



Best products  
for  
oil, gas and  
energy industry



## 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 Mini USB (compatible with Mitutoyo Digimatic)
	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

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### Norms, accuracy-classes, regulations

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

Quality categories	
★★★★★	Product for highest demands
★★★★☆	Industry and craft
★★★☆☆	Craft
★★☆☆☆	DIY and training

### 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

<b>ART NO</b>	Article-Number
	Reading / Resolution
	Weight in kg
	Cross section of the article
	Max. total accuracy (±)
	Repeatability (±)
	Individual measuring range
	Article dimension

**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** Stainless Steel Rules  
acc. to EC II or DIN ISO 2768m

- reading from left to right
- flexible version, small section
- stainless spring steel
- non glare, matt surface
- etched graduation for a clear reading

**type A = mm / mm** top and bottom 1/1 mm graduation

**type C = inch / mm** top 1/64 ; 1/32 and 1/16 inch graduation, bottom 1/2 mm and 1/1 mm

type A

ART N° 10 10010015



type C

ART N° 10 10030015



Our steel rules from 500 mm up to 4000 mm are marked with the EC Code. These steel rules conform to EC Class II and are qualified as reference pieces. Therefore please order our calibration certificate together with the rule.



ART N°		mm	mm	KG	ART N° CC
type A	type C				
10 10010015	10 10030015	150	13 x 0.5	0.008	10 94001
10 10010030	10 10030030	300	13 x 0.5	0.015	10 94001
10 12010050	10 12030050	500	18 x 0.5	0.034	10 94005
10 12010100	10 12030100	1000	18 x 0.5	0.070	10 94010

**MASTER-LINE** Stainless Steel Rules, with magnet discs  
acc. to ECII and BS

**NEW**

- graduations on front and back
- reading from left to right
- with two straight edges
- precise, deep graduation, laser engraved scale
- with two detachable magnet discs
- stainless spring steel
- non glare, matt surface
- with identification number



with magnet disc



frontside 1/2 mm and 1/1 mm



backside 1/32 and 1/64 inch

ART N°	mm / inch	mm	KG	ART N° CC
10 26433015	150 / 6	20 x 1.0	0.030	10 94300
10 26433030	300 / 12	30 x 1.0	0.070	10 94301
10 26433060	600 / 24	30 x 1.0	0.155	10 94302

**BLUE-LINE** Stainless Steel Rules  
acc. EC II

- reading from left to right
- tolerance acc. to EC II (73/362 EWG)
- semi rigid version, with wide cross section
- stainless spring steel
- non glare, matt surface
- etched graduation for a clear reading
- in a vinyl bag

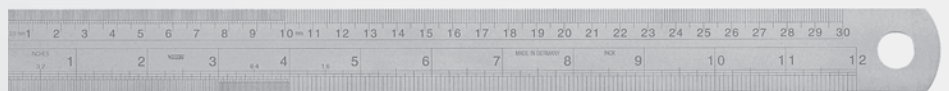
type A

ART N° 10 18010030



type D

ART N° 10 18040030



**type A = mm / mm** top and bottom 1/1 mm graduation

**type D = inch / mm** top 1/64 ; 1/32 and 1/16 inch graduation, bottom 1/2 mm and 1/1 mm

Our steel rules from 500 mm up to 4000 mm are marked with the EC Code. These steel rules conform to EC Class II and are qualified as reference pieces. Therefore please order our calibration certificate together with the rule.

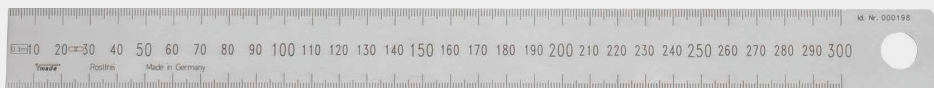


ART N°		mm	mm	KG	ART N° CC
type A	type D				
10 18010030	10 18040030	300	30 x 1.0	0.070	10 94001
10 18010050	10 18040050	500	30 x 1.0	0.115	10 94005
10 18010100	10 18040100	1000	30 x 1.0	0.245	10 94010



★★★★★  
**MASTER-LINE® Stainless Steel Rules**  
 acc. to EC II

- reading from left to right
- precise, deep graduation, laser engraved scale
- non glare, matt surface
- stainless spring steel
- with identification-no.
- in a vinyl bag



**Advice**  
 A perfect master piece for your references.



ART NO	mm		KG	ART NO CC
10 18060030	300	30 x 1.0	0.070	10 94001
10 18060050	500	30 x 1.0	0.115	10 94005
10 18060100	1000	30 x 1.0	0.245	10 94010
10 18060200	2000	30 x 1.0	0.480	10 94020

★★★★★  
**GOLD-LINE® Stainless Steel Rules, gold plated**  
 acc. to BS

- graduations on front and back
- reading from left to right
- precise, deep graduation, laser engraved scale
- non glare, sea water resistant
- stainless spring steel, gold plated
- in a vinyl bag

**NEW**



frontside 1/1 mm and 1/2 mm  
 backside 1/10; 1/16; 1/20; 1/32; 1/64; 1/50; 1/100 inch



ART NO	mm / inch		KG	ART NO CC
10 26432015	150 / 6	18 x 0.5	0.013	10 94300
10 26432030	300 / 12	30 x 1.0	0.070	10 94301

★★★★★  
**BLACK-LINE® Carbon Steel Rules**  
 acc. to BS

- graduations on front and back
- reading from left to right
- precise, deep graduation, laser engraved scale
- non glare, clear reading surface
- carbon spring steel, black finished

**NEW**



frontside 1/1 mm and 1/2 mm  
 backside 1/10; 1/16; 1/20; 1/32; 1/64; 1/50; 1/100 inch

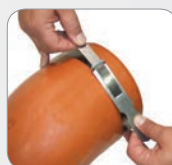


ART NO	mm / inch		KG	ART NO CC
10 26431015	150 / 6	18 x 0.5	0.013	10 94300
10 26431030	300 / 12	30 x 1.0	0.070	10 94301

★★★★★  
**RED-LINE® Circumference Measuring Tape „UFM“**  
 acc. to EC I

- with laser engraved scale
- for measuring diameters and circumferences
- application areas are among others manufacturers of: pipelines, boiler and tank construction, tire industry, forestry, etc.

- graduation in mm
- accuracy of total length according to EC I
- stainless steel



ART NO	circumference mm	diameter mm	mm		KG	ART NO CC
18 1801	60 - 950	20 - 300	0.1	16 x 0.20	0.080	18 94001
18 1802	940 - 2200	300 - 700	0.1	16 x 0.20	0.110	18 94002
18 1803	2190 - 3460	700 - 1100	0.1	16 x 0.20	0.160	18 94003
18 1804	3450 - 4720	1100 - 1500	0.1	16 x 0.20	0.190	18 94004
18 1805	4710 - 5980	1500 - 1900	0.1	16 x 0.20	0.215	18 94005
18 1806	5960 - 7230	1900 - 2300	0.1	16 x 0.20	0.250	18 94006

**AWARD**

**Empfehlung**  
Test  
05/2011  
**selber machen**

ART N° 14 1408

ART N° 14 1405

**BLUE-LINE** Pocket Measuring Tape, in stainless steel metal housing  
EC II

- exceptional tape stability, suitable for craftsmen and industry
- with graduation on front- a. backside
- backside with crosswise graduation for comfortable vertical reading
- autom. blade-stop, lies save and non slip in your hand

- rugged and rubber covered housing, with stainless metal clip and lanyard
- yellow coated blade, high rubb-off resistant and kink resistant
- self adjusting end-hook, with magnetic dots
- long-life spring made of special steel, automatic blade return and blade stop
- black/red figures, black scale
- from up to 25 mm blade with 3 rivets fixed



ART N°	m	± mm	mm	mm	mm	KG
14 1403	3	0.9	19	80 x 75 x 35	1750	0.200
14 1405	5	1.3	25	80 x 75 x 42	2100	0.310
14 1408	8	1.8	25	80 x 75 x 42	2100	0.470

**BLUE-LINE** Pocket Measuring Tape  
EC II

- exceptional tape stability
- suitable for craftsmen and industry
- ergonomic design
- lies save and non slip in your hand

- rugged and rubber covered housing with stainless metal clip and lanyard
- yellow coated blade, high rubb-off resistant and kink resistant
- self adjusting end-hook, with magnetic dots
- long-life spring made of special steel, automatic blade return and blade stop
- black/red figures, black scale
- from up to 25 mm blade with 3 rivets fixed



ART N° graduation mm / cm	ART N° graduation cm / inch	m / ft	± mm	mm	mm	mm	KG
14 1002	14 1102	2 / 6	0.7	16	65 x 65 x 35	1000	0.120
14 1003	14 1103	3 / 10	0.9	16	65 x 65 x 35	1400	0.148
14 1005	14 1105	5 / 16	1.3	19	65 x 73 x 35	1750	0.254
14 1008	14 1108	8 / 27	1.8	25	80 x 85 x 40	2100	0.426
14 1010	14 1110	10 / 33	1.8	25	80 x 85 x 40	2100	0.525

**DIGI PLUS-LINE** Laser Distance Meter • IP52

- with laserpointer and tiltable pintail, the instrument measures distance, area and volume; distances can be added or subtracted
- indirect measuring for height measuring
- with dynamic measuring system for continous measuring
- dust and dropwater resistant device

- shielded and rugged ABS housing with rubber cover for safety handling
- LCD display, main digit height 8 mm, with backlight, "Low-Battery-Display"
- measuring in meter or feet, switchable, measure speed 0.5 s, memory
- functions: Addition, Subtraction, Area and Volume calculation, continuous measuring, countdown measuring selectable 3-15 s, stake out measuring
- pythagoras-function 1: calculation of distance using two related measurements
- pythagoras-function 2: calculation of distance using three related measurements
- laser class II, FCC test part 15, acc. to EN 60825-1:2007 and others
- automatic off: laser after approx. 30 s, device after approx. 180 s.
- operation temperature at -5° ~ +40°C, storage temperature -20° ~ +60°C
- service-friendly touch pad, with sound by pressing the buttons
- carrying bag with belt loop and with hand loop
- incl. 2x 1.5 V battery (type AA, art.-no.: 60 9282) and operation manual



pintail



set composition



ART N°	m	m	± mm	nm	mW	mm	KG
14 0111	0.5 - 70	0.001	1.5	650	< 1	110 x 45 x 30	0.130

**Notice**  
We charge transport- and packing- costs for article marked with \*!

★★★★★  
**BLUE-LINE® Precision Graduated Straight Edge**  
DIN 866

**quality DIN 866 form A**

- mm graduation on bottom edge
- 5 mm protection space on both ends
- flat side finely ground
- vertical edges finely ground, can be used as a rule
- stainless or carbon steel quality available

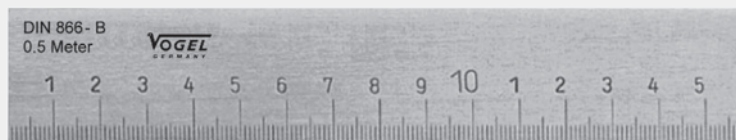
**quality DIN 866 form B**

- mm graduation on bottom edge
- without protection-space end, at left side
- flat side ground
- vertical edges ground
- stainless or carbon steel quality available

form A



form B



ART N°				ART N° CC	ART N° wooden case
<b>DIN 866 / A INOX</b>					
16 91000050	500	30 x 6	0.8	16 94005	16 99050/A
16 91000100	1000	40 x 8	2.5	16 94010	16 99100/A
16 91000200*	2000	50 x 10	7.5	16 94020	16 99200/A*
16 91000300*	3000	50 x 10	12.0	16 94030	16 99300/A*
<b>DIN 866 / B INOX</b>					
16 92000050	500	25 x 5	0.5	16 94005	16 99050/B
16 92000100	1000	30 x 6	1.5	16 94010	16 99100/B
16 92000200*	2000	40 x 8	4.8	16 94020	16 99200/B*
16 92000300*	3000	40 x 8	7.5	16 94030	16 99300/B*

**Tolerances according to DIN 866**

total length graduation mm	500	1000	2000	3000
tolerance form A	0.030	0.04	0.06	0.08
tolerance form B	0.075	0.10	0.15	0.20

★★★★★  
**SILVER-LINE® Precision Straight Edge**  
DIN 874

- accuracy acc. to DIN 874 page 1, accuracy GG 0 or GG 1
- made of steel

- shaped in I-form
- with weight reducing holes
- measuring surfaces extra fine ground
- with wide flat sides for resting spirit levels
- incl. calibration certificate

**Notice**  
We charge transport and packing costs for articles marked with \*!



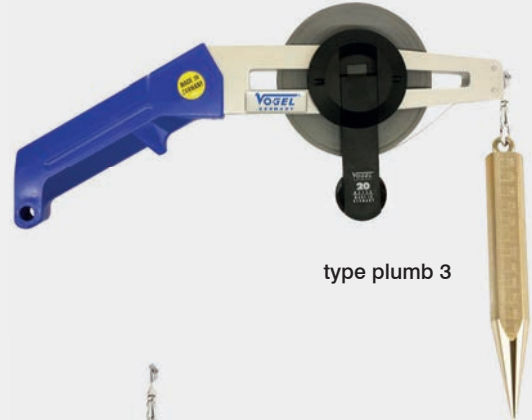
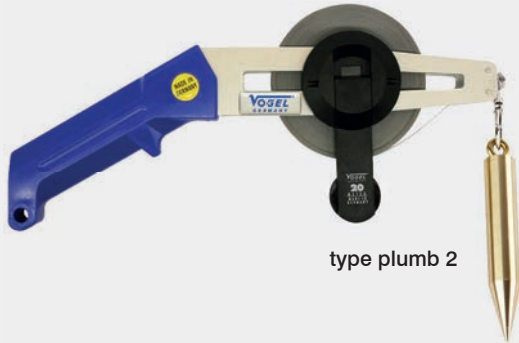
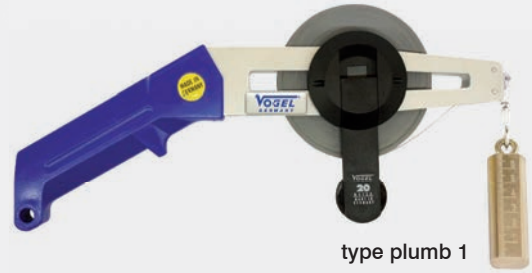
ART N°	DIN / accuracy				CC	ART N° wooden case
15 80010100*	DIN 874 / GG 0	1000	160 x 50	12.500	inclusive	15 998100*
15 80010200*	DIN 874 / GG 0	2000	160 x 50	25.000	inclusive	15 998200*
15 81010100*	DIN 874 / GG 1	1000	100 x 30	5.000	inclusive	15 998100/1*
15 81010200*	DIN 874 / GG 1	2000	120 x 40	16.000	inclusive	15 998200/1*





## Measuring Tape with aluminium diagonal frame

- for measurements of tanks and depths
- plumbs are connected by swivel snap hook with the band
- in a robust and rigid aluminium diagonal frame
- ergonomic handle
- crank core with metal shaft, ensures fatigue-free measurement work
- lasting ease of the tape when rolling in and out
- with different plumbs made of brass
- measuring tape made of carbon steel or stainless steel available
- graduation high etched
- graduation on front in mm/cm, on back in inch/Ft



plumb, no. 1  
brass, cylindrical, double-sided flattened, 70 mm long, ø 25 mm, graduation: mm/-, mm/mm, mm/inch, weight: 240 g



plumb no. 2  
brass, cylindrical, 120 mm long, ø 20 mm, without graduation, weight: 260 g



plumb no. 3  
brass, cylindrical, double-sided flattened, 170 mm long, ø 25 mm, graduation: mm/-, mm/mm, mm/inch, weight: 470 g



ART NO	type	m / ft	mm	KG
14 2521	plumb 1 carbon steel	10 / 32	13	0.800
14 2522		20 / 65	13	0.900
14 2523		30 / 98	13	1.100
14 2525		50 / 164	13	1.500
14 2531	plumb 2 carbon steel	10 / 32	13	0.800
14 2532		20 / 65	13	1.000
14 2533		30 / 98	13	1.100
14 2535		50 / 164	13	1.500
14 2541	plumb 3 carbon steel	10 / 32	13	1.000
14 2542		20 / 65	13	1.200
14 2543		30 / 98	13	1.400
14 2545		50 / 164	13	1.800
14 2621	plumb 1 stainless steel	10 / 32	13	0.800
14 2622		20 / 65	13	0.900
14 2623		30 / 98	13	1.100
14 2625		50 / 164	13	1.500
14 2631	plumb 2 stainless steel	10 / 32	13	0.800
14 2632		20 / 65	13	1.000
14 2633		30 / 98	13	1.200
14 2635		50 / 164	13	1.500
14 2641	plumb 3 stainless steel	10 / 32	13	1.000
14 2642		20 / 65	13	1.200
14 2643		30 / 98	13	1.400
14 2645		50 / 164	13	1.800

★★★★★  
**BLUE-LINE® Measuring Tape with aluminium diagonal frame**  
 EC II

- in a robust and rigid aluminium diagonal frame
- ergonomic handle
- crank core with metal shaft, ensures fatigue-free measurement work
- lasting ease of the tape when rolling in and out
- measuring tape in steel, white lacquered
- graduation in mm, onesided



beginning of tape



steel, white lacquered



ART N <sup>o</sup>	m	mm	KG
14 2512	30	13	0.800
14 2513	50	13	1.200

★★★★★  
**BLUE-LINE® Measuring Tape with aluminium diagonal triangle frame**  
 EC II

- in a robust and rigid aluminium diagonal triangle frame
- ergonomic handle
- crank core with metal shaft, ensures fatigue-free measurement work
- lasting ease of the tape when rolling in and out
- measuring tape in white fiberglass
- graduation in cm, onesided



beginning of tape



fiberglass, white

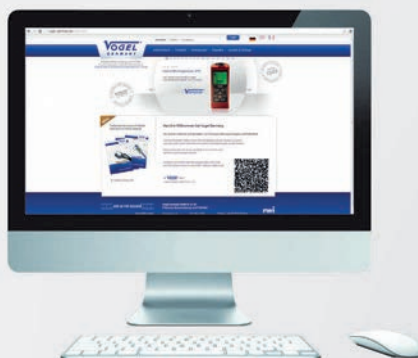


fiberglass with metal ring



ART N <sup>o</sup>	m	mm	KG
14 2712	30	13	0.700
14 2713	50	13	0.900

**Explore our website!**



**Any questions?  
 We are pleased to advise!**

[www.vogel-germany.de](http://www.vogel-germany.de)

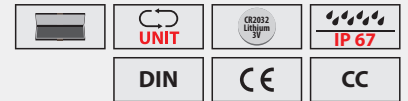
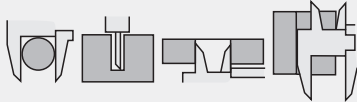


### Electr. Digital Caliper • IP67

DIN 862

- top model for industry purposes
- water and coolant proof acc. to DIN 40050 / IEC 60529
- with Sylvac electronic, without data output

- sturdy quality, stainless steel, hardened
- large LCD display with clear reading, 8 mm digit height
- jaws finely ground and lapped, flat depth gauge
- On/Off button, SET button, MODE button
- mm/inch switchable, zero setting at any position
- incl. 1x 3 V battery (type CR2032, art.-no.: 20 02093), with operation manual
- incl. calibration certificate



ART NO	mm / inch	mm / inch	mm	max. mm				KG	CC
20 2120	150 / 6	0.01 / 0.0005	0.01	0.02	40	16.5	flat	0.170	inclusive
20 2121	200 / 8	0.01 / 0.0005	0.01	0.03	50	19.5	flat	0.200	inclusive

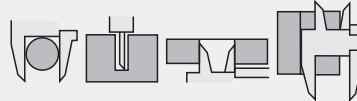
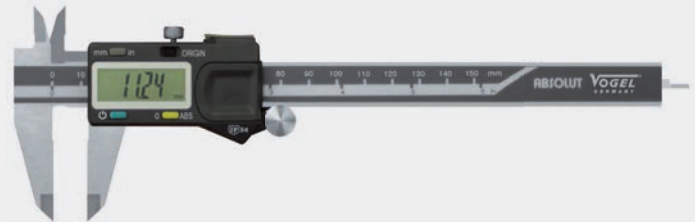


### "Absolute" Electr. Digital Caliper • IP54

DIN 862

- top model for industry purposes
- spray water proof acc. to DIN 40050 / IEC 60529
- with Vocom-s duo data output, top model (compatible with Mitutoyo Digimatic)

- sturdy quality, stainless steel, hardened
- large LCD display with clear reading, 9 mm digit height
- jaws finely ground and lapped, with fixing screw
- On/Off button, with „ORIGIN“ system, with thumbroll
- mm/inch switchable, zero setting at any position
- incl. 1x 3 V battery (type CR2032, art.-no.: 20 02093), with operation manual



ART NO	mm / inch	mm / inch	mm	max. mm				KG	ART NO CC
20 2150	150 / 6	0.01 / 0.0005	0.01	0.02	40	16	flat	0.165	20 94101
20 2151	200 / 8	0.01 / 0.0005	0.01	0.03	50	19.5	flat	0.195	20 94101

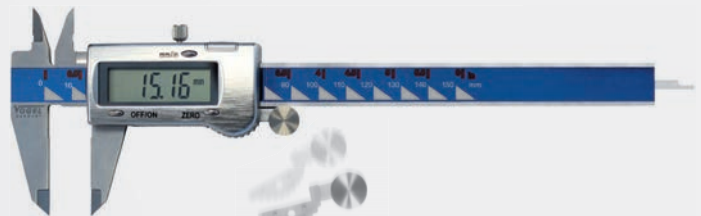


### Electr. Digital Caliper

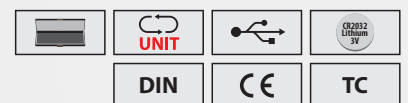
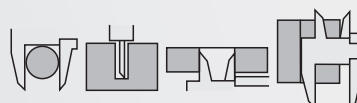
DIN 862

- top model for professional workshop use
- housing with metal cover and metal buttons
- standard model in sturdy quality
- with data output (mini USB)

- sturdy quality, stainless steel, hardened
- with or without thumbroll (included, for self installation)
- large LCD display with clear reading, 9 mm digit height
- jaws finely ground and lapped
- On/Off-button, with flat or round depth gauge
- mm/inch switchable, zero setting at any position
- incl. 1x 3 V battery (type CR2032, art.-no.: 20 02093), with operation manual



with removeable thumbroll



ART NO	mm / inch	mm / inch	mm	max. mm				KG	ART NO CC
20 2040.3	150 / 6	0.01 / 0.0005	0.01	0.02	40	16.5	flat	0.165	20 94101
20 2041.3	200 / 8	0.01 / 0.0005	0.01	0.03	50	19.5	flat	0.195	20 94101



★★★★★  
**DIGI PLUS-LINE** „Solar“ Electr. Digital Caliper

- with power supply by solar cells
- stainless, hardened
- large LCD display with clear reading, 9 mm digit height
- jaws finely ground and lapped, with flat depth gauge
- Zero/On button and autom. shutdown
- mm/inch switchable, zero setting at any position
- incl. 1x 3 V battery (type CR2016, art.-no.: 20 02194), with operation manual



<b>ART No</b>									<b>ART No</b> CC
20 2051	150 / 6	0.01 / 0.0005	0.01	0.03	40	20	flat	0.160	20 94101

★★★★★  
**DIGI PLUS-LINE** Electr. Digital Caliper

- made of carbon fiberglass, non conductive and especially made for the electronic and sensitive purposes, like the food sector and automotive parts
- with fraction number reading system
- large LCD display with clear reading, 13 mm digit height
- Zero/On button and autom. shutdown
- mm/inch switchable, zero setting at any position
- with flat depth gauge made of carbon fiberglass
- incl. 1x 3 V battery (type CR2032, art.-no.: 20 02093), with operation manual



display with fraction number in inches



<b>ART No</b>									<b>ART No</b> CC
20 2201	150 / 6	0.01 / 0.0005	0.01	0.04	40	16	flat	0.060	20 94101

★★★★★  
**BLUE-LINE** Accessories for Digital Calipers

- for many applications
- 6 pairs of different buttons
- 2 pairs of indicators, various sizes
- with measuring force testing system (for permanent uniform pressure)
- in a plastic box

**NEW**



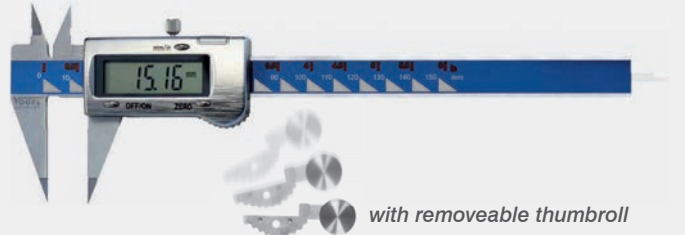
measuring force testing system



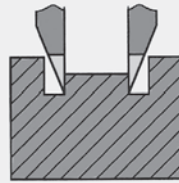
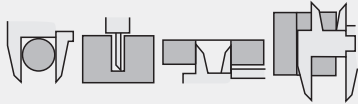
<b>ART No</b>	description / contents pcs.	
20 9333	Accessories for Digital Calipers / 10	0.325

★★★★★  
DIGI PLUS-LINE® **Electr. Digital Pointed Caliper**

- to measure narrow groove widths etc.
- with metal cover and metal button
- with data output (mini USB)
- sturdy quality, stainless steel, hardened
- with or without thumbroll (included, for self installation)
- large LCD display with clear reading, 9 mm digit height
- jaws finely ground and lapped
- On/Off button, with flat depth gauge
- mm/inch switchable, zero setting at any position
- incl. 1x 3 V battery (type CR2032, art.-no.: 20 02093), with operation manual



with removeable thumbroll



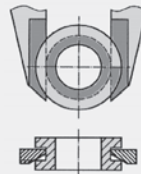
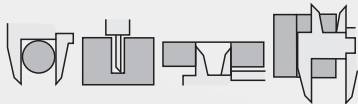
<b>ART No</b>									<b>ART No</b> CC
20 2025	150 / 6	0.01 / 0.0005	0.01	0.03	40	16	flat	0.165	20 94101

★★★★★  
DIGI PLUS-LINE® **Electr. Digital Splines Caliper**

- to measure narrow penetration usw.
- with metal cover and metal button
- with data output (mini USB)
- sturdy quality, stainless steel, hardened
- with or without thumbroll (included, for self installation)
- large LCD display with clear reading, 9 mm digit height
- jaws finely ground and lapped
- On/Off button, with flat depth gauge
- mm/inch switchable, zero setting at any position
- incl. 1x 3 V battery (type CR2032, art.-no.: 20 02093), with operation manual



with removeable thumbroll



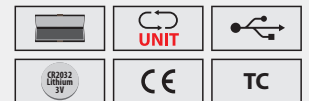
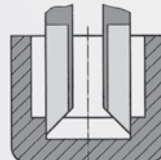
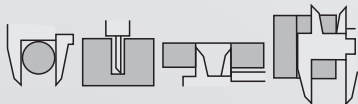
<b>ART No</b>									<b>ART No</b> CC
20 2026	150 / 6	0.01 / 0.0005	0.01	0.03	40	16.5	flat	0.165	20 94101

★★★★★  
DIGI PLUS-LINE® **Electr. Digital Special Caliper**

- to measure especially deep penetrations etc.
- with metal cover and metal button
- with data output (mini USB)
- sturdy quality, stainless steel, hardened
- with or without thumbroll (included, for self installation)
- large LCD display with clear reading, 9 mm digit height
- jaws finely ground and lapped
- On/Off button, with flat depth gauge
- mm/inch switchable, zero setting at any position
- incl. 1x 3 V battery (type CR2032, art.-no.: 20 02093), with operation manual



with removeable thumbroll

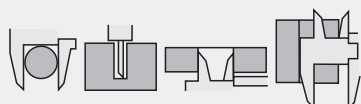
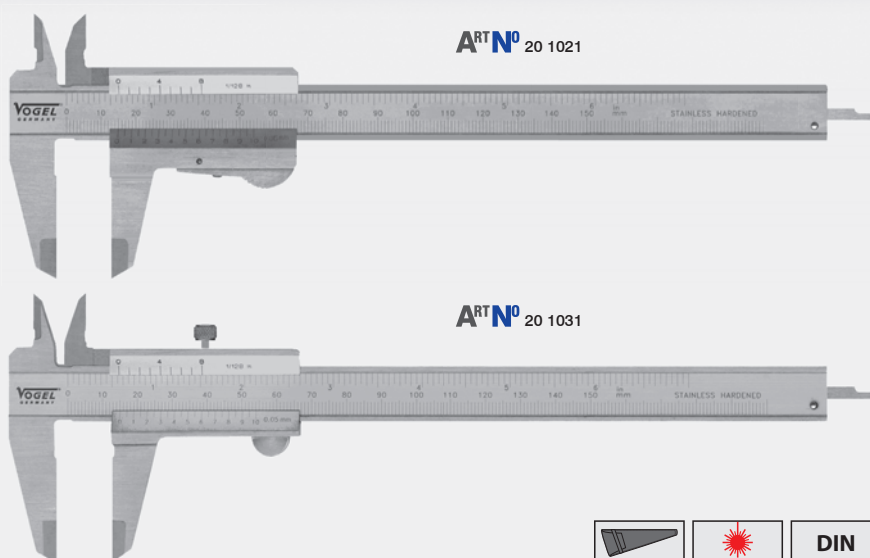


<b>ART No</b>									<b>ART No</b> CC
20 2027	150 / 6	0.01 / 0.0005	0.01	0.04	40	45	flat	0.165	20 94101

We also manufacture special calipers to your needs.  
Please ask us or send us your drawings. We are happy to help you!

★★★★★  
**BLUE-LINE® Pocket Vernier Caliper**  
 DIN 862

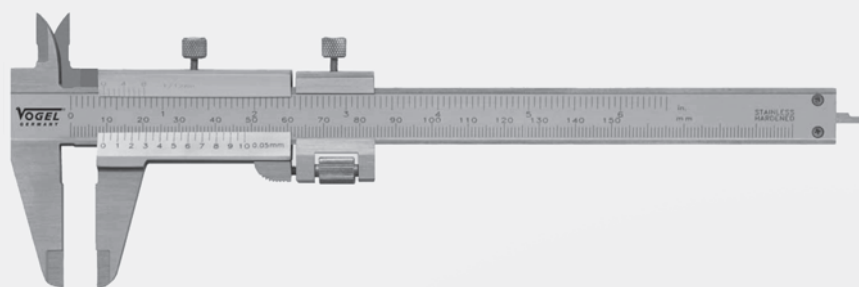
- suitable for workshop use (standard)
- stainless steel, hardened
- scale and vernier satin chrome finish
- jaws fine ground and lapped
- mono-block vernier
- 4-way measuring system
- flat or round depth gauge



ART No thumb locking	ART No fixing screw	mm / inch	mm bottom	inch top	40	16	flat	0.150	ART No CC 20 94001
20 1021	20 1031	150 / 6	0.05	1/128					

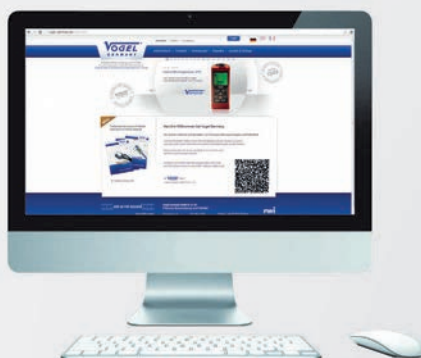
★★★★★  
**BLUE-LINE® Pocket Vernier Caliper**  
 workshop grade

- with fine adjustment and long jaws
- stainless steel, hardened
- graduation in mm/inch, laser engraved scale
- scale and vernier satin chrome finish
- jaws finely ground and lapped
- mono block vernier
- with fine adjustment



ART No	mm / inch	mm bottom	inch top	50	19.5	flat	0.200	ART No CC 20 94020
20 1064	180 / 7	0.05	1/128					
20 1065	180 / 7	0.02	1/1000					

**Explore our website!**



**Any questions?  
 We are pleased to advise!**

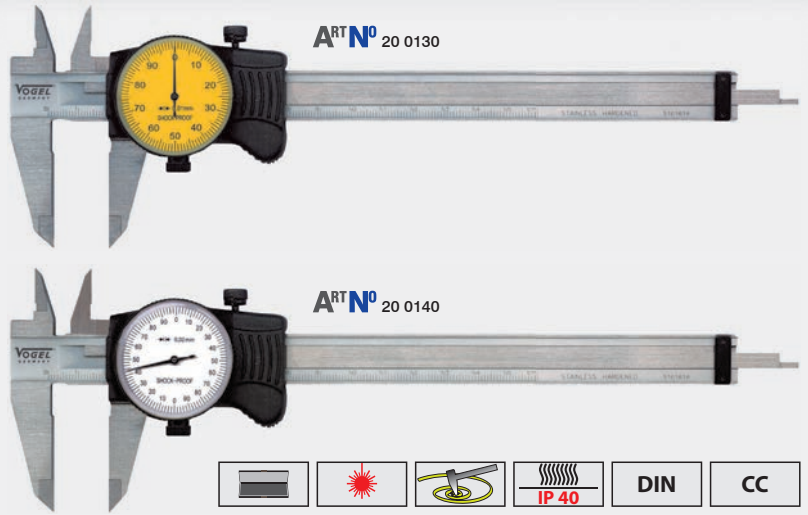
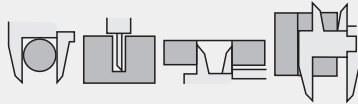
[www.vogel-germany.de](http://www.vogel-germany.de)



★★★★★  
**SILVER-LINE® Precision Dial Caliper • IP40**  
 DIN 862

- top model, dust proof
- for fast and accurate reading

- stainless steel, hardened
- measuring rail matt chrome finish, laser engraved scale
- jaws finely ground and lapped
- shockproof version
- with fixing screw
- incl. calibration certificate

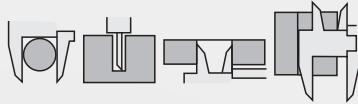


ART No	mm	mm	mm				KG	CC
20 0130	150	0.01	1	40	16	flat	0.215	inclusive
20 0140	150	0.02	2	40	16	flat	0.215	inclusive

★★★★★  
**BLUE-LINE® Dial Caliper • IP40**  
 DIN 862

- with inch graduation, dust proof
- for fast and accurate reading

- stainless steel, hardened
- scale and vernier satin chrome finish, laser engraved scale
- jaws finely ground and lapped
- shock proof housing
- with fixing screw



ART No	inch	inch	inch				KG	ART No CC
20 0081	6	0.001	0.1	40	16	flat	0.160	20 94001

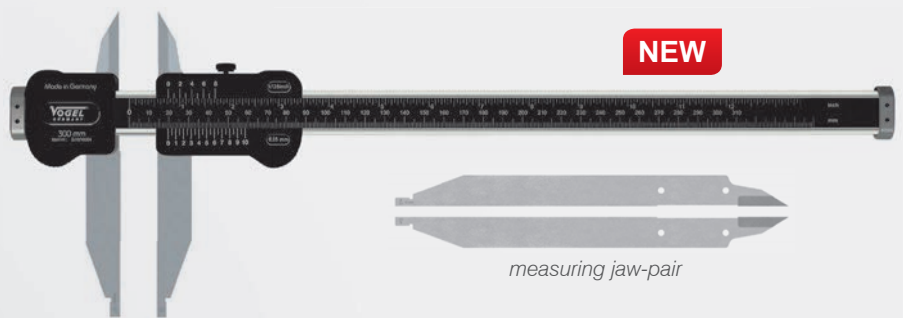
★★★★★  
**BLUE-LINE® Workshop Caliper**  
 DIN 862

- parallaxfree, with flat Nonius
- with exchangeable jaws
- modern design, lightweight model, made of anodized hard aluminium

- stainless, hardened measuring jaws and tips
- jaws finely ground
- good contrast with its white scale on black surface
- reading in mm and inch
- slides perfectly because of double-prismatic-lead
- rail and housing made of anodized-aluminium
- in plastic box, with operation manual

**Options**

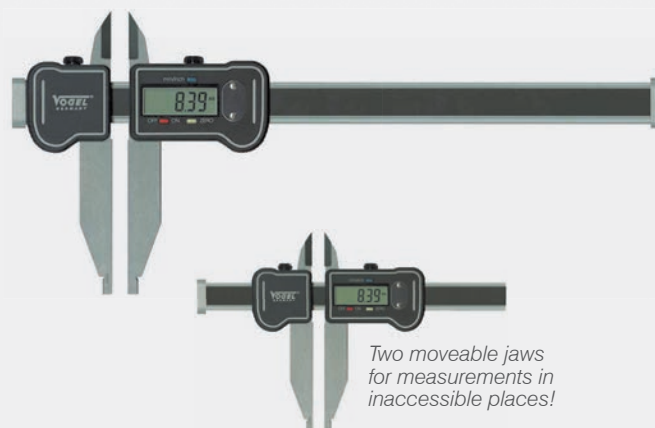
- art. no. 20 0891 measuring jaw-pair, jaw length 125 mm, exchangeable
- art. no. 20 0892 measuring jaw-pair, jaw length 150 mm, exchangeable



ART No	mm / inch	bottom mm	top inch			ø mm	KG	ART No CC
20 0831	300 / 12	0.05	1/128	90	40	10	0.500	20 94030*
20 0832	500 / 20	0.05	1/128	90	40	10	0.600	20 94050*

★★★★★  
**DIGI PLUS-LINE® Electr. Digital Workshop Caliper**  
 workshop grade

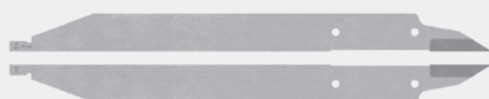
- with two moveable, exchangeable jaws
- modern design, lightweight model, made of anodized hard aluminium
- stainless, hardened measuring jaws and tips
- jaws finely ground
- with two adjustable, exchangeable measuring jaws
- LCD display with clear reading, digit height 10 mm
- On/Off button, mm/inch switchable, zero setting at any position
- slides perfectly because of double-prismatic-lead
- rail and electronic housing made of anodized aluminium
- incl. 1x 1.5 V battery (type LR44, art.-no.: 20 20192/B) with operation manual
- sizes 300 mm and 500 mm in plastic box, other sizes in a strong carton



Two moveable jaws for measurements in inaccessible places!

**Options**

- **art.-no. 20 0891**  
measuring jaw-pair, jaw length 125 mm, exchangeable
- **art.-no. 20 0892**  
measuring jaw-pair, jaw length 150 mm, exchangeable
- **art.-no. 20 0899**  
measuring jaw adapter-pair, with 2.5 mm thread hole, used for special measuring operations



measuring jaw-pair



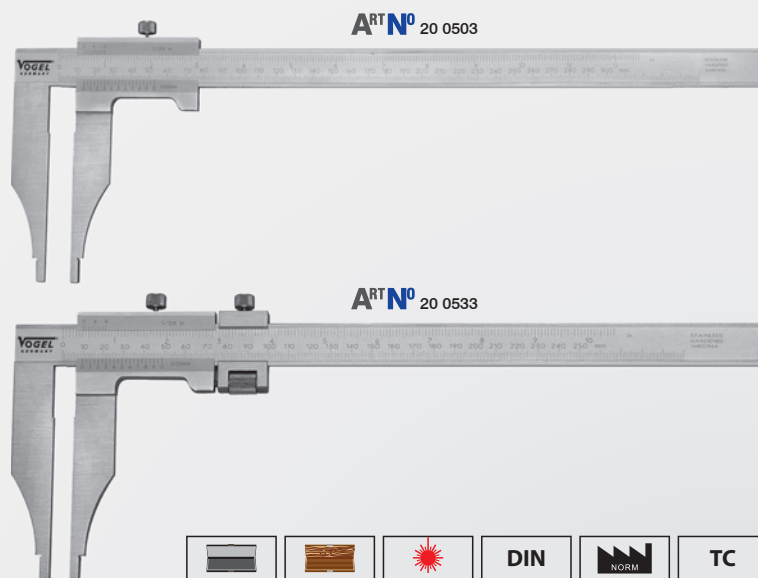
measuring jaw adapter-pair



ART NO	mm / inch	mm / inch	mm	max. mm			ø mm	KG	ART NO CC
20 0880	300 / 12	0.01 / 0.0005	0.01	0.04	90	40	10	0.500	20 94103
20 0881	500 / 20	0.01 / 0.0005	0.01	0.05	90	40	10	0.600	20 94105
20 0882	800 / 32	0.01 / 0.0005	0.01	0.06	90	40	10	1.000	20 94110

★★★★★  
**SILVER-LINE® Workshop Caliper**  
 DIN 862 or in special sizes  
 acc. to workshop grade

- precision class
- stainless steel, hardened
- scale and vernier satin chrome finish, laser engraved scale
- jaws finely ground
- offset jaws for inside measurements
- with or without fine adjustment, without knife points
- with fixing screw
- mono block vernier
- up to 1000 mm in plastic case, other sizes in wooden case
- with identification number



ART NO	ART NO	mm / inch	bottom mm	top inch			ø mm	KG	ART NO CC
<del>20 0503</del>	20 0533	300 / 12	0.05	1/128	100	-	10	0.415	20 94030
<del>20 0505</del>	20 0535	500 / 20	0.05	1/128	150	-	20	1.495	20 94050
<del>20 0510</del>	20 0540	1000 / 40	0.05	1/128	150	-	20	3.110	20 94100
<del>20 0512*</del>	20 0552*	1500 / 60	0.05	1/128	200	-	20	3.550	20 94150
<del>20 0513*</del>	20 0553*	2000 / 80	0.05	1/128	200	-	20	7.000	20 94200

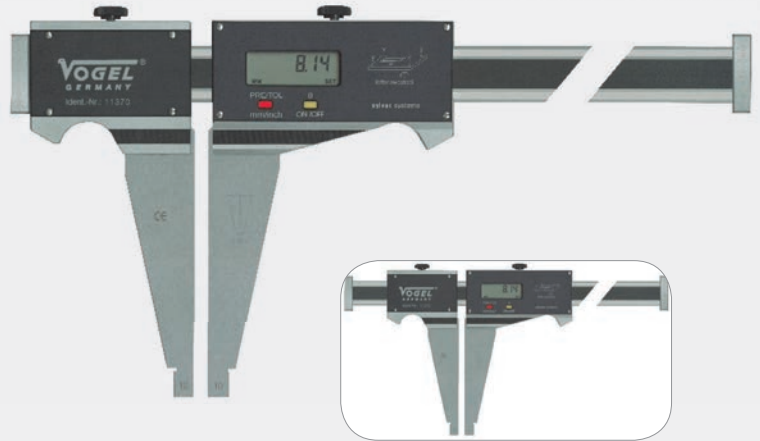
**DIGI PLUS-LINE** **Electr. Digital Workshop Caliper**  
workshop grade

- with two adjustable, exchangeable measuring jaws
- modern design, lightweight model, made of anodized hard aluminium, with Sylvac electronic

- stainless, hardened measuring jaws
- jaws finely ground, offset jaws for inside measurements
- with two adjustable, exchangeable measuring jaws
- LCD display with clear reading, digit height 7 mm
- On/Off button, mm/inch switchable, zero setting at any position
- with pre-select-, Min/Max-, REF-I, REF-II and tolerance-function
- slides perfectly because of double-prismatic-lead
- rail and electronic housing made of anodized aluminium
- incl. 1x 3 V battery (type CR2032, art.-no.: 20 02093) with operation manual

**Option**

- measuring jaws are also available according to your drawing specifications!



*Two moveable jaws for measurements in inaccessible places!*

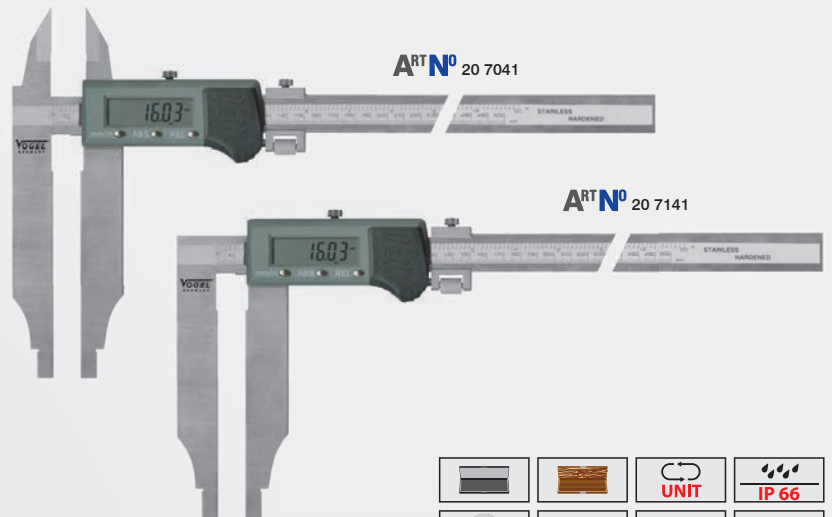


ART NO	mm / inch	mm / inch	mm	max. mm	mm	ø mm	KG	ART NO CC
20 0940	500 / 20	0.01 / 0.0005	0.01	0.05	150	20	1.380	20 94105
20 0942	1000 / 40	0.01 / 0.0005	0.01	0.06	150	20	1.700	20 94110
20 0943*	1500 / 60	0.01 / 0.0005	0.01	0.10	150	20	2.000	20 94115
20 0944*	2000 / 80	0.01 / 0.0005	0.01	0.13	150	20	2.400	20 94120

**DIGI PLUS-LINE** **Electr. Digital Workshop Caliper • IP66**  
workshop grade

- water and coolant proof acc. to DIN 40050 / IEC 60529

- stainless steel, hardened
- large LCD display with clear reading, digit height 11 mm
- jaws finely ground and lapped
- offset jaws for inside measurements
- On/Off button, automatic shutdown, mm/inch switchable
- zero setting at any position, with REL-, ABS- and PRESET-mode
- function buttons made of metal
- with fine adjustment, with or without knife points
- incl. 1x 3 V battery (type CR2032, art.-no.: 20 02093) with operation manual
- incl. calibration certificate



ART NO	mm / inch	mm / inch	mm	max. mm	mm	ø mm	KG	CC
20 7041	500 / 20	0.01 / 0.0005	0.01	0.06	150	56	1.550	inclusive
20 7048	1000 / 40	0.01 / 0.0005	0.01	0.07	150	67	2.420	inclusive
20 7141	500 / 20	0.01 / 0.0005	0.01	0.06	150	-	1.180	inclusive
20 7146	1000 / 40	0.01 / 0.0005	0.01	0.07	150	-	2.290	inclusive





## HIGH PRECISION LASERCENTER

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because manufacturing is on a low cost level.

*Laser engravings  
we can do at:*

- ✓ steel, high-grade steel, stainless steel
- ✓ cast iron
- ✓ non-ferrous metal
- ✓ special plastic material





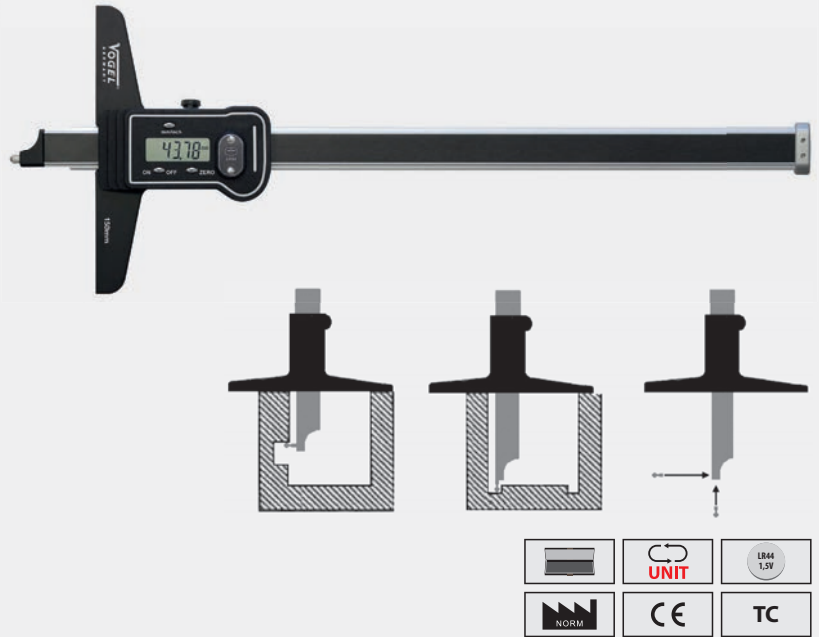
### Electr. Digital Depth Gauge

workshop grade

- modern design, lightweight model
- made of anodized hard aluminium
- with exchangeable measuring tips (M2.5)
- with 3 measuring bridges with different length
- LCD display with clear reading, digit height 10 mm
- incl. hardened measuring tips with M2.5 thread, exchangeable
- On/Off button, mm/inch switchable, zero setting at any position
- slides perfectly because of double-prismatic-lead
- rail and electronic housing made of anodized aluminium
- incl. 1x 1.5 V battery (type LR44, art.-no.: 20 20192/B) with operation manual and hexagon-key

#### Options

- art.-no. 22 0890 measuring bridge, 150 mm, anodized aluminium
- art.-no. 22 0891 measuring bridge, 300 mm, anodized aluminium
- art.-no. 22 0892 measuring bridge, 450 mm, anodized aluminium
- other measuring tips with M2.5 thread can be found in our catalogue "EDITION 2013/2014" on page 140



ART N°	mm / inch	mm / inch	mm	max. mm	mm	KG	ART N° CC
22 0880	300 / 12	0.01 / 0.0005	0.01	0.04	150 / 300 / 450	0.410	22 94870
22 0881	500 / 20	0.01 / 0.0005	0.01	0.05	150 / 300 / 450	0.505	22 94871



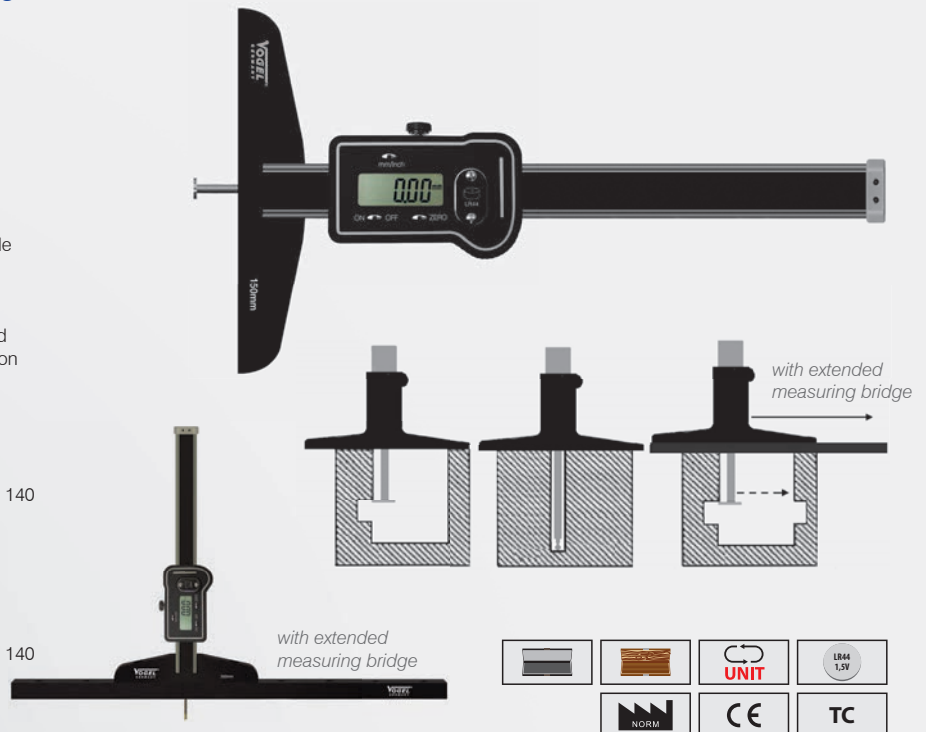
### Electr. Digital Depth Gauge

workshop grade

- especially for narrow bore depth
- with round depth measuring bar
- modern design, lightweight model
- made of anodized hard aluminium
- with exchangeable measuring tips (M2.5)
- with exchangeable disc inserts
- incl. extended measuring bridge
- LCD display with clear reading, digit height 10 mm
- incl. hardened measuring tips with M2.5 thread, exchangeable
- incl. plate insert with ø 10 mm with measuring rods-ø 4 mm
- incl. plate insert with ø 20 mm with measuring rods-ø 6 mm
- all sliding parts slide in plastic bearing double prism guide
- rail and electronics housing made of aluminium, oxide-coated
- On/Off button, mm/inch switchable, zero setting at any position
- incl. 1x 1.5 V battery (type LR44, art.-no.: 20 20192/B) with operation manual and hexagon-key
- sizes 300 mm and 500 mm in plastic box, size 200 mm in wooden case
- further probe tips with M2.5 thread can be found in our catalogue "EDITION 2013/2014" on page 140

#### Options

- art.-no. 22 0893 measuring bridge, 550 mm, duraluminium
- art.-no. 22 0894 measuring bridge, 750 mm, duraluminium
- art.-no. 22 0895 measuring bridge, 950 mm, duraluminium
- other measuring tips with M2.5 thread can be found in our catalogue "EDITION 2013/2014" on page 140



ART N°	mm / inch	mm / inch	mm	max. mm	meas.-beam-ø mm	mm	KG	ART N° CC
22 0840	200 / 8	0.01 / 0.0005	0.01	0.03	4	150/350	0.355	22 94870
22 0841	300 / 12	0.01 / 0.0005	0.01	0.04	4	150/350	0.390	22 94870
22 0842	500 / 20	0.01 / 0.0005	0.01	0.05	6	150/350	0.475	22 94871

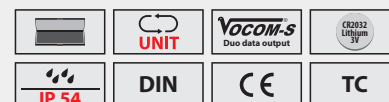


## "Absolute" Electr. Digital Depth Caliper • IP54

DIN 862

**NEW**

- top model for industry purposes
- spray water proof acc. to DIN 40050 / IEC 60529
- with **Vocom-s** duo data output (connectivity also for Digimatic measuring devices)
- sturdy quality, stainless steel, hardened
- large LCD display with clear reading, 9 mm digit height
- surface finely ground and lapped, with fixing screw
- On/Off button, with „ORIGIN“ system
- mm/inch switchable, zero setting at any position
- incl. 1x 3 V battery (type CR2032, art.-no.: 20 02093), with operation manual



ART <sup>NO</sup>	mm / inch	mm / inch	mm	mm	type / size of measuring surface		KG	ART <sup>NO</sup> CC
						mm		
22 0251	150 / 6	0.01 / 0.0005	0.02	100		5.5	0.175	22 94101
22 0252	200 / 8	0.01 / 0.0005	0.03	100		5.5	0.215	22 94101
22 0253	300 / 12	0.01 / 0.0005	0.03	150		5.5	0.280	22 94101



## Electr. Digital Depth Caliper • IP65

DIN 862

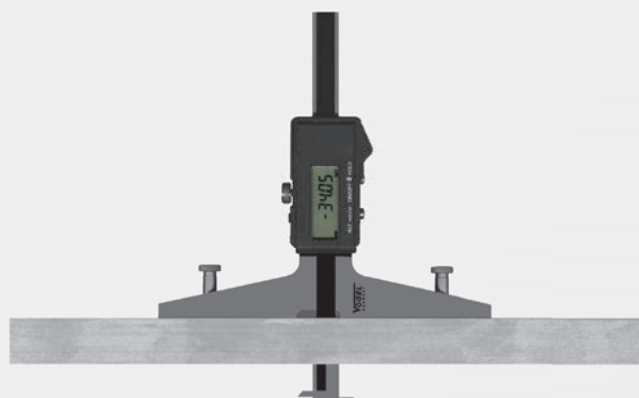
- water and coolant acc. to DIN 40050 / IEC 60529
- with Sylvac electronic and data output OPTO RS 232
- OPTION: with moveable bridge to screw
- stainless steel, hardened
- large LCD display with clear reading, digit height 7 mm
- measuring rail with two offset hooks, with fixing screw
- jaws finely ground and lapped
- On/Off button, automatic shutdown, with ABS/INC mode
- mm/inch switchable, zero setting at any position
- incl. 1x 3 V battery (type CR2032, art.-no. 2002093), with operation manual



Option: moveable bridge to screw

art.-no.: 22 0870 → 400 x 13 x 10 mm

art.-no.: 22 0872 → 600 x 13 x 10 mm



example of an installed measuring bridge



ART <sup>NO</sup>	mm / inch	mm / inch	mm	mm	mm	mm	KG	ART <sup>NO</sup> CC
22 0852	500 / 20	0.01 / 0.0005	0.01	0.03	150	26 x 7/7	2.380	22 94851

★★★★★  
**DIGI PLUS-LINE®** Electr. Digital Micrometer **V<sup>SPEED</sup>** • IP67  
 DIN 863

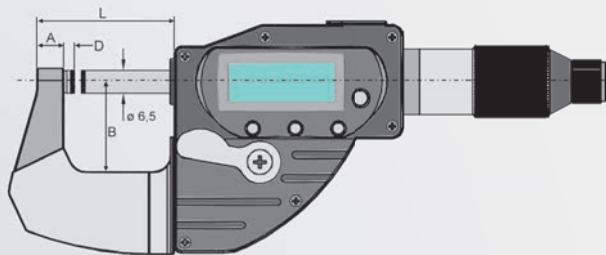
- water and coolant proof acc. to DIN 40050 / IEC 60529
- with 2 mm spindle feed for quick measuring
- with Sylvac electronic • with Proximity data output
- connection proximity USB / RS232 / digimatic (optional choice)
- large LCD display, clear reading, digit height 7 mm
- frame lacquered, with insulation plates, carbide surfaces, lapped
- automatic turn on by movement of the measuring spindle, mode / set button
- zero setting at any position, switching to sleep mode after 20 minutes
- storage of position in the sleep mode, mm/inch switchable
- non swiveling measuring spindle, measuring range 0-102 mm, means total measuring range captured with 3 micrometers
- switchable measuring force 5N/10N
- incl. 1x 3 V battery (type CR2032, art.-no. 20 02093), with operation manual
- incl. calibration certificate



ART NO	mm / inch	mm / inch	ø mm	mm	A mm	B mm	D mm	L mm	max. mm	KG	CC
23 0101	0 - 30 / 0 - 1.2	0.001 / 0.00005	28	2	8	27.5	3.5	42	0.003	0.280	inclusive

★★★★★  
**DIGI PLUS-LINE®** „Absolute“ Electr. Digital Micrometer **V<sup>SPEED</sup>** • IP65  
 DIN 863

- water and coolant proof acc. to DIN 40050 / IEC 60529
- Absolute Measurement System (ABS-system)
- with lifting device for quick measuring processes with a constant measuring pressure
- with **Vocom-s** duo data output, top model (compatible with Mitutoyo Digimatic)
- top model in sturdy quality, frame lacquered, with insulation plates
- large LCD display, clear reading, digit height 7 mm
- carbide surfaces, lapped, non swiveling hardened measuring spindle
- On/Off button, automatic shutdown, zero setting at any position
- mm/inch switchable, ABS/INC measuring system, ORIGIN system
- constant measuring pressure through even pressure of the measuring spindle
- incl. 1x 3 V battery (type CR2032, art.-no. 2002093), with operation manual



ART NO	mm / inch	mm / inch	ø mm	mm	A mm	B mm	D mm	L mm	max. mm	KG	ART NO CC
23 0580	0 - 25 / 0 - 1	0.001 / 0.00005	20	-	8	26	3.5	32	0.002	0.295	23 94000



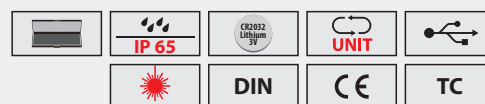
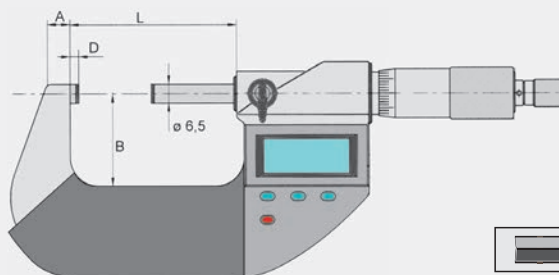


## Electr. Digital Micrometer • IP65

**NEW**

- water and coolant proof acc. to DIN 40050 / IEC 60529
- with USB data output

- sturdy quality, frame lacquered, with insulation plates
- large LCD display, clear reading, digit height 7 mm
- carbide surfaces, lapped, spindle hardened and ground
- On button, automatic shutdown, zero setting at any position
- mm/inch switchable, ABS/INC measuring system
- locking lever for quick and precise fixing
- with ratchet for constant measuring pressure
- incl. 1x 3 V battery (type CR2032, art.-no. 20 02093), with operation manual
- from up 25 mm with setting gauge



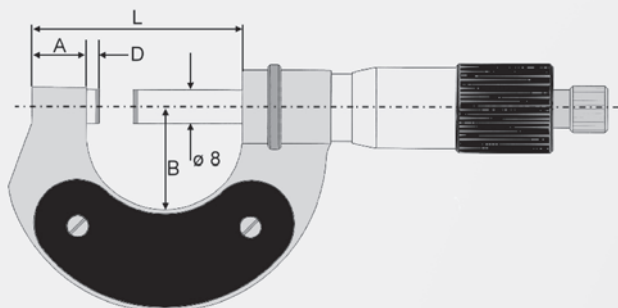
ART NO	mm / inch	mm / inch	ø mm	mm	A mm	B mm	D mm	L mm	max. mm	KG	ART NO CC
23 0130	0 - 25 / 0 - 1	0.001 / 0.00005	18	0.5	9	24	3.5	35	0.003	0.310	23 94000
23 0131	25 - 50 / 1 - 2	0.001 / 0.00005	18	0.5	9	32	3.5	60	0.003	0.394	23 94001



## Precision External Micrometer

- top quality, accuracy better than DIN 863

- sturdy quality, in high precision version
- drum and sleeve matt chrome finish
- hammer blow grey lacquered frame, with insulation plates
- carbide surfaces, lapped, spindle hardened and ground
- locking wheel for quick and precise fixing
- with ratchet for constant measuring pressure
- with adjusting key
- art. no. 23 0587 + 23 0588 with setting gauge



ART NO	mm	mm	ø mm	mm	A mm	B mm	D mm	L mm	max. mm	KG	ART NO CC
23 0586	0 - 25	0.01	21	0.5	13	24	3	37	0.002	0.300	23 94000
23 0587	25 - 50	0.01	21	0.5	13	34	3	62	0.002	0.370	23 94001
23 0588	50 - 75	0.01	21	0.5	15	46	3	87	0.003	0.440	23 94001



### Electr. Digital Micrometer • IP40

DIN 863

- dust proof acc. to DIN 40050 / IEC 60529
- Absolute Measurement System (ABS-system)

- frame lacquered, with insulation plates, sturdy quality
- large LCD display, clear reading, digit height 8 mm
- with carbide surfaces, lapped, spindle hardened and ground
- On/Off button, zero setting at any position
- mm/inch switchable, ABS/INC measuring system
- locking lever for quick and precise fixing
- with friction ratchet for constant measuring pressure
- friction ratchet with rubber studs for better handling
- incl. 1x 3 V battery (type CR2032, art.-no. 20 02093), with operation manual
- art. no. 23 1062 - 23 1064 with setting gauge



ergonomically designed handle shape



ART No	mm / inch	mm / inch	ø mm	mm	A mm	B mm	D mm	L mm	max. mm	KG	ART No CC
23 1061	0 - 25 / 0 - 1	0.001 / 0.00005	22	0.5	6	25	3.5	32	0.003	0.200	23 94000
23 1062	25 - 50 / 1 - 2	0.001 / 0.00005	22	0.5	6	32	3.5	57	0.003	0.330	23 94001
23 1063	50 - 75 / 2 - 3	0.001 / 0.00005	22	0.5	7	44	3.5	82	0.004	0.460	23 94001
23 1064	75 - 100 / 3 - 4	0.001 / 0.00005	22	0.5	8	59	3.5	108	0.005	0.555	23 94001

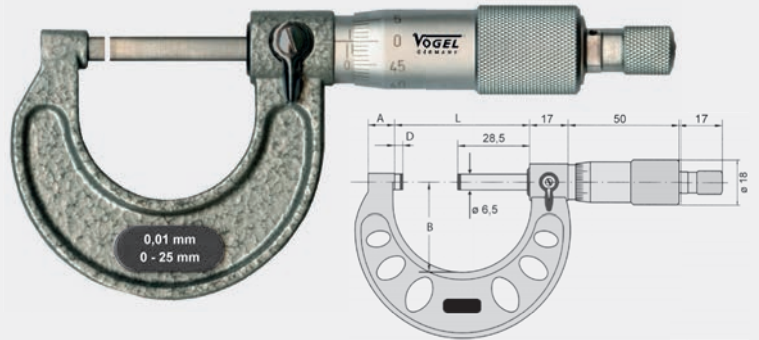


### External Micrometers

DIN 863

- lightweight design, metric graduation
- e.g. for use in the workshop

- drum and sleeve matt chrome finish
- frame hammer blow grey lacquered
- carbide surfaces, lapped, spindle hardened and ground
- locking lever for quick and precise fixing
- with ratchet for constant measuring pressure
- with adjustment key, from up 25 mm with setting gauge



ART No	mm	mm	ø mm	mm	A mm	B mm	D mm	L mm	max. mm	KG	ART No CC
<b>with mm graduation</b>											
23 1301	0 - 25	0.01	18	0.5	9.0	28	3.0	32	0.004	0.170	23 94000
23 1302	25 - 50	0.01	18	0.5	14.0	38	3.0	57	0.004	0.220	23 94001
ART No	inch	inch	ø mm	mm	A mm	B mm	D mm	L mm	max. mm	KG	ART No CC
<b>with inch graduation</b>											
23 1310	0 - 1	0.0001	18	0.5	9.0	28	3.0	32	0.004	0.170	23 94000
23 1311	1 - 2	0.0001	18	0.5	14.0	38	3.0	57	0.004	0.220	23 94001



### Electr. 3-Point Digital Bore Micrometer Set • IP54

DIN 863

- spray water proof acc. to DIN 40050 / IEC 60529
- e.g. for bore-holes and blind holes

- incl. setting ring, LCD display, zero setting at any position, On/Off button
- chromed version, self centering and self aligning
- carbide equipped surfaces at over ø 12 mm
- mm/inch switchable, ABS/INC system
- with ratchet for constant measuring pressure, incl. extension
- incl. 1x 1.5 V battery (type LR44, art.-no.: 20 20192/B), with operation manual



ART No	mm	compilations mm	extensions mm	ART No CC
23 6644	6 - 12	6 - 8 / 8 - 10 / 10 - 12	100	23 94027
23 6646	12 - 20	12 - 16 / 16 - 20	150	23 94028
23 6648	20 - 50	20 - 25 / 26 - 30 / 30 - 40 / 40 - 50	150	23 94029
23 6650	50 - 100	50 - 63 / 62 - 75 / 75 - 88 / 87 - 100	150	23 94030

Wooden cases for art.-no. 23 0170 - 23 0172  
can be found in our catalogue  
„EDITION 2013/2014“ on page 109

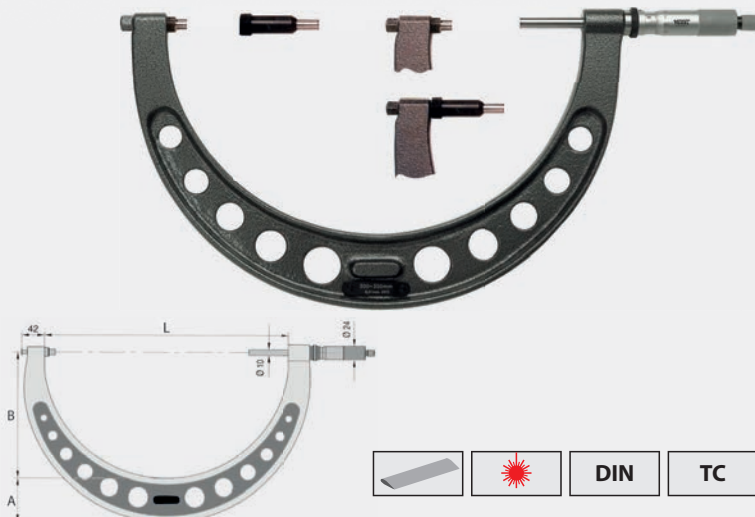
**SILVER-LINE** External Micrometer  
DIN 863

- for large measuring ranges
- with exchangeable extension
- with lightweight metal frame

- drum and sleeve matt chrome finish, spindle revolution 50 mm
- lightweight metal frame, hammer blow grey lacquered
- carbide surfaces, lapped, spindle hardened and fine ground
- locking wheel for quick and precise fixing
- with ratchet for constant measuring pressure
- with adjusting key, without setting gauges, please have a look at our catalogue „EDITION 2013/2014“ on page 107

**Option**

- insulated handle available on request and surcharge (art.-no. 23 0290/1)



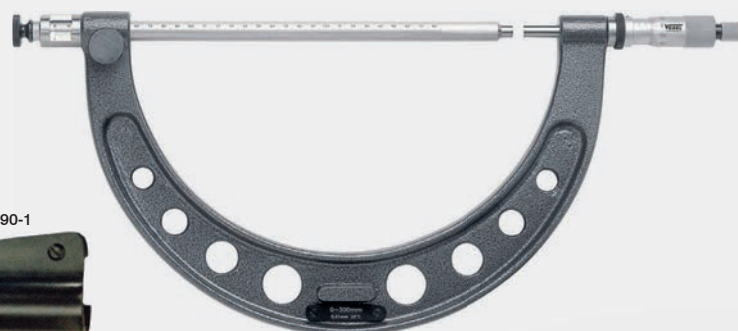
ART No	mm	mm	ø mm	mm	L mm	B mm	A mm	max. mm	KG	ART No CC
23 0170	200 - 300	0.01	24	1.0	325	165	64	0.006	1.500	23 94017
23 0171	300 - 400	0.01	24	1.0	430	220	74	0.007	1.900	23 94017
23 0172	400 - 500	0.01	24	1.0	530	273	87	0.008	2.400	23 94017

**SILVER-LINE** External Micrometer

- large measuring range
- with adjustable anvil
- with lightmetal frame

- with 50 mm spindle revolution
- drum and sleeve matt chrome finish
- frame hammer blow lacquered, carbide surfaces, lapped, spindle hardened and fine ground
- locking wheel for quick and precise fixing
- with ratchet for constant measuring pressure
- with adjusting key, without setting gauges, please have a look at our catalogue „EDITION 2013/2014“ on page 107

Wooden cases for art.-no. 23 4205 - 23 4207  
can be found in our catalogue  
„EDITION 2013/2014“ on page 109



**Option**

- insulated handle available on request and surcharge (art.-no. 23 0290/1)

ART No	mm	mm	ø mm	mm	spindle-ø mm	max. mm	KG	ART No CC
23 4205	0 - 300	0.1 / 0.01	24	1.0	10.0	0.006	1.900	23 94018
23 4206	300 - 600	0.1 / 0.01	24	1.0	10.0	0.009	3.500	23 94018
23 4207*	600 - 900	0.1 / 0.01	24	1.0	10.0	0.012	5.400	23 94018

**DIGI PLUS-LINE** Electr. 3-Point Digital Bore Micrometer Sets • IP54  
DIN 863

- spray water proof acc. to DIN 40050 / IEC 60529

- up to size 100 mm incl. setting ring
- LCD display with clear reading
- chromed version, self centering and self aligning
- with carbide equipped surfaces lapped
- zero setting at any position, On/Off button
- mm/inch switchable, with ABS/INC system
- with friction ratchet for constant measuring pressure, incl. extension
- incl. 1x 1.5 V battery (type LR44, art.-no.: 20 20192/B), with operation manual



ART No	mm	compilation mm	extensions mm	ART No CC
23 6620	50 - 100	50 - 70 / 70 - 100	150	23 94036
23 6621	100 - 250	100 - 150 / 150 - 250	150	23 94039

★★★★★  
**SILVER-LINE® Precision Depth Gauge**  
DIN 863

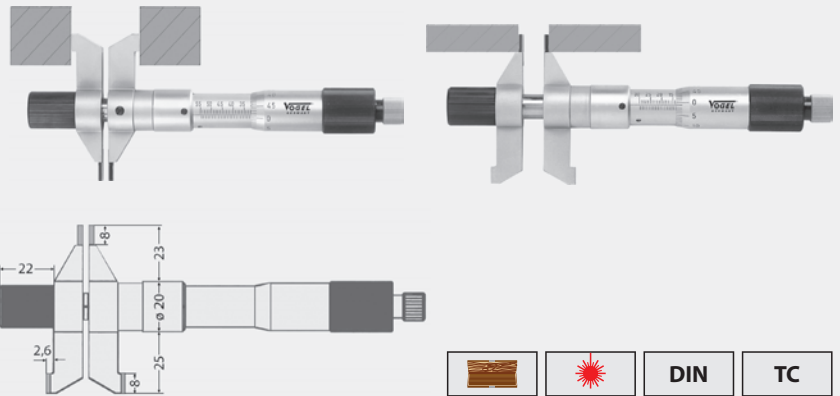
- high standard quality, for calibration purposes
- drum and sleeve matt chrome finish
- measuring pin and surface hardened and fine ground
- measuring face plane ground and lapped
- clamping wheel for quick and precise fixing
- with ratchet for constant measuring pressure
- art.-no. 23 0814 with exchangeable measuring pins



ART NO	mm	mm	ø mm	mm	mm	measuring pin-ø mm	quantity of pins	mm	KG	ART NO CC
23 0801	0 - 25	0.01	20	0.5	100 x 17	6.5	1	3	0.490	23 94001
23 0814	0 - 100	0.01	20	0.5	100 x 17	4.0	4	5	0.660	23 94003

★★★★★  
**SILVER-LINE® Internal Micrometer**  
DIN 863

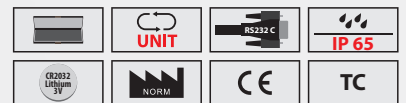
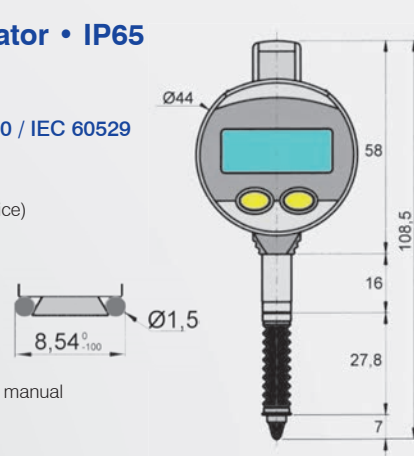
- top quality measuring instrument, for top requirements
- drum and sleeve matt chrome finish
- carbide measuring faces in rounded shape
- two measuring jaws for two different ranges
- easy reading through scale on the front and back
- smoothly through ball bearing spindle
- with friction ratchet for constant measuring pressure
- with insulation handle



ART NO	mm	mm	ø mm	mm	mm	mm	KG	ART NO CC
23 0601	5 - 55	0.01	21	0.5	0.002	0.0025	0.480	23 94102

★★★★★  
**DIGI PLUS-LINE® Electr. Digital Small Dial Indicator • IP65**

- the measurement will not influenced by the liquids on the scale or measuring sensor
- dial indicators water and coolant proof acc. to DIN 40050 / IEC 60529
- with Sylvac electronic, with data output RS232 „Power“
- data output RS232 combined with external power supply
- data output S\_Connect power USB / RS232 / wireless (optional choice)
- mechanical parts in stainless steel, hardened
- housing and front plate made of polyamide
- LCD display with clear reading, digit height 6 mm
- autom. On/Off switching, zero setting at any position
- hold function, absolute and relative mode, pre-select value
- mm/inch switchable, reversal of the measuring device
- with dovetail guide at the back
- incl. 1x 3 V battery (type CR2032, art.-no.: 20 02093), with operation manual



- Option
- spare rubber sleeve (art.-no.: 24 9916)

ART NO	mm / inch	mm / inch	mm	mm 1) 1 Digit	protected	measuring force N	KG	ART NO CC
24 0230	0-12.7 / 0-0.5	0.01 / 0.0005	0.002	1) 0.010	✓	0.60 - 1.30	0.070	24 94230
24 0232	0-12.7 / 0-0.5	0.001 / 0.00005	0.002	0.005	✓	0.60 - 1.30	0.070	24 94230



★★★★★  
**DIGI PLUS-LINE® Electr. Digital Dial Indicator • IP65**

- water and coolant proof acc. to DIN 40050 / IEC 60529
- with mini USB data output

- mechanical parts in stainless steel, hardened
- housing made of aluminium, front plate made of plastic
- LCD display with clear reading, digit height 11 mm
- On/Off button, ABS/INC measurement system
- zero setting at any position, ± pre-select value, PRESET
- mm/inch switchable
- incl. 1x 3 V battery (type CR2032, art.-no.: 20 02093), with operation manual

**Option**

- spare rubber sleeve (art.-no.: 24 9915)



ART No	mm / inch	mm / inch	mm	mm 1/1 Digit	A mm	B mm	C mm	D mm	L mm	KG	ART No CC
24 2140	12.5 / 0.5	0.01 / 0.0005	0.02	0.010	59	65	30	59.5	145	0.095	24 94200
24 2150	12.5 / 0.5	0.001 / 0.00005	0.004	0.003	59	65	30	59.5	145	0.095	24 94200

★★★★★  
**DIGI PLUS-LINE® „Absolute“ Electr. Digital Dial Indicator • IP65**

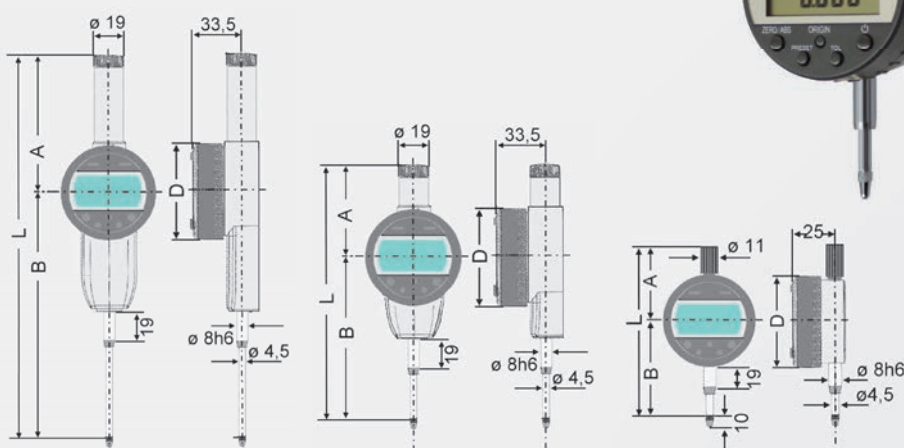
**NEW**

- water and coolant acc. to DIN 40050 / IEC 60529
- with **Vocom-s** duo data output, top model (compatible with Mitutoyo Digimatic)

- mechanical parts in stainless steel, hardened, IP51 protected
- housing IP65 protected, front plate made of plastic, 330° swiveling
- large LCD display with clear reading, digit height 10 mm
- On/Off button, ABS/INC measuring system, with ORIGIN system
- min/max, tolerance, ± pre-select value, PRESET, zero setting at any position
- mm/inch switchable
- incl. 1x 3 V battery (type CR2032, art.-no.: 20 02093), with operation manual

**Options**

- data box with USB port, (art.-no.: 24 20194)
- foot switch for data box, (art.-no.: 20 9010)



ART No 24 0257

ART No 24 0256

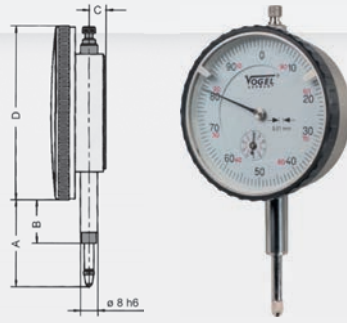
ART No 24 0255



ART No	mm / inch	mm / inch	mm	mm max.	A mm	B mm	D mm	L mm	KG	ART No CC
24 0250	12.7 / 0.5	0.01 / 0.0005	0.002	0.02	125	55	60	62	0.196	24 94200
24 0255	12.7 / 0.5	0.001 / 0.00005	0.002	0.003	125	55	60	62	0.196	24 94200
24 0251	25.4 / 1.0	0.01 / 0.0005	0.002	0.02	161	55	97	62	0.307	24 94201
24 0256	25.4 / 1.0	0.001 / 0.00005	0.002	0.003	161	55	97	62	0.307	24 94201
24 0252	50.8 / 2.0	0.01 / 0.0005	0.002	0.04	240	83	158	62	0.382	24 94202
24 0257	50.8 / 2.0	0.001 / 0.00005	0.002	0.005	240	83	158	62	0.382	24 94202

**SILVER-LINE** **Dial Indicator**  
DIN 878 / workshop grade

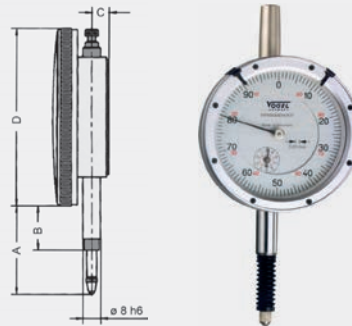
- sturdy design, for workshop use and calibration purposes
- solid brass housing, matt chrome finish
- spindle and stem stainless, hardened and lapped
- adjustable tolerance fingers
- with turnable scale by outer ring, for easy zero setting



ART N°	mm	mm			mm	A mm	B mm	C mm	D-ø mm	KG	ART N° CC
			yes	no							
24 0131	0 - 10	0.01	✓	-	1	40	18.5	7.5	58	0.200	24 94000

**SILVER-LINE** **Dial Indicator • IP67**  
DIN 878 high workshop grade

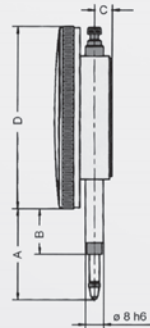
- water-, coolant and oil tight acc. to DIN 40050 / IEC 60529
- solid brass housing, matt chrome finish, stem with rubber sleeve
- stem and spindle stainless, hardened and lapped
- adjustable tolerance fingers, shadowfree flat glass, perfect sealed by O-rings
- with turnable scale by outer ring, for easy zero setting



ART N°	mm	mm			mm	A mm	B mm	C mm	D-ø mm	KG	ART N° CC
			yes	no							
24 0151	0 - 10	0.01	✓	-	1	45.5	16.7	9.3	61.5	0.240	24 94000

**SILVER-LINE** **Dial Indicator**  
high workshop grade

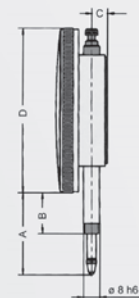
- with inch reading
- shockproof version with 6 jewels
- top quality, for workshop and inspection laboratory
- aluminium housing, matt chrome finish
- stem and spindle stainless and hardened
- adjustable tolerance fingers
- with a flat cover and cover with lug
- with turnable scale by outer ring, for easy zero setting
- incl. calibration certificate



ART N°	inch	inch			inch	A mm	B mm	C mm	D-ø mm	KG	CC
			yes	no							
24 1136	0 - 1.0	0.001	-	✗	0.1	54	19	8.5	60	0.135	inclusive
24 1137	0 - 1.0	0.001	✓	-	0.1	54	19	8.5	60	0.135	inclusive

**BLUE-LINE** **Dial Indicator • IP54**  
DIN 878

- splash water resistant acc. to DIN 40050 / IEC 60529
- metal housing, matt chrome finish
- stem and spindle stainless and hardened, with rubber sleeve
- with turnable scale by outer ring, for easy zero setting
- incl. calibration certificate

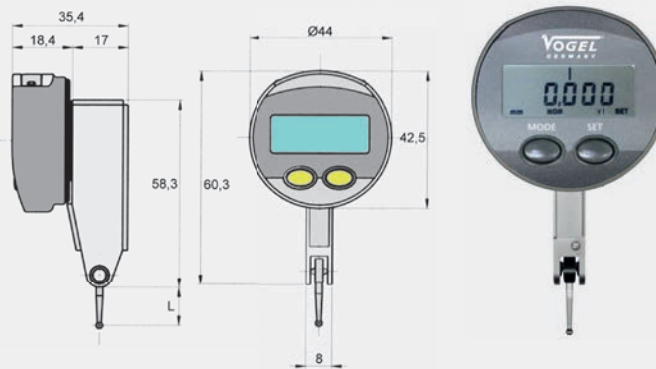


ART N°	mm	mm			mm	A mm	B mm	C mm	D-ø mm	KG	ART N° CC
			yes	no							
24 1143	0 - 10	0.01	-	✗	1	46	19	8	61	0.210	24 94011

★★★★★  
**DIGI PLUS-LINE® Electr. Digital Test Indicator • IP65**

- water- a. coolant proof acc. to DIN 40050 / IEC 60529 (IP65)
- with Sylvac electronic
- with data output RS232 „Power“

- data output RS232 combined with external power supply
- connection S\_Connect Power USB / RS232 / (optional choice)
- mechanical parts in stainless, hardened, matt chrome finish
- housing and front panel made of polyamide
- LCD display with clear reading, digit height 6 mm, over 360° revolving
- autom. power off, zero setting at any position
- hold function, absolute and relative mode, input of preset value
- mm/inch switchable, selection of measuring direction
- housing with 3 dovetail guides
- incl. 1x 3 V battery (type CR2032, art.-no.: 20 02093), with operation manual



ART <sup>NO</sup>	mm	mm / inch	measuring range mm / inch	mm	mm	measuring force N	L mm	KG	ART <sup>NO</sup> CC
24 0680	0 - 1.6	0.001 / 0.0001	±0.8 / ±0.03	0.001	0.01	0.13 ±15%	12.5	0.073	24 94200

★★★★★  
**DIGI PLUS-LINE® Electr. Digital Thickness Gauge**

- pocket size, with spindle lifting knob

- stainless, hardened measuring surfaces, rugged plastic cover
- large LCD display with clear reading, digit height 10 mm
- On/Off button, mm/inch switchable
- zero setting at any position
- incl. 1x 1.5 V battery (type LR44, art.-no.: 20 20192/B), with operation manual



ART <sup>NO</sup>	mm / inch	mm / inch	mm	mm	thread depth mm	KG
24 0408	0 - 10 / 0 - 0.4	0.01 / 0.0005	0.01	0.02	11	0.065

★★★★★  
**SILVER-LINE® Precision Measuring Table**  
 DIN 876/00

- made of black granite
- for the measuring room and calibration laboratory

- measuring surface fine ground and diamond lapped
- hardened column with height adjustment and setting ring
- with adjustable cross arm
- dial indicator shank ø 8 mm

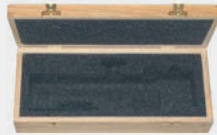


ART <sup>NO</sup>	mm table	meas.- height mm	throat mm	total height (H) mm	column-ø mm	cross arm-ø mm	KG
25 0815	240 x 140 x 50	165	180	270	35	22	8.900

★★★★★  
**SILVER-LINE® Universal Magnetic Measuring Stand**

- for all kind of measurements in various position
- for the professional use

- chromed stem, with fine adjustment
- clamping connection by cross head
- sturdy magnetic block, On/Off-rotary switch from aluminium, prismatic base and with a flat ground face backwards
- hammer blow blue lacquered magnetic block
- dial indicator shank ø 8 mm, ø 10 mm and dovetail



Option 25 09201



ART N°	total height mm	column ø x length mm	throat mm	thread mm	magnetic block mm	magnetic power ~ N	KG
25 0201	295	16 x 230	250	M 10	70 x 45 x 65	650	2.300

wooden box with foam insert

25 09201	for art.-no. 25 0201		→ mm ← 345 x 146 x 77				0.800
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★★★★★  
**SILVER-LINE® Magnetic Measuring Stand**

- triple-jointed arm with central mechanical clamping
- particularly for use in hard to reach places
- high-end product with unrestricted mobility

- elocated aluminium column, corrosion-resistant, universal rotating
- with fine adjustment by knurled screw
- sturdy magnetic block
- with On/Off-rotary switch made of aluminium
- hammer blow lacquered magnetic block
- magnetic block with prismatic base and with a flat ground face backwards
- dial indicator shank ø 8 mm and with dovetail for dial test indicators



Option 25 09301



ART N°	total height mm	column ø x length mm	throat mm	thread mm	magnetic block mm	magnetic power ~ N	KG
25 0301	430	18 x 370	320	M 10	70 x 45 x 65	650	2.000

wooden box with foam insert

25 09301	for art.-no. 25 0301		→ mm ← 307 x 170 x 70				0.780
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★★★★★  
**BLUE-LINE® Magnetic Measuring Stand**

- with central mechanical clamping
- particularly for use in hard to reach places
- standard model with unrestricted mobility

- chromed column, corrosion-resistant, universal turnable
- sturdy magnetic block, On/Off-switch, with prismatic base and with a flat ground face backwards
- with lacquered magnetic block
- dial indicator shank ø 8 mm and dovetail for dial test indicators, with fine adjustment



ART N°	total height mm	column ø x length mm	throat mm	thread mm	magnetic block mm	magnetic power ~ N	KG
25 0319	210	8/20 x 175	100	M 5	36 x 30 x 35	300	0.400

★★★★★  
**BLUE-LINE® Universal Measuring Stand**

- with flexible articulated arm
- particularly for use in hard to reach places
- with unrestricted mobility

- flexible stem with locking lever, adjustable to any position
- sturdy magnetic block, On/Off-switch with prismatic base and with a flat and fine ground face backwards
- with lacquered magnetic block
- dial indicator shank for ø 10 mm and ø 8 mm adjustable



ART N°	total height mm	column ø x length mm	throat mm	thread mm	magnetic block mm	magnetic power ~ N	KG
25 1501	395	16 x 340	240	M 8	65 x 50 x 55	600	1.320

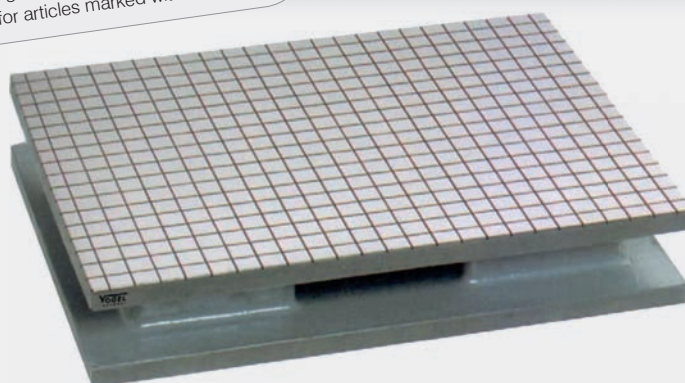




**ATTENTION**  
We charge transport and packing costs for articles marked with \*!

**BLUE-LINE®**  
**Lapping and Control Plate**  
DIN 876/1

- for lapping, flatness measuring and as base line
- special high-density cast iron
- top and bottom surfaces finest ground
- upper surface is additionally squared, with dust grooves



ART NO	mm	evenness mm	KG	ART NO wooden box
26 2101	360 x 260 x 65	0.0014	22.000	26 99036

**BLUE-LINE®**  
**Control-, Surface- and Testing Plate**  
DIN 876

- special wear-resistant casting with additionally steel
- strong ribbed construction, side surfaces reinforced
- measuring surface according to DIN 876
- side surfaces carefully planed or milled
- with supporting points, corresponding to the size of plate
- against extra charge we supply the plates with handle and with protective wooden cover



grade 1 = fine finished

Other sizes are available on request!

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



ART NO grade 1	ART NO handles	ART NO wooden cover	mm	KG
26 1107*	26 9070	26 99040	400 x 400	27.000
26 1111*	26 9071	26 99065*	600 x 500	59.000

**BLUE-LINE®**  
**Stand**

- suitable for Control- and Testing Plates
- solid angular steel construction
- for a working height of approx. 800 mm

**Option**

- adjusting screw art.-no. 20 9096 (singly), to make it possible to adjust exactly in the horizontal level



ART NO	mm	KG
26 9018*	400 x 400	23.000
26 9021*	600 x 500	26.000

# Your advertisement... creative and specific!

Our marketing team supports your efforts in promoting our products and services to your customers.

Please ask for our ideas, strategies, creativity...  
We do the job!

We are pleased to advise!



## BLUE-LINE<sup>®</sup> Marking Ink

- for the marking of machining points on metal surfaces
- dries within seconds
- non-reflective fluid
- good adhesions and can be removed easily
- delivery in a spray can (FCKW-free)

ART N <sup>o</sup>	colour	contents ml	KG
26 2602	blue	300	0.308



## BLUE-LINE<sup>®</sup> Special Cleaner

- this cleaner dissolves dressing paste, marking ink etc.
- skin friendly
- delivery in a spray can

ART N <sup>o</sup>	contents ml	KG
26 2643	300	0.300



## BLUE-LINE<sup>®</sup> Dressing Paste

- the test pieces are covered with the dressing paste, then moved one after the other or on a dressing plate: by this the paste forms a colour coat, showing the evenness
- easy to remove
- 2 different colours available
- delivery in a tube

ART N <sup>o</sup>	colour	contents ml	KG
26 2631	blue	80	0.086



★★★★★  
**DIGI PLUS-LINE® Electr. Digital Hand Tachometer**

- with LCD display for optical or mechanical speed detection

- measurement accuracy is  $\pm 0.02\%$  from the end value  $\pm 1$  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/Average memory-function, recall by memory button
- mode function for different measurement units
- extensive accessories is included: Hand Tachometer, 10 reflective tags, adaptor for direct measuring 1:1, rubber tip, track wheel 0.1 m and 6"
- incl. 2x 1.5 V battery (type AA, art.-no. 60 9282) operation manual and test certificate, in sturdy carrying case

**Option**

- art.-no. 27 0160/8 set of reflective tags (10 pcs.)



ART N° 27 0160



ART N°	1 / min.	measuring distance max. mm	storage temperature °C	operation temperature °C	KG	ART N° CC
27 0160	1 - 99999	600 (optically)	-20° ~ +70°	0° ~ +50°	0.250	27 94110

★★★★★  
**DIGI PLUS-LINE® Electr. Digital Hand Tachometer**

- especially for maintenance and service tasks for lifts
- special set for lift and wire/cable measurement
- with LCD display for optical or mechanical speed detection

- measurement accuracy is  $\pm 0.02\%$  from the end value  $\pm 1$  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/Average memory-function, recall by memory button
- mode function for different measurement units
- extensive accessories is included: Hand Tachometer, 10 reflective tags, adaptor for direct measuring 1:1, rubber tip, track wheel 0.1 m and 6", adaptor for lift-, textile yarn- and wire measuring
- incl. 2x 1.5 V battery (type AA, art.-no. 60 9282) operation manual and sturdy carrying case

**Option**

- art.-no. 27 0160/8 set of reflective tags (10 pcs.)



ART N° 27 0161



ART N°	1 / min.	measuring distance max. mm	storage temperature °C	operation temperature °C	KG	ART N° CC
27 0161	1 - 99999	600 (optically)	-20° ~ +70°	0° ~ +50°	0.250	27 94110



★★★★☆  
**BLUE-LINE® Spring Divider**  
DIN 6486

- steel, polished
- square legs, with hardened tips
- with quick nut for quick positive adjustment



ART NO Divider		KG
30 2422	150	0.135
30 2424	200	0.170
30 2425	250	0.270
30 2426	300	0.325

★★★★☆  
**BLUE-LINE® Divider with Setting Wing**  
DIN 6486

- steel, polished
- square legs, with hardened tips
- with rivet



ART NO with setting wing		KG
30 2412	150	0.100
30 2414	200	0.190
30 2415	250	0.275
30 2416	300	0.320

★★★★☆  
**BLUE-LINE® Internal Spring Joint Compass**  
DIN 6482/6484

- steel, polished
- square legs, with hardened tips
- with quick nut for quick positive adjustment



ART NO Spring Inside Compass		KG
30 2442	150	0.125
30 2445	250	0.220

★★★★☆  
**BLUE-LINE® External Spring Joint Compass**  
DIN 6482/6484

- steel, polished
- square legs, with hardened tips
- with quick nut for quick positive adjustment



ART NO Spring Outside Compass		KG
30 2462	150	0.145
30 2465	250	0.230

★★★★☆  
**BLUE-LINE® Internal Joint Compass**  
DIN 6482 / 6484

- steel, polished
- with flat legs
- with rivet



ART NO Inside Compass		KG
30 2435	250	0.110

★★★★☆  
**BLUE-LINE® External Joint Compass**  
DIN 6482 / 6484

- steel, polished
- with flat legs
- with rivet



ART NO Outside Compass		KG
30 2455	250	0.150



★★★★★  
**SILVER-LINE® Precision Inspection Square**  
 DIN 875/1

- for precision machinery
- stainless, hardened steel or made from special hardened steel
- fine ground
- flat or with back



ART N°	mm	KG	ART N°	mm	KG	ART N° CC	ART N° wooden box	
flat			with back				flat	with back
31 0022	100 x 70	0.100	31 0122	100 x 70	0.150	31 94100	31 99100	31 99101
31 0023	150 x 100	0.250	31 0123	150 x 100	0.400	31 94150	31 99150	31 99151
31 0024	200 x 130	0.500	31 0124	200 x 130	0.700	31 94200	31 99200	31 99201

★★★★★  
**SILVER-LINE® Precision Bevel Edge Square**  
 DIN 875/00

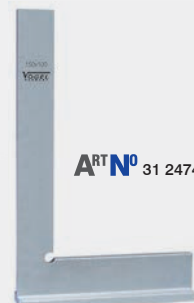
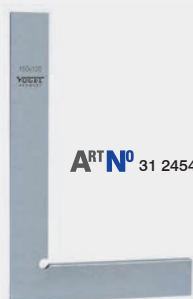
- for the tests of the light-gap method
- stainless steel
- hardened and fine ground
- with two bevelled edges, finely ground and lapped
- flat



ART N°	mm	KG	ART N° CC	ART N° wooden box
31 0203	100 x 70	0.100	31 94022	31 99100
31 0205	200 x 130	0.430	31 94024	31 99200

★★★★☆  
**BLUE-LINE® Workshop Square**

- for locksmith, workshop use, mechanics, training, etc.
- special steel, galvanized finish
- flat or with back, at your choice
- back is forged from T-profile



ART N° flat	mm	mm	KG	ART N° with back	mm	mm	KG
31 2454	150 x 100	20 x 5	0.145	31 2474	150 x 100	20 x 5	0.235
31 2455	200 x 130	25 x 5	0.250	31 2475	200 x 130	25 x 5	0.350
31 2456	250 x 160	25 x 5	0.350	31 2476	250 x 160	25 x 5	0.475
31 2457	300 x 180	25 x 5	0.400	31 2477	300 x 180	25 x 5	0.550

★★★★★  
**SILVER-LINE® Precision Knife Straight Edge**  
 DIN 874/2 page 2

- for the tests of the light-gap method
- stainless steel, anti-glare matt chromed, hardened and fine ground
- bevelled edges finely ground and lapped
- with insulation handle



ART N°	mm	KG	ART N° CC	ART N° wooden box
31 0303	100	0.070	31 94303	31 99303
31 0304	125	0.090	31 94304	31 99304
31 0306	200	0.150	31 94306	31 99306
31 0307	250	0.200	31 94307	31 99307



★★★★★  
**BLUE-LINE® Center Square**  
DIN 875/1

- for marking centers on round discs and shafts
- special steel, chromed finish
- scale in matt chrom finish, with mm graduation



ART N°	mm	for shaft-ø mm	KG
31 2531	100 x 70	90	0.150
31 2532	150 x 130	190	0.450
31 2533	200 x 150	220	0.580
31 2534	250 x 160	230	0.650

★★★★★  
**DIGI PLUS-LINE® Electr. Digital Angle-Sensor with 90° swiveling LCD display • IP54**

- dust- and splash water proof acc. to DIN 40050 / IEC 60529
- ideal device for angle adjustment, can be used for many purposes

- large LCD display, with clear reading, digit height 8 mm
- LCD display swivelling up to 90°, with direction indicating vial in the display
- with magnetic V-base
- On/Off button and data hold function
- incl. 2x 1.5 V batteries (type AAA, art.-no.: 60 9283), operation manual



ART N°	mm	°	max. °	mm	KG
32 0015	± 180°	0.1°	0.1°	55 x 57 x 32	0.130

★★★★★  
**DIGI PLUS-LINE® Electr. Digital Protractor • IP65**

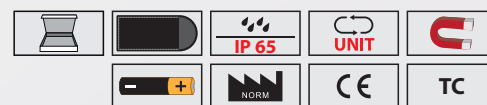
- water- and coolant proof acc. to DIN 40050 / IEC 60529
- ideal device for precise leveling and measuring of flatness and squareness, can be used for many purposes

- sturdy housing with aluminium V-prism at top and bottom side
- art.-no. 32 0016 additionally with magnetic discs in the V-bottom
- large LCD display, with clear reading, digit height 9 mm
- with acoustic signal and backlight
- autom. 180° rotating display, by turning up-side down
- with data hold function, ABS system, with easy to handle self calibration
- On/Off- and zero button, zero setting at any position
- incl. 2x 1.5 V battery (type AAA, art.-no.: 60 9283), with operation manual

ART N° 32 0013 + 32 0016



ART N° 32 0016  
magnetic base



ART N°	mm	°	max. °	mm	X /  ✓	KG
32 0013	4 x 90° (0-360°)	0.05°	0 + 90° <0.05° / rest < 0.1°	150 x 35 x 54	X	0.280
32 0016	4 x 90° (0-360°)	0.05°	0 + 90° <0.05° / rest < 0.1°	150 x 35 x 54	✓	0.295

★★★★★  
**BLUE-LINE® Universal Bevel Protractor Set**

- set with 3 blades in different length
- stainless, hardened and fine ground
- scales matt chrome finish
- parallaxfree reading by vernier, with large magnifying lens
- with fine adjustment
- incl. operation manual



ART N°	length of blades mm	°	angle graduation	packing	KG	ART N° CC
32 1220	150 / 200 / 300 mm	4 x 90°	1/12° = 5'	wooden box	0.765	32 94023

### ★★★★★ BLUE-LINE® Protractor

- with fixing screw
- for standard mechanical engineering
- special steel, in chromed finish
- scale in matt chrom finish, laser engraved scale



ART N°	length of blades mm	arc-ø mm			ART N° CC
32 2512	150	120	0 - 180	0.125	32 94512
32 2514	300	200	0 - 180	0.350	32 94514

### ★★★★★ DIGI-PLUS-LINE® Electr. Digital Protractor

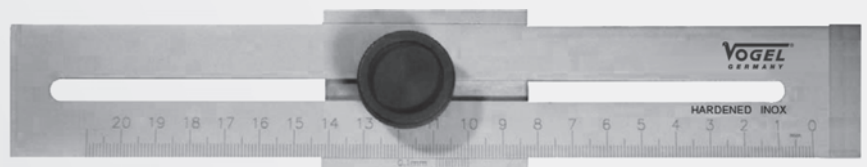
- for checking and transferring angles
- large LCD display with clear reading, digit height 10 mm
- blades in anodized aluminium with profile grooves, and embedded magnet strips
- On/Off button and data hold function, with fixing screw
- 180° rotating display, by pressing function button
- zero setting at any position
- incl. 1x 3 V battery (type CR2032, art.-no.: 20 02093), operation manual



ART N°				length of blades mm			ART N° CC
32 0021	0 - 360	0.05	0.2	200 x 200	205 x 45 x 30	0.290	32 94020
32 0022	0 - 360	0.05	0.2	300 x 300	305 x 45 x 30	0.415	32 94020

### ★★★★★ BLUE-LINE® Marking Gauge

- with flat sliding rule
- with metal fixing screw
- stainless steel blade, with hardened marking block
- laser engraved scale, blade surface matt chrome finish
- with vernier reading 0.1 mm



ART N°				
33 6221	250	0.1	305 x 40/50 x 25	0.450



★★★★★  
**DIGI PLUS-LINE® Electr. Digital T-Marking Vernier Caliper**

- with laser engraved mm-graduation at the edge of the T-bar
- LCD display with clear reading, digit height 10 mm
- stainless steel, hardened, with fine adjustment
- On/Off-button, mm/inch switchable
- with fixing screw
- with ABS system, zero-setting at any position
- incl. 1x 1.5 V battery (type LR44, art.-no.: 20 20192/B), with operation manual



<b>ART N°</b>	mm / inch	mm / inch	mm	mm	length of T-bar mm	KG	ART N° CC
33 7101	150 / 6	0.01 / 0.0005	0.01	0.03	100	0.240	33 94102

**BLUE-LINE® Steel Scriber**

- with carbide tips
- with clip



ART N°	mm	Schaft-ø mm	Ausführung	KG
★★★★★ 33 4608	150	6	hexagonal bar, galvanized	0.040
★★★★★ 33 4611	150	10	„RICO“-Marker, aluminium shaft, knurled handle, pen type	0.030
33 4694	70	-	spare tip, carbide, for 33 4611	0.010

★★★★★  
**BLUE-LINE® Steel Scriber with Magnetic Lifter**

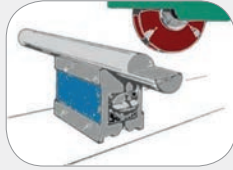
- with hardened tip
- telescopic rod, stainless steel, with clip



ART N°	mm	kg	KG
33 4614	~ 650	1.0	0.025

## ★★★★★ BLUE-LINE® Magnetic Measuring and Clamping V-Block

- special steel made
- with On/Off switch
- art.-no. 33 1000 + 33 1002 with flat magnetic base
- art.-no. 33 1010 with magnetic prism base
- with V-cut 90°, fine ground
- plane, parallel and squared machined



ART N°	mm	for shaft- $\varnothing$ mm	parallelism tolerance $\pm$ mm	N	flat base	prism base	KG
33 1000	101 x 76 x 78	$\varnothing$ 6 - 40	0.05	700	✓	-	3.100
33 1002	70 x 60 x 73	$\varnothing$ 6 - 30	0.05	700	✓	-	1.400
33 1010	80 x 70 x 95	$\varnothing$ 6 - 30	0.05	800	-	✓	3.200

## ★★★★★ BLUE-LINE® Parallel V-Block Pairs

- made of dense special cast iron with high resistance to wear
- supplied in matched pair
- 4 different large grooves, 90°



grade 1 = ground      parallelism tolerance =  $\pm$  0.016 mm



ART N° grade 1	mm	for shaft- $\varnothing$ mm	KG
33 3501	60 x 120 x 100	8 - 90	6.000
33 3502	75 x 150 x 130	10 - 120	12.000
33 3503	90 x 200 x 170	12 - 180	25.000

## ★★★★★ BLUE-LINE® Maintenance Spray

- cleans, maintains and lubricates measuring tools, loosens caked-on section and conserves degreased mechanical connections
- acid and resin-free, compatible to environment, FCKW-free
- displaces humidity in electrical and electronical areas



ART N°	contents ml	mm	KG
35 0320	500	260 x $\varnothing$ 64	0.480

## ★★★★★ BLUE-LINE® Metal Maintenance Tissue

- cleans and maintains all kind of metal, thoroughly and streak-free
- makes a protective film on the metal parts
- tissues in a dispenser box
- acid- and resin-free, streak-free and odorless, compatible to environment
- for indoor- and outdoor use



ART N°	contents tissues pcs.	mm	KG
35 0321	80	190 x $\varnothing$ 90	0.205

★★★★★  
DIGI PLUS-LINE® **Electronic Digital Height and Marking Gauge • IP54**

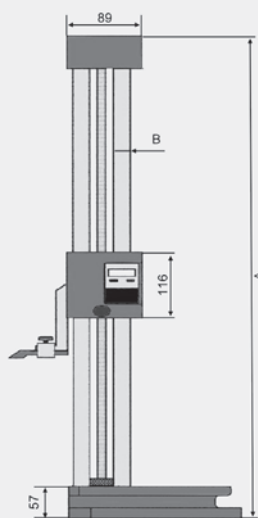
- with two round columns and with fast manual movement
- with data output Opto RS232

- stainless steel columns, hardened and fine ground
- with button for fast manual movement and with wheel for fine adjustment
- LCD display with clear reading, mm/inch switchable
- On/Off button, zero-setting at any position
- at zero-position the scriber coincides exactly with the base
- HOLD- and PRESET function
- max. sliding speed 1.5 m/sec.
- carbide tipped steel scriber, exchangeable
- sturdy base, cast iron made, lacquered
- incl. 1x 3 V battery (type CR2032, art.-no.: 20 02093), with operation manual
- incl. calibration certificate

**Options**

- art.-no. 34 0995 carbide scriber
- art.-no. 34 0998 clamp holder for dial indicators

Accessories can be found in our catalogue „EDITION 2013/2014“ on page 219



ART N°	mm / inch	mm / inch	mm	mm	rectangularity mm	A	B	KG	CC
34 0423	300 / 12	0.01 / 0.0005"	0.01	0.03	0.06	558	Ø 16	5.500	inclusive
34 0426	600 / 24	0.01 / 0.0005"	0.01	0.03	0.06	858	Ø 20	9.000	inclusive

★★★★★  
DIGI PLUS-LINE® **Electronic Digital Height and Marking Gauge**

- stainless steel guideway
- with handwheel for quick adjustment and fine adjustment
- LCD display with clear reading, reading mm / inch switchable
- On/Off switch, zero-setting at any position
- Preset-function, max. sliding speed 1.5 m/sec.
- carbide tipped steel scriber, exchangeable
- at zero-position the drawing point coincides exactly with the base
- sturdy base, cast iron made, lacquered
- incl. 1x 1.5 V battery (type LR44, Art.-Nr.: 20 20192/B), with operation manual

Accessories can be found in our catalogue „EDITION 2013/2014“ on page 219



ART N°	mm / inch	mm / inch	mm	mm	KG	ART N° CC
34 1203	300 / 12	0.01 / 0.0005"	0.02	0.05	5.630	34 94010
34 1206	600 / 24	0.01 / 0.0005"	0.02	0.06	8.250	34 94011

★★★★★  
**SILVER-LINE® Precision Crank Pin Levels**  
 DIN 877

- to adjust crankshafts and crank pins of motors and machines
- with vertical and horizontal prism, fine ground
- with main vial and cross vial
- width 40 mm

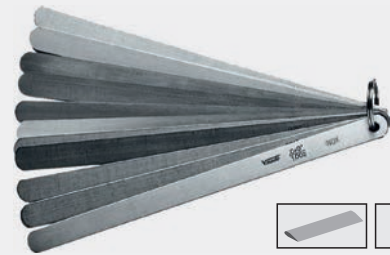


**Option**  
 • with magnets in the prism bottom on request, please

ART N° sensitivity 0.1 mm/m	ART N° sensitivity 0.2 mm/m	length mm	KG	ART N° CC
-	<b>36 0295</b>	60	0.510	36 94062
<b>36 0293</b>	-	90	0.740	36 94091

★★★★★  
**BLUE-LINE® Piston Feeler Gauge Set, stainless steel**

- on a metal ring
- for adjusting the valves at narrow spaces and to reach difficult positions, etc.
- blades made from stainless steel, hard rolled out
- cylindrical shaped blades, 13 mm width



ART N° 13 blades 0.05 - 1.00 mm .002 - .040 inch	KG	length of blade mm	ART N° 20 blades 0.05 - 1.00 mm .002 - .040 inch	KG	length of blade mm
<b>43 7305</b>	0.150	300	<b>43 7307</b>	0.340	300

★★★★★  
**SILVER-LINE® Precision Feeler Gauge Sets**  
 DIN 2275

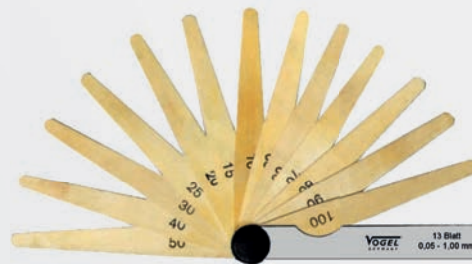
- high tolerance accuracy for precise measurements
- hardened spring steel, conical shaped blades, 100 mm length
- nickel plated case with lock nut
- sizes in mm and inch on each blade
- thickness tolerance in relation to the metric sizes



ART N°	quantity of blades	mm / inch	composition	KG	ART N° CC
<b>40 0105</b>	13	0.05 - 1.00 .002 - .040	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 94013
<b>40 0107</b>	20	0.05 - 1.00 .002 - .040	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	41 94020

★★★★★  
**BLUE-LINE® Feeler Gauge Set, made from brass**

- anti-magnetic gauge, for electrical services
- blades made from brass
- conical shaped blades, 100 mm length
- nickel plated or brass case with lock nut
- sizes in mm on each blade





ART N°	quantity of blades	mm	composition	KG	ART N° CC
<b>41 4005</b>	13	0.05 - 1.00	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	0.065	41 94045
<b>41 4007</b>	20	0.05 - 1.00	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	0.095	41 94047



★★★★★  
**BLUE-LINE® Welding Gauge**

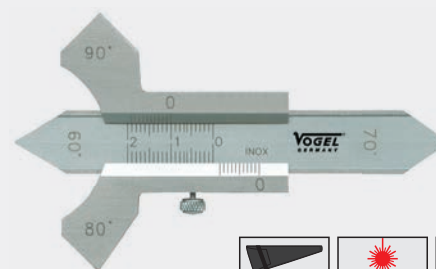
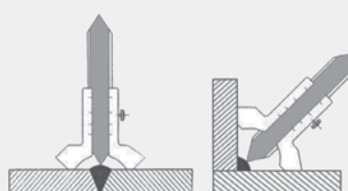
- fan shape
- for measuring right angled welds
- stainless steel



ART NO	quantity of blades	 mm	composition mm	 KG
47 4401	12	3 - 12	3 / 3.5 / 4 / 4.5 / 5 / 5.5 / 6 / 6.5 / 7 / 8 / 10 / 12	0.073

★★★★★  
**BLUE-LINE® Precision Welding Gauge**

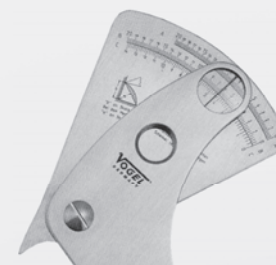
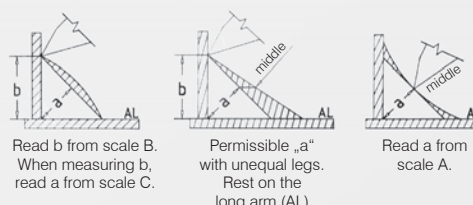
- with vernier reading
- for measurements of flat welding seams and in corners etc.
- stainless steel hardened and fine ground
- scale matt chromed
- with fixing screw






ART NO	 mm	 mm	angle	 mm	 KG	ART NO CC
47 4403	0 - 20	0.1	60 / 70 / 80 / 90	98 x 59 x 5.2	0.070	47 94443

★★★★★  
**BLUE-LINE® Precision Welding Gauge**

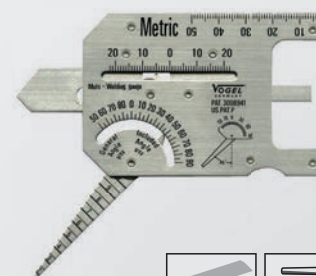
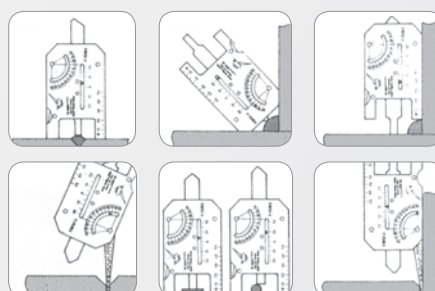
- with reading window
- stainless steel, hardened and fine ground
- reading through a window by a reference line






ART NO	 mm	 mm	 KG	ART NO CC
47 4404	0.1	108 x 81.5 x 3.2	0.110	47 94444

★★★★★  
**BLUE-LINE® Welding Gauge**

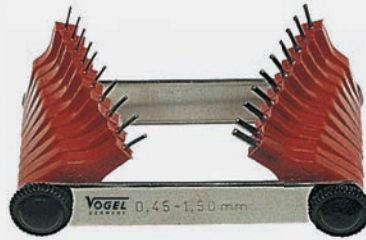
- with adjustable angle
- with various setting facilities
- stainless steel, hardened and fine ground





ART NO	 mm	angle graduation	 mm	 KG
47 4407	20 - 0 - 20	50° - 0 - 90°	110 x 60 x 6.0	0.090

★★★★★  
**BLUE-LINE® Jet Gauge**

- with hardened steel pins, in plastic holders mounted



ART N°	quantity of pins	 mm	composition mm	
47 2201	20	0.45 - 1.50	0.45 / 0.50 / 0.55 / 0.60 / 0.65 / 0.70 / 0.75 / 0.80 / 0.85 / 0.90 / 0.95 / 1.00 / 1.05 / 1.10 / 1.15 / 1.20 / 1.25 / 1.30 / 1.40 / 1.50	0.019
47 2202	16	1.50 - 3.00	1.50 / 1.60 / 1.70 / 1.80 / 1.90 / 2.00 / 2.10 / 2.20 / 2.30 / 2.40 / 2.50 / 2.60 / 2.70 / 2.80 / 2.90 / 3.00	0.022

★★★★★  
**BLUE-LINE® Precision Jet Gauge**

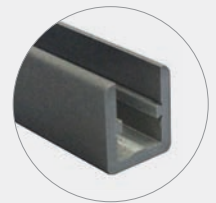
- measuring pin hardened, fine ground
- nickel plated housing



ART N°	 mm	 mm	taper mm		
47 2219	0 - 3	0.1	1 : 10	Ø 6.5 x 118	0.025
47 2220	0 - 5	0.1	1 : 10	Ø 9.0 x 176	0.065

★★★★★  
**BLUE-LINE® Taper Gauge with Slider** NEW

- flat version
- gauge is made of technical ABS plastic
- slider is made of aluminium
- useful gauge, especially for the inspection of gap size, generators, motors, turbines, engines and hard to reach places, because the slider holds the position of measurement
- laser engraved graduation
- with knurled handle



ART N°	 mm	 mm		
47 2375	0.5 - 11.0 mm	0.1	124 x 8 x 8	0.060

★★★★★  
**BLUE-LINE® Inspection Tool Kit**

- multipart set, especially for garages, mechanics, plumbers, etc.
- well assembled kit for the professional

**5-piece set, contents:**

- stainless steel telescope bar with quick release, non-slip grip, 530 mm working length
- socket with ultra bright NICHIA LED-Licht, incl. 3x 1.5 V battery (type LR44, art.-no.: 20 20192/B)
- socket with powerful magnet, 8lb, for to pick up and hold metal objects in hard to reach places
- inspection mirrors, with perfect reflection, no deterioration in the mirror mounted in a stainless steel frame, 360° rotatable, one mirror in ø 50 mm and one mirror rectangular 60 x 40 mm
- in a strong case with zip

**7-piece set, contents:**

- quality claw pick-up device, semi-rigid hose, 400 mm length
- stainless steel telescope bar with quick release, non-slip grip, 530 mm working length
- socket with ultra bright NICHIA LED light, incl. 3x 1.5 V battery (type LR44, art.-no.: 20 20192/B)
- socket with powerful magnet, 8lb, for to pick up and hold metal objects in hard to reach places
- inspection mirrors, with perfect reflection, no deterioration in the mirror mounted in a stainless steel frame, 360° rotatable, one mirror in ø 50 mm and one mirror rectangular 60 x 40 mm
- stainless steel tray, ø 110 mm, with powerful permanent magnetic bottom for small parts
- in a strong case with zip

ART NO 47 4470



ART NO 47 4471



AWARD



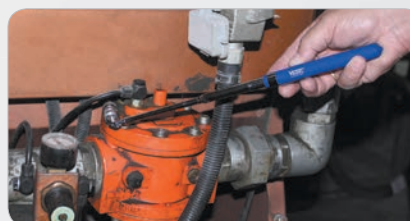
Price / Performance:  
good - excellent



ART NO	set	telescope bar	LED	mirror ø 50 mm	mirror 60 x 40 mm	magnet	claw pick-up	magnetic tray	KG
47 4470	5-pcs.	✓	✓	✓	✓	✓	✗	✗	0.340
47 4471	7-pcs.	✓	✓	✓	✓	✓	✓	✓	0.815

★★★★★  
**BLUE-LINE® Magnet Lifter**

- with quick release
- with telescope bar
- socket with magnet
- telescope bar, stainless steel
- 360° rotatable and swivel joint
- insulated handle, with clip



ART NO	mm	kg	KG
47 4441	~ 650	8	0.096



### ★★★★★ BLUE-LINE® Professional Inspection Mirror

- with telescope bar
- stainless steel telescope bar
- 360° rotatable and swivel joint
- insulated handle



ART No	mm	mm	KG
47 4452	~ 610	ø 40	0.087
47 4453	~ 620	ø 50	0.094
47 4454	~ 620	43 x 65	0.098

### ★★★★★ BLUE-LINE® Professional Inspection Mirror

- with 5x magnification and telescope bar
- stainless steel telescope bar
- 360° rotatable and swivel joint
- insulated handle



Mirror image with 5x magnification



ART No	mm	mm	KG
47 4460	~ 610	ø 24	0.065
47 4461	~ 510	ø 50	0.097

### ★★★★★ DIGI PLUS-LINE® Universal Coating Thickness Gauge

- with memory and multifunction display, combined system for ferrous (Fe) and non-ferrous metal (Ne), with mini USB data output and with software for statistics
- professional, handheld device for quick and flexible coating thickness measurements
- housing in a rugged aluminium frame, with large LCD display for clear reading
- operates in any position: horizontal, vertical or upside down
- for measurements of non-magnetic layers on metal surfaces (Fe) and for measurements of insulating layers on non-ferrous metals (Ne)
- application fields include surface engineering, automotive industry, electroplating, pipeline construction, aluminium industry, spray coating, plastic coating, mechanical engineering, etc.

- rugged extruded aluminium case, with soft keypad, with low battery indicator
- multi-function LCD display with clear reading, backlight (dimmer)
- autom. recognition of probe, indication of all needed informations, data storage of 495 measurements
- units in  $\mu\text{m}$  or mil, automatic substrate recognition, magnetic induction (Fe) and eddy current measuring principle (Ne)
- calibration foil-set (5 pcs.), one aluminium substrate block and one iron substrate block
- 5 statistical ways: mean values; max. values; min. values; testing numbers; standard deviations
- 5 statistical values: mean value; max. value; min. value; numbers of measuring; standard deviation
- tolerance: in standard mode 3% of the value or  $\pm 2.5 \mu\text{m}$ , 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  $\pm 1 \mu\text{m}$
- 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
- direct testing mode and block statistics mode, direct printing out of statistical values via data cable
- min. measuring area 6 mm<sup>2</sup>, autom. and manual power off
- operation temperature 0°C ~ +40°C, humidity 20% - 90% RH
- incl. dataview-software, mini-USB data cable, 2x 1.5 V battery (type AA, art.-no.: 60 9282)
- incl. operation manual, screw driver, wrist strap, in a rugged plastic carrying case

Accessories can be found in our catalogue „EDITION 2013/2014“ on page 264



- Option
- art.-no. 48 0317 Probe F10 (Fe), for measuring range 0 - 10000 mm, low range resolution 10 mm

ISO	ASTM	BS	CE	TC

ART No	$\mu\text{m}$ / probe F1 + N1	mm	mm	KG
48 0226	0.1	0 - 1250	125 x 68 x 33	0.400



★★★★★  
DIGI PLUS-LINE® **Ultrasonic Thickness Gauge**

- with external probe and data output RS232
- 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
- professional, handheld measurement device for quick and flexible wall thickness measuring
- suitable for most metallic and non-metallic ultrasonic wave can go through, 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.
- for wall thickness checking of pressure tanks, vessels, oil tanks, chemical instruments, and others
- operates in any position: horizontal, vertical or upside down

- rugged extruded aluminium case, with soft keypad
- multi-function display with clear reading, coupling status indicator, backlight
- integrated steel testplate for fast calibration, with single point working mode and scan mode, alarm function shiftable
- measurement in metric/inch switchable, measuring range for steel pipes: Min.  $\varnothing$  15 x 2.0 mm and max.  $\varnothing$  20 x 3.0 mm
- 2 external transducers, 1m length, N05 for standard purpose ( $\varnothing$  10 mm / 5 MHz) and N07 for thin walled pipes or small radii ( $\varnothing$  6 mm / 7 MHz), other transducers for different applications are available
- internal data memory for 20 files with up to 99 values for each file
- four measurement readings per second for single point measurement and ten per second for scan mode
- measuring range in steel: 0.75-300 mm (with different transducers), selectable sound velocity 1000-9999 m/s
- Pre-Set for upper and lower limit, it will alarm automatically by exceeding the limits
- tolerance  $\pm 0,5\%$  thickness  $+0.04$  mm, readings in 0.1/0.01 mm, auto calibration of zero point, correction of system error
- On/Off key and autom. power off function, operation temperature  $-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$ , humidity 20% - 90% RH
- incl. 2x battery 1.5 V (type AA, art.-no.: 60 90282), with low battery indicator
- incl. data cable RS232C and software for data process
- incl. operation manual, wrist strap, couplant, screw driver, in a rugged plastic carrying case

**Options**

- art.-no.: 48 0389 thermal printer
- art.-no.: 48 0284 printer cabel
- art.-no.: 48 0285 interface cable RS232

Accessories can be found in our catalogue „EDITION 2013/2014“ on page 264



ART N°	mm	mm N05	mm N07	sound velocity m/s	max.	mm	KG
48 0405	0.1 / 0.01	1.2 - 230	0.75 - 80	1000 - 9999	$\pm 0,5\%n + 0.04$ mm	132 x 76 x 30	0.345

★★★★★  
DIGI PLUS-LINE® **Ultrasonic Thickness Gauge**

- designed to measure the thickness of ferrous (Fe) or non-ferrous materials (NFe)
- 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
- rugged handheld measurement device, for quick and flexible wall thickness measurements
- suitable for most metallic and non-metallic ultrasonic wave can go through, 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.
- for wall thickness checking of pressure tanks, vessels, oil tanks, chemical instruments and many others
- operates in any position: horizontal, vertical or upside down

- robust housing made of polyamide, with soft keypad
- 4-digit LCD display, with backlight, digit height 9 mm
- with integrated test block for fast calibration
- autom. calibration function, reading in mm/inch
- On/Off key and autom. power off function, with „low-battery“ indicator
- selectable sound velocity 1000-9999 m/s
- internal data memory for 40 measurements
- incl. exchangeable 5 MHz transducer,  $\varnothing$  10 mm, for standard purposes
- operation temperature  $0^{\circ}\text{C} \sim +40^{\circ}\text{C}$ , humidity 20% - 90% RH
- incl. 2x battery 1.5 V (type AA, art.-no.: 60 9282), with operation manual, wrist strap and couplant

More probes available on request

Accessories can be found in our catalogue „EDITION 2013/2014“ on page 264



ART N°	mm	mm / inch	max.	mm	KG
48 0120	0.01 0.1	1.0 - 99.99 / 0.39 - 3.94 100.0 - 250.0 / 3.93 - 9.83	$0.5\%n + 0.1$	124 x 67 x 30	0.240



## Ultrasonic Thickness Gauge

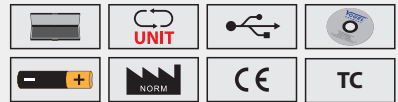
- top class device, with USB data output, with A-Scan mode
- rugged handheld, for quick and flexible wall thickness measurements
- for wall thickness checking of pressure tanks, vessels, oil tanks, chemical instruments and many others
- dedicated for many materials, such as steel, cast iron, grey cast iron, nodular cast iron, aluminium, copper, bronze, zinc, glass (quarz), ceramics, composites, epoxies, homogenously plastics and other ultrasonic wave well conductive materials
- operates in any position: horizontal, vertical or upside down
- suitable for most metallic and non-metallic ultrasonic wave can go through, 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.

- robust housing made of polyamide, with keypad, On/Off button, autom. power off
- 4-digit OLED colour display, with backlight, digit height 14 mm
- autom. colour representation of values if it is above or below the measurement limits
- with integrated test block for fast calibration, Pre-Set of min./max. value, alarm setting
- autom. calibration function, readings in mm/inch, with „low-battery“-indicator
- selectable sound velocity 500 m/s - 9999 m/s
- internal data memory for 100000 measurements, 400 data storage
- menu in german, english, chinese
- incl. exchangeable 5 MHz transducer, for standard purposes
- operation temperature -10°C ~ +50°C, humidity 20 - 90%RH
- incl. 2x 1.5 V battery (type AA, art.-no.: 60 9282), couplant, data view software, data cable and operation manual

More probes available on request



Accessories can be found in our catalogue „EDITION 2013/2014“ on page 264



<b>ART NO</b>	mm	mm / inch	max	mm	KG
48 0246	0.01 0.1	0.6 - 508 / 0.024 - 20.0 100.0 - 250.0 / 3.93 - 9.83	0.5 %n + 0.1	153 x 76 x 37	0.280

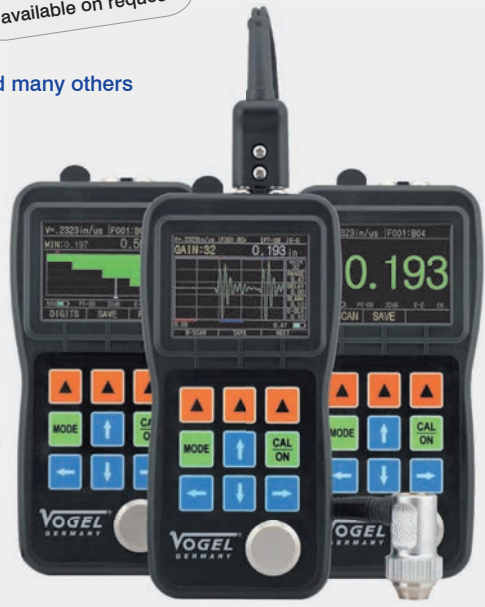


## Ultrasonic Echo-Echo Thickness Gauge

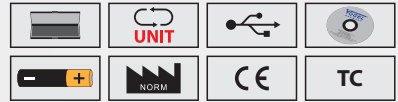
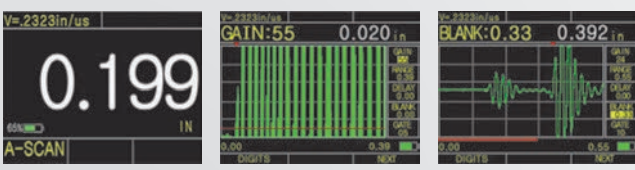
- top class device, with USB data output, with A-scan and B-scan mode
- rugged handheld, for quick and flexible wall thickness measurements, even through coatings
- for wall thickness checking of pressure tanks, vessels, oil tanks, chemical instruments and many others
- dedicated for many materials, such as steel, cast iron, grey cast iron, nodular cast iron, aluminium, copper, bronze, zinc, glass (quarz), ceramics, composites, epoxies, homogenously plastics and other ultrasonic wave well conductive materials
- operates in any position: horizontal, vertical or upside down
- suitable for most metallic and non-metallic ultrasonic wave can go through, 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.

- robust housing made of polyamide, with keypad, On/Off button, autom. power off
- 4-digit OLED colour display, with backlight, digit height 14 mm
- autom. colour representation of values if it is above or below the measurement limits
- with integrated test block for fast calibration, Pre-Set of min./max. value, alarm setting
- autom. calibration function, readings in mm/inch, with „low-battery“-indicator
- selectable sound velocity 500 m/s - 9999 m/s
- internal data memory for 100000 measurements, 400 data storage
- menu in german, english, chinese
- incl. exchangeable 5 MHz transducer, for special purposes
- operation temperature -10°C ~ +50°C, humidity 20 - 90%RH
- incl. 2x 1.5 V battery (type AA, art.-no.: 60 9282), couplant, data view software, data cable and operation manual

More probes available on request



Accessories can be found in our catalogue „EDITION 2013/2014“ on page 264



<b>ART NO</b>	mm	mm / inch	max	mm	KG
48 0252	0.01 0.1	0.5 - 508 / 0.020 - 20.0 100.0 - 250.0 / 3.93 - 9.83	0.5 %n + 0.1	153 x 76 x 37	0.280

**DIGI PLUS-LINE® Electr. Digital Vibration Meter**

- with integrated or with external probe, incl. workshop test certificate
- compact analyser for predictive maintenance of production machinery and for a quick checking of unbalance, misalignment, bearings and gears etc.

- rugged, polyamid plastic housing, with keypad
- large LCD display with clear reading, with backlight
- On-switch, automatic power-Off after approx. 1 min., with battery indicator
- low frequency mode "Lo-RMS" to test low vibrations
- high frequency mode "Hi-AVE" to test average acceleration
- displacement peak to peak mode "Hi-Peak"
- large frequency range: 10 Hz up to 1 kHz (Lo), 1 kHz up to 15 kHz (Hi)
- incl. 2 exchangeable probe tips, for different measuring functions:
  - short probe tip for standard vibration measurements
  - long, small probe tip for vibration measurements on small or narrow objects, etc.
  - without probe tip for vibration measurements on smooth object surfaces, etc.
- operation temperature 0°C ~ +40°C, humidity 30 - 90%RH
- incl. 1x 9 V battery (type 6LR61, art.-no.: 60 9281), with operation manual

**art.-no. 48 0600**

- LCD display with digit height 18 mm
- accuracy ± 5% of display value (± 2 digits)
- with integrated accelerometer and with hand strap

**art.-no. 48 0605**

- two-row LCD display, for velocity and temperature, digit height 15 mm/10 mm
- accuracy ± 5% of display value (± 2 digits)
- with external accelerometer and adapter cable
- HOLD function for holding the determined measured value
- with magnet
- with temperature measurement (C°/F°) within range -10°C ~ +80°C, accuracy ± 2°C



**ART NO 48 0600**



**ART NO 48 0605**



ART NO	velocity Lo-RMS	velocity Hi-AVE	displacement, peak to peak Hi-PEAK	mm	KG
48 0600	0.1 - 199.9 mm/s	0.1 - 199.9 m/s <sup>2</sup>	0.001 - 1999 mm	185 x 68 x 30	0.147
48 0605	0.1 - 199.9 mm/s	0.1 - 199.9 m/s <sup>2</sup>	0.001 - 1999 mm	135 x 75 x 38	0.290

**DIGI PLUS-LINE® Electr. Digital Vibration Meter**

- with integrated probe
- compact analyser for predictive maintenance of production machinery and for a quick checking of unbalance, misalignment, bearings and gears etc.

- rugged, chromed metal housing, with keypad
- large LCD display, digit height 6 mm
- On/Off key, automatic power-Off after approx. 1 min.
- with HOLD function for holding the determined measured value
- low frequency mode "Lo-RMS" to test low vibrations
- high frequency mode "Hi-AVE" to test average acceleration
- displacement peak to peak mode "Hi-Peak"
- frequency range: 10 Hz up to 1 kHz
- operation temperature 0°C ~ +40°C, humidity 30 - 85%RH
- incl. 2x 1.5 V battery (type LR44, art.-no. 20 20192/B), hand strap, screw driver, pouch and operation manual



ART NO	velocity Lo-RMS	velocity Hi-AVE	displacement, peak to peak Hi-PEAK	mm	KG
48 0607	0.1 - 199.9 mm/s	0.1 - 199.9 m/s <sup>2</sup>	0.001 - 1999 mm	150 x 22 x 18	0.080



★★★★★  
**SILVER-LINE® Technical Reading Glass**

- aplanatic lens with silicate glass optic, scratch-resistant and solvent-resistant
- highly polished metal-frame
- handle made of black plastic, fine-grained



ART NO	size of lens ø mm	magnification	mm	KG	ART NO suitable soft case
60 0122	90	2.5 x	245 x 114 x 23	0.252	60 09922

★★★★★  
**SILVER-LINE® LED Handheld Magnifier**

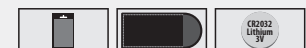
- with different lenses versions
- silicate glass optic, scratch-resistant and solvent-resistant
- with high power LED
- rugged ABS-plastic housing
- incl. 1x 1.5 V battery (type AAA, art.-no.: 60 9283)



ART NO	size of lens ø mm	magnification	type of lens	mm	KG
60 0160	55	4 x	aspheric	165 x 80 x 30	0.100

★★★★★  
**BLUE-LINE® Magnifier with LED Lamp**

- in pocket size
- with 3 magnifying lenses
- 3x, 5x and 7x magnification
- with one extra bright LED lamp
- in a rugged ABS-plastic housing
- incl. 2x 3 V battery (type CR2032, art.-no.: 20 02093)
- with a storage case



ART NO	magnification	field of view mm	mm	KG
60 1230	3 x / 5 x / 7 x	50 x 50 / 25 x 20 / 25 x 20	117 x 61 x 9	0.038

★★★★★  
**BLUE-LINE® Headband Magnifier with LED Lamp**

- total new model with powerful LED light
- patented design
- ideal for technical repair, camera, watch & clock repair, electronic repair, artworkers, dentist, etc.
- made of ABS-plastic with sticky buckle tape for adjustment
- with 4 different lenses with special surface treatment
- light can be adjusted by up-down 45° or left-right 25°, removeable unit
- adjustable special function buckle band
- incl. 3x 1.5 V battery (type AAA, art.-no.: 60 9283)

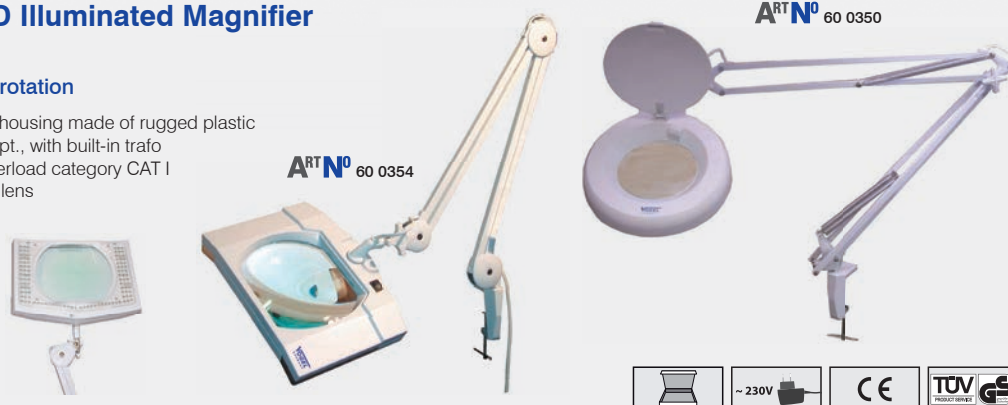


ART NO	magnification	field of view mm	working distance mm	KG
60 0220	1 x / 1.5 x / 2 x / 2.5 x	100 x 50	100 - 650	0.120



## ★★★★★ BLUE-LINE® Professional LED Illuminated Magnifier

- with articulated arm
- adjustable at any position, with 360° rotation
- metal body, powder coated, insulation lamp housing made of rugged plastic
- with extra large and precision glass lens, 3 dpt., with built-in trafo
- with table clamp, cable inside of the arm, overload category CAT I
- with extra bright LED's, mounted around the lens



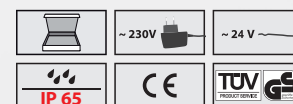
ART No	voltage	magnification	field of view mm	total throat mm	KG
60 0350	230	3 x	ø 127	900	2.200
60 0354	230	3 x	190 x 160	900	3.800

## ★★★★★ BLUE-LINE® LED Machine- and Workbench Lamp • IP65

- water- and coolant proof acc. to DIN 40050 / IEC 60529
- with flexible gooseneck
- extra bright LED illumination
- double-head light case for heat dissipation
- head light housing in a ball joint housing, rotatable 310°, 220° swiveling
- On/Off pressure switch, special tempered glass
- flicker-free light even when vibrations in a unsteady place
- square base for fixing on bench or table with 4 holes
- with 230 V built-in trafo in the base, overload category CAT II



Accessories can be found in our catalogue „EDITION 2013/2014“ on page 283



ART No	voltage	watt	length of arm mm	hole distance in base mm	4 bores in base ø mm	KG
60 0604	230	5	465	50 x 50	5	1.650

### Accessories for Machine- and Workbench Lamps

for art.-no. 60 0604



article description

More accessories can be found in our catalogue „EDITION 2013/2014“ on page 283

ART No	article description
60 9360	magnetic plate, ø 90 mm, hole distance 50x50 mm, M4

## ★★★★★ SILVER-LINE® LED Flashlight „Razor“ and „ION“ • IP68

- watertight acc. to DIN 40050 / IEC 60529, up to 1m
- for the professional purpose
- explosion-proof for gas/dust, acc. to the ATEX-standard
- with 5 watt extremely bright and white LED colour light
- super rugged nylon housing, in black colour
- On/Off pressure switch
- art.-no. 60 0900 incl. 3x 1.5 V battery (type AA, art.-no.: 60 9282)
- art.-no. 60 0906 incl. 3x 1.5 V battery (type AAAA, art.-no.: 60 9278)



ART No	model	watt	luminous flux	colour of housing	LED light colour	running time hrs.	length x ø mm	KG
60 0900	RAZOR	5	60	black	white	100	185 x 47/35	0.175
60 0906	ION	5	60	orange	white	20	160 x 15	0.045

★★★★★  
**BLUE-LINE® Accu Work Lamp, with LED • IP54**

- splash water resistant lamp, acc. to DIN 40050 / IEC 60529
- modern work lamp, designed for universal working places
- rechargeable
- sturdy, acid- and oil-resistant housing, 360° revolving hook
- with rubber covered handle, On/Off pressure switch
- with built-in magnet
- 27 bright white LED's and 1 red control LED
- incl. 230 V DC charger and 12 V car adapter



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

★★★★★  
**BLUE-LINE® LED Head Lamp • IP54**

- splash water resistant lamp, acc. to DIN 40050 / IEC 60529
- professional head lamp
- with extra bright LED light
- with optimized collimator for a deeper, brighter beam, even in outdoor area
- this model will convince every technician as well as rescue service, in maintenance, hobby, etc.
- durable, shock- and splash water resistant housing
- with rubber-covered lenshead
- lens head adjustable, swivel in a wide range
- flexible, tough and adjustable head belt, all-weather resistant
- On/Off pressure switch, extremely bright and white light colour
- incl. 3x 1.5 V battery (type AAA, art.-no.: 60 9283)



ART N°	watt	colour of housing	LED colour light	mm	KG
60 0821	3	black	white	70 x 75 x 50	0.155

★★★★★  
**BLUE-LINE® LED Flashlight • IP54**

- splash water resistant torch, acc. to DIN 40050 / IEC 60529
- thanks to the LED technology almost no replacement of the lamp needed
- LED's with approx. 100000 hrs. durability
- sturdy, acid- and oil-resistant aluminium housing
- On/Off pressure switch
- extremely bright and white LED colour light
- with knurled grip for safe and nonslip handling, incl. 3x 1.5 V battery (type AAA, art.-no.: 60 9283)
- delivery with hand strap and pouch with belt-holder



LED's last a 1000 times longer than conventional bulbs, put halogen bulbs in the shadow, hardly give of any heat and consume less power



ART N°	watt	luminous flux	colour of housing	LED light colour	lighting range ~ m	mm	KG
60 1805	3	120	black	white	120	length x ø mm 120 x 28	0.095

★★★★★  
**DIGI PLUS-LINE® Electr. Digital Stroboscope • IP65**

- water-, coolant proof and shock resistant hand-held device
- in a rugged aluminium- / ABS plastic-housing
- with modern LED technology, precise working electronic
- for non-contact measurements
- large LCD display, multiple lines
- with adjustable flash duration, light emission 1500 lux @ 6000 FPM / 20 cm
- no waste of flash tubes
- resolution  $\pm 0.1$  (30 ~ 999 FPM) /  $\pm 1$  (1000~300000 FPM); FPM=flashes/min.
- operation temperature 0° C ~ +45° C
- incl. 3x 1.5 V battery (type AA, art.-no.: 60 9282), operation time max. 10 hrs.
- in sturdy carrying case, with operation manual

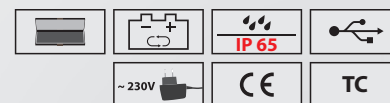


<b>ART N°</b>			flash colour		
61 0101	30 ~ 300000	0.02% ( $\pm 1$ Digit)	white 6500 K	195 x 95 x 50	0.400

★★★★★  
**SILVER-LINE® Professional Image/Video Borescope with articulation • IP65**

- water- and coolant proof acc. to DIN 40050 / IEC 60529
- for example, for the video-inspection in pipes, internal surfaces of gasylanders, refrigeration equipment, narrow entrances to various machines, in the aerospace, marine, automotive industry, for security surveillance of the police and customs, etc.
- with 2-way bend
- with built-in monitor and portable control panel, with shoulder strap
- rugged, shockproof housing, suitable for harsh outdoor use
- bright LCD colour display, with extremely bright LED's at lens head
- high-resolution display, wide angle of view and adequate lighting
- image- and video recording in JPEG and MPG format
- video output NTSC, USB 2.0 video socket, 2 GB memory-card
- with lithium-polymer battery, rechargeable and exchangeable
- power supply for approx. 5-6 hrs., operation temperature -10 °C ~ +50 °C
- incl. AC adapter, input 90-256 V, 50/60 Hz, output 5 V / 1 A
- incl. storage case, with operation manual

More devices are available on request



<b>ART N°</b>		hose-ø mm	hose mm	tubing wrap	
62 0020	180000	4	1.500	stainless steel wire (braided)	0.350
62 0021	180000	4	3.000	stainless steel wire (braided)	0.400



## ★★★★★ SILVER-LINE® Rigid Industry Endoscopes • IP65

- stainless steel tube and housing
- water- and coolant proof, protection class IP65
- operation temperature -10° ~ +85° C



## ★★★★★ SILVER-LINE® Industry Micro Endoscopes • IP62

- fiberglass tube diameter of 0.6 mm to 1.6 mm
- stainless steel tube and housing
- water proof, protection class IP62
- operation temperature -10° ~ +60° C



ART N°	mm	view 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
62 0480	ø 0.6 x 150	0°	40	≥ 70°	3 - 20	6000	✓	0.195
62 0481	ø 1.6 x 180	0°	X	≥ 70°	3 - 20	30000	✓	0.195

## Accessories for Industry Endoscopes



ART N°	article description	mm	KG
62 9222	lithium-polymer battery, 3.7 V	ø 18 x 68	0.045
62 9223	charger for 3.7 V	X	0.118
62 9421	LED power supply (aluminium handle)	ø 25 x 125	0.080
62 9721	aluminium carrying case for rigid industry endoscopes, empty	468 x 265 x 110	1.681
62 9720	aluminium carrying case for industry micro endoscopes, empty	468 x 265 x 110	1.681
62 9224	set for industry endoscopes, in carton box, consisting art.-no.: 62 9222 + 62 9223 + 62 9421	240 x 145 x 55	0.460





## Image/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
- incl. power supply, charger, 3.7 V lithium-polymer battery, AV cable, USB cable, cleaning set
- with operation manual and rugged carrying case



More devices and hose lengths are available on request!



ART NO	hose mm	hose ø mm	hose type			field of view °	depth of field mm	mm	KG	
			flexible	semi rigid	VGA					
62 0076	1000	4.0	✓	✗	✗	67°	15 - 100 mm	220 x 120 x 35	✗	0.390
62 0176	1000	4.25	✗	✓	✗	67°	15 - 100 mm	220 x 120 x 35	✗	0.390
62 0120	1000	5.5	✓	✗	✓	67°	15 - 100 mm	220 x 120 x 35	✓	0.410
62 0121	1000	5.8	✗	✓	✓	67°	15 - 100 mm	220 x 120 x 35	✓	0.410

## Accessories and Spare Parts

- device, 2 way-adapter, cabel, mirrors, pick-up magnets
- mirrors and magnets can be screwed on to lens head
- more hose types up to 30 meter available on request



More hose types and hose lengths are available up to 30 meter, on request

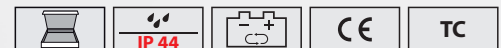
front- and side view combined (0° and 90°)



ART NO	type	view direction °	hose mm	hose-Ø mm	hose type			2-way system	mirror °	KG
					flexible	semi rigid	VGA			
62 99001	<b>5</b>	0	1000	5.5	✓	✗	✗	✓	✗	0.540
62 99015	<b>8</b>	0 and 90	1000	5.8	✓	✗	✓	✗	✗	0.095
62 9903	<b>9</b>	0 and 90	300	4 = 0° 5 = 90°	✗	✗	✓	✗	45	0.220

## DIGI PLUS-LINE® Electr. Digital Multimeter • IP44

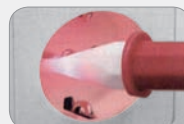
- with solar charger on top of instrument
- very useful instrument, especially in the field of electro-technic
- housing is made of tough, damage-resistant ABS-plastic, dustproof and spray water resistant
- large LCD display clear reading, digit height 19 mm
- current DC and AC up to 20 A
- incl. thermo probe for temperature measurements
- diode test, transistor test function, conductivity test, with acoustical signal
- with battery test function
- with frequency function
- with decimal digits change
- incl. 2x measuring lines and readiness bag
- incl. rechargeable accu and charger cable, with operation manual



ART NO	AC	DC	overload category	resistance	mm	KG
64 0384	0 - 750 V	0 - 1000 V	CAT III / 600 V CAT IV / 1000 V	60 MΩ	167 x 90 x 50	0.320

★★★★★  
**BLUE-LINE® Voltage Detector • IP44**

- non-contact type, rapid detection of live conductors to e.g. cable connections, cable reels, sockets, electrical outlets, switches, etc.
- particularly well-suited for professional use and as well for hobby
- sturdy ABS-plastic housing, with clip, dustproof and spray water resistant
- contactless and safe testing, works at a distance of 4 mm
- protected against voltage loads up to 1000 V AC
- overload category CAT III 1000 V
- capacitive process
- with acoustical signal and built-in LED lamp on top, measuring range 12 V - 1000 V
- incl. 2x 1.5 V battery (type AAA, art.-no.: 60 9283), with operation manual



<b>ART NO</b>		display			<b>ART NO</b> spare battery
64 0357	12 - 1000	optical and acoustical	160 x 25 l x ø	0.045	60 9283 1.5 V (type AAA)

★★★★★  
**DIGI PLUS-LINE® Two Pole Voltage Tester • IP65**

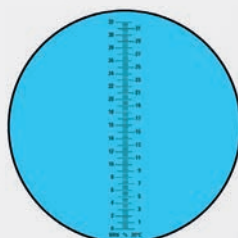
- with LCD display
- the professional appearance is underlined by the mix of materials used in the plastic housing and the rubber handle
- display window made of break proof plastic, scratch resistant
- sturdy ABS-plastic housing, water- and coolant proof acc. to DIN 40050 / IEC 60529
- single pole phase testing, two pole phase sequence testing, autom. load for FI/RCD test
- autom. measurement range, autom. resistance: Is ~ 30mA ED(DT) = 30 sec.
- resistance test 0-2000 Ω, continuity test 0-150 Ω, with acoustical alarm
- operation panel: On/Off button, data hold button, finger tip contact
- display: LCD 3½ digit, LCD for phase/rotary field, LED flashlight (white)
- incl. 2x 1.5 V battery (type AAA, art.-no.: 60 9283), with operation manual



<b>ART NO</b>		phase indicating	overload category		
64 0331	6 - 1000	> 100 V AC	CAT IV 1000 V	238 x 70 x 30	0.200

★★★★★  
**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, okular with rubber eye cup, quality optic
- delivery in a case, with accessories, operation manual



scale reading



Further instruments available on request

<b>ART NO</b>	application range				
65 3200	lubricants, coolant liquids, fruit, juices, wines, etc.	0 - 32% Brix	± 0.20%	170 x ø-29	0.240





### Electr. Digital Thermometer

- with external temperature probe
- for quick and exact measurements of temperatures
- rugged ABS-plastic housing, read-out display 0.1°C
- large LCD display with clear reading, 3½ digit, max. display 1999, On/Off button
- with data hold function, measuring in °Celsius and °Fahrenheit
- incl. 1x 9 V battery (type 6LR61, art.-no.: 60 9281), with readiness bag and operation manual

ART<sup>NO</sup> 64 9300



ART<sup>NO</sup> 64 0300



**Option**

- spare temperature probe (art.-no. 64 9300)



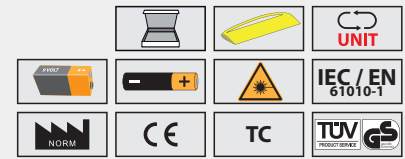
<b>ART<sup>NO</sup></b>						<b>ART<sup>NO</sup></b>
64 0300	-50 ~ +1300	-50° ~ +200°C/200° ~ 1000°C/1000° ~ 1300°C	±0.1% + 1°C / ±0.3% + 2°C / ±0.5% + 2°C	147 x 71 x 34	0.200	64 9402



### Infrared Laser Thermometer

- pistol-sized, with shiftable laser pointer
- for contactless and quick measuring of temperatures
- the devices fulfill the strict requirements of the european national guidelines

- rugged ABS plastic housing
- large LCD display with clear reading, with backlight
- temperature reading in °C / °F, laserpoint can be switched on/off
- autom. power off after 15 sec., response time < 1 sec., laser protection class II
- data hold function for short memory time of the measuring value
- storage temperature -10° ~ 60°C, operation temperature 0° ~ +50°C
- relative humidity 10-90% RH, emissivity 0.95 (pre-set)
- detector "thermopile", overload display "1" at temperature > +380° or < -20°C
- incl. 2x 1.5 V battery (type AAA, art.-no. 60 9283), with interface for K-type temperature probe
- with readiness bag and operation manual



<b>ART<sup>NO</sup></b>					measuring optics			<b>ART<sup>NO</sup></b>
64 0313	-64 ~ +1400°	0.1	± 2.0	± 2.0	12:1	146 x 133 x 49	0.222	64 9401



### Infrared Laser Thermometer

- pistol-sized, with K-type temperature probe and shiftable laser pointer
- for quick measuring of temperatures, by temperature probe or non-contactless
- the devices fulfill the strict requirements of the european national guidelines

- rugged ABS plastic housing
- large LCD display with clear reading, with backlight
- temperature reading in °C / °F, with shiftable laser pointer
- 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, with battery indicator
- storage temperature -10° ~ +60°C, operation temperature 0° ~ +50°C
- relative humidity 10 - 90% RH, emissivity 0.95 (fixed)
- incl. 1x 9 V battery (type 6LR61, art.-no.: 60 9281)
- with readiness bag and operation manual

ART<sup>NO</sup> 64 0320

ART<sup>NO</sup> 64 9300



<b>ART<sup>NO</sup></b>					measuring optics			<b>ART<sup>NO</sup></b>	
64 0320	-50 ~ +1650	0.1	± 4.0 / ± 4%	± 1.0	50:1	120 x 186 x 50	0.284	64 9300	0.020



★★★★★  
DIGI PLUS-LINE® **Electr. Digital Anemometer**

- for many outdoor applications and for several industry purposes to measure the wind speed in different units
- ideal equipment for heating and ventilation technician, shipping industry, etc.
- with Beaufortscale display
- rugged, polyamide housing material
- with tripod mounting screw on the rear side
- large LCD display with clear digit reading, with backlight function
- wind speed unit selection: m/s; Ft/min; Knots; Km/h; Mph
- with max.-value and data hold function, autom. power off
- average and current speed measuring, temperature reading in °C and °F, switchable
- storage temperature -20°C ~ 70°C, operation temperature -10°C ~ 45°C
- without data output
- with 9 V battery (type 6LR61, art.-no.: 60 9281)
- with external impeller and operation manual



<b>ART NO</b>	wind speed m/s	wing volume range	speed m/s	temperature °C	wing speed	temperature °C	160 x 62 x 35	0.265
64 1204	0.3 ~ 45	0 ~ 999900	0.1	0.2°	± 0.1 digits	± 2°		

★★★★★  
DIGI PLUS-LINE® **Electr. Digital Surface Roughness Tester**

- portable roughness tester for measurements of Rz, Ra, Rq, Rt, with USB data output
- rugged housing in an aluminium frame, Ra, Rz, Rq, Rt roughness parameter in one device
- large OLED display, with backlight shiftable, with "low-battery" indicator
- On/Off push button, autom. power off after 3 min., with acoustical signal (start-test-ready)
- measuring range selectable in  $\mu\text{m}$  /  $\mu\text{inch}$ , parameter Ra (ISO and Rz DIN)
- min. tracer tip arc radius  $10 \mu\text{m} \pm 1 \mu\text{m}$ , angle  $90^\circ + 5^\circ / -10^\circ$
- variation of indication <12%, error indication  $\pm 15\%$
- touch needle static force measurement: 0.016 N, force measurement rate: 800 N/m
- operation temperature -20°C ~ +40°C, rel. humidity < 90%
- tracing length 6 mm, tracing speed 1.0 mm/sec., sensor guide head pressure 0.5 N
- integrated stylus protection sleeve for detector, with easy to use calibration function
- incl. roughness calibration test plate Ra, accuracy acc. ISO class 3
- with 3.7 V Li-Ion rechargeable battery, incl. charger 9 V AC
- incl. sturdy carrying case and operation manual



<b>ART NO</b>	$\mu\text{m}$ / inch	Ra $\mu\text{m}$	Rz $\mu\text{m}$	tracing length mm	350 x 200 x 75	0.200
65 7111	0.01 / 1	0.05 - 10	0.1 - 50	6		



## Universal Digital Rebound Hardness Tester

- with external impact device type „D“ (standard), with RS232/USB
- portable device for quick and location-independent hardness tests based on the principle of Leeb
- large LCD display with clear reading, multifunction display, with dimmable backlight

- rugged, anodized aluminium frame
- display functions: hardness scales, hardness value, date, testing time, battery indication, impact direction, average value, type of impact device, memory, with keypad
- incl. testblock type „D“ and impact device type „D“, more impact devices as accessory available
- suitable for testing hardness of almost all Ferrous (Fe) and Non-Ferrous (NFe) materials
- provides testing at any angle, even upside down
- autom. and manual power off, memory capacity for 600 groups
- adjusting limit function, autom. alarm function when exceeding the limit value
- min. workpiece weight 2~5 kg on solid support or 0.05~2 kg with couplant, surface roughness of specimen Ra 10
- min. thickness of workpiece 3 mm with couplant paste, (with impact device G = 10 mm)
- direct display of hardness HL, with autom. conversion in HRB, HRC, HV, HB, HS and tensile strength
- min. radius workpiece (concave/convex) Rmin=30 mm (<30 mm with support ring)
- operation temperature -10° ~ +40°C, humidity 20% ~ 90% RH
- incl. 2x 1.5 V battery (type AA, art.-no.: 60 9282), cleaning brush, screw driver, calibration certificate for the test block, small support ring
- incl. software and data cable RS232 / USB, hand strap, sturdy carrying case, operation manual



<b>ART NO</b>	max. (HLD = 800)	max. hardness of workpiece HLD	workpiece radius (concave/convex) mm	mm	KG
65 1606	± 1.0%	960	Rmin. = 30/with support ring Rmin. = 10	123 x 67 x 30	0.350



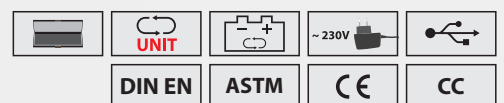
## Universal Digital Rebound Hardness Tester

- with integrated impact device type „D+DL“
- modern device, optionally with combined impact devices
- portable device without cable connection
- measurement is based on the principle of Leeb

- hand-held device, rugged, polyamide housing material, impact channel made of metal
- high contrast OLED display with clear reading and back light, digit height 12 mm
- autom. power On, battery indicator, with rotating display, with self-calibration function
- suitable for testing hardness of almost all Ferrous (Fe) and Non-Ferrous (NFe) materials
- memory: 99 blocks and 2000 data can be saved and re-readable
- direct display of hardness scales: HL, HRC, HRB, HB, HV and HS and ób
- measuring range: 200-960 HL / 19-70 HRC / 13-109 HRB / 20-655 HB / 80-940 HV / 32-99.5 HS
- statistics function: average / min. / max. / value
- provides testing at any angle, even upside down, autom. recognition of the impact direction
- min. workpiece weight 2~5 kg on solid ground, at 0.05~2 kg with couplant paste
- for indentation depth see techn. data of the impact devices in our catalogue „EDITION 2013/2014“ on page 309
- min. radius workpiece (concave/convex) Rmin. = 30 mm, with support ring Rmin. = 10 mm
- surface roughness of workpiece 1.0 µm (Ra 10)
- storage temperature -40°C ~ +80°C, operation temperature -40°C ~ +80°C
- incl. cleaning brush, hand strap, test block with HLD value and with calibration certificate
- incl. 3.7 V Li-ion rechargeable accu, USB/Mini-USB data cable, charger, in sturdy carrying case, with operation manual



Accessories can be found in our catalogue „EDITION 2013/2014“ on page 308



<b>ART NO</b>	incl. impact device „D + DL“	max. (HL=800 / ± 0.2 HRC)	mm	KG	CC
65 1614	✓	± 0.5 %	148 x 44 x 22	0.110	inclusive

★★★★★  
**DIGI PLUS-LINE® Electr. Digital Angle Mesurer Spirit Level**

- automatic calculation of single and double mitre angles without any other tools
- sturdy aluminium housing, with adjustable bevel blade
- large LCD display, digit height 12 mm, reading from all directions possible, with shiftable backlight
- rapid calculation and transfer of angles by means of memory function for frequently used angle dimensions
- power On/Off button, data hold function, shock resistant up to 1 m falling down
- precise mitre- and self-calibration function
- with 1x horizontal vial and 1x vertical vial
- with fixing screw for fixing the angle setting
- incl. 2x battery 1.5 V (type AAA, art.-no.: 60 9283)
- with carrying bag and operation manual



<b>ART N°</b>						
71 1020	0 - 225°	0.05°	max. ±°	max. vial	440 x 60 x 25	0.900

★★★★★  
**DIGI PLUS-LINE® Electr. Digital Light Alloy Spirit Level**

- with cross laser, angle degree indicator and percent deviation
- rugged, rectangular profile, made of light alloy, with ribbed surface
- large LCD display, digit height 10 mm, reading from all directions possible
- switchable display in angle-, percentage measuring- and tangent-mode
- On/Off button, data hold function and memory function
- magnetic inserts in the bottom and M6 thread for tripod attachment
- with each 1x horizontal and 1x vertical vial
- with self-calibration and switchable cross laser
- incl. 1x 9 V battery (type 6LR61, art.-no.: 60 9281), with operation manual



with cross laser



with magnet inserts and M6 thread for tripod attachment



<b>ART N°</b>						
71 2010	4 x 90°	0.05°	max. ±°	max. vial	225 x 57 x 25	0.278

★★★★★  
**BLUE-LINE® Spirit Levels „NIVEAU NORM“**

- top quality spirit levels with plane surfaces
- rugged light alloy rectangular profile, from up 1500 mm length with extrem solid wallthickness
- with 1x horizontal vial and 1x vertical vial
- barrel-shaped vials with patented SOLID built-in system, permanent fixed and constantly aligned with the profile
- surfaces in stratosilver elocated
- measuring accuracy adjusted by electrical adjustment and at final inspection
- measuring accuracy in normal position 0.5 mm/m = 0.029°, with reversal measurement minimum 0.75 mm/m = 0.043°

art.-no. 71 4102 - 71 4106

- with strong adhesive magnet in the measurement base



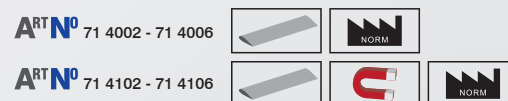
plane, rectangular aluminium profile, extruded and warm cured



ART N° 71 4102 - 71 4106

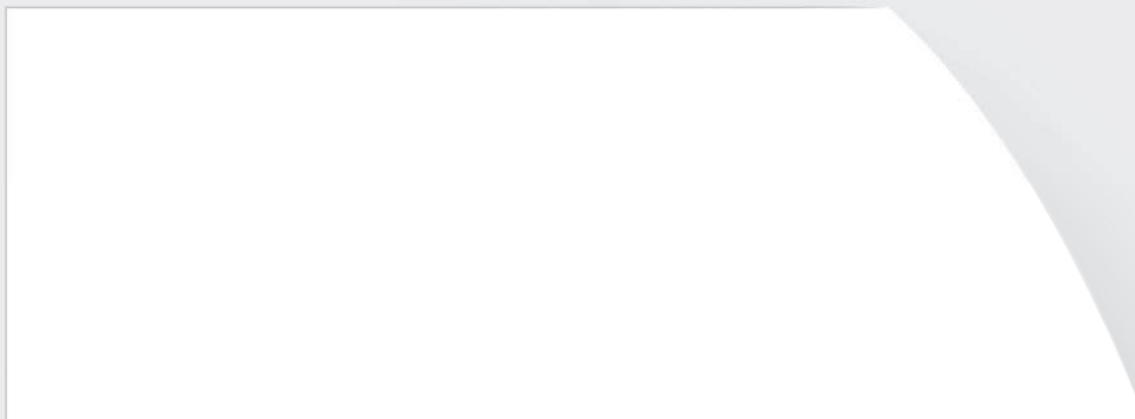


with strong adhesive magnet in the measurement base



<b>ART N°</b>					
71 4002	400	50 x 22	X	0.5 mm/m = ±0.029°	0.250
71 4004	600	50 x 22	X	0.5 mm/m = ±0.029°	0.358
71 4005	800	50 x 22	X	0.5 mm/m = ±0.029°	0.422
71 4006	1000	50 x 22	X	0.5 mm/m = ±0.029°	0.565
71 4102	400	50 x 22	✓	0.5 mm/m = ±0.029°	0.383
71 4104	600	50 x 22	✓	0.5 mm/m = ±0.029°	0.509
71 4105	800	50 x 22	✓	0.5 mm/m = ±0.029°	0.614
71 4106	1000	50 x 22	✓	0.5 mm/m = ±0.029°	0.698

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