

Service Manual

Cordless Drill & Driver

Model No. EY7420

Europe



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

2.1. MAIN UNIT

Motor		7.2V DC
No load speed	LOW	0 ~ 300 min ⁻¹ (rpm)
	HIGH	0 ~ 900 min ⁻¹ (rpm)
Maximum torque	LOW	6.0N·m (61kgf·cm, 53.24 in-lbs)
	HIGH	2.0N·m (20kgf·cm, 17.75 in-lbs)
Clutch torque		Approx. 0.3Nm (3.0kgf·cm, 2.6in-lbs) – 4.0Nm (41.0kgf·cm, 35.6in-lbs)
Overall length		145mm (5-7/10")
Weight (with battery pack EY9L20)		0.63kg (1.39lbs)
Noise, Vibration		Typical Noise Emission Values according to EN 60745; Sound Pressure Level (L _{pA}); 62 dB (A) Sound Power Level (L _{WA}); 73 dB (re1pw) Uncertainty (K): 3 dB Typical Vibration according to EN 60745: ≤2.5 m/s ² (Drilling into metal) Uncertainty (K): 1.5 m/s ²

2.2. MAXIMUM RECOMMENDED CAPACITIES

Screw driving	Machine screw	LOW	M5
		HIGH	M4

2.3. BATTERY PACK

Model	EY9L20
Storage battery	Li-ion
Battery voltage	7.2 V DC (3.6 V × 2 cells)
Charging time	Usable: 35 min
	Full: 60 min

2.4. BATTERY CHARGER

Model	EY0L20
Rating	See the rating plate on the bottom of the charge.
Weight	0.43 kg (0.95 lbs)

NOTE : This chart may include models that are not available in your area.
Please refer to the latest general catalogue.
For the dealer name and address, please see the included warranty card.

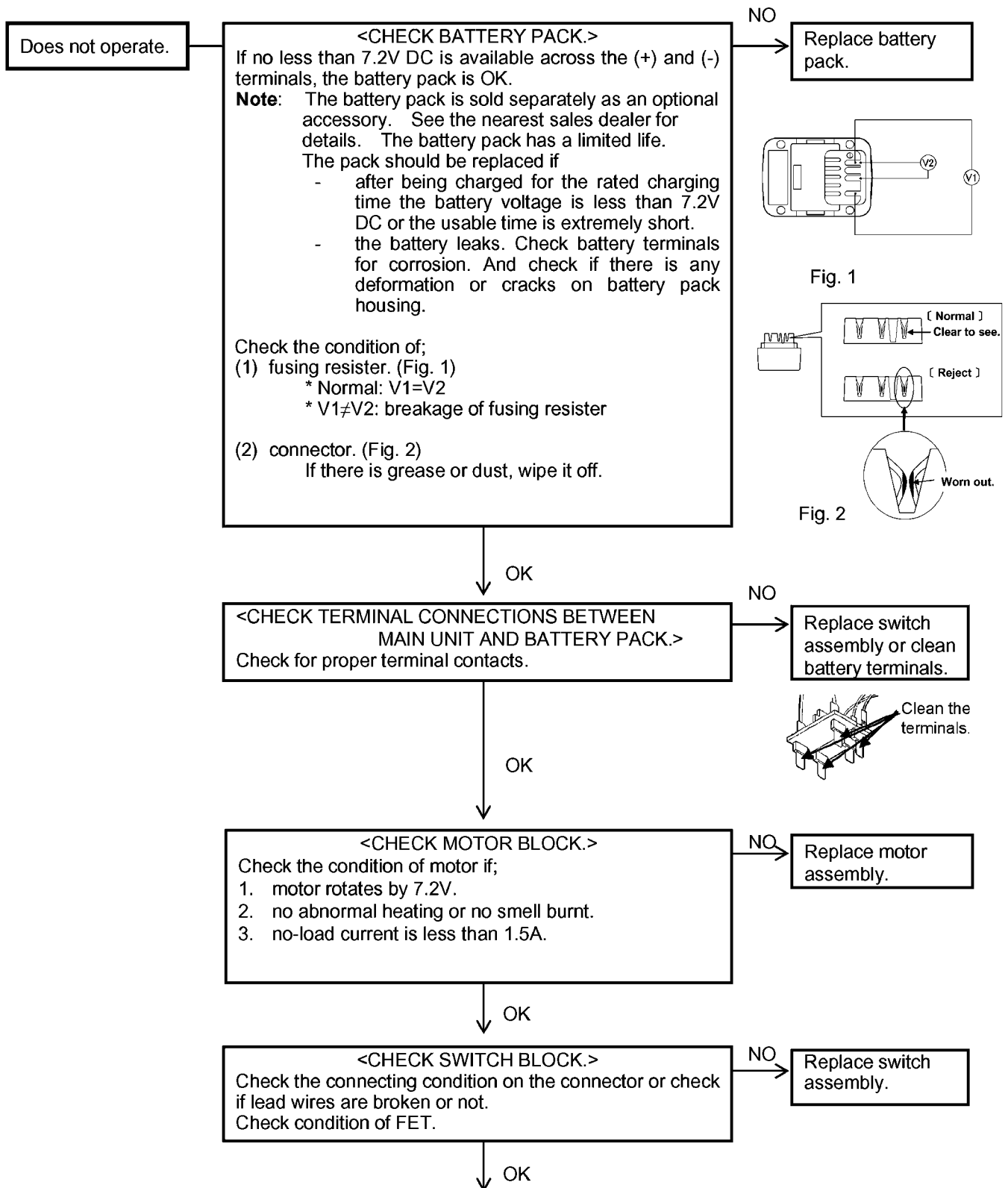
3 Troubleshooting Guide

(Refer to Wiring Connection Diagram)

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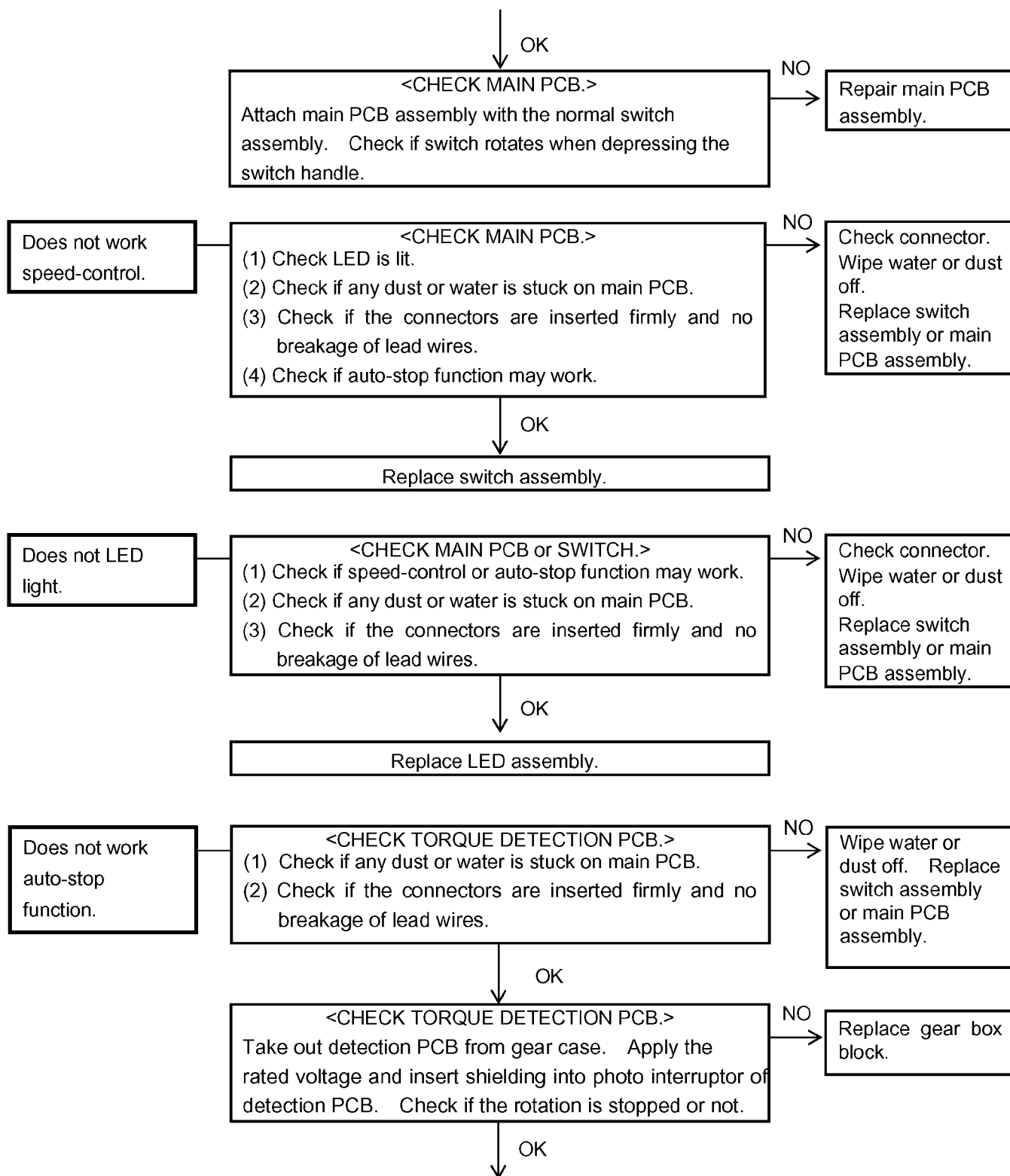
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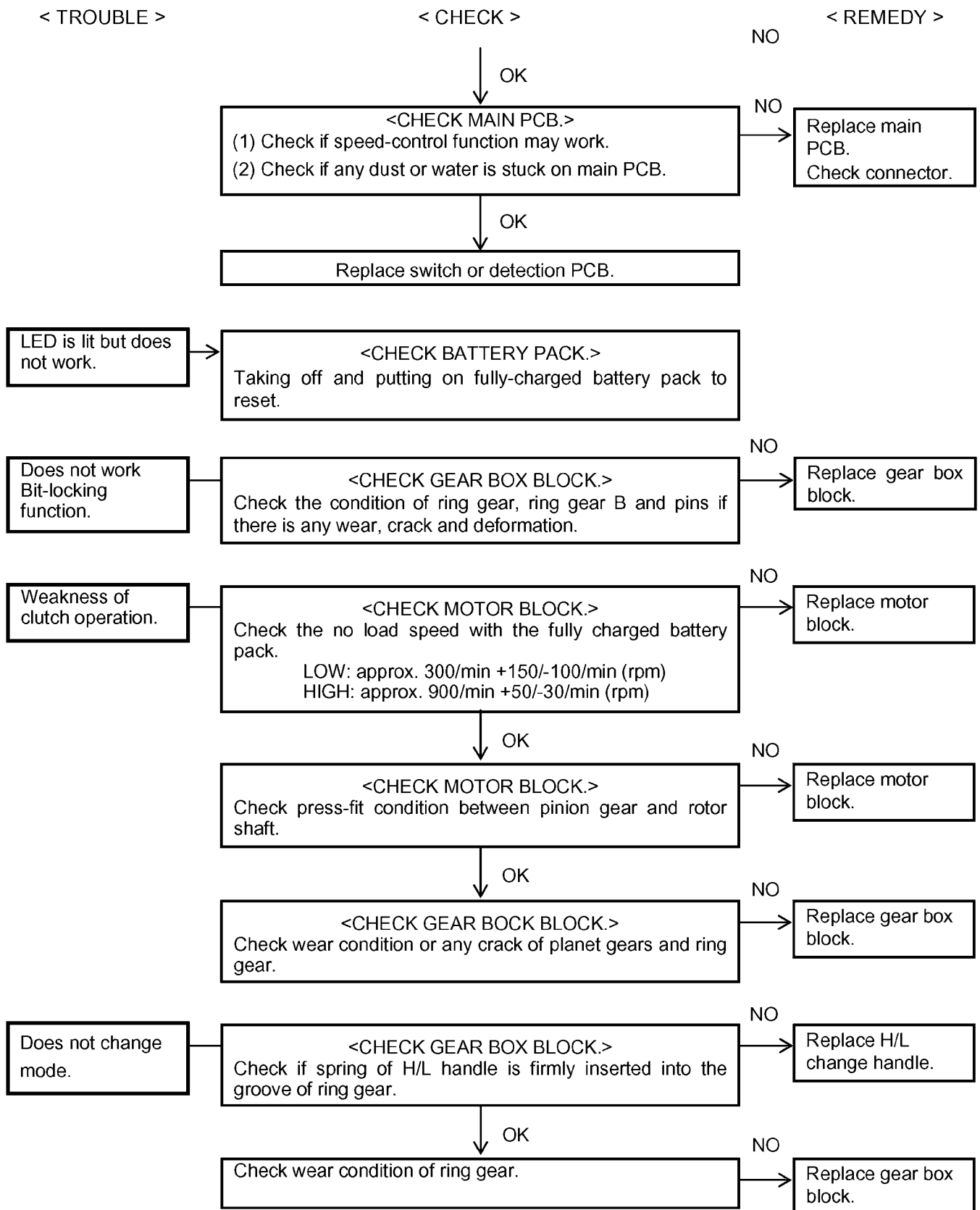


< TROUBLE >

< CHECK >

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3.1. Trial Operation (after checking Troubleshooting Guide.)

3.1.1. ASSEMBLY

1. Confirm if there is NO gap between Housing A and B by pinching the lead wires.
2. Confirm all screws are tightened firmly.
3. There should be no metallic sound and abnormal sound.
4. There is no dust or deformation on battery terminals.
5. Confirm if there is no dirt when repairing.

3.1.2. OPERATION

1. Confirm the forward and reverse side of rotation.
2. Confirm the smooth changing of HIGH and LOW handle and its changing mode.
3. Confirm if LED lights ON. Once battery pack is removed and attached, press the switch handle, otherwise LED does not light ON.
4. Confirm the smooth sliding of bit holder and to hold the bit firmly.
5. Confirm if the rotation;
HIGH: 0-900 +150/-100 rpm LOW: 0-300 +50/-30 rpm

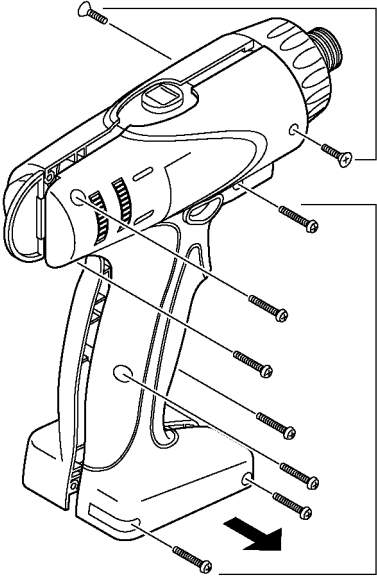
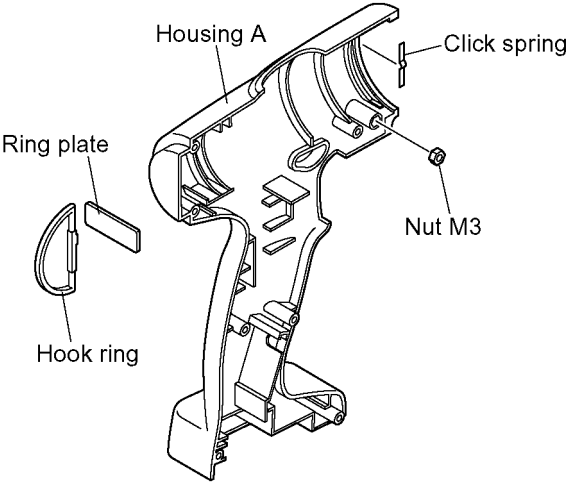
3.1.3. SWITCH

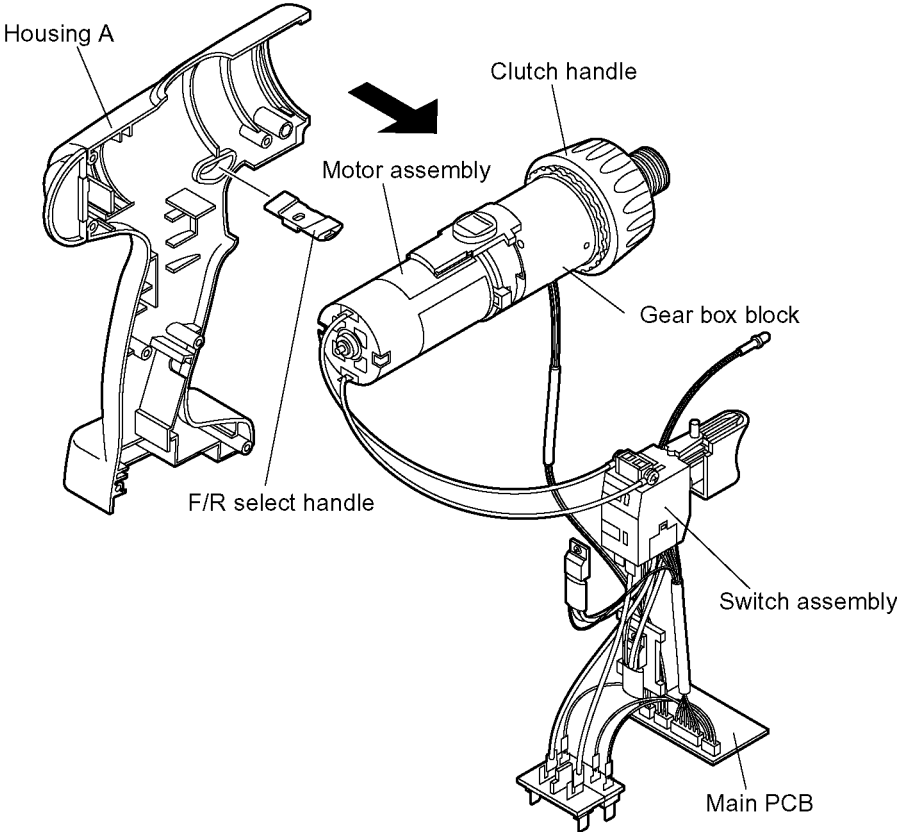
1. Confirm the rotation of speed if it changes in proportion to the amount of pushing level on switch handle.
2. Confirm if the rotation stops when releasing the switch handle.
3. Confirm if the auto-stop operation with clutch "5"

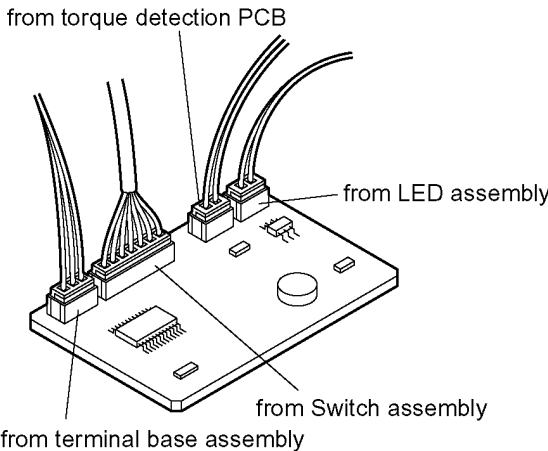
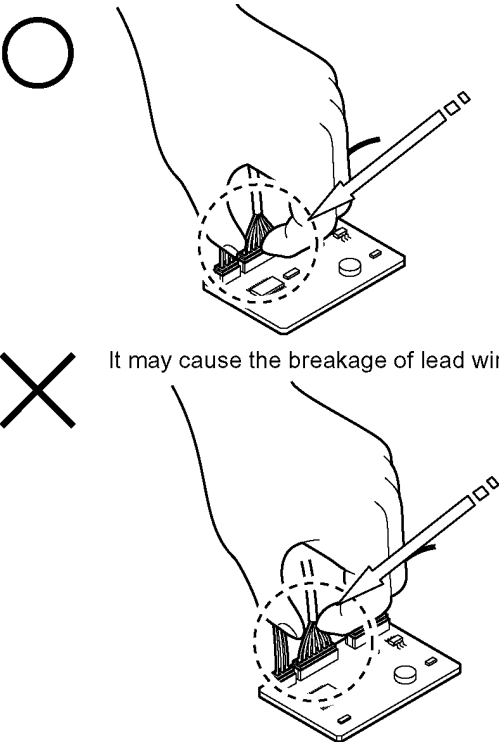
3.1.4. CLUTCH

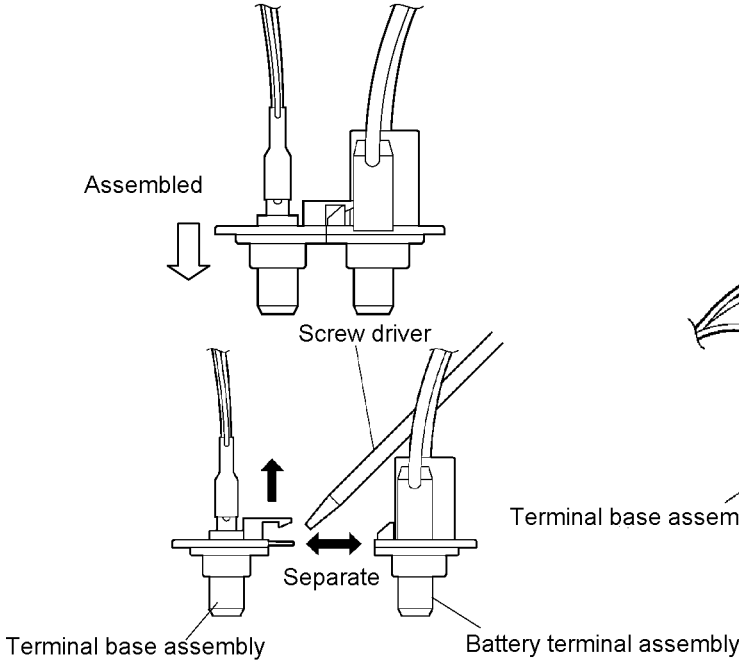
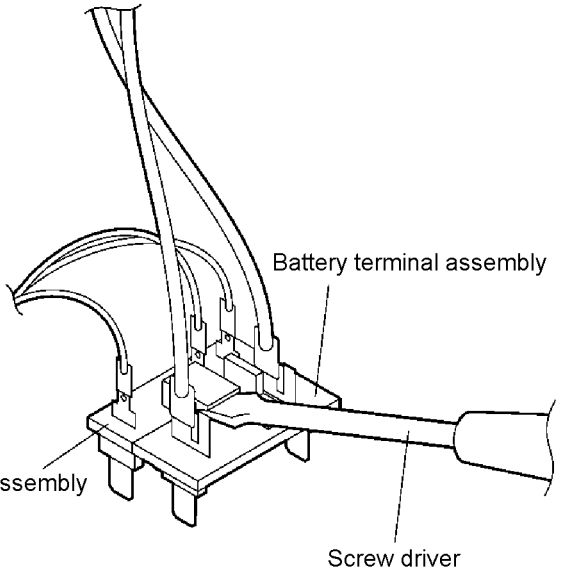
1. Check if the clutch torque changes suited for the number of clutch.

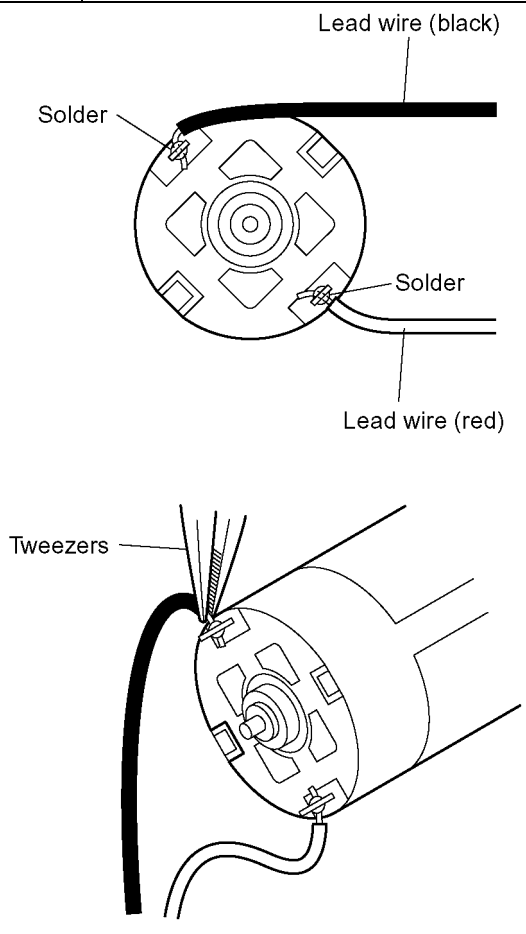
4 Disassembly and Assembly Instructions

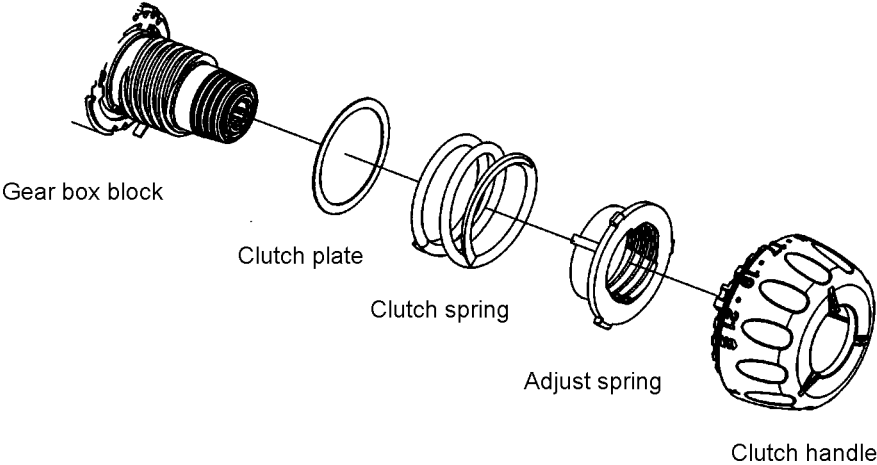
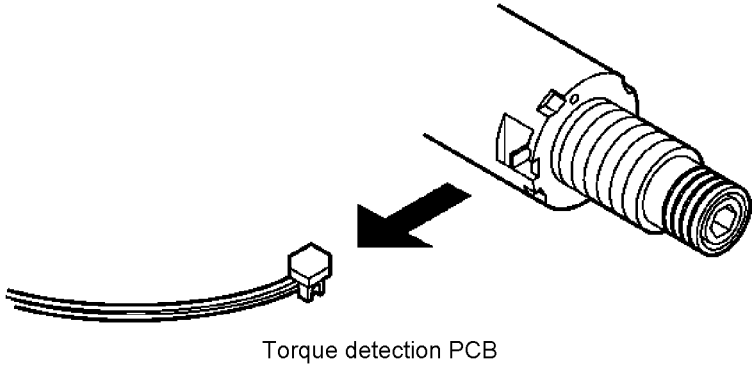
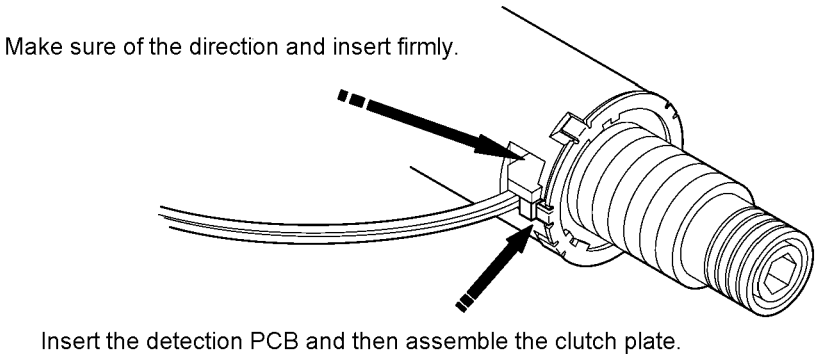
Ref. No. 1A	Procedure 1A	Removal of the Housing.
	Tapping screw 2.6 x 8 Tapping screw K3-16	1. Remove 7 housing screws. 2. Remove 7 screws. 3. Remove ring plate and ring. 4. Remove click spring on both housing A and B. 5. Loosen a nut. 

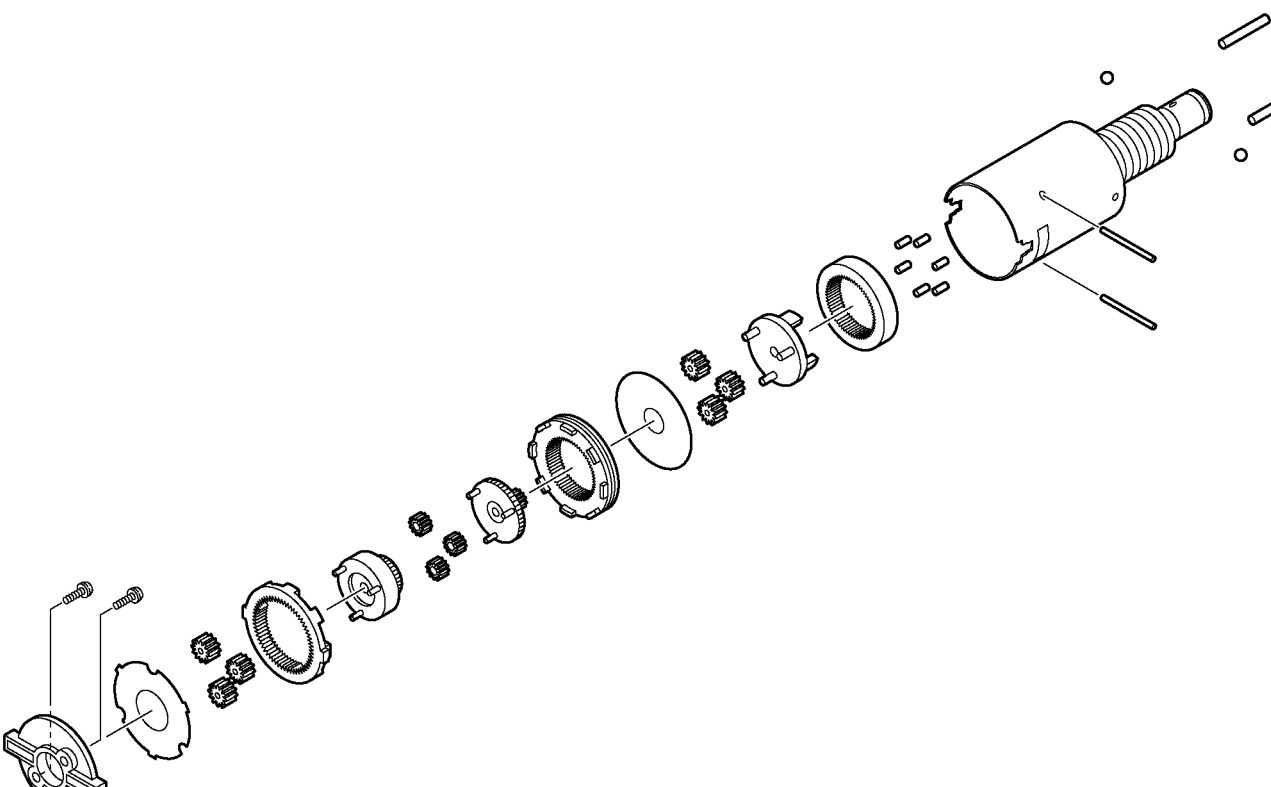
Ref. No. 2A	Procedure 1A → 2A	Removal of Switch and Driving block.
		1. Take out the switch assembly and the driving block. 2. Separate the motor from the gear box block by twisting the motor to unlock tabs.

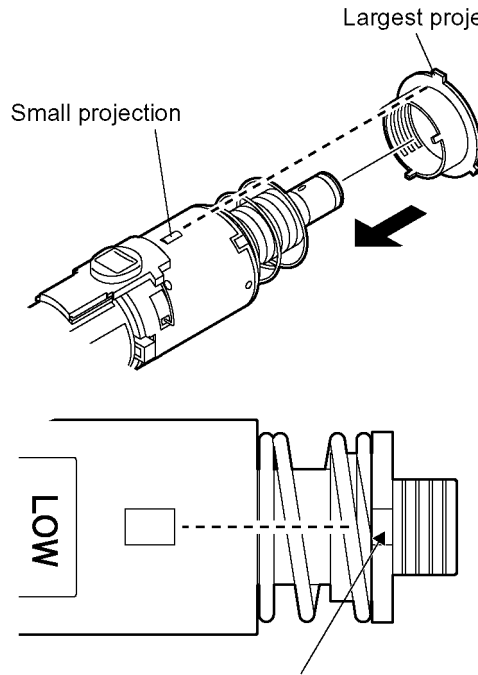
Ref. No. 2B	Procedure 1A → 2A → 2B	Removal of Control PCB.
		1. Take out the connector from the control PCB. NOTE: Make sure hold the connector at the bottom area. 

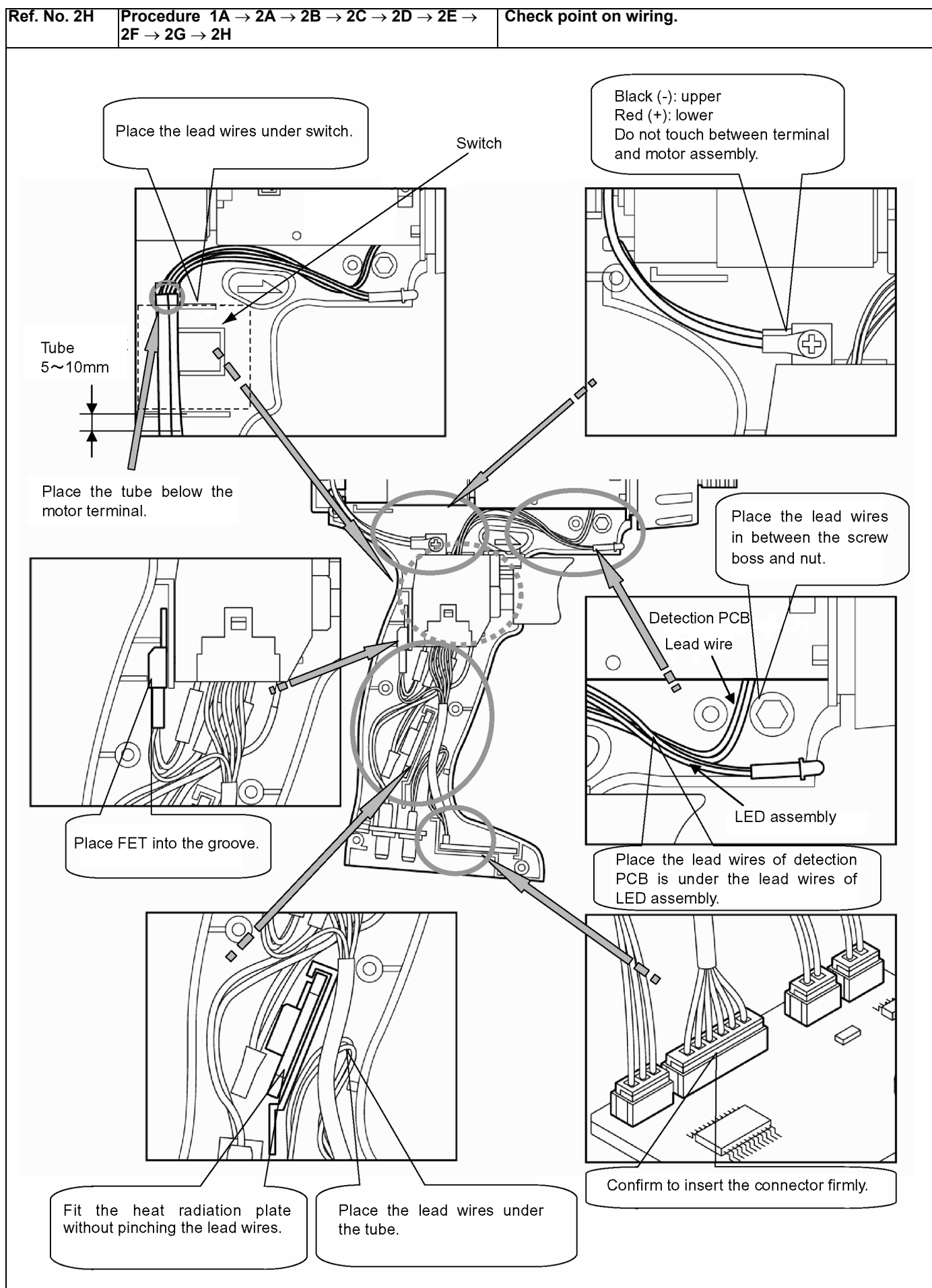
Ref. No. 2C	Procedure 1A → 2A → 2B → 2C	Removal of Battery terminal block.
 Assembled Screw driver Separate Terminal base assembly Battery terminal assembly		1. Take out the connector from the battery terminal block with a screw driver.  Battery terminal assembly Terminal base assembly Screw driver

Ref. No. 2D	Procedure 1A → 2A → 2B → 2C → 2D	Removal and assembly of motor assembly.
 Lead wire (black) Solder Solder Lead wire (red) Tweezers Insert the lead wire from the outside.		(Removal) 1. Unsolder to take out the lead wires. (Assembly) 1. Use the isolation type of soldering iron (less than 80W). 2. Solder within 3 seconds with less than 400°C. NOTE: lead-free solder (Sn-3Ag-0.5Cu).

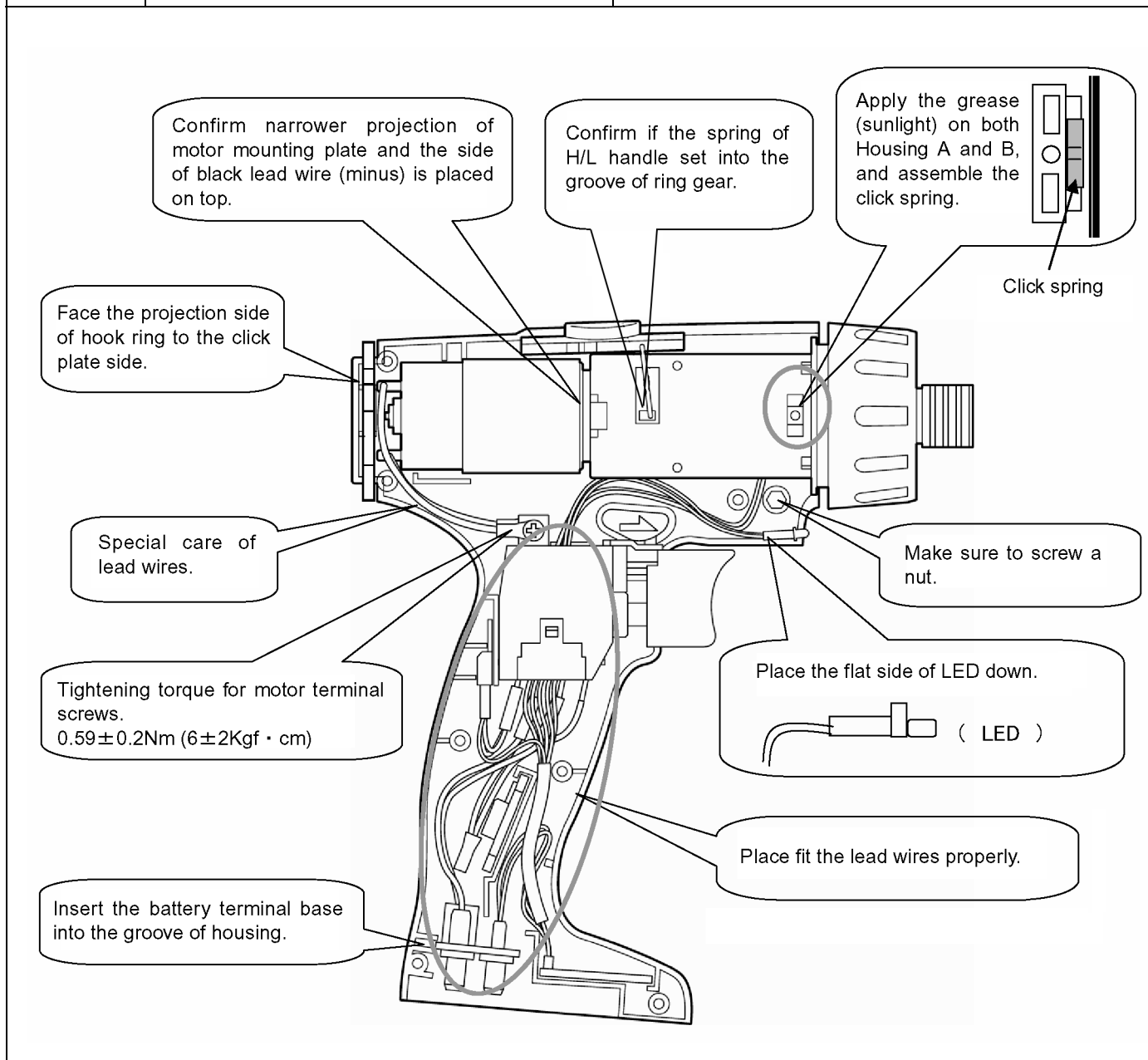
Ref. No. 2E	Procedure 1A → 2A → 2B → 2C → 2D → 2E	Removal or assembly of detection PCB.
		(Removal) 1. Take out the clutch handle. 2. Pull out the torque detection PCB from the gear box block. (Assembly) 1. Insert the torque detection PCB into the groove of gear box block. NOTE: - Make sure the direction of detection PCB. 2. Assemble the clutch plate.  This diagram shows the exploded view of the clutch assembly. From left to right, the components are: Gear box block, Clutch plate, Clutch spring, Adjust spring, and Clutch handle. Each component is labeled with its name and a leader line pointing to it.  This diagram illustrates the removal of the torque detection PCB. A large black arrow points from the gear box block towards the torque detection PCB, which is shown as a separate component with a cable. The label 'Torque detection PCB' is placed below the component.  This diagram shows the assembly of the torque detection PCB. It features two arrows pointing to the PCB as it is inserted into the gear box block. The text 'Make sure of the direction and insert firmly.' is written above the arrows. Below the diagram, the text 'Insert the detection PCB and then assemble the clutch plate.' is provided.

Ref. No. 2F	Procedure 1A → 2A → 2B → 2C → 2D → 2E → 2F	Disassembly of gear box block.
		1. The internal parts of gear box block can be disassembled in order.
		

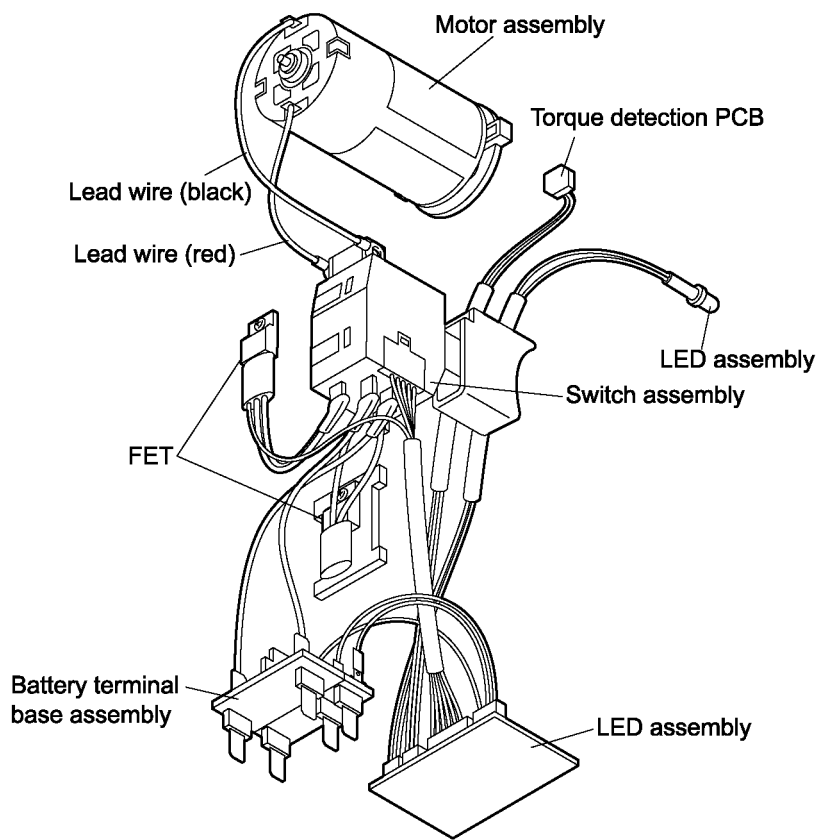
Ref. No. 2G	Procedure 1A → 2A → 2B → 2C → 2D → 2E → 2F → 2G	Assembly of the Adjusting Screw.
		1. Hold the gear box block with the small projection on top, and align the largest projection of adjusting screw. NOTE: Make sure that the adjusting screw has its own correct direction for proper assembly. Failure to do so, the clutch handle does not rotate properly. 2. Turn the adjusting screw into the driving block until the end of spring comes the same line as the largest projection of adjusting screw for clockwise direction.



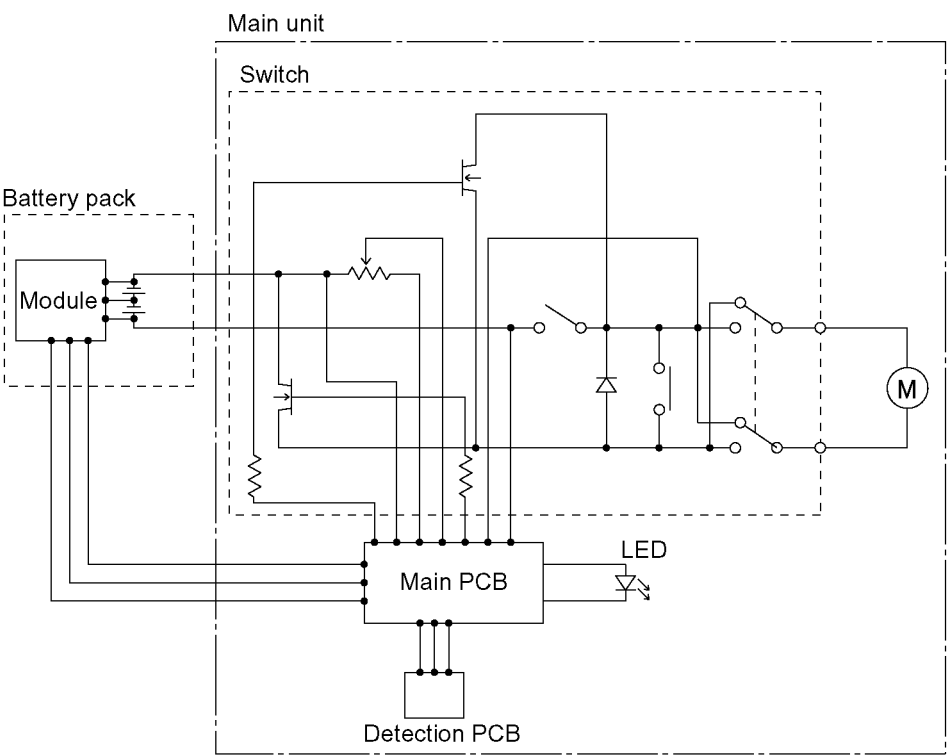
Ref. No. 2I	Procedure 1A → 2A → 2B → 2C → 2D → 2E → 2F → 2G → 2H → 2I	Check point on assembly.
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5 Wiring Connection Diagram

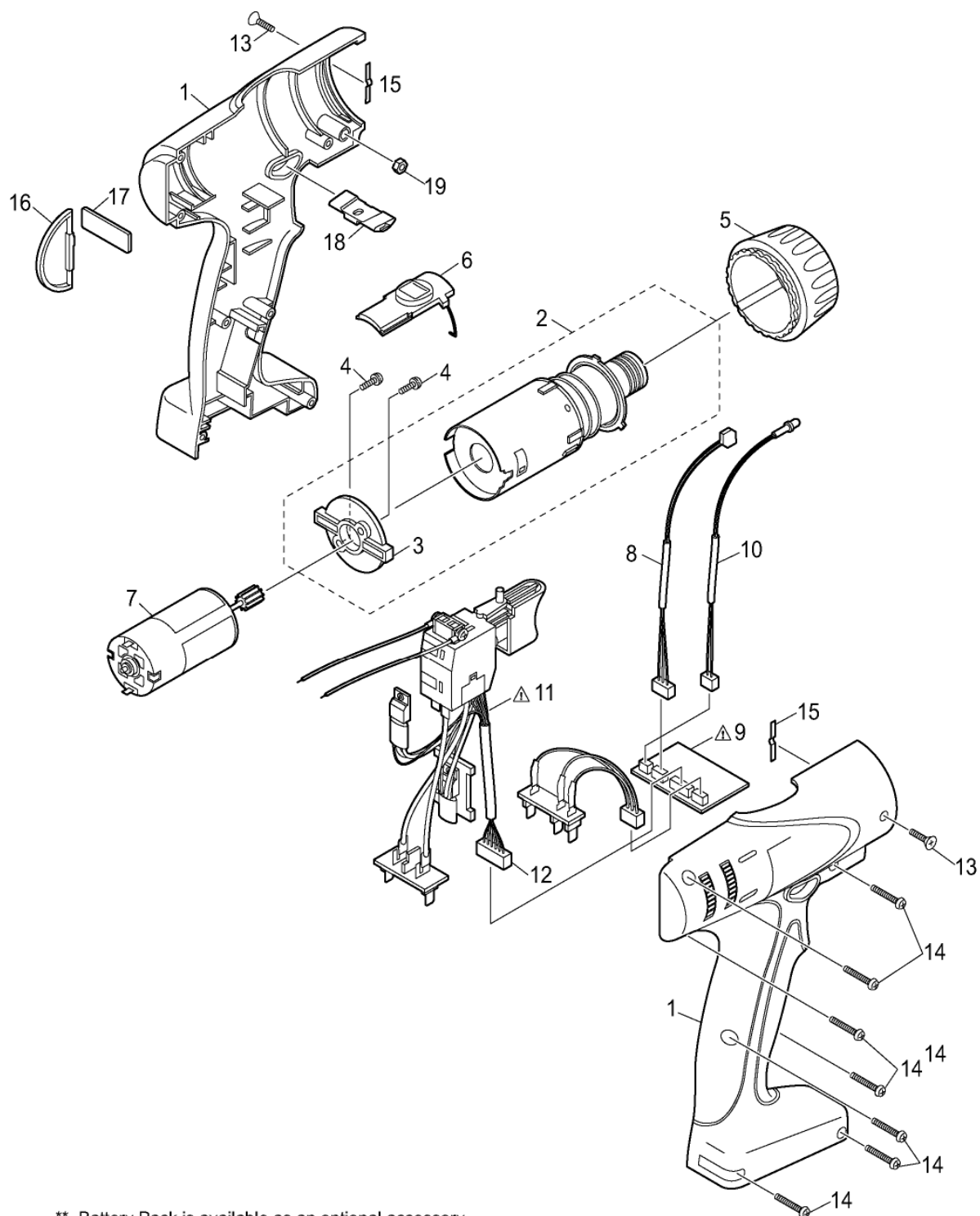


6 Schematic Diagram



7Exploded View and Replacement Parts List

Model No. : EY7420 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. : EY7420 Parts List

Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
	1	WEY7420H3078	HOUSING AB SET	1	
	2	WEY7420L1087	GEAR BOX BLOCK	1	
	3	WEY7420L3747	MOTOR MOUNTING PLATE	1	
	4	WEY6225L6026	SEMS SCREW	2	(M3*5)
	5	WEY7420L0637	CLUTCH HANDLE	1	
	6	WEY7410H3237	H/L CHANGE HANDLE	1	
	7	WEY7420L1007	DC MOTOR	1	
	8	WEY7420L2127	TORQUE DETECTION PCB	1	
	9	WEY7420L2117	MAIN PCB ASSEMBLY	1	
	10	WEY7420L2337	LED ASSEMBLY	1	
	11	WEY7420K2008	SWITCH ASSEMBLY	1	
	12	WEY7420L4127	TERMINAL BASE ASSEMBLY	1	
	13	WEY6605L9626	TAPPING SCREW	2	(2.6*8)
	14	WEY6402K9217	TAPPING SCREW	7	(K3*16)
	15	WEY6225L0176	CLICK SPRING	2	
	16	WEY7420L0057	HOOK RING	1	
	17	WEY7420L0167	RING PLATE	1	
	18	WEY7542H3247	F/R SELECTOR HANDLE	1	
	19	WEY7420L6417	NUT	1	(M3)
	-	WEY9L20R2787	BATTERY PACK COVER	1	
	-	WEY7420K7018	TOOL CASE	1	
	-	WEY7420K8108	OPERATING INSTRUCTIONS	1	
	-	WEY6705X5527	SUNLIGHT GREASE	1	
	-	WEWGW2	FLOIL GREASE	1	