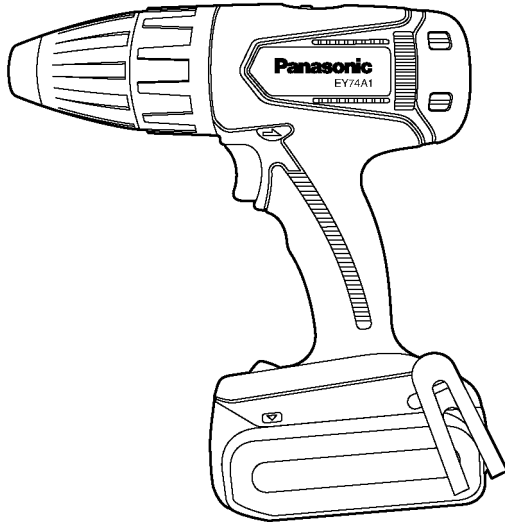


# Service Manual

Drill & Driver

Model No. **EY74A1**

Europe  
Oceania



## **⚠ WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

## **IMPORTANT SAFETY NOTICE**

There are special components used in this equipment which are important for safety. These parts are marked by **⚠** in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

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# Panasonic

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# 1 Warning

**Caution:**

- Pb free solder has a higher melting point than standard solder; Typically the melting point is 50 - 70°F (30 - 40°C) higher. Please use a soldering iron with temperature control and adjust it to 750 ± 20°F (400 ± 10°C). In case of using high temperature soldering iron, please be careful not to heat too long.
- Pb free solder will tend to splash when heated too high (about 1100°F / 600°C).

# 2 Specifications

## Main Unit

Model		EY7441	EY7940	EY74A1	
Motor voltage		14.4V		14.4V	18V
No load speed	Low	70~400 min <sup>-1</sup>		50~480 min <sup>-1</sup>	80~600 min <sup>-1</sup>
	High	200~1400 min <sup>-1</sup>		130~1400 min <sup>-1</sup>	220~1750 min <sup>-1</sup>
Blows Rate Per Minute	Low	-	1260~7200 min <sup>-1</sup>	-	-
	High	-	3600~25200 min <sup>-1</sup>	-	-
Chuck capacity		ϕ 1.5mm - ϕ 13mm			
Clutch torque		Approx 0.5N m-4.4Nm	Approx 1.0N m-4.4Nm	Approx 0.5N m-4.4Nm	
Overall length		193mm	200mm	203mm	
Weight (with battery pack EY9L44)		1.75kg	1.8kg	1.85kg	-
Weight (with battery pack EY9L45)		1.75kg	1.8kg	1.85kg	-
Weight (with battery pack EY9L50)		-	-	-	1.95kg
Weight (with battery pack EY9L51)		-	-	-	1.95kg
Noise vibration		Typical Noise Emission Values according to EN 60745; Sound Pressure Level (L <sub>pA</sub> ): 66.2 dB (A) Sound Power Level (L <sub>WA</sub> ): 77.2 dB (re1pw) Uncertainty (K): 3 dB Typical Vibration according to EN 60745: < 2.65 m/s <sup>2</sup> (Drilling into metal) Uncertainty (K): 1.5 m/s <sup>2</sup>			

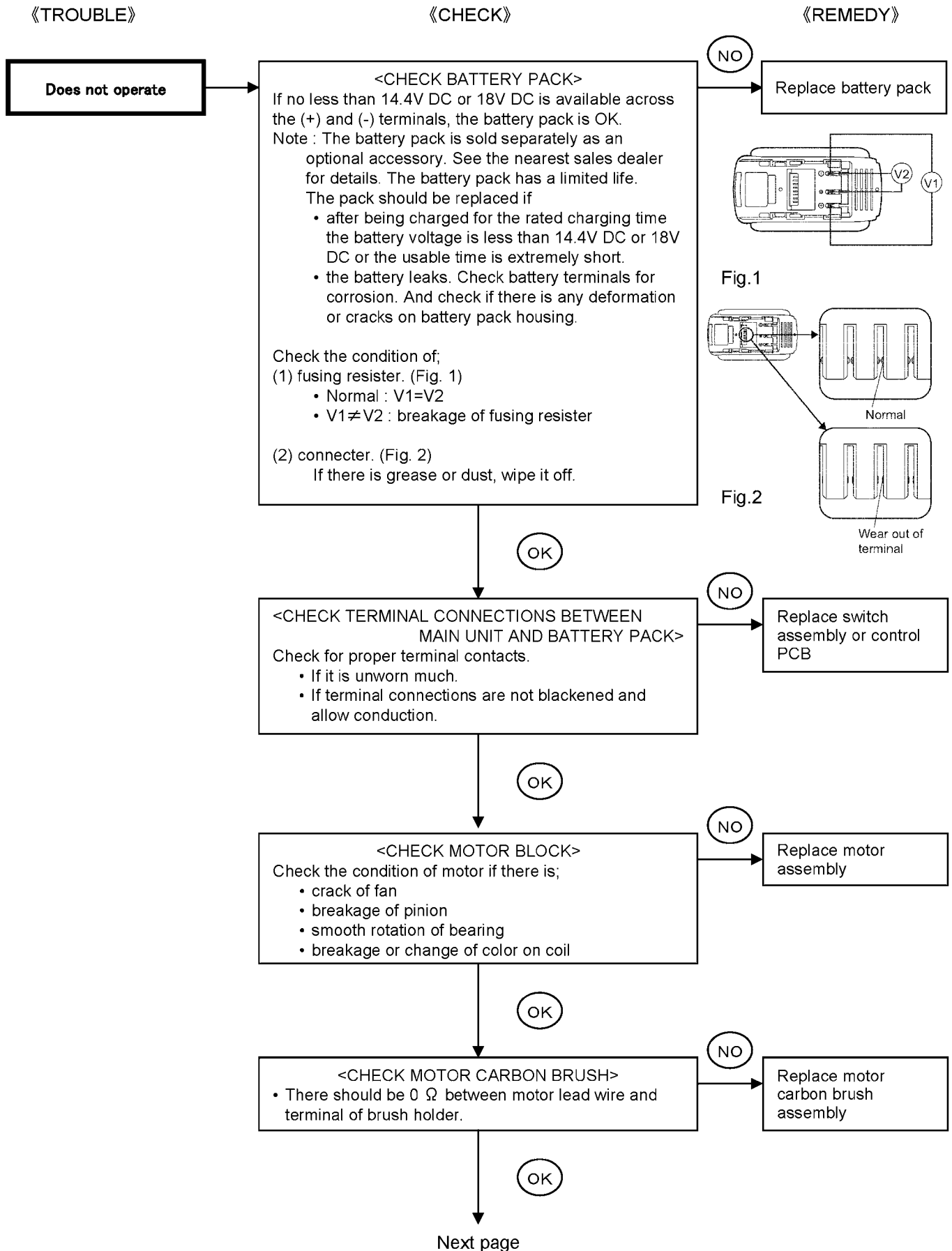
## Battery Pack

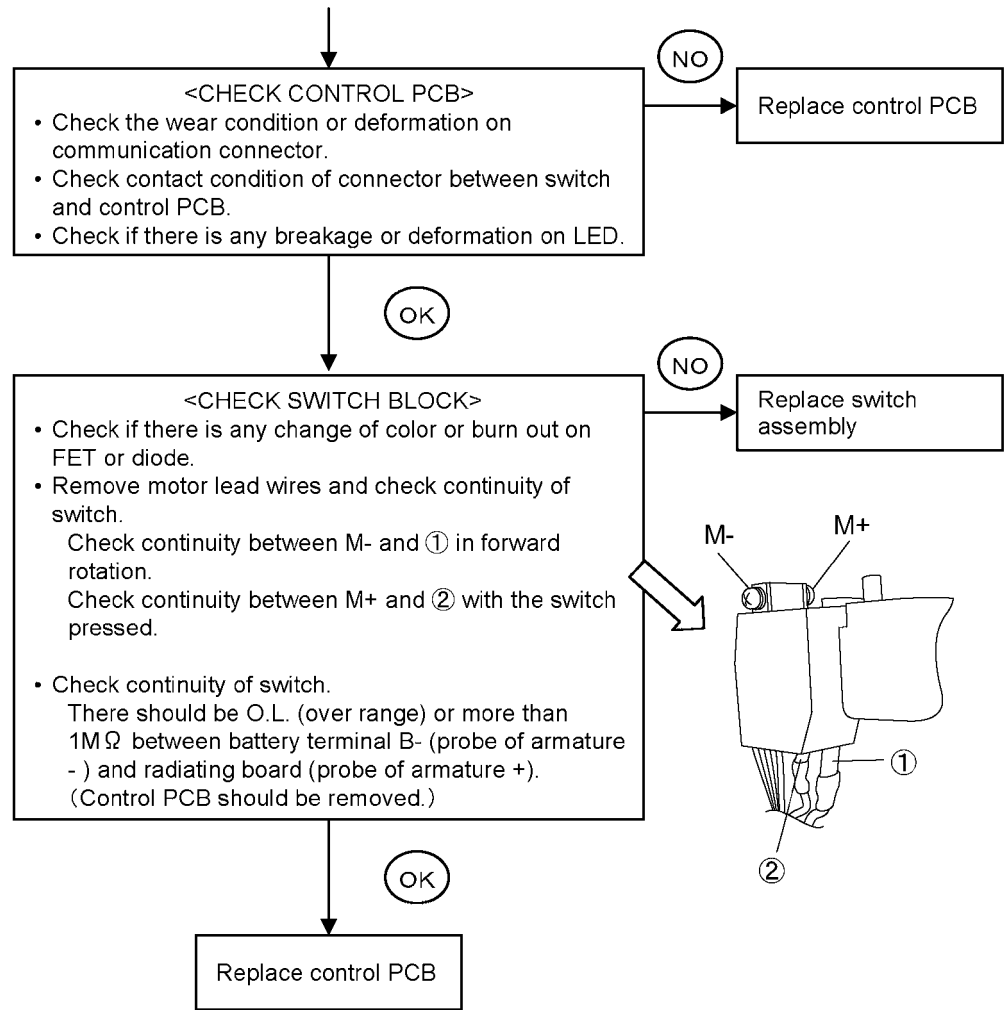
Model No.	EY9L41	EY9L42	EY9L44	EY9L45	EY9L50	EY9L51
Storage battery	Li-ion Battery					
Motor voltage	14.4V DC(3.6V x 4cells )		14.4V DC(3.6V x 8cells )		18V DC(3.6V x 10cells )	

**NOTE :** This chart may include models that are not available in your area. Please refer to the latest general catalogue.

# 3 Troubleshooting Guide

## 3.1. Troubleshooting Guide (Refer to Wiring Connection Diagram)



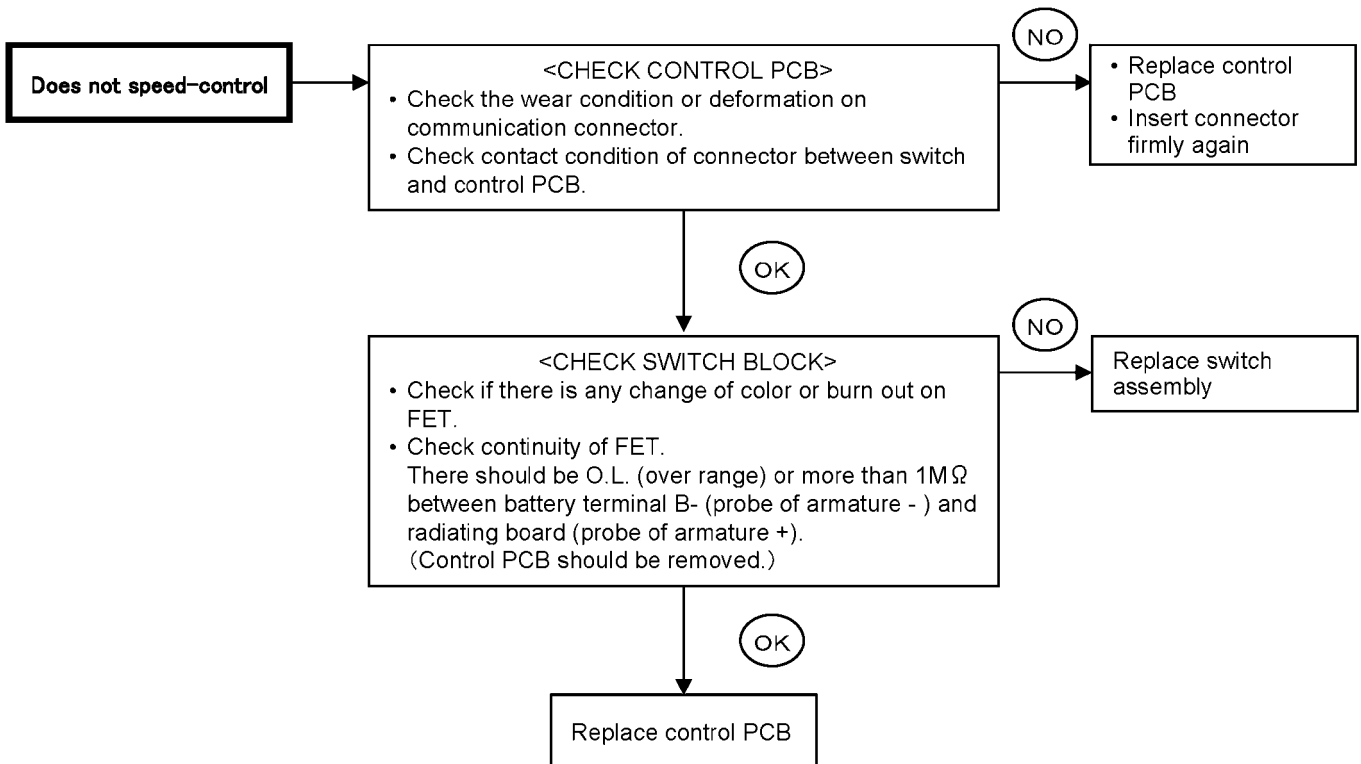


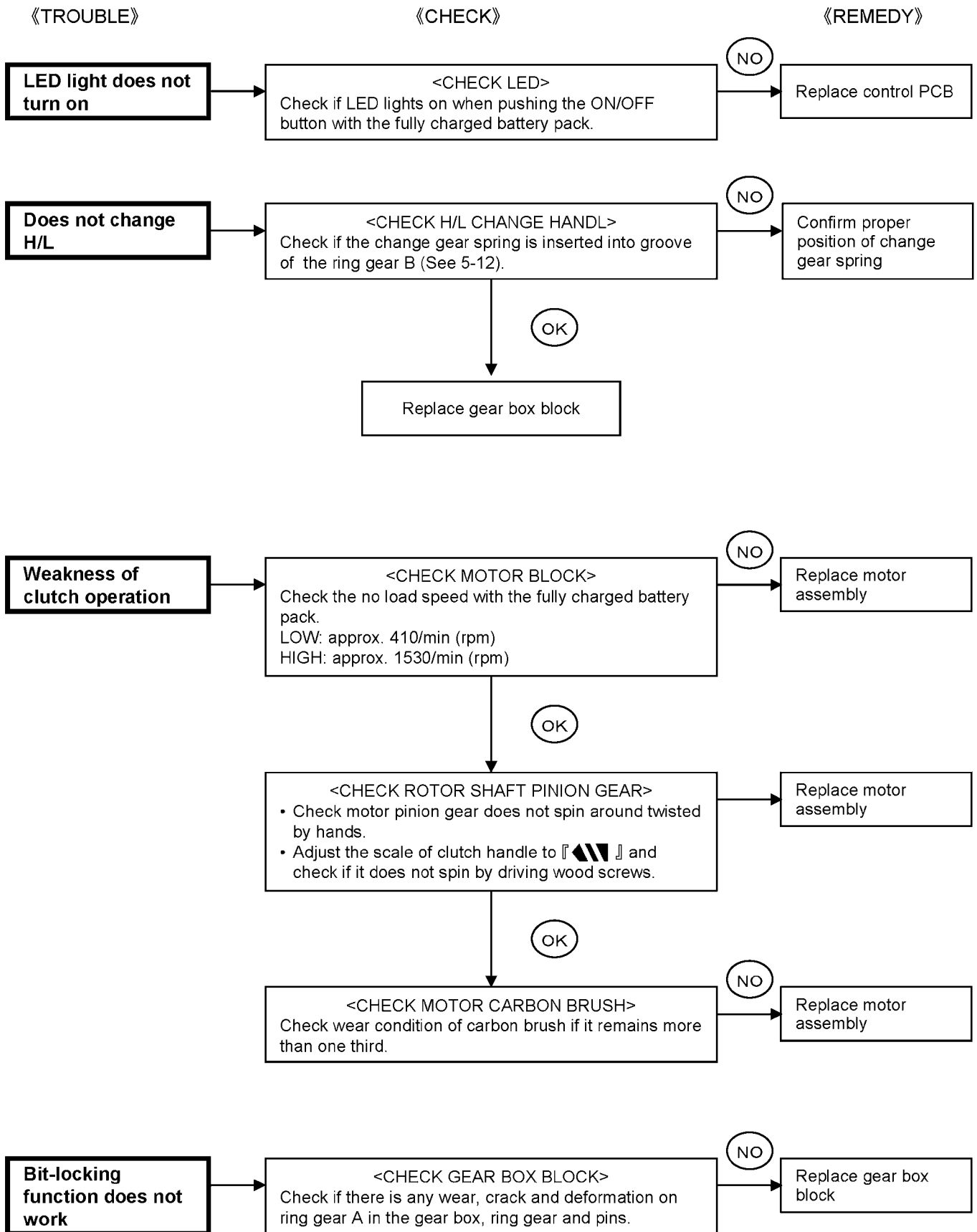
《TROUBLE》

《CHECK》

《REMEDY》

\*Check if the motor rotation become higher as the amount of depression of switch handle.






## 3.2. Trial Operation (after checking Troubleshooting Guide)

### 3.2.1. Assembly

- Confirm if there is no gap between housing A and B by pinching lead wires.
- There is no dust or deformation on battery terminals.
- Confirm if there is no dirt when repairing.

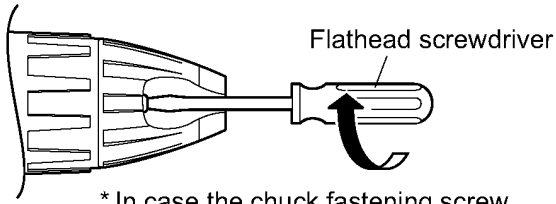
### 3.2.2. Operation

- Confirm the forward and reverse side of rotation.
- Confirm if LED lights ON. Once battery pack is removed, press the switch handle; otherwise LED does not light ON.
- Check if the motor rotation become higher as the amount of depression of switch handle.
- Check if the rotation speed is normal rated value.  
High : 1,750/min (rpm) at 18V, 1,400/ min (rpm) at 14.4V  
Low : 600/min (rpm) at 18V, 450/ min (rpm) at 14.4V
- Confirm the action when setting the drill mode 『』.
- Confirm if the rotation stops immediately when releasing the switch handle.
- Confirm if the chuck jaws move smoothly and hold the bit firmly.
- Check if the clutch torque changes suited for the number of clutch.
- Confirm if the chuck is assembled firmly and chuck jaws operate normally.
- Confirm if there is no abnormal sound when shaking the unit with the switch on.

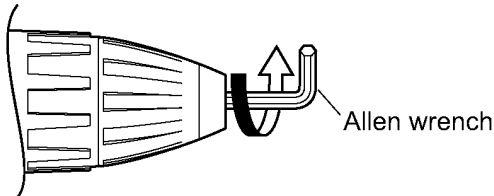
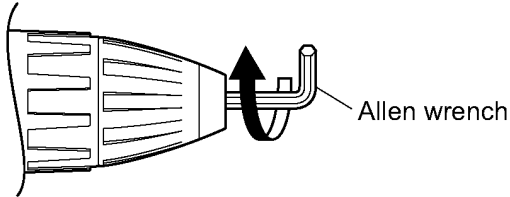
# 4 Disassembly and Assembly Instructions

\*Please assemble by opposite procedure.

## 4.1. How to remove the keyless chuck



\* In case the chuck fastening screw will not come loose



1. Use a screwdriver to turn the chuck fastening screw inside the chuck clockwise direction, and remove the screw.

**NOTE:**

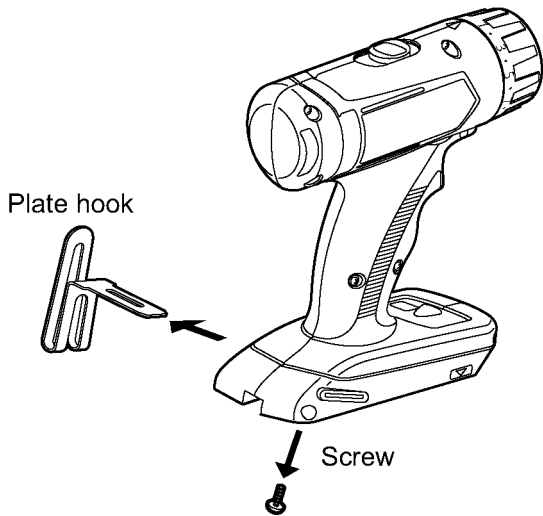
If the chuck fastening screw will not come loose, insert the allen wrench into the chuck and lightly tap in the clockwise direction to tighten the chuck, and then loosen the chuck fastening screw.

2. Insert the allen wrench into the chuck, and turn counterclockwise direction with holding the unit by the vise to remove the chuck.

**NOTE:**

If the chuck is broken, use a pipe wrench and turn counterclockwise direction to remove the chuck.

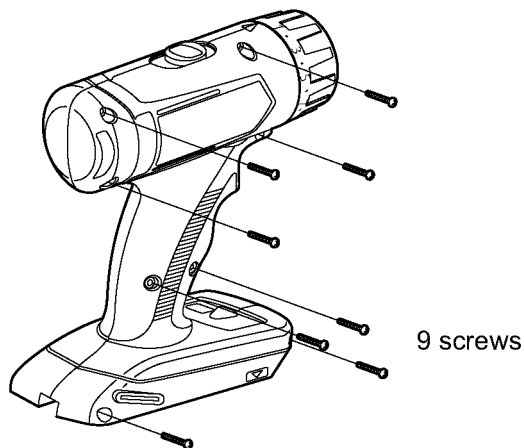
## 4.2. How to remove the housing



1. Remove the screw.
2. Remove the plate hook.

**For assembly :**

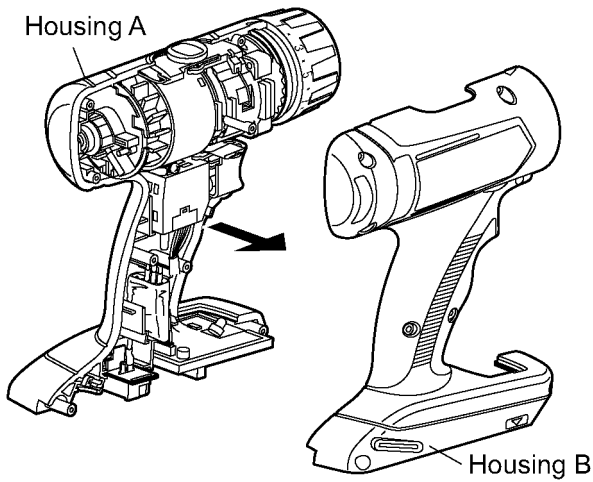
Tightening torque value;  
 $1.3 \pm 0.3 \text{Nm} \{13 \pm 3 \text{kgf} \cdot \text{cm}\}$



3. Remove the 9 screws.

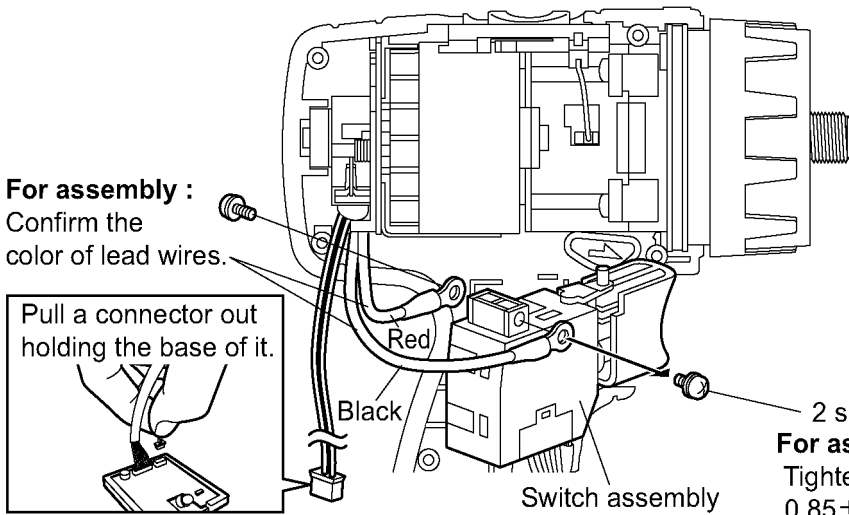
**For assembly :**

Tightening torque value;  
 $0.98 \pm 0.2 \text{Nm} \{10 \pm 2 \text{kgf} \cdot \text{cm}\}$



4. Take out housing B from housing A.

### 4.3. How to remove the lead wires from the motor brush assembly and the control PCB.

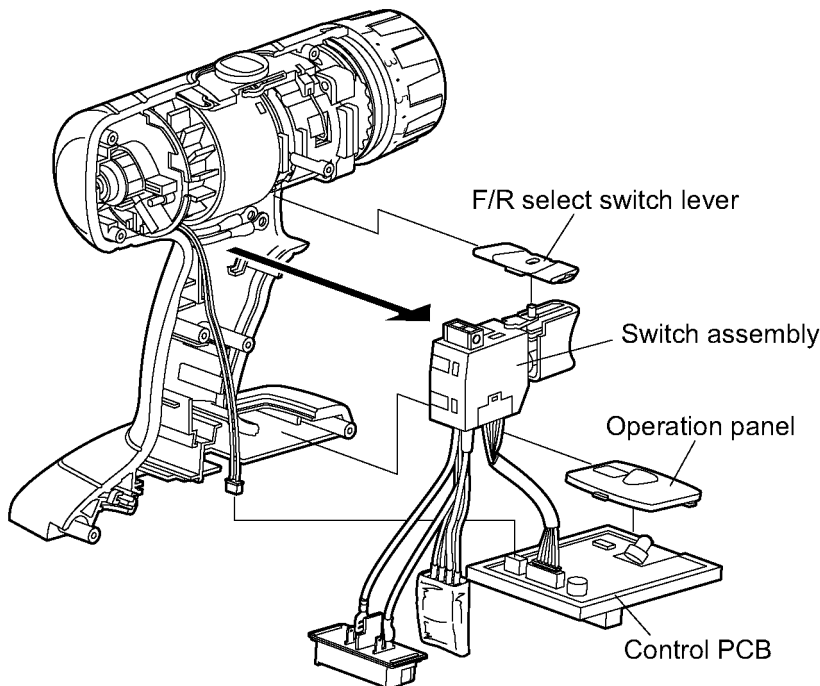


1. Remove 2 screws of the switch assembly.

2. Remove the 2P connector from the control PCB.

**For assembly :**  
Tightening torque value;  
 $0.85 \pm 0.2 \text{Nm} \{8.7 \pm 2 \text{kgf} \cdot \text{cm}\}$

### 4.4. How to remove the switch assembly



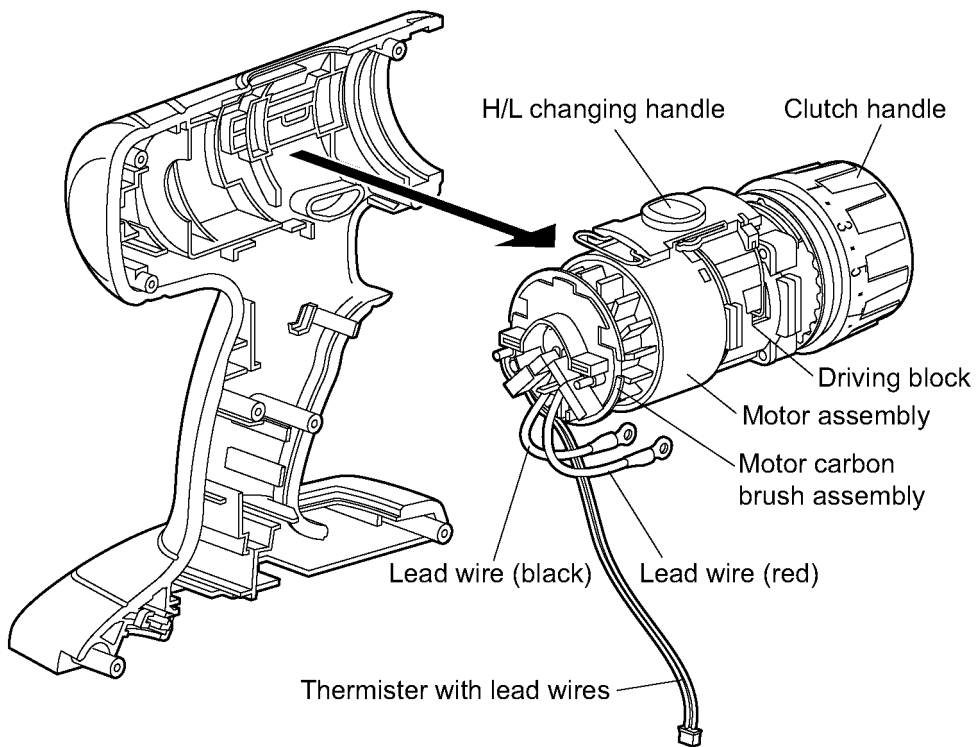
1. Remove the switch assembly and other parts from the housing A.

**For assembly :**  
Insert F/R select switch lever into the housing first.

**For assembly :**  
Cover the operation panel over the LED on the control PCB first and then assemble the control PCB to the housing.



#### 4.5. How to remove the driving block

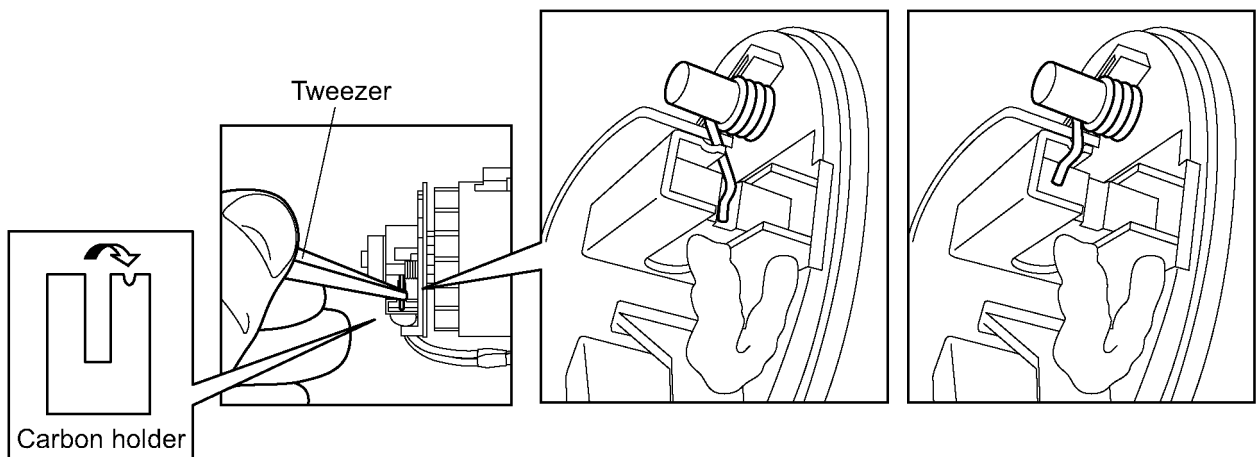


1. Remove the driving block and other parts from the housing A.

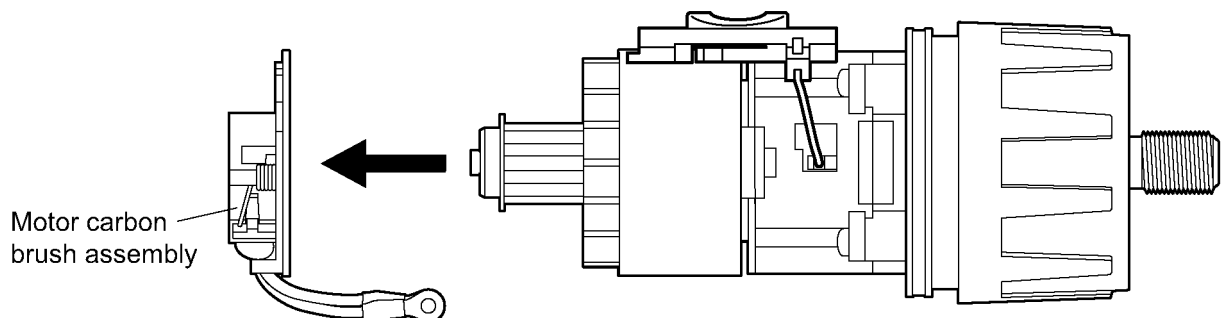
**For assembly:**  
Place the H/L changing handle and the motor carbon brush assembly in groove of the housing.

#### 4.6. How to remove the motor carbon brush assembly

1. Hitch up two springs to the chase of carbon holders with tweezers.

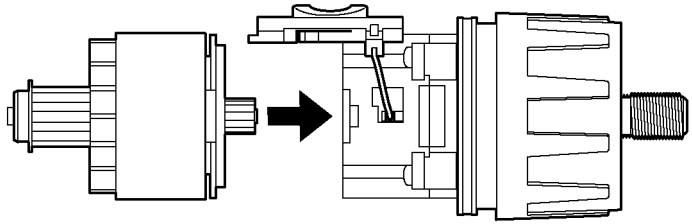
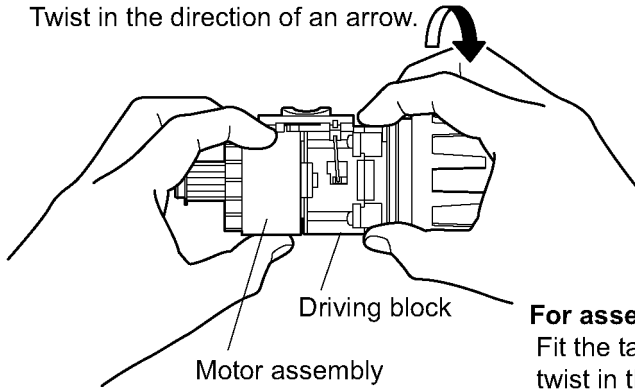


2. Take out the motor carbon brush assembly from the motor assembly.



## 4.7. How to remove the driving block and the motor assembly

Twist in the direction of an arrow.



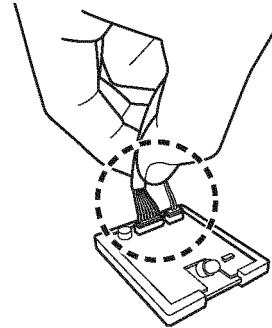
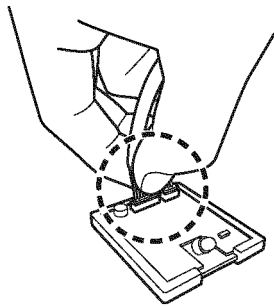
**For assembly :**

Fit the tabs of the motor to the groove of the driving block and twist in the reverse direction of removal till clicking.

## 4.8. How to remove the control PCB

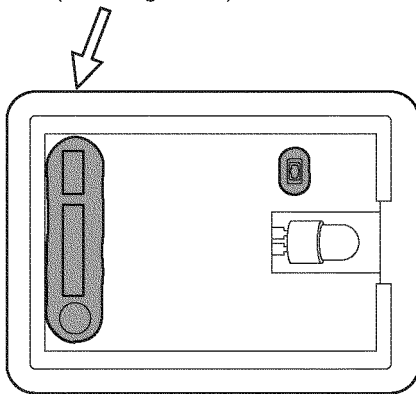
○ Pull the connector out holding the base of it.

✗ Holding the lead wire makes it broken.

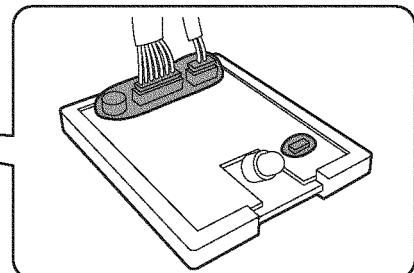
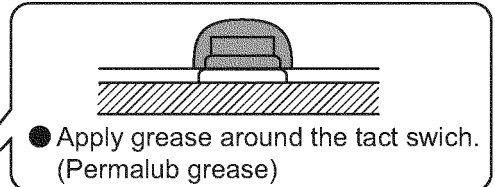


● **For assembly of the control PCB :**  
Confirm to insert the connector firmly.  
Apply grease inside of connector.  
(FLOIL grease)

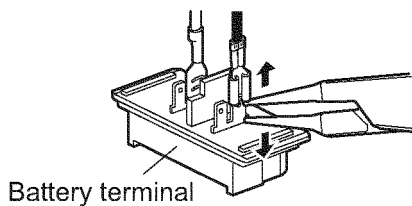
**NOTE :** Be sure to apply grease.



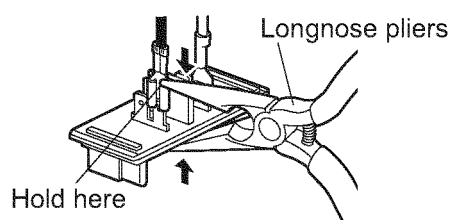
Place putting grease



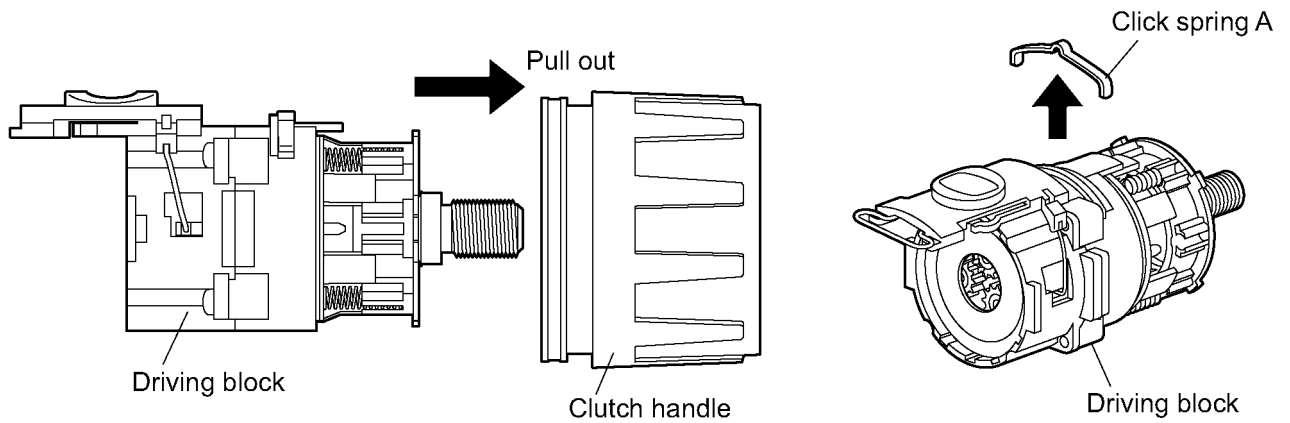
● Removal of the battery terminal



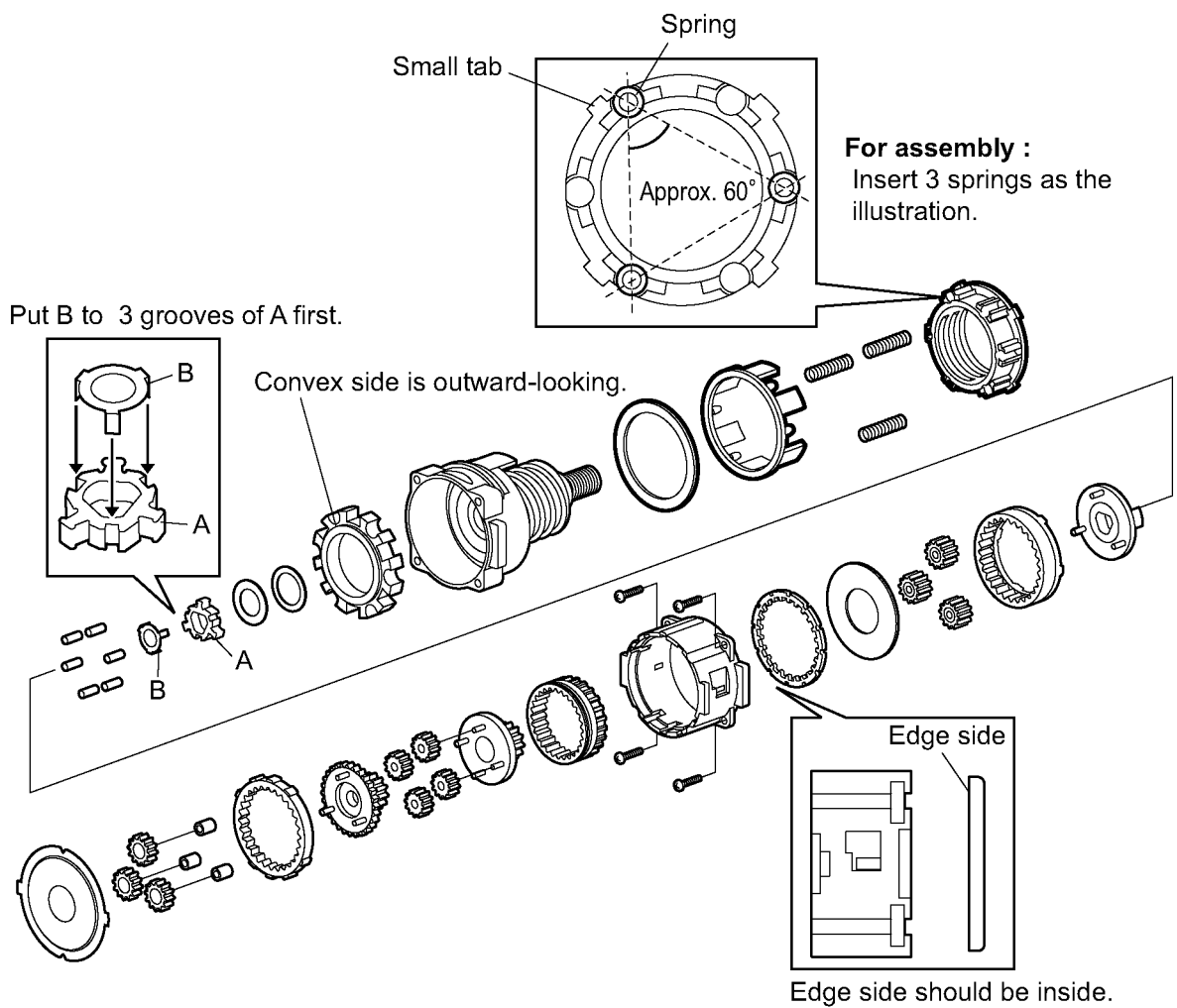
● Assembly of the battery terminal



#### 4.9. How to remove the clutch handle, click spring A and H/L change handle

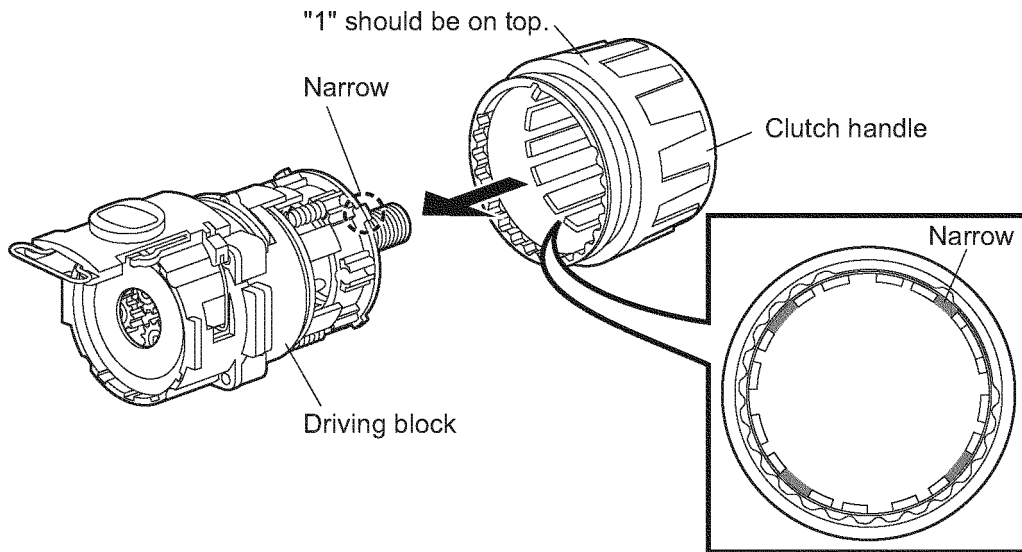
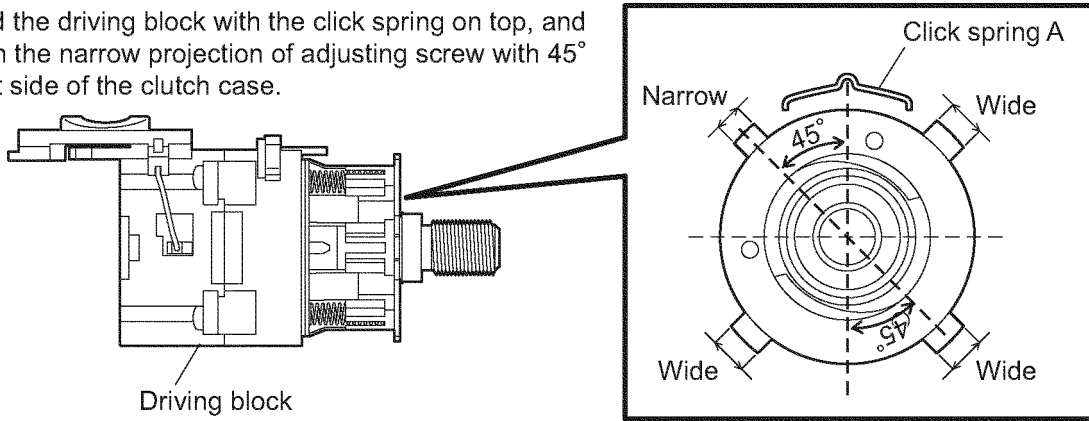


#### 4.10. Disassembly and assembly for the driving block

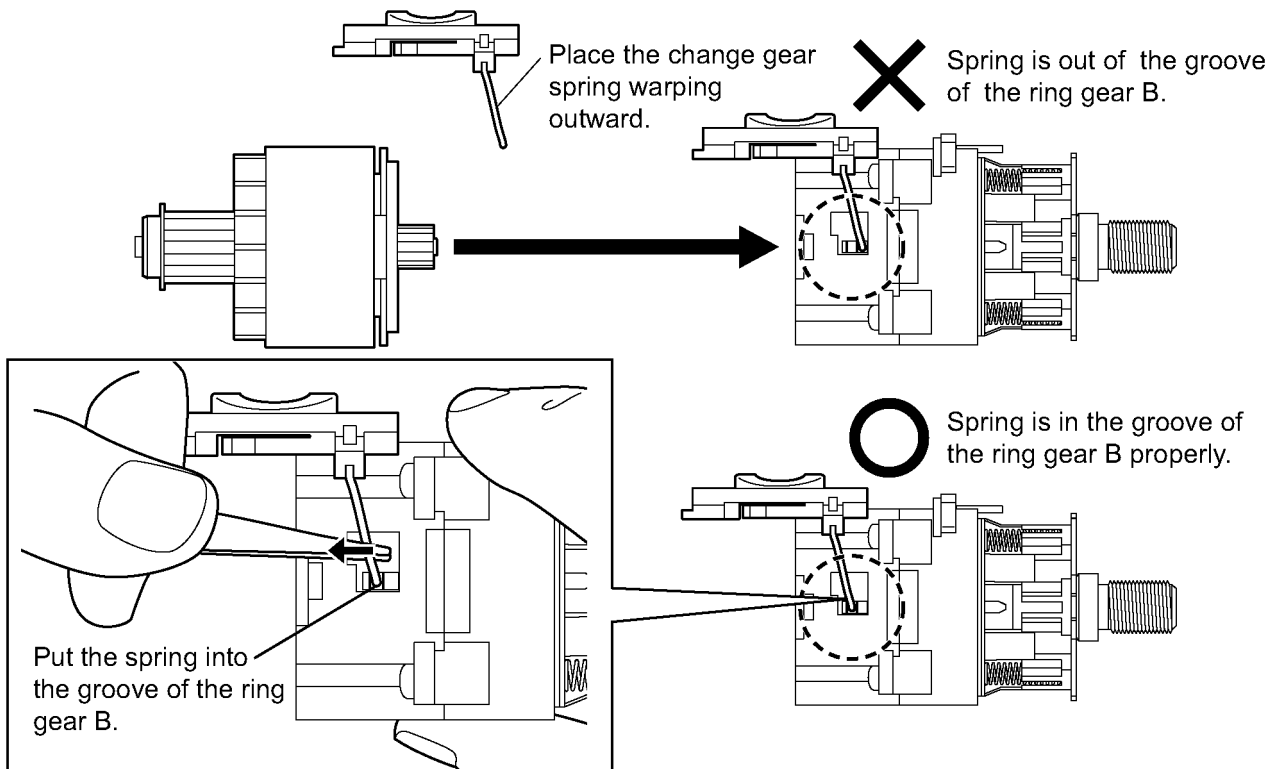


## 4.11. Assembly of the driving block and the clutch handle

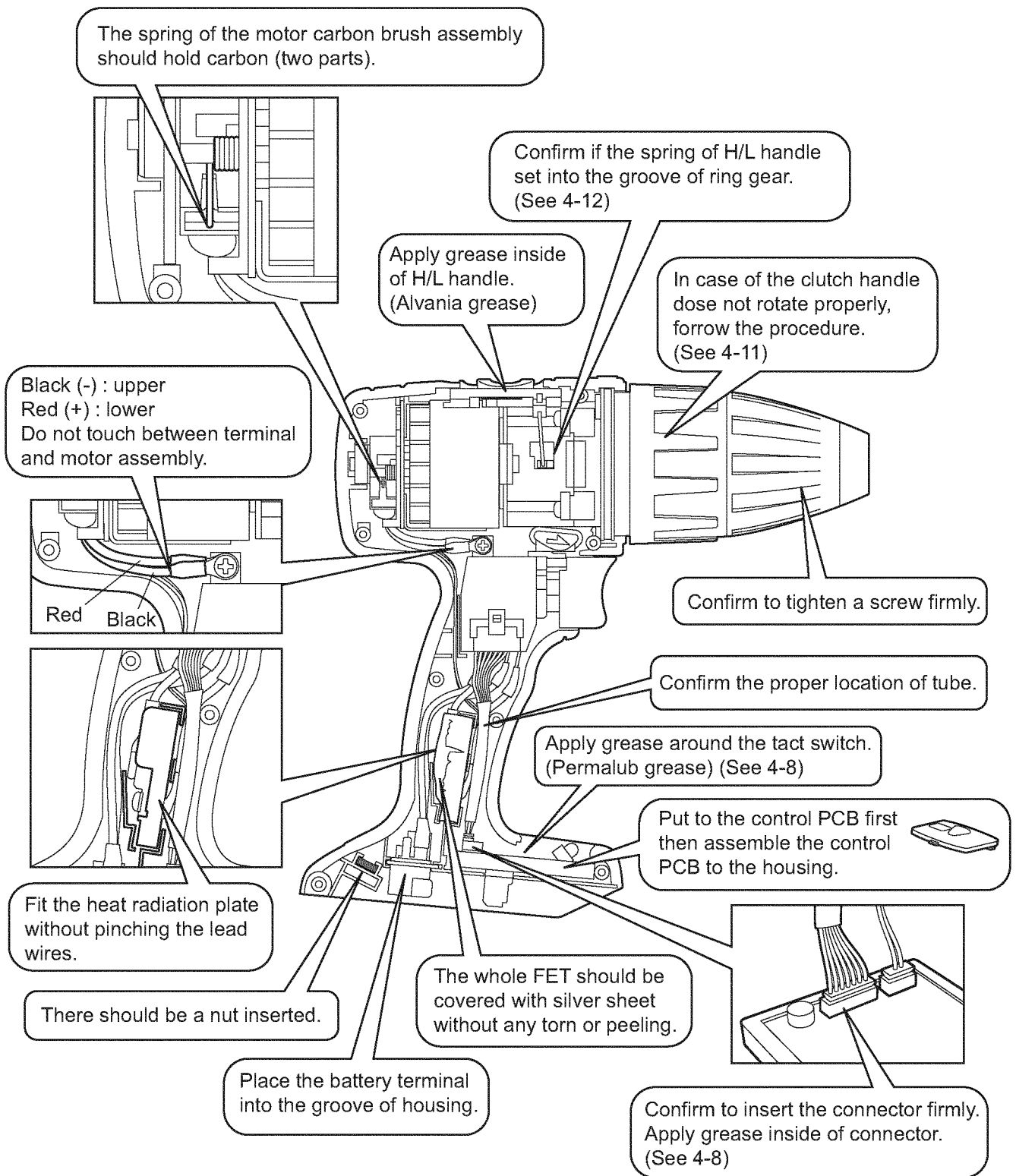
Hold the driving block with the click spring on top, and align the narrow projection of adjusting screw with 45° right side of the clutch case.



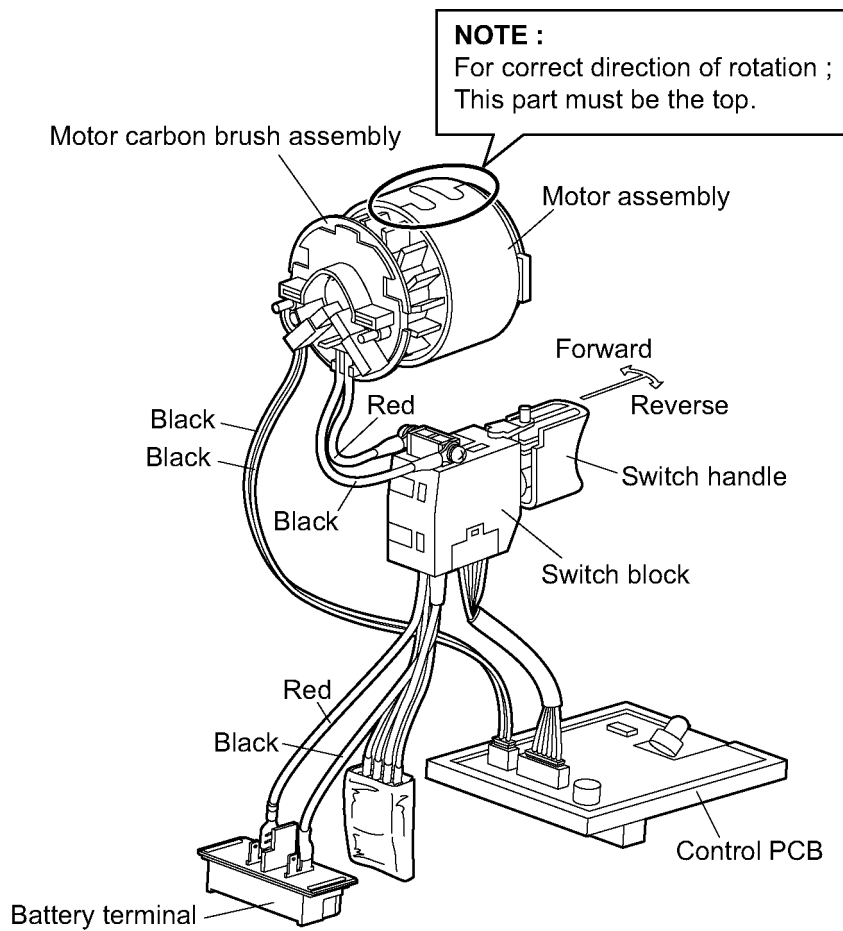
## 4.12. Assembly of the H/L change handle



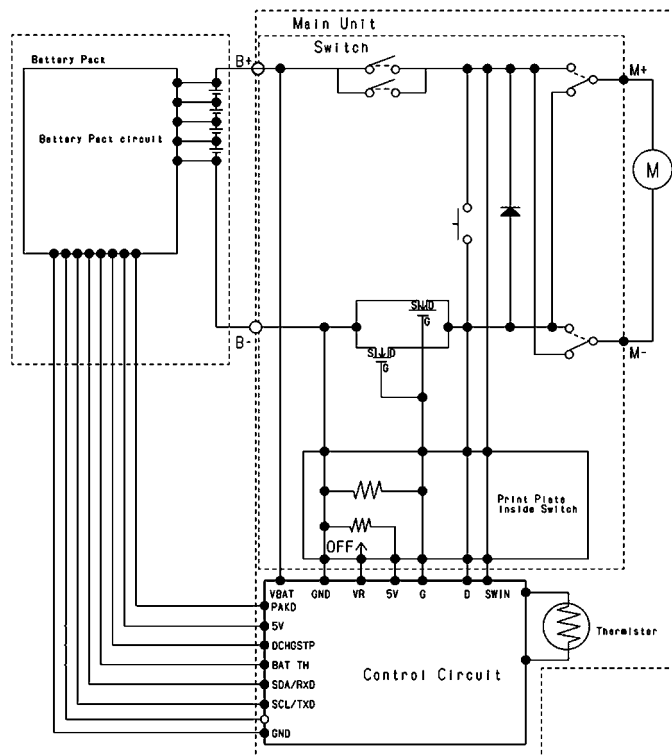
## 4.13. Caution for assembly



## 5 Wiring Connection Diagram

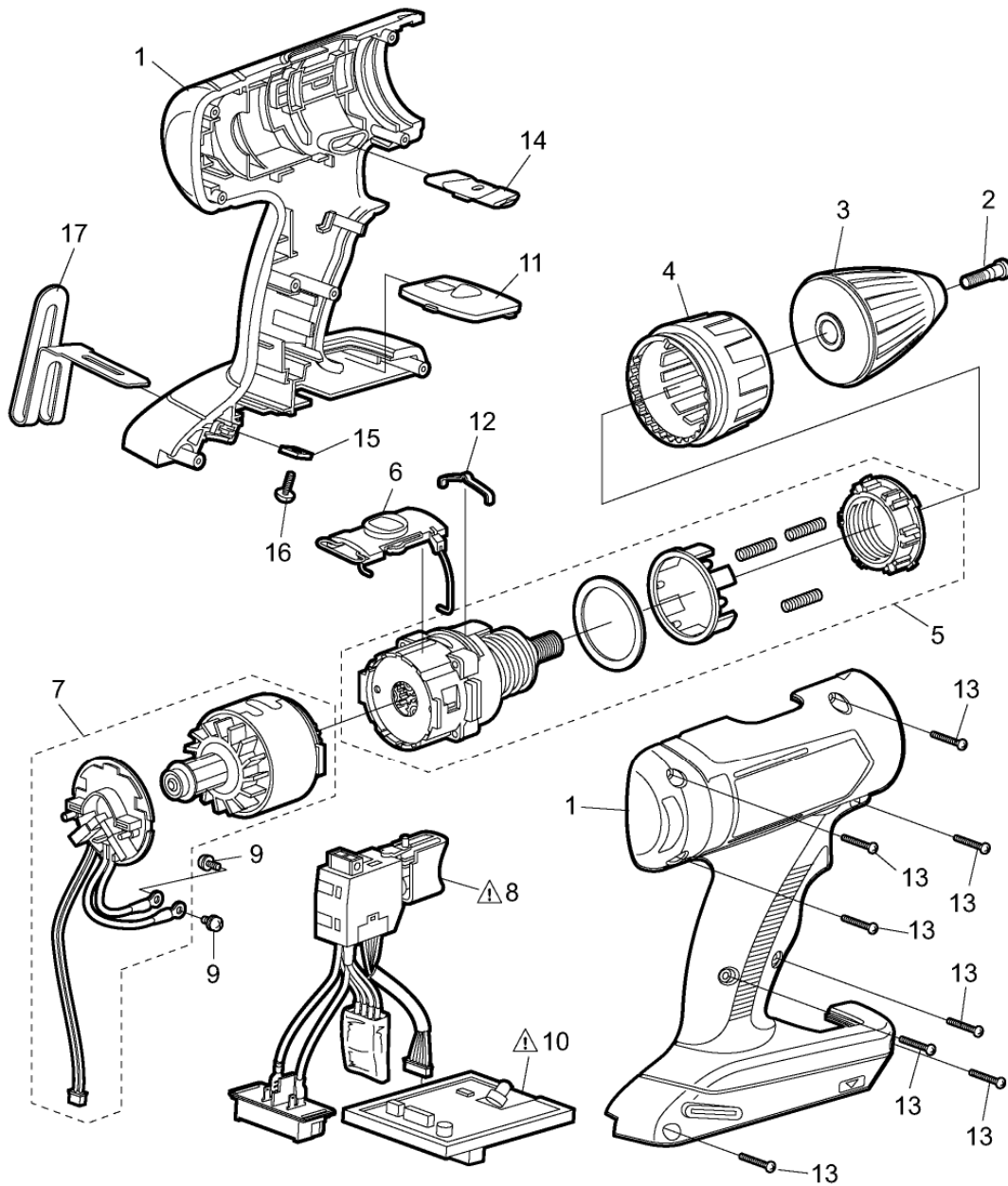


## 6 Schematic Diagram

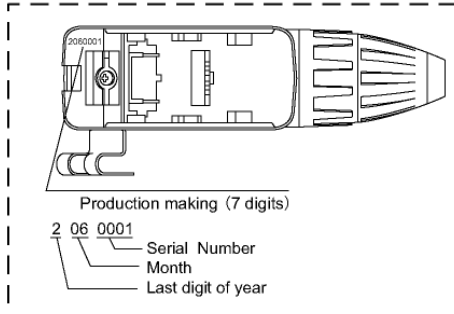


# +9l d`cXYX`J]Yk `UbX`FYd`UWYa YbhDUfHg`@gh



Model No. : EY74A1 Exploded View



- \* Battery Pack is available as an optional accessory. See the nearest sales dealer for details.
- \* For replacement parts of charger, see the charger service manual. Charger complete set is available as an optional accessory. See the nearest sales dealer for details.



## Model No. : EY74A1 Parts List

Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
	1	WEY74A1H3078	HOUSING AB SET	1	(only for Europe)
	1	WEY74A1H3079	HOUSING AB SET	1	(only for Oceania)
	2	WEY65450L6806	CHUCK FASTENING SCREW	1	
	3	WEY7441K7917	KEYLESS CHUCK	1	
	4	WEY74A1K3228	CLUTCH HANDLE	1	
	5	WEY74A1L4058	DRIVING BLOCK	1	
	6	WEY7460H3237	H/L CHANGE HANDLE	1	
	7	WEY74A1L1008	MOTOR ASSEMBLY	1	
	8	WEY7441L2007	SWITCH ASSEMBLY	1	
	9	WEY7441L6028	SCREW	2	
	10	WEY74A1L2118	MAIN PCB ASSEMBLY	1	
	11	WEY7460K3958	OPERATION PLATE	1	
	12	WEY74A1L0178	CLICK SPRING A	1	
	13	WEY6230K9216	TORX TAPPING SCREW	8	
	14	WEY7547H3247	F/R SELECTOR HANDLE	1	
	15	WET7441L6487	NUT	1	M4
	16	WEY7441K6217	SCREW	1	4*14
	17	WEY7543K3187	PLATE HOOK	1	
	—	WEY74A1K7018	TOOL CASE	1	(only for Europe)
	—	WEY74A1L7019	TOOL CASE	1	(only for Oceania) (14.4V)
	—	WEY74A1K7010	TOOL CASE	1	(only for Oceania) (18V)
	—	WEY74A1L8088	POERATING INSTRUCTIONS	1	