



Best products
for automotive service,
car and truck garages!



Explanations

In our catalogue you will find several pictograms beside the text description.

They should be helpful for a quick and easier explanation of the articles and their attributes.

	Protection (IP-Code) acc. to DIN 40050 IEC 60529 etc.
	Pattern protection against solid particles $\varnothing > 1\text{mm}$
	Splash water resistant pattern
	Drip water resistant
	Drip water resistant
	Dust and spray water resistant pattern
	Dust and splash water resistant pattern
	Dust and drip water proof
	Dust and spray water proof pattern
	Dust and splash water resistant pattern
	Dust- and jet water proof pattern
	Water- and oil tight pattern (at times)
	Water- and oil tight pattern (timeless)
	Article is explosion proof
	Article with UL certificate (american safety norm)

	Manufacturing process
	Article with laser-engraved scale / graduation
	Article with etched scale / graduation
	Pad print

	Icons for data process
	RS232 data output by data cable
	Opto RS232 data output
	Proximity data output, inductive, contactless
	Data output by USB and data cable
	Software on CD-Rom

	Several Icons
	Measuring- and weighing-unit selectable or switchable
	Suitable battery included
	Suitable battery included
	Suitable cell-battery included
	Suitable cell-battery included
	Suitable cell-battery included
	Suitable cell-battery included
	Suitable cell-battery included
	Accu
	Power supply
	Laser protection class
	Magnetic power
	Induction
	Laser wavelength
	Shock proof
	Stand out

	Product specifications
	Caliper jaw length
	Measuring internal dimension
	Caliper cross jaws
	Depth gauge
	Thumb roll
	Fine adjustment
	Thread pitch
	Measuring inside
	Measuring outside
	Pointer rotation
	Setting gauge

	Norms, accuracy-classes, regulations
EC I	Article fulfils the respective EC Class standard
EC II	Article fulfils the respective EC Class standard
E1	Article fulfils the respective verification standard
EN 61326	Article fulfils the respective norm standard
CC	Workshop calibration certificate, inclusive
TC	Article with test certificate, marked with Ident.-No.
CE	Article with CE classification
	Article with seal: „TÜV/Geprüfte Sicherheit (GS)“
	Article with seal: „TÜV“
MID CODE	Directive of the European Parliament and of the Council on measuring instruments
DIN	Article fulfils the respective DIN Standard
DIN EN	Article fulfils the respective DIN EN Standard
DIN ISO	Article fulfils the respective DIN ISO Standard
DIN VDE	Article fulfils the DIN VDE Standard
	Article is manufactured in acc. with workshop grade
ASTM	Article fulfils the respective American Standard
BS	Article fulfils the respective British Standard Norm
JIS K	Article fulfils the respective Japanese Standard

	Art of packing for each article
	Article is packed in a carton box
	Article is packed in a sturdy plastic box
	Article is packed in a wooden case
	Article is packed in a sturdy carrying case
	Article is packed in a leatherette pouch
	Article is packed in a PVC pouch
	Article is packed in a sleeve
	Article is packed in a sturdy metal box
	Article is sealed in a foil
	Article is packed in a SB plastic pouch with hanger
	Article comes with wall hanging card
	Article is in blister packing
	Article in clear plastic box
	Carry bag, for outdoor use, with zip
	Article will be despatched on a pallet

	Several Icons
	Article-Number
	Reading / Resolution
	Weight in kg
	Cross section of the article
	Max. total accuracy (\pm)
	Repeatability (\pm)
	Individual measuring range
	Article dimension

© This catalogue is with copyright of Vogel Germany GmbH & Co. KG. Reproduction is permitted only with explicit permission of the publisher. Vogel Germany GmbH & Co. KG is not responsible for printing errors or misrepresentations in this catalog, for the product descriptions, tech. information and illustrations. We reserve the right to change without notice. Illustrations and descriptions are correct at the time of going to press. Changes without prior notice are expressly reserved. Illustrations and weights without obligation.

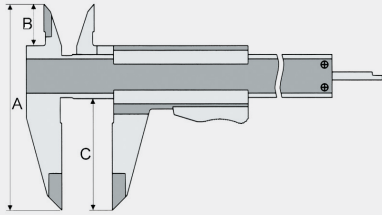
ATTENTION
We charge transport- and packing costs for articles marked with * !

Factory- or „DKD“-Calibration (German Calibrate Service)
Calibrated instruments available for extra charge. Please send us your specific inquiry.

BLUE-LINE® Pocket vernier caliper
DIN 862

Suitable for workshop use (standard).

- stainless steel, hardened
- scale and vernier satin chrome finish
- jaws fine ground and lapped
- mono-block vernier
- 4-way measuring system
- flat depth gauge

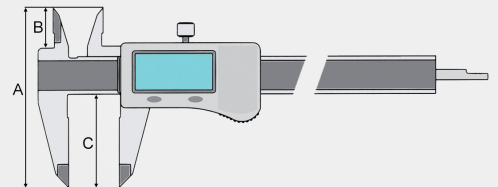


ART No	Type	mm / inch	mm	inch	A mm	B mm	C mm	Surface	Weight (KG)
20 1021	Thumb locking	150 / 6	0.05	1/128	77	16	40	flat	0.145
20 1031	Fixing screw	150 / 6	0.05	1/128	77	16	40	flat	0.144

DIGI-PLUS-LINE® Electr. digital caliper
DIN 862

With plastic housing.

- stainless steel, hardened
- large LCD display with clear figures, digit height 8 mm
- jaws fine ground and lapped
- on/off button
- zero-setting at any position
- reading switchable mm/inch
- incl. battery 1.5 V (type SR44, art.-no.: 20 20192) and operation manual

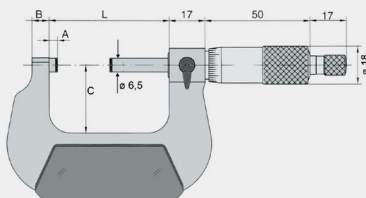


ART No	mm / inch	mm / inch	mm	max. ± mm	A mm	B mm	C mm	Surface	Weight (KG)
20 2011	150 / 6	0.01 / 0.0005	0.01	0.02	77.0	16.5	40.0	flach	0.150

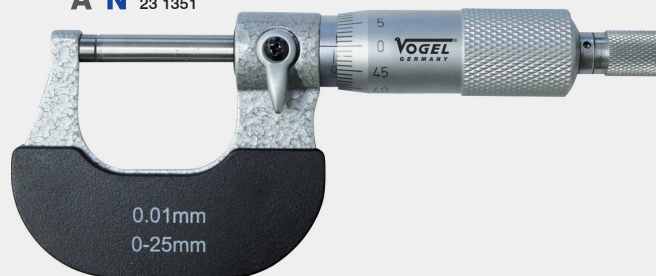
BLUE-LINE® External micrometer

DIN 863

- drum and sleeve satin chrome finish
- hammer blow grey lacquered frame, with insulated frame
- tungsten carbide measuring faces, parallel lapped
- locking lever for quick and precise fixing
- with ratchet for constant measuring pressure
- delivery with setting key, from up 25 mm with setting gauge



ART N° 23 1351

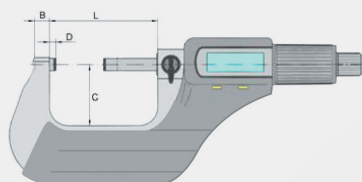


ART N°	mm	mm	mm	A mm	B mm	C mm	L mm	max. μ m	KG
23 1351	0 - 25	0.01	0.5	3.5	6	24	32	4	0.170
23 1352	25 - 50	0.01	0.5	3.5	8	32	57	4	0.270

DIGI PLUS-LINE® Electr. digital external micrometer, IP40

DIN 863

- LCD with clear figures, zero-setting at any position, on/off-button
- lacquered frame with insulated frame, tungsten carbide meas.-faces
- reading switchable mm/inch, with ABS-function, on/off-button
- locking lever for quick and precise fixing
- with friction ratchet for constant measuring pressure
- friction ratchet with rubber for better handling
- with battery 3 V (type CR 2032, art.-no.: 20 02093)
- delivery from up 25 mm with setting gauge
- with operation manual and test certificate



ART N° 23 1061

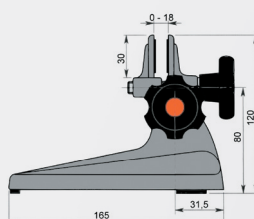


ART N°	mm / inch	mm / inch	Trommel- ϕ mm	B mm	C mm	D mm	L mm	max. μ m	KG
23 1061	0 - 25 / 0 - 1	0.001 / 0.00005	22	6	23	3,5	32	4	0.220
23 1062	25 - 50 / 1 - 2	0.001 / 0.00005	22	8	32	3,5	57	4	0.330

BLUE-LINE® Micrometer stand

Sturdy pattern, for superior expectations.

- with stable base
- cast iron pattern
- hammer blow lacquered
- clamps with rubber pads, for protection the instruments
- clamp is swinging in any position
- for micrometer measuring range: 0 - 100 mm



ART N° 23 9004



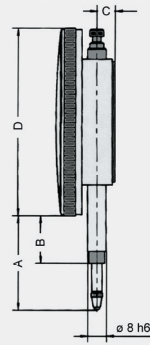
ART N°	mm	KG
23 9004	165 x 120 x 120	0.450



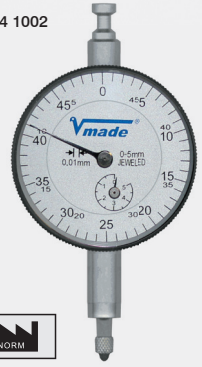
BLUE-LINE® Small dial indicator
Standard quality

Especially for workshop use.

- metal housing, satin chrome finish
- stem and spindle stainless steel, hardened
- scale is turnable by outside-ring, for easy zero-setting
- with flat cover and cover with lug



ART N° 24 1002



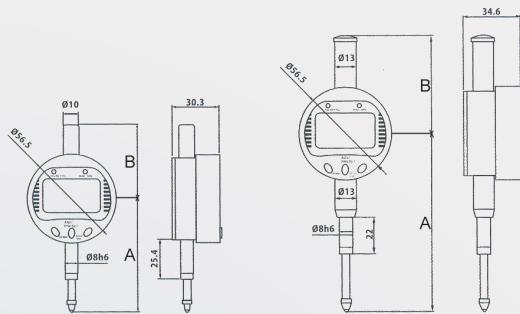
ART N°	mm	mm	mm	A mm	B mm	C mm	D-ø mm	KG
24 1002	0 - 5	0.01	0.5 mm	28	14	8.2	42	0.110

DIGI-PLUS-LINE® Electr. digital dial indicator

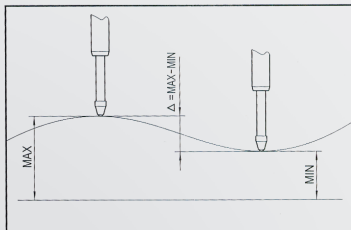
With USB data output.

- housing machined from aluminium and with sturdy plastic cover
- LCD with clear reading, height of digits 10 mm
- stem and spindle stainless steel, hardened and ground
- interchangeable contact points M 2.5
- on/off button, ABS- and preset function
- zero setting at any position, reading switchable mm/inch
- additional function buttons for Min. / Max., Tol. and Set function (setting and display of tolerance-limits)
- with battery 3 V (type CR 2032, art.-no.: 20 02093)
- with flat cover and cover with lug
- with operation manual and test certificate

ART N° 24 2163



representation Min. / Max. measuring range



ART N° 24 2060

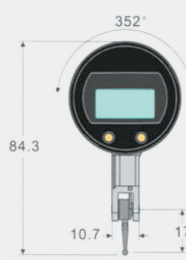
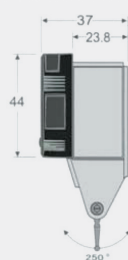


ART N°	mm / inch	mm / inch	μm	μm	Messkraft N	Min / Max Tol / Set	A mm	B mm	KG
24 2060	0 - 12.7 / 0 - 0.5	0.01 / 0.0005	10	10	< 1.50	✓	75	50	0.100
24 2163	0 - 25.4 / 0 - 1.0	0.01 / 0.0005	10	15	< 1.50	✓	120	60	0.100

DIGI PLUS-LINE® Electr. digital test indicator

With USB data output.

- satin chromed body, with rugged plastic housing
- 352° rotating housing
- large LCD with clear reading, 7 mm digit height
- display with additional bar graph
- contact point-ø 2 mm, stainless, hardened
- housing with 3 dovetail guides
- on/off button, Min / Max, Min / Max memory and hold function
- reading in mm/inch, switchable, ABS/INC measurement
- zero setting at any position
- with battery 1.5 V (type LR44, art.-no.: 20 20192/B)
- with operation manual and test certificate



ART N° 24 2605



ART N°	mm / inch	mm / inch	Range mm / inch	± μm	max. ± μm	KG
24 2605	0 - 1 - 0 / 0.04	0.01 / 0.0005	± 0.5 / 0.02	1	3	0.085

SILVER-LINE® Dial indicator with workshop calibration certificate

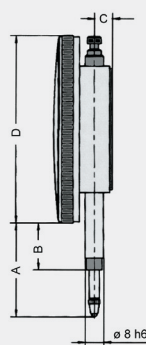
DIN 878

Top Quality, for workshop and inspection laboratory.

- metal housing, satin chrome finish, adjustable tolerance fingers
- stem and spindle stainless steel, hardened
- rotating scale by outside ring, for easy zero setting
- Shockproof pattern (art.-no. 24 1119), with 6 jewels
- with flat cover and cover with lug
- workshop calibration certificate, incl.

ART N° 24 1118

ART N° 24 1119

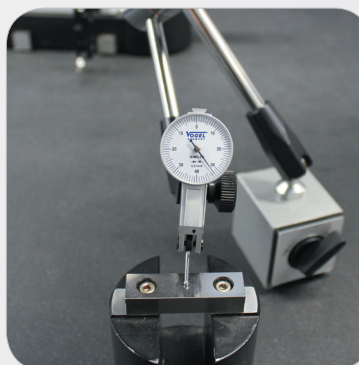


ART N°	mm	mm		shockproof		A mm	B mm	C mm	D-ø mm	KG	CC
				yes	no						
24 1118	0 - 10	0.01	1 mm	X	✓	40	19.5	8	60	0.190	inclusive
24 1119	0 - 10	0.01	1 mm	✓	X	40	19.5	8	60	0.190	inclusive

BLUE-LINE® Dial test indicator

Standard quality

- housing machined from solid brass, satin chrome finish
- with tungsten carbide measuring ball ø 2.5 mm, interchangeable
- contact points reverses, always maintaining clockwise
- scale mounted in a rotating, knurled gripping
- delivery incl. clamp holder ø 6 mm + ø 8 mm



ART N° 24 6600



ART N°	mm	mm	Range mm	L mm	D-ø mm	Quantity of dovetails	KG
24 6600	0 - 40 - 0	0.01	0.8	13.5	31.0	3	0.065

BLUE-LINE® Universal magnetic measuring stand

For all kind of measurements in every position,
low-price pattern, for simple demands.

- chromed stem, with fine adjustment, lacquered magnetic block
- with clamp connection by cross head
- sturdy magnetic block, on/off switch made of plastic, with prismatic base and with a flat ground face backwards
- dial indicator shank \varnothing 4 mm and \varnothing 8 mm

ART N° 25 2002



ART N°	Total height mm	Column \varnothing x L mm	Throat mm	Thread mm	Magnetic block mm	Magnetic power ~ N	KG
25 2002	280	16 x 220	200	M 10	65 x 50 x 55	600	1.880

BLUE-LINE® Magnetic measuring stand

Triple-jointed arm with central mechanical clamping,
useful in places that are hard to reach,
with unrestricted flexibility.

- chromed column, corrosion-resistant, universal turnable
- sturdy magnetic block, on/off switch made of plastic with prismatic base and with a flat ground face backwards
- lacquered magnetic block
- dial indicator shank \varnothing 8 mm and with dovetail for dial test indicators with fine adjustment

ART N° 25 5001



ART N°	Total height mm	Column \varnothing x L mm	Throat mm	Thread mm	Magnetic block mm	Magnetic power ~ N	KG
25 5001	400	10 / 12 x 345	330	M 8	65 x 50 x 55	600	1.515

BLUE-LINE® Bore gauge-set, with dial indicator

For quick and easy measuring of bores,
standard precision, especially for workshop use.

- satin chromed tube, with insulated handle
- hardened measuring faces
- with operation manual

ART N° 23 7003

ART N° 23 7005



ART N°	 mm	 mm	Quantity of contact points	L mm	KG
23 7003	18 - 35	0.01	7	125	0.700
23 7005	50 - 160	0.01	5	150	3.500

BLUE-LINE® Pocket measuring tape

Stainless steel metal housing, EC-Class II

Exceptional tape stability, suitable for craftsmen and industry, ergonomic design, lies save and nonslip in your hand.

- rubber covered case, with stainless metal-clip and with lanyard
- yellow nylon coated steel blade, high rub-off resistant and break-stably
- self-adjusting end-hook, with magnetic dots, with 2 blade-return function buttons
- special spring steel for long-life, automatic blade return and self-lock at any position
- black/red figures, black scale, for clear reading, with consecutive graduation, reading in mm
- from up 25 mm blade width with 3 rivets fixed



ART No	m	max. ± mm	mm	mm	mm	KG
14 1403	3	0.9	19	80 x 75 x 35	1.750	0.200
14 1405	5	1.3	25	80 x 75 x 42	2.100	0.310
14 1408	8	1.8	25	80 x 75 x 42	2.100	0.470

BLUE-LINE® Steel scriber

- tungsten carbide points, exchangeable
- drop mechanic

ART No 33 4615



ART No	mm	Shaft ø mm		KG
33 4615	140	9	Steel scriber with clip, carbide tip	0.015
33 4690	30	-	Spare tungsten carbide point, straight for 33 4615	0.003

BLUE-LINE® Magnetic telescope

Magnetic telescope to pick up metal.

- telescope made from stainless steel, with clip
- art.-no.: 33 4614 with point
- art.-no.: 33 4614 additionally with point, also suitable for adjusting the wiper fluid nozzles

ART No 47 4442

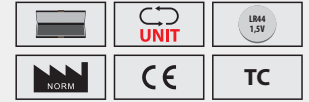
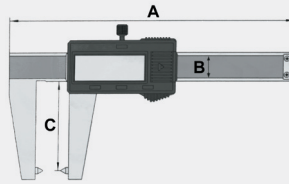
ART No 33 4614



ART No	mm	kg	KG
47 4442	~530	3,5	0.030
33 4614	~650	1,0	0.025

DIGI PLUS-LINE® Electr. digital brake disk caliper

- stainless steel, hardened
- LCD-display with clear figures
- Probes made of hard metal
- on/off button, zero setting at any position
- reading switchable mm/inch
- with 1.5 V battery (type CR2032, art.-no.: 20 020193)
- with operation manual and test certificate

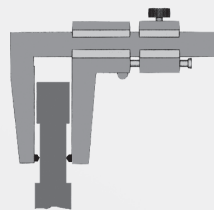
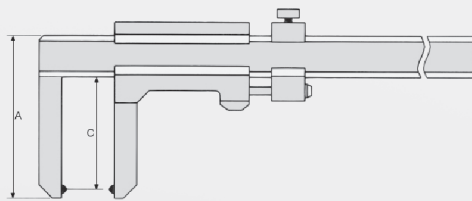


ART No	mm / inch	mm / inch	max. ± mm	A mm	B mm	C mm	KG
20 6020	0-60 / 0-2.4	0.01 / 0.0005	0.04	158	16	50	0.170

BLUE-LINE® Brake disc caliper

For measuring the thickness of installed brake discs.

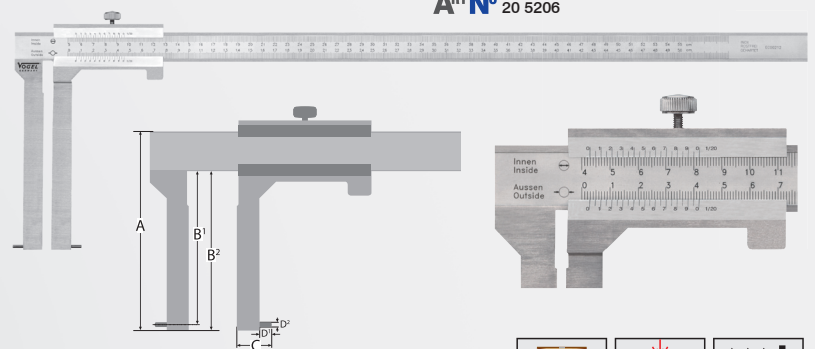
- stainless steel, hardened
- scale and vernier satin chrome finish
- carbide tips



ART No	mm / inch	mm	A mm	mm	C mm	KG
20 6003	0 - 60	0.10	67	55	50	0.130
20 6004	0 - 60	0.10	102	83	79	0.250

BLUE-LINE® Brake drum caliper

- stainless steel, hardened
- scale and vernier satin chrome finish
- with carbide tips
- reading of the inner and outer diameter



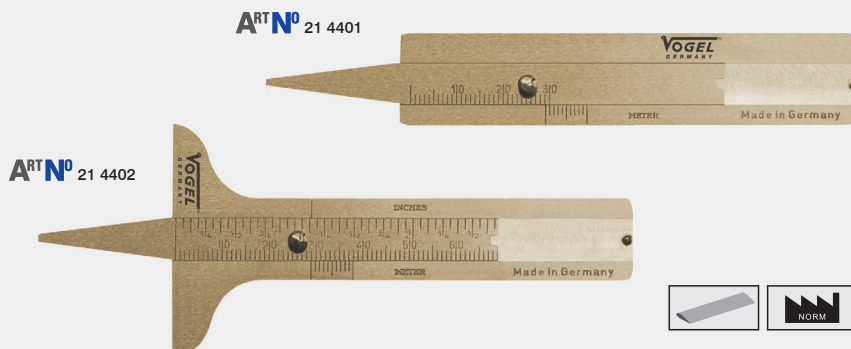
ART No	mm	mm	mm	A mm	B ¹ mm	B ² mm	C mm	D ¹ mm	D ² ø mm	KG
20 5206	50 - 500	0 - 500	0.05	177	150	153	25	9	4	1.032

BLUE-LINE® Brass tread depth gauge

- made of hard brass
- surfaces fine ground and with protective coating
- with dove-tail guiding, with vernier reading
- with your logo, slogan etc. by engraving on front- or backside

Option:

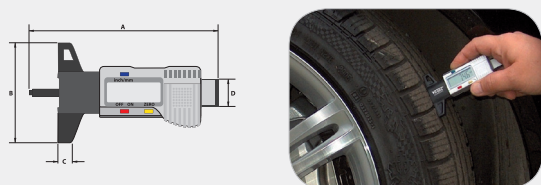
- in real-leather case available on demand



ART No	mm / inch	mm	mm	KG
21 4401	30	0.10	20	0.042
21 4402	60 / 2.5	0.10	50	0.045

DIGI PLUS-LINE® Electr. digital tread depth gauge

- sturdy ABS-plastic housing
- large LCD, digit height 9.5 mm
- on/off button, zero setting at any position
- reading in mm/inch, switchable
- with battery 3 V (type CR2032, art.-no.: 20 02093)
- with operation manual and test certificate



ART No	mm / inch	mm / inch	mm	A mm	B mm	C mm	D mm	KG
21 4442	0 - 25 / 0 - 1	0.01 / 0.0005	0.03	112.4	60.0	8.0	15.8	0.040
21 4445	0 - 25 / 0 - 1	0.01 / 0.0005	0.03	115	45.0	7.0	15.8	0.040

DIGI PLUS-LINE® Electr. digital tyre pressure gauge

For quick and independent measuring of the tyre pressures.

- sturdy ABS-plastic housing
- large LCD with backlight and with flash light tip, digit height 9.5 mm
- lighted valve hydrants
- on/off-switch, auto-power-off function
- 4 units for measuring pressures, PSI, bar, Kg/cm², Kpa
- accuracy ±1%, reading 0.1 PSI; 0.01 bar; 0.01 Kg/cm²; 1 Kpa
- with battery 3 V (type CR2032, art.-no.: 20 02093)
- with operation manual and test certificate



ART No	for Cars	for Trucks	PSI	Bar / Kg/cm ²	Kpa	KG
21 4460	✓	✗	0 - 100	0 - 7 / 0 - 7	0 - 700	0.036
21 4461	✗	✓	0 - 200	0 - 14 / 0 - 14	0 - 1400	0.036

BLUE-LINE® Inspection tool kit

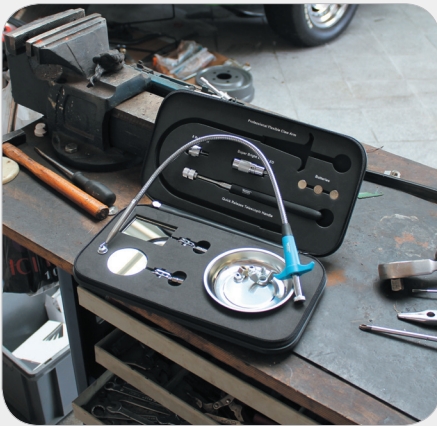
Multi-part set, especially for garages, mechanics, plumbers etc.
Professional tool kit for master practitioners.

- 5- pcs. set, contents:
 - quick release telescope handle, 530 mm working length
 - ultra bright white NICHIA LED light, with 3 batteries 1.5 V (type SR44, art.-no.: 20 20192)
 - strong magnet with 8lb, for to pick up and hold metal objects in hard to reach places
 - professional inspection mirrors, with perfect reflection, can be adjusted 360 degrees, fixed in a stainless steel frame,
 - one mirror with ø 50 mm and one mirror rectangular 60 x 40 mm
- delivery in a strong case with zip
- 7- pcs set, contents:
 - quality claw pick-up tool, 400 mm working length
 - quick release telescope handle, 530 mm working length
 - ultra bright white NICHIA LED light, with 3 batteries 1.5 V (type SR44, art.-no.: 20 20192)
 - strong magnet with 8lb, for to pick up and hold metal objects in hard to reach places
 - professional inspection mirrors, with perfect reflection, can be adjusted 360 degrees, fixed in a stainless steel frame,
 - one mirror with ø 50 mm and one mirror rectangular 60 x 40 mm
 - stainless steel round magnetic tray, ø 110 mm, with heavy duty permanent magnet
- delivery in a strong case with zip

ART N° 47 4470



ART N° 47 4471



ART N°	Satz	Telescopic handle	LED	Mirror	Mirror	Magnet	Claw	Magnetic shell	KG
47 4470	5-teilig	✓	✓	✓	✓	✓	✗	✗	0.340
47 4471	7-teilig	✓	✓	✓	✓	✓	✓	✓	0.815

BLUE-LINE® Magnetic tray

Stainless steel.

- with heavy duty powerful permanent magnet
- available in round or rectangular form

ART N° 47 4475



ART N° 47 4476



ART N°	Gauss	mm	KG
47 4475	1.000 - 1.200	ø 150	0.387
47 4476	1.000 - 1.200	240 x 140	0.812

BLUE-LINE® Magnetic lifter, with quick release

With telescope arm.

- with quick release magnet
- telescope made from stainless steel
- with 360° swivelable joint
- with insulation handle and clip



ART N° 47 4441

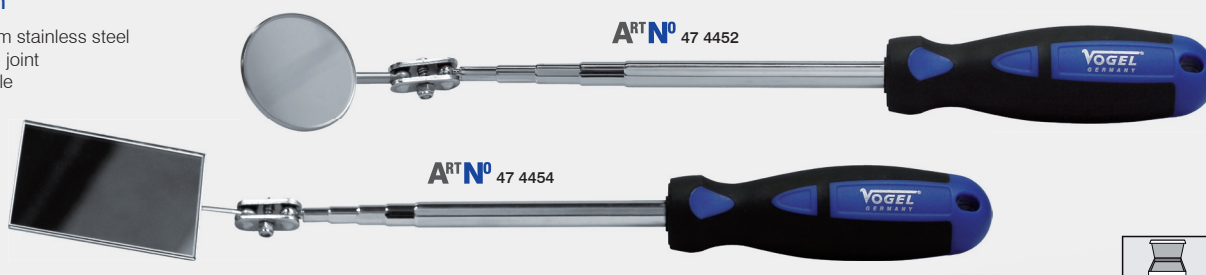





ART N°	 mm	 kg	 KG
47 4441	~650	8	0.096

BLUE-LINE® Professional telescoping inspection mirror

With telescope arm

- telescope made from stainless steel
- with 360° swivelable joint
- with insulation handle



ART N°	 mm	 mm	 KG
47 4452	~ 610	ø 40	0.087
47 4454	~ 620	43 x 65	0.098

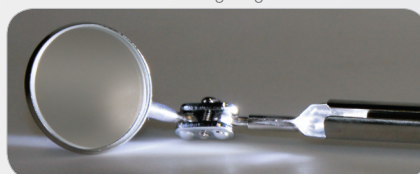
BLUE-LINE® Professional telescoping inspection mirror




With telescope arm.

- telescope made from stainless steel
- with 360° swivelable joint
- with insulation handle and clip
- LED lighting can be activated
- with battery 1.5 V (type LR41, art.-no.: 20 20192/A)



LED-lighting



ART N°	 mm	 mm	 KG
47 4465	~ 610	ø 26	0.057

DIGI PLUS-LINE Photo-/Video borescope,
with 3.5" TFT colour monitor, IP65/IP57

For quick, visual inspection and documentation, useful in hard to reach places, IP57 protected housing, interchangeable water- and cooling waterproof hoses acc. to IP65, available in different diameters and length. With 4 high bright white LEDs, USB data port, 2 GB memory card, with multifunctional keyboard. From up hose-ø 5.5 mm with VGA resolution.

- rugged plastic housing, industry quality, scratch resistant display
- backside with 2 heavy duty magnet stripes and with M8 thread for tripod installation
- camera (CMOS) with resolution 640x480 pixel, high bright LEDs, with dimmer, USB-port
- digital zoom, still image storage format (JPEG), video recording (MPEG-4) AV-out (PAL + NTSC)
- time/date, on/off button, 20 languages selectable
- incl. 2 GB memory card, power supply, charger, 3.7 V Li-polymer battery, AV cable, USB cable, cleaning set, operation manual and rugged carrying case

Option:

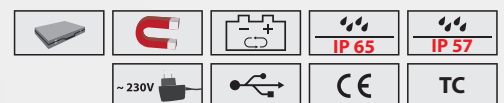
- more models and cable lengths available on request



VGA screen



ART N° 62 0120



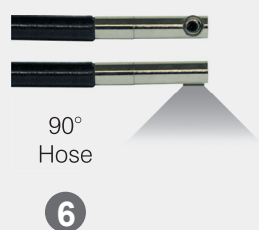
ART N°	Hose mm	Hose-ø mm	Sleeving	VGA	Field of vision	Viewing direction °	Depth of vision mm	mm	IP 65	IP 57	CE	TC	KG
62 0120	1.000	5.5	flexibel	✓	67	0	15 - 100 mm	220 x 120 x 35	✓	✓	✓	✓	0.410

Accessories and spare parts

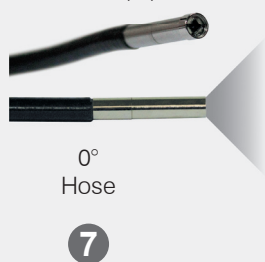
Device, 2-way adapter, cable, mirrors, magnets.
Mirrors and magnets can be fixed onto the lens,
more hose sizes are available, up to 30 m.
Device 1 = for hoses without VGA resolution
Device 2 = for hoses with VGA resolution



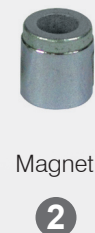
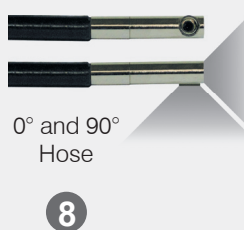
Side-view (90°)



Front-view (0°)



Front- and Sideview
combined (0° and 90°)



ART N°	Type	Viewing direction °	Hose → ← mm	Hose-Ø mm	Sleeving			2-way-system	Mirror °	KG
					flexible	semi-rigid	VGA			
62 0002	4	X	X	X	X	X	✓	X	X	0.450
62 99001	5	0	1.000	5.5	✓	X	X	✓	X	0.540
62 99002	5	0	2.000	5.5	✓	X	X	✓	X	0.590
62 99012	6	90	1.000	5.5	✓	X	✓	X	X	0.095
62 99013	7	0	1.000	5.5	✓	X	✓	X	X	0.095
62 99014	7	0	1.000	5.8	X	✓	✓	X	X	0.095
62 99015	8	0 and 90	1.000	5.8	✓	X	✓	X	X	0.095
62 99022	7	0	2.000	5.5	✓	X	✓	X	X	0.175
62 99063	7	0	1.000	4.0	✓	X	X	X	X	0.065
62 99330	2	X	X	4.0	X	X	X	X	X	0.018
62 99333	1	70 / 90 / 110	X	4.0	X	X	X	X	35 / 45 / 55	0.066
62 99530	2	X	X	5.5	X	X	X	X	X	0.018
62 99533	1	70 / 90 / 110	X	5.5	X	X	X	X	35 / 45 / 55	0.066
62 9903	9	0 and 90	300	4 = 0° 5 = 90°	X	X	✓	X	45	0.220
62 9905	9	0 and 90	300	6 = 0° 7 = 90°	X	X	✓	X	45	0.235

Other types of hose and tubing lengths are available on request!

SILVER-LINE® Borescope, IP65

With flexible hose and built-in optics.

For inspection of machinery, equipment, gears, motors, etc. Ideal machine for maintenance and repair in the automotive, engines, aviation, shipbuilding, machine-building industry, and in many areas of craft used.

- flexible, water-and oil-proof wiring harness (IP65)
- image transmission through fiber optic cables, sharpen adjustable optics
- robust, unbreakable plastic case with battery
- on/off button for lighting (Xenon-lights), incl. replacement bulbs
- incl. 2 batteries 1.5 V (type AA, art.-no.: 60 9282) and operation manual



ART No	Pixel	Hose-ø mm	Hose length mm / inch	KG	ART No Replacement bulb
62 1418	7.400	4	450 / 18	0.200	629901
62 1436	7.400	4	900 / 36	0.230	629901
62 1624	7.400	6	600 / 24	0.220	629901
62 1636	7.400	6	900 / 36	0.250	629901
62 1824	7.400	8	600 / 24	0.270	629901
62 1836	7.400	8	900 / 36	0.290	629901
62 1018	7.400	10	450 / 18	0.280	629901
62 1036	7.400	10	900 / 36	0.350	629901

SILVER-LINE® Rigid industrial borescopes

- body and tube, stainless steel
- water proof, protection class IP65
- operation temperature -10° to +85° C





ART No	mm	viewing direction	bending radius mm	field of vision	depth of field mm	resolution pixel	focusable	KG
62 0371/0	ø 4 x 180	0°	X	≥ 60°	5-100	X	X	0.072
62 0371/30	ø 4 x 180	30°	X	≥ 60°	5-100	X	X	0.072
62 0381/0	ø 6 x 210	0°	X	≥ 70°	5-100	X	X	0.095
62 0382/90	ø 6 x 330	90°	X	≥ 70°	5-100	X	X	0.135

SILVER-LINE® Industrial borescope case set CLASSIC

4-pcs. set in sturdy aluminum carrying case, contents:

- rigid industrial borescope, IP65, housing and tailpipe in stainless steel, stainless, with eyecup
- with battery 3.7 V (art.-no.: 62 9222)
- charger / adapter
- aluminum handle with LED light supply





ART N°	 mm	viewing direction	bending radius mm	field of view	depth of field mm	resolution pixel	focusable	 KG
62 0371/0-S	ø 4 x 180	0°	X	≥ 60°	5-100	X	X	0.072
62 0371/30-S	ø 4 x 180	30°	X	≥ 60°	5-100	X	X	0.072
62 0381/0-S	ø 6 x 210	0°	X	≥ 70°	5-100	X	X	0.095
62 0382/90-S	ø 6 x 330	90°	X	≥ 70°	5-100	X	X	0.135

Supply kit for industrial borescopes

3-pcs. supply kit contents:

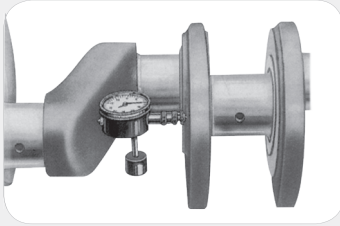
- aluminum handle with LED light supply
- battery 3.7 V (art.-no.: 62 9222)
- charger / adapter



ART N°	Article description	 mm	 KG
62 9222	battery, 3.7 V	ø 18 x 68	0.045
62 9223	charger for 3.7 V	X	0.118
62 9421	LED light supply (aluminium handle)	ø 25 x 125	0.080
62 9721	sturdy carrying case, empty	468 x 265 x 110	1.681
62 9224	supply kit for industrial borescopes, packed in a carton box, contents art.-no.: 62 9222 + 62 9223 + 62 9421	240 x 145 x 55	0.460

BLUE-LINE® Crankshaft testing instrument

These instruments are used for testing crankshaft deflections and for the alignment of crankshaft bearings during engine assembly. Use for ship engines, car engines, compressor engines etc.



ART N° 24 0162



ART N°		mm	Housing-ø of dial indicator mm	KG	CC
24 0161	60 - 300	0 - 3 x 0.01	40	1.100	24 94000
24 0162	60 - 500	0 - 3 x 0.01	40	1.200	24 94000

SILVER-LINE® Precision knife straight edge

DIN 874 Page 2

Suitable for inspection.

- stainless steel with satin matt finish and carbon steel with burnished edges
- hardened and fine ground
- bevelled edge, fine ground and lapped
- with insulation handle

ART N° 31 0303



ART N°		KG
31 0303	100	0.070
31 0306	200	0.190
31 0308	300	0.250
31 0311	500	0.910

BLUE-LINE® Hand-Held refractometer

Refractometers are optical precision instruments for measuring the optimal concentration of liquids.

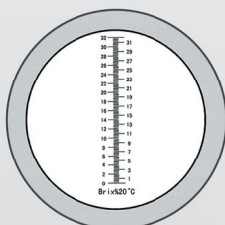
- rugged stainless steel housing with rubber handle
- with adjusting screw, folding cover, ocular with rubber eye cup, quality optic
- delivery in a case and with operation manual

ART N° 65 3200

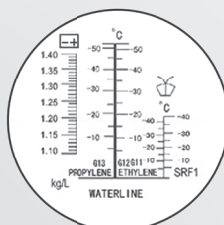


scale reading

ART N° 65 3200



ART N° 65 3210



ART N°	Application range			mm	KG
65 3200	lubricants, coolant water, fruit juices, wines, etc.	0 - 32% Brix	± 0.20%	170 x ø-29	0.240
65 3210	automotive industry	E ¹ : -40° C - 0° C P ² : -50° C - 0° C B ³ : 1.100 - 1.400 Sg ⁴	± 5° C ± 5° C ± 0.01 Sg ⁴	153 x ø-29	0.230

¹ ethylene ² propylene ³ battery ⁴ acidity

BLUE-LINE® Wheelset inspection kit BASIC

ART N° 21 9900

Contents:

- Brake disc caliper 0-60 x 0.1 mm, caliper jaw length 50 mm (art.-no.: 20 6003)
- Electr. digital tread depth gauge 0-25 x 0.01 mm, length of bridge 60 mm (art.-no.: 21 4442)
- Electr. digital tyre pressure gauge 0-100 PSI / 0-7 Bar / 0-700 Kpa (art.-no.: 21 4460)
- incl. batteries, operation manual, in sturdy plastic box



BLUE-LINE® Wheelset inspection kit CLASSIC

ART N° 21 9901

Contents:

- Electr. digital brake caliper 0-60 x 0.01 mm, caliper jaw length 50 mm (art.-no.: 20 6020)
- Electr. digital tread depth gauge 0-25 x 0.01 mm, length of bridge 60 mm (art.-no.: 21 4442)
- Electr. digital tyre pressure gauge 0-100 PSI / 0-7 Bar / 0-700 Kpa (art.-no.: 21 4460)
- incl. batteries, operation manuals, in sturdy plastic box



BLUE-LINE® Brake disc inspection kit BASIC

ART N° 24 2503

Contents:

- Brake disc caliper 0-60 x 0.1 mm, caliper jaw length 50 mm (art.-no.: 20 6003)
- Magnetic measuring stand, chrome rod, with fine adjustment, projection 140 mm, struts-ø 12 mm, length 175 mm, height 235 mm (art.-no.: 25 2001)
- Small dial indicator, 0-5 x 0.01 mm (art.-no.: 24 1002)
- incl. operation manual, in sturdy plastic box



BLUE-LINE® Brake disc inspection kit CLASSIC

ART N° 24 2504

Contents:

- Electr. digital brake disc caliper 0-60 x 0.01 mm, caliper jaw length 50 mm (art.-no.: 20 6020)
- Magnetic measuring stand, chrome rod, with fine adjustment, projection 140 mm, struts-ø 12 mm, length 175 mm, height 235 mm (art.-no.: 25 2001)
- Small dial indicator, 0-5 x 0.01 mm (art.-no.: 24 1002)
- incl. batteries, operation manual, in sturdy plastic box



More set combinations on request!

DIGI PLUS-LINE® Ultrasonic thickness gauge
With integrated probe.

Dedicated for many materials, such as steel, cast iron, grey cast iron, nodular cast iron, aluminium, copper, bronze, zinc, glass (quartz), ceramics, composites, epoxies, homogenously plastics and other ultrasonic wave well conductive materials.

Compact handheld measuring device for quick and flexible wall thickness measurement. Operates in any position horizontal, vertical and upside down.

Application areas are e.g. surface technology, automotive industry, storage tank, pressure boiler, shipbuilding, chemical- and petrol plants, power stations, aluminium industry, machine engineering, bridge construction, etc.

- rugged plastic housing, with soft keypad
- with external steel test plate for fast and easy calibration
- LCD display with clear reading, units in mm/inch switchable
- Measuring range for steel pipes: min. \varnothing 15 x 2.0 mm and max. \varnothing 20 x 3.0 mm
- Tolerance $\pm 0.5\%$ thickness + 0.04 mm, readings in 0.1/0.01 mm
- Selectable sound velocity 500 - 9000 m/s
- Operation temperature 0° - 50°C, humidity 20% - 80% RH
- 4 batteries 1.5 V (type AAA, art.-no.: 60 9283), with low battery indicator
- Delivery with operation manual, wrist strap, in a rugged plastic carrying case
- with operation manual and test certificate

Option:

- art.-no. 48 0280 couplant (60 ml)

ART N° 48 0260



ART N° 48 0280



ART N°	mm	mm N05	sound velocity m/s	max $\pm 0.5\%n + 0.1$ mm	mm	KG
48 0260	0.1	1.0 - 230	500 - 9000	$\pm 0.5\%n + 0.1$ mm	135 x 65 x 30	0.115

DIGI PLUS-LINE® Universal coating thickness gauge

Especially for automobiles, combined system for steel (Fe) and non ferrous metal (Ne), with internal probe (Fe + Ne), with data output RS232.

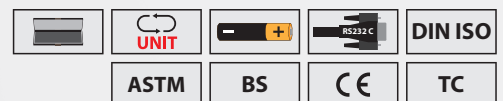
ART N° 48 0235

Compact handheld measuring device, for quick and flexible thickness measurement. Ergonomic design, for convenient handling, with one-key operating. Operates in any position -horizontal, vertical and upside down. For measurement of non-magnetic coating on ferrous substrates (Fe) and insulating coating on non-ferrous conductible substrates (Ne). Application fields: coating thickness measuring and corrosion of pressure vessels, chemical equipment, boilers, oil storage tanks etc.

- rugged plastic housing, with soft keypad, LCD Display with clear reading
- Measuring in μ m or mil, switchable, operating principle magnetic induction (Fe) and eddy current (Ne) switchable and automatic substrate recognition
- 4 standard calibration foils, one aluminium substrate block and one iron substrate block
- Tolerance: in standard mode 3% of the value or $\pm 2.5 \mu$ m, or by two point calibration method with zero-plate and distance foil, hereby the device can be setted precisely to the actual measuring range. By this method you can achieve lowest tolerance of about 1% of value or $\pm 1 \mu$ m
- Min. radius workpiece for Fe-probe: convex 1.5 mm/concave 25 mm, min. thickness of substrate 0.5 mm
- Min. radius workpiece for Ne-probe: convex 3.0 mm/concave 50 mm, min. thickness of substrate 0.3 mm
- Min. measuring area 6 mm², autom. and manual power off
- Operation temperature 0°C ~ +50°C, humidity 20% - 90% RH
- Incl. 4 batteries 1.5 V (type AAA, art.-no.: 60 9283), with low battery indicator
- with wrist strap, in a rugged plastic carrying case
- with operation manual and test certificate



Option: art.-no. 48 9880 RS232C data cable with software and art.-no. 48 9881 USB adaptor



ART N°	μ m/probe F1	μ m/probe F1	μ m/probe N1	μ m/probe N1	mm	KG
48 0235	0.1	0 - 1250	0.1	0 - 1250	125 x 65 x 28	0.081

DIGI PLUS-LINE® Infrared digital thermometer

Pistol sized with K-type thermocouple and shiftable laser pointer.

For contactless and quick measuring of temperatures. The instrument was built acc. to today's state of the art. It fulfills the strict requirements of the european and national guidelines.

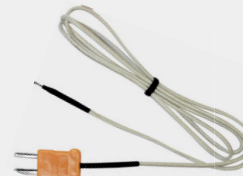
- housing made of tough, damage-resistant ABS-plastic
- 3 LCD digit reading, with shiftable backlight
- temperature reading in °C / °F, laserpoint can be switched on/off
- autom. power off after 20 sec., response time < 0,5 sec., laser protection class II
- data-hold function for short memory time of the measuring value, Min/Max function
- average value selectable, low batterie indication
- storage temperature -10° ~ 60°C, operation temperature 0° ~ +50°C
- relative humidity 10 - 90 % RH, emissivity 0.95 (pre-set)
- delivery with battery 9 V (type 6LR61, art.-no.: 60 9281), readiness bag
- with operation manual and test certificate



ARTN° 64 9300



ARTN° 64 9303



ARTN°	°C	°C	°C	°C	Messoptik			ARTN° Ersatz-Fühler	
64 0314	-30 ~ +550	0.1	±4.0 / ±4%	± 1.0	12:1	215 x 130 x 60	0.205	64 9303	0.030
64 0316	-30 ~ +1200	0.1	±4.0 / ±4%	± 1.0	12:1	120 x 186 x 50	0.210	64 9300	0.020

DIGI PLUS-LINE® Electronic digital sound level meter

For sound and noise measurements acc. to the international directives whether in industry, handcraft or housekeeping. Useful device for air-conditioning, aviationindustry, environmental-technology, automotive industry, etc. With self-calibration after every turn on. The device is calibrated before shipment.

- rugged, polyamid housing material, in new design, with tripod mounting screw
- Large LCD display with clear digit reading, 5 digits, backlight function
- Frequency range 31,5 Hz ~ 8.5 KHz, A/C frequency weighting select switch
- Measuring level 30 ~ 130 dBA, 30 ~ 130 dBC
- Bar graph 50 dB scale at 1 dB step for monitoring current sound pressure level display period 50 mS, with max.-value hold function
- Time weighting Slow / Fast, Microphone ½ inch, electret condenser microphone
- Storage temperature -20°C up to +70°C, operating temperature 0°C up to +45°C
- Incl. 1 battery 9 V (type 6LR61, art.-no.: 60 9281) or DC 9V adapter
- Incl. Workshop Calibration Certificate, operation manual and carrying case



ARTN° 64 1105

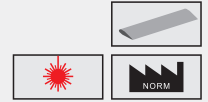
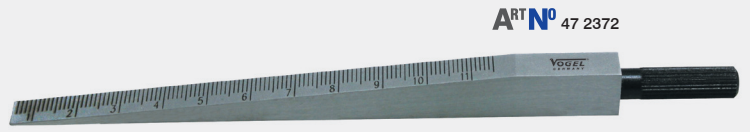


ARTN°	Level range dB	dB	dB	Linearity range dB	
64 1105	30-80 / 50-100 / 60-110 / 80-130	0.1	± 1.5	50	0.180

BLUE-LINE® Taper gauge Flat

Very useful tool, especially for bearing work and for gauging slots.

- steel, satin chrome finish (47 2372)
or made of techn. plastic (47 2373)
- with laser-engraved scale, with knurled handle



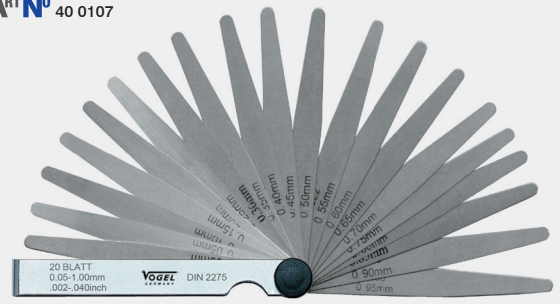
ART No	mm	mm		Pattern	
47 2372	0.5 - 11.0	0.1	153 x 8 x 12	steel, matt chrome	0.065
47 2373	0.5 - 11.0	0.1	153 x 8 x 12	plastic	0.020

BLUE-LINE® Feeler gauge set, DIN 2275

High tolerance accuracy for precise measurements.
For thickness measuring between narrow slots.

- hardened spring steel, conical shaped blades, 100 mm length
- nickel plated case, with lock nut
- sizes in mm and inch on each blade
- thickness tolerance in relation to the metric size

ART No 40 0107



ART No	Blades		Combination of blades	
40 0105	13	0.05 - 1.00 mm 0.002 - 0.040 inch	0.05-0.10-0.15-0.20-0.25-0.30-0.40-0.50-0.60-0.70-0.80-0.90-1.00 mm .002-.004-.006-.008-.010-.012-.016-.020-.024-.028-.032-.036-.040 inch	0.065
40 0107	20	0.05 - 1.00 mm 0.002 - 0.040 inch	0.05-0.10-0.15-0.20-0.25-0.30-0.35-0.40-0.45-0.50-0.55-0.60-0.65-0.70-0.75-0.80-0.85-0.90-0.95-1.00 mm .002-.004-.006-.008-.010-.012-.014-.016-.018-.020-.022-.024-.026-.028-.030-.032-.034-.036-.038-.040 inch	0.095

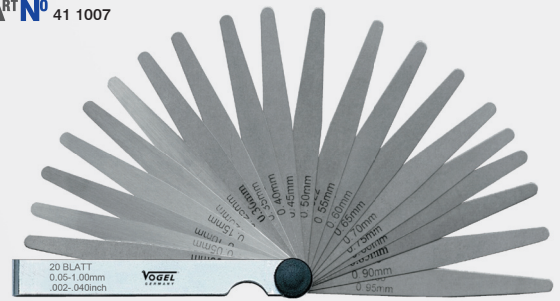
BLUE-LINE® Feeler gauge set, standard

For thickness measuring between narrow slots a. for automotive industry.

- hardened spring steel, conical shaped blades, 100 mm length
- nickel plated case, with lock nut
- sizes in mm and inch on each blade



ART No 41 1007

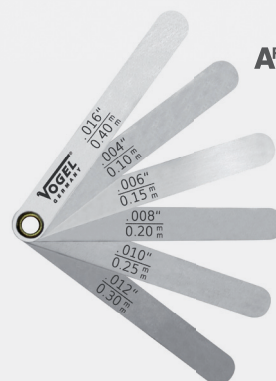


ART No	Blades		Combination of blades	
41 1005	13	0.05 - 1.00 mm 0.002 - 0.040 inch	0.05-0.10-0.15-0.20-0.25-0.30-0.40-0.50-0.60-0.70-0.80-0.90-1.00 mm .002-.004-.006-.008-.010-.012-.016-.020-.024-.028-.032-.036-.040 inch	0.065
41 1007	20	0.05 - 1.00 mm 0.002 - 0.040 inch	0.05-0.10-0.15-0.20-0.25-0.30-0.35-0.40-0.45-0.50-0.55-0.60-0.65-0.70-0.75-0.80-0.85-0.90-0.95-1.00 mm .002-.004-.006-.008-.010-.012-.014-.016-.018-.020-.022-.024-.026-.028-.030-.032-.034-.036-.038-.040 inch	0.090

BLUE-LINE® Valve regulation gauge set

For adjusting the valves.

- blades made from hardened spring steel
- cylindrical shaped blades, 75 mm length, 10 mm width
- fixed by a brass rivet
- sizes in mm and inch on each blade
- delivery bulk packed or in tear-off wallet



ART N° 41 5106



ART N° in tear-off wallet	ART N° bulk packed	Blades	 mm / inch	Combination of blades	 KG
41 5106	41 51061	6	0.10 - 0.40 0.004 - 0.016	0.10-0.15-0.20-0.25-0.30-0.40 mm .004-.006-.008-.010-.012-.016 inch	0.008

BLUE-LINE® Thickness gauge foil

5 Meter

For automotive industry and as lining foil.

- hardened spring steel
- sizes in mm and inch on each blade
- singly packed in a rugged plastic box

ART N° 45 5002



ART N°	 mm / inch	 KG
45 5002	0.02 / 0.0008	0.040
45 5003	0.03 / 0.0012	0.045
45 5004	0.04 / 0.0016	0.048
45 5005	0.05 / 0.002	0.050
45 5010	0.10 / 0.004	0.075
45 5015	0.15 / 0.006	0.100
45 5020	0.20 / 0.008	0.130
45 5025	0.25 / 0.010	0.150
45 5030	0.30 / 0.012	0.175
45 5040	0.40 / 0.016	0.255

BLUE-LINE® Holder for feeler gauge stripe



ART N° 45 8010



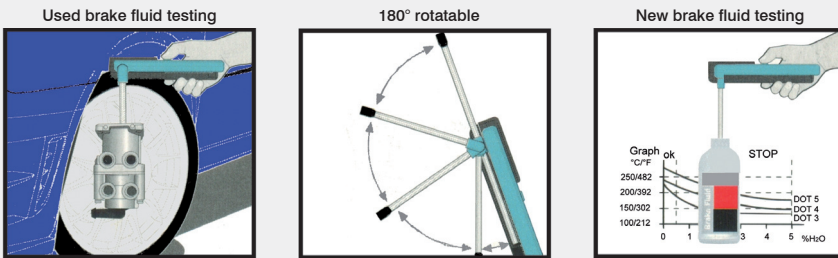
ART N°	 mm	 KG
45 8010	125 x 17	0.120

BLUE-LINE® DOT 5 break fluid tester

This unit can be used to test the quality of brake fluid. It can indicate whether the brake fluid under test can still be used safely or needs to be replaced. It is a very useful tool for ensuring good braking effect and safety driving. With LED technic, swiveable test rod and adjustor.

- rugged ABS plastic housing, anti-slip rubber covered
- 4 LEDs for steps of 0%; <0,5%; <2,5%; <5%
- temperature display in °C / °F
- delivery with 1x battery 9 V (type LR 61, art.-no.: 60 9281) and operation manual

ART N° 64 0371



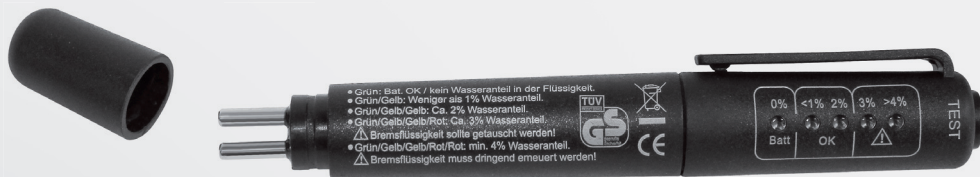
ART N°				
64 0371	0 - 5.0 (H ₂ O) %	100 - 250 °C / 212 - 482 °F	65 x 170 x 30	0.140

BLUE-LINE® DOT 4 break fluid tester, IP44

Fast and accurate check on the water content in the brake fluid, with LED technology, and self-test function.

- acid-resistant, polyamid plastic housing, with clip
- 5 LEDs for steps of 0%; <1%; <2%; <3%; <4%
- delivery with 1x battery (art.-no.: 27 2015) and operation manual

ART N° 64 0370



ART N°				ART N° replacement battery
64 0370	DOT ~ 4 0%; <1%; <2%; <3%; <4%	L x ø 150 x 25	0.075	27 2015

BLUE-LINE® Accu worklamp, with LED, IP54

ART N° 60 0020

Modern worklamp, designed for universal workplaces.
Spraywater resistant lamp, rechargeable.

- sturdy, acid- and oil-resistant housing, 360° revolving hook
- with rubber covered handle
- with built-in magnet, with 360 ° swivel hanging hook
- 27 bright white LED's and 1 red control LED
- Incl. 230 V DC charger and 12 V car adaptor

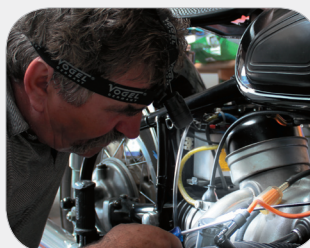


ART N°	Quantity LED's	LED light colour	mm L x Ø mm	KG
60 0020	27 + 1	white	170 x 29	0.640

BLUE-LINE® LED headlight, IP54

Headlight for professional use. The model gives an exceptional light.
With an optimized collimator for a deeper, brighter beam, even in outdoor area. This flashlight should convince every technician as well as for maintenance, rescue service, hobby, etc.

- durable, shock- and spraywater-resistant housing, with rubber-covered lenshead
- lenshead adjustable in a wide range
- flexible, tough and adjustable head belt, weather proof
- with push button on/off switch, with extremely bright white light
- delivery incl. 3 batteries 1.5 V (type AAA, art.-no.: 60 9283)



ART N° 60 0821



ART N°	power W	housing color	mm without belt	KG
60 0821	3	schwarz	70 x 75 x 50	0.155

BLUE-LINE® LED torch, IP54

LEDs last up to approx. 100.000 hrs.
This flashlight should convince every technician.

- durable, spray-water proved housing
- extremely bright white light
- with 3 batteries 1.5 V (typ AAA, art.-no.: 60 9283)



ART N° 60 1805

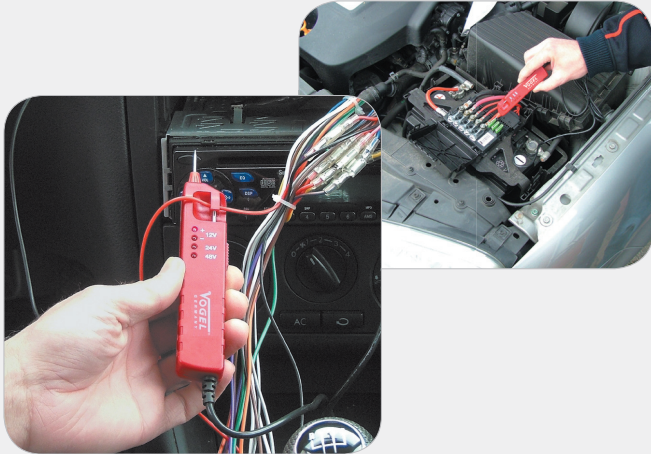


ART N°	power W	housing color	mm L x ø	KG
60 1805	3	black	120 x 28/28	0.095

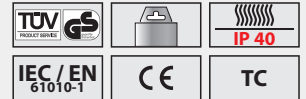
SILVER-LINE® Car tester, automotive voltage tester 3-48 V, IP40

With integrated piercing probe.
Perfect instrument for fault diagnostics in cars, trucks, etc.

- housing is made of tough, damage resistant ABS plastic
- with LED display, 12 V / 24 V / 48 V
- power supply via test object
- protection class III, IEC/EN 61010-1
- with operation manual and test certificate



ART N° 64 0366



ART N°	 AC / DC	 mm	 KG
64 0366	3 - 48 V	145 x 25 x 16	0.250

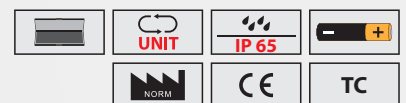
DIGI PLUS-LINE® Electr. digital stroboscope, IP65

Visualization of the oscillations of the vehicle components at different speeds. Non-contact speed or frequency measurement of moving objects. Waterproof and shock-proof handheld instrument in sturdy aluminum / ABS plastic housing. Using advanced LED technology, precision electronics.

- large LCD display, multiple lines
- adjustable flash duration, light emission 1.500 lux @ 6.000 FPM / 20 cm
- no waste of flash tubes
- resolution $\pm 0,1$ (30 ~ 999 FPM) / ± 1 (1.000 ~ 300.000 FPM); FPM=flashes/min
- temperature range 0 ~ 45° C
- incl. 3 batteries 1.5 V (AA), max. 10 h continous operation time
- with sturdy carry bag and operation manual



ART N° 61 0101



ART N°	 FPM	 max.	flash colour	 mm	 KG
61 0101	30 ~ 300.000	0.02% (± 1 Digit)	white 6500 K	191 x 82 x 60	0.400

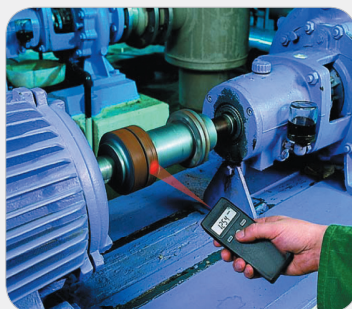
DIGI PLUS-LINE® Electr. digital laser-tachometer V^{SPEED}

With LCD digital display for checking rotational speeds quickly and accurately.

- measurement accuracy is $\pm 0,02\%$ from the end value ± 1 digit
- 5-digit LCD display, housing made of sturdy ABS plastic
- optical speed measurement with LED measurement beam
- autom. Off function, the device switches off after 30 seconds
- autom. Min / Max / AV memory function, display via memory key available
- mode button to switch to the requested parameter
- incl. 2 batteries 1.5 V (type AA, art.-no.: 60 9282)
- incl. 10 reflective tapes (art.-no.: 27 0168)
- with operation manual and test certificate

Option:

- art.-no. 27 0168 Reflectors-set (10 pieces)



ART N° 27 0150



ART N°	1 / min.	measuring distance max. mm	storage temperature °C	operating temperature °C	KG
27 0150	1 - 60.000	450 (optical)	-20 bis +70	0 bis +50	0.150

DIGI PLUS-LINE® Electr. digital laser-tachometer

With LCD digital display for optical or mechanical speed detection.

- measurement accuracy is $\pm 0,02\%$ from the end value ± 1 digit
- 5-digit LCD display, sturdy ABS plastic housing
- direct and non-contact recording of rotation
- automatic Off function, after 30 sec.
- automatic Min / Max / AV memory-function, recall by memory button
- mode function for different measurement units
- Stromversorgung über 2 x 1,5 V (Typ AA, Art.-Nr.: 60 9282), Batterien oder Akkus optional
- Extensive accessories is included: Hand Tachometer, 10 reflective tapes, adapter for direct measuring 1:1, rubber tip, track wheel 0,1 m a. 6", 2 batteries 1.5 V, operation manual, delivery in a case

Option:

- art.-no. 27 0168 reflectors-set (10 pieces)

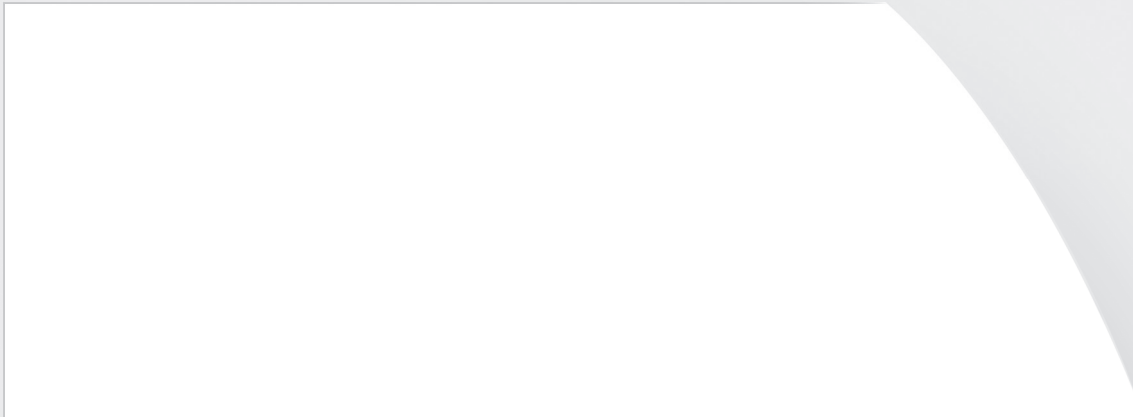


ART N° 27 0160



ART N°	1 / min.	measuring distance max. mm	storage temperature °C	operating temperature °C	KG
27 0160	1 - 99999	600 (optisch)	-20 bis +70	0 bis +50	0.250

Your Retailer:



Vogel Germany GmbH & Co. KG

Ossenpass 4
47623 Kevelaer
Germany

P. O. Box 1351
47613 Kevelaer
Germany

Telefon: 02832 9239-0
Telefax: 02832 3621
Mail: info@vogel-germany.de
Internet: www.vogel-germany.de

Phone: +49 (0)2832 9239-10
Fax: +49 (0)2832 3621
Mail: info@vogel-germany.de
Web: www.vogel-germany.de

Ust.-Id. No.: DE 813587158
WEEE-Reg.-Nr.: DE 68792696

ILN-No.: 40 10873 00000 3
Interseroh Hersteller-Nr.: 113216

* We deliver by our terms of sale, delivery and payment only.

