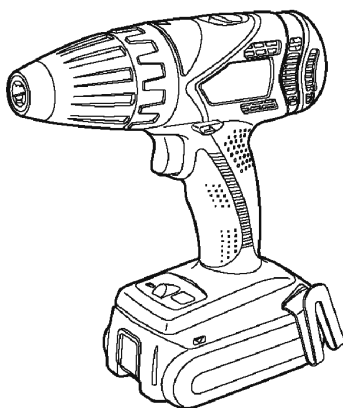


Service Manual

Cordless Drill & Driver

Model No. EY7451

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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1 Safety Precautions

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. EY7451 MAIN UNIT

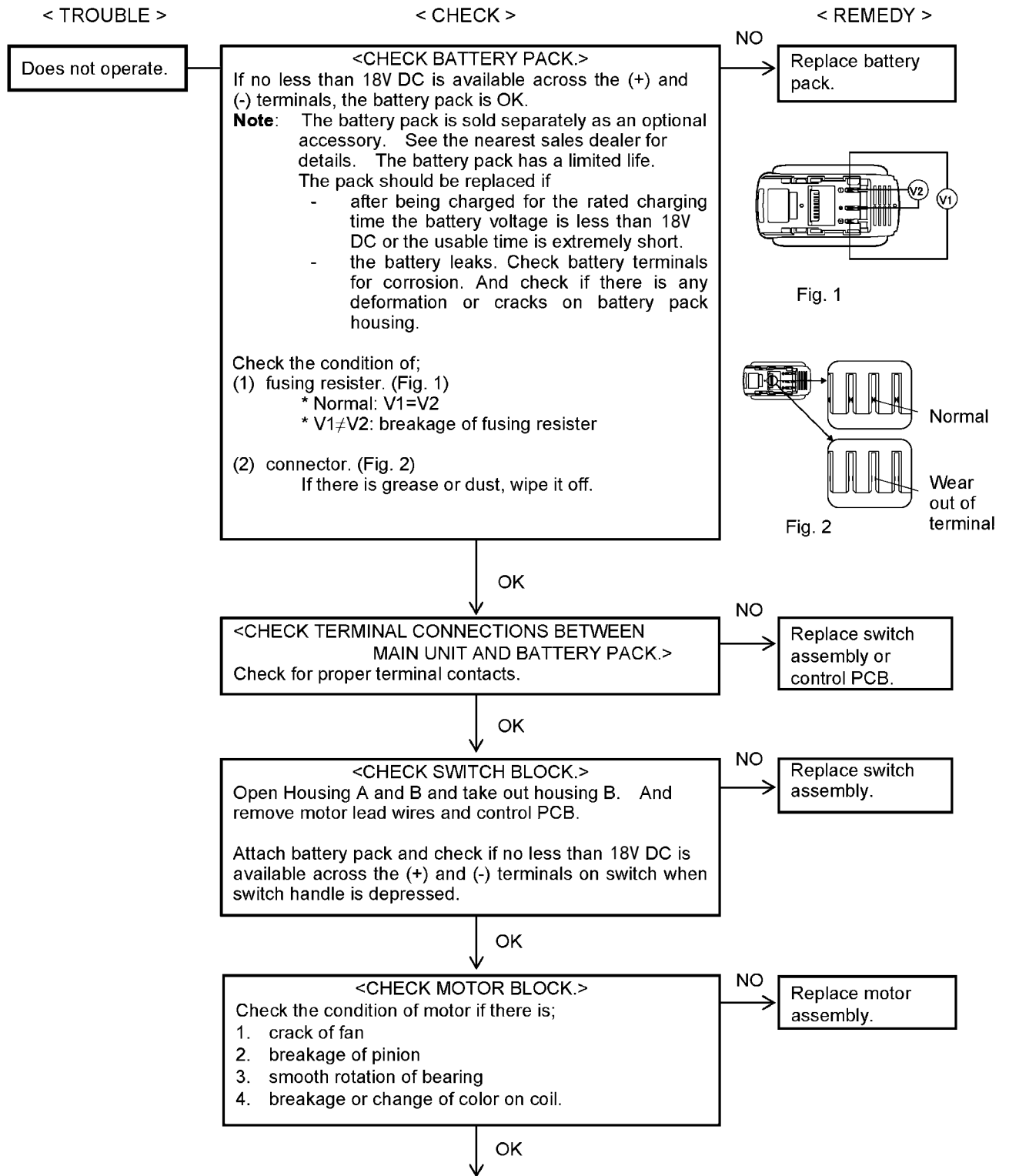
Motor		18V DC
No load speed	LOW	70 ~ 400/min (rpm)
	HIGH	200 ~ 1400/min (rpm)
Chuck capacity		∅1.5 ~ 13mm (1/16" ~ 1/2")
Maximum torque		Stalling torque (3.0Ah Li-ion Battery)
Clutch torque		Approx. 0.5Nm (5.0kgf-cm, 4.3in-lbs) -4.4Nm (45.0kgf-cm, 39.0in-lbs)
Overall length		193mm (7-5/8")
Weight (with battery pack EY9L53)		1.65kg (3.751lbs)

2.2. MAXIMUM RECOMMENDED CAPACITIES

Motor		EY7451
Screw driving	Machine screw	M5
	Wood screw	∅ 6.8 mm (17/64")
	Self-drilling	∅ 6 mm (15/64")
Drilling	for Wood	∅ 38 mm (1-3/8")
	for Metal	∅ 13 mm (1/2")
	for Masonry	-----

3 Troubleshooting Guide

(Refer to Wiring Connection Diagram)



< TROUBLE >

< CHECK >

< REMEDY >

↓ OK

<CHECK MOTOR BRUSH.>
(1) There should be 0Ω between motor lead wire and terminal of brush holder.
(2) Check if the lead wire of thermister is broken or not.

NO

Replace motor brush assembly.

↓ OK

<CHECK CONTROL PCB.>
(1) Check the wear condition or deformation on communication connector.
(2) Check contact condition of connector between switch and control PCB.
(3) Check if there is any breakage or deformation on LED.

NO

Repair control PCB.

Does not control.

<CHECK SWITCH BLOCK.>
(1) Check if the motor rotation become higher as the amount of depression of switch handle.
(2) Check if the motor stop when releasing switch handle.

NO

Replace switch assembly.

↓ OK

<CHECK H/L CHANGE HANDLE.>
Check if the rotation may change at HIGH mode and LOW mode.

NO

Confirm the proper position of change gear spring.

↓ OK

<CHECK LED.>
Check if LED lights on when pushing the button.

NO

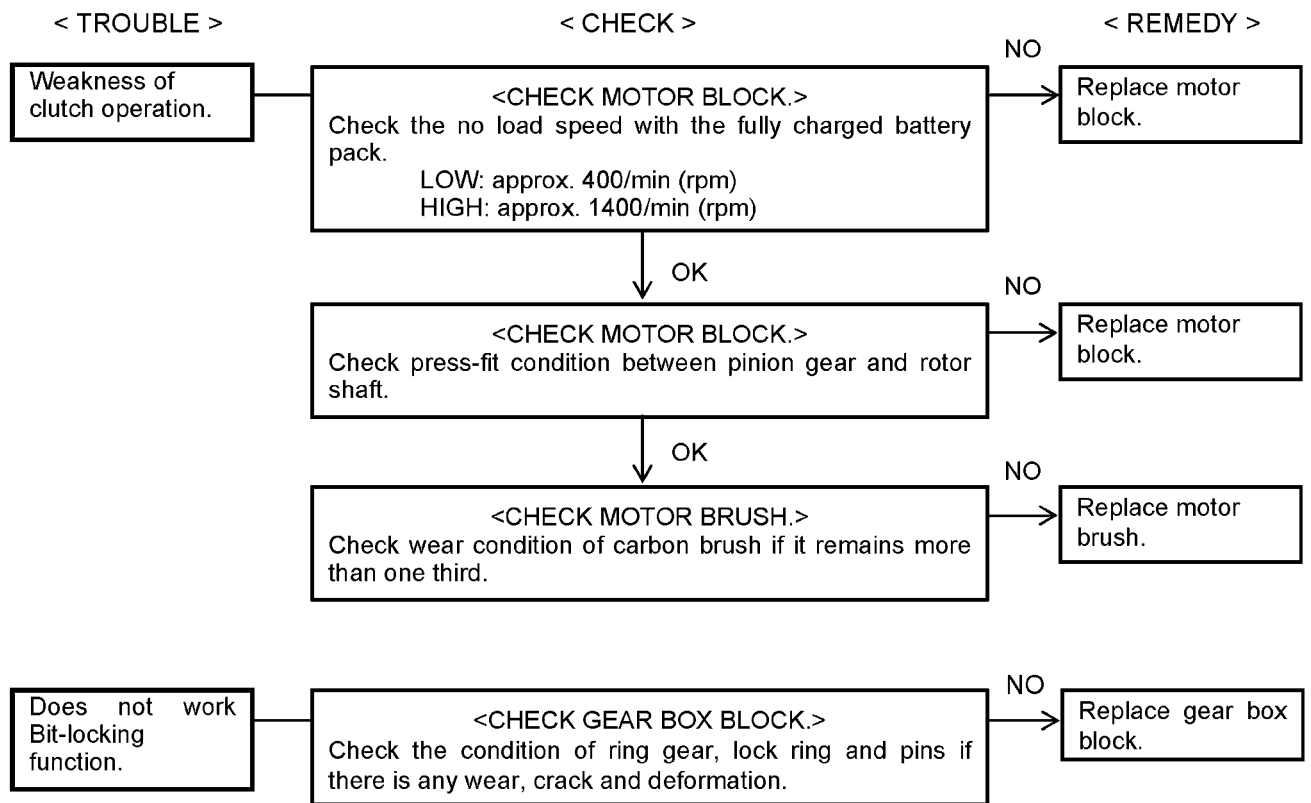
Replace control PCB.

↓ OK

<CHECK FET.>
Check if the color of change the color or burn out on FET.

NO

Replace switch assembly.



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 abnormal sound when shaking the unit.
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 if LED lights ON. Once battery pack is removed, press the switch handle; otherwise LED does not light ON.
3. Confirm if the tools may not become hot in a short operation.
4. Confirm the action when setting the DRILL mode.
5. Confirm if the chuck jaws move smoothly and hold the bit firmly.

3.1.3. SWITCH

1. Confirm the rotation of speed if it changes between 200-1400 \pm 140 rpm in proportion to the amount of pushing level on switch handle on HIGH mode and 70-400 \pm 40 rpm on LOW mode.
2. Confirm if the rotation stops when releasing the switch handle.

3.1.4. CLUTCH

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

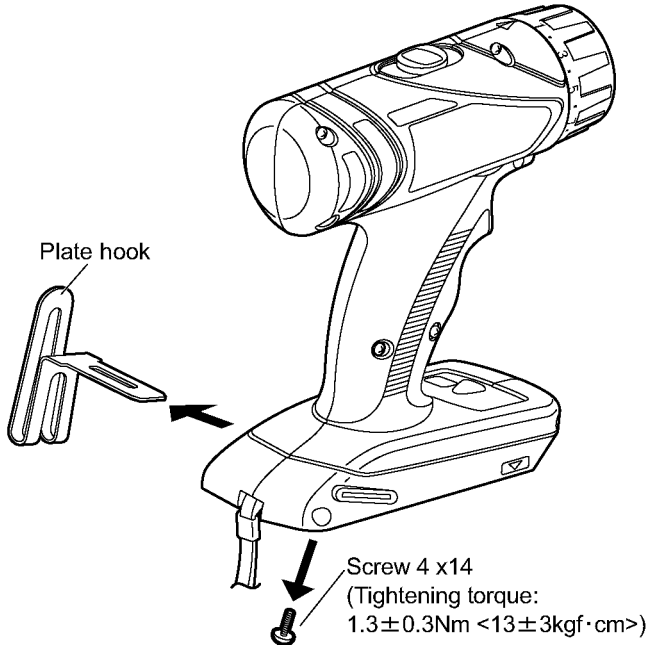
4 Disassembly and Assembly Instructions

4.1. How to disassemble Plate hook and Keyless chuck.

4.1.1. Removal of the Housing.

Removal


1. Loosen a screw.
2. Take out the plate hook.



4.1.2. Removal of Motor screw.

NOTE:

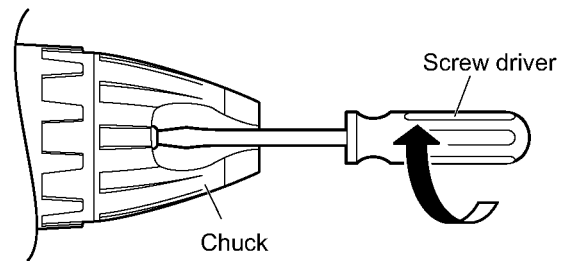
When attaching or removing a bit, disconnect battery pack from tool.

1. Set the clutch handle to position  and select "LOW" position.
2. Turn the lock collar counterclockwise (looking from the front) to open the chuck jaws.
3. Use a screwdriver to turn the chuck fastening screw inside the chuck clockwise direction of the arrow, and remove the screw.

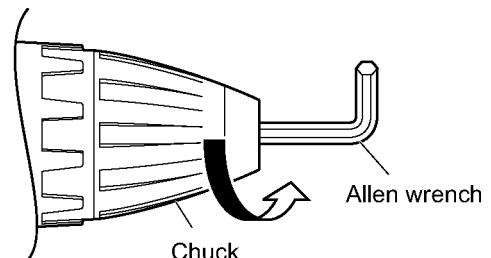
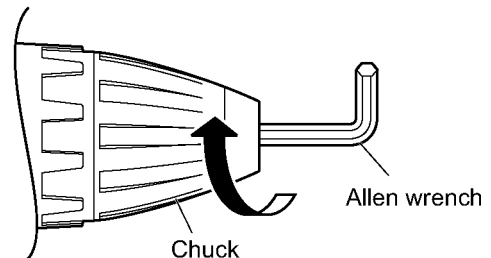
NOTE:

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

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



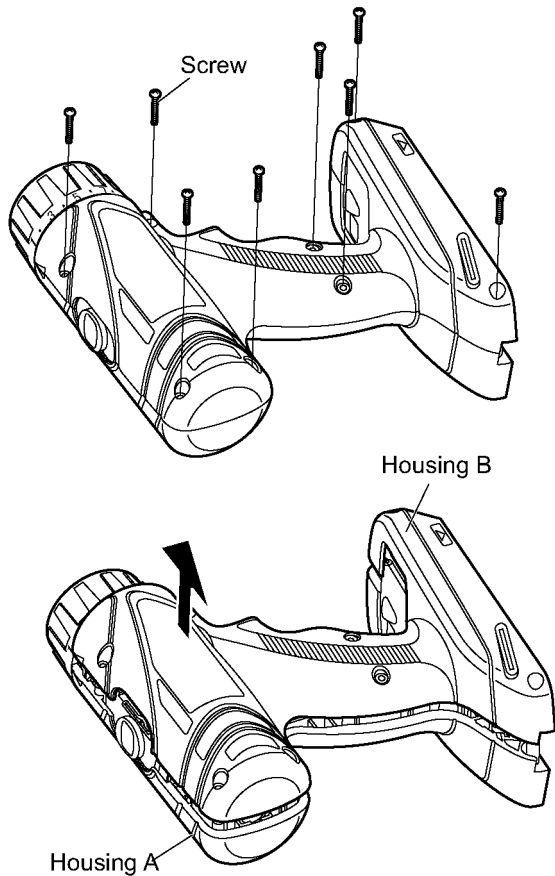
※in case of the chuck does not come loose:



4.2. How to disassemble Main unit.

4.2.1. Removal of the Housing.

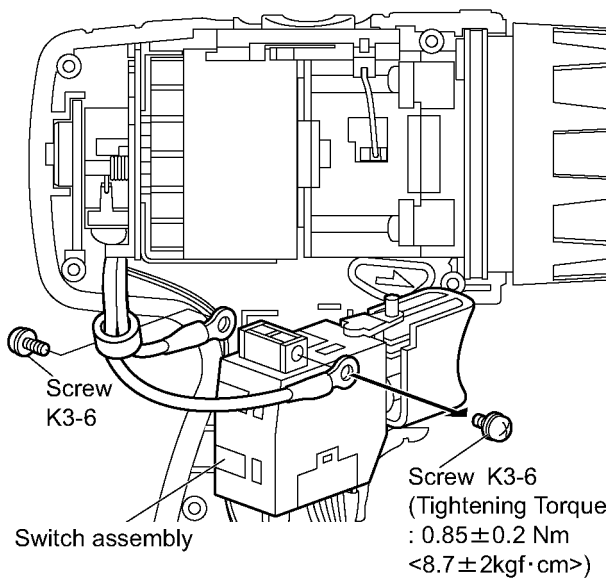
1. Remove 8 housing screws.



4.2.2. Removal of Motor screw.

Removal

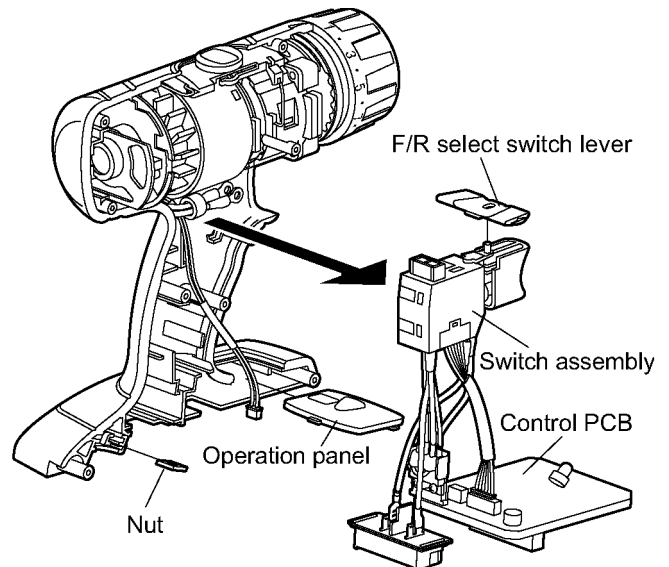
1. Remove 2 screws.



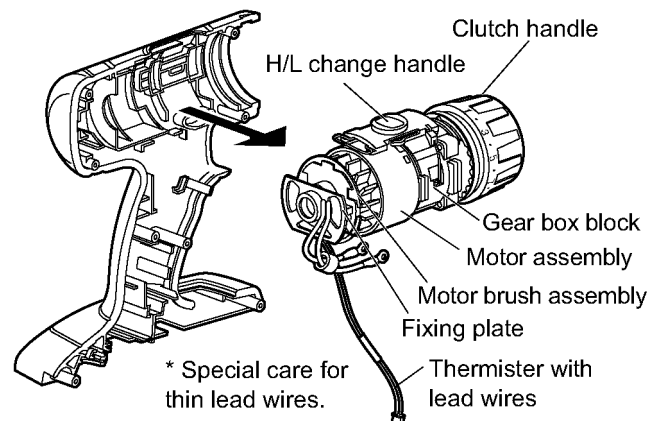
4.2.3. Removal of Switch and Driving block.

Removal

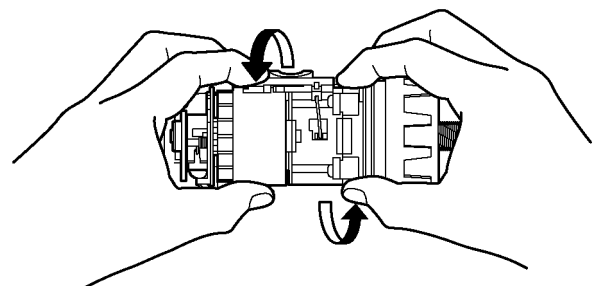
1. Take out the switch assembly.



2. Take out the driving block.



3. Separate the motor from the gear box block by twisting the motor to unlock tabs.



4.2.4. Removal or assembly of Control PCB.

Removal

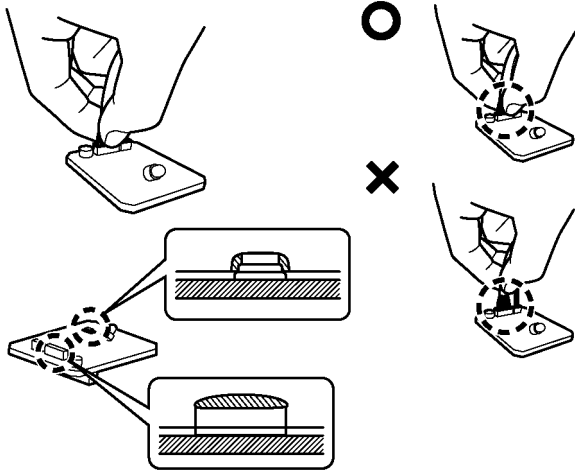
1. Take out the connector from the control PCB.

NOTE:

Make sure hold the connector at the bottom area.

Assembly

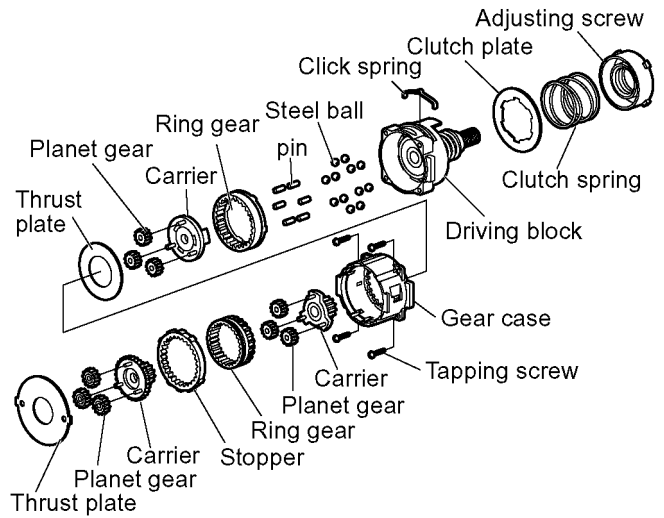
1. Insert the connector.



4.2.5. Removal or attachment of the Gear Box Block.

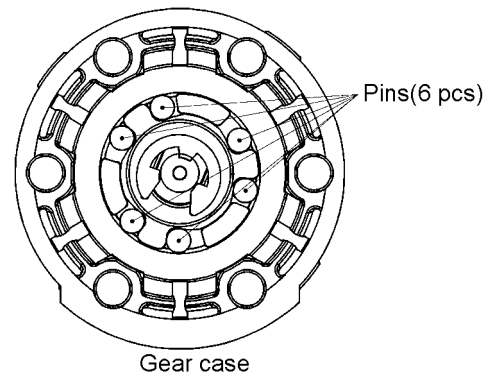
Removal

1. Turn the thrust plate to remove.
2. The internal parts of gear box block can be removed one after another.



Attachment

1. Start from inserting 6 pins into the driving block as shown in the figure.



2. Assemble the other parts in reverse order as shown in the figure.

NOTE:

Carriers and Ring Gears have their own correct directions for proper reassembly.

4.2.6. Assembly of the Adjusting Screw and the Clutch Handle.

1. 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.

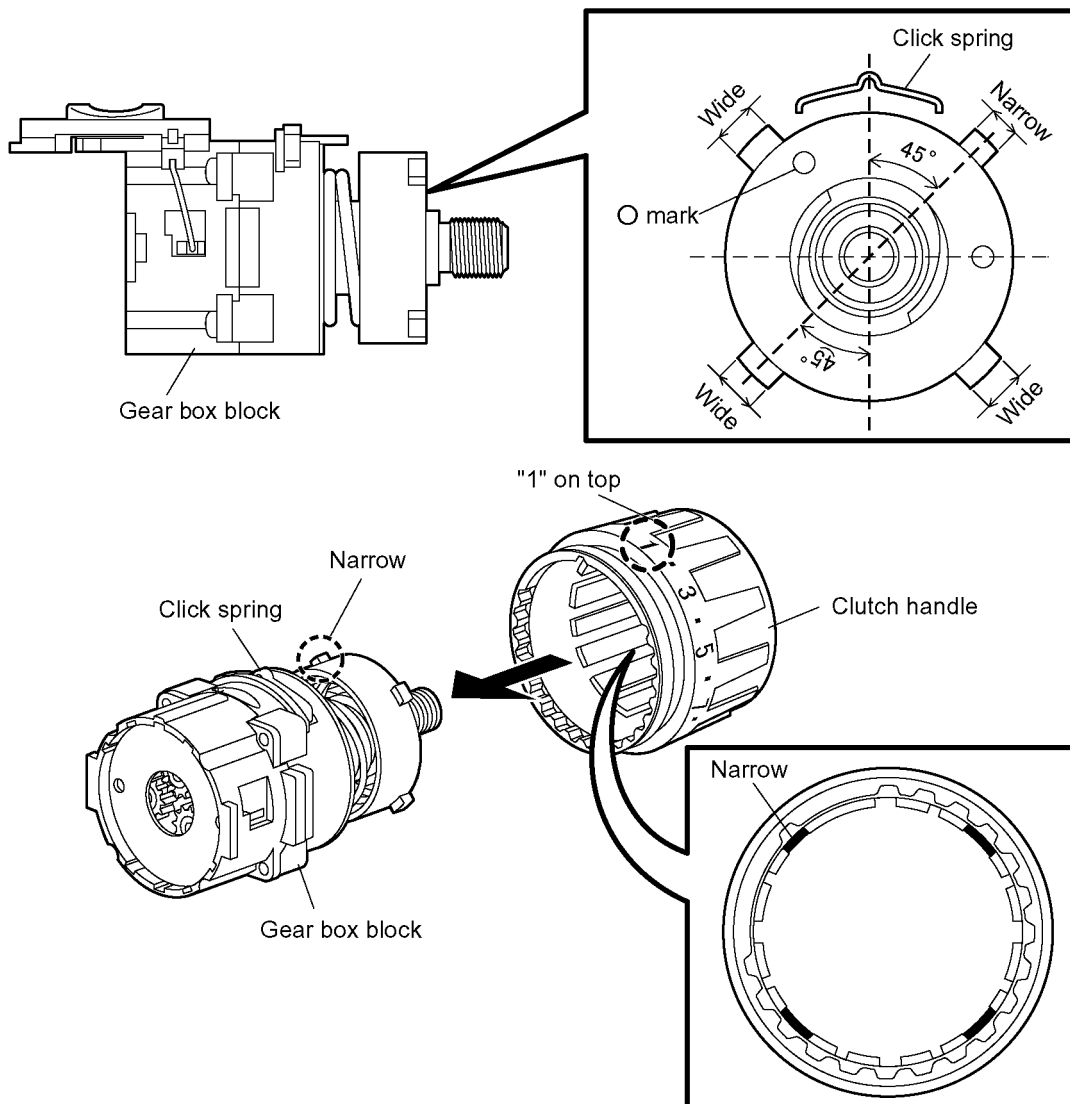
NOTE:

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 about one rotation for clockwise direction.

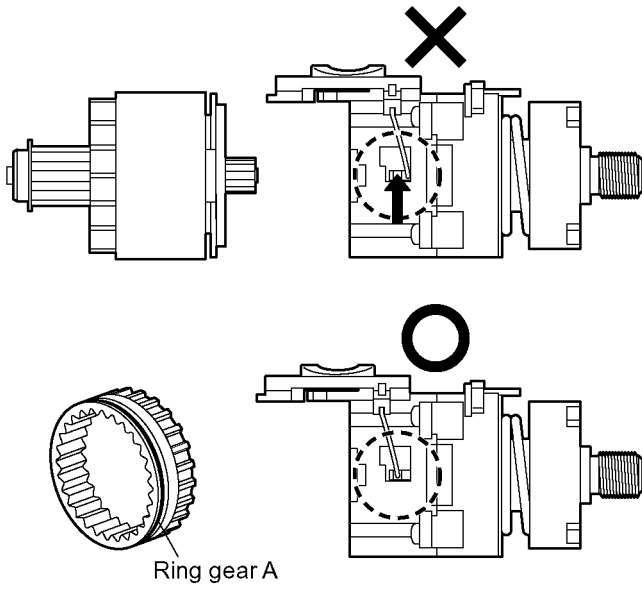
3. Set the clutch handle with position 1 on top.
(Align the position 1 of clutch handle with the narrow projection of driving block.)

4. Insert the clutch handle with adjusting the tabs of adjusting screw to the groove of inside clutch handle.

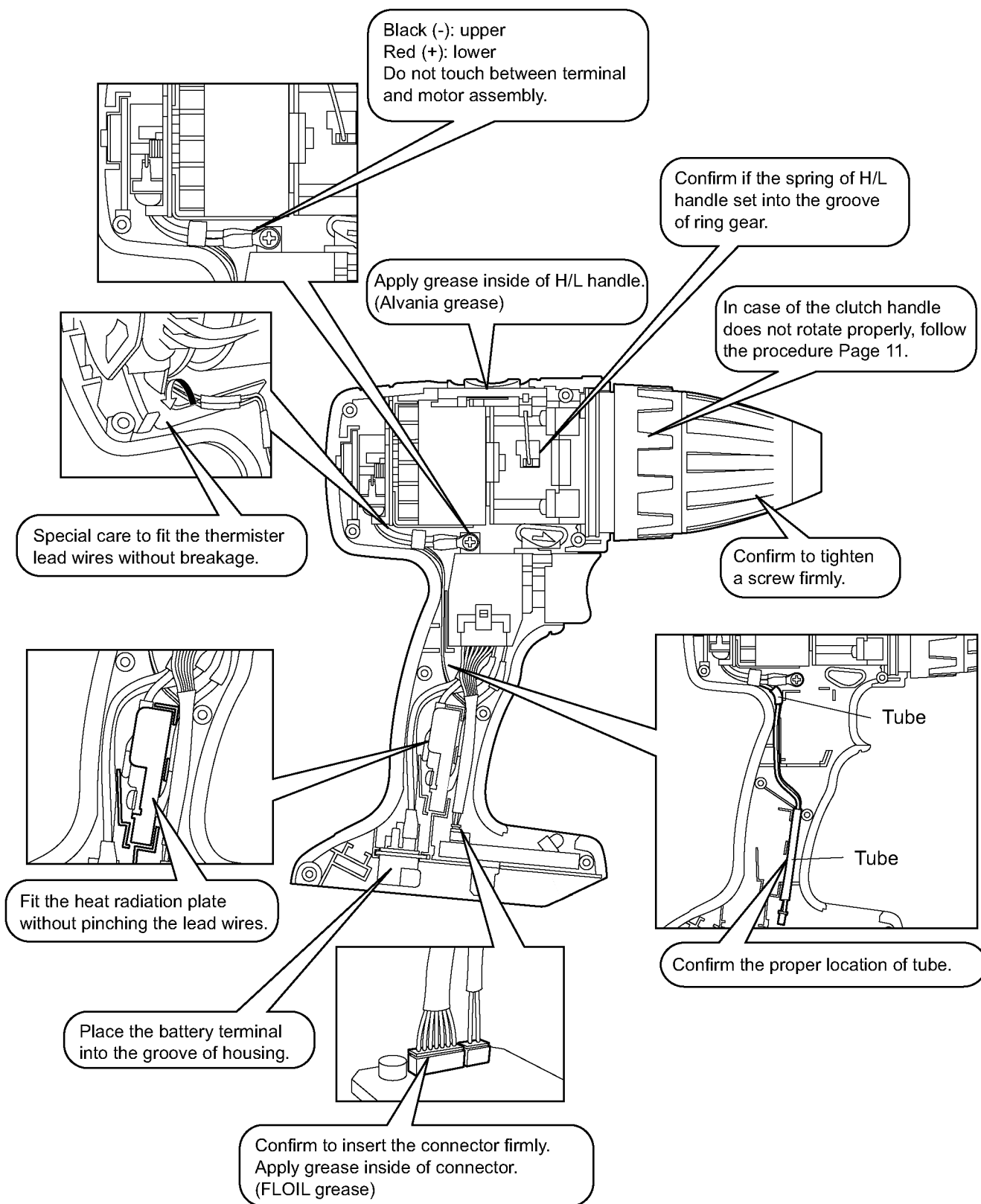


4.2.7. Attachment of the H/L change handle.

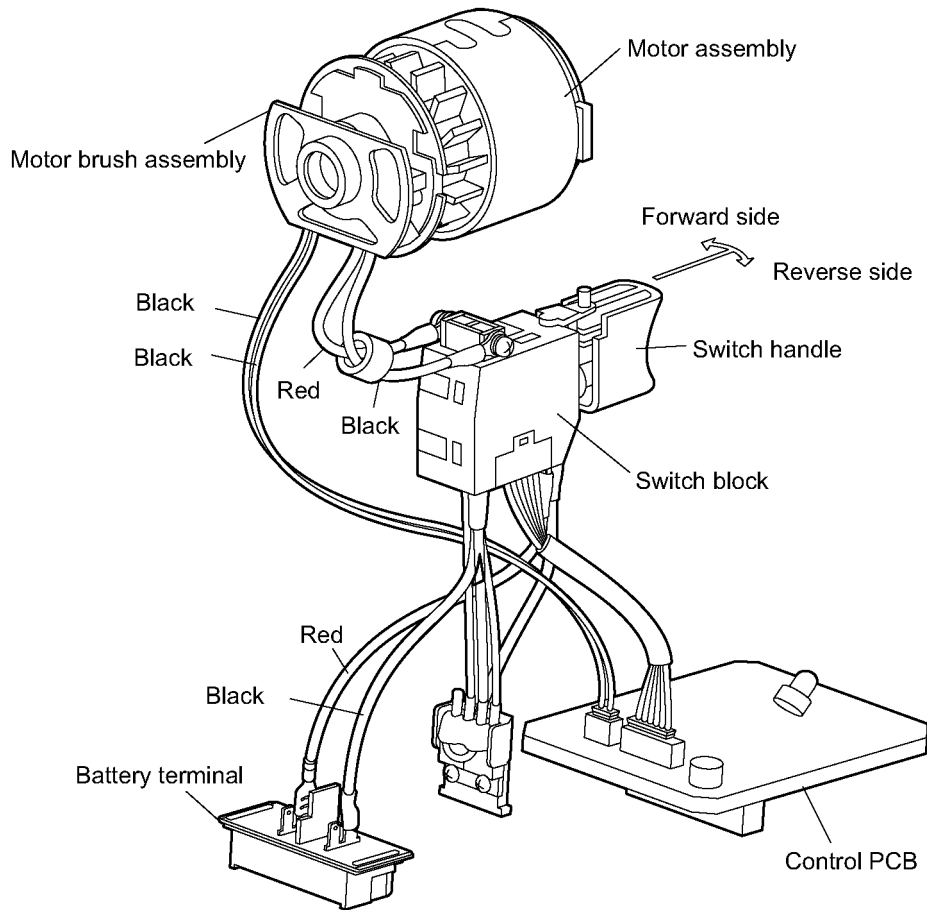
1. Insert the both side of handle spring into the groove of Ring gear A.



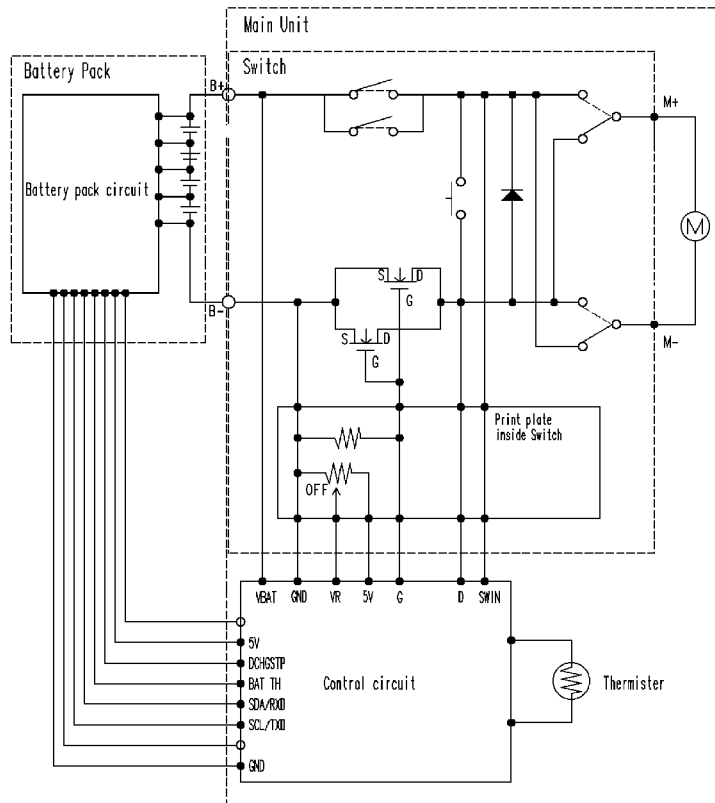
4.2.8. Assemble of Driving block.



5 Wiring Connection Diagram

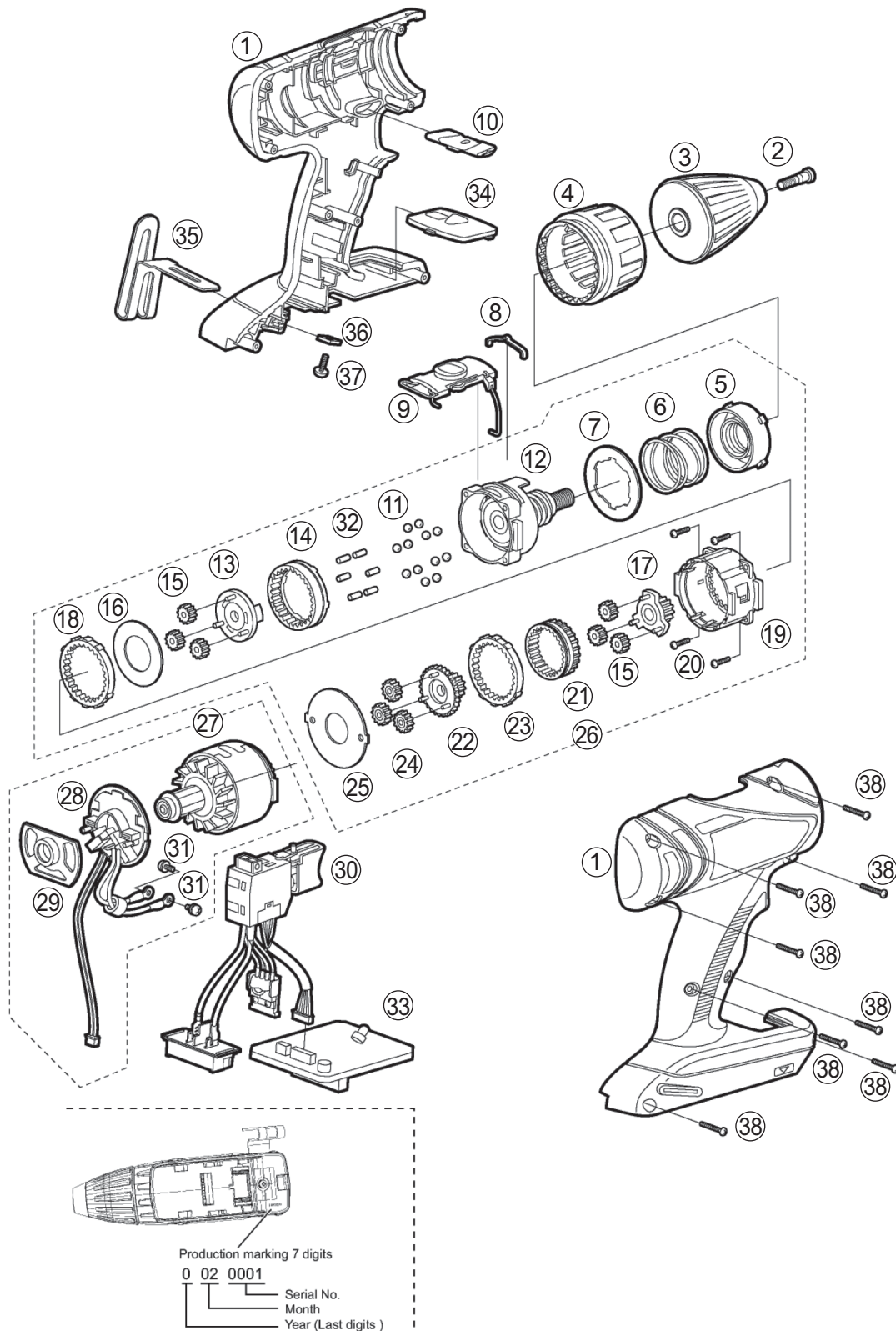


6 Schematic Diagram



7 Exploded View and Replacement Parts List

7.1. PARTS LOCATION



7.2. REPLACEMENT PARTS LIST

MODEL No.EY7451

Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
	1	WEY7451K3078	HOUSING AB SET	1	
	2	WEY6450L6808	CHUCK FASTENING SCREW	1	
	3	WEY7441K7917	KEYLESS CHUCK	1	
	4	WEY7441H3227	CLUTCH HANDLE	1	
	5	WEY7441L0637	ADJUSTING SCREW	1	
	6	WEY7441L0177	CLUTCH SPRING	1	
	7	WEY7441L0577	CLUTCH PLATE	1	
	8	WEYT107L0457	CLICK SPRING A	1	
	9	WEY7460H3237	H/L CHANGE HANDLE	1	
	10	WEY7460H3248	F/R SELECTOR HANDLE	1	
	11	WEY7441L6968	STEEL BALL	12	($\phi 5$) (12PCS/PK)
	12	WEY7441L1088	DRIVING BLOCK	1	
	13	WEY7441L1138	CARRIER	1	
	14	WEY7441L1428	RING GEAR	1	
	15	WEY7441L1348	PLANET GEAR	6	(3PCS/PK)
	16	WEY7441L0858	THRUST PLATE	1	($\phi 37.95$)
	17	WEY7441L1118	CARRIER	1	
	18	WEY7441L0268	STOPPPER	1	
	19	WEY7441L1768	GEAR CASE	1	
	20	WEY7441K9628	TAPPING SCREW	4	(K3-12)
	21	WEY7441L1458	RING GEAR A	1	
	22	WEY7441L1128	CARRIER B	1	
	23	WEY7441L1468	RING GEAR B	1	
	24	WEY7441L1368	PLANET GEAR B	3	(3PCS/PK)
	25	WEY7441L0888	THRUST PLATE	1	$\phi 37.8$
	26	WEY7441L4057	GEAR BOX BLOCK	1	
	27	WEY7451L1008	MOTOR ASSEMBLY	1	
	28	WEY7441L2579	MOTOR BRUSH ASSEMBLY	1	
	29	WEY7441L0128	FIXING PLATE	1	
	30	WEY7441L2007	SWITCH ASSEMBLY	1	
	31	WEY7441L6028	SCREW	2	(K3-6)
	32	WEY7441L0378	ROLLER SET	6	($\phi 3.175 \times 7.2$) (6PCS/PK)
	33	WEY7451L2118	WATERPROOF CIRCUIT ASSEMBLY	1	
	34	WEY7451K3958	OPERATION PANEL	1	
	35	WEY7543K3187	PLATE HOOK	1	
	36	WEY7441L6487	NUT	1	(M4)
	37	WEY7441K6217	SCREW	1	(4-14)
	38	WEY7441K9038	TAPPING SCREW	8	(K3-20)
	-	WEY9633K7010	TOOL CASE	1	
	-	WEY7441K81P0	OPERATING INSTRUCTIONS	1	