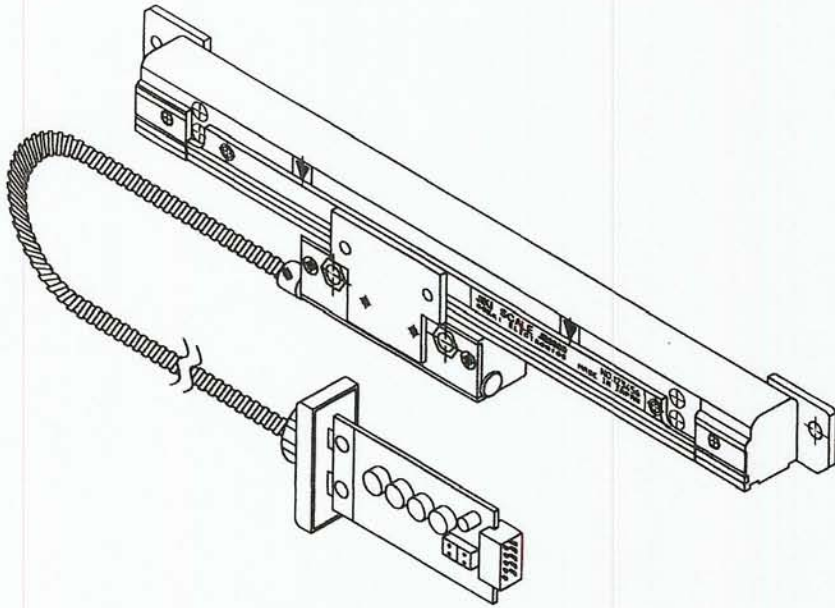


SOKKI
ELECTRONICS

JE8

JIKI SCALE UNIT



OPERATOR'S MANUAL

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The JIKI SCALE JE8 can be operated with the following display unit.
DE002

The JIKI SCALES "JE8 series" are available as 0.5 μ m/1 μ m display and 5 μ m/10 μ m display. These scale units are not provided with absolute zero points.

1. FEATURES

The JIKI SCALES "JE8 series" are high-precision scale units which employ a newly-developed high coercive magnetic scale.

- The magnetic readout system provides high vibration and oil-resistant properties.
- Being the same thermal expansion coefficient as iron, the scale itself provides temperature compensation to minimize error due to changes in temperature.
- The main body of the JIKI SCALE has a shielded structure so that the scale will not be affected by external magnetic fields.
- The head amplifier and scale are assembled as one unit to enable unit replacement. If trouble occurs in field operation, the unit can be replaced easily and quickly without the need to adjust the signal.
- A mounting guide with calibration marks on the entire scale is provided as standard to facilitate installation on the machine.
- The conduit cable between the head amplifier and the JIKI SCALE is of stainless steel construction, and is resistance to bending and twisting.
- The conduit cable can be connected to either side of the carrier bracket.
- Using the M5 locking hexagonal nuts the carrier bracket can be easily fixed to the instrument.
- Even if the exclusive conduit cable is not used, direct connection between the head amplifier and display unit is possible.
- Using the 4 provided set screws, the carrier unit can be aligned with even irregular surfaces.

2. NAMES AND FUNCTION OF PARTS

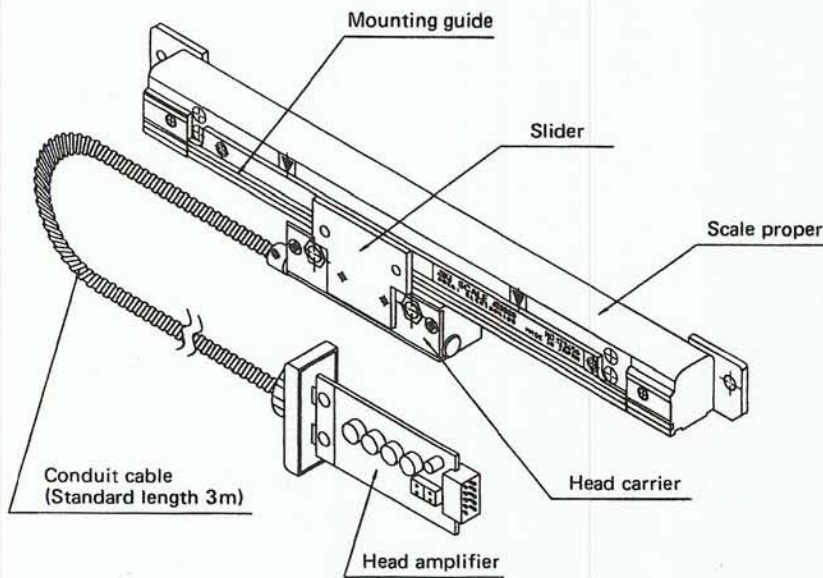


Fig. 2.1

Scale proper:

The scale rod is mounted in the iron housing.

Head amplifier:

Amplifies the signal from the scale and sends it to the display unit.

Head carrier:

Holds the reading head and is normally mounted on the machine bed.

Slider:

Serves as the head carrier fixing board during transit and as a guide for installation.

Mounting guide:

A guide rail for the slider.

Conduit cable:

A signal cable protected by a stainless steel conduit for connecting the head amplifier to the head carrier.

Effective length marks: ▼

Measurement is possible for the length between these marks.

3. INSTALLATION

3.1 INSTALLATION PLACE AND PRECAUTIONS

- Select the installation position as near the object to be measured or the workpiece as possible, to ensure the highest measurement accuracy.
- Care must be taken so that the scale is not bent or twisted on installation.
- Avoid installing the unit in a place where the environmental conditions change drastically due to high electric fields, temperature changes, ferromagnetism, etc.
- It is recommended to put a protective cover on the scale to prevent the workpiece from touching the scale during machining.
- Mount the scale so that the head carrier faces down or sideways.

⊙ Tools required for installation

Electric drill

Drill $\phi 3.3$

Tap M4

Dial gauge 1/100 mm

Tap handle Small

⊕ Screwdriver Small, Medium

○ Mounting accuracy

Mount the unit so that the parallelism of each surface to the machine axis is within the following limits.

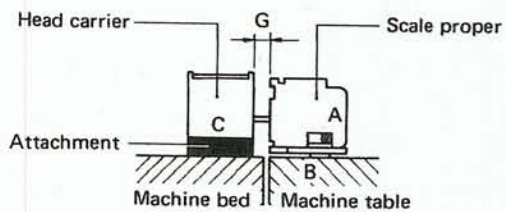


Fig. 3.1

- A: Scale measuring surface
- B: Scale mounting surface
- C: Head carrier mounting surface
- G: Gap between head carrier and scale proper

A · B	within 0.1 mm
C	within 0.1 mm
Parallelism of B and C	within 0.1 mm
Space between B and C	7 ± 0.1 mm
G	2.5 ± 0.1 mm

3.2 SCALE MOUNTING

1) Positioning · Drilling · Temporary Fixing

By referring to the mounting hole sizes on the scale external view drawings, determine the mounting position on the mounting surface of the machine table, then drill and tap the mounting holes.

Fix the scale temporarily to the machine table using the hexagon socket head bolts and leave it for about 30 minutes until the scale temperature adapts itself to the machine temperature.

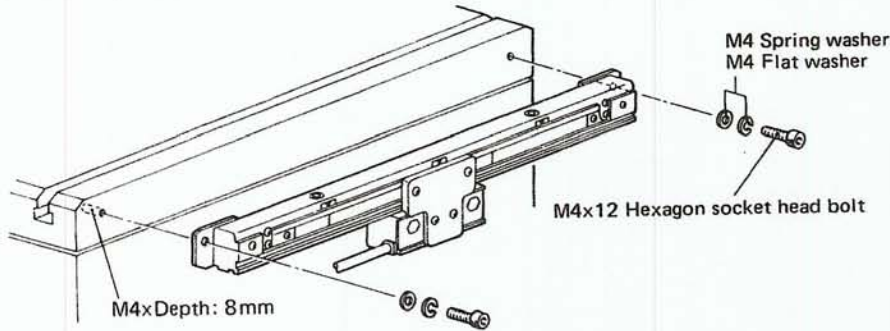


Fig. 3.2

2) Mounting

Measure the parallelism of the surface A (surface provided with the alignment marks ⊙) of the temporarily fixed scale) to the machine axis, using a dial gauge. (Measure the parallelism at the alignment marks.)

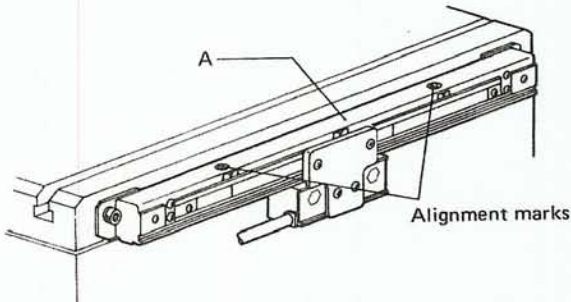


Fig. 3.3

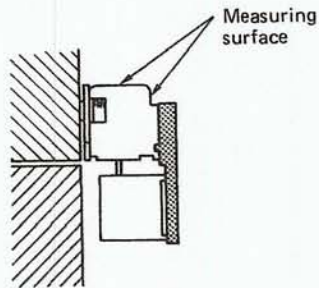


Fig. 3.4

- If the alignment marks on the surface A cannot be measured directly by the dial gauge, measure the parallelism of two directions in the vicinity of the alignment marks.

3.3 HEAD CARRIER MOUNTING

Prepare an attachment for fixing the head carrier to the machine bed.

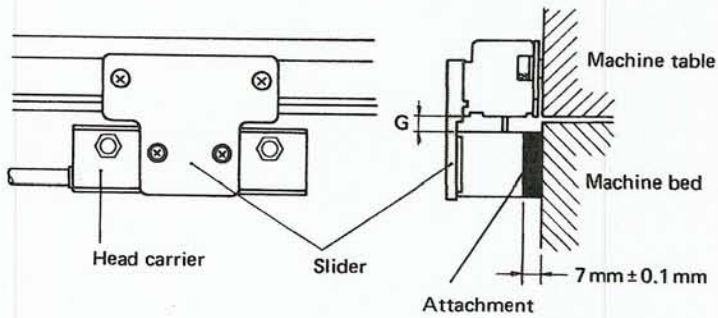


Fig. 3.5

When the scale is attached directly to the table, the thickness of the attachment should be 7 ± 0.1 mm.

(It is recommended to use shim washers for fine adjustment of the thickness.)

Remove the two screws on the scale proper side of the slider so that the head carrier is free from the scale.

After the attachment has been prepared, move the head carrier to the desired mounting position.

Drill the mounting holes at the mounting position on the machine bed.

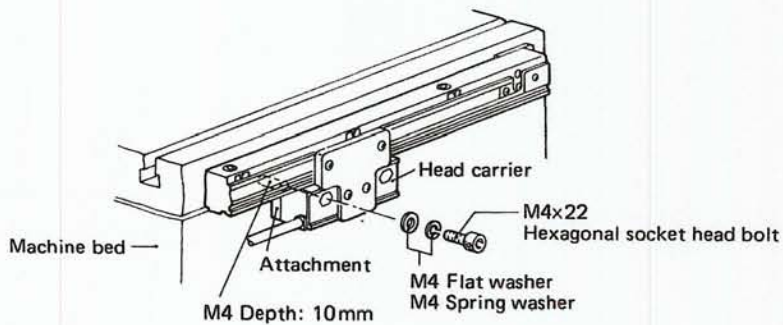


Fig. 3.6

Remove the slider after mounting.

Check the gap (G) between the scale proper and the head carrier by inserting the provided thickness gauge.

Gap (G) allowance 2.5 ± 0.1 mm

Hexagonal nuts mounting
(The HEX NUT 6-32 can be mounting to the instrument.)

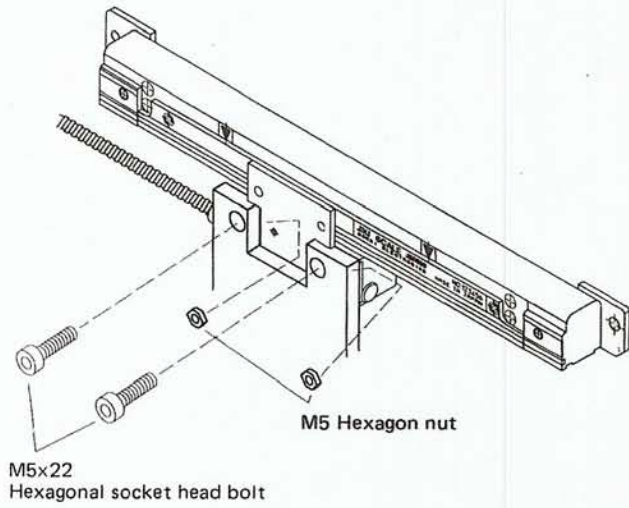


Fig. 3.7

If necessary removing the carrier bracket cover allows access to the 4 alignment adjusting screws.

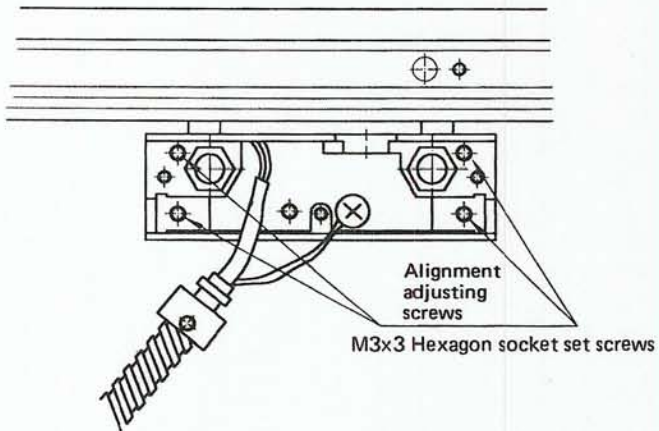


Fig. 3.8

By removing the carrier bracket cover the conduit cable can be moved to the desired location.

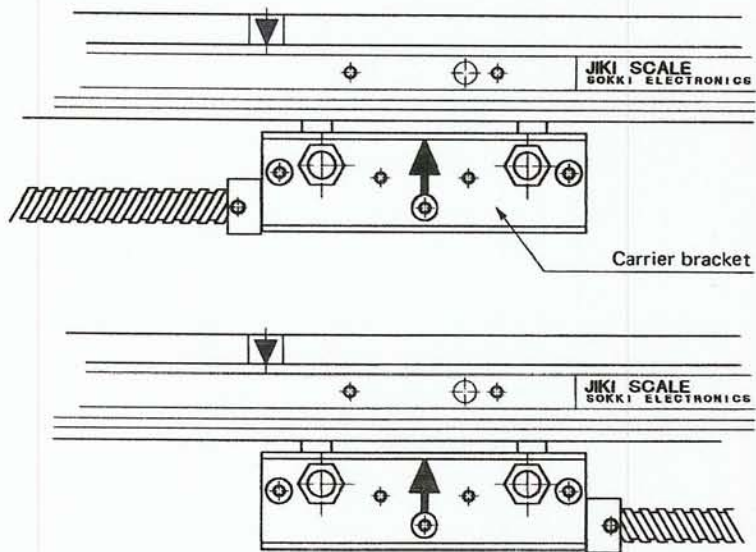


Fig. 3.9

3.4 CONNECTION TO THE DISPLAY UNIT

Note 1: Be sure to connect or disconnect the conduit cables only after turning the power off.

Note 2: Tighten the mounting screws of the connector securely.

Note 3: Connect the attached grounding wire to the machine body for earthing.

Note 4: Mount the conduit cable away from power cables.

Connect the head amplifier base with the specified spots on the display unit.

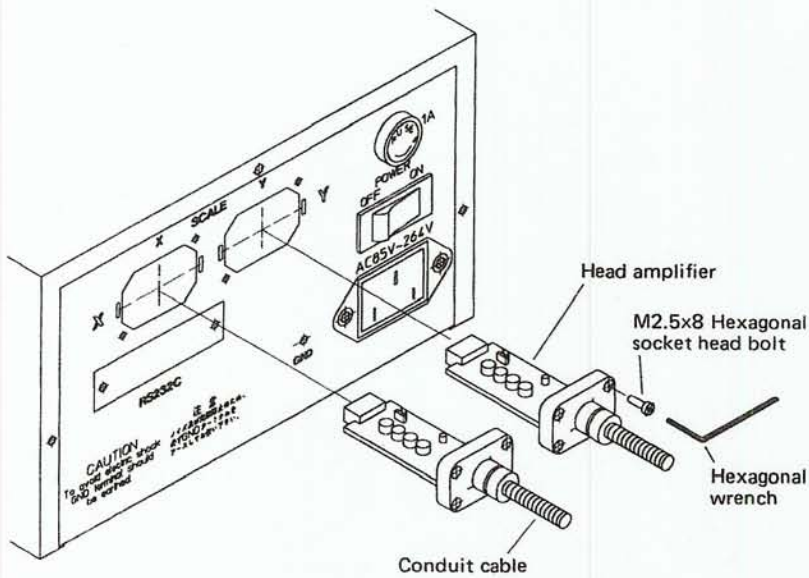


Fig. 3.10

Ensure that the head amplifier is correctly and securely mounted in the display unit.

4. EXTERNAL VIEW DRAWING AND LIST OF TYPES

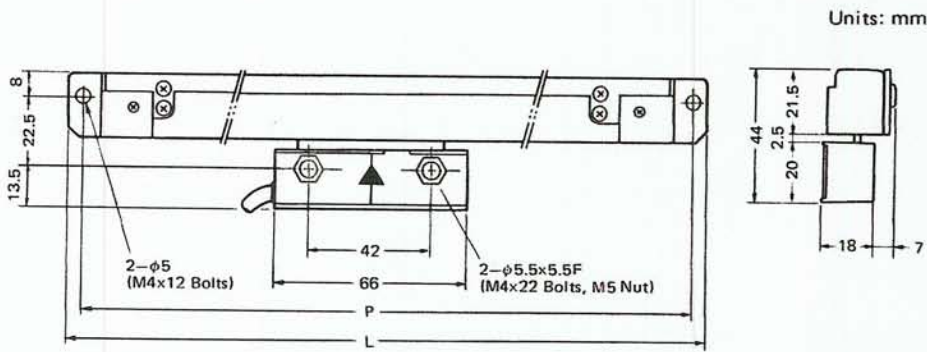


Fig. 4.1

Type	Effective length	Scale overall length	Maximum movable length	Mounting pitch
		L		P
JE8030	300	450	320	440
JE8040	400	550	420	540
JE8075	750	900	770	890
JE8085	850	1000	870	990
JE8095	950	1100	970	1090

5. SPECIFICATIONS

Effective length:	} See the external view drawing and list.
Total length:	
Maximum movable length:	
Scale accuracy (20°C):	$(10 + \frac{10}{1000} L) \mu\text{m}$ L: effective length (mm)
Parallel installation tolerance:	0.1 mm
Thermal expansion coefficient:	$11 \times 10^{-6} \text{mm}/^{\circ}\text{C}$
Display resolution:	$0.5\mu\text{m}/1\mu\text{m}/5\mu\text{m}/10\mu\text{m}$ (Display resolution can be selected by setting the display unit side.)
Operating temperature:	0°C to +45°C
Storage temperature:	-10°C to +50°C

6. LIST OF ACCESSORIES

Type	JE8XXX
Hexagonal socket head bolt	
M4x8	6
M4x12	2
M4x22	2
M5x22	2
Flat washer	
For M4	8
For M5	2
Spring washer	
For M4	6
For M5	2
Hexagonal nut	
For M5	2
Thickness gauge	1
Cable retainer	
$\phi 7$	4
Hexagonal wrench	
For M4	1
Sealing	1
Hexagonal socket head bolt	
M2.5x8	4
Hexagonal wrench	
For M2.5	1
Instruction manual	1

The specification and appearance of the products may be changed for improvement and may differ from those appearing in the catalogs and in the instruction manual.

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