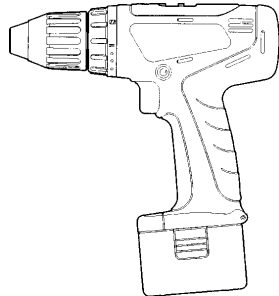


Service Manual

Cordless Drill & Driver



EY6405-U1
EY6409-U1
EY6432-U1

SPECIFICATIONS

MAIN UNIT

Model		EY6405	EY6409	EY6432
Motor		DC Motor 12V		DC Motor 15.6V
No load speed	LOW	400/min (rpm)		450/min (rpm)
	HIGH	1300/min (rpm)		1450/min (rpm)
Chuck capacity		ϕ 0.5 ~ 10mm (1/32" ~ 3/8")	ϕ 1.0 ~ 13mm (1/16" ~ 1/2")	
Maximum torque	LOW	22.5Nm (230kgf-cm, 199in-lbs.)		31.9Nm (325kgf-cm, 282in-lbs.)
	HIGH	6.3Nm (65kgf-cm, 56in-lbs.)		8.8Nm (90kgf-cm, 78in-lbs.)
Clutch torque		Approx. 1.0Nm (10kgf-cm, 8.7in-lbs.) – 5.4Nm (55kgf-cm, 47.7in-lbs.)		Approx. 1.0Nm (10kgf-cm, 8.7in-lbs.) – 6.9Nm (70kgf-cm, 61in-lbs.)
Overall length		202mm (7-61/64")	208mm (8-3/16")	
Weight (with battery pack)		1.7kg (3.75lbs.) with EY9106	1.9kg (4.19lbs.) with EY9201	2.2kg (4.85lbs.) with EY9231

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.

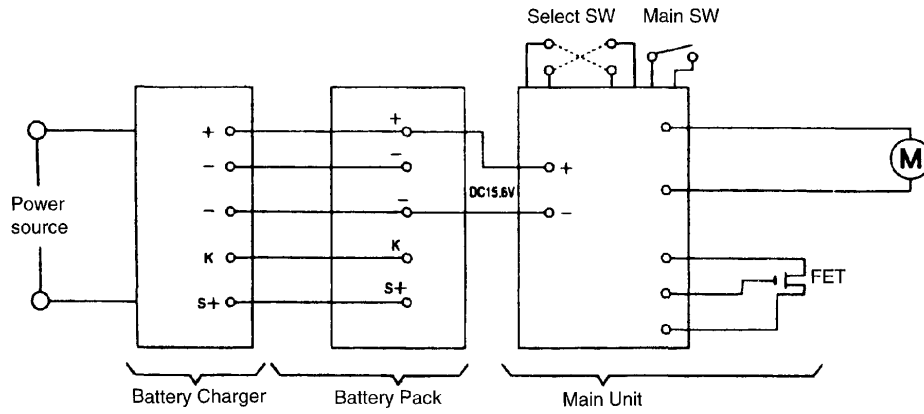
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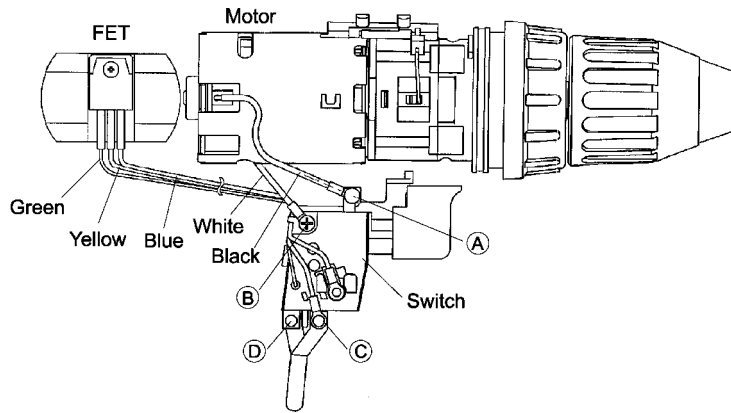
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1 SCHEMATIC DIAGRAM

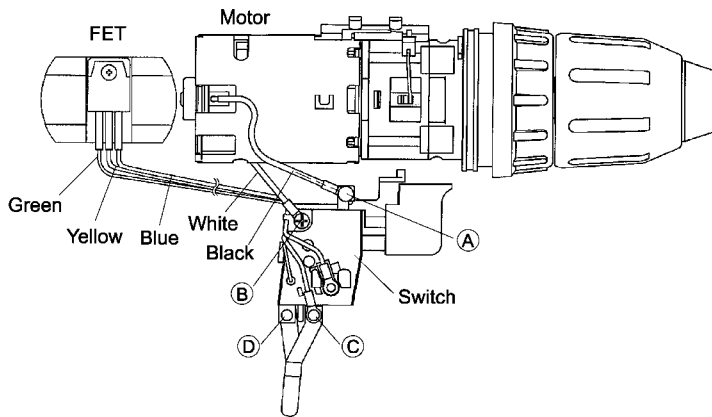


2 WIRING CONNECTION DIAGRAM

2.1. EY6405/EY6409

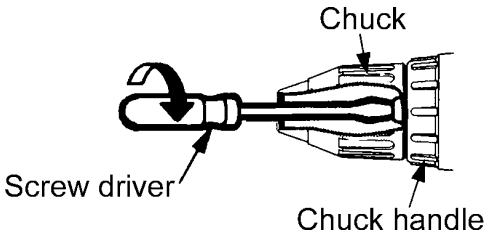
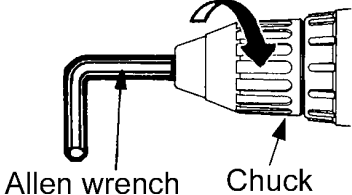
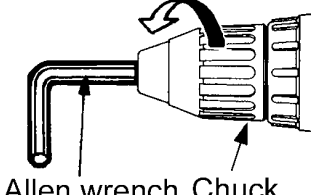



2.2. EY6432

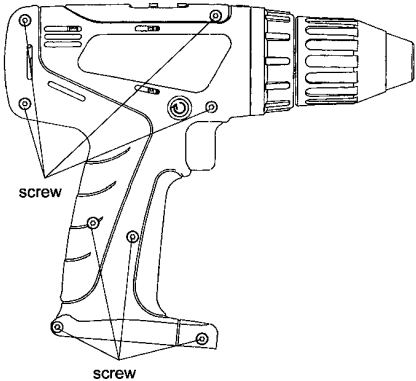
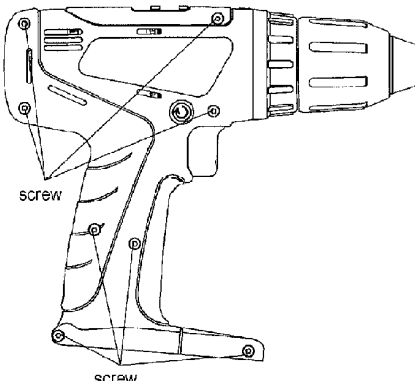


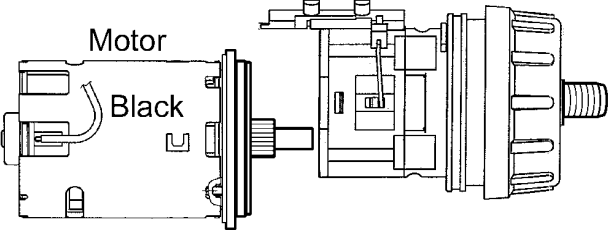
3 DISASSEMBLY/ASSEMBLY INSTRUCTIONS

■HOW TO DISASSEMBLE KEYLESS CHUCK.

Ref. No. 1A	Procedure 1A	Removal of the Keyless Drill Chuck.
	 <p data-bbox="513 464 557 489">Fig.1</p>  <p data-bbox="513 753 557 779">Fig.2</p>  <p data-bbox="513 1045 557 1071">Fig.3</p>	<p data-bbox="862 155 1235 180">Removal of the Keyless Drill Chuck.</p> <ol data-bbox="862 184 1453 338" style="list-style-type: none"> 1. Set the clutch handle to position  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="862 338 938 363">NOTE :</p> <p data-bbox="894 363 1437 449">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="862 459 1453 525" 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="298 296 444 317">EY6405/EY6409</p>  <p data-bbox="293 516 337 533">screw</p> <p data-bbox="367 695 410 711">screw</p> <p data-bbox="459 726 503 747">Fig.4</p>	<p data-bbox="951 296 1024 317">EY6432</p>  <p data-bbox="922 516 966 533">screw</p> <p data-bbox="995 695 1039 711">screw</p> <p data-bbox="1081 726 1125 747">Fig.5</p>	<p data-bbox="803 155 1062 155">1. Remove eight housing screws.</p> <p data-bbox="803 180 997 201">(See or Fig.4 or Fig.5)</p>

Ref. No. 2B	Procedure 2A → 2B	Removal or attachment of the Motor.
 <p data-bbox="261 919 342 940">Motor</p> <p data-bbox="282 982 363 1003">Black</p> <p data-bbox="513 856 719 877">Gear box block</p> <p data-bbox="456 1140 500 1161">Fig.6</p>	<p data-bbox="803 831 883 852">(Removal)</p> <ol data-bbox="803 852 1386 915" style="list-style-type: none"> 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. <p data-bbox="803 936 899 957">(Attachment)</p> <ol data-bbox="803 957 1386 999" style="list-style-type: none"> 3. Motor mounting base and the positioning rib of gear case should be set. (See Fig.6) 	

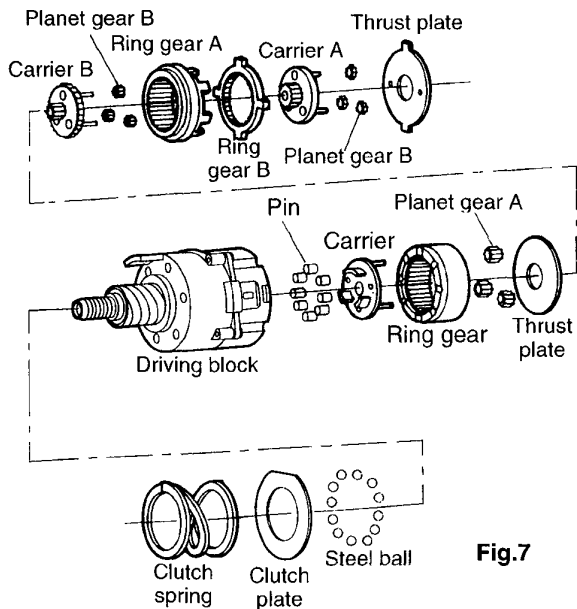


Fig.7

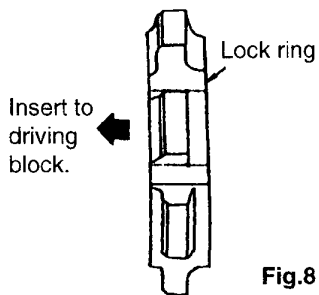


Fig.8

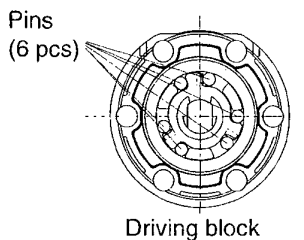


Fig.9

(Removal)

1. Turn the thrust plate to remove.
2. The internal parts of gear box block can be removed one after another. (See Fig. 7)

(Attachment)

3. If the lock ring comes out, reassemble in the correct direction. (See Fig. 8)
4. Start from inserting 6 pins into the driving block as shown in the Fig. 9.
5. Assemble the other parts in reverse order as shown in the Fig. 7.

NOTE :

Carrier, Carrier A and B, Ring Gear, and Ring Gear A have their own correct directions for proper reassembly.

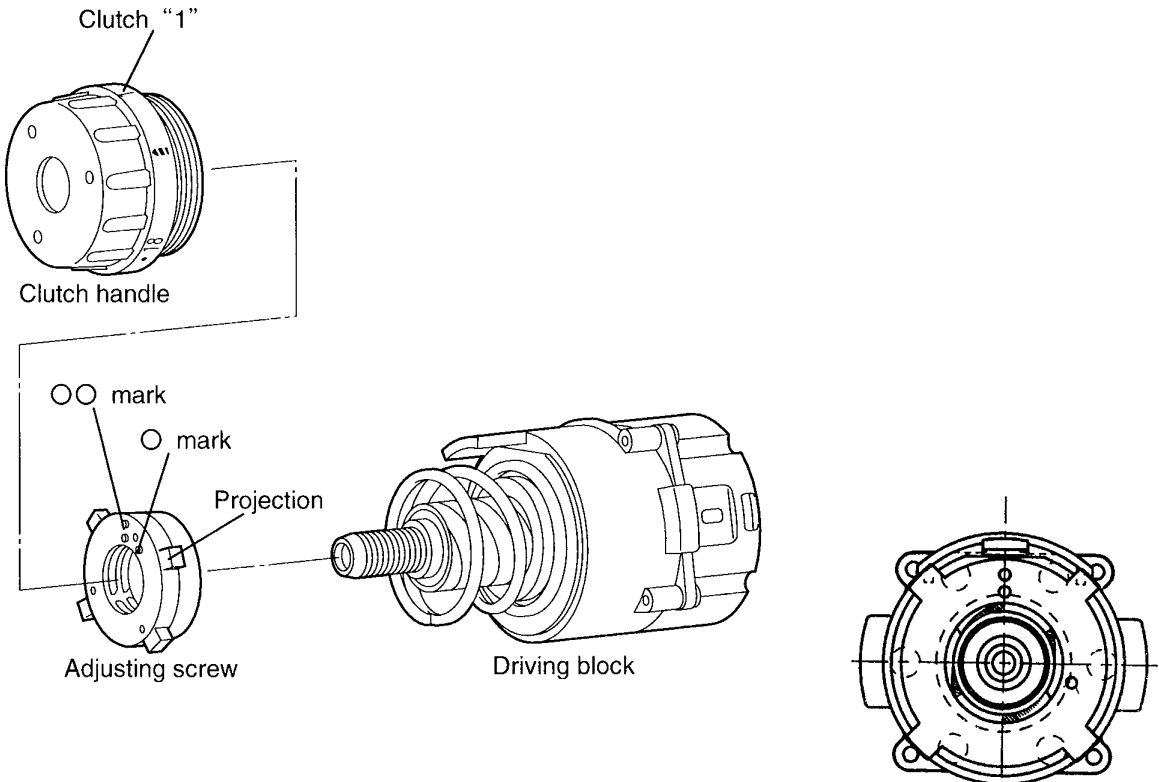
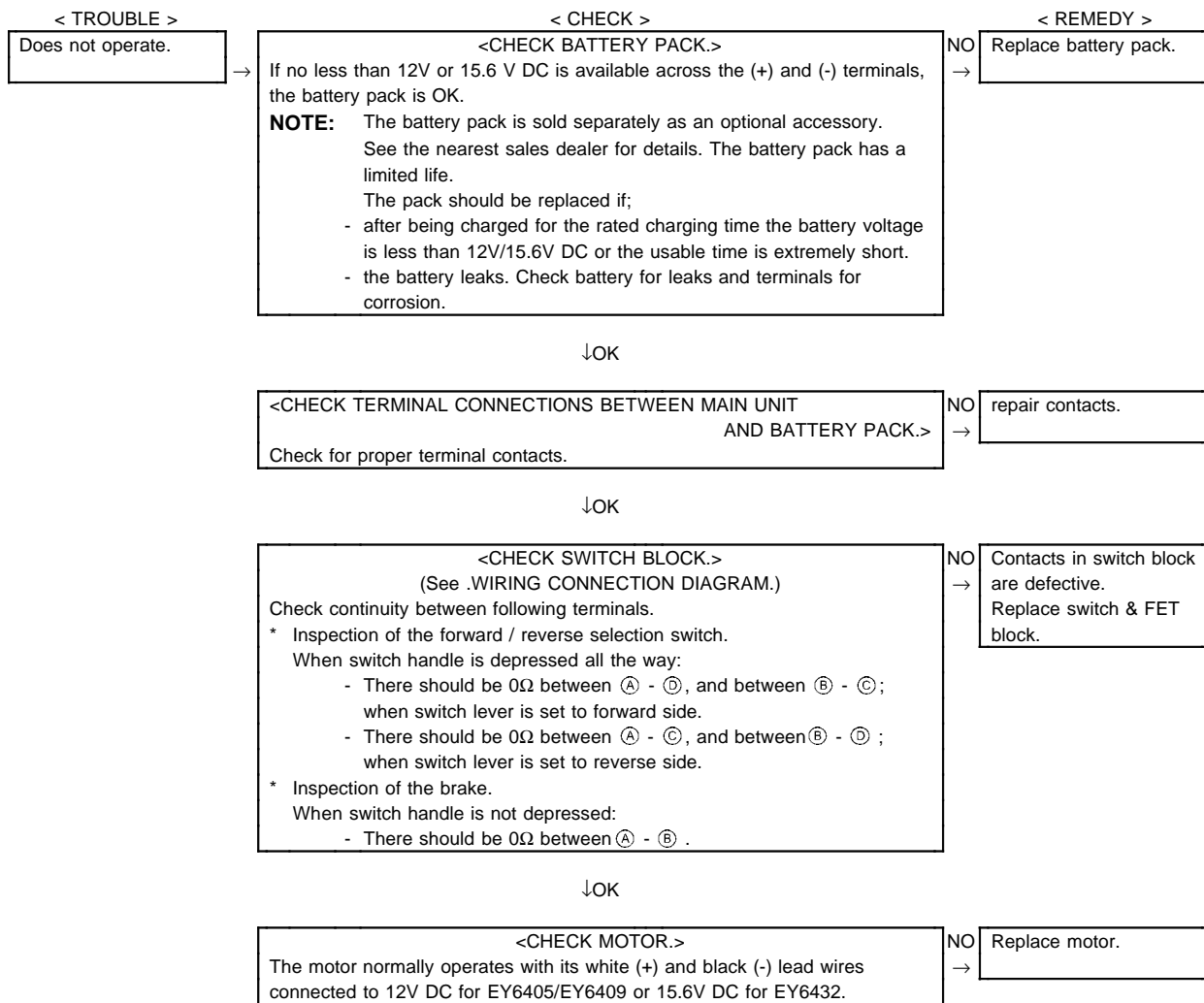
Ref.No.2D	Procedure 2A → 2B → 2C → 2D	Assembly of the Adjusting Screw and the Clutch Handle.
		<ol style="list-style-type: none"> 1. Align the ○ mark of adjusting screw with the center of upper projection of clutch case. 2. Turn the adjusting screw into the driving block about one rotation for clockwise direction. 3. Align the ○ ○ mark of adjusting screw with the center of upper projection of clutch case. 4. Set the clutch handle with position 1 on top. 5. Insert the clutch handle with adjusting the tabs of adjusting screw to the groove of inside clutch handle.

Fig.11

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 sensitive against static electricity.
** The resistance value will vary dependent upon the measurement range of the tester.

NO



< REMEDY >
Repair the contact or replace switch & FET block.

↓OK

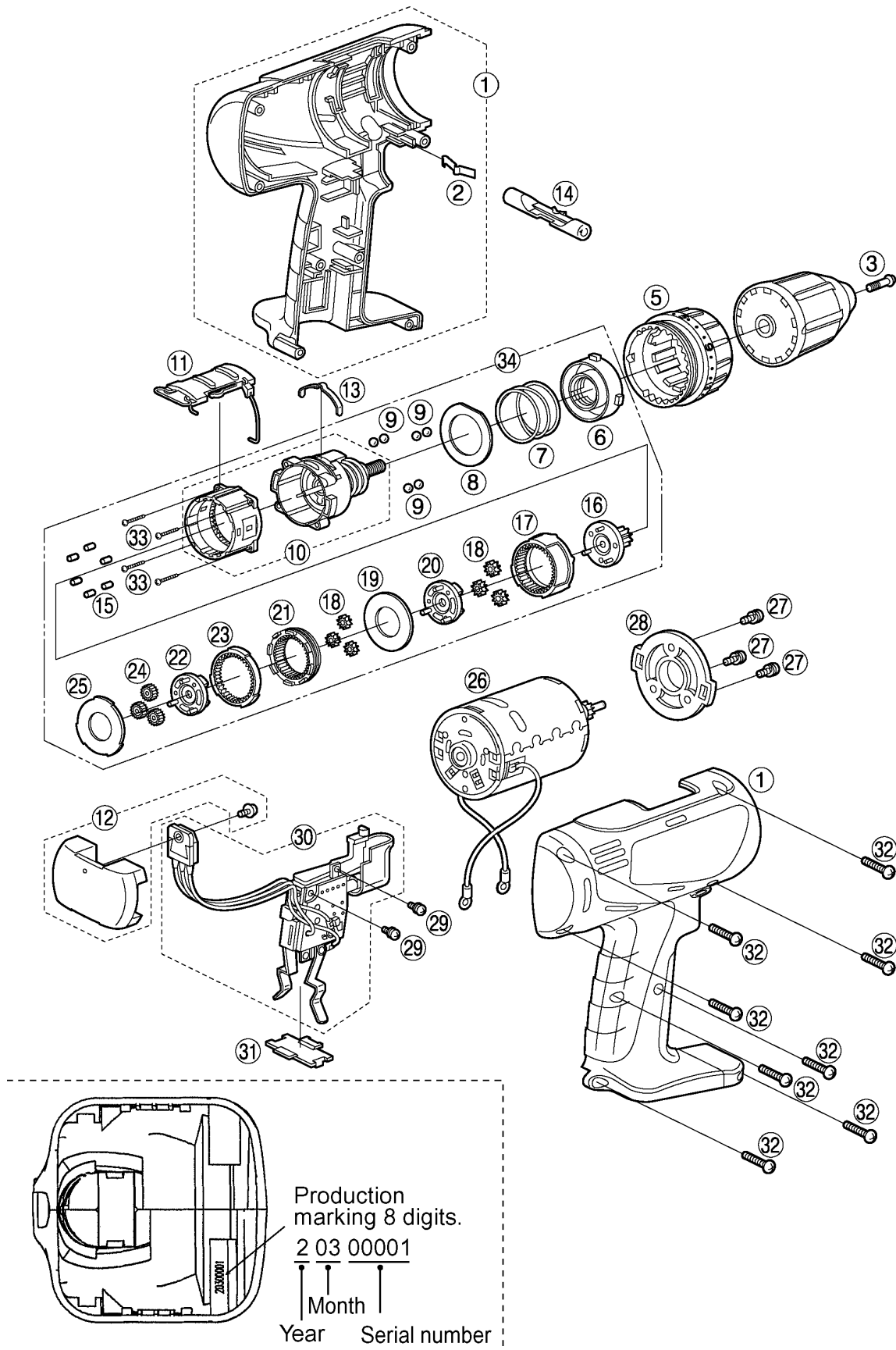
<CHECK SWITCH BLOCK.>

NO



Replace switch & FET block.

5 EXPLODED VIEW



6 REPLACEMENT PARTS LIST

6.1. EY6405 REPLACEMENT PARTS LIST

NOTE:

*B=only available as set

*C=available individually

Ref.No.	Part No.	Part Name & Description	Remarks	Per Unit
1	WEY6405K3078	HOUSING AB SET		▲ 1
2	EY6481L0177	CLICK SPRING		▲ 1
3	EYT103L6807	CHUCK FASTENING SCREW		▲ 1
5	EY6406Y3228	CLUTCH HANDLE		▲ 1
6	EY6406L0638	ADJUSTING SCREW		▲ 1
7	EY6406L0168	CLUTCH SPRING		▲ 1
8	EY6406L0578	CLUTCH PLATE		▲ 1
9	EY560B6967	STEEL BALL	*B (12pcs/PK)	▲ 12
10	EY6406L1078	DRIVING BLOCK		▲ 1
11	EY6406Y3238	H/L CHANGE HANDLE		▲ 1
12	EY6406L2568	HEAT SINK		▲ 1
13	EY6406L0178	CLICK SPRING A		▲ 1
14	WEY6405Y3248	F/R SELECTOR HANDLE		▲ 1
15	EY6283L0377	ROLLER PIN	*B (6pcs/PK)	▲ 6
16	EY6406L1118	CARRIER		▲ 1
17	EY6406L1488	RING GEAR		▲ 1
18	EY6406L1348	PLANET GEAR	*B (3pcs/PK)	▲ 6
19	EY6406L0858	THRUST PLATE		▲ 1
20	EY6406L1128	CARRIER A		▲ 1
21	EY6406L1468	RING GEAR A		▲ 1
22	EY6406L1108	CARRIER B		▲ 1
23	EY6406L1478	RING GEAR B		▲ 1
24	EY6406L1358	PLANET GEAR B	*B (3pcs/PK)	▲ 3
25	EY6406L0888	THRUST PLATE		▲ 1
26	WEY6405L1008	DC MOTOR		▲ 1
27	EY6230L6027	SCREW	*C K3*6	▲ 3
28	EY6406L0028	MOTOR MOUNTING PLATE		▲ 1
29	EY6207Y6027	SCREW	*C K3*5	▲ 2
30	WEY6405Y2008	SWITCH		▲ 1
31	EY6230L0207	DUST PREVENTIVE PLATE		▲ 1
32	EY6230K9218	TAPPING SCREW	*C K3*20	▲ 8
33	EY6406K9038	TORX TAPPING SCREW	*C K3*12	▲ 4
34	EY6406L1458	GEAR BOX BLOCK		▲ 1
-	WEY6405K8108	OPERATING INSTRUCTIONS		▲ 1

**Battery Pack, Keyless Chuck, Quick Change 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.

6.2. EY6409 REPLACEMENT PARTS LIST

NOTE:

*B=only available as set

*C=available individually

Ref.No.	Part No.	Part Name & Description	Remarks	Per Unit
1	WEY6409K3078	HOUSING AB SET		▲ 1
2	EY6481L0177	CLICK SPRING		▲ 1
3	EYT103L6807	CHUCK FASTENING SCREW		▲ 1
5	EY6406Y3228	CLUTCH HANDLE		▲ 1
6	EY6406L0638	ADJUSTING SCREW		▲ 1
7	EY6406L0168	CLUTCH SPRING		▲ 1
8	EY6406L0578	CLUTCH PLATE		▲ 1
9	EY560B6967	STEEL BALL	*B (12pcs/PK)	▲ 12
10	EY6406L1078	DRIVING BLOCK		▲ 1
11	EY6406Y3238	H/L CHANGE HANDLE		▲ 1
12	EY6406L2568	HEAT SINK		▲ 1
13	EY6406L0178	CLICK SPRING A		▲ 1
14	WEY6405Y3248	F/R SELECTOR HANDLE		▲ 1
15	EY6283L0377	ROLLER PIN	*B (6pcs/PK)	▲ 6
16	EY6406L1118	CARRIER		▲ 1
17	EY6406L1488	RING GEAR		▲ 1
18	EY6406L1348	PLANET GEAR	*B (3pcs/PK)	▲ 6
19	EY6406L0858	THRUST PLATE		▲ 1
20	EY6406L1128	CARRIER A		▲ 1
21	EY6406L1468	RING GEAR A		▲ 1
22	EY6406L1108	CARRIER B		▲ 1
23	EY6406L1478	RING GEAR B		▲ 1
24	EY6406L1358	PLANET GEAR B	*B (3pcs/PK)	▲ 3
25	EY6406L0888	THRUST PLATE		▲ 1
26	WEY6405L1008	DC MOTOR		▲ 1
27	EY6230L6027	SCREW	*C K3*6	▲ 3
28	EY6406L0028	MOTOR MOUNTING PLATE		▲ 1
29	EY6207Y6027	SCREW	*C K3*5	▲ 2
30	WEY6405Y2008	SWITCH		▲ 1
31	EY6230L0207	DUST PREVENTIVE PLATE		▲ 1
32	EY6230K9218	TAPPING SCREW	*C K3*20	▲ 8
33	EY6406K9038	TORX TAPPING SCREW	*C K3*12	▲ 4
34	EY6406L1458	GEAR BOX BLOCK		▲ 1
-	WEY6405K8108	OPERATING INSTRUCTIONS		▲ 1

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6.3. EY6405 REPLACEMENT PARTS LIST

NOTE:

*B=only available as set

*C=available individually

Ref.No.	Part No.	Part Name & Description	Remarks	Per Unit
1	WEY6432K3078	HOUSING AB SET		▲ 1
2	EY6481L0177	CLICK SPRING		▲ 1
3	EYT103L6807	CHUCK FASTENING SCREW		▲ 1
5	EY6406Y3228	CLUTCH HANDLE		▲ 1
6	EY6406L0638	ADJUSTING SCREW		▲ 1
7	EY6431L0168	CLUTCH SPRING		▲ 1
8	EY6406L0578	CLUTCH PLATE		▲ 1
9	EY560B6967	STEEL BALL	*B (12pcs/PK)	▲ 12
10	EY6431L1078	DRIVING BLOCK		▲ 1
11	EY6406Y3238	H/L CHANGE HANDLE		▲ 1
12	EY6406L2568	HEAT SINK		▲ 1
13	EY6406L0178	CLICK SPRING A		▲ 1
14	WEY6405Y3248	F/R SELECTOR HANDLE		▲ 1
15	EY6283L0377	ROLLER PIN	*B (6pcs/PK)	▲ 6
16	EY6406L1118	CARRIER		▲ 1
17	EY6406L1488	RING GEAR		▲ 1
18	EY6406L1348	PLANET GEAR	*B (3pcs/PK)	▲ 6
19	EY6406L0858	THRUST PLATE		▲ 1
20	EY6406L1128	CARRIER A		▲ 1
21	EY6406L1468	RING GEAR A		▲ 1
22	EY6406L1108	CARRIER B		▲ 1
23	EY6406L1478	RING GEAR B		▲ 1
24	EY6406L1358	PLANET GEAR B	*B (3pcs/PK)	▲ 3
25	EY6406L0888	THRUST PLATE		▲ 1
26	WEY6432L1008	DC MOTOR		▲ 1
27	EY6230L6027	SCREW	*C K3*6	▲ 3
28	EY6406L0028	MOTOR MOUNTING PLATE		▲ 1
29	EY6207Y6027	SCREW	*C K3*5	▲ 2
30	WEY6432Y2008	SWITCH		▲ 1
31	EY6230L0207	DUST PREVENTIVE PLATE		▲ 1
32	EY6230K9218	TAPPING SCREW	*C K3*20	▲ 8
33	EY6406K9038	TORX TAPPING SCREW	*C K3*12	▲ 4
34	EY6431L1458	GEAR BOX BLOCK		▲ 1
-	WEY6405K8108	OPERATING INSTRUCTIONS		▲ 1

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