

Model No. ▶ BFR440

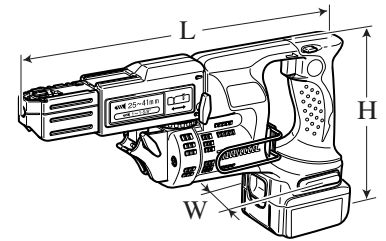
Description ▶ Cordless Auto Feed Screwdriver

CONCEPT AND MAIN APPLICATIONS

Model BFR440 has been developed as an upgraded sister model of Model 6835D, featuring high rotational speed of 4,000rpm for high operation efficiency.

Also features:

- Grip design best-fitting to Auto feed screwdriver
- Light and compact casing
- 14.4V Li-ion battery
- New silent clutch



Dimensions: mm (")	
Length (L)	357 (14)
Width (W)	80 (3-1/8)
Height (H)	193 (7-5/8)

This new product will be available in the following variations.

Model No.	Battery		Charger	Offered to
	type	quantity		
BFR440	BL1430 (Li-ion 3.0Ah)	2	DC18SC	USA, Canada Mexico, Panama
BFR440SFE				All countries except those listed above

► Specification

Battery	Voltage: V		14.4
	Capacity: Ah		3.0
	Cell		Li-ion
Max output: W			235
No load speed: min-1=rpm			4,000
Bit size: mm (")	Shank		6.35 (1/4) Hex
	Length		122 (4-3/16) or 117 (4-5/8)
Capacity: mm (")	Collated drywall screw (for fixing boards to timber or metal studs)	Diameter	4 (5/32)
		Length	25 (1) - 41 (1-5/8)
Reversing switch			Yes
Net weight*: kg (lbs)			1.8 (4.0)

*Includes battery BL1430

► Standard equipment

Philips bit 2-122 or 2-117 3 pcs (Bit length may differ by country.)

Belt clip..... 1 pc

Plastic carrying case 1 pc

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

► Optional accessories

Li-ion battery BL1430

Philips bit 2-122 or 2-117 (Bit length may differ by country.)

Chargers for high voltage countries:

DC14SC, DC18SC, DC24SC

Chargers for low voltage countries:

DC14SA, DC18SC, DC24SA

► Repair

CAUTION: Remove the battery from the machine for safety before repair/ maintenance !

[1] NECESSARY REPAIRING TOOLS

Code No.	Description	Use for
1R269	Bearing Extractor	Removing Ball bearings

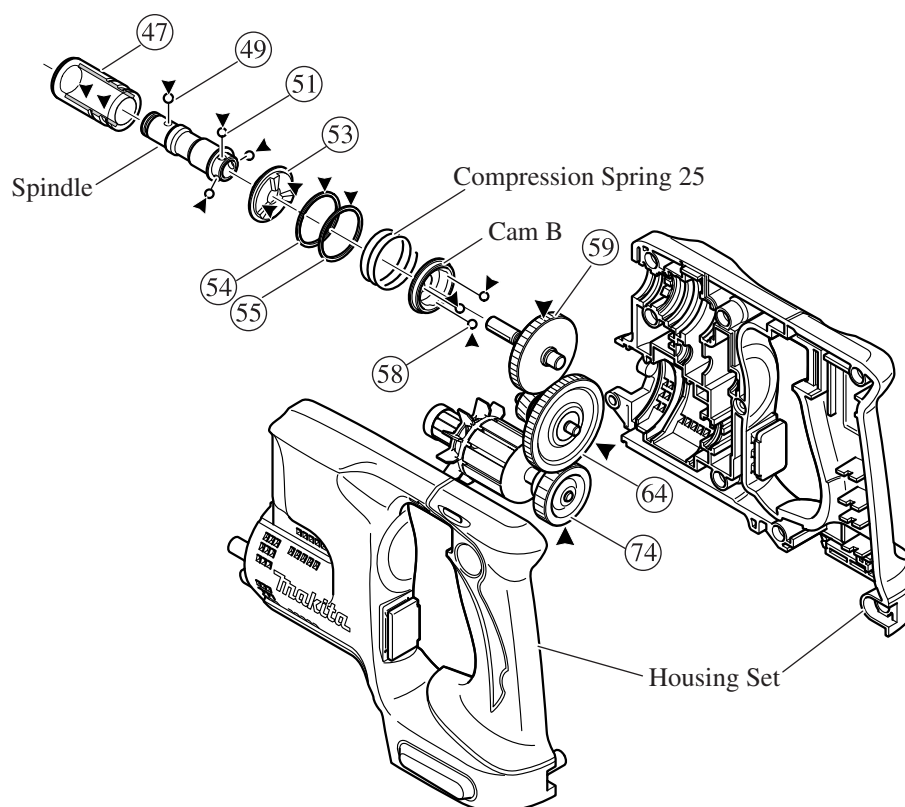
[2] LUBRICATION

Apply Makita grease FA No.2 to the following portions designated with the black triangle to protect parts and product from unusual abrasion.

Item No.	Description	Portion to lubricate
47	Plane bearing 14	Inside surface
49	Steel ball 3.5	Whole surface
51, 58	Steel ball 4.0 (3pcs, 3pcs)	Whole surface
53	Cam A	Surface that contacts Cam B
54, 55	Flat washer 25 (1pc, 1pc)	Whole surface
59	Gear complete 48	Teeth portion
64	Gear complete 18-44	Teeth portion
74	Armature	Gear portion

Apply 9g in total.

Fig. 1



► Repair

[3] DISASSEMBLY/ASSEMBLY

[3] -1. Casing Assembly

DISASSEMBLING

- 1) Remove two M4x28 screws, and take off casing assembly. (Fig. 2)
- 2) Separate Casing (left) from Casing (right) by removing two 4x20 Tapping screws and one 4x12 Tapping screw.
Casing assembly can now be disassembled as illustrated in Fig. 3.

Fig. 2

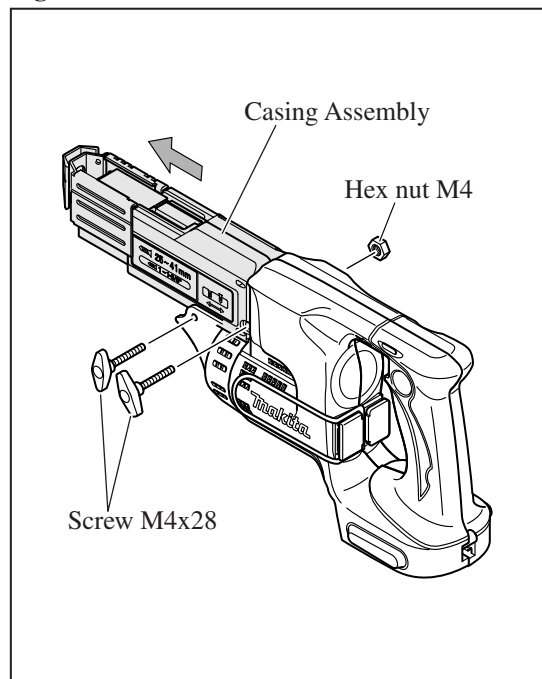
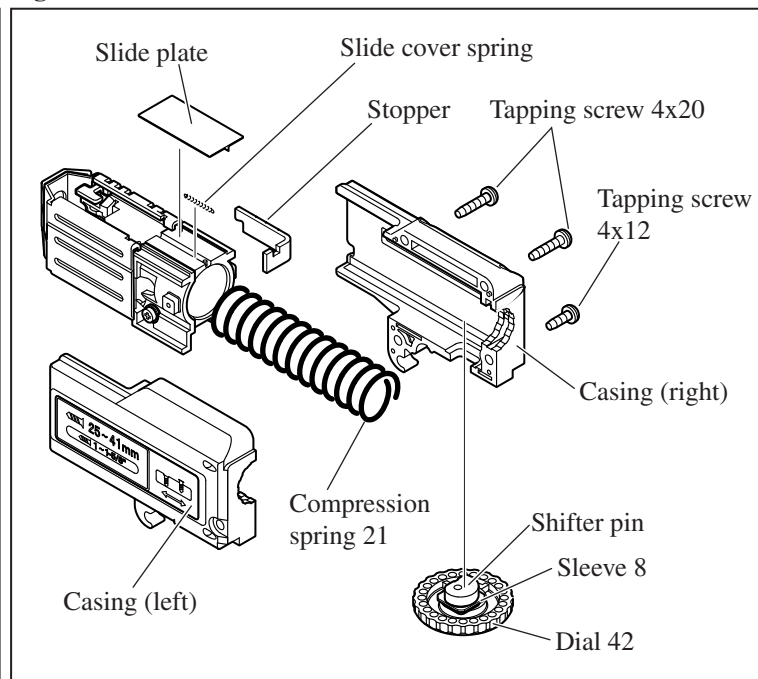


Fig. 3



- 3) Pull off stopper base while pushing Lever. Then remove Lever and Compression spring 2. (Fig. 4)
- 4) Separate Box cover complete from Feeder box by unscrewing Pan head screw M4x12.

The following parts can now be removed. (Fig. 5)

Flat washer 6/ Feeding lever TS-M056/ Dust cover/ Release lever with Torsion spring T-SM134/ Pin TS-M129

Fig. 4

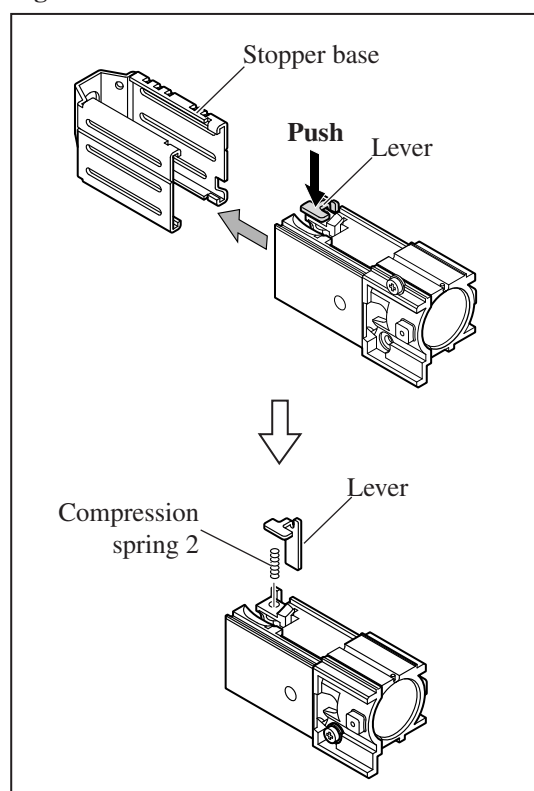
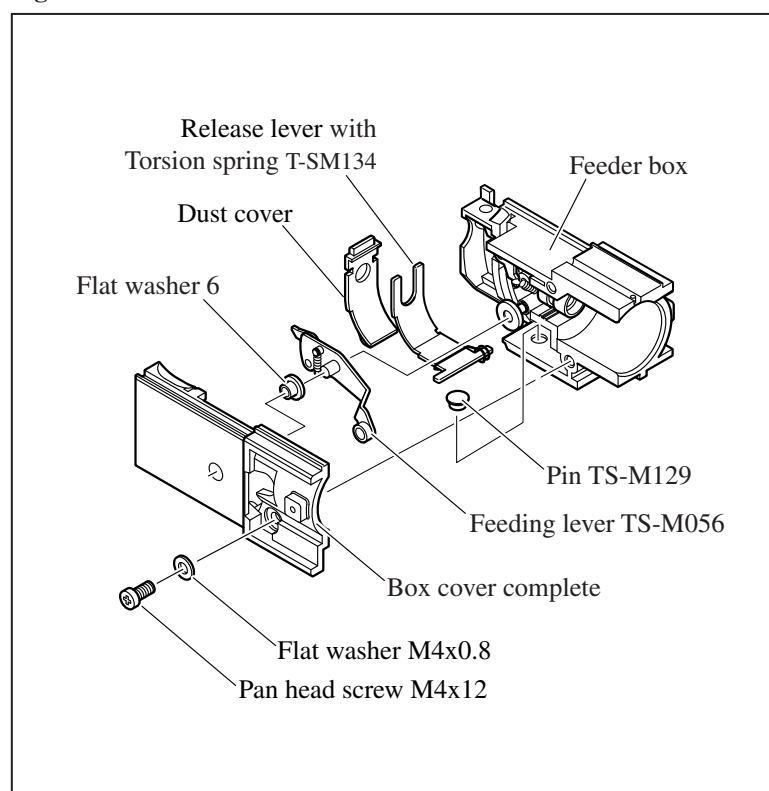


Fig. 5



► Repair

[3] -1. Casing Assembly (cont.)

DISASSEMBLING

- 5) From Feeder box, remove Bearing TS-M122, next Stop ring ERO2SCZ, then Back feeding stopper TS-M052 with Tension spring TS-M133. (**Fig. 6**)
- 6) Remove Sleeve 5 by inserting a screwdriver bit (about 120mm long) into the through hole of Sleeve 5, then levering up as illustrated in **Fig. 7**.

Fig. 6

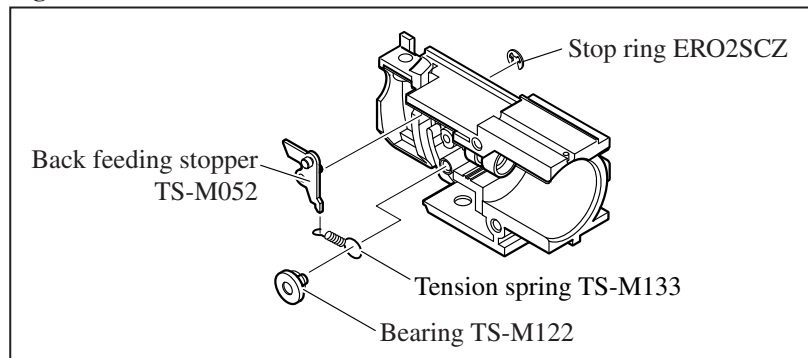
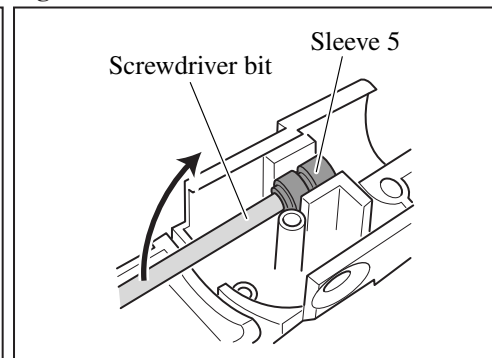


Fig. 7



ASSEMBLING

- 1) Put Sleeve 5 in place on Feeder box. (Refer to **Fig. 7**.)
- 2) Mount Tension spring TS-M133 on Back feeding stopper TS-M052. Then assemble them to Feeder box by securing Tension spring TS-M133 with Bearing TS-M122, and Back feeding stopper TS-M052 with Stop ring ERO2SCZ. (**Fig. 6, 8**)
- 3) Assemble Torsion spring T-SM134 to Release Lever. (**Fig. 9**)
- 4) To Feeder box, assemble Pin TS-M129, next Release lever with Torsion spring T-SM134, then Dust cover. And mount Feeding lever to Box cover complete. (**Fig. 5**)

Fig. 8

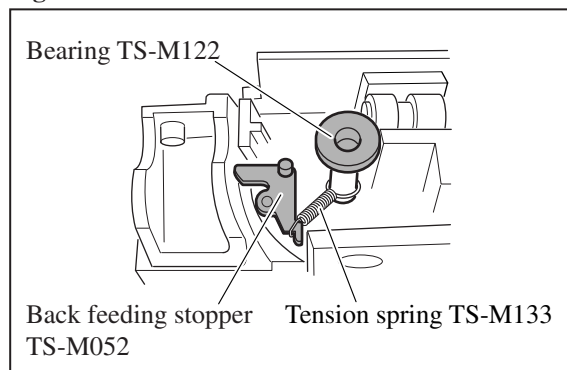
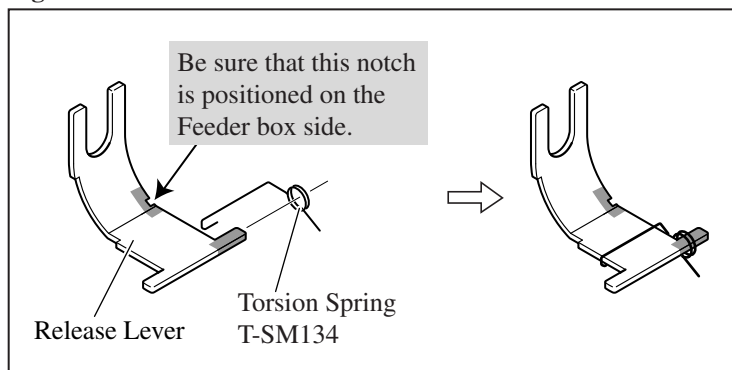
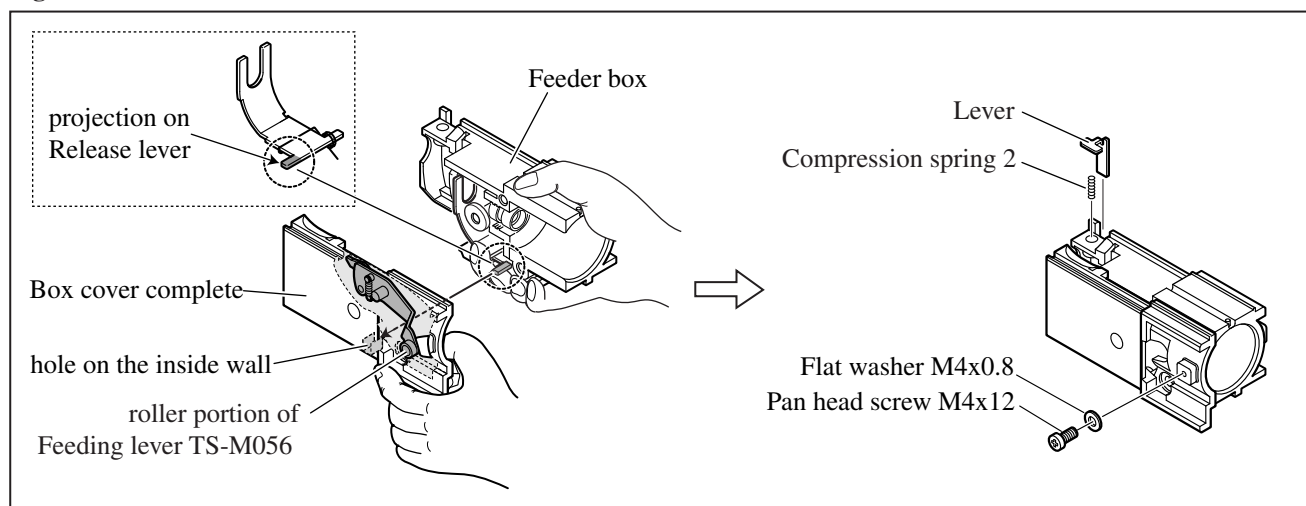


Fig. 9



- 5) Holding the roller portion of Feeding lever TS-M056 on Box cover complete with fingers, fit Feeder box to Box cover complete with the projection on Release lever fit in the hole on the inside wall of Box cover complete. Then fasten them together with Pan head screw M4x12. Assemble Compression spring 2 and Lever to Feeder box. (**Fig. 10**)

Fig. 10



► **Repair**

[3] DISASSEMBLY/ASSEMBLY

[3] -1. Casing Assembly (cont.)

ASSEMBLING

6) Mount Dial 42 to Casing set (left). (**Fig. 11**)

7) Connect one loop end of Slider cover spring TSM-135 to the hook on the back of Slide plate, and the other to the projection on Feeder box. (**Fig. 12**)

Fig. 11

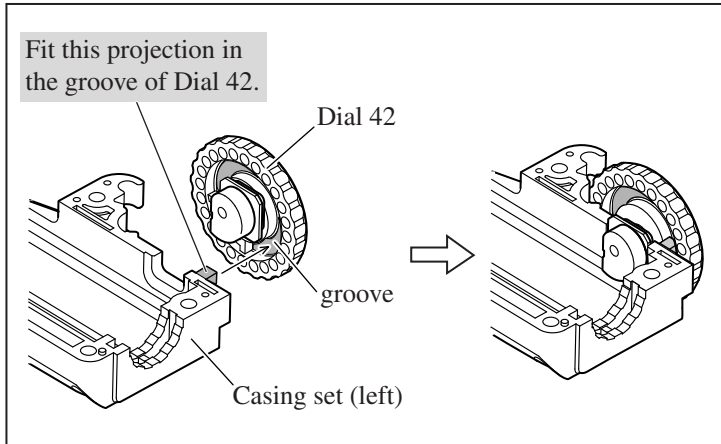
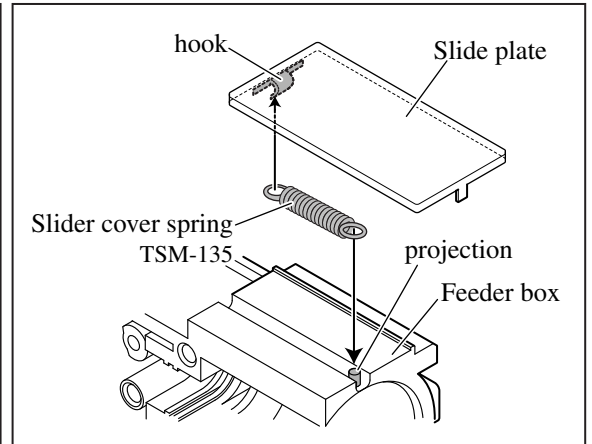


Fig. 12

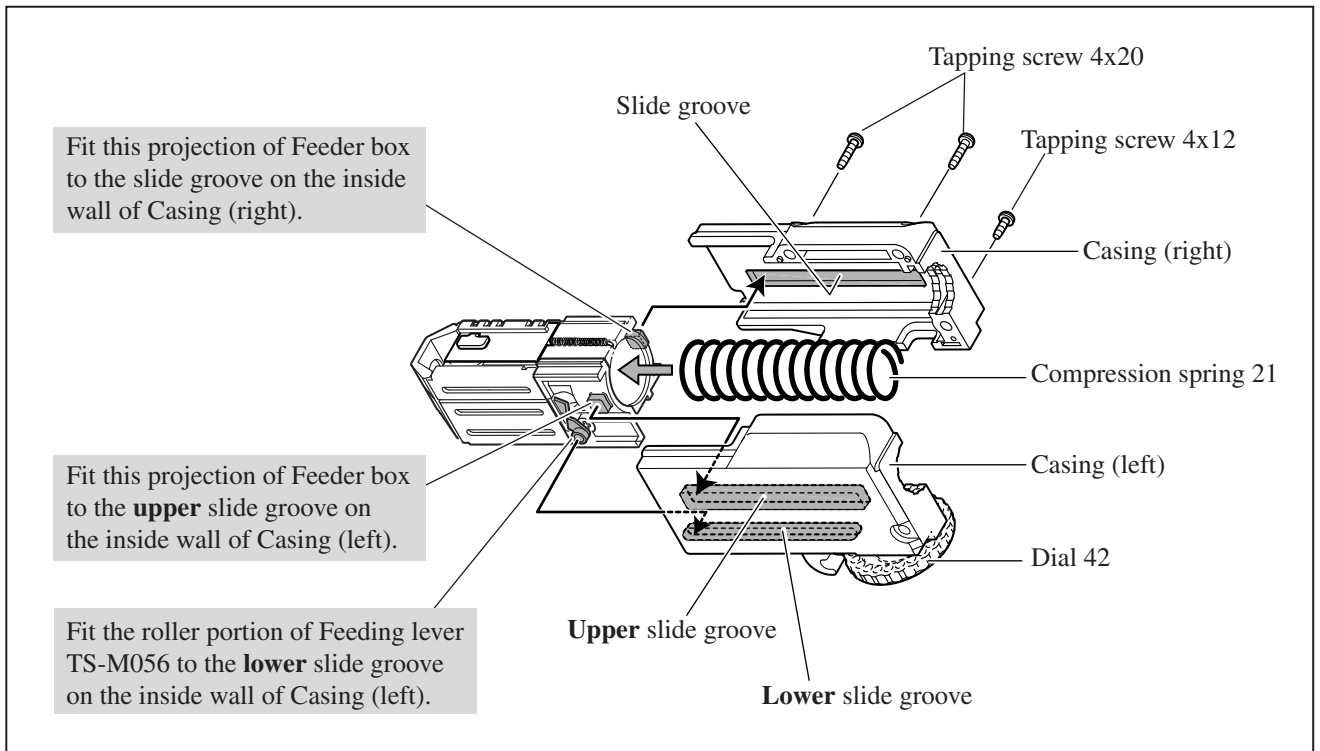


8) Assemble the Feeder box section to Casing set as illustrated in **Fig. 13**.

Important:

Before fastening Casing (R) to (L) with screws, make sure that Compression spring 21 is located in the center of the hole of Casing (R) and (L) without buckling.

Fig. 13



► **Repair**

[3] DISASSEMBLY/ASSEMBLY

[3] -2. Gear Complete 48 and Clutch Section

DISASSEMBLING

- 1) Remove Casing assembly from Housing. (Fig. 2)
- 2) Remove Front cover and Belt clip from Housing. (Fig. 14)
- 3) Separate Housing (R) from Housing (L) by unscrewing nine 4x18 Tapping screws. (Fig. 15)

Fig. 14

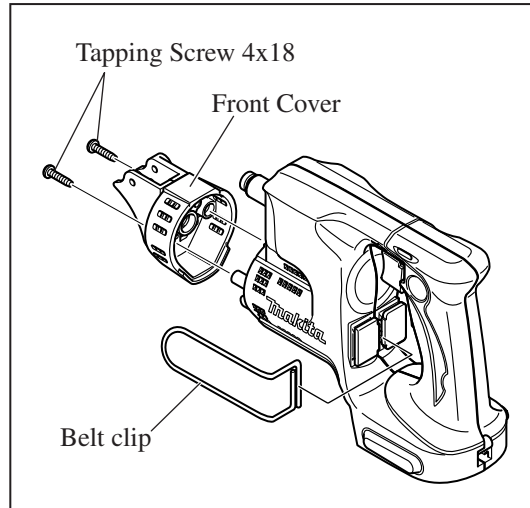
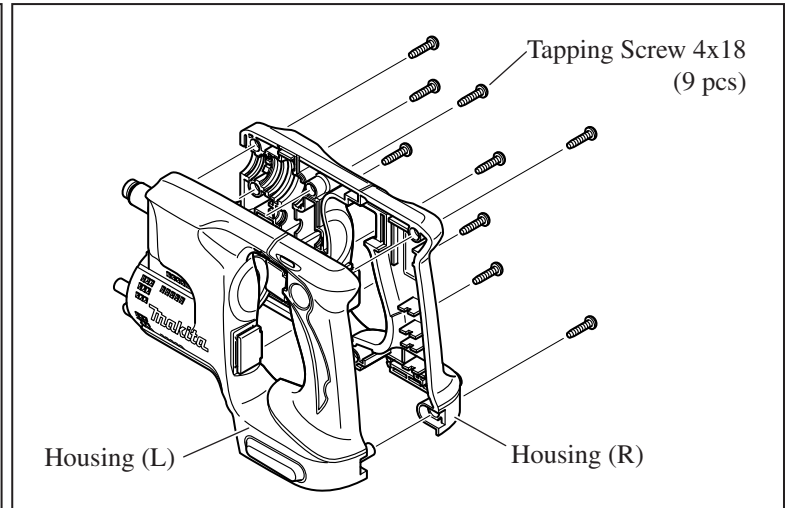


Fig. 15



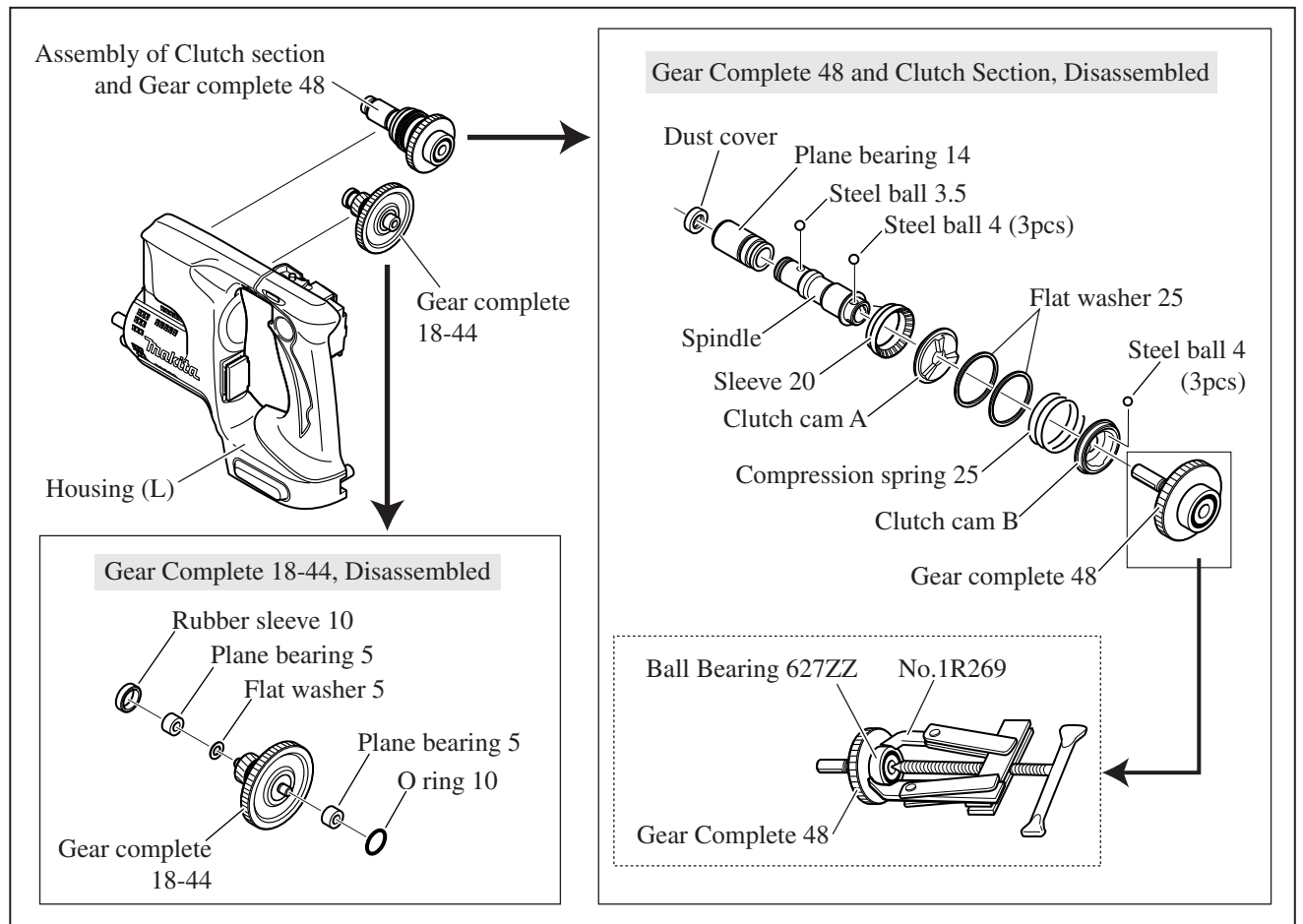
- 4) See Fig. 16.

From Housing (L), take out Gear complete 18-44 and the assembly of Clutch section and Gear complete 48.

The parts can now be disassembled without tools. Only when removing Ball bearing 627ZZ from Gear complete 48, use Bearing Extractor (No.1R269).

Note: Be careful not to lose small parts such as Steel ball.

Fig. 16



► **Repair**

[3] DISASSEMBLY/ASSEMBLY

[3] -2. Gear Complete 48 and Clutch Section (cont.)

ASSEMBLING

Gear Complete 48 and Clutch Section

- 1) Assemble Compression spring 25 to Clutch cam B. Be sure that the end surface of the spring completely touches the flanged portion of the Clutch cam. (Fig. 17)
- 2) Apply Makita grease FA No.2 to the three grooves on Clutch cam B, then put three 4.0 Steel balls into the groove; Be sure to put one Steel ball into each groove. (Fig. 18)

Fig. 17

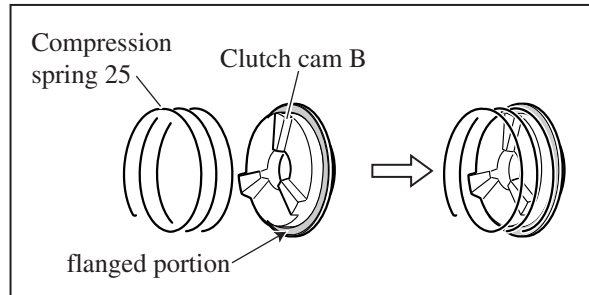
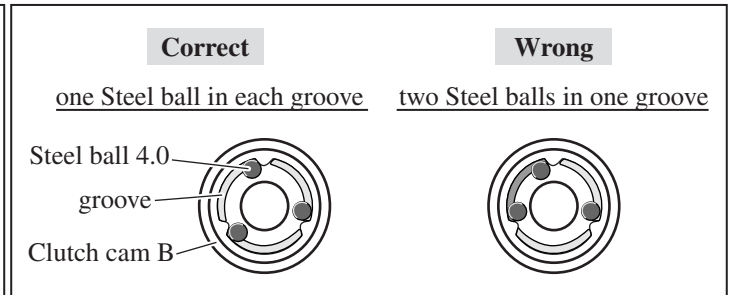


Fig. 18



- 3) Press-fit Ball bearing 627ZZ on Gear complete 48 using arbor press. Then assemble Clutch cam B to Gear complete 48. (Fig. 19)
- 4) Apply Makita grease FA No.2 to the three steel ball installation holes on Spindle. Put 4.0 Steel balls on each of the holes, then assemble it to Clutch cam A. (Fig. 20)

Fig. 19

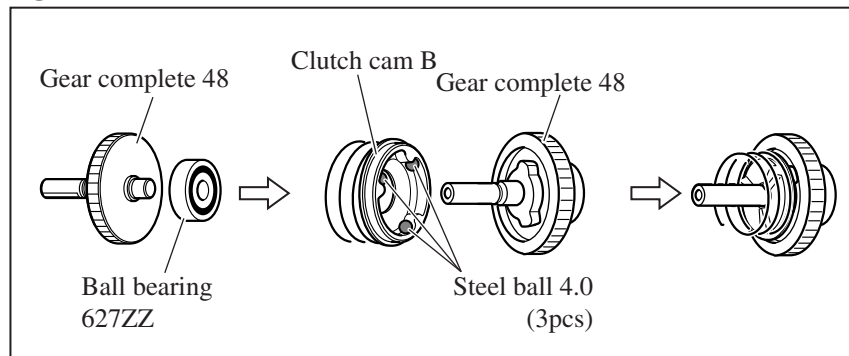
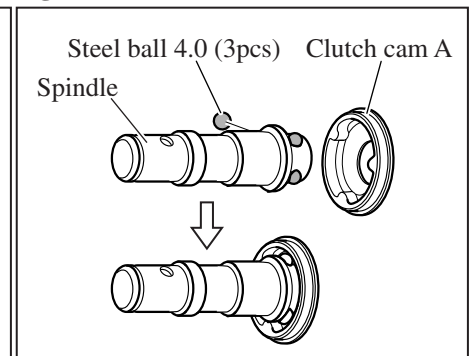


Fig. 20



- 5) With two 25 Flat washers placed between Compression spring 25 and Clutch cam A, join the assembly of Gear complete 48 and Clutch cam B to the assembly of Spindle and Clutch cam A. (Fig. 21)

Note: Do not forget to apply Makita grease FA No.2 to the two Flat washers before assembling.

- 6) Put O ring 18 on the groove of Plane bearing 14. Then to the Gear complete 48 and Clutch section you have assembled in 5), install Sleeve 20, Plane bearing 14 then Dust cover. (Fig. 22)

Fig. 21

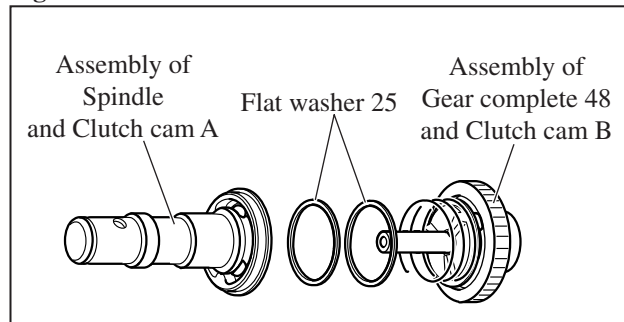
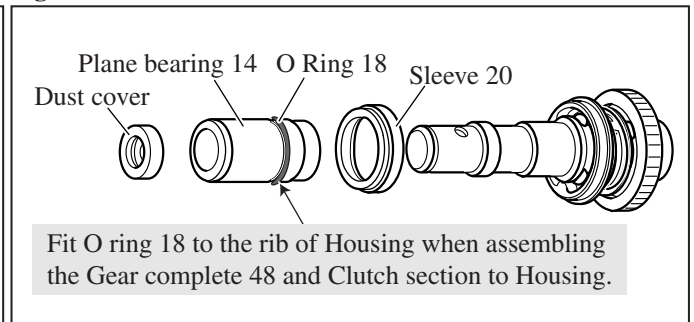


Fig. 22



Gear Complete 18-44

Assemble two 5 Plane bearings and Flat washer 5 to Gear complete 18-46. (Refer to the figure on the left-bottom of Fig. 23)

Note: Be sure that Flat washer 5 is installed in place before assembling Gear complete 18-46 to Housing.

► **Repair**

[3] DISASSEMBLY/ASSEMBLY

[3] -3. Motor Section

DISASSEMBLING

- 1) Remove the following parts from Housing; Casing assembly (**Fig. 2**), Front cover and Belt clip (**Fig. 14**). Then separate Housing (R) from Housing (L). (**Fig. 15**)
- 2) Separate the Motor section from Housing (L), then remove Carbon brush from Brush holder complete or disconnect from the commutator of Armature. (**Fig. 23**)
- 3) Remove Brush holder complete and Yoke unit from Armature. (**Fig. 24**)

Fig. 23

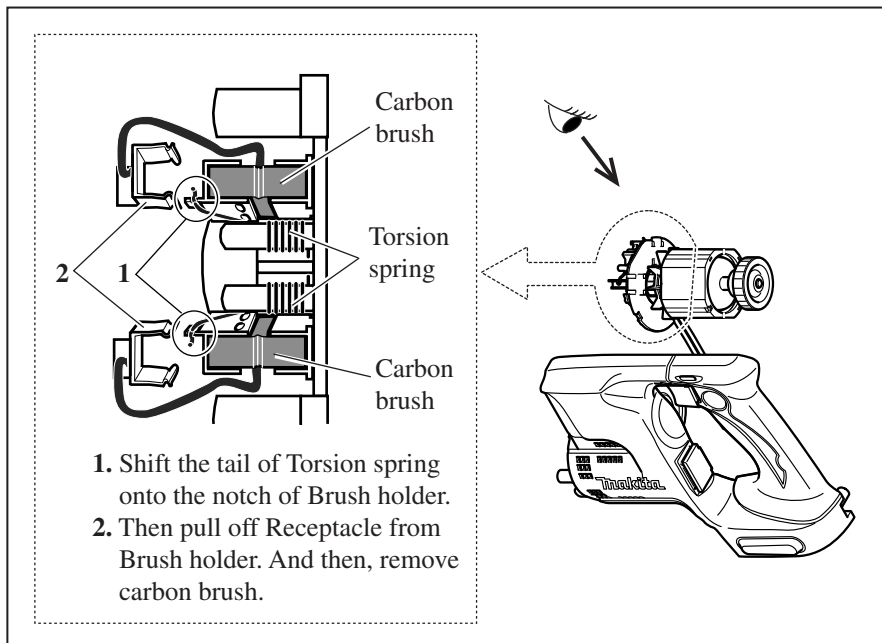
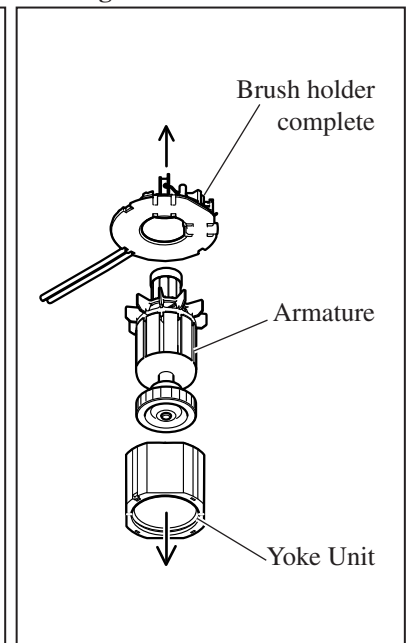


Fig. 24



ASSEMBLING

- 1) Yoke unit is not reversible when assembled to Armature. Be sure to assemble so that the notch in Yoke unit is positioned on the drive-end of Armature. (**Fig. 25**)
If assembled wrong, the Motor section cannot be assembled to Housing (L).
- 2) Because Yoke unit is a strong magnet, when assembling Armature to Yoke unit, be sure to hold the commutator portion as illustrated to left in **Fig. 26**. Do not hold the Armature core as illustrated to right or your fingers will be pinched between Yoke unit and the fan of Armature that is pulled strongly by the magnet force.
- 3) Assemble Brush holder complete to the commutator end of Armature. (Refer to **Fig. 24**.)

Fig. 25

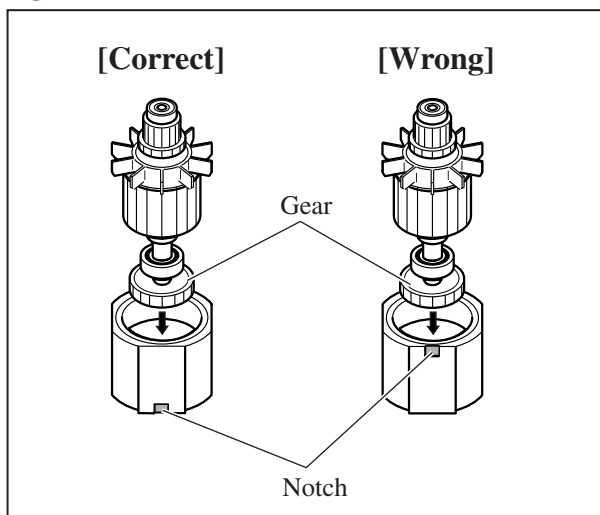
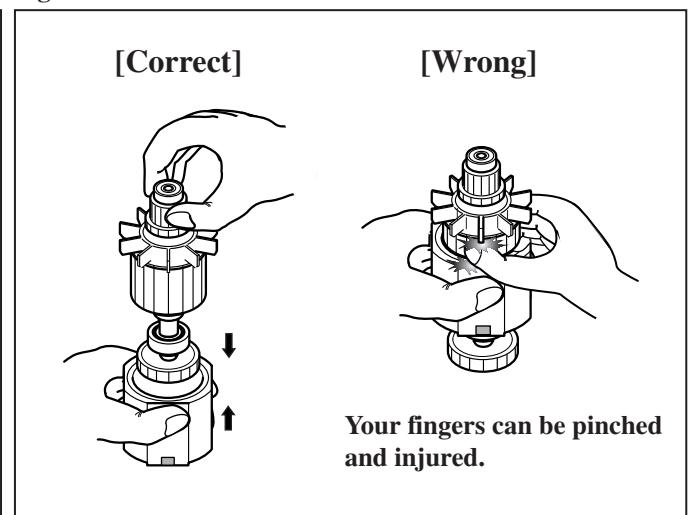


Fig. 26



► **Repair**

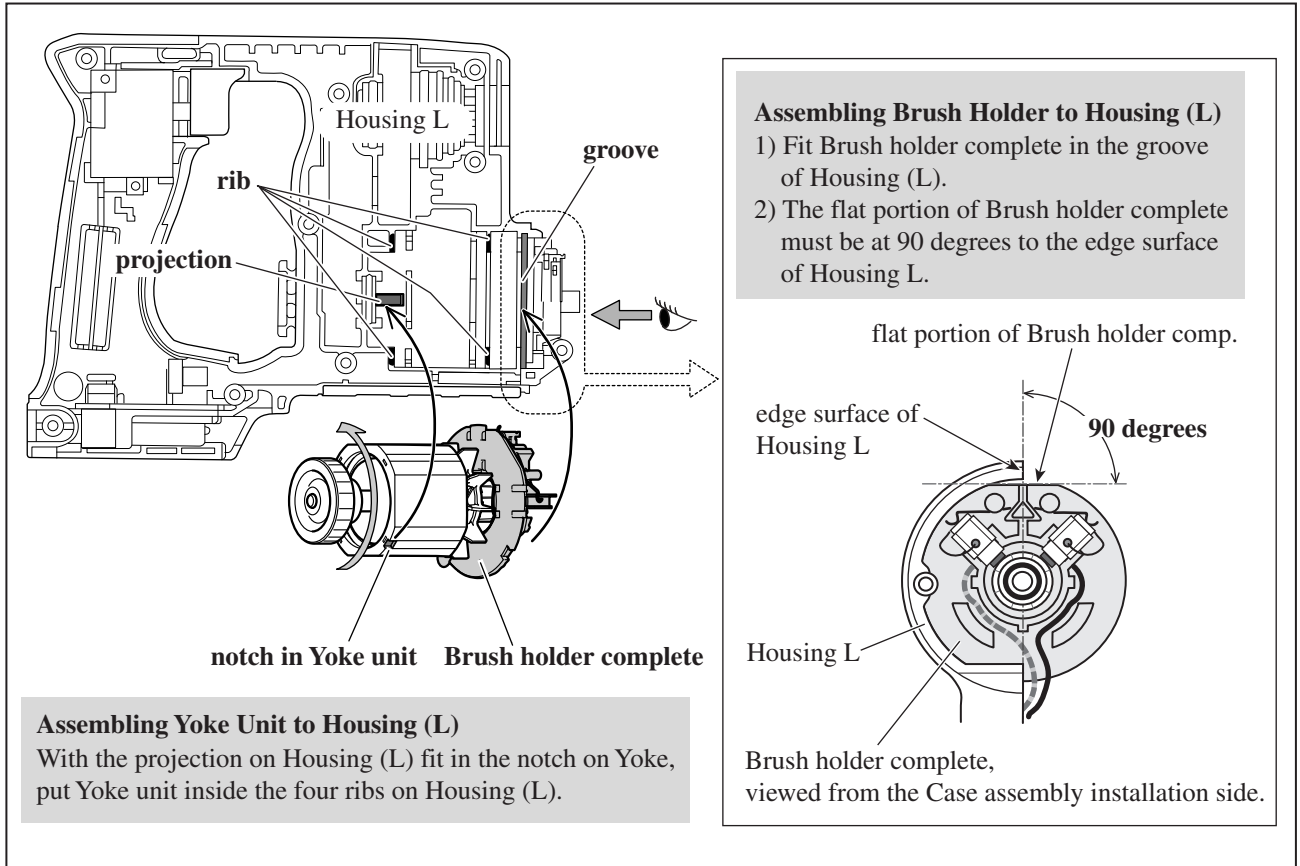
[3] **DISASSEMBLY/ASSEMBLY**

[3] **-3. Motor Section (cont.)**

ASSEMBLING

4) Assemble the Motor section to Housing (L) as illustrated in **Fig. 27**.

Fig. 27

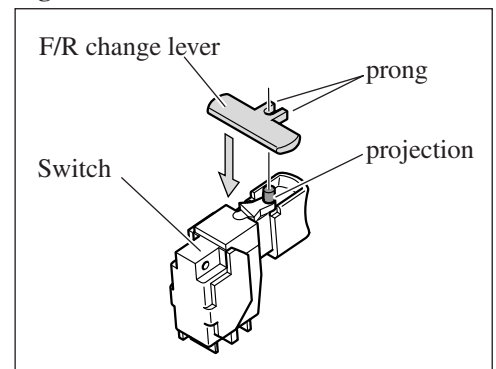


[3] **-4. Switch**

ASSEMBLING

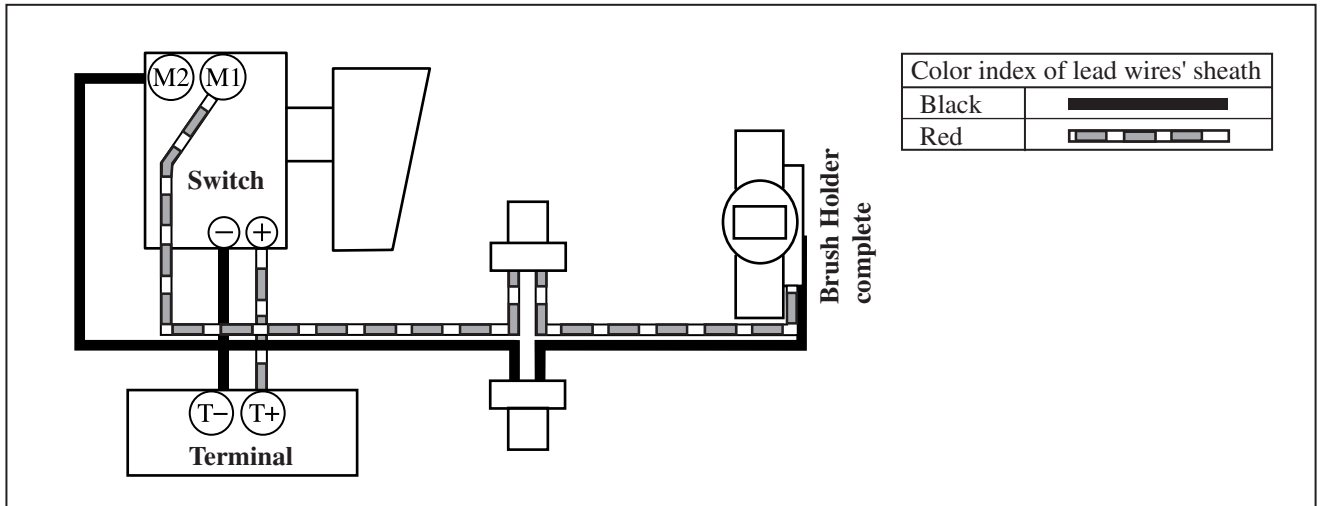
Put the projection on Switch between the prongs of F/R change lever, then assemble the Switch to Housing L. (**Fig. 28**)

Fig. 28



► **Circuit diagram**

Fig. 29



► **Wiring diagram**

Fig. 30

