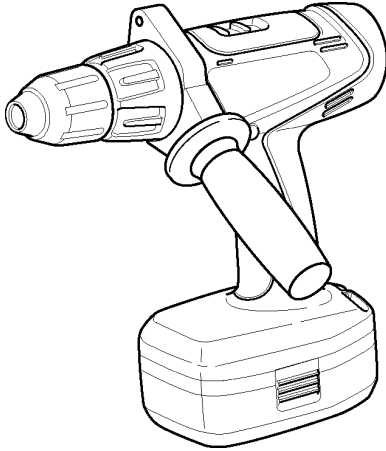


Service Manual


Cordless Drill & Driver

EY6450-U1



SPECIFICATIONS

MAIN UNIT

Motor		DC Motor 18V
No load speed	LOW	70-430/min (rpm)
	HIGH	240-1500/min (rpm)
Chuck capacity		ϕ 0.5 – ϕ 13mm (0 – 1/2")
Chuck stage	Stage 1-15	Approx. 2Nm (20kgf-cm, 18in-lbs.) - 12Nm (122kgf-cm, 106in-lbs.)
		For powerful driving and drilling.
Overall length		250mm (9-13/16")
Weight (with battery pack)		2.6kg (5.7lbs.)

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.

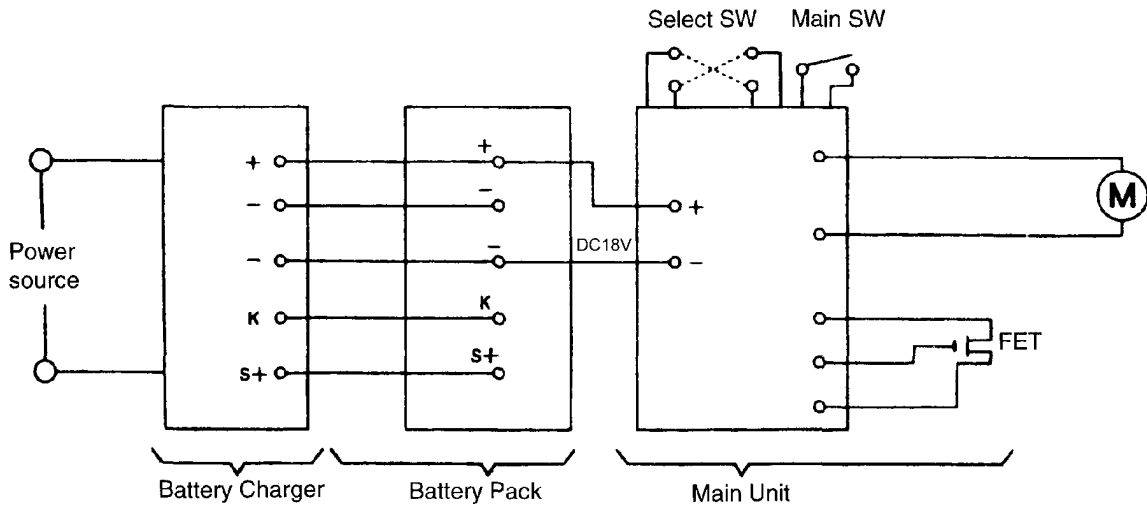
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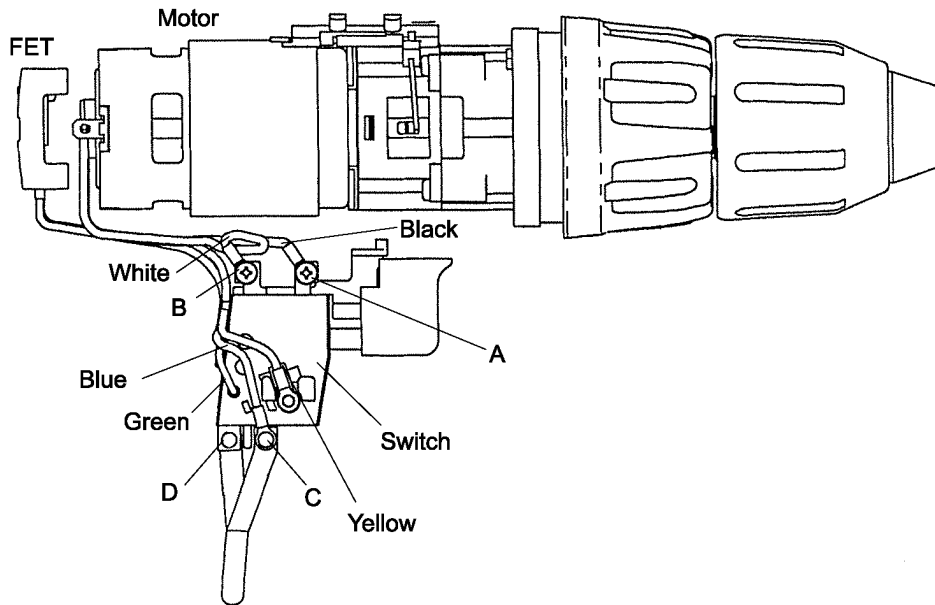
Panasonic[®]

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1 SCHEMATIC DIAGRAM

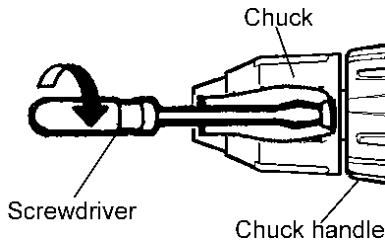
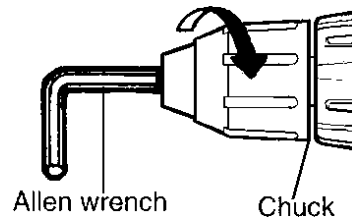
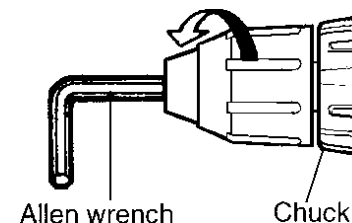


2 WIRING CONNECTION DIAGRAM

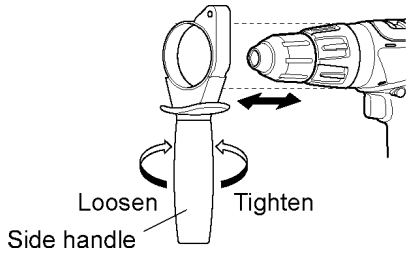
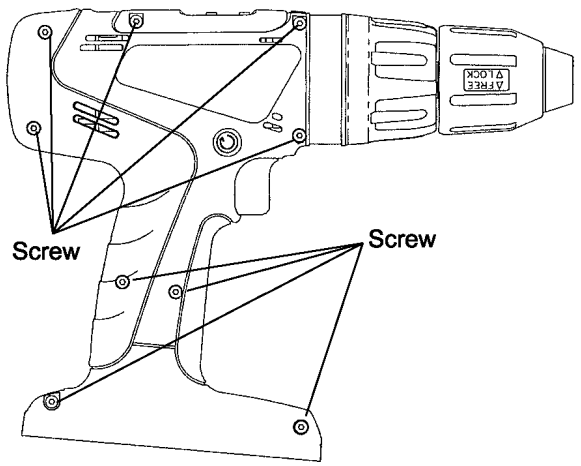
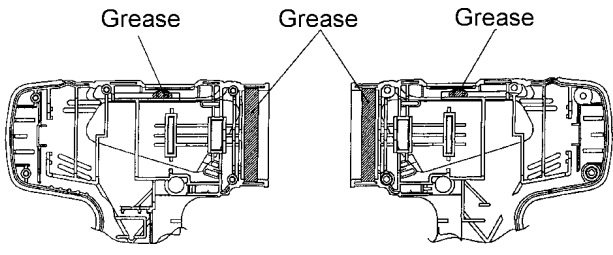


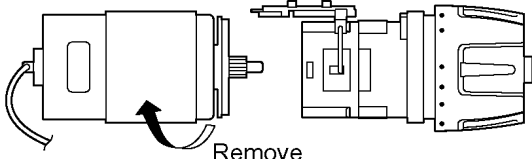
3 DISASSEMBLY/ASSEMBLY INSTRUCTIONS

■HOW TO DISASSEMBLE KEYLESS CHUCK.

Ref. No. 1A	Procedure 1A	Removal of the Keyless Drill Chuck.
	 <p data-bbox="324 420 454 451">Screwdriver</p> <p data-bbox="552 231 633 262">Chuck</p> <p data-bbox="552 441 706 472">Chuck handle</p> <p data-bbox="487 493 544 525">Fig. 1</p>  <p data-bbox="324 735 487 766">Allen wrench</p> <p data-bbox="568 735 657 766">Chuck</p> <p data-bbox="487 787 544 819">Fig. 2</p>  <p data-bbox="324 1039 487 1071">Allen wrench</p> <p data-bbox="568 1039 657 1071">Chuck</p> <p data-bbox="487 1092 544 1123">Fig. 3</p>	<p data-bbox="860 168 1266 199">Removal of the Keyless Drill Chuck.</p> <ol data-bbox="860 199 1494 336" style="list-style-type: none"> 1. Set the clutch handle to position 1 and select "LOW" position. 2. Turn the lock collar counterclockwise direction 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. (See Fig. 1) <p data-bbox="860 336 941 367">NOTE :</p> <p data-bbox="893 367 1477 451">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. (See Fig. 2)</p> <ol data-bbox="860 462 1494 535" 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. (See Fig. 3)

■HOW TO DISASSEMBLE MAIN UNIT.

Ref. No. 2A	Procedure 2A	Removal of the Housing.
	 <p data-bbox="430 472 487 493">Fig. 4</p>  <p data-bbox="430 1008 487 1029">Fig. 5</p>	<p data-bbox="803 168 1226 220">1. Remove the side handle. (See Fig. 4) 2. Remove nine housing screws. (See Fig. 5)</p> <p data-bbox="803 241 885 262">NOTE :</p> <p data-bbox="836 262 1437 315">Grease rubbing part of housing with Shell Alvania for assembly. (See Fig. 6)</p>  <p data-bbox="1096 598 1153 619">Fig. 6</p>

Ref. No. 2B	Procedure 2A → 2B	Removal or attachment of the Motor.
	 <p data-bbox="389 1375 487 1396">Remove</p> <p data-bbox="430 1428 487 1449">Fig. 7</p>	<p data-bbox="803 1167 885 1188">(Removal)</p> <p data-bbox="803 1188 1429 1260">1. Take out 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. (See Fig. 7)</p> <p data-bbox="803 1281 909 1302">(Attachment)</p> <p data-bbox="803 1302 1421 1354">3. Motor mounting base and the positioning rib of gear case should be set.</p>

Ref. No. 2C

Procedure 2A → 2B → 2C

Removal or attachment of the Gear Box Block.

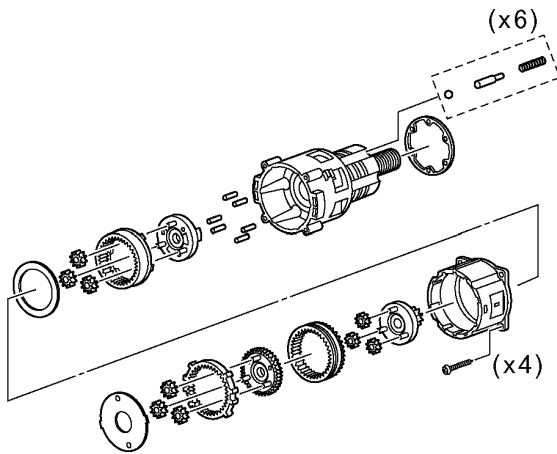


Fig. 8

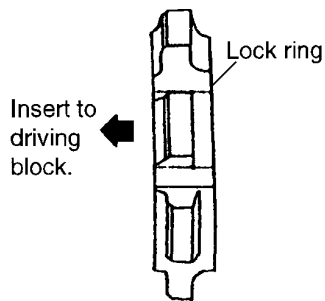


Fig. 9

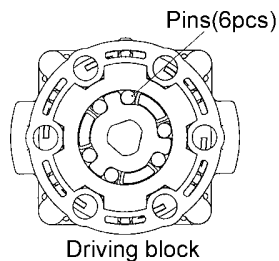


Fig. 10

(Removal)

1. Turn the thrust plate to remove.
2. The internal parts of gear box block can be removed one after another. (See Fig. 8)

(Attachment)

1. If the lock ring comes out, reassemble in the correct direction. (See Fig. 9)
2. Start from inserting 6 pins into the driving block as shown in the Fig. 10.
3. Assemble the other parts in reverse order as shown in the Fig. 8.
4. Install steel balls, pins and clutch springs into 6 holes. (See Fig. 11)

NOTE :

Carrier, Ring gear, and Clutch plate have their own correct directions for proper assembly.

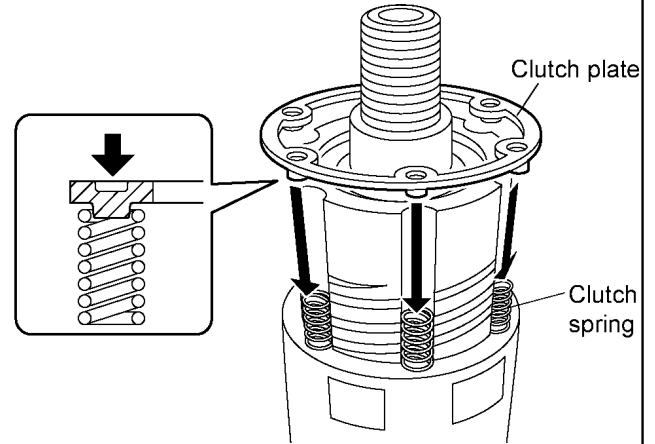


Fig. 11

Ref.No.2D

Procedure 2A → 2B → 2C → 2D

Assembly of the Adjusting Screw and the Clutch Handle.

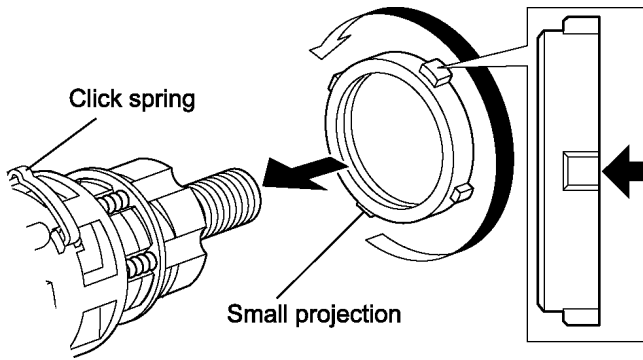


Fig. 12

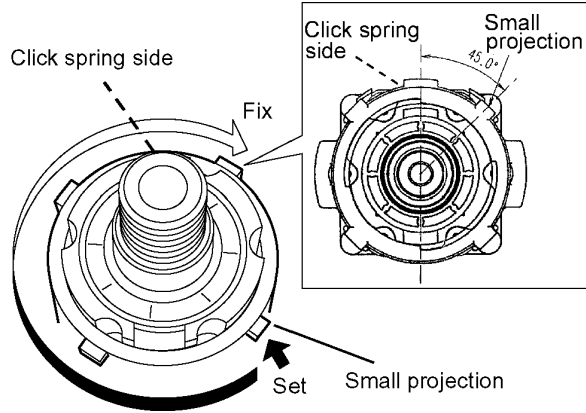


Fig. 13

1. Hold the driving block with the click spring on top, and align the smallest projection of adjusting screw with the driving block at 5 o'clock position.

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. (See Fig. 12)

2. Turn the adjusting screw into the driving block about 255° rotation (to 2 o'clock position) for clockwise direction. (See Fig. 13)

3. Set the clutch handle with position 1 on top. (See Fig. 14)

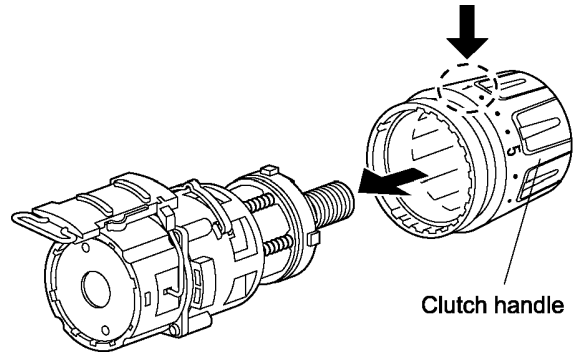


Fig. 14

Ref.No.2E

Procedure 2A → 2B → 2C → 2D → 2E

Assembly of the Switch.

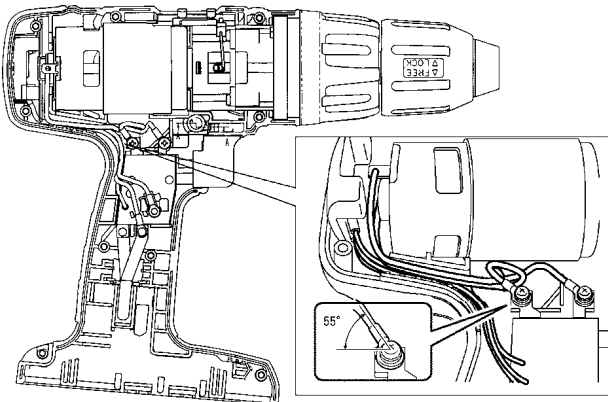


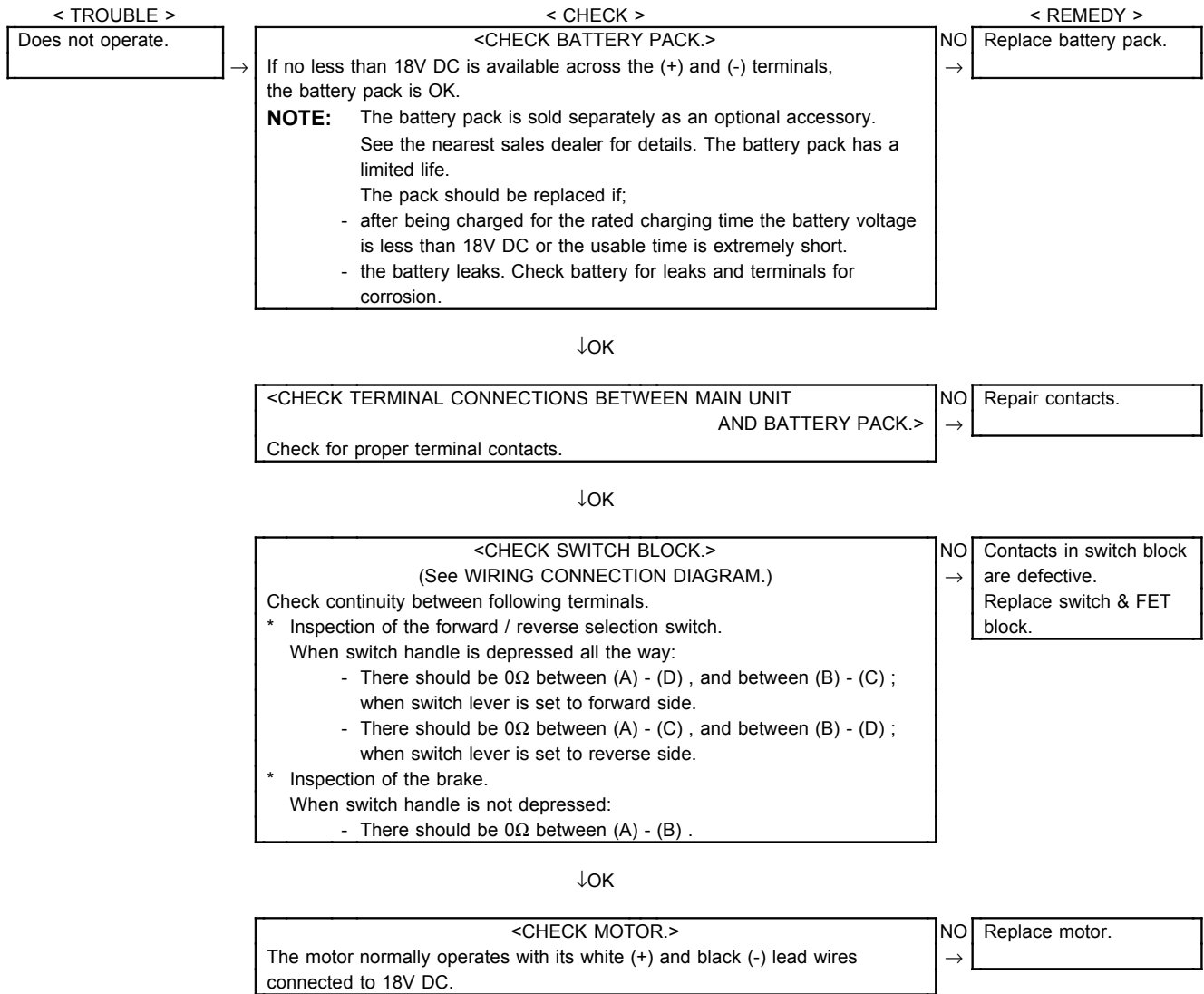
Fig. 15

1. Press fit the lead wires firmly and set the black lead wire on top.

2. Connect the switch with the white and black lead wire at 55° position. (See Fig. 15).

4 TROUBLESHOOTING GUIDE

(Refer to WIRING CONNECTION DIAGRAM)



< TROUBLE >

Does not speed-control or does not brake.



< CHECK >

<CHECK FET.>

Even if FET block is defective, it can not be replaced individually.
Replace whole switch block.
Remove the FET circuit block and check the lead wire terminals.
These terminals are open normally when there is an open circuit ($\infty \Omega$)
between the green and yellow lead wires, and between the blue and yellow lead wires.

NOTE:

- * FET is weak against static electricity.
- ** The resistance value may be some differences depends on the measurement range.

NO

< REMEDY >

Repair the contact or replace switch & FET block.



↓OK

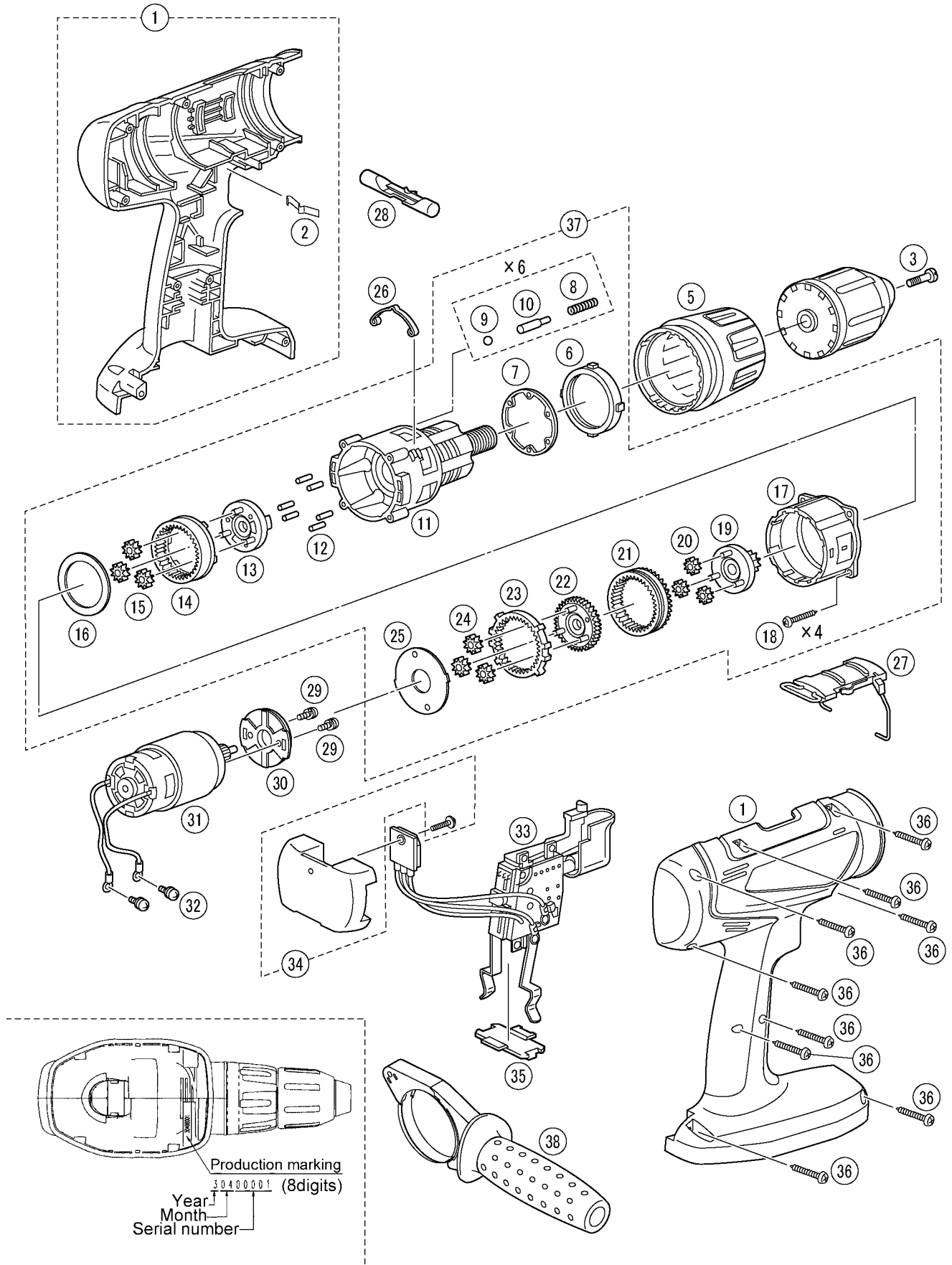
<CHECK SWITCH BLOCK.>

NO

Replace switch & FET block.



5 EXPLODED VIEW



6 REPLACEMENT PARTS LIST

NOTE:

*B=only available as set

*C=available individually

Ref.No.	Part No.	Part Name & Description	Remarks	▲	Per Unit
1	WEY6450K3078	HOUSING AB SET		▲	1
2	EY6481L0177	CLICK SPRING			1
3	WEY6450L6808	CHUCK FASTENING SCREW		▲	1
5	WEY6450Y3228	CLUTCH HANDLE		▲	1
6	WEY6450L0638	ADJUSTING SCREW		▲	1
7	WEY6450L0578	CLUTCH PLATE		▲	1
8	WEY6450L0168	CLUTCH SPRING	(6pcs/PK)	▲	6
9	WEY6813L1927	STEEL BALL	(6pcs/PK) ϕ 5	▲	6
10	WEY6450L0388	PIN	(6pcs/PK) ϕ 5.3*20.3	▲	6
11	WEY6450L1078	DRIVING BLOCK		▲	1
12	EY6283L0377	PIN	(6pcs/PK) ϕ 3.175*7.2		6
13	EY6901L1107	CARRIER			1
14	WEY6450L1488	RING GEAR		▲	1
15	WEY6450L1348	PLANET GEAR	(3pcs/PK)	▲	3
16	WEY6450L0858	THRUST PLATE		▲	1
17	WEY6450L1768	GEAR CASE		▲	1
18	EY6406K9038	TORX TAPPING SCREW	*C K3-12	▲	4
19	WEY6450L1128	CARRIER A		▲	1
20	WEY6450L1358	PLANET GEAR A	(3pcs/PK)	▲	3
21	WEY6200B1468	RING GEAR B		▲	1
22	WEY6450L1118	CARRIER		▲	1
23	WEY6450L1478	RING GEAR		▲	1
24	EY6200B1367	PLANET GEAR	(3pcs/PK)		3
25	WEY6450L0868	THRUST PLATE		▲	1
26	WEY6450L0178	CLICK SPRING A		▲	1
27	EY6406Y3238	H/L CHANGE HANDLE		▲	1
28	WEY6405Y3248	F/R SELECTOR HANDLE		▲	1
29	EYT184L6077	SCREW	*C K4-6		2
30	WEY6450L0028	MOTOR MOUNTING PLATE		▲	1
31	WEY6450L1008	DC MOTOR		▲	1
32	WEY6450S6028	SEMS SCREW	*C K3-5	▲	2
33	WEY6450Y2008	SWITCH		▲	1
34	EY6406L2568	HEAT SINK	with a screw	▲	1
35	EY6230L0207	DUST PREVENTIVE PLATE		▲	1
36	EY6230K9218	TORX TAPPING SCREW	*C K3-20	▲	9
37	WEY6450L1458	GEAR BOX BLOCK		▲	1
38	WEY6450K4628	SIDE HANDLE		▲	1
-	WEY6450K8108	OPERATING INSTRUCTIONS		▲	1

**Battery Pack, Keyless Chuck, and Tool Case are 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.