowel Mounting sockets/Christmas trees

for cable ties up to a width of 9 mm, 2 types with different wall-distances, available wall-fixing avoid the friction of the cable on the wall, black colour



| Art. no. | TL | width | C  | D | PU  | PE  |
|----------|----|-------|----|---|-----|-----|
| 262170   | 37 | 9     | 10 | 1 | 6,5 | 9,2 |
| 262172   | 37 | 9     | 10 | 2 | 6,5 | 9,2 |

## Hook-and-loop cable ties

made from extruded polyamide-velour laminate, thickness approx. 1.4 mm, selfadhesive back to back, suitable for approx. 200 uses. Colours: black and green Hook-and-loop cable ties with loop, cut to binder measurements for all standard electrical installations



### pieces

| Art. no. | TL  | width | kg/100 | PU    | PE |
|----------|-----|-------|--------|-------|----|
| 262750   | 125 | black | 12     | 0,220 | 20 |
| 262752   | 135 | black | 12     | 0,240 | 20 |
| 262754   | 180 | black | 12     | 0,300 | 20 |
| 262756   | 210 | black | 16     | 0,420 | 20 |
| 262758   | 310 | black | 16     | 0,560 | 20 |
| 262760   | 125 | green | 12     | 0,220 | 20 |
| 262762   | 135 | green | 12     | 0,230 | 20 |
| 262764   | 180 | green | 12     | 0,300 | 20 |
| 262766   | 210 | green | 16     | 0,430 | 20 |
| 262768   | 310 | green | 16     | 0,610 | 20 |

## Hook-and-loop cable ties



### coil

| Art. no. | TL    | width | kg/100 | PU | PE |
|----------|-------|-------|--------|----|----|
| 262782   | 10000 | 20    | 10,000 | 1  | 1  |



## Spiral bindings

### Polyethene spiral binding

natural, non-flame resistant



| Art. no. | TL | Ø   | >Ø | kg    | PU |
|----------|----|-----|----|-------|----|
| 262060   | 30 | 1,5 | 10 | 0,141 | 1  |
| 262062   | 30 | 4   | 25 | 0,390 | 1  |
| 262064   | 30 | 9   | 32 | 0,780 | 1  |

### Polyethene spiral binding

white, nearly flame resistant



| Art. no. | TL | Ø   | >Ø | kg    | PU |
|----------|----|-----|----|-------|----|
| 262066   | 30 | 1,5 | 10 | 0,156 | 1  |
| 262068   | 30 | 4   | 25 | 0,497 | 1  |
| 262069   | 30 | 9   | 32 | 0,964 | 1  |

### Polyethene spiral binding

white, nearly flame resistant



| Art. no. | TL | Ø  | >Ø | kg    | PU |
|----------|----|----|----|-------|----|
| 262030   | 2  | 8  | 18 | 0,156 | 1  |
| 262031   | 2  | 15 | 31 | 0,156 | 1  |
| 262032   | 2  | 20 | 43 | 0,156 | 1  |
| 262033   | 2  | 25 | 54 | 0,156 | 1  |

### Polyethene spiral binding

white, nearly flame resistant



| Art. no. | TL | Ø  | >Ø | kg    | PU |
|----------|----|----|----|-------|----|
| 262034   | 2  | 8  | 18 | 0,156 | 1  |
| 262035   | 2  | 15 | 31 | 0,156 | 1  |
| 262036   | 2  | 20 | 43 | 0,156 | 1  |
| 262037   | 2  | 25 | 54 | 0,156 | 1  |



## Cable ties, accessories

### Tensioning tools for cable ties

Prevents overstretching and constriction by continuously adjustable stress limitation. The built-in knife will cut only, when the requested tension has been reached



| Art. no. | width | material | kg    | PU |
|----------|-------|----------|-------|----|
| 262151   | 2,5-5 | plastic  | 0,240 | 1  |

### Tensioning tools for cable ties

Prevents overstretching and constriction by continuously adjustable stress limitation. The built-in knife will cut only, when the requested tension has been reached



| Art. no. | width | material | kg    | PU |
|----------|-------|----------|-------|----|
| 262152   | 2,5-5 | metal    | 0,334 | 1  |

### Tensioning tools for cable ties

Prevents overstretching and constriction by continuously adjustable stress limitation. The built-in knife will cut only, when the requested tension has been reached



| Art. no. | width  | material | kg    | PU |
|----------|--------|----------|-------|----|
| 262154   | 2,5-13 | metal    | 0,365 | 1  |

### Tensioning tools for cable ties

Prevents overstretching and constriction by continuously adjustable stress limitation. The built-in knife will cut only, when the requested tension has been reached



| Art. no. | width  | material | kg    | PU |
|----------|--------|----------|-------|----|
| 262158   | 2,5-10 | metal    | 0,303 | 1  |



Steel cable ties, accessories



## Steel cable ties, SS 316 (V4A) with ball closure

made from stainless steel 316 (DIN 1.4401), corrosion and radiation resistant, non-magnetic, extremely resistant to high temperatures (steel -80 °C to +538 °C) and aggressive chemicals, steel thickness 0.3 mm.

For use in machinery, vehicles, signalling, shipping and mining, in the food and chemical industries, in power plants, underground systems, on drilling platforms, wind-power generation plants and telecommunications, radio technology, stage construction, trade fair construction.



| Art. no.    | TL   | width | mm  | kg  | kg/100 | PU  | PE  |
|-------------|------|-------|-----|-----|--------|-----|-----|
| 262940/125  | 125  | 4,5   | 22  | 45  | 0,400  | 100 | 100 |
| 262940/152  | 152  | 4,5   | 25  | 45  | 0,230  | 100 | 100 |
| 262940/200  | 200  | 4,5   | 50  | 45  | 0,280  | 100 | 100 |
| 262940/250  | 250  | 4,5   | 65  | 45  | 0,330  | 100 | 100 |
| 262940/300  | 300  | 4,5   | 75  | 45  | 0,420  | 100 | 100 |
| 262940/360  | 360  | 4,5   | 102 | 45  | 0,450  | 100 | 100 |
| 262940/520  | 520  | 4,5   | 152 | 45  | 0,660  | 25  | 100 |
| 262950/152  | 152  | 8,0   | 25  | 113 | 0,480  | 100 | 100 |
| 262950/200  | 200  | 8,0   | 50  | 113 | 0,680  | 100 | 100 |
| 262950/300  | 300  | 8,0   | 75  | 113 | 0,750  | 100 | 100 |
| 262950/360  | 360  | 8,0   | 102 | 113 | 0,920  | 100 | 100 |
| 262950/520  | 520  | 8,0   | 152 | 113 | 1,280  | 25  | 100 |
| 262950/680  | 680  | 8,0   | 203 | 113 | 1,550  | 25  | 100 |
| 262950/840  | 840  | 8,0   | 254 | 113 | 1,840  | 25  | 100 |
| 262950/1050 | 1050 | 8,0   | 318 | 113 | 2,560  | 25  | 100 |
| 262960/290  | 290  | 12,0  | 80  | 272 | 1,500  | 100 | 100 |
| 262960/360  | 360  | 12,0  | 102 | 272 | 1,700  | 100 | 100 |
| 262960/520  | 520  | 12,0  | 152 | 272 | 2,800  | 25  | 100 |
| 262960/680  | 680  | 12,0  | 203 | 272 | 3,300  | 25  | 100 |
| 262960/840  | 840  | 12,0  | 254 | 272 | 4,500  | 25  | 100 |
| 262960/1000 | 1000 | 12,0  | 302 | 272 | 5,000  | 25  | 100 |
| 262960/1200 | 1200 | 12,0  | 351 | 272 | 5,500  | 25  | 100 |

## Steel cable ties, SS 316 (V4A) with ratchet function

made from stainless steel 316 (DIN 1.4401), corrosion and radiation resistant, non-magnetic, extremely resistant to high temperatures (steel -80 °C to +538 °C) and aggressive chemicals, steel thickness 0.3 mm; installation without additional tools.

For use in machinery, vehicles, signalling, shipping and mining, in the food and chemical industries, in power plants, underground systems, on drilling platforms, wind-power generation plants and telecommunications.



| Art. no.    | TL   | width | mm  | kg    | kg/100 | PU  | PE |
|-------------|------|-------|-----|-------|--------|-----|----|
| 262970/1100 | 1100 | 10,0  | 330 | 5,500 | 10     | 100 |    |
| 262970/1315 | 1315 | 10,0  | 380 | 6,000 | 10     | 100 |    |

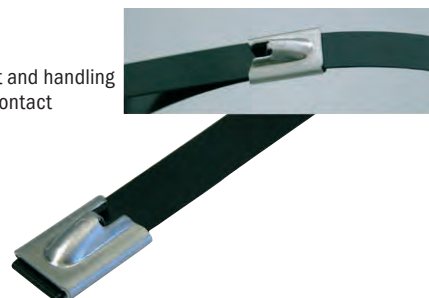
## Steel cable ties, SS 316 (V4A) with ball closure

with cable protection sleeve made of epoxy resin polyester, free from halogen, black made from stainless steel 316 (DIN 1.4401), corrosion and radiation resistant, non-magnetic, extremely resistant to high temperatures (steel -80 °C to +538 °C) and aggressive chemicals, steel thickness 0.3 mm.

For use in machinery, vehicles, signalling, shipping and mining, in the food and chemical industries, in power plants, underground systems, on drilling platforms, wind-power generation plants and telecommunications, radio technology, stage construction, trade fair construction.

### Benefits:

- Soft edges
- Easy installation comfort and handling
- Fully coated to prevent contact corrosion
- Gentle fixture



| Art. no.    | TL   | width | mm  | kg  | kg/100 | PU  | PE  |
|-------------|------|-------|-----|-----|--------|-----|-----|
| 262942/125  | 125  | 4,5   | 22  | 45  | 0,190  | 100 | 100 |
| 262942/152  | 152  | 4,5   | 25  | 45  | 0,230  | 100 | 100 |
| 262942/200  | 200  | 4,5   | 50  | 45  | 0,280  | 100 | 100 |
| 262942/250  | 250  | 4,5   | 60  | 45  | 0,330  | 100 | 100 |
| 262942/300  | 300  | 4,5   | 75  | 45  | 0,420  | 100 | 100 |
| 262942/360  | 360  | 4,5   | 102 | 45  | 0,450  | 100 | 100 |
| 262942/520  | 520  | 4,5   | 152 | 45  | 0,660  | 25  | 100 |
| 262952/152  | 152  | 8,0   | 25  | 113 | 0,480  | 100 | 100 |
| 262952/200  | 200  | 8,0   | 50  | 113 | 0,680  | 100 | 100 |
| 262952/300  | 300  | 8,0   | 75  | 113 | 0,750  | 100 | 100 |
| 262952/360  | 360  | 8,0   | 102 | 113 | 0,920  | 100 | 100 |
| 262952/520  | 520  | 8,0   | 152 | 113 | 1,280  | 25  | 100 |
| 262952/680  | 680  | 8,0   | 203 | 113 | 1,550  | 25  | 100 |
| 262952/840  | 840  | 8,0   | 254 | 113 | 1,840  | 25  | 100 |
| 262952/1050 | 1050 | 8,0   | 318 | 113 | 2,560  | 25  | 100 |
| 262962/290  | 290  | 12,0  | 80  | 272 | 1,500  | 100 | 100 |
| 262962/360  | 360  | 12,0  | 102 | 272 | 1,700  | 100 | 100 |
| 262962/520  | 520  | 12,0  | 152 | 272 | 2,800  | 25  | 100 |
| 262962/680  | 680  | 12,0  | 203 | 272 | 3,300  | 25  | 100 |
| 262962/840  | 840  | 12,0  | 254 | 272 | 4,500  | 25  | 100 |
| 262962/1000 | 1000 | 12,0  | 302 | 272 | 5,000  | 25  | 100 |
| 262962/1200 | 1200 | 12,0  | 351 | 272 | 5,500  | 25  | 100 |

## Tensioning tools for steel cable ties

Steel cable ties are tensioned by the tool and can be cut off flush. Cutting is implemented manually using a hand lever, the force cannot be pre-set. Only suitable for steel cable ties (coated and not coated).

Processing width: 4.5 - 12.0 mm, max. thickness of cable ties: 0.3 mm

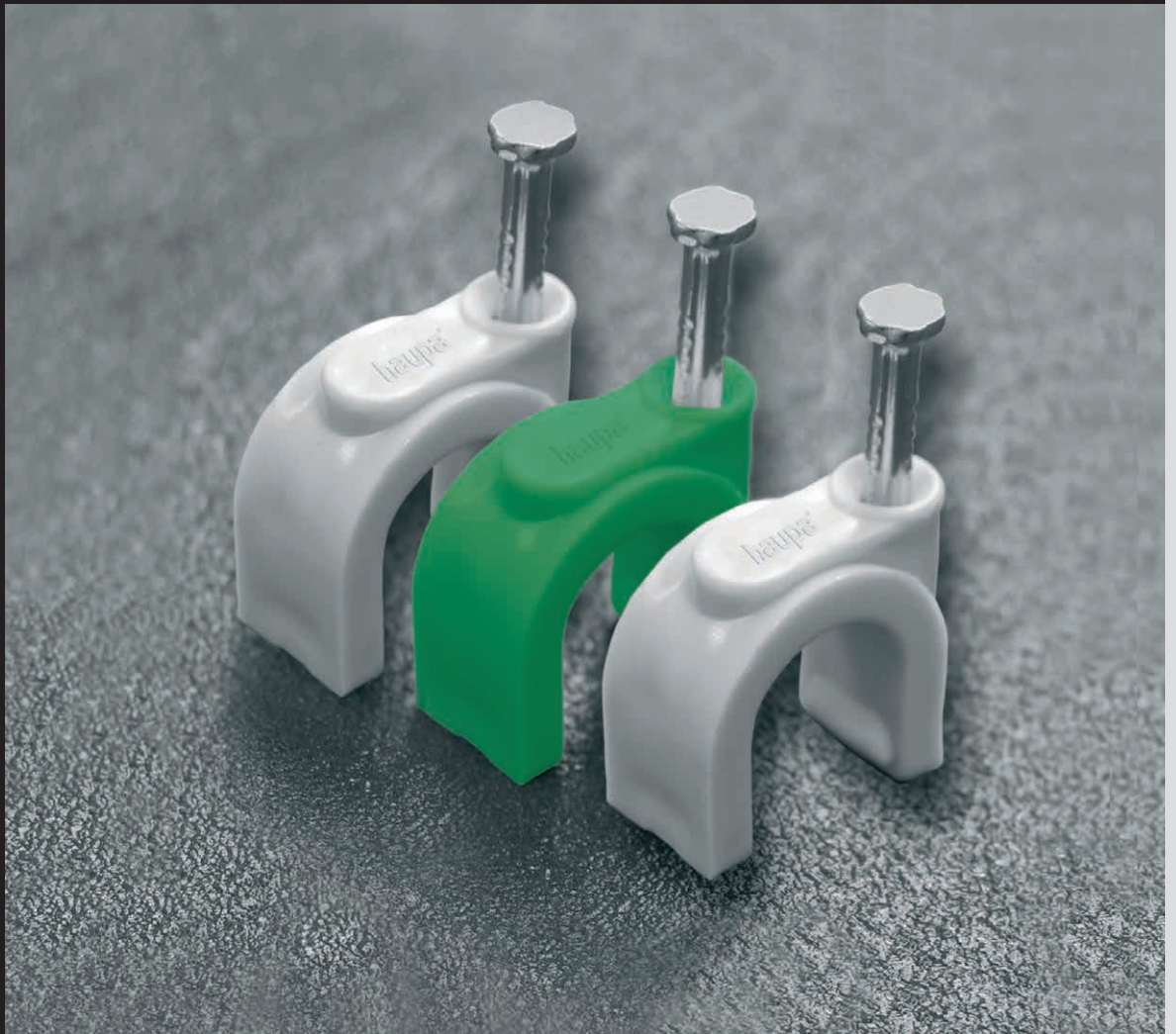


| Art. no. | width      | material | kg    | PU |
|----------|------------|----------|-------|----|
| 262159   | 4.5 - 12.0 | metal    | 0,560 | 1  |





## Nailing clips



# INFO

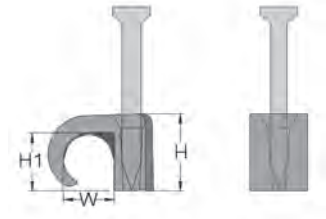
## Nailing clips

Material: hammer-proof polyethylene (PE) halogen-free  
 Temperature resistant: - 40 °C to + 80 °C, and for short periods up to approximately 100 °C



### Nailing clips for round cable

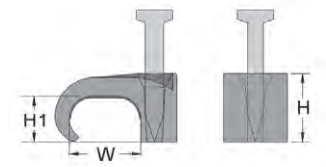
for attaching and fixing electrical cables, optimum claw shape for secure fixing of the cable, can be fixed to the cable, version with inserted galvanised nail, material: hammer-proof polyethylene (PE), halogen-free, temperature resistant: - 40 °C to + 80 °C, and for short periods up to approximately 100 °C.



| Art. no. | colour      | ∅       | H    | H1   | W    | NL | ND   | kg/100 | PU  |
|----------|-------------|---------|------|------|------|----|------|--------|-----|
| 262200   | transparent | 2-3     | 4,3  | 2,8  | 2,8  | 19 | 1,65 | 0,032  | 100 |
| 262202   | transparent | 3-5     | 5,6  | 3,7  | 2,9  | 15 | 2,0  | 0,038  | 100 |
| 262204   | pure white  | 3-5     | 5,6  | 3,7  | 2,9  | 15 | 2,0  | 0,038  | 100 |
| 262206   | black       | 5-7     | 8,0  | 6,0  | 5,3  | 20 | 2,0  | 0,100  | 100 |
| 262208   | transparent | 5-7     | 8,0  | 6,0  | 5,3  | 20 | 2,0  | 0,100  | 100 |
| 262209   | light grey  | 5-7     | 8,0  | 6,0  | 5,3  | 35 | 2,0  | 0,100  | 100 |
| 262210   | pure white  | 5-7     | 8,0  | 6,0  | 5,3  | 20 | 2,0  | 0,102  | 100 |
| 262212   | black       | 7-10    | 9,5  | 7,1  | 6,8  | 25 | 2,0  | 0,093  | 100 |
| 262214   | brown       | 7-10    | 9,5  | 7,1  | 6,8  | 25 | 2,0  | 0,092  | 100 |
| 262215   | grey        | 7-10    | 9,5  | 7,1  | 6,8  | 35 | 2,0  | 0,092  | 100 |
| 262216   | red         | 7-10    | 9,5  | 7,1  | 6,8  | 25 | 2,0  | 0,093  | 100 |
| 262218   | pure white  | 7-10    | 9,5  | 7,1  | 6,8  | 25 | 2,0  | 0,092  | 100 |
| 262219   | light grey  | 8 - 12  | 9,5  | 7,1  | 6,8  | 35 | 2,0  | 0,120  | 100 |
| 262220   | black       | 10-14   | 13,0 | 10,3 | 9,4  | 35 | 2,0  | 0,166  | 100 |
| 262222   | pure white  | 10-14   | 13,0 | 10,3 | 9,4  | 35 | 2,0  | 0,162  | 100 |
| 262223   | light grey  | 10-14   | 13,0 | 10,3 | 9,4  | 44 | 2,0  | 0,162  | 100 |
| 262224   | black       | 14-20   | 17,1 | 13,7 | 13,1 | 40 | 2,5  | 0,136  | 50  |
| 262226   | pure white  | 14-20   | 17,1 | 13,7 | 13,1 | 40 | 2,5  | 0,138  | 50  |
| 262227   | light-grey  | 14-20   | 17,1 | 13,7 | 13,1 | 44 | 2,5  | 0,138  | 100 |
| 262228   | black       | 18-22   | 19,5 | 17,0 | 16,4 | 38 | 3,2  | 0,402  | 50  |
| 262230   | pure white  | 18-22   | 19,5 | 17,0 | 16,4 | 38 | 3,2  | 0,396  | 50  |
| 262231   | light grey  | 18 - 22 | 19,5 | 17   | 16,4 | 45 | 2,0  | 0,396  | 50  |
| 262232   | black       | 22-26   | 21,0 | 19,5 | 24,0 | 38 | 3,2  | 0,464  | 50  |
| 262234   | pure white  | 22-26   | 21,0 | 19,5 | 24,0 | 38 | 3,2  | 0,458  | 50  |
| 262235   | light grey  | 22 - 26 | 21,0 | 19,5 | 24,0 | 38 | 3,2  | 0,458  | 50  |

### Nailing clips for flat cable

for attaching and fixing electrical cables, optimum claw shape for secure fixing of the cable, can be fixed to the cable, version with inserted galvanised nail, material: hammer-proof polyethylene (PE), halogen-free, temperature resistant: - 40 °C to + 80 °C, and for short periods up to approximately 100 °C.



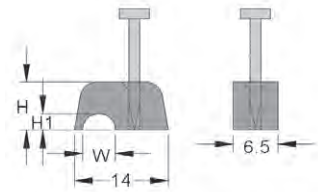
| Art. no. | colour      | ∅    | H    | H1  | W    | NL | ND  | kg/100 | PU  |
|----------|-------------|------|------|-----|------|----|-----|--------|-----|
| 262236   | transparent | 2-4  | 4,0  | 2,0 | 4,0  | 15 | 2,0 | 0,032  | 100 |
| 262238   | transparent | 3-5  | 5,2  | 3,3 | 4,6  | 15 | 2,0 | 0,038  | 100 |
| 262240   | transparent | 4-6  | 5,9  | 3,8 | 5,8  | 15 | 2,0 | 0,047  | 100 |
| 262242   | light grey  | 5-8  | 7,5  | 4,9 | 7,9  | 25 | 2,0 | 0,107  | 100 |
| 262243   | pure white  | 5-8  | 7,5  | 4,9 | 7,9  | 25 | 2,0 | 0,103  | 100 |
| 262244   | light grey  | 6-10 | 8,2  | 5,8 | 9,8  | 25 | 2,0 | 0,120  | 100 |
| 262245   | pure white  | 6-10 | 8,2  | 5,8 | 9,8  | 25 | 2,0 | 0,120  | 100 |
| 262246   | light grey  | 7-14 | 9,3  | 6,5 | 11,8 | 25 | 2,0 | 0,176  | 100 |
| 262247   | pure white  | 7-14 | 9,3  | 6,5 | 11,8 | 25 | 2,0 | 0,174  | 100 |
| 262248   | light grey  | 9-18 | 12,2 | 9,4 | 16,7 | 22 | 2,5 | 0,237  | 100 |
| 262249   | pure white  | 9-18 | 12,2 | 9,4 | 16,7 | 22 | 2,5 | 0,236  | 100 |

- NL = nail length
- N-∅ = nail diameter
- H = height
- H1 = height 1
- W = width (opening)

# Nailing clips

## Nailing clips for round cable

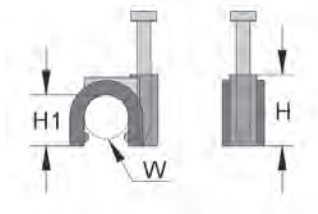
for attaching and fixing electrical cables, version with inserted galvanised nail, material: hammer-proof polyethylene (PE), halogen-free, temperature resistant: - 40 °C to + 80 °C, and for short periods up to approximately 100 °C.



| Art. no. | colour     | Ø    | W    | NL | ND  | kg/100 | PU  |
|----------|------------|------|------|----|-----|--------|-----|
| 262254   | light grey | 4,1  | 4,1  | 15 | 2,0 | 0,083  | 100 |
| 262256   | light grey | 4,1  | 4,1  | 20 | 2,0 | 0,089  | 100 |
| 262258   | light grey | 7,0  | 7,0  | 20 | 2,0 | 0,103  | 100 |
| 262260   | light grey | 9,0  | 9,0  | 20 | 2,0 | 0,178  | 100 |
| 262262   | light grey | 13,2 | 13,2 | 20 | 2,0 | 0,225  | 100 |

## ISO nailing clips

for attaching and fixing electrical cables, can be fixed to the cable, version with inserted galvanised nail, material: hammer-proof polyethylene (PE), halogen-free, temperature resistant: - 40 °C to + 80 °C, and for short periods up to approximately 100 °C.



| Art. no. | colour     | Ø    | H    | H1   | W    | NL | ND   | kg/100 | PU  |
|----------|------------|------|------|------|------|----|------|--------|-----|
| 262264   | light grey | 2,75 | 4,5  | 2,6  | 2,75 | 20 | 2,0  | 0,083  | 100 |
| 262266   | light grey | 6,0  | 9,0  | 6,6  | 6,0  | 20 | 2,0  | 0,100  | 100 |
| 262268   | light grey | 8,0  | 12,9 | 9,0  | 8,0  | 25 | 2,0  | 0,131  | 100 |
| 262270   | light grey | 9,0  | 12,0 | 9,0  | 9,0  | 22 | 2,0  | 0,132  | 100 |
| 262272   | light grey | 10,0 | 13,8 | 10,4 | 9,3  | 25 | 2,0  | 0,145  | 100 |
| 262274   | light grey | 2,75 | 4,5  | 2,6  | 2,75 | 19 | 1,65 | 0,047  | 100 |
| 262276   | light grey | 3,5  | 5,9  | 3,7  | 3,5  | 15 | 2,0  | 0,060  | 100 |
| 262278   | light grey | 4,0  | 6,6  | 4,2  | 4,0  | 18 | 2,5  | 0,091  | 100 |
| 262280   | light grey | 5,0  | 7,6  | 5,0  | 5,0  | 18 | 2,5  | 0,100  | 100 |
| 262282   | light grey | 6,0  | 9,0  | 6,6  | 6,0  | 18 | 2,5  | 0,106  | 100 |
| 262284   | light grey | 6,0  | 10,5 | 6,9  | 6,0  | 20 | 2,5  | 0,119  | 100 |
| 262286   | light grey | 7,0  | 11,0 | 7,5  | 7,0  | 22 | 2,5  | 0,128  | 100 |
| 262288   | light grey | 8,0  | 12,9 | 8,15 | 8,0  | 22 | 2,5  | 0,136  | 100 |
| 262290   | light grey | 9,0  | 12,0 | 9,0  | 9,0  | 22 | 2,5  | 0,138  | 100 |
| 262292   | light grey | 9,5  | 13,8 | 10,4 | 9,3  | 25 | 2,5  | 0,156  | 100 |
| 262294   | light grey | 11,0 | 16,6 | 12,2 | 11,0 | 27 | 2,5  | 0,234  | 100 |
| 262296   | light grey | 12,0 | 16,0 | 12,3 | 12,0 | 27 | 2,5  | 0,223  | 100 |
| 262298   | light grey | 14,0 | 20,5 | 15,6 | 14,0 | 35 | 3,0  | 0,345  | 100 |
| 262300   | light grey | 16,0 | 21,7 | 17,0 | 16,5 | 38 | 3,2  | 0,472  | 100 |
| 262302   | light grey | 18,0 | 22,0 | 17,5 | 18,0 | 38 | 3,2  | 0,457  | 100 |
| 262304   | light grey | 20,0 | 23,5 | 18,5 | 20,0 | 38 | 3,2  | 0,254  | 50  |
| 262306   | light grey | 22,0 | 27,8 | 23,0 | 22,0 | 42 | 3,2  | 0,321  | 50  |
| 262308   | light grey | 25,0 | 30,4 | 25,0 | 25,0 | 47 | 3,2  | 0,433  | 50  |
| 262310   | light grey | 32,0 | 40,0 | 33,5 | 32,0 | 56 | 3,6  | 0,306  | 25  |

NL = nail length  
 N-Ø = nail diameter  
 H = height  
 H1 = height 1  
 W = width (opening)

**haupa®**

**...convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com





## Cable glands, IP68



# Cable glands polyamide IP68

## INFO

### Cable glands polyamide IP68

#### Properties:

integrated strain relief, fully mounted, RoHS-compliant.

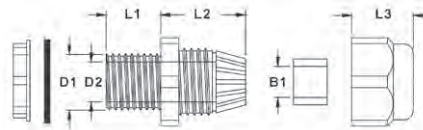
HAUPA cable glands do protect electric equipment (switchboards, distribution boxes) against mechanical influences, dust, and humidity by connecting a cable tight and sealed to the housing.

HAUPA offers next to metric as well PG cable glands.

HAUPA cable glands are IP68 (dust and humidity) to protect human against the potential risk during usage.

### Cable glands IP 68, metric or PG, assembled with washer and lock nut, fully mounted

material: polyamide 6.6, (gland body: PA 6.6, halogen free, seal: TPR, halogen free, washer: PVC), colour: light- grey or black, temperature range: - 40°C to + 85°C, vibration protection: integrated anti- twist protection for vibration- firm assembly, fire class: according to UL 94 V-2, protection category: IP68, properties: integrated strain relief; easy to install, RoHS- compliant, completely assembled as shown



| Art. no. | colour      |            | KB      | D1   | D2   | B1   | L1   | L2   | L3   | WS | kg/100 | PU |       |
|----------|-------------|------------|---------|------|------|------|------|------|------|----|--------|----|-------|
| 250040   | light- grey | <b>M12</b> | 3 - 6,5 | 12,0 | 8,3  | 6,9  | 7,9  | 19,6 | 13,6 | 15 | 0,024  | 10 | 4.250 |
| 250042   | light- grey | <b>M16</b> | 5 - 10  | 16   | 10,9 | 9,6  | 15,5 | 23,4 | 16,9 | 22 | 0,024  | 10 | 1.700 |
| 250044   | light- grey | <b>M20</b> | 8 - 12  | 20,0 | 14,1 | 12,5 | 10,0 | 25,0 | 18,1 | 24 | 0,024  | 10 | 1.200 |
| 250046   | light- grey | <b>M20</b> | 10 - 14 | 20,0 | 15,0 | 14,8 | 10,0 | 28,5 | 18,5 | 27 | 0,024  | 10 | 1.190 |
| 250048   | light- grey | <b>M20</b> | 10 - 14 | 20,0 | 15,0 | 14,8 | 15,0 | 28,5 | 18,5 | 27 | 0,024  | 10 | 1.190 |
| 250050   | light- grey | <b>M25</b> | 13 - 18 | 25,0 | 18,6 | 18,4 | 15,2 | 29,4 | 22,3 | 33 | 0,024  | 10 | 680   |
| 250052   | light- grey | <b>M32</b> | 18 - 25 | 32,0 | 26,0 | 25,0 | 14,7 | 34,5 | 25,7 | 42 | 0,024  | 10 | 340   |
| 250054   | light- grey | <b>M40</b> | 22 - 32 | 40,0 | 33,7 | 33,1 | 18,4 | 41,7 | 31,3 | 54 | 0,024  | 5  | 230   |
| 250056   | light- grey | <b>M50</b> | 30 - 38 | 50,0 | 41,9 | 40,0 | 17,8 | 44,2 | 31,3 | 61 | 0,024  | 5  | 160   |
| 250058   | light- grey | <b>M63</b> | 34 - 44 | 61,0 | 55,0 | 43,2 | 18,5 | 44,6 | 32,7 | 66 | 0,024  | 5  | 120   |

| Art. no. | colour |            | KB      | D1   | D2   | B1   | L1   | L2   | L3   | WS | kg/100 | PU |       |
|----------|--------|------------|---------|------|------|------|------|------|------|----|--------|----|-------|
| 250080   | black  | <b>M12</b> | 3 - 6,5 | 12,0 | 8,3  | 6,9  | 7,9  | 19,6 | 13,6 | 15 | 0,024  | 10 | 4.250 |
| 250082   | black  | <b>M16</b> | 5 - 10  | 16   | 10,9 | 9,6  | 15,5 | 23,4 | 16,9 | 22 | 0,024  | 10 | 1.700 |
| 250084   | black  | <b>M20</b> | 8 - 12  | 20,0 | 14,1 | 12,5 | 10,0 | 25,0 | 18,1 | 24 | 0,024  | 10 | 1.200 |
| 250086   | black  | <b>M20</b> | 10 - 14 | 20,0 | 15,0 | 14,8 | 10,0 | 28,5 | 18,5 | 27 | 1,620  | 10 | 1.190 |
| 250088   | black  | <b>M20</b> | 10 - 14 | 20,0 | 15,0 | 14,8 | 15,0 | 28,5 | 18,5 | 27 | 17,000 | 10 | 1.190 |
| 250090   | black  | <b>M25</b> | 13 - 18 | 25,0 | 18,6 | 18,4 | 15,2 | 29,4 | 22,3 | 33 | 2,690  | 10 | 680   |
| 250092   | black  | <b>M32</b> | 18 - 25 | 32,0 | 26,0 | 25,0 | 14,7 | 34,5 | 25,7 | 42 | 4,560  | 10 | 340   |
| 250094   | black  | <b>M40</b> | 22 - 32 | 40,0 | 33,7 | 33,1 | 18,4 | 41,7 | 31,3 | 54 | 8,100  | 5  | 230   |
| 250096   | black  | <b>M50</b> | 30 - 38 | 50,0 | 41,9 | 40,0 | 17,8 | 44,2 | 31,3 | 61 | 10,100 | 5  | 160   |
| 250098   | black  | <b>M63</b> | 34 - 44 | 61,0 | 55,0 | 43,2 | 18,5 | 44,6 | 32,7 | 66 | 11,400 | 5  | 120   |

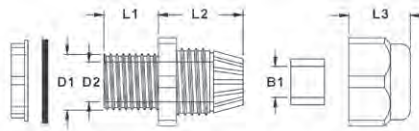
| Art. no. | colour      |               | KB      | D1   | D2   | B1   | L1   | L2   | L3   | WS | kg/100 | PU |       |
|----------|-------------|---------------|---------|------|------|------|------|------|------|----|--------|----|-------|
| 250060   | light- grey | <b>PG7</b>    | 3,5 - 6 | 12,5 | 8,3  | 6,9  | 7,9  | 20,0 | 13,3 | 15 | 0,024  | 10 | 4.250 |
| 250062   | light- grey | <b>PG9</b>    | 4 - 8   | 15,2 | 10,5 | 7,8  | 7,9  | 22,0 | 15,1 | 19 | 0,024  | 10 | 2.980 |
| 250064   | light- grey | <b>PG11</b>   | 5 - 10  | 18,6 | 13,2 | 10,8 | 7,9  | 23,7 | 18,3 | 22 | 0,024  | 10 | 2.040 |
| 250066   | light- grey | <b>PG13,5</b> | 6 - 12  | 20,4 | 15,5 | 12,5 | 8,9  | 24,6 | 18,9 | 24 | 0,024  | 10 | 1.530 |
| 250068   | light- grey | <b>PG16</b>   | 10 - 14 | 22,5 | 17,2 | 15,0 | 9,8  | 26,2 | 19,5 | 27 | 0,024  | 10 | 1.190 |
| 250070   | light- grey | <b>PG21</b>   | 13 - 18 | 28,3 | 22,4 | 18,5 | 10,8 | 30,0 | 23,7 | 33 | 0,024  | 10 | 680   |
| 250072   | light- grey | <b>PG29</b>   | 18 - 25 | 37,0 | 30,6 | 25,3 | 10,8 | 35,0 | 27,4 | 42 | 0,024  | 10 | 380   |
| 250074   | light- grey | <b>PG36</b>   | 22 - 32 | 47,0 | 35,3 | 36,3 | 7,9  | 42,3 | 30,3 | 53 | 0,024  | 5  | 200   |
| 250076   | light- grey | <b>PG42</b>   | 30 - 38 | 54,0 | 40,0 | 40,4 | 14,5 | 44,0 | 31,2 | 60 | 0,024  | 5  | 140   |
| 250078   | light- grey | <b>PG48</b>   | 34 - 44 | 59,3 | 46,2 | 46,3 | 15,6 | 42,7 | 31,3 | 65 | 0,024  | 5  | 130   |

| Art. no. | colour |               | KB      | D1   | D2   | B1   | L1   | L2   | L3   | WS | kg/100 | PU |       |
|----------|--------|---------------|---------|------|------|------|------|------|------|----|--------|----|-------|
| 250100   | black  | <b>PG7</b>    | 3,5 - 6 | 12,5 | 8,3  | 6,9  | 7,9  | 20,0 | 13,3 | 15 | 0,560  | 10 | 4.250 |
| 250102   | black  | <b>PG9</b>    | 4 - 8   | 15,2 | 10,5 | 7,8  | 7,9  | 22,0 | 15,1 | 19 | 7,500  | 10 | 2.980 |
| 250104   | black  | <b>PG11</b>   | 5 - 10  | 18,6 | 13,2 | 10,8 | 7,9  | 23,7 | 18,3 | 22 | 1,030  | 10 | 2.040 |
| 250106   | black  | <b>PG13,5</b> | 6 - 12  | 20,4 | 15,5 | 12,5 | 8,9  | 24,6 | 18,9 | 24 | 1,400  | 10 | 1.530 |
| 250108   | black  | <b>PG16</b>   | 10 - 14 | 22,5 | 17,2 | 15,0 | 9,8  | 26,2 | 19,5 | 27 | 1,560  | 10 | 1.190 |
| 250110   | black  | <b>PG21</b>   | 13 - 18 | 28,3 | 22,4 | 18,5 | 10,8 | 30,0 | 23,7 | 33 | 2,480  | 10 | 680   |
| 250112   | black  | <b>PG29</b>   | 18 - 25 | 37,0 | 30,6 | 25,3 | 10,8 | 35,0 | 27,4 | 42 | 4,160  | 10 | 380   |
| 250114   | black  | <b>PG36</b>   | 22 - 32 | 47,0 | 35,3 | 36,3 | 7,9  | 42,3 | 30,3 | 53 | 8,240  | 5  | 200   |
| 250116   | black  | <b>PG42</b>   | 30 - 38 | 54,0 | 40,0 | 40,4 | 14,5 | 44,0 | 31,2 | 60 | 10,800 | 5  | 140   |
| 250118   | black  | <b>PG48</b>   | 34 - 44 | 59,3 | 46,2 | 46,3 | 15,6 | 42,7 | 31,3 | 65 | 11,600 | 5  | 130   |

# SlimTop cable glands polyamide IP68

## SlimTop - cable glands IP 68, metric or PG, assembled with washer and lock nut, industry

material: polyamide 6.6, (gland body: PA 6.6, halogen free, seal: TPR, halogen free, washer: PVC), colour: light- grey or black, temperature range: - 40°C to + 85°C, vibration protection: integrated anti- twist protection for vibration- firm assembly, fire class: according to UL 94 V-2, protection category: IP68, properties: integrated strain relief, not mounted, easy to install, RoHS- compliant

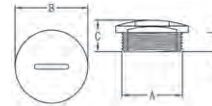


| Art. no. | colour      | KB         | D1      | D2   | B1   | L1   | L2   | L3   | WS   | kg/100 | PU     |    |       |
|----------|-------------|------------|---------|------|------|------|------|------|------|--------|--------|----|-------|
| 250140   | light- grey | <b>M12</b> | 3 - 6,5 | 12,0 | 7,3  | 7,1  | 8,0  | 19,6 | 12,7 | 15     | 0,400  | 10 | 4.250 |
| 250142   | light- grey | <b>M16</b> | 5 - 10  | 16,0 | 10,7 | 10,4 | 8,0  | 23,3 | 16,1 | 20     | 0,800  | 10 | 1.700 |
| 250044   | light- grey | <b>M20</b> | 8 - 12  | 20,0 | 14,1 | 12,5 | 10,0 | 25,0 | 18,1 | 24     | 0,024  | 10 | 1.200 |
| 250144   | light- grey | <b>M25</b> | 11 - 17 | 25,0 | 18,0 | 17,3 | 8,0  | 30,0 | 20,0 | 29     | 1,400  | 10 | 680   |
| 250146   | light- grey | <b>M32</b> | 15 - 21 | 32,0 | 25,7 | 21,6 | 10,0 | 35,4 | 24,1 | 36     | 2,900  | 10 | 340   |
| 250148   | light- grey | <b>M40</b> | 20 - 28 | 40,0 | 32,7 | 28,6 | 10,0 | 39,4 | 27,5 | 46     | 4,800  | 5  | 230   |
| 250150   | light- grey | <b>M50</b> | 27 - 35 | 50,0 | 42,4 | 35,8 | 12,0 | 43,4 | 31,8 | 55     | 8,300  | 5  | 160   |
| 250152   | light- grey | <b>M63</b> | 32 - 42 | 63,0 | 55,0 | 48,8 | 12,0 | 46,4 | 33,7 | 66     | 10,200 | 5  | 120   |
| 250120   | light- grey | <b>M12</b> | 3 - 6,5 | 12,0 | 7,3  | 7,1  | 8,0  | 19,6 | 12,7 | 15     | 0,400  | 10 | 4.250 |
| 250122   | light- grey | <b>M16</b> | 5 - 10  | 16,0 | 10,7 | 10,4 | 8,0  | 23,3 | 16,1 | 20     | 0,8    | 10 | 1.700 |
| 250084   | black       | <b>M20</b> | 8 - 12  | 20,0 | 14,1 | 12,5 | 10,0 | 25,0 | 18,1 | 24     | 0,024  | 10 | 1.200 |
| 250124   | light- grey | <b>M25</b> | 11 - 17 | 25,0 | 14,1 | 17,3 | 20,0 | 25   | 18,1 | 29     | 1,400  | 10 | 680   |
| 250126   | light- grey | <b>M32</b> | 15 - 21 | 32,0 | 25,7 | 21,6 | 10,0 | 35,4 | 24,1 | 36     | 2,900  | 10 | 340   |
| 250128   | light- grey | <b>M40</b> | 20 - 28 | 40,0 | 32,7 | 28,6 | 10,0 | 39,4 | 27,5 | 46     | 4,800  | 5  | 230   |
| 250130   | light- grey | <b>M50</b> | 27 - 35 | 50,0 | 42,4 | 35,8 | 12,0 | 43,4 | 31,8 | 55     | 8,300  | 5  | 160   |
| 250132   | light- grey | <b>M63</b> | 32 - 42 | 63,0 | 55,0 | 48,8 | 12,0 | 46,4 | 33,7 | 66     | 10,200 | 5  | 120   |

## Dummy plugs



Dummy plugs light- grey and black



| Art. no. | colour      | A             | B    | DD   | kg/100 | PU   |       |     |
|----------|-------------|---------------|------|------|--------|------|-------|-----|
| 250196   | light- grey | <b>M12</b>    | 11,7 | 15,0 | 10,0   | 6,0  | 0,090 | 100 |
| 250198   | light- grey | <b>M16</b>    | 15,7 | 20,0 | 10,5   | 6,0  | 0,150 | 100 |
| 250200   | light- grey | <b>M20</b>    | 19,9 | 24,0 | 12,8   | 6,0  | 0,220 | 100 |
| 250202   | light- grey | <b>M25</b>    | 24,7 | 29,7 | 12,8   | 7,8  | 0,350 | 100 |
| 250204   | light- grey | <b>M32</b>    | 31,7 | 36,6 | 13,3   | 7,8  | 0,330 | 50  |
| 250206   | light- grey | <b>M40</b>    | 39,9 | 45,8 | 13,4   | 7,8  | 0,420 | 50  |
| 250208   | light- grey | <b>M50</b>    | 49,4 | 55,5 | 16,2   | 9,8  | 1,300 | 10  |
| 250210   | light- grey | <b>M63</b>    | 62,4 | 69,3 | 17,5   | 11,8 | 1,800 | 10  |
| 250212   | light- grey | <b>PG7</b>    | 12,2 | 14,8 | 10,0   | 6,0  | 0,090 | 100 |
| 250214   | light- grey | <b>PG9</b>    | 15,1 | 18,7 | 10,4   | 6,0  | 0,140 | 100 |
| 250216   | light- grey | <b>PG11</b>   | 18,5 | 21,7 | 10,4   | 6,0  | 0,140 | 100 |
| 250218   | light- grey | <b>PG13,5</b> | 20,3 | 23,7 | 10,3   | 6,0  | 0,210 | 100 |
| 250220   | light- grey | <b>PG16</b>   | 22,3 | 27,0 | 10,3   | 6,0  | 0,290 | 100 |
| 250222   | light- grey | <b>PG21</b>   | 28,2 | 32,8 | 12,8   | 7,8  | 0,480 | 100 |
| 250224   | light- grey | <b>PG29</b>   | 37,0 | 44,1 | 13,2   | 7,8  | 0,400 | 50  |
| 250226   | light- grey | <b>PG36</b>   | 47,0 | 52,6 | 13,7   | 7,8  | 0,500 | 50  |
| 250228   | light- grey | <b>PG42</b>   | 54,0 | 59,5 | 16,2   | 9,6  | 0,090 | 10  |
| 250230   | light- grey | <b>PG48</b>   | 59,6 | 64,2 | 17,5   | 11,8 | 1,800 | 10  |
| 250160   | black       | <b>M12</b>    | 11,7 | 15,0 | 10,0   | 6,0  | 0,090 | 100 |
| 250162   | black       | <b>M16</b>    | 15,7 | 20,0 | 10,5   | 6,0  | 0,150 | 100 |
| 250164   | black       | <b>M20</b>    | 19,9 | 24,0 | 10,5   | 6,0  | 0,220 | 100 |
| 250166   | black       | <b>M25</b>    | 24,7 | 29,7 | 12,8   | 7,8  | 0,350 | 100 |
| 250168   | black       | <b>M32</b>    | 31,7 | 36,6 | 13,3   | 7,8  | 0,330 | 50  |
| 250170   | black       | <b>M40</b>    | 39,9 | 45,8 | 13,4   | 7,8  | 0,420 | 50  |
| 250172   | black       | <b>M50</b>    | 49,4 | 55,5 | 16,2   | 9,8  | 1,300 | 10  |
| 250174   | black       | <b>M63</b>    | 62,4 | 69,3 | 17,5   | 11,8 | 1,800 | 10  |
| 250176   | black       | <b>PG7</b>    | 12,2 | 14,8 | 10,0   | 6,0  | 0,090 | 100 |
| 250178   | black       | <b>PG9</b>    | 15,1 | 18,7 | 10,4   | 6,0  | 0,140 | 100 |
| 250180   | black       | <b>PG11</b>   | 18,5 | 21,7 | 10,4   | 6,0  | 0,140 | 100 |
| 250182   | black       | <b>PG13,5</b> | 20,3 | 23,7 | 10,3   | 6,0  | 0,210 | 100 |
| 250184   | black       | <b>PG16</b>   | 22,3 | 27,0 | 10,3   | 6,0  | 0,290 | 100 |
| 250186   | black       | <b>PG21</b>   | 28,2 | 32,8 | 12,8   | 7,8  | 0,480 | 100 |
| 250188   | black       | <b>PG29</b>   | 37,0 | 44,1 | 13,2   | 7,8  | 0,400 | 50  |
| 250190   | black       | <b>PG36</b>   | 47,0 | 52,6 | 13,7   | 7,8  | 0,500 | 50  |
| 250192   | black       | <b>M12</b>    | 54,0 | 59,5 | 16,2   | 9,6  | 1,300 | 10  |
| 250194   | black       | <b>PG48</b>   | 59,6 | 64,2 | 17,5   | 11,8 | 1,800 | 10  |

**haupa®**

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Cable glands brass nickel-plated, IP68

## INFO

### Cable glands polyamide IP68

#### Properties:

integrated strain relief, fully mounted, RoHS-compliant.

HAUPA cable glands do protect electric equipment (switchboards, distribution boxes) against mechanical influences, dust, and humidity by connecting a cable tight and sealed to the housing.

HAUPA offers next to metric as well PG cable glands.

For an EMC-compatible installation, brass cable glands inclusive EMC insets should be used.

HAUPA cable glands are IP68 (dust and humidity) to protect human against the potential risk during usage.

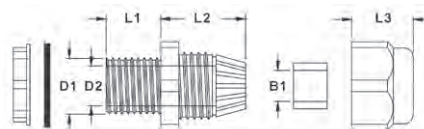
### Cable glands brass nickel-plated, IP68, fully mounted

Material: brass nickel-plated, (halogen free)

lock nut/washer: TPR

temperature range: - 40°C to + 120°C

protection category: IP68



| Art. no. | KB         | D1      | D2   | B1   | L1   | L2   | L3   | WS   | kg/100 | PU    |    |
|----------|------------|---------|------|------|------|------|------|------|--------|-------|----|
| 250600   | <b>M12</b> | 3 - 8,5 | 12,0 | 8,4  | 6,8  | 6,2  | 17   | 10,9 | 14     | 0,024 | 10 |
| 250602   | <b>M16</b> | 4 - 8   | 16,0 | 12,0 | 8,6  | 7,7  | 18,0 | 12,9 | 18     | 0,024 | 10 |
| 250604   | <b>M20</b> | 6 - 12  | 20,0 | 16,0 | 11,9 | 8,1  | 20,0 | 13,9 | 22     | 0,030 | 10 |
| 250606   | <b>M25</b> | 10-14   | 25,0 | 20,5 | 14,5 | 8,5  | 20,2 | 14,0 | 24-27  | 0,043 | 10 |
| 250608   | <b>M32</b> | 15-22   | 32,0 | 27,0 | 21,5 | 10   | 24,5 | 18,0 | 35     | 0,085 | 10 |
| 250610   | <b>M40</b> | 18-25   | 40,0 | 35,5 | 25,5 | 11   | 27,0 | 19,0 | 40-45  | 0,140 | 5  |
| 250611   | <b>M40</b> | 22-30   | 40,0 | 35,0 | 30,5 | 11,0 | 28,0 | 20,5 | 45     | 0,140 | 5  |
| 250612   | <b>M50</b> | 32-38   | 50,0 | 44,0 | 39,0 | 13   | 32,0 | 23,0 | 55-57  | 0,260 | 5  |
| 250614   | <b>M63</b> | 37-44   | 63,0 | 55,5 | 44,5 | 14   | 34,0 | 22,0 | 64-68  | 0,380 | 5  |

| Art. no. | KB            | D1      | D2   | B1   | L1   | L2   | L3   | WS   | kg/100 | PU    |    |
|----------|---------------|---------|------|------|------|------|------|------|--------|-------|----|
| 250630   | <b>PG7</b>    | 3-6,5   | 12,0 | 8,5  | 6,9  | 6,5  | 16,5 | 10,8 | 14     | 0,013 | 10 |
| 250632   | <b>PG9</b>    | 4-8     | 14,8 | 11,8 | 8,5  | 8,1  | 18,9 | 12,7 | 17     | 0,019 | 10 |
| 250634   | <b>PG11</b>   | 5 - 10  | 18,2 | 14,2 | 10,5 | 8    | 18,5 | 13,5 | 20-21  | 0,028 | 10 |
| 250636   | <b>PG13,5</b> | 6-12    | 20,1 | 16,2 | 12,1 | 7,7  | 20,5 | 13,9 | 23-22  | 0,033 | 10 |
| 250638   | <b>PG16</b>   | 10-14   | 22,2 | 18,3 | 14,5 | 8,3  | 19,7 | 14,2 | 25-24  | 0,038 | 10 |
| 250640   | <b>PG21</b>   | 13-18   | 28,2 | 23,8 | 18,2 | 8,8  | 23,3 | 16,5 | 30     | 0,060 | 10 |
| 250642   | <b>PG29</b>   | 18-25   | 36,6 | 32,4 | 25,2 | 10,0 | 26,3 | 19,4 | 40     | 0,111 | 10 |
| 250644   | <b>PG36</b>   | 25-33   | 46,0 | 41,5 | 33,2 | 11,0 | 32,0 | 22,0 | 50     | 0,190 | 5  |
| 250646   | <b>PG42</b>   | 32-38   | 53,8 | 47,7 | 38,7 | 12,0 | 32,0 | 22,0 | 57     | 0,255 | 5  |
| 250648   | <b>PG48</b>   | 37 - 44 | 59,0 | 52,6 | 44,5 | 12,6 | 33,9 | 22,8 | 64     | 0,345 | 5  |

#### PG threads

| Threads Ident. | external mm | Core-hole mm |
|----------------|-------------|--------------|
| Pg 7           | 12,5        | 11,3         |
| Pg 9           | 15,2        | 13,9         |
| Pg 11          | 18,6        | 17,3         |
| Pg 13,5        | 20,4        | 19,1         |
| Pg 16          | 22,5        | 21,2         |
| Pg 21          | 28,3        | 26,8         |
| Pg 29          | 37,0        | 35,5         |
| Pg 36          | 47,0        | 45,5         |
| Pg 42          | 54,0        | 52,5         |
| Pg 48          | 59,3        | 57,8         |

#### Metric thread

| Threads Ident. | external mm | Core-hole mm |
|----------------|-------------|--------------|
| M 12           | 12,0        | 12,5         |
| M 16           | 16,0        | 16,5         |
| M 20           | 20,0        | 20,5         |
| M 25           | 25,0        | 25,5         |
| M 32           | 32,0        | 32,5         |
| M 40           | 40,0        | 40,5         |
| M 50           | 50,0        | 50,5         |
| M 63           | 63,0        | 63,5         |

#### Converting PG to metric

| PG size | Diameter mm | Cable diameter mm | Conversion to metric mm |
|---------|-------------|-------------------|-------------------------|
| Pg 7    | 12,5        | 6,0               | M 12 x 1,5              |
| Pg 7    | 12,5        | 6,0               | M 16 x 1,5              |
| Pg 9    | 15,5        | 8,0               | M 16 x 1,5              |
| Pg 11   | 18,6        | 10,0              | M 20 x 1,5              |
| Pg 13,5 | 20,4        | 12,0              | M 20 x 1,5              |
| Pg 13,5 | 20,4        | 12,0              | M 25 x 1,5              |
| Pg 16   | 22,5        | 14,0              | M 20 x 1,5              |
| Pg 16   | 22,5        | 14,0              | M 25 x 1,5              |
| Pg 21   | 28,3        | 18,0              | M 25 x 1,5              |
| Pg 21   | 28,3        | 18,0              | M 32 x 1,5              |
| Pg 29   | 28,3        | 18,0              | M 32 x 1,5              |
| Pg 29   | 28,3        | 18,0              | M 40 x 1,5              |
| Pg 36   | 47,0        | 32,0              | M 50 x 1,5              |
| Pg 42   | 54,0        | 38,0              | M 50 x 1,5              |
| Pg 42   | 54,0        | 38,0              | M 63 x 1,5              |
| Pg 48   | 59,3        | 43,0              | M 63 x 1,5              |

#### Wrench size for cable glands

| Connecting threads PG | Wrench size | Connecting threads metric | Wrench size |
|-----------------------|-------------|---------------------------|-------------|
| PG7                   | SW 15       | M12 x 1,5                 | SW 15       |
| PG9                   | SW 19       | M16 x 1,5                 | SW 19       |
| PG11                  | SW 22       | M20 x 1,5                 | SW 24       |
| PG13,5                | SW 24       | M25 x 1,5                 | SW 30       |
| PG16                  | SW 27       | M32 x 1,5                 | SW 36       |
| PG21                  | SW 33       | M40 x 1,5                 | SW 46       |
| PG29                  | SW 42       | M50 x 1,5                 | SW 55       |
| PG36                  | SW 53       | M63 x 1,5                 | SW 66       |
| PG42                  | SW 60       |                           |             |
| PG48                  | SW 65       |                           |             |



# Cable glands brass nickel-plated, IP68

## EMC-Cable glands brass nickel-plated, IP68, fully mounted

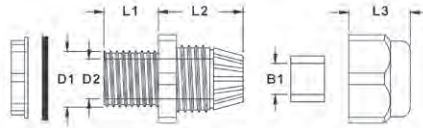
To ensure correct EMP installation, the brass cable screws with EMP inserts should be used.

Material: brass nickel-plated, (halogen free)

lock nut/washer: TPR

temperature range: - 40°C to + 120°C

protection category: IP68



| Art. no. |            | KB      | D1   | D2   | B1   | L1   | L2   | L3   | WS    | kg/100 | PU |
|----------|------------|---------|------|------|------|------|------|------|-------|--------|----|
| 250650   | <b>M12</b> | 3 - 8,5 | 12,0 | 8,4  | 6,8  | 6,2  | 17,0 | 10,9 | 14    | 0,013  | 10 |
| 250652   | <b>M16</b> | 4 - 8   | 16,0 | 12,0 | 8,6  | 7,7  | 18,0 | 12,9 | 18    | 0,024  | 10 |
| 250654   | <b>M20</b> | 6 - 12  | 20,0 | 16,0 | 11,9 | 8,1  | 20,0 | 13,9 | 22    | 0,030  | 10 |
| 250656   | <b>M25</b> | 10-14   | 25,0 | 20,5 | 14,5 | 8,5  | 20,2 | 14,0 | 24-27 | 0,043  | 10 |
| 250658   | <b>M32</b> | 15-22   | 32,0 | 27,0 | 21,5 | 10,0 | 24,5 | 18,0 | 35    | 0,085  | 10 |
| 250660   | <b>M40</b> | 18-25   | 40,0 | 35,5 | 25,5 | 11,0 | 27,0 | 19,0 | 40-45 | 0,140  | 5  |
| 250661   | <b>M40</b> | 22-30   | 40,0 | 35,0 | 30,5 | 11,0 | 28,0 | 20,5 | 45    | 0,140  | 5  |
| 250662   | <b>M50</b> | 32-38   | 50,0 | 44,0 | 39,0 | 13,0 | 32,0 | 23,0 | 55-57 | 0,260  | 5  |
| 250664   | <b>M63</b> | 37-44   | 63,0 | 55,5 | 44,5 | 14,0 | 34,0 | 22,0 | 64-68 | 0,380  | 5  |

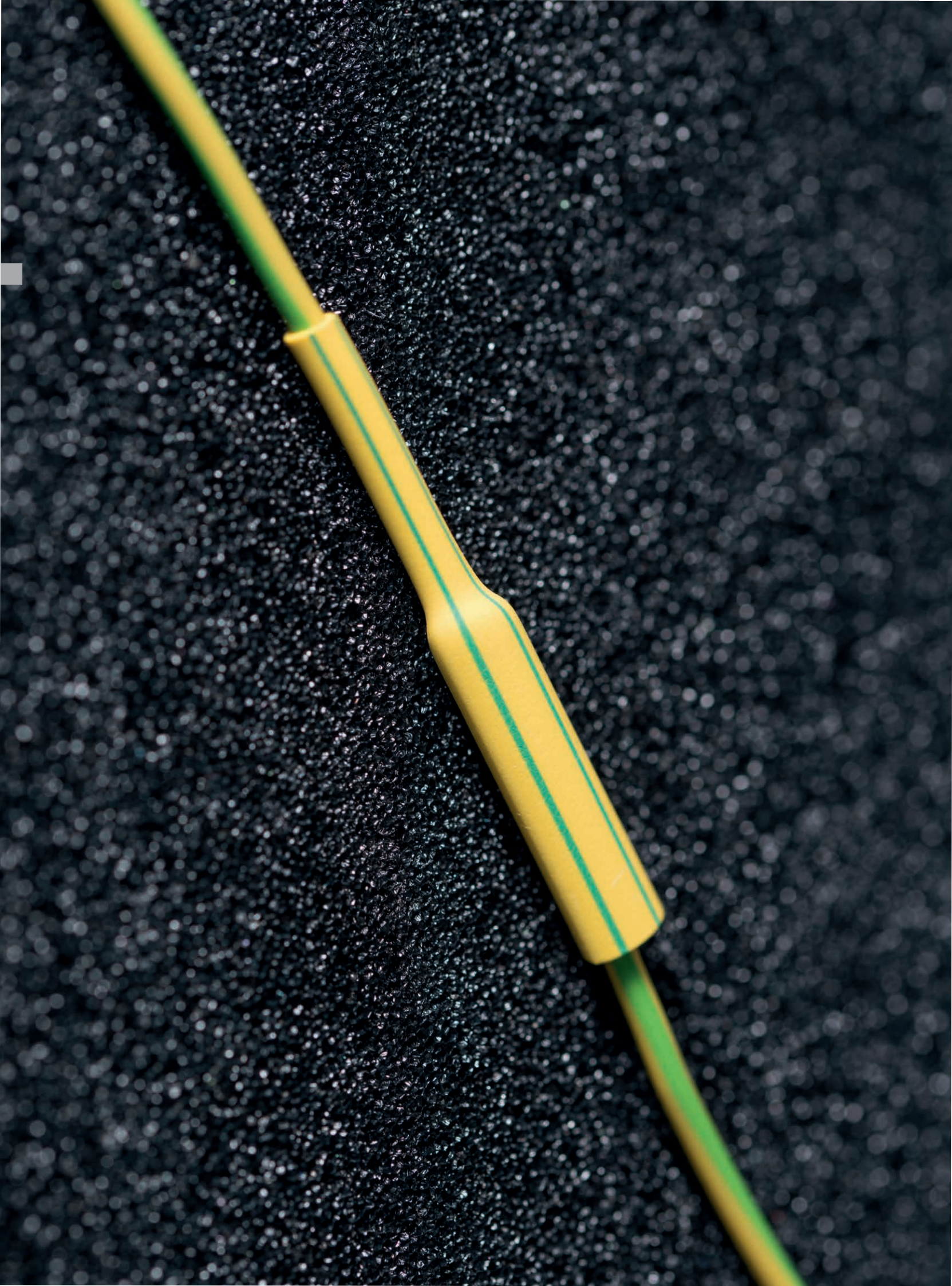
| Art. no. |               | KB    | D1   | D2   | B1   | L1   | L2   | L3   | WS    | kg/100 | PU |
|----------|---------------|-------|------|------|------|------|------|------|-------|--------|----|
| 250666   | <b>PG7</b>    | 3-6,5 | 12,0 | 8,5  | 6,9  | 6,5  | 16,5 | 10,8 | 14    | 0,013  | 10 |
| 250668   | <b>PG9</b>    | 4-8   | 14,8 | 11,8 | 8,5  | 8,1  | 18,9 | 12,7 | 17    | 0,019  | 10 |
| 250670   | <b>PG11</b>   | 5-10  | 18,2 | 14,2 | 10,5 | 8,0  | 18,5 | 13,5 | 20-21 | 0,028  | 10 |
| 250672   | <b>PG13,5</b> | 6-12  | 20,1 | 16,2 | 12,1 | 7,7  | 20,5 | 13,9 | 23-22 | 0,033  | 10 |
| 250674   | <b>PG16</b>   | 10-14 | 22,2 | 18,3 | 14,5 | 8,3  | 19,7 | 14,2 | 25-24 | 0,038  | 10 |
| 250676   | <b>PG21</b>   | 13-18 | 28,2 | 23,8 | 18,2 | 8,8  | 23,3 | 16,5 | 30    | 0,024  | 10 |
| 250678   | <b>PG29</b>   | 18-25 | 36,6 | 32,4 | 25,2 | 10,0 | 26,3 | 19,4 | 40    | 0,111  | 10 |
| 250680   | <b>PG36</b>   | 25-33 | 46,0 | 41,5 | 33,2 | 11,0 | 32,0 | 22,0 | 50    | 0,190  | 5  |
| 250682   | <b>PG42</b>   | 32-38 | 53,8 | 47,7 | 38,7 | 12,0 | 32,0 | 22,0 | 57    | 0,255  | 5  |
| 250684   | <b>PG48</b>   | 37-44 | 59,0 | 52,6 | 44,5 | 12,6 | 33,9 | 22,8 | 64    | 0,345  | 5  |



**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



Heat shrinkable tubes  
HUPshrink



# INFO

## HUPshrink - HAUPA Heat shrinkable tubes

Shrinking tubes are plastic tubes that rapidly contract upon exposure to heat - mostly through the injection of hot air. The object is inserted into the tube prior to heating and is therefore electrically insulated against its environment and protected from mechanical damage.

### Application:

Heat shrinkable tubes serve as insulation and mechanical protection. Areas of application are, for instance, the repairing of components in electrical engineering or the cutting of cables. The three main electronic and electrotechnical applications of the tubes are for sealing, insulation and protection.

### Adhesive:

The HAUPA heat shrinkable tubes HUPshrink are available with or without an adhesive lining on the inside. The tubes with an adhesive lining allow for precise work, offer robust connections and very good protection against corrosion.

### Shrink ratio:

The basic material (plastic) used and the thickness of the wall determine how much a shrinking tube can expand. The shrink ratio gives the size of the original heat shrink tube in relation to its shrunken, final form. (Original size to (:) Final size). The higher the shrink ratio, the greater the variation in diameter that can be covered.

### Important electrical performance features:

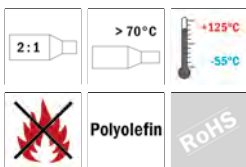
- Dielectric strength 19 kV/mm
- Specific electrical resistance 1 x 10<sup>14</sup> Ω/cm

### Notes for using:

- Cut the heat shrinkable tubes to desired length, this should be done on a smooth surface
- Conduct the shrinking on a clean, preferably dust and grease-free surface
- Start the shrink process unilaterally from one end of the tube
- Shrink temperature:
  - +70 °C - +115 °C (without adhesive lining) respectively
  - +80 °C - +115 °C (with adhesive lining)
- Optimum results when used with the matching Industrial hot air blower (Art. no. 262097 - see page 188).

### Set HUPshrink21TW thin-walled 2:1

Radiation cross-linked polyolefin, self extinguishing according to MV SS 302, flexible, universally applicable, Dielectric strength: 15 - 25 KV/mm according to DIN 53481, shrinking temperature > 70° C, continuous operating temperature - 55° C to 125° C, 160 pieces, in plastic box, thin-walled

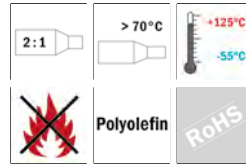


| Art. no. | Shrink ratio | Color | Material   | Quantity   | kg    | PU |
|----------|--------------|-------|------------|------------|-------|----|
| 267200   | 2:1          | black | Polyolefin | 160-pieces | 0,060 | 1  |

## Heat shrinkable tubes

### Set HUPshrink21TW thin-walled 2:1 coloured

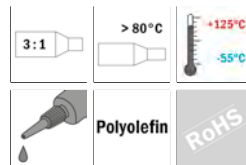
Radiation cross-linked polyolefin, self extinguishing according to MV SS 302, flexible, universally applicable, Dielectric strength: 15 - 25 KV/mm according to DIN 53481, shrinking temperature > 70° C, continuous operating temperature - 55° C to 125° C, 160 pieces, in plastic box, thin-walled



| Art. no. | Shrink ratio | Colours   | Material   | Quantity   | kg    | PU |
|----------|--------------|-----------|------------|------------|-------|----|
| 267202   | 2:1          | 6 colours | Polyolefin | 160-pieces | 0,060 | 1  |

### Set HUPshrink31DW-A double-walled 3:1 with adhesive lining

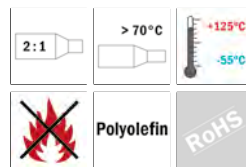
Radiation cross-linked polyolefin, self extinguishing according to MV SS 302, flexible, universally applicable, Dielectric strength: 15 - 25 KV/mm according to DIN 53481, shrinking temperature > 80° C, continuous operating temperature - 55° C to 125° C, 25 pieces, in plastic box, double-walled, with adhesive lining



| Art. no. | Shrink ratio | Color | Material   | Quantity  | kg    | PU |
|----------|--------------|-------|------------|-----------|-------|----|
| 267204   | 3:1          | black | Polyolefin | 25-pieces | 0,060 | 1  |

### Set HUPshrink21TW thin-walled 2:1 coloured

Radiation cross-linked polyolefin, self extinguishing according to MV SS 302, flexible, universally applicable, Dielectric strength: 15 - 25 KV/mm according to DIN 53481, shrinking temperature > 70° C, continuous operating temperature - 55° C to 125° C, 160 pieces, in plastic box, thin-walled

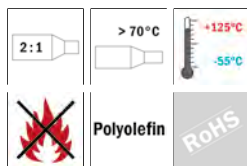


| Art. no. | Shrink ratio | Colours   | Material   | Quantity   | kg    | PU |
|----------|--------------|-----------|------------|------------|-------|----|
| 267206   | 2:1          | 4 colours | Polyolefin | 160-pieces | 0,060 | 1  |

# Heat shrinkable tubes

## HUPshrink21TW thin-walled 2:1

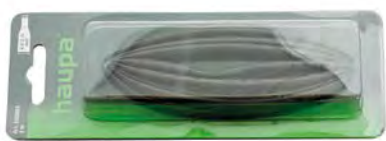
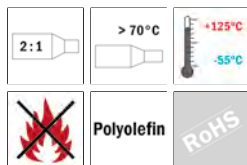
Radiation cross-linked polyolefin, self extinguishing according to MV SS 302, flexible, universally applicable, Dielectric strength: 15 - 25 KV/mm according to DIN 53481, shrinking temperature > 70° C, continuous operating temperature -55° C to 125° C, 50 pieces, 0.1 m long packaged in a polybag, thin-walled



| Art. no. | m   |     | Ø before | Ø after | kg    | PU |
|----------|-----|-----|----------|---------|-------|----|
| 267000   | 0,1 | 2:1 | 2,5      | 1,0     | 0,060 | 50 |
| 267002   | 0,1 | 2:1 | 3,5      | 1,5     | 0,060 | 50 |
| 267004   | 0,1 | 2:1 | 5,0      | 2,25    | 0,060 | 50 |
| 267006   | 0,1 | 2:1 | 6,5      | 3,0     | 0,060 | 50 |
| 267008   | 0,1 | 2:1 | 9,6      | 4,5     | 0,060 | 25 |
| 267010   | 0,1 | 2:1 | 12,7     | 6,0     | 0,060 | 10 |
| 267012   | 0,1 | 2:1 | 19,0     | 9,0     | 0,060 | 10 |
| 267014   | 0,1 | 2:1 | 26,0     | 12,5    | 0,060 | 10 |

## HUPshrink21 thin-walled 2:1 blister package

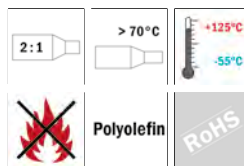
of polyolefin, radiation interlaced, self extinguishing according to MV SS 302, thin and flexible, dielectric strength 15 - 25 KV/mm acc. to DIN 53481, operating temperature: -55° C to 125° C, shrinking temperature: > 70° C, 1 m length in self-service-pack



| Art. no. | m |     | Ø before | Ø after | kg    | PU |
|----------|---|-----|----------|---------|-------|----|
| 262085   | 1 | 2:1 | 4,8      | 2,4     | 0,007 | 1  |
| 262086   | 1 | 2:1 | 6,4      | 3,2     | 0,010 | 1  |
| 262087   | 1 | 2:1 | 9,5      | 4,8     | 0,012 | 1  |
| 262088   | 1 | 2:1 | 12,7     | 6,4     | 0,017 | 1  |
| 262089   | 1 | 2:1 | 19,0     | 9,5     | 0,035 | 1  |
| 262090   | 1 | 2:1 | 25,4     | 12,7    | 0,045 | 1  |

## HUPshrink21TW thin-walled 2:1 Box

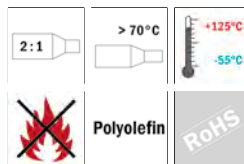
Radiation cross-linked polyolefin, self extinguishing according to MV SS 302, flexible, universally applicable, Dielectric strength: 15 - 25 KV/mm according to DIN 53481, shrinking temperature > 70° C, continuous operating temperature -55° C - 125° C, 5/10m roll in dispenser, thin-walled



| Art. no. | m  |     | Ø before | Ø after | kg    | PU |
|----------|----|-----|----------|---------|-------|----|
| 267016   | 10 | 2:1 | 2,5      | 1,0     | 0,060 | 1  |
| 267018   | 10 | 2:1 | 3,5      | 1,5     | 0,060 | 1  |
| 267020   | 10 | 2:1 | 5,0      | 2,25    | 0,060 | 1  |
| 267022   | 5  | 2:1 | 6,5      | 3,0     | 0,060 | 1  |
| 267024   | 5  | 2:1 | 9,6      | 4,5     | 0,060 | 1  |
| 267026   | 5  | 2:1 | 12,7     | 6,0     | 0,060 | 1  |
| 267028   | 5  | 2:1 | 19,0     | 9,0     | 0,060 | 1  |
| 267030   | 5  | 2:1 | 26,0     | 12,5    | 0,060 | 1  |
| 267032   | 10 | 2:1 | 2,5      | 1,0     | 0,060 | 1  |
| 267034   | 10 | 2:1 | 3,5      | 1,5     | 0,060 | 1  |
| 267036   | 10 | 2:1 | 5,0      | 2,25    | 0,060 | 1  |
| 267038   | 5  | 2:1 | 6,5      | 3,0     | 0,060 | 1  |
| 267040   | 5  | 2:1 | 9,6      | 4,5     | 0,060 | 1  |
| 267042   | 5  | 2:1 | 12,7     | 6,0     | 0,060 | 1  |
| 267044   | 5  | 2:1 | 19,0     | 9,0     | 0,060 | 1  |
| 267046   | 5  | 2:1 | 26,0     | 12,5    | 0,060 | 1  |

## HUPshrink21TW thin-walled 2:1

Radiation cross-linked polyolefin, self extinguishing according to MV SS 302, flexible, universally applicable, Dielectric strength: 15 - 25 KV/mm according to DIN 53481, shrinking temperature > 70° C, continuous operating temperature -55° C to 125° C, 25m roll packaged in a polybag, thin-walled



| Art. no. | m  |     | Ø before | Ø after | kg    | PU |
|----------|----|-----|----------|---------|-------|----|
| 267048   | 25 | 2:1 | 2,5      | 1,0     | 0,060 | 1  |
| 267050   | 25 | 2:1 | 3,5      | 1,5     | 0,060 | 1  |
| 267052   | 25 | 2:1 | 5,0      | 2,25    | 0,060 | 1  |
| 267054   | 25 | 2:1 | 6,5      | 3,0     | 0,060 | 1  |
| 267056   | 25 | 2:1 | 9,6      | 4,5     | 0,060 | 1  |
| 267058   | 25 | 2:1 | 12,7     | 6,0     | 0,060 | 1  |
| 267060   | 25 | 2:1 | 19,0     | 9,0     | 0,060 | 1  |
| 267062   | 25 | 2:1 | 26,0     | 12,5    | 0,060 | 1  |

**haupa®**

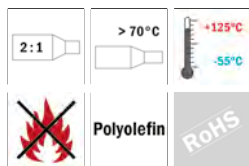
... convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Heat shrinkable tubes

## HUPshrink21TW thin-walled 2:1

Radiation cross-linked polyolefin, self extinguishing according to MV SS 302, flexible, universally applicable, Dielectric strength: 15 - 25 KV/mm according to DIN 53481, shrinking temperature > 70° C, continuous operating temperature - 55° C to 125° C, packaged in a polybag, thin-walled

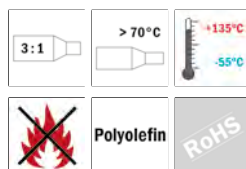


| Art. no. | m   | Ø before | Ø after | kg   | PU    |   |
|----------|-----|----------|---------|------|-------|---|
| 267250   | 1,2 | 2:1      | 1,2     | 0,6  | 0,006 | 1 |
| 267252   | 1,2 | 2:1      | 1,6     | 0,8  | 0,006 | 1 |
| 267254   | 1,2 | 2:1      | 2,5     | 1,0  | 0,008 | 1 |
| 267256   | 1,2 | 2:1      | 3,5     | 1,5  | 0,009 | 1 |
| 267258   | 1,2 | 2:1      | 5,0     | 2,25 | 0,011 | 1 |
| 267260   | 1,2 | 2:1      | 6,5     | 3,0  | 0,014 | 1 |
| 267262   | 1,2 | 2:1      | 9,6     | 4,5  | 0,019 | 1 |
| 267264   | 1,2 | 2:1      | 12,7    | 6,0  | 0,024 | 1 |
| 267266   | 1,2 | 2:1      | 19,0    | 9,0  | 0,043 | 1 |
| 267268   | 1,2 | 2:1      | 26,0    | 12,5 | 0,061 | 1 |
| 267272   | 1,2 | 2:1      | 1,6     | 0,8  | 0,006 | 1 |
| 267274   | 1,2 | 2:1      | 2,5     | 1,0  | 0,008 | 1 |
| 267276   | 1,2 | 2:1      | 3,5     | 1,5  | 0,009 | 1 |
| 267278   | 1,2 | 2:1      | 5,0     | 2,25 | 0,011 | 1 |
| 267280   | 1,2 | 2:1      | 6,5     | 3,0  | 0,014 | 1 |
| 267282   | 1,2 | 2:1      | 9,6     | 4,5  | 0,019 | 1 |
| 267284   | 1,2 | 2:1      | 12,7    | 6,0  | 0,024 | 1 |
| 267286   | 1,2 | 2:1      | 19,0    | 9,0  | 0,043 | 1 |
| 267288   | 1,2 | 2:1      | 26,0    | 12,5 | 0,061 | 1 |
| 267292   | 1,2 | 2:1      | 1,6     | 0,8  | 0,006 | 1 |
| 267294   | 1,2 | 2:1      | 2,5     | 1,0  | 0,008 | 1 |
| 267296   | 1,2 | 2:1      | 3,5     | 1,5  | 0,009 | 1 |
| 267298   | 1,2 | 2:1      | 5,0     | 2,25 | 0,011 | 1 |
| 267300   | 1,2 | 2:1      | 6,5     | 3,0  | 0,014 | 1 |
| 267302   | 1,2 | 2:1      | 9,6     | 4,5  | 0,019 | 1 |
| 267304   | 1,2 | 2:1      | 12,7    | 6,0  | 0,024 | 1 |
| 267306   | 1,2 | 2:1      | 19,0    | 9,0  | 0,043 | 1 |
| 267308   | 1,2 | 2:1      | 26,0    | 12,5 | 0,061 | 1 |
| 267312   | 1,2 | 2:1      | 1,6     | 0,8  | 0,006 | 1 |
| 267314   | 1,2 | 2:1      | 2,5     | 1,0  | 0,008 | 1 |
| 267316   | 1,2 | 2:1      | 3,5     | 1,5  | 0,009 | 1 |
| 267318   | 1,2 | 2:1      | 5,0     | 2,25 | 0,011 | 1 |
| 267320   | 1,2 | 2:1      | 6,5     | 3,0  | 0,014 | 1 |
| 267322   | 1,2 | 2:1      | 9,6     | 4,5  | 0,019 | 1 |
| 267324   | 1,2 | 2:1      | 12,7    | 6,0  | 0,024 | 1 |
| 267326   | 1,2 | 2:1      | 19,0    | 9,0  | 0,043 | 1 |
| 267328   | 1,2 | 2:1      | 26,0    | 12,5 | 0,061 | 1 |
| 267332   | 1,2 | 2:1      | 1,6     | 0,8  | 0,006 | 1 |
| 267334   | 1,2 | 2:1      | 2,5     | 1,0  | 0,008 | 1 |
| 267336   | 1,2 | 2:1      | 3,5     | 1,5  | 0,009 | 1 |
| 267338   | 1,2 | 2:1      | 5,0     | 2,25 | 0,011 | 1 |
| 267340   | 1,2 | 2:1      | 6,5     | 3,0  | 0,014 | 1 |
| 267342   | 1,2 | 2:1      | 9,6     | 4,5  | 0,019 | 1 |
| 267344   | 1,2 | 2:1      | 12,7    | 6,0  | 0,024 | 1 |
| 267346   | 1,2 | 2:1      | 19,0    | 9,0  | 0,043 | 1 |
| 267348   | 1,2 | 2:1      | 26,0    | 12,5 | 0,061 | 1 |
| 267352   | 1,2 | 2:1      | 1,6     | 0,8  | 0,006 | 1 |
| 267354   | 1,2 | 2:1      | 2,5     | 1,0  | 0,008 | 1 |
| 267356   | 1,2 | 2:1      | 3,5     | 1,5  | 0,009 | 1 |
| 267358   | 1,2 | 2:1      | 5,0     | 2,25 | 0,011 | 1 |
| 267360   | 1,2 | 2:1      | 6,5     | 3,0  | 0,014 | 1 |
| 267362   | 1,2 | 2:1      | 9,6     | 4,5  | 0,019 | 1 |
| 267364   | 1,2 | 2:1      | 12,7    | 6,0  | 0,024 | 1 |
| 267366   | 1,2 | 2:1      | 19,0    | 9,0  | 0,043 | 1 |
| 267368   | 1,2 | 2:1      | 26,0    | 12,5 | 0,061 | 1 |

| Art. no. | m   | Ø before | Ø after | kg   | PU    |   |
|----------|-----|----------|---------|------|-------|---|
| 267372   | 1,2 | 2:1      | 1,6     | 0,8  | 0,006 | 1 |
| 267374   | 1,2 | 2:1      | 2,5     | 1,0  | 0,008 | 1 |
| 267376   | 1,2 | 2:1      | 3,5     | 1,5  | 0,009 | 1 |
| 267378   | 1,2 | 2:1      | 5,0     | 2,25 | 0,011 | 1 |
| 267380   | 1,2 | 2:1      | 6,5     | 3,0  | 0,014 | 1 |
| 267382   | 1,2 | 2:1      | 9,6     | 4,5  | 0,019 | 1 |
| 267384   | 1,2 | 2:1      | 12,7    | 6,0  | 0,024 | 1 |
| 267386   | 1,2 | 2:1      | 19,0    | 9,0  | 0,043 | 1 |
| 267388   | 1,2 | 2:1      | 26,0    | 12,5 | 0,061 | 1 |
| 267392   | 1,2 | 2:1      | 1,6     | 0,8  | 0,007 | 1 |
| 267394   | 1,2 | 2:1      | 2,5     | 1,0  | 0,008 | 1 |
| 267396   | 1,2 | 2:1      | 3,5     | 1,5  | 0,008 | 1 |
| 267398   | 1,2 | 2:1      | 5,0     | 2,25 | 0,011 | 1 |
| 267400   | 1,2 | 2:1      | 6,5     | 3,0  | 0,014 | 1 |
| 267402   | 1,2 | 2:1      | 9,6     | 4,5  | 0,020 | 1 |
| 267404   | 1,2 | 2:1      | 12,7    | 6,0  | 0,024 | 1 |
| 267406   | 1,2 | 2:1      | 19,0    | 9,0  | 0,041 | 1 |
| 267408   | 1,2 | 2:1      | 26,0    | 12,5 | 0,058 | 1 |

## HUPshrink31DW double-walled 3:1

Radiation cross-linked polyolefin, self extinguishing according to MV SS 302, flexible, universally applicable, Dielectric strength: 15 - 25 KV/mm according to DIN 53481, shrinking temperature > 70° C, continuous operating temperature - 55° C to 135° C, 1.2m packaged in a polybag, double-walled

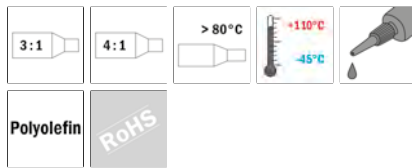


| Art. no. | m   | Ø before | Ø after | kg  | PU    |   |
|----------|-----|----------|---------|-----|-------|---|
| 267430   | 1,2 | 3:1      | 3,0     | 1,0 | 0,009 | 1 |
| 267432   | 1,2 | 3:1      | 6,0     | 2,0 | 0,013 | 1 |
| 267434   | 1,2 | 3:1      | 9,0     | 3,0 | 0,020 | 1 |
| 267436   | 1,2 | 3:1      | 12,0    | 4,0 | 0,025 | 1 |
| 267438   | 1,2 | 3:1      | 18,0    | 6,0 | 0,039 | 1 |
| 267440   | 1,2 | 3:1      | 25,0    | 8,0 | 0,060 | 1 |
| 267442   | 1,2 | 3:1      | 3,0     | 1,0 | 0,008 | 1 |
| 267444   | 1,2 | 3:1      | 6,0     | 2,0 | 0,013 | 1 |
| 267446   | 1,2 | 3:1      | 9,0     | 3,0 | 0,019 | 1 |
| 267448   | 1,2 | 3:1      | 12,0    | 4,0 | 0,024 | 1 |
| 267450   | 1,2 | 3:1      | 18,0    | 6,0 | 0,041 | 1 |
| 267452   | 1,2 | 3:1      | 25,0    | 8,0 | 0,064 | 1 |

## Heat shrinkable tubes with adhesive lining

### HUPshrink31MW-A | HUPshrink41MW-A medium-walled 3:1, 4:1 with adhesive lining

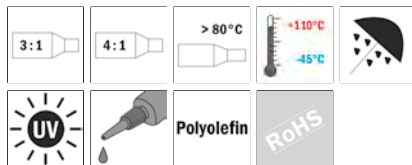
Radiation cross-linked polyolefin, self extinguishing according to MV SS 302, flexible, universally applicable, Dielectric strength: 15 - 25 KV/mm according to DIN 53481, shrinking temperature > 80° C, continuous operating temperature - 45° C to 110° C, 1.2m packaged in a polybag, medium-walled, with adhesive lining



| Art. no. | m   |     | ∅ before | ∅ after |   | kg    | PU |
|----------|-----|-----|----------|---------|---|-------|----|
| 267102   | 1,2 | 4:1 | 8,0      | 2,0     | █ | 0,050 | 1  |
| 267104   | 1,2 | 4:1 | 12,0     | 3,0     | █ | 0,061 | 1  |
| 267106   | 1,2 | 4:1 | 22,0     | 6,0     | █ | 0,118 | 1  |
| 267108   | 1,2 | 4:1 | 33,0     | 8,0     | █ | 0,180 | 1  |
| 267118   | 1,2 | 4:1 | 95,0     | 25,0    | █ | 0,510 | 1  |
| 267110   | 1,2 | 3:1 | 40,0     | 12,0    | █ | 0,210 | 1  |
| 267112   | 1,2 | 3:1 | 55,0     | 16,0    | █ | 0,300 | 1  |
| 267114   | 1,2 | 3:1 | 65,0     | 19,0    | █ | 0,380 | 1  |
| 267116   | 1,2 | 3:1 | 75,0     | 22,0    | █ | 0,395 | 1  |
| 267120   | 1,2 | 3:1 | 115,0    | 34,0    | █ | 0,830 | 1  |

### HUPshrink31DW-A | HUPshrink41DW-A double-walled 3:1, 4:1 with adhesive lining

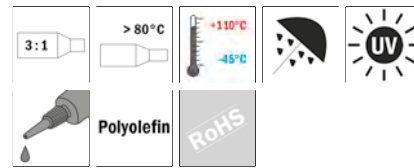
Radiation cross-linked polyolefin, self extinguishing according to MV SS 302, flexible, universally applicable, Dielectric strength: 15 - 25 KV/mm according to DIN 53481, shrinking temperature > 80° C, continuous operating temperature - 45° C to 110° C, 1.2m packaged in a polybag, double-walled, with adhesive lining



| Art. no. | m   |     | ∅ before | ∅ after |   | kg    | PU |
|----------|-----|-----|----------|---------|---|-------|----|
| 267064   | 1,2 | 3:1 | 3,2      | 1,0     | █ | 0,060 | 1  |
| 267066   | 1,2 | 3:1 | 4,8      | 1,6     | █ | 0,060 | 1  |
| 267068   | 1,2 | 3:1 | 6,4      | 2,0     | █ | 0,060 | 1  |
| 267070   | 1,2 | 3:1 | 9,5      | 3,0     | █ | 0,060 | 1  |
| 267074   | 1,2 | 3:1 | 12,7     | 4,0     | █ | 0,060 | 1  |
| 267078   | 1,2 | 3:1 | 19,1     | 6,0     | █ | 0,060 | 1  |
| 267080   | 1,2 | 3:1 | 24,5     | 8,0     | █ | 0,060 | 1  |
| 267084   | 1,2 | 3:1 | 38,1     | 13,0    | █ | 0,060 | 1  |
| 267086   | 1,2 | 3:1 | 38,1     | 13,0    | █ | 0,060 | 1  |
| 267088   | 1,2 | 4:1 | 52,0     | 13,0    | █ | 0,060 | 1  |

### HUPshrink31DW-A double-walled 3:1 with adhesive lining Box

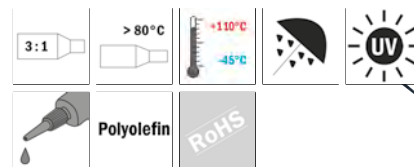
Radiation cross-linked polyolefin, self extinguishing according to MV SS 302, flexible, universally applicable, Dielectric strength: 15 - 25 KV/mm according to DIN 53481, shrinking temperature > 80° C, continuous operating temperature - 45° C - 110° C, 5/10m roll in dispenser, double-walled, with adhesive lining



| Art. no. | m  |     | ∅ before | ∅ after |   | kg    | PU |
|----------|----|-----|----------|---------|---|-------|----|
| 267090   | 10 | 3:1 | 3,0      | 1,0     | █ | 0,060 | 1  |
| 267092   | 5  | 3:1 | 6,0      | 2,0     | █ | 0,060 | 1  |
| 267094   | 5  | 3:1 | 9,0      | 3,0     | █ | 0,060 | 1  |

### HUPshrink31DW-A double-walled 3:1 with adhesive lining

Radiation cross-linked polyolefin, self extinguishing according to MV SS 302, flexible, universally applicable, Dielectric strength: 15 - 25 KV/mm according to DIN 53481, shrinking temperature > 80° C, continuous operating temperature - 45° C - 110° C, 5m roll, double-walled, with adhesive lining



| Art. no. | m |     | ∅ before | ∅ after |   | kg    | PU |
|----------|---|-----|----------|---------|---|-------|----|
| 267096   | 5 | 3:1 | 12,0     | 4,0     | █ | 0,060 | 1  |
| 267098   | 5 | 3:1 | 19,0     | 6,0     | █ | 0,060 | 1  |
| 267100   | 5 | 3:1 | 24,0     | 8,0     | █ | 0,060 | 1  |

**haupa**®

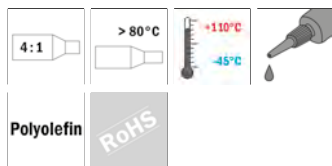
... convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Heat shrinkable tubes with adhesive lining

### HUPshrink41DW-A double-walled 4:1 with adhesive lining

Radiation cross-linked polyolefin, self extinguishing according to MV SS 302, flexible, universally applicable, Dielectric strength: 15 - 25 KV/mm according to DIN 53481, shrinking temperature > 80° C, continuous operating temperature - 45° C to 110° C, 1.2m packaged in a polybag, double-walled, with adhesive lining



| Art. no. | m   | Ø before | Ø after | kg    | PU |
|----------|-----|----------|---------|-------|----|
| 267460   | 1,2 | 4:1 4,0  | 1,0     | 0,013 | 1  |
| 267462   | 1,2 | 4:1 8,0  | 2,0     | 0,017 | 1  |
| 267464   | 1,2 | 4:1 12,0 | 3,0     | 0,030 | 1  |
| 267466   | 1,2 | 4:1 16,0 | 4,0     | 0,051 | 1  |
| 267468   | 1,2 | 4:1 24,0 | 6,0     | 0,103 | 1  |
| 267470   | 1,2 | 4:1 32,0 | 8,0     | 0,120 | 1  |
| 267472   | 1,2 | 4:1 52,0 | 13,0    | 0,183 | 1  |

## Industrial hot air blower

### Industrial hot air blower for heat shrinkable tubes

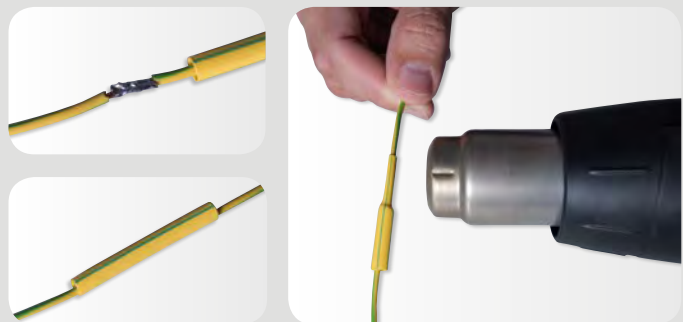
Electronic hot air blower with continuous temperature control and two blower levels, characterised by low weight and slim design. This makes it ideal for long and fatigue-free working and for use in difficult to access areas. The temperature control is continuous, and the air volume can be set to two different levels. For heat shrinkable tubes.

#### Technical data:

Length/Ø (at shock protection): 325 mm / 85 mm  
 Voltage: 230 V / 50 Hz (special voltages possible)  
 Power: 2000 W  
 Temperature: 100° - 600° C continuous control  
 Air volume: min. 300 l/min. / max. 500 l/min.



| Art. no. | kg    | PU |
|----------|-------|----|
| 262097   | 0,773 | 1  |





Electrical insulating tape



# INFO

## Electro insulating tape

### Typical uses in electrical installations

Insulation, Sealing, Padding, Protection from corrosion, heat, electromagnetic faults, cable marking, etc

### Benefits:

- VDE tested
- DIN EN 60454-3-1
- Easy to unroll
- Very good adhesive properties
- High flexibility
- Wrinkle free adhesion to uneven surfaces
- Tear-proof and resistant to aging
- Flame retardant
- Self-extinguishing
- Temperature resistant from -30°C to 105°C
- Water, weather and UV resistant
- With many uses
- For insulating, bundling, marking
- Available in 10 colours

### Electrical insulating tape "HUPTape-15"

Material: PVC, in tested VDE quality, in accordance with DIN EN 60454-3-1, flame retardant, self-extinguishing. Temperature resistant from -30°C to 105°C, water, weather and UV resistant. Highly flexible with very good adhesive properties, versatile in its uses, tear-resistant and durable, for insulating, bundling and marking. Available in ten colours.



| Art. no. | widht/mm | length/m | strength | kg    | PU     |
|----------|----------|----------|----------|-------|--------|
| 263800   | 15       | 10       | 0,15     | 0,035 | 120 10 |
| 263802   | 15       | 10       | 0,15     | 0,035 | 120 10 |
| 263804   | 15       | 10       | 0,15     | 0,035 | 120 10 |
| 263806   | 15       | 10       | 0,15     | 0,035 | 120 10 |
| 263808   | 15       | 10       | 0,15     | 0,035 | 120 10 |
| 263810   | 15       | 10       | 0,15     | 0,035 | 120 10 |
| 263812   | 15       | 10       | 0,15     | 0,035 | 120 10 |
| 263814   | 15       | 10       | 0,15     | 0,035 | 120 10 |
| 263816   | 15       | 10       | 0,15     | 0,035 | 120 10 |
| 263818   | 15       | 10       | 0,15     | 0,035 | 120 10 |

| Art. no. | widht/mm | length/m | strength | kg    | PU    |
|----------|----------|----------|----------|-------|-------|
| 263822   | 15       | 20       | 0,15     | 0,060 | 60 10 |
| 263824   | 15       | 20       | 0,15     | 0,060 | 60 10 |
| 263826   | 15       | 20       | 0,15     | 0,060 | 60 10 |
| 263828   | 15       | 20       | 0,15     | 0,060 | 60 10 |
| 263830   | 15       | 20       | 0,15     | 0,060 | 60 10 |
| 263832   | 15       | 20       | 0,15     | 0,060 | 60 10 |
| 263834   | 15       | 20       | 0,15     | 0,060 | 60 10 |
| 263836   | 15       | 20       | 0,15     | 0,060 | 60 10 |
| 263838   | 15       | 20       | 0,15     | 0,060 | 60 10 |
| 263840   | 15       | 20       | 0,15     | 0,060 | 60 10 |

## Electro insulating tape

| Art. no. | widht/mm | length/m | strength | kg    | PU   |
|----------|----------|----------|----------|-------|------|
| 263842   | 19       | 20       | 0,15     | 0,076 | 48 8 |
| 263844   | 19       | 20       | 0,15     | 0,076 | 48 8 |
| 263846   | 19       | 20       | 0,15     | 0,076 | 48 8 |
| 263848   | 19       | 20       | 0,15     | 0,076 | 48 8 |
| 263850   | 19       | 20       | 0,15     | 0,076 | 48 8 |
| 263852   | 19       | 20       | 0,15     | 0,076 | 48 8 |
| 263854   | 19       | 20       | 0,15     | 0,076 | 48 8 |
| 263856   | 19       | 20       | 0,15     | 0,076 | 48 8 |
| 263858   | 19       | 20       | 0,15     | 0,076 | 48 8 |
| 263860   | 19       | 20       | 0,15     | 0,076 | 48 8 |

| Art. no. | widht/mm | length/m | strength | kg    | PU   |
|----------|----------|----------|----------|-------|------|
| 263902   | 19       | 25       | 0,15     | 0,084 | 48 8 |
| 263904   | 19       | 25       | 0,15     | 0,084 | 48 8 |
| 263906   | 19       | 25       | 0,15     | 0,084 | 48 8 |
| 263908   | 19       | 25       | 0,15     | 0,084 | 48 8 |
| 263910   | 19       | 25       | 0,15     | 0,084 | 48 8 |
| 263912   | 19       | 25       | 0,15     | 0,084 | 48 8 |
| 263914   | 19       | 25       | 0,15     | 0,084 | 48 8 |
| 263916   | 19       | 25       | 0,15     | 0,084 | 48 8 |
| 263918   | 19       | 25       | 0,15     | 0,084 | 48 8 |
| 263920   | 19       | 25       | 0,15     | 0,084 | 48 8 |

| Art. no. | widht/mm | length/m | strength | kg    | PU   |
|----------|----------|----------|----------|-------|------|
| 263862   | 25       | 20       | 0,15     | 0,100 | 36 6 |
| 263864   | 25       | 20       | 0,15     | 0,100 | 36 6 |
| 263866   | 25       | 20       | 0,15     | 0,100 | 36 6 |
| 263868   | 25       | 20       | 0,15     | 0,100 | 36 6 |
| 263870   | 25       | 20       | 0,15     | 0,100 | 36 6 |
| 263872   | 25       | 20       | 0,15     | 0,100 | 36 6 |
| 263874   | 25       | 20       | 0,15     | 0,100 | 36 6 |
| 263876   | 25       | 20       | 0,15     | 0,100 | 36 6 |
| 263878   | 25       | 20       | 0,15     | 0,100 | 36 6 |
| 263880   | 25       | 20       | 0,15     | 0,100 | 36 6 |

| Art. no. | widht/mm | length/m | strength | kg    | PU   |
|----------|----------|----------|----------|-------|------|
| 263882   | 19       | 33       | 0,15     | 0,120 | 48 8 |
| 263884   | 19       | 33       | 0,15     | 0,120 | 48 6 |
| 263886   | 19       | 33       | 0,15     | 0,120 | 48 6 |
| 263888   | 19       | 33       | 0,15     | 0,120 | 48 6 |
| 263890   | 19       | 33       | 0,15     | 0,120 | 48 6 |
| 263892   | 19       | 33       | 0,15     | 0,120 | 48 6 |
| 263894   | 19       | 33       | 0,15     | 0,120 | 48 6 |
| 263896   | 19       | 33       | 0,15     | 0,120 | 48 6 |
| 263898   | 19       | 33       | 0,15     | 0,120 | 48 6 |
| 263900   | 19       | 33       | 0,15     | 0,120 | 48 6 |

### Rainbow-Pack

- VDE tested
- DIN EN 60454-3-1
- Water, weather and UV resistant



| Art. no. | widht/mm | length/m | strength | PU          |
|----------|----------|----------|----------|-------------|
| 263820   | 15       | 10       | 0,15     | 10-pieces 1 |
| 263861   | 19       | 20       | 0,15     | 10-pieces 1 |

## Electro insulating tape

### Self-welding

#### Cold-resistant insulation tape "HUPtape-22plus"

- Excellent wrapping properties
- Can be processed even at very low temperatures
- Extreme weather proof (UV resistant)
- Resistant to corrosion, acids and lyes
- Processing temperature: -18°C to + 60°C
- Individually packaged in plastic box

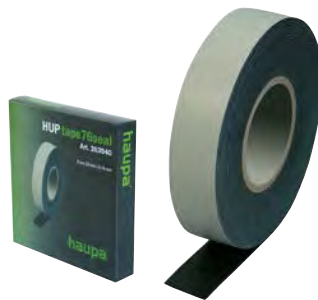


| Art. no. | TL   | widht/mm | strength | kg    | PU |
|----------|------|----------|----------|-------|----|
| 263930   | 20 m | 19       | 0,215    | 0,105 | 1  |

### Self-welding

#### Self-welding insulation tape "HUPtape76seal"

- Forms homogenous welding wraps
- Excellent dielectric properties
- Weather proof (UV resistant)
- Insulation on medium voltage cables up to 69 kV
- Resistant to corrosion, acids and lyes
- Individual in box packaging



| Art. no. | TL  | widht/mm | strength | kg    | PU |
|----------|-----|----------|----------|-------|----|
| 263940   | 9 m | 19       | 0,76     | 0,203 | 1  |

**haupa**<sup>®</sup>

**... convincing solutions**

Germany: **HAUPA**, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Routine tests

### Safety advice for working with live voltage

The basic requirements for working with live voltage are safety-insulated tools. Legal regulations and the following safety advice should always be observed:

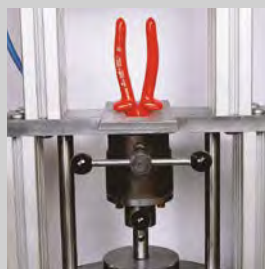
1. Transport your safety tools such that damage to the insulation is avoided.
2. Before use, make sure that the insulation is not damaged. Damaged tools must not be used.
3. Keep your safety tools clean and dry.
4. When working overhead or when using cutting pliers, protective glasses must be worn.
5. For your own safety, keep your work space clean and tidy when working with live voltage.
6. In enclosed, cramped spaces, protective clothing and equipment must be worn (e.g. safety gloves, covering drapes, protective hoods)
7. Only use suitable and tested tools. Make sure that loose and cut off parts do not fall onto live components.

### Routine tests in accordance with VDE Norm 1000 V IEC 60900:2012



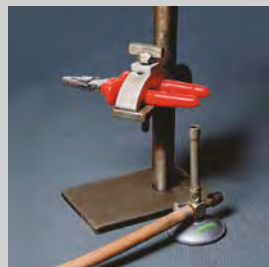
#### Cold-heading test

In this test, the toughness of the PVC material is checked by dropping a weight onto the tools which have been cooled down to -25°C. The tools must not show any cracking or other damage after the test.



#### Testing the adhesive strength of the PVC coating

After pliers have been stored for 168 hours at +70°C, the adhesive power of the PVC coating is tested using a pulling force of 500 Nm. The insulation material must stay firmly attached to the basic tool.



#### Flame resistance test

To exclude any fire risks, only flame-proof PVC material is used.



#### Pressure test

No puncture must occur, while testing the tool with a voltage of 5,000 V AC when also applying a pressure of 20 Nm at a temperature of +70°C to the tool.



#### Testing the insulating properties










After storing the tools under water for 24 hours, the tools are tested using 10,000 V AC for three minutes, while simultaneously measuring the discharge current. During this time, no puncture or sparkover must occur.



#### Voltage test

Each safety tool is individually voltage tested. This means that all tools which bear the relevant mark have been tested at 10,000 V AC and are approved for a voltage of 1,000 V, ensuring 10-fold safety.

#### Screw profiles

-  Slot
-  Cross slot Phillips
-  Cross slot Pozidriv
-  Pozidriv/flat slot
-  Tx
-  Tx with safety pin
-  Allen screw
-  Hexagon head
-  Ball point

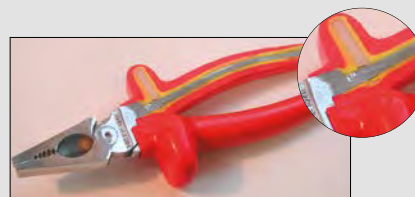
#### Patent ratchet wrench



The HAUPA ratchet wrench has a number of patented advantages. It is characterised particularly by ergonomic handling and high functional safety.

The excellent interlocking of the wrench insert, which must be able to withstand pull-out forces of up to 500 N is the main feature.

The ratchet can be operated with one hand due to a cross slide made from non-conducting material (polyamide). It is ergonomically designed such that it is accessible with the thumb of the hand holding it. This cross slide, which is deep in the inside of the ratchet, also ensures that the testing voltage of 10 kV gema DIN 60900 can easily be achieved.



#### Safety of HAUPA products

All HAUPA products under the product area of "working with live voltage" have a 2-colour multi-layer insulation (wherever technically possible). This multi-layer insulation supports the current VBG4 regulations. This regulation requires that before use all tools are tested for any damage that can be seen externally. The 2-colour coating – the second insulating layer contrast in yellow – ensures that any damages are visible immediately.

Safety tools



# INFO

## Screwdriver range

## Industrial quality

Screwdriver range according to the new Norm IEC 60900:2012. All blades are made of high quality Molybdenum vanadium steel, black, red-covered, Polypropylen moulded. This ergonomic moulded 2-component handles from PP/TPE material guarantees a high security with normal power transmission. Every screwdriver is individually tested and marked according to the new Norm.



1000 V IEC 60900:2012

Injected blades profile on the top of the handle - for a fast access in the tool box, abrasion is not possible



2

Homogeneous sizes-adaptation of the screwdrivers haft for better power transmission. Increase of the soft area for stronger grip

3

Exclusive, ergonomic design, non-slipping 2-component handles from PP/TPE material

4

Roll repressive



5

with 1000 V marking injected

6



Magnetic blade

An addition anti-slip protection on Phillips profiles prevents the tool from slipping out of the screw. Silver tip protects from corrosion.

## VDE screwdrivers 1000 V

### VDE 2-component screwdriver with PZ slot profile



Specifications and advantages of the PZ/FL profile.

The PZ/FL profile can only be used for combination screws that were previously screwed with a slot or recessed head PZ type screwdriver. The screws have an inner PZ profile with an additional cross slot that also allows it to be screwed with a slot screwdriver.



Area of application for PZ/FL profile

The screws are mainly used in electrical installation in automatic circuit breakers and safety switches



1000 V IEC 60900:2012

| Art. no. | size | BL  | TL  | form  | kg    | PU |
|----------|------|-----|-----|-------|-------|----|
| 101870   | 1    | 80  | 205 | PZ/FL | 0,060 | 1  |
| 101872   | 2    | 100 | 270 | PZ/FL | 0,094 | 1  |

### Screwdriver set with PZ slot profile



with 2 component handle made from PP/TPE material, blade made from molybdenum vanadium steel, hardened, blasted, routine checked, insulated

#### Contents:

- 101870
- 101872



1000 V IEC 60900:2012

| Art. no. | size  | form  | set      | kg    | PU |
|----------|-------|-------|----------|-------|----|
| 101879   | 1 + 2 | PZ/FL | 2-pieces | 0,200 | 1  |

### 2-component VDE electricians' screwdrivers



with 2 component handle made from PP/TPE material, blade made from molybdenum vanadium steel, hardened, blasted, routine checked, insulated



1000 V IEC 60900:2012



| Art. no. | CW  | KSt | BL  | TL  | kg    | PU |
|----------|-----|-----|-----|-----|-------|----|
| 101910   | 2,5 | 0,4 | 75  | 155 | 0,027 | 1  |
| 101912   | 3   | 0,5 | 100 | 185 | 0,029 | 1  |
| 101914   | 3,5 | 0,6 | 100 | 185 | 0,035 | 1  |
| 101916   | 4   | 0,8 | 100 | 195 | 0,052 | 1  |
| 101917   | 4   | 1,0 | 100 | 195 | 0,054 | 1  |
| 101918   | 5,5 | 1,0 | 125 | 230 | 0,070 | 1  |
| 101920   | 6,5 | 1,2 | 150 | 255 | 0,108 | 1  |
| 101922   | 8   | 1,2 | 175 | 295 | 0,177 | 1  |
| 101924   | 10  | 1,6 | 200 | 320 | 0,245 | 1  |

## 2-component VDE cross slotted screwdrivers Phillips

with 2 component handle made from PP/TPE material, blade made from molybdenum vanadium steel, hardened, blasted, routine checked, insulated, engraving on the blade ensures extra grip in the screw



▲ 1000 V IEC 60900:2012



| Art. no. | size | BL  | TL  | form | kg    | PU |
|----------|------|-----|-----|------|-------|----|
| 101940   | 0    | 60  | 145 | PH   | 0,034 | 1  |
| 101942   | 1    | 80  | 175 | PH   | 0,061 | 1  |
| 101944   | 2    | 100 | 205 | PH   | 0,100 | 1  |
| 101946   | 3    | 150 | 270 | PH   | 0,165 | 1  |

## 2-component VDE cross slotted screwdrivers Pozidriv

with 2 component handle made from PP/TPE material, blade made from molybdenum vanadium steel, hardened, blasted, routine checked, insulated



▲ 1000 V IEC 60900:2012



| Art. no. | size | BL  | TL  | form | kg    | PU |
|----------|------|-----|-----|------|-------|----|
| 101950   | 0    | 60  | 135 | PZ   | 0,033 | 1  |
| 101952   | 1    | 80  | 175 | PZ   | 0,061 | 1  |
| 101954   | 2    | 100 | 205 | PZ   | 0,095 | 1  |
| 101956   | 3    | 150 | 270 | PZ   | 0,166 | 1  |

## 2-component VDE screwdrivers Tx

with 2 component handle made from PP/TPE material, blade made from molybdenum vanadium steel, hardened, blasted, routine checked, insulated

▲ 1000 V IEC 60900:2012



| Art. no. | size | BL  | TL  | form | kg    | PU |
|----------|------|-----|-----|------|-------|----|
| 101850   | 8    | 100 | 185 | TX   | 0,053 | 1  |
| 101852   | 9    | 100 | 185 | TX   | 0,051 | 1  |
| 101854   | 10   | 100 | 195 | TX   | 0,053 | 1  |
| 101856   | 15   | 100 | 195 | TX   | 0,053 | 1  |
| 101858   | 20   | 100 | 195 | TX   | 0,052 | 1  |
| 101860   | 25   | 125 | 220 | TX   | 0,070 | 1  |
| 101862   | 27   | 125 | 230 | TX   | 0,072 | 1  |
| 101864   | 30   | 150 | 255 | TX   | 0,109 | 1  |
| 101866   | 40   | 175 | 295 | TX   | 0,178 | 1  |

## 2-component VDE screwdrivers Square

with 2 component handle made from PP/TPE material, blade made from molybdenum vanadium steel, hardened, blasted, routine checked, insulated

▲ 1000 V IEC 60900:2012



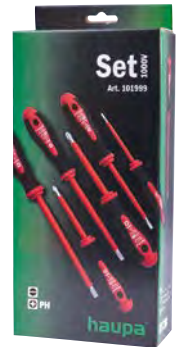
| Art. no. | size | BL  | TL  | form | kg    | PU |
|----------|------|-----|-----|------|-------|----|
| 102550   | 0    | 60  | 145 | SQ   | 0,034 | 1  |
| 102552   | 1    | 80  | 175 | SQ   | 0,061 | 1  |
| 102554   | 2    | 100 | 205 | SQ   | 0,095 | 1  |
| 102556   | 3    | 150 | 270 | SQ   | 0,166 | 1  |

## 2-component VDE screwdrivers set

with 2 component handle made from PP/TPE material, blade made from molybdenum vanadium steel, hardened, blasted, routine checked, insulated, 6-pieces. **Contents:** VDE Electricians' screwdriver 2,5 x 75 mm, 4 x 100 mm, 5,5 x 125 mm, 6,5 x 150 mm, VDE cross slotted screwdrivers Phillips or Pozidriv size 1 and 2



▲ 1000 V IEC 60900:2012



| Art. no.  | form     | set      | kg    | PU |
|-----------|----------|----------|-------|----|
| 101999    | Phillips | 6-pieces | 0,414 | 1  |
| 101999/PZ | Pozidriv | 6-pieces | 0,416 | 1  |

## VDE socket wrenches 1000 V

### 2-component VDE socket wrenches DIN 7445

with 2 component handle made from PP/TPE material, blade made from molybdenum vanadium steel, hardened, blasted, routine checked, insulated

▲ 1000 V IEC 60900:2012

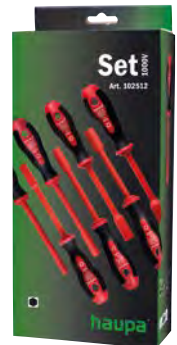


| Art. no. | WS  | BL  | TL  | kg    | PU |
|----------|-----|-----|-----|-------|----|
| 102520   | 4   | 125 | 220 | 0,105 | 1  |
| 102522   | 5   | 125 | 220 | 0,109 | 1  |
| 102524   | 5,5 | 125 | 220 | 0,116 | 1  |
| 102526   | 6   | 125 | 220 | 0,111 | 1  |
| 102528   | 7   | 125 | 230 | 0,116 | 1  |
| 102530   | 8   | 125 | 230 | 0,119 | 1  |
| 102532   | 9   | 125 | 230 | 0,122 | 1  |
| 102534   | 10  | 125 | 230 | 0,125 | 1  |
| 102536   | 11  | 125 | 245 | 0,167 | 1  |
| 102538   | 12  | 125 | 245 | 0,165 | 1  |
| 102540   | 13  | 125 | 245 | 0,175 | 1  |

### 2-component VDE socket wrenches set DIN 7445

with 2 component handle made from PP/TPE material, blade made from molybdenum vanadium steel, hardened, blasted, routine checked, insulated. **Contents:** 1 piece each 5 - 5,5 - 7 - 8 - 10 - 11 - 13 mm

▲ 1000 V IEC 60900:2012



| Art. no. | set      | kg    | PU |
|----------|----------|-------|----|
| 102512   | 7-pieces | 1,065 | 1  |

**haupa**

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# „Vario“ 1000 V replaceable blade system

## „Vario“ 1000 V replaceable blade system

**Vario**  
1000V

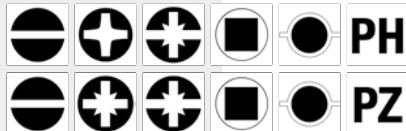
in robust nylon bag, **Contents:** 2C exchangeable handle, screw cap, replaceable blade - slotted blade 0.4 x 2.5 / 0.5 x 3.0 / 0.8 x 4.0 / PH1 / PH2 or PZ1 / PZ2, PZ/FL 2, switch cabinet key - square 1, double-bit

### Further characteristic feature include:

- High level of safety
- Exchangeable cap for use as an electronics screwdriver
- Switching cabinet key is integrated into the system
- Space-saving
- Weight-saving
- Cost-effective price/performance ratio
- Meets all relevant standards



1000 V IEC 60900:2012



| Art. no.  | form     | shank     | set       | kg    | PU |
|-----------|----------|-----------|-----------|-------|----|
| 102000    | Phillips | hexagonal | 10 pieces | 0,340 | 1  |
| 102000/PZ | Pozidriv | hexagonal | 10 pieces | 0,334 | 1  |

## „Vario“ nylon bag - empty

Robust nylon bag (with belt loop) wide hook and eye fastening and loop for hanging up



| Art. no. | width | height | kg  | PU    |   |
|----------|-------|--------|-----|-------|---|
| 102042   | empty | 215    | 290 | 0,088 | 1 |

## 2-component exchangeable „Vario“ handle

automatic locking mechanism ensures that blades do not fall out unexpectedly, ergonomically formed 2 component book of PP/TPE material

1000 V IEC 60900:2012



| Art. no. | TL  | shank     | kg    | PU |
|----------|-----|-----------|-------|----|
| 102040   | 120 | hexagonal | 0,058 | 1  |

## „Vario“ screw cap

Additional screw cap when using as precision tool (electronics)



| Art. no. | TL | kg    | PU |
|----------|----|-------|----|
| 102044   | 10 | 0,002 | 1  |

## „Vario“ 1000 V replaceable blade

Insulated replaceable blade made from molybdenum vanadium steel, hardened, blasted, with hexagonal shaft, greater torque transmission than a pure pozidrive or slotted blade

1000 V IEC 60900:2012



### „Vario“ replaceable blade – pozidrive blade/slotted

| Art. no. | form  | size | BL | TL  | kg    | PU |
|----------|-------|------|----|-----|-------|----|
| 102010   | PZ/FL | 1    | 85 | 165 | 0,035 | 1  |
| 102012   | PZ/FL | 2    | 85 | 165 | 0,045 | 1  |

1000 V IEC 60900:2012



### „Vario“ replaceable blade – slotted blade

| Art. no. | form | CW  | KSt | BL | TL  | kg    | PU |
|----------|------|-----|-----|----|-----|-------|----|
| 102014   | SL   | 2,5 | 0,4 | 85 | 165 | 0,013 | 1  |
| 102016   | SL   | 3,0 | 0,5 | 85 | 165 | 0,015 | 1  |
| 102017   | SL   | 3,5 | 0,6 | 85 | 165 | 0,080 | 1  |
| 102018   | SL   | 4,0 | 0,8 | 85 | 165 | 0,022 | 1  |
| 102020   | SL   | 5,5 | 1,0 | 85 | 165 | 0,034 | 1  |
| 102022   | SL   | 6,5 | 1,2 | 85 | 165 | 0,045 | 1  |

1000 V IEC 60900:2012



### „Vario“ replaceable blade – Phillips blade

| Art. no. | form | size | BL | TL  | kg    | PU |
|----------|------|------|----|-----|-------|----|
| 102001   | PH   | 0    | 85 | 165 | 0,023 | 1  |
| 102002   | PH   | 1    | 85 | 165 | 0,035 | 1  |
| 102004   | PH   | 2    | 85 | 165 | 0,044 | 1  |

1000 V IEC 60900:2012



### „Vario“ replaceable blade – pozidrive blade

| Art. no. | form | size | BL | TL  | kg    | PU |
|----------|------|------|----|-----|-------|----|
| 102005   | PZ   | 0    | 85 | 165 | 0,023 | 1  |
| 102006   | PZ   | 1    | 85 | 165 | 0,035 | 1  |
| 102008   | PZ   | 2    | 85 | 165 | 0,045 | 1  |

1000 V IEC 60900:2012



### „Vario“ replaceable blade – torx blade

| Art. no. | form | size | BL | TL  | kg    | PU |
|----------|------|------|----|-----|-------|----|
| 102060   | S-TX | 8    | 85 | 165 | 0,016 | 1  |
| 102062   | S-TX | 9    | 85 | 165 | 0,016 | 1  |
| 102064   | S-TX | 10   | 85 | 165 | 0,016 | 1  |
| 102066   | S-TX | 15   | 85 | 165 | 0,021 | 1  |
| 102068   | S-TX | 20   | 85 | 165 | 0,021 | 1  |
| 102070   | S-TX | 25   | 85 | 165 | 0,034 | 1  |
| 102072   | S-TX | 30   | 85 | 165 | 0,041 | 1  |

1000 V IEC 60900:2012



### „Vario“ switch cabinet key – Square

| Art. no. | size | TL | kg    | PU |
|----------|------|----|-------|----|
| 102030   | 6    | 47 | 0,010 | 1  |
| 102032   | 8    | 47 | 0,009 | 1  |

1000 V IEC 60900:2012



### „Vario“ switch cabinet key – Triangular

| Art. no. | size | TL | kg    | PU |
|----------|------|----|-------|----|
| 102034   | 9    | 47 | 0,009 | 1  |

1000 V IEC 60900:2012



### „Vario“ switch cabinet key – Double-bit

| Art. no. | size | TL | kg    | PU |
|----------|------|----|-------|----|
| 102036   | 5,3  | 47 | 0,009 | 1  |



# „Vario“ 1000 V replaceable blade system

## „VarioPro“ 1000 V replaceable blade system



The „VarioPro“ replaceable blade system with insulated replaceable blades, switching cabinet key is integrated into the system, VDE pliers set and voltage tester.

### Contents:

- Slot: 0.4 x 2.5 x 100, 0.5 x 3.0 x 100, 0.6 x 3.5 x 100, 0.8 x 4.0 x 100, 1.0 x 5.5 x 100, 1.2 x 6.5 x 100
- Phillips: 0 x 100, 1 x 100, 2 x 100
- Pozidriv: 0 x 100, 1 x 100, 2 x 100
- PZ/FL 1, PZ/FL 2
- Tx: 8 x 100, 9 x 100, 10 x 100, 15 x 100, 20 x 100, 25 x 100, 30 x 100
- Square: 8 x 47
- Double-bit: 5,3 x 47
- Screw cap, additional screw cap when using as precision tool (electronics)
- 2-component exchangeable handle: 120 mm
- Voltage testers VDE/GS: 100700, 125-250 V
- VDE 2C pliers: 211200\*, 211204\*, 211208\*, 211214

\*High leverage (high leverage pliers offer power saving of up to 50%)



1000 V IEC 60900:2012

Video 102050



Placeholders for torque handle



| Art. no. | set       | width | height | depth | kg    | PU |
|----------|-----------|-------|--------|-------|-------|----|
| 102052   | 30-pieces | 410   | 310    | 85    | 3,200 | 1  |



## Tool case „ElectroCombo“

black plastic case with metal catch, complete tool set for electricians and network technicians, case: 490 x 375 x 100 mm

### Contents:

- 2C-VDE combination pliers, 180 mm\*
- 2C-VDE side cutters, 160 mm\*
- 2C-VDE wire stripping pliers, 160 mm
- 2C-VDE long chain nose pliers, straight, 200 mm\*
- Cable cutter 160 mm, coating-insulated
- Crimping pliers for end sleeves 0,5 - 16 mm<sup>2</sup>
- Set ball point allen keys 9-pcs., extra long
- 2C exchangeable „Vario“ handle
- „Vario“ replaceable blade - slotted blade 2.5, 3, 4, 5.5 mm
- „Vario“ replaceable blade - Phillips blade 1, 2
- „Vario“ replaceable blade - pozidrive blade 1, 2
- „Vario“ replaceable blade - pozidrive blade/slotted 1 + 2
- Voltage tester „Basic“, black
- Spanners for switch-cabinets „HUPkey“
- Utility knives
- Junior hacksaw 150 mm
- Electricians' chisels 10 x 250 mm
- Cabinet levels 230 mm
- Measuring tape, 5 m
- Reversible ratchet 1/4"
- Engineers' hammer, 300 g
- Extension 1/4" 100 mm
- Sockets 1/4" WS: 4, 4.5, 5, 5.5, 6, 7, 8, 9, 10, 11, 12, 13, 14 mm
- Ratchet screwdriver „FlexPlus“ for long bits
- 1/4" Bits 50mm HEX 2, 2.5, 3, 4, 5, 6
- 1/4" Bits 50mm PH 0, 1, 2, 3
- 1/4" Bits 50mm PZ 0, 1, 2, 3
- 1/4" Bist 50mm FD 3, 4, 5, 6
- 1/4" Bits 50mm TX 10, 15, 20, 25, 30, 40
- 1/4" Bits 50mm PZ/FL 1 + 2
- 1/4" SQ x 1/4" HEX adapter 50 mm
- Assortment box 160 x 115 x 40 mm

\*High leverage (high leverage pliers offer power saving of up to 50%)



| Art. no. | set       | width | height | depth | kg    | PU |
|----------|-----------|-------|--------|-------|-------|----|
| 104090   | 78-pieces | 490   | 375    | 100   | 6,000 | 1  |

**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# INFO

## Dynamometric screwdriver with replaceable blades

The new HAUPA 1000 V VarioTQ dynamometric screwdriver is characterised by its precision and functionality.

The ergonomic handles can be adjusted individually.

1. 1.0 - 6.0 Nm
2. 0.5 - 3.5 Nm

HAUPA offers all relevant blade tip profiles as individual items and in set form in a high-quality nylon case.

- torque can be set using a separate key
- scale value can easily be read off
- clearly perceptible and audible signal when the set torque is achieved
- torque accuracy according to EN ISO 6789:2013-10



**VarioTQ** 1000V

with hexagonal shaft



1000 V IEC 60900:2012

insulated replaceable blade made from molybdenum vanadium steel, hardened, blasted

### Precisely adjustable torque

Two handle versions, also available individually:

**Art. no. 102790**  
1.0 - 6.0 Nm

**Art. no. 102792**  
0.5 - 3.5 Nm

## „VarioTQ“ 1000 V replaceable blade system

### „VarioTQ“ 1000 V dynamometric screwdriver with replaceable blades - Phillips / Pozidriv

**VarioTQ**

insulated replaceable blade made from molybdenum vanadium steel, hardened, blasted, with hexagonal shaft, in robust nylon bag (with belt loop and hook and loop closure)

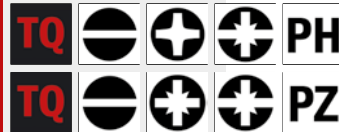
#### Contents:

- 2-component exchangeable handle (1000 V) 1 - 6 Nm or 0,5 - 3,5 Nm
- slotted 0,4 x 2,5 / 0,5 x 3,0 / 0,8 x 4,0 / 1,0 x 5,5 / 1,2 x 6,5
- PH0 / PH1 / PH2 or PZ0 / PZ1 / PZ2
- PZ/FL 1
- PZ/FL 2
- Square socket key



1000 V IEC 60900:2012

Video 102700



| Art. no.  | form | Nm        | set       | kg    | PU |
|-----------|------|-----------|-----------|-------|----|
| 102700    | PH   | 1 - 6     | 12 pieces | 0,700 | 1  |
| 102701    | PH   | 0,5 - 3,5 | 12 pieces | 0,700 | 1  |
| 102700/PZ | PZ   | 1 - 6     | 12 pieces | 0,700 | 1  |
| 102701/PZ | PZ   | 0,5 - 3,5 | 12 pieces | 0,700 | 1  |

# „VarioTQ“ 1000 V replaceable blade system

## „VarioTQ“ 1000 V dynamometric screwdriver with replaceable blades - Tx / Hex



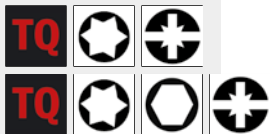
insulated replaceable blade made from molybdenum vanadium steel, hardened, blasted, with hexagonal shaft, in robust nylon bag (with belt loop and hook and loop closure)

### Contents:

- 2-component exchangeable handle (1000 V) 1 - 6 Nm or 0,5 - 3,5 Nm
- TX 8 - 9 - 10 - 15 - 20 - 25 - 30 or TX 8 - 9 - 10 - 15 - 20, HEX 4 - 5
- PZ/FL 1
- PZ/FL 2
- Square socket key



1000 V IEC 60900:2012



| Art. no. | form   | Nm        | set       | kg    | PU |
|----------|--------|-----------|-----------|-------|----|
| 102702   | TX     | 1 - 6     | 11-pieces | 0,700 | 1  |
| 102703   | TX     | 0,5 - 3,5 | 11-pieces | 0,700 | 1  |
| 102706   | TX+HEX | 1 - 6     | 11-pieces | 0,760 | 1  |
| 102707   | TX+HEX | 0,5 - 3,5 | 11-pieces | 0,760 | 1  |

## „VarioTQ“ 1000 V dynamometric screwdriver with replaceable blades - Hex



insulated replaceable blade made from molybdenum vanadium steel, hardened, blasted, with hexagonal shaft, in robust nylon bag (with belt loop and hook and loop closure)

### Contents:

- 2-component exchangeable handle (1000 V) 1 - 6 Nm or 0,5 - 3,5 Nm
- HEX 2 - 3 - 3,5 - 4 - 4,5 - 5 - 5,5 mm
- PZ/FL 1
- PZ/FL 2
- Square socket key



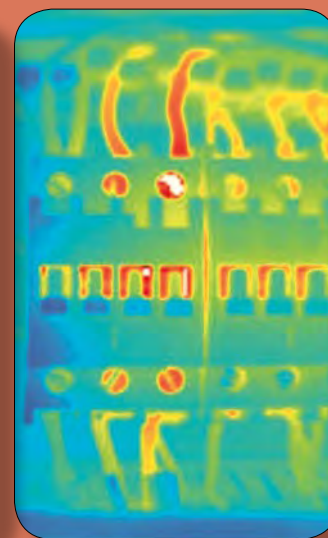
1000 V IEC 60900:2012



| Art. no. | form | Nm        | set       | kg    | PU |
|----------|------|-----------|-----------|-------|----|
| 102704   | HEX  | 1 - 6     | 11-pieces | 0,700 | 1  |
| 102705   | HEX  | 0,5 - 3,5 | 11-pieces | 0,700 | 1  |

## Torque screwdriver for a proper screw connection

- The use of tightening torques is a prerequisite for manufacturer-compliant fastening with type-tested switchgear.
- Screws are tightened neither too much, nor too little. Thus an increased transfer resistance and the emergence of glowing contacts are prevented.
- **NO FIRE HAZARD**



**haupa**

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# „VarioTQ“ 1000 V replaceable blade system

## „VarioTQ“ 1000 V nylon bag – empty

Robust nylon bag (with belt loop) wide hook and eye fastening and loop for hanging up



| Art. no. |       | kg    | PU |
|----------|-------|-------|----|
| 102785   | empty | 0,115 | 1  |

## 2-component exchangeable „VarioTQ“ 1000 V handle

automatic locking mechanism ensures that blades do not fall out unexpectedly, ergonomically formed 2 component book of PP/TPE material, precisely adjustable torque

1000 V IEC 60900:2012



TQ

| Art. no. | TL  | Nm        | kg    | PU |
|----------|-----|-----------|-------|----|
| 102790   | 122 | 1 - 6     | 0,185 | 1  |
| 102792   | 122 | 0,5 - 3,5 | 0,185 | 1  |

## Square socket key

for adjustment of the torque for VarioTQ replacement blades



| Art. no. | form | BL | KIBr | kg    | PU |
|----------|------|----|------|-------|----|
| 102784   | SQ   | 40 | 8    | 0,056 | 1  |

## „VarioTQ“ 1000 V replaceable blade

Insulated replaceable blade made from molybdenum vanadium steel, hardened, blasted, individually tested with hexagonal shaft

1000 V IEC 60900:2012



### „VarioTQ“ 1000 V replaceable blade – pozidrive blade/slotted

| Art. no. | form  | size | BL  | TL  | kg    | PU |
|----------|-------|------|-----|-----|-------|----|
| 102780   | PZ/FL | 1    | 195 | 195 | 0,040 | 1  |
| 102782   | PZ/FL | 2    | 195 | 195 | 0,040 | 1  |

1000 V IEC 60900:2012



### „VarioTQ“ 1000 V replaceable blade – slotted blade

| Art. no. | form | CW  | KSt | BL  | TL  | kg    | PU |
|----------|------|-----|-----|-----|-----|-------|----|
| 102710   | SL   | 2,5 | 0,4 | 195 | 195 | 0,040 | 1  |
| 102712   | SL   | 3,0 | 0,5 | 195 | 195 | 0,040 | 1  |
| 102714   | SL   | 4,0 | 0,8 | 195 | 195 | 0,040 | 1  |
| 102716   | SL   | 5,5 | 1,0 | 195 | 195 | 0,040 | 1  |
| 102718   | SL   | 6,5 | 1,2 | 195 | 195 | 0,040 | 1  |

1000 V IEC 60900:2012



### „VarioTQ“ 1000 V replaceable blade – Phillips blade

| Art. no. | form | size | BL  | TL  | kg    | PU |
|----------|------|------|-----|-----|-------|----|
| 102720   | PH   | 0    | 195 | 195 | 0,040 | 1  |
| 102722   | PH   | 1    | 195 | 195 | 0,040 | 1  |
| 102724   | PH   | 2    | 195 | 195 | 0,040 | 1  |
| 102726   | PH   | 3    | 195 | 195 | 0,040 | 1  |

1000 V IEC 60900:2012



### „VarioTQ“ 1000 V replaceable blade – pozidrive blade

| Art. no. | form | size | BL  | TL  | kg    | PU |
|----------|------|------|-----|-----|-------|----|
| 102730   | PZ   | 0    | 195 | 195 | 0,040 | 1  |
| 102732   | PZ   | 1    | 195 | 195 | 0,040 | 1  |
| 102734   | PZ   | 2    | 195 | 195 | 0,040 | 1  |
| 102736   | PZ   | 3    | 195 | 195 | 0,040 | 1  |

1000 V IEC 60900:2012



### „VarioTQ“ 1000 V replaceable blade – torx blade

| Art. no. | form | size | BL  | TL  | kg    | PU |
|----------|------|------|-----|-----|-------|----|
| 102740   | TX   | 8    | 195 | 195 | 0,040 | 1  |
| 102742   | TX   | 9    | 195 | 195 | 0,040 | 1  |
| 102744   | TX   | 10   | 195 | 195 | 0,040 | 1  |
| 102746   | TX   | 15   | 195 | 195 | 0,040 | 1  |
| 102748   | TX   | 20   | 195 | 195 | 0,040 | 1  |
| 102750   | TX   | 25   | 195 | 195 | 0,040 | 1  |
| 102752   | TX   | 30   | 195 | 195 | 0,040 | 1  |

1000 V IEC 60900:2012



### „VarioTQ“ 1000 V replaceable blade – hex blade

| Art. no. | form | size | BL  | TL  | kg    | PU |
|----------|------|------|-----|-----|-------|----|
| 102760   | HEX  | 2    | 195 | 195 | 0,040 | 1  |
| 102762   | HEX  | 3    | 195 | 195 | 0,040 | 1  |
| 102764   | HEX  | 3,5  | 195 | 195 | 0,040 | 1  |
| 102766   | HEX  | 4    | 195 | 195 | 0,040 | 1  |
| 102768   | HEX  | 4,5  | 195 | 195 | 0,040 | 1  |
| 102770   | HEX  | 5    | 195 | 195 | 0,040 | 1  |
| 102772   | HEX  | 5,5  | 195 | 195 | 0,040 | 1  |

## INFO

### 2 component pliers

### Industrial quality

HAUPA divides the VDE pliers assortment into three groups.

1. 2C VDE pliers with plug-on handles
2. VDE pliers, coating-insulated, treated with a 2-coloured coating-isolation (outside red/inside yellow)
3. VDE pliers with a 2-coloured coating-isolation (outside red/inside yellow), working head insulated

These pliers fulfil the VDE standard IEC 60900:2012

## High leverage | perfected cutting force performance

High leverage pliers offer power saving of up to 50%.

### Combination pliers DIN ISO 5746 VDE

german pattern, comfort grip, alloyed carbon steel, C 45, oil-hardened, cutting edges induction hardened, for soft and hard wire, chrome plated, sheathed handles, **leveraged, perfected cutting force performance.**



1000 V IEC 60900:2012



| Art. no. | TL  |           | kg    | PU |
|----------|-----|-----------|-------|----|
| 211198   | 160 | IEC 60900 | 0,000 | 1  |
| 211200   | 180 | VDE       | 0,287 | 1  |
| 211202   | 200 | VDE       | 0,364 | 1  |

### Side cutters DIN ISO 5749 VDE

swedish pattern, high alloyed carbon steel, oil-hardened, C 60, cutting edges induction hardened, for soft and hard wire, chrome plated, sheathed handles, **leveraged, perfected cutting force performance.**



1000 V IEC 60900:2012



| Art. no. | TL  |           | kg    | PU |
|----------|-----|-----------|-------|----|
| 211199   | 140 | IEC 60900 | 0,000 | 1  |
| 211204   | 160 | VDE       | 0,237 | 1  |
| 211206   | 180 | VDE       | 0,296 | 1  |

### Side cutting pliers with stripping function 1000 V

Swedish design, power class H, C 60, oil-hardened, induction hardened blades, for hard and soft wire, chrome plated, push-on grips. Aside from their traditional advantages, these side cutting pliers also possess an additional wire stripping function. (art. 211207, **leveraged, perfected cutting force performance.**)

1000 V IEC 60900:2012



| Art. no. | TL  |           | kg    | PU |
|----------|-----|-----------|-------|----|
| 211203   | 160 | IEC 60900 | 0,296 | 1  |
| 211207   | 180 | IEC 60900 | 0,296 | 1  |

### Wire stripping pliers VDE

C 45, oil-hardened, with spring and adjustment screw, for cable of 0,2 - 6 mm Ø, chrome plated, sheathed handles



1000 V IEC 60900:2012



| Art. no. | TL  |     | kg    | PU |
|----------|-----|-----|-------|----|
| 211214   | 160 | VDE | 0,202 | 1  |

### Heavy duty side cutters DIN ISO 5745 VDE

C 60, cutting edges induction hardened, chrome plated, sheathed handles



1000 V IEC 60900:2012



| Art. no. | TL  |           | kg    | PU |
|----------|-----|-----------|-------|----|
| 211211   | 160 | IEC 60900 | 0,000 | 1  |
| 211217   | 170 | VDE       | 0,268 | 1  |

### Heavy duty side cutters DIN ISO 5749 VDE

C 60, cutting edges induction hardened, chrome plated, sheathed handles, **leveraged, perfected cutting force performance.**



1000 V IEC 60900:2012



| Art. no. | TL  |     | kg    | PU |
|----------|-----|-----|-------|----|
| 211219   | 200 | VDE | 0,322 | 1  |

### Long chain nose pliers DIN ISO 5745 VDE

with side cutter, straight, C 45, oil-hardened, cutting edges induction hardened, for soft and hard wire, chrome plated, sheathed handles, **leveraged, perfected cutting force performance.**



1000 V IEC 60900:2012



| Art. no. | TL  |             | kg    | PU |
|----------|-----|-------------|-------|----|
| 211213   | 160 | - IEC 60900 | 0,000 | 1  |
| 211208   | 200 | - VDE       | 0,255 | 1  |

### Long chain nose pliers DIN ISO 5745 VDE, 45°

with side cutter, 45° angled nose, C 45, oil-hardened, cutting edges induction hardened, for soft and hard wire, chrome plated, sheathed handles, **leveraged, perfected cutting force performance.**



1000 V IEC 60900:2012



| Art. no. | TL  |               | kg    | PU |
|----------|-----|---------------|-------|----|
| 211209   | 160 | 45° IEC 60900 | 0,000 | 1  |
| 211210   | 200 | 45° VDE       | 0,260 | 1  |

**haupa**

...convincing solutions

# VDE pliers, sheathed handles 1000 V

## Short flat nose pliers DIN ISO 5745 VDE

C 45, oil-hardened, chrome plated, short body, sheathed handles



▲ 1000 V IEC 60900:2012



| Art. no. | TL  |     | kg    | PU |
|----------|-----|-----|-------|----|
| 211212   | 160 | VDE | 0,168 | 1  |

## Short round nose pliers DIN ISO 5745 VDE

C 45, alloyed carbon steel, oil-hardened, chrome plated, sheathed handles



▲ 1000 V IEC 60900:2012



| Art. no. | TL  |     | kg    | PU |
|----------|-----|-----|-------|----|
| 211216   | 160 | VDE | 0,161 | 1  |

## Water pump pliers DIN ISO 8976 VDE

self-clamping water pump plier with head adjustment, non-slip, chrome plated, sheathed handles



▲ 1000 V IEC 60900:2012



| Art. no. | TL  |     | kg    | PU |
|----------|-----|-----|-------|----|
| 211221   | 240 | VDE | 0,392 | 1  |

## Cable cutters VDE

- For cutting Cu/Al cables, fine and multi-wiring
- Chrome vanadium steel, plug-on handles
- Insulating function in upper head area
- Cable measuring function thanks to the 180 degree crossover of the legs
- Not for solid conductors

### Art. 211225 (Art. 211223)

- Data, telephone and control cable, maximum Ø 10 mm (Ø 12 mm)
- Cu single wire, maximum 16 mm<sup>2</sup> (16 mm<sup>2</sup>)
- Cu fine wire, maximum 16 mm<sup>2</sup> (35 mm<sup>2</sup>)
- Cu multi-wire, maximum 16 mm<sup>2</sup> (25 mm<sup>2</sup>)
- Al single wire, maximum 16 mm<sup>2</sup> (25 mm<sup>2</sup>)
- Al multi-wire, maximum Ø 10 mm = 16 mm<sup>2</sup> (25 mm<sup>2</sup>)



▲ 1000 V IEC 60900:2012

| Ø  | Ø  | Cu |  |  |
|----|----|----|--|--|
| 10 | 12 | AL |  |  |

| Art. no. | TL  | Ø  | mm <sup>2</sup> |     | kg    | PU |
|----------|-----|----|-----------------|-----|-------|----|
| 211225   | 160 | 10 | 16              | VDE | 0,215 | 1  |
| 211223   | 200 | 12 | 35              | VDE | 0,352 | 1  |

## Cable cutters VDE with spring joint

- For cutting Cu/Al cables, fine and multi-wiring
- Not suitable for steel wire and wire rope
- Chrome vanadium steel
- Self-opening joint spring
- Enormous cutting power with reduced force expenditure
- Not for solid conductors



▲ 1000 V IEC 60900:2012

| Ø  | Ø  | Cu |  |  |
|----|----|----|--|--|
| 10 | 15 | AL |  |  |

| Art. no. | TL  | Ø  | mm <sup>2</sup> |     | kg    | PU |
|----------|-----|----|-----------------|-----|-------|----|
| 211226   | 170 | 10 | 25              | VDE | 0,268 | 1  |
| 211228   | 230 | 15 | 70              | VDE | 0,457 | 1  |

## 2 components pliers set VDE, sheathed handles

with VDE-safety-isolation, best quality, pliers chrome plated, 4-pieces.

### Contents:

- Combination pliers 180 mm
- Side cutter 160 mm
- Long chain nose pliers 200 mm
- Wire stripping pliers 160 mm



▲ 1000 V IEC 60900:2012

| Art. no. | set      |     | kg    | PU |
|----------|----------|-----|-------|----|
| 220123   | 4-pieces | VDE | 1,063 | 1  |

## Fully insulating 1000 V PVC flat nose pliers

all of plastic, specially for mounting and blocking of electricmeters

▲ 1000 V IEC 60900:2012



| Art. no. | TL  |  | kg    | PU |
|----------|-----|--|-------|----|
| 120051   | 190 |  | 0,109 | 1  |

## Flat nose pliers 1000 V

all of plastic, specially for mounting and blocking of electricmeters

▲ 1000 V IEC 60900:2012



| Art. no. | TL  |  | kg    | PU |
|----------|-----|--|-------|----|
| 120052   | 160 |  | 0,084 | 1  |

# VDE-pliers, 2-coloured coating-insulation 1000 V

## Combination pliers DIN ISO 5746 VDE

alloyed carbon steel, C 45, oil-hardened, cutting edges induction hardened, for soft and hard wire, german pattern, chrome plated, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210056   | 180 | 0,300 | 1  |
| 210058   | 200 | 0,418 | 1  |

## Side cutters DIN ISO 5749 VDE

swedish pattern, high alloyed carbon steel, oil-hardened, C 60, cutting edges induction hardened, for soft and hard wire, chrome plated, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210100   | 160 | 0,253 | 1  |
| 210102   | 180 | 0,303 | 1  |

## Side cutters DIN ISO 5749 VDE

swedish pattern, high alloyed carbon steel, oil-hardened, C 60, cutting edges induction hardened, for soft and hard wire, chrome plated, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210110   | 240 | 0,489 | 1  |
| 210117   | 180 | 0,274 | 1  |
| 210119   | 200 | 0,368 | 1  |

## Front cutters 1000 V

alloyed carbon steel, cutting edges induction hardened, chrome plated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210303   | 160 | 0,328 | 1  |

## Long chain nose pliers DIN ISO 5745 VDE

alloyed carbon steel, C 45, oil-hardened, cutting edges induction hardened, for any wire, chrome plated, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210388   | 200 | 0,270 | 1  |

## Long chain nose pliers DIN ISO 5745 VDE, 45°

alloyed carbon steel, C 45, oil-hardened, cutting edges induction hardened, for any wire, chrome plated, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210390   | 200 | 0,256 | 1  |

## Short round nose pliers DIN ISO 5745 VDE

C 45, alloyed carbon steel, oil-hardened, chrome plated, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210296   | 160 | 0,180 | 1  |

## Short flat nose pliers DIN ISO 5745 VDE

C 45, alloyed carbon steel, oil-hardened, chrome plated, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210270   | 160 | 0,187 | 1  |



**haupa**

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# VDE-pliers, 2-coloured coating-insulation 1000 V

## Wire stripping pliers VDE

C 45, oil-hardened, with spring and adjustment screw, for cable of 0,2 - 6 mm Ø, chrome plated, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210648   | 160 | 0,232 | 1  |

## Water pump pliers DIN ISO 8976 1000 V

heavy pattern, made of chrome vanadium steel, with roll, chrome plated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210588   | 260 | 0,590 | 1  |

## Water pump pliers DIN ISO 8976 1000 V

chrome vanadium, 31 Cr V3, box-joint, burner hole, teeth induction hardened, finger protection, oil-hardened, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210583   | 300 | 0,423 | 1  |

## Cable cutters 1000 V with spring joint

- For cutting Cu/Al cables, fine and multi-wiring
- Not suitable for steel wire and wire rope
- Chrome vanadium steel
- Self-opening joint spring
- Enormous cutting power with reduced force expenditure
- Not for solid conductors

1000 V IEC 60900:2012



| Art. no.   | TL  | Ø  | mm <sup>2</sup> | kg    | PU |
|------------|-----|----|-----------------|-------|----|
| 200086/VDE | 205 | 10 | 25              | 0,274 | 1  |
| 200088/VDE | 230 | 15 | 70              | 0,479 | 1  |

## Pliers set, 2-coloured coating-insulation

C 45, oil-hardened, 2-coloured coating-insulation - inside yellow/ outside red. Pliers chrome plated, 4-pieces.

### Contents:

- Combination pliers 180 mm
- Diagonal cutters 160 mm
- Long chain nose pliers, straight 200 mm
- Wire stripping pliers 160 mm



1000 V IEC 60900:2012



| Art. no. | set             | kg    | PU |
|----------|-----------------|-------|----|
| 220126   | <b>4-pieces</b> | 1,000 | 1  |

## Tool case „Real“ 1000 V

made of plastic, complete with 20 security tools. Dimension: 450 x 340 x 100 mm.

### Contents:

- 2C-VDE electrician's screwdrivers 2,5 x 75, 4 x 100, 6,5 x 150, 8 x 175
- 2C-VDE cross slotted screwdrivers PH, size 0, 1, 2
- 2C-VDE socket wrenches 5, 8, 10, 13 mm
- VDE combination pliers 200 mm
- VDE side cutters 180 mm
- VDE telephone pliers, straight 200 mm
- VDE wire stripping pliers 160 mm
- VDE flat nose pliers 160 mm
- VDE round nose pliers 160 mm
- Cable knife
- Cable stripping knife
- 2-pole voltage tester



1000 V IEC 60900:2012



| Art. no. | set              | kg    | PU |
|----------|------------------|-------|----|
| 220148   | <b>20-pieces</b> | 4,300 | 1  |



# VDE pliers, coating-insulated 1000 V, head insulated

## Combination pliers DIN ISO 5746 1000 V

working head insulated, 2-coloured coating-insulation - inside yellow/outside red

⚠ 1000 V IEC 60900:2012



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210263   | 180 | 0,306 | 1  |
| 210264   | 200 | 0,372 | 1  |

## Side cutters DIN ISO 5749 1000 V

working head insulated, 2-coloured coating-insulation - inside yellow/outside red

⚠ 1000 V IEC 60900:2012



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210301   | 160 | 0,270 | 1  |
| 210302   | 180 | 0,309 | 1  |

## Long chain nose pliers DIN ISO 5745 1000 V

straight, working head insulated, 2-coloured coating-insulation - inside yellow/outside red

⚠ 1000 V IEC 60900:2012



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210266   | 160 | 0,182 | 1  |
| 210267   | 200 | 0,236 | 1  |

## Long chain nose pliers DIN ISO 5745 1000 V, 45°

angled nose, working head insulated, 2-coloured coating-insulation - inside yellow/outside red

⚠ 1000 V IEC 60900:2012



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210297   | 200 | 0,228 | 1  |

## Plan grip pliers 1000 V

working head insulated, made of special alloy steel, long, flat, plain gripping jaws, round edges, 2-coloured coating-insulation - inside yellow/outside red

⚠ 1000 V IEC 60900:2012



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210298   | 200 | 0,215 | 1  |

## Short flat nose pliers DIN ISO 5745 1000 V

working head insulated, 2-coloured coating-insulation - inside yellow/outside red

⚠ 1000 V IEC 60900:2012



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210299   | 160 | 0,216 | 1  |

## Long chain nose pliers DIN ISO 5745 1000 V

working head insulated, 2-coloured coating-insulation - inside yellow/outside red

⚠ 1000 V IEC 60900:2012



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210300   | 160 | 0,191 | 1  |

## Wire stripping pliers 1000 V

working head insulated, 2-coloured coating-insulation - inside yellow/outside red

⚠ 1000 V IEC 60900:2012



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210265   | 160 | 0,180 | 1  |



**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Cable cutters, stripping pliers 1000 V

## Cable cutter 1000 V

Grave version of vanadium steel, annealed, opening 15 mm, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no. | TL  | Ø  | mm <sup>2</sup> | kg    | PU |
|----------|-----|----|-----------------|-------|----|
| 200127   | 160 | 15 | 50              | 0,289 | 1  |

## Cable cutter 1000 V

Long version, slight strain, one and two hand handling, proper cutting due to precise grind, forged of special carbon-steel, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



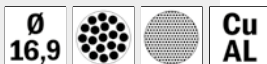
| Art. no. | TL  | Ø  | mm <sup>2</sup> | kg    | PU |
|----------|-----|----|-----------------|-------|----|
| 200129   | 240 | 15 | 50              | 0,484 | 1  |

## Cable cutter with a snap 1000 V

Laser-cut components made of special carbon steel, oil-hardened, for optimal precision, CNC-ground cutting type, inductively hardened for maximum cutting performance, Screwed joint connections, re-adjustable for longer durability as well as, 2-coloured coating-insulation - inside yellow/outside red, for cables to 16,9 mm Ø (70 mm<sup>2</sup>)



1000 V IEC 60900:2012



| Art. no.   | TL  | Ø    | mm <sup>2</sup> | kg    | PU |
|------------|-----|------|-----------------|-------|----|
| 201002/VDE | 180 | 16,9 | 70              | 0,247 | 1  |

## Cable cutter 1000 V

of carbon-steel, maximum cutting capacity due to special cutting-geometry, with VDE insulation, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no. | TL  | Ø  | mm <sup>2</sup> | kg    | PU |
|----------|-----|----|-----------------|-------|----|
| 200120   | 215 | 20 | 70              | 0,403 | 1  |

## Double edged cable cutter 1000 V

slight strain due to optimal lever-transmission, edges with precise grind for easy and proper cutting by one hand handling, opening 20 mm, forged of special carbon-steel, for copper and alu-cable, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no. | TL  | Ø  | mm <sup>2</sup> | kg    | PU |
|----------|-----|----|-----------------|-------|----|
| 200128   | 200 | 20 | 50              | 0,382 | 1  |

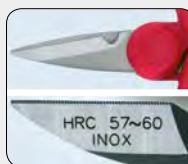
## Allround soft-grip scissors VDE

The new allround Soft - Grip scissors with its relatively short blades and special handles are designed to fulfil the needs of the professional electrical installers. The impressive cutting performance and the tough construction make this new scissors a special tool.

- ergonomic design (2 component)
- slipping free handle - Soft - Grip
- high cutting performance by low cutting force
- precision toothing
- cable stripping device
- stainless



1000 V IEC 60900:2012



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 200189   | 160 | 25              | 0,083 | 1  |

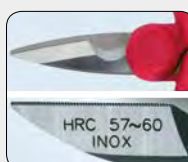
## Allround soft-grip scissors VDE

The new allround Soft - Grip scissors with its relatively short blades and special handles are designed to fulfil the needs of the professional electrical installers. The impressive cutting performance and the tough construction make this new scissors a special tool.

- ergonomic design (2 component)
- slipping free handle - Soft - Grip
- high cutting performance by low cutting force
- precision toothing
- cable stripping device
- stainless



1000 V IEC 60900:2012



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 200191   | 160 | 50              | 0,082 | 1  |

# Cable cutters 1000 V

## VDE ratchet cable cutter with cover 1000 V

One-hand cable cutter with ratchet, optimal lever-transmission, encapsulated head, for copper and alu-cable, opening 25 mm, 2-coloured coating-insulation - inside yellow/outside red



⚠ 1000 V IEC 60900:2012



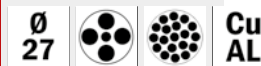
| Art. no. | TL  | Ø  | mm <sup>2</sup> | kg    | PU |
|----------|-----|----|-----------------|-------|----|
| 200109   | 290 | 34 | 240             | 1,308 | 1  |

## Cable cutter 1000 V

- For cutting Cu/Al cables, fine and multi-wiring
- Not suitable for steel wire and wire rope
- Low force required thanks to best blade geometry and translation ratios
- Vanadium electro-steel, forged, oil-hardened
- Aluminium legs
- Hardened blades with precision grinding
- Adjustable screw joint



⚠ 1000 V IEC 60900:2012



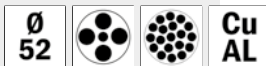
| Art. no. | TL  | Ø  | mm <sup>2</sup> | kg    | PU |
|----------|-----|----|-----------------|-------|----|
| 200123   | 500 | 27 | 150             | 1,389 | 1  |

## Ratchet cable cutter 1000 V

Extremely durable special steel, single-handed operation, stepped cutting in gradation-free cut for copper and aluminium cable



⚠ 1000 V IEC 60900:2012



| Art. no. | Ø  | mm <sup>2</sup> | kg    | PU |
|----------|----|-----------------|-------|----|
| 200198   | 52 | 400             | 0,942 | 1  |

## Cable cutters 1000 V

- For cutting Cu/Al cables, fine and multi-wiring
- Not suitable for steel wire and wire rope
- Hardened blades with precision grinding
- Dual lever ensures easy cutting
- Adjustable screw joint
- Blade head in chrome vanadium steel, forged and oil-hardened



⚠ 1000 V IEC 60900:2012



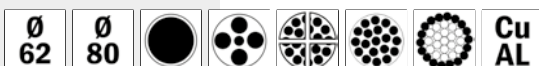
| Art. no. | TL  | Ø  | mm <sup>2</sup> | kg    | PU |
|----------|-----|----|-----------------|-------|----|
| 200110   | 600 | 26 | 150             | 2,327 | 1  |
| 200141   | 700 | 33 | 185             | 3,292 | 1  |

## Ratchet cable cutter 1000 V

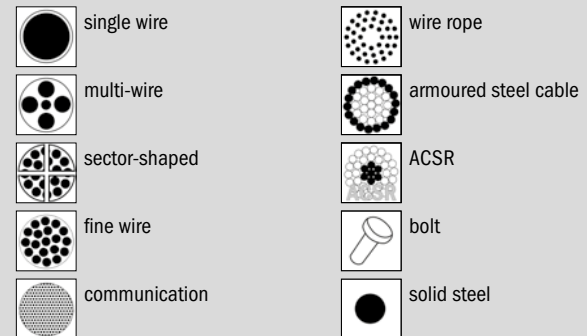
Two-handed cutter with dual bearing offset mechanism, almost break-proof meshing of rotating blade and tooth blade, separates multiple and fine-wired copper and aluminium cables up to a diameter of 62 mm or 80 mm, but also separates cables with thin steel sheet sleeve or steel sheet armoring in the outer part of the cable, not for hardened steel



⚠ 1000 V IEC 60900:2012



| Art. no. | Ø  | mm <sup>2</sup> | kg    | PU |
|----------|----|-----------------|-------|----|
| 200193   | 62 | 840             | 2,200 | 1  |
| 200195   | 80 | 1000            | 3,150 | 1  |



**haupa**<sup>®</sup>

...convincing solutions

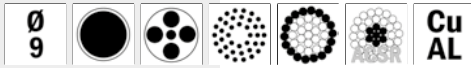
Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Wire cutters 1000 V

### Wire rope and cable cutter 1000 V

with lever action, blades of high alloyed interchangeable, cutting capacity steelaluminum ropes up to 16 mm<sup>2</sup>, for copper- and aluminum cable, opening approx 9 mm

1000 V IEC 60900:2012



| Art. no.  | TL                 | ∅ | mm <sup>2</sup> | kg    | PU |
|-----------|--------------------|---|-----------------|-------|----|
| 200081    | 700                | 9 | 16              | 2,880 | 1  |
| 200081/MK | Spare cutting head |   |                 | 0,350 | 1  |

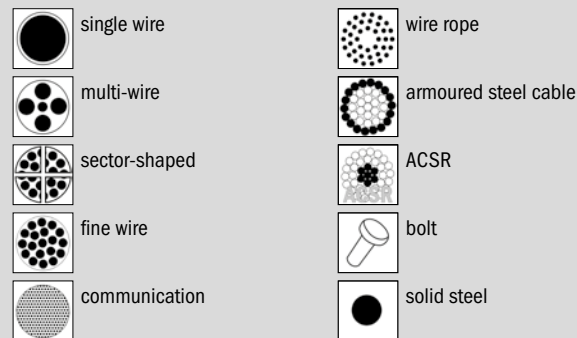
### Wire rope and cable cutter 1000 V

without transmission, blades of high quality special steel, forged, replaceable, opening 20 mm, insulated. Working range: steel-aluminum rope up to 120 mm<sup>2</sup>, copper- and aluminum cable

1000 V IEC 60900:2012



| Art. no. | TL                 | ∅  | mm <sup>2</sup> | kg    | PU |
|----------|--------------------|----|-----------------|-------|----|
| 200130   | 600                | 20 | 120             | 2,348 | 1  |
| 200132   | Spare cutting head |    |                 | 0,340 | 1  |



## Hacksaw frames 1000 V

### Hacksaw frame 1000 V

fully insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no. | TL  | Sbl. | kg    | PU |
|----------|-----|------|-------|----|
| 110558   | 200 | 150  | 0,248 | 1  |

### Hacksaw frame 1000 V

fully insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no. | TL  | Sbl. | strength | kg    | PU |
|----------|-----|------|----------|-------|----|
| 110559   | 350 | 300  | 18 x 8   | 0,732 | 1  |

## Cable sheath strippers 1000 V

### Stripping pliers 1000 V

full insulated, for cutting and stripping off cable sheaths of PVC, PE and VPE, limited cutting deep and therefore no damage on the inside conductors, easy handling, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no. | TL  | ∅       | kg    | PU |
|----------|-----|---------|-------|----|
| 200149   | 200 | 26 - 52 | 0,739 | 1  |

### Cable sheath cutter 1000 V

for removing all insulating layers from cables with diameters as of 25 mm

- Replaceable dual blade
- Cutting depth can be set
- Suitable for lengthwise and circular cuts

1000 V IEC 60900:2012



Video 110561\_67



| Art. no. | ∅            | kg    | PU      |
|----------|--------------|-------|---------|
| 110561   | >25          | 0,250 | 1       |
| 110569   | spare blades |       | 0,040 1 |

# VDE cable knives 1000 V

## Cable knife VDE

with a straight, strong blade, handles made from tough elastic, impact proof plastic, with blade guard



1000 V IEC 60900:2012



| Art. no. | BL | form     | kg    | PU |
|----------|----|----------|-------|----|
| 200000   | 50 | straight | 0,110 | 1  |

## Cable knife VDE

with a hook-shaped blade, handles made from tough elastic, impact proof plastic, with blade guard, thumb recess at the front and finger hook at the end of the handle. **Application:** Round cable



1000 V IEC 60900:2012



| Art. no. | BL | form     | kg    | PU |
|----------|----|----------|-------|----|
| 200002   | 35 | straight | 0,093 | 1  |

## Cable knife VDE

with a hook-shaped insulated blade, handles made from tough elastic, impact proof plastic, with blade guard. **Application:** Large round cables



1000 V IEC 60900:2012



| Art. no. | BL | form   | kg    | PU |
|----------|----|--------|-------|----|
| 200003   | 35 | sickle | 0,074 | 1  |

## Cable knife VDE

with a curved blade, handles made from tough elastic, impact proof plastic, with blade guard. **Application:** Sector cable



1000 V IEC 60900:2012



| Art. no. | BL | form   | kg    | PU |
|----------|----|--------|-------|----|
| 200004   | 35 | hooked | 0,087 | 1  |

## Cable knife VDE

with a straight, partially-insulated, strong blade, handles made from tough elastic, impact proof plastic, with blade guard. **Application:** To prevent short circuiting



1000 V IEC 60900:2012



| Art. no. | BL | form     | kg    | PU |
|----------|----|----------|-------|----|
| 200005   | 40 | straight | 0,106 | 1  |

## Cable knife VDE with sliding block

with a hook blade for slicing open and removing the sleeve from wet-room cables, handles made from tough elastic, impact proof plastic, with blade guard. **Application:** Wet-room cables, no damage to conductor insulation thanks to sliding block



1000 V IEC 60900:2012



| Art. no. | BL | form   | kg    | PU |
|----------|----|--------|-------|----|
| 200007   | 50 | sickle | 0,120 | 1  |

## Cable stripping knife VDE

with a straight, strong blade, handles made from tough elastic, impact proof plastic, with blade guard. **Application:** Rubberised insulation types



1000 V IEC 60900:2012



| Art. no. | BL | form     | kg    | PU |
|----------|----|----------|-------|----|
| 200009   | 50 | straight | 0,094 | 1  |

## Cable knife VDE

with a straight, partially-insulated, strong blade, handles made from tough elastic, impact proof plastic, replaceable blades, fixed blade guard. **Application:** To prevent short circuiting



1000 V IEC 60900:2012



| Art. no. | BL | form                       | kg    | PU |
|----------|----|----------------------------|-------|----|
| 201010   | 50 | straight                   | 0,067 | 1  |
| 201012   |    | replacement blades, 4-pcs. | 0,087 | 1  |

## Cable stripping knife VDE

Blade with a slim, straight blade for fine tasks, handles made from tough elastic, impact proof plastic, with blade guard. **Application:** Phases



1000 V IEC 60900:2012



| Art. no. | BL | form     | kg    | PU |
|----------|----|----------|-------|----|
| 200013   | 50 | straight | 0,094 | 1  |



**haupa**<sup>®</sup>

...convincing solutions

## T-Handle socket wrenches 1000 V

chrome vanadium steel, full insulated, for hexagon nuts, DIN 7440, 2-coloured coating-insulation - inside yellow/outside red

⚠ 1000 V IEC 60900:2004



| Art. no. | WS | BL  | handle | kg    | PU |
|----------|----|-----|--------|-------|----|
| 110000   | 10 | 200 | 160    | 0,300 | 1  |
| 110002   | 11 | 200 | 160    | 0,315 | 1  |
| 110004   | 12 | 200 | 160    | 0,320 | 1  |
| 110006   | 13 | 200 | 160    | 0,320 | 1  |
| 110008   | 14 | 200 | 160    | 0,426 | 1  |
| 110010   | 17 | 200 | 160    | 0,401 | 1  |
| 110012   | 19 | 200 | 160    | 0,430 | 1  |
| 110022   | 11 | 300 | 160    | 0,429 | 1  |
| 110024   | 12 | 300 | 160    | 0,375 | 1  |
| 110026   | 13 | 300 | 160    | 0,380 | 1  |
| 110028   | 14 | 300 | 160    | 0,385 | 1  |
| 110030   | 17 | 300 | 160    | 0,534 | 1  |
| 110032   | 19 | 300 | 160    | 0,556 | 1  |
| 110034   | 22 | 300 | 160    | 0,662 | 1  |
| 110036   | 24 | 300 | 160    | 0,990 | 1  |

## Cross type socket wrenches 1000 V

chrome vanadium steel, no contact with steel insert, full insulated, 2-coloured coating-insulation - inside yellow/outside red

⚠ 1000 V IEC 60900:2004



| Art. no. | WS          | BL  | kg    | PU |
|----------|-------------|-----|-------|----|
| 110070   | 10-11-14-17 | 200 | 0,451 | 1  |
| 110074   | 11-12-13-17 | 200 | 0,225 | 1  |
| 110076   | 10-13-14-17 | 200 | 0,455 | 1  |
| 110078   | 11-13-14-17 | 200 | 0,449 | 1  |
| 110080   | 13-17-19-22 | 200 | 0,502 | 1  |

## Counter hold spanners 1000 V

chrome vanadium steel (31 CrV 3), 2-coloured coating-insulation - inside yellow/outside red

⚠ 1000 V IEC 60900:2004



| Art. no. | WS | TL  | kg    | PU |
|----------|----|-----|-------|----|
| 110081   | 10 | 200 | 0,118 | 1  |
| 110083   | 12 | 200 | 0,120 | 1  |
| 110084   | 13 | 200 | 0,140 | 1  |
| 110085   | 14 | 250 | 0,150 | 1  |
| 110087   | 16 | 260 | 0,249 | 1  |
| 110089   | 17 | 270 | 0,255 | 1  |
| 110091   | 18 | 265 | 0,250 | 1  |
| 110093   | 19 | 270 | 0,275 | 1  |
| 110095   | 20 | 275 | 0,300 | 1  |
| 110097   | 22 | 275 | 0,300 | 1  |
| 110099   | 24 | 270 | 0,350 | 1  |

## Right angle allen keys 1000 V

chrome vanadium steel, for hexagon socket screws, full insulated, 2-coloured coating-insulation - inside yellow/outside red

⚠ 1000 V IEC 60900:2004



| Art. no. | WS | kg    | PU |
|----------|----|-------|----|
| 110042   | 3  | 0,016 | 1  |
| 110044   | 4  | 0,029 | 1  |
| 110046   | 5  | 0,045 | 1  |
| 110048   | 6  | 0,051 | 1  |
| 110050   | 8  | 0,103 | 1  |
| 110052   | 10 | 0,220 | 1  |
| 110054   | 12 | 0,352 | 1  |

## T-handle allen keys 1000 V

chrome vanadium steel, for screws with hexagon inserts, full insulated, 2-coloured coating-insulation - inside yellow/outside red



⚠ 1000 V IEC 60900:2012



| Art. no. | WS | kg    | PU |
|----------|----|-------|----|
| 110060   | 5  | 0,222 | 1  |
| 110062   | 6  | 0,227 | 1  |
| 110064   | 8  | 0,224 | 1  |

## Single ended spanners 1000 V

chrome vanadium steel, full insulated, offset at 15°, 2-coloured coating-insulation - inside yellow/outside red



⚠ 1000 V IEC 60900:2012



| Art. no. | WS | TL  | strength | kg    | PU |
|----------|----|-----|----------|-------|----|
| 110260   | 6  | 75  | 3        | 0,021 | 1  |
| 110262   | 7  | 80  | 3,5      | 0,020 | 1  |
| 110264   | 8  | 85  | 3,5      | 0,032 | 1  |
| 110266   | 9  | 100 | 4        | 0,035 | 1  |
| 110268   | 10 | 120 | 5        | 0,035 | 1  |
| 110270   | 11 | 130 | 5,5      | 0,044 | 1  |
| 110272   | 12 | 140 | 5,5      | 0,064 | 1  |
| 110274   | 13 | 155 | 6        | 0,061 | 1  |
| 110276   | 14 | 170 | 6        | 0,084 | 1  |
| 110278   | 17 | 185 | 6,5      | 0,121 | 1  |
| 110280   | 19 | 210 | 7,5      | 0,140 | 1  |
| 110282   | 22 | 230 | 8,5      | 0,215 | 1  |
| 110284   | 24 | 250 | 9,5      | 0,242 | 1  |
| 110286   | 27 | 290 | 11,5     | 0,338 | 1  |
| 110288   | 30 | 345 | 13       | 0,390 | 1  |
| 110290   | 32 | 350 | 15       | 0,503 | 1  |

## Single ended tool set acc. to VDE 1000 V

in tool wallet of black imitation leather. **Contents:** 8 single ended tools of chrom vanadium steel, offset at 15°, 2-coloured coating-insulation - inside yellow/outside red.

### Populated with:

- Size of key 10, 11, 12, 13, 14, 17, 19, 22



1000 V IEC 60900:2012



| Art. no. | set             | empty  | kg    | PU |
|----------|-----------------|--------|-------|----|
| 220017   | <b>8-pieces</b> | 220002 | 1,181 | 1  |



## Ring spanners 1000 V

chrome vanadium steel, full insulated, offset at 75°, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no. | WS        | TL  | kg    | PU |
|----------|-----------|-----|-------|----|
| 110300   | <b>6</b>  | 140 | 0,061 | 1  |
| 110302   | <b>7</b>  | 140 | 0,066 | 1  |
| 110304   | <b>8</b>  | 150 | 0,084 | 1  |
| 110306   | <b>9</b>  | 155 | 0,066 | 1  |
| 110308   | <b>10</b> | 160 | 0,092 | 1  |
| 110310   | <b>11</b> | 170 | 0,089 | 1  |
| 110312   | <b>12</b> | 180 | 0,130 | 1  |
| 110314   | <b>13</b> | 195 | 0,132 | 1  |
| 110316   | <b>14</b> | 205 | 0,147 | 1  |
| 110318   | <b>17</b> | 240 | 0,233 | 1  |
| 110320   | <b>19</b> | 260 | 0,236 | 1  |
| 110322   | <b>22</b> | 280 | 0,345 | 1  |
| 110324   | <b>24</b> | 280 | 0,357 | 1  |

## Ratchet ring spanners 1000 V

full insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



72 sprockets

| Art. no. | WS        | kg    | PU |
|----------|-----------|-------|----|
| 110870   | <b>8</b>  | 0,032 | 1  |
| 110872   | <b>9</b>  | 0,040 | 1  |
| 110874   | <b>10</b> | 0,050 | 1  |
| 110876   | <b>11</b> | 0,059 | 1  |
| 110878   | <b>12</b> | 0,065 | 1  |
| 110880   | <b>13</b> | 0,076 | 1  |
| 110882   | <b>14</b> | 0,086 | 1  |
| 110884   | <b>15</b> | 0,105 | 1  |
| 110886   | <b>16</b> | 0,130 | 1  |
| 110888   | <b>17</b> | 0,161 | 1  |
| 110890   | <b>18</b> | 0,179 | 1  |
| 110892   | <b>19</b> | 0,215 | 1  |

## Adjustable wrenches to DIN 3117 A 1000 V

steel forged, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no. | WS max.   | TL  | kg    | PU |
|----------|-----------|-----|-------|----|
| 110555   | <b>26</b> | 200 | 0,325 | 1  |
| 110556   | <b>31</b> | 250 | 0,512 | 1  |
| 110557   | <b>36</b> | 300 | 0,809 | 1  |

**haupa**<sup>®</sup>

**...convincing solutions**

**Reversible ratchet 1000 V**

1/4"

full insulated, from shock-resistant plastic



1000 V IEC 60900:2012



| Art. no. | drive | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 220577   | 1/4"  | 150 | 0,145 | 1  |

**Fittings for hexagon socket screws 1000 V**

1/4"

1/4" square drive, made of chrome vanadium steel, forged, oil hardened, full insulated, from shock-resistant plastic



1000 V IEC 60900:2012



| Art. no. | WS | drive | TL | kg    | PU |
|----------|----|-------|----|-------|----|
| 220591   | 3  | 1/4"  | 55 | 0,016 | 1  |
| 220592   | 4  | 1/4"  | 55 | 0,012 | 1  |
| 220593   | 5  | 1/4"  | 55 | 0,012 | 1  |
| 220594   | 6  | 1/4"  | 55 | 0,024 | 1  |

**Socket T-wrench 1000 V**

1/4"

chrome vanadium steel, tempered, with locking device against accidental loosening of sockets or extensions, full insulated, from shock-resistant plastic



1000 V IEC 60900:2012



| Art. no. | drive | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 220578   | 1/4"  | 125 | 0,085 | 1  |

**Extensions 1000 V**

1/4"

with locking device against accidental loosening of sockets or extensions, full insulated, from shock-resistant plastic



1000 V IEC 60900:2012



| Art. no. | drive | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 220579   | 1/4"  | 100 | 0,050 | 1  |
| 220580   | 1/4"  | 150 | 0,070 | 1  |

**Hexagon sockets 1000 V**

1/4"

1/4" square drive, full insulated, from shock-resistant plastic



1000 V IEC 60900:2012



| Art. no. | WS | drive | TL | kg    | PU |
|----------|----|-------|----|-------|----|
| 220581   | 5  | 1/4"  | 40 | 0,011 | 1  |
| 220582   | 6  | 1/4"  | 40 | 0,011 | 1  |
| 220583   | 7  | 1/4"  | 40 | 0,012 | 1  |
| 220584   | 8  | 1/4"  | 40 | 0,013 | 1  |
| 220585   | 9  | 1/4"  | 40 | 0,014 | 1  |
| 220586   | 10 | 1/4"  | 40 | 0,014 | 1  |
| 220587   | 11 | 1/4"  | 40 | 0,017 | 1  |
| 220588   | 12 | 1/4"  | 40 | 0,018 | 1  |
| 220589   | 13 | 1/4"  | 40 | 0,021 | 1  |
| 220590   | 14 | 1/4"  | 40 | 0,023 | 1  |

**Tool case 1000 V**

1/4"

made of plastic, complete with 1/4" tools. The plastic material used for socket sets is guaranteed to pass -40°C impact tests. This guarantee that the insulation value will not be compromised due to impact. Dimension: 286 x 255 x 54 mm.

**Contents:**

- Reversible ratchet 150 mm, 1/4"
- T-slip-on-keys 125 mm, 1/4"
- Extension 100 and 150 mm, 1/4"
- Sockets 1/4", 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 mm
- Dies for hexagon screws 1/4", 3, 4, 5, 6 mm



1000 V IEC 60900:2012

Video 220576



| Art. no. | set       | drive | kg    | PU |
|----------|-----------|-------|-------|----|
| 220576   | 18-pieces | 1/4"  | 1,250 | 1  |





**haupa**<sup>®</sup>

**...convincing solutions**

Germany: **HAUPA**, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

**Reversible ratchet 1000 V**

1/4"

full insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no. | drive | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 110810   | 1/4"  | 135 | 0,122 | 1  |

**Torque wrench 1000 V**

TQ 1/4"

reversible ratchet system, fully insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012

TQ



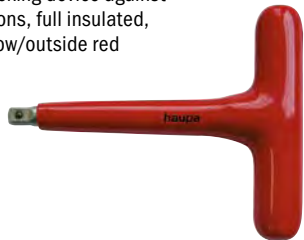
| Art. no. | drive | torque | TL  | kg    | PU |
|----------|-------|--------|-----|-------|----|
| 110812   | 1/4"  | 2-12   | 200 | 0,250 | 1  |
| 110813   | 1/4"  | 5-25   | 200 | 0,420 | 1  |

**Socket T-wrench 1000 V**

1/4"

chrome vanadium steel, tempered, with locking device against accidental loosening of sockets or extensions, full insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no. | drive | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 110818   | 1/4"  | 115 | 0,156 | 1  |

**Extensions 1000 V**

1/4"

with locking device against accidental loosening of sockets or extensions, full insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no. | drive | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 110814   | 1/4"  | 75  | 0,043 | 1  |
| 110816   | 1/4"  | 125 | 0,054 | 1  |

**Extension with bit adapter 1000 V**

1/4"

fully insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no. | bit adapter | drive | TL | kg    | PU |
|----------|-------------|-------|----|-------|----|
| 110860   | 1/4"        | 1/4"  | 40 | 0,023 | 1  |

**Hexagon sockets 1000 V**

1/4"

fully insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no. | WS        | drive | TL | kg    | PU |
|----------|-----------|-------|----|-------|----|
| 110820   | <b>5</b>  | 1/4"  | 25 | 0,012 | 1  |
| 110822   | <b>6</b>  | 1/4"  | 25 | 0,012 | 1  |
| 110824   | <b>7</b>  | 1/4"  | 25 | 0,014 | 1  |
| 110826   | <b>8</b>  | 1/4"  | 25 | 0,011 | 1  |
| 110828   | <b>9</b>  | 1/4"  | 25 | 0,016 | 1  |
| 110830   | <b>10</b> | 1/4"  | 25 | 0,014 | 1  |
| 110832   | <b>11</b> | 1/4"  | 25 | 0,020 | 1  |
| 110834   | <b>12</b> | 1/4"  | 25 | 0,021 | 1  |
| 110836   | <b>13</b> | 1/4"  | 25 | 0,021 | 1  |
| 110838   | <b>14</b> | 1/4"  | 25 | 0,034 | 1  |

**Inserts for hexagon socket screws 1000 V**

1/4"

fully insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no. | WS       | drive | kg    | PU |
|----------|----------|-------|-------|----|
| 110840   | <b>3</b> | 1/4"  | 0,010 | 1  |
| 110842   | <b>4</b> | 1/4"  | 0,014 | 1  |
| 110844   | <b>5</b> | 1/4"  | 0,014 | 1  |
| 110846   | <b>6</b> | 1/4"  | 0,015 | 1  |
| 110848   | <b>8</b> | 1/4"  | 0,021 | 1  |

**Handles with bit adapter 1000 V**

1/4"

fully insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no. | bit adapter | drive | TL  | kg    | PU |
|----------|-------------|-------|-----|-------|----|
| 110864   | 1/4"        | 1/4"  | 120 | 0,160 | 1  |
| 110866   | 1/4"        | 1/4"  | 160 | 0,248 | 1  |
| 110868   | 1/4"        | 1/4"  | 250 | 0,310 | 1  |

**Tool case for household connections 1000 V**

1/4"

Plastic case with foam insert, with 1/4" insert tools.  
Dimensions: 450 x 340 x 100 mm.

**Contents:**

- 1 torque wrench 1/4" 5 - 25 Nm
- 3 extensions 1/4" 75 - 100 - 150 mm
- 2 bit holders 1/4" DIN 3126/FORM C 6,3
- 5 inserts 1/4" 6, 8, 10, 13, 14
- 10 hexagonal bits 5, 6, 8
- Slots 4, 5.5, 6.5
- PZ/FL 1, 2
- PH 1, 2

1000 V IEC 60900:2012



| Art. no. | set              | drive | kg    | PU |
|----------|------------------|-------|-------|----|
| 110869   | <b>21-pieces</b> | 1/4"  | 1,000 | 1  |

**Tool case 1000 V**

1/4"

Plastic case with foam insert, with 1/4" insert tools.  
Dimensions: 450 x 340 x 100 mm.

**Contents:**

- 1 ratchet 1/4"
- 1 bit holder 1/4"
- 1 T-fitting 1/4"
- 4 extensions 1/4"
- 10 inserts 1/4", 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
- 5 hexagonal inserts 1/4" 3, 4, 5, 6, 8

1000 V IEC 60900:2012



| Art. no. | set              | drive | kg    | PU |
|----------|------------------|-------|-------|----|
| 110871   | <b>22-pieces</b> | 1/4"  | 1,600 | 1  |



**Reversible ratchet 1000 V**

3/8"

full insulated, from shock-resistant plastic



1000 V IEC 60900:2012



| Art. no. | drive | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 220410   | 3/8"  | 200 | 0,300 | 1  |

**Fittings for hexagon socket screws 1000 V**

3/8"

3/8" square drive, made of chrome vanadium steel, forged, oil hardened, full insulated, from shock-resistant plastic



1000 V IEC 60900:2012



| Art. no. | WS | drive | TL   | kg    | PU |
|----------|----|-------|------|-------|----|
| 220434   | 4  | 3/8"  | 60,0 | 0,036 | 1  |
| 220436   | 5  | 3/8"  | 60,0 | 0,040 | 1  |
| 220438   | 6  | 3/8"  | 60,0 | 0,041 | 1  |
| 220440   | 8  | 3/8"  | 60,0 | 0,042 | 1  |

**Socket T-wrench 1000 V**

3/8"

chrome vanadium steel, tempered, with locking device against accidental loosening of sockets or extensions, full insulated, from shock-resistant plastic



1000 V IEC 60900:2012



| Art. no. | drive | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 220412   | 3/8"  | 200 | 0,241 | 1  |

**Extensions 1000 V**

3/8"

with locking device against accidental loosening of sockets or extensions, full insulated, from shock-resistant plastic



1000 V IEC 60900:2012



| Art. no. | drive | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 220414   | 3/8"  | 125 | 0,150 | 1  |
| 220416   | 3/8"  | 250 | 0,250 | 1  |

**Hexagon sockets 1000 V**

3/8"

3/8" square drive, full insulated, from shock-resistant plastic



1000 V IEC 60900:2012



| Art. no. | WS | drive | TL   | kg    | PU |
|----------|----|-------|------|-------|----|
| 220418   | 8  | 3/8"  | 44,5 | 0,027 | 1  |
| 220420   | 10 | 3/8"  | 44,5 | 0,027 | 1  |
| 220422   | 12 | 3/8"  | 44,5 | 0,029 | 1  |
| 220424   | 13 | 3/8"  | 44,5 | 0,032 | 1  |
| 220426   | 14 | 3/8"  | 44,5 | 0,035 | 1  |
| 220428   | 17 | 3/8"  | 44,5 | 0,047 | 1  |
| 220430   | 19 | 3/8"  | 46,0 | 0,051 | 1  |
| 220432   | 22 | 3/8"  | 46,0 | 0,063 | 1  |

**Tool case 1000 V**

3/8"

made of plastic, complete with 3/8" tools. The plastic material used for socket sets is guaranteed to pass -40°C impact tests. This guarantee that the insulation value will not be compromised due to impact. Dimension: 286 x 255 x 54 mm.

**Contents:**

- Reversible ratchet 200 mm, 3/8"
- T-slip-on-keys 200 mm, 3/8"
- Extension 150 and 250 mm, 3/8"
- Sockets 3/8", 8, 10, 12, 13, 14, 17, 19, 22 mm
- Dies for hexagon screws 3/8", 4, 5, 6, 8 mm



1000 V IEC 60900:2012

Video 220402



| Art. no. | set       | drive | kg    | PU |
|----------|-----------|-------|-------|----|
| 220402   | 16-pieces | 3/8"  | 2,500 | 1  |



**haupa**<sup>®</sup>

**...convincing solutions**

Germany: **HAUPA**, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

**Reversible ratchet 1000 V**

3/8"

full insulated, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no.  | drive | TL  | kg    | PU |
|-----------|-------|-----|-------|----|
| 110331/EN | 3/8"  | 190 | 0,402 | 1  |

**Locked torque wrench 1000 V**

3/8"

reversible ratchet system, fixed factory-provided valve, possible valve between 5-27 Nm, valve must be indicate before delivery, full insulated, 2-coloured coating-insulation - inside yellow/outside red. **Torque must be specified when ordering!**

1000 V IEC 60900:2012



| Art. no.  | drive | torque | TL  | kg    | PU |
|-----------|-------|--------|-----|-------|----|
| 300310/EN | 3/8"  | 5-27   | 280 | 0,951 | 1  |

**Torque wrenches 1000 V**

TQ 3/8"

reversible ratchet system, fully insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no.  | drive | torque | TL  | kg    | PU |
|-----------|-------|--------|-----|-------|----|
| 110055/EN | 3/8"  | 5-25   | 200 | 0,350 | 1  |
| 110056/EN | 3/8"  | 5-25   | 280 | 0,920 | 1  |
| 110065/EN | 3/8"  | 5-50   | 370 | 1,194 | 1  |

**Torque T key 1000 V**

3/8"

chrome vanadium steel, tempered, with locking device against accidental loosening of sockets or extensions, full insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no. | drive | torque | TL  | kg    | PU |
|----------|-------|--------|-----|-------|----|
| 110071   | 3/8"  | 12 Nm  | 150 | 0,540 | 1  |
| 110073   | 3/8"  | 18 Nm  | 150 | 0,540 | 1  |
| 110075   | 3/8"  | 25 Nm  | 150 | 0,540 | 1  |

**Torque stoppers 1000 V**

3/8"

with short extension, locable for all sockets with 3/8" drive, full insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no.  | drive | torque | kg    | PU |
|-----------|-------|--------|-------|----|
| 110456/EN | 3/8"  | -12    | 0,220 | 1  |
| 110457/EN | 3/8"  | -18    | 0,220 | 1  |
| 110458/EN | 3/8"  | -25    | 0,224 | 1  |

**Socket T-wrench 1000 V**

3/8"

chrome vanadium steel, tempered, with locking device against accidental loosening of sockets or extensions, full insulated, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no.  | drive | BL  | handle | kg    | PU |
|-----------|-------|-----|--------|-------|----|
| 110039/EN | 3/8"  | 200 | 160    | 0,369 | 1  |

**Extensions 1000 V**

3/8"

with locking device against accidental loosening of sockets or extensions, full insulated, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no.  | drive | TL  | kg    | PU |
|-----------|-------|-----|-------|----|
| 110337/EN | 3/8"  | 125 | 0,292 | 1  |
| 110335/EN | 3/8"  | 250 | 0,280 | 1  |

**Extensions with bit adapter 1000 V**

3/8"

full insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no. | bit adapter | drive | TL  | kg    | PU |
|----------|-------------|-------|-----|-------|----|
| 110861   | 1/4"        | 3/8"  | 125 | 0,137 | 1  |

**Hexagon sockets 1000 V**

3/8"

3/8" square drive, 4 edge drive, full insulated, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no.  | WS | drive | TL | kg    | PU |
|-----------|----|-------|----|-------|----|
| 110363/EN | 8  | 3/8"  | 40 | 0,035 | 1  |
| 110364/EN | 9  | 3/8"  | 40 | 0,032 | 1  |
| 110365/EN | 10 | 3/8"  | 40 | 0,036 | 1  |
| 110366/EN | 11 | 3/8"  | 40 | 0,037 | 1  |
| 110367/EN | 13 | 3/8"  | 40 | 0,032 | 1  |
| 110368/EN | 17 | 3/8"  | 40 | 0,050 | 1  |
| 110369/EN | 19 | 3/8"  | 40 | 0,060 | 1  |
| 110371/EN | 14 | 3/8"  | 40 | 0,070 | 1  |
| 110700/EN | 12 | 3/8"  | 40 | 0,070 | 1  |
| 110702/EN | 22 | 3/8"  | 40 | 0,061 | 1  |

**Hexagon sockets 1000 V, extra long**



3/8" square drive, 4 edge drive, full insulated, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no. | WS | drive | TL  | kg    | PU |
|----------|----|-------|-----|-------|----|
| 110710   | 10 | 3/8"  | 125 | 0,180 | 1  |
| 110712   | 12 | 3/8"  | 125 | 0,200 | 1  |
| 110713   | 13 | 3/8"  | 125 | 0,210 | 1  |
| 110714   | 14 | 3/8"  | 125 | 0,220 | 1  |
| 110715   | 17 | 3/8"  | 125 | 0,240 | 1  |
| 110716   | 19 | 3/8"  | 125 | 0,260 | 1  |
| 110717   | 22 | 3/8"  | 125 | 0,280 | 1  |

**Fittings for hexagon socket screws 1000 V**



3/8" square drive, 4 edge drive, made of chrome vanadium steel, forged, oil hardened, full insulated, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no.  | WS | drive | TL | kg    | PU |
|-----------|----|-------|----|-------|----|
| 300302/EN | 4  | 3/8"  | 65 | 0,068 | 1  |
| 300296/EN | 5  | 3/8"  | 65 | 0,065 | 1  |
| 300298/EN | 6  | 3/8"  | 65 | 0,068 | 1  |
| 300299/EN | 8  | 3/8"  | 65 | 0,070 | 1  |
| 300305/EN | 10 | 3/8"  | 65 | 0,082 | 1  |

**Tool case 1000 V**



made of plastic, complete with 3/8" tools. Dimension: 450 x 340 x 100 mm.

**Contents:**

- Reversible ratchet 3/8"
- Extension 125 mm, 3/8"
- Extension 250 mm, 3/8"
- T-slip-on-keys 3/8"
- Sockets 3/8" (10, 12, 13, 14, 17, 19, 22, 24 mm)
- Dies for hexagon screws 3/8", 5, 6, 8 mm
- Torque stopper (12 to 25 Nm)
- 2C-VDE screwdriver 3,5 x 100 mm

with locking system



1000 V IEC 60900:2012



| Art. no. | set       | drive | kg    | PU |
|----------|-----------|-------|-------|----|
| 220147   | 17-pieces | 3/8"  | 3,400 | 1  |

**Tool case 1000 V**



made of plastic, complete with 3/8" tools. Dimension: 400 x 290 x 110 mm.

**Contents:**

- Reversible ratchet 3/8"
- Extension 125 mm, 3/8"
- Extension 250 mm, 3/8"
- T-slip-on-keys 3/8"
- Sockets 3/8", 8, 10, 13, 17, 19 mm
- Dies for hexagon screws 3/8", 4, 5, 6, 8 mm

without locking system



1000 V IEC 60900:2012



| Art. no. | set       | drive | kg    | PU |
|----------|-----------|-------|-------|----|
| 220212   | 13-pieces | 3/8"  | 2,500 | 1  |

**Tool case 1000 V**



Plastic case with foam insert, with 3/8" insert tools. Dimensions: 400 x 290 x 110 mm.

**Contents:**

- 1 torque wrench 3/8" 5-50 Nm
- 2 extensions 3/8" 125/250 mm
- 5 inserts, extra deep in the sizes 10, 13, 14, 17, 19 mm
- 5 inserts for hexagonal screws 3/8" in 4, 5, 6, 8, 10 mm
- Alignment tool for sector-shaped conductors 3/8" in 95-150 mm



1000 V IEC 60900:2012



| Art. no. | set       | drive | kg    | PU |
|----------|-----------|-------|-------|----|
| 110873   | 14-pieces | 3/8"  | 3,870 | 1  |



**Reversible ratchet 1000 V**

1/2"

full insulated, from shock-resistant plastic



1000 V IEC 60900:2012



| Art. no. | drive | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 220450   | 1/2"  | 250 | 0,550 | 1  |

**Fittings for hexagon socket screws 1000 V**

1/2"

1/2" square drive, made of chrome vanadium steel, forged, oil hardened, full insulated, from shock-resistant plastic



1000 V IEC 60900:2012



| Art. no. | WS | drive | TL    | kg    | PU |
|----------|----|-------|-------|-------|----|
| 220486   | 4  | 1/2"  | 120,0 | 0,113 | 1  |
| 220488   | 5  | 1/2"  | 120,0 | 0,113 | 1  |
| 220490   | 6  | 1/2"  | 120,0 | 0,113 | 1  |
| 220492   | 8  | 1/2"  | 120,0 | 0,115 | 1  |
| 220494   | 10 | 1/2"  | 120,0 | 0,134 | 1  |

**Socket T-wrench 1000 V**

1/2"

chrome vanadium steel, tempered, with locking device against accidental loosening of sockets or extensions, full insulated, from shock-resistant plastic



1000 V IEC 60900:2012



| Art. no. | drive | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 220452   | 1/2"  | 200 | 0,330 | 1  |

**Extensions 1000 V**

1/2"

with locking device against accidental loosening of sockets or extensions, full insulated, from shock-resistant plastic



1000 V IEC 60900:2012



| Art. no. | drive | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 220454   | 1/2"  | 125 | 0,208 | 1  |
| 220456   | 1/2"  | 250 | 0,411 | 1  |

**Hexagon sockets 1000 V**

1/2"

1/2" square drive, full insulated, from shock-resistant plastic



1000 V IEC 60900:2012



| Art. no. | WS | drive | TL   | kg    | PU |
|----------|----|-------|------|-------|----|
| 220458   | 10 | 1/2"  | 55,0 | 0,055 | 1  |
| 220460   | 11 | 1/2"  | 55,0 | 0,055 | 1  |
| 220462   | 12 | 1/2"  | 55,0 | 0,058 | 1  |
| 220464   | 13 | 1/2"  | 55,0 | 0,058 | 1  |
| 220466   | 14 | 1/2"  | 55,0 | 0,061 | 1  |
| 220468   | 17 | 1/2"  | 55,0 | 0,069 | 1  |
| 220470   | 19 | 1/2"  | 57,0 | 0,072 | 1  |
| 220478   | 22 | 1/2"  | 57,0 | 0,087 | 1  |
| 220480   | 24 | 1/2"  | 57,0 | 0,095 | 1  |
| 220482   | 27 | 1/2"  | 57,0 | 0,125 | 1  |
| 220484   | 32 | 1/2"  | 57,0 | 0,170 | 1  |

**Tool case 1000 V**

1/2"

made of plastic, complete with 1/2" tools. The plastic material used for socket sets is guaranteed to pass -40°C impact tests. This guarantee that the insulation value will not be compromised due to impact. Dimension: 380 x 316 x 61 mm.

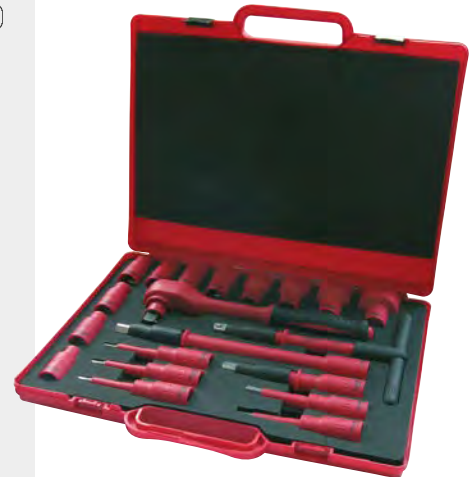
**Contents:**

- Reversible ratchet 250 mm, 1/2"
- T-slip-on-keys 200 mm, 1/2"
- Extension 125 and 250 mm, 1/2"
- Sockets 1/2", 10, 11, 12, 13, 14, 17, 19, 22, 24, 27, 32 mm
- Dies for hexagon screws 1/2", 4, 5, 6, 8, 10 mm



1000 V IEC 60900:2012

Video 220404



| Art. no. | set       | drive | kg    | PU |
|----------|-----------|-------|-------|----|
| 220404   | 20-pieces | 1/2"  | 4,000 | 1  |



**SysCon „VDE-Socket“ 1/2"**



complete with 1/2" tools. The plastic material used for socket sets is guaranteed to pass -40°C impact tests. This guarantee that the insulation value will not be compromised due to impact.

**Contents:**

- 1 220370 ABS plastic box „SysCon S"
- Reversible ratchet 250 mm, 1/2"
- T-slip-on-keys 200 mm, 1/2"
- Extension 125 and 250 mm, 1/2"
- Sockets 1/2", 10, 11, 12, 13, 14, 17, 19, 22, 24, 27, 32 mm
- Dies for hexagon screws 1/2", 4, 5, 6, 8, 10 mm



1000 V IEC 60900:2012



| Art. no. | set              | empty  | drive | kg    | PU |
|----------|------------------|--------|-------|-------|----|
| 220612   | <b>20-pieces</b> | 220370 | 1/2"  | 7,200 | 1  |



**Reversible ratchet 1000 V**

1/2"

full insulated, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no.  | drive | TL  | kg    | PU |
|-----------|-------|-----|-------|----|
| 110332/EN | 1/2"  | 255 | 0,687 | 1  |

**Locked torque wrench 1000 V**

TQ 1/2"

reversible ratchet system, fixed factory-provided valve, possible valve between 5-27 Nm, valve must be indicate before delivery, full insulated, 2-coloured coating-insulation - inside yellow/outside red. **Torque must be specified when ordering!**

1000 V IEC 60900:2012



| Art. no.  | drive | torque | TL  | kg    | PU |
|-----------|-------|--------|-----|-------|----|
| 300312/EN | 1/2"  | 5-27   | 280 | 1,052 | 1  |

**Torque wrenches 1000 V**

TQ 1/2"

reversible ratchet system, fully insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



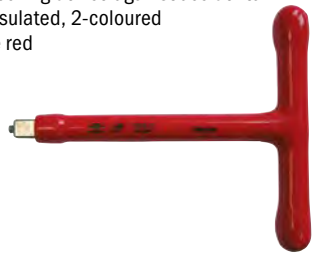
| Art. no.  | drive | torque | TL  | kg    | PU |
|-----------|-------|--------|-----|-------|----|
| 110058/EN | 1/2"  | 2-27   | 280 | 1,034 | 1  |
| 110066/EN | 1/2"  | 5-50   | 370 | 1,121 | 1  |
| 110067/EN | 1/2"  | 20-100 | 460 | 1,493 | 1  |
| 110068/EN | 1/2"  | 60-220 | 530 | 1,300 | 1  |

**Socket T-wrench 1000 V**

1/2"

chrome vanadium steel, tempered, with locking device against accidental loosening of sockets or extensions, full insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no.  | WS   | BL  | handle | kg    | PU |
|-----------|------|-----|--------|-------|----|
| 110040/EN | 12,5 | 200 | 160    | 0,457 | 1  |

**Extensions 1000 V**

1/2"

with locking device against accidental loosening of sockets or extensions, full insulated, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no.  | drive | TL  | kg    | PU |
|-----------|-------|-----|-------|----|
| 110336/EN | 1/2"  | 125 | 0,197 | 1  |
| 110338/EN | 1/2"  | 250 | 0,389 | 1  |

**Extensions with bit adapter 1000 V**

1/2"

full insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no. | bit adapter | drive | TL  | kg    | PU |
|----------|-------------|-------|-----|-------|----|
| 110862   | 1/4"        | 1/2"  | 250 | 0,165 | 1  |

**Hexagon sockets 1000 V**

1/2"

1/2" square drive, 4 edge drive, full insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no.  | WS | drive | TL | kg    | PU |
|-----------|----|-------|----|-------|----|
| 110339/EN | 8  | 1/2"  | 50 | 0,080 | 1  |
| 110340/EN | 10 | 1/2"  | 50 | 0,056 | 1  |
| 110342/EN | 11 | 1/2"  | 50 | 0,062 | 1  |
| 110344/EN | 12 | 1/2"  | 50 | 0,062 | 1  |
| 110346/EN | 13 | 1/2"  | 50 | 0,066 | 1  |
| 110348/EN | 14 | 1/2"  | 50 | 0,063 | 1  |
| 110350/EN | 17 | 1/2"  | 50 | 0,076 | 1  |
| 110352/EN | 19 | 1/2"  | 50 | 0,072 | 1  |
| 110354/EN | 22 | 1/2"  | 50 | 0,104 | 1  |
| 110356/EN | 24 | 1/2"  | 50 | 0,141 | 1  |
| 110358/EN | 27 | 1/2"  | 50 | 0,191 | 1  |
| 110360/EN | 30 | 1/2"  | 50 | 0,224 | 1  |
| 110362/EN | 32 | 1/2"  | 50 | 0,268 | 1  |

**Hexagon sockets DIN 7448, 1000 V, 80 mm**

1/2"

extra long, 1/2" square drive, 4 edge drive, full insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no.  | WS | drive | TL | kg    | PU |
|-----------|----|-------|----|-------|----|
| 110373/EN | 10 | 1/2"  | 80 | 0,085 | 1  |
| 110374/EN | 11 | 1/2"  | 80 | 0,110 | 1  |
| 110375/EN | 13 | 1/2"  | 80 | 0,123 | 1  |
| 110376/EN | 14 | 1/2"  | 80 | 0,119 | 1  |
| 110377/EN | 17 | 1/2"  | 80 | 0,157 | 1  |
| 110378/EN | 19 | 1/2"  | 80 | 0,168 | 1  |
| 110379/EN | 22 | 1/2"  | 80 | 0,230 | 1  |

**Hexagon sockets, 1000 V, 125 mm**

1/2"

extra long, 1/2" square drive, 4 edge drive, full insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no.   | WS | drive | TL  | kg    | PU |
|------------|----|-------|-----|-------|----|
| 110346/125 | 13 | 1/2"  | 125 | 0,250 | 1  |
| 110348/125 | 14 | 1/2"  | 125 | 0,260 | 1  |
| 110350/125 | 17 | 1/2"  | 125 | 0,280 | 1  |
| 110352/125 | 19 | 1/2"  | 125 | 0,295 | 1  |
| 110354/125 | 22 | 1/2"  | 125 | 0,310 | 1  |
| 110356/125 | 24 | 1/2"  | 125 | 0,330 | 1  |
| 110358/125 | 27 | 1/2"  | 125 | 0,350 | 1  |
| 110360/125 | 30 | 1/2"  | 125 | 0,380 | 1  |
| 110362/125 | 32 | 1/2"  | 125 | 0,410 | 1  |

**Hexagon sockets, 1000 V, 250 mm**



extra long, 1/2" square drive, 4 edge drive, full insulated, 2-coloured coating-insulation - inside yellow/outside red

1000 V IEC 60900:2012



| Art. no.   | WS | drive | TL  | kg    | PU |
|------------|----|-------|-----|-------|----|
| 110346/250 | 13 | 1/2"  | 250 | 0,485 | 1  |
| 110348/250 | 14 | 1/2"  | 250 | 0,500 | 1  |
| 110350/250 | 17 | 1/2"  | 250 | 0,530 | 1  |
| 110352/250 | 19 | 1/2"  | 250 | 0,550 | 1  |
| 110354/250 | 22 | 1/2"  | 250 | 0,580 | 1  |
| 110356/250 | 24 | 1/2"  | 250 | 0,605 | 1  |
| 110358/250 | 27 | 1/2"  | 250 | 0,635 | 1  |
| 110360/250 | 30 | 1/2"  | 250 | 0,660 | 1  |
| 110362/250 | 32 | 1/2"  | 250 | 0,670 | 1  |

**Fittings for hexagon socket screws 1000 V**



1/2" square drive, 4 edge drive, made of chrome vanadium steel, forged, oil hardened, full insulated, 2-coloured coating-insulation - inside yellow/outside red



1000 V IEC 60900:2012



| Art. no.  | WS | drive | TL | kg    | PU |
|-----------|----|-------|----|-------|----|
| 300294/EN | 4  | 1/2"  | 70 | 0,094 | 1  |
| 300297/EN | 5  | 1/2"  | 70 | 0,096 | 1  |
| 300295/EN | 6  | 1/2"  | 70 | 0,101 | 1  |
| 300303/EN | 8  | 1/2"  | 70 | 0,100 | 1  |
| 300306/EN | 10 | 1/2"  | 70 | 0,106 | 1  |

**Tool case 1000 V**



made of plastic, complete with 1/2" tools. Dimension: 450 x 340 x 100 mm.

**Contents:**

- Reversible ratchet 1/2"
- Extension 125 mm, 1/2"
- Extension 250 mm, 1/2"
- Slip-on-keys 1/2"
- Hexagon sockets 1/2", 10, 12, 13, 14, 17, 19, 22, 24 mm
- Dies for hexagon screws 1/2", 5, 6, 8 mm
- 2C-VDE screwdriver 3,5 x 100 mm

with locking system



1000 V IEC 60900:2012



| Art. no.  | set       | drive | kg    | PU |
|-----------|-----------|-------|-------|----|
| 220205/EN | 16-pieces | 1/2"  | 4,080 | 1  |

**Tool case „Biber“ 1000 V**



made of plastic, complete with 26 security tools. Dimension: 450 x 340 x 100 mm.

**Contents:**

- 2C-VDE electrician's screwdrivers 4 x 100, 5,5 x 125, 6,5 x 150, 8 x 175 mm
- VDE combination pliers 200 mm
- VDE side cutters 180 mm
- VDE telephone pliers, straight, 200 mm
- Reversible ratchet 1/2"
- Extension 250 mm, 1/2"
- Hexagon sockets 1/2", 10, 11, 12, 13, 14, 17, 19 mm
- Open end spanners 10, 11, 12, 13, 14, 17, 19 mm
- 2-pole voltage tester
- Cable knife
- Cable stripping knife

with locking system



1000 V IEC 60900:2012



| Art. no. | set       | drive | kg    | PU |
|----------|-----------|-------|-------|----|
| 220146   | 26-pieces | 1/2"  | 5,000 | 1  |



## Safety tools

### Alignment tool, 3/8" 1000 V

3/8" drive, for the alignment of 3 or 4-wire sector conductors, made from impact-resistant plastic



| Art. no. | size                      | kg    | PU |
|----------|---------------------------|-------|----|
| 110704   | 95 - 150 mm <sup>2</sup>  | 0,068 | 1  |
| 110705   | 185 - 240 mm <sup>2</sup> | 0,088 | 1  |

### Universal alignment tool 1000 V

for aligning sector-shaped conductors from 50, 70, 95, 150, 185, and 240 mm<sup>2</sup>



1000 V IEC 60900:2012



| Art. no. | kg    | PU |
|----------|-------|----|
| 110709   | 0,142 | 1  |

### Counter holder 1000 V

for the easier handling of screwed connections when assembling coupling sleeves, variably adjustable

1000 V IEC 60900:2012



| Art. no. | TL  | mm      | kg    | PU |
|----------|-----|---------|-------|----|
| 120101   | 240 | 0 - 15  | 0,280 | 1  |
| 120103   | 220 | 15 - 40 | 0,380 | 1  |
| 120104   | 300 | 25 - 50 | 0,610 | 1  |

### Plastic wedges 1000 V

with bright slot for all common cable cutters, oval form without sharp edges

1000 V IEC 60900:2012



| Art. no. | material | TL   | width | kg    | PU |
|----------|----------|------|-------|-------|----|
| 120102   | plastic  | 22,5 | 4,5   | 0,234 | 1  |

### Plastic wedges 1000 V

without slot, oval form without sharp edges, long version with large head

1000 V IEC 60900:2012



| Art. no. | material | TL | width | kg    | PU |
|----------|----------|----|-------|-------|----|
| 120100   | plastic  | 20 | 2,5   | 0,085 | 1  |

### Wedges

wood or plastic, dimension: 16.3 x 3.7 mm



| Art. no. | size | material | type    | kg    | PU |
|----------|------|----------|---------|-------|----|
| 120094   | 1    | plastic  | without | 0,051 | 1  |
| 120098   | 1    | wood     | without | 0,043 | 1  |
| 120099   | 2    | wood     | with    | 0,043 | 1  |

### Cleaning brushes Safety Line

PVC-pattern

1000 V IEC 60900:2012



| Art. no. | TL  | width | kg    | PU |
|----------|-----|-------|-------|----|
| 150036   | 420 | 25    | 0,053 | 1  |
| 150037   | 420 | 28    | 0,061 | 1  |
| 150038   | 420 | 50    | 0,100 | 1  |

### Electrician's safety levels

nonconducting plastic material, with 2 tubes horizontal and vertical



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 240057   | 400 | 0,188 | 1  |
| 240058   | 600 | 0,274 | 1  |

### PVC hammer 1000 V

Bounce-free, head of polyethylen, break-, wear- and splinter-proof, heads interchangeable

1000 V IEC 60900:2012



| Art. no. | TL  | Ø  | kg    | PU |
|----------|-----|----|-------|----|
| 180295   | 290 | 25 | 0,570 | 1  |
| 180297   | 290 | 35 | 0,825 | 1  |

### Combined dowel and contact spanners

may be used for screws 2 - 63 A by changing the insert, handle made from insulating material



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 120002   | 105 | 0,046 | 1  |

### Insulated tweezers VDE 1000 V

austenitic steel, pointed, PVC-insulated



1000 V IEC 60900:2012



| Art. no. | TL  | form    | kg    | PU |
|----------|-----|---------|-------|----|
| 211060   | 130 | pointed | 0,029 | 1  |



1000 V IEC 60900:2012



| Art. no. | TL  | form              | kg    | PU |
|----------|-----|-------------------|-------|----|
| 211064   | 145 | wide round, flat, | 0,042 | 1  |



1000 V IEC 60900:2012



| Art. no. | TL  | form                 | kg    | PU |
|----------|-----|----------------------|-------|----|
| 211062   | 150 | pointed round, bent, | 0,031 | 1  |

1000 V Tool cases

Tool cases 1000 V can be found from page 326 on.



Voltage testers



## Voltage tester "Profi LCDplus II"

The "Profi LCDplus II" is the new top model in our tried and tested professional series. The innovative two-pole voltage tester is characterised by a wide performance spectrum and practical one-handed operation. It enables testing without finger contact and, thanks to the high CAT IV 1000 V safety level, is suitable with immediate effect for taking measurements on hybrid and electrical vehicles as well as for photovoltaic systems.

### Functions and benefits

- Highest CAT IV 1000 V safety level
- Large, illuminated LCD
- Voltage display up to 1000 V AC and 1400 V DC
- Resistance measurement up to 1999 Ω
- Frequency display up to 1000 Hz

### Technical data

|                                  |  |
|----------------------------------|--|
| Display:                         | Optical, LCD   |
| Measuring range:                 | Automatic  |
| Over-voltage category:           | CAT IV 1,000 V   |
| Dimensions:                      | 300 x 75 x 20 mm   |
| Weight:                          | 270 g  |
| Colour:                          | Red/black  |
| Scope of delivery:               | Including batteries  |
| Accessories (optional):          | Carry bag  |
| Voltage range:                   | 3-1000 V AC (TRMS/RMS)<br>4-1400 V DC                                  |
| Throughput check:                | 0-200 Ω with acoustic signal   |
| Phase display:                   | > 100 V AC   |
| Voltage supply:                  | 2 x 1.5 V AAA (display of voltages is possible even without batteries) |
| Polarity:                        | Yes (- in LCD)   |
| PELV display:                    | Optical, acoustic and vibrating  |
| Protection class:                | IP 65  |
| Standard:                        | EN 61243-3:2010  |
| Resistance measurement:          | 1-1999 Ω   |
| Frequency measurement:           | 0-500 Hz   |
| Data-hold:                       | Voltage and resistance   |
| Automatic power off function:    | Yes  |
| FI/RCD test:                     | 30 mA at 230 V AC using two buttons                                    |
| Single-pole phase test:          | Yes  |
| Two-pole phase-sequence test:    | Yes  |
| Illumination of measuring point: | White LED  |
| 4-mm test tip adapter:           | Can be unscrewed   |
| Guarantee:                       | 5 years  |



|          |        |       |    |
|----------|--------|-------|----|
| Art. no. | TMA    | kg    | PU |
| 103826   | 3-1000 | 0,264 | 1  |

## Voltage tester "Profi LEDplus II"

The new two-pole voltage tester "Profi LEDplus II" is the result of consistent further development of our popular "Profi LEDplus". It is characterised by user-friendly handling, robust and safe construction and meets all the requirements a specialist user makes of the modern voltage tester. Thanks to the highest safety level, CAT IV 1000 V, it is also suitable for measurements on hybrid and electrical vehicles as well as photovoltaic systems.

### Functions and benefits

- Highest CAT IV 1000 V safety level
- Practical one-handed operation
- Robust, safe construction format
- Tests without finger contact
- Display on voltages even without battery

### Technical data

|                                  |  |
|----------------------------------|--|
| Display:                         | Optical, LEDs  |
| Measuring range:                 | Automatic  |
| Over-voltage category:           | CAT IV 1,000 V   |
| Dimensions:                      | 300 x 75 x 20 mm   |
| Weight:                          | 270 g  |
| Colour:                          | Red/black  |
| Scope of delivery:               | Including batteries  |
| Accessories (optional):          | Carry bag  |
| Voltage range:                   | 6-1000 V AC  |
| Throughput check:                | 0-50 kΩ optical/acoustic   |
| Phase display:                   | > 100 V AC   |
| Voltage supply:                  | 2 x 1.5 V AAA (display of voltages is possible even without batteries) |
| Diode test:                      | Yes  |
| Polarity:                        | Yes (+, - LED)   |
| PELV display:                    | Optical, acoustic and vibrating  |
| Protection class:                | IP 65  |
| Standard:                        | EN 61243-3:2010  |
| Automatic power off function:    | Yes  |
| FI/RCD test:                     | 30 mA at 230 V AC using two buttons                                    |
| Single-pole phase test:          | Yes  |
| Two-pole phase-sequence test:    | Yes  |
| Illumination of measuring point: | White LED  |
| 4-mm test tip adapter:           | Can be unscrewed   |
| Guarantee:                       | 5 years  |



|          |        |       |    |
|----------|--------|-------|----|
| Art. no. | TMA    | kg    | PU |
| 103824   | 6-1000 | 0,264 | 1  |

## Voltage tester "Basic +"

The two-pole voltage tester reliably indicates direct and alternating voltages within a range of 6 to 400 V in 7 intervals per LED (6, 12, 24, 50, 120, 230 and 400). The electronics also enable the determination of polarity and the phase to protective conductor. The "Basic +" is characterised by a user-friendly construction and robust housing that ensures long operational life. The rubberised handles offer non-slip hold. The "Basic +" operates without batteries. It takes its operating voltage from the test object.

### Functions and benefits

- User-friendly and robust
- Voltage range up to 400 V AC/DC
- Phase search to protective conductor

### Technical data

|                         | „Basic +“  |
|-------------------------|--|
| Display:                | Optical, 8 LEDs                                  |
| Over-voltage category:  | CAT III 400 V                                    |
| Dimensions:             | 120 x 60 x 30 mm                                 |
| Weight:                 | 100 g  |
| Colour:                 | Red/black  |
| Accessories (optional): | Carry bag  |
| Voltage range:          | 6 - 400 V AC/DC                                  |
| Voltage supply:         | Via measuring object                             |
| Polarity:               | Yes (+, - LED)                                   |
| Standard:               | EN 61243-3:2010                                  |
| Housing:                | High quality plastic with rubberised handle area |
| Guarantee:              | 5 years  |



| Art. no. | TMA   | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 103800   | 6-400 | 120 | 0,097 | 1  |

## "Multi Clamp II"

### digital miniature clamp transducer AC/DC 600 V

Thanks to the versatile measuring functions, the digital probe ampere meter "Multi Clamp II" may be used universally. Handy details, such as the large display, the manual or automatic measuring range selection and the measuring point illumination, make operation particularly convenient and safe.

### Functions and benefits

- Large range of functions
- Easy to read LCD
- LED measuring point illumination

### Technical data

|   | „Multi Clamp II“   |
|---|--|
| Display:  | LCD with 4 digits  |
| Over-voltage category:                          | CAT III 600 V  |
| Dimensions:                                     | 220 x 75 x 35 mm   |
| Weight:   | 340g   |
| Colour:   | Red/black  |
| Scope of delivery:                              | Including measuring cables, batteries and carry bag                                    |
| Voltage supply:                                 | 3x 1.5V  |
| Diode test:                                     | Test current - 1 mA, test voltage - 3.3 V  |
| Throughput test:                                | Throughput tone under 30f@   |
| Direct voltage:                                 | 600m, 6, 60, 600V  |
| Direct current:                                 | 60A, 600A  |
| Alternating voltage:                            | 600mV, 6, 60, 600V, 40 to 400Hz  |
| Alternating current:                            | 60A, 600A, 40 to 400Hz   |
| Alternating current accuracy:                   | ±3.0 % +10 digit   |
| Alternating current, highest resolution:        | 10 mA  |
| Direct current, highest resolution:             | 10 mA  |
| Alternating voltage accuracy:                   | ±1.5 % +10 digit to 600 mV /<br>±1.2 % +5 digit to 60 V /<br>±1.5 % +10 digit to 600 V |
| Alternating voltage, highest resolution:        | 100 µV   |
| Alternating voltage input resistance:           | 10 MΩ  |
| Direct voltage accuracy:                        | ±0.8 % +3 digit to 60 V /<br>±1.0 % +5 digit to 600 V                                  |
| Direct voltage, highest resolution:             | 100 µV   |
| Direct voltage input resistance:                | 10 MΩ  |
| Frequency measuring tongs:                      | 600 Hz, 1 kHz, > 1 A AC rms  |
| Frequency measuring tongs, accuracy:            | ±1.5 % +5 digit to 1 kHz   |
| Frequency measuring tongs, highest resolution:  | 100 mHz  |
| Frequency measuring socket:                     | 600 Hz, 6 kHz, 10 kHz, > 0.2 V AC rms  |
| Frequency measuring socket, accuracy:           | ±1.5 % +5 digit to 10 kHz  |
| Frequency measuring socket, highest resolution: | 100 mHz  |
| Sampling rate:                                  | 10 to 95 %, ±3.0 %, > 1 A AC rms   |
| Sampling rate, frequency range:                 | 10 Hz to 1 kHz   |
| Sampling rate, capacity measurement:            | To 60 mF   |
| Resistance accuracy:                            | ±1.2 % +2 digit to 6 MΩ<br>±2.0 % +5 digit to 60 MΩ                                    |
| Resistance highest accuracy:                    | 100 MΩ   |
| Diode test resolution:                          | 1 mV   |
| Diode test throughput test:                     | Throughput tone under 30 Ω   |
| Guarantee:                                      | 5 years  |



| Art. no. | kg    | PU |
|----------|-------|----|
| 103809   | 0,426 | 1  |

**haupa®**

...convincing solutions



## “Multi Check II” - digital high-capacity multimeter

The “Multi Check II” is particularly safe to use. Thanks to the automatic measuring range protection, it is impossible to operate incorrectly. In addition, the digital multimeter has an easy to read LC display with background illumination.

### Functions and benefits

- Automatic measuring range protection
- Large LCD with background lighting
- Temperature measurement

### Technical data

|                                |   |
|--------------------------------|---|
|                                | <b>„Multi Check II“</b>   |
| Display:                       | 37 mm, large, illuminated LCD   |
| Over-voltage category:         | CAT III 600 V   |
| Weight:                        | 380g including batteries.   |
| Scope of delivery:             | Including measuring cables, holster, temperature sensor and battery   |
| Voltage supply:                | 1x 9 V 6LR61  |
| Diode test:                    | Yes   |
| Standard:                      | IEC/EN 61010-1, IEC/EN 61010-2-033  |
| Dimension:                     | 200 x 89 x 38 mm  |
| AC voltage:                    | 2 V, 20 V, 200 V ; ±1.0 %, ±5 Digits<br>600 V ; ±1.2 %, ±5 Digits   |
| AC current:                    | 2 mA, 20 mA ; ±1.0 %, ±5 digits<br>200 mA ; ±1.5 %, ±3 digits<br>10 A ; ±2.0 %, ±8 digits                                     |
| Operating temperature range:   | 0-40 °C (32-104 °F)   |
| DC voltage:                    | 200 mV, 2 V, 20 V, 200 V ; ±0.5 %, ±3 digits<br>600 V ; ±0.8 %, ±5 digits   |
| DC current:                    | 2 mA, 20 mA ; ±1.0 %, ±3 digits<br>200 mA ; ±1.5 %, ±3 digits<br>10 A ; ±2.0 %, ±5 digits                                     |
| Throughput test:               | Yes   |
| Input impedance:               | > 7.5 MΩ, type 10 MΩ (ACV & DCV)  |
| Frequency measurement range:   | 0-20 kHz  |
| Capacity measurement range:    | To 20 μF  |
| Storage temperature range:     | -10-50 °C (14-122 °F)   |
| Maximum input voltage:         | 600 V AC/DC   |
| Fuses:                         | 200 mA (resettable)<br>10 A/1000 V (fast)   |
| Temperature measurement:       | -20-1000°C with K-type sensor   |
| Alternating current bandwidth: | 50-400 Hz   |
| Resistance:                    | 200 Ω ; ±1.0 %, ±5 digits<br>2 kΩ, 20 kΩ, 200 kΩ ; ±1.0 %, ±5 digits<br>2 MΩ ; ±1.0 %, ±5 digits<br>20 MΩ ; ±1.5 %, ±5 digits |
| Guarantee:                     | 5 years   |



|          |       |    |
|----------|-------|----|
| Art. no. | kg    | PU |
| 103811   | 0,433 | 1  |

## Circuit tester “Control”

The “Control” recognises, thanks to the no-contact voltage sensor, alternating voltages through insulation. Defective lamps, for example, in fairy light chains or similar will be shown quickly and precisely. The incorporated current warning issues and alarm when life-threatening voltage is present. The electronics also enable single-pole phase detection. Throughput tester with LED pocket torch, without flat battery, with replaceable measuring cables.

### Functions and benefits

- Reliable throughput tester
- No-contact voltage sensor
- High-performance LED torch

### Technical data

|                              |                                    |
|------------------------------|------------------------------------|
|                              | <b>„Control“</b>                   |
| Over-voltage category:       | CAT II 300 V                       |
| Dimensions:                  | 120 x 60 x 30 mm                   |
| Weight:                      | 90 g (without batteries)           |
| Colour:                      | Red                                |
| Scope of delivery:           | 2 measuring cables                 |
| Accessories (optional):      | Crocodile clips, carry bag         |
| Throughput check:            | Optical 0-20 Ω<br>acoustic 0-250 Ω |
| Test voltage:                | 4.5 V                              |
| Test current:                | Optical - 10 mA<br>acoustic - 2 mA |
| External voltage protection: | Up to 300 V                        |
| Guarantee:                   | 5 years                            |



|          |       |    |
|----------|-------|----|
| Art. no. | kg    | PU |
| 100666   | 0,139 | 1  |

## Voltage tester "TestPen Profi"

The non-contact voltage tester "TestPen Profi" recognises current-carrying cables as of 12 V, including low-voltage systems.. Invisible cable breaks in extension cords or a defect lamp in fairy lights can be localised to the centimetre in seconds thanks to the capacitive measuring procedure.

### Functions and benefits

- Capacitive measuring procedure
- Measurements as of 12 V
- LED torch
- Vibrating display

### Technical data

|                        |  |
|------------------------|--|
| Display:               | „TestPen Profi“<br>Optical and vibrating |
| Measuring range:       | 12-1000 V AC                             |
| Over-voltage category: | CAT III 1,000 V                          |
| Dimensions:            | 160 x 25 mm                              |
| Weight:                | 45 g                                     |
| Colour:                | Red                                      |
| Scope of delivery:     | Including batteries                      |
| Integrated LED torch:  | Yes                                      |
| Voltage supply:        | 2 x 1.5 V AAA Micro, LR03                |
| Standard:              | IEC/EN 61010-1 (DIN VDE 0411)            |
| Housing:               | Impact/break proof ABS plastic           |
| Guarantee:             | 5 years                                  |



| Art. no. | TMA     | TL  | kg    | PU |
|----------|---------|-----|-------|----|
| 103817   | 12-1000 | 140 | 0,190 | 1  |

## Voltage testers VDE/GS

5 mm surrounding hand-protection, clip of insulating material, fixed installed scale with dark background



| Art. no. | TMA     | TL  | BL | kg    | PU |
|----------|---------|-----|----|-------|----|
| 100700   | 125-250 | 190 | -  | 0,036 | 1  |

## Voltage tester "Basic"

surrounding hand-protection, clip of insulating material, fixed installed scale with dark background



| Art. no. | TMA     | TL  | kg    | PU |
|----------|---------|-----|-------|----|
| 102075   | 125-250 | 190 | 0,035 | 1  |



Personal protection equipment



# INFO

## HUPsafteygloves - insulating gloves

### Recommendation for use and maintenance

Insulating gloves are made of natural latex, which is very sensitive to light, heat and air.

- **Before each use:** Visually inspect the gloves and blow air into them to detect any air holes.
- **After use:** Clean and dry your gloves thoroughly.
- **Storage:** Keep the gloves away from heat, direct light and ozone.
- It is strongly recommended to retest the gloves every six months.

It is recommended that all gloves are tested once every six months (every twelve months if they are in storage and not being used).

**In every case:** The gloves must be visually inspected before every use for rips, cuts and holes!

### ALWAYS:

- Determine the voltage with which you are working, to select the appropriate class (00 to 4).
- Wear insulating gloves that have been tested and approved.



| Class | Alternating Current | Direct Current |
|-------|---------------------|----------------|
| 00    | 500                 | 750            |
| 0     | 1.000               | 1.500          |
| 1     | 7.500               | 11.250         |
| 2     | 17.000              | 25.500         |
| 3     | 26.500              | 39.700         |
| 4     | 36.000              | 54.000         |

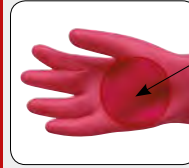
### Recommended maximum voltage according to IEC 60903

The nominal voltage corresponds to the phase-to-phase voltage in multi-phase circuits. The user can choose to use a different class of glove than the one recommended.

Typical direct current applications can be found in the rail and public transport sectors (the most dangerous situations are turning the power supply on and off).

### Gloves in accordance with DIN EN 60903

made from latex, for working voltages of 500, 1.000, 7.500, 17.000 to 26.500 Volt. Electricians gloves by HAUPA protect from dangers through arcing faults. Pleasant, slightly roughened surface in the palm and finger area (improved non-slip)



| Art. no.     | size | TL  | strength | Class | kg    | PU |
|--------------|------|-----|----------|-------|-------|----|
| 120004       | 9    | 350 | 0,5      | 00    | 0,270 | 1  |
| 120005       | 10   | 350 | 0,5      | 00    | 0,293 | 1  |
| 120006       | 9    | 400 | 1,0      | 0     | 0,270 | 1  |
| 120007       | 10   | 400 | 1,0      | 0     | 0,280 | 1  |
| 120007/1     | 11   | 400 | 1,0      | 0     | 0,300 | 1  |
| 120006 561   | 10   | 400 | 1,5      | 1     | 0,646 | 1  |
| 120006 564 S | 10   | 400 | 2,3      | 2     | 0,727 | 1  |
| 120006 587   | 10   | 400 | 2,9      | 3     | 0,947 | 1  |

### Bicolour insulating gloves according to DIN EN 60903

Made of latex for working voltages from 500, 1.000, 7.500, 17.000, 26.500 to 36.000 volts. HAUPA's electricians gloves protect against the hazards caused by arc faults. Pleasant, lightly roughened hand and finger surfaces (for improved slip protection).

**Greater safety thanks to two colours.** Due to the two colour concept of the gloves (**red on the outside - beige on the inside**), the user can recognise damage (such as cuts, abrasions or rips) to the gloves quicker and more easily. Easy and accurate - saves time and provides safety. In the event of any damage, the beige colour shines through and shows up any defect.



| Art. no. | size | TL  | strength | Class | kg    | PU |
|----------|------|-----|----------|-------|-------|----|
| 121000   | 9    | 360 | 0,5      | 00    | 0,300 | 1  |
| 121002   | 10   | 360 | 0,5      | 00    | 0,300 | 1  |
| 121004   | 9    | 410 | 1,0      | 0     | 0,300 | 1  |
| 121006   | 10   | 410 | 1,0      | 0     | 0,300 | 1  |
| 121008   | 11   | 410 | 1,0      | 0     | 0,300 | 1  |
| 121010   | 12   | 410 | 1,0      | 0     | 0,300 | 1  |
| 121012   | 10   | 410 | 1,5      | 1     | 0,300 | 1  |
| 121014   | 10   | 410 | 2,3      | 2     | 0,300 | 1  |
| 121016   | 10   | 410 | 2,9      | 3     | 0,300 | 1  |
| 121018   | 10   | 410 | 3,4      | 4     | 0,300 | 1  |

### Glove tester

Pneumatic tester for electrician's protective gloves. **It is recommended to carry out a test of this nature before starting work.**



| Art. no. | kg    | PU |
|----------|-------|----|
| 120109   | 0,800 | 1  |

## Cotton gloves for putting underneath

short cotton gloves to wear with latex-gloves  
Art. No. 120004 - 120007



| Art. no. | kg    | PU |
|----------|-------|----|
| 120003   | 0,041 | 1  |

## Heat protection gloves acc. to EN 407

Inner glove for heat insulation according to EN 407, flame resistant, made from NOMEX III, heat insulation for contact and insulation against convective heat



| Art. no. | kg    | PU |
|----------|-------|----|
| 120011   | 0,039 | 1  |

## Outer gloves

for mechanical protection from insulated gloves for low voltages 2.5 kV and 5 kV. Made from cow-skin shagreen, water-repellent and silicone treated. Hoop and loop closure on the back of the hand. 150 mm length, sheath sewn on to the exterior. Leather thickness: Only 0.8 / 1.1 mm. Corresponds to the following standards: EN 420-94 General EEC criteria EN 388-94



| Art. no. | kg    | PU |
|----------|-------|----|
| 120028   | 0,070 | 1  |

## Set with protective gloves EN 60903

Safety set, 4 pieces in storage bag, with name plate window, made from polyester (art. no. 220259)

**Contents:**  
120006, 120028, 120003



| Art. no. | TL  | set             | kg    | PU |
|----------|-----|-----------------|-------|----|
| 120029   | 400 | <b>4-pieces</b> | 6,860 | 1  |

## Set with protective gloves EN 60903 light

Safety set, 3 pieces in storage bag, with name plate window, made from polyester (art. no. 220259)

**Contents:**  
120006, 120003



| Art. no. | TL  | set             | kg    | PU |
|----------|-----|-----------------|-------|----|
| 120037   | 400 | <b>3-pieces</b> | 6,790 | 1  |

## Safety fuse grips

with slip off protection and protection sleeve, for low voltage (NH) fuses class 00 - 3, protective sleeve made from smooth, impregnated leather



| Art. no. | kg    | PU |
|----------|-------|----|
| 120012   | 0,563 | 1  |

## Electricians' protection helmets acc. to DIN EN 397 1000 V

low weight, very weatherproof even in cold areas and a stable and very comfortable 4-point belt strap interior. Adjustable to head size, rain catch, slots for ear protection, mount for face protection shields (Art. 120010 + 120034)



| Art. no.     | colour        | kg    | PU |
|--------------|---------------|-------|----|
| 120008       | <b>green</b>  | 0,343 | 1  |
| 120008 GELB  | <b>yellow</b> | 0,343 | 1  |
| 120008 ROT   | <b>red</b>    | 0,343 | 1  |
| 120008 WEISS | <b>white</b>  | 0,343 | 1  |



## Electricians protection visor acc. to EN 166

Protection against short circuit lighting, vision screen of acetate, glassy, transparent forehead protection, convenient head mounting and individual adjustable



| Art. no. | colour      | kg    | PU |
|----------|-------------|-------|----|
| 150377   | transparent | 0,373 | 1  |

## Electrician-safety face mask class II

Electrician-safety face mask with chin guard, protection according DIN EN 166 + 170, GS-ET-29 (protection against arc faults Class II, 7kA), luminous transmission index 0



| Art. no. | colour      | kg    | PU |
|----------|-------------|-------|----|
| 120034   | transparent | 0,275 | 1  |

## Safety-face masks acc. to EN 166

for protection against arc faults



| Art. no. | colour      | kg    | PU |
|----------|-------------|-------|----|
| 120010   | transparent | 0,275 | 1  |

## Safety classes acc. to EN 166

Goggles with transparent lenses, black/orange nylon frame, lenses made of polycarbonate, light weight, high wearing comfort, protects against mechanical risks caused by flying parts, EN166, ANSI Z87.1



| Art. no. | kg    | PU |
|----------|-------|----|
| 120087   | 0,270 | 1  |

## Safety classes acc. to EN 166

Single lens goggles with transparent lenses, black nylon frame, lenses made of polycarbonate, light weight, high wearing comfort, arm length can be adjusted Protects against mechanical risks caused by flying parts, EN166, ANSI Z87.1



| Art. no. | kg    | PU |
|----------|-------|----|
| 120088   | 0,029 | 1  |

## Safety classes acc. to EN 166

Single lens goggles with transparent lenses, soft transparent PVC frame, lenses made of polycarbonate, light weight, high wearing comfort, elastic and adjustable head band, protects against mechanical risks caused by flying parts, EN166, ANSI Z87.1



| Art. no. | kg    | PU |
|----------|-------|----|
| 120093   | 0,067 | 1  |

## Safety glasses acc. to EN 166 with UV filter



Protective goggles with heavily tinted lenses, black nylon frame with non-slip pads, lenses made from polycarbonate, low weight, high level of comfort when wearing, protects from mechanical risks caused by flyaway parts, particular when outside EN 166, ANSI Z87.1



| Art. no. | kg    | PU |
|----------|-------|----|
| 120117   | 0,270 | 1  |

## Ear defenders acc. to EN 352

Dielectric design for environments with the risk of electrical influences, supersoft sealing cushions for long comfort in wear, three wearing positions make combination with safety helmets, face and breathing masks and other safety equipment easy, SNR: 26 dB



| Art. no. | dB | colour | kg    | PU |
|----------|----|--------|-------|----|
| 120112   | 26 | blue   | 0,184 | 1  |

# Personal protection equipment

## Ear defenders acc. to EN 352

Enclosed hearing protectors according to EN 352 with universal bow, soft sealing cushions for long comfort in wear, SNR: 23 dB



| Art. no. | dB | colour | kg    | PU |
|----------|----|--------|-------|----|
| 120111   | 23 | red    | 0,143 | 1  |

## Ear muffs for helmet

Ear muffs including helmet holder, SNR 23 for all currently available protective helmets.



| Art. no. | dB | colour | kg    | PU |
|----------|----|--------|-------|----|
| 120116   | 23 | green  | 0,184 | 1  |

## Ear protection plugs

Universal size, the material adapts individually to every auditory canal, simple to handle, reusable SNR: 30 dB



| Art. no. | dB | colour | kg    | PU |
|----------|----|--------|-------|----|
| 120115   | 30 | orange | 0,010 | 1  |

## Dust masks

light type, made of filter-fleece, against fine particulate matter



| Art. no. | FFP             | kg    | PU |
|----------|-----------------|-------|----|
| 120120   | filterclass P 1 | 0,010 | 1  |
| 120122   | filterclass P 1 | 0,014 | 1  |

## Electricians' boots acc. to EN 50321 Class 0

size 42 to 48



| Art. no. | size    | colour | kg    | PU |
|----------|---------|--------|-------|----|
| 120014   | 42      | white  | 2,160 | 1  |
| 120015   | 43      | white  | 2,235 | 1  |
| 120016   | 44 - 45 | white  | 2,400 | 1  |
| 120017   | 46      | white  | 2,550 | 1  |
| 120018   | 47 - 48 | white  | 2,160 | 1  |

## Security bag, empty

without contents, material: Nylon



| Art. no. | width | depth | height | kg  | PU    |   |
|----------|-------|-------|--------|-----|-------|---|
| 300420   | empty | 390   | 50     | 590 | 0,680 | 1 |

## Safety-sets VDE/GS

in practical bag, 6-pieces. **Contents:** Electricians' helmet, safety mask, safety handle, gloves size 10 (1000 V), insulating mat 1000 x 1000 x 4 mm



| Art. no. | set                                      | kg    | PU |
|----------|--|-------|----|
| 300228   | <b>6-pieces</b>                          | 6,860 | 1  |
| 300229   | <b>5-pieces</b> (without insulating mat) | 3,480 | 1  |

## SysCon XL „SafetySet“



### Content:

1 220650 ABS plastic box „SysCon XL“

1 120010 VDE electricians protection visor 1000 V

1 120007 VDE gloves 1000 V size 10

1 120008 Electricians' protection helmet

1 120012 VDE NH fuse grip



| Art. no. | set             | empty  | kg    | PU |
|----------|-----------------|--------|-------|----|
| 220652   | <b>5-pieces</b> | 220650 | 2,000 | 1  |

**haupa**

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Personal protection equipment

## Climping irons acc. to DIN 8345

postal-type, with 2 points, offset foot-plate and wide leather heel cap, width of points 260 mm, for wooden posts of 150 - 240 mm diam.



| Art. no. | kg    | PU |
|----------|-------|----|
| 150280   | 4,050 | 1  |

## Safety ropes acc. to A-DIN 83330

Safety ropes with hand loop and safety spring hooks acc. to A-DIN 5290. Type: 16 mm drilled polyamide rope



| Art. no. | TL   | strength | kg    | PU |
|----------|------|----------|-------|----|
| 150262   | 5 m  | 16       | 1,185 | 1  |
| 150264   | 10 m | 16       | 2,040 | 1  |
| 150266   | 15 m | 16       | 2,810 | 1  |
| 150268   | 20 m | 16       | 3,781 | 1  |

## Safety belts acc. EN 358

safety belt universal for all sizes, length 1,50 meter



| Art. no. | TL    | kg    | PU |
|----------|-------|-------|----|
| 150240   | 1,5 m | 1,210 | 1  |

## Fallstop acc. to EN 354

Breaking device and rope shortening acc. to EN 355, length 2 m, one hand spring hooks on both sides



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 150274   | 2 m | 1,090 | 1  |

## Travelling safety device DIN 353-2, Type ASK 1

**Rope shortener function:** takes up slack rope and thus reduces height of the fall. **Fall absorber function:** in the case of a fall this limits the catching impact to a medically acceptable level of 6 kN. **Features:** Rope shortener made from V2A stainless steel, connection band with integrated fall absorber and self-securing trigger snap, high level of functional safety and absolutely maintenance free due to simplest mechanism, cannot be operated incorrectly, as every device is firmly attached to the rope



| Art. no. | TL   | strength | kg    | PU |
|----------|------|----------|-------|----|
| 150275   | 5 m  | 12       | 1,953 | 1  |
| 150276   | 10 m | 12       | 2,482 | 1  |
| 150277   | 15 m | 12       | 3,062 | 1  |
| 150278   | 20 m | 12       | 3,174 | 1  |
| 150279   | 25 m | 12       | 3,675 | 1  |

## Safety harness DIN EN 361

Universal harness, rapid adjustment of shoulder strap (orange, 45 mm), body strap (orange, 45 mm) and leg straps (blue, 45 mm), fits all sizes, 1 back D ring, 2 side rings, lightweight, comfortable fabric. The forces that develop during a fall are transferred to less sensitive parts of the body



| Art. no. | kg    | PU |
|----------|-------|----|
| 150270   | 1,614 | 1  |

## Personal safety set

Safety harness (150270), safety device (150277) and shock absorbing rope (15 m) in practical backpack



| Art. no. | set      | kg    | PU |
|----------|----------|-------|----|
| 150258   | 4-pieces | 4,961 | 1  |



## Insulating floor mats acc. to IEC-61111

with anti-skid surfaces, colour: grey

art: 120030, 120031 = Class 2 / 17.000 Volt  
art: 120033 = Class 4 / 36.000 Volt

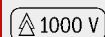


| Art. no. | KV        | TL    |                                 | kg     | PU |
|----------|-----------|-------|---------------------------------|--------|----|
| 120030   | <b>17</b> | 1000  | 1 m x 1 m x 3,0 mm              | 3,754  | 1  |
| 120031   | <b>17</b> | 10000 | 10 m x 1 m x 3,0 mm <b>role</b> | 34,000 | 1  |
| 120033   | <b>36</b> | 10000 | 10 m x 1 m x 4,5 mm <b>role</b> | 42,000 | 1  |

## Isolating magnetic rubber towels

Isolating rubber towels 1000 V, with magnets, IEC 61112 A-KX 55-15 Class 0-Categorie A+Z.

120160: 300 x 500 x 1 mm with 6 magnets  
120162: 500 x 700 x 1 mm with 12 magnets  
120164: 300 x 700 x 1 mm with 8 magnets  
120166: 1100 x 1100 x 1 mm with 20 magnets

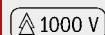


Video 120160\_66



| Art. no. | TL   | width | strength | magnets | kg    | PU |
|----------|------|-------|----------|---------|-------|----|
| 120160   | 300  | 500   | 1,0      | 6       | 0,370 | 1  |
| 120162   | 500  | 700   | 1,0      | 12      | 0,500 | 1  |
| 120164   | 300  | 700   | 1,0      | 8       | 0,700 | 1  |
| 120166   | 1100 | 1100  | 1,0      | 20      | 2,000 | 1  |

## VDE magnet for rubber cloth



| Art. no. | TL | width | strength | magnets | kg    | PU |
|----------|----|-------|----------|---------|-------|----|
| 120168   | 70 | 70    | 1,0      | 1       | 0,025 | 1  |

## Rubber towels acc. to VDE 0680/1

grease and acid-proof, for covering of live equipment



| Art. no. | TL   | width | strength | kg    | PU |
|----------|------|-------|----------|-------|----|
| 120040   | 120  | 120   | 1,6      | 0,037 | 1  |
| 120042   | 350  | 250   | 1,6      | 0,193 | 1  |
| 120044   | 600  | 600   | 1,6      | 1,000 | 1  |
| 120046   | 1000 | 1000  | 1,6      | 2,485 | 1  |
| 120048   | 1200 | 1200  | 1,6      | 3,200 | 1  |

## Covering blankets transparent

in accordance with VDE 0680 part 1, with special labelling 1000 V, transparent, largely UV-resistant, flexible in the cold



| Art. no. | TL    | width | strength | kg     | PU |
|----------|-------|-------|----------|--------|----|
| 120200   | 50000 | 1300  | 0,5      | 41,500 | 1  |
| 150322   | 25000 | 1200  | 1,0      | 38,000 | 1  |

## Covering blankets transparent

in accordance with VDE 0680 part 1, with special labelling 1000 V, transparent, largely UV-resistant, flexible in the cold



| Art. no. | TL   | width | strength | kg    | PU |
|----------|------|-------|----------|-------|----|
| 150302   | 1000 | 600   | 1,0      | 0,750 | 1  |
| 150304   | 1000 | 600   | 0,5      | 0,332 | 1  |
| 150306   | 1000 | 400   | 1,0      | 0,520 | 1  |
| 150308   | 1000 | 400   | 0,5      | 0,260 | 1  |
| 150310   | 1000 | 300   | 1,0      | 0,380 | 1  |
| 150312   | 1000 | 300   | 0,5      | 0,190 | 1  |
| 150314   | 600  | 400   | 1,0      | 0,340 | 1  |
| 150316   | 600  | 400   | 0,5      | 0,171 | 1  |
| 150318   | 400  | 300   | 1,0      | 0,170 | 1  |
| 150320   | 400  | 300   | 0,5      | 0,100 | 1  |



## Plastic clips 1000 V

for fastening of rubber towels



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 120049   | 80  | 0,029 | 1  |
| 120050   | 160 | 0,069 | 1  |

## Self adhesive PVC tape

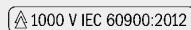
VDE 0340/T1/5.75, temperature area - 10 to + 90° C, 100 x 0,15 mm



| Art. no. | TL    | colour | kg    | PU |
|----------|-------|--------|-------|----|
| 120095   | 10000 | grey   | 0,192 | 1  |
| 120096   | 10000 | red    | 0,190 | 1  |

## Slip on bushes 1000 V

for protective covering of bare live cable terminals, numbered: No. 1 - 2 - 3



| Art. no. | TL | ∅  | for No. | kg    | PU |
|----------|----|----|---------|-------|----|
| 120060   | 80 | 10 | 1       | 0,008 | 1  |
| 120062   | 80 | 10 | 2       | 0,008 | 1  |
| 120064   | 80 | 10 | 3       | 0,008 | 1  |

## Slip on bushes 1000 V

self clamping, not numbered



| Art. no. | TL  | ∅  | kg    | PU |
|----------|-----|----|-------|----|
| 120070   | 75  | 10 | 0,011 | 1  |
| 120072   | 100 | 20 | 0,121 | 1  |
| 120074   | 120 | 30 | 0,207 | 1  |
| 120071   | 135 | 40 | 0,372 | 1  |
| 120069   | 155 | 50 | 0,172 | 1  |
| 120073   | 150 | 60 | 0,144 | 1  |

## Insulator cover for gable insulators 1000 V

with plastic buttons, absolutely safety attachments, touch protection on the bottom side, of weak, weather proofed insulation-material, for long term usage suitable



| Art. no. | TL  | width | kg    | PU |
|----------|-----|-------|-------|----|
| 120079   | 245 | 270   | 0,900 | 1  |

## Insulator cover for gable insulators 1000 V

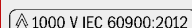
with plastic buttons, absolutely safety attachments, touch protection on the bottom side, of weak, weather proofed insulation-material, for long term usage suitable



| Art. no. | TL  | width | kg    | PU |
|----------|-----|-------|-------|----|
| 120089   | 115 | 270   | 1,100 | 1  |

## Insulator cover for gable insulators 1000 V

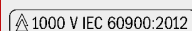
double faced, inside soft and outside strong plastic, for transformers and similar products



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 120057   | 80  | 0,400 | 1  |
| 120059   | 300 | 0,775 | 1  |

## NH-protecting caps 1000 V

for the covering of spring contacts



| Art. no. | TL  | width | kg    | PU |
|----------|-----|-------|-------|----|
| 120058   | 315 | 170   | 0,390 | 1  |

## NH-protecting caps 1000 V

for the covering of spring contacts



| Art. no. | TL  | width | kg    | PU |
|----------|-----|-------|-------|----|
| 120077   | 170 | 140   | 0,155 | 1  |
| 120078   | 255 | 135   | 0,205 | 1  |

# Sealing pliers and accessories

## Sealing pliers

made of cast iron, punch exchangeable and hardened, bright nickel-plated



| Art. no. | TL  | dies-Ø | kg    | PU |
|----------|-----|--------|-------|----|
| 210700   | 125 | 8      | 0,243 | 1  |
| 210702   | 145 | 9      | 0,316 | 1  |
| 210704   | 165 | 10     | 0,448 | 1  |

## Dies for sealing pliers

loose dies



| Art. no. | dies-Ø | kg    | PU |
|----------|--------|-------|----|
| 210710   | 8      | 0,004 | 1  |
| 210712   | 9      | 0,004 | 1  |
| 210714   | 10     | 0,006 | 1  |

## Engraving for sealing pliers

Special engraving on request

| Art. no. |                      |
|----------|----------------------|
| 210731   | up to 3 letters      |
| 210732   | every further letter |
| 210733   | every border         |

## Lead seals



| Art. no. | Ø  | Quantity per kg | kg    | PU |
|----------|----|-----------------|-------|----|
| 150340   | 8  | 850             | 1,080 | 1  |
| 150342   | 9  | 600             | 1,110 | 1  |
| 150344   | 10 | 400             | 1,010 | 1  |

## Plastic seals



| Art. no. | Ø  | kg    | PU   |
|----------|----|-------|------|
| 150343   | 9  | 0,002 | 1000 |
| 150345   | 10 | 0,003 | 1000 |

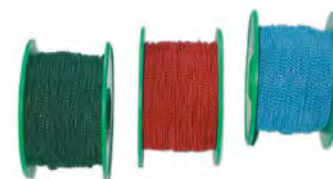
## Seal wire

Material: Iron wire, galvanised



| Art. no. | TL(m) | d1  | d2  | kg    | PU |
|----------|-------|-----|-----|-------|----|
| 150360   | 115   | 0,5 | 0,5 | 0,532 | 1  |
| 150362   | 230   | 0,5 | 0,5 | 1,041 | 1  |
| 150364   | 190   | 0,5 | 0,3 | 0,530 | 1  |
| 150366   | 380   | 0,5 | 0,3 | 1,035 | 1  |
| 150368   | 300   | 0,3 | 0,3 | 0,533 | 1  |
| 150370   | 600   | 0,3 | 0,3 | 1,037 | 1  |

## Plastic seal wire



| Art. no.    | TL(m) | d1  | d2  | colour | kg    | PU |
|-------------|-------|-----|-----|--------|-------|----|
| 150375 BLAU | 100   | 0,5 | 0,6 | blue   | 0,199 | 1  |
| 150375 GRÜN | 100   | 0,5 | 0,6 | green  | 0,220 | 1  |
| 150375 ROT  | 100   | 0,5 | 0,6 | red    | 0,207 | 1  |



**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Accessories

### Parallel rope tension clamps

for copper and steel cables and wires



| Art. no. | for ropes mm <sup>2</sup> | ∅    | load kg | kg    | PU |
|----------|---------------------------|------|---------|-------|----|
| 130064   | 6-35                      | 3-8  | 1000    | 0,890 | 1  |
| 130066   | 16-70                     | 4-12 | 1400    | 1,262 | 1  |
| 130068   | 50-100                    | 8-16 | 2500    | 1,920 | 1  |

### Hemp tackle block ropes

made of hemp, 20 m long



| Art. no. | rope-∅ | kg    | PU |
|----------|--------|-------|----|
| 130042   | 8      | 0,950 | 1  |
| 130044   | 10     | 1,519 | 1  |

### Tackle blocks

made from steel, with turnable hooks, 2 blocks, rust protected finish, with 3 brass rolls



| Art. no. | roll-∅ | rope-∅ | load kg | kg    | PU |
|----------|--------|--------|---------|-------|----|
| 130004   | 50     | 8      | 200     | 1,820 | 1  |
| 130006   | 60     | 10     | 250     | 1,700 | 1  |



Standard tools



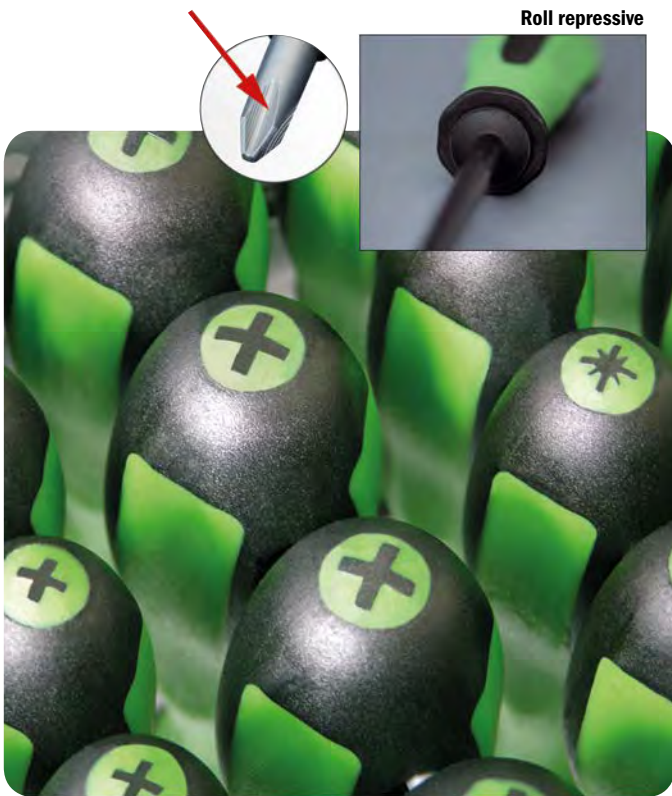
# INFO

## Screwdrivers range

## Industrial quality

### The HAUPA screwdriver series features:

- homogenous size adjustment of the screwdriver handles for better power transmission. Enlargement of soft zone
- elegant, ergonomically shaped, non-slip 2-component handles made from PP/TPE material
- injected blade profile, for easy access in the tool case. Abrasion not possible!
- magnetic blade for secure hold of screws High-gripsystem
- blade made from molybdenum vanadium steel
- an addition anti-slip protection on Phillips profiles prevents the tool from slipping out of the screw



Roll repressive

## 2-component screwdrivers

### 2-component Electricians' screwdrivers

with 2-component handle made from PP/TPE material, blade made from molybdenum-vanadium steel, sanded blade, hardened, chrome plated with black point



| Art. no. | CW         | KSt | BL  | TL  | kg    | PU |
|----------|------------|-----|-----|-----|-------|----|
| 101604   | <b>2,5</b> | 0,4 | 75  | 160 | 0,027 | 1  |
| 101606   | <b>4</b>   | 0,8 | 100 | 195 | 0,051 | 1  |
| 101608   | <b>4</b>   | 0,8 | 125 | 220 | 0,054 | 1  |
| 101610   | <b>5</b>   | 1,0 | 150 | 245 | 0,067 | 1  |
| 101612   | <b>5</b>   | 1,0 | 175 | 270 | 0,069 | 1  |
| 101614   | <b>5</b>   | 1,0 | 200 | 295 | 0,074 | 1  |

### 2-component Engineers' screwdrivers

with 2-component handle made from PP/TPE material, blade made from molybdenum-vanadium steel, sanded blade, hardened, chrome plated



| Art. no. | CW        | KSt | BL  | TL  | kg    | PU |
|----------|-----------|-----|-----|-----|-------|----|
| 101640   | <b>5</b>  | 0,4 | 75  | 170 | 0,056 | 1  |
| 101642   | <b>6</b>  | 1,2 | 100 | 205 | 0,090 | 1  |
| 101644   | <b>7</b>  | 1,2 | 125 | 230 | 0,109 | 1  |
| 101646   | <b>8</b>  | 1,2 | 150 | 270 | 0,160 | 1  |
| 101648   | <b>9</b>  | 1,6 | 175 | 295 | 0,170 | 1  |
| 101650   | <b>10</b> | 1,6 | 200 | 320 | 0,238 | 1  |

### 2-component cross slotted screwdrivers Phillips

with 2-component handle made from PP/TPE material, blade made from molybdenum-vanadium steel, sanded blade, hardened, chrome plated, engraving on the blade ensures extra grip in the screw



| Art. no. | size     | BL  | TL  | form | kg    | PU |
|----------|----------|-----|-----|------|-------|----|
| 101684   | <b>0</b> | 60  | 145 | PH   | 0,032 | 1  |
| 101686   | <b>1</b> | 80  | 175 | PH   | 0,055 | 1  |
| 101688   | <b>2</b> | 100 | 205 | PH   | 0,087 | 1  |
| 101690   | <b>3</b> | 150 | 270 | PH   | 0,161 | 1  |

### 2-component cross slotted screwdrivers Pozidriv

with 2-component handle made from PP/TPE material, blade made from molybdenum-vanadium steel, sanded blade, hardened, chrome plated



| Art. no. | size     | BL  | TL  | form | kg    | PU |
|----------|----------|-----|-----|------|-------|----|
| 102612   | <b>1</b> | 80  | 175 | PZ   | 0,055 | 1  |
| 102614   | <b>2</b> | 100 | 205 | PZ   | 0,088 | 1  |
| 102616   | <b>3</b> | 150 | 270 | PZ   | 0,160 | 1  |

## 2-component screwdrivers

### 2-component screwdrivers Tx with security pin

with 2-component handle made from PP/TPE material, blade made from molybdenum-vanadium steel, sanded blade, hardened, chrome plated with black point



| Art. no. | size      | BL  | TL  | form | kg    | PU |
|----------|-----------|-----|-----|------|-------|----|
| 101229/6 | <b>6</b>  | 100 | 185 | TX   | 0,036 | 1  |
| 101230   | <b>8</b>  | 100 | 185 | TX   | 0,036 | 1  |
| 101200   | <b>9</b>  | 100 | 185 | TX   | 0,036 | 1  |
| 101202   | <b>10</b> | 100 | 195 | TX   | 0,057 | 1  |
| 101204   | <b>15</b> | 100 | 195 | TX   | 0,054 | 1  |
| 101206   | <b>20</b> | 100 | 195 | TX   | 0,058 | 1  |
| 101208   | <b>25</b> | 125 | 195 | TX   | 0,064 | 1  |
| 101210   | <b>27</b> | 125 | 230 | TX   | 0,093 | 1  |
| 101211   | <b>30</b> | 150 | 255 | TX   | 0,093 | 1  |

### 2-component screwdrivers Square

with 2-component handle made from PP/TPE material, blade made from molybdenum-vanadium steel, sanded blade, hardened, chrome plated with black point



| Art. no. | size     | BL  | TL  | form | kg    | PU |
|----------|----------|-----|-----|------|-------|----|
| 103130   | <b>0</b> | 60  | 145 | SQ   | 0,032 | 1  |
| 103132   | <b>1</b> | 80  | 175 | SQ   | 0,055 | 1  |
| 103134   | <b>2</b> | 100 | 205 | SQ   | 0,087 | 1  |
| 103136   | <b>3</b> | 150 | 270 | SQ   | 0,161 | 1  |

### 2-component screwdriver set Tx

screwdriver set Tx with security pin, with 2-component handle made from PP/TPE material, blade made from molybdenum-vanadium steel, sanded blade, hardened, chrome plated, 5-pieces.

#### Contents:

1 screwdriver each

Tx 10, Tx 15, Tx 20, Tx 25, Tx 30



| Art. no. | form | set             | kg    | PU |
|----------|------|-----------------|-------|----|
| 101212/S | TX   | <b>5-pieces</b> | 0,337 | 1  |

### 2-component Electricians' screwdrivers

with 2-component handle made from PP/TPE material, blade made from molybdenum-vanadium steel, sanded blade, hardened, blast-finished, blade black PVC covered



| Art. no. | CW         | KSt | BL  | TL  | kg    | PU |
|----------|------------|-----|-----|-----|-------|----|
| 101520   | <b>2,5</b> | 0,4 | 75  | 160 | 0,027 | 1  |
| 101521   | <b>3</b>   | 0,5 | 100 | 195 | 0,030 | 1  |
| 101522   | <b>4</b>   | 0,8 | 100 | 195 | 0,051 | 1  |
| 101524   | <b>4</b>   | 0,8 | 125 | 220 | 0,054 | 1  |
| 101526   | <b>5</b>   | 1,0 | 150 | 245 | 0,068 | 1  |
| 101528   | <b>5</b>   | 1,0 | 175 | 270 | 0,072 | 1  |
| 101530   | <b>5</b>   | 1,0 | 200 | 295 | 0,078 | 1  |

### 2-component Engineers' screwdrivers

with 2-component handle made from PP/TPE material, blade made from molybdenum-vanadium steel, sanded blade, hardened, blast-finished, blade black PVC covered



| Art. no. | CW        | KSt | BL  | TL  | kg    | PU |
|----------|-----------|-----|-----|-----|-------|----|
| 101532   | <b>5</b>  | 1,0 | 75  | 170 | 0,057 | 1  |
| 101534   | <b>6</b>  | 1,2 | 100 | 205 | 0,091 | 1  |
| 101536   | <b>7</b>  | 1,2 | 125 | 230 | 0,114 | 1  |
| 101538   | <b>8</b>  | 1,2 | 150 | 270 | 0,146 | 1  |
| 101540   | <b>9</b>  | 1,6 | 175 | 295 | 0,210 | 1  |
| 101541   | <b>10</b> | 1,6 | 200 | 320 | 0,214 | 1  |

### 2-component cross slotted screwdrivers Phillips

with 2-component handle made from PP/TPE material, blade made from molybdenum-vanadium steel, sanded blade, hardened, blast-finished, blade black PVC covered, engraving on the blade ensures extra grip in the screw



| Art. no. | size     | BL  | TL  | form | kg    | PU |
|----------|----------|-----|-----|------|-------|----|
| 101542   | <b>0</b> | 60  | 145 | PH   | 0,032 | 1  |
| 101544   | <b>1</b> | 80  | 175 | PH   | 0,059 | 1  |
| 101546   | <b>2</b> | 100 | 205 | PH   | 0,091 | 1  |
| 101548   | <b>3</b> | 150 | 270 | PH   | 0,147 | 1  |

### 2-component cross slotted screwdrivers Pozidriv

with 2-component handle made from PP/TPE material, blade made from molybdenum-vanadium steel, sanded blade, hardened, blast-finished, blade black PVC covered



| Art. no. | size     | BL  | TL  | form | kg    | PU |
|----------|----------|-----|-----|------|-------|----|
| 101550   | <b>1</b> | 80  | 175 | PZ   | 0,056 | 1  |
| 101552   | <b>2</b> | 100 | 205 | PZ   | 0,088 | 1  |
| 101554   | <b>3</b> | 150 | 270 | PZ   | 0,146 | 1  |

**haupa**

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



## 2-component screwdrivers

### 2-component Screwdriver set



with 2-component handle made from PP/TPE material, blade made from molybdenum-vanadium steel, sanded blade, hardened, blast-finished, blade black PVC covered.

#### Contents:

2 electricians' screwdrivers  
2 engineers' screwdrivers  
2 screwdrivers Phillips



| Art. no. | form     | set             | kg    | PU |
|----------|----------|-----------------|-------|----|
| 101560   | Phillips | <b>6-pieces</b> | 0,431 | 1  |

### 2-component Screwdriver set



with 2-component handle made from PP/TPE material, blade made from molybdenum-vanadium steel, sanded blade, hardened, blast-finished, blade black PVC covered.

#### Contents:

2 electricians' screwdrivers  
2 engineers' screwdrivers  
2 screwdrivers Pozidriv



| Art. no. | form     | set             | kg    | PU |
|----------|----------|-----------------|-------|----|
| 101562   | Pozidriv | <b>6-pieces</b> | 0,429 | 1  |



## 2-component screwdrivers

### 2C-Stubby gasifier screwdrivers



with 2-component handle made from PP/TPE material, blade made from molybdenum-vanadium steel, sanded blade, hardened, blast-finished



| Art. no. | CW       | BL | TL | kg    | PU |
|----------|----------|----|----|-------|----|
| 103120   | <b>6</b> | 30 | 80 | 0,050 | 1  |
| 103122   | <b>8</b> | 40 | 90 | 0,051 | 1  |

### 2C-Stubby gasifier cross slot screwdrivers Phillips



with 2-component handle made from PP/TPE material, blade made from molybdenum-vanadium steel, sanded blade, hardened, blast-finished



| Art. no. | size     | BL | TL | form | kg    | PU |
|----------|----------|----|----|------|-------|----|
| 103080   | <b>1</b> | 30 | 80 | PH   | 0,051 | 1  |
| 103082   | <b>2</b> | 40 | 90 | PH   | 0,051 | 1  |

### 2C-Piercing awls

with 2-component handle made from PP/TPE material, blade made from molybdenum-vanadium steel, sanded blade, hardened, blast-finished



| Art. no. | Ø        | BL  | form   | kg    | PU |
|----------|----------|-----|--------|-------|----|
| 103470   | <b>6</b> | 100 | round  | 0,083 | 1  |
| 103472   | <b>6</b> | 100 | square | 0,085 | 1  |



## 2-component socket wrenches

### 2-component socket wrenches

with 2-component handle made from PP/TPE material, blade made from molybdenum-vanadium steel, sanded blade, hardened, blast-finished



| Art. no. | WS  | BL  | TL  | kg    | PU |
|----------|-----|-----|-----|-------|----|
| 101484   | 5   | 125 | 220 | 0,105 | 1  |
| 101486   | 5,5 | 125 | 220 | 0,107 | 1  |
| 101488   | 6   | 125 | 220 | 0,110 | 1  |
| 101490   | 7   | 125 | 230 | 0,113 | 1  |
| 101492   | 8   | 125 | 230 | 0,115 | 1  |
| 101494   | 9   | 125 | 230 | 0,120 | 1  |
| 101496   | 10  | 125 | 230 | 0,124 | 1  |
| 103498   | 11  | 125 | 245 | 0,145 | 1  |
| 101500   | 12  | 125 | 245 | 0,165 | 1  |
| 101502   | 13  | 125 | 245 | 0,171 | 1  |

### 2-component socket wrenches set

with 2-component handle made from PP/TPE material, blade made from molybdenum-vanadium steel, sanded blade, hardened, blast-finished, 7-pieces.

**Contents:** 1 piece each  
5 - 5,5 - 7 - 8 - 10 - 11 - 13 mm



| Art. no. | set             | kg    | PU |
|----------|-----------------|-------|----|
| 101510   | <b>7-pieces</b> | 0,898 | 1  |



## HAUPA replaceable blade system

### Industrial screwdriver set with replaceable dual blades.

2-component screwdriver shaft with 10 interchangeable blades, hexagonal, Material: bit steel S2, (chrome silicon manganese molybdenum vanadium steel), in a stable metal case. To also use blades in the cordless screwdriver, as a long bit with a blade length of 175 mm. Loose interchangeable blades can be found on page 249.

#### Blade types:

Slotted 3, 4, 5, 7  
Phillips 0, 1, 2, 3  
Pozidriv 0, 1, 2, 3  
Tx 10, 15, 20, 25  
Hexagonal 2, 3, 4, 5



| Art. no. | set              | kg    | PU |
|----------|------------------|-------|----|
| 104008   | <b>11-pieces</b> | 1,060 | 1  |

**haupa**<sup>®</sup>

**...convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



# INFO

## Dynamometric screwdriver with replaceable blades

The new HAUPA 1000 V VarioTQ dynamometric screwdriver is characterised by its precision and functionality.

The ergonomic handles can be adjusted individually.

1. 1.0 - 6.0 Nm
2. 0.5 - 3.5 Nm

HAUPA offers all relevant blade tip profiles as individual items and in set form in a high-quality nylon case.



### VarioTQ

- torque can be set using a separate key
- scale value can easily be read off
- clearly perceptible and audible signal when the set torque is achieved
- torque accuracy according to EN ISO 6789:2013-10

#### Replaceable dual blades

made from molybdenum-vanadium steel, sanded blade, hardened, blast-finished, chrome plated with black point



#### Precisely adjustable torque

Two handle versions, also available individually:

**Art. no. 103070**  
1.0 - 6.0 Nm

**Art. no. 103072**  
0.5 - 3.5 Nm

## HAUPA replaceable blade system „VarioTQ“

### „VarioTQ“ dynamometric screwdriver with replaceable blades

### VarioTQ

replaceable dual blades made from molybdenumvanadium steel, sanded blade, hardened, blast-finished, chrome plated with black point, with hexagonal shaft, in robust nylon bag (with belt loop and hook and loop closure), 10 replaceable blades (20 profiles)

#### Contents:

- 2-component exchangeable handle 1 - 6 Nm or 0,5 - 3,5 Nm
- slotted 3/4 - 5,5/6,5
- PH0/PH1
- PZ0/PZ1
- PH2/PZ2
- TX 10/15 - 20/25
- HEX 2/3 - 4/5
- PZ/FL1
- PZ/FL2
- Square socket key



| Art. no. | form | Nm               | set       | kg    | PU |
|----------|------|------------------|-----------|-------|----|
| 103000   | Mix  | <b>1 - 6</b>     | 12-pieces | 0,765 | 1  |
| 103002   | Mix  | <b>0,5 - 3,5</b> | 12-pieces | 0,765 | 1  |

## Replaceable blade

insulated replaceable blade made from molybdenum vanadium steel, hardened, blasted, individually tested, for art. 103000, 103002, 104008, 103070, 103072



### Replaceable blade - pozidrive blade/slotted

| Art. no. | form         | size  | BL  | kg    | PU |
|----------|--------------|-------|-----|-------|----|
| 103028   | <b>PZ/FL</b> | 1 + 2 | 175 | 0,040 | 1  |



### Replaceable blade - slotted blade

| Art. no. | form      | CW        | BL  | kg    | PU |
|----------|-----------|-----------|-----|-------|----|
| 103010   | <b>SL</b> | 3 + 4     | 175 | 0,040 | 1  |
| 103012   | <b>SL</b> | 5,5 + 6,5 | 175 | 0,040 | 1  |



### Replaceable blade - Phillips blade

| Art. no. | form      | size  | BL  | kg    | PU |
|----------|-----------|-------|-----|-------|----|
| 103014   | <b>PH</b> | 0 + 1 | 175 | 0,040 | 1  |



### Replaceable blade - pozidrive blade

| Art. no. | form      | size  | BL  | kg    | PU |
|----------|-----------|-------|-----|-------|----|
| 103016   | <b>PZ</b> | 0 + 1 | 175 | 0,040 | 1  |



### Replaceable blade - Phillips blade/pozidrive blade

| Art. no. | form           | size  | BL  | kg    | PU |
|----------|----------------|-------|-----|-------|----|
| 103018   | <b>PH + PZ</b> | 2 + 2 | 175 | 0,040 | 1  |



### Replaceable blade - torx blade

| Art. no. | form      | size    | BL  | kg    | PU |
|----------|-----------|---------|-----|-------|----|
| 103020   | <b>TX</b> | 10 + 15 | 175 | 0,040 | 1  |
| 103022   | <b>TX</b> | 20 + 25 | 175 | 0,040 | 1  |



### Replaceable blade - hex blade

| Art. no. | form       | size  | BL  | kg    | PU |
|----------|------------|-------|-----|-------|----|
| 103024   | <b>HEX</b> | 2 + 3 | 175 | 0,040 | 1  |
| 103026   | <b>HEX</b> | 4 + 5 | 175 | 0,040 | 1  |



### Replaceable blade - Square

| Art. no. | form      | size  | BL  | kg    | PU |
|----------|-----------|-------|-----|-------|----|
| 103030   | <b>SQ</b> | 0 + 2 | 175 | 0,185 | 1  |
| 103032   | <b>SQ</b> | 1 + 3 | 175 | 0,185 | 1  |

## „VarioTQ“ nylon bag - empty

Robust nylon bag (with belt loop) wide hook and eye fastening and loop for hanging up



| Art. no. | kg           | PU      |
|----------|--------------|---------|
| 103034   | <b>empty</b> | 0,080 1 |

## 2-component exchangeable „VarioTQ“ handle

**TQ**

automatic locking mechanism ensures that blades do not fall out unexpectedly, ergonomically formed 2 component book of PP/TPE material, precisely adjustable torque



**TQ**

| Art. no. | TL  | Nm               | kg    | PU |
|----------|-----|------------------|-------|----|
| 103070   | 125 | <b>1 - 6</b>     | 0,185 | 1  |
| 103072   | 125 | <b>0,5 - 3,5</b> | 0,185 | 1  |

## Square socket key

for adjustment of the torque for VarioTQ replacement blades



| Art. no. | form      | BL | BL | kg    | PU |
|----------|-----------|----|----|-------|----|
| 102784   | <b>SQ</b> | 40 | 8  | 0,056 | 1  |

**haupa**<sup>®</sup>

...convincing solutions

Germany: **HAUPA**, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



## Electronic screwdrivers

### INFO

#### ESD electronic screwdrivers

Now with 2-component handle, these screwdrivers do not just convince because of their homogenous design, but also because of their user-friendly handle.

#### Benefits:

- chrome molybdenum vanadium steel
- blades hardened throughout
- two component handles, hard and soft components
- permanently discharging special synthetic material
- Quick rotating zone
- rotating centring head with recessed grip
- black precision tips
- chromed blade



#### Security advice:

HAUPA ESD screwdrivers are not insulating and therefore unsuitable for work with live parts.

#### ESD electronic screwdrivers

Blade made from chrome molybdenum vanadium steel, chromed with black tip, slotted



| Art. no. | CW         | BL  | TL  | kg    | PU |
|----------|------------|-----|-----|-------|----|
| 100704   | <b>0,8</b> | 60  | 150 | 0,023 | 1  |
| 100250   | <b>1,0</b> | 50  | 150 | 0,014 | 1  |
| 100704 A | <b>1,2</b> | 60  | 150 | 0,021 | 1  |
| 100241   | <b>2,5</b> | 60  | 150 | 0,015 | 1  |
| 100243   | <b>3,5</b> | 100 | 150 | 0,018 | 1  |
| 100252   | <b>1,6</b> | 50  | 150 | 0,014 | 1  |
| 100257   | <b>2,0</b> | 50  | 150 | 0,015 | 1  |
| 100259   | <b>2,4</b> | 75  | 175 | 0,017 | 1  |
| 100261   | <b>3,0</b> | 50  | 200 | 0,020 | 1  |

#### ESD electronic screwdrivers

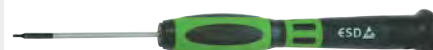
Blade made from chrome molybdenum vanadium steel, chromed with black tip, cross recess, Philipps



| Art. no. | size       | BL | TL  | form | kg    | PU |
|----------|------------|----|-----|------|-------|----|
| 100714   | <b>000</b> | 50 | 150 | PH   | 0,015 | 1  |
| 100715   | <b>00</b>  | 50 | 150 | PH   | 0,022 | 1  |
| 100716   | <b>0</b>   | 50 | 150 | PH   | 0,024 | 1  |
| 100249   | <b>1</b>   | 50 | 150 | PH   | 0,017 | 1  |

#### ESD electronic screwdrivers

Blade made from chrome molybdenum vanadium steel, chromed with black tip, hexagonal



| Art. no. | size       | BL | TL  | form | kg    | PU |
|----------|------------|----|-----|------|-------|----|
| 100728   | <b>1,5</b> | 50 | 150 | HEX  | 0,014 | 1  |
| 100729   | <b>2,0</b> | 50 | 150 | HEX  | 0,015 | 1  |
| 100729 A | <b>2,5</b> | 50 | 150 | HEX  | 0,017 | 1  |
| 100736   | <b>3,0</b> | 50 | 150 | HEX  | 0,020 | 1  |

#### ESD electronic screwdrivers

Blade made from chrome molybdenum vanadium steel, chromed with black tip, Tx/Safety Tx



| Art. no. | size      | BL | TL  | form | kg    | PU |
|----------|-----------|----|-----|------|-------|----|
| 100741   | <b>4</b>  | 50 | 150 | TX   | 0,017 | 1  |
| 100742   | <b>5</b>  | 50 | 150 | TX   | 0,018 | 1  |
| 100718 A | <b>6</b>  | 50 | 150 | TX   | 0,018 | 1  |
| 100720   | <b>7</b>  | 50 | 150 | S-TX | 0,014 | 1  |
| 100721   | <b>8</b>  | 50 | 150 | S-TX | 0,018 | 1  |
| 100712   | <b>9</b>  | 50 | 150 | S-TX | 0,018 | 1  |
| 100713   | <b>10</b> | 50 | 150 | S-TX | 0,016 | 1  |
| 100723   | <b>15</b> | 50 | 150 | S-TX | 0,020 | 1  |
| 100734   | <b>20</b> | 50 | 150 | S-TX | 0,020 | 1  |

#### ESD electronic screwdrivers

Blade made from chrome molybdenum vanadium steel, chromed with black tip, Tri-Wing



| Art. no. | size       | BL | TL  | kg    | PU |
|----------|------------|----|-----|-------|----|
| 100738   | <b>2,4</b> | 50 | 150 | 0,017 | 1  |

#### ESD electronic screwdriver set

Blade made from chrome molybdenum with 2-component handles, 7-pieces, slotted/cross recess.

#### Contents:

1 ESD electronic screwdriver each 1.6 x 50, 2.0 x 50, 2.4 x 50, 3.0 x 50 and 1 Phillips size 1.0 and 00 x 50 each



| Art. no. | set             | kg    | PU |
|----------|-----------------|-------|----|
| 104010   | <b>7-pieces</b> | 0,225 | 1  |

## Precision screwdrivers

### HAUPA Electronic screwdriver set standard



chrome vanadium steel, chrome-plated, with large plastic handle, with black point, 7 pieces.

#### Contents:

1 Electricians' screwdriver size 1.6 x 50, 2.0 x 50, 2.4 x 50, 3.0 x 50, and 1 Phillips size 1, 0 and 00 x 50



| Art. no. | set             | kg    | PU |
|----------|-----------------|-------|----|
| 104000   | <b>7-pieces</b> | 0,221 | 1  |

### Electronic screwdriver set



Chrome vanadium steel, screw holder with black /green plastic handle, 4 x hex head 3, 4, 5, 6 and 8 exchangeable screwdriver blades (slot/Phillips/Tx/hex head)



| Art. no. | set              | kg    | PU |
|----------|------------------|-------|----|
| 104004   | <b>13-pieces</b> | 0,288 | 1  |

### Electronic screwing bit set



Chrome vanadium steel, screw holder with black/green plastic handle, 1 bit holder, 2 nuts of 5 + 6 mm, 30 bits for slot/Phillips/Pozidriv/Tx/hex head



| Art. no. | set              | kg    | PU |
|----------|------------------|-------|----|
| 104002   | <b>34-pieces</b> | 0,230 | 1  |

### Flexible screwdrivers „Piccolo“



with pliable, plastic coated shank, plastic handle



| Art. no. | CW         | BL  | TL  | kg    | PU |
|----------|------------|-----|-----|-------|----|
| 100364   | <b>2,8</b> | 125 | 205 | 0,020 | 1  |

### Claw retrievers

with inflexible shaft, chrome-plated, for gripping and retrieving of small parts in normally inaccessible places



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 100366   | 525 | 0,050 | 1  |

### Checking mirrors

with double ball joint



| Art. no. | TL  | Ø  | kg    | PU |
|----------|-----|----|-------|----|
| 100680   | 210 | 60 | 0,028 | 1  |

### Checking mirrors

with illumination, flexible shaft and plastic handle, 3 interchangeable mirrors Ø 14-23-30 mm, with battery



| Art. no. | TL  | Ø  | kg    | PU |
|----------|-----|----|-------|----|
| 100684   | 530 | 12 | 0,169 | 1  |

### Magnetic retriever

flexible shaft and plastic handle



| Art. no. | TL  | Ø  | kg    | PU |
|----------|-----|----|-------|----|
| 100694   | 520 | 12 | 0,097 | 1  |



**haupa**<sup>®</sup>

**...convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Allen keys

## Allen keys set

chrome vanadium steel, (59 Cr-Mo-V 4), DIN 911, chrome plated, on key ring.

### Contents:

size 2,5 - 3 - 4 - 5 - 6 - 8 - 10



| Art. no. | size   | quantity | kg    | PU |
|----------|--------|----------|-------|----|
| 100640   | 2,5-10 | 8        | 0,250 | 1  |

## Allen keys set

chrome vanadium steel, (59 Cr-Mo-V 4), im metal clip, key bronzed, DIN 911.

### Contents:

Art. 100630: 2,5-3-4-5-6-8 mm  
 Art. 100633: 1,5-2,5-3-4-5-6 mm  
 Art. 100634: 2,5-3-4-5-6-8-10 mm



| Art. no. | size    | quantity | kg    | PU |
|----------|---------|----------|-------|----|
| 100630   | 2,8-8   | 6        | 0,249 | 1  |
| 100633   | 1,5-6"  | 7        | 0,145 | 1  |
| 100634   | 2,5-10" | 7        | 0,335 | 1  |

## Allen keys set

chrome vanadium steel, (59 Cr-Mo-V 4), im metal clip, key bronzed, DIN 911.

### Contents:

Art. 100632: 3/32-1/8-5/32-3/16-1/4-5/16" AF  
 Art. 100635: 1/16-5/64-3/32-1/8-5/32-3/16-7/32" AF  
 Art. 100636: 3/32-1/8-5/32-3/16-1/4-5/16-3/8" AF



| Art. no. | size        | quantity | kg    | PU |
|----------|-------------|----------|-------|----|
| 100632   | 3/32"-5/16" | 6        | 0,251 | 1  |
| 100635   | 1/16"-7/32" | 7        | 0,135 | 1  |
| 100636   | 3/32"-3/8"  | 7        | 0,328 | 1  |

## Key set Tx

chrome vanadium steel, (59 Cr-Mo-V 4), in metal-clip, surface black, keys black.

### Contents:

TX 9 - 10 - 15 - 20 - 25 - 27 - 30 - 40



| Art. no. | size     | quantity | kg    | PU |
|----------|----------|----------|-------|----|
| 100943   | TX9 - 40 | 8        | 0,260 | 1  |

## Ball point allen keys

chrome vanadium steel, (59 Cr-Mo-V 4), im metal clip, black keys, DIN 911

### Contents:

size 2.5 - 3 - 4 - 5 - 6 - 8 - 10



| Art. no. | size   | quantity | kg    | PU |
|----------|--------|----------|-------|----|
| 100917   | 2,5-10 | 7        | 0,334 | 1  |

## Allen keys set

chrome vanadium steel, (59 Cr-Mo-V 4), chrome plated, DIN 911, 8 pieces in handy plastic box, with sliding plexiglasscover.

### Contents:

size 2 - 2.5 - 3 - 4 - 5 - 6 - 8 - 10



| Art. no. | size | quantity | kg    | PU |
|----------|------|----------|-------|----|
| 100585   | 2-10 | 8        | 0,303 | 1  |

## Ball point allen keys

chrome vanadium steel, (59 Cr-Mo-V 4), DIN 911, chrome-plated, 8 pieces in handy plastic box, with pushable plexiglasscover.

### Contents:

size 2 - 2.5 - 3 - 4 - 5 - 6 - 8 - 10



| Art. no. | size | quantity | kg    | PU |
|----------|------|----------|-------|----|
| 100915   | 2-10 | 8        | 0,301 | 1  |

## Allen keys set Tx

chrome vanadium steel, (59 Cr-Mo-V 4), 8 pieces in handy plastic box, surface black.

### Contents:

TX 9 - 10 - 15 - 20 - 25 - 27 - 30 - 40



| Art. no. | size     | quantity | kg    | PU |
|----------|----------|----------|-------|----|
| 100941   | TX9 - 40 | 8        | 0,205 | 1  |

# Allen keys

## Hexagon screwdriver set T-handle, with spherical head

Made from chrome vanadium steel, completely hardened, chrome plated with 2-component handle, hexagonal with spherical head.

### Contents:

WS: Hex 2, 2.5, 3, 4, 5, 6, 8, 10



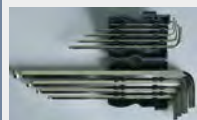
| Art. no. | size | quantity | kg    | PU |
|----------|------|----------|-------|----|
| 100961   | 2-10 | 8        | 0,400 | 1  |

## Hexagon angle screwdriver set, with spherical head

Made from chrome vanadium steel, completely hardened, nickel plated, **extra long**, metric, with spherical head, in folding holder.

### Contents:

WS: Hex 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10



| Art. no. | size   | quantity | kg    | PU |
|----------|--------|----------|-------|----|
| 100921   | 1,5-10 | 9        | 0,300 | 1  |

## Hexagon angle screwdriver set, with spherical head

Made from chrome vanadium steel, blades hardened throughout, nickel plated, **extra long**, metric or AF, with spherical head, in folding holder.

### Content metric:

WS: Hex 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10

### Content AF:

WS: Hex 1/16 - 5/64 - 3/32 - 1/8 - 5/32 - 3/16 - 1/4 - 5/16 - 3/8"



| Art. no. | size       | quantity | kg    | PU |
|----------|------------|----------|-------|----|
| 100965   | 1,5-10     | 9        | 0,420 | 1  |
| 100967   | 1/16"-3/8" | 9        | 0,420 | 1  |

## Hexagon angle screwdriver set, with spherical head

Made from chrome vanadium steel, blades hardened throughout, nickel plated, metric or AF, with spherical head, in folding holder.

### Content metric:

WS: Hex 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10

### Content AF:

WS: Hex 1/16 - 5/64 - 3/32 - 1/8 - 5/32 - 3/16 - 1/4 - 5/16 - 3/8"



| Art. no. | size   | quantity | kg    | PU |
|----------|--------|----------|-------|----|
| 100927   | 1,5-10 | 9        | 0,420 | 1  |

## Allen keys DIN 911

chrome vanadium steel, (59 Cr-Mo-V 4), DIN 911, chrome plated



| Art. no. | TL     | WS  | Inch  | kg    | PU |
|----------|--------|-----|-------|-------|----|
| 100590   | 45x14  | 1,5 | 1/16" | 0,020 | 1  |
| 100592   | 50x16  | 2   | 5/64" | 0,020 | 1  |
| 100594   | 56x18  | 2,5 | 3/32" | 0,020 | 1  |
| 100596   | 63x20  | 3   | 1/8"  | 0,030 | 1  |
| 100598   | 70x25  | 4   | 5/32" | 0,080 | 1  |
| 100600   | 80x28  | 5   | 3/16" | 0,019 | 1  |
| 100602   | 90x32  | 6   | 1/4"  | 0,028 | 1  |
| 100606   | 100x36 | 8   | 5/16" | 0,058 | 1  |
| 100610   | 112x40 | 10  | 3/8"  | 0,099 | 1  |
| 100612   | 125x45 | 12  |       | 0,160 | 1  |
| 100614   | 132x50 | 13  | 1/2"  | 0,202 | 1  |

## Ball point allen keys

chrome vanadium steel, (59 Cr-Mo-V 4), DIN 911, chrome plated



| Art. no. | TL     | WS  | Inch  | kg    | PU |
|----------|--------|-----|-------|-------|----|
| 100902   | 56x18  | 2,5 | 3/32" | 0,003 | 1  |
| 100903   | 63x20  | 3   | 1/8"  | 0,005 | 1  |
| 100904   | 70x25  | 4   | 5/32" | 0,011 | 1  |
| 100905   | 80x28  | 5   | 3/16" | 0,019 | 1  |
| 100906   | 90x32  | 6   | 1/4"  | 0,029 | 1  |
| 100908   | 100x36 | 8   | 5/16" | 0,058 | 1  |
| 100909   | 112x40 | 10  | 3/8"  | 0,102 | 1  |



**haupa**

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Voltage testers

### VDE/GS-Voltage testers, VDE-tested 0426/72

with clear-transparent, shock-resistant plastic handle.  
Art. No. 100646, 100648 each in wallet  
Art. No. 100647, 100649 loose



| Art. no. | BL      | TL  | TMA     | kg    | PU |
|----------|---------|-----|---------|-------|----|
| 100646   | 50x3    | 140 | 100-250 | 0,020 | 1  |
| 100647   | 50x3    | 140 | 100-250 | 0,016 | 1  |
| 100648   | 100x3,5 | 190 | 100-250 | 0,037 | 1  |
| 100649   | 100x3,5 | 190 | 100-250 | 0,032 | 1  |

### Voltage tester

Finnish type, Cellidor, only available for Finland



| Art. no. | BL   | TL  | TMA     | kg    | PU |
|----------|------|-----|---------|-------|----|
| 100645   | 50x3 | 140 | 150-250 | 0,016 | 1  |

### Voltage tester VDE/GS

with retractable screwdriver blade



| Art. no. | BL   | TL  | TMA     | kg    | PU |
|----------|------|-----|---------|-------|----|
| 100650   | 25x4 | 140 | 100-250 | 0,020 | 1  |

### Voltage testers VDE/GS

5 mm surrounding hand-protection, clip of insulating material, fixed installed scale with dark background



| Art. no. | BL | TL  | TMA     | kg    | PU |
|----------|----|-----|---------|-------|----|
| 100700   | -  | 190 | 125-250 | 0,036 | 1  |



## INFO

### Bits

### Industrial quality

HAUPA-Bits are made of high-alloyed tool steel, best hardened (H Rc 60 - 63). They show very high tenacity and tolerance. The long life speaks of the hard use and quality.



1 box = 10 pieces (self-service packaging)

### Screwdriver bits

DIN 3126, form E 6,3, shank 1/4", 10 pieces on card



| Art. no. | size    | CW  | TL | kg    | PU |
|----------|---------|-----|----|-------|----|
| 102110   | 0,6x4,5 | 4,5 | 50 | 0,104 | 1  |
| 102112   | 0,8x5,5 | 5,5 | 50 | 0,115 | 1  |

### Screwdriver bits

DIN 3126, form E 6,3, shank 1/4", 10 pieces on card



| Art. no. | size     | TL  | kg    | PU |
|----------|----------|-----|-------|----|
| 102152   | PH 1     | 25  | 0,062 | 1  |
| 102154   | PH 2     | 25  | 0,067 | 1  |
| 102156   | PH 1 TiN | 25  | 0,064 | 1  |
| 102158   | PH 2 TiN | 25  | 0,066 | 1  |
| 102114   | PH 1     | 50  | 0,105 | 1  |
| 102116   | PH 2     | 50  | 0,124 | 1  |
| 102160   | PH 1 TiN | 50  | 0,106 | 1  |
| 102162   | PH 2 TiN | 50  | 0,123 | 1  |
| 102164   | PH 1     | 90  | 0,180 | 1  |
| 102166   | PH 2     | 90  | 0,097 | 1  |
| 102168   | PH 1 TiN | 90  | 0,063 | 1  |
| 102170   | PH 2 TiN | 90  | 0,100 | 1  |
| 102172   | PH 1     | 150 | 0,251 | 1  |
| 102174   | PH 2     | 150 | 0,358 | 1  |

### Screwdriver bits, red.

DIN 3126, form E 6,3, shank 1/4", 10 pieces on card for PH 1 and PH 2



| Art. no. | size | TL | kg    | PU |
|----------|------|----|-------|----|
| 102155   | 2    | 25 | 0,064 | 1  |



# Bits

## Screwdriver bits



DIN 3126, form E 6.3, shank 1/4", 10 pieces on card



| Art. no. | size     | TL  | kg    | PU |
|----------|----------|-----|-------|----|
| 102176   | PZ 1     | 25  | 0,062 | 1  |
| 102178   | PZ 2     | 25  | 0,065 | 1  |
| 102180   | PZ 1 TiN | 25  | 0,062 | 1  |
| 102182   | PZ 2 TiN | 25  | 0,066 | 1  |
| 102118   | PZ 1     | 50  | 0,107 | 1  |
| 102120   | PZ 2     | 50  | 0,123 | 1  |
| 102184   | PZ 1 TiN | 50  | 0,106 | 1  |
| 102186   | PZ 2 TiN | 50  | 0,122 | 1  |
| 102188   | PZ 1     | 90  | 0,179 | 1  |
| 102190   | PZ 2     | 90  | 0,231 | 1  |
| 102192   | PZ 1 TiN | 90  | 0,177 | 1  |
| 102194   | PZ 2 TiN | 90  | 0,229 | 1  |
| 102196   | PZ 1     | 150 | 0,257 | 1  |
| 102198   | PZ 2     | 150 | 0,360 | 1  |

## Screwdriver bits Tx



DIN 3126, form E 6.3, shank 1/4", 10 pieces on card



| Art. no. | size  | TL | kg    | PU |
|----------|-------|----|-------|----|
| 102200   | Tx 15 | 25 | 0,061 | 1  |
| 102202   | Tx 20 | 25 | 0,063 | 1  |
| 102204   | Tx 25 | 25 | 0,065 | 1  |
| 102208   | Tx 30 | 25 | 0,070 | 1  |
| 102122   | Tx 15 | 50 | 0,100 | 1  |
| 102124   | Tx 20 | 50 | 0,110 | 1  |
| 102126   | Tx 25 | 50 | 0,112 | 1  |

## Bits for PZ slot profile



The PZ/FL profile can only be used for combination screws that were previously screwed with a slot or recessed head PZ type screwdriver. The screws have an inner PZ profile with an additional cross slot that also allows it to be screwed with a slot screwdriver

1 PU (packaging unit) = 2 pieces



| Art. no. | size | TL | kg    | PU |
|----------|------|----|-------|----|
| 101874   | 1    | 60 | 0,012 | 1  |
| 101876   | 2    | 60 | 0,013 | 1  |
| 101880   | 1    | 90 | 0,179 | 1  |
| 101882   | 2    | 90 | 0,231 | 1  |

## Magnetic holder

with strong magnetic, shank 1/4", form C 6,3 DIN 3126, for holding the screws, socket made of stainless steel, suitable for all



| Art. no. | TL | kg    | PU |
|----------|----|-------|----|
| 102130   | 75 | 0,056 | 1  |

## SDS magnetic holder

with strong permanent magnet, bit holder 1/4", form C 6.3 DIN 3126, to hold screws, rust-free, stainless steel sleeve, suitable for SDS bits holders



| Art. no. | TL | kg    | PU |
|----------|----|-------|----|
| 102131   | 55 | 0,045 | 1  |

## Magnetic holder

with strong magnetic, shank 1/4", form C 6.3 DIN 3126, for holding the screws, socket made of stainless steel, with inside ring, suitable for all



| Art. no. | TL | kg    | PU |
|----------|----|-------|----|
| 102132   | 75 | 0,045 | 1  |
| 102134   | 60 | 0,040 | 1  |

## HAUPA „BitBox“

**BitBox**

### Description:

- Belt clip
- Ergonomic (with the opening of the box the bits will be moved in 45° angle, easy pick up position)
- A special mechanism fixes the bits even in an up side down position

### Contents:

Screwdriver bits, form E 6.3, shank 1/4", 25 mm  
 PH: 1, PH 2, PH 3  
 PZ: 1, PZ 2, PZ 3  
 Tx: 10, T 15, T 20, T 25  
 slotted: 4.0 (0.5), 5.0 (0.8), 5.0 (1.0), 6.0 (1.0)  
 hexagon: 4.0, 5.0, 6.0  
 Magnetic holder 60 mm



| Art. no. | set       | kg    | PU |
|----------|-----------|-------|----|
| 102210   | 17-pieces | 0,170 | 1  |

**haupa**

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



# Ratchet screwdriver, bits

## HAUPA „BitBox+“

**BitBox+**

Sturdy black plastic polypropylene, the constant hinge gives maximum stability. Safety and special bit set - top quality S2!

1/4" = 25 mm Bits

**Contents:**

- 1/4" 25 mm Power bits PH: 2x 0, 2x 1, 4x 2, 2x 3
- 1/4" 25 mm Power bits PZ: 2x 0, 2x 1, 4x 2, 2x 3
- 1/4" 25 mm Power bits TX: T10, T15, T20, T25
- 1/4" 25 mm Power bits HEX: H3, H4, H5, H6
- 1/4" 25 mm Power bits R: 1, 2, 3



| Art. no. | bit     | set              | kg    | PU |
|----------|---------|------------------|-------|----|
| 102212   | = 25 mm | <b>32-pieces</b> | 0,400 | 1  |

## Ratchet screwdriver „Flex“

**Flex**

Ratchet screwdriver with right/left hand motion. Adjustable operating angle of 180°. Safety and special bit set - top quality S2! The screwing grasp also Quick change penholder and 2-components Handle provides for anti-slip and fatigue-free working. The ergonomic form and the soft zones within the pressure area range make a relaxed possible screws. With hanging up hole.

**Only for 1/4", = 25 mm Bits.**



| Art. no. | bit     | kg    | PU |
|----------|---------|-------|----|
| 104005   | = 25 mm | 0,216 | 1  |

## Ratchet screwdriver set „Flex“

**Flex**

Ratchet screwdriver with right/left hand motion. Adjustable operating angle of 180°. Safety and special bit set - top quality S2! The screwing grasp also Quick change penholder and 2-components Handle provides for anti-slip and fatigue-free working. The ergonomic form and the soft zones within the pressure area range make a relaxed possible screws. With hanging up hole.

**Only for 1/4", = 25 mm Bits.**

**Advantages:**

- Ratchet function
- Left/clockwise rotation adjustable
- Bending bar: 0° - 45° - 90°
- Ergonomic working within restrained ranges
- S2 steel industry bit for nearly all applications
- 2-components handle
- 55 bits 1/4" 25 mm and 1 adapter for 1/4" nut



| Art. no. | bit     | set              | kg    | PU |
|----------|---------|------------------|-------|----|
| 104006   | = 25 mm | <b>58-pieces</b> | 0,810 | 1  |

# Ratchet screwdriver, bits

## Ratchet screwdriver „FlexPlus“

**FlexPlus**

Ratchet screwdriver with right/left hand motion. Adjustable operating angle of 180°. Safety and special bit set - top quality S2! The screwing grasp also Quick change penholder and 2-components Handle provides for anti-slip and fatigue-free working. The ergonomic form and the soft zones within the pressure area range make a relaxed possible screws. With hanging up hole.



| Art. no. | bit     | kg    | PU |
|----------|---------|-------|----|
| 104009   | > 25 mm | 0,216 | 1  |

## Ratchet screwdriver set „FlexBag“ with 50 mm S2 bits and reduced shank

**FlexBag**

Ratchet screwdriver with right/left hand motion. Adjustable operating angle of 180°. Safety and special bit set - top quality S2! The screwing grasp also Quick change penholder and 2-components Handle provides for anti-slip and fatigue-free working. The ergonomic form and the soft zones within the pressure area range make a relaxed possible screws. With hanging up hole.

### Contents:

- 1/4" 50 mm Power bits Tx: T5, T6, T7, T8, T9, T10, T15, T20, T25, T30, T40
- 1/4" 50 mm Power bits Hex (hole): H2, H2.5, H3, H4, H5, H6
- 1/4" 50 mm Power bits PH: 0, 1, 2, 3
- 1/4" 50 mm Power bits PZ: 0, 1, 2, 3
- 1/4" 50 mm Power bits slot: 3, 4, 5, 6, 7, 8
- 1/4" 50 mm Power bits SQ: 0, 1, 2, 3
- 1/4" 50 mm Power bits Tri-Wing: 1, 2, 3
- 1/4" 50 mm Power bits PZ/FL 1 & 2
- Above bits are in reduced shank except T40, H6, flat: 6, 7, 8 in full hex shank
- 2 pcs. Adapters: 1/4" 50 mm, 1/4" 80 mm
- 8 pcs. sockets: 5, 5.5, 6, 7, 8, 10, 12, 13
- 1 pc of FlexPlus ratcheting driver



| Art. no. | bit     | set       | kg    | PU |
|----------|---------|-----------|-------|----|
| 104020   | = 50 mm | 51-pieces | 0,810 | 1  |

## Ratchet screwdriver set „FlexBox“

**FlexBox**

Sturdy black plastic polypropylene, the constant hinge gives maximum stability. Ratchet screwdriver with right/left hand motion. Adjustable operating angle of 180°. Safety and special bit set - top quality S2! The screw handle with quick ejection and 2 components ensures non-slip and fatiguefree working. The ergonomic shape and the soft zones guarantee relaxed screwing. With hanging up hole. **Only for 1/4" = 50 mm Bits.**

### Contents:

- 1/4" 50 mm Power bits SL: 4, 6
- 1/4" 50 mm Power bits PZ: 1, 2
- 1/4" 50 mm Power bits PZ/FL 1 + 2
- 1/4" 50 mm Power bits Hex: H5, H6
- 1 pc of „FlexPlus“ ratcheting driver



| Art. no. | bit     | set      | kg    | PU |
|----------|---------|----------|-------|----|
| 104030   | = 50 mm | 9-pieces | 0,350 | 1  |

**haupa®**

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



Socket sets



# Spanners

## Double ended spanners acc. to DIN 3110

chrome vanadium steel, bright chrome plated, head polished, offset at 15°



| Art. no. | TL  | WS      | strength | kg    | PU |
|----------|-----|---------|----------|-------|----|
| 110090   | 120 | 6 - 7   | 3,2      | 0,240 | 1  |
| 110092   | 140 | 8 - 9   | 3,5      | 0,340 | 1  |
| 110094   | 157 | 10 - 11 | 4,0      | 0,590 | 1  |
| 110096   | 172 | 12 - 13 | 4,5      | 0,057 | 1  |
| 110100   | 190 | 14 - 15 | 5,0      | 0,760 | 1  |
| 110104   | 205 | 16 - 17 | 5,5      | 0,144 | 1  |
| 110108   | 223 | 18 - 19 | 6,0      | 0,182 | 1  |
| 110112   | 250 | 21 - 23 | 7,0      | 0,212 | 1  |
| 110114   | 250 | 24 - 26 | 7,0      | 0,273 | 1  |
| 110120   | 302 | 27 - 32 | 8,2      | 0,519 | 1  |

## Double ended spanners set acc. to DIN 3110

chrome vanadium steel, chrome plated, head polished, plastic holder included.



| Art. no. | WS   | set              | kg    | PU |
|----------|------|------------------|-------|----|
| 110130   | 6-22 | <b>8-pieces</b>  | 0,940 | 1  |
| 110132   | 6-32 | <b>12-pieces</b> | 2,353 | 1  |

## Double ended ring spanners to DIN 838

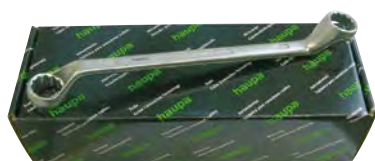
chrome vanadium steel, chrome plated, head polished, offset at 75°



| Art. no. | TL  | WS      | kg    | PU |
|----------|-----|---------|-------|----|
| 110140   | 170 | 6 - 7   | 0,035 | 1  |
| 110142   | 185 | 8 - 9   | 0,066 | 1  |
| 110144   | 205 | 10 - 11 | 0,075 | 1  |
| 110146   | 220 | 12 - 13 | 0,107 | 1  |
| 110148   | 240 | 14 - 15 | 0,154 | 1  |
| 110152   | 265 | 16 - 17 | 0,175 | 1  |
| 110154   | 280 | 18 - 19 | 0,297 | 1  |
| 110160   | 335 | 24 - 26 | 0,468 | 1  |
| 110164   | 370 | 27 - 32 | 0,611 | 1  |

## Double ended ring spanner sets DIN 838

chrome vanadium steel, chrome plated, head polished, in paper box



| Art. no. | WS   | set              | kg    | PU |
|----------|------|------------------|-------|----|
| 110170   | 6-22 | <b>8-pieces</b>  | 1,289 | 1  |
| 110172   | 6-32 | <b>12-pieces</b> | 2,451 | 1  |

## Combination spanners similar to DIN 3113

chrome vanadium steel, chrome plated, head polished, offset at 15°



| Art. no. | TL  | WS | kg    | PU |
|----------|-----|----|-------|----|
| 110180   | 100 | 6  | 0,016 | 1  |
| 110182   | 110 | 7  | 0,021 | 1  |
| 110184   | 120 | 8  | 0,028 | 1  |
| 110186   | 130 | 9  | 0,036 | 1  |
| 110188   | 140 | 10 | 0,043 | 1  |
| 110190   | 150 | 11 | 0,058 | 1  |
| 110192   | 160 | 12 | 0,061 | 1  |
| 110194   | 170 | 13 | 0,081 | 1  |
| 110196   | 180 | 14 | 0,075 | 1  |
| 110198   | 190 | 15 | 0,087 | 1  |
| 110202   | 210 | 17 | 0,160 | 1  |
| 110204   | 220 | 18 | 0,164 | 1  |
| 110206   | 230 | 19 | 0,187 | 1  |
| 110212   | 260 | 22 | 0,266 | 1  |
| 110216   | 280 | 24 | 0,316 | 1  |
| 110222   | 310 | 27 | 0,401 | 1  |

## Combination spanners similar to DIN 3113

chrome vanadium steel, chrome plated, head polished, plastic holder included.



| Art. no. | WS   | set              | kg    | PU |
|----------|------|------------------|-------|----|
| 110250   | 6-22 | <b>12-pieces</b> | 1,144 | 1  |

## Combination spanners similar to DIN 3113

chrome vanadium steel, chrome plated, head polished, in roll bag with eyes for hanging.



| Art. no. | WS   | set              | kg    | PU |
|----------|------|------------------|-------|----|
| 110252   | 6-27 | <b>16-pieces</b> | 1,948 | 1  |

## Open-jawed ring wrench with ratch function

Open-jawed ring wrench with ratch function made from chromium-vanadium steel, chromed surface, polished, fine-toothed, 72 teeth, swing angle 5°, DIN 3113, ISO 3318, in a practical plastic box with metal catch, wrench size 8 - 9 - 10 - 12 - 13 - 14 - 17 - 19 mm



| Art. no. | WS   | set            | kg    | PU |
|----------|------|----------------|-------|----|
| 110900   | 8-19 | <b>8-piece</b> | 1,255 | 1  |

## Open-jawed ring wrench with ratch function

made from chromium-vanadium steel, chromed surface, polished, fine-toothed, 72 teeth, swing angle 5°, DIN 3113, ISO 3318



| Art. no.  | TL  | WS        | kg    | PU |
|-----------|-----|-----------|-------|----|
| 110900/8  | 134 | <b>8</b>  | 0,030 | 1  |
| 110900/9  | 152 | <b>9</b>  | 0,060 | 1  |
| 110900/10 | 157 | <b>10</b> | 0,060 | 1  |
| 110900/12 | 167 | <b>12</b> | 0,080 | 1  |
| 110900/13 | 175 | <b>13</b> | 0,100 | 1  |
| 110900/14 | 190 | <b>14</b> | 0,120 | 1  |
| 110900/17 | 223 | <b>17</b> | 0,180 | 1  |
| 110900/19 | 245 | <b>19</b> | 0,200 | 1  |



## Adjustable single-head wrench

Adjustable single-head wrench with ratch function made from chromium-vanadium steel, forged, chromed, DIN 3117, handle made from TPR, with lasered measuring scale



| Art. no. | size  | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 110590   | 6-19  | 150 | 0,160 | 1  |
| 110592   | 9-24  | 200 | 0,342 | 1  |
| 110594   | 10-29 | 240 | 0,400 | 1  |
| 110596   | 10-34 | 300 | 0,634 | 1  |

## Adjustable single-head wrench with ratch function

Adjustable single-head wrench with ratch function made from chromium-vanadium steel, fast and effective working, use of singlehead wrench does not need to be discontinued, forged, chromed, DIN 3117, handle made from TPR, with lasered measuring scale, mounting with anti-theft device and function test



| Art. no. | size | TL  | kg    | PU |
|----------|------|-----|-------|----|
| 110583   | 6-19 | 150 | 0,160 | 1  |
| 110585   | 9-24 | 200 | 0,342 | 1  |

**haupa**

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



**Socket set**

1/4"

chrome vanadium steel, industrial quality GS tested, black plastic case with metal catch, 1/4".

**Contents:**

12 Sockets: 4 - 4.5 - 5 - 5.5 - 6 - 7 - 8 - 9 - 10 - 11 - 12- 13 mm, 1 ratchet handle, 72 gears with quick release function, 14 insert bit socket PH: 1 - 2 - 3, HX: 3 - 4 - 5 - 6 - 8, TX: 10 - 15 - 20 - 25 - 27 - 30, 1 flexible extension bar, 2 extension bars 50 & 100 mm, 1 universal joint, 1 sliding adapter 3/8" x 1/4" for extension bar work as T handle, 1 spinner handle for screwdriver



| Art. no. | set              | kg    | PU |
|----------|------------------|-------|----|
| 110674   | <b>33-pieces</b> | 1,051 | 1  |

**Flexible extension bar 1/4"**

1/4"

chrome vanadium steel, industrial quality GS tested



| Art. no. | drive | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 110702   | 1/4"  | 100 | 0,059 | 1  |

**Sockets 1/4"**

1/4"

chrome vanadium steel, industrial quality GS tested, square drive



| Art. no.  | WS         | kg    | PU |
|-----------|------------|-------|----|
| 110703/4  | <b>4</b>   | 0,010 | 1  |
| 110703/45 | <b>4,5</b> | 0,010 | 1  |
| 110703/5  | <b>5</b>   | 0,010 | 1  |
| 110703/55 | <b>5,5</b> | 0,011 | 1  |
| 110703/6  | <b>6</b>   | 0,011 | 1  |
| 110703/7  | <b>7</b>   | 0,014 | 1  |
| 110703/8  | <b>8</b>   | 0,012 | 1  |
| 110703/9  | <b>9</b>   | 0,016 | 1  |
| 110703/10 | <b>10</b>  | 0,016 | 1  |
| 110703/11 | <b>11</b>  | 0,024 | 1  |
| 110703/12 | <b>12</b>  | 0,024 | 1  |
| 110703/13 | <b>13</b>  | 0,025 | 1  |

**Reversible ratchet 1/4"**

1/4"

chrome vanadium steel, industrial quality GS tested



| Art. no. | drive | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 110674/K | 1/4"  | 140 | 0,118 | 1  |

**Sliding adapter 3/8" x 1/4"**

3/8" 1/4"

chrome vanadium steel, industrial quality GS tested, for extension bar work as T handle



| Art. no. | kg    | PU |
|----------|-------|----|
| 110706   | 0,029 | 1  |

**Extension 1/4"**

1/4"

chrome vanadium steel, industrial quality GS tested



| Art. no. | drive | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 110700   | 1/4"  | 50  | 0,024 | 1  |
| 110701   | 1/4"  | 100 | 0,063 | 1  |

**Spinner handle for screwdriver 1/4"**

1/4"

chrome vanadium steel, industrial quality GS tested



| Art. no. | drive | kg    | PU |
|----------|-------|-------|----|
| 110725   | 1/4"  | 0,064 | 1  |

### Universal joint 1/4"



chrome vanadium steel, industrial quality GS tested



| Art. no. | kg    | PU |
|----------|-------|----|
| 110726   | 0,024 | 1  |

### Insert bit sockets slot 1/4"



chrome vanadium steel, industrial quality GS tested



| Art. no. | BL  | kg    | PU |
|----------|-----|-------|----|
| 110759   | 5,5 | 0,015 | 1  |
| 110760   | 7   | 0,014 | 1  |

### Insert bit sockets PH 1/4"



chrome vanadium steel, industrial quality GS tested



| Art. no. | size | kg    | PU |
|----------|------|-------|----|
| 110711   | 1    | 0,015 | 1  |
| 110727   | 2    | 0,015 | 1  |
| 110728   | 3    | 0,016 | 1  |

### Insert bit sockets HEX 1/4"



chrome vanadium steel, industrial quality GS tested



| Art. no. | WS | kg    | PU |
|----------|----|-------|----|
| 110729   | 3  | 0,015 | 1  |
| 110747   | 4  | 0,015 | 1  |
| 110749   | 5  | 0,016 | 1  |
| 110754   | 6  | 0,018 | 1  |
| 110718   | 8  | 0,018 | 1  |

### Insert bit sockets TX 1/4"



chrome vanadium steel, industrial quality GS tested



| Art. no. | size | kg    | PU |
|----------|------|-------|----|
| 110719   | 10   | 0,013 | 1  |
| 110720   | 15   | 0,015 | 1  |
| 110721   | 20   | 0,015 | 1  |
| 110722   | 25   | 0,015 | 1  |
| 110723   | 27   | 0,015 | 1  |
| 110724   | 30   | 0,015 | 1  |



**haupa**<sup>®</sup>

**...convincing solutions**

Germany: **HAUPA**, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com





3/8"

## Socket sets

## Socket set

3/8"

chrome vanadium steel, industrial quality GS tested, black plastic case with metal catch, 3/8".

## Contents:

18 Sockets: 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - 19 - 20 - 21 - 22 - 24 mm, 1 ratchet handle, 72 gears with quick release function, 1 universal joint, 1 sliding adapter 1/2" x 3/8" for extension bar work as T handle, 2 spark plug sockets 16 & 21 mm, 3 extension bars 20 - 75 - 150 mm



| Art. no. | set              | kg    | PU |
|----------|------------------|-------|----|
| 110676   | <b>26-pieces</b> | 2,309 | 1  |

## Reversible ratchet 3/8"

3/8"

chrome vanadium steel, industrial quality GS tested



| Art. no. | drive | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 110676/K | 3/8"  | 185 | 0,260 | 1  |

## Extension 3/8"

3/8"

chrome vanadium steel, industrial quality GS tested



| Art. no. | drive | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 110731   | 3/8"  | 20  | 0,045 | 1  |
| 110733   | 3/8"  | 75  | 0,075 | 1  |
| 110735   | 3/8"  | 150 | 0,143 | 1  |

## Sockets 3/8"

3/8"

chrome vanadium steel, industrial quality GS tested, square drive



| Art. no.  | WS        | kg    | PU |
|-----------|-----------|-------|----|
| 110737/6  | <b>6</b>  | 0,019 | 1  |
| 110737/7  | <b>7</b>  | 0,020 | 1  |
| 110737/8  | <b>8</b>  | 0,021 | 1  |
| 110737/9  | <b>9</b>  | 0,023 | 1  |
| 110737/10 | <b>10</b> | 0,023 | 1  |
| 110737/11 | <b>11</b> | 0,024 | 1  |
| 110737/12 | <b>12</b> | 0,024 | 1  |
| 110737/13 | <b>13</b> | 0,024 | 1  |
| 110737/14 | <b>14</b> | 0,031 | 1  |
| 110737/15 | <b>15</b> | 0,040 | 1  |
| 110737/16 | <b>16</b> | 0,035 | 1  |
| 110737/17 | <b>17</b> | 0,046 | 1  |
| 110737/18 | <b>18</b> | 0,061 | 1  |
| 110737/19 | <b>19</b> | 0,056 | 1  |
| 110737/20 | <b>20</b> | 0,066 | 1  |
| 110737/21 | <b>21</b> | 0,060 | 1  |
| 110737/22 | <b>22</b> | 0,078 | 1  |
| 110737/24 | <b>24</b> | 0,085 | 1  |

## Spark plug sockets 3/8"

3/8"

chrome vanadium steel, industrial quality GS tested



| Art. no. | WS        | kg    | PU |
|----------|-----------|-------|----|
| 110738   | <b>16</b> | 0,092 | 1  |
| 110739   | <b>21</b> | 0,139 | 1  |

## Sliding adapter 1/2" x 3/8"

1/2" 3/8"

chrome vanadium steel, industrial quality GS tested, for extension bar work as T handle



| Art. no. | kg    | PU |
|----------|-------|----|
| 110741   | 0,070 | 1  |

## Universal joint 3/8"

3/8"

chrome vanadium steel, industrial quality GS tested



| Art. no. | kg    | PU |
|----------|-------|----|
| 110745   | 0,067 | 1  |

**Socket set**

1/2"

chrome vanadium steel, industrial quality GS tested, black plastic case with metal catch, 1/2".

**Contents:**

20 Sockets: 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - 19 - 20 - 21 - 22 - 23 - 24 - 26 - 27 - 28 - 30 - 32 mm, 1 ratchet handle, 72 gears with quick release function, 1 extension bar, safety locking type 250 mm, 1 extension bar 125 mm, 1 sliding T-bar 300 mm, 1 universal joint, 1 sliding adapter 3/8" x 1/2" for extension bar work as T handle



| Art. no. | set              | kg    | PU |
|----------|------------------|-------|----|
| 110677   | <b>25-pieces</b> | 4,739 | 1  |

**Reversible ratchet 1/2"**

1/2"

chrome vanadium steel, industrial quality GS tested



| Art. no. | drive | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 110677/K | 1/2"  | 260 | 0,560 | 1  |

**Extension 1/2"**

1/2"

chrome vanadium steel, industrial quality GS tested



| Art. no. | drive | TL  | kg    | PU |
|----------|-------|-----|-------|----|
| 110751   | 1/2"  | 75  | 0,137 | 1  |
| 110752   | 1/2"  | 125 | 0,200 | 1  |
| 110753   | 1/2"  | 250 | 0,388 | 1  |

**Sockets 1/2"**

1/2"

chrome vanadium steel, industrial quality GS tested, square drive



| Art. no.  | WS        | kg    | PU |
|-----------|-----------|-------|----|
| 110754/10 | <b>10</b> | 0,046 | 1  |
| 110754/11 | <b>11</b> | 0,051 | 1  |
| 110754/12 | <b>12</b> | 0,052 | 1  |
| 110754/13 | <b>13</b> | 0,053 | 1  |
| 110754/14 | <b>14</b> | 0,055 | 1  |
| 110754/15 | <b>15</b> | 0,052 | 1  |
| 110754/16 | <b>16</b> | 0,052 | 1  |
| 110754/17 | <b>17</b> | 0,060 | 1  |
| 110754/18 | <b>18</b> | 0,060 | 1  |
| 110754/19 | <b>19</b> | 0,066 | 1  |
| 110754/20 | <b>20</b> | 0,066 | 1  |
| 110754/21 | <b>21</b> | 0,080 | 1  |
| 110754/22 | <b>22</b> | 0,094 | 1  |
| 110754/24 | <b>24</b> | 0,100 | 1  |
| 110754/26 | <b>26</b> | 0,120 | 1  |
| 110754/27 | <b>27</b> | 0,150 | 1  |
| 110754/28 | <b>28</b> | 0,165 | 1  |
| 110754/30 | <b>30</b> | 0,177 | 1  |
| 110754/32 | <b>32</b> | 0,206 | 1  |

**Spark plug sockets 1/2"**

1/2"

chrome vanadium steel, industrial quality GS tested



| Art. no. | WS        | kg    | PU |
|----------|-----------|-------|----|
| 110755   | <b>16</b> | 0,092 | 1  |
| 110756   | <b>21</b> | 0,141 | 1  |

**Sliding adapter 3/8" x 1/2"**

3/8" 1/2"

chrome vanadium steel, industrial quality GS tested, for extension bar work as T handle



| Art. no. | kg    | PU |
|----------|-------|----|
| 110757   | 0,069 | 1  |

**Universal joint 1/2"**

1/2"

chrome vanadium steel, industrial quality GS tested



| Art. no. | kg    | PU |
|----------|-------|----|
| 110758   | 0,152 | 1  |



## Socket sets

### Socket set

1/2" 1/4"

chrome vanadium steel, industrial quality GS tested, black plastic case with metal catch.

#### Contents:

**1/4":** 12 Sockets 4 - 4.5 - 5 - 5.5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 mm, 1 ratchet handle, 1 universal joint, 1 sliding adapter 3/8" x 1/4" for extension bar work as T handle, 2 extension bars 50 + 150 mm, 1 spinner handle for screwdriver, 12 insert bit sockets: PH: 1-2, HX: 3 - 4 - 5 - 6, FD: 5.5 - 7, TX: 20 - 25 - 27 - 30, 5 Hex keys: 1.25 - 1.5 - 2.0 - 2.5 - 3.0 mm

**1/2":** 13 sockets 10 - 11 - 12 - 13 - 14 - 15 - 17 - 19 - 22 - 24 - 27 - 30 - 32 mm, 1 ratchet handle, 2 extension bars 75 + 250 mm, 1 sliding adapter 3/8" x 1/2" for extension bar work as T handle, 2 plug sockets, 1 universal joint



| Art. no. | set              | kg    | PU |
|----------|------------------|-------|----|
| 110678   | <b>53-pieces</b> | 4,385 | 1  |

### SysCon

### „SocketMax“ 1/2“, 1/4“

SysCon

chrome vanadium steel, industrial quality GS tested, in ABS plastic box.

#### Contents:

- 1 220370 ABS plastic box „SysCon S“
- 12 Sockets 1/4" 4-4.5-5-5.5-6-7-8-9-10-11-12-13 mm
- 2 Extensions 1/4" 50 - 150mm
- 1 Adapter 3/8" x 1/4" for sliding handle
- 1 Kardanjoint 1/4"
- 1 Bit adapter 1/4"
- 1 Reversible ratchet 1/4"
- 13 Sockets 1/2" 10-11-12-13-14-15-17-19-22-24-27-30-32 mm
- 2 Extensions 1/2" 75 - 250 mm
- 1 Adapter 3/8" x 1/2" for sliding handle
- 1 Kardanjoint 1/2"
- 1 Reversible ratchet 1/2"
- 1 Ratchet screwdriver „Flex“
- 2 Adapter 50 - 80 mm
- 4 Bit 1/4" 50 mm PH 0 - 1 - 2 - 3
- 4 Bit 1/4" 50 mm PZ 0 - 1 - 2 - 3
- 2 Bit 1/4" 50 mm PZ/FL 1 - 2
- 4 Bit 1/4" 50 mm SL 3 - 4 - 5 - 6 mm
- 6 Bit 1/4" 50 mm hexagon 2 - 2.5 - 3 - 4 - 5 - 6



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220600   | <b>55-pieces</b> | 220370 | 6,000 | 1  |

# INFO

## Torque wrench

## Industrial quality

- With built-in changeover ratchet, accuracy +/- 3%,
- Material: Chrome-Vanadium steel DIN-3122; ISO 6789
- Measuring range from 5 - 25 Nm, 21 - 119 Nm, 42 - 210 Nm
- With viewing window display and locking mechanism
- Easy to read scale
- In impact-proof storage box



## Torque wrenches

**TQ 1/4"**

reversible ratchet system, +/- 3%, Chrome-Vanadium-Steel DIN-3122; ISO 6789



**TQ**

| Art. no. | drive | Nm     | kg    | PU |
|----------|-------|--------|-------|----|
| 110607   | 1/4"  | 5 - 25 | 1,000 | 1  |

## Torque wrenches

### Torque wrenches

**TQ 3/8"**

reversible ratchet system, +/- 3%, Chrome-Vanadium-Steel DIN-3122; ISO 6789



**TQ**

| Art. no. | drive | Nm       | kg    | PU |
|----------|-------|----------|-------|----|
| 110608   | 3/8"  | 20 - 120 | 1,500 | 1  |

### Torque wrenches

**TQ 1/2"**

reversible ratchet system, +/- 3%, Chrome-Vanadium-Steel DIN-3122; ISO 6789



**TQ**

| Art. no. | drive | Nm       | kg    | PU |
|----------|-------|----------|-------|----|
| 110610   | 1/2"  | 20 - 120 | 1,500 | 1  |

### Torque wrenches

**TQ 1/2"**

reversible ratchet system, +/- 3%, Chrome-Vanadium-Steel DIN-3122; ISO 6789



**TQ**

| Art. no. | drive | Nm       | kg    | PU |
|----------|-------|----------|-------|----|
| 110609   | 1/2"  | 42 - 210 | 1,750 | 1  |

**haupa®**

**...convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



# SysCon Socket sets

## SysCon socket wrench set "Torque" 1/4"



chrome vanadium steel, industrial quality GS tested, in ABS plastic box.

### Contents:

- 1 220370 ABS plastic box "SysCon S"
- 12 sockets 1/4" 4 - 4.5 - 5 - 5.5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 mm
- 5 sockets 1/4" Tx, long version T20, T25, T27, T30, T40
- 4 sockets 1/4" Hex, long version 4, 5, 6, 8 without hole
- 2 extension bar 1/4", 50 and 150 mm
- 1 adapter 3/8" x 1/4" for extension bar work as T-handle
- 1 universal joint 1/4"
- 1 bit adapter 1/4"
- 1 reversible ratchet 1/4"
- 1 torque wrenches 1/4", 5 - 25 Nm
- 1 ratchet screwdriver "Flex"
- 2 adapter 50 and 80 mm
- 4 bits 1/4" 50 mm PH 0 - 1 - 2 - 3
- 4 bits 1/4" 50 mm PZ 0 - 1 - 2 - 3
- 2 bits 1/4" 50 mm PZ/FL 1 - 2
- 4 bits 1/4" 50 mm SQ 3 - 4 - 5 - 6 mm
- 6 bits 1/4" 50 mm hexagonal 2 - 2.5 - 3 - 4 - 5 - 6



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220640   | <b>51-pieces</b> | 220370 | 3,900 | 1  |

## SysCon socket wrench set "Torque" 1/2"



chrome vanadium steel, industrial quality GS tested, in ABS plastic box.

### Contents:

- 1 220370 ABS plastic box "SysCon S"
- 17 sockets 1/2" 8 - 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 19 - 21 - 22 - 23 - 24 - 27 - 30 - 32 mm
- 5 sockets 1/2" Tx, long version T30, T40, T45, T50, T55
- 4 sockets 1/2" Hex, long version 8, 10, 12, 14 without hole
- 2 extension bar 1/2", 75 and 250 mm
- 1 adapter 3/8" x 1/2" for extension bar work as T-handle
- 1 universal joint 1/2"
- 1 reversible ratchet 1/2"
- 1 torque wrenches 1/2", 21 - 119 Nm



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220642   | <b>32-pieces</b> | 220370 | 4,300 | 1  |

# INFO

## Switch cabinet keys

## Industrial quality

HAUPA Universal keys are ideal for use in building technology.

They are small and lightweight, yet through their zinc die-cast construction they are very robust and stable. The HUPkeys are especially suitable for locking systems in electrical engineering as well as for special applications in construction, plumbing, ventilation and air conditioning technology.



### Switch cabinet key, „HUPkey“ with converting bit

Inside square 6 - 7 mm, 8 - 9 mm,  
Outside square 5 - 10 mm, two-way 3 - 5 mm,  
Triangle socket 7 - 9 mm, triangle socket 11 mm,  
SI converting bit for slotted and cross-headed screws  
Including 5 mm inside square and crescent on chain

**Not available in GB and FR!**

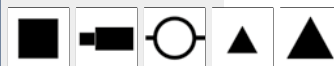


|          |       |    |
|----------|-------|----|
| Art. no. | kg    | PU |
| 110692   | 0,145 | 1  |

## Switch cabinet keys

### Switch cabinet key, „HUPkey“

Inside square 6 - 7 mm, 8 - 9 mm,  
Outside square 5 - 10 mm, two-way 3 - 5 mm,  
Triangle socket 7 - 9 mm, triangle socket 11 mm and chain



|          |       |    |
|----------|-------|----|
| Art. no. | kg    | PU |
| 110691   | 0,115 | 1  |

### Converting bit for bleeding

SI converting bit for slotted and cross-headed screws  
Including 5 mm inside square and crescent on chain

**Not available in GB and FR!**



|          |       |    |
|----------|-------|----|
| Art. no. | kg    | PU |
| 110693   | 0,030 | 1  |

### Universal switch cabinet key with crescent, „HUPkey“

Inside square 6 - 7 mm, 8 - 9 mm, crescent,  
Two-way 3 - 5 mm, triangle socket 7 - 9 mm,  
Triangle socket 11 mm, SI converting bit for slotted  
and cross-headed screws on chain

**Not available in GB and FR!**



|          |       |    |
|----------|-------|----|
| Art. no. | kg    | PU |
| 110697   | 0,094 | 1  |

**haupa**

...convincing solutions

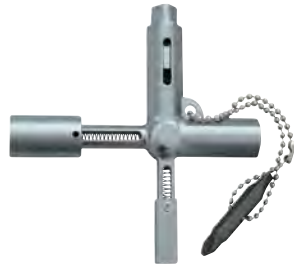
Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



# Switch cabinet keys

## Spanners for switch cabinet key, „HUPkey Uni“

Spanner for switch cabinets with push construction, bitholder and bit on chain, external square 7 + 8 mm, inside square 6, 7, 8, 9 mm, double size 3 - 5 mm, inside threesquare 7, 8, 9, 10, 11 mm



Not available in GB and FR!



| Art. no. | kg    | PU |
|----------|-------|----|
| 110698   | 0,105 | 1  |

## Spanners for switch-cabinets, „HUPkey“

made of metal for high torques, small size, low weight, with chain inside square 6 mm, inside square 7 - 8 mm, inside threesquare 7 - 8 mm, double size 3 - 5 mm



| Art. no. | size    | kg    | PU |
|----------|---------|-------|----|
| 110696   | 72 x 72 | 0,059 | 1  |





## Pliers





# INFO

## 2-component pliers

## Industrial quality

Pliers range with 2-component handles made of highquality, non-slip, thermoplastic elastomer.

## High leverage | perfected cutting force performance

High leverage pliers offer power saving of up to 50%.



## 2-component pliers Black Line

### 2-component combination pliers DIN ISO 5746

alloyed carbon steel, forged and annealed, cutting edges induction hardened, with 2 component plastic handle with hand protection, chrome plated, for soft wire and hard wire, **leveraged, perfected cutting force performance.**



| Art. no. | TL  | soft | hard | kg    | PU |
|----------|-----|------|------|-------|----|
| 210052   | 160 | 4,0  | 2,0  | 0,197 | 1  |
| 210053   | 180 | 4,0  | 2,2  | 0,286 | 1  |
| 210054   | 200 | 4,2  | 2,5  | 0,410 | 1  |

### 2-component side cutters DIN ISO 5749

alloyed carbon steel, forged and annealed, cutting edges induction hardened, with 2 component plastic handle with hand protection, chrome plated, for soft wire and hard wire, **leveraged, perfected cutting force performance.**



| Art. no. | TL  | soft | hard | kg    | PU |
|----------|-----|------|------|-------|----|
| 210067   | 140 | 4,0  | 1,8  | 0,172 | 1  |
| 210068   | 160 | 4,0  | 2,0  | 0,237 | 1  |
| 210069   | 180 | 4,0  | 2,0  | 0,237 | 1  |

### 2-component heavy duty side cutters DIN ISO 5749

alloyed carbon steel, forged and annealed, cutting edges induction hardened, with 2 component plastic handle with hand protection, chrome plated, for soft wire and hard wire.



| Art. no. | TL  | soft | hard | kg    | PU |
|----------|-----|------|------|-------|----|
| 210156   | 160 | 4,0  | 2,7  | 0,264 | 1  |
| 210157   | 180 | 4,0  | 2,7  | 0,264 | 1  |

### 2-component heavy duty side cutters DIN ISO 5749

alloyed carbon steel, forged and annealed, cutting edges induction hardened, with 2 component plastic handle with hand protection, chrome plated, for soft wire and hard wire, **leveraged, perfected cutting force performance.**



| Art. no. | TL  | soft | hard | kg    | PU |
|----------|-----|------|------|-------|----|
| 210158   | 200 | 4,2  | 3,0  | 0,326 | 1  |

## 2-component pliers Black Line

### 2-component long flat nose pliers DIN ISO 5745

alloyed carbon steel, forged and annealed, cutting edges induction hardened, with 2 component plastic handle with hand protection, chrome plated



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210313   | 160 | 0,155 | 1  |

### 2-component long round nose pliers DIN ISO 5745

alloyed carbon steel, forged and annealed, cutting edges induction hardened, with 2 component plastic handle with hand protection, chrome plated



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210350   | 160 | 0,153 | 1  |

### 2-component long chain nose pliers DIN ISO 5745

with side cutter, straight, alloyed carbon steel, forged and annealed, cutting edges induction hardened, for soft wire and hard wire, with 2 component plastic handle with hand protection, chrome plated, **leveraged, perfected cutting force performance.**



| Art. no. | TL  | form     | kg    | PU |
|----------|-----|----------|-------|----|
| 210394   | 170 | straight | 0,154 | 1  |
| 210396   | 200 | straight | 0,253 | 1  |

### 2-component long chain nose pliers DIN ISO 5745

with side cutter, 45° angled nose, alloyed carbon steel, forged and annealed, cutting edges induction hardened, for soft wire and hard wire, with 2 component plastic handle with hand protection, chrome plated, **leveraged, perfected cutting force performance.**



| Art. no. | TL  | form | kg    | PU |
|----------|-----|------|-------|----|
| 210397   | 160 | 45°  | 0,251 | 1  |
| 210398   | 200 | 45°  | 0,251 | 1  |

### Wire stripping pliers

alloyed carbon steel C 45, forged and annealed, cutting edges induction hardened, with 2 component plastic handle with hand protection, chrome plated



| Art. no. | TL  | mm <sup>2</sup> | kg    | PU |
|----------|-----|-----------------|-------|----|
| 210644   | 160 | 0,6-10          | 0,196 | 1  |

### 2-component water pump pliers DIN ISO 8976

chrome vanadium steel, forged and annealed, curved jaws, gripping chuck hardened, self-locking nut, finger protection, with 2 component plastic handle with hand protection, chrome plated



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210584   | 240 | 0,368 | 1  |

### Water pump pliers DIN ISO 8976

chrome vanadium steel, forged and annealed, curved jaws, gripping chuck hardened, titan-plated, dipped, setting at touch of a button, safe engaging



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210616   | 170 | 0,185 | 1  |
| 210617   | 240 | 0,330 | 1  |
| 210618   | 300 | 0,545 | 1  |

### 2-component pliers set

#### Contents:

- 1 combination pliers 180 mm
- 1 diagonal cutter 160 mm
- 1 long chain nose pliers 200 mm
- 1 wire stripping pliers 160 mm



| Art. no. | set             | kg    | PU |
|----------|-----------------|-------|----|
| 220128   | <b>4-pieces</b> | 1,044 | 1  |

### 2-component pliers set

#### Contents:

- 1 combination pliers 180 mm
- 1 heavy duty diagonal cutter 180 mm
- 1 long chain nose pliers 200 mm
- 1 wire stripping pliers 160 mm



| Art. no. | set             | kg    | PU |
|----------|-----------------|-------|----|
| 220129   | <b>4-pieces</b> | 1,082 | 1  |

**haupa**<sup>®</sup>

**...convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



## Special pliers

### Grip pliers

one jaw straight, one jaw movable, forged of chrome vanadium, a real universal plier for gripping any kind of workpiece, flat round or square, with quick-release lever and adjustable screw



| Art. no. | TL  | WS   | kg    | PU |
|----------|-----|------|-------|----|
| 210556   | 250 | 0-40 | 0,518 | 1  |

### Grip pliers

jaws drop, forged of chrome vanadium, adjustable screw, quick-release lever, half-round jaws, with wire cutter



| Art. no. | TL  | WS   | kg    | PU |
|----------|-----|------|-------|----|
| 210562   | 250 | 0-40 | 0,565 | 1  |

### Pipe wrenches

chrome vanadium steel, polished



| Art. no. | TL  | WS  | tube   | kg    | PU |
|----------|-----|-----|--------|-------|----|
| 210592   | 320 | -45 | 1"     | 0,798 | 1  |
| 210594   | 435 | -59 | 1 1/2" | 0,800 | 1  |
| 210596   | 560 | -76 | 2"     | 2,460 | 1  |

### Riveting pliers

made of aluminium-pressure casting, all inner parts made of special alloyed steel and hardened, with 4 exchangeable nozzles 2,4-3-4-5 mm, for blind rivets of aluminium-copper or steel



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210770   | 250 | 0,552 | 1  |

### Riveting tool set

in portable plastic box. **Contents:** 1 plier no. 210770, 100 pieces of alu space rivets 4 mm Ø, short-middle-long, 2 twist drills and washers.



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 210776   | 250 | 0,840 | 1  |

## 2-component electronic pliers

### Microelectronic side cutters

without cutting-facet, clearance angle: 50°, with clip, for soft wires up to 0.8 mm<sup>2</sup>



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 211708   | 118 | 0,069 | 1  |

### Microelectronic side cutters

without cutting-facet, clearance angle: 21°, with clip, for soft wires up to 1.3 mm<sup>2</sup>



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 211720   | 132 | 0,086 | 1  |
| 211722   | 158 | 0,087 | 1  |

### Tweezers

special design for wafers, long, extra small blades, needle fine top ends, stainless steel, antimagnetism acid resistant



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 211080   | 130 | 0,017 | 1  |

### INFO

#### ESD Electronic pliers

#### Industrial quality

##### Advantages:

- Elegant, ergonomically shaped, non-slip 2-component handle ensures comfortable and precise working
- Special tool steel, forged and tempered, edges hardened ( $58 \pm 2\text{HRC}$ )
- Surface resistance 10.9 Ohm, in accordance with electronics area ESD
- Each mechanism checked
- precision pliers for meticulous assembly work for example in electronics and precision engineering
- for picking up, holding and bending
- model with electric discharging
- precision hinges
- smooth handle surfaces
- low-friction double spring for smooth and steady opening
- handles with two-coloured multi-component handle covers black/green
- special tool steel

Not only people, objects also experience electrostatic charging as a result of movement, friction and being handled. Such charging can lead to the destruction of endangered components. HAUPA ESD - electronics pliers discharge such energy slowly and in a controlled way.

#### ESD Electronic needle nose pliers

with wire cutter, special tool steel



| Art. no. | TL  | form     | kg    | PU |
|----------|-----|----------|-------|----|
| 211850   | 130 | straight | 0,091 | 1  |

#### ESD Electronic needle nose pliers, 45° angle

with wire cutter, special tool steel



| Art. no. | TL  | form | kg    | PU |
|----------|-----|------|-------|----|
| 211852   | 130 | 45°  | 0,089 | 1  |

#### ESD Electronic needle nose pliers

straight construction, special tool steel



| Art. no. | TL  | form     | kg    | PU |
|----------|-----|----------|-------|----|
| 211854   | 130 | straight | 0,082 | 1  |

#### ESD Electronic needle nose pliers, 45° angle

45° angle, special tool steel



| Art. no. | TL  | form | kg    | PU |
|----------|-----|------|-------|----|
| 211856   | 130 | 45°  | 0,081 | 1  |

#### ESD Electronic thin needle nose pliers

straight construction, special tool steel



| Art. no. | TL  | form     | kg    | PU |
|----------|-----|----------|-------|----|
| 211858   | 140 | straight | 0,083 | 1  |

#### ESD Electronic thin needle nose pliers, 45° angle

45° angle, special tool steel



| Art. no. | TL  | form | kg    | PU |
|----------|-----|------|-------|----|
| 211860   | 140 | 45°  | 0,084 | 1  |

#### ESD Electronic thin needle nose pliers

straight construction, special tool steel



| Art. no. | TL  | form     | kg    | PU |
|----------|-----|----------|-------|----|
| 211862   | 150 | straight | 0,087 | 1  |

#### ESD Electronic thin needle nose pliers, 45° angle

45° angle, special tool steel



| Art. no. | TL  | form | kg    | PU |
|----------|-----|------|-------|----|
| 211864   | 150 | 45°  | 0,087 | 1  |

**haupa**<sup>®</sup>

...convincing solutions

## 2-component ESD electronic pliers

### ESD Electronic flat nose pliers



Special tool steel



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 211866   | 130 | 0,090 | 1  |

### ESD Electronic front cutter



Special tool steel



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 211874   | 115 | 0,093 | 1  |

### ESD Electronic round nose pliers



straight construction, special tool steel



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 211868   | 130 | 0,091 | 1  |

### ESD Electronic combination pliers



with wire cutter, special tool steel



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 211876   | 115 | 0,077 | 1  |

### ESD Electronic side cutter



normal construction, head width 14 mm, special tool steel



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 211870   | 115 | 0,078 | 1  |

### ESD Electronic side cutters



slim construction, head width 10 mm, special tool steel



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 211872   | 110 | 0,075 | 1  |

### ESD Electronic side cutter without cutting-facet



normal construction, head width 14 mm without chamfer, special tool steel



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 211875   | 115 | 0,075 | 1  |

### ESD Electronic pliers set



Special tool steel

**Contents:**

Art. No. 211862, 211870, 211874, 211876



| Art. no. | set             | kg    | PU |
|----------|-----------------|-------|----|
| 211880   | <b>4-pieces</b> | 0,585 | 1  |

LED lamps/torches and Compact floodlights



## INFO

### LED lamps/torches

### Industrial quality

#### HAUPA high-performance LED lamps/torches for daily work use

Extremely high illumination performance with minimum battery load thanks to highly modern **CREE LED** bulbs

#### LED „Mini Torch“

|                            |                             |
|----------------------------|-----------------------------|
| <b>LED 3W</b><br>CREE XR-E | ↑<br>Ø 20 x<br>92,5 mm<br>↓ |
| <b>50 Lm</b>               | Lifetime<br><b>30000 h</b>  |
| Aircraft Grade Aluminium   | 200 m                       |
| IP65                       | 1xAAA                       |

- Compact
- Very small and light
- Extremely high lighting performance
- LED 3 Watt CREE XR-E
- 1xAAA battery



| Art. no. | size           | kg    | PU |
|----------|----------------|-------|----|
| 130310   | Ø 20 x 92,5 mm | 0,080 | 1  |

#### LED „Focus Torch“

|                            |                              |
|----------------------------|------------------------------|
| <b>LED 3W</b><br>CREE XP-E | ↑<br>Ø 34,4 x<br>115 mm<br>↓ |
| <b>120 Lm</b>              | Lifetime<br><b>30000 h</b>   |
| Aircraft Grade Aluminium   | 300 m                        |
| IP65                       | 3xAAA                        |
| Focus                      |                              |

- Adjustable focus for near and far
- LED 3 Watt CREE XP-E
- 3xAAA batteries



| Art. no. | size            | kg    | PU |
|----------|-----------------|-------|----|
| 130312   | Ø 34,4 x 115 mm | 0,200 | 1  |

#### LED „IP67 Torch“

|                            |                              |
|----------------------------|------------------------------|
| <b>LED 5W</b><br>CREE XP-G | ↑<br>Ø 40,5 x<br>141 mm<br>↓ |
| <b>250 Lm</b>              | Lifetime<br><b>30000 h</b>   |
| Aircraft Grade Aluminium   | 200 m                        |
| IP67                       | 4xAAA                        |

- IP67, dust-tight, protected against brief submersion (water-tight)
- 1 x switch operation 100 % lighting performance
- 2 x switch operation 30 % lighting performance
- LED 5 Watt CREE XP-G
- 4xAAA batteries



| Art. no. | size            | kg    | PU |
|----------|-----------------|-------|----|
| 130314   | Ø 40,5 x 141 mm | 0,440 | 1  |

#### LED „RC Torch“

|                            |  |
|----------------------------|--|
| <b>LED 5W</b><br>CREE XP-G | ↑<br>Ø 40,5 x<br>180 mm<br>↓               |
| <b>250 Lm</b>              | Lifetime<br><b>30000 h</b>                 |
| Aircraft Grade Aluminium   | 200 m                                      |
| IP65                       | Akku<br><b>Li-Ion</b><br>2200 mAh<br>3,7 V |
| 100-240V AC                | 12-24V DC                                  |

- Rechargeable battery, lithium-ion 2200 mAh 3.7 V
- Integrated charging unit
- 1 x switch operation 100 % lighting performance
- 2 x switch operation 30 % lighting performance
- Additional battery holder as backup
- Deep discharge protection
- LED 5 Watt CREE XP-G
- Charging cable 230 Volt, charging cable for automobile
- Battery holder (battery operation is an alternative)



| Art. no. | size            | kg    | PU |
|----------|-----------------|-------|----|
| 130316   | Ø 40,5 x 180 mm | 0,440 | 1  |

#### LED „Max Torch“

|                               |                              |
|-------------------------------|------------------------------|
| <b>LED 10W</b><br>CREE XML-T6 | ↑<br>Ø 40,5 x<br>234 mm<br>↓ |
| <b>500 Lm</b>                 | Lifetime<br><b>30000 h</b>   |
| Aircraft Grade Aluminium      | 300 m                        |
| 3x C                          |                              |

- Illumination range: 300 m
- LED 10 Watt CREE XML-T6
- Extreme illumination range
- 1 x switch operation 100 % lighting performance, 2 x switch operation 25 % lighting performance
- 3x C batteries included
- Including wrist strap



| Art. no. | size            | kg    | PU |
|----------|-----------------|-------|----|
| 130324   | Ø 40,5 x 234 mm | 0,440 | 1  |

# LED lamps/torches

## LED „Pen Torch“



- Illumination range: 50 m
- 50 Lm
- LED 1 Watt CREE
- With clip
- 2xAAA batteries



| Art. no. | size          | kg    | PU |
|----------|---------------|-------|----|
| 130328   | Ø 14 x 143 mm | 0,200 | 1  |

## LED „Headlight“ headlamp



- Very light and balanced headlamp (battery compartment at the rear)
- 4 lighting levels:  
Switch position 1 = 100 % lighting performance  
Switch position 2 = 80 % lighting performance  
Switch position 3 = 30 % lighting performance  
Switch position 4 = red LED
- LED 3 Watt CREE XP-E
- 2xAA batteries



| Art. no. | size   | kg    | PU |
|----------|--------|-------|----|
| 130318   | 143 mm | 0,180 | 1  |

## Holster for LED torches

Suitable for item numbers: 130312, 130314



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 130322   | 30    | 10    | 100    | 0,180 | 1  |

## LED Battery-powered „Working Lamp“

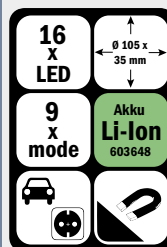


- Extremely large lighting range (Working area) light cone
- Rechargeable battery, lithium-ion 2000 mAh 3.7 V
- Integrated charging unit
- 1 x switch operation 100 % lighting performance
- 2 x switch operation 20 % lighting performance
- 3 x switch operation gives a flash
- Deep discharge protection
- Holding magnetic on the rear
- Emergency light function in the event of power failure (Approximately 19 hours of illumination)
- LED 3 Watt CREE XP-E
- Charging cable 230 Volt
- Charging cable for automobile
- Wall mount, colour disks

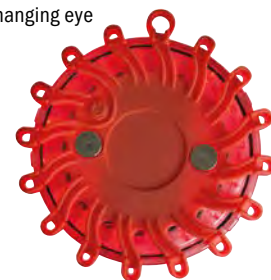


| Art. no. | size                 | kg    | PU |
|----------|----------------------|-------|----|
| 130320   | Ø 100 x 105 x 260 mm | 0,180 | 1  |

## Signal light „HUPemergency“



- 16 x LED
- 9 different flashing modes
- High-quality plastic, drop-protected and weather-proof
- Integrated lithium ion battery pack
- Charging cable 230 Volt, car charging cable
- Magnetic, with hanging eye



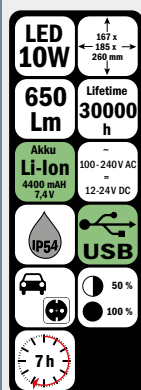
| Art. no. | size           | kg    | PU |
|----------|----------------|-------|----|
| 130326   | Ø 105 x 3,5 mm | 0,200 | 1  |

**haupa**

...convincing solutions



## Compact floodlight "HUPlight10"



- Rechargeable battery, lithium-ion 4400 mAh 7,4 V
- LED 10 Watt
- High quality aluminium housing, protected against spray water in accordance with IP54
- Extremely bright light
- Lighting performance is variable, can be dimmed
- at least 7 hours of operating power
- External devices may be charged via USB connections
- Charging cable 230 Volt, car charging cable



| Art. no. | Watt | size                 | kg    | PU |
|----------|------|----------------------|-------|----|
| 130330   | 10   | 167 x 185 x 260 mm   | 1,470 | 1  |
| 130330/A | 10   | with 2 battery packs | 1,810 | 1  |

## Mini working light "HUPlight4"



- Rechargeable battery, lithium-ion 1800 mAh 3.7 V
- LED 4 Watt
- Approximately 200 Lumen lighting performance
- Approximately 3 hours lighting performance
- Lamp may be charged using the micro USB port
- Stand may be angled
- Dual magnetic bracket
- Hook for securing and hanging
- Can be used and carried everywhere



| Art. no. | Watt | size             | kg    | PU |
|----------|------|------------------|-------|----|
| 130336   | 4    | 60 x 25 x 120 mm | 0,260 | 1  |

## Compact floodlight "HUPlight20"



- Rechargeable battery, lithium-ion 8800 mAh 7,4 V
- LED 20 Watt
- High quality aluminium housing, protected against spray water in accordance with IP54
- Extremely bright light
- Lighting performance is variable, can be dimmed
- at least 8 hours of operating power
- External devices may be charged via USB connections
- Charging cable 230 Volt, car charging cable



| Art. no. | Watt | size                 | kg    | PU |
|----------|------|----------------------|-------|----|
| 130332   | 20   | 245 x 185 x 275 mm   | 2,390 | 1  |
| 130332/A | 20   | with 2 battery packs | 2,963 | 1  |

## Replacement battery to "HUPlight10"



- Lithium-ion battery 4400 mAh 7.4 V
- protected against spray water in accordance with IP54



| Art. no. | Volt | A    | size            | kg    | PU |
|----------|------|------|-----------------|-------|----|
| 130331   | 7.4  | 4400 | 92 x 75 x 65 mm | 0,340 | 1  |

## Replacement battery to "HUPlight20"

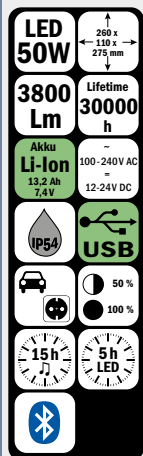


- Lithium-ion battery 8800 mAh 7.4 V
- protected against spray water in accordance with IP54

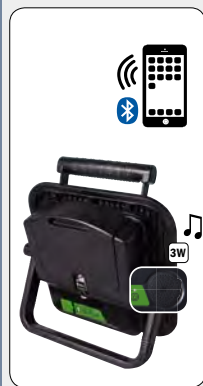


| Art. no. | Volt | A    | size             | kg    | PU |
|----------|------|------|------------------|-------|----|
| 130333   | 7.4  | 8800 | 120 x 75 x 87 mm | 0,573 | 1  |

## Compact floodlight "HUPlight50" with Bluetooth



- Lithium-ion battery 13.2 AH 7.4 V
- 50 Watt LED
- High quality aluminium housing + PC, protects against splashes according to IP54
- Extremely bright light
- Lighting performance is variable, 50% | 100%
- Operating time:
  - about 5 hours for just the lighting (at 100% light intensity),
  - about 10 hours for just the lighting (at 50% light intensity),
  - about 4 hours for lighting + Bluetooth speaker,
  - around 15 hours for just the Bluetooth speaker.
- Loading of external devices via USB port
- Charger: 230 V Power Supply (12 V 2.3 A)
- 12 V Car charger
- Bluetooth
- adjustable stand



| Art. no. | Watt | size                 | kg    | PU |
|----------|------|----------------------|-------|----|
| 130338   | 50   | 260 x 110 x 275 mm   | 2,240 | 1  |
| 130338/A | 50   | with 2 battery packs | 2,950 | 1  |

## Replacement battery to "HUPlight50"



- Lithium-ion battery 13.2 AH 7.4 V
- protected against spray water in accordance with IP54



| Art. no. | Volt | A    | size              | kg    | PU |
|----------|------|------|-------------------|-------|----|
| 130339   | 7.4  | 13,2 | 130 x 115 x 45 mm | 0,710 | 1  |

## Magnetic holder for "HUPlight50"



- magnetic
- extra-strong magnet

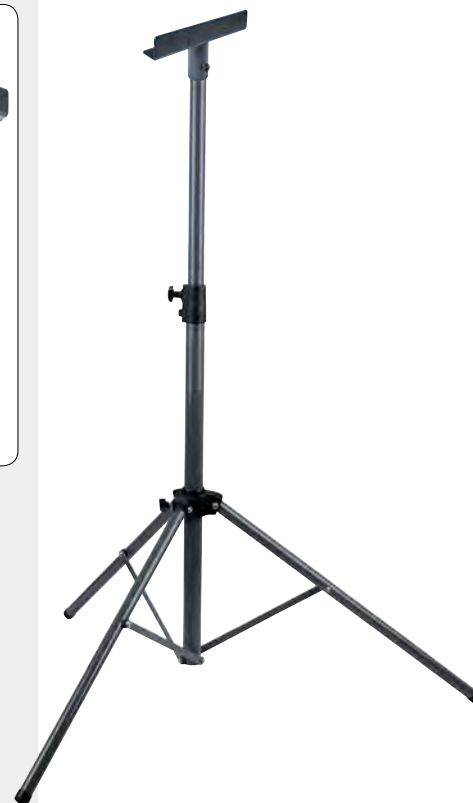


| Art. no. | size              | kg    | PU |
|----------|-------------------|-------|----|
| 130340   | 170 x 140 x 40 mm | 0,470 | 1  |

## Stand for "HUPlight50"



- Dimensions: 115 x 115 x 180 (Height) cm
- Adjustable height maximum height 1.80 m



| Art. no. | size                  | kg    | PU |
|----------|-----------------------|-------|----|
| 130342   | 1150 x 1150 x 1800 mm | 1,470 | 1  |

Measuring tools



## Measuring tools

### Folding rules

with spring joint, mm-graduations on both sides



| Art. no. | TL  | type        | width | kg    | PU |
|----------|-----|-------------|-------|-------|----|
| 240002   | 2 m | wood        | 16    | 0,022 | 1  |
| 240005   | 2 m | fibre glass | 16    | 0,138 | 1  |

### Measuring tapes

with spring steel tapes, case: plastic, with automatic return motion and locking key, tape with stove-enamel finished



| Art. no. | TL  | width | kg    | PU |
|----------|-----|-------|-------|----|
| 240011   | 3 m | 13    | 0,104 | 1  |
| 240012   | 5 m | 16    | 0,179 | 1  |

### Measuring tapes

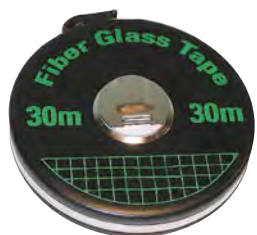
with spring steel tapes, case: plastic, with automatic return motion and locking key, tape with stove-enamel finished. Double Scale (cm/inch).



| Art. no. | TL  | width | kg    | PU |
|----------|-----|-------|-------|----|
| 240013   | 5 m | 16    | 0,179 | 1  |

### Measuring tapes

in metal case, with woven rayon tape, strengthened against stretching by 8 bronze wires woven into tape, scale graduations both sides: metres and centimetres



| Art. no. | TL   | width | kg    | PU |
|----------|------|-------|-------|----|
| 240018   | 20 m | 16    | 0,432 | 1  |
| 240020   | 25 m | 16    | 0,544 | 1  |
| 240022   | 30 m | 16    | 0,586 | 1  |
| 240024   | 50 m | 16    | 0,857 | 1  |

### Aluminium spirit levels

bubble level made of acrylic glass, accuracy of measurement:  $0,043^\circ = 0,75$  mm/m. **Fall arrest on the flanks.**



| Art. no. | TL   | kg    | PU |
|----------|------|-------|----|
| 240041   | 300  | 0,168 | 1  |
| 240042   | 400  | 0,198 | 1  |
| 240044   | 600  | 0,282 | 1  |
| 240046   | 800  | 0,406 | 1  |
| 240048   | 1000 | 0,534 | 1  |

### Electrician's safety levels

nonconducting plastic material, with 2 tubes horizontal and vertical



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 240057   | 400 | 0,188 | 1  |
| 240058   | 600 | 0,274 | 1  |

### Cabinet levels

Torped type, nonconducting plastic material, with 3 tubes horizontal, vertical and  $45^\circ$



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 240059   | 200 | 0,078 | 1  |

### Precision pocket vernier calipers „Stainless“

manufactured from stainless steel, completely hardened, with measuring nibs, depth gauge and thread tables, in plastic wallet,  $1/20''$  or  $1/128$  mm, size 140 mm



| Art. no. | kg    | PU |
|----------|-------|----|
| 240071   | 0,157 | 1  |

### Precision pocket vernier calipers „digital“

manufactured from stainless steel, completely hardened, with measuring nibs, depth gauge and thread tables, in plastic box with sight window,  $1/20''$  or  $1/128$  mm, size 140 mm



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 240073   | 140 | 0,150 | 1  |

## Measuring tools

### Engineers' squares

manufactured from steel, bright



| Art. no. | TL      | width | kg    | PU |
|----------|---------|-------|-------|----|
| 240132   | 150x100 | 20    | 0,181 | 1  |
| 240134   | 200x130 | 20    | 0,237 | 1  |
| 240136   | 250x160 | 25    | 0,378 | 1  |
| 240138   | 300x180 | 25    | 0,445 | 1  |

### Engineers' squares

manufactured from steel, bright



| Art. no. | TL      | width | kg    | PU |
|----------|---------|-------|-------|----|
| 240152   | 150x100 | 20    | 0,170 | 1  |
| 240154   | 200x130 | 20    | 0,340 | 1  |
| 240156   | 250x160 | 25    | 0,511 | 1  |
| 240158   | 300x180 | 25    | 0,440 | 1  |
| 240160   | 400x230 | 30    | 0,783 | 1  |

### Steel point scribers

knurled handle, replaceable screw-out hardened points, handle with one straight and one bent point (90°)



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 240234   | 250 | 0,046 | 1  |

### Carpenters' pencils



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 150090   | 150 | 0,007 | 1  |

### Deep hole marker

Marker and writing implement with a refillable solid lead, suitable for all surfaces (including dusty, rough, damp or oily surfaces) cap in a bright signalling colour with integrated sharpener. Also suitable for dark surfaces.



| Art. no. | kg               | PU      |
|----------|------------------|---------|
| 150025   | 0,291            | 1       |
| 150027   | spare lead 10 pc | 0,291 1 |

### Marking chalk

12 items per packaging unit



| Art. no. | colour | set       | kg    | PU |
|----------|--------|-----------|-------|----|
| 150015 B | blue   | 12-pieces | 0,017 | 1  |
| 150015 G | yellow | 12-pieces | 0,017 | 1  |
| 150015 R | red    | 12-pieces | 0,016 | 1  |

### Holder for marking chalk

suitable for marking chalk art. 150015



| Art. no. | kg    | PU |
|----------|-------|----|
| 150015/1 | 0,036 | 1  |

### Chalk line roller Squid, 15 m

Chalk line roller made from cast magnesium with push system: Pressure on the axle does not turn the crank; hardened hook with curved spike, integrated storage for the hook, Art. no. 150023: fast-retraction transmission 5:1



| Art. no. | size | kg    | PU |
|----------|------|-------|----|
| 150019   | 15 m | 0,291 | 1  |

### Chalk

in plastic bottles, 250 g

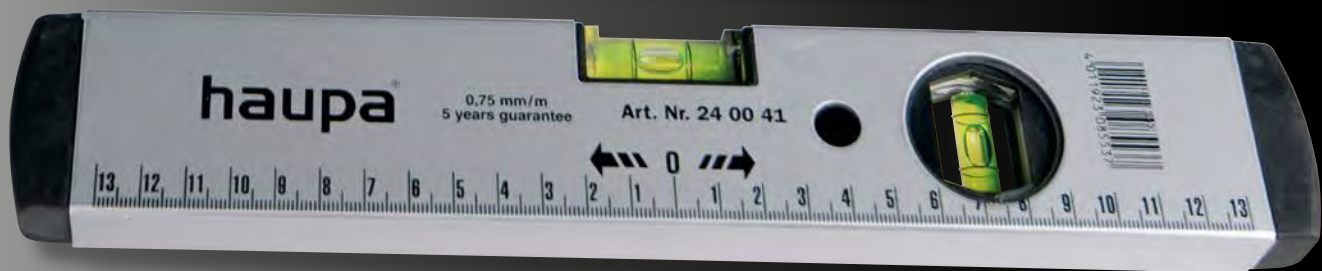


| Art. no. | colour | kg    | PU |
|----------|--------|-------|----|
| 140510   | red    | 0,284 | 1  |
| 140520   | blue   | 0,276 | 1  |
| 140530   | yellow | 0,279 | 1  |

**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



Maintenance



## Hand brush „Prestige“ short

- Soft Elaston PET bristles
- Unvarnished wooden body
- 29 cm
- Handle with hole for hanging up



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 393000   | 290 | 0,250 | 1  |

## Hand brush „Prestige“ long

- Soft Elaston PET bristles
- Unvarnished wooden body
- 43 cm
- Handle with hole for hanging up



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 393002   | 430 | 0,280 | 1  |

## Street broom

- Elaston
- 40 cm
- 6/15 rows



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 393008   | 400 | 0,300 | 1  |

## Broom, for rough dirt

- Elaston
- 40 cm
- For coarse dirt
- Made from wooden corbel
- With hole for handle



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 393012   | 400 | 0,300 | 1  |

## Broom, for smooth ground

- 40 cm
- For smooth floors and fine dirt
- Made from wooden corbel
- With hole for handle



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 393010   | 400 | 0,300 | 1  |

## Metal dustpan with wooden handle

- Made from metal
- Painted black
- Wooden handle with hole for hanging up
- Robust version
- 450 x 230 mm



| Art. no. | TL  | width | kg    | PU |
|----------|-----|-------|-------|----|
| 393006   | 450 | 230   | 0,400 | 1  |

## Bucket

- Made from plastic
- 12 l
- With carry handle



| Art. no. | kg    | PU |
|----------|-------|----|
| 300102   | 0,450 | 1  |

## Broomstick

- Sanded cleanly
- Rounded head
- 1400 mm



| Art. no. | TL   | kg    | PU |
|----------|------|-------|----|
| 393004   | 1400 | 0,250 | 1  |

## Textile tape

Particularly strong adhesive, UV-resistant.

- 50 m



| Art. no. | length/m | width | kg    | PU |
|----------|----------|-------|-------|----|
| 393014   | 50       | 38    | 0,350 | 1  |
| 393016   | 50       | 50    | 0,400 | 1  |



# Maintenance

## Tarpaulin premium

Protects from dust and damp, for indoor use.

- 12 my
- 4 x 12,5 m



| Art. no. | TL    | width | kg    | PU |
|----------|-------|-------|-------|----|
| 393026   | 12500 | 4000  | 0,250 | 1  |

## Tarpaulin, strong

Effective protection from dirt whatever the job, for indoor use.

- 30 my
- 4 x 5 m



| Art. no. | TL   | width | kg    | PU |
|----------|------|-------|-------|----|
| 393022   | 5000 | 4000  | 0,200 | 1  |

## Tarpaulin, strong

Effective protection from dirt whatever the job, for indoor use.

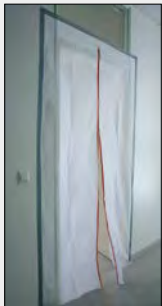
- 30 my
- 4 x 12,5 m



| Art. no. | TL    | width | kg    | PU |
|----------|-------|-------|-------|----|
| 393024   | 12500 | 4000  | 0,500 | 1  |

## Dust protection door, multi-fleece

Protects from dust and dirt, approximately 120 x 220 cm, zip length approximately 215 cm.



| Art. no. | TL   | width | kg    | PU |
|----------|------|-------|-------|----|
| 393032   | 2200 | 1200  | 0,350 | 1  |

## Builders waste sack

- LDPE
- Roll containing 5 sacks
- 75 l
- 100 my
- 575 x 1000 mm



| Art. no. | TL   | width | kg    | PU |
|----------|------|-------|-------|----|
| 393018   | 1000 | 575   | 0,020 | 1  |

## Waste sack, extra

- LDPE
- Roll containing 10 sacks
- 120 l
- 50 my
- 700 x 1100 mm



| Art. no. | TL   | width | kg    | PU |
|----------|------|-------|-------|----|
| 393020   | 1100 | 700   | 0,020 | 1  |

## Construction foil „Profi“

Optimum protection for all jobs indoors and for all outdoor situations.

- 3 x 10 m
- 200g/m<sup>2</sup>



| Art. no. | TL    | width | kg    | PU |
|----------|-------|-------|-------|----|
| 393030   | 10000 | 3000  | 4,500 | 1  |

## Multi-fleece

Extremely absorbent, anti-slip thanks to PE anti-slip sheet, prevents the ingress of paint or damp, for all DIY, renovation, construction and painting work. Easy to lay, can be reused multiple times, dirt on clothes and shoes is not transported further.

- 1 x 10 m



| Art. no. | TL    | width | kg    | PU |
|----------|-------|-------|-------|----|
| 393028   | 10000 | 1000  | 1,500 | 1  |

**haupa**<sup>®</sup>

**...convincing solutions**

Germany: **HAUPA**, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



# Maintenance

## Wire brushes



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 150002   | 300 | 0,131 | 1  |

## Water brushes

real bristles, vulcanized, textile bound, bristles-Ø 24 mm, length of bristle 48 mm



| Art. no. | width | kg    | PU |
|----------|-------|-------|----|
| 150004   | 24    | 0,036 | 1  |

## Plaster cups

soft rubber



| Art. no. | Ø   | depth | kg    | PU |
|----------|-----|-------|-------|----|
| 150006   | 125 | 90    | 0,105 | 1  |

## Plaster pan

metal, with wooden handle



| Art. no. | Ø   | depth | kg    | PU |
|----------|-----|-------|-------|----|
| 150008   | 160 | 40    | 0,341 | 1  |

## Paint scrapers

steel, polished blade, with oval wooden handle



| Art. no. | TL  | width | kg    | PU |
|----------|-----|-------|-------|----|
| 150024   | 185 | 40    | 0,043 | 1  |
| 150026   | 205 | 50    | 0,051 | 1  |
| 150028   | 205 | 60    | 0,047 | 1  |

Chisels, Hammers



## Chisels, centre punches, hatchets

### Flat chisels to DIN 6453 A, flat oval shank

chrome vanadium air hardenend steel, golden varnishes



| Art. no. | TL  | CW | mat/S | mat/S1 | kg    | PU |
|----------|-----|----|-------|--------|-------|----|
| 180008   | 200 | 28 | 23    | 13     | 0,392 | 1  |
| 180010   | 250 | 28 | 23    | 13     | 0,490 | 1  |
| 180012   | 300 | 32 | 26    | 13     | 0,606 | 1  |

### Stone chisels, flat oval shank

chrome vanadium air hardenend steel, golden varnishes



| Art. no. | TL  | CW | mat/S | mat/S1 | kg    | PU |
|----------|-----|----|-------|--------|-------|----|
| 180042   | 250 | 28 | 20    | 12     | 0,394 | 1  |
| 180044   | 300 | 32 | 23    | 13     | 0,584 | 1  |

### Stone chisels, octagonal shank

chrome vanadium air hardenend steel, golden varnishes



| Art. no. | TL  | CW | mat/S | mat/S1 | kg    | PU |
|----------|-----|----|-------|--------|-------|----|
| 180062   | 250 | 28 | 16    | 16     | 0,387 | 1  |
| 180064   | 300 | 30 | 18    | 18     | 0,595 | 1  |

### Jointing chisel

chrome vanadium air hardenend steel, golden varnishes, for light works, the wide and flat cutting edge allows a quick working and avoid a breaking out of the wall



| Art. no. | TL  | CW | mat/S | mat/S1 | kg    | PU |
|----------|-----|----|-------|--------|-------|----|
| 180076   | 250 | 26 | 26    | 7      | 0,302 | 1  |

### Stone chisels, octagonal shank

chrome vanadium air hardenend steel, golden varnishes



| Art. no. | TL  | CW | mat/S | mat/S1 | kg    | PU |
|----------|-----|----|-------|--------|-------|----|
| 180082   | 250 | 14 | 14    | 14     | 0,358 | 1  |
| 180084   | 300 | 16 | 16    | 16     | 0,573 | 1  |

### Electricians' chisels

chrome vanadium air hardenend steel, golden varnishes



| Art. no. | TL  | CW | mat/S | mat/S1 | kg    | PU |
|----------|-----|----|-------|--------|-------|----|
| 180090   | 200 | 8  | 6     | 6      | 0,052 | 1  |
| 180092   | 250 | 10 | 8     | 8      | 0,119 | 1  |
| 180094   | 250 | 12 | 8     | 8      | 0,121 | 1  |

### Centre punch to DIN 7250

octagonal shank, chrome vanadium air hardenend steel, golden varnishes



| Art. no. | TL  | Ø  | kg    | PU |
|----------|-----|----|-------|----|
| 180120   | 120 | 12 | 0,091 | 1  |

## Hammers

### Firmer chisels DIN 5139

with bevelled edges and polished wooden handle and cutting edge protector



| Art. no. | TL  | CW | BL  | kg    | PU |
|----------|-----|----|-----|-------|----|
| 180464   | 280 | 14 | 150 | 0,120 | 1  |
| 180466   | 280 | 16 | 150 | 0,132 | 1  |
| 180468   | 280 | 18 | 150 | 0,161 | 1  |
| 180470   | 280 | 20 | 150 | 0,170 | 1  |
| 180474   | 280 | 24 | 150 | 0,193 | 1  |

### Rubber hand guard

total length 140 mm, max. Ø 90 mm, for chisels flat oval shank



| Art. no. | size | mat/S | mat/S1 | kg    | PU |
|----------|------|-------|--------|-------|----|
| 180110   | 3    | 23    | 13     | 0,125 | 1  |

### Pin punch set

golden varnishes, in folding metal case

Contents: Ø 2 - 3 - 4 - 5 - 6 - 8 mm



| Art. no. | set      | kg    | PU |
|----------|----------|-------|----|
| 180170   | 6-pieces | 0,502 | 1  |

### Household hatchet

varnished and polished cutting edge, DIN 5131



| Art. no. | kg    | PU |
|----------|-------|----|
| 180173   | 0,600 | 1  |

### Claw hammer

American model, 16 Oz, wooden handle



| Art. no. | size | kg    | PU |
|----------|------|-------|----|
| 180321   | 16   | 0,621 | 1  |

## Hammers

### Claw hammer

American model, 16 Oz, fibreglass handle



| Art. no. | size | kg    | PU |
|----------|------|-------|----|
| 180323   | 16   | 0,748 | 1  |

### Engineers' hammer DIN 1041

with polished hickory handle, with steel handle protection



| Art. no. | HW  | kg    | PU |
|----------|-----|-------|----|
| 180182   | 200 | 0,238 | 1  |
| 180184   | 300 | 0,370 | 1  |
| 180186   | 400 | 0,470 | 1  |
| 180188   | 500 | 0,622 | 1  |

### Engineers' hammer DIN 1041

with steel pipe handle and rubber grip



| Art. no. | HW  | kg    | PU |
|----------|-----|-------|----|
| 180200   | 300 | 0,552 | 1  |
| 180202   | 500 | 0,740 | 1  |

### Engineers' hammer DIN 1041

with red ultramid handle, low vibration



| Art. no. | HW  | kg    | PU |
|----------|-----|-------|----|
| 180232   | 300 | 0,410 | 1  |

### Engineers' hammer

English pattern, ball pin



| Art. no. | HW  | kg    | PU |
|----------|-----|-------|----|
| 180274   | 340 | 0,416 | 1  |
| 180276   | 450 | 0,485 | 1  |

### Sledge hammer to DIN 6475

with steel pipe handle and rubber grip



| Art. no. | HW   | kg    | PU |
|----------|------|-------|----|
| 180290   | 1000 | 1,210 | 1  |
| 180292   | 1250 | 1,504 | 1  |

### Sledge hammer to DIN 6475

with polished, fluted hickory handle, with steel handle protection



| Art. no. | HW   | kg    | PU |
|----------|------|-------|----|
| 180300   | 1000 | 1,093 | 1  |
| 180302   | 1250 | 1,375 | 1  |

### Plastic hammer

with replaceable celluloid striking faces and ash handle



| Art. no. | Ø                 | kg    | PU |
|----------|-------------------|-------|----|
| 180334   | 32                | 0,328 | 1  |
| 180346   | replacement heads | 0,460 | 1  |

**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Steel stamps

### Steel stamp, figures (0 - 9) DIN 1451



| Art. no. | size | set | kg    | PU |
|----------|------|-----|-------|----|
| 130200   | 3    | 0-9 | 0,160 | 1  |
| 130201   | 4    | 0-9 | 0,243 | 1  |
| 130202   | 5    | 0-9 | 0,300 | 1  |
| 130203   | 6    | 0-9 | 0,450 | 1  |
| 130204   | 8    | 0-9 | 0,650 | 1  |
| 130206   | 10   | 0-9 | 0,800 | 1  |

### Steel stamp, letters (A - Z), DIN 1451



| Art. no. | size | set | kg    | PU |
|----------|------|-----|-------|----|
| 130208   | 3    | A-Z | 0,461 | 1  |
| 130209   | 4    | A-Z | 0,650 | 1  |
| 130210   | 5    | A-Z | 0,850 | 1  |
| 130211   | 6    | A-Z | 1,200 | 1  |
| 130212   | 8    | A-Z | 1,950 | 1  |
| 130214   | 10   | A-Z | 2,479 | 1  |

## Files

### Warding files DIN 7283

Set: 6 files with wooden handle, section A, B, C, D, E, F in plastic wallet



| Art. no. | TL  | set             | kg    | PU |
|----------|-----|-----------------|-------|----|
| 190120   | 100 | <b>6-pieces</b> | 0,108 | 1  |

### Contact files

Set: 6 files in plastic wallet



| Art. no. | TL  | set             | kg    | PU |
|----------|-----|-----------------|-------|----|
| 190126   | 130 | <b>6-pieces</b> | 0,078 | 1  |

### File assortments

Set: 5 files in plastic wallet, files with plastic handle

**Form:**  
 round  
 square  
 flat  
 half round  
 triangular



| Art. no. | TL  | set                  | kg    | PU |
|----------|-----|----------------------|-------|----|
| 190130   | 100 | <b>bastard cut 1</b> | 0,784 | 1  |
| 190132   | 200 | <b>smooth cut 3</b>  | 0,799 | 1  |

Knives



## Cable stripping knives

### Cable stripping or lead tube knives

with wooden handle



| Art. no. | BL | kg    | PU |
|----------|----|-------|----|
| 200008   | 40 | 0,047 | 1  |

### Cable stripping knives

solid handle, shock-proof synthetic, blade with straight and rounded scraper



| Art. no. | BL | form     | kg    | PU |
|----------|----|----------|-------|----|
| 200010   | 60 | straight | 0,073 | 1  |

### Cable stripping knives

with black plastic scales, stainless blade with scraper



| Art. no. | BL | form     | kg    | PU |
|----------|----|----------|-------|----|
| 200011   | 60 | straight | 0,082 | 1  |

### Cable stripping knives

with wooden scales, blade with scraper



| Art. no. | BL | form     | kg    | PU |
|----------|----|----------|-------|----|
| 200012   | 60 | straight | 0,079 | 1  |

### Cable stripping knives

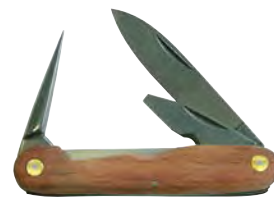
with wooden scales, blade and reamer



| Art. no. | BL | form     | kg    | PU |
|----------|----|----------|-------|----|
| 200014   | 60 | straight | 0,078 | 1  |

### Cable stripping knives

with wooden scales, blade, reamer and screwdriver



| Art. no. | BL | form     | kg    | PU |
|----------|----|----------|-------|----|
| 200016   | 60 | straight | 0,089 | 1  |

### Cable stripping knives

with plastic scales, 2 blades, reamer and screwdriver



| Art. no. | BL | form     | kg    | PU |
|----------|----|----------|-------|----|
| 200018   | 60 | straight | 0,092 | 1  |

## Utility knives

### Utility metal knives

Cutting of plastic, wallpaper, cardboards, leather, plywood, carpets, with automatic blades locking, reserve blade in the handle



| Art. no.  | BL | form         | kg    | PU |
|-----------|----|--------------|-------|----|
| 200025    | 9  | straight     | 0,072 | 1  |
| 200025/KL |    | spare blades | 0,050 | 1  |

### Utility metal knives

Cutting of plastic, wallpaper, cardboards, leather, plywood, carpets, with automatic blades locking, reserve blade in the handle



| Art. no. | BL | form         | kg    | PU |
|----------|----|--------------|-------|----|
| 200027   | 18 | straight     | 0,150 | 1  |
| 200032   |    | spare blades | 0,054 | 1  |



## Tin snips, tube cutters

### Utility knives „EXTRA“ with spare blades

Cutting of plastic, wallpaper, cardboards, leather, plywood, carpets, with automatic blades locking, reserve blade in the handle, softgrip



| Art. no. | BL | form     | kg    | PU |
|----------|----|----------|-------|----|
| 200051   | 18 | straight | 0,022 | 1  |

### „Safety“ safety knife

Robust construction made from zinc die casting, large cutting depth, slider on the top, with automatic blade retraction to protect against cutting injuries, for cutting plastics, wallpaper, card, leather, plywood and carpet.



| Art. no. | BL | TL  | form     | kg    | PU |
|----------|----|-----|----------|-------|----|
| 200021   | 20 | 148 | straight | 0,105 | 1  |

### Utility knife

Utility knife with holder, tool-free blade change, with blade depot, ergonomic design with softgrip



| Art. no. | BL | form     | kg    | PU |
|----------|----|----------|-------|----|
| 200059   | 20 | straight | 0,111 | 12 |

### Utility knives

manufactured from zinc di-cast, with 4 straight blades and 1 hook blade



| Art. no. | BL                             | TL  | form     | kg    | PU |
|----------|--------------------------------|-----|----------|-------|----|
| 200026   | 20                             | 145 | straight | 0,192 | 1  |
| 200028   | Loose knife, hooked blade      |     |          | 0,004 | 1  |
| 200030   | Loose knife, trapezoidal blade |     |          | 0,005 | 1  |

### Hole-cutting tin snips

with polished blade, carbon steel, figure cuts (large radii)



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 200140   | 250 | 0,523 | 1  |

### Figure tin snips

with polished blade, carbon steel, right-hand cutting, for short straight and figure cutting (small radii)



| Art. no. | TL  | kg    | PU |
|----------|-----|-------|----|
| 200154   | 260 | 0,513 | 1  |

### Small tube cutter

with 1 cutting wheel and dual roller guides  
Ø 1/8" - 5/8"



| Art. no. | Ø                  | kg    | PU      |
|----------|--------------------|-------|---------|
| 200190   | 3-16               | 0,107 | 1       |
| 200192   | loose spare wheels |       | 0,025 1 |

### Tube cutter

with 1 cutting wheel and dual roller guides, retractable burr remover,  
Ø 1/8" - 1 3/8"



| Art. no. | Ø                  | kg    | PU      |
|----------|--------------------|-------|---------|
| 200194   | 3-35               | 0,401 | 1       |
| 200196   | loose spare wheels |       | 0,006 1 |

**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



## Saws, saw blades

### Junior hacksaw

strong frame, nickel-plated



| Art. no. | type  | Sbl. | kg    | PU |
|----------|-------|------|-------|----|
| 200280   | metal | 150  | 0,149 | 1  |

### Junior hacksaw DIN 6473 C

hacksaw blade for metal



| Art. no. | type  | Sbl. | kg    | PU |
|----------|-------|------|-------|----|
| 200284   | metal | 150  | 0,069 | 1  |

### Junior hacksaw

heavy type, with pistol type handle and hacksaw blade for metal, form A



| Art. no. | type  | Sbl. | kg    | PU |
|----------|-------|------|-------|----|
| 200285   | metal | 150  | 0,164 | 1  |

### Junior hacksaw

heavy type, with pistol type handle and hacksaw blade for metal, form A



| Art. no. | type  | Sbl. | TL  | kg    | PU |
|----------|-------|------|-----|-------|----|
| 200287   | metal | 150  | 260 | 0,164 | 1  |

### Hand saw „PUK“

with hacksaws blade for metal, with fixed, varnished wooden handle



| Art. no. | type  | Sbl. | kg    | PU |
|----------|-------|------|-------|----|
| 200290   | metal | 150  | 0,100 | 1  |

### Hand saw „PUK“

with adjustable, varnished wooden handle, in plastic bag



| Art. no. | type  | Sbl. | kg    | PU |
|----------|-------|------|-------|----|
| 200292   | metal | 150  | 0,119 | 1  |

### Hacksaw blades „PUK“

acc. to DIN 6494C,  
for Art. No. 200292, 200280, 200290, 200284, 200285, 110558



| Art. no. | type | type    | Sbl. | kg    | PU |
|----------|------|---------|------|-------|----|
| 200286   | wood | plastic | 150  | 0,036 | 1  |

### Hacksaw blades „PUK“

acc. to DIN 6494C,  
for Art. No. 200292, 200280, 200290, 200284, 200285, 110558



| Art. no. | type  | type      | Sbl. | kg    | PU |
|----------|-------|-----------|------|-------|----|
| 200288   | metal | universal | 150  | 0,036 | 1  |

### Hacksaw frame

steel pipe with flat oval section, bright chrome-plated, tension bolt made from steel, form A



| Art. no. | type  | Sbl. | kg    | PU |
|----------|-------|------|-------|----|
| 200304   | metal | 300  | 0,408 | 1  |

### Hacksaw blades to DIN 6494

type A, single sided blade HSS-Bi-metal



| Art. no. | type  | Sbl. | kg    | PU |
|----------|-------|------|-------|----|
| 200310   | metal | 300  | 0,016 | 1  |

Drilling tools



# Twist drills, ground

## Twist drills DIN 338/HSS type N

point angle 118°, spiral angle 25 - 35°, Ø-tolerance h 8, of HSS, for drilling of steel, steel-casting alloyed and unalloyed up to approx. 900 N/mm<sup>2</sup> strength grey- and tempered casting, sinter iron, newsilver, graphit, alu-alloy, bronze and brass

### Packaging unit in blister pack:

0,5 - 3,0 mm; 1 SPU = 3 pieces  
3,2 - 6,0 mm; 1 SPU = 2 pieces  
6,5 - 13,0 mm; 1 SPU = 1 piece

xxxxxx/CO = Cobalt

### Packaging unit in blister pack:

1,0 - 3,0 mm; 1 SPU = 2 pieces  
3,2 - 13,0 mm; 1 SPU = 1 piece



| Art. no.  | Ø    | core-hole | SL | TL  | VE |
|-----------|------|-----------|----|-----|----|
| 230010    | 0,5  |           | 6  | 22  | 1  |
| 230020    | 1    |           | 12 | 34  | 1  |
| 230020/CO |      |           |    |     | 1  |
| 230030    | 1,5  |           | 18 | 40  | 1  |
| 230030/CO |      |           |    |     | 1  |
| 230032    | 1,6  | M2        | 20 | 43  | 1  |
| 230032/CO |      |           |    |     | 1  |
| 230040    | 2    |           | 24 | 49  | 1  |
| 230040/CO |      |           |    |     | 1  |
| 230050    | 2,5  | M3        | 30 | 57  | 1  |
| 230050/CO |      |           |    |     | 1  |
| 230060    | 3    |           | 33 | 61  | 1  |
| 230060/CO |      |           |    |     | 1  |
| 230064    | 3,2  |           | 36 | 65  | 1  |
| 230064/CO |      |           |    |     | 1  |
| 230066    | 3,3  | M4        | 36 | 65  | 1  |
| 230066/CO |      |           |    |     | 1  |
| 230070    | 3,5  |           | 39 | 70  | 1  |
| 230070/CO |      |           |    |     | 1  |
| 230080    | 4    |           | 43 | 75  | 1  |
| 230080/CO |      |           |    |     | 1  |
| 230084    | 4,2  | M5        | 43 | 75  | 1  |
| 230084/CO |      |           |    |     | 1  |
| 230090    | 4,5  |           | 47 | 80  | 1  |
| 230090/CO |      |           |    |     | 1  |
| 230100    | 5    | M6        | 52 | 86  | 1  |
| 230100/CO |      |           |    |     | 1  |
| 230110    | 5,5  |           | 57 | 93  | 1  |
| 230110/CO |      |           |    |     | 1  |
| 230120    | 6    | M7        | 57 | 93  | 1  |
| 230120/CO |      |           |    |     | 1  |
| 230130    | 6,5  |           | 63 | 101 | 1  |
| 230130/CO |      |           |    |     | 1  |
| 230136    | 6,8  | M8        | 69 | 101 | 1  |
| 230136/CO |      |           |    |     | 1  |
| 230140    | 7    |           | 69 | 109 | 1  |
| 230140/CO |      |           |    |     | 1  |
| 230160    | 8    |           | 75 | 117 | 1  |
| 230160/CO |      |           |    |     | 1  |
| 230170    | 8,5  | M10       | 75 | 117 | 1  |
| 230170/CO |      |           |    |     | 1  |
| 230180    | 9    |           | 81 | 125 | 1  |
| 230180/CO |      |           |    |     | 1  |
| 230190    | 9,5  |           | 81 | 125 | 1  |
| 230190/CO |      |           |    |     | 1  |
| 230200    | 10   |           | 87 | 133 | 1  |
| 230200/CO |      |           |    |     | 1  |
| 230204    | 10,2 | M12       | 87 | 133 | 1  |
| 230204/CO |      |           |    |     | 1  |
| 230210    | 10,5 |           | 87 | 133 | 1  |
| 230210/CO |      |           |    |     | 1  |

| Art. no.  | Ø    | core-hole | SL  | TL  | VE |
|-----------|------|-----------|-----|-----|----|
| 230220    | 11   |           | 87  | 133 | 1  |
| 230220/CO |      |           |     |     | 1  |
| 230230    | 11,5 |           | 94  | 142 | 1  |
| 230230/CO |      |           |     |     | 1  |
| 230240    | 12   | M14       | 101 | 151 | 1  |
| 230240/CO |      |           |     |     | 1  |
| 230244    | 12,5 |           | 101 | 151 | 1  |
| 230244/CO |      |           |     |     | 1  |
| 230250    | 13   |           | 101 | 151 | 1  |
| 230250/CO |      |           |     |     | 1  |

## Twist drills DIN 338/HSS type N

made from high power steel, in plastic pocket

### Technical information:

**Standard version:** Industrial quality, dressed to size from solid material, high true tuning precision, long tool life, cutter separate packet in plastic bags or as a set in a box.

/PB: as beside

/R: workshop quality, wheeled milled

/TIN: as beside, titanium nitride coating



| Art. no.   | Ø      | set       | kg    | PU |
|------------|--------|-----------|-------|----|
| 230312     | 1 - 10 | 19-pieces | 0,312 | 1  |
| 230312/R   | 1 - 10 |           | 0,284 | 1  |
| 230312/TIN | 1 - 10 |           | 0,345 | 1  |
| 230314     | 1 - 13 | 25-pieces | 1,270 | 1  |
| 230314/R   | 1 - 13 |           | 1,213 | 1  |
| 230314/TIN | 1 - 13 |           | 1,290 | 1  |

## Bulk storage chest for twist drills

HSS, DIN 338, 170 pieces, TYP N, short, ground, bright, with split point, TIN coated.

**Contents:** 1.0 - 10.0 mm (upstairs in 0.5 mm steps)  
up to 8,0 mm 10 pieces/size  
> 8,5 mm 5 pieces/size



| Art. no.   | set        | kg    | PU |
|------------|------------|-------|----|
| 230301/TIN | 170-pieces | 4,550 | 1  |

## Drills

### Auger bit, type Lewis



| Art. no. | TL  | Ø  | kg    | PU |
|----------|-----|----|-------|----|
| 231502   | 460 | 6  | 0,005 | 1  |
| 231508   | 235 | 10 | 0,098 | 1  |
| 231516   | 235 | 14 | 0,005 | 1  |
| 231524   | 235 | 18 | 0,200 | 1  |
| 231526   | 460 | 18 | 0,468 | 1  |
| 231528   | 235 | 20 | 0,005 | 1  |
| 231530   | 460 | 20 | 0,005 | 1  |
| 231532   | 235 | 22 | 0,300 | 1  |
| 231534   | 450 | 22 | 0,642 | 1  |
| 231540   | 235 | 26 | 0,005 | 1  |
| 231544   | 235 | 28 | 0,005 | 1  |
| 231546   | 460 | 28 | 0,005 | 1  |

### Drill type machine bits for wood

made from carbon steel, concentrically ground, with centre point and front cutter



| Art. no. | TL  | Ø  | kg    | PU |
|----------|-----|----|-------|----|
| 230616   | 70  | 3  | 0,005 | 1  |
| 230618   | 80  | 4  | 0,008 | 1  |
| 230620   | 90  | 5  | 0,011 | 1  |
| 230622   | 100 | 6  | 0,015 | 1  |
| 230626   | 120 | 8  | 0,031 | 1  |
| 230628   | 130 | 9  | 0,039 | 1  |
| 230630   | 137 | 10 | 0,047 | 1  |
| 230634   | 150 | 12 | 0,075 | 1  |
| 230636   | 170 | 13 | 0,088 | 1  |

### Flat bits

with flat cutter head, square shank, DIN 6447 A



| Art. no. | TL  | Ø  | shank | kg    | PU |
|----------|-----|----|-------|-------|----|
| 230732   | 150 | 10 | 6     | 0,041 | 1  |
| 230734   | 150 | 12 | 6     | 0,041 | 1  |
| 230736   | 150 | 14 | 6     | 0,048 | 1  |
| 230738   | 150 | 16 | 6     | 0,051 | 1  |
| 230740   | 150 | 18 | 6     | 0,047 | 1  |
| 230742   | 150 | 20 | 6     | 0,045 | 1  |
| 230746   | 150 | 24 | 6     | 0,045 | 1  |

### Casing drill

With cylindrical clamping shaft, cutting element made of chrome vanadium steel



| Art. no. | TL  | Ø  | kg    | PU |
|----------|-----|----|-------|----|
| 231750   | 400 | 6  | 0,100 | 1  |
| 231752   | 400 | 8  | 0,005 | 1  |
| 231754   | 400 | 10 | 0,160 | 1  |
| 231756   | 400 | 12 | 0,200 | 1  |
| 231758   | 400 | 13 | 0,200 | 1  |
| 231760   | 400 | 17 | 0,005 | 1  |
| 231766   | 400 | 22 | 0,200 | 1  |

## Drills

### Masonry drills DIN 8039

carbide tipped, with straight shank, each piece in plastic pocket



| Art. no. | TL  | Ø   | CL  | kg    | PU |
|----------|-----|-----|-----|-------|----|
| 230330   | 70  | 3   | 40  | 0,003 | 1  |
| 230331   | 75  | 3,5 | 45  | 0,056 | 1  |
| 230332   | 80  | 4   | 45  | 0,008 | 1  |
| 230334   | 85  | 4,5 | 50  | 0,008 | 1  |
| 230336   | 90  | 5   | 50  | 0,011 | 1  |
| 230338   | 95  | 5,5 | 55  | 0,012 | 1  |
| 230340   | 100 | 6   | 60  | 0,018 | 1  |
| 230342   | 105 | 6,5 | 65  | 0,018 | 1  |
| 230344   | 110 | 7   | 65  | 0,018 | 1  |
| 230346   | 120 | 8   | 70  | 0,027 | 1  |
| 230352   | 140 | 10  | 90  | 0,035 | 1  |
| 230354   | 150 | 11  | 95  | 0,082 | 1  |
| 230356   | 160 | 12  | 105 | 0,090 | 1  |
| 230358   | 170 | 13  | 110 | 0,100 | 1  |
| 230360   | 180 | 14  | 115 | 0,120 | 1  |
| 230362   | 190 | 15  | 125 | 0,165 | 1  |
| 230364   | 190 | 16  | 125 | 0,092 | 1  |

### Masonry drills DIN 8039

carbide tipped, with straight shank, each piece in plastic pocket



| Art. no. | TL  | Ø  | CL  | kg    | PU |
|----------|-----|----|-----|-------|----|
| 230370   | 400 | 8  | 300 | 0,130 | 1  |
| 230372   | 400 | 10 | 300 | 0,124 | 1  |
| 230374   | 400 | 12 | 300 | 0,143 | 1  |
| 230376   | 400 | 14 | 300 | 0,316 | 1  |
| 230378   | 400 | 16 | 300 | 0,232 | 1  |
| 230380   | 400 | 18 | 300 | 0,460 | 1  |
| 230382   | 400 | 20 | 300 | 0,608 | 1  |
| 230400   | 600 | 8  | 500 | 0,222 | 1  |
| 230402   | 600 | 10 | 500 | 0,222 | 1  |
| 230404   | 600 | 12 | 500 | 0,330 | 1  |
| 230406   | 600 | 14 | 500 | 0,463 | 1  |
| 230408   | 600 | 16 | 500 | 0,568 | 1  |
| 230410   | 600 | 18 | 500 | 0,715 | 1  |
| 230412   | 600 | 20 | 500 | 0,896 | 1  |
| 230414   | 600 | 22 | 500 | 1,164 | 1  |

### Masonry drill bit

High-Helix Masonry drill bit, sand blasted, countersink construction, professional quality



| Art. no. | TL  | Ø  | kg    | PU |
|----------|-----|----|-------|----|
| 231700   | 70  | 3  | 0,007 | 1  |
| 231702   | 85  | 4  | 0,011 | 1  |
| 231704   | 95  | 5  | 0,017 | 1  |
| 231706   | 100 | 6  | 0,018 | 1  |
| 231708   | 100 | 7  | 0,020 | 1  |
| 231710   | 120 | 8  | 0,027 | 1  |
| 231712   | 120 | 9  | 0,030 | 1  |
| 231714   | 120 | 10 | 0,035 | 1  |
| 231716   | 150 | 11 | 0,090 | 1  |
| 231718   | 150 | 12 | 0,100 | 1  |

**haupa**<sup>®</sup>

**...convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## SDS hammer drill bits

Top quality: SDS-Plus fast fitting system: 2 lengthwise slots and 2 round slots at the end of the shank. Universal tool fitting for different types of hammer drills according to the SDS-Plus system



| Art. no. | TL  | Ø   | CL  | kg    | PU |
|----------|-----|-----|-----|-------|----|
| 230430   | 110 | 5   | 50  | 0,037 | 1  |
| 230431   | 160 | 5   | 100 | 0,042 | 1  |
| 230432   | 110 | 5,5 | 50  | 0,037 | 1  |
| 230433   | 160 | 5,5 | 100 | 0,045 | 1  |
| 230434   | 110 | 6   | 50  | 0,039 | 1  |
| 230436   | 160 | 6   | 100 | 0,045 | 1  |
| 230438   | 110 | 6,5 | 50  | 0,038 | 1  |
| 230438/A | 160 | 7   | 100 | 0,050 | 1  |
| 230438/B | 160 | 6,5 | 100 | 0,047 | 1  |
| 230440   | 110 | 7   | 50  | 0,041 | 1  |
| 230442   | 110 | 8   | 50  | 0,046 | 1  |
| 230442/A | 160 | 8   | 100 | 0,056 | 1  |
| 230444   | 210 | 8   | 150 | 0,064 | 1  |
| 230444/A | 460 | 8   | 400 | 0,150 | 1  |
| 230448   | 160 | 10  | 100 | 0,065 | 1  |
| 230450   | 210 | 10  | 150 | 0,087 | 1  |
| 230450/A | 260 | 10  | 150 | 0,118 | 1  |
| 230451   | 460 | 10  | 400 | 0,192 | 1  |
| 230453   | 210 | 12  | 150 | 0,107 | 1  |
| 230454   | 160 | 12  | 100 | 0,097 | 1  |
| 230456   | 260 | 12  | 200 | 0,159 | 1  |
| 230457   | 460 | 12  | 400 | 0,263 | 1  |
| 230458   | 160 | 13  | 85  | 0,111 | 1  |
| 230459   | 600 | 12  | 540 | 0,286 | 1  |
| 230460   | 160 | 14  | 100 | 0,087 | 1  |
| 230460/A | 260 | 14  | 200 | 0,171 | 1  |
| 230461   | 460 | 14  | 400 | 0,257 | 1  |
| 230464   | 210 | 16  | 150 | 0,197 | 1  |
| 230466   | 460 | 16  | 400 | 0,418 | 1  |
| 230467   | 600 | 14  | 540 | 0,339 | 1  |
| 230473   | 600 | 16  | 540 | 0,561 | 1  |
| 230474   | 210 | 20  | 150 | 0,246 | 1  |
| 230475   | 460 | 18  | 400 | 0,475 | 1  |
| 230478/1 | 600 | 10  | 540 | 0,270 | 1  |
| 230395   | 460 | 20  | 400 | 0,585 | 1  |
| 230396   | 600 | 20  | 540 | 0,737 | 1  |
| 230397   | 460 | 22  | 400 | 0,669 | 1  |
| 230398   | 460 | 25  | 400 | 0,998 | 1  |

## SDS-Nut-hammer drill sets

Contents: 5, 6, 8 x 110 / 6, 8, 10, 12 x 160



| Art. no. | set             | kg    | PU |
|----------|-----------------|-------|----|
| 230479   | <b>7-pieces</b> | 0,679 | 1  |

## SDS hammer drill bits

Workshop quality: SDS-Plus fast fitting system: 2 lengthwise slots and 2 round slots at the end of the shank. Universal tool fitting for different types of hammer drills according to the SDS-Plus system



| Art. no. | TL  | Ø   | CL  | kg    | PU |
|----------|-----|-----|-----|-------|----|
| 230900   | 110 | 5   | 50  | 0,036 | 1  |
| 230902   | 160 | 5   | 100 | 0,042 | 1  |
| 230904   | 110 | 5,5 | 50  | 0,036 | 1  |
| 230906/1 | 160 | 5,5 | 100 | 0,043 | 1  |
| 230908   | 110 | 6   | 50  | 0,040 | 1  |
| 230910   | 160 | 6   | 100 | 0,045 | 1  |
| 230912   | 110 | 6,5 | 50  | 0,041 | 1  |
| 230914   | 160 | 6,5 | 100 | 0,045 | 1  |
| 230916   | 110 | 7   | 50  | 0,040 | 1  |
| 230918   | 160 | 7   | 100 | 0,045 | 1  |
| 230920   | 110 | 8   | 50  | 0,045 | 1  |
| 230922   | 160 | 8   | 100 | 0,055 | 1  |
| 230924   | 210 | 8   | 150 | 0,067 | 1  |
| 230926   | 160 | 10  | 100 | 0,068 | 1  |
| 230928   | 210 | 10  | 150 | 0,095 | 1  |
| 230930/1 | 260 | 10  | 150 | 0,107 | 1  |
| 230932   | 450 | 10  | 400 | 0,155 | 1  |
| 230934   | 600 | 10  | 540 | 0,365 | 1  |
| 230936   | 260 | 11  | 210 | 0,070 | 1  |
| 230938   | 160 | 12  | 100 | 0,077 | 1  |
| 230940   | 210 | 12  | 150 | 0,106 | 1  |
| 230942   | 310 | 12  | 260 | 0,120 | 1  |
| 230944   | 460 | 12  | 400 | 0,250 | 1  |
| 230946   | 600 | 12  | 540 | 0,315 | 1  |
| 230948   | 160 | 13  | 100 | 0,085 | 1  |
| 230950   | 160 | 14  | 100 | 0,200 | 1  |
| 230952   | 260 | 14  | 210 | 0,250 | 1  |
| 230954/1 | 460 | 14  | 400 | 0,300 | 1  |
| 230956   | 600 | 14  | 540 | 0,365 | 1  |
| 230958   | 160 | 15  | 100 | 0,120 | 1  |
| 230960   | 210 | 16  | 150 | 0,195 | 1  |
| 230962/1 | 460 | 16  | 400 | 0,346 | 1  |
| 230964   | 600 | 16  | 540 | 0,418 | 1  |
| 230966   | 200 | 18  | 140 | 0,180 | 1  |
| 230968   | 460 | 18  | 400 | 0,395 | 1  |
| 230970   | 210 | 20  | 150 | 0,221 | 1  |
| 230972   | 310 | 20  | 250 | 0,383 | 1  |
| 230974   | 460 | 20  | 400 | 0,503 | 1  |
| 230976   | 460 | 22  | 400 | 0,583 | 1  |
| 230978   | 460 | 25  | 400 | 0,753 | 1  |

## SDS-hammer drill sets

Contents: 5, 6 x 110, 6, 8, 10 x 160



| Art. no. | set             | kg    | PU |
|----------|-----------------|-------|----|
| 230979   | <b>5-pieces</b> | 0,261 | 1  |

# Step drills

## Combination step drills/HSS

for metric PG rough thread-through-hole and core-hole-drillings, 6 drilling diameters for core-hole with 5 mm step for sheet metal up to max. 6 mm.  
Through-hole: 8,5 - 12,5 - 16,5 - 20,5 - 25,5 - 32,5 - 40,5 mm  
core-hole: 10,5 (M12) - 14,5 (M16) - 18,5 (M20) - 23,5 (M25) - 30,5 (M32) - 38,5 (M40)



| Art. no. | shankt/Ø | min./Ø | max./Ø | kg    | PU |
|----------|----------|--------|--------|-------|----|
| 231319   | 12       | 8,5    | 40,5   | 0,269 | 1  |

## Step drills /HSS

Special type for electric assembly, for sheet metal up to max. 4 mm gauge, for metric thread through-hole drilling, 8,5 - 12,5 - 16,5 - 20,5 - 25,5 - 32,5 - 40,5 mm



| Art. no. | shankt/Ø | min./Ø | max./Ø | kg    | PU |
|----------|----------|--------|--------|-------|----|
| 231324   | 12       | 8,5    | 40,5   | 0,199 | 1  |

## Step drills /HSS

thickness up to max. 6 mm, for metric core-hole-drilling, 8,5 - 10,5 - 14,5 - 18,5 - 23,5 - 30,5 mm



| Art. no. | shankt/Ø | min./Ø | max./Ø | kg    | PU |
|----------|----------|--------|--------|-------|----|
| 231326   | 12       | 8,5    | 30,5   | 0,208 | 1  |



## Step drills /HSS

special type for electric assembly, for sheet steel up to 4 mm thickness, for amoured conduit thread sizes



| Art. no. | shankt/Ø | min./Ø | max./Ø | kg    | PU |
|----------|----------|--------|--------|-------|----|
| 231320   | 12       | 7      | 40     | 0,237 | 1  |
| 231322   | 10       | 7      | 21     | 0,151 | 1  |

## Step drills /HSS

for mechanical engineering and tinsmith working, with 2 cutters, metric



| Art. no. | shankt/Ø | min./Ø | max./Ø | kg    | PU |
|----------|----------|--------|--------|-------|----|
| 231336   | 6        | 4      | 12     | 0,027 | 1  |
| 231338   | 9        | 12     | 20     | 0,079 | 1  |
| 231340   | 12       | 20     | 30     | 0,203 | 1  |
| 231342   | 12       | 30     | 40     | 0,371 | 1  |
| 231350   | 6        | 4      | 12     | 0,027 | 1  |
| 231352   | 8        | 4      | 20     | 0,059 | 1  |
| 231354   | 10       | 6      | 30     | 0,162 | 1  |

## Step drills assortment/HSS

3 pieces, for mechanical engineering and tinsmith working, with 2 cutters.

### Contents:

Ø 4 - 12 mm, Ø 12 - 20 mm, Ø 20 - 30 mm



| Art. no. | Ø      | set      | kg    | PU |
|----------|--------|----------|-------|----|
| 231327   | 4 - 30 | 3-pieces | 0,597 | 1  |

## Rotary guide value for step drills/cone drills

| Material              | unleg. Baustahl<br>< 700 N/mm <sup>2</sup><br>Mild steel<br>< 700 N/mm <sup>2</sup> | unleg. Baustahl<br>> 700 N/mm <sup>2</sup><br>Mild steel<br>> 700 N/mm <sup>2</sup> | leg. Stahl<br>< 1000 N/mm <sup>2</sup><br>Alloy steel<br>< 1000 N/mm <sup>2</sup> | Gußeisen<br>< 250 N/mm <sup>2</sup><br>Cast iron<br>< 250 N/mm <sup>2</sup> | Gußeisen<br>> 250 N/mm <sup>2</sup><br>Cast iron<br>> 250 N/mm <sup>2</sup> | Edelstahl<br>rostfrei<br>Stainless<br>steel | CuZn Leg.<br>spröde<br>CuZn alloy<br>brittle | CuZn Leg.<br>zäh<br>CuZn alloy<br>tough | AL Leg.<br>< 11% Si<br>Alloy steel<br>< 11% Si | Thermo-<br>plaste<br>Thermo<br>plastic | Duro-<br>plaste<br>Duro<br>plastic | Holz<br>Wood   |
|-----------------------|---|---|---|---|---|---|--|---|--|--|------------------------------------|----------------|
| <b>Materialstärke</b> | 6,0 mm  | 6,0 mm  | 6,0 mm  | 6,0 mm  | 6,0 mm  | 3,0 mm                                      | 6,0 mm                                       | 6,0 mm                                  | 6,0 mm   | 6,0 mm                                 | 6,0 mm                             | 25,0 mm        |
| <b>Kühlung</b>        | Bohrpaste   | Bohrpaste   | Bohrpaste   | Luft  | Luft  | Bohrpaste                                   | Luft   | Luft                                    | Bohrpaste                                      | H <sub>2</sub> O                       | Luft                               | Luft           |
| <b>Lubricant</b>      | Drilling paste  | Drilling paste  | Drilling paste  | Air   | Air   | Drilling paste                              | Air  | Air                                     | Drilling paste                                 | H <sub>2</sub> O                       | Air                                | Air            |
| <b>Vc = m / min</b>   | 25  | 20 - 25   | 20  | 15  | 10  | 5   | 60   | 35                                      | 30   | 20                                     | 15                                 | > 40           |
| <b>Ø mm</b>           | U/min<br>r.p.m  | U/min<br>r.p.m  | U/min<br>r.p.m  | U/min<br>r.p.m  | U/min<br>r.p.m  | U/min<br>r.p.m                              | U/min<br>r.p.m                               | U/min<br>r.p.m                          | U/min<br>r.p.m                                 | U/min<br>r.p.m                         | U/min<br>r.p.m                     | U/min<br>r.p.m |
| <b>4,0 - 12,0</b>     | 1900 - 600  | 1700 - 580  | 1550 - 520  | 1190 - 400  | 800 - 250   | 400 - 130                                   | 4700 - 1550                                  | 2750 - 920                              | 2350 - 790                                     | 1550 - 520                             | 1190 - 400                         | 3000 - 1000    |
| <b>4,0 - 20,0</b>     | 1900 - 400  | 1700 - 350  | 1550 - 300  | 1190 - 240  | 800 - 160   | 400 - 80                                    | 4700 - 950                                   | 2750 - 550                              | 2350 - 470                                     | 1550 - 300                             | 1190 - 240                         | 3000 - 650     |
| <b>12,0 - 20,0</b>    | 600 - 400   | 600 - 350   | 520 - 300   | 400 - 240   | 250 - 160   | 130 - 80                                    | 1550 - 950                                   | 920 - 550                               | 790 - 470                                      | 520 - 300                              | 400 - 240                          | 1000 - 650     |
| <b>4,0 - 24,0</b>     | 1900 - 300  | 1700 - 280  | 1550 - 250  | 1190 - 200  | 800 - 130   | 400 - 65                                    | 4700 - 790                                   | 2750 - 460                              | 2350 - 400                                     | 1550 - 250                             | 1190 - 200                         | 3000 - 550     |
| <b>6,0 - 30,0</b>     | 1300 - 250  | 1200 - 230  | 1000 - 200  | 780 - 150   | 530 - 100   | 250 - 50                                    | 3150 - 630                                   | 1850 - 370                              | 1590 - 310                                     | 1000 - 200                             | 780 - 150                          | 2100 - 420     |
| <b>20,0 - 30,0</b>    | 400 - 250   | 350 - 230   | 300 - 200   | 230 - 150   | 160 - 100   | 80 - 50                                     | 950 - 630                                    | 550 - 370                               | 470 - 310                                      | 300 - 200                              | 230 - 150                          | 650 - 420      |
| <b>6,0 - 36,0</b>     | 1300 - 220  | 1200 - 200  | 1000 - 170  | 780 - 130   | 530 - 90  | 250 - 45                                    | 3150 - 530                                   | 1850 - 300                              | 1590 - 260                                     | 1000 - 170                             | 780 - 130                          | 2100 - 350     |
| <b>30,0 - 40,0</b>    | 250 - 200   | 230 - 180   | 200 - 150   | 150 - 120   | 100 - 80  | 50 - 40                                     | 630 - 470                                    | 370 - 280                               | 310 - 240                                      | 200 - 150                              | 150 - 120                          | 420 - 310      |
| <b>40,0 - 50,0</b>    | 200 - 160   | 180 - 140   | 150 - 125   | 120 - 90  | 80 - 65   | 40 - 30                                     | 470 - 380                                    | 280 - 220                               | 240 - 190                                      | 150 - 125                              | 120 - 90                           | 310 - 250      |
| <b>50,0 - 60,0</b>    | 160 - 130   | 140 - 110   | 125 - 100   | 90 - 80   | 65 - 50   | 30 - 25                                     | 380 - 310                                    | 220 - 185                               | 190 - 150                                      | 125 - 100                              | 90 - 80                            | 250 - 210      |

**haupa®**

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Cone drills

### Cone drills/Aerial drills/HSS

for edgefree drilling of thin material



| Art. no. | shankt/Ø | min./Ø | max./Ø | kg    | PU |
|----------|----------|--------|--------|-------|----|
| 231300   | 6        | 3      | 14     | 0,027 | 1  |
| 231301   | 8        | 6      | 20     | 0,055 | 1  |
| 231330   | 8        | 6      | 22,5   | 0,085 | 1  |
| 231302   | 10       | 16     | 30     | 0,139 | 1  |
| 231304   | 12       | 26     | 40     | 0,265 | 1  |
| 231305   | 10       | 6      | 30     | 0,166 | 1  |
| 231306   | 12       | 36     | 50     | 0,350 | 1  |
| 231307   | 13       | 46     | 60     | 0,551 | 1  |

### Set of cone drills/HSS

3 pieces, in metal box.

1 piece each No. 1, 2, 3 (Ø 3 - 30 mm), suitable for NE material, soft steel sheet, similar to ST 14 - 37, Nirosta steel sheet A 2, for duro or thermo plastic



| Art. no. | Ø      | set             | kg    | PU |
|----------|--------|-----------------|-------|----|
| 231312   | 3 - 30 | <b>3-pieces</b> | 0,510 | 1  |

## Screw punches

### Screw punches

matching for cable connection acc. the new Euro-Norm EN 50262, with 3 cutting edges for iron sheet up to 2 mm, steel sheet up to 1,5 mm, stainless-steel sheet up to 1,5 mm thickness



| Art. no. |               |        | screws | kg    | PU |
|----------|---------------|--------|--------|-------|----|
| 180513   | <b>metric</b> | ISO 16 | 180530 | 0,101 | 1  |
| 180515   | <b>metric</b> | ISO 20 | 180530 | 0,115 | 1  |
| 180517   | <b>metric</b> | ISO 25 | 180530 | 0,154 | 1  |
| 180519   | <b>metric</b> | ISO 32 | 180532 | 0,320 | 1  |
| 180521   | <b>metric</b> | ISO 40 | 180532 | 0,950 | 1  |
| 180523   | <b>metric</b> | ISO 50 | 180534 | 0,636 | 1  |
| 180525   | <b>metric</b> | ISO 63 | 180534 | 0,974 | 1  |
| 180500   | <b>PG</b>     | PG9    | 180530 | 0,097 | 1  |
| 180502   | <b>PG</b>     | PG11   | 180530 | 0,106 | 1  |
| 180504   | <b>PG</b>     | PG13,5 | 180530 | 0,115 | 1  |
| 180506   | <b>PG</b>     | PG16   | 180530 | 0,100 | 1  |
| 180508   | <b>PG</b>     | PG21   | 180530 | 0,176 | 1  |
| 180510   | <b>PG</b>     | PG29   | 180532 | 0,400 | 1  |
| 180512   | <b>PG</b>     | 30,5   | 180534 | 0,202 | 1  |
| 180514   | <b>PG</b>     | PG36   | 180534 | 0,590 | 1  |
| 180516   | <b>PG</b>     | PG42   | 180534 | 1,250 | 1  |
| 180518   | <b>PG</b>     | PG48   | 180534 | 0,319 | 1  |
| 180520   | <b>PG</b>     | 1 1/8" | 180530 | 0,250 | 1  |

### Spare screws

Spare screws for screw punches



| Art. no. | size     | kg    | PU |
|----------|----------|-------|----|
| 180530   | 10 x 1,0 | 0,048 | 1  |
| 180532   | 12 x 1,5 | 0,070 | 1  |
| 180534   | 16 x 1,5 | 0,139 | 1  |



## Rotary guide value for step drills/cone drills

| Material                                       | unleg. Baustahl<br>< 700 N/mm <sup>2</sup><br>Mild steel<br>< 700 N/mm <sup>2</sup> | unleg. Baustahl<br>> 700 N/mm <sup>2</sup><br>Mild steel<br>> 700 N/mm <sup>2</sup> | leg. Stahl<br>< 1000 N/mm <sup>2</sup><br>Alloy steel<br>< 1000 N/mm <sup>2</sup> | Gußeisen<br>< 250 N/mm <sup>2</sup><br>Cast iron<br>< 250 N/mm <sup>2</sup> | Gußeisen<br>> 250 N/mm <sup>2</sup><br>Cast iron<br>> 250 N/mm <sup>2</sup> | Edelstahl<br>rostfrei<br>Stainless<br>steel | CuZn Leg.<br>spröde<br>CuZn alloy<br>brittle | CuZn Leg.<br>zäh<br>CuZn alloy<br>tough | AL Leg.<br>< 11% Si<br>Alloy steel<br>< 11% Si | Thermo-<br>plaste<br>Thermo<br>plastic | Duro-<br>plaste<br>Duro<br>plastic | Holz<br>Wood   |
|--|---|---|---|---|---|---|--|---|--|--|------------------------------------|----------------|
| <b>Materialstärke</b><br><b>Material gauge</b> | 6,0 mm  | 6,0 mm  | 6,0 mm  | 6,0 mm  | 6,0 mm  | 3,0 mm                                      | 6,0 mm                                       | 6,0 mm                                  | 6,0 mm   | 6,0 mm                                 | 6,0 mm                             | 25,0 mm        |
| <b>Kühlung</b><br><b>Lubricant</b>             | Bohrpaste<br>Drilling paste   | Bohrpaste<br>Drilling paste   | Bohrpaste<br>Drilling paste   | Luft<br>Air   | Luft<br>Air   | Bohrpaste<br>Drilling paste                 | Luft<br>Air                                  | Luft<br>Air                             | Bohrpaste<br>Drilling paste                    | H <sup>0</sup><br>H <sup>0</sup>       | Luft<br>Air                        | Luft<br>Air    |
| <b>Vc = m / min</b>                            | 25  | 20 - 25   | 20  | 15  | 10  | 5   | 60   | 35                                      | 30   | 20                                     | 15                                 | > 40           |
| <b>Ø mm</b>                                    | U/min<br>r.p.m  | U/min<br>r.p.m  | U/min<br>r.p.m  | U/min<br>r.p.m  | U/min<br>r.p.m  | U/min<br>r.p.m                              | U/min<br>r.p.m                               | U/min<br>r.p.m                          | U/min<br>r.p.m                                 | U/min<br>r.p.m                         | U/min<br>r.p.m                     | U/min<br>r.p.m |
| <b>4,0 - 12,0</b>                              | 1900 - 600  | 1700 - 580  | 1550 - 520  | 1190 - 400  | 800 - 250   | 400 - 130                                   | 4700 - 1550                                  | 2750 - 920                              | 2350 - 790                                     | 1550 - 520                             | 1190 - 400                         | 3000 - 1000    |
| <b>4,0 - 20,0</b>                              | 1900 - 400  | 1700 - 350  | 1550 - 300  | 1190 - 240  | 800 - 160   | 400 - 80                                    | 4700 - 950                                   | 2750 - 550                              | 2350 - 470                                     | 1550 - 300                             | 1190 - 240                         | 3000 - 650     |
| <b>12,0 - 20,0</b>                             | 600 - 400   | 600 - 350   | 520 - 300   | 400 - 240   | 250 - 160   | 130 - 80                                    | 1550 - 950                                   | 920 - 550                               | 790 - 470                                      | 520 - 300                              | 400 - 240                          | 1000 - 650     |
| <b>4,0 - 24,0</b>                              | 1900 - 300  | 1700 - 280  | 1550 - 250  | 1190 - 200  | 800 - 130   | 400 - 65                                    | 4700 - 790                                   | 2750 - 460                              | 2350 - 400                                     | 1550 - 250                             | 1190 - 200                         | 3000 - 550     |
| <b>6,0 - 30,0</b>                              | 1300 - 250  | 1200 - 230  | 1000 - 200  | 780 - 150   | 530 - 100   | 250 - 50                                    | 3150 - 630                                   | 1850 - 370                              | 1590 - 310                                     | 1000 - 200                             | 780 - 150                          | 2100 - 420     |
| <b>20,0 - 30,0</b>                             | 400 - 250   | 350 - 230   | 300 - 200   | 230 - 150   | 160 - 100   | 80 - 50                                     | 950 - 630                                    | 550 - 370                               | 470 - 310                                      | 300 - 200                              | 230 - 150                          | 650 - 420      |
| <b>6,0 - 36,0</b>                              | 1300 - 220  | 1200 - 200  | 1000 - 170  | 780 - 130   | 530 - 90  | 250 - 45                                    | 3150 - 530                                   | 1850 - 300                              | 1590 - 260                                     | 1000 - 170                             | 780 - 130                          | 2100 - 350     |
| <b>30,0 - 40,0</b>                             | 250 - 200   | 230 - 180   | 200 - 150   | 150 - 120   | 100 - 80  | 50 - 40                                     | 630 - 470                                    | 370 - 280                               | 310 - 240                                      | 200 - 150                              | 150 - 120                          | 420 - 310      |
| <b>40,0 - 50,0</b>                             | 200 - 160   | 180 - 140   | 150 - 125   | 120 - 90  | 80 - 65   | 40 - 30                                     | 470 - 380                                    | 280 - 220                               | 240 - 190                                      | 150 - 125                              | 120 - 90                           | 310 - 250      |
| <b>50,0 - 60,0</b>                             | 160 - 130   | 140 - 110   | 125 - 100   | 90 - 80   | 65 - 50   | 30 - 25                                     | 380 - 310                                    | 220 - 185                               | 190 - 150                                      | 125 - 100                              | 90 - 80                            | 250 - 210      |



# Diamond hollow core cutters

## Diamond hollow core cutters

Carrier turned from solid material, suitable for soft materials and brickwork, concrete and artificial stone, takes M 16, without receiving shaft and centre drill, laser-welded, use only without impact



| Art. no. | ∅  | shank | kg    | PU |
|----------|----|-------|-------|----|
| 230676   | 68 | -     | 0,453 | 1  |
| 230677   | 82 | -     | 0,590 | 1  |

## Diamond hollow core cutters

shank M 16, with tapered cylindrical drill bit, laser-welded, use only without impact



| Art. no. | ∅  | shank    | kg    | PU |
|----------|----|----------|-------|----|
| 230676/K | 68 | SDS-plus | 0,672 | 1  |
| 230677/K | 82 | SDS-plus | 0,764 | 1  |

## Diamond hollow core cutter special

Diamond drill bit for socket outlets with laser welded segments, suitable for soft materials and brickwork, concrete and artificial stone, optimal rotating speed 800 - 1.000 U/min, maximum rotating speed 1.600 - 1.800 U/min, use only without impact



| Art. no. | ∅  | shank    | kg    | PU |
|----------|----|----------|-------|----|
| 230885/K | 68 | SDS-plus | 0,450 | 1  |
| 230886/K | 82 | SDS-plus | 0,787 | 1  |

## Drill for Diamond hollow core cutters

tapered shank



| Art. no. | TL  | ∅ | kg    | PU |
|----------|-----|---|-------|----|
| 230679   | 120 | 9 | 0,044 | 1  |

## Shank for hollow core cutters, SDS-Plus

SDS-Plus-shank, M 16, conic



| Art. no. | TL  | shank    | kg    | PU |
|----------|-----|----------|-------|----|
| 230681/K | 100 | SDS-plus | 0,150 | 1  |

## Hollow core cutters

for tungsten carbide tipped, with centre bit and 100 mm hexagon shank, 12 mm



| Art. no. | ∅  | shank    | kg    | PU |
|----------|----|----------|-------|----|
| 230661   | 68 | hexagon  | 0,832 | 1  |
| 230665   | 82 | hexagon  | 1,158 | 1  |
| 230667   | 68 | SDS-plus | 0,827 | 1  |
| 230675   | 82 | SDS-plus | 1,079 | 1  |

## Centre bits with tungsten carbide tipped cutting edge

for tungsten carbide tipped hollow core cutters, cylindrical



| Art. no. | TL  | ∅ | kg    | PU |
|----------|-----|---|-------|----|
| 230680   | 120 | 9 | 0,038 | 1  |

## Shank for hollow core cutters, SW 12

hexagon shank, SW 12, for centre bits, cylindrical cutter



| Art. no. | shank   | kg    | PU |
|----------|---------|-------|----|
| 230678   | hexagon | 0,139 | 1  |

## Shank for hollow core cutters

SDS-Plus-shank, M16, connection thread, cylindrical cutter



| Art. no. | TL  | shank    | kg    | PU |
|----------|-----|----------|-------|----|
| 230681   | 100 | SDS-plus | 0,121 | 1  |

**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Cutting discs

## Diamond cutting blades

laser-welded, high diamond concentration, long life, for the professional works  
- Industrial quality -



| Art. no. | ∅   |         | kg    | PU |
|----------|-----|---------|-------|----|
| 230689   | 115 |         | 0,100 | 1  |
| 230691   | 125 |         | 0,149 | 1  |
| 230720   | 135 | (FUBAG) | 0,193 | 1  |
| 230721   | 140 | (FLEX)  | 0,219 | 1  |
| 230704   | 150 |         | 0,245 | 1  |
| 230705   | 180 |         | 0,317 | 1  |
| 230706   | 230 |         | 0,700 | 1  |
| 230711   | 300 |         | 1,256 | 1  |

## Diamond cutting blades

sintered - Profi Quality -



| Art. no. | ∅   |  | kg    | PU |
|----------|-----|--|-------|----|
| 230701   | 115 |  | 0,132 | 1  |
| 230702   | 125 |  | 0,169 | 1  |
| 230708   | 180 |  | 0,339 | 1  |
| 230709   | 230 |  | 0,681 | 1  |

## Diamond cutting blades, FL tiles

- Profi Quality -, continuous rim. universal application, granite, tiles, ceramics, stone- and marble-flatters



| Art. no. | ∅   |  | kg    | PU |
|----------|-----|--|-------|----|
| 230714   | 115 |  | 0,121 | 1  |

## Diamond cutting blades, TBM Turbo

- Profi quality -



| Art. no. | ∅   |  | kg    | PU |
|----------|-----|--|-------|----|
| 230722   | 115 |  | 0,120 | 1  |
| 230723   | 125 |  | 0,134 | 1  |
| 230725   | 230 |  | 0,706 | 1  |

# INFO

## Diamond cutting discs

## Industrial quality

A new generation for metalworking.

These HAUPA discs can cut **everything but stone!** From iron, stainless steel, PVC etc. through to wood, simply everything. This is a special feature and innovative since these cutting discs are usually only used for cutting stone.

The advantage of these diamond cutting discs compared to an ordinary disc is, above all, the durability, which is 20-40 times the norm! And there is no limit on storage. Ordinary cutting discs will become porous after 2-3 years. HAUPA cutting discs can be stored for a lifetime and beyond. The main arguments in favour of the HAUPA cutting discs are the fact that the diameter is never reduced, there is a much lower incidence of sparks and thus considerably less odour is produced.

### All the benefits at a glance:

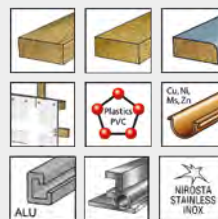
- Versatile scope of application (metal profiles, iron, die cast, steel, steel pipes, wood, Inox, GRP, CFP, polycarbonate, stoneware, fine stoneware)
- Constantly maintained diameter, thus always full cutting depth
- High cutting speed
- High level of durability (20 - 40 times more than normal, depending on materials cut)
- Reduced incidence of sparks
- Reduced odour development
- Unlimited storage times

## Diamond cutting disk „Spezial“

Short-toothed vacuum coating of a new generation for metal work. High diamond concentration enables the processing of materials impossible with traditional diamond tools.

- Versatile areas of application (metal profiles, iron, cast, steel, steel pipes, wood, Inox, GRP, CFRP, polycarbonate, masonry, fine masonry)
- High cutting speed
- High stand time
- Reduced spark formation
- Reduced odour development
- Can be stored with no time restrictions
- Constant diameter, thus always full cutting depth

Video 230727



| Art. no. | ∅   |  | kg    | PU |
|----------|-----|--|-------|----|
| 230727   | 115 |  | 0,120 | 1  |
| 230731   | 125 |  | 0,134 | 1  |



# INFO

## Hole saws

## Industrial quality

The performance of a saw blade depends on the base material quality, the kind of toothing and the tooth geometry. These factors guarantee in conjunction with the correct use of the machine and blade selection the optimum result in cutting all materials.

- Above average concentricity
- Even cutting performance
- Extremely quiet operation even at high speeds
- True diameter
- High resistance even with high loads and torques
- Fast progress thanks to aggressive and permanently sharp cutting performance
- Highest lifetime even with very hard materials such as cast and stainless steel

### T.C.T. Hole Saw

High concentricity and smooth cutting through strong construction. Precise and clean cut. Large tungsten carbide inserts for reshaping and long lifetime. Hole saw comes complete with shank, drill bit, ejector spring and allen key. Long lifetime. **Especially for:** Flat materials of steel, cast steel, stainless steel (up to 4 mm), Chrome-nickel Steel (up to 2 mm), non-ferrous metals, glassfibre and carbon-fibre reinforced products (CRP, GRP), epoxy, reinforced textures and sandwich-materials (up to 6 mm).



| Art. no. | Ø    | ST | Bohrer-Ø | kg    | PU |
|----------|------|----|----------|-------|----|
| 392100   | 16   | 12 | 6,5      | 0,095 | 1  |
| 392102   | 20   | 31 | 6,5      | 0,115 | 1  |
| 392104   | 22   | 31 | 6,5      | 0,135 | 1  |
| 392106   | 22,5 | 31 | 6,5      | 0,155 | 1  |
| 392108   | 25   | 31 | 6,5      | 0,175 | 1  |
| 392110   | 30   | 31 | 6,5      | 0,195 | 1  |
| 392112   | 32   | 31 | 6,5      | 0,215 | 1  |
| 392114   | 35   | 31 | 6,5      | 0,235 | 1  |
| 392116   | 40   | 31 | 6,5      | 0,255 | 1  |
| 392118   | 50   | 31 | 6,5      | 0,275 | 1  |
| 392120   | 60   | 31 | 6,5      | 0,295 | 1  |

## Hollow saws

### T.C.T. center drill for hole saw arbors



| Art. no. | TL  | Ø   | kg    | PU |
|----------|-----|-----|-------|----|
| 392122   | 100 | 6,5 | 0,020 | 1  |

### Spring for hole saw arbors



| Art. no. | spring | kg    | PU |
|----------|--------|-------|----|
| 392124   |        | 0,005 | 1  |

### T.C.T. Hole Saw Fastcut

Very fast and aggressive cut in wood due to large exhaust slots. **Especially for:** wood materials up to 60 mm.



| Art. no. | Ø/Inch  | Ø   | ST | Bohrer-Ø | kg    | PU |
|----------|---------|-----|----|----------|-------|----|
| 231942   | 3/4     | 19  | 50 | 6,35     | 0,047 | 1  |
| 231944   | 7/8     | 22  | 50 | 6,35     | 0,062 | 1  |
| 231946   | 1       | 25  | 50 | 6,35     | 0,077 | 1  |
| 231948   | 1 1/6   | 27  | 50 | 6,35     | 0,092 | 1  |
| 231950   | 1 3/16  | 30  | 50 | 6,35     | 0,115 | 1  |
| 231952   | 1 1/4   | 32  | 50 | 6,35     | 0,122 | 1  |
| 231954   | 1 3/8   | 35  | 50 | 6,35     | 0,133 | 1  |
| 231956   | 1 9/16  | 40  | 50 | 6,35     | 0,123 | 1  |
| 231958   | 1 3/4   | 44  | 50 | 6,35     | 0,144 | 1  |
| 231960   | 2       | 51  | 50 | 6,35     | 0,179 | 1  |
| 231962   | 2 1/8   | 54  | 50 | 6,35     | 0,198 | 1  |
| 231964   | 2 3/8   | 60  | 50 | 6,35     | 0,206 | 1  |
| 231966   | 2 1/2   | 64  | 50 | 6,35     | 0,267 | 1  |
| 231968   | 2 9/16  | 65  | 50 | 6,35     | 0,279 | 1  |
| 231970   | 2 11/16 | 68  | 50 | 6,35     | 0,275 | 1  |
| 231972   | 2 3/4   | 70  | 50 | 6,35     | 0,316 | 1  |
| 231973   | 2 7/8   | 73  | 50 | 6,35     | 0,296 | 1  |
| 231974   | 3       | 76  | 50 | 6,35     | 0,298 | 1  |
| 231976   | 3 1/8   | 79  | 50 | 6,35     | 0,379 | 1  |
| 231978   | 3 1/4   | 83  | 50 | 6,35     | 0,428 | 1  |
| 231980   | 4       | 102 | 50 | 6,35     | 0,591 | 1  |
| 231982   | 4 1/2   | 114 | 50 | 6,35     | 0,773 | 1  |

**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Hollow saws

## Bi-Metal Hole Saws 10 tpi

8% Cobalt

Finely toothed, 10 tpi, made of high quality, cobalt-alloyed bi-metal for clean and fast cuts and a long lifetime. Massive back plate ensures a smooth cut and precise holes for threads, cable and pipe lead-throughs. **Especially for:** steel and stainless steel, sheet metal up to 1 mm.



| Art. no. | Ø  | ST | Bohrer-Ø | kg    | PU |
|----------|----|----|----------|-------|----|
| 392050   | 16 | 31 | 6,5      | 0,036 | 1  |
| 392052   | 19 | 31 | 6,5      | 0,039 | 1  |
| 392054   | 20 | 31 | 6,5      | 0,046 | 1  |
| 392056   | 21 | 31 | 6,5      | 0,052 | 1  |
| 392058   | 22 | 31 | 6,5      | 0,055 | 1  |
| 392060   | 24 | 31 | 6,5      | 0,059 | 1  |
| 392062   | 25 | 31 | 6,5      | 0,064 | 1  |
| 392064   | 29 | 31 | 6,5      | 0,070 | 1  |
| 392066   | 30 | 31 | 6,5      | 0,077 | 1  |
| 392068   | 32 | 31 | 6,5      | 0,081 | 1  |
| 392070   | 38 | 31 | 6,5      | 0,092 | 1  |
| 392072   | 40 | 31 | 6,5      | 0,098 | 1  |

## Hole saw with edge countersink and board ejector

For setting wall-flush sockets, Ø 68 mm

- Cutting depth 40 mm
- High concentricity
- Specially for plasterboard, softwood, plywood, Fermacell etc.
- 11 mm hexagonal holder
- In plastic box

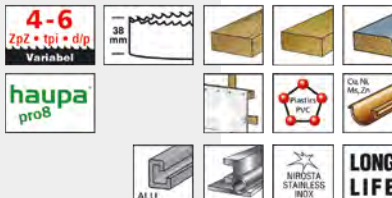


| Art. no. | Ø/Inch  | Ø  | Bohrer-Ø | ST | kg    | PU |
|----------|---------|----|----------|----|-------|----|
| 231929   | 2 11/16 | 68 | 6,35     | 35 | 0,360 | 1  |

## Bi-Metal Hole Saws 4 - 6 tpi

8% Cobalt

Variable toothing of 4 - 6 tpi and high quality, cobaltalloyed bi-metal for clean and fast cuts and a long lifetime. Massive back plate ensures a smooth cut and precise holes for sockets, threads, cable and pipe lead-throughs. **Especially for:** Wood, gypsum board, plastics, non-ferrous metals, aluminium steel and stainless steel minimum 1 mm. Special cutting depth on request.



| Art. no.   | Ø/Inch  | Ø   | ST | Bohrer-Ø | kg    | PU |
|------------|---------|-----|----|----------|-------|----|
| 231803     | 9/16    | 14  | 35 | 6,35     | 0,036 | 1  |
| 231900     | 3/4     | 19  | 35 | 6,35     | 0,036 | 1  |
| 231901/21  |         | 21  | 30 | 6,5      | 0,050 | 1  |
| 231902     | 7/8     | 22  | 35 | 6,35     | 0,046 | 1  |
| 231904     | 1       | 25  | 35 | 6,35     | 0,071 | 1  |
| 231904/29  |         | 29  | 30 | 6,5      | 0,050 | 1  |
| 231906     | 1 1/6   | 27  | 35 | 6,35     | 0,075 | 1  |
| 231908     | 1 3/16  | 30  | 35 | 6,35     | 0,079 | 1  |
| 231910     | 1 1/4   | 32  | 35 | 6,35     | 0,085 | 1  |
| 231912     | 1 3/8   | 35  | 35 | 6,35     | 0,092 | 1  |
| 231912/38  |         | 38  | 30 | 6,5      | 0,050 | 1  |
| 231914     | 1 9/16  | 40  | 35 | 6,35     | 0,086 | 1  |
| 231914/46  |         | 46  | 30 | 6,5      | 0,050 | 1  |
| 231916     | 1 3/4   | 44  | 35 | 6,35     | 0,105 | 1  |
| 231918     | 2       | 51  | 35 | 6,35     | 0,133 | 1  |
| 231920     | 2 1/8   | 54  | 35 | 6,35     | 0,145 | 1  |
| 231922     | 2 3/8   | 60  | 35 | 6,35     | 0,168 | 1  |
| 231924     | 2 1/2   | 64  | 35 | 6,35     | 0,192 | 1  |
| 231926     | 2 9/16  | 65  | 35 | 6,35     | 0,198 | 1  |
| 231928     | 2 11/16 | 68  | 35 | 6,35     | 0,214 | 1  |
| 231930     | 2 3/4   | 70  | 35 | 6,35     | 0,223 | 1  |
| 231931     | 2 7/8   | 73  | 35 | 6,35     | 0,236 | 1  |
| 231932     | 3       | 76  | 35 | 6,35     | 0,253 | 1  |
| 231934     | 3 1/8   | 79  | 35 | 6,35     | 0,275 | 1  |
| 231936     | 3 1/4   | 83  | 35 | 6,35     | 0,304 | 1  |
| 231938     | 4       | 102 | 35 | 6,35     | 0,429 | 1  |
| 231939/111 |         | 111 | 30 | 6,5      | 0,050 | 1  |
| 231940     | 4 1/2   | 114 | 35 | 6,35     | 0,549 | 1  |
| 231940/127 |         | 127 | 30 | 6,5      | 0,050 | 1  |
| 231940/152 |         | 152 | 30 | 6,5      | 0,650 | 1  |
| 231940/210 |         | 210 | 30 | 6,5      | 0,850 | 1  |

## Adapter for hollow saws

### INFO

#### Professional Quick Release System for Hole Saws

- Change quickly in seconds between the different diameters and various types of hole saws.
- One arbor for all diameters between 14 - 210 mm.
- Absolute concentricity and diameter true to size.
- Compact "heavy duty" design for highest demands and very long life.
- No time-consuming seizing up of the hole saw onto the thread of the arbor.
- Runs two hole saws at the same time. A smaller diameter guides as a centering aid when enlarging already existing holes.
- Fits all standard hole saw brands.\*



\*With 1/2" (20 UNF) or 5/8" (18 UNF) thread.

#### Quick change holder for hole saws, "RE-LOAD"

RE-LOAD

for all diameters from 14-210 mm, 9.5 mm hexagonal shank



| Art. no. | size     | shankt/Ø | kg    | PU |
|----------|----------|----------|-------|----|
| 392010   | 14 - 210 | 9,5      | 0,100 | 1  |

#### Adapter assortment for holder, "RE-LOAD"

RE-LOAD



| Art. no. | set                             | kg    | PU |
|----------|---------------------------------|-------|----|
| 392012   | 5 x Ø 14-30 mm                  | 0,100 | 1  |
| 392014   | 5 x Ø 32-210 mm                 | 0,075 | 1  |
| 392016   | 2 x Ø 14-30 mm, 3 x Ø 32-210 mm | 0,065 | 1  |

#### Adapter assortment for hole enlarger "RE-LOAD"

RE-LOAD

1 x Ø 14 - 30 mm, 1 x Ø 32 - 210 mm



| Art. no. | size     | shankt/Ø | kg    | PU |
|----------|----------|----------|-------|----|
| 392018   | 14 - 210 | 9,5      | 0,050 | 1  |

#### Centre drill for holder, "RE-LOAD"

RE-LOAD



| Art. no. | TL  | Ø   | kg    | PU |
|----------|-----|-----|-------|----|
| 392020   | 100 | 6,5 | 0,030 | 1  |
| 392022   | 100 | 6,5 | 0,030 | 1  |

#### Hex shank with plug ejection

hexagon shank



| Art. no. | size     | shankt/Ø | kg    | PU |
|----------|----------|----------|-------|----|
| 392028   | 32 - 210 | 9,5      | 0,050 | 1  |

#### SDS-shank

hexagon shank, 11 mm (14 - 30 mm)



| Art. no. | size    | shankt/Ø | kg    | PU |
|----------|---------|----------|-------|----|
| 392024   | 14 - 30 | 11       | 0,050 | 1  |

#### SDS-shank

hexagon shank, 11 mm (32 - 210 mm)



| Art. no. | size     | shankt/Ø | kg    | PU |
|----------|----------|----------|-------|----|
| 392026   | 32 - 210 | 11       | 0,050 | 1  |

#### Adapter "QuickLock"

hexagon shank



| Art. no. | size   | shank   | kg    | PU |
|----------|--------|---------|-------|----|
| 231998   | 14-30  | hexagon | 0,067 | 1  |
| 231999   | 32-152 | hexagon | 0,107 | 1  |

#### Centre drills for 231998 / 231999



| Art. no. | TL  | type      | Ø | shank   | kg    | PU |
|----------|-----|-----------|---|---------|-------|----|
| 232007   | 120 | universal | 9 | hexagon | 0,020 | 1  |

**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Hollow saws

### Bi-metal hole saw set

RE-LOAD

Set in black plastic case, dimensions: 255 x 210 x 72 mm

#### Contents:

- Hole saws bi-metal 35 mm
- Hole saws bi-metal 68 mm
- Hole saws bi-metal 76 mm
- Quick change holder for hole saws "RE-LOAD"
- 3 adapters for holder "RE-LOAD" 32 - 210 mm



| Art. no. | Content         | kg    | PU |
|----------|-----------------|-------|----|
| 231984   | <b>3-pieces</b> | 1,300 | 1  |



Drilling tools



# Threading bits, taps

## HSS taps "Direct cutter"

with intermittent teeth, dimensions to DIN 371, or ISO metric thread to DIN 13



| Art. no. | shank | thread | kg    | PU |
|----------|-------|--------|-------|----|
| 230982   | 4,5   | 4      | 0,008 | 1  |
| 230984   | 6     | 5      | 0,014 | 1  |
| 230986   | 6     | 6      | 0,017 | 1  |
| 230988   | 6     | 8      | 0,012 | 1  |

## Taps for armoured steel conduits, metric thread



| Art. no. | thread | kg    | PU |
|----------|--------|-------|----|
| 140236   | 16     | 0,040 | 1  |
| 140238   | 20     | 0,060 | 1  |
| 140240   | 25     | 0,206 | 1  |
| 140242   | 32     | 0,359 | 1  |
| 140244   | 40     | 0,648 | 1  |
| 140246   | 50     | 0,230 | 1  |
| 140248   | 63     | 1,688 | 1  |

## Adjustable tap wrenches

short pattern



| Art. no. | thread  | tap wrench | kg    | PU |
|----------|---------|------------|-------|----|
| 140180   | M 7-25  | 21         | 0,850 | 1  |
| 140182   | M 32-63 | 48         | 1,900 | 1  |

## Nipple threading dies

with guide, replaceable dies and taps



| Art. no. | thread | kg    | PU |
|----------|--------|-------|----|
| 140190   | M 10   | 0,100 | 1  |
| 140192   | M 13   | 0,130 | 1  |

## Nipple threading dies

with guide, replaceable dies and tap



| Art. no. | thread     | kg    | PU |
|----------|------------|-------|----|
| 140210   | M 10, M 13 | 0,210 | 1  |

## Complete stocks, metric thread



| Art. no. | thread           | kg    | PU |
|----------|------------------|-------|----|
| 140214   | M 16, M 20, M 25 | 1,000 | 1  |
| 140216   | M 20, M 25       | 1,350 | 1  |
| 140218   | M 32, M 40       | 2,850 | 1  |
| 140220   | M 50, M 63       | 3,500 | 1  |

## Dies, metric thread



| Art. no. | thread | kg    | PU |
|----------|--------|-------|----|
| 140222   | M16    | 0,175 | 1  |
| 140224   | M20    | 0,138 | 1  |
| 140226   | M25    | 0,145 | 1  |
| 140228   | M32    | 0,477 | 1  |
| 140230   | M 40   | 0,130 | 1  |
| 140232   | M 50   | 0,980 | 1  |
| 140234   | M 63   | 0,791 | 1  |

## Guides, metric



| Art. no. | thread | kg    | PU |
|----------|--------|-------|----|
| 140250   | 16     | 0,037 | 1  |
| 140252   | 20     | 0,040 | 1  |
| 140254   | 25     | 0,035 | 1  |
| 140256   | 32     | 0,030 | 1  |
| 140258   | 40     | 0,060 | 1  |
| 140260   | 50     | 0,070 | 1  |
| 140262   | 63     | 0,134 | 1  |

## Screw extractor set



| Art. no. | size      | kg    | PU |
|----------|-----------|-------|----|
| 230682   | 1-5/M3-18 | 0,111 | 1  |
| 230683   | 1-6/M3-24 | 0,231 | 1  |



## Hand taps DIN 352, type N/HSS

set of 3, for ISO metric thread to DIN, 1, 2, 3-cutter, made of HSS, for pass-through threading, for good chipping steel up to approx. 900 N/mm<sup>2</sup>



| Art. no. | shankt/Ø | thread | kg    | PU |
|----------|----------|--------|-------|----|
| 230800   | 2,5      | 1      | 0,010 | 1  |
| 230802   | 2,5      | 1,4    | 0,010 | 1  |
| 230804   | 2,5      | 1,6    | 0,002 | 1  |
| 230806   | 2,5      | 1,8    | 0,002 | 1  |
| 230808   | 2,8      | 2      | 0,002 | 1  |
| 230810   | 2,8      | 2,2    | 0,002 | 1  |
| 230812   | 2,8      | 2,5    | 0,002 | 1  |
| 230814   | 3,5      | 3      | 0,003 | 1  |
| 230816   | 4        | 3,5    | 0,004 | 1  |
| 230818   | 4,5      | 4      | 0,004 | 1  |
| 230820   | 5,5      | 4,5    | 0,005 | 1  |
| 230822   | 6        | 5      | 0,034 | 1  |
| 230824   | 6        | 6      | 0,035 | 1  |
| 230826   | 6        | 7      | 0,039 | 1  |
| 230828   | 6        | 8      | 0,046 | 1  |
| 230830   | 7        | 9      | 0,065 | 1  |
| 230832   | 7        | 10     | 0,071 | 1  |
| 230834   | 8        | 11     | 0,025 | 1  |
| 230836   | 9        | 12     | 0,115 | 1  |
| 230838   | 11       | 14     | 0,052 | 1  |
| 230840   | 12       | 16     | 0,062 | 1  |
| 230842   | 14       | 18     | 0,102 | 1  |
| 230844   | 16       | 20     | 0,125 | 1  |
| 230846   | 18       | 22     | 0,182 | 1  |
| 230848   | 18       | 24     | 0,205 | 1  |
| 230850   | 20       | 27     | 0,260 | 1  |
| 230852   | 22       | 30     | 0,395 | 1  |
| 230854   | 25       | 33     | 0,480 | 1  |
| 230856   | 28       | 36     | 0,645 | 1  |
| 230858   | 32       | 39     | 0,820 | 1  |
| 230860   | 32       | 42     | 0,930 | 1  |
| 230862   | 36       | 45     | 1,140 | 1  |
| 230864   | 36       | 48     | 1,370 | 1  |
| 230866   | 40       | 52     | 1,650 | 1  |
| 230868   | 45       | 56     | 2,800 | 1  |
| 230870   | 45       | 60     | 2,900 | 1  |

## Ratchet wrenches

for right-hand and left-hand action



| Art. no. | thread  | Zoll       | TL  | shank     | kg    | PU |
|----------|---------|------------|-----|-----------|-------|----|
| 231070   | M3 - 10 | 1/8 - 3/8  | 85  | 2,4 - 5,5 | 0,173 | 1  |
| 231072   | M5 - 12 | 7/32 - 1/2 | 100 | 4,5 - 8,0 | 0,272 | 1  |
| 231074   | M3 - 10 | 1/8 - 3/8  | 250 | 2,4 - 5,5 | 0,250 | 1  |
| 231076   | M5 - 12 | 7/32 - 1/2 | 300 | 4,5 - 8,0 | 0,440 | 1  |

## HSS taps set

with taps to DIN 352, in metal box,

**Contents:** M3, M 4, M 5, M 6, M 8, M 10, M 12



| Art. no. | set              | kg    | PU |
|----------|------------------|-------|----|
| 231080   | <b>23-pieces</b> | 0,696 | 1  |

## Combi, threading bit set, made of HSSG SGE-Bit (DBGM)

for drilling, threading and countersinking, for stand drilling machines and hand drills, suitable for steel and NE metal up to 1 xd (M 6 = 6 mm thickness of material), up to 600 N/mm<sup>2</sup> tensile strength, rpm according to the cutting speeds of the tride, in metal box

**Contents:** M 3, 4, 5, 6, 8, 10



| Art. no. | set             | kg    | PU |
|----------|-----------------|-------|----|
| 231082   | <b>7-pieces</b> | 0,188 | 1  |

## Adjustable tap wrenches DIN 1814

for taps



| Art. no. | thread   | tap wrench | kg    | PU |
|----------|----------|------------|-------|----|
| 231050   | M1 - 8   | 0          | 0,050 | 1  |
| 231052   | M1 - 10  | 1          | 0,099 | 1  |
| 231054   | M1 - 12  | 1,5        | 0,097 | 1  |
| 231056   | M4 - 12  | 2          | 0,285 | 1  |
| 231058   | M5 - 21  | 3          | 0,700 | 1  |
| 231060   | M9 - 27  | 4          | 1,270 | 1  |
| 231062   | M12 - 33 | 5          | 1,630 | 1  |
| 231064   | M19 - 38 | 6          | 4,520 | 1  |

**haupa**<sup>®</sup>

**...convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Threading bits, taps

## HSS Tap set

### Contents:

hand tap (DIN 352) M 3, 4, 5, 6, 8, 10, 12  
Dies (DIN 223) M 3, 4, 5, 6, 8, 10, 12,  
Dies stock 20 x 5/20 x 7/25 x 9/30 x 11/38 x 14 mm  
tape holder size 1 + 2, in metal box



| Art. no. | set              | kg    | PU |
|----------|------------------|-------|----|
| 231280   | <b>23-pieces</b> | 3,700 | 1  |

## HSS Tap set

### Contents:

Hand tap (DIN 352) M 3, 4, 5, 6, 8, 10, 12, 14, 16, 18, 20  
Dies (DIN 223) M 3, 4, 5, 6, 8, 10, 12, 14, 16, 18, 20  
Dies holder 20 x 7/25 x 9/30 x 11/38 x 14/ 45 x 18 mm  
Tap holder size 1, 2 + 3, in metal box



| Art. no. | set              | kg    | PU |
|----------|------------------|-------|----|
| 231282   | <b>25-pieces</b> | 8,200 | 1  |

Screws  
Screws assortments



# Wood screws

## Universal countersunk screw



Chipboard screw, galvanised, counter-sunk head, Pozidriv



| Art. no. | TL | Ø   | drive | kg | PE    | PU      |
|----------|----|-----|-------|----|-------|---------|
| 790005   | 15 | 3,0 | PZ    | 2  | 0,002 | 100 200 |
| 790006   | 25 | 3,0 | PZ    | 2  | 0,002 | 100 200 |
| 790008   | 40 | 3,0 | PZ    | 2  | 0,002 | 100 200 |
| 790015   | 20 | 3,5 | PZ    | 2  | 0,001 | 100 200 |
| 790016   | 25 | 3,5 | PZ    | 2  | 0,001 | 100 200 |
| 790017   | 30 | 3,5 | PZ    | 2  | 0,002 | 100 200 |
| 790018   | 35 | 3,5 | PZ    | 2  | 0,002 | 100 200 |
| 790079   | 40 | 3,5 | PZ    | 2  | 0,002 | 100 200 |
| 790027   | 30 | 4,0 | PZ    | 2  | 0,002 | 100 200 |
| 790029   | 40 | 4,0 | PZ    | 2  | 0,002 | 100 200 |
| 790030   | 45 | 4,0 | PZ    | 2  | 0,003 | 100 200 |
| 790031   | 50 | 4,0 | PZ    | 2  | 0,003 | 100 200 |
| 790040   | 35 | 4,5 | PZ    | 2  | 0,003 | 100 200 |
| 790041   | 40 | 4,5 | PZ    | 2  | 0,003 | 100 200 |
| 790043   | 50 | 4,5 | PZ    | 2  | 0,004 | 100 200 |
| 790051   | 30 | 5,0 | PZ    | 2  | 0,003 | 100 100 |
| 790053   | 40 | 5,0 | PZ    | 2  | 0,004 | 100 100 |
| 790054   | 50 | 5,0 | PZ    | 2  | 0,005 | 100 100 |
| 790055   | 60 | 5,0 | PZ    | 2  | 0,005 | 100 100 |
| 790056   | 80 | 5,0 | PZ    | 2  | 0,007 | 100 100 |
| 790063   | 50 | 6,0 | PZ    | 3  | 0,007 | 100 100 |
| 790064   | 60 | 6,0 | PZ    | 3  | 0,008 | 100 50  |
| 790065   | 80 | 6,0 | PZ    | 3  | 0,011 | 100 50  |

## Universal pan head screw



Fibreboard screws, galvanised, pan head Pozidriv



| Art. no. | TL | Ø   | drive | kg | PE    | PU      |
|----------|----|-----|-------|----|-------|---------|
| 790090   | 25 | 3,5 | PZ    | 2  | 0,002 | 100 200 |
| 790091   | 30 | 3,5 | PZ    | 2  | 0,002 | 100 200 |
| 790093   | 40 | 3,5 | PZ    | 2  | 0,002 | 100 200 |
| 790100   | 30 | 4,0 | PZ    | 2  | 0,002 | 100 200 |
| 790101   | 35 | 4,0 | PZ    | 2  | 0,002 | 100 200 |
| 790102   | 40 | 4,0 | PZ    | 2  | 0,003 | 100 200 |
| 790103   | 45 | 4,0 | PZ    | 2  | 0,003 | 100 200 |
| 790104   | 50 | 4,0 | PZ    | 2  | 0,003 | 100 200 |
| 790111   | 40 | 4,5 | PZ    | 2  | 0,004 | 100 200 |
| 790112   | 45 | 4,5 | PZ    | 2  | 0,004 | 100 200 |
| 790113   | 50 | 4,5 | PZ    | 2  | 0,004 | 100 200 |
| 790118   | 30 | 5,0 | PZ    | 2  | 0,004 | 100 200 |
| 790120   | 40 | 5,0 | PZ    | 2  | 0,005 | 100 200 |
| 790121   | 50 | 5,0 | PZ    | 2  | 0,005 | 100 200 |

## Hexagonal wood screws, hot zinc dipped



in accordance with DIN 571, hot zinc dipped, general requirements according to DIN 267 Part 1



| Art. no. | TL | Ø  | WS | kg      | PE    | PU     |
|----------|----|----|----|---------|-------|--------|
| 790212/V | 80 | 6  | 10 | Hexagon | 0,015 | 100 25 |
| 790223/V | 60 | 8  | 13 | Hexagon | 0,021 | 100 25 |
| 790224/V | 80 | 8  | 13 | Hexagon | 0,027 | 100 25 |
| 790235/V | 60 | 10 | 17 | Hexagon | 0,036 | 100 10 |

## Dry wall screws



galvanised, counter-sunk head, Tx



| Art. no. | TL | Ø   | drive | kg | PE    | PU      |
|----------|----|-----|-------|----|-------|---------|
| 790920   | 32 | 3,9 | Torx  | 20 | 0,002 | 100 200 |
| 790922   | 41 | 3,9 | Torx  | 20 | 0,002 | 100 200 |

## Chipboard screw countersunk „TwinSpeed“



Chipboard screw, galvanised, counter-sunk head, Tx, double helix thread, considerably shortened screw-in times when compared to traditional screws thanks to the double start thread.

Uses: Wood, plywood, plasterboard, rawlplugs



| Art. no. | TL | Ø   | drive | kg | PE    | PU      |
|----------|----|-----|-------|----|-------|---------|
| 793005   | 16 | 2,9 | Torx  | 10 | 0,002 | 100 200 |
| 793006   | 25 | 2,9 | Torx  | 10 | 0,002 | 100 100 |
| 793007   | 32 | 2,9 | Torx  | 10 | 0,002 | 100 100 |
| 793008   | 38 | 2,9 | Torx  | 10 | 0,002 | 100 100 |
| 793027   | 32 | 3,9 | Torx  | 15 | 0,002 | 100 100 |
| 793029   | 38 | 3,9 | Torx  | 15 | 0,002 | 100 100 |
| 793030   | 45 | 3,9 | Torx  | 15 | 0,003 | 100 100 |
| 793031   | 50 | 3,9 | Torx  | 15 | 0,003 | 100 100 |
| 793040   | 32 | 4,2 | Torx  | 20 | 0,003 | 100 100 |
| 793041   | 38 | 4,2 | Torx  | 20 | 0,003 | 100 100 |
| 793043   | 50 | 4,2 | Torx  | 20 | 0,004 | 100 100 |
| 793051   | 30 | 4,8 | Torx  | 25 | 0,003 | 100 100 |
| 793053   | 38 | 4,8 | Torx  | 25 | 0,004 | 100 100 |
| 793054   | 50 | 4,8 | Torx  | 25 | 0,005 | 100 100 |
| 793055   | 60 | 4,8 | Torx  | 25 | 0,005 | 100 100 |
| 793064   | 60 | 6,3 | Torx  | 30 | 0,008 | 100 50  |
| 793065   | 80 | 6,3 | Torx  | 30 | 0,011 | 100 50  |

## Chipboard screw pan head „TwinSpeed“



Chipboard screw, galvanised, pan head, Tx, double helix thread, considerably shortened screw-in times when compared to traditional screws thanks to the double start thread.

Uses: Wood, plywood, plasterboard, rawlplugs



| Art. no. | TL | Ø   | drive | kg | PE    | PU      |
|----------|----|-----|-------|----|-------|---------|
| 793099   | 20 | 3,9 | Torx  | 15 | 0,002 | 100 100 |
| 793100   | 32 | 3,9 | Torx  | 15 | 0,002 | 100 100 |
| 793101   | 35 | 3,9 | Torx  | 15 | 0,002 | 100 100 |
| 793102   | 38 | 3,9 | Torx  | 15 | 0,003 | 100 100 |
| 793103   | 45 | 3,9 | Torx  | 15 | 0,003 | 100 100 |
| 793104   | 50 | 3,9 | Torx  | 15 | 0,003 | 100 100 |
| 793111   | 38 | 4,2 | Torx  | 20 | 0,004 | 100 100 |
| 793112   | 45 | 4,2 | Torx  | 20 | 0,004 | 100 100 |
| 793113   | 50 | 4,2 | Torx  | 20 | 0,004 | 100 100 |
| 793118   | 32 | 4,8 | Torx  | 25 | 0,004 | 100 100 |
| 793120   | 38 | 4,8 | Torx  | 25 | 0,005 | 100 100 |
| 793121   | 50 | 4,8 | Torx  | 25 | 0,005 | 100 100 |
| 793125   | 60 | 6,3 | Torx  | 30 | 0,002 | 100 50  |

## Hexagonal wood screws



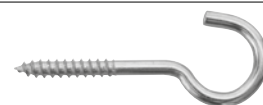
in accordance with DIN 571, galvanised, general requirements according to DIN 267 Part 1



| Art. no. | TL  | Ø  | WS | kg      | PE    | PU     |
|----------|-----|----|----|---------|-------|--------|
| 790210   | 40  | 6  | 10 | Hexagon | 0,008 | 100 50 |
| 790211   | 60  | 6  | 10 | Hexagon | 0,012 | 100 25 |
| 790212   | 80  | 6  | 10 | Hexagon | 0,015 | 100 25 |
| 790222   | 50  | 8  | 13 | Hexagon | 0,018 | 100 50 |
| 790223   | 60  | 8  | 13 | Hexagon | 0,021 | 100 25 |
| 790224   | 80  | 8  | 13 | Hexagon | 0,027 | 100 25 |
| 790225   | 100 | 8  | 13 | Hexagon | 0,033 | 100 25 |
| 790235   | 60  | 10 | 17 | Hexagon | 0,036 | 100 10 |
| 790236   | 80  | 10 | 17 | Hexagon | 0,048 | 100 10 |
| 790237   | 100 | 10 | 17 | Hexagon | 0,055 | 100 10 |

## Hooks

galvanised



| Art. no. | Ø   | SftL | kg    | PE  | PU |
|----------|-----|------|-------|-----|----|
| 790900   | 4,2 | 50   | 0,006 | 100 | 50 |
| 790902   | 5,8 | 80   | 0,008 | 100 | 10 |

## Tin screws, assembly screws

### TwinSpeed self tapping screw



galvanised, pan head, Phillips cross-head and double helix thread, considerably shortened screw-in times when compared to traditional screws thanks to the double start thread. Uses: Wood, plywood, plasterboard, rawlplugs



| Art. no. | TL | Ø   | drive       | kg | PE    | PU  |
|----------|----|-----|-------------|----|-------|-----|
| 790303   | 19 | 3,5 | Phillips PH | 2  | 0,001 | 100 |
| 790311   | 32 | 3,5 | Phillips PH | 2  | 0,002 | 100 |
| 790325   | 13 | 4,2 | Phillips PH | 2  | 0,001 | 100 |
| 790326   | 16 | 4,2 | Phillips PH | 2  | 0,001 | 100 |
| 790327   | 19 | 4,2 | Phillips PH | 2  | 0,001 | 100 |
| 790329   | 25 | 4,2 | Phillips PH | 2  | 0,002 | 100 |
| 790332   | 31 | 4,2 | Phillips PH | 2  | 0,002 | 100 |
| 790333   | 38 | 4,2 | Phillips PH | 2  | 0,003 | 100 |
| 790334   | 45 | 4,2 | Phillips PH | 2  | 0,003 | 100 |
| 790335   | 65 | 4,2 | Phillips PH | 2  | 0,005 | 100 |

### Plate screw DIN 7504



in accordance with DIN 7504M (formerly N), self-tapping, hardened steel, galvanised, pan head with Phillips slot, plate screw thread according to DIN 7970



| Art. no. | TL | Ø   | drive       | kg | PE    | PU  |
|----------|----|-----|-------------|----|-------|-----|
| 790411   | 13 | 3,5 | Phillips PH | 2  | 0,001 | 200 |
| 790413   | 19 | 3,5 | Phillips PH | 2  | 0,001 | 200 |
| 790416   | 13 | 3,9 | Phillips PH | 2  | 0,001 | 200 |
| 790417   | 16 | 3,9 | Phillips PH | 2  | 0,002 | 200 |
| 790419   | 25 | 3,9 | Phillips PH | 2  | 0,002 | 200 |
| 790422   | 13 | 4,2 | Phillips PH | 2  | 0,002 | 200 |
| 790423   | 16 | 4,2 | Phillips PH | 2  | 0,002 | 200 |
| 790424   | 19 | 4,2 | Phillips PH | 2  | 0,002 | 200 |
| 790426   | 25 | 4,2 | Phillips PH | 2  | 0,002 | 200 |
| 790428   | 32 | 4,2 | Phillips PH | 2  | 0,002 | 200 |
| 790432   | 13 | 4,8 | Phillips PH | 2  | 0,002 | 200 |
| 790433   | 16 | 4,8 | Phillips PH | 2  | 0,003 | 200 |
| 790434   | 19 | 4,8 | Phillips PH | 2  | 0,003 | 200 |
| 790436   | 25 | 4,8 | Phillips PH | 2  | 0,003 | 200 |

### Plate screw DIN 7504, Tx



in accordance with DIN 7504M (formerly N), self-tapping, hardened steel, galvanised, Tx, plate screw thread according to DIN 7970



| Art. no. | TL | Ø   | drive | kg | PE    | PU  |
|----------|----|-----|-------|----|-------|-----|
| 790510   | 13 | 4,2 | Torx  | 20 | 0,002 | 100 |
| 790512   | 16 | 4,2 | Torx  | 20 | 0,002 | 100 |
| 790514   | 19 | 4,2 | Torx  | 20 | 0,002 | 100 |
| 790516   | 25 | 4,2 | Torx  | 20 | 0,002 | 100 |

### Mounting screws



galvanised with washer, Philips cross-head, self-cutting



| Art. no. | TL | Ø   | drive       | kg | PE    | PU  |
|----------|----|-----|-------------|----|-------|-----|
| 790450   | 13 | 4,2 | Phillips PH | 2  | 0,001 | 100 |
| 790452   | 25 | 4,2 | Phillips PH | 2  | 0,002 | 100 |
| 790454   | 31 | 4,2 | Phillips PH | 2  | 0,002 | 100 |
| 790456   | 45 | 4,2 | Phillips PH | 2  | 0,003 | 100 |

### Mounting screws



self-cutting and self-boring, galvanised with washer, Tx



| Art. no. | TL | Ø   | drive | kg | PE    | PU  |
|----------|----|-----|-------|----|-------|-----|
| 790500   | 13 | 4,2 | Torx  | 20 | 0,001 | 100 |
| 790502   | 19 | 4,2 | Torx  | 20 | 0,002 | 100 |
| 790504   | 25 | 4,2 | Torx  | 20 | 0,002 | 100 |

### Mounting screws



self-cutting and self-boring, galvanised with washer, Philips cross-head



| Art. no. | TL | Ø   | drive       | kg | PE    | PU  |
|----------|----|-----|-------------|----|-------|-----|
| 790470   | 13 | 4,2 | Phillips PH | 2  | 0,001 | 100 |

## Machinery screws, cylinder screws

### Hexagonal machine screws



according to DIN 933, continuous thread, galvanised, 8.8 quality



| Art. no. | TL | Ø   | WS | kg    | PE  | PU  |
|----------|----|-----|----|-------|-----|-----|
| 790540   | 20 | M6  | 10 | 0,006 | 100 | 100 |
| 790542   | 25 | M6  | 10 | 0,007 | 100 | 100 |
| 790544   | 30 | M6  | 10 | 0,008 | 100 | 100 |
| 790562   | 20 | M8  | 10 | 0,012 | 100 | 100 |
| 790564   | 25 | M8  | 10 | 0,014 | 100 | 100 |
| 790566   | 30 | M8  | 10 | 0,016 | 100 | 100 |
| 790588   | 20 | M10 | 10 | 0,023 | 100 | 100 |
| 790592   | 30 | M10 | 10 | 0,028 | 100 | 100 |
| 790616   | 30 | M12 | 10 | 0,040 | 100 | 50  |
| 790618   | 40 | M12 | 10 | 0,047 | 100 | 50  |

### Socket cup screw DIN 84 Form A



in accordance with ISO 1207, EN 21207 or DIN 84, Form A, with slit, made of hardened steel, galvanised, 4.8 quality



| Art. no. | TL | Ø  | drive         | kg    | PE  | PU  |
|----------|----|----|---------------|-------|-----|-----|
| 790806   | 16 | M3 | slot 5,5x0,8  | 0,001 | 100 | 200 |
| 790808   | 20 | M3 | slot 5,5x0,8  | 0,001 | 100 | 200 |
| 790832   | 16 | M4 | slot 7,0x1,2  | 0,002 | 100 | 200 |
| 790834   | 20 | M4 | slot 7,0x1,2  | 0,002 | 100 | 200 |
| 790837   | 30 | M4 | slot 7,0x1,2  | 0,003 | 100 | 200 |
| 790862   | 16 | M5 | slot 8,5x1,2  | 0,003 | 100 | 200 |
| 790864   | 20 | M5 | slot 8,5x1,2  | 0,004 | 100 | 200 |
| 790867   | 30 | M5 | slot 8,5x1,2  | 0,005 | 100 | 200 |
| 790882   | 16 | M6 | slot 10,0x1,6 | 0,005 | 100 | 200 |
| 790884   | 20 | M6 | slot 10,0x1,6 | 0,055 | 100 | 200 |
| 790888   | 30 | M6 | slot 10,0x1,6 | 0,007 | 100 | 200 |

### Machine screw counter sunk



continuous thread, zinc-plated, pan headed Pozidriv



| Art. no. | TL | Ø  | drive       | kg | PE    | PU  |
|----------|----|----|-------------|----|-------|-----|
| 790700   | 20 | M3 | Pozidriv PZ | 2  | 0,001 | 100 |
| 790702   | 30 | M3 | Pozidriv PZ | 2  | 0,001 | 100 |
| 790704   | 40 | M3 | Pozidriv PZ | 2  | 0,002 | 100 |
| 790706   | 50 | M3 | Pozidriv PZ | 2  | 0,002 | 100 |
| 790710   | 20 | M4 | Pozidriv PZ | 2  | 0,002 | 100 |
| 790712   | 30 | M4 | Pozidriv PZ | 2  | 0,003 | 100 |
| 790714   | 40 | M4 | Pozidriv PZ | 2  | 0,003 | 100 |
| 790716   | 50 | M4 | Pozidriv PZ | 2  | 0,004 | 100 |
| 790721   | 25 | M5 | Pozidriv PZ | 2  | 0,004 | 100 |
| 790722   | 30 | M5 | Pozidriv PZ | 2  | 0,004 | 100 |
| 790724   | 40 | M5 | Pozidriv PZ | 2  | 0,005 | 100 |
| 790726   | 50 | M5 | Pozidriv PZ | 2  | 0,007 | 100 |

**haupa**

... convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Hexagonal nuts, washers

### Hexagonal nut DIN 934

in accordance with ISO 4032, EN 24032 or DIN 934, steel galvanised, 8 quality



| Art. no. | M   | WS  | kg    | PE  | PU  |
|----------|-----|-----|-------|-----|-----|
| 792000   | M3  | 5,5 | 0,001 | 100 | 200 |
| 792001   | M4  | 7   | 0,001 | 100 | 200 |
| 792002   | M5  | 8   | 0,001 | 100 | 200 |
| 792003   | M6  | 10  | 0,002 | 100 | 200 |
| 792005   | M8  | 13  | 0,005 | 100 | 200 |
| 792006   | M10 | 17  | 0,011 | 100 | 200 |
| 792008   | M12 | 19  | 0,010 | 100 | 100 |

### Washers DIN 125

in accordance with ISO 7089, EN 27089 or DIN 125, Form A without chamfer, steel galvanised



| Art. no. | M   | d1   | d4 | kg    | PE  | PU  |
|----------|-----|------|----|-------|-----|-----|
| 792600   | M3  | 3,2  | 7  | 0,000 | 100 | 200 |
| 792602   | M4  | 4,3  | 9  | 0,000 | 100 | 200 |
| 792603   | M5  | 5,3  | 10 | 0,001 | 100 | 200 |
| 792604   | M6  | 6,4  | 12 | 0,001 | 100 | 200 |
| 792606   | M8  | 8,4  | 16 | 0,002 | 100 | 200 |
| 792607   | M10 | 10,5 | 20 | 0,003 | 100 | 200 |

### Washers

in accordance with ISO 7093, DIN 9021N, zinc-plated steel



| Art. no. | M   | d1   | d4 | kg    | PE  | PU  |
|----------|-----|------|----|-------|-----|-----|
| 792650   | M4  | 4,3  | 12 | 0,001 | 100 | 100 |
| 792651   | M5  | 5,3  | 15 | 0,001 | 100 | 100 |
| 792652   | M6  | 6,4  | 20 | 0,012 | 100 | 100 |
| 792654   | M8  | 8,4  | 25 | 0,011 | 100 | 100 |
| 792656   | M10 | 10,5 | 40 | 0,010 | 100 | 100 |
| 792658   | M12 | 13,0 | 40 | 0,010 | 100 | 100 |

### Spring washers

according to DIN 127, form A, curved, zinc-plate steel



| Art. no. | M   | d1   | d4   | kg    | PE  | PU  |
|----------|-----|------|------|-------|-----|-----|
| 792756   | M6  | 6,4  | 11,8 | 0,001 | 100 | 100 |
| 792758   | M8  | 8,4  | 14,8 | 0,002 | 100 | 100 |
| 792760   | M10 | 10,5 | 18,1 | 0,003 | 100 | 100 |
| 792762   | M12 | 13,0 | 21,1 | 0,004 | 100 | 100 |

## Screws assortments

### "Mix" Screws assortment box



**Content:** 1.425 screws, in plastic bulk storage chest 415 x 335 x 90 mm

| Qty. | Description                   | Size     | Drive | Art. no. |
|------|-------------------------------|----------|-------|----------|
| 200  | universal counter-sunk screws | 3,5 x 20 | PZ2   | 790015   |
| 200  | universal counter-sunk screws | 3,5 x 30 | PZ2   | 790017   |
| 200  | universal counter-sunk screws | 3,5 x 40 | PZ2   | 790079   |
| 200  | universal counter-sunk screws | 4,5 x 35 | PZ2   | 790040   |
| 100  | universal counter-sunk screws | 4,5 x 50 | PZ2   | 790043   |
| 50   | universal counter-sunk screws | 5,0 x 80 | PZ2   | 790056   |
| 50   | universal counter-sunk screws | 6,0 x 50 | PZ3   | 790063   |
| 200  | universal pan head screws     | 3,5 x 30 | PZ2   | 790091   |
| 100  | universal pan head screws     | 4,0 x 40 | PZ2   | 790102   |
| 50   | universal pan head screws     | 5,0 x 50 | PZ2   | 790121   |
| 50   | hexagonal wood screws         | 6 x 40   |       | 790210   |
| 25   | hexagonal wood screws         | 6 x 80   |       | 790212   |



| Art. no. | empty  | kg    | PE | PU |
|----------|--------|-------|----|----|
| 792802   | 221131 | 5,022 | 1  | 1  |

### "Pan head" Screws assortment box



**Content:** 1.700 screws, in plastic bulk storage chest 415 x 335 x 90 mm

| Qty. | Description                   | Size     | Drive | Art. no. |
|------|-------------------------------|----------|-------|----------|
| 200  | universal pan head screws     | 3,5 x 30 | PZ2   | 790091   |
| 200  | universal pan head screws     | 3,5 x 40 | PZ2   | 790093   |
| 200  | universal pan head screws     | 4,0 x 30 | PZ2   | 790100   |
| 200  | universal pan head screws     | 4,0 x 40 | PZ2   | 790102   |
| 200  | universal pan head screws     | 4,0 x 50 | PZ2   | 790104   |
| 200  | universal pan head screws     | 4,5 x 40 | PZ2   | 790111   |
| 200  | universal pan head screws     | 4,5 x 50 | PZ2   | 790113   |
| 100  | universal pan head screws     | 5,0 x 30 | PZ2   | 790118   |
| 100  | universal pan head screws     | 5,0 x 40 | PZ2   | 790120   |
| 100  | universal pan head screws     | 5,0 x 50 | PZ2   | 790121   |
| 1    | Bit-Box 17-pcs., incl. holder |          |       | 102210   |



| Art. no. | empty  | kg    | PE | PU |
|----------|--------|-------|----|----|
| 792804   | 221131 | 6,000 | 1  | 1  |

## Screws assortments

### "Countersunk" Screws assortment box



**Content:** 1.800 screws, in plastic bulk storage chest 415 x 335 x 90 mm

| Qty. | Description                   | Size     | Drive | Art. no. |
|------|-------------------------------|----------|-------|----------|
| 200  | universal counter-sunk screws | 3,5 x 20 | PZ2   | 790015   |
| 200  | universal counter-sunk screws | 3,5 x 30 | PZ2   | 790017   |
| 200  | universal counter-sunk screws | 3,5 x 40 | PZ2   | 790079   |
| 200  | universal counter-sunk screws | 4,0 x 30 | PZ2   | 790027   |
| 200  | universal counter-sunk screws | 4,0 x 40 | PZ2   | 790029   |
| 200  | universal counter-sunk screws | 4,0 x 50 | PZ2   | 790031   |
| 200  | universal counter-sunk screws | 4,5 x 40 | PZ2   | 790041   |
| 100  | universal counter-sunk screws | 5,0 x 40 | PZ2   | 790053   |
| 100  | universal counter-sunk screws | 5,0 x 50 | PZ2   | 790054   |
| 100  | universal counter-sunk screws | 5,0 x 60 | PZ2   | 790055   |
| 50   | universal counter-sunk screws | 6,0 x 60 | PZ3   | 790064   |
| 50   | universal counter-sunk screws | 6,0 x 80 | PZ3   | 790065   |
| 1    | Bit-Box 17-pcs., incl. holder |          |       | 102210   |



| Art. no. | empty  | kg    | PE | PU |
|----------|--------|-------|----|----|
| 792806   | 221131 | 5,000 | 1  | 1  |

### "Countersunk" Screws assortment box



**Content:** 1.800 screws, in plastic bulk storage chest 415 x 335 x 90 mm

| Qty. | Description                   | Size     | Drive | Art. no. |
|------|-------------------------------|----------|-------|----------|
| 200  | universal counter-sunk screws | 3,0 x 15 | PZ2   | 790005   |
| 200  | universal counter-sunk screws | 3,0 x 25 | PZ2   | 790006   |
| 200  | universal counter-sunk screws | 3,0 x 40 | PZ2   | 790008   |
| 200  | universal counter-sunk screws | 4,0 x 30 | PZ2   | 790027   |
| 200  | universal counter-sunk screws | 4,0 x 40 | PZ2   | 790029   |
| 200  | universal counter-sunk screws | 4,0 x 50 | PZ2   | 790031   |
| 200  | universal counter-sunk screws | 4,5 x 40 | PZ2   | 790041   |
| 100  | universal counter-sunk screws | 5,0 x 40 | PZ2   | 790053   |
| 100  | universal counter-sunk screws | 5,0 x 50 | PZ2   | 790054   |
| 100  | universal counter-sunk screws | 5,0 x 60 | PZ2   | 790055   |
| 50   | universal counter-sunk screws | 6,0 x 60 | PZ3   | 790064   |
| 50   | universal counter-sunk screws | 6,0 x 80 | PZ3   | 790065   |
| 1    | Bit-Box 17-pcs., incl. holder |          |       | 102210   |



| Art. no. | empty  | kg    | PE | PU |
|----------|--------|-------|----|----|
| 792810   | 221131 | 5,000 | 1  | 1  |

### "Mix Tx" Screws assortment box



**Content:** 1.475 screws, in plastic bulk storage chest 415 x 335 x 90 mm

| Qty. | Description                   | Size     | Drive | Art. no. |
|------|-------------------------------|----------|-------|----------|
| 200  | TwinSpeed counter-sunk screws | 2,9 x 15 | Tx10  | 793005   |
| 200  | TwinSpeed counter-sunk screws | 2,9 x 30 | Tx10  | 793007   |
| 200  | TwinSpeed counter-sunk screws | 2,9 x 40 | Tx10  | 793008   |
| 200  | TwinSpeed counter-sunk screws | 4,2 x 35 | Tx20  | 793040   |
| 100  | TwinSpeed counter-sunk screws | 4,2 x 50 | Tx20  | 793043   |
| 100  | TwinSpeed counter-sunk screws | 4,8 x 50 | Tx25  | 793054   |
| 50   | TwinSpeed counter-sunk screws | 6,3 x 80 | Tx30  | 793065   |
| 200  | TwinSpeed pan head screws     | 3,9 x 30 | Tx15  | 793100   |
| 100  | TwinSpeed pan head screws     | 3,9 x 40 | Tx15  | 793102   |
| 50   | TwinSpeed pan head screws     | 4,8 x 50 | Tx25  | 793121   |
| 50   | hexagonal wood screws         | 6 x 40   |       | 790210   |
| 25   | hexagonal wood screws         | 6 x 80   |       | 790212   |



| Art. no. | empty  | kg    | PE | PU |
|----------|--------|-------|----|----|
| 792816   | 221131 | 5,022 | 1  | 1  |



**haupa**<sup>®</sup>

... convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

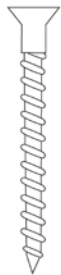
## SysCon universal countersunk screws



**Content:** 1650 universal countersunk screws

- 1 220370 ABS plastic box „SysCon S“
- 1 220375 Foam „SysCon“ 400 x 300 x 10 mm
- 1 220399 Assortment insert „SysCon“

| Qty. | Art. no. | Description                  | Size     | Drive |
|------|----------|------------------------------|----------|-------|
| 400  | 790015   | Universal countersunk screws | 3,5 x 20 | PZ2   |
| 200  | 790027   | Universal countersunk screws | 4,0 x 30 | PZ2   |
| 200  | 790029   | Universal countersunk screws | 4,0 x 40 | PZ2   |
| 200  | 790031   | Universal countersunk screws | 4,0 x 50 | PZ2   |
| 200  | 790041   | Universal countersunk screws | 4,5 x 40 | PZ2   |
| 100  | 790053   | Universal countersunk screws | 5,0 x 40 | PZ2   |
| 100  | 790054   | Universal countersunk screws | 5,0 x 50 | PZ2   |
| 100  | 790055   | Universal countersunk screws | 5,0 x 60 | PZ2   |
| 50   | 790064   | Universal countersunk screws | 6,0 x 60 | PZ3   |
| 100  | 790065   | Universal countersunk screws | 6,0 x 80 | PZ3   |



| Art. no. | empty  | kg    | PE | PU |
|----------|--------|-------|----|----|
| 220389   | 220370 | 7,000 | 1  | 1  |

## SysCon plate screws



**Content:** 2000 universal screws

- 1 220370 ABS plastic box „SysCon S“
- 1 220375 Foam „SysCon“ 400 x 300 x 10 mm
- 1 220399 Assortment insert „SysCon“

| Qty. | Art. no. | Description                              | Size     | Drive |
|------|----------|--|----------|-------|
| 200  | 790327   | Universal screw pan head                 | 4,2 x 19 | PH2   |
| 200  | 790329   | Universal screw pan head                 | 4,2 x 25 | PH2   |
| 200  | 790332   | Universal screw pan head                 | 4,2 x 31 | PH2   |
| 200  | 790333   | Universal screw pan head                 | 4,2 x 38 | PH2   |
| 200  | 790450   | Assembly screw pan head with washer      | 4,2 x 13 | PH2   |
| 200  | 790452   | Assembly screw pan head with washer      | 4,2 x 25 | PH2   |
| 200  | 790456   | Assembly screw pan head with washer      | 4,2 x 45 | PH2   |
| 200  | 790470   | Assembly screw with washer, self-tapping | 4,2 x 13 | PH2   |
| 200  | 790423   | Plate screw DIN 750, 4M                  | 4,2 x 16 | PH2   |
| 200  | 790426   | Plate screw DIN 750, 4M                  | 4,2 x 25 | PH2   |



| Art. no. | empty  | kg    | PE | PU |
|----------|--------|-------|----|----|
| 220398   | 220370 | 5,000 | 1  | 1  |





Tool cases



## Classification for tool cases








|             |  | Type: |
|-------------|--|-------|
| <b>ABS</b>  |  | ABS   |
| <b>ABS+</b> |  | ABS+  |

|                |  | Type:  |
|----------------|--|--------|
| <b>ABSfly</b>  |  | ABSfly |
| <b>HDPEfly</b> |  | HDPE   |

## Specifications

| Type    | Art. no. | Description                      | Dimensions      | Colour | Dokumenten-<br>fach | Combi-<br>nation lock | Properties  |
|---------|----------|----------------------------------|-----------------|--------|---------------------|-----------------------|---|
| ABS     | 220031   | Tool case „Start up Profi“ empty | 470 x 200 x 360 | black  | yes                 | yes                   | <ul style="list-style-type: none"> <li>Impact-resistant ABS material</li> <li>Surrounding impact edge protection</li> <li>High quality metal locks, lockable</li> <li>Stable and hardened aluminium frame</li> <li>Ergonomic handle</li> <li>3 metal hinges</li> <li>Including carrying strap</li> <li>Tested under continuous professional usage situations up to <b>20 kg</b></li> </ul>  |
|         | 220028   | Tool case „Start-up S“           | 460 x 180 x 310 | black  | no                  | no                    |   |
|         | 220023   | Trolley „Start up Profi“ empty   | 470 x 220 x 360 | black  | yes                 | yes                   |   |
| ABS+    | 220076   | VDE-Tool case „Pendant“ empty    | 460 x 180 x 310 | red    | yes                 | yes                   | <ul style="list-style-type: none"> <li>Impact-resistant ABS material</li> <li><b>Extra wide surrounding impact edge protection</b></li> <li>High quality metal locks, lockable</li> <li><b>Extra stable and hardened aluminium frame</b></li> <li>3 metal hinges</li> <li><b>Particularly stable lid holder</b></li> <li>Tested under continuous professional usage situations up to <b>25 kg</b></li> </ul>  |
|         | 220068   | Tool case „Omega“ empty          | 460 x 180 x 310 | black  | yes                 | yes                   |   |
|         | 220038   | Tool case „Aktion“ empty         | 460 x 160 x 310 | black  | no                  | no                    |   |
|         | 220073   | Tool case „Netzwerk“ empty       | 460 x 160 x 310 | black  | no                  | no                    |   |
|         | 220042   | Tool case „Omega Max“ empty      | 470 x 200 x 360 | black  | yes                 | yes                   |   |
|         | 220048   | Tool case „Omega Trolley“ empty  | 470 x 220 x 360 | black  | yes                 | yes                   |   |
| ABSfly  | 220032   | VDE-Tool case „Venus“ empty      | 460 x 180 x 310 | red    | yes                 | yes                   | <ul style="list-style-type: none"> <li><b>Flight-suitable</b></li> <li><b>Extremely impact-resistant ABS-PRO material</b></li> <li>Extra wide surrounding impact edge protection</li> <li><b>High quality metal die cast locks, lockable</b></li> <li><b>Extremely stable and specially hardened aluminium frame</b></li> <li>3 riveted metal hinges</li> <li>Particularly stable lid holder</li> <li>Tested under continuous professional usage situations up to <b>40 kg</b></li> </ul>   |
|         | 220034   | Tool case „Mercur“ empty         | 460 x 180 x 310 | black  | yes                 | yes                   |   |
| HDPEfly | 220248   | HDPE trolley, flight-suitable    | 470 x 220 x 360 | black  | yes                 | no                    | <ul style="list-style-type: none"> <li><b>Flight-suitable and break-proof</b></li> <li><b>Extreme durability thanks to HDPE shell with soft-touch look</b></li> <li><b>Corners additionally reinforced with aluminium</b></li> <li>Extra wide surrounding impact edge protection</li> <li>Locking, extra-long trolley system</li> <li><b>Ball-bearing mounted easy running castors</b></li> <li><b>High quality metal die cast locks, lockable</b></li> <li>Additional combination lock</li> <li>Extremely stable and specially hardened aluminium frame</li> <li>3 riveted metal hinges</li> <li>Particularly stable lid holder</li> <li><b>Screw-fitted handle and locks</b></li> <li>Tested under continuous professional usage situations up to <b>40 kg</b></li> </ul> |



-  ABS hard shell
-  Maximum case payload 20 kg
-  Maximum case payload 25 kg
-  Maximum case payload 40 kg
-  With document compartment
-  With number lock
-  Flight-suitable

## Nylonbags

### HAUPA "ToolPouch"

7 pockets to keep your tools handy with hammerloop and tapeholder belt loop with strong snap-button for easy attachment to belt. Material: extra strong 600D polyester, colour: black/green.



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220103   | 150   | 30    | 260    | 0,102 | 1  |

### HAUPA "ToolBelt"

8 compartments for your tools, reinforced main compartment, steel rivets for high reliable quality. Big front compartment for nails or measurement tape, hammer sleeve, fits up to 135 cm hips, material: extra strong 600D polyester, colour: black/green.



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220105   | 200   | 100   | 300    | 0,326 | 1  |

## Belts and jackets

### Tool belt

10 compartments to organize your tools, hammer sleeve and tapeholder belt loop for easy attachment to belt, materials: extra strong 600D polyester, colour: black/green



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220224   | 880   | 30    | 280    | 0,350 | 1  |

## Backpacks

### HAUPA "Backpack"

Tool backpack not only for the trainee, base shell rubber reinforced, double cross seam for high load. Material: extra strong 600D polyester, watertight and dirtrepellent, colour: black/green.

#### Features:

- Front compartment with 7 compartments narrow and wide
- 2 Side compartments with zipper
- inside 6 compartments small and 6 compartments wide
- double bottom with small parts box



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220275   | 420   | 170   | 380    | 1,880 | 1  |

## Jackets

### HAUPA "Tool Jacket", empty

Tool jacket for quick access to your tools. Quick assembly with strong zip, inside and outside pockets, particularly suitable for use in hot temperatures. Colour: green, black, width 500 mm, height 580 mm.

Non-slip shoulder belt, breathable inside net, 2 document holders at back, 5 screwdriver pockets (with rubber adjustment), 1 pen pocket, 1 mobile phone pocket (Velcro®), 1 shear pocket (with rubber adjustment), 2 pliers pockets (pushbutton fastener), 1 voltage detector pocket (Velcro®), 1 pocket for small parts (Velcro®), hammer loop.



| Art. no. | width | height | kg    | PU |
|----------|-------|--------|-------|----|
| 220053   | 500   | 580    | 0,764 | 1  |



**haupa®**

... convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Nylonbags

### HAUPA "ToolBag"

Tool bag with inner and outer tool compartments, rubber-reinforced base. Waterproof and dirt resistant, double cross-seam for heavy loads, removable shoulder strap, adjustable, 10 compartments outside (various sizes), 10 compartments inside (various sizes), belt for spirit level (outside), material: extra strong 600D polyester, colour: black/green.



| Art. no. | width                     | depth | height | kg  | PU    |   |
|----------|---------------------------|-------|--------|-----|-------|---|
| 220061   | <b>320 x 190 x 280 mm</b> | 320   | 190    | 280 | 1,507 | 1 |

### HAUPA "ToolBag XL"

Tool bag XL with inner and outer tool compartments, rubber-reinforced base. **Features:** waterproof and dirt resistant, rubber-reinforced base, double cross-seam for heavy loads, removable shoulder strap, adjustable, 10 compartments inside/outside (various sizes), belt for spirit level (outside), material: extra strong 600D polyester, colour: black/green.



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220366   | 420   | 220   | 310    | 2,000 | 1  |

### HAUPA "BigBox"

very big box look alike Tool bag, easy approach to the tools, inside and outside compartments for tools, reinforced handles, material: extra strong 600D polyester, colour: black/green.



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220095   | 410   | 240   | 320    | 1,937 | 1  |

### HAUPA "ProBag"

Tool bag with compartments inside and out, base shell made from plastic, dual seat seaming for high loads, removable shoulder strap, adjustable, 4 outer pockets (in various sizes), holder for insulation tape, 2 large internal compartments, suitable, for example, for DIN A4 folders or 15" laptops plus various compartments (in various sizes), straps for spirit level (outside), material: extremely strong **1680D polyester**, water and dirt resistant, colour: black/green.



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220368   | 420   | 300   | 430    | 2,500 | 1  |

## Service bags

### “Supply“ service bag

Document pocket, pockets for tools and measuring devices, bag for small parts, large pockets, rubber rings, separate main compartment (padded) for laptop and documents, can be divided using the removable wall section. Notebook pocket up to 15". Colour: black/green.

#### Features:

- Ergonomic handle
- Adjustable carrying strap with shoulder pad
- Business card pocket for identification purposes
- 2 large side zipped pockets (one of which can be opened fully and has inserts)
- 2 large folding side pockets, can be removed individually, one of which as a small pocket on the front
- Polytex straps for transport securing



Notebook compartment up to 15"



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220292   | 510   | 220   | 335    | 3,000 | 1  |

## Tool sets

### Tool wallets

of black linen, with leather strap fastening



| Art. no. | width | depth | kg    | PU |
|----------|-------|-------|-------|----|
| 220006   | 600   | 310   | 0,452 | 1  |

## Tool sets 1000 V

### VDE/GS - Tool wallets “Rebell“

in red coloured wallet



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220016   | 300   | 50    | 230    | 0,814 | 1  |



**haupa**<sup>®</sup>

**... convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## HAUPA "ToolPouch"

7 pockets to keep your tools handy with hammerloop and tapeholder belt loop with strong snap-button for easy attachment to belt. Material: extra strong 600D polyester, colour: black/green.

### Content:

- 2C combination pliers
- 2C electricians' screwdriver
- 2C cross slotted screwdriver PH
- Cable stripper, manual
- VDE/GS voltage tester



| Art. no. | set             | empty  | kg    | PU |
|----------|-----------------|--------|-------|----|
| 220506   | <b>5-pieces</b> | 220103 | 0,789 | 1  |

## HAUPA "ToolBelt Standard"

8 compartments for your tools, reinforced main compartment, steel rivets for high reliable quality. Big front compartment for nails or measurement tape, hammer sleeve, fits up to 135 cm hips. Material: extra strong 600D polyester, colour: green, black

### Content:

- 2C cross slotted screwdrivers PH, size 1 and 2
- 2C electrician's screwdriver
- 2C combination pliers 200 mm
- 2C side cutters 160 mm
- Engineers' hammer, 300 g
- Cable stripping knife, 1-piece
- Measuring tape, 3 m



| Art. no. | set             | empty  | kg    | PU |
|----------|-----------------|--------|-------|----|
| 220213   | <b>8-pieces</b> | 220105 | 2,222 | 1  |

## HAUPA "ToolBelt VDE" 1000 V

8 compartments for your tools, reinforced main compartment, steel rivets for high reliable quality. Big front compartment for nails or measurement tape, hammer sleeve, fits up to 135 cm hips, material: extra strong 600D polyester, colour: black/green.

### Content:

- 2C combination pliers, 200 mm
- 2C side cutters, 160 mm
- 2C electrician's screwdriver
- 2C cross slotted screwdrivers PH, size 1 and 2
- Voltage tester "Basic"
- Cable knife, 1-piece



1000 V IEC 60900:2012



| Art. no. | set             | empty  | kg    | PU |
|----------|-----------------|--------|-------|----|
| 220211   | <b>7-pieces</b> | 220105 | 1,723 | 1  |

## Tool belt "Basic"

10 compartments to organize your tools, hammer sleeve and tapeholder belt loop for easy attachment to belt, materials: extra strong 600D polyester, colour: black/green.

### Content:

- 2C-VDE-Electricians' screwdriver 5,5x125 mm
- 2C-VDE-Electricians' screwdriver 3x100 mm
- 2C-VDE-Cross slotted screwdrivers PH 2
- Measuring tape 3 m
- 2C-Combination pliers 180 mm
- 2C-Side cutters 160 mm
- VDE/GS Voltage tester 125-250 V
- Utility metal knife
- Wire stripper, hooked blade, 8-28 mm Ø
- Cable cutter with stripping function



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220280   | <b>10-pieces</b> | 220224 | 2,120 | 1  |

## Tool belt "VDE Plus" 1000 V

10 compartments to organize your tools, hammer sleeve and tapeholder belt loop for easy attachment to belt, materials: extra strong 600D polyester, colour: black/green

### Content:

- 2C-VDE-Cable cutters 200 mm
- 2C-VDE-Side cutters 165 mm
- 2C-VDE-Combination pliers 185 mm
- 2C-Replaceable blade system „Vario“ 1000 V, 10 pcs.
- VDE-Cable cutter straight blade, 50 mm
- Voltage tester „Profi“ 12-690 V
- Test Pen „Basic“



⚠ 1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220281   | <b>16-pieces</b> | 220224 | 2,740 | 1  |

## Tool belt "VDE" 1000 V

10 compartments to organize your tools, hammer sleeve and tapeholder belt loop for easy attachment to belt, materials: extra strong 600D polyester, colour: black/green

### Content:

- 2C-VDE-Side cutters 165 mm
- 2C-VDE-Cable cutters 160 mm
- 2C-VDE-Combination pliers 185 mm
- 2C-VDE-Electricians' screwdriver 5,5x125 mm
- 2C-VDE-Cross slotted screwdrivers PH 2
- 2C-VDE-Electricians' screwdriver 3x100 mm
- VDE-Cable cutter straight blade, 50 mm
- Test Pen „Basic“



⚠ 1000 V IEC 60900:2012



| Art. no. | set             | empty  | kg    | PU |
|----------|-----------------|--------|-------|----|
| 220282   | <b>8-pieces</b> | 220224 | 2,020 | 1  |



# haupa®

## ... convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Backpacks

## Backpack "Basic"

Tool backpack not only for the trainee, base shell rubber reinforced, double cross seam for high load. Backpack 220275.

### Content:

- 2C-VDE electricians' screwdriver set, 6 pcs.
- 2C-Combination pliers 180 mm
- 2C-Side cutters 160 mm
- 2C-Telephone pliers 160 mm
- 2C-Wire stripping pliers 160 mm
- Voltage tester 100-250 V
- Wire stripper, hooked blade, 8-28 mm Ø
- Stone chisel, 32x300 mm
- Electricians' chisel, 10x250 mm
- Engineers' hammer, 300 g
- Sledge hammer, 1000 g
- Cable knife, 1 blade
- PUK pocket saw, fixed handle
- Paint scraper, 40 mm
- Carpenters' pencil
- Water brush
- Plaster cup



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220278   | <b>22-pieces</b> | 220275 | 6,660 | 1  |

## Backpack "Basic VDE"

Tool backpack not only for the trainee, base shell rubber reinforced, double cross seam for high load. Backpack 220275.

### Content:

- 2C-VDE electricians' screwdrivers 2,5 x 75, 4 x 100, 5,5 x 125, 6,5 x 150 mm
- 2C-VDE cross slotted screwdrivers PH, size 1 + 2
- 2C-VDE combination pliers, 185 mm
- 2C-VDE side cutters, 165 mm
- 2C-VDE telephone pliers, 200 mm
- 2C-VDE wire stripping pliers, 160 mm
- Wire stripper, hooked blade, 8 - 28 mm Ø
- Cable knife, 1 blade
- Engineers' hammer, 300 g
- PUK pocket saw, fixed handle
- Electricians' chisel, 10 x 250 mm
- Paint scraper, 40 mm
- Voltage tester, blade 50 mm
- Measuring tape, 3 m
- Water brushes



▲ 1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220290   | <b>19-pieces</b> | 220275 | 4,200 | 1  |



# Backpacks 1000 V

## Backpack "VDE Plus" 1000 V

Tool backpack not only for the trainee, base shell rubber reinforced, double cross seam for high load.

**Content:**

- 2C-VDE-Cable cutters 200 mm
- 2C-VDE-Telephone pliers straight, 200 mm
- 2C-VDE-Wire stripping pliers 160 mm
- VDE-Cable knife, straight blade, 50 mm
- 2C-VDE-Combination pliers 185 mm
- 2C-VDE-Side cutters 165 mm
- 2C-Replaceable blade system „Vario“, 1000 V, 10 pcs.
- Voltage tester „Profi“ 12-690 V
- Test Pen „Basic“
- NH-safety fuse grip
- Electricians' protection helmet
- Safety-face mask



⚠ 1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220277   | <b>21-pieces</b> | 220275 | 6,540 | 1  |

## Backpack "VDE" 1000 V

Tool backpack not only for the trainee, base shell rubber reinforced, double cross seam for high load.

**Content:**

- 2C-VDE-Electricians' screwdriver set, 6 pcs.
- 2C-VDE-Cable cutters 200 mm
- 2C-VDE-Telephone pliers straight, 200 mm
- 2C-VDE-Combination pliers 185 mm
- 2C-VDE-Side cutters 165 mm



⚠ 1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220279   | <b>10-pieces</b> | 220275 | 4,200 | 1  |



**haupa®**

**... convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## HAUPA "Tool Jacket"

Tool jacket for quick access to your tools. Tool jacket for fitters including 10 tools. Quick assembly with strong zip, inside and outside pockets, particularly suitable for use in hot temperatures. Colour: green, black, width 500 mm, height 580 mm.

Non-slip shoulder belt, breathable inside net, 2 document holders at back, 5 screwdriver pockets (with rubber adjustment), 1 pen pocket, 1 mobile phone pocket (Velcro®), 1 shear pocket (with rubber adjustment), 2 pliers pockets (pushbutton fastener), 1 voltage detector pocket (Velcro®), 1 pocket for small parts (Velcro®), hammer loop.

### Content:

- 2C-VDE electrician's screwdriver with PZ/FL profile
- 2C-VDE electrician's screwdrivers, 75, 10, 125 mm
- 2C cross slotted screwdriver, PH, 80 mm
- 2C electrician's scissors
- Combination pliers VDE
- Diagonal cuttter VDE
- Voltage tester "Basic"
- Engineer's hammer 300 g



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220560   | <b>10-pieces</b> | 220053 | 2,700 | 1  |

## HAUPA "ToolBag"

Tool bag with inner and outer tool compartments, rubber-reinforced base. Comes complete with 22 tools.

**Features:** Waterproof and dirt resistant, rubber-reinforced base, double cross-seam for heavy loads, removable shoulder strap, adjustable, 10 compartments outside (various sizes), 10 compartments inside (various sizes), belt for spirit level (outside), material: extra strong 600D polyester, colour: black/green.

### Content:

- 2C combination pliers, 200 mm
- 2C side cutters, 160 mm
- 2C telephone pliers, straight
- 2C wire stripping pliers, 160 mm
- VDE screwdriver set, 6 electrician's screwdrivers
- Voltage tester
- Wire stripper, hooked blade, 8 - 28 mm Ø
- Water brush
- Paint scraper, 40 mm
- Electrician's chisel, 10 x 250 mm
- Stone chisel, 300 mm
- Engineers' hammer, 300 g
- Sledge hammer, 1000 g
- Plaster container
- Cable knife, 1-pieces
- PUK pocket saw, fixed handle
- Carpenter's pencil



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220500   | <b>22-pieces</b> | 220061 | 6,350 | 1  |

## Tool bag 1000 V

### HAUPA "ToolBag" 1000 V

Tool bag with inner and outer tool compartments, rubber-reinforced base. Comes complete with 13 tools.

#### Content:

- 2C-VDE combinations pliers 185 mm
- 2C-VDE side cutters 165 mm
- 2C-VDE telephone pliers pliers, straight, 200 mm
- 2C-VDE wire stripping pliers 160 mm
- 2C-VDE-screwdriver set, 6 electrician's screwdrivers
- Spanner for switch-cabinets
- Cable knife
- Voltagetester "Basic"



1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220510   | <b>13-pieces</b> | 220061 | 3,919 | 1  |

## Nylonbags

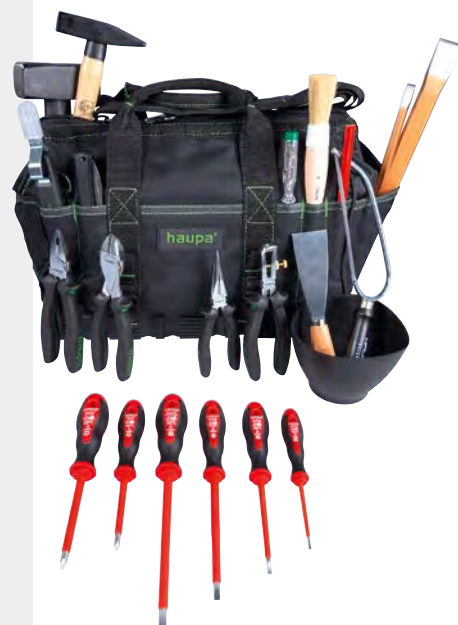
### HAUPA "ToolBag XL Classic"

Tool bag XL with inner and outer tool compartments, rubber-reinforced base. Comes complete with 22 tools.

**Features:** Waterproof and dirt resistant, rubber-reinforced base, double cross-seam for heavy loads, removable shoulder strap, adjustable, 10 compartments inside/outside (various sizes), belt for spirit level (outside), material: extra strong 600D polyester, colour: green, black. ToolBag XL 220366.

#### Content:

- 2C-VDE electrician's screwdrivers, 2.5 x 75, 4 x 100, 5.5 x 125, 6.5 x 150 mm
- 2C-VDE cross slotted screwdrivers PH, size 1 + 2
- 2C combination pliers, 200 mm
- 2C heavy duty side cutters, 175 mm
- 2C telephone pliers, straight, 200 mm
- 2C wire stripping pliers, 160 mm
- Voltage tester
- Wire stripper, hooked blade, 8 - 28 mm Ø
- Water brush
- Paint scraper, 40 mm
- Electrician's chisel, 10 x 250 mm
- Stone chisel, 300 mm
- Engineers' hammer, 300 g
- Sledge hammer, 1000 g
- Plaster container
- Cable knife, 1 blade
- PUK pocket saw, fixed handle
- Carpenter's pencil



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220802   | <b>22-pieces</b> | 220366 | 9,810 | 1  |



**haupa**<sup>®</sup>

**... convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## HAUPA "ToolBag XL Go"

Tool bag XL with inner and outer tool compartments, rubber-reinforced base.

**Features:** Waterproof and dirt resistant, rubber-reinforced base, double cross-seam for heavy loads, removable shoulder strap, adjustable, 10 compartments inside/outside (various sizes), belt for spirit level (outside), material: extra strong 600D polyester, colour: green, black. ToolBag 220366.

**Content:**

- 2C-VDE combinations pliers, 185 mm
- 2C-VDE heavy duty side cutters, 170 mm
- 2C-VDE telephone pliers, straight, 200 mm
- 2C-VDE electrician's screwdriver PZ/FL 1 + 2
- 2C-VDE electrician's screwdriver 2,5 x 75, 3,5 x 100, 4 x 100, 6,5 x 150 mm
- 2C-VDE cross slotted screwdrivers PH 1 + 2
- Automatic wire stripper 0,2-6 mm<sup>2</sup>
- Switching cabinet key
- Cable stripper hooked blade, 8 - 28 mm Ø



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220804   | <b>14-pieces</b> | 220366 | 4,400 | 1  |

## HAUPA "ToolBag XL 1000 V"

Tool bag XL with inner and outer tool compartments, rubber-reinforced base.

Comes complete with 13 tools. Material: extra strong 600D polyester, colour: black/green. ToolBag XL 220366.

**Content:**

- 2C-VDE combinations pliers, 185 mm
- 2V-VDE heavy duty side cutters, 170 mm
- 2C-VDE telephone pliers, straight, 200 mm
- 2C-VDE wire stripping pliers, 160 mm
- 2C-VDE electrician's screwdrivers, 2,5 x 75, 4 x 100, 5,5 x 125, 6,5 x 150 mm
- 2C-VDE cross slotted screwdrivers PH, size 1 + 2
- Spanners for switch-cabinets
- Cable knife
- Voltage tester „Basic“



⚠ 1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220800   | <b>13-pieces</b> | 220366 | 4,600 | 1  |

## HAUPA "TrendBox Plus"

Tool bag for professional use. With inside and outside pockets, easy access to the tools, inside and outside compartments for tools, reinforced handles, material: extra strong 600D polyester, colour: green, black. Big box 220095.

### Content:

- 2C-VDE electrician's screwdrivers, 2.5 x 75, 4 x 100, 5.5 x 125, 6.5 x 150 mm
- 2-VDE cross slotted screwdrivers PH, size 1 + 2
- 2C combination pliers, 180 mm
- 2C telephone pliers, 200 mm
- 2C side cutters, 160 mm
- 2C water pump pliers, 240 mm
- 2C wire stripping pliers, 160 mm
- Bit-Box, 17-pieces
- Voltage tester „Basic“
- Allen keys set, 7-pieces
- Adjustable single-head wrench
- Chalk - blue
- Impact cord roller
- Carpenters' pencil
- Engineers' hammer 300 g
- Cable stripping knife
- Junior hacksaw, heavy 150 mm
- Cable cutters 160 mm insulatet
- Combi-Drillbox
- Spanners for switch-cabinets
- Folding rule, fibre glass, 2 m



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220556   | <b>25-pieces</b> | 220095 | 6,430 | 1  |

## HAUPA "TrendBox"

Tool bag for professional use. With inside and outside pockets, including 20 tools, easy approach to the tools, inside and outside compartments for tools, reinforced handles, material: extra strong 600D polyester, colour: green, black.

### Content:

- 2C combination pliers, 200 mm
- 2C side cutters, 160 mm
- 2C telephon pliers, straight, 200 mm
- 2C water pump pliers, 240 mm
- VDE screwdrivers set, 6 electricians' screwdrivers
- Cable ties, 292 x 3,6 mm
- Cabinet spirit level
- Filling knife, 40 mm
- Electrician's chisel, 10 x 250 mm
- Voltage tester, VDE/GS
- Fitter's hammer, 300 g
- Universal stripper
- Measuring tape, 3 m
- PUK pocket saw, fixed handle
- Carpenters pencil



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220550   | <b>20-pieces</b> | 220095 | 5,540 | 1  |



**haupa**<sup>®</sup>

**... convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## HAUPA "ProBag Max"

Tool bag with compartments inside and out, base shell made from plastic, dual seat seaming for high loads, removable shoulder strap, adjustable, 4 outer pockets (in various sizes), holder for insulation tape, 2 large internal compartments, suitable, for example, for DIN A4 folders or 15" laptops plus various compartments (in various sizes), straps for spirit level (outside), material: extremely strong 1680D polyester, water and dirt resistant, colour: black/green. ProBag 220368.

### Content:

- 2C-VDE combinations pliers, 185 mm
- 2C-VDE heavy duty side cutters, 170 mm
- 2C-VDE telephone pliers, straight, 200 mm
- 2C-VDE electrician's screwdriver  
2,5 x 75, 3,5 x 100, 4 x 100, 5,5 x 125, 6,5 x 150 mm
- 2C-VDE cross slotted screwdrivers PH 1 + 2
- 2C-VDE electrician's screwdriver PZ/FL 1 + 2
- Cable cutter 160 mm
- ESD electronic pliers 110 mm
- Allround soft-grip scissor 150 mm
- Automatic cable stripper 0,08-6,0 mm<sup>2</sup>
- LED „Headlight“ headlamp
- VDE cable knife 50 mm
- Utility knives „EXTRA“ with spare blades 19 mm
- Voltage tester „Profi LCD Plus“ 12-1.000 V
- Spanners for switch-cabinets
- Measuring tapes 3 m
- Adjustable single-head wrench 24 mm
- Bit set, 33 pieces
- Industrial cleaning wipes
- Cable ties black UV resistant, 203x4,6 mm
- Cable ties natural 203x4,6 mm
- HAUPA „Flex Bag“



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220810   | <b>29-pieces</b> | 220368 | 9,180 | 1  |

## HAUPA "ProBag Start VDE"

Tool bag with compartments inside and out, base shell made from plastic, dual seat seaming for high loads, removable shoulder strap, adjustable, 4 outer pockets (in various sizes), holder for insulation tape, 2 large internal compartments, suitable, for example, for DIN A4 folders or 15" laptops plus various compartments (in various sizes), straps for spirit level (outside), material: extremely strong 1680D polyester, water and dirt resistant, colour: green/black. ProBag 220368.

### Content:

- 2C-VDE electrician's screwdrivers, 2,5 x 75, 4 x 100, 5,5 x 125, 6,5 x 150 mm
- 2C-VDE cross slotted screwdrivers PH, size 1 + 2
- 2C-VDE telephone pliers, 200 mm
- 2C-VDE combination pliers, 180 mm
- 2C-VDE heavy duty side cutters, 170 mm
- 2C-VDE wire stripping pliers, 160 mm
- Cable knife, 1 blade
- Electricians' chisel, 10 x 250 mm
- VDE/GS Voltage tester - blade 50 mm
- PUK pocket saw, fixed handle
- Brush
- Stone chisel, 300 mm
- Engineers' hammer, 300 g
- Double-face sledge hammer, 1000 g
- Spatula, 40 mm
- Plaster container



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220814   | <b>20-pieces</b> | 220368 | 9,180 | 1  |

## HAUPA "ProBag Go 1000 V"

Tool bag with compartments inside and out, base shell made from plastic, dual seat seaming for high loads, removable shoulder strap, adjustable, 4 outer pockets (in various sizes), holder for insulation tape, 2 large internal compartments, suitable, for example, for DIN A4 folders or 15" laptops plus various compartments (in various sizes), straps for spirit level (outside), material: extremely strong 1680D polyester, water and dirt resistant, colour: green/black. ProBag 220368.

### Content:

- 2C-VDE combinations pliers, 185 mm
- 2C-VDE heavy duty side cutters, 170 mm
- 2C-VDE telephone pliers, straight, 200 mm
- 2C-VDE electrician's screwdriver PZ/FL 1 + 2
- 2C-VDE electrician's screwdriver 2,5x75, 3,5x100, 4x100, 6,5x150 mm
- 2C-VDE cross slotted screwdrivers PH 1 + 2
- Automatic wire stripper 0,2-6 mm<sup>2</sup>
- Switching cabinet key
- Cable stripper hooked blade, 8 - 28 mm Ø



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220812   | <b>14-pieces</b> | 220368 | 9,180 | 1  |

## "Supply Max" service bag

Document pocket, pockets for tools and measuring devices, bag for small parts, large pockets, rubber rings, separate main compartment (padded) for laptop and documents, can be divided using the removable wall section. Notebook pocket up to 15". Colour: black/green.

### Contents:

- 2K-VDE electrician's screwdriver 2.5 x 75, 3.5 x 100, 4 x 100, 5.5 x 125, 6.5 x 150 mm
- 2K-VDE screwdriver PH 1 + 2
- 2K-VDE screwdriver PZ/FL 1 + 2
- Cable cutter 160 mm dip-insulated
- VDE side cutter 165 mm
- VDE combination pliers 185 mm
- VDE-long chain nose pliers straight
- Electronic side cutter 110 mm
- Electrician's scissors, stainless steel 150 mm
- Switching cabinet key
- Adjustable single-head wrench 24 mm
- Bit set, 33 pieces
- All-purpose industrial cleaning cloths
- Cable-ties, black, UV-resistant 203 x 4.6 mm
- Cable-ties, natural, 203 x 4.6 mm
- Automatic strippers 0.08 - 6.0 qmm
- LED head lamp 75 lm
- VDE cable knife with replaceable blades 50 mm
- Cutting knife "EXTRA" with replacement blades 19 mm
- Voltage tester "Profi LCD Plus" 12 - 1,000 V
- Electrical insulating tape VDE 15 mm x 10 m, Rainbow pack, 263820, 10 colours
- Measuring tape 3 m
- HAUPA "Flex Bag"
- Set X-CrimpPlus



1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220293   | <b>30-pieces</b> | 220292 | 6,350 | 1  |

# haupa®

... convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Service bags

### “Supply Plus“ service bag

Document pocket, pockets for tools and measuring devices, bag for small parts, large pockets, rubber rings, separate main compartment (padded) for laptop and documents, can be divided using the removable wall section. Notebook pocket up to 15". Colour: black/green.

#### Contents:

- 2K-VDE electrician's screwdriver  
2.5 x 75, 3.5 x 100, 4 x 100, 5.5 x 125, 6.5 x 150 mm
- 2K-VDE screwdriver PH 1 + 2
- 2K-VDE screwdriver PZ/FL 1 + 2
- 2K-VDE-long chain nose pliers straight
- Cable cutter 160 mm dip-insulated
- VDE side cutter 165 mm
- VDE combination pliers 185 mm
- Electronic side cutter 110 mm
- Electrician's scissors, stainless steel 150 mm
- Cutting knife "EXTRA" with replacement blades 19 mm
- Adjustable single-head wrench 24 mm
- All-purpose industrial cleaning cloths
- Cable-ties, black, UV-resistant 203 x 4.6 mm
- Electrical insulating tape VDE 15 mm x 10 m,  
Rainbow pack, 263820, 10 colours
- Voltage tester "Basic" 6 - 400 V
- Switching cabinet key
- Measuring tape 3 m
- LED head lamp 75 lm



1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220294   | <b>24-pieces</b> | 220292 | 6,350 | 1  |

### “Supply Basic“ service bag

Document pocket, pockets for tools and measuring devices, bag for small parts, large pockets, rubber rings, separate main compartment (padded) for laptop and documents, can be divided using the removable wall section. Notebook pocket up to 15". Colour: black/green.

#### Contents:

- 2K-VDE electrician's screwdriver 2.5 x 75, 4 x 100, 5.5 x 125, 6.5 x 150 mm
- 2K-VDE screwdriver PH 1 + 2
- 2K-VDE screwdriver PZ/FL 1 + 2
- VDE side cutter 165 mm
- VDE combination pliers 185 mm
- Cable cutter 160 mm dip-insulated
- Electrical insulating tape VDE 15 mm x 10 m,  
Rainbow pack, 263820, 10 colours
- Measuring tape 3 m



1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220298   | <b>14-pieces</b> | 220292 | 6,350 | 1  |



## Tool cases

### Tool case "Kick-Off"

Solid Nylon tool case for the trainee - with 20 tools.

#### Content:

- 2C-VDE telephone pliers, 200 mm
- 2C-VDE combination pliers, 180 mm
- 2C-VDE side cutters, 160 mm
- 2C-VDE wire stripping pliers, 160 mm
- 2C-VDE electrician's screwdrivers, 2.5 x 75, 4 x 100, 5.5 x 125, 6.5 x 150 mm
- 2C-VDE cross slotted screwdrivers PH, size 1+2
- Cable knife, 1-piece
- PUK pocket saw, fixed handle
- Brush
- Electricians' chisel, 10 x 250mm
- VDE/GS Voltage tester, blade 50 mm, 100 - 250 V
- Stone chisel, 250mm
- Engineers' hammer, 300 g
- Double-face sledge hammer, 1000 g
- Spatula, 40mm
- Plaster container



1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220574   | <b>20-pieces</b> | 220573 | 7,650 | 1  |

## Tool cases / Nylon 1000 V

### Tool case "Kick-Off Light"

Solid Nylon tool case for the trainee - with 10 tools.

#### Content:

- 2C-VDE telephone pliers, 200 mm
- 2C-VDE combination pliers, 180 mm
- 2C-VDE side cutters, 160 mm
- 2C-VDE wire stripping pliers, 160 mm
- 2C-VDE electrician's screwdrivers, 2.5 x 75, 4 x 100, 5.5 x 125, 6.5 x 150 mm
- 2C-VDE cross slotted screwdrivers PH, size 1+2



1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220575   | <b>10-pieces</b> | 220573 | 5,200 | 1  |



**haupa**<sup>®</sup>

**... convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## VDE security set 1000 V

Bag of imitation leather, for working under tension up to 1000 V. 10-pieces

### Content:

- 2C-VDE electricians screwdrivers 2,5 x 75, 4 x 100, 5,5 x 125, 6,5 x 150 mm
- 2C-VDE cross slotted screwdrivers PZ, size 1 + 2
- 2C-VDE combination pliers VDE 185 mm
- 2C-VDE side cutters 185 mm
- Voltage tester "Basic"
- Cable stripping knife, 35 mm



1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220014   | <b>10-pieces</b> | 220004 | 1,688 | 1  |

## VDE/GS - Tool sets 1000 V

in red coloured plastic wallet, made from artificial leather, 11-pieces.

### Content:

- VDE combination pliers 185 mm
- VDE round nose pliers 160 mm
- VDE side cutters 165 mm
- VDE wire stripping pliers 160 mm
- 2C-VDE electricians screwdrivers 75, 100, 125, 150 mm
- 2C-VDE cross slotted screwdrivers PZ, size 1
- 2C-VDE socket wrench 7 mm
- VDE/GS voltage tester



1000 V IEC 60900:2012



| Art. no. | set              | width | height | depth | kg    | PU |
|----------|------------------|-------|--------|-------|-------|----|
| 220130   | <b>11-pieces</b> | 300   | 230    | 50    | 2,216 | 1  |

## Tool case "Tradition" and "Fan"

made of black leather, with 2 inside loops and 2 snap-locks.

220022: Tradition

220024: Fan



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220022   | 340   | 110   | 170    | 0,821 | 1  |
| 220024   | 370   | 115   | 255    | 1,669 | 1  |

## Tool case "Achat"

made of black leather, all outside edges reinforced with Alu-squares, with galvanized floor-inset of sheet-metal collapsable front, snap-fasteners riveted on side, side-loops for carrying-belts, 2 snap-locks, all 4 inside with tool-compartments and adjustable loops, without carrying belts



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220052   | 420   | 165   | 320    | 3,113 | 1  |

## Tool case "Favorit - Admiral - Profi"

made of black leather, with galvanized floor-onset of sheet-metal collapsable front, with locks, side-, front-, rear-parts as well as bottom and cover reinforced, inside with tool-compartments and adjustable loops, without carrying belts.



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220060   | 365   | 150   | 250    | 2,126 | 1  |
| 220064   | 470   | 145   | 315    | 2,990 | 1  |
| 220066   | 420   | 150   | 250    | 2,378 | 1  |

## Tool case "Comet"

made of black leather, all outside edges reinforced with Alu-squares, with galvanized floor-onset of sheet-metal collapsable front, snap-fasteners riveted on side, side-loops for carrying-belts, 2 snap-locks, all 4 inside with toolcompartments and adjustable loops, without carrying belts



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220070   | 420   | 165   | 320    | 3,939 | 1  |

## Tool case "Magister"

of signal-red leather, with many compartements for tools, empty



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220142   | 440   | 165   | 260    | 2,700 | 1  |

## Accessories

### Brass padlocks

body made from a solid brass block, hardenend steel shackle, with 2 keys



| Art. no. | kg    | PU |
|----------|-------|----|
| 220110   | 0,085 | 1  |
| 220112   | 0,135 | 1  |

### Carrying belts

with 2 spring hooks



| Art. no. | kg    | PU |
|----------|-------|----|
| 220054   | 0,114 | 1  |



## Leather tool cases

### Tool case "Phoenix"

Tool case for electrical contractor, made of black neat's leather, with 39 tools. Case 220070.

#### Content:

- 2C long flat nose pliers, 160 mm
- 2C telephone pliers, 200 mm
- 2C combination pliers, 180 mm
- 2C side cutters, 160 mm
- 2C wire stripping pliers, 160 mm
- 2C water pump pliers, 240 mm
- ESD electronic side cutters, 115 mm
- ESD electronic needle nose pliers, 130 mm
- Crimping pliers multi insulated and non-insulated crimping terminals
- 2C engineers' screwdrivers 100, 125, 150 mm
- 2C electrician's screwdrivers 2.5 x 75, 4 x 125, 5 x 150, 5 x 175 mm
- 2C cross slotted screwdrivers PH, size 0, 1 and 2
- 2C cross slotted screwdrivers PZ, size 1 and 2
- Electronic screwdriverset, 7-pieces
- 2C socket wrenches, 5.5, 12, 17
- Reamer, round
- Allen key set, 8-pieces
- Adjustable wrench, 340 mm
- Cable stripper hooked blade, 8 - 28 mm Ø
- Combination snips, 190 mm
- PUK" pocket saw, fixed handle
- Electrician's chisel, 10 x 250 mm
- Folding rules, 2 m
- Light metal spirit level, 400 mm
- Bench hammer, 300 g
- Cable cutter, max. 16.9 mm
- Cutter knife, plastic
- Cable stripping knife, plastic scales
- VDE/GS voltage tester 125 - 250 V



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220156   | <b>39-pieces</b> | 220070 | 9,900 | 1  |

### Tool case "Saphir"

Tool case for electrical contractor, made of green neat's leather, with 31 tools. Case 220070.

#### Content:

- 2C long-nosed round pliers, 160 mm
- 2C telephone pliers, 200 mm
- 2C combination pliers, 180 mm
- 2C side cutters, 160 mm
- 2C wire stripping pliers, 160 mm
- 2C water pump pliers, 240 mm
- ESD electronic side cutters, 115 mm
- 2CE electrician's screwdrivers 2.5 x 75, 4 x 100, 4 x 125, 5 x 150 mm
- 2C engineers' screwdrivers 6 x 100, 7 x 125, 8 x 150 mm
- 2C cross slotted screwdrivers PH, size 1 and 2
- 2C cross slotted screwdrivers PZ, size 1 and 2
- Electronic screwdriverset, 7-pieces
- Socket wrenches SW 5.5, 13, 17
- Allen key set, 8-pieces
- Cable stripper hooked blade, 8 - 28 mm Ø
- Combination snips 190 mm
- „PUK" pocket saw, fixed handle
- Bench hammer 400 g
- Folding rules 2 m
- Cable cutter max. 16.9 mm
- Cable stripping knife plastic scales
- Voltage tester VDE/GS



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220154   | <b>31-pieces</b> | 220070 | 8,150 | 1  |

## Leather tool cases

### Tool case "Novelle 1"

Tool case for electrical contractor, made of black neat's, leather, with 26 tools. Case 220066.

**Content:**

- 2C combination pliers, 180 mm
- 2C side cutters, 160 mm
- 2C heavy duty side cutters, 180 mm
- 2C telephone pliers, 200 mm
- 2C telephone pliers, 200 mm, bent
- 2C water pump pliers, 240 mm
- 2C wire stripping pliers, 160 mm
- 2C electrician's screwdrivers, 75, 125, 150 mm
- 2C engineers' screwdrivers, 100, 150 mm
- 2C cross slotted screwdrivers PH, size 1 and 2
- 2C cross slotted screwdrivers PZ, size 1 and 2
- Reamer square
- Cable stripper 0.5 - 4 Ø
- Cable stripper hooked blade, 8 - 28 mm Ø
- Painter scrapers
- Bench hammer 300 g
- Cable stripping knife plastic scales
- Combination snips 140 mm
- „PUK“pocket saw, adjustable handle
- Voltage tester "Basic"
- Voltage tester VDE/GS



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220152/1 | <b>26-pieces</b> | 220066 | 6,500 | 1  |

### Tool case "Alpha"

Tool case made from black neat's leather, equipped with 19 tools. Case 220060.

**Content:**

- 2C combination pliers, 180 mm
- 2C side cutters, 160 mm
- 2C telephone pliers, 200 mm
- 2C-VDE electrician's screwdrivers, 2.5 x 75, 4 x 100, 5.5 x 125, 6.5 x 150 mm
- 2C-VDE cross slotted screwdrivers PH, size 1 and 2
- Voltage tester VDE/GS
- Wire stripping pliers, 0.5 - 4 mm<sup>2</sup>
- Cable stripper hooked blade, 8 - 28 mm Ø
- Cable knife, 1-pieces
- PUK pocket saw, fixed handle
- Electricians' chisel, 10 x 250 mm
- Stone chisel, 250 mm
- Engineers' hammer, 300 g
- Measuring Tape, 3 m
- Cabinet Level, 250 m



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220169   | <b>19-pieces</b> | 220060 | 5,200 | 1  |



**haupa**<sup>®</sup>

**... convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Leather tool cases

## Tool case "Start"

Tool case for apprentices, made from black cow hide equipped with 20 tools. Case 220060.

### Content:

- 2C-VDE electrician's screwdrivers, 2.5 x 75, 4 x 100, 5.5 x 125, 6.5 x 150 mm
- 2C-VDE cross slotted screwdrivers PH, size 1 and 2
- 2C telephone pliers, 200 mm
- 2C combination pliers, 180 mm
- 2C side cutters, 160 mm
- 2C wire stripping pliers, 160 mm
- Cable knife, 1-piece
- PUK pocket saw, fixed handle
- Double-face sledge hammer, 1000 g
- VDE/GS Voltage tester - blade 50 mm
- Electricians' chisel, 10 x 250 mm
- Stone chisel, 300 mm
- Engineers' hammer, 300 g
- Spatula, 40 mm
- Plaster container
- Brush



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220168   | <b>20-pieces</b> | 220060 | 6,100 | 1  |

## Tool case "Start VDE"

Tool case for apprentices, made from black coloured cowhide equipped with 20 tools, case 220060.

### Content:

- 2C-VDE telephone pliers, 200 mm
- 2C-VDE combination pliers, 180 mm
- 2C-VDE cutters, 160 mm
- 2C-VDE wire stripping pliers, 160 mm
- 2C-VDE electrician's screwdrivers, 2.5 x 75, 4 x 100, 5.5 x 125, 6.5 x 150 mm
- 2C-VDE cross slotted screwdrivers PH, size 1 + 2
- Cable knife, 1 blade
- Electricians' chisel, 10 x 250 mm
- VDE/GS Voltage tester - blade 50 mm
- PUK pocket saw, fixed handle
- Brush
- Stone chisel, 300 mm
- Engineers' hammer, 300 g
- Double-face sledge hammer, 1000 g
- Spatula, 40 mm
- Plaster container



⚠ 1000 V IEC 60900:2012



| Art. no.   | set              | empty  | kg    | PU |
|------------|------------------|--------|-------|----|
| 220168/VDE | <b>20-pieces</b> | 220060 | 6,700 | 1  |

## Tool cases 1000 V

### Tool case "Delux" 1000 V

of signal-red leather, with 54 safety tools, case 220142

**Content:**

- 2C-VDE electrician's screwdriver 2,5 x 75, 4 x 100, 5,5 x 125, 6,5 x 150 mm
- 2C-VDE cross slotted screwdriver PH, size 1 + 2
- VDE telephone pliers, straight, 200 mm
- VDE telephone pliers, bent, 200 mm
- VDE combination pliers 185 mm
- VDE side cutters 165 mm
- VDE wire stripping pliers 160 mm
- Socket wrenches 5,5, 7,0, 8,0, 10,0 mm
- Voltage tester „Profi“
- Hexagon sockets 10, 11, 12, 13, 14, 15, 16
- Reversible ratchet 1/2"
- T-sliding handle 1/2"
- Open end spanners 10, 12, 13, 19, 22, 24
- Cable knife
- Cable scissor 200 mm
- Slip-on bushes 5-pieces No. 1, 10 mm
- Slip-on bushes 5-pieces No. 2, 10 mm
- Slip-on bushes 5-pieces No. 3, 10 mm
- Plastic pliers 180 mm
- Plastic clamp
- Covering tape, grey
- Covering tape, red
- Safety grip
- Gloves size 9



1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220135   | <b>54-pieces</b> | 220142 | 9,460 | 1  |

### Tool case "Rotor" 1000 V

of signal-red leather, with 46 safety tools, case 220142

**Content:**

- VDE combination pliers 185 mm
- VDE side cutters 165 mm
- VDE wire stripping pliers
- VDE round nose pliers 160 mm
- Plastic clamp
- Gloves, size 10
- 2C-VDE electrician's screwdrivers 2,5 x 75, 4 x 100 mm
- Safety grip
- Socket wrenches, size 6, 7, 8, 9
- Rubber towels 1000 mm
- 5 slip-on-bushes size 1, 10 mm
- 5 slip-on-bushes size 2, 10 mm
- 5 slip-on-bushes size 3, 10 mm
- 5 slip-on-bushes 10 mm
- 5 slip-on-bushes 20 mm
- 5 slip-on-bushes 30 mm
- Cable knives
- Voltage tester 150 - 250 V



1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220140   | <b>46-pieces</b> | 220142 | 6,400 | 1  |



**haupa**<sup>®</sup>

**... convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Hard-top tool cases

## Tool case "Start-up S"

ABS

Hard-top case, black, interior features: 2 tool panels with Velcro fasteners, the bottom tray has variable partitions.



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220028   | 460   | 310   | 180    | 4,500 | 1  |

## Tool case trolley "Start-up Profi"

ABS

rigid case, made of ABS-plastic material, black, integrated rolls and pull-out handle in the bottom, locks of alu-press-casting, empty. Inside: 1 separation for documents, 1 plate for tools, 1 cover-plate with pocket compartments and clip-compartment, 1 bottom-tray



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220023   | 460   | 160   | 310    | 6,740 | 1  |

## Tool case "Start-up Profi"

ABS

Hard-top case, black, 2 tool kits, document pocket with hook-and-loop fixing, combination lock, bottom half of case equipped with variable partitions, shoulder strap



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220031   | 500   | 210   | 430    | 6,740 | 1  |

## Tool case "OmegaMax"

ABS+

rigid case, black, 28 compartments, 1 combination lock, 1 separation for documents, 2 plate for tools, 2 lockable locks, ground bowl with variables to dividing bars, framed push border



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220042   | 470   | 200   | 360    | 6,500 | 1  |



### Tool case trolley "OmegaMax Trolley"

ABS+

rigid case, black, 28 compartments, 1 combination lock, 1 separation for documents, 2 plate for tools, 2 lockable locks, ground bowl with variables to dividing bars, framed push border



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220048   | 470   | 200   | 360    | 7,000 | 1  |

### Tool case "Omega"

ABS+

rigid case, black, 28 compartments, 1 combination lock, 1 separation for documents, 2 plate for tools, 2 lockable locks, ground bowl with variables to dividing bars, framed push border



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220068   | 460   | 180   | 310    | 5,039 | 1  |

### Tool case "Aktion"

ABS+

2 tool kits (one with document pocket). Ground bowl with variables to dividing bars



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220038   | 460   | 160   | 310    | 4,580 | 1  |

### Network service case HAUPA

ABS+

Hard-top case, black, for electricians and network technicians, 2 tool kits (one with document pocket), bottom half of case contains 8 small removable boxes, secured for transport purposes



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220073   | 460   | 160   | 310    | 4,661 | 1  |



**haupa**<sup>®</sup>

... convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Hard-top tool cases

### Tool case "Pendant"

ABS+

rigid case, signal red, with Alu frame and 2 locks, with 3 plates with many compartments for tools



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220076   | 460   | 180   | 310    | 5,107 | 1  |

## Hard-top tool cases

### Tool case trolley "Fly"

HDPEfly

hard-side case, HDPE, extremely robust, black, 3 tool sections, 2 locks, document pocket, with high-grade fittings, bottom half of case equipped with variable partitions



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220248   | 470   | 360   | 220    | 5,320 | 1  |

## Hard-top tool cases

### Tool case "Merkur"

ABSfly

rigid case, made of ABS-plastic material, double-walled, black, empty, excellent rib-profile on the outside, high-quality locks, inside with separation for documents, 2 plates with compartments for several tools, 1 tray of ABS-plastics with separations for individual divisions



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220034   | 460   | 180   | 310    | 5,320 | 1  |

## Hard-top tool cases

### Tool case "Venus"

ABSfly

rigid case, made of ABS-plastic material, double-walled, signal-red, empty, suitable especially for safety-tools, excellent rib-profile on the outside, high-quality locks, inside with separation for documents, 2 plates with compartments for several tools, 1 tray of ABS-plastics with separations for individual divisions.



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220032   | 460   | 180   | 310    | 5,240 | 1  |

## Hard-top tool cases

### Tool case „ElektroCombo“

black plastic case with metal catch, complete tool set for electricians and network technicians, case: 490 x 375 x 100 mm

#### Content:

- 2C-VDE combination pliers, 180 mm
- 2C-VDE side cutters, 160 mm
- 2C-VDE wire stripping pliers, 160 mm
- 2C-VDE long chain nose pliers, straight, 200 mm
- Cable cutter 160 mm, coating-insulated
- Crimping pliers for end sleeves 0,25 - 2,5 mm<sup>2</sup>
- Set ball point allen keys 9-pcs., extra long
- 2C exchangeable „Vario“ handle
- „Vario“ replaceable blade – slotted blade 2.5, 3, 4, 5.5 mm
- „Vario“ replaceable blade – Phillips blade 1, 2
- „Vario“ replaceable blade – pozidrive blade 1, 2
- „Vario“ replaceable blade – pozidrive blade/slotted 1 + 2
- Voltage tester „Basic“, black
- Spanners for switch-cabinets „HUPkey“
- Utility knives
- Junior hacksaw 150 mm
- Electricians' chisels 10 x 250 mm
- Cabinet levels 230 mm
- Measuring tape, 5 m
- Reversible ratchet 1/4"
- Engineers' hammer, 300 g
- Extension 1/4" 100 mm
- Sockets 1/4"  
WS: 4, 4.5, 5, 5.5, 6, 7, 8, 9, 10, 11, 12, 13, 14 mm
- Ratchet screwdriver „FlexPlus“ for long bits
- 1/4" Bits 50mm HEX 2, 2.5, 3, 4, 5, 6
- 1/4" Bits 50mm PH 0, 1, 2, 3
- 1/4" Bits 50mm PZ 0, 1, 2, 3
- 1/4" Bits 50mm FD 3, 4, 5, 6
- 1/4" Bits 50mm TX 10, 15, 20, 25, 30, 40
- 1/4" Bits 50mm PZ/FL 1 + 2
- 1/4" SQ x 1/4" HEX adapter 50 mm
- Assortment box 160 x 115 x 40 mm



| Art. no. | set              | width | depth | height | kg    | PU |
|----------|------------------|-------|-------|--------|-------|----|
| 104090   | <b>78-pieces</b> | 490   | 100   | 375    | 6,000 | 1  |

### Tool case „Start-up Light“

ABS

hard-shell case, black, 2 tool sections, bottom with variable partitions, 14 tools, case art. 220028 „Start-up S“

#### Content:

- 2C Electricians' screwdrivers 2,5 x 75 mm, 4 x 100 mm, 5,5 x 125 mm
- 2C Cross slotted screwdrivers PH, size 1 + 2
- 2C Combination pliers, 180 mm
- 2C Side cutters, 160 mm
- 2C long chain nose pliers, 200 mm
- Stripper „All-rounder“ 4 - 15 mm
- Junior hacksaw DIN 6473 C, 150 mm with blade
- Engineers' hammer, 300 g
- Cable stripping knives, shock-proof synthetic
- Carpenters' pencils
- Measuring tape, 3 m



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220269   | <b>14-pieces</b> | 220028 | 5,900 | 1  |



**haupa**

... convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Hard-top tool cases

## Tool case „Start-up Go“

ABS

hard-shell case, black, 2 tool sections, bottom with variable partitions, 18 tools, case art. 220028 „Start-up S“

**Content:**

- 2C-VDE electricians' screwdrivers 2,5 x 75 mm, 4 x 100 mm, 5,5 x 125 mm, 6,5 x 150 mm
- 2C-VDE cross slotted screwdrivers PH, size 1 + 2
- 2C-VDE combination pliers, 180 mm
- 2C-VDE side cutters, 160 mm
- 2C-VDE long chain nose pliers, 45° angled nose, 200 mm
- Cable knife VDE with a straight blade
- Automatic wire stripper Super Plus 0,2 - 6 mm<sup>2</sup>
- Cable stripping knife 8 - 28 mm<sup>2</sup>
- Set ball point allen keys 9-pcs., 1,5 - 10 mm, extra long
- Spanners for switch-cabinets „HUPkey“
- PUK pocket saw, fixed handle
- Engineers' hammer, 300 g
- Carpenters' pencils
- Measuring tape, 3 m



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220267   | <b>18-pieces</b> | 220028 | 6,100 | 1  |

## Tool case „Start-up Max“

ABS

hard-shell case, black, 2 tool sections, bottom half of case equipped with variable partitions, 24 tools, case art. 220028 „Start-up S“

**Content:**

- 2C-VDE electricians' screwdrivers 2,5 x 75 mm, 4 x 100 mm, 5,5 x 125 mm, 6,5 x 150 mm
- 2C-VDE cross slotted screwdrivers PH, size 1 + 2
- 2C-VDE combination pliers, 180 mm
- 2C-VDE long chain nose pliers, 45° angled nose, 200 mm
- 2C-VDE side cutters, 160 mm
- 2C-VDE cable cutters, 160 mm
- Cable knife VDE with a straight blade
- Automatic wire stripper Super Plus 0,2 - 6 mm<sup>2</sup>
- Cable stripping knife 8 - 28 mm<sup>2</sup>
- Voltage tester „Profi LEDplus II“ 3 - 1.000 V
- Crimping pliers for end sleeves 0,25 - 2,5 mm<sup>2</sup>
- Dispenser box with insulated end sleeves, colour range III, DIN
- Combination spanners similar to DIN 3113, 8-pcs.
- Set ball point allen keys 9-pcs., 1,5 - 10 mm, extra long
- Spanners for switch-cabinets „HUPkey“
- LED „Pen Torch“
- PUK pocket saw, fixed handle
- Engineers' hammer, 300 g
- Carpenters' pencils
- Measuring tape, 3 m



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220268   | <b>24-pieces</b> | 220028 | 8,500 | 1  |

# Hard-top tool cases

## Tool case "Start-up"

ABS

Hard-top case, black, 2 tool kits, document pocket with hook-and-loop fixing, combination lock, bottom half of case equipped with variable partitions, shoulder strap, 19 tools.

**Content:**

- 2C-VDE electrician's screwdrivers 2,5 x 75, 4 x 100, 5,5 x 125 und 6.5 x 150 mm
- 2C-VDE cross slotted screwdrivers, PH, size 1 + 2
- 2C combination pliers, 185 mm
- 2C side cutters, 165 mm
- 2C telephone pliers, 200 mm
- 2C wire stripping pliers, 160 mm
- Wire stripper, hooked blade, 8 - 28 mm Ø
- Cable knife, 1-pieces
- Engineers' hammer, 300 g
- PUK pocket saw, fixed handle
- Electricians' chisel, 10 x 250 mm
- Paint scraper, 40 mm
- Voltage tester, blade 50 mm
- Measuring tape, 3 m
- Water brush



| Art. no. | set       | empty  | kg    | PU |
|----------|-----------|--------|-------|----|
| 220221   | 19-pieces | 220031 | 9,180 | 1  |

## Tool case "Start-up VDE"

ABS

Hard-top case, black, 2 tool kits, document pocket with hook-and-loop fixing, combination lock, bottom half of case equipped with variable partitions, shoulder strap, 19 tools.

**Content:**

- 2C-VDE electrician's screwdrivers 2,5 x 75, 4 x 100, 5,5 x 125 und 6,5 x 150 mm
- 2C-VDE cross slotted screwdrivers, PH, size 1 + 2
- 2C-VDE combination pliers 185 mm
- 2C-VDE side cutters 165 mm
- 2C-VDE telephone pliers 200 mm
- 2C-VDE wire stripping pliers 160 mm
- Wire stripper, hooked blade, 8 - 28 mm Ø
- Cable knife, 1-pieces
- Engineers' hammer, 300 g
- PUK pocket saw, fixed handle
- Electricians' chisel, 10 x 250 mm
- Paint scraper, 40 mm
- Voltage tester, blade 50 mm
- Measuring tape,
- Water brushes



⚠ 1000 V IEC 60900:2012



| Art. no. | set       | empty  | kg    | PU |
|----------|-----------|--------|-------|----|
| 220235   | 19-pieces | 220031 | 9,300 | 1  |



**haupa**

... convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Hard-top tool cases

### Tool case "EXTRA"

ABS

Hard-side case, black, 2 tool sections, document pocket, combination lock, bottom half of case equipped with variable partitions, with high-grade fittings, 2 locks, 19 tools, case 220031.

#### Content:

- 2C-VDE screwdriver set PZ, 101999/PZ
- 2C-VDE cross slotted screwdrivers PH, size 1
- 2C-VDE cross slotted screwdrivers PH, size 2
- Automatic wire stripper Super Plus 0,2-6 mm<sup>2</sup>
- Cable stripping knives without hook blade 8-28 mm<sup>2</sup>
- Voltagetester „Basic“ black
- Combination pliers VDE 185 mm
- Heavy duty diagonal cutters VDE 205 mm
- Long chain nose pliers VDE angled 200 mm
- Carpenters' pencils • Engineers' hammers 300 g
- Electricians' chisels 10x250 mm
- Hand saws „PUK“ mit fixed handle
- Torped-level 225 mm • Folding rules 2 m
- Paint scrapers 40 mm • Water brushes
- Plaster cups • Cable knives 1000 V, 50 mm
- Sledge hammers 1000 g
- Stone chisels, flat oval shank 28x250 mm
- Industrial cleaning wipes
- Crimping pliers crimping pliers for insulated terminals and end sleeves 0,5 - 6 mm
- Stripper 8-13 mm<sup>2</sup>
- Cable cutters VDE 170 mm
- Electrical insulating tape VDE 15 mm x 10 m, Rainbow pack, 263820, 10 colors
- Voltage tester „Profi plus“
- HAUPA „Multi Check“ digital high-capacity multimeter



1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220309   | <b>33-pieces</b> | 220031 | 8,680 | 1  |

## Tool cases 1000 V

### Tool case "Profi VDE" 1000 V

ABS

Hard-top case, black, 2 tool kits, document pocket with hook-and-loop fixing, combination lock, bottom half of case equipped with variable partitions, shoulder strap, 35 tools, case 220031.

#### Content:

- VDE long chain nose pliers, straight, 200 mm
- VDE combination pliers 185 mm
- VDE heavy duty side cutters 200 mm
- VDE wire stripping pliers 160 mm
- VDE cable cutter, max. 15 mm
- Cable knives, 1000 V, 50 mm
- Finger gloves, size 9
- 2C-VDE electrician's screwdrivers 2,5 x 75, 3 x 100, 6,5 x 150, 8 x 175 mm
- 2C-VDE socket wrenches, size 5,5, 7, 8, 10
- 2C-VDE cross slotted screwdrivers, PH 1 + 2
- NH-safety fuse grip
- Rubber towels, 1000 x 1000 x 1,6 mm
- Plastic clips, 160 mm
- Slip on bushes, No. 1, 2, 3 (each 5 x)
- Self adhesive PVC tape, red, 10 m
- Heat protection gloves
- Safety glasses



1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg     | PU |
|----------|------------------|--------|--------|----|
| 220232   | <b>35-pieces</b> | 220031 | 12,920 | 1  |

# Hard-top tool cases

## Tool case trolley "Profi mobil"

ABS

Hard-side case, black, 2 tool sections, document pocket, combination lock, bottom half of case equipped with variable partitions, with high-grade fittings, 2 locks, 51 tools, case art. 220023.

### Content:

- 2-component socket wrenches set
- 2-component screwdrivers 2,5 x 75, 3 x 100, 4 x 100, 4 x 125, 5 x 150 mm
- Cross slotted screwdrivers PH, size 1+2, insulated
- Voltage tester "Basic" 6-400 V
- Electronic screwing bit set, 34-pcs
- HAUPA ratchet screwdriver „Flex“, 58-pcs
- Combination spanners sets, 12-pcs
- Adjustable single-head wrench 24 mm
- Spanners for switch-cabinets
- Engineers' hammer, 300 g
- Cable stripping knives with hook blade, 8-28 mm<sup>2</sup>
- Utility knives „EXTRA“ with spare blades 19 mm
- Cable cutter with a snap, max. 16,9 mm
- Cable cutter 160 mm, dipped
- 2C combination pliers 185 mm
- 2C diagonal cutter 165 mm
- 2C long chain nose pliers 200 mm
- Automatic wire stripper Super Plus 0,2-6 mm<sup>2</sup>
- ESD Electronic side cutter 115 mm
- Measuring tape 5 m
- Cabinet levels 250
- VDE electrical insulating tape 19 mm x 20 m, black (8x)



| Art. no. | set              | empty  | kg     | PU |
|----------|------------------|--------|--------|----|
| 220273   | <b>51-pieces</b> | 220023 | 14,700 | 1  |

## Tool case trolley "Start-up"

ABS

Hard-side case, black, 2 tool sections, document pocket, combination lock, bottom half of case equipped with variable partitions, with high-grade fittings, 2 locks, 19 tools, case art. 220023.

### Content:

- 2C-VDE electricians' screwdrivers 2,5 x 75, 4 x 100, 5,5 x 125, 6,5 x 150 mm
- 2C-VDE cross slotted screwdrivers PH, size 1 + 2
- 2C-VDE combination pliers, 185 mm
- 2C-VDE side cutters, 165 mm
- 2C-VDE telephone pliers, 200 mm
- 2C-VDE wire stripping pliers, 160 mm
- Wire stripper, hooked blade, 8 - 28 mm Ø
- Cable knife, 1 blade
- Engineers' hammer, 300 g
- PUK pocket saw, fixed handle
- Electricians' chisel, 10 x 250 mm
- Paint scraper, 40 mm
- Voltage tester, blade 50 mm
- Measuring tape, 3 m
- Water brushes



1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg     | PU |
|----------|------------------|--------|--------|----|
| 220252   | <b>19-pieces</b> | 220023 | 10,940 | 1  |



**haupa**

... convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Hard-top tool cases

## Tool case trolley "Master"

ABS

Hard-side case, black, 2 tool sections, document pocket, combination lock, bottom half of case equipped with variable partitions, with high-grade fittings, 2 locks, 38 tools, case art. 220023.

**Content:**

- 2C-VDE-screwdrivers set PH
- VDE-Cable knife straight blade
- Industrial cleaning wipes
- Measuring tape 3 m
- PUK pocket saw, fixed handle
- VDE cable cutter 230 mm
- 2C-VDE combination pliers 185 mm
- VDE side cutters 165 mm
- VDE telephone pliers 45°, 200 mm
- Automatic wire stripper 0,2 - 6 mm<sup>2</sup>
- Ear protection plugs SNR 30 db
- 2C-VDE screwdrivers PZ/FL, size 1
- 2C-VDE screwdrivers PZ/FL, size 2
- Perlon fish tapes 15 mm, 3
- LED Pocket lamp 18 x 91mm 80 lm
- Universal stripper 0,2 - 4 mm<sup>2</sup>
- Wire stripper, hooked blade, 8 - 28 mm Ø
- Crimping pliers for crimp terminals/end sleeves
- Cable cutter 160 mm, coating-insulated
- Crimping pliers 0,75 - 16 mm<sup>2</sup>
- Ratched screwdriver „Flex“, 58 pcs.
- Safety glasses
- Spanner for switch-cabinets
- Voltage tester „Profi Plus“
- Elektronik ESD Electronic side cutter 115 mm
- Adjustable single-head wrench 24 mm
- 2C Allround soft-grip scissors 140 mm
- Cable glands IP 68, M20, light-grey
- Dispenser box with insulated end sleeves (DIN)
- Cable ties UV-resistant 250 x 4,8 mm
- Nailing clips for round cable 7-10, white



1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg     | PU |
|----------|------------------|--------|--------|----|
| 220254   | <b>38-pieces</b> | 220023 | 14,700 | 1  |

## Tool case trolley "EXTRA"

ABS

Hard-side case, black, 2 tool sections, document pocket, combination lock, bottom half of case equipped with variable partitions, with high-grade fittings, 2 locks, 19 tools, case 220023.

**Content:**

- 2C-VDE screwdriver set PZ, 101999/PZ
- 2C-VDE cross slotted screwdrivers PH, size 1
- 2C-VDE cross slotted screwdrivers PH, size 2
- Automatic wire stripper Super Plus 0,2 - 6 mm<sup>2</sup>
- Cable stripping knives without hook blade 8 - 28 mm<sup>2</sup>
- Voltagetester „Basic“ black
- Combination pliers VDE 185 mm
- Heavy duty diagonal cutters VDE 205 mm
- Long chain nose pliers VDE angled 200 mm
- Carpenters' pencils
- Engineers' hammers 300 g
- Electricians' chisels 10 x 250 mm
- Hand saws „PUK“ mit fixed handle
- Torped-level 225 mm
- Folding rules 2 m
- Paint scrapers 40 mm
- Water brushes
- Plaster cups
- Cable knives 1000 V, 50 mm
- Sledge hammers 1000 g
- Stone chisels, flat oval shank 28 x 250 mm
- Industrial cleaning wipes
- Crimping pliers crimping pliers for insulated terminals and end sleeves 0,5 - 6 mm
- Stripper 8 - 13 mm<sup>2</sup>
- Cable cutters VDE 170 mm
- Electrical insulating tape VDE 15 mm x 10 m, Rainbow pack, 263820, 10 colors
- Voltage tester „Profi plus“
- HAUPA „Multi Check“ digital high-capacity multimeter



1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220307   | <b>33-pieces</b> | 220023 | 8,680 | 1  |




# Tool cases 1000 V

## Service trolley for hybrid vehicles 1000 V

ABS

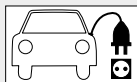
Hard-side case, black, 2 tool sections, document pocket, combination lock, bottom half of case equipped with variable partitions, with high-grade fittings, 2 locks, case art. 220023.

### Content:

- 2C-VDE electrician's screwdrivers 2,5 x 75, 3 x 100, 3,5 x 100, 4 x 100 mm
- 2C-VDE cross slotted screwdrivers PH 1, 2, 3
- 2C-VDE cross slotted screwdrivers S-Tx 20, 25, 30
- Hexagon sockets VDE 3/8" WS 8, 9, 10, 12, 13, 14, 17, 19, 22
- Extension 3/8" VDE, 250 mm
- Reversible ratchet VDE 3/8"
- Water pump pliers VDE 240 mm
- Cable cutters VDE 230 mm
- Side heavy duty side cutters VDE 205 mm
- Side cutters VDE 165 mm
- Short flat nose pliers VDE 160 mm
- Long chain nose pliers, angled nose 200 mm
- Combination pliers VDE 205 mm
- Cable stripping knife 1000V, straight blade, 50 mm
- Safety-sets with bag, insulating mat
- Slip on bushes 1000V, 20 mm
- Slip on bushes 1000V, 10 mm
- **VDE-sockets 3/8", M8, M10, M12** (xzn) 
- Shutting band red/white 500 m
- Sign „dangerous voltage“
- Sign „do not switch“



1000 V IEC 60900:2012



| Art. no. | set       | empty  | kg     | PU |
|----------|-----------|--------|--------|----|
| 220171   | 40-pieces | 220023 | 11,100 | 1  |

## Tool case trolley "Secure mobil" 1000 V

ABS

Hard-side case, black, 2 tool sections, document pocket, combination lock, bottom half of case equipped with variable partitions, with high-grade fittings, 2 locks, 57 tools, case art. 220023.

### Content:

- 2C-VDE electrician's screwdrivers 2,5 x 75, 4 x 100, 5,5 x 125, 6,5 x 150 mm
- 2C-VDE cross slotted screwdrivers PH, size 1 + 2
- Voltage tester "Profi plus" 12-1,000 V
- Single ended spanner 1000 V 10, 12, 13, 19, 22, 24
- Finger gloves 1000 V, size 9
- Safety fuse grips
- Flat nose pliers 1000 V
- Slip on bushes 1000 V no. 1,2, 3 (each 5x)
- VDE cable knife, 50 mm
- VDE combination pliers 185 mm
- VDE diagonal cutter 165 mm
- VDE long chain nose pliers 200 mm
- Tool case 1000 V, drive 3/8"
- Electrical insulating tape, red (6x)



1000 V IEC 60900:2012



| Art. no. | set       | empty  | kg     | PU |
|----------|-----------|--------|--------|----|
| 220272   | 57-pieces | 220023 | 14,700 | 1  |



**haupa**

... convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Hard-top tool cases

## Network service case "Connect"

ABS+

The perfect starter package for data and network. Hard-top case, black, 2 tool kits, bottom half of case contains removeable boxes, 13 tools. Case 220073.

**Content:**

- 2C electrician screwdrivers 2.5 x 75, 3 x 100, 4 x 125 mm
- 2C cross slotted screwdrivers PH, size 1 and 2
- Electronic screwdriverset, 7-pieces
- Stripper for UTP/STP data cable
- 2C side cutters 160 mm
- 2C telephone pliers, bent, 200 mm
- ESD electronic side cutters, 115 mm
- Crimping pliers for modular plugs
- 2C soft-grip scissors, 140 mm
- Sensor tool



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220150   | <b>13-pieces</b> | 220073 | 5,600 | 1  |

## Tool case "2 component"

ABS+

Hard-top case, for apprentices, black, 2 tool kits, one with document pocket, cover-plate with pocket compartments and clip-compartment, 18 tools. Case 220038.

**Content:**

- 2C telephone pliers, straight, 200 mm
- 2C combination pliers, 180 mm
- 2C heavy duty side cutters, 180 mm
- 2C wire stripping pliers, 160 mm
- 2C electrician's screwdrivers 2.5 x 75, 3 x 100, 5.5 x 125, 6.5 x 150 mm
- 2C cross slotted screwdrivers, PH, size 1 and 2
- Cable knife, 1-pieces
- Wire stripper, hooked blade, 8 - 28 mm Ø
- PUK pocket saw, fixed handle
- Paint scraper, 40 mm
- Electricians' chisel, 10 x 250 mm
- Voltage tester, 220 - 250 volt
- Engineers' hammer, 300 g
- Measuring stick, 2 m



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220170   | <b>18-pieces</b> | 220038 | 7,000 | 1  |

# Hard-top tool cases

## Network service case

ABS+

Hard-top case, black, for electricians and network technicians, 2 tool kits (one with document pocket), bottom half of case contains 8 small removable boxes, secured for transport purposes. Case 220038.

**Content:**

- 2C side cutters, 160 mm
- 2C telephone pliers, 180 mm
- 2C telephone pliers, 200 mm, bent
- 2C electrician screwdrivers 75, 100, 150 mm
- 2C cross slotted screwdrivers PH, size 0, 1, 2
- Electronic screwdriver set, 7-pieces
- Control cabinet key
- Precision stripper "PWS-Plus" 0.25 - 0.8 Ø
- Combination snips 190 mm
- „PUK“ pocket saw, fixed handle
- Crimping pliers for coaxial connectors
- ESD electronic side cutters, 130 mm
- Stripper for coaxial cable
- VDE/GS voltage tester
- Stripper for UTP/STP data cable
- Crimping pliers for modular plugs
- Sensor tool



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220141   | <b>21-pieces</b> | 220038 | 8,800 | 1  |

## Tool case "Panther"

ABS+

inside: 1 separation for documents, 2 plate for tools, 1 cover-plate with pocket compartments and clip-compartment. Case 220038.

**Content:**

- 2C electrician's screwdrivers, 75, 100, 125, 150 mm
- 2C engineers' screwdriver, 100 mm
- 2C cross slotted screwdrivers, PZ, size 1 and 2
- Control cabinet key
- Jointing chisel, 26 x 250 mm
- Electrician's chisel, 10 x 250 mm
- Cable stripping knife, plastic shank
- Universal saw, heavy 150 mm
- 2C combination pliers, 180 mm
- 2C heavy duty side cutters, 180 mm
- 2C telephone pliers, 200 mm
- 2C wire stripping pliers, 160 mm
- Cabinet level, 250 mm
- Wire stripper, hooked blade, 8 - 28 mm Ø
- Bench hammer, 300 g
- Voltage tester "Basic"
- VDE/GS voltage tester



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220040   | <b>21-pieces</b> | 220038 | 7,460 | 1  |



**haupa**<sup>®</sup>

**... convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Hard-top tool cases

## Tool case "Compact"

ABS+

Hard-top case, black, 2 tool kits (one with document pocket), bottom half of case equipped with variable partitions, case 220038.

**Content:**

- 2C electrician's screwdrivers, 2,5 x 75, 4 x 100, 4 x 125, 5 x 150 mm
- 2C cross slotted screwdrivers, PH, size 1 and 2
- Electronic screwdriver set, 7-pieces
- 2C combination pliers, 180 mm
- 2C side cutters, 160 mm
- 2C telephone pliers, 200 mm
- Wire stripper, hooked blade, 8 - 28 mm Ø
- Cable stripping knife, 4 - 16 mm Ø
- Automatic wire stripper, 0,2 - 6 mm<sup>2</sup>
- Cable cutter with a snap
- 2K Soft-Grip scissor, 140 mm
- PUK pocket saw, fixed handle
- HAUPA „Bit box“, 17-pieces
- SDS-plus set, 5-pieces
- Spirit level, 400 mm
- Measuring tape, 3 m
- Voltage tester „Basic“



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220229   | <b>47-pieces</b> | 220038 | 7,180 | 1  |

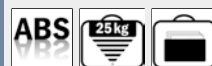
## Tool case "Basic"

ABS+

Hard-top case, black, 2 tool kits (one with document pocket), bottom half of case equipped with variable partitions, 19 tools. Case 220038.

**Content:**

- 2C-VDE electrician's screwdrivers, 2,5 x 75, 4 x 100, 5,5 x 125, 6,5 x 150 mm
- 2-VDE cross slotted screwdrivers PH, size 1 and 2
- 2C combination pliers, 180 mm
- 2C side cutters, 160 mm
- 2C telephone pliers, straight, 200 mm
- 2C wire stripping pliers, 160 mm
- Wire stripper, hooked blade, 8 - 28 mm Ø
- Cable knife, 1-pieces
- Engineers' hammer, 300 g
- PUK pocket saw, fixed handle
- Electricians' chisel, 10 x 250 mm
- Voltage tester blade, 50 mm
- Measuring stick, 2 m
- Paint scraper, 40 mm
- Water brushes



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220153   | <b>19-pieces</b> | 220038 | 6,600 | 1  |

# Hard-top tool cases

## Tool case "Basic VDE"

ABS+ 

Hard-side case, black, 2 tool sections (one with document pocket), bottom half of case equipped with variable partitions, with high-grade fittings, 19 tools. Case 220038.

**Content:**

- 2C-VDE electrician's screwdrivers, 2.5 x 75, 4 x 100, 5.5 x 125, 6.5 x 150 mm
- 2-VDE cross slotted screwdrivers PH, size 1 + 2
- 2C-VDE combinations pliers, 185 mm
- 2C-VDE side cutters 165, mm
- 2C-VDE telephone pliers, straight, 200 mm
- 2C-VDE cable cutter 200 mm
- Wire stripper, hooked blade, 8 - 28 mm Ø
- Cable knife, 1 blade
- Engineers' hammer, 300 g
- PUK pocket saw, fixed handle
- Electricians' chisel, 10 x 250 mm
- Voltage tester blade, 50 mm
- Measuring stick, 2 m
- Paint scraper, 40 mm
- Water brushes



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220244   | <b>19-pieces</b> | 220038 | 7,140 | 1  |

## Tool case "Inspektor"

ABS+ 

rigid case, black, with high-grade fittings, Master's case with 25 tools. Case 220068.

**Content:**

- 2C electrician's screwdrivers 75, 125, 150 mm
- 2C engineers' screwdrivers 100, 150 mm
- 2C cross slotted screwdrivers PH, size 1 + 2
- 2C combination pliers, 180 mm
- 2C heavy duty side cutters, 180 mm
- 2C telephone pliers, 200 mm
- 2C telephone pliers, bent 200 mm
- 2C water pump pliers, 240 mm
- 2C wire stripping pliers, 160 mm
- 2C piercing awl
- Wire stripper, hooked blade, 8 - 28 mm Ø
- Voltage tester, 150 - 250 V
- Adjustable wrench, 210 mm
- Paint scraper, 50 mm
- Electricians' Chisel, 10 x 250 mm
- Engineers' hammer, 300 g
- Cable knife, 1 blade
- Universal scissors, 190 mm
- PUK pocket saw, fixed handle
- Measuring stick, 2 m
- Alu level 400 mm



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220176   | <b>25-pieces</b> | 220068 | 8,980 | 1  |



**haupa**<sup>®</sup>

**... convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Hard-top tool cases

## Tool case "Akkurat"

ABS+

Master's case for radio and television, with 32 tools, rigid case. Case 220068.

**Content:**

- 2C cross slotted screwdrivers, PH, size 1 and 2
- 2C electrician's screwdrivers 2.5 x 75, 4 x 100, 4 x 125, 5 x 150
- 2C electrician's screwdrivers 2.5 x 75 (bare)
- 2C combination pliers, 160 mm
- 2C side cutters, 160 mm
- 2C telephone pliers, straight, 200 mm
- 2C telephone pliers, bent, 200 mm
- 2C wire stripping pliers, 160 mm
- ESD electronic side cutters, 115 mm
- ESD electronic needle nose pliers, 130 mm
- ESD Electronic round nose pliers, 130 mm
- ESD electronic needle nose pliers, 130 mm, 45°
- Engineers' screwdrivers, 8 x 150 mm
- Elektronic screwdriver set, 7-pieces
- Tweezer, straight, 130 mm
- Tweezer, flat, 145 mm
- 2C socket wrenches 5, 5.5, 6
- 2C piercing awl, round
- Voltage tester 50 - 250 Volt
- Checking mirror 210 mm
- Claw holder, size 525
- Spanner, 175 mm
- Solder, Sn 60% 1 mm 100 g
- Universal scissors, 190 mm
- Crown scissors, 115 mm
- Contact file set. 6 pieces



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220179   | <b>32-pieces</b> | 220068 | 8,180 | 1  |

## Tool case "Diamant"

ABS+

Master's case for domestic appliances, with 23 tools, rigid case, black. Case 220068.

**Content:**

- 2C electrician's screwdrivers 4 x 100, 5 x 150 mm
- 2C engineers' screwdrivers 6 x 100, 8 x 150 mm
- 2C cross slotted screwdrivers, PH, size 1 and 2
- 2C long nose round pliers, 160 mm
- 2C long nose flat pliers, 160 mm
- 2C telephone pliers 200 mm
- 2C telephone pliers, bent, 200 mm
- 2C combination pliers 160 mm
- 2C side cutters, 160 mm
- 2C heavy duty side cutters, 200 mm
- Cable stripper 0.5 - 4 Ø
- ESD electronic side cutters, 115 mm
- Crimping pliers for crimping terminals
- Socket wrench set, 1/4", 33 pieces
- „PUK“ pocket saw, fixed handle
- Bench hammer, 300 g
- Cable stripping knife, plastic scales
- VDE/GS Voltage tester
- Combination snips, 190 mm
- Cable cutter, max. 16.9 Ø



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220192   | <b>23-pieces</b> | 220068 | 8,500 | 1  |

# Hard-top tool cases

## The ideal tool assortment

ABS+

rigid case for electromaster, with 32 tools. Case 220068.

### Content:

- 2C electrician screwdrivers 75, 75, 125, 150 mm
- 2C engineers' screwdrivers 100, 150 mm
- 2C cross slotted screwdrivers PH, size 1 + 2
- 2C combination pliers, 180 mm
- 2C telephone pliers, 200 mm
- 2C side cutters, 160 mm
- 2C telephone pliers, 200 mm
- 2C water pump pliers, 240 mm
- ESD electronic side cutters, 115 mm
- ESD electronic needle nose pliers, 130 mm
- Electronic screwdriver set, 7-pieces
- Solder for electronic work, Sn 60%, 1.5 mm, 100 g
- Claw retriever with fixed shaft, size 165
- 2C piercing awl, square
- 2C socket wrenches 7, 8, 10
- Checking mirror, 210 mm
- Socket wrench set, 1/4", 33 piece
- Contact soldering iron, 30 watt
- Cable stripping knife, plastic handle
- Bench hammer, 300 g
- Universal saw, heavy 150 mm
- Cable stripper, 0.5 - 4 mm Ø
- Combination snips, 190 mm
- VDE/GS Voltage tester
- Tweezer angled



| Art. no. | set              | empty  | kg     | PU |
|----------|------------------|--------|--------|----|
| 220177   | <b>32-pieces</b> | 220068 | 10,260 | 1  |

## Tool case "OmegaMax Start VDE"

ABS+

rigid case, black, 28 compartments, 1 combination lock, 1 separation for documents, 2 plate for tools, 2 lockable locks, ground bowl with variables to dividing bars, framed push border. Case 220042.

### Content:

- 2C-VDE electrician's screwdrivers  
2.5 x 75, 4 x 100, 5.5 x 125 und 6.5 x 150 mm
- 2C-VDE cross slotted screwdrivers PH, size 1 + 2
- 2C combination pliers, 185 mm
- 2C side cutters, 165 mm
- 2C telephone pliers, 200 mm
- 2C wire stripping pliers, 160 mm
- Wire stripper, hooked blade, 8 - 28 mm Ø
- Cable knife, 1 blade
- Engineers' hammer, 300 g
- PUK pocket saw, fixed handle
- Electricians' chisel, 10 x 250 mm
- Paint scraper, 40 mm
- Voltage tester, blade 50 mm
- Measuring tape, 3 m
- Water brush



| Art. no. | set              | empty  | kg     | PU |
|----------|------------------|--------|--------|----|
| 220043   | <b>19-pieces</b> | 220042 | 11,000 | 1  |



**haupa**<sup>®</sup>

... convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Tool case trolley "OmegaMax Trolley Start VDE"

ABS+

rigid case, black, 28 compartments, 1 combination lock, 1 separation for documents, 2 plate for tools, 2 lockable locks, ground bowl with variables to dividing bars, framed push border. Tool case 220048.

**Content:**

- 2C-VDE electrician's screwdrivers 2.5 x 75, 4 x 100, 5.5 x 125 und 6.5 x 150 mm
- 2C-VDE cross slotted screwdrivers PH, size 1 + 2
- 2C combination pliers, 185 mm
- 2C side cutters, 165 mm
- 2C telephone pliers, 200 mm
- 2C wire stripping pliers, 160 mm
- Wire stripper, hooked blade, 8 - 28 mm Ø
- Cable knife, 1 blade
- Engineers' hammer, 300 g
- PUK pocket saw, fixed handle
- Electricians' chisel, 10 x 250 mm
- Paint scraper, 40 mm
- Voltage tester, blade 50 mm
- Measuring tape, 3 m
- Water brush



| Art. no. | set              | empty  | kg     | PU |
|----------|------------------|--------|--------|----|
| 220137   | <b>19-pieces</b> | 220048 | 11,500 | 1  |

## Tool case "Delux Plus" 1000 V

ABS+

rigid case, signal-red, with high-grade fittings, complete with 54 safety tools, case 220076.

**Content:**

- 2C-VDE electrician's screwdriver 2.5 x 75, 4 x 100, 5.5 x 125, 6.5 x 150 mm
- 2C-VDE cross slotted screwdriver PH, size 1 + 2
- VDE telephone pliers, straight, 200 mm
- VDE telephone pliers, bent, 200 mm
- VDE combination pliers 185 mm
- VDE side cutters 165 mm
- VDE wire stripping pliers 160 mm
- Socket wrenches 5.5, 7, 8, 10 mm
- Voltage tester „Profi“
- Hexagon sockets 10, 11, 12, 13, 14, 15, 16
- Reversible ratchet 1/2"
- T-sliding handle 1/2"
- Open end spanners 10, 12, 13, 19, 22, 24
- Cable knife
- Cable scissors 200 mm
- Slip-on bushes 5-pieces No. 1, 10 mm
- Slip-on bushes 5-pieces No. 2, 10 mm
- Slip-on bushes 5-pieces No. 3, 10 mm
- Plastic pliers 180 mm
- Plastic clamp
- Covering tape, grey
- Covering tape, red
- Safety grip
- Gloves size 9



1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg     | PU |
|----------|------------------|--------|--------|----|
| 220239   | <b>54-pieces</b> | 220076 | 11,780 | 1  |



# Tool cases 1000 V

## Tool case "Leopard" 1000 V

ABS+

rigid case, signal-red, complete with 32 safety tools (460 x 180 x 310 mm).

**Content:**

- 2C-VDE electrician's screwdrivers  
2,5 x 75, 4 x 100, 6,5 x 150, 8,0 x 175, 10,0 x 200 mm
- 2C-VDE cross slotted screwdrivers PH, size 1 + 2
- 2C-VDE cross slotted screwdrivers PZ, size 1 + 2
- Retaining screwdrivers 100, 125 mm
- Retaining screwdriver, cross-slotted
- Right angle allen keys, 6, 8 mm
- VDE round nose pliers, 160 mm
- VDE telephone pliers, straight, 200 mm
- VDE telephone pliers, bent, 200 mm
- VDE combination pliers 185 mm
- VDE wire stripping pliers 160 mm
- VDE side cutter, 165 mm
- Socket wrenches 5,5, 6, 7, 8 mm
- Voltage Tester „Profi“
- Cable knife, insulated
- Cable knife
- Cable scissor
- Plastic pliers 180 mm
- Covering tape, red 10 m
- NH-safe



1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220136   | <b>32-pieces</b> | 220076 | 9,400 | 1  |

## Tool case "Power Pack" 1000 V

ABS+

rigid case, signal red, with alu frame and 2 locks, 3 plates with many compartments for tools, case 220076 (460 x 180 x 310 mm).

**Content:**

- 2C-VDE electrician's screwdrivers  
2,5 x 75, 4 x 100, 5,5 x 125 und 6,5 x 150 mm
- 2C-VDE cross slotted screwdrivers PH, size 1 + 2
- 2C-VDE screwdrivers PZ/FL, size 1 + 2
- 2C-VDE combination pliers 185 mm
- 2C-VDE diagonal cutter 165 mm
- 2C-VDE telephone pliers 200 mm
- 2C-VDE cable cutter 200 mm
- 2C-VDE water pump pliers 240 mm
- VDE cable knife, straight blade, 50 mm
- Safety glasses „PRO“
- Automatic wire stripper 0,2 - 6 mm<sup>2</sup>
- Voltage tester „TestPen“
- Voltage tester „Profi“
- Finger gloves, size 9
- Ear protection plugs
- NH-safety fuse grip



1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220303   | <b>21-pieces</b> | 220076 | 8,680 | 1  |

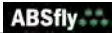


**haupa**

... convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Tool case "Merkur Plus"



rigid case, black, Master's case with 25 tools. Case 220034.

### Content:

- 2C electrician's screwdrivers 75, 125, 150 mm
- 2C engineers' screwdrivers 100, 150 mm
- 2C cross slotted screwdrivers, PH, size 1 and 2
- Universal scissor, 190 mm
- Cable knife, 1-piece
- Wire stripper, hooked blade, 8 - 28 mm Ø
- 2C combination pliers, 180 mm
- 2C heavy duty side cutters, 180 mm
- 2C telephone pliers, 200 mm
- 2C telephone pliers, bent, 200 mm
- 2C water pump pliers, 240 mm
- 2C wire stripping pliers, 160 mm
- PUK pocket saw, fixed handle
- Electricians' chisel 10 x 250 mm
- Measuring stick, 2 m
- Alu level, 400 mm
- 2C piercing awl
- Voltage tester 150 - 250 V
- Adjustable wrench, 210 mm
- Engineers' hammer, 300 g
- Paint scraper, 50 mm



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220035   | <b>25-pieces</b> | 220034 | 9,980 | 1  |

## Tool case "Venus Plus" 1000 V



rigid case, signal-red, complete with 32 safety-tools. (460 x 180 x 310 mm).

### Content:

- Electrician's screwdrivers 75, 100, 150, 175, 200 mm
- Cross slotted screwdriver, PH size 1 + 2
- Cross slotted screwdriver, PZ No. 1 + 2
- VDE round nose pliers 160 mm
- VDE telephone pliers, straight, 200 mm
- VDE telephone pliers, bent, 200 mm
- VDE combination pliers 185 mm
- VDE side cutter 165 mm
- VDE wire stripping pliers 160 mm
- Retaining screwdrivers 100, 125 mm
- Retaining screwdriver cross-slotted
- Right angle allen keys, 6, 8 mm
- 2C-VDE socket wrenches 5,5, 6, 7, 8 mm
- Voltage tester "Profi"
- Cable knife, insulated
- Cable knife
- Cable scissor
- Plastic pliers 180 mm
- Self adhesive PVC tape, red, 10 m
- NH-Safety grip
- Finger gloves, size 9



1000 V IEC 60900:2012



| Art. no. | set              | empty  | kg     | PU |
|----------|------------------|--------|--------|----|
| 220033   | <b>32-pieces</b> | 220032 | 10,160 | 1  |

## Tool case "HAUPA - Lifesaver" 1000 V

Aluminium case, equipped with 54 safety tools.  
Size: 830 mm x 550 mm x 300 mm, weight: 37 kilos.

### Content:

- 2C-VDE socket wrenches 5, 5,5, 7, 8, 10, 11, 13 mm
- Voltage-Tester
- 2C-VDE electrician's screwdrivers  
2,5 x 75, 3 x 100, 4 x 100, 5,5 x 125, 6,5 x 150 mm
- 2C-VDE cross-slotted-screwdrivers PH, size 1, 2
- 2C-VDE cross-slotted-screwdrivers PZ, size 0, 1, 2
- VDE right angle-allen key 3
- VDE right angle-allen key 4
- VDE right angle-allen key 5
- VDE right angle-allen key 6
- VDE right angle-allen key 8
- VDE right angle-allen key 10
- VDE right angle-allen key 12
- VDE open-End Spanners  
6, 7, 8, 9, 10, 11, 12, 13, 14, 17, 19, 22, 24, 27, 30 32
- spanner for switch-cabinets
- finger gloves, size 10
- VDE safety face mask
- VDE safety grip
- VDE electricians boots, size 42
- VDE insulating floor mat
- VDE rubber towels 600 mm
- VDE plastic clip 160 mm (2-pieces)
- Slip-on busches 10 mm (4-pieces)
- Safety belt 1400 mm
- Fallstop-breaking device and rope shortening 2 m
- VDE knife with strong blade
- VDE cable cutter 200 mm
- VDE combination pliers 185 mm
- VDE side cutter 185 mm
- VDE long chain nose pliers 200 mm
- VDE wire stripping pliers 160 mm
- VDE tweezer, pointed round 150 mm
- Fall breaking belt typ A



⚠ 1000 V IEC 60900:2012

| Art. no. | set              | width | height | depth | kg   | PU |
|----------|------------------|-------|--------|-------|------|----|
| 220400   | <b>54-pieces</b> | 830   | 550    | 300   | 37,0 | 1  |
| 220079   | <b>empty</b>     | 830   | 550    | 300   | 18,6 | 1  |

**haupa**<sup>®</sup>

**... convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Laser marking

### Attractive laser marking for your individual tool case

Show profile – give your tool case your name! Logo and name in noble laser design on aluminium plate.

You decide where it's placed!



| Art. no. | Label | kg    | PU |
|----------|-------|-------|----|
| 220193   |       | 0,020 | 1  |

## Assortment boxes

### Assortment boxes with metal catch and pick boxes

**SysCon**

black plastic, including pick boxes

#### Content:

- 4 Boxes 49 x 49 x 72 mm
- 6 Boxes 49 x 98 x 72 mm
- 2 Boxes 98 x 98 x 72 mm
- 4 Boxes 98 x 148 x 72 mm



| Art. no. | width | depth | height |       | kg    | PU |
|----------|-------|-------|--------|-------|-------|----|
| 221131   | 415   | 335   | 90     |       | 1,500 | 1  |
| 221133   | 415   | 335   | 90     | empty | 1,200 | 1  |

**The small parts boxes and the base plate for securing are listed individually on page 372.**

SysCon - Systemcontainer





### HAUPA SysCon product profile:

The basic idea behind the System Container is that the individual containers can be connected to each other to enable easy transport thus ensuring that simple access is provided to the contents of all containers. The containers may be offered in an empty state or with contents. If sold with contents, the contents should encompass assortments which include connection materials, fixture materials and tools.

In addition, the System Container should also acts as a transportation method of HAUPA Hydraulics since the stacking concept enables the hydraulic pressing tools to be organised along with the appropriate cable lugs thus forming a system unit.

The four conical feet on the uppermost container are automatically guided into the correct position on the container below. The connection of the containers is made without expenditure of force, simply by placing them on top of one another: The snap closures on the side mean that the containers can be separated just as easily. The closures are pulled gently outwards which enables lifting.

When stacking, the container handles may be extended or folded in.

The design of the container ensures that water cannot enter the container.

#### Quality profile:

In order to ensure maximum stability, the containers are made from ABS. ABS is capable of withstanding both high and low temperatures without distorting or breaking.

#### The hard tests under a variety of conditions:

Fall tests with both empty and filled containers, stress tests, bounce tests and tensile tests have proved the robustness of the container and of components such as handles, closing flaps, snap closures etc. →

#### Target group:

Due to the high quality and the extreme robustness afforded by this product, the target users are professionals: Trade - Industry - Laboratories, etc.



| Test simulation/Description | Temperature in °C   | Fall height   | Explanation/Observation   |
|-----------------------------|---|---|---|
| <b>Fall test</b><br>(empty) | +20° / -10°<br>+20° / -10°<br>+20° / -10°<br>+20° / -10°<br>+20° / -10° | h = 0,5 m<br>h = 1,0 m<br>h = 1,5 m<br>h = 2,0 m<br>h = 2,5 m | no damage to the product<br>no damage to the product<br>no damage to the product<br>no damage, but the snap closures and closing flaps opened up<br>minor break on the lid of the inner housing where the lid closes on the underside |



| Test simulation/Description                 | Temperature in °C | Fall height | Explanation/Observation  |
|---|-------------------|-------------|--------------------------|
| <b>Ultimate stress test</b><br>(Box closed) | +20° / -10°       | h = 2,0 m   | no damage to the product |



| Test simulation/Description         | Temperature in °C  | Fall height                                      | Explanation/Observation  |
|-------------------------------------|--|--|--|
| <b>Fall test</b><br>(Content: 5 kg) | +20° / -10°<br>+20° / -10°<br>+20° / -10°<br>+20° / -10° | h = 0,5 m<br>h = 1,0 m<br>h = 1,5 m<br>h = 2,0 m | no damage to the product<br>no damage to the product<br>no damage, but the snap closures and closing flaps opened up<br>no damage, but the snap closures and closing flaps opened up |



| Test simulation/Description   | Temperature in °C | Jump height | Explanation/Observation                                |
|-------------------------------|-------------------|-------------|--|
| <b>Bounce test</b><br>(90 kg) | +20° / -10°       | h = 0,3 m   | it is not possible to destroy the product by this test |



| Test simulation/Description | Temperature in °C          | Content in kg | Explanation/Observation   |
|-----------------------------|----------------------------|---------------|---|
| <b>Handle</b>               | +20° / -10°<br>+20° / -10° | 60<br>70      | No damage to the handle<br>No damage, but the snap closures and closing flaps opened up |



| Test simulation/Description            | Temperature in °C          | Content in kg | Explanation/Observation  |
|--|----------------------------|---------------|--|
| <b>Snap closures and closing flaps</b> | +20° / -10°<br>+20° / -10° | 60<br>70      | No damage to the snap closures<br>No damage to the closing flaps<br>No damage, but the snap closures and closing flaps opened up |



## ABS plastic box „SysCon S“



outer dimensions: 464 x 353 x 142 mm  
inner dimensions: 400 x 300 x 80 mm

without inlay



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220370   | 400   | 300   | 80     | 2,200 | 1  |

## ABS plastic box „SysCon S mobil“



outer dimensions: 464 x 353 x 142 mm  
inner dimensions: 400 x 300 x 80 mm  
2 swivel castors  
2 swivel castors with locking function

without inlay



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220371   | 400   | 300   | 80     | 4,300 | 1  |

## ABS plastic box „SysCon M“



outer dimensions: 464 x 353 x 212 mm  
inner dimensions: 400 x 300 x 150 mm

without inlay



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220372   | 400   | 300   | 150    | 2,600 | 1  |

## ABS plastic box „SysCon M mobil“



outer dimensions: 464 x 353 x 212 mm  
inner dimensions: 400 x 300 x 150 mm  
2 swivel castors  
2 swivel castors with locking function

without inlay



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220380   | 400   | 300   | 150    | 4,700 | 1  |

## ABS plastic box „SysCon XL“



outer dimensions: 464 x 335 x 362 mm  
inner dimensions: 400 x 300 x 312 mm

without inlay



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220650   | 400   | 300   | 312    | 2,800 | 1  |

## ABS plastic box „SysCon XL mobil“



outer dimensions: 464 x 335 x 362 mm  
inner dimensions: 400 x 300 x 312 mm  
2 swivel rolls  
2 swivel rolls with locking function

without inlay



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220651   | 400   | 300   | 312    | 9,180 | 1  |





## SysCon for assortment inserts empty



### Content:

|    |        |  |
|----|--------|--|
| 1  | 220370 | ABS plastic box „SysCon S“             |
| 2  | 220376 | Foam insert "SysCon" 395 x 300 x 15 mm |
| 24 | 221135 | Box M                                  |



|          |              |       |    |
|----------|--------------|-------|----|
| Art. no. |              | kg    | PU |
| 220620   | <b>empty</b> | 2,800 | 1  |

## SysCon M for assortment inserts empty



### Content:

|    |          |                                    |
|----|----------|------------------------------------|
| 1  | 220372   | ABS plastic box „SysCon M“         |
| 1  | 220374/S | Assortment insert SysCon with foam |
| 1  | 220399   | Foam "SysCon" 395 x 300 x 10 mm    |
| 14 | 221135   | Box M                              |
| 2  | 221136   | Box L                              |
| 2  | 221137   | Box XL                             |



|          |             |       |    |
|----------|-------------|-------|----|
| Art. no. |             | kg    | PU |
| 220770   | <b>leer</b> | 3,000 | 1  |

## SysCon for assortment inserts, empty



### Content:

|    |        |  |
|----|--------|--|
| 1  | 220370 | ABS plastic box „SysCon S“             |
| 2  | 220376 | Foam insert "SysCon" 395 x 300 x 15 mm |
| 14 | 221135 | Box M                                  |
| 2  | 221136 | Box L                                  |
| 2  | 221137 | Box XL                                 |



|          |              |       |    |
|----------|--------------|-------|----|
| Art. no. |              | kg    | PU |
| 220628   | <b>empty</b> | 2,900 | 1  |

## SysCon tool box empty



### Content:

|   |        |  |
|---|--------|--|
| 1 | 220372 | ABS plastic box „SysCon M“             |
| 1 | 220399 | Foam insert "SysCon" 300 x 395 x 10 mm |
| 1 | 220374 | Tools insert "SysCon"                  |
| 1 | 220379 | Tool plate "SysCon" 11 compartments    |



|          |              |       |    |
|----------|--------------|-------|----|
| Art. no. |              | kg    | PU |
| 220622   | <b>empty</b> | 2,400 | 1  |



**haupa®**

**... convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Systemcontainer

## SysCon tool box empty



### Content:

|   |        |  |
|---|--------|--|
| 1 | 220370 | ABS plastic box „SysCon S“             |
| 2 | 220377 | Foam insert "SysCon" 395 x 300 x 20 mm |
| 1 | 220406 | Tools insert "SysCon"                  |



| Art. no. |              | kg    | PU |
|----------|--------------|-------|----|
| 220626   | <b>empty</b> | 2,500 | 1  |

## Tool plate



adjustable inner divider  
with 10 tool straps  
dimensions: 275 x 285 mm



| Art. no. | width | height |              | kg    | PU |
|----------|-------|--------|--------------|-------|----|
| 220655   | 275   | 285    | <b>empty</b> | 0,200 | 1  |

## Tool plate SysCon



11 compartments



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220379   | 400   | 300   | 20     | 0,200 | 1  |

## ABS plastic box „SysCon XL“ variable



outer dimensions: 464 x 335 x 362 mm  
inner dimensions: 400 x 300 x 312 mm

incl. tool plate and adjustable inner divider



| Art. no. | width        | depth | height | kg  | PU    |   |
|----------|--------------|-------|--------|-----|-------|---|
| 220654   | <b>empty</b> | 400   | 300    | 312 | 4,300 | 1 |

## SysCon Rack



black plastic, for 2 assortment boxes art. 221131  
Delivery without assortment boxes!



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 221132   | 493   | 367   | 248    | 2,000 | 1  |

# Systemcontainer

## Tools insert SysCon



Polypropylen, 5 compartments



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220374   | 400   | 300   | 80     | 0,200 | 1  |

## Tools insert SysCon



Polypropylen, 18 compartments



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220355   | 400   | 300   | 80     | 0,200 | 1  |

## Tools insert SysCon with foam



Polypropylen, 5 compartments

### Content:

- 1 220374 Tools insert "SysCon"
- 1 220399 Foam "SysCon" 395 x 300 x 10 mm



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220374/S | 400   | 300   | 80     | 0,220 | 1  |

## Assortment insert SysCon with foam



Polypropylen, 18 compartments

### Content:

- 1 220399 Foam "SysCon" 395 x 300 x 10 mm
- 1 220355 Assortment insert "SysCon"



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220355/S | 400   | 300   | 80     | 0,220 | 1  |

## Tools insert SysCon



Polypropylen, 10 compartments



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220375   | 400   | 300   | 80     | 0,200 | 1  |

## Tools insert SysCon



Polypropylen, with 12 adjustable compartments



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220356   | 400   | 300   | 80     | 0,200 | 1  |

## Assortment insert SysCon with foam



Polypropylen, 10 compartments

### Content:

- 1 220399 Foam "SysCon" 395 x 300 x 10 mm
- 1 220375 Assortment insert "SysCon"



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220375/S | 400   | 300   | 80     | 0,220 | 1  |

## Assortment insert SysCon with foam



Polypropylen, with 12 adjustable compartments

### Content:

- 1 220399 Foam "SysCon" 395 x 300 x 10 mm
- 1 220356 Assortment insert "SysCon", with adjustable compartments



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220356/S | 400   | 300   | 80     | 0,220 | 1  |



**haupa**<sup>®</sup>

... convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

# Systemcontainer

## Box S



ABS, conical design for stacking with snap on base plate



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 221134   | 49    | 49    | 72     | 0,020 | 1  |

## Box M



ABS, conical design for stacking with snap on base plate



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 221135   | 98    | 49    | 72     | 0,031 | 1  |

## Box L



ABS, conical design for stacking with snap on base plate



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 221136   | 98    | 98    | 72     | 0,048 | 1  |

## Box XL



ABS, conical design for stacking with snap on base plate

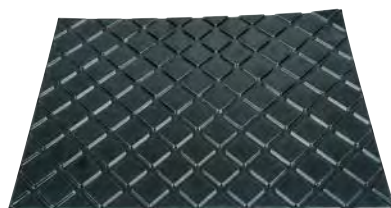


| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 221137   | 148   | 98    | 72     | 0,065 | 1  |

## Baseplate for fixing



Polypropylene, grids for even better non-slip grip

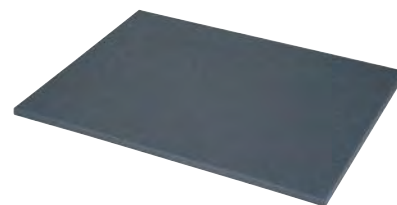


| Art. no. | width | depth | kg    | PU |
|----------|-------|-------|-------|----|
| 221138   | 400   | 300   | 0,100 | 1  |

## Foam insert SysCon



soft foam, 395 x 300 x 10 mm



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220399   | 395   | 300   | 10     | 0,020 | 1  |

## Foam insert SysCon



soft foam, 395 x 300 x 15 mm

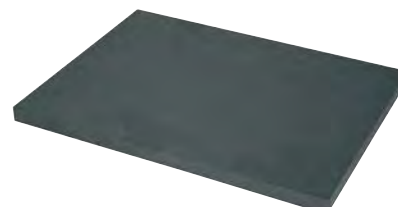


| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220376   | 395   | 300   | 15     | 0,030 | 1  |

## Foam insert SysCon



rigid foam, 395 x 300 x 20 mm

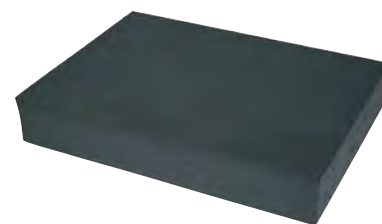


| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220377   | 395   | 300   | 20     | 0,055 | 1  |

## Foam insert SysCon



rigid foam, 395 x 300 x 65 mm



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220378   | 395   | 300   | 65     | 0,200 | 1  |

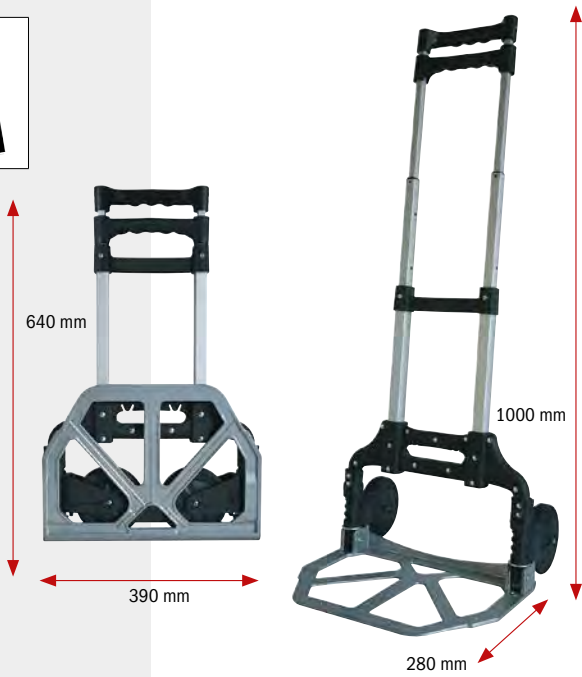
# Systemcontainer

## SysCon hand truck



### Properties:

- up to 60 kg
- sturdy aluminum frame
- Hand truck shovel: 390 x 280 mm



| Art. no. | max.kg | kg    | PU |
|----------|--------|-------|----|
| 220602   | 60     | 2,500 | 1  |

## SysCon starter set



Car securing trolley made from anodised aluminium for HAUPA SysCon system containers. The ideal companion for use out and about. Easy installation in all car models.

- 220370 ABS plastic box "SysCon S"
- 220372 ABS plastic box "SysCon M"
- 220644 SysCon load securing "SysCon Car"
- 220375 Assortment inset "SysCon"
- 220374 Tool inset "SysCon"



| Art. no. | width | depth | height | kg     | PU |
|----------|-------|-------|--------|--------|----|
| 220646   | 475   | 360   | 1080   | 10,000 | 1  |

## SysCon load securing "SysConCar"



### Properties:

- 21 slots (rear side)
- 3 round holes each side, left and right
- 5 round holes in floor plate
- Width: 475 mm, height: 1080 mm, depth: 360 mm
- Volume for contents:
  - max. 5 ABS boxes „SysCon M“
  - max. 8 ABS boxes „SysCon S“



| Art. no. | width | depth | height | kg    | PU |
|----------|-------|-------|--------|-------|----|
| 220644   | 475   | 360   | 1080   | 5,000 | 1  |



**haupa**<sup>®</sup>

**... convincing solutions**

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## SysCon tool case set



**Content:** 17 tools

|   |        |                                     |
|---|--------|-------------------------------------|
| 1 | 220372 | ABS plastic box "SysCon M"          |
| 1 | 220374 | Tools insert "SysCon"               |
| 1 | 220399 | Foam "SysCon" 400 x 300 x 10 mm     |
| 1 | 220379 | Tool plate "SysCon" 11 compartments |

|        |   |  |
|--------|---|--|
| 210696 | Spanner for switch-cabinets                         |  |
| 210695 | Automatic wire stripper 0,2 - 6 mm <sup>2</sup>     |  |
| 263842 | VDE electrical tape 19 mm x 20 mm, black            |  |
| 263844 | VDE electrical tape 19 mm x 20 mm, white            |  |
| 263860 | VDE electrical tape 19 mm x 20 mm, green/yellow     |  |
| 200031 | Cable stripping knife 8 - 28 mm <sup>2</sup>        |  |
| 211200 | 2C-VDE combination plier DIN 5244, 185 mm           |  |
| 211204 | 2C-VDE side cutter DIN 5238 B, 165 mm               |  |
| 211208 | 2C-VDE telephone plier DIN 5236 A, 200 mm, straight |  |
| 101870 | 2C-VDE screwdriver PZ/FL 1                          |  |
| 101872 | 2C-VDE screwdriver PZ/FL 2                          |  |
| 181910 | 2C-VDE screwdriver 2,5 x 75 mm                      |  |
| 101914 | 2C-VDE screwdriver 3,5 x 100 mm                     |  |
| 101916 | 2C-VDE screwdriver 4,0 x 100 mm                     |  |
| 101920 | 2C-VDE screwdriver 6,5 x 150 mm                     |  |
| 101942 | 2C-VDE screwdriver PH1                              |  |
| 101944 | 2C-VDE screwdriver PH2                              |  |



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220392   | <b>17-pieces</b> | 220372 | 4,300 | 1  |

## SysCon tool case set "Start VDE"



**Content:** 22 tools

|   |        |                                     |
|---|--------|-------------------------------------|
| 1 | 220372 | ABS plastic box "SysCon M"          |
| 1 | 220374 | Tools insert "SysCon"               |
| 1 | 220399 | Foam "SysCon" 400 x 300 x 10 mm     |
| 1 | 220379 | Tool plate "SysCon" 11 compartments |

|        |  |  |
|--------|--|--|
| 240042 | Aluminium spirit levels 400 mm                       |  |
| 180184 | Engineers' hammer 300 g                              |  |
| 210695 | Wire stripper Super Plus 0,2 - 6 mm <sup>2</sup>     |  |
| 200043 | Universal stripper 0,2 - 4 mm <sup>2</sup>           |  |
| 211200 | 2C-VDE combination pliers DIN 5244, 185 mm           |  |
| 211217 | 2C-VDE heavy duty side cutters DIN 5238 A, 170 mm    |  |
| 211208 | 2C-VDE telephone pliers DIN 5236 A, 200 mm, straight |  |
| 101999 | 2C-VDE screwdrivers set                              |  |
| 101870 | 2C-VDE screwdriver with PZ slot profile PZ/FL 1      |  |
| 101872 | 2C-VDE screwdriver with PZ slot profile PZ/FL 2      |  |
| 180092 | Electricians' chisels 10 x 250 mm                    |  |
| 100647 | Voltage tester VDE/GS                                |  |
| 150090 | Carpenters' pencil                                   |  |
| 150024 | Paint scrapers 40 mm                                 |  |
| 150004 | Water brushes  |  |
| 240002 | Folding rules 2 m                                    |  |
| 150006 | Plaster cup  |  |



| Art. no. | set              | empty  | kg    | PU |
|----------|------------------|--------|-------|----|
| 220608   | <b>22-pieces</b> | 220372 | 6,500 | 1  |

## Workshop trolley

### HAUPA Workshop trolley

- with 6 drawers and 2 outer compartments
- outside dimensions: 907 x 474 x 815 mm
- drawer dimensions:  
3 small drawers: 568 x 75 x 398 mm  
3 large drawers: 568 x 154 x 398 mm
- material thickness: 0.8 mm
- with practical side handle
- 4 castors (2 rollers with brake)
- 40 kg load capacity per drawer
- drawers suitable for HAUPA foam inserts
- 3 integrated locks
- EVA mats on the trolley and in the drawers prevent unintentional slippage



| Art. no. | width | depth | height | kg   | PU |
|----------|-------|-------|--------|------|----|
| 220750   | 907   | 474   | 815    | 69,5 | 1  |

## Workshop trolley robust, versatile and mobile



### Foam socket wrench set „Torque“ 1/4"

1/4"

including tools, chrome vanadium steel, industrial quality GS tested

#### Content:

- 12 sockets 1/4" 4 - 4.5 - 5 - 5.5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13
- 5 sockets 1/4" Tx, long version T20, T25, T27, T30, T40
- 4 sockets 1/4" Hex, long version 4, 5, 6, 8 without hole
- 2 extension bar 1/4", 50 and 150 mm
- 1 adapter 3/8" x 1/4" for extension bar work as T-handle
- 1 universal joint 1/4"
- 1 bit adapter 1/4"
- 1 reversible ratchet 1/4"
- 1 torque wrenches 1/4", 5 - 25 Nm
- 1 ratchet screwdriver "Flex"
- 2 adapter 50 and 80 mm
- 4 bits 1/4" 50 mm PH 0 - 1 - 2 - 3
- 4 bits 1/4" 50 mm PZ 0 - 1 - 2 - 3
- 2 bits 1/4" 50 mm PZ/FL 1 - 2
- 4 bits 1/4" 50 mm SQ 3 - 4 - 5 - 6
- 6 bits 1/4" 50 mm hexagonal 2 - 2.5 - 3 - 4 - 5 - 6



TQ

| Art. no. | drive | Nm     | set              | kg    | PU |
|----------|-------|--------|------------------|-------|----|
| 220640/H | 1/4"  | 5 - 25 | <b>51-pieces</b> | 2,600 | 1  |

### Foam inlay for socket set "Torque" 1/2"

1/2"

including tools, chrome vanadium steel, industrial quality GS tested

#### Content:

- 17 sockets 1/2" 8 - 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 19 - 21 - 22 - 23 - 24 - 27 - 30 - 32 mm
- 5 sockets 1/2" Tx, long version T30, T40, T45, T50, T55
- 4 sockets 1/2" Hex, long version 8, 10, 12, 14 without hole
- 2 extension bar 1/2", 75 and 250 mm
- 1 adapter 3/8" x 1/2" for extension bar work as T-handle
- 1 universal joint 1/2"
- 1 reversible ratchet 1/2"
- 1 torque wrenches 1/2", 21 - 119 Nm



TQ

| Art. no. | drive | set              | kg    | PU |
|----------|-------|------------------|-------|----|
| 220642/H | 1/2"  | <b>32-pieces</b> | 2,600 | 1  |



**haupa**<sup>®</sup>

... convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com

## Foam inlay for socket set "SocketMax" 1/4" + 1/2" 1/4 1/2

including tools, chrome vanadium steel, industrial quality GS tested

### Content:

- 12 Sockets 1/4" 4 - 4.5 - 5 - 5.5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 mm
- 2 Extensions 1/4" 50 - 150mm
- 1 Adapter 3/8" x 1/4" for sliding handle
- 1 Kardanjoint 1/4"
- 1 Bit adapter 1/4"
- 1 Reversible ratchet 1/4"
- 13 Sockets 1/2" 10-11-12-13-14-15-17-19-22-24-27-30-32 mm
- 2 Extensions 1/2" 75 - 250 mm
- 1 Adapter 3/8" x 1/2" for sliding handle
- 1 Kardanjoint 1/2"
- 1 Reversible ratchet 1/2"
- 1 Ratchet screwdriver „Flex“
- 2 Adapter 50 - 80 mm
- 4 Bit 1/4" 50 mm PH 0 - 1 - 2 - 3
- 4 Bit 1/4" 50 mm PZ 0 - 1 - 2 - 3
- 2 Bit 1/4" 50 mm PZ/FL 1 - 2
- 4 Bit 1/4" 50 mm SL 3 - 4 - 5 - 6 mm
- 6 Bit 1/4" 50 mm hexagon 2 - 2.5 - 3 - 4 - 5 - 6



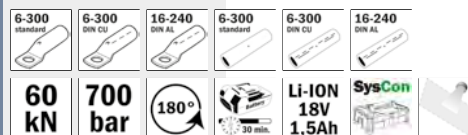
| Art. no. | drive      | set              | kg    | PU |
|----------|------------|------------------|-------|----|
| 220600/H | 1/2", 1/4" | <b>55-pieces</b> | 2,600 | 1  |

## Foam inlay for smart battery hydraulics "S0-6"

Hydraulic for interchangeable dies, crimping head 180° swivelling, Head can be opened, manual return flow after perfect pressure.

### Extent of supply:

- 1 crimping tool, 1 charger, 1 battery, without crimping headstock.
- Pressing force in kN: 60 kN
- Working pressure in bar: 700
- Head can be opened
- Opening/ Hub: 17 mm
- Pressing width: slim
- Pressing time, battery-operated in seconds: ca. 5
- Battery charging time in minutes: 30
- Battery type: Li-Ion, 18 V, 1,5 Ah
- Cable lugs: standard Cu 6-300 • DIN Cu 6-300 • DIN Al 16-240
- Connectors: Cu 6-300 • DIN Cu 6-300 • DIN Al 16-240



| Art. no. | mm <sup>2</sup> | kg    | PU |
|----------|-----------------|-------|----|
| 216801/H | 6 - 300         | 7,900 | 1  |

## Foam inlay for socket set "VDE-Socket" 1/2" 1/2

complete with 1/2" tools. The plastic material used for socket sets is guaranteed to pass -40°C impact tests. This guarantee that the insulation value will not be compromised due to impact.

### Content:

- Reversible ratchet 250 mm, 1/2"
- T-slip-on-keys 200 mm, 1/2"
- Extension 125 and 250 mm, 1/2"
- Sockets 1/2", 10, 11, 12, 13, 14, 17, 19, 22, 24, 27, 32 mm
- Dies for hexagon screws 1/2", 4, 5, 6, 8, 10 mm



1000 V IEC 60900:2012



| Art. no. | drive | set              | kg    | PU |
|----------|-------|------------------|-------|----|
| 220413   | 1/2"  | <b>20-pieces</b> | 6,500 | 1  |



HUPchemie



**haupa**<sup>®</sup>  
... convincing solutions



**Construction Glue HUPfix+**

**Application HUPfix+:**

Gluing of metal, wood and synthetic materials in electrical sectors, building, furniture manufacture, container construction, metal work, machinery, air conditioning, yacht/boat construction, body-work, vessel construction and construction of window and door frames. Suitable in applications where silicones can not be used. An adhesive with a grab and bond strength so good it can be classed as the ultimate performance adhesive. With HUPfix+ it is possible to glue heavy materials like cables, stone, wood, tiles and metals on ceilings and walls, where other common glues fail.

**Characteristics:**

The materials which needs to be glued, must be clean, free of oil and grease. Apply the HUPfix+ on one side, place the material to be glued together and press firm. Direct adhesion. Skinning time after 10 till 20 minutes. Curing 3 mm/24 hours. Shelf life: 12 months. Temperature resistance: -40 till +100°C (130°C short-term up to 2-3 hours). Application temperature: +5 till +40°C.



| Art. no. | ml  |                  | kg    | PU |
|----------|-----|------------------|-------|----|
| 170206   | 310 | Adhesion+Sealing | 0,450 | 1  |

**Construction Adhesive HUPmount**

**How to use HUPmount:**

Used to joint wood, plywood, fibreboard, MDF, laminated boards, metals, aluminium, natural stone, artificial stone such as Corian® and Varicor, cement, marble, ceramics, acrylic, plastics, plasterboard, polystyrene, hard foam, insulation and many more, for fitting and securing dowels in brickwork.

**Properties:**

HUPmount is weather-resistant in accordance with DIN EN 204 D4, combines almost all materials, single-component, easy to use, solvent-free, silicone-free, aging-resistant, resistant to many chemicals, good initial adhesion (full load may be applied after approximately 15 minutes), frost-safe, high final durability, suitable for natural stone. Temperature resistant from -30°C to +110°C.



| Art. no. | ml  |                  | kg    | PU |
|----------|-----|------------------|-------|----|
| 170208   | 310 | Adhesion+Sealing | 0,470 | 1  |

**MS-Polymer HUPfix**

**How to use HUPfix:**

HUPfix is a high-quality adhesive and sealant with an MS polymer base. UV, weather, saltwater and chlorine resistant. Very good adhesion to many surfaces, in most cases, without primer. Hardens quickly. The join must be smoothed immediately after application using acid-free soapy water.

**Properties:**

Temperature resistant from -40 to +100°C. Processing temperature +5 to +40°C. HUPfix can be used both as adhesive and for grouting. Can be painted.



| Art. no. | ml  |                  | colour      | kg    | PU |
|----------|-----|------------------|-------------|-------|----|
| 170216   | 310 | Adhesion+Sealing | transparent | 0,300 | 1  |
| 170210   | 310 | Adhesion+Sealing | grey        | 0,440 | 1  |
| 170212   | 310 | Adhesion+Sealing | black       | 0,440 | 1  |
| 170214   | 310 | Adhesion+Sealing | white       | 0,440 | 1  |
| 170218   | 120 | Adhesion+Sealing | white       | 0,120 | 1  |

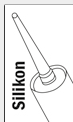
**HUPsilicon**

**How to use HUPsilicon:**

For grouting indoors and outdoors, window glazing and sealing of joints in wood, plastic and aluminium windows. Corresponds to DIN 18545 Part 2. Very good adhesion on the majority of usual varnishes and paints.

**Properties:**

Permanently elastic. Aging, weather and UV resistant. Odour neutral. No early crack formation. Good adhesion on worktops. No surface stickiness. Temperature resistant from -50°C to +150°C. Processing temperature +5°C to +40°C. Skin formation time approximately 10-15 minutes (at 23°C).



| Art. no. | ml  |                  | colour      | kg    | PU |
|----------|-----|------------------|-------------|-------|----|
| 170200   | 310 | Adhesion+Sealing | transparent | 0,450 | 1  |
| 170202   | 310 | Adhesion+Sealing | white       | 0,450 | 1  |
| 170204   | 310 | Adhesion+Sealing | grey        | 0,450 | 1  |

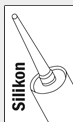
**High temperature silicon HUPsilicon**

**How to use HUPsilicon:**

For sealing joints and surfaces in temperature-critical areas (extreme cold and heat). Can be used as coating for solid seals. For sealing drive axle covers, inlet systems, differential covers, gear, front and camshaft bearing covers, thermostat housings, oil pumps, oil tanks, spur-wheel covers, spotlights and street lighting, windscreens, water pumps etc. (not suitable for adherence to PP, PE, Teflon® and bitumen surfaces, or for parts constantly exposed to solvents)

**Properties:**

Sealing and adhesive mass with a silicone base. Heat stabilised, excellent resistance to UV and weather influences as well as to motor and gear oils, resistant to chemicals, mechanical and environmental influences, resistant to water, salt water, cold, heat, very high flexibility and good adherence on almost all surfaces. Colour: Black. Skin formation time: 10 minutes. Temperature resistance: -40° to +260°



| Art. no. | ml  | colour | kg    | PU |
|----------|-----|--------|-------|----|
| 170250   | 310 | black  | 0,450 | 1  |

**Cartridge gun**

for 310 ml cartridges

- for processing silicone and polymer cartridges



| Art. no. |                  | kg    | PU |
|----------|------------------|-------|----|
| 170252   | Adhesion+Sealing | 0,450 | 1  |

**Cartridge gun „Profi“**

for 310 ml cartridges

- for processing silicone and polymer cartridges



| Art. no. |                  | kg    | PU |
|----------|------------------|-------|----|
| 170254   | Adhesion+Sealing | 0,450 | 1  |

**2 Component High-Performance-Adhesive HUPmega**

**How to use HUPmega:**

Gluing of metal, stone, ceramics, wood and plastic. Simple to use. Extremely high durability. HUPmega is mixed automatically. Within 4 minutes, combine the pieces and wait 24 hours to harden (approximately 75% of the final hardness will be achieved after 2 hours at room temperature).

**Properties:**

Temperature-resistant: -55°C to +120°C. Open time: approximately 5 minutes. Mechanical processing: After approximately 30 minutes. Final hardness: After 24 hours. Processing temperature: from +10°C to +30°C. Weather-resistant, good media resistance. Storage temperature +6°C to maximum +28°C.



| Art. no. | ml |                  | kg    | PU |
|----------|----|------------------|-------|----|
| 170220   | 25 | Adhesion+Sealing | 0,050 | 1  |

**Mixing nozzle**

- for 2-component adhesive



| Art. no. |                  | kg    | PU |
|----------|------------------|-------|----|
| 170234   | Adhesion+Sealing | 0,003 | 1  |



**2 Component-epoxyd glue HUPepoxyd**

**How to use HUPepoxyd:**

Gluing of metal, (hard) plastic, ceramics, glass, porcelain, stone, wood, concrete, rubber and much more. Ideal for gluing tasks with high visual requirements. Clean the surfaces to be glued, open the cap and screw the mixing nozzle into place. Dispose of the first 2 g since this will not be mixed 1:1. Then apply the glue and join the parts. Remove the mixing nozzle and dispose it. Replace the cap. Store open cartridges in a cool place and use as soon as possible (you can also work without the nozzle).

**Properties:**

Temperature resistant: -40°C to +80°C. Processing temperature: +10°C to +30°C. Final hardness: 24 hours. Open time: approximately 5 minutes.



| Art. no. | ml |                  | kg    | PU |
|----------|----|------------------|-------|----|
| 170222   | 25 | Adhesion+Sealing | 0,025 | 1  |

**2 Component liquid metal HUPfastMetal**

**How to use HUPfastMetal:**

Repair of cracks, drill holes, holes etc. Suitable for extremely strong adhesion of metal and metal alloys (steel, aluminium). Clean the surfaces to be glued, open the cap and screw the mixing nozzle into place. Dispose of the first 2 g since this will not be mixed 1:1. Then apply the glue and join the parts. Remove the mixing nozzle and dispose it. Replace the cap. Store open cartridges in a cool place and use as soon as possible (you can also work without the nozzle).

**Properties:**

Temperature resistant: -50°C to +120°C, Open time approximately 5 - 10 minutes. After approximately 30 minutes, you will be able to mechanically process the repaired location.



| Art. no. | ml |                  | kg    | PU |
|----------|----|------------------|-------|----|
| 170224   | 25 | Adhesion+Sealing | 0,025 | 1  |

**HUPsuperglue**

**How to use HUPsuperglue:**

The surfaces must be clean and free of oil or grease. Apply a thin layer of HUPsuperglue to one side and join the parts.



| Art. no. | ml |                  | kg    | PU |
|----------|----|------------------|-------|----|
| 170226   | 20 | Adhesion+Sealing | 0,020 | 1  |

**Fine droplet tip**



| Art. no. |  |                  | kg    | PU |
|----------|--|------------------|-------|----|
| 170236   |  | Adhesion+Sealing | 0,001 | 1  |

**Double-Sided Acryl Tape**

**HUPtapeDouble**

**How to use HUPtapeDouble:**

Permanent and safe hold on almost all smooth surfaces such as metal, wood, glass, plastic, ceramics and rubber. Ideal for mounting brackets, signs, hooks, shelf elements, etc.

Not suitable for: PE, PP, PTFE (e.g. Teflon®), silicone, paper and vinyl wallpaper, non-load-carrying surfaces as well as surfaces with dirt-repelling coatings.

**Properties:**

HUPtapeDouble is an extremely strong, double-sided sticky tape. For durable adhesion, installation and securing both indoors and outdoors. Load up to a maximum of 1.3 kg.

Transparent. Surfaces are not damaged. Moisture resistant.

Used in dry, clean and well-aired areas with temperatures of +10°C to +30°C.



| Art. no. |  |                  | kg    | PU |
|----------|--|------------------|-------|----|
| 170232   |  | Adhesion+Sealing | 0,050 | 1  |

**UV-Hardening GRP Repair-Film**

**HUPplaxUV**

**How to use HUPplaxUV:**

Easy to use - cut to the size of the surface to be repaired, done. Extremely durable, fibre-glass reinforced plastic, vibration resistant, remains flexible, weather, UV and moisture resistant. Good subsequent processing (sanding, drilling, painting, etc.), resistant to oils and solvents, permanently temperature resistant from -40°C to +200°C, no shrinking or expansion during processing and hardening, adheres to all surfaces except polypropylene (PP), quick to harden (as of 5 minutes, depending on UV radiation).

**Properties:**

HUPplaxUV is a unique, easy to use repair foil that is activated and hardened by UV radiation or sunlight. The foil is a fibre-glass reinforced polyester with extremely good adhesive and a long life. No mixing, no weighing, no sources of error.

Maintenance and repair of roofs, stairs, basins, pipes, lines, cable ducts, switching cabinets etc., all surfaces made of wood, metal, glass, ceramic, brickwork, cement and plastic.



| Art. no. |  |                  | kg    | PU |
|----------|--|------------------|-------|----|
| 170230   |  | Adhesion+Sealing | 0,120 | 1  |

**Screw-Locking Medium-Strength HUPlockM**

**How to use HUPlockM:**

For all screws with threads up to M36.  
Extremely viscous, medium hard, can be removed.

**Properties:**

Hand-tight: 10 - 20 minutes  
Functionally-tight: 1 - 3 hours  
Temperature resistant: -55 to +150°C



| Art. no. | ml |                  | kg    | PU |
|----------|----|------------------|-------|----|
| 170238   | 50 | Adhesion+Sealing | 0,050 | 1  |

**Screw-Locking High-Strength HUPlockH**

**How to use HUPlockH:**

For all screws with threads up to M20.  
Medium viscosity, extremely durable, difficult to remove.

**Properties:**

Hand-tight: 10 - 20 minutes  
Functionally-tight: 1 - 3 hours  
Temperature resistant: -55 to +150°C



| Art. no. | ml |                  | kg    | PU |
|----------|----|------------------|-------|----|
| 170240   | 50 | Adhesion+Sealing | 0,050 | 1  |

**Anti-Friction-Coating HUPcable**

**Application HUPcable:**

Spray the prepared cable. Wait for the propellant gas to evaporate (a few seconds) then pull in the cable.

**Properties:**

HUPcable simplifies pulling of cable into the protective hose.



| Art. no. | ml  |                     | kg    | PU |
|----------|-----|---------------------|-------|----|
| 170174   | 400 | Coating+Lubrication | 0,450 | 1  |

**Water-based lubricants and slip agents**

This prevents 80% of friction and facilitates cable laying through excellent slippage in every situation. As soon as the water is evaporated, the main part of the lubricant remains und and ensures that old cables can easily be pulled out and new ones inserted, for many years and at different temperatures.

Gel lubricant art. 143344: plastic bottle 500 ml  
Gel lubricant art. 143345: plastic bottle 1.000 ml



| Art. no. |                         | kg    | PU |
|----------|-------------------------|-------|----|
| 143344   | plastic bottle 500 ml   | 0,572 | 1  |
| 143345   | plastic bottle 1.000 ml | 1,150 | 1  |

**Dispenser for plastic bottle**



| Art. no. |                     | kg    | PU |
|----------|---------------------|-------|----|
| 143346   | Coating+Lubrication | 0,016 | 1  |

**Water-based lubricants and slip agents**

This prevents 80% of friction and facilitates cable laying through excellent slippage in every situation. As soon as the water is evaporated, the main part of the lubricant remains und and ensures that old cables can easily be pulled out and new ones inserted, for many years and at different temperatures.

Foam lubricant, spray can 400 ml



| Art. no. |                  | kg    | PU |
|----------|------------------|-------|----|
| 143348   | spray can 400 ml | 0,457 | 1  |



**Aluminium-Spray HUPalu**

**Application HUPalu:**

For servicing and maintaining the value of machine parts, for processing of machines, furnaces, heating and steam systems, pipes, exhaust systems, turbines, etc., as a container protection, coating for wheels, trucks bodies and much more.

**Properties:**

HUPalu pure aluminum spray 99.5%, heat resistant up to 900°C, anti-corrosive and high-temperature-resistant, scratch-, brushing and abrasion resistant, weather resistant.



| Art. no. | ml  |                     | kg    | PU |
|----------|-----|---------------------|-------|----|
| 170154   | 400 | Coating+Lubrication | 0,450 | 1  |

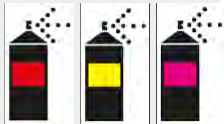
**Marking Paint HUPmark**

**Application HUPmark:**

The area to be sprayed must be dry, clean and grease-free. Bring the can up to room temperature. Before use and after each pause in spraying, shake well until the mixing ball moves freely. After use, spray out upside down.

**Properties:**

Marking spray for industrial, craft, construction and mining etc. For fast, clean and permanent marking of: Cement, wood, masonry, metal, asphalt, soil, plaster, glass, ceramics etc. For labelling and marking of: Pavements and roads, construction measures, breakthroughs, pipe and cable ducts, free from heavy metals, lead and cadmium, dries quickly and is friction and waterproof.



| Art. no. | ml  | form                | colour          | kg    | PU |
|----------|-----|---------------------|-----------------|-------|----|
| 170140   | 500 | Coating+Lubrication | luminous red    | 0,550 | 1  |
| 170141   | 500 | Coating+Lubrication | luminous yellow | 0,550 | 1  |
| 170142   | 500 | Coating+Lubrication | luminous pink   | 0,550 | 1  |

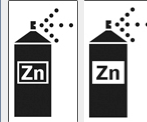
**Zinc-Spray HUPzinc**

**Application HUPzincDark:**

For rectification of hot-dip galvanized parts, subsequent protection after welding, to repair damaged surfaces, corrosion protection by galvanic effect, protective coating for pipes and metals, primer for subsequent coats. Forms a durable protective layer with water-insoluble Zinc oxide, iron (steel) and thus protects also defective places.

**Properties:**

HUPzinc is a mixture of high-purity zinc and aluminum powder, heat resistant, weather-resistant and quick-drying.



| Art. no. | ml  |                     | colour | kg    | PU |
|----------|-----|---------------------|--------|-------|----|
| 170150   | 400 | Coating+Lubrication | Dark   | 0,450 | 1  |
| 170152   | 400 | Coating+Lubrication | Light  | 0,450 | 1  |

**Zinc spray 550 HUPzincKorro**

**How to use HUPzincKorro:**

Shake the container well until the mixing ball is clearly audible and the contents are well mixed. Clean the surface to be treated with the wire brush, or even better sand blast it. The surface must be grease-free and clean. The best processing temperature is from 16-32 °C. For optimum results apply the spray from a distance of 25-30 cm with short motions. For commercial use only. Carry out preliminary tests for effectiveness and material compatibility.

**Properties:**

The employed zinc and zinc compounds contain more than 99% pure zinc, cross-cut adhesion tested in accordance with DIN EN ISO 2409, heat-resistant up to 500 °C, mandrel bend tested in accordance with DIN EN ISO 1519, salt spray tested in accordance with DIN 50021, subsequent protection after welding work for repairing damaged surfaces, protective coating for pipelines and metals, forms a permanent protective coating with water-insoluble zinc oxide on iron (steel) and thus also protects faulty points.



| Art. no. | ml  |                     | kg    | PU |
|----------|-----|---------------------|-------|----|
| 170153   | 400 | Coating+Lubrication | 0,450 | 1  |

**Stainless-Steel-Spray HUPInox**

**Application HUPInox:**

For maintenance and repair, maintaining the value of stainless steel, for processing of pipes, machinery, truck bodies, silos, turbines, etc., as a container and tank system protection and much more.

**Properties:**

HUPInox stainless steel coating, alloy, consisting of chrome >15%, nickel >7%, manganese >1%, heat resistant to 300°C, protects against corrosion, durable and weather-resistant protective layer, good and secure adhesion to metal, wood, glass, stone and much more.



| Art. no. | ml  | kg    | PU |
|----------|-----|-------|----|
| 170156   | 400 | 0,450 | 1  |

**Silicone-Spray HUPSil**

**Application HUPSil:**

In order to eliminate creaking, squeaking and running noise of machines, vehicles, chains. As a lubricant, and as anti-aging. To clean, care and protection of metals, rubber and plastic, for retracting of rubber and plastic profiles, etc.

**Properties:**

HUPSil is a universal silicone spray and lubricant. It is waterproof, weather and temperature-resistant from -30°C to +200°C. It acts antistatic and dust repellent, lubricates and waterproofs all surfaces without being greasy, anti-corrosive and moisture-resistant.



| Art. no. | ml  | kg    | PU |
|----------|-----|-------|----|
| 170162   | 400 | 0,450 | 1  |

**Universal-Lubricant HUP40**

**Application HUP40:**

Loosens persistent fittings, nuts, bolts, etc. due to rust and oxidation, removes moisture and condensation on cables and electrical connections and contacts, is based on an ultra-thin film which protects all metal surfaces and prevents further corrosion, keeps moisture from cables and contacts and prevents further accumulation of moisture, Lubricates cars and protects tools, machines, precision instruments, locks, sliding and guiding rails, wheels, bolts, hinges, fittings, etc.

Silicone free! It even melts ice on locks, bolts, hinges, fittings, etc.

**Properties:**

HUP40 high quality universal spray with 1001 solutions!



| Art. no. | ml  | kg    | PU |
|----------|-----|-------|----|
| 170166   | 400 | 0,450 | 1  |
| 170168   | 50  | 0,075 | 1  |

**PTFE-Spray HUPptfe**

**Application HUPptfe:**

Anywhere where oil- and grease coatings are unwanted. The special lubricant for all maintenance-free gliding lubrications, protects all metals, leather and wood parts - anti-aging for rubber parts, seals and plastics.

To eliminate creaking, squeaking and running noise of machinery, chains, windows, doors, trays, etc. In the electro-, plastics-, wood-, paper- and textileindustrie. Water-resistant coating of paper, cork and textiles.

**Properties:**

HUPptfe Oil-free Dry Lubrication Spray. High temperature resistant surface protection from -60 °C to +250°C with long-term effect and low coefficient of friction, quick drying, highly adhesive, grease-free and colorless, tasteless after application, the protection film seems anti-corrosive and moisture repellent.



| Art. no. | ml  | kg    | PU |
|----------|-----|-------|----|
| 170158   | 400 | 0,450 | 1  |

**Allround PTFE-Spray HUPptfeSynt**

**Application HUPptfeSynt:**

Especially for long-lasting lubrication under very strong pressure and frictional conditions. It protects all moving parts and prevents snagging, creaks and squeaks.

**Properties:**

HUPptfeSynt for lubrication of precision, such as pressure-loaded parts in an enormously wide range of temperatures.



| Art. no. | ml  | kg    | PU |
|----------|-----|-------|----|
| 170160   | 400 | 0,450 | 1  |

**Polymer-Spray HUPpolymer**

**Application HUPpolymer:**

Substitute for silicone spray as a retraction, sliding and lubricating aid, as well as long-term care for rubber, EPDM, PP, PVC etc. Significantly improved gliding characteristics on coated surfaces - the coefficients of friction are reduced up to 40%. Treated surfaces have a color-intensifying appearance. Coated surfaces are water-resistant, insensitive to contamination, further processing (gluing, painting, printing, etc.) of adjacent materials without having trouble.

**Properties:**

HUPpolymer contamination of tools and manufactured parts, which can occur when using silicone oils, are avoided. No stress cracking when in contact treated profiles with plexiglas or polycarbonate.



| Art. no. | ml  | kg    | PU |
|----------|-----|-------|----|
| 170170   | 400 | 0,450 | 1  |

**haupa®**

**...convincing solutions**



**Cutting-Oil HUPdrill**

**Application HUPdrill:**

Targeted and clean to use when cutting, very economical and efficient in consumption. For machines, for which the complete separation of the coolant from the hydraulic oil used or lubricating oil is not present. Suitable for the treatment of iron and non-ferrous metals.

**Properties:**

HUPdrill special cutting oil, transparent. Alloyed oil contains highly effective EP-Additives and polar substances, elastic film of lubricant with corrosion protection, high loads through sustainable boundary layer formation, high load carrying capacity.

Provides low-wear operation with corrosion protection.



| Art. no. | ml  | kg    | PU |
|----------|-----|-------|----|
| 170172   | 400 | 0,450 | 1  |

**Anti-Rust-Spray HUPrustEX**

**Application HUPrustEX:**

Penetrates the rust, removes oils, resins, tar and oil coal, solves persistent connections easily, eliminates rattles and squeaks protects the long term, penetrates even constrictions and facilitates the disassembly of parts. Triggers stuck screw, brings all corroded connections, such as screw, nuts, bolts, joints moving again.

**Properties:**

HUPrustEX penetrates and dissolves extremely effective rust, preserves and protects against new rust attack by a MoS2 protective film.



| Art. no. | ml  | kg    | PU |
|----------|-----|-------|----|
| 170164   | 400 | 0,450 | 1  |

**Contact spray HUPwetBlock**

**Application HUPwetBlock:**

Due to its highly effective ingredients all types of electrical contacts and connections are protected against moisture and corrosion. Water and moisture is reliably suppressed. The product properties remain even after several months of use indoors and also outdoor and prevent permanent leakage currents and short circuits in: lighting systems, connections and sockets, electrical machinery and equipment, pumps, intercom systems, switches and fittings, connectors and contacts sockets, fuse boxes, cable connections, cable reels, battery terminals, engine electrical, electric, bell systems and much more.



| Art. no. | ml  | kg    | PU |
|----------|-----|-------|----|
| 170180   | 400 | 0,450 | 1  |

**Fast degreaser HUPdegreaser**

**Application HUPdegreaser:**

For cleaning and degreasing of dust, dirt, oil, mechanical parts. For removing wax-stains, fats and resins from high potential switches, air conditioning, antenna insulators, motors, ventilators, switchboards, cables, stubborn dirt on glass and car paint, etc.

**Properties:**

HUPdegreaser is a quick and intensive degreaser and cleaner for mechanical and electrical equipment. Residue-free and fast evaporating.



| Art. no. | ml  | kg    | PU |
|----------|-----|-------|----|
| 170102   | 500 | 0,600 | 1  |

**Electric-Engine-Cleaner HUPelectroClean**

**Application HUPelectroClean:**

It is used to remove dust, dirt, oil, grease, lubricants and coal dust to electromechanical contacts, relays, wires, distributors, coils, etc. Can also be used for pre-cleaning for subsequent painting.

**Properties:**

HUPelectroClean consisting of a mixture of hydrocarbons and cleaning boosters. Cleans spot and streak free and evaporates without residue after cleaning.



| Art. no. | ml  | kg    | PU |
|----------|-----|-------|----|
| 170114   | 400 | 0,450 | 1  |

**Electric-Contact-Cleaner non-flammable HUPcontactXtra**

**Application HUPcontactXtra:**

Spray on the parts to be cleaned or the contact surfaces and allow the dirt to run off. It may be necessary to repeat this if the contact is very dirty. It is not necessary to switch off power-conducting aggregates due to the non-flammable properties of the product.

**Properties:**

HUPcontactXtra is a safety cleaner based on non-flammable solvents. The product does not have any smell, is physiologically harmless, aroma-free and therefore very well tolerated by the skin compared to commercially available hydrocarbon-based cleaners. It has excellent wetting and creeping properties. It evaporates very quickly without leaving any residue.



| Art. no. | ml  | kg    | PU |
|----------|-----|-------|----|
| 170120   | 400 | 0,450 | 1  |



**Multi Cleaner  
HUPcleanMulti**

**Application** HUPcleanMulti:  
Cleaning of windows, mirrors, glass, monitors, plastic-surfaces, tiles, etc. in industry and crafts.

**Properties:**  
HUPcleanMulti is a Multi-Foam with orange aroma. Intensive cleaner, for a sparkling shine on all surfaces. Powerful, yet mild. Very economical due to high concentrate, skin-sensitive. Spotless, non-porous, streak-free. Cleans with active-foaming effect.

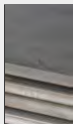


| Art. no. | ml  |          | kg    | PU |
|----------|-----|----------|-------|----|
| 170104   | 500 | Cleaning | 0,550 | 1  |

**Metal Degreaser  
HUPmetalClean**

**Application** HUPmetalClean:  
Removes coarse contamination mechanically. Spray from a short distance and allow the cleaning agent to run off. The parts to be cleaned are clean and dry in just a few seconds. Parts do not need to be removed if the dissolved contaminations are able to run off with the fluid.  
Note: Does not attack enamelled paints/Not suitable for plastic and seals! Only for commercial use. Carry out tests for effect and material compatibility.

**Properties:**  
For powerful quick cleaning, residue-free and rapid evaporation, removes grease, oil, wax residue, Edding, felt-tip and ball-point pen, resin and stubborn contaminations from all metal surfaces.  
For residue-free degreasing of all metal objects, but may also be used as cleaner for subsequent painting of gluing.



| Art. no. | ml  |          | kg    | PU |
|----------|-----|----------|-------|----|
| 170103   | 500 | Cleaning | 0,600 | 1  |

**Foam Cleaner HUPclean**

**Application** HUPclean:  
For cleaning windows, monitors, plastic surfaces, buildings, vehicles and machines.

**Properties:**  
HUPclean is a multifunctional cleaner and achieves best levels of cleanliness on cases of fouling by oil, grease, wax and similar substances.



| Art. no. | ml    |          | kg     | PU |
|----------|-------|----------|--------|----|
| 170100   | 500   | Cleaning | 0,550  | 1  |
| 170101   | 1000  | Cleaning | 1,050  | 1  |
| 170105   | 5000  | Cleaning | 5,080  | 1  |
| 170107   | 10000 | Cleaning | 10,100 | 1  |

**HUPfoamPump**

1,5 l



| Art. no. |       |          | kg    | PU |
|----------|-------|----------|-------|----|
| 170109   | empty | Cleaning | 0,800 | 1  |



**Graffiti-Remover  
HUPgraffitiEx**

**Application HUPgraffitiEx:**

Removes varnish, paint, graffiti and adhesive residues. Cleans easily spotted surfaces made of concrete, stone, brick and wood surfaces, as well as glass, ceramic, porcelain and metal surfaces.

**Properties:**

Agents and propellants are free of toxic, corrosive and ozone-depleting substances. Usage in all areas of industry and commerce use, as well as installing companies, in printing, paint shops, metal and plastic industry, cleaning companies.



| Art. no. | ml  |          | kg    | PU |
|----------|-----|----------|-------|----|
| 170110   | 400 | Cleaning | 0,450 | 1  |

**Label-Remover  
HUPlableEx**

**Application HUPlableEx:**

Residue-free removal of adhesive residues, labels, lubricants, bitumen, fresh PU foam residues and stubborn stains. For cleaning of metal surfaces (even before painting) suitable in many areas of industry, trade and craft.

**Properties:**

HUPlableEx is powerful, yet gentle on the material, evaporates quickly and leaves no residue.



| Art. no. | ml  |          | kg    | PU |
|----------|-----|----------|-------|----|
| 170112   | 400 | Cleaning | 0,450 | 1  |

**Compressed Air HUPair**

**Application HUPair:**

HUPair compressed air for cooling and debugging overheated parts. To remove dust, dirt and other deposits on computers, Keyboards, engineering components, office equipment, photocopiers, printers etc.



| Art. no. | ml  |          | kg    | PU |
|----------|-----|----------|-------|----|
| 170106   | 400 | Cleaning | 0,450 | 1  |

**Compressed Air non-flammable  
HUPairXtra**

**Application HUPairXtra:**

Is used anywhere where dust and loose dirt is only removed with difficulty. In the entire range of maintenance and repair of electronic equipment, components, computers, precision mechanical watches, etc. For dust and dirt removal on keyboards, computer cases, cabinets, measuring and control technology instruments, optical instruments, hi-fi and video equipment, as well as modules, printed circuit boards, magnetic heads, drives, etc.

**Properties:**

HUPairXtra non-flammable - especially good for suitable cleaning of electrical contacts. For a clean and dry cleaning in hard to reach places and on delicate surfaces.



| Art. no. | ml  |          | kg    | PU |
|----------|-----|----------|-------|----|
| 170108   | 400 | Cleaning | 0,450 | 1  |

**HUPskinProtect**

**Application HUPskinProtect:**

Protects hands and other parts of the body by a protective film prior to contact with the oil, grease, tar, paint, dust, and other dirt and pollutant species. It can prevent allergic reactions with many substances, because a protective film between the skin and the medium is established. For daily use in the industrial and craft.

**Properties:**

HUPskinProtect facilitates skin cleaning. The skin remains breathable and does not dry out. Dermatologically tested.



| Art. no. | ml  |          | kg    | PU |
|----------|-----|----------|-------|----|
| 170116   | 250 | Cleaning | 0,300 | 1  |

**Dosage cap „Target Control System“**

The „Target Control System“ is a stable, flexible dosage cap that can be removed at any time.

It is compatible with many of the HAUPA aerosol products („parent valve“/star). This means even more accurate, precise spraying and dosage. Targeted, accurate and properly dosed.

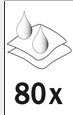
Not for sprays art: 170106, 170150, 170152, 170400



| Art. no. |          |  | kg    | PU |
|----------|----------|--|-------|----|
| 170406   | Cleaning |  | 0,020 | 1  |

**Cleaning Wipes  
HUPwipe**

**Application HUPwipe:**  
HUPwipe is the ideal aid for removing stubborn. Contaminants such as: rust, grease, adhesive residue, oil, soot, resins, Edding lines, fresh paint residues, lubricants, nicotine and more. Can be used to remove the heaviest soiling in commercial, industrial and craft.



| Art. no. | ml |          | kg    | PU |
|----------|----|----------|-------|----|
| 170118   | 80 | Cleaning | 1,000 | 1  |

**Hand cleaning cream  
HUPsoap, 500 ml**

**Application HUPsoap:**  
Rub some grams on dry hands, add some water and wash thoroughly. Reduce the consumption with the corresponding dosing dispenser.

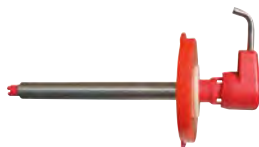
**Properties:**  
HUPsoap Special cleaning cream for the removal of stubborn dirt e.g. fresh paint and adhesive residues, oils, grease, tar, bitumen, resins etc.



| Art. no. | ml    |          | kg     | PU |
|----------|-------|----------|--------|----|
| 170126   | 500   | Cleaning | 0,600  | 1  |
| 170127   | 3000  | Cleaning | 3,300  | 1  |
| 170128   | 10000 | Cleaning | 10,500 | 1  |

**Dispenser for hand cleaning cream HUPsoap, 3l**

- compatible for art. 170127
- Stainless steel tube



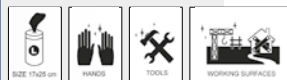
| Art. no. | ml   |          | kg    | PU |
|----------|------|----------|-------|----|
| 170129   | 3000 | Cleaning | 0,500 | 1  |

**Industrial cleaning wipes**

HAUPA Industrial cleaning wipes are **perfect for washing hands as well as cleaning tools and work surfaces**. They remove stubborn dirt fast and efficiently such as grease, paint, oil, tar, ink, silicone, glue and much more making them the **ideal companions for workshops, offices, home or for those on the go**. These practical wipes have been impregnated with a solvent-free, industrial hand cleaner, which has been dermatologically tested and is also suitable for sensitive skin. The individually perforated wipes ensure easy extraction. The practical and solid storage container with lock-lid prevents the wipes from drying out.

**Contents: 40 wipes, each 17 x 25 cm.**

**The must have for every cleaning job!**



**Effortlessly removes:**

- Grease
- Paint
- Oil
- Tar
- Ink
- Silicone
- Glue
- and more...



| Art. no. | width |  | kg    | PU |
|----------|-------|--|-------|----|
| 150600   | 250   |  | 0,190 | 1  |



**Freeze-Spray HUPcool**

**Application HUPcool:**

HUPcool to remove dust, dirt and other deposits on computers, Keyboards, engineering components, office equipment, photocopiers, printers, etc.  
For cooling and debugging overheated parts.



| Art. no. | ml  |         | kg    | PU |
|----------|-----|---------|-------|----|
| 170400   | 400 | Testing | 0,455 | 1  |

**Freeze-Spray HUPcoolXtra**

**Application HUPcoolXtra**

For the detection of defects in electrical systems and electronics. With the freeze-spray thermal errors on electric, electronics, computer cases, cabinets, measuring and control technology instruments, optical equipment, hi-fi and video equipment, as well as modules, printed circuit boards, magnetic heads, thermal switches etc. are fast tracked.

**Properties:**

HUPcoolXtra is a freeze spray with that you achieve cooling to -50°C. Cooling of resistors and transistors to prevent heat damage during soldering.



| Art. no. | ml  |         | kg    | PU |
|----------|-----|---------|-------|----|
| 170402   | 400 | Testing | 0,455 | 1  |

**Smoke-Detector-Test-Spray**

**HUPdetect**

**Application HUPdetect:**

Test your smoke detectors once a month with this test spray, to exclude technical defect, as well as the contamination of the detector.

**Properties:**

- directly simulated fire smoke
- enough for about 150-200 test operations
- Fast and reliable



| Art. no. | ml  |         | kg    | PU |
|----------|-----|---------|-------|----|
| 170404   | 250 | Testing | 0,180 | 1  |

**Our HUPchemie safety certificates can be found in the download section of [www.haupa.com](http://www.haupa.com).**



# Soldering accessoires

## Soldering irons

chrome nickel steel tube, with schuko safety plug, replaceable nickel-plated copper tips



| Art. no. | TL  | Volt | Watt | kg    | PU |
|----------|-----|------|------|-------|----|
| 160142   | 265 | 220  | 60   | 0,322 | 1  |
| 160144   | 315 | 220  | 80   | 0,319 | 1  |
| 160146   | 320 | 220  | 100  | 0,324 | 1  |

## Soldering irons

with plastic handle, with schuko safety plug, replaceable copper tips, nickel-plated



| Art. no. | TL  | Volt | Watt | kg    | PU |
|----------|-----|------|------|-------|----|
| 160150   | 250 | 220  | 30   | 0,264 | 1  |

## Soldering irons

soldering tip internally heated, chrome vanadium steel tube, with plastic handle, with schuko safety plug, replaceable nickel-plated copper tips, for electronic work



| Art. no. | TL  | Volt | Watt | kg    | PU |
|----------|-----|------|------|-------|----|
| 160190   | 200 | 220  | 15   | 0,257 | 1  |

## Soldering set

### Contents:

- 1 Soldering iron 80 Watt
- 1 Hobbyists' solder 1 m
- 1 Radio solder 1 m
- 1 Soldering grease 20 g



| Art. no. | Watt | kg    | PU |
|----------|------|-------|----|
| 160234   | 80   | 0,387 | 1  |

## Solder in triangular sticks DIN 1707

length approx. 430 mm, approx. 250 g per stick, size: 11 x 11 x 11 x 430 mm



| Art. no. | Sn% | Roll/g | kg    | PU |
|----------|-----|--------|-------|----|
| 160112   | 30  | 250    | 0,275 | 1  |
| 160114   | 40  | 250    | 0,247 | 1  |

## Soldering stone



| Art. no. | kg    | PU |
|----------|-------|----|
| 160130   | 0,070 | 1  |

## Soldering paste acc. to DIN 8511-F-SW 26

rosin halide-activated, field of application: electro-technic, electronics, manufacture of electrical appliances



| Art. no. | kg    | PU |
|----------|-------|----|
| 160090   | 0,073 | 1  |

## Soldering fluid acc. to DIN 8511-F-SW 32

rosin halide-activated, field of application: electro-technic, electronics, manufacture of electrical appliances



| Art. no. | kg    | PU |
|----------|-------|----|
| 160092   | 0,054 | 1  |

## Grease for soft-soldering acc. to DIN 8511-F-SW 21

ammonium chloride, organic preparation field of application: general soldering work



| Art. no. | kg    | PU |
|----------|-------|----|
| 160094   | 0,072 | 1  |
| 160096   | 0,132 | 1  |

## Soldering grease for fittings acc. to DIN 8511-F-W 22

field of application: sanitary technics



| Art. no. | kg    | PU |
|----------|-------|----|
| 160100   | 0,080 | 1  |

## Soldering fluid acc. to DIN 8511-F-W 21

ammonium chloride, organic preparation field of application: sanitary technics, copper tubes etc.



| Art. no. | kg    | PU |
|----------|-------|----|
| 160102   | 0,065 | 1  |

## Solder for electronic work

### Solder for electronic work acc. to DIN EN 29453

antimony-free, soldering flux acc. To DIN EN 29454, 1.1.2.B (F-SW 26), S-Sn60Pb40, rosin halide-activated



| Art. no. | Ø   | Sn% | Roll/g | kg    | PU |
|----------|-----|-----|--------|-------|----|
| 160020   | 1   | 60  | 100    | 0,104 | 1  |
| 160022   | 1   | 60  | 250    | 0,253 | 1  |
| 160024   | 1   | 60  | 500    | 0,529 | 1  |
| 160026   | 1   | 60  | 1000   | 1,008 | 1  |
| 160028   | 1,5 | 60  |        | 0,016 | 1m |
| 160030   | 1,5 | 60  | 100    | 0,106 | 1  |
| 160042   | 1,5 | 60  | 250    | 0,247 | 1  |
| 160044   | 1,5 | 60  | 500    | 0,528 | 1  |
| 160046   | 1,5 | 60  | 1000   | 1,022 | 1  |
| 160050   | 2   | 60  | 100    | 0,108 | 1  |
| 160052   | 1   | 60  | 250    | 0,250 | 1  |
| 160054   | 1   | 60  | 500    | 0,529 | 1  |

### Solder for electronic work acc. to DIN EN 29453

antimony-free, soldering flux acc. to DIN EN 29454, 1.1.2.B (F-SW 26), S-Sn60Pb40, rosin halide-activated



| Art. no. | Ø   | Sn% | Roll/g | kg    | PU |
|----------|-----|-----|--------|-------|----|
| 160000   | 1   | 60  | 100    | 0,009 | 1m |
| 160002   | 1   | 60  | 100    | 0,106 | 1  |
| 160004   | 1   | 60  | 250    | 0,259 | 1  |
| 160006   | 1   | 60  | 500    | 0,528 | 1  |
| 160008   | 1   | 60  | 1000   | 1,015 | 1  |
| 160012   | 1,5 | 60  | 100    | 0,102 | 1  |
| 160014   | 1,5 | 60  | 250    | 0,255 | 1  |
| 160016   | 1,5 | 60  | 500    | 0,523 | 1  |
| 160018   | 1,5 | 60  | 1000   | 1,024 | 1  |

### Solder for electronic work acc. to DIN EN 29453

antimony-free, soldering flux acc. To DIN EN 29454, 1.1.2.B (F-SW 26), S-Pb60Sn40, rosin halide-activated



| Art. no. | Ø | Sn% | Roll/g | kg    | PU |
|----------|---|-----|--------|-------|----|
| 160060   | 2 | 40  | 100    | 0,106 | 1  |
| 160062   | 2 | 40  | 250    | 0,257 | 1  |

### Fittings' solder acc. to DIN EN 29453

low antimony content, soldering flux acc. to DIN EN 29454, 2.1.3.B (F-SW 24), S-Pb60Sn40, ammonium chloride based, organically prepared



| Art. no. | Ø   | Sn% | Roll/g | kg    | PU |
|----------|-----|-----|--------|-------|----|
| 160070   | 1,5 | 40  |        | 0,018 | 1m |
| 160072   | 2   | 40  | 100    | 0,103 | 1  |
| 160074   | 2   | 40  | 250    | 0,258 | 1  |

## Solder lead-free (RoHS-directive)

### Solder wire according to DIN EN 29453

lead-free special alloy, 2.5% flux percentage according to DIN EN 29454, 1.1.2.B (EN-61190-ROLO), 1.00 mm of Ø, 0,100 kg spools S-Sn99Cu1, DIN EN 29453 (Sn99, 3Cu0,7 - eutectic)



| Art. no. | Ø   | Sn% | Roll/g | kg    | PU |
|----------|-----|-----|--------|-------|----|
| 160420   | 1   | 99  | 100    | 0,114 | 1  |
| 160422   | 1   | 99  | 250    | 0,262 | 1  |
| 160424   | 1   | 99  | 500    | 0,536 | 1  |
| 160426   | 1   | 99  | 1000   | 1,000 | 1  |
| 160430   | 1,5 | 99  | 100    | 0,112 | 1  |
| 160442   | 1,5 | 99  | 250    | 0,266 | 1  |
| 160444   | 1,5 | 99  | 500    | 0,500 | 1  |
| 160446   | 1,5 | 99  | 1000   | 1,000 | 1  |
| 160450   | 2   | 99  | 100    | 0,109 | 1  |
| 160452   | 2   | 99  | 250    | 0,257 | 1  |
| 160454   | 2   | 99  | 500    | 0,527 | 1  |

### Solder wire according to Din EN 29453

lead-free special alloy, 3.5% flux percentage according to DIN EN 29454, 1.1.3.B (EN-61190-ROLO), 1.00 mm of Ø, 0, 100 kg spools S-Sn99Cu1, DIN EN 29453 (Sn99, 3Cu0,7 - eutectic)



| Art. no. | Ø   | Sn% | Roll/g | kg    | PU |
|----------|-----|-----|--------|-------|----|
| 160402   | 1   | 99  | 100    | 0,114 | 1  |
| 160404   | 1   | 99  | 250    | 0,250 | 1  |
| 160406   | 1   | 99  | 500    | 0,500 | 1  |
| 160408   | 1   | 99  | 1000   | 1,000 | 1  |
| 160412   | 1,5 | 99  | 100    | 0,114 | 1  |
| 160414   | 1,5 | 99  | 250    | 0,258 | 1  |
| 160416   | 1,5 | 99  | 500    | 0,535 | 1  |
| 160418   | 1,5 | 99  | 1000   | 1,000 | 1  |

**haupa**<sup>®</sup>

...convincing solutions

Germany: HAUPA, Koenigstr. 165-169, 42853 Remscheid, Phone: +49 (0)2191 8418-0, Fax: +49 (0)2191 8418-840, sales@haupa.com



**Index**



| <b>A</b>  | <b>Seite</b> | <b>B</b>   | <b>page</b>        | <b>C</b>   | <b>page</b>                                |
|---|--------------|--|--------------------|--|--|
| ABS plastic box „SysCon M mobil“                  | 368          | Broomstick   | 288                | Connector for fine-wired highly flexible conductors        | 148  |
| ABS plastic box „SysCon M“                        | 368          | Bucket   | 288                | Construction Adhesive HUPmount                             | 378  |
| ABS plastic box „SysCon S mobil“                  | 368          | Builders waste sack                                    | 289                | Construction foil „Profi“                                  | 289  |
| ABS plastic box „SysCon S“                        | 368          | Bulk storage chest for twist drills                    | 300                | Construction Glue HUPfix+                                  | 378  |
| ABS plastic box „SysCon XL mobil“                 | 368          | Butt connectors 118, 122, 125, 140, 142, 145, 148, 154 |                    | Contact files  | 294  |
| ABS plastic box „SysCon XL“                       | 368          |  |                    | Contact spray HUPwetBlock                                  | 384  |
| ABS plastic box „SysCon XL“ variable              | 370          |  |                    | Converting bit for bleeding                                | 269  |
| Accessories for 217050                            | 51           |  |                    | Cord und cable grips                                       | 94   |
| Adapter "QuickLock"                               | 309          | <b>C</b>   | <b>page</b>        | Cotton gloves for putting underneath                       | 235  |
| Adapter assortment for holder, "RE-LOAD"          | 309          | Cabinet levels   | 284                | Counter hold spanners 1000 V                               | 210  |
| Adapter assortment for hole enlarger "RE-LOAD"    | 309          | Cable cutter 1000 V                                    | 206, 207           | Counter holder 1000 V                                      | 224  |
| Adapter pressing thorn                            | 68           | Cable cutter with a snap                               | 7, 206             | Countersunk screws assortment box                          | 319  |
| Adapter   | 81           | Cable cutter   | 6, 7, 8, 9, 10, 11 | Covering blankets transparent                              | 239  |
| Adjustable single-head wrench                     | 261          | Cable cutters „Super light“                            | 8                  | Cranking tool for stepped bending of power rails           | 83   |
| Adjustable tap wrenches                           | 312, 313     | Cable cutters 1000 V                                   | 204, 207           | Crimp connector  | 150, 153                                   |
| Adjustable wrenches to DIN 3117 A 1000 V          | 211          | Cable cutters VDE                                      | 202                | Crimp fork terminals without insulation                    | 139  |
| Adhesive HUPmega                                  | 379          | Cable cutters with spring joint                        | 6                  | Crimp insert for "Hirschmann" contacts                     | 44   |
| Al and Cu cable lugs, longitudinally sealed       | 157          | Cable glands   | 178, 179, 180      | Crimp insert for "Tyco" contacts                           | 44   |
| Al and Cu crimp terminals, longitudinally sealed  | 157          | Cable grips  | 88, 94             | Crimp inserts for "Huber & Suhner" contacts                | 44   |
| Al compression cable lugs                         | 155          | Cable knife VDE  | 209                | Crimp inserts for "multi-contact" contacts                 | 44   |
| Al crimp terminal                                 | 155          | Cable lugs acc. to DIN 46235                           | 149, 151, 152      | Crimp pin terminals without insulation                     | 137, 139                                   |
| AL screw connectors medium voltage                | 160          | Cable pulling device „CableGo“                         | 98                 | Crimp terminals DIN 46235                                  | 149, 151                                   |
| Al/Cu non-tension compression joints with Cu bolt | 157          | Cable pulling device FIX                               | 91                 | Crimp terminals with 2 oval holes                          | 152  |
| Al-Crimp connector DIN 46267 Part 2               | 156          | Cable pulling device FOX                               | 89                 | Crimping dies DIN Cu + Al                                  | 60, 67, 72                                 |
| Al-Cu reducing connectors                         | 158          | Cable pulling device HAUPA PullTec                     | 87                 | Crimping dies DIN  | 59, 72                                     |
| Alignment tool, 3/8" 1000 V                       | 224          | Cable pulling device HAUPA-FIBRE                       | 88                 | Crimping dies  | 50, 53, 54, 55, 67, 68, 72, 73             |
| Allen keys set                                    | 252          | Cable pulling device KING                              | 92                 | Crimping dies standard                                     | 59, 60, 72, 73                             |
| Allround PTFE-Spray HUPpfeSynt                    | 383          | Cable pulling device POWER                             | 92                 | Crimping headstock „HKD400“                                | 70   |
| Allround soft-grip scissor                        | 5, 206       | Cable pulling device SIX                               | 90                 | Crimping headstock „KD300-6“                               | 69   |
| Alu crimp connectors with Cu pins                 | 157          | Cable pulling device STRONG                            | 92                 | Crimping headstock „KH-12“                                 | 66   |
| Aluminium spirit levels                           | 284          | Cable sheath cutter 1000 V                             | 208                | Crimping headstock „KO-6“                                  | 62   |
| Aluminium-Spray HUPalu                            | 382          | Cable sheath cutter                                    | 32                 | Crimping pliers „Multi“                                    | 51   |
| Angled cable lugs 90° acc. to DIN 46325           | 152          | Cable Sheath Stripper                                  | 32                 | Crimping pliers Combi-Crimp                                | 50   |
| Angled terminals 90° acc. to DIN 46235            | 152          | Cable stripper „Kabifix LWL“                           | 22                 | Crimping pliers for coax-connections                       | 43   |
| Angled tubular cable lugs 90°                     | 144, 145     | Cable stripper „Kabifix“                               | 22                 | Crimping pliers for modular plugs                          | 45   |
| Anti-Friction-Coating HUPcable                    | 381          | Cable stripper ASI, automatic                          | 28                 | Crimping pliers for modular plugs                          | 46   |
| Anti-Rust-Spray HUPrustEX                         | 384          | Cable stripper, automatic                              | 26                 | Crimping pliers for twin end sleeves                       | 36   |
| Assortment boxes                                  | 364          | Cable stripper, manual                                 | 26                 | Crimping pliers HUPcompact                                 |  |
| Assortment for Combi-Crimp - DIN                  | 113          | Cable stripper Outlet 20/55                            | 28                 | Crimping pliers HUPstar Coax                               | 43   |
| Assortment insert SysCon with foam                | 371          | Cable strippers for short-circuit proof lines          | 23                 | Crimping pliers HUPstar Photovoltaic                       | 44   |
| Assortment of insulated terminals                 | 127          | Cable stripping knives                                 | 22, 209, 296       | Crimping pliers X-Crimp                                    | 50   |
| Assortments of wire-end sleeves                   | 112          | Cable stripping or lead tube knives                    | 296                | Crimping pliers 36, 37, 40, 41, 42, 43, 44, 52, 53, 54, 55 | 36, 37, 40, 41, 42, 43, 44, 52, 53, 54, 55 |
| Auger bit   | 301          | Cable ties   | 166, 167, 168      | Crimping terminals and connectors, DIN                     | 73   |
| Automatic cable stripper                          | 28, 29       | Cable unwinder   | 96                 | Crimpset „MULTI Photovoltaik“                              | 44   |
| Automatic wire stripper                           | 27           | CableGo  | 98                 | Crimpset MULTI   | 51   |
|   |              | Carpenters' pencils                                    | 285                | Crimpset X-Crimp   | 50   |
| <b>B</b>  | <b>page</b>  | Carrying belts   | 339                | Cross connectors, standard series                          | 146  |
| Backpack "Basic VDE"                              | 328          | Cartridge gun „Profi“                                  | 379                | Cross slotted screwdrivers                                 | 244, 245                                   |
| Backpack "Basic"                                  | 328          | Cartridge gun  | 379                | Cross slotted screwdrivers VDE                             | 195  |
| Backpack "VDE Plus" 1000 V                        | 329          | Casing drill   | 301                | Cross type socket wrenches 1000 V                          | 210  |
| Backpack "VDE" 1000 V                             | 329          | Catch device made from zinc steel                      | 91, 93             | Cupal washer   | 158  |
| Ball point allen keys                             | 252, 253     | Centre bits  | 305                | Cutting tool   | 83   |
| Baseplate for fixing                              | 372          | Centre drill for holder, "RE-LOAD"                     | 309                | Cutting-Oil HUPdrill                                       | 384  |
| Basic module „CableGo“                            | 99           | Centre punch   | 292                |  |  |
| Basic unit  | 82           | Centre drills  | 309                | <b>D</b>   | <b>page</b>                                |
| Battery Li-Ion 18 V                               | 71           | Chalk line roller Squid                                | 285                | Decoiler   | 96   |
| Battery powered cable cutter „AS12-52“            | 19           | Chalk  | 285                | Deep hole marker   | 285  |
| Battery powered cable cutter „AS-52“              | 18           | Checking mirrors                                       | 251                | Diamond cutting blades                                     | 306  |
| Battery powered cable cutter „AS-52ACSR“          | 18           | Chipboard screw  | 316                | Diamond cutting disk                                       | 306  |
| Battery powered cable cutter „AS6-85“             | 19           | Circuit tester "Control"                               | 292, 293           | Diamond hollow core cutters                                | 305  |
| Battery powered cable cutter „AS6-S20“            | 18           | Claw hammer  | 251                | Dies for end sleeves                                       | 63   |
| Battery powered cable cutter „SAS6-85“            | 19           | Claw retrievers  | 251                | Dies for rounding of round conductors                      | 63   |
| Battery powered crimping tool „AC25-12“           | 64           | Cleaning brushes Safety Line                           | 224                | Dies for sealing pliers                                    | 241  |
| Battery powered crimping tool „AC42-12“           | 65           | Cleaning Wipes HUPwipe                                 | 387                | Dies for Solar contacts Amphenol                           | 44   |
| Battery powered crimping tool „AH-12“             | 66           | Climping irons   | 238                | Dies for terminals and connectors                          | 62, 63                                     |
| Battery powered crimping tool „AO-6“              | 61           | Cold-resistant insulation tape „HUPtape-22plus“        | 191                | Dies for terminals and compacted connectors                | 63   |
| Battery powered crimping tool „SO-6“              | 61           | Combi, threading bit set                               | 313                | Dies for tubular terminals „F-Type“                        | 63   |
| Battery powered crimping tool „SO-6M“             | 61           | Combi-Crimping pliers                                  | 40                 | Dies, metric thread  | 312  |
| Battery powered crimping tool „SD300-6“           | 69           | Combination pliers                                     | 272                | Dies   | 45, 46                                     |
| Battery powered crimping tool „SD300-6M“          | 69           | Combination pliers VDE                                 | 201, 203           | Dispenser box with insulated end sleeves                   | 111  |
| Battery powered crimping tool „SD400-6“           | 70           | Combination pliers 1000 V                              | 205                | Dispenser box with Twin end sleeves                        | 111  |
| Battery powered crimping tool „SD400-6M“          | 70           | Combination scissor                                    | 5                  | Dispenser box with uninsulated end sleeves                 | 111  |
| Battery powered crimping tool „SDE240-6“          | 71           | Combination spanners                                   | 260                | Dispenser for hand cleaning cream HUPsoap                  | 387  |
| Battery powered crimping tool „SDE240-6M“         | 71           | Combination step drills/HSS                            | 303                | Dispenser for plastic bottle                               | 381  |
| Battery powered crimping tool „SH-6“              | 60           | Combined dowel and contact spanners                    | 224                | Dosage cap „Target Control System“                         | 386  |
| Battery powered crimping tool „SH-6M“             | 60           | Compact floodlight "HUPlight10"                        | 280                | Double edged cable cutter 1000 V                           | 206  |
| Battery powered crimping tool „SHs-6“             | 59           | Compact floodlight "HUPlight10"                        | 280                | Double ended ring spanner                                  | 260  |
| Battery powered crimping tool „SHs-6M“            | 59           | Compact floodlight "HUPlight20"                        | 280                | Double ended spanners                                      | 260  |
| Battery powered cable cutter „AS6-40“             | 19           | Complete assembly case                                 | 32                 | Double faced sledges to DIN 6475                           | 293  |
| Battery powered wire cutter „AS6-S32“             | 18           | Complete stocks, metric thread                         | 312                | Double-locking-cable ties                                  | 168  |
| Bending tool                                      | 83           | Compact floodlight "HUPlight10"                        | 280                | Double-Sided Acryl Tape HUPtapeDouble                      | 380  |
| Bi-Metal hole saws                                | 308, 310     | Compact floodlight "HUPlight20"                        | 280                | Dowel Mounting sockets/Christmas trees                     | 169  |
| Bits for PZ slot profile                          | 255          | Compact floodlight "HUPlight50"                        | 281                | Drill for Diamond hollow core cutters                      | 305  |
| Bolt cutter                                       | 8            | Compressed Air HUPair                                  | 386                | Drill type machine bits for wood                           | 301  |
| Box S, M, L, XL                                   | 372          | Compressed Air non-flammable HUPairXtra                | 386                | Dry wall screws  | 316  |
| Box for end sleeves                               | 37           | Compression joints                                     | 150, 153           | Dust masks   | 237  |
| Brass padlocks                                    | 339          | Compression joints                                     | 150, 153           | Dust protection door                                       | 289  |
| Broom   | 288          | Cone drills/Aerial drills/HSS                          | 304                |  |  |
|   |              | Connecting rod   | 81                 |  |  |
|   |              | Connection set basic module „CableGo“                  | 99                 |  |  |
|   |              | Connection shackle for probes                          | 90                 |  |  |
|   |              | Connection sleeve                                      | 88, 89, 91, 93     |  |  |

| <b>E</b>                                      | <b>page</b>                  | <b>G</b>   | <b>page</b>                            | <b>H</b>                                    | <b>Seite</b>       |
|---|------------------------------|--|--|---|--------------------|
| Ear defenders                                 | 236, 237                     | Glove tester                                       | 234                                    | Hydraulic crimping headstock set            | 72                 |
| Ear muffs for helmet                          | 237                          | Gloves - bicolour insulating                       | 234                                    | Hydraulic cutter „HH 85-ST“                 | 16                 |
| Ear protection plugs                          | 237                          | Gloves in accordance                               | 234                                    | Hydraulic cutting headstock                 | 16                 |
| Edge cutter                                   | 32                           | Graffiti-Remover HUPgraffitiEx                     | 386                                    | Hydraulic foot pump „F-700“                 | 74                 |
| Elastic cable distributors                    | 133                          | Grease for soft soldering                          | 390                                    | Hydraulic hand pliers „HC25-12“             | 64                 |
| Elastic connectors with socket sleeves (male) | 133                          | Grip pliers  | 274                                    | Hydraulic hand pliers „HC42-12“             | 65                 |
| Electrical insulating tape                    | 190                          | Guides, metric                                     | 312                                    | Hydraulic hand pliers „HD300-6“             | 69                 |
| Electric-Contact-Cleaner HUPcontactXtra       | 384                          | Guiding head                                       | 87, 88, 89, 90                         | Hydraulic hand pliers „HD400-6“             | 70                 |
| Electric-Engine-Cleaner HUPelectroClean       | 384                          | Guiding role                                       | 89, 90, 91, 93                         | Hydraulic hand pliers „HH-12“               | 66                 |
| Electrician's safety levels                   | 224, 284                     |  |  | Hydraulic hand pliers „HH-6“                | 60                 |
| Electricians protection visor                 | 236                          |  |  | Hydraulic hand pliers „HHS-6“               | 59                 |
| Electricians' boots                           | 237                          |  |  | Hydraulic hand pliers „HO-6“                | 62                 |
| Electricians' protection helmets              | 235                          | <b>H</b>   | <b>page</b>                            | Hydraulic hand-punch-cutter „HS-6“          | 81                 |
| Electricians' scissor                         | 5                            | Hacksaw blades „PUK“                               | 298                                    | Hydraulic hand-punching tool „HS-8“         | 81                 |
| Electricians' chisels                         | 292                          | Hacksaw blades to DIN 6494                         | 298                                    | Hydraulic high-pressure hose                | 74                 |
| Electrician-safety face mask class II         | 236                          | Hacksaw frame                                      | 208, 298                               | Hydraulic oil                               | 71                 |
| Electricians' screwdrivers                    | 244, 245                     | Hand brush „Prestige“                              | 288                                    | Hydraulic safety life line cable cutter     | 17                 |
| Electro-hydraulic pump „PN700 I“              | 74                           | Hand cable cutter                                  | 9                                      |   |                    |
| Electro-hydraulic pump „Special“              | 83                           | Hand cleaning cream HUPsoap                        | 387                                    |   |                    |
| Electro-hydraulic punching tool „AS-6M“       | 80                           | Hand pliers „MO-6“ for exchangeable dies           | 62                                     | <b>I</b>                                    | <b>page</b>        |
| Electronic screwdriver set                    | 251                          | Hand saw „PUK“                                     | 298                                    | Industrial cleaning wipes                   | 387                |
| Electronic screwing bit set                   | 251                          | Hand taps DIN 352, type N/HSS                      | 313                                    | Industrial hot air blower                   | 188                |
| EMC-Cable glands brass nickel-plated          | 181                          | Handles with bit adapter 1000 V                    | 214                                    | Industrial screwdriver set                  | 247                |
| Empty dispenser box                           | 111                          | HAUPA „Backpack“                                   | 323                                    | Insert bit sockets                          | 263                |
| End connectors                                | 120                          | HAUPA „BigBox“                                     | 324                                    | Inserts for hexagon socket screws 1000 V    | 214                |
| End sleeve assortment                         | 113                          | HAUPA „ProBag Go 1000 V“                           | 335                                    | Insulated crimp cable lugs                  | 138                |
| End sleeves                                   | 104, 105, 106, 108, 109      | HAUPA „ProBag Max“                                 | 334                                    | Insulated tweezers VDE 1000 V               | 224                |
| Engineers' hammer                             | 293                          | HAUPA „ProBag“                                     | 324                                    | Insulating floor mats                       | 239                |
| Engineers' squares                            | 285                          | HAUPA „Tool Jacket“, empty                         | 323                                    | Insulating sleeves                          | 133                |
| Engineers' screwdrivers                       | 244, 245                     | HAUPA „Tool Jacket“                                | 330                                    | Insulator cover for gable insulators 1000 V | 240                |
| Engraving for sealing pliers                  | 241                          | HAUPA „ToolBag XL 1000 V“                          | 332                                    | ISO nailing clips                           | 175                |
| Epoxyd glue HUPepoxyd                         | 380                          | HAUPA „ToolBag XL Classic“                         | 331                                    | Isolating magnetic rubber towels            | 239                |
| ESD Electronic combination pliers             | 276                          | HAUPA „ToolBag XL Go“                              | 332                                    |   |                    |
| ESD Electronic flat nose pliers               | 276                          | HAUPA „ToolBag XL“                                 | 324                                    |   |                    |
| ESD Electronic front cutter                   | 276                          | HAUPA „ToolBag 1000 V“                             | 331                                    |   |                    |
| ESD Electronic needle nose pliers             | 275                          | HAUPA „ToolBag“                                    | 330                                    | <b>J</b>                                    | <b>page</b>        |
| ESD Electronic pliers set                     | 276                          | HAUPA „ToolBag“                                    | 324                                    | Jointing chisel                             | 292                |
| ESD Electronic round nose pliers              | 276                          | HAUPA „ToolBelt VDE“ 1000 V                        | 326                                    | Junior hacksaw                              | 298                |
| ESD electronic screwdrivers                   | 250                          | HAUPA „ToolBelt“                                   | 323                                    |   |                    |
| ESD Electronic side cutter                    | 276                          | HAUPA „ToolBelt Standard“                          | 326                                    |   |                    |
| ESD Electronic thin needle nose pliers        | 275                          | HAUPA „ToolPouch“                                  | 323                                    | <b>K</b>                                    | <b>page</b>        |
| Exchangeable „Vario“ handle                   | 196                          | HAUPA „ToolPouch“                                  | 326                                    | Kevlar cutter                               | 5                  |
| Exchangeable „VarioTQ“ 1000 V handle          | 200                          | HAUPA „TrendBox Plus“                              | 333                                    | Key set Tx                                  | 252                |
| Exchangeable „VarioTQ“ handle                 | 249                          | HAUPA „TrendBox“                                   | 333                                    |   |                    |
| Extension 1/2“                                | 265                          | HAUPA „Bit box“                                    | 255                                    |   |                    |
| Extension 1/4“                                | 262                          | HAUPA „BitBox+“                                    | 256                                    | <b>L</b>                                    | <b>page</b>        |
| Extension 3/8“                                | 264                          | HAUPA „ProBag Start VDE“                           | 334                                    | Label-Remover HUPlableEx                    | 386                |
| Extensions 1000 V                             | 212, 214, 216, 218, 220, 222 | HAUPA Crimp System for Photovoltaics               | 44                                     | Laser marking for your individual tool case | 364                |
| Extensions with bit adapter 1000 V            | 218, 222                     | HAUPA electric crimper                             | 51                                     | Lead seals                                  | 241                |
| Extensions                                    | 216, 220                     | HAUPA Electronic screwdriver set standard          | 251                                    | LED „Focus Torch“                           | 278                |
|   |                              | HAUPA Pneumatic Crimpers                           | 38                                     | LED „Headlight“ headlamp                    | 279                |
|   |                              | Workshop trolley                                   | 375                                    | LED „IP67 Torch“                            | 278                |
|   |                              | Heat protection gloves                             | 235                                    | LED „Max Torch“                             | 278                |
|   |                              | Heat shrinkable tubes                              | 184, 185, 186, 187, 188                | LED „Mini Torch“                            | 278                |
|   |                              | Heavy duty side cutters                            | 201, 272                               | LED „Pen Torch“                             | 279                |
|   |                              | Hemp tackle block ropes                            | 242                                    | LED „RC Torch“                              | 278                |
|   |                              | Hex shank with plug ejection                       | 309                                    | LED Battery-powered „Working Lamp“          | 279                |
|   |                              | Hexagon angle screwdriver set, with spherical head | 253                                    | Liquid metal HUPfastMetal                   | 380                |
|   |                              | Hexagon sockets                                    | 212, 214, 216, 218, 219, 220, 222, 223 | Locked torque wrench 1000 V                 | 218, 222           |
|   |                              | Hexagonal machine screws                           | 317                                    | Long chain nose pliers                      | 201, 203, 205, 273 |
|   |                              | Hexagonal nut DIN 934                              | 318                                    | Long flat nose pliers                       | 273                |
|   |                              | Hexagonal wood screws                              | 316                                    | Long round nose pliers                      | 273                |
|   |                              | High temperature silicon HUPsilicon                | 379                                    | Loose knives                                | 27                 |
|   |                              | Holder for „Deep Indent“ pressing inserts          | 68                                     |   |                    |
|   |                              | Holder for marking chalk                           | 285                                    |   |                    |
|   |                              | Hole inserts for round holes                       | 82                                     |   |                    |
|   |                              | Hole inserts for slotted holes                     | 82                                     |   |                    |
|   |                              | Hole saw   | 308                                    |   |                    |
|   |                              | Hole-cutting tin snips                             | 297                                    |   |                    |
|   |                              | Hole-making tools                                  | 82                                     |   |                    |
|   |                              | Hollow core cutters                                | 305                                    |   |                    |
|   |                              | Holster for LED torches                            | 279                                    |   |                    |
|   |                              | Hook-and-loop cable ties                           | 169                                    |   |                    |
|   |                              | Hooks  | 316                                    |   |                    |
|   |                              | Household hatchet                                  | 292                                    |   |                    |
|   |                              | HSS Tap set  | 313, 314                               |   |                    |
|   |                              | HSS taps „Direct cutter“                           | 312                                    |   |                    |
|   |                              | HUPcompact   | 35, 36, 40, 41, 42                     |   |                    |
|   |                              | HUPshrink  | 184, 185, 186, 187, 188                |   |                    |
|   |                              | HUPsilicon   | 379                                    |   |                    |
|   |                              | HUPskinProtect                                     | 386                                    |   |                    |
|   |                              | HUPstar „Coaxial“                                  | 43, 49                                 |   |                    |
|   |                              | HUPstar „Photovoltaic“                             | 44, 49                                 |   |                    |
|   |                              | HUPstar  | 49                                     |   |                    |
|   |                              | HUPsuperglue                                       | 380                                    |   |                    |
|   |                              | Hydraulic cable cutters „HH 32-ST“                 | 16                                     |   |                    |
|   |                              | Hydraulic crimping headstock „KC25-12“             | 64                                     |   |                    |
|   |                              | Hydraulic crimping headstock „KC42-12“             | 65                                     |   |                    |
|   |                              | Hydraulic crimping headstock „KH-25“               | 72                                     |   |                    |
|   |                              | Hydraulic crimping headstock + cylinder „KH-45“    | 73                                     |   |                    |

| <b>F</b>                                       | <b>page</b>             |
|--|-------------------------|
| Fallstop acc. to EN 354                        | 238                     |
| Fast degreaser HUPdegreaser                    | 384                     |
| Fibre glass push rod set                       | 87                      |
| Figure tin snips                               | 297                     |
| File assortments                               | 294                     |
| Fine droplet tip                               | 380                     |
| Firmer chisels DIN 5139                        | 292                     |
| Fittings for hexagon socket screws             | 212, 216, 219, 220, 223 |
| Fittings' solder acc. to DIN EN 29453          | 391                     |
| Flat bits                                      | 301                     |
| Flat cable pliers                              | 27                      |
| Flat chisels to DIN 6453 A, flat oval shank    | 292                     |
| Flat nose pliers 1000 V                        | 202                     |
| Flat terminals                                 | 119, 123, 125, 133, 131 |
| Flatcable stripper                             | 23                      |
| Flexible extension bar 1/4“                    | 262                     |
| Flexible screwdrivers „Piccolo“                | 251                     |
| Foam Cleaner HUPclean                          | 385                     |
| Foam inlay for smart battery hydraulics „SO-6“ | 376                     |
| Foam inlay for socket set „SocketMax“ ¼“ + ½“  | 376                     |
| Foam inlay for socket set „Torque“ ½“          | 375                     |
| Foam inlay for socket set „VDE-Socket“ ½“      | 376                     |
| Foam insert SysCon                             | 372                     |
| Foam socket wrench set „Torque“ ¼“             | 375                     |
| Folding rules                                  | 284                     |
| Fork terminals                                 | 117, 121                |
| Fork terminals without insulation              | 139                     |
| Freeze-Spray HUPcool                           | 388                     |
| Freeze-Spray HUPcoolXtra                       | 388                     |
| Front bulb with shackle                        | 89, 90, 91, 93          |
| Front cable cutter                             | 13                      |
| Front cutters 1000 V                           | 203                     |
| Front/end sleeve                               | 88, 89, 90, 91, 93      |
| Front-Crimping pliers                          | 37                      |
| Fully insulating 1000 V PVC flat nose pliers   | 202                     |

| M   | page       | R  | page                         | S  | Seite                        |
|---|------------|--|------------------------------|--|------------------------------|
| Machine screw counter sunk                          | 317        | Rainbow-Pack                             | 190                          | Small tube cutter                            | 297                          |
| Magazine for Quadro                                 | 37         | Rapid connectors                         | 120                          | Smoke-Detector-Test-Spray HUPdetect          | 388                          |
| Magnetic holder                                     | 255        | Ratchet cable cutter 1000 V              | 207                          | Socket cup screw                             | 317                          |
| Magnetic holder for "HUPlight50"                    | 281        | Ratchet ring spanners 1000 V             | 211                          | Socket set                                   | 262, 264, 265, 266           |
| Magnetic retriever                                  | 251        | Ratchet screwdriver „Flex“               | 256                          | Socket sleeves (female)                      | 118, 119, 122, 123, 125      |
| Marking chalk                                       | 285        | Ratchet screwdriver „FlexPlus“           | 257                          | Socket sleeves (female) with cable stop      | 130, 131                     |
| Marking Paint HUPmark                               | 382        | Ratchet screwdriver set „Flex“           | 256                          | Socket sleeves (male)                        | 117, 121, 132                |
| Masonry drills                                      | 301        | Ratchet screwdriver set „FlexBag“        | 257                          | Socket T-wrench 1000 V                       | 212, 214, 216, 218, 220, 222 |
| Measuring tapes                                     | 284        | Ratchet screwdriver set „FlexBox“        | 257                          | Socket wrenches                              | 247                          |
| Metal box   | 53, 54, 55 | Ratchet two handed cable cutter „SCAR45“ | 9                            | Socket wrenches VDE                          | 195                          |
| Metal Degreaser HUPmetalClean                       | 385        | Ratchet wrenches                         | 313                          | Sockets 1/2"                                 | 265                          |
| Metal dustpan with wooden handle                    | 288        | Replacement batteries to HUPlight        | 280, 281                     | Sockets 1/4"                                 | 262                          |
| Microelectronic side cutters                        | 274        | Releasable cable ties                    | 168                          | Sockets 3/8"                                 | 264                          |
| Mini working light "HUPlight4"                      | 280        | Replaceable blade                        | 5, 32, 208, 209, 249         | Solder for electronic work                   | 391                          |
| "Mix Tx" Screws assortment box                      | 319        | Replacement glass fibre rod              | 88                           | Solder in triangular sticks                  | 390                          |
| "Mix" Screws assortment box                         | 318        | Replacement glass fibre rod FIX          | 91                           | Solder wire                                  | 391                          |
| Mixing nozzle                                       | 379        | Replacement glass fibre rod FOX          | 89                           | Soldering fluid                              | 390                          |
| Mounting bracket „CableGo“                          | 99         | Replacement glass fibre rod POWER        | 92                           | Soldering grease for fittings                | 390                          |
| Mounting screws                                     | 317        | Replacement glass fibre rod SIX          | 90                           | Soldering irons                              | 390                          |
| MS-Polymer HUPfix                                   | 378        | Replacement glass fibre rod STRONG       | 92                           | Soldering paste                              | 390                          |
| "Multi Check II" - digital high-capacity multimeter | 230        | Replacement head                         | 7, 8, 293                    | Soldering set                                | 390                          |
| "Multi Clamp II" digital miniature clamp transducer | 229        | Replacement rod                          | 87                           | Soldering stone                              | 390                          |
| Multi Cleaner HUPcleanMulti                         | 385        | Reversible ratchet 1/2"                  | 265                          | Solderless butt connectors                   | 140                          |
| Multi-fleece  | 289        | Reversible ratchet 1000 V                | 212, 214, 216, 218, 220, 222 | Solderless terminals for meter connection    | 138                          |
|   |            | Right angle allen keys 1000 V            | 210                          | Spacer bushing                               | 81                           |
|   |            | Ring spanners 1000 V                     | 211                          | Spanners for switch-cabinets                 | 270                          |
|   |            | Ring terminals                           | 117, 121, 126, 132           | spare blades hook form                       | 297                          |
|   |            | Riveting pliers                          | 274                          | spare blades straight form                   | 297                          |
|   |            | Riveting tool set                        | 274                          | spare blades                                 | 5, 22, 27, 28, 29, 296       |
|   |            | Round pins                               | 118, 122                     | spare cutting head                           | 208                          |
|   |            | Round sleeves                            | 120, 123                     | Spare screws                                 | 304                          |
|   |            | Round terminals                          | 119, 124                     | Spark plug sockets 1/2"                      | 265                          |
|   |            | Rubber hand guard                        | 292                          | Spark plug sockets 3/8"                      | 264                          |
|   |            | Rubber towels                            | 239                          | Special cable cutter                         | 10                           |
|   |            |  |                              | Special fast glue for glass fibre rod Ø 3 mm | 88                           |
|   |            |  |                              | Special pulling aid                          | 88                           |
|   |            |  |                              | Spinner handle for screwdriver 1/4"          | 262                          |
|   |            |  |                              | Spiral fish tapes                            | 86                           |
|   |            |  |                              | Spring for hole saw arbors                   | 307                          |
|   |            |  |                              | Spring washers                               | 318                          |
|   |            |  |                              | Square socket key                            | 200, 249                     |
|   |            |  |                              | Stainless-Steel-Spray HUPinox                | 383                          |
|   |            |  |                              | Stand for "HUPlight50"                       | 281                          |
|   |            |  |                              | Steel cable ties                             | 172                          |
|   |            |  |                              | Steel fish tapes                             | 86                           |
|   |            |  |                              | Steel point scribers                         | 285                          |
|   |            |  |                              | Steel stamp                                  | 294                          |
|   |            |  |                              | Step drills /HSS                             | 303                          |
|   |            |  |                              | Step drills assortment/HSS                   | 303                          |
|   |            |  |                              | Stone chisels                                | 292                          |
|   |            |  |                              | Street broom                                 | 288                          |
|   |            |  |                              | Stripper "Coaxi"                             | 23                           |
|   |            |  |                              | Stripper „All-rounder“                       | 22                           |
|   |            |  |                              | Stripper for coaxial cable                   | 23                           |
|   |            |  |                              | Stripper for UTP-/STP-data cable             | 24                           |
|   |            |  |                              | Stripper standard                            | 22                           |
|   |            |  |                              | Stripping pliers                             | 32, 208                      |
|   |            |  |                              | Stripping tool for medium-high voltage cable | 32                           |
|   |            |  |                              | Stubby gasifier screwdrivers                 | 246                          |
|   |            |  |                              | Super wire stripper                          | 26                           |
|   |            |  |                              | "Supply Basic" service bag                   | 336                          |
|   |            |  |                              | "Supply Max" service bag                     | 335                          |
|   |            |  |                              | "Supply Plus" service bag                    | 336                          |
|   |            |  |                              | "Supply" service bag                         | 325                          |
|   |            |  |                              | Switch cabinet key, „HUPkey“                 | 269                          |
|   |            |  |                              | SysCon „SocketMax“ 1/2", 1/4"                | 266                          |
|   |            |  |                              | SysCon XL „SafetySet“                        | 237                          |
|   |            |  |                              | SysCon tool case set "Start VDE"             | 374                          |
|   |            |  |                              | SysCon „VDE-Socket“ 1/2"                     | 221                          |
|   |            |  |                              | SysCon cable lugs DIN                        | 162, 163                     |
|   |            |  |                              | SysCon cable lugs standard                   | 162, 163                     |
|   |            |  |                              | SysCon cable pulling device „CableGo“        | 99                           |
|   |            |  |                              | SysCon end sleeves & 210804                  | 114                          |
|   |            |  |                              | SysCon end sleeves & 210842                  | 114                          |
|   |            |  |                              | SysCon for assortment inserts empty          | 369                          |
|   |            |  |                              | SysCon hand truck                            | 373                          |
|   |            |  |                              | SysCon insulated terminals                   | 128                          |
|   |            |  |                              | SysCon load securing "SysConCar"             | 373                          |
|   |            |  |                              | SysCon M for assortment inserts empty        | 369                          |
|   |            |  |                              | SysCon plate screws                          | 320                          |
|   |            |  |                              | SysCon Rack                                  | 370                          |
|   |            |  |                              | SysCon for assortment inserts, empty         | 369                          |
|   |            |  |                              | SysCon set                                   | 80                           |
|   |            |  |                              | SysCon socket wrench set "Torque" ¼"         | 268                          |
|   |            |  |                              | SysCon socket wrench set "Torque" ½"         | 268                          |
|   |            |  |                              | SysCon starter set                           | 373                          |
|   |            |  |                              | SysCon tool box empty                        | 369, 370                     |
|   |            |  |                              | SysCon tool case set                         | 374                          |
|   |            |  |                              | SysCon universal countersunk screws          | 320                          |

| <b>T</b>  | <b>page</b>                  | <b>T</b>  | <b>Seite</b>       |
|---|------------------------------|---|--------------------|
| Table clamp „CableGo“                           | 99                           | Tube cutter   | 297                |
| Tackle blocks                                   | 242                          | Tubular cable lugs assortment                       | 161                |
| Tapping screws                                  | 317                          | Tubular cable lugs                                  | 143, 148, 154      |
| Taps for armoured steel conduits, metric thread | 312                          | Tubular notched terminals                           | 148                |
| Tarpaulin                                       | 289                          | Tubular terminals, forke type, of pure nickel       | 154                |
| T-connectors, standard series                   | 146                          | Tubular terminals, Light „T“ series                 | 142                |
| T.C.T. center drill for hole saw arbors         | 307                          | Tubular terminals, Light „T“ series                 | 141                |
| T.C.T. Hole Saw                                 | 307                          | Tubular terminals, nylon-insulated, standard series | 147                |
| Template for four mandrel pressing              | 70                           | Tubular terminals                                   | 143, 144, 154      |
| Tensioning tools for cable ties                 | 170, 172                     | Tweezers  | 274                |
| Test pin  | 70                           | Twin-end sleeves                                    | 109, 110           |
| Textile tape                                    | 288                          | TwinSpeed self tapping screw                        | 317                |
| T-Handle allen keys 1000 V                      | 210                          | Twist drills DIN 338/HSS type N                     | 300                |
| T-Handle socket wrenches 1000 V                 | 210                          |   |                    |
| The ideal tool assortment                       | 359                          |   |                    |
| Tool belt „Basic“                               | 327                          | <b>U</b>  | <b>page</b>        |
| Tool belt „VDE Plus“ 1000 V                     | 327                          | Universal alignment tool 1000 V                     | 224                |
| Tool belt „VDE“ 1000 V                          | 327                          | Universal countersunk screw                         | 316                |
| Tool belt                                       | 323                          | Universal joint 1/2“                                | 265                |
| Tool case „HAUPA – Lifesaver“ 1000 V            | 363                          | Universal joint 1/4“                                | 263                |
| Tool case „Start-up Profi“                      | 344                          | Universal joint 3/8“                                | 264                |
| Tool case „Start-up S“                          | 344                          | Universal pan head screws                           | 316, 317           |
| Tool case „Achat“                               | 338                          | Universal stripper                                  | 22                 |
| Tool case „Akkurat“                             | 358                          | Universal switch cabinet key „HUPkey“               | 269                |
| Tool case „Aktion“                              | 345                          | Universal-Lubricant HUP40                           | 383                |
| Tool case „Alpha“                               | 341                          | Utility knives                                      | 296, 297           |
| Tool case „Basic VDE“                           | 357                          | UV-Hardening GRP Repair-Film HUPplaxUV              | 380                |
| Tool case „Basic“                               | 356                          |   |                    |
| Tool case „Comet“                               | 339                          | <b>V</b>  | <b>page</b>        |
| Tool case „Compact“                             | 356                          | „Vario“ 1000 V replaceable blade set                | 196                |
| Tool case „Delux Plus“ 1000 V                   | 360                          | „Vario“ nylon bag – empty                           | 196                |
| Tool case „Delux“ 1000 V                        | 343                          | „Vario“ replaceable blade                           | 196                |
| Tool case „Diamant“                             | 358                          | „Vario“ screw cap                                   | 196                |
| Tool case „EXTRA“                               | 350                          | „Vario“ switch cabinet key                          | 196                |
| Tool case „Favorit - Admiral - Profi“           | 339                          | „VarioPro“ 1000 V replaceable blade system          | 197                |
| Tool case „Inspektor“                           | 357                          | „VarioTQ“ nylon bag                                 | 249                |
| Tool case „Kick-Off Light“                      | 337                          | „VarioTQ“ nylon bag 1000 V                          | 200                |
| Tool case „Kick-Off“                            | 337                          | „VarioTQ“ 1000 V replaceable blade                  | 200                |
| Tool case „Leopard“ 1000 V                      | 361                          | „VarioTQ“ 1000 V screwdriver                        | 198, 199           |
| Tool case „Magister“                            | 339                          | „VarioTQ“ 1000 V replaceable blade                  | 200                |
| Tool case „Merkur Plus“                         | 362                          | „VarioTQ“ screwdriver                               | 248                |
| Tool case „Merkur“                              | 346                          | VDE 2-component screwdriver with PZ slot profile    | 194                |
| Tool case „Novelle 1“                           | 341                          | VDE magnet for rubber cloth                         | 239                |
| Tool case „Omega“                               | 345                          | VDE ratchet cable cutter with cover 1000 V          | 207                |
| Tool case „OmegaMax Start VDE“                  | 359                          | VDE security set 1000 V                             | 338                |
| Tool case „OmegaMax“                            | 344                          | VDE/GS - Tool sets 1000 V                           | 338                |
| Tool case „Panther“                             | 355                          | VDE/GS - Tool wallets „Rebell“                      | 325                |
| Tool case „Pendant“                             | 346                          | VDE/GS-Voltage testers, VDE-tested 0426/72          | 254                |
| Tool case „Phoenix“                             | 340                          | Voltage tester „Basic +“                            | 229                |
| Tool case „Power Pack“ 1000 V                   | 361                          | Voltage tester „Basic“                              | 231                |
| Tool case „Profi VDE“ 1000 V                    | 350                          | Voltage tester „Profi LCDplus II“                   | 228                |
| Tool case „Rotor“ 1000 V                        | 343                          | Voltage tester „Profi LEDplus II“                   | 228                |
| Tool case „Saphir“                              | 340                          | Voltage tester „TestPen Profi“                      | 231                |
| Tool case „Start VDE“                           | 342                          | Voltage testers VDE/GS                              | 231, 254           |
| Tool case „Start“                               | 342                          |   |                    |
| Tool case „Start-up VDE“                        | 349                          |   |                    |
| Tool case „Start-up“                            | 349                          |   |                    |
| Tool case „Tradition“ and „Fan“                 | 338                          | <b>W</b>  | <b>page</b>        |
| Tool case „Venus Plus“ 1000 V                   | 362                          | Warding files DIN 7283                              | 294                |
| Tool case „Venus“                               | 346                          | Washers   | 318                |
| Tool case „2 component“                         | 354                          | Waste sack, extra                                   | 289                |
| Tool case „Biber“ 1000 V                        | 223                          | Water brushes                                       | 290                |
| Tool case „ElektroCombo“                        | 197, 347                     | Water pump pliers 1000 V                            | 204                |
| Tool case „Real“ 1000 V                         | 204                          | Water pump pliers                                   | 202, 273           |
| Tool case „Start-up Go“                         | 348                          | Water-based lubricants and slip agents              | 381                |
| Tool case „Start-up Light“                      | 347                          | Wedges  | 224                |
| Tool case „Start-up Max“                        | 348                          | Welded shrink connectors                            | 126                |
| Tool case 1000 V                                | 212, 215, 216, 219, 220, 223 | Wire brushes  | 290                |
| Tool case for household connections 1000 V      | 215                          | Wire cutter   | 8                  |
| Tool case trolley „EXTRA“                       | 352                          | Wire rope and cable cutter 1000 V                   | 208                |
| Tool case trolley „Fly“                         | 346                          | Wire stripper / Solar                               | 27                 |
| Tool case trolley „Master“                      | 352                          | Wire stripper „High Strip“                          | 26                 |
| Tool case trolley „OmegaMax Trolley Start VDE“  | 360                          | Wire stripper Sensor Mini                           | 28                 |
| Tool case trolley „OmegaMax Trolley“            | 345                          | Wire stripper sensor special                        | 28                 |
| Tool case trolley „Profi mobil“                 | 351                          | Wire stripping pliers VDE                           | 201, 204, 205, 273 |
| Tool case trolley „Secure mobil“ 1000 V         | 353                          |   |                    |
| Tool case trolley „Start-up“                    | 351                          |   |                    |
| Tool case trolley „Start-up Profi“              | 344                          | <b>Z</b>  | <b>page</b>        |
| Tool cases                                      | 83                           | Zinc-Spray 550 HUPzincKorro                         | 382                |
| Tool frame „HUPstar“                            | 278, 279                     | Zinc-Spray HUPzinc                                  | 382                |
| Tool plate SysCon                               | 370                          |   |                    |
| Tool plate                                      | 370                          |   |                    |
| Tool wallets                                    | 325                          |   |                    |
| Tools insert SysCon                             | 371                          |   |                    |
| Torque stoppers 1000 V                          | 218                          |   |                    |
| Torque T key 1000 V                             | 218                          |   |                    |
| Torque wrenches 1000 V                          | 214, 218, 222                |   |                    |
| Torque wrenches                                 | 267                          |   |                    |
| Travelling safety device DIN 353-2, Type ASK 1  | 238                          |   |                    |

# Index

| art. no. | page | art. no. | page | art. no.  | page | art. no.  | page | art. no.  | page | art. no.  | page | art. no.   | page |
|----------|------|----------|------|-----------|------|-----------|------|-----------|------|-----------|------|------------|------|
| 100241   | 250  | 101202   | 245  | 101916    | 194  | 102180    | 255  | 102785    | 200  | 110062    | 210  | 110280     | 210  |
| 100243   | 250  | 101204   | 245  | 101917    | 194  | 102182    | 255  | 102790    | 200  | 110064    | 210  | 110282     | 210  |
| 100249   | 250  | 101206   | 245  | 101918    | 194  | 102184    | 255  | 102792    | 200  | 110065/EN | 218  | 110284     | 210  |
| 100250   | 250  | 101208   | 245  | 101920    | 194  | 102186    | 255  | 103000    | 248  | 110066/EN | 222  | 110286     | 210  |
| 100252   | 250  | 101210   | 245  | 101922    | 194  | 102188    | 255  | 103002    | 248  | 110067/EN | 222  | 110288     | 210  |
| 100257   | 250  | 101211   | 245  | 101924    | 194  | 102190    | 255  | 103010    | 249  | 110068/EN | 222  | 110290     | 210  |
| 100259   | 250  | 101212/S | 245  | 101940    | 195  | 102192    | 255  | 103012    | 249  | 110070    | 210  | 110300     | 211  |
| 100364   | 251  | 101229/6 | 245  | 101942    | 195  | 102194    | 255  | 103014    | 249  | 110071    | 218  | 110302     | 211  |
| 100366   | 251  | 101230   | 245  | 101944    | 195  | 102196    | 255  | 103016    | 249  | 110073    | 218  | 110304     | 211  |
| 100585   | 252  | 101484   | 247  | 101946    | 195  | 102198    | 255  | 103018    | 249  | 110074    | 210  | 110306     | 211  |
| 100590   | 253  | 101486   | 247  | 101950    | 195  | 102200    | 255  | 103020    | 249  | 110075    | 218  | 110308     | 211  |
| 100592   | 253  | 101488   | 247  | 101952    | 195  | 102202    | 255  | 103022    | 249  | 110076    | 210  | 110310     | 211  |
| 100594   | 253  | 101490   | 247  | 101954    | 195  | 102204    | 255  | 103024    | 249  | 110078    | 210  | 110312     | 211  |
| 100596   | 253  | 101492   | 247  | 101956    | 195  | 102208    | 255  | 103026    | 249  | 110080    | 210  | 110314     | 211  |
| 100598   | 253  | 101494   | 247  | 101999/PZ | 195  | 102210    | 255  | 103028    | 249  | 110081    | 210  | 110316     | 211  |
| 100600   | 253  | 101496   | 247  | 101999    | 195  | 102212    | 256  | 103030    | 249  | 110083    | 210  | 110318     | 211  |
| 100602   | 253  | 101500   | 247  | 102000/PZ | 196  | 102512    | 195  | 103032    | 249  | 110084    | 210  | 110320     | 211  |
| 100606   | 253  | 101502   | 247  | 102000    | 196  | 102520    | 195  | 103034    | 249  | 110085    | 210  | 110322     | 211  |
| 100610   | 253  | 101510   | 247  | 102001    | 196  | 102522    | 195  | 103070    | 249  | 110087    | 210  | 110324     | 211  |
| 100612   | 253  | 101520   | 245  | 102002    | 196  | 102524    | 195  | 103072    | 249  | 110089    | 210  | 110331/EN  | 218  |
| 100614   | 253  | 101521   | 245  | 102004    | 196  | 102526    | 195  | 103080    | 246  | 110090    | 260  | 110332/EN  | 222  |
| 100630   | 252  | 101522   | 245  | 102005    | 196  | 102528    | 195  | 103082    | 246  | 110091    | 210  | 110335/EN  | 218  |
| 100632   | 252  | 101524   | 245  | 102006    | 196  | 102530    | 195  | 103120    | 246  | 110092    | 260  | 110336/EN  | 222  |
| 100633   | 252  | 101526   | 245  | 102008    | 196  | 102532    | 195  | 103122    | 246  | 110093    | 210  | 110337/EN  | 218  |
| 100634   | 252  | 101528   | 245  | 102010    | 196  | 102534    | 195  | 103130    | 245  | 110094    | 260  | 110338/EN  | 222  |
| 100635   | 252  | 101530   | 245  | 102012    | 196  | 102536    | 195  | 103132    | 245  | 110095    | 210  | 110339/EN  | 222  |
| 100636   | 252  | 101532   | 245  | 102014    | 196  | 102538    | 195  | 103134    | 245  | 110096    | 260  | 110340/EN  | 222  |
| 100640   | 252  | 101534   | 245  | 102016    | 196  | 102540    | 195  | 103136    | 245  | 110097    | 210  | 110342/EN  | 222  |
| 100645   | 254  | 101536   | 245  | 102017    | 196  | 102550    | 195  | 103470    | 246  | 110099    | 210  | 110344/EN  | 222  |
| 100646   | 254  | 101538   | 245  | 102018    | 196  | 102552    | 195  | 103472    | 246  | 110100    | 260  | 110346/125 | 222  |
| 100647   | 254  | 101540   | 245  | 102020    | 196  | 102554    | 195  | 103800    | 229  | 110104    | 260  | 110346/250 | 223  |
| 100648   | 254  | 101541   | 245  | 102022    | 196  | 102556    | 195  | 103809    | 229  | 110108    | 260  | 110346/EN  | 222  |
| 100649   | 254  | 101542   | 245  | 102030    | 196  | 102612    | 244  | 103811    | 230  | 110112    | 260  | 110348/125 | 222  |
| 100650   | 254  | 101544   | 245  | 102032    | 196  | 102614    | 244  | 103817    | 231  | 110114    | 260  | 110348/250 | 223  |
| 100666   | 230  | 101546   | 245  | 102034    | 196  | 102616    | 244  | 103824    | 228  | 110120    | 260  | 110348/EN  | 222  |
| 100680   | 251  | 101548   | 245  | 102036    | 196  | 102700/PZ | 198  | 103826    | 228  | 110130    | 260  | 110350/125 | 222  |
| 100684   | 251  | 101550   | 245  | 102040    | 196  | 102700    | 198  | 104000    | 251  | 110132    | 260  | 110350/250 | 223  |
| 100694   | 251  | 101552   | 245  | 102042    | 196  | 102701/PZ | 198  | 104002    | 251  | 110140    | 260  | 110350/EN  | 222  |
| 100700   | 254  | 101554   | 245  | 102044    | 196  | 102701    | 198  | 104004    | 251  | 110142    | 260  | 110352/125 | 222  |
| 100700   | 231  | 101560   | 246  | 102052    | 197  | 102702    | 199  | 104005    | 256  | 110144    | 260  | 110352/250 | 223  |
| 100704 A | 250  | 101562   | 246  | 102060    | 196  | 102703    | 199  | 104006    | 256  | 110146    | 260  | 110352/EN  | 222  |
| 100704   | 250  | 101604   | 244  | 102062    | 196  | 102704    | 199  | 104008    | 247  | 110148    | 260  | 110354/125 | 222  |
| 100712   | 250  | 101606   | 244  | 102064    | 196  | 102705    | 199  | 104009    | 257  | 110152    | 260  | 110354/250 | 223  |
| 100713   | 250  | 101608   | 244  | 102066    | 196  | 102706    | 199  | 104010    | 250  | 110154    | 260  | 110354/EN  | 222  |
| 100714   | 250  | 101610   | 244  | 102068    | 196  | 102707    | 199  | 104020    | 257  | 110160    | 260  | 110356/125 | 222  |
| 100715   | 250  | 101612   | 244  | 102070    | 196  | 102710    | 200  | 104030    | 257  | 110164    | 260  | 110356/250 | 223  |
| 100716   | 250  | 101614   | 244  | 102072    | 196  | 102712    | 200  | 104090    | 347  | 110170    | 260  | 110356/EN  | 222  |
| 100718 A | 250  | 101640   | 244  | 102075    | 231  | 102714    | 200  | 104090    | 197  | 110172    | 260  | 110358/125 | 222  |
| 100720   | 250  | 101642   | 244  | 102110    | 254  | 102716    | 200  | 110000    | 210  | 110180    | 260  | 110358/250 | 223  |
| 100721   | 250  | 101644   | 244  | 102112    | 254  | 102718    | 200  | 110002    | 210  | 110182    | 260  | 110358/EN  | 222  |
| 100723   | 250  | 101646   | 244  | 102114    | 254  | 102720    | 200  | 110004    | 210  | 110184    | 260  | 110360/125 | 222  |
| 100728   | 250  | 101648   | 244  | 102116    | 254  | 102722    | 200  | 110006    | 210  | 110186    | 260  | 110360/250 | 223  |
| 100729 A | 250  | 101650   | 244  | 102118    | 255  | 102724    | 200  | 110008    | 210  | 110188    | 260  | 110360/EN  | 222  |
| 100729   | 250  | 101684   | 244  | 102120    | 255  | 102726    | 200  | 110010    | 210  | 110190    | 260  | 110362/125 | 222  |
| 100734   | 250  | 101686   | 244  | 102122    | 255  | 102730    | 200  | 110012    | 210  | 110192    | 260  | 110362/250 | 223  |
| 100736   | 250  | 101688   | 244  | 102124    | 255  | 102732    | 200  | 110022    | 210  | 110194    | 260  | 110362/EN  | 222  |
| 100738   | 250  | 101690   | 244  | 102126    | 255  | 102734    | 200  | 110024    | 210  | 110196    | 260  | 110363/EN  | 218  |
| 100741   | 250  | 101850   | 195  | 102130    | 255  | 102736    | 200  | 110026    | 210  | 110198    | 260  | 110364/EN  | 218  |
| 100742   | 250  | 101852   | 195  | 102131    | 255  | 102740    | 200  | 110028    | 210  | 110202    | 260  | 110365/EN  | 218  |
| 100902   | 253  | 101854   | 195  | 102132    | 255  | 102742    | 200  | 110030    | 210  | 110204    | 260  | 110366/EN  | 218  |
| 100903   | 253  | 101856   | 195  | 102134    | 255  | 102744    | 200  | 110032    | 210  | 110206    | 260  | 110367/EN  | 218  |
| 100904   | 253  | 101858   | 195  | 102152    | 254  | 102746    | 200  | 110034    | 210  | 110212    | 260  | 110368/EN  | 218  |
| 100905   | 253  | 101860   | 195  | 102154    | 254  | 102748    | 200  | 110036    | 210  | 110216    | 260  | 110369/EN  | 218  |
| 100906   | 253  | 101862   | 195  | 102155    | 254  | 102750    | 200  | 110039/EN | 218  | 110222    | 260  | 110371/EN  | 218  |
| 100908   | 253  | 101864   | 195  | 102156    | 254  | 102752    | 200  | 110040/EN | 222  | 110250    | 260  | 110373/EN  | 222  |
| 100909   | 253  | 101866   | 195  | 102158    | 254  | 102760    | 200  | 110042    | 210  | 110252    | 260  | 110374/EN  | 222  |
| 100915   | 252  | 101870   | 194  | 102160    | 254  | 102762    | 200  | 110044    | 210  | 110260    | 210  | 110375/EN  | 222  |
| 100917   | 252  | 101872   | 194  | 102162    | 254  | 102764    | 200  | 110046    | 210  | 110262    | 210  | 110376/EN  | 222  |
| 100921   | 253  | 101874   | 255  | 102164    | 254  | 102766    | 200  | 110048    | 210  | 110264    | 210  | 110377/EN  | 222  |
| 100927   | 253  | 101876   | 255  | 102166    | 254  | 102768    | 200  | 110050    | 210  | 110266    | 210  | 110378/EN  | 222  |
| 100941   | 252  | 101879   | 194  | 102168    | 254  | 102770    | 200  | 110052    | 210  | 110268    | 210  | 110379/EN  | 222  |
| 100943   | 252  | 101880   | 255  | 102170    | 254  | 102772    | 200  | 110054    | 210  | 110270    | 210  | 110456/EN  | 218  |
| 100961   | 253  | 101882   | 255  | 102172    | 254  | 102780    | 200  | 110055/EN | 218  | 110272    | 210  | 110457/EN  | 218  |
| 100965   | 253  | 101910   | 194  | 102174    | 254  | 102782    | 200  | 110056/EN | 218  | 110274    | 210  | 110458/EN  | 218  |
| 100967   | 253  | 101912   | 194  | 102176    | 255  | 102784    | 200  | 110058/EN | 222  | 110276    | 210  | 110555     | 211  |
| 101200   | 245  | 101914   | 194  | 102178    | 255  | 102784    | 249  | 110060    | 210  | 110278    | 210  | 110556     | 211  |

| art. no.  | page | art. no.  | page | art. no.     | page | art. no. | page | art. no.   | page | art. no. | page | art. no. | page |
|-----------|------|-----------|------|--------------|------|----------|------|------------|------|----------|------|----------|------|
| 110557    | 211  | 110737/14 | 264  | 110869       | 215  | 120079   | 240  | 130339     | 281  | 143114   | 90   | 143274   | 92   |
| 110558    | 208  | 110737/15 | 264  | 110870       | 211  | 120087   | 236  | 130340     | 281  | 143116   | 90   | 143276   | 92   |
| 110559    | 208  | 110737/16 | 264  | 110871       | 215  | 120088   | 236  | 130342     | 281  | 143117   | 90   | 143278   | 92   |
| 110561    | 208  | 110737/17 | 264  | 110872       | 211  | 120089   | 240  | 140180     | 312  | 143118   | 90   | 143280   | 92   |
| 110567    | 32   | 110737/18 | 264  | 110873       | 219  | 120093   | 236  | 140182     | 312  | 143120   | 90   | 143300   | 94   |
| 110569    | 32   | 110737/19 | 264  | 110874       | 211  | 120094   | 224  | 140190     | 312  | 143122   | 90   | 143302   | 94   |
| 110569    | 208  | 110737/20 | 264  | 110876       | 211  | 120095   | 240  | 140192     | 312  | 143124   | 90   | 143304   | 94   |
| 110583    | 261  | 110737/21 | 264  | 110878       | 211  | 120096   | 240  | 140210     | 312  | 143126   | 90   | 143306   | 94   |
| 110585    | 261  | 110737/22 | 264  | 110880       | 211  | 120098   | 224  | 140214     | 312  | 143128   | 90   | 143308   | 94   |
| 110590    | 261  | 110737/24 | 264  | 110882       | 211  | 120099   | 224  | 140216     | 312  | 143130   | 90   | 143310   | 94   |
| 110592    | 261  | 110737/6  | 264  | 110884       | 211  | 120100   | 224  | 140218     | 312  | 143132   | 90   | 143312   | 94   |
| 110594    | 261  | 110737/7  | 264  | 110886       | 211  | 120101   | 224  | 140220     | 312  | 143134   | 90   | 143314   | 94   |
| 110596    | 261  | 110737/8  | 264  | 110888       | 211  | 120102   | 224  | 140222     | 312  | 143136   | 90   | 143316   | 94   |
| 110607    | 267  | 110737/9  | 264  | 110890       | 211  | 120103   | 224  | 140224     | 312  | 143150   | 91   | 143318   | 94   |
| 110608    | 267  | 110738    | 264  | 110892       | 211  | 120104   | 224  | 140226     | 312  | 143152   | 91   | 143320   | 94   |
| 110609    | 267  | 110739    | 264  | 110900/10    | 261  | 120109   | 234  | 140228     | 312  | 143154   | 91   | 143322   | 94   |
| 110610    | 267  | 110741    | 264  | 110900/12    | 261  | 120111   | 237  | 140230     | 312  | 143156   | 91   | 143324   | 94   |
| 110674    | 262  | 110745    | 264  | 110900/13    | 261  | 120112   | 236  | 140232     | 312  | 143158   | 91   | 143326   | 94   |
| 110676    | 264  | 110747    | 263  | 110900/14    | 261  | 120115   | 237  | 140234     | 312  | 143160   | 91   | 143328   | 94   |
| 110677/K  | 265  | 110749    | 263  | 110900/17    | 261  | 120116   | 237  | 140236     | 312  | 143162   | 91   | 143330   | 94   |
| 110677    | 265  | 110751    | 265  | 110900/19    | 261  | 120117   | 236  | 140238     | 312  | 143164   | 91   | 143332   | 94   |
| 110678    | 266  | 110752    | 265  | 110900/8     | 261  | 120120   | 237  | 140240     | 312  | 143166   | 91   | 143334   | 94   |
| 110691    | 269  | 110753    | 265  | 110900/9     | 261  | 120122   | 237  | 140242     | 312  | 143168   | 91   | 143336   | 94   |
| 110692    | 269  | 110754/10 | 265  | 110900       | 261  | 120160   | 239  | 140244     | 312  | 143170   | 91   | 143338   | 94   |
| 110693    | 269  | 110754/11 | 265  | 120002       | 224  | 120162   | 239  | 140246     | 312  | 143172   | 91   | 143340   | 94   |
| 110696    | 270  | 110754/12 | 265  | 120003       | 235  | 120164   | 239  | 140248     | 312  | 143174   | 91   | 143342   | 94   |
| 110697    | 269  | 110754/13 | 265  | 120004       | 234  | 120166   | 239  | 140250     | 312  | 143176   | 91   | 143344   | 381  |
| 110698    | 270  | 110754/14 | 265  | 120005       | 234  | 120168   | 239  | 140252     | 312  | 143178   | 91   | 143345   | 381  |
| 110700/EN | 218  | 110754/15 | 265  | 120006 561   | 234  | 120200   | 239  | 140254     | 312  | 143180   | 93   | 143346   | 381  |
| 110700    | 262  | 110754/16 | 265  | 120006 564 S | 234  | 121000   | 234  | 140256     | 312  | 143180   | 91   | 143348   | 381  |
| 110701    | 262  | 110754/17 | 265  | 120006 587   | 234  | 121002   | 234  | 140258     | 312  | 143182   | 93   | 143398   | 96   |
| 110702/EN | 218  | 110754/18 | 265  | 120006       | 234  | 121004   | 234  | 140260     | 312  | 143182   | 91   | 143400   | 96   |
| 110702    | 262  | 110754/19 | 265  | 120007/1     | 234  | 121006   | 234  | 140262     | 312  | 143184   | 91   | 143402   | 96   |
| 110703/10 | 262  | 110754/20 | 265  | 120007       | 234  | 121008   | 234  | 140510     | 285  | 143184   | 93   | 143404   | 96   |
| 110703/11 | 262  | 110754/21 | 265  | 120008 GELB  | 235  | 121010   | 234  | 140520     | 285  | 143186   | 93   | 143406   | 96   |
| 110703/12 | 262  | 110754/22 | 265  | 120008 ROT   | 235  | 121012   | 234  | 140530     | 285  | 143186   | 91   | 143420   | 98   |
| 110703/13 | 262  | 110754/24 | 265  | 120008 WEISS | 235  | 121014   | 234  | 143000     | 88   | 143187   | 91   | 143422   | 98   |
| 110703/4  | 262  | 110754/26 | 265  | 120008       | 235  | 121016   | 234  | 143002/ECO | 88   | 143188   | 93   | 143424   | 98   |
| 110703/45 | 262  | 110754/27 | 265  | 120010       | 236  | 121018   | 234  | 143002     | 88   | 143190   | 93   | 143430   | 99   |
| 110703/5  | 262  | 110754/28 | 265  | 120011       | 235  | 130004   | 242  | 143004     | 88   | 143190   | 91   | 143432   | 99   |
| 110703/55 | 262  | 110754/30 | 265  | 120012       | 235  | 130006   | 242  | 143006     | 88   | 143192   | 91   | 143434   | 99   |
| 110703/6  | 262  | 110754/32 | 265  | 120014       | 237  | 130042   | 242  | 143008     | 88   | 143194   | 93   | 143440   | 99   |
| 110703/7  | 262  | 110754    | 263  | 120015       | 237  | 130044   | 242  | 143010     | 88   | 143194   | 91   | 143441   | 99   |
| 110703/8  | 262  | 110755    | 265  | 120016       | 237  | 130064   | 242  | 143012     | 88   | 143196   | 93   | 143442   | 99   |
| 110703/9  | 262  | 110756    | 265  | 120017       | 237  | 130066   | 242  | 143012     | 89   | 143196   | 91   | 143443   | 99   |
| 110704    | 224  | 110757    | 265  | 120018       | 237  | 130068   | 242  | 143014     | 88   | 143198   | 91   | 143444   | 99   |
| 110705    | 224  | 110758    | 265  | 120028       | 235  | 130200   | 294  | 143014     | 89   | 143198   | 93   | 143500   | 87   |
| 110706    | 262  | 110759    | 263  | 120029       | 235  | 130201   | 294  | 143016     | 88   | 143200   | 93   | 143501   | 87   |
| 110709    | 224  | 110760    | 263  | 120030       | 239  | 130202   | 294  | 143018     | 88   | 143200   | 91   | 143502   | 87   |
| 110710    | 219  | 110810    | 214  | 120031       | 239  | 130203   | 294  | 143020     | 88   | 143202   | 93   | 143503   | 87   |
| 110711    | 263  | 110812    | 214  | 120033       | 239  | 130204   | 294  | 143024     | 88   | 143202   | 91   | 143504   | 87   |
| 110712    | 219  | 110813    | 214  | 120034       | 236  | 130206   | 294  | 143026     | 88   | 143204   | 93   | 143505   | 87   |
| 110713    | 219  | 110814    | 214  | 120037       | 235  | 130208   | 294  | 143028     | 88   | 143204   | 91   | 143506   | 87   |
| 110714    | 219  | 110816    | 214  | 120040       | 239  | 130209   | 294  | 143030     | 89   | 143210   | 92   | 143507   | 87   |
| 110715    | 219  | 110818    | 214  | 120042       | 239  | 130210   | 294  | 143030     | 88   | 143212   | 92   | 143508   | 87   |
| 110716    | 219  | 110820    | 214  | 120044       | 239  | 130211   | 294  | 143050     | 89   | 143214   | 92   | 143509   | 87   |
| 110717    | 219  | 110822    | 214  | 120046       | 239  | 130212   | 294  | 143052     | 89   | 143216   | 92   | 150002   | 290  |
| 110718    | 263  | 110824    | 214  | 120048       | 239  | 130214   | 294  | 143054     | 89   | 143218   | 92   | 150004   | 290  |
| 110719    | 263  | 110826    | 214  | 120049       | 240  | 130310   | 278  | 143056     | 89   | 143220   | 92   | 150006   | 290  |
| 110720    | 263  | 110828    | 214  | 120050       | 240  | 130312   | 278  | 143058     | 89   | 143222   | 92   | 150008   | 290  |
| 110721    | 263  | 110830    | 214  | 120051       | 202  | 130314   | 278  | 143060     | 89   | 143224   | 92   | 150015 B | 285  |
| 110722    | 263  | 110832    | 214  | 120052       | 202  | 130316   | 278  | 143062     | 89   | 143226   | 92   | 150015 G | 285  |
| 110723    | 263  | 110834    | 214  | 120057       | 240  | 130318   | 279  | 143064     | 89   | 143228   | 92   | 150015 R | 285  |
| 110724    | 263  | 110836    | 214  | 120058       | 240  | 130320   | 279  | 143066     | 89   | 143230   | 92   | 150015/1 | 285  |
| 110725    | 262  | 110838    | 214  | 120059       | 240  | 130322   | 279  | 143068     | 89   | 143232   | 92   | 150019   | 285  |
| 110726    | 263  | 110840    | 214  | 120060       | 240  | 130324   | 278  | 143070     | 89   | 143250   | 92   | 150024   | 290  |
| 110727    | 263  | 110842    | 214  | 120062       | 240  | 130326   | 279  | 143072     | 89   | 143252   | 92   | 150025   | 285  |
| 110728    | 263  | 110844    | 214  | 120064       | 240  | 130328   | 279  | 143100     | 90   | 143254   | 92   | 150026   | 290  |
| 110729    | 263  | 110846    | 214  | 120069       | 240  | 130330/A | 280  | 143102     | 90   | 143256   | 92   | 150027   | 285  |
| 110731    | 264  | 110848    | 214  | 120070       | 240  | 130330   | 280  | 143104     | 90   | 143258   | 92   | 150028   | 290  |
| 110733    | 264  | 110860    | 214  | 120071       | 240  | 130331   | 280  | 143105     | 90   | 143260   | 92   | 150036   | 224  |
| 110735    | 264  | 110861    | 218  | 120072       | 240  | 130332/A | 280  | 143106     | 90   | 143262   | 92   | 150037   | 224  |
| 110737/10 | 264  | 110862    | 222  | 120073       | 240  | 130332   | 280  | 143108     | 90   | 143264   | 92   | 150038   | 224  |
| 110737/11 | 264  | 110864    | 214  | 120074       | 240  | 130333   | 280  | 143110     | 90   | 143266   | 93   | 150090   | 285  |
| 110737/12 | 264  | 110866    | 214  | 120077       | 240  | 130336   | 280  | 143111     | 90   | 143270   | 92   | 150152   | 86   |
| 110737/13 | 264  | 110868    | 214  | 120078       | 240  | 130338   | 281  | 143112     | 90   | 143272   | 92   | 150154   | 86   |

# Index

| art. no.    | page | art. no. | page | art. no. | page | art. no.  | page | art. no.   | page | art. no.   | page | art. no. | page |
|-------------|------|----------|------|----------|------|-----------|------|------------|------|------------|------|----------|------|
| 150156      | 86   | 150482   | 86   | 170114   | 384  | 180232    | 293  | 200039     | 23   | 200188     | 32   | 210267   | 205  |
| 150158      | 86   | 150560   | 87   | 170116   | 386  | 180274    | 293  | 200040     | 22   | 200189     | 206  | 210270   | 203  |
| 150200      | 86   | 150562   | 87   | 170118   | 387  | 180276    | 293  | 200042     | 22   | 200190     | 297  | 210296   | 203  |
| 150202      | 86   | 150600   | 387  | 170120   | 384  | 180290    | 293  | 200043     | 22   | 200191     | 206  | 210297   | 205  |
| 150204      | 86   | 160000   | 391  | 170126   | 387  | 180292    | 293  | 200044     | 22   | 200192     | 297  | 210298   | 205  |
| 150206      | 86   | 160002   | 391  | 170127   | 387  | 180295    | 224  | 200046     | 22   | 200193     | 207  | 210299   | 205  |
| 150208      | 86   | 160004   | 391  | 170128   | 387  | 180297    | 224  | 200046     | 22   | 200194     | 297  | 210300   | 205  |
| 150210      | 86   | 160006   | 391  | 170129   | 387  | 180300    | 293  | 200050     | 22   | 200195     | 207  | 210301   | 205  |
| 150220      | 86   | 160008   | 391  | 170140   | 382  | 180302    | 293  | 200051     | 297  | 200196     | 297  | 210302   | 205  |
| 150222      | 86   | 160012   | 391  | 170141   | 382  | 180321    | 292  | 200057     | 26   | 200197     | 8    | 210303   | 203  |
| 150224      | 86   | 160014   | 391  | 170142   | 382  | 180323    | 293  | 200059     | 297  | 200198     | 207  | 210313   | 273  |
| 150226      | 86   | 160016   | 391  | 170150   | 382  | 180334    | 293  | 200062     | 5    | 200199     | 9    | 210350   | 273  |
| 150228      | 86   | 160018   | 391  | 170152   | 382  | 180346    | 293  | 200064     | 5    | 200214     | 5    | 210388   | 203  |
| 150230      | 86   | 160020   | 391  | 170153   | 382  | 180464    | 292  | 200068     | 24   | 200214     | 5    | 210390   | 203  |
| 150232      | 86   | 160022   | 391  | 170154   | 382  | 180466    | 292  | 200069     | 23   | 200215     | 5    | 210394   | 273  |
| 150234      | 86   | 160024   | 391  | 170156   | 383  | 180468    | 292  | 200072     | 5    | 200215     | 5    | 210396   | 273  |
| 150236      | 86   | 160026   | 391  | 170158   | 383  | 180470    | 292  | 200073/MK  | 7    | 200216     | 5    | 210397   | 273  |
| 150238      | 86   | 160028   | 391  | 170160   | 383  | 180474    | 292  | 200073     | 7    | 200216     | 5    | 210398   | 273  |
| 150239      | 86   | 160030   | 391  | 170162   | 383  | 180500    | 304  | 200076     | 7    | 200217     | 5    | 210556   | 274  |
| 150240      | 238  | 160042   | 391  | 170164   | 384  | 180502    | 304  | 200081/MK  | 208  | 200217     | 5    | 210562   | 274  |
| 150241      | 86   | 160044   | 391  | 170166   | 383  | 180504    | 304  | 200081     | 208  | 200218     | 5    | 210583   | 204  |
| 150243      | 86   | 160046   | 391  | 170168   | 383  | 180506    | 304  | 200086/VDE | 204  | 200218     | 5    | 210584   | 273  |
| 150245      | 86   | 160050   | 391  | 170170   | 383  | 180508    | 304  | 200086     | 6    | 200219     | 5    | 210588   | 204  |
| 150247      | 86   | 160052   | 391  | 170172   | 384  | 180510    | 304  | 200087     | 7    | 200219     | 5    | 210592   | 274  |
| 150258      | 238  | 160054   | 391  | 170174   | 381  | 180512    | 304  | 200088/VDE | 204  | 200280     | 298  | 210594   | 274  |
| 150262      | 238  | 160060   | 391  | 170180   | 384  | 180513    | 304  | 200088     | 6    | 200284     | 298  | 210596   | 274  |
| 150264      | 238  | 160062   | 391  | 170200   | 379  | 180514    | 304  | 200089     | 9    | 200285     | 298  | 210616   | 273  |
| 150266      | 238  | 160070   | 391  | 170202   | 379  | 180515    | 304  | 200095/MK  | 7    | 200286     | 298  | 210617   | 273  |
| 150268      | 238  | 160072   | 391  | 170204   | 379  | 180516    | 304  | 200095     | 7    | 200287     | 298  | 210618   | 273  |
| 150270      | 238  | 160074   | 391  | 170206   | 378  | 180517    | 304  | 200099/MK  | 7    | 200288     | 298  | 210620   | 26   |
| 150274      | 238  | 160090   | 390  | 170208   | 378  | 180518    | 304  | 200099     | 7    | 200290     | 298  | 210624   | 26   |
| 150275      | 238  | 160092   | 390  | 170210   | 378  | 180519    | 304  | 200100     | 8    | 200292     | 298  | 210644   | 273  |
| 150276      | 238  | 160094   | 390  | 170212   | 378  | 180520    | 304  | 200102     | 7    | 200304     | 298  | 210648   | 204  |
| 150277      | 238  | 160096   | 390  | 170214   | 378  | 180521    | 304  | 200104     | 8    | 200310     | 298  | 210681   | 27   |
| 150278      | 238  | 160100   | 390  | 170216   | 378  | 180523    | 304  | 200105     | 6    | 200520/1   | 32   | 210682/1 | 37   |
| 150279      | 238  | 160102   | 390  | 170218   | 378  | 180525    | 304  | 200109     | 207  | 200520     | 32   | 210682/2 | 37   |
| 150280      | 238  | 160112   | 390  | 170220   | 379  | 180530    | 304  | 200110     | 207  | 200522     | 32   | 210682/3 | 37   |
| 150302      | 239  | 160114   | 390  | 170222   | 380  | 180532    | 304  | 200111     | 9    | 200524/1   | 32   | 210682   | 37   |
| 150304      | 239  | 160130   | 390  | 170224   | 380  | 180534    | 304  | 200112     | 9    | 200524     | 32   | 210683   | 26   |
| 150306      | 239  | 160142   | 390  | 170226   | 380  | 190120    | 294  | 200113     | 10   | 200526     | 32   | 210684   | 26   |
| 150308      | 239  | 160144   | 390  | 170230   | 380  | 190126    | 294  | 200114     | 10   | 200528     | 32   | 210685   | 27   |
| 150310      | 239  | 160146   | 390  | 170232   | 380  | 190130    | 294  | 200115     | 11   | 200630     | 23   | 210686   | 27   |
| 150312      | 239  | 160150   | 390  | 170234   | 379  | 190132    | 294  | 200116     | 10   | 200632     | 23   | 210690   | 28   |
| 150314      | 239  | 160190   | 390  | 170236   | 380  | 200000    | 209  | 200119     | 11   | 200634     | 23   | 210691   | 26   |
| 150316      | 239  | 160234   | 390  | 170238   | 381  | 200002    | 209  | 200120     | 206  | 200636     | 23   | 210692   | 26   |
| 150318      | 239  | 160402   | 391  | 170240   | 381  | 200003    | 209  | 200123     | 207  | 200637     | 24   | 210693/1 | 28   |
| 150320      | 239  | 160404   | 391  | 170250   | 379  | 200004    | 209  | 200124     | 13   | 200638     | 24   | 210693   | 28   |
| 150322      | 239  | 160406   | 391  | 170252   | 379  | 200005    | 209  | 200126     | 13   | 201000     | 7    | 210695/E | 27   |
| 150340      | 241  | 160408   | 391  | 170254   | 379  | 200007    | 209  | 200127     | 206  | 201002/VDE | 206  | 210695   | 27   |
| 150342      | 241  | 160412   | 391  | 170400   | 388  | 200008    | 296  | 200128     | 206  | 201002     | 7    | 210696/2 | 27   |
| 150343      | 241  | 160414   | 391  | 170402   | 388  | 200009    | 209  | 200129     | 206  | 201010     | 209  | 210696   | 27   |
| 150344      | 241  | 160416   | 391  | 170404   | 388  | 200010    | 296  | 200130     | 208  | 201012     | 209  | 210697   | 28   |
| 150345      | 241  | 160418   | 391  | 170406   | 386  | 200011    | 296  | 200131     | 13   | 201085     | 6    | 210699   | 28   |
| 150360      | 241  | 160420   | 391  | 180008   | 292  | 200012    | 296  | 200132     | 208  | 201086     | 6    | 210700   | 241  |
| 150362      | 241  | 160422   | 391  | 180010   | 292  | 200013    | 209  | 200140     | 297  | 201087     | 6    | 210702   | 241  |
| 150364      | 241  | 160424   | 391  | 180012   | 292  | 200014    | 296  | 200141     | 207  | 201088     | 6    | 210704   | 241  |
| 150366      | 241  | 160426   | 391  | 180042   | 292  | 200016    | 296  | 200149     | 208  | 210052     | 272  | 210710   | 241  |
| 150368      | 241  | 160430   | 391  | 180044   | 292  | 200018    | 296  | 200151     | 13   | 210053     | 272  | 210712   | 241  |
| 150370      | 241  | 160442   | 391  | 180062   | 292  | 200021    | 297  | 200153     | 5    | 210054     | 272  | 210714   | 241  |
| 150375 BLAU | 241  | 160444   | 391  | 180064   | 292  | 200022    | 22   | 200154     | 297  | 210056     | 203  | 210729   | 28   |
| 150375 GRÜN | 241  | 160446   | 391  | 180076   | 292  | 200023/M  | 22   | 200155     | 5    | 210058     | 203  | 210730   | 28   |
| 150375 ROT  | 241  | 160450   | 391  | 180082   | 292  | 200023    | 22   | 200170     | 8    | 210067     | 272  | 210731   | 241  |
| 150377      | 236  | 160452   | 391  | 180084   | 292  | 200024    | 22   | 200173     | 8    | 210068     | 272  | 210732   | 241  |
| 150450      | 86   | 160454   | 391  | 180090   | 292  | 200025/KL | 296  | 200175     | 8    | 210069     | 272  | 210733   | 241  |
| 150452      | 86   | 170100   | 385  | 180092   | 292  | 200025    | 296  | 200177     | 10   | 210100     | 203  | 210761/E | 50   |
| 150454      | 86   | 170101   | 385  | 180094   | 292  | 200026    | 297  | 200178/B   | 12   | 210102     | 203  | 210761   | 40   |
| 150456      | 86   | 170102   | 384  | 180110   | 292  | 200027    | 296  | 200178/C   | 12   | 210110     | 203  | 210762/E | 50   |
| 150458      | 86   | 170103   | 385  | 180120   | 292  | 200028    | 297  | 200178/S   | 12   | 210117     | 203  | 210762   | 42   |
| 150462      | 86   | 170104   | 385  | 180170   | 292  | 200030    | 297  | 200178/S1  | 12   | 210119     | 203  | 210763/E | 50   |
| 150464      | 86   | 170105   | 385  | 180173   | 292  | 200031    | 22   | 200178/S2  | 12   | 210156     | 272  | 210763   | 36   |
| 150466      | 86   | 170106   | 386  | 180182   | 293  | 200032    | 296  | 200178     | 12   | 210157     | 272  | 210764/E | 50   |
| 150468      | 86   | 170107   | 385  | 180184   | 293  | 200033    | 24   | 200179     | 11   | 210158     | 272  | 210764   | 41   |
| 150470      | 86   | 170108   | 386  | 180186   | 293  | 200035    | 23   | 200181     | 8    | 210263     | 205  | 210765/E | 50   |
| 150476      | 86   | 170109   | 385  | 180188   | 293  | 200036    | 22   | 200183     | 9    | 210264     | 205  | 210765   | 36   |
| 150478      | 86   | 170110   | 386  | 180200   | 293  | 200037    | 23   | 200185     | 5    | 210265     | 205  | 210767/E | 50   |
| 150480      | 86   | 170112   | 386  | 180202   | 293  | 200038    | 22   | 200187     | 32   | 210266     | 205  | 210767   | 43   |

| art. no. | page | art. no. | page | art. no. | page | art. no. | page | art. no. | page | art. no. | page | art. no.   | page |
|----------|------|----------|------|----------|------|----------|------|----------|------|----------|------|------------|------|
| 210768   | 36   | 211656   | 43   | 212005   | 44   | 213094   | 42   | 215226   | 55   | 216024/V | 67   | 216176     | 67   |
| 210770   | 274  | 211657/E | 50   | 212007   | 51   | 213098/E | 49   | 215228   | 55   | 216024   | 67   | 216178     | 67   |
| 210772   | 52   | 211657   | 44   | 212008   | 51   | 213100/E | 49   | 215230   | 55   | 216026/V | 67   | 216180     | 67   |
| 210772   | 41   | 211658   | 43   | 212200   | 44   | 213102/E | 49   | 215232   | 55   | 216026   | 67   | 216182     | 67   |
| 210774   | 41   | 211659/E | 50   | 212206   | 44   | 215000   | 53   | 215234   | 55   | 216028/V | 67   | 216236     | 72   |
| 210774   | 52   | 211659   | 44   | 212208   | 44   | 215002   | 53   | 215236   | 55   | 216028   | 67   | 216238     | 74   |
| 210776   | 274  | 211660   | 43   | 212210   | 44   | 215004   | 53   | 215238   | 55   | 216030/V | 67   | 216240     | 74   |
| 210777   | 42   | 211662   | 43   | 212212   | 44   | 215006   | 53   | 215240   | 55   | 216030   | 67   | 216242     | 74   |
| 210778   | 41   | 211672/E | 50   | 212214   | 44   | 215008   | 53   | 215242   | 55   | 216032/V | 67   | 216244     | 74   |
| 210779   | 41   | 211672   | 36   | 212216   | 44   | 215010   | 53   | 215244   | 55   | 216032   | 67   | 216250     | 72   |
| 210784/E | 50   | 211674   | 36   | 212218   | 44   | 215012   | 53   | 215246   | 55   | 216036   | 67   | 216254     | 71   |
| 210784   | 50   | 211676/E | 50   | 212220   | 44   | 215014   | 53   | 215248   | 55   | 216038   | 67   | 216304     | 73   |
| 210785   | 42   | 211676   | 36   | 212222   | 44   | 215016   | 53   | 215250   | 55   | 216040   | 67   | 216306     | 73   |
| 210786   | 42   | 211678   | 36   | 212226   | 44   | 215018   | 53   | 215252   | 55   | 216042   | 67   | 216308     | 73   |
| 210788   | 37   | 211680   | 43   | 212228   | 44   | 215020   | 53   | 215254   | 55   | 216044   | 67   | 216310     | 73   |
| 210789   | 37   | 211682   | 42   | 212372   | 72   | 215022   | 53   | 215256   | 55   | 216046   | 67   | 216312     | 73   |
| 210791   | 52   | 211690   | 50   | 212376   | 72   | 215024   | 53   | 215258   | 55   | 216048   | 67   | 216314     | 73   |
| 210799   | 41   | 211692   | 50   | 212380   | 72   | 215026   | 53   | 215260   | 55   | 216050   | 67   | 216316     | 73   |
| 210802   | 40   | 211695   | 40   | 212382   | 72   | 215028   | 53   | 215262   | 55   | 216052   | 67   | 216318     | 73   |
| 210804   | 36   | 211708   | 274  | 212384   | 72   | 215030   | 53   | 215264   | 55   | 216054   | 67   | 216320     | 73   |
| 210805 K | 52   | 211720   | 274  | 212388   | 72   | 215032   | 53   | 215503   | 71   | 216056   | 67   | 216322     | 73   |
| 210805   | 52   | 211722   | 274  | 212390   | 72   | 215034   | 53   | 215511   | 71   | 216060   | 67   | 216324     | 73   |
| 210808   | 40   | 211805   | 37   | 212392   | 72   | 215036   | 53   | 215513   | 71   | 216064   | 67   | 216326     | 73   |
| 210819   | 37   | 211810   | 37   | 212394   | 72   | 215038   | 53   | 215641   | 59   | 216065   | 67   | 216328     | 73   |
| 210820   | 36   | 211816   | 36   | 212396   | 72   | 215040   | 53   | 215642   | 59   | 216066   | 67   | 216330     | 73   |
| 210824   | 36   | 211818   | 37   | 212580   | 72   | 215042   | 53   | 215643   | 59   | 216067   | 67   | 216332     | 73   |
| 210826   | 36   | 211850   | 275  | 212581   | 72   | 215044   | 53   | 215644   | 59   | 216068   | 67   | 216334     | 73   |
| 210827   | 40   | 211852   | 275  | 212582   | 72   | 215046   | 53   | 215645   | 59   | 216069   | 67   | 216336     | 73   |
| 210830   | 52   | 211854   | 275  | 212583   | 72   | 215048   | 53   | 215646   | 59   | 216070   | 67   | 216338     | 73   |
| 210834   | 52   | 211856   | 275  | 212584   | 72   | 215050   | 53   | 215648   | 59   | 216071   | 67   | 216340     | 73   |
| 210836   | 52   | 211858   | 275  | 212585   | 72   | 215100   | 54   | 215650   | 59   | 216072   | 67   | 216348     | 74   |
| 210838   | 52   | 211860   | 275  | 212586   | 72   | 215102   | 54   | 215651   | 59   | 216074   | 67   | 216352     | 74   |
| 210840   | 52   | 211862   | 275  | 212587   | 72   | 215104   | 54   | 215652   | 59   | 216076   | 67   | 216355     | 73   |
| 210841   | 36   | 211864   | 275  | 212588   | 72   | 215106   | 54   | 215653   | 59   | 216078   | 67   | 216357     | 74   |
| 210842/E | 50   | 211866   | 276  | 213000   | 45   | 215108   | 54   | 215654   | 59   | 216080   | 67   | 216358     | 74   |
| 210842   | 36   | 211868   | 276  | 213002   | 45   | 215110   | 54   | 215655   | 59   | 216082   | 67   | 216359     | 83   |
| 210845   | 40   | 211870   | 276  | 213004   | 45   | 215112   | 54   | 215765   | 59   | 216084   | 67   | 216402     | 16   |
| 210849   | 43   | 211872   | 276  | 213006   | 45   | 215114   | 54   | 215770/M | 59   | 216086   | 67   | 216404     | 16   |
| 210850   | 52   | 211874   | 276  | 213008   | 45   | 215116   | 54   | 215770   | 59   | 216088   | 67   | 216408     | 16   |
| 210853   | 52   | 211875   | 276  | 213010   | 45   | 215118   | 54   | 215800   | 60   | 216090   | 67   | 216410     | 16   |
| 210857   | 45   | 211876   | 276  | 213012   | 45   | 215120   | 54   | 215852   | 60   | 216092   | 67   | 216415     | 16   |
| 210865   | 45   | 211880   | 276  | 213014   | 45   | 215122   | 54   | 215854   | 60   | 216094   | 67   | 216416/850 | 17   |
| 210867   | 45   | 211928/1 | 28   | 213020   | 46   | 215124   | 54   | 215856   | 60   | 216096   | 67   | 216416     | 17   |
| 210869   | 45   | 211928   | 28   | 213022   | 46   | 215126   | 54   | 215858   | 60   | 216098   | 67   | 216417     | 17   |
| 210871   | 45   | 211930/1 | 29   | 213024   | 46   | 215128   | 54   | 215859   | 60   | 216100   | 67   | 216418     | 18   |
| 210979/B | 37   | 211930   | 29   | 213026   | 46   | 215130   | 54   | 215860   | 60   | 216112   | 68   | 216419     | 18   |
| 210979   | 37   | 211932/1 | 29   | 213028   | 46   | 215142   | 54   | 215861   | 60   | 216114   | 68   | 216421     | 17   |
| 211060   | 224  | 211932   | 29   | 213030   | 46   | 215144   | 54   | 215862   | 60   | 216116   | 68   | 216422     | 19   |
| 211062   | 224  | 211934   | 29   | 213032   | 46   | 215146   | 54   | 215864   | 60   | 216118   | 68   | 216424     | 19   |
| 211064   | 224  | 211960   | 51   | 213034   | 46   | 215148   | 54   | 215866   | 60   | 216120   | 68   | 216428     | 19   |
| 211080   | 274  | 211962   | 51   | 213036   | 46   | 215150   | 54   | 215868   | 60   | 216122   | 68   | 216430     | 19   |
| 211198   | 201  | 211963   | 51   | 213038   | 46   | 215152   | 54   | 215869   | 60   | 216123   | 68   | 216434     | 18   |
| 211199   | 201  | 211964   | 51   | 213040   | 46   | 215154   | 54   | 215870   | 60   | 216124   | 64   | 216436     | 18   |
| 211200   | 201  | 211965   | 51   | 213042   | 46   | 215156   | 54   | 215872   | 60   | 216125   | 65   | 216503     | 66   |
| 211202   | 201  | 211968   | 51   | 213044   | 46   | 215164   | 54   | 215881/M | 60   | 216126   | 68   | 216552     | 68   |
| 211203   | 201  | 211969   | 51   | 213046   | 46   | 215166   | 54   | 215881   | 60   | 216128   | 68   | 216554     | 68   |
| 211204   | 201  | 211970   | 51   | 213048   | 46   | 215168   | 54   | 215946   | 66   | 216130   | 68   | 216556     | 68   |
| 211206   | 201  | 211971   | 51   | 213050   | 45   | 215170   | 54   | 215980   | 66   | 216132   | 68   | 216562     | 68   |
| 211207   | 201  | 211972   | 51   | 213077   | 48   | 215172   | 54   | 216004   | 64   | 216134   | 68   | 216564     | 68   |
| 211208   | 201  | 211973   | 51   | 213078   | 48   | 215200   | 55   | 216005   | 65   | 216136   | 68   | 216566     | 68   |
| 211209   | 201  | 211974   | 51   | 213079   | 49   | 215201   | 55   | 216008/V | 67   | 216138   | 68   | 216570     | 68   |
| 211210   | 201  | 211980   | 51   | 213080/E | 49   | 215202   | 55   | 216008   | 67   | 216140   | 68   | 216574     | 68   |
| 211211   | 201  | 211981   | 51   | 213082/E | 43   | 215203   | 55   | 216010/V | 67   | 216142   | 68   | 216576     | 68   |
| 211212   | 202  | 211982   | 51   | 213082/E | 49   | 215204   | 55   | 216010   | 67   | 216148   | 68   | 216578     | 68   |
| 211213   | 201  | 211985   | 51   | 213082   | 43   | 215205   | 55   | 216012/V | 67   | 216150   | 68   | 216580     | 68   |
| 211214   | 201  | 211990   | 51   | 213084/E | 44   | 215206   | 55   | 216012   | 67   | 216152   | 68   | 216582     | 68   |
| 211216   | 202  | 211991   | 51   | 213084/E | 49   | 215207   | 55   | 216014/V | 67   | 216154   | 68   | 216601     | 64   |
| 211217   | 201  | 211992   | 51   | 213084   | 44   | 215208   | 55   | 216014   | 67   | 216156   | 68   | 216622     | 65   |
| 211219   | 201  | 211993   | 51   | 213086/E | 49   | 215210   | 55   | 216016/V | 67   | 216160   | 67   | 216660/B   | 70   |
| 211221   | 202  | 211994   | 51   | 213088   | 36   | 215212   | 55   | 216016   | 67   | 216162   | 67   | 216660/L   | 70   |
| 211223   | 202  | 211995   | 51   | 213088   | 35   | 215214   | 55   | 216018/V | 67   | 216164   | 67   | 216660     | 69   |
| 211225   | 202  | 211996   | 51   | 213090   | 35   | 215216   | 55   | 216018   | 67   | 216166   | 67   | 216661     | 70   |
| 211226   | 202  | 211997   | 51   | 213090   | 40   | 215218   | 55   | 216020/V | 67   | 216168   | 67   | 216663/M   | 69   |
| 211228   | 202  | 211998   | 51   | 213092   | 41   | 215220   | 55   | 216020   | 67   | 216170   | 67   | 216663     | 69   |
| 211650   | 36   | 211999   | 51   | 213092   | 35   | 215222   | 55   | 216022/V | 67   | 216172   | 67   | 216665     | 69   |
| 211652   | 36   | 212000   | 51   | 213094   | 35   | 215224   | 55   | 216022   | 67   | 216174   | 67   | 216666     | 70   |



# Index

| art. no. | page | art. no. | page | art. no.  | page | art. no.   | page | art. no. | page | art. no.  | page | art. no.   | page |
|----------|------|----------|------|-----------|------|------------|------|----------|------|-----------|------|------------|------|
| 216667/M | 70   | 216836   | 62   | 217600/PG | 80   | 220150     | 354  | 220392   | 374  | 220622    | 369  | 230200     | 300  |
| 216667   | 70   | 216838   | 62   | 217600    | 80   | 220152/1   | 341  | 220398   | 320  | 220626    | 370  | 230204/CO  | 300  |
| 216669/M | 71   | 216840   | 62   | 217602    | 81   | 220153     | 356  | 220399   | 372  | 220628    | 369  | 230204     | 300  |
| 216669   | 71   | 216842   | 62   | 217604    | 81   | 220154     | 340  | 220400   | 363  | 220640/H  | 375  | 230210/CO  | 300  |
| 216770   | 82   | 216844   | 62   | 217610    | 81   | 220156     | 340  | 220402   | 216  | 220640    | 268  | 230210     | 300  |
| 216771   | 83   | 216846   | 62   | 217612    | 81   | 220168/VDE | 342  | 220404   | 220  | 220642/H  | 375  | 230220/CO  | 300  |
| 216772   | 83   | 216848   | 62   | 217614    | 81   | 220168     | 342  | 220410   | 216  | 220642    | 268  | 230220     | 300  |
| 216773   | 83   | 216850   | 62   | 217616    | 81   | 220169     | 341  | 220412   | 216  | 220644    | 373  | 230230/CO  | 300  |
| 216774   | 83   | 216852   | 62   | 217618    | 81   | 220170     | 354  | 220413   | 376  | 220646    | 373  | 230230     | 300  |
| 216775   | 83   | 216854   | 62   | 217620    | 81   | 220171     | 353  | 220414   | 216  | 220650    | 368  | 230240/CO  | 300  |
| 216776   | 82   | 216856   | 62   | 217622    | 81   | 220176     | 357  | 220416   | 216  | 220651    | 368  | 230240     | 300  |
| 216777   | 82   | 216876   | 63   | 217630    | 81   | 220177     | 359  | 220418   | 216  | 220652    | 237  | 230244/CO  | 300  |
| 216778/L | 82   | 216878   | 63   | 217632    | 81   | 220179     | 358  | 220420   | 216  | 220654    | 370  | 230244     | 300  |
| 216778   | 82   | 216880   | 63   | 217634    | 81   | 220192     | 358  | 220422   | 216  | 220655    | 370  | 230250/CO  | 300  |
| 216779/L | 82   | 216882   | 63   | 217636    | 81   | 220193     | 364  | 220424   | 216  | 220750    | 375  | 230250     | 300  |
| 216779   | 82   | 216884   | 63   | 217638    | 81   | 220205/EN  | 223  | 220426   | 216  | 220770    | 369  | 230301/TIN | 300  |
| 216780/L | 82   | 216886   | 63   | 217640    | 81   | 220211     | 326  | 220428   | 216  | 220800    | 332  | 230312/R   | 300  |
| 216780   | 82   | 216888   | 63   | 217642    | 81   | 220212     | 219  | 220430   | 216  | 220802    | 331  | 230312/TIN | 300  |
| 216781/L | 82   | 216890   | 63   | 217644    | 81   | 220213     | 326  | 220432   | 216  | 220804    | 332  | 230312     | 300  |
| 216781   | 82   | 216892   | 63   | 217646    | 81   | 220221     | 349  | 220434   | 216  | 220810    | 334  | 230314/R   | 300  |
| 216782/L | 82   | 216894   | 63   | 217650    | 81   | 220224     | 323  | 220436   | 216  | 220812    | 335  | 230314/TIN | 300  |
| 216782   | 82   | 216896   | 63   | 217652    | 81   | 220229     | 356  | 220438   | 216  | 220814    | 334  | 230314     | 300  |
| 216783/L | 82   | 216898   | 63   | 217654    | 81   | 220232     | 350  | 220440   | 216  | 221131    | 364  | 230330     | 301  |
| 216783   | 82   | 216899   | 63   | 217660    | 81   | 220235     | 349  | 220450   | 220  | 221132    | 370  | 230331     | 301  |
| 216784/L | 82   | 216926   | 63   | 217662    | 81   | 220239     | 360  | 220452   | 220  | 221133    | 364  | 230332     | 301  |
| 216784   | 82   | 216928   | 63   | 217664    | 81   | 220244     | 357  | 220454   | 220  | 221134    | 372  | 230334     | 301  |
| 216785/L | 82   | 216930   | 63   | 217666    | 81   | 220248     | 346  | 220456   | 220  | 221135    | 372  | 230336     | 301  |
| 216785   | 82   | 216932   | 63   | 220006    | 325  | 220252     | 351  | 220458   | 220  | 221136    | 372  | 230338     | 301  |
| 216786/L | 82   | 216934   | 63   | 220014    | 338  | 220254     | 352  | 220460   | 220  | 221137    | 372  | 230340     | 301  |
| 216786   | 82   | 216936   | 63   | 220016    | 325  | 220267     | 348  | 220462   | 220  | 221138    | 372  | 230342     | 301  |
| 216787/L | 82   | 216938   | 63   | 220017    | 211  | 220268     | 348  | 220464   | 220  | 230010    | 300  | 230344     | 301  |
| 216787   | 82   | 216940   | 63   | 220022    | 338  | 220269     | 347  | 220466   | 220  | 230020/CO | 300  | 230346     | 301  |
| 216788/L | 82   | 216942   | 63   | 220023    | 344  | 220272     | 353  | 220468   | 220  | 230020    | 300  | 230352     | 301  |
| 216788   | 82   | 216944   | 63   | 220024    | 338  | 220273     | 351  | 220470   | 220  | 230030/CO | 300  | 230354     | 301  |
| 216789/L | 82   | 216946   | 63   | 220028    | 344  | 220275     | 323  | 220478   | 220  | 230030    | 300  | 230356     | 301  |
| 216789   | 82   | 216950   | 63   | 220031    | 344  | 220277     | 329  | 220480   | 220  | 230032/CO | 300  | 230358     | 301  |
| 216790   | 83   | 216952   | 63   | 220032    | 346  | 220278     | 328  | 220482   | 220  | 230032    | 300  | 230360     | 301  |
| 216791   | 83   | 216954   | 63   | 220033    | 362  | 220279     | 329  | 220484   | 220  | 230040/CO | 300  | 230362     | 301  |
| 216792   | 83   | 216956   | 63   | 220034    | 346  | 220280     | 327  | 220486   | 220  | 230040    | 300  | 230364     | 301  |
| 216793   | 83   | 216958   | 63   | 220035    | 362  | 220281     | 327  | 220488   | 220  | 230050/CO | 300  | 230370     | 301  |
| 216794   | 83   | 216960   | 63   | 220038    | 345  | 220282     | 327  | 220490   | 220  | 230050    | 300  | 230372     | 301  |
| 216800   | 61   | 216962   | 63   | 220040    | 355  | 220290     | 328  | 220492   | 220  | 230060/CO | 300  | 230374     | 301  |
| 216801/H | 376  | 216964   | 63   | 220042    | 344  | 220292     | 325  | 220494   | 220  | 230060    | 300  | 230376     | 301  |
| 216801/M | 61   | 216966   | 63   | 220043    | 359  | 220293     | 335  | 220500   | 330  | 230064/CO | 300  | 230378     | 301  |
| 216801   | 61   | 216968   | 63   | 220048    | 345  | 220294     | 336  | 220506   | 326  | 230064    | 300  | 230380     | 301  |
| 216802   | 62   | 216970   | 63   | 220052    | 338  | 220298     | 336  | 220510   | 331  | 230066/CO | 300  | 230382     | 301  |
| 216804   | 62   | 216972   | 63   | 220053    | 323  | 220303     | 361  | 220550   | 333  | 230066    | 300  | 230395     | 302  |
| 216806/V | 63   | 217010   | 38   | 220054    | 339  | 220307     | 352  | 220556   | 333  | 230070/CO | 300  | 230396     | 302  |
| 216806   | 62   | 217020   | 38   | 220060    | 339  | 220309     | 350  | 220560   | 330  | 230070    | 300  | 230397     | 302  |
| 216807   | 62   | 217030   | 38   | 220061    | 324  | 220355/S   | 371  | 220574   | 337  | 230080/CO | 300  | 230398     | 302  |
| 216808/V | 63   | 217040   | 38   | 220064    | 339  | 220355     | 371  | 220575   | 337  | 230080    | 300  | 230400     | 301  |
| 216808   | 62   | 217050   | 51   | 220066    | 339  | 220356/S   | 371  | 220576   | 212  | 230084/CO | 300  | 230402     | 301  |
| 216810/V | 63   | 217052   | 51   | 220068    | 345  | 220356     | 371  | 220577   | 212  | 230084    | 300  | 230404     | 301  |
| 216810   | 62   | 217056   | 51   | 220070    | 339  | 220366     | 324  | 220578   | 212  | 230090/CO | 300  | 230406     | 301  |
| 216812/V | 63   | 217058   | 51   | 220073    | 345  | 220368     | 324  | 220579   | 212  | 230090    | 300  | 230408     | 301  |
| 216812   | 62   | 217060   | 51   | 220076    | 346  | 220370     | 368  | 220580   | 212  | 230100/CO | 300  | 230410     | 301  |
| 216814/V | 63   | 217062   | 51   | 220079    | 363  | 220371     | 368  | 220581   | 212  | 230100    | 300  | 230412     | 301  |
| 216814   | 62   | 217064   | 51   | 220095    | 324  | 220372     | 368  | 220582   | 212  | 230110/CO | 300  | 230414     | 301  |
| 216816/V | 63   | 217066   | 51   | 220103    | 323  | 220374/S   | 371  | 220583   | 212  | 230110    | 300  | 230430     | 302  |
| 216816   | 62   | 217068   | 51   | 220105    | 323  | 220374     | 371  | 220584   | 212  | 230120/CO | 300  | 230431     | 302  |
| 216818/V | 63   | 217070   | 51   | 220110    | 339  | 220375/S   | 371  | 220585   | 212  | 230120    | 300  | 230432     | 302  |
| 216818   | 62   | 217072   | 51   | 220112    | 339  | 220375     | 371  | 220586   | 212  | 230130/CO | 300  | 230433     | 302  |
| 216820/V | 63   | 217074   | 51   | 220123    | 202  | 220376     | 372  | 220587   | 212  | 230130    | 300  | 230434     | 302  |
| 216820   | 62   | 217076   | 51   | 220126    | 204  | 220377     | 372  | 220588   | 212  | 230136/CO | 300  | 230436     | 302  |
| 216822/V | 63   | 217078   | 51   | 220128    | 273  | 220378     | 372  | 220589   | 212  | 230136    | 300  | 230438/A   | 302  |
| 216822   | 62   | 217080   | 51   | 220129    | 273  | 220379     | 370  | 220590   | 212  | 230140/CO | 300  | 230438/B   | 302  |
| 216824/V | 63   | 217082   | 51   | 220130    | 338  | 220380     | 368  | 220591   | 212  | 230140    | 300  | 230438     | 302  |
| 216824   | 62   | 217084   | 51   | 220135    | 343  | 220381     | 128  | 220592   | 212  | 230160/CO | 300  | 230440     | 302  |
| 216826/V | 63   | 217086   | 51   | 220136    | 361  | 220382     | 114  | 220593   | 212  | 230160    | 300  | 230442/A   | 302  |
| 216826   | 62   | 217088   | 51   | 220137    | 360  | 220385     | 162  | 220594   | 212  | 230170/CO | 300  | 230442     | 302  |
| 216828/V | 63   | 217090   | 51   | 220140    | 343  | 220386     | 162  | 220600/H | 376  | 230170    | 300  | 230444/A   | 302  |
| 216828   | 62   | 217092   | 51   | 220141    | 355  | 220387     | 163  | 220600   | 266  | 230180/CO | 300  | 230444     | 302  |
| 216830/V | 63   | 217094   | 51   | 220142    | 339  | 220388     | 163  | 220602   | 373  | 230180    | 300  | 230448     | 302  |
| 216830   | 62   | 217096   | 51   | 220146    | 223  | 220389     | 320  | 220608   | 374  | 230190/CO | 300  | 230450/A   | 302  |
| 216832   | 62   | 217098   | 51   | 220147    | 219  | 220390     | 114  | 220612   | 221  | 230190    | 300  | 230450     | 302  |
| 216834   | 62   | 217600/M | 80   | 220148    | 204  | 220391     | 128  | 220620   | 369  | 230200/CO | 300  | 230451     | 302  |

| art. no. | page | art. no. | page | art. no.  | page | art. no.   | page | art. no. | page | art. no.  | page             | art. no.  | page             |
|----------|------|----------|------|-----------|------|------------|------|----------|------|-----------|------------------|-----------|------------------|
| 230453   | 302  | 230820   | 313  | 231056    | 313  | 231914     | 308  | 240234   | 285  | 250198    | 179              | 260284    | 117              |
| 230454   | 302  | 230822   | 313  | 231058    | 313  | 231916     | 308  | 250040   | 178  | 250200    | 179              | 260286    | 117              |
| 230456   | 302  | 230824   | 313  | 231060    | 313  | 231918     | 308  | 250042   | 178  | 250202    | 179              | 260288/10 | 120 <sup>1</sup> |
| 230457   | 302  | 230826   | 313  | 231062    | 313  | 231920     | 308  | 250044   | 178  | 250204    | 179              | 260288    | 117              |
| 230458   | 302  | 230828   | 313  | 231064    | 313  | 231922     | 308  | 250044   | 179  | 250206    | 179              | 260290/10 | 120 <sup>1</sup> |
| 230459   | 302  | 230830   | 313  | 231070    | 313  | 231924     | 308  | 250046   | 178  | 250208    | 179              | 260290    | 117              |
| 230460/A | 302  | 230832   | 313  | 231072    | 313  | 231926     | 308  | 250048   | 178  | 250210    | 179              | 260292    | 117              |
| 230460   | 302  | 230834   | 313  | 231074    | 313  | 231928     | 308  | 250050   | 178  | 250212    | 179              | 260300    | 117              |
| 230461   | 302  | 230836   | 313  | 231076    | 313  | 231929     | 308  | 250052   | 178  | 250214    | 179              | 260302    | 117              |
| 230464   | 302  | 230838   | 313  | 231080    | 313  | 231930     | 308  | 250054   | 178  | 250216    | 179              | 260304    | 117              |
| 230466   | 302  | 230840   | 313  | 231082    | 313  | 231931     | 308  | 250056   | 178  | 250218    | 179              | 260306    | 117              |
| 230467   | 302  | 230842   | 313  | 231280    | 314  | 231932     | 308  | 250058   | 178  | 250220    | 179              | 260308    | 117              |
| 230473   | 302  | 230844   | 313  | 231282    | 314  | 231934     | 308  | 250060   | 178  | 250222    | 179              | 260310    | 117              |
| 230474   | 302  | 230846   | 313  | 231300    | 304  | 231936     | 308  | 250062   | 178  | 250224    | 179              | 260312    | 117              |
| 230475   | 302  | 230848   | 313  | 231301    | 304  | 231938     | 308  | 250064   | 178  | 250226    | 179              | 260314    | 117              |
| 230478/1 | 302  | 230850   | 313  | 231302    | 304  | 231939/111 | 308  | 250066   | 178  | 250228    | 179              | 260316    | 117              |
| 230479   | 302  | 230852   | 313  | 231304    | 304  | 231940/127 | 308  | 250068   | 178  | 250230    | 179              | 260318    | 117              |
| 230616   | 301  | 230854   | 313  | 231305    | 304  | 231940/152 | 308  | 250070   | 178  | 250600    | 180              | 260320    | 117              |
| 230618   | 301  | 230856   | 313  | 231306    | 304  | 231940/210 | 308  | 250072   | 178  | 250602    | 180              | 260322    | 117              |
| 230620   | 301  | 230858   | 313  | 231307    | 304  | 231940     | 308  | 250074   | 178  | 250604    | 180              | 260324    | 117              |
| 230622   | 301  | 230860   | 313  | 231312    | 304  | 231942     | 307  | 250076   | 178  | 250606    | 180              | 260326    | 117              |
| 230626   | 301  | 230862   | 313  | 231319    | 303  | 231944     | 307  | 250078   | 178  | 250608    | 180              | 260328    | 117              |
| 230628   | 301  | 230864   | 313  | 231320    | 303  | 231946     | 307  | 250080   | 178  | 250610    | 180              | 260330    | 117              |
| 230630   | 301  | 230866   | 313  | 231322    | 303  | 231948     | 307  | 250082   | 178  | 250611    | 180              | 260331    | 117              |
| 230634   | 301  | 230868   | 313  | 231324    | 303  | 231950     | 307  | 250084   | 178  | 250612    | 180              | 260332    | 117              |
| 230636   | 301  | 230870   | 313  | 231326    | 303  | 231952     | 307  | 250084   | 179  | 250614    | 180              | 260333    | 117              |
| 230661   | 305  | 230885/K | 305  | 231327    | 303  | 231954     | 307  | 250086   | 178  | 250630    | 180              | 260334    | 117              |
| 230665   | 305  | 230886/K | 305  | 231330    | 304  | 231956     | 307  | 250088   | 178  | 250632    | 180              | 260335    | 117              |
| 230667   | 305  | 230900   | 302  | 231336    | 303  | 231958     | 307  | 250090   | 178  | 250634    | 180              | 260336    | 120              |
| 230675   | 305  | 230902   | 302  | 231338    | 303  | 231960     | 307  | 250092   | 178  | 250636    | 180              | 260337    | 120              |
| 230676/K | 305  | 230904   | 302  | 231340    | 303  | 231962     | 307  | 250094   | 178  | 250638    | 180              | 260338    | 120              |
| 230676   | 305  | 230906/1 | 302  | 231342    | 303  | 231964     | 307  | 250096   | 178  | 250640    | 180              | 260350/10 | 120 <sup>1</sup> |
| 230677/K | 305  | 230908   | 302  | 231350    | 303  | 231966     | 307  | 250098   | 178  | 250642    | 180              | 260350    | 118              |
| 230677   | 305  | 230910   | 302  | 231352    | 303  | 231968     | 307  | 250100   | 178  | 250644    | 180              | 260352/10 | 120 <sup>1</sup> |
| 230678   | 305  | 230912   | 302  | 231354    | 303  | 231970     | 307  | 250102   | 178  | 250646    | 180              | 260352    | 118              |
| 230679   | 305  | 230914   | 302  | 231502    | 301  | 231972     | 307  | 250104   | 178  | 250648    | 180              | 260354/10 | 120 <sup>1</sup> |
| 230680   | 305  | 230916   | 302  | 231508    | 301  | 231973     | 307  | 250106   | 178  | 250650    | 181              | 260354    | 118              |
| 230681/K | 305  | 230918   | 302  | 231516    | 301  | 231974     | 307  | 250108   | 178  | 250652    | 181              | 260360    | 118              |
| 230681   | 305  | 230920   | 302  | 231524    | 301  | 231976     | 307  | 250110   | 178  | 250654    | 181              | 260362    | 118              |
| 230682   | 312  | 230922   | 302  | 231526    | 301  | 231978     | 307  | 250112   | 178  | 250656    | 181              | 260364    | 118              |
| 230683   | 312  | 230924   | 302  | 231528    | 301  | 231980     | 307  | 250114   | 178  | 250658    | 181              | 260370    | 118              |
| 230689   | 306  | 230926   | 302  | 231530    | 301  | 231982     | 307  | 250116   | 178  | 250660    | 181              | 260371    | 118              |
| 230691   | 306  | 230928   | 302  | 231532    | 301  | 231984     | 310  | 250118   | 178  | 250661    | 181              | 260372    | 118              |
| 230701   | 306  | 230930/1 | 302  | 231534    | 301  | 231998     | 309  | 250120   | 179  | 250662    | 181              | 260373    | 118              |
| 230702   | 306  | 230932   | 302  | 231540    | 301  | 231999     | 309  | 250122   | 179  | 250664    | 181              | 260374    | 118              |
| 230704   | 306  | 230934   | 302  | 231544    | 301  | 232007     | 309  | 250124   | 179  | 250666    | 181              | 260376    | 118              |
| 230705   | 306  | 230936   | 302  | 231546    | 301  | 240002     | 284  | 250126   | 179  | 250668    | 181              | 260380    | 118              |
| 230706   | 306  | 230938   | 302  | 231700    | 301  | 240005     | 284  | 250128   | 179  | 250670    | 181              | 260382    | 118              |
| 230708   | 306  | 230940   | 302  | 231702    | 301  | 240011     | 284  | 250130   | 179  | 250672    | 181              | 260384    | 118              |
| 230709   | 306  | 230942   | 302  | 231704    | 301  | 240012     | 284  | 250132   | 179  | 250674    | 181              | 260386    | 118              |
| 230711   | 306  | 230944   | 302  | 231706    | 301  | 240013     | 284  | 250140   | 179  | 250676    | 181              | 260388    | 118              |
| 230714   | 306  | 230946   | 302  | 231708    | 301  | 240018     | 284  | 250142   | 179  | 250678    | 181              | 260390    | 118              |
| 230720   | 306  | 230948   | 302  | 231710    | 301  | 240020     | 284  | 250144   | 179  | 250680    | 181              | 260392/10 | 120 <sup>1</sup> |
| 230721   | 306  | 230950   | 302  | 231712    | 301  | 240022     | 284  | 250146   | 179  | 250682    | 181              | 260392    | 118              |
| 230722   | 306  | 230952   | 302  | 231714    | 301  | 240024     | 284  | 250148   | 179  | 250684    | 181              | 260394/10 | 120 <sup>1</sup> |
| 230723   | 306  | 230954/1 | 302  | 231716    | 301  | 240041     | 284  | 250150   | 179  | 260250    | 117              | 260394    | 118              |
| 230725   | 306  | 230956   | 302  | 231718    | 301  | 240042     | 284  | 250152   | 179  | 260252    | 117              | 260396/10 | 120 <sup>1</sup> |
| 230727   | 306  | 230958   | 302  | 231750    | 301  | 240044     | 284  | 250160   | 179  | 260254    | 117              | 260396    | 118              |
| 230731   | 306  | 230960   | 302  | 231752    | 301  | 240046     | 284  | 250162   | 179  | 260256/10 | 120 <sup>1</sup> | 260400    | 118              |
| 230732   | 301  | 230962/1 | 302  | 231754    | 301  | 240048     | 284  | 250164   | 179  | 260256    | 117              | 260402    | 118              |
| 230734   | 301  | 230964   | 302  | 231756    | 301  | 240057     | 224  | 250166   | 179  | 260258/10 | 120 <sup>1</sup> | 260404    | 118              |
| 230736   | 301  | 230966   | 302  | 231758    | 301  | 240057     | 284  | 250168   | 179  | 260258    | 117              | 260410    | 119              |
| 230738   | 301  | 230968   | 302  | 231760    | 301  | 240058     | 284  | 250170   | 179  | 260260    | 117              | 260411    | 119              |
| 230740   | 301  | 230970   | 302  | 231766    | 301  | 240058     | 224  | 250172   | 179  | 260262    | 117              | 260412    | 119              |
| 230742   | 301  | 230972   | 302  | 231803    | 308  | 240059     | 284  | 250174   | 179  | 260264    | 117              | 260414/10 | 120 <sup>2</sup> |
| 230746   | 301  | 230974   | 302  | 231900    | 308  | 240071     | 284  | 250176   | 179  | 260267    | 117              | 260414    | 119              |
| 230800   | 313  | 230976   | 302  | 231901/21 | 308  | 240073     | 284  | 250178   | 179  | 260268    | 117              | 260415    | 119              |
| 230802   | 313  | 230978   | 302  | 231902    | 308  | 240132     | 285  | 250180   | 179  | 260270/10 | 120 <sup>1</sup> | 260416/10 | 120 <sup>2</sup> |
| 230804   | 313  | 230979   | 302  | 231904/29 | 308  | 240134     | 285  | 250182   | 179  | 260270    | 117              | 260416    | 119              |
| 230806   | 313  | 230982   | 312  | 231904    | 308  | 240136     | 285  | 250184   | 179  | 260272/10 | 120 <sup>1</sup> | 260417    | 119              |
| 230808   | 313  | 230984   | 312  | 231906    | 308  | 240138     | 285  | 250186   | 179  | 260272    | 117              | 260418    | 119              |
| 230810   | 313  | 230986   | 312  | 231908    | 308  | 240152     | 285  | 250188   | 179  | 260274/10 | 120 <sup>1</sup> | 260422/10 | 120 <sup>2</sup> |
| 230812   | 313  | 230988   | 312  | 231910    | 308  | 240154     | 285  | 250190   | 179  | 260274    | 117              | 260422    | 119              |
| 230814   | 313  | 231050   | 313  | 231912/38 | 308  | 240156     | 285  | 250192   | 179  | 260276    | 117              | 260424/10 | 120 <sup>2</sup> |
| 230816   | 313  | 231052   | 313  | 231912    | 308  | 240158     | 285  | 250194   | 179  | 260278    | 117              | 260424    | 119              |
| 230818   | 313  | 231054   | 313  | 231914/46 | 308  | 240160     | 285  | 250196   | 179  | 260282    | 117              | 260426/10 | 120 <sup>2</sup> |

# Index

| art. no. | page | art. no. | page | art. no. | page | art. no. | page | art. no.    | page | art. no.    | page | art. no. | page |
|----------|------|----------|------|----------|------|----------|------|-------------|------|-------------|------|----------|------|
| 260426   | 119  | 260777   | 127  | 262120   | 167  | 262286   | 175  | 262643      | 167  | 262962/1000 | 172  | 263826   | 190  |
| 260427   | 120  | 260858   | 138  | 262122   | 167  | 262288   | 175  | 262645      | 167  | 262962/1200 | 172  | 263828   | 190  |
| 260428   | 120  | 260860   | 138  | 262124   | 167  | 262290   | 175  | 262646      | 167  | 262962/290  | 172  | 263830   | 190  |
| 260430   | 120  | 260862   | 138  | 262126   | 167  | 262292   | 175  | 262647      | 167  | 262962/360  | 172  | 263832   | 190  |
| 260431   | 120  | 260863   | 138  | 262130   | 167  | 262294   | 175  | 262700      | 168  | 262962/520  | 172  | 263834   | 190  |
| 260440   | 120  | 260902   | 138  | 262132   | 167  | 262296   | 175  | 262702      | 168  | 262962/680  | 172  | 263836   | 190  |
| 260442   | 120  | 260904   | 138  | 262134   | 167  | 262298   | 175  | 262704      | 168  | 262962/840  | 172  | 263838   | 190  |
| 260443   | 120  | 260906   | 138  | 262136   | 167  | 262300   | 175  | 262710      | 168  | 262962      | 167  | 263840   | 190  |
| 260444   | 120  | 260908   | 138  | 262140   | 168  | 262302   | 175  | 262750      | 169  | 262964      | 167  | 263842   | 190  |
| 260446   | 119  | 260910   | 138  | 262142   | 168  | 262304   | 175  | 262752      | 169  | 262966      | 167  | 263844   | 190  |
| 260448   | 119  | 260912   | 138  | 262144   | 168  | 262306   | 175  | 262754      | 169  | 262968      | 167  | 263846   | 190  |
| 260449   | 119  | 260914   | 138  | 262151   | 170  | 262308   | 175  | 262756      | 169  | 262970/1100 | 172  | 263848   | 190  |
| 260450   | 119  | 260916   | 138  | 262152   | 170  | 262310   | 175  | 262758      | 169  | 262970/1315 | 172  | 263850   | 190  |
| 260500   | 120  | 260918   | 138  | 262154   | 170  | 262500/1 | 166  | 262760      | 169  | 262970      | 167  | 263852   | 190  |
| 260502   | 120  | 260920   | 138  | 262158   | 170  | 262500   | 166  | 262762      | 169  | 262972      | 167  | 263854   | 190  |
| 260504   | 120  | 260922   | 138  | 262159   | 172  | 262501   | 167  | 262764      | 169  | 262974      | 167  | 263856   | 190  |
| 260510   | 119  | 260924   | 138  | 262160   | 169  | 262502   | 166  | 262766      | 169  | 262976      | 167  | 263858   | 190  |
| 260512   | 119  | 260926   | 138  | 262161   | 169  | 262503   | 167  | 262768      | 169  | 262978      | 167  | 263860   | 190  |
| 260514   | 119  | 260928   | 138  | 262162   | 169  | 262504   | 166  | 262782      | 169  | 262980      | 167  | 263861   | 190  |
| 260516   | 119  | 260930   | 138  | 262163   | 169  | 262505   | 167  | 262820      | 168  | 263360      | 122  | 263862   | 190  |
| 260518   | 119  | 260932   | 138  | 262164   | 169  | 262506   | 166  | 262822      | 168  | 263362      | 122  | 263864   | 190  |
| 260520   | 119  | 260934   | 138  | 262165   | 169  | 262507   | 167  | 262824      | 168  | 263364      | 122  | 263866   | 190  |
| 260650   | 121  | 260936   | 138  | 262170   | 169  | 262508   | 166  | 262826      | 168  | 263380      | 122  | 263868   | 190  |
| 260651   | 121  | 260938   | 138  | 262172   | 169  | 262509/1 | 166  | 262828      | 168  | 263382      | 122  | 263870   | 190  |
| 260654   | 121  | 260940   | 138  | 262200   | 174  | 262509   | 167  | 262830      | 168  | 263384      | 122  | 263872   | 190  |
| 260656   | 121  | 260942   | 138  | 262202   | 174  | 262510/1 | 166  | 262832      | 168  | 263386      | 122  | 263874   | 190  |
| 260658   | 121  | 260944   | 138  | 262204   | 174  | 262510   | 166  | 262834      | 168  | 263388      | 122  | 263876   | 190  |
| 260660   | 121  | 260946   | 138  | 262206   | 174  | 262511   | 167  | 262840      | 168  | 263392      | 122  | 263878   | 190  |
| 260662   | 121  | 260948   | 138  | 262208   | 174  | 262512/1 | 166  | 262842      | 168  | 263393      | 122  | 263880   | 190  |
| 260664   | 121  | 260950   | 138  | 262209   | 174  | 262512   | 166  | 262844      | 168  | 263394      | 122  | 263882   | 190  |
| 260665   | 121  | 260952   | 138  | 262210   | 174  | 262513   | 167  | 262846      | 168  | 263396      | 122  | 263884   | 190  |
| 260666   | 121  | 260954   | 138  | 262212   | 174  | 262515   | 166  | 262848      | 168  | 263400      | 122  | 263886   | 190  |
| 260667   | 121  | 260956   | 138  | 262214   | 174  | 262516   | 166  | 262850      | 168  | 263402      | 122  | 263888   | 190  |
| 260670   | 121  | 260960   | 138  | 262215   | 174  | 262517   | 167  | 262940/125  | 172  | 263404      | 122  | 263890   | 190  |
| 260672   | 121  | 260962   | 138  | 262216   | 174  | 262518   | 166  | 262940/152  | 172  | 263410      | 123  | 263892   | 190  |
| 260674   | 121  | 260964   | 138  | 262218   | 174  | 262520   | 166  | 262940/200  | 172  | 263412      | 123  | 263894   | 190  |
| 260676   | 121  | 260966   | 138  | 262219   | 174  | 262522   | 166  | 262940/250  | 172  | 263413      | 123  | 263896   | 190  |
| 260678   | 121  | 260968   | 138  | 262220   | 174  | 262523   | 166  | 262940/300  | 172  | 263414      | 123  | 263898   | 190  |
| 260682   | 121  | 260970   | 138  | 262222   | 174  | 262528   | 166  | 262940/360  | 172  | 263415      | 123  | 263900   | 190  |
| 260684   | 121  | 260972   | 138  | 262223   | 174  | 262530   | 166  | 262940/520  | 172  | 263416      | 123  | 263902   | 190  |
| 260686   | 121  | 260974   | 138  | 262224   | 174  | 262532   | 166  | 262942/125  | 172  | 263417      | 123  | 263904   | 190  |
| 260688   | 121  | 260976   | 138  | 262226   | 174  | 262535   | 166  | 262942/152  | 172  | 263418      | 123  | 263906   | 190  |
| 260690   | 121  | 260978   | 138  | 262227   | 174  | 262536   | 166  | 262942/200  | 172  | 263422      | 123  | 263908   | 190  |
| 260692   | 121  | 260980   | 138  | 262228   | 174  | 262537   | 166  | 262942/250  | 172  | 263424      | 123  | 263910   | 190  |
| 260700   | 121  | 260982   | 138  | 262230   | 174  | 262538   | 166  | 262942/300  | 172  | 263426      | 123  | 263912   | 190  |
| 260702   | 121  | 260984   | 138  | 262231   | 174  | 262540   | 166  | 262942/360  | 172  | 263440      | 123  | 263914   | 190  |
| 260704   | 121  | 262030   | 170  | 262232   | 174  | 262542   | 166  | 262942/520  | 172  | 263442      | 123  | 263916   | 190  |
| 260706   | 121  | 262031   | 170  | 262234   | 174  | 262543   | 166  | 262950/1050 | 172  | 263443      | 123  | 263918   | 190  |
| 260708   | 121  | 262032   | 170  | 262235   | 174  | 262545   | 166  | 262950/152  | 172  | 263444      | 123  | 263920   | 190  |
| 260710   | 121  | 262033   | 170  | 262236   | 174  | 262546   | 166  | 262950/200  | 172  | 263446      | 124  | 263930   | 191  |
| 260712   | 121  | 262034   | 170  | 262238   | 174  | 262547   | 166  | 262950/300  | 172  | 263448      | 124  | 263940   | 191  |
| 260714   | 121  | 262035   | 170  | 262240   | 174  | 262600/1 | 167  | 262950/360  | 172  | 263449      | 124  | 265013   | 102  |
| 260716   | 121  | 262036   | 170  | 262242   | 174  | 262600   | 167  | 262950/520  | 172  | 263450      | 124  | 265014   | 102  |
| 260718   | 121  | 262037   | 170  | 262243   | 174  | 262602   | 167  | 262950/680  | 172  | 263451      | 123  | 265015   | 102  |
| 260721   | 121  | 262048   | 127  | 262244   | 174  | 262604   | 167  | 262950/840  | 172  | 263452      | 123  | 265016   | 102  |
| 260722   | 121  | 262060   | 170  | 262245   | 174  | 262606   | 167  | 262950      | 167  | 263453      | 123  | 265017   | 102  |
| 260724   | 121  | 262062   | 170  | 262246   | 174  | 262608   | 167  | 262952/1050 | 172  | 263456      | 123  | 265033   | 102  |
| 260726   | 121  | 262064   | 170  | 262247   | 174  | 262609/1 | 167  | 262952/152  | 172  | 263510      | 123  | 265034   | 102  |
| 260728   | 121  | 262066   | 170  | 262248   | 174  | 262610/1 | 167  | 262952/200  | 172  | 263512      | 123  | 265035   | 102  |
| 260730   | 121  | 262068   | 170  | 262249   | 174  | 262610   | 167  | 262952/300  | 172  | 263514      | 123  | 265036   | 102  |
| 260731   | 121  | 262069   | 170  | 262254   | 175  | 262612/1 | 167  | 262952/360  | 172  | 263516      | 123  | 265037   | 102  |
| 260732   | 121  | 262085   | 185  | 262256   | 175  | 262615   | 167  | 262952/520  | 172  | 263518      | 123  | 267000   | 185  |
| 260733   | 121  | 262086   | 185  | 262258   | 175  | 262616   | 167  | 262952/680  | 172  | 263520      | 123  | 267002   | 185  |
| 260734   | 121  | 262087   | 185  | 262260   | 175  | 262618   | 167  | 262952/840  | 172  | 263800      | 190  | 267004   | 185  |
| 260735   | 121  | 262088   | 185  | 262262   | 175  | 262620   | 167  | 262952      | 167  | 263802      | 190  | 267006   | 185  |
| 260750   | 122  | 262089   | 185  | 262264   | 175  | 262622   | 167  | 262954      | 167  | 263804      | 190  | 267008   | 185  |
| 260752   | 122  | 262090   | 185  | 262266   | 175  | 262623   | 167  | 262956      | 167  | 263806      | 190  | 267010   | 185  |
| 260754   | 122  | 262097   | 188  | 262268   | 175  | 262628   | 167  | 262958      | 167  | 263808      | 190  | 267012   | 185  |
| 260762   | 127  | 262100   | 167  | 262270   | 175  | 262630   | 167  | 262960/1000 | 172  | 263810      | 190  | 267014   | 185  |
| 260764   | 127  | 262101   | 167  | 262272   | 175  | 262632   | 167  | 262960/1200 | 172  | 263812      | 190  | 267016   | 185  |
| 260765   | 127  | 262102   | 167  | 262274   | 175  | 262635   | 167  | 262960/290  | 172  | 263814      | 190  | 267018   | 185  |
| 260770   | 122  | 262106   | 167  | 262276   | 175  | 262636   | 167  | 262960/360  | 172  | 263816      | 190  | 267020   | 185  |
| 260771   | 122  | 262108   | 167  | 262278   | 175  | 262637   | 167  | 262960/520  | 172  | 263818      | 190  | 267022   | 185  |
| 260772   | 122  | 262110   | 167  | 262280   | 175  | 262638   | 167  | 262960/680  | 172  | 263820      | 190  | 267024   | 185  |
| 260773   | 122  | 262114   | 167  | 262282   | 175  | 262640   | 167  | 262960/840  | 172  | 263822      | 190  | 267026   | 185  |
| 260774   | 122  | 262116   | 167  | 262284   | 175  | 262642   | 167  | 262960      | 167  | 263824      | 190  | 267028   | 185  |

| art. no. | page | art. no. | page | art. no.   | page | art. no.   | page | art. no.  | page             | art. no.   | page | art. no.  | page |
|----------|------|----------|------|------------|------|------------|------|-----------|------------------|------------|------|-----------|------|
| 267030   | 185  | 267314   | 186  | 270036     | 108  | 270141     | 104  | 270778/25 | 120 <sup>2</sup> | 270852     | 111  | 280115    | 132  |
| 267032   | 185  | 267316   | 186  | 270038     | 108  | 270142/500 | 104  | 270778    | 109              | 270854     | 111  | 280120    | 132  |
| 267034   | 185  | 267318   | 186  | 270040     | 108  | 270142     | 104  | 270780/25 | 120 <sup>2</sup> | 270856     | 111  | 280124    | 132  |
| 267036   | 185  | 267320   | 186  | 270042     | 108  | 270143/500 | 104  | 270780    | 109              | 270858     | 111  | 280128    | 132  |
| 267038   | 185  | 267322   | 186  | 270044     | 108  | 270143     | 104  | 270782    | 109              | 270864     | 112  | 280132    | 132  |
| 267040   | 185  | 267324   | 186  | 270046     | 108  | 270144     | 104  | 270784/25 | 120 <sup>2</sup> | 270866     | 112  | 280136    | 132  |
| 267042   | 185  | 267326   | 186  | 270048     | 108  | 270146/500 | 104  | 270784    | 109              | 270870     | 111  | 280140    | 132  |
| 267044   | 185  | 267328   | 186  | 270049     | 108  | 270146     | 104  | 270787    | 109              | 270882/DIN | 113  | 280150    | 132  |
| 267046   | 185  | 267332   | 186  | 270050     | 108  | 270148/500 | 104  | 270788/25 | 120 <sup>2</sup> | 270882     | 113  | 280154    | 132  |
| 267048   | 185  | 267334   | 186  | 270066/500 | 105  | 270148     | 104  | 270788    | 109              | 270888     | 112  | 280158    | 132  |
| 267050   | 185  | 267336   | 186  | 270066     | 105  | 270149/500 | 104  | 270790    | 109              | 270890     | 112  | 280162    | 132  |
| 267052   | 185  | 267338   | 186  | 270068/500 | 105  | 270149     | 104  | 270792/25 | 120 <sup>2</sup> | 270891     | 112  | 280166    | 132  |
| 267054   | 185  | 267340   | 186  | 270068     | 105  | 270150/500 | 104  | 270792    | 109              | 270892     | 112  | 280170    | 132  |
| 267056   | 185  | 267342   | 186  | 270070/500 | 105  | 270150     | 104  | 270794    | 109              | 270894     | 113  | 280180    | 133  |
| 267058   | 185  | 267344   | 186  | 270070     | 105  | 270152/500 | 104  | 270795    | 111              | 270895     | 113  | 280182    | 133  |
| 267060   | 185  | 267346   | 186  | 270072/500 | 105  | 270152     | 104  | 270796/10 | 120 <sup>2</sup> | 270896     | 113  | 280184    | 133  |
| 267062   | 185  | 267348   | 186  | 270072     | 105  | 270154/500 | 104  | 270796    | 109              | 270897     | 113  | 280186    | 133  |
| 267064   | 187  | 267352   | 186  | 270074/500 | 105  | 270154     | 104  | 270797/10 | 120 <sup>2</sup> | 270899     | 113  | 280188    | 133  |
| 267066   | 187  | 267354   | 186  | 270074     | 105  | 270156/500 | 104  | 270797    | 109              | 270900     | 109  | 280190    | 133  |
| 267068   | 187  | 267356   | 186  | 270076     | 105  | 270156     | 104  | 270798    | 109              | 270902     | 109  | 280192    | 133  |
| 267070   | 187  | 267358   | 186  | 270077     | 105  | 270158/500 | 104  | 270799/5  | 120 <sup>2</sup> | 270904     | 109  | 280194    | 133  |
| 267074   | 187  | 267360   | 186  | 270078/500 | 105  | 270158     | 104  | 270799    | 109              | 270906     | 109  | 280196    | 133  |
| 267078   | 187  | 267362   | 186  | 270078     | 105  | 270159/500 | 104  | 270800/25 | 120 <sup>2</sup> | 270908     | 109  | 280198    | 133  |
| 267080   | 187  | 267364   | 186  | 270079/500 | 105  | 270159     | 104  | 270800    | 106              | 270910     | 109  | 280200    | 133  |
| 267084   | 187  | 267366   | 186  | 270079     | 105  | 270160/500 | 104  | 270800    | 108              | 270912     | 109  | 280202    | 133  |
| 267086   | 187  | 267368   | 186  | 270080     | 105  | 270160     | 104  | 270801    | 106              | 270914     | 109  | 280204    | 133  |
| 267088   | 187  | 267372   | 186  | 270082/500 | 105  | 270164/500 | 104  | 270801    | 108              | 272250     | 107  | 280206    | 133  |
| 267090   | 187  | 267374   | 186  | 270082     | 105  | 270164     | 104  | 270802    | 106              | 272254     | 107  | 280208    | 133  |
| 267092   | 187  | 267376   | 186  | 270084/500 | 105  | 270166/500 | 104  | 270803/25 | 120 <sup>2</sup> | 272260     | 107  | 280210    | 133  |
| 267094   | 187  | 267378   | 186  | 270084     | 105  | 270166     | 104  | 270803    | 106              | 272264     | 107  | 280212    | 133  |
| 267096   | 187  | 267380   | 186  | 270086/500 | 105  | 270168/500 | 104  | 270804/25 | 120 <sup>2</sup> | 272268     | 107  | 280214    | 133  |
| 267098   | 187  | 267382   | 186  | 270086     | 105  | 270168     | 104  | 270804    | 106              | 272280     | 107  | 280460    | 133  |
| 267100   | 187  | 267384   | 186  | 270087     | 105  | 270170     | 104  | 270804    | 108              | 272284     | 107  | 280482    | 133  |
| 267102   | 187  | 267386   | 186  | 270088     | 105  | 270172     | 104  | 270805    | 108              | 272290     | 107  | 280490    | 133  |
| 267104   | 187  | 267388   | 186  | 270089/500 | 105  | 270174     | 104  | 270805    | 106              | 272294     | 107  | 280512    | 133  |
| 267106   | 187  | 267392   | 186  | 270089     | 105  | 270176     | 104  | 270806    | 106              | 272298     | 107  | 280520    | 133  |
| 267108   | 187  | 267394   | 186  | 270090/500 | 105  | 270178     | 104  | 270807    | 106              | 273350     | 110  | 280542    | 133  |
| 267110   | 187  | 267396   | 186  | 270090     | 105  | 270180     | 104  | 270808/25 | 120 <sup>2</sup> | 273352     | 110  | 280550    | 133  |
| 267112   | 187  | 267398   | 186  | 270091/500 | 105  | 270182     | 104  | 270808    | 106              | 273354     | 110  | 280572    | 133  |
| 267114   | 187  | 267400   | 186  | 270091     | 105  | 270184     | 104  | 270808    | 108              | 273356     | 110  | 280580    | 133  |
| 267116   | 187  | 267402   | 186  | 270092/500 | 105  | 270186     | 104  | 270809    | 106              | 273358     | 110  | 280582    | 133  |
| 267118   | 187  | 267404   | 186  | 270092     | 105  | 270188     | 104  | 270810/25 | 120 <sup>2</sup> | 273360     | 110  | 290001    | 149  |
| 267120   | 187  | 267406   | 186  | 270093/500 | 105  | 270190     | 104  | 270810    | 106              | 273362     | 110  | 290003    | 149  |
| 267200   | 184  | 267408   | 186  | 270093     | 105  | 270192     | 104  | 270810    | 108              | 273364     | 110  | 290004    | 144  |
| 267202   | 184  | 267430   | 186  | 270094     | 105  | 270194     | 104  | 270811    | 106              | 273366     | 110  | 290005    | 149  |
| 267204   | 184  | 267432   | 186  | 270096     | 105  | 270195     | 104  | 270811    | 108              | 273368     | 110  | 290006/90 | 145  |
| 267206   | 184  | 267434   | 186  | 270097     | 105  | 270196     | 104  | 270812    | 106              | 273392     | 110  | 290006    | 144  |
| 267250   | 186  | 267436   | 186  | 270098     | 105  | 270198     | 104  | 270813    | 106              | 273394     | 110  | 290007    | 149  |
| 267252   | 186  | 267438   | 186  | 270100     | 105  | 270217     | 111  | 270813    | 108              | 273396     | 110  | 290008/90 | 145  |
| 267254   | 186  | 267440   | 186  | 270102     | 105  | 270218     | 111  | 270814/25 | 120 <sup>2</sup> | 280000     | 130  | 290008    | 144  |
| 267256   | 186  | 267442   | 186  | 270104     | 105  | 270714     | 108  | 270814    | 106              | 280004     | 130  | 290009    | 144  |
| 267258   | 186  | 267444   | 186  | 270106     | 105  | 270715     | 108  | 270814    | 108              | 280008     | 130  | 290010/90 | 145  |
| 267260   | 186  | 267446   | 186  | 270107     | 105  | 270716     | 108  | 270815    | 108              | 280012     | 130  | 290010    | 144  |
| 267262   | 186  | 267448   | 186  | 270108     | 105  | 270719     | 108  | 270815    | 106              | 280016     | 130  | 290011    | 149  |
| 267264   | 186  | 267450   | 186  | 270110     | 105  | 270720     | 108  | 270816    | 108              | 280020     | 130  | 290012    | 144  |
| 267266   | 186  | 267452   | 186  | 270112     | 105  | 270721     | 108  | 270816    | 106              | 280030     | 130  | 290013    | 149  |
| 267268   | 186  | 267460   | 188  | 270114     | 105  | 270722     | 108  | 270818/10 | 120 <sup>2</sup> | 280034     | 130  | 290014/90 | 145  |
| 267272   | 186  | 267462   | 188  | 270116     | 105  | 270723     | 108  | 270818    | 106              | 280038     | 130  | 290014    | 144  |
| 267274   | 186  | 267464   | 188  | 270118     | 105  | 270724     | 108  | 270820    | 106              | 280042     | 130  | 290015    | 149  |
| 267276   | 186  | 267466   | 188  | 270119     | 105  | 270725     | 108  | 270822/10 | 120 <sup>2</sup> | 280046     | 130  | 290016/90 | 145  |
| 267278   | 186  | 267468   | 188  | 270120     | 105  | 270726     | 108  | 270822    | 106              | 280050     | 130  | 290016    | 144  |
| 267280   | 186  | 267470   | 188  | 270121     | 105  | 270727     | 108  | 270824    | 106              | 280060     | 130  | 290017    | 144  |
| 267282   | 186  | 267472   | 188  | 270122     | 105  | 270728     | 108  | 270826/10 | 120 <sup>2</sup> | 280064     | 130  | 290018/90 | 145  |
| 267284   | 186  | 270014   | 108  | 270123     | 105  | 270732     | 108  | 270826    | 106              | 280070     | 130  | 290018    | 144  |
| 267286   | 186  | 270015   | 108  | 270124     | 105  | 270738     | 108  | 270828    | 106              | 280074     | 130  | 290019    | 149  |
| 267288   | 186  | 270016   | 108  | 270126     | 105  | 270740     | 108  | 270830/5  | 120 <sup>2</sup> | 280080     | 131  | 290020/90 | 145  |
| 267292   | 186  | 270021   | 108  | 270128     | 105  | 270742     | 108  | 270830    | 106              | 280084     | 131  | 290020    | 144  |
| 267294   | 186  | 270022   | 108  | 270130     | 105  | 270744     | 108  | 270832    | 106              | 280090     | 131  | 290021    | 149  |
| 267296   | 186  | 270027   | 108  | 270131     | 105  | 270746     | 108  | 270834    | 106              | 280094     | 131  | 290022/90 | 145  |
| 267298   | 186  | 270028   | 108  | 270132     | 105  | 270748     | 108  | 270836/5  | 120 <sup>2</sup> | 280100     | 131  | 290022    | 144  |
| 267300   | 186  | 270029   | 108  | 270134     | 105  | 270750     | 108  | 270836    | 106              | 280101     | 132  | 290023    | 144  |
| 267302   | 186  | 270030   | 108  | 270135     | 105  | 270754     | 108  | 270838    | 106              | 280104     | 131  | 290024/90 | 145  |
| 267304   | 186  | 270031   | 108  | 270136     | 105  | 270756     | 108  | 270840    | 106              | 280105     | 132  | 290024    | 144  |
| 267306   | 186  | 270032   | 108  | 270137     | 105  | 270758     | 108  | 270842    | 106              | 280110     | 131  | 290025    | 149  |
| 267308   | 186  | 270033   | 108  | 270140/500 | 104  | 270760     | 108  | 270844    | 106              | 280111     | 132  | 290026    | 144  |
| 267312   | 186  | 270034   | 108  | 270140     | 104  | 270762     | 108  | 270850    | 111              | 280114     | 131  | 290027    | 149  |

# Index

| art. no.  | page | art. no. | page | art. no. | page | art. no. | page | art. no.  | page | art. no.  | page | art. no. | page |
|-----------|------|----------|------|----------|------|----------|------|-----------|------|-----------|------|----------|------|
| 290028/90 | 145  | 290290   | 148  | 290482   | 151  | 290719   | 137  | 290902    | 143  | 290994/90 | 145  | 291384   | 146  |
| 290028    | 144  | 290292   | 148  | 290484   | 151  | 290720   | 137  | 290904    | 143  | 290994    | 143  | 291386   | 146  |
| 290029    | 144  | 290294   | 148  | 290486   | 151  | 290721   | 137  | 290906    | 143  | 290996/90 | 145  | 291388   | 146  |
| 290030/90 | 145  | 290296   | 148  | 290488   | 151  | 290730   | 139  | 290908    | 143  | 290996    | 143  | 291390   | 146  |
| 290030    | 144  | 290300   | 148  | 290490   | 151  | 290731   | 139  | 290910    | 143  | 290998/90 | 145  | 291392   | 146  |
| 290031    | 149  | 290302   | 148  | 290492   | 151  | 290732   | 139  | 290912    | 143  | 290998    | 143  | 291394   | 146  |
| 290033    | 149  | 290304   | 148  | 290494   | 151  | 290734   | 139  | 290914    | 143  | 290999    | 143  | 291396   | 146  |
| 290034    | 144  | 290306   | 148  | 290496   | 151  | 290735   | 139  | 290916    | 143  | 291000/90 | 145  | 291398   | 146  |
| 290035    | 149  | 290308   | 148  | 290498   | 151  | 290736   | 139  | 290918    | 143  | 291000    | 143  | 291440   | 150  |
| 290036    | 144  | 290310   | 148  | 290516   | 151  | 290738   | 139  | 290920    | 143  | 291002/90 | 145  | 291442   | 150  |
| 290037    | 149  | 290316   | 148  | 290518   | 151  | 290739   | 139  | 290922    | 143  | 291002    | 143  | 291444   | 150  |
| 290038    | 144  | 290318   | 148  | 290520   | 151  | 290740   | 139  | 290924    | 143  | 291004/90 | 145  | 291446   | 150  |
| 290039    | 149  | 290320   | 148  | 290522   | 151  | 290742   | 139  | 290926    | 143  | 291050    | 145  | 291448   | 150  |
| 290040    | 144  | 290322   | 148  | 290550   | 152  | 290744   | 139  | 290928    | 143  | 291052    | 145  | 291450   | 150  |
| 290041    | 144  | 290324   | 148  | 290552   | 152  | 290746   | 139  | 290930    | 143  | 291054    | 145  | 291452   | 150  |
| 290042    | 149  | 290326   | 148  | 290554   | 152  | 290748   | 139  | 290932/90 | 144  | 291056    | 145  | 291454   | 150  |
| 290043    | 144  | 290328   | 148  | 290556   | 152  | 290750   | 139  | 290932    | 143  | 291058    | 145  | 291456   | 150  |
| 290044    | 149  | 290330   | 148  | 290558   | 152  | 290751   | 139  | 290934/90 | 144  | 291060    | 145  | 291458   | 150  |
| 290045    | 144  | 290332   | 148  | 290560   | 152  | 290752   | 139  | 290934    | 143  | 291062    | 145  | 291460   | 150  |
| 290046    | 144  | 290334   | 148  | 290617   | 137  | 290754   | 139  | 290936/90 | 144  | 291064    | 145  | 291462   | 150  |
| 290047    | 144  | 290336   | 148  | 290619   | 137  | 290756   | 139  | 290936    | 143  | 291066    | 145  | 291464   | 150  |
| 290048    | 144  | 290338   | 148  | 290620   | 137  | 290770   | 139  | 290938/90 | 144  | 291068    | 145  | 291520   | 150  |
| 290049    | 149  | 290350   | 148  | 290621   | 137  | 290771   | 139  | 290938    | 143  | 291070    | 145  | 291521   | 153  |
| 290050    | 149  | 290352   | 148  | 290622   | 137  | 290773   | 139  | 290940/90 | 144  | 291072    | 145  | 291522   | 150  |
| 290051    | 149  | 290354   | 148  | 290623   | 137  | 290775   | 139  | 290940    | 143  | 291074    | 145  | 291523   | 153  |
| 290052    | 149  | 290356   | 148  | 290624   | 137  | 290776   | 139  | 290942/90 | 144  | 291076    | 145  | 291524   | 150  |
| 290053    | 149  | 290358   | 148  | 290625   | 137  | 290777   | 139  | 290942    | 143  | 291078    | 145  | 291525   | 153  |
| 290054    | 149  | 290360   | 148  | 290626   | 137  | 290778   | 139  | 290944/90 | 144  | 291080    | 145  | 291526   | 150  |
| 290055    | 149  | 290362   | 148  | 290627   | 137  | 290780   | 139  | 290944    | 143  | 291082    | 145  | 291527   | 153  |
| 290056    | 149  | 290364   | 148  | 290628   | 137  | 290782   | 139  | 290946    | 143  | 291084    | 145  | 291528   | 150  |
| 290057    | 149  | 290366   | 148  | 290630   | 137  | 290784   | 139  | 290948/90 | 144  | 291090    | 140  | 291529   | 153  |
| 290058    | 149  | 290368   | 148  | 290632   | 137  | 290786   | 139  | 290948    | 143  | 291092    | 140  | 291530   | 150  |
| 290059    | 149  | 290370   | 148  | 290634   | 137  | 290788   | 139  | 290950/90 | 144  | 291096    | 140  | 291531   | 153  |
| 290060    | 149  | 290372   | 148  | 290635   | 137  | 290800   | 147  | 290950    | 143  | 291098    | 140  | 291532   | 150  |
| 290061    | 149  | 290374   | 148  | 290636   | 137  | 290801   | 147  | 290952/90 | 144  | 291100    | 140  | 291533   | 153  |
| 290063    | 149  | 290380   | 161  | 290637   | 137  | 290802   | 147  | 290952    | 143  | 291102    | 140  | 291534   | 150  |
| 290064    | 149  | 290382   | 161  | 290646   | 137  | 290804   | 147  | 290954/90 | 144  | 291104    | 140  | 291535   | 153  |
| 290065    | 149  | 290404   | 151  | 290648   | 137  | 290806   | 147  | 290954    | 143  | 291106    | 140  | 291536   | 150  |
| 290066    | 149  | 290406   | 151  | 290650   | 137  | 290810   | 147  | 290956/90 | 144  | 291108    | 140  | 291537   | 153  |
| 290067    | 149  | 290408   | 151  | 290652   | 137  | 290812   | 147  | 290956    | 143  | 291110    | 140  | 291538   | 150  |
| 290068    | 149  | 290410   | 151  | 290654   | 137  | 290814   | 147  | 290958/90 | 144  | 291112    | 140  | 291539   | 153  |
| 290069    | 149  | 290412   | 151  | 290656   | 137  | 290816   | 147  | 290958    | 143  | 291114    | 140  | 291540   | 150  |
| 290070    | 149  | 290414   | 151  | 290658   | 137  | 290818   | 147  | 290960/90 | 144  | 291119    | 140  | 291541   | 153  |
| 290071    | 149  | 290416   | 151  | 290660   | 137  | 290820   | 147  | 290960    | 143  | 291120    | 140  | 291542   | 150  |
| 290072    | 149  | 290418   | 151  | 290662   | 137  | 290822   | 147  | 290962/90 | 144  | 291124    | 140  | 291543   | 153  |
| 290073    | 149  | 290420   | 151  | 290663   | 137  | 290824   | 147  | 290962    | 143  | 291126    | 140  | 291544   | 150  |
| 290074    | 149  | 290422   | 151  | 290664   | 137  | 290826   | 147  | 290964/90 | 144  | 291128    | 140  | 291545   | 153  |
| 290075    | 149  | 290424   | 151  | 290666   | 137  | 290830   | 147  | 290964    | 143  | 291130    | 140  | 291546   | 150  |
| 290076    | 149  | 290426   | 151  | 290668   | 137  | 290832   | 147  | 290966/90 | 145  | 291132    | 140  | 291547   | 153  |
| 290077    | 149  | 290428   | 151  | 290670   | 137  | 290834   | 147  | 290966    | 143  | 291134    | 140  | 291548   | 150  |
| 290078    | 149  | 290430   | 151  | 290672   | 137  | 290836   | 147  | 290968/90 | 145  | 291136    | 140  | 291549   | 153  |
| 290079    | 149  | 290432   | 151  | 290676   | 137  | 290840   | 147  | 290968    | 143  | 291138    | 140  | 291550   | 150  |
| 290080    | 149  | 290434   | 151  | 290678   | 137  | 290842   | 147  | 290970/90 | 145  | 291140    | 140  | 291551   | 153  |
| 290081    | 149  | 290436   | 151  | 290680   | 137  | 290844   | 147  | 290970    | 143  | 291142    | 140  | 291552   | 150  |
| 290082    | 149  | 290438   | 151  | 290682   | 137  | 290846   | 147  | 290972/90 | 145  | 291330    | 146  | 291553   | 153  |
| 290083    | 149  | 290440   | 151  | 290684   | 137  | 290848   | 147  | 290972    | 143  | 291332    | 146  | 291554   | 150  |
| 290084    | 149  | 290442   | 151  | 290686   | 137  | 290850   | 147  | 290974    | 143  | 291334    | 146  | 291555   | 153  |
| 290250    | 148  | 290444   | 151  | 290688   | 137  | 290852   | 147  | 290976/90 | 145  | 291336    | 146  | 291700   | 152  |
| 290252    | 148  | 290446   | 151  | 290690   | 137  | 290854   | 147  | 290976    | 143  | 291338    | 146  | 291702   | 152  |
| 290254    | 148  | 290448   | 151  | 290692   | 137  | 290856   | 147  | 290978/90 | 145  | 291340    | 146  | 291704   | 152  |
| 290256    | 148  | 290450   | 151  | 290694   | 137  | 290858   | 147  | 290978    | 143  | 291342    | 146  | 291706   | 152  |
| 290258    | 148  | 290452   | 151  | 290696   | 137  | 290860   | 147  | 290980/90 | 145  | 291344    | 146  | 291708   | 152  |
| 290260    | 148  | 290454   | 151  | 290698   | 137  | 290862   | 147  | 290980    | 143  | 291348    | 146  | 291710   | 152  |
| 290262    | 148  | 290456   | 151  | 290700   | 137  | 290864   | 147  | 290982/90 | 145  | 291350    | 146  | 291712   | 152  |
| 290264    | 148  | 290458   | 151  | 290701   | 137  | 290866   | 147  | 290982    | 143  | 291352    | 146  | 291714   | 152  |
| 290266    | 148  | 290460   | 151  | 290702   | 137  | 290868   | 147  | 290984    | 143  | 291354    | 146  | 291716   | 152  |
| 290268    | 148  | 290462   | 151  | 290704   | 137  | 290870   | 147  | 290985    | 143  | 291356    | 146  | 291718   | 152  |
| 290270    | 148  | 290464   | 151  | 290707   | 137  | 290872   | 147  | 290986/90 | 145  | 291358    | 146  | 291720   | 152  |
| 290272    | 148  | 290466   | 151  | 290708   | 137  | 290874   | 147  | 290986    | 143  | 291360    | 146  | 291722   | 152  |
| 290276    | 148  | 290468   | 151  | 290710   | 137  | 290876   | 147  | 290988/90 | 145  | 291370    | 146  | 291724   | 152  |
| 290278    | 148  | 290470   | 151  | 290712   | 137  | 290878   | 147  | 290988    | 143  | 291372    | 146  | 291726   | 152  |
| 290280    | 148  | 290472   | 151  | 290713   | 137  | 290880   | 147  | 290990/90 | 145  | 291374    | 146  | 291728   | 152  |
| 290282    | 148  | 290474   | 151  | 290714   | 137  | 290882   | 147  | 290990    | 143  | 291376    | 146  | 291730   | 152  |
| 290284    | 148  | 290476   | 151  | 290716   | 137  | 290884   | 147  | 290991    | 143  | 291378    | 146  | 291732   | 152  |
| 290286    | 148  | 290478   | 151  | 290717   | 137  | 290886   | 147  | 290992/90 | 145  | 291380    | 146  | 291734   | 152  |
| 290288    | 148  | 290480   | 151  | 290718   | 137  | 290900   | 143  | 290992    | 143  | 291382    | 146  | 291736   | 152  |

| art. no. | page | art. no. | page | art. no. | page | art. no.  | page | art. no. | page | art. no. | page | art. no. | page |
|----------|------|----------|------|----------|------|-----------|------|----------|------|----------|------|----------|------|
| 291738   | 152  | 292918   | 155  | 293656   | 158  | 294134    | 141  | 363604   | 126  | 790064   | 316  | 790618   | 317  |
| 291740   | 152  | 292920   | 155  | 293664   | 158  | 294138    | 141  | 363606   | 126  | 790065   | 316  | 790700   | 317  |
| 291742   | 152  | 292922   | 155  | 293666   | 158  | 294140    | 141  | 363607   | 126  | 790079   | 316  | 790702   | 317  |
| 291744   | 152  | 292924   | 155  | 293678   | 158  | 294142    | 141  | 363608   | 126  | 790090   | 316  | 790704   | 317  |
| 291746   | 152  | 292926   | 155  | 293680   | 158  | 294144    | 141  | 392010   | 309  | 790091   | 316  | 790706   | 317  |
| 291748   | 152  | 292928   | 155  | 293688   | 158  | 294150    | 142  | 392012   | 309  | 790093   | 316  | 790710   | 317  |
| 291750   | 152  | 292930   | 155  | 293690   | 158  | 294152    | 142  | 392014   | 309  | 790100   | 316  | 790712   | 317  |
| 291752   | 152  | 292932   | 155  | 293810   | 158  | 294154    | 142  | 392016   | 309  | 790101   | 316  | 790714   | 317  |
| 291754   | 152  | 292934   | 155  | 293812   | 158  | 294160    | 142  | 392018   | 309  | 790102   | 316  | 790716   | 317  |
| 291756   | 152  | 292936   | 155  | 293814   | 158  | 294162    | 142  | 392020   | 309  | 790103   | 316  | 790721   | 317  |
| 291758   | 152  | 292938   | 155  | 293816   | 158  | 294164    | 142  | 392022   | 309  | 790104   | 316  | 790722   | 317  |
| 291760   | 152  | 292940   | 155  | 293960   | 157  | 294174    | 142  | 392024   | 309  | 790111   | 316  | 790724   | 317  |
| 291762   | 152  | 292942   | 155  | 293962   | 157  | 294176    | 142  | 392026   | 309  | 790112   | 316  | 790726   | 317  |
| 291764   | 152  | 292944   | 155  | 293964   | 157  | 294184    | 142  | 392028   | 309  | 790113   | 316  | 790806   | 317  |
| 291766   | 152  | 292946   | 155  | 293966   | 157  | 294196    | 142  | 392050   | 308  | 790118   | 316  | 790808   | 317  |
| 291768   | 152  | 292948   | 155  | 293968   | 157  | 294200    | 142  | 392052   | 308  | 790120   | 316  | 790832   | 317  |
| 291770   | 152  | 292950   | 155  | 293970   | 157  | 294202    | 142  | 392054   | 308  | 790121   | 316  | 790834   | 317  |
| 291772   | 152  | 293130   | 160  | 293972   | 157  | 294204    | 142  | 392056   | 308  | 790210   | 316  | 790837   | 317  |
| 291774   | 152  | 293132   | 160  | 293974   | 157  | 294206    | 142  | 392058   | 308  | 790211   | 316  | 790862   | 317  |
| 291776   | 152  | 293134   | 160  | 293976   | 157  | 294208    | 142  | 392060   | 308  | 790212/V | 316  | 790864   | 317  |
| 291778   | 152  | 293136   | 160  | 293978   | 157  | 294210    | 142  | 392062   | 308  | 790212   | 316  | 790867   | 317  |
| 291780   | 152  | 293138   | 160  | 294000   | 141  | 294212    | 142  | 392064   | 308  | 790222   | 316  | 790882   | 317  |
| 291782   | 152  | 293140   | 160  | 294002   | 141  | 294214    | 142  | 392066   | 308  | 790223/V | 316  | 790884   | 317  |
| 292560   | 154  | 293142   | 160  | 294004   | 141  | 294218    | 142  | 392068   | 308  | 790223   | 316  | 790888   | 317  |
| 292562   | 154  | 293144   | 160  | 294006   | 141  | 294220    | 142  | 392070   | 308  | 790224/V | 316  | 790900   | 316  |
| 292564   | 154  | 293146   | 160  | 294008   | 141  | 294222    | 142  | 392072   | 308  | 790224   | 316  | 790902   | 316  |
| 292566   | 154  | 293148   | 160  | 294010   | 141  | 294224    | 142  | 392100   | 307  | 790225   | 316  | 790920   | 316  |
| 292568   | 154  | 293150   | 160  | 294012   | 141  | 294226    | 142  | 392102   | 307  | 790235/V | 316  | 790922   | 316  |
| 292570   | 154  | 293152   | 160  | 294014   | 141  | 294228    | 142  | 392104   | 307  | 790235   | 316  | 792000   | 318  |
| 292572   | 154  | 293154   | 160  | 294016   | 141  | 294230    | 142  | 392106   | 307  | 790236   | 316  | 792001   | 318  |
| 292574   | 154  | 293156   | 160  | 294018   | 141  | 294232    | 142  | 392108   | 307  | 790237   | 316  | 792002   | 318  |
| 292580   | 154  | 293300   | 157  | 294020   | 141  | 294234    | 142  | 392110   | 307  | 790303   | 317  | 792003   | 318  |
| 292582   | 154  | 293302   | 157  | 294022   | 141  | 300033    | 46   | 392112   | 307  | 790311   | 317  | 792005   | 318  |
| 292584   | 154  | 293304   | 157  | 294024   | 141  | 300102    | 288  | 392114   | 307  | 790325   | 317  | 792006   | 318  |
| 292586   | 154  | 293306   | 157  | 294026   | 141  | 300228    | 237  | 392116   | 307  | 790326   | 317  | 792008   | 318  |
| 292588   | 154  | 293308   | 157  | 294028   | 141  | 300229    | 237  | 392118   | 307  | 790327   | 317  | 792600   | 318  |
| 292590   | 154  | 293310   | 157  | 294034   | 141  | 300294/EN | 223  | 392120   | 307  | 790329   | 317  | 792602   | 318  |
| 292592   | 154  | 293312   | 157  | 294036   | 141  | 300295/EN | 223  | 392122   | 307  | 790332   | 317  | 792603   | 318  |
| 292596   | 154  | 293314   | 157  | 294038   | 141  | 300296/EN | 219  | 392124   | 307  | 790333   | 317  | 792604   | 318  |
| 292598   | 154  | 293316   | 157  | 294040   | 141  | 300297/EN | 223  | 393000   | 288  | 790334   | 317  | 792606   | 318  |
| 292600   | 154  | 293318   | 157  | 294044   | 141  | 300298/EN | 219  | 393002   | 288  | 790335   | 317  | 792607   | 318  |
| 292770   | 155  | 293320   | 157  | 294046   | 141  | 300299/EN | 219  | 393004   | 288  | 790411   | 317  | 792650   | 318  |
| 292772   | 155  | 293322   | 157  | 294048   | 141  | 300302/EN | 219  | 393006   | 288  | 790413   | 317  | 792651   | 318  |
| 292774   | 155  | 293324   | 157  | 294050   | 141  | 300303/EN | 223  | 393008   | 288  | 790416   | 317  | 792652   | 318  |
| 292776   | 155  | 293326   | 157  | 294052   | 141  | 300305/EN | 219  | 393010   | 288  | 790417   | 317  | 792654   | 318  |
| 292778   | 155  | 293328   | 157  | 294054   | 141  | 300306/EN | 223  | 393012   | 288  | 790419   | 317  | 792656   | 318  |
| 292780   | 155  | 293330   | 157  | 294056   | 141  | 300310/EN | 218  | 393014   | 288  | 790422   | 317  | 792658   | 318  |
| 292782   | 155  | 293332   | 157  | 294058   | 141  | 300312/EN | 222  | 393016   | 288  | 790423   | 317  | 792756   | 318  |
| 292784   | 155  | 293334   | 157  | 294060   | 141  | 300322    | 24   | 393018   | 289  | 790424   | 317  | 792758   | 318  |
| 292786   | 155  | 293336   | 157  | 294062   | 141  | 300420    | 237  | 393020   | 289  | 790426   | 317  | 792760   | 318  |
| 292788   | 155  | 293338   | 157  | 294064   | 141  | 363500    | 125  | 393022   | 289  | 790428   | 317  | 792762   | 318  |
| 292790   | 155  | 293542   | 156  | 294066   | 141  | 363502    | 125  | 393024   | 289  | 790432   | 317  | 792802   | 318  |
| 292792   | 155  | 293544   | 156  | 294068   | 141  | 363504    | 125  | 393026   | 289  | 790433   | 317  | 792804   | 318  |
| 292794   | 155  | 293546   | 156  | 294070   | 141  | 363510    | 125  | 393028   | 289  | 790434   | 317  | 792806   | 319  |
| 292796   | 155  | 293548   | 156  | 294080   | 141  | 363512    | 125  | 393030   | 289  | 790436   | 317  | 792810   | 319  |
| 292798   | 155  | 293550   | 156  | 294082   | 141  | 363514    | 125  | 393032   | 289  | 790450   | 317  | 792816   | 319  |
| 292800   | 155  | 293552   | 156  | 294084   | 141  | 363520    | 125  | 790005   | 316  | 790452   | 317  | 793005   | 316  |
| 292802   | 155  | 293554   | 156  | 294086   | 141  | 363522    | 125  | 790006   | 316  | 790454   | 317  | 793006   | 316  |
| 292804   | 155  | 293556   | 156  | 294088   | 141  | 363524    | 125  | 790008   | 316  | 790456   | 317  | 793007   | 316  |
| 292806   | 155  | 293558   | 156  | 294094   | 141  | 363530    | 126  | 790015   | 316  | 790470   | 317  | 793008   | 316  |
| 292808   | 155  | 293578   | 158  | 294096   | 141  | 363532    | 126  | 790016   | 316  | 790500   | 317  | 793027   | 316  |
| 292810   | 155  | 293582   | 158  | 294098   | 141  | 363534    | 126  | 790017   | 316  | 790502   | 317  | 793029   | 316  |
| 292812   | 155  | 293584   | 158  | 294100   | 141  | 363536    | 126  | 790018   | 316  | 790504   | 317  | 793030   | 316  |
| 292814   | 155  | 293598   | 158  | 294102   | 141  | 363538    | 126  | 790027   | 316  | 790510   | 317  | 793031   | 316  |
| 292816   | 155  | 293600   | 158  | 294106   | 141  | 363540    | 126  | 790029   | 316  | 790512   | 317  | 793040   | 316  |
| 292818   | 155  | 293606   | 158  | 294108   | 141  | 363542    | 126  | 790030   | 316  | 790514   | 317  | 793041   | 316  |
| 292820   | 155  | 293608   | 158  | 294110   | 141  | 363544    | 126  | 790031   | 316  | 790516   | 317  | 793043   | 316  |
| 292822   | 155  | 293610   | 158  | 294112   | 141  | 363546    | 126  | 790040   | 316  | 790540   | 317  | 793051   | 316  |
| 292824   | 155  | 293622   | 158  | 294114   | 141  | 363548    | 126  | 790041   | 316  | 790542   | 317  | 793053   | 316  |
| 292904   | 155  | 293624   | 158  | 294118   | 141  | 363550    | 126  | 790043   | 316  | 790544   | 317  | 793054   | 316  |
| 292906   | 155  | 293626   | 158  | 294120   | 141  | 363552    | 126  | 790051   | 316  | 790562   | 317  | 793055   | 316  |
| 292908   | 155  | 293634   | 158  | 294122   | 141  | 363554    | 126  | 790053   | 316  | 790564   | 317  | 793064   | 316  |
| 292910   | 155  | 293636   | 158  | 294124   | 141  | 363556    | 126  | 790054   | 316  | 790566   | 317  | 793065   | 316  |
| 292912   | 155  | 293638   | 158  | 294128   | 141  | 363558    | 126  | 790055   | 316  | 790588   | 317  | 793099   | 316  |
| 292914   | 155  | 293652   | 158  | 294130   | 141  | 363600    | 126  | 790056   | 316  | 790592   | 317  | 793100   | 316  |
| 292916   | 155  | 293654   | 158  | 294132   | 141  | 363602    | 126  | 790063   | 316  | 790616   | 317  | 793101   | 316  |

| art. no. | page |
|----------|------|
| 793102   | 316  |
| 793103   | 316  |
| 793104   | 316  |
| 793111   | 316  |
| 793112   | 316  |
| 793113   | 316  |
| 793118   | 316  |
| 793120   | 316  |
| 793121   | 316  |
| 793125   | 316  |

|                 |                                 |
|-----------------|---------------------------------|
| A               | sleeve length                   |
| Al              | aluminium                       |
| B               | flange width                    |
| BL              | blade length                    |
| c               | flange length                   |
| c1              | flange length 1                 |
| c2              | flange length 2                 |
| CL              | cutting length                  |
| Col.            | colour                          |
| Cont.           | content                         |
| crimp           | crimping range                  |
| crimp coaxial   | crimping range coaxial          |
| crimp modular   | crimping range modular          |
| CSS             | cross-section in mm             |
| CSS rm/sm       | cross-section mm/sm             |
| CSS/red.        | conductor cross-section reduced |
| Cu              | copper                          |
| CW              | cutting width                   |
| d1              | internal diameter               |
| d1/red.         | internal diameter reduced       |
| d2              | hole diameter                   |
| d4              | external diameter               |
| depth (D)       | depth in mm                     |
| drive           | drive                           |
| drum/kg         | drum weight in kg               |
| drum/Ø          | drum diameter in mm             |
| drum/width      | drum width in mm                |
| E               | length to middle of hole        |
| empty           | without tools                   |
| H1              | height 1 in mm                  |
| height (H)      | height in mm                    |
| HW              | hammer weight in g              |
| Id.             | identification number           |
| Id. Al          | identification number Al        |
| Id. Cu          | identification number Cu        |
| kg              | weight in kg                    |
| kg/100          | weight in kg/100 pcs.           |
| l               | length in mm                    |
| length (L)      | length in mm                    |
| Load            | load                            |
| Loc.            | locator                         |
| mat.            | material                        |
| mm <sup>2</sup> | diameter in mm <sup>2</sup>     |
| N/Ø             | nail diameter                   |
| NL              | nail length                     |
| No.             | number                          |
| NP              | nominal pressure in bar         |
| Ø               | cross-section in mm             |
| Ø after         | diameter after shrinkage        |
| Ø before        | diameter before shrinkage       |
| Ø/Inch          | diameter in inch                |
| Øbo.            | bolt diameter in mm             |
| PB              | pressing width                  |
| PE/PU           | pricing/packing unit            |
| plug            | plug                            |
| PU              | packing unit                    |
| PW              | press width                     |
| role/G          | role weight in g                |
| rope-Ø          | rope diameter in mm             |
| s               | material thickness              |
| Sbl.            | saw blade length                |
| se              | single core sector              |
| size            | size in mm                      |
| sm              | multiple core sector            |
| strength (St.)  | strength in mm                  |
| TL              | total length in mm              |
| TM              | thread metric                   |
| TMA             | tested/Measured area            |
| v1              | slim pressing                   |
| v2              | wide pressing                   |
| width (B)       | width in mm                     |
| WS              | wrench size                     |

**HAUPA transparent /  
Foreign representatives**



## HAUPA-Group

**Germany** (HAUPA Main Office)  
**HAUPA GmbH & Co. KG**  
 Königstraße 165-169  
 D-42853 Remscheid  
 Phone: +49 (0) 2191 8418 0  
 Fax: +49 (0) 2191 8418 840  
 E-Mail: sales@haupa.com, info@haupa.com  
 Internet: www.haupa.com

**Austria**  
**HAUPA Werkzeuge Hans-Udo Paas**  
 Bayernstraße 39  
 A-5071 Wals-Siezenheim  
 Phone: +43 (0662) 854717  
 Fax: +43 (0662) 854632  
 E-Mail: haupa.austria@haupa.com

**Spain**  
**HAUPA Ibérica S. L.**  
 C/. Joanot Martorell, 36  
 E-08850 Gava/Barcelona  
 Phone: +34 (902) 313135  
 Fax: +34 (902) 414145  
 E-Mail: comercial@haupa.es

**Poland**  
**HAUPA Polska Sp. z o.o.**  
 ul. Norwida 11  
 55100 Trzebnica  
 Phone: +48 (0)71 387 48 13  
 Fax: +48 (0)71 387 48 14  
 E-Mail: haupa@haupa.pl

**Russia**  
**HAUPA-RU Ltd**  
 ul. Industrialnaya, 9/1,  
 180021 Pskov, RUSSIA  
 Phone: +7 (8112) 29-28-78  
 Fax: +7 (8112) 29-28-79  
 E-Mail: russia@haupa.com  
 www.haupa-ru.ru

**Baltic States**  
**UAB HAUPA Baltics**  
 Žirmunu g. 139 - 318  
 09120 Vilnius  
 GSM: +370 699 633 63  
 E-Mail: andrius.krisiunas@haupa.com  
 www.haupa.com

**Balkan States**  
**HAUPA S.E.E. d.o.o.**  
 Miroslava Krljeze 24, 71000 Sarajevo  
 Phone/Fax: +387(0)33545725  
 GSM: +38763891678  
 E-Mail: goran.hrgovic@haupa.com

**Romania**  
**SC HAUPA SRL**  
 Str. G. Enescu, Nr. 3  
 331030 Hunedoara  
 GSM: +4 0744 561 567  
 Fax: +4 0354 407 994  
 E-Mail: mihai.lupu@haupa.com

**Portugal**  
**HAUPA Portugal**  
 Rua Álvaro Ferreira Alves, 15 C  
 Zona Industrial de St<sup>a</sup>. Marta do Pinhal  
 2855-591 CORROIOS  
 Mobile Phone: +351 961660713  
 Phone Number: +351 302000330  
 E-Mail: luis.esteves@haupa.com

## Commercial sales staff, Germany

**Hans-Joachim Gummersbach** (HAUPA Main Office)  
**HAUPA GmbH & Co. KG**  
 Königstraße 165-169  
 D-42853 Remscheid  
 Phone: +49 (0) 2191 8418 0  
 Fax: +49 (0) 2191 8418 840  
 E-Mail: joachim.gummersbach@haupa.com

**Rainer Eiselt**  
**Industrievertretungen**  
 Südstraße 4  
 09221 Neukirchen  
 Phone: +49 (0) 371 271050  
 Fax: +49 (0) 371 2710518  
 E-Mail: info@iv-eiselt.de  
**Sachsen/Sachsen-Anhalt/Thüringen**

**Kittler Elektro-Vertriebs GmbH**  
**Industrievertretung**  
 Attilastr. 73  
 12247 Berlin  
 Phone: +49 (0) 30 77430-73  
 Fax: +49 (0) 30 77430-82  
 E-Mail: Kittlerindustrie@aol.com  
**Berlin/Brandenburg**

**Hans Fr. R. Petersen KG**  
**Vertretungen der Elektroindustrie**  
 Nikolaus-Otto-Straße 17  
 22946 Trittau  
 Phone: +49 (0) 4154 841821  
 Fax: +49 (0) 4154 841833  
 E-Mail: hans\_fr.r.petersen@t-online.de  
**Hamburg/Schweswig-Holstein/  
 Mecklenburg-Vorpommern**

**Markus Hermann**  
**Technischer Berater im Außendienst**  
 Königstraße 165-169  
 D-42853 Remscheid  
 Phone: +49 (0) 2191 8418 210  
 Fax: +49 (0) 2191 8418 840  
 GSM: +49 (0) 160 972 624 95  
 E-Mail: markus.hermann@haupa.com  
**NRW-Ost/Niedersachsen/Hannover/Bremen**

**Sönnecken GmbH**  
**Industrie-Vertretungen**  
 Wildermannstr. 8  
 44141 Dortmund  
 Phone: +49 (0) 231 5600012  
 Fax: +49 (0) 231 590607  
 E-Mail: soenneckengmbh@t-online.de  
**NRW Ruhrgebiet**

**Carsten Potrz**  
**Industrievertretung**  
 Hausinger Straße 8  
 40764 Langenfeld  
 Phone: +49 (0) 2173/1657923  
 Fax: +49 (0) 2173/1657926  
 Mobile Phone: 0170/8114074  
 E-Mail: potrz@cpiv.de  
 Web: www.cpipv.de  
**NRW Rheinland**

**Außenbüro NRW Rheinland**  
 Karl Kleemann  
**Industrievertretung**  
 Löhdorfer Str. 257  
 42699 Solingen  
 Phone: +49 (0) 212/64568156  
 Mobile Phone: 0174/2193743  
 E-Mail: karl.kleemann@emeatec.com  
 Web: www.emeatec.com  
**NRW Rheinland**

**Hipp-Industrievertretungs-GmbH**  
 Zum Engelberg 4  
 79249 Merzhausen  
 Phone: +49 (0) 761 402425  
 Fax: +49 (0) 761 408351  
 GSM: +49 (0) 172 7648217  
 E-Mail: info@hipp-gmbh-fr.de  
**Baden-Württemberg/Pfalz/Region Rhein-Neckar**

**Bernd Schneiderheinze**  
**Elektro-Vertretungen**  
 Mühlsteig 20  
 90579 Langenzenn  
 Phone: +49 (0) 9101 904810  
 Fax: +49 (0) 9101 904825  
 E-Mail: elektro@schneiderheinze.de  
**Nordbayern**

**Wolfgang Humig**  
**Handelsvertretung**  
 Rossinistr. 37 b  
 85057 Ingolstadt  
 Phone: +49 (0) 841 / 99 32 764  
 Fax: +49 (0) 841 / 99 32 765  
 E-Mail: w.humig@humig.de  
**Südbayern**

**Bernd Oedekoven GmbH**  
**Werkstattvertretungen**  
 Rudolf-Diesel-Straße 11  
 56220 Urmitz (Gewerbegebiet)  
 Phone: +49 (0) 2630/9635-0  
 Fax: +49 (0) 2630/963535  
 E-Mail: info@oedekovengmbh.de  
**Rheinland-Pfalz/Saarland**

**Außenbüro Trier/Saarbrücken**  
 Franz Josef Kirchen  
**Bernd Oedekoven GmbH**  
 Schillinger Weg 10  
 54421 Reinsfeld  
 GSM: +49 (0) 176 19635502  
 E-Mail: fjk@oedekovengmbh.de

**Schaum Industrievertretung GmbH**  
 Rheinstraße 8  
 35625 Hüttenberg  
 Tel: 06403/9119-0  
 Fax: 06403/9119-20  
 info@schaum-net.de  
**Hessen**

## Commercial sales staff, Austria

### Ing. Reinhold Wolfsgrubner

M. Schurrer & Co. GmbH  
Bayernstraße 39  
A-5071 Wals-Siezenheim  
Phone: 0664/43 14 4 31 | 0662/85 47 00-11  
E-Mail: reinhold.wolfsgrubner@schurrer.at

### Sales management Austria

### Andrä Eberharter

Pipelife Austria GmbH & Co. KG  
Bert-Köllensperger-Straße 8a  
6065 Thaur/Gewerbegebiet  
Phone: 0664/122 65 24  
E-Mail: andrae.eberharter@pipelife.at

### Vorarlberg, Tirol

### Klaus Gutenbrunner

M. Schurrer & Co. GmbH  
Bayernstraße 39  
A-5071 Wals-Siezenheim  
Phone: 0664/444 95 49  
E-Mail: klaus.gutenbrunner@schurrer.at

### Oberösterreich

### Alex Cenker

M. Schurrer & Co. GmbH  
Bayernstraße 39  
A-5071 Wals-Siezenheim  
Phone: 0664/260 78 78  
E-Mail: alex.cenker@schurrer.at

### Wien, Niederösterreich, Burgenland

### Ing. Stefan Greisberger

M. Schurrer & Co. GmbH  
Bayernstraße 39  
A-5071 Wals-Siezenheim  
Phone: 0664/888 714 11  
E-Mail: stefan.greisberger@schurrer.at

### Salzburg

### Uwe Sottovia

M. Schurrer & Co. GmbH  
Bayernstraße 39  
A-5071 Wals-Siezenheim  
Tel.: 0664/122 65 28  
E-Mail: uwe.sottovia@schurrer.at

### Steiermark, Kärnten

## Commercial sales staff, Spain

### HAUPA Iberica Central

Phone: +34 (902) 31 31 35  
Fax: +34 (902) 41 41 45  
E-Mail: comercial@haupa.es

### Rubén Mestanza Portales

Phone: +34 (902) 31 31 35  
Fax: +34 (902) 41 41 45  
E-Mail: ruben.mestanza@haupa.com  
Zona: **Canarias, Segovia, Avila, Toledo, Ciudad Real, Soria y Teruel**

### Red Levante

**José Vicente Antón**  
Móvil: 667-50-71-47  
E-Mail: josevicente@redlevante.com

### Fermin Ortega

Móvil: 667-46-56-72  
E-Mail: fermin@redlevante.com  
Zona: **Alicante, Albacete, Cuenca y Murcia**

### Juan Campos Rangel

Móvil: 609-44-77-09  
E-Mail: jcguati@hotmail.com  
Zona: **Extremadura**

### Albert Pérez Gaona

Móvil: 600-52-05-02  
E-Mail: albert7perez@telefonica.net  
Zona: **Cataluña**

### Granarep (Teodoro Jerez)

Móvil: 600-51-24-94  
E-Mail: granarep@granarep.com  
Zona: **Granada y Almería**

### Antonio Hueso Pérez

Móvil: 617-41-96-54  
E-Mail: antoniohueso@antoniohueso.es  
Zona: **Jaén y Córdoba**

### Angel Lopez García

Móvil: 647-52-53-23  
E-Mail: angel.lopezgarcia@orange.es  
Zona: **Madrid y Guadalajara**

### Jose M<sup>a</sup> González

Móvil: 610-71-01-00  
E-Mail: jmaria.chiqui@gmail.com  
Zona: **Málaga**

### Antonio Duran (MELEC)

Móvil: 640-15-09-23  
E-Mail: comercial@melecs.com  
Zona: **Galicia**

### Juan Luís Gomez Andana

Móvil: 670-22-74-88  
E-Mail: gomezandana@vodafone.es  
Zona: **Sevilla, Huelva y Cádiz**

### Antonella García

Móvil: 615-010-500  
E-Mail: tecnicoantonella@gmail.com  
Zona: **Castellón, Valencia, Islas Baleares**

### Ignacio Menaya

Móvil: 656-19-46-21  
E-Mail: ignacio@menaya.e.movistar.es  
Zona: **Aragón y La Rioja**

## Commercial sales staff, Poland

### Andrzej Ryznar

55-100 Trzebnica  
ul. Norwida 11  
Phone: +48 71 387 48 13  
Fax: +48 71 387 48 14  
E-Mail: ryznar@haupa.pl

### Marek Dąbek

55-100 Trzebnica  
ul. Norwida 11  
Phone: +48 71 387 48 13  
Fax: +48 71 387 48 14  
Phone: com. +48 693-431-542  
E-Mail: dabek@haupa.pl

### Jakub Bałaziński

55-100 Trzebnica  
ul. Norwida 11  
Phone: +48 71 387 48 13  
Fax: +48 71 387 48 14  
Phone: com. +48 603-719-731  
E-Mail: balazinski@haupa.pl

### Andrzej Bednarczyk

55-100 Trzebnica  
ul. Norwida 11  
Phone: +48 71 387 48 13  
Fax: +48 71 387 48 14  
Phone: com. +48 601-181-181  
E-Mail: bednarczyk@haupa.pl



## Argentina

### Hoyos y Cia S. R. L.

Calle 62 (Cuba) No. 1561 (CP 1651)  
1651 San Andres  
Phone: +54 114 754 165  
Fax: +54 114 753 810  
E-Mail: hoyos@hoyos.com.ar



## Australia

### TransNet Equipment Pty Ltd

Unit 20, 8 Hurley Street  
Canning Vale WA 6155  
Phone: +61 8 9256 3417  
Fax: +61 8 9256 3917  
E-Mail: sales@transnetequipment.com



## Belgium

### S.A. HUPPERTZ N.V.

Rue Golden Hope Straat 35 B  
B-1620 Drogenbos  
Phone: 02/334 34 34  
Fax: 02/334 34 40  
E-Mail: info@huppertz.be



## Bosnia

### HAUPA S.E.E. d.o.o.

Miroslava Krleze 24  
71000 Sarajevo  
Phone/Fax: +387(0)33545725  
GSM: +38763891678  
E-Mail: goran.hrgovic@haupa.com



## Bulgaria

### Retra-Georgiev

21 Vek 54  
BG-1700 Sofia  
Phone/Fax: +359 2 8687207  
GSM: +359888331018  
E-Mail: retrana@abv.bg



## Chile

### Santander Import Chile S.P.A.

Exequiel Fernández 2822,  
Macul, Chile  
Phone: 00562 4548062  
E-Mail: oluengo@santanderimport.cl



## Denmark

### Direct support by HAUPA Main Office/

Export Dept. Mrs. Kerstin Uebbert  
Phone: +49 2191 8418-0  
Fax: +49 2191 8418-880  
E-Mail: kerstin.uebbert@haupa.com  
www.haupa.com



## Estonia

### UAB HAUPA Baltics

Žirmunu g. 139 - 318  
09120 Vilnius  
GSM: +370 699 633 63  
E-Mail: andrius.krisiunas@haupa.com  
www.haupa.com



## Finland

### UAB HAUPA Baltics

Žirmunu g. 139 - 318  
09120 Vilnius  
GSM: +370 699 633 63  
E-Mail: andrius.krisiunas@haupa.com  
www.haupa.com



## France

### T.P.H. SA

ZA la Doller  
100 rue du Rail - BP 58  
68460 LUTTERBACH - France  
Phone: +33 03 89 53 52 22  
Fax: +33 03 89 50 01 59  
E-Mail: info@tph.fr  
www.tph.fr



## Greece

### Technomat S.A.

Industrial Area of Sindos,  
57022 Thessaloniki  
Phone: +30 2310 777000  
Fax: +30 2310 797998  
E-Mail: technomat@technomat.gr  
www.technomat.gr



## Großbritannien

### CEE Norm U.K. LTD

Unit 2, Highbridge Court, Stafford Park  
Telford, Shropshire TF3 3BD  
Phone: +44 1952 212 700  
Fax: +44 1952 212 711  
E-Mail: sales@ceenorm.co.uk



## India

### Electro Crimp Contacts (I) Pvt. Ltd.

44/17/1, M.I.D.C, Satpur  
422007 Nasik, Maharashtra  
Phone: 0091 0253 2350838  
Fax: 0091 0253 2354948  
Mobil: 9850888866  
E-Mail: harshad@eccipl.com  
www.eccipl.com



## Ireland

### MCC Controls Ltd.

Robinhood Business Park  
Robinhood Road, Dublin 22  
Phone: +353 14506450  
Fax: +353 14506104  
E-Mail: nfo@mcc-controls.com



## Iceland

### Smith & Norland

Nóatúni 4  
IS-105 Reykjavik  
Phone: 00354 520 3000  
Fax: 00354 520 3011  
E-Mail: hallan@smn.or.is



## Italy

### E.S.co. soci del sole srl

Via E. Mattei, 1  
27020 Marcignago (PV)  
Phone: +39 0382 921755 / 921774  
Fax: +39 0382 921828  
E-Mail: info@intercontrol.it



## Croatia

### HAUPA S.E.E. d.o.o.

Miroslava Krleze 24  
71000 Sarajevo  
Phone/Fax: +387(0)33545725  
GSM: +38763891678  
E-Mail: goran.hrgovic@haupa.com



## Latvia

### UAB HAUPA Baltics

Žirmunu g. 139 - 318  
09120 Vilnius  
GSM: +370 699 633 63  
E-Mail: andrius.krisiunas@haupa.com  
www.haupa.com



## Lithuania

### UAB HAUPA Baltics

Žirmunu g. 139 - 318  
09120 Vilnius  
GSM: +370 699 633 63  
E-Mail: andrius.krisiunas@haupa.com  
www.haupa.com



## Luxembourg

### MINUSINES S.A.

8, rue Hogenberg  
L-1022 Luxembourg-Gasperich  
Phone: +352 495 858  
Fax: +352 495 866  
E-Mail: minlu@pt.lu



## Malta

### VCT Ltd.

Ponsomy Street  
Mosta, MST 4032  
Phone: +356 2143 2571  
Fax: +356 2143 6186  
E-Mail: info@vct.com.mt



## Macedonia

### HAUPA S.E.E. d.o.o.

Miroslava Krleze 24  
71000 Sarajevo  
Phone/Fax: +387(0)33545725  
GSM: +38763891678  
E-Mail: goran.hrgovic@haupa.com



## Mexico

### Ekom Industrie Komponenten S.A. de C.V.

Calle 2 Sur 1003-B, Chipilo de Francisco Javier Mina  
C.P. 74325, San Gregorio Atzompa, Puebla, Mexico  
Tel.: / Fax: +52 (222) 283 11 33  
E-Mail: jpmorales@ekommexico.com  
www.ekommexico.com



## New Zealand

### TransNet NZ Ltd

78 Cryers Road, East Tamaki  
Auckland 2013  
Phone: +64 9 274 3340  
Fax: +64 9 274 5490  
E-Mail: sales@transnet.co.nz



## Netherlands

### Richard Woestenenk

Telefoon: +31 612885793 (GSM)  
E-Mail: richard.woestenenk@haupa.com  
www.haupa.com



## Norway

### VIX AS

Stabburveien 24  
1617 Fredrikstad  
Phone: ++47 69 36 00 50  
Fax: ++47 69 34 76 70  
E-Mail: post@vixnordic.com



## Austria

### HAUPA Werkzeuge Hans-Udo Paas

Bayernstraße 39  
A-5071 Wals-Siezenheim  
Phone: +0662 85 47 17  
Fax: +0662 85 46 32  
E-Mail: haupa.austria@haupa.com



## Poland

### HAUPA Polska Sp. z o.o.

ul. Norwida 11  
55100 Trzebnica  
Phone: +48 (0)71 387 48 13  
Fax: +48 (0)71 387 48 14  
E-Mail: haupa@haupa.pl



## Portugal

### HAUPA Portugal Rua Álvaro Ferreira Alves

15 C, Zona Industrial de Stª. Marta do Pinhal  
2855-591 CORROIOS  
Mobile Phone: +351 961660713  
Phone Number: +351 302000330  
E-Mail: luis.esteves@haupa.com



## Romania

### SC HAUPA SRL

331059 Hunedoara  
Bulevard 1848, Nr. 13, Ap. 6  
GSM: +4 0744 561 567  
Fax: +4 0354 407 994  
E-Mail: mihai.lupu@haupa.com



## Russia

**HAUPA-RU Ltd**  
 ul. Industrialnaya, 9/1,  
 180021 Pskov, RUSSIA  
 Tel.: +7 (8112) 29-28-78  
 Fax: +7 (8112) 29-28-79  
 E-Mail: russia@haupa.com  
 www.haupa-ru.ru



## Sweden

**VIX AS**  
 Stabburveien 24  
 1617 Fredrikstad  
 Phone: ++47 69 36 00 50  
 Fax: ++47 69 34 76 70  
 E-Mail: post@vixnordic.com



## Switzerland

**AXTRON GmbH**  
 Hungerbuelstr. 22  
 CH-8500 Frauenfeld  
 Phone: 0041 / 527 21 58 58  
 Fax: 0041 / 527 21 58 59  
 E-Mail: info@axtron.ch



## Serbia

**HAUPA S.E.E. d.o.o.**  
 Miroslava Krleze 24  
 71000 Sarajevo  
 Phone/Fax: +387(0)33545725  
 GSM: +38763891678  
 E-Mail: goran.hrgovic@haupa.com



## Slovakia

**HAUPA Main Office Germany, Marc Wolter**  
 Phone: +49 2191 8418-0  
 Fax: +49 2191 8418-840  
 E-Mail: marc.wolter@haupa.com  
 www.haupa.com



## Slovenia

**HAUPA S.E.E. d.o.o.**  
 Miroslava Krleze 24  
 71000 Sarajevo  
 Phone/Fax: +387(0)33545725  
 GSM: +38763891678  
 E-Mail: goran.hrgovic@haupa.com



## Spain

**HAUPA Ibérica S. L.**  
 C/. Joanot Martorell  
 36, E-08850 Gava/Barcelona  
 Phone: (902) 313135  
 Fax: (902) 414145  
 E-Mail: comercial@haupa.es



## South Africa

**Surge Technology (Pty) Ltd.**  
 18-20 Arbeid Avenue, Strydom Park  
 Randburg 2125  
 Phone: +27 (0) 11 792-1303/4/5  
 Fax: +27 (0) 11 793-6928  
 E-Mail: info@surgetec.co.zam



## Czechia

**ELIMA ELEKTRO s.r.o.**  
 Hradecká 506  
 506 01 Jičín  
 Phone: +420 493 524 390  
 Fax: +420 493 525 720  
 E-Mail: objednavky@elima.cz



## Ukraine

### TEKO INTERFACE TOB

ul. Lomonosova, 73 g  
 03189 Kiev  
 Phone: +38 044 374-06 -40  
 Fax: +38 044 374-06- 42  
 E-Mail: info@tekointerface.com.ua  
 tekointerface.com.ua



## Ukraine

### Scientific-Produktion Firm, ElectroDinamika

Isaevskaya Str. 5  
 61033 Kharkov  
 GSM: +38 (057) 704-15-41  
 Fax: +38 (057) 715-79-98  
 E-Mail: office@electrodinamika.com  
 www.electrodinamika.com.ua



## Hungary

### POLY-NORM 2000 Kft.

Lócsei út 81.  
 1147 Budapest  
 Phone: +361/461-0170  
 Fax: +361/321-1618  
 E-Mail: haupa@polynom2000.hu



## Belarus

### UAB HAUPA Baltics

P. Smugleviciaus g. 8-30  
 08311 Vilnius  
 GSM: +370 699 633 63  
 Fax: +370 527 841 64  
 E-Mail: andrius.krisiunas@haupa.com



## Central America

### INTEK

Guatemala, El Salvador, Honduras,  
 Nicaragua, Costa Rica  
 www.intek-ca.com



## Cyprus

### HAUPA Main Office Germany

Phone: +49 2191 8418-0  
 Fax: +49 2191 8418-840  
 E-Mail: sales@haupa.com  
 www.haupa.com

## Contact



## Point of sales

### HAUPA Shop in Shop Sales System

**A well-stocked display of tools at the point of sale is the hallmark of every good electrical wholesaler and offers customers the full service they need.**

Within this complete customer-focussed presentation concept, your clients will find a wide range of HAUPA quality tools and the materials to go with them. It includes tools from the „Around the cable“, „Working under tension“ and „Standard program“ ranges and offers the user a very high degree of flexibility.



Cupboards with lockable glass door. Perforated panel displays also available in 1.00m and 1.25 m width.  
Dimensions: 2,20 m x 1,25 m x 40 cm. (The entire list of items available for display on the panels can be viewed on the internet or by mailing [info@haupa.com](mailto:info@haupa.com)).

### HAUPA Sales promotion

On request, HAUPA also naturally supplies individual cabinets and wall displays fitted out with your own choice of tools.

Our different resenatation models offer possibilities for your sales area which are both interesting and variable.

# HAUPA pliers module for wall displays, cabinets and counter



Art. No. 220346

## Pliers module, 2C pliers

42 pliers

| Art. No. | Description                         | Piece |
|----------|-------------------------------------|-------|
| 210053   | Combination pliers, 180 mm          | 6     |
| 210068   | Diagonal cutter, 160 mm             | 6     |
| 210157   | Heavy duty diagonal cutter, 180 mm  | 6     |
| 210158   | Heavy duty diagonal cutter, 200 mm  | 6     |
| 210396   | Long chain nose pliers, 200 mm      | 6     |
| 210398   | Long chain nose pliers, 45°, 200 mm | 6     |
| 210644   | Wire stripping pliers, 160 mm       | 6     |

Dimensions: 47 cm x 13 cm x 22 cm (w x h x d)



Art. No. 220349

## Pliers module, VDE pliers

sheathed handles - 1000 V - 42 pliers

| Art. No. | Description                                 | Piece |
|----------|---|-------|
| 211200   | Combination pliers, 185 mm                  | 3     |
| 211202   | Combination pliers, 205 mm                  | 3     |
| 211203   | Diagonal cutter, stripping function, 165 mm | 3     |
| 211204   | Diagonal cutter, 165 mm                     | 3     |
| 211217   | Heavy duty diagonal cutter, 170 mm          | 3     |
| 211219   | Heavy duty diagonal cutter, 205 mm          | 3     |
| 211226   | Cable cutter, 170 mm                        | 3     |
| 211228   | Cable cutter, 230 mm                        | 3     |
| 211225   | Cable cutter, 160 mm                        | 3     |
| 211223   | Cable cutter, 200 mm                        | 3     |
| 211208   | Long chain nose pliers, 200 mm              | 3     |
| 211210   | Long chain nose pliers, 45°, 200 mm         | 3     |
| 211214   | Wire stripping pliers, 160 mm               | 3     |
| 211221   | Water pump pliers, 240 mm                   | 3     |



Art. No. 220350

## Pliers module, VDE pliers

coating-insulation - 1000 V - 21 pliers

| Art. No. | Description                         | Piece |
|----------|-------------------------------------|-------|
| 210058   | Combination pliers, 200 mm          | 3     |
| 210388   | Long chain nose pliers, 200 mm      | 3     |
| 210390   | Long chain nose pliers, 45°, 200 mm | 3     |
| 210117   | Heavy duty diagonal cutter, 170 mm  | 3     |
| 210119   | Heavy duty diagonal cutter, 205 mm  | 3     |
| 210102   | Diagonal cutter, 185 mm             | 3     |
| 210648   | Wire stripping pliers, 160 mm       | 3     |



Dimensions:  
73 cm x 220 cm x 45 cm (w x h x d)

- **easy mounting**
- **individual arrangements possible**
- **coloured labels**
- **clear product display**



Dimensions:  
41 cm x 58 cm x 18 cm  
(w x h x d)



Dimensions:  
40 cm x 163 cm x 35 cm  
(w x h x d)

# Screwdrivercenter



Art. No. 220360

## 2C VDE Screwdriver center

1000 V - 50 screwdrivers

| Art. No. | Description     | Piece |
|----------|-----------------|-------|
| 101910   | Slott 2,5 x 75  | 6     |
| 101916   | Slott 4,0 x 100 | 6     |
| 101918   | Slott 5,5 x 125 | 5     |
| 101920   | Slott 6,5 x 150 | 5     |
| 101940   | PH 0            | 6     |
| 101942   | PH 1            | 6     |
| 101944   | PH 2            | 5     |
| 101952   | PZ 1            | 6     |
| 101954   | PZ 2            | 5     |

Dimensions: 33,0 cm x 33,0 cm x 17,5 cm (w x h x d)



Art. No. 220354

## 2C Screwdriver center

52 screwdrivers, standard

| Art. No. | Description     | Piece |
|----------|-----------------|-------|
| 101520   | Slott 2,5 x 75  | 6     |
| 101522   | Slott 4,0 x 100 | 6     |
| 101524   | Slott 4,0 x 125 | 6     |
| 101526   | Slott 5,0 x 150 | 6     |
| 101542   | PH 0            | 6     |
| 101544   | PH 1            | 6     |
| 101546   | PH 2            | 5     |
| 101550   | PZ 1            | 6     |
| 101552   | PZ 2            | 5     |



Art. No. 220365

## 2C VDE Screwdriver center Tx

1000 V - 52 screwdrivers

| Art. No. | Description     | Piece |
|----------|-----------------|-------|
| 101850   | Tx 8 100 x 3,0  | 6     |
| 101852   | Tx 9 100 x 3,0  | 6     |
| 101854   | Tx 10 100 x 3,0 | 6     |
| 101856   | Tx 15 100 x 3,5 | 6     |
| 101858   | Tx 20 100 x 4,0 | 6     |
| 101860   | Tx 25 125 x 4,5 | 6     |
| 101862   | Tx 27 125 x 5,5 | 6     |
| 101864   | Tx 30 150 x 6,5 | 5     |
| 101866   | Tx 40 175 x 8,0 | 5     |



Art. No. 220364

## 2C Screwdriver center Tx

52 screwdrivers, standard

| Art. No. | Description           | Piece |
|----------|-----------------------|-------|
| 101229/6 | Tx 6 100 x 2,0        | 6     |
| 101230   | Tx 8 100 x 2,5        | 6     |
| 101200   | Tx 9 100 x 2,5        | 6     |
| 101202   | Tx 10 100 x 3,0       | 6     |
| 101204   | Tx 15 100 x 3,0 - 3,5 | 6     |
| 101206   | Tx 20 100 x 3,5 - 4,0 | 6     |
| 101208   | Tx 25 125 x 4,0 - 5,0 | 6     |
| 101210   | Tx 27 125 x 4,5 - 5,0 | 5     |
| 101211   | Tx 30 150 x 6,0 - 7,0 | 5     |



**QR codes:**

This catalogue contains QR codes which ensure more transparent communication of additional information via video or similar media content.

Germany  
**HAUPA GmbH & Co. KG**  
Königstraße 165-169  
42853 Remscheid  
Phone: +49 (0)2191 84 18-0  
Fax: +49 (0)2191 84 18 840  
E-Mail: sales@haupa.com  
www.haupa.com

