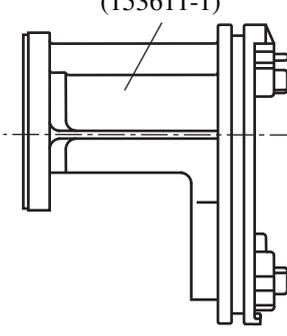
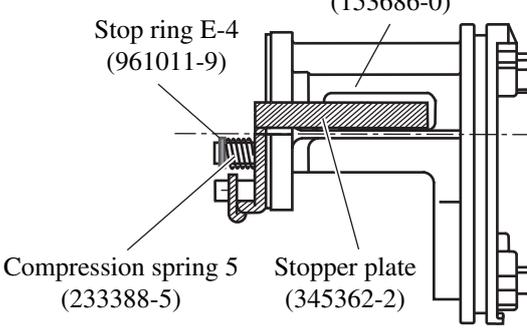


- Subject** ▶ Modification of Inner Housing Complete and Change Plate, Addition of Stopper Plate, Compression Spring, Stop Ring E-4
- For Models** ▶ HR2020, HR2021, HR2022, HR2440, HR2440F, HR2441, HR2442, HR2445, HR2450, HR2450F, HR2450T, HR2450FT, HR2451, HR2455
- Country** ▶ All countries
- Description** ▶ The changes <1> (See page 1 to 3) and <2> (See page 4 to 5) have been implemented.

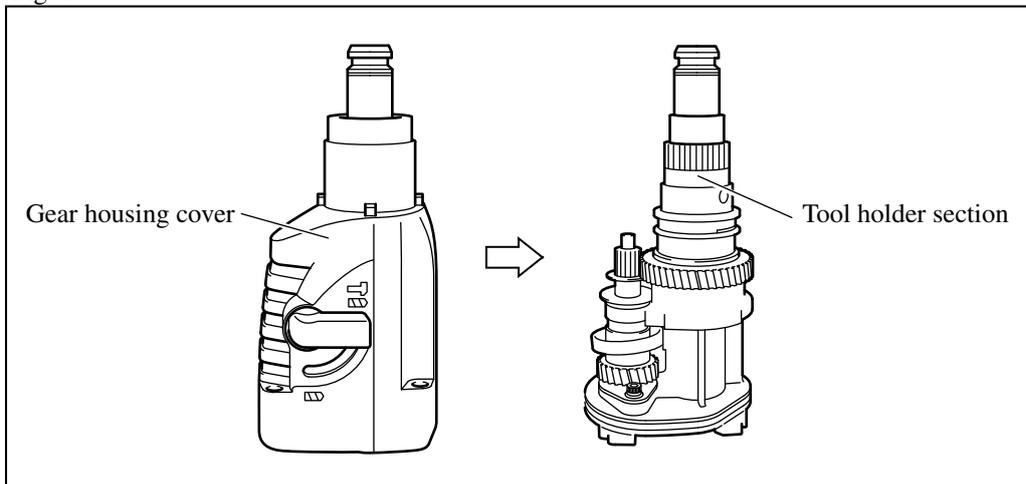
**<1> Modification of Inner housing complete and addition of Compression spring 5, Stopper plate, Stop ring E-4:
For HR2020, HR2021, HR2022, HR2440, HR2440F, HR2441, HR2442, HR2445**

▶ Current	▶ New
<p>Inner housing complete (153611-1)</p> 	<p>Inner housing complete (153686-0)</p> <p>Stop ring E-4 (961011-9)</p> <p>Compression spring 5 (233388-5)</p> <p>Stopper plate (345362-2)</p> 

Steps to replace the above parts

<1>-1. Remove gear housing cover as Fig. 1.

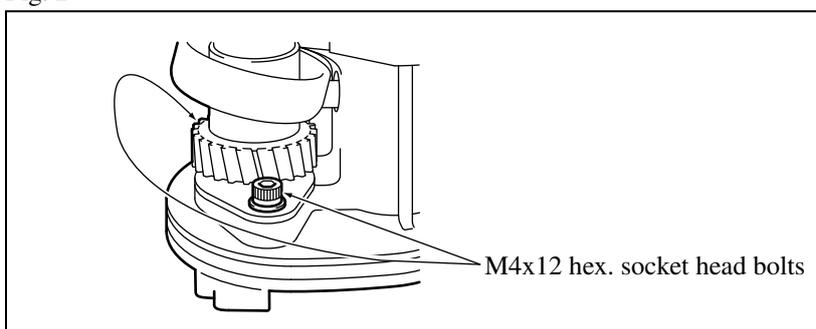
Fig. 1



<1>-2. Remove tool holder section.

<1>-3. Remove two M4x12 hex. socket head bolts. (Fig. 2)

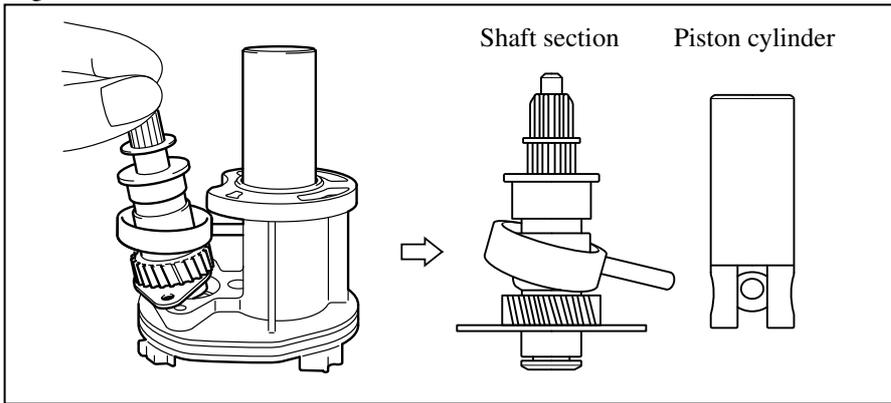
Fig. 2



<1>-4. Remove Shaft section and Piston cylinder as Fig. 3.

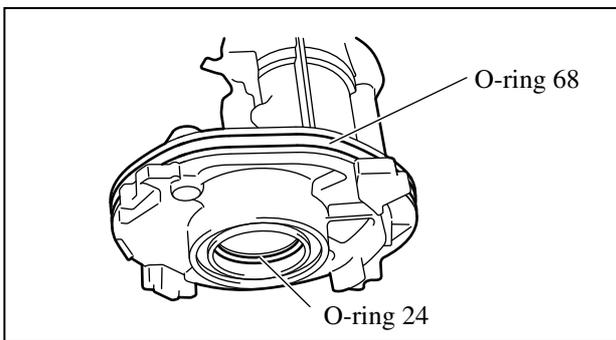
All steps for removal of re-use parts have now been completed.

Fig. 3



<1>-5. Remove O-ring 24 and O-ring 68 as Fig. 4.

Fig. 4



<1>-6. Replace the current Inner housing complete by the new one illustrated in Fig. 5, and then apply Makita grease RA No.1 to the designated portion as Fig. 6.

Fig. 5

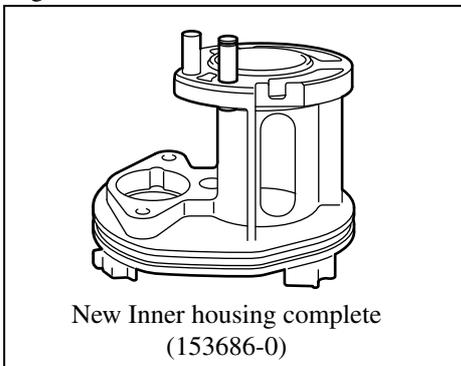
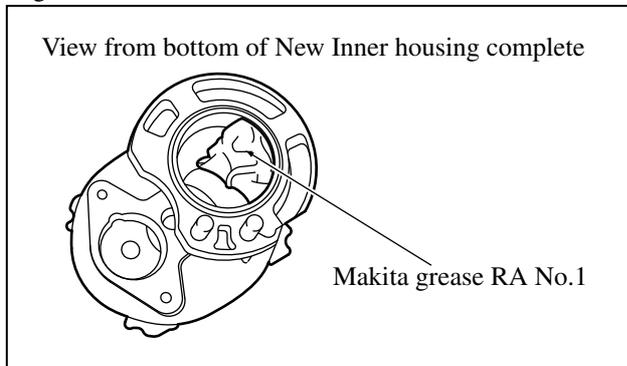


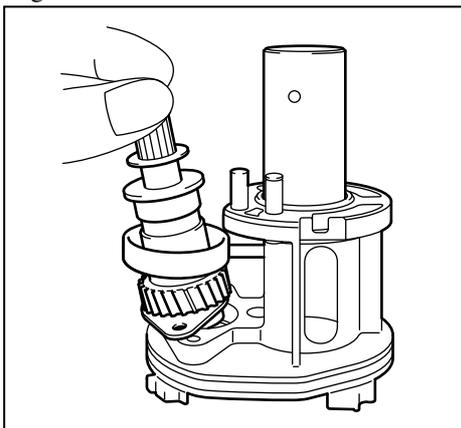
Fig. 6



<1>-7. Set the current O-ring 24 and O-ring 68 to the new Inner housing complete as Fig.4.

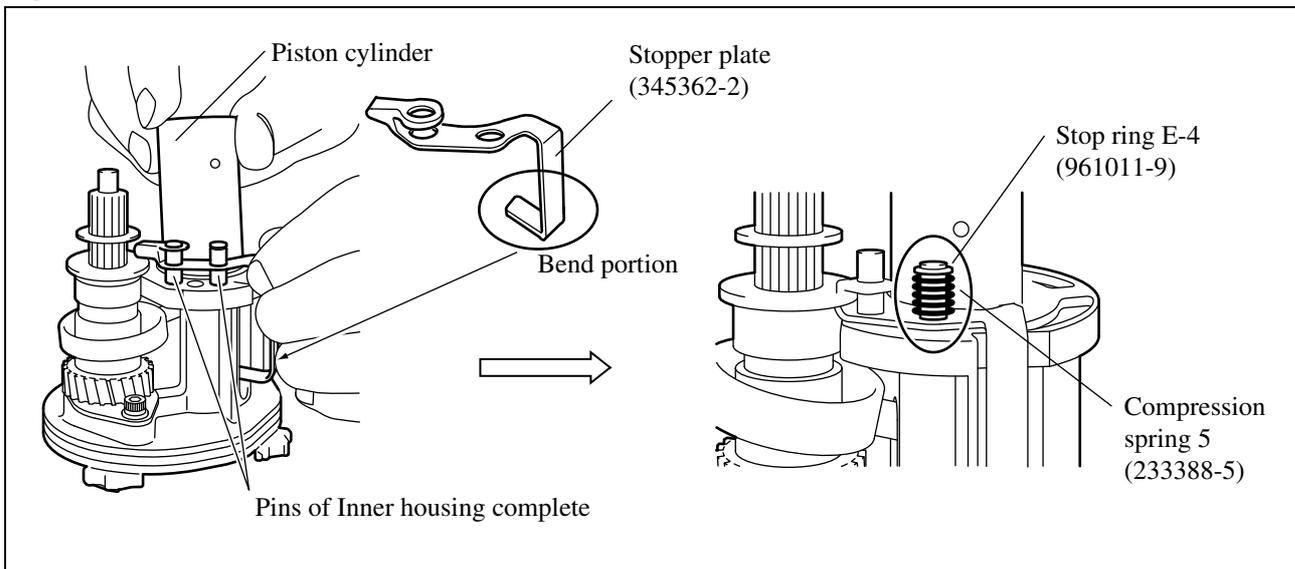
<1>-8. Assemble the current Shaft section and Piston cylinder with the new Inner housing complete as Fig. 7, and screw the brand new M4x12 hex socket head bolts (2 pcs.).

Fig. 7



<1>-9. Set Stopper plate through the pins of Inner housing complete as Fig 8 while lifting the current Piston cylinder by fingers.
Install Compression spring 5 and Stop ring E-4 to the pin of Inner housing complete.

Fig. 8



Interchangeability(I/C)

Item No.	Current part	Q'ty	I/C	New part	Q'ty	Note
049	Inner Housing Complete 153611-1	1	←	Inner Housing Complete 153686-0	1	Interchangeable as a set
HR2020, HR2021, HR2022, HR2440, HR2441, HR2442: 080 HR2440F: 081				Stopper Plate 345362-2	1	
HR2020, HR2021, HR2022, HR2440, HR2441, HR2442: 081 HR2440F: 082				Compression Spring 5 233388-5	1	
HR2020, HR2021, HR2022, HR2440, HR2441, HR2442: 082 HR2440F: 083				Stop Ring E-4 961011-9	1	

Interchangeability mark ;

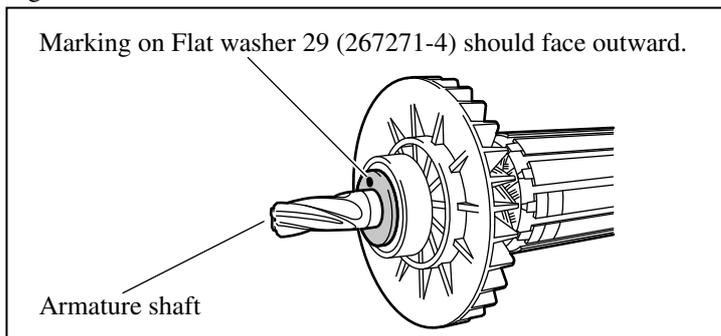
The arrow ← means that the new part can be substituted for the current.

Implementation

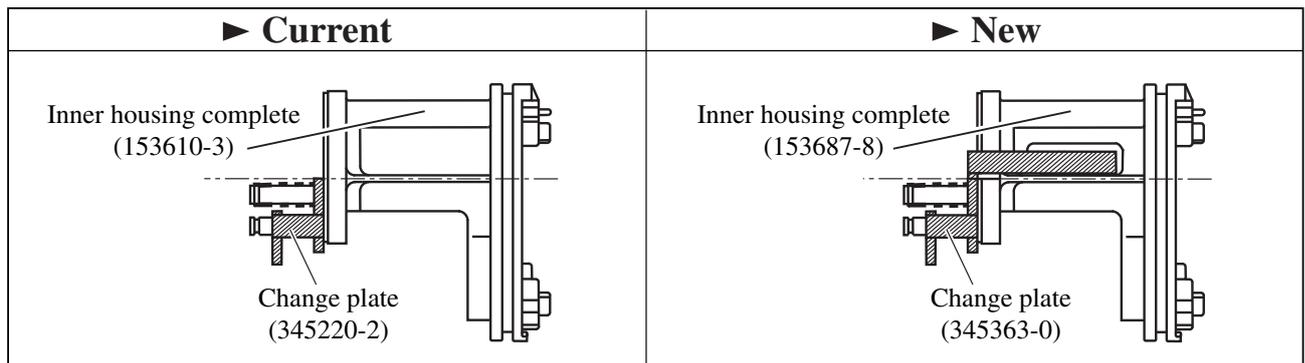
Since Nov., 2003 production.

Supplementary information: Check whether Flat washer 9 can be seen on the Armature shaft as Fig. 9 by removing the armature from the machine. If not, put Flat washer 9 (Part No. 267271-4) as shown in Fig. 9. Refer to Technical information No. 67378.

Fig. 9



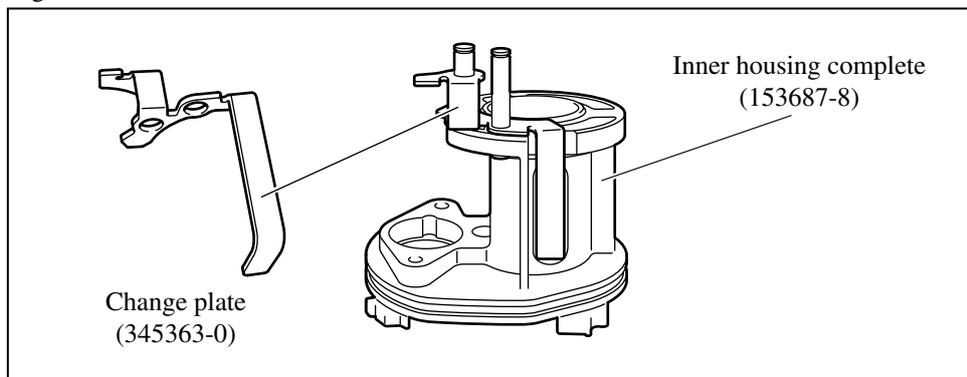
<2> Modifications of Inner housing complete and change plate: HR2450, HR2450F, HR2450T, HR2450FT, HR2451, HR2452, HR2455



Steps to replace the above parts

- <2>-1 Remove gear housing cover.
 - <2>-2 Remove Tool holder section.
 - <2>-3 Remove two M4x12 Hex. socket head bolts. (Refer to Fig. 2 of page 1.)
 - <2>-4 Remove shaft portion and Piston cylinder. (Refer to Fig. 3 of page 2.)
 - <2>-5 Remove Change plate.
 - <2>-6 Remove O-ring 24 and O-ring 68. (Refer to Fig. 3 of page 2.)
- All steps for removal of re-use parts have now been completed.
- <2>-7. Replace the current Inner housing complete by the new one in accordance with the steps <2>-8 to 14.
 - <2>-8. Apply 5g of Makita grease RA No.1 as Fig. 6 of page 2.
 - <2>-9. Install O-ring 24 and O-ring 68 as Fig. 4 of page 2.
 - <2>-10. Set the new Change plate to the new Inner housing complete (Fig. 10).

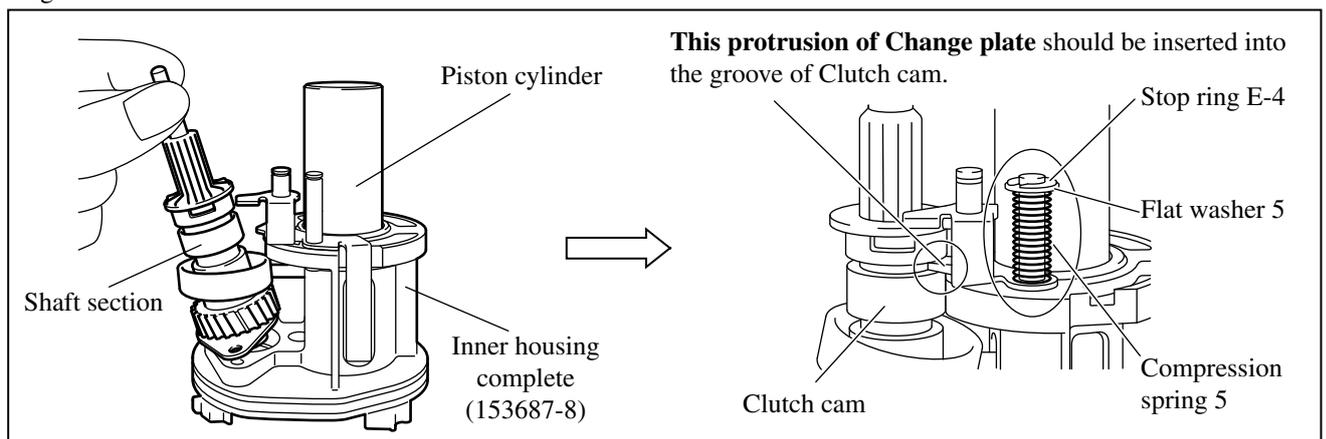
Fig. 10



- <2>-11. Fix the current Shaft section and Piston cylinder with Inner housing, and then secure them by screwing the new M4x12 hex socket head bolts (2 pcs.). Next, set the following parts on Pin 6 as Fig. 11.

- Stop ring E-4
- Compression spring 5
- Flat washer 5

Fig.11



<1>-12. Do the reverse of disassembling for Tool holder section and Gear housing cover.

Interchangeability(I/C)

Item No.	Current part		Q'ty	I/C	New part		Q'ty	Note
049	Inner Housing Complete 153610-3		1	←	Inner Housing Complete 153687-8		1	Interchangeable as a set
082	Change Plate 345220-2		1	No	Change Plate 345363-0		1	

Interchangeability mark ;

The arrow ← means that the new part can be substituted for the current.

Implementation

Since Nov., 2003 production.

Supplementary information: Check whether Flat washer 9 can be seen on the Armature shaft as Fig. 12 by removing the armature from the machine. If not, put Flat washer 9 (Part No. 267271-4) as shown in Fig. 12. Refer to Technical information No. 67378.

Fig. 12

