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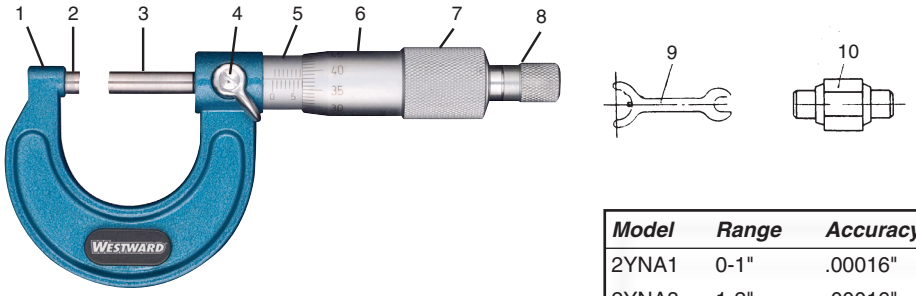
WESTWARD® Vernier Micrometer



1. Frame
2. Anvil
3. Spindle
4. Spindle Lock
5. Sleeve
6. Thimble
7. Friction Thimble (when applicable)
8. Ratchet (when applicable)
9. Spanner Wrench
10. Standard (if supplied)

Model	Range	Accuracy
2YNA1	0-1"	.00016"
2YNA8	1-2"	.00016"
2YNA2	3-4"	.00020"
2YNA3	4-5"	.00024"
2YNA4	5-6"	.00024"
2YNA5	0-25mm	.004mm

Cleaning

Wipe off oil, grease, dust and other foreign substances from all surfaces of the micrometer. Use particular care on the precision finished measuring contact faces of the spindle and the anvil.

Checking Operation

Inspection should be carried out particularly on the following points:
(1) Check if the ratchet mechanism functions properly.
(2) Turning the ratchet, check if the spindle moves smoothly throughout the entire travel.
(3) Examine the measuring contact faces to be sure they are in a good condition in every respect.
(4) Also check the spindle lock for its positive action.

Checking Zero Point

The zero point setting of each micrometer has been carefully set and tested. However, it should always be checked as a routine rule to ensure the accuracy of the measurements taken. Turn the ratchet until the spindle touches the anvil lightly but distinctly and see if the zero point on the thimble coincides with the reference base line of the graduations on the outer sleeve.
For micrometers larger than 0-25mm (0-1") size, the zero point is checked using the standard (if supplied) or a gage block.

Adjusting Zero Point

If any deviation is found as the result of the above inspection, the zero point can be set correctly by the following procedure:
(A) If the deviation is under 2 divisions on the thimble, turn the sleeve with the spanner supplied by an amount corresponding to the deviation and bring the reference base line of the sleeve to coincide with the zero point.
(B) If the deviation is more than 2 divisions on the thimble, it is corrected by the following procedure:
(1) Hold the frame and the thimble and loosen the ratchet with the spanner.
(2) Disconnect the coupling of the thimble and the spindle by giving a light tap to the thimble, then turn the thimble by an amount equal to the deviation, bringing the zero point to coincide with the reference base line of the graduation on the sleeve.
(3) Securely holding the thimble in the corrected position, press it against the spindle and tighten the ratchet with the spanner coupling them together.
(4) Having adjusted, check and confirm by repeating that the zero point has been correctly set. If any adjustment of a very small degree is required, it can be adjusted on the sleeve using the spanner wrench.

Operating Instructions and Parts Manual | Model No: 2YNA1, 2, 3, 4, 5, 8 2YNC1, 2

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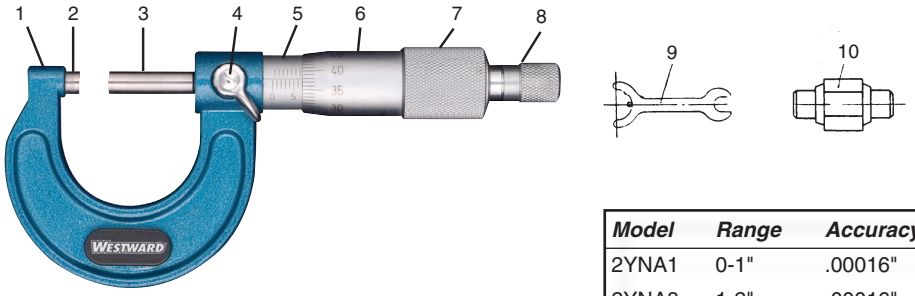

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2YNA3	4-5"	.00024"
2YNA4	5-6"	.00024"
2YNA5	0-25mm	.004mm

Cleaning

Wipe off oil, grease, dust and other foreign substances from all surfaces of the micrometer. Use particular care on the precision finished measuring contact faces of the spindle and the anvil.

Checking Operation

Inspection should be carried out particularly on the following points:
(1) Check if the ratchet mechanism functions properly.
(2) Turning the ratchet, check if the spindle moves smoothly throughout the entire travel.
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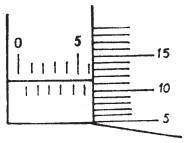
(4) Having adjusted, check and confirm by repeating that the zero point has been correctly set. If any adjustment of a very small degree is required, it can be adjusted on the sleeve using the spanner wrench.

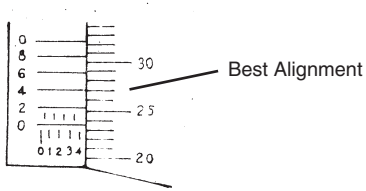
Caution

When reading the micrometer, the line of vision must be in the plane containing the graduated line to be read and the line of the spindle axis to avoid parallax. Keep correct posture to avoid parallax error.
The difference between temperatures of the micrometer and those of the work under measurement will cause errors in the measurement.
Avoid pulling out the micrometer or the work without relieving the pressure at the contact points. It is apt to damage and ruin the precision finished contact faces of the tool.
Handle the instruments with care. Dropping and giving undue shocks will not only damage the contact faces but effect the combined precision.

Examples for taking readings for: 2YNA5

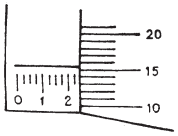


Example for division 0.01mm
Reading:
From Sleeve: 6mm
From thimble: 0.11mm
Estimated reading from thimble: 0.005mm
Final readings should be:
6 + 0.11 + 0.005 = 6.115mm

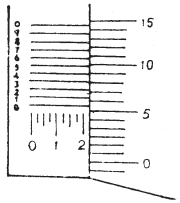


Example for division 0.002mm
Reading:
From Sleeve: 4mm
From thimble: 0.23mm
From vernier of sleeve:
0.004mm
Final readings should be
4 + 0.23 + 0.004 = 4.234mm

Examples for taking readings for: 2YNA1, 2YNA2, 2YNA3, 2YNA4, 2YNA8 2YNC1, 2YNC2



Example for division .001"
Reading:
From sleeve: .2000"
+ .0250"
.2250"
From thimble: .0150"
Final readings should be:
.2000" + .0250" + .0150" = .2400"



Example for division 0.0001"
Reading:
From Sleeve: .2000"
+ .0250"
.2250"
From thimble: .0050"
From vernier of sleeve: .0004"
Final readings should be
.2000" + .0250" + .0050" + .0004" = .2304"

These micrometers meet or exceed Federal accuracy specs. GGG-C-105C

Manufactured for Grainger International Inc.
100 Grainger Pkwy., Lake Forest IL 60045 U.S.A.

FOW227
Printed in China
08/08

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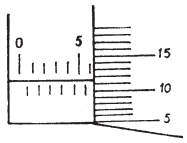

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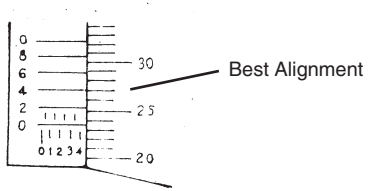
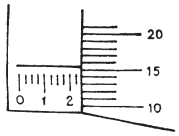


Example for division 0.002mm
Reading:
From Sleeve: 4mm
From thimble: 0.23mm
From vernier of sleeve:
0.004mm
Final readings should be
4 + 0.23 + 0.004 = 4.234mm

Examples for taking readings for: 2YNA1, 2YNA2, 2YNA3, 2YNA4, 2YNA8 2YNC1, 2YNC2



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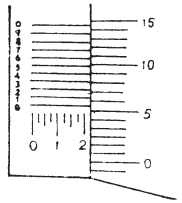

Example for division 0.0001"
Reading:
From Sleeve: .2000"
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.2250"
From thimble: .0050"
From vernier of sleeve: .0004"
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