

TECHNICAL INFORMATION



PRODUCT

P 1 / 17

Models No. ▶ HM0871C, HM0870C

Description ▶ Demolition Hammers

CONCEPT AND MAIN APPLICATIONS

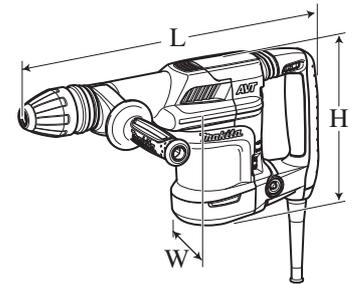
Models HM0871C and HM0870C are 5kg-class demolition hammers adapted for SDS-MAX bits, and developed from HM0860C, featuring:

- Same high work efficiency as HM0860C
- Higher durability achieved by using ball bearing for crank section
- AVT* for reduced vibration during chipping (HM0871C only)
- Suppression of motor speed during no-load for reduced vibration when idling

Listed below are the specification differences between the two models.

Model No.	HM0871C	HM0870C
AVT*	Yes	No
Vibration absorbing handle		
Suppression of motor speed during no-load		

*Anti-Vibration Technology using Active dynamic vibration absorber



[The image above is **HM0871C.**]

Dimensions: mm (")		
Model No.	HM0871C	HM0870C
Length (L)	466 (18-3/8)	449 (17-3/4)
Width (W)	116 (4-9/16)	109 (4-1/4)
Height (H)	230 (9)	

Specification

Voltage (V)	Current (A)	Cycle (Hz)	Continuous Rating (W)		Max. Output (W)
			Input	Output	
110	12	50/60	1,100	450	1,200
120	10	50/60	---	450	1,200
220	5.8	50/60	1,100	500	1,200
230	5.8	50/60	1,100	500	1,200
240	5.8	50/60	1,100	500	1,200

Model No.		HM0871C	HM0870C
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, Hong Kong, Korea: 4.0 (13.1); Brazil: 2.0 (6.6); Other countries: 5.0 (16.4)	
Net weight*1: kg (lbs)		5.6 (12.4)	5.1 (11.1)
Net weight*2: kg (lbs)		5.8 (12.8)	5.3 (11.6)

*1 Weight according to EPTA-Procedure 01/2003, with bar-shaped Side handle.

*2 Weight according to EPTA-Procedure 01/2003, with D-shaped Side handle.

Standard equipment

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

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

Optional accessories

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

► Repair

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

[1] NECESSARY REPAIRING TOOLS

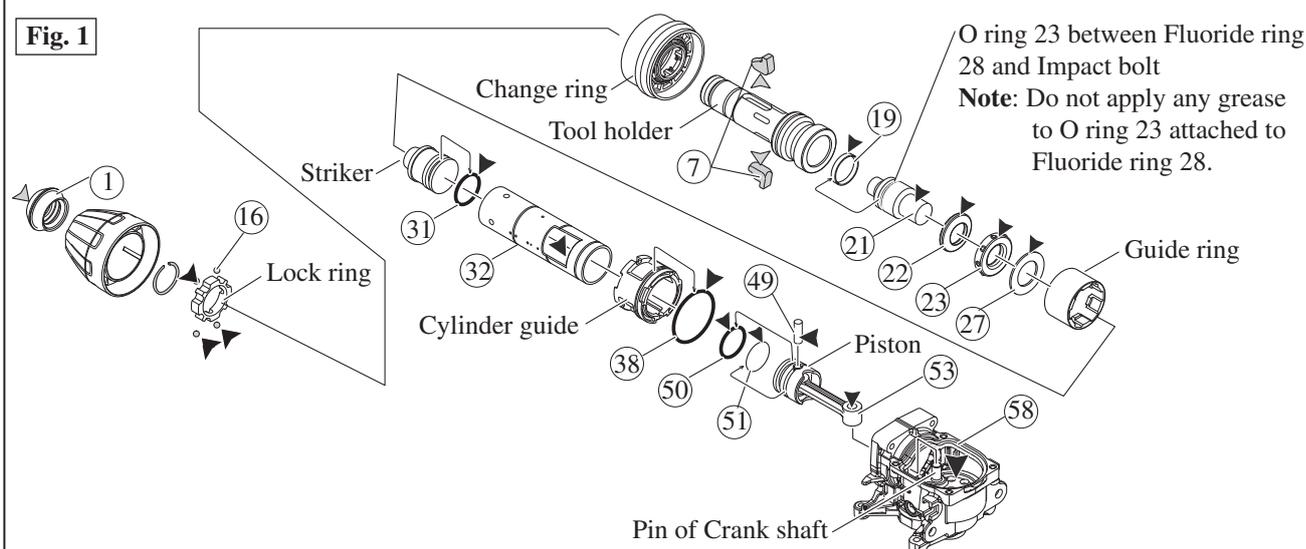
Code No.	Description	Use for
1R003	Retaining ring S pliers ST-2N	Removing Ring springs
1R005	Retaining ring R pliers RT-2N	Removing Retaining ring (INT) round R-42
1R023	Pipe ring (for Arbor press)	When it is difficult to remove Armature from Crank housing complete.
1R089	Bearing extractor	When it is difficult to remove Ball bearing 6203LLU.
1R132	Nose 15-20	Attachment for 1R089 to remove Ball bearing 6203LLU
1R139	Drill chuck extractor	Removing Crank shaft
—	M8x40 Hex socket head bolt	
—	Flat washer 8	
1R212	Tip for Retaining ring pliers	Attachment for 1R003 to remove Ring springs
1R214	Taper sleeve	Fitting Fluoride ring on Impact bolt
1R229	1/4” Hex shank bit for M5	Unscrewing/ screwing M5 size Hex socket head bolt
1R230	1/4” Hex shank bit for M6	Unscrewing/ screwing M6 size Hex socket head bolt
1R239	Round bar for Arbor 10-100	When it is difficult to remove Armature from Crank housing complete.
1R269	Bearing extractor	Removing Ball bearing 608DDW from Armature’s commutator end
1R288	Screwdriver magnetizer	Magnetizing screwdriver when removing Steel balls
1R291	Retaining ring S and R pliers	Removing Ring spring 34 when disassembling Barrel section
1R306	Ring spring removing jig	When it is difficult to remove Armature from Crank housing complete.
1R363	Ring spring removing tool	Removing Ring spring 25

[2] LUBRICATIONS

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

Item No.	Description	Portion to lubricate	Lubricant	Amount	
①	Tool holder cap	Lip portion	Makita grease N.No.2 ▼	a little	
⑦	Tool retainer	Belly portion where Hammer bit contacts			
⑬	Steel ball 4.8 (4pcs.)	Whole portion	Makita grease R.No.00 ▼	a little	
⑲	Fluoride ring 28	The surface where Tool holder contacts			
⑳	Impact bolt	Cylindrical portion of Striker side			
㉒	Ring 20	Whole portion			
㉓	Rubber ring 20				
㉔	Flat washer 23				
㉖	O ring 24	The surface where ㉗ Cylinder contacts.			7g
㉘	Cylinder 32	Inside between Striker and Piston.			
㉙	O ring 46	Whole portion			a little
㉚	Pin 8				
㉛	O ring 26				
㉝	Connecting rod	The hole in which Crank shaft’s pin is inserted	20g		
㉞	Crank housing complete	Crank room			

Fig. 1



► **Repair**

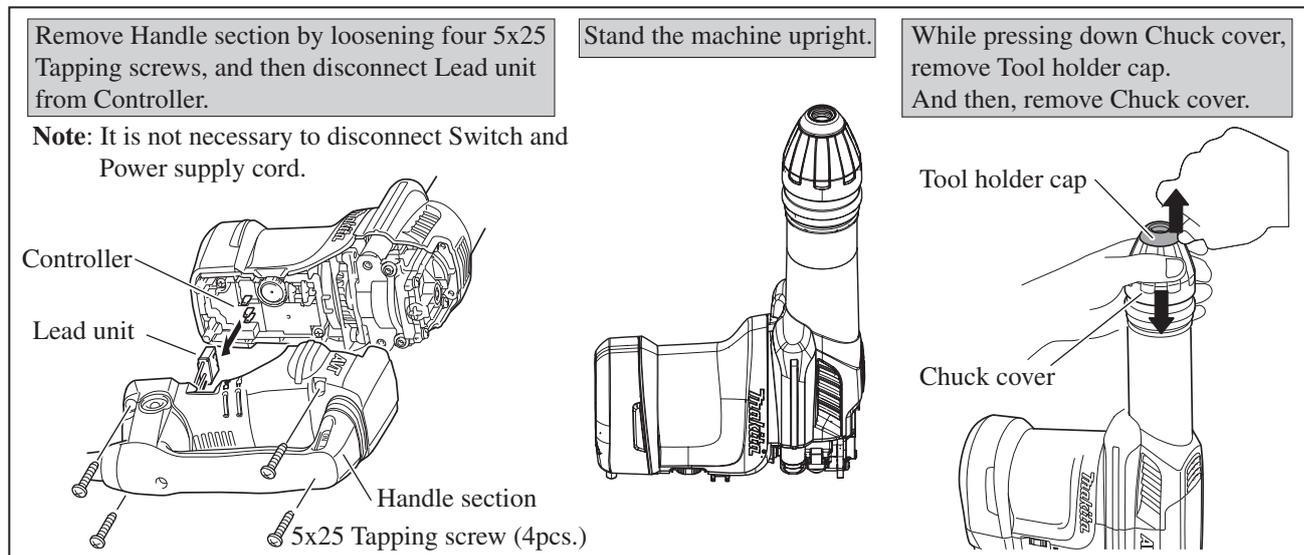
[3] DISASSEMBLY/ASSEMBLY

[3]-1. Chuck section

DISASSEMBLING

(1) Remove Tool holder cap as illustrated in **Fig. 2**.

Fig. 2



(2) Disassemble Chuck section as illustrated in **Figs. 3 and 4**.

Fig. 3

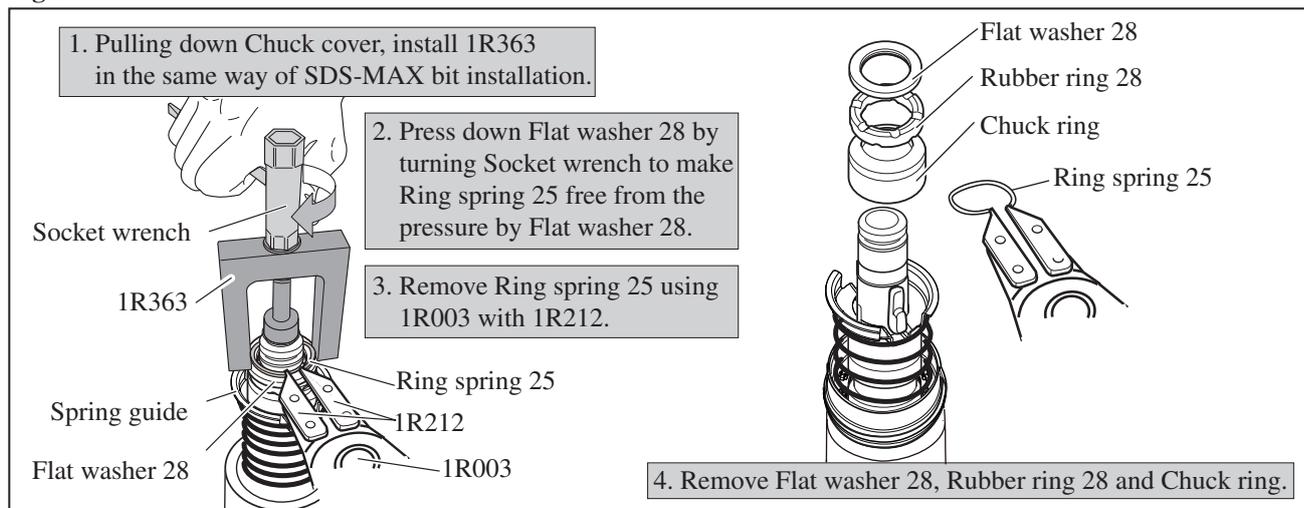
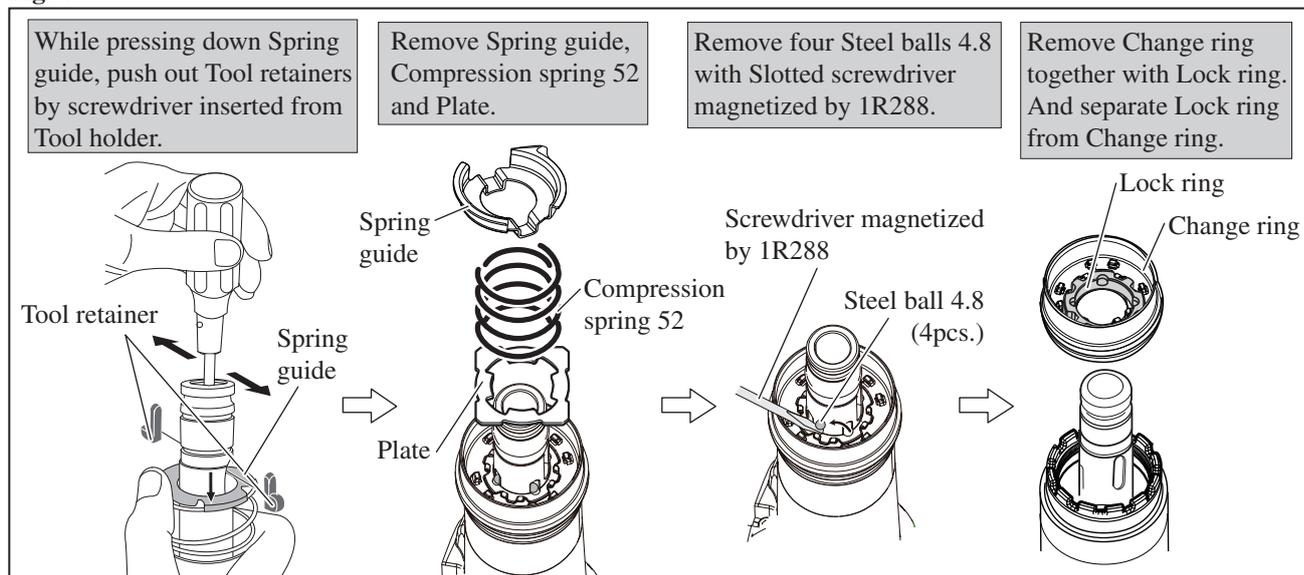


Fig. 4



► Repair

[3] DISASSEMBLY/ASSEMBLY

[3]-2 Tool holder section

DISASSEMBLING

- (1) Disassemble Chuck section. (Figs. 2, 3 and 4)
- (2) Removing Retaining ring R-42, disassemble Tool holder section and take out Impact bolt. (Fig. 5)
- (3) Remove Fluoride ring 28 and O ring 23 from Impact bolt when Fluoride ring 28 is worn out as illustrated in Fig. 6.

Fig. 5

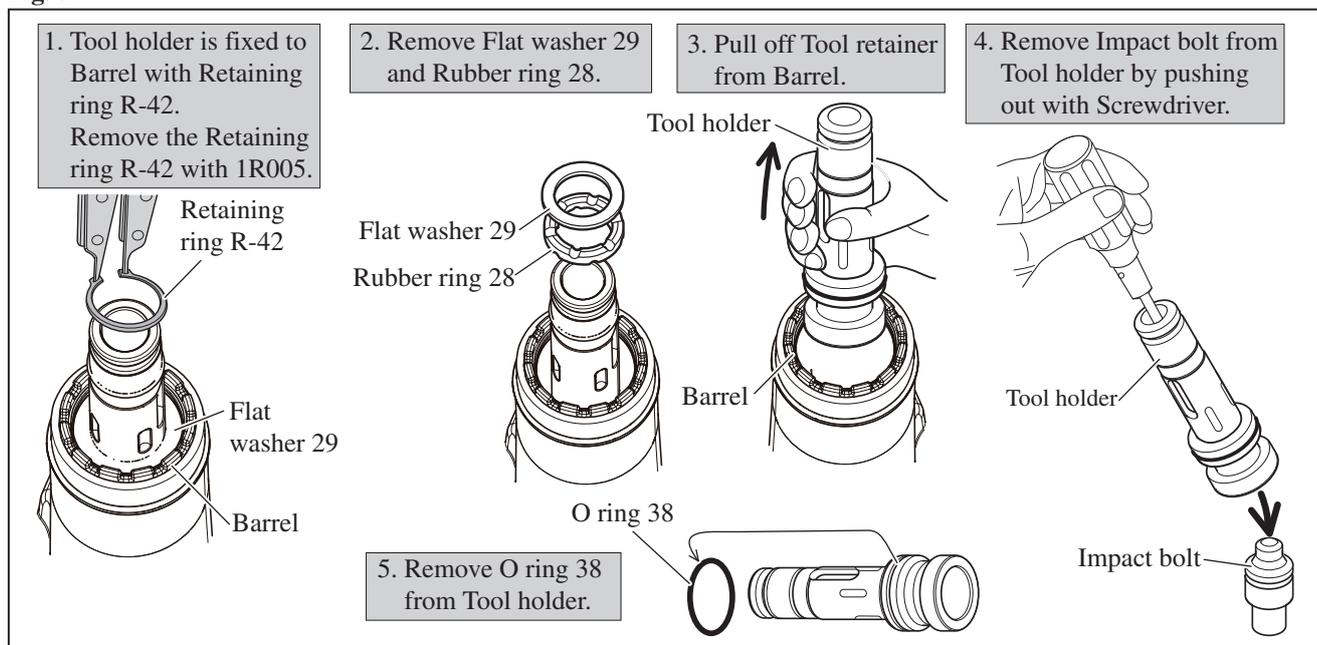
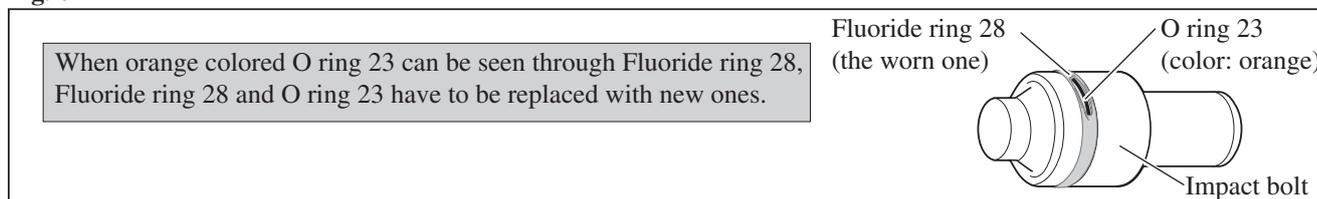


Fig. 6



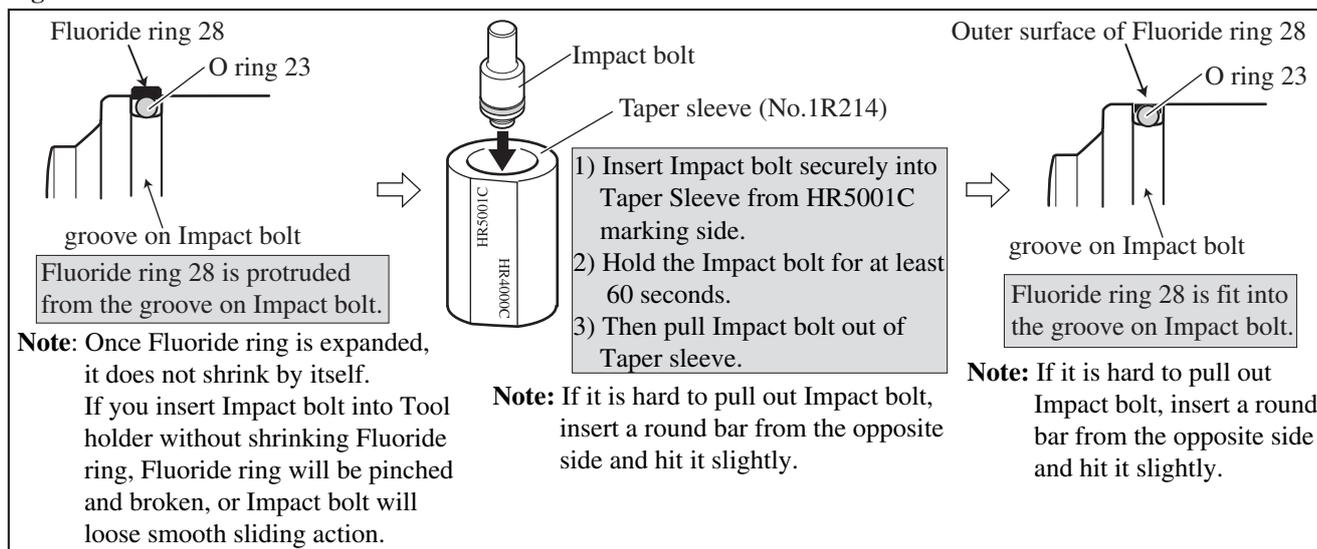
ASSEMBLING

- (1) When particles and dust are in the inside of Barrel and Crank housing, be sure to clean them up.
- (2) Fit O ring 23 into the groove of Impact bolt, and then put Fluoride ring 28 on O ring 23 as illustrated in Fig. 7.
- (3) Assemble Tool holder and Chuck section by taking the reverse step of Figs. 5, 4, 3 and 2.

Note: Do not apply any grease to O ring 23, or the Fluoride ring will not shrink even using Taper sleeve.

Be sure to apply Makita grease R.No.00 to the outer surface of Fluoride ring 28 after fitting into Impact bolt.

Fig. 7



► **Repair**

[3] DISASSEMBLY/ASSEMBLY

[3]-2 Tool holder section (cont.)

ASSEMBLING

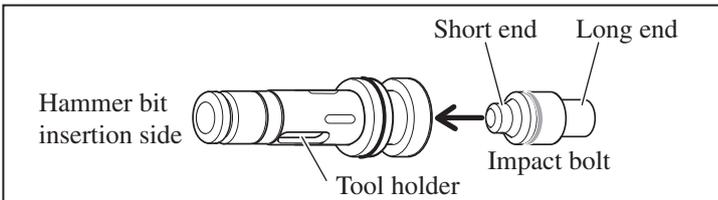
(2) Assemble Tool holder section by taking the reverse step of **Fig. 5**.

Insert Impact bolt into Tool holder.

Note: Face the short end of Impact bolt to Hammer bit insertion side. See **Fig. 8**.

(3) Assemble Chuck section by taking reverse step of disassembly. Refer to **Figs. 4, 3 and 2**.

Fig. 8



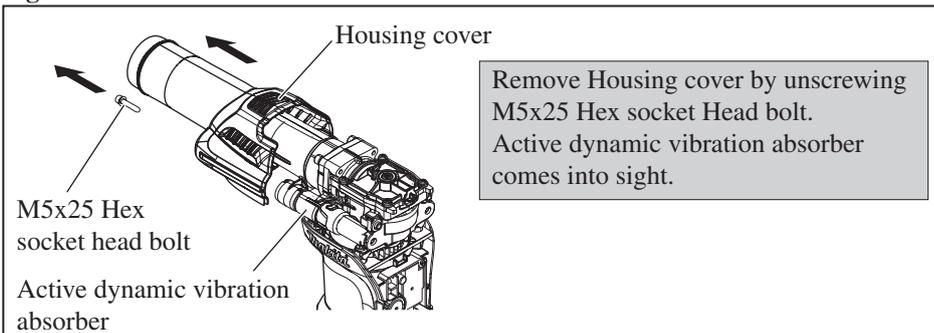
[3]-3 Active dynamic vibration absorber (exclusively for HM0871C)

DISASSEMBLING

(1) First, disassemble Chuck section as illustrated in **Fig. 2, 3 and 4**.

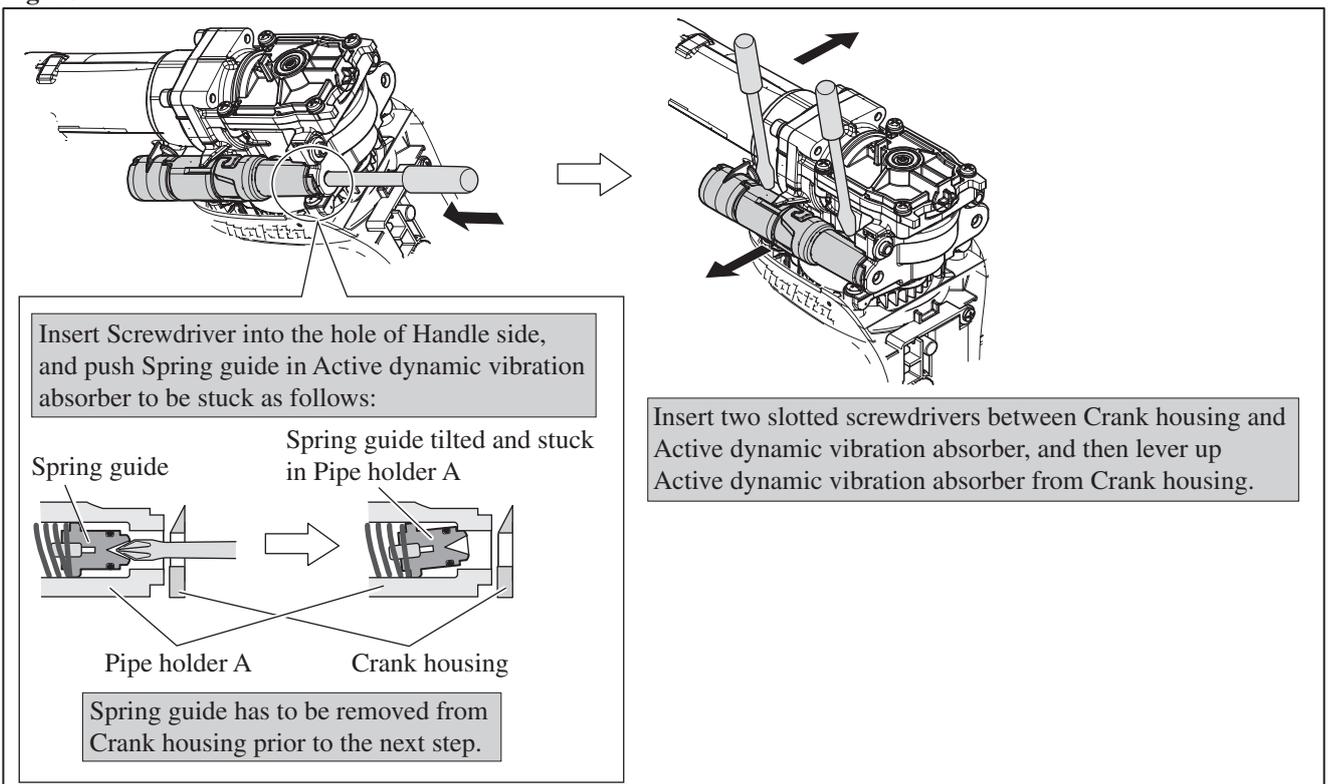
(2) Remove Housing cover as illustrated in **Fig. 9**.

Fig. 9



(3) Remove Active dynamic vibration absorbers from the both side of the machine as illustrated in **Fig. 10**.

Fig. 10



► **Repair**

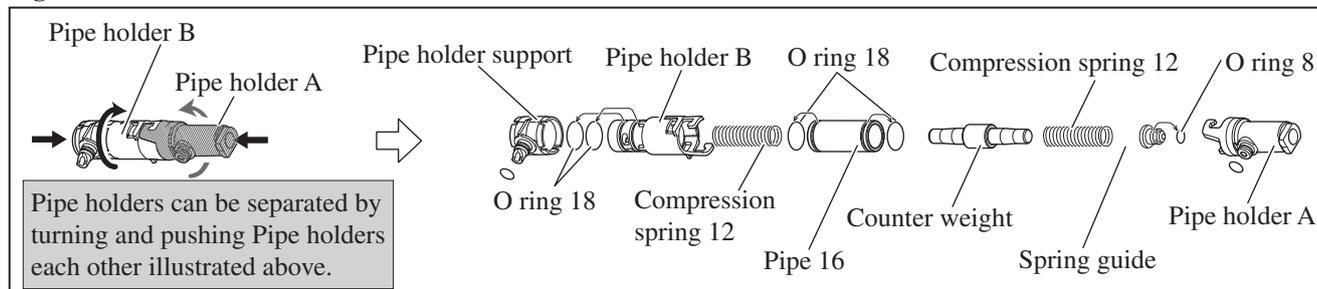
[3] **DISASSEMBLY/ASSEMBLY**

[3]-3 **Active dynamic vibration absorber (exclusively for HM0871C) (cont.)**

DISASSEMBLING

(4) The removed Active dynamic vibration absorber can be disassembled as illustrated in **Fig. 11**.

Fig. 11



ASSEMBLING

(1) Assemble a pair of Active dynamic vibration absorber. (**Fig. 11**)

(2) Before fitting Active dynamic vibration absorber to the machine, take the steps in **Figs. 12 and 13**.

Fig. 12

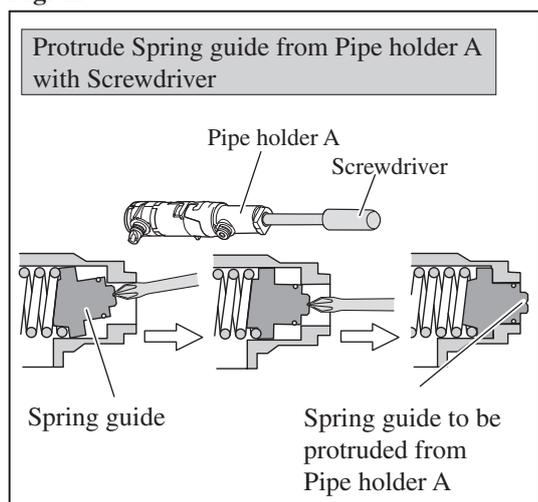
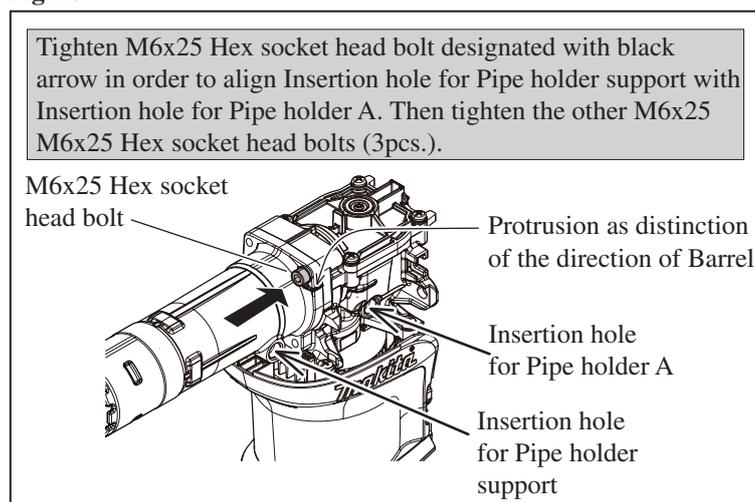
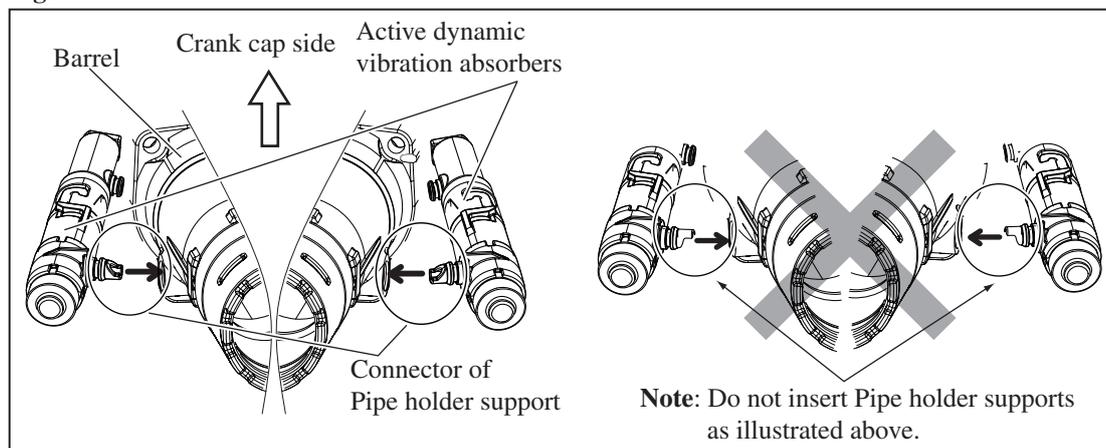


Fig. 13



(3) Insert Pipe holder supports of Active dynamic vibration absorbers to holes on Barrel and Crank housing. (**Fig. 14**) And push Active dynamic vibration absorbers parallel to the machine so as to pass the protrusion of Spring guides through the holes of Crank housing. (Refer to **Figs. 12 and 10**.)

Fig. 14



► **Repair**

[3] DISASSEMBLY/ASSEMBLY

[3]-4 Piston, Striker, Cylinder

DISASSEMBLING

- (1) Disassemble Chuck section as illustrated in **Figs 2, 3 and 4.**
- (2) Remove Housing cover as illustrated in **Fig. 9.** In case of HM0871C, disassemble Active dynamic vibration absorber as illustrated **Figs. 9 and 10.**
- (3) Striker and Piston can be disassembled as illustrated in **Figs. 15 and 16.**

Note: It is not necessary to remove Tool holder from Barrel.

Fig. 15

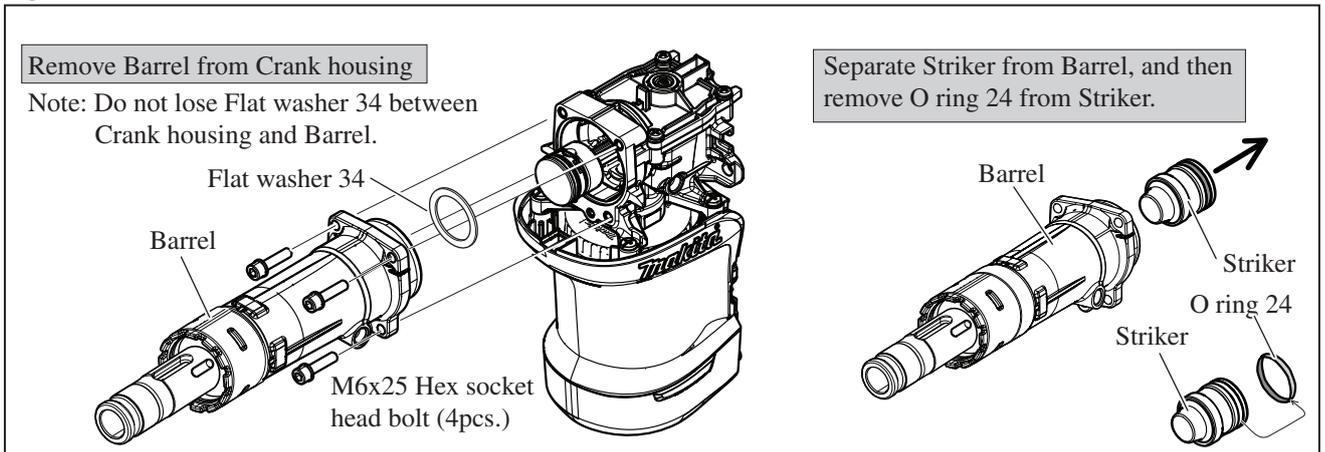
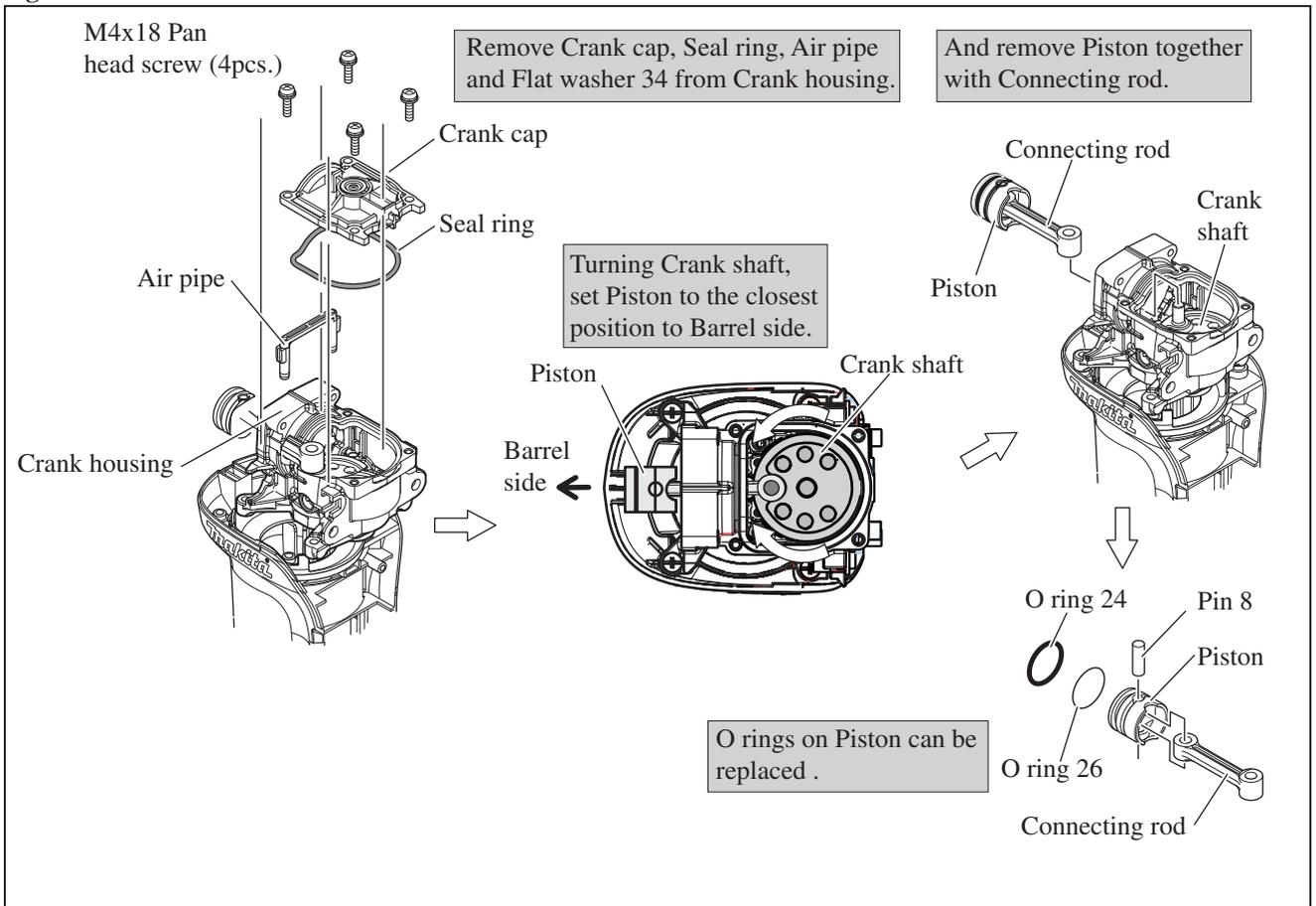


Fig. 16



► **Repair**

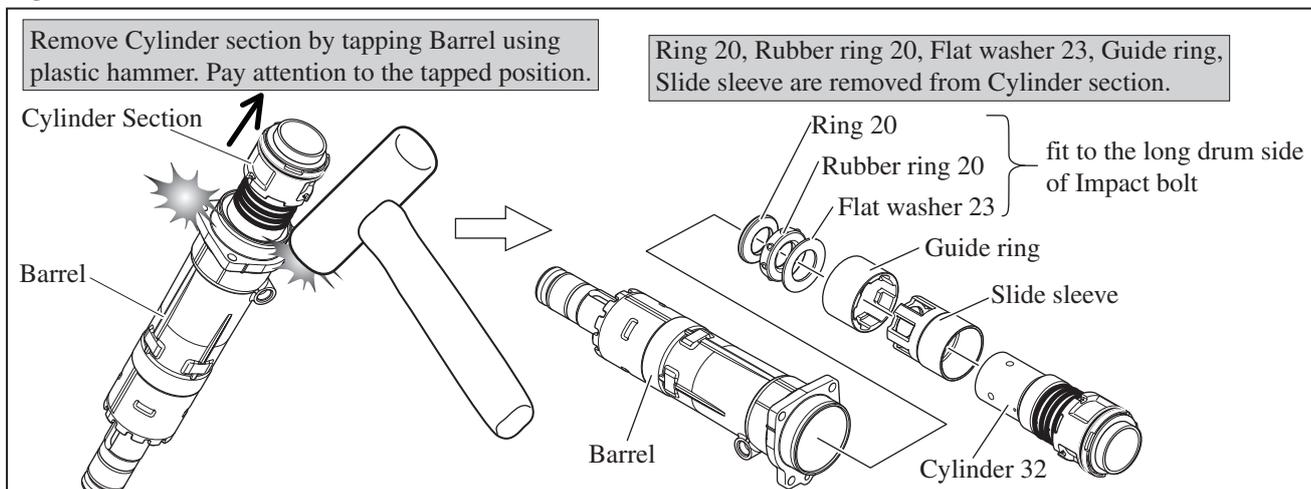
[3] DISASSEMBLY/ASSEMBLY

[3]-4 Piston, Striker, Cylinder (cont.)

DISASSEMBLING

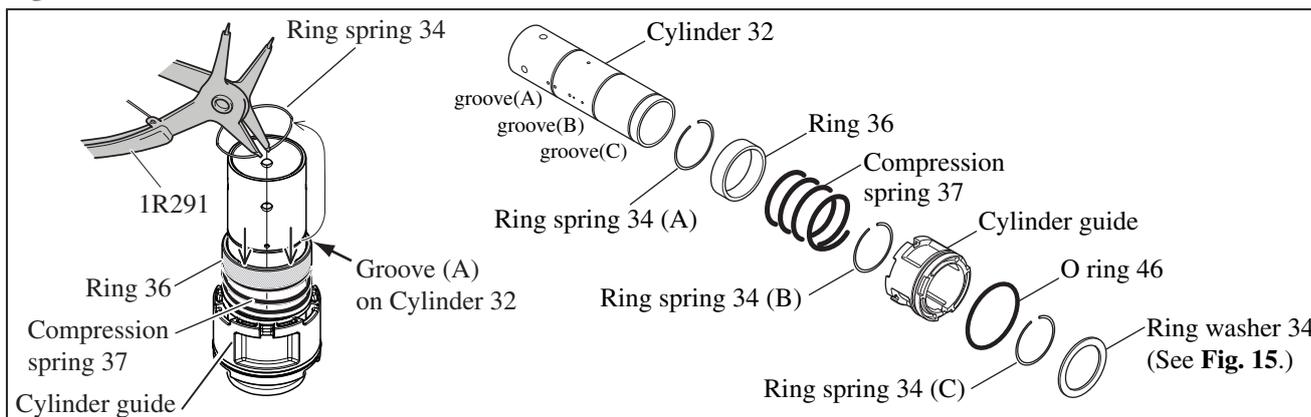
(4) Separate Cylinder section from Barrel. The parts on Tool holder side can be removed from Cylinder 32 as per the **right** illustration in **Fig. 17**.

Fig. 17



(5) Pressing down Ring 36, remove Ring spring 34 (A) from Groove (A) on Cylinder 32 with 1R291. The components of Cylinder section can be separated by removing Ring spring 34 (B) and (C). (**Fig. 18**.)

Fig. 18



► Repair

[3] DISASSEMBLY/ASSEMBLY

[3]-5 Crank shaft

DISASSEMBLING

- (1) Separate Barrel from Crank housing. (**Fig. 15**)
- (2) Remove Crank cap, Seal ring, Air pipe and Flat washer 34 from Crank housing. (the **left** illustration in **Fig. 16**)
- (3) Remove Piston together with Connecting rod (the **right** illustrations in **Fig. 16**)

Note: Turn Crank shaft so that the crank pin is at the closest position to Barrel side for easy removal of Connecting rod.

- (4) remove Crank shaft as illustrated in **Figs. 19** and **20**.

Fig. 19

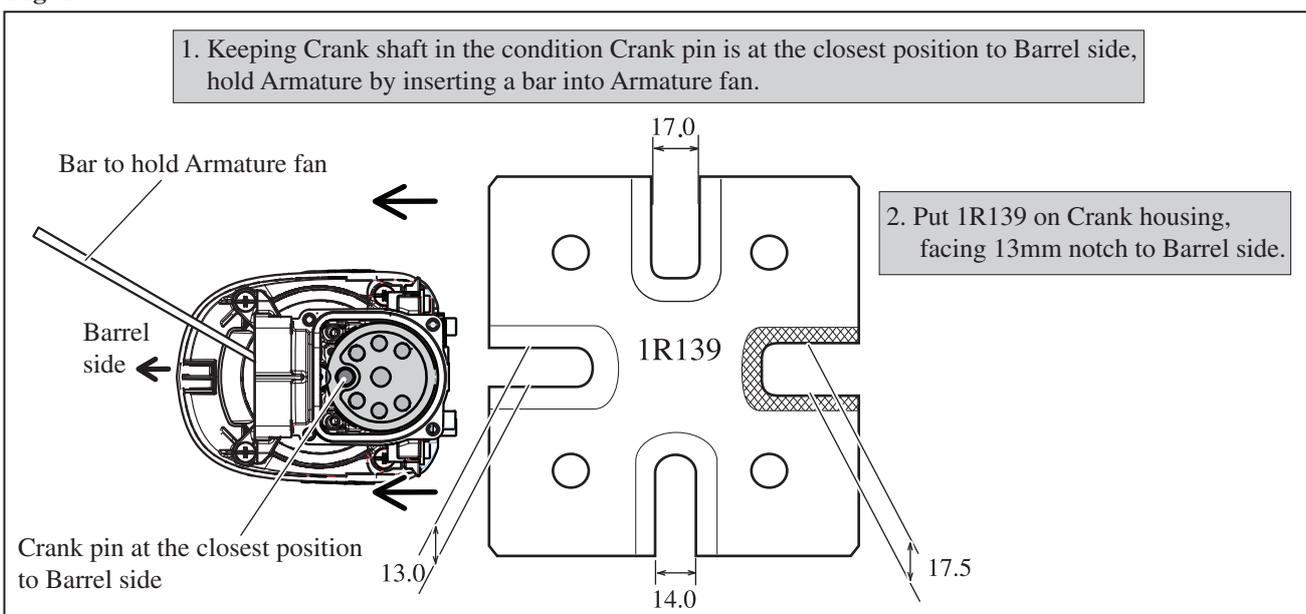
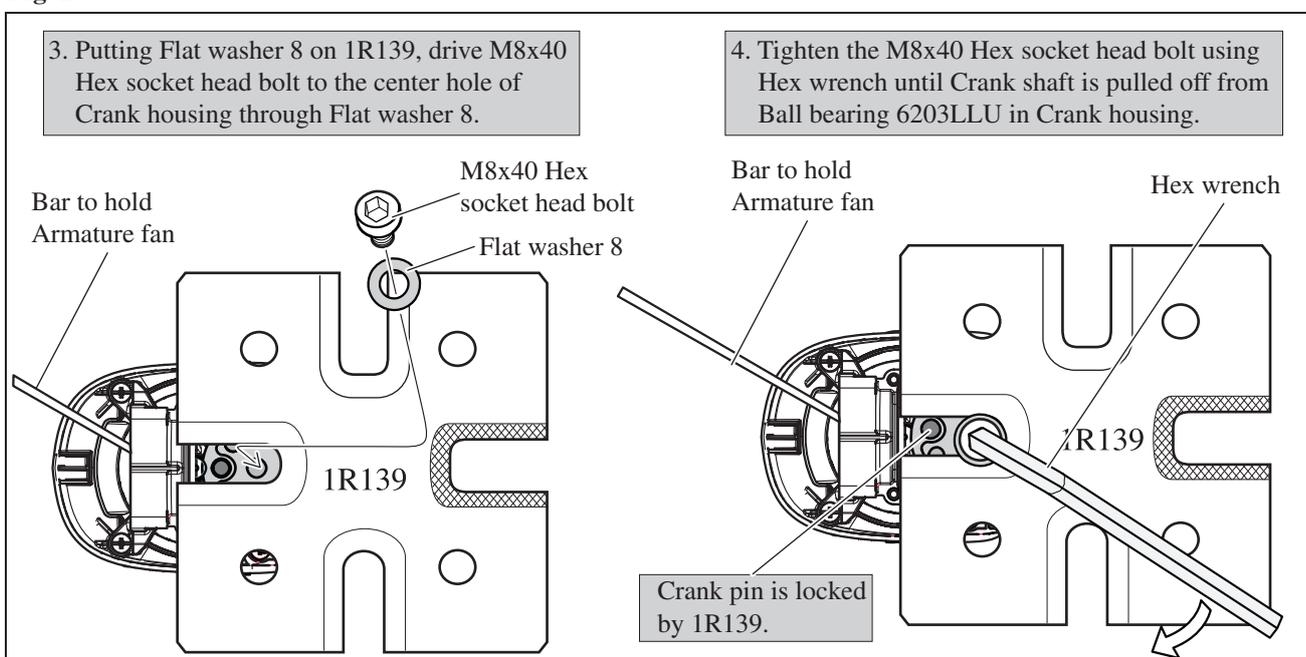


Fig. 20



► **Repair**

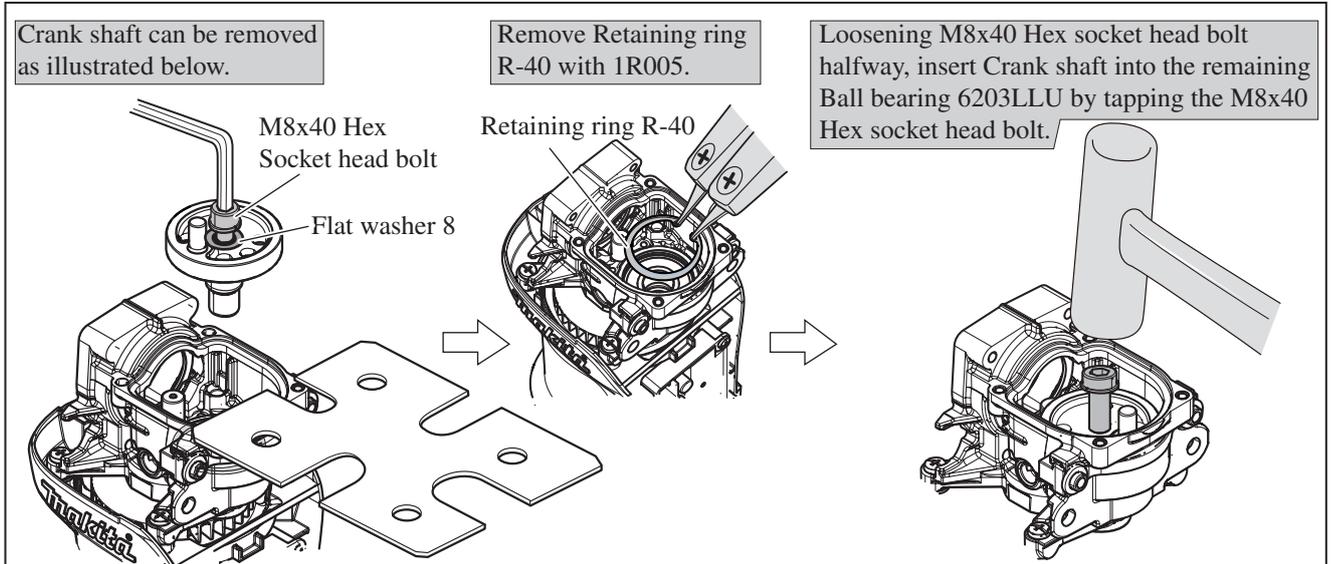
[3] DISASSEMBLY/ASSEMBLY

[3]-5 Crank shaft

DISASSEMBLING

- (1) Separate Barrel from Crank housing as per the **left** illustration in **Fig. 15**.
- (2) Remove Crank cap, Seal ring Air pipe and Flat washer 34 from Crank housing as per the **left** illustration in **Fig. 16**.
- (3) Remove Piston together with Connecting rod as per the **center** and **right** illustrations in **Fig. 16**.
- (4) remove Crank shaft as illustrated in **Figs. 19** and **20**.

Fig. 21



- (5) Lock Armature, and set 1R139, Flat washer 8 and M8x40 Hex socket head bolt as illustrated in **Fig. 20** again, tighten the M8x40 Hex socket head bolt with Hex wrench. So Ball bearing 6203LLU are removed as illustrated in **Fig. 22**. If it is difficult to remove as illustrated in Fig. 22, remove Ball bearing 6203LLU as illustrated in **Fig. 22A**.

Fig. 22

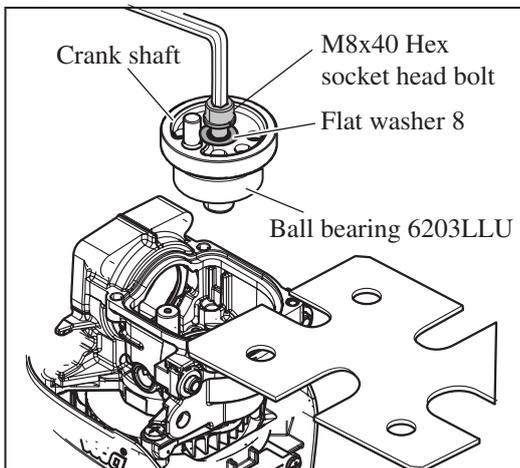
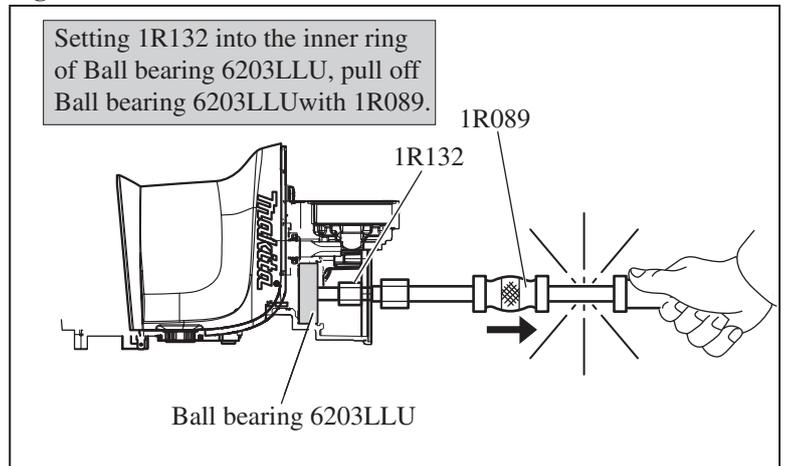


Fig. 22A



► Repair

[3] DISASSEMBLY/ASSEMBLY

[3]-5 Crank shaft (cont.)

ASSEMBLING

(1) Assemble Crank housing section as illustrated in **Fig.s 23**.

Be careful that Crank shaft of HM0870C is different from that of HM0871C as illustrated in **Fig. 24**.

(2) Assemble Piston to Crank pin while referring to the **right** illustration in **Fig. 16**.

(3) Assemble Air pipe, Seal ring and Crank cap. And secure them with M4x18 Pan head screws. Refer to the **left** illustration in **Fig. 16**.

Fig. 23

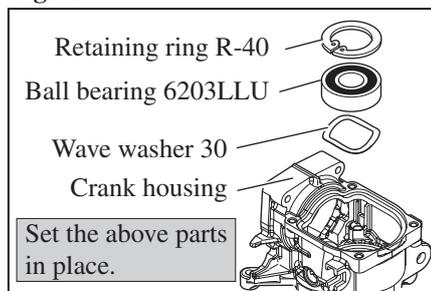
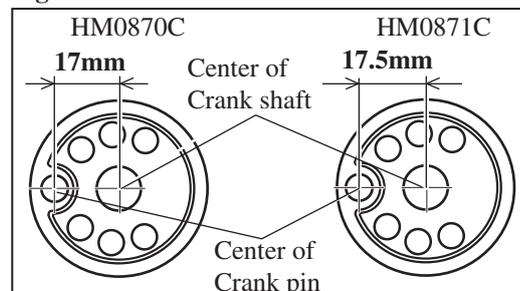


Fig. 24

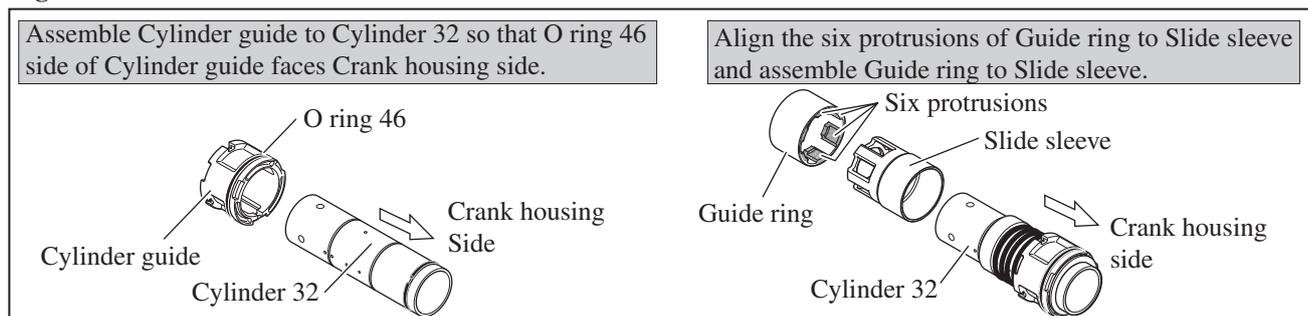


[3]-6 Cylinder section

ASSEMBLING

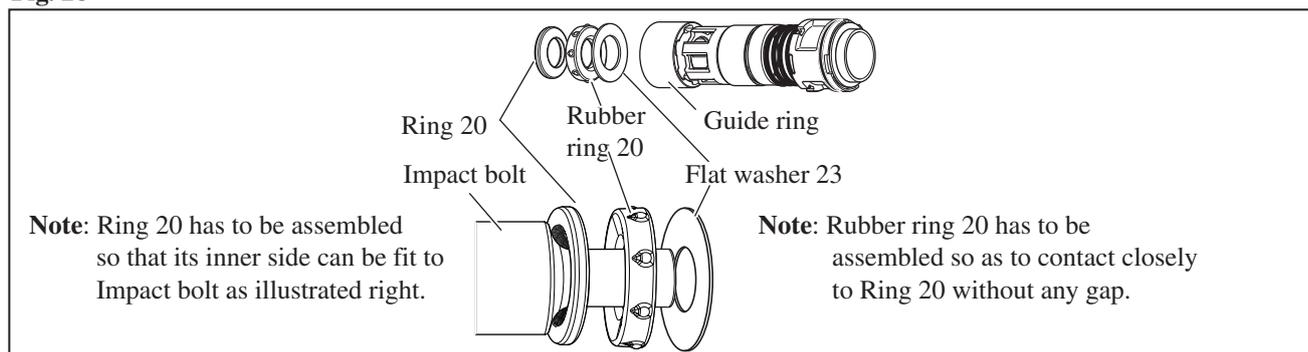
(1) Cylinder section can be assembled as illustrated in **Fig. 25**.

Fig. 25



(2) When assembling the parts which accept Impact bolt, put them into Guide ring as illustrated in **Fig. 26**.

Fig. 26



(3) Assemble Cylinder section to Barrel as illustrated in **Fig. 27**.

(4) Assemble Flat washer 34 into Crank housing, and then assemble Barrel to Crank housing as illustrated in **Fig. 28**.

Fig. 27

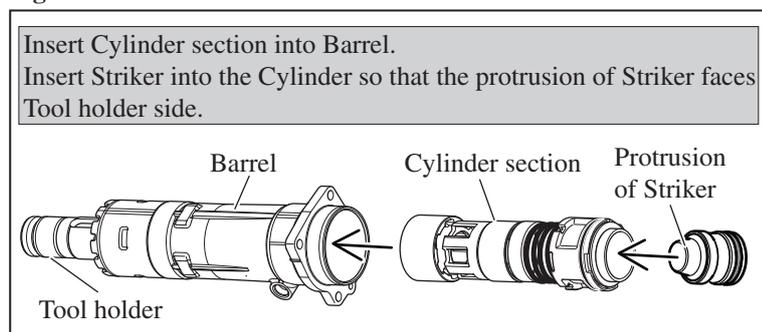
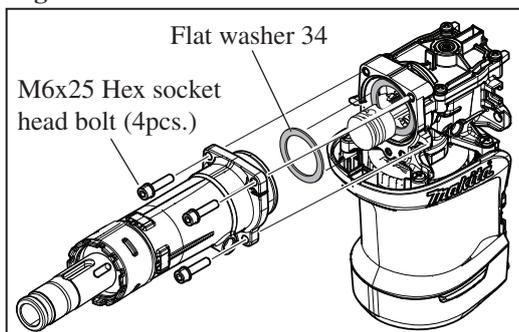


Fig. 28



► **Repair**

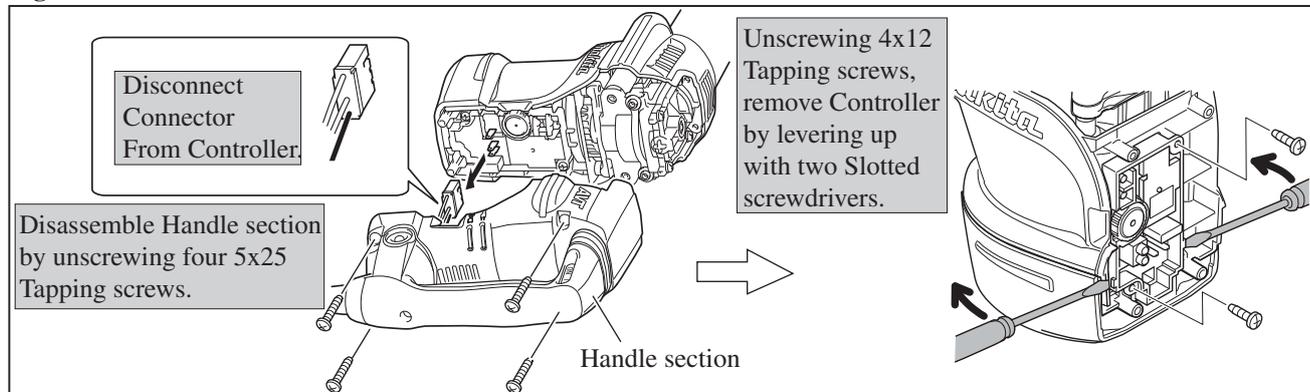
[3] DISASSEMBLY/ASSEMBLY

[3]-7 Controller

DISASSEMBLING

Controller can be removed as illustrated in **Fig. 29**.

Fig. 29

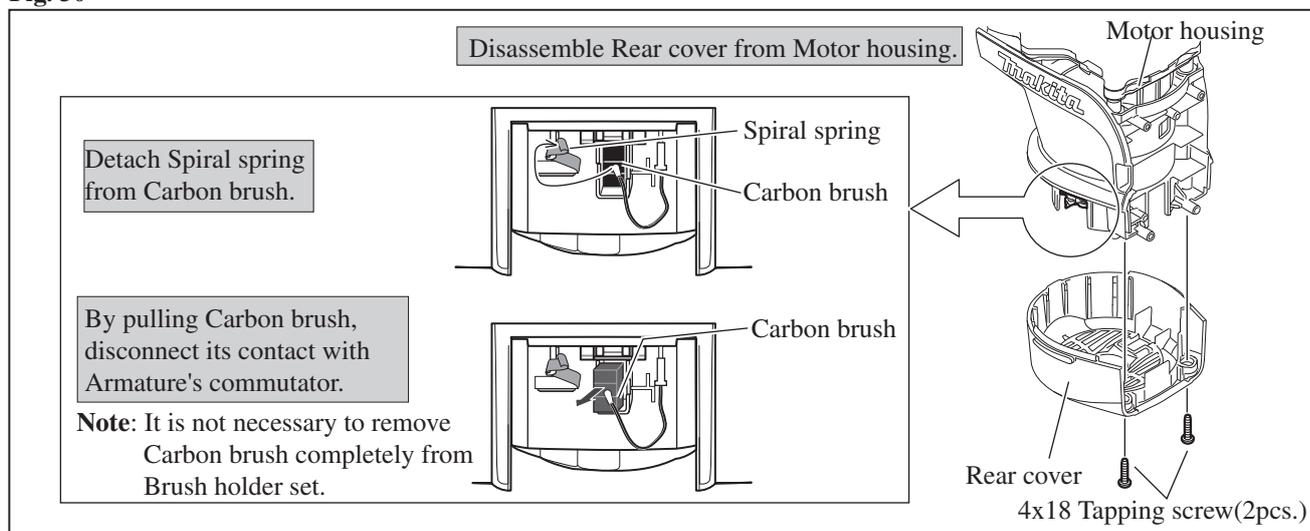


[3]-8 Armature

DISASSEMBLING

- (1) Disassemble Chuck section as illustrated in **Fig. 2**, **Fig. 3**, **Fig. 4**. However, no need to remove Tool holder.
- (2) Disassemble Housing cover as illustrated in **Fig. 9**.
- (3) In case of HM0871C, remove Active dynamic vibration absorber after removing Housing cover. See **Fig. 10**.
- (4) Disconnect Carbon brush from Armature's commutator as illustrated in **Fig. 30**.

Fig. 30



- (5) Separate Motor housing by tapping with Plastic hammer as illustrated in **Fig. 31R**.

Fig. 31R

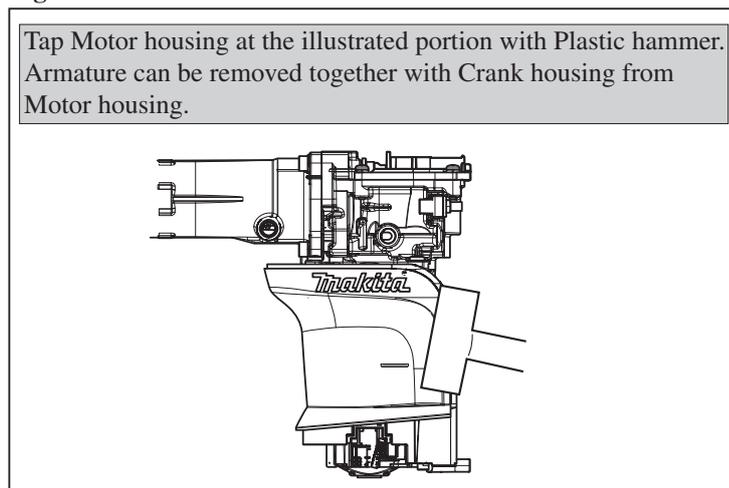
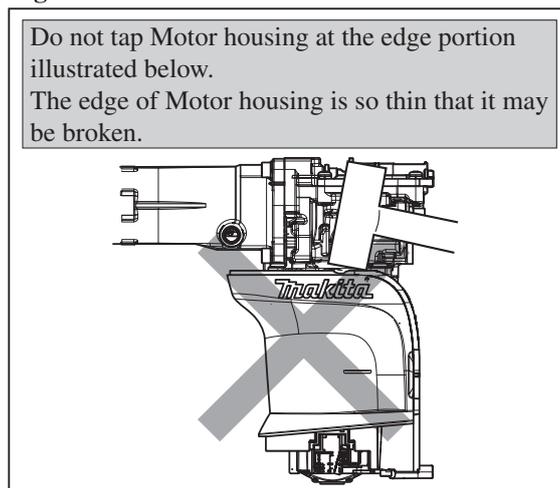


Fig. 31F



► **Repair**

[3] DISASSEMBLY/ASSEMBLY

[3]-8 Armature (cont.)

DISASSEMBLING

(6) Disassemble Armature from Crank housing as illustrated in **Fig. 32**.

If it is difficult to remove as illustrated in **Fig. 32**, Crank shaft has to be removed in the following process.

1. Disassemble Barrel, Cylinder section as illustrated in **Fig. 15**.
2. Disassemble Crank cap, Seal ring, Air pipe and Piston as illustrated in **Fig. 16**.
3. Remove Crank shaft from Crank housing as illustrated in **Figs. 19 and 20**.
4. Remove Armature using 1R306, 1R239, 1R023 and arbor press as illustrated in **Fig. 32A**.

Fig. 32

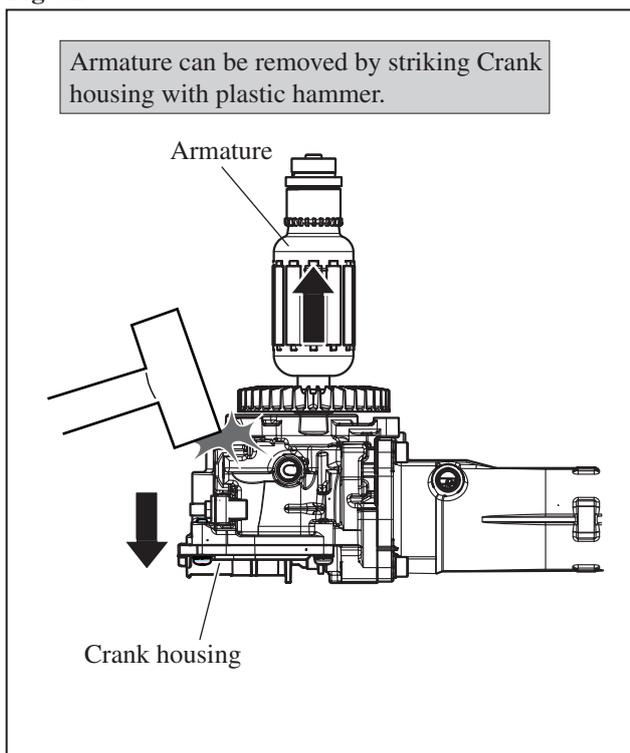
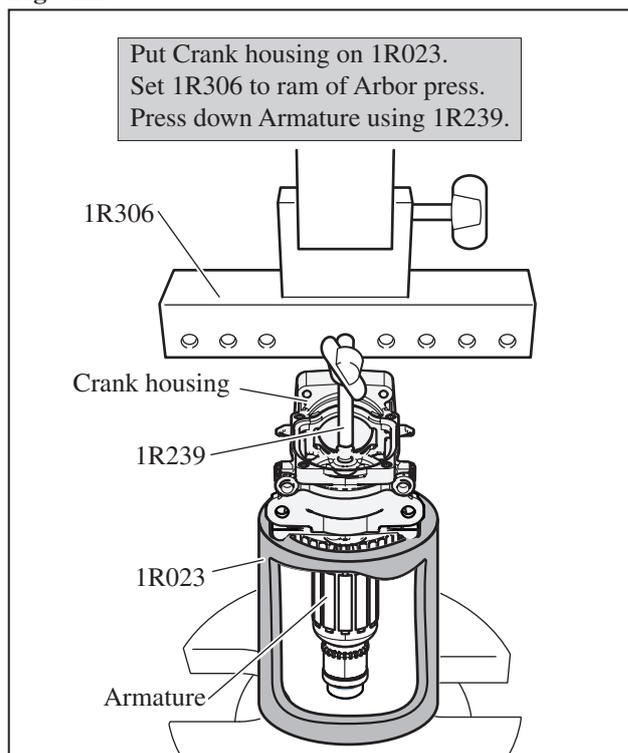
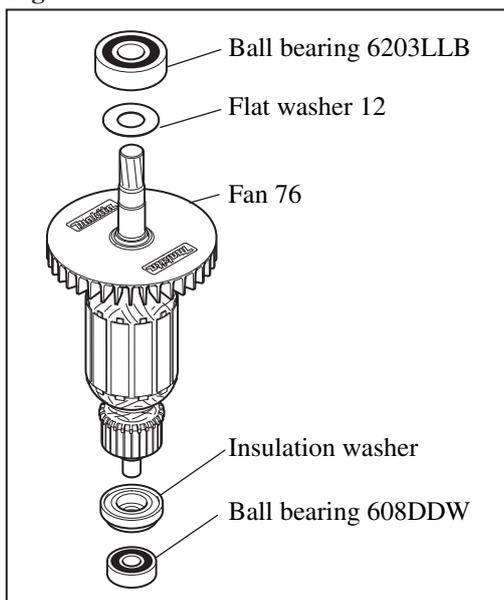


Fig. 32A



(7) Armature can be disassembled as illustrated in **Fig. 33**.

Fig. 33

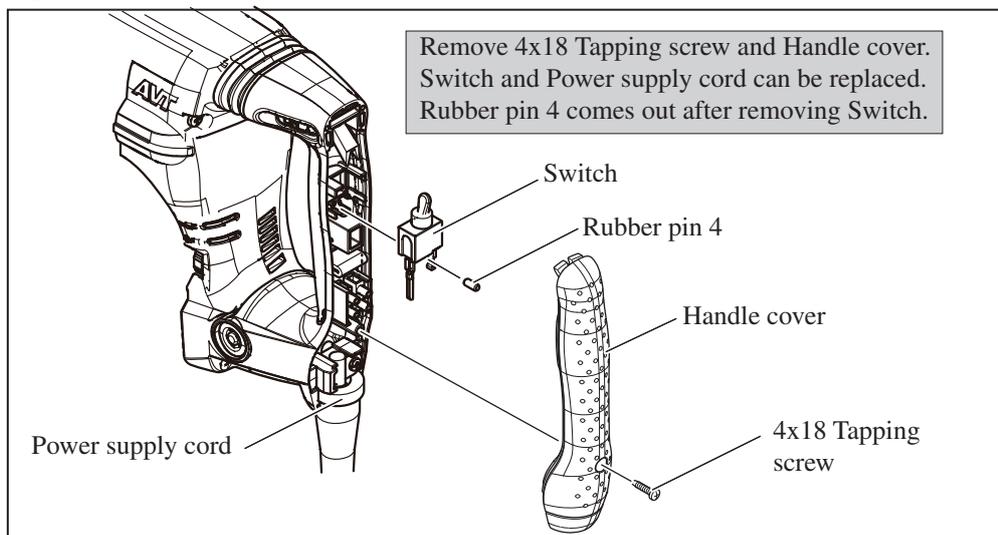


► **Repair**

[3]-9 Handle section

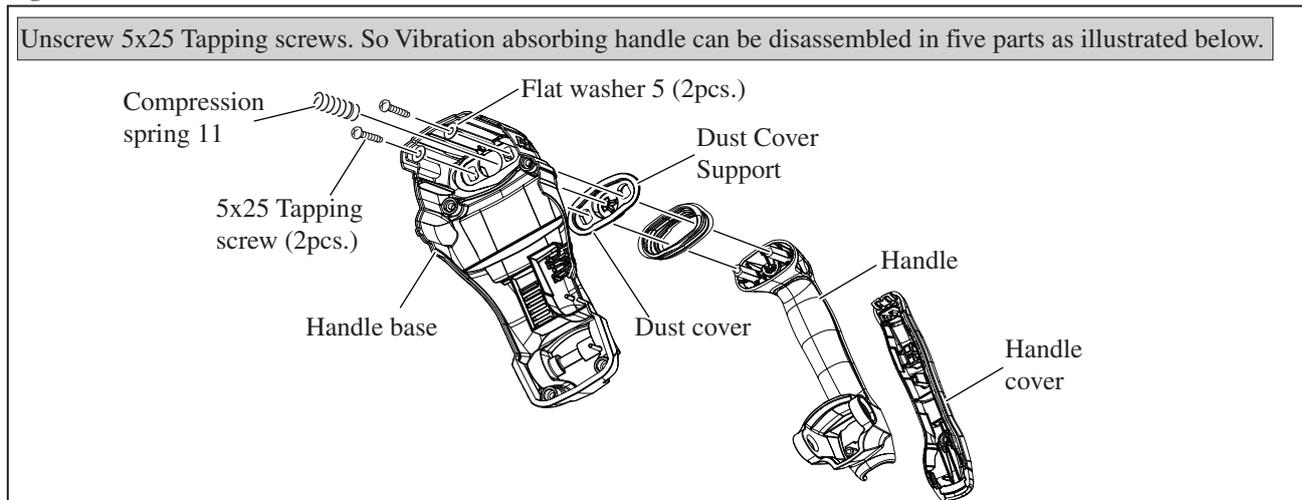
- (1) Disassemble Handle section as per the left illustration in **Fig. 29**.
- (2) Remove Handle cover by unscrewing 4x18 Tapping screw to replace the electrical parts in Handle. See **Fig. 34**.

Fig. 34



- (3) In case of HM0871C, the Vibration absorbing handle section can be disassembled as illustrated in **Fig. 35**.

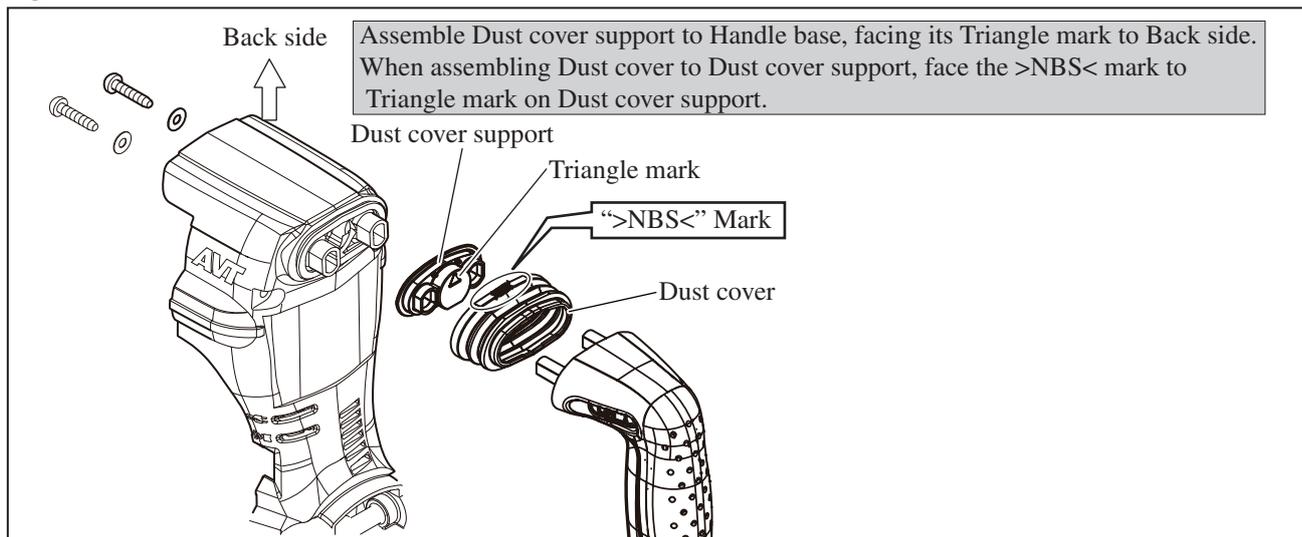
Fig. 35



ASSEMBLING

Assemble Handle section as illustrated in **Fig. 36**.

Fig. 36



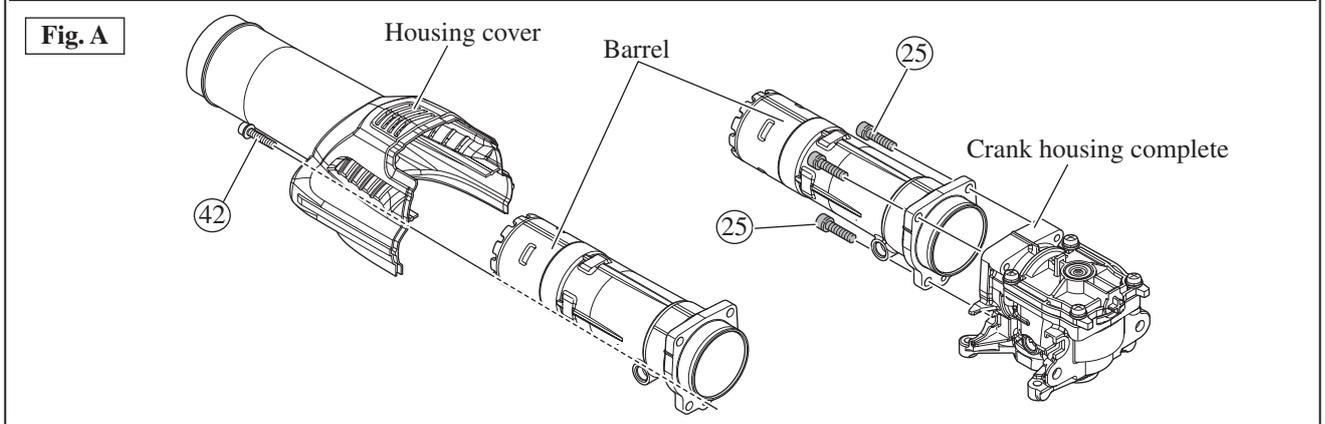
► **Repair**

[3] DISASSEMBLY/ASSEMBLY

[3]-10. Fastening torque

Fasten the following bolts to the specific fastening torque.

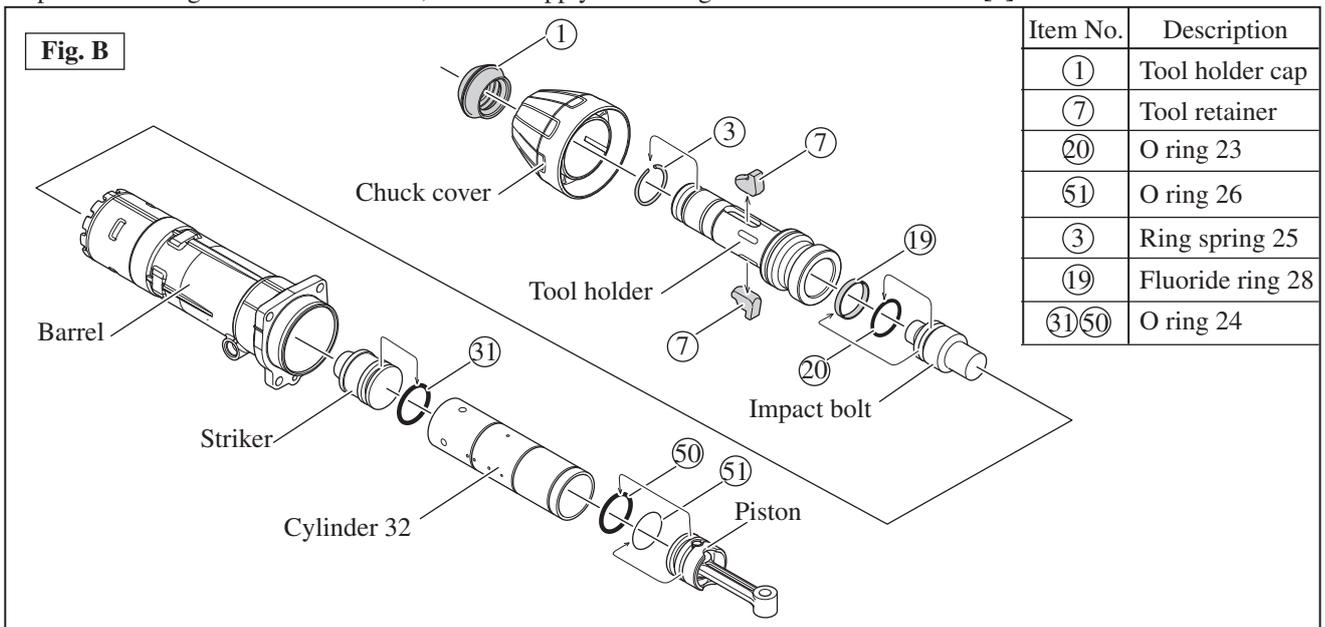
Item No.	Description	Q'ty	Fastening torque	Use for
②5	M6 x 25 Hex socket head bolt	4	7.8 - 11.7 N.m	Fastening Barrel to Crank housing complete
④2	M5 x 25 Hex socket head bolt	1	2.9 - 3.4 N.m	Fastening Housing cover to Barrel



[4] MAINTENANCE PROGRAM

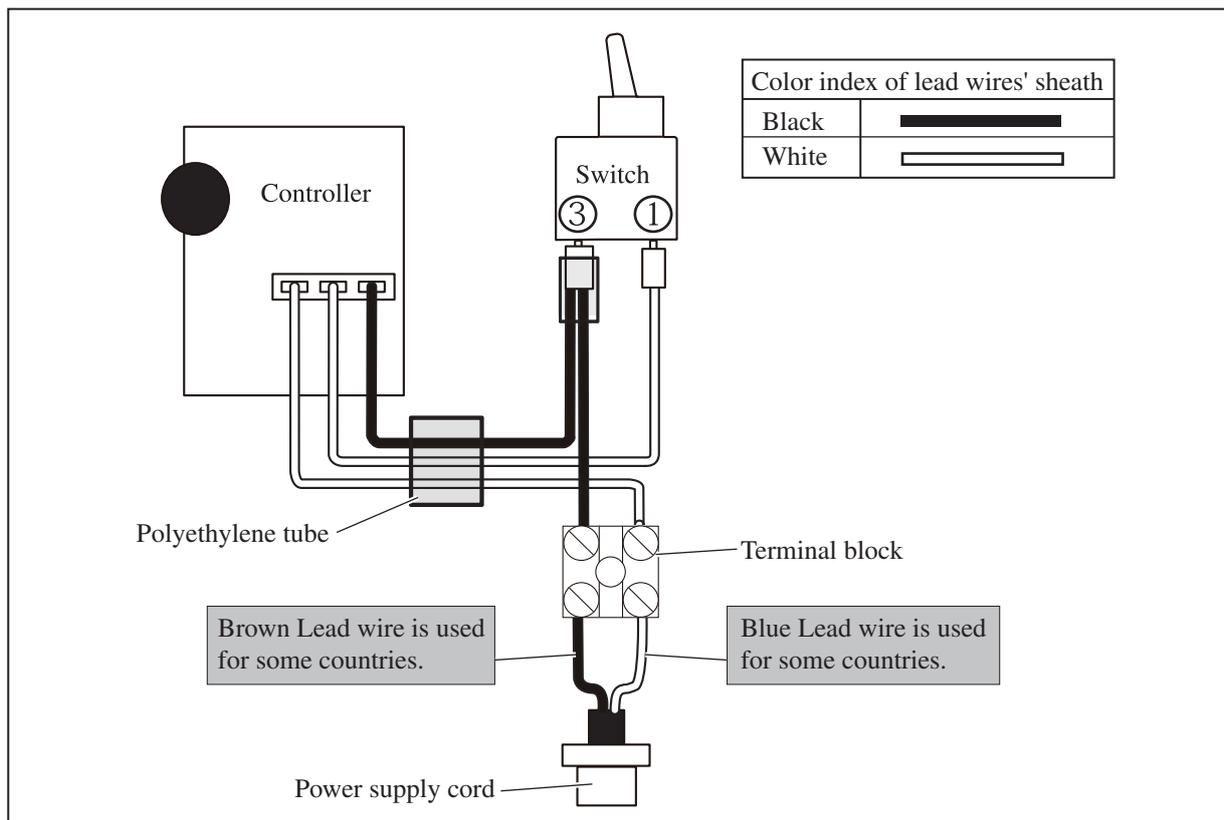
Replacing the following parts is recommended when Carbon brush is replaced.

Wipe off the old grease in the machine, and then apply the fresh grease in accordance with [2] LUBRICATIONS.



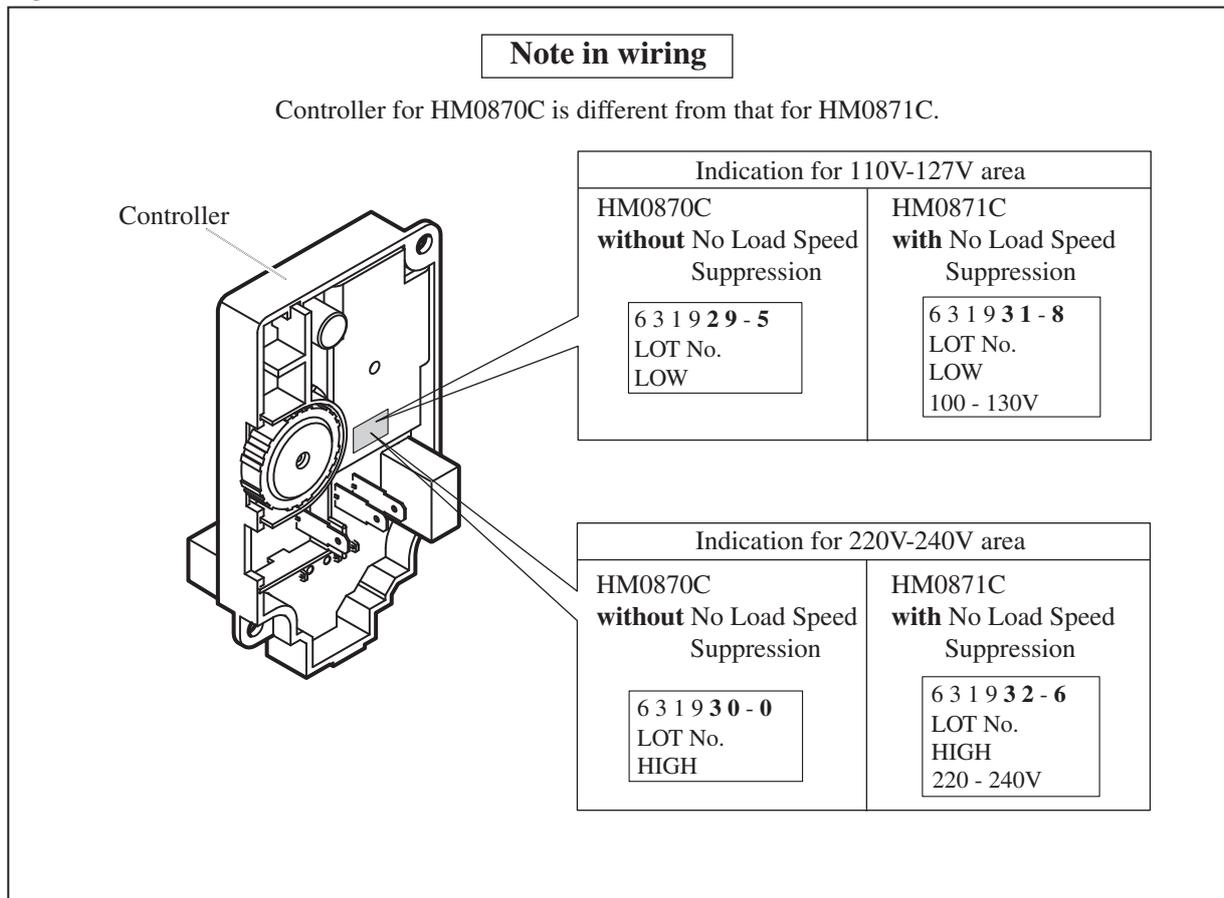
► **Circuit diagram**

Fig. D-1



► **Wiring diagram**

Fig. D-2



► **Wiring diagram**

Fig. D-3

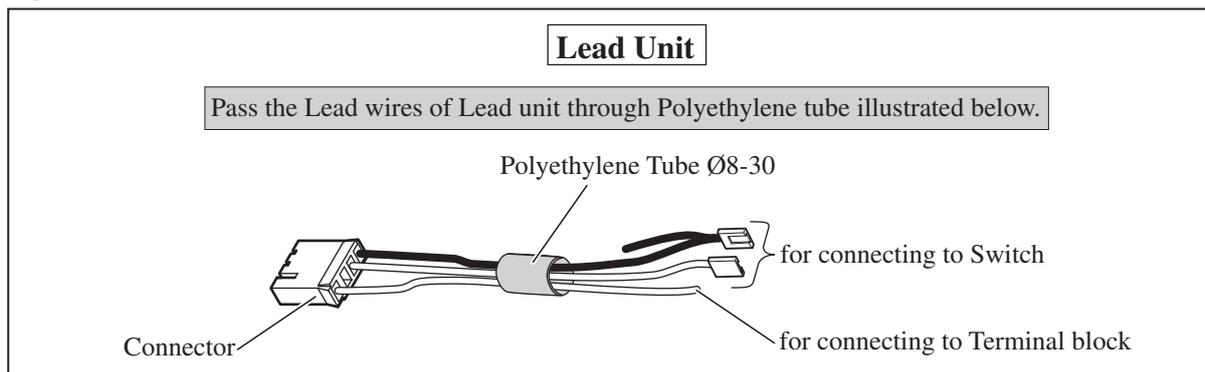


Fig. D-4

