Dial Bore Gauge Sets

The Dial Bore Gauge provides a two point measuring system for comparative measurement of component hole sizes. It will also detect ovality and taper in bores
These instruments are fitted with spring loaded centralising mechanisms which ensure the measurement is taken across the true diameter of the component.
All instruments are supplied in cases complete with probes and extensions as listed

Set Range and Dimensions

Code	Range	Stem Length	Overall Length	Dial Diameter	Dial Graduations	Dial Reading	Plunger Travel
55-200-018	10-18mm	110mm	260mm	40mm	0.01mm	0-50	3mm
55-200-035	18-35mm	140mm	290mm	57mm	0.01mm	0-100	3mm
55-200-050	35-50mm	150mm	340mm	57mm	0.01mm	0-100	3mm
55-200-150	50-150mm	150mm	340mm	57mm	0.01mm	0-100	3mm
55-200-007	0.4”-0.7”	4 ¼”	11”	2 ¼”	0.0005”	0-25-0	¼”
55-200-015	0.7”-1.5”	5 ¼”	12”	2 ¼”	0.0005”	0-25-0	¼”
55-200-024	1.4”-2.4”	6”	13 ½”	2 ¼”	0.0005”	0-25-0	¼”
55-200-006	2”-6”	6”	13 ½”	2 ¼”	0.0005”	0-25-0	¼”

Contents of Set

Code	Range	Probe Type	No. of Probes	Probe Range	Shim	Addit Ext
55-200-018	10-18mm	Threaded	9	10, 11, 12, 13, 14, 15, 16, 17, 18mm	0.5mm	N/A
55-200-035	18-35mm	Threaded	7	18-20.5, 20.5-23, 23-25.5, 25.5-28, 28-30.5, 30.5-33, 33-35mm	N/A	N/A
55-200-050	35-50mm	Threaded	3	35-40, 40-45, 45-50mm	N/A	N/A
55-200-150	50-150mm	Threaded	5	50-62, 62-74, 74-86, 86-98, 98-110mm	N/A	60mm
55-200-007	0.4”-0.7”	Threaded	9	0.4, 0.44, 0.48, 0.52, 0.56, 0.60, 0.64, 0.68, 0.70”	0.02”	N/A
55-200-015	0.7”-1.5”	Threaded	8	0.7, 0.8, 0.9, 1.0, 1.1, 1.2, 1.3, 1.4”	N/A	N/A

New Models

55-200-024	1.4”-2.4”	Threaded	5	5 Threaded Probes	N/A	N/A
55-200-006	2”-6”	Threaded	5	5 Threaded Probes	N/A	2”

Original Models

55-200-024	1.4”-2.4”	Plain	6	1.4, 1.6, 1.8, 2.0, 2.2, 2.4”	0.1, 0.5, 0.2”	N/A
55-200-006	2”-6”	Plain	11	2.0, 2.2, 2.4, 2.6, 2.8, 3.0, 3.2, 3.4, 3.6, 3.8, 4.0”	0.1, 0.5, 0.2”	2”

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Setting Procedures

Note: New Instruments, remove the plastic cap from the dial indicator and the plastic ring from the top of the bore gauge stem

Fixed Probe Type

Remove dial indicator from protective shroud.
Insert indicator stem into top of bore gauge .
Position indicator into bore gauge stem with one revolution of dial gauge hand.
Use knurled thumbscrew on split clamp to clamp indicator.
Select probe and shim washer to get nearest to required measurement size
Example:- Measurement size 2.750"
Select Probe 2.6" shims 0.1 & 0.05 = 2.75
Fit shim washers behind datum flange on probe
Remove knurled retaining nut from bore gauge foot and insert probe with shims.
Replace retaining nut and clamp probe positively.
At this stage it is necessary to offer the bore gauge to a setting master at the required nominal size. This can be a ring gauge, caged gauge blocks with protruding end faces or a pre-set micrometer.
Insert bore gauge probes into the ring gauge or between the faces of the setting master.
Rock bore gauge in ring or between the setting master faces to achieve the reversal point of the dial indicator hand.
If this does not coincide with the zero on the dial, re position dial gauge down bore gauge stem to achieve this position. The final setting for zero can be made by rotating dial gauge bezel so that the zero coincides exactly with the reversal point of the indicator hand.
Re check in setting gauge.
Finally replace protective shroud and clamp firmly to top of bore gauge stem.

Screwed Probe Type

Remove dial indicator from protective shroud.
Insert indicator stem into top of bore gauge.
Position indicator into bore gauge stem with one revolution of dial gauge hand. Use knurled thumbscrew on split clamp to clamp indicator.
Select a probe with a range which suits the required measurement size.
Fit knurled lock nut to probe.
Screw probe into bore gauge foot.
Select setting master (see previous instructions)
Insert bore gauge probes between setting master faces and adjust screwed probe to bring dial gauge hand to zero position.
Rock bore gauge in ring or between the setting master faces to achieve the reversal point of the dial indicator hand.
Fine adjust dial hand to zero by either adjusting screwed probe, moving dial indicator up or down in bore gauge and finally revolving bezel to obtain final zero.

Taking Measurements

Insert pre-set bore gauge into component hole.
Rock bore gauge in hole.
Note reversal point of dial gauge hand.
Add or deduct the variance from zero to the setting master nominal size, to obtain the measured diameter of the component hole.

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Instrument Accuracy Check

There are no International Standards covering the calibration procedure and accuracy specifications for Dial Bore Gauges
The following information describes a convenient method generally accepted by industrial users to check this type of comparative measuring instrument

Remove the dial indicator from the bore gauge and calibrate the indicator
This can be done by clamping the indicator in a suitable stand and using Gauge Blocks to determine the accuracy
See manufacturer's accuracy specifications for new instruments listed below
Re-fit the indicator to the bore gauge
Set the bore gauge in a suitable ring gauge and test for repeatability of the reading
Manufacturer's repeatability tolerance is ± 1/2 a division

Note:

This method does not take into consideration any error in the fulcrum of the instrument

Dial Indicator Accuracy Specifications:

Metric Indicators (New)

Range	Grads.	Total Number	Each 0.1mm	Each 0.5mm	Each 1.0mm	Each 2mm	Total Travel
mm	mm	Of Revs	mm	mm	mm	mm	mm
3	0.01	5	0.005	0.008	0.01	0.015	0.016

Inch Indicators (New)

Range	Grads.	Total Number	Any 2 Revs.	First 10 Revs.	First 20 Revs.	Total Travel
inch	inch	Of Revs	inch	inch	inch	inch
1/4	0.0005	2 1/2	0.001	N/A	N/A	0.0012

Packed Weight and Dimensions

Code	Range	Weight g	W mm	H mm	L mm
55-200-018	10-18mm	510	130	50	250
55-200-035	18-35mm	640	130	50	250
55-200-050	35-50mm	950	140	60	375
55-200-150	50-150mm	1030	140	60	375
55-200-007	0.4"-0.7"	544	130	50	250
55-200-015	0.7"-1.5"	615	130	50	250
55-200-024	1.4"-2.4"	950	140	60	375
55-200-006	2"-6"	1030	140	60	375

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