



Best products  
for  
marine and  
aircraft 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 (connectivity for 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

### 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
	Article with seal: „TÜV/Geprüfte Sicherheit (GS)“
	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
	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

### Art of packing for each article

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

### Several Icons

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

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**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

ART N° 10 10010015



type C

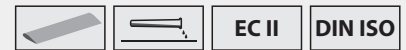
ART N° 10 10030015



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

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

## BLUE-LINE® Stainless Steel Rules

acc. EC II or DIN ISO 2768m

- 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
- up to 2000 mm in a vinyl bag

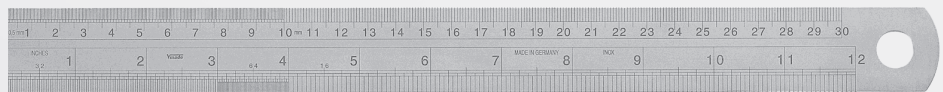
type A

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.

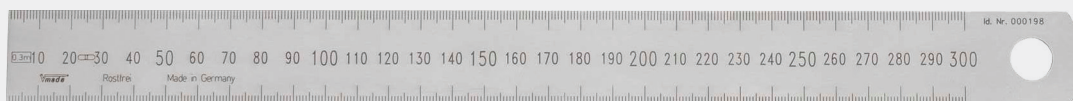


ART N°		mm	mm	KG	ART N° CC
type A	type D				
10 18010030	10 18040030	300	30 x 1.0	0.070	10 94001
10 18010050	10 18040050	500	30 x 1.0	0.115	10 94005
10 18010100	10 18040100	1000	30 x 1.0	0.245	10 94010

## RED-LINE® Stainless Steel Rules, with laser engraving

acc. to EC II

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



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

## BLUE-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

## 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

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



ART No	order quantity	ART No	order quantity						
ART No	order quantity	ART No	order quantity	mm	± mm	mm	mm	mm	KG
14 1403	1 - 120	14 1403/121	121 - >	3	0.9	19	80 x 75 x 35	1750	0.200
14 1405	1 - 120	14 1405/121	121 - >	5	1.3	25	80 x 75 x 42	2100	0.310
14 1408	1 - 60	14 1408/61	61 - >	8	1.8	25	80 x 75 x 42	2100	0.470

## 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 continuous measuring
- dust and dropwater resistant device

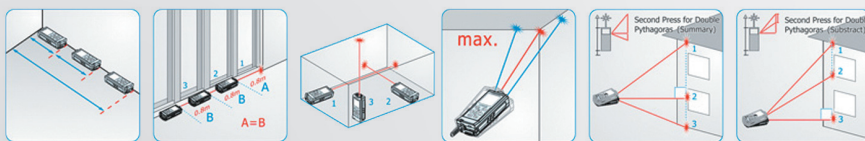
- shielded and rugged ABS housing with rubber cover for safety handling
- LCD display, main digit height 8 mm, with backlight, "Low-Battery-Display"
- measuring in meter or feet, switchable, measure speed 0.5 s, memory
- functions: Addition, Subtraction, Area and Volume calculation, continuous measuring, 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 No							
ART No	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

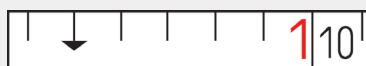
## BLUE-LINE® Measuring Tape with aluminium diagonal frame

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

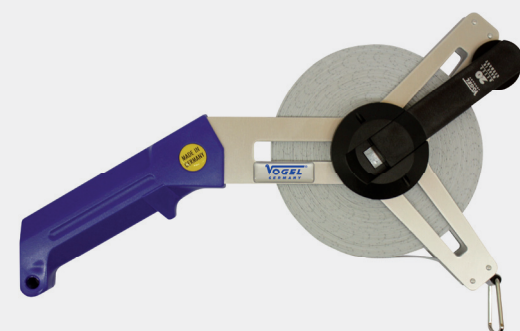


ART N°	m	mm	KG
14 2512	30	13	0.800
14 2513	50	13	1.200

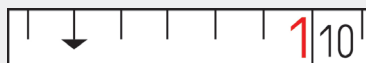
## BLUE-LINE® Measuring Tape with aluminium diagonal triangle frame

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°	m	mm	KG
14 2712	30	13	0.700
14 2713	50	13	0.900

## SILVER-LINE® Precision Straight Edge

DIN 874

- accuracy acc. to DIN 874 page 1, accuracy GG 0
- 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 \*!

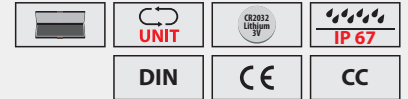
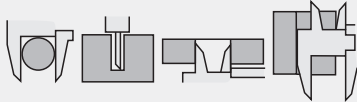
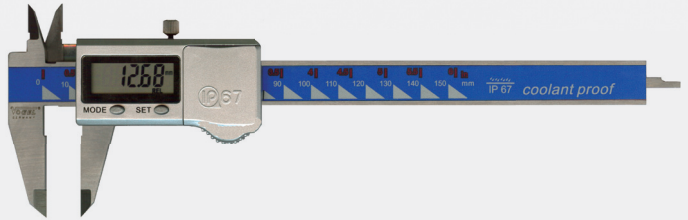


ART N°	m	mm	KG	CC	ART N° wooden case
DIN 874 GG 0					
15 80010100*	1000	160 x 50	12.500	inclusive	15 998100*
15 80010200*	2000	160 x 50	25.000	inclusive	15 998200*

**DIGI PLUS-LINE® Electr. Digital Caliper • IP67**  
DIN 862

- 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

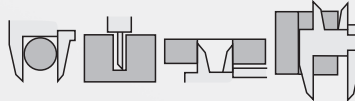
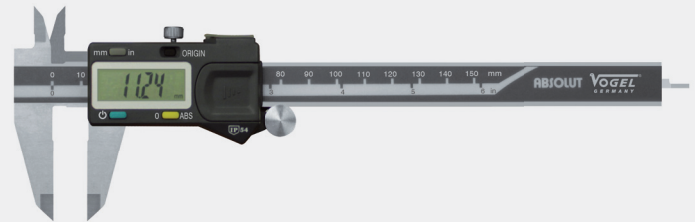


ART NO	mm / inch	mm / inch	mm	max. mm				KG	CC
20 2120	150 / 6	0.01 / 0.0005	0.01	0.02	40	16.5	flat	0.170	inclusive
20 2121	200 / 8	0.01 / 0.0005	0.01	0.03	50	19.5	flat	0.200	inclusive

**DIGI PLUS-LINE® "Absolute" Electr. Digital Caliper • IP54**  
DIN 876

- spray water proof acc. to DIN 40050 / IEC 60529
- with Vocom-s duo data output, top model (connectivity also for Digimatic measuring devices)

- 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

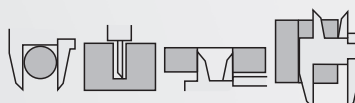
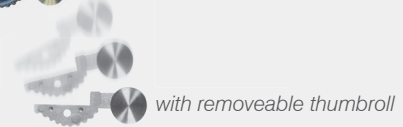
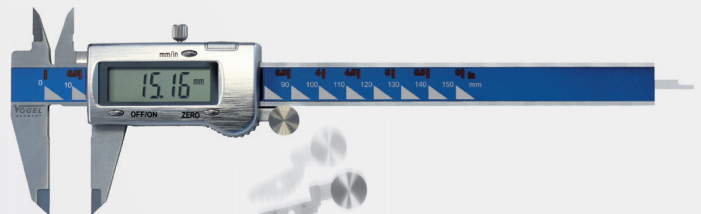


ART NO	mm / inch	mm / inch	mm	max. mm				KG	ART NO CC
20 2150	150 / 6	0.01 / 0.0005	0.01	0.02	40	16	flat	0.165	20 94101
20 2151	200 / 8	0.01 / 0.0005	0.01	0.03	50	19.5	flat	0.195	20 94101

**DIGI PLUS-LINE® Electr. Digital Caliper**  
DIN 862

- 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



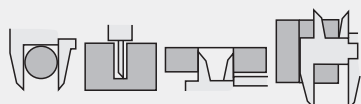
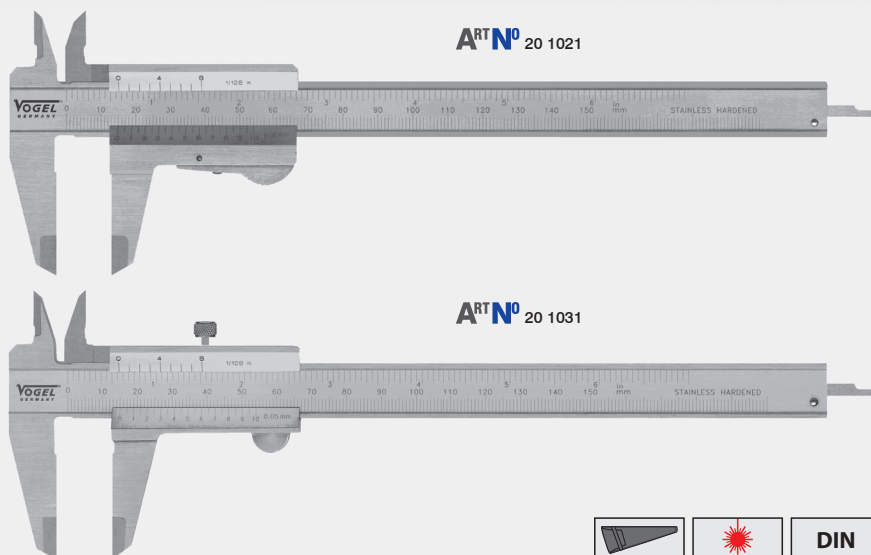
ART NO	mm / inch	mm / inch	mm	max. mm				KG	ART NO CC
20 2040.3	150 / 6	0.01 / 0.0005	0.01	0.02	40	16.5	flat	0.165	20 94101
20 2041.3	200 / 8	0.01 / 0.0005	0.01	0.03	50	19.5	flat	0.195	20 94101



## BLUE-LINE® Pocket Vernier Caliper DIN 862

ART N° 20 1021

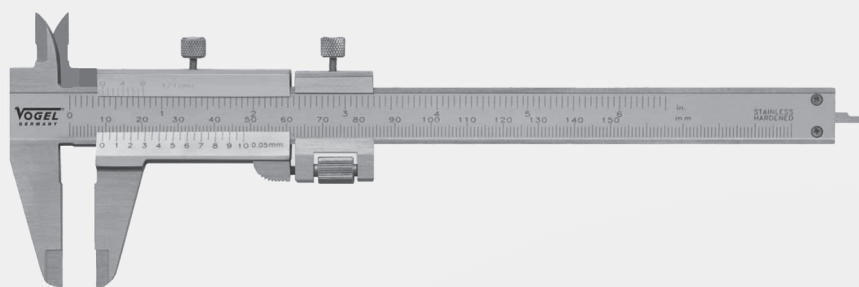
- suitable for workshop use (standard)
- stainless steel, hardened
- scale and vernier satin chrome finish
- jaws fine ground and lapped
- mono-block vernier
- 4-way measuring system
- flat or round depth gauge



ART N° thumb locking	ART N° fixing screw	mm / inch	mm bottom	inch top	40	16	flat	KG	ART N° CC
20 1021	20 1031	150 / 6	0.05	1/128				0.150	20 94001

## 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 N°	mm / inch	mm bottom	inch top	50	19.5	flat	KG	ART N° CC
20 1064	180 / 7	0.05	1/128				0.200	20 94020
20 1065	180 / 7	0.02	1/1000				0.200	20 94020

# Explore our website!



Any questions?  
We are pleased to advise!

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

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

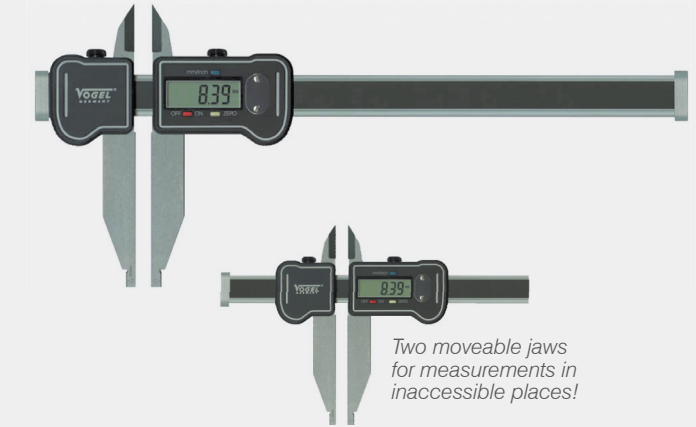
- with two moveable, exchangeable jaws
- modern design, lightweight model, made of anodized hard aluminium
- stainless, hardened measuring jaws and tips
- jaws finely ground
- with two adjustable, exchangeable measuring jaws
- LCD display with clear reading, digit height 10 mm
- On/Off button, mm/inch 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

**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



Two moveable jaws for measurements in inaccessible places!



measuring jaw adapter-pair

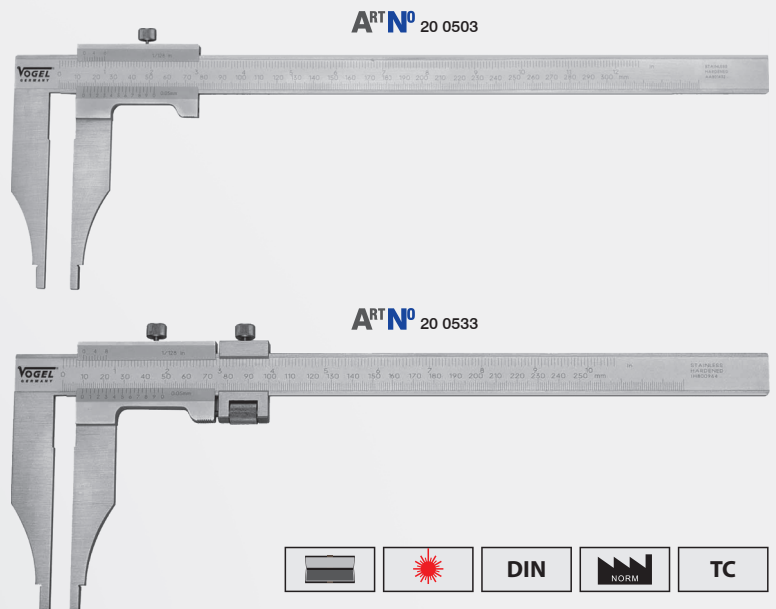


ART No	mm / inch	mm / inch	mm	max. mm			ø mm	KG	ART No CC
20 0880	300 / 12	0.01 / 0.0005	0.01	0.04	90	40	10	0.500	20 94103
20 0881	500 / 20	0.01 / 0.0005	0.01	0.05	90	40	10	0.600	20 94105
20 0882	800 / 32	0.01 / 0.0005	0.01	0.06	90	40	10	1.000	20 94110

**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
- in plastic case
- with identification number

Spare parts and accessories for our calipers can be found in our catalogue „EDITION 2013/2014“ on page 72



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
20 0505	20 0535	500 / 20	0.05	1/128	150	-	20	1.495	20 94050
20 0510	20 0540	1000 / 40	0.05	1/128	150	-	20	3.110	20 94100

## DIGI PLUS-LINE® Electr. Digital Depth Gauge

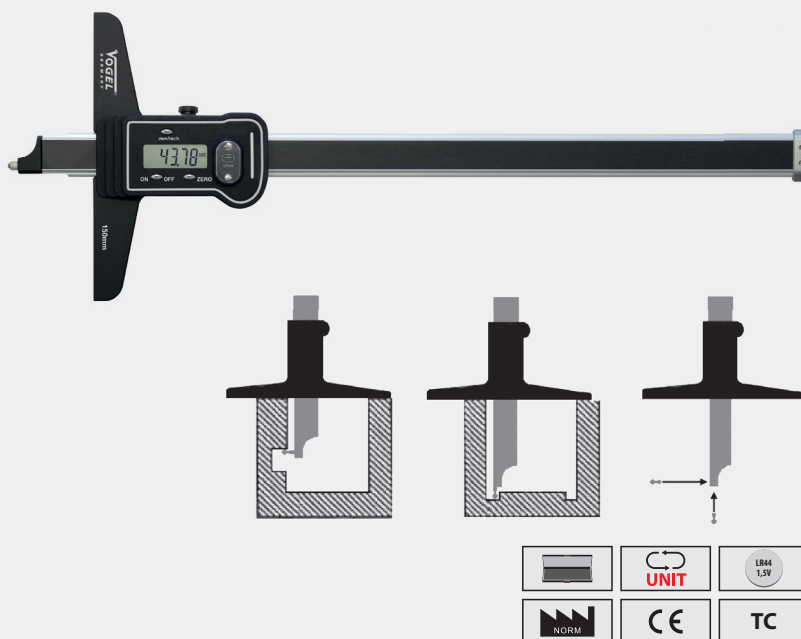
workshop grade

- modern design, lightweight model
- made of anodized hard aluminium
- with exchangeable measuring tips (M2.5)
- incl. 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 NO	mm / inch	mm / inch	mm	max. mm	mm	KG	ART NO 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

## DIGI PLUS-LINE® Electr. Digital Depth Gauge

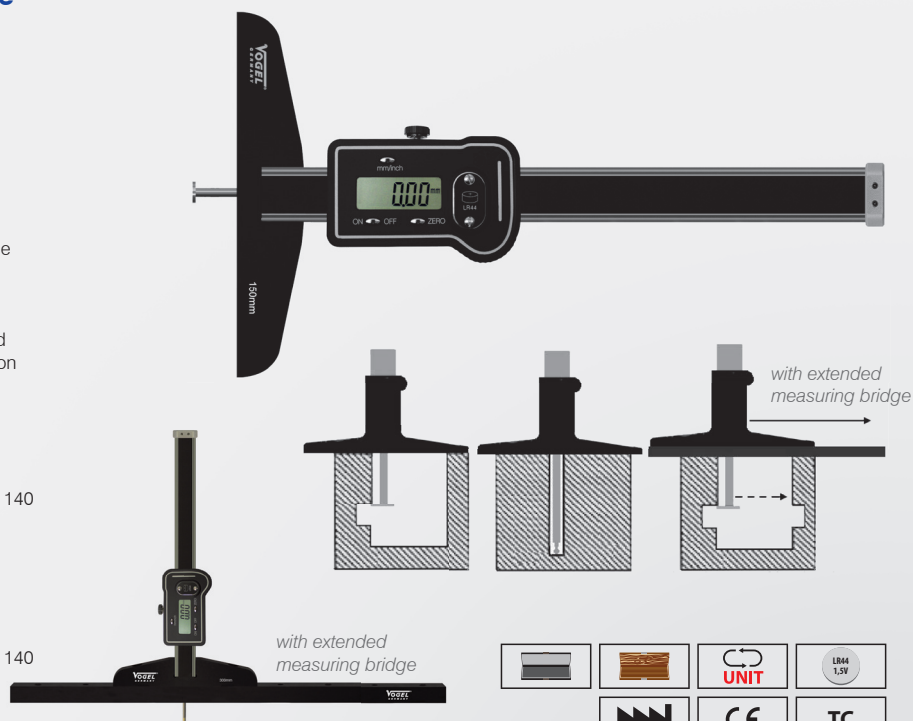
workshop grade

- 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  $\varnothing$  10 mm with measuring rods- $\varnothing$  4 mm
- incl. plate insert with  $\varnothing$  20 mm with measuring rods- $\varnothing$  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 NO	mm / inch	mm / inch	mm	max. mm	meas.-beam- $\varnothing$ mm	mm	KG	ART NO CC
22 0840	200 / 6	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

**BLUE-LINE** Depth Caliper  
DIN 862

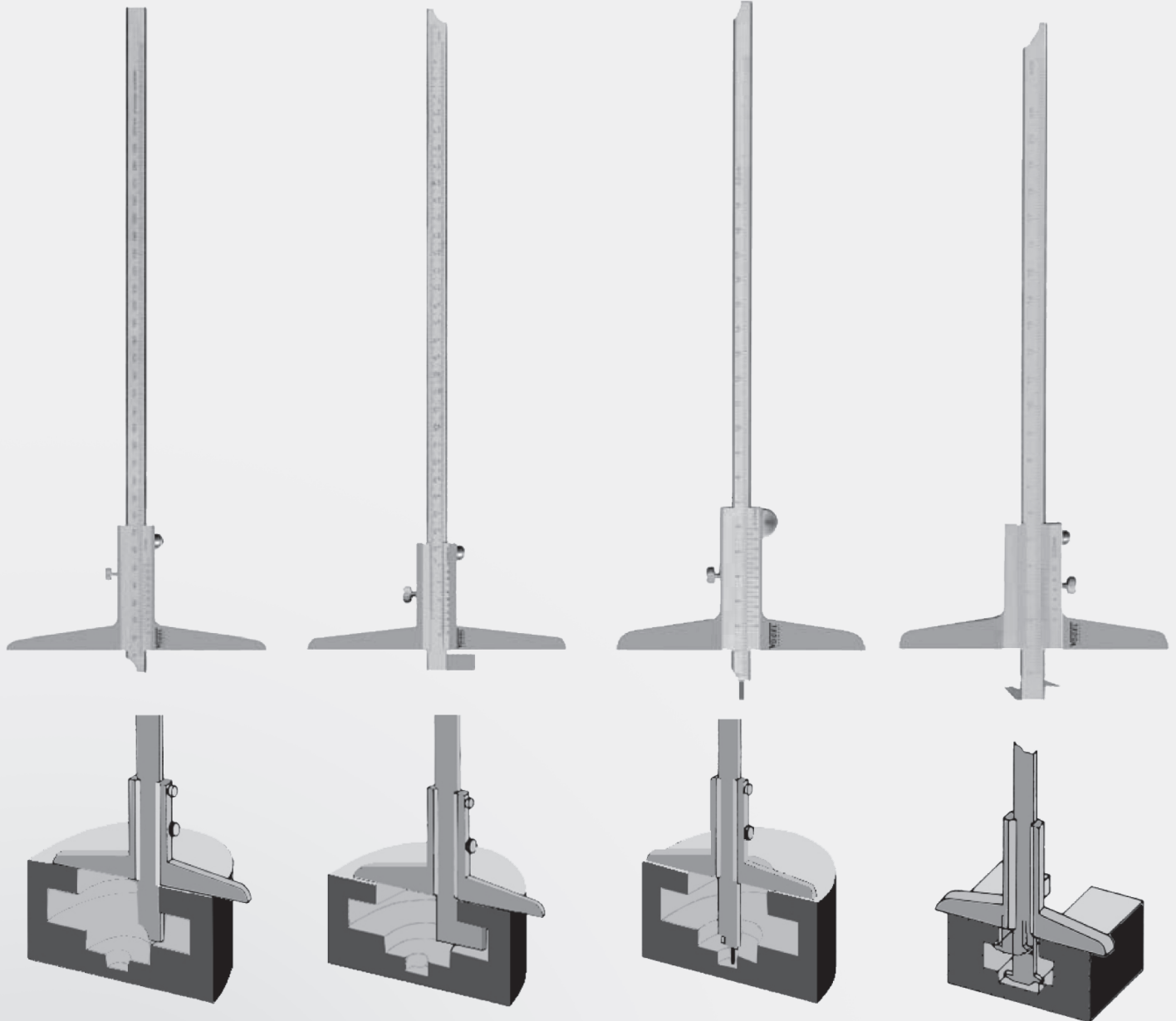
- stainless steel, hardened, vernier and scale matt chrome finish
- surfaces finely ground, with fixing screw
- mono block vernier, reading 0.05 mm
- straight bar, series 22 1530, type "C"
- straight and 90°-hook bar, reversible, series 22 1630, type "A"
- straight and with 2-hook bar, reversible, series 22 1830, type "B"
- exchangeable tip, reversible, series 22 1730, type "G"

ART N° 22 1532 type C

ART N° 22 1632 type A

ART N° 22 1732 type G

ART N° 22 1832 type B



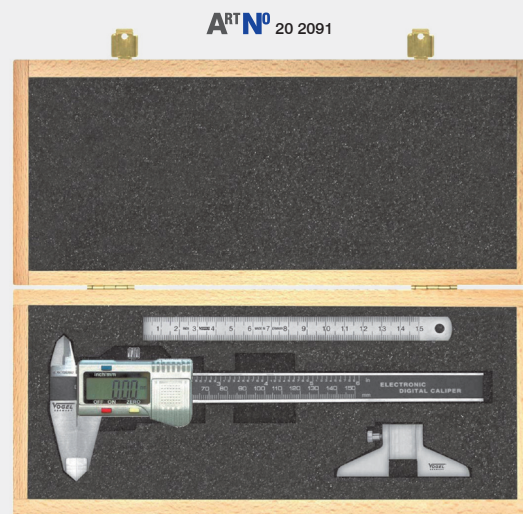
ART N° type C	ART N° type A	ART N° type B	ART N° type G	 mm	 mm / inch	 mm	 KG	ART N° CC
22 1530	22 1630	22 1830	22 1730	150	0.05	100	0.100	22 94001
22 1531	22 1631	22 1831	22 1731	200	0.05	100	0.125	22 94001
22 1532	22 1632	22 1832	22 1732	300	0.05	150	0.250	22 94001

Other combinations available on request, please!

## BLUE-LINE® DIGI PLUS-LINE® Measuring Tool Set

- selection of need-based compilations

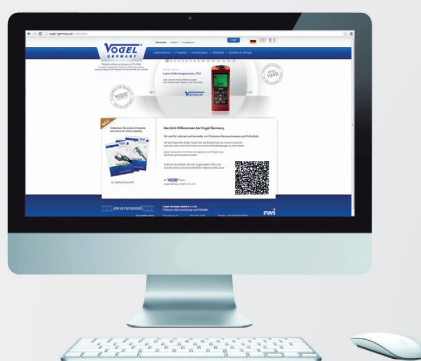
ART NO SET	pieces	consisting of	article	box type
20 2091	3	<b>Electr. Digital Caliper</b> • 150 x 0.01 mm • mm / inch • stainless • hardened	20 2011	
		<b>Measuring Bridge</b> • 75 mm • stainless • hardened	20 02092	
		<b>Satinless Steel Rule</b> • 150 x 13 x 0.5 mm • graduation mm/mm	10 10010015	



ART NO SET	pieces	consisting of	article	box type
23 9908	8	<b>Precision Vernier Caliper</b> • 150 x 0.05 mm • mm / inch • stainless • hardened	20 1020	
		<b>Micrometer</b> • 0-25 mm x 0.01 mm • with carbide surfaces	23 1351	
		<b>Flat Square, DIN 874/00</b> • 100 x 70 mm	31 0062	
		<b>Knife straight edge, bevelled edge DIN 874/00</b> • 100 mm	31 0323	
		<b>Spring Divider</b> • 150 mm	30 2422	
		<b>Carbide Steel Scriber</b> • 150 mm	33 4608	
		<b>Stainless Steel Rule</b> • 200 x 13 x 0.5 mm • graduation mm/mm	10 10010020	
		<b>Center Punch</b> • 120 x ø 10 mm	23 9999	



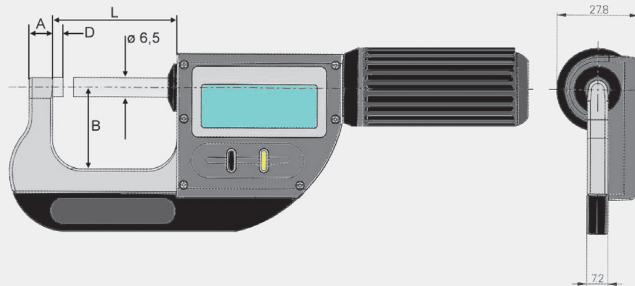
# Explore our website!



Any questions?  
We are pleased to advise!

**DIGI PLUS-LINE® Electr. Digital Micrometer *V*SPEED • IP67**  
DIN 863

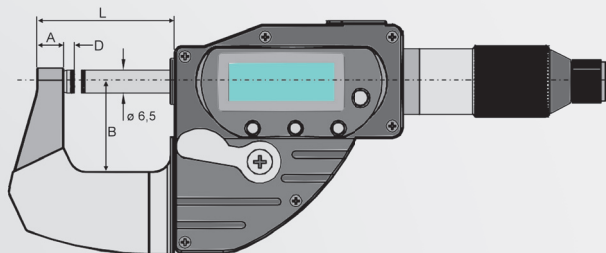
- water and coolant proof acc. to DIN 40050 / IEC 60529
- with 2 mm spindle feed for quick measuring
- with Sylvac electronic • with Proximity data output
- connection proximity USB / RS232 / digimatic (optional choice)
- large LCD display, clear reading, digit height 7 mm
- frame lacquered, with insulation 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*SPEED • 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 (connectivity also for Digimatic measuring devices)
- 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

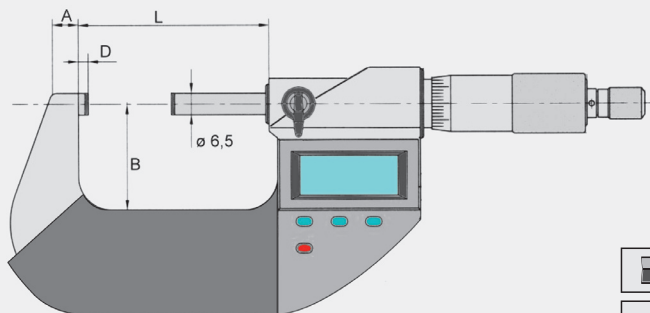


ART NO	mm / inch	mm / inch	ø mm	mm	A mm	B mm	D mm	L mm	max. mm	KG	ART NO CC
23 0580	0 - 25 / 0 - 1	0.001 / 0.00005	20	-	8	26	3.5	32	0.002	0.295	23 94000

## DIGI PLUS-LINE® Electr. Digital Micrometer • IP65 DIN 863

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

- 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, ORIGIN system, HOLD function
- locking lever for quick and precise fixing
- with ratchet for constant measuring pressure
- incl. 1x 3 V battery (type CR2032, art.-no. 2002093), with operation manual
- from up 25 mm with setting gauge

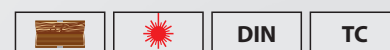
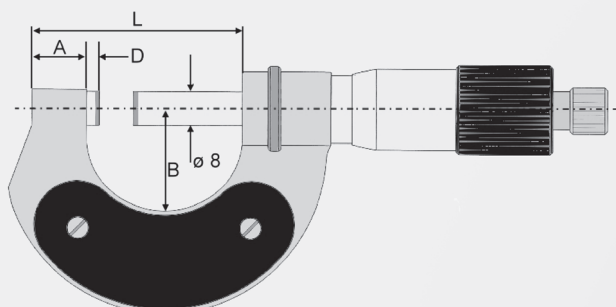
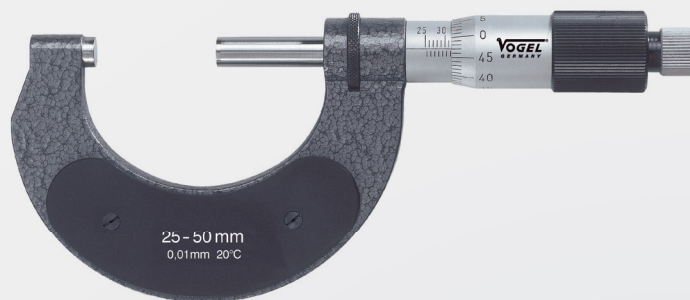


ART NO	mm / inch	mm / inch	$\varnothing$ mm	mm	A mm	B mm	D mm	L mm	max. mm	KG	ART NO CC
23 2150	0 - 25 / 0 - 1	0.001 / 0.00005	18	0.5	9	24	3.5	35	0.002	0.310	23 94000
23 2151	25 - 50 / 1 - 2	0.001 / 0.00005	18	0.5	9	32	3.5	60	0.002	0.394	23 94001

## SILVER-LINE® 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, from up 25 mm with setting gauge

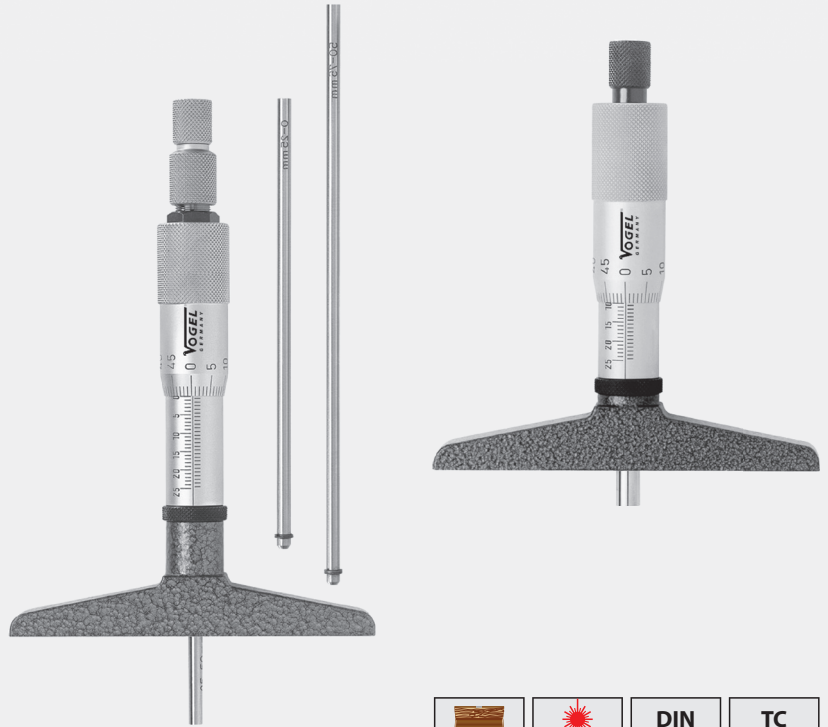


ART NO	mm	mm	$\varnothing$ mm	mm	A mm	B mm	D mm	L mm	max. mm	KG	ART NO CC
23 0586	0 - 25	0.01	21	0.5	13	24	3	37	0.002	0.300	23 94000
23 0587	25 - 50	0.01	21	0.5	13	34	3	62	0.002	0.370	23 94001
23 0588	50 - 75	0.01	21	0.5	15	46	3	87	0.003	0.440	23 94001

**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

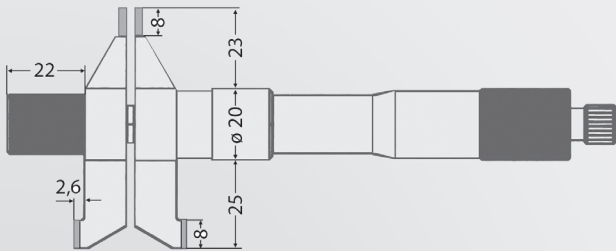
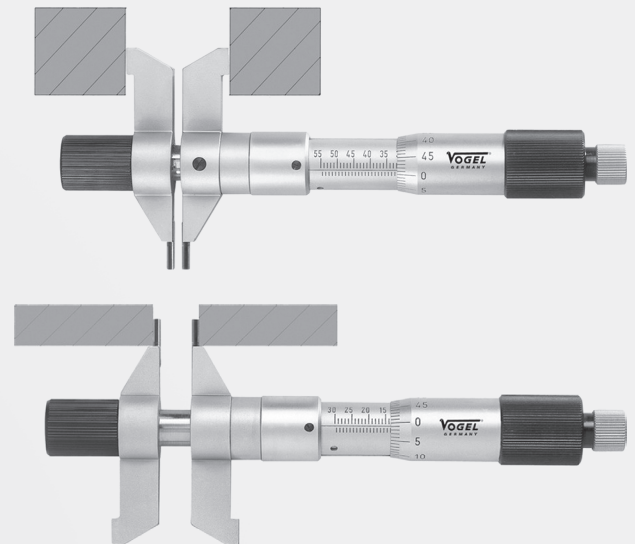


ART No	mm	mm	ø mm	mm	mm	measuring pin-ø mm	quantity of pins	max. mm	KG	ART No CC
23 0801	0 - 25	0.01	20	100 x 17	6.5	0.5	1	3	0.490	23 94001
23 0814	0 - 100	0.01	20	100 x 17	4.0	0.5	4	5	0.660	23 94003

**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	max. 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 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 11mm
- 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 max. 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	1) 0.010	59	65	30	59.5	145	0.095	24 94200

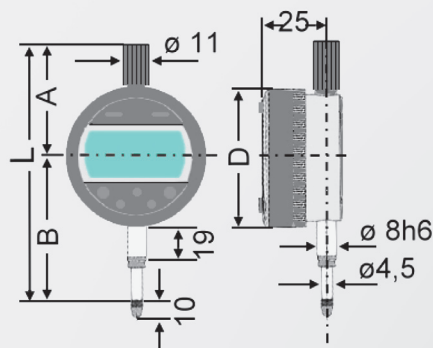
## DIGI PLUS-LINE® „Absolute“ Electr. Digital Dial Indicator • IP65

- water and coolant acc. to DIN 40050 / IEC 60529
- with **Vocom-s** duo data output, top model (connectivity also for Digimatic measuring devices)

- 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)

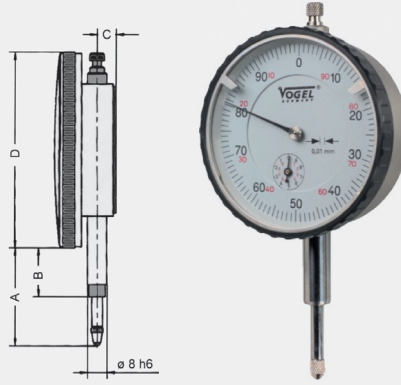


ART NO	mm / inch	mm / inch	mm	mm max.	A mm	B mm	D mm	L mm	KG	ART NO CC
24 0250	12.7 / 0.5	0.01 / 0.0005	0.002	0.02	125	55	60	62	0.196	24 94200
24 0255	12.7 / 0.5	0.001 / 0.00005	0.002	0.003	125	55	60	62	0.196	24 94200

**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

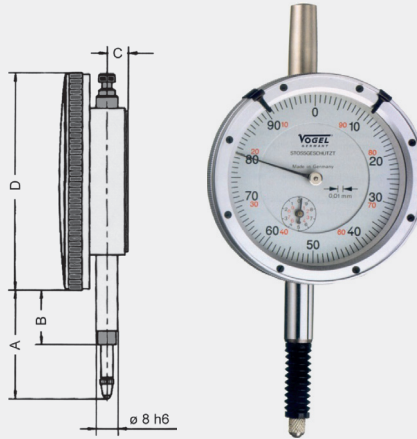


ART No	mm	mm			mm	A mm	B mm	C mm	D-ø mm	KG	ART No CC
			yes	no							
24 0131	0 - 10	0.01	✓	-	1	40	18.5	7.5	58	0.200	24 94000

**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

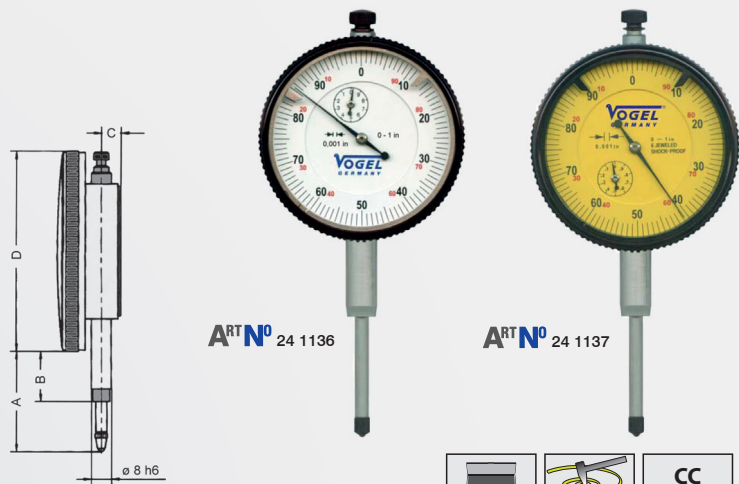


ART No	mm	mm			mm	A mm	B mm	C mm	D-ø mm	KG	ART No CC
			yes	no							
24 0151	0 - 10	0.01	✓	-	1	45.5	16.7	9.3	61.5	0.240	24 94000

**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

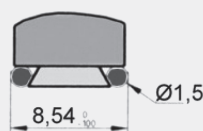
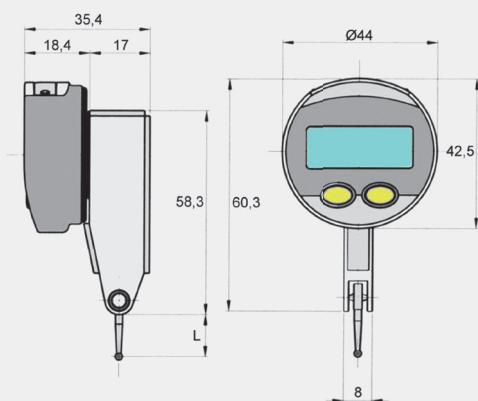


ART No	inch	inch			inch	A mm	B mm	C mm	D-ø mm	KG	CC
			yes	no							
24 1136	0 - 1.0	0.001	-	✗	0.1	54	19	8.5	60	0.135	inclusive
24 1137	0 - 1.0	0.001	✓	-	0.1	54	19	8.5	60	0.135	inclusive

## 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 NO	mm	mm / inch	measuring range mm / inch	mm	max. mm	measuring force N	L mm	KG	ART NO 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

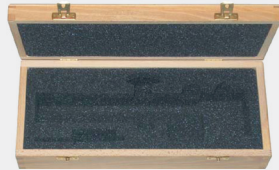


ART NO	mm / inch	mm / inch	mm	max. mm	thread depth mm	KG
24 0408	0 - 10 / 0 - 0.4	0.01 / 0.0005	0.01	0.02	11	0.065

**SILVER-LINE® 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  $\varnothing$  8 mm,  $\varnothing$  10 mm and dovetail



Option  
25 09201



ART No 25 0201



ART No	total height mm	column $\varnothing$ 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  $\varnothing$  8 mm and with dovetail for dial test indicators



Option  
25 09301

ART No 25 0301



ART No	total height mm	column $\varnothing$ 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  $\varnothing$  8 mm and dovetail for dial test indicators, with fine adjustment

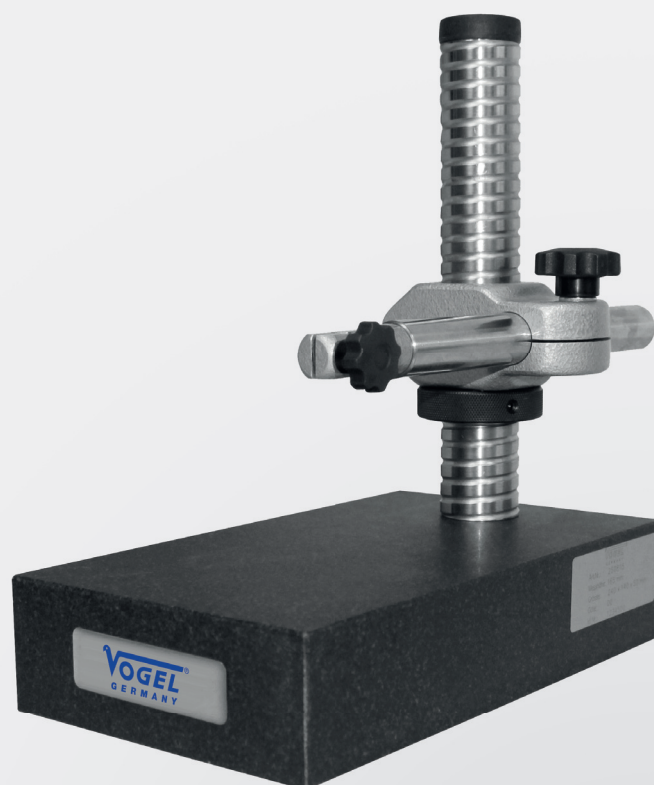
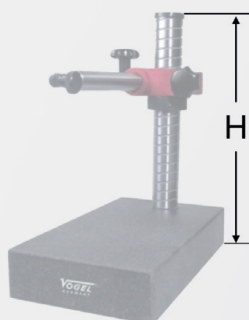


ART <sup>NO</sup>	total height mm	column $\varnothing$ x length mm	throat mm	thread mm	magnetic block mm	magnetic power ~ N	KG
25 0319	210	8/20 x 175	100	M 5	36 x 30 x 35	300	0.400

## 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  $\varnothing$  8 mm

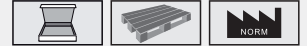


ART <sup>NO</sup>	mm table	meas.- height mm	throat mm	total height (H) mm	column- $\varnothing$ mm	cross arm- $\varnothing$ mm	KG
25 0815	240 x 140 x 50	165	180	270	35	22	8.900

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

## BLUE-LINE® Straightening Plates

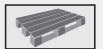
- solid or ribbed construction
- special wear resistant steel casting
- surfaces and four sides fine planed
- against extra charge the plates can be supplied also with bores, holes or T-slots



ART NO	mm	rib height mm	KG
26 1503*	500 x 500 x 40	40	84.000
26 1506*	800 x 800 x 40	40	216.000

## BLUE-LINE® Stands

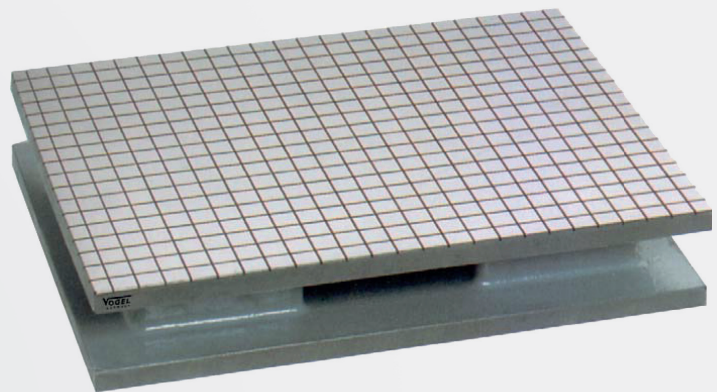
- suitable for straightening plates
- solid angular steel construction
- for a working height of approx. 800 mm



ART NO	for straightening plate size mm	quantity of legs	KG
26 9103*	500 x 500	4	27.000
26 9106*	800 x 800	4	46.000

## 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



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



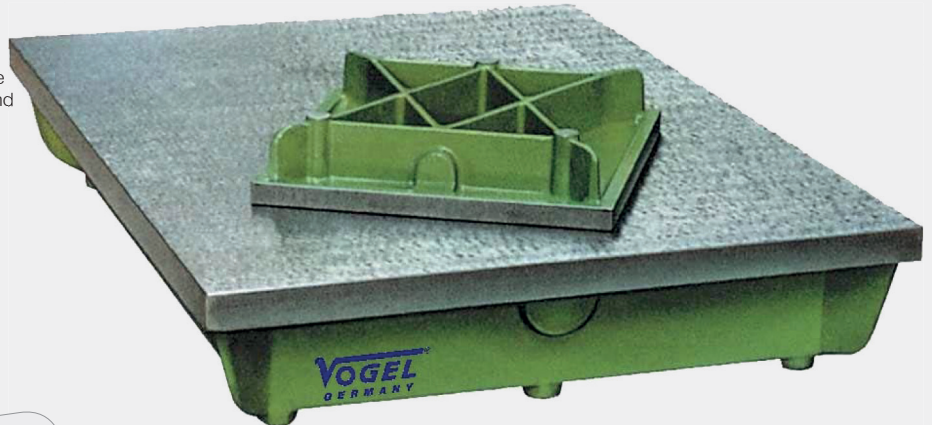
ART NO	mm	eveness mm	KG	ART NO wooden box
26 2101	360 x 260 x 65	0.0014	22.000	26 99036

## 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



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



<b>ART N°</b> grade 1	<b>ART N°</b> handles	<b>ART N°</b> wooden cover	mm	KG
26 1107*	26 9070	26 99040	400 x 400	27.000

## BLUE-LINE® Stand

- suitable for Control- and Testing Plates
- from about 1200x800 mm size we recommend single supporting feet
- 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



<b>ART N°</b>	mm	KG
26 9018*	400 x 400	23.000

## BLUE-LINE® 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°	colour	contents ml	KG
26 2602	blue	300	0.308

## BLUE-LINE® 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°	colour	contents ml	tube	box	KG
26 2631	blue	80	✓	-	0.086

## BLUE-LINE® Special Cleaner

- this cleaner dissolves dressing paste, marking ink etc.

- skin friendly
- delivery in a spray can



ART N°	contents ml	KG
26 2643	300	0.300



## 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

### **DIGI PLUS-LINE® Electr. Digital Parcel Platform Scale • IP65**

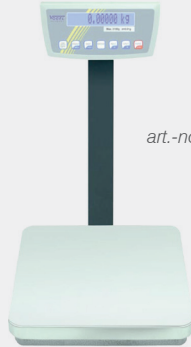
- multimodel platform scale • with data output RS 232 C
- for industrial purpose, with piece-counting, reference quantities selectable
- dual range scale, automatically switches to the next higher weighing range
- dust- and splash water proof acc. to DIN 40050 / IEC 60529

- industry scale with rugged metal housing, stainless steel weighing plate
- with large LCD display, with backlight, digit height 25 mm
- freely programmable weighing units, e.g. in yarn length g/m, in paper weight g/m<sup>2</sup>, etc.
- display unit (IP 65) placed anywhere by flexible spiral cable (approx. 1.4 m)
- easy 5-button operation, self-explaining, with animal weighing program
- with data output RS 232, for data-printer or computer connection
- mains or battery operation possible  
(1x 1.5 V battery, type 6LR61, art.-no. 60 9281, batteries are not included)
- adjusting program (CAL), piece-counting (PCS), net-total weighing (REZ)
- automatic power-Off after 3 min., permissible temperature +5°C ~ +35°C
- incl. charger 230 V/AC, dust cover, with operation manual



#### Options

- stand, art.-no. 27 3550 (except unit and scale)
- statistics printer, art.-no. 27 3098 or 27 3099/1
- interface cable, art.-no. 27 9998 or 27 9998/1
- DKD calibration certificate



art.-no. 27 3550, stand, except unit and scale



ART NO	max. kg	g	reproducibility g	linearity ± g	weighing plate mm	LCD unit	KG	ART NO CC
27 3054	15 / 35	5 / 10	5 / 10	15 / 30	318 x 308 x 75	225 x 110 x 45	4.000	27 94361
27 3057	30 / 60	10 / 20	10 / 20	30 / 60	318 x 308 x 75	225 x 110 x 45	4.000	27 94362

### **BLUE-LINE® Spring Divider** DIN 6486

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



ART NO	max. kg	KG
30 2422	150	0.135
30 2425	250	0.270

### **BLUE-LINE® Divider with Setting Wing** DIN 6486

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



ART NO	max. kg	KG
30 2412	150	0.100
30 2414	200	0.190
30 2415	250	0.275

**BLUE-LINE® Internal and External Spring Joint Compass**  
DIN 6482/6484

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



**ART N°**  
Spring Inside Compass

30 2442	150	0.125
30 2445	250	0.220



**ART N°**  
Spring Outside Compass

30 2462	150	0.145
30 2465	250	0.230

**BLUE-LINE® Internal and External Joint Compass**  
DIN 6482 / 6484

- steel, polished
- with flat legs
- with rivet



**ART N°**  
Inside Compass

30 2435	250	0.110



**ART N°**  
Outside Compass

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 No flat	mm		KG	ART No with back	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 No	mm	KG	ART No CC	ART No wooden box
31 0304	125	0.090	31 94304	31 99304
31 0306	200	0.150	31 94306	31 99306

## BLUE-LINE® Carpenter's Try Square

- with stainless steel blade and elocated aluminium handle
- for general carpentry and metal work, etc.

- stainless, hardened steel blade with matt finish surface
- elocated aluminium handle with profile grooves
- with 45° mitre
- graduation on front- and rear side
- laser engraved scale for clear reading



graduation at type B = mm - mm / mm - mm

graduation at type C = mm - mm / inch - inch



ART No type B	mm	ART No type C	mm / inch	length of handle mm	handle	steel blade	KG
50 4063	250	50 4073	250 / 10	145	40 x 12	40 x 1.0	0.230
50 4064	300	50 4074	300 / 12	145	40 x 12	40 x 1.0	0.250

**BLUE-LINE® Bevel Square**

- for general carpentry and metal work, etc.
- stainless steel, cross section 29 x 1.6 mm
- elocated aluminium handle with profile grooves, cross section 30 x 11.5 mm
- with angle graduation on the handle
- with galvanized fixing screw for locking the steel blade



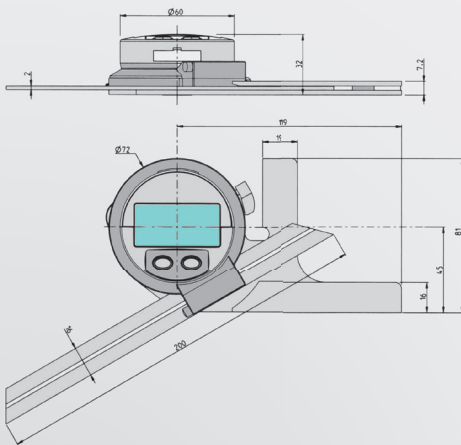
with angle graduation



<b>ART N°</b>	 mm	 KG
50 4863	250	0.250

**DIGI-PLUS-LINE® Electr. Digital Univ. Bevel Protractor • IP51**

- with data output Opto RS 232
- spraywater resistant
- stainless, hardened and fine ground
- large LCD display with clear reading
- preset to 0° or 180°, resolution 0.01° / 0°0.1'
- two measuring directions
- multifunctional display
- with fine adjustment and locking device
- On/Off button
- incl. 1x 3 V battery (type CR2032, art.-no.: 20 02093), and operation manual



Accessories can be found in our catalogue „EDITION 2013/2014“ on page 205



<b>ART N°</b>	length of blades mm		 max.	 KG	<b>ART N°</b> CC
32 0151	200	1 x 360° / 2 x 180° / 4 x 90°	4'	1.070	32 94020

## DIGI PLUS-LINE® Electr. Digital Angle-Sensor „Bevel-Box“ and „Level-Box“ • IP54

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

- rugged aluminium housing
- large LCD display with clear reading, digit height 10 mm
- with 3 magnetic discs in the bottom of the housing
- with On/Off-, zero- and ABS button, data hold function
- incl. 1x 3 V battery (type CR2032, art.-no.: 20 02093), and operation manual



magnetic discs

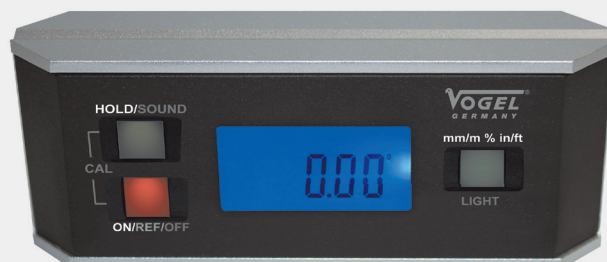


<b>ART NO</b>					
32 0010	± 180°	0.1°	± 0.1°	50 x 50 x 32	0.160

## 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
- 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



<b>ART NO</b>					
32 0013	4 x 90° (0-360°)	0.05°	0 + 90° <0.05° / rest < 0.1°	150 x 35 x 54	0.280

## BLUE-LINE® Universal Bevel Protractor Set

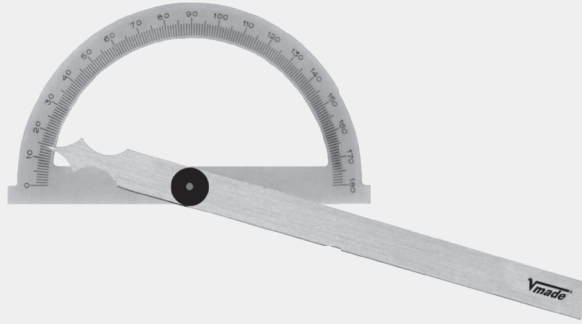
- set with 3 blades in different length
- stainless, hardened and fine ground
- scales matt chrome finish
- parallaxfree reading by vernier, with large magnifying lens
- with fine adjustment
- incl. operation manual



<b>ART NO</b>	length of blades mm		angle graduation	packing		<b>ART NO</b> CC
32 1220	150 / 200 / 300 mm	4 x 90°	1/12° = 5'	wooden box	0.765	32 94023

**BLUE-LINE® Protractor**

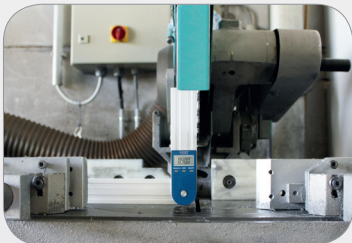
- with fixing screw
- for standard mechanical engineering
- special steel, in chromed finish
- scale in matt chrom finish, laser engraved scale



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**

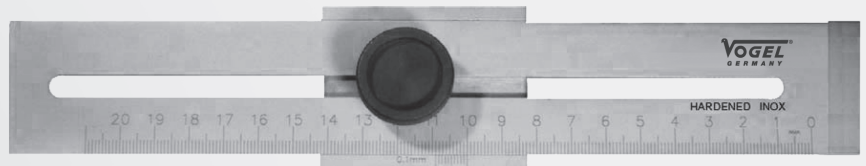
- for checking and transferring angles
- large LCD display with clear reading, digit height 10 mm
- blades in anodized aluminium with profile grooves, and embedded magnet strips
- On/Off button and data hold function, with fixing screw
- 180° rotating display, by pressing function button
- zero setting 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



## VOGEL 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



ART No	mm / inch	mm / inch	mm	max. mm	length of T-bar mm	KG	ART No CC
33 7101	150 / 6	0.01 / 0.0005	0.01	0.03	100	0.240	33 94102

## VOGEL BLUE-LINE® Steel Scriber

- with carbide tips
- with clip



ART No	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

## VOGEL BLUE-LINE® Steel Scriber with Magnetic Lifter

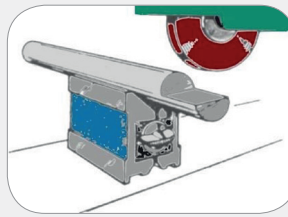
- with hardened tip
- telescopic rod, stainless steel, with clip



ART No	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
- with magnetic prism base
- with V-cut 90°, fine ground
- plane, parallel and squared machined



<b>ART N°</b>		for shaft- mm	parallelism tolerance ± mm	 N	
33 1010	80 x 70 x 95	ø 6 - 30	0.05	800	3.200

### BLUE-LINE® Parallel Surface Gauge

- for simple workshop purposes
- round, chromed column, without graduation
- hardened steel scriber, straight and cranked bar
- scriber is rotatable and turnable
- round and lacquered iron base



<b>ART N°</b>		
34 2102	300	0.650
34 2104	500	2.400

### 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



<b>ART N°</b>	contents ml		
35 0320	500	260 x ø 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



<b>ART N°</b>	contents tissues pcs.		
35 0321	80	190 x ø 90	0.205

## 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

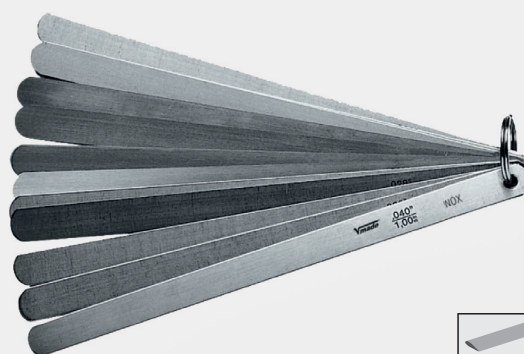
- with magnets in the prism bottom on request, please



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 difficult to reach 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

## BLUE-LINE® Taper Gauge

- flat version
- special steel, hardened and made of technical ABS plastic available
- useful gauge, especially for the inspection of gap size, etc.
- special steel, hardened, fine ground and matt chrom finish or made of ABS plastic
- laser engraved graduation, with knurled handle



ART N°	mm	mm		version	KG
<b>47 2372</b>	0.5 - 11.0 mm	0.1	153 x 8 x 12	steel	0.080
<b>47 2373</b>	0.5 - 11.0 mm	0.1	155 x 8 x 12	ABS plastic	0.020

### BLUE-LINE® Angle Thread Cutting Gauge

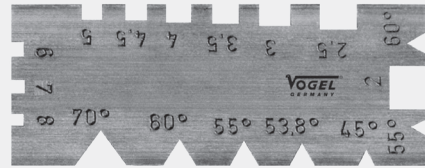
- angles 55° whitworth or 60° metric



ART N°	inch	ART N°	mm	KG
47 2001	55°	47 2002	60°	0.013

### BLUE-LINE® Combined Angle Thread Cutting Gauge

- fine machined edges



ART N°	angles threads	flat threads threads/inch (t.p.i.)	KG
47 2003	45 - 53.8 - 55 - 60 - 70°	2 / 2.5 / 3 / 3.5 / 4 / 4.5 / 5 / 6 / 7 / 8	0.020

### BLUE-LINE® Combined Turning and Thread Cutting Gauge

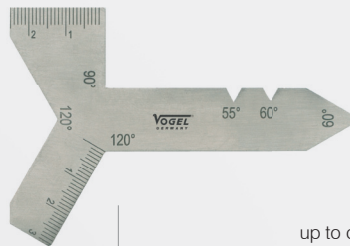
- with trapez- and flat threads



ART N°	trapez threads mm	flat threads threads/inch (t.p.i.)	angles	KG
47 2005	2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 12	2 / 2.5 / 3 / 3.5 / 4 / 4.5 / 5 / 6 / 7 / 8	55° + 60°	0.050

### BLUE-LINE® Universal Twist Drill Grinding Gauge

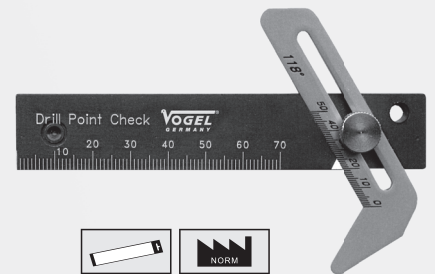
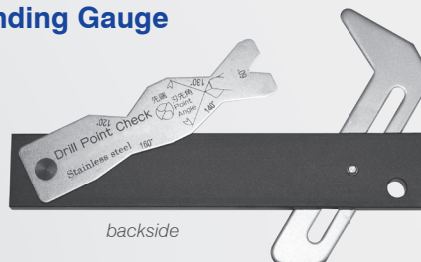
- with several angle cuts



ART N°	angle cut	up to drill-ø mm	KG
47 2012	55° / 60° / 90° / 120°	60	0.030

### BLUE-LINE® Universal Twist Drill Grinding Gauge

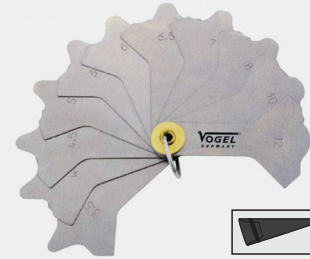
- special steel, hardened, ground and burnished
- with angle finder at the rear side



ART N°	mm	angle settings	up to drill-ø mm	KG
47 2018	0 - 70	60° / 118° / 120° / 130° / 140° / 160°	100	0.185

### BLUE-LINE® Welding Gauge

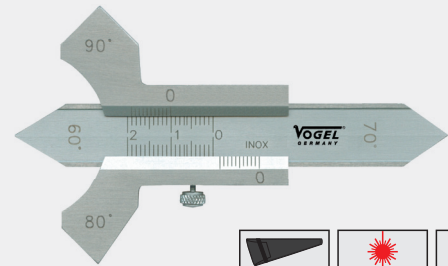
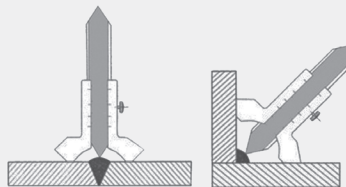
- fan shape
- for measuring right angled welds
- stainless steel



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

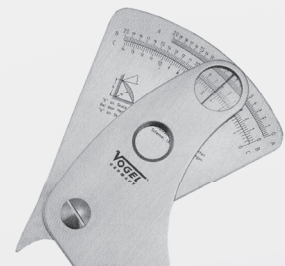
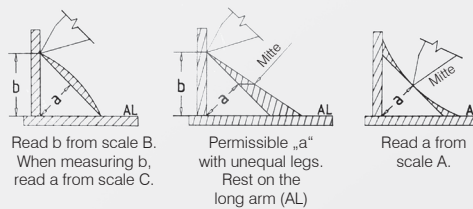
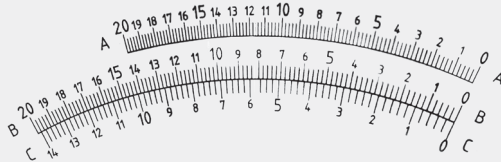
- with vernier reading
- for measurements of flat welding seams and in corners etc.
- stainless steel hardened and fine ground
- scale matt chromed
- with fixing screw



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

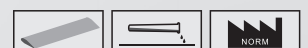
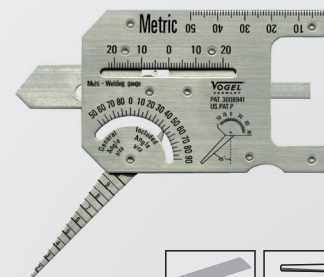
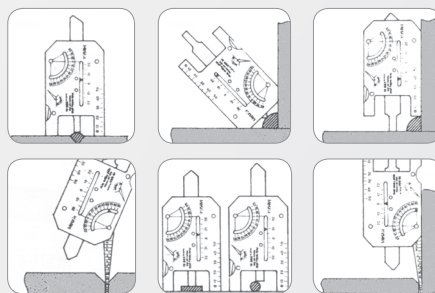
- with reading window
- stainless steel, hardened and fine ground
- reading through a window by a reference line



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

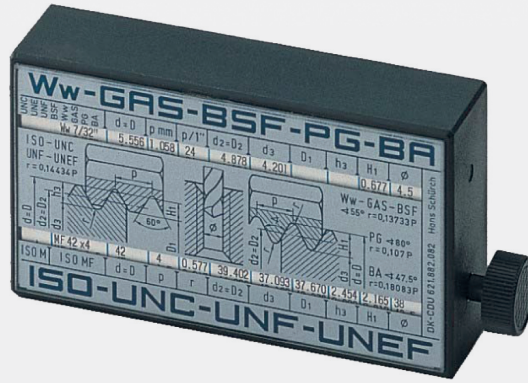
- with adjustable angle
- with various setting facilities
- stainless steel, hardened and fine ground



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® Thread Indicator**

- for the direct reading of all details necessary for the determination of threads and core-ø
- dustproof plastic housing



**ART N°**

47 4121



30 x 60 x 110



0.100

**BLUE-LINE® ISO Tolerance Indicator**

- for the direct reading of all tolerance values according to ISO, including complete board of all ISO-tolerances up to 500 mm
- dustproof plastic housing



**ART N°**

47 4122



30 x 60 x 110



0.100

**BLUE-LINE® Converter**

- for reading millimetre to inch and visa versa
- dustproof plastic housing



**ART N°**

47 4123



30 x 60 x 110



0.100

## 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-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
- stainless steel tray, ø 110 mm, with powerful permanent magnetic bottom for small parts
- in a strong case with zip

ART<sup>NO</sup> 47 4470



ART<sup>NO</sup> 47 4471



AWARD



Price / Performance:  
goog - excellent



ART <sup>NO</sup>	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 <sup>NO</sup>	mm	kg	KG
47 4441	~650	8	0.096

## BLUE-LINE® Professional Inspection Mirror

- with 5x magnification and telescope bar

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



ART N°	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.

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

- 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

### Option

- art.-no. 48 0317 Probe F10 (Fe), for measuring range 0 - 10000  $\mu\text{m}$ , low range resolution 10 mm



ISO	ASTM	BS	CE	TC

ART N°	$\mu\text{m}$ / probe F1 + N1	$\mu\text{m}$ / probe F1 + N1	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 (quarz), 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.  $\phi$  15 x 2.0 mm and max.  $\phi$  20 x 3.0 mm
- 2 external transducers, 1m length, N05 for standard purpose ( $\phi$  10 mm / 5 MHz) and N07 for thin walled pipes or small radii ( $\phi$  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. $\pm 0,5\%n + 0.04$ mm	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 (quarz), 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,  $\phi$  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. $0.5\%n + 0.1$	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

## DIGI PLUS-LINE® Ultrasonic Thickness Gauge

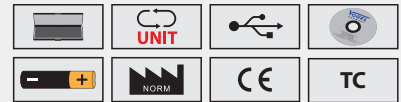
- top class device, with USB data output, with A-Scan mode
- rugged handheld, for quick and flexible wall thickness measurements
- for wall thickness checking of pressure tanks, vessels, oil tanks, chemical instruments and many others
- dedicated for many materials, such as steel, cast iron, grey cast 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

## DIGI PLUS-LINE® Ultrasonic Echo-Echo Thickness Gauge

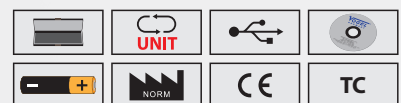
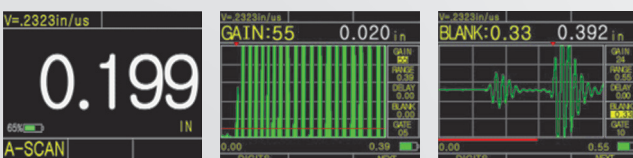
- top class device, with USB data output, with A-scan and B-scan mode
- rugged handheld, for quick and flexible wall thickness measurements, even through coatings
- for wall thickness checking of pressure tanks, vessels, oil tanks, chemical instruments and many others
- dedicated for many materials, 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 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 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	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

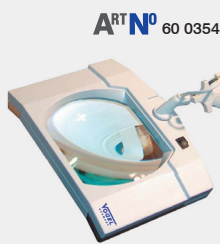
- total new model with powerful LED light
- patented design
- ideal for technical repair, camera, watch & clock repair, electronic repair, artworkers, dentist, etc.
- made of ABS-plastic with sticky buckle tape for adjustment
- with 4 different lenses with special surface treatment
- light can be adjusted 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

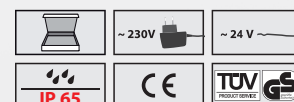
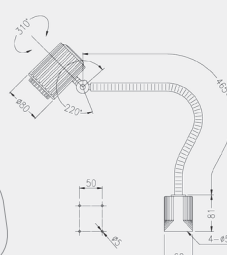
- with articulated arm
- adjustable at any position, with 360° rotation
- metal body, powder coated, insulation lamp housing made of rugged plastic
- with extra large and precision glass lens, 3 dpt., with built-in trafo
- with table clamp, cable inside of the arm, overload category CAT I
- with extra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



ART N°	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 N°	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 N°	article description
60 9360	magnetic plate, ø 90 mm, hole distance 50x50 mm, M4

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

- for the professional purpose
- explosion-proof for gas/dust, acc. to the ATEX-standard
- with 5 watt extremely bright and white LED colour light
- watertight acc. to DIN 40050 / IEC 60529, up to 1m
- super rugged nylon housing, in black colour
- On/Off pressure switch
- art.-no. 60 0901 incl. 3x 1.5 V battery (type AA, art.-no.: 60 9282)
- art.-no. 60 0905 incl. 3x 1.5 V battery (type AAAA, art.-no.: 60 9278)



ART N° 60 0901

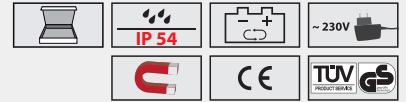


ART N°	model	watt	luminous flux	colour of housing	LED light colour	running time hrs.	length x ø mm	KG
60 0901	RAZOR	5	60	orange	white	100	185 x 47/35	0.175
60 0905	ION	5	60	black	white	20	160 x 15	0.045

## 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

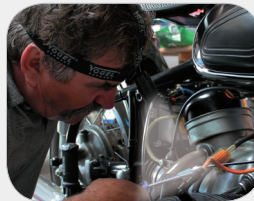


ART No	quantity of LED's	LED light colour	mm	KG
60 0020	27 + 1	white	170 x 29 x 29	0.640

## 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 No	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 No	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

## V<sup>DIGI PLUS-LINE</sup>® 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

## V<sup>SILVER-LINE</sup>® 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



**DIGI PLUS-LINE** 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 water/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!



	IP 65	IP 57	~ 230V

ART NO	hose →           ← mm	hose ø mm	hose type			field of view °	depth of field mm	→           ← mm		
			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

## 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

## DIGI PLUS-LINE® Electr. Digital Miniature Current Clamp • IP44

- the manual/automatic test range selector enables versatile and reliable testing
- use in the service sector, in industry or in the installation
- whether you want to measure a direct current as shown in the picture to check that a battery's load current will be sufficient, or the load is pulling too much and causing leakage
- the included readiness-bag keeps the device and its attachments safe, even in harsh areas or on the road
- protected housing made of sturdy ABS-plastic, dustproof and spray water resistant
- LCD display with clear reading
- incl. readiness bag, with operation manual
- voltage up to 600 V, current AC/DC up to 600 A
- overload category CAT III 600 V, conductivity with acoustical signal, resistance 0-60Ω
- with diode test, with 1x testing lead set
- incl. 3x 1.5 V battery (type AAA, art.-no.: 60 9283)



<b>ART N°</b>					<b>ART N°</b> spare battery
64 0364	- 600 V AC/DC	- 600 A AC/DC	208 x 75 x 35	0.340	60 9283 1.5 V (type AAA)

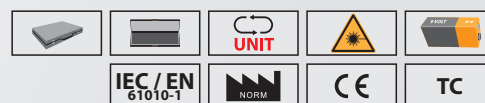
## DIGI PLUS-LINE® Infrared Laser Thermometer

- 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 N° 64 9300



<b>ART N°</b>					measuring optics			<b>ART N°</b> spare probe	
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

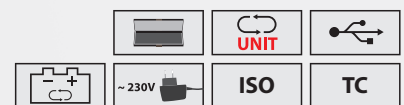
- for many outdoor applications and for several industry purposes to measure the wind speed in different units
- ideal equipment for heating and ventilation technician, shipping industry, etc.
- with Beaufortscale display
- rugged, polyamide housing material
- with tripod mounting screw on the rear side
- 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	mm	KG
64 1204	0.3 ~ 45	0 ~ 999900	0.1	0.2°	± 0.1 digits	± 2°	160 x 62 x 35	0.265

## 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 statistic 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	mm	KG
65 7111	0.01 / 1	0.05 - 10	0.1 - 50	6	350 x 200 x 75	0.200

## DIGI PLUS-LINE® Electr. Digital Surface Roughness Tester

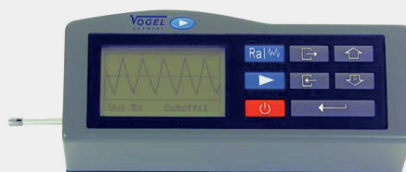
- with data output RS232
- portable surface roughness tester with graphic display
- for measurement of roughness parameters:  
Rz, Ra, Rq, Ry, Rt, Rp, Rmax, Rv, R3z, RS, RSm, RSk, Rmr, P
- rugged ABS-plastic housing, with 13 different roughness parameters
- easy to operate menu software, with tracer (art.-no. 65 7200)
- graphical display on a large LCD, 128 x 64 dot-matrix, with backlight, brightness adjustment
- pick-up stylus position indicator, indication of roughness profile on LCD
- standards acc. to ISO / DIN / JIS / ANSI selectable, battery indicator
- On/Off button, autom. power off after 5 min., with auto-store of adjustments and measuring values
- measuring unit switchable mm/inch, accuracy class acc. DIN 4772 class 2
- tracer tip made of diamond, radius 5 µm, bores from up ø 6.0 mm, depth 15 mm (art.-no. 65 7200)
- primary profile (P), roughness profile (R), Tp curve (material ration Mr)
- digital filter RC/PC-RC/GAUSS/D-P, profile recording magnification Vv 200x~20000x, Vh 20x, 50x, 200x
- exchangeable tracer, with software for calibration, incl. roughness test plate Ra
- selectable languages in english, german, french, italian, spanish, netherlands
- data output RS232, interface cable (for PC or printer art.-no. 65 7198), software
- with 3 V Li-Ion rechargeable battery, charger 220V / 50Hz
- with support for stand alone use, screw driver, carrying case, with operation manual



Accessories can be found in our catalogue „EDITION 2013/2014“ on page 303



display material bearing ration curve



display finish profile



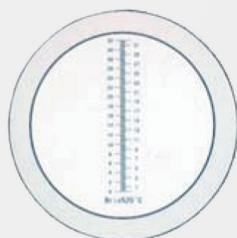
display finish parameter



ART NO	µm / inch	Ra, Rq µm	Rz, Ry, Rp, Rt, R3z µm	RSm, RS µm	cut-off lengths mm	mm	KG
65 7110	0.001 / 0.04	0.05 – 16	0.02 - 160	2 - 4000	0.25 / 0.8 / 2.5	141 x 56 x 48	0.480

## 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



ART NO	application range		max.	mm	KG
65 3200	lubricants, coolant liquids, fruit, juices, wines, etc.	0 - 32% Brix	± 0.20%	170 x ø-29	0.240

## DIGI PLUS-LINE® 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 scale 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		
65 1606	± 1.0%	960	Rmin. = 30/with support ring Rmin. = 10	123 x 67 x 30	0.350

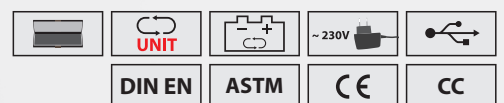
## DIGI PLUS-LINE® Universal Digital Rebound Hardness Tester

- 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)			
65 1614	✓	± 0.5 %	148 x 44 x 22	0.110	inclusive

## DIGI PLUS-LINE® Electr. Digital Angle Measurer Spirit Level

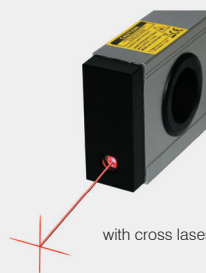
- automatic calculation of single and double mitre angles without any other tools
- sturdy aluminium housing, with adjustable bevel blade
- large LCD display, digit height 12 mm, reading from all directions possible, with shiftable backlight
- rapid calculation and transfer of angles by means of memory 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°	0.1°	1 mm/m = ±0.057°	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°	0.1	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
- 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 electronical 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°

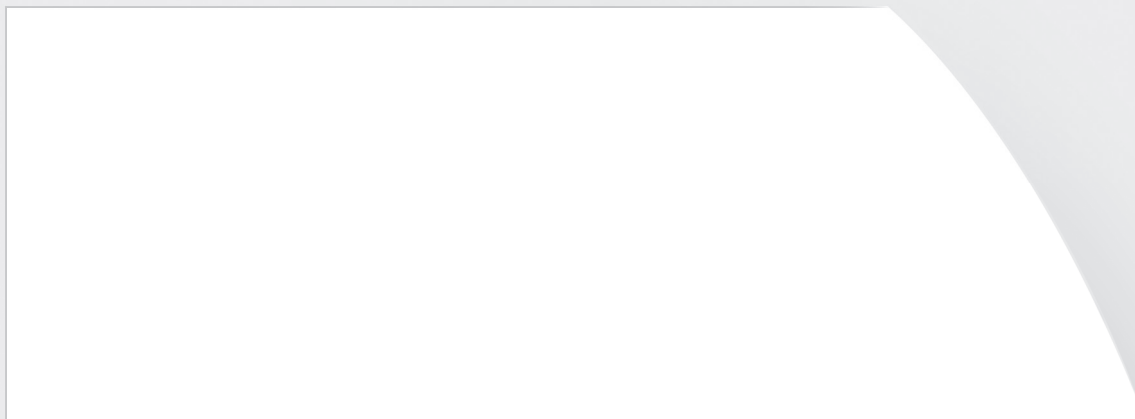


plane, rectangular aluminium profile, extruded and warm cured



<b>ART N°</b>				
71 4002	400	50 x 22	0.5 mm/m = ±0.029°	0.250
71 4005	800	50 x 22	0.5 mm/m = ±0.029°	0.422

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