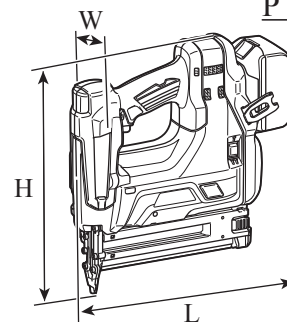




TECHNICAL INFORMATION

Models No. ▶ DBN500

Description ▶ Cordless brad nailer 50mm (2")



CONCEPT AND MAIN APPLICATIONS

DBN500 is cordless brad nailer powered by 18V Li-ion battery. Compressed air generated by piston work with DC motor pushes down Driver to shoot Brad nails. The mechanism provides less reaction force and “air nailer like” shot feeling to the operator.

Other features are as follows:

- Higher durability than competitors’ models
- Easy-to-see slim nose tip
- Rocker switch to select Sequential mode / Bump fire mode

Dimensions: mm (")	
Length (L)	294 (11-5/8)*1
Width (W)	97 (3-13/16)*2
Height (H)	318 (12-1/2)

*1 With Battery BL1830

*2 103mm (4-16") when using Hook

► Specification

Battery	Voltage: V	18
	Cell	Li-ion
	Capacity: Ah	1.5, 2.0, 3.0, 4.0, 5.0
	Energy capacity: Wh	24, 27, 54, 72, 90
	Charging time (approx.): min.	15, 24, 22, 36, 45 with DC18RC
Max output (W)		460
Nail	Type	Finish
	Length: mm (")	15, 20, 25, 30, 32, 35, 38, 40, 45, 50 (5/8, 3/4, 1, 1-3/16, 1-1/4, 1-3/8, 1-1/2, 1-5/8, 1-3/4, 2)
	Nail gauge	18Ga
	Nails per strip	100
Magazine capacity (pcs)		110
Shot quantity on a single full battery charge		1,000*1
Quick response (pcs/sec.)		2
Driving depth adjustment		Yes (Tool-less)
Anti-dry-fire mechanism		Yes
Operation mode	Change of Bump fire mode and sequential mode	Rocker switch
	2 mode pattern	Sequential*3 / Auto change mode between Bump fire*4 and single fire*5
LED job light		Yes
Weight according to EPTA-Procedure 01/2003: kg (lbs)		3.3 (7.3), 3.3 (7.3), 3.5 (7.7), 3.5 (7.7), 3.5 (7.7) *6

*3 One nail is fired first by pushing Contact arm against workpiece, then by pulling Trigger with the Contact arm kept pushed; nail cannot be fired when the steps are reversed. Another one can be fired by releasing Trigger, then by repeating the steps; however, cannot be fired if Trigger is not released before repetition of the steps.

*4 Nail is fired first by pulling Trigger then by bumping Contact arm against workpiece with Trigger kept pulled. As long as Trigger is kept pulled, nails can be fired one after the other continuously every time when Contact arm is bumped against workpiece.

*5 Nail is fired first by pushing Contact arm against workpiece then by pulling Trigger with Contact arm kept pushed. Another nail can be fired by releasing then re-pulling Trigger even if Contact arm is kept pushed; another nail cannot be fired if Trigger is not released.

*6 2.9kg (5.5lbs) without Battery

► Standard equipment

Battery 1 or 2*8 Nose adapter 1
 Charger 1*8 Hex wrench 3 1
 Battery cover..... 1*9 Plastic carrying case 1
 Safety goggles 1 (for some countries only)

*8 Battery and charger are not supplied with “Z” model

*9 Supplied with the same quantity of extra Battery

Note: The standard equipment may vary by country or model variation.

► Optional accessories

Finish nails Fast charger DC18RC
 Battery BL1815 Charger DC18SD
 Battery BL1815N Charger DC24SC
 Battery BL1820 Four port multi charger DC18SF
 Battery BL1830 Automotive charger DC18SE
 Battery BL1840
 Battery BL1850

► Repair

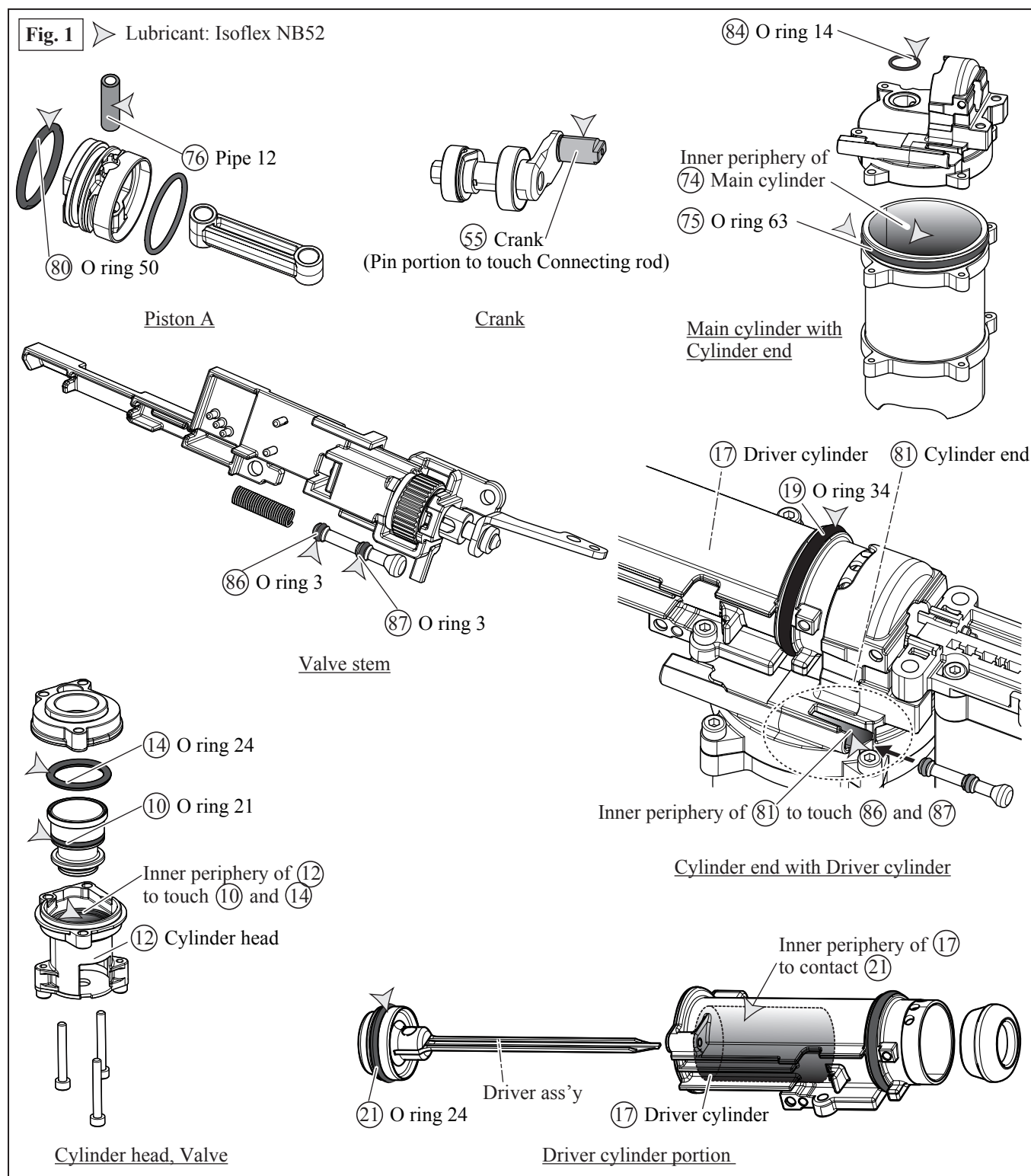
CAUTION: Repair the machine in accordance with “Instruction manual” or “Safety instructions”.

[1] NECESSARY REPAIRING TOOLS

Code No.	Description	Use for
1R014	1/4” Hex shank bit for M4	disassembling / assembling M4 Hex socket head bolt
1R015	1/4” Hex shank bit for M5	disassembling / assembling M5 Hex socket head bolt
1R268	Spring pin extractor M3	removing Lock lever
1R269	Bearing extractor	removing Ball bearings 6001ZZ and 6002ZZ
1R291	Retaining ring S and R pliers	disassembling / assembling Retaining rings S-12 and S-19

[2] LUBRICANT APPLICATION

Apply lubricant to the portions designated with gray triangles to protect parts and product from unusual abrasion. See Fig. 1 for the item Nos and descriptions.



► **Repair**

[3] ADHESIVE APPLICATION AND TIGHTENING TORQUE

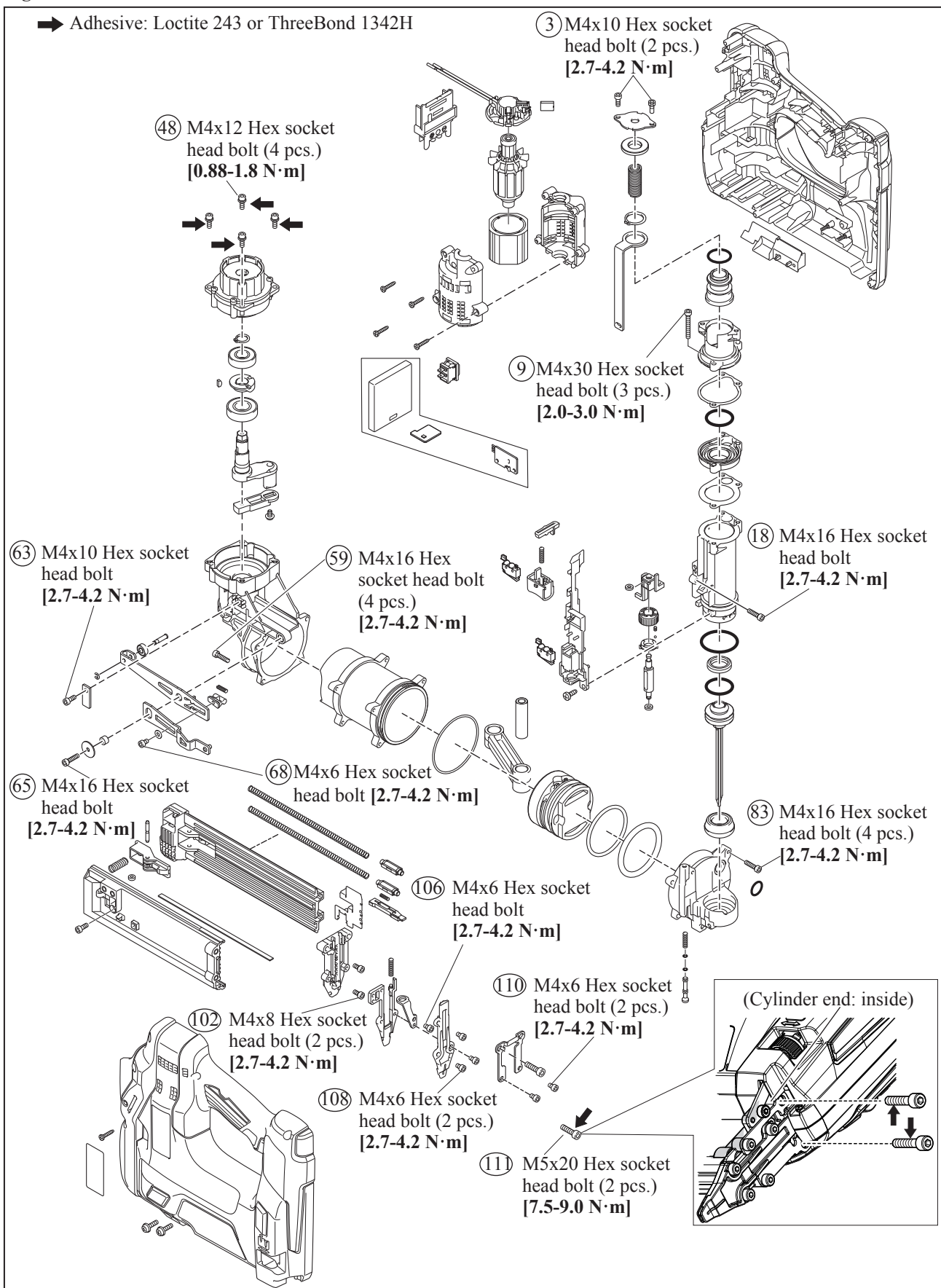
Apply adhesive to the bolts designated with black arrows.

See **Fig. 2** for the item Nos. and descriptions that should be glued.

Note: Their bolts are thread-locker type. First, use L-shaped hex wrench to unscrew them for repair. After that, remove them using Cordless impact driver with 1R014/ 1R015.

See Fig. 2 and the next page for the tightening torque of some bolts.

Fig. 2



► Repair

[3] ADHESIVE APPLICATION AND TIGHTENING TORQUE (cont.)

Fastening for	Description	Tightening torque (N.m.)	Adhesive to be applied
Driver cylinder and Cylinder end	M4x16 Hex socket head bolt	2.7 to 4.2	
Plate A and Set plate	M4x6 Hex socket head bolt	2.7 to 4.2	
Arm and Center plate	M4x6 Hex socket head bolt	2.7 to 4.2	
Cylinder end and Main cylinder	M4x16 Hex socket head bolt	2.7 to 4.2	
Main cylinder and Crank case	M4x16 Hex socket head bolt	2.7 to 4.2	
Sub arm complete and Crank case, Link arm A	M4x16 Hex socket head bolt	2.7 to 4.2	
Plate B and Crank case	M4x10 Hex socket head bolt	2.7 to 4.2	
Top cap and Cylinder head	M4x10 Hex socket head bolt	2.7 to 4.2	
Cylinder head and Driver cylinder	M4x30 Hex socket head bolt	2.0 to 3.0	
Sub arm complete and Slider, Link arm A	M4x6 Hex socket head bolt	2.7 to 4.2	
Set plate and Cylinder end	M5x20 Hex socket head bolt	7.5 to 9.0	Loctite 243 or ThreeBond 1342H
Set plate and Magazine	M4x8 Hex socket head bolt	2.7 to 4.2	
Driver guide and Center plate	M4x6 Hex socket head bolt	2.7 to 4.2	
Gear assembly and Crank case	M4x12 Hex socket head bolt	0.88 to 1.8	Loctite 243 or ThreeBond 1342H

► Repair

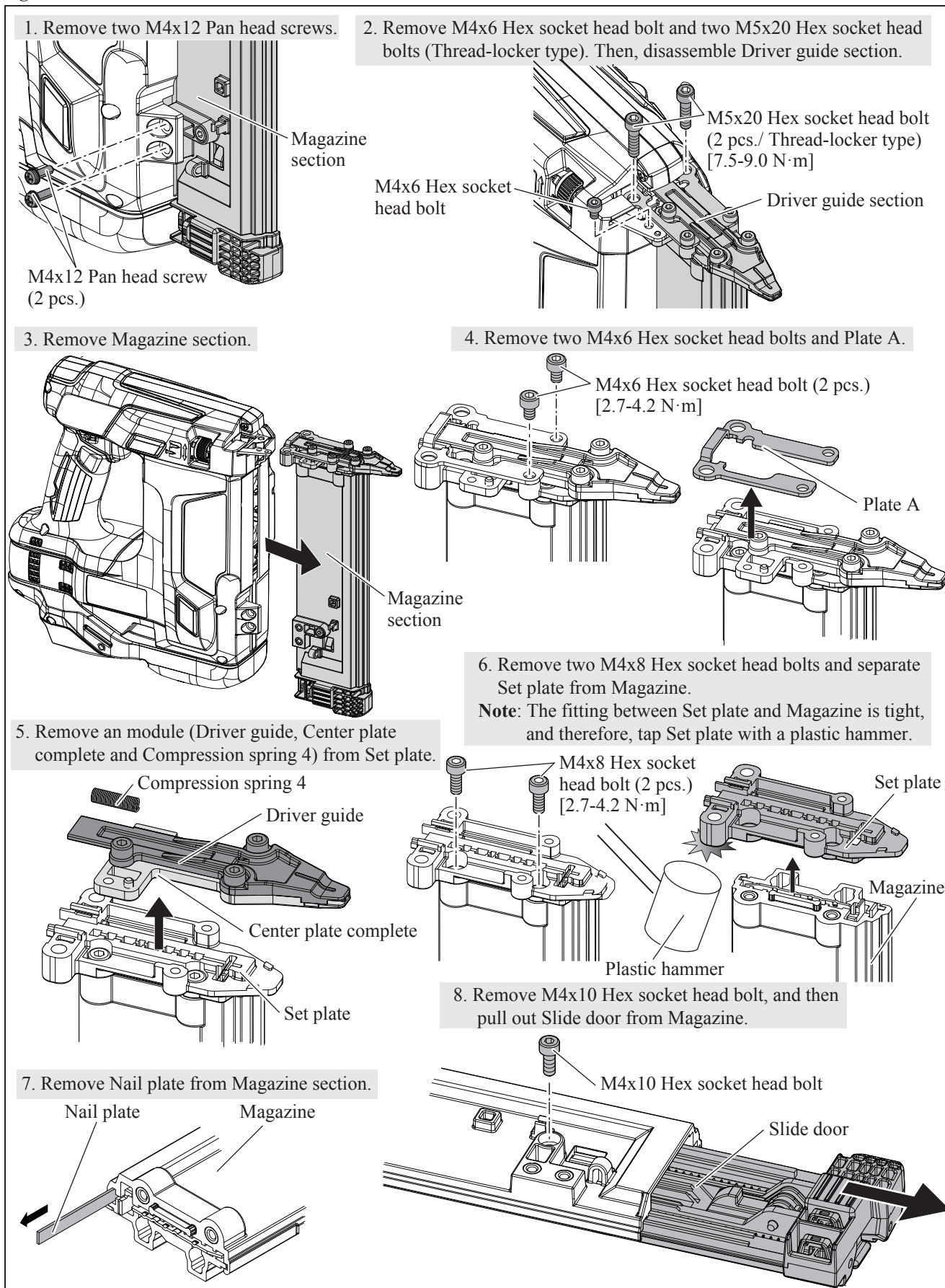
[4] DISASSEMBLY/ ASSEMBLY

[4]-1. Magazine section

DISASSEMBLING

(1) Remove Magazine section, and then separate Slide door from Magazine. (Fig. 3)

Fig. 3



► Repair

[4] DISASSEMBLY/ ASSEMBLY

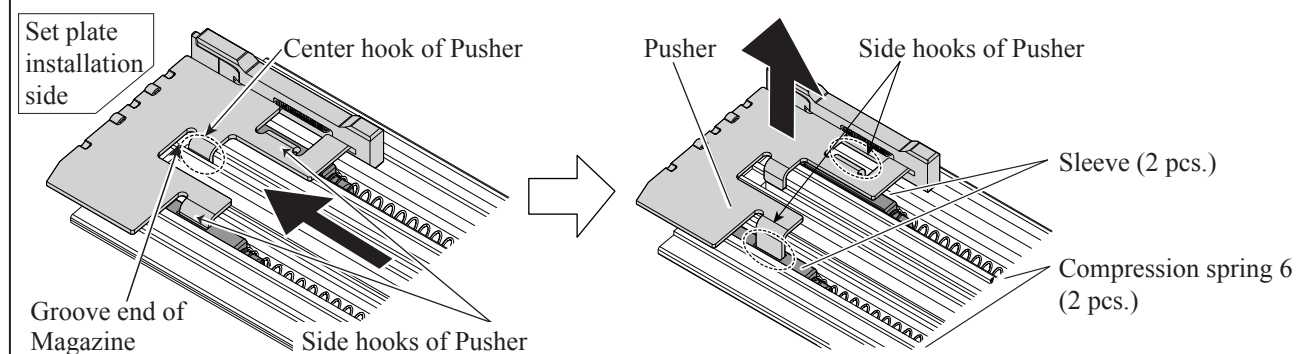
[4]-1. Magazine section (cont.)

DISASSEMBLING

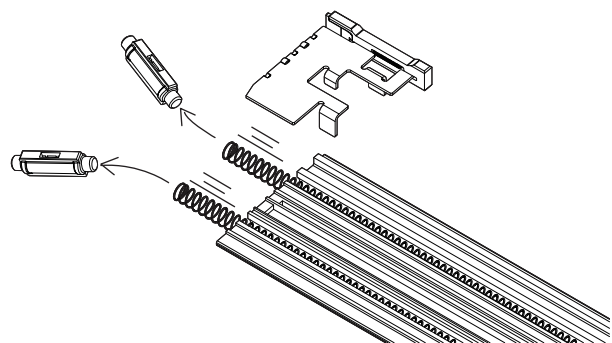
(2) Remove Pusher from Slide door. (Fig. 4)

Fig. 4

1. Pull Pusher toward Set plate installation side fully, and lift up the center hook of Pusher slightly and carefully without detaching the side hooks of Pusher from Sleeves.

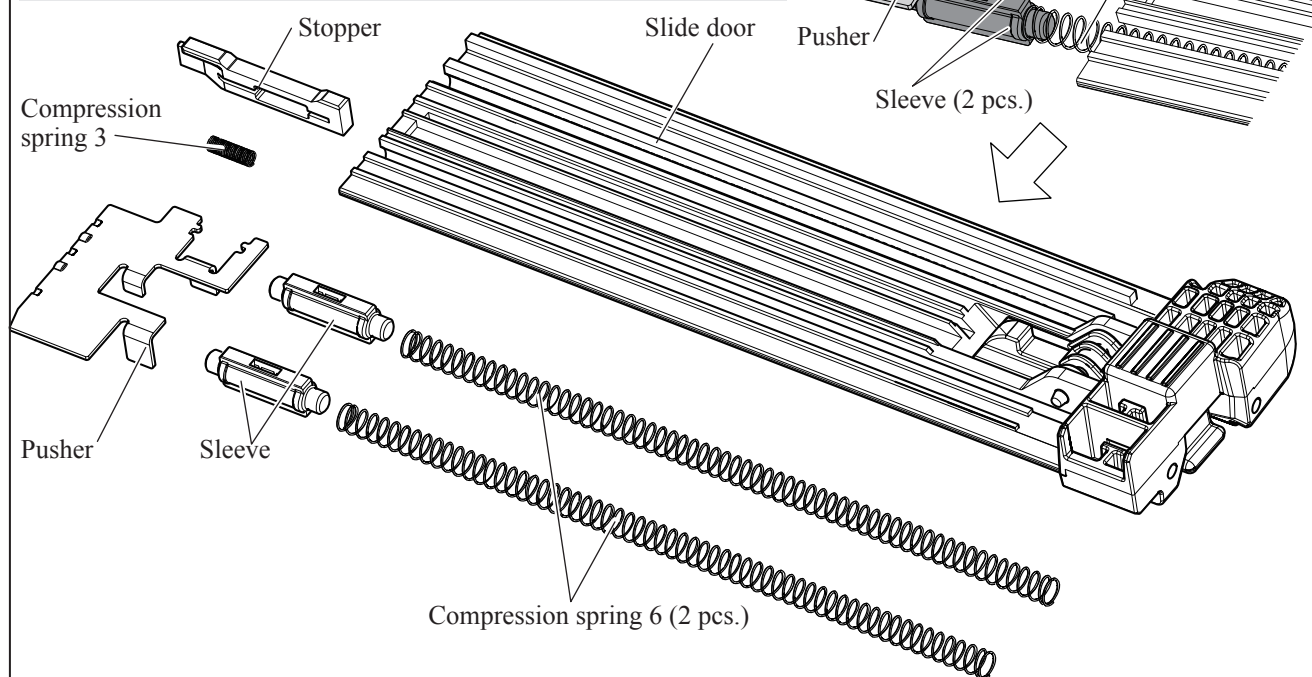


Note: If the side hooks of Pusher are detached completely from Sleeves in the grooves of Slide door, Sleeves and Compression springs 6 will pop out as drawn right. Therefore, keep the fitting of Sleeves and the side hooks of pushers by hand.



2. While keep the fitting of Sleeves and the side hooks of Pushers by hand, release the reaction force of two Compression springs 6 carefully.

3. Stopper, Compression spring 3, Sleeves and Compression springs 6 can be removed from Pusher.



► **Repair**

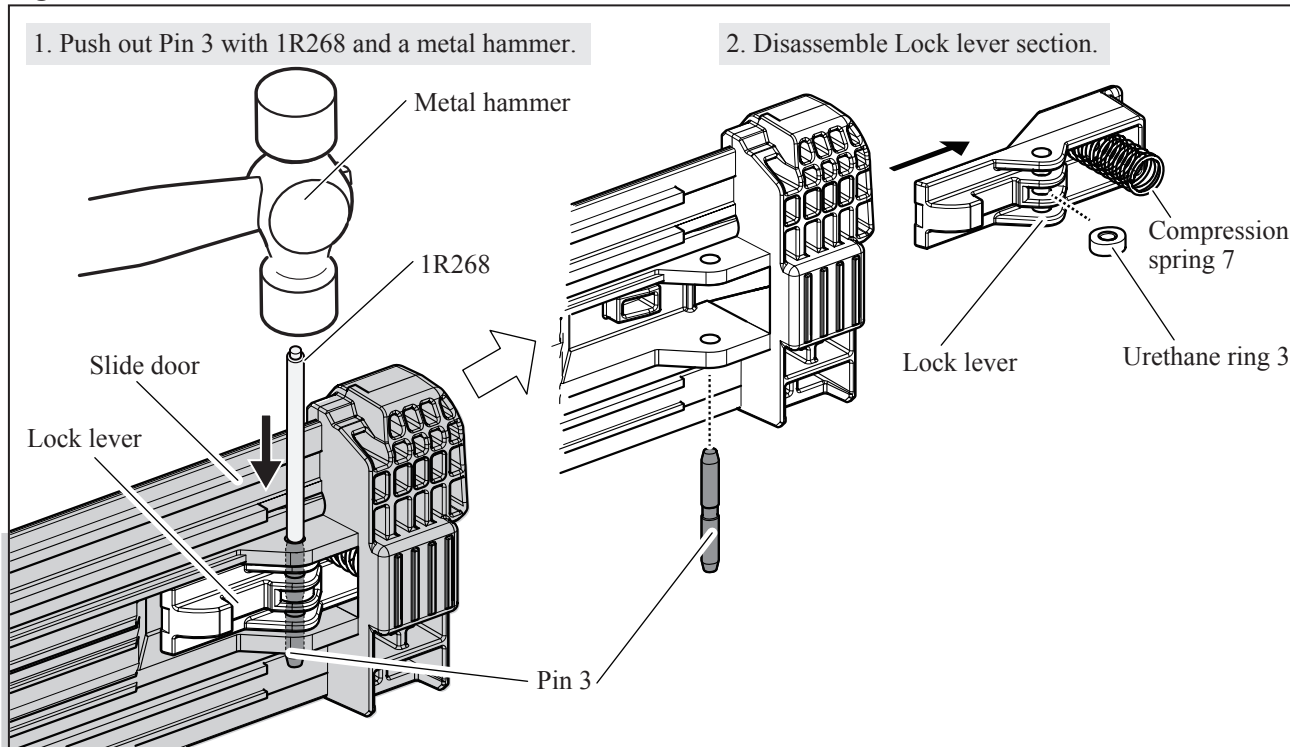
[4] DISASSEMBLY/ ASSEMBLY

[4]-1. Magazine section (cont.)

DISASSEMBLING

(3) Remove Lock lever from Slide door. (Fig. 5)

Fig. 5



ASSEMBLING

Assemble the components by reversing the disassembly procedure. See **Figs. 6 and 7** for the assembly of Pusher section.

Fig. 6

Note: Leave 4mm height between the angle of the side hook of Pusher and the bottom of each Sleeve. If the bottom of Sleeve is attached to the angle of the side hook by inserting completely, the center hook would be bumped against Slide door.

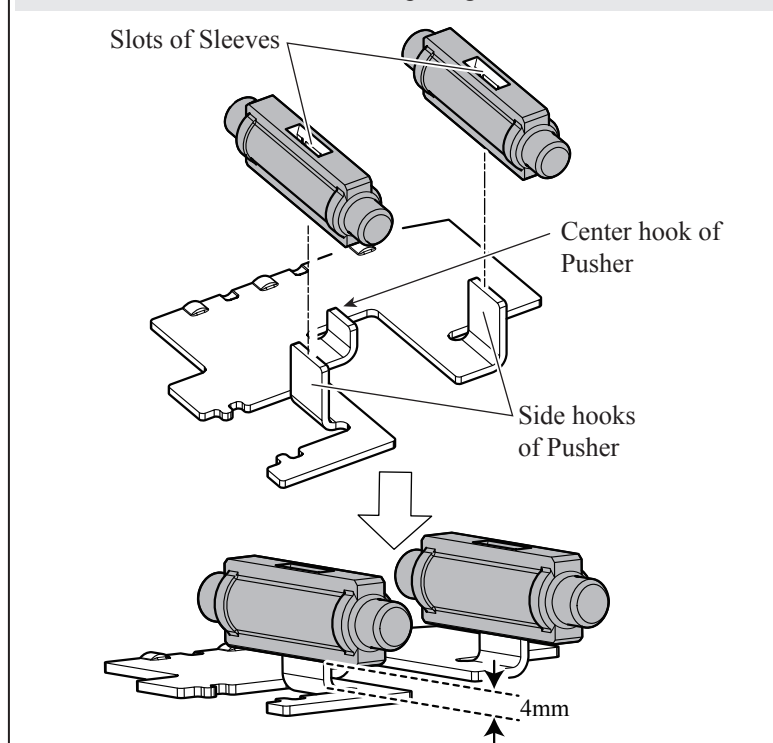
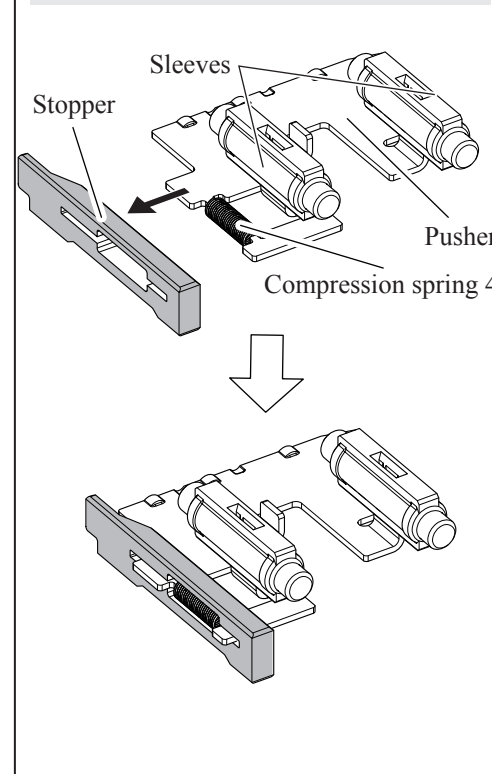


Fig. 7

Note: Stopper is directional, and therefore, it must be assembled to Pusher as drawn below.



► Repair

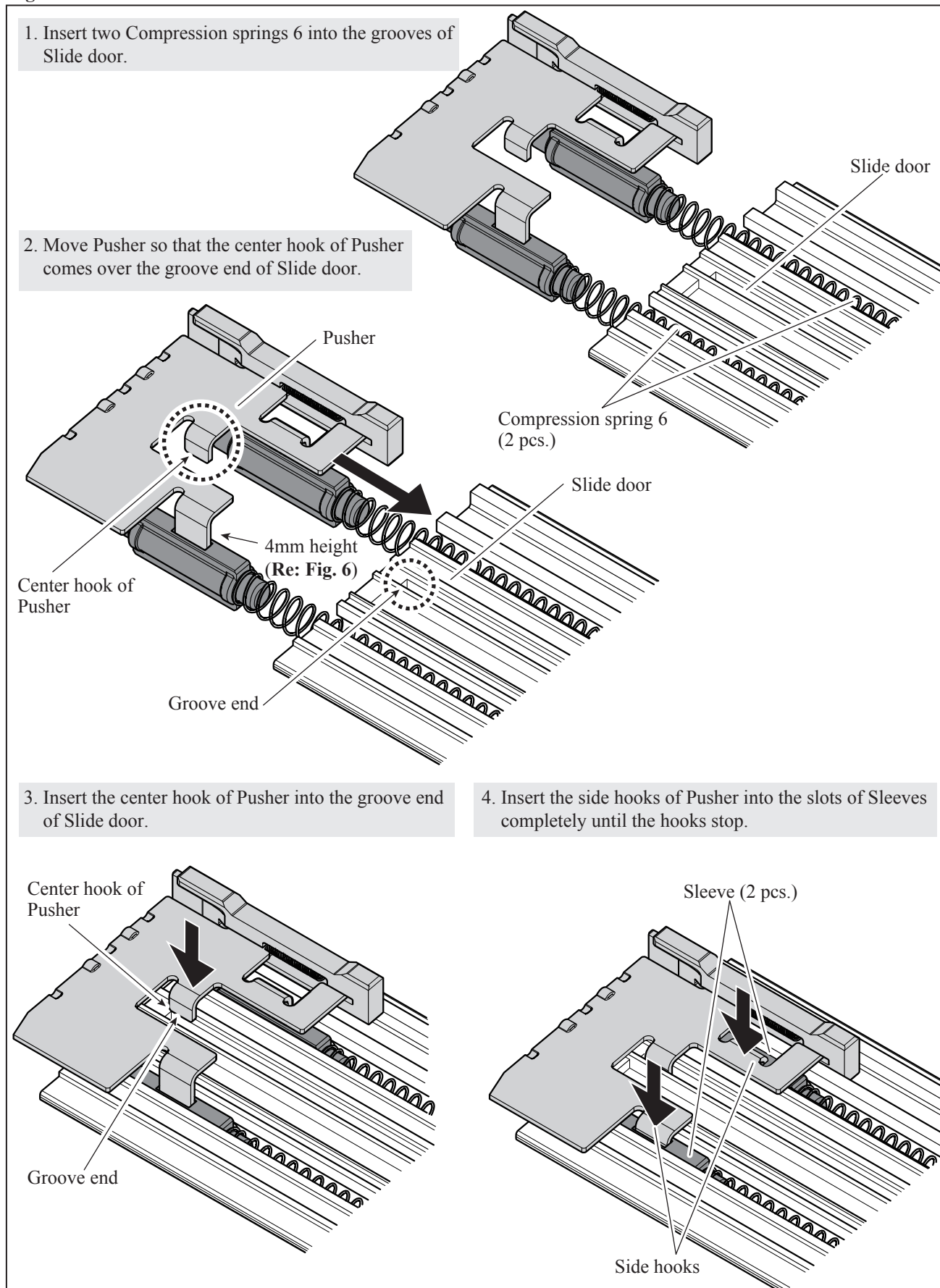
[4] DISASSEMBLY/ ASSEMBLY

[4]-1. Magazine section (cont.)

ASSEMBLING

Assemble Pusher section to Slide door. (Fig. 8)

Fig. 8



► Repair

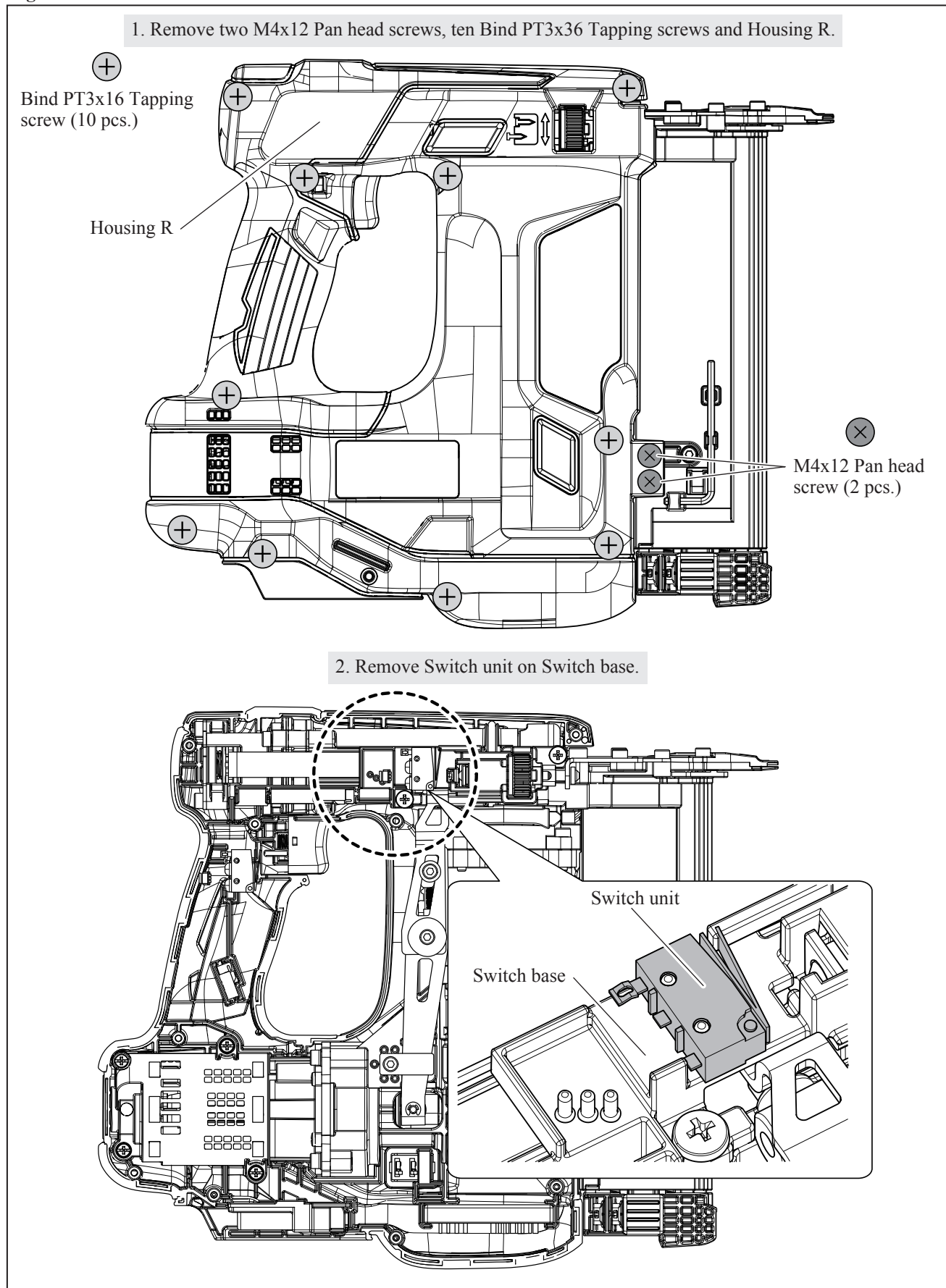
[4] DISASSEMBLY/ ASSEMBLY

[4]-2. Armature

DISASSEMBLING

Remove Housing R, and then separate Switch unit. (Fig. 9)

Fig. 9



► **Repair**

[4] DISASSEMBLY/ ASSEMBLY

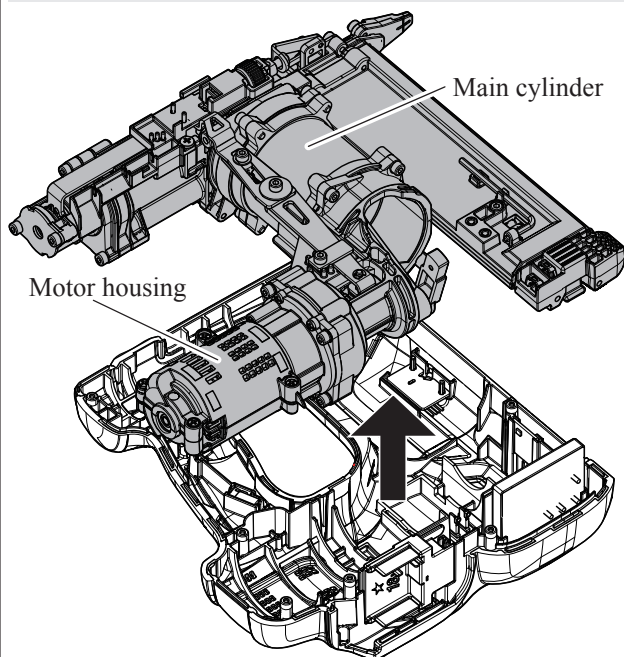
[4]-2. Armature (cont.)

DISASSEMBLING

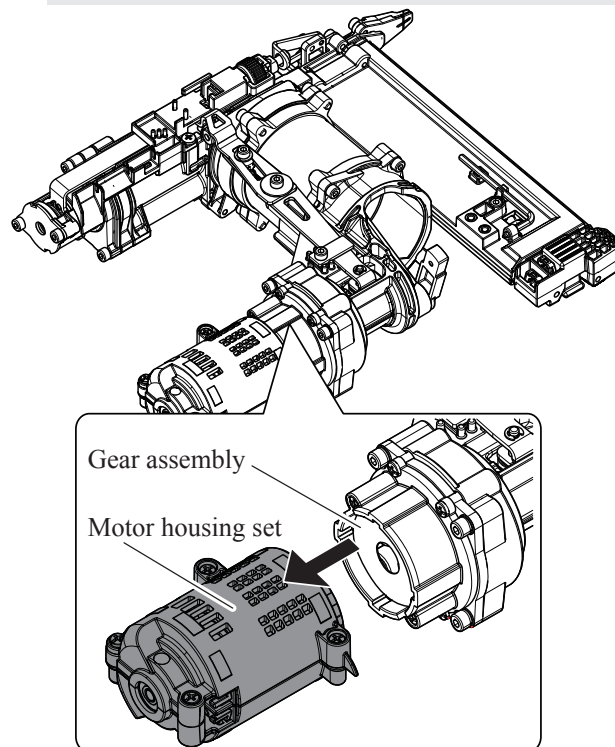
See **Fig. 10** for removing Armature section.

Fig. 10

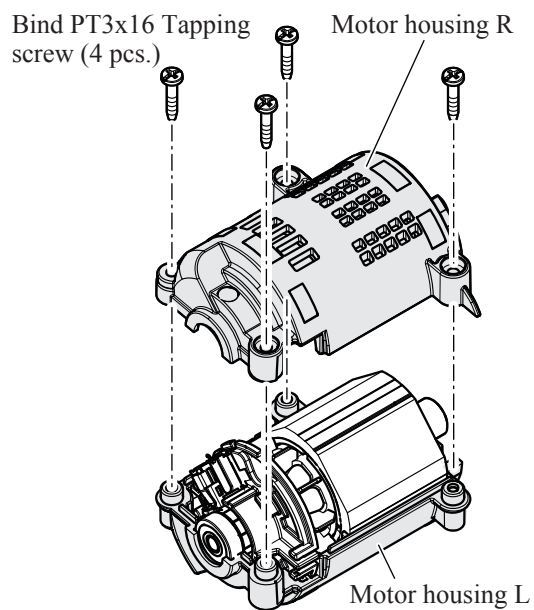
1. Remove an module (Motor housing, Main cylinder, etc.) from Housing L



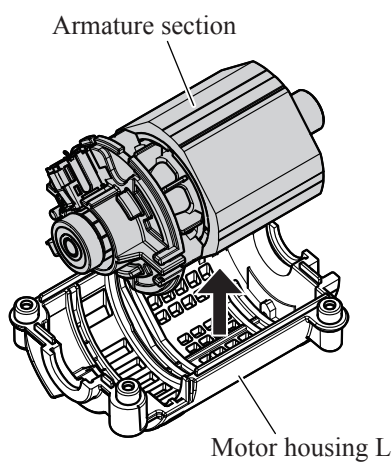
2. Pull out Motor housing set from Gear assembly.



3. Remove four Bind PT3x16 Tapping screws and Motor housing R from Motor housing L.



4. Remove Armature section from Motor housing L.



► Repair

[4] DISASSEMBLY/ ASSEMBLY

[4]-2. Armature (cont.)

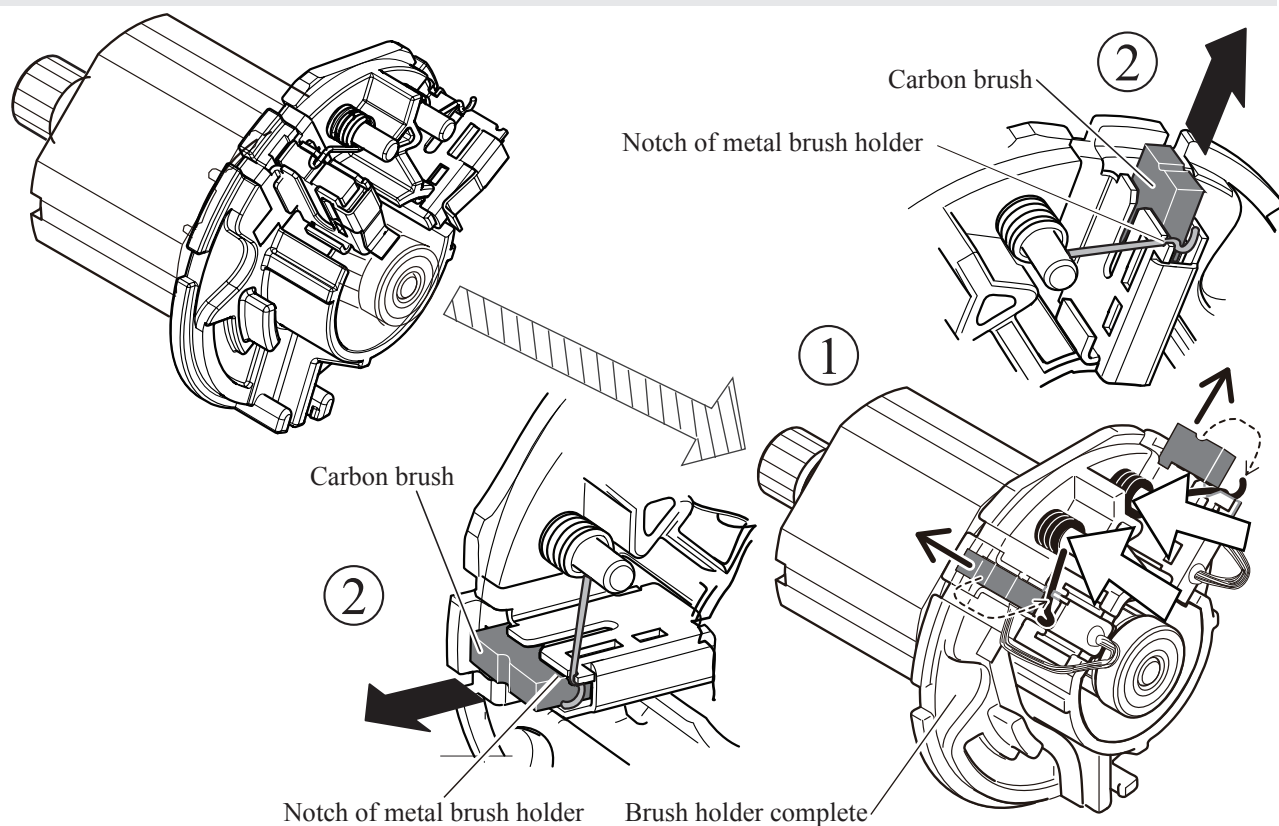
DISASSEMBLING

See Fig. 11 for the disassembly of Armature section.

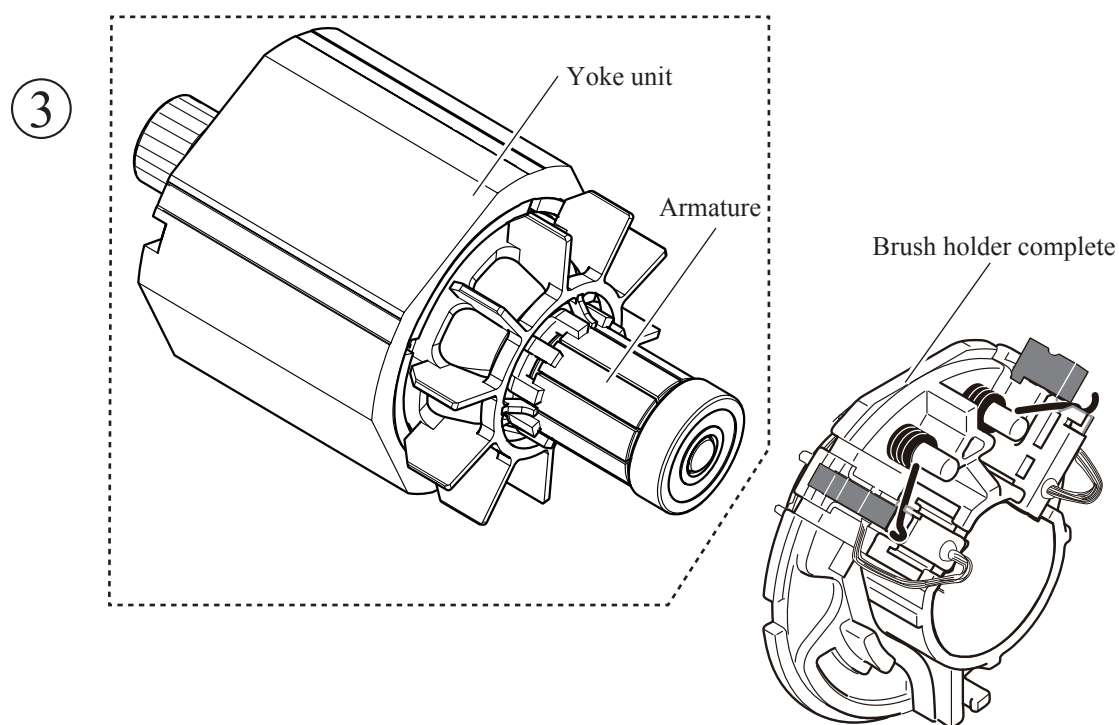
Fig. 11

1. Remove the end of Torsion springs of Brush holder complete from Carbon brushes and hook them in the notches of metal brush holders, then disconnect Carbon brushes from Commutator by pulling them in the direction of the black arrows.

Note: Hold the coils of Torsion springs (designated by the white arrows) so as not to remove them from Brush holder complete.



2. Pull out Armature together with Yoke unit from Brush holder complete.



► Repair

[4] DISASSEMBLY/ ASSEMBLY

[4]-2. Armature (cont.)

ASSEMBLING

See **Fig. 12** for the assembly of Armature, Yoke unit and Motor housing set.

Fig. 12

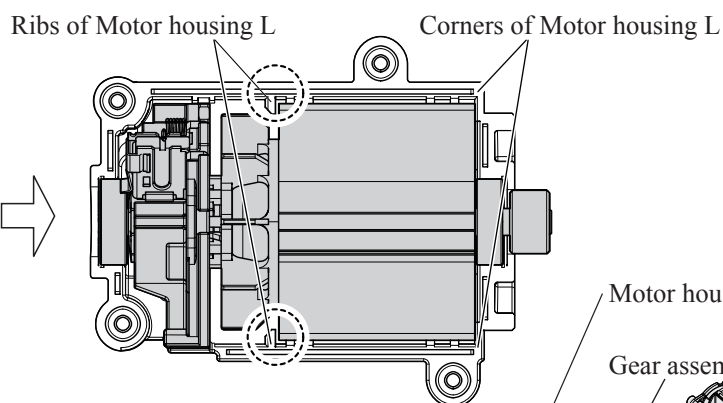
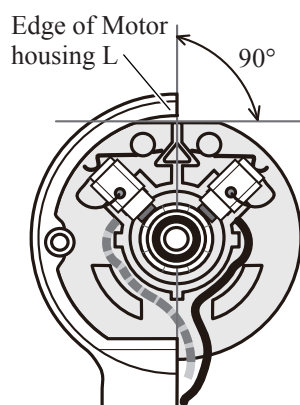
1. Face the notch of Yoke unit toward Armature gear end side and assemble Armature to Yoke unit.

- Note**
- Do not hold Armature body nor Fan by your fingers, or the fingers will be pinched between Yoke unit and the fan of Armature which is strongly pulled toward Yoke unit.
 - Do not scratch copper wires of Armature.

2. Return Carbon brushes and the ends of Torsion springs back to the original position to set Brush holder complete in place. (Refer to **Fig. 11** of the previous page.)

3. Fit the notch of Yoke unit with the protrusion of Motor housing L as drawn right.

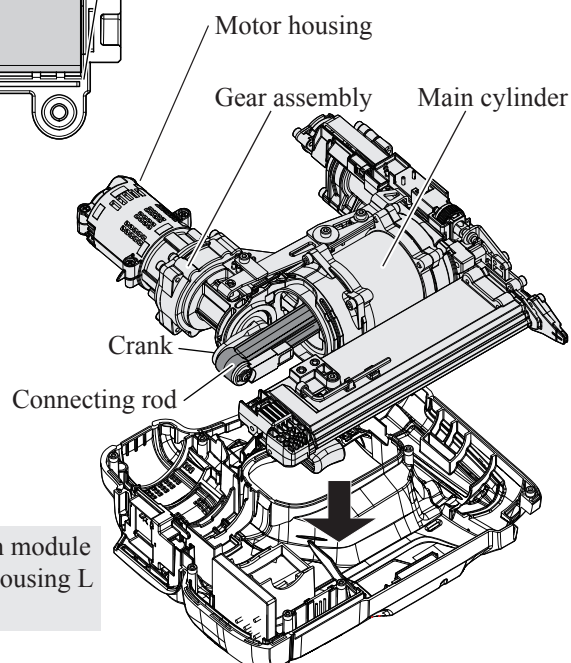
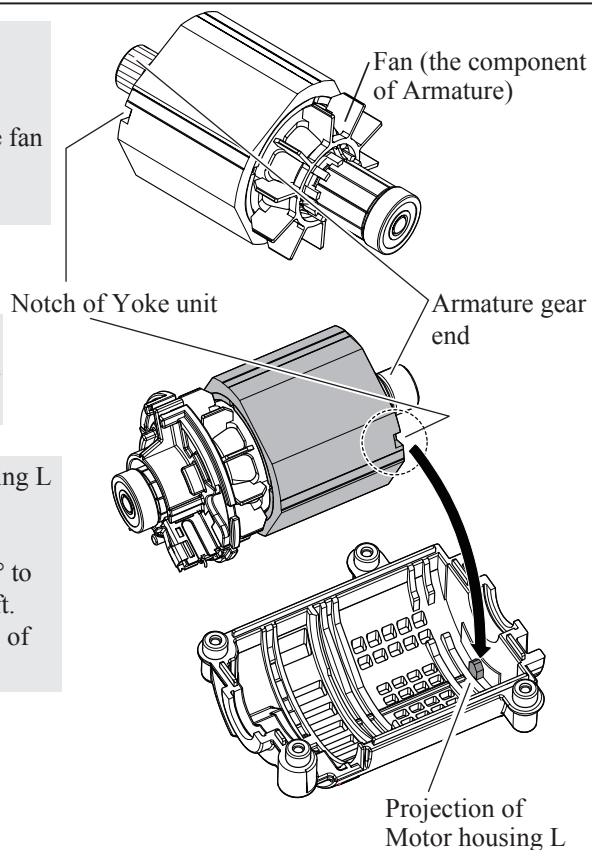
- Note**
- Do not scratch copper wires of Armature.
 - The flat portion of Brush holder complete must be at 90° to the edge surface of Motor housing L as drawn below left.
 - Place Yoke unit to the inside between Ribs and Corners of Motor housing as drawn below right.



4. When you assemble Armature section to Gear assembly;

- protrude Armature gear into the internal gears in Gear assembly first.
- The next, check their gears are engaged each other.
- Finally, push Armature to Gear assembly while keeping gear engagement firmly.

5. Move Connecting rod and Crank to lower dead point, and fit an module (Motor housing, Gear assembly and Main cylinder, etc.) into Housing L as drawn right.



► Repair

[4] DISASSEMBLY/ ASSEMBLY

[4]-3. Gear assembly

DISASSEMBLING

After removing Motor housing set from Gear assembly as mentioned in **page 9**, remove four M4x12 Hex socket head bolts and Gear assembly from Crank case. (**Fig. 13**)

ASSEMBLING

- (1) Move Connecting rod in advance until the hex end of Crank is aligned with the hex hole in Gear assembly. (**Fig. 14**)
- (2) Assemble Gear assembly to Crank case with four M4x12 Hex socket head bolt so that the hex end of Crank fits into the hex hole in Gear assembly. (**Figs. 14 and 13**)
- (3) Assemble Motor section to Gear assembly. Refer to **Fig. 12 of page 11**.
- (4) Move the crank portion to the lower dead point, and install the module of Motor housing and Main cylinder into Housing L. (**Fig. 15**)

Fig. 13

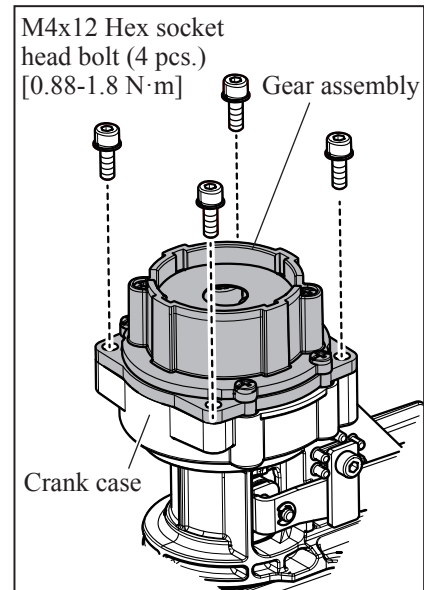


Fig. 14

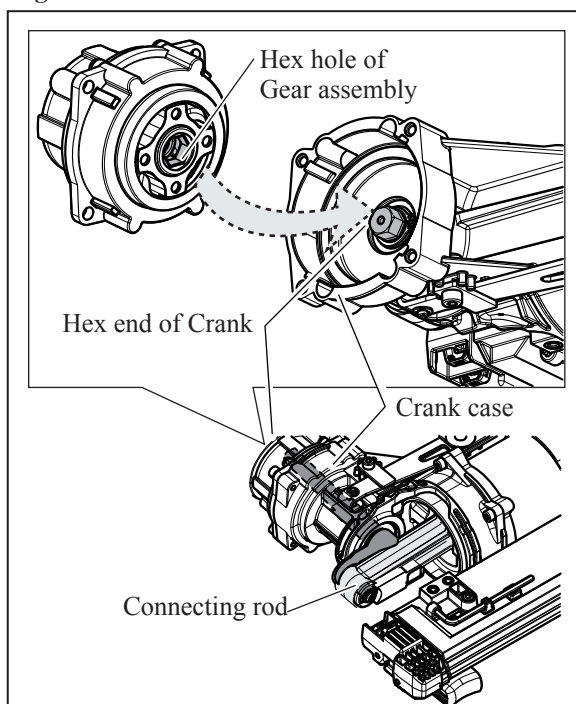
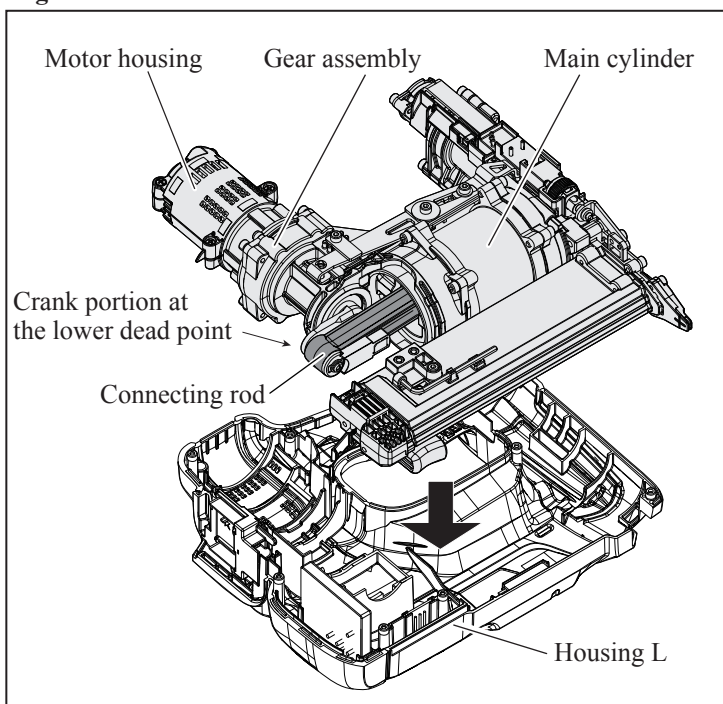


Fig. 15



► Repair

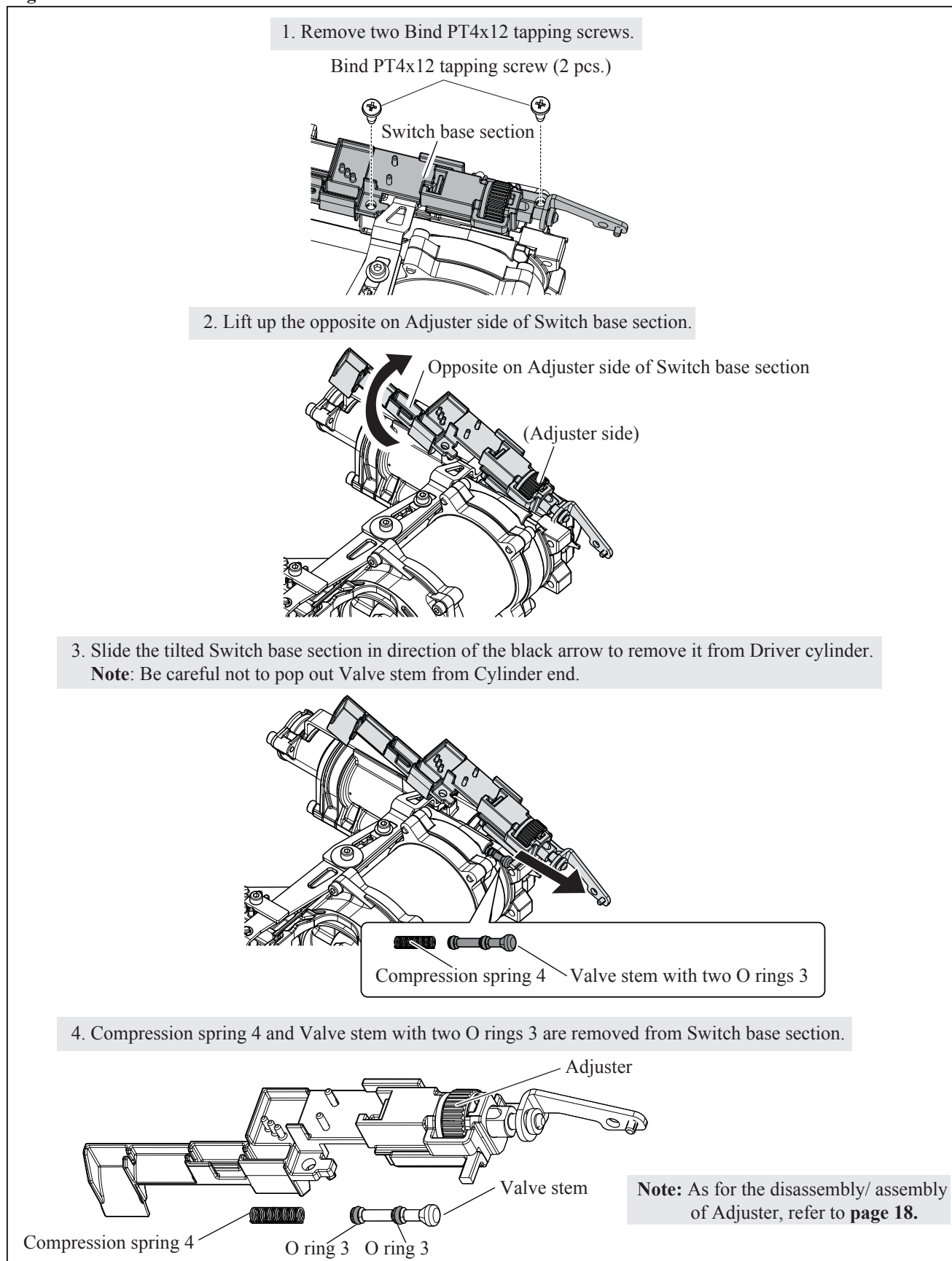
[4] DISASSEMBLY/ ASSEMBLY

[4]-4. Switch base, Crank, Main cylinder, Cylinder end

DISASSEMBLING

- (1) Remove the module of Driver guide and Magazine, and then remove Motor section and Gear assembly from the module.
(Refer to **Pages 9, 10 and 13.**)
- (2) Remove Switch base section. (**Fig. 16**)

Fig. 16



► Repair

[4] DISASSEMBLY/ ASSEMBLY

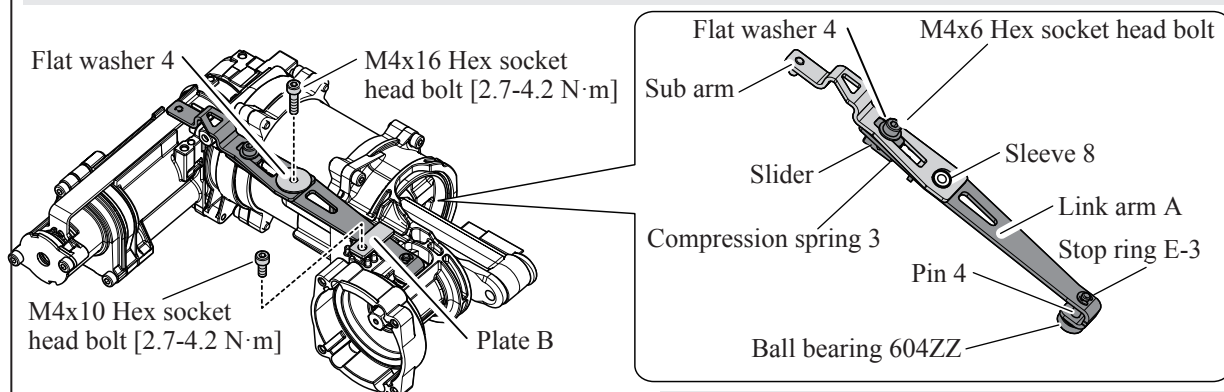
[4]-4. Switch base, Crank, Main cylinder, Cylinder end (cont.)

DISASSEMBLING

Remove an module of Sub arm and Link arm A, and then separate Driver cylinder section, Crank section, Main cylinder section and Cylinder end section. (Fig. 17)

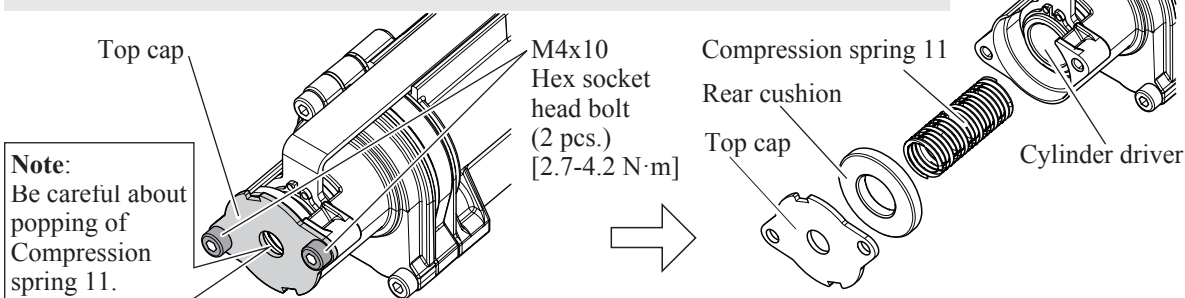
Fig. 17

1. Remove M4x10 Hex socket head bolt and Plate B, and then separate M4x16 Hex socket head bolt on Flat washer 4.



2. Remove an module of Sub arm and Link arm A. (Refer to **page 18** for the disassembly.)

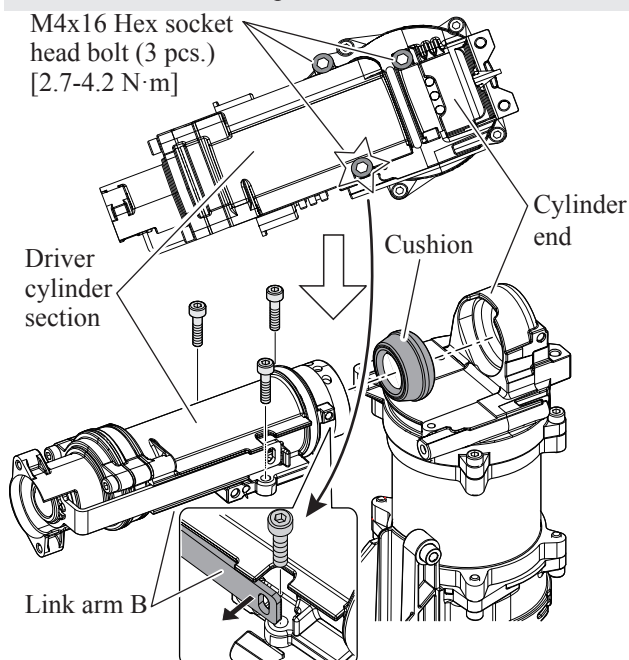
3. While holding Top cap by a finger, remove two M4x10 Hex socket head bolts, and then relieve the holding force carefully to prevent Top cap from popping out. Top cap, Rear cushion and Compression spring 11 are removed from Cylinder driver.



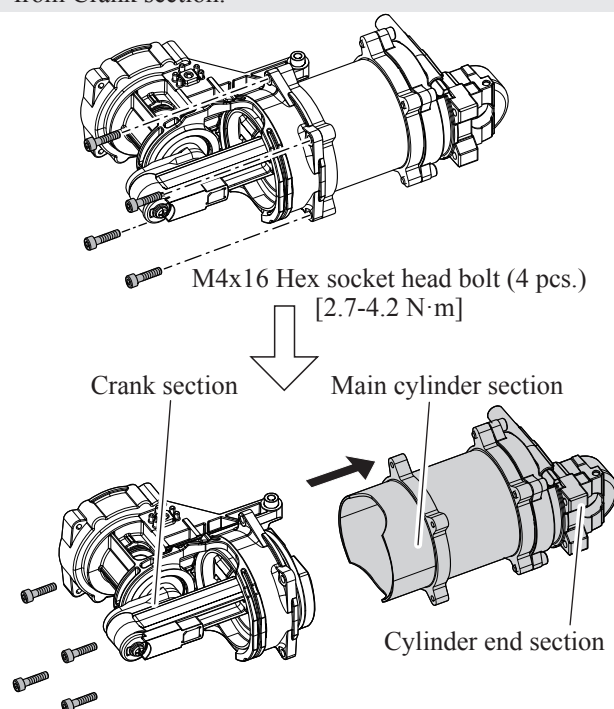
4. Remove three M4x16 Hex socket head bolts, and then separate Driver cylinder section from Cylinder end.

Note: Bend Link arm B slightly to access M4x16 Hex socket head bolt.

Cushion and Driver complete can be removed at this time.



5. Remove four M4x16 Hex socket head bolts, and then separate Main cylinder section and Cylinder end section from Crank section.



► Repair

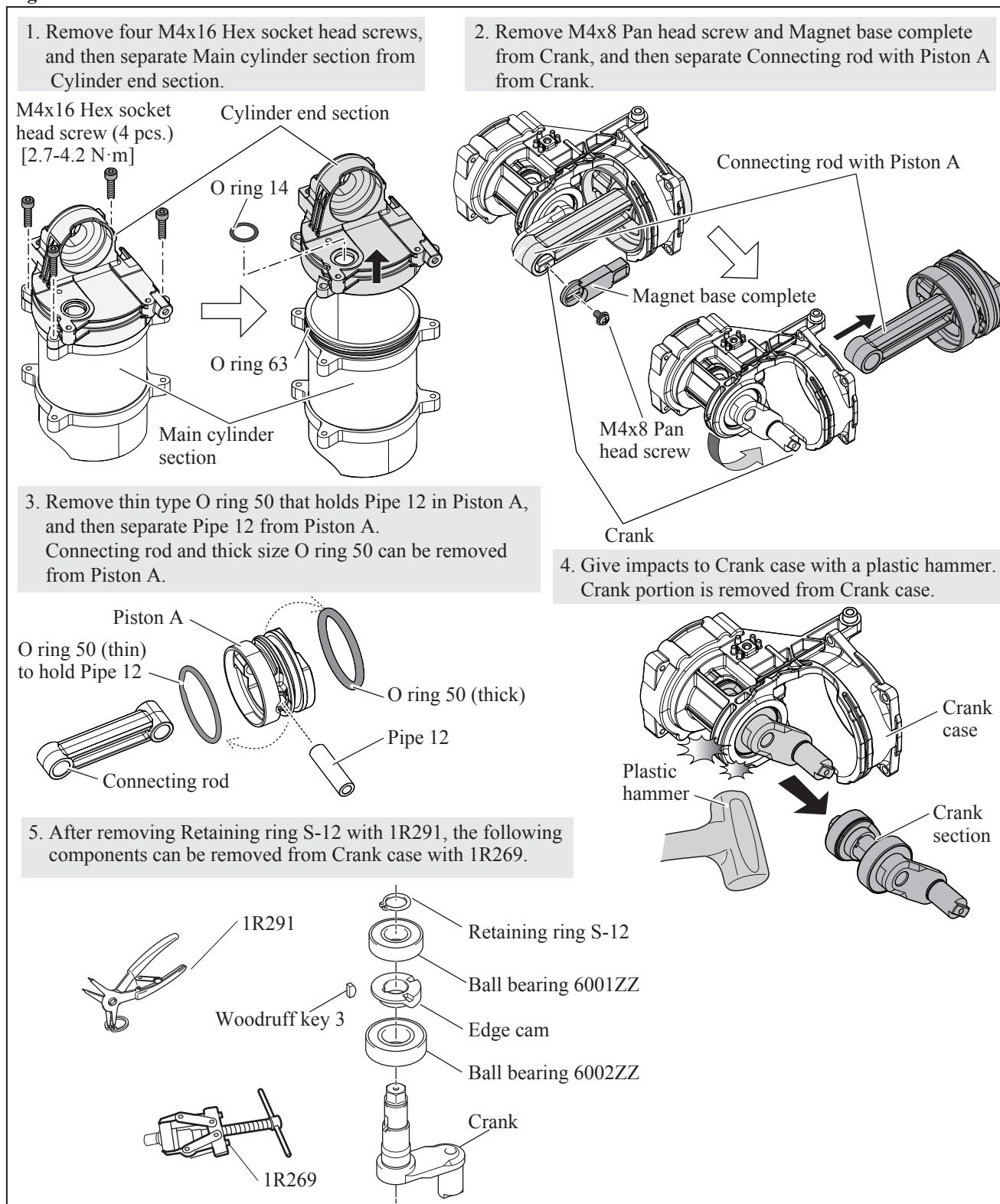
[4] DISASSEMBLY/ ASSEMBLY

[4]-4. Switch base, Crank, Main cylinder, Cylinder end (cont.)

DISASSEMBLING

(4) Remove Housing R, and then separate Switch unit. (Fig. 18)

Fig. 18



ASSEMBLING

Assemble the components by reversing the disassembling procedure.

Note: • Be careful to the direction of Edge cam. Refer to Fig. 18.

- As for the assembly of Sub arm complete and Link arm A, refer to **page 19**.
- Move Crank to the lower dead point, and install the module of Motor housing and Main cylinder into Housing L. (Fig. 15 of Page 13)

► Repair

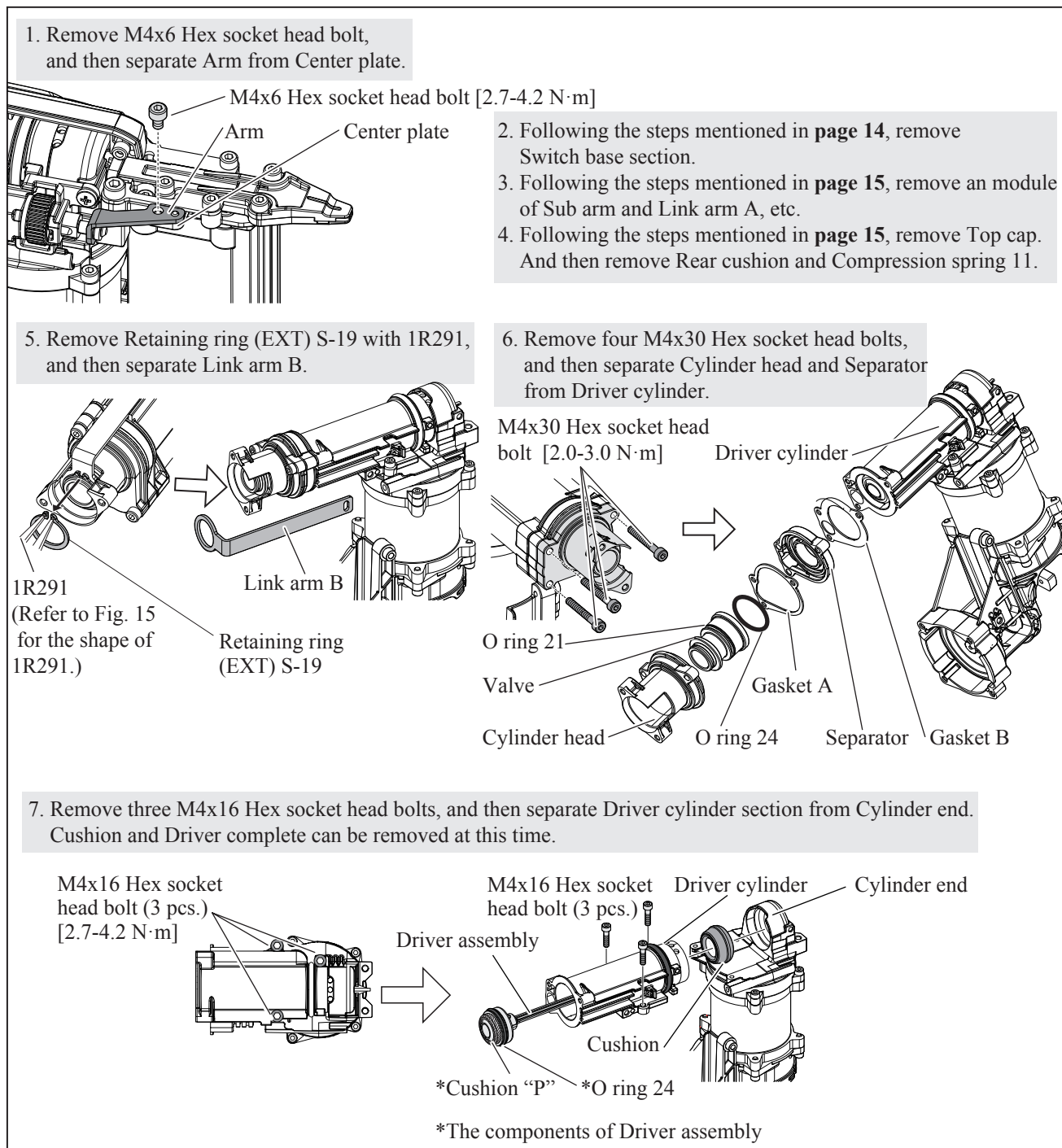
[4] DISASSEMBLY/ ASSEMBLY

[4]-5. Valve, Crank, Driver complete, Cushion

DISASSEMBLING

- (1) Remove Motor housing set from Gear assembly. Refer to **pages 10 and 11**.
- (2) Remove Driver complete as drawn in **Fig. 19**.

Fig. 19



ASSEMBLING

Assemble the components by reversing the disassembly procedure.

Note: • Following to the steps mentioned in **pages 19 and 20**, assemble and adjust Sub arm and Link arm A.

- Move the crank portion to the lower dead point, and install the module of Motor housing and Main cylinder into Housing L. (**Fig. 16 of Page 13**)

► **Repair**

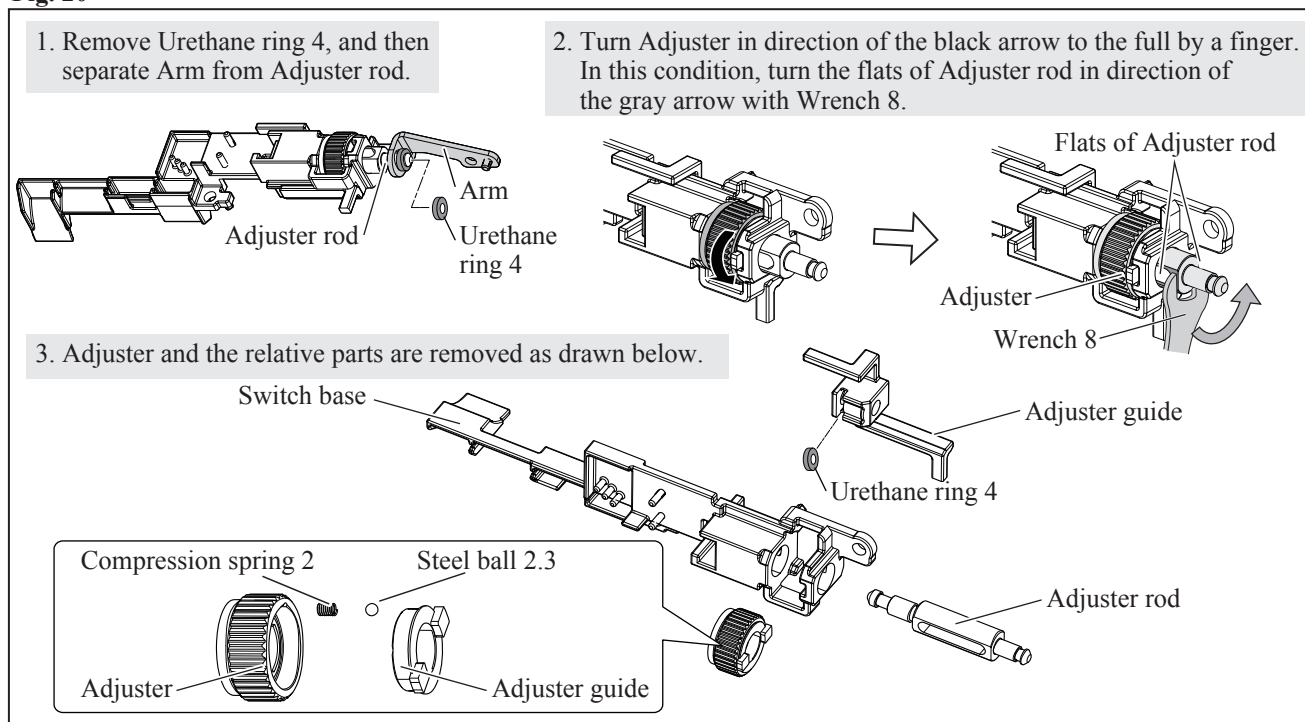
[4] DISASSEMBLY/ ASSEMBLY

[4]-6. Adjuster

DISASSEMBLING

Following the steps mentioned in Fig. 16 of page 14, remove Switch base. And then, remove Adjuster as drawn in Fig. 20.

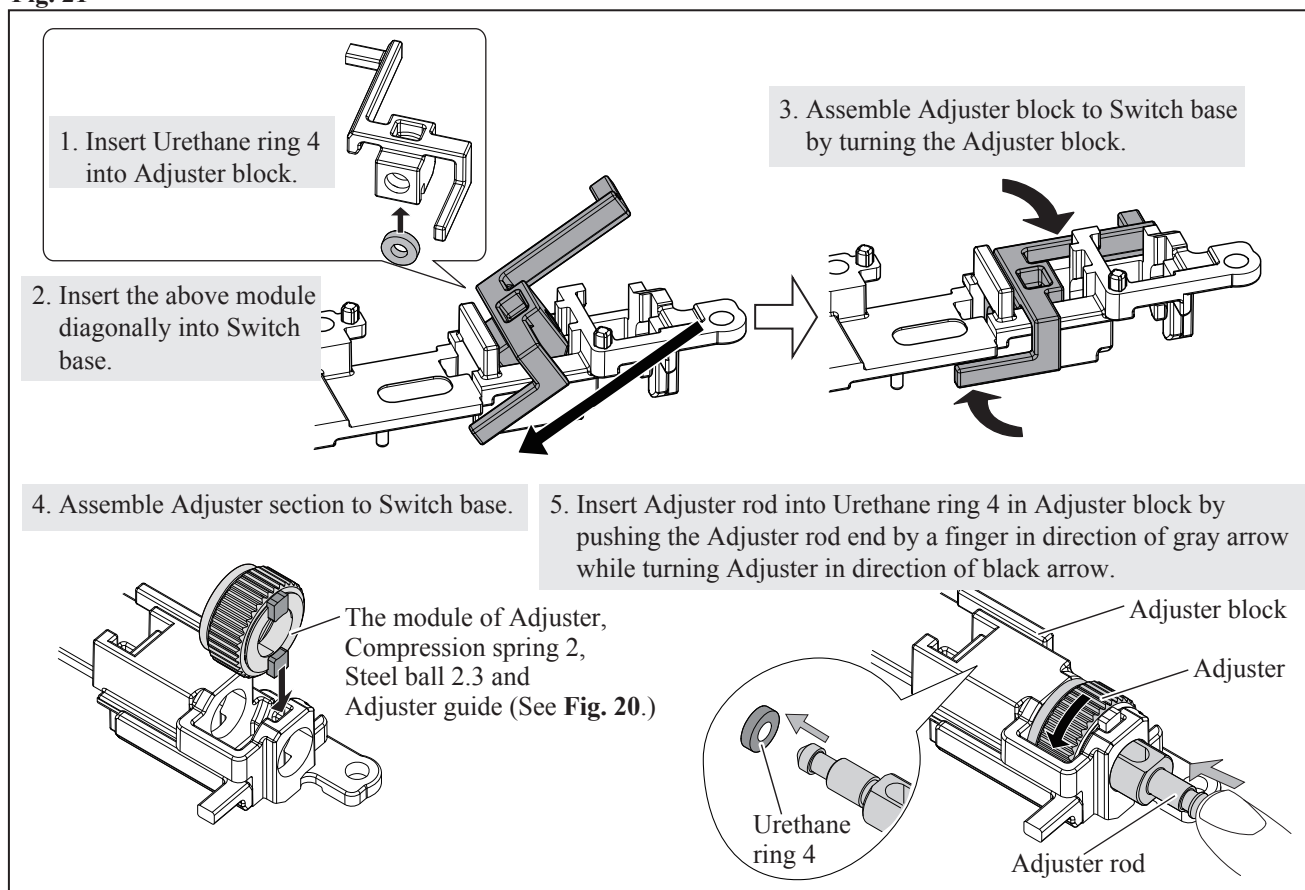
Fig. 20



ASSEMBLING

Refer to Figs. 21.

Fig. 21



► **Repair**

[4] DISASSEMBLY/ ASSEMBLY

[4]-7. Sub arm, Link arm A

DISASSEMBLING

Remove M4x10 Hex socket head bolt and Plate B, and then separate M4x16 Hex socket head bolt on Flat washer 4.

(Refer to the step 1 in Fig. 17 of page 15.)

The module of Sub arm and Link arm A can be disassembled as drawn in Fig. 22.

ASSEMBLING

- (1) Move Connecting rod and Crank to lower dead point. (Fig. 15 of page 13)
- (2) Fit Retaining ring (EXT) S-19 into the groove of Valve with 1R291. (Fig. 23)
- (3) Assemble the module of Link arm A and Sub arm, etc. (Fig. 24)
- (4) Use Flat washers 4 (large and Small), M4x16 Hex socket head screw and M4x6 Hex socket head screw to set the above module in place. (Fig. 25)

Fig. 22

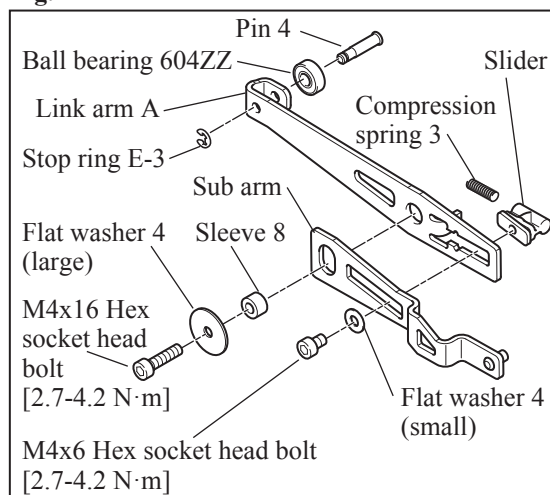


Fig. 23

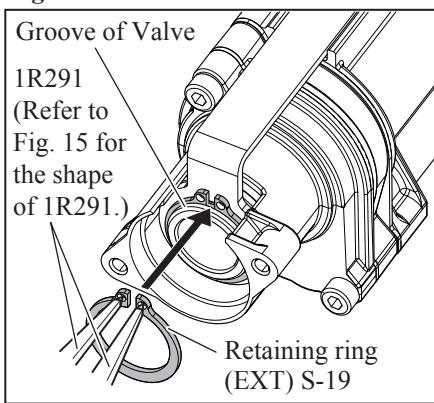


Fig. 24

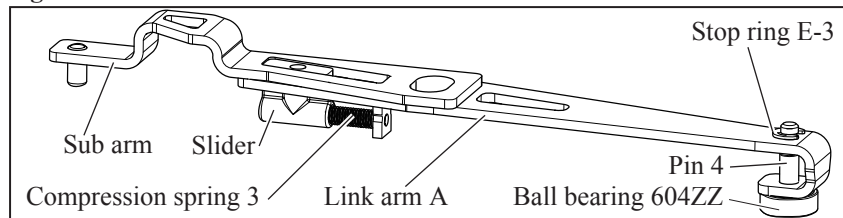
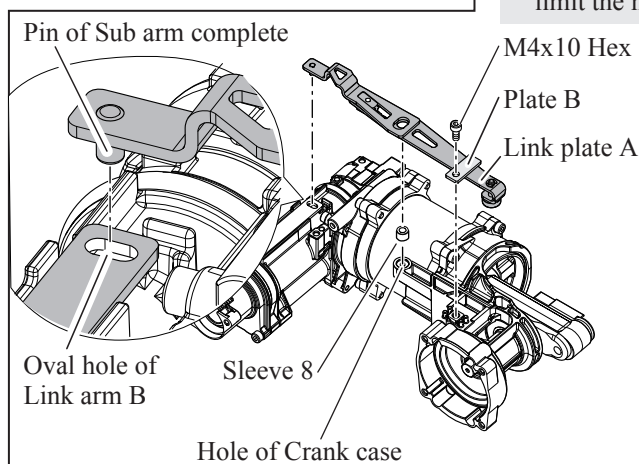
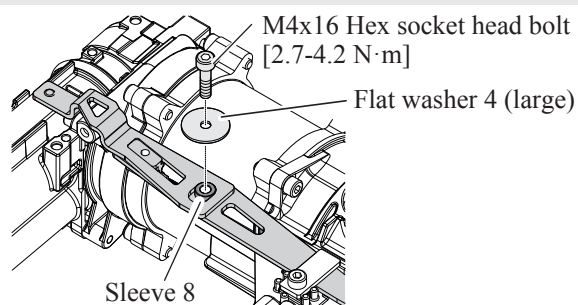


Fig. 25

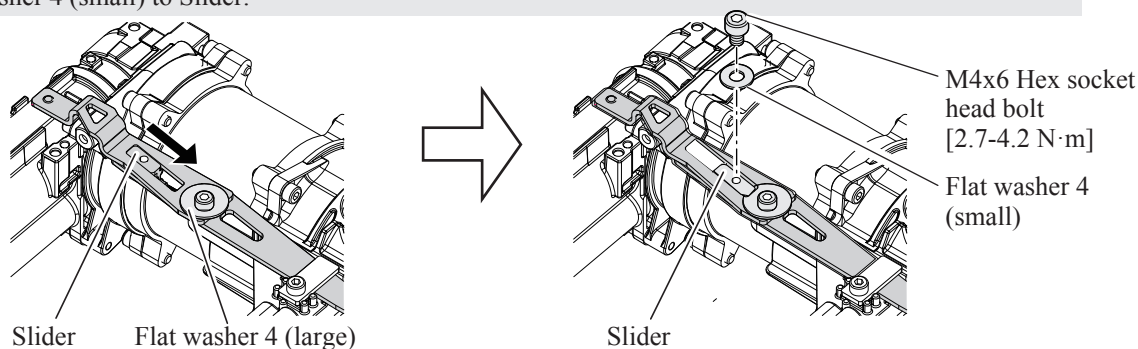
1. Put Sleeve 8 on the hole of Crank case, and fit the pin of Sub arm complete into the oval hole of Link arm B while aligning the Sleeve 8 with the threaded hole of Crank case.
2. assemble M4x10 Hex socket head bolt and Plate B to Crank case to limit the motion range of Link plate A.



3. Assemble M4x16 Hex socket head bolt with Flat washer 4 (large) to Crank case through Sleeve 8.



4. Move Slider to the closest position to Flat washer 4 (large), and pretighten M4x6 Hex socket head bolt with Flat washer 4 (small) to Slider.



► Repair

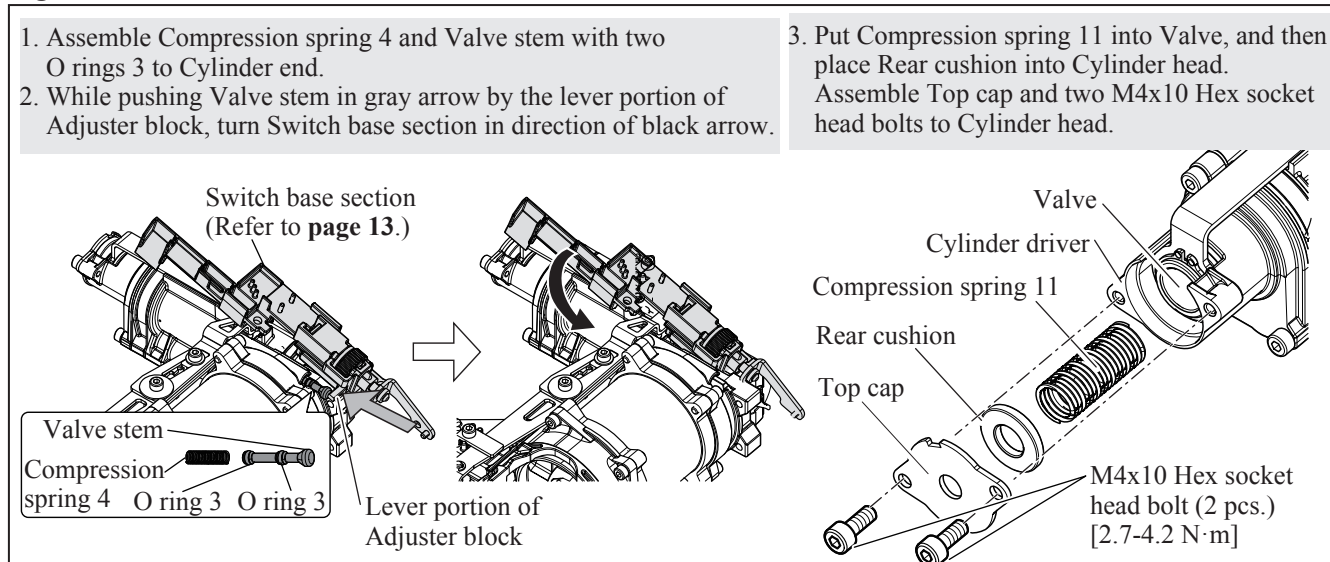
[4] DISASSEMBLY/ ASSEMBLY

[4]-7. Sub arm, Link arm A (cont.)

ASSEMBLING

(5) Assemble Switch base section and then set Compression spring 11, Rear cushion, Top cap and two M4x10 Hex socket head bolts as drawn in **Fig. 26**.

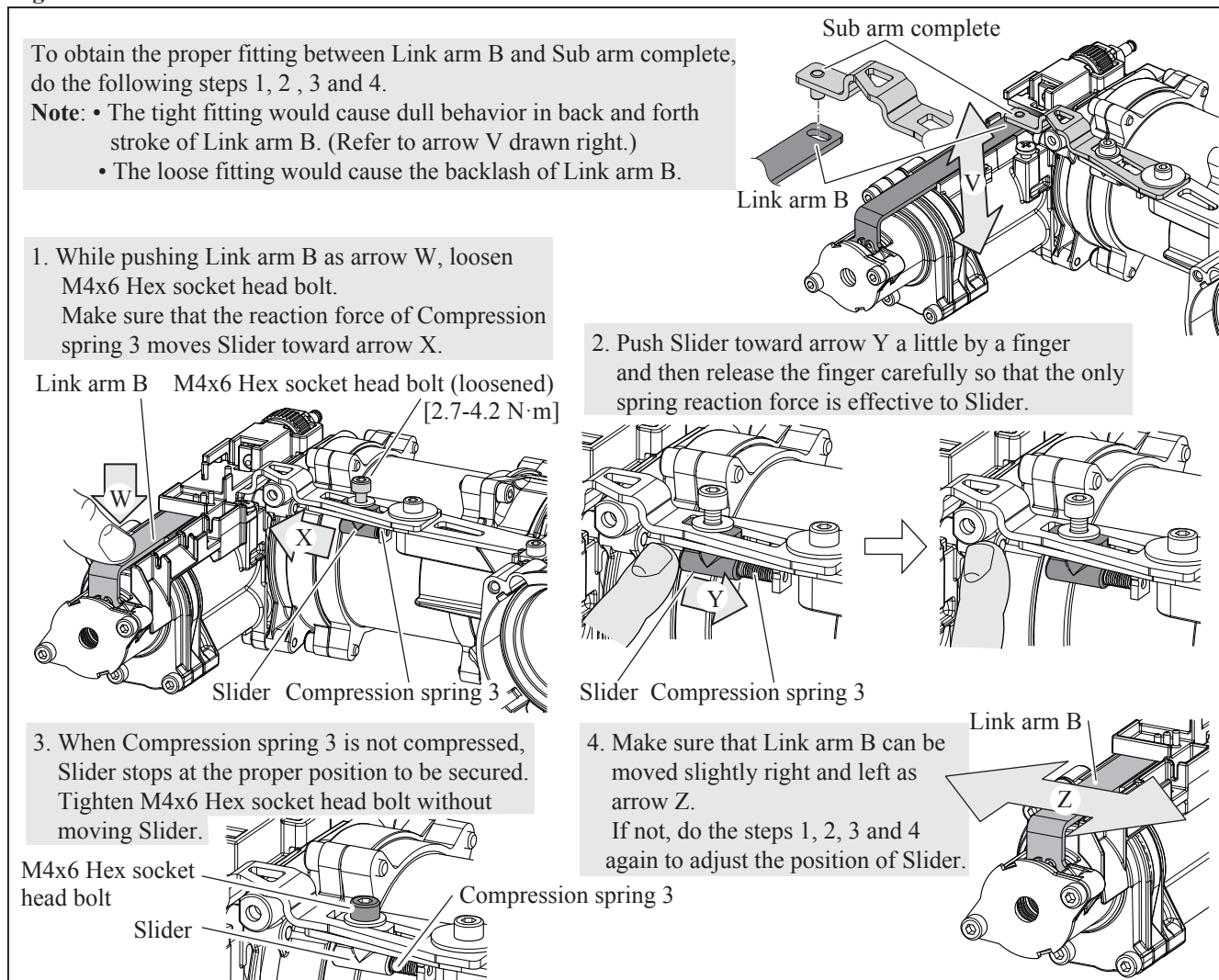
Fig. 26



(6) Loosen the pretightened M4x6 Hex socket head screw.

Adjust the linkage of Link arm B, Sub arm complete, Link arm A and Slider, and then tighten M4x6 Hex socket head screw. (**Fig. 27**)

Fig. 27



► Repair**[4] DISASSEMBLY/ ASSEMBLY****[4]-8. Check of Air leakage**

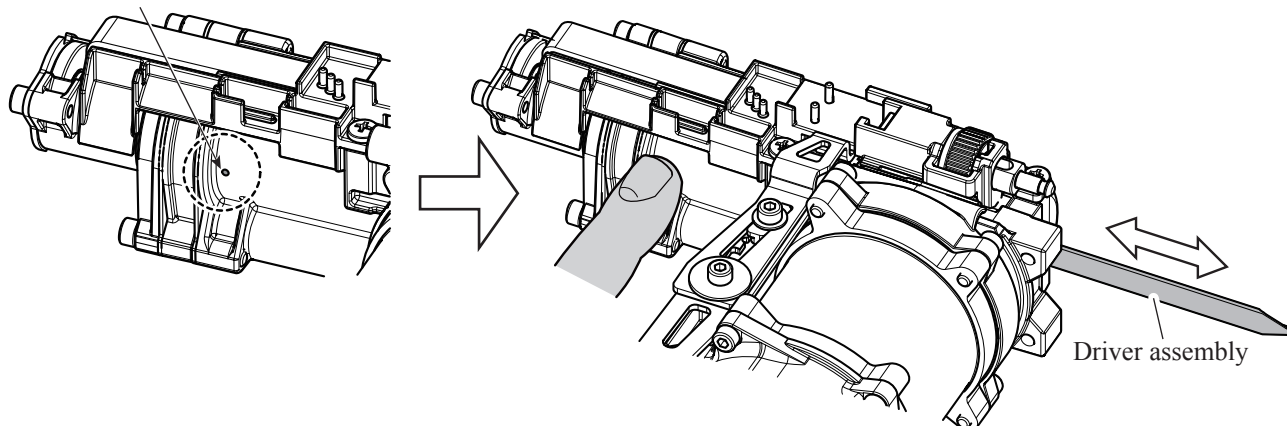
ASSEMBLING

See Fig. 28.

Fig. 28

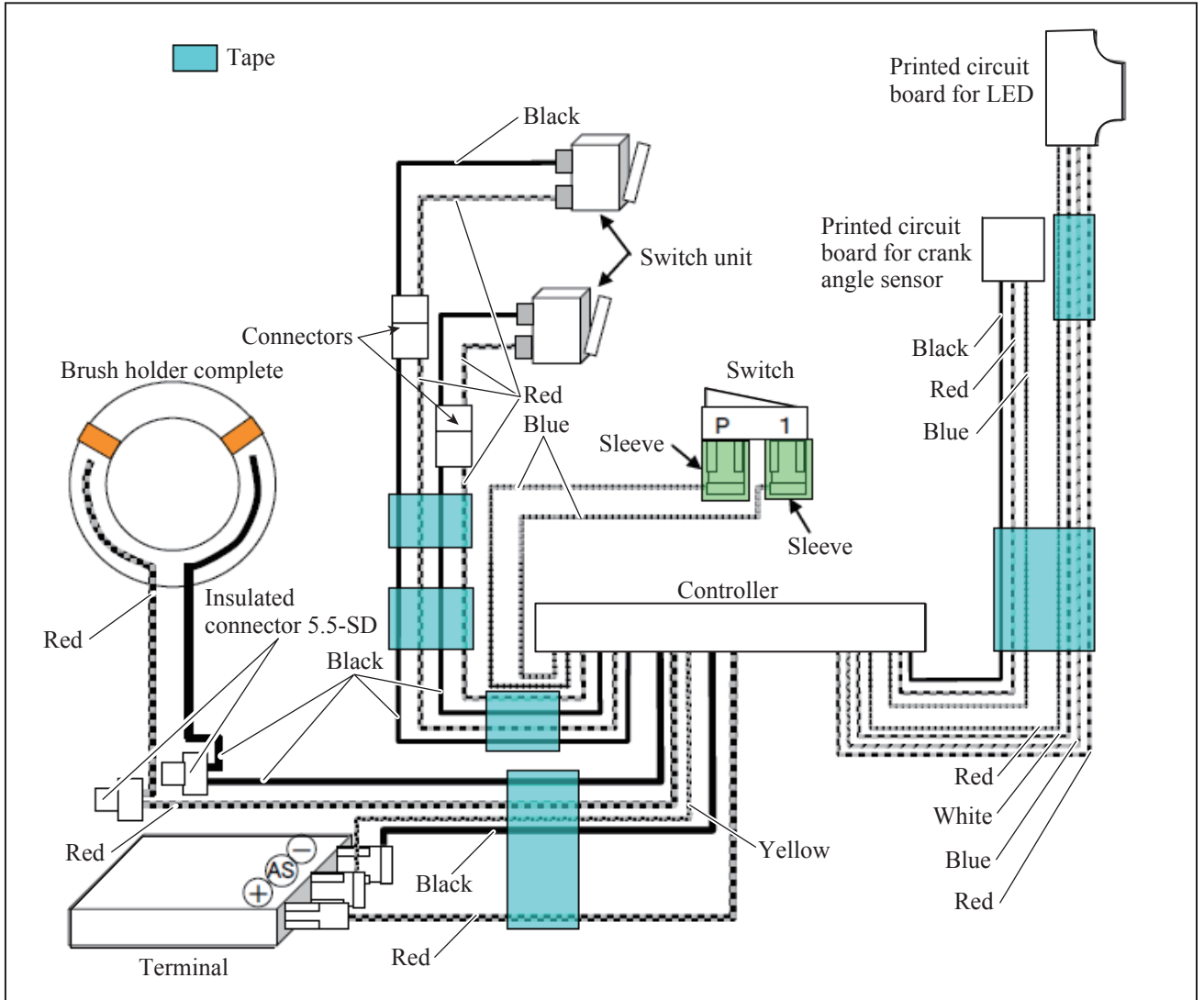
Fill the hole of Driver cylinder for air path using your finger in condition that Driver complete is set in place, and check that you cannot push and pull Driver assembly by hand. If you can move Driver assembly, air leakage occurs somewhere.

Hole of Driver cylinder for air path



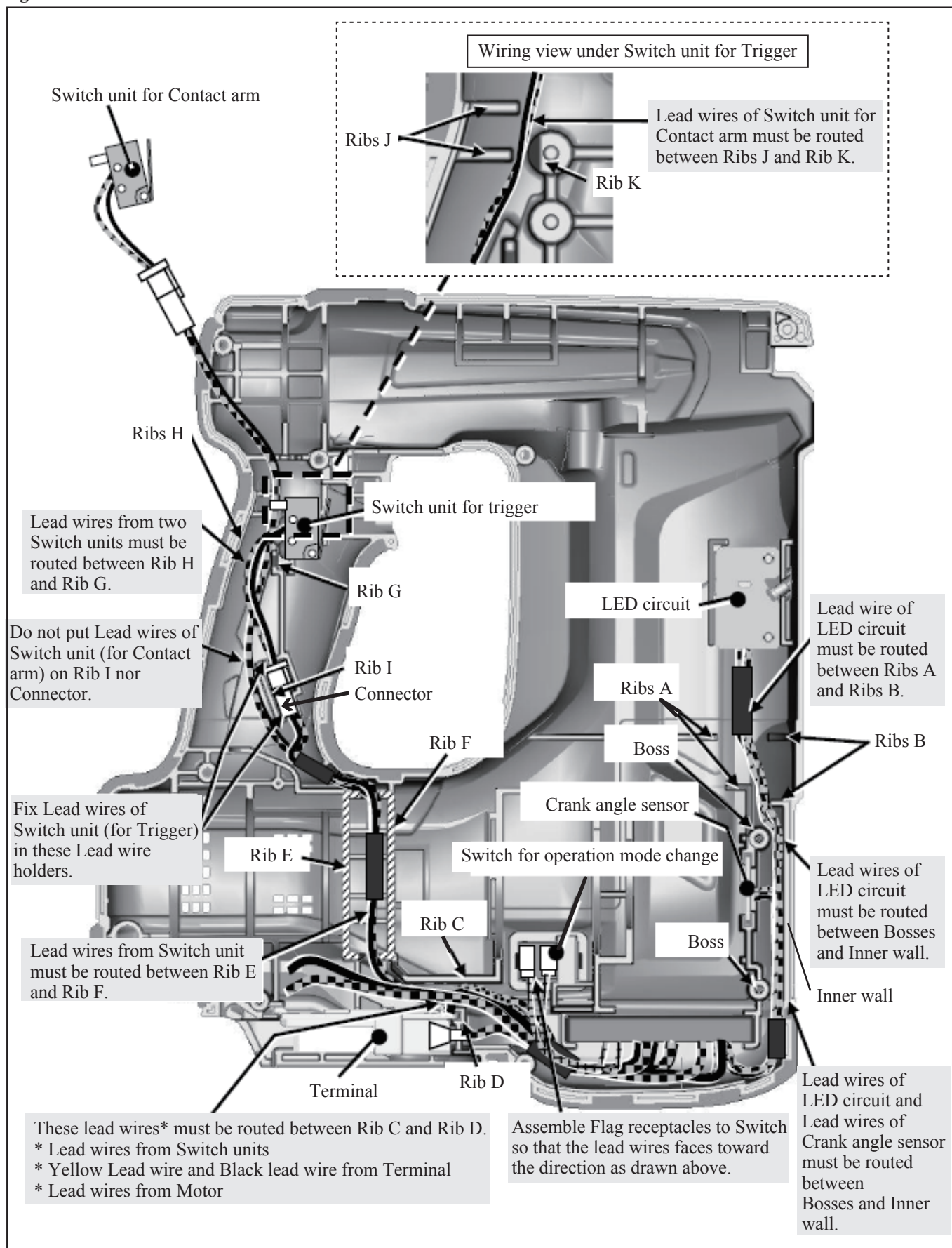
► Circuit diagram

Fig. D-1



► **Wiring diagram**

Fig. D-2



► **Wiring diagram**

Fig. D-3

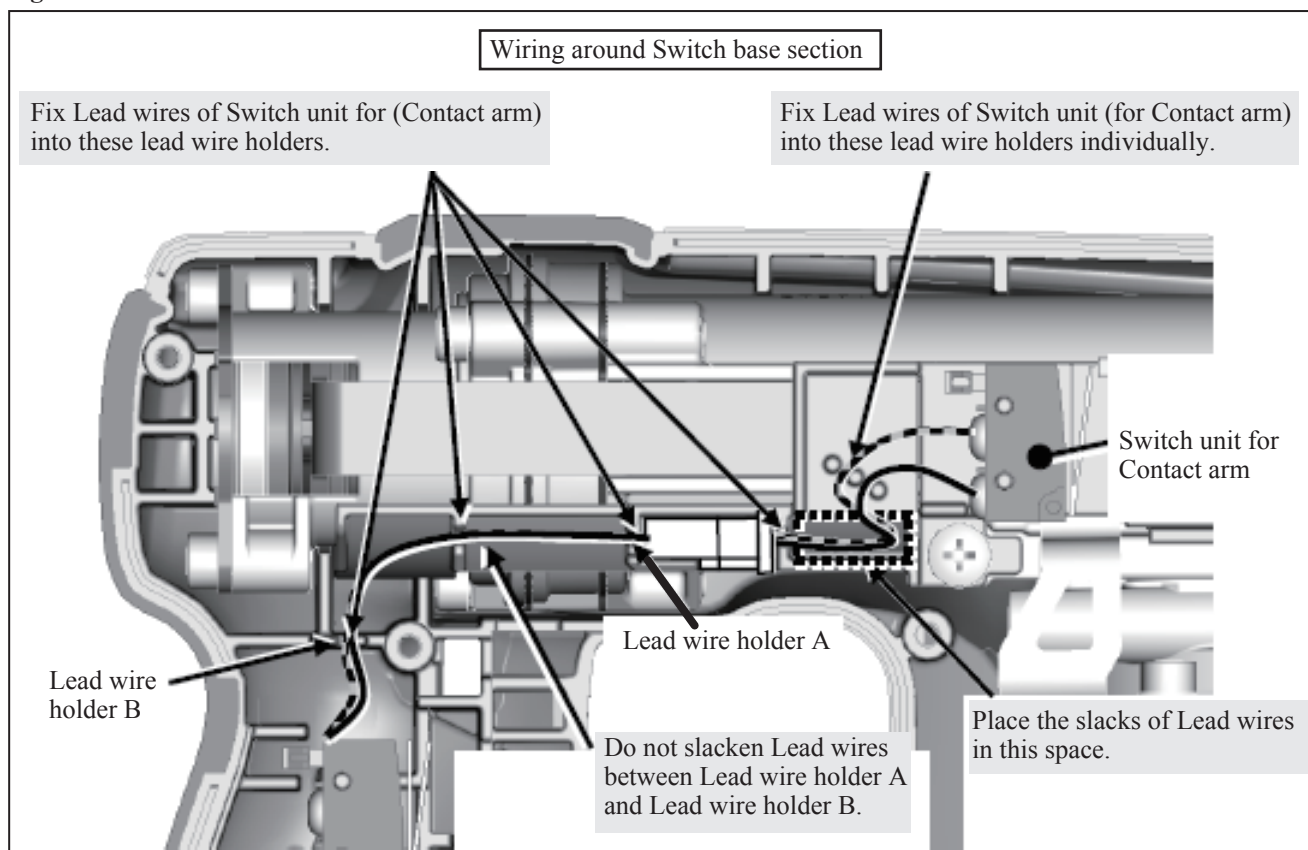


Fig. D-4

