

T ECHNICAL INFORMATION

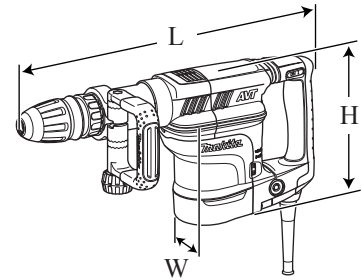


PRODUCT

P 1/22

Model No. ▶ HM1111C, HM1101C

Description ▶ Demolition Hammers



[The image above is **HM1111C**.]

CONCEPT AND MAIN APPLICATIONS

Models HM1111C and HM1101C are 7kg-class demolition hammers adapted for SDS-MAX bits; more powerful than 5kg-class models, but still more compact / lightweight than 10kg-class models.

The higher specification model of the two, HM1111C additionally features:

- AVT* for reduced vibration during chipping
- SOFT NOLOAD (=Suppression of motor speed during no-load for reduced vibration when idling)
- Vibration absorbing handle provides comfortable operation

*Anti-Vibration Technology using Active dynamic vibration absorber

Dimensions: mm (")		
Model No.	HM1111C	HM1101C
Length (L)	528 (20-3/4)	
Width (W)	126 (5)	115 (4-1/2)
Height (H)	247 (9-3/4)	

▶ Specification

Voltage (V)	Current (A)	Cycle (Hz)	Continuous Rating (W)		Max. Output (W)
			Input	Output	
110	15	50/60	1,300	600	1,600
120	14	50/60	---	500	1,600
220	7.5	50/60	1,300	600	1,600
230	7.5	50/60	1,300	600	1,600
240	7.5	50/60	1,300	600	1,600

Model No.	HM1111C	HM1101C	
Impacts per min: min-1 = ipm	1,100 - 2,650		
Shank type	Adapted for SDS-MAX bits		
Shank diameter: mm (")	18 (11/16)		
Vibration absorption	AVT (Anti-Vibration Technology using Active dynamic vibration absorber)	Yes	No
	Vibration absorbing handle	Yes	No
Electronic control	Variable speed control by dial	Yes	
	Soft start	Yes	
	Constant speed control	Yes	
	Suppression of motor speed during no-load	Yes	No
Double insulation	Yes		
Power supply cord: m (ft)	Europe, Commonwealth of Dominica, Kuwait, Hong Kong, Korea, Saudi Arabia (220V), Indonesia, Chile, Egypt, Singapore, Malaysia: 4.0 (13.1) Brazil: 2.0 (6.6) Other countries: 5.0 (16.4)		
Net weight*1: kg (lbs)	8.0 (17.7)	7.3 (16.2)	

*1 Weight according to EPTA-Procedure 01/2003, including Side handle (D-shaped type)

▶ Standard equipment

Bull point 1 Bit grease 1 Cleaning cloth 1
 Side handle (Bar- or D-shaped) 1 Plastic carrying case 1

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

▶ Optional accessories

Bull points	Clay spade	D-shaped side handle
Cold chisels	Bushing tool	Bar-shaped Side handle
Scaling chisels	Rammer	Plastic carrying case
Scaling chisel (for Tile)	Shank (for Bushing tool and Rammer)	Blow out bulb
Grooving chisel	Grease vessel (containing 30g hammer grease)	Safety goggles
		Hammer service kit

► Repair

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

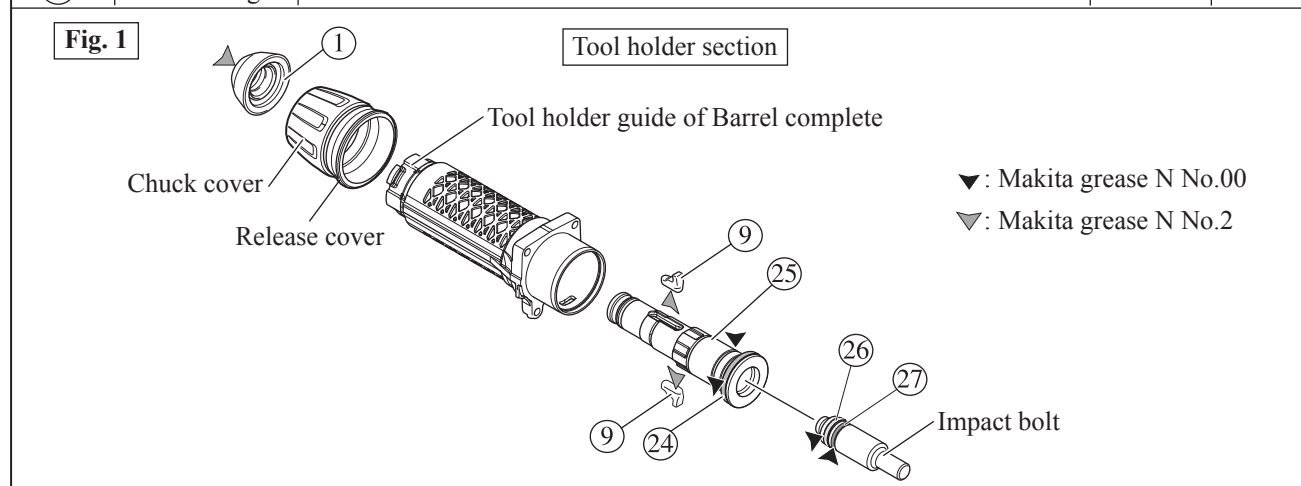
[1] NECESSARY REPAIRING TOOLS

Code No.	Description	Used for
1R003	Retaining ring S pliers ST-2N	removing / mounting Ring spring 25
1R004	Retaining ring S pliers ST-2	removing AVT
1R023	Pipe ring	supporting Crank housing when removing Armature
1R089	Bearing extractor	removing Ball bearing 6303LLU from Crank housing
1R132	Nose 15-20	attaching to 1R089
1R139	Drill chuck extractor	removing Crank shaft
	Hex socket head bolt M8x40	
	Flat washer 8	
1R212	Tip for Retaining ring pliers	attaching to 1R003 to remove / assemble Ring spring 25
1R214	Taper sleeve	fixing Fluoride ring 25 onto Impact bolt
1R230	1/4" Hex shank bit for M6	screwing / unscrewing M6 Hex socket head bolt
1R235	Round bar for Arbor 6-100	removing Ball bearing 6202LLU from Crank housing
1R239	Round bar for Arbor 10-100	removing Armature from Crank housing
1R263	Bearing extractor	removing Crank housing
1R269	Bearing extractor	removing Ball bearing 6000DDW from Armature shaft
1R280	Round bar for Arbor 6-50	removing Ball bearing 6303LLU
1R285	Round bar for Arbor 11-50	removing Ball bearing 6202LLU from Crank housing
1R306	Retaining ring removing jig	removing Armature from Crank housing
1R363	Ring spring removing tool for SDS-MAX Tool holder	removing / assembling Ring spring 25

[2] LUBRICATIONS

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

Item No.	Description	Portion to lubricate	Lubricant	Amount
①	Tool holder cap	Lip portion	▼	a little
⑨	Tool retainer	The portion where SDS-MAX bit contacts		
⑳	Rubber ring 36	Whole portion	▼	
㉕	Tool holder	The portion where Tool holder guide (the component of Barrel complete) contacts		
㉖	X ring 18	The surface where Tool holder contacts		
㉗	Fluoride ring 25			



► **Repair**

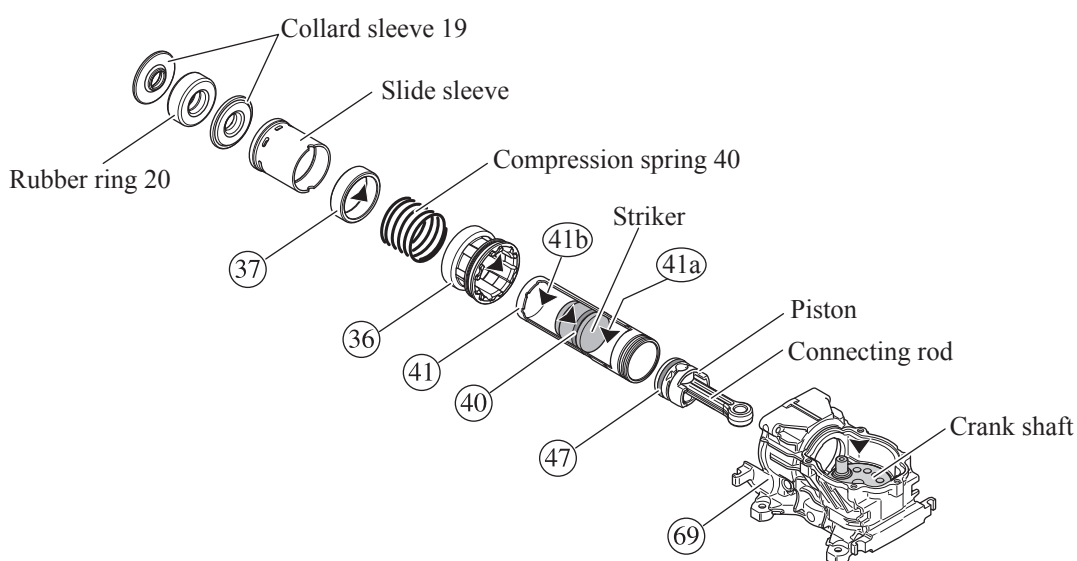
[2] LUBRICATIONS

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

Item No.	Description	Portion to lubricate	Lubricant	Amount
③⑥	Cylinder guide	Internal surface contacting Cylinder ④①	Makita grease N No.00 ▼	a little
③⑦	Ring 39	Internal surface contacting Cylinder ④①		
④①	O ring 27	Whole portion for smooth action of Striker		10g
④①	Cylinder	④①a Internal area between Piston and Striker ----- ④①b Internal area between Collared sleeve 19 and Striker		
④⑦	O ring 27	Whole portion		a little
⑥⑨	Crank housing complete	Crank room	20g	

Fig. 1A

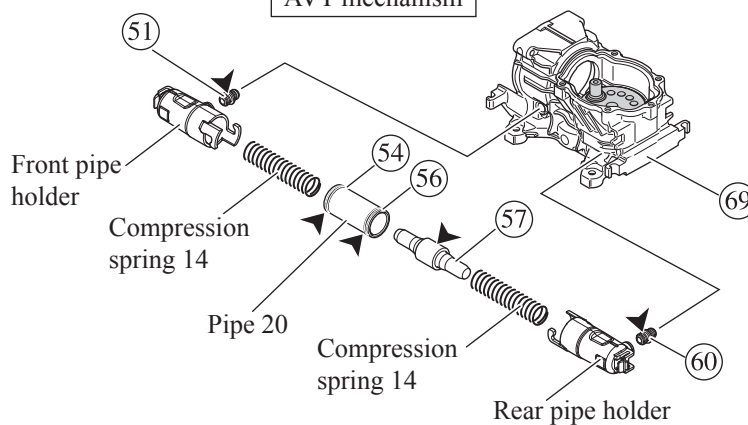
Cylinder, Crank housing



Item No.	Description	Portion to lubricate	Lubricant	Amount
⑤① ⑥①	Rubber pipe	Outer surface	Makita grease N No.00 ▼	a little
⑤④ ⑤⑥	O ring 22	Whole portion		
⑤⑦	Counter weight	The drum portion where Pipe 20 contacts		

Fig. 1B

AVT mechanism



► **Repair**

[3] DISASSEMBLY/ASSEMBLY

[3]-1. Chuck section

DISASSEMBLING

Chuck section can be disassembled in the order of **Figs. 2, 3, 4** and **5**.

Fig. 2

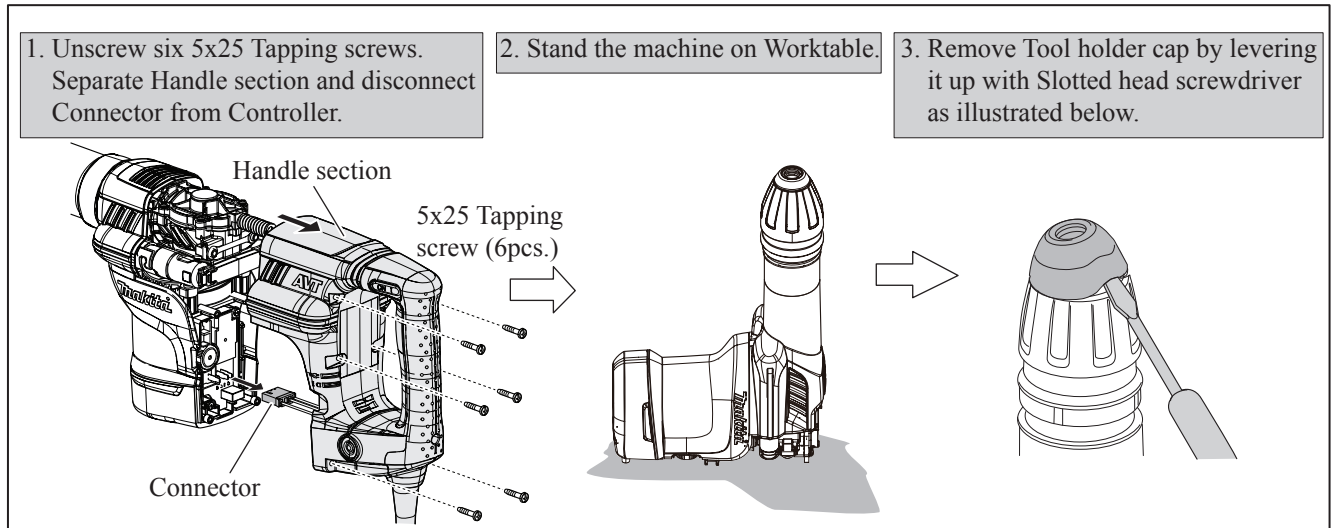


Fig. 3

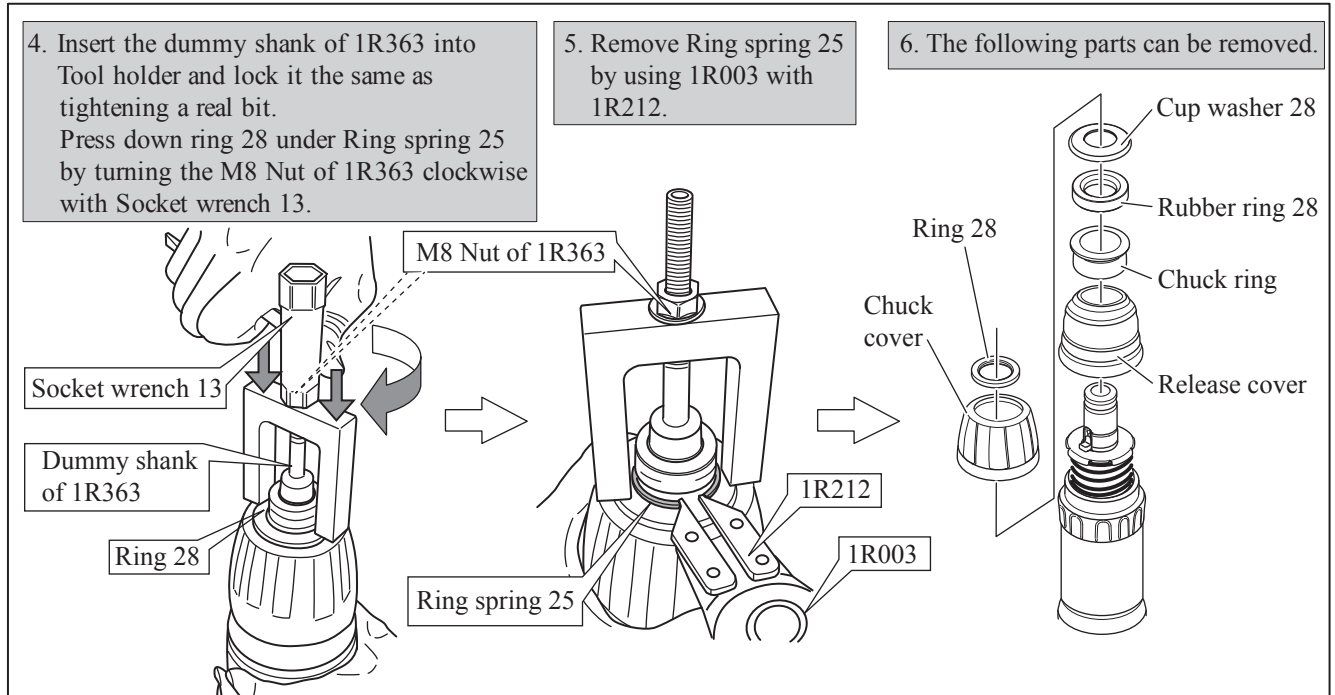
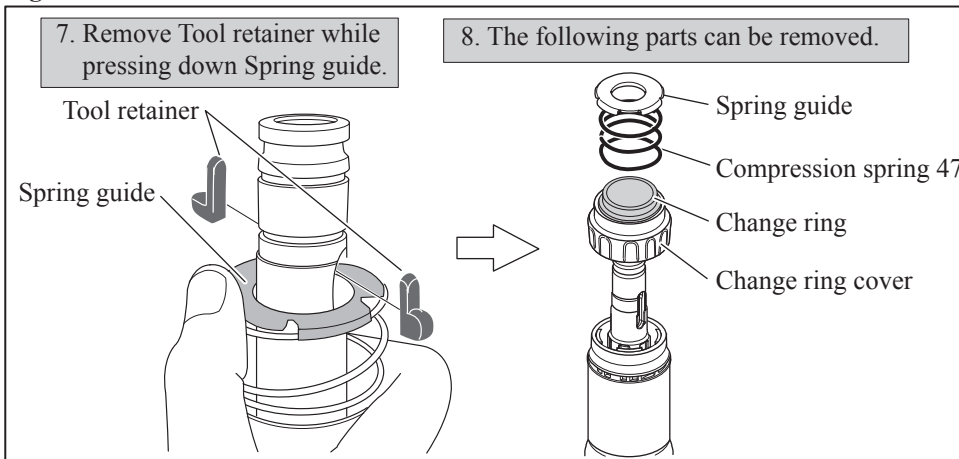


Fig. 4



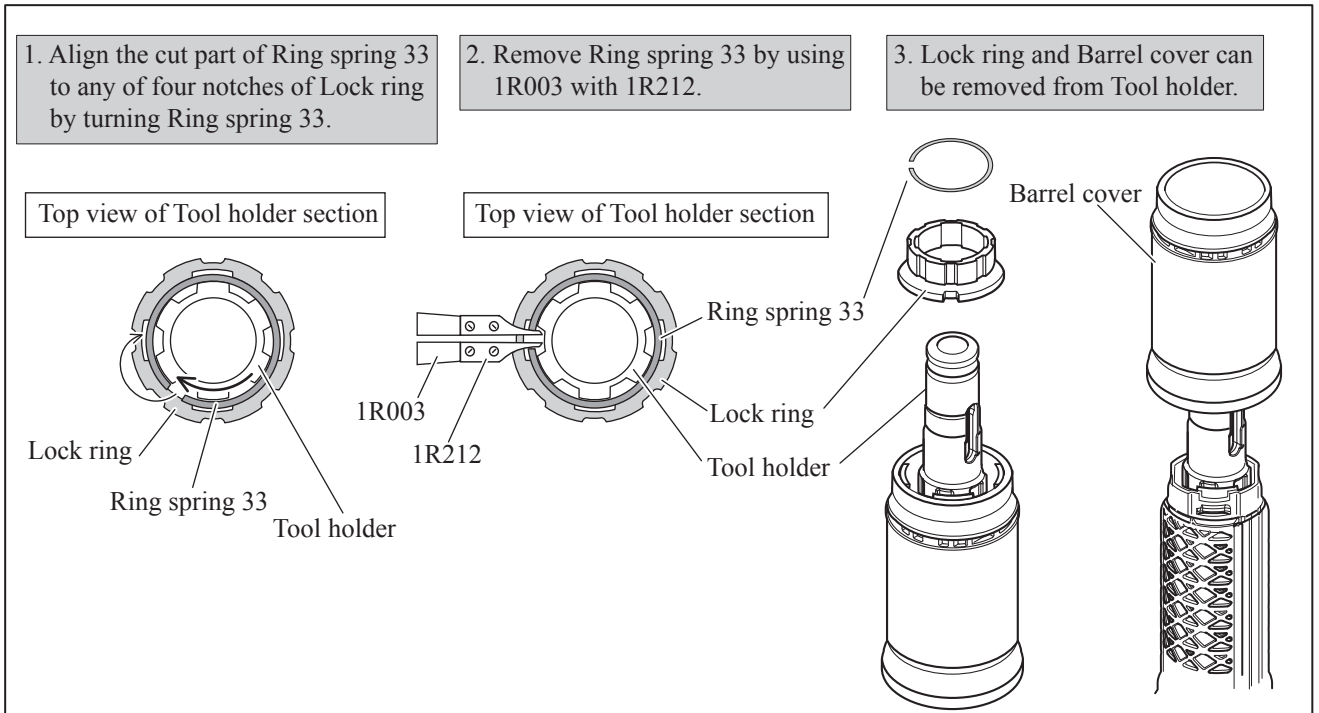
► Repair

[3] DISASSEMBLY/ASSEMBLY

[3]-1. Chuck section (cont.)

DISASSEMBLING

Fig. 5



ASSEMBLING

Take the disassembling step in reverse.

► **Repair**

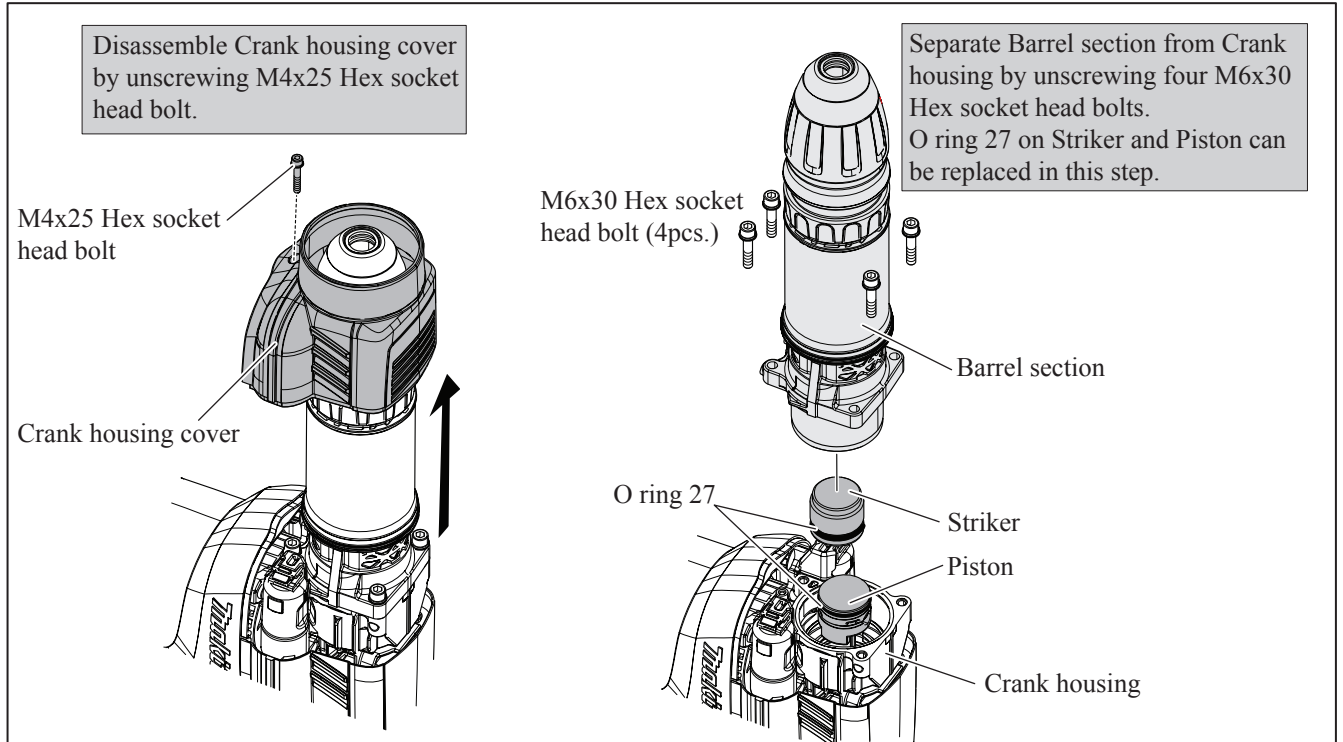
[3] DISASSEMBLY/ASSEMBLY

[3]-2. Piston, Striker, Impact bolt

DISASSEMBLING

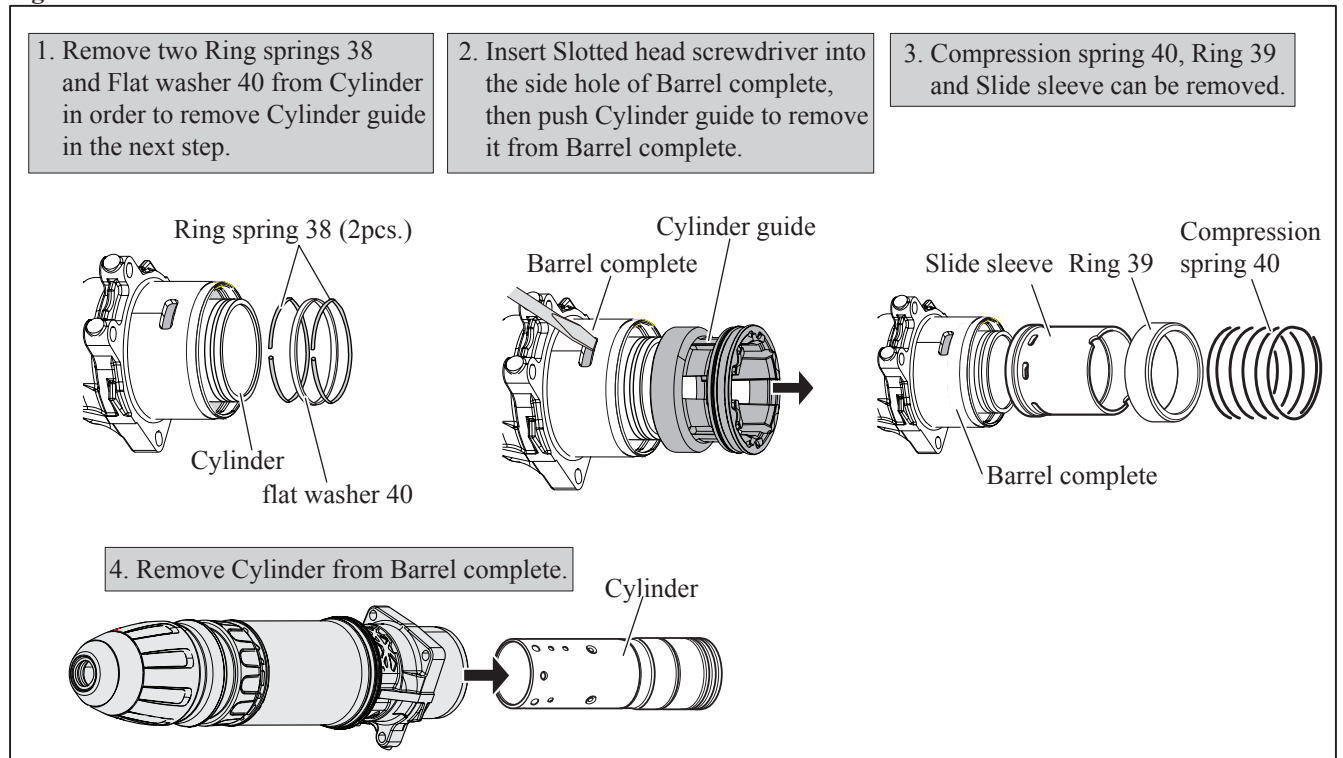
(1) O ring 27 on Piston and Striker can be replaced as illustrated in **Fig. 6**.

Fig. 6



(2) Remove Cylinder guide, Compression spring 40, Ring 39, Slide sleeve and Cylinder from Barrel section (**Fig. 7**).

Fig. 7



► **Repair**

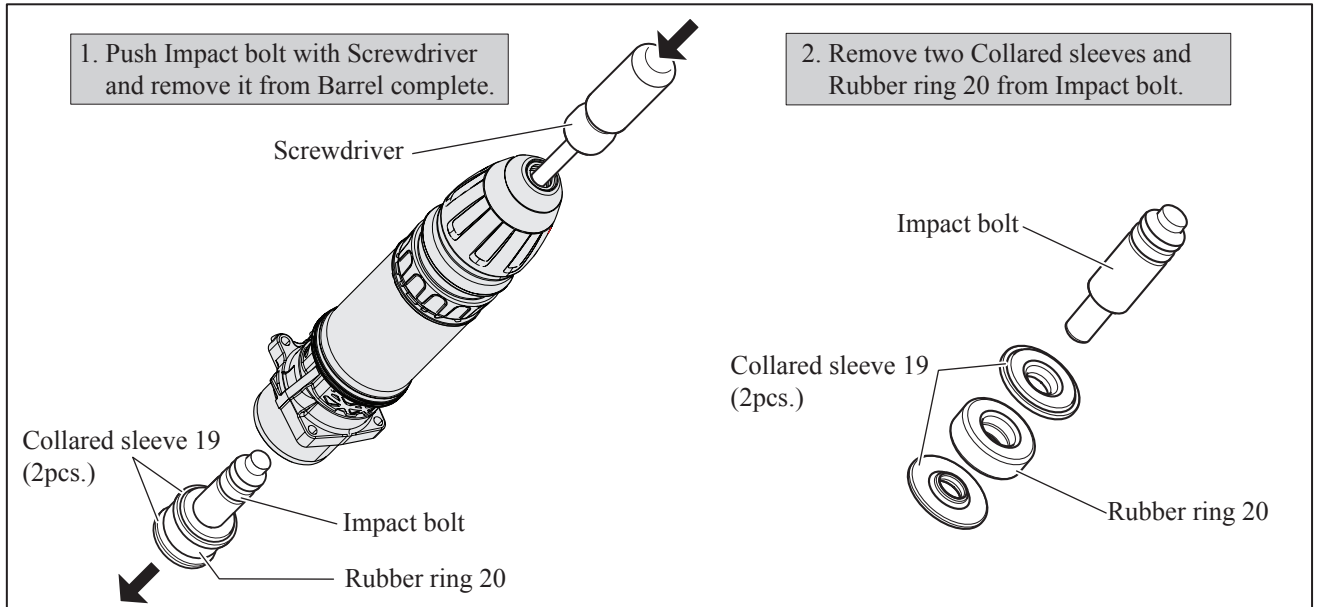
[3] DISASSEMBLY/ASSEMBLY

[3]-2. Piston, Striker, Impact bolt (cont.)

DISASSEMBLING

(3) Remove Impact bolt (Fig. 8).

Fig. 8



(4) Check Fluoride ring on Impact bolt (Fig. 9). If it is worn, all Rings on the Impact bolt have to be replaced (Fig. 10).

Fig. 9

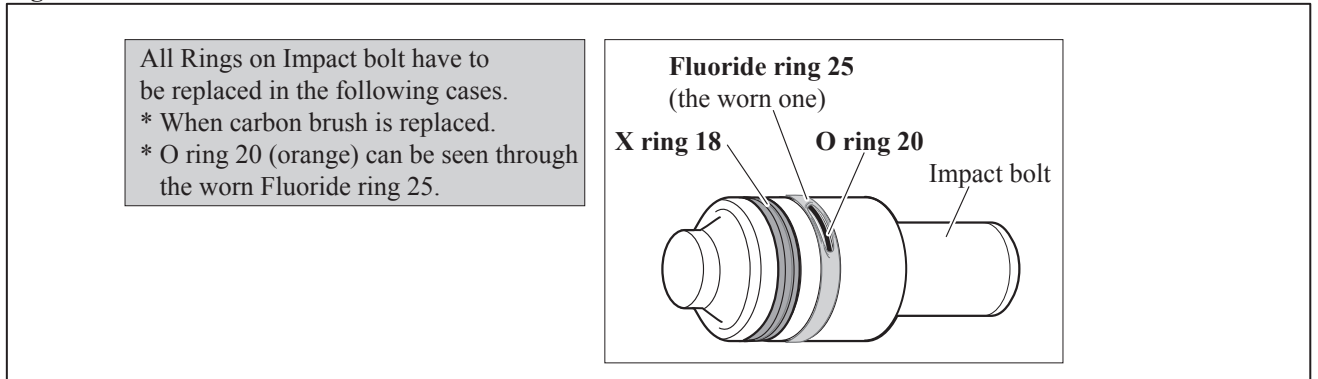
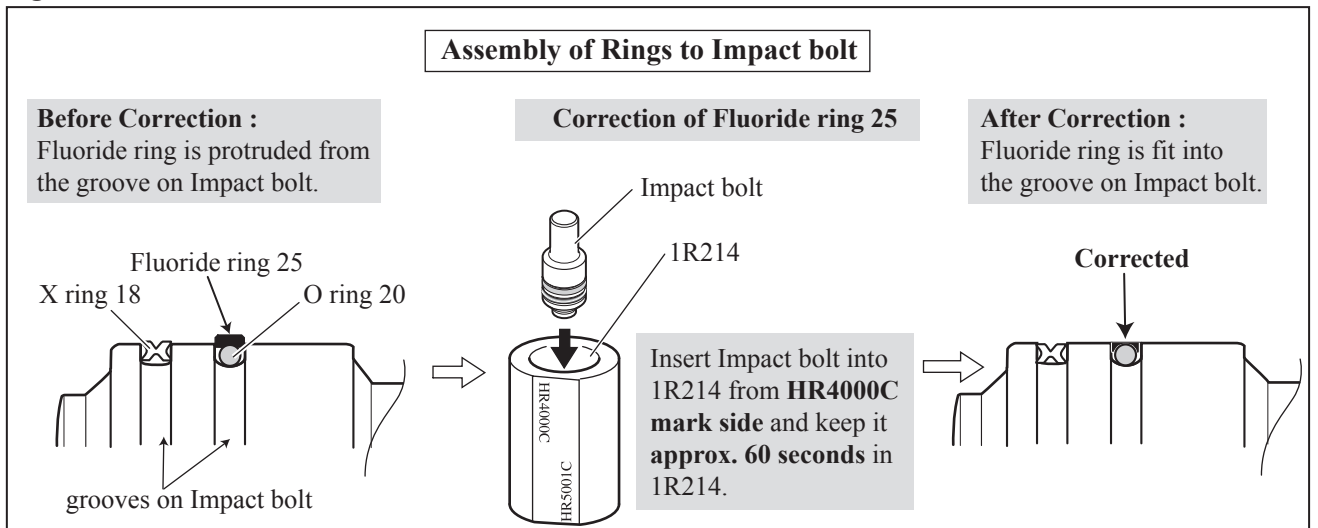


Fig. 10



► **Repair**

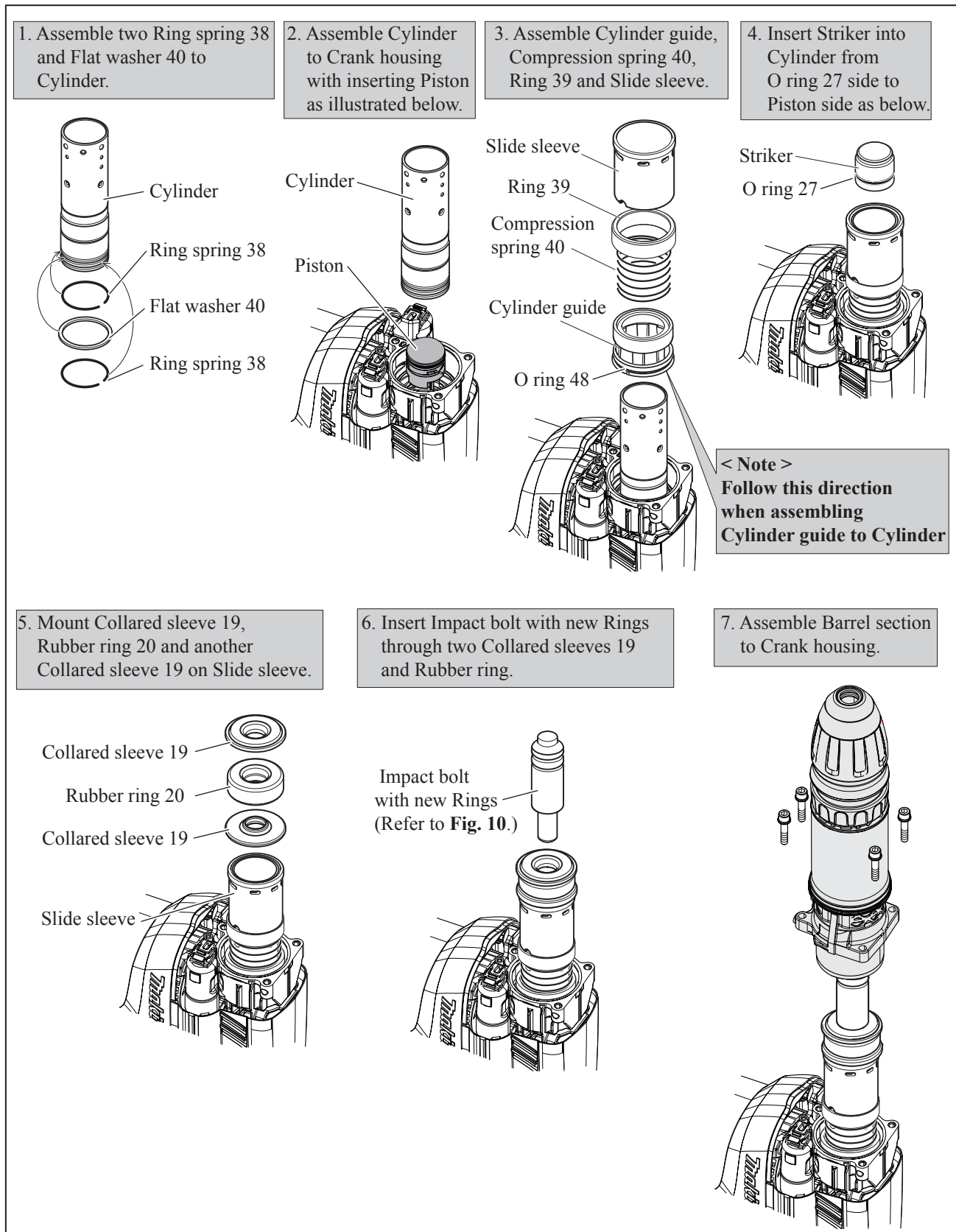
[3] DISASSEMBLY/ASSEMBLY

[3]-2. Piston, Striker, Impact bolt

ASSEMBLING

Stand the machine on Worktable as in center Fig.2 and assemble the parts as illustrated in Fig. 11.

Fig. 11



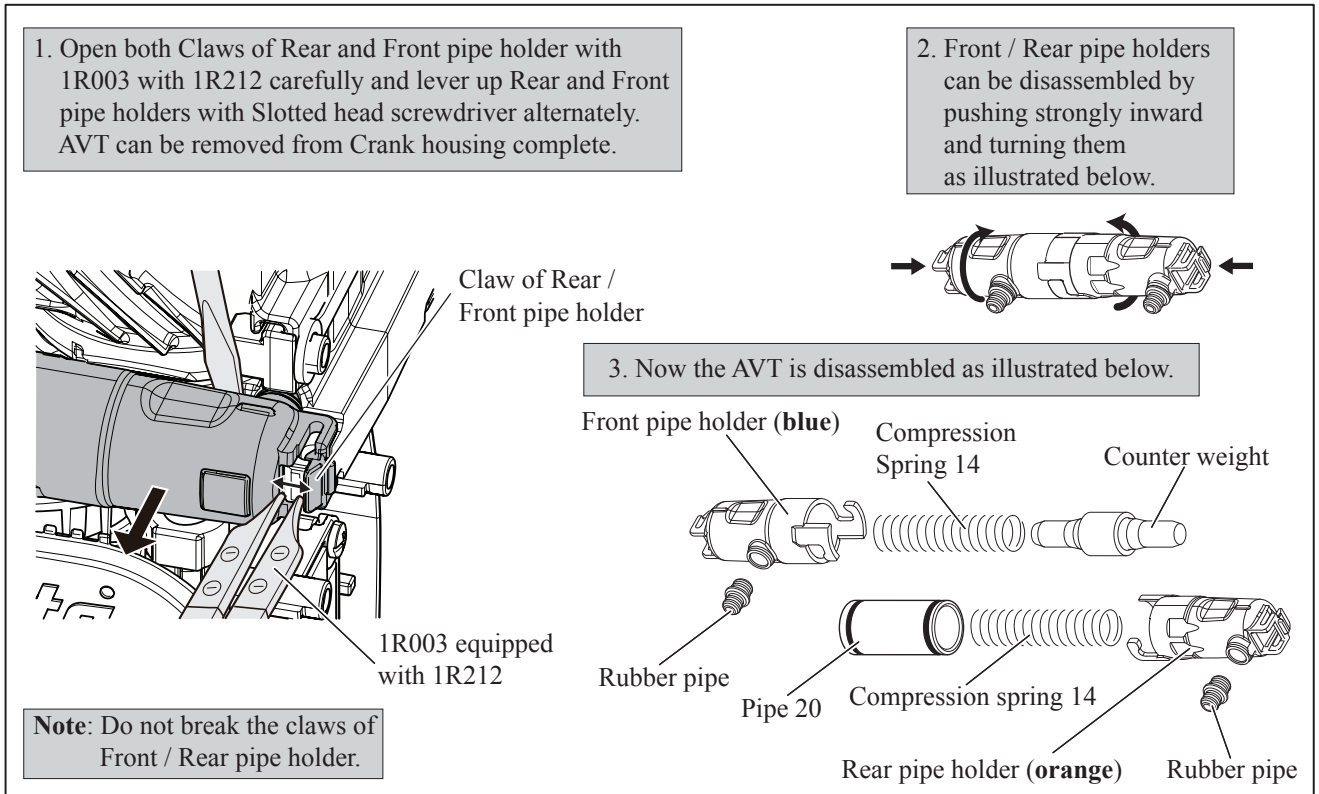
► **Repair**

[3] DISASSEMBLY/ASSEMBLY
[3]-3. AVT mechanism (HM1111C)

DISASSEMBLING

- (1) Disassemble Handle section (**Fig. 2 left**).
- (2) Disassemble Crank housing cover by unscrewing M4x25 Hex socket head bolt (**Fig. 6 left**).
- (3) AVT mechanism can be seen after removing Handle section and Crank housing cover.
 Disassemble AVT mechanism (**Fig. 12**).

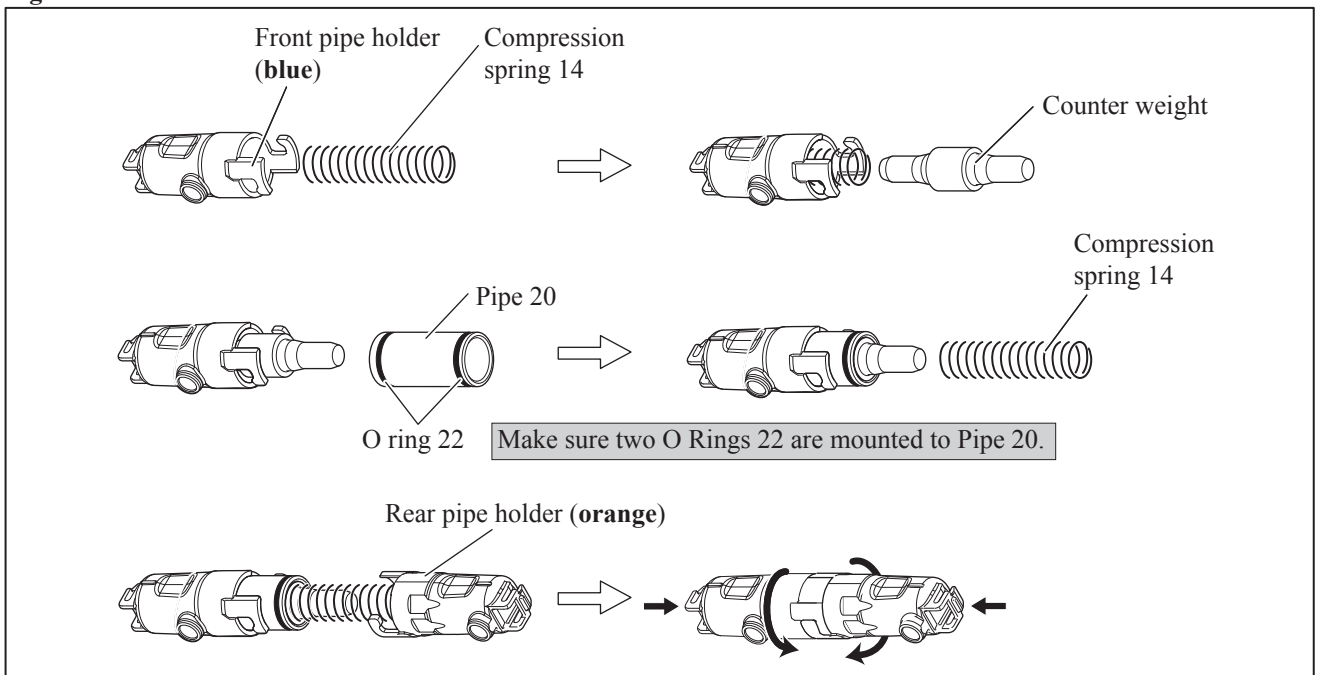
Fig. 12



ASSEMBLING

- (1) Assemble both sides of AVT mechanism (**Fig. 13**).

Fig. 13



► **Repair**

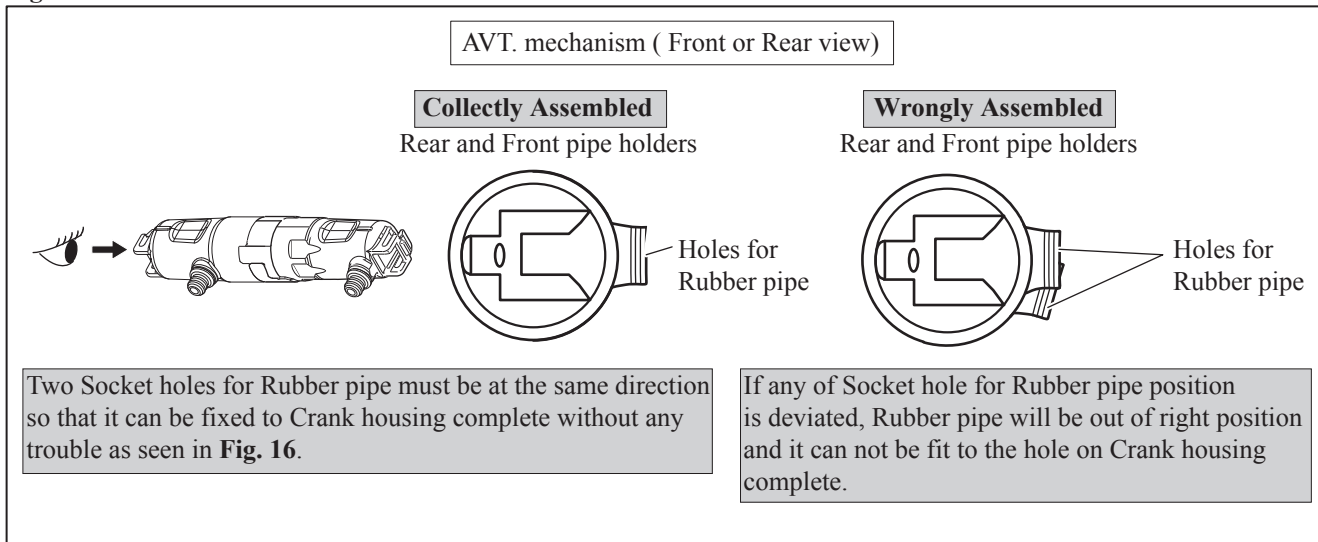
[3] DISASSEMBLY/ASSEMBLY

[3]-3. AVT mechanism (HM1111C) (cont.)

ASSEMBLING

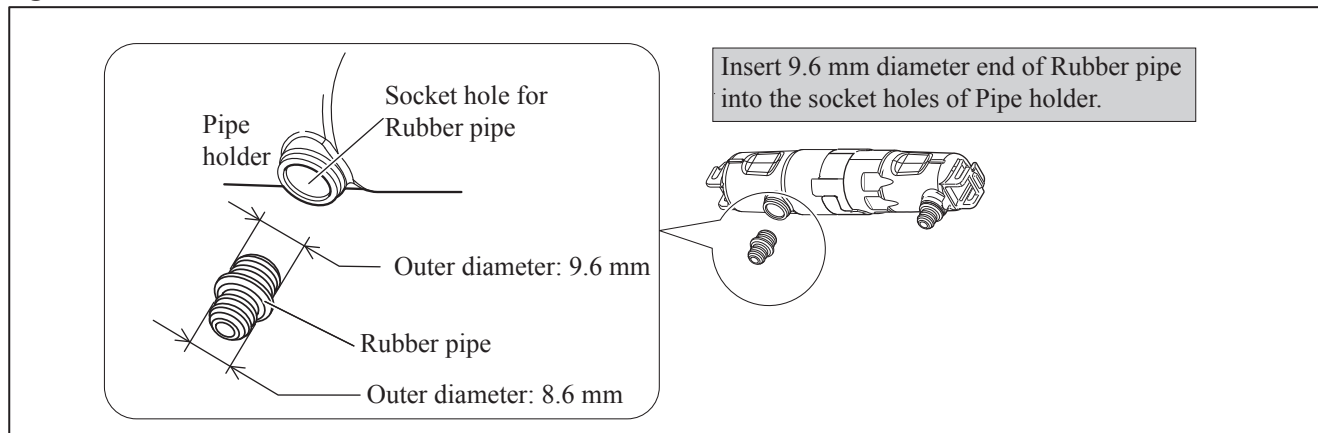
(2) Check if Front and Rear pipe holders are assembled properly (**Fig. 14**).

Fig. 14



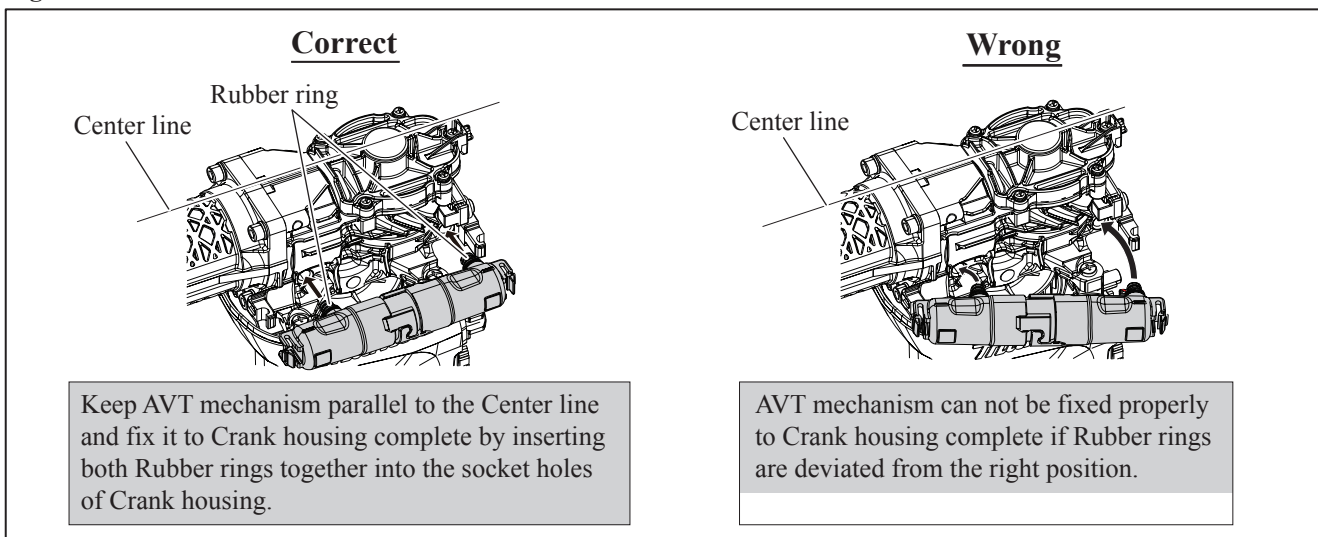
(3) Assemble Rubber pipe (**Fig. 15**).

Fig. 15



(4) Mount AVT mechanism (**Fig. 16 left**).

Fig. 16



► **Repair**

[3] DISASSEMBLY/ASSEMBLY

[3]-4. Crank section

DISASSEMBLING

- (1) Remove Handle section (**Fig. 2 left**).
- (2) Remove Crank housing cover, Barrel section (**Fig. 6**) and AVT for HM1111C (**Fig. 12 left**).
- (3) Disassemble Piston as illustrated in **Figs. 17, 18 and 19**.

Fig. 17

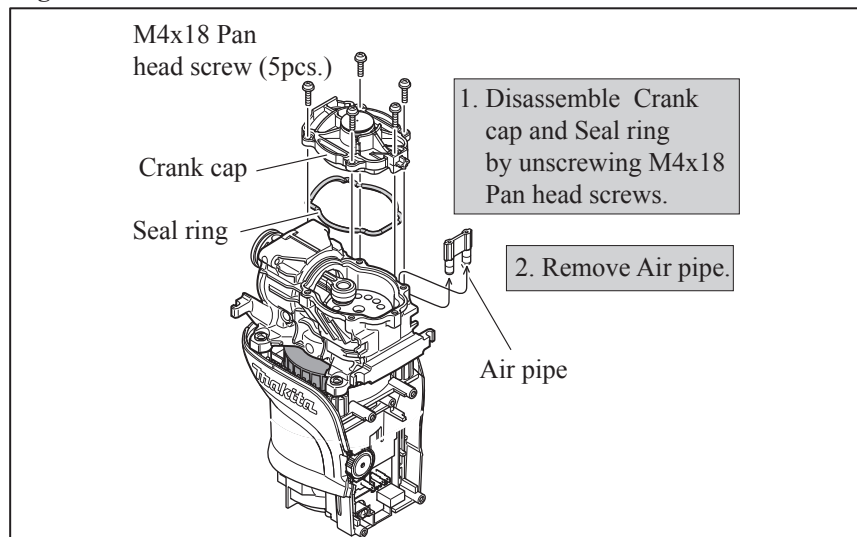


Fig. 18

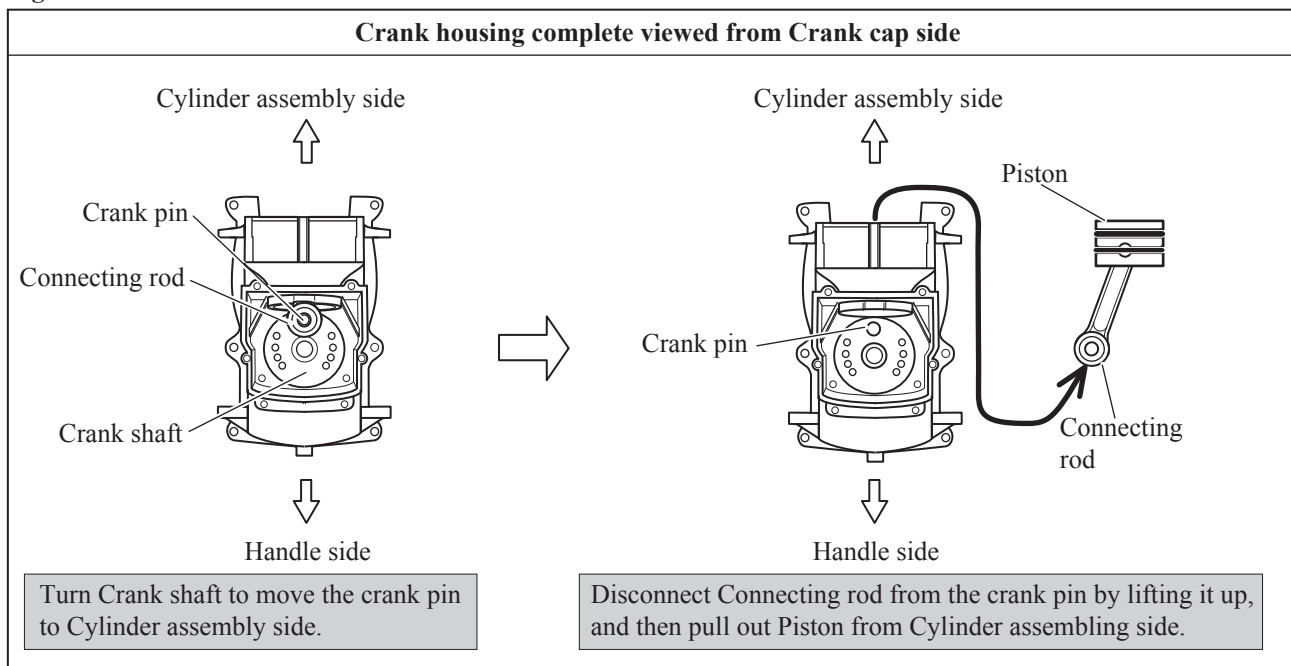
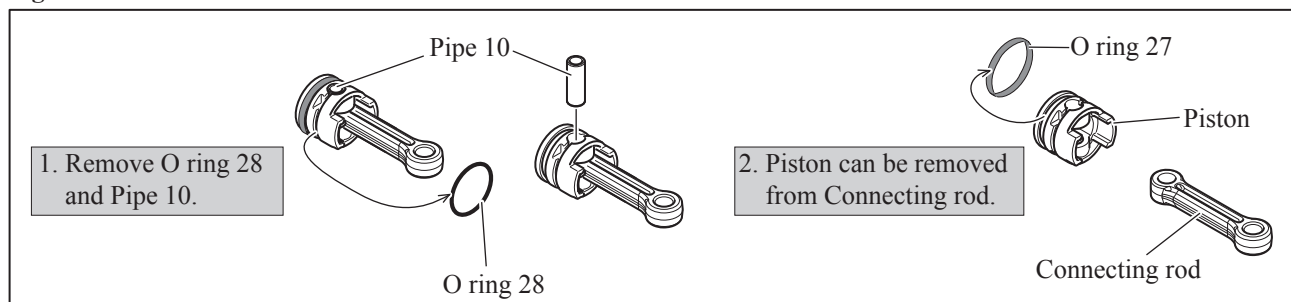


Fig. 19



► Repair

[3] DISASSEMBLY/ASSEMBLY

[3]-4. Crank Section

DISASSEMBLING

- (1) Remove Handle section (**Fig. 2**).
- (2) Remove Crank housing cover, Barrel section (**Fig. 6**) and AVT (**Fig. 12 left**).
- (3) Disassemble Crank cap, Seal ring and Air pipe (**Fig. 17**).
- (4) Disassemble Piston and Connecting rod (**Fig. 18**).
- (5) Set the repairing tools and jigs (**Figs. 20 and 21**).

Fig. 20

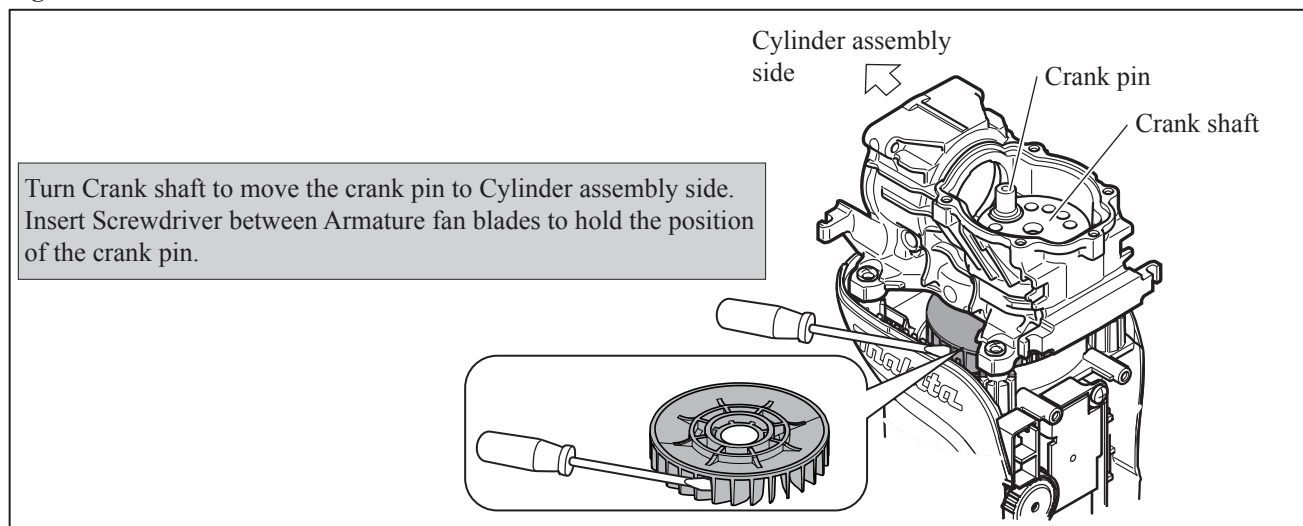
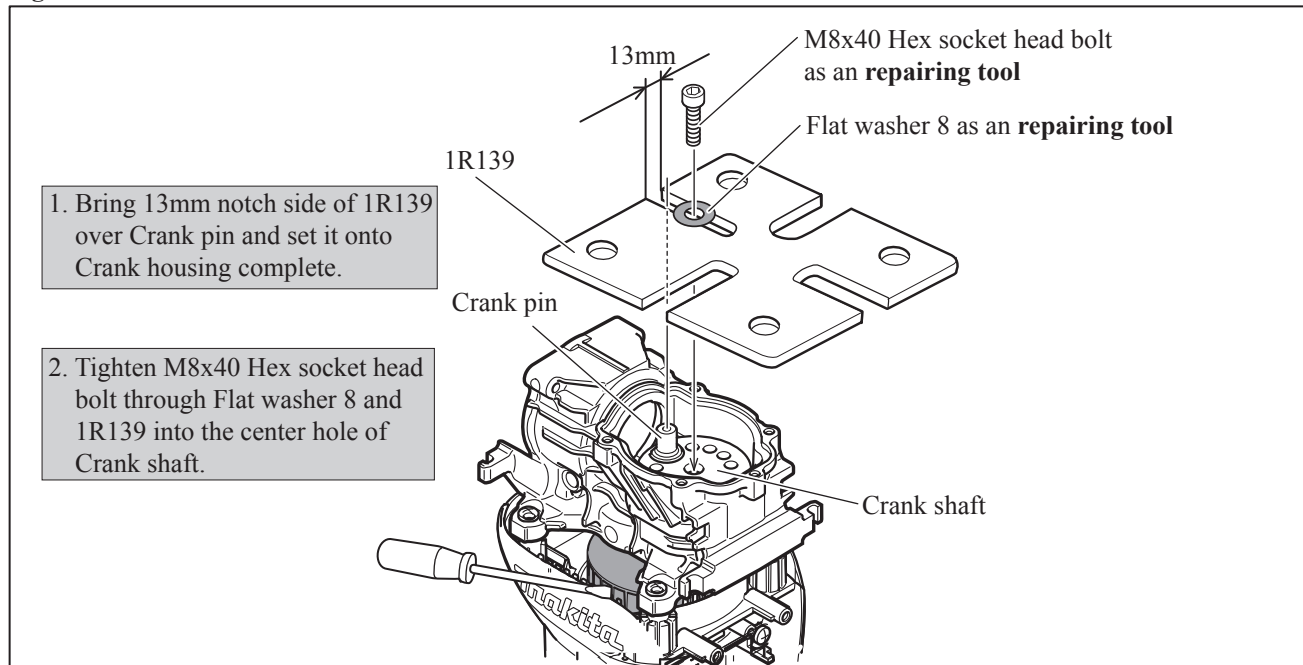


Fig. 21



► **Repair**

[3] DISASSEMBLY/ASSEMBLY

[3]-4. Crank section (cont.)

DISASSEMBLING

(6) Disassemble Crank shaft (Figs. 22 and 23).

Fig. 22

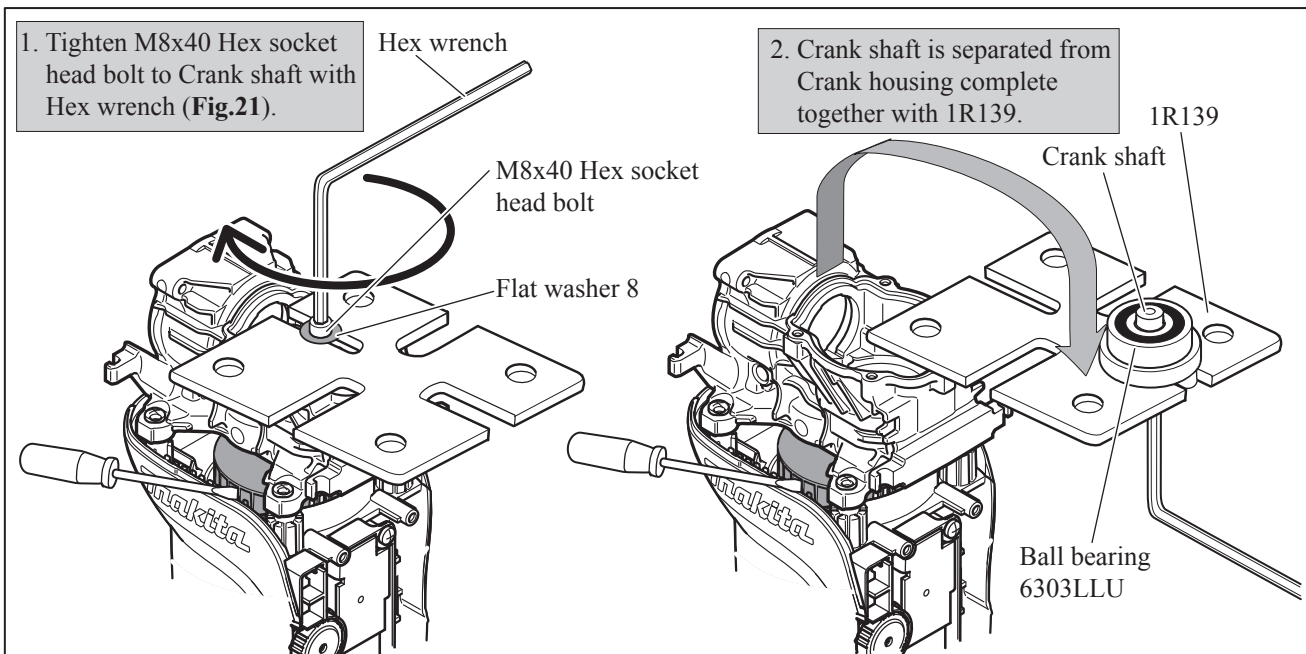


Fig. 23

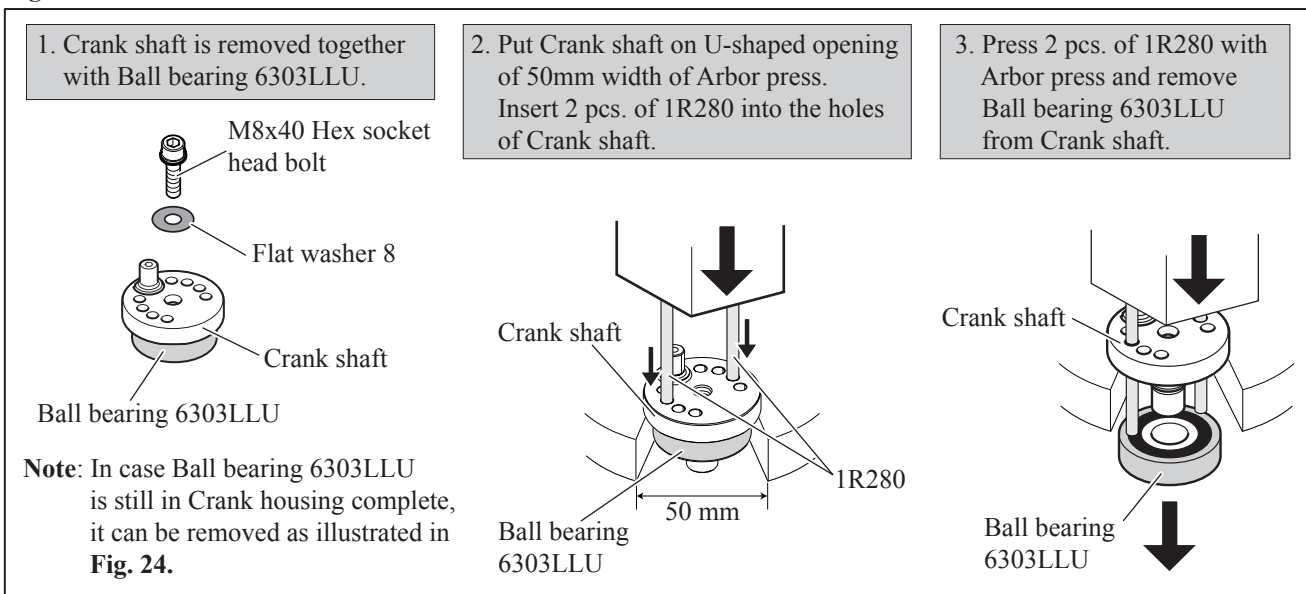
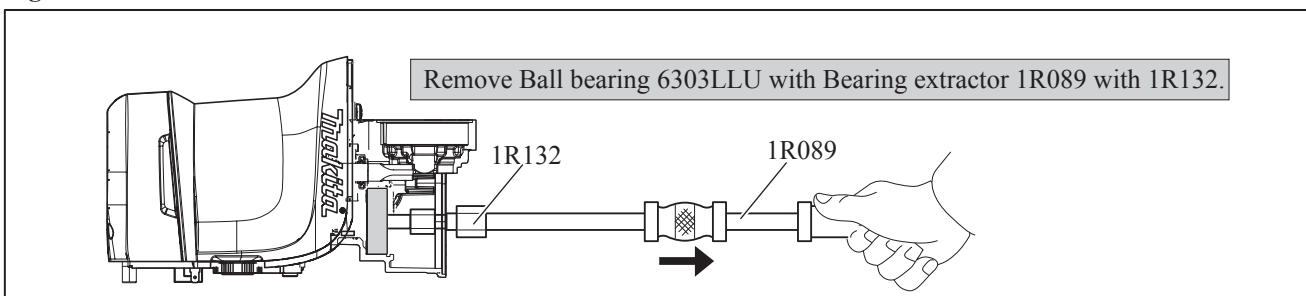


Fig. 24



► Repair

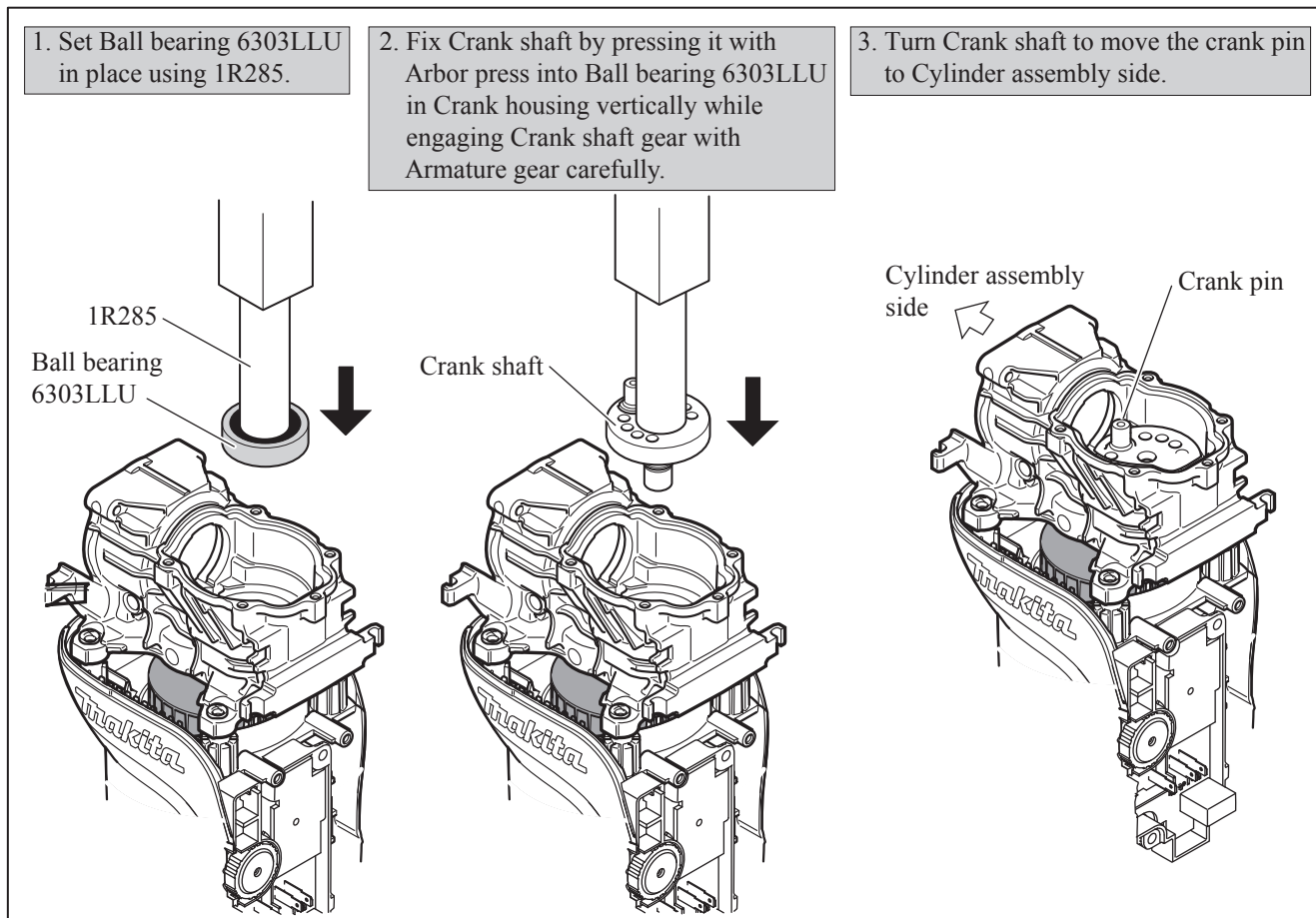
[3] DISASSEMBLY/ASSEMBLY

[3]-4. Crank section

ASSEMBLING

(1) Assemble Crank shaft (**Fig. 25**).

Fig. 25



(2) Take the reverse step of disassembling (**Figs. 19, 18 and 17**).

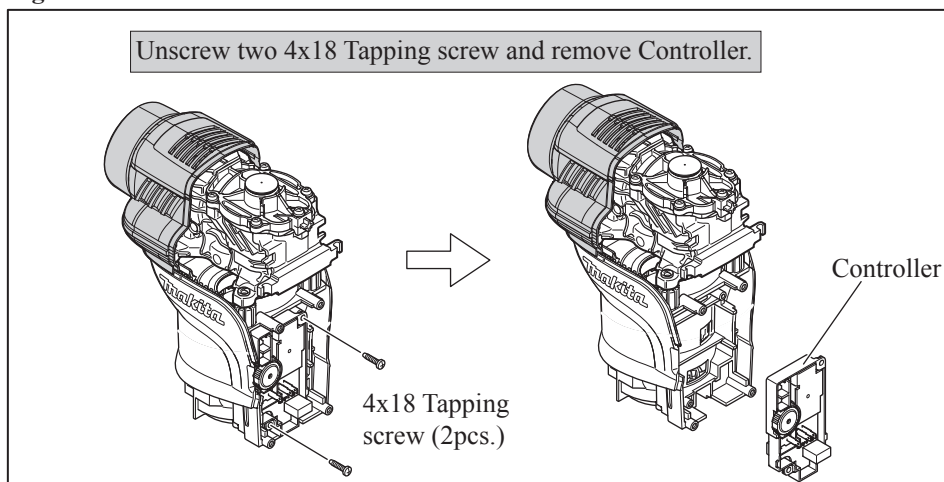
[3]-5. Controller

DISASSEMBLING

(1) Disassemble Handle section (**Fig. 2**).

(2) Remove Controller (**Fig. 26**).

Fig. 26



► Repair

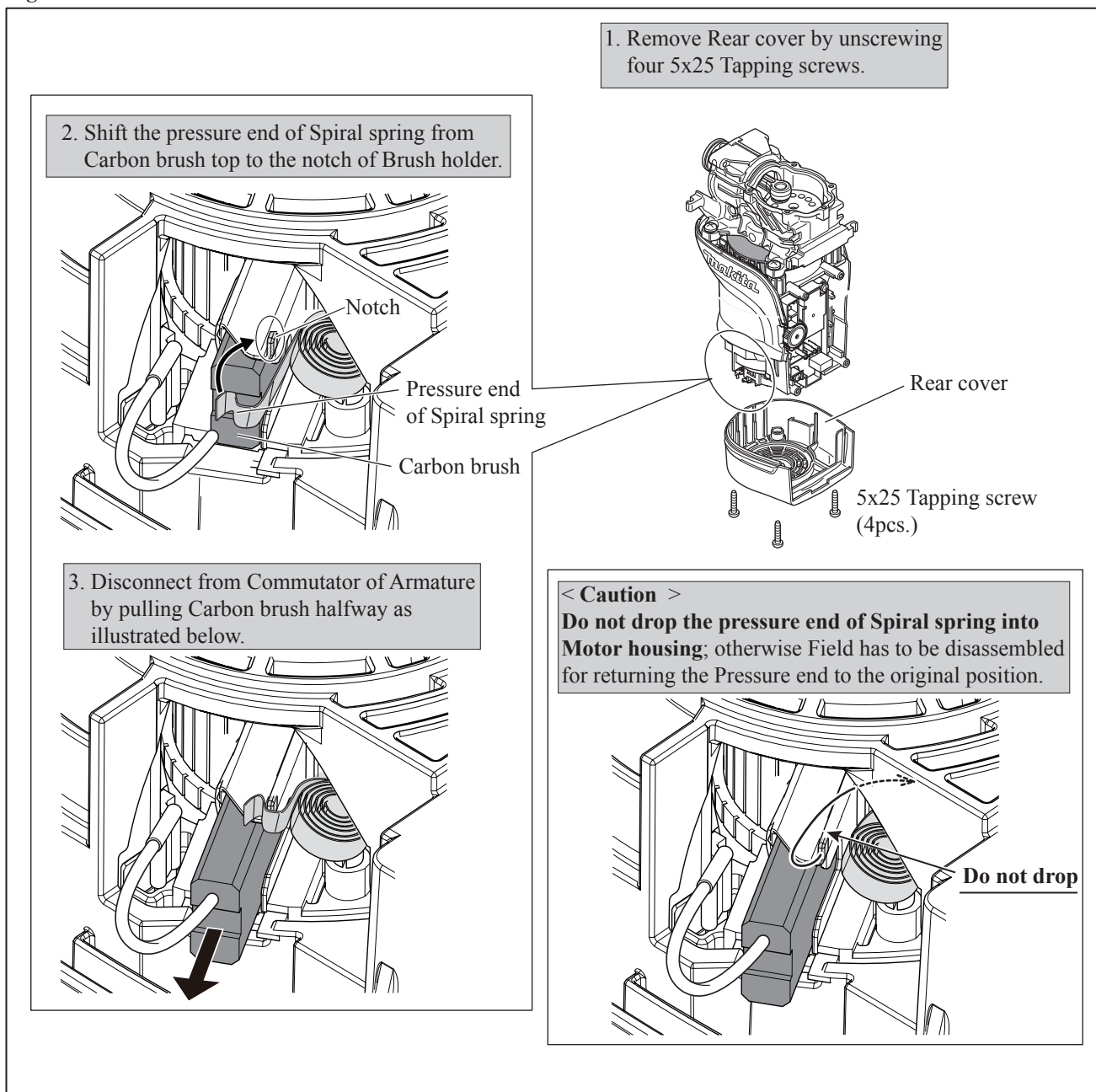
[3] DISASSEMBLY/ASSEMBLY

[3]-6. Armature

DISASSEMBLING

- (1) Disassemble Handle section (**Fig. 2**).
- (2) Remove Crank housing cover and Barrel section (**Fig. 6**).
- (3) Remove AVT from the both side of Crank housing complete (**Fig. 12**).
- (4) Disassemble Crank cap, Seal ring and Air pipe (**Fig. 17**).
- (5) Disconnect Carbon brush from Commutator of Armature (**Fig. 27**).

Fig. 27



► **Repair**

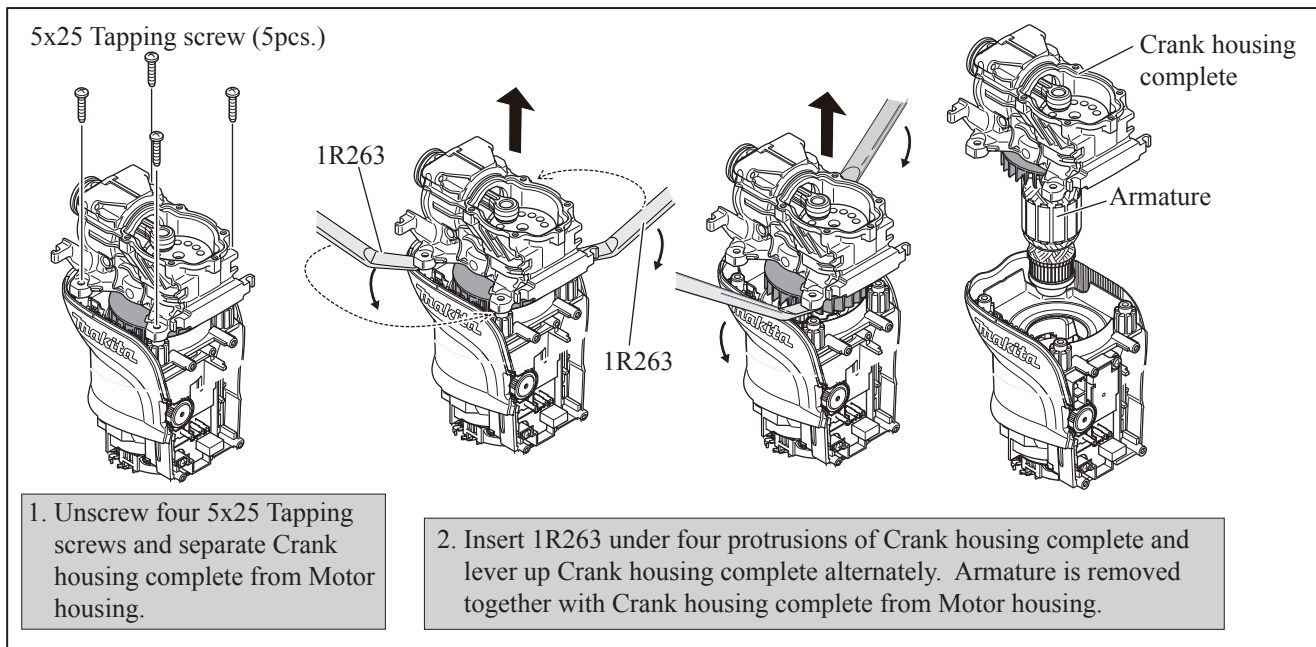
[3] DISASSEMBLY/ASSEMBLY

[3]-6. Armature (cont.)

DISASSEMBLING

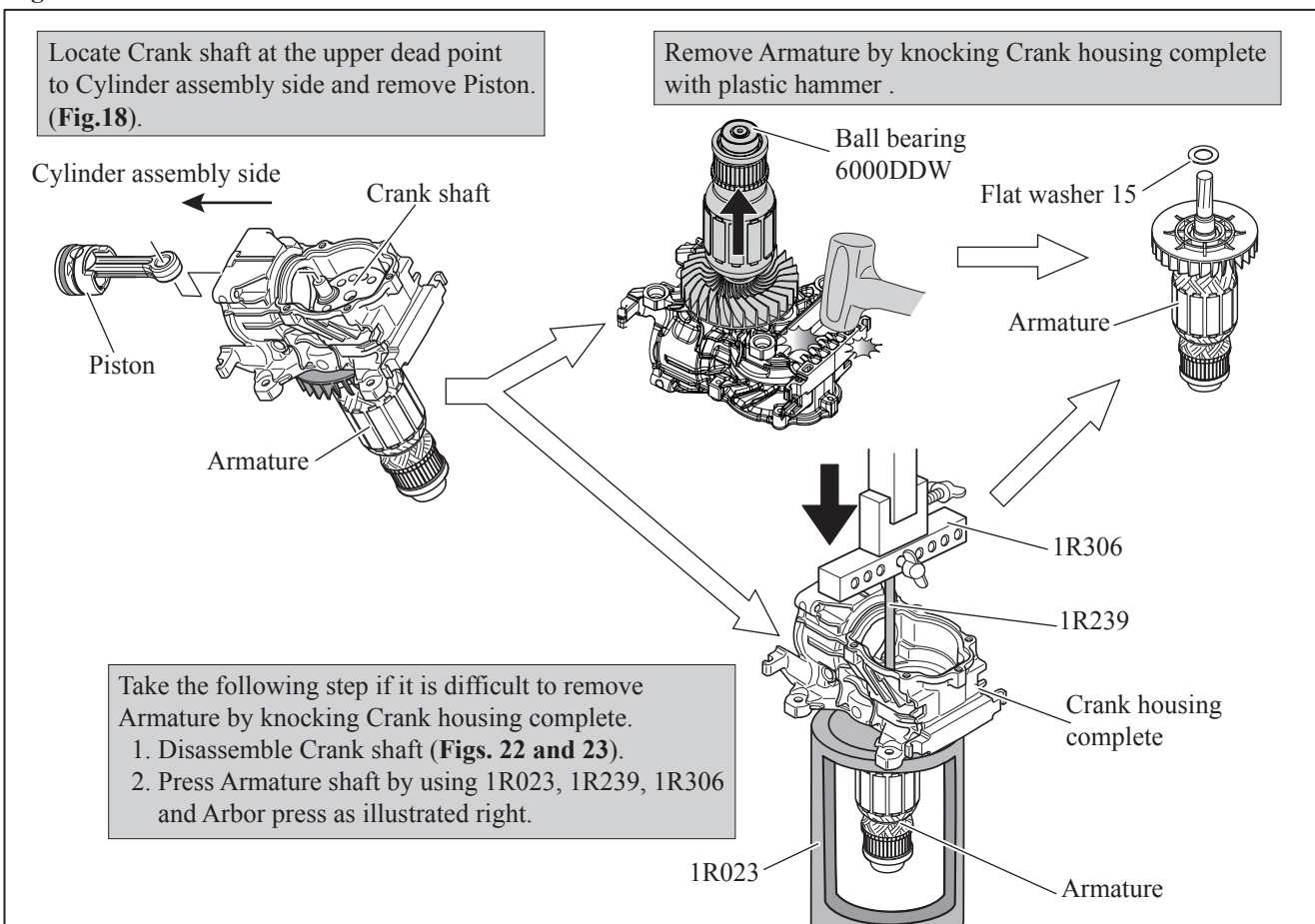
(6) Separate Motor housing from Crank housing complete (**Fig. 28**).

Fig. 28



(7) Remove Armature (**Fig. 29**).

Fig. 29



► Repair

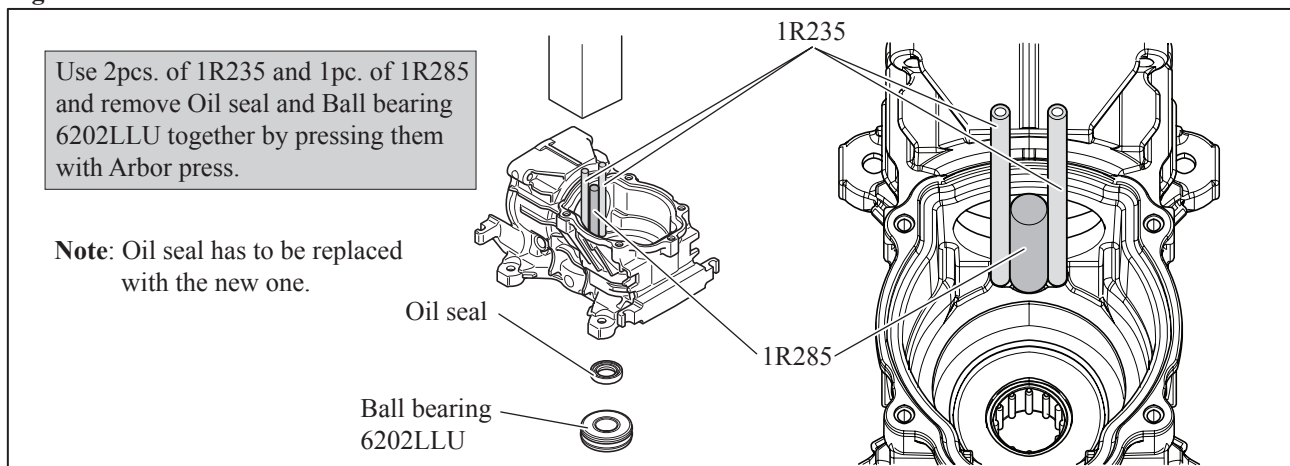
[3] DISASSEMBLY/ASSEMBLY

[3]-6. Armature (cont.)

DISASSEMBLING

(8) Remove Oil seal and Ball bearing 6202LLU from Crank housing complete (Fig. 30).

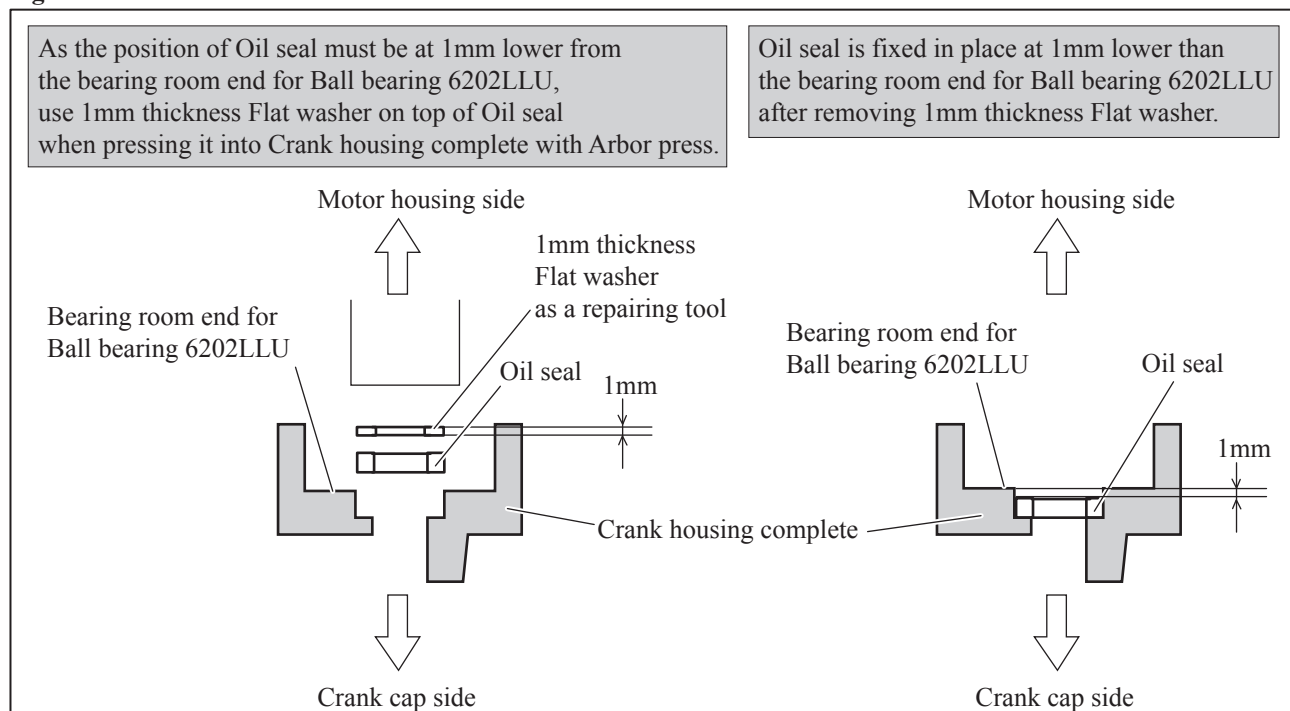
Fig. 30



ASSEMBLING

(1) Assemble Oil seal to Crank housing (Fig. 31).

Fig. 31



(2) Assemble Ball bearing 6202LLU (Fig. 30).

(3) Be sure to put Flat washer 15 between Armature fan and Ball bearing 6202LLU (Fig. 29).

(4) Take the reverse step of disassembling (Figs. 29 and 28).

► Repair

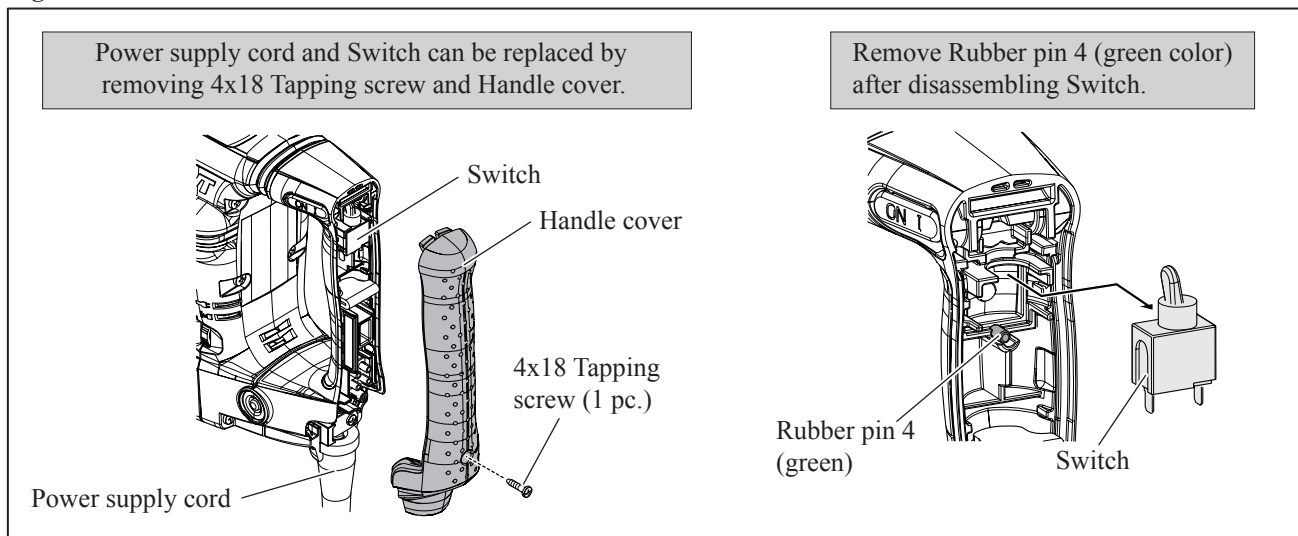
[3] DISASSEMBLY/ASSEMBLY

[3]-7. Switch

DISASSEMBLING

(1) Switch and Power supply cord can be replaced by removing Handle cover (Fig. 32).

Fig. 32



ASSEMBLING

(1) Assemble Switch to Handle complete (Fig. 32).

(2) Insert Pin 4 (green) after assembling Switch to hold it (Fig. 32).

► **Repair**

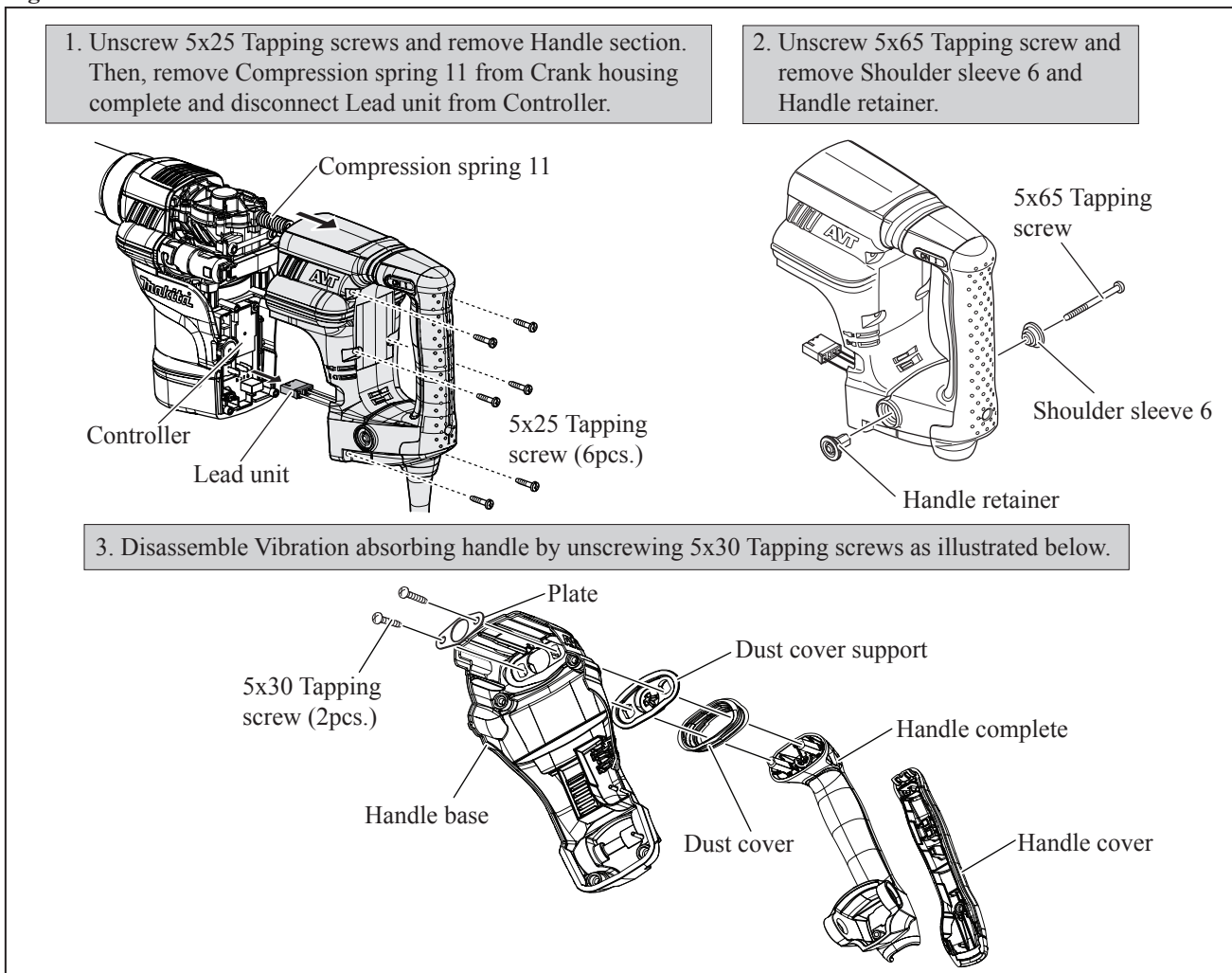
[3] DISASSEMBLY/ASSEMBLY

[3]-8. Handle section (Vibration absorbing handle)

DISASSEMBLING

(1) Handle section of HM1111C is different from that of HM1101C. Disassemble it as illustrated in **Fig. 33**.

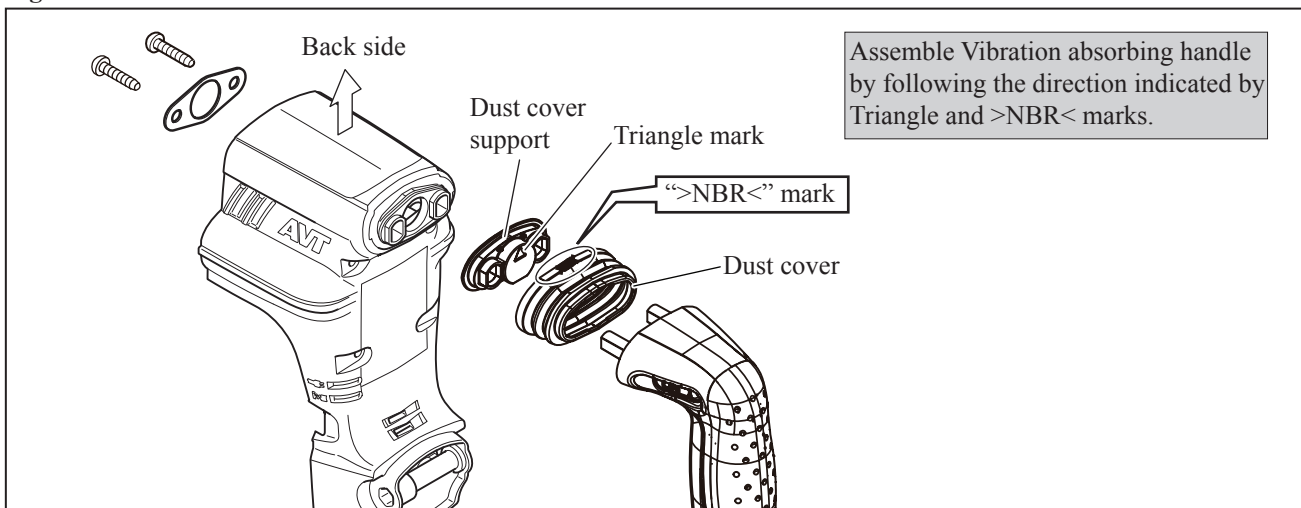
Fig. 33



ASSEMBLING

(1) Assemble Handle section (**Fig. 36**).

Fig. 36



► **Repair**

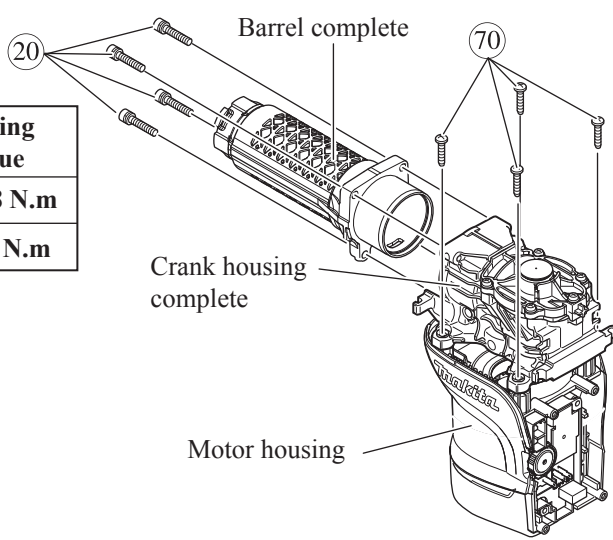
[3] DISASSEMBLY/ASSEMBLY

[3]-9. Fastening torque

Fasten the bolts and Screws with the fastening torque listed below (Fig. 36).

Fig. 36

Item No.	Size of Bolt / Screw	Used Q'ty	Fastening Torque
②①	M6 x 30 Hex socket head. Bolt	4	7.8 - 11.8 N.m
⑦①	5 x 25 Tapping Screw	4	3.0 - 3.5 N.m

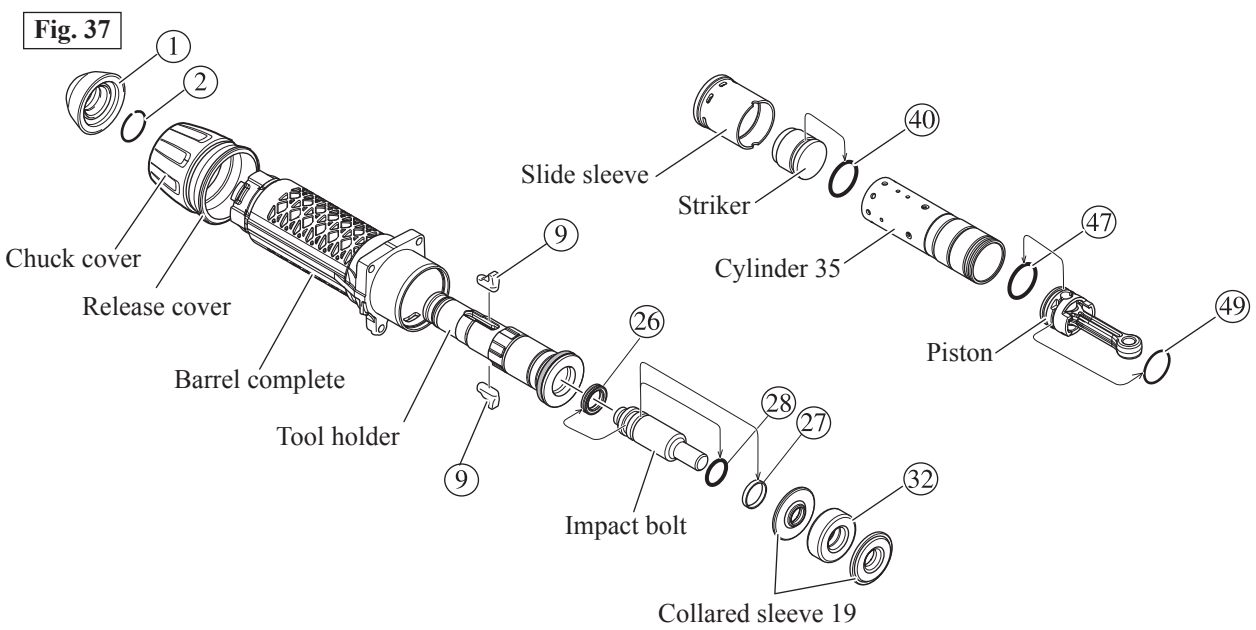


[4] MAINTENANCE PROGRAM

Do the maintenance for the following items when Carbon brush set is replaced for longer service life of the machine.

Item No.	Description	Item No.	Description
①	Tool holder cap	②	Ring spring 25
⑨	Tool holder	②⑥	X ring 18
②⑦	Fluoride ring 25	②⑧	O ring 20
③②	Rubber ring 20	④① ④⑦	O ring 27
④⑨	O ring 28		

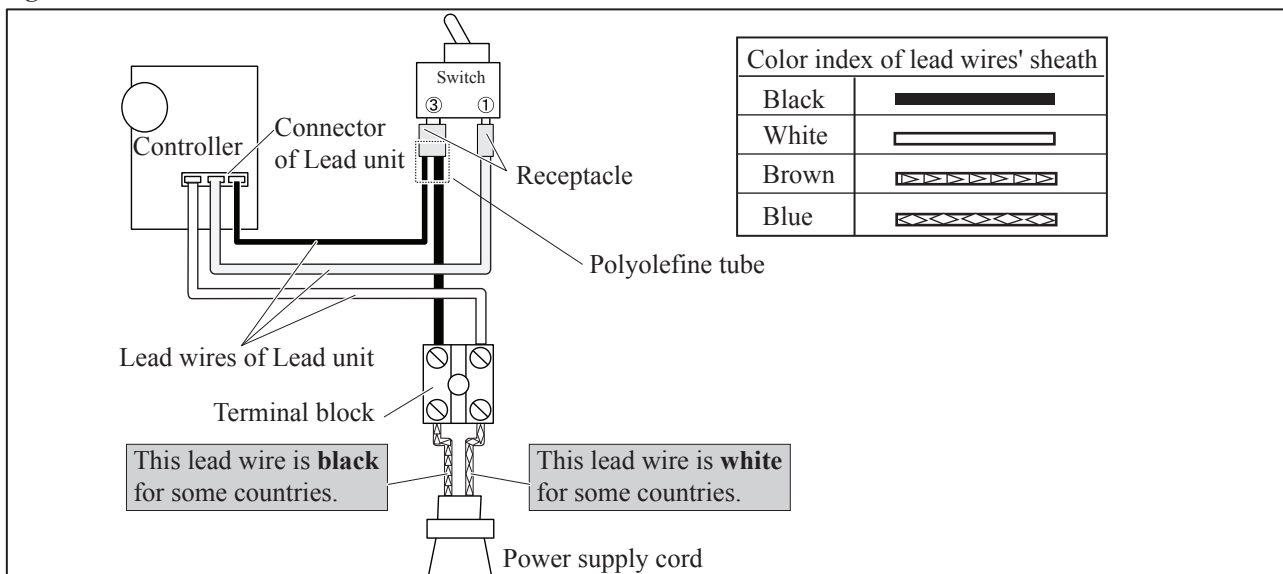
Fig. 37



Note: Replace the old grease from Inner housing and Gear housing complete to thenew grease.

► **Circuit diagram**

Fig. D-1



► **Wiring diagram**

Pigtail of Carbon brush

Assemble Carbon brush to the machine while paying attention to the following matters.

1. Pigtail portion has to be located on **Rear cover side** (Fig. D-2R).
2. Pigtail (Carbon brush's Lead wire) must be inflected to **Motor housing side** without crossing over the Line B toward Rear cover side (Fig. D-2R).

Fig. D-2R

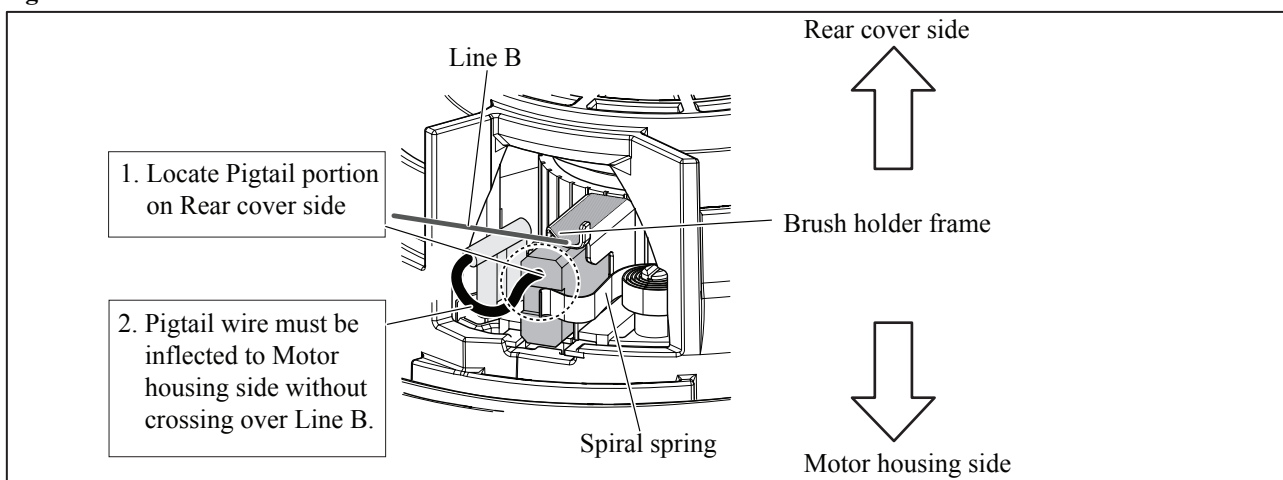
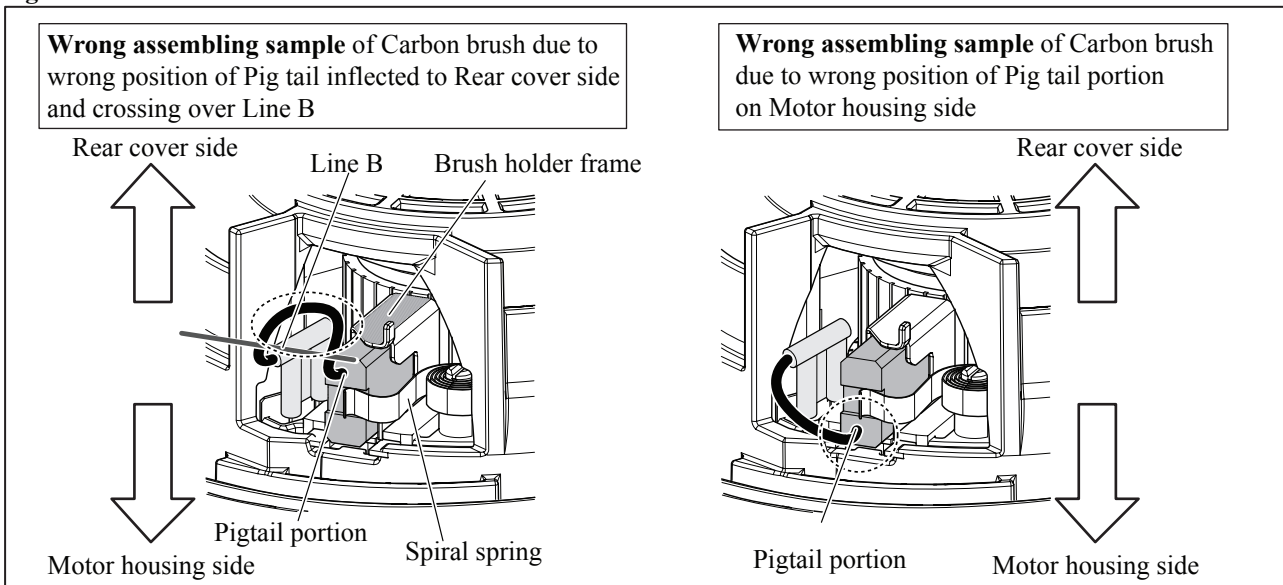


Fig. D-2F



▶ Wiring diagram

Fig. D-3

