



BOWERS GROUP

THE ESSENTIAL METROLOGY CATALOGUE 14/15



Partners in Precision

INNOVATIVE NEW PRODUCTS THROUGHOUT THIS ALL-INCLUSIVE, EASY TO USE REFERENCE



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For our full range of Spares & Accessories visit bowers.co.uk

Visit www.bowers.co.uk for latest pricing

Quality Guaranteed

Our ongoing commitment to quality can easily be seen by our success in achieving the quality standard of: **ISO 9001:2008**.

Having attained BSI registration, first back in April 1995, we believe that we offer a service second to none in the supply of precision measuring equipment. With over 5000 items of equipment in our catalogue, our fully computerised distribution procedure enables "same day despatch" on the majority of stock items.

All products are fully traceable to source at all times and are constantly scrutinised by our strict BSI procedures.



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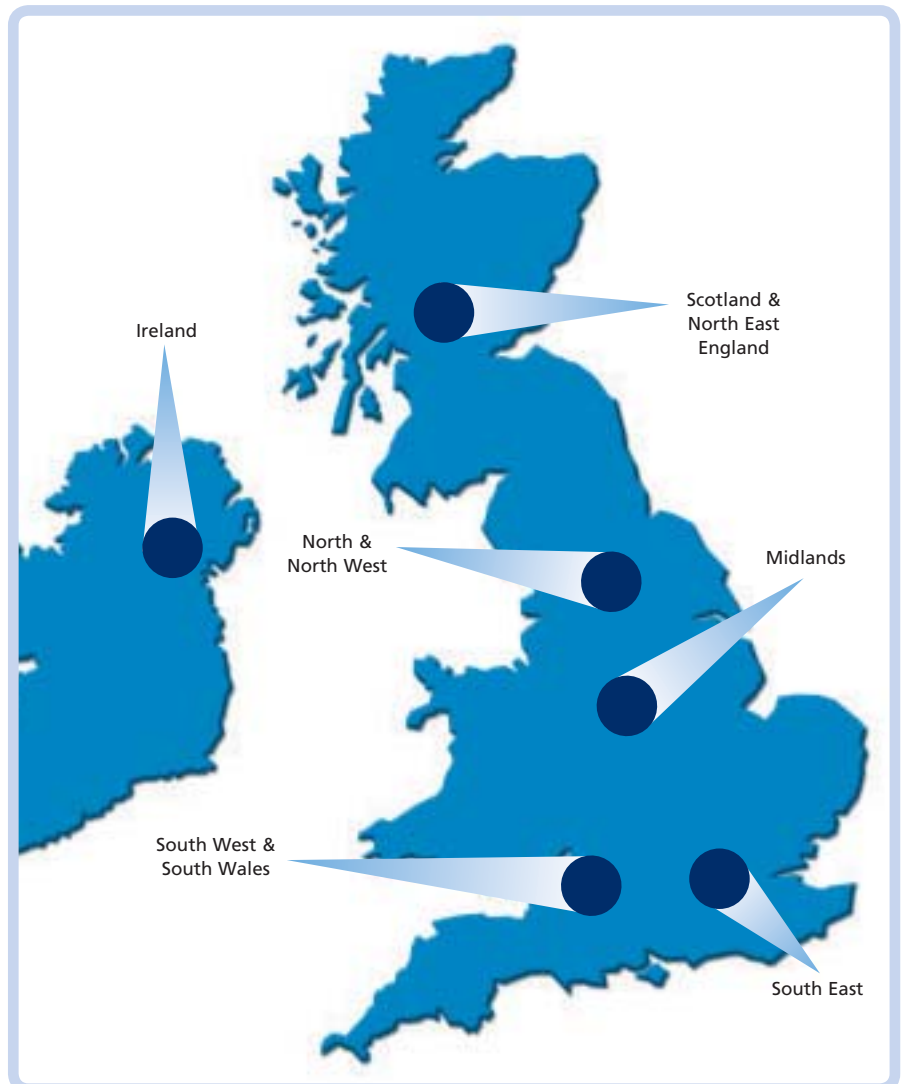
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BOWERS GROUP

Bowers Group

As a leading supplier of quality metrology instruments to organisations throughout the world, Bowers Group has developed into a respected global leader in the field of measurement. Our first-class reputation has been built on the continuing Group ethos of striving for excellence in both the comprehensive range of products that we supply and the many quality services that we provide to our customers. The Group's aim is to build on its hard-won reputation and continue to exceed customers' expectations.

Reflecting the all-inclusive nature of our products and services, Bowers UK provides British industry with the widest choice of cost effective, quality measuring instruments currently available. Supplementing Bowers' own famous range of gauges, our enviable 'sole UK agent' status means that we can offer superior products from many pre-eminent metrology companies, such as Trimos, Sylvac, Gagemaker, Innovatest and Wyler. Bowers' diverse range of quality measuring instruments allows us to offer cost effective solutions to UK industries' measuring challenges. Helping in the decision making process, our network of skilled Sales Engineers is happy to give on-site demonstrations of our full product range.



Baty International

Baty International is one of the world's leading manufacturers of Optical Profile Projectors, Co-ordinate Measuring Systems and Gauging Products. Baty's product range includes two dimensional (profile measuring) equipment and full 3 dimensional (coordinate measuring) systems. Baty also services and calibrates contact and non contact dimensional measuring equipment. Baty products are for industrial, manufacturing and professional use, on the shop-floor, in tool rooms, and in other areas where precision measurement is critical.



Moore & Wright

Founded in 1906 by innovative young engineer Frank Moore, Moore & Wright has been designing, manufacturing and supplying precision measuring equipment to global industry for over 100 years. With roots fixed firmly in Sheffield, the company began by manufacturing a range of calipers, screwdrivers, punches and other engineer's tools.

Now part of Bowers Group, Moore & Wright continues its commitment to supplying industry with high quality, affordable products. Its ongoing pledge to research and development ensures that Moore & Wright remains at the forefront of global innovation.



CV Instruments

With the largest selection of portable and bench hardness testers currently available within the UK, the CV arm of Bowers Group has evolved into an all-inclusive material testing quality instrument supplier, with cost effective solutions to coating thickness, surface finish and many other disciplines now available.

Our full range of Bowers, Moore & Wright, Baty International and CV Instruments products can now be found in this catalogue, making it your complete guide to metrology.

Analogue Bore Gauges

Bowers XT Analogue Bore Gauges are an economical solution to accurate shop-floor bore measurement. The extended mechanical travel of these advanced two or three point gauges ensures that exchanging measuring anvils is now unnecessary. Their wide application range, 2-300mm, rugged construction and easy read scale, ensure both accuracy and ease of use. XT measuring heads and setting rings are supplied with UKAS certification.



Features

- Range 2-300mm (0.080"-12")
- 2-6mm 2 point / 6-300mm 3 point measurement
- Graduation 2-6mm: 0.001mm, 6-300mm: 0.005mm
- Tungsten carbide measuring faces on all 3-point heads from 12.5mm
- Blind bore measurement from 2mm-6mm and above 12.5mm (0.500")
- Extensions available above 6mm for deep hole measurement
- Ratchet stop to ensure consistent measurement
- Setting rings included with individual instruments and sets
- UKAS certificates supplied as standard with all setting rings
- UKAS certificate supplied as standard with all XT mechanical micrometers
- Serial number on all gauges
- Bore gauges manufactured according to DIN 863, part 4
- Supplied in fitted wooden case

XT SETTING RINGS

Code No	Setting Ring (mm)	Code No	Setting Ring (inch)
XTR3M	2.5	XTR3I	0.1000
XTR5M	4.00	XTR5I	0.1600
XTR7M	5.00	XTR7I	0.2000
XTR8M	8.00	XTR8I	0.3125
XTR12M	12.50	XTR12I	0.500
XTR20M	20.00	XTR20I	0.750
XTR35M	35.00	XTR35I	1.375
XTR65M	65.00	XTR65I	2.625
XTR80M	80.00	XTR80I	3.250
XTR125M	125.00	XTR125I	5.000
XTR175M	175.00	XTR175I	7.000
XTR225M	225.00	XTR225I	9.000
XTR275M	275.00	XTR275I	11.000



Analogue Bore Gauges

TECHNICAL SPECIFICATION: Individual instruments supplied with setting ring and UKAS

Code No	Range (mm)	Accuracy (mm)	Depth (mm)	Setting Ring (mm)
XTA1M	2-2.5	0.004	9	2.50
XTA2M	2.5-3	0.004	9	2.50
XTA3M	3-4	0.004	12	4.00
XTA4M	4-5	0.004	18	4.00
XTA5M	5-6	0.004	18	5.00
XTA6M	6-8	0.004	58	8.00
XTA8M	8-10	0.004	58	8.00
XTA10M	10-12.5	0.004	58	12.50
XTA12M	12.5-16	0.004	62	12.50
XTA16M	16-20	0.004	62	20.00
XTA20M	20-25	0.004	66	20.00
XTA25M	25-35	0.004	66	35.00
XTA35M	35-50	0.004	80	35.00
XTA50M	50-65	0.005	80	65.00
XTA65M	65-80	0.005	80	65.00
XTA80M	80-100	0.005	100	80.00
XTA100M	100-125	0.006	115	125.00
XTA125M	125-150	0.006	115	125.00
XTA150M	150-175	0.007	115	175.00
XTA175M	175-200	0.007	115	175.00
XTA200M	200-225	0.008	118	225.00
XTA225M	225-250	0.008	118	225.00
XTA250M	250-275	0.009	118	275.00
XTA275M	275-300	0.009	118	275.00

Code No	Range (inch)	Accuracy (inch)	Depth (inch)	Setting Ring (inch)
XTA1I	0.080-0.100	0.00015	0.35	0.1000
XTA2I	0.100-0.120	0.00015	0.35	0.1000
XTA3I	0.120-0.160	0.00015	0.47	0.1600
XTA4I	0.160-0.200	0.00015	0.70	0.1600
XTA5I	0.200-0.250	0.00015	0.70	0.2000
XTA6I	1/4-5/16	0.00015	2.28	0.3125
XTA8I	5/16-3/8	0.00015	2.28	0.3125
XTA10I	3/8-1/2	0.00012	2.28	0.500
XTA12I	1/2-5/8	0.00015	2.44	0.500
XTA16I	5/8-3/4	0.00015	2.44	0.750
XTA20I	3/4-1	0.00015	2.62	0.750
XTA25I	1-1 3/8	0.00015	2.62	1.375
XTA35I	1 3/8-2	0.00015	3.15	1.375
XTA50I	2-2 5/8	0.00020	3.15	2.625
XTA65I	2 5/8-3 1/4	0.00020	3.15	2.625
XTA80I	3 1/4-4	0.00020	3.94	3.250
XTA100I	4-5	0.00025	4.53	5.000
XTA125I	5-6	0.00025	4.53	5.000
XTA150I	6-7	0.00030	4.53	7.000
XTA175I	7-8	0.00030	4.53	7.000
XTA200I	8-9	0.00030	4.65	9.000
XTA225I	9-10	0.00030	4.65	1.375
XTA250I	10-11	0.00035	4.65	11.000
XTA275I	11-12	0.00035	4.65	11.000

SETS: Supplied with individual instrument, setting rings and UKAS

Range (mm)	Code No	Measuring Head	Setting Ring	Range (inch)	Code No
2-3	SXTA1M	2	1	0.080-0.120	SXTA1I
3-6	SXTA2M	3	2	0.120-0.250	SXTA2I
6-10	SXTA3M	2	1	1/4-3/8	SXTA3I
10-20	SXTA4M	3	2	3/8-3/4	SXTA4I
20-50	SXTA5M	3	2	3/4-2	SXTA5I
50-100	SXTA6M	3	2	2-4	SXTA6I
100-150	SXTA7M	2	1	4-6	SXTA7I
150-200	SXTA8M	2	1	6-8	SXTA8I



SXTA5M

EXTENSIONS

Code No	Length (mm)	Length (inch)	To Fit Heads (mm)	To Fit Heads (inch)
EGX0200	63	2.5	6-10	1/4-3/8
EGX0400	76	3.0	10-12.5	3/8-1/2
EGX0500	100	4.0	12.5-20	1/2-3/4
EGX0001	150	6.0	20-50	3/4-2
EGX0004	150	6.0	50-300	2-12



Blind Bore measuring above 12.5mm diameter (0.500")

Digital Bore Gauges

Bowers XT Digital Xtreme internal micrometers give the operator the advantage of traditional quality ratchet gauges allied to advanced IP65 electronics. The extended mechanical travel of the XT range means that special heads can also be manufactured to accommodate users most awkward measuring problems. Measuring heads for threads, splines slots, grooves, deep-holes and many more applications are available on request. For applications please see pages 14-19.

The Bowers XT range of internal micrometers can be supplied as individual instruments or in complete sets. All XT instruments give the user the advantage of extended measuring travel with fixed anvils and UKAS certification of both measuring head and setting ring as standard.



Features

- IP65 Electronics
- Simple 2-button operation
- Large easy-to-read display
- 3 preset memories
- RS-232C output
- Range 2-300mm (0.080"-12")
- 2-6mm 2 point/ 6-300mm 3 point measurement
- Resolution 0.001mm/0.00005"
- Tungsten carbide measuring faces on all 3-point heads from 12.5mm
- Blind bore measurement from 2mm - 6mm and above 12.5 mm (0.500")
- Extensions available above 6mm for deep hole measurement
- Ratchet stop to ensure consistent measurement
- Setting rings included with individual instruments and sets
- UKAS certificates supplied as standard with all setting rings
- UKAS certificates supplied as standard with all gauges
- Serial number on all digital readouts and measuring heads
- Heads with special anvils available to suit specific customer requirements (e.g. Threads, grooves, 2-point, spherical, splines etc)
- Bore gauges manufactured according to DIN 863, part 4
- Supplied in fitted wooden case

Available Late 2014 - New Bowers XT3:

- IP67 Electronics Protection
- Bluetooth Low Energy Data Transmission - Option
- Bi-directional (Duplex) communication
- Larger, clearer LCD display
- New ergonomic design



Digital Bore Gauges

TECHNICAL SPECIFICATION: Individual instruments supplied with digital display unit, head, ring and UKAS

Code No	Range (mm)	Accuracy (mm)	Depth (mm)	Setting Ring (mm)
XTD1M	2-2.5	0.004	9	2.50
XTD2M	2.5-3	0.004	9	2.50
XTD3M	3-4	0.004	12	4.00
XTD4M	4-5	0.004	18	4.00
XTD5M	5-6	0.004	18	5.00
XTD6M	6-8	0.004	58	8.00
XTD8M	8-10	0.004	58	8.00
XTD10M	10-12.5	0.004	58	12.50
XTD12M	12.5-16	0.004	62	12.50
XTD16M	16-20	0.004	62	20.00
XTD20M	20-25	0.004	66	20.00
XTD25M	25-35	0.004	66	35.00
XTD35M	35-50	0.004	80	35.00
XTD50M	50-65	0.005	80	65.00
XTD65M	65-80	0.005	80	65.00
XTD80M	80-100	0.005	100	80.00
XTD100M	100-125	0.006	115	125.00
XTD125M	125-150	0.006	115	125.00
XTD150M	150-175	0.007	115	175.00
XTD175M	175-200	0.007	115	175.00
XTD200M	200-225	0.008	118	225.00
XTD225M	225-250	0.008	118	225.00
XTD250M	250-275	0.009	118	275.00
XTD275M	275-300	0.009	118	275.00

SETS: Supplied with one digital display unit, heads, rings and UKAS

Code No	Range (mm)	Measuring Head	Setting Ring
SXTD1M	2-6	5	3
SXTD3M	6-10	2	1
SXTD4M	10-20	3	2
SXTD5M	20-50	3	2
SXTD6M	50-100	3	2
SXTD7M	100-150	2	1
SXTD8M	150-200	2	1
SXTD9M	100-200	4	2

SETS: Supplied with digital display unit with each head, rings and UKAS

Code No	Range (mm)	Measuring Head	Setting Ring
SXTD3U	6-10	2	1
SXTD4U	10-20	3	2
SXTD5U	20-50	3	2
SXTD6U	50-100	3	2

DEPTH STOP

Code No	Range (mm)
DSTOP01	2-6

EXTENSIONS

Code No	Length (mm)	Length (inch)	To Fit Heads (mm)	To Fit Heads (inch)
EGX0200	63	2.5	6-10	1/4-3/8
EGX0400	76	3.0	10-12.5	3/8-1/2
EGX0500	100	4.0	12.5-20	1/2-3/4
EGX0001	150	6.0	20-50	3/4-2
EGX0004	150	6.0	50-300	2-12



SXTD5M



SXTD5U

Digital Pistol Grip Bore Gauge

Bowers XT Holematic Xtreme bore gauge incorporates an ergonomic pistol grip handle with an advanced trigger action, giving the user the advantages of both speed of operation and a constant measuring pressure. The clear digital display, superior IP65 electronics and application range of 2 to 300mm ensures ease of use and assured accuracy. For applications please see pages 14-19.

The XT Holematic pistol grip range of bore gauges can be supplied as individual instruments or in complete sets. All XT instruments give the user the advantage of extended measuring travel with fixed anvils and UKAS certification of both measuring head and setting ring as standard.



Features

- IP65 Electronics
- Simple 2-button operation
- Large easy-to-read swivel display
- 3 preset memories
- RS-232C output
- Self-centring heads
- Constant measuring pressure
- Fast, accurate measurement
- Range 2 - 300mm (0.080"-12")
- 2-6mm 2 point/ 6-300mm 3 point measurement
- Resolution 0.001mm (0.00005")
- Tungsten carbide measuring faces on all 3-point heads from 12,5mm
- Blind bore measurement from 2mm - 6mm and above 12.5 mm (0.500")
- Extensions available above 6mm for deep hole measurement
- Setting rings included with individual instruments and sets
- UKAS certificates supplied as standard with all setting rings
- UKAS certificates supplied as standard with all pistol-grip gauges
- Serial number on all gauges and measuring heads
- Heads with special anvils available to suit specific customer requirements (e.g. Threads, grooves, 2-point, spherical, splines etc)
- Bore gauges manufactured according to DIN 863, part 4
- Supplied in fitted case



Available Late 2014 - New Bowers XT3:

- IP67 Electronics Protection
- Bluetooth Low Energy Data Transmission - Option
- Bi-directional (Duplex) communication
- Larger, clearer LCD display
- New ergonomic design



Digital Pistol Grip Bore Gauge

TECHNICAL SPECIFICATION: Individual instruments supplied with digital pistol grip, head, ring and UKAS

Code No	Range (mm)	Accuracy (mm)	Depth (mm)	Setting Ring (mm)
XTH1M	2-2.5	0.004	9	2.50
XTH2M	2.5-3	0.004	9	2.50
XTH3M	3-4	0.004	12	4.00
XTH4M	4-5	0.004	18	4.00
XTH5M	5-6	0.004	18	5.00
XTH6M	6-8	0.004	58	8.00
XTH8M	8-10	0.004	58	8.00
XTH10M	10-12.5	0.004	58	12.50
XTH12M	12.5-16	0.004	62	12.50
XTH16M	16-20	0.004	62	20.00
XTH20M	20-25	0.004	66	20.00
XTH25M	25-35	0.004	66	35.00
XTH35M	35-50	0.004	80	35.00
XTH50M	50-65	0.005	80	65.00
XTH65M	65-80	0.005	80	65.00
XTH80M	80-100	0.005	100	80.00
XTH100M	100-125	0.006	115	125.00
XTH125M	125-150	0.006	115	125.00
XTH150M	150-175	0.007	115	175.00
XTH175M	175-200	0.007	115	175.00
XTH200M	200-225	0.008	118	225.00
XTH225M	225-250	0.008	118	225.00
XTH250M	250-275	0.009	118	275.00
XTH275M	275-300	0.009	118	275.00

DEPTH STOP

Code No	Range (mm)
DSTOP01	2-6

EXTENSIONS

Code No	Length (mm)	Length (inch)	To Fit Heads (mm)	To Fit Heads (inch)
EGX0200	63	2.5	6-10	1/4-3/8
EGX0400	76	3.0	10-12.5	3/8-1/2
EGX0500	100	4.0	12.5-20	1/2-3/4
EGX0001	150	6.0	20-50	3/4-2
EGX0004	150	6.0	50-300	2-12

SETS: Supplied with digital display unit, heads, rings and UKAS

Code No	Range (mm)	Measuring Head	Setting Ring (inch)
SXTH1M	2-6	5	3
SXTH3M	6-10	2	1
SXTH4M	10-20	3	2
SXTH5M	20-50	3	2
SXTH6M	50-100	3	2
SXTH7M	100-150	2	1
SXTH8M	150-200	2	1

LARGE SETS: Supplied with digital pistol grip, heads, rings and UKAS

Code No	Range (mm)	Measuring Head	Setting Ring (inch)
SXTH10M	6-20	5	3
SXTH11M	20-100	6	4
SXTH9M	100-200	4	2



SXTH5M

XT500 Large Diameter 3-point Bore Gauge

The Bowers XT500 large diameter 3-point bore-gauge has been designed specifically for the measurement of internal diameters between 300 and 500mm. The newly designed constant-force digital readout ensures that the measuring pressure remains constant throughout the measurement whilst radiussed measuring anvils provide optimum centralisation in the part. Anvil sets are supplied in 25mm steps (300-325, 325-350 etc) and each set has been manufactured to the exact toleranced size. The 300-325mm anvils are the master reference set and are used for setting the gauge in the setting ring. The other anvil sets are then fitted as required without further re-setting. This means that only one 300mm setting ring is required to set the gauge for all diameters in the full 300-500mm range of the instrument.



ask for details



Features

- Measuring range: 300-500mm
- New constant-force digital readout
- Single 300mm setting ring covers full range
- Radiussed anvils of tool-steel for optimum centering
- Accuracy: 15µm
- Repeatability: 3µm
- IP65 electronics
- RS-232 output
- Resolution 0.01/0.001mm. Metric/inch switchable
- Fast accurate measurement
- Extensions available for deeper bores
- UKAS certificate with setting ring
- Certificate of conformity with bore gauge
- Supplied in fitted case



The Bowers XT500 with extension for deeper bores

INDIVIDUAL INSTRUMENTS: Supplied with digital display unit, measuring head with exchangeable anvils and setting ring with UKAS certificate

Code No	Range (mm)	Accuracy (µm)	Depth (mm)	Setting Ring (mm)
XT5001M	300-325	15	120	300
XT5002M	300-325, 325-350	15	120	300
XT5003M	300-325, 350-375	15	120	300
XT5004M	300-325, 375-400	15	120	300
XT5005M	300-325, 400-425	15	120	300
XT5006M	300-325, 425-450	15	120	300
XT5007M	300-325, 450-475	15	120	300
XT5008M	300-325, 475-500	15	120	300

SETS: Supplied with digital display unit, measuring head with exchangeable anvils and setting ring with UKAS certificate

Code No	Range (mm)
SXT3000M	300-400
SXT4000M	300-325, 400-500
SXT5000M	300-500



Digital Lever Bore Gauge

The robust new Bowers XTL Lever range is perfect for vertical bore measurement, providing accurate and repeatable bore gauging under inspection department or shop-floor conditions. The XTL has a simple ergonomic action and can be fitted with a wide variety of analogue and digital indicators or even transducer probes. The range can be provided with IP65 rated digital indicators, rendering it resistant to coolant, water and airborne particles. A 'wireless' gauge module is also available, enabling cable free communication with remote data collectors, PCs etc.

The cost-effective new XTL boasts hardwearing extended travel carbide measuring anvils and is able to measure diameters up to 100mm.

Bluetooth Available
ask for details

WiFi
see p249 for wireless options

RS232

Features

- Measuring range 6-100mm (diameters above 100mm on request)
- Excellent for vertical bore measurement
- Simple 2-button operation
- Large easy-to-read swivel display (20-100 sizes only)
- 2 preset memories
- RS-232C output
- Self-entering heads
- Constant measuring pressure
- Fast, accurate measurement
- Resolution 0.001mm (0.00005")
- Tungsten carbide measuring faces on all 3-point heads from 12.5mm
- Blind bore measurement above 12.5mm (0.500")
- Extensions available above 6mm for deep hole measurement
- Setting rings included with individual instruments and sets
- UKAS certificates supplied as standard with all setting rings
- UKAS certificates supplied with all gauges
- Serial number on all gauges and measuring heads
- Heads with special anvils available to suit specific customer requirements (e.g. Threads, grooves, 2-point, spherical, splines etc)
- Bore gauges manufactured according to DIN863, part4



SXTL4M

INDIVIDUAL INSTRUMENTS: Supplied with head, ring and UKAS certificates

Code No	Range (mm)	Accuracy (mm)	Depth (mm)	Setting Ring (mm)
XTL6M	6-8	0.004	58	8.00
XTL8M	8-10	0.004	58	8.00
XTL10M	10-12.5	0.004	58	12.50
XTL12M	12.5-16	0.004	62	12.50
XTL16M	16-20	0.004	62	20.00
XTL20M	20-25	0.004	66	20.00
XTL25M	25-35	0.004	66	35.00
XTL35M	35-50	0.004	80	35.00
XTL50M	50-65	0.005	80	65.00
XTL65M	65-80	0.005	80	65.00
XTL80M	80-100	0.005	85	80.00

SETS: Supplied with heads, rings and UKAS certificates

Code No	Range (mm)	Description
SXTL3M	6-10	Mini Indicator
SXTL4M	10-20	Mini Indicator
SXTL5M	20-50	Standard Indicator
SXTL6M	50-100	Standard Indicator

DATA TRANSMISSION - 6-20MM MINI INDICATOR

Code No	Description
30-905-4516	Powered Serial Data Output Cable
30-926-6821	Powered Opto / USB
25-604-013	Wireless Powered Opto Module

DATA TRANSMISSION - 20-100MM STD INDICATOR

Code No	Description
30-926-6723	Proximity Serial Data Output Cable
30-926-6721	Sylvac Proximity USB
25-604-064	Wireless Proximity Module

Electronic Bore Gauge - Ultima

Bowers Ultima Bore Gauge offers a choice of resolutions up to 0.0001mm. Featuring the NEW Bowers 'FASTFIT' measuring heads with extended measuring range (above 14mm), the Ultima boasts a simple lever operation and a constant measuring force, ensuring outstanding ease of use and repeatability under laboratory or shop-floor conditions.

WiFi
see p249 for wireless options

RS232



ULTIMA HOLDERS

Code No	Range (mm)
PH2	2-6
PH3	6-20
PH4	20-100
PH5	100-310

ULTIMA HOLDER TO SUPERBORE HEAD ADAPTER

Code No	Range (mm)
ULSBA01	6-8
ULSBA02	8-16
ULSBA03	16-100
ULSBA04	100-300

Features

- UKAS certificates standard for all measuring heads and setting rings
- Measuring range 2-310mm (0.080"-12.000")
- Resolution: 0.0001mm (0.00001")
- Constant spring pressure for improved repeatability
- Good positive feel as heads self-centre in the bore
- Bowers Fastfit measuring heads for rapid changeover
- Ceramic anvils on heads above 12mm
- Blind-bore measurement standard above 12mm
- Possible to connect several probe holders to one single readout to measure different bore sizes at one measuring station
- The complete range of Bowers special heads is available for the Ultima (grooves, threads, splines, deep-bores etc)
- Depth stops available for all heads
- Available without digital readout unit (if not required)
- Alternative Sylvac digital readouts available see pages 111-116
- Interchangeable probe option, to allow use of other manufacturers probes and displays



ULTIMA SPECIFICATION

Code No	Range (mm)	Range (inch)	Accuracy (mm)	Accuracy (inch)	Repeatability (mm)	Repeatability (inch)	Measuring Depth (mm)	Measuring Depth (inch)	Code	Setting Ring (mm)	Setting Ring (inch)	Holder Type
ULH6	2.0-2.5	0.078-0.098	0.0010	0.00004	0.0010	0.00004	9	0.35	ULR2	2.5	0.098	PH2
ULH7	2.5-3.0	0.098-0.118	0.0010	0.00004	0.0010	0.00004	9	0.35	ULR2	2.5	0.098	PH2
ULH8	3.0-4.0	0.118-0.157	0.0010	0.00004	0.0010	0.00004	12	0.47	ULR4	4	0.157	PH2
ULH9	4.0-5.0	0.157-0.197	0.0010	0.00004	0.0010	0.00004	18	0.71	ULR5	5	0.197	PH2
ULH10	5.0-6.0	0.197-0.236	0.0010	0.00004	0.0010	0.00004	18	0.71	ULR5	5	0.197	PH2
ULH11	6-8	0.236-0.315	0.0010	0.00004	0.0010	0.00004	60	2.36	ULR8	8	0.315	PH3
ULH12	8-10	0.315-0.393	0.0010	0.00004	0.0010	0.00004	60	2.36	ULR8	8	0.315	PH3
ULH13	10-12	0.393-0.472	0.0010	0.00004	0.0010	0.00004	61	2.40	ULR12	12	0.472	PH3
ULH14	12-14	0.472-0.550	0.0010	0.00004	0.0010	0.00004	61	2.40	ULR12	12	0.472	PH3
ULH15	14-17	0.550-0.670	0.0010	0.00004	0.0010	0.00004	61	2.40	ULR17	17	0.670	PH3
ULH16	17-20	0.670-0.787	0.0010	0.00004	0.0010	0.00004	61	2.40	ULR17	17	0.670	PH3
ULH17	20-24	0.787-0.945	0.0010	0.00004	0.0010	0.00004	69	2.72	ULR24	24	0.945	PH4
ULH18	24-28	0.945-1.100	0.0010	0.00004	0.0010	0.00004	69	2.72	ULR24	24	0.945	PH4
ULH19	28-32	1.100-1.260	0.0010	0.00004	0.0010	0.00004	69	2.72	ULR32	32	1.260	PH4
ULH20	32-38	1.260-1.500	0.0010	0.00004	0.0010	0.00004	72	2.83	ULR32	32	1.260	PH4
ULH21	38-44	1.500-1.730	0.0010	0.00004	0.0010	0.00004	72	2.83	ULR44	44	1.730	PH4
ULH22	44-50	1.730-1.970	0.0010	0.00004	0.0010	0.00004	72	2.83	ULR44	44	1.730	PH4
ULH23	50-60	1.970-2.360	0.0015	0.00006	0.0015	0.00006	80	3.15	ULR60	60	2.360	PH4
ULH24	60-70	2.360-2.756	0.0015	0.00006	0.0015	0.00006	80	3.15	ULR60	60	2.360	PH4
ULH25	70-80	2.756-3.150	0.0015	0.00006	0.0015	0.00006	80	3.15	ULR80	80	3.150	PH4
ULH26	80-90	3.150-3.543	0.0015	0.00006	0.0015	0.00006	80	3.15	ULR80	80	3.150	PH4
ULH27	90-100	3.543-3.940	0.0015	0.00006	0.0015	0.00006	80	3.15	ULR100	100	3.940	PH4
ULH28	100-110	3.940-4.330	0.0015	0.00006	0.0015	0.00006	80	3.15	ULR100	100	3.940	PH5
ULH29	110-120	4.330-4.725	0.0015	0.00006	0.0015	0.00006	80	3.15	ULR120	120	4.725	PH5
ULH30	120-130	4.725-5.120	0.0015	0.00006	0.0015	0.00006	80	3.15	ULR120	120	4.725	PH5
ULH31	130-140	5.120-5.510	0.0015	0.00006	0.0015	0.00006	80	3.15	ULR140	140	5.510	PH5
ULH32	140-150	5.510-5.900	0.0015	0.00006	0.0015	0.00006	80	3.15	ULR140	140	5.510	PH5
ULH33	150-160	5.900-6.300	0.0015	0.00006	0.0015	0.00006	80	3.15	ULR160	160	6.300	PH5
ULH34	160-170	6.300-6.690	0.0015	0.00006	0.0015	0.00006	80	3.15	ULR160	160	6.300	PH5
ULH35	170-180	6.690-7.090	0.0015	0.00006	0.0015	0.00006	80	3.15	ULR180	180	7.090	PH5
ULH36	180-190	7.090-7.480	0.0015	0.00006	0.0015	0.00006	80	3.15	ULR180	180	7.090	PH5
ULH37	190-200	7.480-7.875	0.0015	0.00006	0.0015	0.00006	80	3.15	ULR200	200	7.875	PH5
ULH38	200-210	7.875-8.270	0.0015	0.00006	0.0015	0.00006	80	3.15	ULR200	200	7.875	PH5
ULH39	210-220	8.270-8.661	0.0020	0.00008	0.0020	0.00008	80	3.15	ULR220	220	8.661	PH5
ULH40	220-230	8.661-9.055	0.0020	0.00008	0.0020	0.00008	80	3.15	ULR220	220	8.661	PH5
ULH41	230-240	9.055-9.449	0.0020	0.00008	0.0020	0.00008	80	3.15	ULR240	240	9.449	PH5
ULH42	240-250	9.449-9.842	0.0020	0.00008	0.0020	0.00008	80	3.15	ULR240	240	9.449	PH5
ULH43	250-260	9.842-10.236	0.0020	0.00008	0.0020	0.00008	80	3.15	ULR260	260	10.236	PH5
ULH44	260-270	10.236-10.630	0.0020	0.00008	0.0020	0.00008	80	3.15	ULR260	260	10.236	PH5
ULH45	270-280	10.630-11.024	0.0020	0.00008	0.0020	0.00008	80	3.15	ULR280	280	11.024	PH5
ULH46	280-290	11.024-11.417	0.0020	0.00008	0.0020	0.00008	80	3.15	ULR280	280	11.024	PH5
ULH47	290-300	11.417-11.811	0.0020	0.00008	0.0020	0.00008	80	3.15	ULR300	300	11.811	PH5
ULH48	300-310	11.811-12.200	0.0020	0.00008	0.0020	0.00008	80	3.15	ULR300	300	11.811	PH5

ULTIMA STANDARD EXTENSIONS

Code No	Length (mm)	To Fit Heads (mm)
UEXT0200	63	6-10
UEXT0300	75	10-12
UEXT0001	100	12-20
UEXT0002	150	20-50
UEXT0004	150	50+

ULTIMA SHORT EXTENSIONS

Code No	Length (mm)	To Fit Heads (mm)
UXSH4	50	20-50
UXSH5	50	50+

ULTIMA SETS

Code No (with Sylvac D50S display)	Code No (without Sylvac D50S display)	Range (mm)
USET2	USET2W	2-6
USET3	USET3W	6-10
USET4	USET4W	10-20
USET7	USET7W	6-20
USET8	USET8W	20-50
USET9	USET9W	50-100
USET10	USET10W	20-100



USET8 20-50mm Set

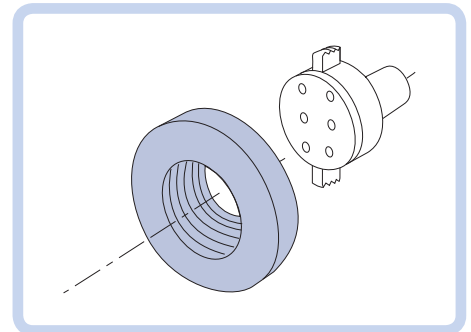
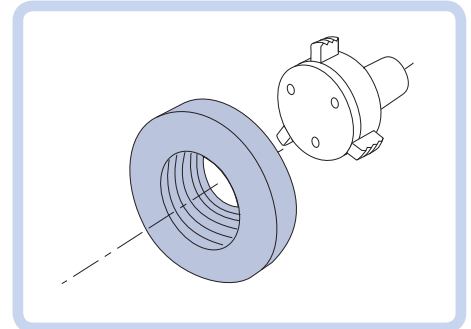
Special Bore Measurement

Although Bowers produces the most comprehensive series of bore gauges and internal measuring equipment available, not all applications can be covered by our standard instrument range. In line with our customer care ethos, Bowers has earned a reputation for manufacturing special heads for measuring non-standard applications. The following information illustrates some of the many difficult measuring problems easily solved by these special heads.

Threads

Screw Threads

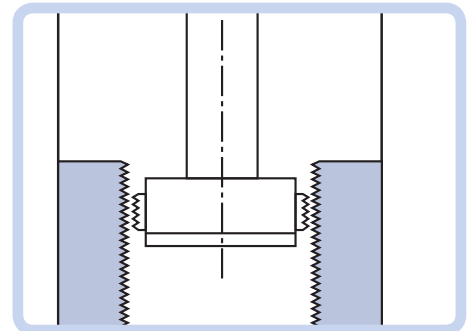
To measure effective (functional) diameter, pitch diameter, major diameter, between M4 - 300mm. / No. 8 UN - 12" diameter.



2 Point



3 Point



Ball Screw Threads

From \varnothing M10.



External Threads

External Thread





Special Bore Measurement - Grooves

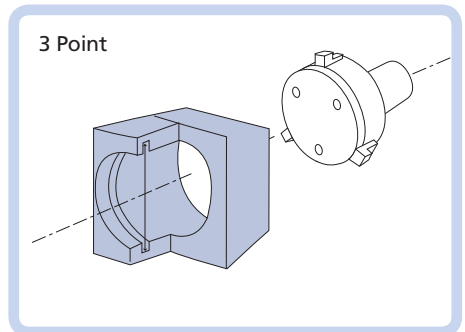
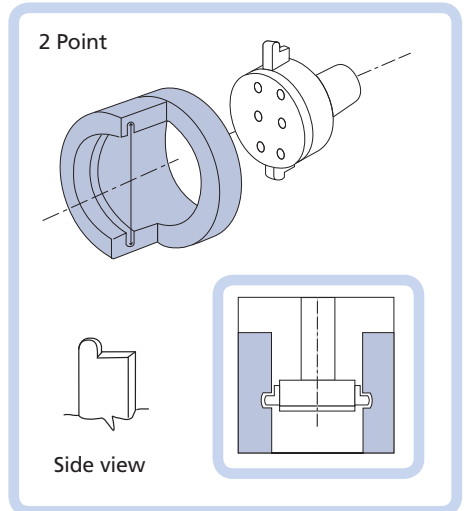
- Interchangeable with standard heads
- Suits Bowers XTD, XTH and Ultima
- Special forms, radius, ball contacts
- Depth stops available for quick location
- Annular grooves possible

Grooves

For sizes from 2-300mm diameter.



Groove Head with Depth Stop



Brake Caliper Measurement

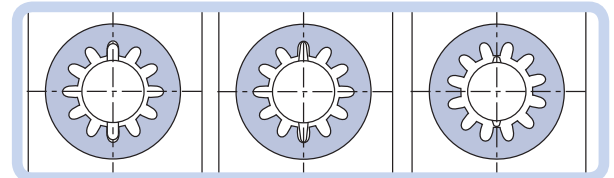
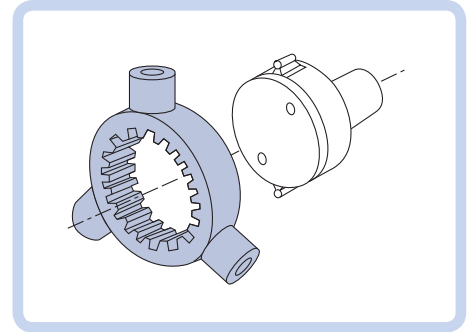


Ball Race Measurement



Special Bore Measurement - Internal Spline

2 and 3 point heads available.
Anvils manufactured from tool steel.
Between pin, major and minor diameter heads available.
Diameters from 8-300mm diameter (5/16"-12").



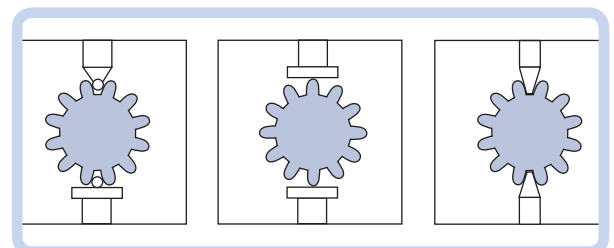
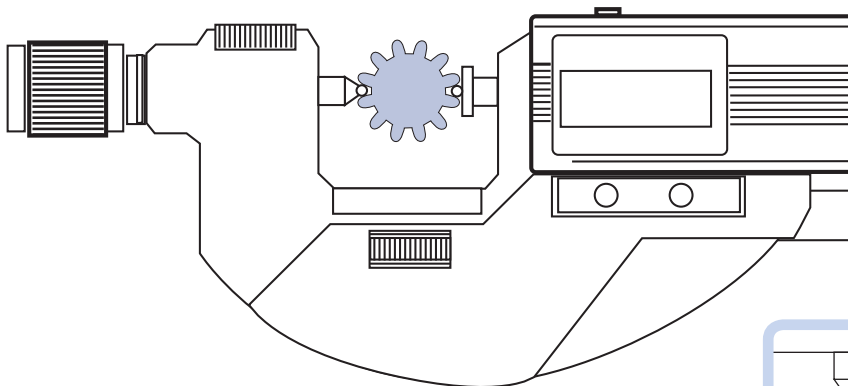
Pitch Diameter

Major Diameter

Minor Diameter

Special Measurement - External Spline

Frames fitted with 1 x ball and 1 x pin.



Pitch Diameter

Major Diameter

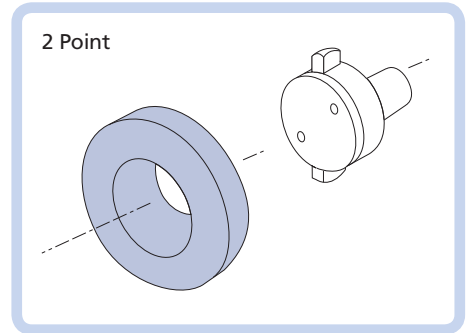
Minor Diameter



Special Bore Measurement - Spherical

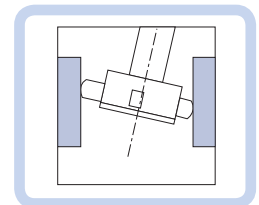
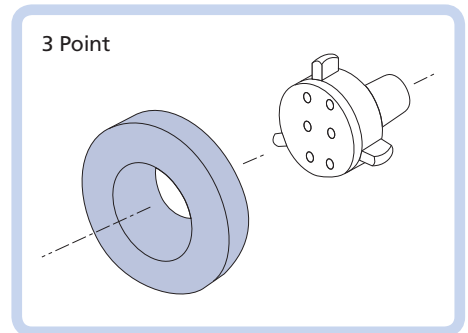
2 Point Spherical

Measurement of ovality in bore.
Measurement of bores with irregularities.



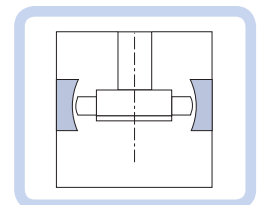
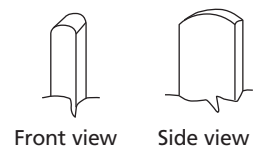
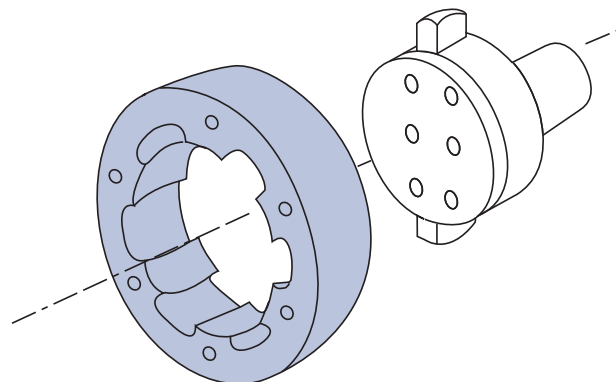
3 Point Spherical

Gives good repeatability even when out of line with bore centre.
Available from 6-300mm diameter on digital systems.



Spherical Radius

Can be supplied as a 2 point
(for ovality) or 3 point contact.
Available from 6-300mm.

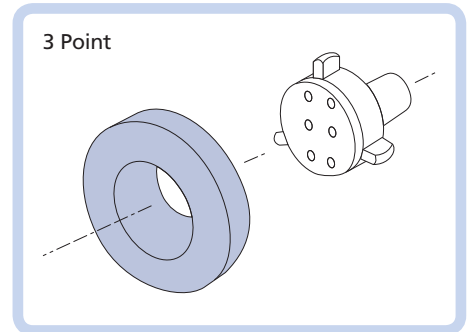
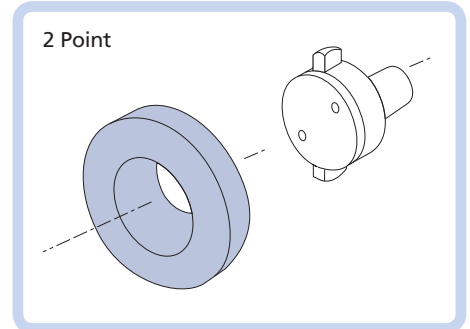


Special Bore Measurement - Deep Hole Pneumatic

Operated by a pneumatic actuator powered by a 3 bar compressed air supply - either from a compressor or a workshop air-line. The measurement data is collected by a capacitive probe fitted just behind, and in constant contact with the measuring head. This direct contact ensures high-quality transducer-type accuracy, even at great depths. Measurements are taken by pressing a footswitch connected to the airline and the data is then passed automatically via cable back down the bore to the digital readout at the operator end.

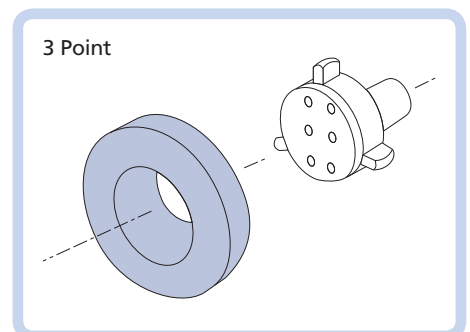
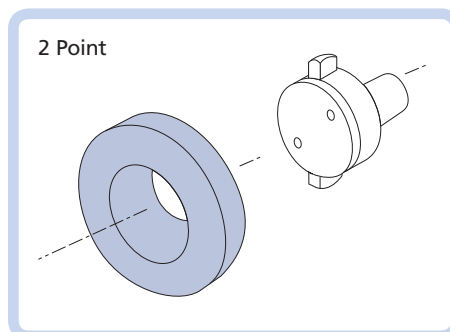
Features

- Measures diameters from 50-310mm, up to 15m deep
- Spherical, Tungsten Carbide anvils
- 2 point and 3 point heads available
- Accuracy +/-0.005mm (subject to bore condition)
- Quick set-up time
- Easy to use
- Not adversely effected by temperature fluctuation
- Robust design
- Various readouts available



Deep Hole XT - Under 2 Metres

Up to 2.0 metres deep with standard extensions.

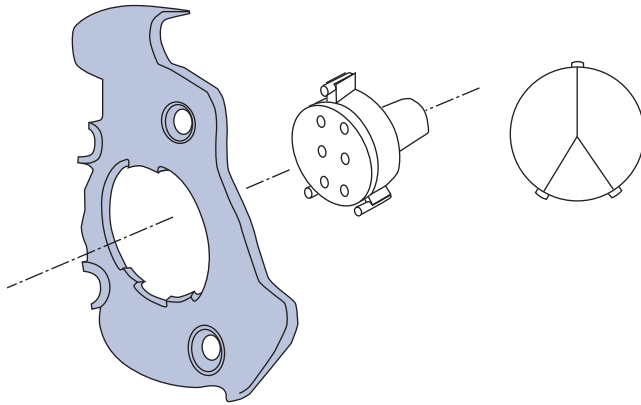




Special Bore Measurement - Miscellaneous

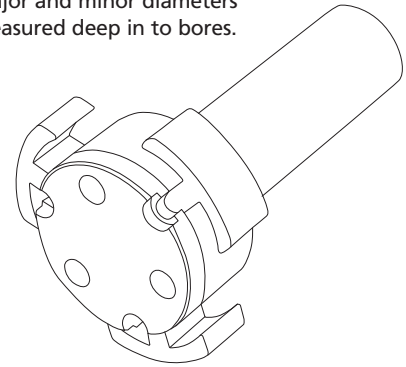
Irregular Spacing

Available between 16-300mm diameter to measure between odd spaced lobes.



Gun Barrel Head

Measurement of smooth bore and rifled bore gun barrels. Major and minor diameters measured deep in to bores.

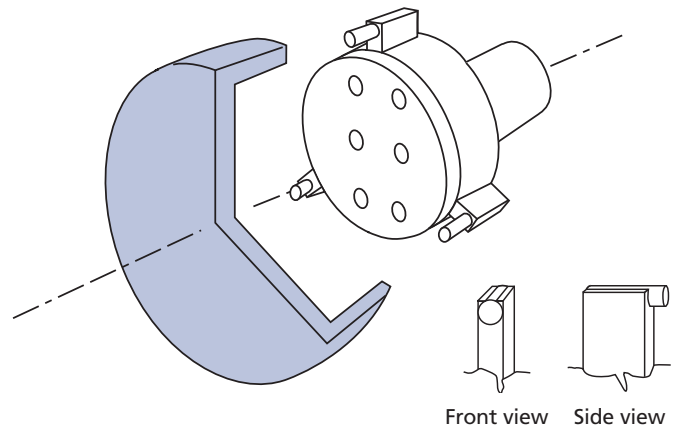


Right Angled Adaptor



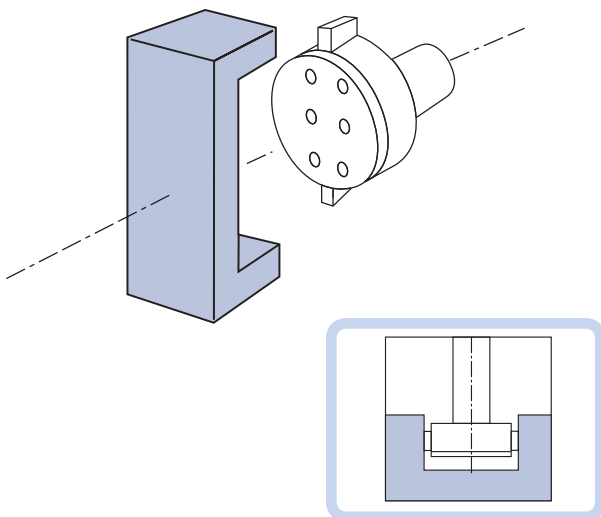
Blind Bore

Standard between 2-6mm and 12.5-300mm. Between 6-12.5mm on request.



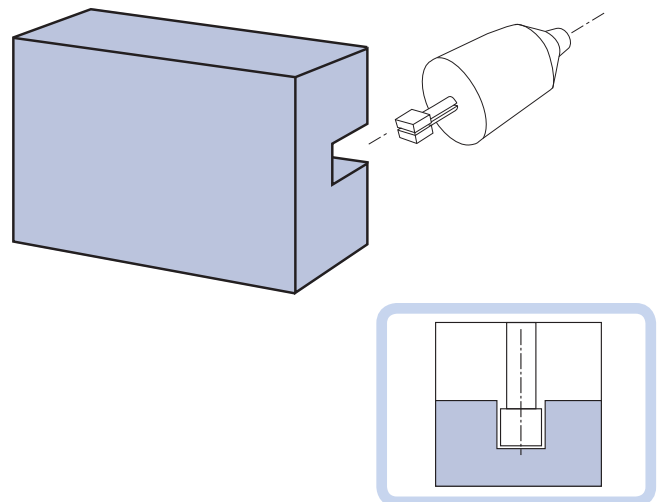
Slot Width (Large)

Slot widths from 6-100mm.



Slot Width (Small)

Slot widths from 2-6mm.



SmartPlugs

The robust, easy to use SmartPlug range is designed to give the operator greater speed of use, unmatched measuring accuracy and superb repeatability, especially in harsh shop-floor environments. Advanced hand held ergonomics allied to an ingenious mechanical / electronic system render SmartPlugs the easiest to operate Bowers bore gauging system to date. The flexible nature of Bowers SmartPlugs range means that they can be supplied fitted with easy to read electronic indicators (ideal for automatic data collection), conventional analogue indicators, or transducer probes linked to remote digital readout units.



ask for details



see p249 for wireless options



Features

- Range 6-280mm
- Tough, robust construction
- Easy-to-use
- Long life
- High accuracy dedicated plug-gauges
- Flexible, modular
- Hand-held measurement
- Can be incorporated into automated measuring systems (in-series)
- Cost-effective
- Short delivery times
- High visibility display
- Protective indicator shroud (with some indicators)
- All setting rings supplied as standard with UKAS calibration certificates
- Coverplates as standard on all SmartPlugs
- Specials (e.g. blind bore) on request
- Repeatability $\leq 1\mu\text{m}$
- Setting by means of a setting ring
- Quick and reliable measurement
- 2-point measurement as standard
- Blind bore available on request
- Depth-stops available
- Extensions available for deeper bores
- Guide chamfer for easy entry into bore
- High durability, long-life plugs and contacts
- Easy to clean
- Plug body coatings: Hard-chrome (standard), T.i.N., Plain steel
- Measuring contacts: Tungsten carbide, (standard), hard-chrome, ruby, ceramic



SmartPlugs

Indicators



Type A
Waterproof Mini Indicator with Shroud
Preset value maximum 130mm



Type B
Mechanical Dial Gauge



Type C
Standard Digital Indicator
also available with shroud



P10
Transducer Probe



P5
Transducer probe

Holders



SMA001M
M6 Holder short
8mm stem



SMA002M
M6 Holder long
8mm stem



SMA003
M6 100mm
extension



SMA004
M6 Probe holder
8mm stem



SMA007
M10 100mm
extension



SMA006M
M10 Holder long
8mm stem



SMA005M
M10 Holder
short 8mm



SMA028
M6-M10 Adapter
(to use M10 holders
with M6 plugs)



SMPDS00-09
Depth Stop



SMPDS00-09
Depth Stop

SmartPlugs

M6 THREAD RANGE 6 - 20mm
Please state size to be measured



M10 THREAD RANGE 15 - 280mm
Please state size to be measured



Contact Options: Tungsten Carbide (standard), Hard Chrome, Ruby, Ceramic
Plug-Body options: Hard Chrome Plated (standard), Titanium Nitride, Plain Steel

SmartPlugs

SmartPlug Applications & Options



SmartPlug with TiN coated body



SmartPlug with MicroGauge head



SmartPlug with ceramic contacts



SmartPlug for blind bore measurement



SmartPlug with depth stop



SmartPlug with extension



SmartPlug with transducer holder and standalone display

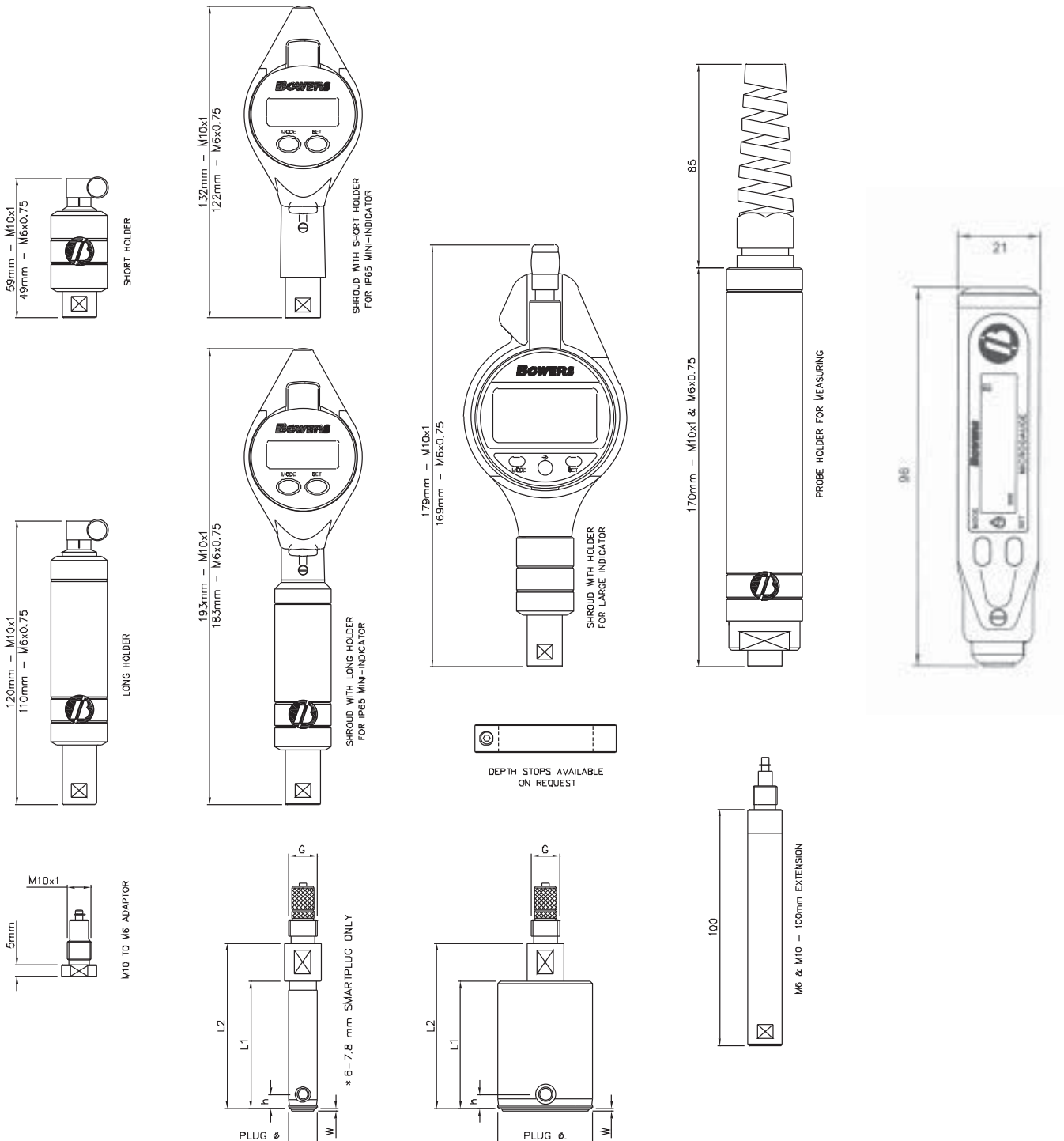


SmartPlug for large diameters (up to 280mm)



SmartPlugs

SmartPlug Technical Detail



SMARTPLUGS

Size (mm)	Range	h	L1	L2	W	G
6-7.8*	0.15	3	27	35	0.5	M6x0.75
7.9-20	0.15	3	27	35	0.5	M6x0.75
15-45	0.2	3.5	28	43.5	1	M10x1
45.1-70	0.2	4	28	44	1.5	M10x1
70.1-280	0.2	4	35	44	1.5	M10x1

* max measuring depth 27mm between 6 and 7.8mm

SmartPlugs

SMARTPLUG STANDARD

Code No	Description	Accessory
SMP010	>6-20mm / 0.236"-0.787"	M6x0.75
SMP012	>15-25mm / 0.590"-0.984"	M10x1
SMP014	>25-35mm / 0.984"-1.378"	M10x1
SMP016	>35-45mm / 1.378"-1.772"	M10x1
SMP018	>45-60mm / 1.772"-2.362"	M10x1
SMP020	>60-80mm / 2.362"-3.150"	M10x1
SMP022	>80-100mm / 3.150"-3.937"	M10x1
SMP024	>100-125mm / 3.937"-4.921"	M10x1
SMP026	>125-150mm / 4.921"-5.906"	M10x1
SMP028	>150-175mm / 5.906"-6.890"	M10x1
SMP030	>175-200mm / 6.890"-7.874"	M10x1
SMP032	>200-225mm / 7.874"-8.858"	M10x1
SMP034	>225-250mm / 8.858"-9.843"	M10x1
SMP036	>250-280mm / 9.843"-11.025"	M10x1

SMARTPLUG BLIND-BORE

Code No	Description	Accessory
SMP010BB	>6-20mm / 0.236"-0.787"	M6x0.75
SMP012BB	>15-25mm / 0.590"-0.984"	M10x1
SMP014BB	>25-35mm / 0.984"-1.378"	M10x1
SMP016BB	>35-45mm / 1.378"-1.772"	M10x1
SMP018BB	>45-60mm / 1.772"-2.362"	M10x1
SMP020BB	>60-80mm / 2.362"-3.150"	M10x1
SMP022BB	>80-100mm / 3.150"-3.937"	M10x1
SMP024BB	>100-125mm / 3.937"-4.921"	M10x1
SMP026BB	>125-150mm / 4.921"-5.906"	M10x1

Sizes above 150mm on request

SMARTPLUG ACCESSORIES

Code No	Description
SMA001M	M6 Holder short 8mm stem
SMA002M	M6 Holder long 8mm stem
SMA003	M6 100mm extension
SMA004	M6 Probe holder 8mm stem
SMA009M	*Type A Mini indicator with shroud & M6 short holder 8mm stem*
SMA011M	*Type A Mini indicator with shroud & M6 long holder 8mm stem
SMA013	Type C Indicator with shroud & M6 holder 8mm stem
SMA028	M6-M10 Adapter (to use M10 holders with M6 plugs)

Code No	Description
SMA005M	M10 Holder short 8mm
SMA006M	M10 Holder long 8mm stem
SMA007	M10 100mm extension
SMA008	M10 Probe holder 8mm stem
SMA015M	*Type A Mini indicator with shroud & M10 short holder 8mm stem
SMA017M	*Type A Mini indicator with shroud & M10 long holder 8mm stem
SMA019	Type C Indicator with shroud & M10 holder 8mm stem

* Type A Mini indicators preset values up to 130mm only.

SMARTPLUG INDICATING UNITS

Code No	Description
SMA021	*Type 'A' digital Mini indicator. Res. 0.001mm
SMA022	Type 'B' mechanical dial-gauge. 0.001mm graduation
SMA023	Type 'C' digital indicator. Res. 0.001mm
MGU2	MicroGauge Display
30-900-1001	Sylvac P5 Transducer Probe
30-804-1050	D50S digital readout 0.001 / 0.0001mm Res.
30-804-1080	D80S digital readout unit
30-804-1300	D300S Display Unit 2 Probes 6USB

* Type A Mini indicators preset values up to 130mm only.

TiN coated body

Ceramic contacts

Ruby contacts

WiFi

see p249 for wireless options

RS232





SmartPlug Setting Rings

- Complete with UKAS Calibration Certificates

SETTING RING (MM) GRADE NOMINAL

Code No	Size (mm)
SPR002N	1.5-2
SPR003N	2-3
SPR004N	3-4
SPR005N	4-5
SPR006N	5-6
SPR010N	6-10
SPR020N	10-20
SPR025N	20-25
SPR030N	25-30
SPR040N	30-40
SPR050N	40-50
SPR060N	50-60
SPR070N	60-70
SPR080N	70-80
SPR090N	80-90
SPR100N	90-100
SPR115N	100-115
SPR130N	115-130
SPR145N	130-145
SPR160N	145-160
SPR170N	160-170
SPR180N	170-180
SPR190N	180-190
SPR200N	190-200
SPR210N	200-210
SPR220N	210-220
SPR230N	220-230
SPR240N	230-240
SPR250N	240-250
SPR260N	250-260
SPR270N	260-270
SPR280N	270-280

SETTING RING (MM) GRADE "X"

Code No	Size (mm)
SPR002X	1.5-2
SPR003X	2-3
SPR004X	3-4
SPR005X	4-5
SPR006X	5-6
SPR010X	6-10
SPR020X	10-20
SPR025X	20-25
SPR030X	25-30
SPR040X	30-40
SPR050X	40-50
SPR060X	50-60
SPR070X	60-70
SPR080X	70-80
SPR090X	80-90
SPR100X	90-100
SPR115X	100-115
SPR130X	115-130
SPR145X	130-145
SPR160X	145-160
SPR170X	160-170
SPR180X	170-180
SPR190X	180-190
SPR200X	190-200
SPR210X	200-210
SPR220X	210-220
SPR230X	220-230
SPR240X	230-240
SPR250X	240-250
SPR260X	250-260
SPR270X	260-270
SPR280X	270-280

SETTING RING (MM) GRADE "XX"

Code No	Size (mm)
SPR002XX	1.5-2
SPR003XX	2-3
SPR004XX	3-4
SPR005XX	4-5
SPR006XX	5-6
SPR010XX	6-10
SPR020XX	10-20
SPR025XX	20-25
SPR030XX	25-30
SPR040XX	30-40
SPR050XX	40-50
SPR060XX	50-60
SPR070XX	60-70
SPR080XX	70-80
SPR090XX	80-90
SPR100XX	90-100
SPR115XX	100-115
SPR130XX	115-130
SPR145XX	130-145
SPR160XX	145-160
SPR170XX	160-170
SPR180XX	170-180
SPR190XX	180-190
SPR200XX	190-200
SPR210XX	200-210
SPR220XX	210-220
SPR230XX	220-230
SPR240XX	230-240
SPR250XX	240-250
SPR260XX	250-260
SPR270XX	260-270
SPR280XX	270-280

(+/- 0.005mm and marked to actual size)



DEPTH STOPS

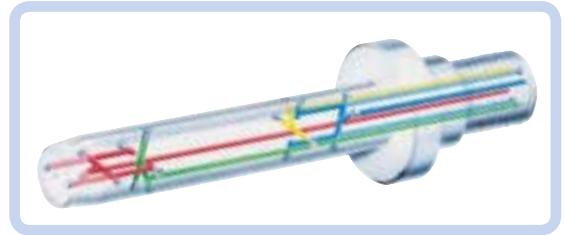
Code No	Range (mm)
SMPDS00	below 6
SMPDS01	6-8.5
SMPDS02	8.5-13
SMPDS03	13-17.5
SMPDS04	17.5-25
SMPDS05	25-32.5
SMPDS06	32.5-40
SMPDS07	40-47.5
SMPDS08	47.5-55
SMPDS09	55-62.5
SMPDS10	62.5-70
SMPDS11	70-77.5
SMPDS12	77.5-85
SMPDS13	85-92.5
SMPDS14	92.5-100

Bowers Air Plugs and Rings

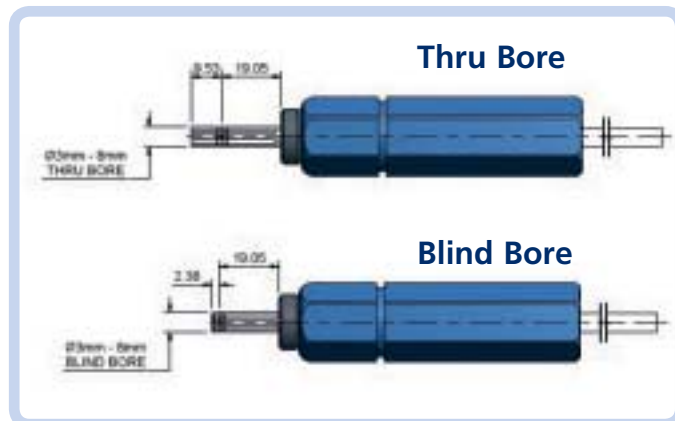
Bowers offers the most comprehensive range of standard air plugs, rings, calipers, etc, currently available. To complement this service we also produce bespoke air gauging products to help solve customer's specific measuring problems. Our hi-tech manufacturing plant incorporates a first class UKAS calibration laboratory, ensuring the quality and accuracy of our air gauging products.

Features

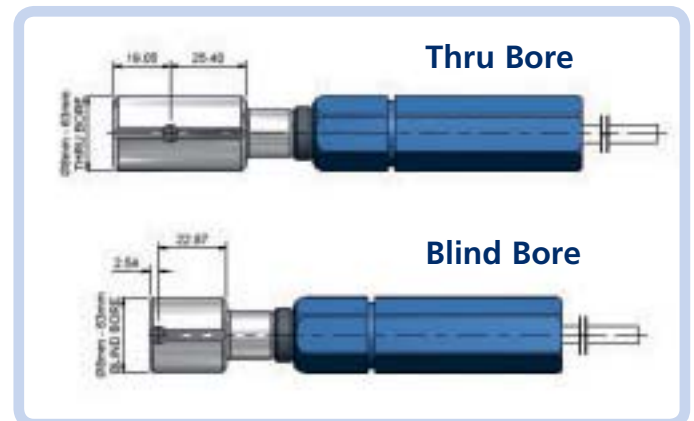
- High resolution
- 3mm to 150mm diameter
- High repeatability
- Non contact
- Static or dynamic measurement
- Multi parameter measurement
- Compatible with instruments from other sources
- Air plugs for internal measurement
- Air rings and calipers for external measurement
- In-cycle, in-process and post-process



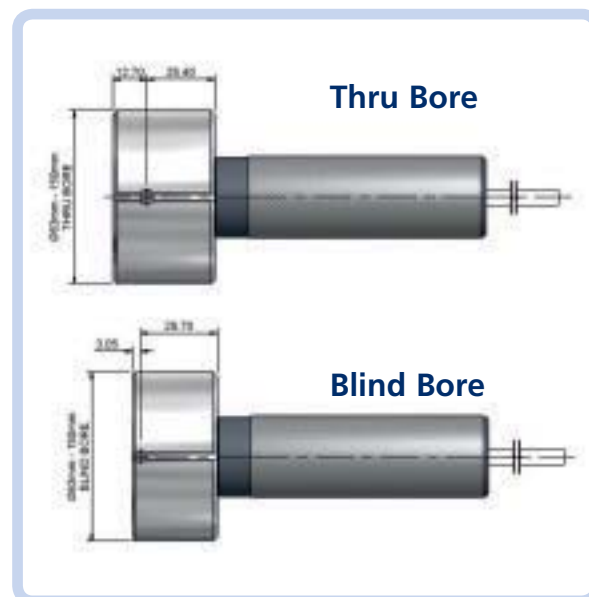
Standard: 3-8mm



Standard: 8-63mm



Standard: 63-150mm





Air Gauging

Air Gauging is a fast, user friendly method of providing high precision results in even the most challenging of shop-floor environments. Using air flow volumes and pressures to measure parts, air gauging is a reliable, repeatable technology well-suited for applications such as precision medical tapers where tolerances are tight. Air gauging technology is flexible; enabling measurement of not only dimensions but geometric and relational characteristics, such as squareness and parallelism; ovality, taper, and straightness of bores; and distance between hole centres.



see p249 for wireless options



Electronic Columns

The Bowers PC-2200 is a state of the art flexible electronic/air column capable of operating with air gauging products and measuring probes. The advanced new column contains a multitude of measuring functions including static and dynamic gauging, classification grading, probe mixing, (A+B), (A-B), etc.

Features

- Metric/Imperial
- 3 colour LED display
- Digital display
- Status indicator
- 2 probe input
- 4 probe input option
- Probe mixing, (A+B), (A-B), etc.
- Compatible with most electronics probes
- Air convertor option (1 or 2)
- Dynamic mode Max, Min, TIR, etc.
- Tolerance limit setting
- Approach limit setting
- Calibration, single or Max/Min
- Accuracy 0.5% full scale +/- resolution
- 6 range settings
- Resolution 0.1um (5 settings)
- Grading (1-100)
- RS-232 output
- Can be linked to PLC or Logic controller
- Dual supply voltage (220 / 110 volt)



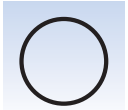
Concentricity



Squareness



Runout



Ovality



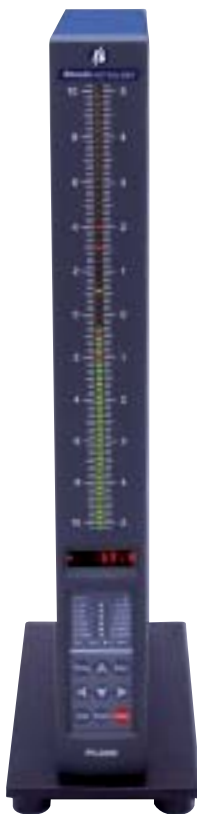
Flatness



Diameter



Parallelism



55-MCOL2



55-MCOL2-Air

Air Electronic Gauging

Features

- Single Air-Electronic input
- Measuring range : $\pm 30\text{mm}$
- Accuracy: $\pm 0.5\text{mm}$ @ Reference temperature + 20°C & Relative Humidity $\leq 50\%$
- 3 colour LED bar-graph column type measurement display
- 101 LED bars constitute bar-graph column type measurement display
- LED bar-graph display can be set to originate from the middle '0' bar, or from one end of the scale.
- 8 character, alphanumeric, dot-matrix LED type digital display for measurements - either in Absolute or Comparative form
- Simplified menu based setting
- Input polarity and multiplying factors (0.001 to 9.999) to suit measuring application
- Menu based pre-settable display intensity control - applicable to Bar-graph and digital displays
- 4 Digit Password prevents unauthorised use
- Menu allows settings of 16 different applications that can be quickly recalled as and when required
- Menu settable Tolerance and Control limits, with LED cursors (markers) on bargraph display to show set limits
- Classification capability:
 - Uniform Classes up to 99 grades
 - Grade displayed in form of alphabet or numeric characters
 - Grading can be set to commence from Upper or Lower Tolerance limits
- Static & Dynamic measurements
- Auto Calibration Mode with two Setting Masters, and Calibration lock to prevent unauthorised tampering of Calibration
- Probe offset setting mode with one Setting Master
- RS232 data output
- Information of Menu entries and settings are retained after power shutdown



55-2045-AEP

TECHNICAL SPECIFICATION

Stability of bar-graph display	± 1 Bar
Stability of Digital display	± 1 Count
Zero drift over Operating temperature range	0.005% / °C
Drift of Sensitivity over Operating temperature range	0.005% / °C
Stabilisation time of Digital & Column display	2 500m. sec.
Mains supply voltage	230V ac, 50Hz
Permissible variation in Mains supply voltage	$\pm 10\%$
Power consumption	10VA
Operating temperature range	0°C to 40°C
Dimensions	(H) 500mm x (W) 60mm x (D) 200mm
Weight	4Kg

ELECTRONIC COLUMN (PC2200)

Code No	Description
55-MCOL2	PC-2200 Column mm/inch
55-MAIND2	A-IND2 analogue board (HBT)-2 channels
55-MAIND4	A-IND4 analogue board (HBT)-4 channels
55-MALVD2	A-IND2 analogue board (LVDT)-2 channels
55-MALVD4	A-IND4 analogue board (LVDT)-4 channels
55-MACAP2	A-CAP2 analogue board (Sylvac)-2 channels
55-MACAP4	A-CAP4 analogue board (Sylvac)-4 channels
55-MC	AIR Converter + regulator
55-MAIR1	AIR1 1 channel analogue board
55-MAIR2	AIR2 2 channels analogue board
55-PC2332	Cable, column to A/E converter
55-WKXT4248	Air Regulator / Filter

ELECTRONIC COLUMN (2045-AEP)

Code No	Description
55-2045-AEP	Air Electronic Column

ACCESSORIES (PC2200)

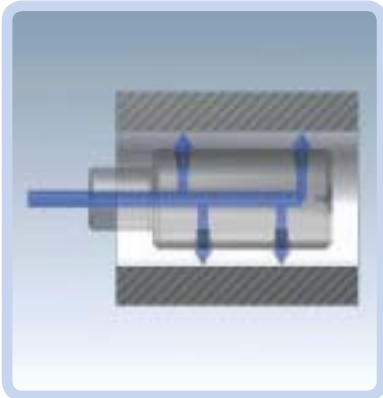
Code No	Description
55-PC2302	Power jump cable
55-PC2311	RS232 cable (9p/M/F)
55-PC2312	Output cable (9p/M-> no connector)
55-PC2321	Foot pedal with cable for 1 col.
55-PC2341	Switch box (4 functions)
55-PC2332	Cable, column to A/E converter
55-SOFTWARE	Programming Software

ALUMINIUM BASE PLATES (PC2200)

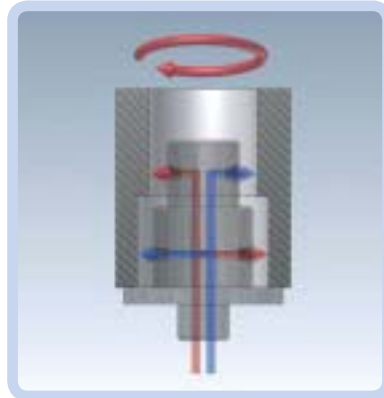
Code No	Description
55-MALP1	For 1 Column
55-MALP2	For 1 Column & 1 Converter
55-MALP3	For 1 Column & 2 Converters
55-MALP4	For 2 Column & 2 Converters
55-MALP5	For 2 Column & 3 Converters
55-MALP6	For 2 Column & 4 Converters



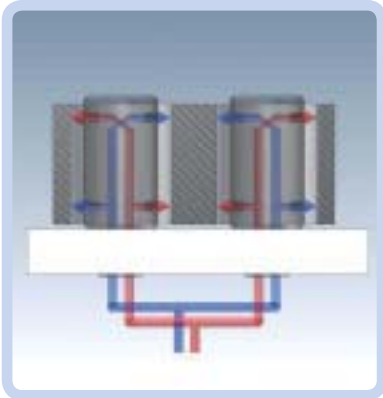
Air Gauging Options and Applications



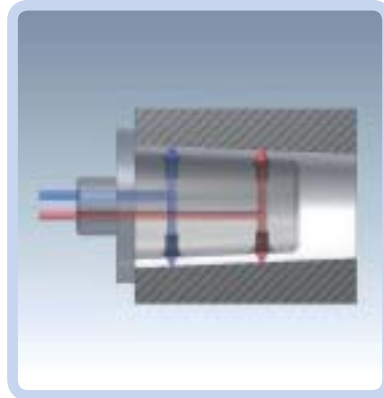
Straightness



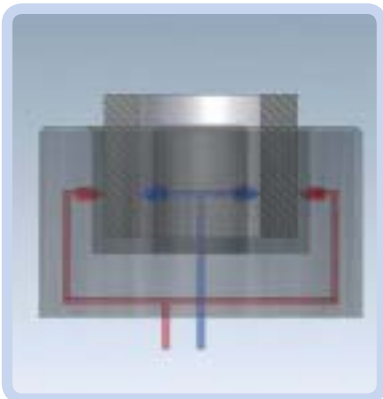
Concentricity of 2 Inside Diameters



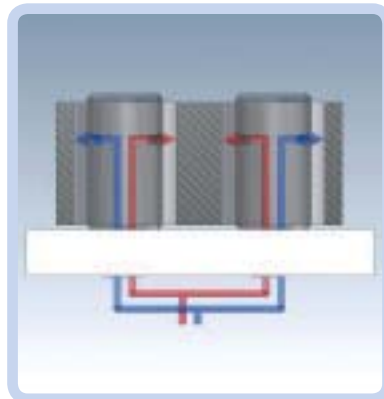
Parallelism of 2 Bores



Taper



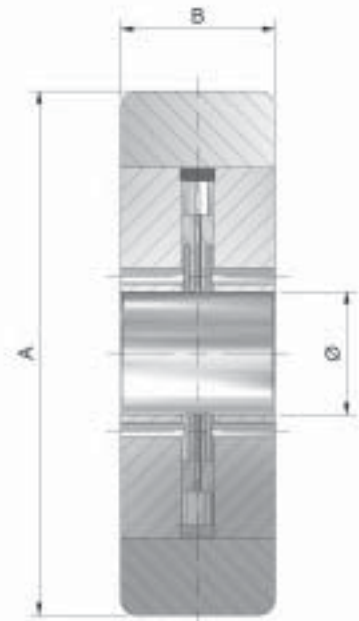
Simultaneous Int/Ext Measurement



Centre Distance of 2 Holes

Bowers Air Rings

Air Rings-Standard & Offset



STD AIR RING



OFFSET AIR RING

AIR RINGS - SPECIFICATION

Size Range (mm)	Size Range (inch)	Dia A (mm)	Dia A (inch)	Dia B (mm)	Dia B (inch)
3.17-6.35	1/8-1/4	63.50	2.5	19.05	3/4
6.35-25.40	1/4-1	82.55	3 1/4	25.40	1
25.40-38.10	1-1.5	107.95	4 1/4	28.58	1 1/8
38.10-50.80	1.5-2	120.65	4 3/4	28.58	1 1/8
50.80-63.5	2-2.5	133.35	5 1/4	28.58	1 1/8

Bowers MicroGauge 2-Point Bore Gauge

The new MicroGauge 2-point bore gauging system has been designed specifically for the measurement of small bores between 1.0-6.0mm. Featuring a completely new digital readout and extremely compact overall dimensions, the MicroGauge is truly a pocket-sized instrument. Digital readout and measuring head together are about the same size and format as a ballpoint pen which represents a big advantage for those needing to measure small precision parts and who need to have their gauge with them all the time. The clear LCD display is easily set using only two buttons and results are shown with switchable 0.01/0.001/0.0005mm resolution. Data transfer is via Proximity-RS232 or Proximity-USB output. The measuring heads are equipped with spherical hard-chromed contact points and are set in appropriate setting rings. Like all Bowers bore gauging products the MicroGauge system is available as individual instruments or as full sets. All setting rings are supplied as standard with UKAS certification.



Depth Stop

Features

- System range: 1-6mm
- New slimline digital display
- Switchable resolution 0.01/0.001/0.0005mm
- Simple 2-button operation
- Clear LCD display
- Data output: RS232 / USB proximity sensor
- Linearity: Diameter 1.0-1.5 max 2% of measuring travel, min 0.001mm.
Diameter 1.5-6 max 1% of measuring travel, min 0.001mm
- Repeatability: 0.001mm
- Available as individual instruments or sets
- UKAS-certificates as standard with all setting rings
- Hard-chromed ball-contacts
- Depth-stops available
- Stand available as an option



EST0001 - MicroGauge Stand



Bowers MicroGauge 2-Point Bore Gauge

TECHNICAL SPECIFICATION: Individual measuring heads, readouts and setting rings

Code No	Range (mm)	Range (inch)	Measuring Depth (mm)	Digital Readout	Cone	Setting Ring	Setting Ring (mm)
MG011W	0.95-1.15	0.037-0.045	0.6-11	MGU1	MGC1	MGR100	1.00
MG012W	1.07-1.25	0.042-0.049	0.6-11	MGU1	MGC1	MGR110	1.10
MG013W	1.17-1.35	0.046-0.053	0.6-11	MGU1	MGC1	MGR120	1.20
MG014W	1.27-1.45	0.050-0.057	0.6-11	MGU1	MGC1	MGR130	1.30
MG015W	1.37-1.55	0.054-0.061	0.6-11	MGU1	MGC1	MGR140	1.40
MG016W	1.50-1.90	0.059-0.075	0.9-17	MGU2	MGC2	MGR175	1.75
MG017W	1.80-2.20	0.071-0.087	0.9-17	MGU2	MGC2	MGR200	2.00
MG018W	2.05-2.45	0.081-0.096	0.9-17	MGU2	MGC2	MGR225	2.25
MG019W	2.25-2.75	0.089-0.108	1.2-22	MGU2	MGC3	MGR250	2.50
MG020W	2.50-3.00	0.098-0.118	1.2-22	MGU2	MGC3	MGR275	2.75
MG021W	2.75-3.25	0.108-0.128	1.2-22	MGU2	MGC3	MGR300	3.00
MG022W	3.00-3.50	0.118-0.138	1.2-22	MGU2	MGC3	MGR325	3.25
MG023W	3.25-3.75	0.128-0.148	1.2-22	MGU2	MGC3	MGR350	3.50
MG024W	3.50-4.00	0.138-0.157	1.2-22	MGU2	MGC3	MGR375	3.75
MG025W	3.75-4.25	0.148-0.167	1.2-22	MGU2	MGC3	MGR400	4.00
MG026W	3.65-4.35	0.144-0.171	2.0-40	MGU2	MGC4	MGR400	4.00
MG027W	4.15-4.85	0.163-0.191	2.0-40	MGU2	MGC4	MGR450	4.50
MG028W	4.65-5.35	0.183-0.211	2.0-40	MGU2	MGC4	MGR500	5.00
MG029W	5.15-5.85	0.203-0.230	2.0-40	MGU2	MGC4	MGR550	5.50
MG030W	5.65-6.35	0.222-0.250	2.0-40	MGU2	MGC4	MGR600	6.00

DISPLAYS

Code No	Description	Size
MGU1	MicroGauge Display	0.95-1.55mm
MGU2	MicroGauge Display	1.5-6.33mm

STANDS

Code No	Description
EST0001	Stand
MST-58	Checking Stand
SH-T	Floating Holder

SETS: including digital readout, measuring heads and setting rings with UKAS certificate

Code No	Range (mm)
SMG001M	0.95-1.55
SMG002M	1.50-2.45
SMG003M	2.25-4.25
SMG004M	3.65-6.35

LARGE SETS: including digital readout, measuring heads and setting rings with UKAS certificate

Code No	Range (mm)
SMG010M	0.95-2.45
SMG011M	1.50-4.25
SMG012M	2.25-6.35

STANDARD DEPTH STOP

Code No	Range (mm)
MGSTOP1	0.95-1.55
MGSTOP2	1.50-2.45
MGSTOP3	2.25-4.25
MGSTOP4	3.65-6.35

DATA TRANSMISSION

Code No	Description
25-604-064	Wireless Proximity Module
30-926-6721	Sylvac Proximity USB



SMG004M



MicroGauge with proximity cable

Bowers Mechanical & Digital Cylinder Bore Gauge

Recent improvements to the popular Bowers Cylinder Bore Gauges, such as the introduction of tungsten carbide contact points have ensured even greater reliability, ease of use and superior wear resistance. Suitable for use in most environments, these gauges are particularly useful for detecting ovality, or taking measurements relatively deep inside bores.

WiFi
see p249 for wireless options

RS232

Standard Features

- Fast simple checking for bore size, ovality, taper, etc
- Tungsten carbide contact points
- Lightweight glass reinforced nylon gauge shroud for extra strength and protection
- Thermally insulated for extra stability
- Bore gauges available up to 2m (6 feet) long for deep hole measurement
- Large sets available on request

Digital Features

- RS232 output
- Inch / metric conversion
- Displays actual bore diameter or comparative results



MECHANICAL & DIGITAL CYLINDER BORE GAUGE

Code No	Range (mm)	Resolution (mm)	Graduation	Measuring Depth (mm)	Measuring Depth (inch)
TGB652M	12.5-22	0.01	0-50-0	150	6
TGB655M	12.5-22	0.002	0-10-0	150	6
CBGD010	12.5-22	0.001	Digital	150	6
TGB702M	22-50	0.01	0-50-0	150	6
TGB717M	22-50	0.002	0-10-0	150	6
CBGD020	22-50	0.001	Digital	150	6
TGB752M	50-150	0.01	0-50-0	250	10
TGB765M	50-150	0.002	0-10-0	250	10
CBGD030	50-150	0.001	Digital	250	10
TGB802M	150-300	0.01	0-50-0	380	15
TGB812M	150-300	0.002	0-10-0	380	15
TGB821M	150-600	0.01	0-50-0	380	15
TGB851M	150-600	0.002	0-10-0	380	15
CBGD040	150-300	0.001	Digital	380	15
CBGD050	150-600	0.00005	Digital	380	15

Special depths are available on request.
Note: Imperial range available on request

Moore & Wright Cylinder Bore Gauge Sets 316 Series

Features

- With interchangeable contact points
- Set of carbide tipped contact points included
- Unique self centring device
- Supplied with dial indicator, resolution 0.01mm
- Packed as set with all necessary accessories to measure the complete range as shown

Digital Bore Gauge Sets

- Supplied with digital indicator with bar graph and numerical display

CYLINDER BORE GAUGES

Code No	Range (mm)	Resolution (mm)
MW316-01	6-10	0.01
MW316-02	10-18	0.01
MW316-03	18-35	0.01
MW316-04	35-50	0.01
MW316-05	50-160	0.01
MW316-06	160-250	0.01

DIGITAL BORE GAUGE SET

Code No	Range (mm)	Resolution (mm)	Resolution (inch)	Measuring Depth (mm)	Measuring Depth (inch)
MW316-12D	35-160	0.001	0.0005	200	8





Universal Gauge

The Bowers Universal Gauge's ingenious modular format enables it to be quickly configured to suit almost any measuring challenge. Whether measuring internally or externally, the Universal's clever constant pressure device ensures accuracy and consistency of reading. The gauge's findings are displayed on its built in clear digital readout.

The unique modular construction of the Bowers Universal Gauge facilitates the fitting of a large variety of measuring contacts and adaptors, enabling countless measuring tasks to be completed with ease. Accessories for the measurement of threads, grooves, splines, gears, hole centres, and many others are available as standard, whilst special adaptations for more unusual applications can be quoted on request.

Bluetooth Available
ask for details

WiFi
see p249 for wireless options

RS232



Features

- Internal and external measurement
- Large measuring range possible 0-3000mm (0-118")
- Constant measuring force
- Supplied with digital readout
- Large range of accessories for standard measurement of threads, grooves, splines, diameters, lengths, shallow spigots and recess diameters etc
- Special anvil designs available P.O.A



TGUDEMO

UNIVERSAL GAUGE	
Code No	Description
TGUDEMO	Universal Gauge Full Set

Universal Gauge Sets

Universal Gauge (extension compatible version) standard features:

- Range 30-250mm internal / 0-215mm external 15mm anvil travel
- Constant measuring pressure
- Digital or mechanical readout
- 150mm and 500mm extensions available. Can be screwed together in multiples (up to maximum 3m recommended)
- Measuring table and supports available for conversion to bench gauge for the measurement of small components
- Covers approx 90% of all applications



ask for details



see p249 for wireless options



SET CONTENTS - STANDARD VERSION

Code No	Description
TGUDEMO2	Set with box
TGU1000	Universal Gauge - supplied boxed Compatible with Extensions
TGUA001	Digital indicator with cowl
TGUA003	Clamping inserts (each)
TGUA005	Spherical contacts (each)
TGUA006	Measuring arms 50mm (pair)
TGUA010	Depth-stops (pair)

TGUDEMO2



Universal Gauge (slide guideway version) standard features:

- Range 30-335mm internal / 0-300mm external 15mm anvil travel
- Slide guideway for rapid measuring contact alignment
- Constant measuring pressure
- Digital or mechanical readout
- Measuring table and supports available for conversion to bench gauge for the measurement of small components
- Covers approx 90% of all applications

TGUGSET01



SET CONTENTS - SLIDE GUIDEWAY VERSION

Code No	Description
TGUGSET01	Slide Guideway version-Set
TGU1000G	Universal Gauge - supplied boxed Not Compatible with Extensions
TGUA001	Digital indicator with cowl
TGUA003	Clamping inserts (each)
TGUA005	Spherical contacts (each)
TGUA006	Measuring arms 50mm (pair)
TGUA010	Depth-stops (pair)

Slide Guideway





Universal Gauge and Accessories

Standard Gauge

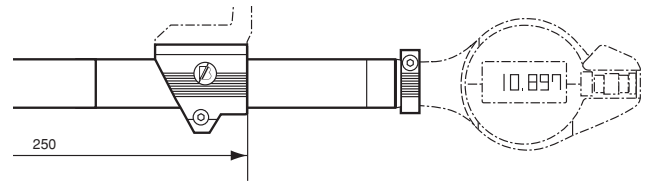
Code No	Range - Internal (mm)	Range - Internal (inch)	Range - External (mm)	Range - External (inch)
TGU1000	30-250	1.2-10.030	0-215	0.8-50

Slide Guideway Version

Code No	Range - Internal (mm)	Range - Internal (inch)	Range - External (mm)	Range - External (inch)
TGU1000G	30-335	1.2-13.20	0-300	0-11.80

EXTENSIONS: (for standard gauge only)

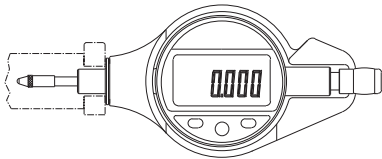
Dimn - A	Code No	Range - Internal (mm)	Range - Internal (inch)	Range - External (mm)	Range - External (inch)
150	TGUA033	30-400	1.2-15.00	0-365	0-14
500	TGUA032	30-750	1.2-29.00	0-715	0-28.0



Intermediate and additional lengths can be made up by using 150 or 500mm extensions

Digital Indicator and Protective Shroud

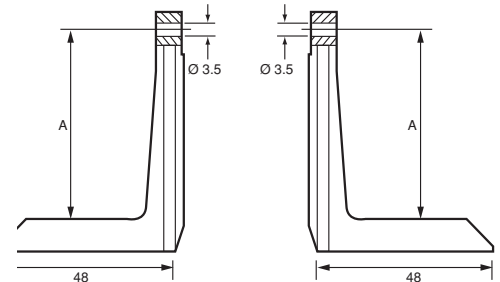
Code No
TGUA001



Measuring Arms

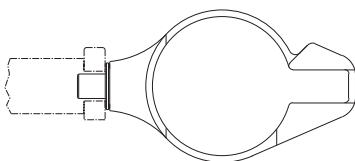
(reversible for inside/outside diameters)

Dimn - A	Code No
50	TGUA006
75	TGUA007
100	TGUA008



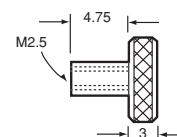
Protective Shroud for Dial/Digital Indicator

Code No
TGUA002

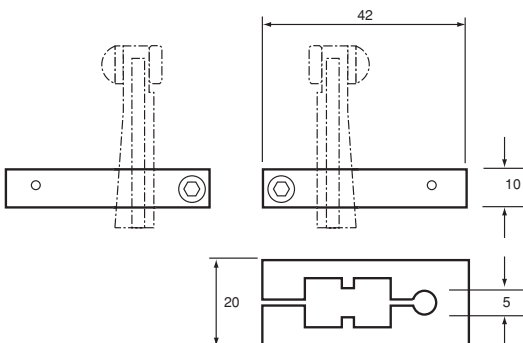


Clamping Insert

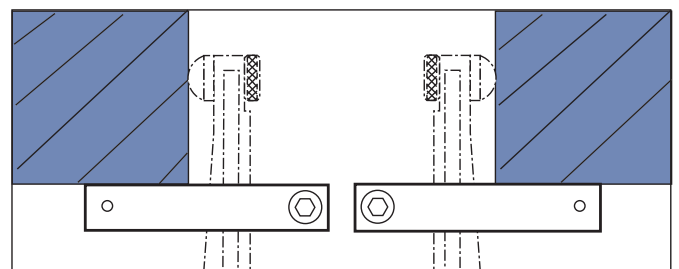
Code No
TGUA003



Adjustable Depth Stops for Measuring Arms



Code No
TGUA010



Spherical Tips

Code No
TGUA005

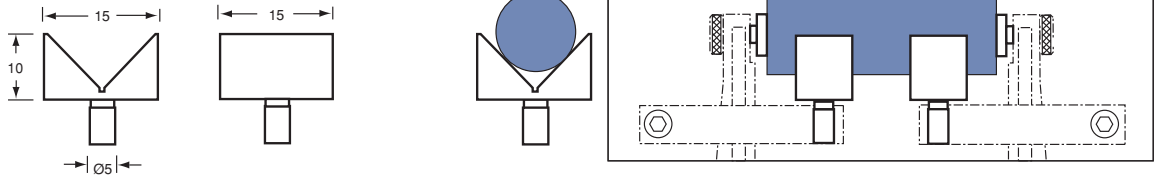
Flat Tips

Code No
TGUA004

Universal Gauge

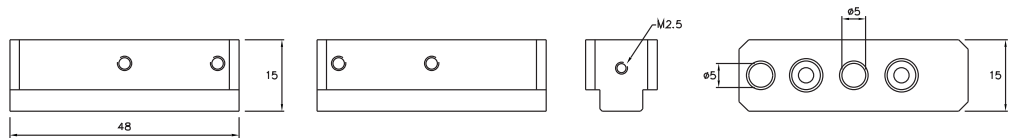
Vee Support for Length Measurement

Code No
TGUA022



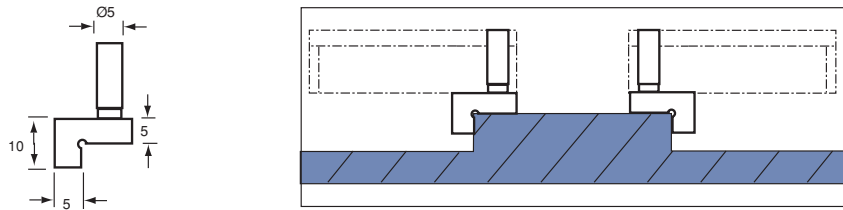
Mounting Attachments for use with the following Anvils

Code No
TGUA009



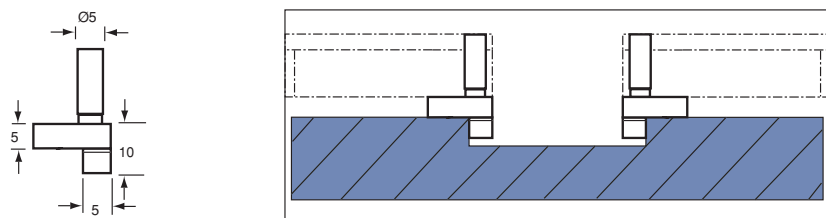
Shoulder Anvils Flat Outside Spigot Diameter

Code No
TGUA011



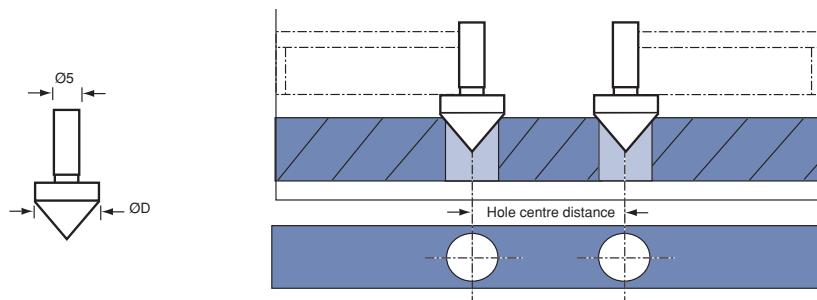
Semi-Cylindrical Anvils for Inside Register Diameters

Code No
TGUA012



Cone Anvils for Measuring Hole Centre Distance

Code No	Dimn - D
TGUA019	13
TGUA020	25
TGUA021	50



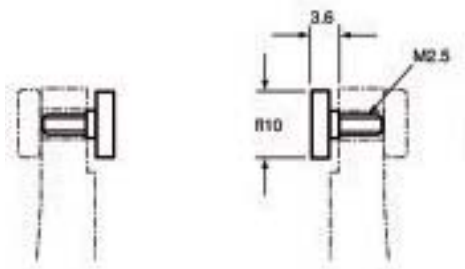


Universal Gauge

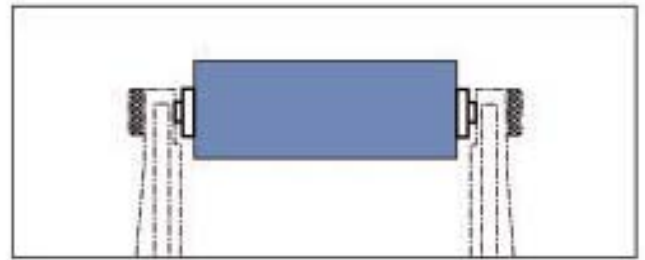
Although extremely comprehensive, the collection of Universal Gauge accessories cannot cover every measuring application. If your particular gauging need is not catered for within our standard range, specialised adaptors, contact points, etc can be quoted from a customer supplied component drawing.

CONTACTS FOR USE WITH MEASURING ARMS

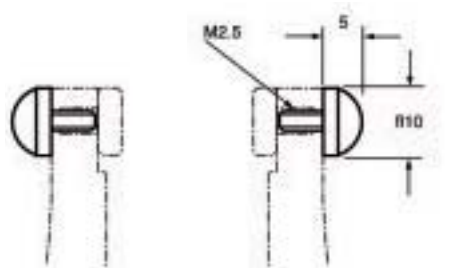
Flat Tips



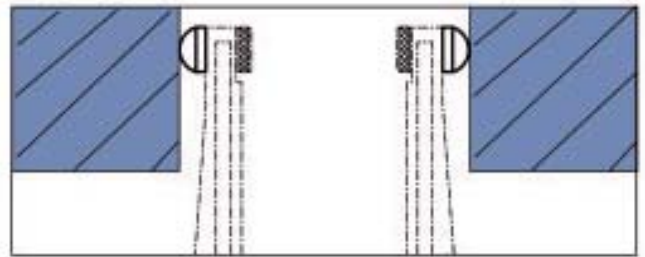
Code No
TGUA004



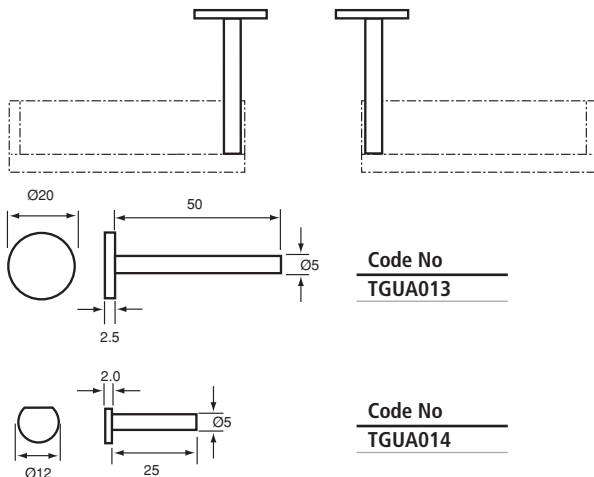
Spherical Tips



Code No
TGUA005

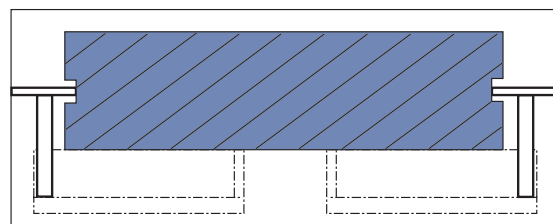
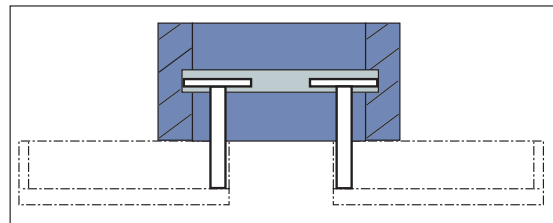


DISC Anvils for measuring Groove Diameter



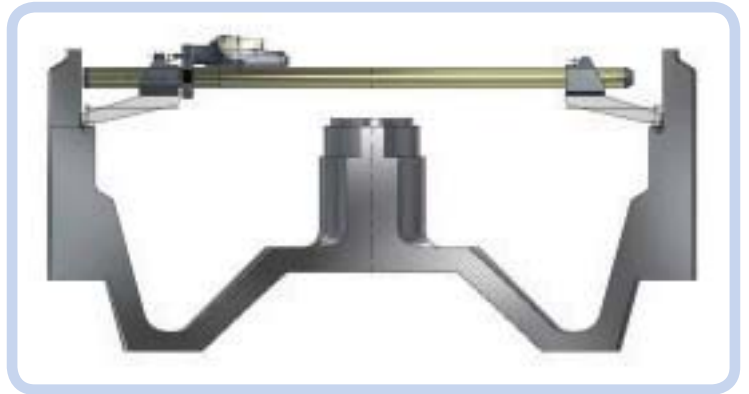
Code No
TGUA013

Code No
TGUA014

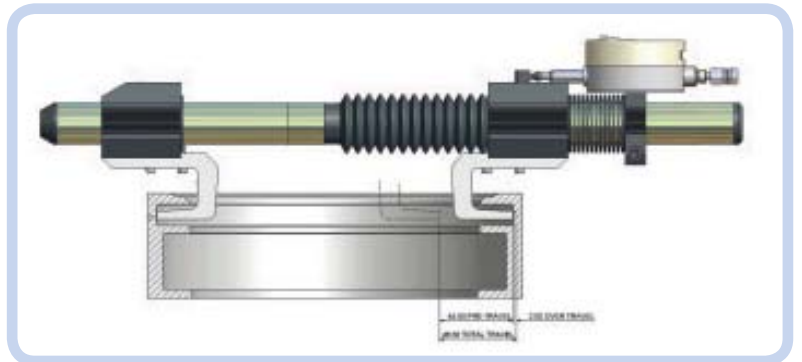
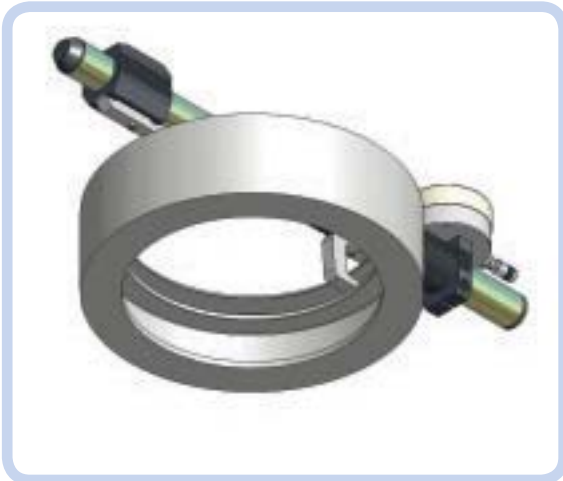


Bowers Universal Gauge Specials

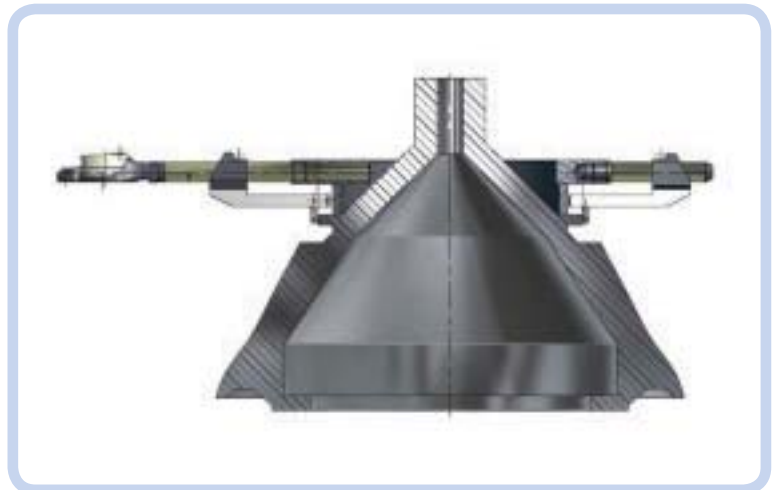
Universal Gauge incorporating on-board indicator and extra reach contact points.



Extended Travel Special Application Universal Gauge.



Special Universal Gauge measuring across large diameter component with central boss.





Checkmaster Comparator

Available in two sizes, Checkmaster is the flexible gauging solution for short production runs. Simply setup your Universal Tooling set to suit your application (see opposite), fit your preferred indicator and zero against a master for fast accurate and incredibly repeatable results. Gauging force can be adjusted for softer materials and biased for either internal or external dimensions by a simple lever selection. This enables multi-dimension setups to be easily catered for.

Need absolute results?

Using Bowers' standard digital indicator, the master size can be pre-set. Now the results are displayed as Absolute dimensions. Tolerances can be entered and an out of tolerance symbol will flash for even quicker reference.

Tooling:

The Universal Tooling Set includes 2 x universal tooling blocks, combination blade / radius anvil, Mushroom anvils and mounting bars to allow a variety of internal and external features to be measured.

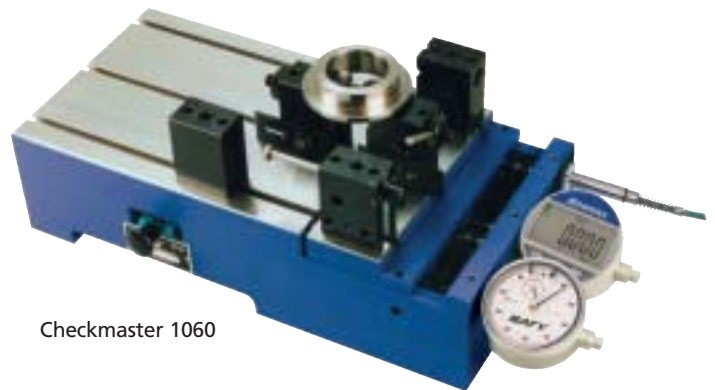
Checkmasters can be supplied with or without indicators. If ordered 'Less Indicator' the Checkmaster will be supplied with a set of split bushes to suit any 8mm or 3/8" stem mount gauge with a suitable reach.

Features

- Unique 3 gauge station and readout capability
- Remarkable versatility and repeatability
- Accepts most dial indicators, digital indicators (12.7mm travel) and Gauging Probes
- Excellent gauge repeatability and reproducibility (G.R. & R.) capability
- Exceptionally tough for shopfloor on-line inspection
- Measuring force, with adjustable setting
- Multi functional
- Ideal for SPC and 100% inspection
- Left or right hand operation



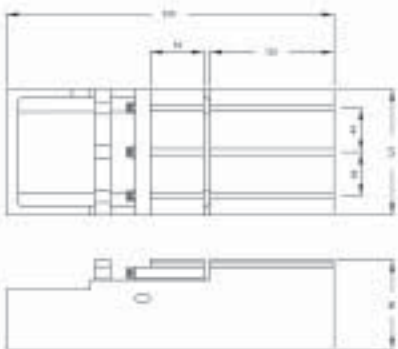
Checkmaster 1050



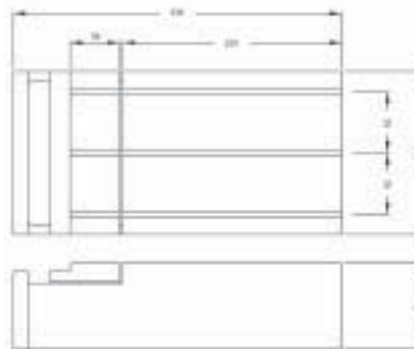
Checkmaster 1060

Checkmaster Dimensions

Checkmaster 1050
Code No: 1050



Checkmaster 1060
Code No: 1060



Checkmaster Comparator

Need SPC, printed reports data storage?

Replacing the conventional indicator with a transducer linked to our Sylvac D300S digital readout will allow you to setup and store multiple parts each with pre-toleranced dimensions. Just setup the correct tooling situation, select the part / job number required from the D300S memory and you are ready to go.

SPC Data from previous measurements of the same part type can be viewed on the large colour screen and even printed direct from the D300S or transferred to a PC.

Full maths functionality included: take dynamic measurements such as roundness / concentricity or solve more complex applications by using multiple transducers.



Checkmaster 1050



1060-UTS

CHECKMASTER COMPARATOR

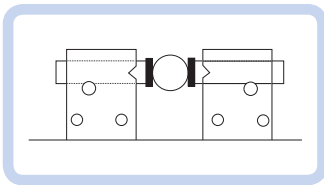
Code No	Description
1060-UTS	Universal Tooling Set for 1050 or 1060 Checkmaster



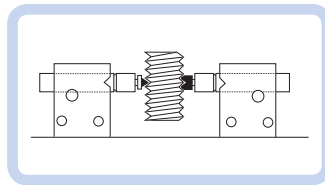
Checkmaster Tooling Applications

Features

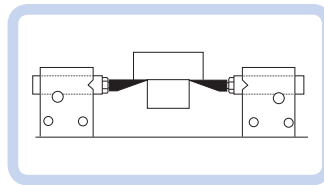
- Diameters, internal and external
- Undercuts, O ring grooves, ball tracks internal and external
- Gear and spline pitch diameter internal and external
- Rolling gear test, gear to gear or gear to master
- Gear pitch diameter to shaft bore run out
- Holes centre to centre
- Concentricity bore to O.D.
- Step height, lengths, depths



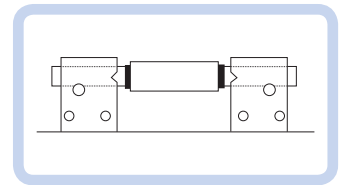
Outside Diameter



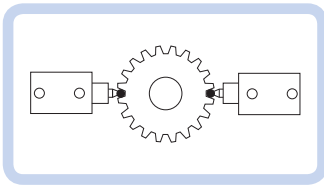
Thread Features



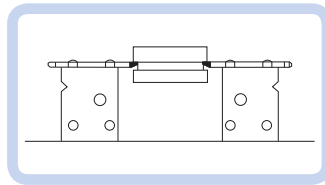
Undercut Depth



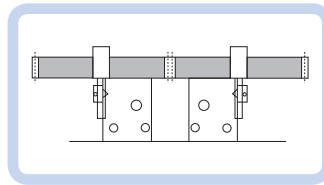
Length



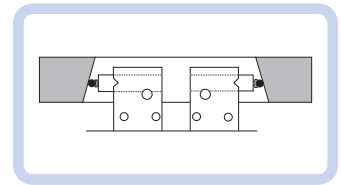
External Spline / Gear PCD



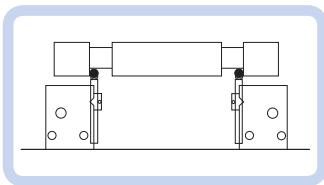
External Diameter



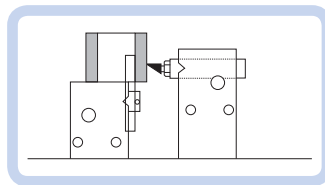
Rolling Gear Test



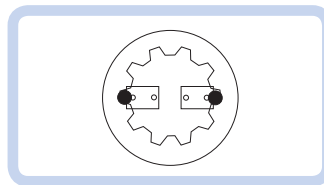
Internal Taper



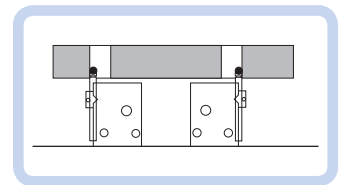
Bearing Face Distance



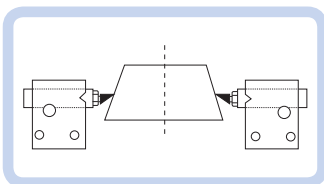
Concentricity / Wall Thickness



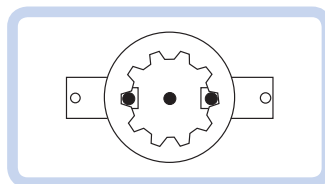
Internal Spline (Large Diameter)



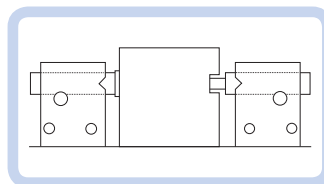
Hole / Slot Position



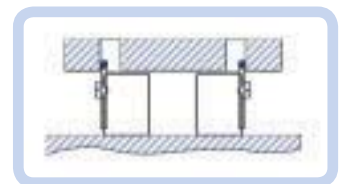
External Taper



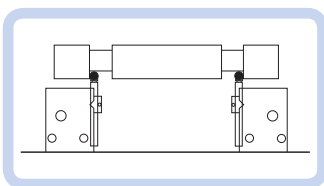
Internal Spline (Small Diameter)



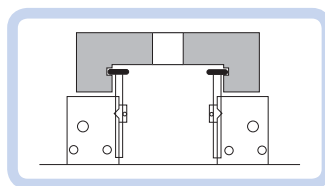
Slot Depth



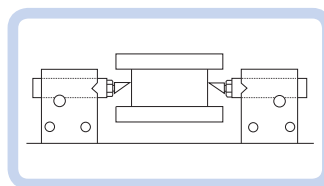
Hole Centres



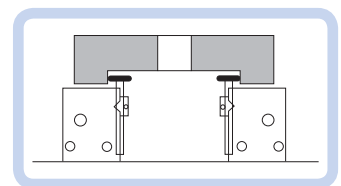
Web Thickness



Internal Recess Diameter



Recess Diameter



Bore Diameter

INTEX Comparator Beam Gauge

Developed to measure both internal and external diameters and lengths, the Intex gauge's aluminium extrusion beam gives it a rigid yet lightweight quality, making it ideal for shop-floor environments. The simple release of a locking thumbscrew enables the gauge's measuring direction to be changed quickly and easily.

Features

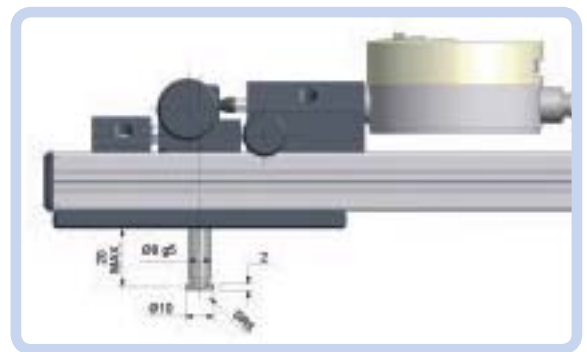
- Lightweight and rigid
- Measuring ranges: 200-400mm, 400-600mm, 600-800mm, 800-1000mm
- Sizes over 1000mm available on request
- Internal and external measurement
- 2mm travel on moving contacts
- Adjustable fixed contacts with up to 250mm adjustment range
- Digital or analogue indicator available
- Hardened steel wear pads locate gauge onto component aiding repeatability and prolonging service life
- Setting master required to set the instrument



ask for details



see p249 for wireless options



INTEXA01

INTEX BEAM GAUGE - Without Indicator

Code No	Range (mm)	Range (inch)
INTEX01	200-400	8-16
INTEX02	400-600	16-24
INTEX03	600-800	24-32
INTEX04	800-1000	32-40

INTEX BEAM GAUGE - With Indicator

Code No	Range (mm)	Range (inch)
INTEX01IND	200-400	8-16
INTEX02IND	400-600	16-24
INTEX03IND	600-800	24-32
INTEX04IND	800-1000	32-40

Code No	Description
INTEXA01	Standard contacts - 10 diameter (pair)



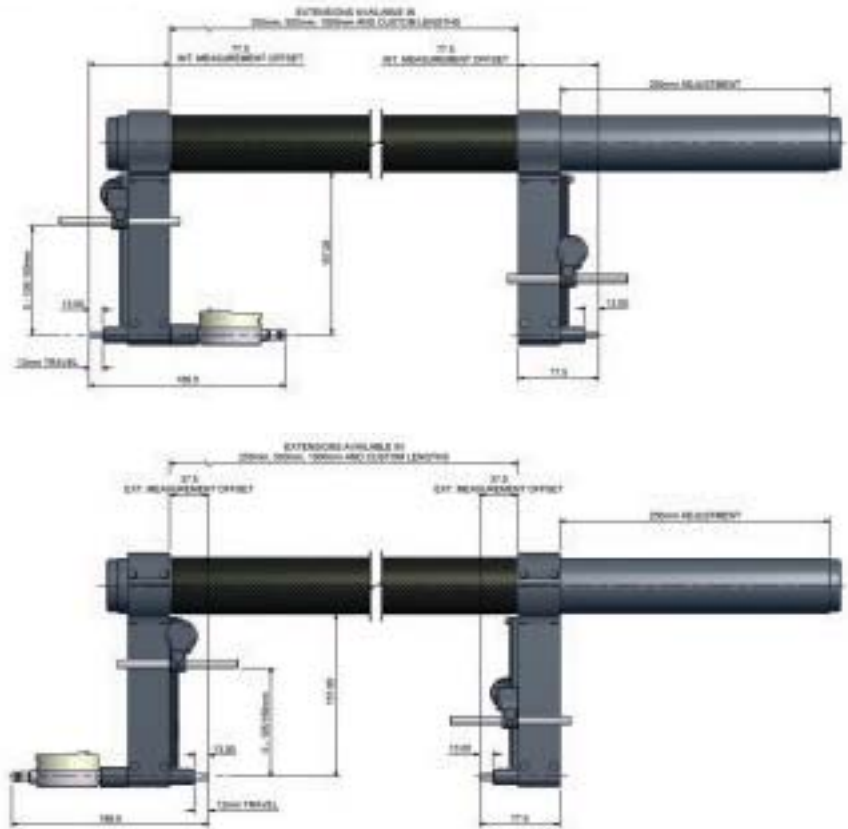
Carbon Fibre Comparator Beam Gauge

Designed to measure both internal and external diameters and lengths, the high modulus carbon fibre beam is stiff, lightweight and has an extremely low co-efficient of thermal expansion (CTE). Suitable for measuring high accuracy diameters and lengths up to 4000mm+.



Features

- Extremely lightweight even at 4m span
- Extremely low co-efficient of thermal expansion
- Measuring capacity of standard set:
External: 0 > 1930mm
Internal: 150 > 2150mm
- Modular design of beam allows infinite level of adjustment within the above ranges
- Additional 1000mm extensions add quickly and cost effectively to the gauge capacity
- Internal and external measurement
0 > 105 (150)mm measurement depth from component face
- 12mm anvil travel
- Digital or mechanical readout
- Tooling included for presetting gauge on Trimos horizontal machines



Sets include:

- Pair gauge legs
- Fixed leg tube
- Moving leg tube
- 250mm CF ext. tube
- 500mm CF ext. tube
- 1000mm CF ext. tube
- Tooling to suit Trimos setting machine and storage/travel case



CFBG01 - Carbon Fibre Beam Gauge Set

Traditional External Micrometer 1961 Series

Features

Standard: BS870, DIN 863/1, ISO361

- Tungsten carbide measuring faces
- 6.5mm spindle diameter
- 'Speeder' type ratchet
- Locking lever
- Choice of standard or vernier type sleeve
- Tapered bow frame
- Supplied in plastic pocket case
- Adjusting key
- Capacity of 0-25mm / 0-1"
- Pearl chrome plated frame with insulation pads



ACCURACY

Micrometer Range Max Size up to	Measuring Faces		Screw Pitch Accuracy
	Flatness	Parallelism	
25mm	0.001mm	0.003mm	0.003mm
1"	0.00005"	0.0001"	0.0001"

MECHANICAL EXTERNAL MICROMETER

Code No	Range (mm)	Resolution (mm)	Code No	Range (inch)	Resolution (inch)
1961M	0-25	0.01	1961	0-1	0.001
1961MB	0-25	0.002	1961B	0-1	0.0001

Traditional External Micrometer 1965 Series

Features

Standard: BS870, DIN 863/1, ISO361

- Tungsten carbide measuring faces
- 6.5mm spindle diameter
- 'Speeder' type ratchet
- Locking lever
- Choice of standard or vernier type sleeve
- Tapered bow frame
- Supplied in plastic pocket case
- Adjusting key
- Capacity from 0-25mm / 0-1"
- Blue textured frame finish



ACCURACY

Micrometer Range Max Size up to	Measuring Faces		Screw Pitch Accuracy
	Flatness	Parallelism	
25mm	0.001mm	0.003mm	0.003mm
1"	0.00005"	0.0001"	0.0001"

MECHANICAL EXTERNAL MICROMETER

Code No	Range (mm)	Resolution (mm)	Code No	Range (inch)	Resolution (inch)
1965M	0-25	0.01	1965	0-1	0.001
1965MB	0-25	0.002	1965B	0-1	0.0001



Moore & Wright Traditional External Micrometers, 966 Series

Complies with: BS870, DIN 863/1, ISO361

966 Series Features:

- Tungsten carbide measuring faces
- Blue textured frame finish
- 'Speeder' type ratchet
- Locking lever
- Adjusting key
- Supplied in case
- Choice of standard or vernier type sleeve
- Spindle diameter 6.5mm

Visit bowers.co.uk for our range of spares and accessories.



ACCURACY

Micrometer Range Max Size up to	Measuring Faces		Screw Pitch
	Flatness	Parallelism	Accuracy
50mm	0.001mm	0.003mm	0.003mm
2"	0.00005"	0.0001"	0.0001"
150mm	0.001mm	0.005mm	0.003mm
6"	0.00005"	0.0002"	0.0001"

MOORE & WRIGHT MICROMETER SETTING STANDARDS

Metric			Imperial		
Code No	Length (mm)	Tolerance +/- (mm)	Code No	Length (inch)	Tolerance +/- (inch)
980525	25mm	0.001	980501	1	0.00005
980550	50mm	0.002	980502	2	0.0001
980575	75mm	0.002	980503	3	0.0001
9805100	100mm	0.002	980504	4	0.0001
9805125	125mm	0.002	980505	5	0.0001

Hardened and Ground Steel Measuring Faces with Flat Ends
Fitted Insulating Sleeve
Marked with Nominal Size

MECHANICAL EXTERNAL MICROMETERS - IMPERIAL: 1-6"

Code No	Range (inch)	Description	Code No	Range (inch)	Description
19662	1-2	0.001" Carbide anvils	1966B2	1-2	0.0001" Carbide anvils
19663	2-3	0.001" Carbide anvils	1966B3	2-3	0.0001" Carbide anvils
19664	3-4	0.001" Carbide anvils	1966B4	3-4	0.0001" Carbide anvils
19665	4-5	0.001" Carbide anvils	1966B5	4-5	0.0001" Carbide anvils
19666	5-6	0.001" Carbide anvils	1966B6	5-6	0.0001" Carbide anvils

MECHANICAL EXTERNAL MICROMETERS - METRIC: 25-150MM

Code No	Range (mm)	Description	Code No	Range (mm)	Description
1966M50	25-50	0.01mm Carbide anvils	1966MB50	25-50	0.002mm Carbide anvils
1966M75	50-75	0.01mm Carbide anvils	1966MB75	50-75	0.002mm Carbide anvils
1966M100	75-100	0.01mm Carbide anvils	1966MB100	75-100	0.002mm Carbide anvils
1966M125	100-125	0.01mm Carbide anvils	1966MB125	100-125	0.002mm Carbide anvils
1966M150	125-150	0.01mm Carbide anvils	1966MB150	125-150	0.002mm Carbide anvils

Value Line External Micrometer 200 Series

Complies with: DIN 863 / 1

Features

- Tungsten carbide measuring faces
- Satin - chrome scale
- Hammertone finish frame with insulated grip
- Tapered for easier access to difficult areas
- Locking lever
- Constant force ratchet
- Supplied in plastic case
- Adjusting key
- Metric or imperial versions available



EXTERNAL MICROMETER 200 SERIES METRIC

Code No	Range (mm)	Resolution (mm)
MW200-01	0-25	0.01
MW200-02	25-50	0.01
MW200-03	50-75	0.01
MW200-04	75-100	0.01

EXTERNAL MICROMETER 200 SERIES IMPERIAL

Code No	Range (inch)	Resolution (inch)
MW200-01i	0-1	0.0005
MW200-02i	1-2	0.0005
MW200-03i	2-3	0.0005
MW200-04i	3-4	0.0005

Value Line Blade External Micrometer 275 Series

Complies with: DIN 863

Features

- For measuring grooves, keyways etc.
- Blade 6.5mm non-rotating spindle
- Blade: 1.25mm thick
- Satin - chrome scale
- Hammertone finish frame with insulated grip
- Tapered for easier access to difficult areas
- Constant force ratchet on thimble
- Supplied in plastic case
- Adjusting key



BLADE EXTERNAL MICROMETER 275 SERIES

Code No	Range (mm)	Resolution (mm)
MW275-01	0-25	0.01
MW275-02	25-50	0.01
MW275-03	50-75	0.01
MW275-04	75-100	0.01



Moore & Wright Traditional Micrometers, Boxed Sets

Complies with BS870, DIN 863 / 1, ISO361, where applicable.

Each set is supplied in a fitted case.

Features

- Resolutions of 0.01mm or 0.002mm metric, or 0.001" or 0.0001" imperial
- Tungsten carbide 6.5mm diameter anvils
- Supplied with setting standards



RESOLUTION 0.01MM

Code No	Range (mm)	Description
MEB-122M	0-75	Carbide anvils
MEB-322M	0-150	Carbide anvils
MEB-522M	0-300	Carbide anvils

RESOLUTION 0.002MM

Code No	Range (mm)	Description
MEB-222M	0-75	Carbide anvils
MEB-422M	0-150	Carbide anvils
MEB-622M	0-300	Carbide anvils

RESOLUTION 0.001"

Code No	Range (inch)	Description
MEB-122E	0-3	Carbide anvils
MEB-322E	0-6	Carbide anvils
MEB-522E	0-12	Carbide anvils

RESOLUTION 0.0001"

Code No	Range (inch)	Description
MEB-222E	0-3	Carbide anvils
MEB-422E	0-6	Carbide anvils
MEB-622E	0-12	Carbide anvils

Point Micrometer 270 Series

Complies with: BS870, DIN 863 / 1, ISO361, where applicable.

Features

- Pointed spindle and anvil for measuring the web thickness of drills, small grooves, keyways and other hard to reach places
- Hammertone finished frame with high quality insulated grip
- Tapered for easier access to difficult areas
- With tungsten carbide measuring faces and constant force ratchet on thimble
- Packed in plastic box with standard and adjusting key



POINT MICROMETER 270 SERIES

Code No	Range (mm)	Resolution (mm)	Point Angle
MW270-01	0-25	0.01	15°
MW270-02	25-50	0.01	15°
MW270-03	50-75	0.01	15°
MW270-04	75-100	0.01	15°
MW270-05	0-25	0.01	30°
MW270-06	25-50	0.01	30°
MW270-07	50-75	0.01	30°
MW270-08	75-100	0.01	30°

Value Line Digital Point Micrometer 270 Series

Features

Standard: DIN 863

- Pointed spindle and anvil for measuring the web thickness of drills, small grooves, keyways and other hard to reach places
- Features 'easy to read' large 7.5mm character height, digital display
- Modern design
- 'Soft keys' for maximum operating comfort
- Long life guaranteed
- With constant force ratchet thimble
- Hammertone finished frame with high quality insulated grip
- Tapered for easier access to difficult areas
- Functions: mm/inch conversion, ABS/INC, on/off, zero-setting, data-output, battery low indication
- Packed in plastic box with standard setting rod



DIGITAL POINT MICROMETER 270-DDL SERIES

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Point Angle
MW270-01DBL	0-25	0-1	0.001	0.00005	30°
MW270-02DBL	25-50	1-2	0.001	0.00005	30°
MW270-03DBL	50-75	2-3	0.001	0.00005	30°
MW270-04DBL	75-100	3-4	0.001	0.00005	30°



Value Line Digital External Micrometer 200 Series

Features

Standard: DIN 863

- Large LCD display
- Tapered for easier access to difficult areas
- Hammertone finished frame with high quality insulated grip
- Tungsten carbide measuring faces and constant force ratchet on thimble
- Functions: mm/inch conversion, ABS/INC, zero setting
- Packed in plastic box with standard (over 25mm)



VALUE LINE DIGITAL EXTERNAL MICROMETER

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)
MW200-01DBL	0-25	0-1	0.001	0.00005
MW200-02DBL	25-50	1-2	0.001	0.00005
MW200-03DBL	50-75	2-3	0.001	0.00005
MW200-04DBL	75-100	3-4	0.001	0.00005

Digital External Micrometer 201 Series

Features

Standard: DIN 863

- Protected to IP54 specifications
- Rugged steel design
- Large LCD display
- Absolute and Incremental modes
- Carbide measuring faces
- Ball attachment included
- Packed in plastic box with standard (over 25mm)



DIGITAL EXTERNAL MICROMETER

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)
MW201-01DAB	0-25	0-1	0.001	0.00005"
MW201-02DAB	25-50	1-2	0.001	0.00005"
MW201-03DAB	50-75	2-3	0.001	0.00005"
MW201-04DAB	75-100	3-4	0.001	0.00005"

Sylvac S_Mike PRO

Complies with: DIN 863



see p249 for wireless options



Features

- Automatic wake-up by moving the measuring spindle
- Sleep mode after 20 min. of no use
- Position memorised in sleep mode
- Water protected for heavy-duty work with coolants and lubricants, protection rating IP67 according to IEC 60529, with or without connector
- Measuring range 0-102mm covered with 3 instruments only
- Set of 3 micrometers 0-102mm available
- Quick displacement of the measuring spindle 12mm / rotation
- Battery life 12,000 hours
- Non-rotating spindle
- Preset function
- Setting masters provided where applicable



30-903-0300

S_MIKE PRO - STANDARD

Code No	Range (mm)	Maximum Error (µm)	Repeatability (µm)	Proximity	Protection Rating
30-903-0300*	0-30	3	1	USB / RS 232 / Digimatic / Wireless	IP67 with or without connector
30-903-0600	30-66	4	1	USB / RS 232 / Digimatic / Wireless	IP67 with or without connector
30-903-1000	66-102	5	1	USB / RS 232 / Digimatic / Wireless	IP67 with or without connector
30-903-1360	100-136	7	2	USB / RS 232 / Digimatic / Wireless	IP67 with or without connector
30-903-1600	125-161	8	2	USB / RS 232 / Digimatic / Wireless	IP67 with or without connector

*Adjustable measuring force 5N / 10N

Code No	Range (mm)	Description	Proximity	Protection Rating
30-903-1300	0-102	Sylvac S_Mike PRO Box Set	USB / RS 232 / Digimatic / Wireless	IP67 with or without connector



Sylvac S_Mike PRO Ø2 & S_Mike PRO - BLADE

Complies with: DIN 863



see p249 for wireless options



Features

- Automatic wake-up by moving the measuring spindle
- Sleep mode after 20 min. of no use
- Position memorised in sleep mode
- Water protected for heavy-duty work with coolants and lubricants, protection rating IP67 according to IEC 60529, with or without connector
- Quick displacement of the measuring spindle 12mm / rotation
- Battery life 12,000 hours
- Non-rotating spindle
- Preset function

Tempered steel knife shaped anvils 0.7mm



30-903-0302

Tempered steel anvils type Ø 2mm



30-903-0301

Tempered steel disc anvils



30-903-0303

S_MIKE PRO Ø2 - 2MM DIAMETER ANVILS

Code No	Range (mm)	Maximum Error (µm)	Repeatability (µm)	Proximity	Protection Rating
30-903-0301*	0-25	3	1	USB / RS 232 / Digimatic / Wireless	IP67 with or without connector
30-903-0601	25-60	4	1	USB / RS 232 / Digimatic / Wireless	IP67 with or without connector
30-903-1001	60-95	5	1	USB / RS 232 / Digimatic / Wireless	IP67 with or without connector
30-903-1301	95-120	6	2	USB / RS 232 / Digimatic / Wireless	IP67 with or without connector
30-903-1601	120-145	7	2	USB / RS 232 / Digimatic / Wireless	IP67 with or without connector

*Adjustable measuring force 5N / 10N

S_MIKE PRO - BLADE ANVILS

Code No	Range (mm)	Maximum Error (µm)	Repeatability (µm)	Proximity	Protection Rating
30-903-0302*	0-25	3	1	USB / RS 232 / Digimatic / Wireless	IP67 with or without connector
30-903-0602	25-60	4	1	USB / RS 232 / Digimatic / Wireless	IP67 with or without connector
30-903-1002	60-95	5	1	USB / RS 232 / Digimatic / Wireless	IP67 with or without connector
30-903-1302	95-120	6	2	USB / RS 232 / Digimatic / Wireless	IP67 with or without connector
30-903-1602	120-145	7	2	USB / RS 232 / Digimatic / Wireless	IP67 with or without connector

*Adjustable measuring force 5N / 10N

S_MIKE PRO - SPECIAL ANVILS

Code No	Range (mm)	Maximum Error (µm)	Repeatability (µm)	Description	Proximity	Protection Rating
30-903-0303*	0-30	4	1	With disc anvil	USB / RS 232 / Digimatic / Wireless	IP67 with or without connector
30-903-0304*	0-25	3	1	With spherical anvil on one side	USB / RS 232 / Digimatic / Wireless	IP67 with or without connector
30-903-0305*	0-25	3	1	With 2 spherical anvils	USB / RS 232 / Digimatic / Wireless	IP67 with or without connector

*Adjustable measuring force 5N / 10N

Tube Micrometer 255 Series

Complies with: DIN 863

Features

- Micrometer for measuring tube wall thickness
- With spherical anvil
- Satin - chrome scale
- Hammertone finished frame with insulated grip
- Tungsten carbide measuring faces on spindle
- Constant force ratchet on thimble
- Supplied in plastic box



TUBE MICROMETER 255 SERIES

Code No	Range (mm)	Resolution (mm)
MW255-01	0-25	0.01
MW255-02	25-50	0.01

Digital Tube Micrometer 255-DDL Series

Complies with: DIN 863

Features

- High quality Digital micrometer for measuring tube wall thickness
- With spherical anvil
- Features 'easy to read' large 7.5mm character height, digital display
- 'Soft keys' for maximum operating comfort
- Long life guaranteed
- With constant force ratchet thimble
- Chrome plated frame with high quality insulated grip
- Functions: mm/inch conversion, on/off, zero-setting, battery low indication, hold, 0...ABS
- Packed in plastic box with standard and battery cover key



DIGITAL TUBE MICROMETER 255-DDL SERIES

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)
MW255-01DDL	0-25	0-1	0.001	0.00005
MW255-02DDL	25-50	1-2	0.001	0.00005

Caliper Type Inside Micrometer 280 Series

Complies with: DIN 863

Features

- For measuring the inside of a bore or hole
- Resolution 0.01mm
- With constant force ratchet thimble
- Satin chrome finished frame
- With tungsten carbide measuring faces and constant force ratchet
- Locking clamp for positive locking of spindle
- Packed in wooden / plastic box with setting ring and adjusting key



CALIPER TYPE INSIDE MICROMETER 280 SERIES

Code No	Range (mm)	Resolution (mm)	Note
MW280-01	5-30	0.01	Setting Ring Included
MW280-02	25-50	0.01	Setting Ring Included
MW280-03	50-75	0.01	
MW280-04	75-100	0.01	

Digital Caliper Type Inside Micrometer 280-DDL Series

Complies with: DIN 863

Features

- For measuring the inside of a bore or hole
- Features 'easy to read' large 7.5mm character height, digital display
- 'Soft keys' for maximum operating comfort
- With constant force ratchet thimble
- Satin chrome finished frame with high quality insulated grip
- Functions: mm / inch conversion, tolerance indication, ABS / INC, preset, on / off, zero-setting, battery low indication



DIGITAL CALIPER TYPE INSIDE MICROMETER 280-DDL SERIES

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Note
MW280-01DDL	5-30	0.2-1.2	0.001	0.00005	Setting Ring Included
MW280-02DDL	25-50	1-2	0.001	0.00005	Setting Ring Included
MW280-03DDL	50-75	2-3	0.001	0.00005	
MW280-04DDL	75-100	3-4	0.001	0.00005	
MW280-05DDL	100-125	4-5	0.001	0.00005	
MW280-06DDL	125-150	5-6	0.001	0.00005	

Value Line External Micrometer Set 215 Series

Features

Standard: DIN 863

- Resolution 0.01mm
- Satin-chrome scale
- Satin chrome forged steel frame with insulated grip
- With tungsten carbide measuring faces and constant force ratchet
- Packed in wooden box with standards and adjusting key



VALUE LINE EXTERNAL MICROMETER SET

Code No	Range (mm)	Resolution (mm)	Note
MW215-01BL	0-75	0.01	3 Micrometers In Set
MW215-02BL	0-100	0.01	4 Micrometers In Set
MW215-03BL	0-150	0.01	6 Micrometers In Set
MW215-04BL	0-200	0.01	8 Micrometers In Set

Value Line Micrometer With Interchangeable Anvils 217 Series

Features

Standard: DIN 863

- Features wide measuring range with interchangeable anvils
- Hardened and ground spindles/anvils
- Strong forged steel frame, hammertone finish, quality insulated grip
- Design Line product
- Satin-chrome scale
- Tapered for easier access to difficult areas
- With tungsten carbide measuring faces and constant force ratchet
- Packed in wooden box with standard and adjusting key



MICROMETER WITH INTERCHANGEABLE ANVILS

Code No	Range (mm)	Resolution (mm)
MW217-01	0-100	0.01
MW217-02	0-150	0.01
MW217-03	100-200	0.01
MW217-04	150-300	0.01
MW217-05	200-300	0.01

Large External Micrometer 210 Series

Features

Standard: DIN 863

- Strong forged steel frame, hammertone finish, quality insulated grip
- Design Line product
- Satin-chrome scale
- Tapered for easier access to difficult areas
- With tungsten carbide measuring faces and constant force ratchet
- Packed in wooden box with standard and adjusting key



LARGE EXTERNAL MICROMETER

Code No	Range (mm)	Resolution (mm)
MW210-01	100-125	0.01
MW210-02	125-150	0.01
MW210-03	150-175	0.01
MW210-04	175-200	0.01
MW210-05	200-225	0.01
MW210-06	225-250	0.01
MW210-07	250-275	0.01
MW210-08	275-300	0.01

Digital Large External Micrometer 210-DDL Series

Complies with: DIN 863



Features

Standard: DIN 863

- Strong forged steel frame, hammertone finish, quality insulated grip
- Design Line product
- Large 7.5mm character height digital display
- Tapered for easier access to difficult areas
- With tungsten carbide measuring faces and constant force ratchet
- Modern design
- 'Soft keys' for maximum operating comfort
- Functions: mm/inch conversion, set, on/off zero-setting, data-output, battery low indication, hold, 0...ABS
- Packed in wooden box with standard and battery cover key

EXTERNAL MICROMETER 210-DDL SERIES - METRIC RANGE ONLY

Code No	Range (mm)	Resolution (mm)	Resolution (inch)
MW210-01DDL	100-125	0.001	0.00005
MW210-02DDL	125-150	0.001	0.00005
MW210-03DDL	150-175	0.001	0.00005
MW210-04DDL	175-200	0.001	0.00005
MW210-05DDL	200-225	0.001	0.00005
MW210-06DDL	225-250	0.001	0.00005
MW210-07DDL	250-275	0.001	0.00005
MW210-08DDL	275-300	0.001	0.00005

Moore & Wright Traditional External Micrometers, 971 Series: 150-450mm / 6 - 18"

Complies with: BS870, DIN 863/1, ISO361, where applicable

Features

- Capacities from 150-450mm / 6-18"
- Lightweight frame with ribs and reliefs providing both high strength and user comfort
- Blue textured frame finish
- Hardened steel or tungsten carbide anvils 6.8mm diameter
- 'Speeder' type ratchet and locking lever
- Supplied in a case with recess for setting gauge
- Setting gauge supplied separately

ACCURACY

Micrometer Capacity Max Size up to	Measuring Faces		Screw Pitch Accuracy
	Flatness	Accuracy	
225mm	0.001mm	0.005mm	0.003mm
9"	0.00005"	0.0002"	0.0001"
300mm	0.003mm	0.008mm	0.003mm
12"	0.0001"	0.0003"	0.0001"
375mm	0.003mm	0.013mm	0.005mm
15"	0.0001"	0.0005"	0.0002"
450mm	0.003mm	0.015mm	0.005mm
18"	0.0001"	0.0006"	0.0002"

MOORE & WRIGHT TRADITIONAL EXTERNAL MICROMETERS, 971 SERIES: 150-450MM / 6 - 18"

Code No	Description	Size
1971M175	0.01mm Carbide Anvils	150-175mm
19717	0.001" Carbide Anvils	6-7"
1971M200	0.01mm Carbide Anvils	175-200mm
19718	0.001" Carbide Anvils	7-8"
1971M225	0.01mm Carbide Anvils	220-225mm
19719	0.001" Carbide Anvils	8-9"
1971M250	0.01mm Carbide Anvils	225-250mm
197110	0.001" Carbide Anvils	9-10"
1971M275	0.01mm Carbide Anvils	250-275mm
197111	0.001" Carbide Anvils	10-11"
1971M300	0.01mm Carbide Anvils	275-300mm
197112	0.001" Carbide Anvils	11-12"
1971M325	0.01mm Carbide Anvils	300-325mm
197113	0.001" Carbide Anvils	12-13"
1971M350	0.01mm Carbide Anvils	325-350mm
197114	0.001" Carbide Anvils	13-14"
1971M375	0.01mm Carbide Anvils	350-375mm
197115	0.001" Carbide Anvils	14-15"
1971M400	0.01mm Carbide Anvils	375-400mm
197116	0.001" Carbide Anvils	15-16"
1971M425	0.01mm Carbide Anvils	400-425mm
197117	0.001" Carbide Anvils	16-17"
1971M450	0.01mm Carbide Anvils	425-450mm
197118	0.001" Carbide Anvils	17-18"

SETTING STANDARD

Code No	Size	Diameter (mm)
980M150	150mm	8.0
9806	6"	8.0
980M175	175mm	9.5
9807	7"	9.5
980M200	220mm	9.5
9808	8"	9.5
980M225	225mm	9.5
9809	9"	9.5
980M250	250mm	9.5
98010	10"	9.5
980M275	275mm	9.5
98011	11"	9.5
980M300	300mm	11.1
98012	12"	11.1
980M325	325mm	11.1
98013	13"	11.1
980M350	350mm	11.1
98014	14"	11.1
980M375	375mm	12.5
98015	15"	12.5
980M400	400mm	12.5
98016	16"	12.5
980M425	425mm	12.5
98017	17"	12.5





Moore & Wright Traditional Adjustable Micrometers

Complies with BS870, DIN 863 / 1, ISO361, where applicable

Features

- Hardened steel or tungsten carbide measuring faces
- 6.8mm spindle diameter
- 'Speeder' type ratchet
- Locking lever
- Each model supplied complete with setting gauges
- Blue textured frame finish
- Ribbed bow frames (sizes up to 150mm / 6")
- Lightweight fabricated tubular bow frame (sizes 750-1800mm / 36-72")
- All sizes supplied in either a durable plastic or aluminium framed case

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METRIC WITH STEEL / CARBIDE ANVILS 0.01MM READING

Code No	Description	Code No	Description	Range (mm)	Setting Gauges	Interchangeable Anvils
940MX	Steel Anvils	MEA021M	Carbide Anvils	0-50	1	2
941MX	Steel Anvils	MEA041M	Carbide Anvils	0-100	3	4
942MX	Steel Anvils	MEA051M	Carbide Anvils	50-150	4	4
943MX	Steel Anvils	MEA081M	Carbide Anvils	100-200	4	4
945MX	Steel Anvils	MEA121M	Carbide Anvils	200-300	4	4
1044MX150	Steel Anvil	MEA061M	Carbide Anvils	0-150	5	6
1044MX300	Steel Anvils	MEA131M	Carbide Anvils	150-300	6	6
1044MX450	Steel Anvils	MEA181M	Carbide Anvils	300-450	6	6
1044MX600	Steel Anvils	MEA241M	Carbide Anvils	450-600	6	6
1044MX750	Steel Anvils	MEA301M	Carbide Anvils	600-750	3	6
MEA360M	Steel Anvils	MEA361M	Carbide Anvils	750-900	3	6
MEA420M	Steel Anvils	MEA421M	Carbide Anvils	900-1050	3	6
MEA480M	Steel Anvils	MEA491M	Carbide Anvils	1050-1200	3	6
MEA540M	Steel Anvils	MEA541M	Carbide Anvils	1200-1350	3	6
MEA600M	Steel Anvils	MEA601M	Carbide Anvils	1350-1500	3	6
MEA660M	Steel Anvils	MEA661M	Carbide Anvils	1500-1650	3	6
MEA720M	Steel Anvils	MEA721M	Carbide Anvils	1650-1800	3	6

ACCURACY

Micrometer Range	Measuring Faces		Screw Pitch Accuracy
	Flatness	Parallelism	
0-50mm	0.001mm	0.008mm	0.003mm
0-100mm	0.001mm	0.010mm	0.003mm
50-150mm	0.001mm	0.013mm	0.003mm
100-200mm	0.001mm	0.013mm	0.003mm
200-300mm	0.003mm	0.015mm	0.003mm
0-150mm	0.003mm	0.003mm	0.003mm
150-300mm	0.003mm	0.003mm	0.003mm
300-450mm	0.003mm	0.005mm	0.005mm
450-600mm	0.003mm	0.005mm	0.005mm
600-750mm	0.003mm	0.005mm	0.005mm
750-900mm	0.003mm	0.005mm	0.005mm
900-1050mm	0.003mm	0.005mm	0.005mm
1050-1200mm	0.003mm	0.005mm	0.005mm
1200-1350mm	0.003mm	0.005mm	0.005mm
1350-1500mm	0.003mm	0.005mm	0.005mm
1500-1650mm	0.003mm	0.005mm	0.005mm
1650-1800mm	0.003mm	0.005mm	0.005mm

IMPERIAL WITH STEEL / CARBIDE ANVILS 0.001" READING

Code No	Description	Code No	Description	Range (inch)	Setting Gauges	Interchangeable Anvils
940X	Steel Anvils	MEA021E	Carbide Anvils	0-2	1	2
941X	Steel Anvils	MEA041E	Carbide Anvils	0-4	3	4
942X	Steel Anvils	MEA051E	Carbide Anvils	2-6	4	4
943X	Steel Anvils	MEA081E	Carbide Anvils	4-8	4	4
945X	Steel Anvils	MEA121E	Carbide Anvils	8-12	4	4
1044X6	Steel Anvils	MEA061E	Carbide Anvils	0-6	5	6
1044X12	Steel Anvils	MEA131E	Carbide Anvils	6-12	6	6
1044X18	Steel Anvils	MEA181E	Carbide Anvils	12-18	6	6
1044X24	Steel Anvils	MEA241E	Carbide Anvils	18-24	6	6
1044X30	Steel Anvils	MEA301E	Carbide Anvils	24-30	3	6
MEA360E	Steel Anvils	MEA361E	Carbide Anvils	30-36	3	6
MEA420E	Steel Anvils	MEA421E	Carbide Anvils	36-42	3	6
MEA480E	Steel Anvil	MEA481E	Carbide Anvils	42-48	3	6
MEA540E	Steel Anvil	MEA541E	Carbide Anvils	48-54	3	6
MEA600E	Steel Anvils	MEA601E	Carbide Anvils	54-60	3	6
MEA660E	Steel Anvils	MEA661E	Carbide Anvils	60-66	3	6
MEA720E	Steel Anvils	MEA721E	Carbide Anvils	66-72	3	6

ACCURACY

Micrometer Range	Measuring Faces		Screw Pitch Accuracy
	Flatness	Parallelism	
0-2"	0.00005"	0.003"	0.0001"
0-4"	0.00005"	0.0004"	0.0001"
2-6"	0.00005"	0.0005"	0.0001"
4-8"	0.00005"	0.0005"	0.0001"
8-12"	0.0001"	0.0006"	0.0001"
0-6"	0.0001"	0.0001"	0.0001"
6-12"	0.0001"	0.0001"	0.0001"
12-18"	0.0001"	0.0002"	0.0002"
12-18"	0.0001"	0.0002"	0.0002"
24-30"	0.0001"	0.0002"	0.0002"
30-36"	0.0001"	0.0002"	0.0002"
36-42"	0.0001"	0.0002"	0.0002"
42-48"	0.0001"	0.0002"	0.0002"
48-54"	0.0001"	0.0002"	0.0002"
54-60"	0.0001"	0.0002"	0.0002"
60-66"	0.0001"	0.0002"	0.0002"
66-72"	0.0001"	0.0002"	0.0002"

Large External Micrometers 220 Series

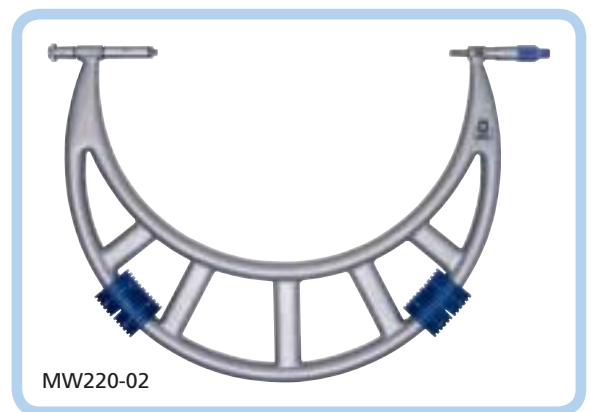
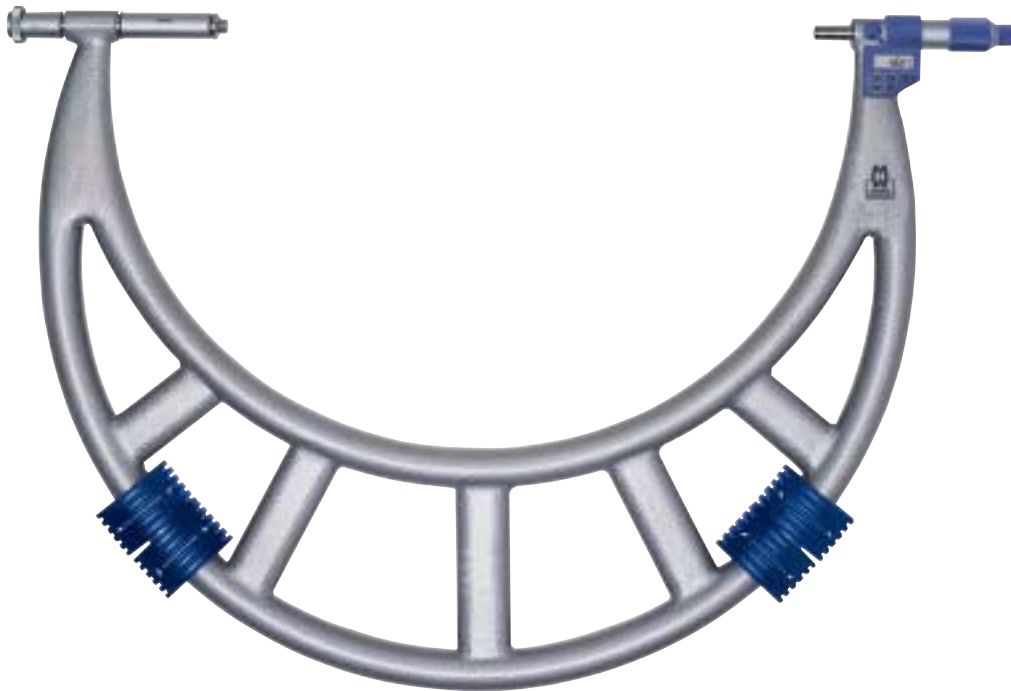
Features

Standard: DIN 863 / IAIS

- Features wide measuring range with interchangeable anvils
- Hardened and ground spindles/anvils
- "Tube type" low weight, Dur-al frame with insulated grips
- Tapered for easier access to difficult areas
- With tungsten carbide measuring faces and constant force ratchet on thimble
- Packed in a wooden/plastic box with setting standard and adjusting key

Digital Features

- Large 7.5mm character height digital display
- 'Soft keys' for maximum operating comfort
- Functions: mm/inch conversion, tolerance indication, ABS/INC, preset, on/off, zero-setting, battery low indication



LARGE EXTERNAL MICROMETER

Code No	Range (mm)	Resolution (mm)
MW220-01	300-400	0.01
MW220-02	400-500	0.01
MW220-03	500-600	0.01
MW220-04	600-700	0.01
MW220-05	700-800	0.01
MW220-06	800-900	0.01
MW220-07	900-1000	0.01
MW220-08	1000-1200	0.01
MW220-09	1200-1400	0.01

LARGE DIGITAL EXTERNAL MICROMETER

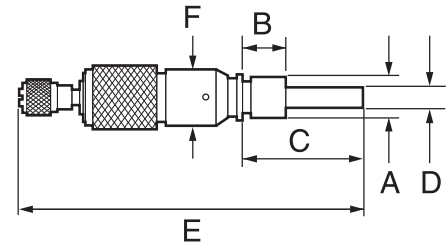
Code No	Range (mm)	Resolution (mm)	Resolution (inch)
MW220-01DDL	300-400	0.001	0.00005
MW220-02DDL	400-500	0.001	0.00005
MW220-03DDL	500-600	0.001	0.00005
MW220-04DDL	600-700	0.001	0.00005
MW220-05DDL	700-800	0.001	0.00005
MW220-06DDL	800-900	0.001	0.00005
MW220-07DDL	900-1000	0.001	0.00005



Moore & Wright Micrometer Heads

Complies with BS1734 and DIN 863 where applicable

Moore & Wright micrometer heads are available in a range of standard sizes and configurations. However, if you have specific requirements which are not covered by the models listed below then please contact our Customer Service Department.



METRIC: MICROMETER HEADS

Code No	Range (mm)	Principal dimensions in mm						Basic Features			Description
		Dimn - A	Dimn - B	Dimn - C	Dimn - D	Dimn - E	Dimn - F	Ratchet	Locking Screw	Speeder	
MHM-522M	0-25	12.7	19.0	50.8	6.8	122.0	16.5	Yes	No	No	Flat Spindle
MHM-543M	0-25	9.525	19.0	45.6	6.8	122.0	16.5	Yes	Yes	Yes	Flat Spindle
MW310-15	0-15	9.5	9.5	26.0	5.0	61.0	13.5	No	No	No	Flat Spindle
MW310-15R	0-15	9.5	9.5	26.0	5.0	61.0	13.5	No	No	No	Spherical Spindle
MW310-25	0-25	12.0	16.0	46.0	6.5	115.0	18.0	Yes	No	No	Flat Spindle
MW310-25B	0-25	12.0	16.0	46.0	8.0	115.0	18.0	Yes	No	No	Flat Spindle

IMPERIAL: MICROMETER HEADS

Code No	Range (inch)	Principal dimensions in inches						Basic Features			Description
		Dimn - A	Dimn - B	Dimn - C	Dimn - D	Dimn - E	Dimn - F	Ratchet	Locking Screw	Speeder	
MHM-543E	0-1	0.375	0.75	1.795	0.268	4.813	0.650	Yes	Yes	Yes	Flat Spindle
MHM-771E	0-1	0.5	0.75	2.000	0.268	4.531	1.138	No	No	Yes	Flat Spindle

Value Line Digital Micrometer Head 312 Series

Features

Standard: DIN862

- Universal micrometer head for X-Y stages or other purposes
- Large LCD display
- Constant force ratchet thimble
- Functions: mm/inch conversion, ABS/INC, zero-setting



DIGITAL MICROMETER HEAD 312 SERIES

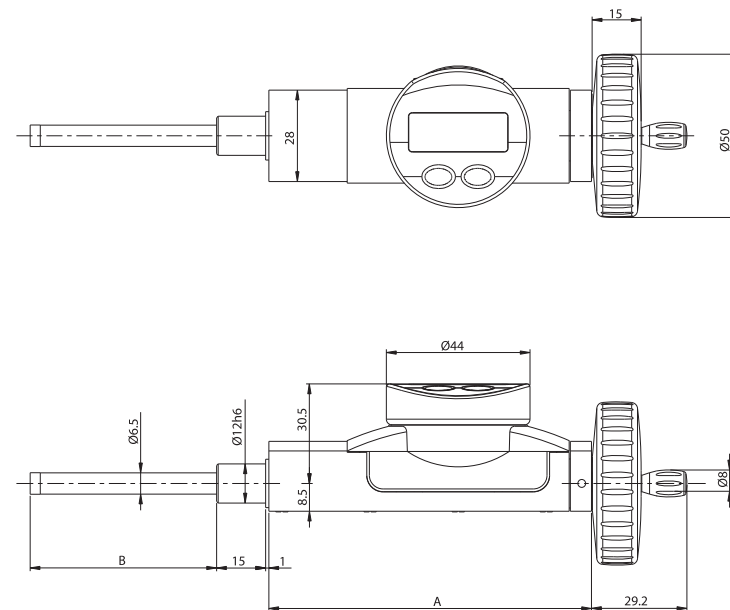
Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Dimn - A	Dimn - B	Dimn - C
MW312-25DBL	0-25	1	0.001	0.00005	6.5	150	12.0

Sylvac Digital Micrometer Heads

Features

Data output RS232, combined with external power supply

- Fine adjustment available (accessories)
- Type H and V (same model)
- Reduced dimensions, compact design
- Selection of measuring direction, preset function, absolute of relative measurement



DIGITAL MICROMETER HEADS

Code No	Range (mm)	Maximum Error	Repeatability (mm)	Resolution (mm)	Dimn - A	Dimn - B
30-852-2001	0-25	5	2	0.001	74.5	33.1
30-852-2011	0-50	8	2	0.001	98.5	57.1



Moore & Wright Traditional Internal Micrometers 900 Series

Each model comprises a measuring head, a set of extension rods and a spacing collar to facilitate alternative measuring ranges. The smaller models (901, 902 & 903) have detachable extension handles. All models supplied in a fitted case.

Complies with: BS959

Features

- Supplied in a fitted case

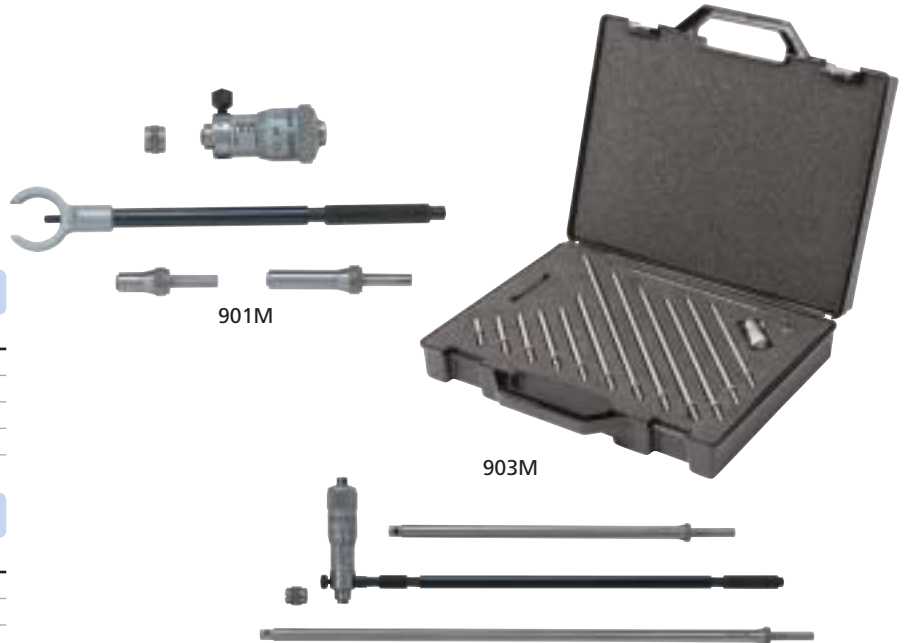
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METRIC

Code No	Range (mm)	Head Range (mm)
901M	25-55	5
902M	50-210	10
903M	50-310	10
908M825	200-825	25

IMPERIAL

Code No	Range (inch)	Head Range (inch)
901	1-2	0.25
902	2-8	0.50
903	2-12	0.50
908-33	8-33	1.00



Tubular Internal Micrometer 300 Series

Features

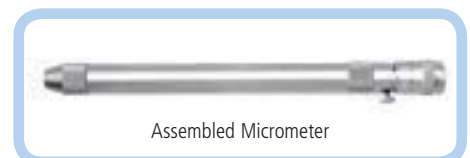
Standard: DIN 863

- Ideal for large diameters
- With tungsten carbide measuring faces
- All measuring faces are micro-lapped
- Satin-chromed scale and body with lock screw
- All extension pieces equipped with gauge parts are under constant spring loading
- Packed in a wooden box



TUBULAR INTERNAL MICROMETER

Code No	Range (mm)	Resolution (mm)
MW300-01	50-250	0.01
MW300-02	50-600	0.01
MW300-04	150-2000	0.01



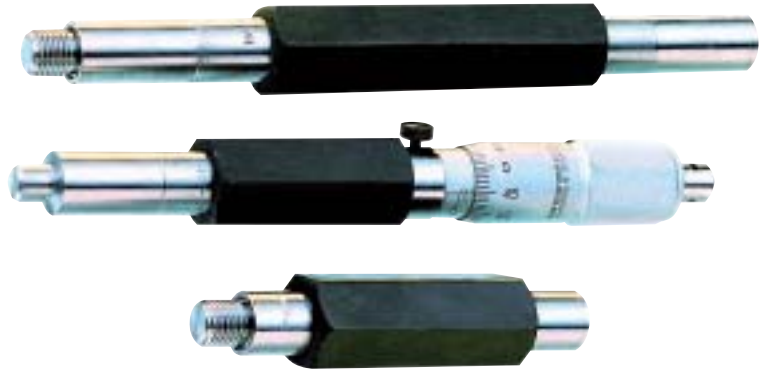
Moore & Wright Traditional Internal Micrometer G700 / G710 Series

Features

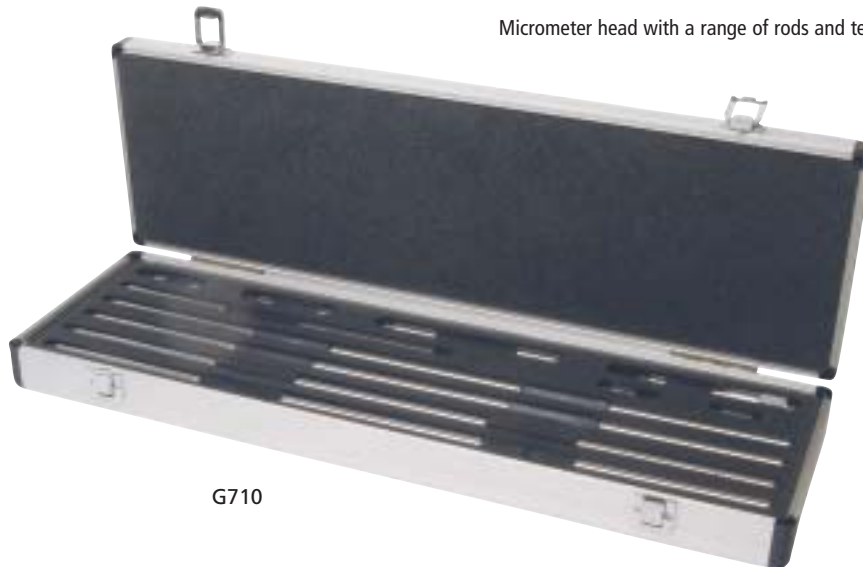
Standard: BS959

- Suitable for applications requiring a wide measuring range
- Stick micrometer consists of a micrometer with a set of extension rods
- All models supplied in a fitted case

Please Note: When using a stick micrometer, the instrument should be fully supported to prevent sagging and inaccuracies.



Micrometer head with a range of rods and terminal end.



G710

METRIC ACCESSORIES

Code No	Description	Range (mm)
G700M	Micrometer Head*	
MST-791M	Extension Rod	25
MST-792M	Extension Rod	50
MST-793M	Extension Rod	75
MST-794M	Extension Rod	150
MST-795M	Extension Rod	300
MST-796M	Extension Rod	600

*Complete with Terminal End

IMPERIAL ACCESSORIES

Code No	Description	Range (inch)
G700E	Micrometer Head*	
MST-791E	Extension Rod	1
MST-792E	Extension Rod	2
MST-793E	Extension Rod	3
MST-794E	Extension Rod	6
MST-795E	Extension Rod	12
MST-796E	Extension Rod	24

*Complete with Terminal End

METRIC: 150MM-6175MM, RESOLUTION 0.01MM

Code No	Range (mm)	Head Range (mm)	Rod Length (mm)
G704M	150-1375	25	25, 50, 75, 150, 300, 600
G710M	150-3175	25	25, 50, 75, 150, 300, 4 x 600
G720M	150-6175	25	25, 50, 75, 150, 300, 9 x 600

IMPERIAL: 6" -20' 7", RESOLUTION 0.001"

Code No	Range (inch)	Head Range (inch)	Rod Length (inch)
G704	6-55	1	1, 2, 3, 6, 12, 24
G710	6-127	1	1, 2, 3, 6, 12, 4 x 24
G720	6-247	1	1, 2, 3, 6, 12, 9 x 24

Micrometer Ball Attachment

Features

- To suit the 1961, 1965 and 1966 series micrometers
- Can be fitted to the anvil or spindle on external micrometer series 1961, 1965 and 1966 to enable round or irregular surfaces to be measured
- The ball is hardened and moves freely to allow contact with the object being measured

Note: Always deduct the ball diameter from any reading.



MICROMETER BALL ATTACHMENT

Code No	Description	Diameter (mm)	Diameter (inch)	Note
878M	6.5mm and 6.8mm	6.0 ball		1 of each spindle size supplied
878	0.256" and 0.268"		0.250 ball	1 of each spindle size supplied

Micrometer Stand

Features

- Designed for micrometers up to 100mm
- Painted cast iron base with plastic covered clamping jaws
- Angle adjustable

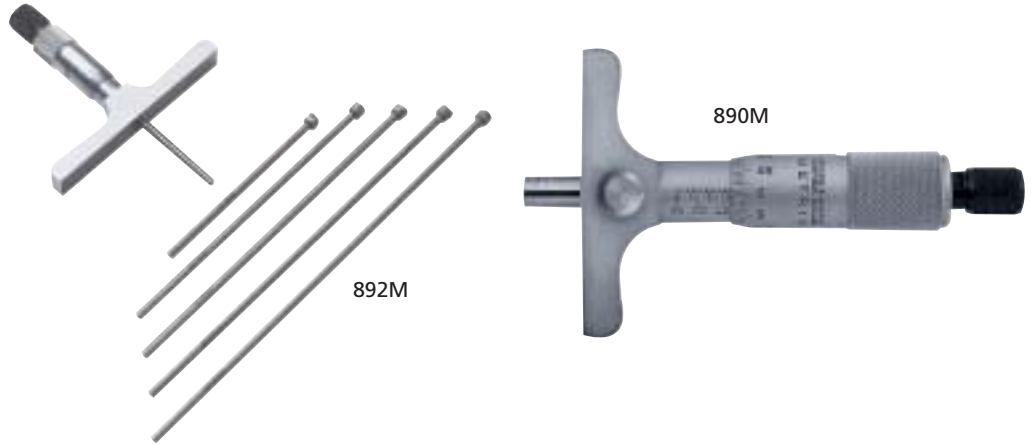


MICROMETER STAND

Code No	Description
MW279-01A	Stand for micrometers up to 100mm

Moore & Wright Traditional Depth Gauge Micrometer

Complies with BS6468:1984



890 Series:

- Fixed depth rod, 6.5mm diameter
- 63.5mm / 2 1/2" base length
- 'Speeder' type ratchet
- Lock screw

891 Series:

- Interchangeable depth rods, 4mm diameter
- 63.5mm / 2 1/2" base length

892 Series:

- As 891 Series except for:
100mm / 4" base length

Please visit bowers.co.uk for our range of Spares & Accessories

DEPTH GAUGE MICROMETER - METRIC

Code No	Range (mm)
890M	0-25
891M75	0-75
891M150	0-150
891M300	0-300
892M75	0-75
892M150	0-150
892M300	0-300

DEPTH GAUGE MICROMETER - IMPERIAL

Code No	Range (inch)
890	0-1
8913	0-3
8916	0-6
89112	0-12
8923	0-3
8926	0-6
89212	0-12

Digital Depth Micrometer 305-DDL Series

Complies with: DIN 863

Features

- Interchangeable rods (spherical ends)
- Rods are hardened and spherically lapped
- Features 'easy to read' large 7.5mm character height, digital display
- 'Soft keys' for maximum operating comfort
- Constant force ratchet thimble
- Satin chrome finished base
- Functions: mm / inch conversion, set, on/off, zero-setting, battery low indication, hold, 0...ABS



DIGITAL DEPTH MICROMETER 305-DDL SERIES

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Size of Base
MW305-00DDL	0-25	0-1	0.001	0.00005	100mm
MW305-01DDL	0-50	0-2	0.001	0.00005	100mm
MW305-02DDL	0-100	0-4	0.001	0.00005	100mm
MW305-03DDL	0-150	0-6	0.001	0.00005	100mm
MW305-04DDL	0-200	0-8	0.001	0.00005	100mm
MW305-05DDL	0-300	0-12	0.001	0.00005	100mm



Digital Tyre Profile Gauge 176 Series

Features

- Spring loaded with a hold measurement button for ease of use
- Large LCD display
- Supplied on retail packaging
- Vinyl holder supplied as standard
- Spindle \varnothing 2.5mm



DIGITAL TYRE PROFILE GAUGE 176 SERIES

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)
MW176-01DTG	0-25	0-1	0.01	0.0005

Digital Depth Caliper 170-DDL Series

Features

- 'Soft keys' for maximum operating comfort
- Easy to read LCD display
- Ground micro-lapped measuring surfaces
- Functions : mm / inch conversion, on / off, zero-setting, battery low indication
- Available with hook (H) or without hook (B)



DEPTH CALIPER 170-DDL SERIES (Without Hook)

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Size of Base
MW170-15DB	0-150	0-6	0.01	0.0005	100mm
MW170-20DB	0-200	0-8	0.01	0.0005	100mm
MW170-30DB	0-300	0-12	0.01	0.0005	100mm

DEPTH CALIPER 170-DDL SERIES (With Hook)

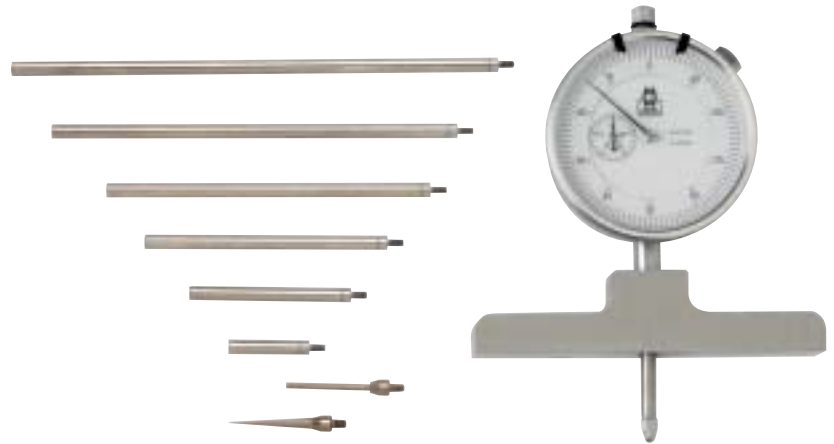
Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Size of Base
MW170-15DH	0-150	0-6	0.01	0.0005	100mm
MW170-20DH	0-200	0-8	0.01	0.0005	100mm
MW170-30DH	0-300	0-12	0.01	0.0005	100mm

Note: Hook width: 2mm

Mechanical Depth Gauge 172 Series

Features

- 0-25mm travel mechanical indicator
- Satin chrome finish
- Rods connect together for full 550mm capacity
- Base size: 100mm
- Includes 2 extra points for small hole applications



MECHANICAL DEPTH GAUGE 172 SERIES

Code No	Range (mm)	Resolution (mm)
MW172-01	0-550	0.01

Digital Depth Gauge 172 Series

Features

- 0-25mm / 0-1" travel digital indicator
- Inch / mm conversion
- Zero setting at any position
- Rods connect together for full 550mm capacity
- Base size: 100mm
- Includes 2 extra points for small hole applications



DIGITAL DEPTH GAUGE 172 SERIES

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)
MW172-01D	0-550	0-22	0.01	0.0005

Sylvac S_Depth Pro Depth Gauge

Features

- PRESET function
- Two references
- Automatic selection of measuring direction
- Constant setting for measurement with cylindrical or spherical anvils
- Interchangeable base
- Standard base - 100mm



ACCESSORIES

Code No	Description	Length (mm)
30-805-2180	Additional Base	180
30-805-2260	Additional Base	260
30-805-2320	Additional Base	320
30-805-6101	Ball probe M2.5 (standard)	
30-805-6102	Offset Anvils	
30-805-6103	Anvil with pin Ø4 mm	

SYLVAC S_DEPTH PRO DEPTH GAUGE

Code No	Measuring Depth (mm)	Maximum Error (µm)	Repeatability (µm)	Output
30-805-6005	300	30	10	USB / RS232 / Digimatic / Wireless
30-805-6006	600	40	10	USB / RS232 / Digimatic / Wireless

Bowers Universal "Snap" Gauge

The Bowers SNAPMATIC snap gauge has been designed specifically for quick, reliable and accurate measurement of external cylindrical diameters. Particularly suitable for use in series production, the instrument is tough and solid enough to use on the machine in the workshop and flexible enough to be used in the measuring room for sample measurements (bench-stand available). The measuring surfaces are of top-quality tungsten carbide mounted on a no-maintenance spring-operated mechanism.

Features

- Measuring ranges: 0-25mm (0-1"), 25-50mm (1-2"), 50-75mm (2-3"), 75-100mm (3-4"), 100-125mm (4-5"), 125-150mm (5-6")
- Gauging travel: 0.5mm
- Constant measuring pressure
- Adjustable depth-stop
- 8mm diameter indicator locking bush as standard (3/8" on request)
- Can be used with dial-gauges, digital indicators or measuring probes
- 16mm wide tungsten carbide measuring surfaces for positive-feel measurement (see table for flatness and parallelism)
- Measuring force: 13 N \pm 3N
- Indicator protection
- Indicator can be swivelled through 360°
- Bench stand available
- Heat-resistant polymer grip



ask for details



see p249 for wireless options



Indicator not included in price of gauge.

BOWERS 'SNAP' GAUGE

Code No	Range (mm)	Flatness (μ m)	Parallelism (μ m)
SPM25X	0-25mm	0.3	2
SPM50X	25-50mm	0.3	2
SPM75X	50-75mm	0.3	3
SPM100X	75-100mm	0.3	3
SPM125X	100-125mm	0.3	4
SPM150X	125-150mm	0.3	4



Bowers Universal "Snap" Gauge



ask for details



see p249 for wireless options



Indicating Options



Mini Indicator Features

- Relative / absolute modes, mm / inch conversion, Preset, zero setting



Probe Features

- P5 Probe
- Capacitive transducers for both absolute and comparative measurements
- Max error 1.0µm
- Repeatability 0.2µm



S_Dial Work Features

- Standard digital indicator

INDICATOR AND PROBE OPTIONS

Code No	Description
30-905-5301	S_Dial Work 12.5mm Travel 0.001mm Resolution
30-905-4121	Mini indicator 12.5mm Top Lifter
30-905-4511	Mini Indicator 5mm Travel Analogue
30-900-1001	Sylvac P5 Transducer Probe

Note: See page 111 and 114 for digital readout options

Bowers Snapmic

The revolutionary Bowers Snapmic shares the best attributes of a high quality digital micrometer and a flexible snap gauge. Its wide application range, adjustable support platen and ingenious snap action enable the rapid and accurate measuring of a wide range of parts.

An adjustable support stand is available to aid the speed of batch part measurement.

As well as its many standard uses the flexible nature of the Bowers Snapmic allows it to be configured to suit a multitude of specialised external measuring applications, the gauge can be supplied with special anvils to facilitate the trouble-free measurement of threads, splines, grooves, etc. The optional sturdy Snapmic stand permits the rapid accurate measurement of batch parts.

WiFi
see p249 for wireless options

RS232

Features

- Measuring range 0-30mm & 30-60mm
- 2 preset memories
- Preset recall
- Zero set
- Max / min / Tolerance / Hold function
- Metric / inch conversion
- Switchable resolution 0.01 / 0.001mm
0.0005 / 0.00005"
- RS-232 output
- Half duplex transmission
- Bench stand available
- 8mm diameter anvils
- Special contact tips available for threads, gear tooth measurement, splines, grooves etc
- Adjustable backstop
- Repeatability: 1µm / 0.00005"



ACCESSORIES

Code No	Description
EST0001	Stand

BOWERS SNAPMIC

Code No	Range (mm)	Resolution (mm)	Flatness (µm)	Parallelism (µm)	Accuracy (µm)
EIM030M	0-30	0.001	0.3	1.0	4
EIM060M	30-60	0.001	0.6	2.0	5

Analogue Snap Micrometer

Features

- Measuring range 0-25mm & 25-50mm
- Retractable anvil with an indicator for precise measurement of mass produced parts
- Micrometer accuracy 0.003mm
- Indicator accuracy 0.001mm



ANALOGUE SNAP MICROMETER

Code No	Range (mm)	Resolution (mm)	Indicator Range
MW290-01	0-25	0.001	+/- 0.04mm
MW290-02	25-50	0.001	+/- 0.04mm

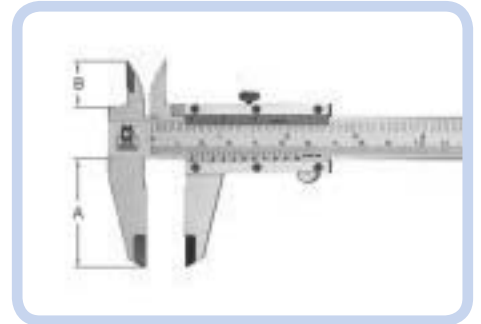


Workshop Vernier Caliper 100 Series

Features

Standard DIN 862

- Standard workshop model with stop screw
- Assembly slider model
- 4-way measurement
- Made of hardened alloyed stainless steel
- Chromed scale with engraved graduations
- Measuring surface is micro-lapped
- Packed in plastic box



WORKSHOP VERNIER CALIPER 100 SERIES

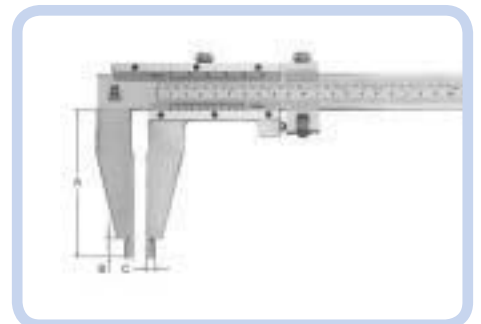
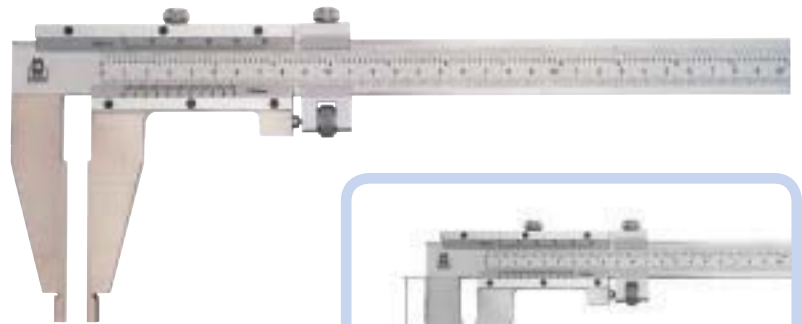
Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Dimm - A	Dimm - B
MW100-15B	0-150	0-6	0.05	1/128	40mm	16mm
MW100-20B	0-200	0-8	0.05	1/128	50mm	20mm
MW100-30B	0-300	0-12	0.05	1/128	55mm	20mm
MW100-15Bi	0-150	0-6	0.02	0.001	40mm	16mm
MW100-20Bi	0-200	0-8	0.02	0.001	50mm	20mm
MW100-30Bi	0-300	0-12	0.02	0.001	55mm	20mm

Large Workshop Vernier Caliper 150 Series

Features

Standard: Factory Standard

- Standard workshop model with stop screw
- Mono block solid slider
- Made of hardened alloyed stainless steel
- Jaws for internal and external measurement
- Chromed scale with laser engraved graduations
- Measuring surface is micro-lapped
- With fine adjustment
- Packed in wooden box



LARGE WORKSHOP VERNIER CALIPER 150 SERIES

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Dimm - A	Dimm - B	Dimm - C
MW150-52	0-500	0-20	0.02	0.001	100mm	12mm	5mm
MW150-55	0-500	0-20	0.05	1/128	100mm	12mm	5mm
MW150-62	0-600	0-24	0.02	0.001	100mm	12mm	5mm
MW150-65	0-600	0-24	0.05	1/128	100mm	12mm	5mm
MW150-72	0-1000	0-40	0.02	0.001	125mm	18mm	10mm
MW150-75	0-1000	0-40	0.05	1/128	125mm	18mm	10mm

Vernier Calipers

Moore & Wright Vernier Calipers are manufactured to the DIN 862 standard from high quality materials and combine good traditional design at a reasonable price. In addition to our standard range of vernier calipers, we are able to offer a wide range of non-standard designs.

Comply with: DIN 862.

Features

- Stainless steel monoblock design
- Satin chrome finish on scale faces
- Clearly defined laser engraved graduations
- Includes depth rod
- Knife edge internal jaws
- Knife edge tips on external jaws
- Economical design for general workshop use



VERNIER CALIPERS METRIC / IMPERIAL: UPTO 12"-300MM

Code No	Resolution (mm)	Resolution (inch)	Range (mm)	Range (inch)	Jaws
VCL-015D	0.05	0.001	150	6	40mm
VCT-015D	0.02	0.001	150	6	40mm

Dial Caliper 140 Series

Features

- Rapid movement model with roller-button
- Rack cover prevents dust or grit fouling teeth of rack
- High precision model with mono block solid slider
- 4-way measurement
- Made of alloyed hardened stainless steel
- Chromed scale with engraved graduations
- Measuring surface is micro-lapped
- Black indicator plate with clear red pointer



DIAL CALIPER 140 SERIES

Code No	Range (mm)	Resolution (mm)	Jaws
MW140-15	0-150	0.02	40mm
MW140-20	0-200	0.02	55mm
MW140-30	0-300	0.02	55mm



Dial Caliper 141 Series

Features

Standard: DIN 862

- Rapid movement with thumb wheel
- Covered rack
- 4-way measurement
- Hardened stainless steel rack
- Measuring surface is micro-lapped



DIAL CALIPER 141 SERIES

Code No	Range (mm)	Resolution (mm)	Code No	Range (inch)	Resolution (inch)
MW141-15	0-150	0.02	MW141-15i	0-6	0.001

Dial Caliper 142 Series

Features

Standard: DIN 862

- High-quality shockproof dial caliper
- Rapid movement with thumb wheel
- Covered rack
- 4-way measurement
- Standard yellow metric face
- Hardened stainless steel rack
- Measuring surface is micro-lapped



DIAL CALIPER 142 SERIES

Code No	Range (mm)	Resolution (mm)
MW142-15	0-150	0.02
MW142-20	0-200	0.02
MW142-30	0-300	0.02

Plastic Dial Caliper

Features

- Manufactured from glass reinforced nylon material
- Highly durable design
- $\pm 0.1\text{mm} / \pm 0.004''$ accuracy
- Plastic depth rod



CDP150M

METRIC: DIAL CALIPER

Code No	Range (mm)	Resolution (mm)	Jaws
CDP150M	0-150	0.1	40mm

IMPERIAL: DIAL CALIPER

Code No	Range (inch)	Resolution (inch)	Jaws
CDP006E	0-6	0.01	1.57"

Plastic Digital Caliper

Features

- Manufactured from glass reinforced nylon material
- Highly durable design
- Accuracy 0.05mm/0.002"
- Plastic depth rod
- Functions: mm/inch, zero setting, auto off



METRIC / IMPERIAL: DIGITAL CALIPER

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Jaws
ECP015D	0-150	0-6	0.01	0.0005	40mm

Polycarbonate Digital Caliper

Features

- Polycarbonate frame
- 4 way measurement
- Accuracy +/- 0.2mm / 0.008"
- Functions: mm/inch, zero setting, Absolute/Incremental measurement
- Supplied retail packed with vinyl pouch
- CR2032 battery



POLYCARBONATE DIGITAL CALIPER

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Jaws
MW110-15DPC	0-150	0-6	0.01	0.0005	40mm

Value Line Digital Caliper 110-DBL Series

Complies with: DIN 862

Features

- On/off switch
- Zero point at any position
- Displays values in mm and inch
- All metal parts made of hardened stainless steel
- CR2032 battery
- ABS / INC measurement



VALUE LINE DIGITAL CALIPER

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Jaws
MW110-15DBL	0-150	0-6	0.01	0.0005	40mm
MW110-20DBL	0-200	0-8	0.01	0.0005	50mm
MW110-30DBL	0-300	0-12	0.01	0.0005	60mm

Three Reading Digital Caliper DFC Series

Features

- Extra large, easy-to-read display
- High measuring speed: 120" per second
- Read and convert in inch, metric and fractions
- Stainless steel frame with extra smooth movements
- CR2032 battery



METRIC



INCH



FRACTION

THREE READING DIGITAL CALIPER DFC SERIES

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Jaws
MW110-15DFC	0-150	0-6	0.01	0.0005 / 1/128	40mm
MW110-20DFC	0-200	0-8	0.01	0.0005 / 1/128	50mm
MW110-30DFC	0-300	0-12	0.01	0.0005 / 1/128	60mm

Water Resistant Caliper IP54 Series

Complies with: DIN 862

Features

- Water and dust resistant to IP54 specification
- Functions: mm/inch conversion, on/off, zero setting
- Patented ceramic capacitive sensor
- Large LCD display
- CR2032 battery
- ABS / INC measurement



WATER RESISTANT CALIPER IP54 SERIES

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Jaws
MW110-15WR	0-150	0-6	0.01	0.0005	40mm
MW110-20WR	0-200	0-8	0.01	0.0005	50mm
MW110-30WR	0-300	0-12	0.01	0.0005	60mm

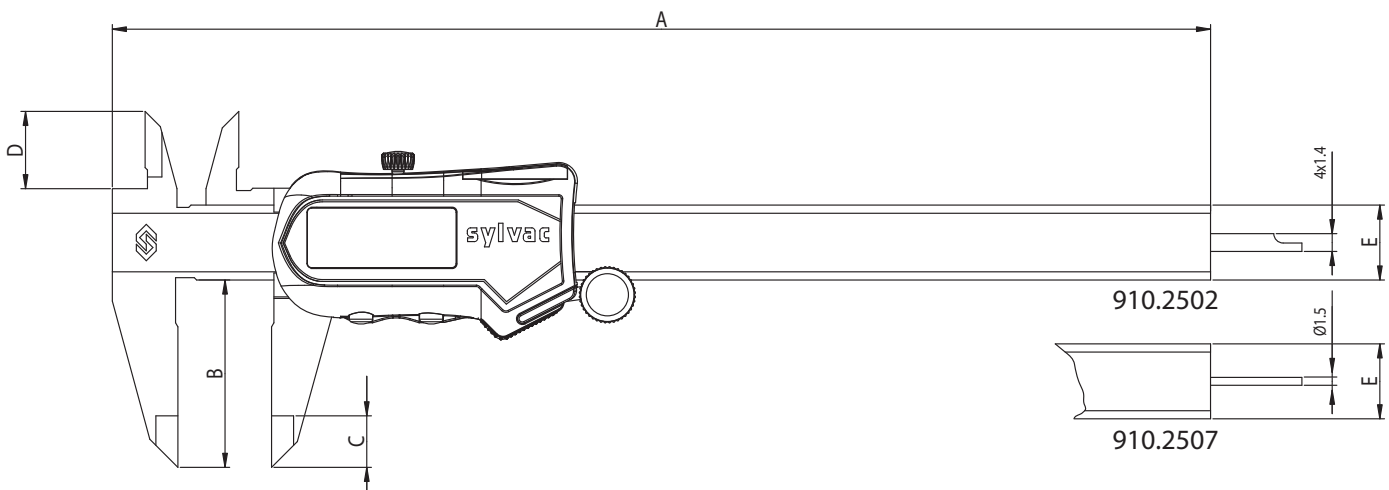
Sylvac S_Cal ONE Workshop Caliper



Swiss Precision

Features

- Robust
- Water resistant
- Swiss measuring system
- Large digits (9.6mm)
- Simple and intuitive functions



TECHNICAL SPECIFICATION

30-910-2502

Measuring range	0-150mm / 6"
Resolution	0.01mm / 0.0005"
Max. Error G μ m	20*
Thumb wheel device *	Optional
Zero setting	•
Simple and intuitive functions	•

* >100 mm : 30 μ m / DIN 862

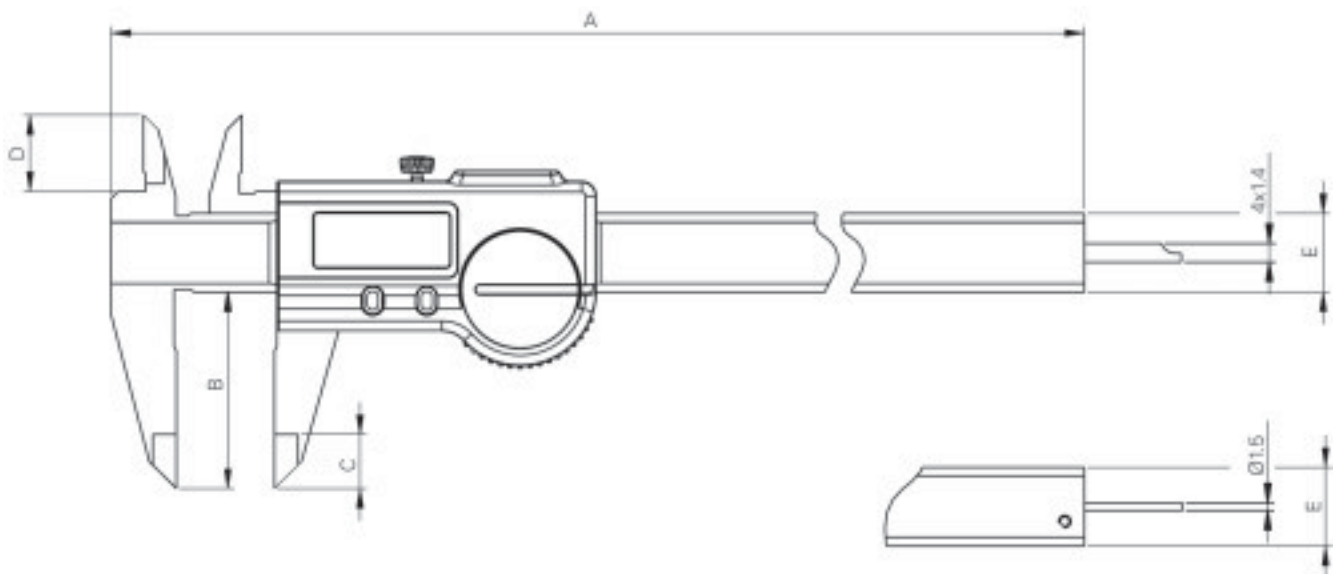
S_CAL ONE WORKSHOP CALIPER

Code No	Description	Range (mm)	Range (inch)	Dimn - A	Dimn - B	Dimn - C	Dimn - D	Dimn - E	Note
30-910-2502	S_Cal ONE	0-150	6	233	40	10	16	16 x 3	Flat depth rod
30-910-2507	S_Cal ONE	0-150	6	233	40	10	16	16 x 3	Round depth rod
30-910-2202	Thumbwheel								

Sylvac S_Cal PRO Caliper

Features

- Water and coolant resistant, IP67 (according to IEC 60529)
- Comfortable to use thanks to its ergonomic beam
- Automatic stand-by mode
- Origin saved
- Automatic wake-up by motion of the slider
- LCD digital display, height of the digits 7mm
- New, contactless data output (S_Connect Proximity)
- Increased self-contained use (12,000 working hours)



S_CAL PRO CALIPER

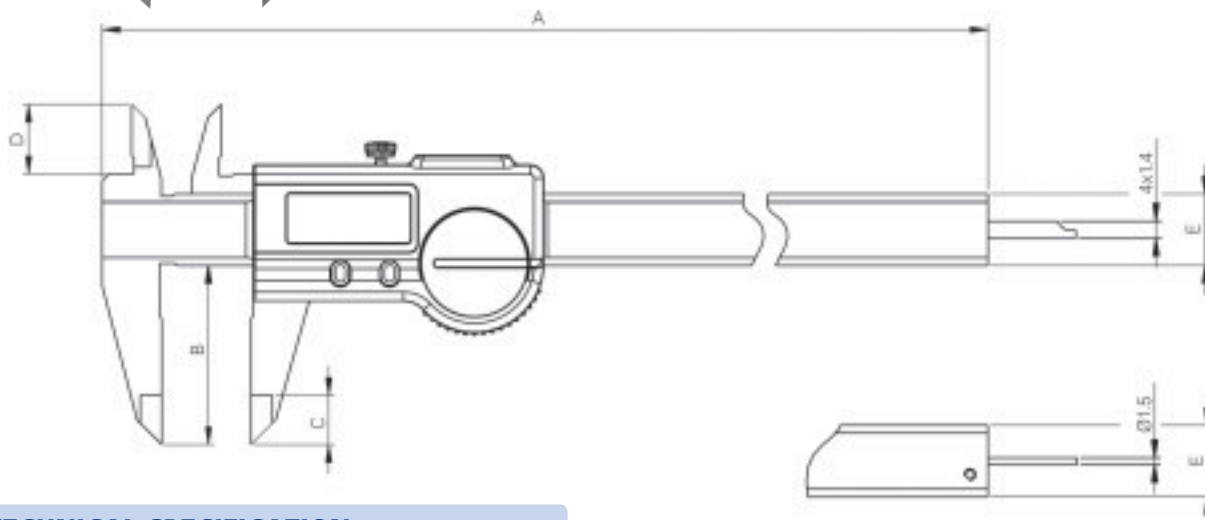
Code No	Description	Dimn - A	Dimn - B	Dimn - C	Dimn - D	Dimn - E
30-910-1502	0-150mm Sylvac Waterproof caliper IP67 S-Cal PRO with flat depth rod (4 x 1.4)	234.50	40	11	16	16 x 3.5
30-910-1507	0-150mm Sylvac Waterproof caliper IP67 S-Cal PRO with round depth rod (Ø 1.5mm)	234.50	40	11	16	16 x 3.5
30-910-1522	0-200mm Sylvac Waterproof caliper IP67 S-Cal PRO with flat depth rod (4 x 1.4)	290.50	50	14	19	16 x 3.5
30-910-1532	0-300mm Sylvac Waterproof caliper IP67 S-Cal PRO	388.00	64	14	19	16 x 4
30-926-6721	Proximity Data Cable USB*					
30-910-2201	Thumbwheel					
25-604-064	Wireless Proximity Module					

*Other data cable options available.

Sylvac S_Cal PRO Micron Caliper

Features

- Water protected for heavy-duty work with coolants and lubricants, protection rating IP67 according to IEC 60529, even connected
- Automatic wake-up (system S.I.S)
- Sleeping mode after 20 min. of no use. (system S.I.S)
- Position memorised in sleeping mode (system S.I.S), absolute system*
- Maximum speed of displacement: 2.5 m/sec
- Mechanical frame in stainless steel, hardened and ground
- Improved parallelism of internal jaws compared to version S_Cal PRO
- Preset
- Resolution 0.001 or 0.00005"
- 4µm repeatability



TECHNICAL SPECIFICATION

	30-910-9502	30-910-9507
Measuring Range (mm)	150	150
Maximum Error (µm)	15*	15*
Depth Rod (mm)	4 x 1.4	Ø 1.5
S_Connect: Proximity	USB / RS232 / Wireless	
Functions	mm/inch, preset, zero setting	
Smart Inductive Sensor	Yes	Yes

* <100mm: 15µm / >100mm: 30µm DIN 862

SYLVAC S_CAL PRO MICRON CALIPER

Code No	Description	Dimn - A	Dimn - B	Dimn - C	Dimn - D	Dimn - E
30-910-9502	0-150mm Sylvac S_Cal PRO Micron Caliper with flat depth rod (4 x 1.4)	234.5	40	11	16	16 x 3.5
30-910-9507	0-150mm Sylvac S_Cal PRO Micron Caliper with round depth rod (Ø 1.5)	234.5	40	11	16	16 x 3.5

Sylvac Ultra Light Digital Caliper Mark III

Available in seven standard sizes covering most large caliper applications, these revolutionary digital gauges have lightweight reinforced main beams, giving them both incredible strength and an amazing lack of weight, aiding both accuracy and ease of use. All gauge contact faces are titanium coated or solid carbide giving excellent wear resistance. A range of flexible accessories further improves the usefulness of these quality gauges.



Special Applications

Available on request.



Special S_Cal UL with modified measuring jaws.



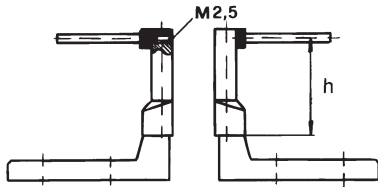
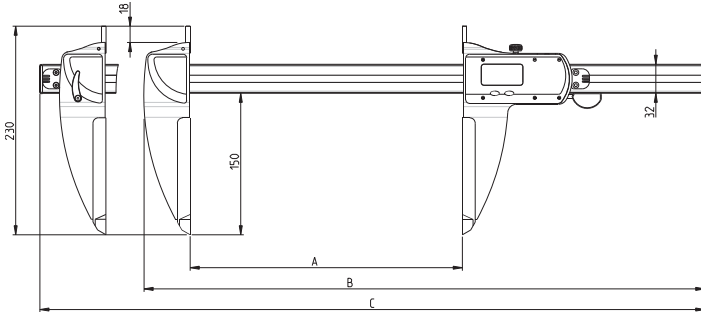
Special S_Cal UL with extended measuring jaws.

Features

- Preset facility for Internal / External measurement
- Constant measuring force applied to measurement
- Hold feature, freezes display for later viewing
- Incremental floating zero
- Metric / inch operation resolution 0.01mm / 0.0005"
- MIN/MAX function
- Tolerance limit indicators
- Hard wearing titanium coated stainless steel external jaws
- Tungsten carbide internal measuring pins
- Large easy to read digital display - 8.5mm digits
- RS 232 output
- Movable left jaw on 1m to 3m models for improved balance
- Water Resistant
- External Jaws, titanium coated stainless steel: Length = 150mm, 6"
- Internal Pins, tungsten carbide: Length = 18mm, 0.71". Dia. = 5mm, 0.2"
- Measuring Speed = 60" / 1.5m per second

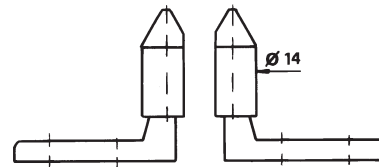
Ultra Light Accessories

Measurement of threads, grooves and hole centreline distances can be achieved with this range of optional accessories.

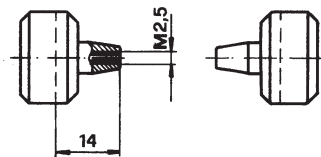


Code No	Height	Description
30-911-2308	30mm	Internal groove measurement. Holder for dial gauge contact points
30-911-2309	60mm	Internal groove measurement. Holder for dial gauge contact points

See page 104 for contact points

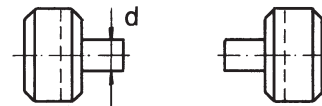


Code No	Description
30-911-2307	Hole centreline measurement inserts in hardened steel, cone 60°



Code No	Description
30-911-2305	Groove Measurement Holder For Dial Gauge Contact Points

See page 104 for contact points



Code No	Dimensions	Description
30-911-2301	d=6.35mm	Holder for mounting thread measuring wires
30-911-2302	d=6.5mm	Holder for mounting thread measuring wires
30-911-2303	d=8.0mm	Holder for mounting thread measuring wires

TECHNICAL SPECIFICATION UL III RANGE

Code No	Description	Range (mm)	Range (inch)	Weight	Maximum Error (µm)	Maximum Error (inch)	Repeatability (µm)	Repeatability (inch)
30-911-1403	ULIII300	300	12	1.1kg	30	0.0008	20	0.0008
30-911-1406	ULIII600	600	24	1.3kg	40	0.0016	20	0.0008
30-911-1410	ULIII1000*	1000	40	1.6kg	60	0.0024	20	0.0008
30-911-1415	ULIII1500*	1500	60	2kg	120	0.0048	20	0.0008
30-911-1420	ULIII2000*	2000	80	2.3kg	150	0.0060	30	0.0012
30-911-1425	ULIII2500*	2500	100	3.5kg	200	0.0080	30	0.0012
30-911-1430	ULIII3000*	3000	120	4kg	250	0.01	30	0.0012

*These models have a movable left jaw for improved balance when measuring smaller parts.

Digital Long Jaw Caliper 110-DLJ Series

Features

Standard: Factory Standard

- Heavy duty design
- Long jaws with internal measuring nibs
- 'Soft keys' for maximum operating comfort
- Easy to read LCD display
- Ground micro-lapped measuring surfaces
- Thumb wheel for fine adjustment
- Functions: mm / inch conversion, on/off, zero-setting, ABS / zero, battery low indication



DIGITAL LONG JAW CALIPER 110-DLJ SERIES

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Jaws	Internal Nibs
MW110-15DLJ	0-150	0-6	0.01	0.0005	60mm	10 x 5mm

Large Digital Workshop Caliper 150 Series

Features

Standard: Factory Standard

- Top quality digital caliper
- Modern design
- Large 7.5mm/10mm character height digital display
- Long life guaranteed
- Ground micro-lapped measuring surfaces
- Functions: mm / inch conversion, on/off, data-output, zero-setting, ABS / zero, battery low indication
- With fine adjustment



LARGE DIGITAL WORKSHOP CALIPER 150 SERIES

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Jaws	Internal Nibs
MW150-50DDL	0-500	0-20	0.01	0.0005	100mm	18 x 10mm
MW150-60DDL	0-600	0-24	0.01	0.0005	100mm	24 x 10mm
MW150-75DDL	0-1000	0-40	0.01	0.0005	125mm	24 x 10mm



Heavy Duty Digital Workshop Caliper 160-D Series

Features

- Heavy duty design
- Internal measuring nibs on external jaws and knife edge external jaws
- 'Soft keys' for maximum operating comfort
- Easy to read LCD display
- Ground micro-lapped measuring surfaces
- Functions: mm / inch conversion, on/off, zero-setting, ABS / zero, battery low indication
- Fine adjustment



HEAVY DUTY DIGITAL WORKSHOP CALIPER 160-D SERIES

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Jaws	External Knife Edge	Internal Nibs
MW160-20D	0-200	0-8	0.01	0.0005	60mm	12mm	33.5 x 5mm
MW160-30D	0-300	0-12	0.01	0.0005	60mm	12mm	38 x 5mm

Long Jaw Heavy Duty Digital Workshop Caliper 160-D Series

Features

- Heavy duty design
- Internal measuring nibs on external jaws and knife edge external jaws
- 'Soft keys' for maximum operating comfort
- Easy to read LCD display
- Ground micro-lapped measuring surfaces
- Functions: mm / inch conversion, on/off, zero-setting, ABS / zero, battery low indication
- Fine adjustment



LONG JAW HEAVY DUTY DIGITAL WORKSHOP CALIPER 160-D SERIES

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Jaws	External Knife Edge	Internal Nibs
MW160-50D	0-500	0-20	0.01	0.0005	150mm	18mm	50 x 10mm

Sylvac S_Scale Work Horizontal / Vertical Digital Scales



Swiss Precision

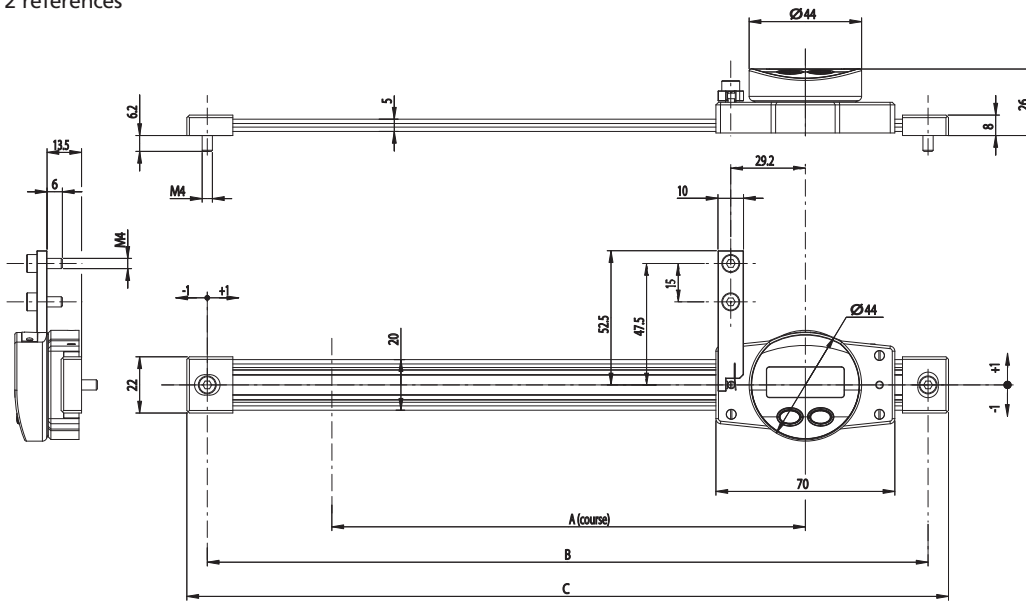


see p249 for wireless options



Features

- Max speed displacement: 2 m/sec
- RS232 or USB data output
- External power supply option by power cable
- Easy to integrate in to existing projects
- Selection of measuring direction
- PRESET function
- 2 references



Beam in stainless steel, hardened and ground

Clamping device supplied as standard

Digital display LCD
Height of digits 6mm



Steel carriage
Rotating display 270°

SYLVAC S_SCALE WORK DIGITAL SCALES

Code No	Range (mm)	Description	Maximum Error (μm)	Repeatability (μm)	Resolution (mm)	Output
30-816-1015	150	H / V	20	10	0.01	USB / RS232 / Digimatic / Wireless
30-816-1020	200	H / V	20	10	0.01	USB / RS232 / Digimatic / Wireless
30-816-1030	300	H / V	30	10	0.01	USB / RS232 / Digimatic / Wireless
30-816-1060	600	H / V	30	10	0.01	USB / RS232 / Digimatic / Wireless



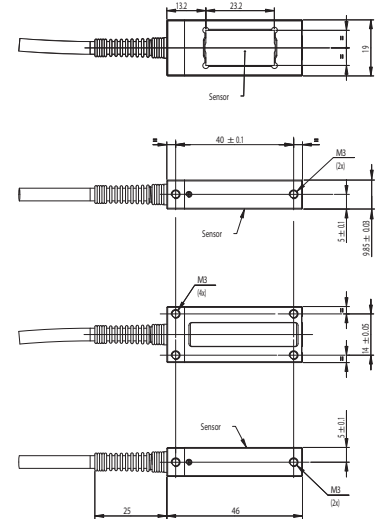
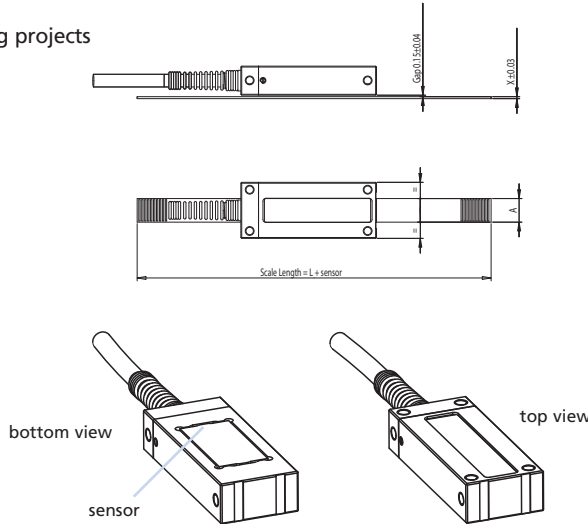
Sylvac S_System LIN Digital Scales

Precision measuring set for new development and retro-fitting.



Features

- Easy to integrate in to existing projects
- Small overall dimensions
- USB or RS-232 connectivity
- Software development kit
- Includes software
- Scale up to 1140mm
- Max error of device 7µm / 1m
- Programmable by PC
- IP67 rating



SYLVAC S_SYSTEM LIN DIGITAL SCALES - SENSOR

Code No	Maximum Error (µm) ¹	Repeatability (µm) ²	Output
30-813-1001	3	2	USB
30-813-1011	3	2	RS-232
30-813-1101	5	2	USB
30-813-1111	5	2	RS-232

¹Max error of a set = Max. error sensor + max. error scale (according to length)

SYLVAC S_SYSTEM LIN DIGITAL SCALES - SCALE

Code No	Maximum Error	Width (mm)	Thickness	Scale Pitch	Length (mm)
30-REGF5-XXXX	L/300	8.00	0.68mm	1.000mm	1140
30-REGG5-XXXX	L/300	12.45	0.58mm	1.000mm	1140
30-REGF1-XXXX	L/150	8.00	0.68mm	1.000mm	1140
30-REGG1-XXXX	L/150	12.45	0.58mm	1.000mm	1140

Ordering Code for a 300mm x 8mm long high resolution scale = REGF5-0300

Internal / External Calipers

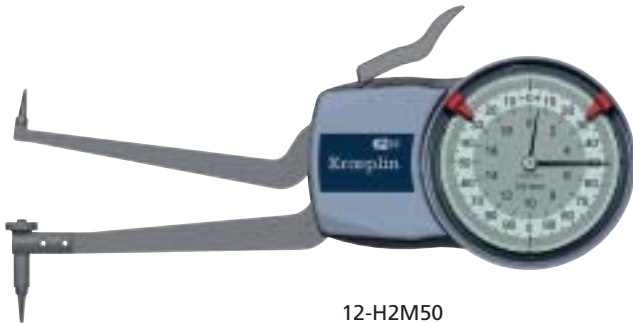
Internal



12-H105



12-H210



12-H2M50



12-G220

METRIC - INTERNAL CALIPERS

Code No	Range (mm)	Resolution (mm)	Leg Length (mm)	Groove Depth (mm)
12-H105	5-15	0.005	35	2.5
12-H210	10-30	0.01	85	5.4
12-H220	20-40	0.01	85	7.3
12-H230	30-50	0.01	85	7.3
12-H240	40-60	0.01	85	8.5
12-H250	50-70	0.01	85	8.5
12-H2M50	50-100**	0.01	85	8.5
12-H2M90	90-140**	0.01	85	8.5
12-H2M130	130-180**	0.01	85	8.5

IMPERIAL - INTERNAL CALIPERS

Code No	Range (inch)	Resolution (inch)	Leg Length (inch)	Groove Depth (inch)
12-H602	0.1-0.5	0.0002	1.37	0.04
12-H710	0.4-1.2	0.0005	3.3	0.21
12-H720	0.8-1.6	0.0005	3.3	0.29
12-H730	1.2-2.0	0.0005	3.3	0.29
12-H740	1.6-2.4	0.0005	3.3	0.33
12-H750	2.0-2.8	0.0005	3.3	0.33
12-H7M50	2.0-4.0**	0.0005	3.3	0.33
12-H7M90	3.6-5.6**	0.0005	3.3	0.33
12-H7M130	5.2-7.2**	0.0005	3.3	0.33

* See Data sheet for full detail

** Using interchangeable anvils

Digital versions available upon request

These calipers are supplied as standard in cardboard cartons.

Wooden cases are available upon request at extra cost



Internal / External Calipers

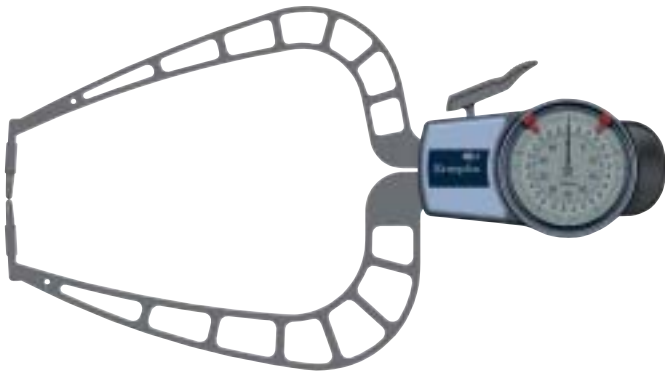
External



12-D110



12-D220



12-D450



12-C220

METRIC - EXTERNAL CALIPERS

Code No	Range (mm)	Resolution (mm)	Leg Length (mm)	Groove Depth (mm)
12-D110	0-10	0.005	35	12
12-D220	0-20	0.01	81	12
12-D450	0.50	0.05	167	12

IMPERIAL - EXTERNAL CALIPERS

Code No	Range (inch)	Resolution (inch)	Leg Length (inch)	Groove Depth (inch)
12-D610	0-0.4	0.0002	1.37	0.47
12-D720	0-0.8	0.0005	3.2	0.47
12-D950	0-2	0.001	6.57	0.47

* See Data sheet for full detail

Special application or other ranges available upon request

Digital versions available upon request

Data Transmission:

USB Cable - 12-1961-09

Adaptor - 12-2482-05

NB both parts required

These calipers are supplied as standard in cardboard cartons.

Wooden cases are available upon request at extra cost.

Internal Digital Caliper

Incorporating advanced electronics, these advanced gauges have the benefit of a large digital readout and an auto adjusting analogue display. These gauges are ideally suited for measuring bores, internal grooves and other hard to reach inside dimensions.



Features

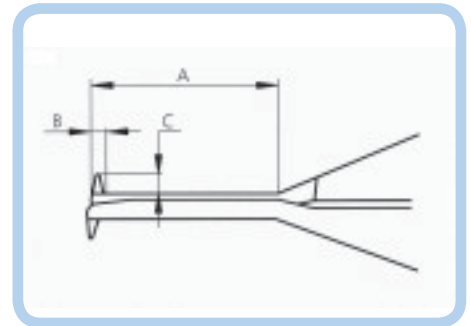
- Large LCD display
- 0.01mm or 0.0005" resolution
- Preset capability
- Direct Inch/Metric conversion
- Absolute/Incremental measurements
- RS232 output



INTERNAL DIGITAL CALIPER SPECIFICATION

Code No	Range (mm)	Range (inch)	Dimn - A	Dimn - B	Dimn - C	Contact Radius
MW432-01DC	5-15	0.2-0.6	20.0	1.0	1.5	0.3mm
MW432-02DC	10-20	0.4-0.8	25.0	1.5	3.0	0.3mm
MW432-03DC	20-30	0.8-1.2	30.0	2.0	6.5	0.5mm
MW432-04DC	30-40	1.2-1.6	30.0	2.5	9.0	0.5mm
MW432-05DC	40-50	1.6-2.0	30.0	2.5	9.0	0.5mm

Code No	Description
MWY400/01	Data cable and footswitch to 9 pin PC connection



External Digital Caliper

Incorporating advanced electronics, these advanced gauges have the benefit of a large digital readout and an auto adjusting analogue display. These gauges are ideally suited for measuring external grooves and other hard to reach outside dimensions.



Features

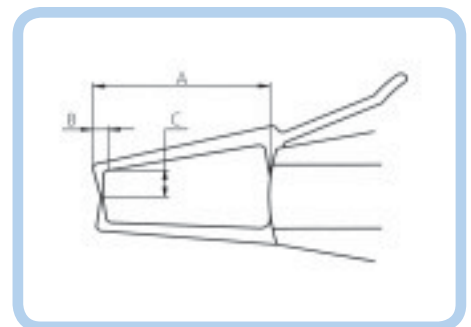
- Large LCD display
- 0.01mm or 0.0005" resolution
- Preset capability
- Direct Inch/Metric conversion
- Absolute/Incremental measurements
- RS232 output



EXTERNAL DIGITAL CALIPER SPECIFICATION

Code No	Range (mm)	Range (inch)	Dimn - A	Dimn - B	Dimn - C	Contact Radius
MW442-01DC	0-10	0.2-0.4	40.0	3.0	8.0	0.3mm
MW442-02DC	10-20	0.4-0.8	40.0	3.0	8.0	0.3mm
MW442-03DC	20-30	0.8-1.2	40.0	3.0	8.0	0.5mm
MW442-04DC	30-40	1.2-1.6	40.0	3.0	8.0	0.5mm
MW442-05DC	40-50	1.6-2.0	40.0	3.0	8.0	0.5mm

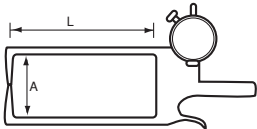
Code No	Description
MWY400/01	Data cable and footswitch to 9 pin PC connection





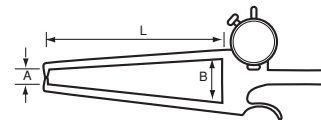
Bowers TGM Analogue Major Calipers

The major versions of Bowers TGM calipers include hard wearing carbide contact points as standard. As with other Bowers TGM products, non-standard applications can be quoted against a component drawing.



Model TGIC

External caliper allowing clearance over such obstructions as flanges, pipes etc.



Model TGEC

External caliper for use where access is limited.

EXTERNAL CALIPERS - METRIC

Code No	Dimn - A	Dimn - B	Length (mm)	Resolution (mm)	Range (mm)
TGIC063	55	-	150	0.02	0-50
TGEC063	25	55	150	0.02	0-50
TGIC064	55	-	150	0.1	0-50
TGEC064	25	55	150	0.1	0-50
TGIC103	55	-	250	0.02	0-50
TGEC103	25	55	250	0.02	0-50
TGIC104	55	-	250	0.1	0-50
TGEC104	25	55	250	0.1	0-50

EXTERNAL CALIPERS - IMPERIAL

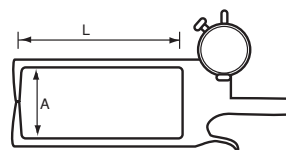
Code No	Dimn - A	Dimn - B	Length (inch)	Resolution (inch)	Range (inch)
TGIC061	55	-	6	0.001	0-2
TGEC061	25	55	6	0.001	0-2
TGIC062	55	-	6	0.01	0-2
TGEC062	25	55	6	0.01	0-2
TGIC101	55	-	10	0.001	0-2
TGEC101	25	55	10	0.001	0-2
TGIC102	55	-	10	0.01	0-2
TGEC102	25	55	10	0.01	0-2

Bowers TGM Digital Major Calipers

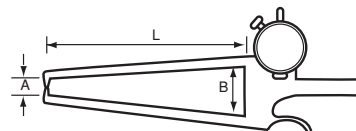
Digital Major Calipers have a direct Inch/Metric indicator with switchable resolution 0.01mm / 0.0005". They have zero and preset facility for both absolute and comparative measurement.

Features

- High contrast digital display
- Switchable resolution
- Zero and preset facility for absolute and comparative readings
- Output for connection to printer or computer
- Carbide measuring faces as standard
- Hold function for ease of reading
- Min / max function



Model TGIC



Model TGEC

EXTERNAL SPECIFICATION

Code No	Dimn - A	Dimn - B	Length (mm)	Length (inch)	Resolution (mm)	Resolution (inch)	Range (mm)	Range (inch)
TGIC060	55	-	150	6	0.02	0.001	0-50	0-2
TGEC060	25	55	150	6	0.02	0.001	0-50	0-2
TGIC100	55	-	250	10	0.02	0.001	0-50	0-2
TGEC100	25	55	250	10	0.02	0.001	0-50	0-2
TGIC200	55	-	550	22	0.1	0.005	0-50	0-2
TGEC200	25	55	550	22	0.1	0.005	0-50	0-2

Dial Indicator 400 Series

Standard: DIN 878

MW400-02



MW400-03



MW400-04



MW400-05



MW400-06



MW400-06B



MW400-08



MW400-09



DIAL INDICATOR 400 SERIES

Code No	Range (mm)	Resolution (mm)	Dial Diameter	Description
MW400-01	0-1	0.001	58mm	Flat back
MW400-02	0-1	0.001	58mm	Lug back
MW400-03	0-3	0.01	42mm	Lug back and flat back
MW400-04	0-5	0.01	42mm	Lug back
MW400-05	0-10	0.01	58mm	Flat back
MW400-06	0-10	0.01	58mm	Ear back
MW400-06B	0-10	0.01	54mm	Waterproof
MW400-07	0-10	0.1	54mm	Lug back
MW400-08	0-30	0.01	58mm	Lug back
MW400-09	0-50	0.01	58mm	Lug back

Features

- Satin-chromed body
- With tungsten carbide measuring contact
- With double dial indicator for measuring mm stroke
- Shockproof
- Micron versions are jewelled
- Adjustable scale with stop screw
- Packed in foam box



Dial Indicator 401 Series

Features

Standard: ANSI B89.1.10

- Aluminium body
- With Tungsten carbide measuring tip
- Adjustable bezel with stop screw
- Tolerance indicators
- Lug back (flat back is optional)



MW401-01



MW401-02



MW401-05

DIAL INDICATOR 401 SERIES

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Bezel Diameter	Stem Diameter	Description
MW401-01		0-0.5		0.001	58mm	3/8" spindle dia.	Lug back
MW401-02		0-1.0		0.001	58mm	3/8" spindle dia.	Lug back
MW401-05	0-25	1	0.01	0.001	60mm	8mm spindle dia.	Lug back

Dial Indicator

Features

- Housings machined from solid brass
- Lapped stainless steel spindle and stem
- Robust design suited to workshop use
- Unbreakable Plexi-glass face
- Shockproof versions available on some models to protect indicator mechanism from hard impacts on the stem
- Water and oil proof versions available on some models (not 300 Series)



DIP224M



DIP302M



DIP222M



DIP223M



DIP502M

METRIC: DIAL INDICATORS, PLUNGER

Code No	Range	Graduation	One revolution of pointer	Scale Reading	Bezel Diameter	Stem Diameter	Lug Back No.
DIP402M	1	0.001	0.2mm	0-100-0	58mm	8mm h6	DIS842X
DIP502M	5	0.01	0.5mm	0-50	40mm	8mm h6	DIS841X
DIP504M*†	5	0.01	0.5mm	0-50	40mm	8mm h6	DIS841X
DIP222M	10	0.01	1mm	0-100	58mm	8mm h6	DIS842X
DIP223M†	10	0.01	1mm	0-100	58mm	8mm h6	DIS848X
DIP224M*†	10	0.01	1mm	0-100	61mm	8mm h6	DIS842X
DIP302M	30	0.01	1mm	0-100 / 0-30	58mm	8mm h6	DIS842X

* Waterproof †Shockproof

IMPERIAL: DIAL INDICATORS, PLUNGER

Code No	Range	Graduation	One revolution of pointer	Scale Reading	Bezel Diameter	Stem Diameter	Lug Back No.
DIP402E	0.040	0.0001	0.010"	0-10	2 1/4"	0.318"	DIS842X
DIP222E	0.400	0.0005	0.05"	0-50	2 1/4"	0.318"	DIS842X
DIP223E†	0.400	0.0005	0.05"	0-50	2 1/4"	0.318"	DIS842X
DIP224E*†	0.400	0.0005	0.05"	0-50	2 1/4"	0.318"	DIS842X
DIP232E	0.400	0.001	0.100"	0-100	2 1/4"	0.318"	DIS842X
DIP233E†	0.400	0.001	0.100"	0-100	2 1/4"	0.318"	DIS842X
DIP234E*†	0.400	0.001	0.100"	0-100 / 0-10	2 1/4"	0.318"	DIS842X
DIP302E	1.000	0.001	0.100"	0-100	2 1/4"	0.375"	DIS842X

* Waterproof †Shockproof

Dial Test Indicator 420 Series

Features

- Automatic reversal of measuring direction
- High precision fully jewelled bearings
- Rotating dial
- Two dovetail clamps
- Carbide points
- Styli Length: 12mm / 1/2"



METRIC: DIAL TEST INDICATOR 420 SERIES

Code No	Range (mm)	Graduation (mm)	Dial Reading	Dial Diameter (mm)
MW420-03	0.8	0.01	0-40-0	25
MW420-04	0.8	0.01	0-40-0	37

IMPERIAL: DIAL TEST INDICATOR 420 SERIES

Code No	Range (inch)	Graduation (inch)	Dial Reading	Dial Diameter (inch)
MW420-03i	0.030	0.0005	0-15-0	1
MW420-04i	0.030	0.0005	0-15-0	1 1/2

Dial Test Indicator 421 Series

Features

- Automatic reversal of measuring direction
- High precision fully jewelled bearings
- Rotating dial
- Two dovetail clamps
- Carbide points
- Styli Length: 12mm / 1/2"



METRIC: DIAL TEST INDICATOR 421 SERIES

Code No	Range (mm)	Graduation (mm)	Dial Reading	Dial Diameter (mm)
MW421-01	0.2	0.002	0-100-0	25
MW421-02	0.2	0.002	0-100-0	37

IMPERIAL: DIAL TEST INDICATOR 421 SERIES

Code No	Range (inch)	Graduation (inch)	Dial Reading	Dial Diameter (inch)
MW421-01i	0.008	0.0001	0-4-0	1
MW421-02i	0.008	0.0001	0-4-0	1 1/2



Dial Test Indicator 422 Series

Features

- Long range - twice the range of most indicators
- Automatic reversal of measuring direction
- High precision fully jewelled bearings
- Rotating dial
- Two dovetail clamps
- Carbide points
- Styli Length: 12mm / 1/2"



METRIC: DIAL TEST INDICATOR 422 SERIES

Code No	Range (mm)	Graduation (mm)	Dial Reading	Dial Diameter (mm)
MW422-01	1.6	0.01	0-40-0	37

IMPERIAL: DIAL TEST INDICATOR 422 SERIES

Code No	Range (inch)	Graduation (inch)	Dial Reading	Dial Diameter (inch)
MW422-011	0.060	0.0005	0-15-0	1 1/2

Dial Test Indicator Accessories



Universal Holder



Contact Points



Dovetail Stem

DIAL TEST INDICATOR: ACCESSORIES

Code No	Description
MW-Z40010	Universal Holder
MW-Z40012	Contact point 12mm length, 1mm steel ball
MW-Z40013	Contact point 12mm length, 2mm carbide ball
MW-Z40014	Contact point 12mm length, 3mm carbide ball

Code No	Description
MW-Z40016	Contact point 1/2" length, 0.040" steel ball
MW-Z40018	Contact point 1/2" length, 0.120" carbide ball
MW-Z40020	Dovetail stem 4mm clamping diameter
MW-Z40022	Dovetail stem 8mm clamping diameter

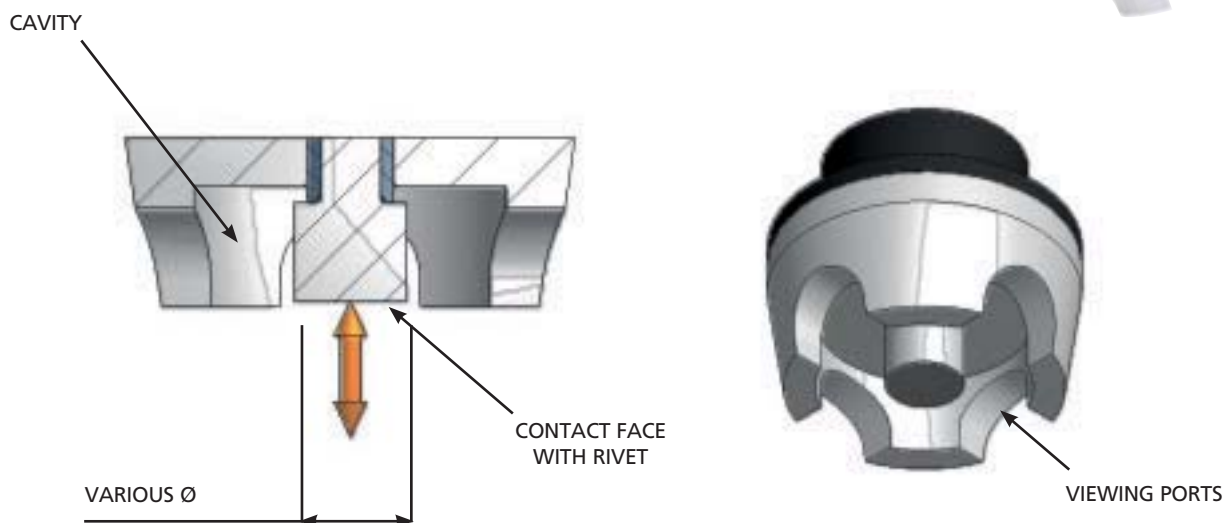
Bowers Aerospace Specials - Rivet Height Gauge

The Bowers Rivet Height Gauge has been specially designed to measure the height of rivets used on aircraft outer skin. If the top of the rivet is too high above or too low below the level of the rivet-hole, the streamlining of the aircraft will be affected. This wind-resistance will be magnified many times depending on the number of rivets present in the outer hull of the aircraft. The rivet-height gauge measures the height of the top of the rivet in relation to the level of the surrounding aircraft skin, enabling tolerances to be maintained and providing a valuable reference measurement to help determine the streamlining of the aircraft and the consequent effects on it's aerodynamics and fuel efficiency.

Features

- Rivet diameters : 3/16", 1/4", 5/16", 3/8" available as standard
- Other rivet diameters available on request
- Digital display with mm / inch conversion and preset function
- Resolution : 0.0005" / 0.001mm
- Repeatability +/- 0.003µm
- RS-232 data output
- Scalloped base to facilitate visual location over the rivet
- Very easy to use
- Small portable format
- Robust construction

Different diameter and contact point options are available on request.



Bowers can deliver innovative and cost-effective solutions to the most demanding measurement challenge. If you have a specific requirement that you would like Bowers to assist with, please contact the Sales Team direct.



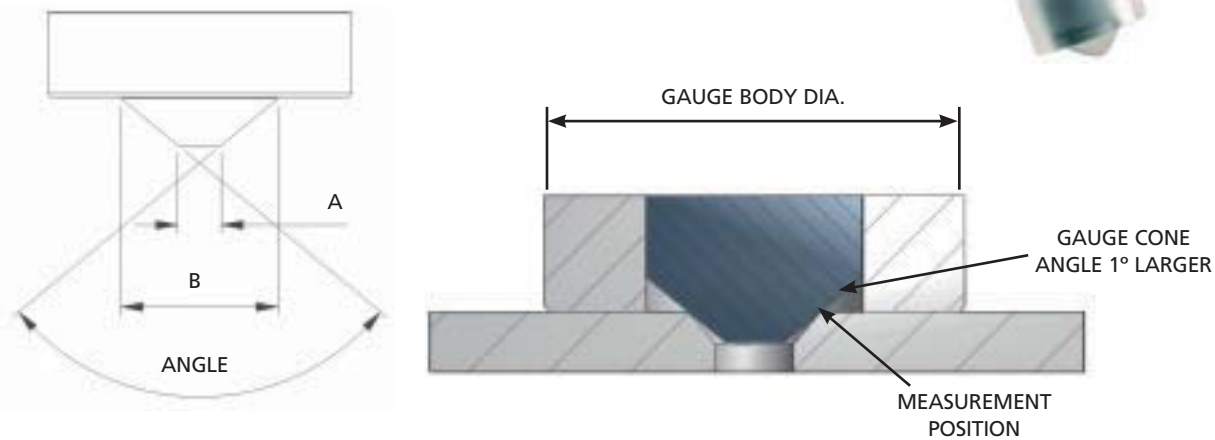
Bowers Aerospace Specials - Digital Countersink Gauge

The Bowers Countersink Gauge can be used to check the major diameters of countersinks in the aircraft outer skin, prior to the application of rivets. The gauge can also be used for countersink measurement in general applications within the aerospace, automotive and other related industries. The unit shown here is fitted with a Sylvac Digital Indicator with Factor function, but can also be fitted with a Sylvac Probe connected to a D80S Digital Display Unit as shown on page 111.

Features

- Standard range diameter 6-16mm / 1/4-5/8"
- Switchable resolution - inch/metric true conversion
- Preset facility
- Tolerance mode
- RS-232 data output
- Robust construction, hardened plunger, induction hardened body
- Standard plungers available to measure 90°, 100° and 110°
- Other angles available on request
- Setting master supplied as standard
- **Indicator NOT included in price**

Alternative size ranges can be manufactured to order.



DIGITAL COUNTERSINK GAUGE

Code No	Range (mm)	Range (inch)	Dimn - A	Dimn - B	Setting Ring (mm)	Standard Plunger Angle
BCSG-001M*	4.76-12.7	3/16-1/2	3	14	8 Ø Conical	100°
BCSG-002M*	12.7-19.05	1/2-3/4	10	21	16 Ø Conical	100°
BCSG-003M*	19.05-28.57	3/4-1 1/8	17	30	23 Ø Conical	100°
BCSG-004M*	28.57-38.01	1 1/8-1 1/2	26	40	32 Ø Conical	100°
BCSG-005M	38.01-47.625	1 1/2-1 7/8	36	50	42 Ø Conical	100°
BCSG-006M	47.625-57.15	1 7/8-2 1/4	46	60	52 Ø Conical	100°
BCSG-007M	57.15-66.675	2 1/4-2 5/8	54	70	62 Ø Conical	100°

*Code No 10-CSG - Case for items highlighted (available at extra cost)

SYLVAC S_DIAL WORK ADVANCED DIGITAL INDICATOR

Code No	Description	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Maximum Error (µm)
30-805-5301	Advanced	12.5	0.5	0.001	0.00005	3

Other Indicators or Indicating Units available, ask for details

Digital Indicator 405 Series

Moore & Wright low cost digital indicator manufactured to withstand the rigours of shop floor use. Easy to use functions accessed via three buttons.

Features

- Direct Inch / Metric conversion
- 58mm dial face
- Lugback and 8mm stem mountings
- Resolution 0.01mm / 0.0005"
- Absolute / Incremental reading
- Floating Zero
- Also supplied with flatback



DIGITAL INDICATOR 405 SERIES

Code No	Range (mm)	Range (inch)	Accuracy (mm)	Accuracy (inch)
MW405-04DB	0-12.7	0-0.5	0.02	0.0008
MW405-06DB	0-25.0	0-1.0	0.03	0.0012

Digital Indicator 410 Series

Moore & Wright multi function digital indicator ideal for the measurement of more complex features.

Features

- Functions include Tolerance and Min/Max
- Direct Inch / Metric conversion
- 8mm stem mounting
- Resolution 0.001mm / 0.00005"
- Absolute / Incremental reading
- Floating Zero



DIGITAL INDICATOR 410 SERIES

Code No	Range (mm)	Range (inch)	Accuracy (mm)	Accuracy (inch)
MW410-02DF	0-12.7	0-0.5	0.008	0.0003



Sylvac S_Dial ONE Digital Indicator

The tough but accurate new S_Dial ONE indicators from Sylvac are available with measuring capacities of 12.5mm and 25mm and have an impressive repeatability specification of 0.002mm. Designed to operate within harsh measuring environments, such as in close proximity to machine tools, the S_Dial ONE boasts an IP67 rating, according to IEC 60529, rendering it resistant to the ingress of water and coolant even when fitted with a data connection cable. Manufactured from materials that are able to withstand extended shop floor use, the new S_Dial ONE can be fitted with a wide range of contact points.



Features

- Integrated, ergonomic lifting device (can be removed)
- Large LCD digital readout
- Direct metric/inch conversion
- Preset
- Zero setting
- Extended battery life of 3,300 hours
- Selection of measuring direction
- Programmable by PC
- Direct RS232, USB, Digimatic output
- Lithium CR2302 battery included



SYLVAC S_DIAL ONE DIGITAL INDICATOR

Code No	Range (mm)	Range (inch)	Accuracy (µm)	Resolution (mm)	Resolution (inch)
30-905-0121	12.5	0.5	10	0.01	0.0005
30-905-0131	12.5	0.5	5	0.001	0.00005
30-905-0141	25	1.0	10	0.01	0.0005
30-905-0151	25	1.0	6	0.001	0.00005
30-905-0161*	50	2.0	20	0.01	0.0005
30-905-0171*	50	2.0	8	0.001	0.00005

*Lifter not included

Code No	Description
30-905-0216	Lifter for 50mm indicator

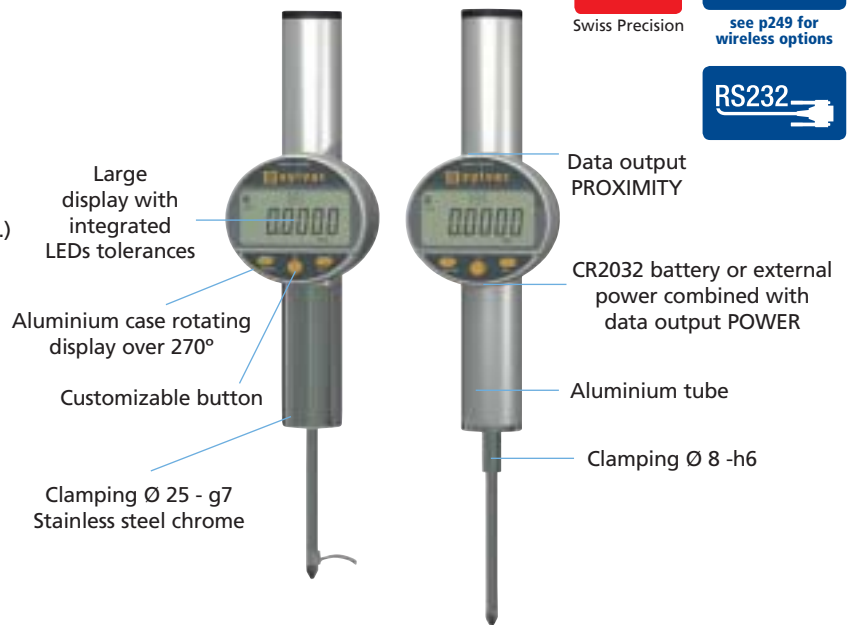
DATA TRANSMISSION

Code No	Description
30-926-6721	Sylvac Proximity USB
30-926-6821	Powered Opto / USB
25-604-064	Wireless Proximity Module
25-604-013A	Wireless Powered Opto Module

Sylvac S_Dial PRO Digital Indicator

Features

- Resolution of 0.1µm
- Broad choice of functions (MIN/MAX/DELTA, TOL, Factor, PRESET, AUTO OFF, etc.)
- Max error 1.5µm / 50mm
- Constant measuring force (depending on model)
- Clamping stem Ø8 or Ø25 (depending on model)
- Mixed ceramic bearing / ball bearing system
- Measuring system with homing
- Battery life : 2 years
- Data output PROXIMITY and POWER



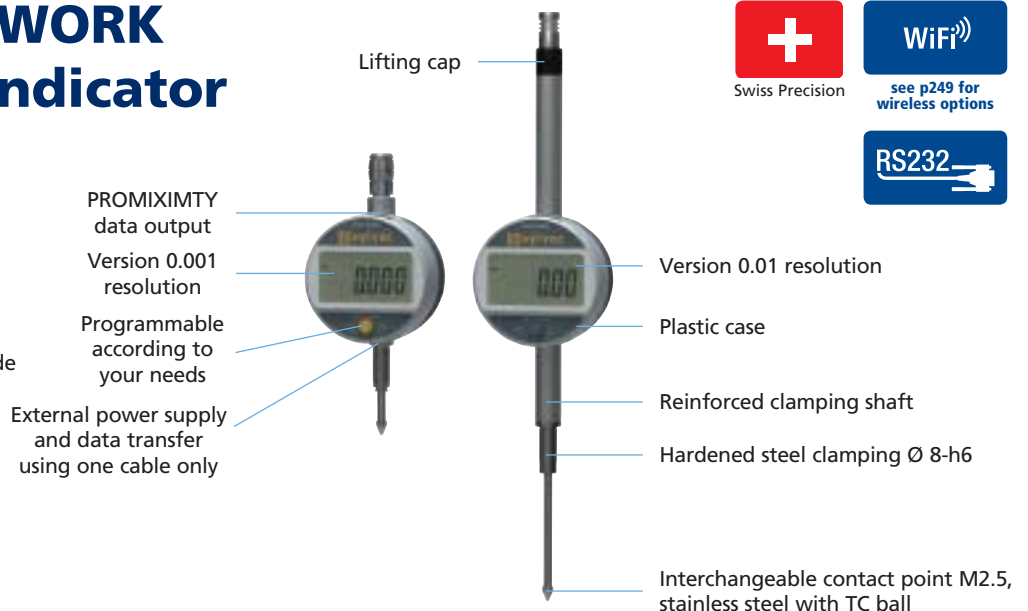
SYLVAC S_DIAL PRO DIGITAL INDICATOR

Code No	Description	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Maximum Error (µm)	Repeatability (µm)
30-805-8601	Basic	50	2	0.0001	0.000005	1.5	0.2
30-805-8602	Basic	50	2	0.0001	0.000005	1.5	0.2
30-805-8701	Basic	50	2	0.0001	0.000005	1.5	0.2
30-805-8702	Basic	50	2	0.0001	0.000005	1.5	0.2

Sylvac S_Dial WORK Basic Digital Indicator

Features

- Robust construction
- Water and coolant resistant
- Standard functions (mm/inch, preset, direction of measurement)
- Automatic wake-up and sleeping mode (S.I.S system), absolute System



SYLVAC S_DIAL WORK BASIC DIGITAL INDICATOR

Code No	Description	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Maximum Error (µm)	Repeatability (µm)
30-805-1201	Basic	12.5	0.5	0.01	0.0005	10	2
30-805-1301	Basic	12.5	0.5	0.001	0.00005	4	2
30-805-1401	Basic	25	1	0.01	0.0005	10	2
30-805-1501	Basic	25	1	0.001	0.00005	5	2
30-805-1601	Basic	50	2	0.01	0.0005	20	2
30-805-1621	Basic	50	2	0.001	0.00005	7	2



Sylvac S_Dial WORK Advanced Digital Indicator

Features

- Robust construction
- Water and coolant resistant
- Protection rating IP67 according to IEC 60529 for protected versions, even when connected
- New technology with configurable menus via PC
- Broad choice of functions (MIN/MAX/DELTA, TOL, Factor, PRESET, AUTO OFF, etc.)
- Automatic wake-up and sleeping mode (S.I.S system)
- Optional lifting lever



DATA TRANSMISSION

Code No	Description
30-926-6721	Sylvac Proximity USB
30-926-6821	Powered Opto / USB
25-604-064	Wireless Proximity Module
25-604-013A	Wireless Powered Opto Module

KEY

- | | | | |
|---|--|---|--|
| 1 | PROXIMITY data output | 6 | Interchangeable contact point M2.5, stainless steel with TC ball |
| 2 | Large display with integrated LEDs tolerances | 7 | Lifting cap |
| 3 | Programmable according to your needs | 8 | Optional lifting lever |
| 4 | External power supply and data transfer using one cable only | 9 | Dust cover |
| 5 | Hardened steel clamping Ø 8-hs | | |

SYLVAC S_DIAL WORK ADVANCED DIGITAL INDICATOR

Code No	Description	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Maximum Error (µm)
30-805-5201	Advanced	12.5	0.5	0.01	0.0005	10
30-805-5301	Advanced	12.5	0.5	0.001	0.00005	3
30-805-5305	Advanced, Protected	12.5	0.5	0.001	0.00005	3
30-805-5401	Advanced	25	1.0	0.01	0.0005	10
30-805-5501	Advanced	25	1.0	0.001	0.00005	4
30-805-5505	Advanced, Protected	25	1.0	0.001	0.00005	4
30-805-5601	Advanced	50	2.0	0.01	0.0005	20
30-805-5621	Advanced	50	2.0	0.001	0.00005	5
30-805-5625	Advanced, Protected	50	2.0	0.001	0.00005	5
30-805-5641	Advanced	100	4.0	0.01	0.0005	20
30-805-5661	Advanced	100	4.0	0.001	0.00005	6
30-805-5671	Advanced	150	6.0	0.01	0.0005	20
30-805-5681	Advanced	150	6.0	0.001	0.00005	10
30-805-6301	Advanced, Bluetooth	12.5	0.5	0.001	0.00005	3
30-805-6501	Advanced, Bluetooth	25	1.0	0.001	0.00005	4
30-805-6621	Advanced, Bluetooth	50	2.0	0.001	0.00005	5
30-805-6661	Advanced, Bluetooth	100	4.0	0.001	0.00005	6

Sylvac S_Dial WORK Analogue Digital Indicators

Features

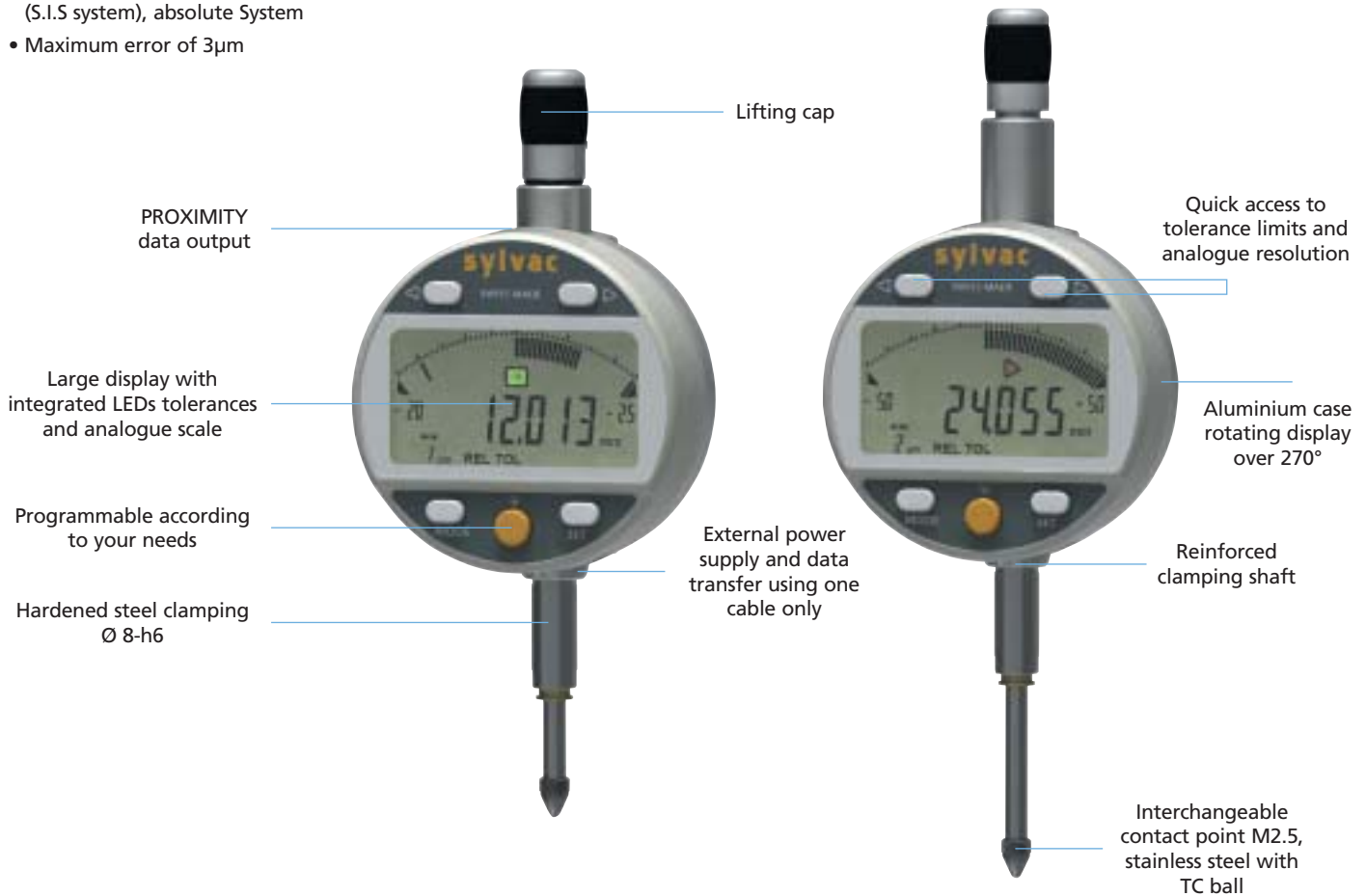
- Adaptive analogue display (up to 0.2µm per segment)
- Robust construction
- Water and coolant resistant
- New technology with configurable menus
- Broad choice of functions (MIN/MAX/DELTA, TOL, Factor, PRESET, AUTO OFF, etc.)
- Automatic wake-up and sleeping mode (S.I.S system), absolute System
- Maximum error of 3µm



Swiss Precision



see p249 for wireless options



TECHNICAL SPECIFICATION

	30-805-5307	30-805-5507
Maximum Error fe (µm)	3µm	4µm
Repeatability (µm)	2µm	2µm
Model type	Standard	Standard
S_Connect : Proximity/Power	USB/RS232	USB/RS232
Programmable by PC	Yes	Yes
Standard functions (customised by PC)	mm/inch, ref 1/11, preset (max 999.999) min/max/delta, tolerances, resolutions, direction of measurement, multiplication factor, automatic or manual switch off, key lock	

SYLVAC S_DIAL WORK ANALOGUE DIGITAL INDICATORS

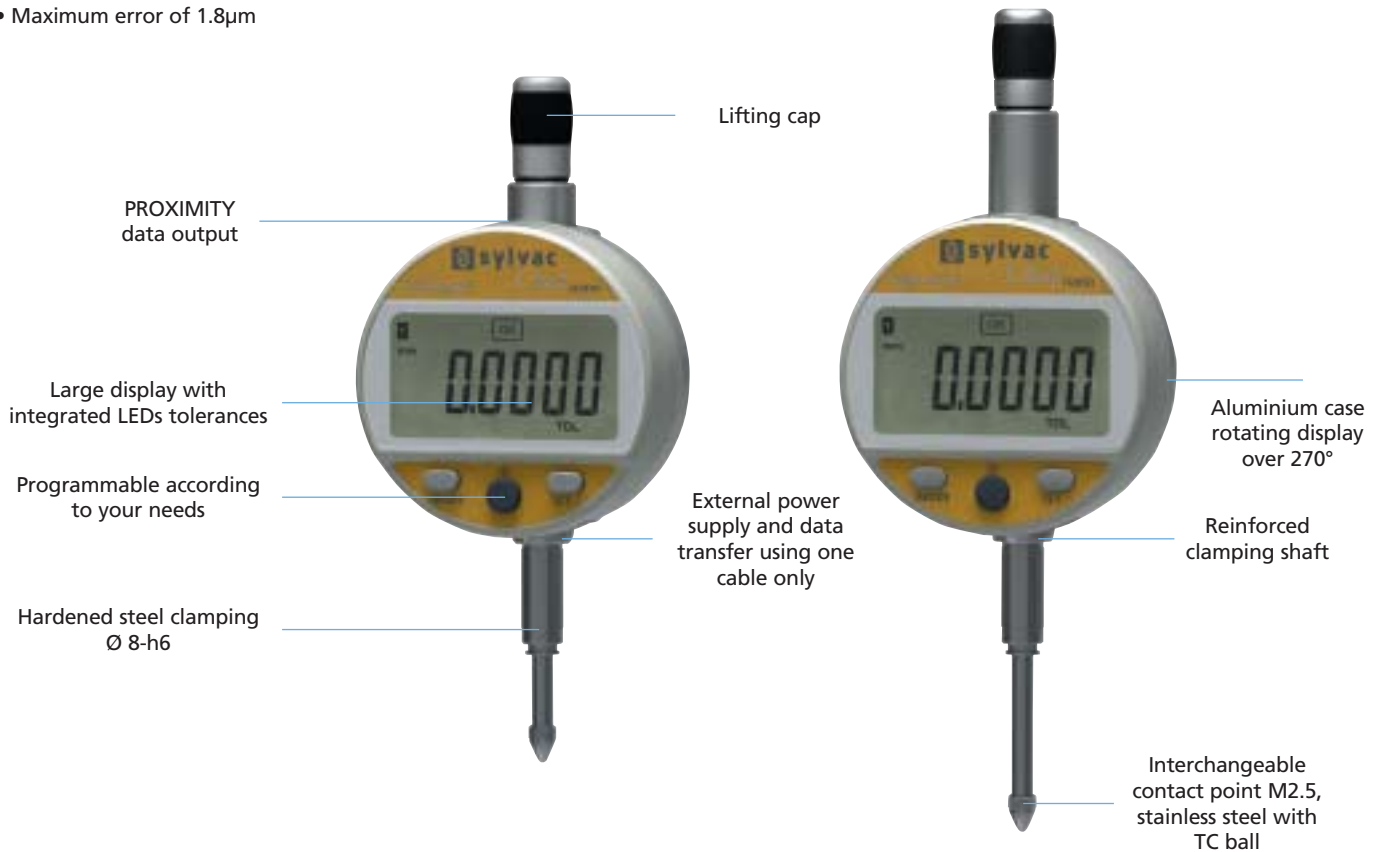
Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)
30-805-5307	12.5	0.5	0.001	0.00005
30-805-5507	25	1.0	0.001	0.00005



Sylvac S_Dial WORK Nano Digital Indicators

Features

- 0.1µm resolution
- Robust construction
- Water and coolant resistant
- New technology with configurable menus
- Broad choice of functions (MIN/MAX/DELTA, TOL, Factor, PRESET, AUTO OFF, etc.)
- Automatic wake-up and sleeping mode (S.I.S system), absolute System
- Maximum error of 1.8µm



TECHNICAL SPECIFICATION

	30-805-5306	30-805-5506	30-805-6306	30-805-6506
Maximum Error fe (µm)	1.8µm	2.2µm	1.8µm	2.2µm
Repeatability (µm)	0.5µm	0.5µm	0.5µm	0.5µm
Model type	Standard	Standard	Standard	Standard
S_Connect : Proximity/Power	USB/RS232	USB/RS232	USB/RS232/BLUETOOTH® Smart*	
Programmable by PC	Yes	Yes	Yes	Yes
Standard functions (customised by PC)	mm/inch, ref I/II, preset (max 999.999) min/max/delta, tolerances, direction of measurement, multiplication factor, automatic or manual switch off, key lock			

*100% compatible with BLUETOOTH® Smart dongle 30-981-7100

SYLVAC S_DIAL WORK NANO DIGITAL INDICATORS

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Note
30-805-5306	12.5	0.5	0.0001	0.000005	-
30-805-5506	25	1.0	0.0001	0.000005	-
30-805-6306	12.5	0.5	0.0001	0.000005	Bluetooth
30-805-6506	25	1.0	0.0001	0.000005	Bluetooth

Sylvac IP65 Digital Mini Indicator

The Sylvac Digital Mini indicator boasts a remarkable rating of IP65 making it ideal for use in harsh environments. The simple to operate instrument has an impressive list of advanced features including a large easy to read display, relative/absolute modes, preset function, metric/inch modes.

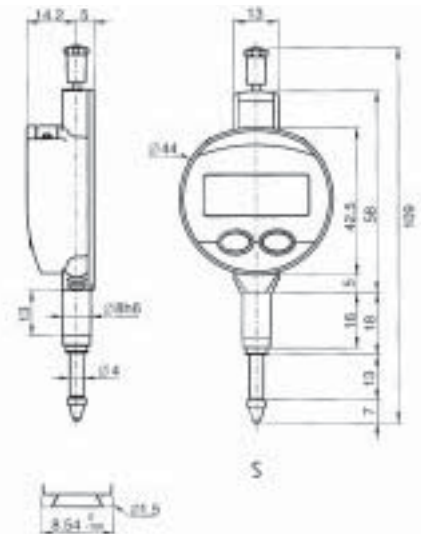
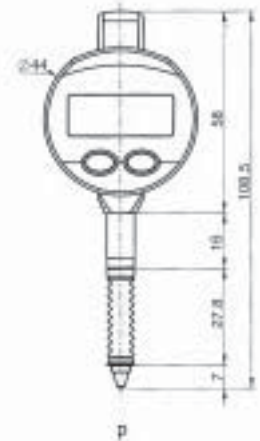


see p249 for wireless options



Features

- Relative / absolute modes
- mm / inch conversion
- Accuracy: $20\mu / 0.008''$ or $5\mu / 0.0002''$
- Preset function (max 130mm)
- Repeatability (+/-2s): $5\mu\text{m} / 0.0.0002''$
- Max displacement speed: 2m / sec
- Measuring force: 0.5-0.9N
- Weight: 70g
- Battery: Lithium, 3V, CR2032
- Protection of the module according to IEC529: IP65 even with data output
- Autonomy: minimum 5000 hours in continuous use (corresponds to 2 years in output normal use/auto-off)
- Clamping: diameter 8h6 and dove-tail back
- Anvil with TC ball



SYLVAC IP65 DIGITAL MINI INDICATOR

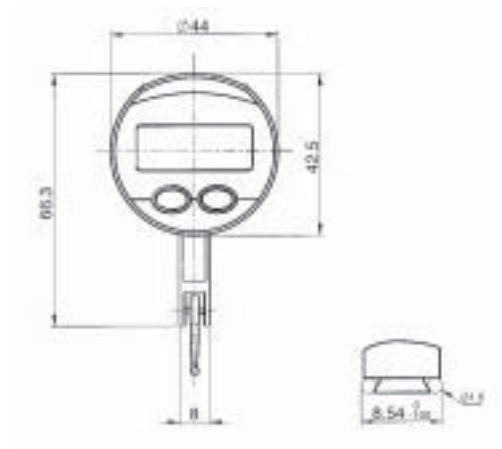
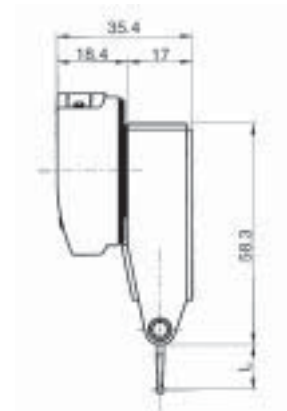
Code No	Description	Resolution (mm)	Resolution (inch)	Maximum Error (μm)	Repeatability (μm)
30-905-4121	Mini indicator 12.5mm Top Lifter	0.01	0.0005	10	2
30-905-4125	Mini indicator 12.5mm with bellows	0.01	0.0005	10	2
30-905-4521	Mini indicator 12.5mm Top Lifter	0.001	0.00005	5	2
30-905-4525	Mini indicator 12.5mm with bellows	0.001	0.00005	5	2
30-905-4527	Mini indicator 12.5mm Top Lifter "Factor"	0.001	0.00005	5	2
30-905-4511	Mini Indicator 5mm Travel Analogue	0.001	0.00005	4	2
30-905-4515	Mini indicator 5mm travel analogue with bellows	0.001	0.00005	4	2
30-905-4140	Vertical Display Mini Indicator 5mm Travel	0.01	0.0005	10	2
30-905-4540	Vertical Display Mini Indicator 5mm travel	0.001	0.00005	5	2
30-905-4516	Powered Serial Data Output Cable				
30-926-6821	Sylvac Powered Opto Duplex USB				
25-604-013	Wireless Powered Opto Module				
30-905-4211	Lug Back				

See page 249 for data transmission options



Sylvac Test Indicator

The unique Sylvac Quadra Test series gives the user all of the advantages of a sturdy, conventional analogue lever indicator, with the numerous useful facilities that can only be found in a quality digital gauge.



Features


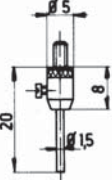


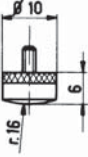
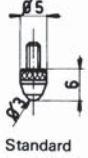
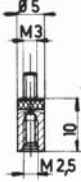
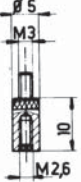
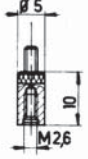
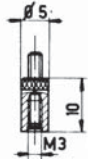
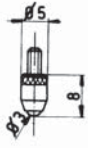
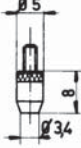
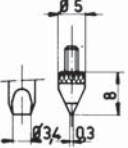
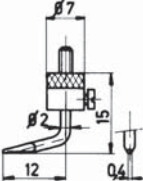
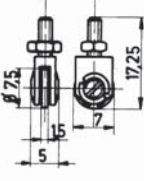
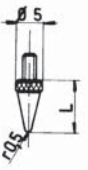

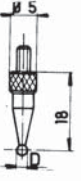
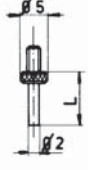
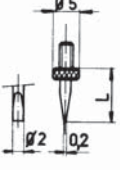
- 4 measuring modes: Min, Max, TIR, and Direct
- 4 measuring resolutions 0.01mm, 0.001mm, 0.0005", 0.00005", except 30-705-4321 (0.01 / 0.0005" only)
- mm / inch conversion
- RS-232 output
- Water, oil and coolant resistant to IP65 - IEC 529 specification
- 44mm diameter dial face, rotates through 360°
- Clear bar-graph
- Easy to read numeric digital display
- Meets or exceeds Din/ISO standards
- Available with 12.5mm or extra-long 36.5mm contact point

SYLVAC TEST INDICATOR

Code No	Description	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Probe Type
30-905-4321	Quadra Test Lever Indicator	0.8	0.03	0.001	0.00005	12.5mm
30-905-4322	Quadra Test Lever Indicator	0.5	0.02	0.001	0.00005	36.5mm
30-905-4516	Powered Serial Data Output Cable					
30-926-6821	Sylvac Powered Opto Duplex USB					
25-604-013	Wireless Powered Opto Module					

Contact Points

Bowers offers a wide selection of quality contact points to suit all analogue and digital indicators transducer probes, etc. containing standard M2.5 thread.

<p>Steel T/C</p>  <p>Code No 40-42A20 40-42A21</p>	<p>Steel T/C</p>  <p>Code No 40-42A22 40-42A23</p>	<p>Steel T/C</p>  <p>Code No 40-42A24 40-42A25</p>	<p>Steel T/C</p>  <p>Code No 40-42A26 40-42A27</p>	<p>Steel T/C</p>  <p>Code No 40-42A28 40-42A29</p>
<p>Steel T/C</p>  <p>Code No 40-42A30 40-42A31</p>	<p>Steel T/C</p>  <p>Code No 40-42A85</p>	<p>Steel T/C</p>  <p>Code No 40-42A86</p>	<p>Steel T/C</p>  <p>Code No 40-42A87</p>	<p>Steel T/C</p>  <p>Code No 40-42A88</p>
<p>Steel T/C</p>  <p>Code No Description 40-42A40 40-42A41 10-901994 Hard plastic ball</p>	<p>Steel T/C</p>  <p>Code No 40-42A42 40-42A43</p>	<p>Steel T/C</p>  <p>Code No 40-42A44 40-42A45</p>	<p>Steel T/C</p>  <p>Code No 40-42A82</p>	<p>Steel T/C</p>  <p>Code No 40-42A83 flat 40-42A84 convex</p>
<p>Steel T/C</p>  <p>Code No 40-42A54 (5mm long) 40-42A55 - 10mm 40-42A56 - 15mm 40-42A57 - 20mm 40-42A58 - 30mm 40-42A59 - 40mm 40-42A60 - 50mm</p>	<p>Steel T/C</p>  <p>Extension</p> <p>Code No 40-42A61 (10mm long) 40-42A62 - 15mm 40-42A63 - 20mm 40-42A64 - 25mm 40-42A65 - 30mm 40-42A66 - 35mm 40-42A67 - 40mm 40-42A68 - 45mm 40-42A69 - 50mm</p>	<p>Steel T/C</p>  <p>Code No 40-42A70 (1mm dia. carbide) 40-42A71 - 2mm 40-42A72 - 3mm 40-42A73 - 4mm 40-42A74 - 5mm 40-42A75 - 6mm 40-42A76 - 7mm 40-42A77 - 8mm 40-42A78 - 9mm 40-42A79 - 10mm 40-42A80 - 11mm 40-42A81 - 12mm</p>	<p>Steel T/C</p>  <p>Code No 40-42A46 (5mm long) 40-42A47 - 10mm 40-42A48 - 15mm 40-42A49 - 20mm</p>	<p>Steel T/C</p>  <p>Code No 40-42A50 (5mm long) 40-42A51 - 10mm 40-42A52 - 15mm 40-42A53 - 20mm</p>



Magnetic Bases and Fitments

Magnetic Bases

- All units are suitable for use with dial indicators and test dial indicators
- 900 and 901 versions both have push button 'ON/OFF' control
- 905 model has a toggle lever for 'ON/OFF' function
- The base incorporates a vee slot for location on curved surfaces (with the exception of 909)
- 909 Non-switchable (M6 coarse thread)

Magnetic Base Fitments

- All fitments accept stem or back lug mounting
- All fitments have M8 x 1.25mm screw thread for fixing
- Compatible with any of the Eclipse range of magnetic bases



E909-MW



E905-WFMW + RP991BLMW



E901-WFMW + RP995BLMW



E905-WFMW + RP999MW

MAGNETIC BASES

Code No	Force	Length (mm)	Width (mm)	Height (mm)	No. of Magnetic Faces	Note	Weight
E900-WFMW	30kg	48	40	50	4	Vee for Curved Surfaces	0.5kg
E901-WFMW	80kg	64	64	76	4	Vee for Curved Surfaces	1.7kg
E905-WFMW	80kg	65	50	55	2	Vee for Curved Surfaces	1.05kg
E909-MW	14kg	n/a	35	30	1		0.35kg

MAGNETIC BASES FITMENTS

Code No	Type	Description	Clamp Size	Note
RP991BLMW	Fine Adjust	Column dia - 12mm, length - 175mm. Arm dia - 10mm, length - 165mm	10mm Universal	Accepts 1/4" I.D Lug Stem / Spigot Dia: 1/8", 1/4", 5/16" and 3/8"
RP995BLMW	Plain	Column dia - 12mm, length - 175mm. Arm dia - 10mm, length - 165mm	10mm Universal	Accepts 1/4" I.D Lug Stem / Spigot Dia: 1/8", 1/4", 5/16" and 3/8"
RP72CPMW	Plain	Column dia - 12.5mm, length - 185mm. Arm dia - 6.3mm, length - 150mm	6.35 Standard Clamp	Accepts 1/4" I.D Lug Stem/Spigot Dia: 5/16"
RP999MW	3 Point Adjustable	Column dia - 15mm, length - 295mm.	3 Point Special Clamp	Accepts 1/4" I.D Lug and Dovetails Stem / Spigot Dia: 5/16"

Magnetic Stand 475 Series

Features

- Features fine adjustment
- With powerful on / off magnetic base
- Magnetic force 80Kg / 175lbs
- Universal model which can be used for indicators with or without "lug" on back plate
- Accepts dial test indicators, digital indicators and normal indicators
- Extra rigid



MAGNETIC STAND

Code No	Description	Type
MW475-01	ON/OFF Magnetic	Fine Adjustment

Magnetic Hydraulic Stand 485 Series

Features

- Features a unique hydraulic central lock for all arms and swivel positions
- Super solid model
- With fine adjustment
- With powerful on/off magnetic base
- Magnetic force 80Kg / 175 LBS
- Universal model which can be used for indicators with or without "lug" on back plate
- Accepts dial test indicators, digital indicators and normal indicators
- Dovetail groove for clamping a dial test indicator
- Super rigid



MAGNETIC HYDRAULIC STAND

Code No	Description	Type
MW485-01	ON/OFF Magnetic	Hydraulic lock dovetail groove

Magnetic Snake Stand 496 Series

Features

- Corrosion resistant chrome plated flex arm
- Magnetic force 40kg / 85 lbs
- Holds rigidly in almost any position
- V -base for mounting on rounded surfaces



MAGNETIC SNAKE STAND

Code No	Description	Type
MW496-01	Snake Stand	Mechanical Lock

Magnetic Articulating Stand 477 Series

Features

- Versatile magnetic base that can be adjusted in almost unlimited ways
- Fine adjustment
- 30kg clamp force
- V -base for mounting on rounded surfaces



MAGNETIC ARTICULATING STAND

Code No	Description	Type
MW477-01	Articulating arm magnetic base	Fine Adjustment



Comparator Stands

The rigid construction and quality materials used in manufacturing these quality Bowers comparator stands gives the user both a solid component support and a strong fixing for most types of indicator, transducer probe etc.

Features

- Hard chrome column
- Table surface is lapped
- One piece bracket for high rigidity and constant parallelism
- Adapter Hole for dial gauge 8mm H7

13-03306



13-03304



13-03309



13-03308



MW498-05



COMPARATOR STANDS

Code No	Height (mm)	Range (mm)	Overhang (mm)	Weight	Measuring Table Area	Type
13-03304	284	150	76	7kg	98 x 115mm	Plain Column
13-03305	320	160	104	12kg	98 x 180mm	Plain Column
13-03306	320	160	104	12kg	98 x 180mm	Threaded Column
13-03308	320	160	104	12kg	98 x 180mm	Handwheel Column
13-03309	320	180	104	9.5kg	150 x 200mm	Handwheel Column
MW498-05	280	110	70	12kg	98 x 98mm	Threaded Column

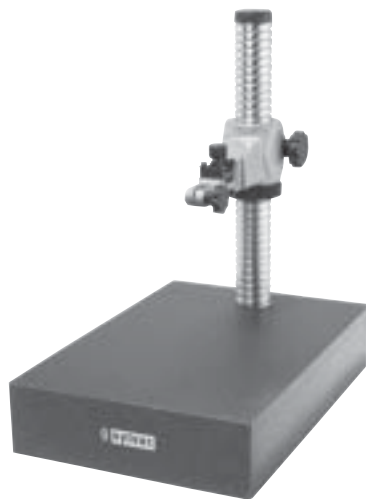
Other models available.

Sylvac Comparator Stands

Features

- Highly stable base to DIN 876/00
- 8mm H7 stem mounting
- One piece bracket for high rigidity and constant parallelism

Note: Not supplied with dial gauge.



30-908-1203



30-908-1206



30-908-1204



30-908-1209

TECHNICAL SPECIFICATION

	30-908-1203	30-908-1204	30-908-1206	30-908-1209
Column	Hard Chrome Ø 35mm	Hard Chrome Ø 35mm	Steel Ø 20mm	Chrome Steel Ø 25mm
Clamping dimension	Ø 8mm	Ø 8mm	Ø 8mm	Ø 8mm
Distance column measuring point	67mm	100mm	60mm	78mm
Total height	280mm	360mm	240mm	215mm
Fine adjustment	Yes	Yes	No	No

SYLVAC COMPARATOR STANDS

Code No	Height (mm)	Load Range (mm)	Overhang (mm)	Weight	Type	Size of Base
30-908-1203	280	0-150	67	8kg	Fine adjustment. Granite grade 00	240 x 140 x 50mm
30-908-1204	360	0-210	100	16kg	Fine adjustment. Granite grade 00	300 x 210 x 60mm
30-908-1206	240	0-170	60	2.6kg	Granite grade 00	100 x 150 x 40mm
30-908-1209	215	0-115	78	4.3kg	Cast iron, ceramic table	85 x 85 x 25mm

SYLVAC DIAL GAUGE LIFTING DEVICES

Code No	Description
30-905-2214	Lifting lever (suits all Dial Gauges)
30-905-2215	Upper lifting device to suit S_Dial WORK 12.5 - 25mm indicators
30-905-2216	Lifting device with photo-cable, suits S_Dial WORK 12.5 - 25mm indicators
30-905-4214	Lower lifting lever, suits S233 mini indicator, range 12.5mm
30-905-4215	Upper lifting type, suits S233 mini indicator, range 12.5mm

Sylvac Measuring Stand: PS15

The Sylvac Mini-Measuring Stand is the perfect solution to the rapid and accurate inspection of small parts. This extremely robust device exerts a low measuring force and is activated by one of the two convenient operating levers. The flexible Mini-Measuring Stand can be fitted with most analogue or digital indicators, or transducer probes.



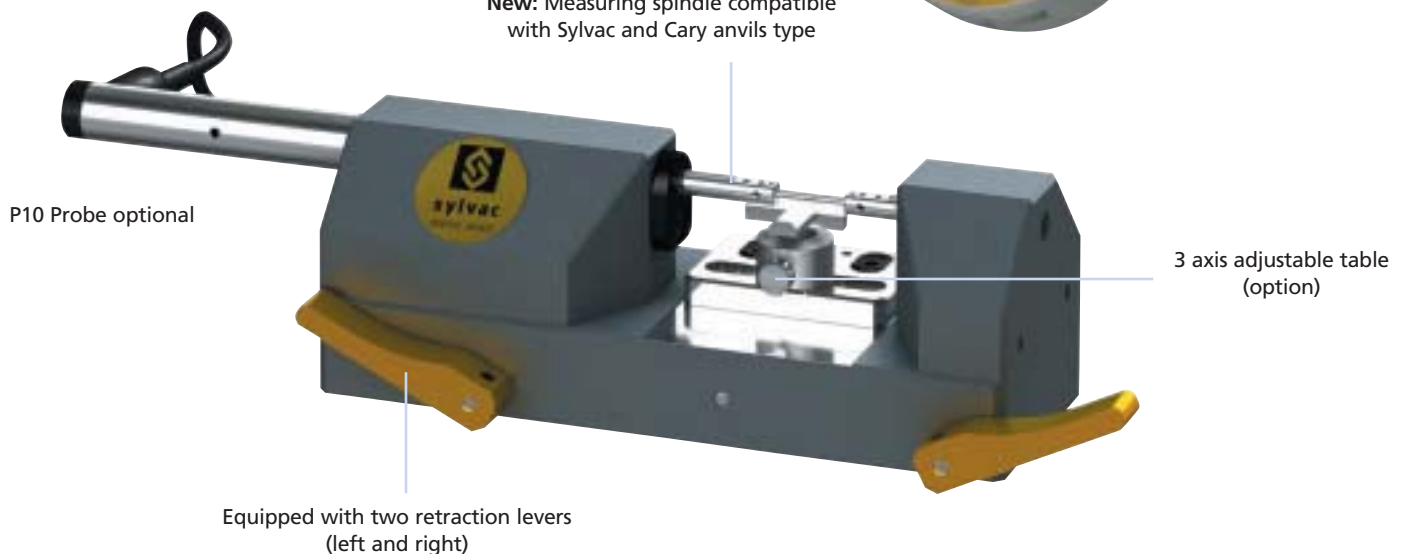
Features

- Small horizontal or vertical bench table designed to easily and quickly check small parts up to 20mm
- Measuring spindle guided by linear ball bearing
- The measured value will be displayed either by a Sylvac digital gauge range 12.5mm, up to 0.0001mm resolution or by a Sylvac measuring probe P10 (P10L) linked to a digital display unit. Using a pair display unit / measuring probe an overall accuracy of 0.6μ and repeatability of 0.2μ can be reached
- This bench table can be equipped with different kind of tables as well as with several types of anvils of any shapes
- Wide choice of special applications can be found on our specific flyer Measuring Benches PS15-16-17



Sylvac indicator optional

New: Measuring spindle compatible with Sylvac and Cary anvils type



P10 Probe optional

3 axis adjustable table (option)

Equipped with two retraction levers (left and right)

TECHNICAL SPECIFICATION

	30-808-1215	30-808-1216	30-908-1218
Description	PS15BH	PS15BV	PS15BV+
Max. capacity (mm)	20	20	20
Measuring Range (mm)	10	10	10
Adjustable measuring force (N)	0.3-1.0	0.3-1.0	0.3-1.0
Measuring direction	Horizontal	Vertical	Vertical
Anvils fixation	Ø 1.5mm	M2.5	Ø 1.5mm
Cary compatibility	Yes	Yes	Yes

SYLVAC MEASURING STAND PS15

Code No	Description	Weight
30-808-1215	Horizontal stand with anvils Ø 1.5mm without support table	1.8kg
30-808-1216	Vertical stand with 5mm / M2.5 flat anvils without support table	1.8kg
30-808-1218	Vertical stand with anvils Ø 1.5mm without support table	1.8kg

Sylvac Horizontal Measuring Bench Table: PS16

The easy to use Sylvac Horizontal Measuring Table is capable of very accurate external and internal (with attachment) measurement. Ideal for repeatable small part batch measurements, the ingenious gauge has adjustable measuring force and can be supplied with a built-in digital display or connected to a multi-function Sylvac readout unit.



Integral Display Features

- Preset capability
- 0.001mm / 0.00005"
- Min / max
- RS-232 output
- Accessories for special applications



Remote Display Features

- Designed with internal Sylvac transducer probe for connection to a D50S, D80S or D300S digital indication units, giving access to further measuring options

Table Features

- Built-in measuring table with a part centraliser (LVS and LVP models only)

MEASURING BENCH TABLE PS16

Code No	Description
30-908-1221	Horizontal Stand, Integral Display 50mm with Ø 6.5mm anvils, without table
30-908-1222	Horizontal Stand, Integral Display 50mm with Ø 6.5mm anvils, without table
30-908-1223	Horizontal Stand, Integral Display 50mm with Ø 0.4mm anvils and table
30-908-1231	Horizontal Stand with Transducer 25mm with Ø 6.5mm anvils, without table
30-908-1232	Horizontal Stand with Transducer 50mm with Ø 6.5mm anvils, without table
30-908-1233	Horizontal Stand, Integral Display 50mm with Ø 0.4mm anvils and table
30-908-1224	Horizontal Stand, Integral Display 50mm with Ø 0.4mm anvils and table
30-908-1234	Horizontal Stand with Transducer 50mm with Ø 0.4mm anvils and table

See additional literature for alternative anvils and accessories
See following pages for remote display units.

TECHNICAL SPECIFICATION

External and internal measurement	30-908-1221	30-908-1231	30-908-1222	30-908-1232
Description	VS25	VP25	V550	VP50
Measuring capacity (mm)	38	38	68	68
Measuring range (mm)	25	25	50	50
Max. Error (µm)	5	1.5	7	2.5
Repeatability (µm)	1	0.3	1	0.4
Resolution (µm)	1	0.1	1	0.1
Measuring force (Adjustable) N	0.2 - 1.0	0.2 - 1.0	0.2 - 1.0	0.2 - 1.0
Weight (kg)	5	5	6.5	5.5
Anvils clamping dimension (mm)	Ø 1.5	Ø 1.5	Ø 1.5	Ø 1.5
Dimensions - A (mm)	301	301	401	401
Dimensions - B (mm)	65	65	96	96

TECHNICAL SPECIFICATION

2 - points Internal measurement with centring pins	30-908-1223	30-908-1224	30-908-1233	30-908-1234
Description	LVS50	LVS50	LVP50	LVP50
Internal measuring capacity (mm)	12 - 64	24 - 70	12 - 64	24 - 70
External measuring range (mm)	48	48	48	48
Max. Error (µm)	10	10	6	6
Repeatability (µm)	4	4	2	2
Resolution (µm)	1	1	0.1	0.1
Measuring force (Adjustable) N	0.2 - 1.0	0.2 - 1.0	0.2 - 1.0	0.2 - 1.0
Weight (kg)	7	7	7	7
Thickness of anvils (mm)	0.4	0.4	0.4	0.4
Anvils clamping dimension (mm)				
Adjustable range of the table (mm)	20	20	20	20
Dimensions - A (mm)	418	418	418	418
Dimensions - B (mm)	96	96	96	96

Sylvac S_View D50S and D50S PRO

Ease of use and compatibility with the Sylvac range of long travel transducers have made the D50S a universal instrument for either the workshop or laboratory.



Features

- Easy to use
- 1 button = 1 function
- 2 Sylvac probe inputs
- Modes Absolute / Relative
- 1 configurable foot switch
- Resolution upto 0.0001mm
- RS-232 output
- Bright LED display
- Direct display:
channel 1
channel 2
channel 1 + channel 2
channel 1 - channel 2
- Mains power only
- Correction of linearity on both channels (D50S PRO only)

SYLVAC D50S DIGITAL INDICATOR UNITS

Code No	Description
30-804-1050	D50S digital readout 0.001 / 0.0001mm Res.
30-804-1060	D50S Pro digital readout 0.001 / 0.00001mm Res. (with correction factors on both channels)
30-904-4101	Foot pedal
30-925-5608	RS232 connecting cable

Sylvac S_View D70S

The new Sylvac D70S has 2 probe inputs that provide multiple probe combination, high resolution touch screen operation and the option of a simple user display or double display with an additional analogue bar-graph.



Features

- Touch screen display
- For Sylvac capacitive probes
- 2 probe inputs
- Display resolution selectable up to 0.0001mm
- Simple or double display with bargraph or needle
- Different possibilities of probe's combination: (C1, C2, C1-C2...)
- Direct measurement or Min, Max, Average, Max-Min...
- User friendly interface
- Very robust construction
- USB connection for transfer of data
- Powered by the computer when connected by USB cable

SYLVAC S_VIEW D70S DIGITAL INDICATOR UNIT

Code No	Description
30-804-2070	D70S digital readout 0.0001mm resolution
30-904-4101	Foot pedal

Sylvac S_View D80S

The advanced D80S is capable of undertaking numerous common and advanced measuring procedures with ease. Its user-friendly characteristics and clear digital display make it useful for processing and displaying readings from a Sylvac transducer probe.



Features

- Display unit with 8 analogue channels
- CCFL graphic display with backlight
- Resolution upto 0.0001mm
- Tolerance indicator
- Input for Sylvac probe P5 to P50
- RS-232 input/output
- Analogue and Opto-coupled output (command signal)
- Mains power only

SYLVAC S_VIEW D80S DIGITAL INDICATOR UNIT

Code No	Description
30-804-1080	D80S digital readout unit
30-904-4101	Foot pedal
30-925-5608	RS232 connecting cable

Sylvac S_View D300S V2 Digital Display

The new D300s V2 digital display from Swiss Metrology manufacturer, Sylvac is able to display the absolute displacement position of Sylvac's extremely accurate capacitive and Inductive transducer probes, to a resolution of 0.1µm, as well as now being capable of connecting probes and instruments from other manufacturers due to the introduction of the new M-Bus input. The D300S has a highly visible 8.5" LCD touch screen digital display and is capable of accepting readings from up to 64 instruments via USB, RS232 and various other types of transducer probes from multiple manufacturers at the same time. The D300S can memorise previously input configurations and values and can recall both individual or group preset values. Each of the D300s' 64 channels has a separate maths function, whilst all of the channels have switchable numeric / analogue and statistical displays.



Features

- Digital display with 8.5" touch screen IP65 Rated
- 6 USB inputs for Sylvac instruments
- Optional embedded inputs for Sylvac probe, 2, 4 or None
- Capability to connect transducers and instruments from other manufacturers using M-Bus
- Automatic detection of connected instruments
- Maths functions for each channel
- Switchable and configurable interface / display
- Compatible with Bluetooth instruments (USB Dongle required)



TECHNICAL SPECIFICATIONS

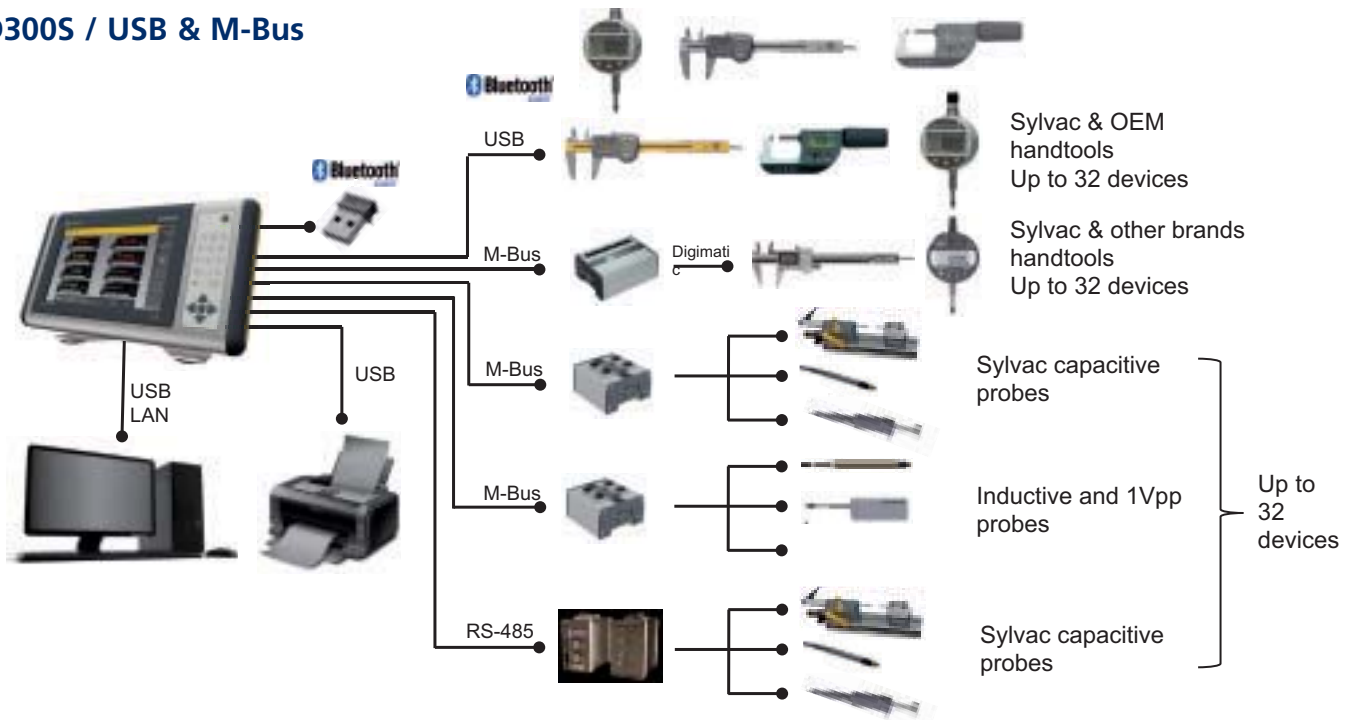
	30-804-1310	30-804-1300	30-804-1320
Embedded probe inputs	0	2	4
Probes types	Capa / ind / inc	Capa	Capa
Max probe inputs*	32	32	32
RS232 in / out	1	1	1
RS485 in	1	1	1
M-BUS	1	-	-
USB out	1	1	1
USB in	6 (up to 32*)	6 (up to 32*)	6 (up to 32*)
RJ45 / LAN	Yes	Yes	Yes
Footpedal plug	Binder (2x)	Binder (2x)	Binder (2x)
RS232 cable*	1:1	1:1	1:1
I/O optocoupled	Yes	Yes	Yes
Display mode	Digital & Analogue	Digital & Analogue	Digital & Analogue
Meas. / sec / input at 0.1µm	up to 500	20	20
Data via USB	Yes**	Yes**	Yes**

*With ext. modules **Virtual COM port

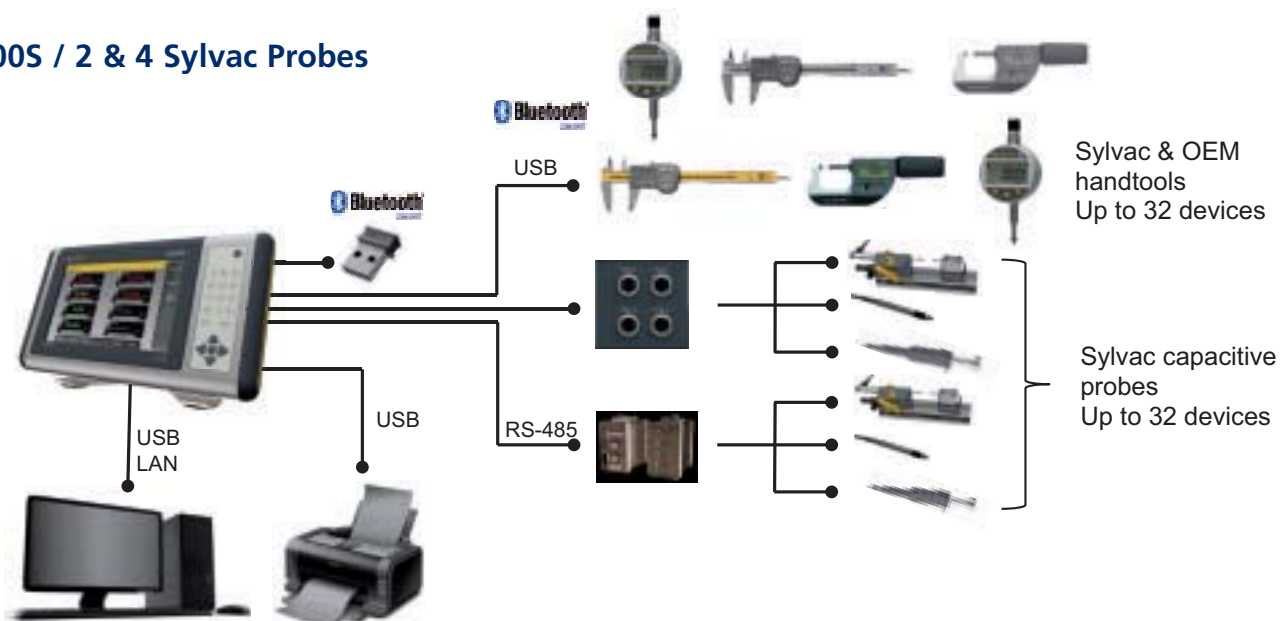


Sylvac S_View D300S V2 Digital Display

D300S / USB & M-Bus



D300S / 2 & 4 Sylvac Probes



SYLVAC D300S

Code No	Description	Output
30-804-1300	D300S Display Unit 2 Probes 6USB	USB / RS232 Output / LAN
30-804-1310	D300S Display Unit MBUS 6USB	USB / RS232 Output / LAN
30-804-1320	D300S Display Unit 4 Probes 6USB	USB / RS232 Output / LAN

Sylvac S_View D200S Digital Indicator Unit

The Sylvac S_View D200S is a computer based unit with extra speed for dynamic measurement and versatility.



Features

- Multiplexer with 8 inputs for Sylvac probes P2 to P50
- Dynamic measurement (200 measurements/sec)
- Ideal for the layout conception of multi-gauging
- Possibility of pneumatic lifting of the probes
- Software allowing the reading of up to 24 channels simultaneously (bar graph)
- Sending of the measured values in Excel, notepad or specific file
- Create sequences of sending data
- Grouped or individual PRESET
- Mathematic combinations between channels
- Unit usable in an autonomous way



TECHNICAL SPECIFICATION

Frequency of measurement	200 values/second
Case	Aluminium profile, Terlend plastic, ABS and aluminium varnished
Protection rating according to IEC 60529	IP50
Programmable by PC	Yes

SYLVAC D200S

Code No	Description	Size	Weight	Output
30-804-2101	D200S Multiplexer with Software	304 x 171 x 61mm	1.2kg	USB / RS232 Output
30-904-4101	Foot pedal			



Sylvac S_View D400S Digital Display

Features

- Digital multifunctional unit with 7" touch screen display
- Multi-brands compatible through M-BUS multiplexers (possibility to mix the transducer brands)
- Designed for multigauging applications
- Up to 99 input (probes, instruments, I/O) through M-BUS multiplexers
- Automatic detection of connected instruments
- Storage of up to 128 different parts configurations
- Up to 30,000 measurements can be saved by configuration
- Display of up to 32 channels simultaneously (on the same screen)
- Single or multi-gauging display mode
- SPC functions (run chart, pareto, histogram with Gaussian curve, etc.)
- PLC functions and PLC communication protocols
- Formula editor, free combination between all instruments connected to the M-BUS
- Configurable by PC
- Ethernet connection
- Footpedal input
- User friendly interface
- Very robust construction



SYLVAC D400S

Code No	Description
30-804-2400	D400S Display Unit



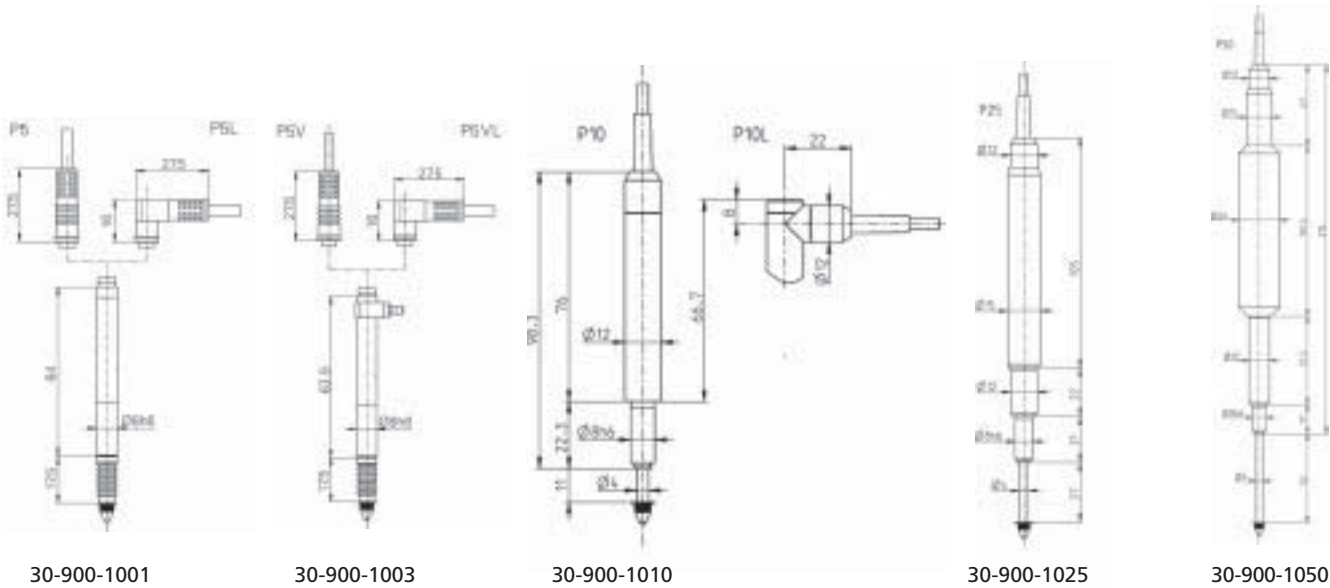
Transducer Probes

Sylvac long travel probes have built-in capacitive transducers which allow them to function for both absolute and comparative measurements. The Sylvac capacitive probes can be used with all Sylvac digital display units.

The Sylvac inductive (PXi) probes can be used with the Sylvac D300s V2 MBUS.



Swiss Precision



TRANSDUCER PROBES

Code No	Description
30-900-1050	Sylvac P50 Transducer Probe
30-900-1025	Sylvac P25 Transducer Probe
30-900-1010	Sylvac P10 Transducer Probe
30-900-1014	Sylvac P10L Transducer Probe
30-900-1001	Sylvac P5 Transducer Probe
30-900-1006	Sylvac P5L Transducer Probe
30-900-1001B	Sylvac P5BL Transducer Probe
30-900-1003	Sylvac P5V Transducer Probe
30-900-1008	Sylvac P5VL Transducer Probe
30-900-1003B	Sylvac P5BVL Transducer Probe

PXI INDUCTIVE PROBES

Code No	Description
30-900-1101	Sylvac P2i Inductive Probe - Spring Force
30-900-1102P	Sylvac P2i Inductive Probe - Pneumatic Force
30-900-1111	Sylvac P5i Inductive Probe - Spring Force
30-900-1112P	Sylvac P5i Inductive Probe - Pneumatic Force

CAPACITIVE TRANSDUCER PROBE SPECIFICATIONS

	P5, P5L & P5V Probes	P10 & P10L Probes	P25 Probe	P50 Probe	P2i & P2iP Probes	P5i & P5iP Probes
Linear measuring range	5mm / 0.2"	10mm / 0.4"	25mm / 1"	50mm / 2"	+/-2mm / 0.08"	+/-5mm / 0.2"
Maximum error	2µm / 0.00008"	1µm / 0.00004"	1.5µm / 0.00006"	4µm / 0.00016"	2µm / 0.00008"	5µm / 0.0002"
Measuring force	0.45-0.65 N	0.6-0.9 N	0.6-1.2 N	0.6-1.4 N		
Increase of measuring force	0.04N/mm	0.03 N/mm	0.024 N/mm	0.016N/mm		
Repeatability	0.2µm / 0.000008"	0.1µm / 0.000004"	0.01µm / 0.000004"	0.2µm / 0.000008"	0.15µm / 0.000006"	0.15µm / 0.000006"
Zero drift	0.0001mm/1/4C	0.0001mm/1/4C	0.0001mm/1/4C	0.0001mm/1/4C		
Temperature range	0-501/4	0-701/4	0-701/4C	0-701/4C		

'V' denotes vacuum retraction probe, 'B' denotes ball bearing, 'L' denotes side entry cable, 'P' denotes pneumatic.

Multiplexers

A wide range of flexible Sylvac Multiplexers are available to enable the connection of multiple transfer probes (up to 64) or instruments containing an Opto RS232 output to the Sylvac range of digital display units. Plus other types of digital instruments.

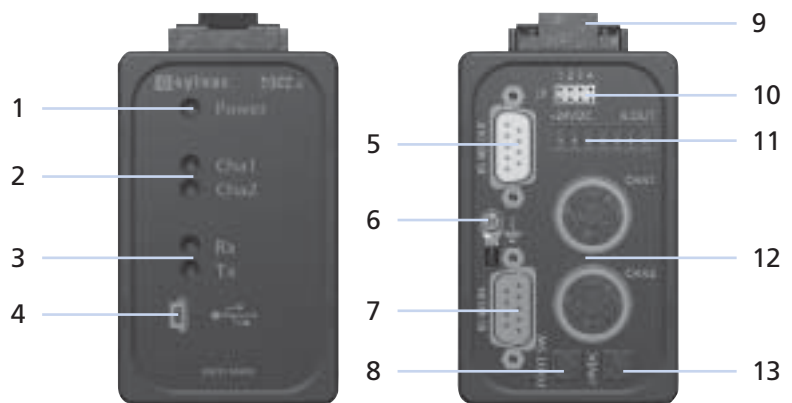


Features

- Multiplexing unit with 2 or 4 inputs for Sylvac probes P2 to P50
- Dynamic measurement (10 - 20 meas./Sec. according to resolution)
- Perfect solution for multi-gauging system
- Analogue output for PC connection
- Standalone use possible
- Programmable by PC
- Protection rating: IP40

MULTIPLEXERS - KEY

- | | |
|----|---|
| 1 | LED Power |
| 2 | LEDS channel |
| 3 | LED RS 485 activity |
| 4 | USB port for PC connection |
| 5 | RS 485 output |
| 6 | Ground connector |
| 7 | RS 485 input |
| 8 | External connector |
| 9 | Standard clamping (DIN 35mm) |
| 10 | Jumpers |
| 11 | Analogic output/24 VDC (only version a) |
| 12 | Probes input |
| 13 | 9V power supply input |



MULTIPLEXERS

Code No	Description
30-804-1302	D302 Multiplexer Unit
30-804-1303	D302 Multiplexer Unit with Analogue Output
30-804-1304	D304 Multiplexer Unit
30-804-1305	D304 Multiplexer Unit with Analogue Output

M-Bus Multiplexers

Features

- Multiplexer units allowing to connect different kind and brands of instruments to the D3005 V2 and D4005 display units
- Possibility to connect and mix different brands together
- RS485 based protocol
- The different units can be mounted on a DIN rail
- Robust construction

M-BUS MULTIPLEXERS

Code No	Description
30-804-2102	M-Bus 2C Multiplexer Unit
30-804-2104	M-Bus 4C Multiplexer Unit
30-804-2108	M-Bus 8i Inductive Multiplexer Unit
30-804-2114	M-Bus 4D Digimatic Multiplexer Unit
30-804-2118	M-Bus 8D Digimatic Multiplexer Unit
30-804-2122	M-Bus 2S Heidenhain Multiplexer Unit



30-804-2104



30-804-2108



Moore & Wright Vernier Height Gauge 190 Series

Features

- Zero reference point can be adjusted for calibration
- Hardened stainless steel beam
- Measuring faces are micro-lapped for high accuracy
- Chrome plated scale
- Heavy duty base for increased stability
- Carbide tipped scriber
- Fine adjustment
- Magnifier glass for easy reading of vernier scale



VERNIER HEIGHT GAUGE 190 SERIES

Code No	Range (mm)	Resolution (mm)	Size of Base
MW190-30	0-300	0.02	125 x 85mm
MW190-50	0-500	0.02	170 x 110mm
MW190-60	0-600	0.02	180 x 120mm
MW190-75	0-1000	0.02	250 x 150mm

Digital Mini Height Gauge 192 Series

Features

- Large LCD display
- Solid aluminium alloy base with magnets
- Hardened stainless steel beam
- Measuring range: 0-6" / 0-150mm
- Reading: inch/metric/fractional
- IP54 water, dust and oil resistant
- ABS, HOLD and power saving functions



DIGITAL MINI HEIGHT GAUGE 192 SERIES

Code No	Range (mm)	Range (inch)	Accuracy (mm)	Accuracy (inch)
MW192-20D	0-150	0-6	0.04	0.0015

Moore & Wright Digital Height Gauge 190 Series

Features

- Easy to read LCD display
- 'Soft keys' for maximum operating comfort
- Ground micro-lapped measuring surfaces
- Functions: mm/inch conversion, on/off, zero-setting, max, min, hold, battery low indication
- Fine adjustment for high precision measurement



DIGITAL HEIGHT GAUGE 190-DBL SERIES

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Size of Base
MW190-30DBL	0-300	0-12	0.01	0.0005	125 x 85mm
MW190-60DBL	0-600	0-24	0.01	0.0005	150 x 120mm

Digital Height Gauge 191 Series

Features

- Heavy duty beam
- Handwheel for ease of use
- ABS/INC measurement
- Large LCD display
- Inch/mm conversion
- Positive lock carbide scriber
- Supplied in moulded case



DIGITAL HEIGHT GAUGE 191 SERIES

Code No	Range (mm)	Range (inch)	Resolution (mm)	Resolution (inch)	Accuracy (mm)	Accuracy (inch)
MW191-30DAB	0-300	0-12	0.01	0.0005	+/-0.04	+/-0.0015
MW191-60DAB	0-600	0-24	0.01	0.0005	+/-0.05	+/-0.002



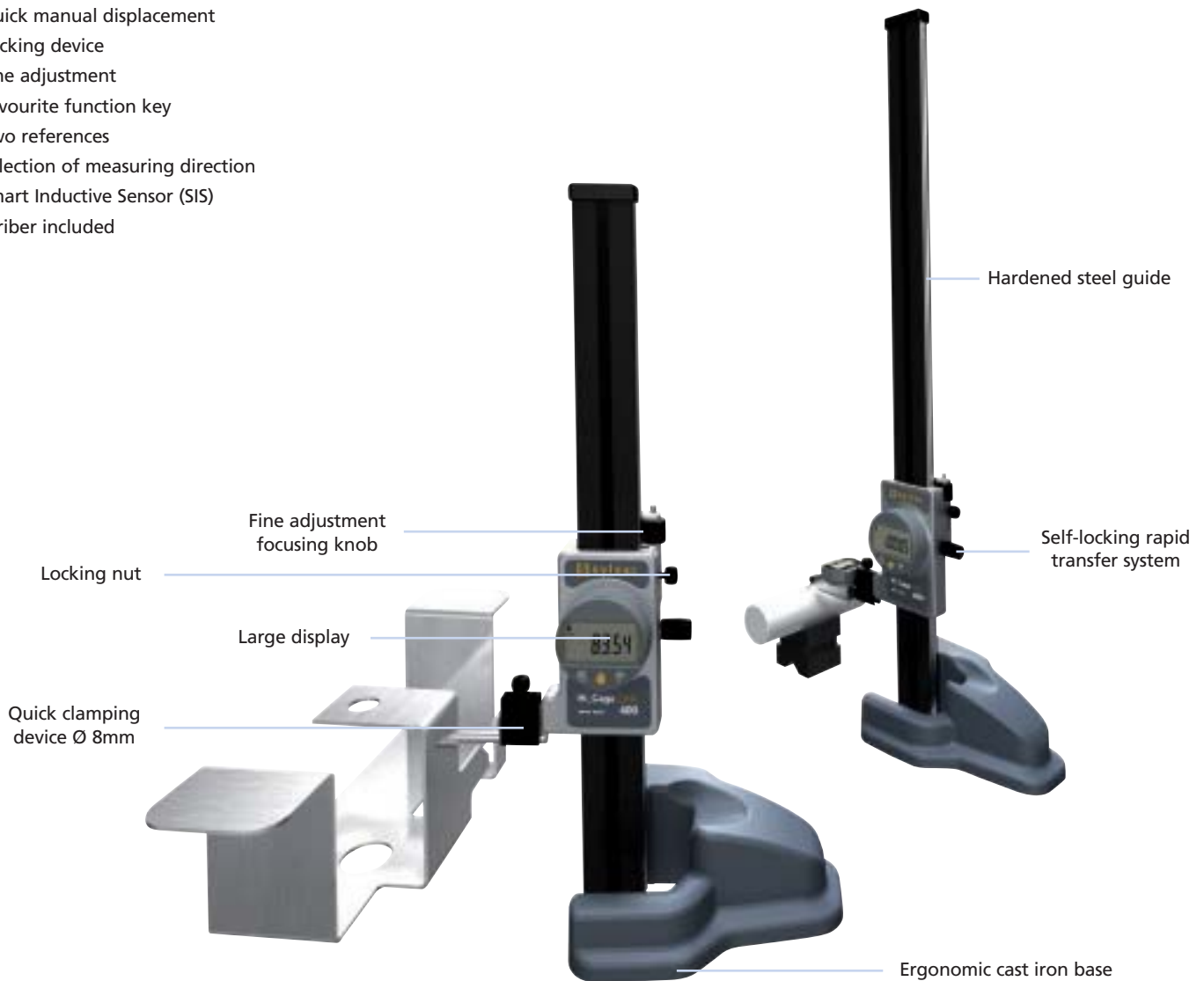
Sylvac Hi_Gage ONE Height Gauge

Available in 400mm and 600mm capacities, the robust new Sylvac Hi_Gage ONE Height Gauge is water and coolant resistant and designed to provide high levels of accuracy and repeatability throughout extended shop floor use.



Features

- Robust conception
- Quick manual displacement
- Locking device
- Fine adjustment
- Favourite function key
- Two references
- Selection of measuring direction
- Smart Inductive Sensor (SIS)
- Scriber included



SYLVAC HI_GAGE ONE HEIGHT GAUGE

Code No	Range (mm)	Resolution (mm)	Maximum Error (µm)	Repeatability (µm)
30-840-0400	400	0.01	40	10
30-840-0600	600	0.01	50	10

Code No	Description
30-840-9001	Ball Probe Ø 8mm
30-840-9002	Replacement scriber
30-905-2247	Lever indicator dovetail holder

Trimos Mini-Vertical Height Gauge

The Trimos Mini-Vertical Height Gauge is perfect for height measurements and scribing work and suitable for all kinds of workshop conditions. Its unique, compact design offers mobility and extreme stability. Because of its advanced measuring system, the self-contained working time of the Mini-Vertical is one year; therefore it can be used for multiple applications on the shop-floor.



Features

- Robust and compact construction
- Perfect for use on the shop-floor
- Constant measuring pressure
- Accurate and reliable measurements
- User friendly
- Opto-RS232 data output
- 3V Lithium battery CR2032
- Large range of accessories
- Two models available: cast iron base or granite base



TRIMOS MINI-VERTICAL

Code No	Description	Range (mm)	Range (inch)	Accuracy (mm)	Resolution (mm)	Resolution (inch)	Repeatability (mm)
20-23CI	300mm, Cast iron base	320	12	0.02	0.01 / 0.001	0.0005 / 0.00005	0.005
20-23GR	300mm, Granite base	320	12	0.02	0.01 / 0.001	0.0005 / 0.00005	0.005
20-2310CI	600mm, Cast iron base	620	24	0.03	0.01 / 0.001	0.0005 / 0.00005	0.005
20-2310GR	600mm, Granite base	620	24	0.03	0.01 / 0.001	0.0005 / 0.00005	0.005



Sylvac Hi_Cal Digital Motorised Height Gauge

The Sylvac Hi_Cal Digital Motorised Height Gauge is the latest, high specification electronic height gauge available from Bowers. With further improved accuracy, the Hi-Cal is perfect for a variety of measuring tasks including step heights, internal/external diameters and centre-line distances.

The height gauge benefits from Sylvac's patented inductive measuring electronics and the latest motorised probing system, to give excellent repeatability and ease of use.



Swiss Precision



see p249 for wireless options



Features

- Available in two models: 150mm and 300mm
- Motorised carriage with 2 progressive speed ranges
- Light and compact with a small footprint
- Simultaneous display of diameter and centerline
- Measures internal and external diameter, centerline, height, thickness and depth
- Extremely low measuring force
- USB data output or RS232
- Supplied with setting master



SYLVAC HI_CAL DIGITAL MOTORISED HEIGHT GAUGE

Code No	Range (mm)	Range (inch)	Application Range (mm)	Application Range (inch)	Accuracy (mm)	Repeatability (µm)	Resolution (mm)
30-830-0150	150	6	0-155	6	2.5 + L / 175	2	0.01 / 0.001
30-830-0300	300	12	0-320	12	2.5 + L / 175	2	0.01 / 0.001

Code No	Description
30-930-2150	Full accessories set in wooden box - 13 probes and holders
30-930-2151	Basic accessories set in wooden box - 4 probes and holders

Trimos V Series Digital Height Gauge

Perfect for use in the workshop environment, the easy-to-operate Trimos V Series Height Gauge offers accuracy and repeatability alongside quick performance.



Features

- Extremely easy to operate
- Autonomous use with rechargeable battery pack
- Clear definition of all measuring functions
- Extremely large display of values
- Acceptance of a measured value by acoustic signal
- Direct RS232C data output (bi-directional)
- Supplied with setting master (20-3415)

Display/Software Features

The clearly defined functions of the display unit allow quick performance of all required height measurements.

- Surface and centreline distance measurements
- Zero setting of the display or preset value setting
- Data transfer (RS 232)
- Selection of measuring unit mm or inch
- Selector key to obtain a min/max/delta value
- Measuring using two references
- Adjustment of the acoustic signal
- Max. manual carriage displacement speed 1500mm/s



TRIMOS V SERIES SPECIFICATION

Code No	20-VL300	20-VL600
Range (mm)	300mm	600mm
Range (inch)	12"	24"
Application Range (mm)	535mm	835mm
Application Range (inch)	21"	32"
Maximum Error (µm)	8µm	10µm
Repeatability (µm)	2 (Ø4)µm	2 (Ø4)µm
Frontal Squareness Deviation (µm)	10µm	15µm
Resolution (mm)	0.01 / 0.001mm	0.01 / 0.001mm
Resolution (inch)	0.0005 / 0.00005"	0.0005 / 0.00005"
Force	1N	1N
Operational Time	100h	100h
Operating Temperature	+10 - +40°C	+10 - +40°C
Temperature Range	-10 - +40°C	-10 - +40°C
Power	Incorporated rechargeable battery pack	Incorporated rechargeable battery pack
Weight	10kg	12kg



Trimos V+ Series Digital Height Gauge

Ideally suited to shop-floor situations where accuracy, repeatability, ease of use and ruggedness are required. This battery operated, motorised gauge boasts a multitude of useful, easy to access features, whilst its built in air cushion enables great ease of movement and speed of operation.



Swiss Precision



see p249 for wireless options



Features

- Measures heights, depths, thickness, gaps
- Measures internal and external diameters
- Min / Max / Delta feature
- Measures centreline distances of bores, shafts and surface to centreline
- Storage of probe constant
- Unique touch sensitive probe
- Direct RS232 output
- Portable lightweight construction
- Adjustable measuring pressure
- Metric / Inch conversion
- Built in air cushion activation (600 & 1000mm versions)
- Supplied with setting master



20-3415 Setting Master



TRIMOS V+ SERIES SPECIFICATION

Code No	20-34300	20-34601	20-341001
Range (mm)	300mm	600mm	1000mm
Range (inch)	12"	23.6"	48.6"
Application Range (mm)	535mm	835mm	1235mm
Application Range (inch)	21"	32.8"	48.6"
Resolution (mm)	0.01 / 0.001mm	0.01 / 0.001mm	0.01 / 0.001mm
Resolution (inch)	0.0005 / 0.00005"	0.0005 / 0.00005"	0.0005 / 0.00005"
Maximum Error (µm)	2.5+L / 300µm	2.5+L / 300µm	2.5+L / 300µm
Repeatability (mm)	0.002mm	0.002mm	0.002mm
Repeatability (inch)	0.0001"	0.0001"	0.0001"
Speeder	3m / sec	3m / sec	3m / sec
Force	0.7-1.6N	0.7-1.6N	0.7-1.6N
Operational Time	100 hours	100 hours/30hours (air)	100 hours/30hours (air)
Power	Incorporated rechargeable battery pack	Incorporated rechargeable battery pack	Incorporated rechargeable battery pack
Weight	10kg	12kg	16kg
Note	-	With base air pump	With base air pump

Trimos Vectra Touch

The exceedingly robust construction, class leading ergonomic design and use of Trimos registered Embedded Technology gives the revolutionary new Vectra extremely impressive accuracy and repeatability figures. This easy to use Height Gauge boasts many advanced features.



Features

- On-board temperature compensation as standard
- (Optional) temperature compensation with external gauge
- (Optional) wireless data transfer via bluetooth
- USB data transfer
- Graphical display of reversal point
- Colour touch screen
- Programming of measuring sequences (motorised)
- XY coordinate measuring system
- A built-in RS232 output enables the simple transmission of measured data to printers, computers, SPC devices etc.
- Simplified memory sequence programs including tolerance limits input
- Statistical analysis of measurements and protocol
- Ambient temperature display can also be added to reports
- Robust Trimos carriage system not compromised
- The operating handle has been designed for optimum operator comfort, and includes programmable function keys
- The "Trimos Measurement Control" enables a smooth probe setting on surfaces and diameters, and guarantees a constant measuring force
- Semi-automatic motorised movement (motorised model only)
- Motorised version available on request
- Supplied with setting master

Accessories Set

Please request Trimos catalogue for complete range of accessories.



TRIMOS VECTRA

Code No	Description
20-4012	300mm / 12" Vectra Electronic Height Gauge manual
20-4014	600mm / 24" Vectra Electronic Height Gauge manual
20-4016	1000mm / 40" Vectra Electronic Height Gauge manual
20-4018	1500mm / 59" Vectra Electronic Height Gauge manual
20-4020	2000mm / 78" Vectra Electronic Height Gauge manual
20-4030	Macro Accessories (see p126)
20-4032	Micro Accessories (see p126)
20-4035	Squareness Probe with holder
20-4070	USB Memory Stick

Motorised versions available

TECHNICAL SPECIFICATION

	20-4012	20-4014	20-4016	20-4018	20-4020
Measuring range (mm) (in)	305 (12)	610 (24)	1016 (40)	1524 (60)	2034 (80)
With second probe holder (mm) (in)	567 (22)	872 (34)	1278 (50)	1786 (70)	2296 (90)
Max. permissible errors (µm)	2+L(mm)/400	2+L(mm)/400	2+L(mm)/400	2.5+L(mm)/300	2.5+L(mm)/300
Repeatability (2s) (µm)	1(Ø2)	1(Ø2)	1(Ø2)	1(Ø2)	1(Ø2)
Resolutions (mm) (in)	0.01/0.001/0.0001 (.001/.0001/.00001)				
Manual carriage displacement speed mm / s	1000	1000	1000	1000	1000
Motorised carriage displacement speed mm / s	150	150	150	150	150
Measuring force (adjustable) N	0.5 - 1.8	0.5 - 1.8	0.5 - 1.8	0.5 - 1.8	0.5 - 1.8
Frontal squareness deviation (µm)	4	6	10	15	25
Autonomy h	>8	>8	>8	>8	>8
Data output	2 x RS232 C and 2 x USB (A and B)				
Operational temperature °C	+10 - +40°C	+10 - +40°C	+10 - +40°C	+10 - +40°C	+10 - +40°C
Temperature of storage °C	-10 - +40°C	-10 - +40°C	-10 - +40°C	-10 - +40°C	-10 - +40°C
Weight (kg)	22	25	29	39	44



Trimos Mestra Touch Height Gauge

Supreme levels of accuracy are available from the innovative new Trimos Mestra Height Gauges due to their unique motorised probing system, extremely high contact stability and the use of Trimos registered embedded technology. The standard range of easy to use gauges boast an unparalleled list of useful functions, with even more advanced features available on the revolutionary 'Mestra Touch' versions.



Features

- On-board temperature compensation as standard
- (Optional) temperature compensation with external gauge
- (Optional) wireless data transfer via bluetooth
- USB data transfer
- Graphical display of reversal point
- Simplified memory sequence programs including tolerance limits input
- Statistical analysis of measurements and protocol
- Ambient temperature display can also be added to reports
- Robust Trimos carriage system not compromised
- The operating handle has been designed for optimum operator comfort, and includes programmable function keys
- The "Trimos Measurement Control" enables a smooth probe setting on surfaces and diameters, and guarantees a constant measuring force
- Semi-automatic motorised movement (motorised model only)
- Motorised version available on request
- Supplied with setting master
- Extreme accuracy level

Accessories Set

Please request Trimos catalogue for complete range of accessories.



TRIMOS MESTRA TOUCH

Code No	Description
20-4006	300mm / 12" Mestra Touch Electronic Height Gauge manual
20-4008	600mm / 24" Mestra Touch Electronic Height Gauge manual
20-4010	1000mm / 40" Mestra Touch Electronic Height Gauge manual
20-4030	Macro Accessories (see p126)
20-4032	Micro Accessories (see p126)
20-4035	Squareness Probe with holder
20-4070	USB Memory Stick

Motorised versions available.

TECHNICAL SPECIFICATION

	20-4006	20-4008	20-4010
Measuring range (mm) (in)	305 (12)	610 (24)	1016 (40)
With second probe holder (mm) (in)	567 (22)	872 (34)	1278 (50)
Max. permissible errors (µm)	1.2+L(mm)/1000	1.2+L(mm)/1000	1.2+L(mm)/1000
Repeatability (2s) (µm)	0.5(Ø1)	0.5(Ø1)	0.5(Ø1)
Resolutions (mm) (in)	0.01/0.001/0.0001/(.001.0001/0.00001)		
Manual carriage displacement speed mm/s	1000	1000	1000
Motorised carriage displacement speed mm/s	150	150	150
Measuring force (adjustable) N	0.5 - 1.8	0.5 - 1.8	0.5 - 1.8
Frontal squareness deviation (µm)	4	6	10
Autonomy h	>8	>8	>8
Data output	2 x RS232 C and 2 x USB (A and B)		
Operational temperature °C	+10 - +40°C	+10 - +40°C	+10 - +40°C
Temperature of storage °C	-10 - +40°C	-10 - +40°C	-10 - +40°C
Weight (kg)	22	25	29

Trimos Mestra Accessories

MICRO

Complete set includes:

- 1 case
- 1 hemispheric insert
- 1 probe with pin, 4 pins-shaped
- 1 disc shaped insert \varnothing 7.7mm
- 1 disc shaped insert \varnothing 11.5mm
- 1 corner insert 1mm
- 1 measuring insert of test indicator \varnothing 1mm
- 1 measuring insert of test indicator \varnothing 2mm
- 1 measuring insert of test indicator \varnothing 3mm
- 1 measuring insert holder for M2.5, M1.6, M1.4
- 1 insert holder L=80mm M2.5
- 1 insert holder 90° L=80mm \varnothing 4mm
- 1 measuring insert holder \varnothing 1mm
- 1 ball probe ruby \varnothing 2mm
- 1 ball probe \varnothing 1mm
- 1 knife-edged measuring probe L=88mm
- 1 holder with reduction 8mm/4mm
- 1 swivel holder \varnothing 4/ \varnothing 8mm
- 1 key for ball-insert
- 1 hex screw wrench 1.5mm
- 1 hex screw wrench 2.5mm



20-4032

Trimos Vectra Accessories

MACRO

Complete set includes:

- 1 case
- 1 ball probe tungsten carbide \varnothing 4mm
- 1 ball probe tungsten carbide \varnothing 2mm
- 1 probe with pin tungsten carbide \varnothing 1.5mm
- 1 swivel holder \varnothing 4/8mm
- 1 insert holder 90° \varnothing 4mm
- 1 measuring insert holder \varnothing 2mm
- 1 insert holder (metrique) M2.5
- 1 insert holder L-124mm M2.5
- 1 insert holder L-200mm M2.5
- 1 hemispheric insert
- 1 disc-shaped insert \varnothing 18mm
- 1 measuring insert of test indicator \varnothing 1mm
- 1 measuring insert of test indicator \varnothing 2mm
- 1 measuring insert of test indicator \varnothing 3mm
- 1 key for ball insert
- 1 hex screw wrench 2.5mm



20-4030



Sylvac Dial Gauge Calibrator

The Sylvac stand is custom designed for calibrating all types of dial gauges, lever indicators and transducers. It utilises a 25mm / 1" travel Sylvac probe linked to a digital indicating unit, which in turn can be connected to various software programs for test certificate production.



30-809-1301 (Laptop not included)



Features

- Suitable for both dial gauges & lever indicators
- Test system according to the ABBE principle
- Fine adjustment hand wheel
- Thermal shield for reference probe
- Quick clamping for 8mm or 3/8" gauges

Readout Features:

- True inch / metric conversion
- Resolution options of 0.001mm, 0.0001mm, and 0.0001", 0.00001"
- Digital display
- RS 232 direct output for computer / printer or gauge management system

SYLVAC DIAL GAUGE CALIBRATOR

Code No	Description
30-809-1300	Sylvac Dial Gauge Calibrator M3 Only
30-809-1301	Sylvac Dial Gauge Calibrator complete kit M3/D50P/P25 and Sylvac Sycopro software
30-804-1300	D300S Display Unit 2 Probes 6USB
30-804-1080	D80S digital readout unit
30-804-1060	D50S Pro digital readout (with correction factors on both channels)
30-900-1025	Sylvac P25 Transducer Probe
30-909-2011	Clamping device for dial gauges Ø 16/28/30mm diameter
40-41A11	Holder for Lever Indicators

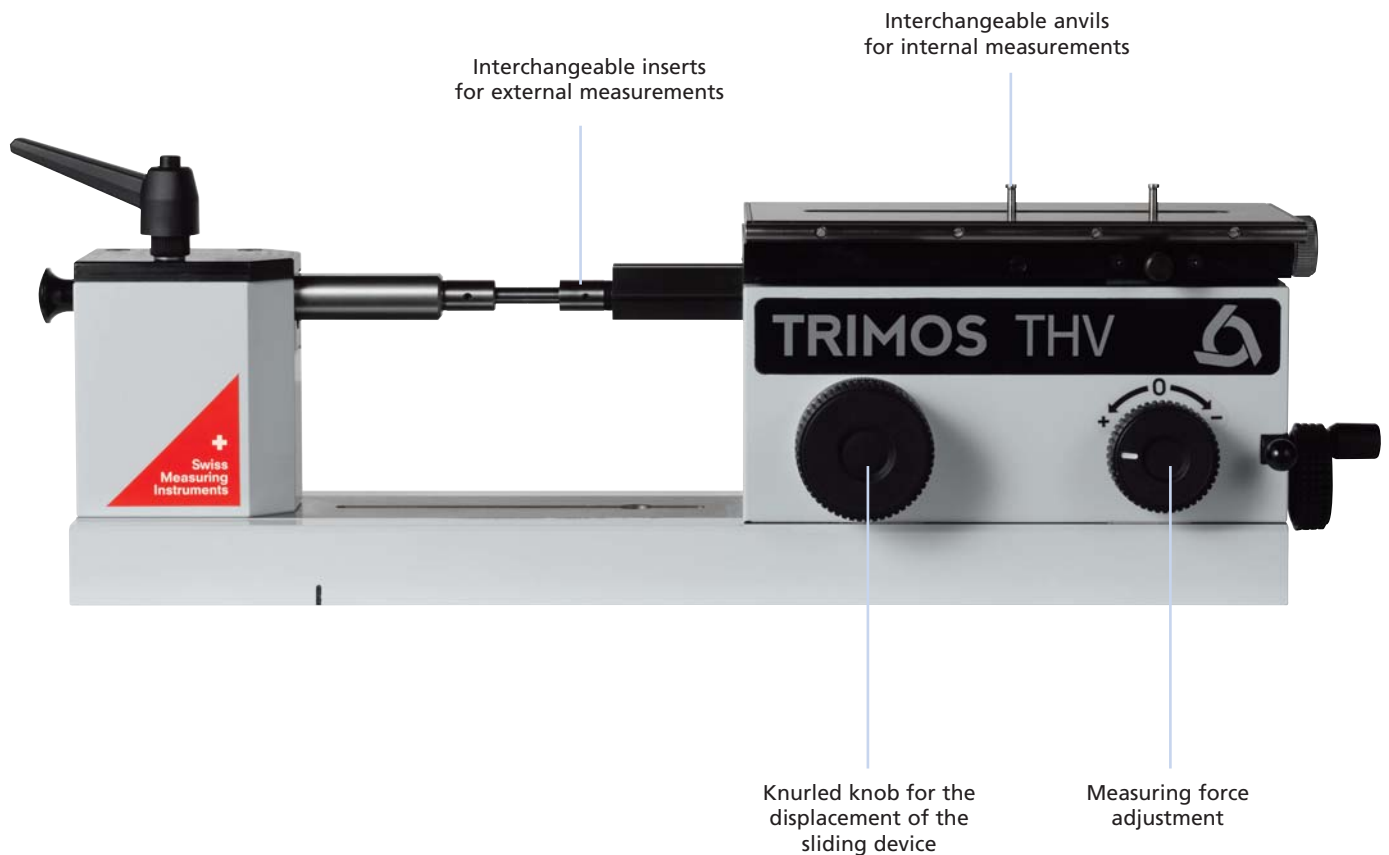
Trimos THV Mini Horizontal Calibration Machine

The flexible Trimos THV Calibration Machine is capable of undertaking a wide range of internal and external calibration routines, belying its relatively inexpensive price. This flexible instrument can be supplied fitted with a variety of probes, scales and readouts, including Heidenhain units, dependent on the customers required accuracy specification.



The large range of ingenious, quick-fit accessories available for the THV, ensures great versatility of application. Simplicity of design and ease of use of the instrument allows rapid and accurate calibration of a wide variety of measuring instruments.

The basic instrument is supplied with a set of 6.5mm diameter carbide anvils for external measurements and a set of anvils for internal measurements, minimum diameter 10mm. Smaller diameters available on request.



FEATURES WITH HEIDENHAIN READOUT

	Trimos THV
Measuring range	0-100mm / 4"
Absolute measuring range	0-50mm / 2"
Resolutions	0.1 - 0.00001mm / 0.0001 - 0.000001"
Repeatability	0.1µm
Measuring Force	0 - 4N
Accuracy over 50mm scale range	0.2+L (mm) / 250
Operational temperature	+10 - +40°C
Temperature of storage	-10 - +40°C
Functions	Min / Max / TIR Preset
Output	RS232 output (USB)
Weight	22kg

Extensive range of accessories available - please request detailed literature.



Trimos Accessories

Versatility of application is ensured by a large range of accessories for checking all types of gauges. The simplicity of the instrument and its ease of use allows quick and precise measurements.



1) Checking of test indicators



2) Measuring of precision parts



3) Checking of plain and threaded plug gauges using the floating table



4) Checking of internal diameters



Heidenhain Display



TFT/Touch screen option with TRIMOS-WinDHI software for all required measuring functions

HORIZONTAL/VERTICAL CALIBRATION INSTRUMENTS

Code No	Description
20-3300	THV with fixed table Heidenhain display
20-3301	THV with floating table Heidenhain display
20-3302	THV with fixed table D300S display P25 probe
20-3307	THV with fixed table PC display with WinDHI
20-3309	THV with floating table PC display with WinDHI

For a complete list of accessories, please contact the sales office.

Trimos Horizon 'H' Series Length Measuring Machine



Features

- Ideal for use in the workshop area
- Very simple operation
- Precise checking and setting made easy
- Self-contained operation of approx. 100 hours
- Incorporated rechargeable battery pack
- Clearly defined display unit
- Wide selection of accessories available (please request Trimos catalogue for details)

TRIMOS HORIZON "H" SERIES

Code No	Description
20-H500	Trimos H501 Horizon, V-series display
20-H1000	Trimos H1001, Horizon, V-series display
20-H1500	Trimos H1501, Horizon, V-series display
20-H2000	Trimos H2001 Horizon, V-series display

TECHNICAL SPECIFICATION

	H501	H1001	H1501	H2001
Measuring range	520mm / 20"	1020mm / 40"	1520mm / 60"	2020mm / 80"
Measuring system	Sylvac system			
Max. permissible errors	2.5+L(mm)/300			
Repeatability (+/- 2s)	Reference temperature 20 deg C, relative humidity 50%			
Display	1µm / 0.00004"			
Resolution (switchable)	LCD digital display, Sylvac-System			
Measuring force	0.01 or 0.001mm or .0001 / 0.00001"			
Maximum displacement speed of the measuring carriage	3N			
Data output	1500mm/s			
Operational temperature limit	RS232C			
Weight	92kg	118kg	143kg	168kg
Up to 8000mm size on request				



Trimos Horizon Premium

The Trimos 'Horizon' Series of Horizontal Machines are capable of setting, checking and calibrating a wide range of gauges. The availability of the machine in a range of sizes and wide variety of holders and adapters further improves the usefulness of these quality instruments.



TFT/Touch screen option with TRIMOS-WinDHI software for all required measuring functions (DIGITAL) HPD



Heidenhain Display (ANALOGUE) HPA



TRIMOS HORIZON PREMIUM

Code No	Description
20-32550	Trimos HPA500 Horizon, Heidenhain display
20-321050	Trimos HPA1000 Horizon, Heidenhain display
20-321550	Trimos HPA1500 Horizon, Heidenhain display
20-322050	Trimos HPA2000 Horizon, Heidenhain display
20-323050	Trimos HPA3000 Horizon, Heidenhain display
20-34550	Trimos HPD500 Horizon, Premium digital
20-341050	Trimos HPD1000 Horizon, Premium digital
20-341550	Trimos HPD1500 Horizon, Premium digital
20-342050	Trimos HPD2000 Horizon, Premium digital
20-343050	Trimos HPD3000 Horizon, Premium digital

Features

- Suitable for the shopfloor or inspection room
- Available in 5 different capacities ranging from 0-550mm up to 0-3050mm
- Separate digital readout, PC display or touchscreen option
- For machine Specifications and Accessories please request Trimos catalogue for details

Trimos Labconcept and Labconcept Premium Calibration Machines

The Trimos Labconcept represents the latest developments in the field of multifunction calibration machines. Capable of calibrating an extremely wide range of measuring instruments with incredible speed and accuracy the instrument is now the calibration machine of choice for some of the biggest UKAS and factory laboratories throughout the UK and beyond.



The wide range of quick-change ingenious accessories and holders facilitates the accurate calibration of an exceedingly wide range of measuring instruments. Utilising the user-friendly QM software, the instrument can rapidly send its findings to a gauge-management module or generate calibration certificates instantly.



TRIMOS LABCONCEPT CALIBRATION MACHINE

Code No	Range (mm)	Range (inch)	Maximum Error	Repeatability (μm)	Resolution (mm)	Resolution (inch)	Force	Weight
20-32500	550	21	0.3 + L (mm)/1500	0.1 (2s)	0.01-0.00001	0.0001-0.00001	0-12N	94kg
20-321000	1050	41	0.3 + L (mm)/1500	0.1 (2s)	0.01-0.00001	0.0001-0.00001	0-12N	123kg
20-321500	1550	61	0.3 + L (mm)/1500	0.1 (2s)	0.01-0.00001	0.0001-0.00001	0-12N	152kg
20-322000	2050	80	0.3 + L (mm)/1500	0.1 (2s)	0.01-0.00001	0.0001-0.00001	0-12N	181kg
20-32300P	370	14	0.1 + L (mm)/2000	0.05 (2s)	0.01-0.00001	0.0001-0.00001	0-12N	78kg
20-325000P	550	21	0.15 + L (mm)/2000	0.05 (2s)	0.01-0.00001	0.0001-0.00001	0-12N	95kg
20-321000P	1050	41	0.15 + L (mm)/2000	0.05 (2s)	0.01-0.00001	0.0001-0.00001	0-12N	125kg



Trimos Labconcept and Labconcept Premium Calibration Machine Applications



Checking of ring gauges



Checking of plug gauges



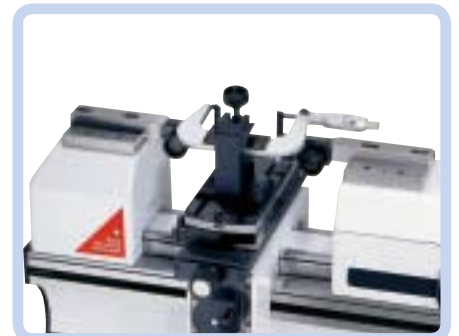
Checking of small ring gauges



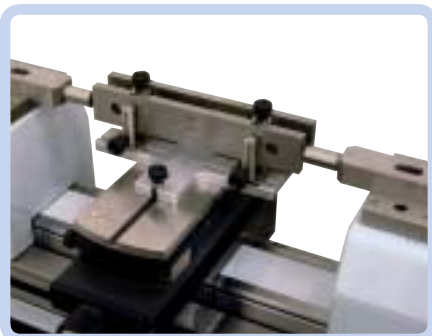
Checking of screw ring gauges



Checking of thread plug gauges



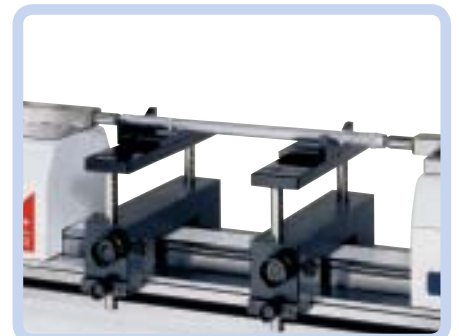
Checking of micrometers



Checking of gauge blocks



Checking of long series gauge blocks



Setting of 2-point comparative measuring equipment

Features

- Large measuring range 0-14" (0-370mm) and 0-79" (0-2050mm)
- Developed for EN ISO 9000/2000 standards
- Switchable resolution; 0.0001", 0.00001", 0.000001", or 0.001mm, 0.0001mm, 0.00001mm
- Wide range of easily interchangeable accessories
- Adjustable measuring force 0-12N
- Displacement speed of measuring carriage: Labconcept 1500mm/s, Labconcept Premium 400mm/s
- Fine adjustment range = 0.394" / 10mm
- Operational temperature limit 10°-40°C
- Operational humidity limit 20-80%

Trimos Labconcept Nano Calibration Machine

The Labconcept Nano is a new reference in the field of dimensional metrology. The result of a unique combination of the most recent developments in technology and Trimos' expertise in the metrology market, comes an outstanding instrument adapted to perform all dimensional measuring tasks requiring extreme high accuracy.



With the Trimos Labconcept Nano it is possible to check all kinds of gauges as plain ring gauges, plain plug gauges, pins, threaded ring and plug gauges, conical thread ring and plug gauges, gauge blocks, snap gauges, gauge bars etc. The sizes of all gauges can be considered by selecting the required model (350mm / 600mm / 1100mm).



TECHNICAL SPECIFICATION

Max. permissible errors (μm)	$0.07+L(\text{mm})/2000$
Max. resolution (mm/inch)	0.00001 (0.0000004)
Repeatability (2s) (μm)	0.03
Measuring force (adjustable by software) (N)	0-12
Time measuring a plain ring (sec)	40
Time measuring a thread ring (sec)	50
Movement of X axis	motorised
TFT screen	1 x TFT touch screen / 1 normal screen
Interface	PC-Dell
Temperature compensation	Yes, with 2 sensors
Measuring table with motorised Y and Z axis	Yes
Z axis, displacement range (mm)	100
Y axis, displacement range (mm)	50
X axis, floating movement (mm)	± 10
Angle of rotation \emptyset Y ($^{\circ}$)	± 1.5
Angle of inclination \emptyset Z ($^{\circ}$)	± 4
Operational temperature ($^{\circ}\text{C}$)	+15 $^{\circ}$ to 35 $^{\circ}\text{C}$
Stocking temperature ($^{\circ}\text{C}$)	-10 $^{\circ}$ to 50 $^{\circ}\text{C}$
Relative humidity (%)	20 .. 80

LABCONCEPT NANO

Code No	Range (mm)	Range (inch)	Application Range (mm)	Application Range (inch)	Weight
20-32350N	350	14	0-350	0-14	350kg
20-32600N	350	14	0-600	0-24	420kg
20-321100N	350	14	0-1100	0-44	500kg



Trimos Labconcept Nano Calibration Machine



Swiss Precision



Plain ring gauge from 15mm up to 250mm



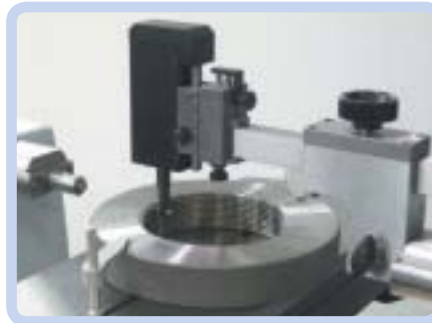
Plain ring gauge from 1mm up to 20mm



Plug gauges / pins without centers up to dia. 100mm



Thread plug gauges between centers up to 100mm



Threaded ring gauges from M3 up to M180



Checking of gauge blocks up to 250mm (250 to 1000mm)



Gauge bars from 100mm (up to the instrument range)



Checking of taper thread gauges (plug/ring gauges)

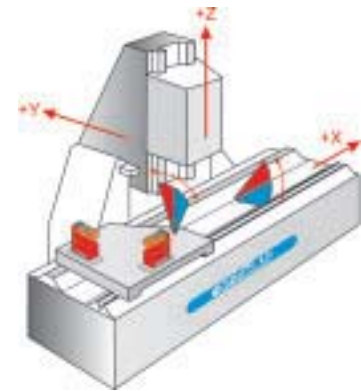
A large range of accessories is available as standard. Accessories to suite special applications can be supplied.

Features

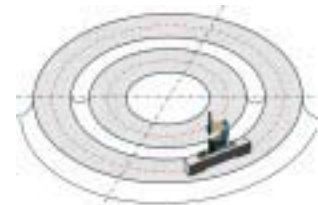
- Unequaled high level of accuracy: $0.07\mu\text{m} + L/2000\text{mm}$
- Exceptional repeatability: $0.03\mu\text{m}$
- Motorised measuring carriage, X axis, selection of speed by software
- Motorised universal measuring table, Y/Z axis. 60Kg range
- Measuring force (0-12N) and locking of measuring anvil performed by software
- Integrated temperature compensation system (2 sensors)
- Integrated gauge management software (optional)

Flatness Calibration & Machine Tool Verification

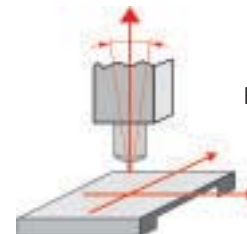
The Wyler Electronic Levelling System is now well established in the field of flatness calibration. The Blue System set shown below has an output signal allowing it to be used to produce in-depth results and print-outs using a variety of methods and software programs.



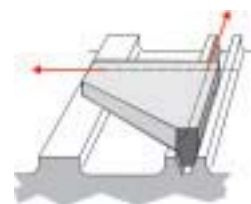
Circles



Rotating axis



Guide ways



Features

- Differential measurement eliminates errors caused by vibration
- Calculates an average of 64 inputs per measurement
- Range for 99 measuring points for lines, 1000 for surfaces
- Graphic results can be printed or retained on disc for reference
- Software conforms to British Standard

LEVELSOFT PRO SOFTWARE

Code No	Description
60-6168L	Levelsoft Pro Light Software (Line and Surface Calibration Only)
60-6168	Levelsoft Pro Software (Full Version) Software Only
60-6168BW	Levelsoft Pro Software (Full Version) with cables for Wyler Blue System
60-MTSOFT-D	MTSOFT Machine Tool Verification Software (Full Version)
60-MTSOFT1-D	MTSOFT Basic Package incl Guideways and Rotating Elements
60-MTSOFT2-D	Circles
60-MTSOFT3-D	Partial Surfaces
60-MTSOFT4-D	Rotation and Machine Elements
60-MTSOFT5-D	Levelsoft Pro as Part of MTSOFT
60-MTSOFT6-D	Comparison of Elements

Computer software program offers the following solutions

Line	Straightness of guideways and machine tool beds.
Line / Twist	Straightness and twist of bedways, straight edges and rails
Parallels	Straightness and parallelism of bedways etc.
Parallels / Twist	Straightness, twist and parallelism of bedways
Rectangle	Flatness of surfaces and machine tool beds
Union Jack / Grid	Flatness of surface plates and tables



Data Collection Software (Suitable for 32 & 64 Bit Operating Systems)

Software Wedge is an ingenious and inexpensive piece of software that allows the user to connect ANY gauge with an RS 232 output directly to a PC, laptop etc and send the instruments reading to such programs as spreadsheets, databases etc. Imported data can be manipulated, analysed etc on a users own software of choice.

Software Wedge for Windows

Standard version features:

- Supports all COM ports. Install on up to 32 serial ports on a PC for data collection from many devices simultaneously
- Data transfer as keystrokes directly into any other application program
- A powerful serial data analyser feature allows you to preview serial data and debug all serial communications problems
- Data filtering capabilities let you selectively filter out non-numeric characters from any field in your input data or ignore specific fields altogether

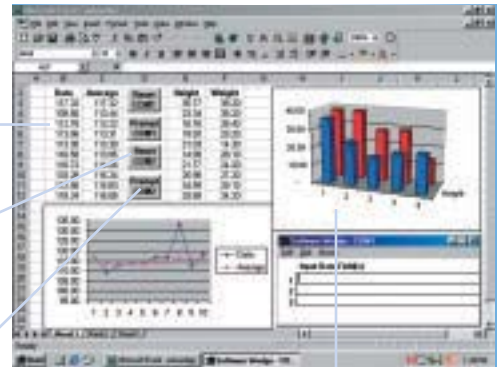
Pro version - all the features of the standard version plus:

- Extended support for 2-way I/O to give you more options for controlling serial devices
- Support up to 99 com ports simultaneously
- Support for any serial data including binary hexadecimal and octal as well as ASCII
- Thirty powerful maths and string functions including scaling, conversions, arithmetic and logical operators
- Hot key activated output strings and hot key control of all WinWedge pro features
- More advanced data filtering option

Input serial data from any instrument directly into your application programs in real time.

Create buttons or macros in your application that perform Serial I/O functions with the Pro version.

Send out commands or data to control your instruments directly.



Create charts or graphs in your application that automatically update with real-time data from your serial devices.

SOFTWARE WEDGE

Code No	Description
30-1522	Software Wedge-Standard (32 & 64 Bit)
30-1524	Software Wedge-Pro (32 & 64 Bit)

Sylvac Sylconnect



Software allowing the connection of 16 Sylvac handtools to a computer by USB cable. No specific interface is required! The instruments can be directly connected to the USB port or via USB-Hub available on the market.

Automatic recognition and USB port setting for every new connected instrument. A digital or analog window is automatically created for each instrument. Jpeg picture import function and window value resizing. Direct values export to Excel worksheet. Possibility to connect one or many USB footpedals to drive different instruments.



SYLCONNECT

Code No	Description
30-981-7110	Sylconnect Licence (Single Licence)
30-981-7111	Sylconnect Dongle (Single Licence)
30-926-7020	USB Foot Pedal
30-926-7021	Heavy Duty USB Footswitch



Multi channels screen with tolerances displayed in colour



Automatic instrument detection and configuration window



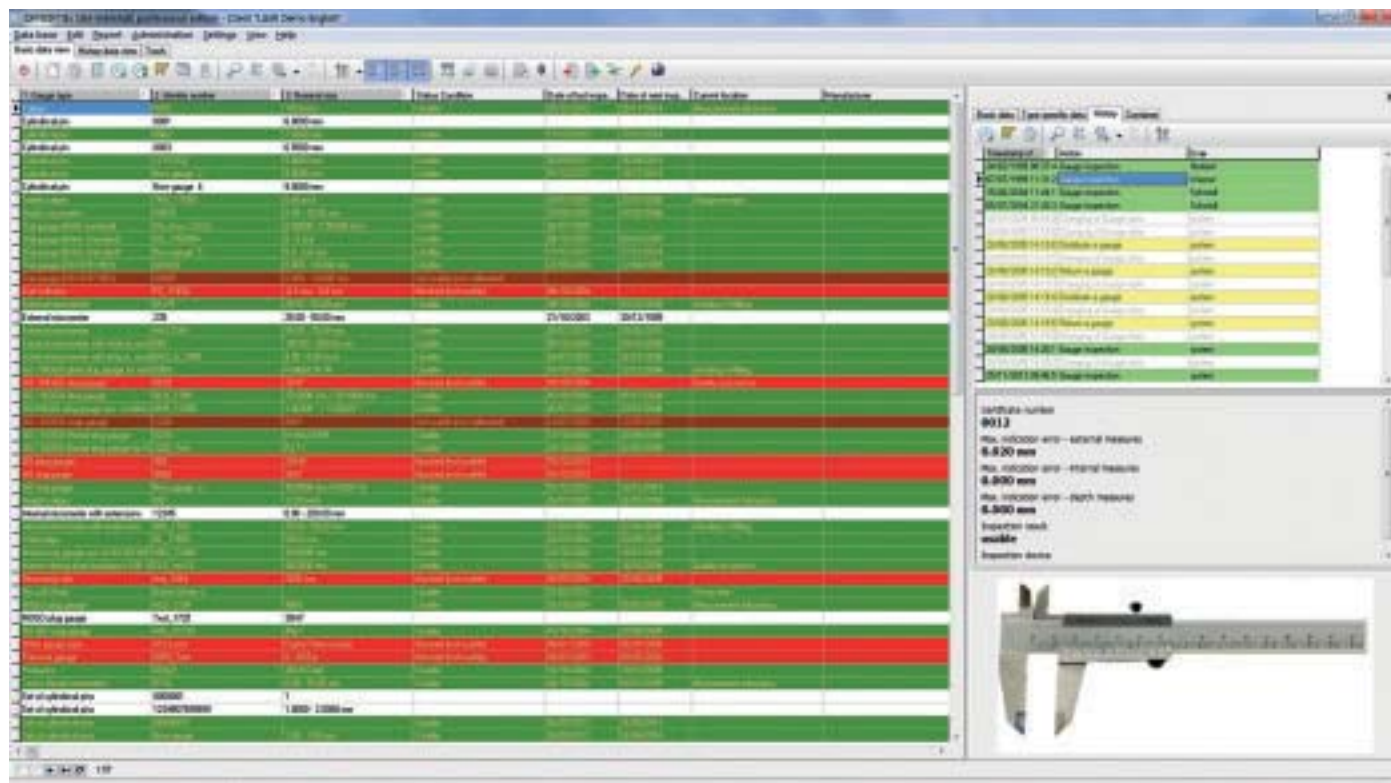
Tolerances setting



Multi channels screen displayed in analog mode

Gauge Management & Calibration Software

The inspired QMSOFT (Quality Management Software) system is a comprehensive, user-friendly gauge management software programme, enabling the efficient administration of a company's measuring instrument inventory, or the effective management of commercial calibration laboratory gauge throughput. Add on individual modules relating to specific gauge categories render this powerful software one of the most comprehensive and flexible currently available.



QMSOFT Main Features

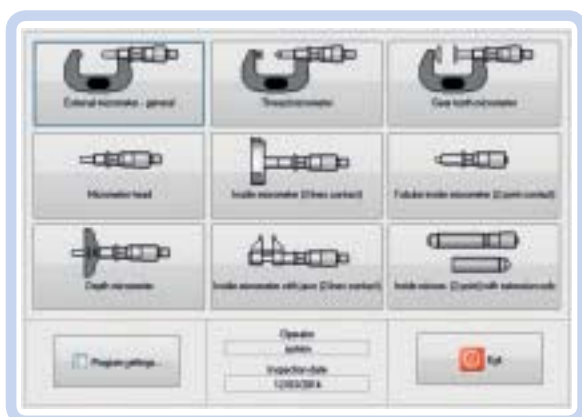
- Gauge management and gauge inspection are integrated into the system with equal importance
- Specially developed modules make possible the calibration of all common gauges using any national, international or user defined standard. It is therefore not necessary to define an inspection procedure for each gauge type
- Extensive support for directly connected measuring devices including Trimos & Sylvac calibration instruments
- All normal sizes and tolerances for gauges are calculated by the program (with relevant modules installed)
- Inspection certificates may be customised for individual presentation saved as html, doc or pdf files

QM-MANAG - The Gauge Management system

Code No 20-3250

QM-MANAG provides all the functions to manage the complete inventory of measuring tools and gauges. It also allows the creation of identification cards, search and reminder lists, as well as histories of all measuring tools and gauges.

The QMSOFT modules allow the operator to calibrate all types of measuring instruments against major international standards or to create and use more practical in-house standards for each gauge within the database. The easy to use, modular nature of QMSOFT allows the user to customise the software to match their own requirements.



QM-PLAIN - plain gauge inspection

Code No 20-3251

QM-PLAIN supports the inspection of master rings and ring gauges, plug gauges and snap gauges. Using the selected gauge type and the nominal value provided (e.g. 2H7), the program calculates the gauge tolerances.

Includes DIN, ANSI/ASME and British Standards.

QM-THREAD - thread gauge inspection

Code No 20-3252

QM-THREAD calculates the expected size over wires or balls and the pitch diameter depending on the measurement method. The program calculates the nominal sizes and tolerances for varied international standards including:

- ISO metric threads BS 3643
- Unified threads to ANSI / ASME
- Pipe threads to BS 2779
- Steel Conduit threads to DIN 40431
- Trapezoidal threads to DIN 103
- Whitworth threads BS 84:1956
- Helicoil threads to BOELLHOFF standard
- Unified threads to BS 1580
- Unified Helicoil to BOELLHOFF standard
- Buttress threads to DIN 513
- MJ threads to DIN ISO 5855
- NPSM pipe threads to ANSI / ASME
- Threads for valves to DIN 7756 / ETRTO V.7
- ACME screw threads to ASME / ANSI
- STUB ACME screw threads to ASME / ANSI
- Buttress inch screw threads 7°/45° to ANSI
- Thread gauges according to factory standard
- Plus many others

QM-DIAL - dial gauge inspection

Code No 20-3255

QM-DIAL supports the inspection of dial gauges, dial indicators and dial test indicators. Standards supported include:

- Dial gauges to DIN 878
- Dial indicators to DIN 879
- Dial test indicators to DIN 227
- Dial gauges to BS 907
- Dial indicators to BS 2795

Additional modules include:

QM-CALIP - Code No 20-3256 - inspection of calipers

QM-MICRO - Code No 20-3258 - inspection of micrometers

QM-PINS - Code No 20-3257 - inspection of pin gauges

QM-EMP4W - Code No 20-3261 - inspection of gauge blocks

QM-RULE - Code No 20-3259 - inspection of rules

QM-TORQ - Code No 20-3249 - inspection of torque gauges

QM-TTAP - Code No 20-3248 - inspection of tapered threads

CV Rockwell Hardness Tester W-600A / W-600MA / W-600MA/S

Basic regular Rockwell type tester (600A/MA) and Superficial Rockwell type tester (600MA/S) offering accuracy, reliability and durability at an extremely affordable price.



W-600A



W-600MA



W-600MAS

Features

- Rugged construction, will stand up to the harshest environments
- Direct reading of Rockwell scales HRC, B, A, F or Superficial: HRT, HRN
- Other scales with the use of optional indenters
- Accuracy conforms to EN-ISO 6508 and ASTM E-18
- Easy load force selection by robust dial knob
- Oil brake with variable damping by adjustable knob (W-600A)
- Large capacity to accommodate large test specimen
- Electronic control of load duration (dwell time) (W-600MA & W-600MA/S)
- Motorised testing procedure (W-600MA & W-600MA/S)
- Standard delivery including accessories ready for testing all scales

CV Rockwell Hardness Tester W-600A / W-600MA / W-600MA/S



TECHNICAL SPECIFICATION

Rockwell scales	A, B, C, F (W-600A/W-600MA)
Standard	A, B, C, F (W-600A/W-600MA)
Superficial	HRT, HRN (W-600MA/S)*
Hardness resolution	1 of a Rockwell unit
Test loads	
Rockwell	10kgf preload / 60, 100, 150kgf main load
Superficial Rockwell	3kgf preload / 15, 30, 45kgf main load
Display	Dial indicator
Test force application	By force lever (W-600A) Motorised load system (W-600MA & W-600MA/S)
Test cycle	Manual (W-600A); Motorised (preload applied manually) (W-600MA & W-600MA/S)
Load duration	Manually, following display indication (W-600A), Automatic (W-600MA & W-600MA/S)
Dwell time	2-99 sec (1 sec. step) (600MA/S)
Data output	Non
Accuracy	Conforms to EN-ISO 6508 and ASTM E-18
Specimen accommodation	Vertical space 170mm (6.7") Horizontal space (from center-line) 165mm (6.5")
Specimen access	External surfaces
Power supply	Non (600A), 220V 50Hz (600MA & 600MA/S)
Machine dimensions	150mm x 485mm x 700mm (WxDxH)
Machine weight	Approx. 85kg

*Other scales with the use of optional indenters.

CV ROCKWELL ANALOGUE HARDNESS TESTER

Code No	Description
W-600A	Rockwell Tester, Manual, Analogue display
W-600MA	Rockwell Tester, Motorised, Analogue display
W-600MAS	Superficial Rockwell Tester, Motorised, Analogue display

Standard Delivery

- Main unit
- Diamond Rockwell indenter
- Rockwell ball indenter 1/16"
- Hardness test block $\pm 60\text{HRC}$
- Hardness test block $\pm 25\text{HRC}$
- Hardness test block $\pm 85\text{HRB}$
- Flat anvil $\varnothing 60\text{mm}$
- Large flat anvil $\varnothing 150\text{mm}$
- V-anvil $\varnothing 40\text{mm}$
- Adjustable feet (4 pcs)
- Spindle protection cover
- Solid accessories case
- CV Instruments certificate
- Installation & user manual
- Spare lamps 6V-12W (2pcs) (W-600MA/S)
- Spare balls 1/16" (5pcs)
- Power cable (W-600MA/S)
- Fuse 0.5A (2pcs) (W-600MA/S)

Optional Accessories

- Certified test blocks
- Certified indenters & balls
- Clamping protection nose
- Pedestal spot anvil $\varnothing 10\text{mm}$

CV Advanced Digital Rockwell Hardness Tester W-600BDL / W-600MBDL / W-600MBDL/S

Basic digital regular Rockwell type tester (W-600BDL/MBDL) and Superficial Rockwell type tester (W-600MBDL/S) offering accuracy, reliability and durability at an extremely affordable price.



W-600BDL



W-600MBDL



W-600MBDL/S

Features

- Advanced functions such as CONVERSION to Brinell, Vickers and all Rockwell scales. USB-2 output, printer output for detailed measuring report, Go/No Go limit settings, 99 memory positions, PROGRAM mode stores 50 test program settings, shape correction setting, full statistics
- Direct reading of Rockwell scales HRA, B, C, D, E, F, G, K, L, M, P, R, S (HRN, T, W, X & Y W-600MBDL/S)
- Accuracy conforms to EN-ISO 6508 and ASTM E-18
- Easy load force selection by robust dial knob
- Oil brake with variable damping by adjustable knob (W-600BDL)
- Large capacity to accommodate large test specimen
- Selectable control of load duration (dwell time)
- Motorised testing procedure (W-600MBDL & W-600MBDL/S)
- Rugged construction, will stand up to the harshest environments
- Standard delivery including accessories ready for testing all scales

CV Advanced Digital Rockwell Hardness Tester W-600BDL / W-600MBDL / W-600MBDL/S



TECHNICAL SPECIFICATION

Rockwell scales	
Standard	A, B, C, D, E, F, G, K, L, M, P, R, S
Superficial	HRN, T, W, X & Y (W-600MBDL/S)
Hardness resolution	0.01 of a Rockwell unit
Test loads	
Rockwell	10kgf preload /60, 100, 150kgf main load
Superficial Rockwell	3kgf preload /15, 30, 45kgf main load
Display	Full colour multi function indicator
Test force application	By force lever (W-600BDL) Motorised load system (W-600MBDL)
Test cycle	Manual (W-600BDL); Motorised (preload applied manually) (W-600MBDL)
Load duration	Manually, following display indication (W-600BDL); Automatic (W-600MBDL)
Dwell time	2-99 sec. (1 sec. step)
Measuring protocol	ISO / ASTM / JIS
Indications on display	Progress bar for preload, preload applied, main load applied, dwell time, invalid reading, invalid measurement, invalid procedure, Rockwell value, Go/No Go, shape correction, limits, program number, conversion scale, statistics, scale applied
Accuracy	Conforms to EN-ISO 6508 and ASTM E-18
Specimen accommodation	Vertical space 170mm (6.7") Horizontal space (from center-line) 165mm (6.5")
Specimen access	External surfaces Cylindrical surfaces down to 3mm diameter
Data output	USB
Power supply	Input 110/220Volt 50/60Hz
Machine dimensions	150mm x 485mm x 700mm (WxDxH)
Machine weight	Approx. 85kg

Standard Delivery

- Diamond Rockwell indenter
- Rockwell ball indenter 1/16"
- Hardness test block ±60HRC
- Hardness test block ±25HRC
- Hardness test block ±85HRB
- Spare balls 1/16" (5 pcs)
- Flat anvil ø60mm
- Testing table large ø150mm
- V-anvil ø40mm
- Power cable
- Adjustable feet (4 pcs)
- Spindle protection cover
- Spare lamps 6V-12W (2pcs)
- Solid accessories case
- CV Instruments certificate
- Installation & user manual

Optional Accessories

- Reference hardness blocks
- Certified indenters & balls
- Clamping protection nose
- Pedestal spot anvil Ø10mm

CV ROCKWELL DIGITAL HARDNESS TESTERS

Code No	Description
W-600BDL	Rockwell Tester, Manual, LED display
W-600MBDL	Rockwell Tester, Motorised, LED display
W-600MBDL/S	Superficial Rockwell Tester, Motorised, LED display

Eseway® Premium Rockwell Hardness Tester EW-650

LCD touch screen, superior functionality, ultra high precision, 3 models available.

Features

- Measures all standard Rockwell hardness values
- Simultaneous conversion to HV, HB and other HR scales
- Rugged fine cast frame, allowing larger dimension work pieces
- ASTM, ISO, JIS compliant
- ESELOAD™ unique motorised load application system, auto selection of main loads depending on HR scale (656 & 657 only)
- Superior depth measuring system through Heidenhain (Germany) transducer
- ESETOUCH™ advanced LCD touch screen & operator panel with user friendly menu operation in multiple languages
- High speed preload, loading and unloading procedure for ultra high efficiency
- ESELIFT™ (657 only) motorised elevating screw simplifies and speeds up test operation
- Automatic measurement procedure, load / dwell / unload (655 & 656 models)
- ESEMATIC™ fully automatic positioning and measuring procedure (positioning, preload, load, dwell, unload (657 only))
- Storage of 50 test programs and tester settings, allowing you to set up your tester in just seconds
- Alpha numerical data entry
- Continuous automatic "online" statistics, incl. average of readings etc.
- Storage of 99 single hardness values
- Go / No Go mode
- Convex and concave measuring mode
- Calibration date expired (reminder)
- Service mode including electronic linearity calibration, tests counter, maintenance system
- Prints statistics to built-in printer or external printer
- Connects with PC or SPC network via built-in bi-directional USB2 connector



Standard Delivery

- Main unit
- Built-in thermal printer
- Data-output USB2
- Diamond Rockwell indenter
- Rockwell ball indenter 1/16"
- Rockwell testing balls
- Flat testing anvil Ø 60mm
- Flat anvil Ø 150mm
- V-anvil Ø 50mm
- Hardness test blocks:
±60 HRC, ±25 HRC, ±85 HRB
- Power cable
- Spare fuse
- Adjustable feet (4 Pcs)
- Spindle protection cover
- Machine cover
- Solid accessories case
- ESEWAY® certificate
- User and installation manual

Optional Accessories

- Clamping and indenter protection nose
- UKAS, DKD, ASTM Certified test blocks
- UKAS, DKD, ASTM Indenters & balls
- Pedestal spot anvil Ø 10mm
- Special support systems for large work pieces

TECHNICAL SPECIFICATION

Rockwell scales	A, B, C, D, E, F, G, K, L, M, P, R, V
Conversion to	HV, HB, other HR scales
Hardness resolution	0.1 of a Rockwell unit
Pre-load	10kgf
Main loads	60, 100, 150kgf
Pre-load application	Manual (automatic for 657 ESEMATIC™)
Test load application	Fully automatic
Data entry	Membrane keypad
Test force application	Automatic main load application
Data output	Built in high speed printer & USB2
LCD Display	Hardness value, conversion value, test force indicator, dwell time, memory contents, all machine settings, go / no go, all statistics
Specimen accommodation	Vertical space 275mm Horizontal space (from centre of elevator) 190mm
Power supply	110/240V, 50-60Hz
Machine dimensions	Approx. 940mm x 390mm x 670mm (HxWxD)
Net weight	Approx. 140kg

ESEWAY® PREMIUM ROCKWELL TYPE HARDNESS TESTER

Code No	Description
W-EW-655	ESETOUCH Manual load, Manual elevator lead screw
W-EW-656	ESELOAD Automatic load selection, Manual elevator lead screw
W-EW-657	ESEMATIC Automatic load selection, motorised elevator lead screw / Full automatic

Eseway® Premium Twin Scale Rockwell Hardness Tester EW-670

LCD touch screen, superior functionality, ultra high precision, 3 models available.

Features

- Measures all Standard & Superficial Rockwell hardness values
- Simultaneous conversion to HV, HB and other HR scales
- Rugged fine cast frame allowing large dimension work pieces
- ASTM, ISO, JIS compliant
- ESELOAD™ unique motorised load application system, auto selection of main loads depending on HR scale (676 & 677 only)
- Superior depth measuring system through Heidenhain (Germany) transducer
- ESETOUCH™ advanced LCD touch screen & operator panel with user friendly menu operation in multiple languages
- High speed preload, loading and unloading procedure for ultra high efficiency
- ESELIFT™ (677 only) motorised elevating screw simplifies and speeds up test operation
- Automatic measurement procedure, load / dwell / unload (677 only)
- ESEMATIC™ fully automatic positioning and measuring procedure (positioning, preload, load, dwell, unload (676 and 677 models))
- Storage of 50 test programs and tester settings, allowing you to set up your tester in just seconds
- Alpha numerical data entry
- Continuous automatic "online" statistics, incl. average of readings etc.
- Storage of 99 single hardness values
- Go / No Go mode
- Convex and concave measuring mode
- Calibration date expired (reminder)
- Service mode including electronic linearity calibration, tests counter, maintenance system
- Prints statistics to built-in printer or external printer
- Connects with PC or SPC network via built-in bi-directional USB2 connector



Standard Delivery

- Main unit
- Built-in printer
- Data-output USB2
- Diamond Rockwell indenter
- Rockwell ball indenter 1/16"
- Rockwell testing balls
- Flat testing anvil ø 60mm
- Flat anvil ø 150mm
- V-anvil ø 50mm
- Hardness test blocks: ±60HRC, ±25HRC, ±85HRB, ±50HR30N, ±80HR30N, ±70HR30T
- Power cable
- Adjustable feet (4 Pcs)
- Spindle protection cover
- Machine cover
- Solid accessories case
- ESEWAY® certificate
- User and installation manual

Optional Accessories

- Clamping and indenter protection nose
- UKAS, DKD, ASTM Certified test blocks
- UKAS, DKD, ASTM Indenters & balls
- Pedestal spot anvil
- Special support systems for large work pieces

TECHNICAL SPECIFICATION

Rockwell scales	Standard Superficial	A, B, C, D, E, F, G, K, L, M, P, R, V 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y
Conversion to	HV, HB, other HR scales	
Hardness resolution	0.1 of a Rockwell unit	
Pre-load	3kgf / 10kgf	
Main loads	15, 30, 45, 60, 100, 150kgf	
Pre-load application	Manual (automatic for 677 ESEMATIC™)	
Test load application	Fully automatic	
Data output	Built-in high speed printer & USB2	
LCD Display	Hardness value, conversion value, test force indicator, dwell time, memory contents, all machine settings, go / no go, all statistics	
Specimen accommodation	Vertical space 275mm Horizontal space (from centre of elevator shaft) 190mm	
Power supply	110/240V, 50-60Hz	
Machine dimensions	Approx. 940mm x 390mm x 670mm (HxWxD)	
Net weight	Approx. 140kg	

ESEWAY® PREMIUM ROCKWELL TYPE HARDNESS TESTER

Code No	Description
W-EW-675	ESETOUCH Manual load, Manual elevator lead screw
W-EW-676	ESELOAD Automatic load selection, Manual elevator lead screw
W-EW-677	ESEMATIC Automatic load selection, Motorised elevator lead screw, full automatic

Load Cell Closed Loop Brinell Hardness Tester NEXUS 3000 Series



The advanced Load Cell, Force Feedback Closed Loop, load application system of the NEXUS 3000 allows a wide variety of test loads ranging from 30kgf to 3000kgf in one hardness test frame.



W-3001

Features

- Large multi function LCD display, Brinell microscope and built-in hardness calculator
- Shows Brinell hardness value directly on the display; converts to Rockwell, Vickers, Leeb's and tensile strength
- Test loads 30kgf - 3000kgf
- Innovaview Computer & CCD (USB camera) technology allows measurement of HB indents automatically and stores them in the system's database program, or export CSV files to Excel
- Motorised automatic elevator spindle available for easy work-piece positioning and running fully automatic test procedures; positioning, main load, dwell, unload. Automatic start sequence option (NEXUS 3001 XLM)
- Frame types:
 - Standard: vertical capacity - 220mm, throat depth - 220mm
 - XL: vertical capacity - 390mm, throat depth - 220mm

Load Cell Closed Loop Brinell Hardness Tester NEXUS 3000 Series



TECHNICAL SPECIFICATION

W-3001	30, 31.25, 62.5, 100, 125, 187.5, 250, 500, 1000, 1500, 3000Kgf (Brinell)
Test force selection	Electronic, closed loop, load cell, force feedback system, indication in kgf or N. Test force selectable over menu operation
Test procedure	Automatic, loading/dwell/unloading
Hardness value	5 digits
Loading speed	variable depending on load application
Test force accuracy	<1% full range
User display	Diameter of indent, Length of diagonals, hardness value, converted value, test force, online statistics
Display resolution	0.1 HB
Hardness conversion	Rockwell, Vickers, Brinell, Leeb & Tensile 2 scale simultaneously
Standardisation	EN ISO 6506, ASTM E-10-08
Statistics	Total test, max, min, average, range, standard deviation, all in real time after each test
Control panel	Start test, stop test, light intensity, dwell time, print, clear
Memory	Large memory for testing results
Data output	RS-232, Bi-Directional
Dwell time setting	Default 10 seconds, user defined 1 to 60 seconds
Eyepiece microscope	Analogue
Vertical capacity	Standard 220mm, optional 390mm
Horizontal capacity	220mm (from centre line)
Humidity	10% to 90% non condensing
Weight	130Kg, XL version 160Kg
Power	220V/110V, 50/60Hz, single phase

Standard Delivery

- Main unit
- Flat anvil 200mm
- Analogue microscope 20x (Brinell)
- Brinell test blocks & indenters
- RS232 data output
- 4 adjustable feet
- Fuse
- Installation & user manual
- Quality certificate
- Colour: laboratory white

Optional Accessories

- Motorised spindle
- Analogue microscope with LED light 30x, 40x, 100x
- HB100 Video measuring and database system
- Extended height/width frame
- Motorised X-Y stage
- Certified indenters & test blocks
- Indenters & test blocks for Brinell
- Solid tester table & storage cabinet
- Specify alternative colour of unit

NEXUS 3000 SERIES TESTER

Code No	Description
W-3001	Load Cell Closed Loop Brinell Hardness Tester

'King' Brinell Portable Hardness Tester

The 'King' Brinell Portable Hardness Tester is a lightweight, full load (3000kg) instrument capable of accurately testing a large variety of metal specimens. The testers portability allows it to be used in any plane, conventionally for full load (3000Kg), in-situ Brinell testing of large components.

Features

- Wide measuring range to 3000kgf
- Simple handling and low test expenditure
- High accuracy
- Conforms to ASTM and ISO Brinell Standards
- API approved

Standard Delivery

- Main unit
- 10mm Brinell ball
- Flat, dome and V-anvils

Optional Accessories

- Chain adapter
- Test blocks
- Reverse direction adapters
- Low pressure test head
- Video measurement microscope system



TECHNICAL SPECIFICATION

Pressure exerted	Up to 3000kgf
Pressure gauge indication	True load and load reached indication
Max specimen height	14", (20" optional model)
Max specimen depth	4", (6" optional model)
Brinell ball	Standard 10mm, optional 2.5mm, 5mm etc
Accuracy	0.5 of 1% of load ASTM/BS certifiable

BRINELL PORTABLE HARDNESS TESTER

Code No	Description
W-WHB-120	King Brinell Tester
W-WHB-MIC	20X Microscope for King Brinell

Kingscan IV Automatic Brinell Video Microscope

Features

- Major improvement in accuracy and repeatability of measurement
- Reduced cost of testing 2 sec test time typical
- 6ft and 15ft camera cables
- LED array lighting to maximise test accuracy under any condition
- Remote measure facility

BRINELL VIDEO MICROSCOPE

Code No	Description
W-WHB-KIIIK	KingScanIV Video Microscope System
W-WHB-PACK	KingScan/Case/Laptop
W-WHB-CASE	Case





'King' Brinell Portable Hardness Tester Accessories

- **Standard test head**

Calibrated accurate to 1/2 of 1% load.
Releases at 3000kg automatically.
Capable of incremental loads



- **Standard test head with long ram**

Same features as standard test head plus a long ram that puts impression head at end of 2" extension for easy access into recessed areas or over raised edges



- **Low pressure test head**

Applied load and indicator dial are coordinated for softer metals.
Can be calibrated to release at loads of 62-1/2kg, 125kg, 250kg, 500kg, or 1000kg



- **Low pressure test head with long ram**

Same features as low pressure test head plus a long ram that puts impression head at end of 2" extension for easy access into recessed areas or over raised edges



- **Adapter to hold test head upright without base**

For testing large flats it enables test heads to be used under large drill presses, boring mills, arbor presses and beams that are capable of withstanding 3000kg load



- **Chain adapter**

Used for large cylinders it fits onto a standard test head and wraps around specimens that are too big for regular tester. High strength chrome/molybdenum steel arms hold the chain to the test head and allow it to stay rigid while the chain takes the full thrust of the load. Supplied with 4' chain



- **Base**

14" base with 14" test height opening and 4" throat is standard. Optional 6" throat with either 14" or 20" test height opening available, 20" base also available with 4" throat and 20" test height opening



- **2.5mm and 5mm ball adapter**

Used on softer materials or where a smaller impression is desired



- **Stage micrometer**

Used to check calibration of Brinell Microscope by placing the microscope on the stage micrometer and aligning the grid on the stage micrometer with the grid on the microscope. If the grids do not match perfectly, the microscope is out of calibration and should be re-calibrated.



Meets ASTM50, and is traceable to NIST standards

- **Brinell microscope**

Constructed from stainless steel, the rugged and optically reliable Brinell microscope is the most versatile on the market today. Featuring a 20x pre-focused lens, the microscope has a narrow nosetip which easily fits into tight recesses, resulting in less grinding on castings, billets and dies. For added stability when performing flat work, a slip-on base adapter is included. A side opening in the microscope allows plenty of natural light for viewing, and a cordless movable pen light can be used in dim conditions. Calibrated on equipment traceable to NIST standards, the Brinell microscope meets ASTM 5-10 specifications. It is ready to use and comes equipped with a handy storage case



Premium Micro-Vickers Hardness Tester NEXUS 410AAT/DAT Series

RS232

Motorised turret with analogue / digital measurement microscope and easy-to-use integrated hardness calculator.

Features

- Two models available with 10gf - 1 Kgf or 10gf - 2Kgf depending on model
- Fully automatic 4 position turret for Micro Vickers /Knoop measurements
 - Choice of turret configuration
 - 3 objectives and 1 indenter
 - 2 objectives and 2 indenter (Vickers & Knoop)
 - Dual indenter (Vickers/Knoop) turret optional
- High resolution eyepiece
- Built in high speed printer



NEXUS 410AAT/DAT SERIES TESTER

Code No	Description
W-412AAT	Analogue, 2 objectives, 0.01 - 0.025 - 0.05 - 0.1 - 0.2 - 0.3 - 0.5 - 1Kgf (HV)
W-413AAT	Analogue, 3 objectives, 0.01 - 0.025 - 0.05 - 0.1 - 0.2 - 0.3 - 0.5 - 1Kgf (HV)
W-412DAT	Digital, 2 objectives, 0.01 - 0.025 - 0.05 - 0.1 - 0.2 - 0.3 - 0.5 - 1Kgf (HV)
W-413DAT	Digital, 3 objectives, 0.01 - 0.025 - 0.05 - 0.1 - 0.2 - 0.3 - 0.5 - 1Kgf (HV)

TECHNICAL SPECIFICATION

Test force selection	Manual
Test procedure	Automatic, loading/dwell/unloading
Hardness value	5 digits
Turret	4 positions over 360°, fully automatic, memorised start position, option for 2
Test force accuracy	< +/-1% for force from 100gr to 2kg, < +/-1.5% for force below 100gr
User display	Length of diagonals, hardness value, converted value, test force, online statistics
Display resolution	0.1 HV, HK
Standardisation	EN, ISO 6507, ASTM E-384, EN ISO 4545
Statistics	Total test, max, min, average, range, standard deviation, all in real time after each test
Control panel	Start test, stop test, light intensity, dwell time, print, clear
Firmware	English
Memory	Memory for 20 test results, with CCD-VIEW software unlimited results
Data output	RS-232 Bi-Directional
Dwell time setting	Default 5 seconds, user defined 1 to 60 seconds (5 sec. increments)
Printer	Built in, silent high speed thermal printer
Eyepiece microscope	Bright dual line filar eyepiece with 15x magnification, 0.1µm reading
Light source	Halogen 12V, 30W, green filter, dimmable
Optical path	2 way, eyepiece / camera
Vertical capacity	90mm (maximum specimen height)
Horizontal capacity	120mm (from centre line)
Stage dimensions	100x100mm, travel 25x25mm, and reading 0.01mm
Operating temperature	5°C to 40°C (+/-20° for force 25gr and 50gr)
Humidity	10% to 90% non condensing
Dimensions	420 x 250 x 490mm
Weight	37.5Kg
Power	240V/110V, 50/60Hz, single phase

Standard Delivery

- Main unit
- Manual X-Y stage
- Objectives according to model (10x & 40x or 10x, 20x & 40x)
- Analogue eyepiece 15x (410AAT)
- Digital eyepiece 15x (410DAT)
- Vickers test block (+/- 725 HV 1)
- Vickers test block (+/- 450 HV 0.2)
- Built-in thermal printer
- RS-232 data output
- 4 adjustable feet
- Set of work piece fixtures - vice, chuck & clamp
- Spare halogen bulb
- Fuse
- Installation & user's manual
- Quality certificate

Optional Accessories

- Choice of objective configuration
- IMP Video measuring systems
- Dual indenter turret, Vickers & Knoop
- Motorised X-Y stage
- Motorised X-Y-Z stage (auto focus)
- Metal support table with storage cabinet
- Indenter & test blocks
- Certified indenter & test blocks

Optional System

- IMP system for semi and automatic traverses, pattern testing through PC support and motorised XY stage

Premium Micro-Vickers Hardness Tester

NEXUS 420AAT/DAT Series



Motorised turret with analogue / digital measurement microscope and easy-to-use integrated hardness calculator.

Features

- Two models available with 10gf - 1 Kgf or 10gf - 2Kgf depending on model
- Fully automatic 4 position turret for Micro Vickers /Knoop measurements
 - Choice of turret configuration
 - 3 objectives and 1 indenter
 - 2 objectives and 2 indenter (Vickers & Knoop)
 - Dual indenter (Vickers/Knoop) turret optional
- High resolution eyepiece
- Built in high speed printer



Analogue Eyepiece

Digital Eyepiece

NEXUS 420AAT/DAT SERIES TESTER

Code No	Description
W-422AAT	Analogue, 2 objectives, 0.01 - 0.025 - 0.05 - 0.1 - 0.2 - 0.3 - 0.5 - 1 - 2Kgf (HV)
W-423AAT	Analogue, 3 objectives, 0.01 - 0.025 - 0.05 - 0.1 - 0.2 - 0.3 - 0.5 - 1 - 2Kgf (HV)
W-422DAT	Digital, 2 objectives, 0.01 - 0.025 - 0.05 - 0.1 - 0.2 - 0.3 - 0.5 - 1 - 2Kgf (HV)
W-423DAT	Digital, 3 objectives, 0.01 - 0.025 - 0.05 - 0.1 - 0.2 - 0.3 - 0.5 - 1 - 2Kgf (HV)

TECHNICAL SPECIFICATION

Test force selection	Manual
Test procedure	Automatic, loading/dwell/unloading
Hardness value	5 digits
Turret	4 positions over 360°, fully automatic, memorised start position, option for 2 indenters and 2 objectives or 1 indenter and 3 objectives
Test force accuracy	< +/-1% for force from 100gr to 2kg, < +/-1.5% for force below 100gr
User display	Length of diagonals, hardness value, converted value, test force, online statistics
Display resolution	0.1 HV, HK
Standardisation	EN, ISO 6507, ASTM E-384, EN ISO 4545
Statistics	Total test, max, min, average, range, standard deviation, all in real time after each test
Control panel	Start test, stop test, light intensity, dwell time, print, clear
Firmware	English
Memory	Memory for 20 test results, with CCD-VIEW software unlimited results
Data output	RS-232 Bi-Directional
Dwell time setting	Default 5 seconds, user defined 1 to 60 seconds (5 sec. increments)
Printer	Built in, silent high speed thermal printer
Eyepiece microscope	Bright dual line filar eyepiece with 15x magnification, 0.1µm reading
Light source	Halogen 12V, 30W, green filter, dimmable
Optical path	2 way, eyepiece / camera
Vertical capacity	90mm (maximum specimen height)
Horizontal capacity	120mm (from centre line)
Stage dimensions	100x100mm, travel 25x25mm, and reading 0.01mm
Operating temperature	5°C to 40°C (+/-20° for force 25gr and 50gr)
Humidity	10% to 90% non condensing
Dimensions	420 x 250 x 490mm
Weight	37.5Kg
Power	240V/110V, 50/60Hz, single phase

Standard Delivery

- Main unit
- Manual X-Y stage
- Objectives according to model (10x & 40x or 10x, 20x & 40x)
- Analogue eyepiece 15x (420AAT)
- Digital eyepiece 15x (420DAT)
- Vickers test block (+/- 725 HV 1)
- Vickers test block (+/- 450 HV 0.2)
- Built-in thermal printer
- RS-232 data output
- 4 adjustable feet
- Set of work piece fixtures - vice, chuck & clamp
- Spare halogen bulb
- Fuse
- Installation & user's manual
- Quality certificate

Optional Accessories

- Choice of objective configuration
- IMP Video measuring systems
- Dual indenter turret, Vickers & Knoop
- Motorised X-Y stage
- Motorised X-Y-Z stage (auto focus)
- Metal support table with storage cabinet
- Indenter & test blocks
- Certified indenter & test blocks

Optional System

- IMP system for semi and automatic traverses, pattern testing through PC support and motorised XY stage

Premium Closed Loop Micro/Macro Vickers, Knoop & Brinell Hardness Tester

NEXUS 4000 Series

RS232

High-end Vickers/Knoop/Brinell hardness testers with low and high forces ranging from HV0.01 to HV50. The NEXUS 4000 series features state of the art Closed Loop, Load Cell, and Force feedback technology for a reliable fast measurement procedure.

Features

STAGES:

- Manual X-Y stage
- Motorised X-Y stage
- Motorised X-Y-Z stage
- IMPRESSIONS Video Measuring System

TURRET SYSTEM:

- Fully automatic 4 position turret for Micro Vickers / Macro Vickers or Knoop measurements
- Featuring 3 objectives at choice, all 3 objectives can be used for measuring and observation

INDENTERS:

- Vickers 136°
- Knoop 172.5° x 130°
- Brinell 1 & 2.5mm

EYEPIECE:

- Electronic eyepiece microscope with precision encoder providing 15x magnification

OBJECTIVES:

- 5x for 75x magnification
- 10x for 150x magnification
- 20x for 300x magnification
- 40x for 600x magnification



Standard Delivery

- Main unit
- Manual X-Y stage
- Flat anvil 60mm
- Objectives 5x, 10x, 20x or 10x, 20x, 40x
- Digital eyepiece 15x
- Vickers test block (+/- 700 HV10)*
- Vickers test block (+/- 700 HV30)*
- Built in thermal printer
- RS232 data output
- 4 adjustable feet
- Spare halogen lamp
- Installation & user manual
- Quality certificate
- Set of work piece fixtures, vice, chuck, clamp

*May vary depending on model

Optional Accessories

- IMP video measuring system
- Motorised X-Y stage
- Motorised X-Y-Z stage
- Indenters & test blocks
- Certified indenters & test blocks
- Solid tester table & storage cabinet

NEXUS 4000 SERIES TESTER

Code No	Rockwell Scales	Load Range
W-4300	Vickers/Knoop	1Kgf - 30Kgf
W-4301	Brinell	1Kgf - 31.25Kgf
W-4302	Macro Vickers/Knoop	300gf - 30Kgf
W-4303	Micro/Macro Vickers/Knoop	20gf - 30Kgf
W-4304	Micro/Macro Vickers/Knoop/Brinell	20gf - 31.25Kgf
W-4305	Micro/Macro Vickers/Knoop	10gf - 10Kgf
W-4500	Vickers/Knoop	1Kgf - 50Kgf
W-4501	Brinell	1Kgf - 62.5Kgf
W-4502	Macro Vickers/Knoop	300gf - 50Kgf
W-4503	Micro/Macro Vickers/Knoop	100gf - 50Kgf
W-4504	Micro/Macro Vickers/Knoop/Brinell	100gf - 62.5Kgf

Premium Closed Loop Micro/Macro Vickers, Knoop & Brinell Hardness Tester NEXUS 4000 Series

High accuracy and repeatability through Closed Loop, Load Cell and Force feedback system, 11 models available.

TEST PROCEDURE CONTROL

Traditional hardness testing systems use a "dead weight" mechanical design or inaccurate spring force mechanism to apply the test force. Such systems lack test control as there is no feedback on the actual applied force. The Closed Loop technology with a force feedback system, as applied in the NEXUS 4000 series, constantly measures and controls the applied force on the tester's indenter and tested surface. Consequently, this superior control system offers an almost unlimited selection of test loads and test rates for virtually any test condition imaginable.

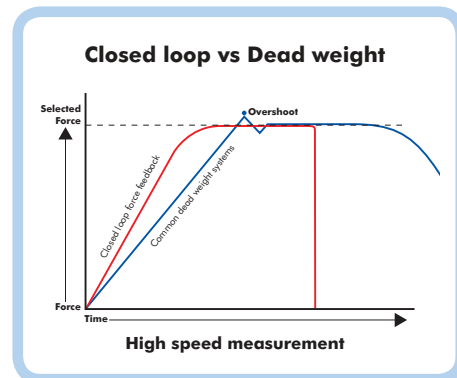
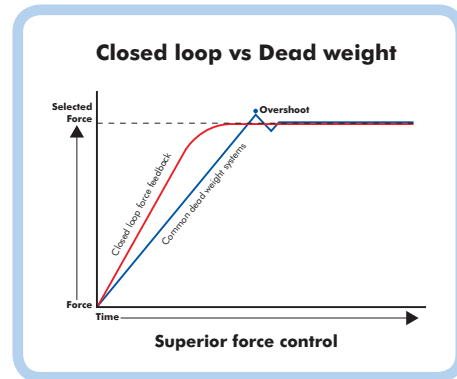
ACCURACY, RELIABILITY & EFFICIENCY

Elimination of overshoot due to sophisticated algorithms detecting contact with the indenter and the tested object's surface.

The application and removal of the test force is fully automatic, as well as the positioning of the indenter and the pre-determined objective. The result is an absolute vibration-free operation while reducing the operator's workload to a minimum.

UPGRADE

Upgrades on the NEXUS 4000 series are available on request. For instance, your budget and your requirements allow a Vickers tester; your choice could be an Eseyway Vickers / Knoop tester 4300. After your purchase you can upgrade your tester from, for instance, Vickers to Macro, Micro Vickers or even to Brinell at a fixed price. The upgrades are possible in the 4300 or 4500 range. Investing in an NEXUS 4000 series tester guarantees access to almost any load application in the Vickers, Knoop and Brinell range up to 62.5kg.



TECHNICAL SPECIFICATION

Test force selection	Electronic, Closed Loop, Load Cell, Force feedback system, indication in Kgf or N. Test force selectable over menu operation
Test procedure	Automatic, loading/dwell/unloading
Hardness value	5 digits
Loading speed	Variable, depending on selected force
Turret	4 positions over 360°, fully automatic, memorised start position, option for 2 indenters and 2 objectives or 1 indenter and 3 objectives
Test force accuracy	< +/-1% for force from 100gr to 30kg, < +/-1,5% for force below 100gr
User display	Length of diagonals, hardness value, converted value, test force, online statistics
Display resolution	0.1 HV, HK and HB
Hardness conversion	Rockwell, Rockwell Superficial, Brinell, Leeb & Tensile
Standardisation	EN, ISO 6507, EN ISO 6506, EN ISO 4545, ASTM E-384, ASTM E-10-08, ASTM E-384
Statistics	Total test, max, min, average, range, standard deviation, all in real time after each test
Control panel	Start test, stop test, light intensity, dwell time, print, clear, menu operation for date, time, scale and load settings, language
Firmware	V2.01, German, English, French (standard), V2.02, English, Italian, Spanish
Memory	Memory for 20 test results, with INNOVAVIEW software unlimited results
Data output	RS-232 Bi-Directional
Loading mechanism	Fully automatic, Closed Loop, Force feedback, loading, dwell, unloading
Dwell time setting	Default 5 seconds, user defined 0 to 60 seconds
Printer	Built in, silent high speed thermal printer
Eye-piece microscope	Bright dual line filar eyepiece with 15x magnification, 0.1µm reading
Light source	Halogen 12V, 30 watt, green filter, dimmable
Optical path	2 way, eyepiece / camera
Vertical Range	165mm (maximum specimen height)
Horizontal Range	135mm (from centre line)
Stage dimensions	100x100mm, travel 20x20mm, and reading 0.01mm
Operating temperature	5°C to 40°C (+/-20° for force 25gr and 50gr)
Humidity	10% to 90% non condensing
Dimensions	220 x 540 x 650mm
Weight	51Kg
Power	220V/110V, 50/60Hz, single phase

IMPRESSIONS Video Measuring System

IMPRESSIONS is the new advanced user operating system that will be adopted on all future developments. The software incorporates manual and automatic measurement for all scales, image editing, file storing, image storing, report printing, turret operation, manual or automatic focusing and many other advanced functions.

All data can be copied or exported in to MS applications like Word, Excel, or a report generator that emails test results directly to your workstation, or server. All data can be accessed over the LAN or WLAN connections.

Standard delivery

For manual X-Y stage - IMPRESSIONS software, CCD camera and C-mount included software for manual and automatic measurement of indentations, Indent zoom function, automatic light adjustment, LCD industrial DVI touch screen included (IMP-2, IMP-3, IMP-4)

For motorized XY stage & auto focus - IMPRESSIONS software, motorized X-Y stage and motorized Z-axis. CCD camera and C-mount included. Software for manual and fully automatic measurement of indentations. Indent zoom function, automatic indent focus, automatic light adjustment, coordinate multi pattern testing module, motorized X-Y stage, LCD industrial touch screen included, virtual mouse function. (IMP-5 and IMP-6)



IMPRESSIONS VIDEO MEASURING SYSTEM

Code No	Description
W-IMP2	IMPRESSIONS software for manual X-Y stage
W-IMP3	IMPRESSIONS software with 1 analogue micrometer and 1 digital micrometer on XY stage
W-IMP4	IMPRESSIONS software with 2 digital micrometers on manual XY stage
W-IMP5MV	IMPRESSIONS software with 3Kg motorized XY stage and coordinate multi pattern testing module (for micro Vickers)
W-IMP5V	IMPRESSIONS software with 30Kg motorized XY stage and coordinate multi pattern testing module (for macro Vickers),
W-IMP6MV	IMPRESSIONS software with 3Kg motorized XY stage with Z axis auto focus and coordinate multi pattern testing module. (for micro Vickers)
W-IMP6V	IMPRESSIONS software with 30kg motorized XY stage with Z axis auto focus and coordinate multi pattern testing module.(for macro Vickers),

Micro/Macro Vickers Hardness Tester FALCON 500 Series

The FALCON 500 series, Micro Vickers, Vickers and Micro Brinell hardness testing machines are a new generation of instruments, improving conventional hardness testing methods and focused on eliminating user influence on the test results. The unique force actuator system utilizes an electronically controlled closed loop system and advanced force sensor technology, to achieve absolute accuracy, reliability and repeatability, on each of the forces used for a test.

The innovative software functions of IMPRESSIONS software allow file storing, test program setting and storing, image zoom, auto focus, limit settings, conversions to other hardness scales, system setup and (remote) control, pattern testing (CHD/Nht/Rht) and widely contributes to the high reproducibility of test results. Fully automatic image evaluation combined with intuitive operator software avoid operator influence on the test results.



W-501

W-501XL

Features

- Load cell, closed loop force control
- IMPRESSIONS operator control
- Auto Brightness
- Auto Contrast
- Auto Sharpness
- Auto Focus
- Automatic indent measurement
- 2 indenter positions, 4 objective positions
- 5mp HD camera
- High power LED vertical illuminator with filter position
- Anti-collision system
- Powerful Embedded Micro Controller; MS Windows, 80gb dual SSD data storage keyboard & mouse
- 15" portrait mode, HD industrial touch screen on adjustable table stand

Micro/Macro Vickers Hardness Tester FALCON 500 Series

Optional Accessories

- Overview camera
- Click & Go software option (requires motorised X-Y stage & Overview camera)
- Pattern testing (requires motorized X-Y stage)
- CHD, Nht, Rht (requires Pattern testing and motorized X-Y stage)
- Certified indenters
- Certified hardness test blocks
- Motorized X-Y stage
- 2nd indenter position
- 150mm Ø table
- Choice of objectives (see specification leaflet)
- V-anvil for 1-6mm
- V-anvil for 4-20mm

General functionality

Intuitive operator interface IMPRESSIONS

IMPRESSIONS software is the ultra-modern user interface of all Innovatest hardness testing machines. IMPRESSIONS offers unparalleled simplicity in operation but yet, includes the most advanced functions found in hardness testing.

With only a minimum of operator skills required, IMPRESSIONS guides you through the set up process, in just seconds. Standard features, complex tasks and advanced work flow at your fingertips.

Fully automatic image evaluation

IMPRESSIONS software evaluates sharpness and brightness of all camera images and measures the indentation independent of the operator. The automatic adjustment of the picture parameters ensures reproducible test results, even for different materials and difficult, scratched or damaged test surfaces.

The standard fast auto-focus technology guarantees a sharp image of the indentation, in just a few seconds.

Overview & full view zoom camera

The optional overview & full view autofocus zoom camera with additional surface illumination, ensures a perfect overview or full view on your sample or samples.

The combination of the zoom overview & zoom full view camera and superior measuring objectives ranges allow a viewing range of 60µm to 200mm. This technology allows an overall picture of the test subject or subjects or a further magnified part of the object. The overview/full view images can also be saved with the test report.

IMPRESSIONS 'click and go' functionality allows random test point selection on the screen, while the high speed motorized X-Y stage perfectly positions the selected test point under the indenter and measuring objective.

Anvils, X-Y stage or CNC motorized X-Y stage

The basic version provides a manual X-Y stage and a plane anvil with all the requirements for quick and easy single tests.

The FALCON allows to expanded to a wide choice of motorized X-Y stages while the IMPRESSIONS tester control and workflow software has many advanced positioning functions, from single indent to advanced pattern testing. The onboard controller allows up to 5 axis CNC work piece positioning.

Dynamic Z-Axis height adjustment

Intelligent precision positioning of the work piece is a standard feature on the FALCON series.

The 2 button control system allows ultra-fast pre-positioning, while the scroll wheel provides a pulse by pulse control on the actual fine adjustment on the focus position.

* All FALCON models have a standard auto-focus system!

Dual view screen technology

The dual screen option gives the image of the overview camera (normally also provided on a single screen solution) next to the standard operator screen. The advantage is that a larger image of the overview image can viewed simultaneous with the normal measurement camera images.



Micro/Macro Vickers Hardness Tester

FALCON 500 Series

TECHNICAL SPECIFICATION

Hardness scale	(Micro/Macro) Vickers, Knoop & Brinell
Load application	Load cell, force feedback, closed loop system
Load range	1gf up to 62.5Kgf
Motorized turret	6 positions; 2 indenter positions, 4 objectives positions
Optical system	High definition, 5Mpx machine Vision system
Objectives	2.5x, 5x, 10x, 20x, 40x, 60x, 100x
Overview & full view	5Mpx optical ZOOM camera, field of view 35x35mm / 200x200mm
Electronic system	High performance embedded micro system controller, MS Windows®, 15" full color industrial touch screen, automatic and manual measurement
Test loads	1gf, 2gf, 3gf, 4gf, 5gf, 6gf, 7gf, 8gf, 9gf, 10gf, 20gf, 25gf, 50gf, 100gf, 200gf, 300gf, 500gf, 1kgf, 2kgf, 2.5kgf, 3kgf, 4kgf, 5kgf, 6.25kgf, 10kgf, 15.625kgf, 20kgf, 25kgf, 30kgf, 31.25kgf, 50kgf, 62.5kgf
Vickers test range	HV0.001, HV0.002, HV0.003, HV0.004, HV0.005, HV0.006, HV0.007, HV0.008, HV0.009, HV0.010, HV0.020, HV0.025, HV0.050, HV0.1, HV0.2, HV0.3, HV0.5, HV1, HV2, HV2.5, HV3, HV4, HV5, HV10, HV20, HV25, HV30, HV50
Brinell test range	HB1/1kgf, HB1/2.5kgf, HB1/5kgf, HB1/10kgf, HB1/30kgf; HB2.5/6.25kgf, HB2.5/15.625kgf, HB2.5/31.25kgf, HB2.5/62.5kgf
Knoop	HK0.01, HK0.02, HK0.025, HK0.05, HK0.1, HK0.2, HK0.3, HK0.5, HK1, HK2, HK5
Indentors	Factory indentors or certified indentors (DKD, UKAS, ASTM) (optional)
Test cycles	Fully automatic, automatic and manual
Standards	Complies to or exceeds, ISO, ASTM, JIS (Nadcap) standards
Test force accuracy	<1% for test force 200gr to 62.5kg, <1.5% for test force below 100gr
Display resolution	0.1 HV, HK, 0.5 HB
Hardness conversion	Rockwell, Rockwell Superficial, Brinell, Leeb & Tensile
Statistics	Total test, max, min, average, range, standard deviation, all in real time after each test
Data storage capacity	Dual SSD 80Gb, RAID system
Connectivity	2 USB ports, RJ45 Ethernet LAN, W-LAN, RS-232, Blue Tooth, 5 Axis CNC & motorized X-Y stage connector
Dwell time setting	Default 10 seconds, user defined 1 to 99 seconds (1 sec increments)
Printer	A4, A3 full colour laser printer (optional)
Manual stage dimensions	Stage 100mm x 100mm, Travel 25mm x 25mm, Reading 0.01mm
Operating temperature	101/4C to 351/4C, non-condensing
Humidity	10% to 90% non-condensing
Machine dimensions	485mm x 322mm x 683mm 525mm x 323mm x 773mm (XL)
Machine weight	60kg, 75kg(XL)
Power consumption	100W
Power supply	100VAC to 240VAC, 50/60Hz, single phase

FALCON 500 SERIES TESTER

Code	Description	Code	Description
W-501	3gf - 2kgf, Vickers & Knoop	W-501XL	3gf - 2kgf, Vickers & Knoop, large frame
W-502	50gf - 10kgf, Vickers, Knoop & Brinell	W-502XL	50gf - 10kgf, Vickers, Knoop & Brinell, large frame
W-503	10gf - 10kgf, Vickers, Knoop & Brinell	W-503XL	10gf - 10kgf, Vickers, Knoop & Brinell, large frame
W-504	1gf - 10kgf, Vickers, Knoop & Brinell	W-504XL	1gf - 10kgf, Vickers, Knoop & Brinell, large frame
W-505	200gf - 31.25kgf, Vickers, Knoop & Brinell	W-505XL	200gf - 31.25kgf, Vickers, Knoop & Brinell, large frame
W-506	50gf - 31.25kgf, Vickers, Knoop & Brinell	W-506XL	50gf - 31.25kgf, Vickers, Knoop & Brinell, large frame
W-507	10gf - 31.25kgf, Vickers, Knoop & Brinell	W-507XL	10gf - 31.25kgf, Vickers, Knoop & Brinell, large frame
W-508	1gf - 31.25kgf, Vickers, Knoop & Brinell	W-508XL	1gf - 31.25kgf, Vickers, Knoop & Brinell, large frame
W-509	200gf - 62.5kgf, Vickers, Knoop & Brinell	W-509XL	200gf - 62.5kgf, Vickers, Knoop & Brinell, large frame
W-5010	10gf - 62.5kgf, Vickers, Knoop & Brinell	W-5010XL	10gf - 62.5kgf, Vickers, Knoop & Brinell, large frame
W-5011	1gf - 62.5kgf, Vickers, Knoop & Brinell	W-5011XL	1gf - 62.5kgf, Vickers, Knoop & Brinell, large frame

Universal Hardness Tester VERZUS 700 Series

The VERZUS 700 series is a new generation of hardness testing machines. Featuring closed loop system based on a precision load cell, guarantees the best GR & R results ever seen on Universal hardness testers. Test forces ranging from 1 to 250kgf.



W-700-AS



W-750-LCD

Features

- Load cell, force feedback, closed loop system
- Unparalleled rigidity
- Unmatched GR & R results
- Load range 1kgf up to 250kgf depending on model
- Complies to all applicable EN/ISO, ASTM and JIS standards
- Shape correction settings for curved surfaces
- Optical depth measuring system (**Rockwell, HBT, HVT, Hb**)
- Powerful Embedded PC with 2 hard disks and HD industrial touch screen (**VERZUS 750 models**)
- IMPRESSIONS™ high end video based hardness testing firmware including CCD camera, automatic indent measurement, indent ZOOM system, conversion to other hardness scales, test data & image storage, statistic results storage, Jominy stage operation, X-Y stage operation (**VERZUS 750 models**)
- OLED full colour user-friendly interface, easy to operate (**VERZUS 700 RS, RSB, AS models**)
- Go / No Go function with visual and acoustic warning (**VERZUS 700 RS, RSB, AS models**)
- Large memory for measurements with statistic results (**VERZUS 700 RS, RSB, AS models**)
- Easy calibration function
- Testing program storage
- Standard nose cone clamping attachment
- Printer & USB-2 output (**VERZUS 700 RS, RSB, AS models**)
- External Brinell microscope with LED ring light (**RSB model**)
- Built on Vickers / Brinell microscope with LED ring light (**AS, CCD models**)
- Work piece sliding table (**AS, CCD models**)
- Large work piece accommodation
- Motorised spindle (**Optional**)

Universal Hardness Tester VERZUS 700 Series


W-700-AS

W-750-LCD

TECHNICAL SPECIFICATION

Load application	Load cell, force feedback, closed loop system
Hardness scales (RS)	Rockwell / Superficial Rockwell, HVT, HBT, Hb
Hardness scales (RSB)	Rockwell / Superficial Rockwell, Brinell, HVT, HBT, Hb
Hardness scales (AS)	Rockwell / Superficial Rockwell, Brinell, Vickers, HVT, HBT, Hb
Hardness scales (LCD)	Rockwell / Superficial Rockwell, HVT, HBT, Hb
Hardness scales (CCD)	Rockwell / Superficial Rockwell, Brinell, Vickers, HVT, HBT, Hb
Load range (RS)	1kgf to 187.5kgf
Load range (RSB/AS)	1kgf to 250kgf
Load range (LCD)	1kgf to 187.5kgf
Load range (CCD)	1kgf to 250kgf
Test loads	1, 2, 2.5, 3, 5, 10, 15, 15.625, 20, 30, 31.25, 45, 50, 60, 62.5, 100, 125, 150, 187.5, 250kgf depending on model.
Vickers test range	HV1, HV 2, 3, 5, 10, 20, 30, 50, 100, 120kgf; HVT 50, 100kgf
Brinell test range	HB1/2.5, 5, 10, 31.25kgf; HB2.5/6.25, 15.625, 31.25, 62.5, 187.5kgf; HB5/25, 62.5, 125kgf; HB10/100kgf; HBT2.5/62.5, 187.5kgf
Rockwell scales	A, B, C, D, E, F, G, H, K, L, M, P, R, S, V
Rockwell superficial scales	15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y
Optical system (RS)	None
Optical system (RSB)	External Brinell microscope with LED ring light
Optical system (AS)	Built on electronic microscope with 3 objectives and LED ring light
Optical system (LCD)	None
Optical system (CCD)	High resolution 5Mp video camera mounted on built on Microscope
Objectives (AS, CCD)	Interchangeable 2.5x, 5x and 10x magnification with LED ring light (CCD)
Eyepiece (AS, LCD)	10x magnification (15x optional)
Scale resolution (depth)	0.1 micron
Display (RS,RSB,AS)	Full colour OLED display, testing results, statistics, built-in hardness calculator, program overview, settings, calibration and many more
Display (LCD,CCD)	Large high definition industrial touch screen can also be operated by mouse and keyboard
Standards	Complies to, or exceeds, EN/ISO, ASTM and JIS
Test cycles	Fully automatic, Load, Dwell, Unload
Force control	1- 99 seconds
Data output	USB-2.,RS-232 (RS,RSB,AS) RJ-45 LAN,W-LAN (LCD,CCD)
Specimen accommodation	Height 300mm Throat 200mm

Standard Delivery

- Brinell microscope with LED ring light for dark field illumination **(AS, RSB, CCD)**
- Objectives for 37.5x, 75x and 150x magnification **(AS, CCD)**
- Sliding testing table **(AS, CCD)**
- Flat anvil, hardened, \varnothing 60mm
- Testing table, hardened, \varnothing 180mm
- V-anvil hardened \varnothing 40mm
- Fuse 3A slow 2 pcs
- Power cable
- INNOVATEST® certificate
- Installation and user manual
- Test blocks and indenters optional

Optional Accessories

- Knoop hardness testing scale **(CCD)**
- V-Anvil 60mm
- Certified indenters
- Certified or factory reference hardness blocks
- Long indenters
- Goose neck indenter holder
- Large testing table 300 x 200mm with T-slot
- Custom testing tables
- Precision vices, V-blocks and special clamps

UNIVERSAL HARDNESS TESTER VERZUS 700 SERIES

Code	Description
W-700-RS	Rockwell, Superficial Rockwell, HVT, HBT, Hb, Plastic ISO 2039/1
W-700-RSB	Rockwell, Superficial Rockwell, Brinell, HVT, HBT, Hb, Plastic ISO 2039/1
W-700-AS	Rockwell, Superficial Rockwell, Brinell, Vickers, HVT, HBT, Hb, Plastic ISO 2039/1
W-750-RS	Rockwell, Superficial Rockwell, HVT, HBT and Ball indentation for plastic ISO 2039/1
W-750-RSB	Rockwell, Superficial Rockwell, Brinell, HVT, HBT and Ball indentation for plastic ISO 2039/1
W-750-LCD	Rockwell, Superficial Rockwell, HVT, HBT, Hb, Plastic ISO 2039/1
W-750-CCD	Rockwell, Superficial Rockwell, Brinell, Vickers, HVT, HBT, Hb, Plastic ISO 2039/1

Universal Hardness Tester NEXUS 7501 Series

The NEXUS 7501 universal hardness tester is based on the successful NEXUS 7000 load cell closed loop concept with indenter/objective swivel system.

The NEXUS 7501 is a hardness tester for all hardness procedures according to Rockwell, Superficial Rockwell, Brinell, Vickers and Knoop. Also possible are ball and indentation hardness testing for thermo plastics and the new Vickers depth (HVT) and Brinell depth (HBT) procedures.

The load range goes from 1 to 250kgf (optional from 0.5kgf). All procedures complying to EN/DIN/ISO, ASTM and JIS.

The new user interface IMPRESSIONS guarantees hassle free tester operation with a minimum amount of training. IMPRESSIONS allows you to operate the tester's main functions but also incorporates advanced algorithms for automatic impression detection and hardness measurement.



W-7501

Universal Hardness Tester NEXUS 7501 Series


W-7501

TECHNICAL SPECIFICATION

Hardness scales	Brinell, Vickers, Rockwell, Superficial Rockwell, Knoop, Vickers depth (HVT), Brinell depth (HBT), Plastic
Optical	5 mega-pixel HD camera, indent zoom function
Load range	1-250kgf
Display	High resolution industrial LCD touch screen Optional: desk top LCD screen Optional: desk top LCD touch screen Optional: Height adjustable LCD touch screen
CPU	Embedded high performance PC with 2 solid state HD drives Optional: External high performance PC
Firmware	IMPRESSIONS, advanced hardness testing software including options for: manual measurement, automatic measurement, indent zoom function, scale, conversion, file storage, report printing, test program storage, machine settings storage, graphic interface for swivel system position
Standards	Conforms to ISO 6506, 6507, 6508, 4545, ASTM E18, E92, E10 & JIS
Test load type	Loadcell closed loop, force feedback system Complies to EN/ISO and ASTM standards
Test cycle	Automatic and indent evaluation
Test loads	(0,5*) 1, 3, 5, 10, 15, 15.625, 20, 30, 31.25, 50, 60, 62.5, 100, 125, 150, 187.5, 250kgf
Brinell test procedures	HB1 1, 2.5, 5, 10, 30 HB2.5: 6.25, 15.625, 31.25, 62.5, 187.5 HB5: 25, 62.5, 125, 250 HB10: 100, 250
Vickers test procedures	HV (0,5*) 1, 2, 3, 5, 10, 20, 30, 50, 100
Rockwell test procedures	A, B, C, D, E, F, G, H, K, L, M, P, R, S, V, Bm, Fm, 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X,30X, 45X, 15Y, 30Y, 45Y, 30 TM, HMR 5/25
Indenter types (included)	Brinell Balls: 1, 2.5, 5, 10mm Vickers Diamond: 136° Rockwell Diamond Cone: 120° Balls: 1/16 in, 1/8 in, 1/4 in, 1/2 in
Load duration	0.1-255 seconds
Connectivity	USB-2(6) RS-232, UTP RJ45, LAN, W-LAN
Specimen accommodation	Maximum test height 300mm, maximum throat 220mm
Specimen access	External surfaces, internal surfaces with goose neck adapter (optional)
Dimensions	620mm x 250mm x 900mm (L x W x H)
Weight	170kg
Power Supply	230V / 50Hz other voltages and/or frequencies on request

Standard Delivery

- Objective for 70x magnification
- Objective for 140x magnification
- Clamping protection nose
- Testing table Ø80mm
- Power cable
- Installation & user manual
- INNOVATEST® certificate
- Test blocks and indenters optional

Optional Accessories

- Objectives for 10x, 20x, 44x magnification
- Testing table Ø150mm
- Testing table Ø235mm
- V-Anvil Ø80mm
- V-Anvil Ø120mm
- Certified indenters and hardness test blocks
- Long Vickers indenter
- Other testing tables and XY stages
- Precision vices, V-blocks and special clamps
- Software solutions for advanced application

UNIVERSAL HARDNESS TESTER NEXUS 7501 SERIES

Code	Description
W-7501	Universal hardness tester with video indent measuring system

Universal Hardness Tester NEXUS 8000 Series

The NEXUS 8000 Series can be used for all hardness procedures according to standards Rockwell, Superficial Rockwell, Brinell, Vickers and Knoop. But it is also capable of ball and indentation hardness testing for thermoplastics and the new Vickers depth (HVT) and Brinell depth (HBT) procedures. The NEXUS 8000 universal hardness testers include all standard hardness testing methods between 1kgf - 250kgf(8001), 3kgf - 750kgf(8002), 10kgf - 3000kgf(8003). All procedures meet or exceed DIN, ISO, ASTM and JIS standards.



TECHNICAL SPECIFICATION

Hardness scales	Rockwell, Vickers, Brinell, Vickers depth (HVT), Brinell depth (HBT), Ball indentation for plastic ISO 2039/1
Load application	Load cell, force feedback, closed loop system
Load range	1kgf - 250kgf (NEXUS 8001) 3kgf - 750kgf (NEXUS 8002) 10kgf - 3000kgf (NEXUS 8003)
Motorized turret	3 indenter positions, 3 objectives positions
Optical system	High definition, 5Mp machine Vision system
Objectives	3 installed for 0.7x - 1000x magnification
Electronic system	High performance embedded micro PC, MS Windows®, 15" full color touch screen, automatic and manual measurement Standards Meets or exceeds, ISO, ASTM, JIS (Nadcap) standards
Rockwell test scales	A, B, C, D, E, F, G, H, K, L, M, P, R, S, V, 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y (8003 no superficial scales)
Vickers test range	1kgf - 120kgf (depending on model) HV: 1kgf, 2kgf, 3kgf, 4kgf, 5kgf, 10kgf, 20kgf, 30kgf, 50kgf, 100kgf, 120kgf HVT: 50kgf, 100kgf
Brinell test range	1kgf - 3000kgf (depending on model) HB1: 1kgf, 2.5kgf, 5kgf, 10kgf, 30kgf HB2.5: 6.25kgf, 15.625kgf, 31.25kgf, 62.5kgf, 187.5kgf HB5: 25kgf, 62.5kgf, 125kgf, 250kgf HB10: 100kgf, 250kgf, 500kgf, 750kgf, 1000kgf, 1500kgf, 3000kgf HBT: 5kgf, 250kgf
Test cycles	Fully automatic, automatic and manual
Force tolerance	<0.5%
Force control	1 - 99 seconds
Connectivity	USB (4), UTP-RJ45-LAN, W-LAN, RS232, Motorized X-Y stage
Workpiece accommodation	Vertical capacity 350mm, Horizontal capacity 250mm (from center-line)
Operating temperature	10°C to 35°C, non-condensing
Machine dimensions	380mm x 753mm x 1390mm
Machine weight	425kg
Power supply	100V AC to 240V AC, 50Hz/60Hz, single phase



Standard Delivery

- Flat anvil, hardened, Ø 80mm
- V-anvil, hardened, Ø 80mm
- Testing table, hardened, Ø 200mm
- Ringlight for (Brinell) dark field illumination
- Power cable
- Four adjustable feet
- INNOVATEST® calibration certificate
- Installation and user manual

Optional Accessories

- Flat anvil, hardened, Ø 80mm
- V-anvil, hardened, Ø 80mm
- Testing table, hardened, Ø 200mm
- Ringlight for (Brinell) dark field illumination
- Power cable
- Four adjustable feet
- Calibration certificate
- Installation and user manual

UNIVERSAL HARDNESS TESTER NEXUS 8000 SERIES

Code No	Description
W-8001	Universal hardness tester with video indent measuring system with Brinell, Vickers, Rockwell, Superficial Rockwell, Knoop, HVT, HBT, Ball indentation, test forces 1kgf - 250kgf
W-8002	Universal hardness tester with video indent measuring system with Brinell, Vickers, Rockwell, Superficial Rockwell, HVT, HBT, Ball indentation, test forces 3kgf - 750kgf
W-8003	Universal hardness tester with video indent measuring system with Brinell, Vickers, Rockwell, HVT, HBT, Ball indentation, test forces 10kgf - 3000kgf



Heavy Duty Universal and Brinell Hardness Tester NEXUS 8000XL Series

The sturdy design of the NEXUS 8000XL Series allows rough workshop conditions. The tester can be used for measuring hardness according to global standards in most of the common hardness scales: Rockwell, Superficial Rockwell, Brinell, Vickers and Knoop. But it is also capable of ball and indentation hardness testing for thermoplastics and the Vickers depth (HVT) and Brinell depth (HBT) procedures. The NEXUS 8000XL Universal hardness testers applies all common test forces between 1kgf - 250kgf (8001XL), 3kgf - 750kgf (8002XL), 10kgf - 3000kgf (8003XL). All procedures meet or exceed DIN, ISO, ASTM and JIS standards.



TECHNICAL SPECIFICATION

Hardness scales	Rockwell, Vickers, Brinell, Vickers depth (HVT), Brinell depth (HBT),
Ball indentation	for plastic ISO 2039/1
Load application	Load cell, force feedback, closed loop system
Load range	1kgf - 250kgf (8001XL), 3kgf - 750kgf (8002XL), 10kgf - 3000kgf (8003XL)
Motorized turret	3 indenter positions, 3 objectives positions
Optical system	High definition, 5Mp machine Vision system
Objectives	3 installed for 0.7x - 1000x magnification
Electronic system	High performance embedded micro system controller, MS Windows® , 15" full color touch screen, automatic and manual measurement Standards Meets or exceeds, ISO, ASTM, JIS (Nadcap) standards
Rockwell test scales	A, B, C, D, E, F, G, H, K, L, M, P, R, S, V, 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y (8003XL no superficial scales)
Vickers test range	1kgf - 120kgf (depending on model) HV: 1kgf, 2kgf, 3kgf, 4kgf, 5kgf, 10kgf, 20kgf, 30kgf, 50kgf, 100kgf, 120kgf HVT: 50kgf, 100kgf
Brinell test range	1kgf - 3000kgf (depending on model) HB1: 1kgf, 2.5kgf, 5kgf, 10kgf, 30kgf HB2.5: 6.25kgf, 15.625kgf, 31.25kgf, 62.5kgf, 187.5kgf HB5: 25kgf, 62.5kgf, 125kgf, 250kgf HB10: 100kgf, 250kgf, 500kgf, 750kgf, 1000kgf, 1500kgf, 3000kgf HBT: 5kgf, 250kgf
Test cycles	Fully automatic, automatic and manual
Force tolerance	<0.5%
Force control	1 - 99 seconds
Connectivity	USB (4), UTP-RJ45-LAN, W-LAN, RS232, Motorized X-Y stage
Workpiece accommodation	Vertical capacity 520mm Horizontal capacity 300mm (from center-line)
Operating temperature	10°C to 35°C, non-condensing
Machine dimensions	380mm x 830mm x 1680mm
Machine weight	540kg
Power supply	100V AC to 240V AC, 50Hz/60Hz, single phase



Standard Delivery

- Workpiece clamping attachment
- Large work piece table 600mm x 500mm with T slot
- Ringlight for (Brinell) dark field illumination
- Wireless mouse and keyboard
- Power cable
- Four adjustable feet
- INNOVATEST® calibration certificate
- Installation and user manual

Optional Accessories

- Certified indenters
- Factory reference hardness blocks
- Certified reference hardness blocks
- Testing table, hardened, Ø 200mm
- Flat anvil, hardened, Ø 80mm
- V-anvil, hardened, Ø 80mm
- Motorised X-Y stages, motorised rotary or tilting tables
- Built-in 5 axis support driver
- Solid tester stand and storage cabinet

HEAVY DUTY UNIVERSAL AND BRINELL HARDNESS TESTER NEXUS 8000XL SERIES

Code No	Description
W-8001XL	Universal hardness tester, tall version, with video indent measuring system Brinell, Vickers, Rockwell, Superficial Rockwell, Knoop, HVT, HBT, Ball indentation, test forces 1kgf-250kgf
W-8001XLM	Universal hardness tester, tall version with motorized spindle and video indent measuring system Brinell, Vickers, Rockwell, Superficial Rockwell, Knoop, HVT, HBT, Ball indentation, test forces 1kgf-250kgf
W-8002XL	Universal hardness tester, tall version, with video indent measuring system Brinell, Vickers, Rockwell, Superficial Rockwell, HVT, HBT, Ball indentation, test forces 3kgf-750kgf
W-8002XLM	Universal hardness tester, tall version with motorized spindle and video indent measuring system Brinell, Vickers, Rockwell, Superficial Rockwell, HVT, HBT, Ball indentation, test forces 3kgf-750kgf
W-8003XL	Universal hardness tester, tall version, with video indent measuring system Brinell, Vickers, Rockwell, HVT, HBT, Ball indentation, test forces 10kgf-3000kgf
W-8003XLM	Universal hardness tester, tall version with motorized spindle and video indent measuring system Brinell, Vickers, Rockwell, HVT, HBT, Ball indentation, test forces 10kgf-3000kgf

Universal Hardness Tester NEMESIS 9000 Series

The NEMESIS 9000 Series represents the latest top of the range development in universal hardness testing. Modern design, innovated technology, multi purpose hardness testing instrument, based on the application of mechatronic components and high resolution video machine vision systems. A superior level of precision combined with high definition imaging creates an almost unlimited field of applications.

The NEMESIS 9000 Series represents universal hardness testing in the most versatile meaning. Aircraft engine parts, automobile parts, production lines, general quality assurance and laboratory use are all fields covered by the NEMESIS 9000 Series.

Manual operation or full scale automation to the highest possible level are both standard on the NEMESIS 9000.

The NEMESIS 9000, Load Cell, Closed loop, Force feedback system is suitable for the following:

Optical Hardness Testing Methods:

- Vickers (HV), EN ISO 6507, ASTM E 92
- Knoop (HK) ISO 4545, 4546
- Brinell (HB) EN ISO 6506, ASTM E 10

Depth Measuring Hardness Testing Methods:

- Rockwell (HR) EN ISO 6508, ASTM E 18
- Vickers depth measurement HVT VDI/VDE 2616-1
- Brinell depth measurement HBT VDI/VDE 2616-1
- Ball indentation hardness (H) (ISO 2039-1) (plastics)

Features

- Rockwell, Superficial Rockwell, Vickers, Knoop, Brinell, Ball indentation, HVT and HBT scales
- Superior range of test loads/force application ranging from 1kgf to 3000kgf (over 3 models)
- Fixed work piece position (no spindle)
- Descending test head with automatic work piece detection
- Free definable, manual or motorised 6 position turret for objectives and indenters of choice
- High definition optical system for images of 0.7x to 1000x magnification
- PC based hardness testing firmware and database file system as standard
- Large, adjustable 15" industrial touch screen
- Automatic or manual focus, manual or fully automatic indent measurement standard
- Built-in hard disk offers nearly endless file storing, standard
- LAN, WLAN, USB-2, RS-232, Printer and DVI connectivity, standard
- On board built-in driver for (optional) motorised X-Y stage, standard
- Free definable test patterns case depth, traverse, free style, etc., optional
- Machine covers made of shock, damage and fire proof recyclable materials
- Large range of optional accessories
- Large test piece accommodation H=300mm, D=220mm can be upgraded to a taller frame of, for instance, H=450mm, D=220mm or 300mm; even years after purchasing the tester
- 3 years free firmware upgrade, standard
- Designed and manufactured in The Netherlands





Universal Hardness Tester NEMESIS 9000 Series

TECHNICAL SPECIFICATIONS

	W-9001 Universal	W-9002 Universal	W-9003 Universal	W-9004 Pure Rockwell	W-9005 Pure Vickers	W-9006 Pure Brinell
Scales / Test Loads/Force	1kgf to 250kgf	3kgf to 750kgf	10kgf to 3000kgf	3kgf to 150kgf	1kgf to 120kgf	10kgf to 3000kgf
Rockwell, A, B, C, D, E, F, G, H, K, L, M, P, R, V	All scales	All scales	All scales	All scales	No	No
Superficial Rockwell, N, T, X, Y	All scales	All scales	No	All scales	No	No
Macro Rockwell HRM	Yes	Yes	Yes	Yes	No	No
Vickers HV	1kgf to 120kgf	3kgf to 120kgf	10kgf to 120kgf	No	500gf to 120kgf	No
Knoop	All scales	All scales	No	No	All scales	No
HVT	50, 100kgf	50, 100kgf	50, 100kgf	No	No	No
Brinell	1kgf to 250kgf	3kgf to 750kgf	10kgf to 3000kgf	No	No	10kgf to 3000kgf
HBT	5/250	5/250	5/250	No	No	No
H (ball indentation)	Up to 250kgf	Up to 750kgf	Up to 3000kgf	No	No	Up to 3000kgf

Force Application System

Linear force actuator	Standard	Standard	Standard	Standard	Standard	Standard
Load cell, closed loop, force feed back system	Standard	Standard	Standard	Standard	Standard	Standard
Motorised heavy duty TURRET with 6 positions	Standard	Standard	Standard	Standard	Standard	No
Indenter positions	3	3	3	3 (or 6, option)	3	None
Objective positions	3	3	3	None	3	None
LED optical indent illumination	Standard	Standard	Standard	None	Standard	None
LED ring light indent illumination	Optional	Optional	Optional	None	Optional	None
	175-200	0.007				

Optical Measuring System

5 mega pixels optical ZOOM system	Standard	Standard	Standard	None	Standard	None
Auto focus	Standard	Standard	Standard	No	Standard	No
Manual focus	Standard	Standard	Standard	No	Standard	No
Fully automatic indent measuring	Standard	Standard	Standard	No	Standard	No
Manual on screen indent measuring	Standard	Standard	Standard	No	Standard	No
Zoom and magnification ratio	0.7x to 1000x	0.7x to 1000x	0.7x to 1000x	No	0.7x to 1000x	No
Dual view working area overview camera	Optional	Optional	Optional	No	Optional	No
External Electronic Brinell microscope and objectives	No	No	No	No	No	Standard

Depth Measurement System

Heidenhain™ high resolution scale & reading head	Standard	Standard	Standard	Standard	No	No
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Hardware & User Interface

Built-in industrial Pentium PC and harddrive	Standard	Standard	Standard	Standard	Standard	No
Adjustable 15" full color industrial touch screen	Standard	Standard	Standard	Standard	Standard	No
MS Windows 7 Ultimate license	Standard	Standard	Standard	Standard	Standard	No
W-9000 hardness testing firmware	Standard	Standard	Standard	Standard	Standard	No
Automatic image and file storage	Standard	Standard	Standard	No	Standard	No
Stores and handles 3000 files & images	Standard	Standard	Standard	Standard	Standard	No
Stores and handles 9000 files & images	Optional	Standard	Standard	Standard	Standard	No
Forms 9000 set of customised certificates	Optional	Standard	Standard	Standard	Standard	No
Universal motorised X-Y stage controls	Standard	Standard	Standard	Standard	Standard	No

Connectivity

External digital (DVI) TFT screen output	Standard	Standard	Standard	Standard	Standard	No
External keyboard & mouse connections	Standard	Standard	Standard	Standard	Standard	No
LAN (local area network connection)	Standard	Standard	Standard	Standard	Standard	No
WLAN (Wireless network connection)	Standard	Standard	Standard	Standard	Standard	No
Bi-directional RS-232	Standard	Standard	Standard	Standard	Standard	Standard
Printer / USB-2 output	Standard	Standard	Standard	Standard	Standard	Standard
Built-in motorized X-Y stage driver	Standard	Standard	Standard	Standard	Standard	No

Work piece accommodation height: 300mm (opt. 500mm)

Work piece accommodation horizontal: 220mm from center

Machine dimensions: 1400mm x 420mm x 640mm (HxWxD)

Machine weight: 242kg

Tester colour (standard): Black / Metallic silver

Light source: White power LED (Opt. green/blue/red)

Power: 220volt / 50Hz, others on request

Objectives: 3 installed for 0.7x to 1000x

Force tolerance: Max. < 1%

Force control: 1-99 sec.

Hardness resolution: 0.01 Rockwell, 0.1 Vickers, 1 Brinell

Universal Hardness Tester NEMESIS 9500 Series

Load cell, closed loop,
linear force actuator,
fixed workpiece position

Force configuration for
maximum 250kgf, 750kgf
or 3000kgf

High performance PC, Windows 7
operating system with refined algorithms
for automatic image measuring system

6 positions modular motorised turret,
5 Mp built-in camera,
Optional overview camera

LED illumination,
LED ringlight

15" high
resolution
industrial
touch-screen

Microscope quality
optical system with
long working distance
objectives

Motorised spindle



W-9501



Universal Hardness Tester NEMESIS 9500 Series

The NEMESIS 9500 is the universal hardness tester most suitable for heavy duty testing in the Eseyaw standard range of testers. Partly based on the technology of the NEMESIS 9000. Built for tough environments, the floor type welded frame reaches a height of 2 meters and offers a work space of not less than 650mm height and a throat depth of 300mm.

Rockwell, Vickers and Brinell, but also pure depth test methods such as H, HVT and HBT are part of the standard test procedures of the NEMESIS 9500. 3 models cover a range of test loads either up to 250kgf, 750kgf or 3000kgf.

The frame of the NEMESIS 9500 is equipped with a heavy duty motorised spindle, allowing positioning of the test piece on the required working height. The NEMESIS 9500 has a descending test head allowing each test piece to be tested on an ergonomic working height. The linear actuator of the NEMESIS 9500 is equipped with a load cell closed loop system guaranteeing excellent accuracy and a wide range of fast testing procedures.

The test head is equipped with a 6 positions modular turret (indenters and objectives) and an optical zoom video system with 5mp HD camera. High performance PC driven automatic and manual indent measurement with automatic filing and storage functions.

Refined algorithms for automatic measurement on materials normally less suitable for automatic measurement.

Three years free firmware upgrade as standard.

TECHNICAL SPECIFICATION

Hardness scales	Brinell, Vickers, Rockwell, HVT, HBT
Load application	Load cell, force feed back, closed loop system
Load range	1-250kgf, 3-750kgf, 10-3000kgf
Motorised turret	3 indenter positions; 3 objectives positions
Optical system	High definition, 5Mp machine Vision system
Objectives	3 installed for 0.7x-1000x magnification
Scale resolution	0.0005mm (0.5 micron)
Electronic system	High performance built-in PC, Windows 7, 15" full color touch screen, automatic and manual measurement
Standards	Complies to all applicable EN/ISO and ASTM standards
Test loads	1, 2, 2.5, 3, 5, 10, 15, 15.625, 20, 30, 31.25, 45, 50, 60, 62.5, 100, 125, 150, 187.5, 250, 750, 3000kgf
Vickers test range	1 - 120kgf (depending on model)
Brinell test range	1 - 3000kgf (depending on model)
Rockwell test scales	A, B, C, D, E, F, G, H, K, L, M, P, R, S, V
Test cycles	Automatic & Manual
Force control	2-99 seconds
Connectivity	USB-2, Blue tooth, WLAN, LAN
Specimen accommodation	Max. height: 650mm Max. throat: 400mm
Machine dimensions	2125mm x 998mm x 540mm (HxDxW)
Machine weight	1100kg
Power supply	220V / 50Hz others on request

Standard Delivery

- Motorised turret with 6 positions
- Objectives for 0.7x-1000x magnification
- Built-in 3 axis support driver
- Large testing table
- Installation & user manual
- Innovatest calibration certificate
- Toolset
- Test blocks and indenters optional

Optional Accessories

- Built-in 5 axis support driver
- Testing table Ø235mm
- V-Anvil Ø80mm
- V-Anvil Ø120mm
- Certified indenters & hardness test blocks
- Long Vickers indenter
- Other testing tables and XY-stages
- Precision vices, V-blocks and special clamps

UNIVERSAL HARDNESS TESTER NEMESIS 9500 SERIES

Code	Description
W-9501	Heavy duty, video based universal hardness tester, test forces 1kgf to 250kgf
W-9502	Heavy duty, video based universal hardness tester, test forces 3kgf to 750kgf
W-9503	Heavy duty, video based universal hardness tester, test forces 10kgf to 3000kgf

Hardness Reference Blocks For All Scales

With official calibration certificates UKAS, DKD or ASTM.

CV Instruments hardness reference blocks are used for annual verification and calibration of hardness testing machines, as well as for periodical check and sometimes for overtaking of hardness scales on a hardness testing machine. That's why hardness reference blocks are a necessary help of industrial Quality Management. Only the use of high quality, precise hardness reference blocks calibrated to applicable standards can ensure the functionality and relative reliability and accuracy of measurement of a hardness testing machine.

The hardness reference blocks used for indirect verification should conform largely to the workpiece to be tested, in terms of material characteristics and hardness range. For this reason a hardness reference block made of aluminium was developed for the lower hardness range which can not be covered by steel, using new materials technology methods.

When using hardness reference blocks it is irrelevant whether the value of the nominal hardness to be delivered corresponds exactly to the actual calibration value observed, since scale adaptation should be carried out with at least two hardness values.

A hardness reference block shall only be used as according to the standards to that method and test condition for which it was calibrated.

CV Instruments certified hardness reference blocks are available as follows and all conform to the international standards as mentioned above.

Hardness reference "soft" blocks made of aluminium

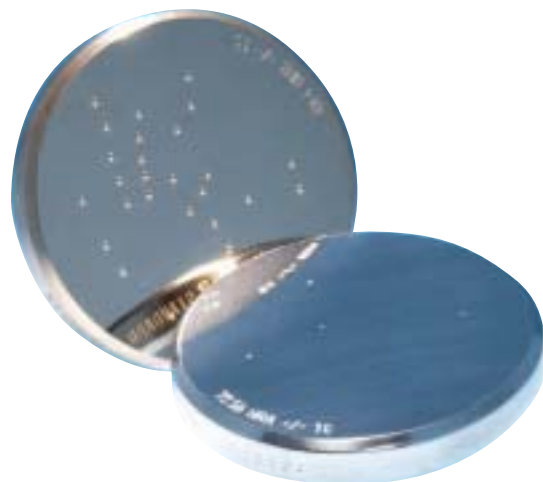
These CV Instruments reference blocks are available with DKD/MPA certificate only.

For several years there has been a need for "soft" blocks.

Using new materials technology methods, it is now possible to produce blocks made of aluminium.

They are available in lower nominal values in Rockwell, Brinell and Vickers scales.

Ask for our separate sales list.



TECHNICAL SPECIFICATION

All CV Instruments hardness reference block certificates are based on following international standards:

Brinell	DIN-EN-ISO 6506-3	ASTM E 10
Vickers	DIN-EN-ISO 6507-3	ASTM E 92 / E 384
Rockwell	DIN-EN-ISO 6508-3	ASTM E 18
Knoop	ISO 4545-3	ASTM E 384
Rockwell carbide	DIN 30999	ISO 3738
Martens hardness	DIN 50359	ISO DIS 14577

CV Instruments certified hardness reference blocks are available as follows and all conform to the international standards as mentioned above.

Scale	UKAS	DKD	DKD/MPA	ASTM	CV
Regular Rockwell (all scales)	Yes	Yes	Yes	Yes	Yes
Superficial Rockwell (all scales)	Yes	Yes	Yes	Yes	Yes
Brinell (all scales)	Yes	Yes	Yes	Yes	Yes
Macro Vickers (all scales)	Yes	Yes	Yes	Yes	Yes
Micro Vickers (all scales)	Yes	Yes	Yes	Yes	Yes
Knoop	Yes	Yes	Yes	Yes	
Martens hardness	Yes	Yes	Yes	Yes	

Order your blocks based on nominal values.

Please ask for our separate product list of nominal hardness values available per hardness scale and type of certificate.

CV Portable Analogue Hardness Tester - CV Instrumatic

A fully mechanical instrument of the highest precision, robust, and maintenance free. The large clearly marked dials on these unique instruments cover a full range of hardness values in Vickers, Brinell, Rockwell A, B, C, covering national and international standards.

The Instrument

The system is entirely mechanical employing the use of special pre-loaded springs which provide a load of about 15Kg to the diamond. Maximum penetration of the diamond into the specimen is 0.125mm (0.005").

Operation and Use

The simplicity of the tester enables it to be used in almost any direction, without affecting accuracy. It can be used 'on site' with complete success. The grips are depressed to the fullest extent by using the palms of the hands and the hardness value can be read off the appropriate scale. Repeatability is excellent and the calibration can be checked by the user against a UKAS certified reference test block supplied with each instrument. Each tester is supplied complete with case and detailed operating instructions.

Features

- Accurate and easy to use
- No batteries required
- UKAS certified test block supplied
- Optional bench stand with V base for round parts
- Precision Instrument
- Able to test even thin materials due to low penetration of indenter (0.25mm and above)
- Bench stand available for testing small components
- No. 3 - general purpose



PORTABLE ANALOGUE HARDNESS TESTER

Code No	Description	Scale	Range (mm)	Scale	Range (mm)	Scale	Range (mm)	Scale	Range (mm)
POR0002	No. 2	Rockwell A	40-85	Vickers Pyramid	50-100	Brinell	20-70		
POR0003	No. 3	Vickers Pyramid	100-1000	Brinell	100-400	Rockwell B	50-99	Rockwell C	20-70
POR0006	No. 6	Brinell	40-300	Vickers Pyramid	40-300				
PBS0001	Precision Bench Stand								

CV Portable Digital Hardness Tester

The Bowers CV Rangemaster Plus Hardness Tester represents an ideal solution to the problems associated with portable hardness testing. Its clear digital display, ease of use and ability to operate in all major international scales make it the most comprehensive unit of its type currently available. The optional sturdy bench stand adds further to the flexible nature of this ergonomic gauge.



Features

- Dynamic test indicator
- Large digital readout
- Hardness values in all major international scales with simple conversion facilities from one to the other
- RS232 output for connection to PC or serial printer
- Memory storage range for in excess of 400 readings
- Statistical summary
- Integral icon facility provides operator with easy visual identification of mode in which unit is operating
- Operates in temperatures from -5°C to +35°C
- Upper and lower control limits
- Last reading recall
- Supplied with two UKAS certified test blocks, adjuster key and carrying case



TECHNICAL SPECIFICATION

Hardness Scale	Vickers Pyramid No., Brinell, Rockwell B, Rockwell C, Tensile Strength, Shore Scleroscope	
Testing Range	Vickers Pyramid No.	35-1000
	Brinell	100-500
	Rockwell B	30-100
	Rockwell C	20-70
	Tensile Strength	255-1999 N/mm ²
Resolution	1	Vickers Pyramid No., Brinell, Tensile Strength, Shore Scleroscope
	0.1	Rockwell B, Rockwell C
Power	9V battery or adaptor	
Output	RS-232 serial output	

CV RANGEMASTER PLUS HARDNESS TESTER

Code No	Description
RANP001	Rangemaster
PBS0001	Precision Bench Stand
RAN0004	RS232 PC Connection Cable



Standard Delivery

- Main unit
- 2 UKAS certified test blocks
- Case
- Adjusting keys
- CV Instruments certificate
- Manual

Optional Accessories

- Bench stand
- RS-232 cable

Universal Portable Hardness Tester - TH-1100 Series

The new entry-level TH-1100 offers a very affordable but accurate hardness testing solution for on-site testing in workshops and in field operations. The unit assures accurate and reliable measurement.

Any metallic products with a minimum solid mass of 2 kg can be tested according to the Leeb principle. The display shows hardness values in all common scales, such as HLD, HB, HRC, HRA, HRB, HV and HS. The instrument is equipped with chargeable batteries that provide 16 hours continuous operation.

Features

- Direct display of hardness values in Rockwell HRB, HRC, Vickers HV, Brinell HB, Shore HS, Leebs (HLD)
- Test results appear directly on the large display
- Impact Device D integrated: no cables
- Memory up to 99 data group files
- Tests at any angle, even upside down
- High quality LCD display
- Battery Range display

TECHNICAL SPECIFICATION

Standard impact device	D integrated
Hardness scales	HLD, HB, HRC, HRA, HRB, HV, HS
Measuring range/materials	See table below
Tolerance	0.5% at 800HLD
Memory	99 data group files
Output	No
Min. surface roughness of workpiece	1.6 μ (Ra)
Max. workpiece hardness	960HLD
Min. radius of workpiece (convex/concave)	Rmin = 50mm (with support ring Rmin = 10mm)
Min. workpiece weight	2~5kg on stable support 0.05~2kg with compact coupling
Min. workpiece thickness coupled	5mm
Min. thickness of hardened layers	0.8mm
Charging time	3 hours
Continuous working time	16 hours
Power	Rechargeable Li battery
Operating temperature	0°C to 40°C
Overall dimensions	145 x 35 x 30mm
Weight	110g



TH-1100

Material	HLD	HRB	HRA	HRC	HB	HV	HS
Steel & cast steel	300-900	38.4-99.8	59.1-85.8	20-68.4	81-654	81.1-955	32.5-99.5
Cold work tool steel	300-840	-	-	20.4-67.1	-	80-898	-
Stainless steel	300-800	46.5-101.7	-	19.6-62.4	85-655	85-802	-
Grey cast iron	360-650	-	-	-	93-334	-	-
Nodular cast iron	400-660	-	-	-	131-387	-	-
Cast aluminium alloys	200-570	23.8-34.6	-	-	26.8-164	-	-
Brass	200-550	13.5-95.3	-	-	40-173	-	-
Bronze	300-700	-	-	-	60-290	-	-
Copper	200-690	-	-	-	45-315	-	-

The ranges are stipulated by the application limits of the relevant static procedure

UNIVERSAL PORTABLE TESTER - TH-1100 SERIES

Code No	Description
W-TH1100	Universal Tester

Standard Delivery

- Main unit integrated with impact device
- Test block with HLD value
- Charger
- Cleaning brush
- Certificate
- Manual
- Carrying case

Optional Accessories

- Support rings
- UKAS certified test blocks

Portable Hardness Tester - TH-170 Series



Handheld dynamic metal hardness tester with integrated Impact device D.

Features

- Impact device D integrated: no cables! (TH-170)
- Integrated impact device C featuring low impact energy for surface hardened components and thin walled components (TH-172)
- Integrated impact device DL featuring testing in confined spaces (TH-174)
- Wide measuring range
- Direct display of hardness scales Rockwell HRB, HRC, Vickers HV, Brinell HB, Shore HS, Leebs HLD (TH-170)/Leebs HLC (TH-172)/Leebs HLDL
- For all metallic materials (TH-170), for steel and cast steel (TH-172/174), and cold work tool steel (TH-172)
- Provides testing at any angle
- Simple handling and low test expenditure
- High accuracy $\pm 0.5\%$
- Clear LCD display showing all functions and parameters
- Conforms to ASTM A 956 and DIN 50156
- USB output to PC only

TH-170

Material	HLD	HRC	HRB	HRA	HB	HV	HS
Steel & cast steel	300-900	20-68	39-100	59-86	81-654	81-955	32-100
Cold work tool steel	300-840	20-67	-	-	-	80-898	-
Stainless steel	300-800	20-62	46-101	-	85-655	80-802	-
Grey cast iron	360-650	-	-	-	93-334	-	-
Nodular cast iron	400-660	-	-	-	131-387	-	-
Cast aluminium alloys	200-570	-	24-34	-	27-164	-	-
Brass	200-550	-	13-95	-	40-173	-	-
Bronze	300-700	-	-	-	60-290	-	-
Copper	-	-	-	-	45-315	-	-

TH-172

Material	HLD	HB	HRC	HV	HS	HS	HS
Steel & cast steel	350-960	80-683	20-69	80-996	31-102	32-100	32-100
Cold work tool steel	350-900	-	20-68	100-941	-	-	-

TH-174

Material	HLDL	HB	HRB	HRC	HV	HS	HS
Steel & cast steel	560-950	81-646	37-100	21-68	80-950	80-96	32-100

TECHNICAL SPECIFICATION

Hardness parameter	HRC, HRB, HRA, HV, HB, HS, HLD or HLC or HLDL
Accuracy	Within ± 6 HLD (TH-170), Within ± 12 HLC (TH-172), Within ± 12 HLDL (TH-174)
Data memory	270 average data in 9 files
Output	RS-232
Min. Surface Roughness of Workpiece	1.6 μ m (Ra) (TH-170/174), 0.4 μ m (Ra) (TH-172)
Impact device	D (standard) integrated (TH-170), C integrated (TH-172) or DL integrated (TH-174)
Needle front section of DL-device (TH-174)	Diameter = 4.2mm, Length = 50mm
Workplace max. hardness value	900HLD (TH-170), 960HLC (TH-172), 950HLDL (TH-174)
Workplace radius (convex/concave)	Rmin = 50mm (with support ring Rmin = 10mm)
Workplace minimum weight	2kg-5kg on solid support (TH-170/174) 0.5kg-1.5kg on solid support (TH-172) (0.05kg-2kg with couplant paste) (TH-170/174) (0.02kg-0.5kg with couplant paste) (TH-172)
Workplace min thickness coupled	5mm (TH-170/174), 1mm (TH-172)
Workplace min. case hardened depth	0.8mm (TH-170/174), 0.2mm (TH-172)
Power	AAA Batteries (x2)
Charger	9V, 200mA (1.8VA)
Operating temperature	0°C to 40°C
Overall dimensions	155mm x 24mm x 55mm (TH-170/172) 210mm x 24mm x 55mm (TH-174)
Dimensions DL impact device (TH-174)	LxD 50mm x 4mm diameter
Weight	180g (TH-170/172) or 200g (TH-174)

PORTABLE HARDNESS TESTER - TH-170 SERIES

Code No	Description
W-TH170	Universal type
W-TH172	Low impact force (for low weight parts)
W-TH174	For narrow or confined spaces



Standard Delivery

- Main unit integrated with impact Device D, C or DL
- Test block with HLD, HLC or HLDL value
- Cleaning brush
- Battery AAA 1.5V (2pcs)
- Certificate
- Manual
- Carrying case
- Data cable (USB)

Optional Accessories

- Support rings for convex and concave surfaces
- UKAS certified test blocks
- Dataview software TH-170

Portable Hardness Tester - TH-110

The new TH-110, part of the unbeatable series of CV Leeb type dynamic hardness testers offers a very affordable but accurate hardness testing solution for on-site testing in workshops and in field operations. The unit assures accurate and reliable measurement. All results and statistics can be directly printed on the built-in printer. Any metallic products with a minimum solid mass of 2kg can be tested according to the Leeb principle and directly converted to any common hardness scale. All test results appear immediately on the display, while you toggle between scales and conversions.

Features

- Test results appear directly on the large display
- According to ASTM and DIN standard
- Display scales HV, HB, HRC, HRB, HS and conversion to tensile strength
- Highly accurate readings $\pm 0.5\%$ at 800 HL
- Correction for impact direction 360 degrees
- Chargeable battery pack to ensure many hours of undisturbed testing and printing
- Direct keys for easy set up of testing parameters
- Thermal mini-printer installed on the main unit
- Ridged ABS anti-shock casing with sealed keypad
- Optional impact devices available on request



TECHNICAL SPECIFICATION

Hardness scales	HL, HRC, HRB, HV, HB, HS
Tensile strength U.T.S range (steel only)	b from 374 to 2652
Accuracy	Within $\pm 0.5\%$ at 800HL
Printer	Thermal printer showing all test results, settings and histogram
Statistics	Average value, min-max, upper-lower limits
Impact device	D (standard)
Optional impact devices	DC/D+15/DL/G/C/E
Workpiece max. hardness value	900HLD
Workpiece radius (convex/concave)	Rmin = 50mm (with support ring Rmin = 10mm)
Min. Workpiece weight	2-5kg on stable support 0.05-2kg with compact coupling
Workpiece min. case hardened depth	0.8mm
Power	Rechargeable Li battery, 6V (1pc)
Charger	6V, 500mA (1.8VA)
Charger time	2.5-4 hours
Operating temperature	0 to 40°C
Overall dimensions	235mm x 90mm x 47mm
Weight	615gr (including impact device and printer)

PORTABLE HARDNESS TESTER TH-110

Code No	Description
W-TH110	Dynamic Hardness Tester

Standard Delivery

- Main unit with impact device type D
- Printer (on top)
- Test block with HLD-value
- Charger
- Cleaning brush
- Coupling paste
- Table support for main unit
- Certificate
- Manual
- Plastic carrying case

Optional Accessories

- Special impact devices
- UKAS certified test blocks
- Support rings for convex and concave surfaces

Portable Magnetic Rockwell Tester - W-INMR/01

Magnetic base hardness tester designed according to the principle of Rockwell hardness testing.

Features

- The test head can be fixed to the surface of iron and steel components by magnetic force. Support to the test piece is not required as the 350kg+ magnetic base will hold the unit firmly in position
- The testing accuracy complies to ISO 6508 or ASTM E18 and is comparable to a Rockwell bench hardness tester
- Testing can be done regardless of the shape of the component as long as there is a flat surface for positioning of the magnetic base
- Able to test large-size workpieces which are assembled, unable to cut or inconvenient to move such as large-size moulds, steel plates, steel tubes, steel structures, pressure vessels, metallic pipe lines or the slide ways of machine tools

Optional Accessories

- Rockwell indenters
- Rockwell balls



TECHNICAL SPECIFICATION

Initial test force	10kg
Rockwell test force	60kg, 100kg or 150kg
Indenter	120° diamond cone 1.588mm carbide ball
Force applying method	By screw
Maximum magnetic force	>350kg
Test range	Rockwell hardness HRC, HRB, HRA etc. 15 scales
Resolution	Rockwell hardness 0.5HR
Accuracy	In accordance with ISO 6508
Minimum specimen size	60mm x 180mm
Net weight	4.9kg
Package gross weight	7.4kg

PORTABLE MAGNETIC ROCKWELL TESTER

Code No	Description
W-INMR/01	Rockwell Hardness Tester

Portable Brinell Hardness Tester

The HB1500 Portable Brinell Hardness Tester is designed following the Brinell hardness test method. The test force is controlled by a shear pin. After reading the diameter of the indentation with the reading microscope, the brinell hardness number can be obtained.

Features

- Solid framework
- Easy to operate
- Tolerance is controlled by a shear pin
- Three types of application: bench, C clamp and hammer impact
- Suitable for assemblies inconvenient to be taken to the lab and not allowed to be cut
- Accuracy is much higher than any other type hammer impact tester
- Used to test the hardness of forgings, castings, steels, nonferrous metal and its alloy products, and to test the hardness of annealed, normalizing and tempered mechanical parts

TECHNICAL SPECIFICATION

Test force	1580kg
Tolerance of test force	<0.5%
Accuracy	In accordance with ISO 6506
Indenter	Ø 7.26mm steel spherical surface indenter (range: 100-400HB) Ø 4.0mm carbide spherical surface indenter (Optional) (range: 400-650HB)
Net weight	C clamp: 4.2kg Hammer impact: 0.8kg Bench: 5.1kg

PORTABLE BRINELL HARDNESS TESTER

Code No	Description
W-HB1500	Brinell Hardness Tester



Webster Type Portable Hardness Tester

The WEBSTER Hardness Testers are portable instruments that can perform on-site hardness testing on aluminium alloys, brass, copper and soft steel. A quick and easy test, the hardness value can be read out directly from the indicator with a simple clamp. Suitable for testing aluminium alloy profiles, tubings and sheet materials. Especially suitable for fast, non destructive quality inspection on the production site.

Features

- One hand operation and portability
- Variety of anvils permits testing a great variance of shapes
- Simple operation permits readings independent of the operator's skill
- Test is made by simply applying pressure to the handles until "bottom" is felt
- Easy-to-read dial indicator with 20 graduations permits use of the tester as "go" and "no-go" gauge
- Standard hardness gauge tests materials up to 13mm in thickness



WEBSTER TYPE HARDNESS TESTER

Code No	Material	Hardness Scale	Thickness	Diameter (mm)
W-WH100	Aluminium alloy	25-110HRE 58-131HV	Max. 6	Min. 10
W-WH110	Aluminium alloy	25-110HRE 58-131HV	Max. 13	Min. 10
W-WH120	Aluminium alloy	25-110HRE 58-131HV	Max. 8	Min. 6
W-WH130	Brass in hard/half hard state super-hard Aluminium alloy	63-105HRF	Max. 6	Min. 10
W-WH140	Brass in hard/half hard state super-hard Aluminium alloy	63-105HRF	Max. 8	Min. 6
W-WH150	Soft Brass, pure Copper	18-100HRE	Max. 6	Min. 10
W-WH160	Soft Brass, pure Copper	18-100HRE	Max. 8	Min. 6
W-WH170	Cold-rolled steel sheet, stainless steel	48-100HRB	Max. 8	Min. 6

TECHNICAL SPECIFICATION

Measuring Scope	0-20HW
Accuracy	0.5HW
Net Weight	0.5kg
Package Gross Weight	1.55kg
Package Dimensions	330mm x 255mm x 150mm

Ultrasonic Portable Hardness Tester 'Ultramatic 2'

The ULTRAMATIC 2 is the next generation portable and laboratory use ultrasonic hardness tester. The instrument covers several new advanced features that can be selected from a menu-operated full colour display.

TECHNICAL SPECIFICATION

Measuring principle	UCI method (ultrasonic contact impedance principle)		
Standards	Conforms to DIN 50159, ASTM A 1038-05 and VDI/VDE directive 2616		
Indenter type	Vickers diamond (angle 136°)		
Measuring range	Vickers	HV	10-3000 (direct)
	Rockwell	HRC	20-68 (conversion)
	Brinell	HB	76-447 (conversion)
	UTS	N/mm ²	255-2180 (conversion)
Reproducibility	HV +/- 1%, HRC +/- 0.5, HB +/- 1%		
Test probes available	3N, 10N, 20N, 30N, 49N, 98N (30N standard)		
Display	Large backlit LCD, displays hardness HV, HRC, HB and UTS		
Calibration	20 preset calibrations for different materials (user definable)		
Memory	1000 readings, expandable to 30,000		
Statistics	Mean, min, max, std dev, Go-No-Go%		
Interface	Serial RS-232, RS-485 and parallel printer		
Power	Mains / rechargeable battery / shows continuous use		



PORTABLE HARDNESS TESTER - HV400

Code No	Description
W-HV400	UCI Vickers Portable Tester without probe
W-HV400/08	30N Probe (standard)
W-HV400/10	49N Probe
W-HV Guide	Guide Support

Standard Delivery

- Probe with one fixed load (30N as standard, others available)
- Charger 230V
- Certificate
- Manual
- Carrying case

Optional Accessories

- Probe SL type (slim nose)
 - Memory for 30,000 readings
 - Bench Stand TH-4S
 - Guide Support
- Call for full specification and accessory list.

Ultrasonic Portable Hardness Tester MET-U1A

Portable hardness tester for accurate testing on metals, plastics and ceramics.

Features

- Uses UCI principle of hardness testing
- Suitable for hardness testing of metals, plastics and ceramics
- Rockwell (HRC), Brinell (HB), Vickers (HV) and Shore (HSD)
- Leaves almost no visible indent on the tested article surface



PORTABLE HARDNESS TESTER - MET-U1A

Code No	Description
W-MET-U1A	Ultrasonic Portable Hardness Tester
W-MET-U1A/10	Stand for MET-U1A probe

Standard Delivery

- Main unit
- U1 ultrasonic probe
- Power unit
- Battery: NiMH, C size
- Carrying case
- Instruments certificate
- User and installation manual

Optional Accessories

- Hardness reference test blocks
- Precision holding fixture for probe
- Battery operated grinder
- Changeable headpiece to probe
- Probe stand

CV Shore Durometers - Analogue / Digital

These advanced Shore Scale Durometers provide fast easy-to-read instruments ideal for testing rubber, plastic, leather and all other soft materials. The gauges can be used in hand held mode or mounted onto a sturdy bench stand for improved accuracy and repeatability.

Features: Analogue

- Fast and easy to read
- Portable
- Hand-held operation or via optional bench stand
- Available in either Shore A or Shore D
- Supplied with a setting / reference block
- Supplied with UKAS calibration certificate



CV SHORE DUROMETERS - ANALOGUE / DIGITAL

Code No	Description
SHA0001	Analogue Shore 'A' Scale
SHD0002	Analogue Shore 'D' Scale
DSAS001	Digital 'A' Scale Durometer, Sylvac RS232 output
DSDS001	Digital 'D' Scale Durometer, Sylvac RS232 output
SHA0003	Shore 'A/D' Bench Stand

Features: Digital

- Testing rubber, plastic, leather and all other soft materials
- Fast and easy to read
- Large digital display, digits 6mm high
- Portable
- Use by hand or mounted on a stand
- Supplied with a reference block
- Data output for SPC
- Zero setting
- Preset - value input options
- Auto display off
- Electronic module protection to IP65, even with data output
- Can be used in conjunction with Shore bench stand
- Supplied with UKAS calibration certificate



TECHNICAL SPECIFICATION - DIGITAL

Scale	Shore A	Shore D
Resolution	0.1	0.1
Standards	Conforms to ASTM D2240 and ISO 868	Conforms to ASTM D2240 and ISO 868
Display Range	0-100	0-100
Pressure foot	Ø 18mm	Ø 18mm
Indentor	Blunt taper	Sharp point
Tip angle	35°	30°
Indentor diameter	1.25mm	1.25mm
Battery	Lithium 3V, CR2032	Lithium 3V, CR2032
Data output	RS-232 combined with external power supply	RS-232 combined with external power supply

Manufactured in accordance with specifications, ASTM D2240 and ISO 868. For all flexible materials i.e. rubber, leather, vinyl sheets, perspex and plastics using the Shore 'A' and 'D' Scales.

The bench stand is intended for use with 1Kg. loading for Shore 'A' scales and 5Kg. for Shore 'D' scales. Using the stand ensures a greater repeatability and better accuracy.

Surface Roughness Standards

Ideal for use in the drafting room, engineering department or small shop.

Features

- Made from solid electroformed nickel
- Markings in AA (microinches) and metric in Ra (micrometers)
- Each type of surface finish is truly and consistently reproduced to give the operator a realistic idea of the feel, appearance and texture of the machined component
- Conforms to S.A.E. and military specifications for visual and tactile inspection
- Set contains 30 Specimens, each 7/8" x 3/8"



SURFACE ROUGHNESS STANDARDS

Code No	Description
10-7524	3 Specimens Flat Lapping 2, 4 and 8 μ " AA 3 Specimens Reaming 16, 32 and 63 μ " AA 6 Specimens Grinding 2, 4, 8, 16, 32 and 63 μ " AA 6 Specimens Horizontal Milling 16, 32, 63, 125, 250 and 500 μ " AA 6 Specimens Vertical Milling 16, 32, 63, 125, 250 and 500 μ " AA 6 Specimens Turning 16, 32, 63, 125, 250 and 500 μ " AA

Moore & Wright Surface Roughness Tester - MTR110

The Surfmatic MTR110 is a pocket sized surface roughness measuring instrument ideally suited to rapid on-the-spot surface measurements. Conforms to ISO Class 3.

Features

- Back-light LCD
- Dynamic Test Display: progress of cut-off length during testing
- Li-ion rechargeable batteries
- Protection slide on pick-up
- Auto-off after 90 seconds
- Pocket-size and economically priced
- Both Ra and Rz parameters in one instrument
- Features external calibration specimen
- Large measuring range suitable for most materials
- Piezo-electric pick-up stylus for external surfaces
- Includes steel test piece
- Includes charger unit
- Measurements of shafts above 40mm diameter using the Vee groove in base



SURFACE ROUGHNESS TESTER

Code No	Description
MTR-110UK	Surface Roughness Tester

Please visit www.bowers.co.uk for full technical specification.

Surface Roughness Tester - R-135

Handheld surface roughness tester for external surfaces and grooves.

The R-135 is a portable, battery-powered instrument for checking surface roughness, with the measured values displayed on a digital readout display. The instrument can be used in laboratory, inspection area, workshop, or wherever on-site surface roughness testing is required.

Features

- Pocket-sized and economically priced!
- External and internal finish testing with swivable tracer
- Ra and Rz parameters in one instrument and all available after each individual test
- Standard 9V battery (not included)
- Three cut-off 0.25mm, 0.8mm and 2.5mm, adjustable to 1-3-5 times
- Piezo-electric pick-up stylus for external surfaces with diamond tip of 2 micron according to the latest ISO standards
- With data output



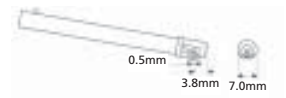
TECHNICAL SPECIFICATION

Measuring ranges	Ra-- 0.03 μ m ~ 6.35 μ m (1 μ "~250 μ "")
Rz-- 0.2 μ m ~ 25.3 μ m (8 μ "~999 μ "")	
Display resolution	0.01 μ m / 1 μ "
Cut-off	0.25mm / 0.001", 2RC filter, select 1-3-5 times 0.8mm / 0.03", 2RC filter, select 1-3-5 times 2.5mm / 0.01", 2RC filter, select 2 times
Display	3-digit LCD
Accuracy	Meets ISO and DIN standards
Probe Type	Piezoelectric
Maximum stylus force	15.0mN / 1500mgf
Stylus tip radius	Diamond, 2 micron
Power	9V alkaline battery (not included)
Battery capacity	Approx. 3000 measurements
Output	RS-232 to pc or printer (only IPX-104)

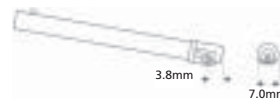
CV SURFACE ROUGHNESS TESTER

Code No	Description
W-R135	Surface Roughness Tester + RS-232 output
W-R130/3200	Stand for R-135
W-R130/4101	Data cable to PC or Printer

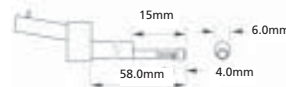
Parallel chisel probe for gauging sharp edges or small O.D., perpendicular for axis of traverse



Standard probe for most applications



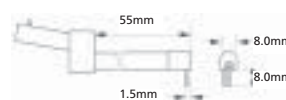
Small bore probe, minimum inside diameter 5.0mm, up to depth of 15.0mm



Transverse chisel probe for gauging sharp edges or small O.D., aligned to axis of traverse



Groove bottom probe for measuring the bottoms of O-ring grooves, recesses and holes up to 8.0mm depth



Standard Delivery

- Main unit
- Protection cover
- Roughness test plate Ra
- Carrying case
- Manual
- RS-232
- Certificate

Optional Accessories

- Tracers for special applications
- Stand for stable testing
- Mini-printer with cable
- Data cable to MS-Hyperterminal



CV Surface Roughness Tester - TR-200

The comprehensive, hand-held TR-200 represents the ideal multi-function solution for surface roughness testing. This compact gauge has a large measuring range, easy-to-read, backlit graphical and text display and is suitable for a wide variety of applications.



DataView PC Software

TECHNICAL SPECIFICATION

Roughness parameter	Ra, Rz, Ry, Rq, Rt, Rp, Rmax, Rv, Rs, Rsm, Rsk, Rmr
Assessed profiles	Primary profile (P), Roughness profile (R) Tp curve (material ratio Mr)
Profile recording magnification	Vv: 200x - 20000x Vh: 20x, 50x, 200x
Standard	Conforms ISO / DIN / JIS / ANSI (menu selectable)
Measuring system	Metric μm , imperial μinch
Display resolution	0.001 μm / 0.04 μinch
Display features	Detector stylus position indicator Battery level indicator, Direct printing, Direct display of parameters and profiles
Data output	RS-232 port
Measuring range	Ra, Rq : 0.0-40.0 μm Rz, Ry, Rp, Rt, R3z, : 0.02-160 μm Sm, S : 2-4000 μm Tp : 1-100% (% Ry)
Cut-off lengths	0.25mm / 0.8mm / 2.5mm
Evaluation length Ln	1-5 cut-off

Standard Delivery

- Certificate
- Main unit, Stylus TS100
- Protection nose piece
- Steel support for stand alone use
- Roughness test plate Ra
- Charger
- Carrying case

Optional Accessories

A large range of accessories are available including TA220 printer, pickups/ extensions, measuring platform, PC software.

CV SURFACE ROUGHNESS TESTER

Code No	Description
W-TR200	TR-200 Surface Roughness Tester
W-TA-220	Printer for TR200
W-TS-100	Tracer, standard
W-TS-110	Tracer, narrow skid, special
W-TS-120	Tracer, with skid, bores from 2mm
W-TSEA	Extension arm, 50mm x 10mm
W-TS-130	Tracer, deep grooves <3mm
W-TS-131	Tracer, deep grooves <10mm
W-TSEB	Extension arm, 90°, 70mm x 25mm
W-200/0320	DataView Software - Windows XP
W-200/0500	Granite platform TA610 without 'L' attachment
W-200/0510	'L' attachment for TR200

W-TS-100



W-TSEA



W-TSEB





Diavite DH8 High Precision Surface Roughness Meter



New high precision surface roughness meter for universal use in workshops and inspection rooms. VH model for use with probes with skids only. VHF model for use with probes with and without skids.

Features

- Automatic calibration
- Memory for 50 measurements
- 5 measuring lengths, all selectable between 0.5 and 15.0mm
- Selectable measuring speed
- Calibration for max. 8 tracers
- 8 measuring programs
- Choice of many types of tracers to solve nearly all measuring tasks, also customer specific ones
- User friendly comprehensive multilingual menu guidance
- Tolerance indication for measuring values exceeding permissible allowance set
- Key lock for It, Ic and R to prevent any settings being changed by mistake during measuring procedure
- USB output for data transfer (Option: Bluetooth)
- Choice of capable software programmes DIASOFT (optional)
- Numerous accessories for many applications, needed for working with skid less tracers
- Rechargeable battery for mobile applications



DIAVITE DH8 HIGH PRECISION SURFACE ROUGHNESS METER

Code No	Description
13-3053	Diavite DH8 Surface finish tester VH
13-3051	Diavite DH8 Surface finish tester VHF
13-3074	Stand with alu base
13-3074HG	Stand with black granite base
13-3052/A	Motor nose piece clamp
13-3030	Extension - 100mm

Diavite Tracers

The flexible application of a surface roughness meter can be reached using a Diavite tracer, of which there are several to choose from. For DH-8 and COMPACT II, 17 different tracers are available, and thanks to the integrated reference flat in the VHF traversing unit, very precise measurements are no longer a problem - even using skid-less tracers.



TRACER WITH SKID

Standard tracer

SH
Smallest bore: \varnothing 8mm
Max. measuring depth: 27mm
Included in the delivery



13-3022

Slot tracer

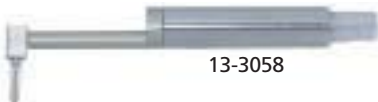
NH
Max. depth of slot: 15mm and 20mm
Min. width of slot: 3mm



13-3025

Concave-convex tracer

KKH
For measuring concave and convex work pieces having a minimum radius of 5mm. Also irregular curves can be measured. Use minimum cut-off and length of traverse.



13-3058

Bore tracer

BH
Smallest bore: \varnothing 2.5mm
Max. measuring depth: 20mm



13-3056

Axis and knives tracer

AH
For measuring small axis, knives, edges and wires.



13-3054

Gear tooth flanks tracer

ZH
Tracer with skid for tooth flanks up to module 2.



13-3028

TRACER WITH SKID CONTINUATION

Transversal tracer

QH
For use in slots and for crank shaft.



13-3023

Transversal tracer

QKKH
For measuring radially slots in bores and tubes.



13-3024

Circumference and ball tracer

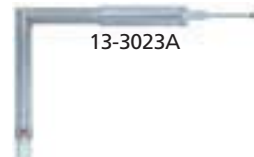
UH
Minimum possible diameter \varnothing 8mm.



13-3027

Transversal tracer

QBH
For measuring radially in bores and tubes.



13-3023A

Basis tracer

TH
For measuring of deep level flats till 140mm.



13-3066

SKIDLESS TRACER

Bore tracer

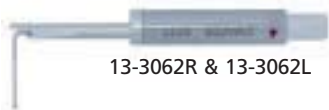
BZFH
Smallest bore: \varnothing 1.5mm
Max. measuring depth: 15mm
Gear tooth flanks: from module 0.75



13-3060

Transversal tracer

WFH
For measuring slots inside of flanks.



13-3062R & 13-3062L

Slot tracer

NFH
Max. depth of slot: 25mm
Min. width of slot: 1.5mm



13-3068

Small bore tracer

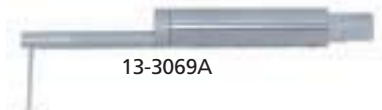
BZFH-06
Smallest bore: \varnothing 0.8mm
Max. measuring depth: 15mm
Gear tooth flanks: from module 0.5



13-3067

Slot tracer

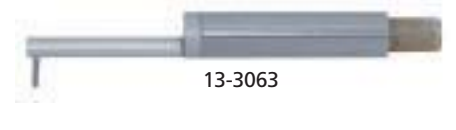
NFH-06
Max. depth of slot: 10mm
Min. width of slot: 1.0mm



13-3069A

Axis and knives tracer

AFH
For measuring small axis, knives, edges and wires.



13-3063

Diavite Accessories & Applications

13-3074



13-3074HG

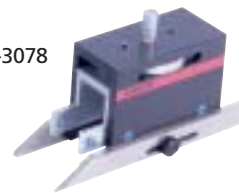


Measuring support with alu- or granite base plate and column 250mm or 500mm high.

"Tubemaster" for measuring the roughness radially at the inner and outer circumference of tubes and cylindrical parts.



13-3078



13-3077

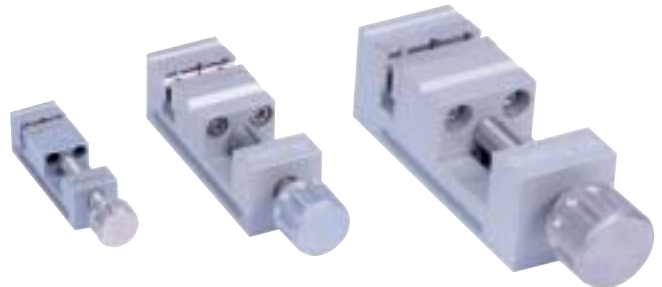


Adapter for measurements with skid less tracers on big work pieces.

Cross table 70 x 70mm for vices.



Vices with jaws width 15mm, 25mm and 35mm.



Various small supports.



Various metal or glass specimen.



13-3034

Device for the manual measurement of crank shafts (without tracer and motor unit).



To extend the tracers for deep bores (up to 700mm), (standard 100mm).



13-3030

CV Ultrasonic Thickness Gauge - TT-100 Series

The TT series represents a range of quality, hand-held, ultrasonic gauges for accurate measurement of wall thickness of a variety of materials, displaying results on a clear digital display. Suitable for metals, glass and plastics.

Features

- Easy to operate ultrasonic wall thickness gauge
- Standard 5 MHz transducer included, special purpose types available
- Clear 4-Digit LCD display
- Retention of last 10 readings



TECHNICAL SPECIFICATION

Four models:	TT-100, TT-110, TT-120, TT-130
Measuring range	4.0-80.00mm with ZW5P transducer (TT-120)
Measuring range (in steel)	1.2-225.0mm with 5MHz transducer (TT-100, TT-110, TT-130)
Measuring restriction	Minimum 3mm thickness, 20mm dia
Transducer frequency	Standard 5 MHz, diameter probe 10mm
Display resolution	0.1mm (0.01mm for model TT-130)
Measuring accuracy	+/- 0.1mm (+/- 0.02mm for model TT-130)
Measuring units	mm
Sound velocity range	1000-9999m/s (5900m/s for TT-110, steel only)
Working temperature	All standard -15°C to + 150°C, Model TT120 up to 300/4C max

Applications:

TT-100 for metal, glass, plastics etc (Standard model)
TT-110 for steel thickness only
TT-120 for high temperature steel (Up to 300°C)
TT-130 for metals, glass, plastics etc, 0.01mm resolution

ULTRASONIC THICKNESS GAUGE - TT-100

Code No	Description
W-TT100	Universal / 0.1mm reading / incl. transducers (5MHz)
W-TT110	Steel only / 0.1mm reading / incl. transducers (5MHz)
W-TT120	High temp., reading 0.1mm / incl. special transducer
W-TT130	Universal / 0.01mm reading / incl. transducer (5MHz)

Standard Delivery

- Transducer 5MHz
- Transducer ZW5P (TT-120)
- Integrated steel calibration plate 4.0mm
- Ultrasonic couplant
- Operation manual
- Carrying case

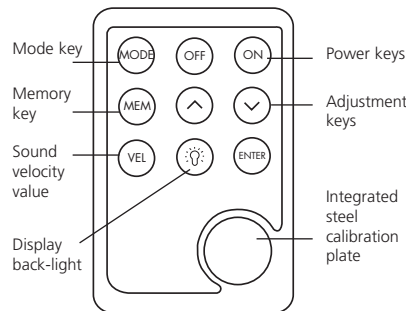
CV Ultrasonic Thickness Gauge - TT-300 Series

Handheld gauge with external transducer series for metals, glass and plastics.



Features

- Four models available
- Easy to operate ultrasonic wall thickness gauge for metals, glass, plastics
- Display resolution menu selectable
- Automatic zero setting
- Two-point calibration possible
- LCD display with back-light
- Min. mode for minimum thickness measurement
- Mm/inch selectable
- Data output RS-232
- Large internal memory for 500 readings
- Including protection case, couplant and carrying case



TECHNICAL SPECIFICATION

Measuring range	1.2-225.0mm (steel) with 5MHz transducer 5.0-80.0mm (steel-high temp (300°C)) 5MHz transducer 5.0-40.0mm (cast iron) 2MHz probe
Transducer frequency	Standard 5 MHz, diameter probe 10mm
Display resolution	Menu selectable, low 0.1mm, high 0.01mm
Measurement accuracy	0.75-9.99mm: ±0.05mm 10-99.99mm: (0.5%H+0.01)mm 100mm - 300mm: (1%H+0.1)mm
Measuring units	mm/inch selectable
Sound velocity range	1000-9999m/s
Display	LCD with back-light
Display Min. mode	Display current thickness or minimum thickness (menu selectable)
Alarm function	Minimum / Maximum limits exceeding alarm
Calibration setting	Automatic zero setting, two-point calibration possible
Data output	RS-232 serial port, Baud rate selectable to printer or pc
Memory	Storage of 500 thickness readings
Surface temperature	Standard -10°C to +60°C (high temperature see TT-320)
Battery indicator	Low battery indicator
Power supply	2 pcs AA batteries 1.5V
Operation time	With back-light 60 hours continuously Without back-light 100 hours continuously
Dimensions	152 x 74 x 35mm
Weight	370g



Standard Delivery

- Main unit
- Integrated steel calibration plate
- Transducer 5MHz
- Transducer ZW5P (TT-320)
- Batteries AA 1.5V (2 pcs)
- Ultrasonic couplant
- Manual
- Certificate
- Carrying case

Optional Accessories

- Transducers for special applications
- TA-220 printer with cable
- Software Dataview TT-300



ULTRASONIC THICKNESS GAUGE - TT-300

Code No	Description
W-TT300	Universal, 0.01mm resolution, 5MHz probe (std)
W-TT310	Universal, 0.10mm resolution, 5MHz
W-TT320	High temperature version, (300°C) 5MHz probe
W-TT340	Castings version, 2MHz probe

Coating Thickness Gauge - TT-210

RS232

Features

- Easy to use
- Integrated probe FN
- Automatic substrate recognition
- Automatic calculation: Mean/Max/Min/No./S.Dev
- Upper-lower limit setting and sound alarm
- Data output RS-232 to printer TA-220S or PC
- Storage function for 500 measuring results
- Measurement modes: continuous/single
- Battery operated



TECHNICAL SPECIFICATION

Operating principle	Magnetic induction/eddy current
Measurement range	0µm to 1250µm
Measuring system	Selectable mm/inch
Minimum resolution	0.1µm (coating thickness <100µm)
Measuring accuracy	F: $\pm(3\%H+1\mu\text{m})$ N: $\pm(3\%H+1.5\mu\text{m})$ H = nominal value
Statistics	Average (MEAN), MAX., MIN., number of measurements (NO.), standard deviation (S.Dev)
Power supply	Battery AAA 1.5V (2 pcs)
Display	LCD with back-light
Dimensions	110mm x 50mm x 23mm
Weight	100gr

COATING THICKNESS GAUGE - TT-210 SERIES

Code No	Description
W-TT210	Handheld gauge with integrated FN probe

Standard Delivery

- Calibration foil set
- AAA 1.5V battery (2 pcs)
- Manual
- Certificate
- Carrying case

Optional Accessories

- Printer TA-220S with cable

Coating Thickness Gauge TT-270 Series

The measuring methods of the TT-270 are magnetic induction (F) and eddy current (N). When a F series probe is connected, the unit measures non-magnetic coating on ferro substrates, when a N series probe is connected, the unit measures non-conductive coating on non-ferro substrates.

Features

- Several types of probes are available for various applications: F400, F1, F1/90, F10, N1, CN02
- Measurement modes: continuous / single
- Automatic calculation: Mean values / Max. values / Min. values / No. of test, S.Dev.
- Memory for maximum 640 readings
- Working modes: direct mode (DIRECT) and Batch mode (APPL)
- With backlight display
- Integrated printer
- Battery low indication
- Switch off modes: manual and auto



TECHNICAL SPECIFICATION

Measuring range	Refer to table below
Probes available	F400, F1, F1/90, F10, N1, CN02
Tolerance	Refer to table below
Minimum resolution	Refer to table below
Measuring conditions	Refer to table below
Operation language	English
Standards	DIN, ISO, ASTM, BS
Min. measuring area	Ø5mm (standard probe N1), Ø7mm (standard probe F1)
Calibration	Zero and foil calibration
Statistics	Maximum and minimum, mean, standard deviation of 3000 readings, number of measurements
Data memory	640 readings
Limits	Min-max with alarm
Interface	RS-232
Operating temperature	-5°C-40°C
Humidity	20%~90%
Power supply	NiMH rechargeable batteries, 1.25V
Dimensions	230mm x 86mm x 47mm
Weight	530g

Standard Delivery

- Controller unit & integrated printer
- Probe F1 or N1
- Charger
- Substrate & calibration foil set
- Printer paper
- Manual
- Quality certificate

Optional Accessories

- Various probes for different applications

PROBE MODEL

	F400	F1	F1/90°	F10	N1	CN02
Operating principle	Magnetic induction	Magnetic induction	Magnetic induction	Magnetic induction	Eddy current	Eddy current
Measuring range (µm)	0-400	0-1250	0-10000 10-200 (for chrome plate on copper)	0-1250	0-40	
Low range resolution (µm)	0.1	0.1	0.1	10	0.1	1
Accuracy One-point calibration (µm)	±(3%H+1)	±(3%H+1)	±(3%H+1)	±(3%H+10)	±(3%H+1.5)	±(3%H+1)
Accuracy Two-point calibration (µm)	±[(1~3)H%+0.7]	±[(1~3)H%+1]	±[(1~3)H%+1]	±[(1~3)H%+10]	±[(1~3)H%+1.5]	-
Measuring conditions	Convex 1	1.5	Flatten	10	3	Flatten
Min curvature of the min area (mm)						
Min diameter of the area (mm)	Ø 3	Ø 7	Ø 7	Ø 40	Ø 5	Ø 7
Critical thickness of substrate (mm)	0.2	0.5	0.5	2	0.3	unlimited

COATING THICKNESS GAUGE - TT-270 SERIES

Code No	Description
W-TT270F	Coating thickness gauge with integrated printer and F1 probe
W-TT270N	Coating thickness gauge with integrated printer and N1 probe
W-TT270FN	Coating thickness gauge with integrated printer and FN probe

Ultrasonic Thickness Gauge TT-500

The new handheld TT-500 Ultrasonic Wall Thickness Gauge offers the ability to measure the wall thickness through paint and eliminate coatings. It assures accurate measuring of wall thickness and the extent of corrosion of all metals from the outside.

Features

- A-Scan display for waveform verification
- Wide thickness range (0.75-508mm)
- Echo-echo mode to determine the distance excluding the coating between two echoes
- Min. and Max. mode
- Two Differential modes:
 - Thickness difference between actual measuring and reference value
 - % difference between actual measuring and reference value
- Manual gain adjustment/auto gain selectable
- Large backlit LCD display



TECHNICAL SPECIFICATION

Measuring range	0.75mm - 508.00mm
Sound speed	1000m/s - 9999m/s
Scanning mode	A scan
Gain range	20db - 70db step: 1db
Rectification	Positive half wave, negative wave, full wave, and RF
Testing mode	Standard mode: testing from primary pulse to the first echo. Testing between two echoes
Resolution	Standard: 0.01 low: 0.1
Memory	100 A scan graphs and 10000 thickness values in 100 groups
Communication	RS-232 port to PC or printer
Tolerance (steel)	A) When the selected resolution is 0.01mm and the thickness is $H < 10\text{mm}$, the tolerance is = 0.05mm maximum B) When the resolution is 0.01mm and the thickness $H > 10\text{mm}$, the tolerance is = (0.5% H 0.01mm) maximum C) When the resolution is 0.1mm the tolerance is = (1% H 0.1mm) maximum
Pulse frequency	1KHz
Protection Class	IP54

ULTRASONIC THICKNESS GAUGE TT-500

Code No	Description
W-TT-500	TT-500 Coating wall thickness gauge

Multi-Functional Digital Force Gauge

With integrated load cell and external load cell.

Features

- High accuracy +/- 0.5% of full scale
- Peak hold function
- Tolerance setting
- Calculation of average values
- Lbf, kgf and Newton units
- RS232 digital output
- Clear LCD display showing all functions and parameters
- Supplied with standard accessories and software
- Optional stands available



13-03650



13-03652



TECHNICAL SPECIFICATION

Measurement unit	Lbf, kgf or Newtons
Accuracy	+/-0.5% of full scale
Resolution	Depending on range, see table below
Output	RS232
Memory	10 readings to calculate average
Power	Rechargeable Ni-Hi batteries
Battery life	20 hours of use
Operating temperature	20°C +/- 10°C
Dimensions	225mm x 65mm x 35mm
Weight of main unit	650g

DIGITAL PUSH-PULL FORCE GAUGE

Code No	Description	Maximum Scale Newtons	Minimum Scale Newtons
13-03611	SH-2	2	0.001
13-03612	SH-5	5	0.001
13-03613	SH-10	10	0.005
13-03614	SH-20	20	0.01
13-03615	SH-50	50	0.01
13-03616	SH-100	100	0.05
13-03617	SH-200	200	0.1
13-03618	SH-500	500	0.1
13-03650	Stand (Mechanical)		
13-03652	Stand (Motorised)		

STANDS SPECIFICATION

13-03650	
Dimension	152x233x425 (LxWxH)
Weight	10.6Kg
Capacity	500N
Stroke	70mm

13-03652	
Dimension	245x430x570 (LxWxH)
Weight	24.2Kg
Test speed: 50-245mm/min	Capacity: 200N
Test speed: 200-500mm/min	Capacity: 500N
Stroke	250mm
Accuracy of speed	10%
Resolution of speed	5 mm/min
Max Cycle Times	9999

Standard Delivery

- Main unit
- AC adaptor
- 5 measuring tips
- 4 M3 x 8 mounting screws
- CD-ROM with PC software
- Extension shaft
- Inspex certificate
- Instruction manual

Optional Accessories

- Various stands
- UKAS calibration certificate
- RS232 serial cable

Baty R14 - Profile Projector

The Baty R14 bench mount profile projector with its 340mm screen combines high accuracy non-contact measurement and inspection with a large 175mm x 100mm measuring range.

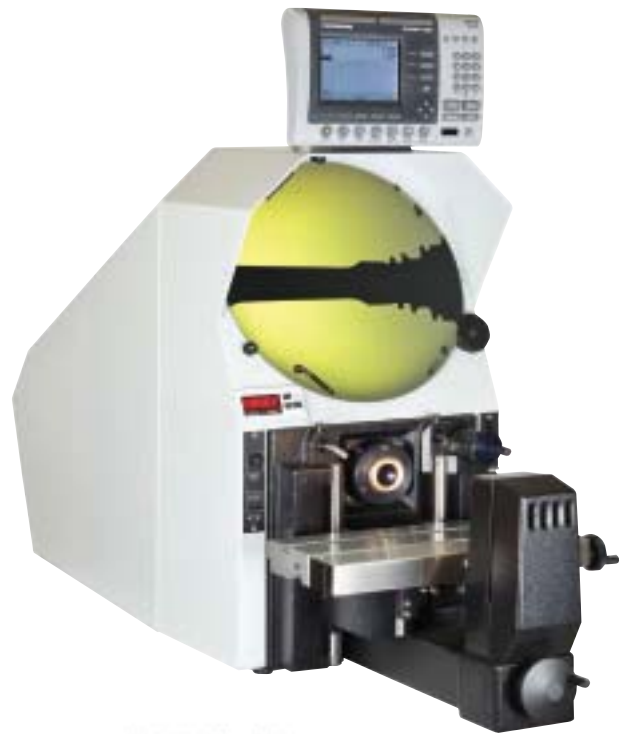
Choice of digital readouts and optional automatic profile edge detection. The horizontal light path configuration is ideally suited to machined parts that can be secured to the workstage using a range of optional accessories from the Baty fixture family. The compact and robust lightweight chassis makes the R14 ideal for workshop environments.

Features

- 340mm (14") screen with 90° crosslines and chart clips
- Profile illumination with halogen lamp and green filter
- Lens magnification choice: x10, x20, x25, x50 and x100
- Surface illumination (fibre optic)
- Helix adjustment of light source $\pm 7^\circ$ for accurate thread form projection
- Workstage with machined slot for holding accessories
- Workstage measuring range of 175mm (7") x 100mm (4")
- Digital angle measurement to 1 minute

Available Options

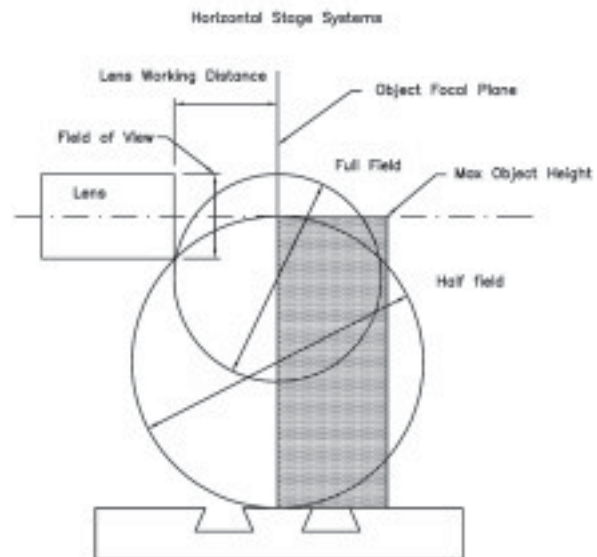
- Internally fitted automatic edge sensor (illustrated)
- Swing over lamphouse to allow clear access to the workstage
- Various electronic measuring systems to suit individual requirements
- Cabinet stand ensures a solid base and provides storage
- Other options include foot switch control and printer



Projector Type	R14					
Magnification	10x	20x	25x	50x	100x	
Field of view	35	18	14	7	4	
Working Distance	82	38	24	15	31	
Maximum	half field	103	103	80	45	96
Working Diameter	full field	120	109	56	31	77

LENS SYSTEMS

Code No	Description
122-600	Lens system - magnification 10x
122-601	Lens system - magnification 20x
122-602	Lens system - magnification 25x
122-603	Lens system - magnification 50x
122-604	Lens system - magnification 100x



BATY R14

Code No	Description	Magnification	Functions
R14-XLS	Horizontal projector with QC100 two axis digital readout	10x lens	Basic X Y readout with inch / mm conversion
R14-GXL	Horizontal projector with QC200 geometric readout	10x lens	As XLS with Geometric Measurement functions and tolerancing
R14-FT2	Horizontal projector with Fusion 2D Touchscreen DRO	10x lens	Windows Touch Screen SW with full reporting
R14-FT2-E	Horizontal projector with Fusion 2D Touchscreen DRO & optical edge detection	10x lens	As FT2 with optical edge detection

For more information contact sales@baty.co.uk or visit www.baty.co.uk

Baty R400 - Profile Projector

The Baty R400 bench mount profile projector with its 400mm screen combines high accuracy non-contact measurement and inspection with a large 300mm x 150mm measuring range.

Choice of digital readouts and automatic profile edge detection. The horizontal light path configuration is ideal for checking machined components that can be secured to the workstage using a range of optional accessories from the Baty fixture family. The robust design of the R400 makes it suitable for both the shop floor and standards room.

Features

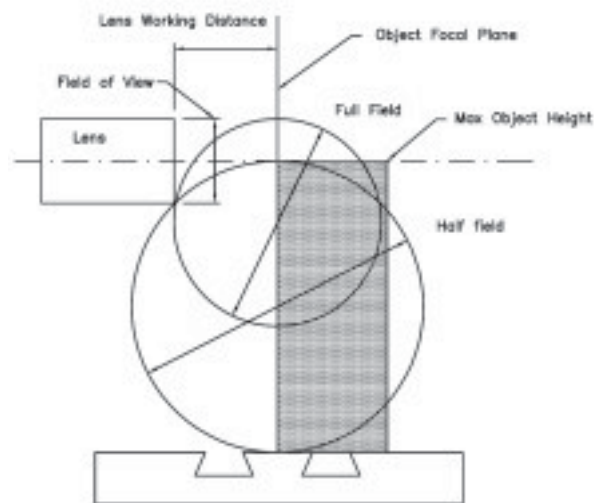
- 400mm (16") screen with 90° crosslines and chart clips
- Profile illumination with halogen lamp and green filter
- Lens magnification choice: x10, x20, x25, x50 and x100
- Surface illumination (fibre optic)
- Helix adjustment of light source for accurate thread form projection
- Workstage with two machined slots for holding accessories
- Workstage measuring range of 300mm (12") x 150mm (6")
- Digital angle measurement

Available Options

- Internally fitted automatic edge sensor (FT2-E model only)
- Swing over lamphouse to allow clear access to the workstage
- Various electronic measuring systems to suit individual requirements
- Cabinet stand ensures a solid base and provides storage
- Computer numerical control (CNC) for automated measuring
- Other options include foot switch control



Horizontal Stage Systems



Projector Type	R400				
Magnification	10x	20x	25x	50x	100x
Field of view	40	20	16	8	4
Working Distance	80	82	70	53	43
Maximum	184	185	185	185	143
Working Diameter	179	176	181	147	122

all dimensions in mm

LENS SYSTEMS

Code No	Description
RH400-087	Lens system - magnification 10x
RH400-088	Lens system - magnification 20x
RH400-089	Lens system - magnification 25x
RH400-090	Lens system - magnification 50x
RH400-091	Lens system - magnification 100x

BATY R400

Code No	Description	Magnification	Functions
R400-XLS	Horizontal projector with QC100 two axis digital readout	10x lens	Basic XY readout with inch / mm conversion
R400-GXL	Horizontal projector with QC200 geometric readout	10x lens	As XLS with Geometric Measurement functions and tolerancing
R400-FT2	Horizontal projector with Fusion 2D Touchscreen DRO	10x lens	Windows Touch Screen SW with full reporting
R400-FT2-E	Horizontal projector with Fusion 2D Touchscreen DRO & optical edge detection	10x lens	As FT2 with optical edge detection

For more information contact sales@baty.co.uk or visit www.baty.co.uk

Baty R600 - Profile Projector

The Baty R600 with its 600mm (24") screen and high specification, presents the capability to make simple comparative non-contact measurement through to complex CNC programmed measuring sequences with SPC capability.

The horizontal light beam configuration is ideally suited to large machined or turned workpieces for mounting in vee blocks and centres, or customised features.

Features

- 600mm (24") screen with 90° cross lines and chart clips
- Heavy duty workstage with 450mm x 200mm (18" x 8") measuring range and 2 machine slots for workpiece holders
- Angular rotation of $\pm 15^\circ$ on workstage for measuring threadforms or cutting tools
- Vertical 200mm (8") Y axis power driven with joystick control
- Lens magnification choice - x5, x10, x20, x25, x50, x100
- 4 position rotating lens turret for ease of lens changing
- Profile illumination with halogen lamp and green filter
- Screen hood and curtains for use in bright ambient light conditions
- Digital angle measurement

Available Options

- Horizontal axis motorisation via joystick control
- CNC workstage for automatic measuring
- Internally fitted automatic edge sensor to allow the use of overlay charts on an unobstructed screen (FT2-E model only)
- Various electronic measuring systems to suit your individual requirements
- SPC to add to your quality control without the purchase of a separate system



Projector Type	R600					
Magnification	5x	10x	20x	25x	50x	100x
Field of view	120 (4.72)	60 (2.36)	30 (1.18)	24 (.94)	12 (.47)	6 (1.72)
Working Distance	245 (9.64)	135 (5.31)	132 (5.19)	106 (4.17)	93 (3.15)	50 (1.96)
Maximum	292 (9.64)	343 (13.50)	343 (13.50)	343 (13.50)	343 (13.50)	195 (7.75)
Working Diameter	406 (18.98)	343 (13.50)	343 (13.50)	343 (13.50)	343 (13.50)	235 (9.25)

all dimensions in mm / (inches)

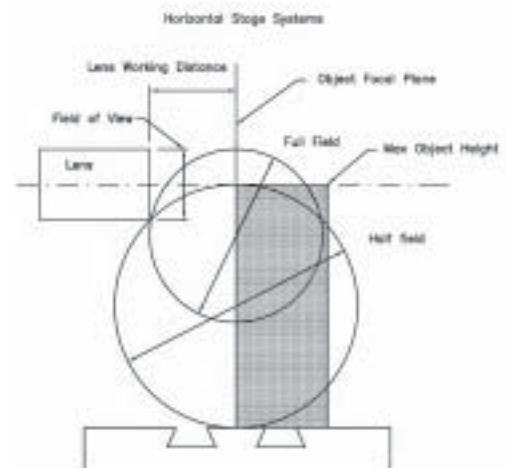
LENS SYSTEMS

Code No	Description
54-650	Lens system - magnification 10x
202-1852	Lens system - magnification 20x
202-1853	Lens system - magnification 25x
202-1854	Lens system - magnification 50x
202-1855	Lens system - magnification 100x

BATY R600

Code No	Description	Magnification	Functions
R600-XLS	Horizontal projector with QC100 two axis digital readout	10x lens	Basic X Y readout with inch / mm conversion
R600-GXL	Horizontal projector with QC200 geometric readout	10x lens	As XLS with Geometric Measurement functions and tolerancing
R600-FT2	Horizontal projector with Fusion 2D Touchscreen DRO	10x lens	Windows Touch Screen SW with full reporting
R600-FT2-E	Horizontal projector with Fusion 2D Touchscreen DRO & optical edge detection	10x lens	As FT2 with optical edge detection

For more information contact sales@baty.co.uk or visit www.baty.co.uk





Baty SM300 - Profile Projector

300mm screen vertical light path projector with multi-function readout unit, printer and data output.

Robust design with full geometric measuring functionality ideal for the shop floor.

Features

- Top quality profile projector highly versatile and easy to operate
- Large travel range 150mm x 50mm (6" x 2") as standard
- Linear scale stage with 0.001mm resolution
- Fine ground glass screen for clear image with cross hairs
- Screen complete with cross hair lines and chart clips
- Built-in profile and surface illumination
- 10x, 20x, 50x, 100x projection lenses available
- Data output via RS-232 interface
- Display-readout unit DC300 included in standard delivery

Available Options

- Projection lens 10x with half reflecting mirror
- Projection lens 20x with half reflecting mirror
- Projection lens 50x with half reflecting mirror
- Projection lens 100x with half reflecting mirror
- Rotary table 360°
- Swivel centre support
- Holder with clamp
- V-block with clamp
- Overlay charts



	Projection capacity (unit mm)			
	10x	20x	50x	100x
Magnification	10x	20x	50x	100x
View field diameter	30	15	6	3
Working distance W	77.7	44.3	24.5	25.3
Max workpiece height H	80	80	80	80
Max workpiece diameter, edge line can be focused on screen centre D	160	130	55	60

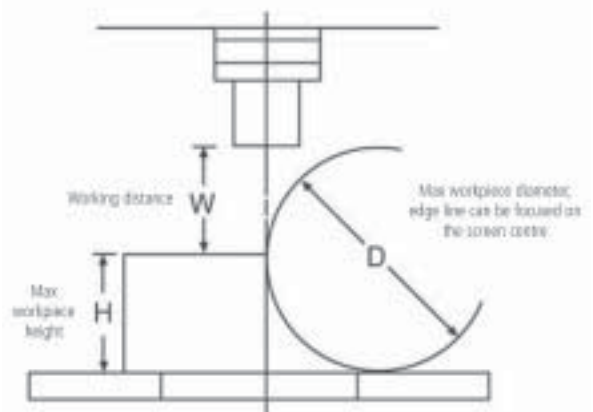
LENS SYSTEMS

Code No	Description
SM300-10X	Lens system - magnification 10x
SM300-20X	Lens system - magnification 20x
SM300-50X	Lens system - magnification 50x
SM300-100X	Lens system - magnification 100x

BATY SM300

Code No	Description
SM300	Vertical projector with Geometric Readout

For more information contact sales@baty.co.uk or visit www.baty.co.uk



Baty SM350 - Profile Projector

The SM350 is an all new design. This vertical 14" / 350mm screen bench projector features an option where the focus axis can also be used as a 3rd measurement axis. This enables Z axis height measurements to be taken using a touch trigger probe. Another new feature is the option of a three lens turret for instant lens changes without re-calibration.

Features

- Fully usable 340mm screen
- Digital screen protractor
- Built in helix adjustment
- Sturdy all-steel design
- Cross roller bearings
- Quick release 'X' and 'Y' travel
- Erect image
- Easy-view vertical screen
- Large stage travel 10" (250mm) x 5" (125mm)
- Rotating chart clips
- Fibre optic illumination for surface measurement

Available Options

- Automated measurement system with joystick control
- Automatic edge sensing (FT2-E model only)
- Motorised focus axis
- Heavy duty cabinet
- Touch trigger probe for fast Z axis measurement
- 3-Position turret

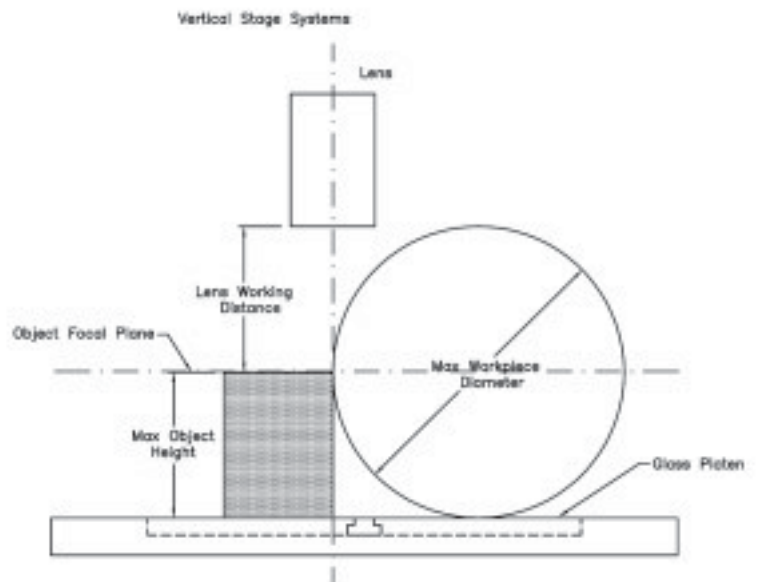


Projector Type	SM350					
Magnification	10x	20x	25x	50x	100x	
Field of view	35	17	14	7	3	
Working Distance	84	37	29	17	41	
Maximum	half field	220	162	52	51	140
Working Diameter	full field	171	130	75	37	97
Maximum Height Object		114	113	106	111	103

all dimensions in mm

LENS SYSTEMS

Code No	Description
122-600	Lens system - magnification 10x
122-601	Lens system - magnification 20x
122-602	Lens system - magnification 25x
122-603	Lens system - magnification 50x
122-604	Lens system - magnification 100x



BATY SM350

Code No	Description	Magnification	Functions
SM350-XLS	Vertical projector with QC100 two axis digital readout	10x lens	Basic XY readout with inch / mm conversion
SM350-GXL	Vertical projector with QC200 Geometric Readout	10x lens	As XLS with Geometric Measurement functions and tolerancing
SM350-FT2	Vertical projector with Fusion 2D Touchscreen DRO	10x lens	Windows Touch Screen SW with full reporting
SM350-FT2-E	Vertical projector with Fusion 2D Touchscreen DRO & optical edge detection	10x lens	As FT2 with optical edge detection

For more information contact sales@baty.co.uk or visit www.baty.co.uk



Baty SM20 - Profile Projector

The Baty Shadomaster SM20 with its 500mm screen and high specification presents the capability to make simple comparative measurements through to complex results storage and tolerancing with SPC capability.

The vertical light beam configuration is ideally suited for workpieces which are more readily mounted flat or horizontally.

Features

- 500mm screen with 90 degree crosslines and chart clips
- Angled screen for easy viewing
- Profile illumination with halogen lamp and green filter
- Single lens mounting
- Lens magnification choice: x5, x10, x20, x25, x50 and x100
- Helix adjustment of light source for accurate thread form projection
- Large stage travel 10" (250mm) x 5" (125mm)
- Digital angle measurement

Available Options

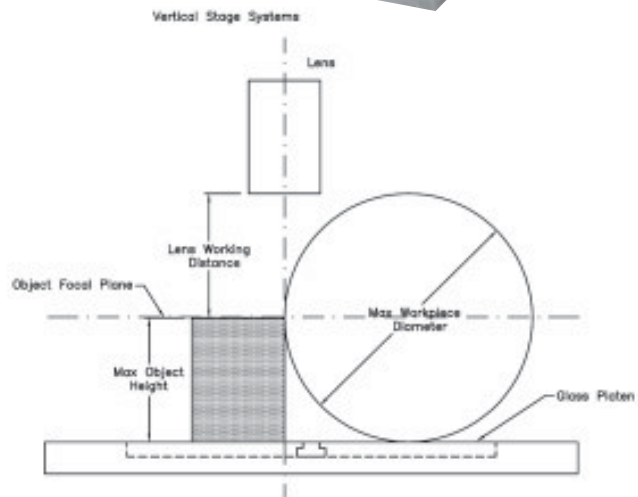
- Screen hood and curtains with generous proportions for use in bright ambient light conditions
- Automatic edge sensing
- Surface illumination through twin fibre optics for bright full colour surface inspection
- 3 position lens turret for easy lens changing
- Various electronic measurement systems to suit your individual requirements
- SPC to add to your quality control without the purchase of a separate system



Projector Type	SM20					
Magnification	x10	x20	x25X	x25	x50	x100
Condenser	L	L	L	S	S	S
Field of view	50	25	20	20	10	5
Max diameter	200	200	200	200	180	85
Max focal pane height (profile lighting)	205	203	218	254	240	195
Max end mill height (surface lighting)	150	153	153	155	150	150

LENS SYSTEMS

Code No	Description
S4-650	Lens system - magnification 10x
202-1852	Lens system - magnification 20x
202-1853	Lens system - magnification 25x
202-1854	Lens system - magnification 50x
202-1855	Lens system - magnification 100x



BATY SM20

Code No	Description	Magnification	Functions
SM20-XLS	Vertical projector with QC100 two axis digital readout	10x lens	Basic X Y readout with inch / mm conversion
SM20-GXL	Vertical projector with QC200 Geometric Readout	10x lens	As XLS with Geometric Measurement functions and tolerancing
SM20-FT2	Vertical projector with Fusion 2D Touchscreen DRO	10x lens	Windows Touch Screen SW with full reporting
SM20-FT2-E	Vertical projector with Fusion 2D Touchscreen DRO & optical edge detection	10x lens	As FT2 with optical edge detection

For more information contact sales@baty.co.uk or visit www.baty.co.uk

Baty Readout Options

The readout options from Baty include a fully programmable unit with geometrical functions and a software module allowing direct connection to a PC. All units are fully compatible allowing upgrades as required.

XLS Readout

- A simple two axis digital readout for point to point X,Y or R,A measurements
- Absolute or incremental mode with Inch / metric conversion, Zero, preset and print functions. RS-232C serial and parallel ports. Footswitch compatible



GXL Readout

- Graphical display of measured feature
- Radius, angle, line, point, skew
- Inch, metric, polar, cart
- Data output to PC/printer
- Store inspection routines to prompt operator
- Tolerancing
- Multi-language menu
- On-screen help

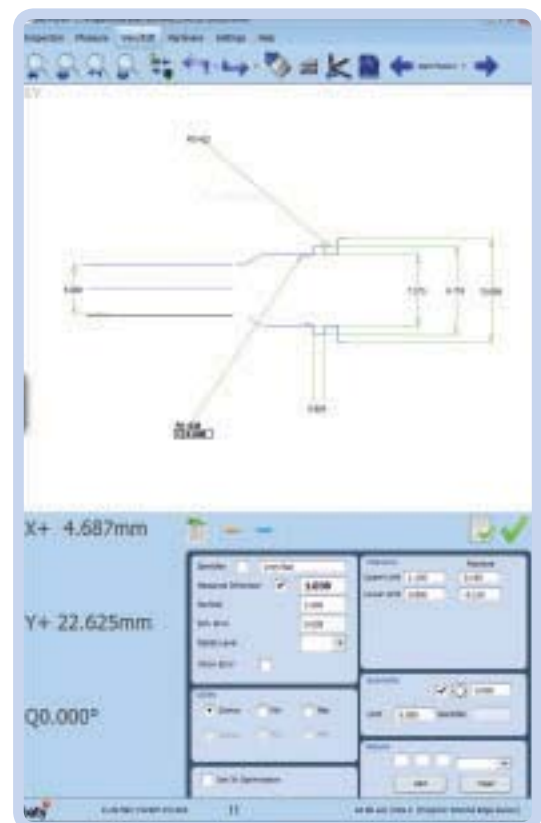


Fusion Touch Readout

FT2: Complete TOUCH SCREEN DRO with 2D Fusion Touch software for projectors with full geometric functionality. Graphical view of measured part can be printed as a fully dimensioned drawing with geometric tolerances. Other graphics include form error and SPC charts. Full reporting capability includes tabulated details with pass / fail analysis, auto link to Excel and auto sequence programming feature. SPC and best fitting to dxf (overlay). Windows O/S and built in 19" portrait touch screen monitor in a rugged all steel housing.

FT2-E: Complete TOUCH SCREEN DRO with 2D Fusion Touch software as above. Built-in optical edge detection allows data points to be taken 'on the fly' as the projected image is passed under the screen-mounted fibre optic sensor. An internally mounted edge sensor is available as an option on all 'R' series projectors.

Note: FT2 and FT2-E DROs are available to retrofit to customers' projectors, of any make.





Baty Options & Accessories - Profile Projector



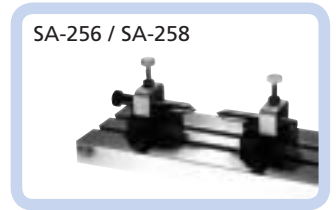
SA-527



SA-250



52-602



SA-256 / SA-258



52-701 / 52-604



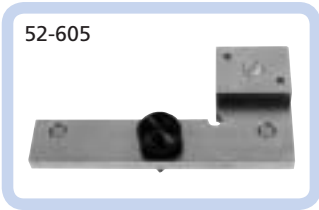
SA-152



52-600 / 52-603



SA-260



52-605



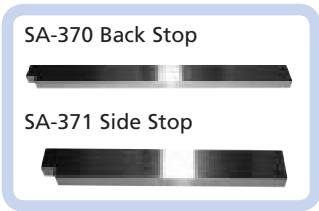
SA-542 Large Vee Blocks and Centres



SA-543 Riser Blocks



Rotary Glass Stage SA-245-2



SA-370 Back Stop

SA-371 Side Stop



SA-196-EXT Dual Vee Blocks and Centres



FM-2510 Open Frame Fixturing

R14 / R400 ACCESSORIES

Code No	Description
202-1327-1	Footswitch for GXL
ABFS-001	Footswitch for AB2 Fusion Systems
52-371	Protective cover - R14
350-035	Protective cover
SA-328	Cabinet stand
SA-250	Iris diaphragm
SA-256	Vee blocks
SA-258	Spring loaded centres
SA-259	Riser blocks 38mm (1/2") for SA-256
SA-152	Vice stage and vice
SA-260	Swivel vice
SA-276	Single vee and clamp (Vee parallel to optic axis)
SA-153	Fixture base
SA-527	Glass plate work holder

FIXTURE FAMILY ACCESSORIES

Code No	Description
52-600	Self centering vice
52-601	Dual axis vee block and clamp to Ø 15mm
52-602	Dual axis vee block and clamp to Ø 30mm
52-603	Precision rotary base
52-604	Universal base
52-605	Precision ground steel alignment feature
52-606	Magnetic vee block
52-701	Dual axis vee block fitted with side base

SM350 ACCESSORIES

Code No	Description
SA-245-2	Rotary glass stage
SA-370	Back stop
SA-371	Side stop
SA-196-EXT	Dual vee block and centres
FM-2510	Open frame fixturing for 2510 stage
SA-551	Iris diaphragm for SM350
350-035	Protective cover

Baty Vision Systems - VuMaster 2D Manual / 2D CNC

VuMaster is a manual 2D vision system with a massive difference.

Due to its innovative absolute 2D scale system, the newly designed VuMaster does not have a conventional moving stage or encoders - just a floating measuring camera that moves anywhere in the measuring range. The result is fast, accurate, 'non contact' measurement over a much larger measuring range - 400mm x 300mm to be exact!

Because the camera moves and the part stays still, there is often no need for expensive and time consuming work holding devices.

VuMaster is either operated manually or inspection routines can be recorded and stored. When played back, these 'programs' guide the operator through a pre-defined inspection procedure recreating the same lighting conditions and using 'Video Edge Detection' to automatically 'capture' feature data. The CNC model is fully motorised for automated inspection.

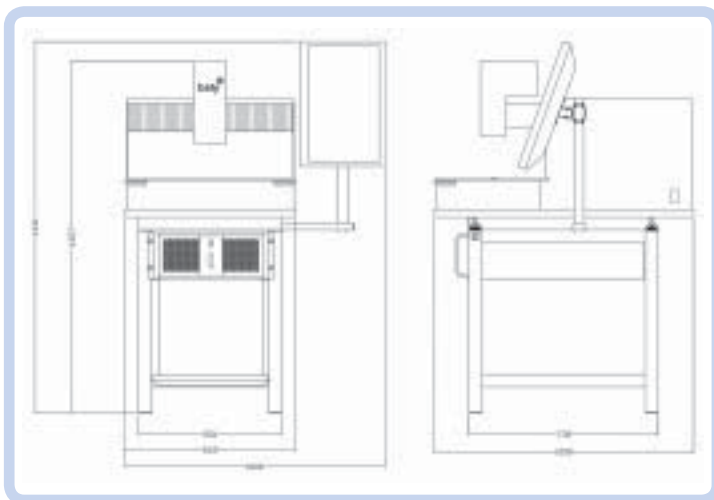
Finally, a report is generated in the form of a fully dimensioned drawing of the measured part.

Features

- Large 400mm x 300mm measuring range
- Sturdy construction with a granite base
- Supplied with Fusion Touch 2D vision software
- Patented measuring technology
- Programmable collimated profile lighting
- Teach and repeat part programming
- Advanced video edge detection
- Digital zoom
- Supplied with stand, rack mount PC and touch screen monitor
- Programmable segmented LED surface ring light
- Motorised autofocus
- Image grab
- Auto inspection playback



VM2-4030-2D-M



VUMASTER

Code No	Description
VM2-4030-2D-M	VuMaster Manual including 19" LCD monitor
VM2-4030-2D-C	VuMaster CNC including 19" LCD monitor
CAL-MAG-2	Glass calibration artefact

For more information contact sales@baty.co.uk or visit www.baty.co.uk



Baty Vision Systems - Venture Touch

The highly successful Venture range includes both manual and full CNC systems that cover two standard measuring ranges:

The VI-2510 has a 250mm x 125mm x 165mm X,Y,Z measuring capacity and the VI-3030 has 300mm x 300mm x 165mm.

Venture Touch 3D

This advanced Vision system combines a manually operated X-Y measuring stage with a motorised Z axis. The advantage of this is that the servo motor driven Z axis can provide the all-important autofocus function for Z axis measurement without operator influence.

Suitable for the shop floor, the rugged design features a steel / granite stand with fully integrated PC controller running Baty's all new 3 axis touch screen software - Fusion Touch. The full HD touch screen is mounted on an adjustable arm and the software is arranged in a portrait layout for ease of use.

Fusion Touch software features full geometric functionality so circles, lines arcs and points can be measured using dedicated tools. Data points are automatically taken along the edge of the feature using video edge detection, then all measurements are automatically saved, should the inspection need to be replayed for a batch of parts.

All measured features appear in the part view where they can be selected for dimensioning resulting in a dimensioned part view that can be printed or exported to CAD. Tolerances are set for each dimension so that the final inspection reports can classify each dimension as a pass or fail.

Inspection playback

During this process the operator is guided through the inspection routine via the graphical part view. Once the stage has been positioned so that the feature appears in the camera's view, the Video edge detection tools take over and measure the feature automatically. If features are on different planes, the Z axis drives under CNC control to the correct position as defined by the original inspection. All lighting and magnification conditions are also recorded and re-created as each feature is visited. The end result is a highly repeatable process with no operator influence.

Lighting

The programmable LED lighting is also controlled using the touch screen. Segmented surface illumination, through the lens and profile lighting conditions can be adjusted to ensure that the feature edge is perfectly illuminated.



Features

- High resolution 0.5um scales for increased accuracy
- 6.5:1 Zoom optics (with optional CNC control)
- Programmable segmented LED lighting system
- Z axis dovetail slide mount for increased Z axis capacity
- High precision cross-roller stage
- Auto video edge detection tools
- Auto programming
- Motorised Autofocus
- Full HD touch screen display
- Motorised Z axis

Venture Touch options

- Motorised CNC zoom optics
- Steel / granite machine stand

VENTURE TOUCH

Code No	Description
Venture-Touch-3030	Venture Manual with motorised Z and autofocus, Fusion Touch software, 300 x 300 x 165 X, Y, Z measuring range
CAL-MAG-2	Glass calibration artefact
VI-Vision-Stand	All steel machine stand with granite top

For more information contact sales@baty.co.uk or visit www.baty.co.uk

Baty Vision Systems - Venture 3D CNC

Venture CNC models take the power of fusion software one stage further by completely automating the inspection process.

Automatic Inspection

Advanced features like scanning and best fitting can be done quickly without taking up the time of skilled operators.

CNC programming is a simple teach and repeat process. Just measure the part once and a full CNC program is created automatically. The zoom lens can also be controlled so that magnification changes are all recorded into the program.

Programmable Segmented Light

Lighting is critical to ensure that the correct edge is measured. Baty's new programmable LED lighting head allows the user to define any segment pattern to be switched on. This means that oblique lighting conditions can be achieved to illuminate more difficult edges.

Segments can then be rotated and intensity varied to suit the radial position of the edge. Once set, the lighting condition for each measured feature is now automatically programmed and will be reproduced by the software each time a new part is measured. Through the lens (TTL) lighting is included for applications like blind bore measurement. 64 white LEDs are used to ensure Venture's high quality colour image is achieved.

Only now can this functionality be combined with traditional touch probe technology to offer the ultimate in multi-sensing Vision systems - Venture.

Standard CNC system features include:

- Teach and Repeat programming
- Programmable segmented LED lighting
- High resolution 0.5µm scales for increased accuracy
- CAD import / export
- Scanning & best fitting
- Fully dimensioned part view
- SPC included
- One click output to Excel™
- Autofocus
- 165mm Z axis measuring range on adjustable dovetail slide
- 250mm x 125mm and 300mm x 300mm XY stages available
- Auto program from CAD



Baty's programmable segmented LED lighting



VENTURE AB3-V-CNC

Code No	Description
AB3-V-CNC	Venture CNC with Fusion 3D software, 250mm x 125mm stage, incl. PC and 2 x 19" Monitors
3030-X-Y	Stage upgrade to 300mm x 300mm
CAL-MAG-2	Glass calibration artefact
TP-20 Kit	Touch probe kit incl ref ball, module and stylus

For more information contact sales@baty.co.uk or visit www.baty.co.uk

Baty Vision Systems - Venture Plus

The Venture Plus range includes all of the standard Venture features with a little more... measuring range, that is.

Large Measurement Volume

The Venture Plus is available in four models:

VP-6460 with 640mm x 600mm x 250mm measuring range

VP-6490 with 640mm x 900mm x 250mm measuring range

VP-101040 with 1000mm x 1000mm x 400mm measuring range

VP-101540 with 1000mm x 1500mm x 400mm measuring range

The bridge type construction is all aluminium resulting in low inertia and low thermal mass. Air bearings are used on all axes and a granite Y beam is used for increased accuracy. This ensures that the machine will expand and contract uniformly with temperature changes ensuring minimal distortion and subsequent errors. Ambient temperature can be compensated for within the Fusion software making Venture Plus ideal for use on the shop floor.

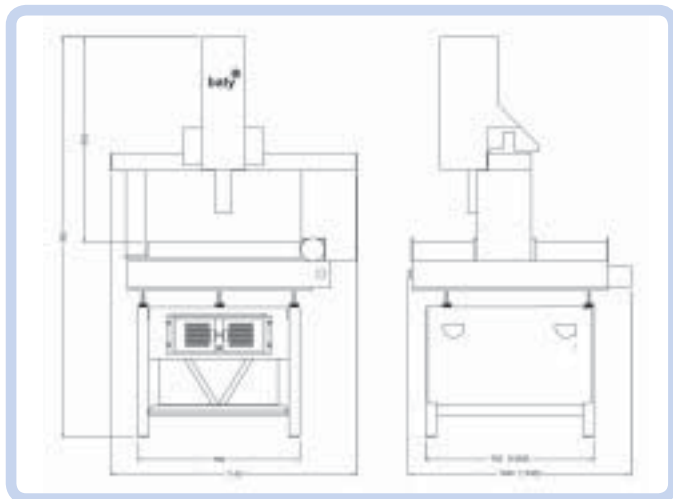
Complete with our standard zoom optics and programmable, segmented LED surface lighting, Venture Plus offers the same level of camera based functionality as every other Venture.

The use of a touch probe is optimised on a CNC system. Measurements from data points taken using the touch probe can be combined with those taken using Video Edge Detection for optimum speed and reduced inspection times.

A probe changer rack can be installed so that probe modules fitted with a variety of pre-calibrated styli can also be used in the same inspection. When a change of stylus is required, the system automatically puts the current probe module back in the rack and picks up the next to continue the inspection process. Only now can this functionality be combined with traditional touch probe technology to offer the ultimate in large format multi-sensing Vision systems - Venture Plus.

Venture Plus additional features include:

- Rigid, low mass bridge construction
- Integral zoom optics
- 0.5µm resolution scales
- Collimated profile illumination
- Coaxial TTL lighting
- Renishaw touch probe
- Easy to use Fusion software



VENTURE PLUS

Code No	Description
VP-6460	Venture Plus CNC with Fusion software and Touch probe - includes PC and 2x19" monitors (640 x 600 x 250mm)
VP-6490	Venture Plus CNC with Fusion software and Touch probe - includes PC and 2x19" monitors (640 x 900 x 250mm)
VP-101040	Venture Plus CNC with Fusion software and Touch probe - includes PC and 2x19" monitors (1000 x 1000 x 400mm)
VP-101540	Venture Plus CNC with Fusion software and Touch probe - includes PC and 2x19" monitors (1000 x 1500 x 400mm)
CAL-MAG-2	Glass calibration artefact

For more information contact sales@baty.co.uk or visit www.baty.co.uk

Venture Options

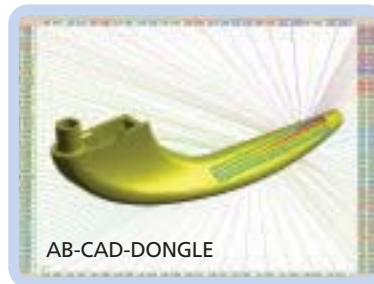
CAD

3D CAD models (STEP or IGES) can be imported and are shown in a floating window. After alignment to the CAD model, points are taken anywhere on the part surface and displayed on the CAD model. The points appear colour coded so as to indicate their distance from the nominal surface.

Rotary Axis

A CNC rotary axis is used to rotate the part to a pre-determined angle for the next set of measurements to be taken.

Rotations are automatically recorded into the inspection program. 6 jaw keyless chuck to suit O/D range of 2-44mm can be mounted horizontally (as shown) or vertically.



AB-CAD-DONGLE



SB-A-1371-0163

SA-196

Cast vee blocks and extended centres for the 2510 Venture model



SA-196-EXT



VI-3030-UFB

UFB3030

Universal fixture base provides fixture mounting slots compatible with all projector accessories.

Venture Stand

Rigid steel stand with granite top and integral PC / controller shelf for Venture 2510 and 3030 models



VI-Vision-Stand

Glass Reference Standard

Calibration standard with nominal diameters for field of view measurement verification and pixel calibration.



CAL-MAG-2

VENTURE OPTIONS

Code No	Description
AB-CAD-DONGLE	CAD comparison software
SB-A-1371-0163	Probe module change rack - 6 port
SA-196-EXT	Dual vee block and centres
VI-3030-UFB	Universal fixture base
VI-Vision-Stand	All steel machine stand with granite top
CAL-MAG-2	Glass calibration artefact



Flexmaster Fixtures

Flexmaster components introduce new technology. Our selfwedging clamps offer near zero clamping force. Sliding t-nut tooling blocks provide an infinite variety of fixture solutions.

Even the corner joiners for our frame are dual purpose, providing ridges that allow backlighting to illuminate edges for inspection.

Fixture frame assembly, includes the following:

- 4 off linear slide-frames with t-slots, and laser marked reference scales
- 4 off ridged two-way T-nuts for corner joining and part location
- 4 off sliding hold-down brackets with slots for 2 axis adjustment to mount t-slot frames to venture stage frame

Fasteners

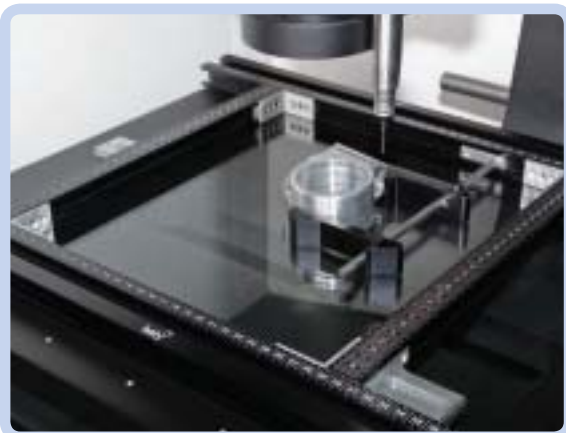
- 30 off stainless grub screws
- 3 off long T-nuts
- 6 off short T-nuts
- 2 off T-nuts with machined vee in end
- 12 off locknut with threaded ID.
(For use with clamp rods, thumbscrew, and spherical locator pin)

Clamps and Rods

- 2 off narrow 'soft-touch' self-wedging tail-spring clamp
- 2 off wide 'soft-touch' self-wedging tail-spring clamp
- 2 off self-wedging V-clamp
- 2 off ridged corner locator clamp
- 3 off stainless clamp rod.
(Use with locknut to attach rods to slideframe, for self-wedging clamps)
- 3 off stainless clamp rod
- 2 off stainless clamp rod

Locators

- 3 off sliding tool blocks with threaded holes for vertical clamp and adjustment
- 4 off adjustable rest button, stainless, spherical top
- 2 off additional ridged two-way t-nuts for part location
- 1 off case



Moore & Wright Mini Level

Features

- Ultra compact dimensions and a single vial
- Machined from a solid block of carbon steel
- Supplied on retail card



METRIC / IMPERIAL MINI LEVELS

Code No	Length (mm)	Length (inch)	Width (mm)	Width (inch)	Height (mm)	Height (mm)	Accuracy (inch)
ELT-001XR	51	2.0	19	0.75	19	0.75	± 1° / 0.0035" per foot

Moore & Wright Engineers' Levels

Features

- Main vial sensitivity of 1 minute
- Each level is fitted with a main, cross and plumb vial
- Main vial protected by rotating shroud
- Vial solution maintains colour and fluidity under all workshop conditions
- Precision ground cast base with vee groove for location on cylindrical work



ELS



ELM

METRIC / IMPERIAL ENGINEERS' LEVELS

Code No	Length (mm)	Length (inch)	Width (mm)	Width (inch)	Height (mm)	Height (inch)	Resolution (mm)	Resolution (inch)
ELS	165	6.5	34	1.34	46	1.81	0.3mm per metre	0.0035" per foot
ELM	310	12	36	1.42	58	2.28	0.3mm per metre	0.0035" per foot



Digital Mini-Mag Level 570 Series

Features

- Measuring range 360° (4 x 90°)
- Embedded magnets on three sides
- Resolution 0.05°
- Accuracy +/- 0.2°
- Standard 9V battery
- Dimensions: L60mm x H60mm x W35mm



DIGITAL MINI-MAG LEVEL

Code No	Description
MW570-01	Mini-Mag Level

Digital Level 580 Series

Features

- Precision navigational level sensor
- CNC machined super flat edge
- Heavy duty aluminium alloy body, chrome finish
- Laser accurately extends level capabilities
- Strong magnets on underside
- Measuring: 4x90°
- Resolution: 0.05°
- Battery: standard 9V
- Accuracy ± 0.2°



DIGITAL LEVEL

Code No	Size	Resolution
MW580-01	150mm / 6"	0.05°
MW580-02	225mm / 9"	0.05°
MW580-03	600mm / 24"	0.05°
MW580-04	1200mm / 48"	0.05°

WYLER Bubble Spirit Levels

A wide range of WYLER Bubble Spirit Levels are available, designed to be fitted onto machines and other applications where a clear visual indication of levelling is required.



Adjustable Micrometer Spirit Level No. 68

Used to measure the flatness of surfaces, inclinations, taper or concentricity. With prismatic base, hardened and ground for measuring shafts and flat surfaces. The micrometer has a knurled knob for setting zero. Height 80mm, length 150mm and sensitivity 0.02mm/m.

Code No	Sensitivity (mm/m)
60-6242	0.02



Micrometric Spirit Level No. 53

For measurement of irregular plane surfaces. Permits direct reading of the inclination in 0.001" on the scale of the micrometer. Finer displacements are obtainable from the displacement of the bubble. Support at each end means that uneven surfaces are bridged.

Code No	Sensitivity (mm/m)
60-6243	0.02
60-6244	0.05



Shaft Spirit Level No. A63. Prismatic base. Size 30 x 35mm. Wide viewing slots.

Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Sensitivity (mm/m)
60-6290	100	60-6292	150	60-6294	200	0.05
60-6290A	100	60-6292A	150	60-6294A	200	0.1
60-6290B	100	60-6292B	150	60-6294B	200	0.3
60-6291	100	60-6293	150	60-6295	200	1.0



Tubular Spirit Level No. 59. With flat base, 80 x 9 (16mm dia), 100 x 10 (20mm dia), 150 x 10 (20mm dia.) and 200 x 11 (22mm dia.)

Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Sensitivity (mm/m)
				60-62109	150	60-62111	200	0.05
60-62105	80	60-62107	100	60-62109A	150	60-62111A	200	0.1
60-62105A	80	60-62107A	100	60-62109B	150	60-62111B	200	0.3
60-62106	80	60-62108	100	60-62110	150	60-62112	200	1.0



Cross Level No. 78

Code No	Diameter (mm)	Code No	Diameter (mm)	Sensitivity (mm/m)
		60-62167	100	0.02
		60-62168	100	0.05
60-62166	80	60-62169	100	0.1
60-62166A	80	60-62169A	100	0.3



Circular Level No. 76. The Cross Spirit Level 76 is specially designed for the simultaneous measuring or levelling of surfaces on machines, apparatus, etc. The main advantage of this spirit level is that the inclination of both axis (X- and Y-axis) is visualised at the same time. This enables a quick levelling of a measuring object in a very easy way.

Code No	Diameter (mm)	Code No	Diameter (mm)	Code No	Diameter (mm)	Code No	Diameter (mm)	Sensitivity (mm/m)
60-62170	40	60-62170A	50	60-62170B	60	60-62170C	80	2
		60-62171	50	60-62173	60	60-62175	80	1.0
				60-62172	60	60-62174	80	0.3



Note: Other models available, see www.wylerag.com for more information



WYLER Spirit Levels - 58S/55S Series

WYLER Conventional Spirit Levels are manufactured to the highest of standards using artificially aged materials. With precise prismatic bases the new "Spirit" branded models offer an especially rigid vial adjustment system.



Frame Spirit Level No. 58S

With two prismatic and two flat base surfaces for checking horizontal and vertical surfaces, plane or cylindrical.

Magnetic inserts available.



LEVEL NO. 58S

Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Sensitivity (mm/m)
60-6207	100	60-6212	150	60-6217	200	60-6222	250	60-6227	300	0.02
60-6208	100	60-6213	150	60-6218	200	60-6223	250	60-6228	300	0.05
60-6209	100	60-6214	150	60-6219	200	60-6224	250	60-6229	300	0.1

Horizontal Spirit Level No. 55S

With prismatic base for checking horizontal surfaces, plane and cylindrical.

Magnetic inserts available.



LEVEL SENSITIVITIES

2 seconds	0.0001" in 10" or 0.01mm/m.
4 seconds	0.0002" in 10" or 0.02mm/m.
10 seconds	0.0005" in 10" or 0.05mm/m.
20 seconds	0.001" in 10" or 0.10mm/m.

LEVEL NO. 55S

Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Code No	Size of Base (mm)	Sensitivity (mm/m)
60-6252	100	60-6257	150	60-6262	200	60-6267	250	60-6272	300	60-6277	500	0.02
60-6253	100	60-6258	150	60-6263	200	60-6268	250	60-6273	300	60-6278	500	0.05
60-6254	100	60-6259	150	60-6264	200	60-6269	250	60-6274	300	60-6279	500	0.1

Frame Angular Levels

These levels are ideal for checking both horizontal and vertical surfaces. Their prismatic base makes them suitable for both cylindrical and flat surfaces.

Magnetic Spirit Level No. A48

This level has strong magnetic inserts in its 150mm long vertical base. They provide a positive hold on both flat and cylindrical vertical surfaces.

Magnetic inserts in horizontal base available.

MAGNETIC SPIRIT LEVEL NO. A48

Code No	Sensitivity (mm/m)	Size of Base (mm)
60-6201	0.02	150
60-6201B	0.05	150
60-6201C	0.1	150



WYLER nivelSWISS - Electronic Analogue Level

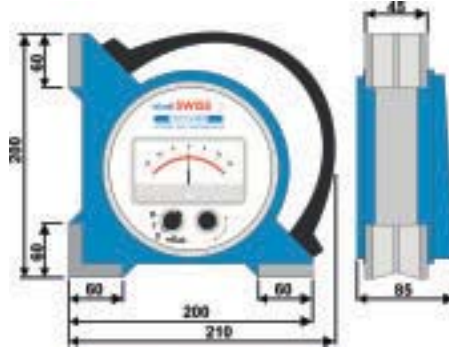
The functional range of WYLER nivelSWISS precision levels employs the accurate inductive pendulum principle. Precision prismatic bases make the range particularly useful for measurement on both plane or cylindrical work pieces, whilst the easy to read analogue display aids ease of use.



nivelswiss 50W with angular base

Suitable for measuring both horizontal and vertical surfaces.

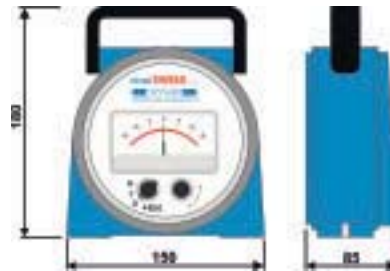
Code No	Description
60-6164	nivelSWISS 50W with angular base



nivelswiss 50H with horizontal base

Suitable for measuring only horizontal surfaces. This model can have a choice of screw on granite bases in either 200mm, 250mm or 500mm lengths.

Code No	Description
60-6165	nivelSWISS 50H with horizontal base



The nivelSWISS has two measuring ranges, reversible:

- a $\pm 0.0075'' / 10''$, $\pm 0.75\text{mm/m}$, ± 150 sec.
and one division equals $0.0005''$ in $10'' / 0.05\text{mm/m} / 10$ sec.
- b $\pm 0.0015'' / 10''$, $\pm 0.15\text{mm/m}$, ± 30 sec.
and one division equals $0.0001''$ in $10'' / 0.01\text{mm/m} / 2$ sec.

WYLER nivelSWISS-D - Digital Level

Battery powered electronic inclinometer nivelSWISS-D with digital display. A remarkable stability of the zero-point makes this instrument particularly suitable for long lasting measuring tasks and for adjustment or alignment works on large guideways. The functional range of WYLER nivelSWISS-D precision levels employs the accurate inductive pendulum principle. Precision prismatic bases make the range particularly useful for measurement on both plane or cylindrical work pieces, whilst the easy to read analogue display aids ease of use. The nivelSWISS is mounted in a bold body of carefully treated cast iron.



WYLER NIVELSWISS-D - DIGITAL LEVEL

Code No	Description
60-6164D	nivelSWISS-D with angular prismatic base
60-6165D	nivelSWISS-D with horizontal base



WYLER Digital Inclinometers - Clinotronic Plus IR



The Clinotronic Plus IR builds on the success of its popular predecessor the Clinotronic. This robust shop-floor proof inclinometer features four machined faces permitting the measurement of angles through 360°, its three simple button operation and high visibility display allow easy access to its many operating modes including absolute and relative modes. The Clino IR now comes with an inbuilt Infa Red receiver Lab Excel Software and cables as standard, this allows the use of an Infa Red transmitter (optional) to remotely transmit data to the Labview software (included).



TECHNICAL SPECIFICATION

Clinotronic Plus IR	
Measuring range	+/- 45 deg
Settle time	ca.5 seconds
Sensitivity	0.02 mm/m
Working temp.	0 to 40° C
Output	RS 485
Battery	Standard AA 1.5V
Housing	Aluminium hard anodised
Dimensions	100 x 75 x 30mm
Weight	400g

CLINOTRONIC PLUS IR

Code No	Description
60-6180	Clinotronic 45 IR, < 2 min + 1 digit accuracy, +/- 45 deg. range
60-6196	Clinotronic 45 IR with vertical magnetic face
60-6198	Clinotronic 45 IR with vertical & horizontal magnetic face
60-6181	IR Zapper

WYLER Clino 2000

The CLINO 2000 is a precision hand held inclination measuring instrument of the highest standard. Designed as a standalone unit, it can also be used together with a second instrument for measurements where a reference is required. Furthermore it can be connected to a PC / Laptop via a built-in RS-232 interface.

The measured primary values are compared to a stored reference curve in the CLINO 2000. This allows a very accurate calculation of the inclination.



Features

- High precision over the large measuring range of $\pm 45^\circ / \pm 10^\circ$, with integrated temperature compensation
- Effortless zero adjustment
- Easy to calibrate
- Large digital display
- Possible to connect an additional instrument for differential measurement or ZEROTRONIC sensors by using the serial port
- Rugged steel housing, rust protected with prismatic bases
- Built-in cross vial
- State of the art digital technology
- Conforms to CE requirements
- As an option magnetic inserts are available

TECHNICAL SPECIFICATION

Measuring range	Standard	± 45 Arcdeg
	Optional	± 10 Arcdeg
Calibration	Built-in software and calibration aids	Correction of gain by simple 3-point-method
Settling time	Value available after	< 5 sec
Resolution	Depending on units set	5 Arcsec (approx. 0.025mm/m)
Limits of error	within 6 months / Gain (TA = 201/4C)	< 10 Arcsec + 0.033%R.O.
	at $-45^\circ, 0^\circ, +45^\circ$ straight after quick calibration	as above, but < 30 Arcsec (CLINO 2000 $\pm 45^\circ$ only)
Data connection	Special cables	RS232 / RS 485, asynchr., 7 Bit, 2 Stopbits, no parity, 9600 Baud
Power supply	Batteries	2 x Size AA 1.5V Alkaline (35-50 hrs)
	Rechargeable (optional) (25-45 hrs)	2 x Size AF 1,2 V NIMH rechargeable
External power supply		+12... +48 V DC / 200-500 mW
Housing (Weight)	Cast iron, rust protected	150 x 150 x 35 mm (260g)
Temp. range	Operating	0° to 40 °C
	Storage	-30° to 70 °C
Code No.	60-6190	

WYLER BlueCLINO Precision Inclinometers



60-6190B



60-6190BA



60-6190HP



Swiss Precision

Features - BlueCLINO

- Large and very easy to read colour display
- Various colour profiles available
- Various display methods like bar graphs or spirit levels available
- All current units can be indicated
- High Precision over the whole measuring range of $\pm 60^\circ$ with integrated temperature compensation
- The internal software, together with a reversal measurement, allows a simple zero setting
- Rugged housing, rust protected, with prismatic bases made of either aluminium hard anodized or cast iron, rust protected
- Built-in cross vial for easy alignment of the vertical axis in order to avoid "twist errors"
- The instrument is compatible with the whole range of digital sensors from WYLER
- Powered with common 1.5V Batteries, rechargeable batteries or with mains adapter
- Fulfils strict CE requirements (immunity against electromagnetic smog)
- The instrument can be adjusted to the local gravitation

Optional Accessories

- Wireless communication, based on Bluetooth-technology
- Quick calibration function
- The instrument can be recalibrated with the help of simple calibration tools which are supplied together with the instrument. This process is supported by the internal software
- Magnetic inserts in all measuring bases possible
- The base on the right side can be used as a flat measuring base
- A fourth measuring base may be attached to the top of the instrument
- External power supply
- Cable to connect the instrument to a PC
- Software to collect measuring data

Features - BlueCLINO HP

- Large and very easy-to-read colour display
- Various colour profiles can be chosen
- Various display methods are available such as bar graphs or spirit levels can be chosen
- All current units can be indicated
- Measuring range of $\pm 1^\circ$ (corresponds to about $\pm 18\text{mm/m}$)
- High precision due to the rugged, rust-protected housing made out of cast iron with prismatic and scraped bases on the left-hand and lower side of the housing, combined with an integrated temperature compensation
- Right hand base is precision ground
- Simple zero-adjustment with the integrated software and a reversal measurement
- Built-in cross vial for easy alignment of the vertical axis in order to avoid "twist errors"
- The BlueCLINO High Precision is compatible with the full range of WYLER digital sensors
- Powered by standard 1.5 V batteries, rechargeable batteries or with mains adapter
- Fulfils the strict CE requirements (immunity against electromagnetic smog)
- The instrument can be adjusted to local gravitation

Optional Accessories

- Wireless communication, based on Bluetooth technology
- Magnetic inserts in the left hand vertical and the bottom horizontal base possible
- External power supply
- Cable to connect the instrument to a PC
- Software to collect measuring data

BLUECLINO PRECISION INCLINOMETERS

Code No	Description	Sensitivity (mm/m)
60-6190B	Cast Iron Precision Inclinometer*	5 arc seconds (0.025mm/m)
60-6190BA	Aluminium Precision Inclinometer*	5 arc seconds (0.025mm/m)
60-6190HP	Cast Iron High Precision Inclinometer*	1 arc seconds (0.005mm/m)

* without quick calibration function

WYLER BlueSYSTEM Inclinometers

The BlueSYSTEM is a continuous further enhancement of the well known and well established measuring instruments MINILEVEL NT and LEVELTRONIC NT. A BlueSYSTEM normally consists of one or two measuring BlueLEVEL instruments and an indicating unit BlueMETER. Depending on the application, the BlueMETER can also be connected to a PC with evaluation software allowing the on-line SIGMA evaluation and presentation of the measured SIGMA values.



Features

- Compact and pleasant design which is functionally optimised for precision measurement
- Radio data transmission based on the internationally approved Bluetooth standard *Optional
- Large easy to read LCD display which can be read from both sides since the handle can be rotated
- Each instrument has its own specific address allowing the use of several independent systems in the same room without interfering with each other
- Linearity according to DIN 2276
- All instruments are equipped with RS 232/RS422/RS485 interfaces
- Powered by standard 1.5V batteries type 'C'
- In compliance with CE regulations and all applicable EMC regulations



WYLER BlueSYSTEM BASIC

The BlueSYSTEM BASIC forms part of the BlueSYSTEM family. BlueSYSTEM BASIC normally consists of one or two measuring instruments (Blue-LEVEL BASIC) and a display unit (BlueMETER BASIC). Depending on the application, the BlueMETER BASIC can also be connected to a PC with evaluation software allowing the on-line evaluation and presentation of the measured values.

This latest generation of high precision electronic inclination measuring instruments is specifically suitable for the measurement of the smallest angles, making it ideal for measuring the flatness of surface plates or the geometry of machine tools.

Features

- Compact design which is functionally optimised for precision measurement
- Radio data transmission based on the internationally approved Bluetooth™ standard (Option)
- Each instrument has its own specific address allowing the use of several independent systems in the same room without interfering with each other
- Since each instrument has a built in IR receiver, the measurement can be initiated from a distance
- Linearity according to DIN 2276
- All instruments are equipped with RS 232 / RS 422 / RS 485 interfaces
- Powered by standard 1.5 V batteries type "C"
- In compliance with CE regulations and all applicable EMC regulations



BLUESYSTEM BASIC INCLINOMETERS

Length (mm)	Sensitivity (mm/m)	Code No	Description	Code No	Description	Code No	Description	Code No	Description
110	0.001 or 0.2 arc seconds	60-6608B		60-6608BW		60-6608BB		60-6608BBW	
110	0.005 or 1 arc second	60-6609B		60-6609BW		60-6609BB		60-6609BBW	
150	0.001 or 0.2 arc seconds	60-6611B	Horizontal	60-6611BW	Horizontal	60-6611BB	Horizontal	60-6611BBW	Horizontal
150	0.005 or 1 arc second	60-6612B	Steel Base	60-6612BW	Steel Base	60-6612BB	Steel Base	60-6612BBW	Steel Base
200	0.001 or 0.2 arc seconds	60-6614B		60-6614BW		60-6614BB		60-6614BBW	
200	0.005 or 1 arc second	60-6615B		60-6615BW		60-6615BB		60-6615BBW	

Length (mm)	Sensitivity (mm/m)	Code No	Description	Code No	Description	Code No	Description	Code No	Description
150	0.001 or 0.2 arc seconds	60-6602B		60-6602BW		60-6602BB		60-6602BBW	
150	0.005 or 1 arc second	60-6603B	Angular	60-6603BW	Angular	60-6603BB	Angular	60-6603BBW	Angular
200	0.001 or 0.2 arc seconds	60-6605B	Prismatic	60-6605BW	Prismatic	60-6605BB	Prismatic	60-6605BBW	Prismatic
200	0.005 or 1 arc second	60-6606B		60-6606BW		60-6606BB		60-6606BBW	

B - BlueLEVEL Without Wireless Data Transmission BW - BlueLEVEL With Wireless Data Transmission

BB - BlueLEVEL Without Wireless Data Transmission BBW - BlueLEVEL With Wireless Data Transmission

WYLER BlueSYSTEM Display Units

BlueMETER BASIC and BlueMETER SIGMA are intelligent digital display units developed for the inclination measuring instrument BlueLEVEL and the ZEROTRONIC sensors. Besides the excellent measuring accuracy, the BlueLEVEL instruments and ZEROTRONIC sensors supply a fully digital signal for transmitting over long distances without any loss of quality.



- Compact and pleasant design in aluminium housing and state of the art technology
- Wireless data transmission based on the internationally approved Bluetooth standard (option)
- Large and easy-to-read LCD display
- Display showing the automatically recognised instruments connected
- Powered by standard 1.5 V batteries type "C"
- In compliance with CE regulations and all applicable EMC regulations
- Measuring with one of several instruments connected to port A
- Measuring with one of several instruments connected to port B
- Differential measurement between two instruments connected to the ports A and B
- Simultaneous display of one each of several instruments connected to the ports A and B

The following functions are included in the BlueMETER BASIC:

- Display of the measuring values in various measuring units, such as:
 - $\mu\text{m/m}$, respectively mm/m with 3 decimals
 - Inches/10 inch
 - Milliradian
 - Degrees/Arcmin/Arcsec
 - $\text{mm/relative base length}$
- Display of measuring values of two instruments / sensors connected
- Display of the difference between two instruments / sensors connected
- Absolute / relative measurements
- Evaluation and storage of the zero-offset of instruments/sensors connected
- Calibration of ZEROTRONIC-sensors
- Battery indicator



60-6502BB

BlueMETER Sigma is a further enhancement of the BlueMETER and has been developed as an intelligent display unit for the following electronic inclination measuring instruments:

- BlueLEVEL
- BlueCLINO and BlueCLINO High Precision
- MINILEVEL NT and LEVELTRONIC NT (by means of cables only)
- Clinotronic Plus
- ZEROMATIC
- ZEROTRONIC sensors

The following new functions and features distinguish the BlueMETER Sigma from the BlueMETER Basic:

- Large and very easy-to-read colour display
 - Various colour profiles can be chosen
 - Various display methods are available: the new graphical 2D-display allows very interesting new applications
- Measured values of up to 4 instruments can be displayed simultaneously. It can be chosen which instrument is displayed as A, B, C or D
- Furthermore the following options are available:
 - Display of the difference of 2 instruments (A-B)
 - Display of the difference of 4 instruments (A-B and C-D)
 - The values can then be displayed as a 2D-graphic: A-B in X-direction and C-D in Y-direction
- The connectors for the cables are now on the right side of the instrument, allowing adjustment of the instrument to the optimal reading angle with a built-in bracket on the back



60-6502BS

The 2D-display shows graphically the position of an object in space, respectively the change of its position and makes the information easily understandable. This facilitates substantially the alignment of e.g. a machine, truck or a reference plate.

WYLER BLUE SYSTEM DISPLAY UNITS

Code No	Description
60-6502BB	BlueMETER Basic Without Radio Data Transmission
60-6502BS	BlueMETER SIGMA Without Radio Data Transmission
60-6502BBW	BlueMETER Basic With Radio Data Transmission
60-6502BWS	BlueMETER SIGMA With Radio Data Transmission
60-6508	Powers Supply Unit 24V



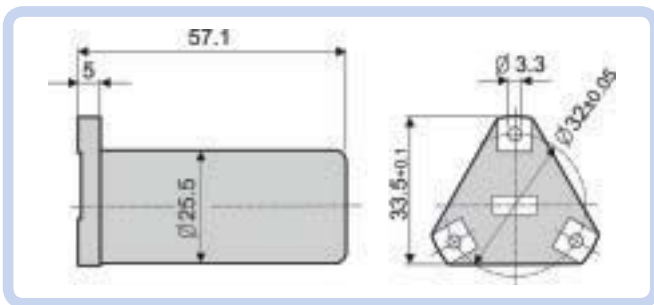
WYLER Zerotronic - Digital Inclinometer Sensors



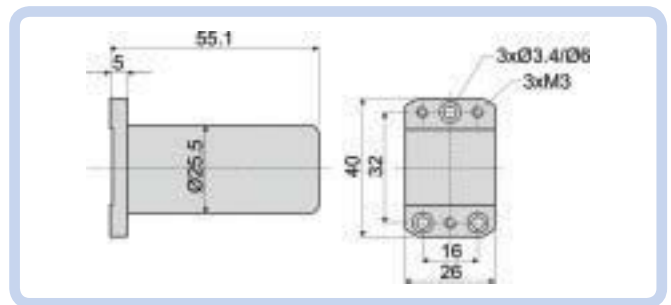
TECHNICAL SPECIFICATION - ZEROTRONIC SENSOR

		ZEROTRONIC-sensor Type 3	ZEROTRONIC-sensor Type C
Power consumption ZEROTRONIC-sensors		ca. 70 mW	ca. 100 mW
Power supply	Sensor	5 V ± 10 %	5V ± 10 %
External power supply	System T/C	12 ... 48 V	
Digital output		RS485 / asynchr. , 7 DataBits, 2 StopBits, no parity	
	Baudrate (automatic adjustment)	2'400 ... 115'000	9'600 ... 57'600
Analog output PWM		0.5 V ... 2.5 V ... 4.5 V @ 5 V Supply	
Temperature range	Operating	- 40°C to + 85°C	
	Storage	- 55°C to + 95°C	
Net weight sensor		118gr	100gr
Shock resistance		practically indestructible	

Dimensions Zerotronic Sensor



ZEROTRONIC-sensor with triangular mounting surface



ZEROTRONIC-sensor with rectangular mounting surface

ZEROTRONIC Type 3

- High resolution, high precision for inclinations up to 30°
- Excellent signal-to-noise ratio
- Excellent repeatability
- Excellent linearity
- Excellent temperature stability

Some typical applications for the ZEROTRONIC Type 3 include those applications in which high precision and high resolution is first priority, and where only small inclinations are measured:

- Adjustment of machines (e.g. pitch and roll)
- Precise adjustment of absolute zero
- Precise measurement of small inclinations in a heavy duty environment; e.g. exposure to outside temperature

ZEROTRONIC Type C

- Excellent precision for inclinations between 10° and 60°
- Excellent repeatability
- Excellent long-term stability in inclined position
- Excellent linearity
- Excellent temperature stability

Some typical applications for the ZEROTRONIC Type C include:

- Larger inclinations
- Applications in which the sensor remains in inclined position over a longer period of time

ZEROTRONIC SENSORS

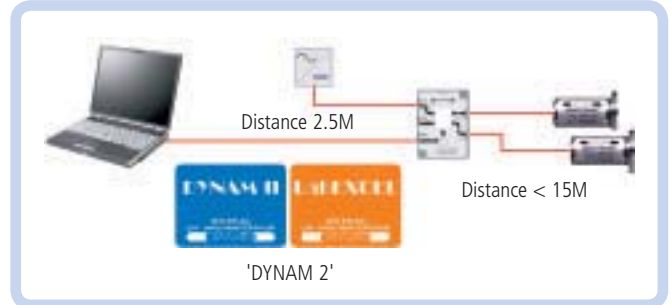
Code No	Description	Range
60-6510	Zerotronic 0.5	Type 3 +/- 0.5°
60-6511	Zerotronic 1	Type 3 +/- 1°
60-6513	Zerotronic 10	Type 3 +/- 10°
60-6514	Zerotronic 30	Type 3 +/- 30°
60-6513C	Zerotronic 10	Type C +/- 10°
60-6514C	Zerotronic 30	Type C +/- 30°
60-6515C	Zerotronic 60	Type C +/- 60°



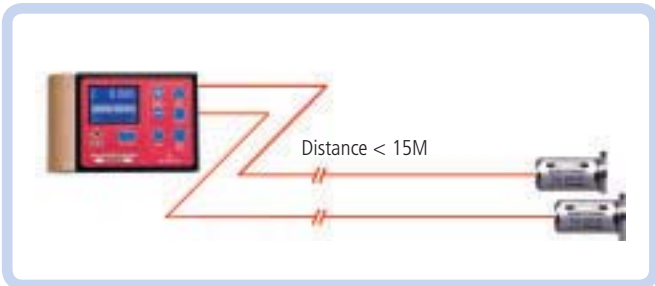
WYLER Zerotronic - Digital Inclinometer Sensors



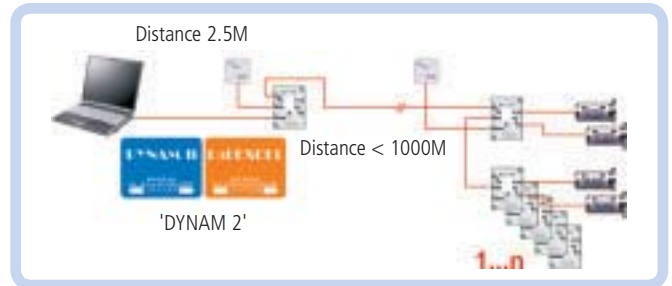
Standard configuration for ZEROTRONIC sensors. The customer can view and record the sensor output signal using their own in-house software.



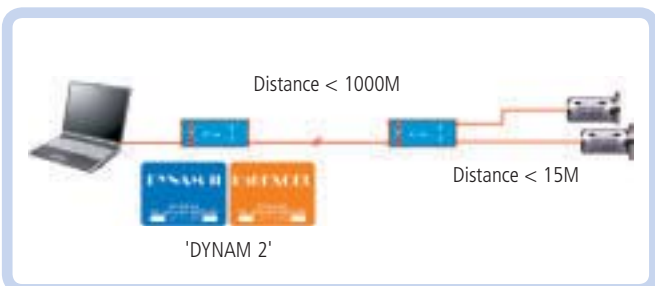
Connection to a PC/laptop through a T/C (Transceiver/Converter)



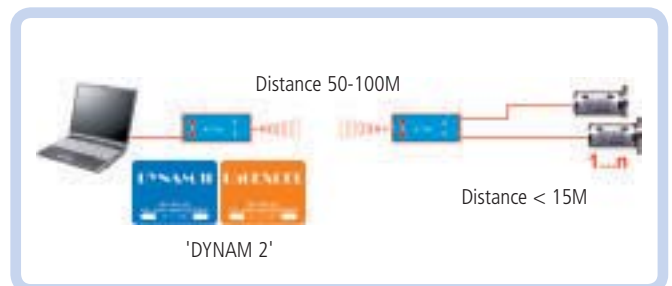
ZEROTRONIC sensors connected to a BlueMETER



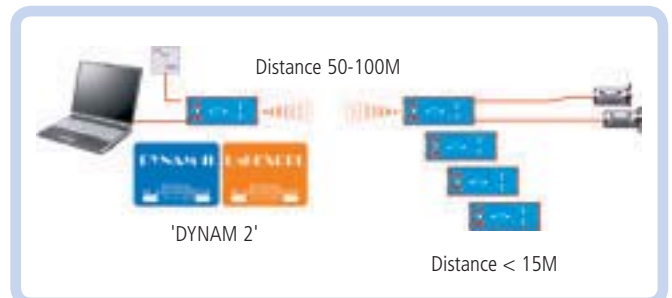
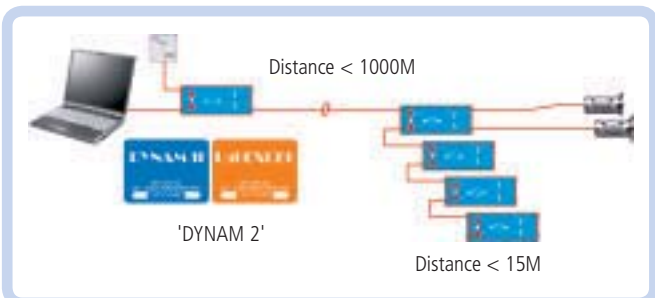
ZEROTRONIC sensors connected to a PC/laptop on RS485-Bus through one or more Transceiver/Converters (T/C). Analysis of measuring results using DYNAM 2 or LabEXCEL software. External power supply via Transceiver/Converter.



Data transmission through cables



Data transmission through a wireless connection



The BlueTC is used as an interface for data transmission through a cable or wireless connection. To each BlueTC up to eight sensors may be connected. In total, the system can handle 64 units. Because every TC also uses one address, a total of 56 sensors can be connected (64 minus 8 BlueTC addresses). Analysis of measuring results utilising LabEXCEL software.



Functional PD Thread Gauges

The Gagemaker PG-6000 and RG-7000 Series gauges measure diameters of internal, and external threads respectively. Both series of these functional diameter gauges inspects the effects of all thread element variations and report deviations.

The gauges must be preset to a Nominal predetermined dimension using gauge blocks, micrometers, or the MIC TRAC measurement centre.



90-PG6000



90-RG7000



90-DPG6000

PG-6000 SERIES, INTERNAL DIAMETERS

Code No	Description	Range (inch)
90-SPG6000	Internal Thread Roll Gauge, 1" reach	5/8 to 1 1/2
90-PG6000	Internal Thread Roll Gauge, 2 1/2" reach	1 1/2 to 9
90-PG6001	Internal Thread Roll Gauge, 2 1/2" reach	9 to 16
90-PG6002	Internal Thread Roll Gauge, 2 1/2" reach	16 to 24
90-DPG6000	Deep Bore Thread Gauge, 6" reach	3 to 4

Extension arms available up to 12" depth, and 9.6" diameter for DPG-6000

RG-7000 SERIES, EXTERNAL DIAMETERS

Code No	Description	Range (inch)
90-SRG7000	External Thread Roll Gauge	5/8 to 1 1/2
90-RG7000	External Thread Roll Gauge	1 to 4
90-RG7001	External Thread Roll Gauge	4 to 8
90-RG7002	External Thread Roll Gauge	8 to 12
90-RG7003	External Thread Roll Gauge	12 to 16
90-RG7004	External Thread Roll Gauge	16 to 20
90-RG7005	External Thread Roll Gauge	20 to 24

Extension arms, handle extensions, and replacement arm sets are available upon request.

Prices do not include thread roll sets.

Functional Gauge Thread Rolls

UN Series Thread Rolls

These thread rolls inspect the functional fit of machined parts with 60° "V" thread forms. Sold in matched sets of rolls.

UN SERIES

Code No	Description
90-TRVI-4P	4 Pitch Internal 60° "V"
90-TRVI-5P	5 Pitch Internal 60° "V"
90-TRVI-6P	6 Pitch Internal 60° "V"
90-TRVI-8P	8 Pitch Internal 60° "V"
90-TRVI-10P	10 Pitch Internal 60° "V"
90-TRVI-12P	12 Pitch Internal 60° "V"
90-TRVI-14P	14 Pitch Internal 60° "V"
90-TRVI-16P	16 Pitch Internal 60° "V"
90-TRVI-18P	18 Pitch Internal 60° "V"
90-TRVI-20P	20 Pitch Internal 60° "V"

Code No	Description
90-TRVE-4P	4 Pitch External 60° "V"
90-TRVE-5P	5 Pitch External 60° "V"
90-TRVE-6P	6 Pitch External 60° "V"
90-TRVE-8P	8 Pitch External 60° "V"
90-TRVE-10P	10 Pitch External 60° "V"
90-TRVE-12P	12 Pitch External 60° "V"
90-TRVE-14P	14 Pitch External 60° "V"
90-TRVE-16P	16 Pitch External 60° "V"
90-TRVE-18P	18 Pitch External 60° "V"
90-TRVE-20P	20 Pitch External 60° "V"

ACME and stub ACME Thread Rolls

TRA & TRSA thread rolls inspect the functional fit of parts with 29° ACME and Stub ACME thread forms.

ACME AND STUB ACME

Code No	Description
90-TRA-3P	3 Pitch 29° ACME
90-TRA-4P	4 Pitch 29° ACME
90-TRA-5P	5 Pitch 29° ACME
90-TRA-6P	6 Pitch 29° ACME
90-TRA-8P	8 Pitch 29° ACME
90-TRA-10P	10 Pitch 29° ACME
90-TRA-12P	12 Pitch 29° ACME
90-TRA-14P	14 Pitch 29° ACME
90-TRA-16P	16 Pitch 29° ACME
90-TRA-18P	18 Pitch 29° ACME

Code No	Description
90-TRSA-3P	3 Pitch 29° Stub ACME
90-TRSA-4P	4 Pitch 29° Stub ACME
90-TRSA-5P	5 Pitch 29° Stub ACME
90-TRSA-6P	6 Pitch 29° Stub ACME
90-TRSA-8P	8 Pitch 29° Stub ACME
90-TRSA-10P	10 Pitch 29° Stub ACME
90-TRSA-12P	12 Pitch 29° Stub ACME
90-TRSA-14P	14 Pitch 29° Stub ACME
90-TRSA-16P	16 Pitch 29° Stub ACME
90-TRSA-18P	18 Pitch 29° Stub ACME

ISO Metric Series Thread Rolls

TRM thread rolls inspect the functional fit of machine threaded parts with ISO metric 60° "V" thread forms.

ISO METRIC SERIES - INTERNAL

Code No	Description
90-TRMI-4P	4mm Pitch Internal 60° "V"
90-TRMI-35P	3.5mm Pitch Internal 60° "V"
90-TRMI-3P	3mm Pitch Internal 60° "V"
90-TRMI-25P	2.5mm Pitch Internal 60° "V"
90-TRMI-2P	2mm Pitch Internal 60° "V"
90-TRMI-175P	1.75mm Pitch Internal 60° "V"
90-TRMI-15P	1.5mm Pitch Internal 60° "V"

ISO METRIC SERIES - EXTERNAL

Code No	Description
90-TRME-4P	4mm Pitch External 60° "V"
90-TRME-35P	3.5mm Pitch External 60° "V"
90-TRME-3P	3mm Pitch External 60° "V"
90-TRME-25P	2.5mm Pitch External 60° "V"
90-TRME-2P	2mm Pitch External 60° "V"
90-TRME-175P	1.75mm Pitch External 60° "V"
90-TRME-15P	1.5mm Pitch External 60° "V"

National 7° x 45° Buttress Thread Rolls

These thread rolls inspect the functional fit of parts with 7° x 45° buttress thread forms. Specify the pitch of thread when ordering.

NATIONAL 7° X 45° BUTTRESS

Code No	Description
90-TRB7452P	2 Pitch, 7° x 45°
90-TRB74535P	3.5 Pitch, 7° x 45°
90-TRB7454P	4 Pitch, 7° x 45°
90-TRB7456P	6 Pitch, 7° x 45°
90-TRB7458P	8 Pitch, 7° x 45°
90-TRB74510P	10 Pitch, 7° x 45°
90-TRB74512P	12 Pitch, 7° x 45°
90-TRB74516P	16 Pitch, 7° x 45°

Specials - all other thread forms available upon request.





Pitch Diameter Inspection Gauges

The Gagemaker PD-6000 and PD-8000 Series gauges measure Pitch Diameters of internal, and external threads. The gauges can be preset to a nominal predetermined dimension using gauge blocks, micrometers, or the MIC TRAC measurement centre.



90-PD6000



90-PD6001



90-PD8001

PD-6000 SERIES, INTERNAL DIAMETERS

Code No	Description	Range (inch)
90-PD6000	Internal PD Gauge, "V" & ACME	1 1/2 to 9
90-PD6000-02	Replacement Arm Set, 2 1/2" Length	
90-PD6000-07	Replacement Arm Set, 4 1/2" Length	
90-PD6001	Internal PD Gauge	6 to 24

Extension arms available up to 12" depth, and 9.6" diameter for DPG-6000

PD-8000 SERIES, EXTERNAL DIAMETERS

Code No	Description	Range (inch)
90-PD8001	External Ball PD Gauge	0 to 6
90-PD8002	External Ball PD Gauge	6 to 12
90-PD8004	External Ball PD Gauge	12 to 16
90-PD8006	External Ball PD Gauge	16 to 20
90-PD8008	External Ball PD Gauge	20 to 24
90-PD8010	External Ball PD Gauge	24 to 28
90-PD8012	External Ball PD Gauge	28 to 36
90-PD8013	External Ball PD Gauge	36 to 44
90-PD8014	External Ball PD Gauge	44 to 52
90-PD8015	External Ball PD Gauge	52 to 60
90-PD8016	External Ball PD Gauge	60 to 72

Thread Disk for Windows Software/Contact Points

Gagemaker's standard ball contact points are manufactured with spherical chrome balls with threaded shanks of 4-48 UNF. Contact sizes are matched closely to thread inspection wire sizes. The contact diameters listed are used in the TDWIN Thread Disk for Windows software program for pitch diameter inspection.



Thread Type Entry Screen



Thread Dimension Screen

UN SERIES (60°V) THREADS

Carbide	Thread Pitch
90-T562C	1
90-T288C	2
90-T188C	3 / 3.5
90-T144C	4
90-T128C	4.5
90-T115C	5
90-T105C	5.5

Carbide	Thread Pitch
90-T096C	6
90-T072C	8
90-T057C	10
90-T050C	11.5 / 12
90-T041C	14 / 16
90-T032C	18

ACME OR STUB ACME THREADS

Carbide	Thread Pitch
90-T531TC	1
90-T344TC	1.5
90-T266TC	2
90-T219TC	2.5
90-T188TC	3
90-T144TC	3.5
90-T128TC	4

Carbide	Thread Pitch
90-T105TC	5
90-T090TC	6, 7
90-T062TC	8
90-T050TC	10
90-T041TC	12 / 14
90-T032TC	16

TDWIN THREAD DISK SOFTWARE

Model	Description
90-TDWIN	Thread Disk for Windows Software
90-TDWIN-UP	Upgrade to TDWIN from TD-100
90-TDWINLIC5	Multi-License Agreement, 5 Users
90-TDWINLIC10	Multi-License Agreement, 10 Users

T = Truncated

C = Carbide





TDWIN TAPER Thread Disk for Tapered Threads

Gagemaker's TDWIN TAPER software program produces dimensional drawings and inspection data for API downhole tubular connectors based on the most current industry standards. Everything you need to machine, inspect, and document tubular connection threads is available in this convenient software program.

TDWIN TAPER provides easy access to information for both preferred and non-preferred Rotary Shouldered Connections, Tubing and Casing Connections, and any combination of Crossover. The program offers standard connection types and sizes. TDWIN TAPER displays connection drawings, inspection gauge information and setup and inspection reports.

The software displays printable drawings suitable for manufacturing that follow ASME Y14.5 standards for industry compatibility. Print gauge setup and inspection reports with your company logo and work order information. The program also offers the choice to save reports and jobs for future reference.

Features

- Follows API Specification 7.2, Dec. 2008, for Rotary Shouldered Connections
- Follows API Specification 5B, Oct. 2008, for Tubing and Casing Connections
- Presents "preferred" connections as well as interchangeable and obsolete connections
- Organises data compatible with API and industry knowledge offered by resources such as Smith, Joy, and Hughes
- Displays Gagemaker style thread gauges and gauge setting information
- Configures and prints reference drawings for manufacturing including; standard pin/box/coupling, pin/box blanking, pin/box
- Relief groove, box modified bore-back relief, special clearance couplings, and SR grooved couplings
- Produces gauge setup reports for tubing, casing, RSC, and crossover combinations
- Provides inspection reports for all connection configurations selected
- Customises reports with your company logo
- Saves reports to job files and recalls them for future reference
- Provides web links to locate and purchase necessary gauges and standards



Select from 3 connection categories or review previous jobs and reports



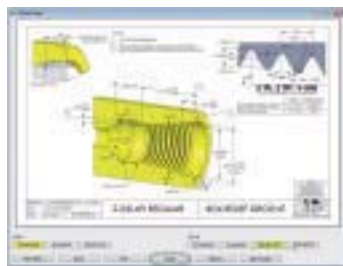
Select a Thread Type



Select a Thread Size



Select View Drawings



Select the desired drawing and view gauge requirements



Select the required gauging method and gauge

THREAD DISK FOR WINDOWS (Tapered Threads)

Code No

90-TDWIN-TPR



View gauge details and tolerances



Customise, preview and print desired reports

Mic Trac Gauge Setting System

The Gagemaker MIC TRAC is a multi-use gauge setting system. The system sets or zeros most gauges with the use of interchangeable anvils or blocks. Standard resolution of base unit is 0.00005". Accuracies range from +/- 0.0001" to +/- 0.0004".

The MIC TRAC is also available as a multi-use gauge calibration system. These MIC TRACs incorporate the ForeLok™ feature to provide a constant anvil force that improves repeatability from operator to operator. Please ask the Bowers sales team for details.



BASE UNITS (INCLUDES TF-1F BLOCK SET)

Code No	Description
90-MT3012-50	MIC TRAC, Range: 0" to 12" Internal, 1 1/2" to 13 1/2" External
90-MT3024-50	MIC TRAC, Range: 0" to 24" Internal, 1 1/2" to 25 1/2" External
90-MT3036-50	MIC TRAC, Range: 0" to 36" Internal, 1 1/2" to 37 1/2" External
90-MT3048-50	MIC TRAC, Range: 0" to 48" Internal, 1 1/2" to 49 1/2" External

SETTING BLOCKS

Code No	Description
90-TF1F	Face Setting Blocks (1.500" outside Dimension)
90-TFBX	23° Angled Face setting blocks
90-TF10	Tapered Setting Blocks 10° half angle
90-TF15	Tapered setting Blocks 15° half angle
90-TF20	Tapered setting Blocks 20° half angle
90-TF30	Tapered setting Blocks 30° half angle
90-TF45	Tapered setting Blocks 45° half angle

TUBING AND CASING TAPER SETTING BLOCKS

Code No	Description
90-TF-STR	Straight Blocks
90-TF-.75T	3/4" Taper Blocks, 8 & 10 Round, 3/4" TPF Buttress, Line Pipe
90-TF-1.0T	1" Taper Blocks, 1" TPF Buttress
90-TF-1.12T	1 1/8" Taper Blocks, 1.125 TPF Connectors
90-TF-1.75T	1 3/4" Taper Blocks, 1.75 TPF Connectors

ROTARY SHOULDERED CONNECTOR SETTING BLOCKS

Code No	Description
90-TF-1.25RSC	1 1/4" Taper Blocks, 1.25 TPF Rotary Shouldered Connectors
90-TF-1.5RSC	1 1/2" Taper Blocks, 1.5 TPF Rotary Shouldered Connectors
90-TF-2.0RSC	2" Taper Blocks, 2.0 TPF Rotary Shouldered Connectors
90-TF-3.0RSC	3" Taper Blocks, 3.0 TPF Rotary Shouldered Connectors

RISER BLOCKS FOR THE TAPER BLOCKS

Code No	Description
90-TF-RISER1	1.00" Riser Block (Set of 2)
90-TF-RISER2	2.00" Riser Block (Set of 2)
90-TF-RISER3	3.00" Riser Block (Set of 2)

Special taper blocks available on request

A huge range of Tapered, Thread and Special setting blocks are available upon request





Groove Diameter and Groove Width Gauges Face Grooves - BX-1000 / BXG-1000 Series

These gauges adjust to cover all sizes of R, RX, and BX ring grooves. The standard gauge measures groove diameters from 2.6-13" and groove widths from .34-1.5". Optional rails extend the range of diameters from 13-36". The face groove gauges accurately measure the ring groove diameter and width at the critical sealing point of the face groove. Gauge indicators show actual deviation from a preset master dimension. The BX-1000 can be used to measure straight or tapered groove diameters, shallow bores, and hole locations. Contact points included are .188". The BXG-1000 measures widths of straight or tapered grooves and includes .072" contact points.

Features

- Measures face grooves for a range of diameters
- Replaces traditional GO/NOT GO templates
- Provides accurate measurements at the critical sealing point of the face groove
- Allows use in a manufacturing or field environment due to durable construction
- Requires presetting using a micrometer or Gagemaker's MIC TRAC measurement center (setting dimensions and tolerances for API ring grooves supplied with gauge)



90-BX1000



90-BXG1000

GROOVE DIAMETER AND GROOVE WIDTH GAUGES FACE GROOVES

Code No	Description	Range (inch)
90-BX1000	Groove Diameter Gauge	Diameters 2.6-13"
90-BXG1000	Groove Width Gauge	Widths 0.34-1.5"
90-BXR24	Optional Rail 24"	Groove Diameters to 23 3/4"
90-BXR30	Optional Rail 30"	Groove Diameters to 29 3/4"
90-BXR36	Optional Rail 36"	Groove Diameters to 35 3/4"
90-TDWIN	Thread Disk for Windows Software	

Applications

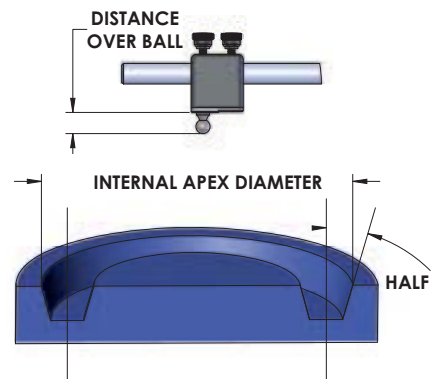
BX-1000

Groove Diameter Gauge



BXG-1000

Groove Width Gauge

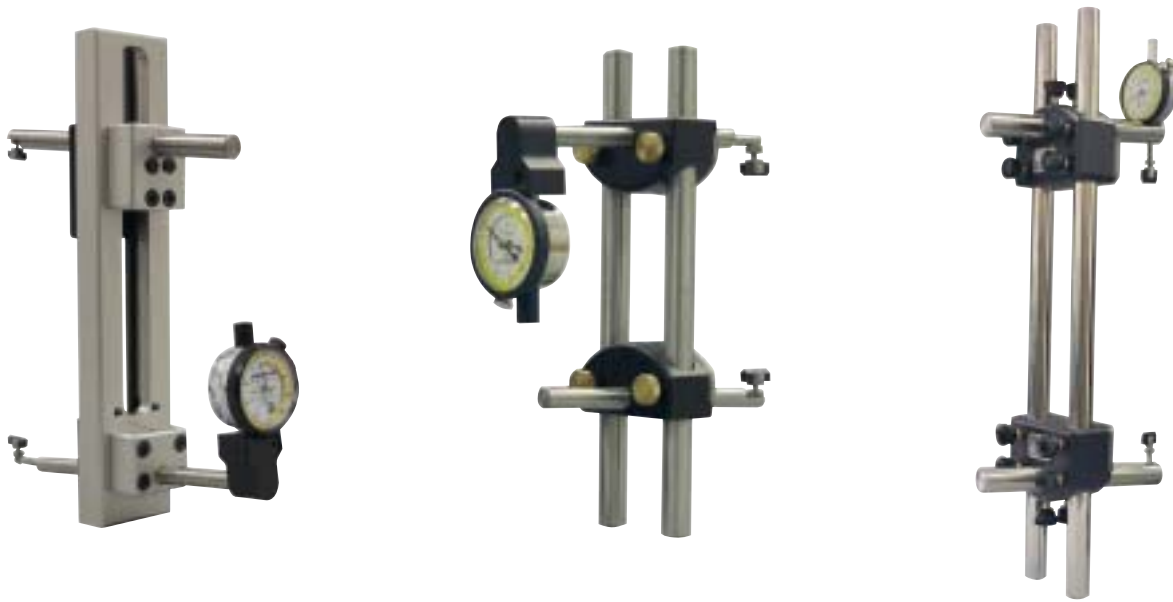


Example of setting aid using TD Win software

MRP Pitch Diameter & Ovality Gauges

The MRP series of Pitch diameter gauges measures internal and external pitch diameters of tapered threaded connectors. The gauges use two pivoting thread shoes that rest on the crests of the threads. Variation in diameter is detected by the indicator readout.

The MRP gauges are preset to size before inspecting parts. A variety of setting standards are available. Alternatively the MIC TRAC setting system can be used.



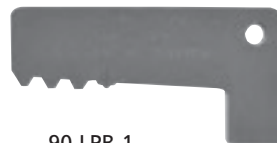
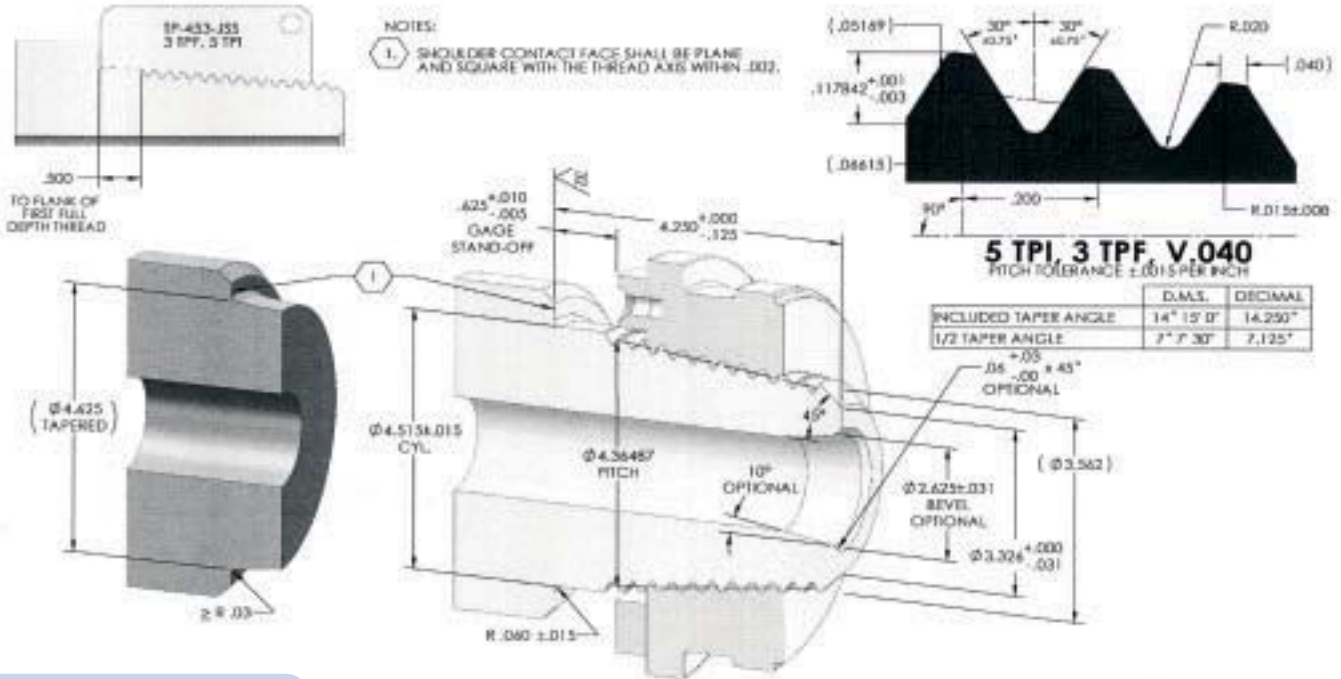
MRP GAUGES

Code No	Description	Range (inch)
90-MRP1000	Internal / External PD Gauge	1 1/2-4 1/2
90-MRP1500	Internal / External PD Gauge (Solid Frame Style)	1 1/2-4 1/2
90-MRP2001	External PD Gauge with 4 1/4" reach	2 3/8-20
90-MRP20017	External PD Gauge with 7" reach	2 3/8-20
90-MRP200110	External PD Gauge with 10" reach	2 3/8-20
90-MRP2002	Internal PD Gauge with 4 1/4" reach	2 3/8-20
90-MRP2002-7	Internal PD Gauge with 7" reach	2 3/8-20
90-MRP200210	Internal PD Gauge with 10" reach	2 3/8-20
90-MRP2003	Internal / External PD Gauge with 4 1/4" reach	2 3/8-20
90-MRP2003-7	Internal / External PD Gauge with 7" reach	2 3/8-20
90-MRP200310	Internal / External PD Gauge with 10" reach	2 3/8-20
90-MRP2511	External PD Gauge with 4" reach	4 1/2-9 5/8
90-MRP2521	External PD Gauge with 4" reach	4 1/2-13 3/8
90-MRP2512	Internal PD Gauge with 3 3/8" reach	4 1/2-9 5/8
90-MRP2522	Internal PD Gauge with 3 3/8" reach	4 1/2-13 3/8
90-MRP2513	Internal / External PD Gauge with 3 3/8" reach	4 1/2-9 5/8
90-MRP2523	Internal / External PD Gauge with 3 3/8" reach	4 1/2-13 3/8
90-MRP3001	External PD Gauge with 3 3/8" reach	8 5/8-24
90-MRP3002	Internal PD Gauge with 3 3/8" reach	8 5/8-24
90-MRP3003	Internal / External PD Gauge with 3 3/8" reach	8 5/8-24
90-MRP3501	External PD Gauge with 6 1/4" reach	8 5/8-24
90-MRP3502	Internal PD Gauge with 6 1/4" reach	8 5/8-24
90-MRP3503	Internal / External PD Gauge with 6 1/4" reach	8 5/8-24

For a full comprehensive catalogue featuring all the Gagemaker products including many API & Premium gauges not shown here, please contact our sales department.



Thread Pitch Diameter Measurement for Rotary Shoulder Threads - Internal



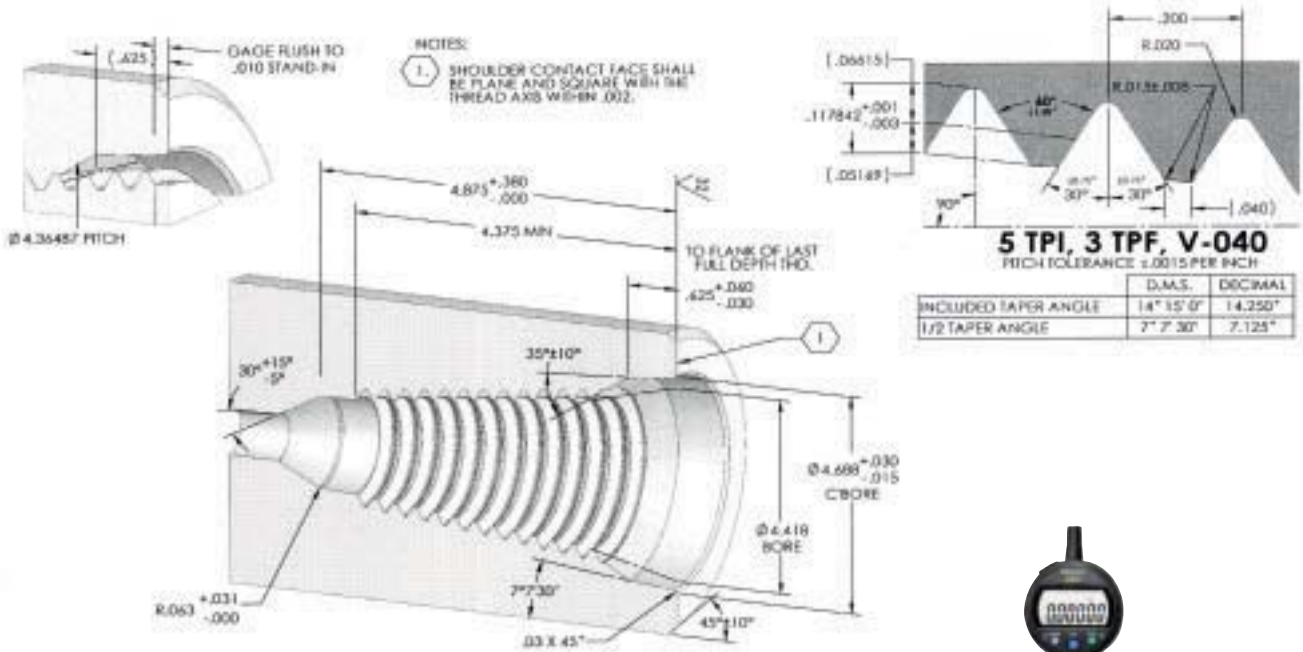
90-LPB-1



THREAD PITCH DIAMETER MEASUREMENT FOR ROTARY SHOULDER THREADS - INTERNAL

Code No	Description
90-IT5104RSC	Box Rotary Shoulder pitch diameter gauge 0-9" w/ Electronic .500" travel digital indicator
90-LPB-1	Box Length Profile template for pitch diameter measurement on rotary shoulder connection. 3TPI-1.25TPF-SL-H90
90-LPB-2	Box Length Profile template for pitch diameter measurement on rotary shoulder connection. 3.5TPI-2TPF-H90
90-LPB-3	Box Length Profile template for pitch diameter measurement on rotary shoulder connection. 3.5TPI-3TPF-H90
90-LPB-4	Box Length Profile template for pitch diameter measurement on rotary shoulder connection. 4TPI-1.50TPF-V076
90-LPB-5	Box Length Profile template for pitch diameter measurement on rotary shoulder connection. 4TPI-2TPF-V038
90-LPB-6	Box Length Profile template for pitch diameter measurement on rotary shoulder connection. 4TPI-2TPF-V050
90-LPB-7	Box Length Profile template for pitch diameter measurement on rotary shoulder connection. 4TPI-3TPF-V038
90-LPB-8	Box Length Profile template for pitch diameter measurement on rotary shoulder connection. 4TPI-3TPF-V050
90-LPB-9	Box Length Profile template for pitch diameter measurement on rotary shoulder connection. 4TPI-3.375TPF-A094
90-LPB-10	Box Length Profile template for pitch diameter measurement on rotary shoulder connection. 5TPI-3TPF-V040
90-LPB-11	Box Length Profile template for pitch diameter measurement on rotary shoulder connection. 6TPI-1.50TPF-V055
90-LPB-12	Box Length Profile template for pitch diameter measurement on rotary shoulder connection. 6TPI-2TPF-V032

Thread Pitch Diameter Measurement for Rotary Shoulder Threads - External



90-LPP-1



THREAD PITCH DIAMETER MEASUREMENT FOR ROTARY SHOULDER THREADS - EXTERNAL

Code No	Description
90-PD8001RSC	Pin Rotary Shoulder pitch diameter gauge 0-6" w/ Electronic .500" travel digital indicator
90-PD8002RSC	Pin Rotary Shoulder pitch diameter gauge 6-12" w/ Electronic .500" travel digital indicator
90-LPP-1	Pin Length Profile template for pitch diameter measurement on rotary shoulder connection. 3TPI-1.25TPF-SL-H90
90-LPP-2	Pin Length Profile template for pitch diameter measurement on rotary shoulder connection. 3.5TPI-2TPF-H90
90-LPP-3	Pin Length Profile template for pitch diameter measurement on rotary shoulder connection. 3.5TPI-3TPF-H90
90-LPP-4	Pin Length Profile template for pitch diameter measurement on rotary shoulder connection. 4TPI-1.50TPF-V076
90-LPP-5	Pin Length Profile template for pitch diameter measurement on rotary shoulder connection. 4TPI-2TPF-V038
90-LPP-6	Pin Length Profile template for pitch diameter measurement on rotary shoulder connection. 4TPI-2TPF-V050
90-LPP-7	Pin Length Profile template for pitch diameter measurement on rotary shoulder connection. 4TPI-3TPF-V038
90-LPP-8	Pin Length Profile template for pitch diameter measurement on rotary shoulder connection. 4TPI-3TPF-V050
90-LPP-9	Pin Length Profile template for pitch diameter measurement on rotary shoulder connection. 4TPI-3.375TPF-A094
90-LPP-10	Pin Length Profile template for pitch diameter measurement on rotary shoulder connection. 5TPI-3TPF-V040
90-LPP-11	Pin Length Profile template for pitch diameter measurement on rotary shoulder connection. 6TPI-1.50TPF-V055
90-LPP-12	Pin Length Profile template for pitch diameter measurement on rotary shoulder connection. 6TPI-2TPF-V032

Granite Tables

Completely stress free after millions of years of natural stress relieving, high rigidity, corrosion free and non-magnetic, just some of the attributes that makes granite ideal for inspection purposes and anywhere an accurate stable datum is required.

Granite Surface Tables are manufactured to BS817:1988 and are finished to the exacting tolerances required. Every table is supplied complete with a UKAS calibration certificate and a box section frame with adjusting supports. Tapped inserts and covers can also be supplied as extra.

Surface plates are similar to the Tables in both grade and finish and provide a highly accurate datum surface for smaller inspection departments. Each Plate is supplied with UKAS certificates but without a support frame. Tapped inserts and covers can be supplied at extra cost.



GRANITE TABLES

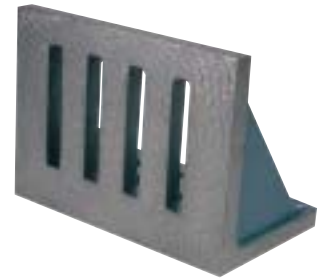
Size	Code No	Description	Code No	Description	Code No	Description
900mm x 600mm (3' x 2')	10-10001	Grade 0	10-10002	Grade 1	10-10003	Grade 2
1000mm x 1000mm (3' x 3')	10-10005	Grade 0	10-10006	Grade 1	10-10007	Grade 2
1200mm x 900mm (4' x 3')	10-10013	Grade 0	10-10014	Grade 1	10-10015	Grade 2
1800mm x 900mm (6' x 3')	10-10021	Grade 0	10-10022	Grade 1	10-10023	Grade 2
2000mm x 1200mm (6' x 4')	10-10029	Grade 0	10-10030	Grade 1	10-10031	Grade 2
2400mm x 1200mm (8' x 4')	10-10033	Grade 0	10-10034	Grade 1	10-10035	Grade 2

SURFACE PLATES

Size	Code No	Description	Code No	Description	Code No	Description
300mm x 300mm (12 x 12")	10-10073	Grade 0	10-10074	Grade 1	10-10075	Grade 2
450mm x 300mm (18 x 12")	10-10077	Grade 0	10-10078	Grade 1	10-10079	Grade 2
450mm x 450mm (18 x 18")	10-10081	Grade 0	10-10082	Grade 1	10-10083	Grade 2
600mm x 450mm (24 x 18")	10-10085	Grade 0	10-10086	Grade 1	10-10087	Grade 2
600mm x 600mm (24 x 24")	10-10089	Grade 0	10-10090	Grade 1	10-10091	Grade 2

Bowers Angle Plates

Manufactured from close grained cast iron, our high quality Angle Plates are supplied in their Grade A or B and are supplied with UKAS calibration certification as standard.



ANGLE PLATES

Size	Code No	Description	Code No	Description
6" x 3" x 4"	10-10319	Grade A Webb	10-10321	Grade B Webb
8" x 4" x 6"	10-10323	Grade A Webb	10-10325	Grade B Webb
11" x 6" x 8"	10-10327	Grade A Webb	10-10329	Grade B Webb
12" x 6" x 10"	10-10335	Grade A Webb	10-10337	Grade B Webb
16" x 9" x 12"	10-10343	Grade A Webb	10-10345	Grade B Webb
20" x 12" x 16"	10-10347	Grade A Webb	10-10348	Grade B Webb

BOX ANGLE PLATES

Size	Code No	Description	Code No	Description
6" x 5" x 4.5"	10-10351	Grade A	10-10352	Grade B
9" x 7" x 6"	10-10353	Grade A	10-10354	Grade B
12" x 10" x 9"	10-10355	Grade A	10-10356	Grade B



Moore & Wright Angle Plates

Complies with: BS5535 Grade B

- Manufactured from close grained cast iron
- Heat stabilised to prevent distortion
- Machined to tolerance on all four edges and two faces (four faces on open end version)



E301



E201

METRIC / IMPERIAL ANGLE PLATES

Code No.	Description	Length (mm)	Length (inch)	Width (mm)	Width (inch)	Height (mm)	Height (inch)
E200	Webbed	100	3.94	60	2.36	80	3.15
E201	Webbed	131	5.15	86	3.38	106	4.17
E202	Webbed	160	6.30	100	3.94	125	4.92
E204	Webbed	200	7.87	125	4.92	160	6.30
E301	Open End	125	4.92	80	3.15	100	3.94
E302	Open End	160	6.30	100	3.94	125	4.92
E304	Open End	200	7.87	125	4.92	160	6.30



Moore & Wright Vee Blocks & Clamps

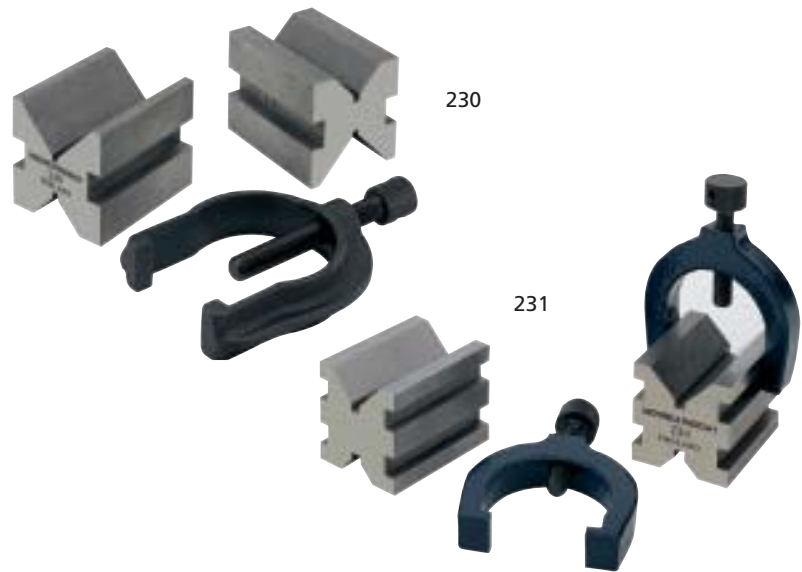
Features

230 General Workshop grade

- Manufactured from close grained cast iron
- Supplied in matched and numbered pairs
- One steel clamp and screw supplied per pair

231 Precision Vee Blocks

- Manufactured to BS3731 grade B
- Manufactured from case hardened and ground mild steel
- Supplied in matched pairs only
- Two malleable iron clamps with steel screws supplied with each pair of blocks



VEE BLOCKS & CLAMPS

Code No	Accuracy (mm)	Accuracy (inch)	Range (mm)	Range (inch)	Width (mm)	Width (inch)	Length (mm)	Length (inch)	Height (mm)	Height (inch)
230	0.05	0.020	40	1 1/2	40	1 1/2	50	2	40	1 1/2
231	0.01	0.004	25	1	32	1 1/4	42	1 5/8	32	1 1/4

Code No Description

23001	Spare Clamp and Screw for 230
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Moore & Wright Vee Blocks Standard Pairs

Features

- Supplied in matched and numbered pairs only
- Manufactured from close grained cast iron
- Ground faces



VEE BLOCKS STANDARD PAIRS

Code No	Accuracy (mm)	Accuracy (inch)	Range (mm)	Range (inch)	Width (mm)	Width (inch)	Length (mm)	Length (inch)	Height (mm)	Height (inch)
211	0.04	0.0015	63	2.48	80	3.15	35	1.38	60	2.36
212	0.04	0.0015	80	3.15	100	3.94	40	1.57	75	2.95
213	0.05	0.0020	100	3.94	130	5.12	45	1.77	90	3.54
214	0.05	0.0020	125	4.92	150	5.90	50	1.97	100	3.94
215	0.06	0.0025	160	6.30	180	7.09	60	2.36	130	5.12
216	0.06	0.0025	200	7.87	220	8.66	70	2.76	160	6.30

Bowers Slip Gauges

A full range of different set compositions, grades and materials all manufactured to BS 4311:1993 or DIN861. Popular sizes are available in either Imperial or Metric sets and can be made from Steel, Carbide or Ceramic. Individual sizes also available.

Slip Gauges are supplied either in sets or individually.

Sets are supplied complete in a fitted wooden box with sizes marked. Each set is supplied complete with a calibration certificate of accuracy.

Steel slips must be cleaned after use to avoid corrosion.

Due to their extra hardness, carbide slips can last up to 5 or 6 times longer and do not suffer from the same potential corrosion problems as their steel counterparts.



METRIC SETS IN STEEL - BS 4311 - Complete with UKAS

Note	Code No	Description	Code No	Description	Code No	Description
M112 (112 pieces)	16-1120	Grade 0	16-1121	Grade 1	16-1122	Grade 2
M88 (88 pieces)	16-1880	Grade 0	16-1881	Grade 1	16-1882	Grade 2
M47 (47 pieces)	16-1470	Grade 0	16-1471	Grade 1	16-1472	Grade 2
M8 (8 pieces)	16-1080	Grade 0	16-1081	Grade 1	16-1082	Grade 2

Imperial Sets available - Please contact the sales office

METRIC SETS IN CARBIDE - BS 4311 - Complete with UKAS

Note	Code No	Description	Code No	Description	Code No	Description
M112 (112 pieces)	16-2120	Grade 0	16-2121	Grade 1	16-2122	Grade 2
M88 (88 pieces)	16-2880	Grade 0	16-2881	Grade 1	16-2882	Grade 2
M47 (47 pieces)	16-2470	Grade 0	16-2471	Grade 1	16-2472	Grade 2
M8 (8 pieces)	16-2080	Grade 0	16-2081	Grade 1	16-2082	Grade 2

Imperial Sets available - Please contact the sales office

Combination Length Bar Sets

Combination Length Bars are made from the same high grade steel as the gauge blocks. These length bars are manufactured to BS 1790 (Imperial) and BS 5317 (Metric). The bars have a round section, are hardened to 64 Rc and are precision lapped. Reference and calibration length bars are produced with plain ends and Inspection and Workshop grades have internal threaded holes in their end faces. This helps with the assembly of a combination of bars. A number of standard sets are available as well as individual sizes.



LENGTH BAR SETS SUPPLIED IN WOODEN CASE

Code No	Size
MB8	10mm, 20mm, 40mm, 60mm, 80mm, 100mm, 200mm and 300mm
MB9	10mm, 20mm, 40mm, 60mm, 80mm, 100mm, 200mm, 300mm and 400mm
MB10	10mm, 20mm, 40mm, 60mm, 80mm, 100mm, 200mm, 300mm, 400mm and 600mm
MB11	25mm, 50mm, 75mm, 100mm, 125mm, 150mm, 175mm, 200mm, 375mm, 575mm and 775mm
MB14	25mm (x3), 50mm, 75mm, 100mm, 125mm, 150mm, 175mm, 200mm (x2), 375mm, 575mm and 775mm



Moore & Wright Steel Gauge Blocks 700 Series

Features

- Made from high quality stress relieved alloy steel
- Hardened to HV820 (HRC65)
- Excellent rigidity
- Size and serial number are engraved on each individual gauge block
- Available in 2 grades
- All sets have a MOORE & WRIGHT certificate
- All sets can be issued with a UKAS certificate at extra cost



Carbide Gauge Blocks 710 Series

Features

Standard: DIN 861

- Made from solid carbide with high precision
- Service life is up to 6 times that of steel
- Excellent wringability due to micro polished surfaces
- Every gauge block has its own serial number
- Available in 3 grades
 - Grade 0 for calibration
 - Grade 1 for inspection
 - Grade 2 for workshop
- All sets have MOORE & WRIGHT certificate
- All sets can be issued with UKAS certificate at extra cost



STEEL AND CARBIDE BLOCK SET CONFIGURATION

No. blocks	Nominal size	Qty	Step (mm)	No. blocks	Nominal size	Qty	Step (mm)	No. blocks	Nominal size	Qty	Step (mm)	No. blocks	Nominal size	Qty	Step (mm)
103	1.005	1		47	1.005	1		87	1.001-1.009	9	0.001	32	1.005	1	
	1.01-1.49	49	0.01		1.01-1.09	9	0.01		1.01-1.49	49	0.01		1.01-1.09	9	0.01
	0.50-24.50	49	0.5		1.10-1.90	9	0.1		0.50-9.50	19	0.5		1.10-1.90	9	0.1
	25.0-100.0	4	25		1.0-24.0	24	1		10.0-100.0	10	10		10.0-30.0	3	10
					25.0-100.0	4	25						60.0	1	

STEEL GAUGE BLOCK SETS - 700 SERIES

Code No	No. of Blocks	Description
MW700-02	103	Grade 1
MW700-03	103	Grade 2
MW700-05	87	Grade 1
MW700-06	87	Grade 2
MW700-08	47	Grade 1
MW700-09	47	Grade 2
MW700-11	32	Grade 1
MW700-12	32	Grade 2

CARBIDE GAUGE BLOCK SETS - 710 SERIES

Code No	No. of Blocks	Description
MW710-01	103	Grade 0
MW710-02	103	Grade 1
MW710-03	103	Grade 2
MW710-04	87	Grade 0
MW710-05	87	Grade 1
MW710-06	87	Grade 2
MW710-07	47	Grade 0
MW710-08	47	Grade 1
MW710-09	47	Grade 2
MW710-10	32	Grade 0
MW710-11	32	Grade 1
MW710-12	32	Grade 2

Mike-Check M10 Set 715 Series

Features

Standard: DIN 861

- For the inspection of micrometers according to DIN 863
- Grade 0 accuracy
- Nominal sizes (mm): 2.5, 5.1, 7.7, 10.3, 12.9, 15.0, 17.6, 20.2, 22.8, 25.0
- Includes parallel optical flat 30mm dia. x 12mm
- UKAS calibration available at extra cost



MIKE-CHECK M10

Code No	Description
MW715-01	10 Piece Micrometer Gauge Block Set plus Optical Flat

Bore Gauge Setting Master Kit 720 Series

Features

- Bore Gauge Setting Master Kit for accurately setting any 2 point bore gauge up to 160mm in diameter to an accuracy of 0.01mm
- Setting master and 33 piece metric gauge block set supplied in aluminium case

Setting Device

- Internal range 160mm
- Depth range 25mm
- Centraliser width 70mm
- Quick-release holder for fast adjustment

Gauge Block Set

- Accuracy to DIN 861, Grade2
- 33 piece metric steel set
- Includes MOORE & WRIGHT certificate



BORE GAUGE SETTING MASTER KIT

Code No	Description
MW720-01	Bore Gauge Setting Master Kit



Bowers Steel Rules and Tapes

These Graduated Rules are manufactured out of spring steel.



Graduated Steel Rules

Manufactured to DIN 866/2 these round ended steel rules start their graduations on the left edge. The top of the rule is graduated in inch readings 1/16", 1/32" and 1/64". The bottom is graduated in metric readings of 1/2mm and 1/1mm.



Graduated Steel Straight Edge

Manufactured to DIN 866/1 the gauging surfaces have been precision ground. The clear and easy to read metric graduations start 5mm in from the ends.



Circumference Tapes

Tapes measure both circumference and external diameters on the vernier cover plate. Manufactured to DIN 866/2 and read to 0.1mm.

GRADUATED STEEL RULES

Code No	Size
80-460-241	150 x 13 x 0.5mm
80-460-243	250 x 15 x 0.5mm
80-460-247	300 x 30 x 1mm
80-460-248	500 x 30 x 1mm
80-460-249	1000 x 30 x 1mm
80-460-250	1500 x 30 x 1mm
80-460-251	2000 x 30 x 1mm
80-460-252	3000 x 30 x 1mm

GRADUATED STEEL STRAIGHT EDGE

Code No	Size
80-451-101	500 x 30 x 6mm
80-451-102	1000 x 40 x 8mm
80-451-103	1500 x 40 x 8mm
80-451-104	2000 x 50 x 10mm
80-451-105	3000 x 50 x 10mm

CIRCUMFERENCE TAPES

Code No	Circumference	Diameter (mm)
80-458-102	60-950mm	20-300
80-458-103	940-2200mm	300-700
80-458-104	2190-3460mm	700-1100
80-458-105	3450-4720mm	1100-1500
80-458-106	4710-5980mm	1500-1900
80-458-107	5960-7230mm	1900-2300
80-458-108	7220-8500mm	2300-2700
80-458-109	8490-9760mm	2700-3100
80-458-110	9730-11010mm	3100-3500

Moore & Wright Engineers' Rules

Features

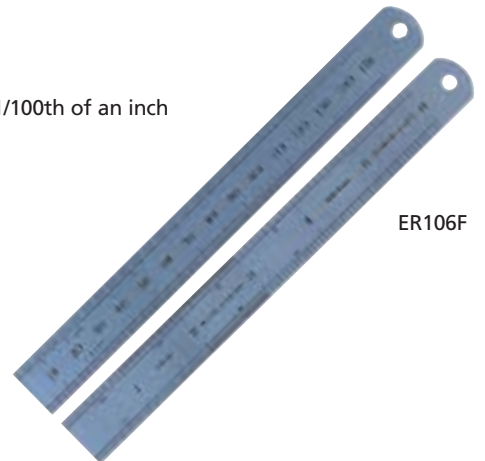
- Made from fine quality steel which has been hardened and tempered to provide the ideal balance between flexibility and durability
- 'D' end with hanging hole
- Satin chrome anti-glare finish
- Permanent black high definition scale markings
- Metric scales front and rear face graduations 0.5mm, 1.0mm
- Metric / Imperial scales front face graduations 1/16th, 1/32nd, 1/64th 1/10th, 1/20th, 1/50th, 1/100th of an inch
- Metric / Imperial scales rear face graduations 0.5mm, 1.0mm

METRIC SCALES ONLY: TWO SIDES, FOUR EDGES

Code No	Length (mm)	Width (mm)	Thickness	Pack Quantity
ER306F	150	19	0.4mm	1
ER312	300	25	1.0mm	1

METRIC / IMPERIAL SCALES: TWO SIDES, FOUR EDGES

Code No	Length (mm)	Length (inch)	Width (mm)	Thickness	Pack Quantity
ER106F	150	6	19.0	0.4mm	1
ER206F	150	6	12.5	0.4mm	1
ER112	300	12	25.0	1.0mm	1
ER212	300	12	12.5	1.0mm	1
ER424	600	24	25.0	1.0mm	1



Bowers Straight Edges & Parallels

Manufactured out of spring steel these straight edges are precision ground.



Steel Straight Edge

Manufactured to DIN 874/1. Up to 2000mm these straight edges are rectangular section. From 2500mm they are I-section with two grip slots.

Straightness: $4 + \frac{\text{Length (mm)}}{60} = \mu\text{m}$.

STEEL STRAIGHT EDGE

Code No	Size
80-465-101	500 x 40 x 8mm
80-465-102	750 x 50 x 10mm
80-465-103	1000 x 50 x 10mm
80-465-104	1500 x 60 x 12mm
80-465-105	2000 x 70 x 14mm
80-465-106	2500 x 80 x 15mm
80-465-107	3000 x 100 x 16mm

Moore & Wright Engineers' Straight Edges

Standard features include:

- Manufactured from high quality hardened steel
- Available with either square or one 30° bevelled edge
- Finish ground on both sides and edges
- Clearly marked supporting points on 900mm size

31012



31036

Light Section Straight Edges:

- Manufactured to BS5204 Grade B
- Suitable for general workshop use

METRIC / IMPERIAL LIGHT SECTION (GRADE B) STRAIGHT EDGES

Length (mm)	Width (inch)	Width (mm)	Width (inch)	Thickness	Code No	Description	Code No	Description
305	12	32	1 1/4	4.76mm / 3/16"	31012	Square Edge	310B12	Bevel Edge
610	24	41	1 5/8	6.35mm / 1/4"	31024	Square Edge	310B24	Bevel Edge
914	36	51	2	7.94mm / 5/16"	31036	Square Edge	310B36	Bevel Edge

Heavy Section features:

- Manufactured to BS5204 Grade A
- Suitable for precision, inspection and workshop use



312B36

METRIC HEAVY SECTION (GRADE A) STRAIGHT EDGES

Length (mm)	Length (inch)	Width (mm)	Width (inch)	Thickness	Code No	Description	Code No	Description
305	12	41	1 5/8	6.35mm / 1/4"	31212	Square Edge	312B12	Bevel Edge
610	24	51	2	7.94mm / 5/16"	31224	Square Edge	312B24	Bevel Edge
914	36	64	2 1/2	9.53mm / 3/8"	31236	Square Edge	312B36	Bevel Edge

TOLERANCES TABLES FOR STRAIGHT EDGES

GRADE B - 310 SERIES			Combined Tolerance of flatness & Parallelism of Side Faces
Nominal Length	Straightness of Working Faces	Parallelism of Working Faces	
12"	0.00039"	0.00039"	0.00276"
24"	0.00047"	0.00047"	0.00315"
36"	0.00055"	0.00055"	0.00354"

TOLERANCES TABLES FOR STRAIGHT EDGES

GRADE A - 312 SERIES			Combined Tolerance of flatness & Parallelism of Side Faces
Nominal Length	Straightness of Working Faces	Parallelism of Working Faces	
12"	0.00020"	0.00020"	0.00197"
12"	0.00020"	0.00020"	0.00197"
36"	0.00028"	0.00028"	0.00236"

Carbide Tipped Scriber

Features

- Pocket clip
- Pearl chrome finish
- Robust design



SCT-001XR



SCT-002R

CARBIDE TIPPED SCRIBER

Code No	Description	Pack Quantity
SCT-001XR	Retail Pack, replaceable carbide tipped scriber	1
SCT-002R	Retail Pack, fixed carbide tipped scriber	1

Telescopic Gauges 315 Series

Features

- For quick inside measurement and determination of inside diameters
- Spring loaded plunger that expands in the bore or groove
- Satin chromed body
- With auto extension and direct locking
- Measuring faces are hardened and micro-lapped



TELESCOPIC GAUGE SETS

Code No	Range (mm)	Pack Quantity
MW315-01	8-150	6-pieces

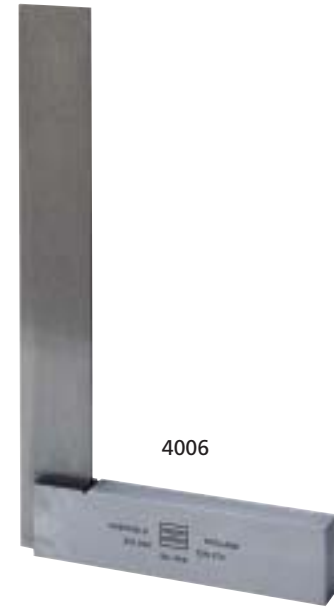
INDIVIDUAL TELESCOPIC GAUGES

Code No	Range (mm)
MW315-011	8-12.7
MW315-012	12.7-19
MW315-013	19-32
MW315-014	32-54
MW315-015	54-90
MW315-016	90-150

Moore & Wright Engineers' Squares

Features

- Precision ground blade and stock
- Blind rivetted construction
- Hardened and tempered blades
- 3" & 4" available in Retail Packs

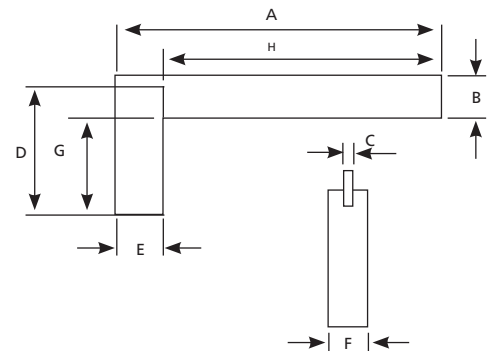


WORKSHOP SQUARES: Grade B

Code No	Blade Length (mm)	Blade Length (inch)	Approx. Stock Length (mm) (inside face)
4003	75	3	49
4004	100	4	56
4006	150	6	82
4009	225	9	108
40012	300	12	139

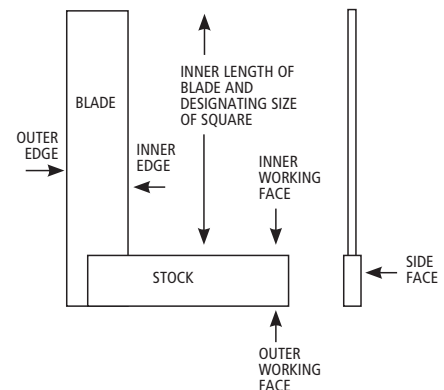
DIMENSIONS TABLE (MM)

Square Size Faces	Blade		Stock				Inner Working	
	A	B	C	D	E	F	G	H
3" (75mm)	104.8	25.4	1.42	68.5	25.4	12.7	49.3	79.4
4" (100mm)	130.2	25.4	1.42	76.2	25.4	12.7	57.0	104.8
6" (150mm)	181.0	25.4	1.42	101.6	25.4	12.7	82.4	155.6
9" (225mm)	273.1	38.1	3.15	139.7	38.1	19.05	107.9	234.95
12" (300mm)	355.6	44.4	3.15	177.8	44.4	22.2	139.7	311.2
18" (450mm)	527.0	63.5	4.74	254.0	63.5	25.4	201.0	463.5
24" (600mm)	679.4	63.5	4.74	330.0	63.5	31.75	277.0	615.9



400 SERIES ENGINEERS SQUARES TOLERANCES (MICRONS)

	Size of Square							
	3" 75mm	4" 100mm	6" 150mm	9" 225mm	12" 300mm	18" 450mm	24" 600mm	
Straightness of Blade Edges	8	8	8	8	12	16	24	
Parallelism of Blade Edges	8	8	8	12	12	18	18	
Flatness of Working Faces of Stock (any deviation must be concave)	4	6	6	8	8	10	16	
Parallelism of Working Faces of Stock	5	5	5	8	8	12	12	
Parallelism of Side Faces of Stock	25	25	25	50	50	100	100	
Squareness of Side Faces of Stock to Working Faces of Stock	57	57	75	114	134	190	190	
Squareness of Edges of Blade to Side Faces of Stock	15	15	15	15	15	15	15	
Squareness of Edges of Blade to Working Faces of Stock	16	16	16	16	24	32	48	
Lateral Squareness of Blade	125	250	250	375	375	500	500	





Sliding 'T' Squares

Practical time saving tool for many marking-out applications. Suitable for use as a parallel or as a double square.

Features

- Working surfaces of the stock are ground
- The blade is hardened, tempered and has a satin chrome finish

DS71041



DS71056



METRIC SLIDING T SQUARES

Code No	Length (mm)	Graduation	Stock Length (mm)
DS71041	100	1mm, 0.5m	62
DS71051	150	1mm, 0.5m	62

METRIC / IMPERIAL SLIDING T SQUARES

Code No	Length (mm)	Length (inch)	Graduation	Stock Length (mm)
DS71044	100	4	0.5mm, 1mm	62
DS71056	150	6	0.5mm, 1mm	62

Precision Engineers' Square

Features

- Manufactured according to DIN 875
- Made of hardened stainless steel
- Precision ground and micro-lapped
- 2 knife-form sides with angle of 40°

STANDARD DIN 875 SQUARES

Code No	Description
MW910-01	40 x 30mm
MW910-02	50 x 40mm
MW910-03	75 x 50mm
MW910-04	100 x 70mm
MW910-05	150 x 100mm
MW910-06	200 x 130mm



Moore & Wright Jenny (Hermaphrodite) Calipers

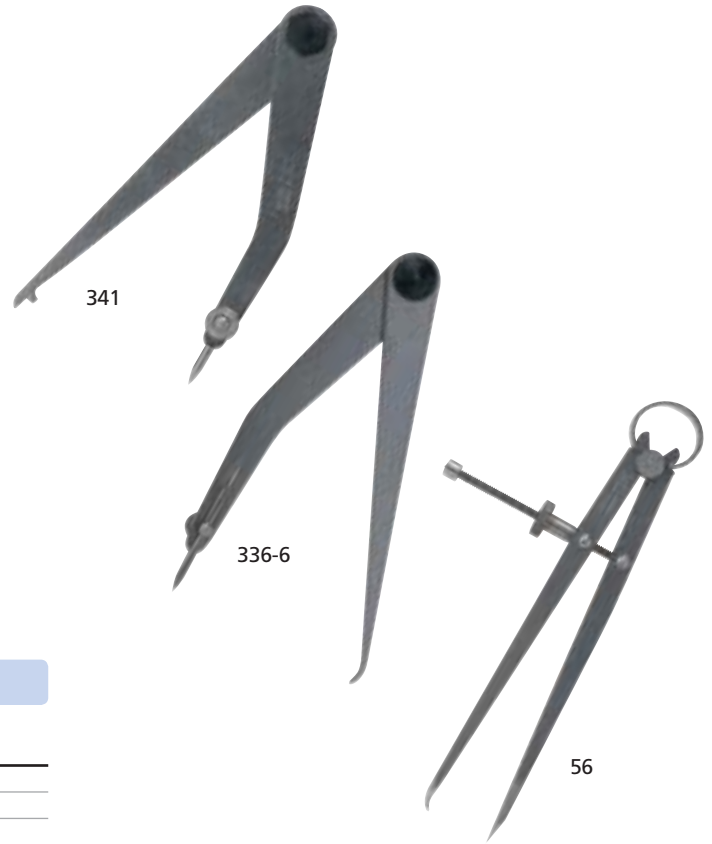
Firm Joint Adjustable Point:

- Manufactured from polished tool steel
- A large headed nut and screw assembly provides a firm and rigid friction joint, with no play
- The sizes listed are the effective leg length which is measured from the joint assembly
- Leg which holds the round adjustable hardened point is offset
- Model 341 has a locating spur on the straight leg

Note: Firm joint caliper capacities are generally 1/3 greater than the effective leg length.

Spring Joint:

- Manufactured from polished tool steel
- The marking leg is hardened to over 550Hv at the point
- Bow spring ensures uniform tension over working range
- Centrally mounted adjustment screw offers finer setting than firm joint type



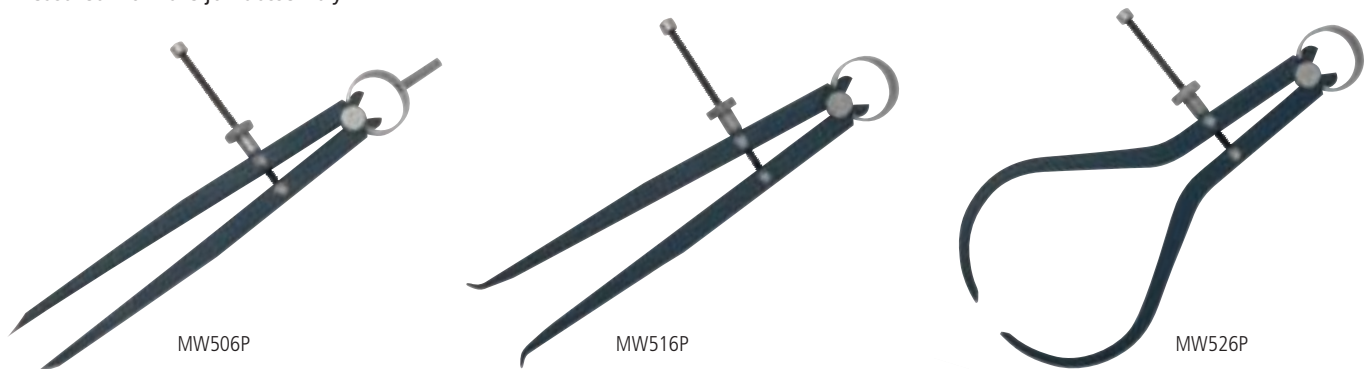
METRIC / IMPERIAL JENNY CALIPERS

Code No	Size	Pack Quantity	Description
341	125mm / 5"	5	Firm Joint
336-6	150mm / 6"	5	Spring Joint
56	150mm / 6"	5	Spring Joint

Powder Coated Calipers & Dividers

Features

- Powder coated steel for extra durability
- Sizes listed are the effective leg length which is measured from the joint assembly



POWDER COATED CALIPERS & DIVIDERS

Code No	Description	Code No	Description	Code No	Description	Size
MW504P	Dividers	MW514P	Inside Calipers	MW524P	Outside Calipers	100mm / 4"
MW506P	Dividers	MW516P	Inside Calipers	MW526P	Outside Calipers	150mm / 6"
MW5012P	Dividers	MW5112P	Inside Calipers	MW5212P	Outside Calipers	300mm / 12"

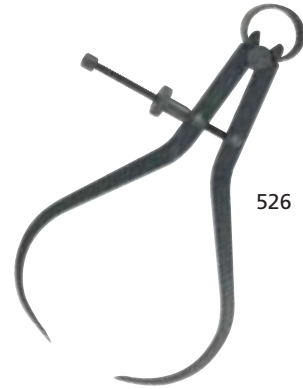


Moore & Wright Inside & Outside Calipers

Outside & Inside Calipers, Firm Joint:

- Manufactured from polished tool steel
- A large headed nut & screw assembly provides a firm & rigid friction joint, with no play
- The sizes listed are the effective leg length which is measured from the joint assembly

Note: Firm joint caliper capacities are generally 1/3 greater than the effective leg length.



Outside Calipers, Spring Joint:

- Bow spring ensures uniform tension over working range
- Centrally mounted adjustment screw offers finer setting, than firm joint type

Inside Calipers, Spring Joint:

- Bow spring ensures uniform tension over working range
- Centrally mounted adjustment screw
- Manufactured from polished tool steel

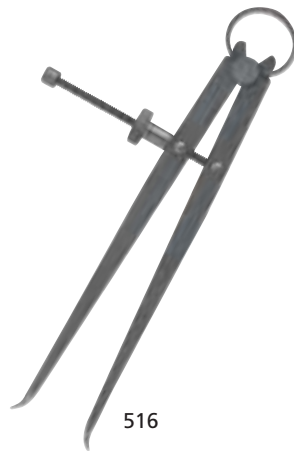
Note: Firm joint caliper capacities are generally 1/3 greater than the effective leg length.



Spring Dividers:

- Manufactured from polished tool steel
- Points are hardened to over 550Hv
- Bow spring ensures uniform tension over working range
- Centrally mounted adjustment screw

Note: The nominal size is the distance between the centre of the roller and the working ends of the legs.



Comply with: BS3123

INSIDE CALIPERS FIRM JOINT

Code No	Size	Pack Quantity
3306	150mm / 6"	5
3308	200mm / 8"	1
33012	300mm / 12"	1

OUTSIDE CALIPERS FIRM JOINT

Code No	Size	Pack Quantity
3316	150mm / 6"	6
3318	200mm / 8"	8
33112	300mm / 12"	12
33118	450mm / 18"	18
33124	600mm / 24"	24

DIVIDERS & INSIDE / OUTSIDE CALIPERS SPRING JOINT

Code No	Description	Code No	Description	Code No	Description	Size	Pack Quantity
503	Dividers	513	Inside	523	Outside	75mm / 3"	5
504	Dividers	514	Inside	524	Outside	100mm / 4"	5
506	Dividers	516	Inside	526	Outside	150mm / 6"	5
508	Dividers	518	Inside	528	Outside	200mm / 8"	1
5010	Dividers	5110	Inside	5210	Outside	250mm / 10"	1
5012	Dividers	5112	Inside	5212	Outside	300mm / 12"	1

Moore & Wright Depth Gauges

Depth Gauges:

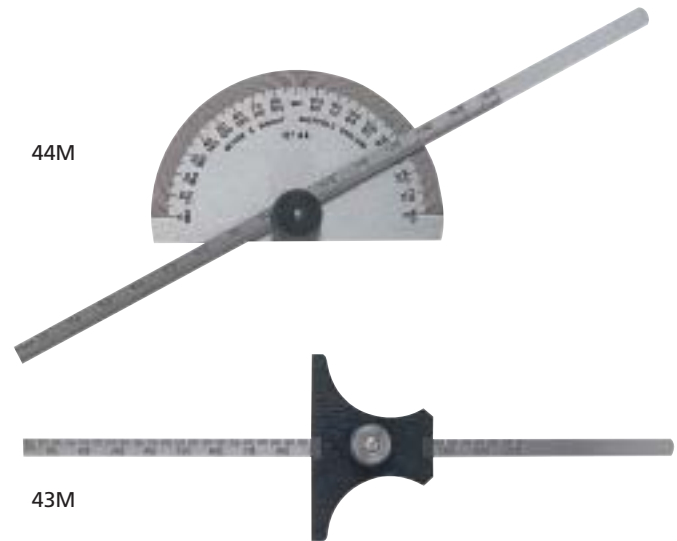
- Available with either reversible base or protractor
- Full range rule adjustment
- Readings can be fixed by means of a locknut
- Rules graduated on both sides
- Metric scales front face graduations 0.5mm, 1.0mm
- Metric scales rear face graduations 1.0mm
- Metric / Imperial scales front face graduations 1/32nd
- Metric / Imperial scales rear face graduations 1.0mm
- Length of blade 195mm / 7.68"

Reversible Base Type:

- Accurately ground top and bottom faces allow base to be reversed, for use in confined spaces

Protractor type:

- Protractor plate is graduated 0° - 180° - 0° degrees
- Scale resolution 1/2 degree
- 43M & 44M available in Retail Packs. See page 250.



METRIC DEPTH GAUGE 0-150MM

Code No	Description	Width (mm)	Thickness	Size of Base
43M	Reversible Base	5.5	1.0mm	18mm, 56mm
44M	Protractor	5.5	1.0mm	79mm

METRIC / IMPERIAL DEPTH GAUGE 0-150MM / 0-6"

Code No	Description	Width (mm)	Width (inch)	Thickness	Size of Base
43	Reversible Base	5.5	0.22	1.0mm / 0.04"	18mm, 56mm, 0.71", 2.21"
44	Protractor	5.5	0.22	1.0mm / 0.04"	79mm / 3.11"

Angle Meter 946 Series

Features

- Made of tool steel
- Satin chromed, engraved scale
- Robust and durable



METRIC ANGLE METER READINGS

Code No	Length (mm)	Diameter of Scale (mm)
MW946-01	120	80
MW946-02	150	120
MW946-03	200	150
MW946-04	300	200
MW946-05	500	250



Moore & Wright Surface Gauges

Universal type:

- Designed for precise marking out operations
- Hardened and tempered steel base, ground on one end and bottom face
- Vee groove for locating on cylindrical workpieces
- Two retractable locating pins
- Radial grooves in the side facilitate comfortable handling
- One handed fine adjustment
- Supplied with two interchangeable pillars and one 4mm diameter scriber

Fixed type:

- Budget surface gauge designed for general purpose use
- Cast cylindrical base
- Fixed pillar
- Supplied with one 4mm diameter scriber

Note: Surface gauges can be used for mounting dial test indicators with either a 4mm or 6.35mm (1/4") mounting spigot.



METRIC / IMPERIAL SURFACE GAUGES

Code No	Description	Size of Base	Height (mm)	Height (inch)
E101B	Universal	80 x 65mm, 3 1/8 x 2 1/2"	225 & 300	9 & 12
E102B	Universal	105 x 85mm, 4 1/8 x 3 3/8"	300 & 450	12 & 18
E1079	Fixed	68mm dia., 2 5/8" dia.	225	9

Universal Centre Finder with Indicators

Features

- Universal equipment for finding the centre of a bore or to measure the concentricity of work pieces
- Indicator always faces operator, also when spindle runs
- With double indicator for maximum accuracy
- For vertical and horizontal use
- Includes 6 touch points for internal and external measurement



UNIVERSAL CENTRE FINDER

Code No	Description	Range - Internal (mm)	Range - External (mm)	Concentricity	Accuracy (mm)	Indicator Range (mm)
MW612-01	Centre finder	3.5-300	0-300	0.005mm	0.01	0-3

Universal Bevel Protractor 500 Series

Features

- Made of high quality hardened and ground stainless steel
- High precision satin chromed scale
- Minimum reading 5 minutes
- Magnifying glass for easy reading
- With fine adjustment and height gauge attachment
- 300mm / 12" and 150mm / 6" rule
- Packed as set in plastic box



UNIVERSAL BEVEL PROTRACTOR SET 500 SERIES

Code No	Range
MW500-01	360°

Indicator Bevel Protractor

Features

- Features high quality indicator
- Made of high quality hardened and ground stainless steel
- High precision satin chromed scale
- Minimum reading 5 minutes
- Magnifying glass for easy reading
- With fine adjustment and height gauge attachment
- 300mm / 12" rule and 150mm / 6" rule
- Packed as set in plastic box



INDICATOR BEVEL PROTRACTOR 510 SERIES

Code No	Range
MW510-01	360°

Digital Angle Rule

Features

- Large LCD display
- Easy-to-use and strong lock device
- Inside and outside angle measuring
- Hold function
- Reversible reading
- Stainless steel rule blades with mm, 1/16", 1/32" and 1/64" scales



DIGITAL ANGLE RULE

Code No	Range (mm)	Range (inch)	Resolution
MW506-01	200	8	0.05°
MW506-02	300	12	0.05°



Sylvac Digital Protractor

The Sylvac Digital Protractor gives the operator access to a multitude of useful functions within an easy to use format. The instrument's easy to read display, digital output and range of useful accessories mean that it can undertake most angular measuring tasks with great ease.



Large 8.5mm LCD digits for ease of viewing.

Zero setting is made against a fixed stop and internal angles from 40° to 160° inclusive can be measured.

Accessories include an acute angle attachment and a support stand for vertical applications.



Read-out

- 1 minute of arc or 0.01 degrees of arc
- For accurate settings the instrument is fitted with a micro-fine adjustment

Accuracy

- 4 minutes of arc

Range

- With the aid of a push button the range can be selected according to the application. i.e 1 x 360°, 2 x 180° or 4 x 90°. Changing from reading of arc minutes to decimal indication by pressing a button. Example: Angle reading 35°30' changes to 35.50°

SYLVAC PROTRACTOR

Code No	Description
30-820-1700	Sylvac Digital Protractor with 200mm blade
30-820-2420	Replacement Blade 200mm
30-820-2430	Additional Blade 300mm
30-820-2450	Additional Blade 500mm
30-820-2460	Support stand for protractor
30-820-2461	Acute Angle Attachment

Digital Protractor



Features

- 360° measuring range (4 x 90°)
- Manufactured from stainless steel
- Displays in deg/min/sec and decimal
- Resolution 30"
- Accuracy +/- 5'
- Fine adjustment
- Supplied with 150mm, 200mm and 300mm blades
- Supplied with acute angle attachment
- Battery CR2032

DIGITAL PROTRACTOR

Code No	Range
MW500-01D	360°

Digital Protractor



Features

- Large LCD display
- Strong magnets on all blade edges
- Easy-to-use and strong lock device
- Hold function
- Reversible reading
- Accuracy: ±0.2°

DIGITAL PROTRACTOR

Code No	Size	Range	Resolution
MW505-01	100mm / 4"	360°	0.05°
MW505-02	200mm / 8"	360°	0.05°
MW505-03	300mm / 12"	360°	0.05°

Basic Combination Set 521 Series

Features

- Three measuring heads are attached to the stainless steel ruler, allowing versatile measurements on various types of work pieces
- Square head, protractor head and centre head
- For various measuring and marking applications
- Hardened and ground slide ways
- Stainless steel rule with engraved graduations; one side metric, one side imperial



BASIC COMBINATION SET 521 SERIES

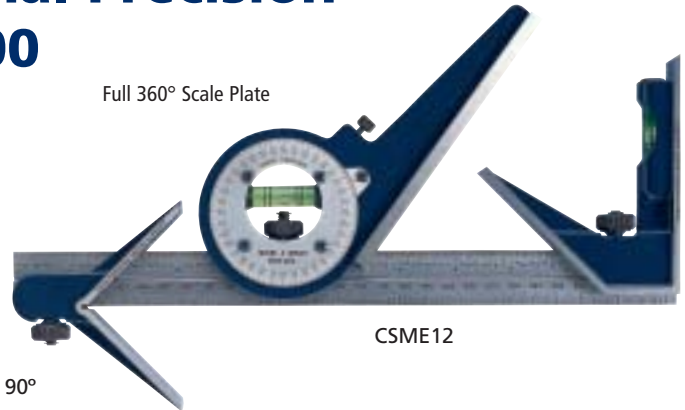
Code No	Range	Description
MW521-01	180°	4 items in set

Moore & Wright Traditional Precision Combination Set - CSM300

Features

- Fully hardened and tempered precision rules with deeply etched graduations on both sides for ease of reading and long life
- Fully hardened and ground datum faces to resist wear
- Centrally mounted protractor vial allows unrestricted viewing
- Protractor has full 360° scale plate, graduated 0 - 180° - 0
- Satin chrome scale plate on protractor
- Unique rule clamp allows positive location and clamping
- Square head offers the following fixed angles: 15°, 30°, 45°, 60°, 75° & 90°
- Centre head offers a fixed 90° angle, for finding the centre of round bar stock up to 120mm diameter
- Clipped corner on rule to maximise capability

Full 360° Scale Plate



CSME12

METRIC PRECISION COMBINATION SETS & RULES

Code No	Application Range	Description
CSM300	Precision Combination Set	Full set including 300mm rule (graduated both sides), Protractor head, Square head and Centre head
CSRM300	Rule, 300mm	mm and 0.5mm on both sides; numbered every 10mm
CSRM600	Rule, 600mm	mm and 0.5mm on both sides; numbered every 10mm

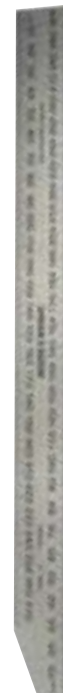
METRIC / IMPERIAL PRECISION COMBINATION SETS & RULES

Code No	Application Range	Description
CSME12	Precision Combination Set	Full set inc. 300mm/12" rule, Protractor head, Square head & Centre head
CSRME12	Rule, 300mm / 12"	Metric graduations: in 0.5mm, numbered every 10mm. Imperial graduations: 32nds and 64ths numbered every 1/8"
CSRME24	Rule, 600mm / 24"	Metric graduations: in 0.5mm, numbered every 10mm. Imperial graduations: 32nds and 64ths numbered every 1/8"

PRECISION COMBINATION SET ACCESSORIES

Code No	Application Range	Description
CSPRO	Protractor head	Supplied as standard with CSM300 & CSME12 precision combination sets
CSSH	Square head	Supplied as standard with CSM300 & CSME12 precision combination sets
CSCH	Centre head	Supplied as standard with CSM300 & CSME12 precision combination sets
RPCSCS-5	Replacement rule clamp screw	Supplied as standard with CSPRO, CSSH and CSCH

CSRME12



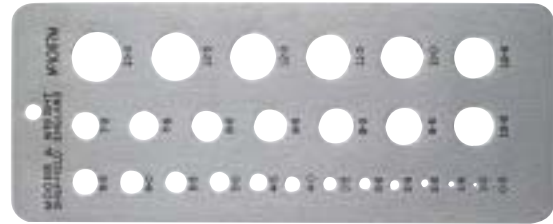
RPCSCS-5



Moore & Wright Drill & Standard Wire Gauges

Drill Gauges:

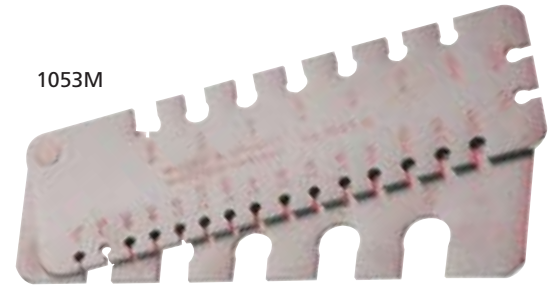
- Made from high grade tool steel, with a brushed finish
- Marked with nominal size of each hole



1067M

Standard Wire Gauges:

- Two part space saving design, with corner pivot
- Marked with nominal size of each slot
- Made from high grade tool steel, with a brushed finish
- 1067M & 1053M available in Retail Packs (page 248)



1053M

METRIC STANDARD WIRE GAUGES

Code No	No. of Slots	Range of Slot Size
1053M	40	0.2-10.0mm

IMPERIAL STANDARD WIRE GAUGES

Code No	No. of Slots	Range of Slot Size
1052	36	1-36 SWG

METRIC DRILL GAUGES

Code No	No. of Slots	Range of Slot Size	Graduation (mm)
1067M	26	0.5-13.0mm	0.5
1066M	96	0.5-10.0mm	0.1

Moore & Wright Feeler Strip Sets

Features

Complies with DIN 2275

- 20 piece feeler strip in wallet
- Hardened, tempered and polished steel strip
- Nominal thickness is marked on each strip
- Imperial Set: Length 6", Range 1-25 Thou
- Metric Set: Length 150mm, Range 0.03 to 1.00mm



FS20M

FEELER STRIP SETS

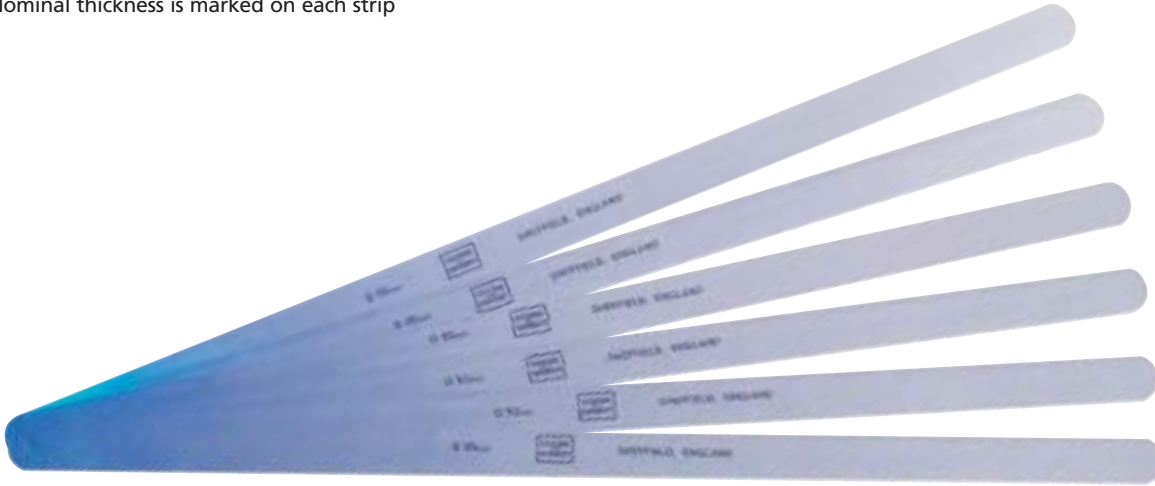
Code No	Range
FS20M	Metric 20 Piece Feeler Strip Set
FS20E	Imperial 20 Piece Feeler Strip Set

Moore & Wright Feeler Strip 126M Series

Features

Complies with DIN 2275

- Hardened, tempered and polished steel strip
- Nominal thickness is marked on each strip



126M003

METRIC 0.03-0.60MM

Code No	Thickness x 0.01mm	Length (mm)	Width (mm)	Pack Quantity
126M003	3	300	12.7	10
126M004	4	300	12.7	10
126M005	5	300	12.7	10
126M006	6	300	12.7	10
126M007	7	300	12.7	10
126M008	8	300	12.7	10
126M009	9	300	12.7	10
126M010	10	300	12.7	10
126M015	15	300	12.7	10
126M020	20	300	12.7	10
126M025	25	300	12.7	10
126M030	30	300	12.7	10
126M035	35	300	12.7	10
126M040	40	300	12.7	10
126M045	45	300	12.7	10
126M050	50	300	12.7	10
126M055	55	300	12.7	10
126M060	60	300	12.7	10

IMPERIAL 0.001-0.025"

Code No	Thickness x 0.001"	Length (inch)	Width (inch)	Pack Quantity
1260001	1	12	0.5	10
12600015	1.5	12	0.5	10
1260002	2	12	0.5	10
12600025	2.5	12	0.5	10
1260003	3	12	0.5	10
1260004	4	12	0.5	10
1260005	5	12	0.5	10
1260006	6	12	0.5	10
1260007	7	12	0.5	10
1260008	8	12	0.5	10
1260009	9	12	0.5	10
1260010	10	12	0.5	10
1260011	11	12	0.5	10
1260012	12	12	0.5	10
1260013	13	12	0.5	10
1260014	14	12	0.5	10
1260015	15	12	0.5	10
1260016	16	12	0.5	10
1260017	17	12	0.5	10
1260018	18	12	0.5	10
1260019	19	12	0.5	10
1260020	20	12	0.5	10
1260021	21	12	0.5	10
1260022	22	12	0.5	10
1260023	23	12	0.5	10
1260024	24	12	0.5	10
1260025	25	12	0.5	10

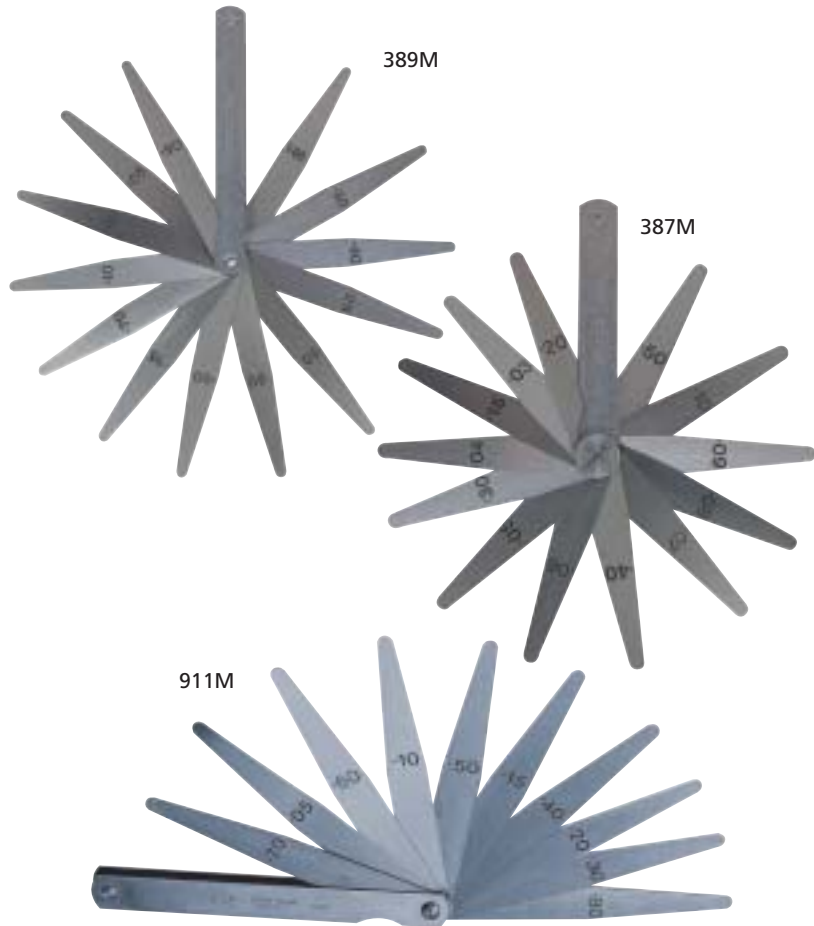


Feeler Gauge Sets

Precision Range:

Complies with DIN 2275

- All blades are hardened, tempered and polished
- Nominal thickness marked on each blade
- Replacement blades available
- 3" / 75mm & 4" / 100mm available in Retail Pack



Safe and Sure® Range:

- An economical range of feeler sets for general workshop use
- All blades are hardened, tempered and polished
- Nominal thickness marked on each blade

IMPERIAL PRECISION RANGE

Code No	Length (inch)	No. of Blades	Thickness x 0.001"	Width (inch)	Locking Screw	Pack Quantity
1243	3	10	1.5, 2, 3, 4, 6, 8,	0.5	No	1
132	4	10	10, 12, 15, 25	0.5	No	1
1246	6	10		0.5	No	1
12412	12	10		0.5	No	1
492	3	15	1.5, 2, 2.5, 3, 4,	0.5	No	1
493	4	15	5, 6, 7, 8, 9, 10,	0.5	No	1
			12, 15, 20, 25			
12	3	26	1.5, 2, 2.5, 3, 4,	0.5	No	1
			5, 6, 7, 10, 11,			
			12, 13, 14, 15,			
			16, 17, 18, 19,			
			20, 21			

IMPERIAL SAFE AND SURE® RANGE

Code No	Length (inch)	No. of Blades	Thickness x 0.001"	Width (inch)	Locking Screw	Pack Quantity
912	3	10	0.0015-0.025	0.5	No	1
911	4	10	0.0015-0.025	0.5	No	1
1106	6	10	0.0015-0.025	0.5	No	1
1112	12	10	0.0015-0.025	0.5	No	1

METRIC PRECISION RANGE

Code No	Length (mm)	No. of Blades	Thickness x 0.01mm	Width (mm)	Locking Screw	Pack Quantity
387M	75	13	3, 4, 5, 6, 7, 8,	12.7	Yes	1
388M	100	13	9, 10, 15, 20,	12.7	Yes	1
			30, 40, 50			
389M	100	13	5, 10, 15, 20,	12.7	No	1
394M	150	13	25, 30, 40, 50,	12.7	No	1
398M	300	13	60, 70, 80, 90,	12.7	Yes	1
			100			
391M	75	11	5, 10, 15, 20,	12.7	No	1
			25, 30, 40, 50,			
			60, 70, 80			
393M	75	20	5, 10, 15, 20,	12.7	No	1
390M	100	20	25, 30, 35, 40,	12.7	No	1
395M	150	20	45, 50, 55, 60,	12.7	No	1
399M	300	20	65, 70, 75, 80	12.7	Yes	1

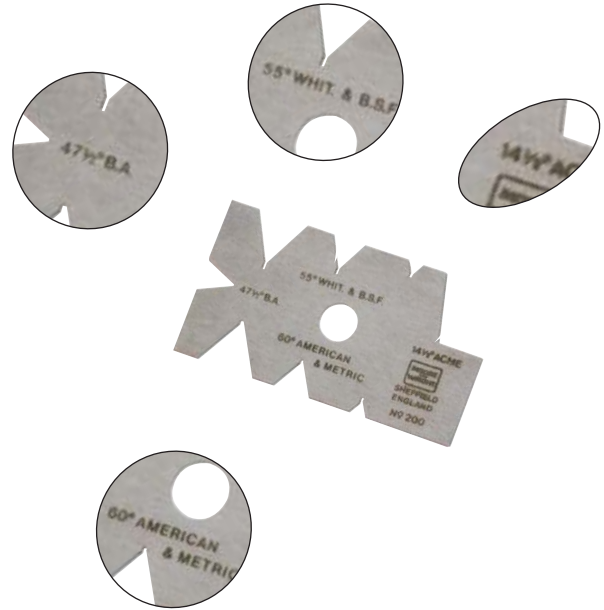
METRIC SAFE AND SURE® RANGE

Code No	Length (mm)	No. of Blades	Thickness x 0.001mm	Width (mm)	Locking Screw	Pack Quantity
912M	75	10	0.05-0.8	12.7	No	1
911M	100	10	0.05-0.8	12.7	No	1
1106M	150	10	0.05-0.8	12.7	No	1
1112M	300	10	0.05-0.8	12.7	No	1

Moore & Wright Screw Cutting Gauges

Features

- Traditional Engineers' screw cutting gauge
- Suitable for most standard metric and imperial thread forms
- Accurately milled angles for precise evaluation of thread form
- Available in Retail Packs. See page 248.



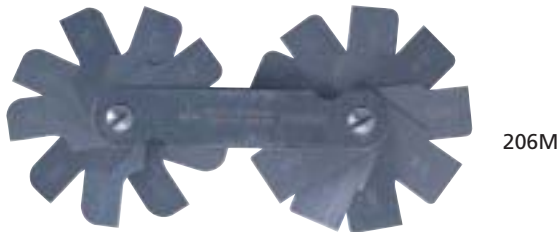
SCREW CUTTING GAUGE 200 SERIES

Code No	Description	Pack Quantity
200	Thread form: SI, ISO, US Std. 60°. Thread form: Whitworth 55°. Thread form: British Association (BA). 47.5°. Thread form: ACME. 14.5°.	10

Moore & Wright Radius Gauges

Features

- Accurately milled steel blades
- Designed to check both internal and external radii
- Marked with nominal size on each blade
- Mounted either on a ring or in a steel sleeve
- 204M & 204 available in Retail Packs. See page 248.



RADIUS GAUGES

Code No	Range	No. of Blades
RG-C7M	1mm to 7mm by steps of 0.25 from 1mm to 3mm by steps of 0.5 from 3.5mm to 7mm	17 concave & 17 convex
RG-C15M	7.5mm To 15mm (BY STEP OF 0.5mm)	16 concave & 16 convex
RG-C25M	15.5mm to 25mm by steps of 0.5mm from 15.5mm to 20mm by steps of 1mm from 21mm to 25mm	15 concave & 15 convex
RG-C14N	1/32" To 1/4" (BY STEPS OF 1/64")	15 concave & 15 convex
RG-C12N	17/64" To 1/2" (BY STEPS OF 1/64")	16 concave & 16 convex

METRIC: Radius Gauges, 0.75-13mm

Code No	Range (mm)	Graduation (mm)	No. of Blades	Description
204M	0.75-5	0.25	18	Ring
206M	0.75-5	0.25	18	Sleeve
204MA	5.5-13	0.5	16	Ring
206MA	5.5-13	0.5	16	Sleeve

IMPERIAL: Radius Gauges, 1/32-33/64"

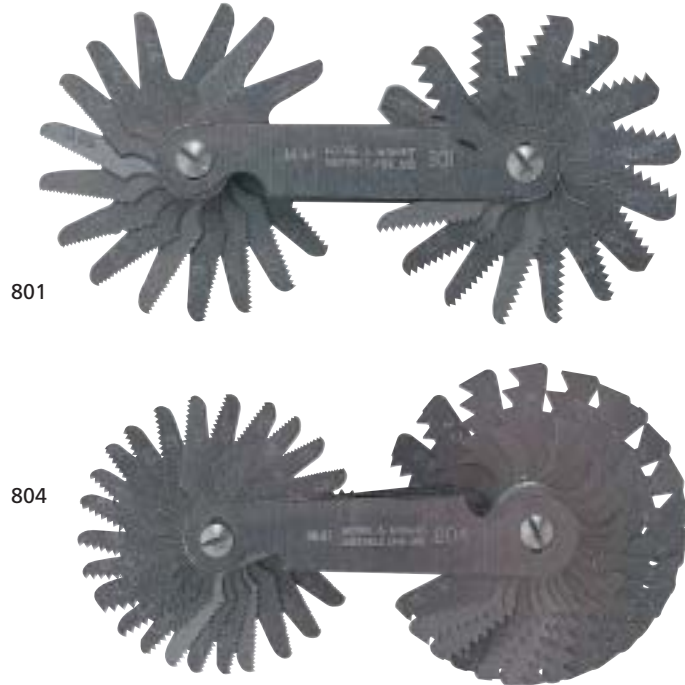
Code No	Range (inch)	Graduation (inch)	No. of Blades	Description
204	1/32 - 17/64	1/64	16	Ring
206	1/32 - 17/64	1/64	16	Sleeve
204A	9/32 - 33/64	1/64	16	Ring
206A	9/32 - 33/64	1/64	16	Sleeve

Moore & Wright Screw Pitch Gauges MW800 Series

Features

- Accurately milled steel blades
- Designed to check both internal and external thread forms
- Marked with nominal size on each blade
- All blades fixed in a steel sleeve
- Screw cutting gauge included
- 801, 804, 806, 809 available in Retail Packs. See page 248.

Note: SI (System International) metric blades should not be used to check ISO (International Standards Organisation) metric threads due to interference of the thread forms; but ISO metric blades can be used to check SI metric threads.



COMBINED METRIC & IMPERIAL: Screw Pitch Gauges

Code No	Description	No. of Blades	Threads per mm	Note
804	S.I. Metric & Whitworth	49	Metric: 0.4, 0.5, 0.7, 0.75, 0.8, 0.9, 1.0, 1.25, 1.50, 1.75, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.0, 6.5, 7.0 Imperial: 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 18, 19, 20, 22, 24, 25, 26, 28, 30, 32, 36, 40, 48, 60	Screw Cutting Gauge included 60 degrees and 55 degrees

METRIC: Screw Pitch Gauges

Code No	Description	No. of Blades	Threads per mm	Note
801	S.I. Metric	30	0.25, 0.3, 0.35, 0.4, 0.45, 0.5, 0.55, 0.6, 0.65, 0.7, 0.75, 0.8, 0.85, 0.9, 1.0, 1.1, 1.2, 1.25, 1.3, 1.4, 1.5, 1.6, 1.7, 1.75, 1.8, 1.9, 2.0, 2.5, 3.0	Screw Cutting Gauge included 60 degrees
809	ISO Metric	22	0.35, 0.4, 0.45, 0.5, 0.6, 0.7, 0.75, 0.8, 1.0, 1.25, 1.5, 1.75, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.0	Screw Cutting Gauge included 60 degrees

IMPERIAL: Screw Pitch Gauges

Code No	Description	No. of Blades	Threads per mm	Note
799	American National	30	4, 4.5, 5, 5.5, 6, 7, 8, 9, 10, 11, 11.5, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40, 42	n/a
800	Whitworth	28	4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 18, 19, 20, 22, 24, 25, 26, 28, 30, 32, 36, 40, 48, 60	Screw Cutting Gauge included 55 degrees
806	Unified	30	4, 4.5, 5, 5.5, 6, 7, 8, 9, 10, 11, 11.5, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40, 42	n/a

Retail Packed Products



RETAIL PACKED RANGE

Code No	Description	Code No	Description
1243R	Feeler Gauge Set - Imperial, 3" x 10 blades, 1.5-25	506R	Dividers - 6" / 150mm Spring Joint
12R	Feeler Gauge Set - Imperial, 3" x 26 blades, 1.5-25	513R	Calipers - 3" / 75mm Outside Spring Joint
132R	Feeler Gauge Set - Imperial, 4" x 26 blades, 1.5-25	514R	Calipers - 4" / 100mm Outside Spring Joint
492R	Feeler Gauge Set - Imperial, 3" x 15 blades, 1.5-25	516R	Calipers - 6" / 150mm Outside Spring Joint
493R	Feeler Gauge Set - Imperial, 4" x 15 blades, 1.5-25	523R	Calipers - 3" / 75mm Inside Spring Joint
911R	Feeler Gauge Set - Imperial, 4" x 10 blades, 1.5-25	524R	Calipers - 4" / 100mm Inside Spring Joint
912R	Feeler Gauge Set - Imperial, 3" x 10 blades, 1.5-25	526R	Calipers - 6" / 150mm Inside Spring Joint
387MR	Feeler Gauge Set - Metric, 75mm x 13 blades, 0.03-0.5	ELT001XR	Mini Level
388MR	Feeler Gauge Set - Metric, 100mm x 13 blades, 0.03-0.5	4003R	Engineer's Square - 3" / 75mm Grade B
389MR	Feeler Gauge Set - Metric, 100mm x 13 blades, 0.05-1.0	4004R	Engineer's Square - 4" / 100mm Grade B
390MR	Feeler Gauge Set - Metric, 100mm x 20 blades, 0.05-1.0	965R	Micrometer - External Imperial 0-1"
391MR	Feeler Gauge Set - Metric, 75mm x 11 blades, 0.05-0.8	965MR	Micrometer - External Metric 0-25mm
393MR	Feeler Gauge Set - Metric, 75mm x 20 blades, 0.05-1.0	1053MR	Wire Gauge - Metric, 40 slots 0.2-10.0mm
911MR	Feeler Gauge Set - Metric, 100mm x 10 blades, 0.05-0.8	1067MR	Drill Gauge - Metric, 26 holes 0.5-13.0mm
912MR	Feeler Gauge Set - Metric, 75mm x 10 blades, 0.05-0.8	43MR	Depth Gauge - Reversible Base
200R	Screw Cutting Gauge	44MR	Depth Gauge - Protractor
3306R	Caliper - 6" / 150mm Inside Firm Joint	SCT001XR	Scriber - Carbide Tipped
3316R	Caliper - 6" / 150mm Outside Firm Joint	801R	Screw Pitch Gauge - SI Metric
3366R	Jenny Caliper - 6" / 150mm Firm Joint	804R	Screw Pitch Gauge - SI Metric & Whitworth
341R	Jenny Caliper - 5" / 125mm Firm Joint	806R	Screw Pitch Gauge - Unified
56R	Jenny Caliper - 6" / 150mm Spring Joint	809R	Screw Pitch Gauge - ISO Metric
503R	Dividers - 3" / 75mm Spring Joint	204MR	Radius Gauge - Metric, on ring, 0.75-5mm
504R	Dividers - 4" / 100mm Spring Joint	204R	Radius Gauge - Imperial, on ring, 1/32-17/64"



Wireless Data Transmission

Allowing the wireless transmission of measurement values from gauge to PC, the IBRit-rf1 Radio Module is the latest development in interface technologies.

Communicating with up to 120 gauges, and with a maximum transmission distance of up to 200m, the wireless data transfer module connects via a port to your PC. The PC transmits address numbers to each gauge radio module where they are stored. The transmission of a measurement value is triggered simply by pressing the data key on the gauge module or on the gauge itself. An audible tone and visible light confirms a successful data transmission. Special data coding between the PC and the gauge radio module guarantees absolute data security.

Special versions of radio modules

Gauge radio modules with external antenna The Standard IBRit - rf1 radio modules are delivered with an integrated antenna. For max. transmission power, all radio modules can be delivered with an external antenna.

Gauge radio modules with terminal strips The IBRit - rf1 radio modules can be delivered optional with terminal strips for the connection of external switches for data transmission.



Features

- User-friendly
- Full data security
- Low cost
- Compact size
- Long transmitter battery life
- Long transmission distance
- CE & FCC approval
- Audible/visual transmission confirmation
- Individually programmable
- Connects to all types of gauges
- Up to 120 transmitters per receiver
- Allows integration into SPC software

IBRit - rf1 - usb

The radio module IBRit - rf1 - usb serves as PC station for the wireless data transmission of measured values. The module is connected to an USB Port. The program IBR_SimKey is a simple PC software for the IBRit - rf1 series with following functions:

1. Programming of the gauge radio modules.
2. Displaying of received values for testing.
3. Data transfer to all Windows programs.

Code No: 25-604-001



IBRit - rf1 - prox

Radio module for gauges with Proximity interface.

Code No: 25-604-064



IBRit - rf1 - S233

Radio module for gauges with Power RS-232 interface.

Code No: S233 25-604-013



IBRit - rf1 - SDial

Radio module for gauges with Power RS-232 interface.

Code No: SDial 25-604-013A



IBRit - rf1 - mit1

Radio module for gauges with Mitutoyo Digimatic interface.

Plugable in calipers and dial gauges.

Code No: 25-604-011



IBRit - rf1 - tesa

Radio module for Tesa dial gauges of series Digico 2xx... 7xx.

Code No: 25-604-014T



IBRit - rf1 - digi

Radio module for gauges with Mitutoyo Digimatic interface. Use with Mitutoyo cables.

Code No: 25-604-007



IBRit - rf1 - mahr

Radio module for gauges with MarConnect interface.

Code No: 25-604-006



IBRit - rf1 - opto

Radio module for gauges with Opto RS-232 interface.

Code No: 25-604-014



IBRit - rf1 - 232

The radio module IBRit - rf1 - 232 allows the connection of stationary gauges with RS-232 output and is universally programmable.

Code No: 25-604-008



Opto / 232

Adapter to connect IBRit - rf1 - opto radio modules to 9 pin. Sub-D connectors. Connection to Height gauges...

Code No: 25-604-004



Cables & Accessories

A complete listing of cables and output accessories to suit the Bowers Metrology range of instruments.

CABLES

Code No	Cable	PC Connectivity	Length	Output	Functions
30-926-5521	Sylvac Opto Simplex	9 Pin Female	2 Metre	All (Non IP65) Opto outputs	Data Send Only
30-926-5521A	Sylvac Opto Simplex with Footswitch	9 Pin Female	2 Metre	All (Non IP65) Opto outputs	Data Send Only
30-926-5520	Sylvac Opto Simplex	9 Pin Female	15 Metre	All (Non IP65) Opto outputs	Data Send Only
30-926-6521	Sylvac Opto Duplex	9 Pin Female	2 Metre	All (Non IP65) Opto outputs	Bi Directional Connectivity
30-926-6521A	Sylvac Opto Duplex with Footswitch	9 Pin Female	2 Metre	All (Non IP65) Opto outputs	Bi Directional Connectivity
30-926-6535	Sylvac Opto Duplex	9 Pin Female	15 Metre	All (Non IP65) Opto outputs	Bi Directional Connectivity
30-926-6621	Sylvac Opto Duplex	USB	2 Metre	All (Non IP65) Opto outputs	Bi Directional Connectivity
30-926-6538	Sylvac Opto Duplex (Right Angle Opto Entry)	9 Pin Female	3 Metre	All (Non IP65) Opto outputs	Bi Directional Connectivity
30-926-6542	Sylvac Opto Duplex (Right Angle Opto Entry)	9 Pin Female	15 Metre	All (Non IP65) Opto outputs	Bi Directional Connectivity
30-926-6539	Sylvac Opto Duplex (Left Angle Opto Entry)	9 Pin Female	3 Metre	All (Non IP65) Opto outputs	Bi Directional Connectivity
30-926-6543	Sylvac Opto Duplex (Left Angle Opto Entry)	9 Pin Female	15 Metre	All (Non IP65) Opto outputs	Bi Directional Connectivity
30-926-8010	Sylvac Opto Digimatic (Mitutoyo) Sylvac MUX BOX ONLY	Digimatic	2 Metre	All (Non IP65) Opto outputs	Bi Directional Connectivity
30-926-8158	Sylvac Opto Digimatic (Mitutoyo)	Digimatic	2 Metre	All (Non IP65) Opto outputs	Bi Directional Connectivity
30-926-5531	Sylvac Cable for Digital Minor Caliper	9 Pin Female	2 Metre	Digital Minor Caliper with Output	Data Send Only
30-905-4516	Sylvac Powered Opto Duplex	9 Pin Female	2 Metre	All IP65 Opto Outputs	Bi Directional Connectivity
30-905-4519	Sylvac Powered Opto Duplex	9 Pin Female	15 Metre	All IP65 Opto Outputs	Bi Directional Connectivity
30-926-6821	Sylvac Powered Opto Duplex	USB	2 Metre	All IP65 Opto Outputs	Bi Directional Connectivity
30-926-8154	Sylvac Powered Opto Digimatic (Mitutoyo)	Digimatic	2 Metre	All IP65 Opto Outputs	Bi Directional Connectivity
30-925-1151	Sylvac Power Booster	9 Pin Female	2 Metre	for RS232 Cable	Continuous Power Supply
30-925-1143	Sylvac Power Booster with Footswitch (for Bi-Directional Cables Only)	9 Pin Female	3 Metre	for RS232 Cable	Continuous Power Supply
30-926-5516	Sylvac Power Supply (To replace battery)	N/A	3 Metre	All (Non IP65) Opto outputs	
30-926-6723	Sylvac Proximity RS232	9 Pin Female	3 Metre	All IP67 Proximity Outputs	Bi Directional Connectivity
30-926-6721	Sylvac Proximity USB	USB	3 Metre	All IP67 Proximity Outputs	Bi Directional Connectivity
30-926-USB	Serial to USB adaptor	USB	10 cm	RS232 Cable	Converts Serial Output to USB
30-925-5608	Straight Connection 9 Pin Male - 9 Pin Female	9 Pin Female	2 Metre	D50S, D60S, D80S, D100S, D104 PC, All Z Cal Height Gauges, Diavite (Up to DH7) Trimos V & VL Series, Altia, Altia Premium Heights and Trimos Horizon H series	Bi Directional Connectivity
30-925-5609	Straight Connection 9 Pin Male - 9 Pin Female	9 Pin Female	3 Metre	D50S, D60S, D80S, D100S, D104 PC, All Z Cal Height Gauges, Diavite (Up to DH7) Trimos V Series, Altia, Altia Premium Height Gauges and Trimos Horizon H series	Bi Directional Connectivity
30-926-8116	Sylvac 9 Pin Female to Digimatic	Digimatic	2 Metre	D50S, D60S, D80S, D100S, D104 PC, All Z Cal Height Gauges, Diavite (Up to DH7) Trimos V Series, Altia, Altia Premium Height Gauges and Trimos Horizon H series	Bi Directional Connectivity
30-904-4101	Footswitch		2 Metre	D50S, D60S, D80S, D100S, D104PC, D300S, D302, D304 All Z Cal, V Series and Altia Height Gauges	
20-USB	Standard A-B USB Cable	USB Receiver	2 Metre	Trimos Mestra, Vectra, D200S, D300S, D400S	Bi Directional Connectivity
30-926-6001	Mini USB - USB	USB Receiver	2 Metre	Sylvac Hi-cal	
30-804-1211	Sylvac D110V Connection Cable		2 Metre	Sylvac D110V - D100S/ D200S	
25-604-014	Wireless Opto Module	USB Receiver	N/A	All (Non IP65) Opto outputs	Data Send Only
25-604-013	Wireless Powered Opto Module	USB Receiver	N/A	All IP65 Opto Outputs	Data Send Only
25-604-064	Wireless Proximity Module	USB Receiver	N/A	All IP67 Proximity Outputs	Data Send Only



Cables & Accessories

CABLES CONTINUED

Code No	Cable	PC Connectivity	Length	Output	Functions
25-604-004	Adapter RS232 / Opto (Requires 25-604-014)	USB Receiver	N/A	All Sylvac 9 Pin Connectors	Data Send Only
25-604-008	RS232 Transmitter Module	USB Receiver	N/A	All 9 Pin Static Instrument Connectors	Data Send Only
25-604-007	Wireless Digimatic (Mitutoyo) Module	USB Receiver	N/A	Can be connected to Standard Instrument cable	Data Send Only
25-604-011	Wireless Digimatic (Mitutoyo) Module	USB Receiver	N/A	Can be connected directly to Calipers and Dial Gauges	Data Send Only
25-604-006	Wireless Mahr Module	USB Receiver	N/A	All Mahr Connect Instruments	Data Send Only
25-604-001	USB Receiver	USB Receiver	N/A	Connect to PC Only	Data Send Only
55-PC2311	Crossed Connection (Null Modem) 9 Pin Male - 9 Pin Female	9 Pin Female	Metre	PC2200, Deltronic, Sylvac MUX, D300S	Bi Directional Connectivity
20-4070	Trimos RS232 Straight Connection 9 Pin Female - 9 Pin Female	9 Pin Female	2 Metre	Trimos Vectra and Mestra to PC	Data Send Onl
30-1540	Trimos Vertical 3 Height Gauge	9 Pin Female	2 Metre	Trimos Vertical 3 to PC	Data Send Only
20-25014	Trimos THV to PC Cable	9 Pin Female	2 Metre	Heidenhein to PC	Data Send Only
20-25016A	Trimos THV Footswitch	N/A	2 Metre	Heidenhein Footswitch	Data Send Only
20-25020	Trimos THV to Remote Keypad Cable	N/A	2 Metre	Heidenhein to Remote Keypad	Print, Zero, Preset
20-25015	Trimos THV Remote Keypad	N/A	N/A	Keypad	
60-6517	WYLER Clinotronic, Clino 2000 to LM2000 or Adaptor Cable	N/A	2.5 Metre	Clinotronic, Clino 2000 to LM2000 or Adaptor	Bi Directional Connectivity
60-6519	WYLER Clinotronic, Clino 2000 to LM2000 or Adaptor Cable	N/A	5 Metre	Clinotronic, Clino 2000 to LM2000 or Adaptor	Bi Directional Connectivity
60-6519A	WYLER Clinotronic, Clino 2000 to LM2000 or Adaptor Cable	N/A	10 Metre	Clinotronic, Clino 2000 to LM2000 or Adaptor	Bi Directional Connectivity
60-6172A	WYLER Clinotronic RS485 /RS232 Adaptor	9 Pin Female	N/A	Clinotronic	Bi Directional Connectivity
60-6517	WYLER Zerotronic Sensor to LM2000	N/A	2.5 Metre	Zerotronic Sensor to LM2000 or Transceiver Converter	Bi Directional Connectivity
60-6519	WYLER Zerotronic Sensor to LM2000	N/A	5 Metre	Zerotronic Sensor to LM2000 or Transceiver Converter	Bi Directional Connectivity
60-6519A	WYLER Zerotronic Sensor to LM2000	N/A	10 Metre	Zerotronic Sensor to LM2000 or Transceiver Converter	Bi Directional Connectivity
60-6657	WYLER NT to Levelmeter 2000	N/A	2.5 Metre	NT Level to LM2000	
60-6662	WYLER Levelmeter 2000 and CLINO 2000 to PC	9 Pin Female	2 Metre	Levelmeter 2000 to PC	
60-6617	WYLER Blue Level, Blue Level basic, Blue Meter, Blue Meter Basic, Blue TC, Blue Clino		2.5 Metre	Blue Meter Blue Series Universal	
RAN0004	Rangemaster to PC	9 Pin Female	2 Metre	Rangemaster to PC	Data Send Only
W-TA510	PC	9 Pin Female	2 Metre	Impact Series to PC	Data Send Only
W-WRT150PC	CVI WRT150 (CVR135) Surface Finish Tester	9 Pin Female	2 Metre	WRT150 (CVR150) to PC	Data Send Only
W-TR-200CA	CVI TR200 Surface Finish Tester (Included with Tester)	9 Pin Female	2 Metre	TR200 to PC	Data Send Only
W-CG500/150	CVI CG500 Thickness Gauge	9 Pin Female	2 Metre	CG500 to PC	Data Send Only
30-901-5042	Replacement Sylvac Probe Cable	N/A	1.5 Metre	P2B [Pre 2011]and P5	
30-901-5002	Replacement Sylvac Probe Cable	N/A	1.5 Metre	P10	
30-901-5012	Replacement Sylvac Probe Cable	N/A	1.5 Metre	P25	
30-901-5022	Replacement Sylvac Probe Cable	N/A	1.5 Metre	P50	
30-901-5052	Replacement Sylvac Probe Cable	N/A	1.5 Metre	P2BL and P5L	
30-901-5032	Replacement Sylvac Probe Cable	N/A	1.5 Metre	P10L	
30-901-9993	Extension Cable (affects accuracy calculation)	N/A	3 Metre	All Sylvac Probes	
60-232UBS	USB Adaptor WYLER				

UTILITY SOFTWARE

Code No	Description
30-981-7100	USB Dongle BT Smart for PC/D300S/D400S
30-981-7110	Sylconnect Licence (Single Licence)
30-981-7111	Sylconnect Dongle (Single Licence)
30-981-7161	Sylvac VMux

Main Conditions of Sale

Minimum Order Value:	£50.00 Nett.
Carriage:	Charged as EXTRA from our warehouse on every shipment.
Settlement:	Payment in advance of delivery unless you have an authorised credit account. Authorised credit account holders - we reserve the right to charge interest on overdue accounts. This title in the goods does not pass to you until they have been paid for in full and if you sell on the goods before the goods have been paid for, then we have the right to the proceeds of such sale.
Prices:	As ruling at the date of despatch. This price list cancels all previous price lists. This price list can be used as a guide only due to currency fluctuations.
Collections:	You are welcome to collect goods from our warehouse. However in order to avoid inconvenience to yourselves, please allow us 2 hours notification to prepare your order.
Out-of-Stock Goods:	All items out of stock will be automatically back-ordered. If you do not wish us to keep any items on back-order, please mark your order Ex-stock or cancel.
Claims:	Non-delivery of goods must be advised IN WRITING to us within 3 days of receipt of invoice, otherwise you are liable to the cost of the goods invoiced. Shortages / damages must be advised IN WRITING to us and carriers on the day of delivery.
Returns:	Goods ordered in error are subject to a 25% re-stocking charge if returned. We cannot accept back for credit, replacement or exchange any goods that have been defaced or engraved in any way. Any goods being returned must be returned within 30 days of date of invoice.
Guarantee:	All instruments are manufactured to the highest standards using correspondingly high-quality materials and are therefore guaranteed against faulty materials and workmanship. Should any defect arise due to faulty materials or workmanship then we undertake to repair or replace that item free of charge. Any defect item should be returned to our warehouse, carriage paid together with a covering letter clearly stating the reason for complaint. The guarantee does not cover instrument defects arising from fair wear and tear or improper use.
Value Added Tax:	Added to all invoices, except Export, at current rate. All prices shown in this list are exclusive of V.A.T.
Specification:	As improvement is a continuing process, we reserve the right to change specification without prior notification E. & O.E.

Full list of Terms & Conditions of sale available on request.



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