

Service Manual

Cordless Drill & Driver

EY6408

SPECIFICATIONS

DRILL/DRIVER

Motor voltage	: 12V DC
No load speed	: 50~ 350 min ⁻¹ (RPM)
Maximum torque	: 19.6Nm (200kg-cm, 173.6in.lbs.)
Maximum clutch torque	: 6.9Nm (70kg-cm, 60.8in.lbs.) at 21 positions
Overall length	: 171mm (6-3/4")
Mass (Weight)	: 1.5kg (3.3lbs.) (with battery pack)

BATTERY PACK (Compact Type)

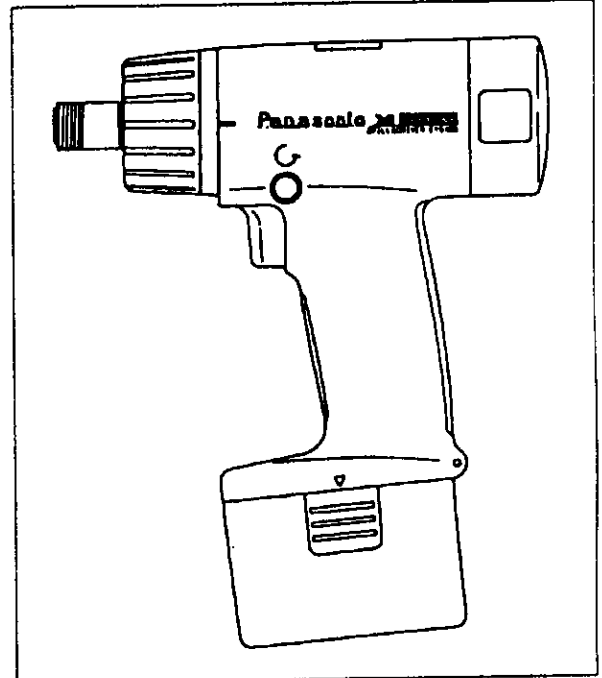
Storage battery	: Ni-Cd battery
Battery voltage	: 12V DC (1.2V × 10 cells)

BATTERY CHARGER

Input	: 120V AC
Mass (Weight)	: 0.66kg (1.45lbs.)
Charging time	: Approx. 15 min. / 20 min. (with compact type battery pack)

STANDARD EQUIPMENT

Phillips bit #2 (75mm)



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⚠ WARNING

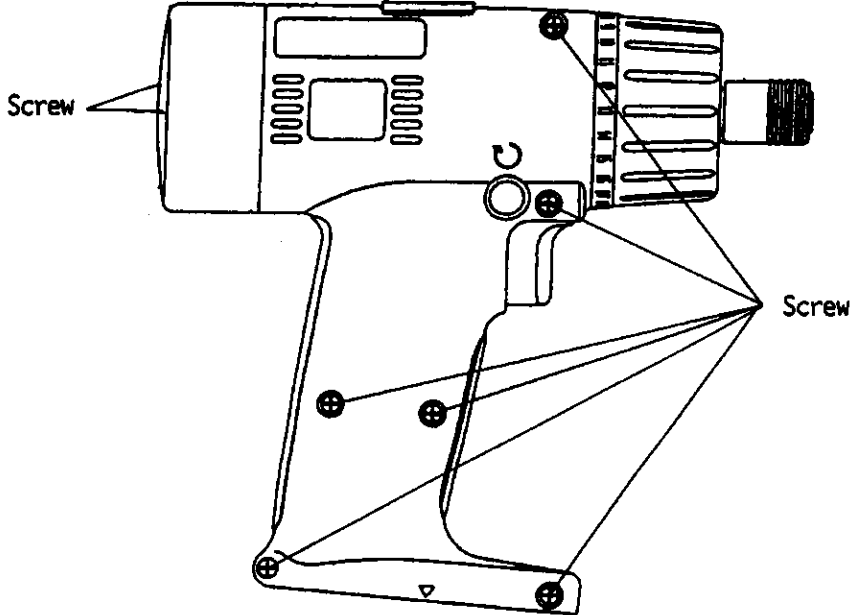
This service literature is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be 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.

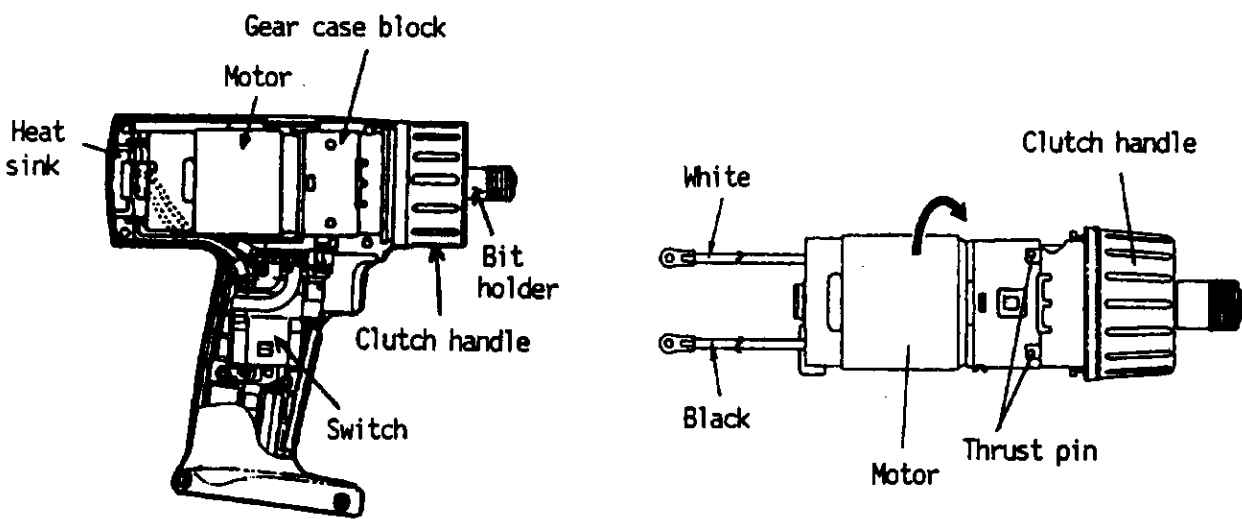
Panasonic

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DISASSEMBLY / ASSEMBLY INSTRUCTIONS

■ HOW TO REMOVE THE MAIN UNIT.

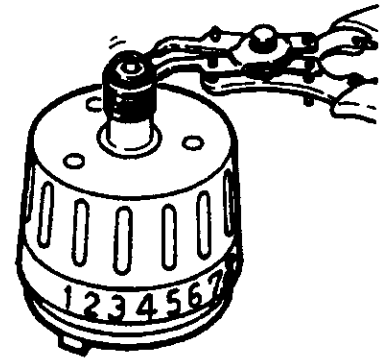
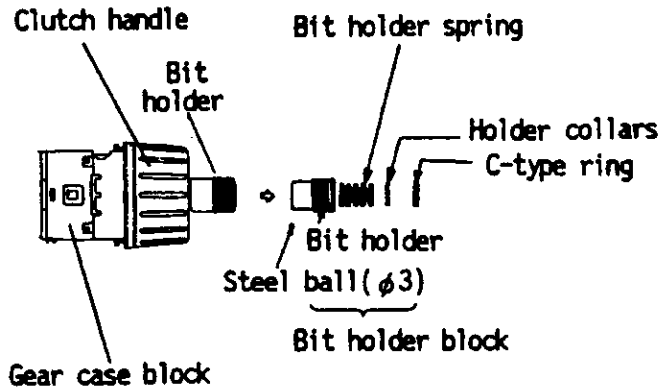
Ref. No. 1	Procedure 1	Removal of the housings.
		<p>1. Remove 2 screws of the housing cover. 2. Remove 6 screws of the housing.</p> 

Ref. No. 2	Procedure 1 → 2	Removal or attachment of the motor.
		

- (Removal of the motor.)
1. Remove the motor with the gear box block from housing.
 2. Separate the motor from the gear box block by twisting the motor to unlock tabs.

- (Attachment for the motor.)
3. Adjust the tabs of gear box block to the groove of motor in the counter-direction of the arrow.

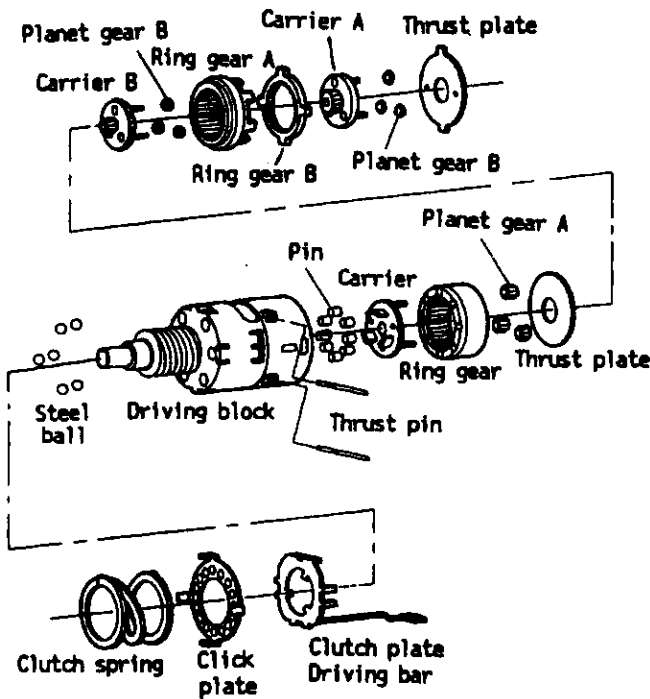
Ref. No. 3	Procedure 1 → 2 → 3	Removal of the bit holder block.
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1. Remove the C-type ring at the top of the bit holder with snap ring pliers.

* C-type ring are lively and could be lost, handle accordingly.
 * Be careful not to lose any of the steel balls(φ3) and holder collar.

Ref. No. 4	Procedure 1 → 2 → 3 → 4	Removal or attachment of the gear box block.
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(Removal of the gear box block.)

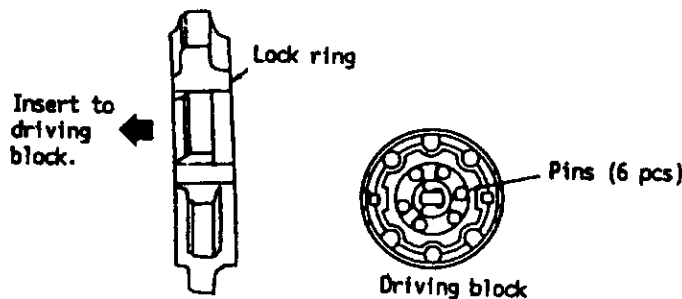
1. Turn the thrust plate.
2. The internal parts of gear box block can be removed one after another.

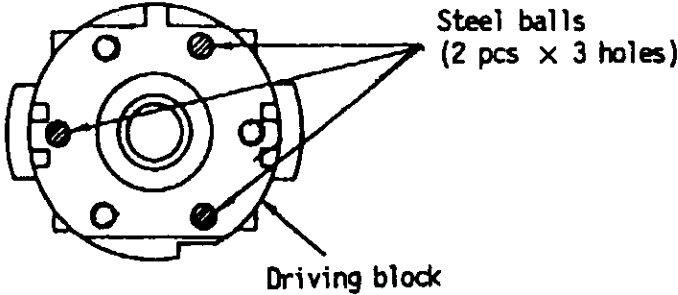
thrust plate → 3pcs of planet gear B → carrier A → ring gear B → ring gear A → 3pcs of planet gear → carrier B → 2pcs of thrust pins → thrust plate → 3pcs of planet gear A → ring gear → carrier → 6pcs of roller pins

(Attachment for the gear box block.)

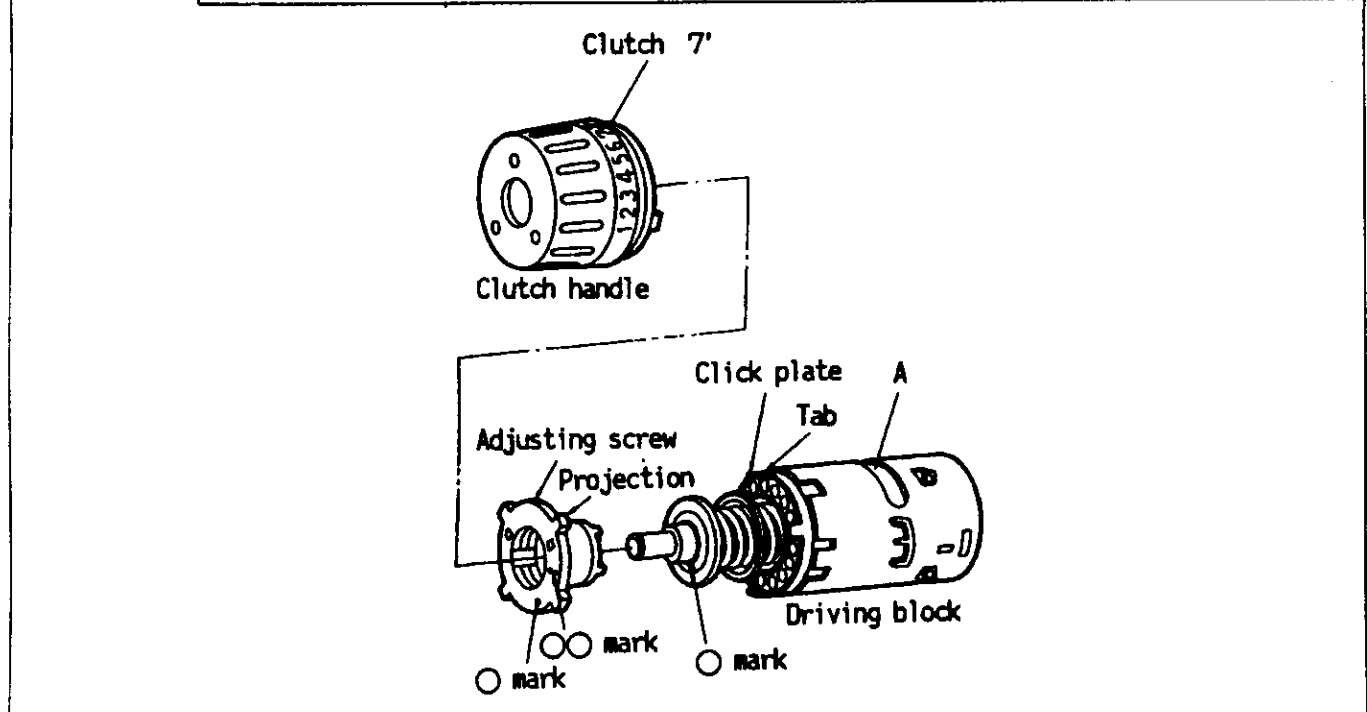
3. When the lock ring comes out, it has its own correct direction.
4. Start from inserting 6 pins into the driving block.
5. Assemble the other parts in reverse order.

NOTE : Carrier, ring gear and ring gear A have their own correct directions for proper reassemble.



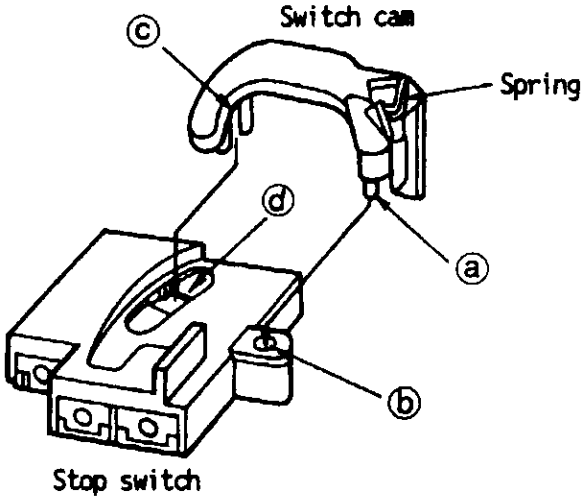
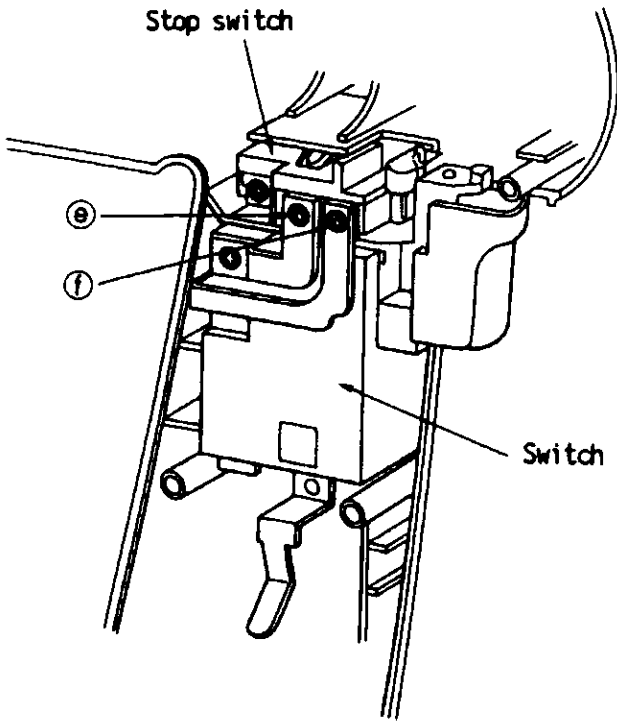
Ref. No. 5	Procedure 1 → 2 → 3 → 4 → 5	Attachment for steel balls, clutch plate, click plate, and clutch spring.
		<ol style="list-style-type: none"> 1. Reinstalling place 2 steel balls into each of the 3 holes. 2. Clutch plate, click plate and clutch spring have their own correct directions for proper reassemble.
		

Ref. No. 6	Procedure 1 → 2 → 3 → 4 → 5 → 6	Attachment for the adjusting screw and the clutch handle.
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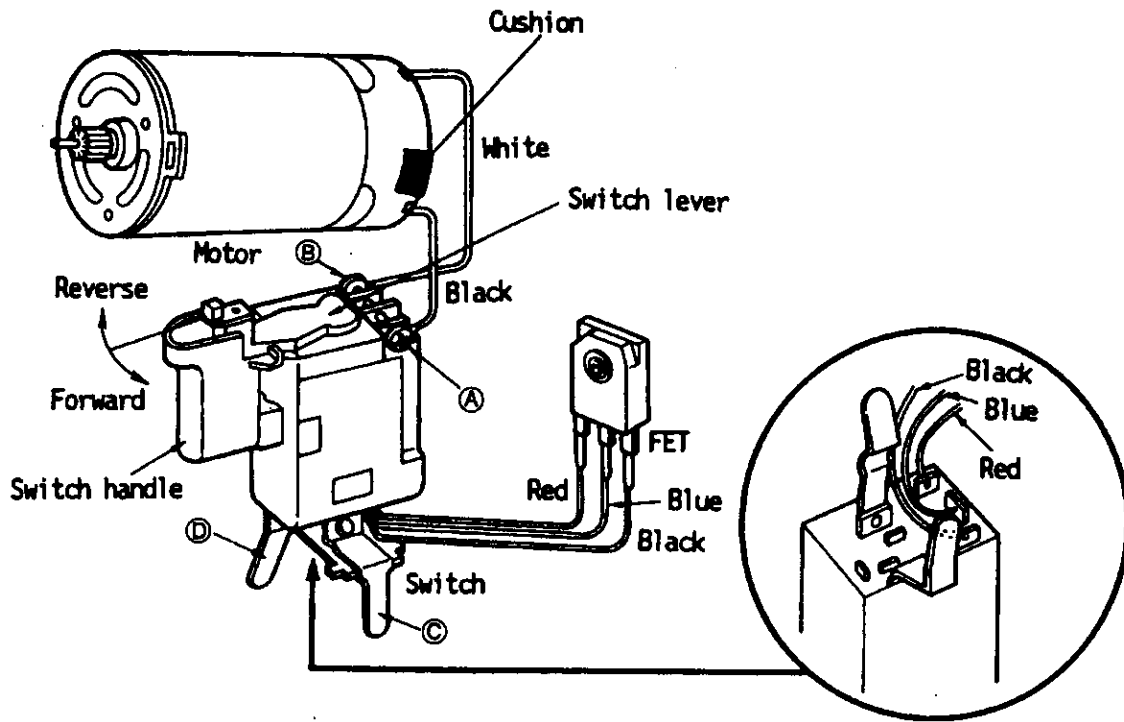
1. Align the ○ mark of adjusting screw with 'A' part of the clutch case.
2. Turn the adjusting screw into driving block about one rotation for clockwise direction.
3. Align the ○○ mark of adjusting screw with 'A' part of the clutch case.
4. Adjust the tabs of click plate to the projection of adjusting screw.
5. Set the clutch handle with position 7 toward A part of the clutch case.
6. Insert the clutch handle with adjusting the tabs of adjusting screw and of click plate to the groove of inside clutch handle.

■ HOW TO REMOVE THE SWITCH.

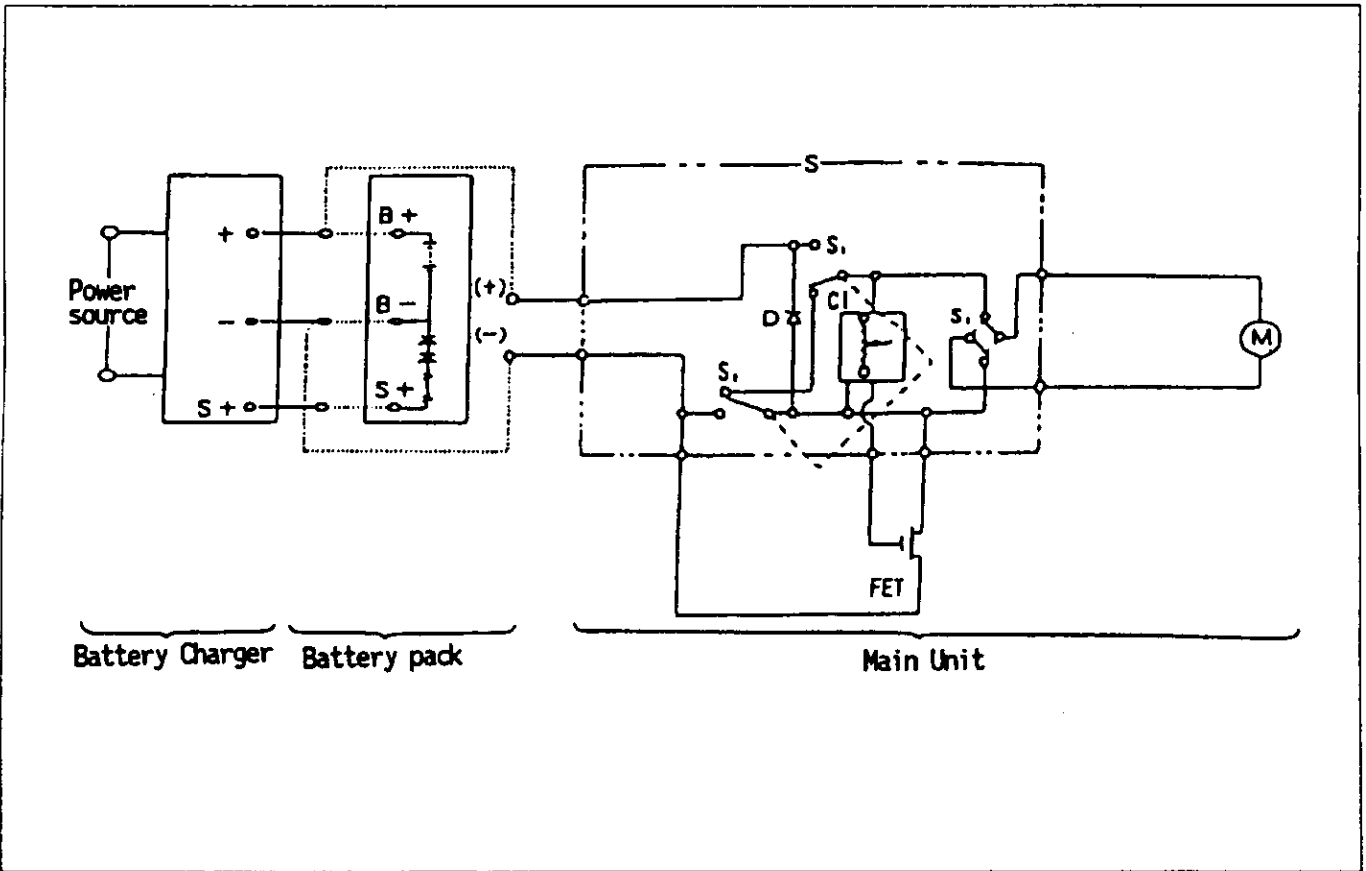
Ref. No. 1B	Procedure 1B	Assemble switch cam with stop switch.
		<p>1. Insert the projection (a) into the hole (b) of stop switch, and set the terminal plate (d) between the projections (c) of switch cam.</p>
Ref. No. 2B	Procedure 1B → 2B	Assemble stop switch with switch.
		<p>1. Set the driving block into the housing. After assembling the stop switch and switch, tighten the 2 screws (e) and (f).</p> <p>NOTE : There is a possibility that the stop switch may not work smoothly depending on the conditions of assembling the driving block with stop switch.</p> <p>(Automatic stop function.) The slight movement of the clutch transmits to the stop switch by the driving bar which is connected with the click plate. When the clutch is OFF, the stop switch works to switch OFF. This operation improves the life of battery.</p>

WIRING CONNECTION DIAGRAM

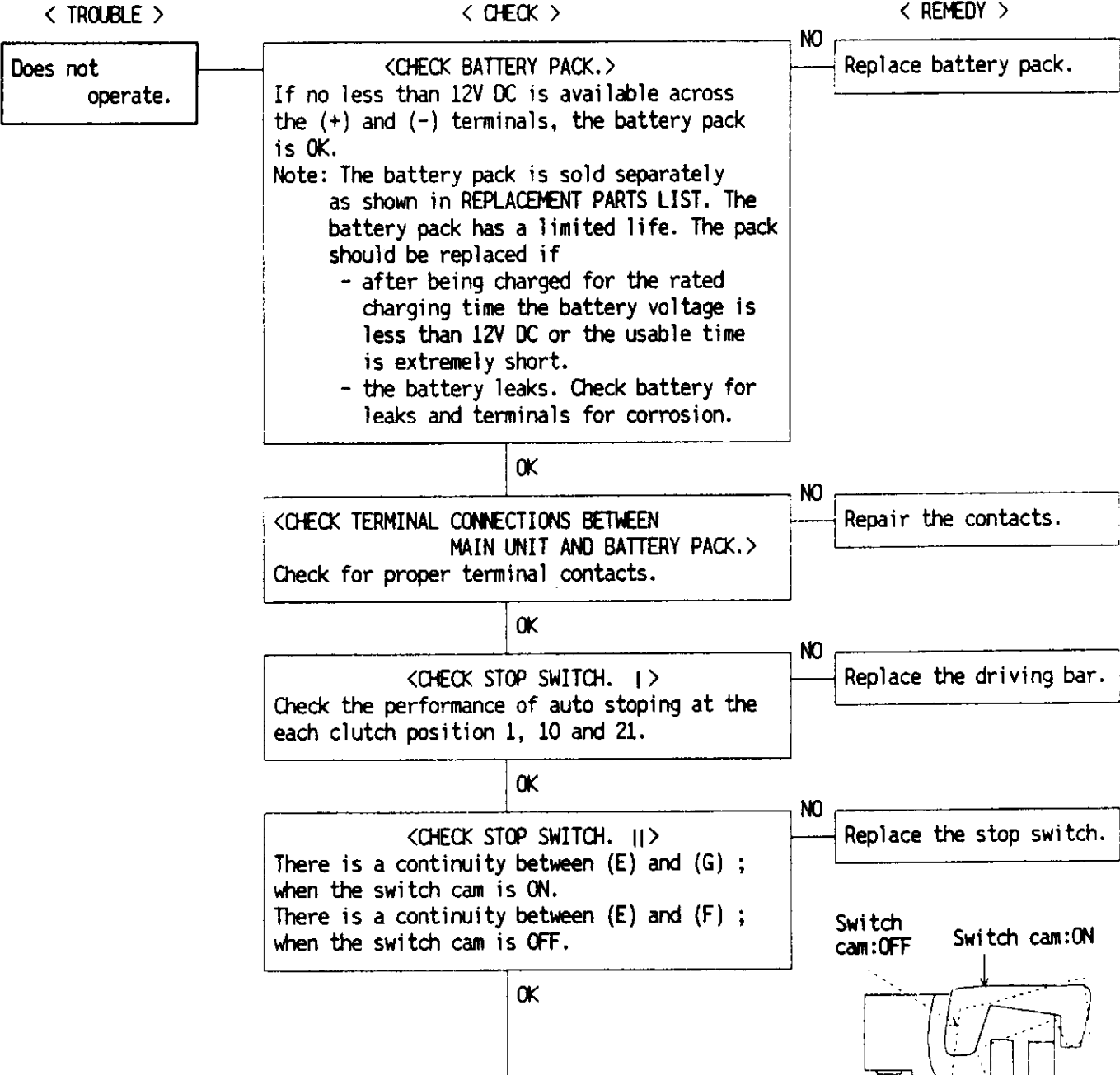
■ Main unit



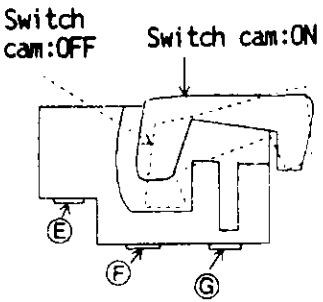
SCHEMATIC DIAGRAM



TROUBLESHOOTING GUIDE (Refer to WIRING CONNECTION DIAGRAM)



(to be continued)



< TROUBLE >

< CHECK >

< REMEDY >

<CHECK SWITCH BLOCK.>
(See WIRING CONNECTION DIAGRAM.)
With touching (+) terminal of Volt-Ohm meter,
check continuity between following terminals.
* Inspection of the forward / reverse
selection switch.
When the switch handle is depressed all the
way :
• There should be 0Ω between (A) - (D), and
between (B) - (C) ; when the switch lever
is set to the forward side.
• There should be 0Ω between (A) - (C), and
between (B) - (D) ; when the switch lever
is set to the reverse side.
* Inspection of braking
• There should be 0Ω between (A) and (B)
without depressing the switch handle.

NO

Contacts in the switch
block are defective.
Replace the switch.

OK

<CHECK MOTOR.>
The motor normally operates with its white
(M+) and black (M-) lead wires connected to
12V DC.

NO

Replace the motor.

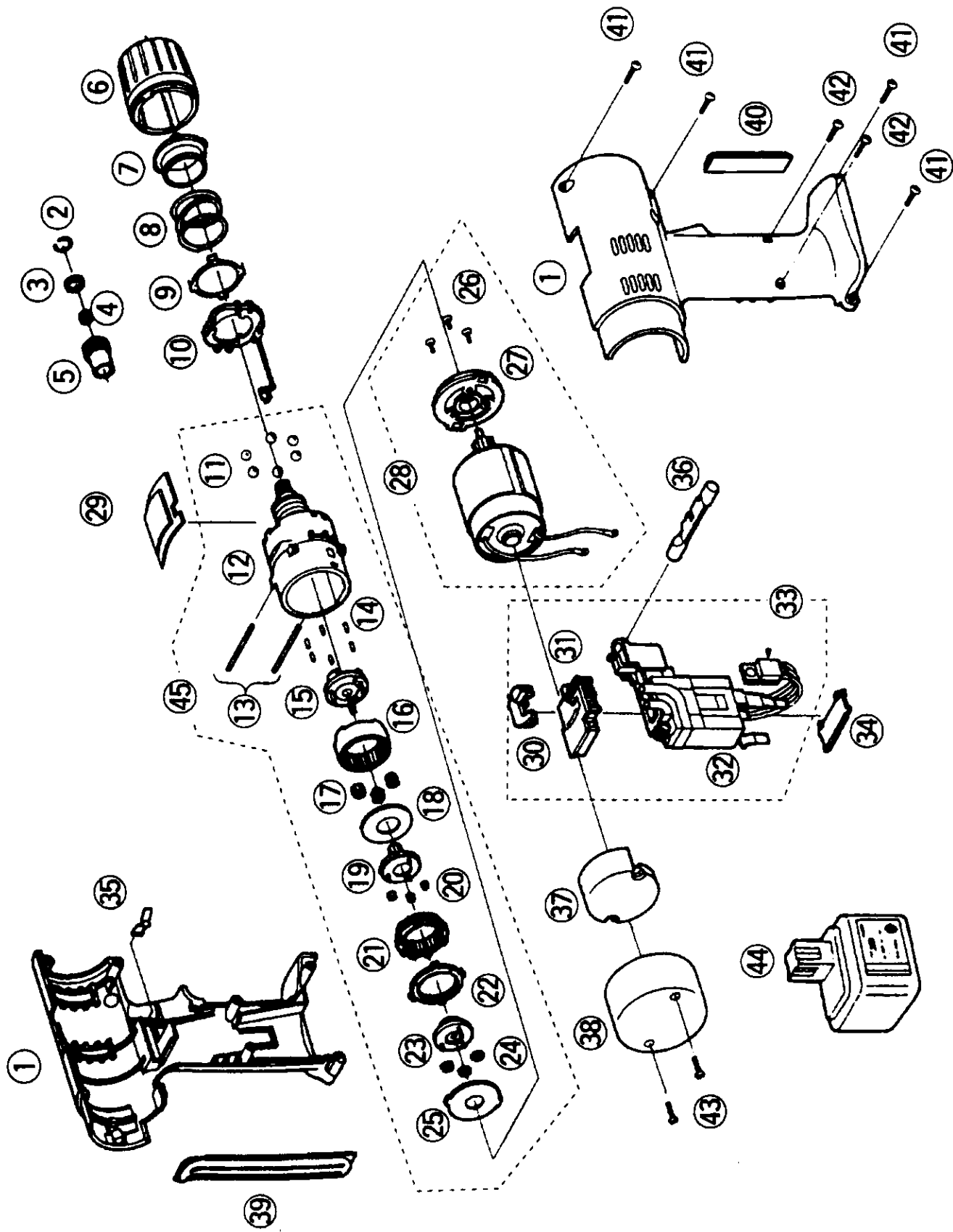
Does not speed-
control.

<CHECK SWITCH BLOCK.>
FET block could be damaged.

NO

Replace the switch & FET
block.

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	EY6408K3079	HOUSING AB SET	1	
2	EY574B1167	C-TYPE SPRING	1	
3	EY574B0857	THRUST PLATE	1	
4	EY6408K0197	HOLDER SPRING	1	
5	EY6408K3718	BIT HOLDER	1	
▲ 6	EY6481H3227	CLUTCH HANDLE	1	
▲ 7	EY6481L0637	ADJUSTING SCREW	1	
8	EY6408L0168	SPRING FOR CLUTCH	1	
▲ 9	EY6481L0457	CLICK PLATE	1	
10	EY6481L0577	CLUTCH PLATE	1	
11	EY560B6967	STEEL BALL	6	*B (6PCS/PK)
12	EY6408L1068	DRIVING BLOCK	1	
▲ 13	EY6481L0357	THRUST PIN SET	2	*B (2PCS/PK)
14	EY6283L0377	ROLLER PIN	6	*B (6PCS/PK)
15	EY6207B1117	CARRIER	1	
16	EY6481L1477	RING GEAR A	1	
17	EY6207B1347	PLANET GEAR SET	3	*B (3PCS/PK)
18	EY6200B0857	THRUST PLATE	1	
▲ 19	EY6401L1357	CARRIER	1	
20	EY6200B1357	PLANET GEAR A	3	*B (3PCS/PK)
21	EY6408L1468	RING GEAR A	1	
22	EY6101L1477	RING GEAR B	1	
▲ 23	EY6401B1108	CARRIER A	1	
24	EY6200B1367	PLANET GEAR B	3	*B (3PCS/PK)
▲ 25	EY6481L0887	THRUST PLATE	1	
26	EY6261B6027	SCREW FOR MOTOR	3	*C K3-6
27	EY6481L0027	MOTOR MOUNTING PLATE	1	
28	EY6408L1008	MOTOR	1	
29	EY6408K3238	FIXED HANDLE	1	
30	EY6481L1487	SWITCH CAM	1	
31	EY6481L2017	STOP SWITCH	1	
32	EY6408Y2028	SWITCH SET	1	
33	EY6408Y2008	SWITCH BLOCK	1	
▲ 34	EY6481L0207	DUST PREVENTIVE PLATE	1	
▲ 35	EY6481L0177	CLICK SPRING	1	
▲ 36	EY6481H3247	SELECTOR HANDLE	1	
37	EY6481L2567	RADIATING PLATE (W/SCREW)	1	
38	EY6408H3108	HOUSING COVER	1	
39	EY6481H3937	GRIP B	1	
40	EY6481H3947	GRIP A	1	
41	EY563B9217	TAPPING SCREW	4	*C K3-16
42	EY574B9037	SCREW	2	*C K3-20
43	EY6408K9058	SCREW	2	*C K3-10
44	EY9107	BATTERY PACK	1	*A
45	EY6408L1458	GEAR BOX BLOCK	1	
▲ -	EY6408K8009	INDIVIDUAL BOX	1	
▲ -	EY6408K8109	OPERATING INSTRUCTIONS	1	