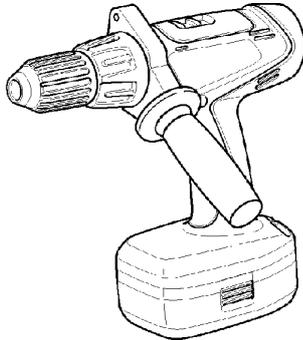


# Service Manual

Cordless Hammer Drill Driver

**EY6950-U1**



## SPECIFICATIONS

### MAIN UNIT

Motor		DC Motor 18V	
Capability	Screw driving	Wood screw	$\phi$ 4.2mm (3/16") x 75mm (3")
		Self-drilling screw	$\phi$ 3mm (1/8") x 13mm (1/2") SPC t = 1.6mm (1/16")
		Masonry screw	$\phi$ 6.5mm (1/4") x 35mm (1-3/8") Soft concrete, Soft brick, Mortar
	Drilling	Masonry	$\phi$ 13mm (1/2") x 40mm (1-9/16") Soft concrete, Soft brick, Mortar
		Wood	$\phi$ 50mm (2") Yellow pine t = 38mm (1-1/2")
	Metal	$\phi$ 13mm (1/2") SPC t = 1.6mm (1/16")	
No load speed		LOW	75-450/min (rpm)
		HIGH	250-1550/min (rpm)
Blows rate per minute		LOW	1400-8100/min (rpm)
		HIGH	4500-28000/min (rpm)
Chuck capacity		$\phi$ 1.5 – $\phi$ 13mm (1/16" – 1/2")	
Chuck stage	Stage 1-15	Approx. 2Nm (20kgf-cm, 18in-lbs.) - 12Nm (122kgf-cm, 106in-lbs.)	
		For powerful driving and drilling.	
		Percussion	
Overall length		255mm (10")	
Weight (with battery pack)		2.7kg (5.9lbs.)	

### 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.

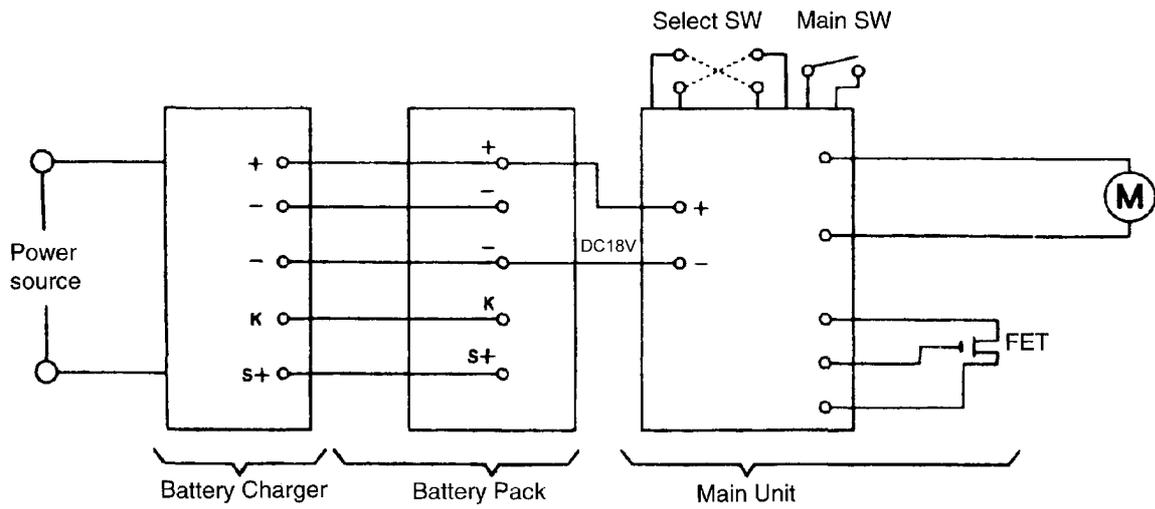
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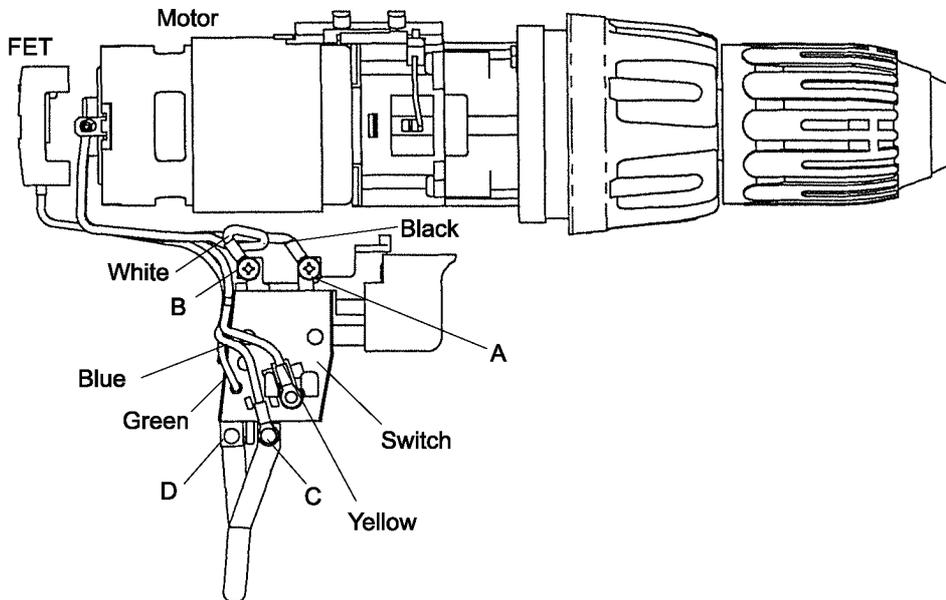
**Panasonic**<sup>®</sup>

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# 1 SCHEMATIC DIAGRAM

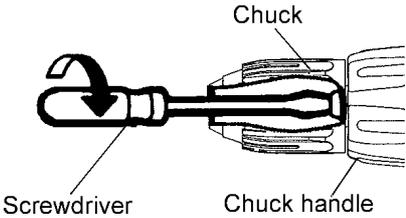
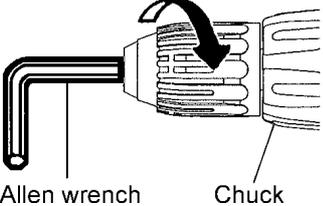
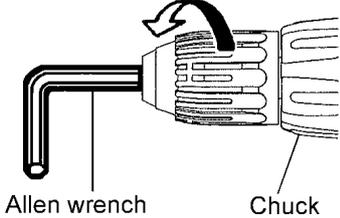


# 2 WIRING CONNECTION DIAGRAM



### 3 DISASSEMBLY/ASSEMBLY INSTRUCTIONS

#### ■HOW TO DISASSEMBLE KEYLESS CHUCK.

Ref. No. 1A	Procedure 1A	Removal of the Keyless Drill Chuck.
	 <p data-bbox="304 434 437 459">Screwdriver</p> <p data-bbox="528 241 608 266">Chuck</p> <p data-bbox="528 434 676 459">Chuck handle</p> <p data-bbox="475 495 528 519">Fig. 1</p>  <p data-bbox="336 725 475 750">Allen wrench</p> <p data-bbox="549 725 624 750">Chuck</p> <p data-bbox="475 797 528 822">Fig. 2</p>  <p data-bbox="336 1039 475 1064">Allen wrench</p> <p data-bbox="584 1039 659 1064">Chuck</p> <p data-bbox="475 1104 528 1128">Fig. 3</p>	<p data-bbox="847 165 1257 197"><b>Removal of the Keyless Drill Chuck.</b></p> <ol data-bbox="847 197 1493 338" style="list-style-type: none"> <li>1. Set the clutch handle to position 1 and select "LOW" position.</li> <li>2. Turn the lock collar counterclockwise direction to open the chuck jaws.</li> <li>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)</li> </ol> <p data-bbox="847 338 932 362"><b>NOTE :</b></p> <p data-bbox="884 362 1474 459">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="847 465 1493 539" style="list-style-type: none"> <li>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)</li> </ol>

■HOW TO DISASSEMBLE MAIN UNIT.

Ref. No. 2A

Procedure 2A

Removal of the Housing.

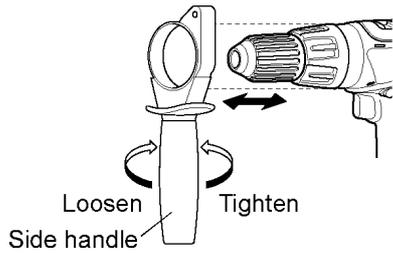


Fig. 4

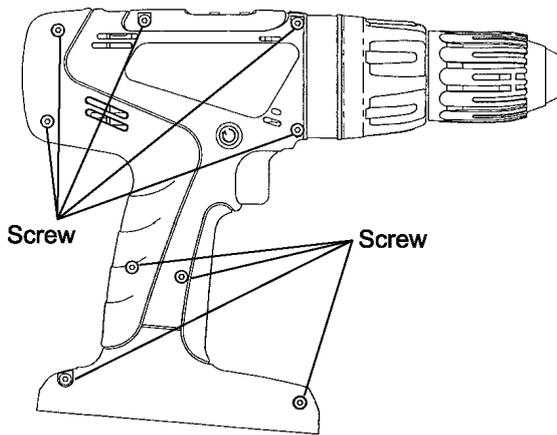


Fig. 5

1. Remove the side handle. (See Fig. 4)
2. Remove nine housing screws. (See Fig. 5)

**NOTE :**

Grease rubbing part of housing with Shell Alvania for assembly.  
(See Fig. 6)

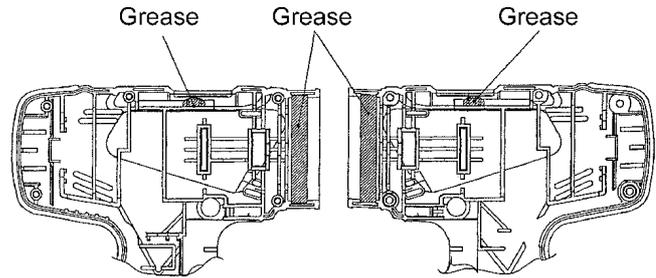
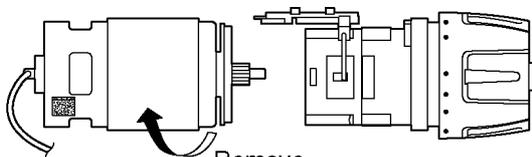


Fig. 6

Ref. No. 2B

Procedure 2A → 2B

Removal or attachment of the Motor.



Remove

Fig. 7

(Removal)

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)

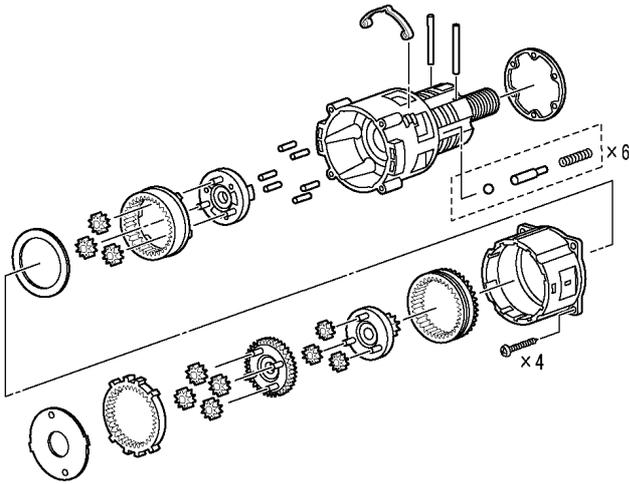
(Attachment)

3. Motor mounting base and the positioning rib of gear case should be set.

Ref. No. 2C

Procedure 2A → 2B → 2C

Removal or attachment of the Gear Box Block.



(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)

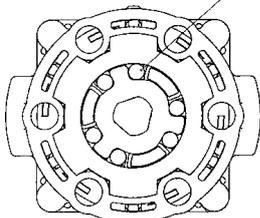
1. Start from inserting 6 pins into the driving block as shown in the Fig. 9.
2. Assemble the other parts in reverse order as shown in the Fig. 8.
3. Install steel balls, pins and clutch springs into 6 holes. (See Fig. 10)

**NOTE:**

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

Fig. 8

Pins(6pcs)



Driving block

Fig. 9

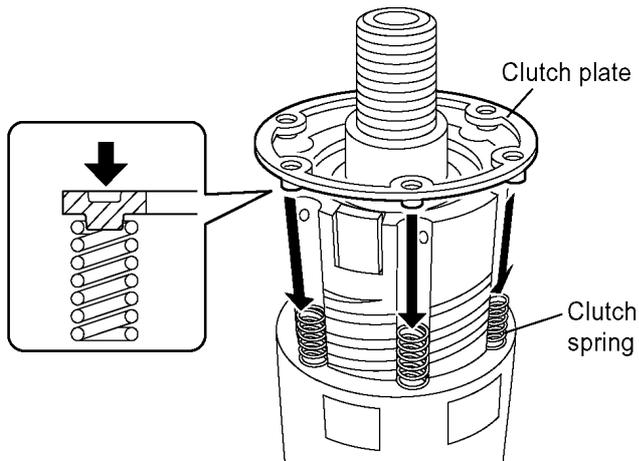


Fig. 10

Ref. No. 2D

Procedure 2D

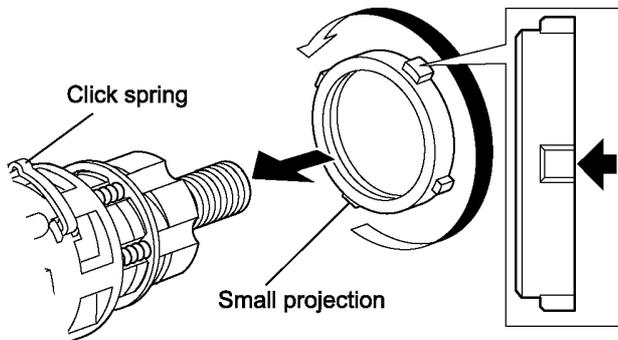
**Assembly of the Adjusting Screw and the Clutch Handle.**

Fig. 11

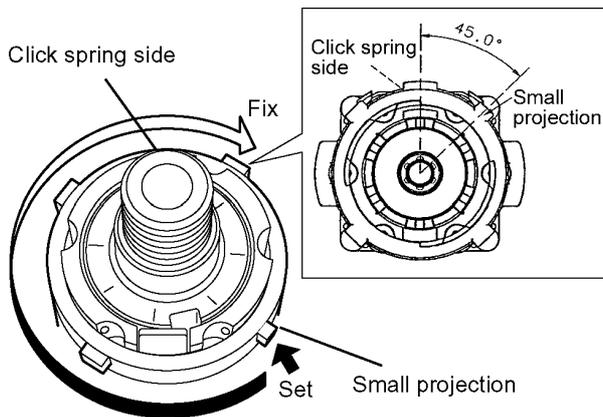


Fig. 12

1. Hold the driving block with the click spring on top, and align the smallest projection of adjusting screw with the clutch case 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. 11)

2. Turn the adjusting screw into the driving block about 255° rotation (at 2 o'clock position) for clockwise direction. (See Fig. 12)

3. Insert 2 pins and set each length on top and bottom should be same. (See Fig. 13)

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

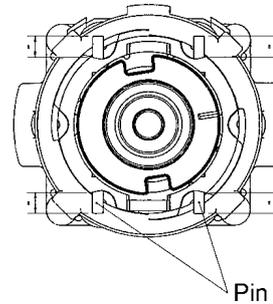


Fig. 13

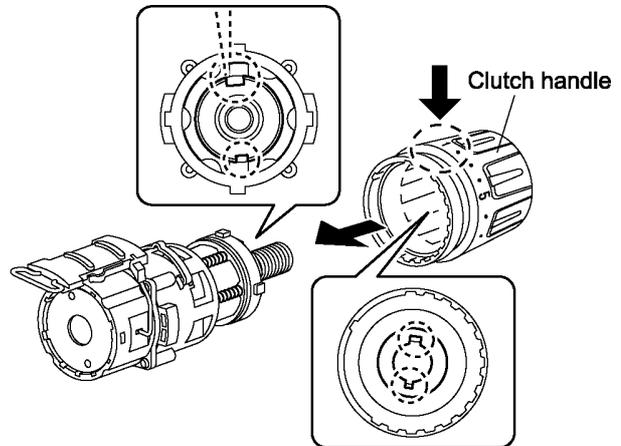


Fig. 14

Ref. No. 2E

Procedure 2A → 2B → 2C → 2D → 2E

**Assembly of the Switch.**

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)

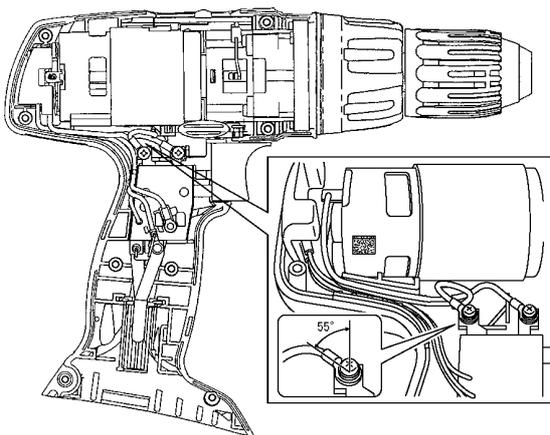
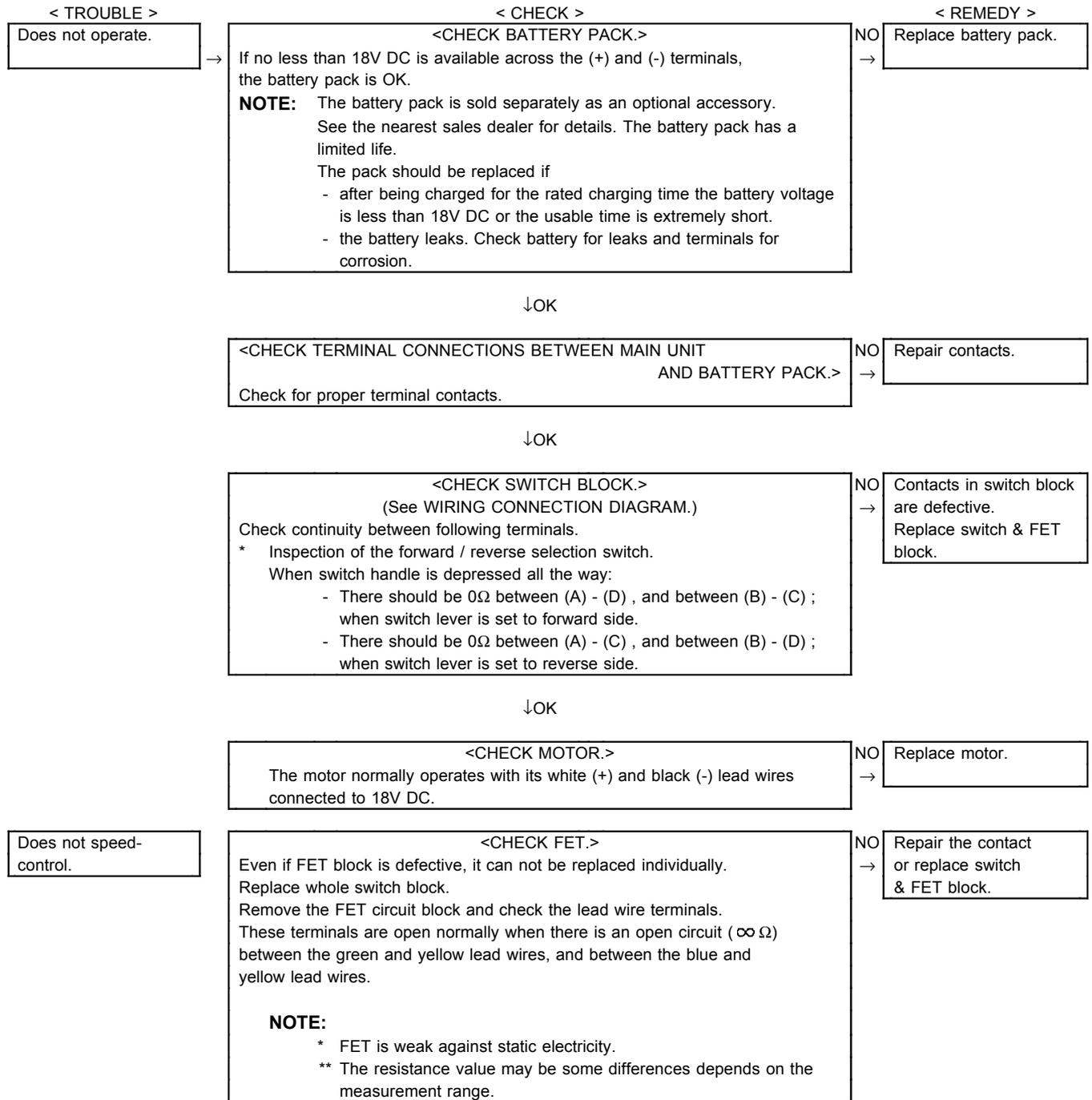
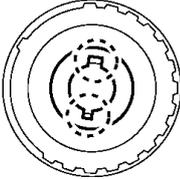
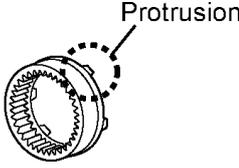


Fig. 15

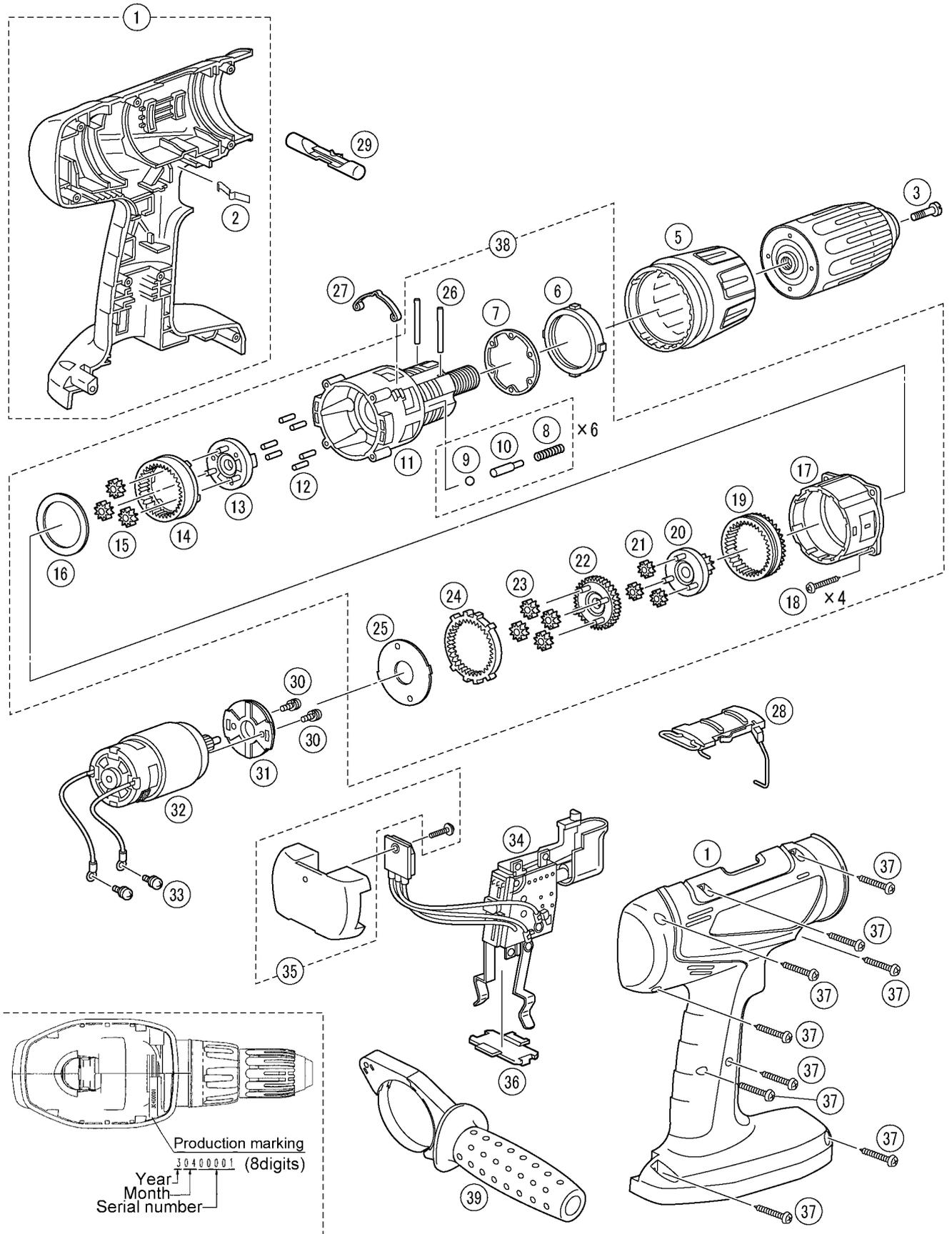
# 4 TROUBLESHOOTING GUIDE

(Refer to WIRING CONNECTION DIAGRAM)



< TROUBLE >	< CHECK >	NO	< REMEDY >		
Does not vibrate. (When setting clutch handle to  )	<p data-bbox="608 91 895 114">&lt;CHECK CLUTCH HANDLE.&gt;</p> <p data-bbox="379 120 1027 174">Check the condition of inside of clutch handle if two projections were broken or not.</p> 	→	Replace clutch handle.		
Weakness of vibration. (When setting clutch handle to  )	<p data-bbox="608 454 895 477">&lt;CHECK DRIVING BLOCK.&gt;</p> <p data-bbox="379 483 823 510">Check wear condition of driving shaft and cam.</p>	→	Replace driving block.		
Weakness of clutch operation.	<p data-bbox="635 622 868 645">&lt;CHECK RING GEAR.&gt;</p> <p data-bbox="379 651 895 678">Check wear condition of protrusion parts of ring gears.</p> 	→	Replace ring gear.		
↓OK					
<p data-bbox="608 1043 895 1066">&lt;CHECK CLUTCH SPRING.&gt;</p> <p data-bbox="405 1072 887 1126">Check wear condition of 6 pieces of clutch springs. connected to 18V DC.</p>				→	Replace clutch springs.
↓OK					
<p data-bbox="592 1211 911 1234">&lt;CHECK ADJUSTING SCREW.&gt;</p> <p data-bbox="405 1240 967 1267">Check wear condition of projection parts of adjusting screw.</p>				→	Replace adjusting screw.
↓OK					
<p data-bbox="635 1379 868 1402">&lt;CHECK GEAR CASE.&gt;</p> <p data-bbox="405 1408 967 1435">Check wear condition of gear case if it is cracked or broken.</p>				→	Replace gear case.

# 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	WEY6950K3078	HOUSING AB SET		▲	1
2	EY6481L0177	CLICK SPRING			1
3	WEY6450L6808	CHUCK FASTENING SCREW		▲	1
5	WEY6950Y3228	CLUTCH HANDLE		▲	1
6	WEY6450L0638	ADJUSTING SCREW		▲	1
7	WEY6450L0578	CLUTCH PLATE		▲	1
8	WEY6450L0168	CLUTCH SPRING	*B (6pcs/PK)	▲	6
9	WEY6813L1927	STEEL BALL	*B (6pcs/PK) $\phi$ 5	▲	6
10	WEY6450L0388	PIN	*B (6pcs/PK) $\phi$ 5.3*20.3	▲	6
11	WEY6950L1078	DRIVING BLOCK		▲	1
12	EY6283L0377	PIN	*B (6pcs/PK) $\phi$ 3.175*7.2		6
13	EY6901L1107	CARRIER			1
14	WEY6450L1488	RING GEAR		▲	1
15	WEY6450L1348	PLANET GEAR	*B (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	*B (3pcs/PK)	▲	3
21	WEY6200B1468	RING GEAR B		▲	1
22	WEY6950L1118	CARRIER		▲	1
23	WEY6950L1478	RING GEAR		▲	1
24	EY6230L1367	PLANET GEAR	*B (4pcs/PK)		4
25	WEY6450L0868	THRUST PLATE		▲	1
26	WEY6950L0358	PIN	*B (2pcs/PK)		2
27	WEY6450L0178	CLICK SPRING A		▲	1
28	WEY6450Y3238	H/L CHANGE HANDLE		▲	1
29	WEY6405Y3248	F/R SELECTOR HANDLE		▲	1
30	EYT184L6077	SCREW	*C K4-6		2
31	WEY6450L0028	MOTOR MOUNTING PLATE		▲	1
32	WEY6450L1008	DC MOTOR		▲	1
33	WEY6450S6028	SEMS SCREW	*C K3-5	▲	2
34	WEY6950Y2008	SWITCH		▲	1
35	EY6406L2568	HEAT SINK	with a screw	▲	1
36	EY6230L0207	DUST PREVENTIVE PLATE		▲	1
37	EY6230K9218	TORX TAPPING SCREW	*C K3-20	▲	9
38	WEY6950L1458	GEAR BOX BLOCK		▲	1
39	WEY6450K4628	SIDE HANDLE		▲	1
-	WEY6950K8108	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.