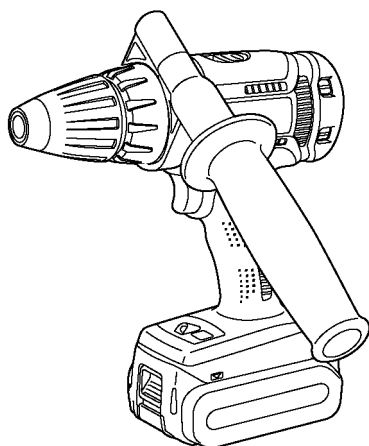


Service Manual

Cordless Drill & Driver / Cordless Hammer Drill & Driver



Model No. **EY7442**

EY7450

(Cordless Drill & Driver)

Model No. **EY7950**

**(Cordless Hammer Drill
& Driver)**

Europe and 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.

TABLE OF CONTENTS

	PAGE	PAGE
1 Warning-----	2	
2 Specifications -----	2	
3 Troubleshooting Guide-----	3	
4 Disassembly and Assembly Instructions -----	8	
5 Wiring Connection Diagram -----	16	
6 Schematic Diagram-----	17	
7 Exploded View and Replacement Parts List -----	18	

Panasonic

© Panasonic Electric Works Co., Ltd. 2011.
All rights reserved. Unauthorized copying and distribution is a violation of law.

1 Warning

Caution:

- Pb free solder has a higher melting point than standard solder; Typical 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

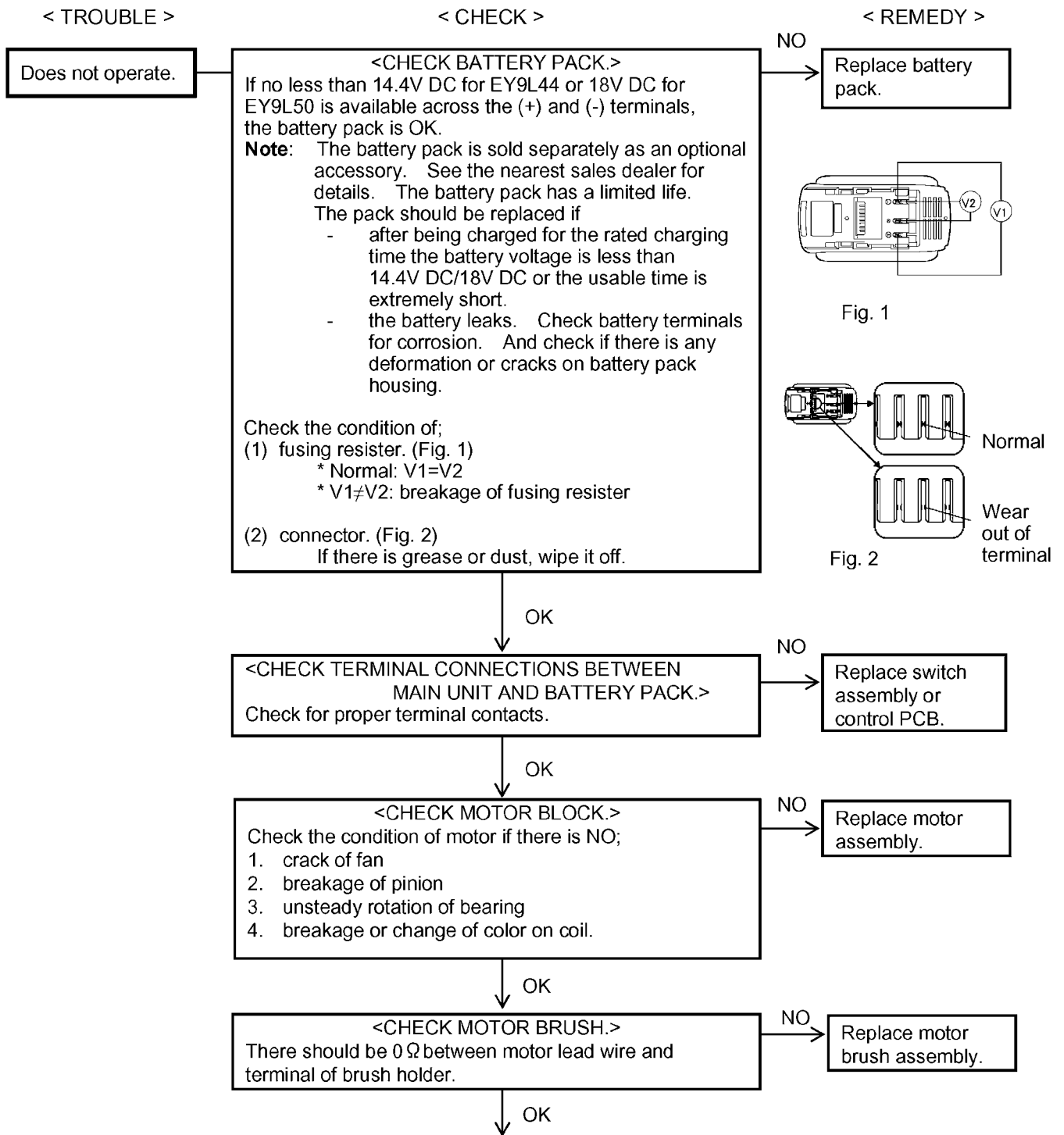
Model		EY7442	EY7450	EY7950
Motor		14.4V DC	18V DC	
No load speed	LOW	0 ~ 410 min ⁻¹	0 ~ 430 min ⁻¹	
	HIGH	0 ~ 1530 min ⁻¹	0 ~ 1650 min ⁻¹	
Blows rate per minute	LOW	/		1800-7740 min ⁻¹
	HIGH			6840-29700 min ⁻¹
Chuck capacity		φ 1.5 ~ 13mm (1/16" ~ 1/2")		
Clutch torque		Approx. 1.0Nm– 6.9Nm (0.34 Nm per stage, total 18 stage)		
Maximum torque	LOW	36N·m Stalling torque	40N·m Stalling torque	
	HIGH	12N·m Stalling torque	13.9N·m Stalling torque	
Overall length		218mm (8-9/16")		235mm (9-1/4")
Weight (with battery pack EY9L41)		2.05kg (4.5lbs)	2.15kg (4.7lbs)	2.3kg (5.0lbs)

2.2. MAXIMUM RECOMMENDED CAPACITIES

Screw driving	Machine screw	M8
	Wood screw	∅ 10 mm or ∅ 6.8 mm
	Self-drilling screw	∅ 6 mm
Drilling	for Wood	∅ 36 mm
	for Metal	∅ 13 mm
	for Masonry	∅ 13 mm

3 Troubleshooting Guide

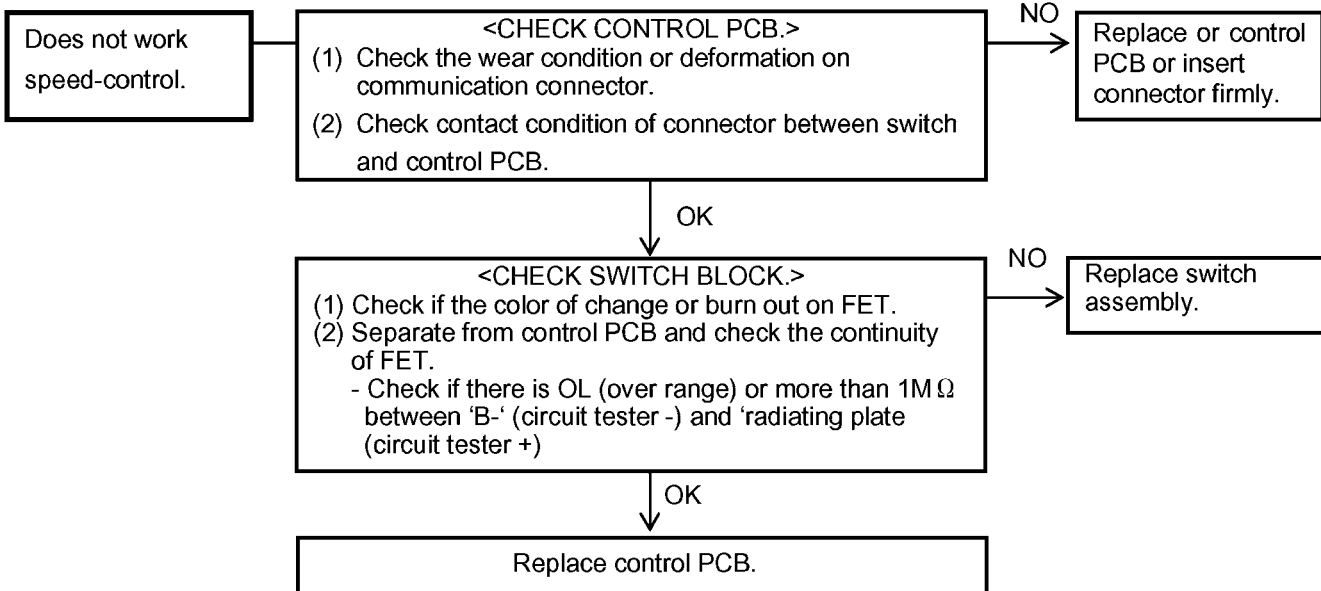
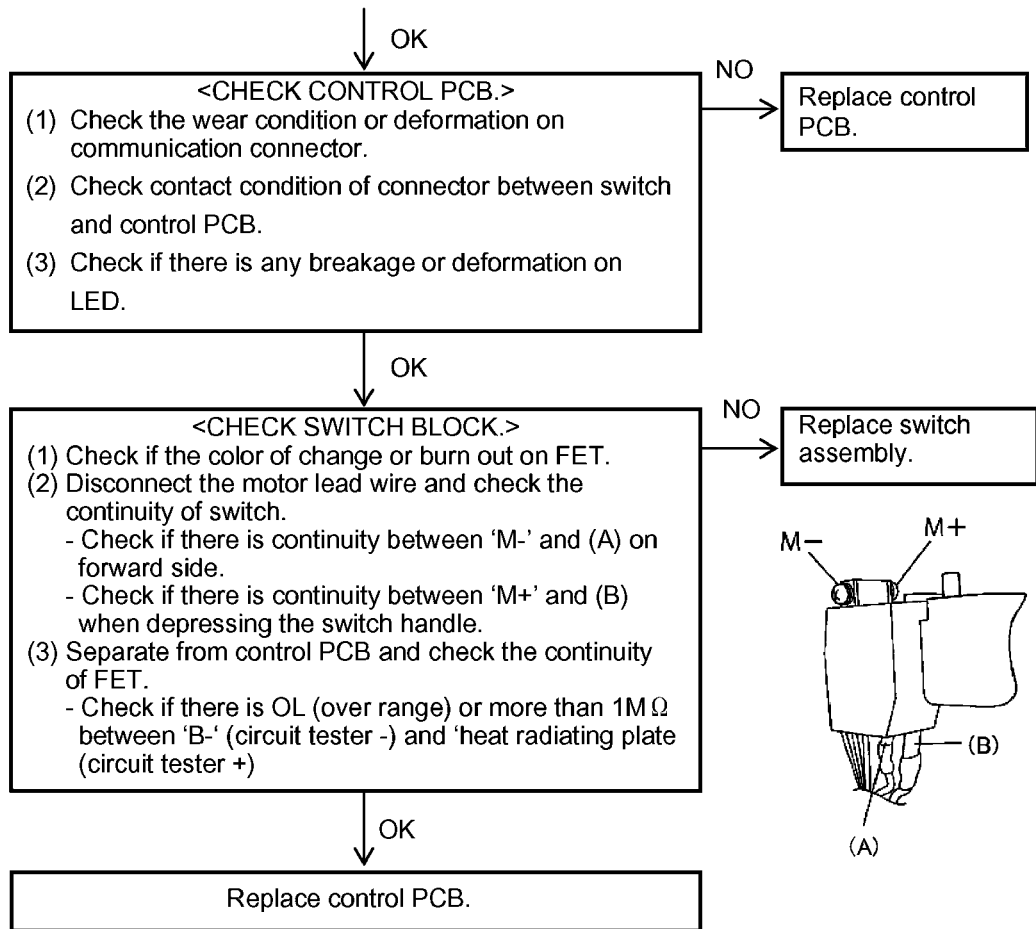
(Refer to Wiring Connection Diagram)

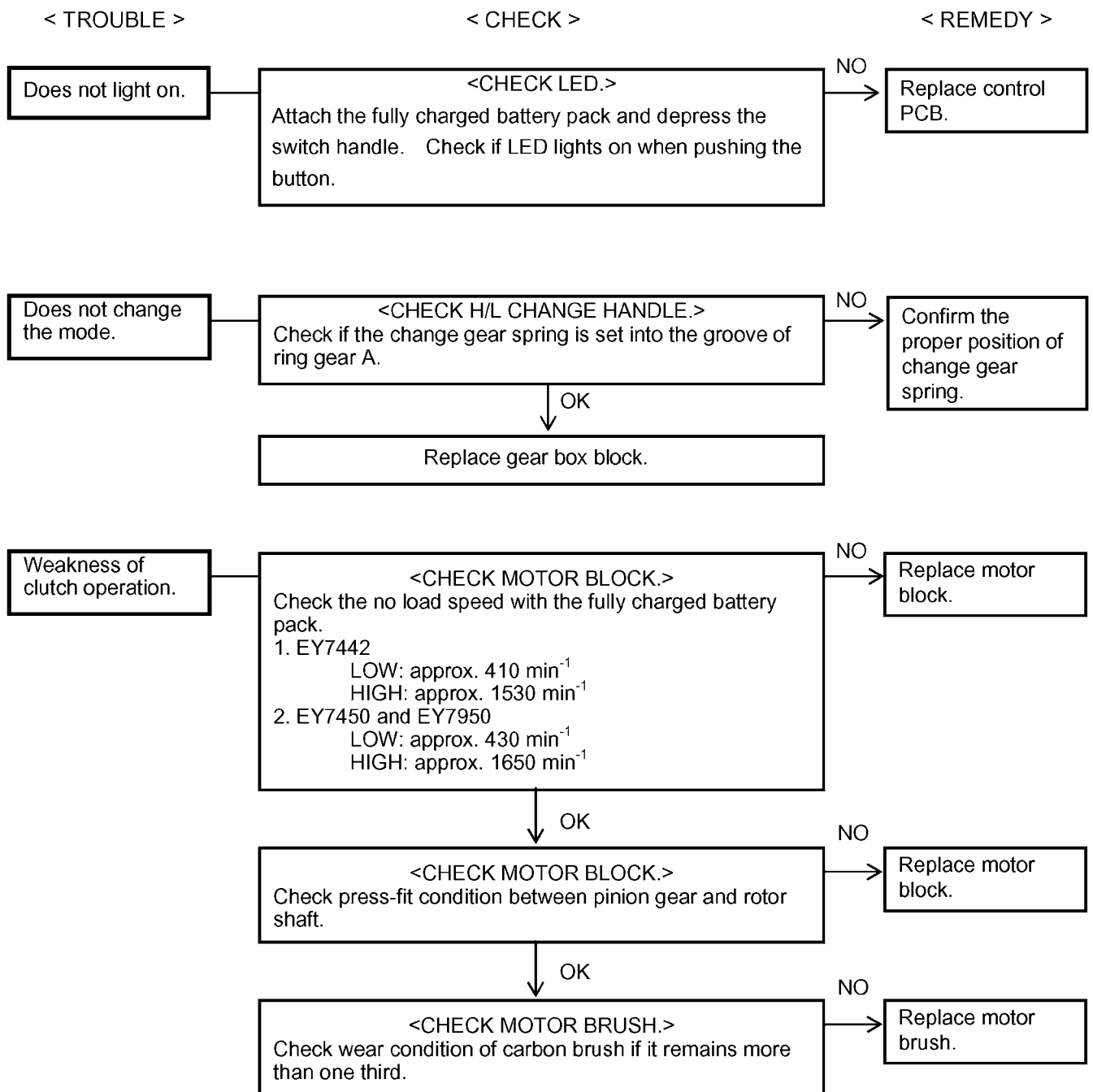


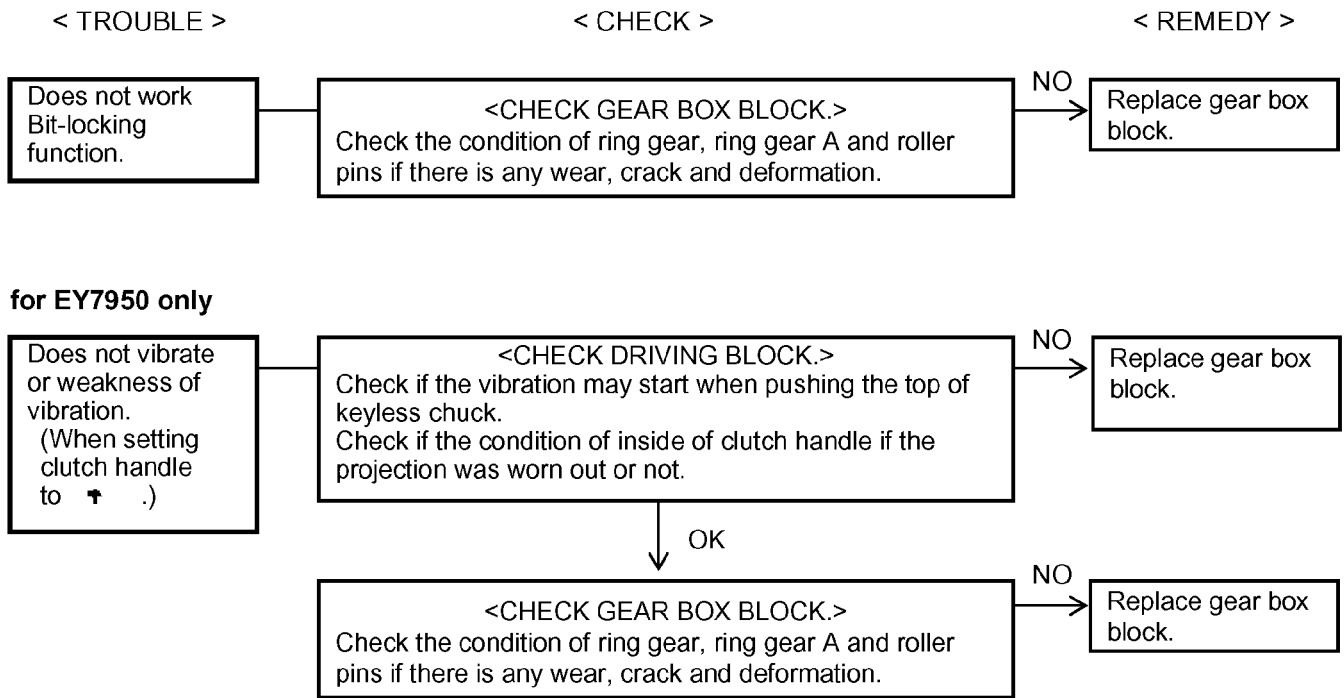
< TROUBLE >

< CHECK >

< REMEDY >







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 if LED lights ON. Once battery pack is removed and attached, press the switch handle, otherwise LED does not light ON.
3. Confirm if the tools 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.
6. Confirm the rotation of speed if it changes in proportion to the amount of pushing level on switch handle.

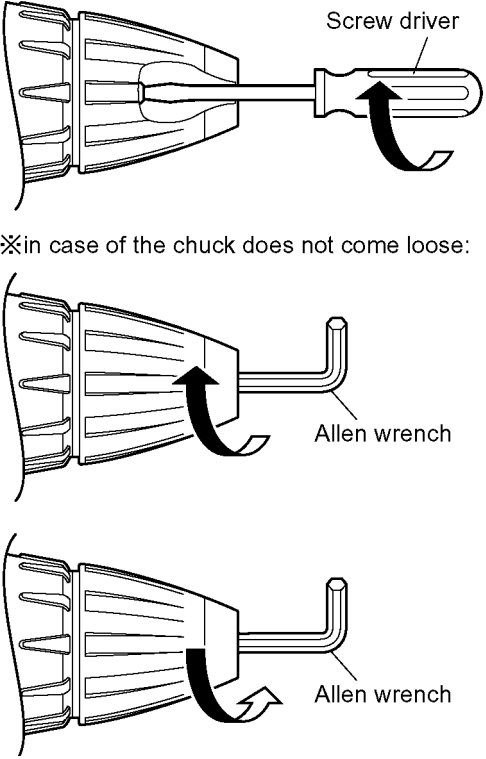

	EY7442	EY7450/EY7950
LOW	410 min ⁻¹	430 min ⁻¹
HIGH	1530 min ⁻¹	1650 min ⁻¹

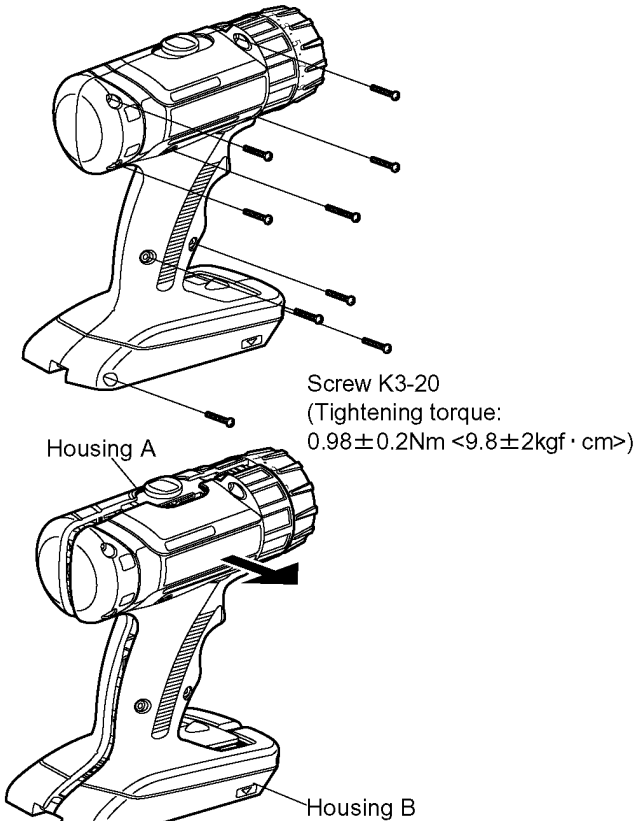
7. Confirm if the rotation stops when releasing the switch handle.
8. Check if the clutch torque changes suited for the number of clutch.
9. No clutching when setting  mark.

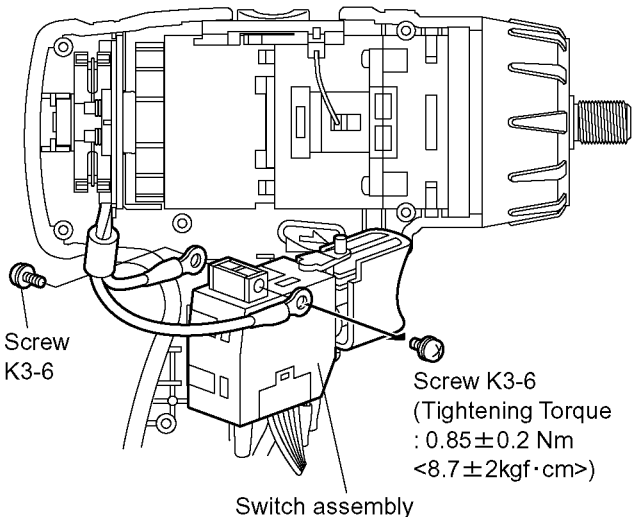
only for EY7950

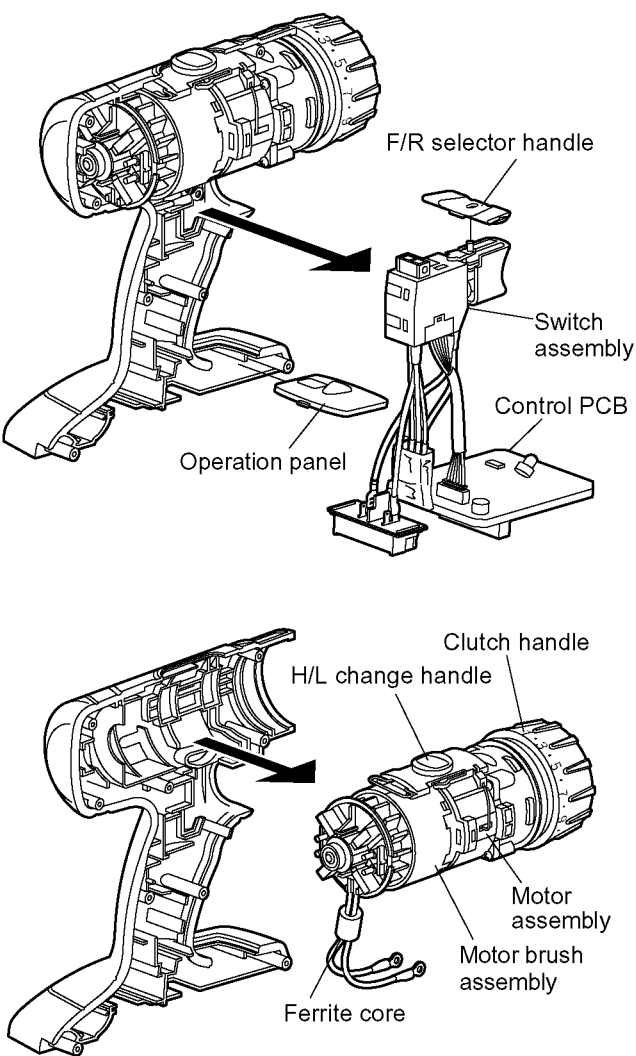
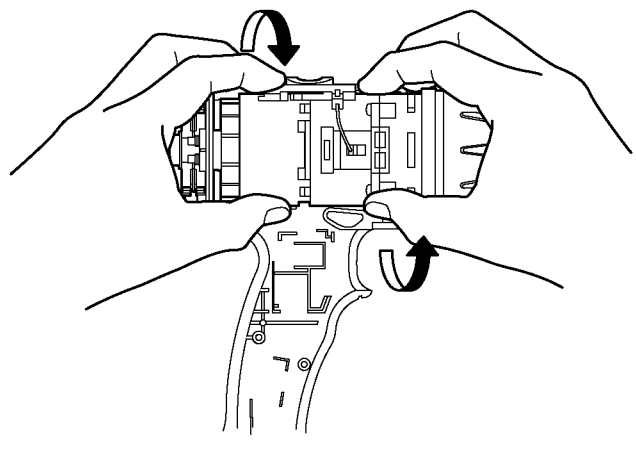
10. Rotation with hammering may work when the drill bit touches something like concrete or hard type of wood block by  mode. And confirm the power.

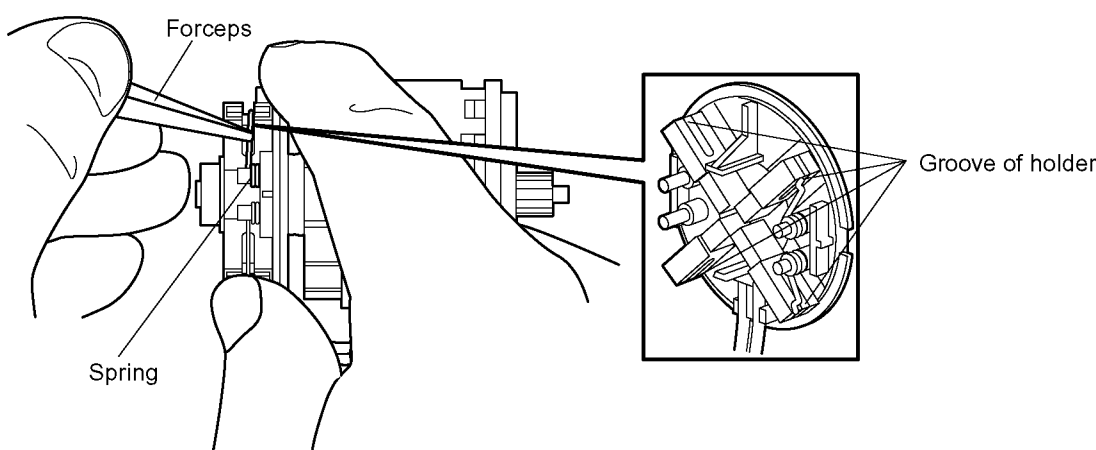
4 Disassembly and Assembly Instructions

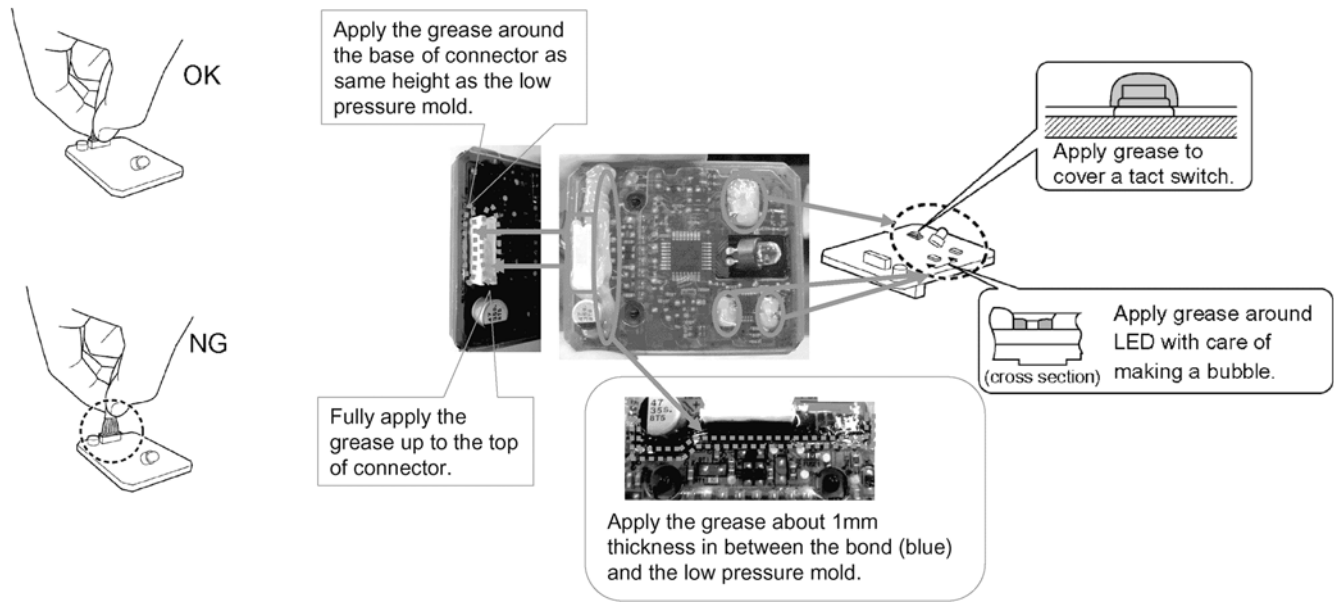
Ref. No. 1A	Procedure 1A	Removal of Keyless chuck.
	 <p data-bbox="523 275 662 297">Screw driver</p> <p data-bbox="196 499 671 521">※in case of the chuck does not come loose:</p> <p data-bbox="512 678 654 701">Allen wrench</p> <p data-bbox="512 947 654 969">Allen wrench</p>	<p data-bbox="794 264 869 286">NOTE:</p> <p data-bbox="831 286 1436 342">When attaching or removing a bit, disconnect battery pack from tool.</p> <ol data-bbox="794 342 1444 477" style="list-style-type: none"> 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. <p data-bbox="794 488 869 510">NOTE:</p> <p data-bbox="831 510 1460 611">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.</p> <ol data-bbox="794 611 1444 689" style="list-style-type: none"> 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.

Ref. No. 2B	Procedure 2A → 2B	Removal of Housing.
	 <p data-bbox="140 1574 252 1597">Housing A</p> <p data-bbox="403 1507 734 1597">Screw K3-20 (Tightening torque: $0.98 \pm 0.2 \text{ Nm}$ <$9.8 \pm 2 \text{ kgf} \cdot \text{cm}$>)</p> <p data-bbox="403 1933 515 1955">Housing B</p>	<ol data-bbox="794 1137 1061 1160" style="list-style-type: none"> 1. Remove 9 housing screws.

Ref. No. 2C	Procedure 2A → 2B → 2C	Removal of Motor screw.
 <p>Screw K3-6</p> <p>Screw K3-6 (Tightening Torque : 0.85 ± 0.2 Nm <math>< 8.7 \pm 2 \text{kgf} \cdot \text{cm}></math>)</p> <p>Switch assembly</p>		<p>1. Remove 2 screws.</p>

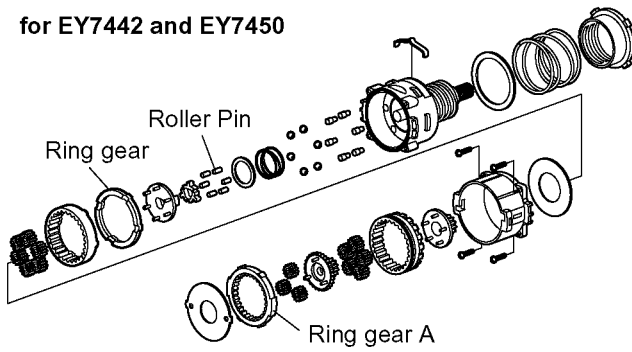
Ref. No. 2D	Procedure 2A → 2B → 2C → 2D	Removal of Switch and Driving block.
 <p>F/R selector handle</p> <p>Switch assembly</p> <p>Control PCB</p> <p>Operation panel</p> <p>Clutch handle</p> <p>H/L change handle</p> <p>Motor assembly</p> <p>Motor brush assembly</p> <p>Ferrite core</p>		<ol style="list-style-type: none"> 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. 

Ref. No. 2E	Procedure 2A → 2B → 2C → 2D → 2E	Removal of Motor brush assembly.
 <p>Labels: Forceps, Spring, Groove of holder</p>		<ol style="list-style-type: none"> 1. Hitch the brush spring to the groove of holder by something like forceps and separate the motor brush assembly from commutator. 2. Take out the motor brush assembly from the motor case.

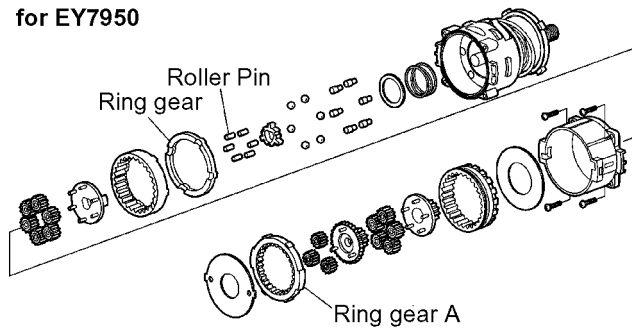
Ref. No. 2F	Procedure 2A → 2B → 2C → 2D → 2E → 2F	Removal or assembly of Control PCB.
 <p>Labels: OK, NG, Apply the grease around the base of connector as same height as the low pressure mold., Fully apply the grease up to the top of connector., Apply the grease about 1mm thickness in between the bond (blue) and the low pressure mold., Apply grease to cover a tact switch., Apply grease around LED with care of making a bubble. (cross section)</p>		<p>(Removal)</p> <ol style="list-style-type: none"> 1. Pull out the connector from the control PCB. <p>NOTE: Make sure hold the connector at the bottom area.</p> <p>(Assembly)</p> <ol style="list-style-type: none"> 1. Apply the permalub grease around the tact switch. <p>NOTE: Make sure to apply the grease to keep IP56. <ol style="list-style-type: none"> 2. Insert the connector firmly. </p>

Ref. No. 2G	Procedure 2A → 2B → 2C → 2D → 2E → 2F → 2G	Removal or attachment of Gear box block.
-------------	--	--

for EY7442 and EY7450



for EY7950



(Removal)

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

(Attachment)

1. Assemble the parts in reverse order as shown in the figure.

NOTE:

Carriers, Ring gears and Clutch plate have their own correct directions for proper reassembly.

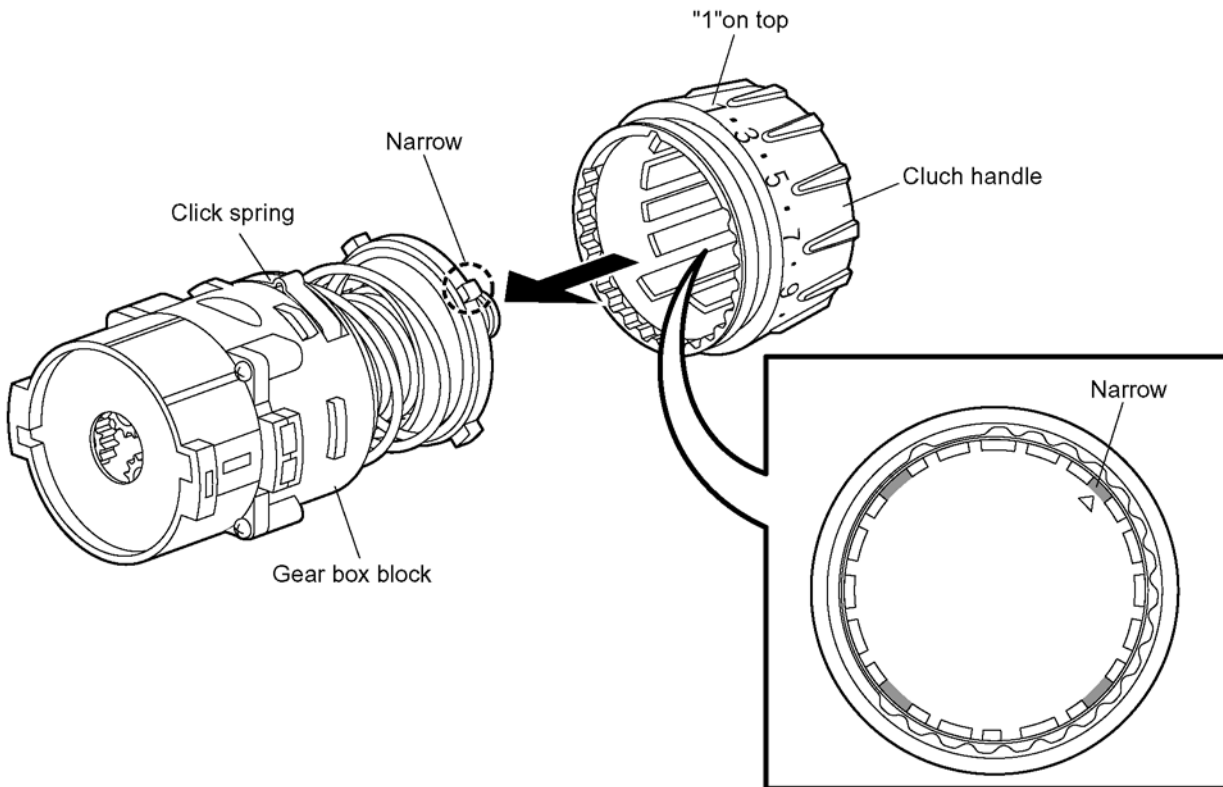
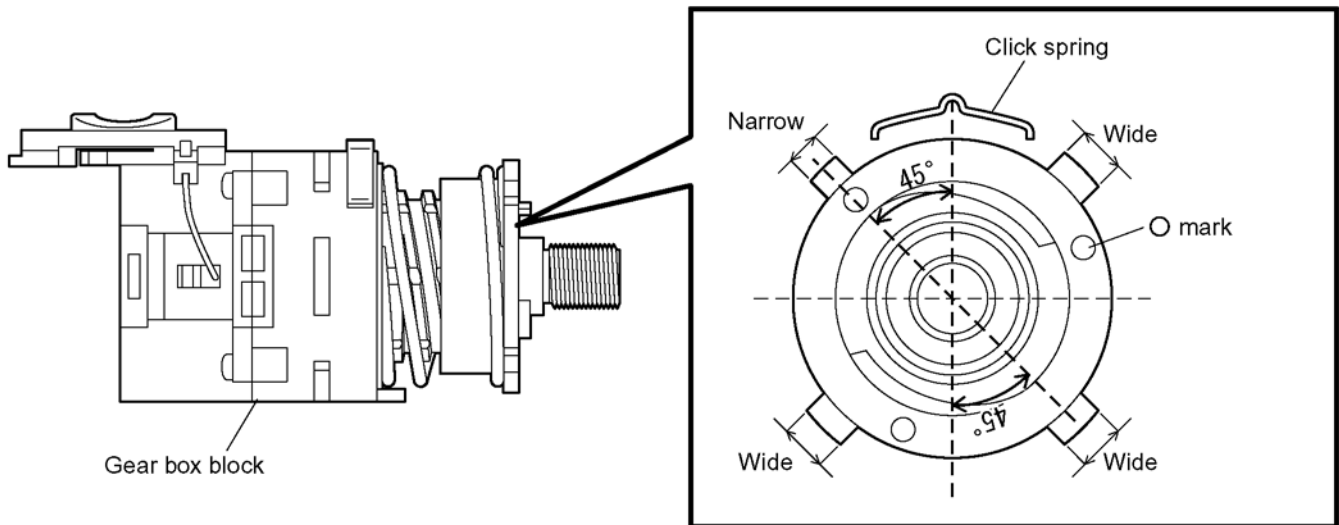
for EY7442 and EY7450

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

NOTE:

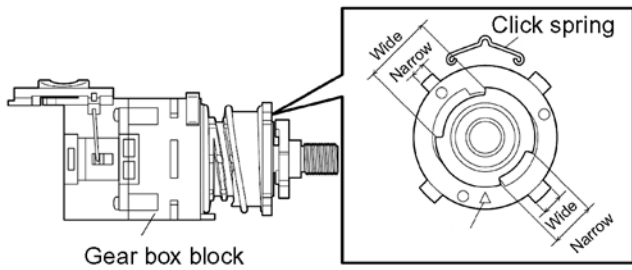
Make sure that the adjusting screw has its own correct direction for proper assembly. Failure to do so, the clutch handle does not rotate properly.

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 narrowest projection of driving block.)
4. Insert the clutch handle with adjusting the tabs of adjusting screw to the groove of inside clutch handle.



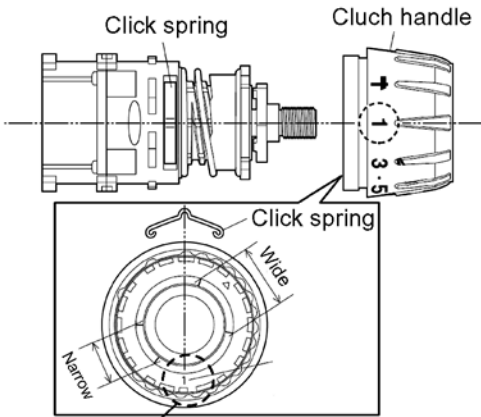
Ref. No. 2H-2	Procedure 2A → 2B → 2C → 2D → 2E → 2F → 2G → 2H	Assembly of Adjusting screw and Clutch handle.
---------------	---	--

for EY7950



1. Hold the driving block with the click spring on top, and align the Δ mark of adjusting screw with the bottom of the clutch case.

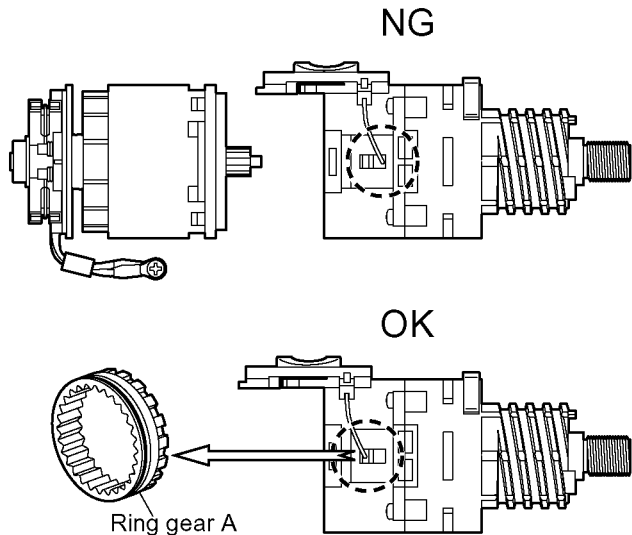
NOTE:
 Make sure that the adjusting screw has its own correct direction for proper assembly. Failure to do so, the clutch handle does not rotate properly.
 2. Turn the adjusting screw into the driving block about one rotation for clockwise direction.
 3. Set the clutch handle with position 14 on top.
 (Align the projection of clutch handle on bottom.)

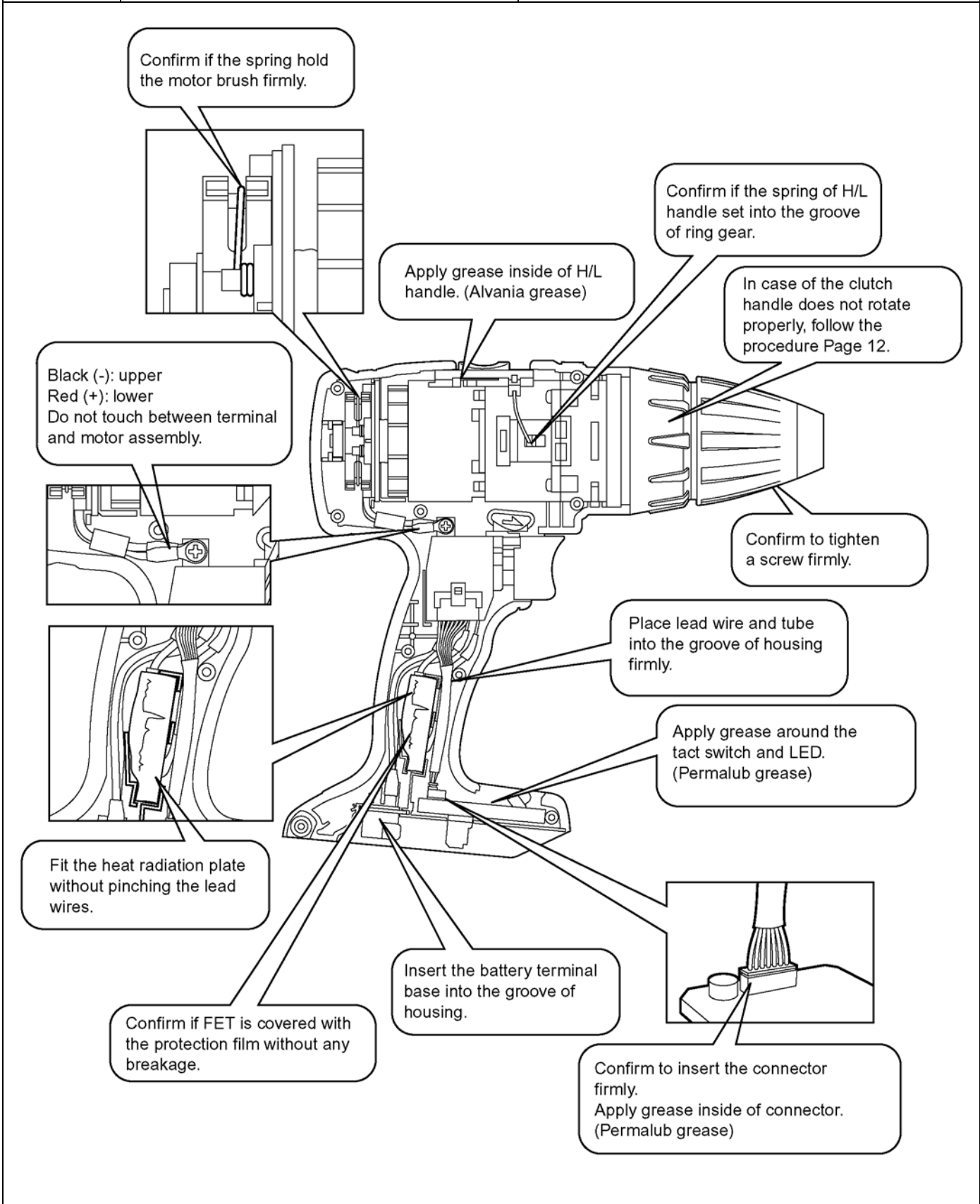


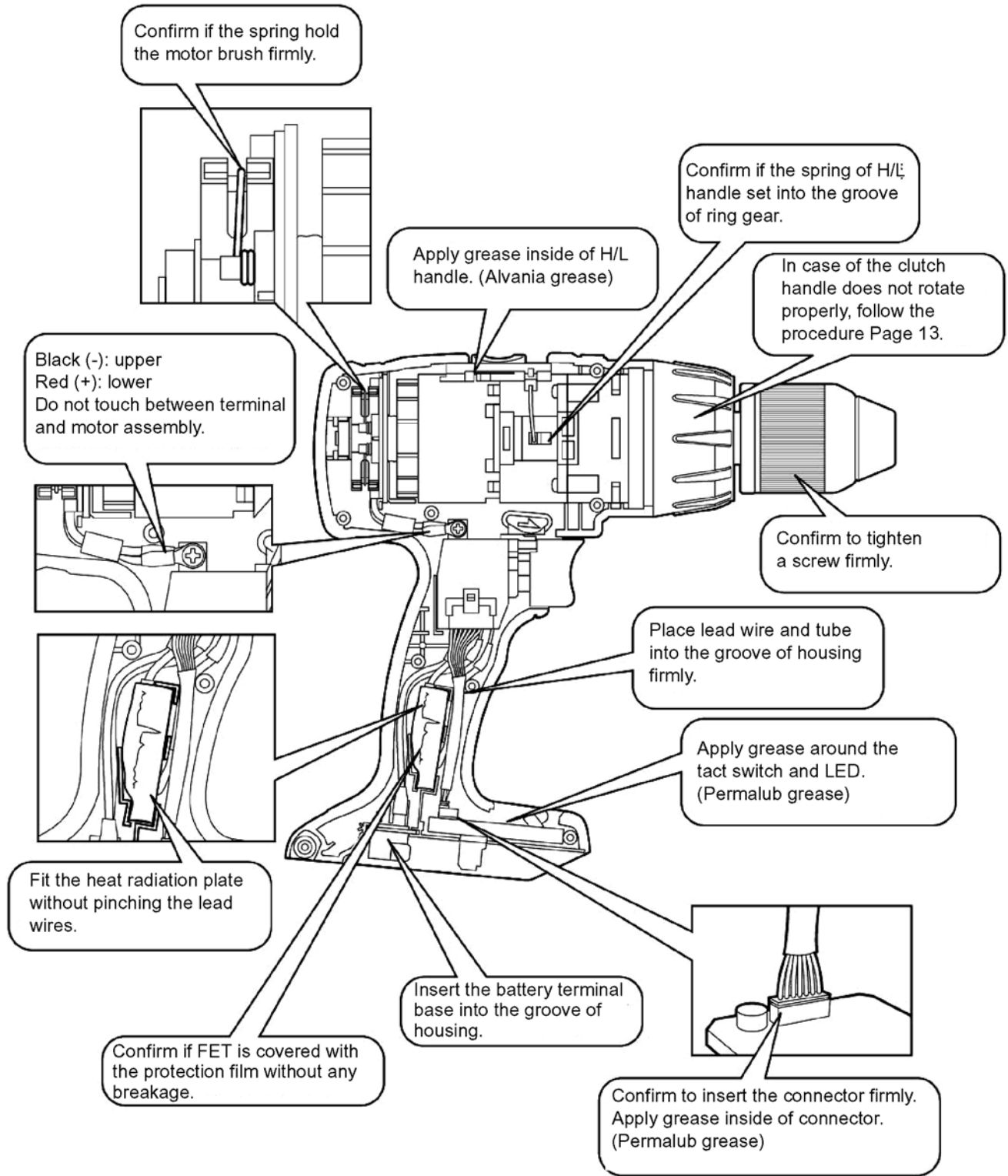
Clutch "1" located opposite side of click spring.

Ref. No. 2I	Procedure 2A → 2B → 2C → 2D → 2E → 2F → 2G → 2H → 2I	Attachment of H/L change handle.
-------------	--	----------------------------------

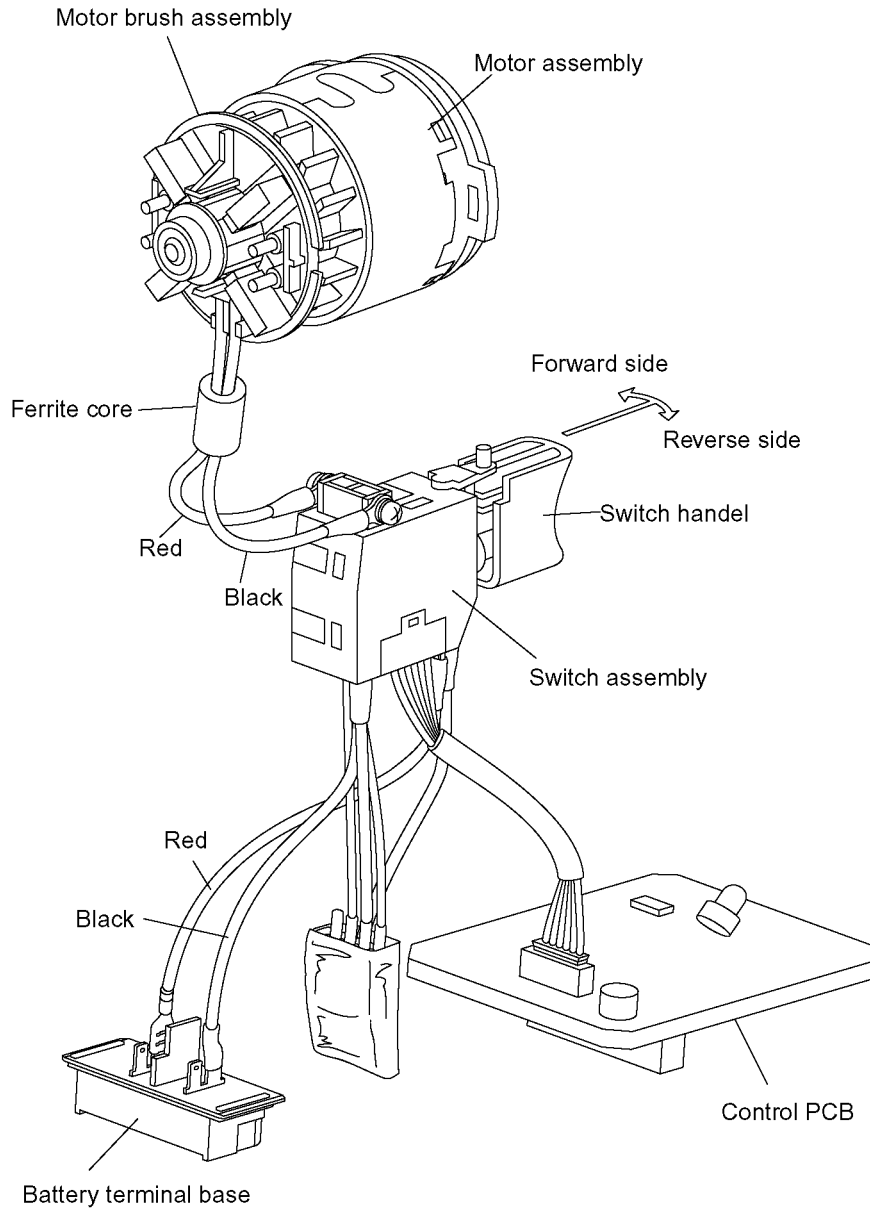
1. Insert the both side of handle spring into the groove of Ring gear A.





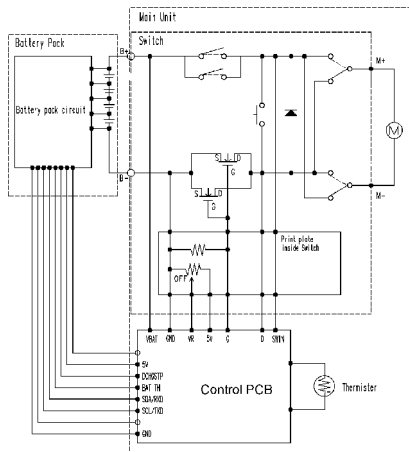


5 Wiring Connection Diagram

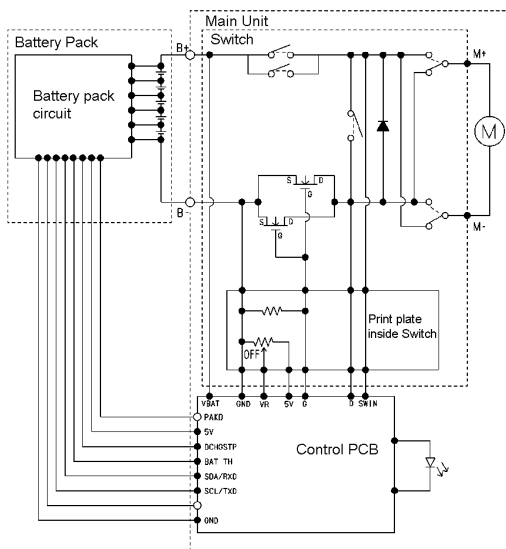


6 Schematic Diagram

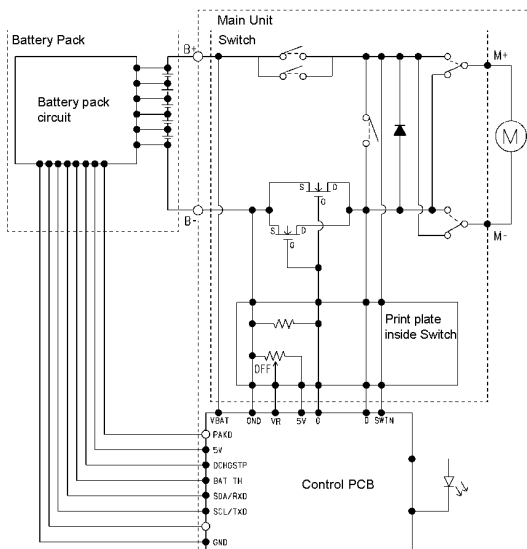
6.1. EY7442



6.2. EY7450

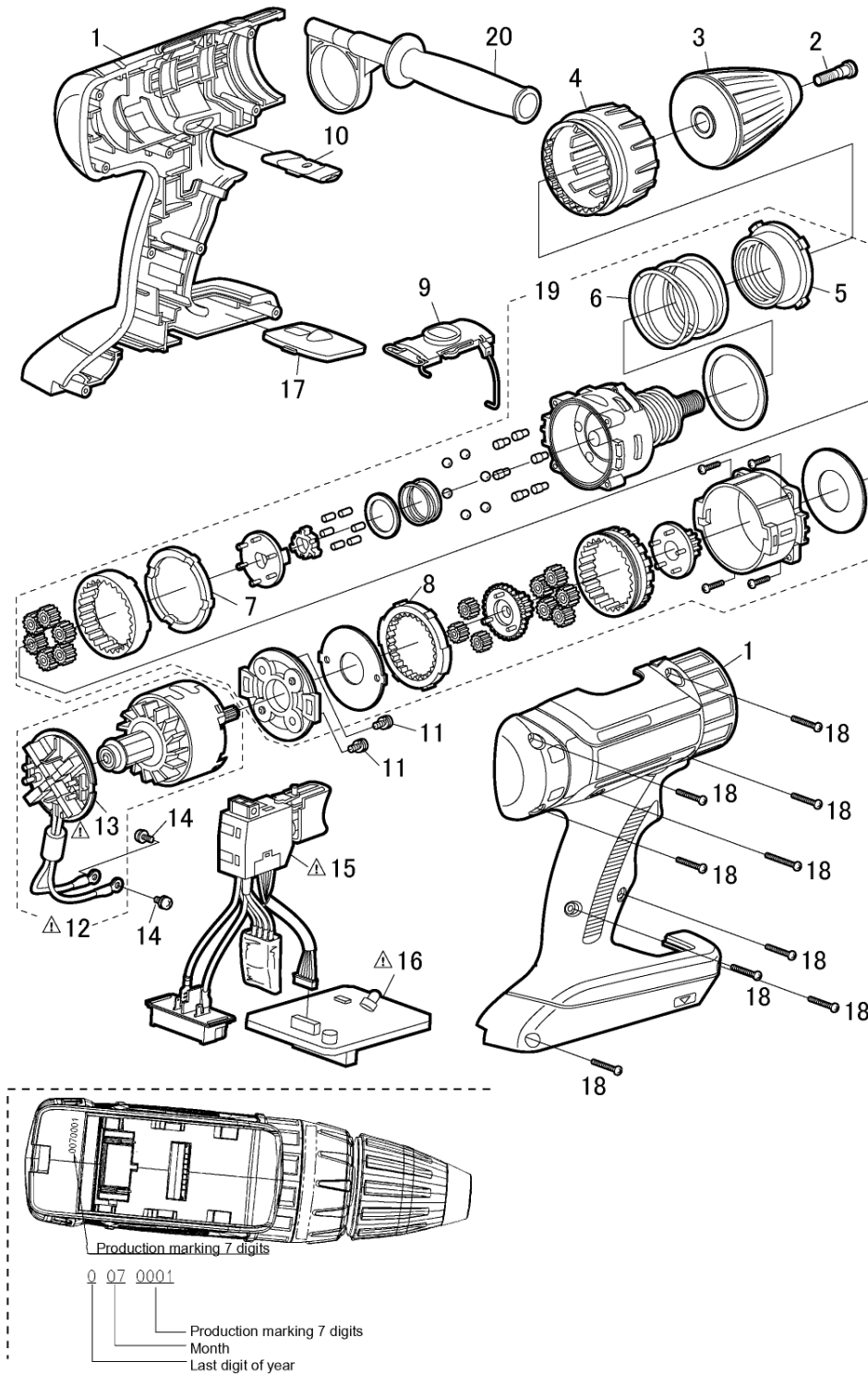


6.3. EY7950



7 Exploded View and Replacement Parts List

Model No. : EY7442 Exploded View for EY7442



** Battery Pack is available as an optional accessory. See the nearest sales dealer for details.

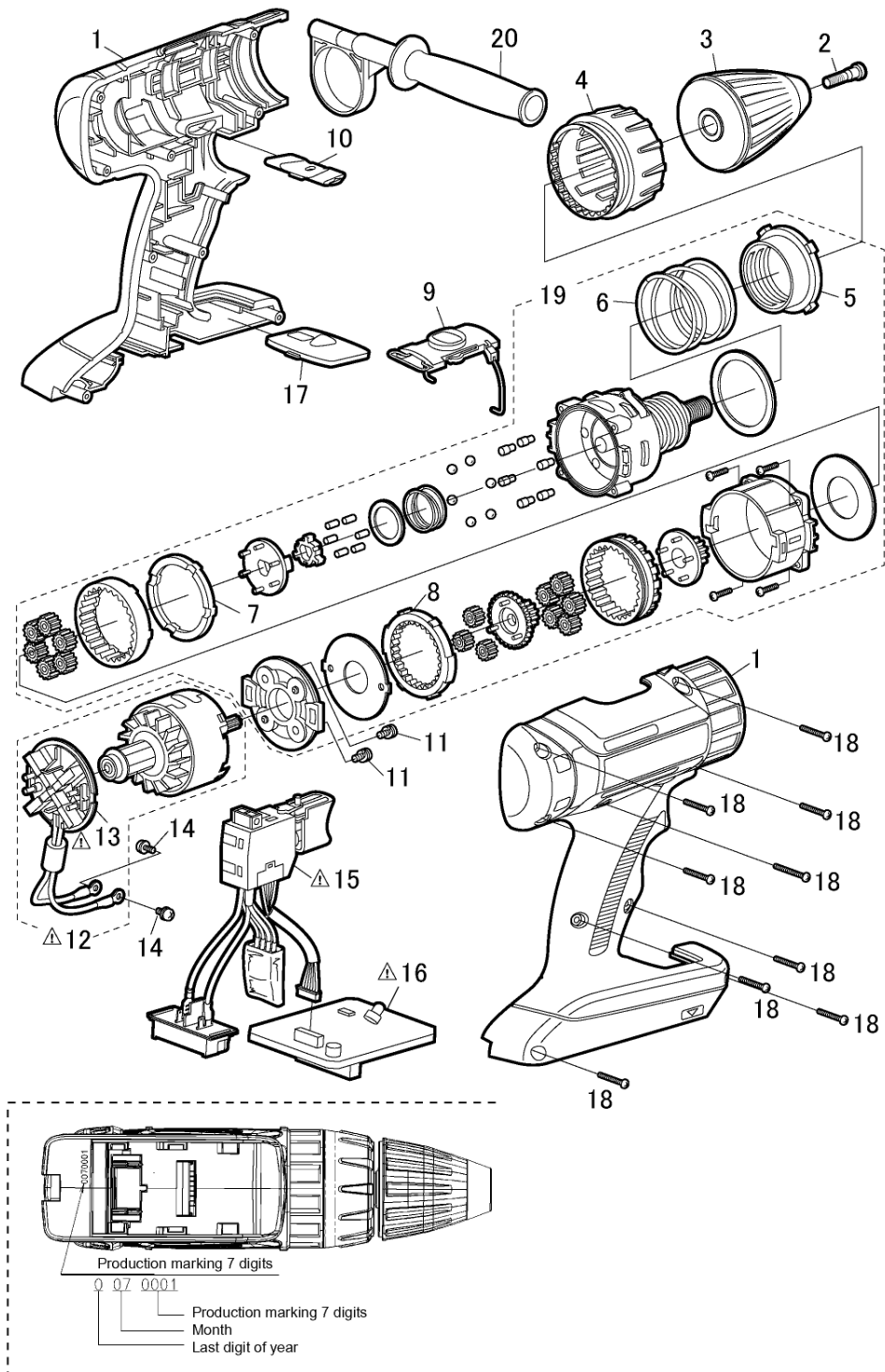
*** For replacement parts of charger, see the charger service manual.

Charger complete set is available as an optional accessory. See the nearest sales dealer for details.

Model No. : EY7442 Parts List

Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
EY7442					
	1	WEY7442K3078	HOUSING AB SET	1	(for Europe)
	1	WEY7442K3079	HOUSING AB SET	1	(for Oceania)
	2	WEY6450L6806	CHUCK FASTENING SCREW	1	
	3	WEY7441K7917	KEYLESS CHUCK	1	
	4	WEY7442H3227	CLUTCH HANDLE	1	
	5	WEY7460L0637	ADJUSTING SCREW	1	
	6	WEY7442L0177	CLUTCH SPRING	1	
	7	WEY7442L1427	RING GEAR	1	
	8	WEY7442L1117	RING GEAR A	1	
	9	WEY7460H3238	H/L CHANGE HANDLE	1	
	10	WEY7460H3248	F/R SELECTOR HANDLE	1	
	11	WEY7441L6028	SEMS SCREW	2	(K3-6)
	12	WEY7442L1008	DC MOTOR ASSEMBLY	1	
	13	WEY7442L2577	MOTOR BRUSH ASSEMBLY	1	
	14	WEYT184L6076	SEMS SCREW	2	(K4-6)
	15	WEY7442L2007	SWITCH ASSEMBLY	1	
	16	WEY7442L2117	CONTROL PCB	1	
	17	WEY7460K3958	OPERATION PANEL	1	
	18	WEY6405K9218	TORX TAPPING SCREW	9	(K3-20)
	19	WEY7442L4057	GEAR BOX BLOCK	1	
	20	WEY7460K4628	SUPPORT HANDLE	1	
	-	WEY9L40R2788	BATTERY PACK COVER	1	
	-	WEY9644K7019	TOOL CASE	1	
	-	WEY7450K8108	OPERATING INSTRUCTIONS	1	
	-	WEY001T8907	GREASE (ALVANIA)	1	
	-	WEY003W8957	GREASE (PERMALUB)	1	

Model No. : EY7450 Exploded View for EY7450



** 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. : EY7450 Parts List

Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
EY7450					
	1	WEY7450K3079	HOUSING AB SET	1	(for Europe)
	1	WEY7450K3070	HOUSING AB SET	1	(for Oceania)
	2	WEY6450L6806	CHUCK FASTENING SCREW	1	
	3	WEY7441K7917	KEYLESS CHUCK	1	
	4	WEY7442H3227	CLUTCH HANDLE	1	
	5	WEY7460L0637	ADJUSTING SCREW	1	
	6	WEY7442L0177	CLUTCH SPRING	1	
	7	WEY7442L1427	RING GEAR	1	
	8	WEY7442L1117	RING GEAR A	1	
	9	WEY7460H3238	H/L CHANGE HANDLE	1	
	10	WEY7460H3248	F/R SELECTOR HANDLE	1	
	11	WEY7441L6028	SEMS SCREW	2	(K3-6)
	12	WEY7450L1008	DC MOTOR ASSEMBLY	1	
	13	WEY7442L2577	MOTOR BRUSH ASSEMBLY	1	
	14	WEYT184L6076	SEMS SCREW	2	(K4-6)
	15	WEY7442L2007	SWITCH ASSEMBLY	1	
	16	WEY7450L2117	CONTROL PCB	1	
	17	WEY7460K3958	OPERATION PANEL	1	
	18	WEY6405K9218	TORX TAPPING SCREW	9	(K3-20)
	19	WEY7442L4057	GEAR BOX BLOCK	1	
	20	WEY7460K4628	SUPPORT HANDLE	1	
	-	WEY9L40R2788	BATTERY PACK COVER	1	
	-	WEY9644K7019	TOOL CASE	1	
	-	WEY7450K8109	OPERATING INSTRUCTIONS	1	
	-	WEY001T8907	GREASE (ALVANIA)		
	-	WEY003W8957	GREASE (PERMALUB)		

Model No. : EY7950 Parts List

Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
EY7950					
	1	WEY7950K3079	HOUSING AB SET	1	(for Europe)
	1	WEY7950K3070	HOUSING AB SET	1	(for Oceania)
	2	WEY7950L6808	CHUCK FASTENING SCREW	1	
	3	WEY7950K7918	KEYLESS CHUCK	1	
	4	WEY7950K3227	CLUTCH HANDLE	1	
	5	WEY7442L1427	RING GEAR	1	
	6	WEY7442L1117	RING GEAR A	1	
	7	WEY7460H3238	H/L CHANGE HANDLE	1	
	8	WEY7460H3248	F/R SELECTOR HANDLE	1	
	9	WEY7441L6028	SEMS SCREW	2	(K3-6)
	10	WEY7450L1008	DC MOTOR ASSEMBLY	1	
	11	WEY7442L2577	MOTOR BRUSH ASSEMBLY	1	
	12	WEYT184L6076	SEMS SCREW	2	(K4-6)
	13	WEY7442L2007	SWITCH ASSEMBLY	1	
	14	WEY7450L2117	CONTROL PCB	1	
	15	WEY7460K3958	OPERATION PANEL	1	
	16	WEY6405K9218	TORX TAPPING SCREW	9	(K3-20)
	17	WEY7950L4057	GEAR BOX BLOCK	1	
	18	WEY7460K4628	SUPPORT HANDLE	1	
	-	WEY9L40R2788	BATTERY PACK COVER	1	
	-	WEY9644K7019	TOOL CASE	1	
	-	WEY7450K8109	OPERATING INSTRUCTIONS	1	
	-	WEY001T8907	GREASE (ALVANIA)	1	
	-	WEY003W8957	GREASE (PERMALUB)	1	