



This set contains a selection of measuring tools most suitable for students and apprentices

Set contents:

Metric Set: 50-610-BFM

Fine Adjustment Vernier Caliper: 145mm / 5 1/2"

Mechanical Micrometer: 0-25mm

Satin Chrome Rule: 150mm/6"

Inch Set: : 50-610-BFI

Fine Adjustment Vernier Caliper: 145mm / 5 1/2"

Mechanical Micrometer: 0-25mm

Satin Chrome Rule: 150mm/6"

Packed Weight and Dimensions

Code	Description	Weight g	W mm	H mm	L mm
50-610-BFM	Mechanical Measuring Set: Metric	680	140	45	255
50-610-BFI	Mechanical Measuring Set: Inch	680	140	45	255

Dial Calipers



Hardened stainless steel body

Satin chrome finish

Thumbroll

Depth Rod

Four-way measurement:

Outside

Inside

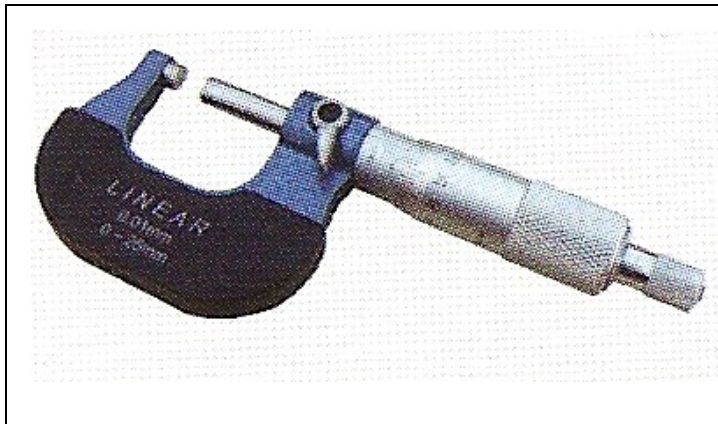
Step

Depth

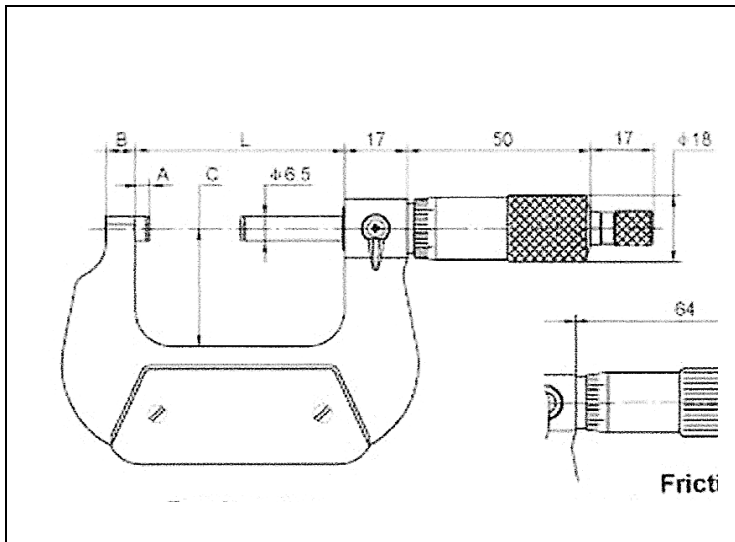
Black dial face

Code	Range	Metric Grads	Inch Grads	Accuracy	External Jaw Depth	Internal Jaw Depth
51-200-150B	150mm	0.02mm	N/A	±0.02mm	40mm	18mm
51-200-006B	6"	N/A	0.001"	±0.02mm	40mm	18mm

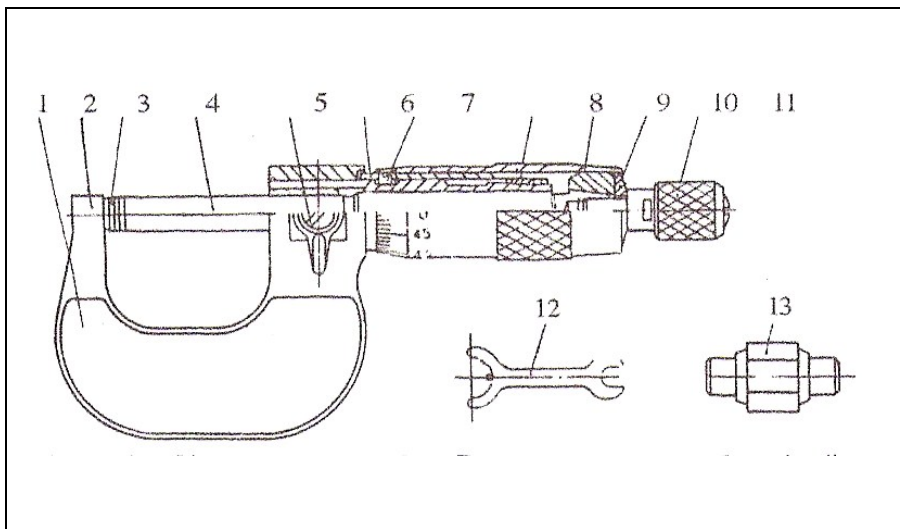
Mechanical Micrometers 50-100-Series



Accuracy conforms to DIN 863
 Resolution: Metric 0.01mm, Inch 0.0001"
 Models above 25mm / 1" supplied with setting rod
 Micro fine graduations for accurate reading
 Tungsten carbide measuring faces
 Spindle locking lever
 Ratchet stop
 Non-glare satin chrome barrel and sleeve
 Blue baked enamel hammer tone finish
 Supplied in fitted case with adjustment tools



Code	Range	Code	Range	Style	A mm	B mm	C mm	L mm	Accuracy mm
Metric	mm	Inch	inch						
50-100-025	0-25	50-100-001	0-1	A	3.0	6	24.0	32	0.004



- 1 Heat Resistant Plate
- 2 Frame
- 3 Anvil
- 4 Spindle
- 5 Spindle Lock
- 6 Sleeve
- 7 Thimble
- 8 Barrel
- 9 Taper
- 10 End Cap
- 11 Ratchet Stop
- 12 Spanner
- 13 Setting Standard

Mechanical Micrometers 50-100-Series

Cleaning and Basic Checking Procedure

Remove any oil, grease, dust or small particles which may cause damage to the micrometer or affect its accuracy when taking measurements. Use a soft lint free cloth or paper together with a proprietary instrument cleaning agent. Do not use acetone as this can damage parts of the micrometer

Zero Point Checking and Adjustment

Use the ratchet stop to move the spindle until it touches the fixed anvil. Allow the ratchet to turn 1 ½ to 2 revolutions for the final positioning

The zero point on the thimble should now coincide with the reference graduated base line on the sleeve

For micrometers above 25mm / 1” use the supplied setting standard or a gauge block to check the zero position

If the zero point does not line up as required, it can be corrected by using the following procedure

When the zero point deviation on the thimble is under 2 divisions from the graduated base line

Turn the sleeve using the “C” spanner provided until correct alignment is achieved

When the zero point deviation on the thimble is over 2 divisions from the graduated base line

Hold the frame and the thimble and loosen the ratchet stop using the spanner provided

Disconnect the coupling of the thimble to the spindle by giving a light shock to the side of the thimble

Turn the thimble until the zero point is in alignment with the base line on the sleeve

Press the thimble against the spindle and re tighten with the spanner to achieve a positive coupling

Re check the zero position, any final small adjustment can now be made using the “C” spanner to re position the sleeve to the thimble zero

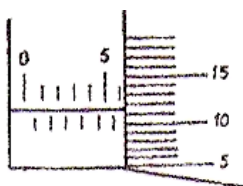
Reading the Micrometer

When reading the micrometer ensure that your line of sight is directly above the graduated scale on the sleeve and the thimble scale to avoid parallax reading errors

Ensure that the micrometer and the work piece are at the same temperature

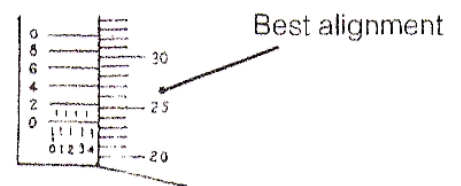
Handle the instrument with care, if it is dropped or knocked in any way it must be rechecked for correct working and accuracy as above

Reading Example: Metric



Example for division 0.01mm
 Reading:
 From Sleeve: 6mm
 From thimble: 0.11mm
 Final readings should be
 $6. + 0.11 = 6.11\text{mm}$

Reading Example: Inch

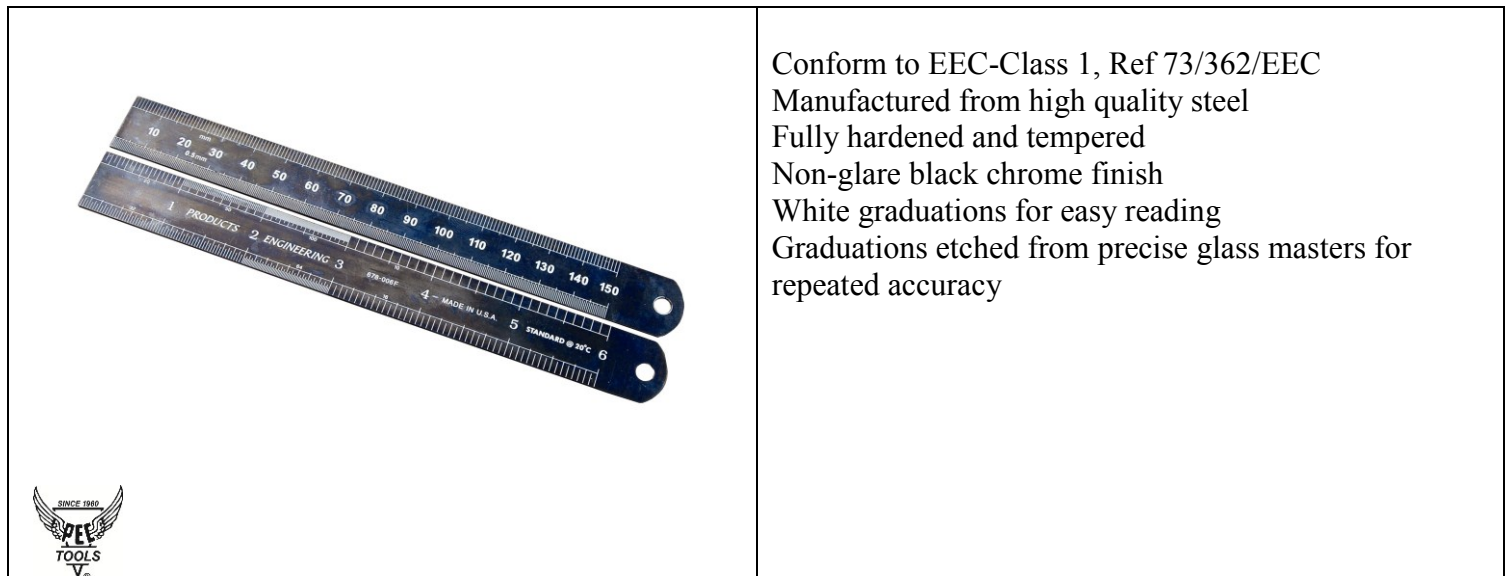


Example for division 0.002mm
 Reading:
 From Sleeve: 4mm
 From thimble: 0.23mm
 From vernier of sleeve: 0.004mm
 Final readings should be
 $4 + 0.23 + 0.004 = 4.234\text{mm}$

Product: Mechanical Black Face Dial Caliper Measuring Sets

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Steel Rule Metric and Inch Two Sided with Round End



Conform to EEC-Class 1, Ref 73/362/EEC
 Manufactured from high quality steel
 Fully hardened and tempered
 Non-glare black chrome finish
 White graduations for easy reading
 Graduations etched from precise glass masters for repeated accuracy

Code	Length	Type	Width and Thickness	Rule Marking Front Face (inch)	Rule Marking Reverse Face Metric)	Style	End Style
678-006FEZ	150mm / 6"	Rigid	19 x 0.5mm	16ths, 32nds, 64ths 10ths, 20ths, 50ths, 100ths	1.0mm and 0.5mm	64R	D End

EEC Directive 73-362 / EEC: Rules Class 1 and 2

For Metric Scales Only: (there is no specification for Inch Scales)

Permissible Errors: For EEC Class 1 Rules

Maximum permissible error between 2 intervals upto 1mm = 0.1mm

Maximum permissible error between two intervals not exceeding 10mm = 0.2mm

From Rule End: Above tolerance increased by 0.1mm

Examples:

Rule End to 1mm graduation = Normal Tol. 0.1mm + Additional Tol. 0.1mm = 0.2mm

Rule End to 10mm graduation = Normal Tol. 0.2mm + Additional Tol. 0.1mm = 0.3mm

Overall Length Tolerance

$$\text{Tol} = [a + (b \times L)]$$

a = 0.1 for class 1

b = 0.1 for class 1

L = Length of scale rounded up to the nearest metre

Example for a 300mm rule, when measurement is taken from the 10mm graduation to the 300mm graduation:

$$\text{Tol} = [0.1 + (0.1 \times 1)] = 0.2\text{mm}$$