

Models No. ▶ DC14SC

Description ▶ Charger

CONCEPT AND MAIN APPLICATIONS

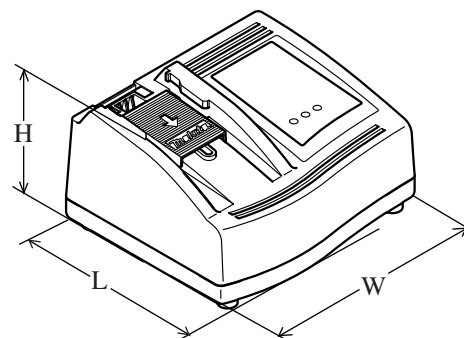
DC14SC has been added to our MAKSTAR series.

Developed as a less expensive MAKSTAR charger for slide type batteries, yet having the same features as the current DC14SA.

Its brief features are;

1. Innovative computer controlled charging system (conditioning charge) provides the best charging point every time by making computerized communication between the charger and battery.
2. Forced air-cooling fan keeps the battery temperature optimum for the most efficient charging.
3. Charging time is only 30 minutes with 2.0Ah batteries.
4. Power display shows charging condition of the battery in 2 steps; less than 80% of full charge and more than 80% of full charge

For the time being, this product will be supplied exclusively to high voltage (220V-240V) areas.



Dimensions: mm (")	
Length (L)	165 (6-1/2)
Width (W)	190 (7-1/2)
Height (H)	106 (4-3/16)

► Specification

Voltage (V)	Current (A)	Cycle (Hz)	Continuous Rating (W)		Max. Output(W)
			Input	Output	
220 - 240		50 / 60	90		

D / C Output voltage: V				7.2 - 14.4
D / C Output current: A				3.5
Charging time for slide type batteries	1.7Ah	9.6V	B9017A	approx. 30 min.
	2.0Ah	9.6V	BH9020, BH9020A	
		12V	BH1220, BH1220C	
		14.4V	BH1420	
	2.7Ah	14.4V	BH1427	approx. 40 min.
	3.3Ah	9.6V	BH9033, BH9033A	approx. 50 min.
		12V	BH1233, BH1233C	
		14.4V	BH1433	
Forced air-cooling fan				Yes
Digital power display				Yes
Protection against electric shock				Double insulation
Power supply cord: m (ft)				2.0 (6.6)
Net weight: kg (lbs)				1.0 (2.2)

► Optional accessories

- * Interchangeable adapter ADP01
- * Interchangeable adapter ADP04
- * Auto refresh adapter ADP03

► Features and benefits

Short Charging Time

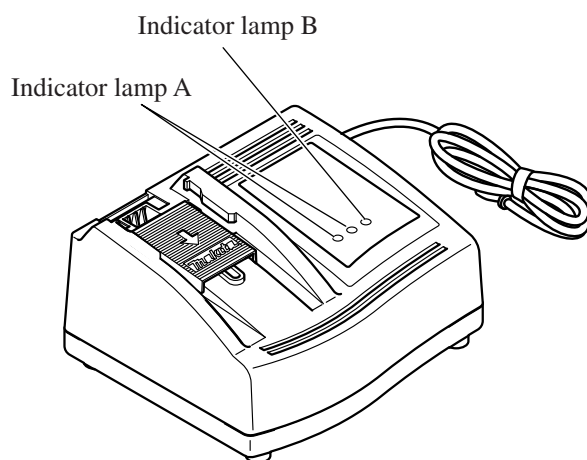
Only 30 minutes with 2.0 Ah slide type battery

More Convenient with Optional Adapters.

- *Interchangeable adapter ADP01/ADP04 for charging the existing insert type batteries
- *Refresh adapter ADP02 and Auto refresh adapter ADP03 for refreshing inactive battery

Same Great Advantages as DC14SA







- ***Conditioning charge** provides the best charging point every time by detecting the history of battery's usage through the computerized communication.
- ***Intelligent charging control** provides the best output current by sensing the battery temperature.
- ***Forced air-cooling fan** keeps the battery temperature optimum for the most efficient charging.
- ***Maintenance charge (trickle charging)** keeps the battery left on the charger fresh and fully charged.
- ***Digital power display** lets the user know the condition of the battery, as well as the current charge level of the battery. (See the table below for details.)



Digital Power Display

Indicator lamps			Charging level and Charging condition of the battery	
Lamp A	Lamp B	Behavior		
		Two lamps blink in green.	The charger is connected to power source. But the battery is not set in place on charger yet.	
		One red lamp turns on.	The battery is being charged.	Less than 80% of full charge
		Two red lamps turn on.		80% or more of full charge
		Two green lamps turn on.	Completion of the charging process.	
		Two lamps blink in red.	Hot battery is being cooled down, and not being charged.	The battery temperature is 70 C degrees or higher.
		One lamp blinks in red.		The battery temperature is lower than 70 C degrees.
		Two lamps blink in red and green alternately.	Impossible to charge, because; *Service life of battery has ended, or *The vent of charger or battery is clogged with dust.	
		Turns on in yellow.	Battery is in the process of conditioning charge. The time require to charge can be longer than usual.	
		Blinks in yellow.	Trouble with cooling system (The vent of charger or battery is clogged with dust, or the cooling fan does not rotate.)	

► Comparison of products

Model No. Specifications			Makita					
			DC14SC		DC14SA		DC1414	DC1439
			Slide type 	Insert type* 	Slide type 	Insert type* 	Insert type 	Insert type 
Output voltage: V			7.2 - 14.4	7.2 - 14.4	7.2 - 14.4	7.2 - 14.4	7.2 - 14.4	7.2 - 14.4
Charging time (approximate): min.	Ni-MH	3.3Ah	50	—	50	—	—	—
		3.0Ah	—	55	—	55	70	27
		2.7Ah	40	—	40	—	—	—
		2.6Ah	—	45	—	45	60	23
		2.2Ah	—	40	—	40	50	20
		1.7/ 2.0Ah	30	—	30	—	—	—
	Ni-Cd	2.0Ah	—	35	—	35	45	14
		1.3Ah	—	23	—	23	30	9
Conditioning charge			Yes	Yes	Yes	Yes	No	Yes
Forced air-cooling fan			Yes	No	Yes	No	No	No
Charging control system (controls output current)			Yes	No	Yes	No	No	No
Maintenance charge			Yes	No	Yes	No	Yes	Yes
Power display for indicating charging status			Yes	No	Yes	No	No	No
Power supply cord: m (ft)			2.0 (6.6)		2.0 (6.6)		2.0 (6.6)	2.0 (6.6)
Dimensions	Length: mm (")		165 (6-1/2)		155 (6-1/8)		193 (7-5/8)	135 (5-5/16)
	Width: mm (")		190 (7-1/2)		180 (7-1/8)		92 (3-5/8)	190 (7-1/2)
	Height: mm (")		106 (4-3/16)		110 (4-5/16)		78 (3-1/16)	68 (2-11/16)
Net weight: kg (lbs)			1.0 (2.2)		1.3 (2.9)		0.39 (0.86)	1.0 (2.2)

*Insert type: This type of battery can be charged by attaching "Interchangeable adapter".

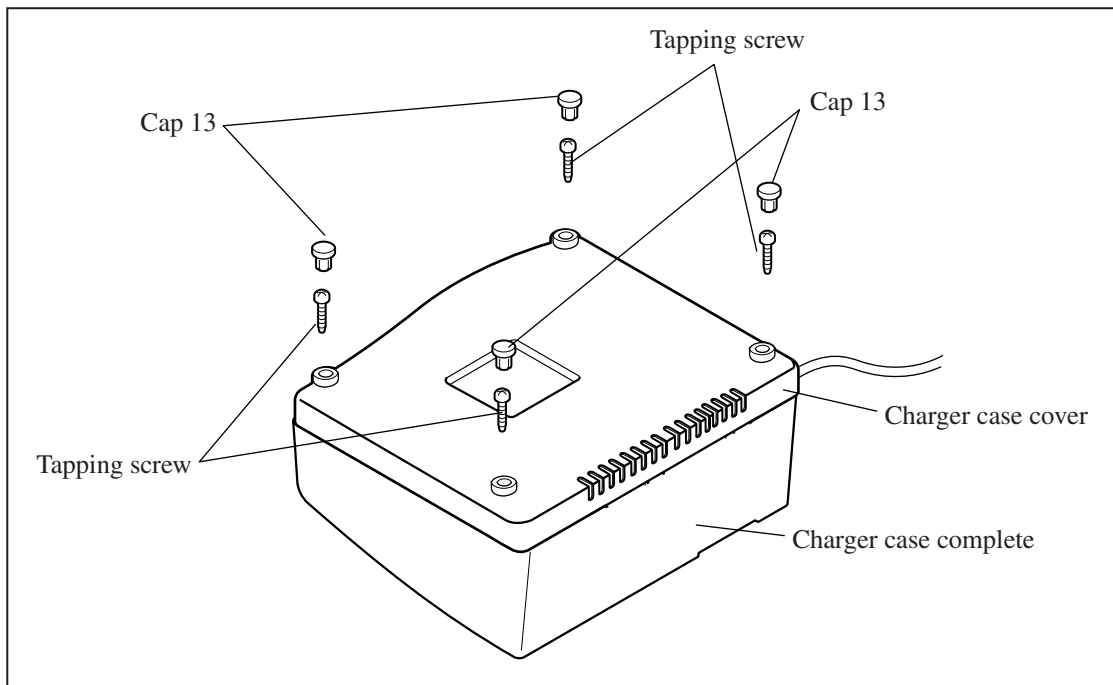
► Repair

[1] Removal/Installation of Charger Case Complete from/on Charger Case Cover

REMOVAL

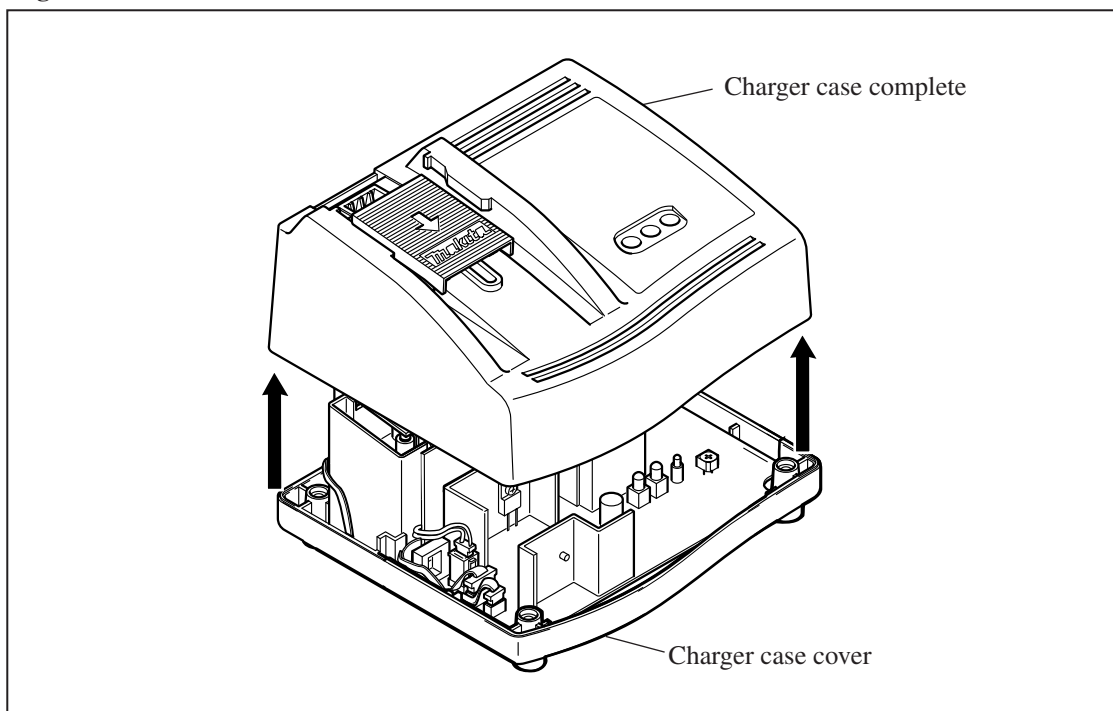
1) Turn Charger upside down as illustrated in **Fig. 1**, and remove cap 13 (4 pcs), and then 4 tapping screws.

Fig. 1.



2) Place Charger as illustrated in **Fig. 2**, and remove charger case complete from charger case cover.

Fig. 2.



INSTALLATION

- 1) Make sure that the lead wires are put in place as illustrated in **Fig. 6**.
- 2) Install charger case complete on charger case cover, and secure the charger case complete with four tapping screws. (**Fig. 1**)
- 3) Install cap 13 (4 pcs) on each tapping screw. (**Fig. 1**)

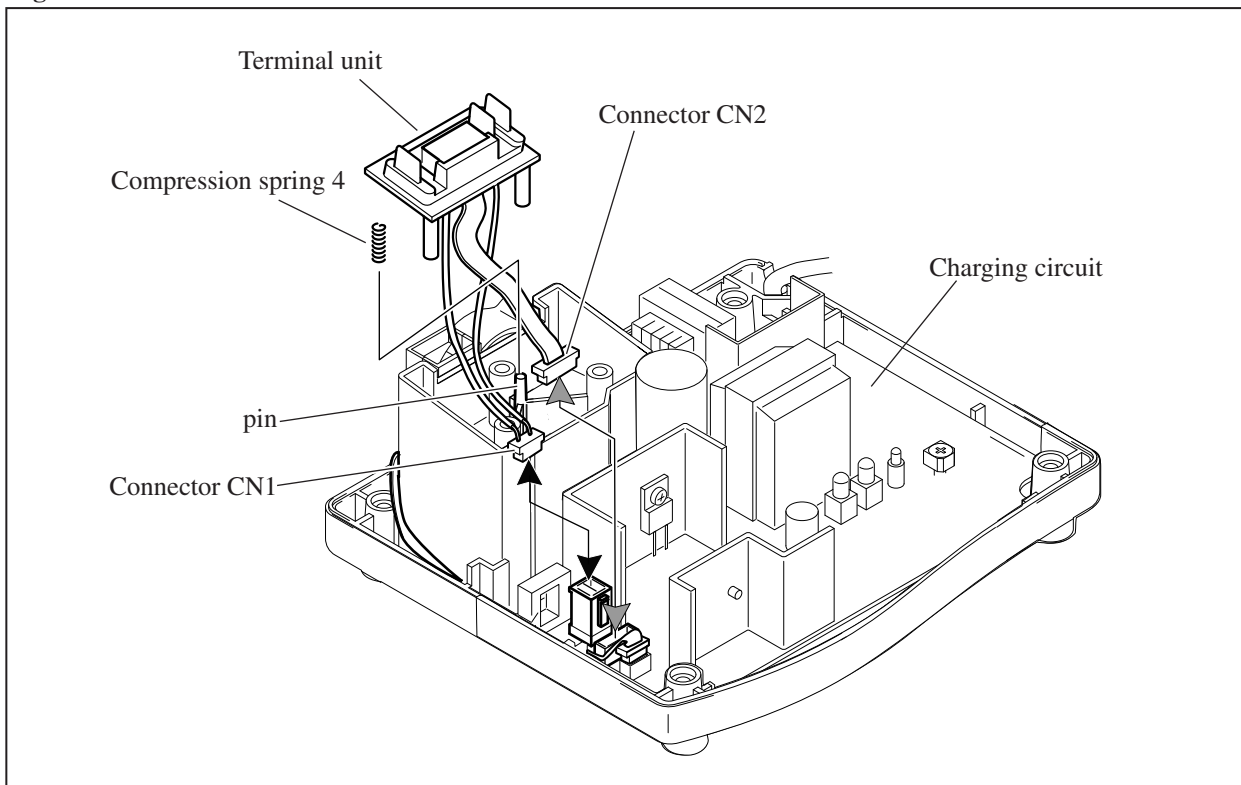
► Repair

[2] Removal/Installation of Terminal Unit and Scirocco Fan

REMOVAL

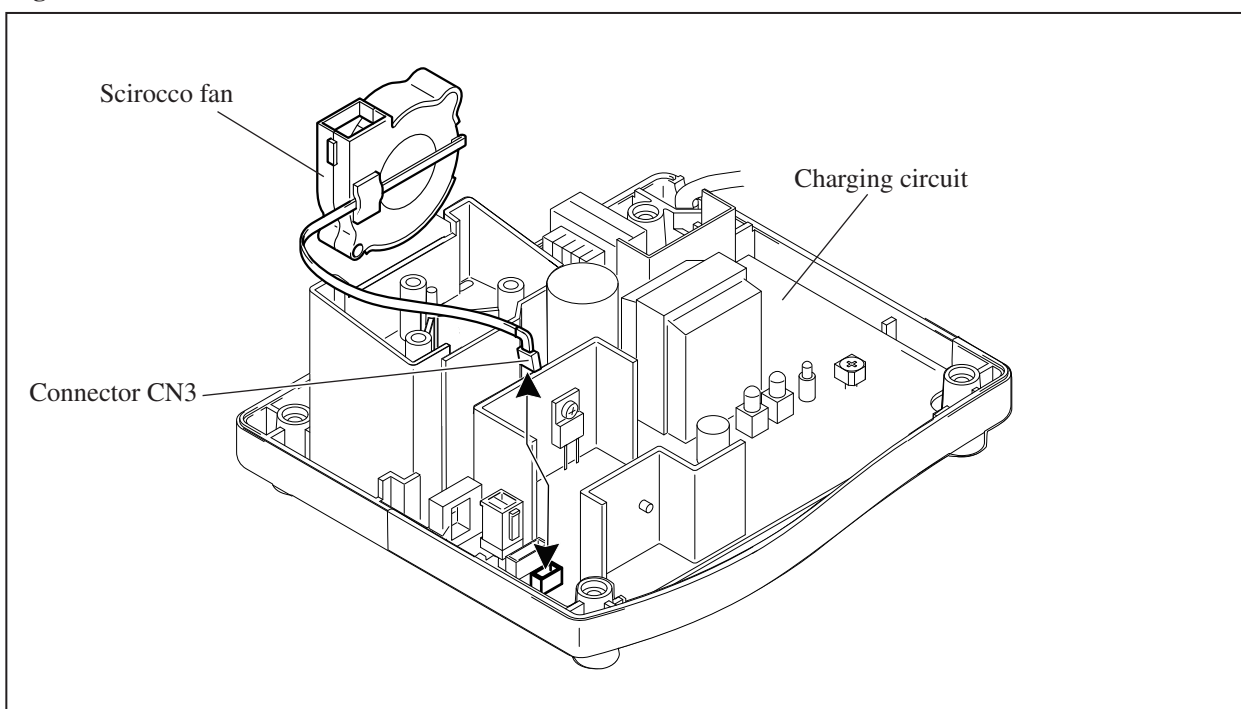
- 1) By disconnecting connector CN1 and CN2, terminal unit can be removed from charging circuit.
Be careful not to lose compression spring 4 which is mounted to the pin on charging circuit. (Fig. 3)

Fig. 3



- 2 By disconnecting connector CN3, scirocco fan can be removed from charging circuit. (**Fig. 4**)

Fig. 4



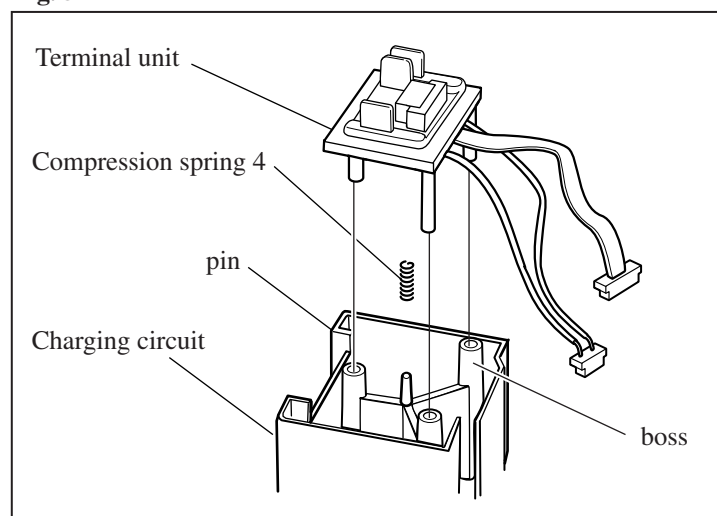
► Repair

[2] Removal/Installation of Terminal Unit and Scirocco Fan (cont.)

INSTALLATION

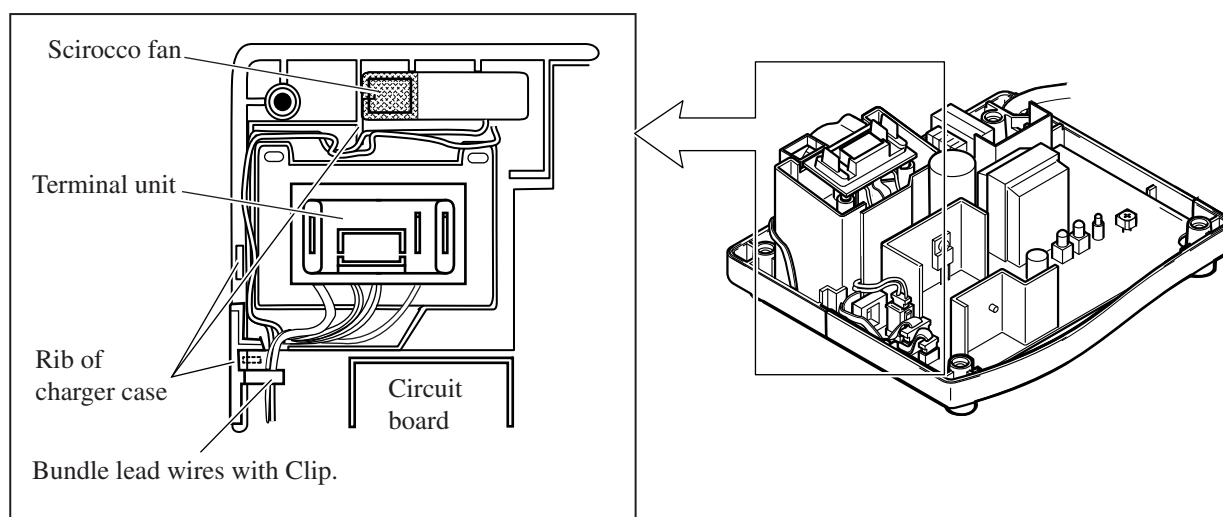
- 1) Install compression spring 4 on the boss on charging circuit.
And install terminal unit by inserting its three legs into the holes in the three bosses. **(Fig. 5)**

Fig. 5



- 2) Connect the connectors CN1 and CN2 firmly to charging circuit. **(Fig. 3)**
- 3) After connecting the connector CN3 of scirocco fan firmly with charging circuit, put scirocco fan in place. **(Fig. 4)**
- 4) Route the lead wires of terminal unit and scirocco fan as illustrated in **Fig. 6**.

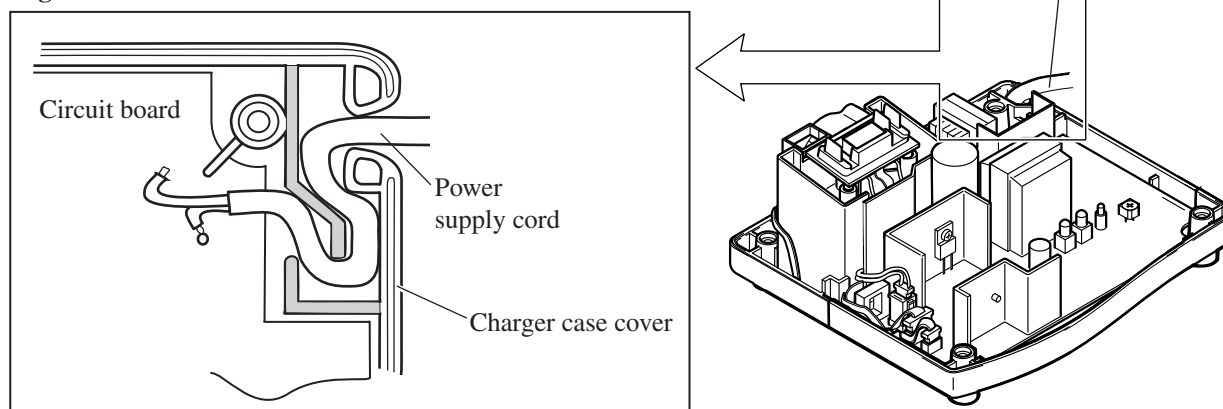
Fig. 6



[3] Wiring Power Supply Cord

Put the power supply cord into the labyrinth shaped rib of charger case cover. **(Fig. 7)**

Fig. 7



► Repair

[4] Removal/Installation of Terminal Cover

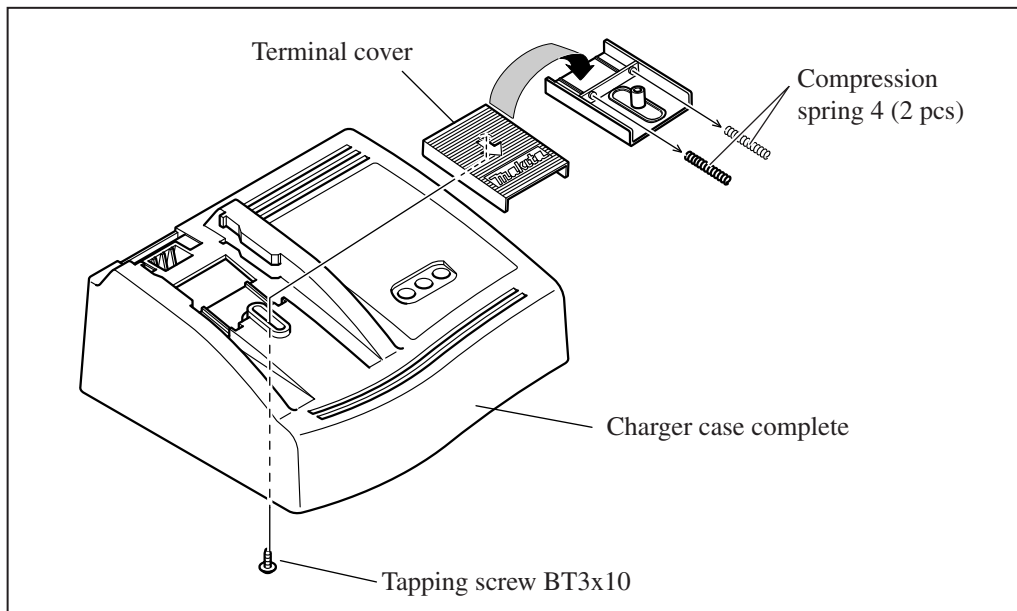
REMOVAL

1) Separate charger case cover from charger case complete. (**Fig. 1** and **Fig. 2**)

2) Remove terminal cover by removing tapping screw BT3x10. (**Fig. 8**)

Note: Be careful not to lose compression spring 4 when removing terminal cover.

Fig. 8



INSTALLATION

1) Install compression spring 4 (2 pcs) on terminal cover. (**Fig. 8**)

2) Insert the boss of the terminal cover into the elliptic hole in charger case. (**Fig. 9**)

3) Compress the compression springs toward the wall of terminal cover in order to set them on the bosses of charger case. (**Fig. 10**) And then, secure the terminal cover by tightening tapping screw BT3x10 to the recommended torque of 0.5N.m. (**Fig. 10**)

Note: Be careful not to confuse the compression spring 4 on terminal cover (Part No. 231474-6) and the compression spring 4 under terminal unit (Part No. 233194-8), because they are not interchangeable.

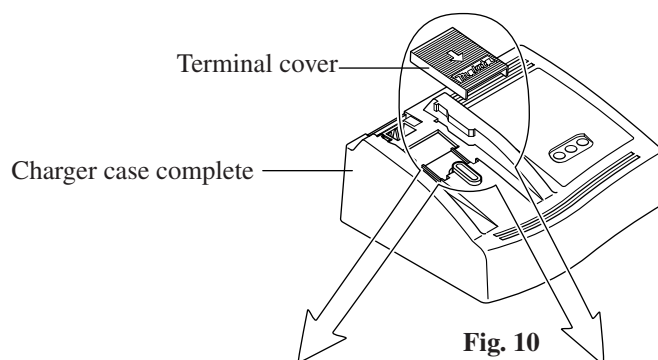


Fig. 9

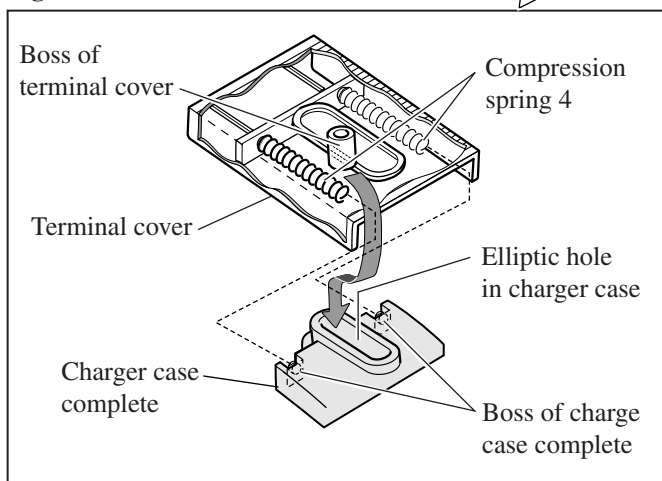
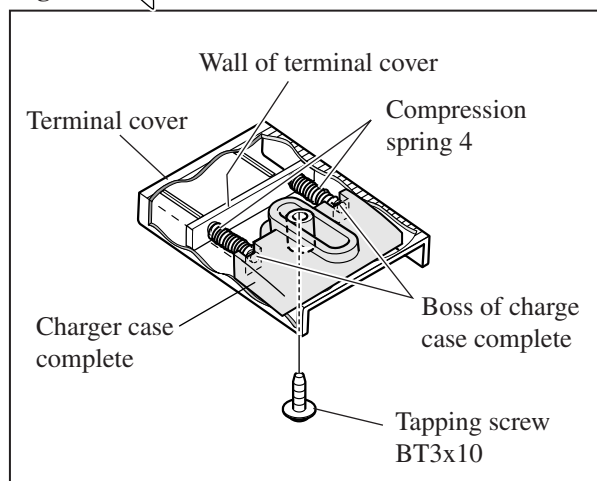


Fig. 10



► Repair

[5] Replacing Varistor and Fuse

1) Types of Breakage

1. If fuse is broken, varistor is also broken in almost every case, showing the sign of breakage mentioned below.
In this case, replace fuse and varistor at the same time.
2. Only varistor can be damaged if charger is plugged in a power source double the rated voltage.
In this case, replace varistor solely.
3. If fuse is broken while varistor is not broken, charging circuit can be broken.
In this case, wholly replace charging circuit complete.

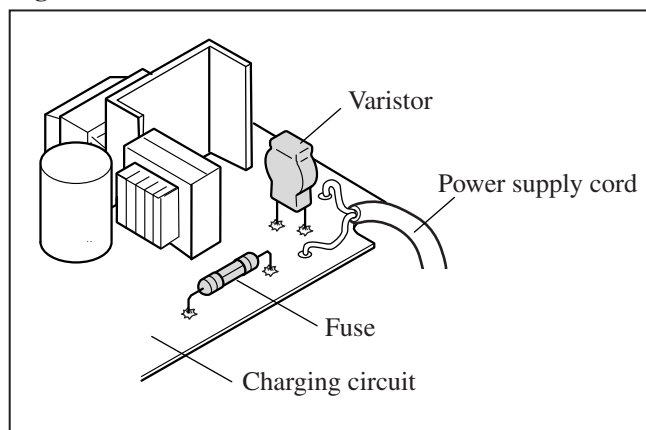
Sign of varistor breakage

- a) Cracks in the surface of varistor
- b) Black discolored surface of varistor

2) Replacing Varistor/Fuse

Varistor/fuse is soldered on the charging circuit.
Remove a broken varistor/fuse with soldering iron.
And solder brand-new one with soldering iron.

Fig. 11



[6] Interchangeability with DC14SA

- 1) The following component parts are interchangeable with DC14SA.

Varistor (647306-1)
Sirocco fan (638084-4)
Compression spring 4 (233194-8)
Cap 13 (286255-3)
Fuse (652747-8)
Vinyl cords

- 2) Tapping screw BT4x20

DC14SA	Interchangeability	DC14SC
265874-8	←	266346-6

← : This arrow means that 266346-6 can substitute for 265874-8
and that 265874-8 cannot substitute for 266346-6.

- 3) Except for the items listed above, the component parts are not interchangeable with DC14SA.