INTRODUCTION

1. Scope of Application

This manual is applied to the following cases:

(1) Focusing knobs become loose when it is focused by right-focusing knob. It is not effective by increasing the tension of the focusing knobs.

(2) Those which manufactured before June, 1991.

2. Identification

Read the date of manufacture from the stamp on the base bottom.

(Example 1) H9 04 04
(Example 2) 9 J 001

<table>
<thead>
<tr>
<th>Alphabet</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digit</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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3. Necessary parts for modification

(1) KNOB ASSEMBLY AQ413300

4. JIGS and TOOLS

(1) ALLEN WRENCH (Size 2.5mm) (OT0207)
(2) ALLEN WRENCH (Size 4.0mm) (OT0209)
(3) TWEETERS (OT0095)
(4) SLIDE CALIPERS (OT0409)
(5) GREASE Los 72515 (OT2008)
(6) ADHESIVE "THREE BOND"1401 (OT1378)
(7) CLEANING MIXTURE (ether 70%; alcohol 30%) (OT2059) and LENS PAPER (OT0551)

5. Configuration

This manual is edited in two sections. The section 2 provides supplementary works for those which are not finished in the section 1. The configuration is as shown below.

Disassembly Procedure (1)
Knob comes off.
Assembly/Adjustment Method (1)

Disassembly Procedure (2)
Assembly/Adjustment Method (2)
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2. Assembly/Adjustment Method (1) ....................... 3
3. Disassembly Procedure (2) ............................. 4
4. Assembly/Adjustment Method (2) ....................... 5
1. DISASSEMBLY PROCEDURE (1)

1-1 Remove the STOPPER SCREW ①, and take off the BASE ②.

1-2 Remove LEFT PLATE ③ and RIGHT PLATE ④.

1-3 Lower INNER BALL GUIDE ② by rotating KNOB ASSEMBLY ① to the position where the pinion and rack are not engaged.

* The rack and pinion will be disengaged at the lowest position of GUIDE ②. Otherwise, go to "Disassembly Procedure (2)" on page 4.

1-4 Remove KNOB-B ① and KNOB ASSEMBLY ②.

* The washer will come off together.

* The washer ③ is unnecessary, and not used on assembly.
2-1 Assemble new KNOB ASSEMBLY with WASHERS as shown on the left, and screw new KNOB-B up to the position where it stops lightly.

* Apply enough grease previously to the thread of KNOB ASSEMBLY, and apply small amount of grease to the PINION and WASHERs.

GREASE Los 72515 (OT2008)

2-2 Engage the PINION and RACK of KNOB ASSEMBLY.

2-3 Secure the BASE and the STOPPER SCREW.

* Make the BASE position even.

Screws AB5x12SA x 3
AB3x8SA x 1

2-4 Attach LEFT PLATE and RIGHT PLATE.

2-5 Apply adhesive to the screw head.

Adhesive Three bond 1401(OT1378)
3. DISASSEMBLY PROCEDURE (2)

3-1 Remove the arm (1) and the rack (2).

3-2 Remove KNOB-B (1) and KNOB ASSEMBLY (2).

* The washers come off together.

* The washer (3) is unnecessary, and not used on assembly.
4. ASSEMBLY/ADJUSTMENT METHOD (2)

4-1 Assemble new KNOB ASSEMBLY 1 with WASHERS 2 as shown on the left, and screw new KNOB-B 3 up to the position where it stops lightly.

* Apply enough grease previously to the thread of KNOB ASSEMBLY 1, and apply small amount of grease to the PINION and WASHERS.

GREASE Los 72515 (OT2008)

4-2 Insert RACK 1 and engage it with the PINION of KNOB ASSEMBLY. Turn KNOB-B to familialize RACK with the pinion. Secure RACK with screws.

Screw AB3x8SA x 2

4-3 Secure the BASE 1 and the STOPPER SCREW 2.

* Make the base position even.

Screws AB5x12SA x 3
AB3x8SA x 1

4-4 Attach LEFT PLATE 3 and RIGHT PLATE 4.
4-5 Assemble the arm (1) tentatively.

Screw AB3x8SA × 4

4-6 Move the ARM (1) and adjust it so that the parallelism between the ARM (1) and the STAGE PLATE (2) comes within standard.

<table>
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<tr>
<th>Standard</th>
<th>Parallelism 0.15 mm./max.</th>
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1) Measure with a SLIDE CALIPERS the height from the upper end of the ARM (1) to the surface of the STAGE PLATE (2).

(Dimension A)

2) Measure with a SLIDE CALIPERS the height from the upper end of the ARM (1) to the surface of the STAGE PLATE (2).

(Dimension B)

3) Check the difference between the dimensions A and B, and incline the ARM (1) so that the parallelism come within the standard.

4) When the parallelism come within the standard, tighten the screw firmly to secure the ARM (1).

4-7 Apply adhesive to the screw head.

Adhesive Three bond 1401 (OT1378)