

CORDLESS BRAD NAILER DBN600

REPAIR MANUAL



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2 CAUTION

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

Follow the instructions described below in advance before repairing:

- Wear gloves.
- In order to avoid wrong reassembly, draw or write down where and how the parts are assembled, and what the parts are. It is also recommended to have boxes ready to keep disassembled parts by group.
- Handle the disassembled parts carefully. Clean and wash them properly.

3 NECESSARY REPAIRING TOOLS

Code No.	Description	Use for
1R026	Bearing setting pipe 16-8.2	removing/ assembling Latch
1R041	Vise plate	removing/ assembling Crank
1R219	Torque wrench shaft 7-23N.m	assembling Crank
1R220	Ratchet head 9.5 (for 1R219)	use with 1R219
1R222	Socket adapter (for 1R219)	use with 1R220
1R258	V block	removing/ assembling Spur gear 44
1R267	Spring extractor M2.5	removing/ assembling Spur gear 44
1R268	Spring extractor M3	fixing Pusher lever and removing/ assembling Latch
1R291	Retaining ring S and R pliers	removing Retaining ring R-28

4 LUBRICANT AND ADHESIVE APPLICATION

Description		Amount
↑	Isoflex NB52	A little if not indicated

5 TIGHTENING TORQUE SPECIFICATIONS

No.	Parts to fasten		Fastener	Tightening torque (N·m)	Quantity	
1	Top cap	⇔	Main cylinder	M5x18 Hex socket head bolt	4.5 – 6.5 *1	4
2	Top cap	⇔	Stem holder	M4x12 Hex socket head bolt	2.7 – 4.2	2
3	Shaft	⇔	Crank	Shaft	15 – 18	1
4	Housing R	⇔	Housing L	M5x8 Pan head screw	1.2 – 1.8	1
5	Driver guide	⇔	Magazine	M4x12 Hex socket head bolt	1.0 – 1.8 *2	2
6	Driver guide	⇔	Crank case	M5x25 Hex socket head bolt	5.0 – 7.5	2
7	Top cap	⇔	Spring bracket	M5x12 Hex bolt	5.0 – 7.0 *2	2
8	Adjuster shaft	⇔	Hex nut M8	Adjuster shaft	7.5 – 9.5	1
9	Crank case	⇔	Main cylinder	M4x28 Hex socket head bolt	3.0 – 4.2 *2	4
10	Adjuster base	⇔	Crank case	M4x16 Pan head screw	1.0 – 1.8	1
11	Gear assembly	⇔	Crank case	M4x16 Hex socket head bolt	1.0 – 1.8	4
12	Button	⇔	Pusher	3x8 Tapping screw	0.6 – 0.9	1
13	Magazine	⇔	Magazine end	3x16 Tapping screw	1.0 – 1.7	2

*1 Apply a little of Loctite 243.

*2 Apply a little of Loctite 272.

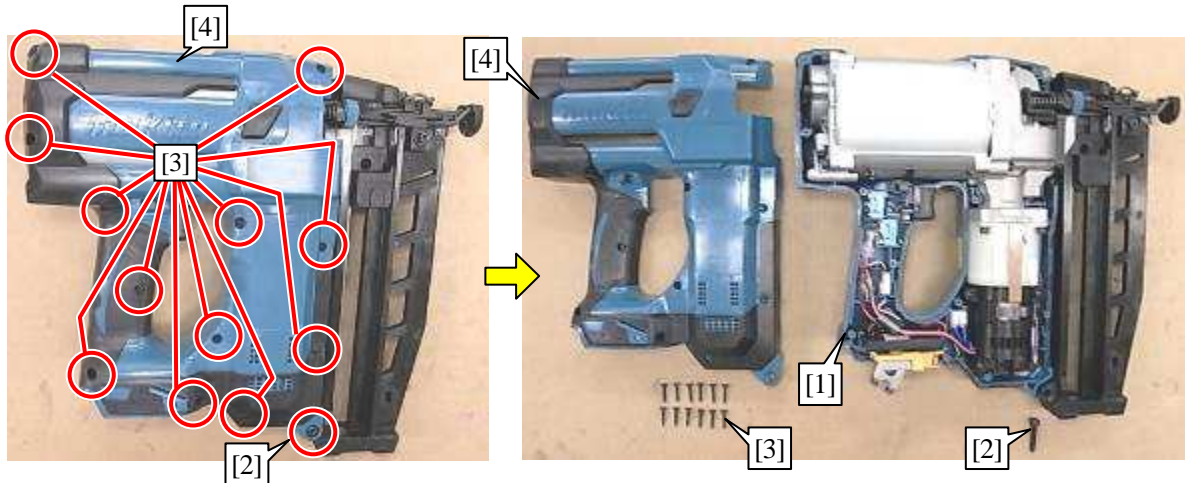
6 REPAIR

Note: Be sure to remove battery and Nails before repairing.

6-1 Magazine section

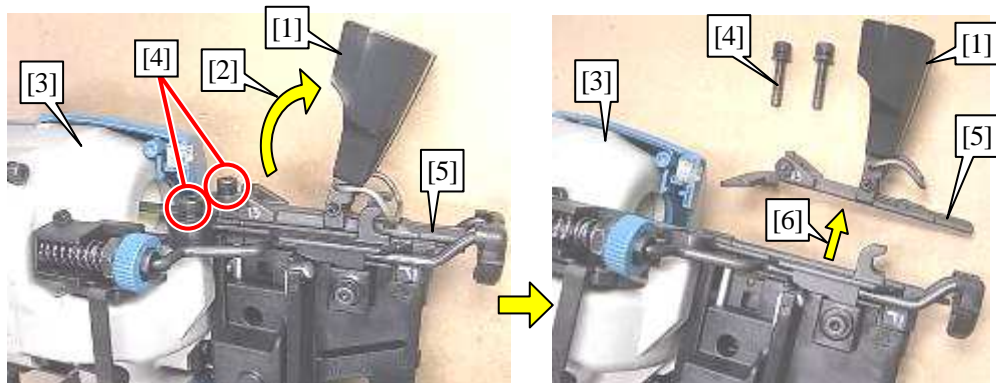
6-1-1 Disassembling

Fig. 1



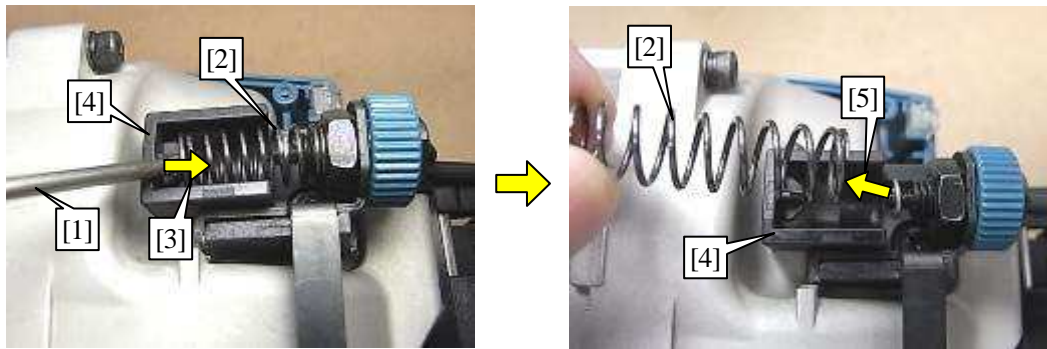
- 1 Remove an M5x28 Pan head screw [2] and 3x16 Tapping screws [3] (12 pcs) from Housing L [1]. Then remove Housing R [4].

Fig. 2



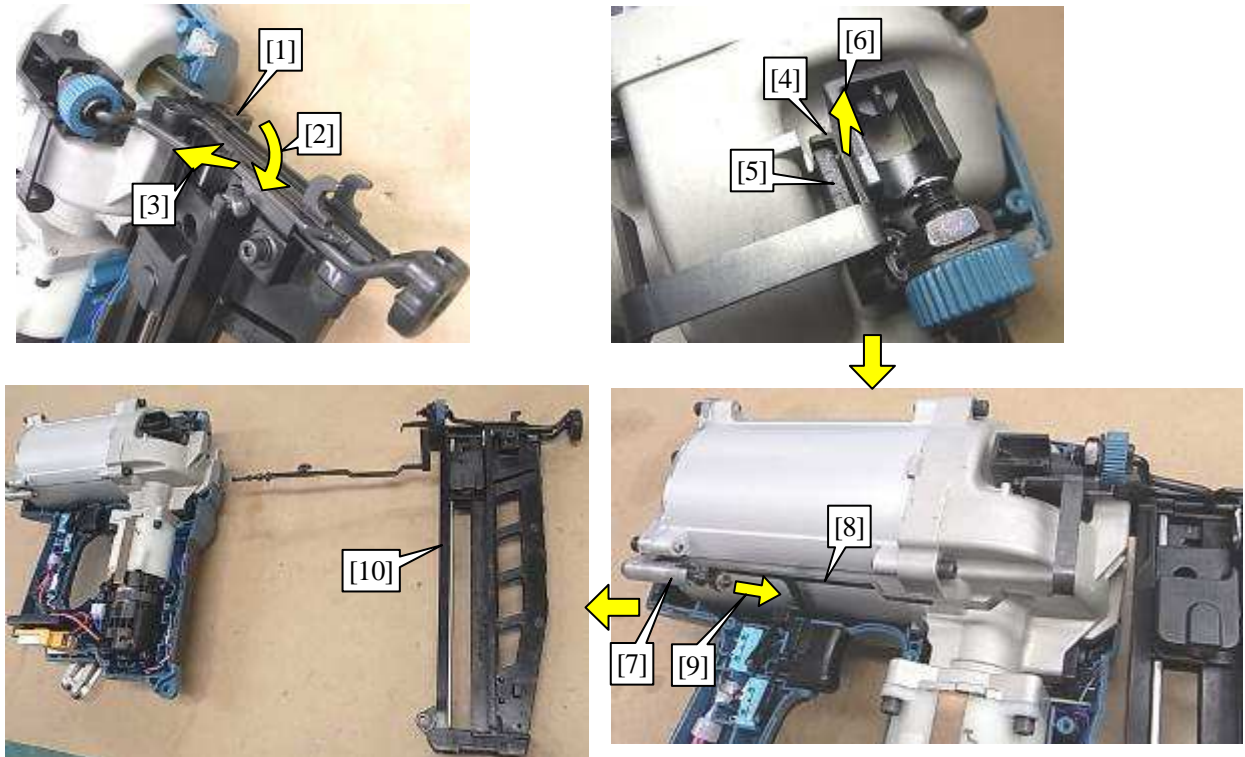
- 2 Open [2] Latch cover [1]. Remove M5x25 Hex socket head bolts [4] (2 pcs) from Crank case [3]. Remove [6] Door section [5].

Fig. 3

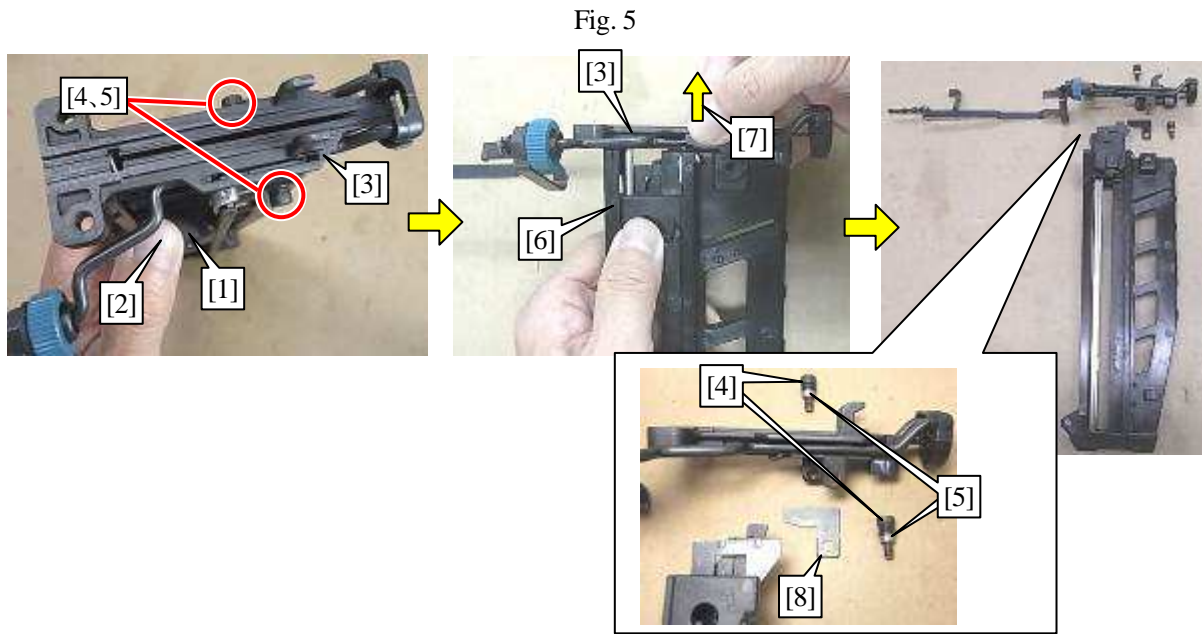


- 3 Compress [3] Compression spring 9 [2] using Slotted screwdriver [1]. Remove Compression spring 9 [2] from Adjuster base [4].

Fig. 4



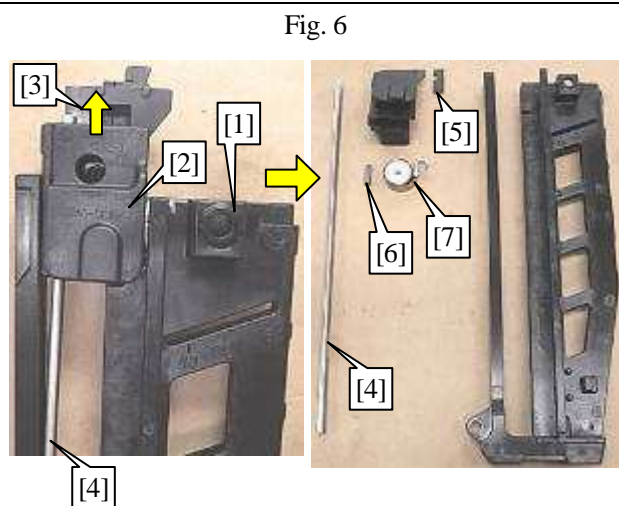
- 4 Remove [6] the bent portion of Arm [4] from Adjuster base [5] while lifting up [3] Driver guide [1] by turning [2] it. Remove [9] Arm section [8] from Stem holder [7]. Remove Driver guide and Magazine [10].



5 Remove M4x12 Hex socket head bolts [4] (2 pcs) and Sleeves 4 [5] (2 pcs) from Driver guide [3] by supporting [2] Pusher lever [1]. Remove [7] Driver guide section [3] from Magazine section [6].

- Guide plate [8]

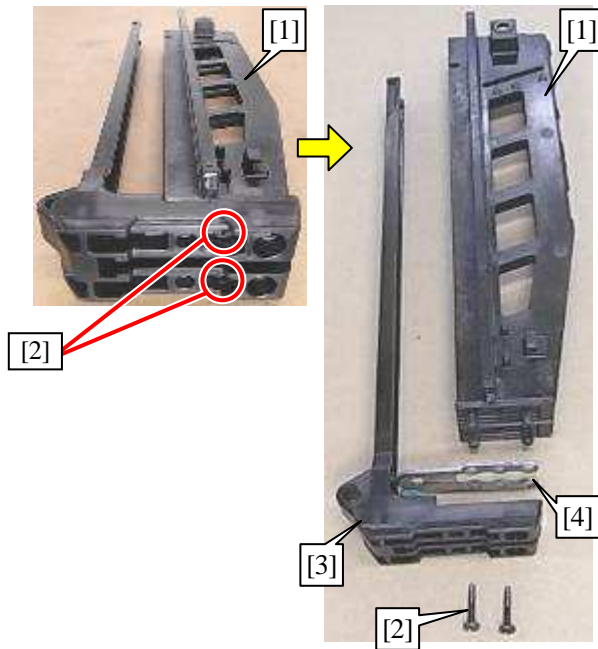
Note
Be sure not to lose Sleeve 4 [5].



6 Remove [3] Pusher lever section [2] from Magazine section [1]. Remove Nail rail [4].

- Stopper [5]
- Pin 5 [6]
- Spiral spring [7]

Fig. 7

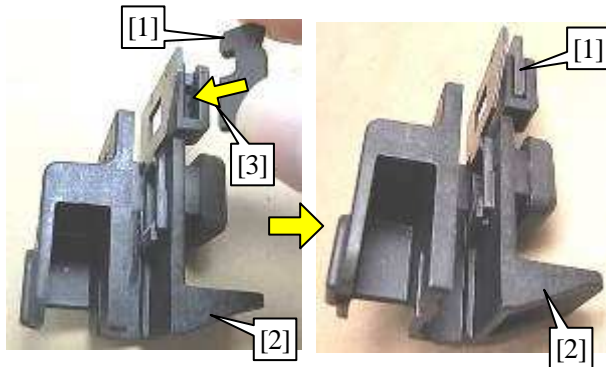


- 7 Remove 3x16 Tapping screws [2] (2 pcs) from Magazine [1]. Remove Magazine end [3] and End plate [4].

6-1-2 Assembling

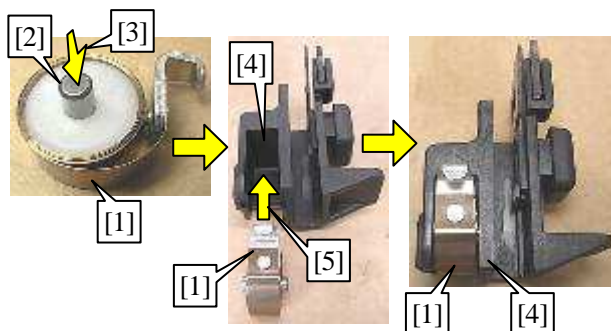
- 1 Reverse the procedure. (6-1-1)

Fig. 8



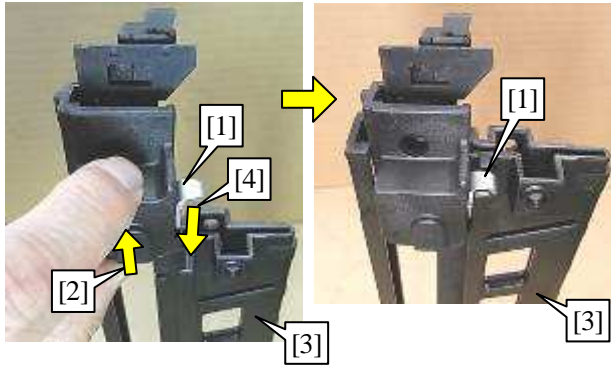
- 2 Insert [3] Stopper [1] into Pusher lever portion [2] if Stopper [1] is disengaged.

Fig. 9



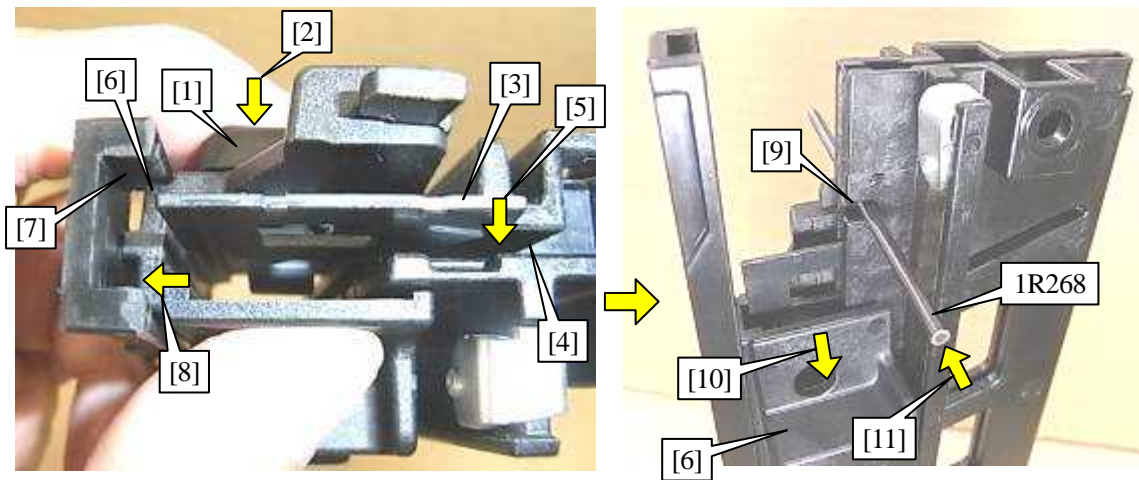
- 3 Insert [3] Pin 5 [2] in Spiral spring [1]. Insert [5] Spiral spring [1] in the groove of Pusher lever [4].

Fig. 10



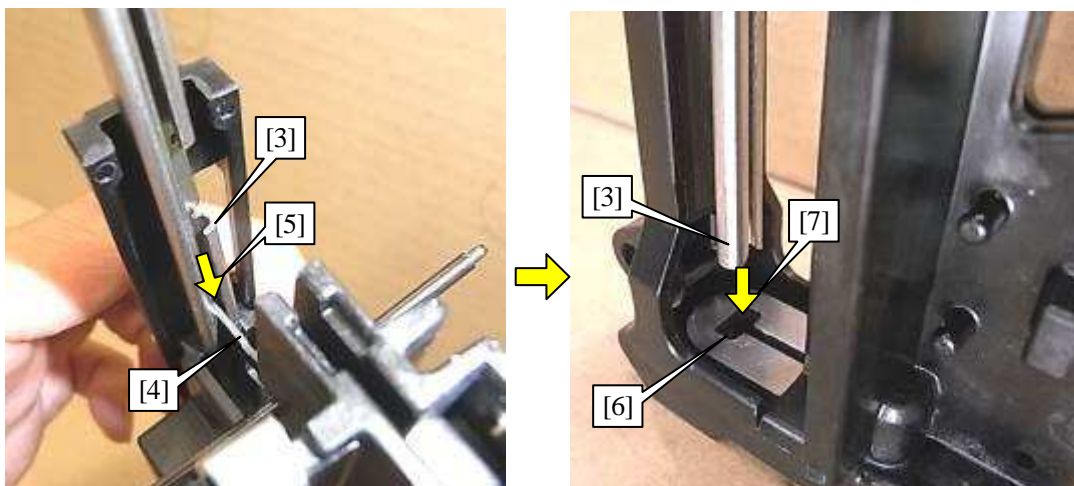
- 4 Set [4] to Magazine [3] by supporting [2] Spiral spring [1] so that Spiral spring [1] does not come off.

Fig. 11



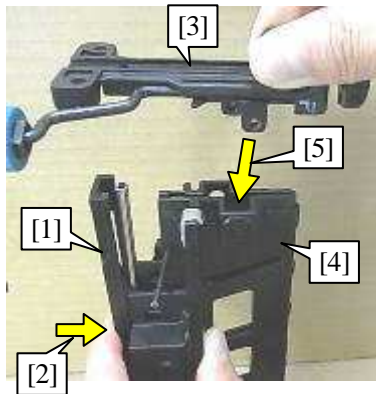
- 5 Set [8] the protrusion of Pusher lever [6] in the groove of Magazine end [7] while setting [5] Pusher [3] in the groove of Magazine [4] by pushing [2] Button [1].
- 6 Push down [10] Pusher lever [6] to the position that U groove of Magazine [9] reveals. Fix Pusher lever [6] by inserting [11] 1R268.

Fig. 12



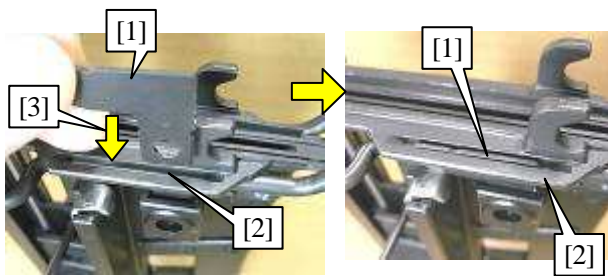
- 7 Set [5] the groove of Nail rail [3] in Pusher [4] while pushing [2] Button [1] of (Fig. 11) and aligning the cutout portion of Nail rail [3] to the arrowed direction. Set [7] the edge of Nail rail [3] to the groove of End plate [6].

Fig. 13



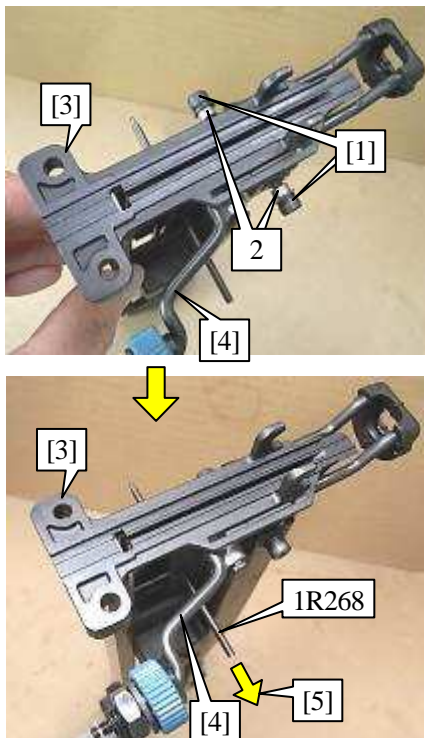
- 8 Insert [5] Driver guide [3] in Magazine [4] while pushing [2] Magazine end [1].

Fig. 14



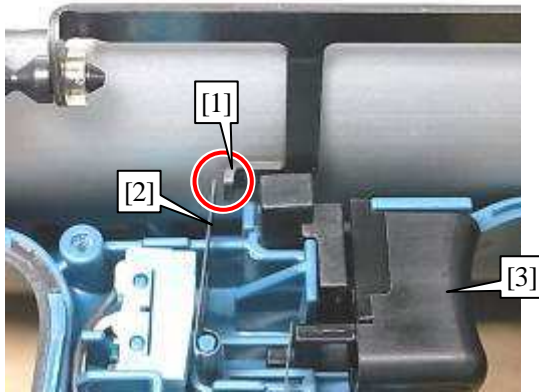
- 9 Insert [3] Guide plate [1] in the groove of Driver guide [2].

Fig. 15



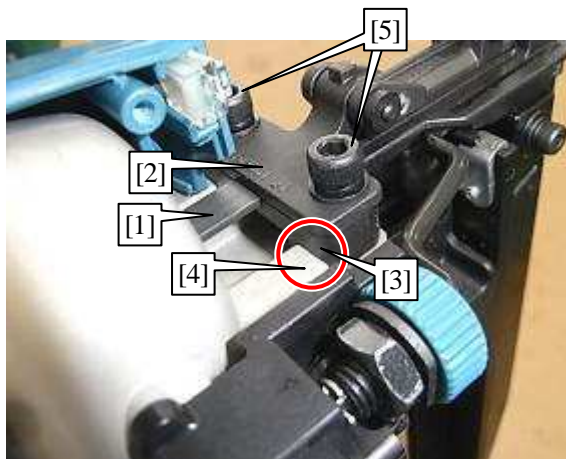
- 10 Put Loctite 272 on M4x12 Hex socket head bolts [1] (2 pcs) a little bit. Tighten M4x12 Hex socket head bolts [1] (2pcs) while being sure to set Sleeve 4 [2] (2 pcs). Fix Driver guide [3] and Contact top [4] and pull out [5] 1R268.

Fig. 16



- 11 Set to Housing so that the bent portion of Arm [1] comes closer to the Trigger side [3] than Leaf spring [2].

Fig. 17



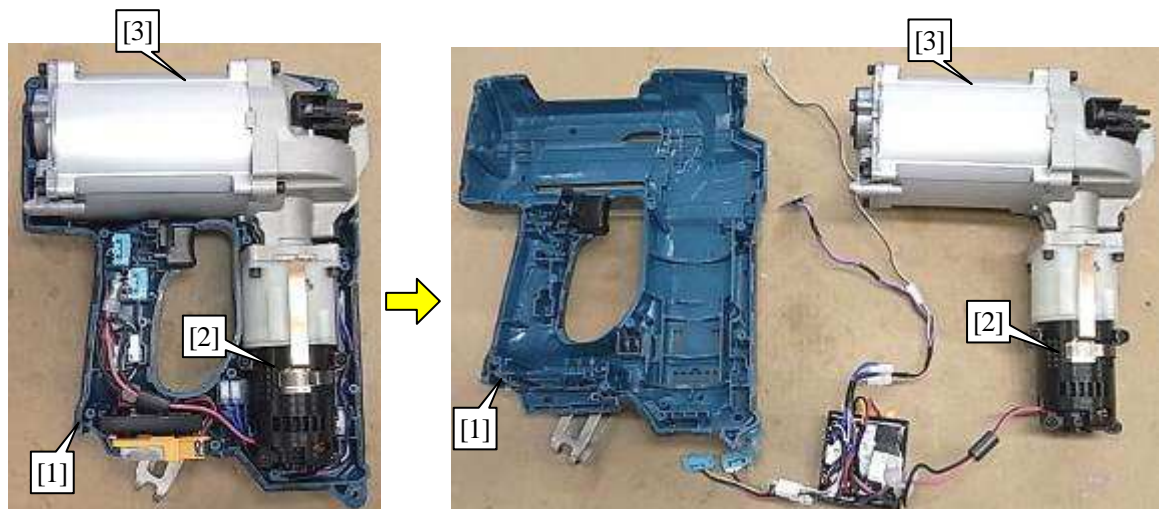
- 12 Facing the flat sides of Driver [1] to the door side [2], and applying the side surface of Driver guide [3] to the side surface of Crank case [4], tighten M5x25 Hex socket head bolts [5] (2 pcs).

6-2 Armature and Gear assembly

6-2-1 Disassembling

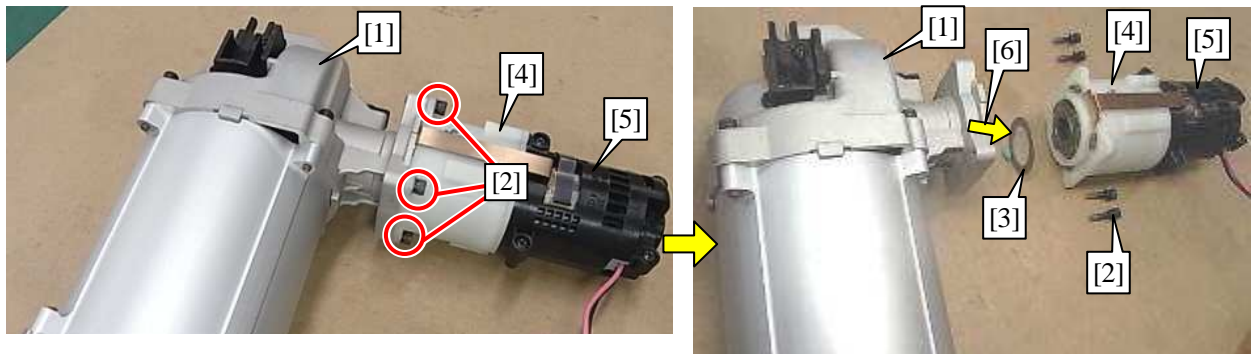
- 1 Remove Housing R, Driver guide and Magazine. (6-1-1).

Fig. 18



- 2 Remove Motor section [2] and Main cylinder section [3] from Housing L [1].

Fig. 19

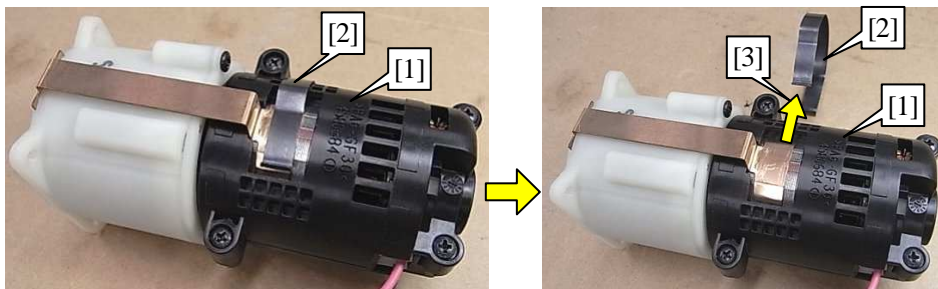


- 3 Remove M4x16 Hex socket head bolts [2] (4 pcs) from Crank case [1]. Remove [6] Flat washer 23 [3], Gear assembly [4] and Motor housing [5].

Note

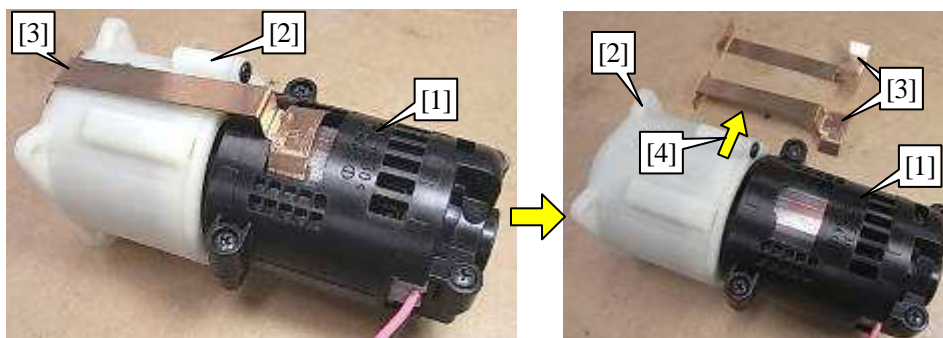
Be sure not to lose Flat washer 23 [3].

Fig. 20



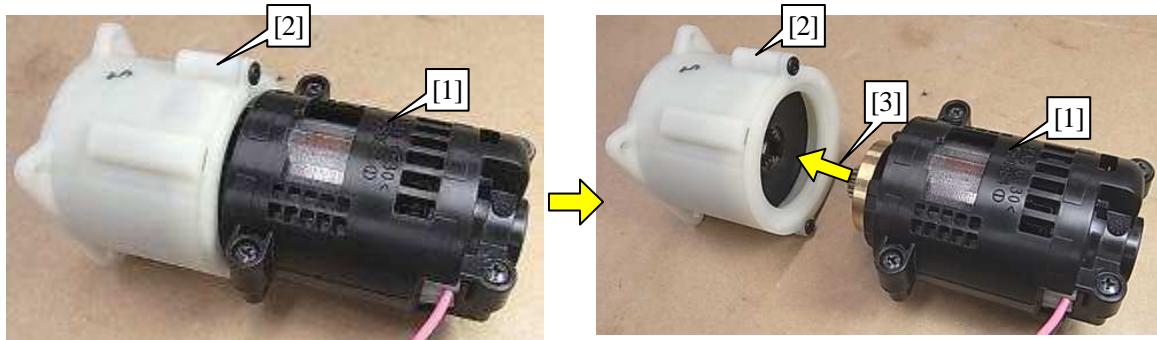
- 4 Remove [3] Leaf spring [2] from Motor housing [1].

Fig. 21



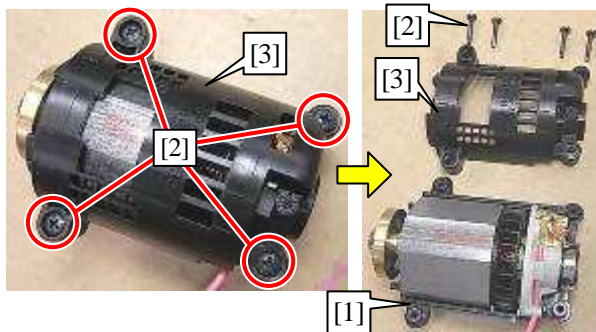
- 5 Remove [4] Plates [3] (2 pcs) from Motor housing [1] and Gear assembly [2].

Fig. 22



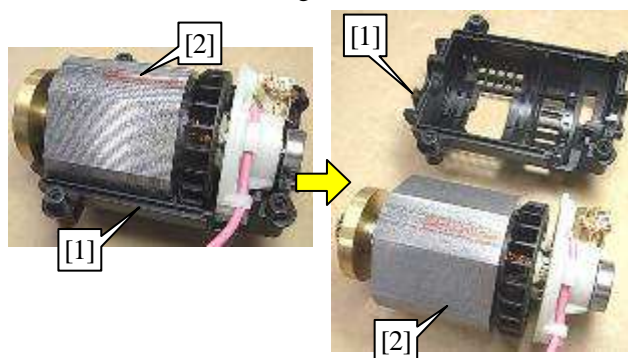
6 Remove [3] Gear assembly [2] from Motor housing [1].

Fig. 23



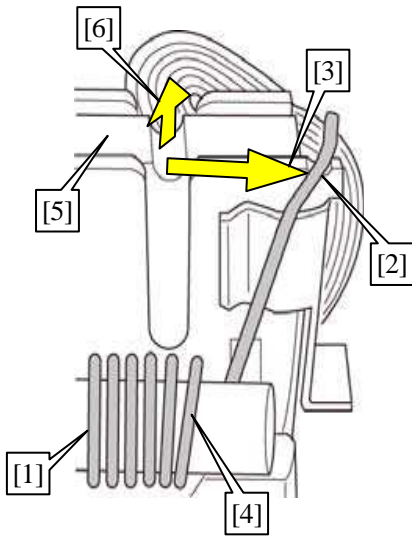
7 Remove 3x16 Tapping screws [2] (4 pcs) from Motor housing L [1]. Remove Motor housing R [3].

Fig. 24



8 Remove Armature [2] from Motor housing L [1].

Fig. 25

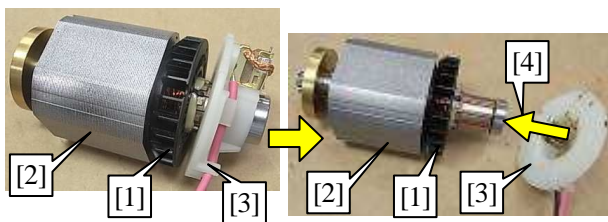


- 9 Hook [3] Torsion spring [1] to the groove of Brush holder [2]. Float [6] Carbon brush [5].

Tips

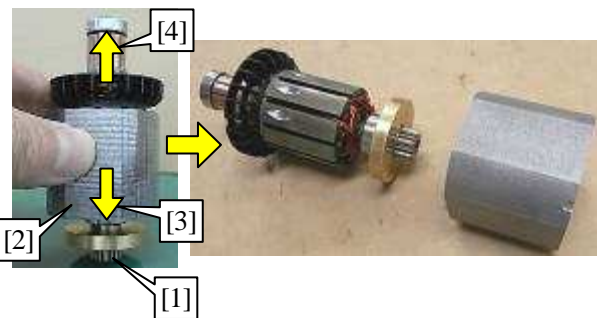
Hold the illustrated parts [4] so that Torsion spring [1] does not come off.

Fig. 26



- 10 Pull out [4] Armature [1] and York unit [2] from Brush holder [3].

Fig. 27



- 11 Applying the gear side of Armature [1] on work bench, and pushing down [3] York unit [2], and pull out [4] Armature [1].

6-2-2 Assembling

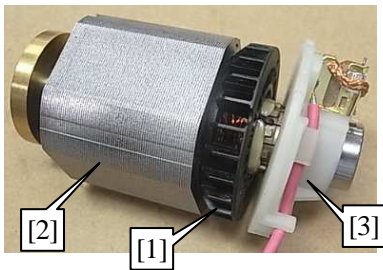
- 1 Reverse the procedure (6-2-1).

Fig. 28



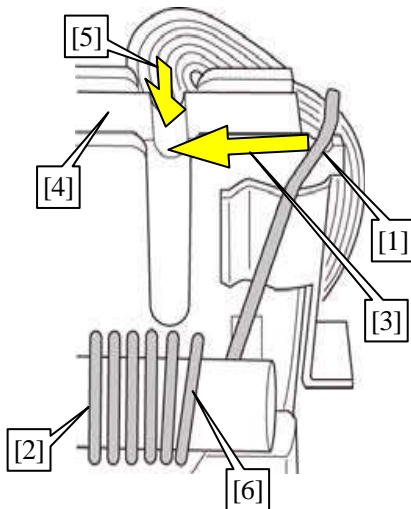
- 2 Facing the cutout portion of York unit [1] to the gear side of Armature [2], assemble them.

Fig. 29



- 3 Assemble Armature [1] and York unit [2] to Brush holder [3].

Fig. 30

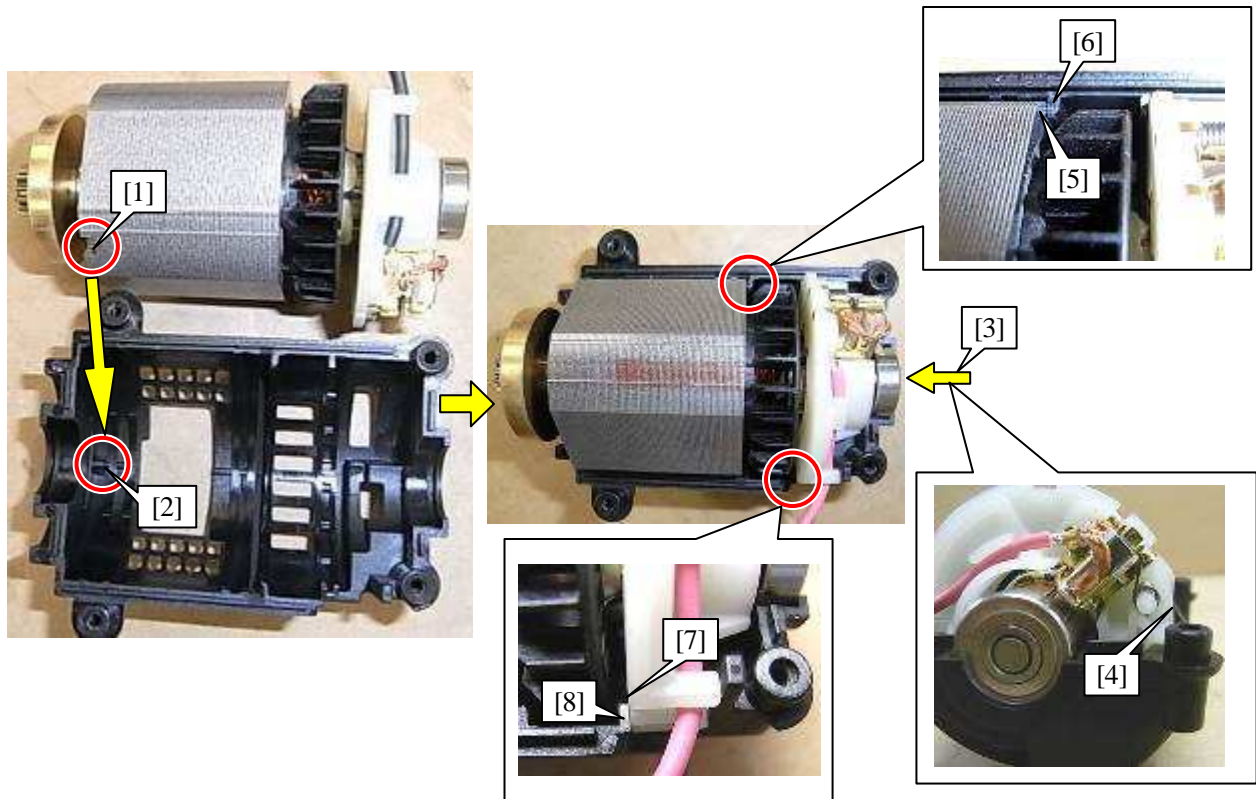


- 4 Set Torsion spring [2] that is hooked to the groove of Brush holder side [1] to the initial position [3]. Hold [5] Carbon brush [4].

Tips

Hold the illustrated portion [6] so that Torsion spring [2] does not come off.

Fig. 31

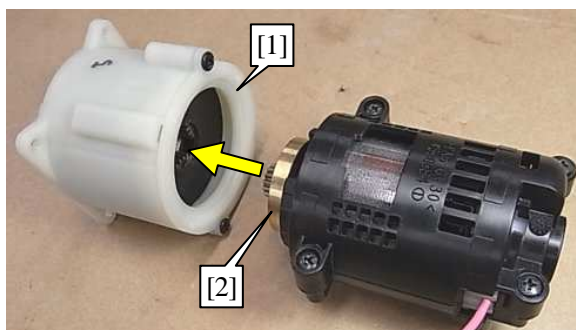


5 Assemble by facing the cutout portion of York unit [1] to the protrusion of Motor housing L [2].

Tips

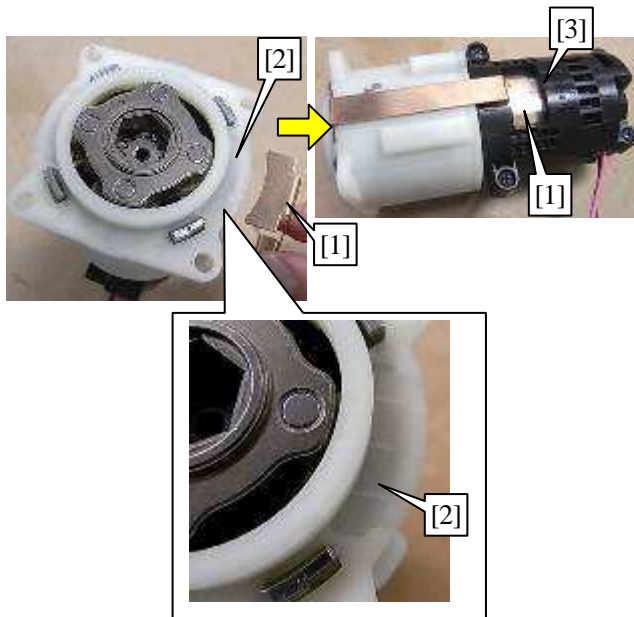
- Be sure that the flat surface of Brush holder [4] is fit vertically when viewed from arrow side [3].
- Be sure that the sides of York unit [5] are fit inside of the rib of Motor housing L [6].
- Be sure that the sides of Brush holder [7] are fit inside of the rib of Motor housing L [8].

Fig. 32



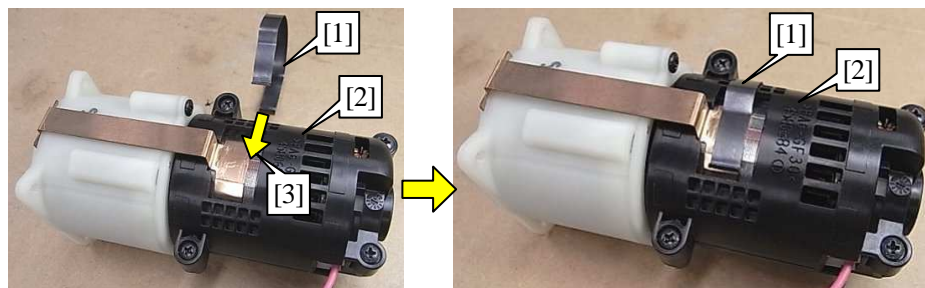
6 When you assemble Armature section [2] to Gear assembly [1], once face Armature gear to Gear assembly, and push Armature section [2] to Gear assembly [1] after checking they are engaged.

Fig. 33



- 7 Align Plate [1] and Gear assembly [2] as shown. Align the other side of Plate [1] to the groove of Motor housing [3].
- 8 Opposite side can be done in the same way.

Fig. 34

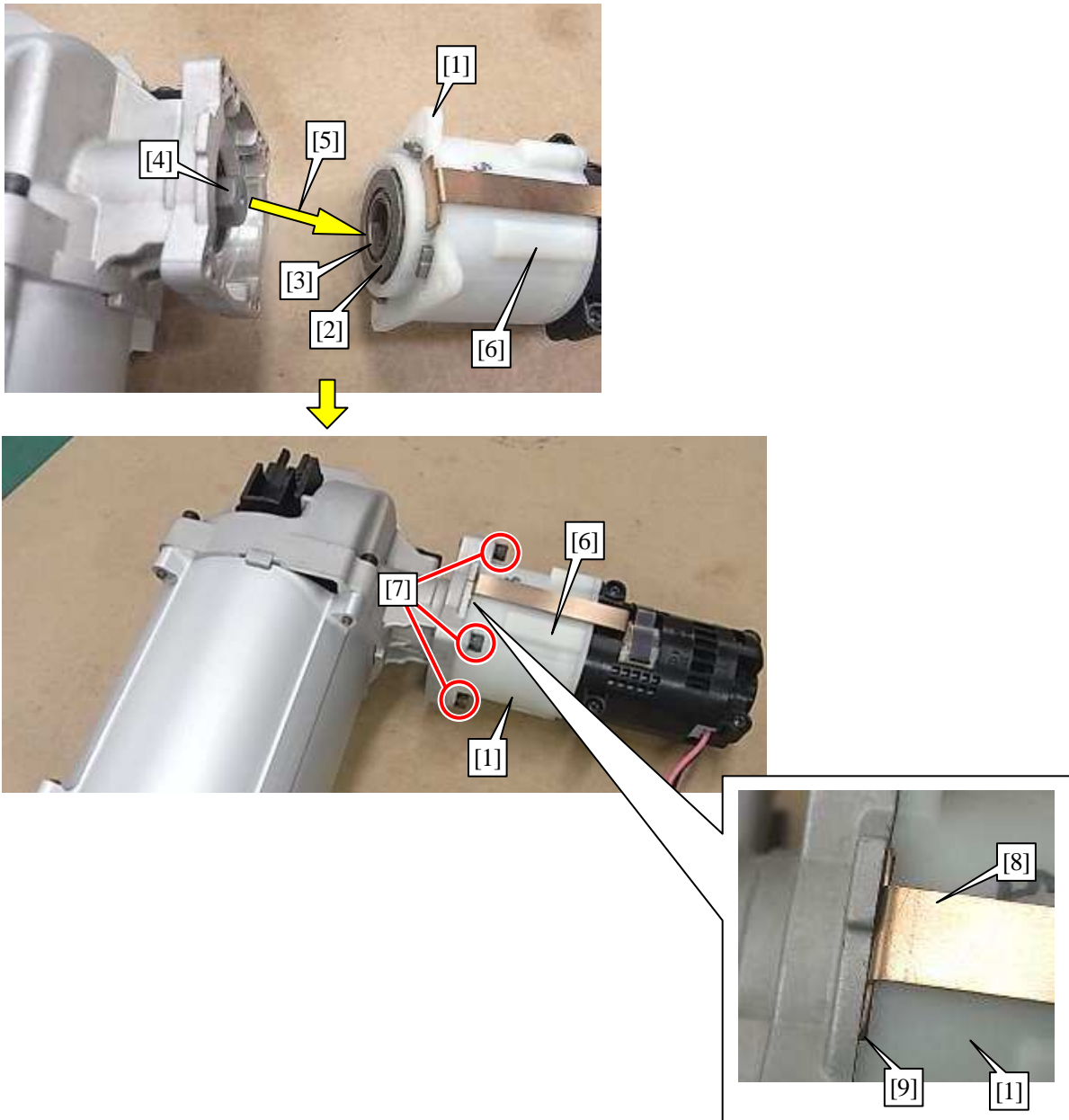


- 9 Set [3] Leaf spring [1] to Motor housing [2].

Tips

Leaf spring [1] can be assembled in either direction.

Fig. 35



- 10** Assemble Flat washer 23 [2] to Gear assembly [1]. Set Gear assembly [1] by aligning [5] the hexagonal part [4] of Shaft [4] to the hexagonal part [3] of Gear assembly [1]. Setting the protrusion [6] of Gear assembly [1], tighten with M4x16 Hex socket head bolts [7] (4 pcs) applied a little bit of Loctite 272.

Note

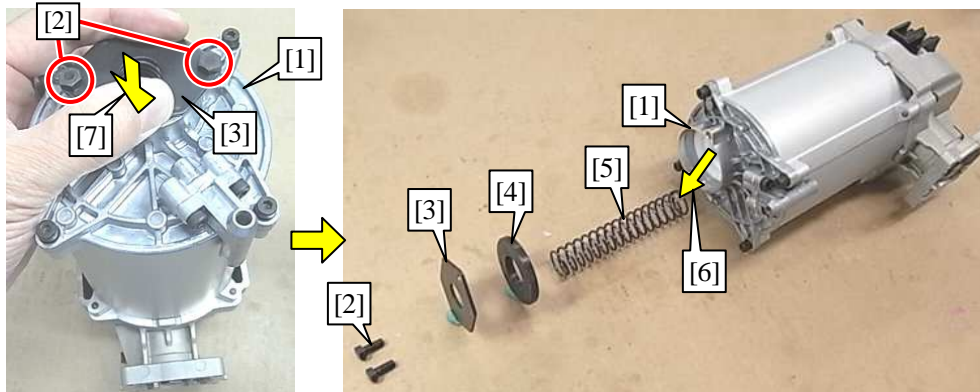
Be sure that Plate [8] does not protrude from the concave of the edge [9] of Gear assembly [1].

6-3 Crank section, Main piston section and Driver

6-3-1 Disassembling

- 1 Remove Housing R, Driver guide and Magazine. (6-1-1)
- 2 Remove Gear assembly and Motor housing. (6-2-1)

Fig. 36

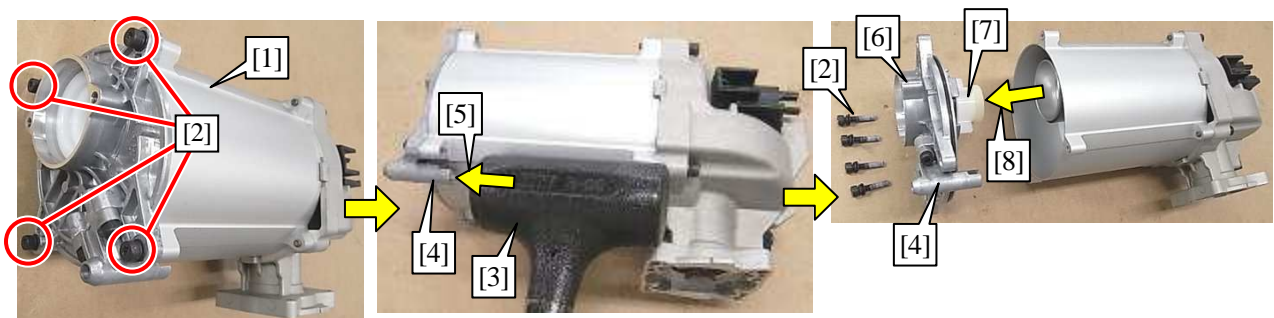


- 3 Remove M5x12 Hex bolts [2] (2 pcs) from Top cap [1]. Remove [6] Spring bracket [3], Rear cushion [4] and Compression spring 15 [5].

Note

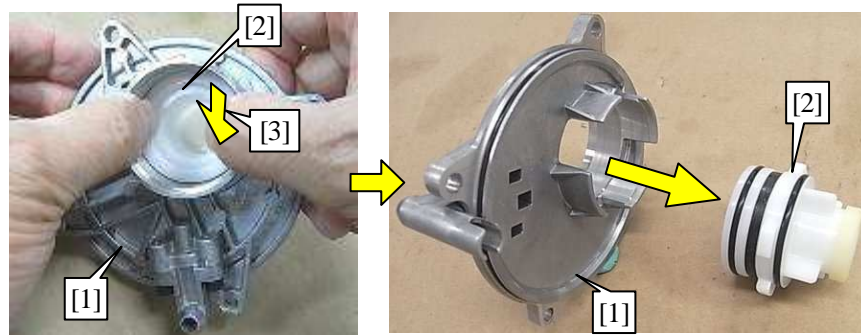
When you remove M5x12 Hex bolts [2] (2 pcs), be sure to press [7] Spring bracket [3] because Compression spring 15 [5] pops up.

Fig. 37



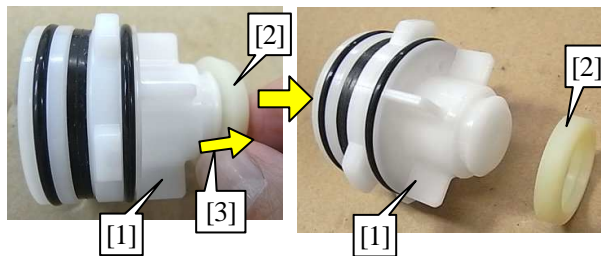
- 4 Remove M5x18 Hex socket head bolts [2] (4 pcs) from Main cylinder [2]. Remove [8] Top cap [6], Stem holder [4] and Head valve [7] by tapping [5] Stem holder [4] with Plastic hammer [3].

Fig. 38



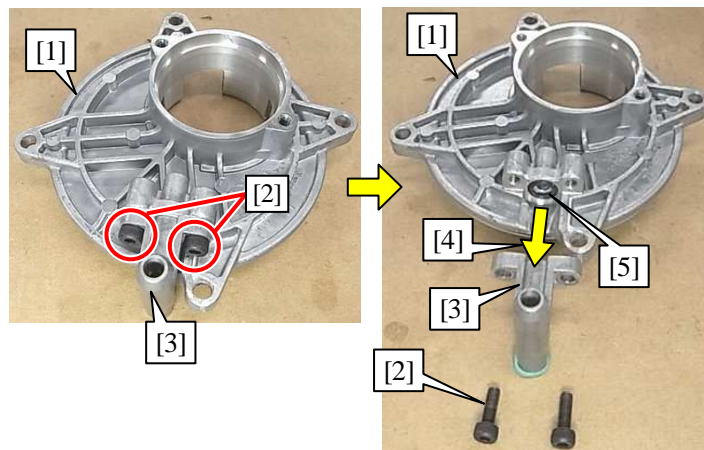
5 Push through [3] Head valve [2] from Top cap [1].

Fig. 39



6 Remove [3] Cushion P [2] from Head valve [1].

Fig. 40

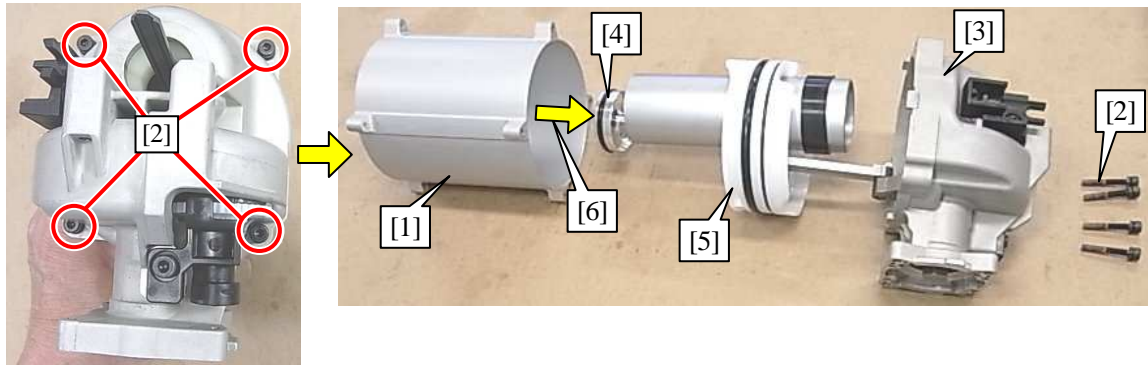


7 Remove M4x12 Hex socket head bolts [2] (2 pcs) from Top cap [1]. Remove [4] Stem holder [3].

Note

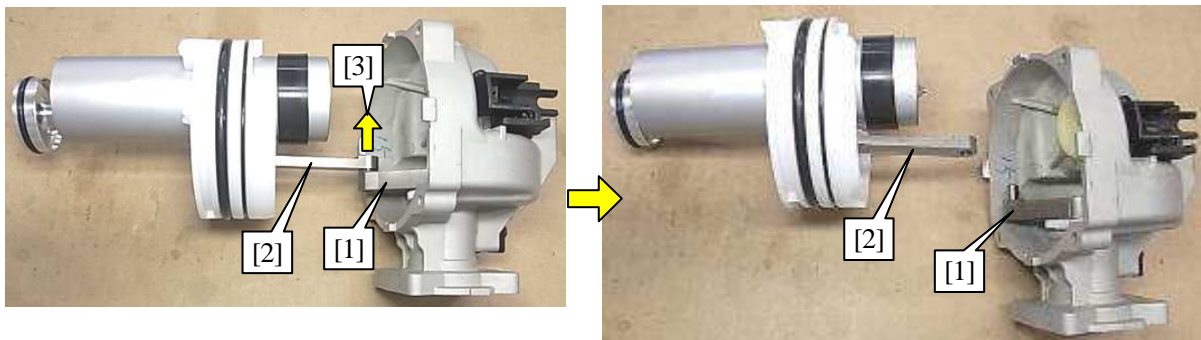
Be sure that O ring 6 [5] does not come off.

Fig. 41



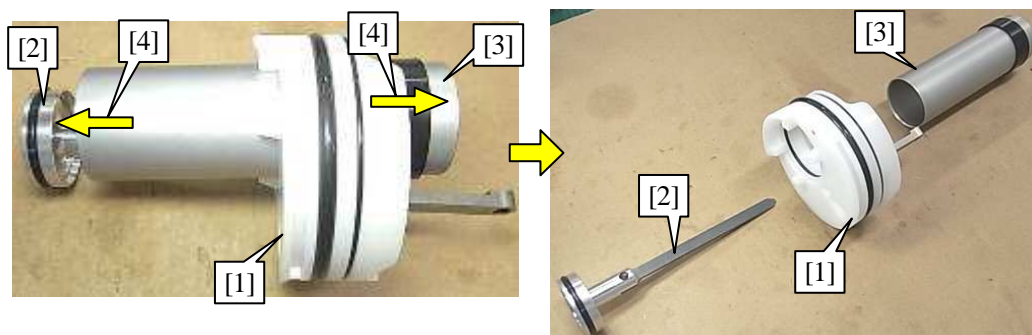
-
- 8 Remove M4x28 Hex socket head bolts [2] (4 pcs) from Main cylinder [1]. Remove [6] Crank case [3], Driver [4] and Main piston [5].
-

Fig. 42



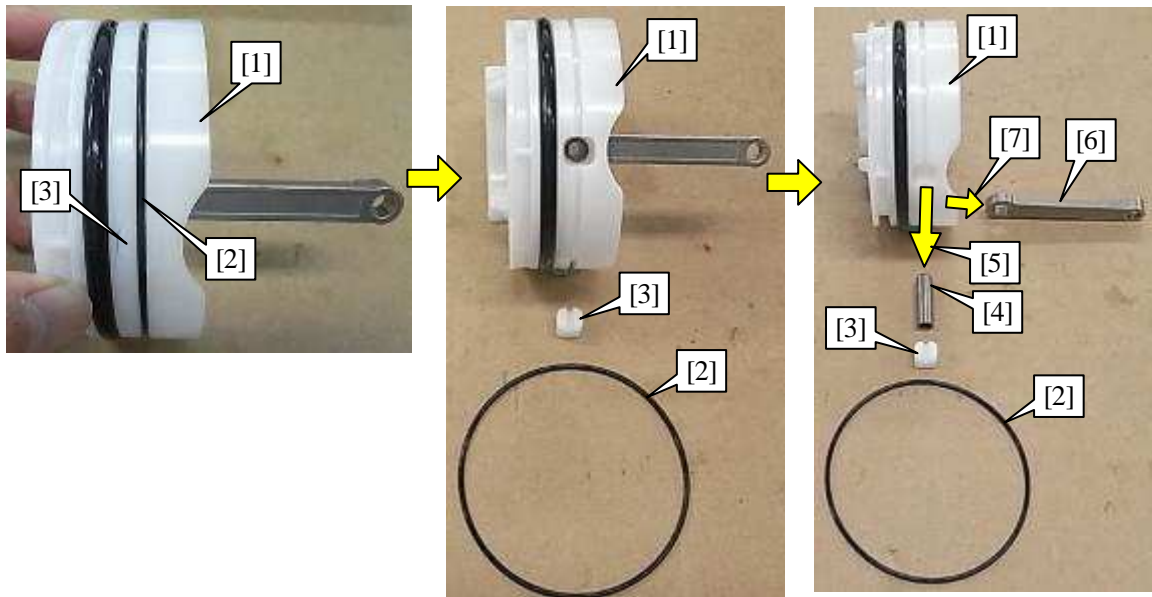
-
- 9 Remove [3] Con-rod [2] from Crank [1].
-

Fig. 43



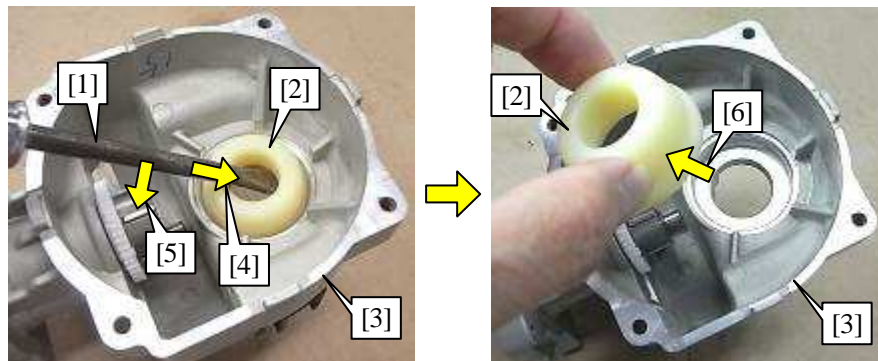
-
- 10 Remove [4] Driver [2] and Cylinder [3] from Main piston [1].
-

Fig. 44



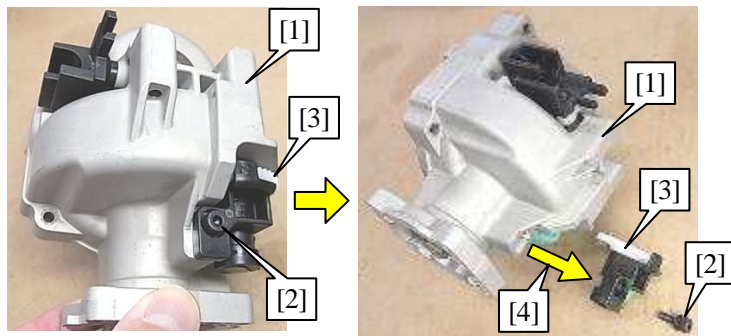
-
- 11** Remove O ring 80 [2] and Stopper [3] from Main piston [1]. Pull out [5] Piston pin 8 [4] and remove [7] Con-rod [6] from Main piston [1].

Fig. 45



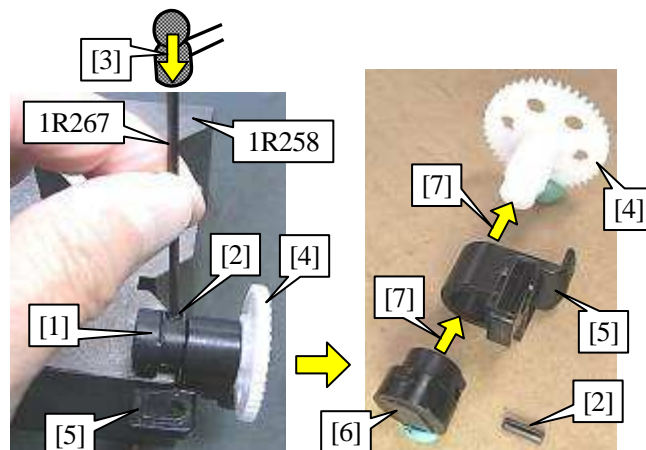
-
- 12** Inserting Slotted screwdriver [1] to the gap [4] between Front cushion [2] and Crank case [3], prying it up [5], remove [6] Front cushion [2] from Crank case [3].
-

Fig. 46



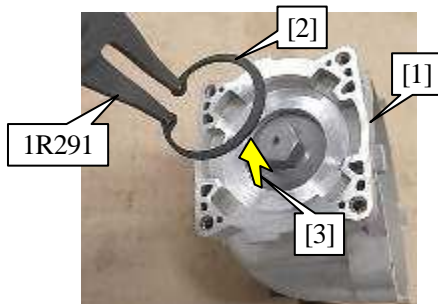
- 13 Remove M4x12 Hex socket head bolt [2] from Crank case [1]. Remove [4] Spur gear 14 section [3].

Fig. 47



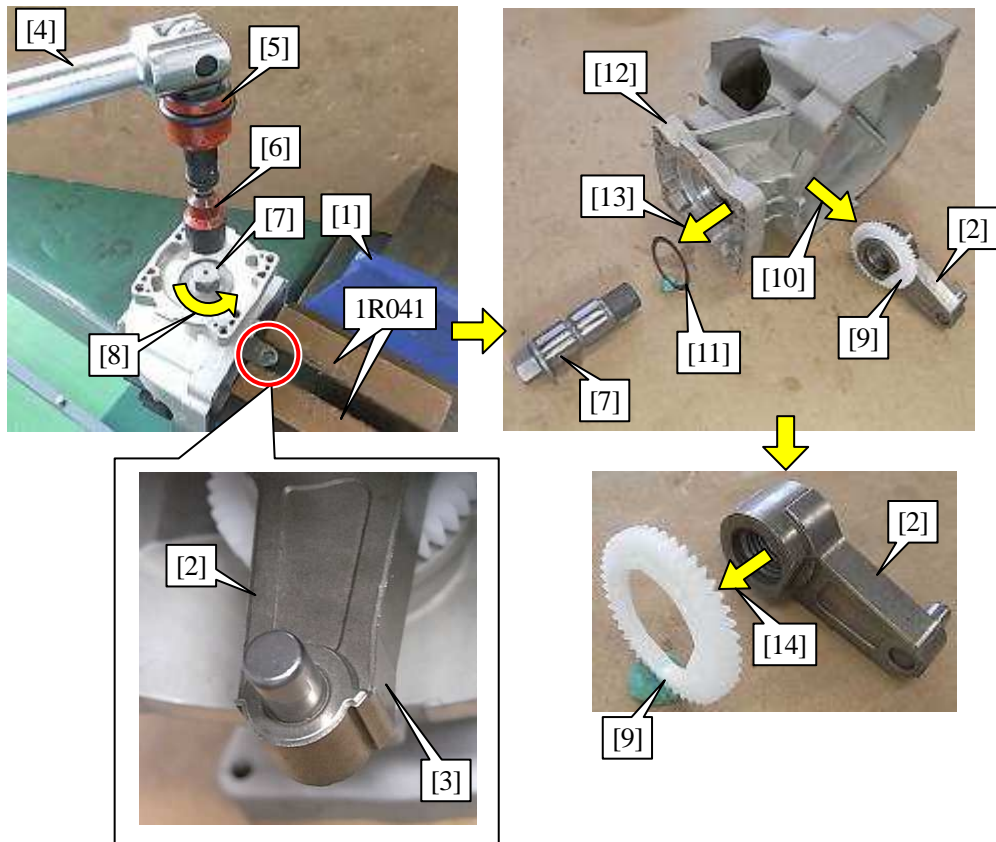
- 14 Supporting Holder [1] with 1R258, tapping [3] Spring pin 2.5-9 [2] with 1R267, remove [7] Spur gear 44 [4], Bracket [5] and Holder [6].

Fig. 48



- 15 Remove [3] Retaining ring R-28 [2] from Crank case [1] using 1R291.

Fig. 49

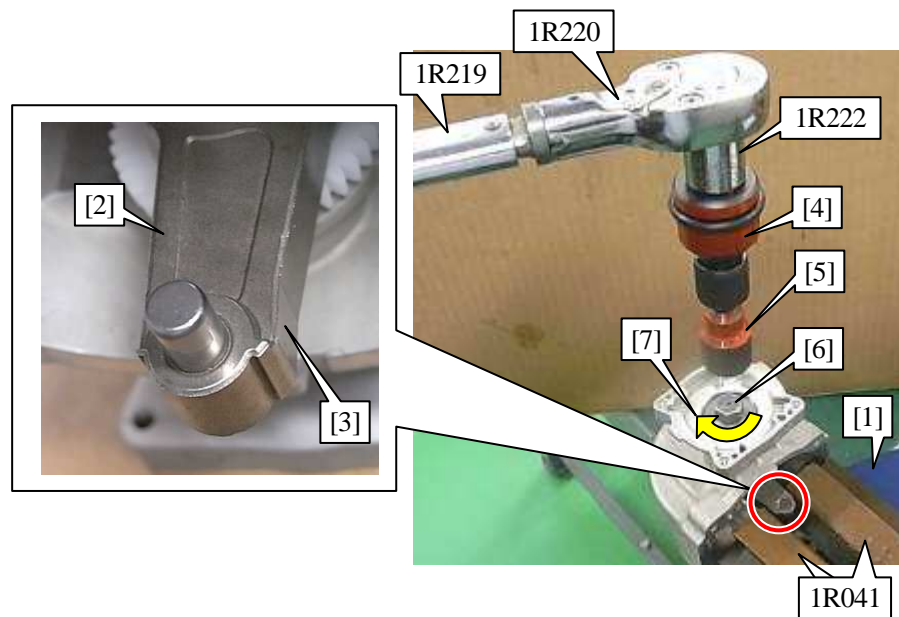


-
- 16** Fixing the flat two surfaces of the edge [3] of Crank [2] with Vice [1] and 1R041, and using Nut spinner handle [4], Bit adapter assembly [5] and Socket bit 13 [6], remove [10] Crank [2] and Spur gear 44 [9] by turning Shaft [7] counterclockwise [8].
 - 17** Remove [13] Shaft [7], Flat washer 22 [11] from Crank case [12].
 - 18** Remove [14] Spur gear 44 [9] from Crank [2].
-

6-3-2 Assembling

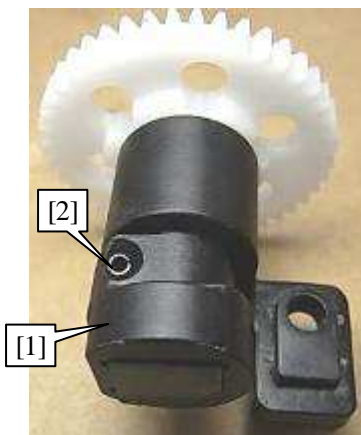
- 1** Reverse the procedure (6-2-1).
-

Fig. 50



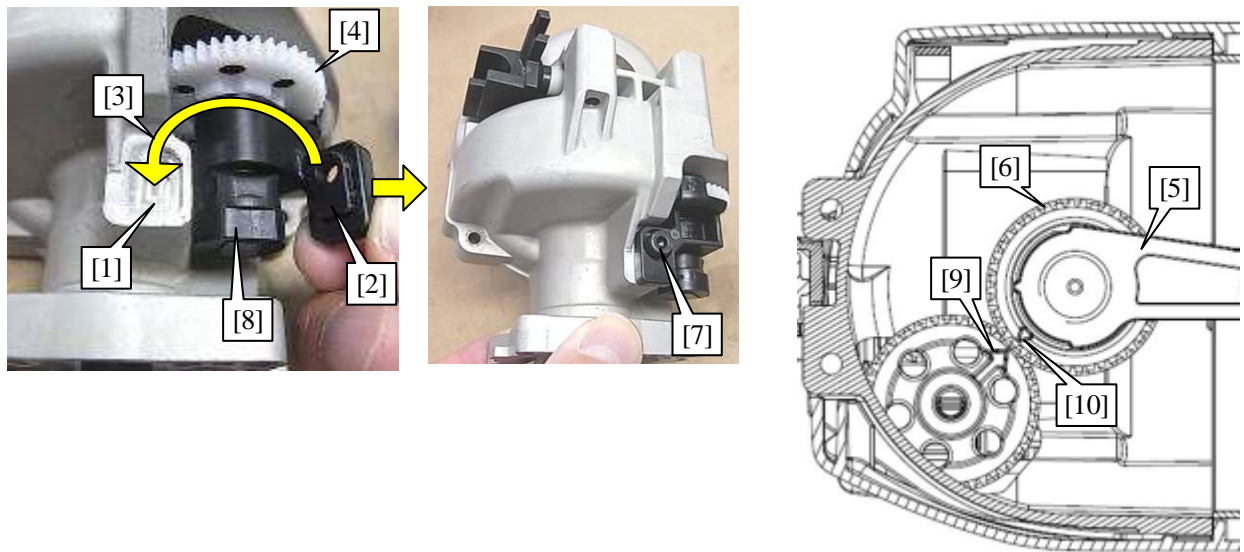
- 2 Fixing the flat two surfaces of the edge [3] of Crank [2] with Vice [1] and 1R041, setting 1R219 to 15-18 N·m, using 1R220, 1R222, Bit adapter assembly [4] and Socket bit 13 [5], tighten Shaft [6] by turning it clockwise [7].

Fig. 51



- 3 Do not get Spring pin 2.5-9 [2] that is set to Holder [1] protruded from the surface of Holder [1].

Fig. 52

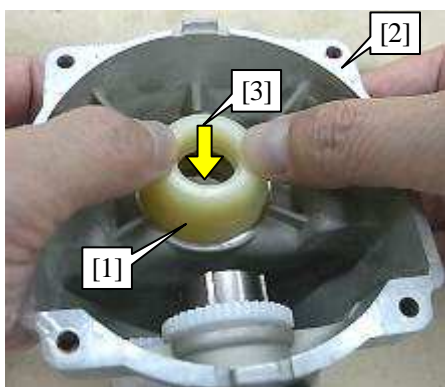


- 4 Aligning [3] the two surfaces of Bracket [2] to the groove of Crank case [1], assembling Spur gear 44 [4] while being careful of the engaged position (see the Note below) with Spur gear 44 [4] of Crank side [5], tighten M4x12 Hex socket head bolt [7] (1 pc).

Note

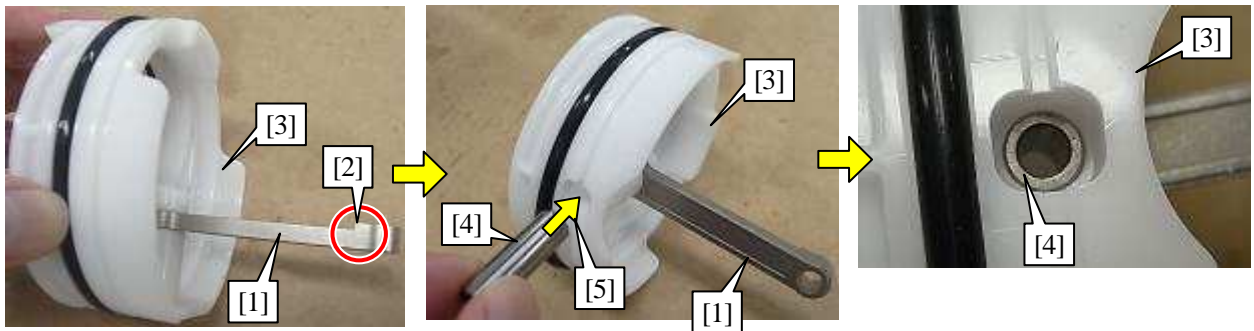
Be sure that the arrow [9] of Spur gear 44 [4] of Holder side [8] align with the arrow [10] of Spur gear 44 [6] of Crank side [5].

Fig. 53



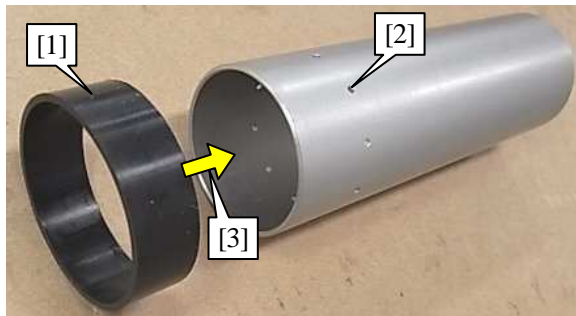
- 5 Push [3] Front cushion [1] to Crank case [2].

Fig. 54



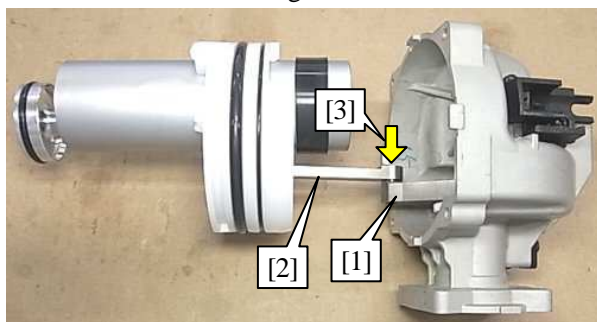
- 6 Inserting Con-rod [1] to Main piston [3] as shown [2], insert [5] Piston pin 8 [4] to all the way inside.

Fig. 55



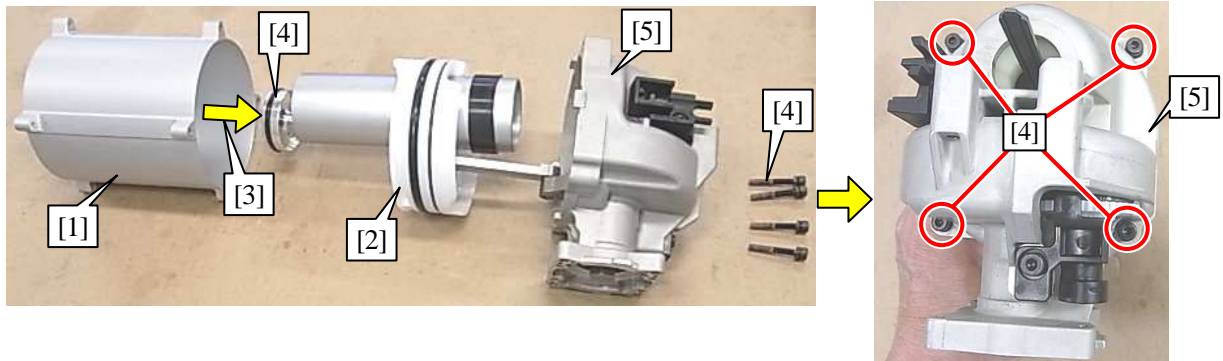
- 7 Fit up [3] Rubber ring [1] to the position that seals the Cylinder's holes [2].

Fig. 56



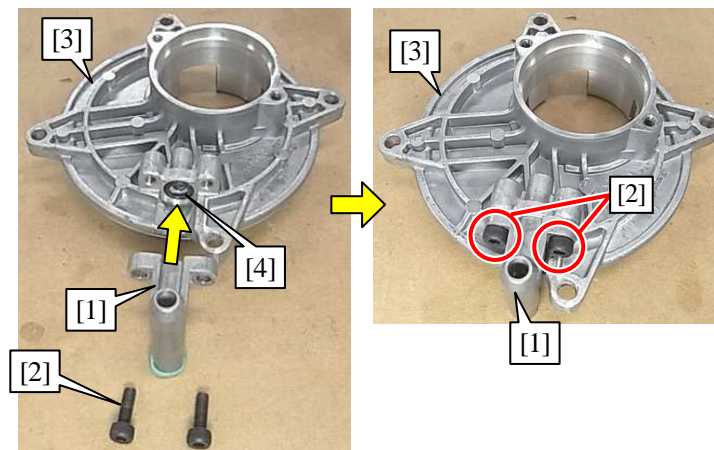
- 8 Fit up [3] Con-rod [2] to Crank [1].

Fig. 57



- 9 Cover [3] Main piston [2] with Main cylinder [1]. Put a little bit of Loctite 272 on M4x28 Hex socket head bolts [4] (4 pcs). Fasten Crank case [5] to Main cylinder [1].

Fig. 58

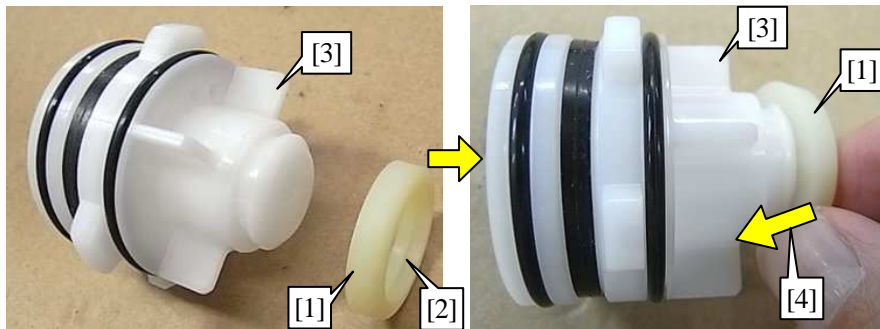


- 10 Fasten Stem holder [1] to Top cap [3] with M4x12 Hex socket head bolts [2] (2 pcs).

Note

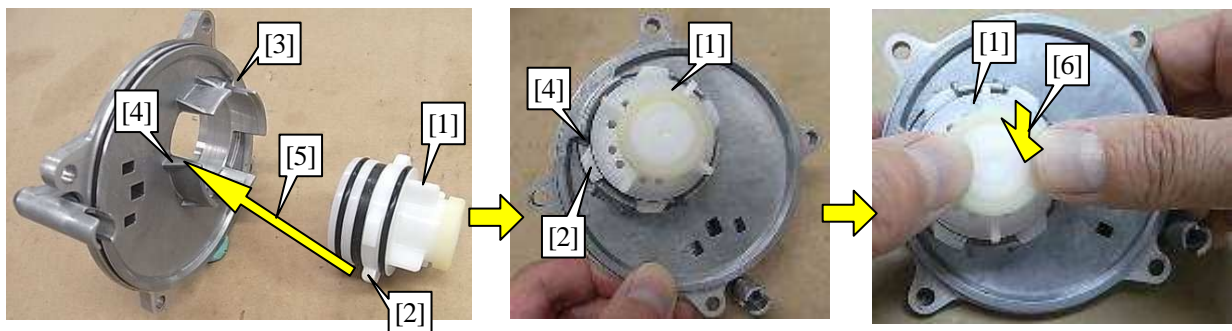
Do not forget to assemble O ring 6 [4].

Fig. 59



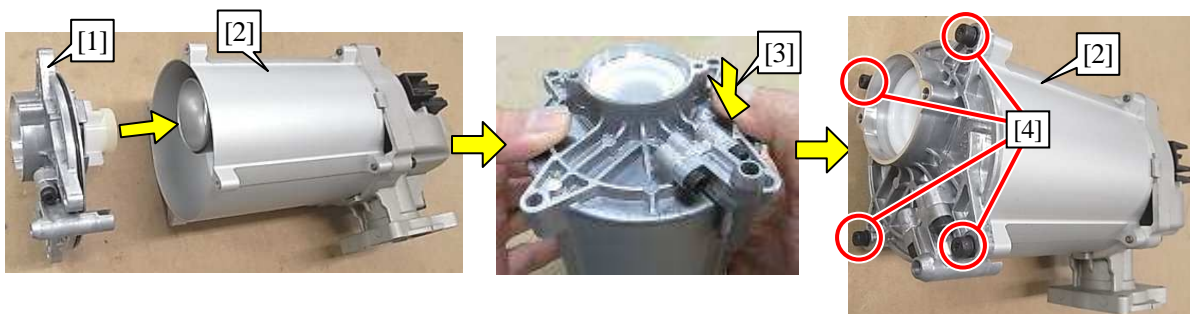
- 11 Push [4] Cushion P [1] to Head valve [3] with stepped side of Cushion P set [2] as shown.

Fig. 60



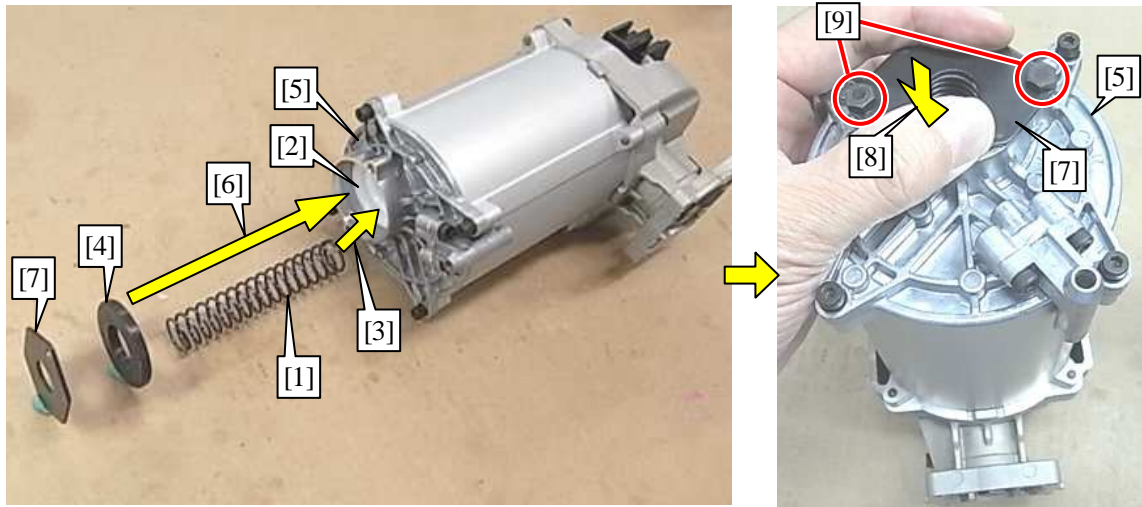
- 12 Aligning [5] the protrusion [2] of Head valve [1] to the groove [4] of Top cap [3], push [6] Head valve [1].

Fig. 61



- 13 Push [3] Top cap [1] to Main cylinder [2]. Put a little bit of Loctite 243 on M5x18 Hex socket head bolts [4] (4 pcs). Fasten Top cap [1] to Main cylinder [2].

Fig. 62



14 Insert [3] Compression spring 15 [1] into Head valve [2]. Insert Rear cushion [4] into Top cap [5]. Supporting [8] Spring bracket [7], put a little bit of Loctite 272 on M5x12 Hex bolts (2 pcs) [9]. Fasten Spring bracket [7] to Top cap [5].

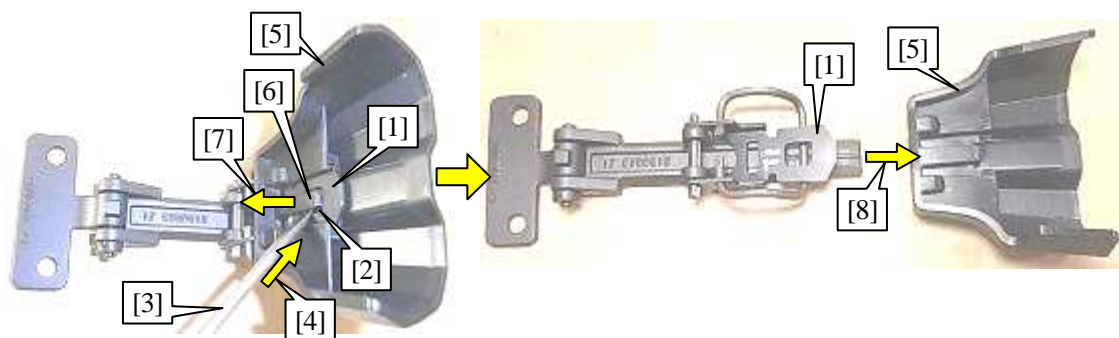
15 Assemble Gear assembly to Crank case complete. (6-2-2)

6-4 Door section

6-4-1 Disassembling

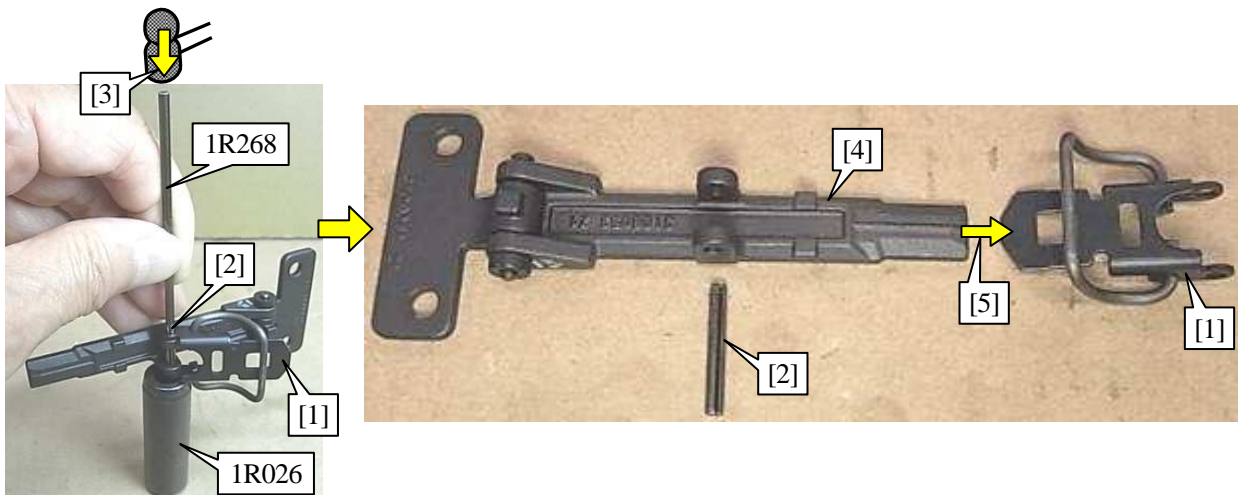
1 Remove Door section. (6-1-1)

Fig. 63



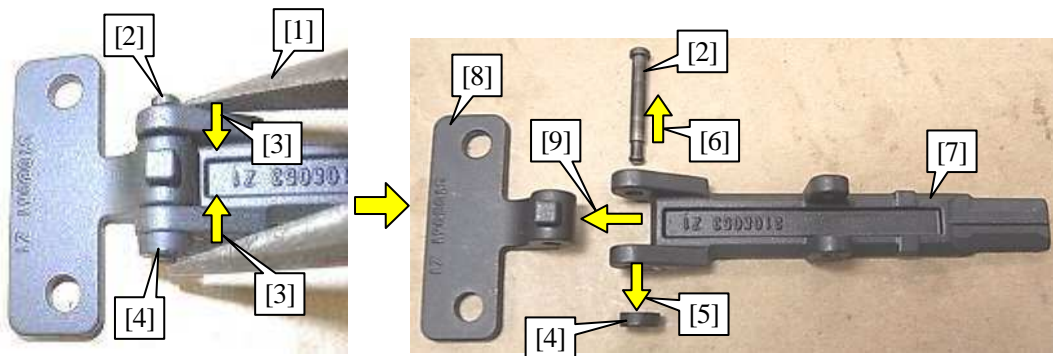
2 Insert [4] Slotted screw driver [3] in the groove [2] of Latch [1]. Pull up [7] the shown part [6] of Latch cover [5] and unlock the lock. Remove [8] Latch cover [5] from Latch [1].

Fig. 64



- 3 Supporting Latch [1] with 1R026 etc., tap [3] Spring pin 3-22 [2] with 1R268 and remove [5] Latch [1] from Door [4].

Fig. 65

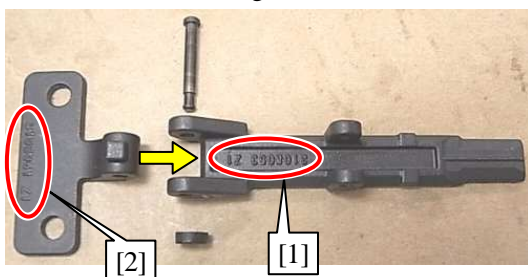


- 4 Pinching [3] Headed pin 3 [2] with Long nose pliers [1], remove [5] Urethane washer [4]. Pull out [6] Headed pin 3 [2] and remove [9] Plate [8] from Door [7].

6-4-2 Assembling

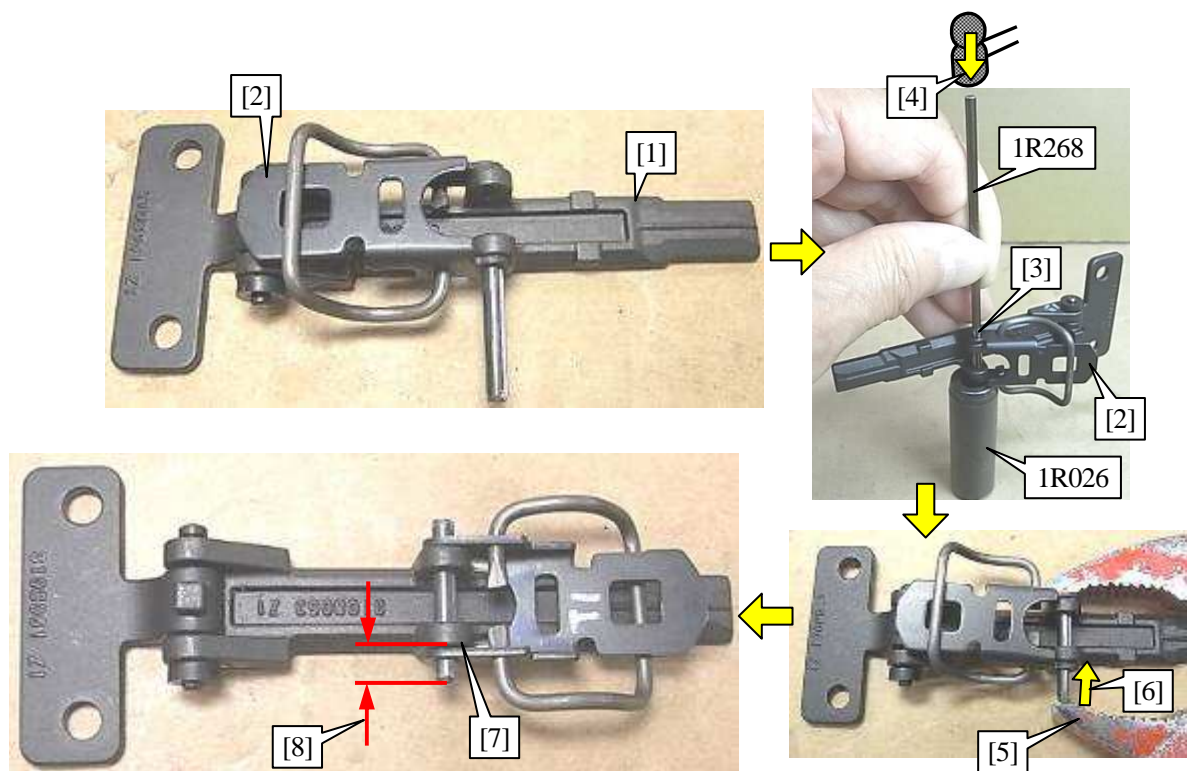
- 1 Reverse the procedure of (6-4-1).

Fig. 66



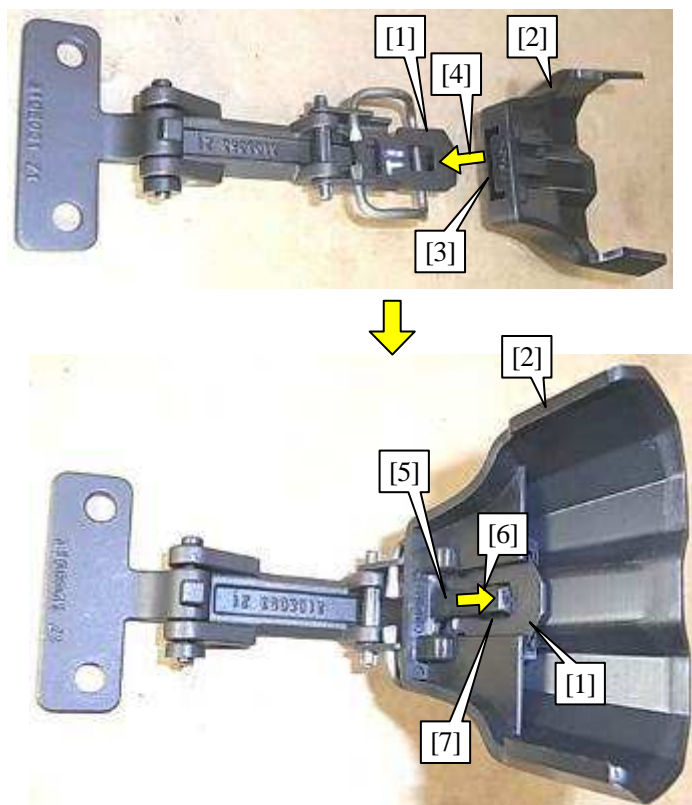
- 2 Assemble by aligning the number side of Door [1] to the number side of Plate [2].

Fig. 67



- 3 Set Latch [2] to Door [1] as shown. Supporting Latch [2] with 1R026 etc., tap [4] Spring pin 3-22 [3] with 1R268.
- 4 Pushing to the other side [6] of Water pump plier [5], tap Spring pin 3-22 [3] again. Set the Spring pin 3-22 [3] as shown. The distance of red arrow [8] must be 4.2 ± 0.3 mm.

Fig. 68



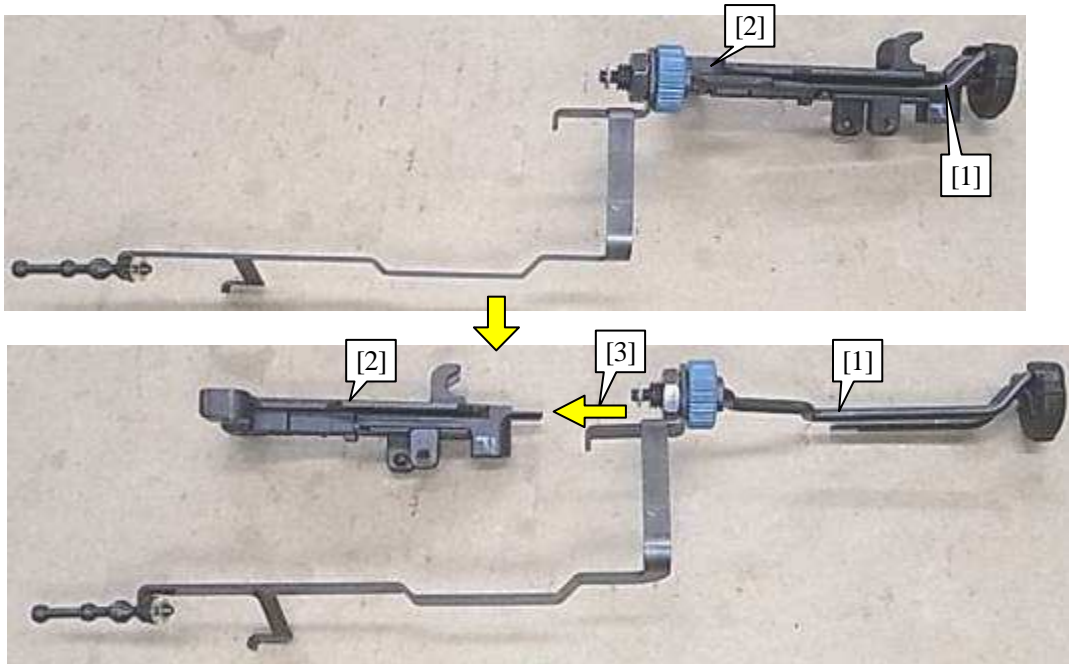
-
- 5 Press into [4] the groove [3] of Latch cover [2] to Latch [1]. Push into [6] the shown part [5] of Latch cover [2] and fit in the groove [7] of Latch [1].
-

6-5 Arm section, Contact top, Driver guide

6-5-1 Disassembling

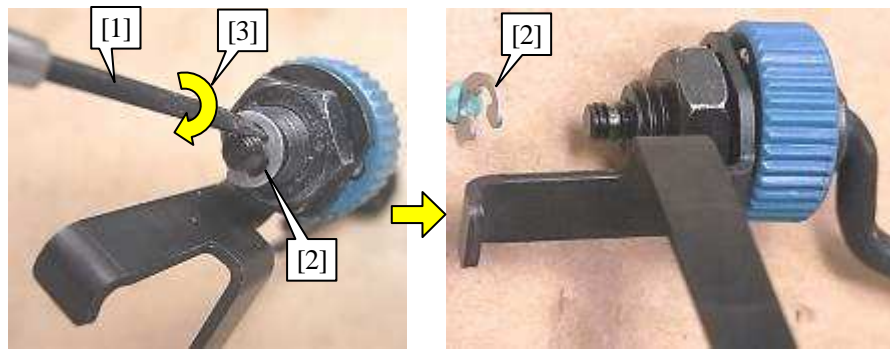
- 1 Remove Driver guide section from Magazine. (6-1-1)
-

Fig. 69



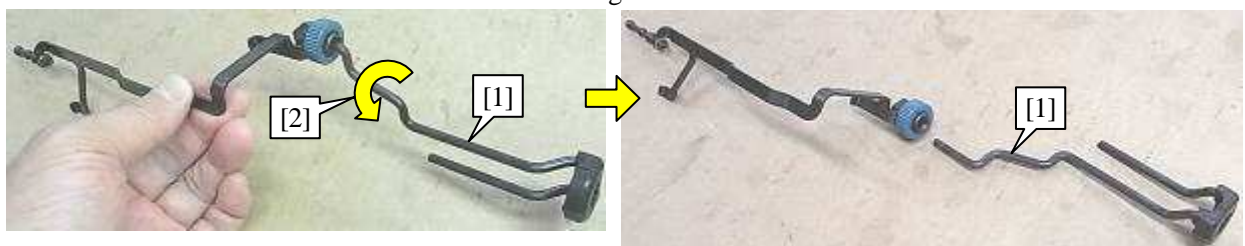
- 2 Remove [3] Driver guide [2] from Contact top [1].

Fig. 70



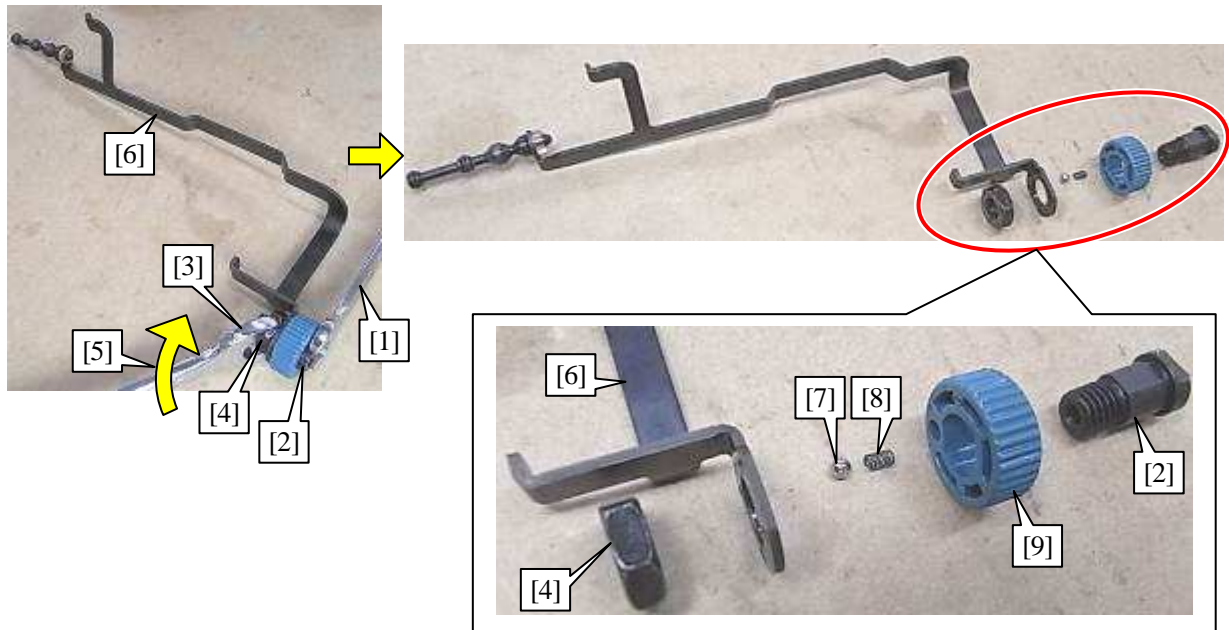
- 3 Remove [3] Stop ring E-3 [2] using Precision driver [1].

Fig. 71



- 4 Remove Contact top [1] by turning it counterclockwise [2].

Fig. 72

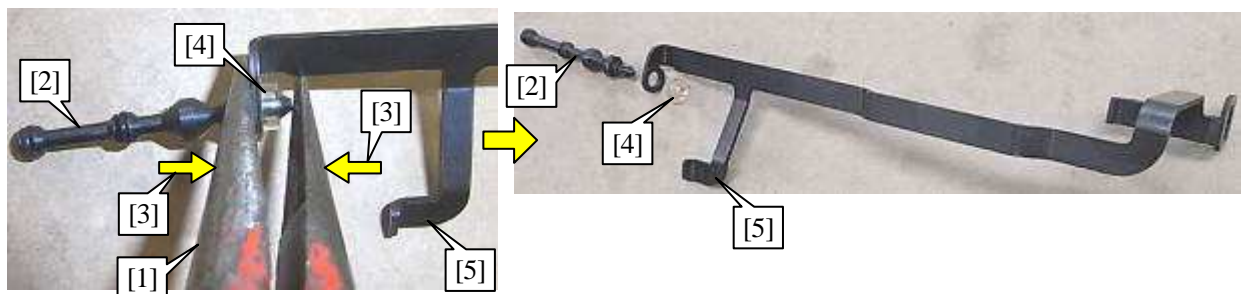


- 5 Remove parts from Arm [6] by fixing Adjuster shaft [2] with Wrench 8 [1] and turning M8 Hex nut [4] with Wrench 13 [3] counterclockwise [5].

Note
Do not lose Steel ball 3 [7] and Compression spring 2 [8].

- Steel ball 3 [7]
- Compression spring 2 [8]
- Adjuster dial [9]

Fig. 73



- 6 Remove Urethane ring 3 [4] by clipping [3] Valve stem [2] with Long-nose pliers [1]. Remove Valve stem [6] from Arm [5].

Fig. 74



7 Remove O rings 3 [1] (2 pcs).

6-5-2 Assembling

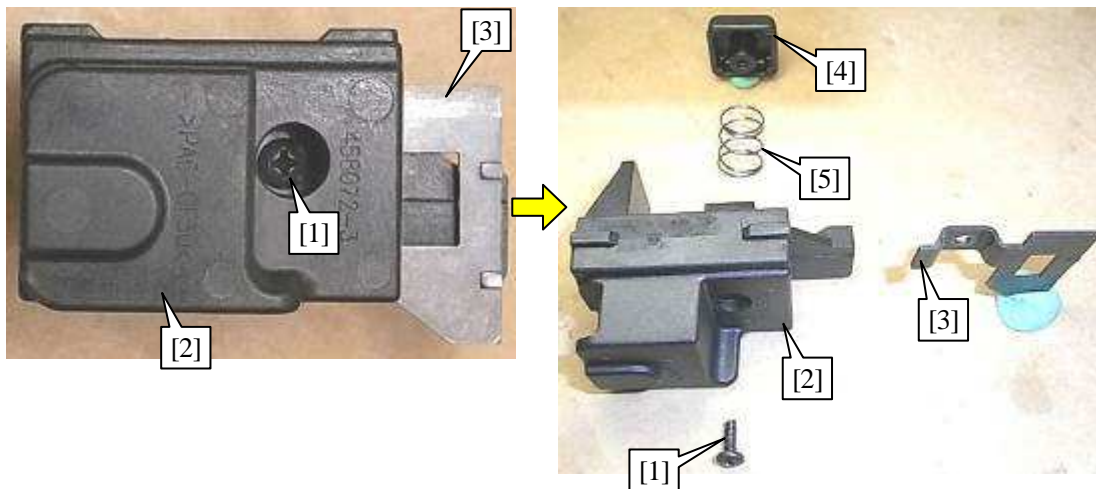
1 Reverse the procedure (6-5-1).

6-6 Pusher section

6-6-1 Disassembling

1 Remove Pusher lever section from Magazine. (6-1-1)

Fig. 75



2 Disassembled parts are as follow when 3x8 Tapping screw [1] gets removed:

- Pusher lever [2]
- Pusher [3]
- Button [4]
- Compression spring 9 [5]


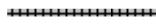
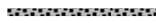







6-7 Door section

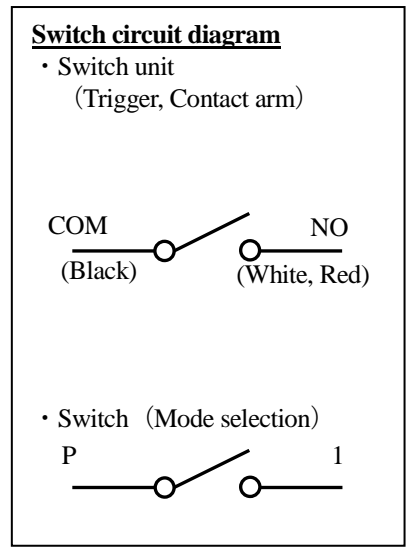
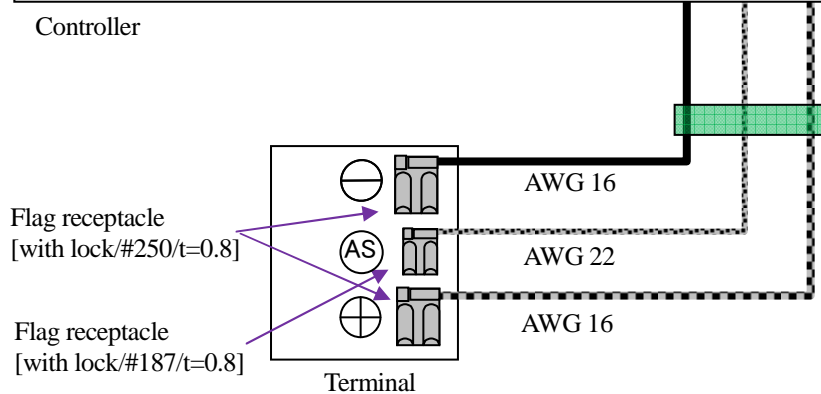
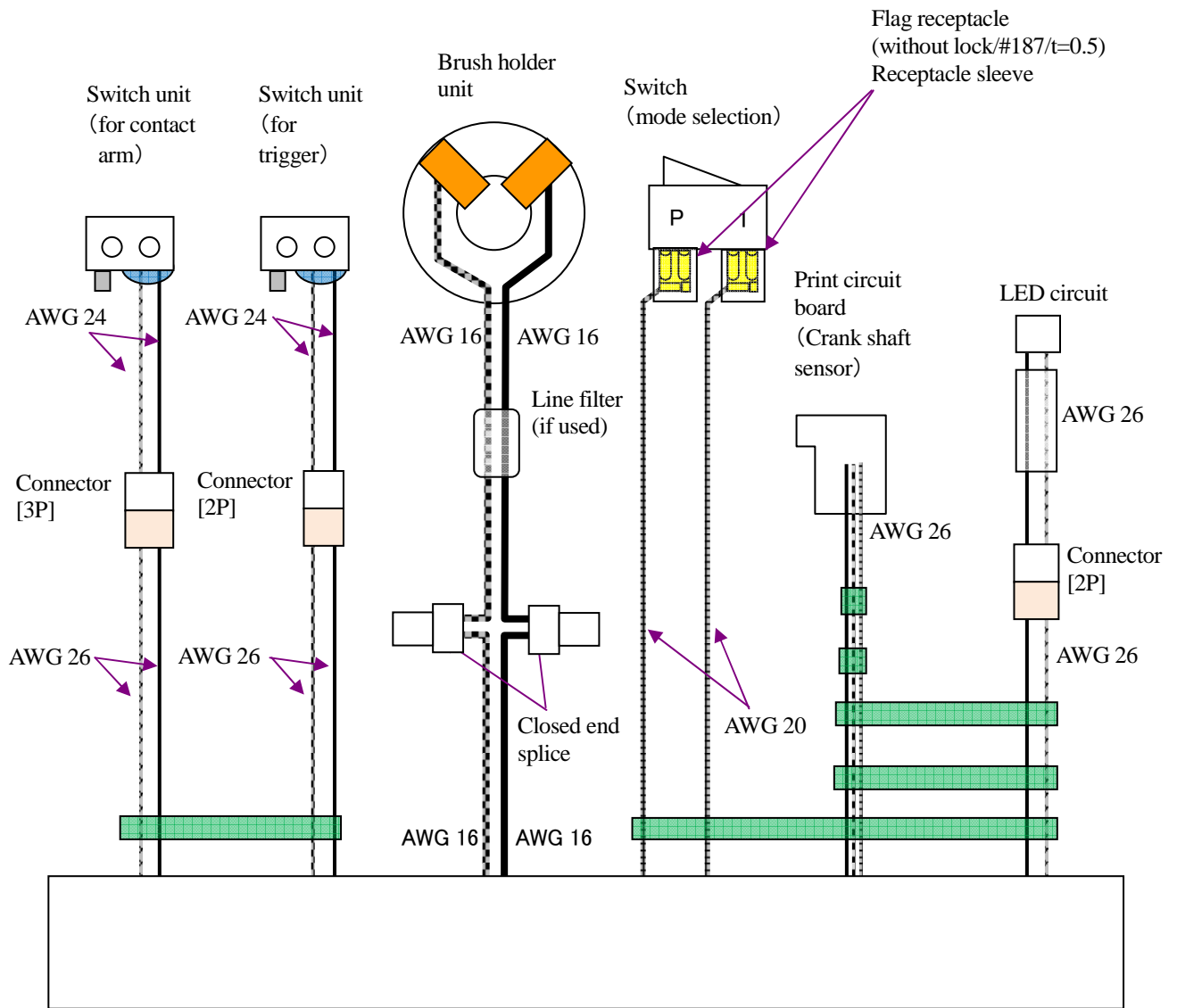
6-7-1 Assembling

1 Reverse the procedure (6-4-1).

7 CIRCUIT DIAGRAM

Fig. 76

Color index of lead wires' sheath	
White	
Blue	
Yellow	
Red	
Orange	
Gray	
Purple	
Green	
Brown	
Black	



AWG: American wire gauge

8 WIRING DIAGRAM

Fig. 77

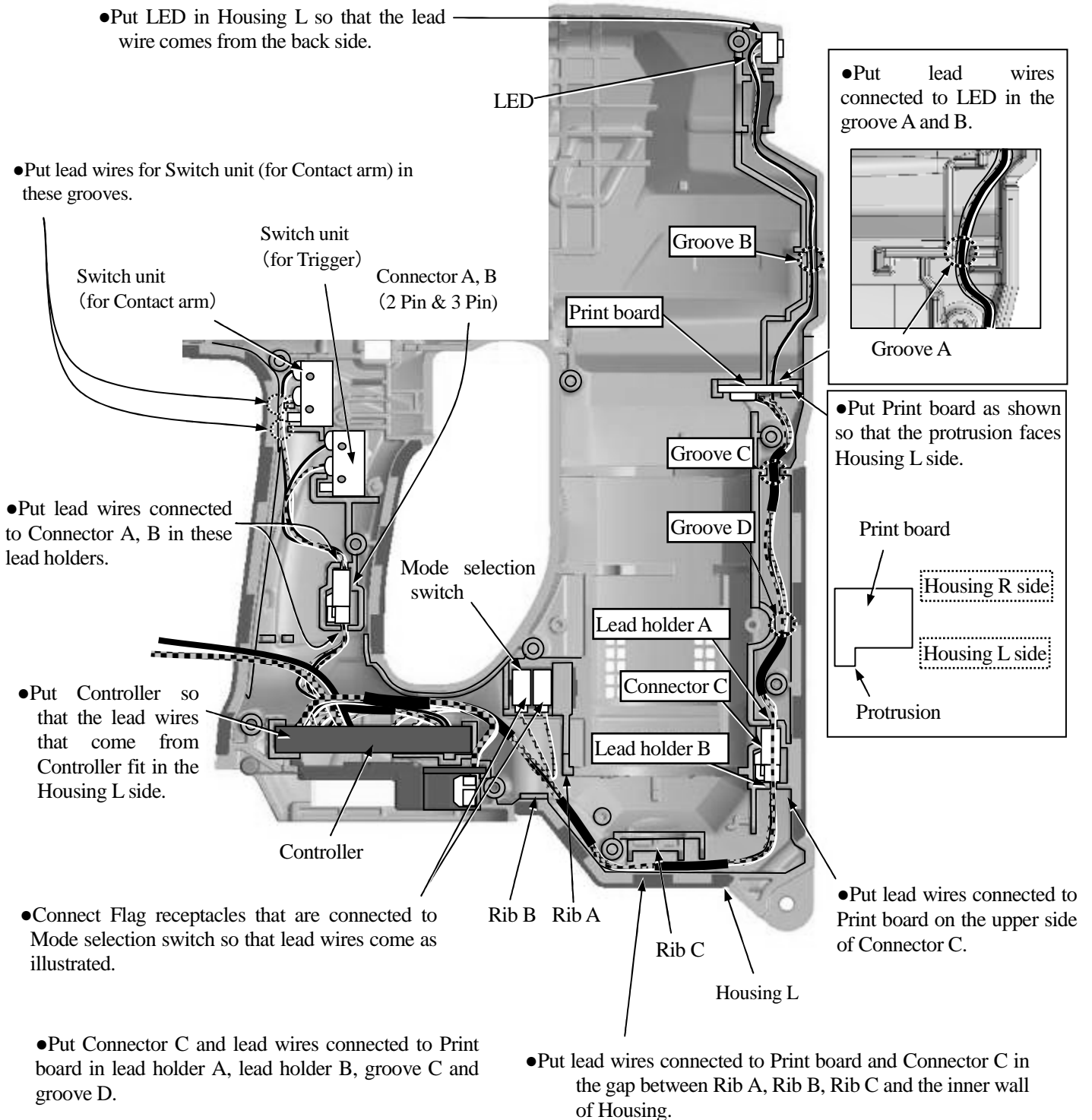


Fig. 78

- Put the protrusion of Closed end splice connected to lead wires (red, red) in the space circled with dots.
- ※Do not put as shown on the right <NG example>.

