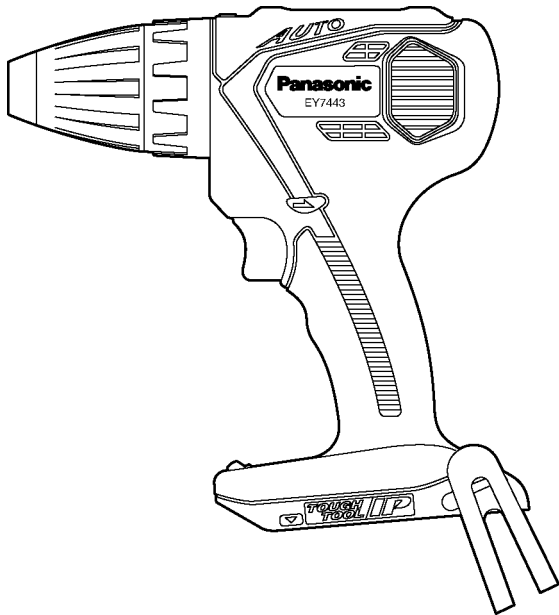


Service Manual

Cordless Auto Drill & Driver

Model No. EY7443

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 No.		EY7443
Motor voltage		14.4V
No load speed	Low	60~400min ⁻¹
	High	160~1400min ⁻¹
	AUTO	160~1400min ⁻¹
Chuck capacity		Φ 1.5mm- Φ 13mm
Clutch torque		Approx 0.5Nm - 4.4Nm
Overall length		199mm
Weight (with battery pack:EY9L44)		1.85kg
Weight (with battery pack:EY9L45)		1.85kg
Noise, Vibration		Typical Noise Emission Values according to EN 60745; Sound Pressure Level (L _{pA}); 64.4 dB (A) Sound Power Level(L _{wA}); 75.4 dB (re1pw) Uncertainty (K): 3 dB Typical Vibration according to EN 60745:≤0.93 m/s ² (Drilling into metal) Uncertainty (K): 1.5 m/s ²

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)	

Battery Charger

Model No.	EY0L81					
Electrical rating	See the rating plate on the bottom of the charger					
Weight	0.93kg					
Charging time	EY9L41	EY9L42	EY9L44	EY9L45	EY9L50	EY9L51
	Usable:45min Full:60min	Usable:30min Full:35min	Usable:50min Full:65min	Usable:65min Full:80min	Usable:50min Full:65min	Usable:65min Full:80min

Model No.	EY0L82					
Electrical rating	See the rating plate on the bottom of the charger					
Weight	0.93kg					
Charging time	EY9L41	EY9L42	EY9L44	EY9L45	EY9L50	EY9L51
	Usable:35min Full:50min	Usable:30min Full:35min	Usable:40min Full:55min	Usable:50min Full:60min	Usable:40min Full:55min	Usable:55min Full:70min

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

《TROUBLE》

《CHECK》

《REMEDY》

Does not operate (spin)

<CHECK BATTERY PACK>
 If no less than 18V DC/ 14.4V DC is available across the (+) and (-) terminals, the battery pack is OK.
Note: The battery pack is sold separately as an optional accessory. See the nearest sales dealer for details. The battery pack has a limited life. The pack should be replaced if
 - after being charged for the rated charging time the battery voltage is less than 14.4V DC or the usable time is extremely short.
 - the battery leaks. Check battery terminals for corrosion, And check if there is any deformation or cracks on battery pack housing.

Check the condition of:
 (1) fusing resistor. (Fig. 1)
 *Normal: $V1=V2$
 * $V1 \neq V2$: breakage of fusing resistor
 (2) connector. (Fig. 2)
 If there is grease or dust, wipe it off.

NO → Replace the battery pack

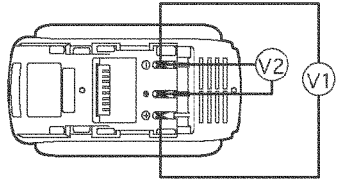
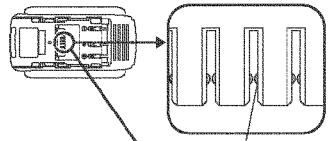


Fig1



Normal

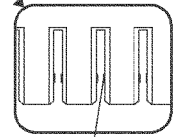


Fig2

Wear out of terminal

OK

<CHECK TERMINAL CONNECTIONS BETWEEN MAIN UNIT AND BATTERY PACK>
 • There are no much gull.
 • Terminal connections are not blackened and allow conduction.
 • Terminal connections are not rusty or deformed.

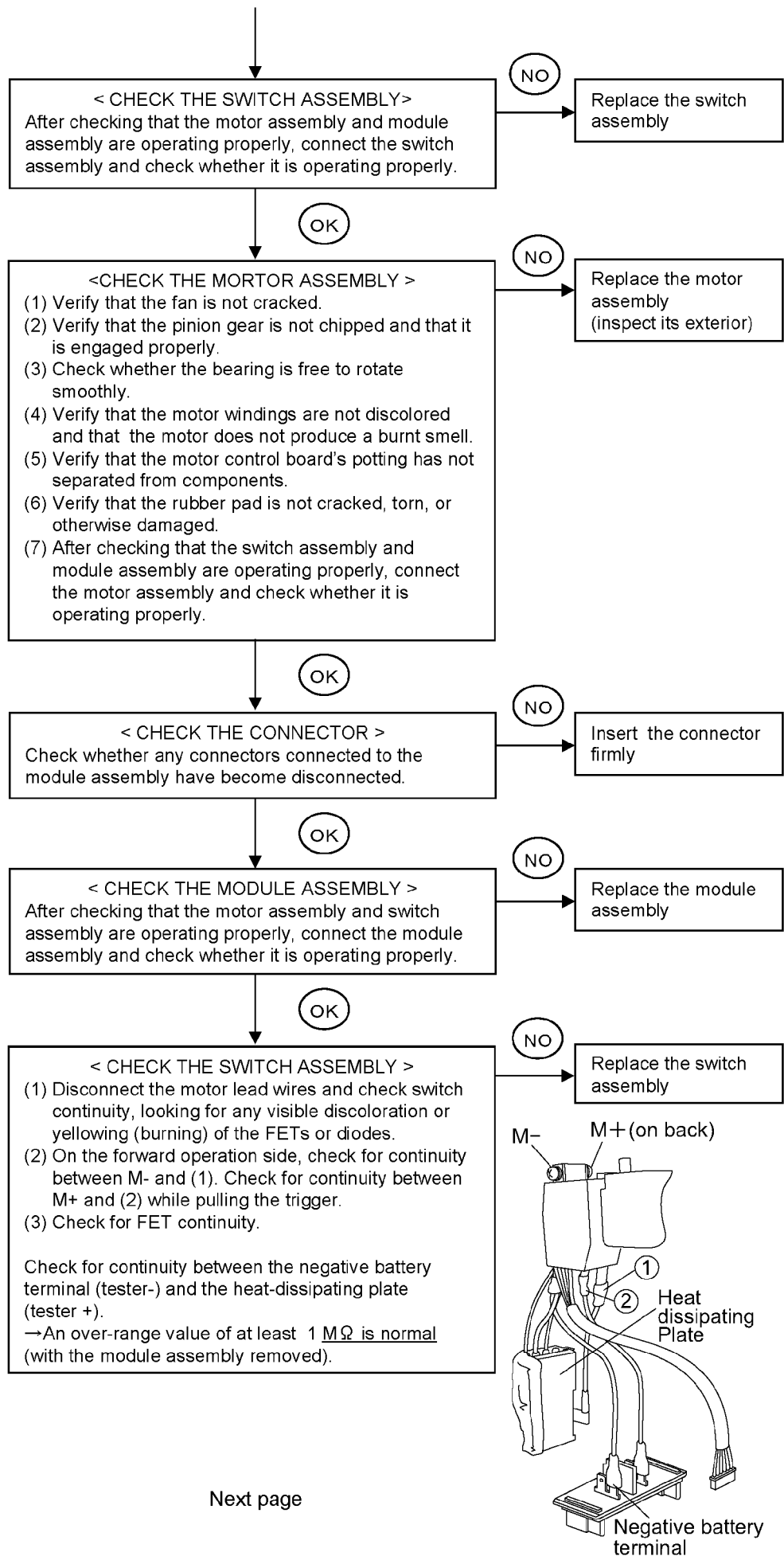
NO → Replace the switch assembly or module assembly

OK

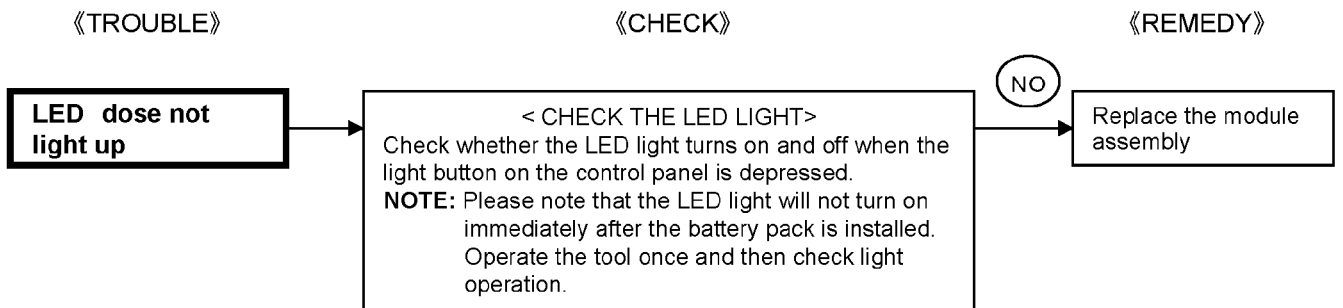
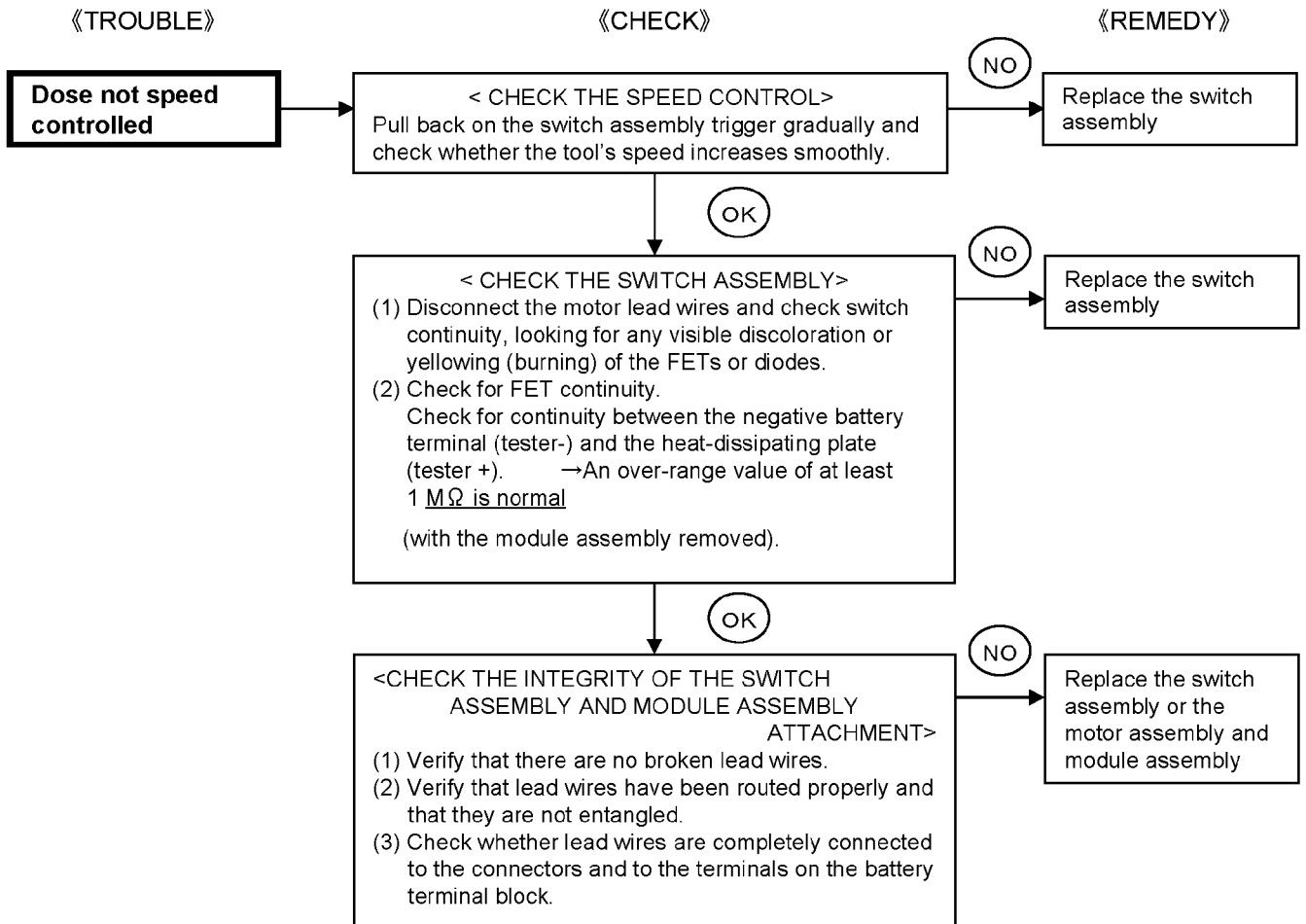
<CHECK THE DETECTIVE MODULE>
 (1) Is the H/L change handle magnet attached in the proper orientation polarity?
 (2) Check whether the amount of grease on the module assembly connectors is sufficient.
 (3) Check whether there has been a wiring break due to a break in the detective module or to wires pulling on each other.

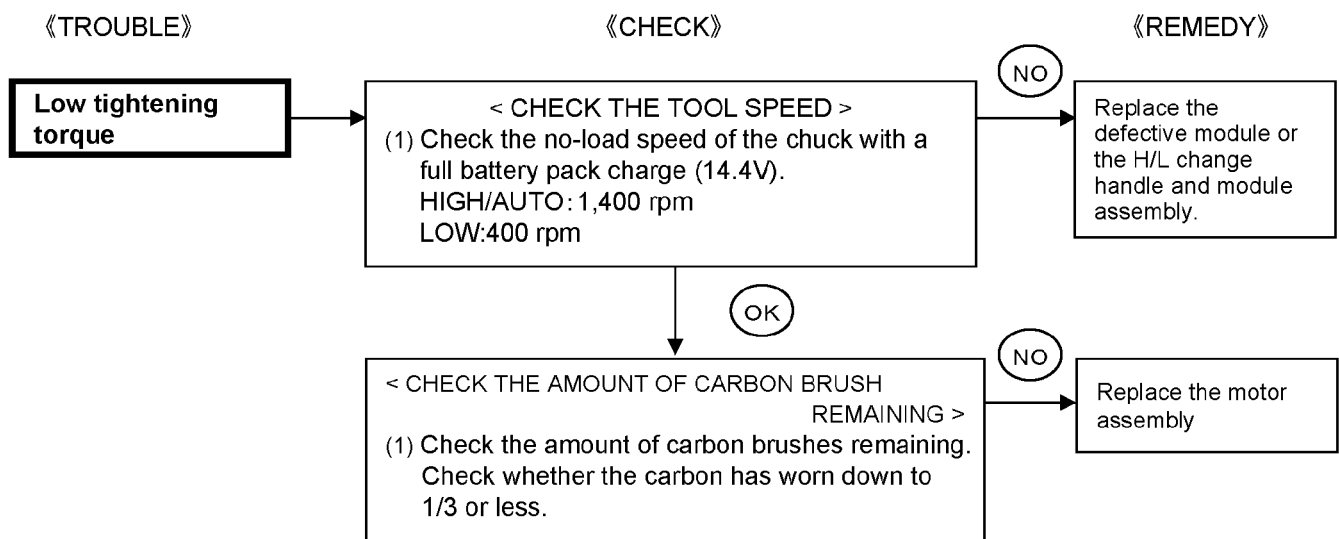
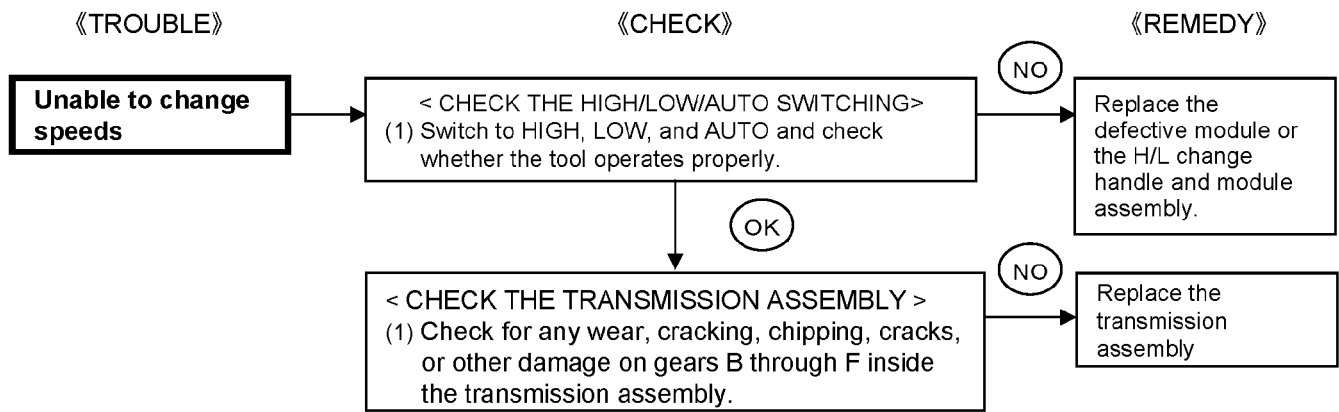
NO → Replace the defective assembly or module assembly (check connectors)

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Next page






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

- Check whether the tool operates properly in both the forward and reverse directions.
- Check whether the LED light turns on and off each time the LED light on/off button is depressed.
- Check whether the tool detects the load and switches gears automatically during AUTO mode operation (continuous speed adjustment).
- Check whether the gear can be fixed during HIGH/LOW mode operation.
- Check whether the tool speed is normal after repair and reassembly.
- High mode: 180 to 1,400 rpm
- Low mode: 50 to 400 rpm
- Check whether the tool may become hot in a short operation.
- Set the clutch handle to the 「」 mark and check whether the tool rotates without any clutch operation.
- Operate (rotate) the keyless chuck and check whether the chuck's three jaws move smoothly.
- Pull the trigger all the way back and check whether the tool stops rotating immediately when it is released.

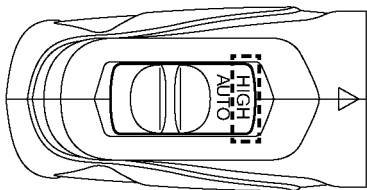
3.2.3. Integrity

- With the switch activated, shake the tool back and forth and up and down and verify that its sound does not change excessively.
- Rotate the clutch handle and check whether the clutch switches properly.
- Check whether the keyless chuck is attached securely to the tool.
- Check whether the chuck's jaws operate properly.
- Check for the presence of any dirt or foreign matter from the repair process on the outside of the tool.

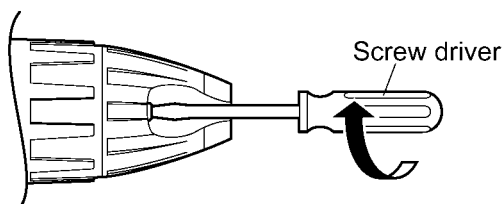
4 Disassembly and Assembly Instructions

*To assemble the tool, start with 5-12 and proceed to 5-1

*Set the clutch handle to select "HIGH" position.

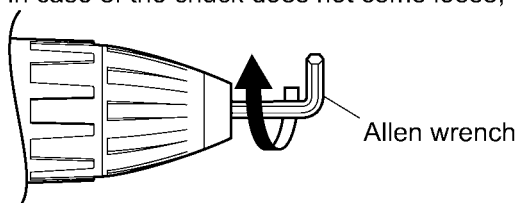


4.1. Removing the keyless chuck



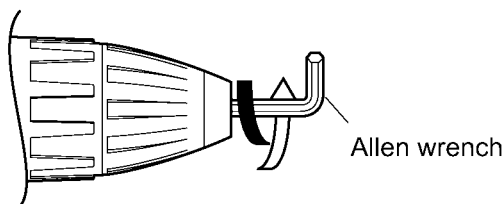
1. Use a screwdriver to turn the chuck fastening screw inside the chuck clockwise direction, and remove the screw.

*in case of the chuck does not come loose;



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.

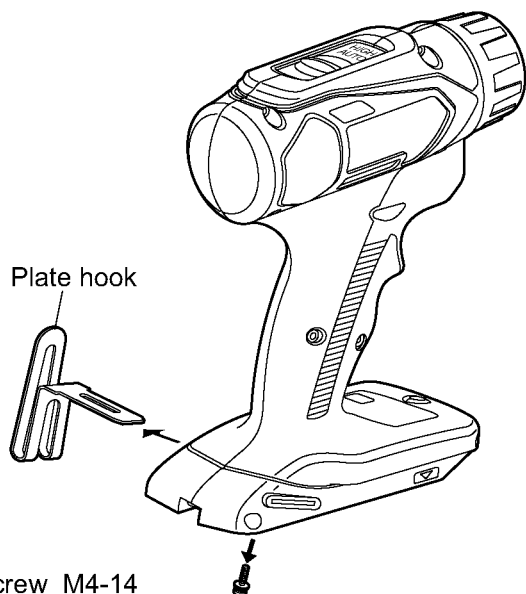
NOTE:

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

Chuck fastening screw

Tightening torque value; $2.5 \pm 0.5 \text{ N} \cdot \text{m} \{25.5 \pm 5 \text{ kgf} \cdot \text{cm}\}$

4.2. Removing the plate hook



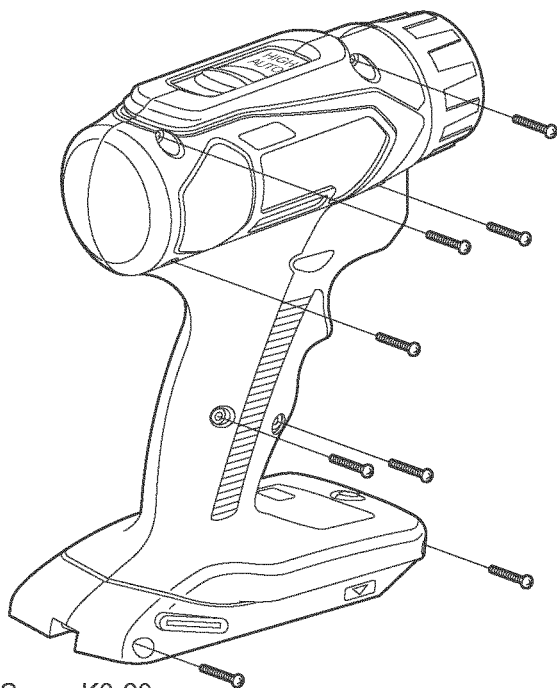
1. Remove the M4-14 screw.

2. Remove the plate hook.

Screw M4-14

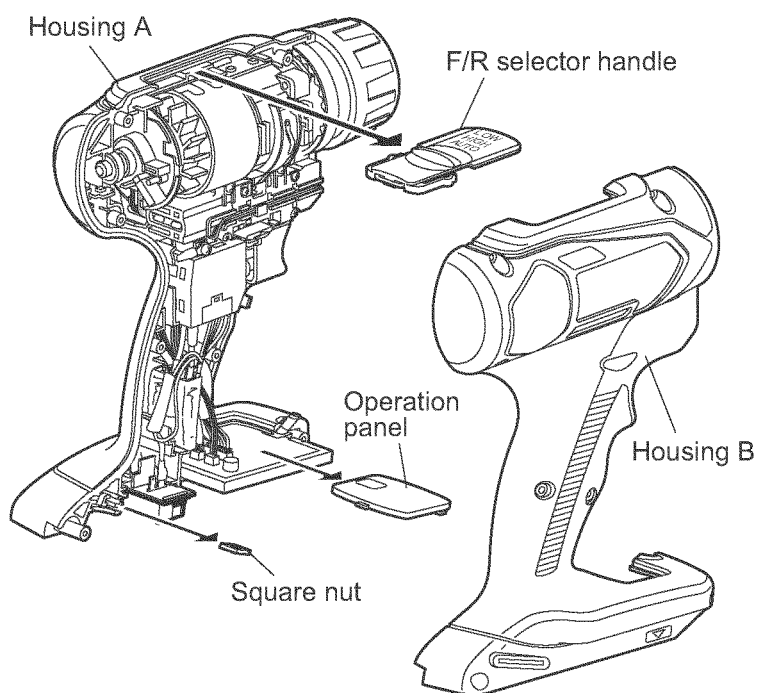
Tightening torque value; $1.3 \pm 0.3 \text{ N} \cdot \text{m} \{13 \pm 3 \text{ kgf} \cdot \text{cm}\}$

4.3. Removing the housing



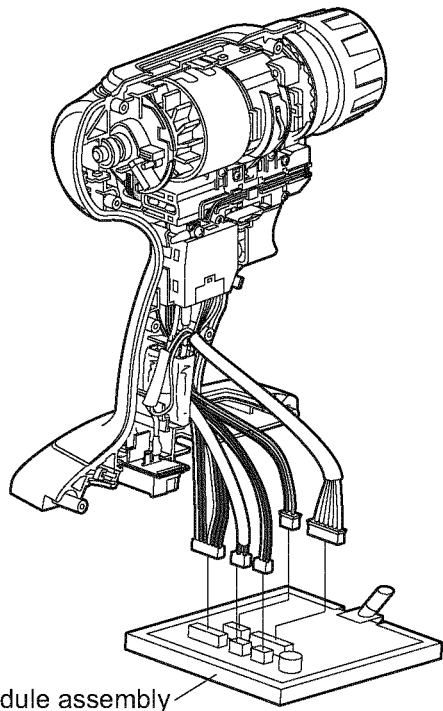
Screw K3-20
Tightening torque value; $0.98 \pm 0.2 \text{ N} \cdot \text{m} \{10 \pm 2 \text{ kgf} \cdot \text{cm}\}$

1.Remove eight screws.



- 2.Remove housing B.
- 3.Remove the F/R selector handle.
- 4.Remove the operation panel.
- 5.Remove the square nut.

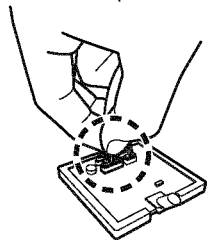
4.4. Removing the Module assembly



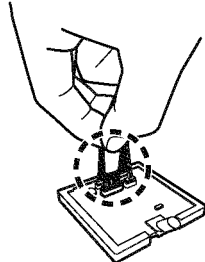
1. Remove the adhesive holding the electrolytic capacitor and 7-pin connector in place.
2. Disconnect the detective module's 7-pin connector from the module assembly.
3. Disconnect the 2-pin connector for the carbon brush block's thermistor lead wires from the module assembly.
4. Disconnect the gear box block's 3-pin connector from the module assembly.
5. Disconnect the 2-pin connector for the transmission assembly's sub-motor lead wires from the module assembly.
6. Disconnect the switch assembly's 7-pin connector from the module assembly.

Connecting and disconnecting the connector.

○ Grip the connector at its base and pull it out.

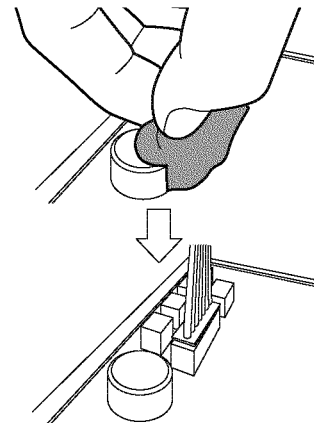


✗ Pulling on the lead wires
Will break the wires.



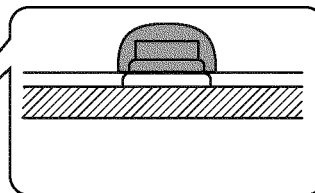
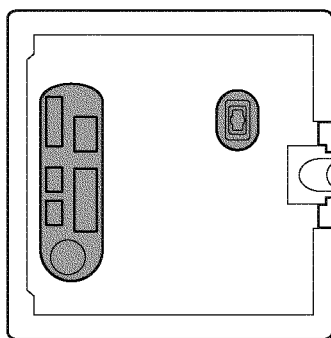
※Removing adhesive

Pinch the edge of the adhesive with your fingers and remove.

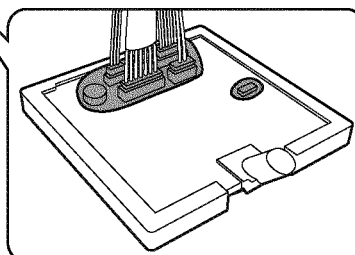


●Precautions when attaching the module assembly

- Apply the grease to the connector.
- *PERMALUB(Order Mo.:WEY003W8957)
- Confirm to insert the connector firmly.

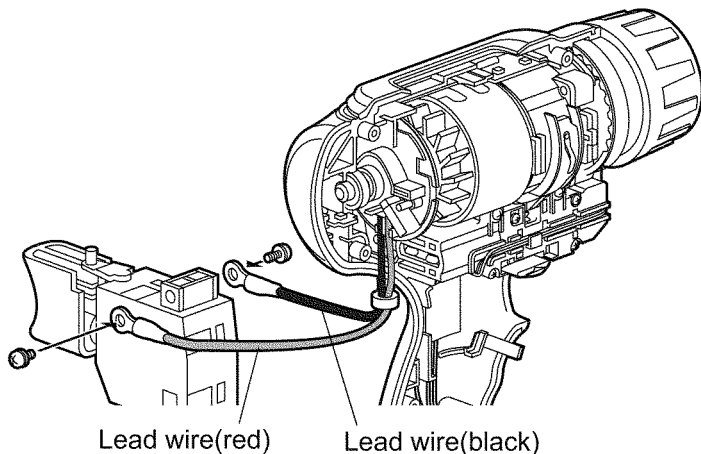


Apply grease so that it completely covers the switch



●With the connector inserted

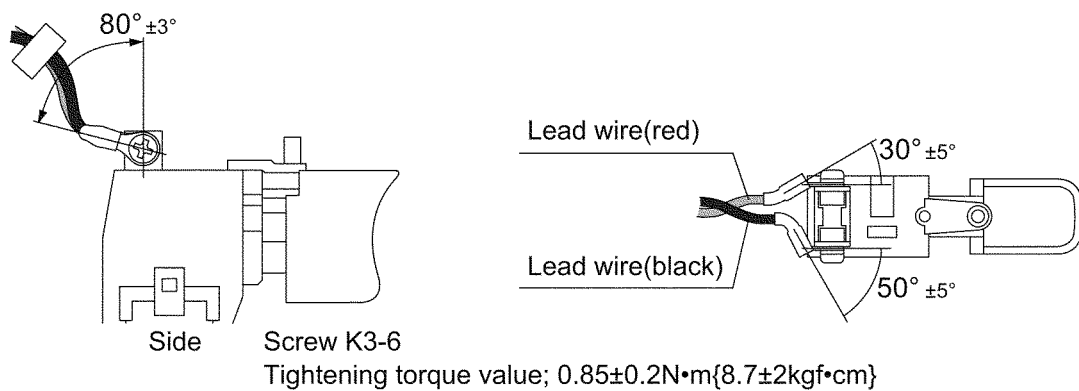
4.5. Removing the Switch assembly



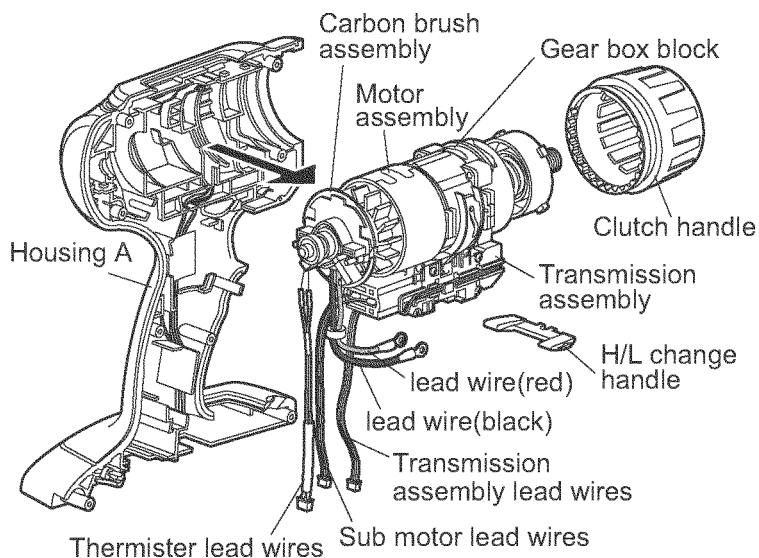
1.Remove the switch assembly from housing A and remove the 2 sems screws holding the carbon brush assembly' s lead wires in place on the switching assembly.

2.Remove the switch assembly while removing the switch assembly' s FET and battery terminal block from housing A.

*Attaching the carbon brush assembly' s black and red lead wires.



4.6. Removing the Gear Box Block and Associated Parts



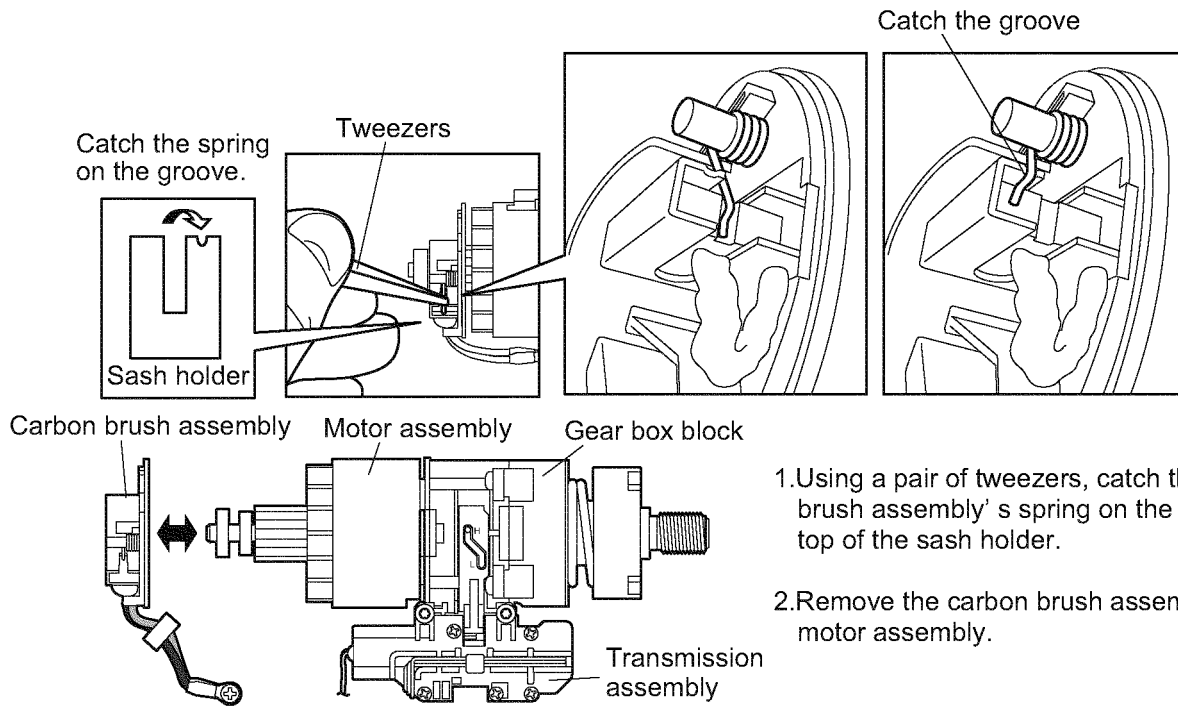
1.Remove the gear box block and associated parts together from housing A.

*When installing parts associated with the gear box block, align them so that they fit into the grooves in housing A. Additionally, route lead wires between the ribs on housing A in the following order:

Thermistor assembly lead wires(2-pins) → transmission assembly lead wires(3-pins) → sub-motor lead wires(2-pins).

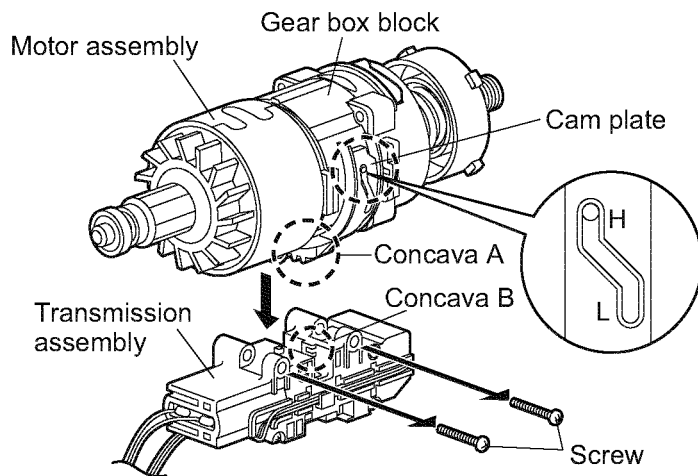
(Exercise care it keep wires from pulling on each other.)

4.7. Removing the Carbon brush block



1. Using a pair of tweezers, catch the carbon brush assembly's spring on the groove on top of the sash holder.
2. Remove the carbon brush assembly from the motor assembly.

4.8. Removing the Transmission Assembly from the Gear Box Block



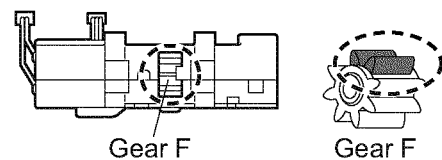
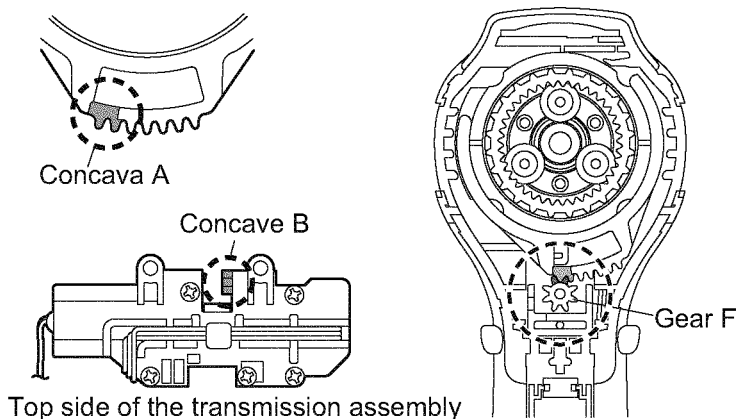
Screw K3-20
Tightening torque value; $0.7 \pm 0.1 \text{ N} \cdot \text{m}$ { $7.14 \pm 1.2 \text{ kgf} \cdot \text{cm}$ }

1. Verify that the cam plate is the H position.
2. Remove the 2 screws that attach the transmission assembly.
3. Remove the transmission assembly from the gear box block.

*Precautions when attaching the transmission assembly.

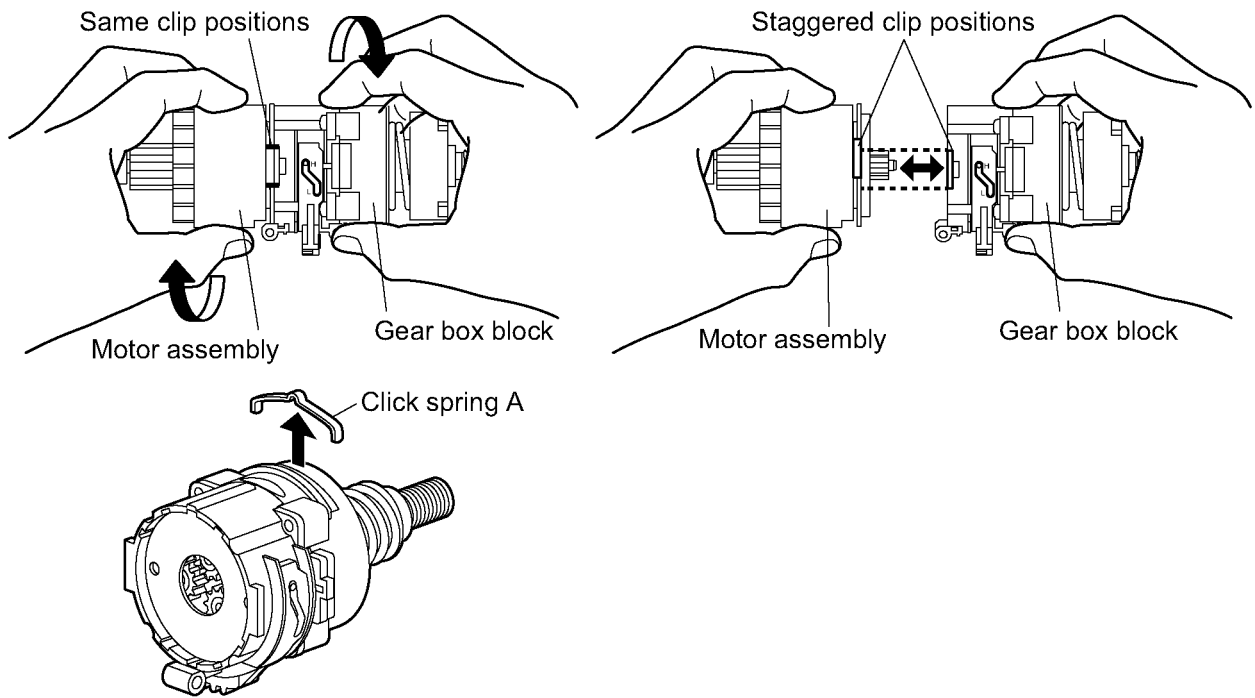
1. When attaching the transmission assembly, verify that the concave part of the transmission's gear F is facing up.

(The short dimension of the gear F teeth should be facing up.)

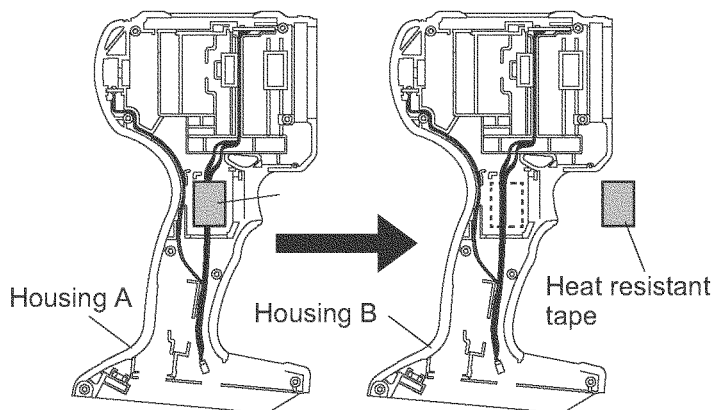


2. After verifying that the cam plate is in the H position, fit protrusion B of the transmission assembly into the concave A groove on the cam plate.

4.9. Removing the motor assembly from the gear box brock

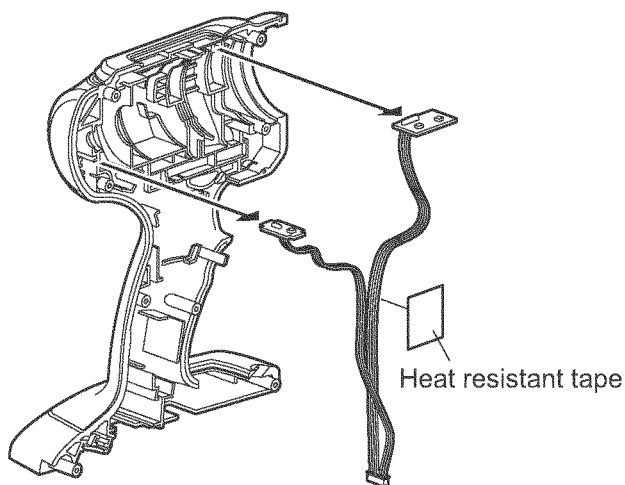


4.10. Removing the Detective module



1. Remove the heat-resistant tape attaching the detective module lead wires to housing A.

*Heat-resistant tape is affixed in the shaded area to secure the lead wires to housing A.

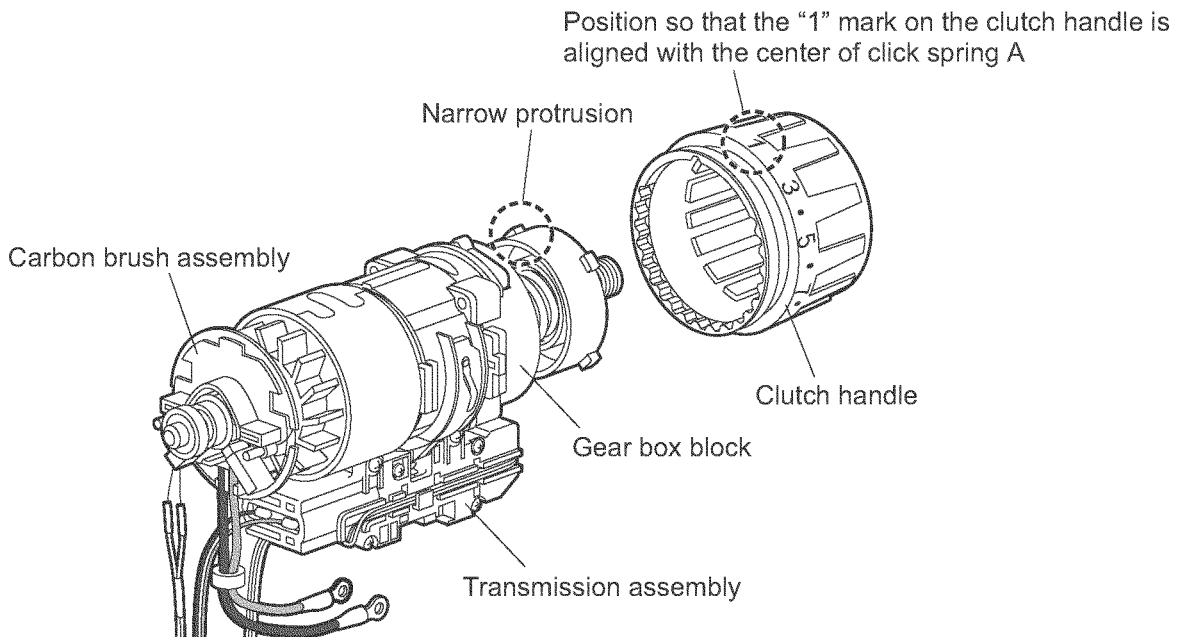
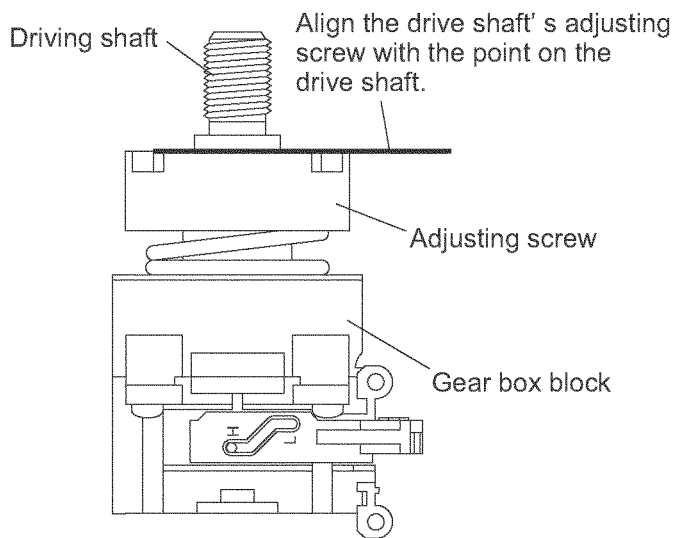
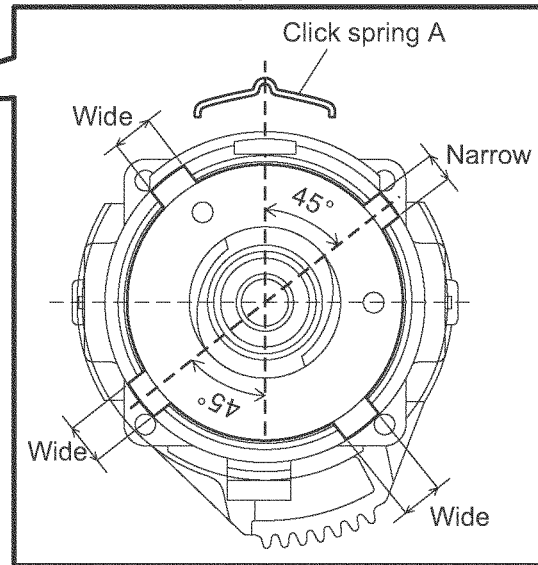
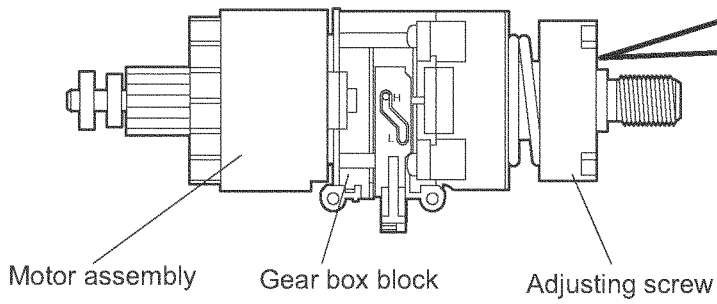


2. Remove the detective module from the housing A.

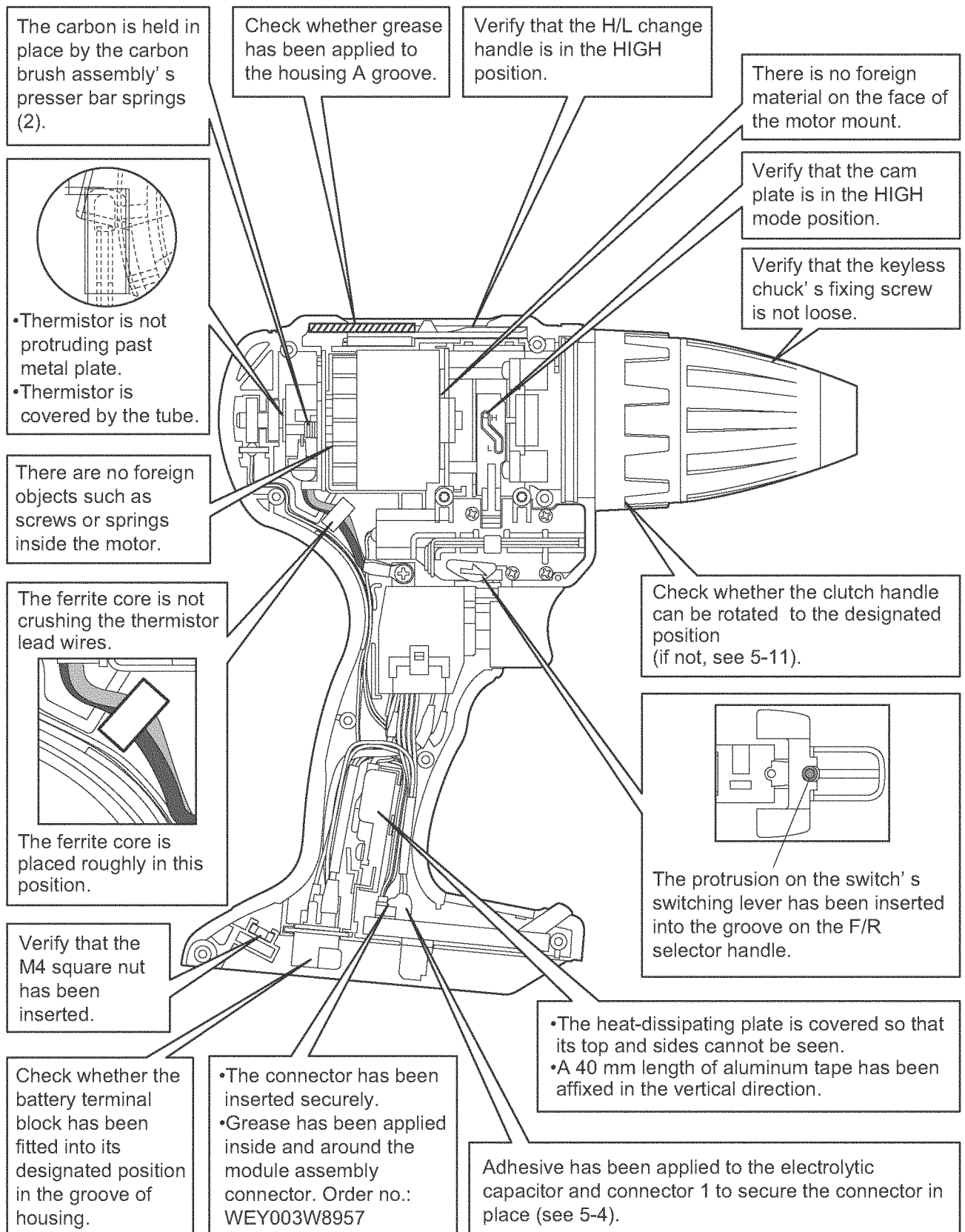
*When attaching, orient the two detective module boards so that the sides to which the lead wires are soldered face the housing A and push firmly all the way into housing A so that the lead wires fit securely toward the back between the ribs.

4.11. Tips for installing the Clutch Handle onto the Gear Box Block

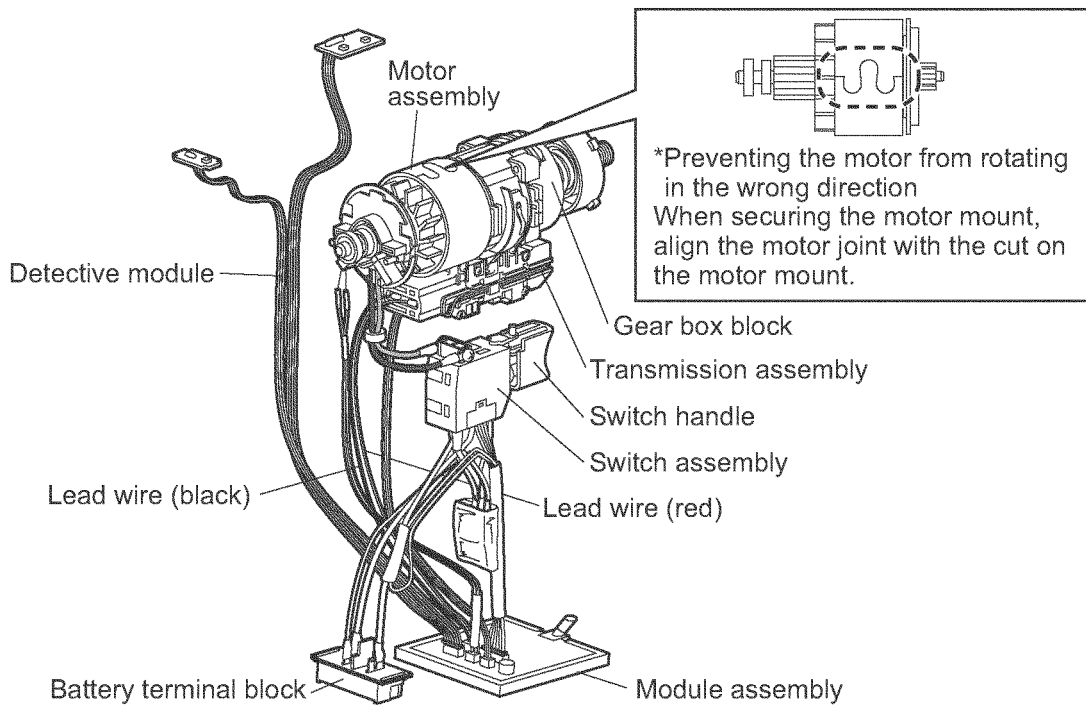
Align the gear box block's adjusting screw as shown in the figure.



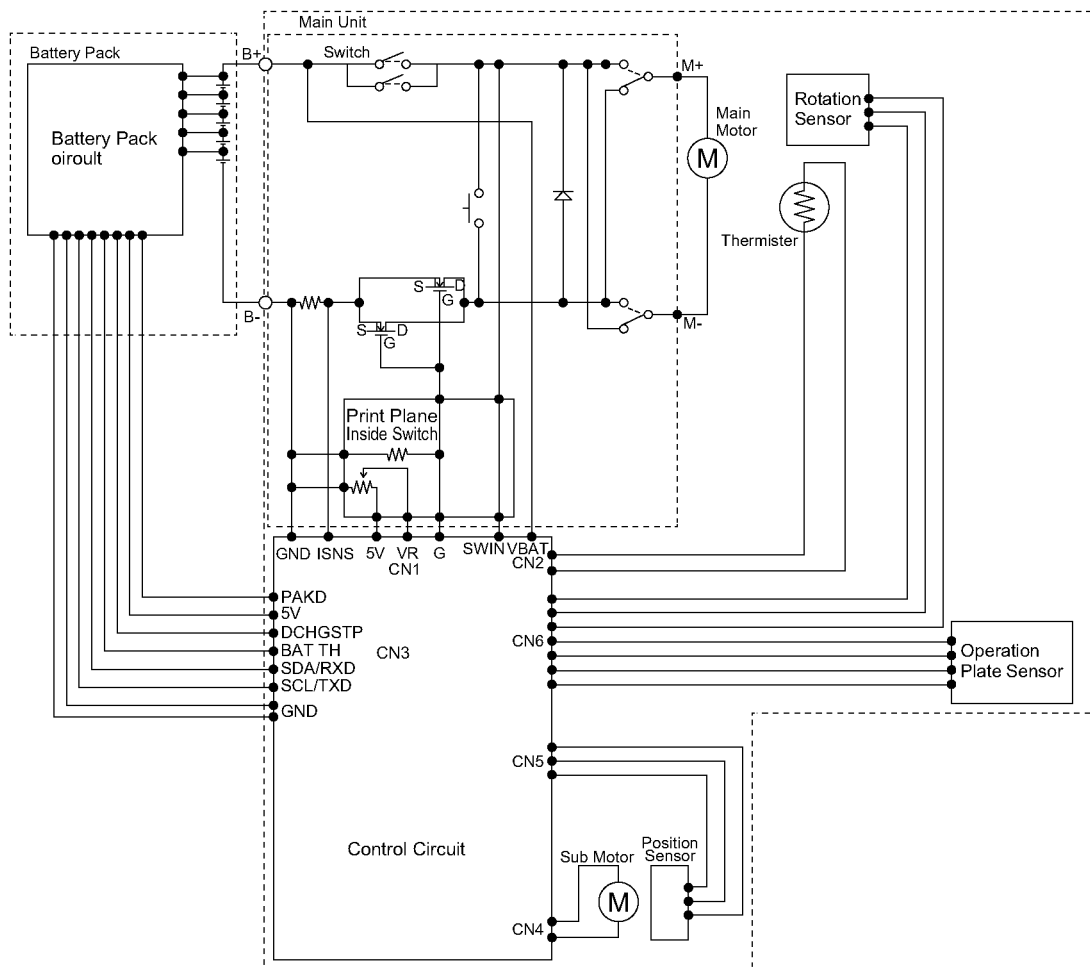
4.12. Wiring and Assembly Points



5 Wiring Connection Diagram

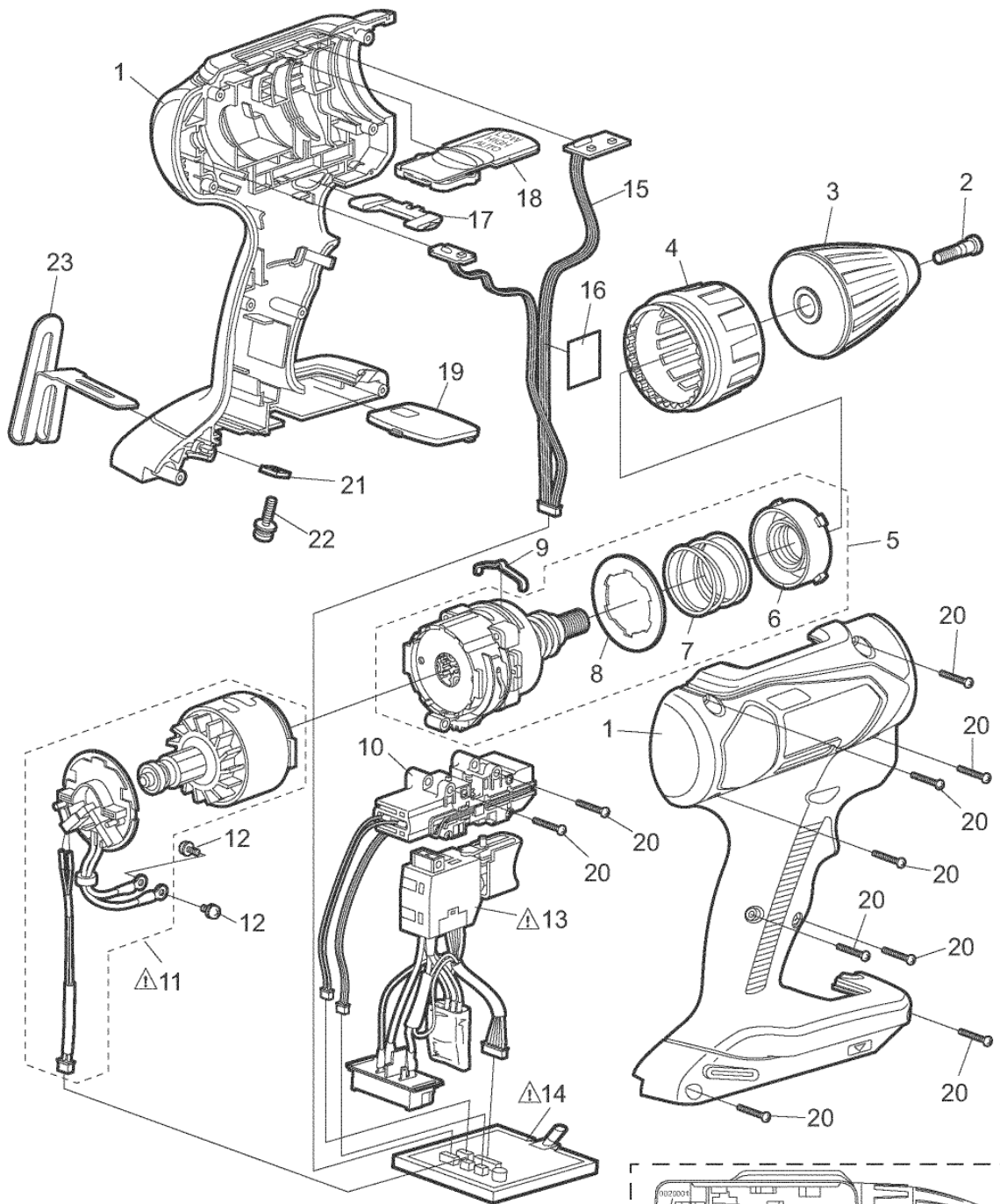


6 Schematic Diagram

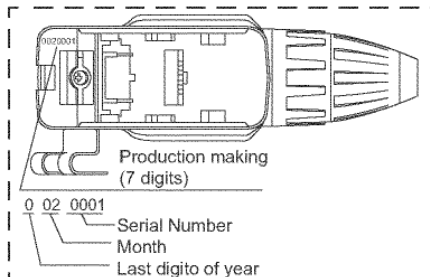


7 Exploded View and Replacement Parts List

Model No. : EY7443 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. : EY7443 Parts List

Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
	1	WEY7443H3079	HOUSING AB SET	1	(for EUROPE)
	2	WEY6450L6806	CHUCK FASTENING SCREW	1	
	3	WEY7441K7917	KEYLESS CHUCK	1	
	4	WEY7441H3227	CLUTCH HANDLE	1	
	5	WEY7443L4057	GEAR BOX BLOCK	1	
	6	WEY7441L0637	ADJUSTING SCREW	1	
	7	WEY7441L0177	CLUTCH SPRING	1	
	8	WEY7441L0577	CLUTCH PLATE	1	
	9	WEYT107L0456	CLICK SPRING A	1	
	10	WEY7443L4121	TRANSMISSION ASSEMBLY	1	
	11	WEY7443L4058	MOTOR ASSEMBLY	1	
	12	WEY7441L6028	SCREW	2	(K3-6)
	13	WEY7443L2007	SWITCH ASSEMBLY	1	
	14	WEY7443L2107	MODULE ASSEMBLY	1	
	15	WEY7443L2187	DETECTIVE MODULE	1	
	16	WEY7443W0957	HEAT RESISTANT TAPE	1	30m/roll
	17	WEY7443H3247	F/R SELECTOR HANDLE	1	
	18	WEY7443J3237	H/L CHANGE HANDLE	1	
	19	WEY7443K3958	OPERATION PANEL	1	
	20	WEY7441K9038	TAPPING SCREW	10	(K3-20)
	21	WEY7441L6487	NUT	1	(M4)
	22	WEY7441K6217	SCREW	1	(4-14)
	23	WEY7543K3187	PLATE HOOK	1	
	-	WEY9L40R2788	BATTERY PACK COVER	1	
	-	WEY7443K7019	TOOL CASE	1	
	-	WEY7443K8109	OPERATING INSTRUCTIONS	1	
	-	WEY003W8957	GREASE (PERMALUB)	1	
	-	WEY004X8967	CALFOREX	1	