

## Mechanical Ball Anvil Micrometers

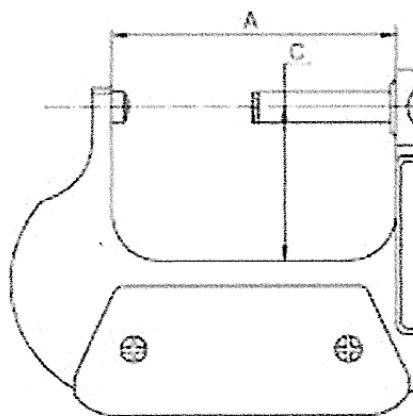
Page 1 of 3



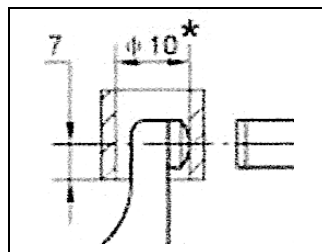
Accuracy conforms to DIN 863  
 Resolution: Metric 0.01mm, Inch 0.0001"  
 Micro fine graduations for accurate reading  
 Tungsten carbide spindle face  
 Spindle locking lever  
 Ratchet stop  
 Non-glare satin chrome barrel and sleeve  
 Blue baked enamel hammer tone finish  
 Supplied in fitted case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

## Packed Weight and Dimensions

Code	Range	Code	Range	Weight g	W mm	H mm	L mm
Metric	mm	Inch	inch				
50-165-025	0-25	50-165-001	0-1	304	82	30	158
50-165-050	25-50	50-165-002	1-2	473	98	30	192



Code	Range mm/Inch	A mm	C mm	Accuracy mm
50-165-025	0-25	32	24	+/- 0.004
50-165-050	25-50	57	32	+/- 0.004
50-165-001	0-1	32	24	+/- 0.004
50-165-002	1-2	57	32	+/- 0.004



## Instructions and Care

Check all new and in use micrometers for correct zero setting prior to use

Clean micrometer spindle and measuring anvils with soft cloth or paper to remove any oil or particles which may affect the measurements

Ensure that the micrometer is thermally stabilised with the temperature where it is to be used

Larger micrometers should be clamped in a suitable stand to make setting easier

Ensure that the spindle lock is off

For 0-25mm and 0-1" micrometers: Advance the spindle towards the fixed anvil. Use the ratchet stop to finally close the 2 anvils together. Rotate the ratchet stop 1 1/2 to 2 revolutions to exert a constant measuring force

For larger micrometers a setting standard should be placed between the anvils and the ratchet stop should be used as above to obtain the zero position

In the closed position the zero position on the thimble should coincide with the horizontal line on the sleeve

If the two lines do not coincide, small adjustments can be made by using the "C" spanner provided

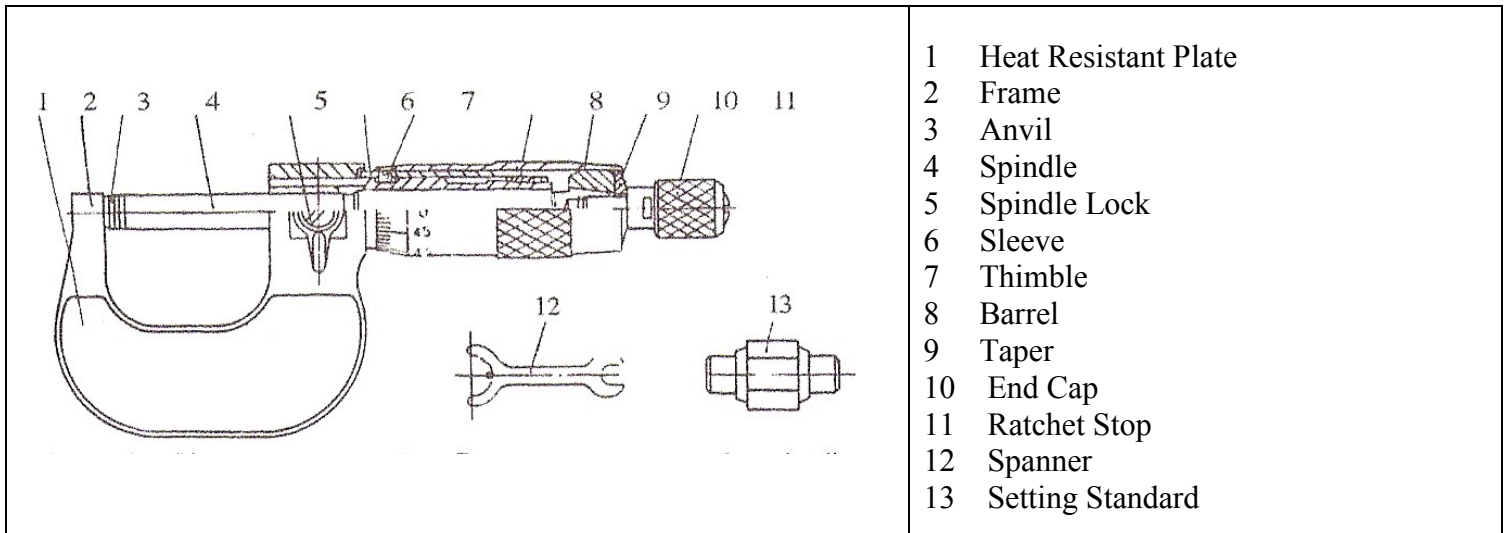
Insert the "C" spanner into the hole at the back of the sleeve and gently turn the sleeve in the direction required to achieve line up

The micrometer is now set and ready for use

Clean micrometers and check zero position regularly during use to ensure their continued accuracy

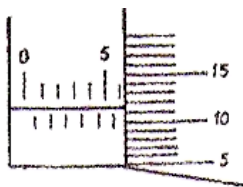
After use always clean and replace the micrometer in its box

Mechanical Micrometers

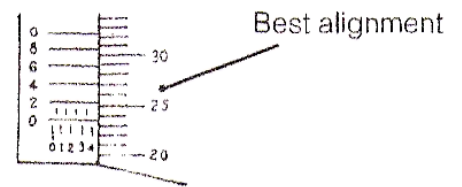


- 1 Heat Resistant Plate
- 2 Frame
- 3 Anvil
- 4 Spindle
- 5 Spindle Lock
- 6 Sleeve
- 7 Thimble
- 8 Barrel
- 9 Taper
- 10 End Cap
- 11 Ratchet Stop
- 12 Spanner
- 13 Setting Standard

Reading Examples: Metric

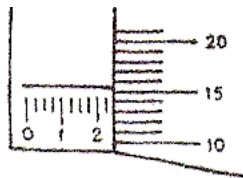


Example for division 0.01mm  
 Reading:  
 From Sleeve: 6mm  
 From thimble: 0.11mm  
 Final readings should be  
 $6. + 0.11 = 6.11\text{mm}$

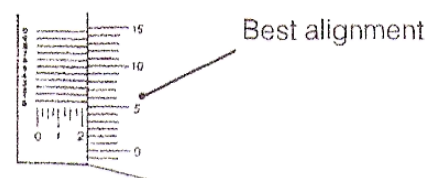


Example for division 0.002mm  
 Reading:  
 From Sleeve: 4mm  
 From thimble: 0.23mm  
 From vernier of sleeve: 0.004mm  
 Final readings should be  
 $4 + 0.23 + 0.004 = 4.234\text{mm}$

Reading Examples: Inch



Example for division .001"  
 Reading:  
 From sleeve: .2  
 $.2 + .025 = .225"$   
 From thimble: .0150"  
 Final readings should be:  
 $.2000" + .0250" + .0150" = .2400"$



Example for division 0.0001"  
 Reading:  
 From Sleeve: .2  
 $.2 + .025 = .225"$   
 From thimble: .0050"  
 From vernier of sleeve: .0004"  
 Final readings should be  
 $.2000" + .0250" + .0050" + .0004" = .2304"$

## Mechanical Micrometers

Page: 3 of 3

### 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

Before use check that the ratchet mechanism functions correctly

Check the spindle movement by using the ratchet stop to traverse the spindle through its complete travel

Check that the measuring faces are in good condition

Check the locking mechanism works correctly

### Zero Point Checking and Adjustment

Use the ratchet stop to move the spindle until it touches the fixed anvil. Allow the ratchet to turn  $1\frac{1}{2}$  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