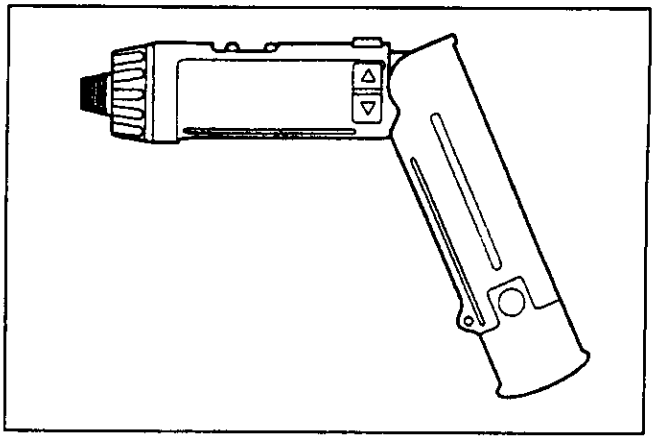
ORDER NO. MEW/PTD 9808-62251

Service Manual

Cordless Drill & Driver

EY6225

CONTENTS



SPECIFICATIONS

DRILL / DRIVER

Capacity	Driving	Machine screw	M2.5-M5
		Wood screw	ϕ 3.1 X 13mm (1/8" X 33/64")
			ϕ 3.8 X 25mm (5/32" X 63/64")
	Drilling	For metal	ϕ 2.0mm (5/64")
Motor	DC 3.6V		
No load speed	LOW HIGH	200/min (rpm.) 600/min (rpm.)	
Maximum torque	LOW HIGH	4.4Nm (45kgf-cm, 39in-lbs) 1.5Nm (15kgf-cm, 13in-lbs)	
Maximum clutch torque	3.0Nm (30kgf-cm, 26in-lbs) at position 21		
Overall length	296mm (11-21/32")		
Weight (with battery pack)	0.5kg (1.1lbs)		

BATTERY PACK

Storage battery	Ni-Cd Battery
Battery voltage	3.6V DC (1.2V X 3cells)

BATTERY CHARGER

Weight	0.5kg (1.1lbs)
Charging time	Approx. 15 minutes for EY9021 and EY9025

STANDARD EQUIPMENT

Battery charger, Battery pack, #1 Philips bit (50mm), #2 Philips bit (50mm)

⚠WARNING

This service literature 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.

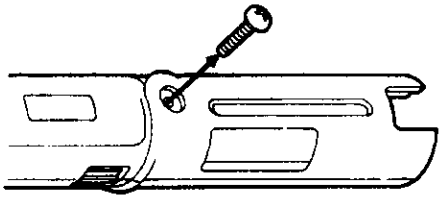
Panasonic

DIASSEMBLY INSTRUCTIONS

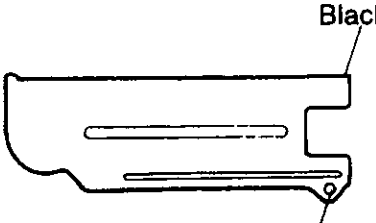
Ref. No. 1A	Removal of the grip.	Procedure 1A

1. Remove both sides of the grip fastening clip by sliding it outward.

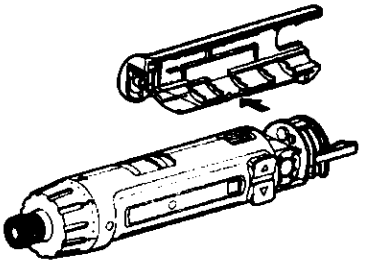
2. Remove one grip fastening screw.



3. To separate the grip housing, remove battery. Place your thumb on the black arrow located on the rear of the grip and your forefinger on the bottom bump of the strap holder and squeeze. This will release the plastic latches.

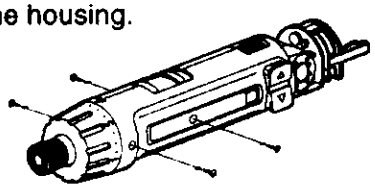


4. Both sides of the grip will now be released.
   Note: Do not loose 4 ball bearings.

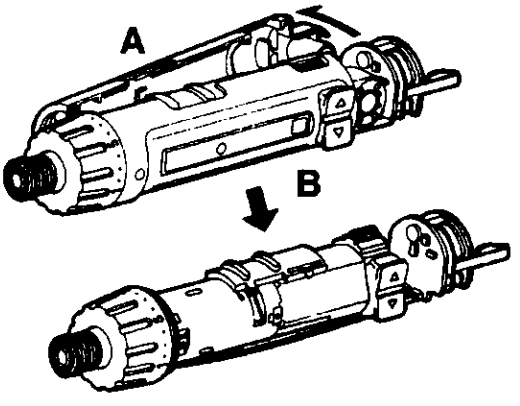


Ref. No. 1B	Removal of the housing.	Procedure 1A → 1B

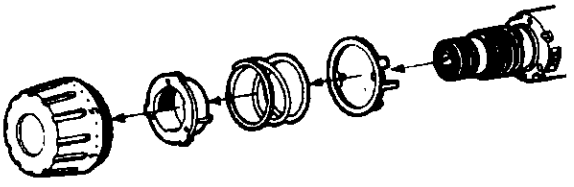
1. Remove 4 screws from the housing.



2. Separate the housing A and B, and remove the clutch, driving block, motor and switch.
   Note: When removing housing B, take notice of the small spring clip (#37 in parts list). This spring produces the "click" when torque is adjusted.

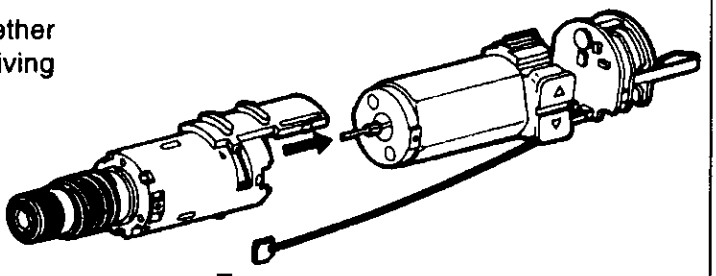


3. Remove the clutch handle, clutch spring and clutch plate from the driving block.

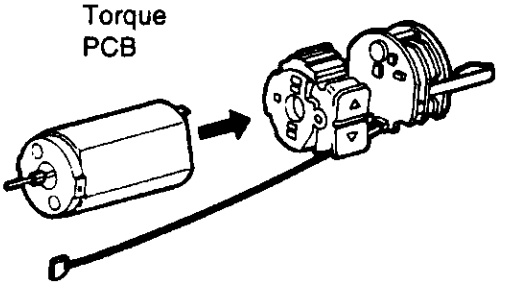


Ref. No. 1C	Removal of the motor.	Procedure 1A → 1B → 1C

1. Remove the motor and switch block together with the torque detection PCB from the driving block.
   NOTE: Once the clutch plate is removed. The torque detection PCB can be removed from the driving block.

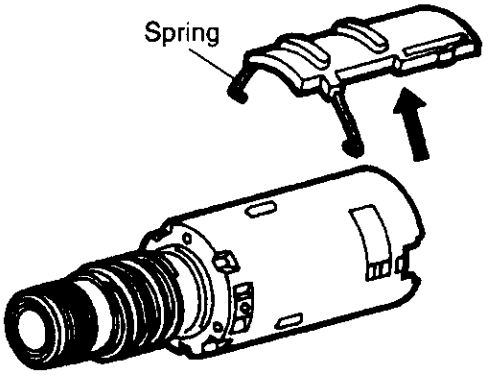


2. Remove the switch from the motor.

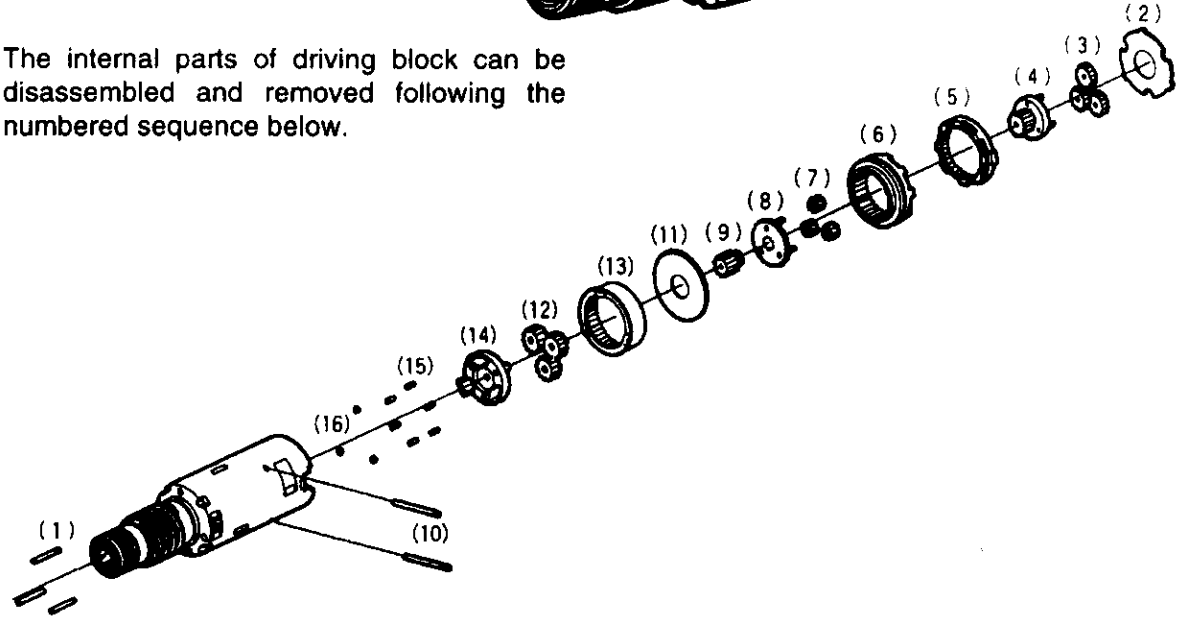


Ref. No. 1D	Removal of the driving block.	Procedure 1A → 1B → 1C → 1D

1. Remove the High/Low handle by spreading the spring.



2. The internal parts of driving block can be disassembled and removed following the numbered sequence below.

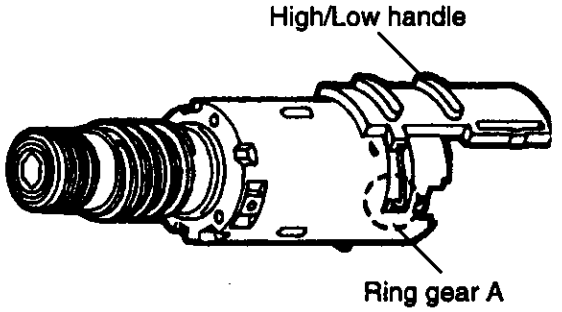


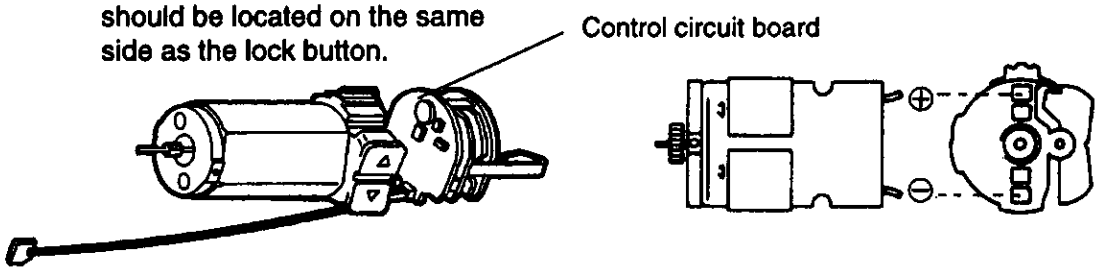
REASSEMBLY INSTRUCTIONS

■ When reassembling, apply grease around the ring and planet gear.

Ref. No. 2A	Assembly of the switch.	Procedure 2A

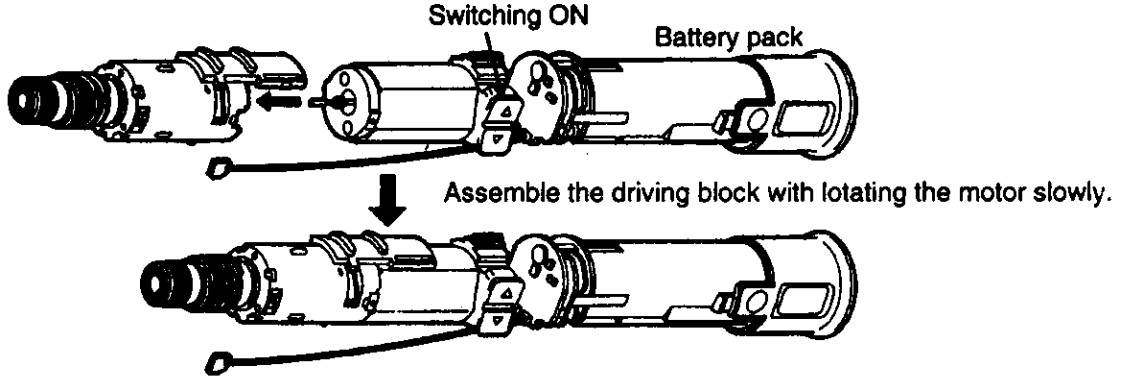
1. Reassemble the internal gear of the driving block in the reverse order of disassembly.
2. Attach the High/Low handle to the driving block.
   Both ends of spring must be put into the grooves of the ring gear A.
3. Mount the switch on the motor and attach the torque detection PCB with the control circuit board.)
   NOTE: The (+) terminal of motor, which is indicated by the red circle, should be located on the same side as the lock button.



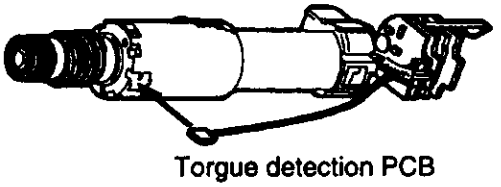


Ref. No. 2B	Assembly of the motor.	Procedure 2A → 2B

1. To properly seat the motor with the driving block, temporarily attach the battery and switch on the driving block.
   Caution: Verify battery polarity, otherwise torque control PCB will be damaged.
   NOTE: This operation will center the planet gear with the motor gear. If the motor is connected to the driving block without it being switched on, the planet gear B may become deformed and caused the abnormal sounds.

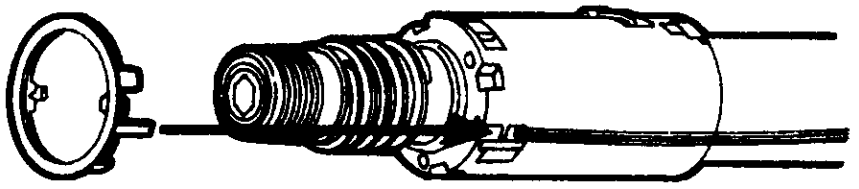


2. Insert the torque detection PCB into the groove of driving block.

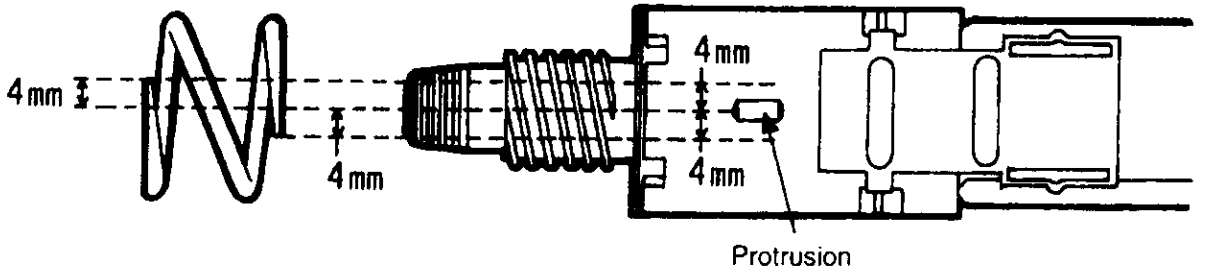


Ref. No. 2C	Assembly of the clutch handle.	Procedure 2A → 2B → 2C

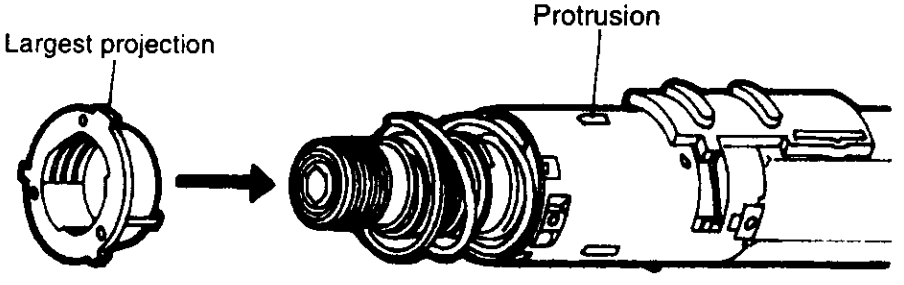
1. Set the longest rib of clutch plate into the groove for the Torque detection PCB.



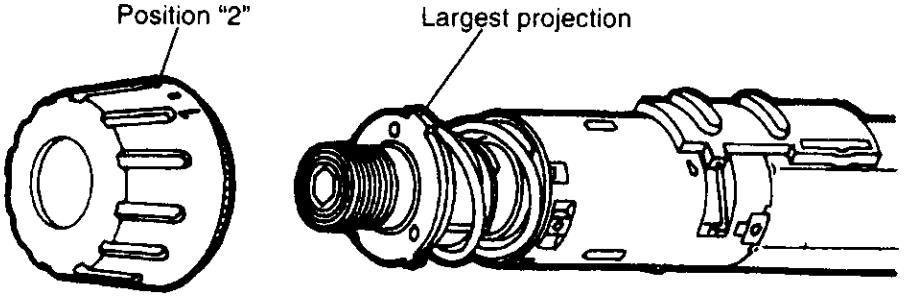
2. When assembling the clutch spring, set both ends of the spring so that they are positioned within 4mm of the protrusion.



3. When assembling the adjusting screw, align the protrusion of the driving block with the largest protrusion of the adjusting screw.
   Rotate the adjusting screw clockwise one complete rotation into the driving block.

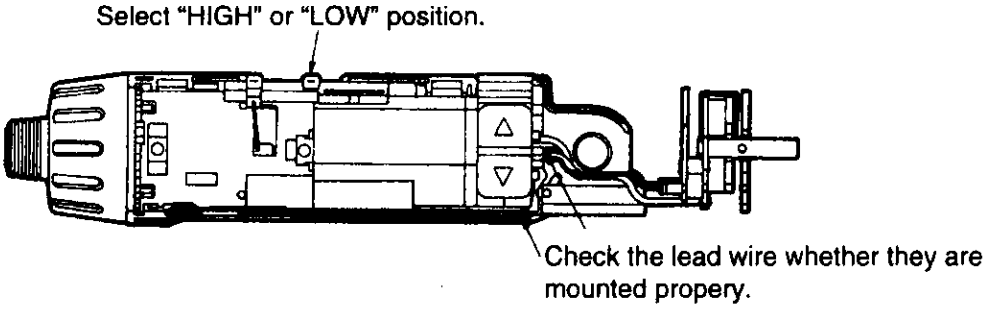


4. When assembling the clutch handle, position the clutch handle with position number"2" towards the largest protrusion of adjusting screw.

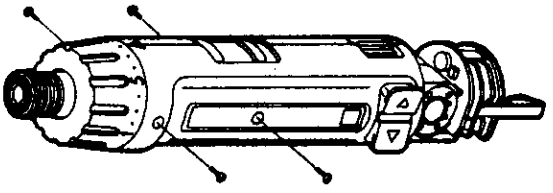


Ref. No. 2D	Assembly of the housing.	Procedure 2A → 2B → 2C → 2D

1. Check that the lead wires are positioned properly so that they will not be pinched or severed when the motor block is inserted into the housing.
   NOTE: Make sure that HIGH/LOW lever is in either "HIGH" or "LOW" position when installing the housing, otherwise there is a possibility that the spring may become deformed.

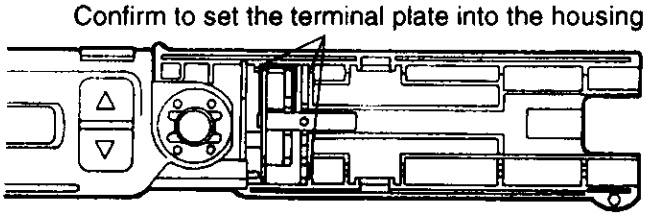


2. Attach the hinge cover after fastening the housing screw.

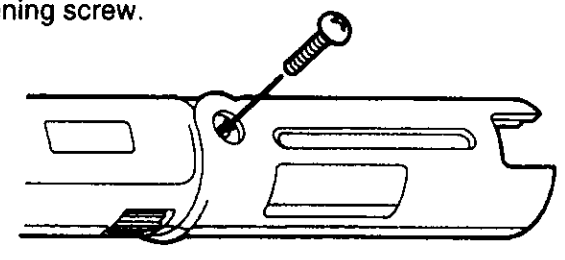


Ref. No. 2E	Assembly of the grip.	Procedure 2A → 2B → 2C → 2D → 2E

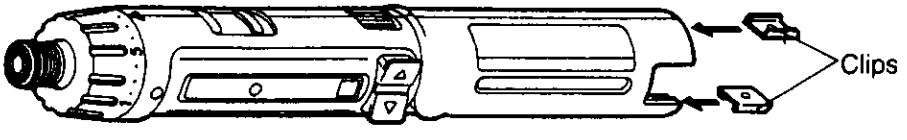
1. Insert the control circuit board into the grip.



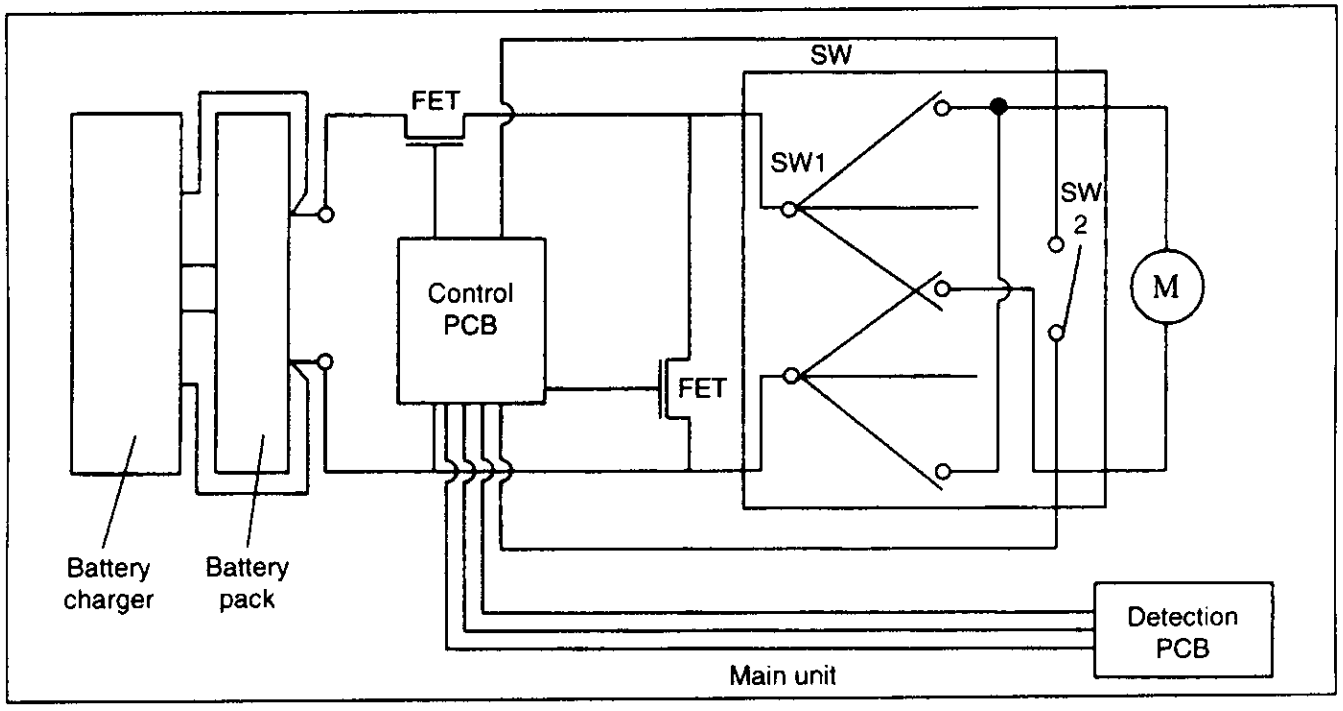
2. Fasten the grip fastening screw.



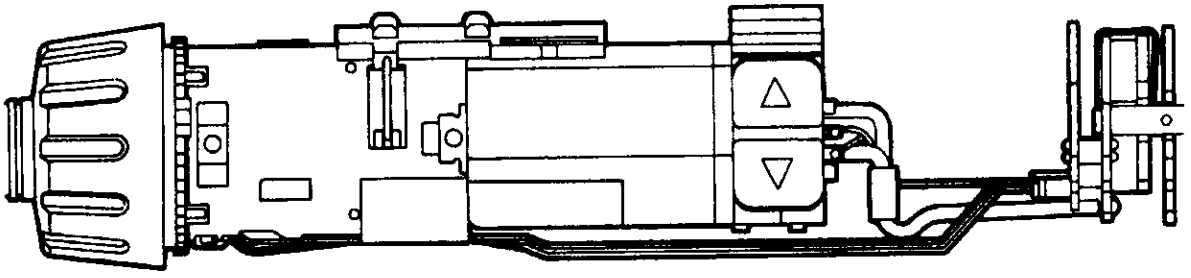
3. Attach the 2 fastening clips.

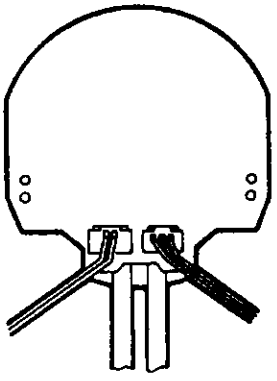


SCHEMATIC DIAGRAM



WIRING CONNECTION DIAGRAM





TROUBLESHOOTING GUIDE (Refer to WIRING CONNECTION DIAGRAM)

■CHECK POINTS FOR ELECTRICAL PARTS.

< TROUBLE >	< CHECK >		< REMEDY >
Does not operate.	<CHECK BATTERY PACK.> If no less than 3.6V DC is available across the (+) and (-) terminals, the battery pack is OK. Note : The battery pack is sold separately as shown in REPLACEMENT PARTS LIST. **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 3.6V DC or the usable time is extremely short. - the battery leaks. Check battery for leaks and terminals for corrosion.	NO	Replace battery pack.
	OK		
	<CHECK TERMINAL CONNECTIONS. Check the terminal connections between the battery terminals and the battery pack.	NO	Repair the contacts.
	OK		
	<CHECK CONNECTOR.> Check connections and connectors on the control circuit board.	NO	Repair the connectors.
	OK		
	<CHECK MOTOR.> The motor operates when connected to 3.6V DC. Ref.: Motor rotating speed 17,600±2200rpm.	NO	Replace the motor.
	OK		
	<CHECK SWITCH.> The motor operates with the red and black lead wires connected to 3.6V DC in both forward and reverse modes when attaching the motor with switch.	NO	Replace the switch.
	OK		
	<CHECK SWITCH.> See the details in next check point. (Auto-stop function does not function.)	NO	Check the torque detection PCB.

< TROUBLE >

The auto-stop function does not work.

< CHECK >

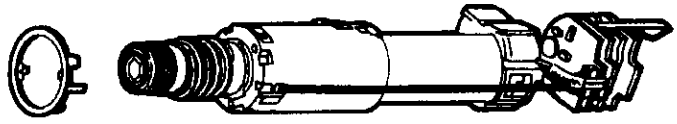
<CHECK TORQUE DETECTION PCB.>

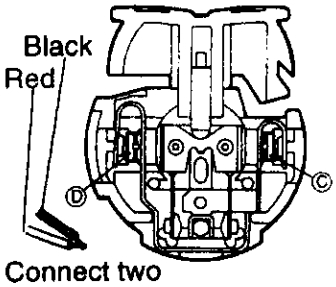
Take the driving block out the housing.
Remove the torque adjusting screw and clutch spring from the driving block (leave clutch plate attached) and connect 3.6V DC to drill. Drill should stop immediately when the clutch plate is removed from driving block.

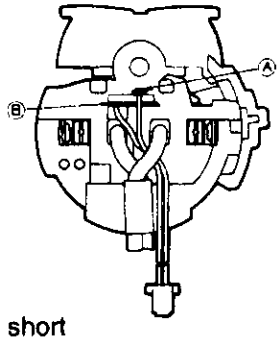
NO

< REMEDY >

Replace the torque detection PCB.







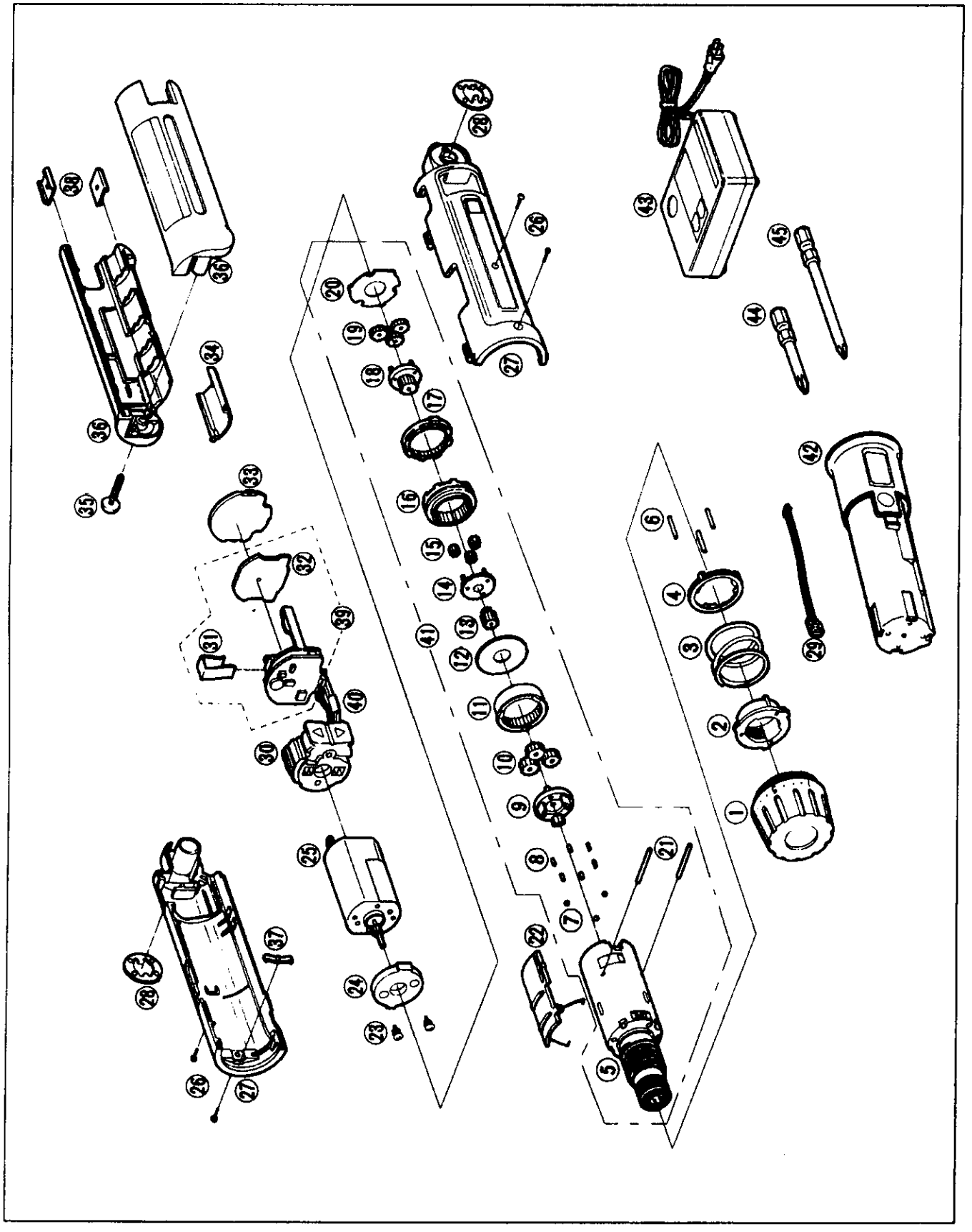
Connect two lead wire.

NOTE: Remove battery and short red and black lead wires to check the continuity between Ⓒ and Ⓓ .

OK

Replace the torque detection PCB.

EXPLODED VIEW



REPLACEMENT PARTS LIST

NOTE : *A · · · available as an optional accessory
*B · · · only available as set
*C · · · available individually

Ref.No.	Part No.	Part Name & Descriptions	Per unit	Remarks	
1	EY6225Y3227	CLUTCH HANDLE	1		
2	EY6225L0637	ADJUSTING SCREW	1		
3	EY6225L0167	CLUTCH SPRING	1		
4	EY6225L0847	CLUTCH PLATE	1		
5	EY6225L1797	DRIVING BLOCK	1		
6	EY6225L0397	PIN A	3	*B	φ3*15.1
7	EY6225L6977	STEEL BALL	3	*B	φ3.5
8	EY6225L0387	PIN B	6	*B	φ2.5*5.8
9	EY6225L1147	CARRIER D	1		
10	EY6225L1347	PLANET GEAR C	3	*B	
11	EY6225L1477	RING GEAR C	1		
12	EY6225L0857	THRUST PLATE	1		
13	EY6225L1117	CARRIER A	1		
14	EY6225L1127	CARRIER B	1		
15	EY6225L1357	PLANET GEAR A	3	*B	
16	EY6225L1487	RING GEAR A	1		
17	EY6225L1497	RING GEAR B	1		
18	EY6225L1137	CARRIER C	1		
19	EY6225L1367	PLANET GEAR B	3	*B	
20	EY502B0207	INTERNAL PRESSURE	1		
21	EY6225L0377	PIN C	2	*B	φ2*20.6
22	EY6225Y3237	CHANGE-GEAR HANDLE	1		
23	EY6225L6027	SCREW	2	*C	M3*5
24	EY6225L0027	MOTOR MOUNTING BASE	1		
25	EY6225L1007	MOTOR	1		
26	EY6605L9627	TAPPING SCREW	4	*C	2.6*8
27	EY6225K3078	HOUSING AB SET	1		
28	EY502B0187	CLICK SPRING	2	*C	
29	EY6225L2117	DETECTION PCB	1		
30	EY6225Y2008	SWITCH	1		
31	EY6225L0197	SPRING	1		
32	EY6225L2567	RADIATING PLATE	1		
33	EY6225L0207	TERMINAL BASE	1		
34	EY502B0877	HINGE COVER	1		
35	EY502B6217	TAPPING SCREW	1		M4*20
36	EY6225K3938	GRIP AB SET	1		
37	EY6225L0177	CLICK SPRING	1		
38	EY6225L0157	FASTENING CLIP	2	*B	
39	EY6225L2107	CONTROL PCB	1		
40	EY6225L0827	TUBE	1		
41	EY6225L1458	GEAR BOX BLOCK	1		
42	EY9025	BATTERY PACK	1	*A	
43	EY0225	BATTERY CHARGER	1	*A	
▲ 44	EY6225S7888	#1 PHILIPS BIT	1		L=50MM
▲ 45	EY6225S7958	#2 PHILIPS BIT	1		L=50MM
▲ -	EY6225K8008	INDIVIDUAL BOX	1		
▲ -	EY6225K8108	OPERATING INSTRUCTIONS	1		