

LiMiT



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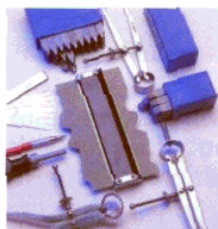
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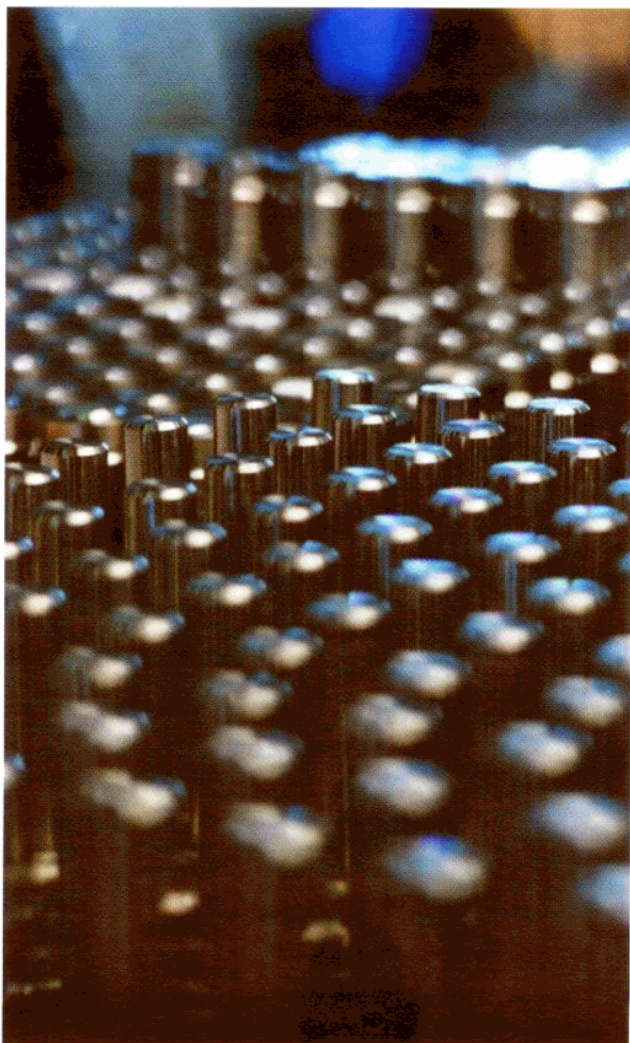
Technical support

Often situations occur when measuring points are hard to access or other difficulties are encountered concerning measuring in a convenient way. When this is the case, we can offer specially adapted measuring instruments or tools made for dimensions exceeding standard proportions.

We also offer help with calibration and repair of measuring instruments, as well as spare parts.

The assortment

The assortment includes more than 500 different standard products. The mechanical manufacturing and engineering industries demand measuring products with great accuracy to measure and control details within a range of fractions of a millimeter to several meters. Limit supplies instruments with an accuracy ranging from 1 mm down to 0.001 mm.



Production

The production takes place in several different production units. Each unit is specialised within a certain area. Everything from precision machining to precision cuts, from electronics to casting.

What unites the different units is that they all fulfill our specifications and demands, and finally that the finished products meet our clients expectations.

Quality according to demand

Accuracy always has its price. Higher accuracy means higher costs. Both the choice of measuring product and the choice of measuring method affect the total cost.

Limit products meet international levels of tolerance according to DIN (Deutsches Institut für Normung). Several products are available, individually calibrated with calibration certificates, linked to international standards and traceable to the National Laboratory of Length, in stock for immediate delivery.

We hope this catalogue, will help you to choose the right measuring instrument at every opportunity.



Measuring kits



To the point

Measuring Kits

We have been supplying measuring products to the industry for almost 100 years and during that time we have learnt what our customers require and appreciate. The products have been constantly developed according to new productions methods and new technology.

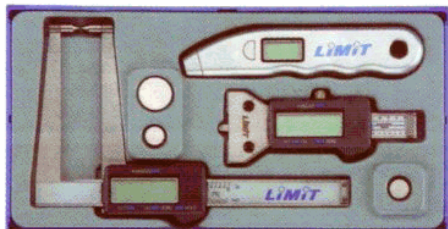
The trademark **Limit** has been created using the experience we have gathered during the years. Our target group demands accurate function, quality, price and delivery. We know how to meet these demands.

Through **Limit** we aim to supply European industry with a broad and qualified assortment of measuring products.

- Measure your quality.
- Organise your measuring tools.
- Measuring kits for industrial and automotive mechanics.
- Supplied in a handy carrying case with recessed handle, click lock mechanism and rubber feet.



Measuring kits



Measuring kits

3 piece measuring set. For measuring and control of brakediscs and tyres. Fits in Teng Tools Tool Storage system.

Code no.		139560106
Digital brake disc caliper	mm	0-75
Tyre pressure gauge	kg/cm ²	7 (100 PSI)
Tyre tread depth gauge	mm	0-25



5 piece set.
Fits in Teng Tools storage system.

Code no.		128640109
Vernier caliper	mm/inch	150/6
Micrometer	mm	0-25
Precision square DIN 875/2	mm	150 x 100
Steel rule	mm	150
Scriber TC-tipped, length	mm	150



5 piece set. Fits in Teng Tools Storage system.

Code no.		118610104	118610203
Measuring system		Metric	Inch
Digital caliper	mm/inch	150	6
Micrometer	mm/inch	0-25	0-1
Precision square	mm/inch	150x100	6x4
Steel rule	mm/inch	150	6
Scriber, TC-tipped, length	mm/inch	150	6

Measuring kits

9 piece measuring set. For mechanical workshop, assembling, repair, services etc. A base assortment for measuring length, thickness, angles, distance, electrical circuits and temperature.

Code no.			128630100
Multimeter: voltage	DCV	200 mV - 500 V	
voltage	ACV	200 V - 500 V	
current	DCA	2000 μ A - 10 A	
resistance	Ω	200 Ω - 20 M Ω	
temperature	$^{\circ}$ C	-40 - +250	
Steel rule	mm	300	
Digital caliper	mm/inch	150/6	
Micrometer	mm	0-25	
Precision square DIN 875/2	mm	150 x 100	
Protractor	mm	80	
Screw pitch gauge M/UNF	no. of blades	55	
Feeler gauge 13 blades	mm	0.05-1.00	
Scriber TC-tipped, length	mm	150	



9 piece measuring set. For measuring, troubleshooting and control. A basic assortment for vehicle mechanical, repair, service etc.

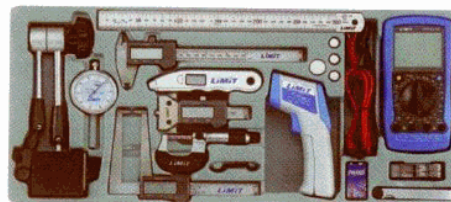
Code no.			139570105
IR Thermometer, measuring range	$^{\circ}$ C	-20 - +500	
Digital caliper, measuring range	mm	0-150	
Digital brake disc caliper, measuring range	mm	0-75	
Tyre pressure gauge	kg/cm ²	7 (100 PSI)	
Tyre tread gauge	mm	0-25	
Steel rule	mm	300	
Feeler gauge 13 pcs	mm	0.05-1.00	
Thread pitch gauge 60 $^{\circ}$		Metric/UNC	
Multimeter:			
Voltage	DC	500 V	
Voltage	AC	500 V	
Current	DC	10 A	
Resistance		20 Ω	
Temperature	$^{\circ}$ C	-40 - +250	
Continuity test		-	
Diode test		-	



Limit

12 piece measuring set. For measuring, troubleshooting and control. A basic assortment for vehicle mechanical, repair, service etc.

Code no.			139580104
IR Thermometer, measuring range	$^{\circ}$ C	-20 - +500	
Digital caliper, measuring range	mm	0-150	
Digital brake disc caliper, measuring range	mm	0-75	
Tyre pressure gauge	kg/cm ²	7 (100 PSI)	
Tyre tread depth gauge	mm	0-25	
Micrometer	mm	0-25	
Dial gauge	mm	10	
Magnetic stand, max. height	mm	280	
Steel rule	mm	300	
Feeler gauge 13 pcs	mm	0.05-1.00	
Thread pitch gauge 60 $^{\circ}$		Metric/UNC	
Multimeter:			
Voltage	DC	1000 V	
Voltage	AC	750 V	
Current	DC	10 A	
Resistance		-	
Dwell		-	
Engine tach.		-	
Continuity test		-	
Diode test		-	



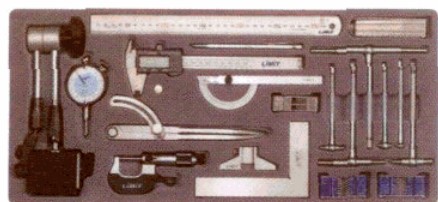
Measuring kits

Measuring kits

14 piece measuring set. For mechanical workshop, assembling, repair, services etc. A base assortment for measuring length, thickness, depth, holes, angles, distance.



Code no.		128620101
Steel rule	mm	300
Digital caliper	mm/inch	150/6
Micrometer	mm	0-25
Telescopic gauge	mm	8-12.7
Telescopic gauge	mm	12.7-19
Telescopic gauge	mm	19-32
Telescopic gauge	mm	32-54
Telescopic gauge	mm	54-90
Telescopic gauge	mm	90-150
Precision square DIN 875/2	mm	150 x 100
Protractor	mm	80
Screw pitch gauge M/UNC	no. of blades	55
Feeler gauge 13 blades	mm	0.05-1.00
Scriber TC-tipped	mm	150



20 piece measuring set. For mechanical workshop, assembling, repair, services etc. A base assortment for measurement length, thickness, depth, holes, angles, roundness and distance.

Fits in Teng Tools storage system.

Code no.		128610102
Steel rule	mm	300
Digital caliper	mm/inch	150/6
Base for depth gauge	mm	75
Micrometer	mm	0-25
Dial indicator	mm	10/0.01
Magnetic stand with central locking, max. height	mm	280
Telescopic gauge	mm	8-12.7
Telescopic gauge	mm	12.7-19
Telescopic gauge	mm	19-32
Telescopic gauge	mm	32-54
Telescopic gauge	mm	54-90
Telescopic gauge	mm	90-150
Precision square DIN 875/2	mm	150 x 100
Protractor	mm	120
Hole gauge 20 pins	mm	0.45-1.5
Hole gauge 16 pins	mm	1.5-3.0
Screw pitch gauge M/UNC	no. of blades	55
Feeler gauge 13 blades	mm	0.05-1.00
Scriber TC-tipped	mm	150
Divider with locking	mm	200



23 piece set. For mechanical workshops, assembling, repair, services etc. A base assortment for measuring length, thickness, depth, holes, angles, roundness and distance.

Code no.		122670102
Steel rule	mm	300
Vernier caliper	mm	300
Digital caliper	mm	150
Base for depth gauge (suitable to digital caliper)	mm	75
Micrometer	mm	0-25
Dial indicator	mm	10/0.01
Test indicator	mm	0.8/0.01
Magnetic stand with central locking, max. height	mm	280
Telescopic gauge	mm	8-12.7
Telescopic gauge	mm	12.7-19
Telescopic gauge	mm	19-32
Telescopic gauge	mm	32-54
Telescopic gauge	mm	54-90
Telescopic gauge	mm	90-150
Square DIN 875/2	mm	100x70
Square with base	mm	300x175
Protractor Ø	mm	120
Hole gauge 20 pins	mm	0.045-1.5
Hole gauge 16 pins	mm	1.5-3.0
Screw pitch gauge M and UNF	no. of blades	55
Feeler gauge 13 blades	mm	0.05-1.0
Scriber TC-tipped, length	mm	150
Divider	mm	200

Calipers



Calipers

- Made of brass.
- The outside of the jaws can be used for internal measurement.
- Graduated in mm and inch.
- Reading accuracy 0.1 mm.

Code no.		26540203
Length of measurement	mm	100
Length of jaws	mm	19



Small format and practical leather case makes it ideal for storing in the pocket.

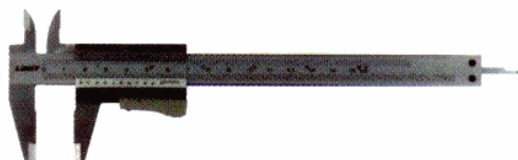
- Frosted chrome plated scale and vernier.
- Stainless and hardened steel.
- Lapped measurement surfaces.
- Leather case.
- Reading vernier scale 0.05 mm.
- DIN 862.

Code no.		60060100
Length of measurement	mm	100
Length of jaws	mm	27



- Frosted chrome plated scale and vernier.
- Made of hardened carbon steel.
- Lapped measuring surfaces.
- Reading vernier scale 0.05 mm.
- Tolerance according to DIN 862.
- Supplied in a plastic wallet.

Code no.		119090108
Length of measuring	mm	150
Length of jaws	mm	40



- Frosted chrome plated scale and vernier.
- Made of stainless and hardened steel.
- Lapped measuring surfaces.
- Reading vernier scale 0.05 mm.
- Tolerance according to DIN 862.
- 150mm caliper supplied in a colour display carton with plastic wallet.

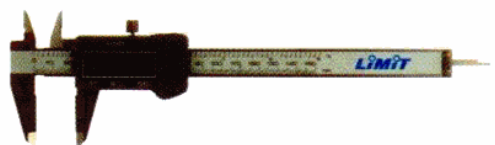
Code no.	26700302	26700351
Length of measurement	mm 150	200
Length of jaws	mm 40	40
With calibration certificate	26700401	-
Spare part set	26702001	26702001



Digital calipers

- Reading 0.01 mm.
- Made of stainless steel.
- Repeated reading ± 0.01 mm.
- Zero set in any position.
- Switch off button.
- Adjustable between mm and inch.
- 4 function.
- DIN 862.
- 150mm caliper supplied in a colour display with plastic box.
- **No. 2928-0146.** Absolute function. The caliper can be shifted between a zero value and the absolute measurement value. Battery type SR 44.

Code no.	29280104	29280146	29280161	29280203
Length of measurement	mm 150	150	200	300
Length of jaws	mm 40	40	50	60
Height of figures	mm 11	11	11	11
Resolution	mm 0.01	0.01	0.01	0.01
With calibration certificate	29280153	-	-	-
Spare battery to fit all		29281003		
Spare part set		29282001		



Calipers

Calipers

Calipers are an all round instrument with a relatively high measuring accuracy. Calipers are recommended for measuring where 0.1 measuring is required.

Measuring with vernier calipers means that values less than 1 mm are read by a vernier scale. The zero mark of the vernier scale indicates the measured value in integer mm on the base scale.

Dial calipers are very easy to read and especially when comparing check measurements. The indicator gives a clear visual picture of how big the difference is between the measured values. Calipers are frequently used as they are such universal tools/instruments. You can measure both outer, inner and depth dimensions. Calipers with 4-functions also have the possibility to measure steps, etc. and they are useful when scribing and marking out.

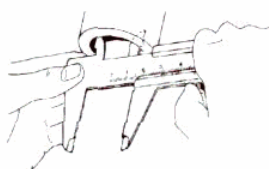


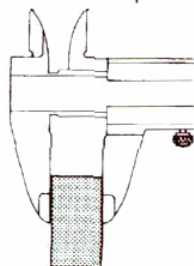
Table of tolerances for vernier callipers according to DIN 862.

Ref. temperature +20°C.

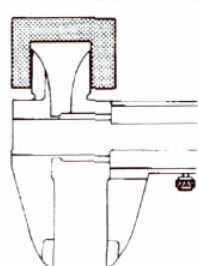
Range.....	mm	0-200	200-300	300-400	400-500	500-600
Maximum variation.....	mm	±0.04	±0.05	±0.07	±0.08	±0.09
Range.....	mm	600-700	700-800	800-900	900-1000	1000-1100
Maximum variation.....	mm	±0.10	±0.11	±0.12	±0.13	±0.14
Range.....	mm	1100-1200	1200-1300	1300-1400	1400-1500	1500-1600
Maximum variation.....	mm	±0.16	±0.17	±0.18	±0.19	±0.20
Range.....	mm	1600-1700	1700-1800	1800-1900	1900-2000	2000-
Maximum variation.....	mm	±0.21	±0.22	±0.23	±0.24	±0.25

4 functions

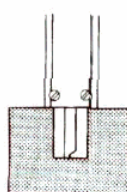
Vernier callipers with 4 functions can be used for the following measurements and scribing:



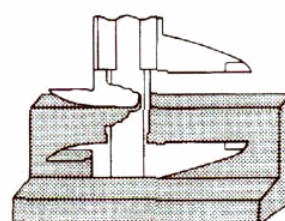
External measuring



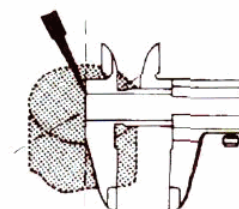
Internal measuring



Depth measuring



Height measuring



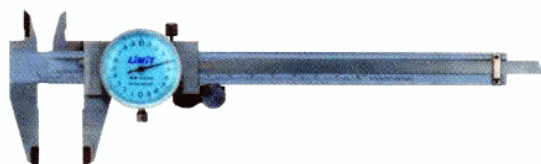
Scribing

Calipers

With dial indicator

- 4 function.
- Frosted chrome plated scale.
- Made of stainless hardened steel.
- Lapped measurement surfaces.
- Tolerance according to DIN 862.
- Supplied in a plastic box.

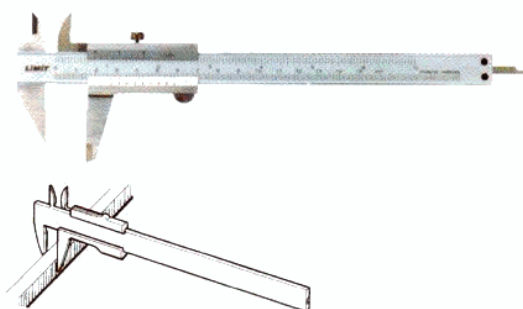
Code no.		52700309
Length of measurement	mm	150
Dial scale division	mm	0.02
1 turn of needle =	mm	2
Length of jaws	mm	40



With scriber

- The scribe can be easily re-sharpened.
- Can also be used as an ordinary vernier caliper.
- Frosted chrome plated scale and vernier.
- Made of stainless and hardened steel.
- Reading vernier scale 0.05 mm.
- Supplied in a plastic wallet.
- **35130202** with scribing tip of hard metall.

Code no.		35130103	35130202
Type		steel tip	TC tip
Length of measurement	mm	150	150
Length of jaws	mm	40	40



For left hand use

- Frosted chrome plated scale and vernier.
- Made of stainless and hardened steel.
- Lapped measuring surfaces.
- Reading vernier scale 0.05 mm.
- DIN 862.
- Supplied in a plastic wallet.

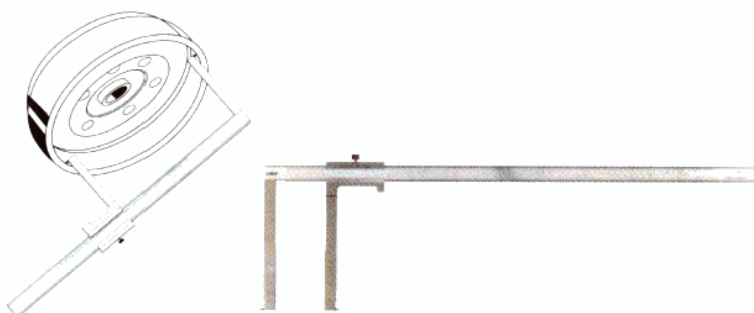
Code no.		102360104
Length of measurement	mm	150
Length of jaws	mm	40



For brake drums

Precision vernier calipers for brake drums. Hardened, stainless steel, with 2 metric scales for internal and external measurements 1/10 and 1/20 mm with 50 mm points. With set screw. Frosted chrome plated scale and vernier. DIN 862. Supplied in a wooden box.

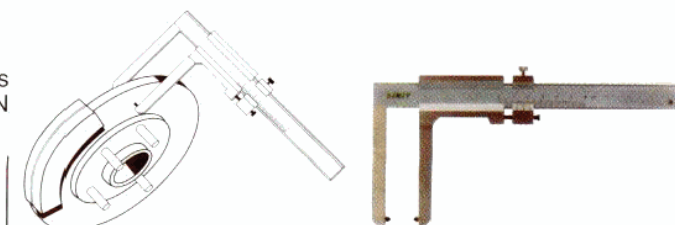
Code no.	109090100	109090209
Capacity	mm 50-500	50-600
Length of jaws ..	mm 150	200



For brake discs

Precision vernier calipers for brake discs. Hardened, stainless steel with frosted chrome plated scale and vernier 1/10 mm. DIN 862. Supplied in a handy storage box.

Code no.	109100107
Capacity	mm 0-60
Jaw length	mm 85



Calipers

Calipers

Digital calipers



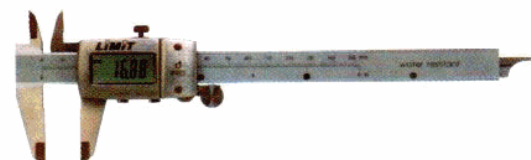
- Triple reading: Metric / Inch / Fraction.
- Made of stainless steel.
- Zero set in any position.
- Automatic switch off.
- 4 function.
- DIN 863.
- Battery type SR44.

Code no.		144550100
Measuring length.	mm	150
Jaw length	mm	40
Height of figures	mm	11
Resolution	mm	0.01
Resolution	inch	0.0005
Resolution	inch fraction	1/128
Spare battery		29281003



- **Digital caliper.**
- Reading 0.01 mm.
- Made of stainless steel.
- Zero set in any position.
- Automatic switch off.
- Adjustable between mm and inch.
- 4 function.
- DIN 862.
- Battery type SR44.

Code no.		132330101
Measuring length.	mm	150
Length of jaws	mm	40
Height of figures	mm	11
Resolution	mm	0.01
Spare battery		29281003



Waterproof digital calipers

- Waterproof IP 65 digital caliper.
- Reading 0.01 mm.
- Made of stainless steel.
- With Zero at any position.
- Switch off button and automatic switch off.
- Adjustable between mm and inch.
- 4 function.
- DIN 862.
- Battery type SR44.

Code no.		122560105
Length of measurement.	mm	150
Length of jaws	mm	40
Height of figures	mm	9
Resolution	mm	0.01
Spare battery		29281003



- **Waterproof digital caliper IP 67.**
- Reading 0.01 mm.
- Made of stainless steel.
- Zero set in any position.
- Automatic switch off.
- 4 function.
- DIN 862.
- Battery type 3V CR2032.

Code no.		132340100
Measuring length.	mm	150
Length of jaws	mm	40
Height of figures	mm	11
Resolution	mm	0.01
Spare battery		109600304

Calipers

For brake discs

- Digital caliper for brake discs.
- Hardened stainless steel.
- Holdfunction for hold measured value when caliper remove after measuring.
- Zero in any position.
- Adjustable between mm and inch.
- Battery type SR44.



Code no.....	mm
Measuring length.....	mm
Length of jaws.....	mm
Height of figures.....	mm
Reading.....	mm
Spare battery	mm

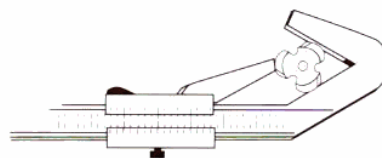
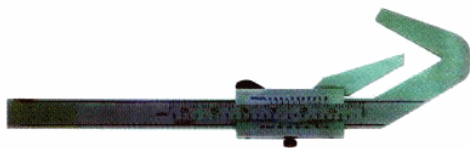
139490106	75
	92
	11
	0.01
29281003	

Three point vernier caliper

For measuring the diameter of round objects or milling tools. Can also be used on 3 bit milling tools.

- Made of stainless steel.
- Reading vernier scale 0.02 mm.
- Supplied in a plastic wallet.

Code no.....	mm
Range of measurement, diameter.....	mm
Vernier.....	mm
	0.02
23940109	4-45

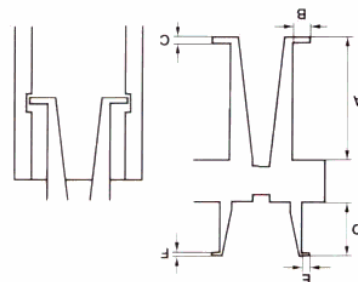
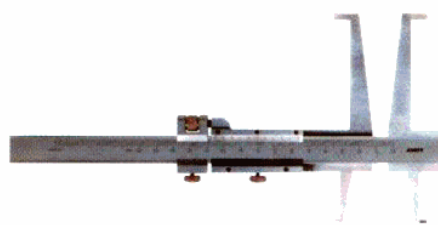


Internal vernier caliper

Carbon steel. For internal measuring of slots etc.

- Frosted chromed scale.
- With fine tuning.
- DIN 862.

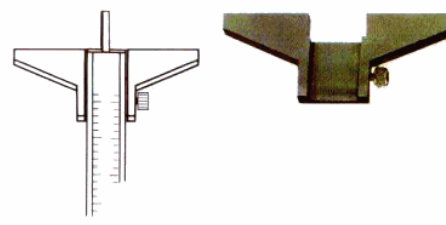
Code no.....	mm
Length of measurement.....	mm
A.....	mm
B.....	mm
C.....	mm
D.....	mm
E.....	mm
F.....	mm
9-150	74
128170107	10
	35
	4
	2
30-300	74
128170206	10
	5
	-
	-
	-



Depth gauge stop

Fits most vernier calipers.

Code no.....	mm
Stop length.....	mm
Groove width.....	mm
73120107	75
	17



Calipers

Workshop vernier calipers

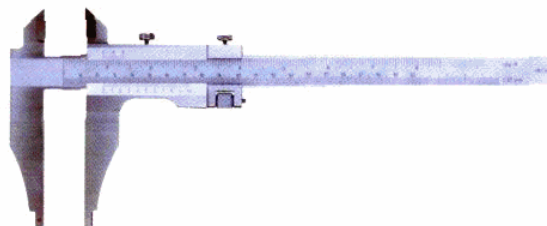
- **CARBON STEEL.** Jaws for internal measuring.
- With fine tuning.
- Frosted chromed plated scale and vernier.
- Lapped measuring surfaces.
- DIN 862.



Code no.		122590102
Length of measuring	mm	300
Length of jaws	mm	18

STAINLESS STEEL. Steps on jaws for internal measurement.

- With upper jaws for outside measurements in grooves and tight spaces.
- Frosted chrome plated scale and vernier.
- Lapped measuring surfaces.
- Reading vernier scale 0.05 mm.
- Tolerance according to DIN 862.
- Supplied in wooden boxes.



Without fine turning		68760107	68760206	68760305
Range of measurement	mm	200	300	400
Length of jaws	mm	80	100	100
With fine turning		-	68780204	-

Spare parts

Code no.	68751007	68751106
Part	Locking screw	Brass insert

STAINLESS STEEL. Hardened. Steps on jaws for internal measurement.

- With fine tuning.
- Tolerance according to DIN 862.
- Vernier scale 0.05 mm.
- Supplied in wooden case.



Code no.	23050057	23050206	23050404	23050503
Length of measurement	mm	300	500	800
Length of jaws	mm	90	150	150

CARBON STEEL. Hardened. Steps on jaws for internal measurement.

- With fine tuning.
- Tolerance according to DIN 862.
- Vernier scale 0.05 mm.
- Supplied in wooden case.



Code no.	23040108	23040207	23040306	23040405	23040504
Length of measurement	mm	500	800	1000	1500
Length of jaws	mm	100	125	125	150

Calipers

Calipers

Digital calipers



- Stainless steel.
- Max/min value function. Hold function.
- Adjustable between mm and inch.
- Adjustable absolute value.
- Fine tuning screw.
- DIN 862.
- Supplied in wooden case.
- Battery type SR 44.

Code no.		22890107	22890156	22890172	22890206
Length of measurement	mm	500	600	800	1000
Length of jaws	mm	100	300	200	150
Height of figures	mm	8	8	8	8
Reading	mm	0.01	0.01	0.01	0.01
Spare Battery		29281003	29281003	29281003	29281003

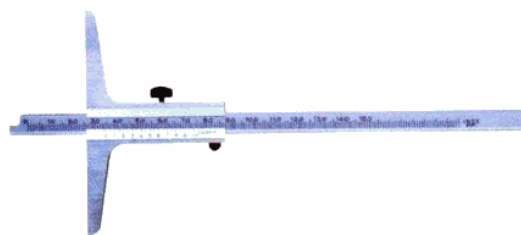
Aluminium calipers



- **Made of construction aluminium.** The jaws are made of hardened stainless steel.
- Easy to use due its low weight.
- Non glare scale.
- Graduated in mm and inch. Vernier for $\frac{1}{20}$ mm.
- Tolerance according to DIN 862.

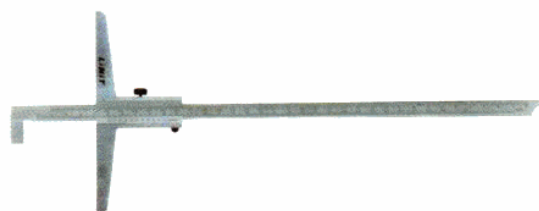
Code no.		05750104	05750203	05750302	05750401	05750500
Length of measurement	mm	500	500	800	800	1000
Length of jaws	mm	150	250	150	400	150
Weight	kg	1.1	1.1	1.5	1.6	1.8
Code no.		05750559	05750609	05750708	05750807	
Length of measurement	mm	1000	1500	2000	3000	
Length of jaws	mm	500	150	150	150	
Weight	kg	1.9	2.1	2.6	3.4	

Depth gauges



- Made of stainless steel.
- Frosted chrome plated vernier and gloss scale.
- Lapped measurement tip and base.
- Reading vernier scale 0.05 mm.
- Tolerance according to DIN 862.
- Supplied in plastic box up to 300mm.

Code no.		26430108	26430207	26430405	26430504
Depth of measurement	mm	150	200	300	500
Length of base	mm	100	100	100	150



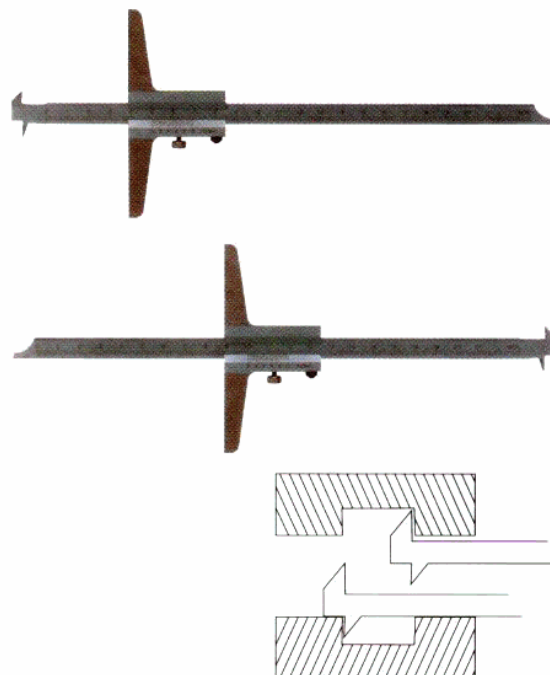
- Made of stainless steel.
- Frosted chrome plated scale.
- Reversible scale for measuring with hook or tip.
- Graduated in millimeters. Vernier scale 0.05 mm.
- Tolerance according to DIN 862.
- Supplied in a plastic box.

Code no.		22550107
Depth of measurement	mm	300
Length of base	mm	150
Hook dimensions	mm	16x10

Depth gauges

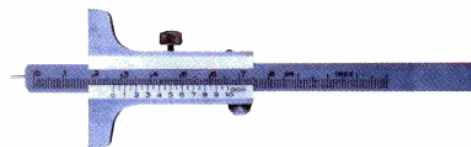
- Depth gauge with double hooks.
- Double hooks for measuring upper or lower edge of slot.
- Turnable scale for measuring with hook or tip.
- Frosted chromed plated scale.
- Made of stainless steel.
- Reading vernier scale 0.05 mm.
- DIN 862.

Code no.		122570104
Depth of measuring	mm	200
Length of base	mm	100
Hook dimension	mm	7x3.5



- Reversible scale. Both sides of the pin can be used for measuring.
- Exchangeable measurement pin.
- Made of stainless steel.
- Frosted chrome plated vernier and gloss scale.
- Lapped measurement surfaces and base.
- Reading vernier scale 0.05 mm.
- Tolerance according to DIN 862.
- Supplied in leather wallet.

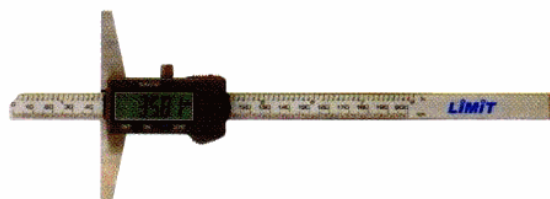
Code no.		26450106	26450205
Depth of measurement	mm	80	200
Length of base	mm	50	100



Digital depth gauges

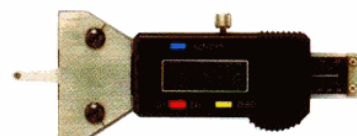
- Reading 0.01 mm.
- Stainless steel.
- Hold function.
- Switch off button.
- Adjustable between mm and inch.
- DIN 862.
- Battery type SR 44.
- Supplied in a plastic box.

Code no.		21460605
Depth of measurement	mm	200
Resolution	mm	0.01
Accuracy	±mm	0.03
Length of base	mm	100
Spare Battery		29281003



Tyre profile gauge. Digital gauge for measuring profile depth of car tyres.

Code no.		132360108
Depth of measurement	mm	0-25
Measurement point	mm	5 x 4
Base length x width	mm	55 x 6
Spare battery		29281003

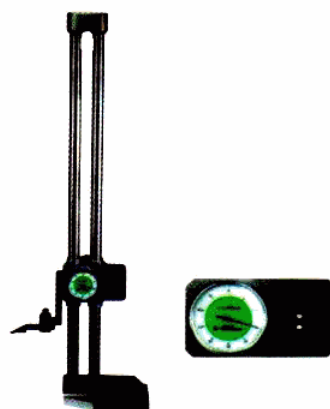


Height gauges



- Precision made.
- Frosted chrome plated scale.
- Graduated in millimeters.
- With fine tuning screw. Vernier reading 0.05 mm.
- DIN 862.
- Supplied in wooden case.

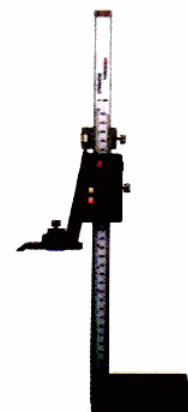
Code no.		22490056	22490106	22490205
Scribing height	mm	300	500	1000
Base dimensions	mm	110x60	150x90	220x150
Weight	kg	2.6	4.7	10
Spare scribing point		22490304	22490403	22490403



- Measurement value is read in mm and 0.01 mm on the dial gauge.
- Double counters, one adding and one subtracting which can be individually reset to required position.
- Fast height adjustment with knob on the rear side.
- Hard metal measuring tip.
- DIN 862.

Code no.		102350105
Scribing height	mm	500
Base plate dimensions	mm	150x100
Extra scribing point		102350204

Electronic height gauge



- Reading 0.01 mm.
- Made of stainless steel.
- Hold function.
- Adjustable absolute value.
- Adjustable measurement direction.
- Shut off button.
- Adjustable between mm and inch.
- DIN 862.
- Battery type SR 44.

Code no.		21461108	21461306
Scribing height	mm	300	500
Resolution	mm	0.01	0.01
Accuracy	±mm	0.04	0.04
Height total	mm	330	640
Distance measuring tip - stand	mm	110	145
Spare scribing point		21461207	21461405
Spare battery		29281003	29281003

Micrometers



Micrometers

Micrometers

When accuracy of 0.01 mm is required the micrometer is the most common instrument. The external measuring screw usually has an increment of 0.5 mm/revolution.

The base scale is on the sleeve and is graduated in intervals of 0.5 mm. On the thimble there are 50 graduation marks which indicate 1/100 value (0.01 mm).

Micrometers also have a friction facility which allows a constant measuring power which is important when measuring 1/100 and 1/1000 mm measurements.

There are many different micrometers for different appliances e.g. outer, depth, bore/hole measurements. Further more there are micrometers with different designs for the feeler pin for special purposes.

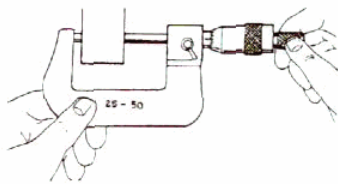


Table of tolerances for micrometers according to DIN 863

Range mm	Maximum variation μm	Measuring surface tolerance at 10 N μm
0-25	4	2
25-50	4	2
50-75	5	3
70-100	5	3
100-125	6	3
125-150	6	3
150-175	7	4
175-200	7	4
200-225	8	4
225-250	8	4
250-275	9	5
275-300	9	5



- Reading 0.01 mm.
- Forged frame and matt chromium-plated scale.
- Hardened spindle with 6.5 mm fine polished measuring surfaces of hard metal.
- Friction sleeve and lock nut.
- DIN 863.
- Supplied in wooden case.

Code no.		95380101	95380200	95380309	95380408
Measuring range	mm	0-25	25-50	50-75	75-100
Reading	mm	0.01	0.01	0.01	0.01
Accuracy	$\pm\text{mm}$	0.004	0.004	0.005	0.005
With calibration certificate		95380150	-	-	-
Code no.		95381000	95381109	95381208	
Measuring range	inch	0-1	1-2	2-3	
Reading	inch	0.0001	0.001	0.001	
Accuracy	$\pm\text{mm}$	0.004	0.004	0.005	
Code no.		95381307	95381406		
Measuring range	inch	3-4	4-5		
Reading	inch	0.001	0.001		
Accuracy	$\pm\text{mm}$	0.005	0.006		

Micrometers

DIGITAL MICROMETER.

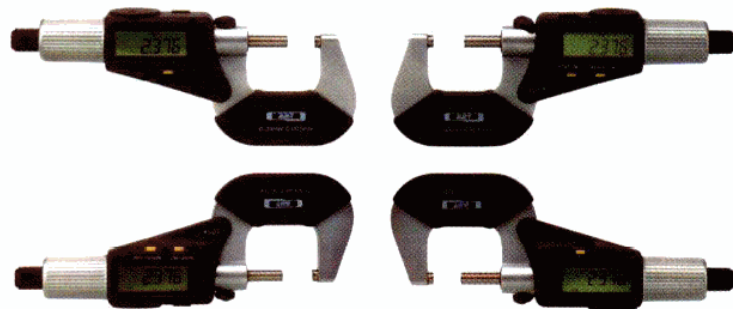
- Reading 0.001 mm.
- IP 54. Can be exposed to coolant water, dust or oil.
- Reading in mm or inch.
- Automatic shut off after 5 minutes.
- Hardened measuring surfaces. Friction thimble and locking device.
- Tolerance according to DIN 863.
- Battery type SR 44.
- Supplied in a plastic box.



Code no.		96640107	96640206	96640305	96640404
Measuring range	mm	0-25	25-50	50-75	75-100
Accuracy	±mm	0.004	0.004	0.005	0.005
Spare battery.		29281003			

DOUBLE DISPLAY DIGITAL MICROMETER.

- Displays on both sides.
- Can be read by a left handed and right handed user.
- Can be read upside down.
- Reading 0.001 mm.
- IP 54. Can be exposed to coolant water, dust or oil.
- Reading in mm or inch.
- Automatic shut off after 5 min.
- Hardened measuring surface. Friction thimble and locking device.
- DIN 863.
- Battery type 3V CR2032.



Code no.		120600101
Range of measurement.	mm	0-30
Accuracy	±mm	0.004
Battery CR 2032 3V		109600304

- Reading 0.01 mm.
- Enameled steel clamp and frosted chrome plated scale.
- Hardened spindle 6.5 mm. Fine lapped hard metal measuring surfaces.
- Friction socket and locking pin.
- Tolerance according to DIN 863.
- Supplied in a wooden box.



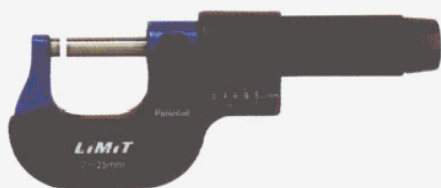
Code no.		95420105	95420204
Range of measurement.	mm	100-125	125-150
Accuracy	±mm	0.006	0.006
Code no.		95420303	95420402
Range of measurement.	mm	150-175	175-200
Accuracy	±mm	0.007	0.007

- Reading 0.01 mm.
- Forged clamp and frosted chrome plated scale.
- Hardened spindle. Fine lapped hard metal measuring surfaces.
- Large graduated drum.
- 1 turn equivalent to 1 mm of spindle movement.
- Friction socket and locking pin.
- Tolerance according to DIN 863.
- Supplied in a plastic box.



Code no.		102370103
Range of measurement	mm	0-25
Accuracy	±mm	0.04

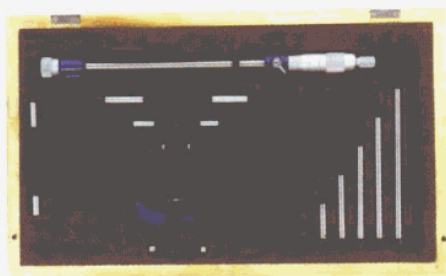
Micrometers



Micrometers

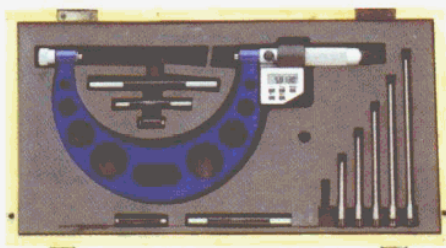
- Reading 0.01 mm.
- Counter gives clear and easy reading in 1/100 mm.
- Hardened spindle $\varnothing$ 6.5 mm. Fine lapped measurement surfaces in hard metal.
- Friction thimble and locking screw.
- Tolerance according to DIN 863.
- Supplied in a plastic box.

Code no.		119100105	119100204
Range of measurement	mm	0-25	25-50
Accuracy	$\pm$ mm	0.004	0.004



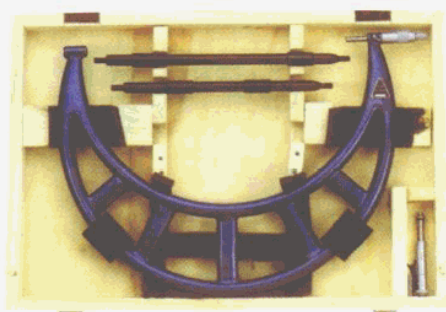
- Reading 0.01 mm.
- Enameled steel clamp and frosted chrome plated scale.
- Exchangeable insert bolts 8.0 mm.
- Fine lapped hard metal measuring surfaces.
- Friction socket and locking pin.
- Tolerance according to DIN 863.
- Supplied in a wooden box.

Code no.		95440103	95440202
Range of measurement	mm	0-150	150-300
Accuracy	$\pm$ mm	0.006	0.009



- **DIGITAL MICROMETER.**
- Reading 0.001 mm.
- Adjustable absolute value. Absolute/incremental measuring.
- Reading in mm or inch.
- Manual shut off button or automatic shut off after 5 minutes.
- Exchangeable bolts. Forged clamp. Hardened measuring surface.
- Friction socket and locking device.
- Tolerance according to DIN 863.
- Battery type SR 44.
- Supplied in a wooden box.

Code no.		96760103
Range of measurement	mm	0-150
Accuracy	$\pm$ mm	0.006
Spare battery		29281003



- Reading 0.01 mm.
- Enameled low weight clamp and frosted chrome plated scale.
- Adjustable measurement spindle 8.0 mm and fixed bolts.
- Friction socket and locking pin.
- Tolerance according to DIN 863.
- Supplied in a wooden box.

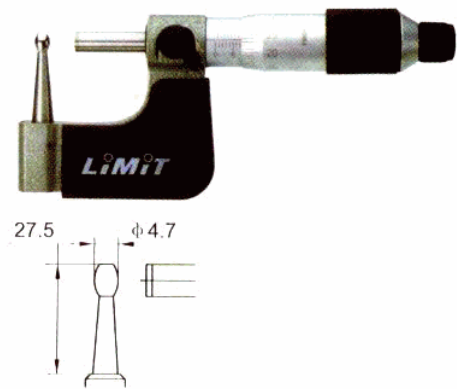
Code no.		95450102	95450201	95450300	95450409
Range of measurement	mm	300-400	400-500	500-600	600-700
Reading	mm	0.01	0.01	0.01	0.01
Accuracy	$\pm$ mm	0.011	0.013	0.015	0.016

Micrometers

Tube micrometer

- Reading 0.01 mm.
- Forged clamp and frosted chrome plated scale.
- Hardened spindle 6.5 mm. Anvil diameter 4.8 mm.
- Friction socket and locking pin.
- Tolerance according to DIN 863.
- Supplied in a plastic box.

Code no.		95480109
Range of measurement	mm	0-25
Accuracy	±mm	0.006



Digital tube micrometer

- Reading 0.01 mm.
- Double sphere measuring faces.
- IP 54. Can be exposed to coolant water, dust or oil.
- Reading in mm or inch.
- Automatic shut off after 5 minutes.
- Friction thimble and locking device.
- Tolerance according to DIN 863.
- Battery type SR 44.

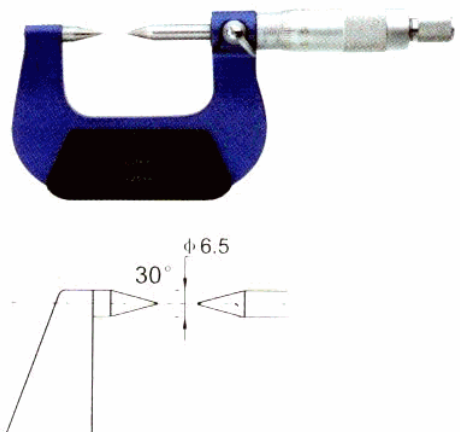
Code no.		132680109
Measuring range	mm	0-25
Accuracy	mm	±0.004
Spare battery		29281003



With conical measuring tips

- Reading 0.01 mm.
- Forged clamp and frosted chrome plated scale.
- Hardened spindle 6.5 mm with hard metal measuring tips.
- Friction socket and locking pin.
- Tolerance according to DIN 863.
- Supplied in a plastic box.

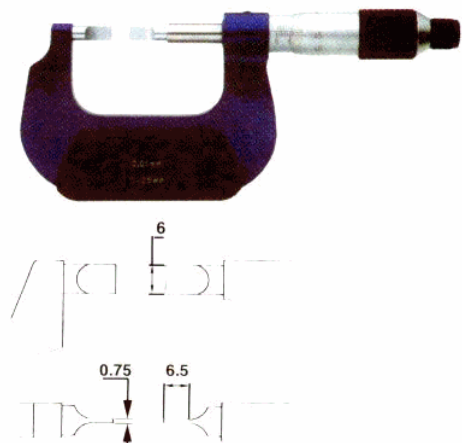
Code no.		95640108
Range of measurement	mm	0-25
Accuracy	±mm	0.004



With blade measuring tips

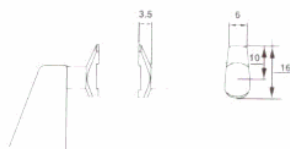
- Reading 0.01 mm.
- Forged clamp and frosted chrome plated scale.
- Hardened spindle 8.0 mm.
- Friction socket and locking pin.
- Tolerance according to DIN 863.
- Supplied in a plastic box.

Code no.		96090105
Range of measurement	mm	0-25
Accuracy	±mm	0.004
Blade thickness	mm	0.75
Blade length x width	mm	6.5 x 6



Micrometers

Tooth micrometer



- Reading 0.01 mm.
- Forged clamp and frosted chrome plated scale.
- Hardened spindle 7.5 mm.
- Friction socket and locking pin.
- Tolerance according to DIN 863.
- Supplied in a plastic box.

Code no.		96130109
Range of measurement	mm	0-25
Accuracy	±mm	0.004
Leg thickness	mm	3.5
Leg height x thickness	mm	6 x 6

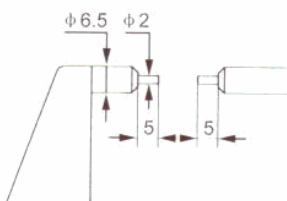
Wire micrometer



- Reading 0.02 mm.
- Forged clamp and frosted chrome plated scale.
- Hardened spindle 6.5 mm. Fine lapped measuring surfaces.
- Friction socket.
- Tolerance according to DIN 863.

Code no.		96140108
Range of measurement	mm	0-13
Accuracy	±mm	0.004
Height of measurement	mm	5

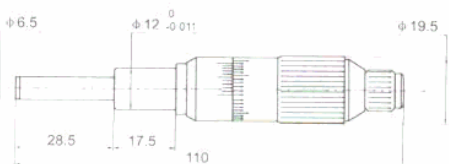
For precision work



- For measuring small details, in small holes, small grooves and other similar hard to reach places.
- Reading 0.01 mm.
- Enamel moulded.
- Easy to read frosted chrome plated socket and graduated drum.
- Hardened pivot pin and measurement tip.
- Friction knob and locking screw.
- Tolerance according to DIN 863.
- Supplied in a plastic box.

Code no.		73220105
Range of measurement	mm	0-16.5
Anvil, length x diameter	mm	5 x 2

Micrometer head



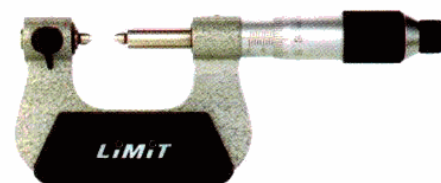
- For installation in measuring devices, control devices or machines.
- Reading 0.001 mm.
- Hardened spindle Ø 6 mm. Fine lapped measurement surface of hard metal.
- Frosted chrome plated socket and graduated drum.
- Friction device.
- Tolerance according to DIN 863.

Code no.		73240103
Range of measurement	mm	0-25
Fitting holes diameter x length	mm	12 x 17

Micrometers

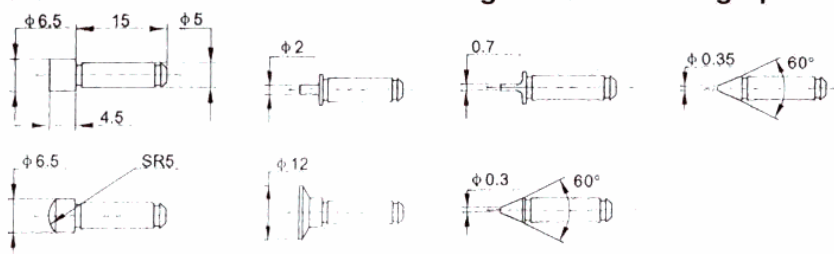
Thread micrometers

- Reading 0.01 mm.
- For outside measuring of thread diameter.
- Interchangeable V-shaped and cone-shaped anvils. (Not included.)
- Friction thimble and locking device.
- Tolerance according to DIN 863.



Code no.		132720103	132720400	132720509	132720608
Measuring range	mm	0-25	25-50	50-75	75-100
Accuracy	mm	±0.004	±0.004	±0.004	±0.005
Set with 6 pairs of V-shaped and cone-shaped anvils 60°		132720202			
Pitch		0.4-0.5 0.6-0.9 1-1.75 2-3 3.5-5 5.5-7			
Threads per inch	TPI	64-48 44-28 24-14 13-9 8-5 4.5-3.5			
Set with 10 pairs of V-shaped and cone-shaped anvils 55°		132720301			
Threads per inch		60-48 48-40 40-32 32-24 24-18			
		18-14 14-10 10-7 7-4.5 4.5-3.5			

Universal micrometer with exchangeable measuring tips



- Reading 0.01 mm.
- Forged clamp and frosted chrome plated scale.
- 7 different measuring tips. Flat 6.5 mm. Flat 12 mm. Flat 2 x 4 mm. Spherical 6.5 mm. Conical 60°. Sharp 60°. Blade 6.5 x 8, 0 x 3.5 mm.
- Friction socket and locking tips.
- Supplied in a wooden box.

Code no.		22500102
Range of measurement	mm	0-25
Accuracy	mm	0.004

Micrometer holders

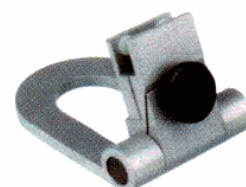
Turnable holder. Black enameled.

Code no.		60070109
Clamping range	mm	0-14
Height	mm	100
Diameter	mm	105
Weight	kg	1.7



Adjustable holder.

Code no.		102380102
Clamping range	mm	7-16
Base width x length	mm	80 x 120



Micrometers

Micrometers

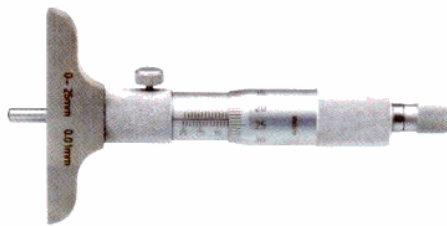
Control gauges



For control and calibration of micrometers and other measuring tools. Made of hardened high alloy steel.

Code no.		26243006	26243105	26243204	26243303
Length	mm	25	50	75	100
Accuracy	±μm	0.5	1.0	1.0	1.5
Code no.		26243402	26243501	26243600	26243709
Length	mm	125	150	175	200
Accuracy	±μm	1.5	2.0	2.0	2.0

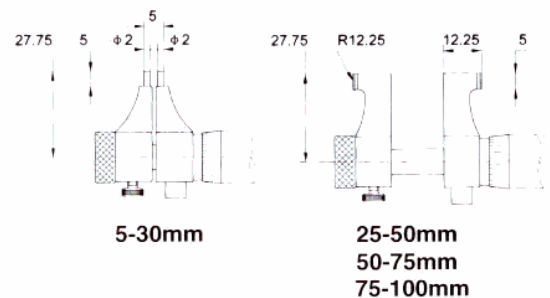
Depth micrometer



- With interchangeable rods in steps of 25 mm.
- Reading 0.01 mm.
- Easy to read frosted chrome plated socket and graduated drum.
- Lapped measurement surface and base surface.
- Friction knob.
- Tolerance according to DIN 863.
- Supplied in a plastic wallet.

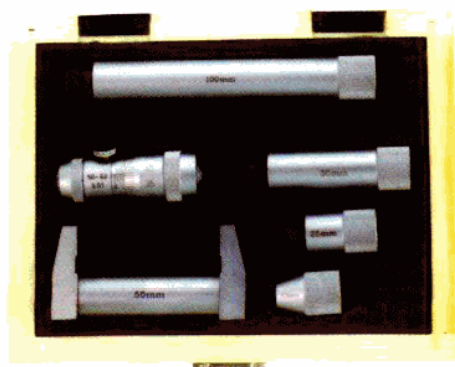
Code no.		73250102
Measuring depth	mm	0-100
Length of base	mm	63
Interchangeable rod diameter	mm	4.5

Internal micrometers



- Reading 0.01 mm.
- Hardened measuring surfaces and frosted chrome plated scale.
- Friction socket and locking screw.
- Tolerance according to DIN 863.
- Supplied in a plastic box.

Code no.		96150107	96150206	96150305	96150404
Range of measurement	mm	5-30	25-50	50-75	75-100
Accuracy	±mm	0.007	0.007	0.008	0.008



- Reading 0.01 mm. Includes micrometer head and extension sleeves.
- Frosted chrome plated graduated drum and socket.
- Hard metal spherical hardened measuring surfaces.
- Supplied with adjustment clamp.
- Supplied in a wooden box.

Code no.		96230107	96230206
Range of measurement	mm	50-200	50-600
Contents	pieces	5	7
Code no.		96230305	
Range of measurement	mm	150-1400	
Contents	pieces	9	

Micrometers

Three-point internal micrometers

- Self centering 3 point accurate measurement of internal diameters.
- Measurement can be taken in bottom of blind holes and for deep holes with an extension.
- Carbide tipped contact points.
- Including setting ring for zero adjustment.
- Exchangeable measuring heads.
- Dial gauges are not included. Recommend electronic dial gauges 11914-0101 or similar.



Code no.		120610100	120610209	120610308	120610407
Range of measurement	mm	6-12	12-20	20-50	50-100
Accuracy	±mm	0.004	0.004	0.005	0.005
No. of measuring heads		3	2	4	4
Extension rod	mm	100	150	150	150

Selfcentering 3-point micrometer for internal hole measurement.

- Carbide tipped contact points.
- Measurement can be taken 0.5 mm from bottom of a blind hole.
- Reading 0.005 mm.
- Friction socket.
- Supplied with setting ring.



Code no.		127810109	127810208	127810307	127810406	127810505
Range of measurement	mm	12-16	16-20	20-25	25-30	30-40
Accuracy	mm	0.004	0.004	0.004	0.004	0.004
Depth of measurement	mm	80	80	90	90	97

Code no.		127810604	127810703	127810802	127810901	127811008
Range of measurement	mm	40-50	50-63	62-75	75-88	87-100
Accuracy	mm	0.005	0.005	0.005	0.005	0.005
Depth of measurement	mm	97	114	114	114	114

Sets of selfcentering 3-point micrometers for internal hole measurement.

- Carbide tipped contact points.
- Measurement can be taken 0.5 mm from bottom of a blind hole.
- Reading 0.005 mm.
- Friction socket.
- Supplied with extension rod and setting rings.

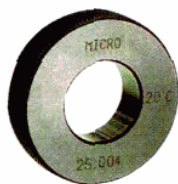
Code no.		127820108	127820207
Range of measurement	mm	20-50	50-100
Extension rod	mm	150	150
No. of micrometers		4	4
No. of setting rings		2	2



Micrometers

Setting rings

For control and zero setting of 3-point micrometers and cylinder gauges. DIN 2250.



Code no.	127830107	127830206	127830305	127830404
Diameter mm	10	16	25	30
Tolerance μm	± 1.5	± 1.5	± 1.5	± 1.5
Roundness μm	± 1.0	± 1.0	± 1.0	± 1.0

Code no.	127830503	127830602	127830701	
Diameter mm	40	62	87	
Tolerance μm	± 1.5	± 1.5	± 1.5	
Roundness μm	± 1.0	± 1.0	± 1.0	

Telescopic gauges



Spring loaded telescopic gauges with hardened measurement tips. Locking screw in the shaft upper part. Readings are taken with a micrometer or a vernier caliper. Set of 6 telescoping gauges.

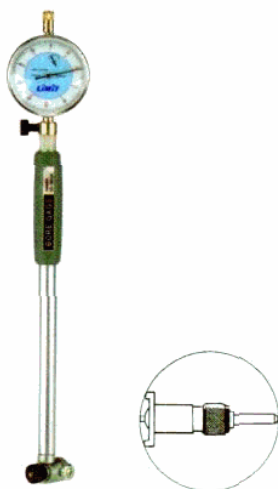
Code no.	52910106
Range of measurement mm	8-150



Individual gauges for set 5291.

Code no.	52910205	52910304	52910403	52910502	52910601	52910700
Range of measurement mm	8-12.7	12.7-19	19-32	32-54	54-90	90-150

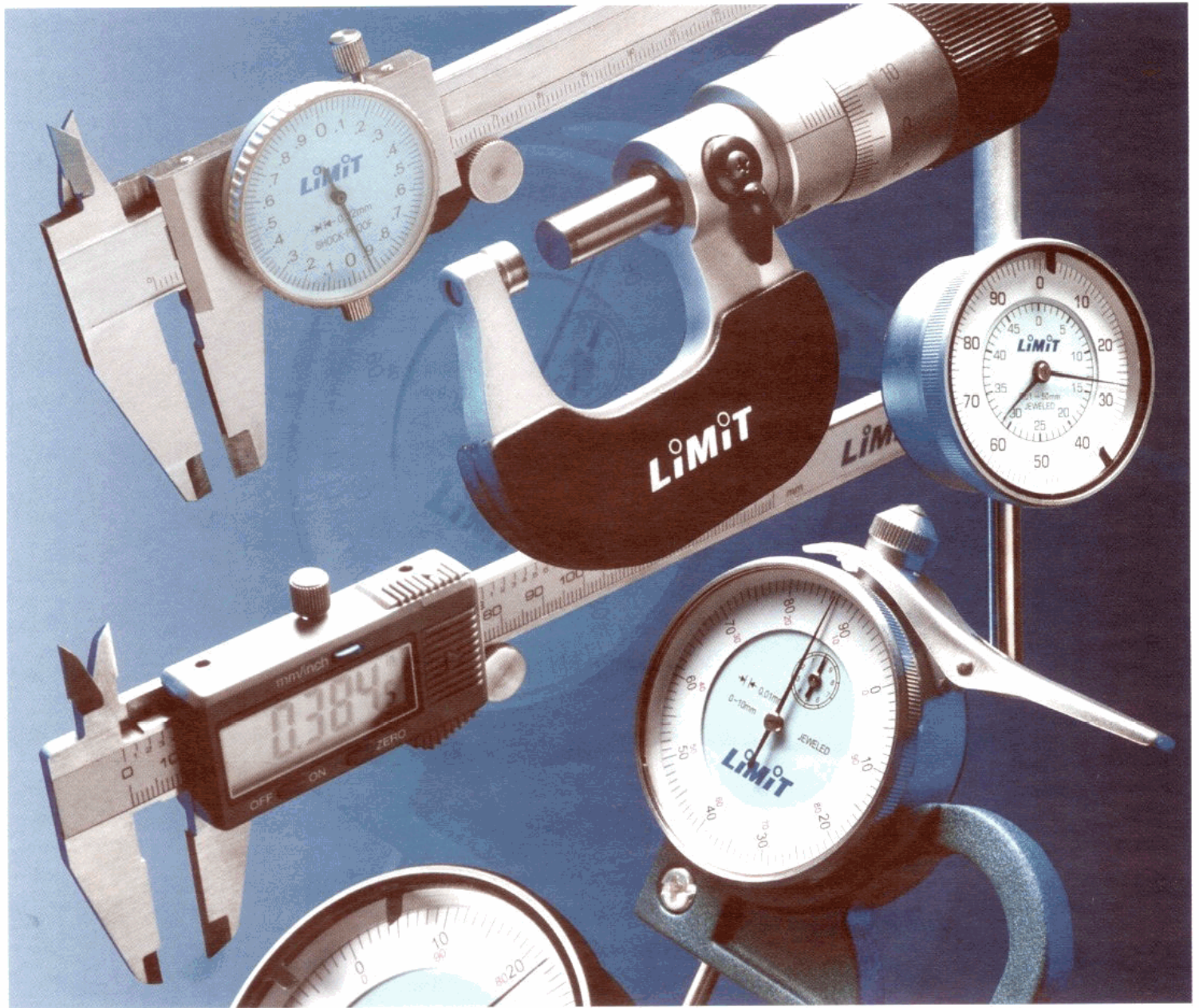
Cylinder gauges



- For measurement of hole diameters and groove widths. Set with exchange measurement tips in steps of 1 mm.
- Measurement tips in hard metal.
- Complete with dial gauge.

Stock no.	61931002	61931101	61931200	61931309	61931408
Range of measurement mm	10-18	18-35	35-50	50-160	160-250
Depth of measurement mm	100	125	150	150	400
No. of measurement tips	9	9	4	12	9

Set of extra measuring points, washer & nut	61932000	61932109	61932208	61932307	61932406
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We have been supplying measuring products to the Swedish industry for almost 100 years and during that time we have learnt what customers require and appreciate. The products have been constantly developed according to new production methods and new technology. The trademark Limit has been created using the experience we have gathered during the years.

Marketing

Through Limit we have aim to supply European industry with a broad and qualified assortment for measuring products. The demands from this target group, which is probably the most demanding one there is, are well known by us. The demands concern function, quality, price and delivery. We know how to meet these demands.

Accessibility

Limit is sold by local stockists. The assortment is neat and easy to display which makes it easy to find and simple to choose from. Practical and stylish packages make the products easy to store, transport and easy to recognise. We also have one of the markets best logistics and ordering system at our disposal.

Dial gauges



Dial gauges

Dial gauges

Dial indicators and dial test indicators are used for comparison measurements i.e. when the read value does not indicate the absolute measured value but a relative (incremental) measured value. The deviation from a master or a gauge block combination is read. With a digital indicator however the absolute measured value can be preset which simplifies the reading. The dial indicator can also be used together with a bore gauge for bore/hole measuring, or using a measuring fixing device.

Dial test indicators are used in places where access is difficult, such as inside a bore/hole. By moving the feeler pin of the dial test indicator along a surface roughnesses and eccentricities can be read. The feeler pin of the dial test indicator makes a circular movement unlike the movement of the dial indicator which is linear. Therefore it is important to hold the feeler pin perpendicular to the measured surface.

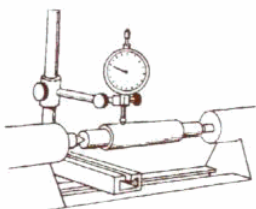


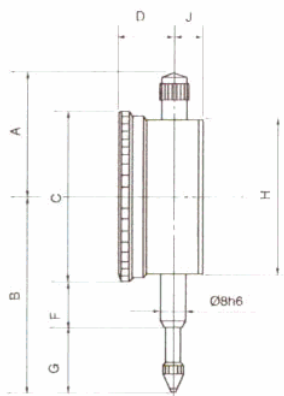
Table of tolerances for dial indicators according to DIN 878.

(Tolerance according to DIN 7168/1).

Max permitted measuring deviation for all measuring ranges.

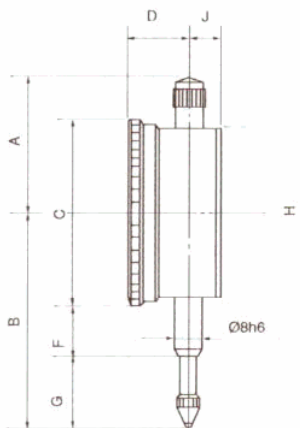
(Reference temperature +20°C.)

Range.....	mm	0.4	0.8	3	5	10
Maximum variation.....	µm	± 9	± 9	± 12	± 14	± 17



- Mini dial gauges.
- Rotatable scale.
- Tolerance according to DIN 878.
- Supplied in a plastic box.

Code no.		103900106
Range of measurement.....	mm	5
Scale division.....	mm	0.01
Scale graduation.....		0-50, 50-0
One pointer turn =	mm	0.5
Measure A.....	mm	38
Measure B.....	mm	48
Measure C.....	mm	42
Measure D.....	mm	14
Measure F.....	mm	14
Measure G.....	mm	13
Measure H.....	mm	40
Measure J.....	mm	7



With turnable scale and two adjustable tolerance indexes. Extra pointer that indicates whole millimeters. Body made of aluminium. Replaceable measuring tip. Without mounting lug. Tolerance according to DIN 878.

119110153 Lug back, hole 6.5mm.

Accessories, see 5318.

Code no.	119110104	119110153	119110203
Measuring range .. mm	10	10 lug back	25
Scale division..... mm	0.01	0.01	0.01
Scale graduation ..	0-100, 100-0	0-100, 100-0	0-100, 100-0
One pointer turn = .. mm	1	1	1
Measure A..... mm	44	44	38
Measure B..... mm	69	69	81
Measure C..... mm	58	58	58
Measure D..... mm	17	17	17
Measure F..... mm	18	18	18
Measure G..... mm	21	21	34
Measure H..... mm	54	54	54
Measure J..... mm	8.5	8.5	8.5

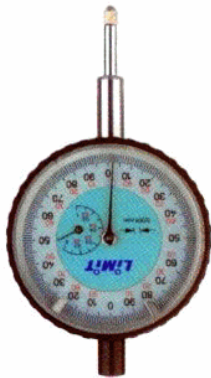
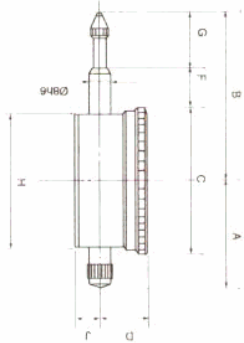
Code no.		119111003
Measuring range ..	inch	0.5
Scale division ..	inch	0.0005
Scale graduation ..		0-50, 50-0
One pointer turn = ..	inch	0.05
Measure A.....	inch	1.48
Measure B.....	inch	2.74
Measure C.....	inch	2.28
Measure D.....	inch	0.64
Measure F.....	inch	0.69
Measure G.....	inch	0.91
Measure H.....	inch	2.11
Measure J.....	inch	0.32

Dial gauges

Dial gauges

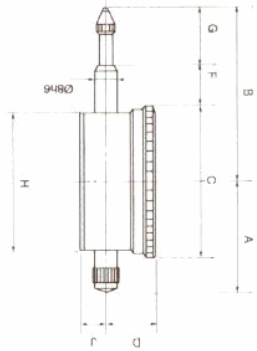
- Turnable scale.
- Tolerance according to DIN 878.
- Supplied in a plastic box.

Code no.	Range of measurement	Scale division	Scale graduation	Range per turn of pointer	Measure A	Measure B	Measure C	Measure D	Measure F	Measure G	Measure H	Measure J
119120103	1	0.001	0-100	100-0	0.2	45	60	58	17	34	54	8.5



- SHOCK PROOF.
- Turnable scale.
- Tolerance according to DIN 878.
- Supplied in a plastic box.
- 43970250 Lug back, hole 6.5mm.

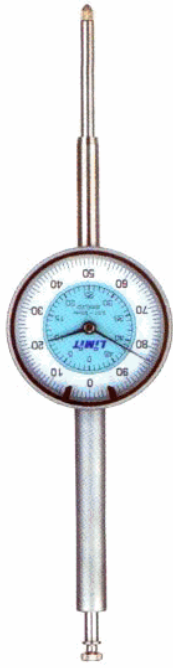
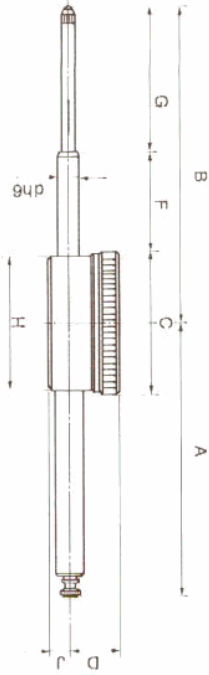
Code no.	Range of measurement	Scale division	Scale graduation	Range per turn of pointer =	Measure A	Measure B	Measure C	Measure D	Measure F	Measure G	Measure H	Measure J
43970201	10	0.01	0-100, 100-0	1	44	69	58	44	18	21	54	44
43970250	10 lug back	0.01	0-100, 100-0	1	44	69	58	44	18	21	54	44



Limit

- SHOCK PROOF.
- Turnable scale.
- Tolerance according to DIN 878.

Code no.	Range of measurement	Scale division	Scale graduation	Measure A	Measure B	Measure C	Measure D	Measure F	Measure G	Measure H	Measure J
119130102	50	0.01	0-100	108	127	58	20	40	58	54	8
119130201	80	0.01	0-100	139	169	58	20	52	88	54	8



Dial gauges

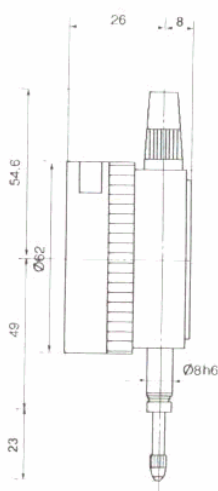
Electronic dial gauges

- Tolerance function.
- Absolute / Incremental reading.
- Zero setting in any position.
- Automatic off.
- Adjustable between mm and inch.
- 3 V battery CR 2032.



Code no.		151300100	151300209	151300308
Range of measurement.	mm	12.5	25	12.5
Reading.	mm	0,01	0,01	0,001
Accuracy.	mm	0,02	0,02	0,013
Height of figures.	mm	12	12	12
Diameter.	mm	57	57	57
Thickness.	mm	26	26	26
Diameter of spigot.	mm	8	8	8
Battery 3 V.	type	CR 2032	CR 2032	CR 2032

Limit



- Digital dial gauge.
- Adjustable absolute value.
- Absolute/incremental reading.
- Adjustable between mm and inch.
- Max/Min value function.
- Tolerance function.
- Manual switch off.
- Battery type SR44.
- Supplied in a plastic box.

Code no.		119140101
Range of measurement.		12.5
Reading.	mm	0.01
Accuracy.	mm	±0.02
Repeating accuracy.	mm	±0.01
Height of figures.	mm	8
Diameter of dial.	mm	63
Diameter of spigot.	mm	8
Spare battery.		29281003

Accessories

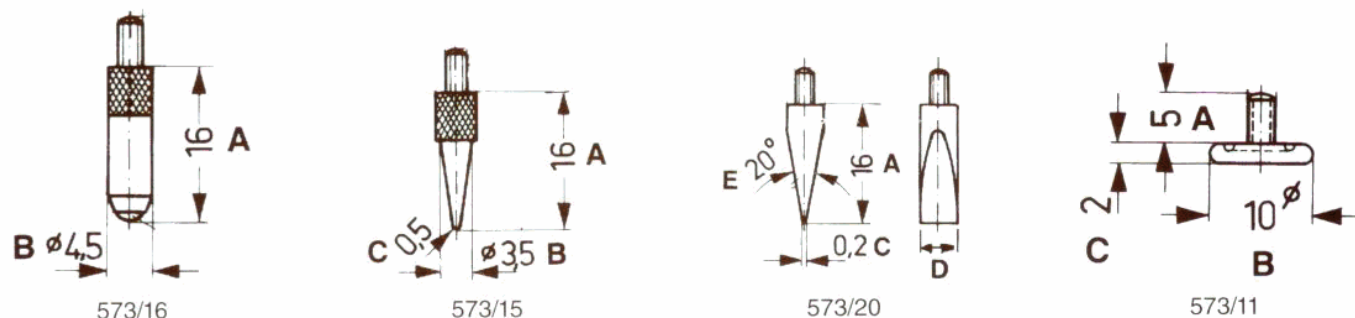


Magnetic mount. Knuckle joint. Mounting hole Ø 8 mm.

Code no.	53180303
Description.	Magnetic mount

Dial gauges

Accessories



Separate measurement tips for dial gauges.

Code no.	53181004	53181103	53181202	53181301
Original number	573/16	573/15	573/20	573/11
Tip	Half round	Conical	Flat	Flat
Dimension A	mm 16	mm 16	mm 16	mm 5
Dimension B	mm 4.5	mm 3.5	-	mm 10
Dimension C	mm -	mm 0.5	mm 0.2	mm 2
Dimension D	mm -	mm -	mm 5	mm -
Dimension E	mm -	mm -	20°	mm -
Measuring bar 10 mm		26510131		
Measuring bar 20 mm		26510164		
Measuring bar 30 mm		26510206		
Measuring bar 60 mm		26510305		
Measuring bar 90 mm		26510404		

151290103 Holder for dial gauges. Hole 8 and 6 mm. Also dovetail fitting.

151290202 Holder for flip flop indicator. Ball joint head. Dovetail fitting.

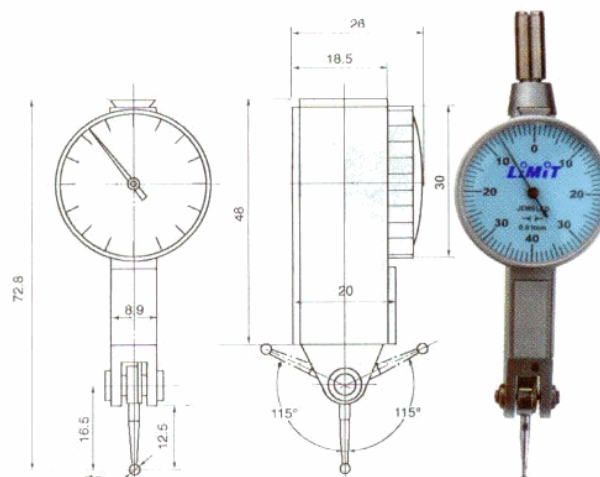
Code no.	151290103	151290202
Holediam for dial gauge/flip flop indicator	mm 8 and 6	mm 8
Bar size	mm 6 x 12	mm Ø 8
Length	mm 100	mm 65



Flip flop indicators

- Reversible direction on the measuring pin.
- Rotatable scale.
- Spigot moveable to 3 sides.
- 2 spigots Ø 6 and 8 mm.
- Supplied in a plastic case.

Code no.	22590103
Range of measurement	mm 0.8
Scale division	mm 0.01
Scale graduation	0-40-0
Diameter of dial	mm 30
Length of flip flop pin	mm 15
Extra flip measuring point	22590202
Extra holding pin 8 mm	22590301



Dial gauges

Magnetic stand with dial indicator

Magnetic stand 11908-0208 with dial indicator 11911-0104.



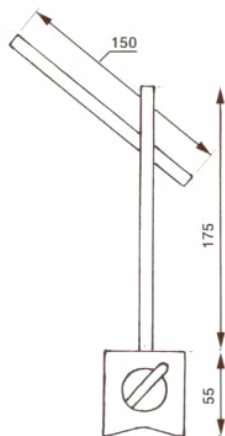
Code no.		119081008
Magnetic stand:		
Maximum height adjustment.	mm	280
Base plate dimensions	mm	58x50x55
Mounting hole diameter.	mm	8
Magnetic force	kg	80
Net weight	kg	1.9
Dial indicator:		
Measuring range	mm	10
Scale division	mm	0.01
Scale graduation		0-100, 100-0
One pointer turn =	mm	1
Dial diameter.	mm	58

Magnetic stands



- Magnetic force can be switched on or off.
- V shaped base plate.
- Mounting hole 8 and 6 mm.

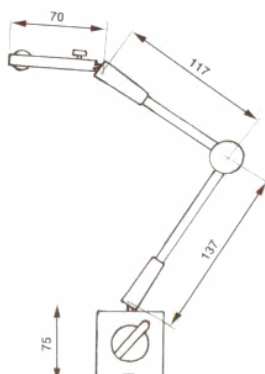
Code no.		151280104
Maximum height	mm	230
Base plate dimension	mm	30 x 35 x 36
Mounting hole diameter	mm	8 and 6
Magnetic force	kg	40
Net weight.	kg	0.392



- On and off switch on magnetic base.
- V shaped base plate.
- Supplied in a colour display box.

Code no.		60191004
Max. height adjustment.	mm	250
Base plate dimensions	mm	50 x 55 x 58
Mounting hole diameter	mm	8
Magnetic force	kg	80
Net weight.	kg	1.5

Upper and lower holder	60190402
Magnetic base, magnetic force 100 kg.	60190600
Magnetic base, magnetic force 100 kg.	60190600



- **Central locking** with one knob for lower, middle and upper joint.
- Fine adjustment.
- Magnetic base which can be switched on or off.
- V shaped base plate.
- Magnetic force 60 kg.
- Mounting hole $\varnothing$ 8 mm.
- Supplied in a colour display box.

Code no.		119080208
Maximum height adjustment.	mm	280
Base plate dimensions.	mm	50 x 55 x 58
Mounting hole diameter	mm	8
Magnetic force.	kg	80
Net weight	kg	1.9

Dial gauges

Magnetic stands

- Flexible arm - lockable with lever in every required position.
- Magnetic base - on the V-shaped bottom and one side.
- The magnetism is switched on and off with a knob.
- Magnetic force 75 kg.
- Mounting hole $\varnothing$ 6 and 8 mm.

Code no.		60200201
Maximum height adjustment	mm	395
Base plate dimensions	mm	48 x 60 x 50
Mounting hole diameter	mm	6 & 8
Magnetic force	kg	75
Net weight	kg	1.6



Dial gauge stand

- Hardened, ground and lapped table surface.
- Mounting hole $\varnothing$ 8 mm.

Code no.		53220208
Table area	mm	65 x 70
Max. height table/measurement tip.....	mm	145
Overhang, measurement tip/pillar	mm	80
Mounting hole diameter	mm	8
Weight	kg	145

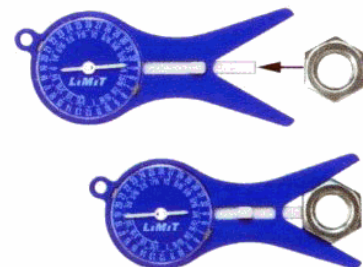


Limit

Hexagon/Diameter gauge

Measures hexagon for nut and bolt sizes to identity the correct spanner or socket. Also measures diameters for drills etc.

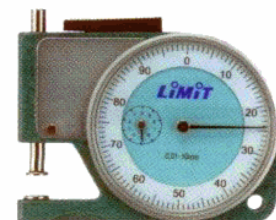
Code no.		122830102
Range of measurement	mm	6-32
Range of measurement	inch	1/4-1 1/4
Total length	mm	80



Thickness gauges

- Pocket size.
- Supplied in a plastic box.

Code no.		119150100
Range of measurement	mm	10
Reading	mm	0.01
Measuring surface diameter	mm	8
Throat depth	mm	12

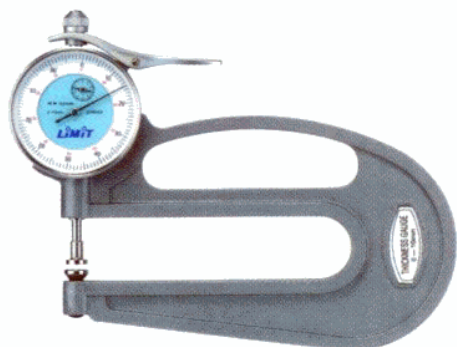


Dial gauges Thickness gauges



- Pocket size.
- Supplied in a plastic box.

Code no.		119160109
Range of measurement	mm	10
Reading	mm	0.01
Measuring surface diameter	mm	10
Throat depth	mm	30



Suitable for both soft and hard materials.

Code no.		119170108
Range of measurement	mm	10
Reading	mm	0.01
Measuring surface diameter	mm	10
Throat depth	mm	120

Electronic

- Digital reading.
- Adjustable between mm and inch.
- Automatic shut off.
- Reset button.
- Battery type SR44.

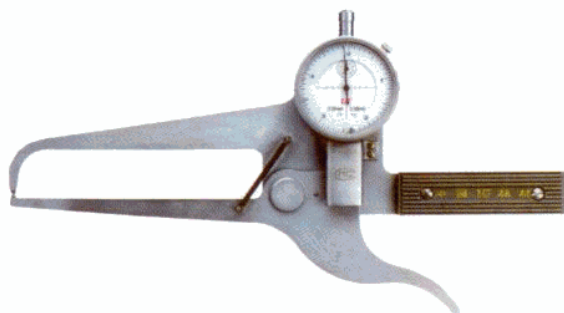


Code no.		22940100
Range of measurement	mm	0-15
Resolution	mm	0.01
Tolerance	mm	±0.02
Measuring surface diameter	mm	8.9
Throat depth	mm	13
Spare battery		29281003

Snap gauges

For external measuring.

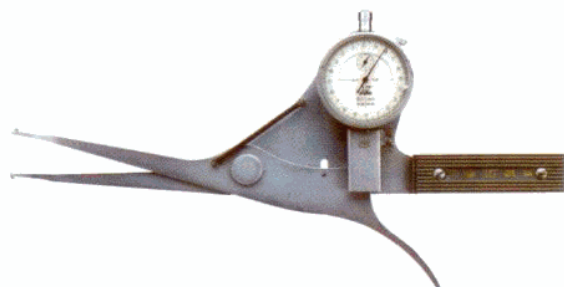
- Hardened, round measuring tips.
- Turnable scale.
- Supplied in a plastic box.



Code no.		22680102
Range of measurement	mm	0-50
Scale division	mm	0.05
One turn of pointer =	mm	5
Measurement depth, length	mm	125
Diameter of measuring, tip	mm	∅ 2.6x1.5

For internal measuring.

- Hardened round measuring tips.
- Rotatable scale.
- Supplied in a plastic box.



Code no.	22720106	22720205
Range of measurement	mm 10-30	30-50
Scale division	mm 0.01	0.01
One turn of pointer =	mm 2	2
Measurement depth, length	mm 100	150
Diameter of measuring, tip	mm ∅ 2.6x1.5	∅ 2.6x1.5

Rules and angles



Rules and squares

Rules and angles

Protractor measuring

For protractor measuring with 1° accuracy protractors with graduations in integer grades are used. For more accurate measuring than integer grades a bevel vernier protractor is used.

Planetary and squareness control

When controlling planetary and squareness rules or squares are used. There are both rules and squares with different tolerances. The most accurate types are knife edge rules and knife edge squares which have a knife edge formed black coloured edge for better contrast effect.

When using you see a light gap between the work piece and the measuring tool. By using a thickness gauge you can feel how rough a surface is or how high the angular error is.

Gauge blocks

To calibrate or reset measuring equipment, measuring fixing devices or gauge, gauge blocks are used. Also when adjusting tools and machines gauge blocks are used. Gauge blocks are blocks manufactured with a high dimensional accuracy, planetary and parallelism. By surface roughness the gauge blocks can obtain a very high adhesive strength when the blocks are turned and pressed together. That is how gauge block combinations are put together so that the total measurement value of all blocks is equal to the total length.



Type A
0.07 - 0.10 mm



Type B
0.10 - 0.15 mm

Table of tolerances according to DIN 866

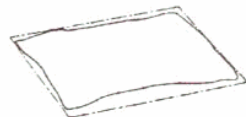
For engineer's folding rules

Length	mm	500	1000	1500	2000	3000	4000
Type A	mm	0.04	0.04	0.06	0.06	0.08	0.10
Type B	mm	0.10	0.10	0.15	0.15	0.20	0.10

Table of tolerances according to DIN 874.

Levelness tolerance (flatness) in µm for different degrees of precision.

The levelness tolerance indicates the max deviation between the lowest and highest point. (Reference temperature +20°C.)

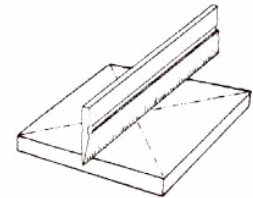


Steel rules					Sharp edged rules	
Length in mm					Length in mm	
±2	00	0	1	2	±2	00
500	4	7	12	21	75	2
750	6	9.5	17	27	100	2
1000	8	12	21	33	150	2
1500	-	17	29	46	300	3
2000	-	22	37	58		
2500	-	27	46	71		
3000	-	32	54	83		
4000	-	42	71	108		
5000	-	-	87	133		

Rules and angles

Table of tolerances for surface plates according to DIN 876

The levelness tolerance indicates the max deviation between the highest and lowest point on the surface.
(Ref. temperature +20°C.)



Length mm	Maximum variation by grade type				
	00	0	1	2	3
100	2	4	11	22	44
160	2	5	12	23	46
250	3	5	13	25	50
400	3	6	14	28	56
630	3	7	16	33	65
1000	4	8	20	40	80
1600	5	10	26	52	104
2000	6	12	30	60	120
2500	7	14	35	70	-

Workshop squares - table of tolerances according to DIN 875

Length on long shank mm	Maximum variation (angle) μm				Maximum variation (Straight edge) μm			
	00	0	1	2	00	0	1	2
50	3	-	-	-	2	3	5	10
75	3	7	14	28	2	3	5	11
100	3	7	15	30	2	3	6	12
150	4	8	18	35	3	4	7	14
200	4	8	20	40	3	4	8	16
250	5	10	23	45	3	5	9	18
300	5	11	25	50	3	5	10	20
500	7	15	35	70	4	7	14	26
750	10	20	43	85	5	10	19	38
1000	12	25	60	120	6	12	24	48
1500	17	35	85	170	8	17	34	68

* The surface smoothness tolerance for flat sides is 6 times the given value for contact surfaces.

Limit

Table of tolerances for gauge blocks according to DIN 861

(correspond with ISO 3650 and SS 3348)



Nominal length mm	Degree of precision 00		Degree of precision 0		Degree of precision 1		Degree of precision 2	
	Length tolerance *) μm	Max length variation width**) μm	Length tolerance *) μm	Max length variation width**) μm	Length tolerance *) μm	Max length variation width**) μm	Length tolerance *) μm	Max length variation width**) μm
-10	± 0.06	0.05	± 0.12	0.10	± 0.20	0.16	± 0.45	0.30
(10)-25	± 0.07	0.05	± 0.14	0.10	± 0.30	0.16	± 0.60	0.30
(25)-50	± 0.10	0.06	± 0.20	0.10	± 0.40	0.18	± 0.80	0.30
(50)-75	± 0.12	0.06	± 0.25	0.12	± 0.50	0.18	± 1.00	0.35
(75)-100	± 0.14	0.07	± 0.30	0.12	± 0.60	0.20	± 1.20	0.35
(100)-150	± 0.20	0.08	± 0.40	0.14	± 0.80	0.20	± 1.60	0.40
(150)-200	± 0.25	0.09	± 0.50	0.16	± 1.00	0.25	± 2.00	0.40
(200)-250	± 0.30	0.10	± 0.60	0.16	± 1.20	0.25	± 2.40	0.45
(250)-300	± 0.35	0.10	± 0.70	0.18	± 1.40	0.25	± 2.80	0.50
(300)-400	± 0.45	0.12	± 0.90	0.20	± 1.80	0.30	± 3.60	0.50
(400)-500	± 0.50	0.14	± 1.10	0.25	± 2.20	0.35	± 4.40	0.60
(500)-600	± 0.60	0.16	± 1.30	0.25	± 2.60	0.40	± 5.00	0.70
(600)-700	± 0.70	0.18	± 1.50	0.30	± 3.00	0.45	± 6.00	0.70
(700)-800	± 0.80	0.20	± 1.70	0.30	± 3.40	0.50	± 6.50	0.80
(800)-900	± 0.90	0.20	± 1.90	0.35	± 3.80	0.50	± 7.50	0.90
(900)-1000	± 1.00	0.25	± 2.00	0.40	± 4.20	0.60	± 8.00	450

*) = Permitted $\pm$ deviation at arbitrary point in relation to nominal dimension.

**) = Permitted length variation (depending on flatness and parallelism error).

Rules and squares

Steel rules



- Extra thin steel rules.
- Stainless steel.
- Graduated in mm.
- Hanging hole.

Code no.		27020106	27020205	27020304	27020403	27020502	27020601
Length	mm	100	150	200	300	500	1000
Width x thickness	mm	13 x 0.5	13 x 0.5	13 x 0.5	13 x 0.5	18 x 0.5	18 x 0.5



- Stainless and hardened steel.
- Easy to read frosted chrome plated non glare rule.
- Graduated in mm and in inches.
- Hanging hole.

Code no.		27030055	27030105	27030204	27030303
Length	mm	150	300	500	1000
Width x thickness	mm	15 x 0.5	25 x 1.0	30 x 1.2	35 x 1.5



- Stainless and hardened steel.
- Easy to read frosted chrome plated non glare rule.
- Graduated in mm. Lower edge in half mm.
- Hanging hole.

Code no.		84270107	84270206	84270305	84270404	84270503	84270602
Length	mm	150	300	600	1000	2000	3000
Width x thickness	mm	15 x 0.5	25 x 1.0	30 x 1.0	35 x 1.5	40 x 2.0	40 x 3.0
Accuracy	mm	±0.12	±0.13	±0.16	±0.20	±0.30	±0.40

Engineers rules



- Bevelled edge.
- Ground steel.
- Graduated in mm.

Code no.		27050202	27050509	27050608	27050707
Length	mm	500	1000	1500	2000
Width x thickness	mm	40 x 5	40 x 5	40 x 5	40 x 5



Graduation top edge



Graduation lower edge

- Rectangular profile.
- Measuring tolerance according to **DIN 866/2**. Form B.
- Ground steel.
- Graduated in mm.

Graduation top edge

Code no.		27060102	27060201	27060300	27060409	27060508
Length	mm	500	1000	1500	2000	3000
Width x thickness	mm	25x5	30x6	30x6	40x8	40x8
With calibration certificate		-	27060250	-	27060458	-

Graduation lower edge

Code no.		27061001	27061100	27061209	27061308
Length	mm	500	1000	1500	2000
Width x thickness	mm	25x5	30x6	30x6	40x8

Steel rules

· Bevelled edges. Ground steel.

Code no.		25050204	25050501	25050600	25050709
Length	mm	500	1000	1500	2000
Width x thickness	mm	40 x 5	40 x 5	40 x 5	40 x 5

· Rectangular profile. Ground steel.

Code no.		25060104	25060302	25060500	25060609	25060807
Length	mm	500	1000	1500	2000	3000
Width x thickness	mm	40 x 5	40 x 5	40 x 6	40 x 6	50 x 8
Weight	kg	0.7	1.4	3.8	8.0	12.0

· Calibration certificate is included.
· Tolerance **DIN 874/1** respective **874/2**.
· All sides are finely ground, inspected and adjusted.

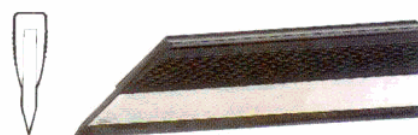
DIN 874/2 Code no. ...	25070103	25070202	25070301	25070400	25070509	25070608	25070707
Length	500	1000	1500	2000	2500*	3000*	4000*
Width x thickness	30 x 6	40 x 8	50 x 10	60 x 12	70 x 15	80 x 15	100 x 16
Weight	1.3	2.5	5.8	11.4	14.3	17.1	22.8
DIN 874/1 Code no. ...	25071507	25071606	25071705	25071804	25071903	25072000	25072109
Length	500	1000	1500	2000	2500*	3000*	4000*
Width x thickness	40 x 8	50 x 10	60 x 12	70 x 15	80 x 15	100 x 16	120 x 20
Weight	1.3	4.0	8.4	12.0	17.0	28.0	35.0

Limit

Sharp edged rules

· Black edge for better contrast.
· Special steel with honed edge.
· Tolerance **DIN 874/00**.
· Corner angle 30°.

Code no.	52090107	52090206	52090305	52090404
Length	75	100	200	300
Width x thickness	22 x 6	22 x 6	22 x 6	30 x 7
Weight	40	60	120	750

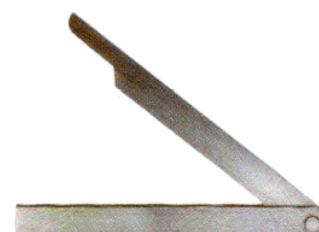


Workshop squares

Sliding bevels

· Ground steel.

Code no.	25441007	25441106
Leg length	200	300
Leg cross section	25 x 5	25 x 5
Code no.	25441205	25441304
Leg length	400	500
Leg cross section	30 x 5	30 x 5



Rules and squares

Workshop squares

Flat squares

- Made of tool steel.
- All sides are ground.

<i>Code no.</i>		25380957	25381005
Long leg, length	mm	800	1000
Short leg, length	mm	375	500
Width x thickness	mm	30 x 5	30 x 5
<i>Code no.</i>		25381104	25381203
Long leg, length	mm	1500	2000
Short leg, length	mm	750	1000
Width x thickness	mm	30 x 5	30 x 5

- Made of zinc plated special steel.
- Quality level 3.

<i>Code no.</i>		120470109	120470208	120470307
Long leg, length	mm	150	200	300
Short leg, length	mm	100	130	175
Leg dimension	mm	25x5	25x5	25x5
Accuracy of squareness	±µm	55	60	70
<i>Code no.</i>		120470406	120470505	120470604
Long leg, length	mm	400	500	600
Short leg, length	mm	230	250	300
Leg dimension	mm	25x5	25x5	25x5
Accuracy of squareness	±µm	80	90	100

- Tolerance **DIN 875/2**.
- Made of tool steel.
- All sides are ground.

<i>Code no.</i>		25331505	25331604	25331703
Long leg, length	mm	75	100	150
Short leg, length	mm	50	70	100
Width x thickness	mm	15 x 4	20 x 5	25 x 6
<i>Code no.</i>		25331802	25331901	25332008
Long leg, length	mm	200	300	400
Short leg, length	mm	130	200	250
Width x thickness	mm	30 x 7	40 x 8	45 x 10

Base squares

- Made of zinc plated special steel.
- Quality level 3.

<i>Code no.</i>		120480108	120480207	120480306
Long leg, length	mm	150	200	300
Short leg, length	mm	100	130	175
Width x thickness	mm	25x5	25x5	25x5
Base width	mm	22	22	22
Accuracy of squareness	±µm	55	60	70
<i>Code no.</i>		120480405	120480504	120480603
Long leg, length	mm	400	500	600
Short leg, length	mm	230	250	300
Width x thickness	mm	25x5	25x5	25x5
Base width	mm	22	22	22
Accuracy of squareness	±µm	80	90	100

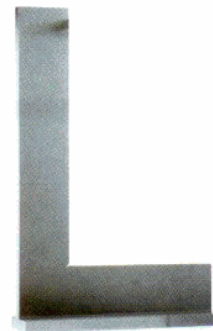
Limit

Workshop squares

Base squares

- Tolerance **DIN 875/2**.
- Made of tool steel.
- All sides are ground.

Code no.	25342007	25342106	25342205	25342304
Long leg, length..... mm	100	200	300	400
Short leg, length..... mm	70	130	200	265
Width x thickness..... mm	20x5	30x7	40x8	40x10
Base width..... mm	20	30	40	45
With calibration certificate...	-	25341553	25341652	-



Angled stop

- Tolerance **DIN 875/1**.
- Made of tool steel.
- All sides are ground.

Code no.	25301003	25301102	25301201	25301300
Long leg, length..... mm	75	100	150	200
Long leg dim..... mm	14x3	16x3	22x3	24x3
Short leg, length..... mm	50	70	100	130
Short leg, dim..... mm	14x10	16x10	20x12	24x14
With calibration certificate...	-	25300252	25300351	-

Code no.	25301508	25301607	25301706
Long leg, length..... mm	250	300	400
Long leg dim..... mm	28x3	30x3	34x3
Short leg, length..... mm	165	200	265
Short leg, dim..... mm	28x16	30x18	34x20
With calibration certificate...	-	-	-



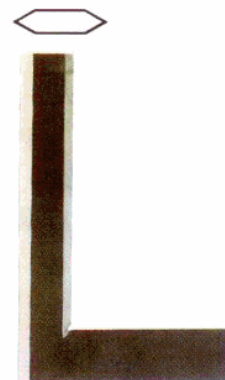
Limit

Sharp edge squares

Made of hardened steel. Fine ground sides and honed edges. Legs of equal thickness.
Tolerance according to **DIN 875/00**.

Code no.	52171006	52171105	52171204
Long leg..... mm	50	75	100
Short leg..... mm	40	50	70
Width x thickness..... mm	13.5 x 4	15 x 4	20 x 5

Code no.	52171303	52171402
Long leg..... mm	150	200
Short leg..... mm	100	130
Width x thickness..... mm	25 x 6	30 x 7



Adjustable squares

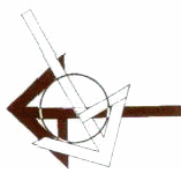
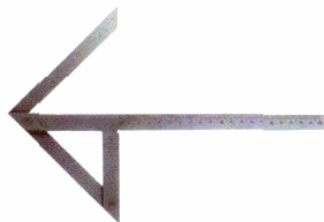
- Toolmakers adjustable square.
- Tolerance **DIN 875/2**.
- Graduated steel rule.

Code no.	151250107	151250206
Graduated steel rule length..... mm	100	150
Locking steel rule..... mm	70	100



Rules and squares

Centre square

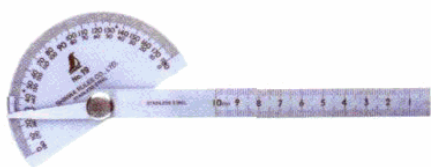


For use as marking out centre on end plate of round workpiece, as an angled stop or as a T square.

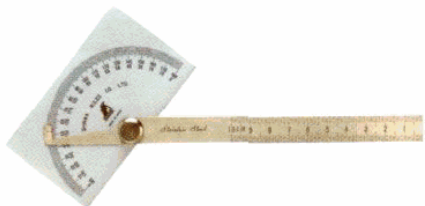
- Made of steel.
- Graded in mm.

Code no.		25420209
Blade length.....	mm	200
Stock length.....	mm	150

Protractors



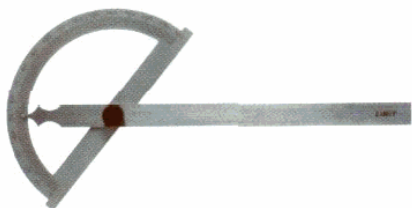
No. 2549 Circular



No. 2549 Rectangular

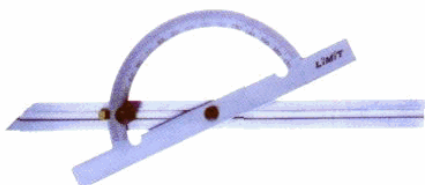
- Made of sheet steel.
- Frosted chrome plated scale.
- With locknut.

Code no.....	25490103	25490202
Protractor disc shape	Circular	Rectangular
Protractor disc diameter	85	85
Leg length	150	150



- Made of steel.
- Frosted chrome plated scale.
- Supplied in a colour display box with a plastic wallet.

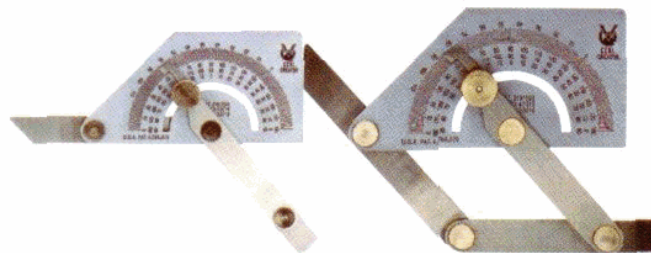
Code no.....	25480104	25480203	25480302	25480401
Protractor diameter ... mm	80	120	150	200
Leg length mm	120	150	200	300



- Made of steel.
- Frosted chrome plated scale.
- Sliding leg.
- With locknut.
- 150 and 200mm *protractors supplied in a plastic box.*
- 300mm protractor supplied in a plastic wallet.

Code no.....	25500109	25500208	25500406
Protractor diameter mm	150	200	300
Leg length mm	300	400	600

Protractors



Made of steel. Frosted chrome plated for non glare reading. Can be used for inside and outside angles.

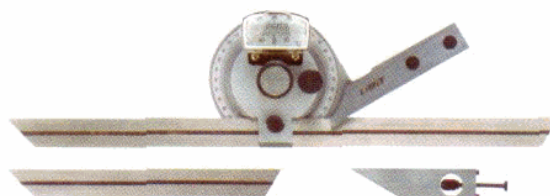
Code no.	73770109
Protractor diameter	90
Leg length	80



Precision protractors

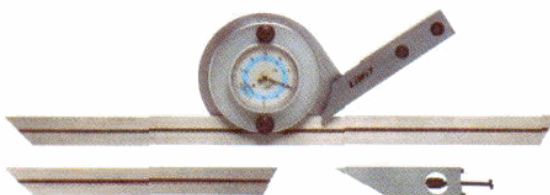
- Made of stainless steel.
- Knob for fine adjustment.
- Frosted vernier scale for reading $1/12^\circ = 5$ minutes.
- Adjustable for measuring 360° .
- 2 separate steel rules.

Code no.	122580103
Length of steel rules	150 and 300



- Made of steel.
- Frosted chrome plated scale and magnifier.
- Dial scale for reading $1/12^\circ = 5$ minutes.
- Adjustable to all required angles.
- Supplied in a plastic box.

Code no.	119190106
Length of blade	300
Scale division	$1/12^\circ$
Range per turn of pointer	10°



Digital protractor

Digital reading, adjustable between $0-360^\circ$, $0-180^\circ$ or $0-90^\circ$. Including setting square 90° .

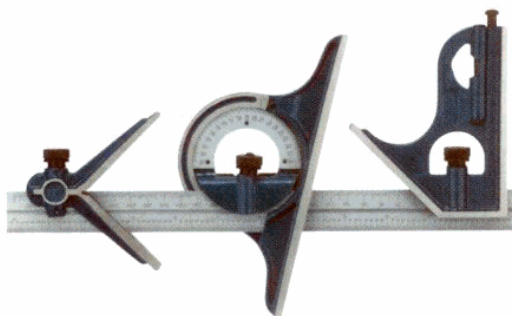
- Made of stainless steel.
- Zero setting in any position.
- Hold function.
- 2 separate steel rules.

Code no.	151270105
Length of steel rules	150 and 300
Reading	0,01%



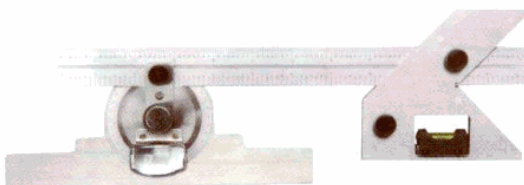
Rules and squares

Combined squares



- With protractor, angle head and centre head sliding on the rule.
- Protractor with double sided ledge.
- Spirit level on angle head and protractor.
- The rule is graduated in mm and inch.
- Supplied in a plastic box.

Code no.		119180107
Protractor, reading	mm	0-180
Steel rule, length	mm	300
Angle edge, length	mm	110
Centre head, length	mm	63
Extra steel rule 600 mm		119180206
Spare part set including nuts & screws		119180305



Precision combination square.

- Made of stainless steel.
- With protractor head, angle head, centre head sliding on steel rule.
- Angle head with 90°, 45°, centre square and spirit level.
- All surfaces grinded.
- Steel rule graduated in mm and inch on both sides.

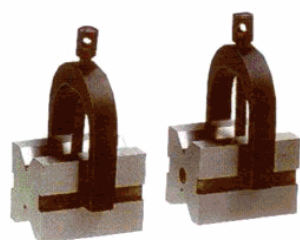
Code no.		151260106
Protractor, reading		360°
Steel rule, length	mm	300
90° Square, length	mm	100
Protractor head, length	mm	180

V blocks



- Set of 2 pieces.
- Ground in pairs.
- Uniformity of parallelism $\pm 0,03$ mm.

Code no.		25020108	25020207	25020405	25020603
Width	mm	76	102	152	203
Height	mm	60	67	89	140
Thickness	mm	32	41	63	102
V groove width	mm	45	55	80	114
V groove depth	mm	22.5	27.5	40	57



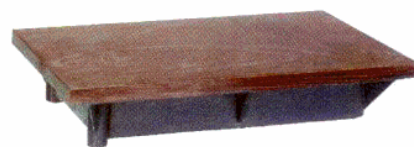
- Precision type. For clamping when measuring, grinding, milling or drilling.
- Set of 2 blocks and 2 clamps.
- Uniformity of parallelism $\pm 0,01$ mm.

Code no.		52520202	52520301
Maximum diameter of clamps	mm	25	37
Length x width x height	mm	40 x 32 x 32	50 x 37 x 37
Code no.		52520400	
Maximum diameter of clamps	mm	40	
Length x width x height	mm	75 x 55 x 55	

Engineers surface plates

- Made of cast iron.
- Tolerance **DIN 876/3**.

Code no.....		24940504	24940801	24941007
Length	mm	400	600	800
Width	mm	300	400	500
Weight	kg	25	45	80
Stand.....		-	-	24951204



Made of close grained and aged cast iron. Plane ground to tolerance **DIN 876/1**. The Engineers surface plate measures 800x500 mm complete with stand with adjustment screws and vibration absorber.

Code no....		24950404	24950602	24950909	24951006
Length	mm	300	400	600	800
Width	mm	200	300	500	500
Weight	kg	10	20	45	80
Stand.....		-	-	-	24951204



Gauge blocks

- Made of hardened special steel.
- Ground and hand lapped.
- Tolerance DIN 861/1 resp. 861/2.

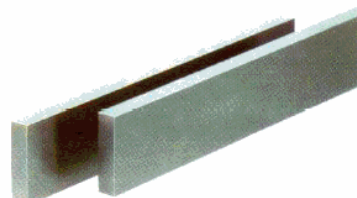
Total number of blocks		47	87
Range of measurement	mm	1.005	1.001-1.009
No. of blocks (range)	pieces	1 (0.005 mm)	9 (0.001 mm)
Range of measurement	mm	1.01-1.20	1.01-1.49
No. of blocks (range)	pieces	20 (0.01 mm)	49 (0.01 mm)
Range of measurement	mm	1.30-1.90	0.50-9.50
No. of blocks (range)	pieces	7 (0.10 mm)	19 (0.50 mm)
Range of measurement	mm	1.00-9.00	-
No. of blocks (range)	pieces	9 (1.00 mm)	-
Range of measurement	mm	10.00-100.00	10.00-100.00
No. of blocks (range)	pieces	10 (10.00 mm)	10 (10.00 mm)
DIN 861/2		52720109	52720208
DIN 861/1		52720307	52720406



Parallel blocks

Sets of 7 pairs. Perpendicular grinded in pairs. Hardened steel HRC 55-62. Parallelism tolerance ± 0.005 mm.

Code no.		151530102	151530201	151530300
Length	mm	95	120	200
Heights	mm	15-20-25-30-35-40-45		



Machine levels

Digital level and protractors



- Digital level and protractor with magnet.
- Reading 4 x 90°.
- Alternative reading 0-100%.
- Zero setting in any position.
- Hold function.
- Magnet on one side for fitting on steel rules etc.
- Automatic off after 3 minutes.

Code no.		151230109
Dimension	mm	50 x 50 x 25
Reading		4 x 90°
Reading		0-100%
Scale value	mm	0.1°
Accuracy		±0.2°
Battery type		3 pcs 3 V CR2032



- Digital level and protractor.
- Reading 4 x 90°.
- Alternative reading 0-100%.
- Zero setting in any position.
- Hold function.
- Display backlight.
- Automatic off after 3 minutes.

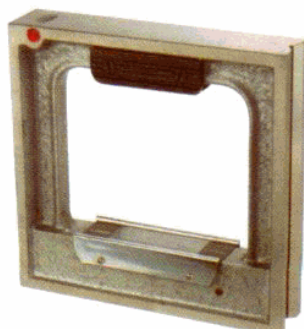
Code no.		151240108
Dimension	mm	150 x 50 x 33
Reading		4 x 90°
Reading		0-100%
Scale value	mm	0.1°
Accuracy		±0.2°
Battery type		3 pcs 3 V CR2032

Even levels



- Made of steel casting, precision ground.
- V shaped base.
- Adjustable clinometer.
- Accuracy to **DIN 877**.

Code no.		07490204	07490402
Length	mm	200	200
Scale value	mm/m	0.10	0.02
Width x height	mm	40 x 40	40 x 40
Accuracy	mm/m	±0.025	±0.005



Frame levels

- Made of cast steel. Precision ground.
- V shaped set surface.
- Adjustable clinometer.
- Accuracy to **DIN 877**.

Code no.		07570104	07570203
Length	mm	200	200
Height	mm	200	200
Scale value	mm/m	0.10	0.02
Accuracy	mm/m	±0.025	±0.005

Scribes



Scribing and marking

Scribes

Double ended

With one straight and one angled steel tip. Hardened. Round, knurled handle.



Code no.	52530102	52530201
Type	Steel point	Hard metal point
Length	240	240
Diameter	4	4

With clip

Hard metal point. K 30 quality.



Code no.	24750101
Length	130
Diameter	7

Hard metal point. K 20 quality.



Code no.	24741001
Length	150
Diameter	6
Ditto 10 pcs in paperbox	24740201

Hard metal point. K 30 quality. Automatic pencil with locking device.



Code no.	24821001
Length	150

With automatic punch marker

For scribing and punching. When the scribe point is pressed into the pen a stroke spring is released for punch marking.

- Chrome vanadium steel tip.
- Rubber grip.



Scribe	102300100
Length	140
Extra point	102300209
Length x diameter	40 x 3

With handle

Hard metal point. Reversible blade with point at each end.



Code no.	24850109
Total blade length	100
Diameter	7
Spare hard metal point, code no.	24850208

Surface gauges

· Without fine adjustment.

Code no.
Height of spindle

mm

52380102
300



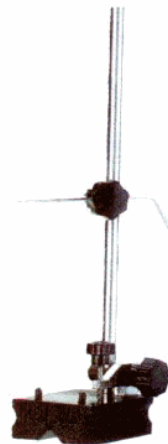
With fine adjustment

· With fine adjustment.

Code no.
Height of spindle

mm

52430105
300



Marking gauges

Marking gauges

Made of steel. Scale graduated in millimeter. Enamelled. Supplied complete with lead-pencil.

Code no.
Length of graduation

mm

23960107
200



For scribing with scribe against edge. Graduated scale. Hardened scribing edge.

Code no.
Adjustable length.
Width

mm
mm

23790108
0-200
40

23790207
0-300
40



For metal

- Made of stainless steel.
- Knuckle jointed roll as stop.
- Frosted chrome plated scale and vernier.
- Hardened scribe point.

Code no.
Length of measurement.
Scribe point diameter.

mm
mm

97170104
200
2 x 21

Extra scribe point.

97170203



Made of steel. Hardened point $\varnothing$ 5 mm. Fine adjustment. Graduated in mm and vernier for 0.1 mm.

Code no.
Bar length.

mm

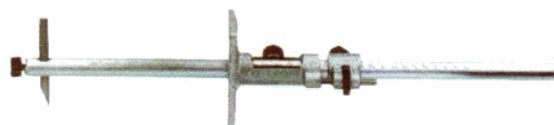
24130106
200

24130205
300

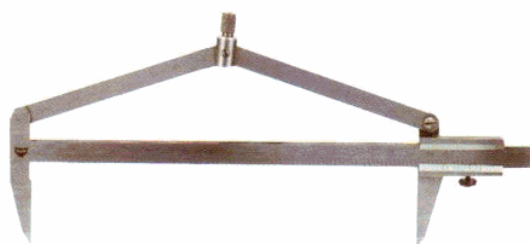
Extra marking point.

24130304

24130304



Scribing and marking



Marking gauges

Combined dividers and sliding calipers

- Made of steel. Hardened and ground points.
- Graduated in mm. Vernier 0.01 mm.

Code no.		24360208
Length	mm	200
Point length	mm	45



Bar calipers

- Rectangular bar of steel.
- Graduated in mm. Vernier 0.1 mm.

Code no.	24200107	24200206	24200305	24200404
Length mm	500	1000	1500	2000
For max. diameter mm	1000	2000	3000	4000

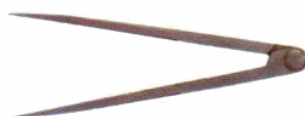


Compasses

For pencils

Made of steel. Pencil not included.

Code no.	24281008	24281107
Length	mm 175	300
Max. capacity	mm 190	380



Dividers

Made of steel. Hardened points.

Code no.	24321002	24321101
Length	mm 200	300
Max. capacity	mm 380	580



Wing dividers

Made of steel. Hardened points.

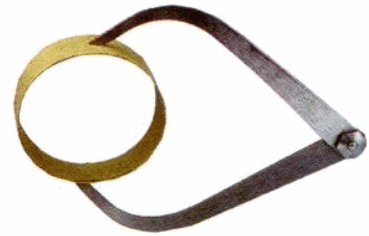
Code no.		24291106	24291205	24291304	24291403	24291502
Length	mm	150	200	300	400	600
Max. capacity ..	mm	170	235	390	545	800

Compasses

Calipers

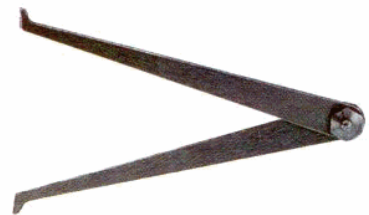
External calipers with flat shanks and screw joint.

Code no.		24391500	24391609	24391708	24391807
Length.....	mm	200	300	500	800
Max. capacity.....	mm	300	500	850	1250



Internal calipers with flat shanks and screw joint.

Code no.		24401507	24401606	24401705
Length.....	mm	200	300	500
Max. capacity.....	mm	370	570	950



Spring dividers and calipers

External calipers with hardened points and fast action adjustment nut.

Code no.....		24431009	24431108	24431207
Length.....	mm	150	200	300
Max capacity	mm	125	170	250



Dividers with hardened points and fast action adjustment nut.

Code no.		24441008	24441107	24441206
Length.....	mm	150	200	300
Max. capacity.....	mm	150	190	275



Internal calipers with hardened points and fast action adjustment nut.

Code no.		24451007	24451106	24451205
Length.....	mm	150	200	300
Max. capacity.....	mm	150	180	260



Scribing and marking

Number punches

Includes 9 punches 0 - 9.

STANDARD Engraving side hardened according to 58-60 HRC.

SPECIAL Engraving side hardened according to 58-60 HRC and 38-46 HRC on the other side.



5

Height of numbers mm	STANDARD		SPECIAL	
	Code no.	Shank square mm	Code no.	Shank square mm
2	17330101	6	51750107	7
3	17330200	6	51750206	8
4	17330309	7	51750305	9
5	17330408	8	51750404	10
6	17330507	9	51750503	12
8	17330606	11	51750602	14
10	17330705	12	51750701	16
12	17330804	14	-	-
15	17330903	16	-	-

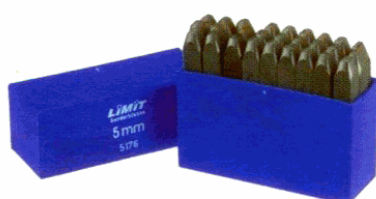
Letter punches

Alphabetical punches

Includes 27 punches, A - Z and &.

STANDARD Engraving side hardened according to 58-60 HRC.

SPECIAL Engraving side hardened according to 58-60 HRC and 38-46 HRC on the punching side.



F

Height of letters mm	STANDARD		SPECIAL	
	Code no.	Shank square mm	Code no.	Shank square mm
2	17350109	6	51760106	7
3	17350208	6	51760205	8
4	17350307	7	51760304	9
5	17350406	8	51760403	10
6	17350505	9	51760502	12
8	17350604	11	51760601	14
10	17350703	12	51760700	16
12	17350802	14	-	-
15	17350901	16	-	-

Stamp sets



Complete sets with holder and 100 types. 58 letters, 35 figures and 7 special marks for punctuation, etc.

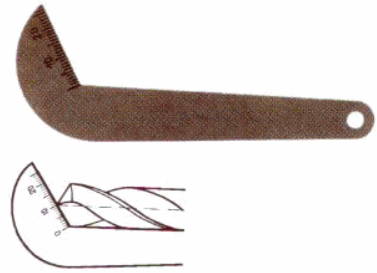
Code no.	58890104	58890203	58890302
Height of type..... mm	3	4	5
No. of types (total).....	100	100	100
Capacity of holder. No. of types ...	10	8	6
Length of text..... mm	40	40	40

Grinding gauge

Used for grinding twist drills. Graded up to 25 mm.

Code no.
 For drills up to mm
 Cutting angle

25650102
 50
 118°

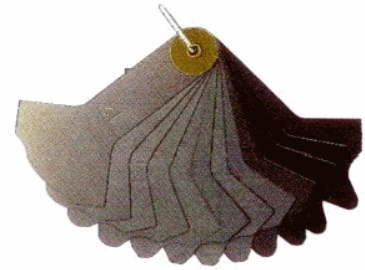


Welding gauges

With 12 blades for height measurement of plane welding joints.

Code no.
 Range of measurement mm

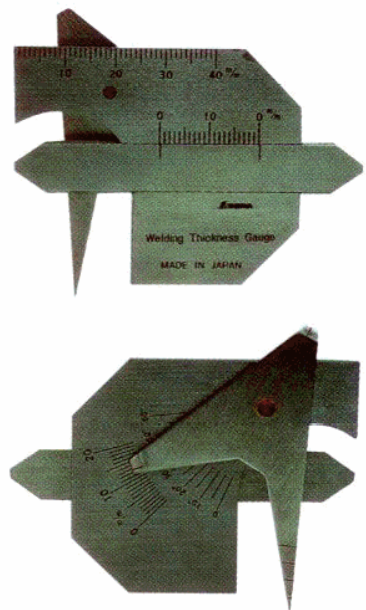
74031006
 3-12



For measurement of welding joints in corners, height of even joints. Height gauge/material thickness. Angle measuring. Distance between plates.
 · Made of stainless steel.
 · Supplied in a plastic wallet.

Code no.
 Welding joint mm
 Height measurement mm
 Angles degrees
 Distance mm

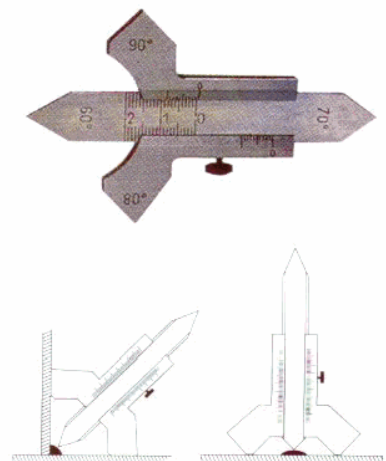
97540108
 0-20
 0-40
 0°-60°
 0-4



· For measurement of plane welding joint heights and in corners.
 · Made of steel.
 · Graded in mm and equipped with 1/10 mm vernier.
 · Points angled at 60°-70°-80°-90°.
 · Supplied in a plastic wallet.

Code no.
 Measurement range mm

25690108
 20



Thread gauges

Combined thread and lathe angle gauge. Hardened.



Code no.	25751009	25751108
Thread angle	55°	60°
Thread system	WW	MM+UN

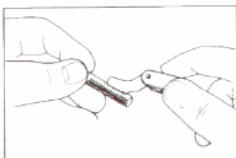


Universal thread gauge for various special thread types.

Code no.	25771007
Thread angles (sharp V threads)	55° 60°
For no. of threads (squares threads)	per inch 2 2.5 3 3.5 4 4.5 5 6 7 8
For pitches (30° acme thread)	mm 2 3 4 5 6 7 8 9 10 12

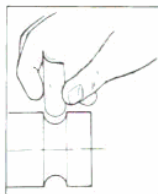
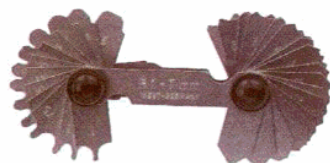
Screw pitch gauges

For control of threads.



Code no.	25801002	25801101	25801200
Thread system	WW	MM	MM/UNF
Thread angle	55°	60°	60°
No. of blades	28	24	55
For no. of threads	per inch 4-62	-	4-42
For pitches	mm -	0.25-6	0.25-6
Code no.	25801309	25801408	
Thread system	UNC-UNF	G-pipe (R)	
Thread angle	60°	55°	
No. of blades	30	6	
For no. of threads	per inch 4-42	8-28	
For pitches	mm -	-	

Radius gauges



For control of convex and concave surfaces.

Code no.	25841008	25841107	25841206
For radius	mm 1-7	7.5-15	15.5-25
No. of blades	17+17	16+16	15+15
Intervals	mm (1-3)=0.25 (3-17)=0.5	0.5	(15.5-20)=0.5 (20-25)=1

Angle gauges

With folding steel blades. The blade ends are bevelled at various angles.



Code no.	25861006
No. of blades	18
For angles (degrees)	1 2 3 4 5 7 8 9 10 12 14 16 18 20 25 30 40 45

Hole size gauges

For measuring and checking orifices and smaller holes.



Code no.	26390104	26390203
For diameter	mm 0.45-1.5	1.5-3
No. of pins	pieces 20	16

Hole size gauges

- For measurement of hole diameters and groove widths.
- Made of stainless steel with frosted chrome plated scale.

Code no.		14411003	
Range of measurement	mm	1-15	
Reading	mm	0.1	
Scale length	mm	120	
Thickness	mm	1.2	



- Hardened and ground steel.
- Conicity of measurement pin 1:10.
- Direct reading 0.1 mm.
- Vernier reading 0.01 mm.
- Supplied with protective sleeve for the measurement pin.

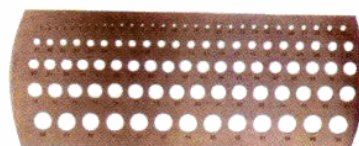
Code no.		26410209	
For diameter	mm	0-5	



Drill and wire gauge

- Intervals in 0.1 mm step.
- No. of holes 100.

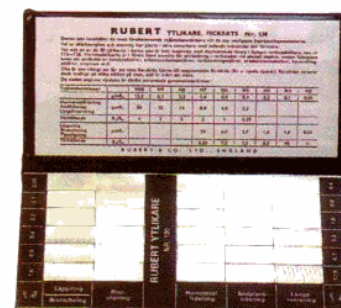
Code no.		25900309	
Diameter of hole	mm	0.1-10	
Intervals	mm	0.1	
No. of holes		100	
Thickness	mm	2	



Surface roughness blocks

- For visual or by fingertip compare surface roughness on metal. Practical for engineers, designers, and machine operators.
- 6 different Ra value for each method. In total 30 different surface roughness blocks.

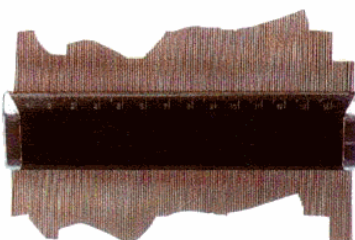
Code no.		53700100	
Horizontal milling			
Vertical milling			
Turning	Ra	12.5 6.3 3.2 1.6 0.8 0.4	
Grinding			
Lapping	Ra	1.6 0.8 0.4 0.2 0.1 0.05	



Profile patterns

- For creating the required profile where circular or irregular lines are needed. Ideal for carpet and floor laying, manufacture of shelves and benches, turning etc. Round pins made of stainless steel.

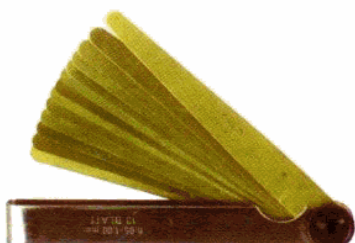
Code no.		97390108	97390207	
Length	mm	150	300	
Max. profile depth	mm	48	105	



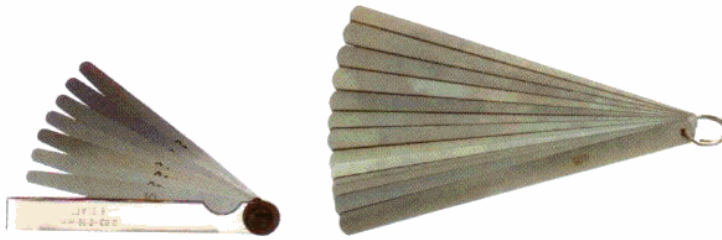
Feeler gauges

Brass.

Code no.		67921007	67921106	67921205	
No. of blades	pieces	8	13	20	
Range of measurement	mm	0.05-0.50	0.05-1.00	0.05-1.00	
Blade length	mm	100	100	100	



Feeler gauges

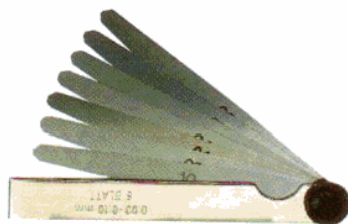


100mm

200mm

· Hardened, rolled steel.

Blade length 100 mm	25953001	25953100	25953209	25953308	25953407	25950601
No. of blades	8	8	21	13	20	20
Range of measurement	mm 0.03-0.10	0.05-0.50	0.10-0.50	0.05-1.00	0.05-1.00	0.10-2.00
Blade length 200 mm	-	-	-	25953506	25953605	25951104
No. of blades	-	-	-	13	20	20
Range of measurement	-	-	-	0.05-1.00	0.05-1.00	0.10-2.00



Calibrated

Calibrated. Tolerance according to DIN 2275. Certificate included. Calibrated on two measuring points per blade. Blade in millimeter dimensions. For measurement of slots, bearing clearances, etc. Nickel plated, lockable holder included.

Code no.	25952003	25952102	25952201
No. of blades	pieces 8	13	20
Range of measurement	mm 0.03-0.10	0.05-1.00	0.05-1.00
Blade length	mm 100	100	100



· Hardened, rolled steel.

Code no.	25971003
Orig. no.	133
No. of blades	13
Range of measurement	mm 0.05-1.00
Blade width	mm 12.7
Blade length	mm 300

Feeler strips



· Cold rolled, hardened and white polished steel band.
· Dimension marking every 150 mm.
· Length 3 m. Width 13 mm.

Code no.	25990052	25990102	25990201	25990300	25990409	25990508	25990607	25990706
Blade thickness . mm	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08
Tolerance	mm ±0.004	±0.004	±0.004	±0.004	±0.004	±0.004	±0.004	±0.004
Code no.	25990805	25990904	25991308	25991506	25991605	25991704	25991902	25992009
Blade thickness . mm	0.09	0.10	0.15	0.20	0.25	0.30	0.35	0.40
Tolerance	mm ±0.004	±0.005	±0.005	±0.007	±0.008	±0.009	±0.009	±0.011
Code no.	25992108	25992207	25992405	25992504	25992702	25992801	25992900	
Blade thickness . mm	0.45	0.50	0.60	0.70	0.80	0.90	1.00	
Tolerance	mm ±0.011	±0.013	±0.015	±0.015	±0.017	±0.017	±0.017	



Feeler strip holder

For feeler strips as above.

Code no.	26000109
Length	mm 135
Width	mm 13

Measuring instruments



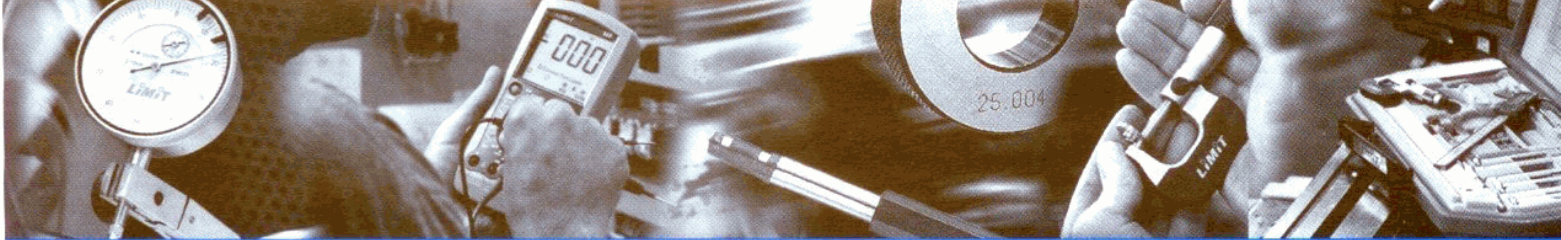
To the point

Test Instruments

We have been supplying measuring products to the industry for almost 100 years and during that time we have learnt what our customers require and appreciate. The products have been constantly developed according to new productions methods and new technology.

The trademark **Limit** has been created using the experience we have gathered during the years. Our target group demands accurate function, quality, price and delivery. We know how to meet these demands. Through **Limit** we aim to supply European industry with a broad and qualified assortment of measuring products.





Large digits

Easy to read
in every occasion.

Display

Shows correct test
leads terminals and
rotary switch position.
Easy to operate and
avoid mistakes.

Rubber holster

Protect instrument
against shocks and gives
the instruments extra
long life.

Hands free

The bench stands on
rear side. Practical when
you need to have both
hands free.

Operating manual

Made in practical pocket
size and printed in your
language.



Multimeters



Digital multimeter in pocket size with autorange. Measuring DC/AC voltage, resistance, frequency and capacitance. Also diode test, continuity with buzzer, datahold, relative mode, low battery capacity warning and auto off after 15 minutes. Supplied complete with test leads, battery, cover and manual. Max display 3999. Safety isolation CAT II 300 V, IEC 61010.

Code no.	144880101
Orig. no.	Limit 200
DC Voltage	400 mV-4-40-300 V
Resolution	0.1 mV
Accuracy	±0.8% + 1 digit
AC Voltage	40-300 V
Resolution	1 mV
Accuracy	±1.2% + 3 digits
Resistance	400 Ω-4-40-400 KΩ-4-40 MΩ
Resolution	0.1 Ω
Accuracy	±1% + 2 digits
Capacitance	4-40-400 nF-4-40-200 μF
Resolution	0.001 nF
Accuracy	4% + 3 digits
Frequency	10 Hz-100 KHz
Resolution	0.01 Hz
Accuracy	±0.5% + 3 digits
Duty cycle	0.1-99.9%
Battery	1 pcs 3 V (CR2032)
Dimension	108x58x12 mm
Weight	62 g

Limit



Digital multimeter palmsize and display with backlight. Measuring DC/AC voltage, DC current, resistance, temperature. Also diode test, continuity test with buzzer, datahold, low battery capacity warning. Supplied complete with test leads, temperature probe type K, battery and English manual. Rubber cover and bench stand. Max. display 1999. Safety insulation CAT I 600 V / CAT II 300 V, IEC 61010.

Code no.	128600103
Orig. no.	Limit 300
DC voltage	DCV 200-2000 mV-20-200-500 V
resolution	μV 100
accuracy	± 0.5 % + 2 digits
AC voltage	ACV 200-500 V
resolution	mV 100 mV
accuracy	± 1.2 % + 10 digits
DC current	DCA 2000 μA-20-200 mA-10A
resolution	μA 0.1 μA
accuracy	± 1 % + 2 digits
Resistance	Ω 200 Ω-2-20-200 KΩ-20 MΩ
resolution	0.1 Ω
accuracy	± 0.8 % + 2 digits
Temperature	°C -40 - +1000 °C
resolution	°C 1 °C
accuracy	± 1 % + 3 digits
Battery	V 1 pcs 9 V (6F22)
Dimension	mm 130x74x35
Weight	g 156
Extra test leads	128600202
Extra temp probe	128600301

Multimeters

Digital multimeter with large display, shows correct input for testlead and selected function. Measuring AD/DC current, resistance, capacity, frequency, temperature. Also diode test, transisto test, continuity test with buzzer, datahold, low battery capacity warning. Automatic off.

Supplied complete with test leads, multi purpose socket, temperature probe type K and English manual. Rubber cover and bench stand.

Max. display 1999. Safety insulation CAT II 1000 V / CAT III 600 V, IEC 61010.

Code no.		128590106
Orig. no.		Limit 500
DC voltage	DCV	200 mV-2-20-200-1000 V
resolution	mV	100
accuracy		$\pm 0.5 \% + 1$ digit
AC voltage	ACV	2-20-200-1000 V
resolution	mV	1 mV
accuracy		$\pm 0.8 \% + 3$ digits
DC current	DCA	2-200 mA-10 A
resolution	μ A	0.01 μ A
accuracy		$\pm 0.8 \% + 1$ digit
AC current	ACA	2-200 mA-10 A
resolution	μ A	1 μ A
accuracy		$\pm 1 \% + 3$ digits
Resistance	Ω	200 Ω -2-20 K Ω -2-20 M Ω
resolution	Ω	0.1 Ω
accuracy		$\pm 0.8 \% + 1$ digit
Capacitance	F	2-200 nF-100 μ F
resolution	pF	1 pF
accuracy		$\pm 4 \% + 3$ digit
Frequency	KHz	2-20 KHz
resolution	Hz	1 Hz
accuracy		$\pm 1.5 \% + 5$ digits
Temperature	$^{\circ}$ C	-40 - +1000 $^{\circ}$ C
resolution		1 $^{\circ}$ C
accuracy		$\pm 1 \% + 3$ digits
Automatic off after	min	15
Battery	V	1 pcs 9 V (6F22)
Dimension	mm	179x88x39
Weight	g	380
Extra test leads		128600202
Extra temp probe		128600301
Extra multi socket		128590205



Limit

Digital multimeter for auto and engine mechanics. Large display, shows as well as measurement value also correct input for test leads and selected function. Measuring DC/AC voltage, DC current, resistance, capacity. Dwell and engine tach. Also diode test, continuity test with buzzer, datahold, low battery capacity warning.

Supplied complete with test leads and battery and English manual. Rubber cover and bench stand.

Max. display 1999. Safety insulation CAT II 1000 V / CAT III 600 V, IEC 61010.

Code no.		128580107
Orig. no.		Limit 500 Auto
DC voltage	DCV	200 mV-2-20-200-1000 V
resolution	mV	0.1 mV
accuracy		$\pm 0.5 \% + 5$ digits
AC voltage	ACV	2-20-200-750 V
resolution	mV	1 mV
accuracy		$\pm 0.8 \% + 5$ digits
DC current	DCA	200 mA-10 A
resolution	μ A	0.1 μ A
accuracy		$\pm 0.8 \% + 5$ digits
Resistance	Ω	200 Ω -2-20-200 K Ω -2-20- M Ω
resolution		0.1 Ω
accuracy		$\pm 0.8 \% + 5$ digits
Dwell: resolution		0.1 $^{\circ}$
accuracy		$\pm 3 \% + 5$ digits
Engine tach: resolution		10 rpm
accuracy		$\pm 1.5 \% + 5$ digits
Battery	V	1 pcs 9 V (6F22)
Dimension	mm	179x88x39
Weight	g	380
Extra test leads		128600202





Multimeters

Digital multimeter with autorange and large display with backlight. Measuring DC/AC voltage, DC/AC current, resistance, capacity, frequency, temperature. Also diode test continuity test with buzzer, datahold, low battery capacity warning. Automatic off. Supplied complete with test leads, temperature probe type K and English manual. Rubber cover and bench stand.
Max. display 3999. Safety insulation CAT III 1000 V /CAT IV 600 V, IEC 61010. Fused to max. 10 A.

Code no.		128570108
Orig. no.		Limit 600
DC voltage	DCV	400 mV-4-40-400-1000 V
resolution		0.1 mV
accuracy		$\pm 0.8\% + 1$ digit
AC voltage	ACV	4-40-400-750 V
resolution	mV	1 mV
accuracy		$\pm 1\% + 5$ digits
DC current	DCA	400-4000 μ A-40-400 mA-10 A
resolution	μ A	0.1 μ A
accuracy		$\pm 1\% + 2$ digits
AC current		400-4000 μ A-40-400 mA-4-10 A
resolution	mA	0.11 μ A
accuracy		$\pm 1.5\% + 6$ digits
Resistance	Ω	400 Ω -4-40-400 K Ω -4-40 M Ω
resolution	Ω	1 Ω
accuracy		$\pm 1\% + 2$ digits
Capacitance	F	40-400 nF-4-40-100 μ F
resolution	F	10 pF
accuracy		$\pm 3\% + 5$ digits
Frequency	Hz	10 Hz-10 MHz
resolution	Hz	1 Hz
accuracy		$\pm 0.1\% + 3$ digits
Temperature	$^{\circ}$ C	-40 - +1000 $^{\circ}$ C
resolution		0.1
accuracy		$\pm 1\% + 3$ digits
Automatic off after	min	30
Battery	V	1 pcs 9 V (6F22)
Dimension	mm	177x85x39
Weight	g	300
Extra test leads		128600202
Extra temp probe		128600301

Clamp multimeters

Digital clamp multimeter with autorange. Measures DC/AC voltage DC/AC current, Resistance, Frequency. Also surge Current measurement, Max/Min mode, true RMS for AC voltage, testing diode, continuity with buzzer, datahold, low battery capacity warning.
Supplied completely with test leads, carrying case, battery and manual.
Max display 6666. Safety isolation CAT II 600V/ CAT III 300 V, IEC 61010.



Code no.		144860103
Orig. no.		Limit 23
DC Voltage		6.6-66-600 V
Resolution		0.1 mV
Accuracy		$\pm 0.8\% + 1$ digit
AC Voltage		6.6-66-600 V
Resolution		1 mV
Accuracy		$\pm 1.2\% + 5$ digits
DC Current		66-1000 A
Resolution		0.01 A
Accuracy		$\pm 1.5\% + 8$ digit
AC Current		66-1000 A
Resolution		0.01 A
Accuracy		$\pm 2\% + 8$ digits
Resistance		660 Ω -46.6-66-600 K Ω -6.6-66 M Ω
Resolution		0.1 Ω
Accuracy		$\pm 1.2\% + 2$ digits
Frequency		660 Hz-6.6-66-660 KHz-6.6-66 MHz
Resolution		0.1 Hz
Accuracy		$\pm 0.1\% + 3$ digits
Duty cycle		0.1%-99.9%
Battery		9 V (6F22)
Dimension		285x105x45 mm
Weight		533 g

Multimeters

Clamp multimeters

Digital clamp multimeter with autorange.

Measures DC/AC voltage DC/AC current, Resistance, Frequency. Also testing diode, continuity with buzzer, datahold, low battery capacity warning.

Supplied completely with test leads, carrying case, battery and manual.

Max display 3999. Safety isolation CAT II 600V/ CAT III 300 V, IEC 61010.

Code no.	144870102
Orig. no.	Limit 21
DC Voltage	400 mV-4-40-400-600 V
Resolution	0.1 mV
Accuracy	$\pm 0.8\% + 1$ digit
AC Voltage	4-40-400-600 V
Resolution	1 mV
Accuracy	$\pm 1\% + 5$ digits
DC Current	40-400 A
Resolution	0.01 A
Accuracy	$\pm 2\% + 3$ digits
AC Current	40-400 A
Resolution	0.01 A
Accuracy	$\pm 2.5\% + 5$ digits
Resistance	400 Ω -4-40-400 K Ω -4-40 M Ω
Resolution	0.1 Ω
Accuracy	$\pm 1\% + 2$ digits
Frequency	10 Hz-1 MHz
Resolution	0.001 Hz
Accuracy	$\pm 0.1\% + 3$ digits
Duty cycle	0.1%-99.9%
Battery	9 V (6F22)
Dimension	210x76x30 mm
Weight	200 g



Limit

Digital clamp multimeter with autorange. Measures DC/AC voltage, AC current, resistance. Also testing diode, continuity with buzzer, datahold, low battery capacity warning. Automatic off.

Supplied with test leads, carrying case, battery and English manual.

Max. display 1999. Safety insulation CAT II 600 V/CAT III 300 V, IEC 61010.

Code no.	128560109
Orig. no.	Limit 20
DC voltage	DCV
resolution	200 mV-2-20-600 V
accuracy	100 mV
AC voltage	ACV
resolution	$\pm 0.8\% + 1$ digit
accuracy	2-20-200-600 V
AC current	ACA
resolution	1 mV
accuracy	$\pm 1.2\% + 5$ digits
Resistance	Ω
resolution	2-20-200-400 A
accuracy	1 mA
Automatic off after	$\pm 4\% + 5$ digits
Battery	200 Ω 2-20-200 K Ω 2-20 M Ω
Dimension	0.1 Ω
Weight	$\pm 1\% + 2$ digits
	15
	2 pcs 1.5 V (LR06)
	208x76x30
	260

Extra test leads

128600202



Voltage testers



144890100



144890209

Voltage and continuity tester with 3 phase rotation detection. Distinguish between phase and zero. Checking function of earth leakage circuit breaker. Single hand test on 19 mm wallsockets. Buzzer indicate continuity. Shows DCV polarity + or -. Flashlight in handle. Automatic on and off. Supplied with battery, probe tips protection and manual.

Safety isolation CAT IV 600 V, IEC 61010. Water and dust protection IP 65. Limit 110. Ledlights shows voltage in 7 levels. 12-24-50-120-230-400-690 V. Limit 112. Display shows real voltage value and also ledlights in 7 levels.

Code no.	144890100	144890209
Orig. no.	Limit 110	Limit 112
Display	No	Yes
Ledlights.	Yes	Yes
Voltage DCV/ACV.	12-690	12-690
Continuity	Summer	Summer
Battery	2 pcs 1.5V AA	2 pcs 1.5V AA
Dimension mm	260x56x20	260x56x20

Voltage detector



Controll of electrical voltage or not in conductors, wallsocket etc. Distinguish between phase and zero. Non-contact, just place the tip near an AC voltage conductor. Led flash and buzzer when conductor is live. Buzzer can be turned off. Both automatic and manuel off. The instrument is continual checking function and battery status by regular ledflash. Supplied with battery and manual. Safety isolation CAT IV 1000V.

Code no.	145010104
Orig. no.	Limit 100
Voltage AC	90-1000
Dimension mm	18x150
Battery V	2 pcs 1.5V AAA

Tachometer



Digital reading. Combined photo measuring alternative mechanical contact measuring. **Photo measuring.** Point the instrument against a reflecting tape or other contrast part on the rotating object. Measuring distance 50-150 mm. **Contact measuring.** Measuring rev/min or surface speed. Press measuring ring/point against center of the rotating object for rpm reading. Alternative press measuring wheel against surface of the object for speed reading. Memory for last measured value and max and min value. Supplied with english manual. Batteries are not included. Battery 4 pcs 1.5 V LR06.

Code no.	132370107
Orig. no.	Limit 2000
Range: Photo rpm	2.5-100 000
Contact. rpm	2.5-20 000
Contact. m/min	0.05-2000
Contact. Ft/min	0.02-6560
Spare reflecting tape 5x350mm	132370206
Spare measuring points 3 pcs	132370305

Torque tester

Digital torque wrench tester for click type torque wrenches. Solid and simple to use. Torque value on wrench can be compared to real value shown on the tester display. Accuracy of $\pm 1\%$ over the range 35-350 Nm.

Supplied with a traceable calibration for clockwise direction.

Code no.		135280105
Type		Limit TC 350
Range	Nm	35-350
Range	lbf.ft	25-250
For square drive	inch	$\frac{1}{2}$



Tyre pressure tester

Digital instrument for measuring of tyre pressure for cars etc. Simple handling. Only one button for ON and shift between reading in PSI, BAR, kg/cm^2 or KPA. Automatic OFF after 10 sec.

Battery type CR2032.

Code no.		132350109
Orig. no.		Limit 3000
Measuring range	PSI	0-100
.....	BAR	0-7
.....	Kg/cm^2	P 3000
Spare battery		109600304



IR Thermometer / Flashlight

Infrared non-contact thermometer for measuring surface temperature in one side. Combined with flashlight in the other side.

Aim the thermometer at the target and press button. Read the temperature on the display.

Battery type 5 pcs 1,5 V SR44.

Code no.		131560104
Orig.-no.		Limit 80
Measuring range	$^{\circ}\text{C}$	-33 - +110
Reading	$^{\circ}\text{C}$	0,2
Accuracy		$\pm 2,5^{\circ}\text{C}$ alternativ $\pm 2,5\%$
Emissivity factor		0,95
Distance / Area		0,95





IR Thermometer

Infrared non-contact thermometer for measuring temperature on most kind of surfaces. Automatic off after 6 seconds. Laser sight with on/off button. Switchable between °C and °F. Display backlight. Low battery voltage warning.

Code no.		139550107
Orig. no.		Limit 90
Temperature range	°C	-20 - +500
Temperature range	°F	-40 - +930
Resolution	°C	0.2
Accuracy		±2°C (120 - +100°C)
Accuracy		±2% (100 - 500°C)
Spot area : Distance		1 : 8
Emissivity		Fixed 0.95%
Operation temp.	°C	0-50
Storage temp.	°C	-10 - +60
Battery type		9V NEDA 1604 or 6F22 or 006P
Battery life	hrs	16



Rubber Hardness Tester

Digital hardness tester is designed to determine hardness of soft material as rubber, neoprene, silicon, vinyl etc. A spring loaded probe is hold against the specimen and the Shore A value shows on the display. The specimen surface should be flat and the instrument foot parallel to the specimen. The measurement area must have at least 12 mm diameter and distance to any edge at least 12 mm. Calibration can be made against attached testblock. Average value can be given from 2-9 measurements. Automatic Off after 1 minute.

The instrument meet standard as DIN 53505, ISO 868, ASTM D 2240.

Code no.		144850104
Orig. no.		Limit 4000
Range	Shore A	0-100
Min. specimen thickness	mm	6
Accuracy	%	±1
Operation temperature	°C	0-50
Humidity	%	0-80
Battery	V	1.5 (4 pcs LR03 AAA)
Weight	g	170



Coating Thickness Gauge

Digital coating thickness gauge for measure thickness of coating. E.g. paint, plastic, porcelain, enamel, copper, zinc, aluminium, chrome galvanizing layer on magnetic and non-magnetic materials. Calibration can be made against attached foils. Automatic Off after 2 minutes.

Code no.		144830106
Orig. no.		Limit 5100
Range	µm	0-1000
Reading 0-100 µm	µm	0.1
Reading 100-1000 µm	µm	1
Accuracy		±2.5 µm or 1-3%
Battery		4 pc 1.5V LR03 AAA



Ultrasound Thickness Gauge

Digital thickness gauge to measure thickness of most kind of homogeneous material. Ultrasound technology can be recommended when the object only is reached from one side. Eg pipes, tanks, cisterns, design of glass.

Suitable materials for sound technology are most metals, glass and plastics. Conditions for accuracy measurement is that material is homogeneous, surface is smooth and both sides are parallel. Automatic Off after 2 minutes.

Code no.		144840105
Orig. no.		Limit 5500
Range	mm	1.2-200
Reading	mm	0.1
Probe Ø	mm	10
Accuracy 1-10 mm	mm	±0.4
Accuracy 10-100 mm	mm	±0.4 + 1%
Accuracy 100-250 mm	mm	±3%
Operation temperature	°C	0-50
Humidity	% RH	0-80
Battery		4 pc 1.5V LR03 AAA
Weight	g	165

Sound Level Meter

Digital soundmeter. Two different weightings A or C and two response times Fast and Slow. With A-weighting the frequency responds to the human ear and is commonly used for environmental measurements. C-weightings is a much flatter response and is suitable for the sound level analysing of machines, engines etc. Fast response time to capture noise peaks and noises that occur very quickly. Slow response time to monitor a sound that has a consistent noise level or to average quickly changing levels. Select equivalent with adjustable time period from 10 sec to 24 hours to get an average value over a longer period. Memory for 30 groups of measurement. The instrument can also be connected to PC for registration of data. Max value function. Alarm function, select an alarm value and the instrument shows with LED-lamp when sound level is over value, and percent of all readings over alarm value. Adjustable manual or automatic off. Built in calibration signal 94 dB. Standard IEC 651 Type 2, ANSI 1,4 Type 2.

Code no.		151520103
Orig. no.		Limit 7000
Measuring range	dB	30-130
Reading	dB	0,1
Accuracy	dB	±1
Response time Fast	ms	125
Response time Slow	sec	1
Time periods		10 sec, 1 min, 5 min 10 min, 15 min, 30 min 1 h, 8 h, 24 h
Memory	groups	30
Frequency range	Hz	20-12500
Battery		4 pcs 1,5V LR03 AAA
Dimension	mm	236x63x26
Weight	g	170
Cable and software for PC. Connection RS-232....		151520202
External Soundcalibrator 94 and 114 dB		151520301
Battery eliminator		151520400



Limit

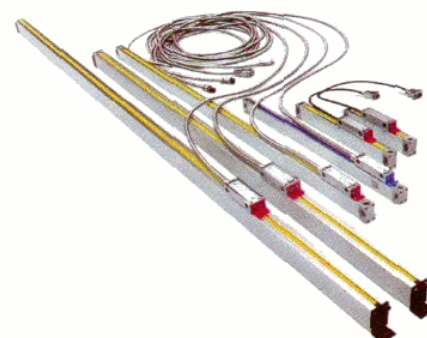
Digital Linear Scales and Readout



151390101



151390200



Linear scales

For milling machines and lathe machines.

151390101 Readout digital display for 3-axis milling machines. Complete with holding arm and assembling kit.

151390200 Readout digital display for lathe machines. Complete with holding arm and assembling kit.

Linear scales. Complete with cable, cover and assembling kit.

Readout digital display.....		No		151390101		151390200	
Limit				DRO-3M		DRO-2L	
Suitable for.....				milling machines		lathe machines	
Linear scales....		151390309	151390408	151390507	151390606	151390705	151390804
Length	mm	150	200	250	300	400	500
Linear scales....		151390903	151391000	151391109	151391208	151391307	151391406
Length	mm	600	700	800	900	1000	1200
Linear scales....		151391505	151391604	151391703	151391802		
Length	mm	1400	1600	1800	2000		

Commercials



Commercials Battery tester

For standard batteries AA and AAA 1.5V. 6F22 9V, Button 1.55V.

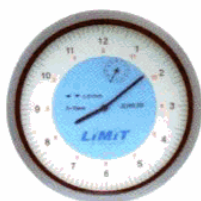
| **Code no.**..... | **139540108** |



USB memory

256 MB, leather cover with Limit logo.

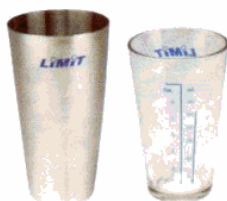
| **Stock no.**..... | **47099825** |



Wall clock

Wall clock with Limit logo.

| **Code no.**..... | **131062705** |



Shaker

Drink shaker with Limit logo. Staninless and glass.

| **Code no.**..... | **131060105** |



Display cabinet

For display Limit products. Lookable. 4 moveable shelves. Size 450 x 450 mm.

| **Code no.**..... | **139410104** |

Limit