Order No.PTD2210E02CE

Service Manual

Cordless Impact driver

Model No. EY1PD1

Europe

⚠ WARNING

This service manual is strictly meant to be used by experienced professional repair technicians only and is not designed for use by the general public. Products powered by electricity should be serviced and repaired only by experienced professional repair technicians (“Professionals”). Any attempt to service or repair the product by anyone else could result in serious injury and even death. Panasonic shall not be responsible, to the extent permitted by applicable law, for any damages, losses, costs, expenses, death, injury, claims, decree, proceedings, and/or judgment, arising out of, in connection with, or relating to, any use and/or misuse of this service manual by users other than Professionals.

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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1 Warning

Caution:

- Pb free solder has a higher melting point that 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

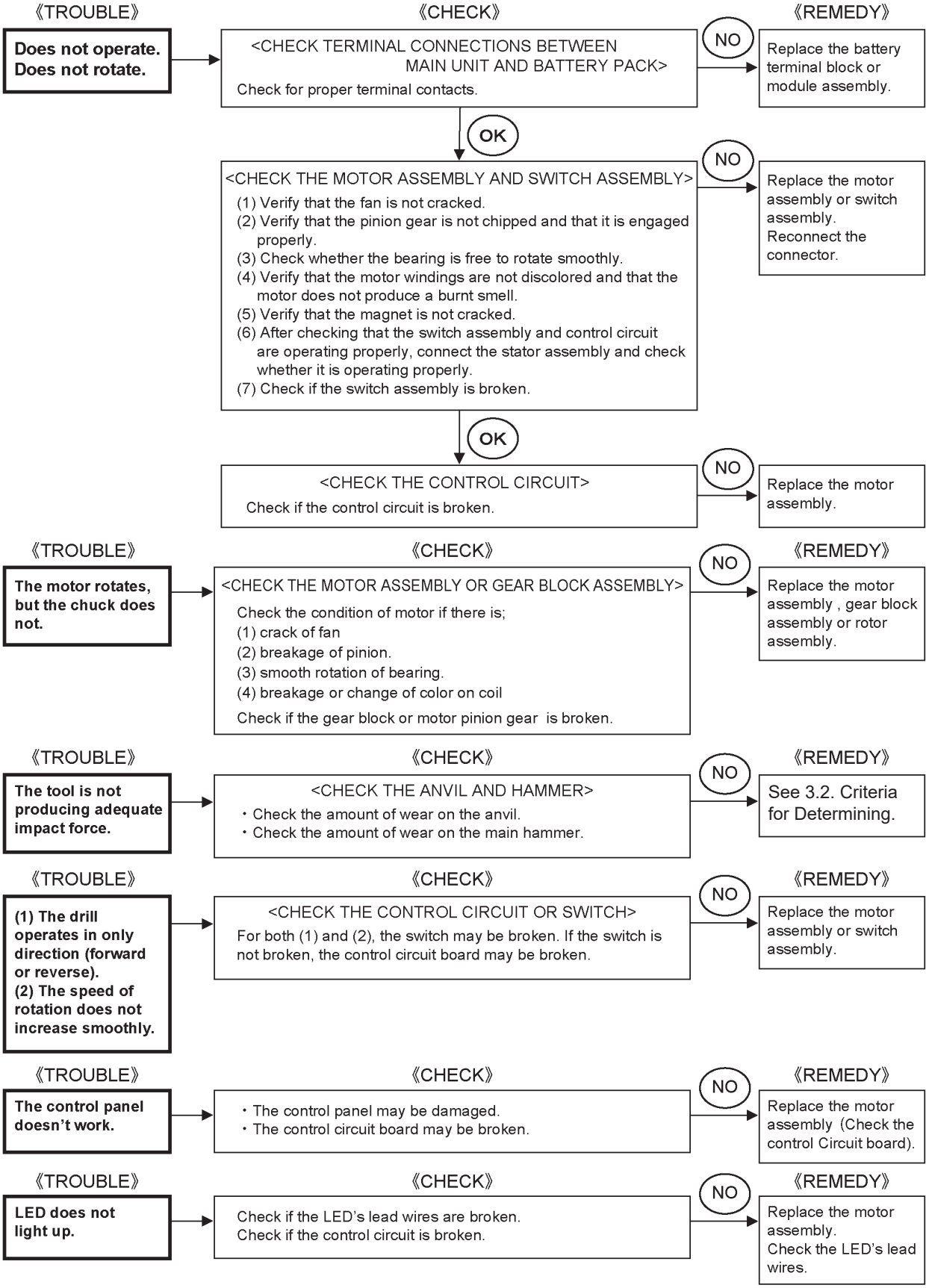
NOTE: Weight indication
Greater than or equal to 1 kg: indicated by 0.05 kg.
Less than 1 kg: indicated by 0.01 kg.

MAIN UNIT

Model No.		EY1PD1	
Motor voltage		14.4 V DC	18 V DC
No load speed [min^{-1} (rpm)]	Soft mode	0 – 1000	
	Medium mode	0 – 1600	
	Hard mode	0 – 2700	
	Self-drilling screw mode	0 – 2700	
Maximum torque		140 N•m	155 N•m
Impact per minute [min^{-1} (i.p.m.)]	Soft mode	0 – 2100	
	Medium mode	0 – 3100	
	Hard mode	0 – 4100	
	Self-drilling screw mode	0 – 2100	
Overall length		98 mm	
Weight With battery pack:	EY9L47	1.15 kg	—
	EY9L49	1.35 kg	—
	EY9L53	—	1.30 kg
	EY9L54	—	1.50 kg
Noise, Vibration		See the included sheet	

3 Troubleshooting Guide

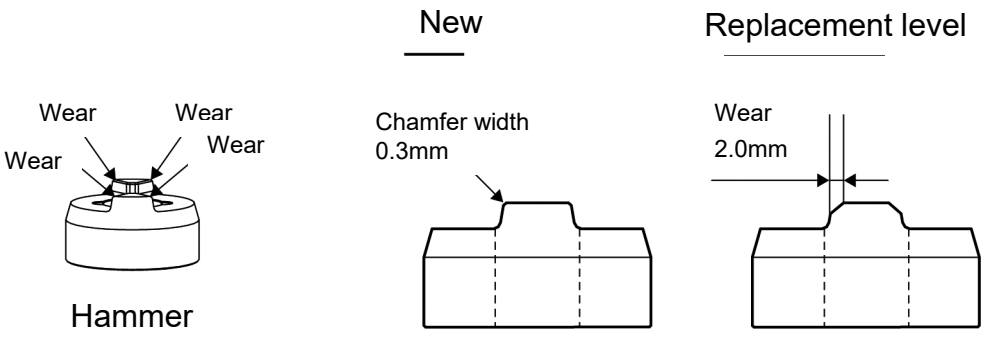
3.1 Troubleshooting Guide



3.2. Criteria for Determining When to Replace Worn Parts

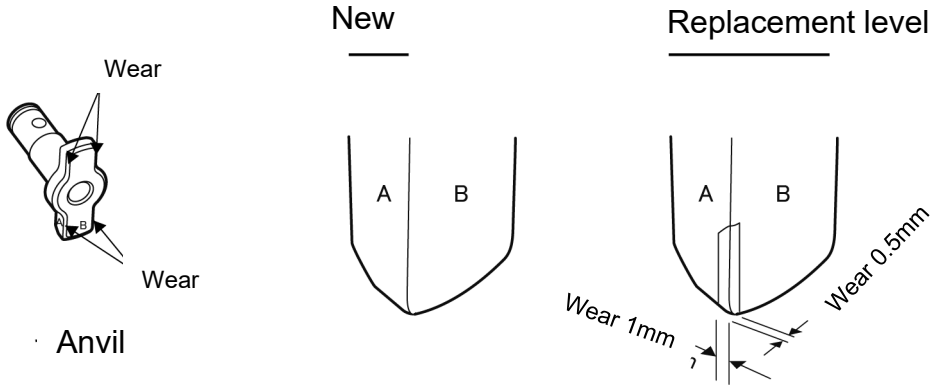
① Hammer Wear

The parts shown in the figure below will wear out as they collide with the anvil. Replace the hammer when the replacement level is reached.



② Anvil Wear

The parts shown in the figure below will be worn by bumping the same way as on the hammer side. Replace the anvil when the replacement level is reached.



3.3. Trial Operation (after checking Troubleshooting Guide).

Note:

- If you have any questions concerning operation, refer to the instruction manual and review its description of drill operation.
- If the tool fails to operate as described in the instruction manual, reassemble it and check for any improperly assembled or missing parts.

3.3.1. Assembly.

- Confirm if there is no gap between housing A and B by pinching lead wires.
- Make sure that the battery pack can be attached and detached smoothly.
- Confirm the smooth sliding of bit holder and to hold the firmly.
- Confirm all screws are tightened firmly.

3.3.2. Operation.

- Check whether the tool operates properly in both the forward and reveres directions.
- Check whether the tool speed increases continuously as the trigger is gradually engaged.
- Confirm if the rotation stops when releasing the switch handle.

●Check that the tool operates normally according to the settings on the control panel.
（Please refer to the operating instructions for details).
① Press the light button and check that the light switches in the following order: Light on ➡ Interlocking trigger ➡ Light off.
② Check that the battery level indicator is lit (three lamps will be lit when fully charged) while the battery level button is pressed.
③ Press the impact power mode button and check whether the mode changes to Hard, Self-drilling screw, Soft, Medium.
④ Check that the rotation speed at no load is high (in Hard or Self-drilling screw mode), low (in Soft mode), and medium (in Medium mode).
Check that there is no abnormality in the click feel of the control panel buttons.

3.3.3. Integrity

- With the switch activated, shake the tool back and forth and up and down and verify that its sound does not change excessively.
- Check for the presence of any dirt or foreign matter from the repair process on the outside of the tool.

4 Disassembly and Assembly Instructions

[Strictly observe] Check and understand the disassembly/assembly procedures and exploded view in advance.
[Strictly observe] To reduce the risk of injury, always remove battery pack before removing/installing the tool.
[Strictly observe] Manage all parts and make sure that no parts are left unattached at the time of assembling.
[Note] Work while keeping information on the disassembly process using a digital camera as needed.

【Note】**Also, see Service Manuals for EY76A1 and EY75A7.**

4.1. Removing the Plate Hook.

Screw(M4-14)

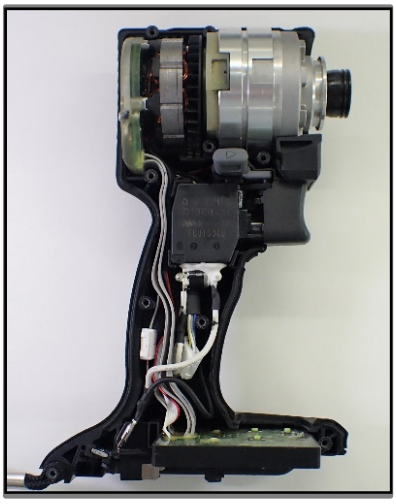
1. Removing M4-14 screw.

For assembly
Tightening torque value;
1.6±0.3N・m

2. Removing the plate hook.

3. Removing the protector.

4.2. Removing the Housing.



1. Remove nine screws(K3*20) that attach housings.

For assembly
Tightening torque value;
1±0.3N・m

2. Remove the associated parts.

NOTE:
Create a record of the lead wire routing as necessary, for example by taking a picture with a digital camera.

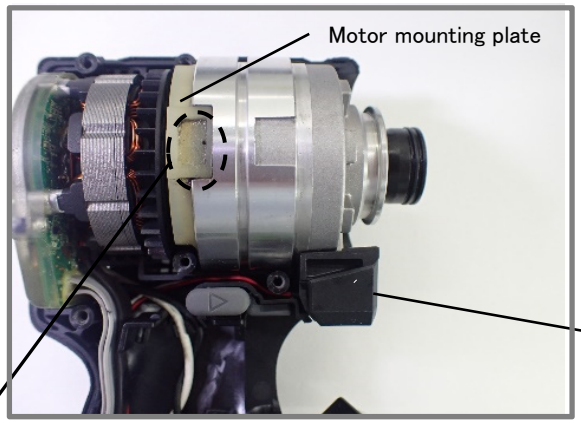
Battery terminal

Lead wire(black)

Lead wire(white)

3. Remove the lead wires from the battery terminal.

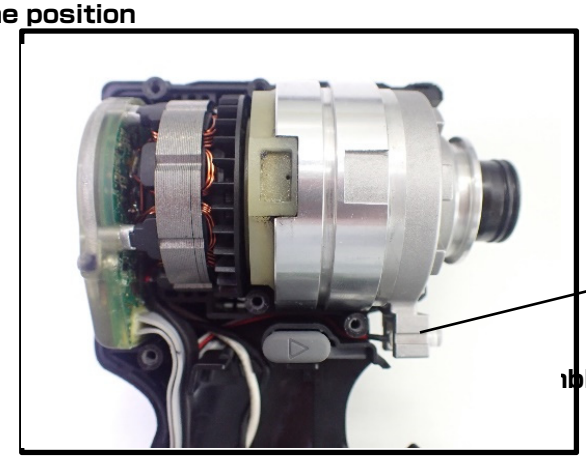
4.3. Removing the LED cover and drive unit.



1. Remove the LED cover.

(The LED cover can be easily removed by lifting the tip of the drive unit)

NOTE: (When Assembling)
Align the position

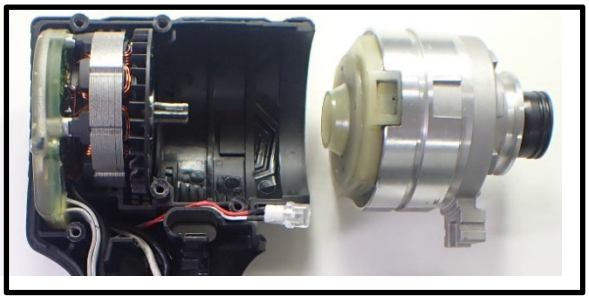


2. Lift up the drive unit and motor assembly and remove the LED.from the housing.

LED

NOTE: (When disassembling the LED).
Exercise care not to cut the lead wires.

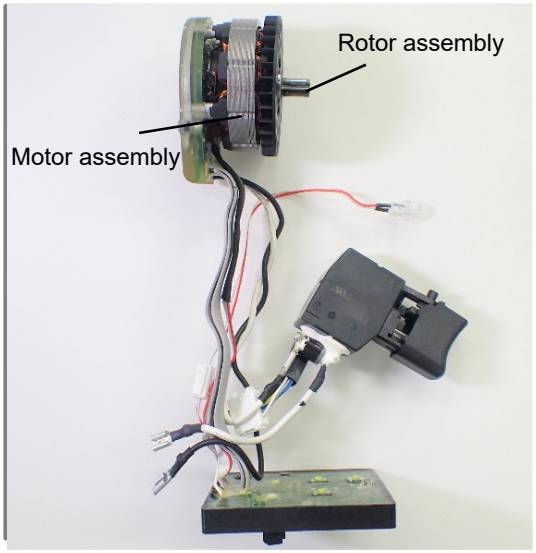
NOTE: (When Assembling)
Make sure that the rotors move smoothly.



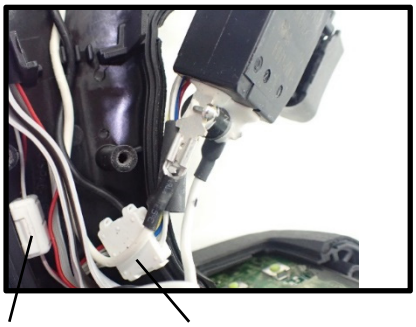
3. Remove the drive unit from the motor assembly.

NOTE: (When Assembling the drive unit)
When assembling, pay attention to the order in which the parts are assembled.
Please see the exploded view.
Remove the C spring and disassemble the unit.

4.4. Removing the motor assembly and rotor assembly from the housing.



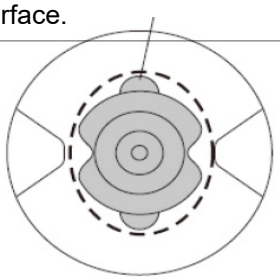
1. Remove the motor assembly and rotor assembly from the housing.
2. Remove the connector(6-pin/2-pin)covers.
3. Disconnect the connecters or lead wires,



4.5. Precautions When Applying Grease

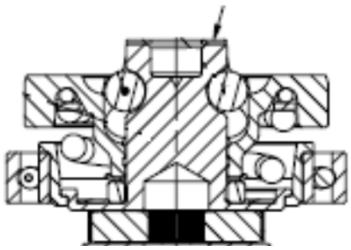
Apply grease (CALFOREX) to the indicated by the shaded area.

Fill grease up to the hammer surface.

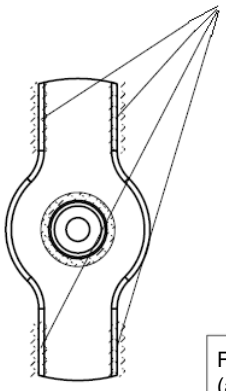


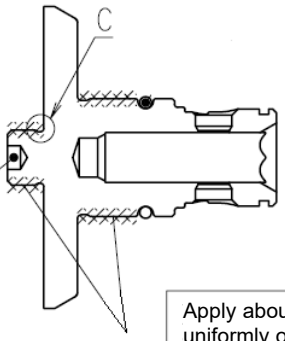
Apply grease to the outer circumference of gear rod.

Apply grease to the sliding surfaces of the thrust plate and anvil.



Apply grease to the section of the side surface of the anvil.

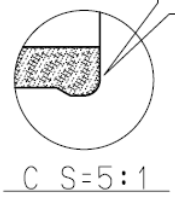




Fill the hole with grease (approx. 0.03 g)

Apply about 0.1 to 0.2 g of grease uniformly on the anvil's outer surface.

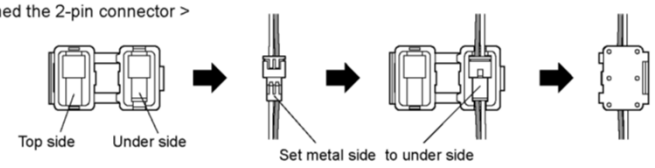
Apply grease to the depth of the relief groove.



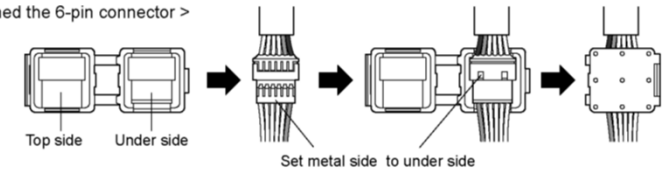
Precautions when attaching the connectors and switch assembly.

NOTE: The connect cover cannot be reused after being repaired.

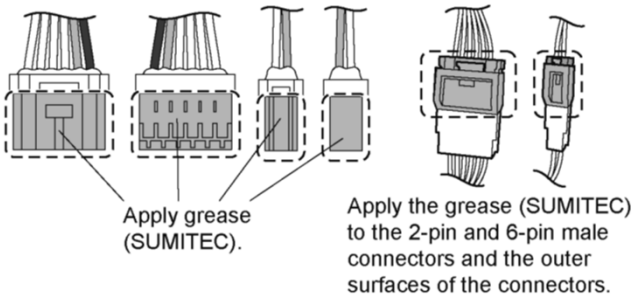
< How to attached the 2-pin connector >

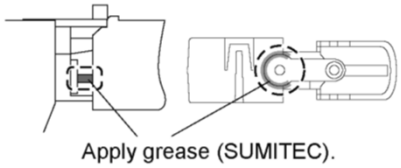


< How to attached the 6-pin connector >



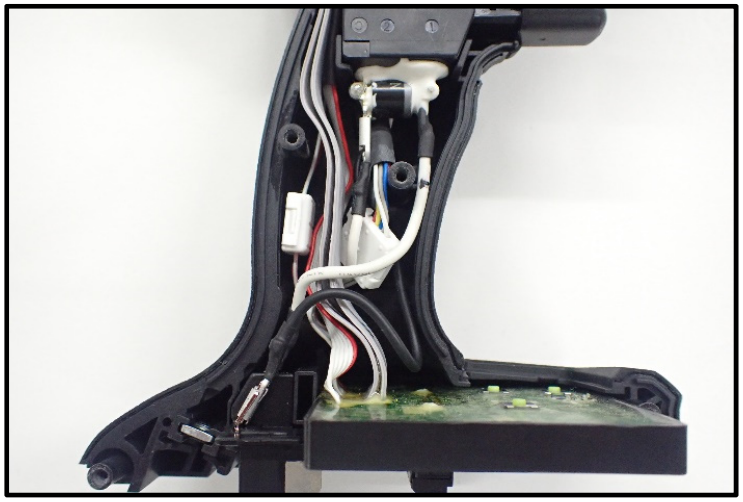
Remove the C spring and disassemble the unit.



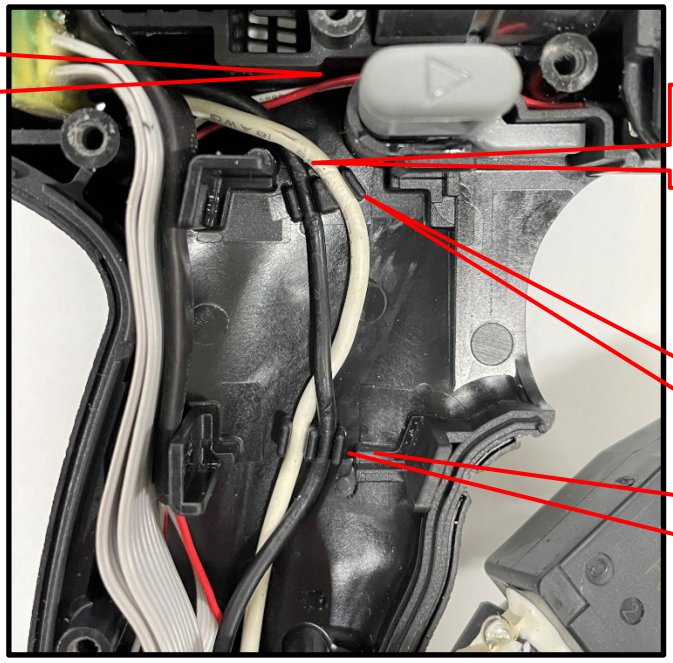


4.6. Wiring and Assembly Points.

Wiring process from the switch assembly to the circuit board

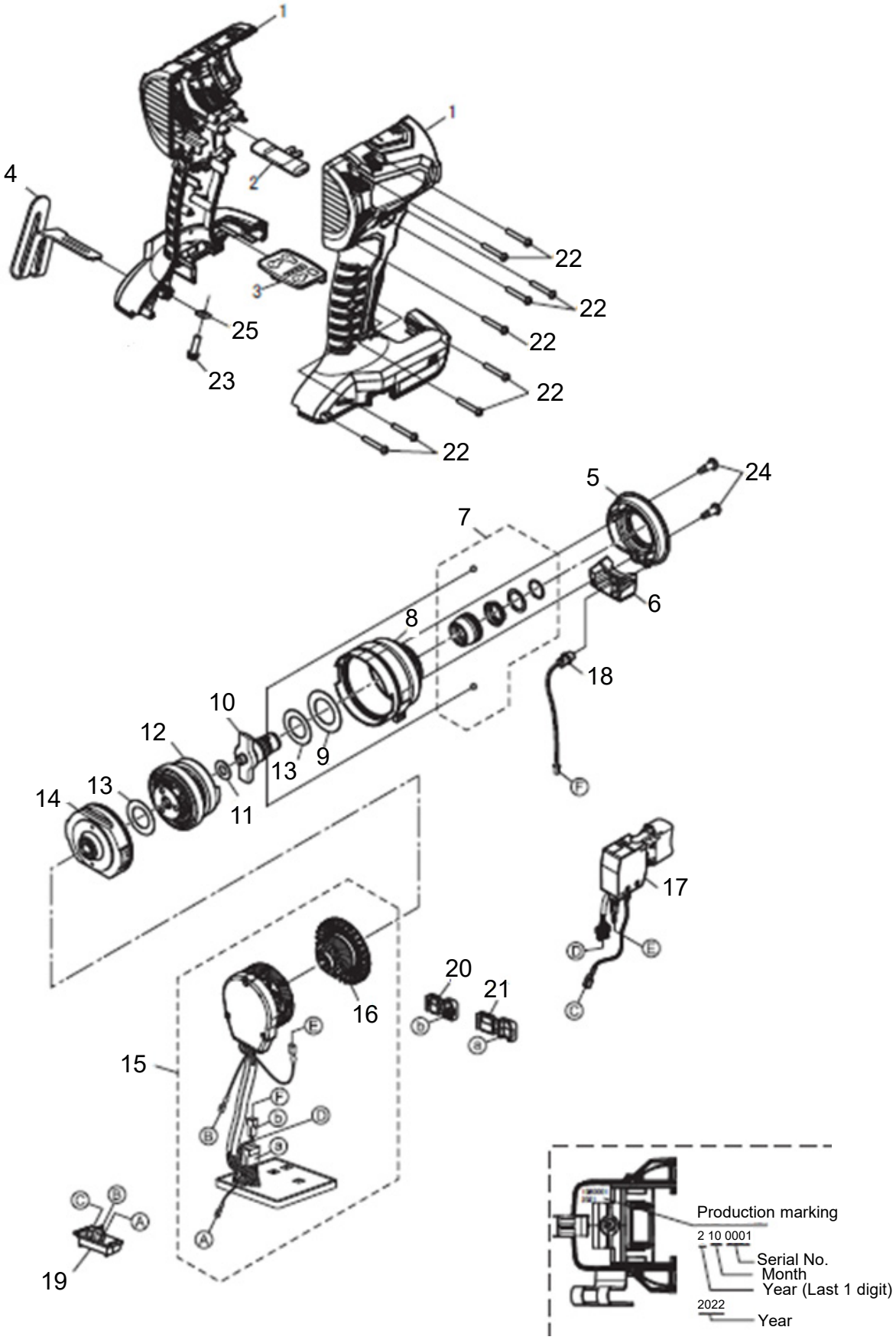


Wiring process under the switch assembly



5 Exploded View and Replacement Parts List

Model NO. : EY1PD1 Exploded View



Model NO. : EY1PD1 Parts list

Ref No	Part No.	Part Name & Description	Q'ty	Remarks
1	WEY1PD1K3002	HOUSING AB SET	1	
2	WEY1PD1H3101	F/R SELECTOR HANDLE	1	
3	WEY1PD1L3102	OPERATION PLATE	1	
4	WEY7543K3187	PLATE FOOK	1	
5	WEY1PD1K3101	PROTECTOR	1	
6	WEY1PD1K3201	LED COVER	1	
7	WEY1PD1L1001	BIT HOLDER SET	1	
8	WEY1PD1L0301	DRIVING COVER ASSEMBLY	1	
9	WEY1PD1L0001	THRSUT PLATE 165	1	
10	WEY1PD1L1102	ANVIL BLOCK	1	
11	WEY1PD1L0101	THRSUT PLATE 166	1	
12	WEY1PD1L1201	DRIVE SHAFT ASSEMBLY	1	
13	WEY1PD1L0201	THRUST PLATE 169	2	
14	WEY1PD1L0401	MOTOR MOUNTING PLATE ASSEMBLY	1	
15	WEY1PD1L2101	MOTOR ASSEMBLY	1	
16	WEY1PD1L2201	ROTOR ASSEMBLY	1	
17	WEY75A8L2007	SWITCH ASSEMBLY	1	
18	WEY1PD1L2301	LED BLOCK	1	
19	WEY75A7K2157	BATTERY TERMINAL ASSEMBLY	1	
20	WEY75A8W3117	CONNECTOR COVER 2P	1	
21	WEY75A8W3127	CONNECTOR COVER 6P	1	
22	WEY7441K9038	TAPPING SCREW	9	(K3*20)
23	WEY7441K6217	SCREW	1	(K4*14)
24	WEY1PD1F6001	PROTECTOR LOCK SCREW	2	
25	WEY7441L6487	NUT	1	(M4)
-	WEY1PD1L8002	OPERATING INSTRUCTIONS	1	
-	WEY004X8967	GREASE (CALFOREX)	1	
-	WEY7543X5517	GREASE (SUMITEC)	1	