Niigata Seiki

PRECISION MEASURING TOOLS

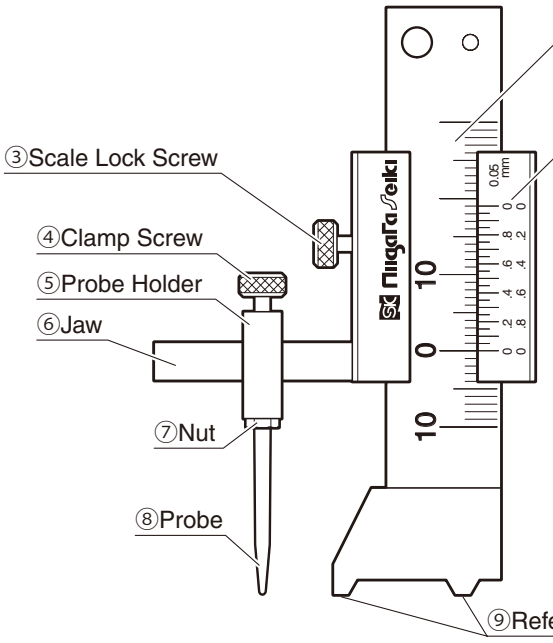
GAP CALIPER

INSTRUCTION MANUAL	
Model No.	GVG-1

Thank you for purchasing the Niigata Seiki Gap Caliper.
This precision instrument indicates measured value using a main scale with a vernier scale.

- For safe and proper use, please read this instruction manual before use and follow the procedures described. Please keep manual where it is accessible to user for future reference.
- Keep this manual with the instrument if transferred or leased to a third party.
- For inquiries about this product, please contact dealer or place of purchase.

■PART IDENTIFICATION AND FUNCTION



①Main Scale1mm ····· Graduation Main Scale
②Vernier Scale (Slide) ····· 0.05mm Vernier Scale
Please see below for guide to reading the scale.
③Scale Lock Screw ····· Locks Slide position
④Clamp Screw ····· Secures Probe in position
⑤Probe Holder ····· Holds Probe
⑥Jaw ····· Probe Holder slides upon
⑦Nut ····· For adjusting Zero-point
⑧Probe ····· Applied to object for measurement
⑨Reference Surface ····· Measured value is height difference between probe tip and this surface.

SAFETY PRECAUTIONS

Please Observe

Always follow the these marked operating procedures in order to prevent harm to yourself or others, and to prevent damage to property.

Denotes a prohibition – You **MUST NOT** do.

Denotes a requirement – You **MUST** do.

⚠WARNING

Indicates risk of **personal injury** or **property damage** if not followed.

Read the manual and follow the instructions.
- Use of product other than as described in the manual may cause accident.

Use only for measuring.
- Use for any purpose other than measuring may damage or wear the instrument. Improper use may also cause accident.

Handle with Care.
- Do not drop or subject instrument to excessive shock. Do not place under heavy objects. Improper handling may cause damage or poor accuracy.
- Do not scratch instrument, for example by writing ID number.

Use In Proper Environment.
- Please do not use instrument in rain or locations with excessive humidity. Do not use at extreme high or low temperatures. Keep out of direct sunlight.

Probe Tip is Sharp – Handle With Care.
- Careless handling may cause injury.

Do not move the Vernier Slide when the Scale Lock Screw is tightened.
- Excessive force applied to Slide may cause damage or affect accuracy.

Do not disassemble or modify.
- Do not remove the Vernier Slide, Please do not attempt to disassemble or modify as it may cause damage or poor accuracy.

CALIBRATION

- **In order to maintain instrument accuracy, it is recommended that accuracy is confirmed through calibration on a periodic basis.**
  Wear of measuring surfaces from repeated use may affect accuracy and periodic accuracy checks should be performed.

We provide calibration services.
Please contact agent in country of purchase to make arrangements.

PREPARATION FOR USE

Before using the caliper, follow the steps below:

●Loosen the Scale Lock Screw.
Moving the Vernier Slide with the Scale Lock Screw tightened may cause excessive force to the Slide which will damage the caliper and affect accuracy.

●Make sure Nut is not loose.
If Probe Nut is loose, adjust Zero-Point setting on Vernier and secure Probe by tightening the Nut.

●Wipe off any dirt, or oil from Probe, Slide and Reference Surface.
Contamination of surfaces may cause damage or measurement error.

●Allow the caliper and object to be measured time to reach the same temperature.
A temperature difference between the object to be measured and the caliper may cause measurement error. Allow enough time for the temperatures to equilibrate.

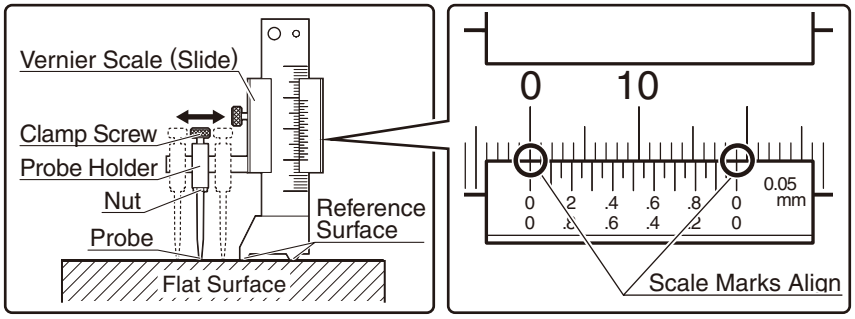
●Performing an accuracy check.

①Set position of Probe Holder.
Loosen the Probe Clamp Screw and adjust position as desired. Secure by tightening the Clamp Screw.

②Probe Check.
Make sure the Probe tip and Jaw are straight. Place the Gauge on a flat surface and move the slide to position the probe tip onto the surface.

③Check for Zero Reading.
In this position from step ②, the vernier scale marks should line up with the main scale lines at position 0 and 19 as shown.

※If Zero-Point is not set properly:
Set the Zero point by loosening the Nut and adjusting the position of the Probe until zero point is aligned. Tighten Nut to secure.



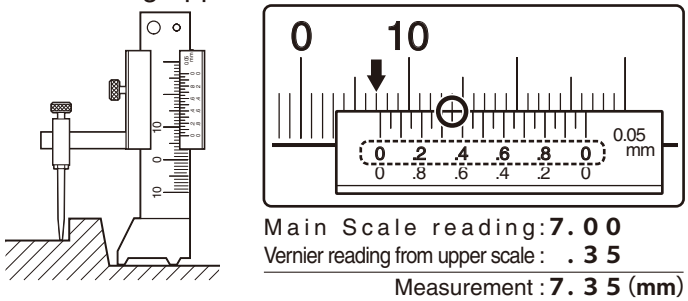
READING THE SCALE

The measured value is determined by reading the main scale, and then adding the Vernier Scale reading as determined by the point where the vernier and main scale graduations align.

Measured value =
Main Scale Reading + Vernier Scale Reading

Example for Positive Reading

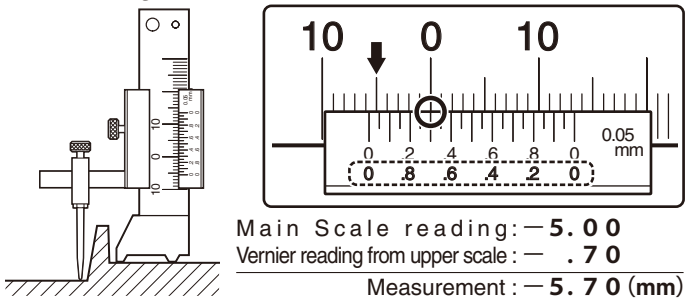
Read using upper vernier scale



Main Scale reading: **7.00**
Vernier reading from upper scale : **.35**
Measurement : **7.35 (mm)**

Example for Negative Reading

Read using lower vernier scale



Main Scale reading: **−5.00**
Vernier reading from upper scale : **− .70**
Measurement : **−5.70 (mm)**

SPECIFICATIONS

Model No.	GVG-1
Measurement Range	-10 ~ 10mm
Resolution	0.05mm
Accuracy	±0.05mm
Material	Stainless Steel

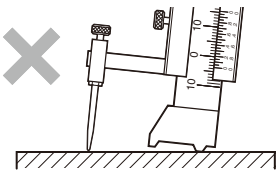
PREVENTING ERRORS

In order to prevent measurement error, please note the following.

PREVENTING ERRORS

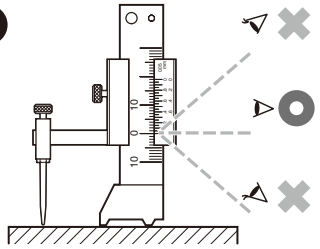
●Do not change the position of the Probe Holder after the accuracy check is performed. If position is changed, please do another accuracy check.

●Make sure the base is not tilted when taking a measurement.



VIEWING THE SCALE

Scale should be read from directly in front of the gauge. Due to step in height of vernier scale relative to main scale, if viewing direction is not directly above the reading may have parallax error.



AFTER USE CARE • STORAGE

●Wipe measuring surfaces, sliding surfaces, reference surface, and exterior with a dry cloth treated with anti-corrosive oil.
When not in use, apply anti-corrosive treatment or keep in anti-corrosive bag.

●When not in use, keep lock screws slightly loose.
Thermal expansion during storage may cause over tightening which may affect accuracy.

●Store in supplied case in a cool, dry location.
Keep away from direct sunlight or wet locations.

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