

RECIPRO SAW JR3051T

REPAIR MANUAL



1 CONTENTS

1	CONTENTS	2
2	CAUTION	3
3	NECESSARY REPAIRING TOOLS	3
4	LUBRICANT AND ADHESIVE APPLICATION	4
5	TIGHTENING TORQUE SPECIFICATIONS	4
6	REPAIR	5
6-1	Hook section	5
6-1-1	Disassembling	5
6-1-2	Assembling	5
6-2	Shoe section	6
6-2-1	Disassembling	6
6-2-2	Assembling	6
6-3	Blade clamp section	7
6-3-1	Disassembling	7
6-3-2	Assembling	9
6-4	Carbon brush section	13
6-4-1	Disassembling	13
6-4-2	Assembling	13
6-5	Insulation cover section	14
6-5-1	Disassembling	14
6-5-2	Assembling	14
6-6	Switch/ Motor section	15
6-6-1	Disassembling	15
6-6-2	Assembling	18
6-7	Armature/ Gear section	21
6-7-1	Disassembling	21
6-7-2	Assembling	24
6-8	Slider section	26
6-8-1	Disassembling	26
6-8-2	Assembling	28
7	CIRCUIT DIAGRAM	30
8	WIRING DIAGRAM	31
8-1	Field section	31
8-2	Handle section	32

2 CAUTION

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

Follow the instructions described below in advance before repairing:

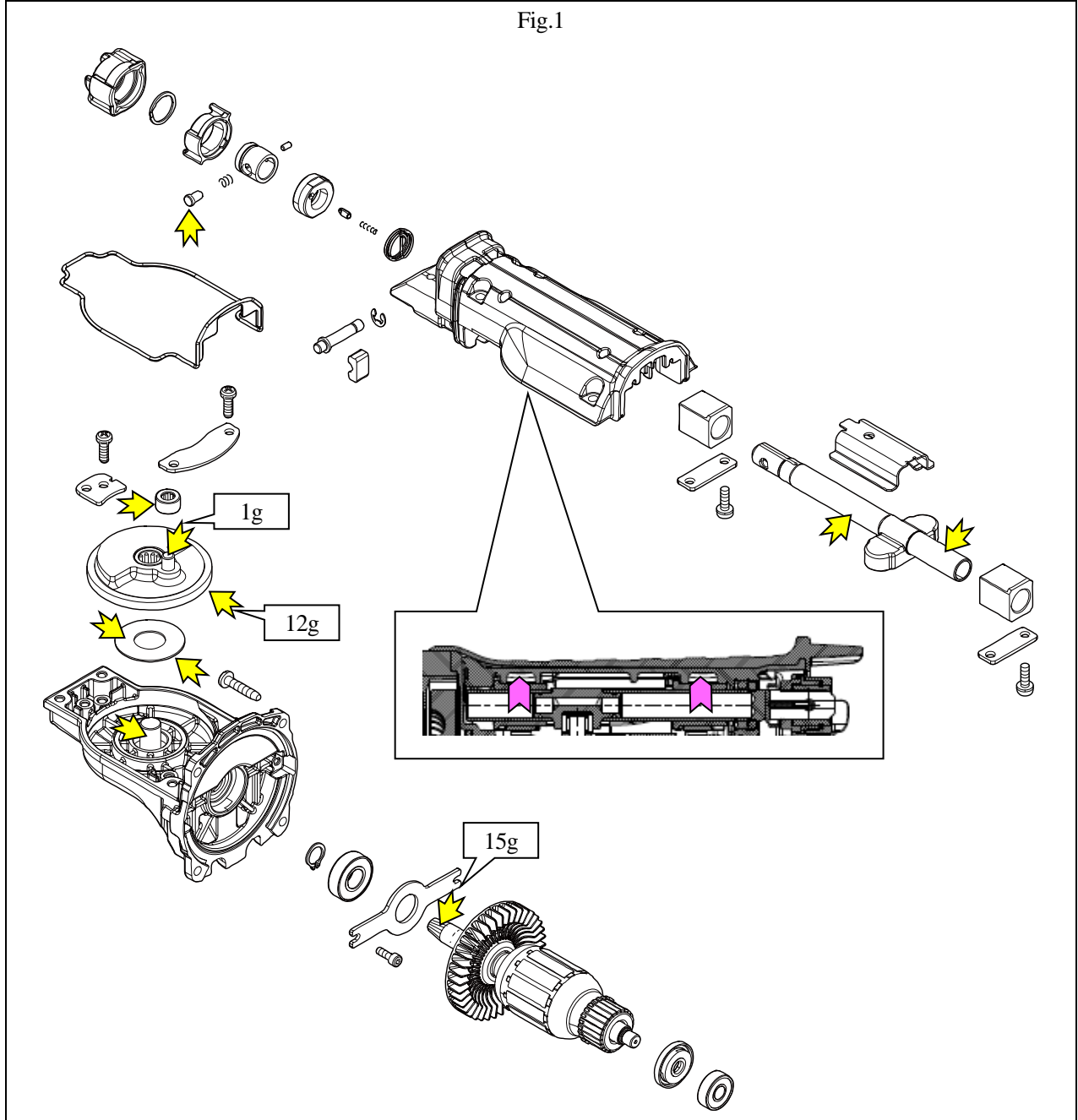
- Wear gloves.
- In order to avoid wrong reassembly, draw or write down where and how the parts are assembled, and what the parts are. It is also recommended to have boxes ready to keep disassembled parts by group.
- Handle the disassembled parts carefully. Clean and wash them properly.

3 NECESSARY REPAIRING TOOLS

Code No.	Description	Use for
1R034	Ring 12-60-15	press-fitting Ball bearings 6001LLU and 608ZZ
1R049	Drill chuck removal wedge 15	fixing Blade clamp section
1R269	Bearing puller small	removing Ball bearings 6001LLU and 608ZZ
1R291	Retaining ring pliers S and R	removing/ assembling Retaining ring S-12
1R296	Spring pin extractor 1.5	removing Switch Lead wires
1R312	Hammer clamping vise	fixing the machine
1R370	Ring terminal setting jig	assembling Ring terminal
1R461	Grip for spring pin extractor	using with 1R296

4 LUBRICANT AND ADHESIVE APPLICATION

Description		Amount
↑	Makita grease FA. No.2	Apply a little unless specified in the figure.
↓	Makita grease R No.00	Apply a little unless specified in the figure.

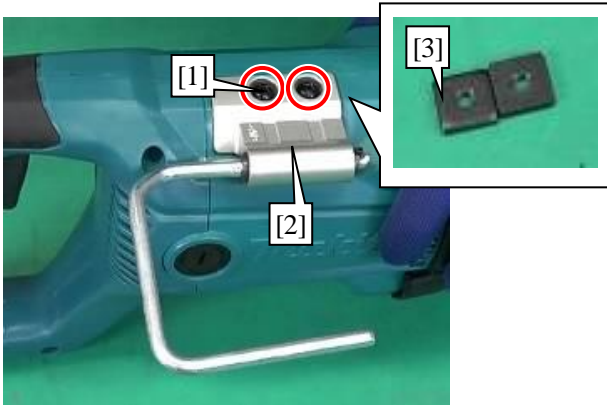


5 TIGHTENING TORQUE SPECIFICATIONS

Parts to fasten	Fastener	Q'ty	Tightening torque (N·m)
Bearing retainer 80 ↔ Gear housing	Hex. socket head bolt M4x12	2	3.0 - 3.5
Shoe ↔ Gear housing	Hex. socket head bolt M6x20	1	6.3 - 6.8

6 REPAIR
6-1 Hook section
6-1-1 Disassembling

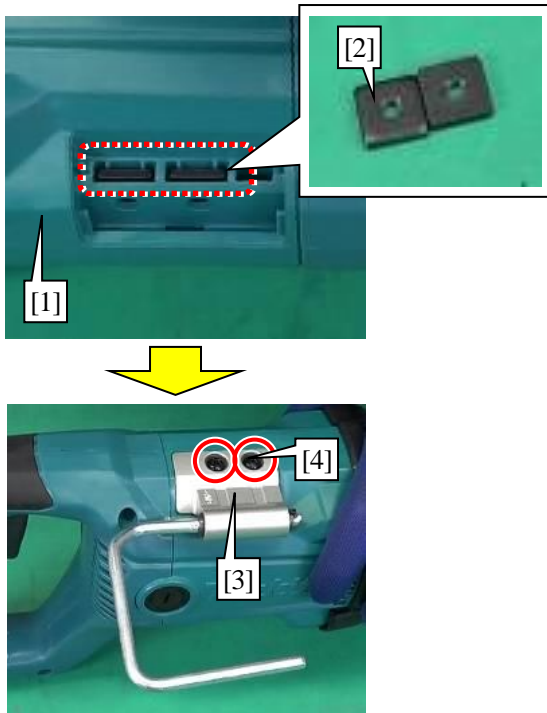
Fig.2



- 1 Remove Pan head screws M5x10 [1] (2 pcs), then remove Hook [2] and Square nuts [3] (2 pcs).

6-1-2 Assembling

Fig.3



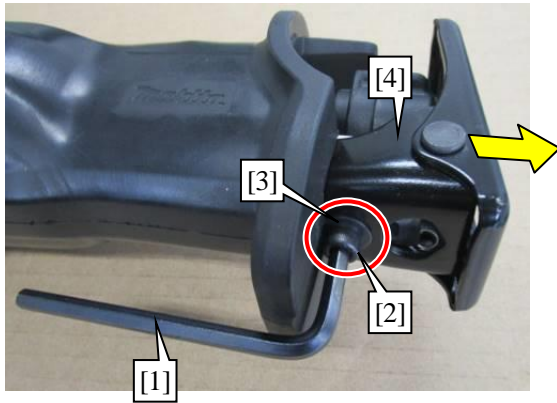
- 1 Assemble Square nuts M5 [2] (2 pcs) and Hook [3] to Motor housing [1] with Pan head screws M5x10 [4] (2 pcs).

Tips

Square nuts M5 [2] (2 pcs) is easy to come off. Tilt the nut in the direction that does not come off.

6-2 Shoe section
6-2-1 Disassembling

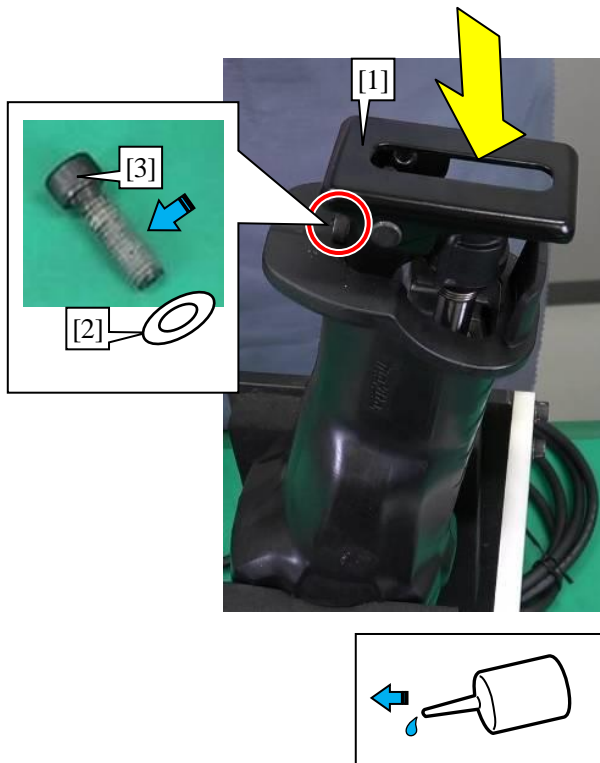
Fig.4



- 1 Remove Hex. socket head bolt M6x20 [2] and Flat washer 6 [3] with Hex. wrench 5 [1], then remove Shoe [4].

6-2-2 Assembling

Fig.5



- 1 Assemble Shoe [1] with Flat washer 6 [2] and Hex. socket head bolt M6x20 [3].

Note

Apply the specified adhesive to the thread of Hex. socket head bolt M6x20 [3].

6-3 Blade clamp section
6-3-1 Disassembling

1 Remove Shoe. ([6-2-1](#))

Fig.6



- 2** It is easy to disassemble by holding the machine [1] with the tip faced upward with 1R312.

Fig.7



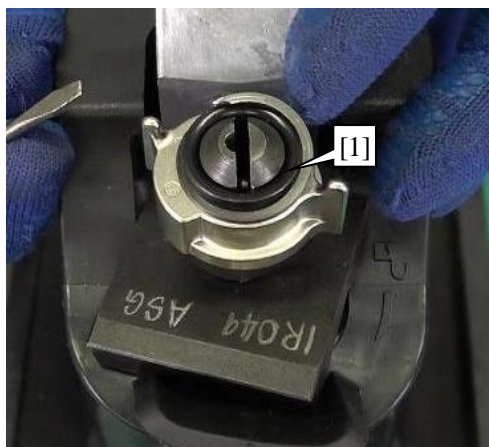
- 3** Plug the cord in the outlet and move Blade clamp section to the most forward position by pulling Switch slightly. Then unplug the machine.

- 4** Remove Protector [1].

Tips

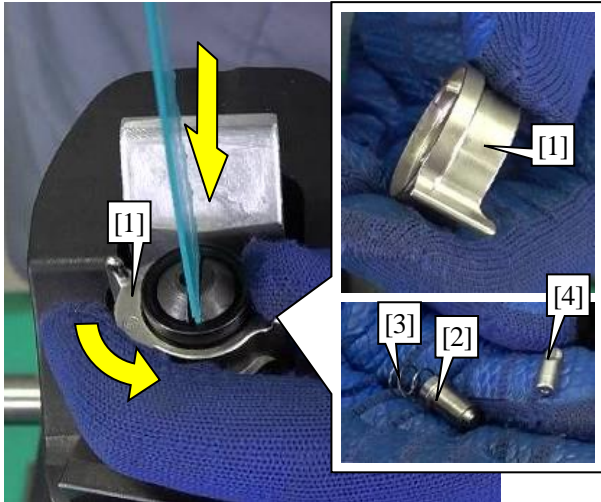
It is easy to disassemble by putting 1R049 under Blade clamp section to prevent it from falling down.

Fig.8



- 5** Remove Retaining ring (EXT) 18 [1] from the end with a slotted screwdriver, then slide the blade along the ring while rotating.

Fig.9



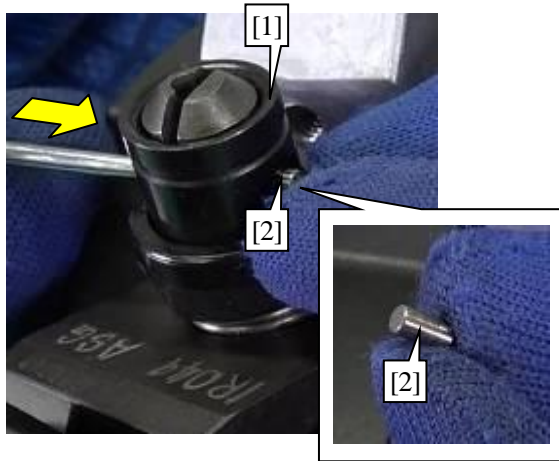
6 Insert the blade, then turn Driving sleeve [1] to lock it, and then remove the following parts:

- Driving sleeve [1]
- Shoulder pin 5 [2]
- Compression spring 6 [3]
- Push pin [4]

Note

Be careful not to drop or lose Shoulder pin 5 [2] and Compression spring 6 [3].

Fig.10



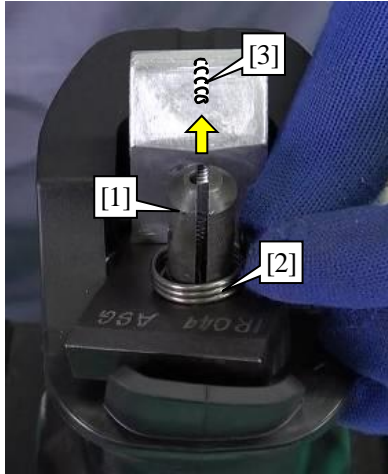
7 Remove Pin 3 [2] from Guide sleeve [1].

Fig.11



8 Remove Guide sleeve [1] and Connecting sleeve [2].

Fig.12



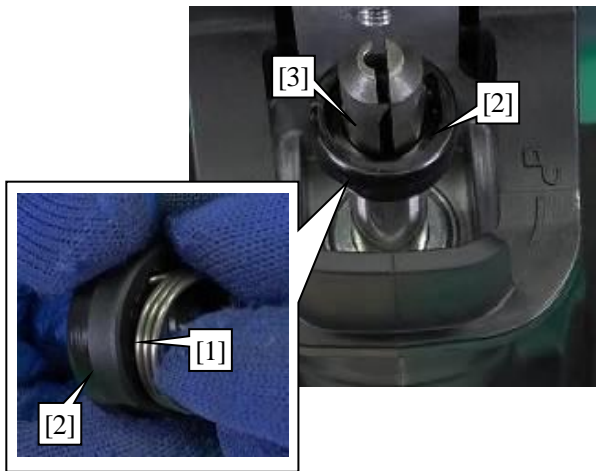
- 9 When removing Torsion spring 17 [2] from Slider [1], Compression spring 2 [3] is also come off.

Note

Be careful not to drop or lose Compression spring 2 [3].

6-3-2 Assembling

Fig.13

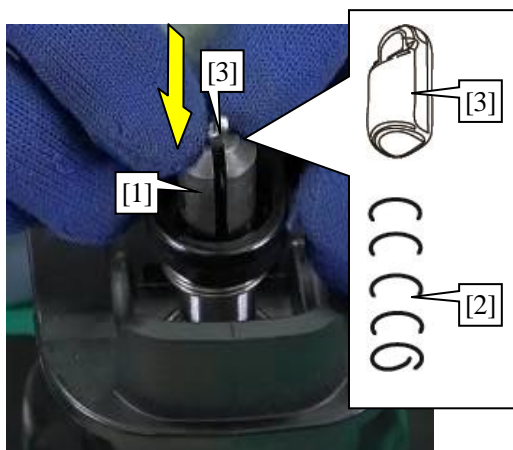


- 1 Hold the machine with 1R312 with the tip faced upward.
- 2 Fit the short leg of Torsion spring 17 [1] into the hole in Connecting sleeve [2], then assemble them to Slider [3].

Note

Note the orientation of Torsion spring 17 [1].

Fig.14



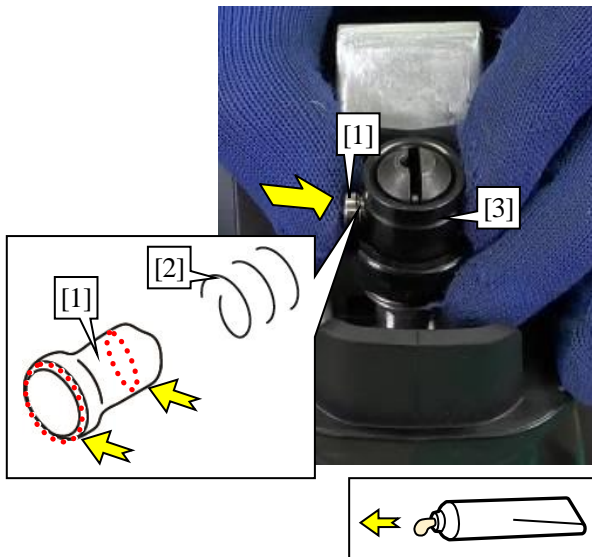
- 3 Assemble Compression spring 2 [2] and Push pin [3] to Slider [1].

Fig.15



- 4 Assemble Guide sleeve [1], then align the holes, and then insert Pin 3 [2].

Fig.16



- 5 Assemble Compression spring 6 [2] to Shoulder pin 5 [1], then insert them into Guide sleeve [3].

Note

Apply the specified grease to the outer surface and the head of Shoulder pin 5 [1].

Fig.17



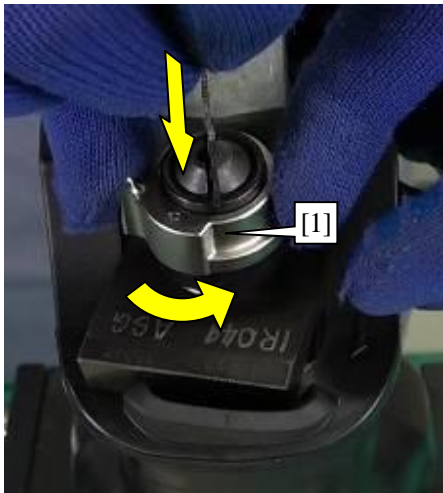
- 6 Insert the blade into Slider [1], then push Shoulder pin 5 [2] until it stops.

Fig.18



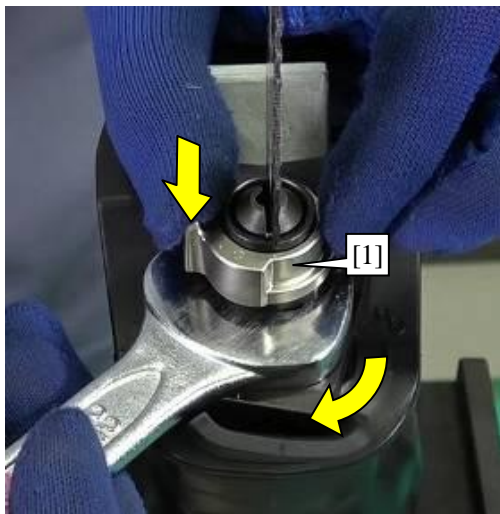
- 7 Hold Slider [1] in 1R049 so as not to lower.
- 8 Assemble Driving sleeve [2].

Fig.19



- 9 While inserting the blade, turn Driving sleeve [1] counterclockwise until it is fully turned.

Fig.20



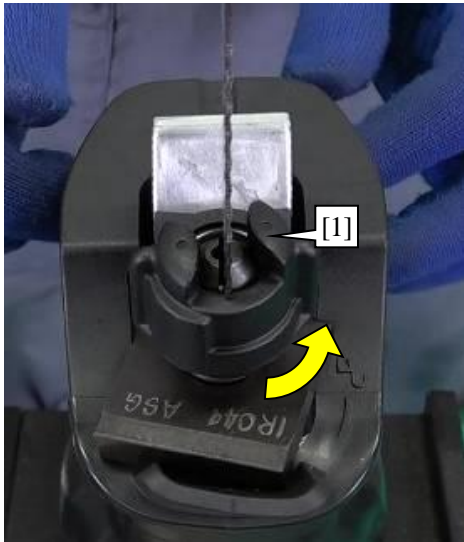
- 10 While holding Driving sleeve [1] to turn it counterclockwise all the way, turn Connecting sleeve clockwise with Wrench 22.
- 11 Push in Driving sleeve [1] where Driving sleeve [1] and Connecting sleeve fit.

Fig.21



- 12 Remove the blade from Slider [1].
- 13 Fit Retaining ring (EXT) 18 [2] into the groove of Guide sleeve [3] while rotating it from the end in order.

Fig.22



- 14 Assemble Protector [1].
- 15 Remove 1R049 from Blade clamp section.

Tips

Check that Driving sleeve is locked by inserting the blade, then check that the blade is pushed out by turning Protector [1] counterclockwise.

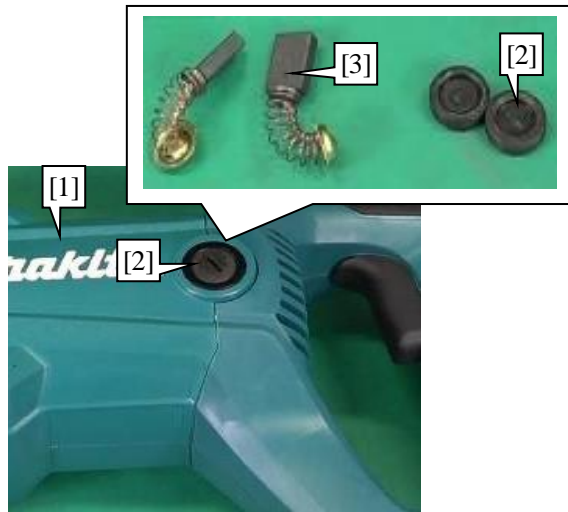
- 16 Assemble Shoe. (6-2-1)

6-4 Carbon brush section

6-4-1 Disassembling

- 1 Remove Blade clamp section. (6-3-1)

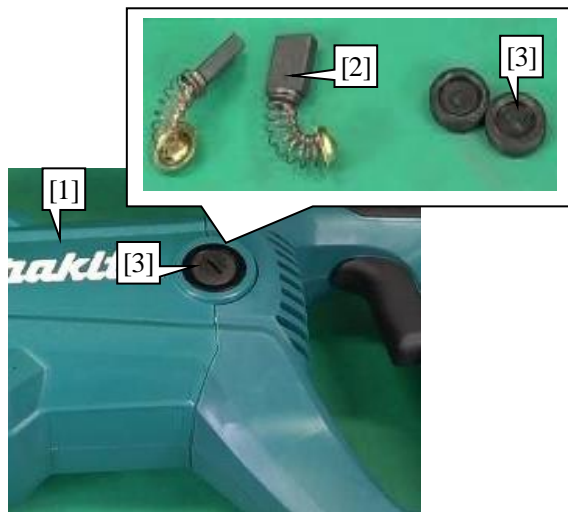
Fig.23



- 2 Remove Holder caps [2] (2 pcs) and Carbon brushes [3] (2 pcs) from each side of Motor housing [1].

6-4-2 Assembling

Fig.24

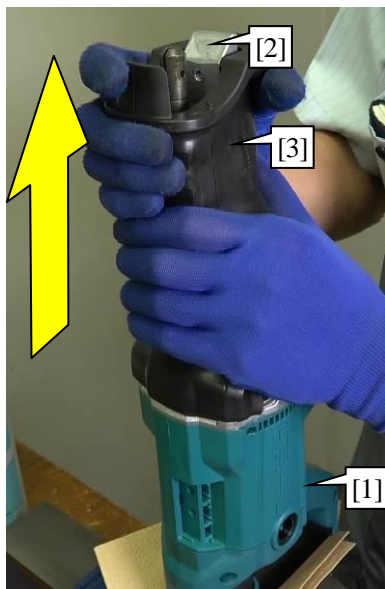


- 1 Assemble Carbon brushes [2] (2 pcs) and Holder caps [3] (2 pcs) to each side of Motor housing [1].

6-5 Insulation cover section

6-5-1 Disassembling

Fig.25



- 1 While protecting Handle section [1] with a waste cloth, hold them in Vise.
- 2 Remove Insulation cover [3] from Gear housing [2].

Tips

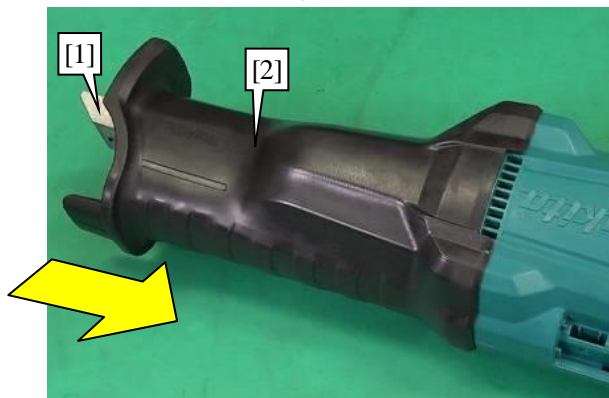
Insulation cover [3] can be easily removed by spraying parts cleaner between Insulation cover [3] and Gear housing [2].

Note

Do not spray Lubricant or silicone-spray when disassembling Insulation cover [3] because the cover can easily come off during use.

6-5-2 Assembling

Fig.26



- 1 Assemble Insulating cover [2] to Gear housing [1].
- 2 Fit the protrusions (4 positions) of Insulation cover [2] into Gear housing [1].

Tips

If Parts cleaner is sprayed to the inside of Insulation cover [2], Insulation cover [2] can easily cover Gear housing [1].

6-6 Switch/ Motor section

6-6-1 Disassembling

- 1 Remove Hook, Shoe, Carbon brushes and Insulation cover. ([6-1-1](#), [6-2-1](#), [6-4-1](#), [6-5-1](#))

Tips

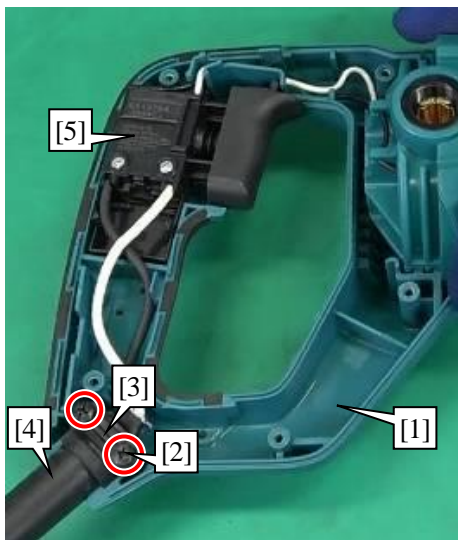
The above disassembly is not necessary if only Switch and Power supply cord are replaced.

Fig.27



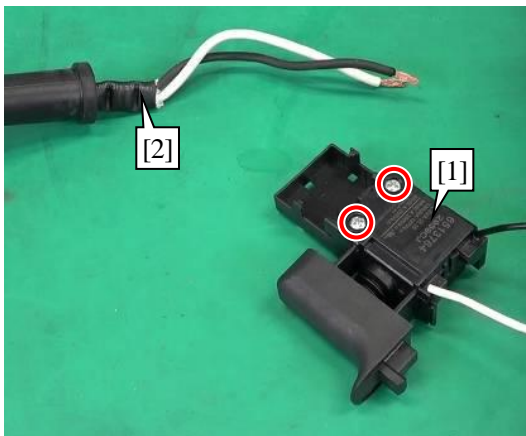
- 2 Remove Tapping screws 4x18 [1] (5 pcs), then remove Handle R [2].

Fig.28



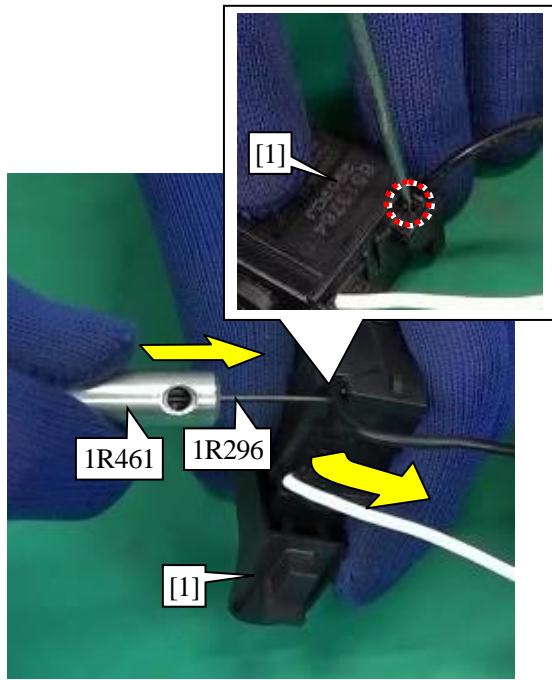
- 3 Remove Tapping screws 4x18 [2] (2 pcs) from Handle L [1], then remove the following parts:
 - Strain relief [3]
 - Cord guard 10-90 [4]
 - Switch [5]

Fig.29



- 4 Loosen the screws on Switch [1], then remove Power supply cord [2] from Switch [1].

Fig.30



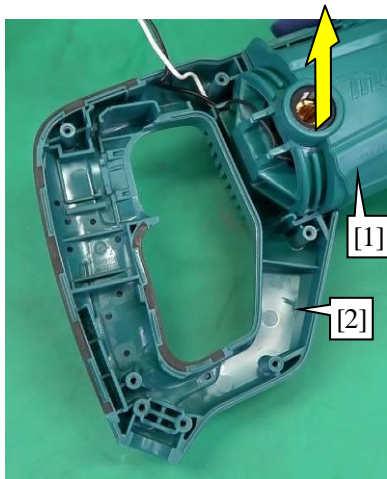
5 When removing Lead wires from Switch [1], insert a thin pin through the hole near Switch lead wire insertion port.

6 Attach 1R296 to 1R461, then pull out Lead wire while inserting 1R296 into the hole.

Tips

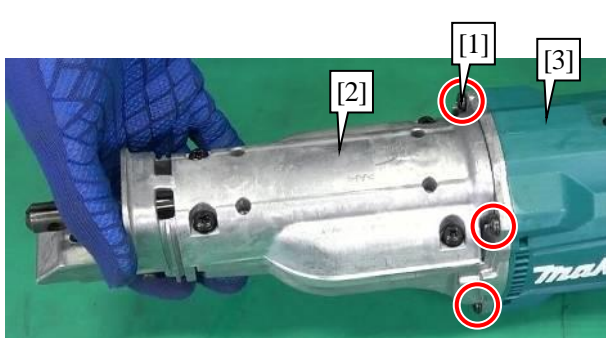
If it is hard to insert 1R296 into the bottom, tap 1R461 with a plastic hammer to pierce the hole.

Fig.31



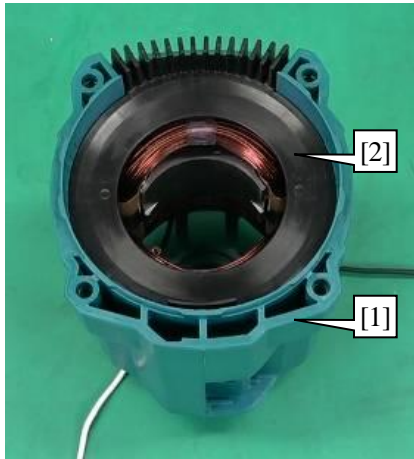
7 Remove Handle L [2] from Motor housing [1].

Fig.32



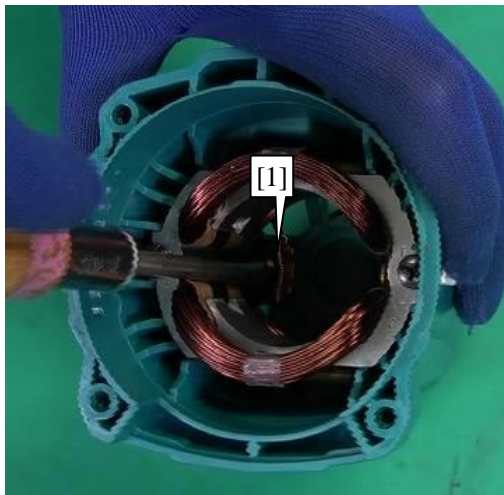
8 Remove Tapping screws 5x25 [1] (4 pcs), then remove Motor housing [3] from Gear housing [2].

Fig.33



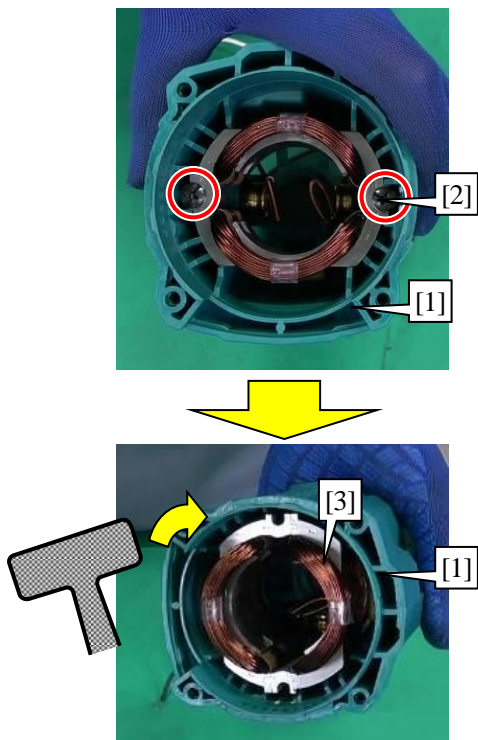
- 9 Remove Baffle plate [1] from Motor housing [2].

Fig.34



- 10 Remove Ring terminal [1] with a slotted screwdriver.

Fig.35



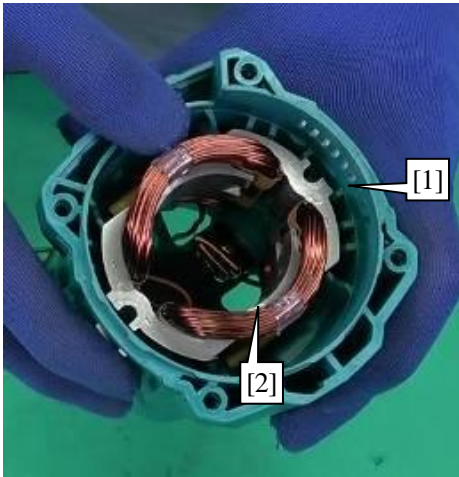
- 11 Remove Tapping screws 5x45 [2] (2 pcs) from Motor housing [1], then tap Motor housing [1] with a plastic hammer [3] to remove Field [3].

Note

Do not tap the thin portion of Motor housing [1] because it is fragile.

6-6-2 Assembling

Fig.36



- 1 Insert Field [2] straight down into Motor housing [1].

Tips

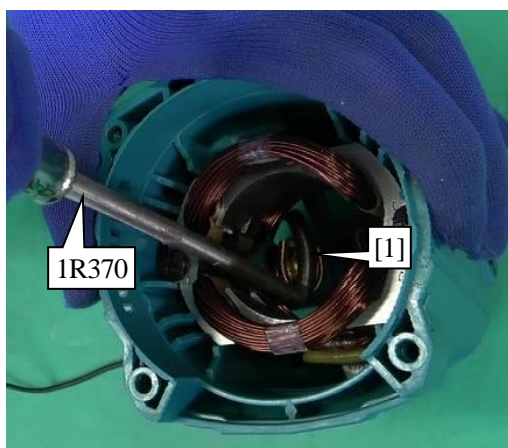
If it is hard and does not fit into the bottom, tap the back of Motor housing [1] with a plastic hammer.

Fig.37



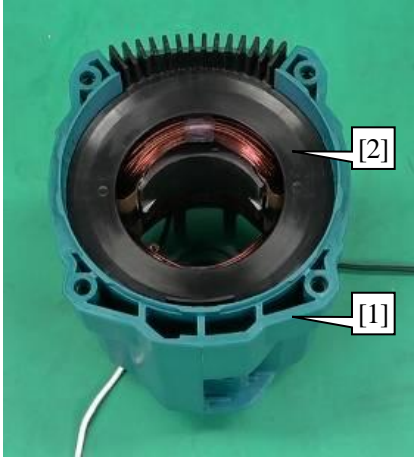
- 2 Tighten Tapping screws 5x45 [1] (2 pcs).

Fig.38



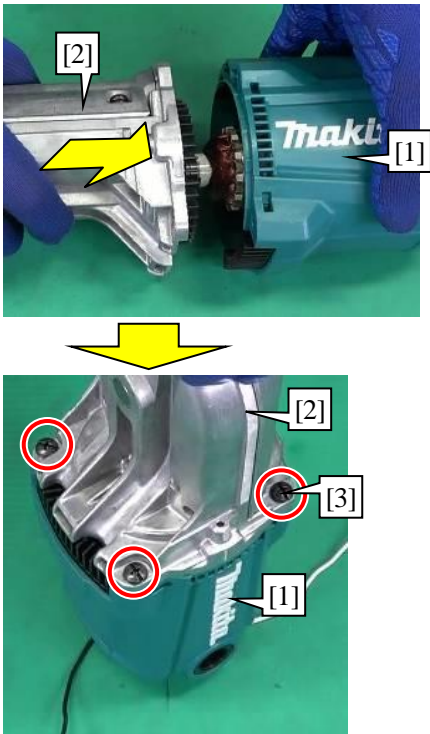
- 3 Set Ring terminals [1] (2 pcs) in place with 1R370.

Fig.39



4 Assemble Baffle plate [2] to Motor housing [1].

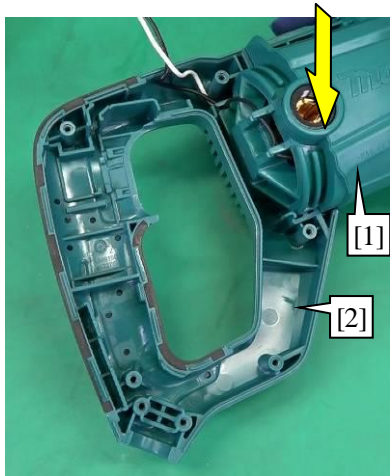
Fig.40



5 Assemble Gear housing [2] to Motor housing [1].

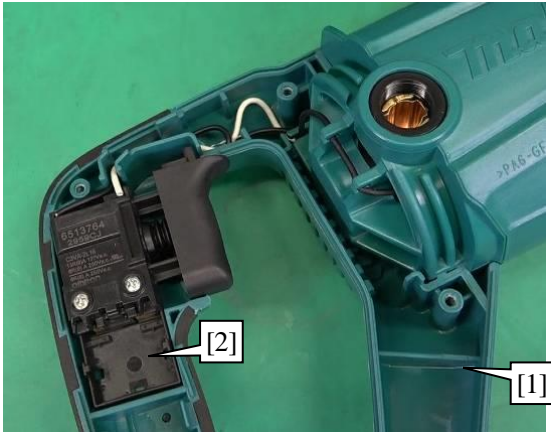
6 Tighten Tapping screws 5x25 [3] (4 pcs).

Fig.41



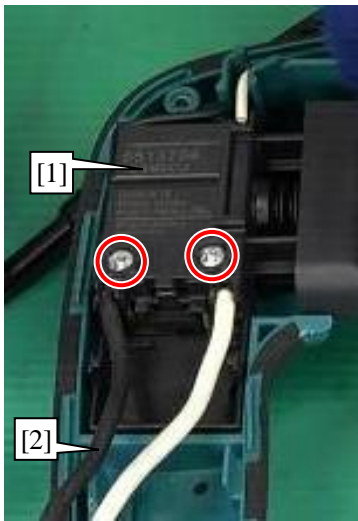
7 Assemble Handle L [2] to Motor housing [1].

Fig.42



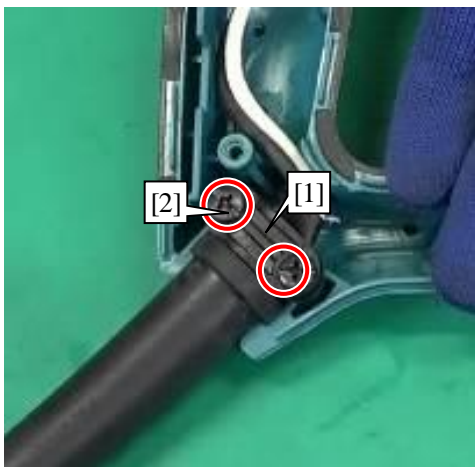
- 8 Assemble Switch [2] to Handle L [1], then insert Lead wires.

Fig.43



- 9 Loosen the screws on Switch [1], then insert Lead wires of Power supply cord [2], and then tighten the screws.

Fig.44



- 10 Hold Power supply cord with Strain relief [1] and Tapping screws 4x18 [2] (2 pcs).

Fig.45



- 11 Assemble Handle R [1] with Tapping screws 4x18 [2] (5 pcs).

Note

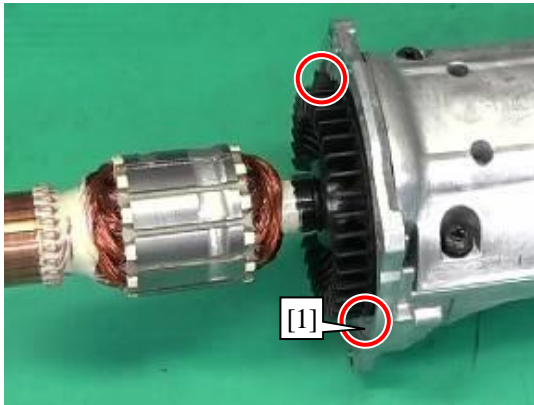
Check the operation of Switch [3].

6-7 Armature/ Gear section

6-7-1 Disassembling

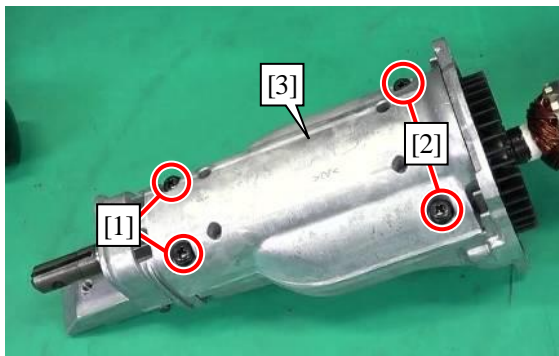
- 1 Remove Handle section. (6-6-1)

Fig.46



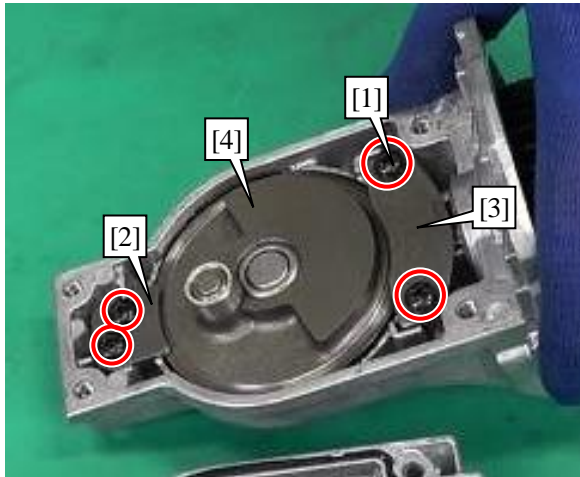
- 2 Remove Hex. socket head bolts M4x12 [1] (2 pcs).

Fig.47



- 3 Remove Pan head screws M5x35 [1] (2 pcs) and Pan head screws M5x25 [2] (2 pcs), then remove Gear housing cover [3].

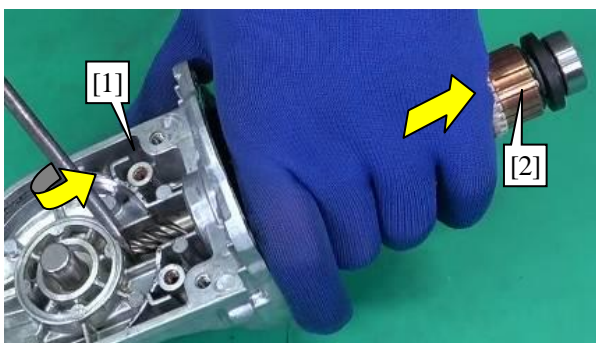
Fig.48



4 Remove Pan head screws M5x16 [1] (4 pcs), then remove the following parts:

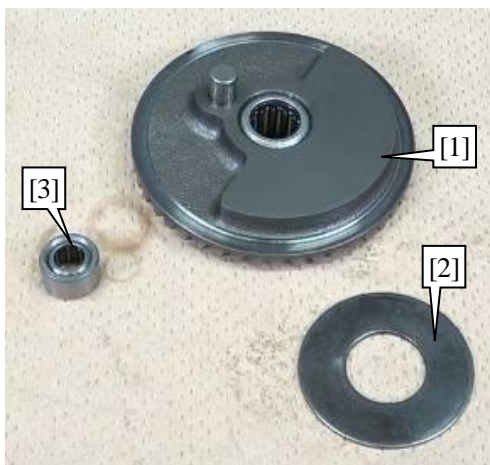
- Gear plate A [2]
- Gear plate [3]
- Gear complete [4]

Fig.49



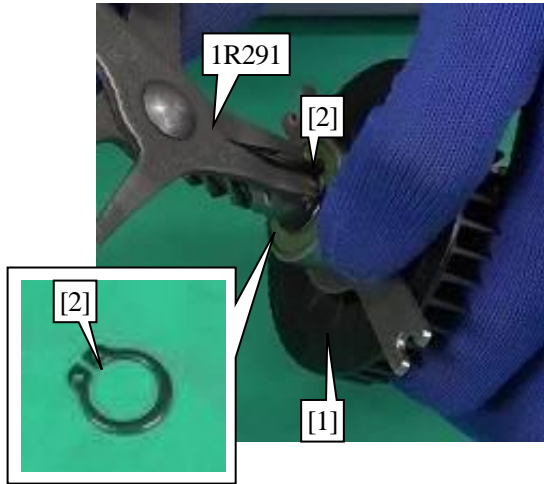
5 Remove Armature [2] from Gear housing [1] with a slotted screwdriver.

Fig.50



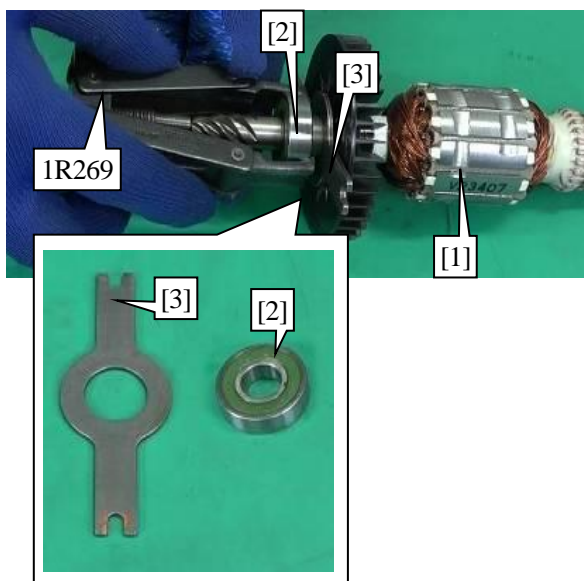
6 Remove Flat washer 18 [2] and Needle bearing 708 [3] from Gear complete [1].

Fig.51



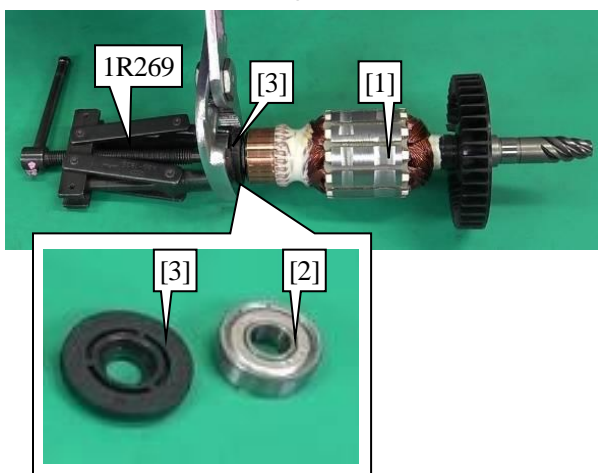
- 7 Remove Retaining ring S-12 [2] from Armature [1] with 1R291.

Fig.52



- 8 Remove Ball bearing 6001LLU [2] from Armature [1] with 1R269, then remove Bearing retainer 80 [3].

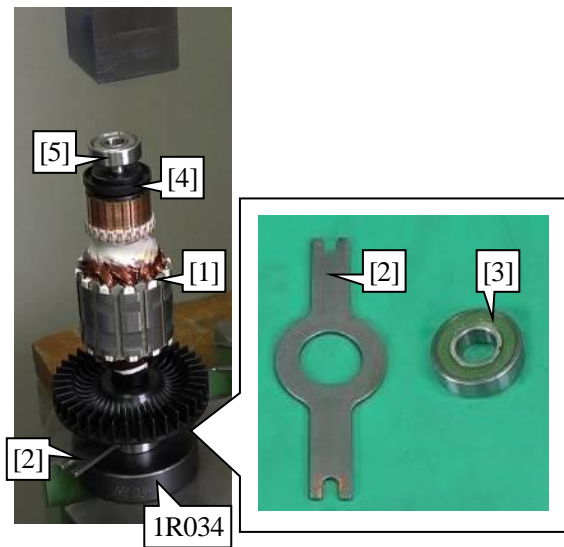
Fig.53



- 9 Remove Ball bearing 608ZZ [2] from Armature [1] with 1R269 and Water pump pliers, then remove Insulation washer [3].

6-7-2 Assembling

Fig.54

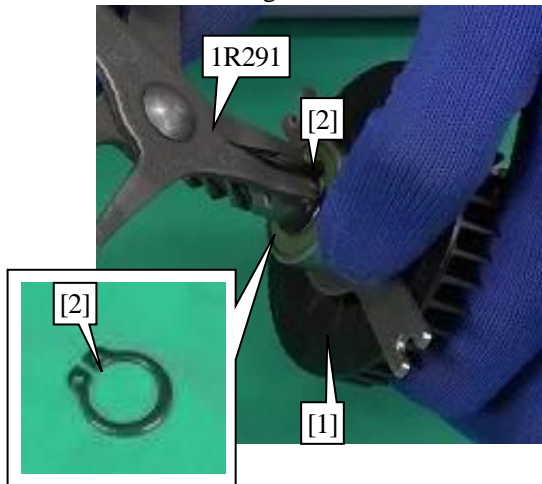


1 Assemble the following parts to Armature [1], then hold Armature [1] with 1R034, and then press-fit them.

- Bearing retainer 80 [2]
- Ball bearing 6001LLU [3]
- Insulation washer [4]
- Ball bearing 608ZZ [5]

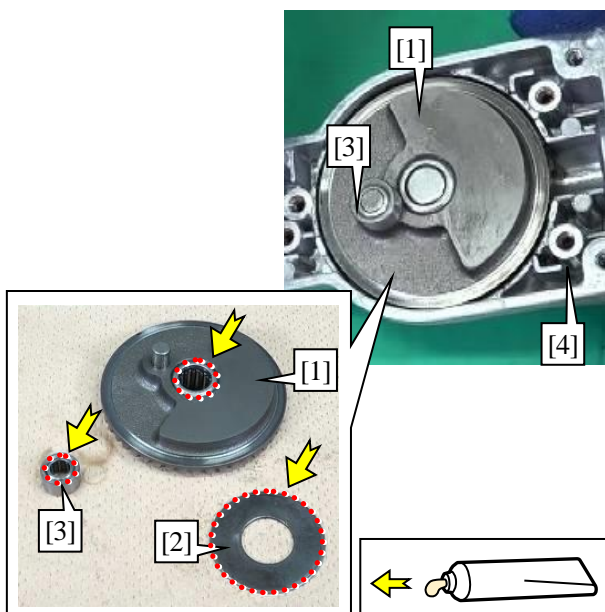
Tips
Press-fit Armature [1] while turning it.

Fig.55



2 Assemble Retaining ring S-12 [2] to Armature [1] with 1R291.

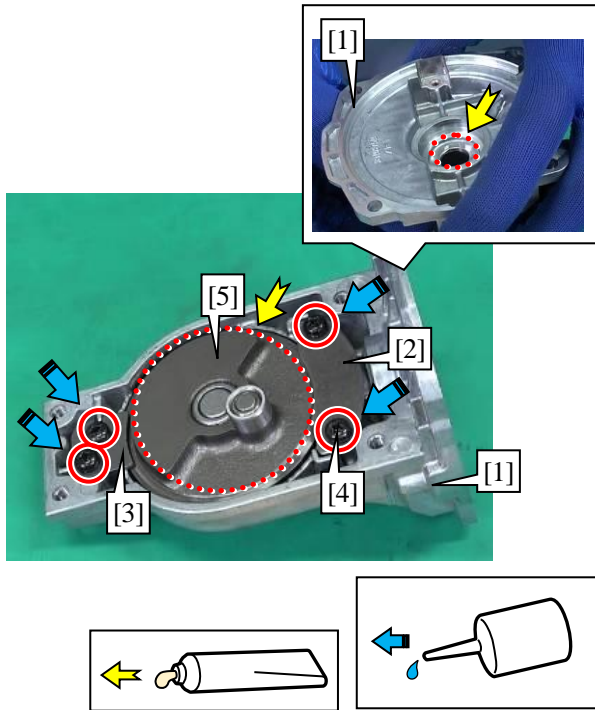
Fig.56



3 Assemble Flat washer 18 [2] and Needle bearing 708 [3] to Gear complete [1], then assemble them to Gear housing [4].

Note
Apply the specified grease to the inner ring of Gear complete [1], Flat washer 18 [2] and the inner ring of Needle bearing 708 [3].

Fig.57

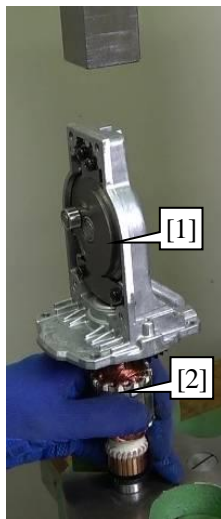


- 4 Assemble Gear plate [2] and Gear plate A [3] to Gear housing [1] with Pan head screws M5x16 [4] (4 pcs).

Note

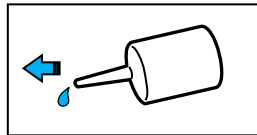
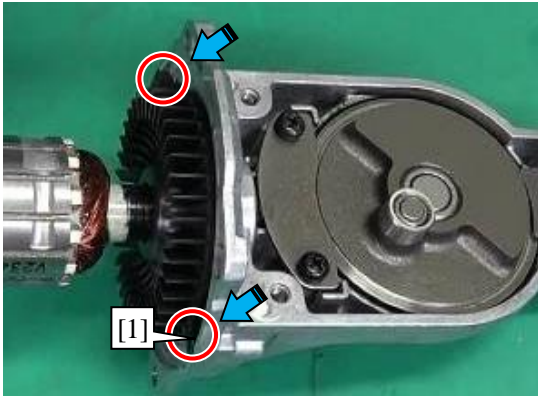
- Apply the specified adhesive to the thread of Pan head screws M5x16 [4] (4 pcs).
- Apply the specified grease to the sliding portion of Gear housing [1] and Gear complete [5].
- Check the operation of Gear complete [5].

Fig.58



- 5 Press-fit Armature [2] into Gear housing [1].

Fig.59

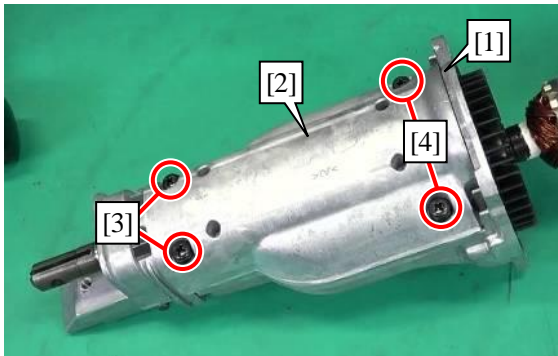


- 6 Tighten Hex. socket head bolts M4x12 [1] (2 pcs).

Note

Apply the specified adhesive to the thread of Hex. socket head bolts M4x12 [1] (2 pcs).

Fig.60

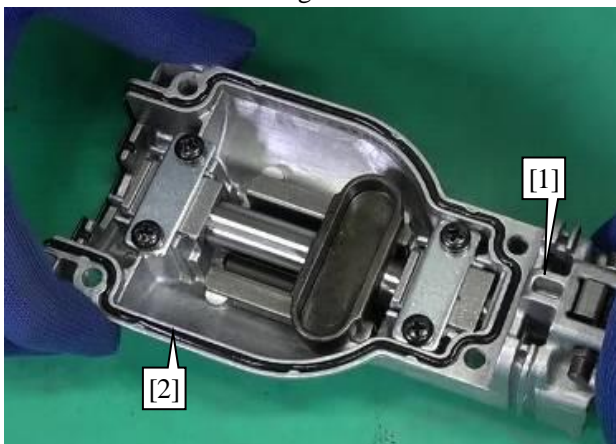


- 7 Assemble Gear housing cover [2] to Gear housing [1] with Pan head screws M5x25 [3] (2 pcs) and Pan head screws M5x35 [4] (2 pcs).

6-8 Slider section
6-8-1 Disassembling

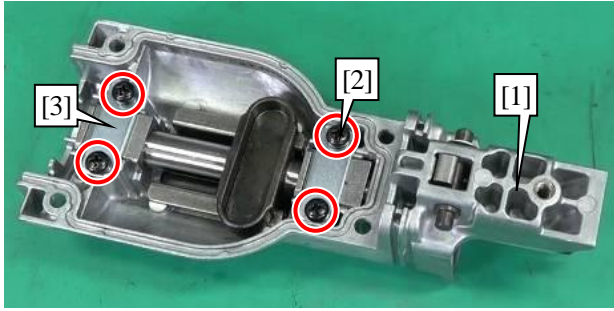
- 1 Remove Gear housing cover. (6-7-1)

Fig.61



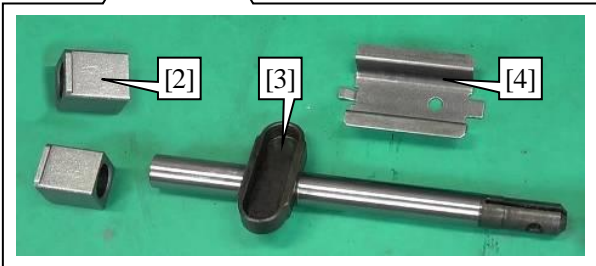
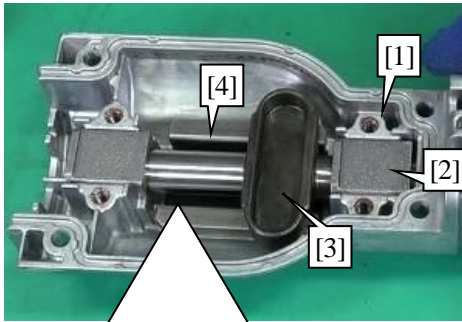
- 2 Remove Seal ring [2] from Gear housing cover [1].

Fig.62



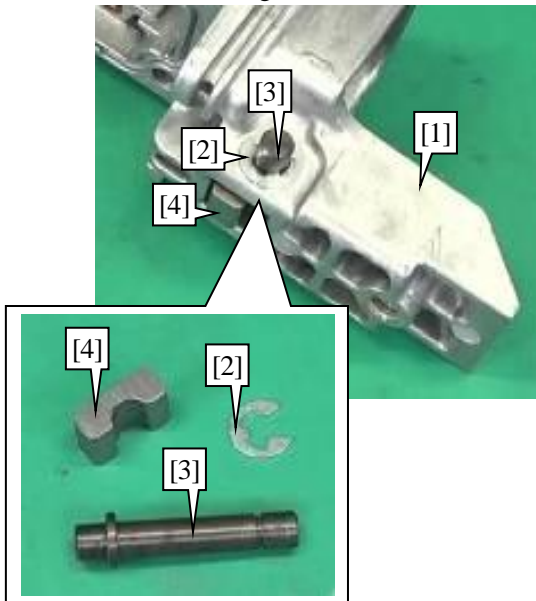
- 3 Remove Pan head screws M5x16 [2] (4 pcs) from Gear housing cover [1], then remove Plates [3] (2 pcs).

Fig.63



- 4 Remove the following parts from Gear housing cover [1]:
- Plane bearings 14 [2] (2 pcs)
 - Slider [3]
 - Slide plate [4]

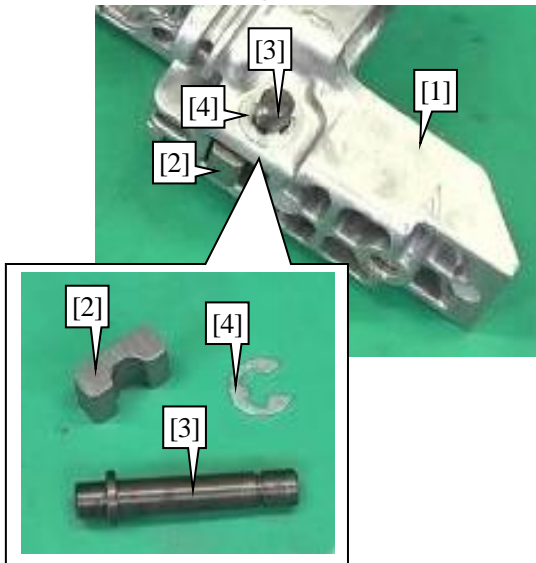
Fig.64



- 5 Remove the following parts from Gear housing cover [1]:
- Stop ring E-5 [2]
 - Collared pin 6 [3]
 - Block [4]

6-8-2 Assembling

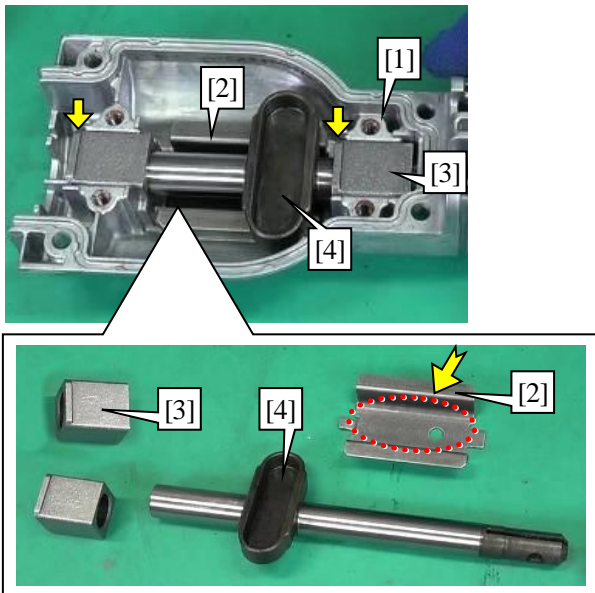
Fig.65



1 Assemble the following parts to Gear housing cover [1]:

- Block [2]
- Collared pin 6 [3]
- Stop ring E-5 [4]

Fig.66



2 Assemble the following parts to Gear housing cover [1]:

- Slide plate [2]
- Plane bearings 14 [3] (2 pcs)
- Slider [4]

Note

- Apply the specified grease to Slide plate [2].
- Align the flange of Plane bearing 14 [3] with the groove (arrow position) of Gear housing cover.

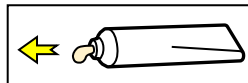
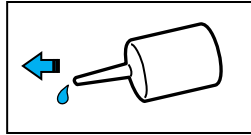
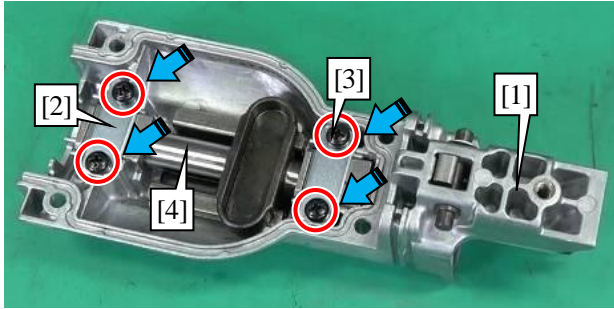


Fig.67

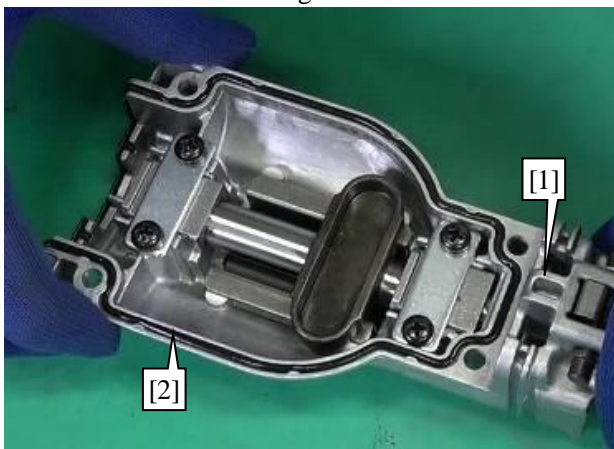


- 3 Assemble Plates [2] (2 pcs) to Gear housing cover [1] with Pan head screws M5x16 [3] (4 pcs).

Note

- Apply the specified adhesive to the thread of Pan head screws M5x16 [3] (4 pcs).
- Check the operation of Slider [4].



Fig.68

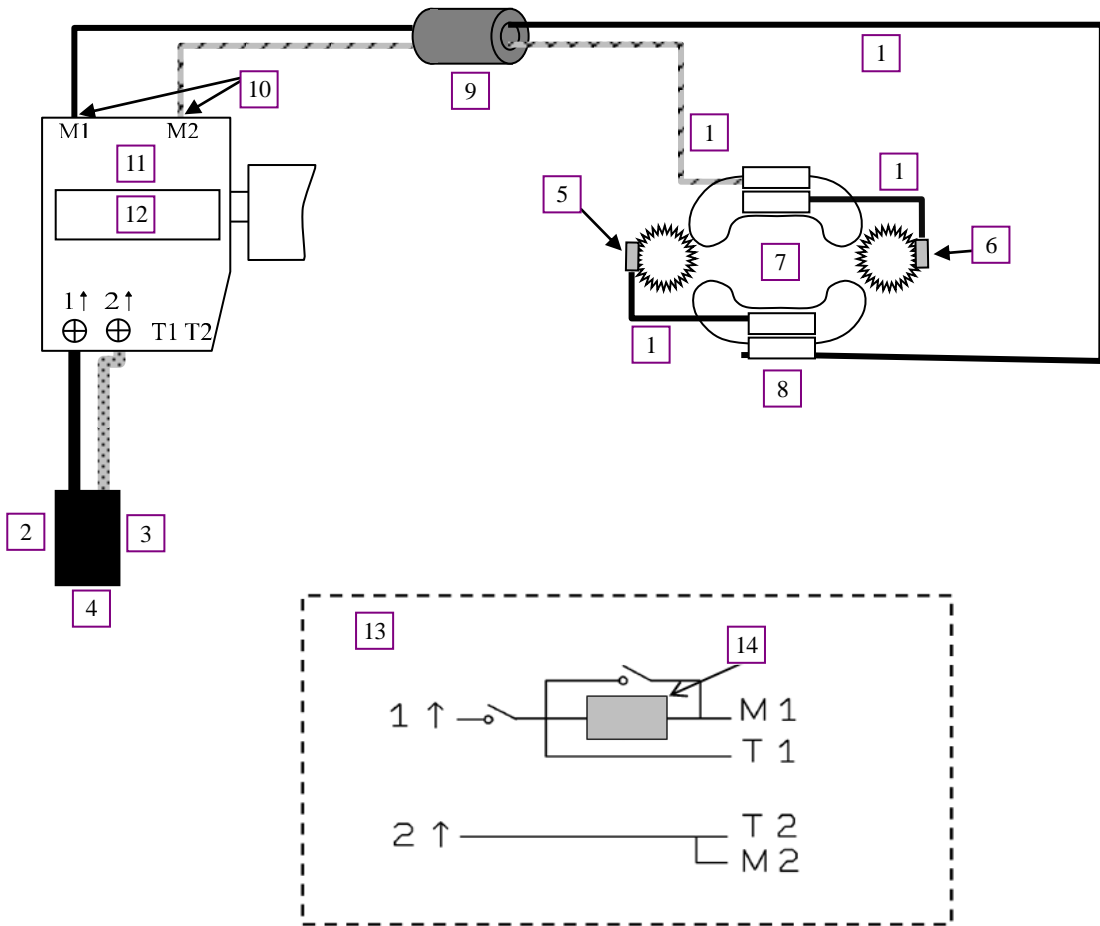


- 4 Assemble Seal ring [2] to Gear housing cover [1].

7 CIRCUIT DIAGRAM

Fig.69

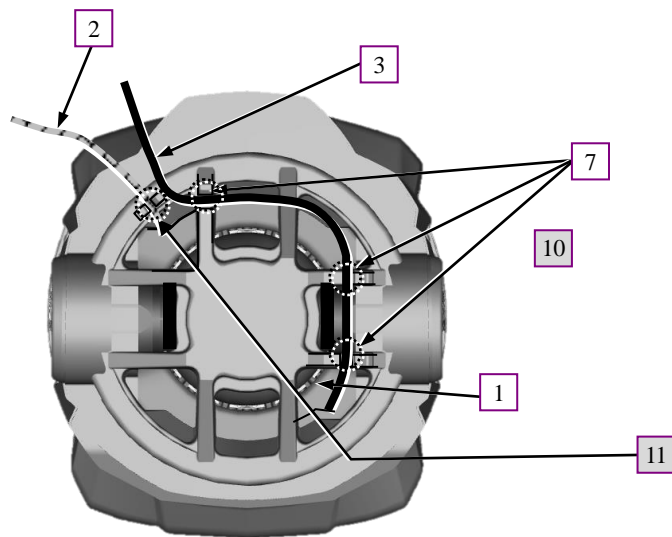
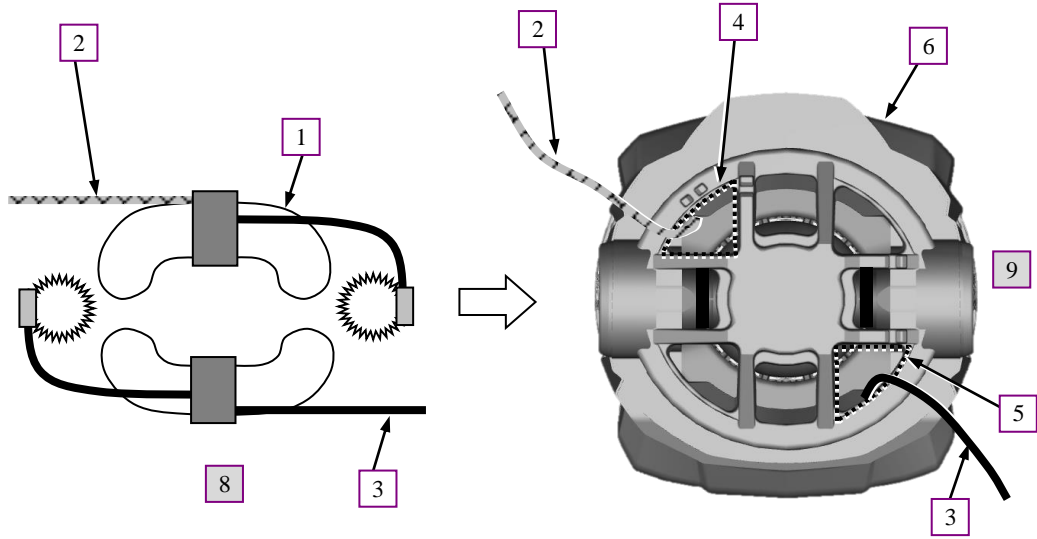
Color index of lead wires' sheath			
White		Black	



1	AWG18	8	View of Field from Commutator side
2	Black or Brown	9	Line filter (ø10-30/ if used)
3	White or Blue	10	Non-insulated splice [SPC-1.0T]
4	Power supply cord	11	Switch
5	Non-insulated splice (Handle L side)	12	Noise suppressor (if used)
6	Non-insulated splice (Handle R side)	13	Switch circuit diagram
7	Field	14	Speed change element

8 WIRING DIAGRAM
8-1 Field section

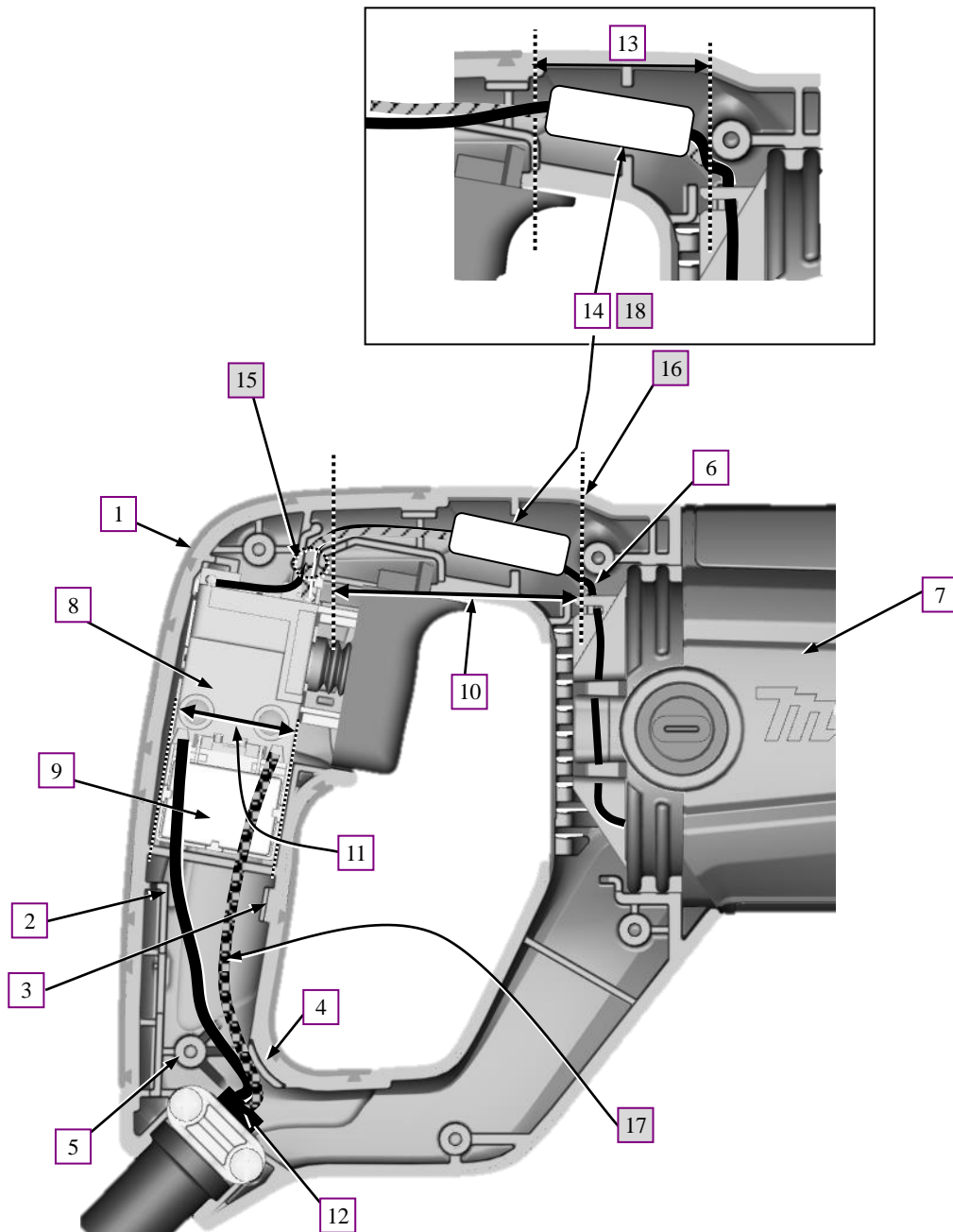
Fig.70



1	Field	5	Opening B
2	Lead wire of Field (White)	6	Motor housing
3	Lead wire of Field (Black)	7	Lead wire holder
4	Opening A		
8	Assemble Field to Motor housing in the orientation as shown.		
9	Pass Lead wire of Field (white) through Opening A and Lead wire of Field (black) through Opening B as shown.		
10	Assemble Lead wire of Field (black) from Motor housing between Field and Lead wire holder and Lead wire holder without slack.		
11	Fix Lead wire of Field (white) in this Lead wire holder.		

8-2 Handle section

Fig.71



1	Handle L	8	Switch
2	Rib A	9	Noise suppressor (if used)
3	Rib B	10	Range C
4	Rib C	11	Range B
5	Boss	12	Power supply cord
6	Lead wires of Field	13	Range A
7	Motor housing	14	Line filter (if used)
15	Fix Lead wires of Field connect to Switch in this groove. Put Lead wire of Filed (White) on Lead wire of Field (Black).		
16	Put the slack of Lead wires of Field connect to Switch in Range C.		
17	Put Lead wires of Power supply cord connect to Switch in Range B and route between Rib A and Rib B/ Boss and Rib C.		
18	Pass Lead wires (White/ Black) of Field connect to Switch through Line filter (if used) and assemble them to Range A as shown.		