

# TECHNICAL INFORMATION



PRODUCT

P 1 / 21

**Models No.** ▶ BHR261, BHR261T

**Description** ▶ Cordless Combination Hammer

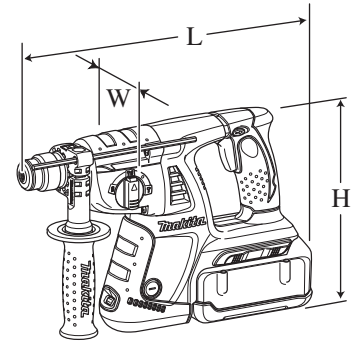
## CONCEPT AND MAIN APPLICATIONS

This model is cordless combination hammer powered by 36V Li-ion battery BL3626. Tool holder section transplanted from AC tool is durable, and allows higher efficiency than competitors' models.

Other features are as follows:

- \*Vibration absorbing handle and soft grips
- \*Good tool-balance due to the center of gravity closer to handle
- \*Battery adapter (option) for clipping a battery BL3626 to waist belt

This new product is available in the following variations.  
-T- models are equipped with quick change chuck.



Dimensions: mm (")		
	BHR261	BHR261T
Length (L)	363 (14-1/4)	387 (15-1/4)
Width (W)	104 (4-1/8)	
Height (H)	235 (9-1/4)	

Model No.	Battery		Battery cover	Charger	Plastic carrying case	Battery adapter	Offered to
	Type	Quantity					
BHR261	BL3626	2	1	DC36RA	Yes	No	Canada, Mexico, Panama, USA
BHR261T	BL3626	2	1	DC36RA	Yes	No	
BHR261RDE	BL3626	2	1	DC36RA	Yes	No	
BHR261TRDE	BL3626	2	1	DC36RA	Yes	Yes	All countries other than the four listed above
BHR261DP1	BL3626	2	1	DC36RA	Yes	Yes	
BHR261TDP1	BL3626	2	1	DC36RA	Yes	No	
BHR261RD	BL3626	1	1	DC36RA	Yes	No	
BHR261TRD	BL3626	1	1	DC36RA	Yes	No	

All models also include the accessories listed below in "Standard equipment".

### ► Specification

		BHR261	BHR261T
No load speed : (min <sup>-1</sup> = rpm)		0 - 1,200	
Impacts per min. :(ipm=min <sup>-1</sup> )		0 - 4,800	
Max. Output(W)		500	
Battery	Voltage: V	36	
	Cell and Capacity	Li-ion 2.6 Ah	
	Charging Time: min.	22 with DC36RA	
Bit Shank		SDS-plus	
Capacity : mm ( " )	Steel	13 (1/2)	
	Wood	32 (1-1/4)	
	Concrete	26 (1)	
Operation mode R= Rotation only H+R= Hammering with Rotation H= Hammering only		3 modes (R/ H+R/ H)	
Variable switch		Yes	
Reverse switch		Yes	
Clutch (Torque Limiter)		Yes	
Net Weight : kg (lbs)		4.3 (9.5)	4.5 (9.9)
Weight according to EPTA-Procedure 01/2003: kg (lbs)		4.5 (9.9)	4.8 (10.6)

### ► Standard equipment

- \* Grip assembly ..... 1
- \* Depth gauge (Stopper pole) ..... 1
- \* Cloth ..... 1

**Note:** The standard equipment for the tool shown above may differ by country.

### ► Optional accessories

- \* SDS-Plus bits
- \* Taper shank T.C.T bits
- \* Taper shank adapter
- \* Cotter
- \* Drill chuck assembly
- \* Chuck adapter
- \* Drill chuck S13
- \* Chuck key S13
- \* Keyless drill chuck
- \* Grip assembly
- \* Bull points
- \* Cold chisels
- \* Grooving chisels
- \* Scaling chisels
- \* Dust cup
- \* Grease vessel 30g
- \* Blow out bulb
- \* Safety goggles
- \* Plastic carrying case
- \* Dust extractor attachment
- \* Joint 25
- \* Battery BL3626
- \* Battery charger DC36RA
- \* Battery adapter BAP36
- \* Grip base set
- \* Hammer service kit

## ► Repair

**CAUTION: Repair the machine in accordance with “Instruction manual” or “Safety instructions”.**

### [1] NECESSARY REPAIRING TOOLS

Code No.	Description	Use for
1R003	Retaining ring S pliers ST-2N	Removing Ring spring 19 from Tool holder complete/ Tool holder guide complete Removing Retaining ring WR-12 from Armature shaft
1R004	Retaining ring S pliers ST-2	Removing Ring spring 29
1R022 or 1R356	Bearing Plate (for arbor press)	Removing Ring spring 29
1R032	Bearing setting plate 8.2	Assembling Spiral bevel gear 26
1R033	Bearing setting plate 10.2	Assembling Spiral bevel gear 26
1R139	Drill chuck extractor	Removing Spiral bevel gear 26
1R164	Ring spring setting tool A	Assembling Oil seal 25 from Gear housing complete
1R165	Ring spring setting tool B	Assembling Needle bearing complete from Gear housing complete
1R170	T-type hex wrench 3-127	Removing two M4x25 hex socket head bolts on Inner support complete
1R212	Tip for Retaining ring pliers	Attachment of 1R003
1R232	Pipe 30	Assembling Oil seal 25 to Gear housing complete
1R249	Round bar for arbor 24-100	Removing Ring spring 28
1R252	Round bar for arbor 30-100	Removing Oil seal 25 from Gear housing complete
1R269	Bearing extractor	Removing Ball bearing 608ZZ from Inner support complete
1R281	Round bar for arbor 7-50	Removing Ring 8
1R291	Retaining ring S and R pliers	Removing Retaining Ring S-7
1R306	Ring spring removing jig	Removing Ring spring 29 from Tool holder complete/ Tool holder guide complete
318132-2	Piston cylinder	Assembling Ring spring 28 to Tool holder complete/ Tool holder guide complete

### [2] LUBRICATION

Apply the following grease to protect parts and product from unusual abrasion.

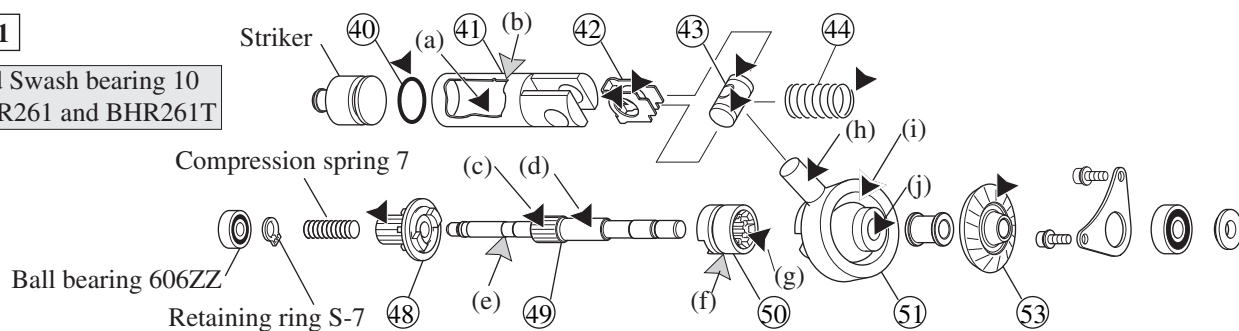
\* Makita grease R No.00 to the portions marked with black triangle

\* Molybdenum disulfide lubricant to the portions marked with gray triangle

Item No.	Description	Portion to lubricate	Lubricant	Amount	
④①	O ring 16	Whole portion	Makita grease R No.00	a little	
④②	Piston cylinder	(a) Inside where Striker moves	Molybdenum disulfide		
		(b) Outside where Tool holder (guide) complete contacts			
④③	Guide plate	Inside where ④③ Piston joint contacts	Makita grease R No.00		
④④	Piston joint	Grooves where ④② Guide plate contacts			
④⑤	Compression spring 4	End which is fixed to emboss in Inner housing complete			
④⑧	Spur gear 10	Gear portion where Spur gear 51 engages			Molybdenum disulfide
		(c) Gear portion where ⑤① Clutch cam engages			
		(d) Portion which is inserted into ⑤② Swash bearing 10			
④⑨	Cam shaft	(e) Constricted part which is inserted into ④⑧ Spur gear 10			Molybdenum disulfide
		(f) Groove for hooking Change plate			
		(g) Gear portion where ④⑨ Cam shaft engages			
⑤①	Clutch cam	(h) Pole portion which is inserted into ④③ Piston joint		Makita grease R No.00	
		(i) Ball bearing portion (Re: Fig. 3)			
		(j) Inside of hole			
⑤③	Spiral bevel gear 26	Gear portion where Armature shaft gear engages	Makita grease R No.00	4g	
				a little	

**Fig. 1**

Around Swash bearing 10 for BHR261 and BHR261T

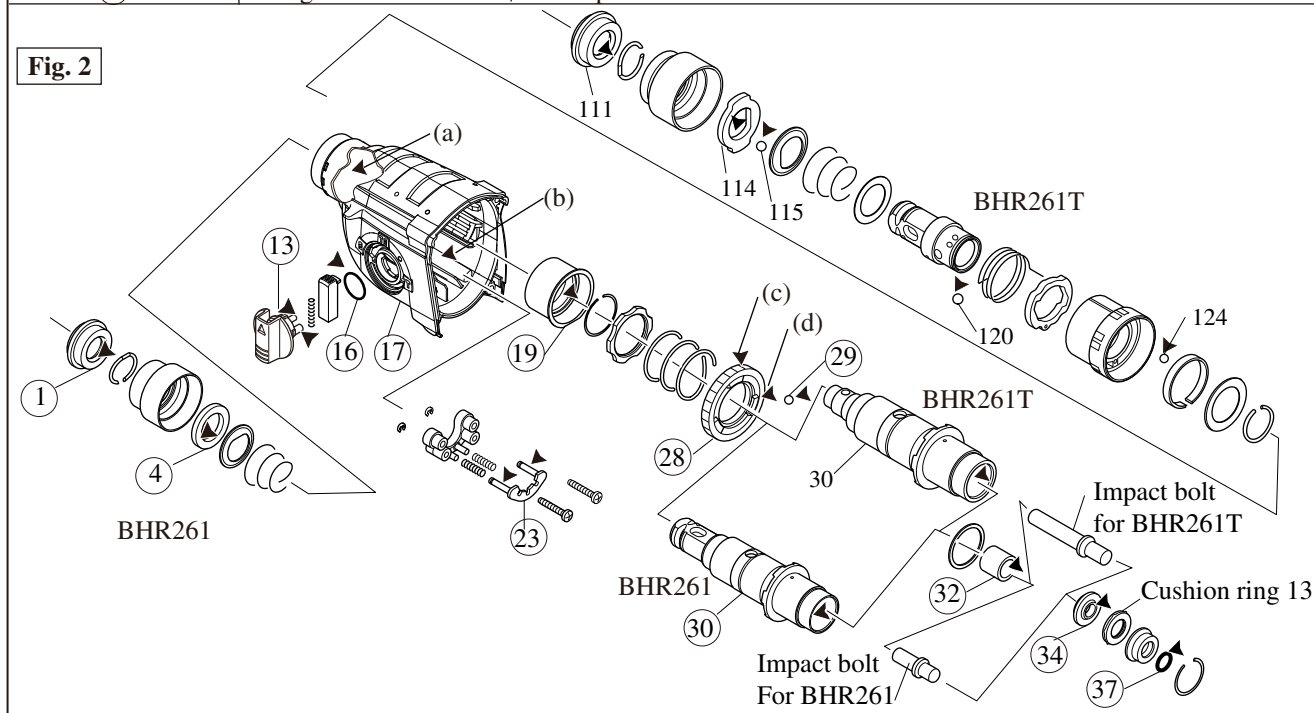


► **Repair**

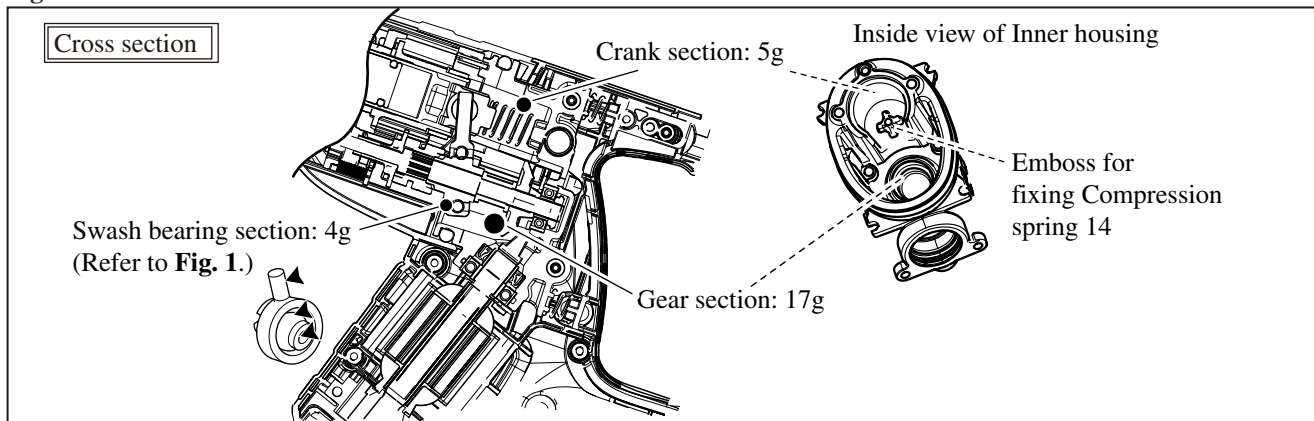
**[2] LUBRICATION (cont.)**

Apply Makita grease R. No.00 to the following portions designated with the black triangle to protect parts and product from unusual abrasion.

Item No.		Description	Portion to lubricate
BHR261	BHR261T		
①	111	Cap 35	Lip portion where Bit is inserted
④		Ring 21	Inner periphery
	114	Stopper	Inner periphery
	120	Steel Ball 6 (2pcs.)	Whole portion
	124	Steel Ball 5	Whole portion
⑬		Change lever	Pins portions
⑯		O ring 17	Whole portion
⑰		Gear housing complete	(a) Oil seal 25 on the inside of Gear housing complete
			(b) Inside where Swash bearing section rotates (Re: <b>Fig. 3</b> )
⑲		Needle bearing complete	Needle bearing portion in Cup washer (Re: <b>Fig. 37</b> )
⑳		Lock plate	Pins portions
㉘		Spur gear 51	(c) Gear portion
			(d) Surface where Clutch portion of ㉚ Tool holder (guide) complete contacts
㉙	115	Steel ball 7	Whole portion
㉛		Tool holder complete	Inside where Piston cylinder reciprocates
	30		
㉜		Sleeve 9	Inside where Impact bolt reciprocates
㉞		Ring 10	Portion where Cushion ring 13 contacts
㉟		O ring 9	Whole portion



**Fig. 3**



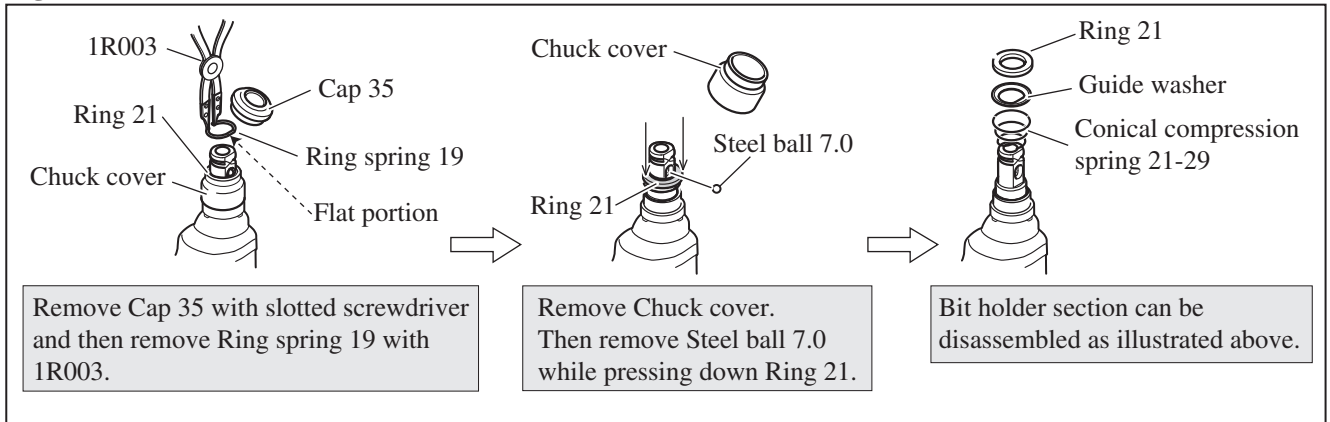
► **Repair**

**[3] DISASSEMBLY/ASSEMBLY**

**[3] -1. Bit holder section for BHR261/ Holder section for Drill chuck of BHR261T**

DISASSEMBLING for BHR261

Fig. 4



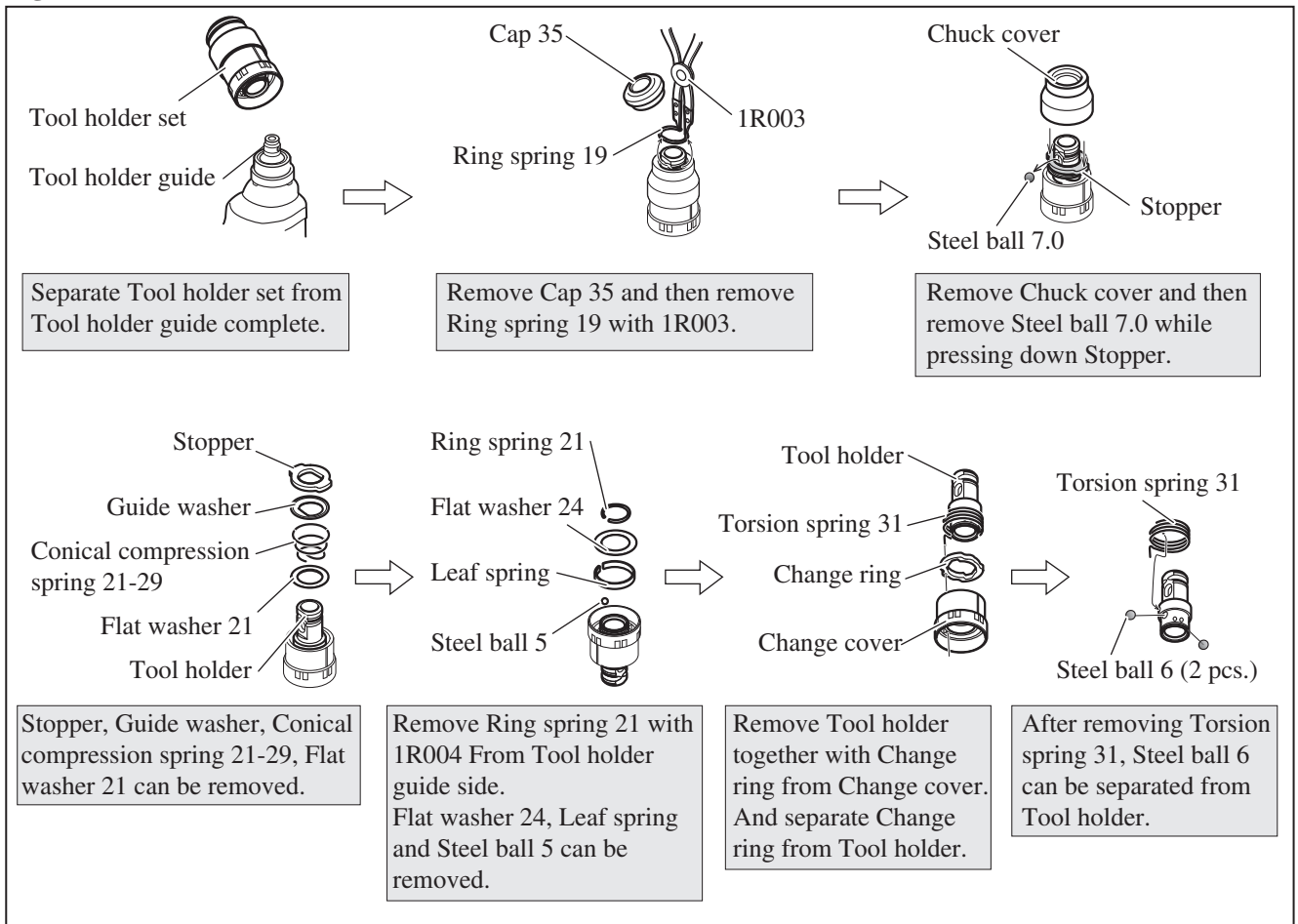
ASSEMBLING for BHR261

Take the disassembling step in reverse.

**Note:** Be sure to place the flat portion of Ring spring 19 on Steel ball 7.0. (Fig. 4)

DISASSEMBLING for BHR261T

Fig. 5



## ► Repair

### [3] DISASSEMBLY/ASSEMBLY

#### [3] -1. Bit holder section for BHR261/ Holder section for Drill chuck of BHR261T (cont.)

##### ASSEMBLING for BHR261T

- 1) Assemble Change ring to Change cover. (Fig. 6)
- 2) Assemble Torsion spring 31 to Tool holder. (Fig. 7)
- 3) Assemble Tool holder to Change cover. (Fig. 8)
- 4) Attach Steel ball 5.0 between the ends of Leaf spring, and mount them to the groove between Change lever and Tool holder. (Fig. 9)
- 5) Mount Flat washer 24 on Leaf spring, and secure them with Ring spring 21. (Fig. 9)
- 6) As for the assembling of Cap 35 side, do the reverse of disassembling steps. Refer to Fig. 4.

Fig. 6

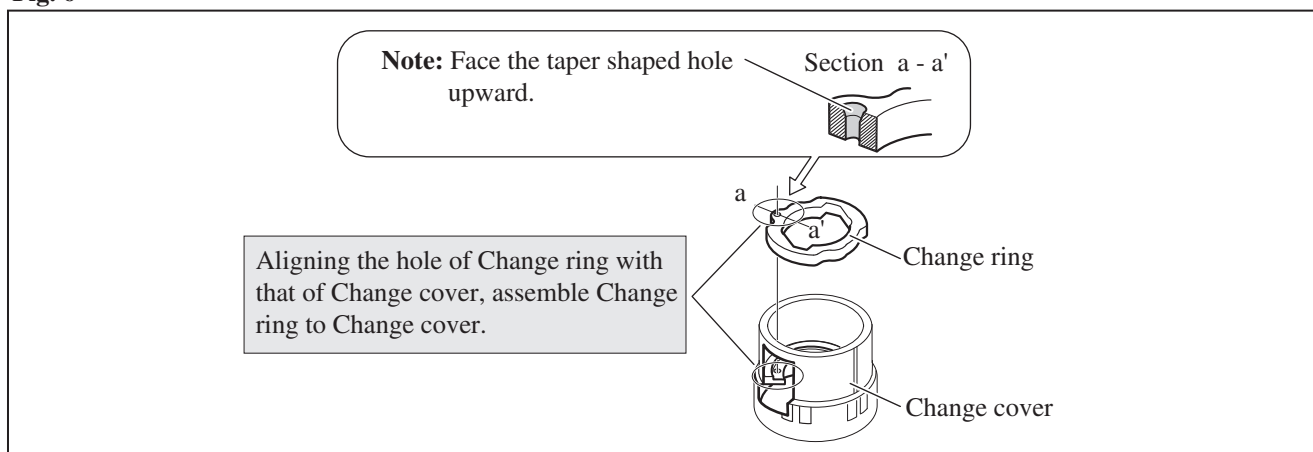


Fig. 7

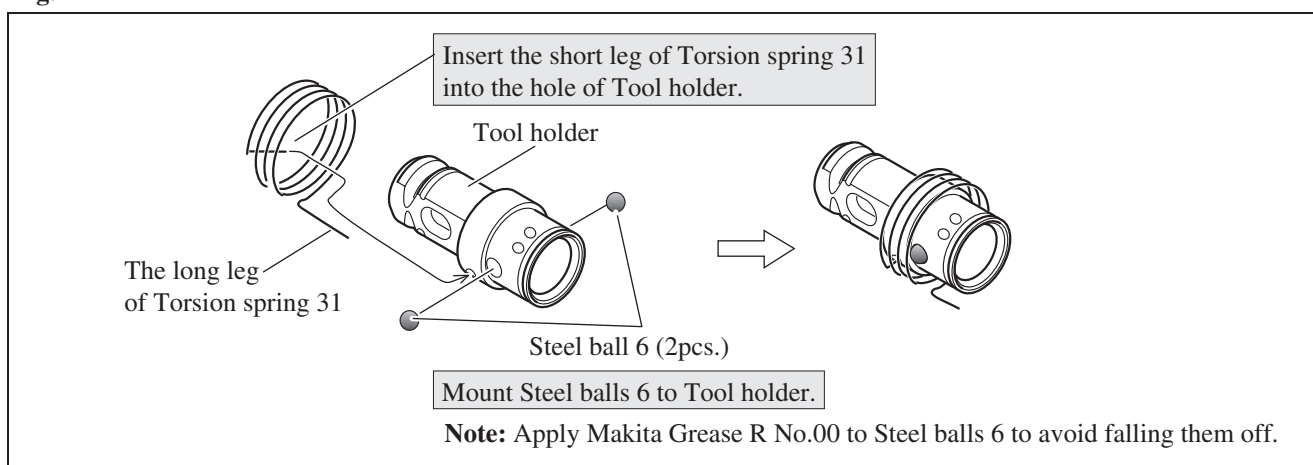


Fig. 8

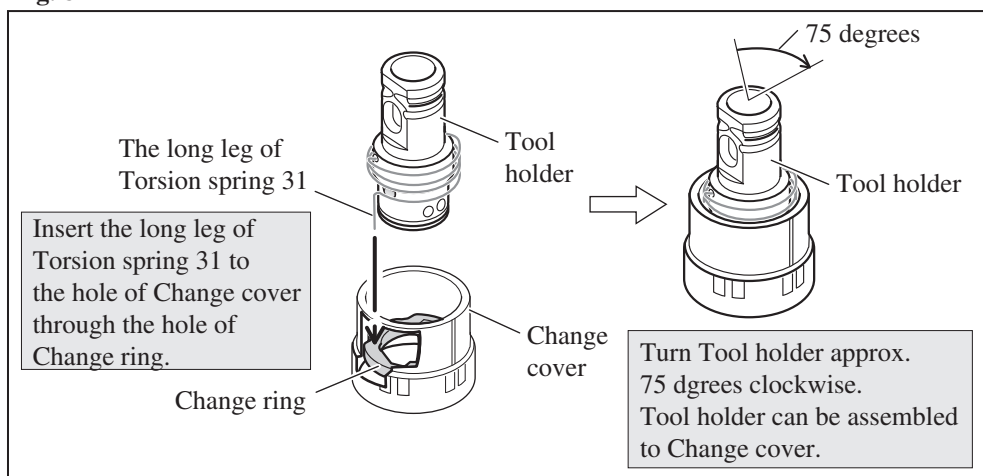
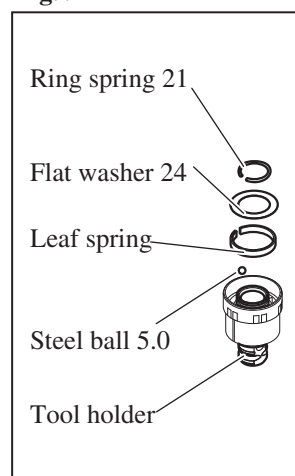


Fig. 9



► **Repair**

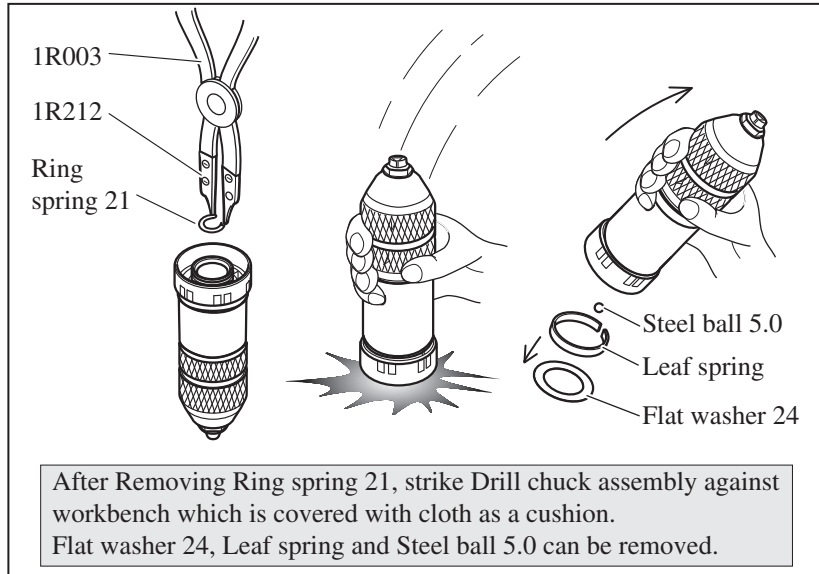
**[3] DISASSEMBLY/ ASSEMBLY**

**[3] -2. Drill chuck assembly for BHR261T**

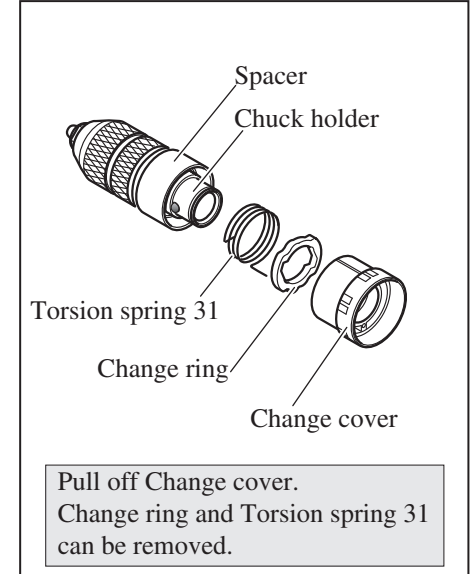
**DISASSEMBLING**

Drill chuck assembly can be disassembled as illustrated in **Figs. 10 to 14.**

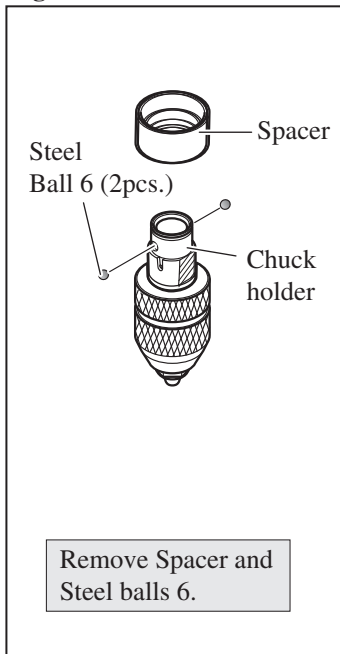
**Fig. 10**



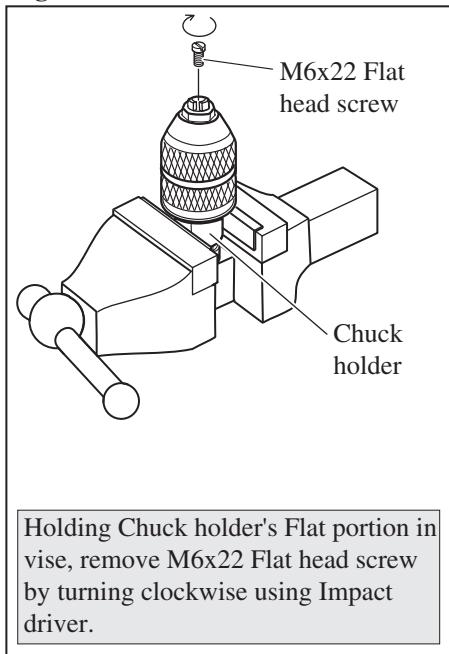
**Fig. 11**



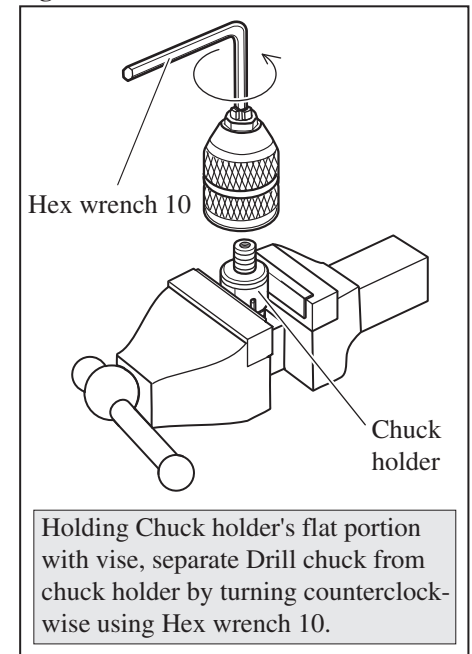
**Fig. 12**



**Fig. 13**



**Fig. 14**





► **Repair**

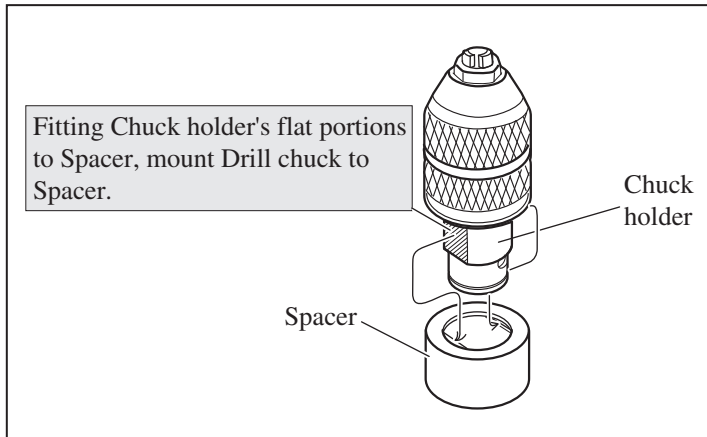
**[3] DISASSEMBLY/ ASSEMBLY**

**[3] -2. Drill chuck assembly for BHR261T (cont.)**

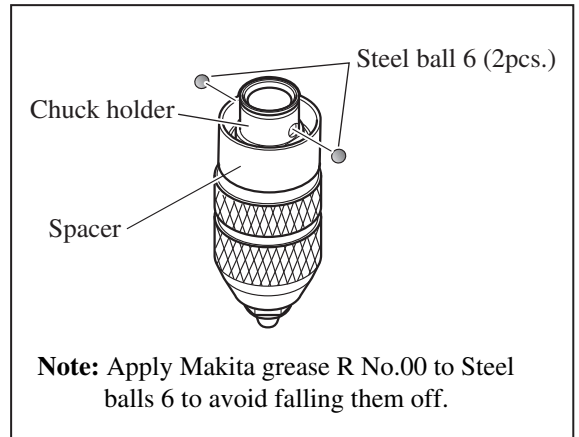
**ASSEMBLING**

- 1) Holding Chuck holder's Flat portion in vise. Assemble Drill chuck to Chuck holder by turning **clockwise** using Hex wrench 10.
- 2) Secure Drill chuck with M6x22 Flat head screw by turning **counterclockwise** using Impact driver.
- 3) Assemble Drill chuck to Spacer. (**Fig. 15**) And mount two Steel balls 6. (**Fig. 16**)
- 4) Mount Torsion spring 31. And assemble the Drill chuck to Change cover. (**Fig. 17**)
- 5) Mount Steel ball 5, Leaf spring and Flat washer 24 to Chuck holder. And secure them with Ring spring 21. (**Fig. 18**)

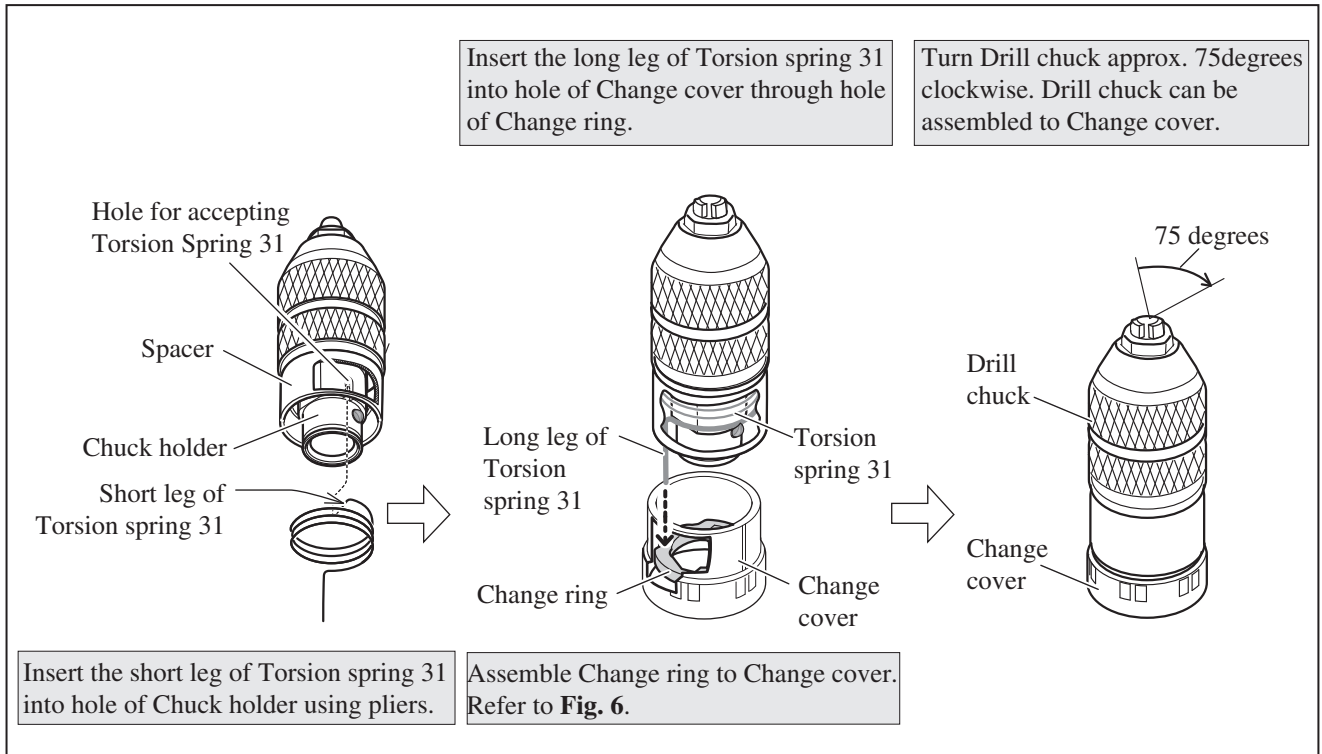
**Fig. 15**



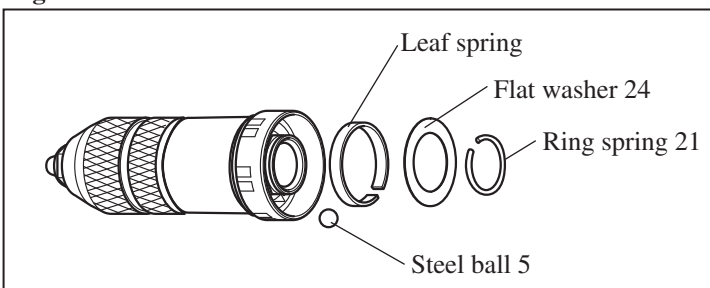
**Fig. 16**



**Fig. 17**



**Fig. 18**



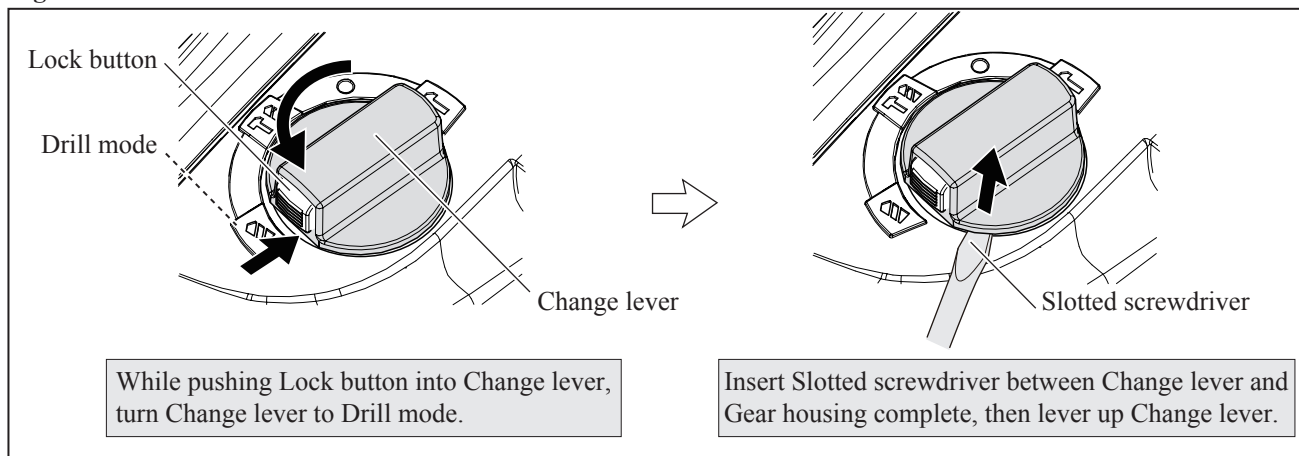
► **Repair**

[3] **DISASSEMBLY/ASSEMBLY**

[3]-3. **Change lever**

DISASSEMBLING

Fig. 19



ASSEMBLING

Fig. 20

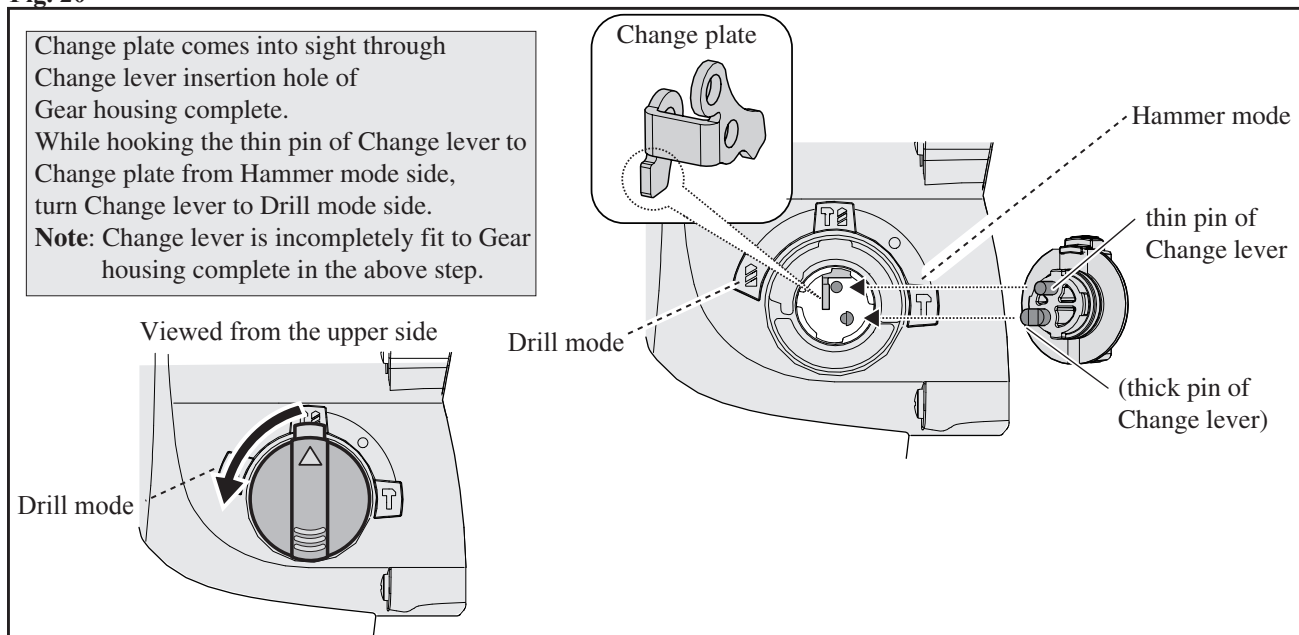
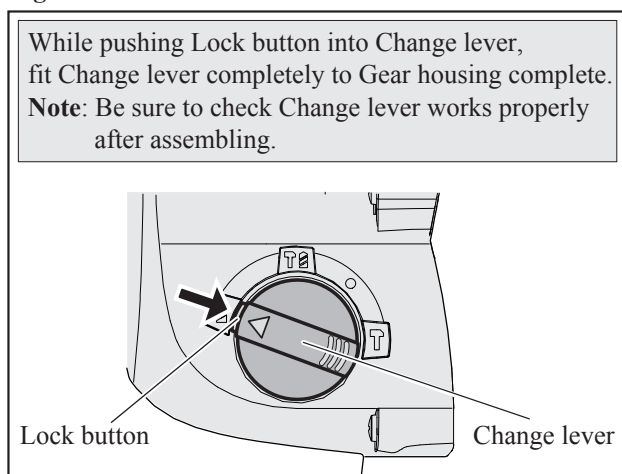


Fig. 21





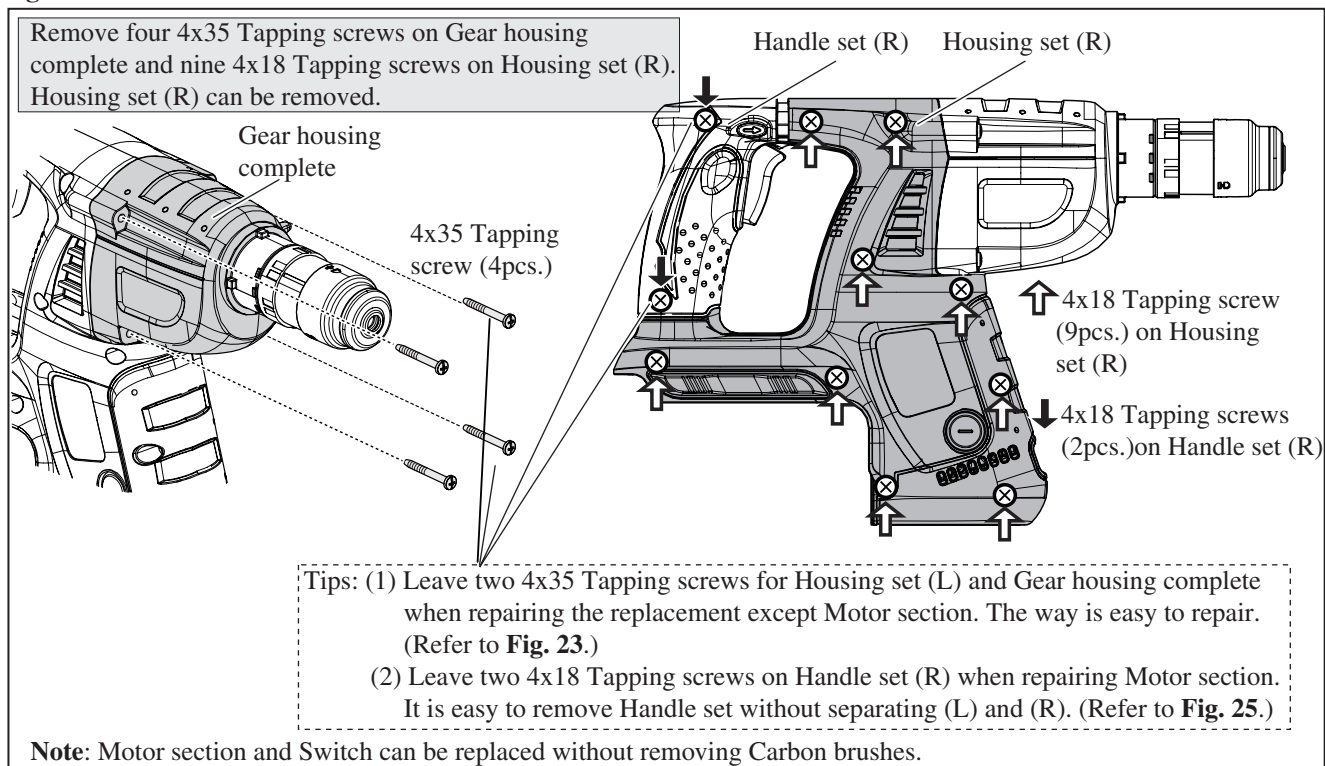
► **Repair**

**[3] DISASSEMBLY/ASSEMBLY**

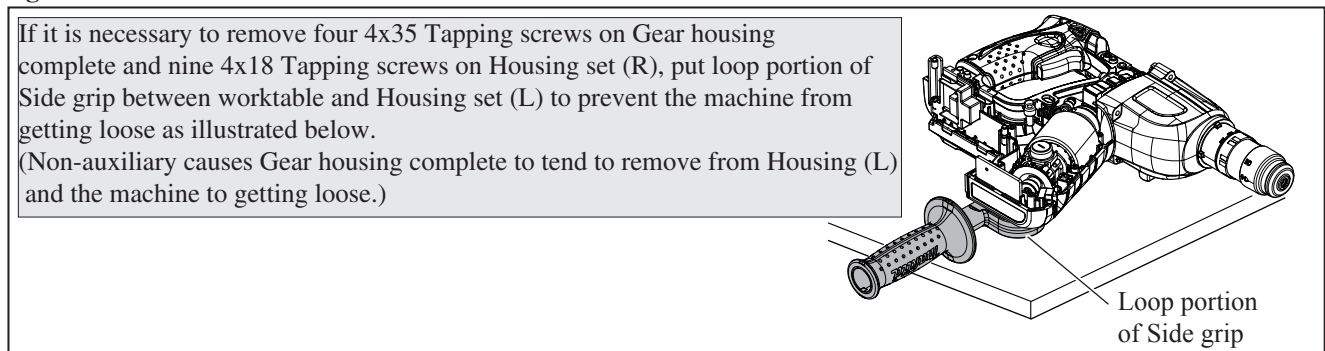
**[3]-4. Motor section, Switch**

DISASSEMBLING

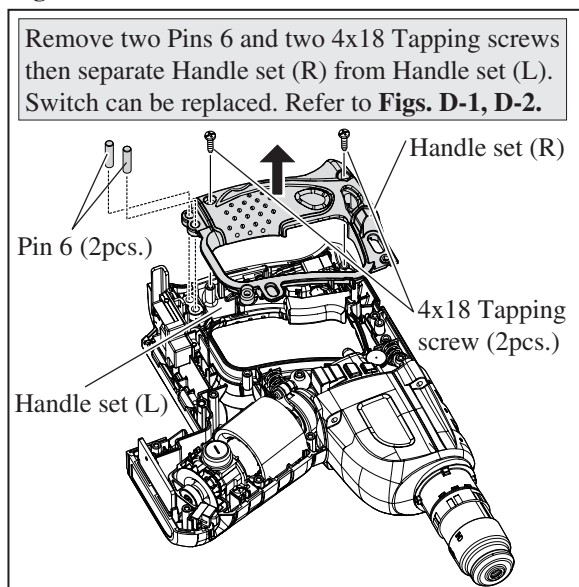
**Fig. 22**



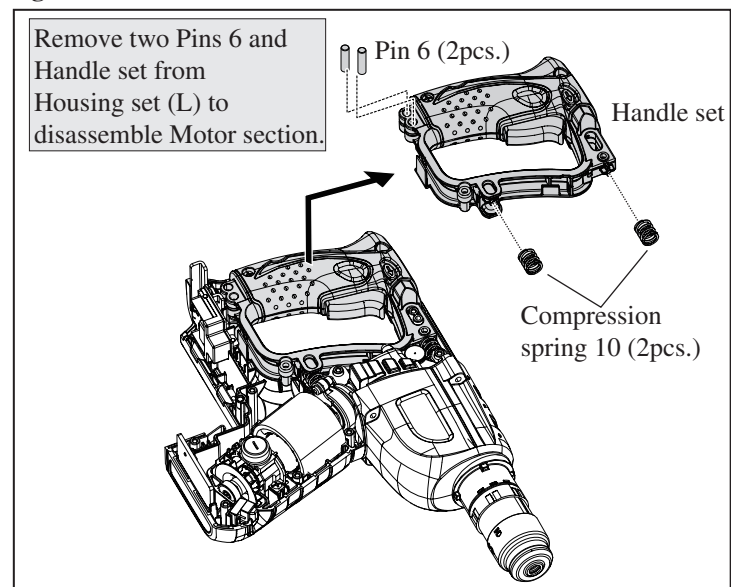
**Fig. 23**



**Fig. 24**



**Fig. 25**



## ► Repair

### [3] DISASSEMBLY/ASSEMBLY

#### [3]-4. Motor section, Switch (cont.)

##### DISASSEMBLING

Fig. 26

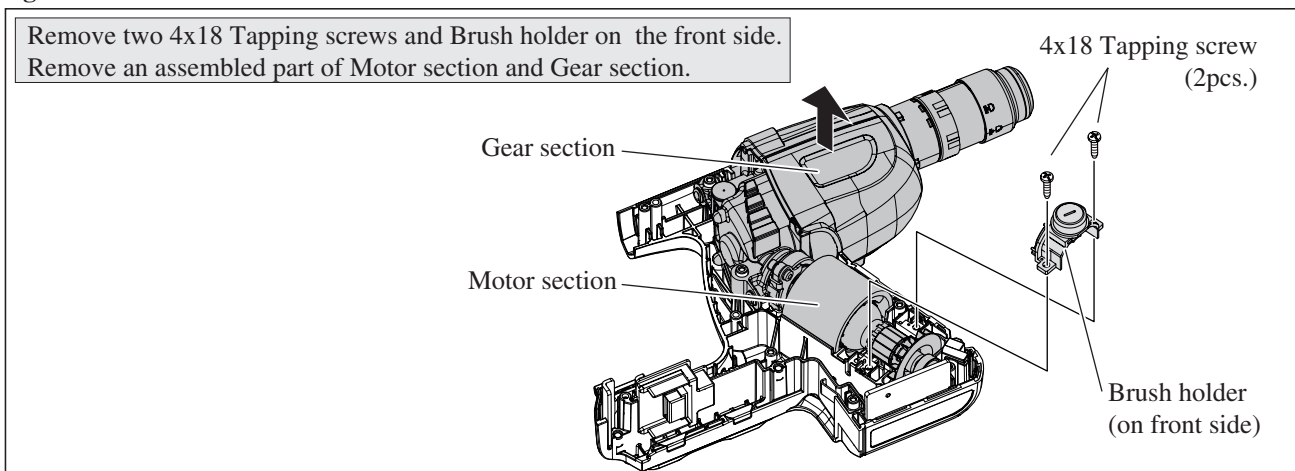


Fig. 27

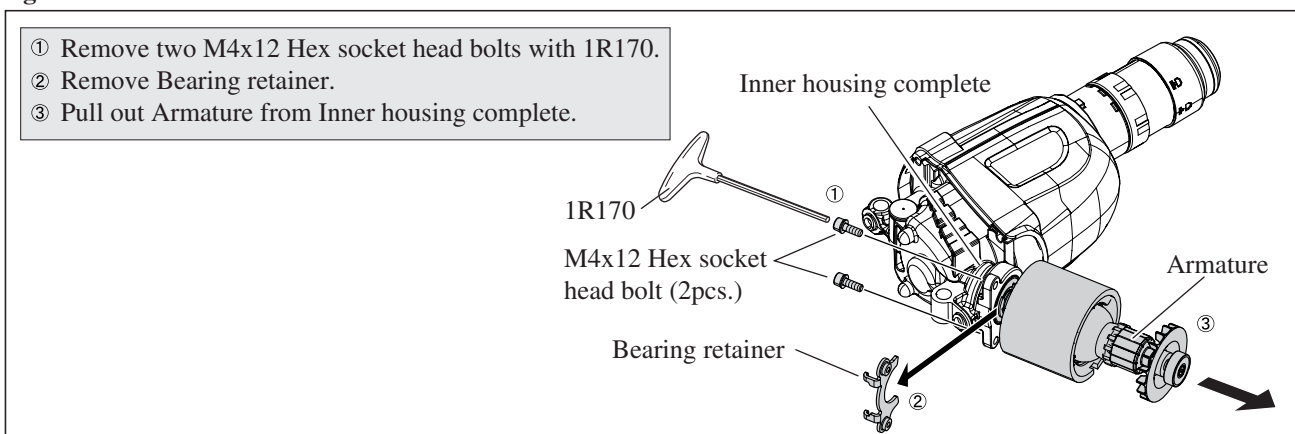
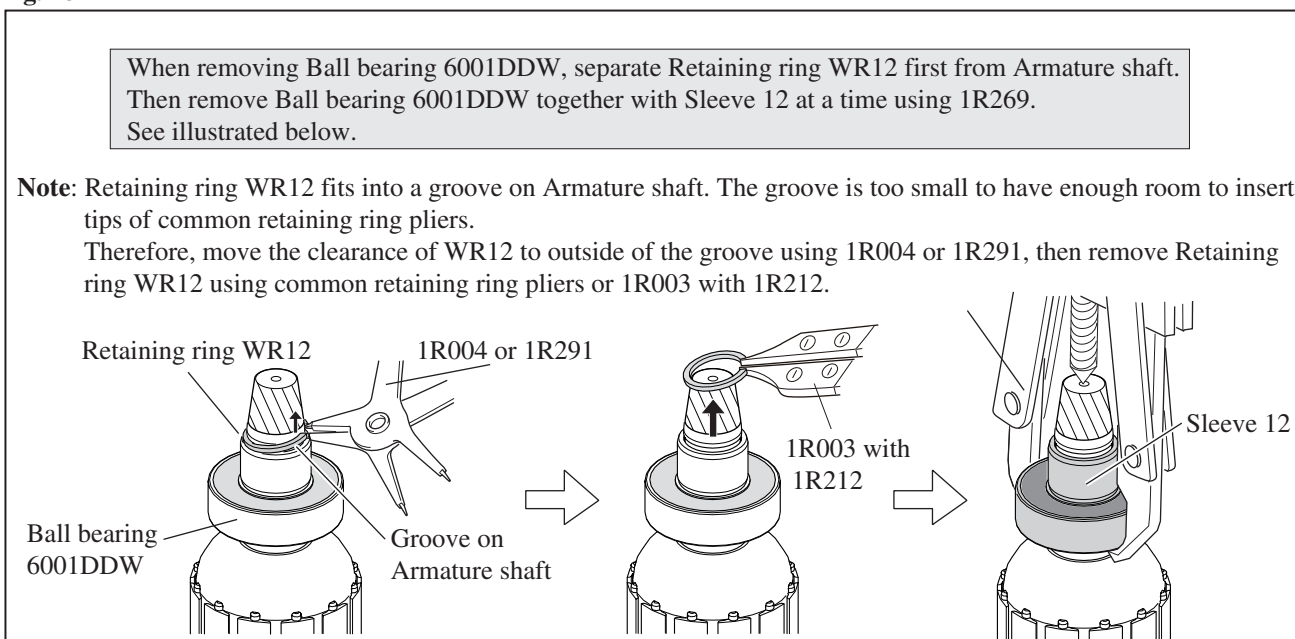


Fig. 28



## ► Repair

### [3] DISASSEMBLY/ASSEMBLY

#### [3]-4. Motor section, Switch (cont.)

##### ASSEMBLING

Fig. 29

When inserting Armature to Inner housing complete, do not fail to pass Armature through Yoke unit in advance.

**Note:** Yoke unit can be independent from the directional of front end and rear end.

Ball bearing 6001DDW on Armature gear shaft side may be incompletely fit into the bearing room in Inner housing complete without full attention. Therefore, turn Armature by hand to engage the gear shaft with Spiral bevel gear 26 in Inner housing complete and fit Ball bearing 6001DDW completely into the bearing room in Inner housing complete. After that, fix Ball bearing 6001DDW with Bearing retainer and two M4x12 Hex socket head bolts.

**Note:** Be sure to apply adhesive (ThreeBond 1321B/1342 or Loctite 242) to the threads when fastening the reused M4x12 Hex socket head bolts because their bolts are threadlocker type.

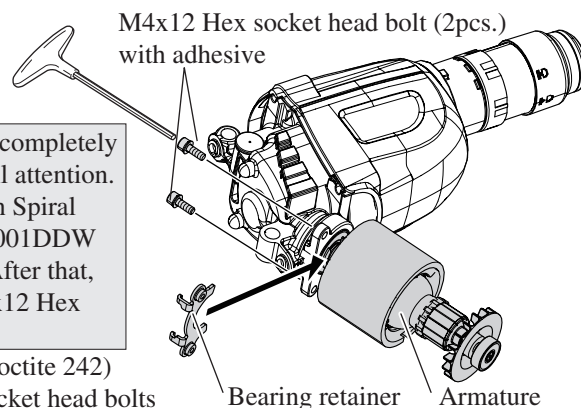
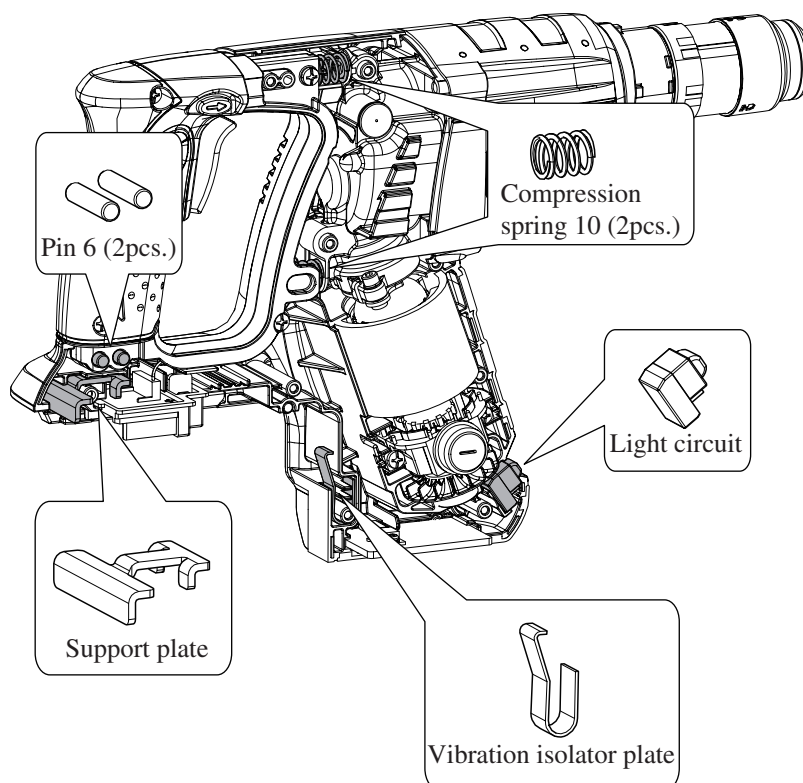


Fig. 30

Make sure that the following parts are set in place before assembly of Housing R to Housing L.



► **Repair**

**[3] DISASSEMBLY/ASSEMBLY**

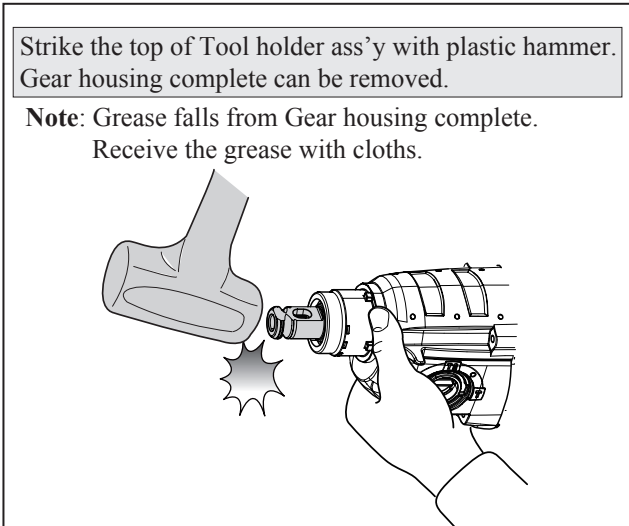
**[3]-5. Tool holder section (BHR261)/ Tool holder guide section (BHR261T)**

**DISASSEMBLING**

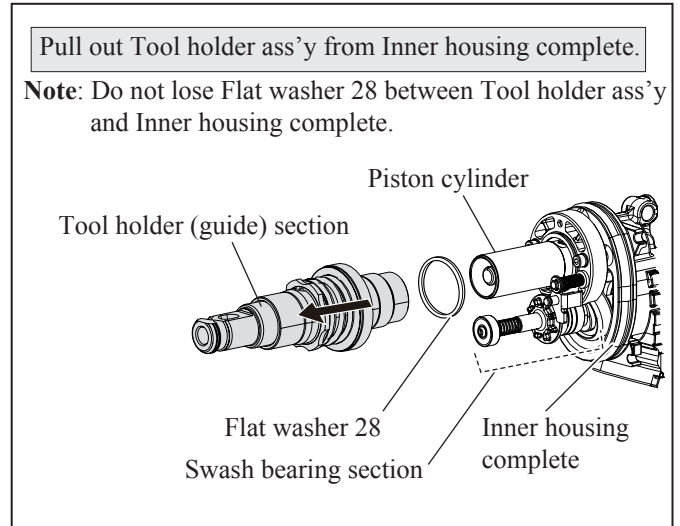
**Note:** Tool holder (guide) section can be removed without disassembling Housing set.

- (1) Remove Chuck section as illustrated in **Fig. 4**.
- (2) Remove Change lever as illustrated in **Fig. 19**.
- (3) Remove four 4x35 Tapping screws as illustrated in **Fig. 10**.
- (4) Take steps illustrated in **Figs. 31 and 32**.

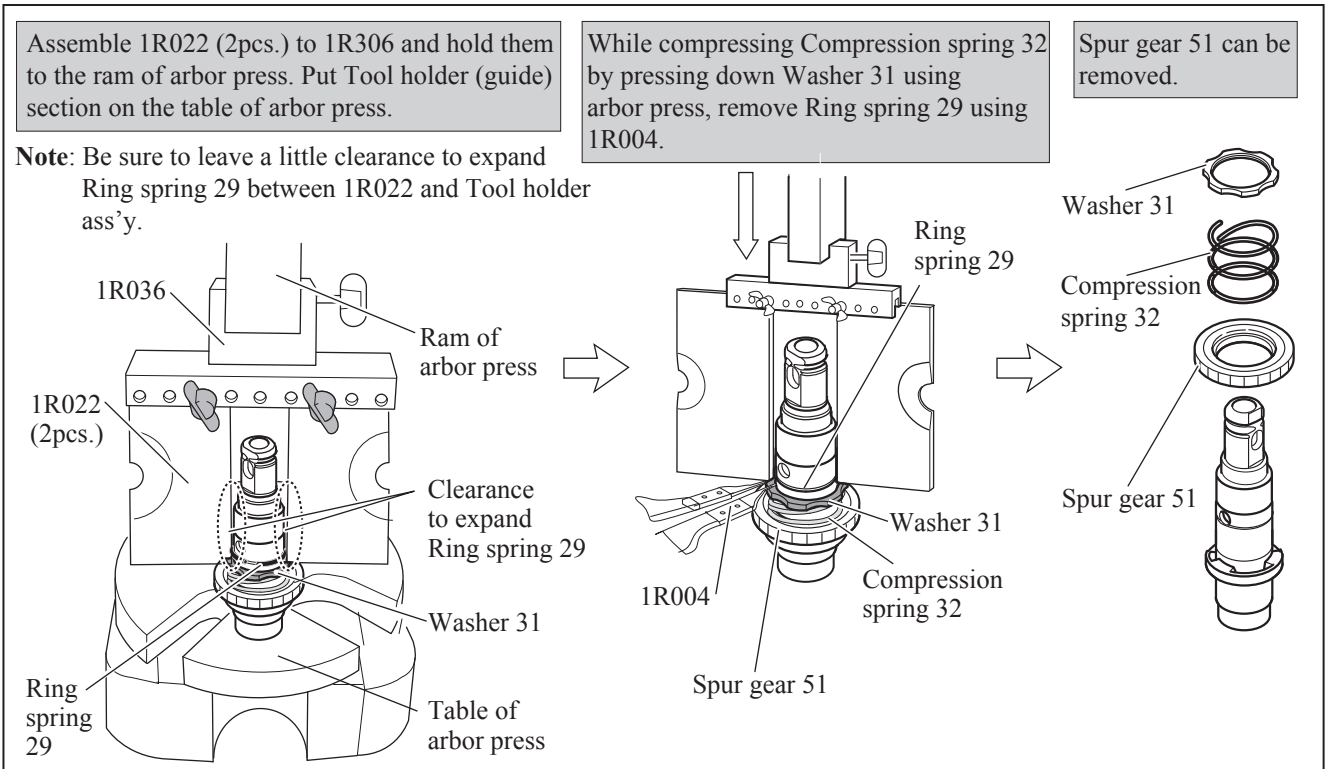
**Fig. 31**



**Fig. 32**



**Fig. 33**



**ASSEMBLING**

Take the disassembling step in reverse.

# ► Repair

## [3] DISASSEMBLY/ASSEMBLY

### [3]-6. Needle bearing complete and Oil seal 25

#### DISASSEMBLING

Fig. 34

Keep Gear housing complete almost upright on Arbor press table, and Press down Oil seal 25 using 1R252.

Oil seal 25 and Needle bearing complete can be removed from Gear housing complete **with gentle pressure** because of their low press fit.

**Note:** Press down Oil seal 25 carefully to prevent Gear housing complete from falling. (Contact areas of Gear housing complete to Arbor press table is very small.)

#### ASSEMBLING

- 1) Assemble Oil seal 25 to Gear housing complete as illustrated in **Figs. 35 and 36**.
- 2) Assemble Needle bearing complete as illustrated in **Fig. 37**.

Fig. 35

With 1R232 and arbor press, insert Oil seal 25 until it stops. In this step, Oil seal 25 is not yet inserted completely because the outer diameter of 1R232 is bigger than that of Oil seal setting hole.

Outer diameter: 36mm

The diameter of Oil seal 25 setting hole is less than 36mm.

Fig. 36

Press Oil seal 25 until it stops with arbor press and the outer diameter 34mm end surface of 1R164. Oil seal 25 can be moved to the original position.

Outer diameter: 30mm

Outer Diameter: 34mm

The original position of Oil seal 25

Fig. 37

Press Needle bearing complete with arbor press and the outer diameter 40mm end surface of 1R165 until Needle bearing complete stops.

Outer diameter: 30mm

Cup washer portion of Needle bearing complete

Needle bearing portion of Needle bearing complete

**Note:**

- 1) Do not use 1R164 in this step.
- 2) Do not press **Needle bearing portion** directly.
- 3) Much pressure makes Needle bearing complete deform. Do not press hard.
- 4) Be sure to press **Cup washer portion** with gentle pressure.

Belly side of Gear housing complete

Needle bearing complete

Face the flat portion of Needle bearing complete to the belly side of Gear housing complete.



► **Repair**

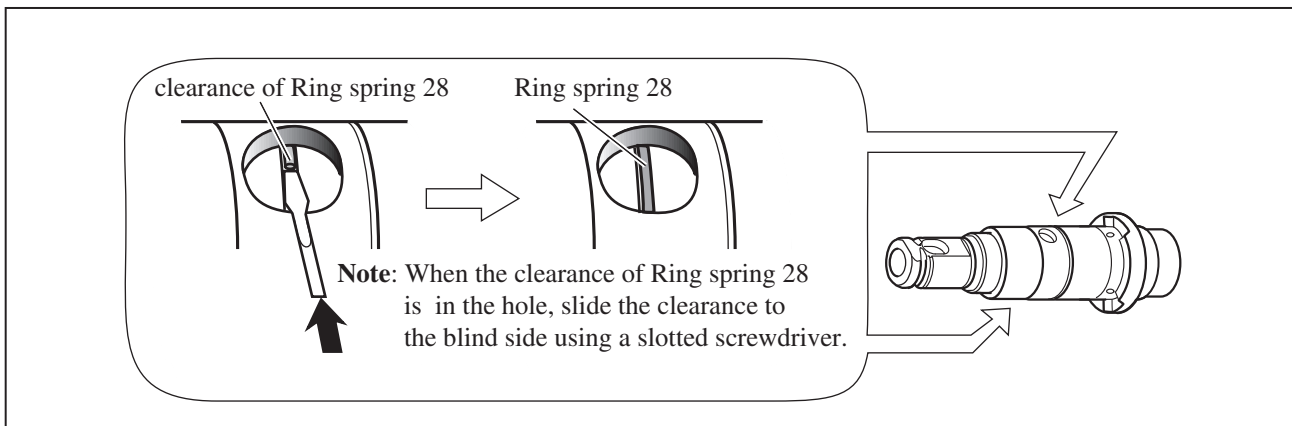
**[3] DISASSEMBLY/ASSEMBLY**

**[3]-7. Impact bolt in Tool holder complete (BHR261)/ Tool holder guide complete (BHR261T)**

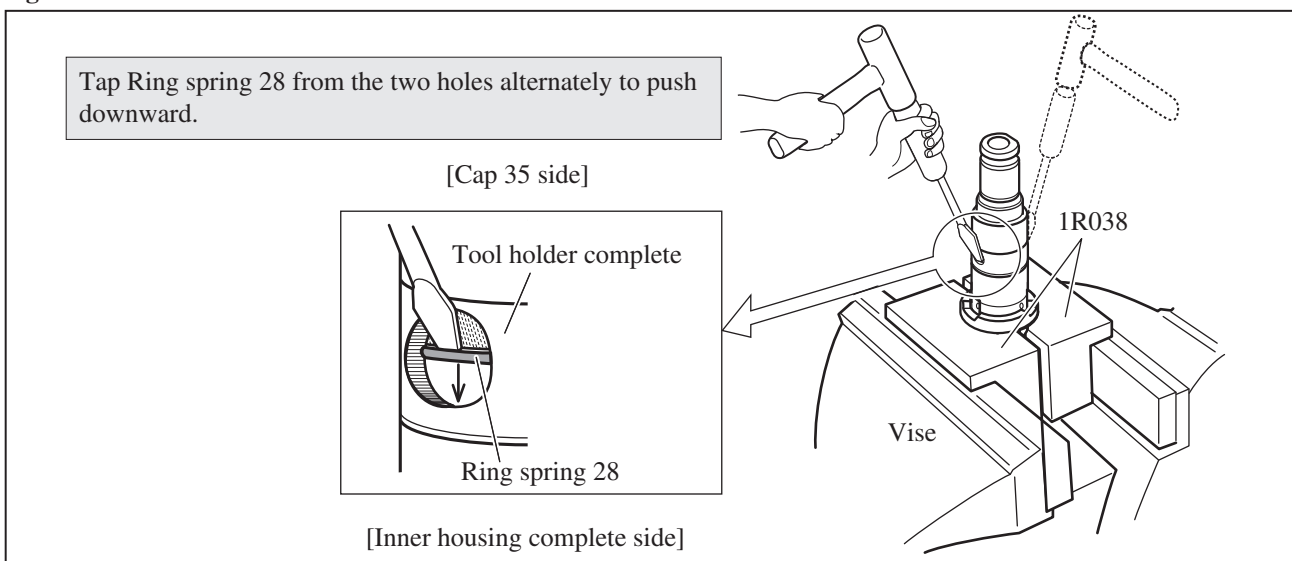
**DISASSEMBLING**

- (1) When Striker is left in Tool holder (guide) complete, push Striker out of Tool holder (guide) complete by inserting 1R281 from the top end and striking the 1R281 with plastic hammer.
- (2) Remove Tool holder (guide) section as mentioned in the clause of [3]-5.
- (3) Remove Ring spring 28 from Tool holder (guide) complete and disassemble Impact bolt section. (Figs. 39 to 42)

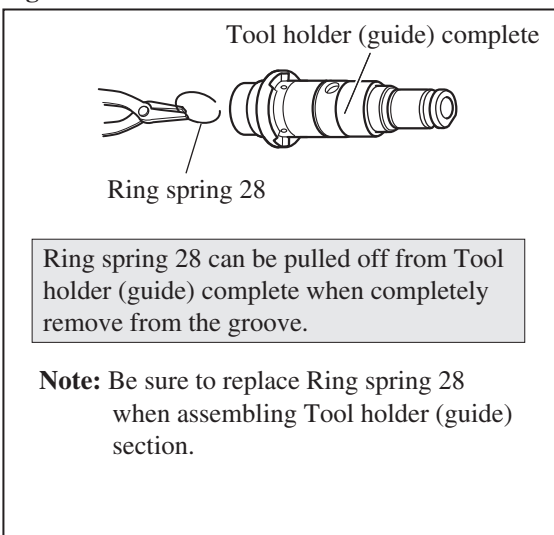
**Fig. 39**



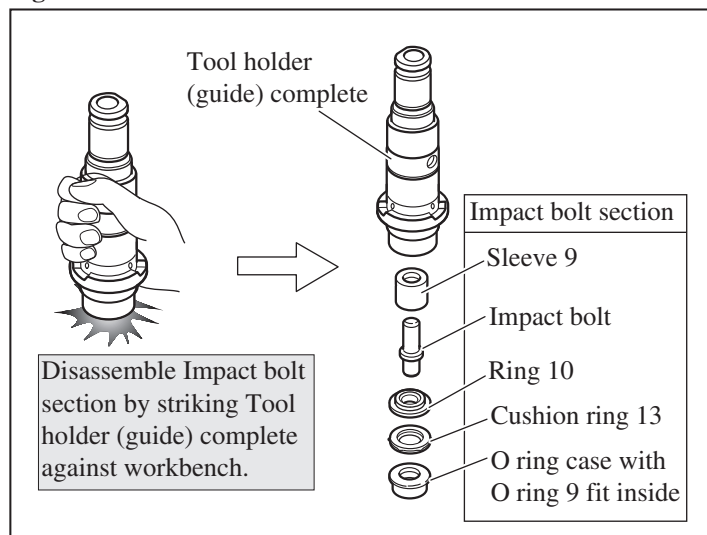
**Fig. 40**



**Fig. 41**



**Fig. 42**





► **Repair**

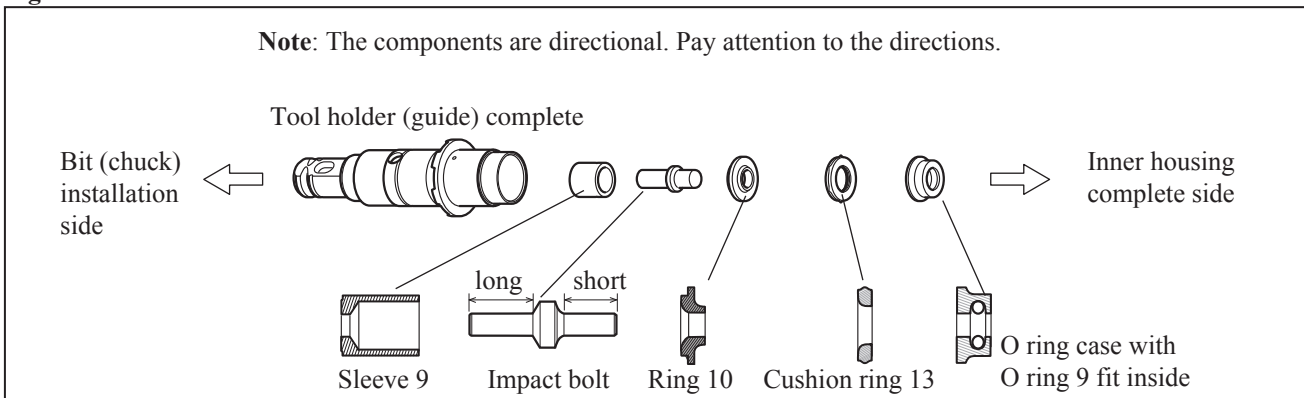
**[3] DISASSEMBLY/ASSEMBLY**

**[3]-7. Impact bolt in Tool holder complete (BHR261)/ Tool holder guide complete (BHR261T)(cont.)**

**ASSEMBLING**

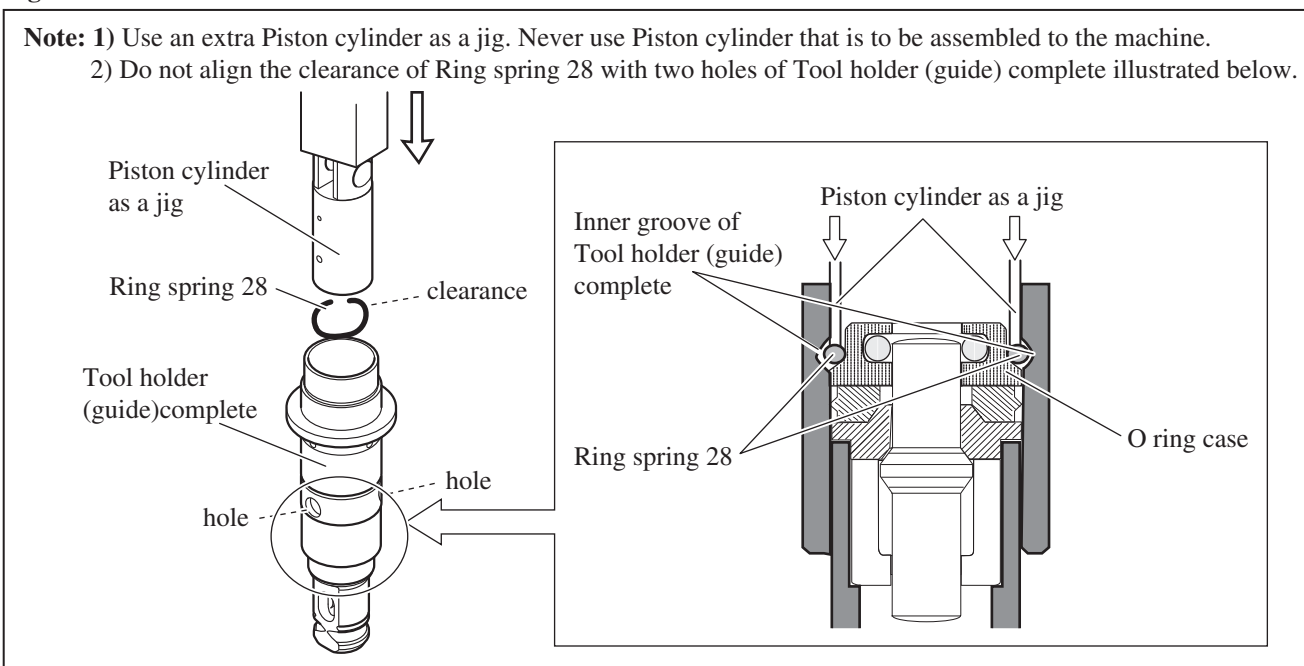
1) Assemble Impact bolt section to Tool holder (guide) complete as illustrated in **Fig. 43**.

**Fig. 43**



2) Push Ring spring 28 into the inner groove of Tool holder (guide) complete as illustrated in **Fig. 44**.

**Fig. 44**



► **Repair**

**[3] DISASSEMBLY/ASSEMBLY**

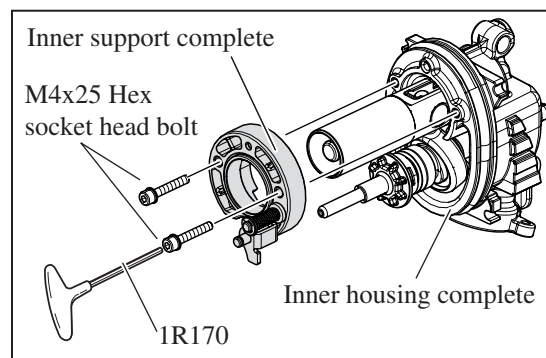
**[3]-8. Swash bearing 10, Gear portions**

**DISASSEMBLING**

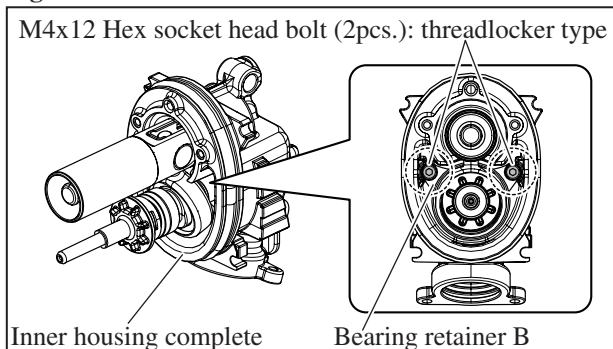
**Note:** The subject step can be done without removing Motor section.

- 1) Remove Gear housing complete as mentioned in the clause of [3]-5.
- 2) Remove Inner support complete by loosening two M4x25 Hex socket head bolts using 1R170. **(Fig. 45)**
- 3) Remove two M4x12 Hex socket head bolts that is seated on Bearing retainer B on Inner support complete. **(Fig. 46)**
- 4) Swash bearing 10 portion and Piston cylinder portion from Inner housing complete. **(Fig. 47)**
- 5) When Ball bearing 606ZZ is left in Gear housing complete after removing Swash bearing section, insert Cam shaft to a hole of Ball bearing 606ZZ and tilt Cam shaft back and forth **(Fig. 48)**, then tap Gear housing complete with plastic hammer as illustrated in **Fig. 49**. Ball bearing 606ZZ can be removed.
- 6) Put Spiral bevel gear 26 on a U groove of 1R139 and pass Swash bearing portion through the groove, then press down Cam shaft using 1R281 to lose the press fit to Spiral bevel gear 26, Ball bearing 608ZZ and Ring 8 at a time. **(Fig. 50)** They can be removed. Also Clutch cam, Swash bearing 10, Sleeve 9 and Bearing retainer B can be removed from Cam shaft. **(Fig. 51)**
- 7) Remove Retaining ring S-7 from Cam shaft using 1R291. Compression spring 7 and Spur gear 10 can be removed. **(Fig. 51)**

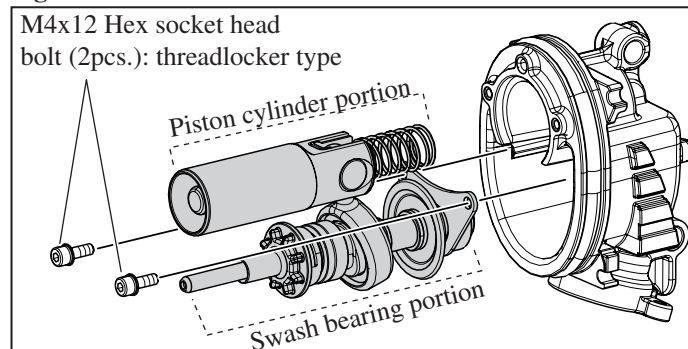
**Fig. 45**



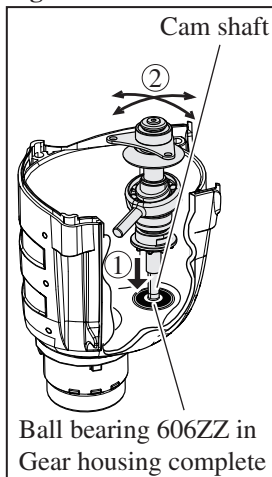
**Fig. 46**



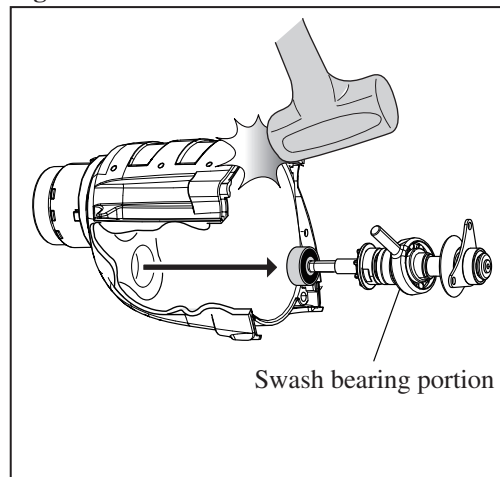
**Fig. 47**



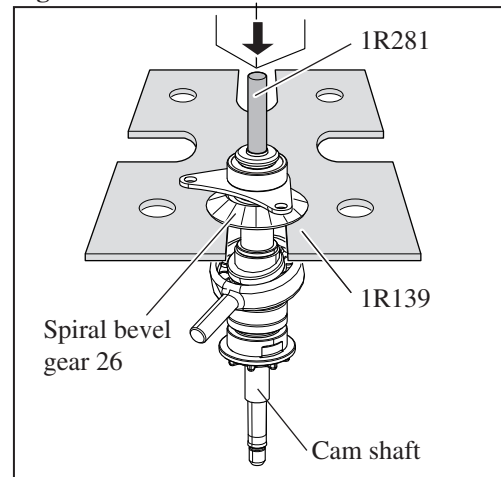
**Fig. 48**



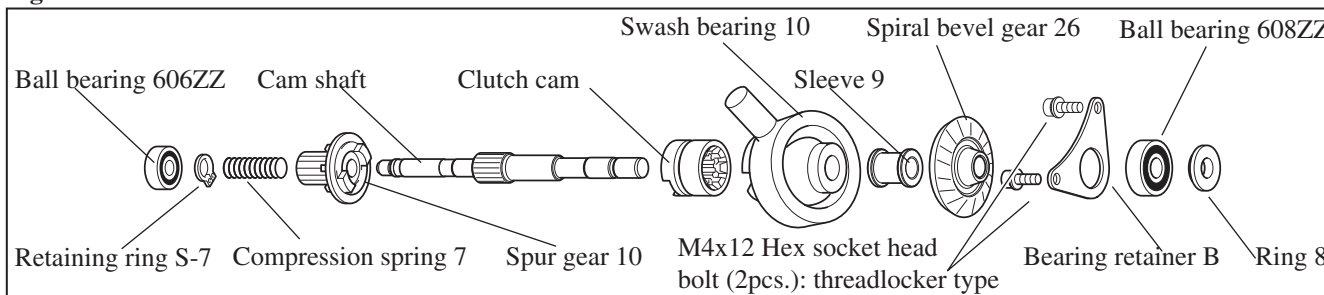
**Fig. 49**



**Fig. 50**



**Fig. 51**



## ► Repair

### [3] DISASSEMBLY/ASSEMBLY

#### [3]-8. Swash bearing 10, Gear portions

##### DISASSEMBLING

**Note:** Be sure to apply Makita grease RB No.00 and Molybdenum disulfide lubricant to the specific portions shown in Fig. 1, 2 and 3.

- 1) Assemble Guide plate and Piston joint to Piston cylinder. (Fig. 52)
- 2) Insert a emboss of Inner housing complete to Compression spring 14 to keep Compression spring 14 upright. (Figs. 3 and 53)
- 3) Pass pole of Swash spring 10 through hole of Piston joint, then mount Swash bearing portion into Inner housing complete. Secure Swash bearing portion by fixing Bearing retainer B to Inner housing complete with two M4x12 Hex socket head bolts. (Fig. 54)

**Note:** Be sure to apply adhesives to the threads of the two M4x12 Hex socket head bolts.

- 4) Insert Change plate into groove of Clutch cam then secure Inner support complete with two M4x25 Hex socket head bolts. (Fig. 55)

Fig. 52

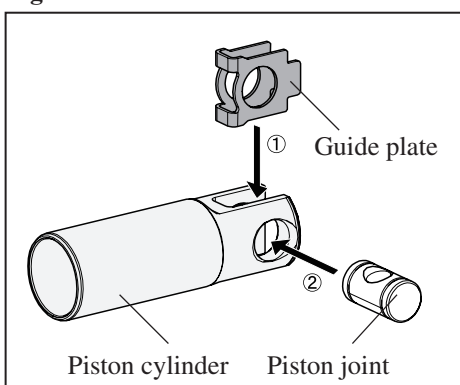


Fig. 53

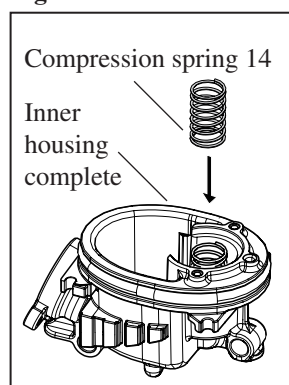


Fig. 55

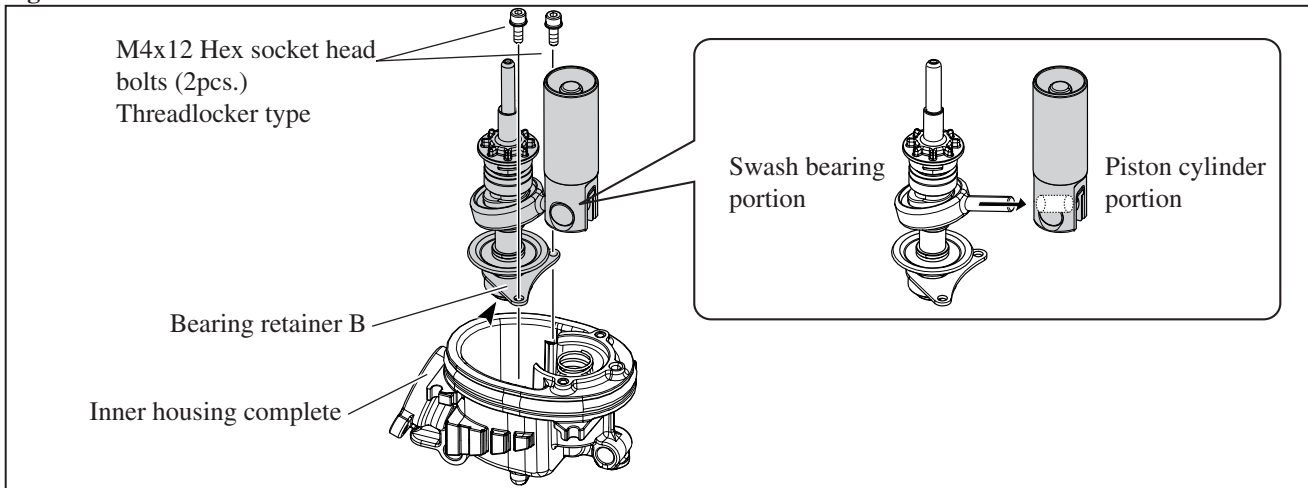
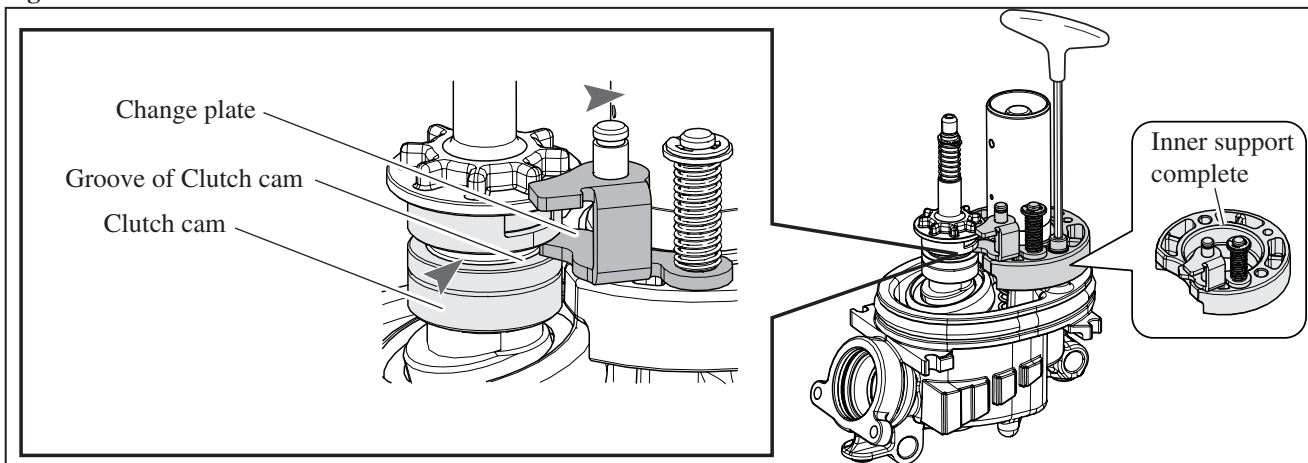


Fig. 56



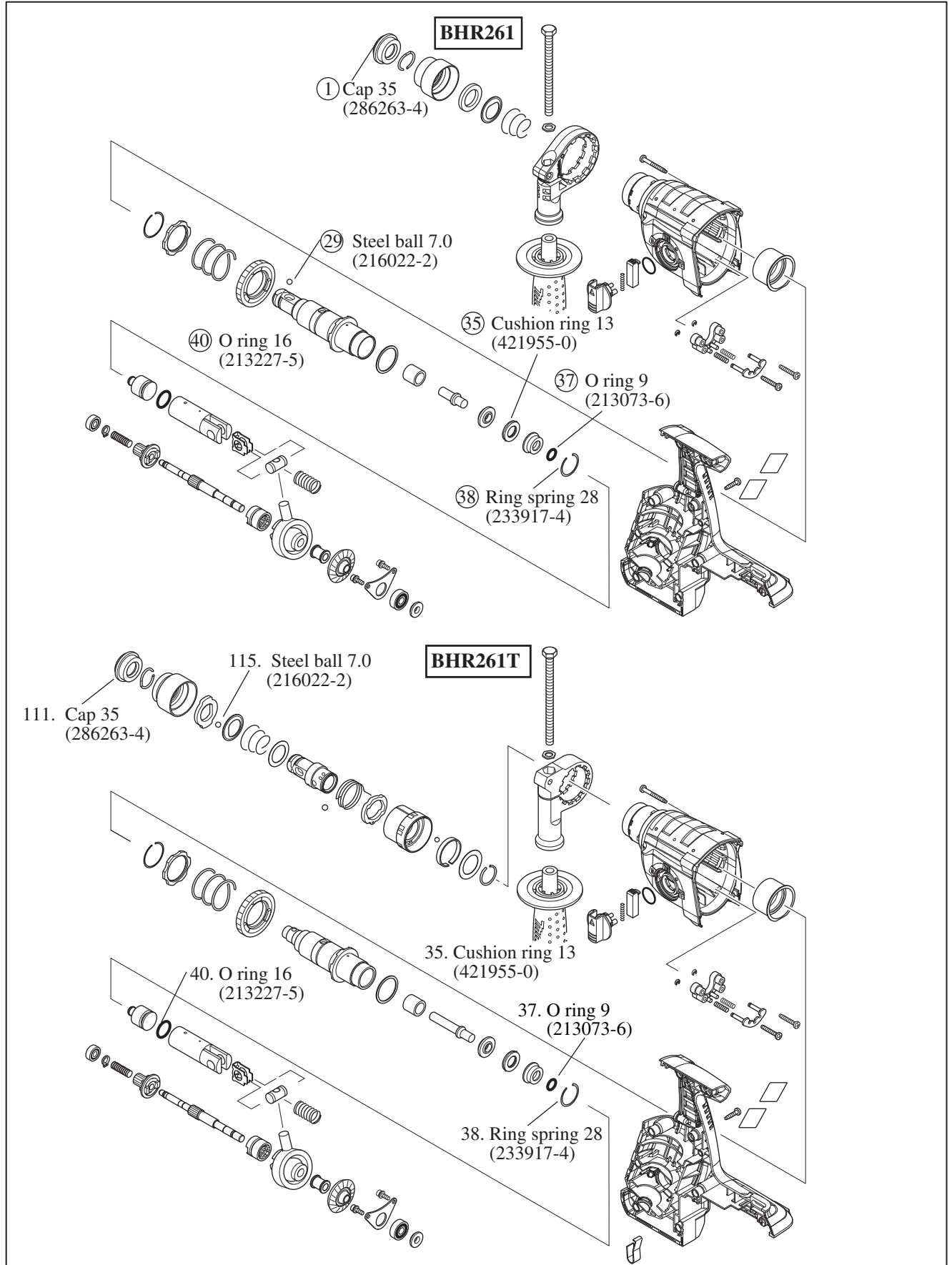
► **Repair**

**[4] Maintenance program**

Replacing the following parts at the same time is recommended when replacing Carbon brushes is required. See **Fig. 56**.

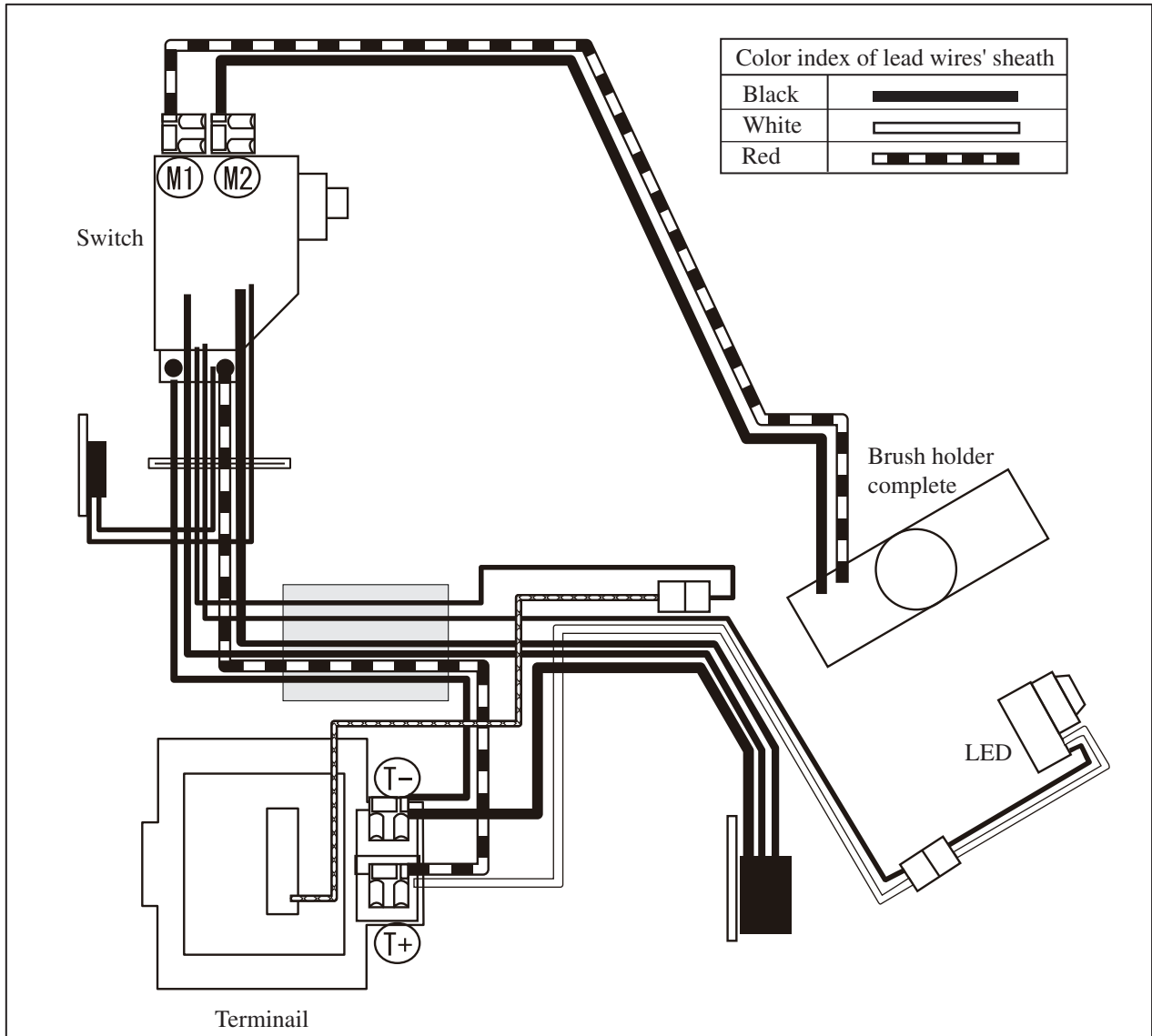
**Note:** Be sure to put Makita grease R No. 00 and Molybdenum disulfide lubricant to the specific portions. Refer to **Figs. 1, Fig. 2 and Fig. 3.**

**Fig. 56**



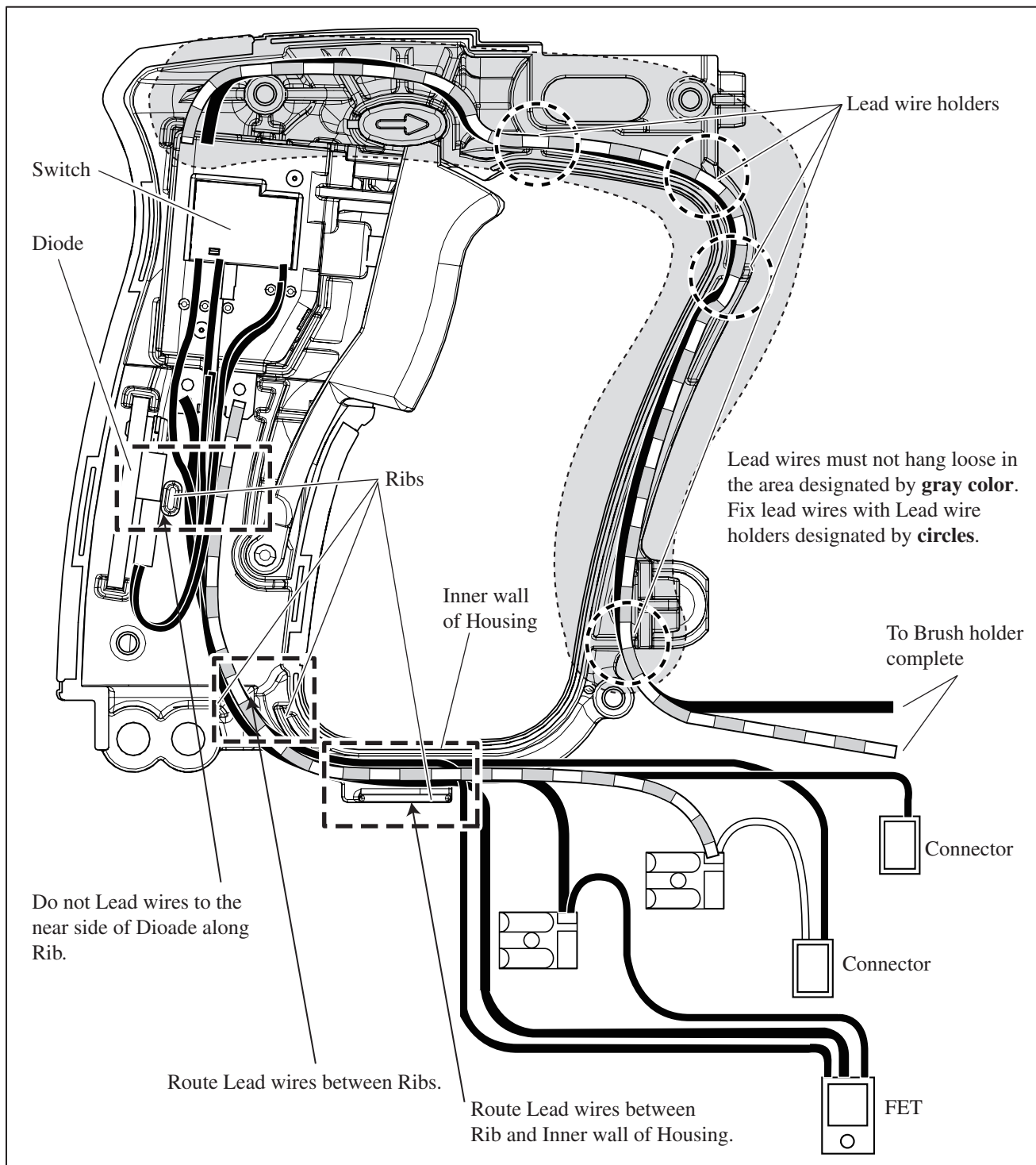
► **Circuit diagram**

Fig. D-1



# ▶ Wiring diagram

Fig. D-2





► **Wiring diagram**

Fig. D-3

