

TECHNICAL INFORMATION



PRODUCT

P 1 / 12

Model No. ▶ BDF448

Description ▶ 14.4V Cordless Driver Drill

CONCEPT AND MAIN APPLICATIONS

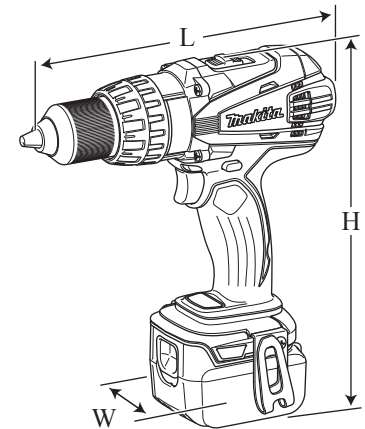
Model BDF448 is a successor model of BDF444, featuring:

- Extremely compact tool size with an overall length of 225mm (8-7/8") - the shortest in its class
- High power and productivity achieved with new DC motor (FD31-30)
- Enhanced dust and drip-proof performance to ensure reliable operation even under bad weather.
- Equipped with Battery fuel gauge for increased maneuverability.

Note: This product is not compatible with 14.4V-1.3Ah battery BL1415.

This product is available in the following variations.

Model No.	Battery		Battery cover	Charger	Plastic carrying case	Systainer case	Housing color
	Type	Quantity					
BDF448Z	No	No	No	No	No	No	Makita blue
BDF448RFE	BL1430	2	1	DC18RC	Yes	No	
BDF448RFE3	BL1430	3	2	DC18RC	Yes	No	
BDF448ZX	No	No	No	No	No	Yes	
BDF448RFX	BL1430	2	1	DC18RC	No	Yes	



Dimensions: mm (")	
Length (L)	225 (8-7/8)
Width (W)	79 (3-1/8)
Height (H)	259 (10-1/4)

► Specification

Battery	Voltage: V	14.4
	Capacity: Ah	3.0
	Energy capacity: Wh	44
	Cell	Li-ion
	Charging time (approx.): min.	22 with DC18RC
No load speed: min ⁻¹ =rpm	High	0 - 1,800
	Low	0 - 350
Capacity of drill chuck: mm (")		1.5 (1/16) - 13 (1/2)
Capacity: mm (")	Steel	13 (1/2)
	Wood	65 (2-9/16)
Torque setting		21 stage + drill mode
Clutch torque setting: N.m (in.lbs)		1.0 - 10.0 (9 - 89)
Max lock torque: N.m (in.lbs)		67 (590)
Max fastening torque: N.m (in.lbs)	Soft joint	43 (380)
	Hard joint	77 (680)
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)		2.2 (4.8)

* with Battery BL1430

► Standard equipment

+ - bit 2-45 2 Belt clip 1
 Bit holder 1 Grip assembly 1

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

► Optional accessories

Fast charger DC18RA (for US, Canada, Guam, Panama, Mexico and Colombia)	Charger DC18SD	Battery protectors
Fast charger DC18RC (for all countries except the countries above)	Charger DC24SC	Drill bits for wood
	Automotive charger DC18SE	Drill bits for steel
	Battery BL1430	Driver 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-assembled gear unit.

[3] DISASSEMBLY/ASSEMBLY

[3] -1. Drill Chuck

DISASSEMBLING

- (1) Remove M6x22 Flat head screw as drawn in **Fig. 1**.
- (2) Preset the machine as drawn in **Fig. 2**. And set Hex wrench 10 to Vise as drawn in **Fig. 3**.
- (3) Gripping Hex wrench 10 with Drill chuck firmly, remove Drill chuck as drawn in **Fig. 4**.

Fig. 1

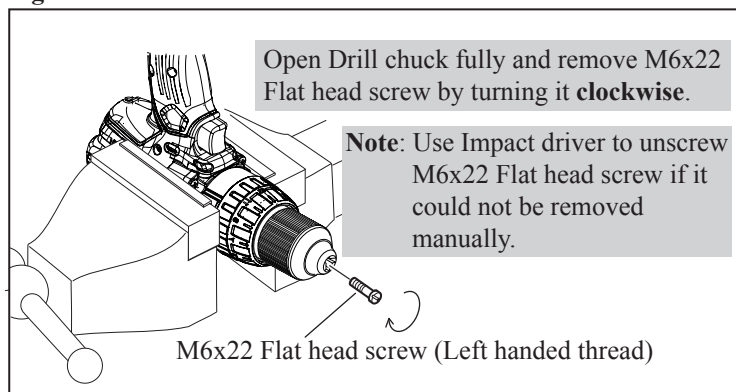


Fig. 2

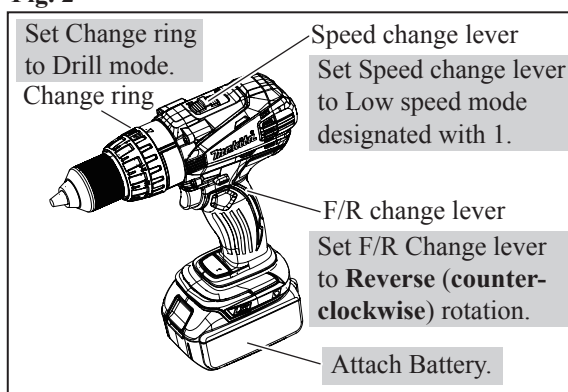


Fig. 3

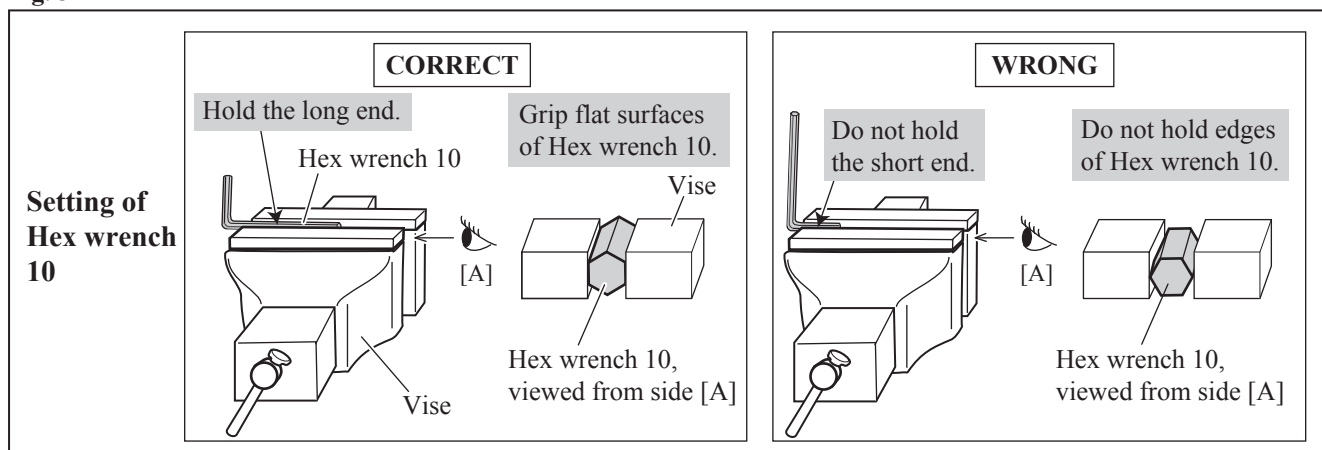
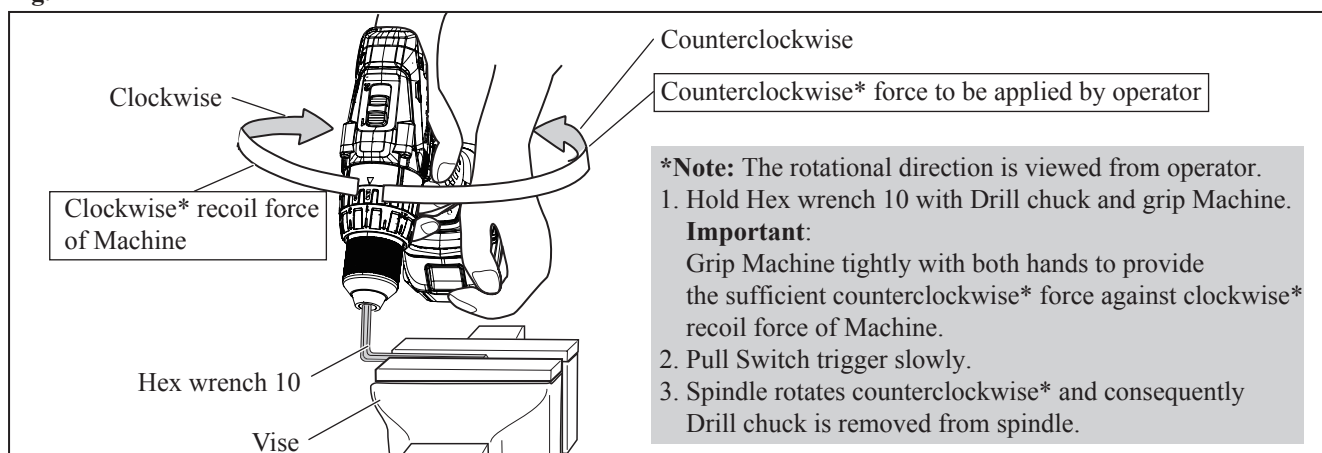


Fig. 4



► Repair

[3] DISASSEMBLY/ASSEMBLY

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

ASSEMBLING

- (1) Set the machine. (Fig. 5 and 6)
- (2) Set Hex wrench 10 to vise and described in Fig. 3.
- (3) Set Drill chuck in place. (Fig. 7)

Fig. 5

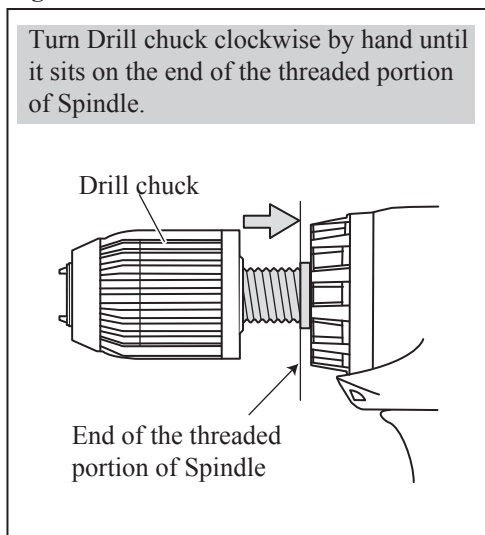


Fig. 6

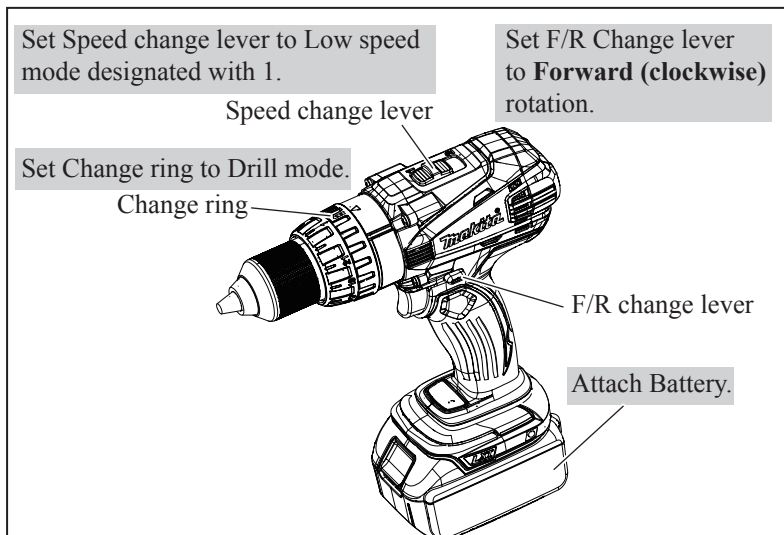
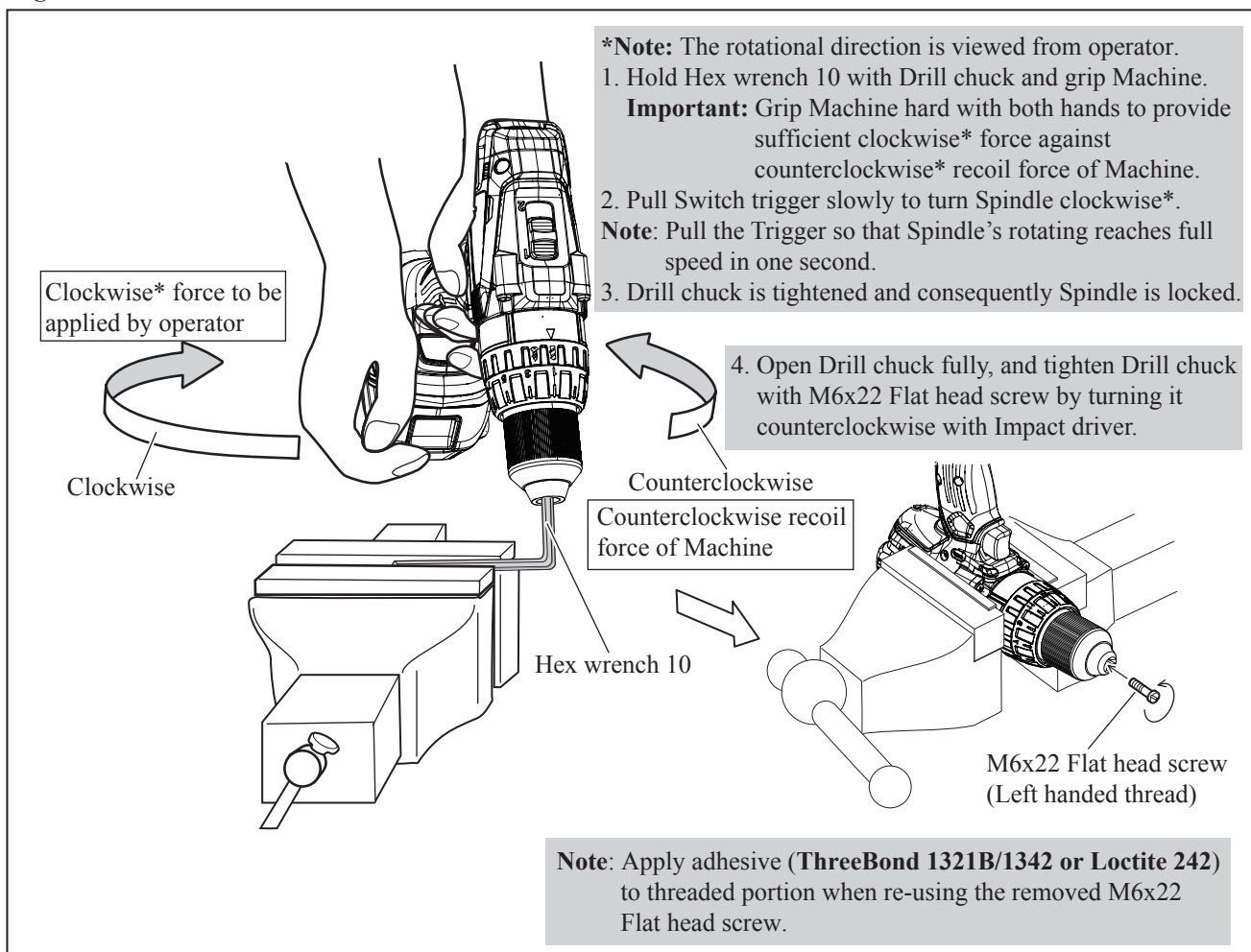


Fig. 7



► **Repair**

[3] DISASSEMBLY/ASSEMBLY

[3] -2. Gear Assembly, Motor Section

DISASSEMBLING

After removing Drill chuck (Re: **Figs. 1, 2, 3 and 4**), disassemble Motor section and Gear assembly. (**Figs. 8 and 9**)

Fig. 8

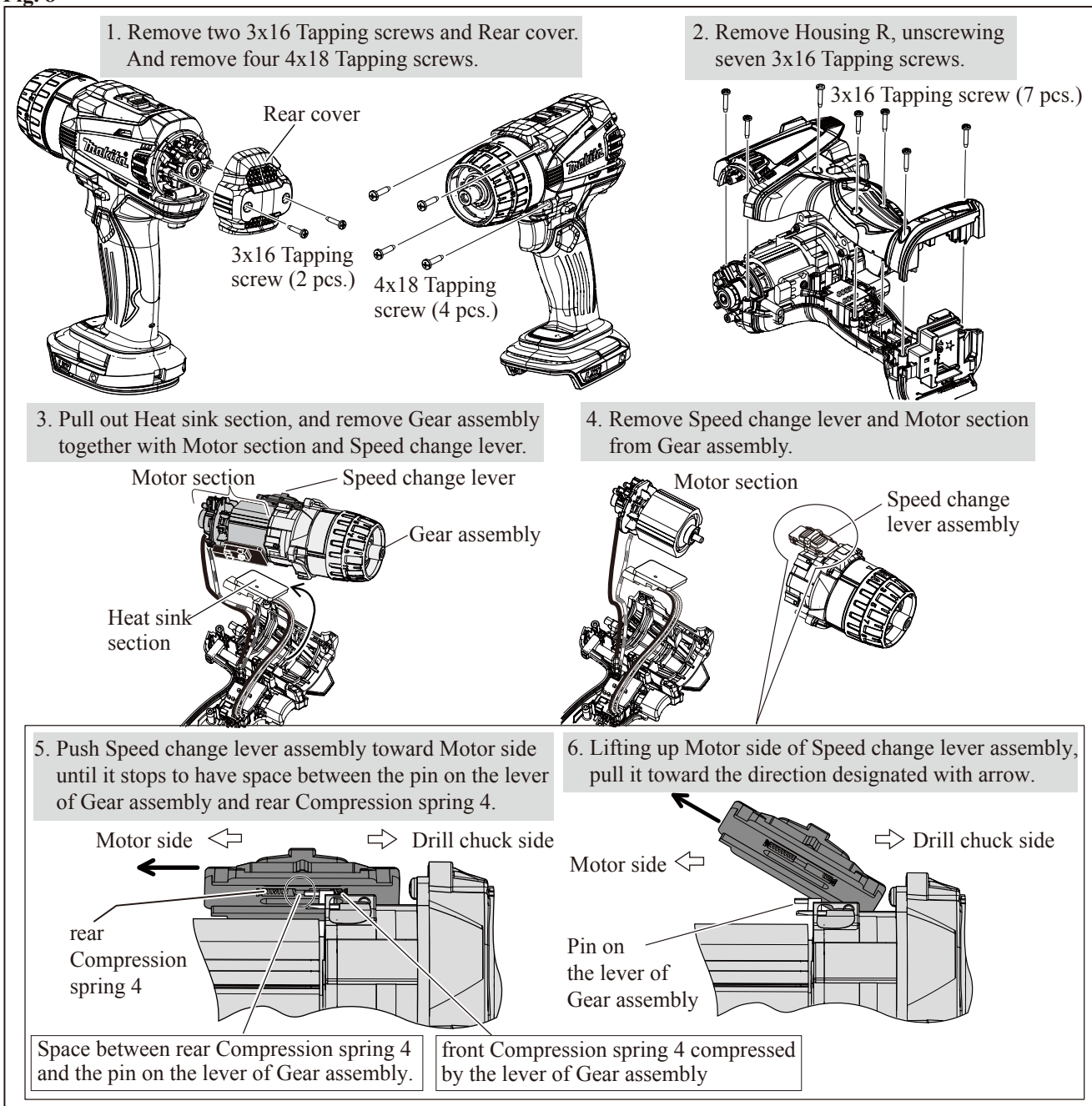
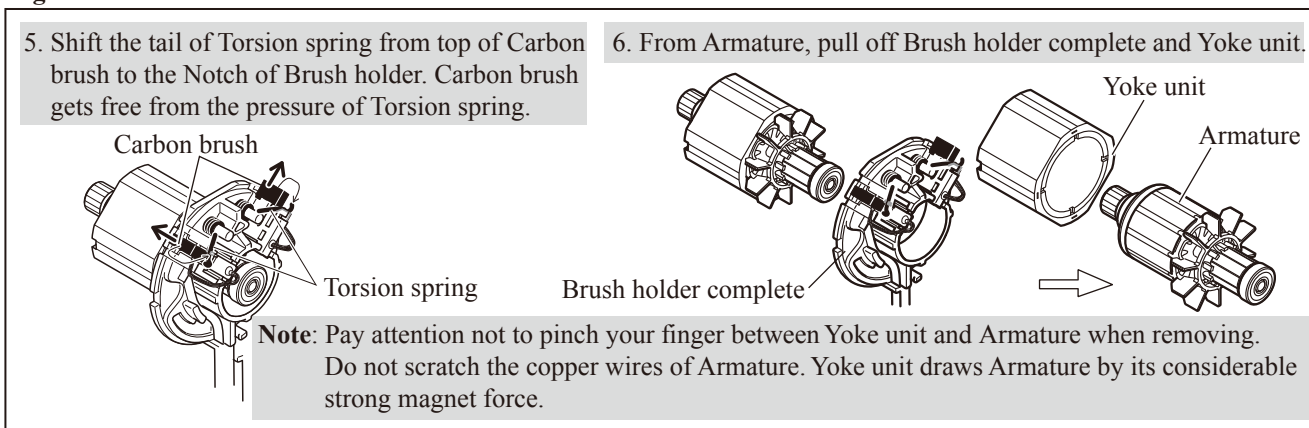


Fig. 9



► Repair

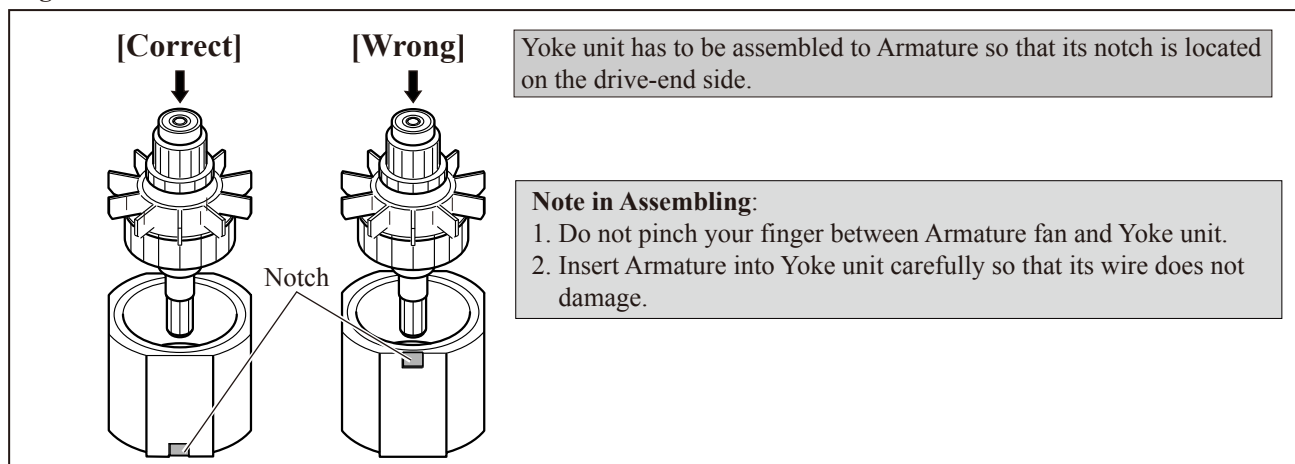
[3] DISASSEMBLY/ASSEMBLY

[3] -2. Gear Assembly, Motor Section (cont.)

ASSEMBLING

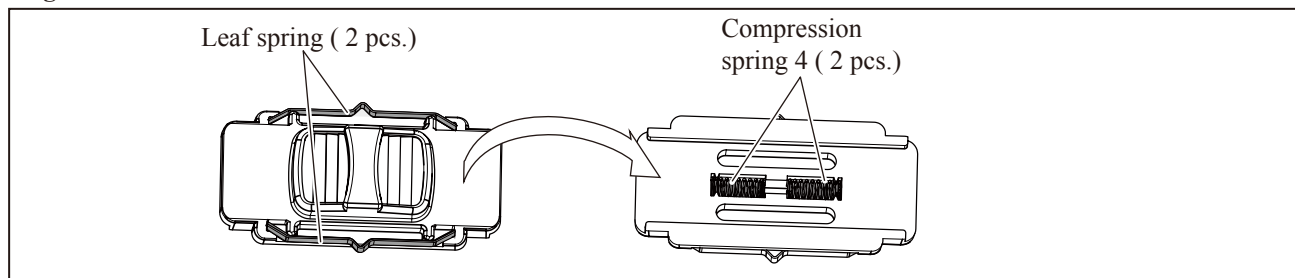
- (1) Assemble Motor section taking the reverse step of Disassembling. Refer to **Fig. 9**.
Insert Armature into Yoke unit as drawn in **Fig. 10**.

Fig. 10



- (2) Assemble Brush holder complete to Commutator end of Armature. Refer to the drawings in **Fig. 9**.
Carbon brushes in Brush holder complete have to be still left from Armature's commutator in this step.
- (3) Fasten Heat sink with Pan head screw to Yoke unit. And insert the Motor section into Gear assembly, while engaging Armature's gear with the Planet gears in Gear assembly. Refer to the **center right** drawing in **Fig. 8**.
- (4) Before mounting Speed change lever assembly, make sure that Lead springs and Compression springs are assembled to Speed change lever assembly. See **Fig. 11**.

Fig. 11



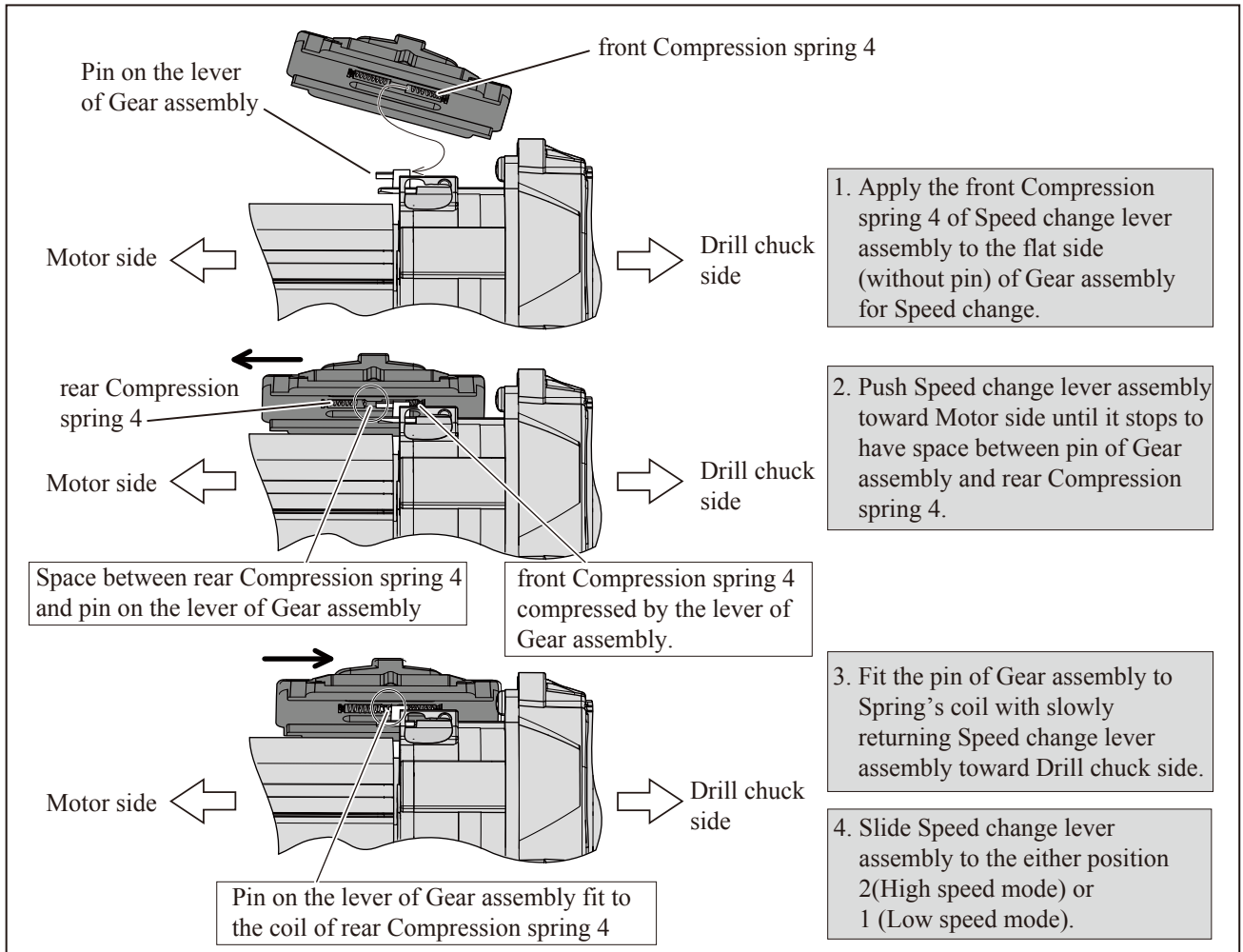
► **Repair**

[3] DISASSEMBLY/ASSEMBLY
[3] -2. Gear Assembly, Motor Section

ASSEMBLING

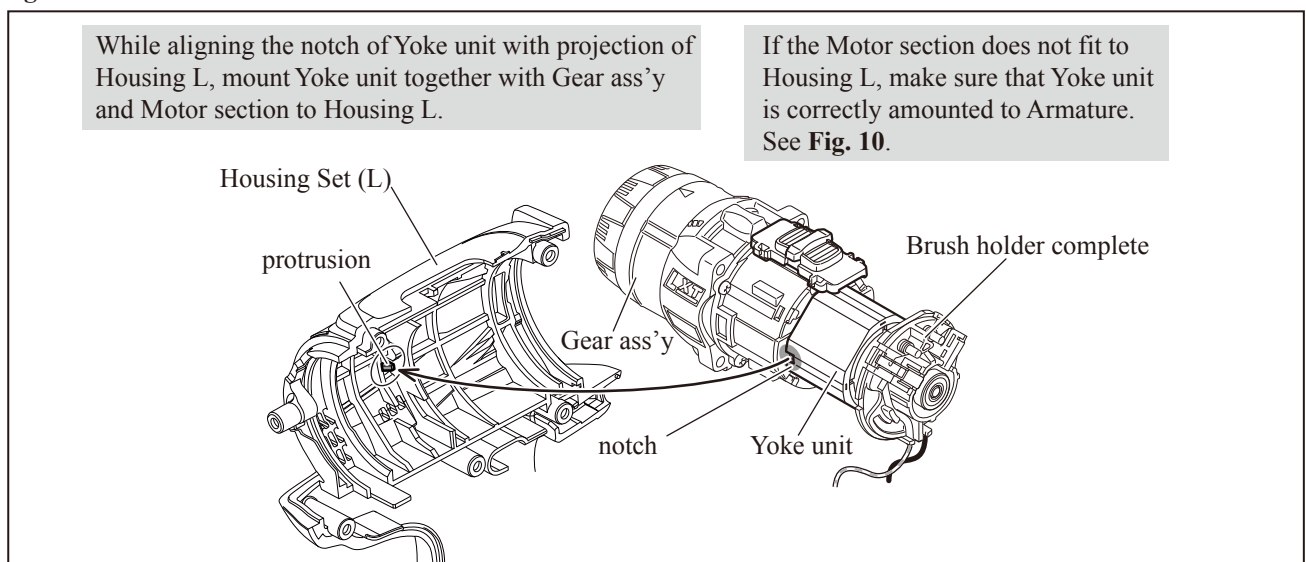
(5) Assemble Speed change lever assembly as drawn in **Fig. 12**.

Fig. 12



(6) Assemble Motor section and Gear assembly as illustrated in **Figs. 13 and 14**.

Fig. 13



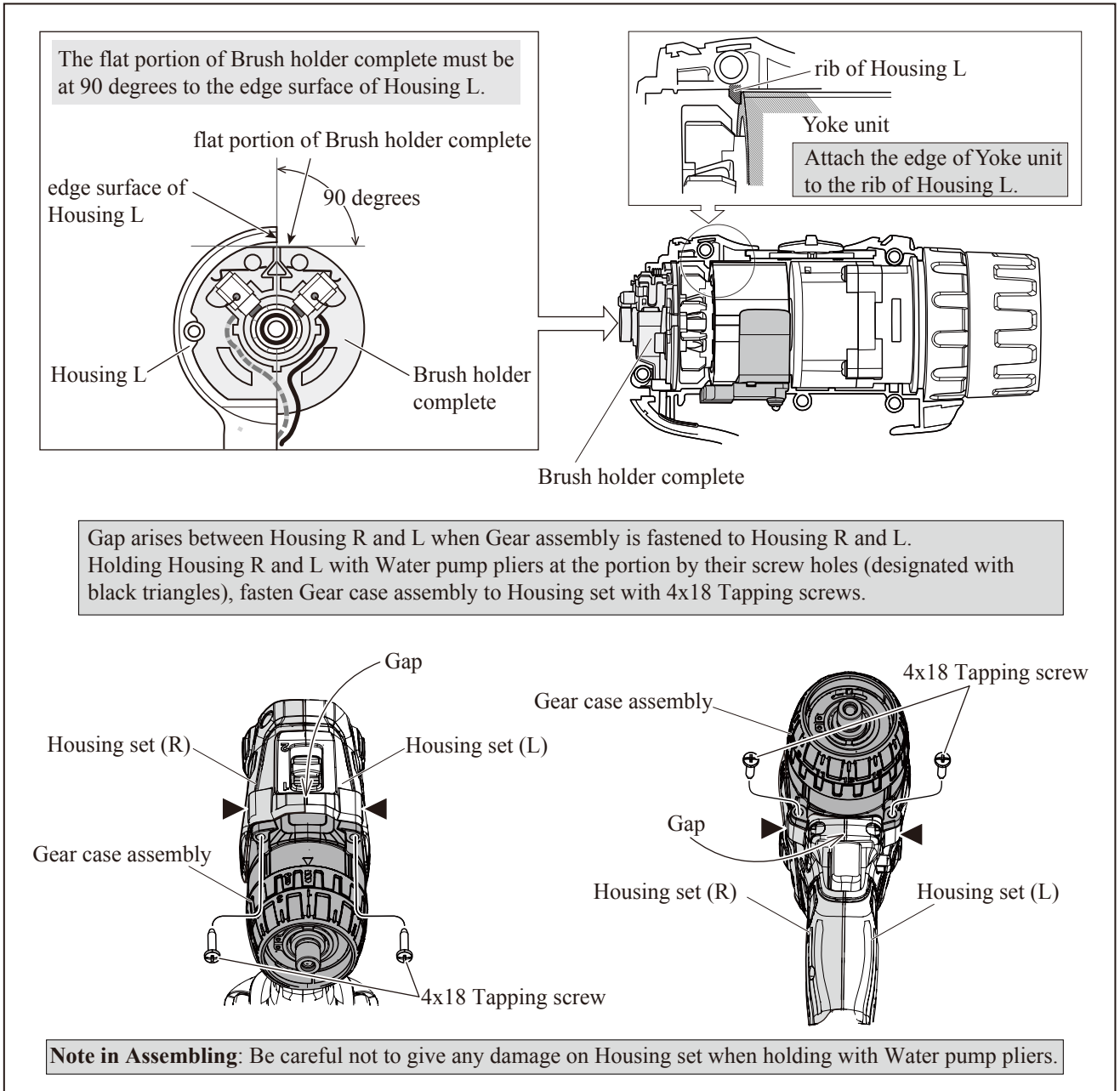
► **Repair**

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

ASSEMBLING

- (7) Make sure Brush holder complete and Yoke unit are precisely mounted to Housing R. See **upper** drawing in **Fig. 14**. And then, mount Housing R to Housing L as drawn in **Fig. 14**.

Fig. 14



- (8) Fasten Housing R to Housing L with seven 3x16 Tapping screws. Refer to the **upper right** drawing in **Fig. 8**.
- (9) Contact Carbon brush with Armature's commutator, putting Torsion spring on the Carbon brush. Refer to the **left** drawing in **Fig. 9**.

► **Repair**

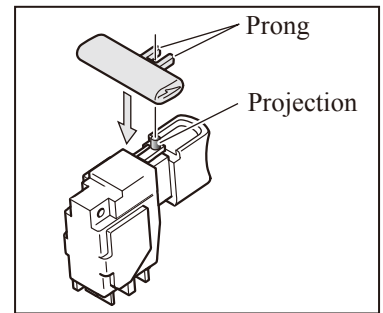
[3] DISASSEMBLY/ASSEMBLY

[3] -3. F/R Change Lever

ASSEMBLING

Put the projection on Switch between the prongs of F/R change lever. (Fig. 15)

Fig. 15



[3] -4. Switch plate complete

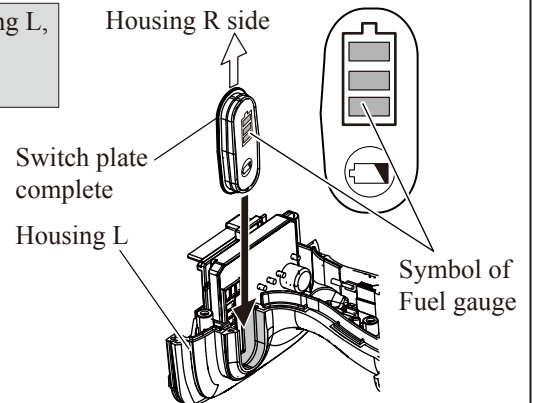
ASSEMBLING

Set Switch plate complete in place. (Fig. 16)

Fig. 16

Insert Switch plate complete to Housing L, facing its symbol of Fuel gauge to Housing R side.

Note: Switch plate complete with faced in the wrong direction can not be inserted to Housing L.

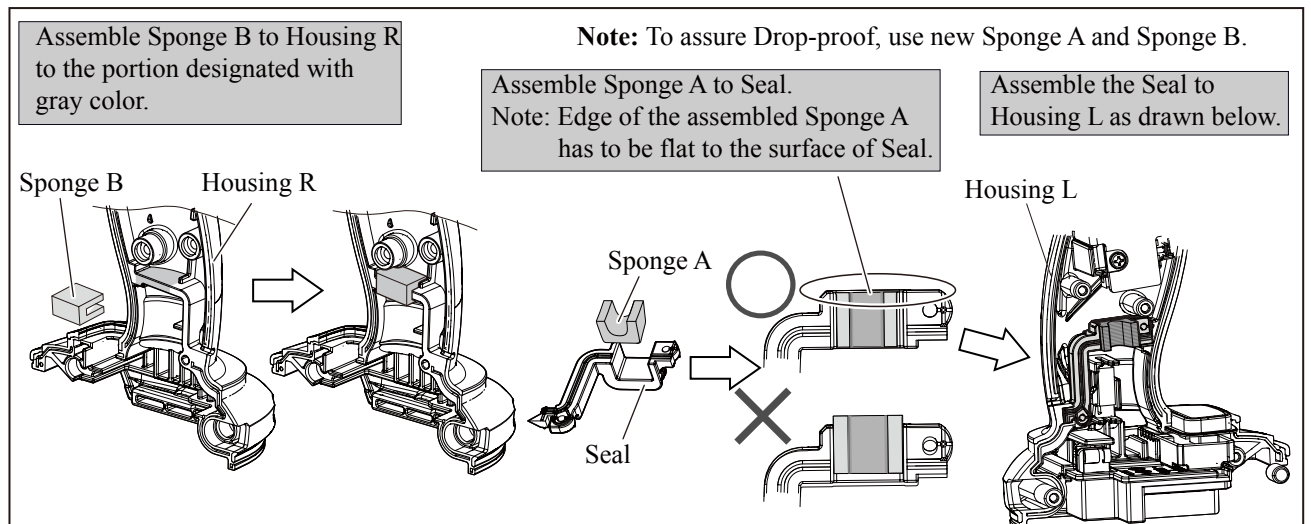


[3] -5. Parts related to Drip-proof structure

ASSEMBLING

Assemble Sponge B to Housing L. And assemble Seal and Sponge A to Housing L as drawn in Fig. 17.

Fig. 17



[3]-6. Cushion

ASSEMBLING

Be sure to install Cushion into Housing set (L) as drawn in Fig. 18R.

Note: Fig. 18F is the wrong installation.

Pay attention to the direction.

Fig. 18R

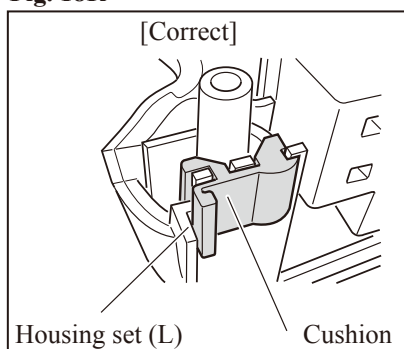
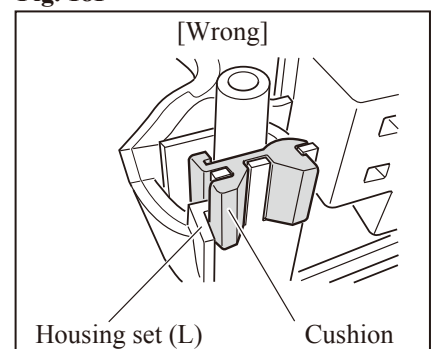
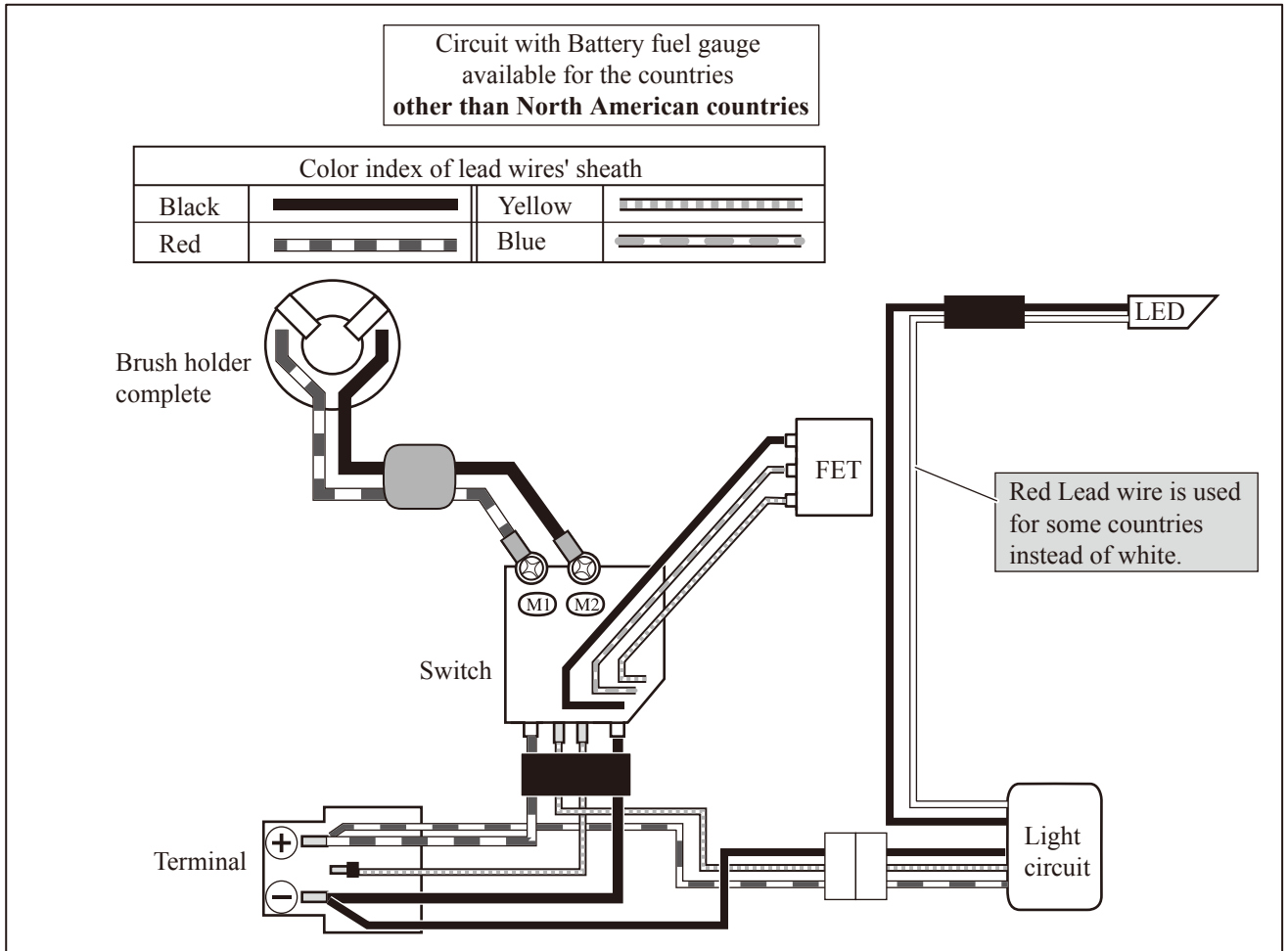


Fig. 18F



▶ Circuit diagram

Fig. D-1



▶ Wiring diagram

Fig. D-2

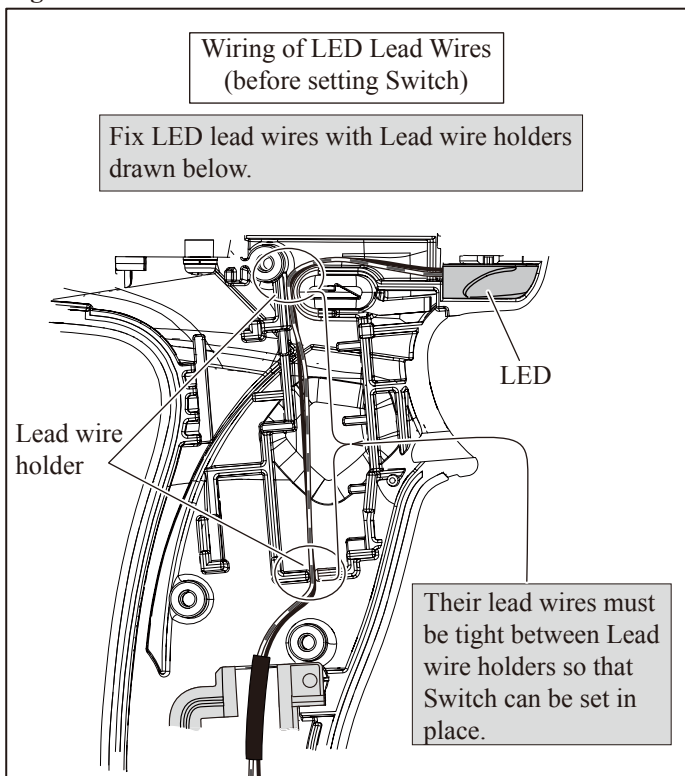
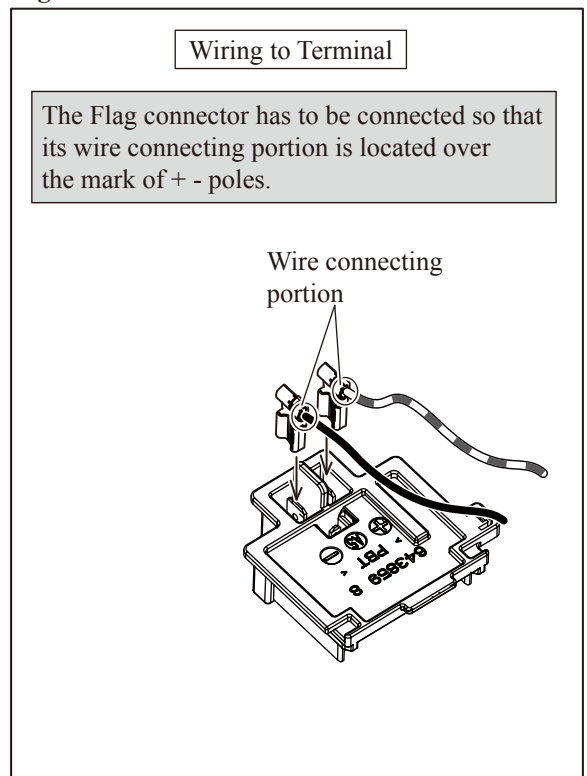


Fig. D-3



► Wiring diagram

Fig. D-4

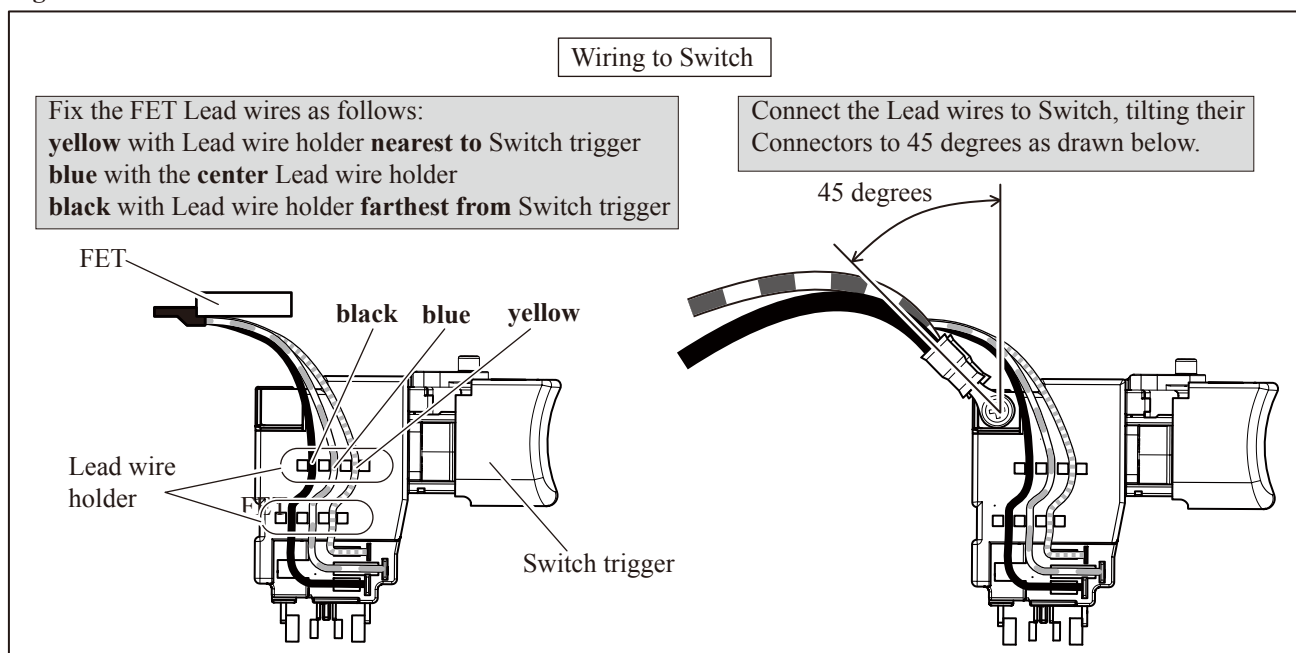
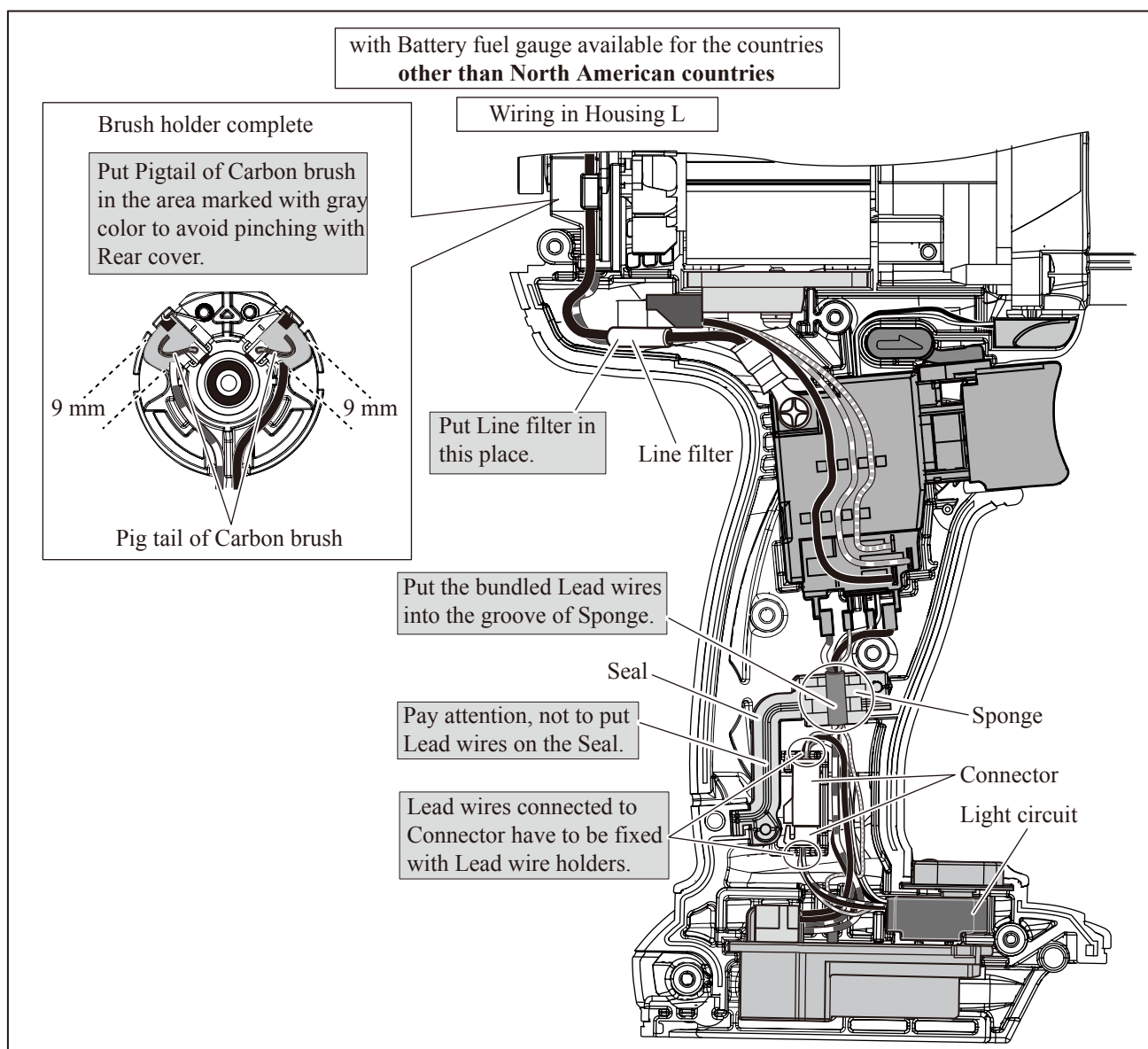
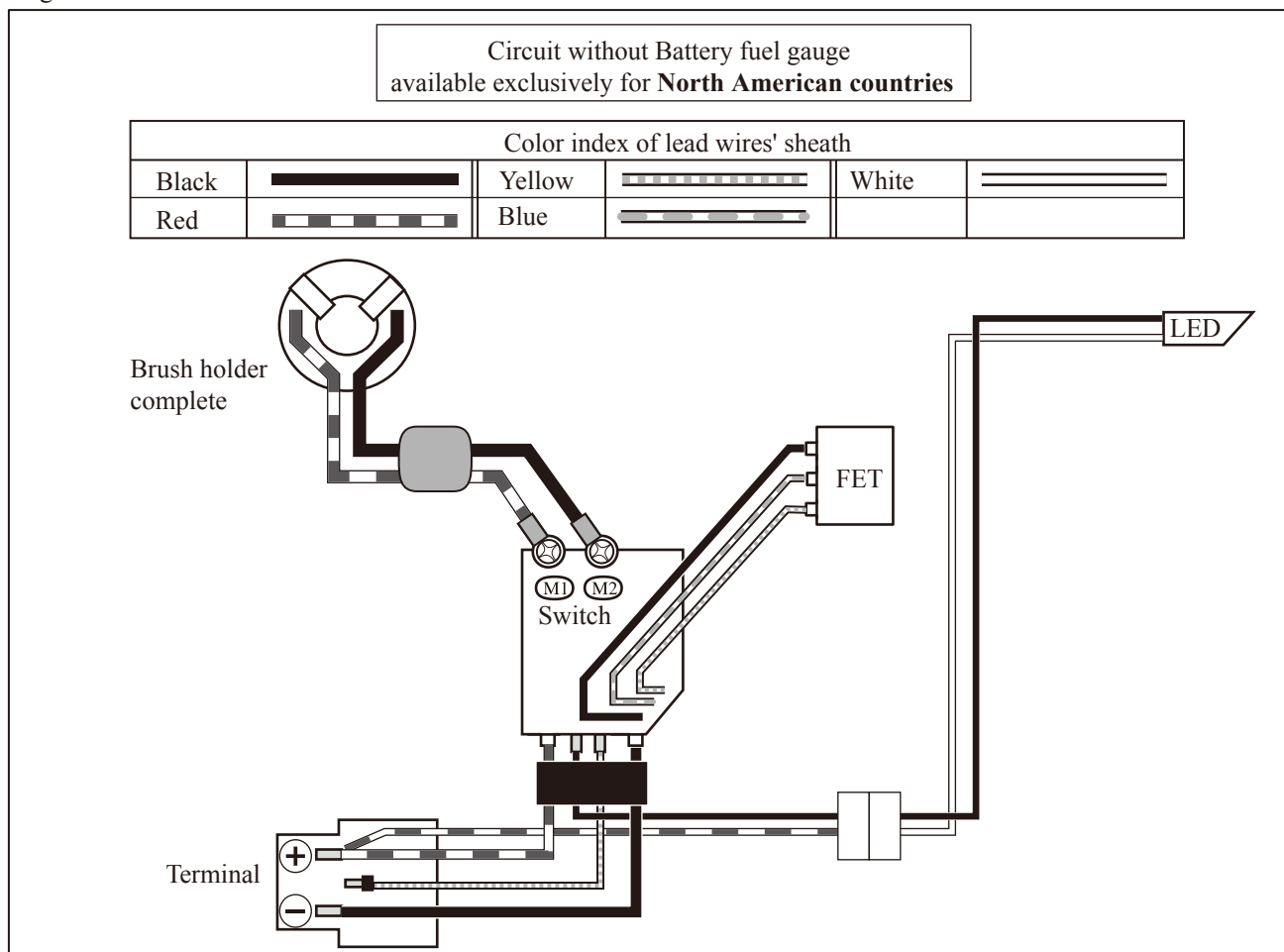


Fig. D-5



▶ Circuit diagram

Fig. D-1A



▶ Wiring diagram

Fig. D-2A

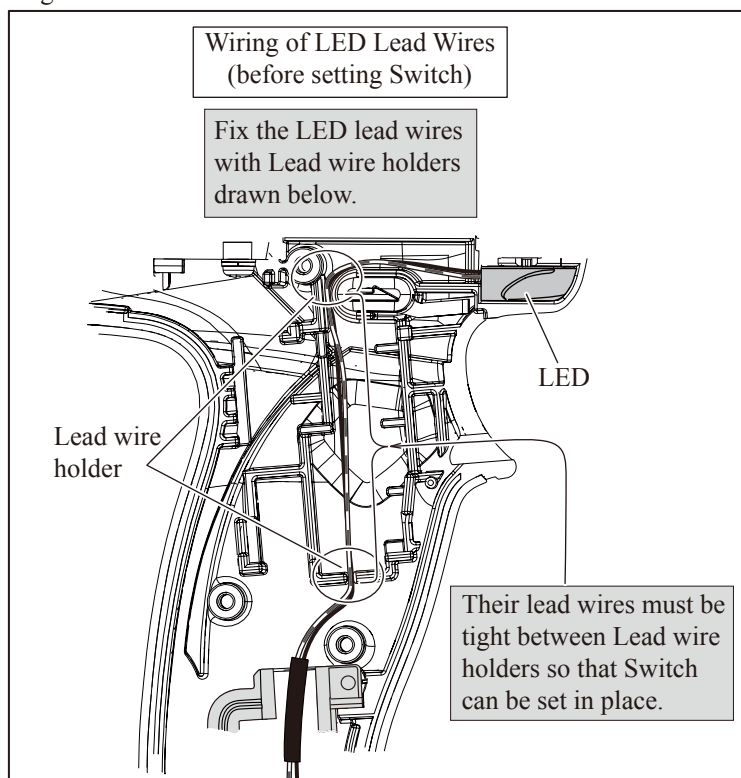
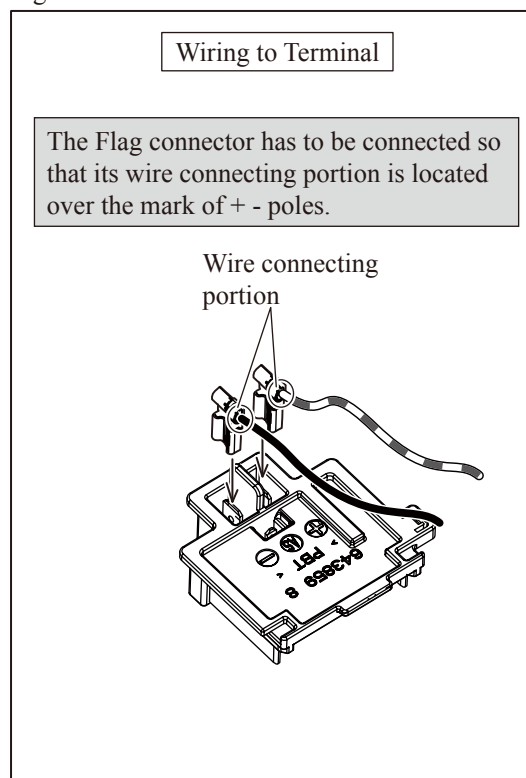


Fig. D-3A



▶ Wiring diagram

Fig. D-4A

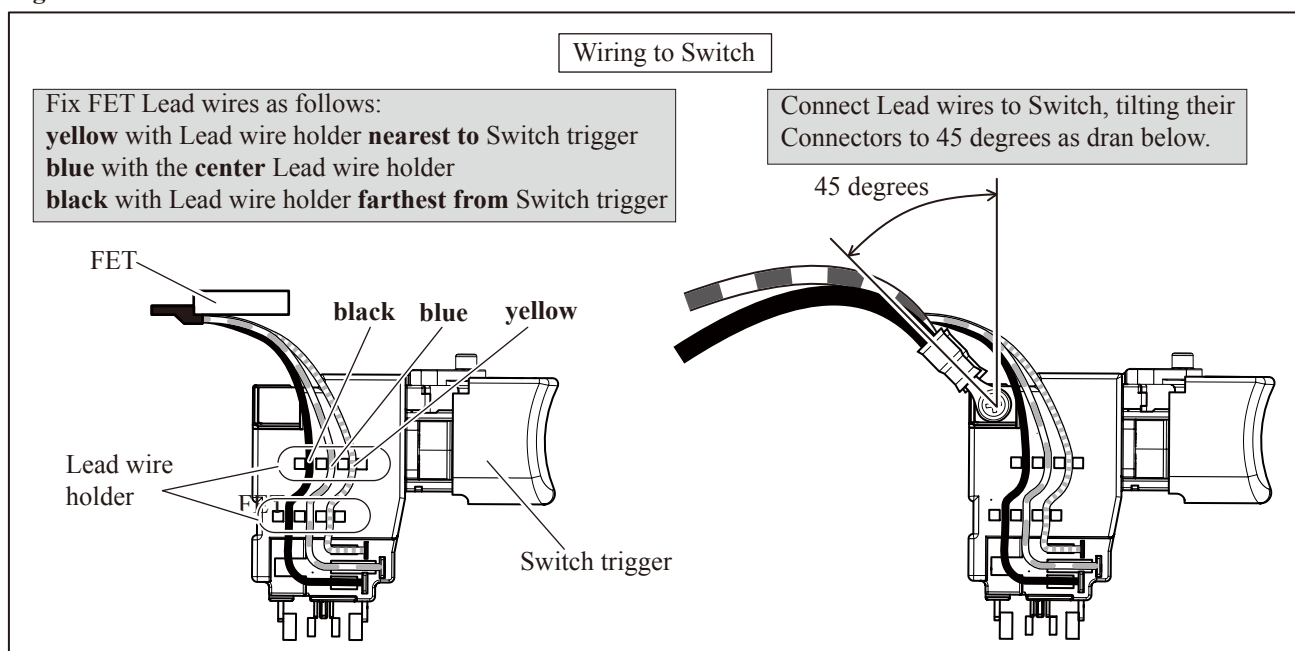
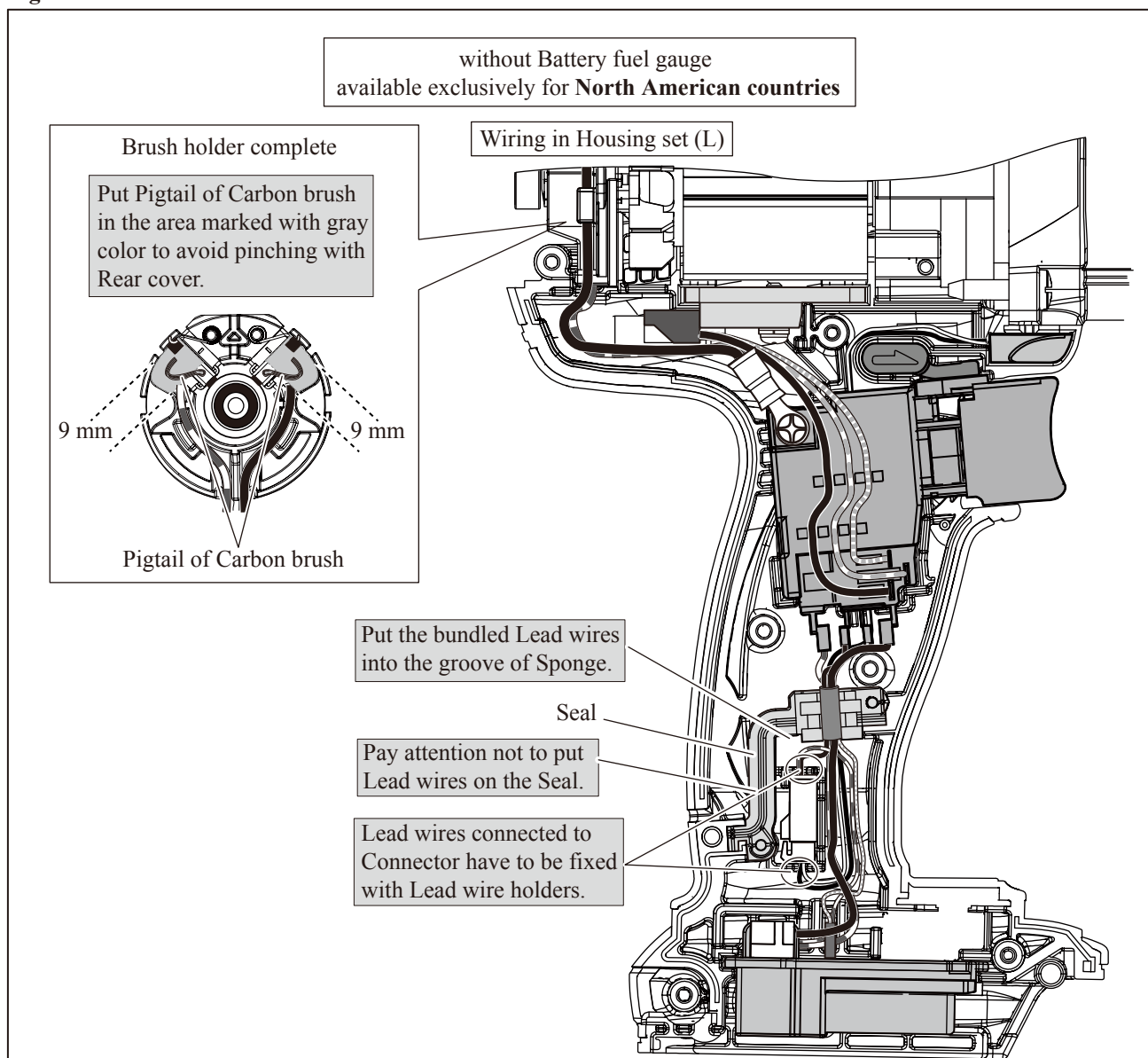


Fig. D-5A



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