

MODEL

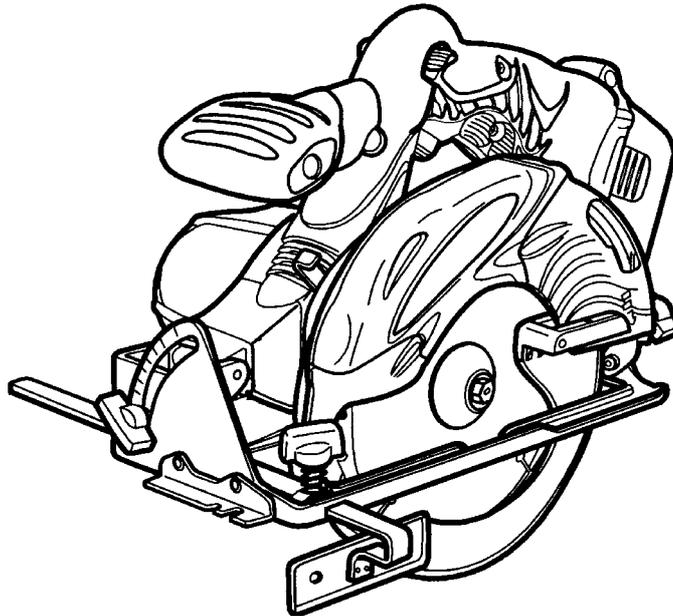
C 14DMR

Hitachi
Power Tools

CORDLESS CIRCULAR SAW
C 14DMR

TECHNICAL DATA
AND
SERVICE MANUAL

C



LIST No. G833

August 2005

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

REMARK:

Throughout this TECHNICAL DATA AND SERVICE MANUAL, a symbol(s) is(are) used in the place of company name(s) and model name(s) of our competitor(s). The symbol(s) utilized here is(are) as follows:

Symbols Utilized	Competitors	
	Company Name	Model Name
C	MAKITA	5630DWD

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1. PRODUCT NAME

Hitachi Cordless Circular Saw, Model C 14DMR

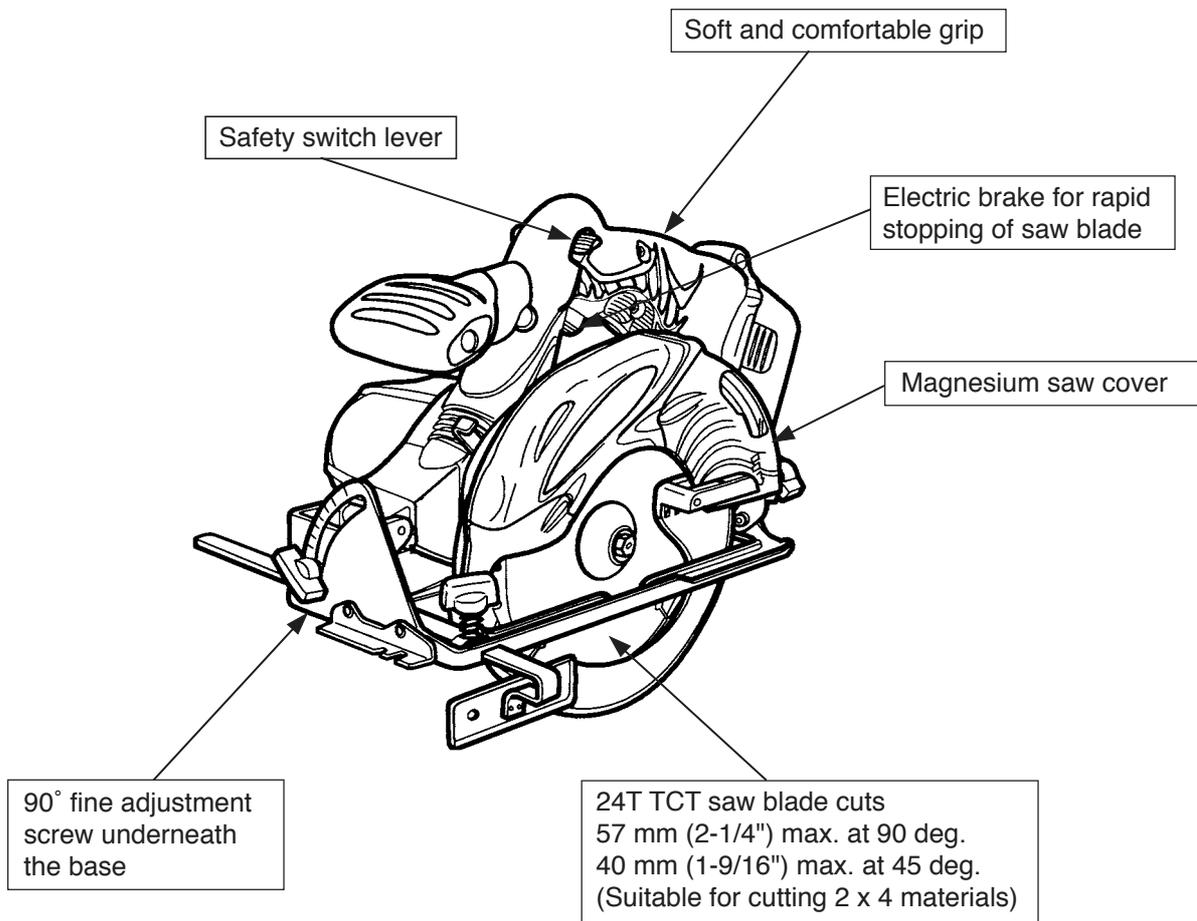
2. MARKETING OBJECTIVE

Circular saws are highly sought in the United States and some other countries where a majority of houses are of 2 x 4 construction. While we have so far met this demand with our AC-powered saws, the need for cordless tools is growing for working on sites with no or few power supply facilities. We have thus developed this model which is equipped with a 165 mm (6-1/2") saw blade capable of cutting a 2 x 4 piece of wood with a single pass of the blade even at an angle of 45°. This feature is expected to make this product series stand out from the existing competitive models.

3. APPLICATIONS

- Cutting various wood materials

4. SELLING POINTS



4-1. Selling Point Descriptions

- (1) 24T TCT saw blade cuts 57 mm (2-1/4") max. at 90 deg.

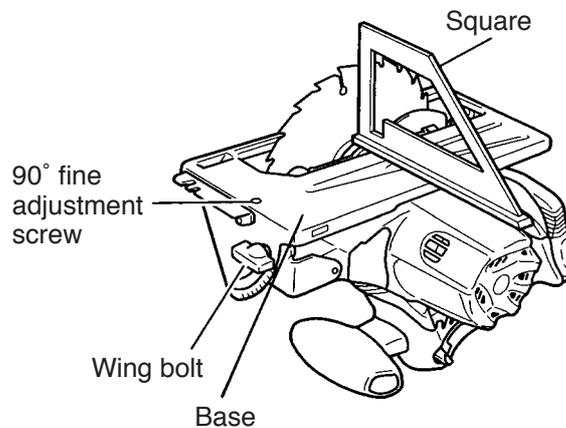
The Model C 14DMR is equipped with a 165 mm (6-1/2") tungsten-carbide tipped saw blade as a standard attachment. Its maximum cutting depth is 57 mm (2-1/4"), while maker C's maximum cutting depth is 54 mm (2-1/8").

- (2) 24T TCT saw blade cuts 40 mm (1-9/16") max. at 45 deg. (Suitable for cutting 2 x 4 materials)

The Model C 14DMR's maximum cutting depth is 40 mm (1-9/16") at 45 degrees inclined cutting. Therefore, a 2 x 4 workpiece can be easily cut at 45 degrees inclined cutting.

- (3) 90° fine adjustment screw underneath the base

The Model C 14DMR is equipped with a base that can be inclined up to 50°, and a 90° fine adjustment screw that makes the angle between the base and a saw blade square for accurate 90° cutting.



5. SPECIFICATIONS

Model		C 14DMR
Saw blade diameter		165 mm (6-1/2")
Cutting depth	at 90°	0 – 57 mm (0 – 2-1/4")
	at 45°	0 – 40 mm (0 – 1-9/16")
Type of motor		DC magnet motor
Type of handle		D type
Type of switch		Trigger switch (automatic return type with switch-lock)
Enclosure	Housing, handle cover	Glassfiber reinforced polycarbonate resin
	Saw cover	Magnesium
	Lower guard	Polycarbonate
	Charger	ABS resin
	Battery	Glassfiber reinforced polyamide resin
Rotation speed	No-load	3,100/min.
Current (A)		20 A
Battery (Model EB 1414S)	Type of battery	Sealed cylindrical nickel cadmium battery
	Nominal voltage	DC 14.4 V
	Nominal service life	Charging/discharging: approximately 1,000 cycles
	Nominal capacity	1.4 Ah
Charger (Model UC 18YG)	<ul style="list-style-type: none"> • Overcharge prevention circuit: A thermostat monitors the surface temperature of the battery and, on detecting the temperature rise which occurs on completion of charging, automatically turns off the unit to prevent the battery from overcharge. • Input capacity: 70 W • Indication method: Pilot lamp indicator of battery charging Function: On During charging Off Charging completed 	
Weight	Net	Main body (including battery) 3.3 kg (7.3 lbs.)
		Charger unit (including cord) 0.3 kg (0.7 lbs.)
Standard accessories		Charger (UC 18YG) 1 Saw blade 1 Box wrench 1 Guide 1 Plastic tool case (Except for combo kit) 1

1) Saw blade

- For the U.S.A. and Canada

External diameter	Hole diameter	No. of teeth	Code No.
165 mm (6-1/2")	15.9 mm (5/8")	24 pieces	324293
165 mm (6-1/2")	15.9 mm (5/8")	40 pieces	317451

2) Battery

- For the U.S.A. and Canada

Model	Code No.
EB 1414S (1.4 Ah)	324367

6. COMPARISONS WITH SIMILAR PRODUCT

Maker		HITACHI		C	
Model		C 14DMR			
Max. cut depth	90°	57 mm (2-1/4")		54 mm (2-1/8")	
	45°	40 mm (1-9/16")		38 mm (1-1/2")	
Saw blade	Diameter	165 mm (6-1/2")		165 mm (6-1/2")	
	No. of chips	24 pieces		24 pieces	
No-load speed (/min.)		3,100		2,600	
Battery	Nominal capacity	1,400 mAh		2,600 mAh	
	Nominal voltage	14.4 V		14.4 V	
	Charging time*	30 minutes		65 minutes	
Brake		Equipped		Equipped	
Adjustable guide piece		None		None	
Base material		Steel plate		Aluminum press	
Carbon brushes replacements		Unable		Able	
Dimension	Length	340 mm		364 mm	
	Height	251 mm		227 mm	
	Width	193 mm		197 mm	
Tool weight	Actual weight	3.3 kg (7.3 lbs.)	3.3 kg (7.3 lbs.)	3.2 kg (7.1 lbs.)	3.4 kg (7.5 lbs.)
No-load-noise level [dB (A)]		75 dB		77.5 dB	

* : Charging time may vary depending on charger to be used and ambient temperatures.

7. WORKING PERFORMANCE PER SINGLE CHARGE

Model		HITACHI	C
Model name		C 14DMR	
Wood		Capacity	
2 x 4	Cuts	60	140
2 x 8	Cuts	30	80
Concreteform plywood (t =12.7 mm, 1/2")	m	10 (33 ft)	28 (92 ft)

As actually measured values listed in the above table may vary depending on sharpness of the saw blade, workpiece hardness (particularly in wood materials), moisture content of wood, charging condition, operator skill, etc., please use this only as a reference only.

8. PRECAUTIONS IN SALES PROMOTION

In the interest of promoting the safest and most efficient use of the Model C 14DMR Cordless Circular Saw by all of our customers, it is very important that at the time of sale the salesperson carefully ensures that the buyer seriously recognizes the importance of the contents of the Handling Instructions, and fully understands the meaning of the precautions listed on the Caution Plate and Name Plate attached to each tool.

8-1. Handling Instructions

Salespersons must thoroughly be familiar with the contents of the Handling Instructions in order to give pertinent advice to the customer. In particular, they must have a thorough understanding of the precautions in the use of the cordless (battery charger type) electric power tool which are different from those of ordinary electric power tools.

- (1) Before use, ensure that the storage battery is fully charged.

New storage batteries are not fully charged. Even if the storage batteries were fully charged at the factory, long periods out of use, such as during shipping, cause the storage battery to lose its charge.

Customers must be instructed to fully charge the storage battery prior to use.

- (2) When charging storage batteries, use only the exclusive Model UC 24YFA charger provided with the tool.

Because of the batteries' rapid-charging feature (about one hour), use of other battery chargers is hazardous.

- (3) Connect the charger to an AC power outlet only.

Use of any other power source (DC outlet, fuel powered generator, etc.) will cause the charger to overheat and burn out.

- (4) Do not use any voltage-increasing equipment (transformer etc.) between the power source and the charger.

If the charger is used with voltage over and above that indicated on the unit, it will not function properly.

- (5) Conduct battery charging at an ambient temperature range of 0 – 40 °C (32 – 104°F).

Special temperature sensitive devices are employed in the charger to permit rapid charging.

Ensure that customers are instructed to use the charger at the indicated ambient temperature range.

At temperature under 0°C (32°F), the thermostat will not function properly, and the storage battery may be over-charged. At temperature over 40°C (104°F), the storage battery cannot be sufficiently charged. The optimum temperature range is 20 – 25°C (68° – 77°F).

- (6) The battery charger should not be used continuously.

At high ambient temperatures, if more than three storage batteries are charged in succession, the temperature of the coils on the transformer will rise and there is a chance that the temperature fuse inserted in the interior of the transformer will inadvertently melt. After charging one battery, please charge the next battery after about a fifteen-minute interval.

- (7) Do not use more than two batteries in succession.

If three or more batteries are used in rapid succession, the main body may become overheated, causing possible motor or switch malfunction. After two batteries have been used, stop operation for about 15 minutes to allow the main body to cool.

(8) Do not insert foreign objects into the air vents on the charger.

The charger case is equipped with air vents to protect the internal electronic components from overheating. Caution the customer not to allow foreign materials, such as metallic or inflammable objects, to be dropped or inserted into the air vents. This could cause electrical shock, fire or other serious hazards.

(9) Do not attempt to disassemble the storage battery or the charger.

Special devices, such as a thermostat, are built into the storage battery and charger to permit rapid charging. Incorrect parts replacement and/or wiring will cause malfunctions which could result in fire or other hazard. Instruct the customer to bring these units to an authorized service center in the event repair or replacement is necessary.

(10) Disposal of the storage battery.

Ensure that all customers understand that storage batteries should be turned to a Hitachi Power Tool sales outlet or authorized service center when they are no longer capable of being recharged or repaired. If thrown into a fire, the batteries may explode, or if discarded indiscriminately, leakage of the cadmium compound contained in the battery may cause environmental pollution.

8-2. Caution Plates

(1) The following basic safety precautions are listed on the Name Plate attached to the main body of each tool.

- For the U.S.A. and Canada

DANGER-Keep hands and body parts away from blade. Contact with blade will result in serious injury.

WARNING-To reduce the risk of injury, user must read and understand instruction manual. Check lower guard. It must close instantly! Hold saw with both hands. Support and clamp work. Wear eye protection.

(2) The following cautions are listed on the Name Plate attached to each Model EB 1414S Battery.

- For the U.S.A.

CAUTION

- For safe operation, see instruction manual.
- Use HITACHI charger recommended in instruction manual for recharging.

(3) The following cautions are listed on the Name Plate attached to each Model UC 18YG Charger.

- For the U.S.A. and Canada

CAUTION ●For safe operation, see instruction manual. ●Charge HITACHI rechargeable batteries types EB7, EB9, EB12, EB14 and EB18 series. Other types of batteries may burst causing personal injury and damage. ●Charge between 32°F and 104°F. Rest 15 minutes between the charging of batteries. ●Indoor use only. ●Replace defective cord immediately.

8-3. Inherent Drawbacks of Cordless Circular Saws Requiring Particular Attention During Sales Promotion

The cordless circular saw offers many advantages; it can be used in places where no power source is available, the absence of a cord allows easy use, etc. However, any cordless electric power tool has certain inherent drawbacks. Salespersons must be thoroughly familiar with these drawbacks in order to properly advise the customer in the most efficient use of the tool.

(1) Do not overload the motor.

As the Model C 14DMR is a battery-powered cordless circular saw, the motor's output and torque are less than those of ordinary AC-powered circular saws. Do not twist or thrust the main body during cutting.

Otherwise, the motor becomes locked and will cause burning of the motor or deterioration of the battery. The motor must not be locked during operation.

(2) Avoid continuous heavy-duty operation.

Cutting a thick workpiece with strong pressure can put a heavy load on the motor. If such an operation is performed continuously, the temperature of the motor and the housing will rise and burning of the motor will result. Do not perform heavy-duty operations continuously.

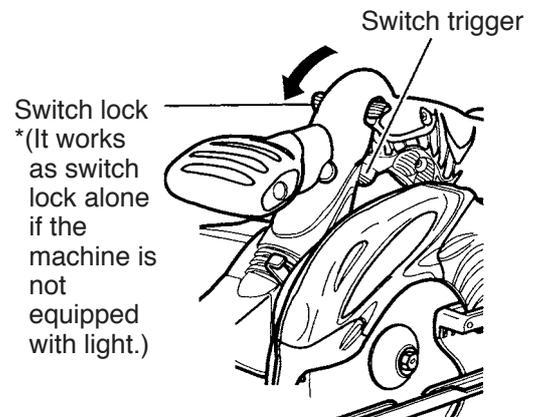
(3) Do not place any foreign substance in the vent hole of the main body.

The outer body of this unit is provided with a vent hole for greater cooling efficiency. Since the motor has a built-in cooling fan, a foreign substance inserted into the vent hole is likely to cause mechanical failure.

Instruct your customer never to cover or block the vent hole.

(4) Safety switch lever

The Model C 14DMR is equipped with an safety switch lever at the side of the handle for safety. Users who are familiar with AC-powered circular saws might feel a little awkwardness in handling the safety switch lever. However, this lever is equipped for user's safety and the salespersons must instruct the users not to insert any foreign substance such as a chip of wood in the safety switch lever to ensure the correct functioning of the safety switch lever. Refer to the Handling Instructions ("Operation of Switch") for operation of the safety switch lever.



(5) Variation in amount of work possible per charge.

Although the nominal chargeable capacity of the storage batteries used with the Model C 14DMR is 1,400 mAh, the actual capacity may vary within 10 % than that value depending on the ambient temperatures during use and charging, and the number of times the batteries have been recharged. It should be noted that other factors which may have a bearing on the amount of work possible per charge are the working conditions (ambient temperature, type and moisture content of the workpiece, sharpness of the saw blade, etc.) and operational skill of the user.

9. REPAIR GUIDE

WARNING:

Without fail, remove the storage battery from the main body of the tool before starting repair or maintenance work. If the battery is left in and the switch is activated inadvertently, the motor will start rotating unexpectedly, which could cause serious injury.

9-1. Precautions in Disassembly and Reassembly

The **[Bold]** numbers in the description below correspond to the item numbers in the Parts List and the exploded assembly diagram for the Model C 14DMR.

9-1-1. Disassembly

(1) Removal of the TCT Saw Blade **[3]**

While pressing the Lock Lever **[23]**, turn the Bolt (Left Hand) W/Washer M7 x 17.5 **[1]** clockwise with the box wrench 10 mm to loosen it. Remove Washer (B2) **[2]**, TCT Saw Blade **[3]**, Ring D15.9/I.D14.5 **[4]** and Washer (A1) **[5]**. Handle the saw blade with care to avoid injury. The Ring D15.9/I.D14.5 **[4]** is provided for the U.S.A. and Canada.

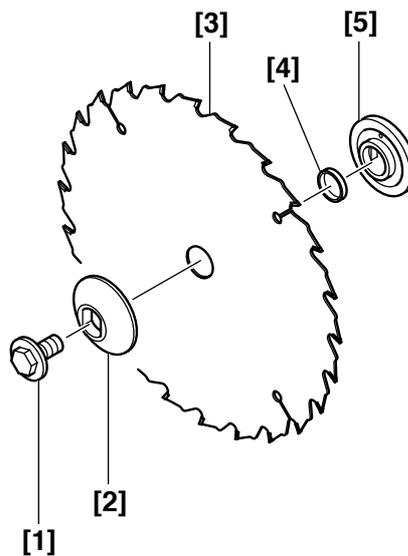


Fig. 1

(2) Removal of the Protective Cover [9]

Remove the three Seal Lock Flat Hd. Screws M3 x 12 [6] and then the Bearing Cover [7]. Remove the Return Spring [19] from the Saw Cover [18]. Remove the Protective Cover [9] from the Bearing Holder [12]. Remove the Bushing [10] from the Protective Cover [9].

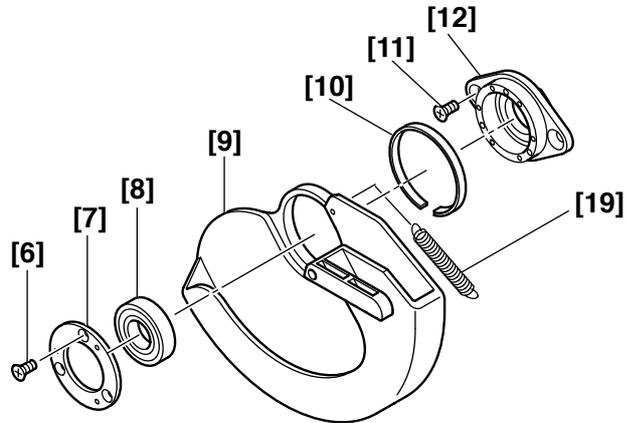


Fig. 2

(3) Removal of the Saw Cover [18]

Remove the Bolt Ass'y (Square) M6 x 22 [38]. Remove the Tapping Screw (W/Flange) D5 x 50 [14] and then the Saw Cover [18].

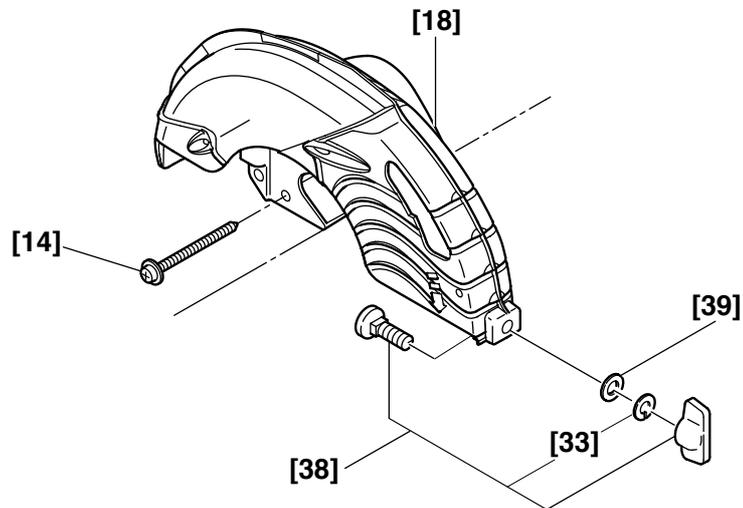


Fig. 3

(4) Removal of the Handle Cover [42]

Remove the six Tapping Screws (W/Flange) D4 x 16 (Black) [41] to remove the Handle Cover [42].

(5) Disassembly of the Gear [13] and Motor (B) [26]

- (a) Remove the Seal Lock Flat Hd. Screw M5 x 12 [11] to remove the Bearing Holder [12], Gear [13] and Ball Bearing 6002VVCMP2L [8] together. Put the spindle of the Gear [13] with hand-press to remove the Gear [13] from the Bearing Holder [12]. Remove the Ball Bearing 6002VVCMP2L [8] from the Bearing Holder [12].
- (b) Remove the Nylock Bolt (W/Flange) M4 x 12 [20] from Inner Cover (B) [21].
- (c) Remove the Ball Bearing 609VVC2PS2L [22] from the pinion of Motor (B) [26]. Remove the Lock Lever [23] and the Spring [31], then remove the two Special Bolts M5 [24] to remove Inner Cover (A) Ass'y [25].

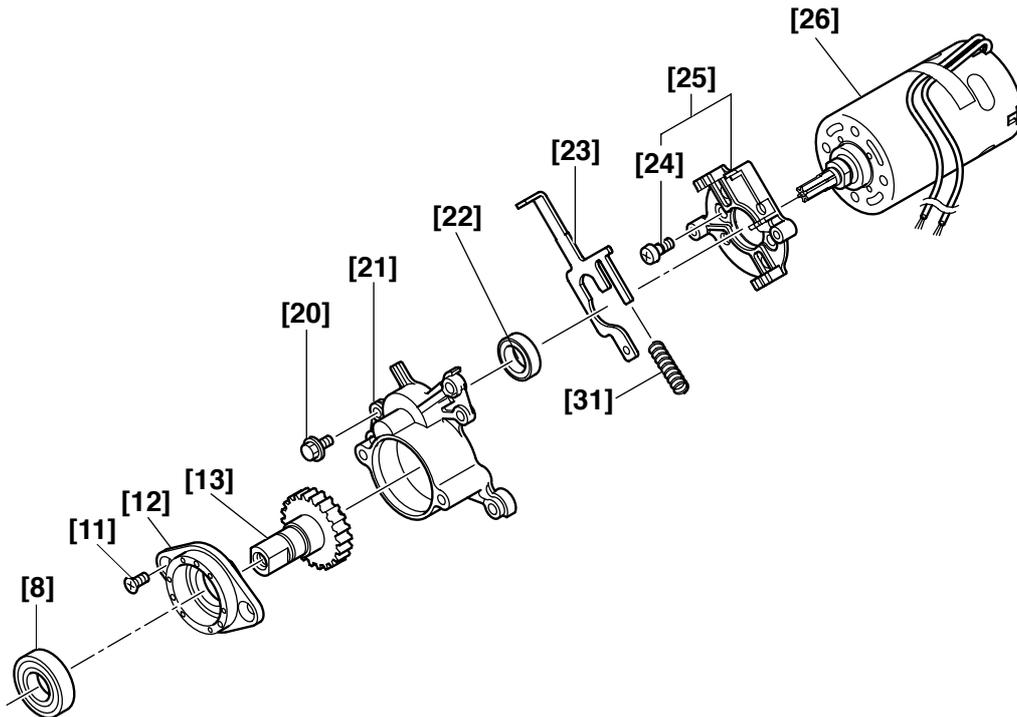


Fig. 4

(6) Removal of the Base Ass'y [34]

Extract the Roll Pin D6 x 50 [40] that connects the Base Ass'y [34] and the Housing [29]. Remove the Base Ass'y [34].

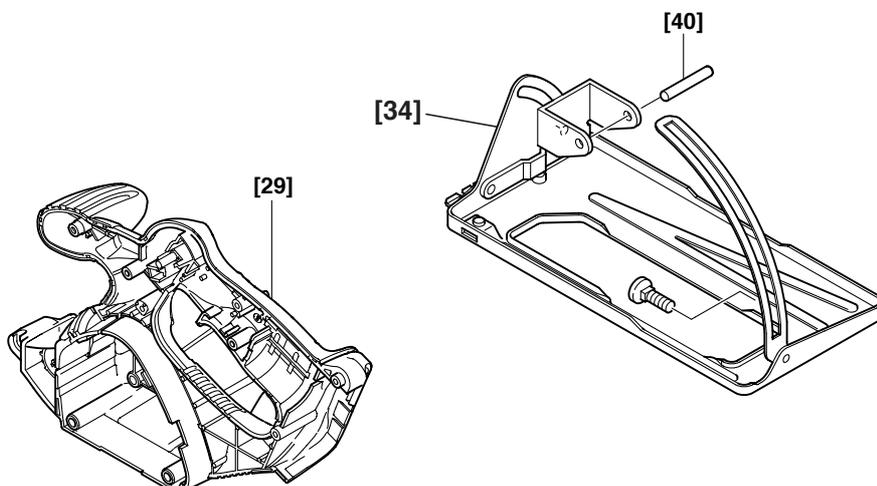


Fig. 5

9-1-2. Reassembly

Reassembly can be accomplished by following the disassembly procedures in reverse, with some items to be noted as follows.

(1) Reassembly of the components for power supply

(a) Be sure to perform wiring connections as indicated in the wiring diagram. (Fig. 9)

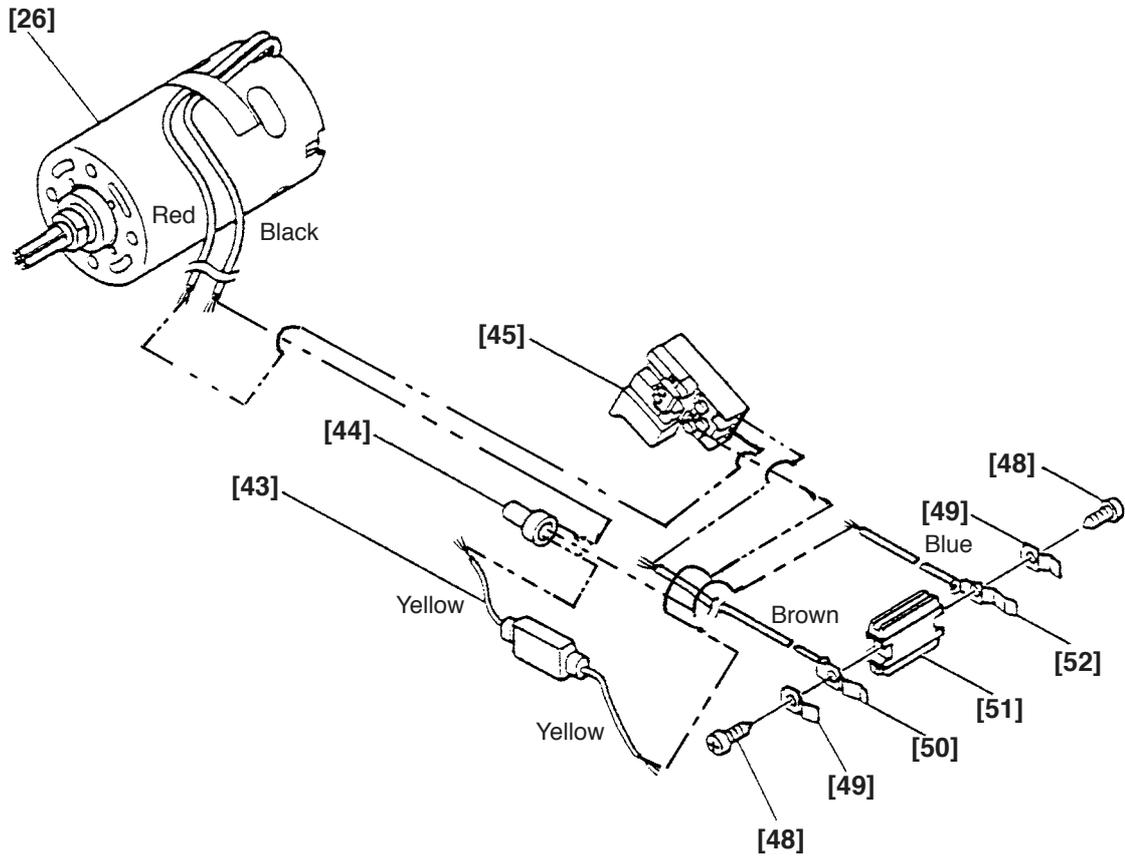


Fig. 6

(b) Mount Inner Cover (A) Ass'y [25] to Motor (B) [26] as illustrated in Fig. 7.

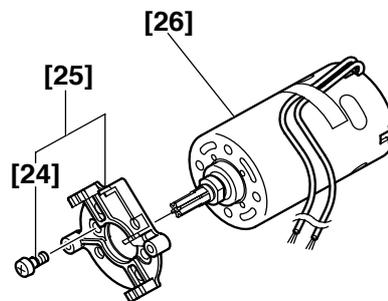
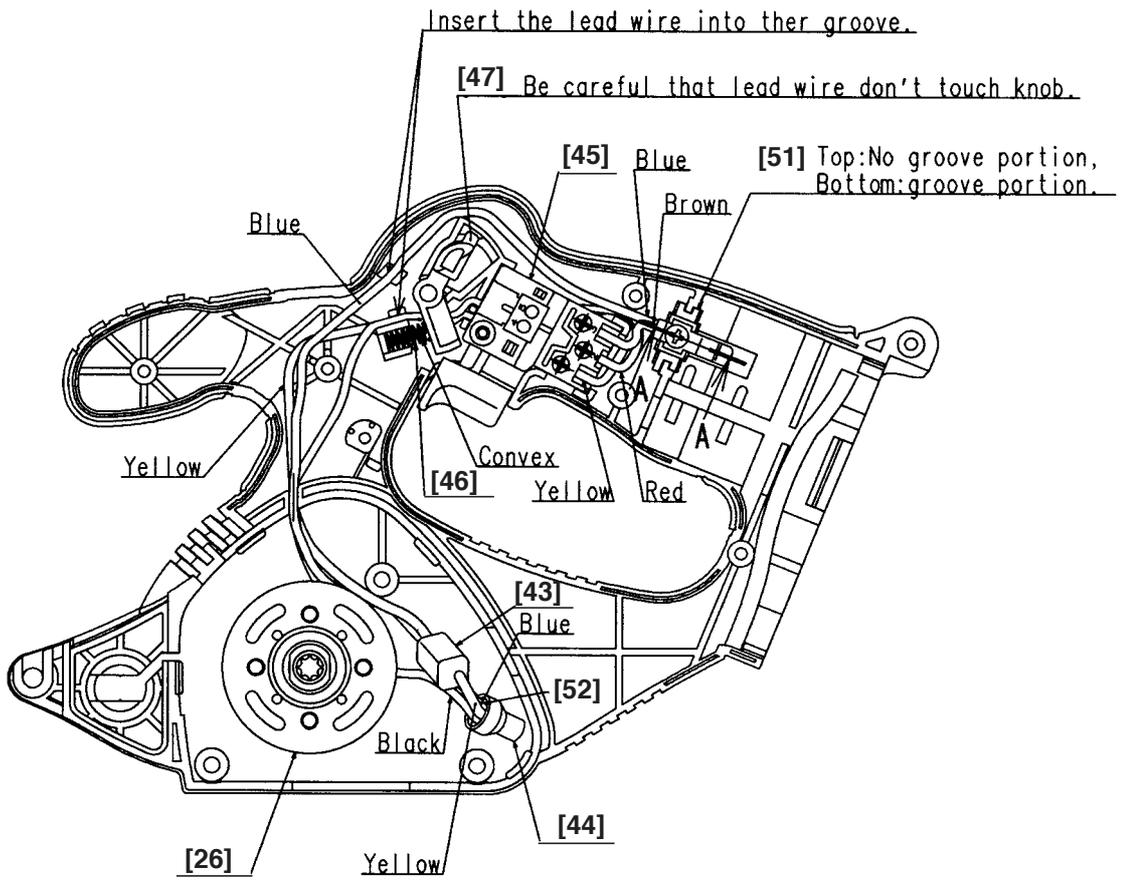


Fig. 7

(c) Connect the internal wires as illustrated in Fig. 8. Mount the Knob [47] and Spring (F) [46] without fail.



(Mounting direction of Terminals [50] [52])

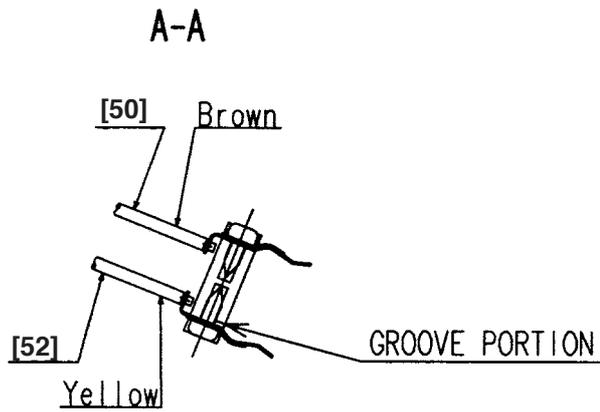


Fig. 8

(2) Reassembly of the Gear [13]

- (a) Apply grease (Shell Alvania RL3) to the pinion and the meshing parts of the Gear [13], and also to the inside of the metal of Inner Cover (B) [21] (5 grams in total).
- (b) When securing Inner Cover (A) Ass'y [25] to Inner Cover (B) [21] with the Nylock Bolt (W/Flange) M4 x 12 [20], be careful not to interfere with the rotation of the pinion.

(3) Checking of operation after reassembly

- (a) Check that the Knob [47] operates smoothly and the switch trigger can be locked and released reliably.
- (b) Check that the cutting and inclining operation of the Base Ass'y [34] is smoothly performed.
- (c) Check that the Protective Cover [9] operates smoothly.
- (d) Check that the brake is applied when turning off the switch.
- (e) Check that the saw blade turns in the arrow direction indicated on the saw cover (clockwise viewed from the front of the saw blade).
- (f) Check that runout of the saw blade is 0.6 mm or less at 150 mm dia. position.

(4) Wiring diagram

Perform wiring as illustrated in Fig. 9. Note that wrong wiring can cause troubles such as rotation failure, inverse rotation and brake failure.

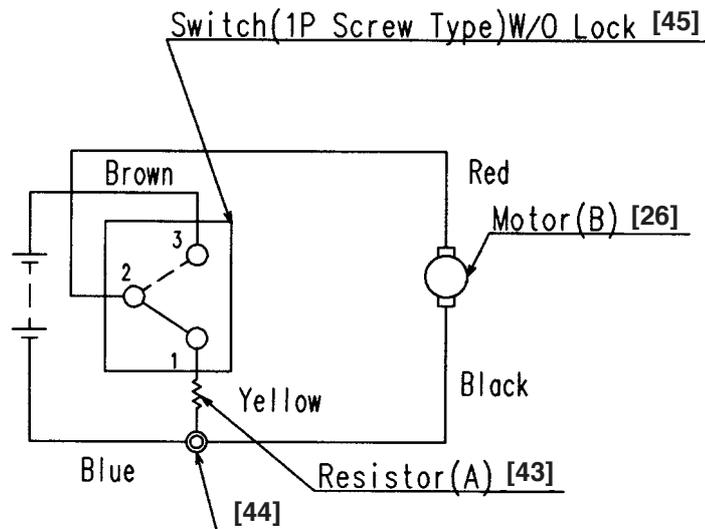


Fig. 9

(5) Tightening torque of each screw is given below.

Machine Screw of the Switch (1P Screw Type) W/O Lock [45]....	0.4 ± 0.1 N·m (4 ± 1 kgf-cm, 3.5 ± 0.9 in-lbs.)
Special Bolt M5 [24]	1.0 ± 0.2 N·m (10 ± 2 kgf-cm, 8.7 ± 1.7 in-lbs.)
Tapping Screw (W/Flange) D4 x 16 (Black) [41]	2.0 ± 0.5 N·m (20 ± 5 kgf-cm, 17.4 ± 4.3 in-lbs.)
Seal Lock Flat Hd. Screw M5 x 12 [11]	3.4 ± 0.7 N·m (35 ± 7 kgf-cm, 30.4 ± 6.1 in-lbs.)
Seal Lock Flat Hd. Screw M3 x 12 [6]	0.8 ± 0.2 N·m (8 ± 2 kgf-cm, 6.9 ± 1.7 in-lbs.)
Nylock Bolt (W/Flange) M4 x 12 [20].....	2.5 ± 0.5 N·m (25 ± 5 kgf-cm, 22 ± 4.3 in-lbs.)

9-2. Precautions in Disassembly and Reassembly of Battery Charger

Refer to the Technical Data and Service Manual of the Model UC 18YG Charger for precautions in disassembly and reassembly of this charger.

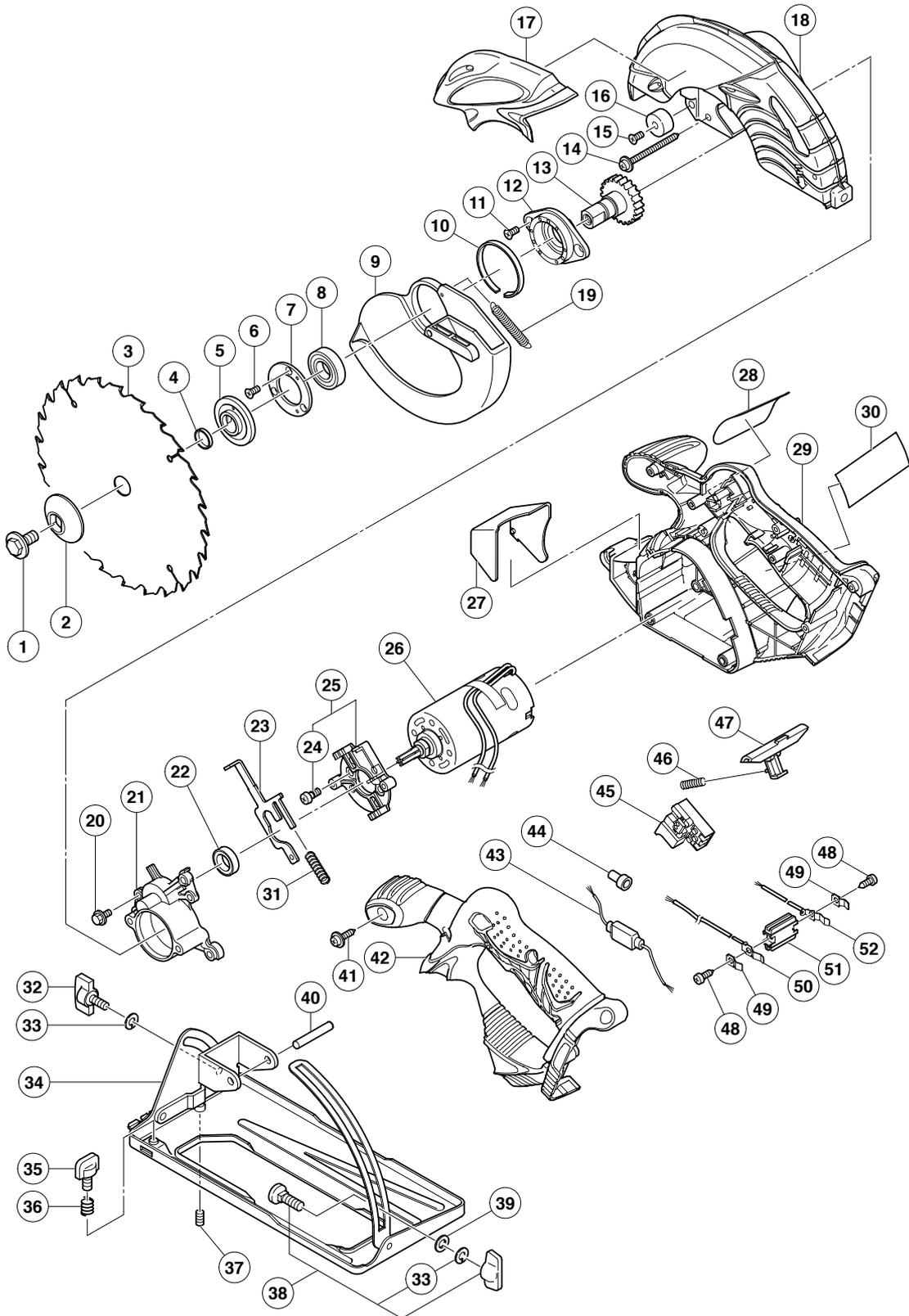
10. STANDARD REPAIR TIME (UNIT) SCHEDULES

MODEL	Variable		10	20	30	40	50	60 min.
	Fixed							
C 14DMR		Work Flow						
				Switch Handle Cover				
				Inner Cover (A) Ass'y Ball Bearing (609VV) Inner Cover (B) Lock Lever	Housing Motor (B)			
	General Assembly	Protective Cover Return Spring		Saw Cover Gear Bearing Holder Ball Bearing (6002VV)				
		Base Ass'y						

ELECTRIC TOOL PARTS LIST

CORDLESS CIRCULAR SAW
Model C 14DMR

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(E1)



PARTS

C 14DMR

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
1	998-335	BOLT (LEFT HAND) W/WASHER M7X17.5	1	
2	324-563	WASHER (B2)	1	
3	324-293	TCT SAW BLADE 165MM-D15.9 HOLE-NT24	1	
4	990-100	RING D15.9/I.D14.5	1	
5	317-466	WASHER (A1)	1	
6	308-773	SEAL LOCK FLAT HD. SCREW M3X12	3	
7	308-362	BEARING COVER	1	
8	600-2VV	BALL BEARING 6002VVCMP2L	1	
9	324-567	PROTECTIVE COVER	1	
10	318-192	BUSHING	1	
11	305-568	SEAL LOCK FLAT HD. SCREW M5X12	2	
12	308-361	BEARING HOLDER	1	
13	324-564	GEAR	1	
14	317-449	TAPPING SCREW (W/FLANGE) D5X50	3	
15	949-793	FLAT HD. SCREW M5X20 (10 PCS.)	1	
16	310-842	CUSHION	1	
17	324-903	HITACHI PLATE	1	
18	324-566	SAW COVER	1	
19	317-203	RETURN SPRING	1	
20	317-196	NYLOCK BOLT (W/FLANGE) M4X12	2	
21	324-565	INNER COVER (B)	1	
22	609-VVM	BALL BEARING 609VVC2PS2L	1	
23	324-568	LOCK LEVER	1	
24	317-914	SPECIAL BOLT M5	2	
25	324-578	INNER COVER (A) ASS'Y	1	INCLUD. 24
26	324-904	MOTOR (B)	1	
27	324-906	LIGHT COVER	1	
28		NAME PLATE	1	
29	324-575	HOUSING	1	
30		CAUTION PLATE	1	
31	961-803	SPRING	1	
32	308-364	WING BOLT (A) M6X15	1	
33	948-167	SUPER LOCK WASHER M6	2	
34	324-561	BASE ASS'Y	1	INCLUD. 32, 33, 35-37
35	324-562	KNOB BOLT	1	
36	947-859	LOCK SPRING	1	
37	302-469	SLOTTED HD. SET SCREW (SEAL LOCK) M6X6	1	
38	314-620	BOLT ASS'Y (SQUARE) M6X22	1	INCLUD. 33
39	949-425	WASHER M6 (10 PCS.)	1	
40	949-750	ROLL PIN D6X50 (10 PCS.)	1	
41	305-812	TAPPING SCREW (W/FLANGE) D4X16 (BLACK)	6	
42	324-905	HANDLE COVER	1	
43	324-573	RESISTOR (A)	1	
44	959-141	CONNECTOR 50092 (10 PCS.)	1	
45	319-825	SWITCH (1P SCREW TYPE) W/O LOCK	1	
46	301-631	SPRING (F)	1	
47	324-571	KNOB	1	
48	958-715	TAPPING SCREW D4X10	2	
49	996-118	HOLDER SPRING	2	
50	321-000	TERMINAL	1	
51	320-997	TERMINAL PIECE	1	

