

Angle Plate Sine Bar with Centers

Instruction Manual

To ensure correct use, please read this instruction manual carefully before use. After reading, keep it in a safe place where the user can always refer to it.



OBISHI KEIKI SEISAKUSHO Co., Ltd.

Safety Precautions

- ※Before use, please read this instruction manual carefully and use the product correctly.
- ※The precautions shown here are intended to ensure the safe and proper use of the product and to prevent any potential hazards to the user.
- ※The precautions are categorized into three levels — **Danger, Warning, and Caution** — to clearly indicate the severity and urgency of potential harm or damage that may occur if the product is mishandled.

For Safe and Proper Use		
This instruction manual includes various symbols and pictograms throughout the text to ensure correct use of the product and to prevent harm or damage to the user. The symbols and their meanings are as follows. ● Please read the text after fully understanding the symbols and their meanings. ● After reading, be sure to keep this manual in a place where anyone using the product can easily refer to it at any time. ● All of these are safety-related instructions, so please be sure to follow them.		
	Danger	This indicates situations where incorrect handling could result in imminent risk of death or serious injury.
	Warning	This indicates situations where incorrect handling could potentially result in death or serious injury.
	Caution	This indicates situations where incorrect handling may result in injury to persons or only property damage.
Examples of symbols		The △ symbol indicates the presence of danger, warning, or caution messages, with specific precautions described within the figure. (The left figure is used to indicate general danger, warning, or caution without specifying details.)
		The ○ symbol indicates prohibited actions, with specific precautions described within or below the figure. (The figure on the left is used for general prohibition notices without specifying particular actions.)
		The ● symbol indicates mandatory actions, with specific instructions detailed within the figure. (The figure on the left is used for general mandatory actions or instructions without specifying details.)

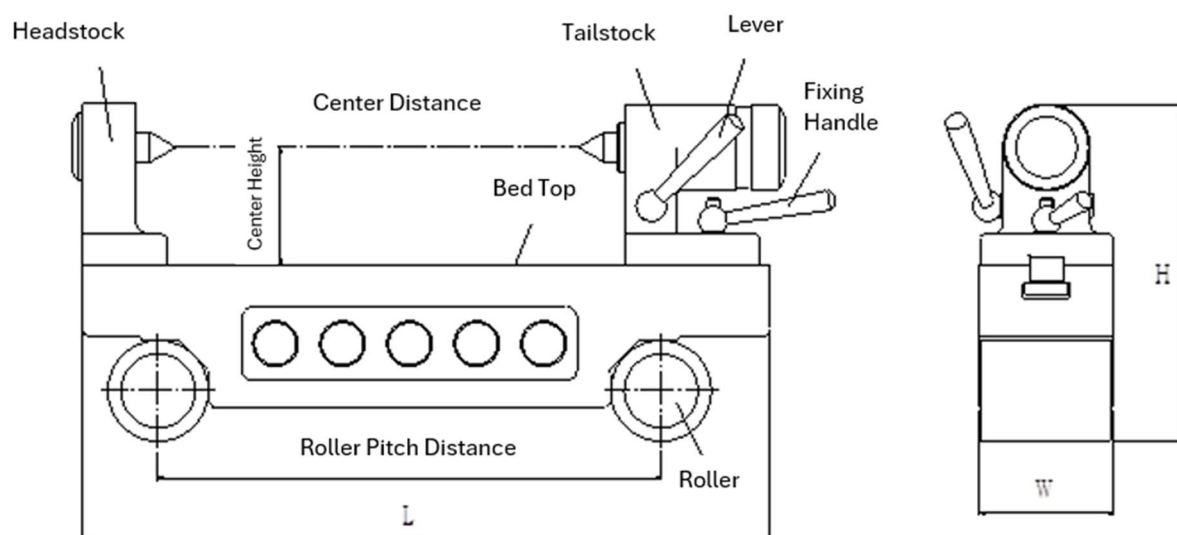
Sine Bar with Centers Instruction Manual

1. Product Features

- A highly stable and precise sine bar with centers.
- Set the angle using gauge blocks.
- Suitable for measuring workpieces with angles such as tapers.
- The top surface of the bed can also be used for measuring the angle of flat workpieces.
- Both the bed and the rollers are fully hardened.
- The centers are spring-loaded.

Note: A test bar is not included.

2. Names of Parts and External View



3. Specifications

Code No.	Nomi-nal	Size (L×W×H mm)	Center Distance (mm)	Center Height (mm)	use Center	Roller Pitch Distance (mm)	Height Parallelism (μm)	Mass (kg)
NK101	300	410×80×200	240	70	MT-2	300 ±0.004	4	23
NK102	500	630×84×230	440	80		500 ±0.005	5	58

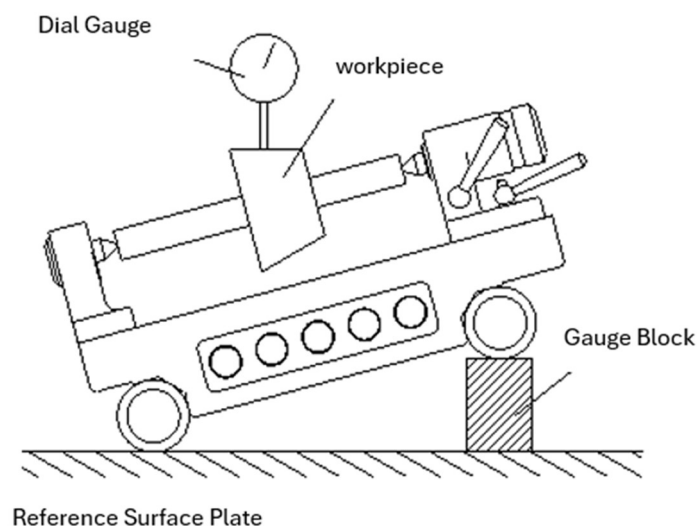
4. Instructions for Use

- ① Wipe this instrument and the workpiece clean, place them on the reference surface plate, and mount the workpiece between the centers.
- ② Prepare gauge blocks that match the taper angle of the workpiece.
- ③ Lift the sine bar, place the gauge blocks under the rollers, and gently lower the rollers onto the gauge blocks.

※Do not apply strong impact to the rollers, as this may cause damage and result in inaccurate measurements.

Always place the gauge blocks at the center of the rollers. If not centered, the sine bar may tilt, causing the gauge blocks to topple and creating a risk of injury.

- ④ Bring the stylus of the dial gauge into contact with the workpiece and perform the measurement by sliding the stand over the reference surface plate.
- ⑤ After completing the work, lift the sine bar and remove the gauge blocks.
- ⑥ Remove the workpiece.



5. Replacement of the Center

If damage (such as chipping or wear) is found on the tip of the center, replace the center with a new one immediately.

【Headstock Side】

- ① Turn the plug by hand and remove it.
- ② Hold the tip of the small center with a wiper or similar cloth, and lightly tap the rear of the small center from the plug side using a push rod to remove it.
- ③ Wipe the new small center clean and insert it into the center hole.

Note: The small center is a special type made by cutting the taper part of an MT No.2 center.

- ④ Turn the plug by hand and install it.

【Tailstock Side】

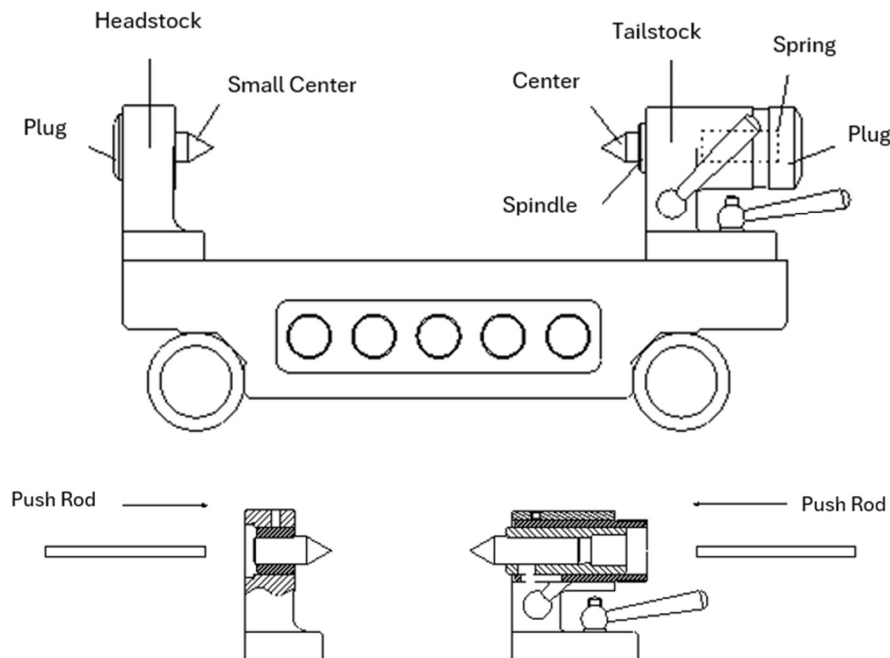
- ① Turn the plug by hand and remove it.

Note: A spring is located inside the plug, so take care not to let the plug fly out when removing it.

- ② Remove the spring.
- ③ While holding the tip of the center with a wiper or similar cloth, lightly tap the rear of the center from the plug side using a push rod to remove it.

Note: Since the center is inserted inside the spindle, take great care not to strike the spindle.

- ④ Wipe the new center clean and insert it into the center hole.
- ⑤ Install the center so that it fits correctly inside the spindle.
- ⑥ While pressing the plug firmly against the stock to prevent it from being ejected, turn it by hand to install it.



6. Precautions for Use

- ① Clean the Precision Surface and the measurement surface of the workpiece before use.
- ② Handle the instrument carefully during use and storage to avoid impact or shock.
- ③ Allow the instrument to acclimate to the ambient temperature before use.
- ④ Do not use or store the instrument in places with drastic temperature changes.
- ⑤ Do not apply excessive load or impact to the bed or centers.
- ⑥ Before mounting the workpiece, always make sure that the stock is securely fixed.

If the stock is not fixed, the spring force inside the tailstock may cause the stock to move, resulting in the workpiece coming off the centers and falling.

- △ ⑦ Check that the center holes of the workpiece are properly engaged with the centers of this instrument.

If they are not properly engaged, the workpiece may fall when released.

- ⑧ When removing the workpiece, firmly support it with your hand or an equivalent fixture while removing it..

- ⑨ When moving the stock, always move it gradually and carefully.

If it is moved too much at once, the stock may slip on the bed and collide with the opposite stock, causing damage to the centers.

In particular, when the distance between the centers is narrow, lightly tap the rear of the stock and adjust it slowly.

- ⑩ Parallelism between the bottom surface of the bed and the centers is not ensured.

Use this instrument with caution.

- ⑪ When moving this instrument, always move it with the stocks fixed.

Note: When transporting by vehicle, insert cardboard or similar material between the two stocks and secure them firmly with string or other means to prevent movement, even if the fixing handle loosens due to vibration.

- ⑫ Do not place this instrument in locations subject to vibration or other similar conditions.

- ⑬ After use, always apply rust prevention treatment and store the instrument in its storage case.

- ⑭ Check the instrument for abnormalities before use in the following cases:

- When the instrument has been dropped.
- When an object has been dropped onto the instrument.

- ⑮ Check the accuracy regularly before using the product.

- △ ⑯ If the product has sharp edges, handle it carefully to avoid injuring your fingers or other parts of your body.

- △ ⑰ For heavy products, handle placement and other operations with two or more people, and take care to avoid injury.

- ⑱ Use cloth or nylon sleeves for lifting. Do not use hard materials such as metal chains or wires, as they may cause scratches or cracks on the product and pose a risk of injury to the operator.

- ⑲ Wear protective gloves and safety glasses as necessary to prevent injury while working.

- △ ⑳ Do not use this product if it is damaged or deteriorated, as it may cause injury or accidents.

- △ ㉑ If an injury occurs, give first aid immediately and seek medical attention if necessary.

Contact Information



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Design, development, manufacturing, and calibration services for precision measuring instruments (levels, surface plates, straight edges, reference measuring instruments, square rulers, blocks, dial gauge stands, comparators, angle measuring instruments, bench centers, squareness measuring instruments).