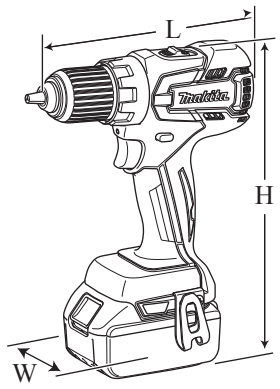
TECHNICAL INFORMATION

Model No. ► DDF459
Description ► Cordless Driver Drill



[Drawn above is the image with BL1830, BL1840 or BL1850.]

Dimensions: mm (")	
Length (L)	179 (7)
Width (W)	78 (3-1/16)
Height (H)	238 (9-3/8)*1
	256 (10-1/8)*2

*1 With Battery BL1815, BL1815N or BL1820
*2 With Battery BL1830, BL1840 or BL1850

CONCEPT AND MAIN APPLICATIONS

Model DDF459 Cordless Driver Drill has been developed specially for light to medium duty drilling and fastening applications.
This model is equipped with a basic **BLDC** motor (**B**rush**L**ess **DC** motor) specially designed to provide, above all, more work amount on a single full battery charge.

This product is powered by BL1815 (1.3Ah), BL1815N (1.5Ah), BL1820 (2.0Ah), BL1830 (3.0Ah), BL1840 (4.0Ah) or BL1850 (5.0Ah).

► Specification

Battery	Voltage: V		18
	Capacity: Ah		1.3, 1.5, 2.0, 3.0, 4.0, 5.0
	Energy capacity: Wh		24, 27, 36, 54, 72, 90
	Cell		Li-ion
	Charging time (approx.): min.		15, 15, 24, 22, 36, 45 with DC18RC
Max output: W			250
No load speed: min-1=rpm		High	0 - 1,500
		Low	0 - 400
Capacity of drill chuck: mm (")			1.5 (1/16) - 13 (1/2)
Capacity: mm (")		Steel	13 (1/2)
		Wood	38 (1-1/2)
Torque setting			16 stages + drill mode
Clutch torque setting: N.m (in.lbs)			1.0 - 5.0 (9 - 44)
Max lock torque: N.m (in.lbs)			45 (400)
Max fastening torque: N.m (in.lbs)		Soft joint	25 (220)
		Hard joint	45 (400)
Electric brake			Yes
Mechanical speed control			Yes (2 speed)
Variable speed control			Yes
Reversing switch			Yes
LED job light			Yes
Weight according to EPTA-Procedure 01/2003: kg (lbs)			1.5 (3.2)*1 1.7 (3.7)*2

► Standard equipment

Battery*3
Charger*3
Battery cover*4
+ – bit 2-45
Belt clip
Plastic carrying case*3

***3**: Battery, charger and Plastic carrying case are not supplied with "Z" model
***4**: Supplied with the same quantity of extra Battery

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

► Optional accessories

Li-ion Battery BL1850
Li-ion Battery BL1840
Li-ion Battery BL1830
Li-ion Battery BL1820
Li-ion Battery BL1815N
Li-ion Battery BL1815

Charger DC18SD
Charger DC24SC
Fast charger DC18RC Automotive charger DC18SE
Four port multi charger DC18SF
Two port multi fast charger DC18RD

Drill bits for wood
Drill bits for steel
Phillips bits

Repair

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

[1] NECESSARY REPAIRING TOOLS

Code No.	Description	Use for
1R359	Drill chuck removing tool	(Use this tool if Drill chuck cannot be removed by the method of described in "[3]-1 Drill chuck disassembling".)
	Hex wrench 10	removing/ mounting Drill chuck

[2] LUBRICATION

It is not required to lubricate the gear section because the portion is replaced as a factory- lubricated gear unit.

[3] DISASSEMBLY/ASSEMBLY

[3] -1. Drill Chuck

DISASSEMBLING

Note: It is required to remove Drill chuck when replacing Gear assembly, but you need not when replacing the parts that are independent of Gear assembly.

(1) Remove M6x22 Flat head screw. (**Fig. 1**)

(2) Preset the machine. (**Fig. 2**) And set Hex wrench 10 to Vise. (**Fig. 3**)

(3) While holding Hex wrench 10 with Drill chuck firmly, remove Drill chuck from Gear assembly. (**Fig. 4**)

Fig. 1

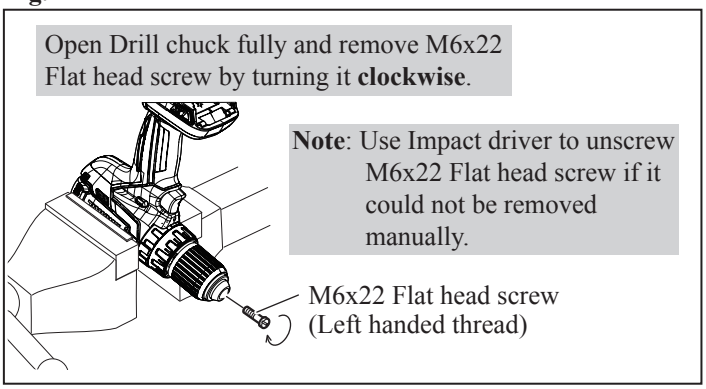


Fig. 2

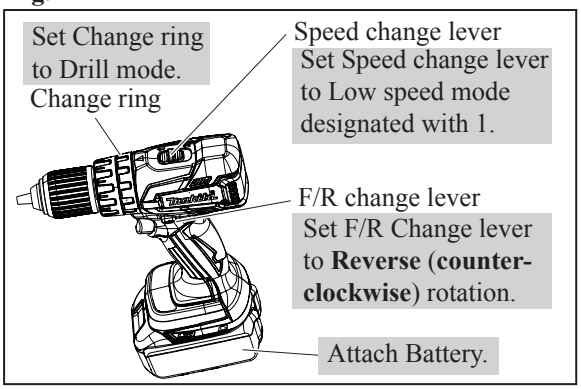


Fig. 3

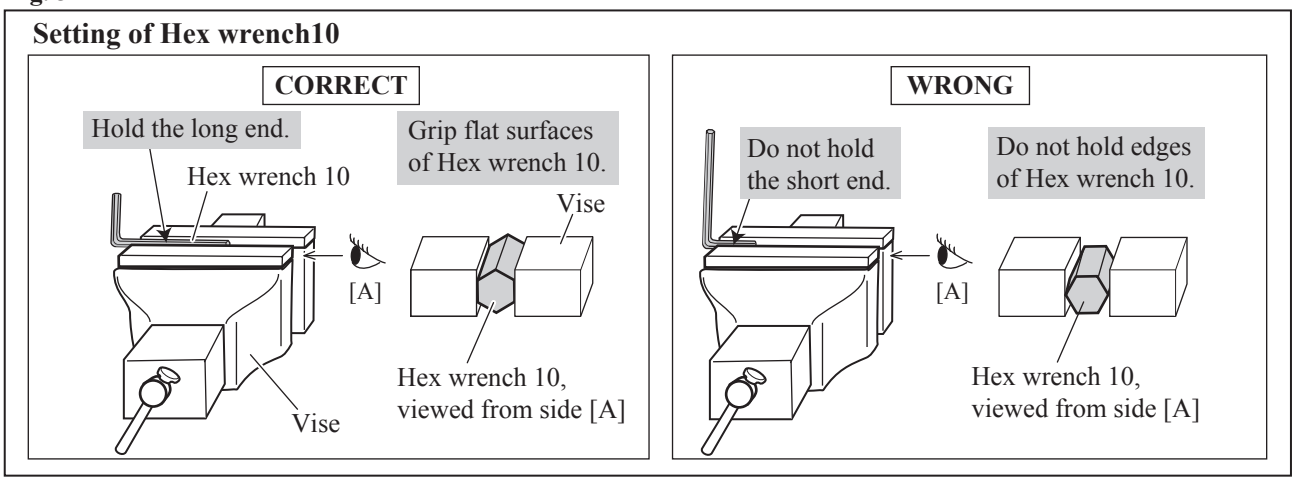
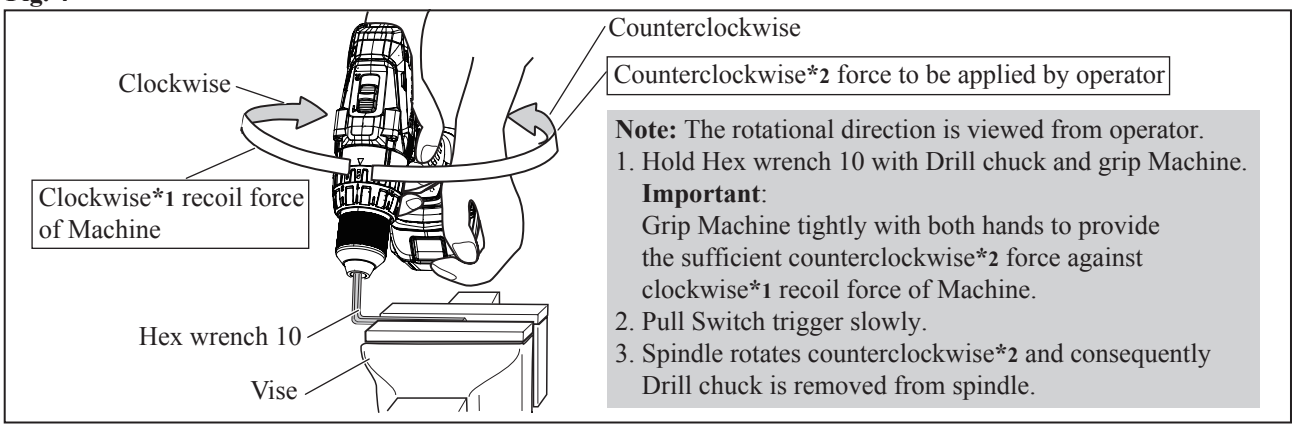


Fig. 4



Repair

[3] DISASSEMBLY/ASSEMBLY

[3] -1. Drill Chuck (cont.)

ASSEMBLING

(1) Seat Drill chuck on Spindle. (**Fig. 5**)
(2) Set the machine to Drill mode, Low gear mode and Forward rotation mode. (**Fig. 6**)
(3) Set Hex wrench 10 to vise. (Refer to **Fig. 3**)
(4) Tighten Drill chuck. (**Fig. 7**)

Fig. 5

Turn Drill chuck clockwise by hand until it is seated on the end of the threaded portion of Spindle.

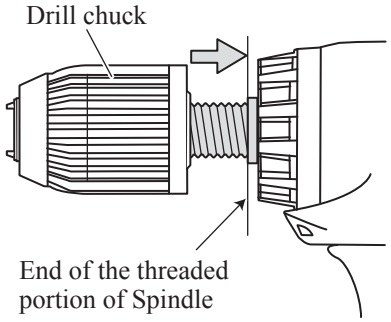


Fig. 6

Set Speed change lever to Low speed mode designated with 1.

Set F/R Change lever to **Forward (clockwise)** rotation.

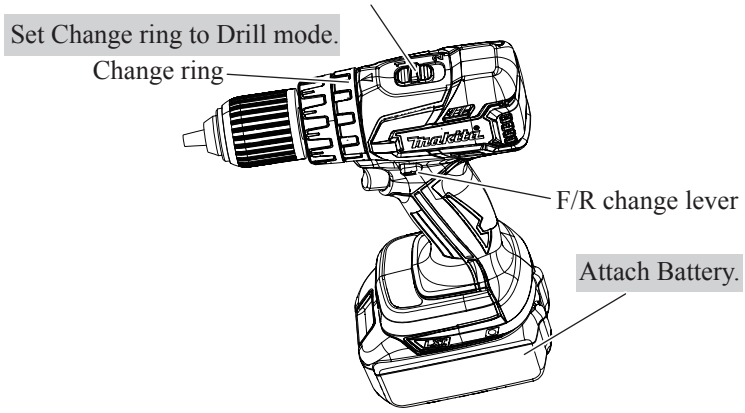
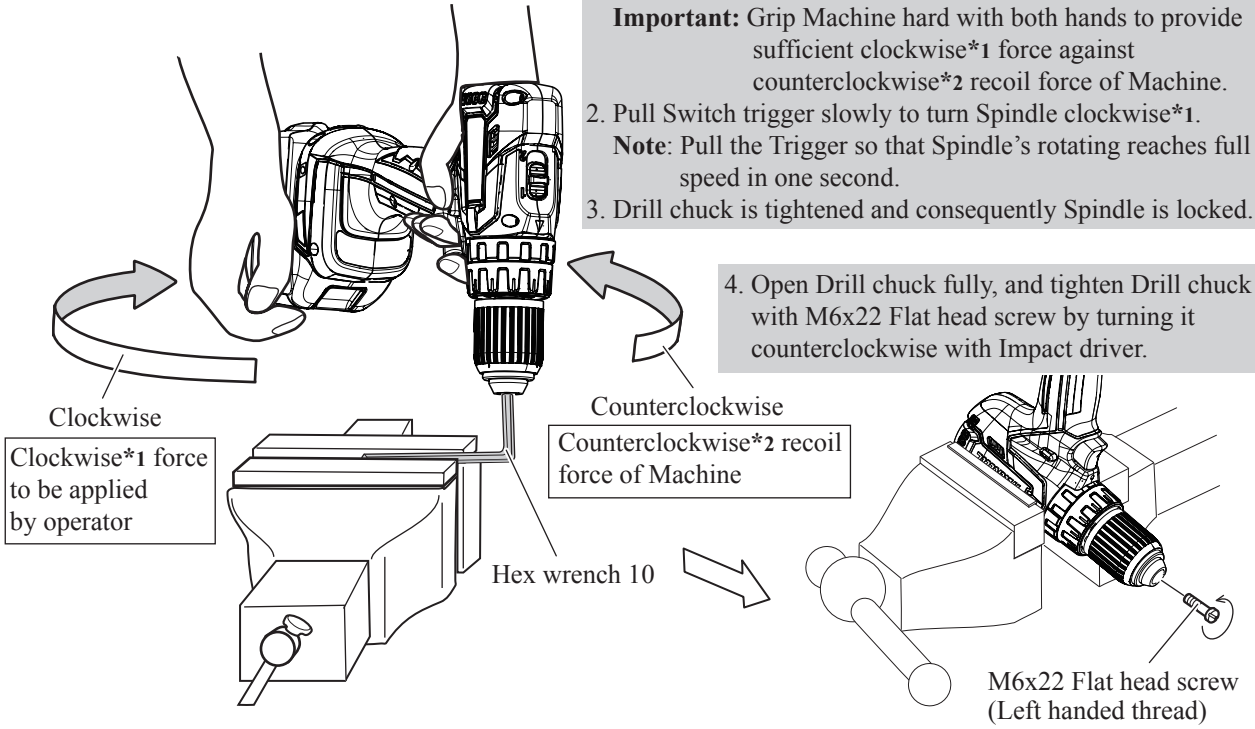


Fig. 7

Note: The rotational direction is viewed from operator.
1. Hold Hex wrench 10 with Drill chuck and grip Machine.
   Important: Grip Machine hard with both hands to provide sufficient clockwise***1*** force against counterclockwise***2*** recoil force of Machine.
2. Pull Switch trigger slowly to turn Spindle clockwise***1***.
   Note: Pull the Trigger so that Spindle's rotating reaches full speed in one second.
3. Drill chuck is tightened and consequently Spindle is locked.
4. Open Drill chuck fully, and tighten Drill chuck with M6x22 Flat head screw by turning it counterclockwise with Impact driver.



Note: Apply adhesive (**ThreeBond 1342 or Loctite 242**) to threaded portion when re-using the removed M6x22 Flat head screw.

► Repair

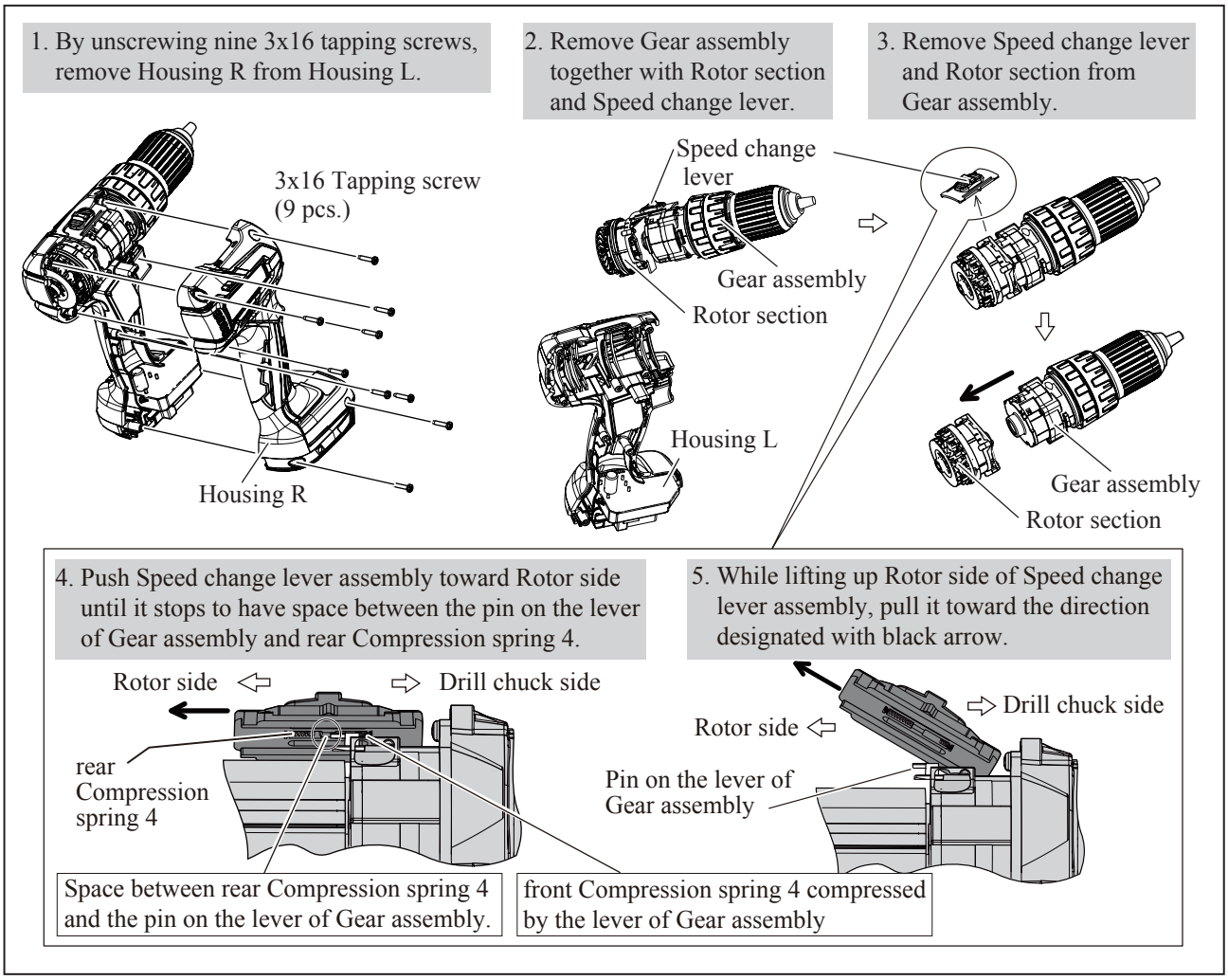
[3] DISASSEMBLY/ASSEMBLY

[3] -2. Gear Assembly, Rotor Section

DISASSEMBLING

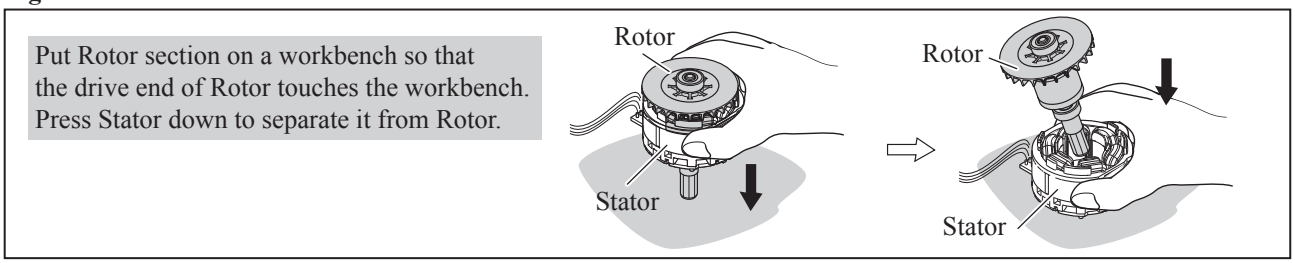
(1) Disassemble Rotor section and Gear assembly. (**Figs. 8** and **9**)

Fig. 8



(2) Separate Rotor from Stator. (**Fig. 9**)

Fig. 9



Caution for Handling of Rotor

When handling or storing multiple Rotors, be sure to keep a proper distance between Rotors as shown in **Fig. 10A** because Rotor has a strong magnet, failure to follow this instruction could result in:

- Finger injury caused by pinching between Rotors pulling each other.
- Magnetic loss of Rotors or damage on the magnet portion of Rotors. (**Fig. 10B**)

Fig. 10A

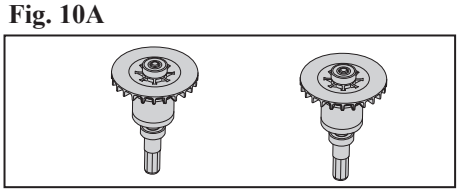
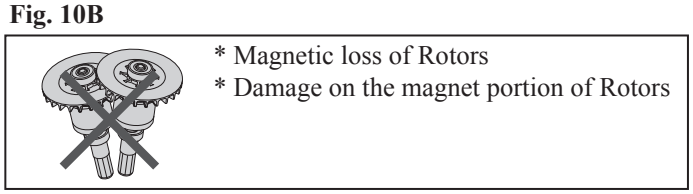


Fig. 10B



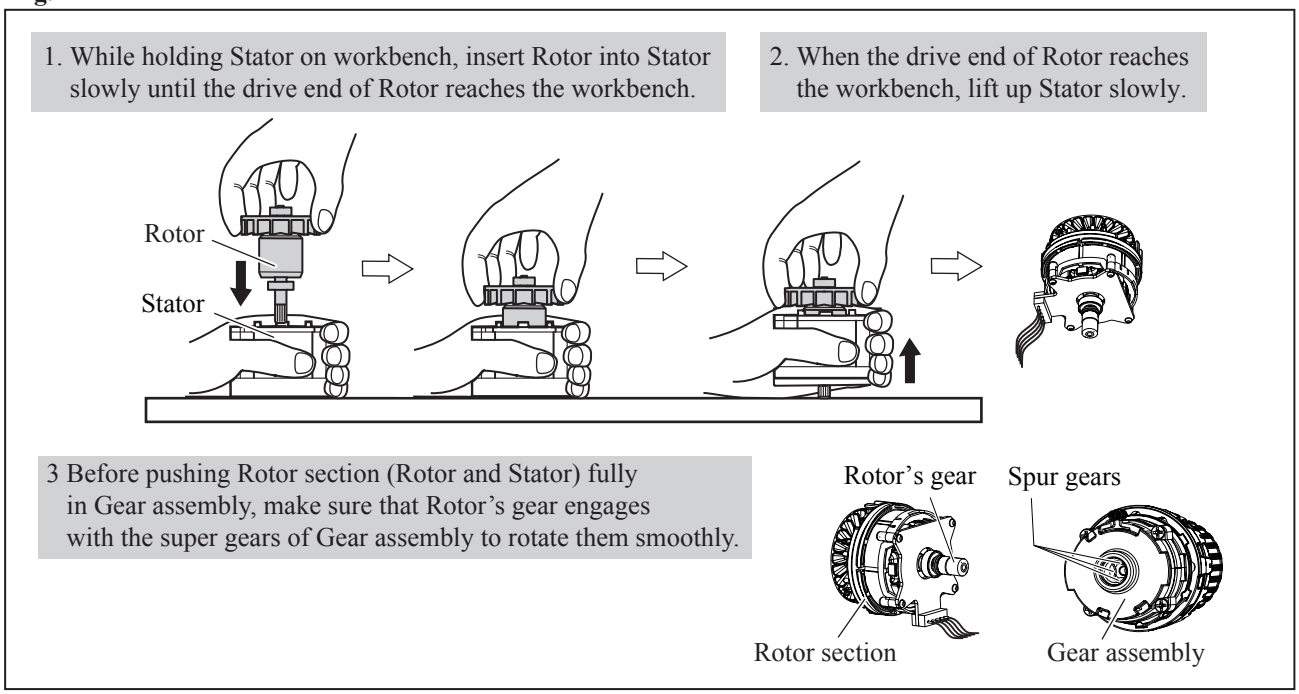
Repair

[3] DISASSEMBLY/ASSEMBLY
[3] -2. Gear Assembly, Rotor Section (cont.)

ASSEMBLING

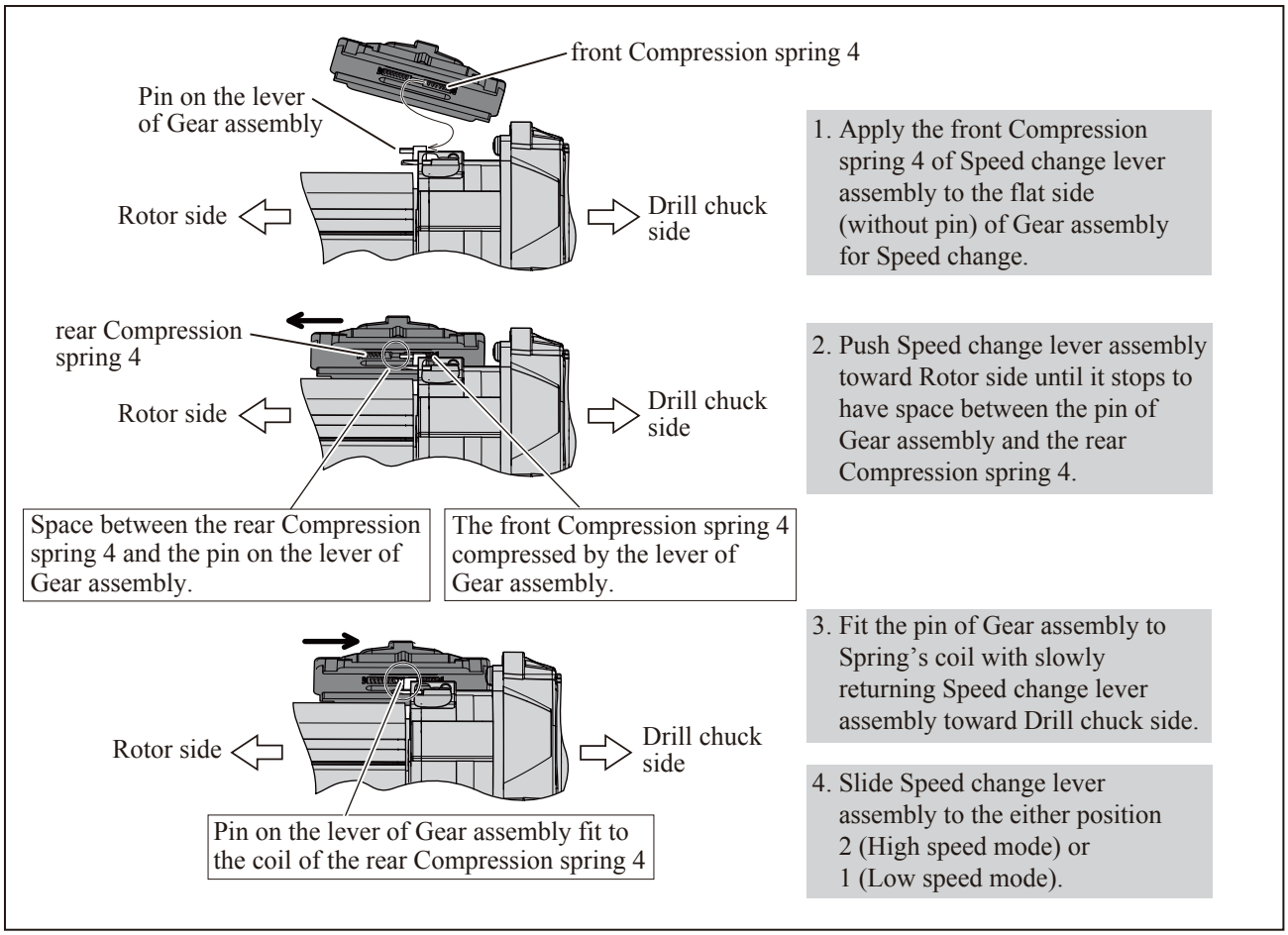
(1) Assemble Gear assembly and Rotor section in the reverse order of disassembly. (Refer to **Figs. 9 and 8**)
Note: Be careful not to pinch your fingers between Stator and Rotor's fan when assembling Rotor. (**Fig. 11**)

Fig. 11



(2) Assemble Speed change lever assembly. (**Fig. 12**)

Fig. 12



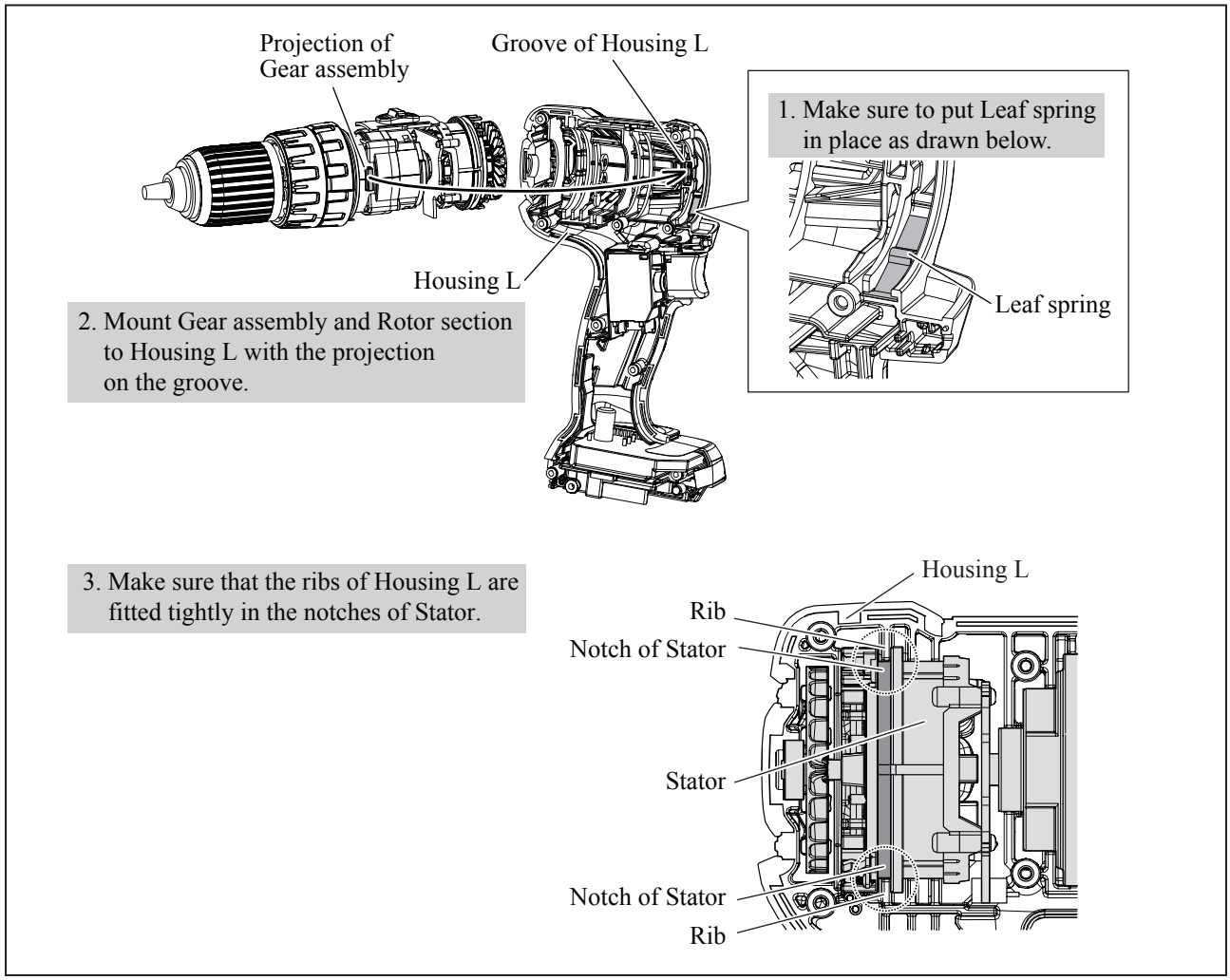
Repair

[3] DISASSEMBLY/ASSEMBLY
[3] -2. Gear Assembly, Rotor Section (cont.)

ASSEMBLING

Assemble Gear assembly and Rotor section to Housing L. (**Fig. 13**)

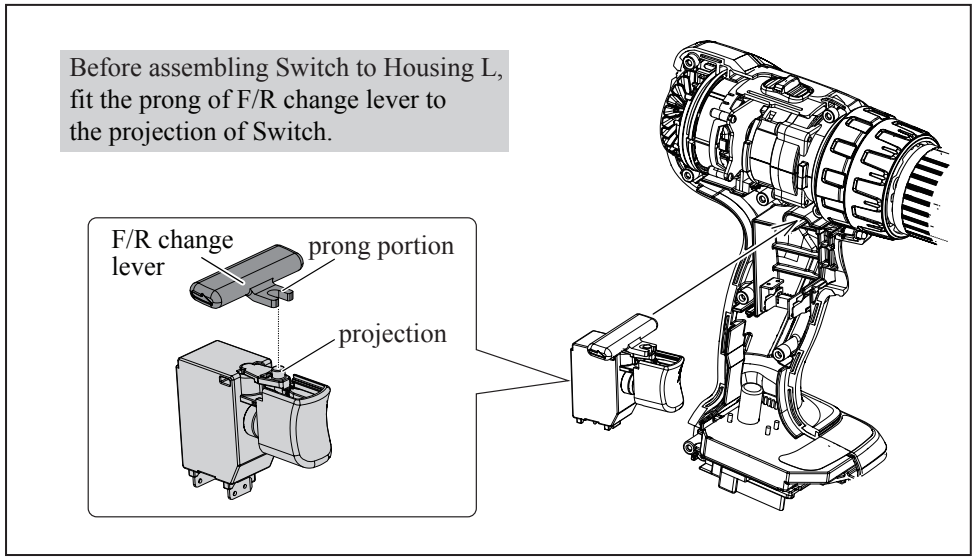
Fig. 13



[3]-3. F/R change lever

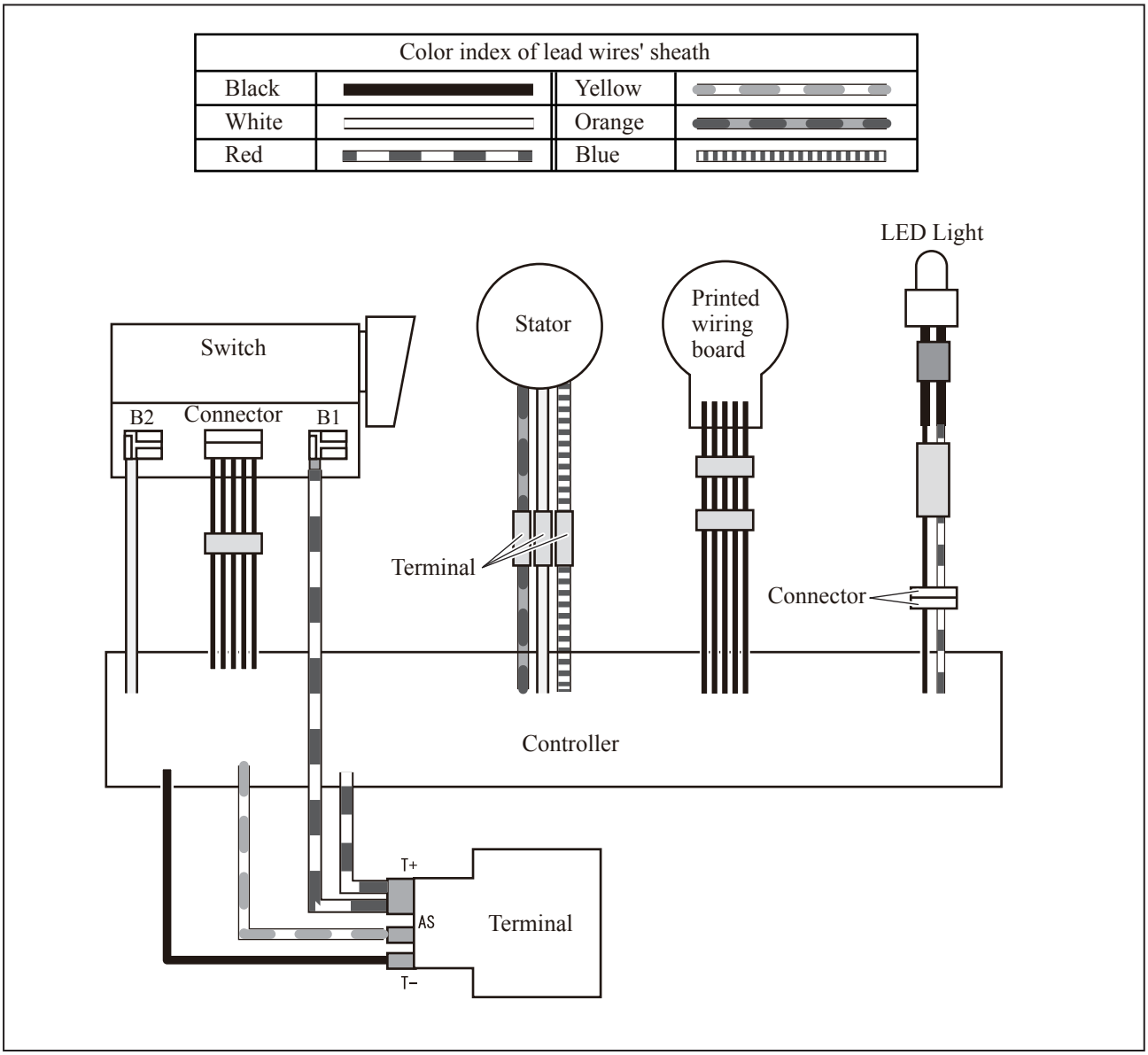
F/R Change lever can be assembled to Switch. (**Fig. 14**)

Fig. 14



Circuit diagram

Fig. D-1



Wiring diagram

Fig. D-2

Wiring to Switch

Flag connectors of Lead wires must be connected to Switch so that their wires come to Housing L side.

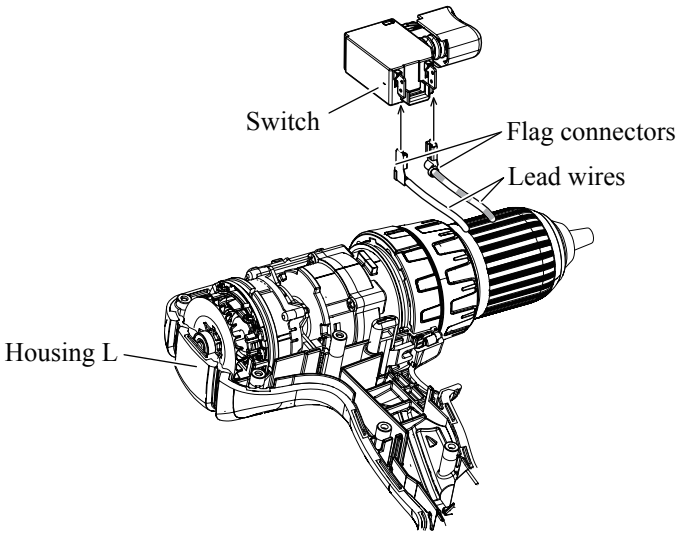
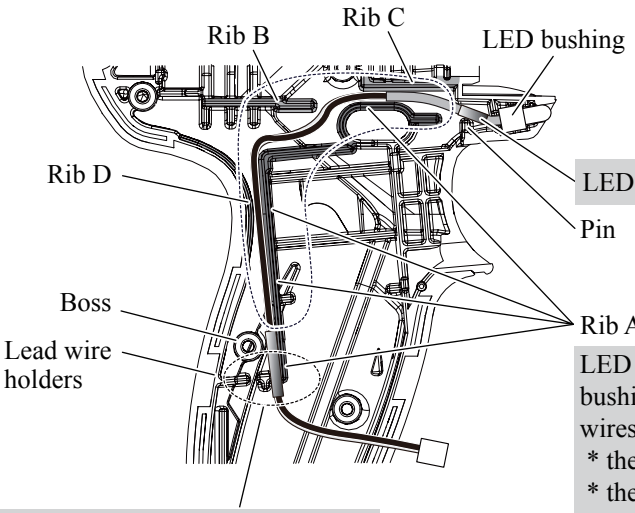


Fig. D-3

Wiring of LED Lead wire



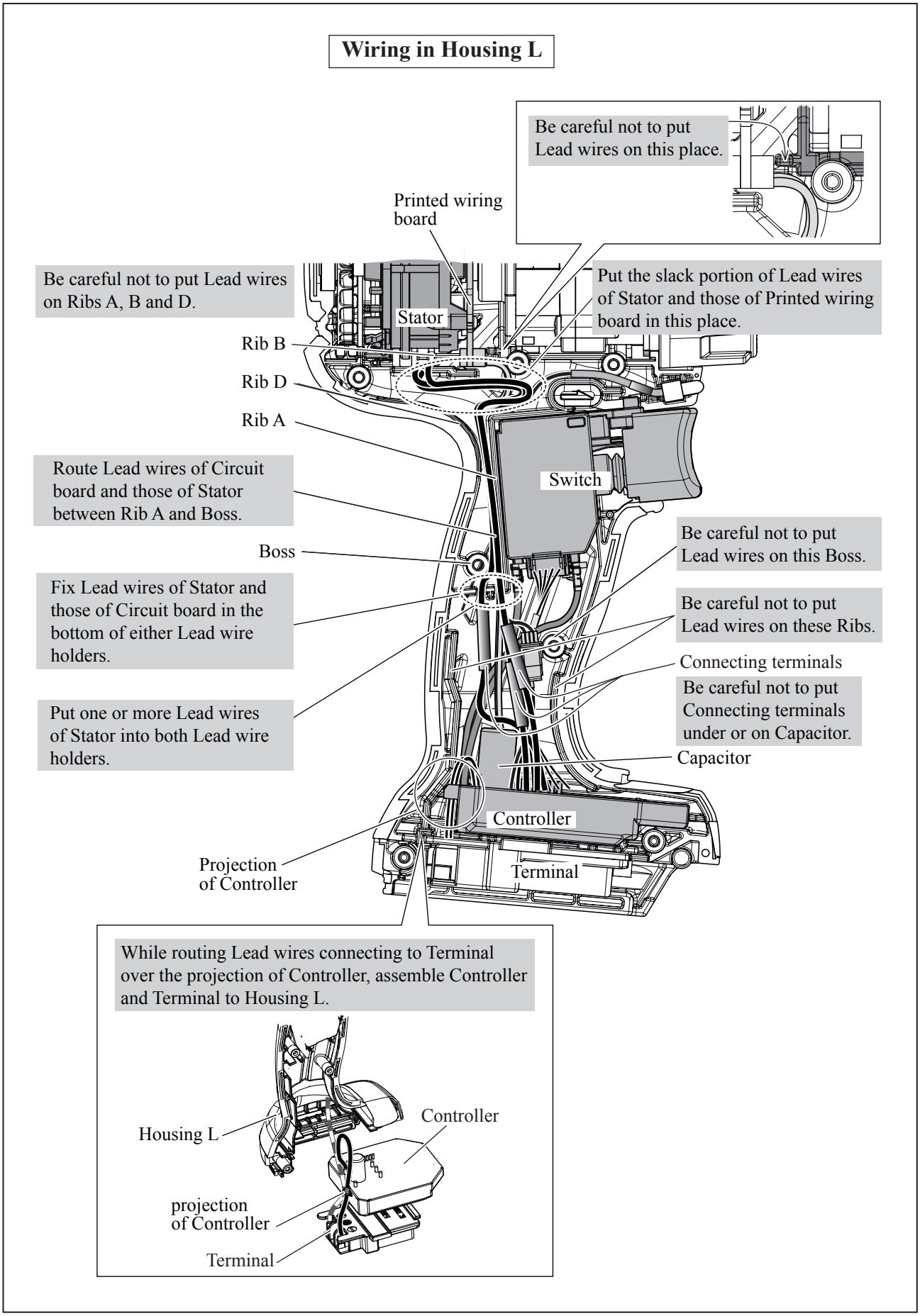
LED Lead wires must be routed around Pin.

LED Lead wires must be tightened between LED bushing and Lead wire holder when routing these wires between the following Ribs and Boss:
* the space between Ribs A and C
* the space between Ribs A and B
* the space between Ribs A and D
* the space between Rib A and Boss

Fix LED lead wires with either of two Lead wire holders.

Wiring diagram

Fig. D-4

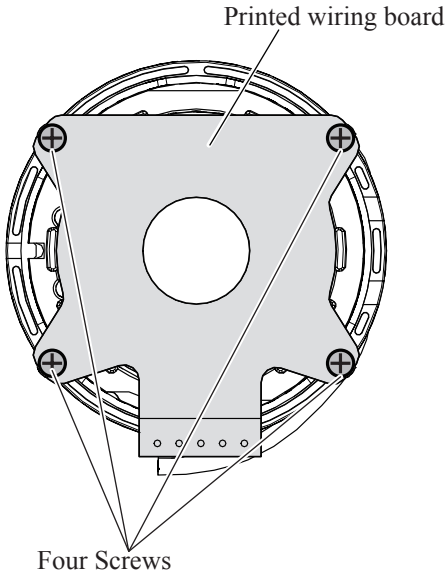
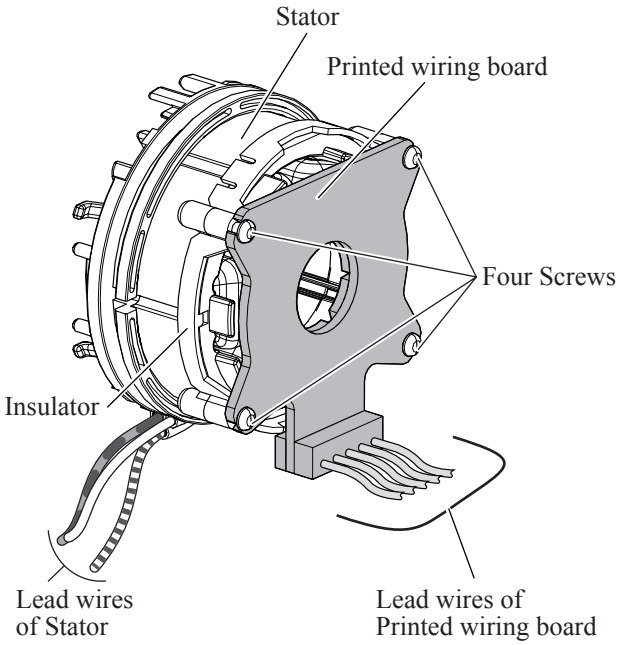


► Wiring diagram

Fig. D-5

Wiring and Mounting of Printed Wiring Board to Stator

By fastening four screws, assemble Printed wiring board to Insulator without wobbling.
Note: The screws must be tightened to 0.3N·m of torque.



Lead wires of Printed wiring board must be faced to the opposite side of Lead wires of Stator.