

Ultra master tool

Ultra Precision Granite Master Angle

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.

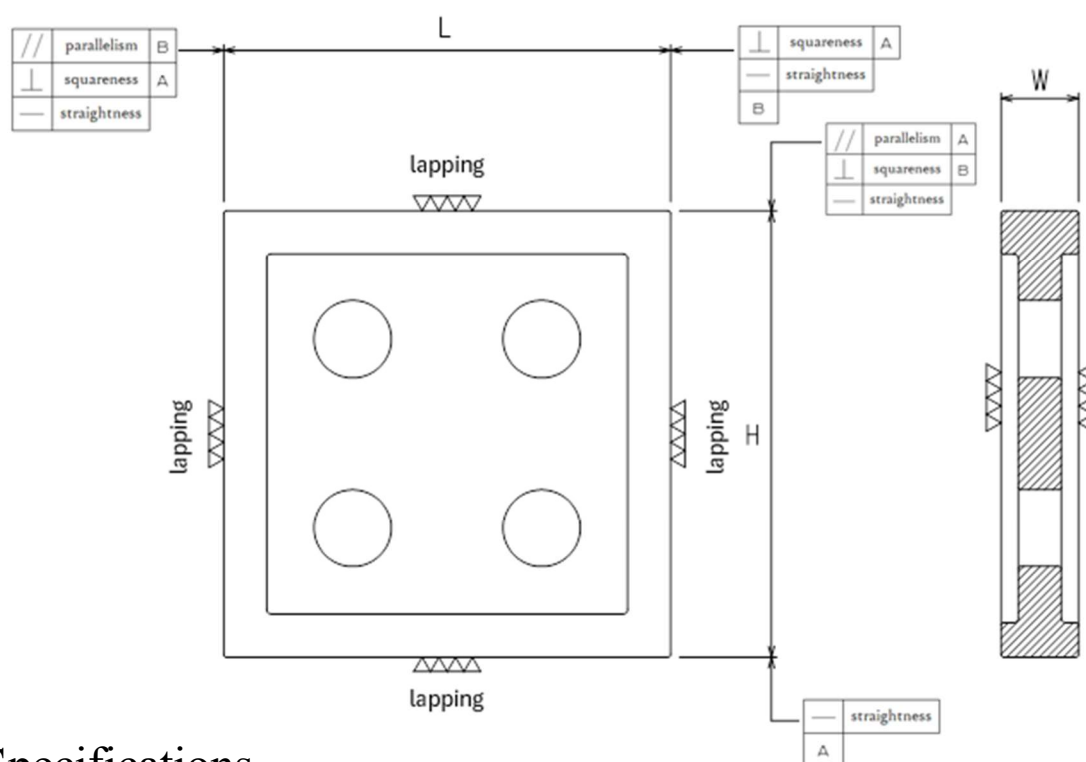
For Safe and Proper Use		
This instruction manual includes various symbols and pictograms throughout the text to ensure correct use of the product and to prevent harm or damage to the user. The symbols and their meanings are as follows. ● Please read the text after fully understanding the symbols and 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.)

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1. Product Features

- It can be used as a master reference for geometric accuracy inspection of machining centers, various machine tools, semiconductor equipment, coordinate measuring machines, and inspection devices.
- As a four-right-angle master, it can also be used as a reference master for parallelism.
- The measuring face is finished with precision lapping, and the accuracy surfaces are the four outer right-angle edges.
- ※ • The accuracy-guaranteed surface is located 10 mm inside from the outer perimeter.
 - Made of stone, it is less affected by temperature changes and can maintain stable accuracy over a long period.

2. External View



3. Specifications

Code No.	Nominal	Size (L×H×W mm)	Squareness, Parallelism (μm)	Side Surface Accuracy (μm)	Mass (kg)
GC-1001	300	320×320×60	1.0	5	13

GC-1002	500	520 × 520 × 90	2.0	10	48
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4. Operating Instructions for Using the Master Angle in Horizontal and Vertical Positions

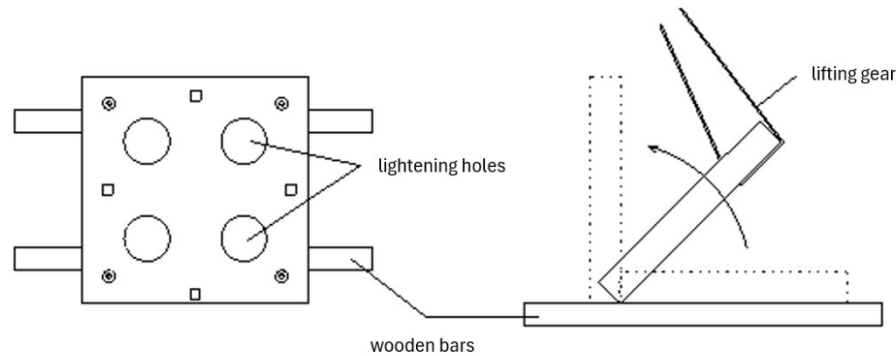
【When used in the horizontal position】

- ① Take it out of the storage case horizontally.
 - ※When hanging, use the hanging hole or lightening hole and secure it with a nylon sleeve or similar.
 - ※To prevent direct contact of the hanging equipment with the precision surface, use a protective cloth as needed.
- ② Please thoroughly clean any dirt from the measuring face, contact surface, and the installation surfaces such as the reference surface plate or machine base where the instrument will be placed.
- ③ Slowly place it on the reference surface plate or machine base.

【When using in a vertical position.】

- ※When using lifting gear, use the bolt holes or lightening holes, and perform the operation with nylon sleeves or similar.
 - ※To prevent the lifting gear from coming into direct contact with the precision surface, place a protective cloth if necessary.
- ① For temporary placement, prepare two wooden (or similar) bars and place them in parallel on a wide area.
(A length approximately 1.5 times that of the instrument is required.)
 - ② Remove the instrument horizontally from the storage case.
 - ③ Slowly lower the product onto the wooden bars prepared in step ① to make a temporary placement.
When placing it temporarily, position it toward one side of the bars (e.g., the right side as shown in the figure) to facilitate the next operation.
 - ※Place a protective cloth between the precision surface and the wooden bars to prevent any scratches or damage.
 - ④ Slowly lift the right side of the instrument (the side placed against the bars) and bring the instrument to an upright position.
 - ※The balance will be unstable, so operate carefully and take care to prevent the product from tipping or falling.
 - ※When using a lifting device, attach it to the right side (the side placed against the bars) and operate carefully.

- ⑤ Thoroughly wipe clean the measuring surface, the contact surface, and the surfaces of the reference surface plate or machine base where the instrument will be placed.
- ⑥ Carefully place the instrument onto the reference surface plate or machine base.
- ⑦ After measurement, store the instrument by following the reverse of the above procedure.



5. Precautions for Use

- ① Before use, please clean the measuring face and the measurement surface of the workpiece.
- ② When using or storing this instrument, handle it carefully 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 After use, always store the instrument in its storage case.
- ⑥ Do not concentrate usage on a single measuring surface; use all four faces evenly.
- ⑦ If there are any scratches or damage, repair and inspection are recommended.
- ⑧ In the following cases, please check for any abnormalities in the instrument before use.
 - When the instrument has been dropped.
 - When an object has been dropped onto the instrument.
- ⑨ Check the accuracy regularly and use the product.
- ⑩ For heavy products, ensure that two or more people handle placement and other operations, taking care to avoid injury.
- ⑪ Use cloth or nylon sleeves for lifting. Using hard materials such as metal chains or wires may cause scratches or cracks on the product and pose a risk of injury to the operator.
- △ ⑫ If the product has sharp parts, please handle it carefully to avoid injuring your fingers or other parts of your body.
- △ ⑬ Wear protective gloves and safety glasses as necessary to prevent injury while working.
- △ ⑭ Do not use this product if it is damaged or deteriorated, as it may cause injury or accidents.
- △ ⑮ If an injury occurs, provide first aid immediately and consult a physician if necessary.

Contact Information

JIS Certified Factory



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Head Office and Factory

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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).