



# OPERATION INSTRUCTION

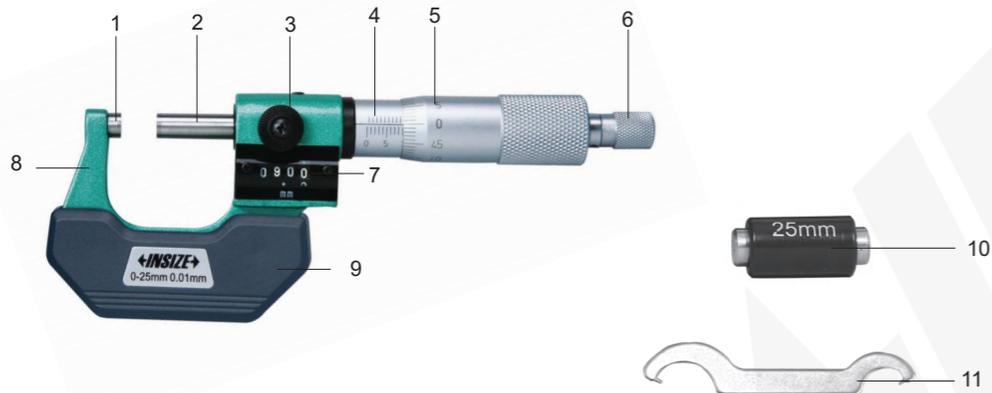
## Outside Micrometer With Counter

### Series 3400

Counter graduation: 0.01mm/.001"  
Thimble graduation: 0.01mm/.0001"

Code	Range	Accuracy
3400-25	0-25mm	4μm
3400-50	25-50mm	4μm
3400-75	50-75mm	5μm
3400-100	75-100mm	5μm
3400-125	100-125mm	6μm
3400-150	125-150mm	6μm
3400-175	150-175mm	7μm
3400-200	175-200mm	7μm
3400-225	200-225mm	8μm
3400-250	225-250mm	8μm
3400-275	250-275mm	9μm
3400-300	275-300mm	9μm

Order No.	Range	Accuracy
3400-1	0-1"	.00015"
3400-2	1-2"	.00015"
3400-3	2-3"	.00020"
3400-4	3-4"	.00020"
3400-5	4-5"	.00025"
3400-6	5-6"	.00025"
3400-7	6-7"	.00030"
3400-8	7-8"	.00030"
3400-9	8-9"	.00030"
3400-10	9-10"	.00030"
3400-11	10-11"	.00035"
3400-12	11-12"	.00035"



- 1-Anvil with carbide measuring face
- 2-Spindle with carbide measuring face
- 3-Locking knob
- 4-Sleeve
- 5-Thimble
- 6-Ratchet stop
- 7-Counter
- 8-Frame
- 9-Heat isolation plate
- 10-Setting standard (except 0-25mm/0-1")
- 11-Wrench

1. Set zero: It is necessary to set zero before measurement.
  - Before measurement, clean the measuring faces and setting standard faces with soft cloth(the micrometer is set zero with setting standard when its range is more than 25mm)

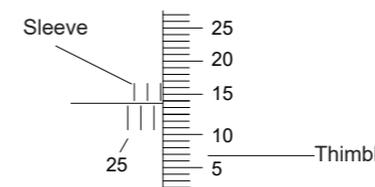
- Confirm that the both measuring faces(measuring face and setting standard's face) gently contact. The proper measuring force can be confirmed to rotate the ratchet stop(rotate friction thimble which will damage the internal precision threads) 3 or 4 times, and then get result
- If the reading is zero(or equal to the normal value of setting standard), micrometer is ready to measure. If there is a deviation, insert the wrench into the hole on the opposite side of the index line, and rotate the sleeve(Fig.1) to align the index line with thimble zero graduation line.

Caution: When the measuring faces is close, but not in contact with the workpiece, do not apply excessive force to rotate the ratchet stop, as it will lead to inaccurate results and may damage the internal precision threads.

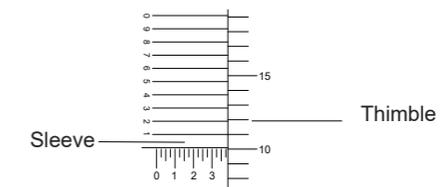


Fig.1

2. During measurement: The measuring method is same with setting zero, and get the result. Please pay attention the environment and action, avoid varied environment temperature and action lead to the error of measurement.
3. Reading: Micrometer with counter has two ways to get the reading. Get the reading from the counter, the minimum reading is 0.01mm/.001". Or get the reading from sleeve, the minimum reading is 0.001mm/.0001". During reading, the sight is perpendicular to the scale (as the index line of the sleeve and the graduation of the thimble are not on the same plane, parallax error will affect the result). The reading is the sum of sleeve, thimble, estimating reading(vice sleeve in inch).



Sleeve reading: 27.5mm  
Thimble reading: 0.13mm  
Estimating reading: 0.007mm  
Reading: 27.637mm



Sleeve reading: 0.375"  
Thimble reading: 0.010"  
Vice sleeve reading: 0.0001"  
Reading: 0.3851"

4. Measuring faces should be carefully protected from being scratched or damaged. Do not operate abruptly, drop or strike micrometer. Micrometer should be oiled to prevent rust after use.

MN-3400-E