Cordless Angle Grinder

DGA506

REPAIR MANUAL

1 INDEX

2 CAUTION

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

3 NECESSARY REPAIRING TOOLS

Code No.	Description	Use for
1R003	Retaining pliers ST-2N	removing/ assembling Ring spring 11
1R026	Bearing setting pipe 16-8.2	removing Ball bearing 6201DDW
1R028	Bearing setting pipe 20-12.2	press-fitting Spindle/ Spindle A
1R029	Bearing setting pipe 16-8.2	press-fitting Spiral bevel gear 37
1R032	Bearing setting plate 8.2	press-fitting Ball bearing 607LLB
1R036	Bearing setting plate 17.2	press-fitting Spiral bevel gear 37 Ball bearing 6201DDW/ 696ZZ
1R038	Armature holder 32 set for use with vise	clamping Rotor with a vise to remove M6 Hex nut
1R164	Ring spring setting tool A	press-fitting Ball bearing 6201DDW
1R212-A	Tip for Retaining ring pliers	use with 1R003
1R212-B	Plate set (with Screws)	use with 1R003
1R220	Ratchet head 9.5 (for 1R219)	assembling M6 Hex nut
1R222	Socket adapter	assembling M6 Hex nut
1R248	Round bar for Arbor 22-100	removing Felt ring 16
1R252	Round bar for Arbor 30-100	press-fitting Felt ring 16
1R254	Torque wrench shaft FT 2-6 N·m	assembling M6 Hex nut
1R258	V block	removing Spiral bevel gear 37
1R268	Spring pin extractor M3	removing Shoulder pin 4
1R269	Bearing extractor	removing Ball bearing 607LLB/ 696ZZ
1R284	Round bar for Arbor 10-50	removing Spiral bevel gear 37
1R291	Retaining ring S and R pliers	removing/ assembling Retaining ring R-32/ R-26
1R401	Bearing extractor	removing Rotor

4 LUBRICANT AND ADHESIVE APPLICATION

Apply lubricant and adhesive to the designated portions.

Lubricant	
⇦	Makita grease R No.00

Fig. 4-1

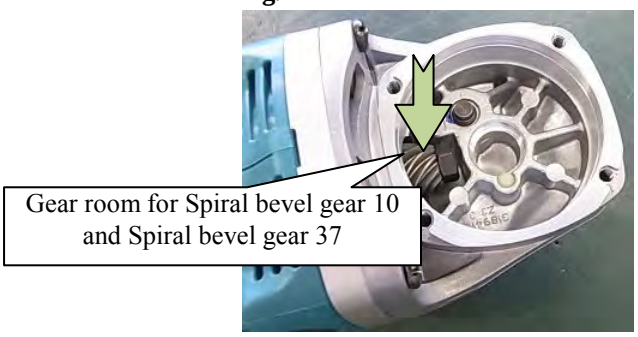
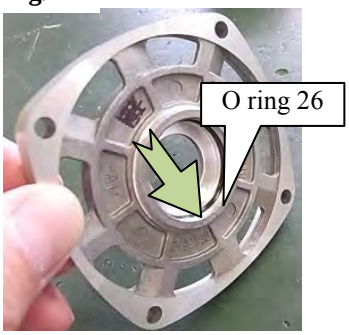


Fig. 4-2

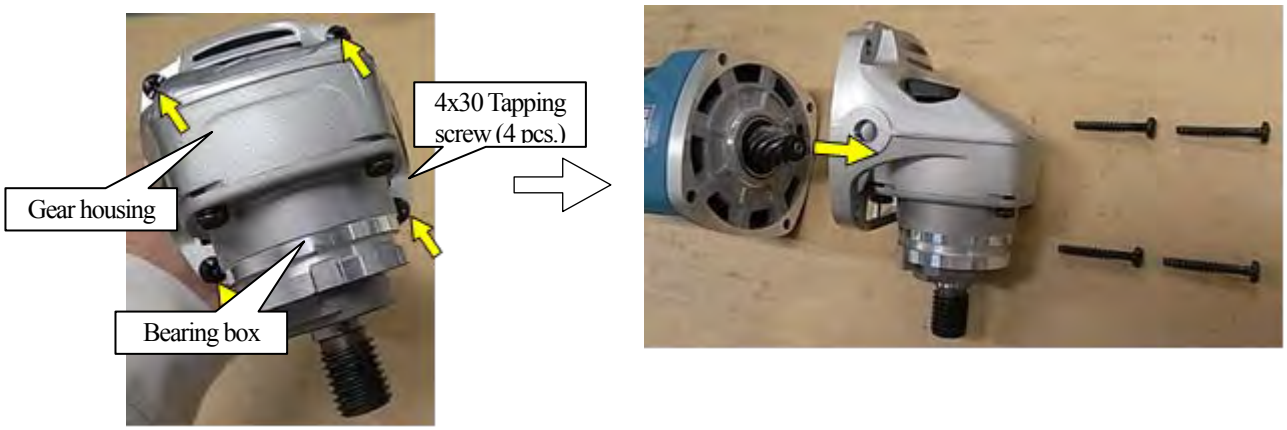


5 Rotor, Ball bearing 629LLB/ 607LLB, Spiral bevel gear 10

5-1 Disassembling

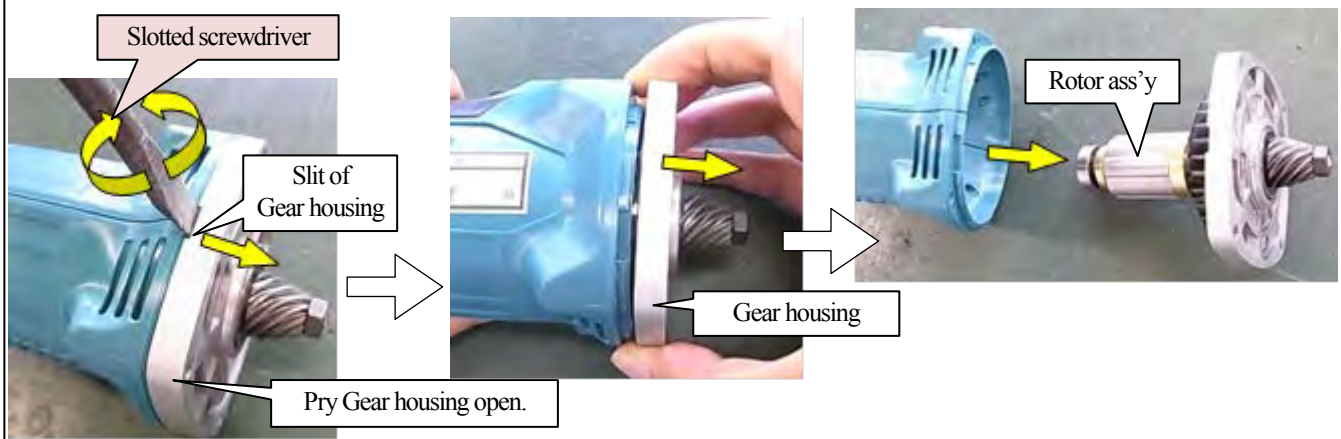
5-1-1

Remove four 4x30 Tapping screw, then remove Gear housing together with Bearing box.



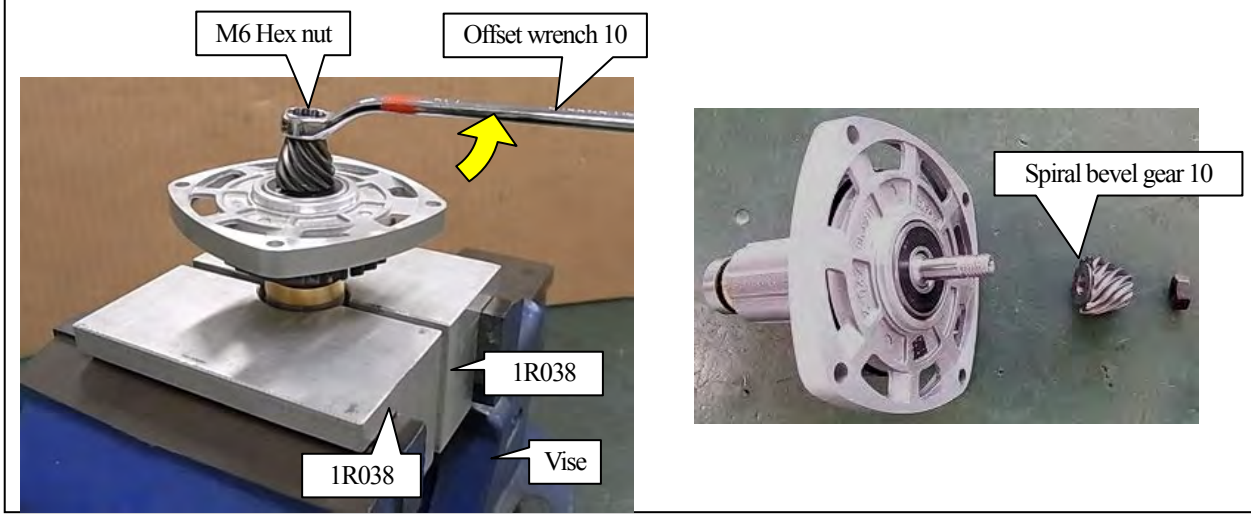
5-1-2

Insert a slotted screwdriver to the slit of Gear housing cover, then pry the gear housing cover open.
Remove Gear housing cover together with Rotor ass'y.



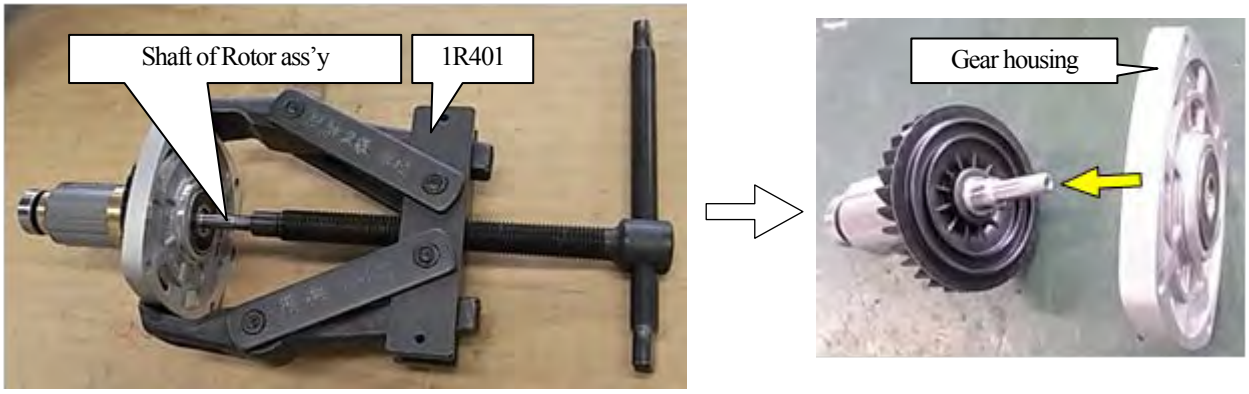
5-1-3

Hold Rotor ass'y in between 1R038 with a vise, then turn M6 Hex nut counterclockwise with an offset wrench 10.
Spiral bevel gear 10 is removed.



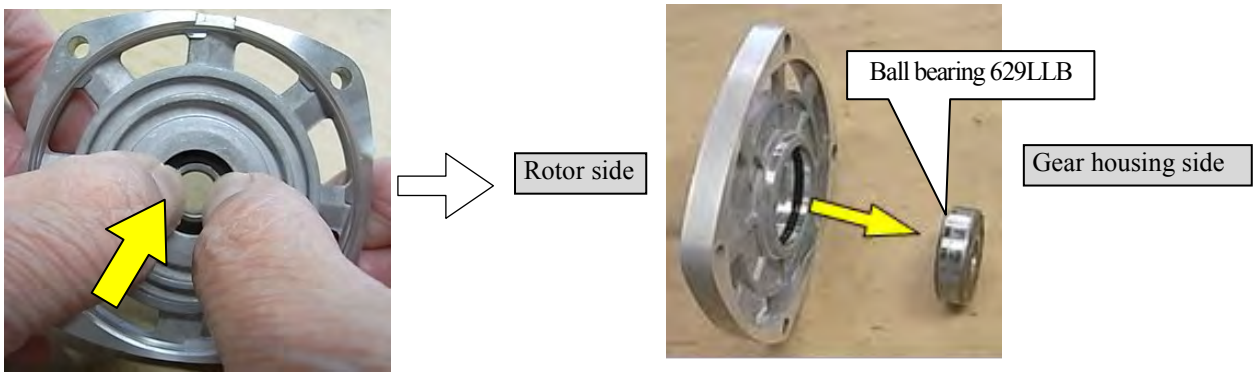
5-1-4

Remove Rotor ass'y from Gear housing cover with 1R401.



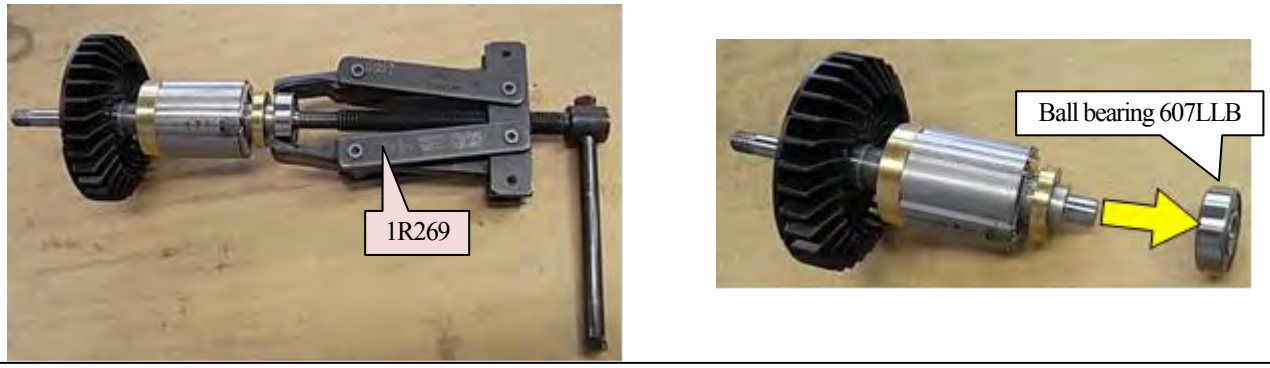
5-1-5

Push out Ball bearing 629LLB from Gear housing cover.



5-1-6

Remove 607LLB from Rotor ass'y.



5-1-7

Note: When handling or storing multiple Rotors, be sure to keep a proper distance between Rotors as shown below left.. Because Rotor is a strong magnet, failure to follow this instruction could result in:

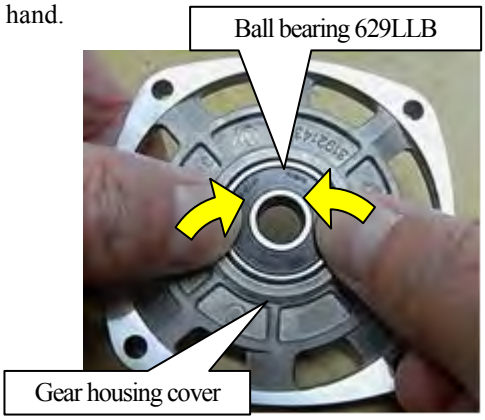
• Finger injury from being pinched between Rotors • Magnetic loss of Rotors or damage to Rotors. (See below right.)

5-2 Assembling

Assemble by reversing the disassembly procedure.
Also, refer to the following points.

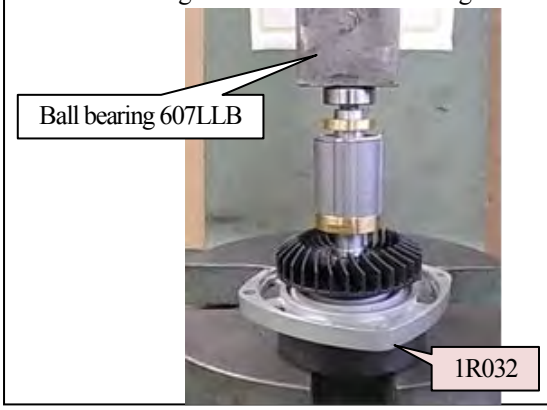
5-2-1

Push Ball bearing 629LLB into Gear housing cover by hand.



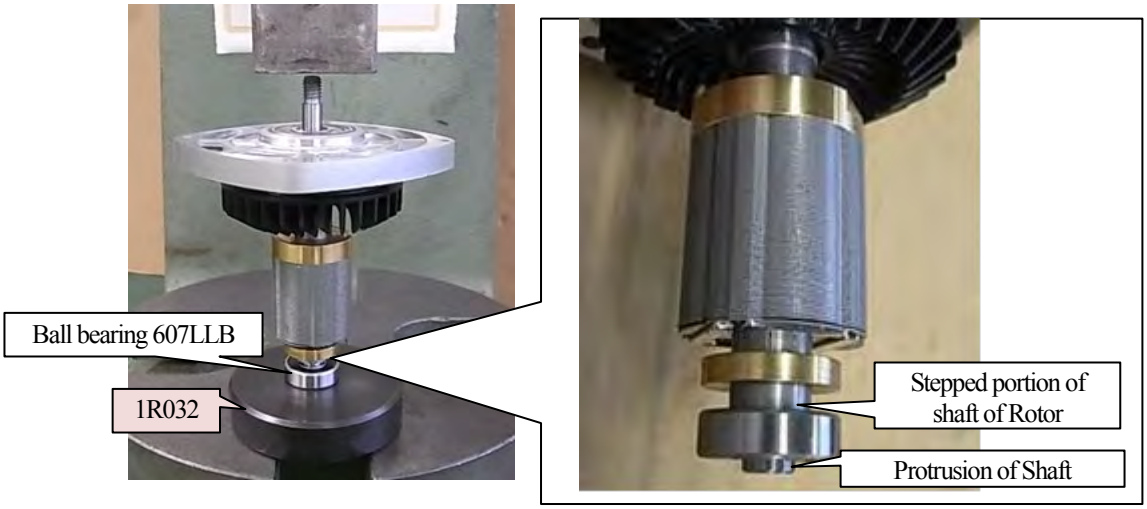
5-2-2

Receive Ball bearing 629LLB on 1R032, then press-fit Rotor into Ball bearing 629LLB and Ball bearing 607LLB.



5-2-3

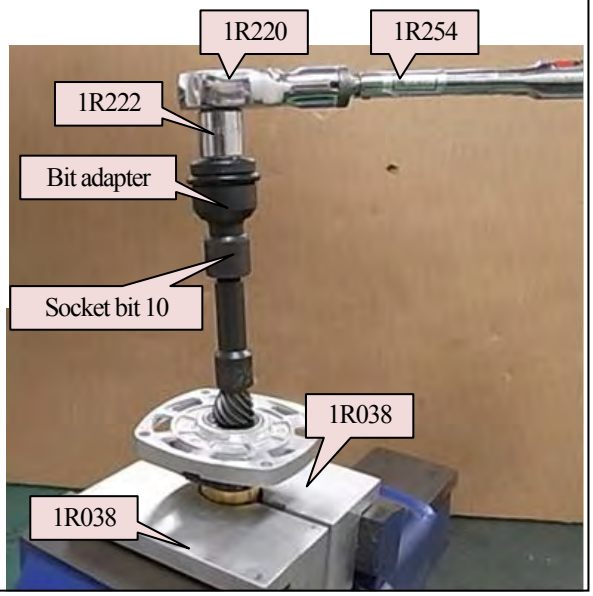
Receive Ball bearing 607LLB on 1R032, then protrude the shaft of Rotor from Ball bearing 607LLB by pressing from the opposite end carefully.



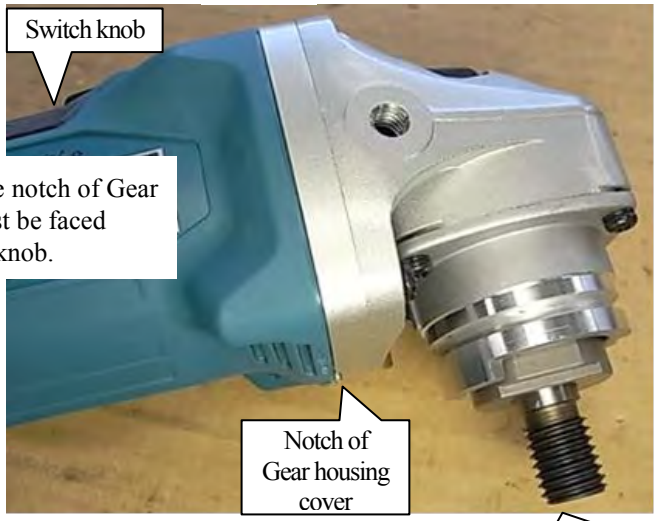
5-2-4

Assemble Spiral bevel gear 10 to Rotor ass'y, then hold Rotor ass'y in between 1R038 in a vise.
Secure M6 hex nut that fasten Spiral bevel gear 10 and Rotor ass'y by tightening to 4.9-5.9N·m with 1R254, 1R220, 1R222, a bit adapter and a socket bit 10.

Note: When the unit is assembled to Motor housing, be careful not to pinch your finger between the fan of Rotor ass'y and Gear housing cover.

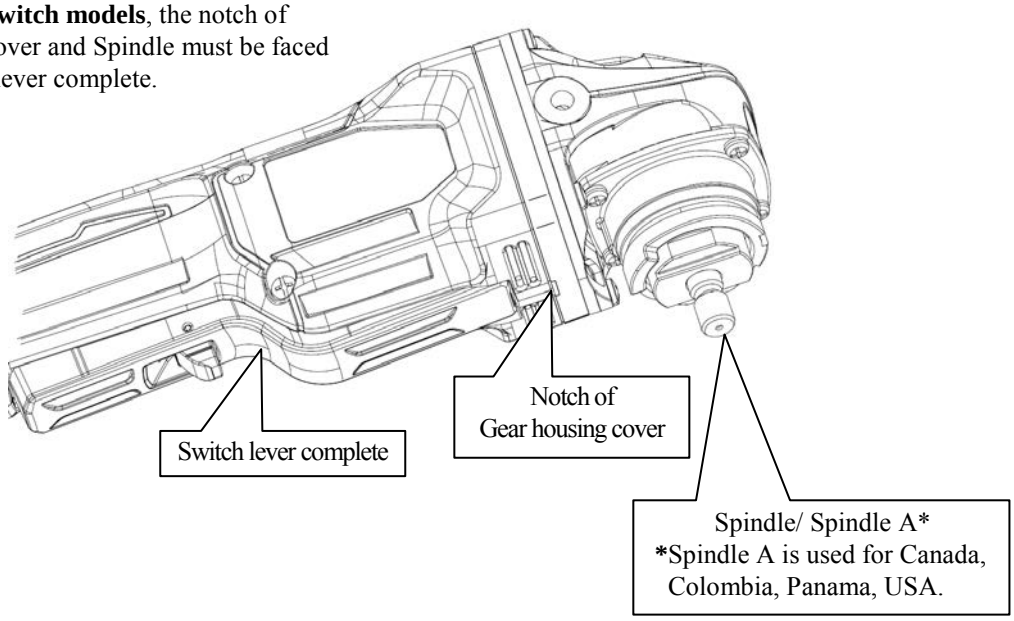


5-2-5



Note: As for **Slide switch models**, the notch of Gear housing cover and Spindle must be faced toward the opposite of Switch knob.

Note: As for **Paddle switch models**, the notch of Gear housing cover and Spindle must be faced toward Switch lever complete.



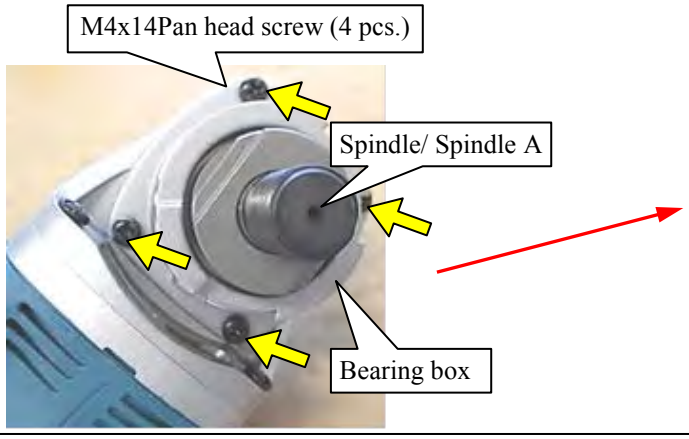
6 Spiral bevel gear 37, Ball bearing 696ZZ, Ball bearing 6201DDW

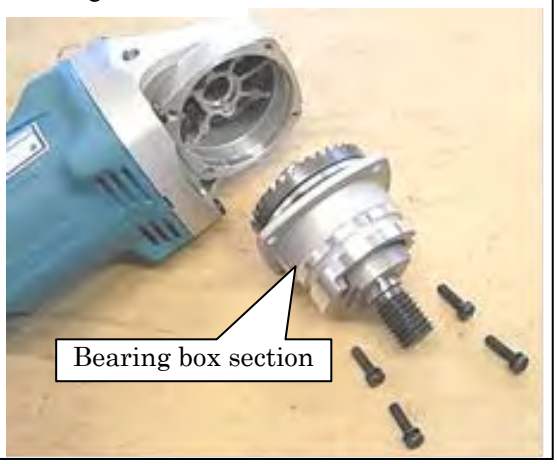
6-1 Disassembling

Note: The above parts can be removed without disassembling Motor section.

6-1-1

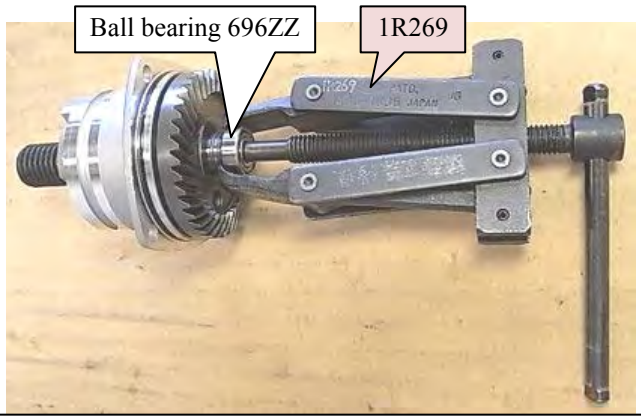
Remove M4x14 Pan head screws, then remove Bearing box section.





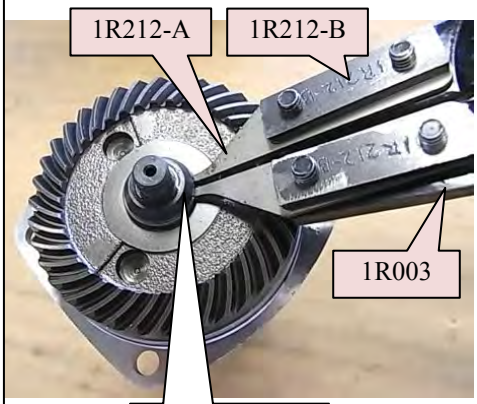
6-1-2

Remove Ball bearing 696ZZ with 1R269.



6-1-3

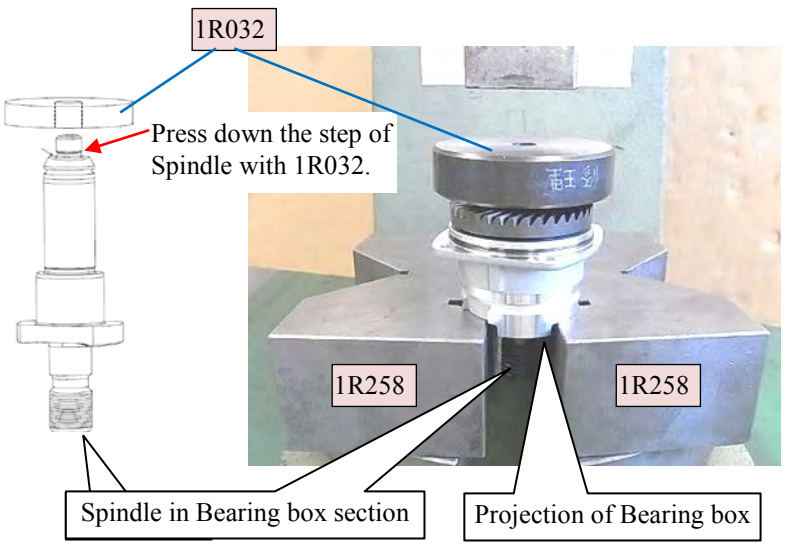
Remove Ring spring 11 using 1R003 with 1R212-A and 1R212-B.



6-1-4

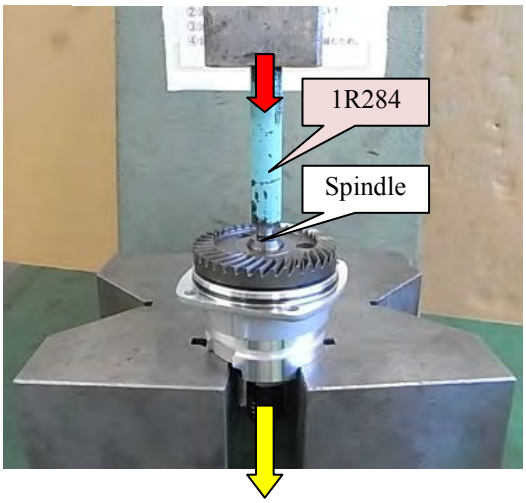
Receive Bearing box on 1R258, then give a shock to Spindle with 1R032 and an arbor press until the Spindle is moved slightly to relieve the press-fitting.

Note: Use 1R032 and 1R258 to prevent damage to both ends of Spindle and the projection of Bearing box.



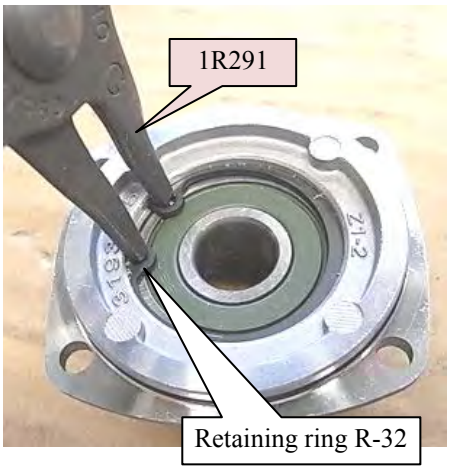
6-1-5

Press down Spindle with 1R284.



6-1-6

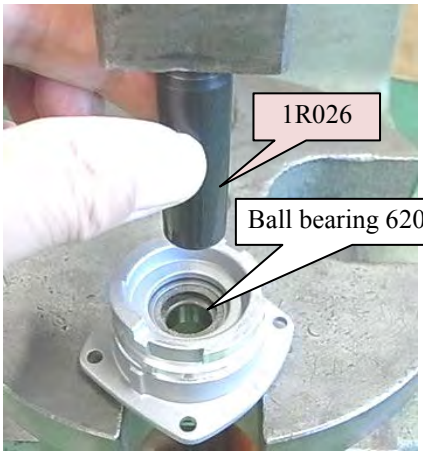
Remove Retaining ring R-32 with 1R291.



6-1-7

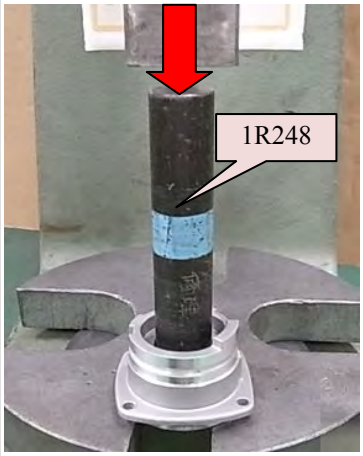
Press down Ball bearing 6201DDW with 1R026.

Note: Do not use the removed Ball bearing 6201DDW because it is deformed once removed.
Always replace the ball bearing with a new one.



6-1-8

Press down Felt ring 16 with 1R248.



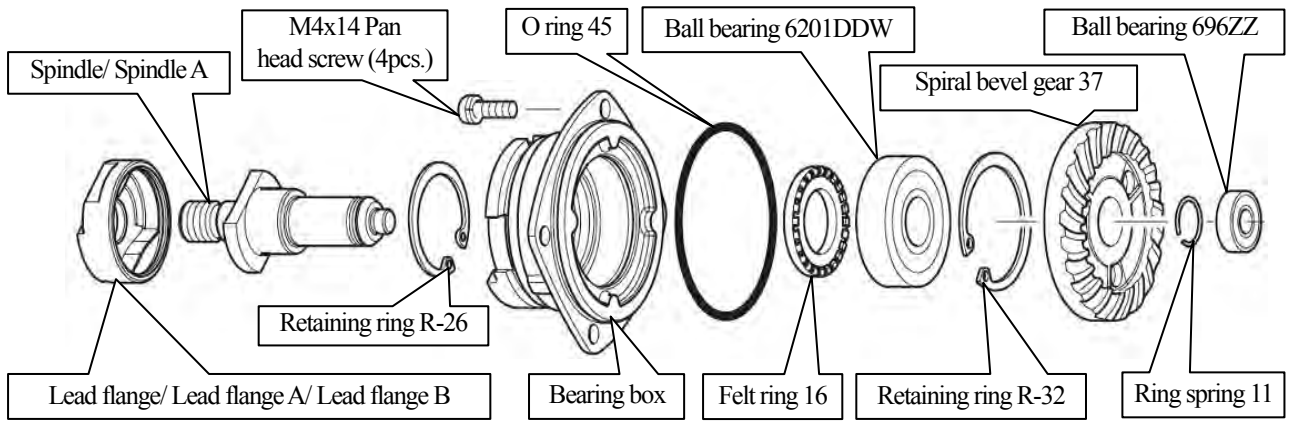
6-1-9

Remove Retaining ring R-26 with 1R291, then remove Lead flange (or Lead flange A/ Lead flange B.)

Note: Actual lead flange differs by specifications.

6-1-10

Bearing box section can be disassembled as follows.

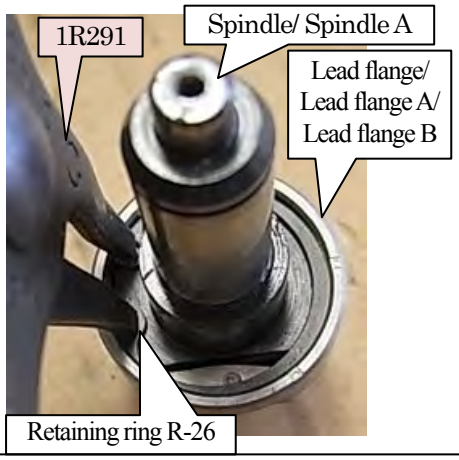


6-2 Assembling

Assemble by reversing the disassembly procedure.
Also, refer to the following points.

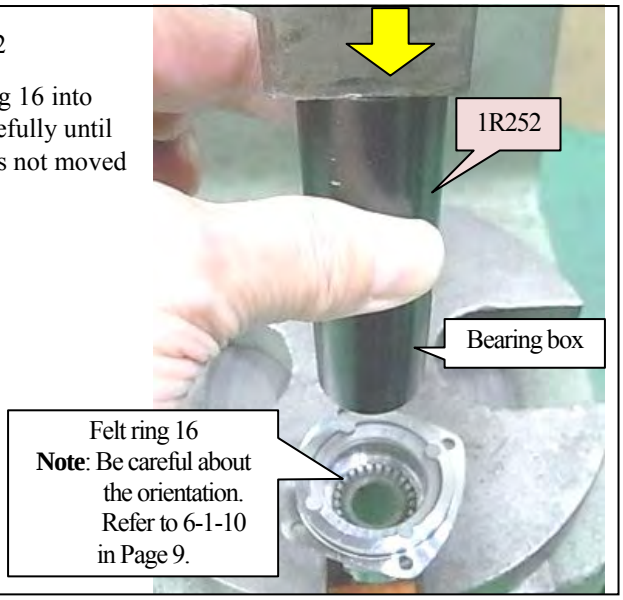
6-2-1

Fit Retaining ring R-26 into the groove of Lead flange.



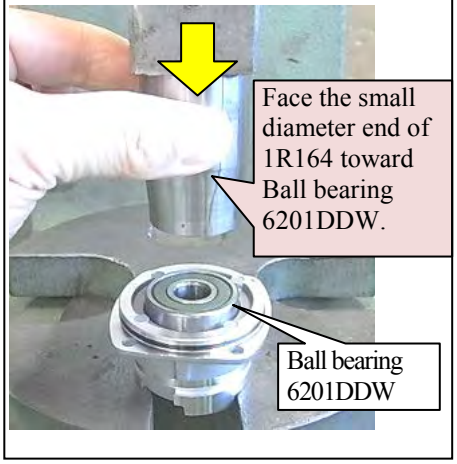
6-2-2

Press-fit Felt ring 16 into Bearing box carefully until the felt ring 16 is not moved downward.



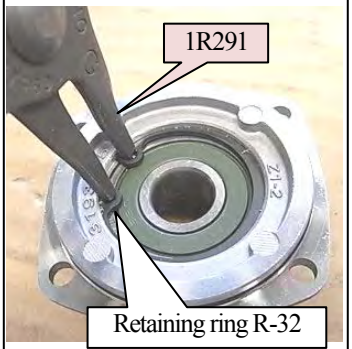
6-2-3

Press-fit Ball bearing 6201DDW into Bearing box with 1R164.



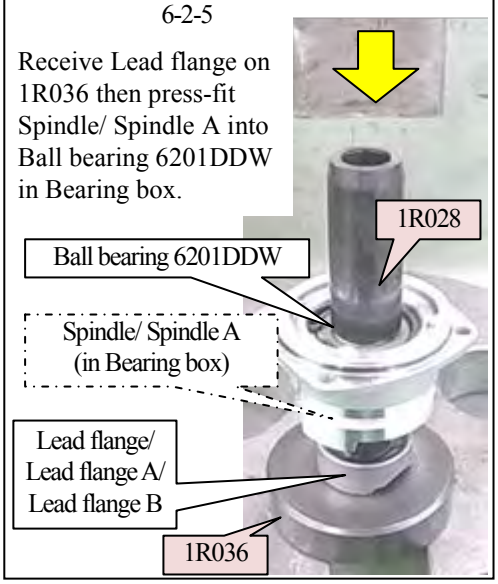
6-2-4

Fit Retaining ring R-32 into the groove of Bearing box.



6-2-5

Receive Lead flange on 1R036 then press-fit Spindle/ Spindle A into Ball bearing 6201DDW in Bearing box.

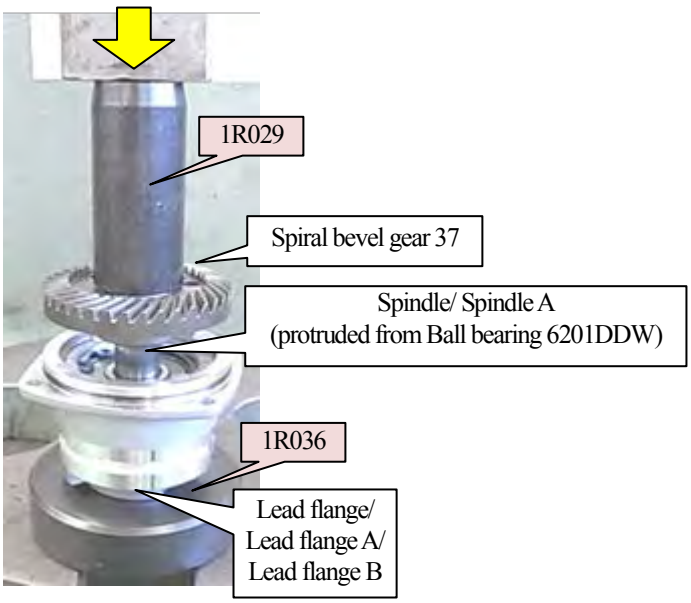


6-2-6

Receive Lead flange/ Lead flange A/Lead flange B on 1R036, then press-fit Spindle into Spiral bevel gear 37.

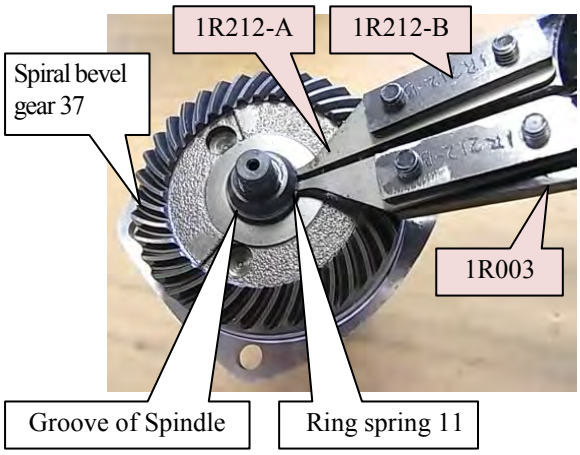
Press the boss portion around the hole of Spiral bevel gear 37 with 1R029.

Spiral bevel gear 37



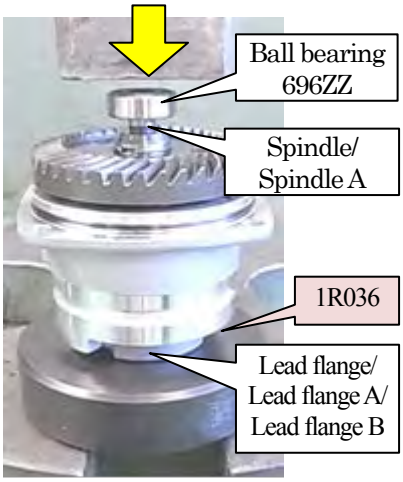
6-2-7

Fit Ring spring 11 into the groove of Spindle/ Spindle A using 1R003 with 1R212-A and 1R212-B.



6-2-8

Receive Lead flange/ Lead flange A/ Lead flange B on 1R036, then press-fit Spindle/ Spindle A into Ball bearing 696ZZ.

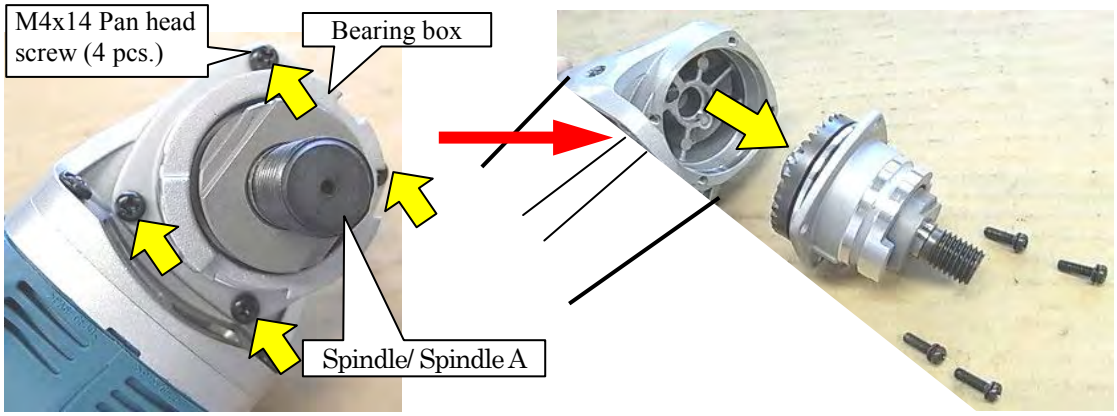


7 Shaft lock

7-1 Disassembling

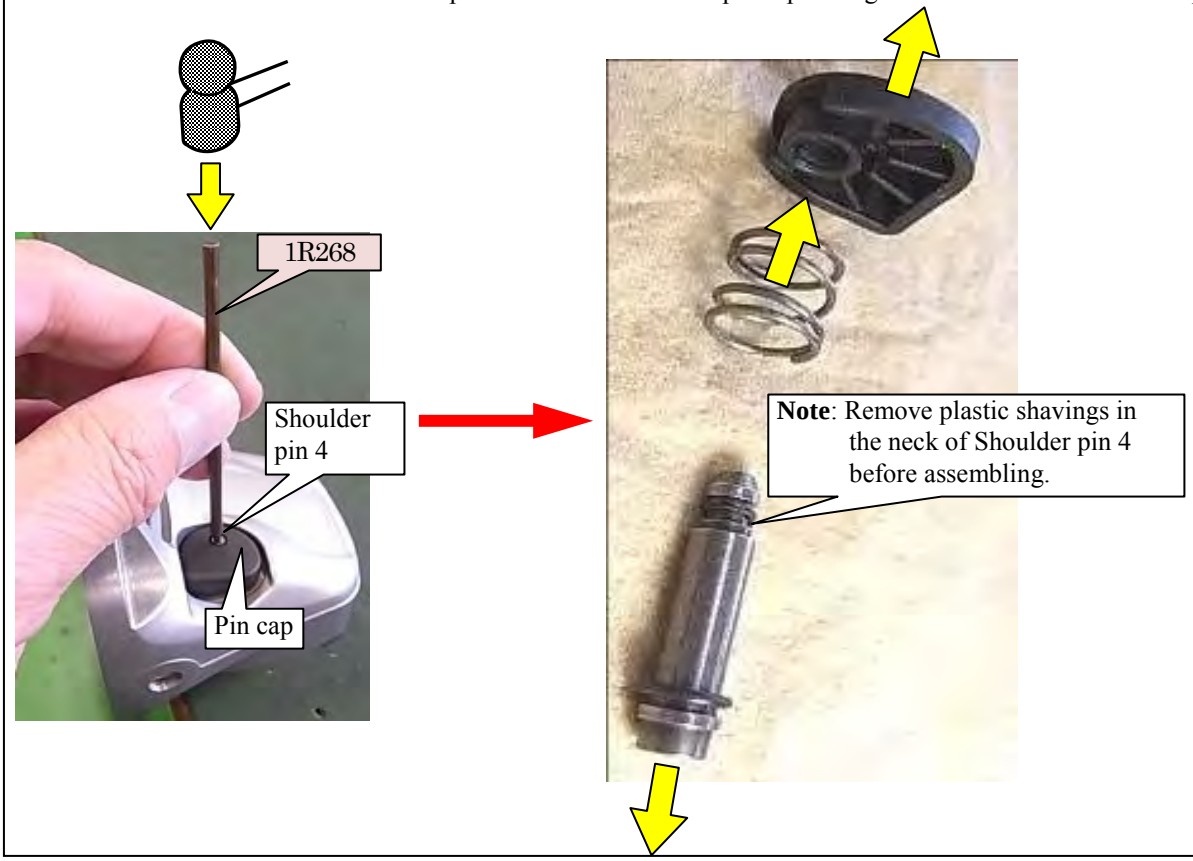
7-1-1

Remove four M4x14 Pan head screws, then remove the unit of Bearing box and Spindle/ Spindle A.



7-1-2

Push out Shoulder pin 4 with a metal hammer and 1R268.
Note: Do not re-use the removed Pin cap because removal of the pin cap damages the inside surface of the cap.



7-2 Assembling

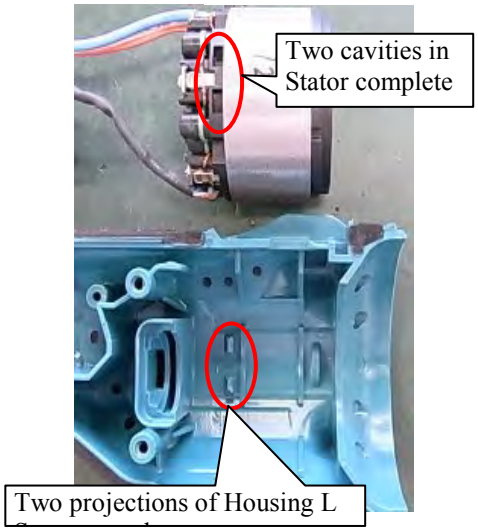
Assemble by reversing the disassembly procedure.
Be careful about **Note in Fig. 7-1-2**

8 Stator complete
8-1 Assembling

8-1-1

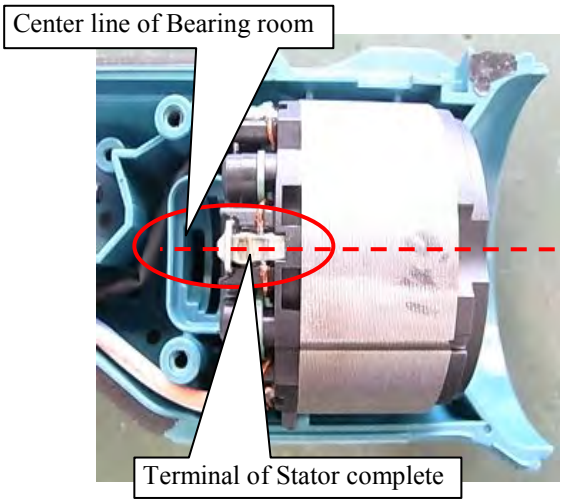
Fit four projections* of Housing set into four mating cavities* in Stator complete.

*Two each L side/ R side



8-1-2

Align the center line of Bearing room with the terminal of Stator complete.

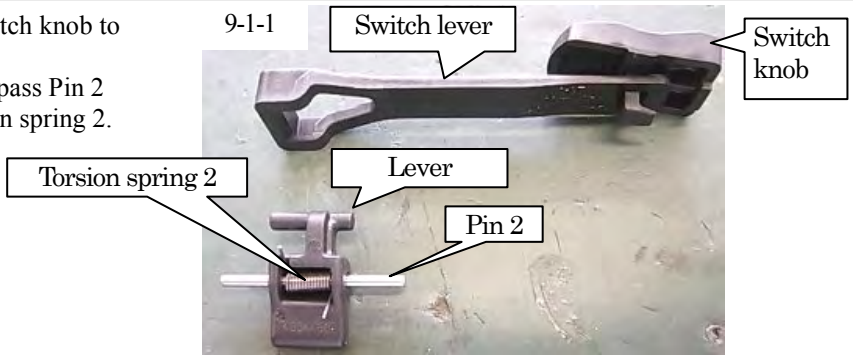


9 Switch

9-1 Assembling of Slide switch

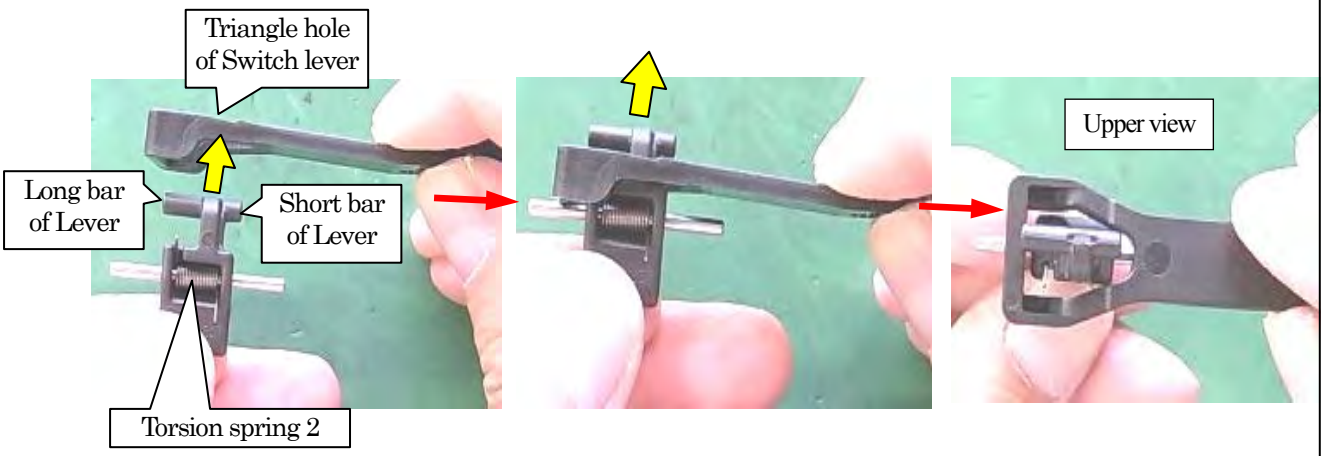
As for Slide switch version, hook Switch knob to Switch lever.
Put Torsion spring 2 into Lever, then pass Pin 2 through the holes of Lever and Torsion spring 2.

9-1-1



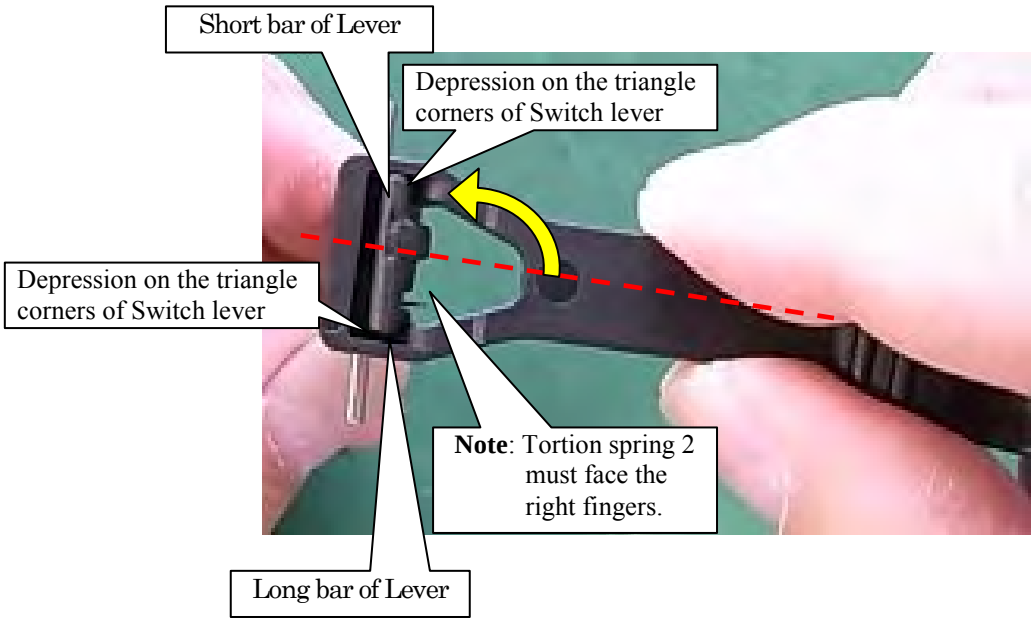
9-1-2

Protrude the bars of Lever from the triangle hole of Switch lever.



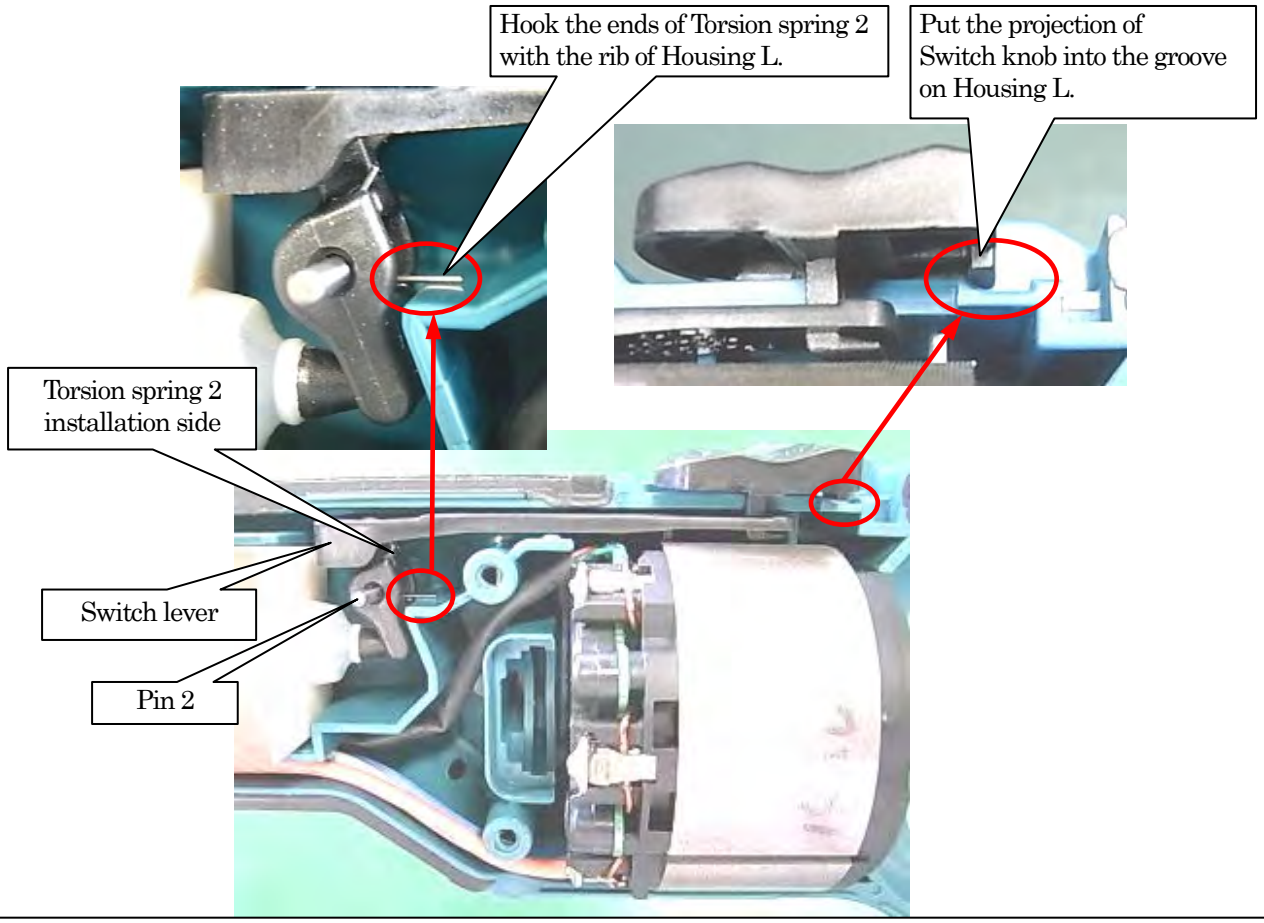
9-1-3

Turn the bars counterclockwise to place the long bar and the short bar onto the depressions on the triangle corners of Switch bar.



9-1-4

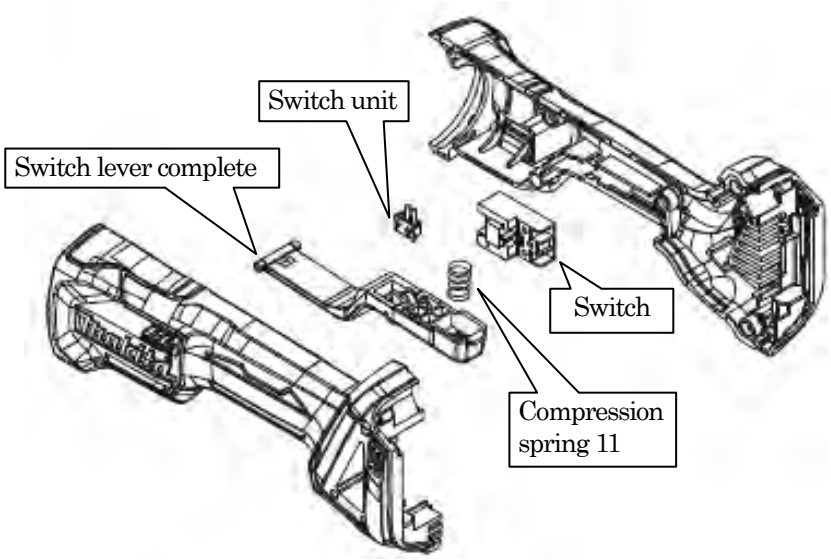
Insert one end of Pin 2 into the hole of Housing L.and put the one end of Torsion spring 2 on the rib of Housing L.
The other end of Pin 2 should be inserted into the hole of Housing R.



9-2 Assembling of Paddle switch

9-2-1

Refer to the following Parts breakdown and 10-2-1 in pags 16 and 11-2-1/ 11-2-2 in page 18.

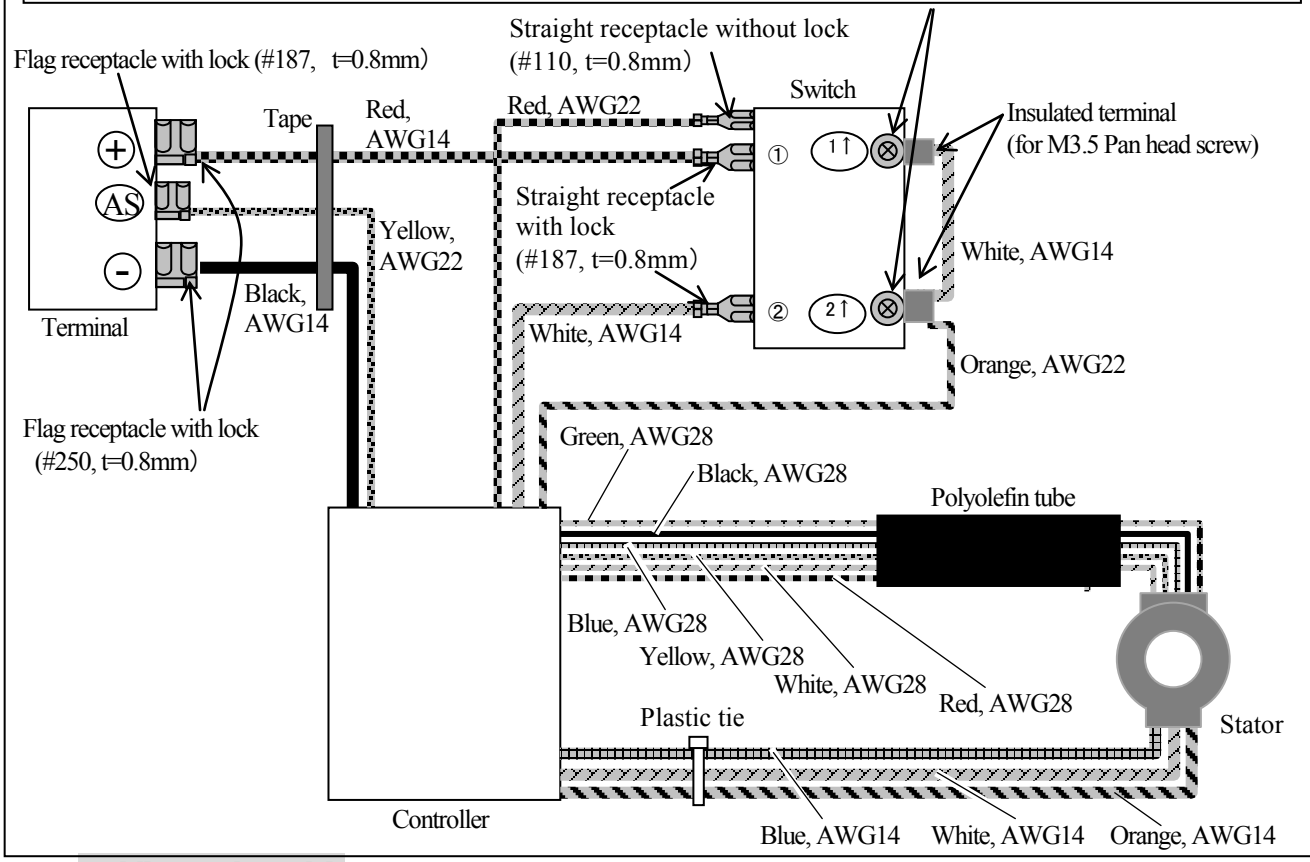


10 Circuit diagram

10-1 Slide switch models

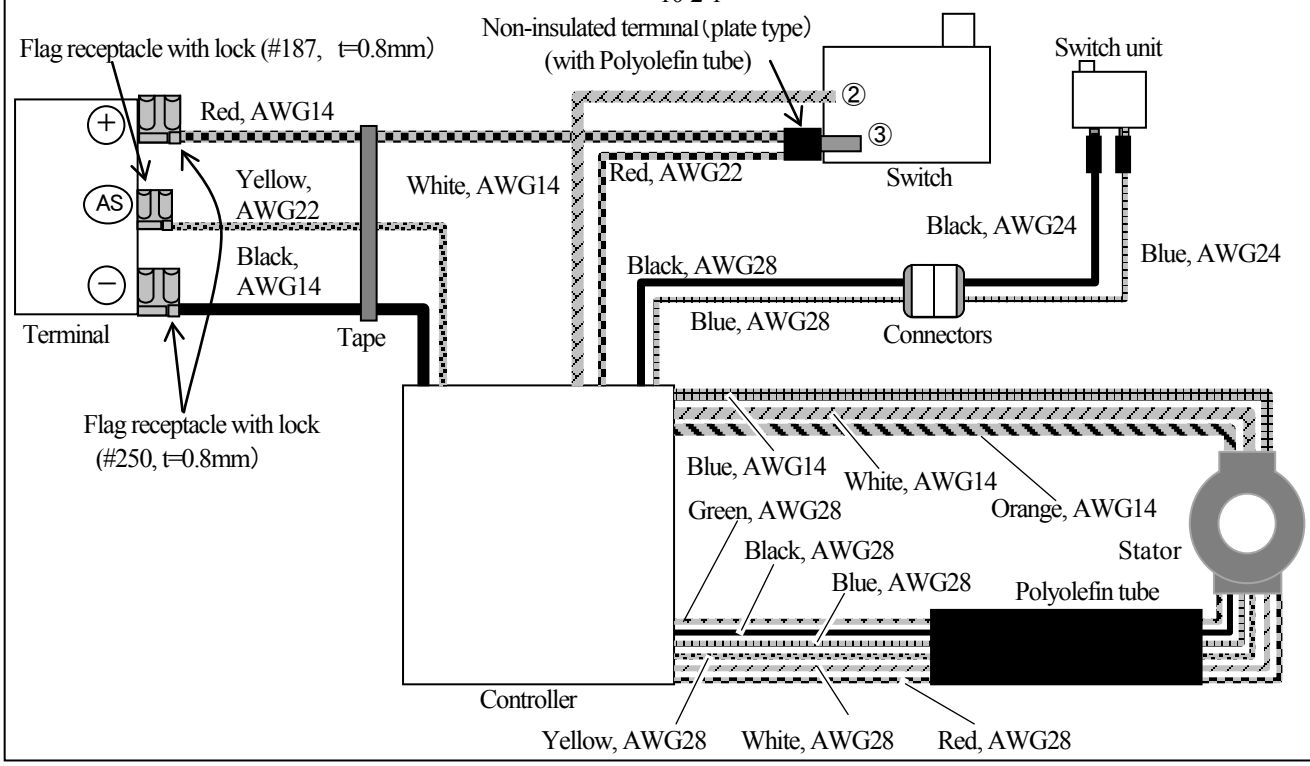
10-1-1

The orange lead wire end from Controller can be connected to either (1↑) or (2↑)
The one white lead wire end must be connected to either (1↑) or (2↑) together with the orange lead wire end, and then the other white lead wire end must be connected solely to the opposite terminal. Use Insulated terminals and M3.5 Pan head screws.



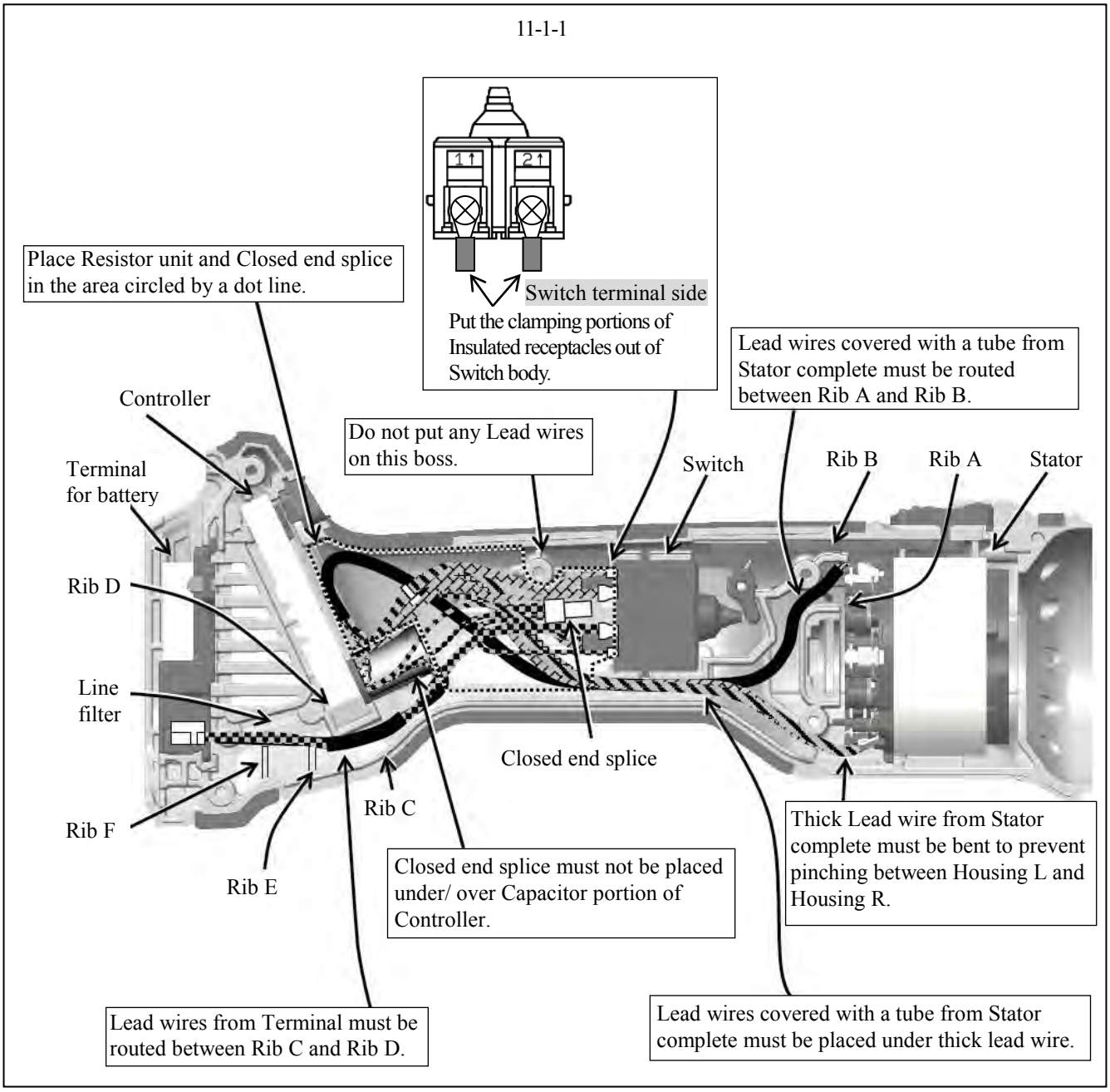
10-2 Paddle switch models

10-2-1



11 Wiring diagram
11-1 Slide switch models

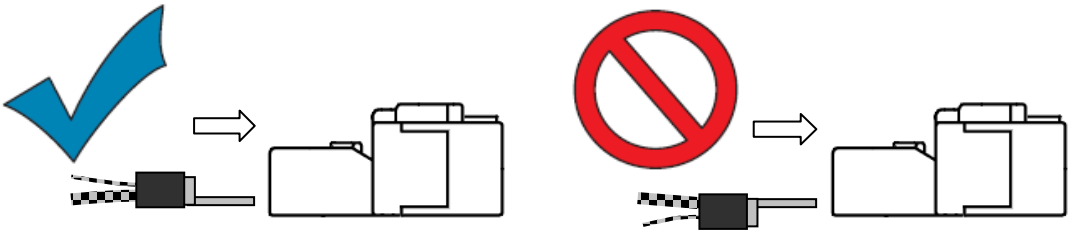
11-1-1

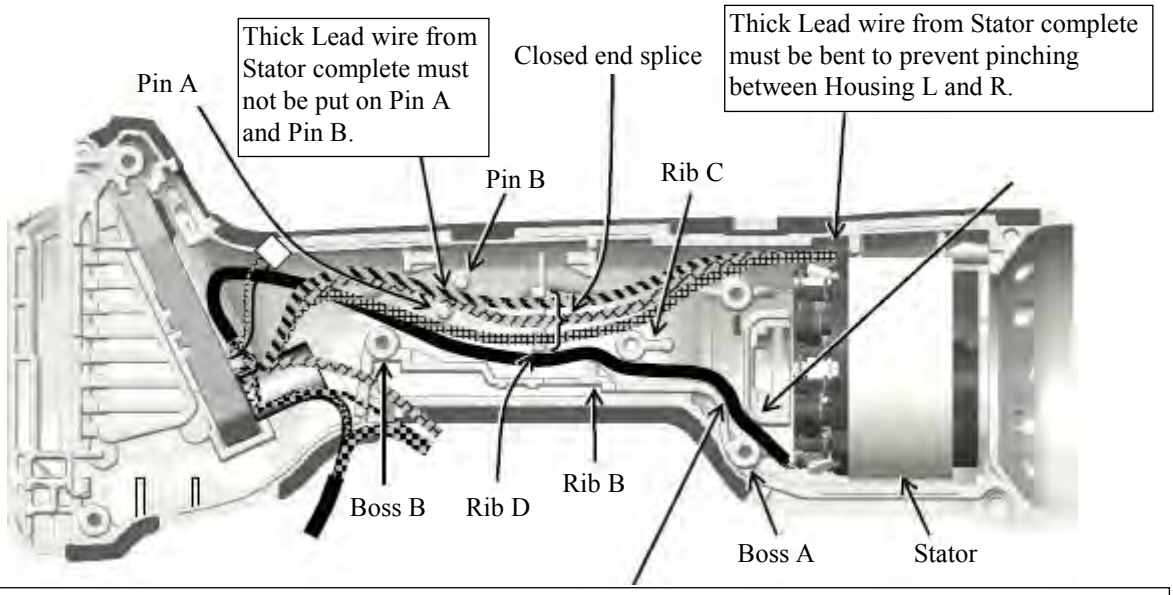


11-2 Paddle switch models

11-2-1

Assemble the plate portion of Non-insulated terminal to No. 3 terminal of Switch as drawn left.
(The right drawing is wrong. Be careful.) Also, refer to the paddle switch model circuit diagram of section No. 10-2 in page 16.





Lead wires (covered with Tube) of Stator complete must be routed between Rib A and Boss A, Rib B and Rib C, Rib B and Rib D, Boss B and Pin A.

11-2-2