

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

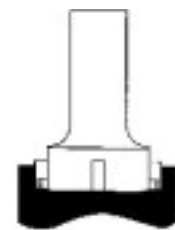
Range (mm)	Code No	Measuring Head	Setting Ring	Range (inch)	Code No
2-3	SXTA1M	2	1	0.080-0.120	SXTA1I
3-6	SXTA2M	3	2	0.120-0.250	SXTA2I
6-10	SXTA3M	2	1	1/4-3/8	SXTA3I
10-20	SXTA4M	3	2	3/8-3/4	SXTA4I
20-50	SXTA5M	3	2	3/4-2	SXTA5I
50-100	SXTA6M	3	2	2-4	SXTA6I
100-150	SXTA7M	2	1	4-6	SXTA7I
150-200	SXTA8M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





ask for details



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 Hometric 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 Hometric 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

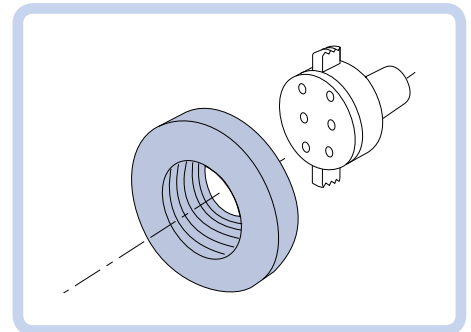
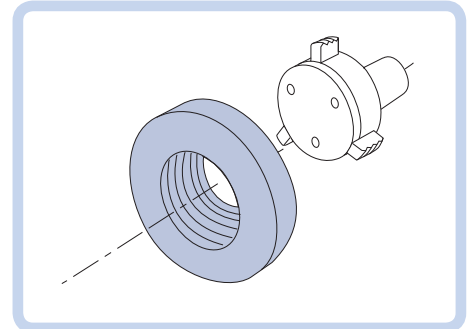
Special Bore Measurement

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

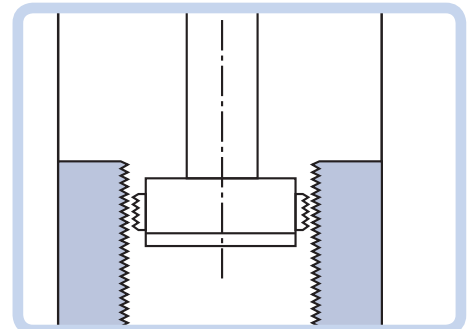
To measure effective (functional) diameter, pitch diameter, major diameter, between M4 - 300mm. / No. 8 UN - 12" diameter.



2 Point



3 Point



Ball Screw Threads

From Ø M10.



External Threads

External Thread





Special Bore Measurement - Grooves

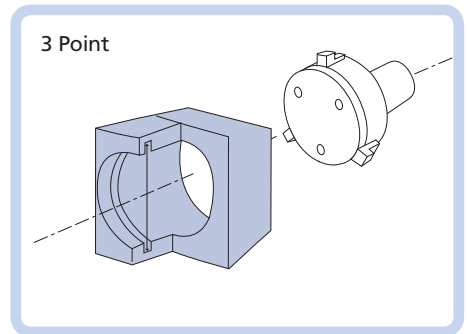
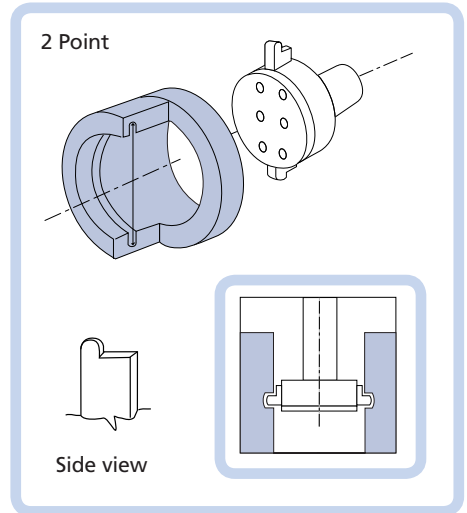
- Interchangeable with standard heads
- Suits Bowers XTD, XTH and Ultima
- Special forms, radius, ball contacts
- Depth stops available for quick location
- Annular grooves possible

Grooves

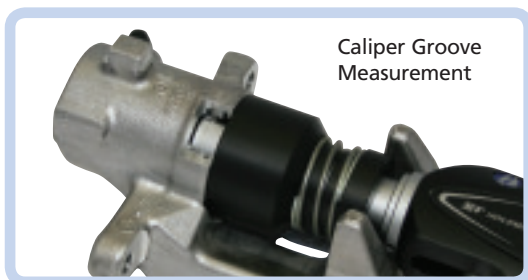
For sizes from 2-300mm diameter.



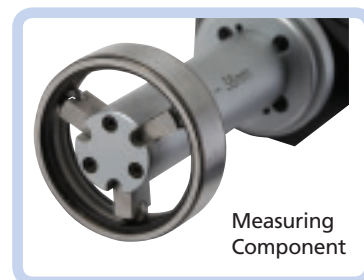
Groove Head with Depth Stop



Brake Caliper Measurement

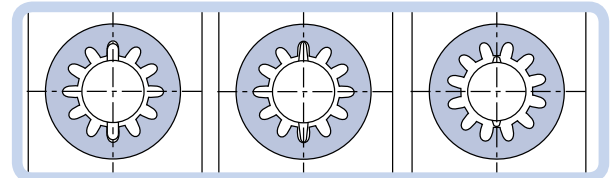
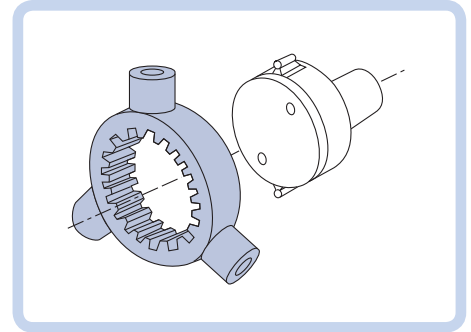


Ball Race Measurement



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").



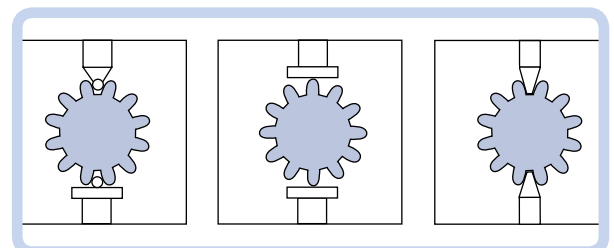
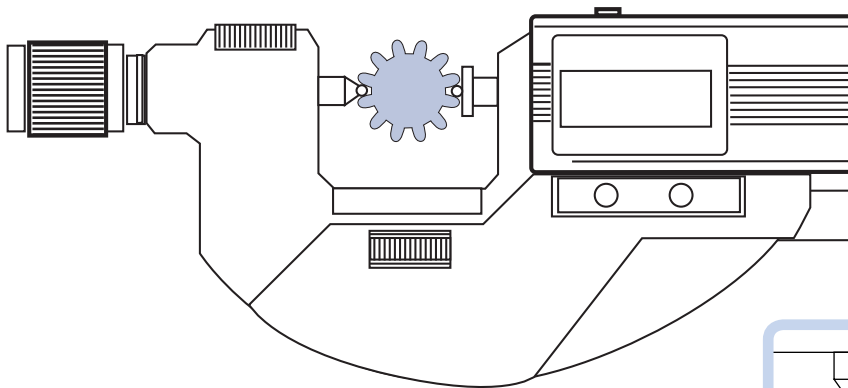
Pitch Diameter

Major Diameter

Minor Diameter

Special Measurement - External Spline

Frames fitted with 1 x ball and 1 x pin.



Pitch Diameter

Major Diameter

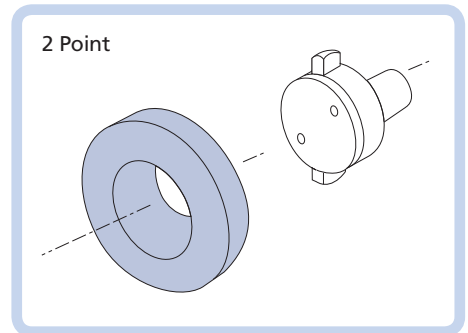
Minor Diameter



Special Bore Measurement - Spherical

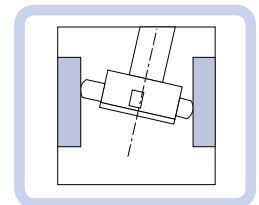
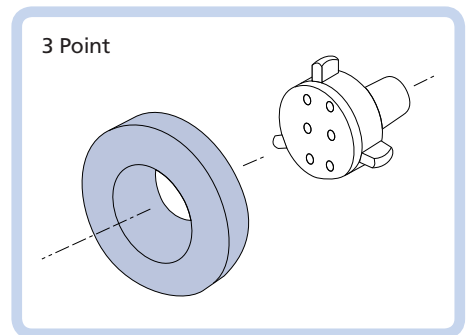
2 Point Spherical

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



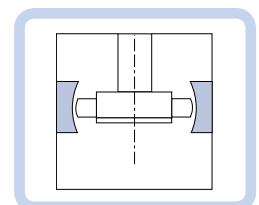
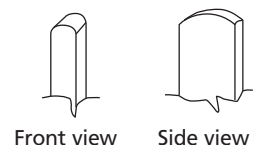
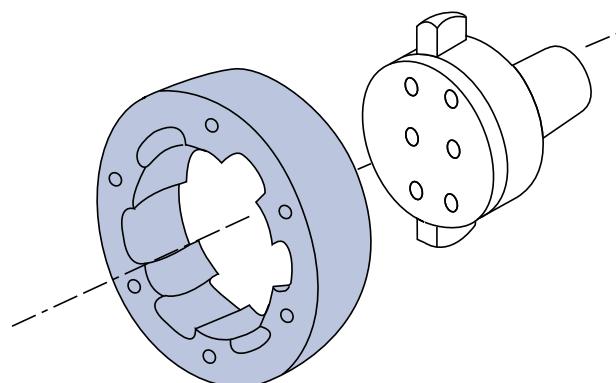
3 Point Spherical

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

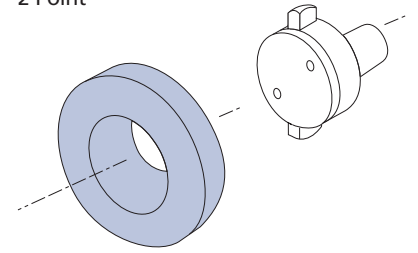
Operated by a pneumatic actuator powered by a 3 bar compressed air supply - either from a compressor or a workshop air-line. The measurement data is collected by a capacitive probe fitted just behind, and in constant contact with the measuring head. This direct contact ensures high-quality transducer-type 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

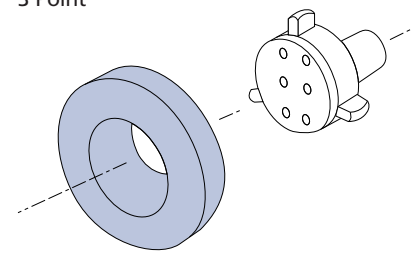
- Measures diameters from 50-310mm, up to 15m deep
- Spherical, Tungsten Carbide anvils
- 2 point and 3 point heads available
- Accuracy +/-0.005mm (subject to bore condition)
- Quick set-up time
- Easy to use
- Not adversely effected by temperature fluctuation
- Robust design
- Various readouts available



2 Point



3 Point

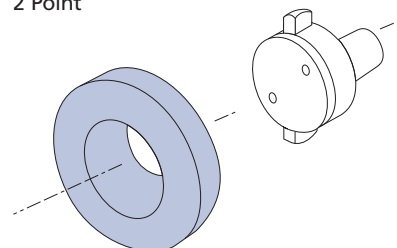


Deep Hole XT - Under 2 Metres

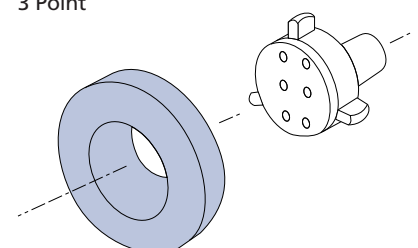
Up to 2.0 metres deep with standard extensions.



2 Point



3 Point

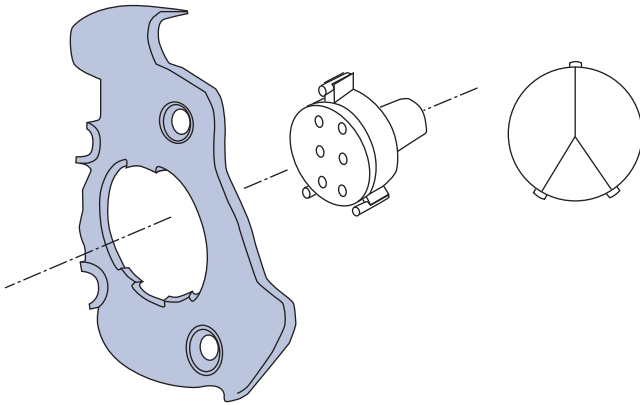




Special Bore Measurement - Miscellaneous

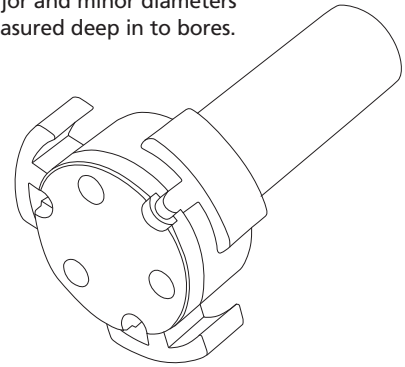
Irregular Spacing

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.

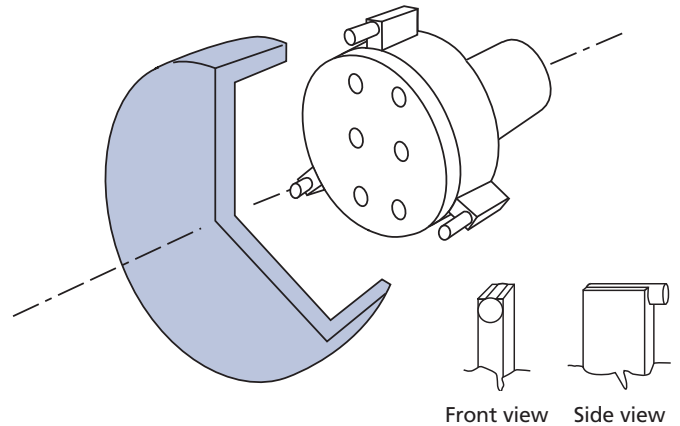


Right Angled Adaptor



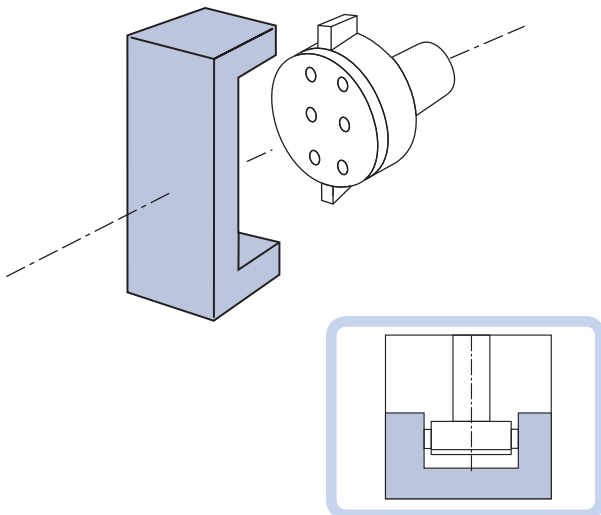
Blind Bore

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



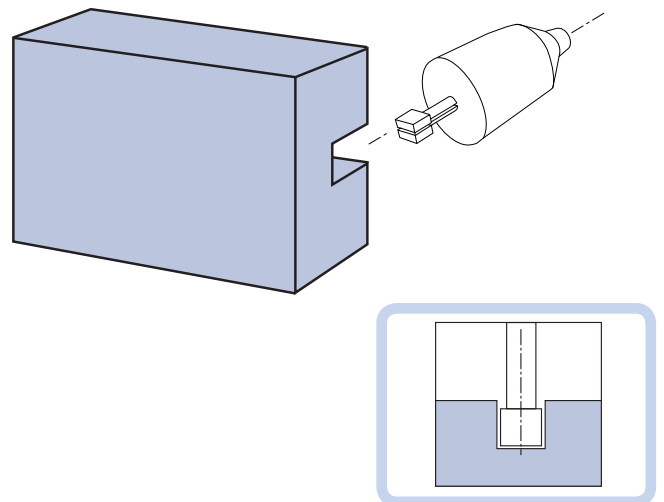
Slot Width (Large)

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

WiFi

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

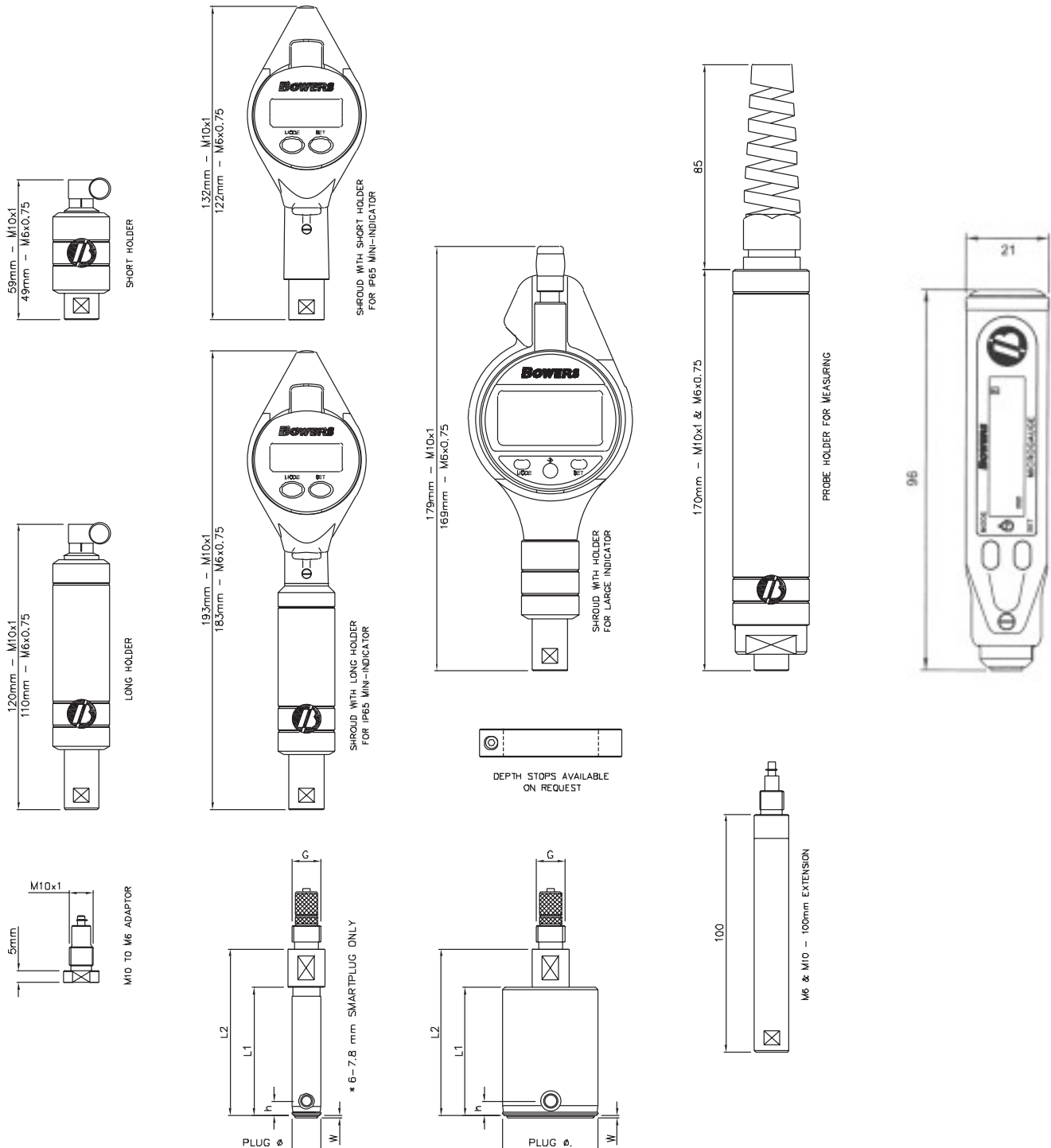


SmartPlug for large diameters (up to 280mm)



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

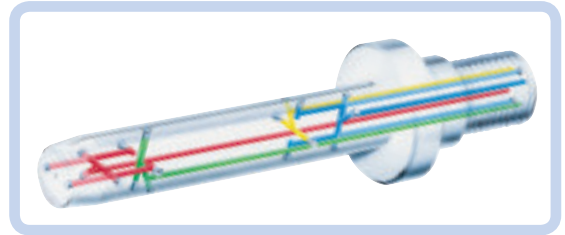
Code No	Range (mm)
SMPDS00	below 6
SMPDS01	6-8.5
SMPDS02	8.5-13
SMPDS03	13-17.5
SMPDS04	17.5-25
SMPDS05	25-32.5
SMPDS06	32.5-40
SMPDS07	40-47.5
SMPDS08	47.5-55
SMPDS09	55-62.5
SMPDS10	62.5-70
SMPDS11	70-77.5
SMPDS12	77.5-85
SMPDS13	85-92.5
SMPDS14	92.5-100

Bowers Air Plugs and Rings

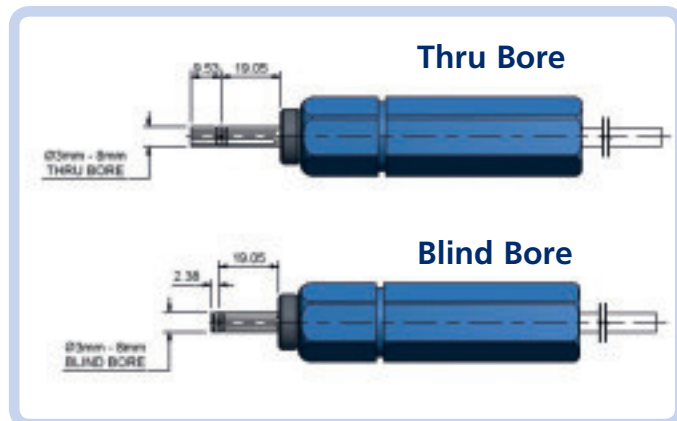
Bowers offers the most comprehensive range of standard air plugs, rings, calipers, etc, currently available. To complement this service we also produce bespoke air gauging products to help solve customer's specific measuring problems. Our hi-tech manufacturing plant incorporates a first class UKAS calibration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

Features

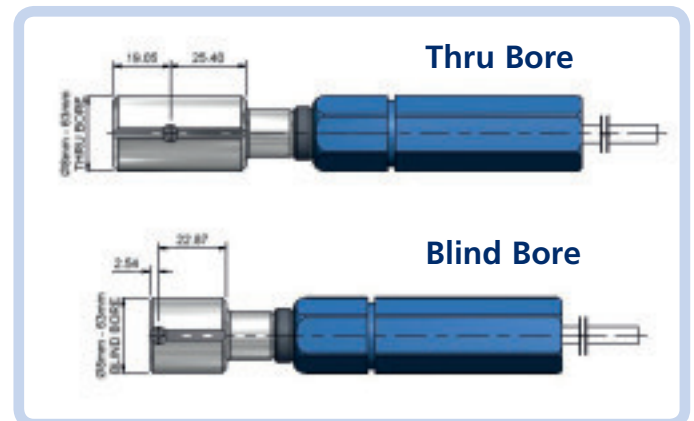
- High resolution
- 3mm to 150mm diameter
- High repeatability
- Non contact
- Static or dynamic measurement
- Multi parameter measurement
- Compatible with instruments from other sources
- Air plugs for internal measurement
- Air rings and calipers for external measurement
- In-cycle, in-process and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



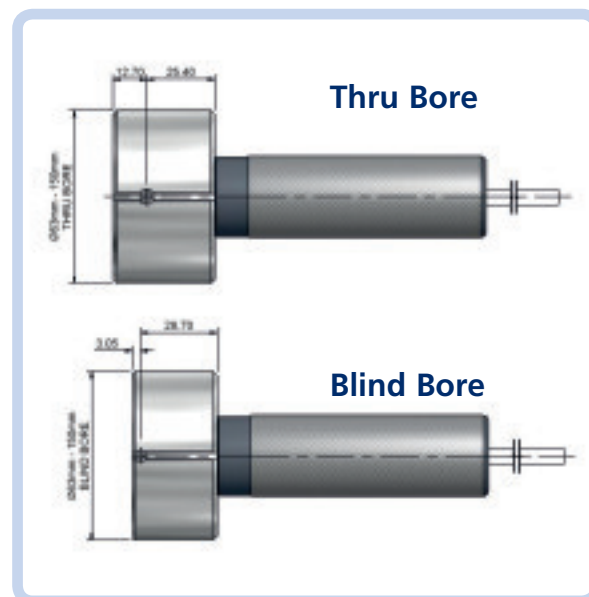
Standard: 3-8mm



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.



Electronic Columns

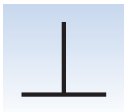
The Bowers PC-2200 is a state of the art flexible electronic/air column capable of operating with air gauging products and measuring probes. The advanced new column contains a multitude of measuring functions including static and dynamic gauging, classification grading, probe mixing, (A+B), (A-B), etc.

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)



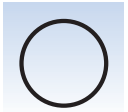
Concentricity



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)

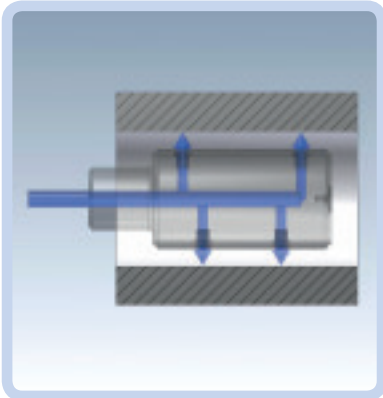
Code No	Description
55-PC2302	Power jump cable
55-PC2311	RS232 cable (9p/M/F)
55-PC2312	Output cable (9p/M-> no connector)
55-PC2321	Foot pedal with cable for 1 col.
55-PC2341	Switch box (4 functions)
55-PC2332	Cable, column to A/E converter
55-SOFTWARE	Programming Software

ALUMINIUM BASE PLATES (PC2200)

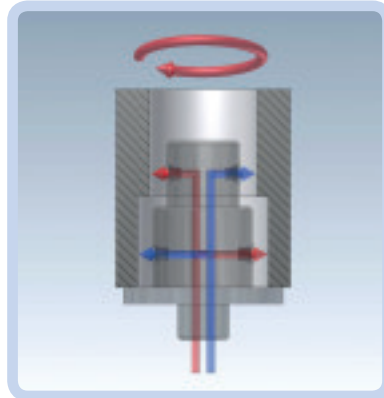
Code No	Description
55-MALP1	For 1 Column
55-MALP2	For 1 Column & 1 Converter
55-MALP3	For 1 Column & 2 Converters
55-MALP4	For 2 Column & 2 Converters
55-MALP5	For 2 Column & 3 Converters
55-MALP6	For 2 Column & 4 Converters



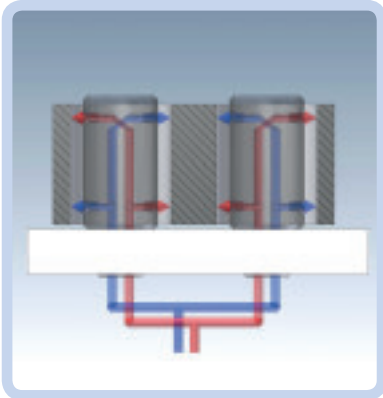
Air Gauging Options and Applications



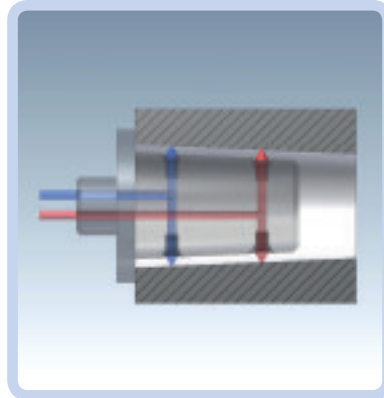
Straightness



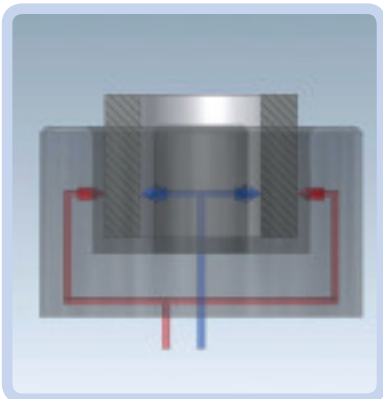
Concentricity of 2 Inside Diameters



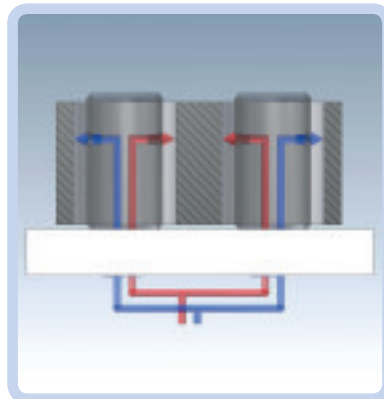
Parallelism of 2 Bores



Taper



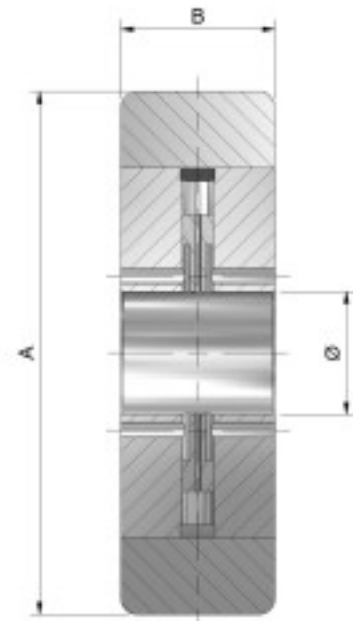
Simultaneous Int/Ext Measurement



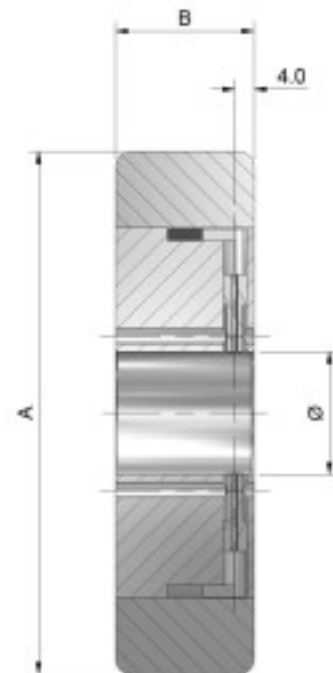
Centre Distance of 2 Holes

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

