

# T ECHNICAL INFORMATION

Models No. ▶ DC9711

Description ▶ Charger

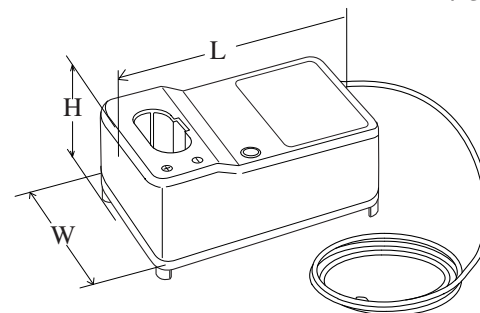
P 1 / 3

## CONCEPTION AND MAIN APPLICATIONS

This charger can charge both Ni-Cd. and Ni-MH. batteries of which powers are 7.2V and 9.6V.

Its brief benefits and features are as follows.

- \* The charging time is kept in the steady level by controlling the output current ( current for charging battery) in spite of the changeable input voltage (power source voltage).
- \* The charger can switch into trickle charge (maintenance charge) mode to keep the full charged condition for battery left in the charger.



Dimensions : mm ( " )	
Width ( W )	80 (3-1/8)
Height ( H )	63 (2-1/2)
Length ( L )	145 (5-3/4)

## ▶ Specification

Voltage (V)	Current (A)	Cycle (Hz)	Continuous Rating (W)		Max. Output(W)
			Input	Output	
220 - 240	/	50 / 60	35	/	/
230 - 240	/	50 / 60	35	/	/

Output voltage (D/C)	7.2 V, 9.6 V,	
Output current (D/C)	1.5 A	
Charging time	Ni-Cd. battery 1.3Ah	approx. 60 min.
	Ni-Cd. battery 2.0Ah	approx. 90 min.
	Ni-MH. battery 2.2Ah	approx. 100 min.
	Ni-MH. battery 2.6Ah	approx. 115 min.
	Ni-MH. battery 3.0Ah	approx. 130 min.
Net weight : Kg ( lbs )	0.41 (0.9)	
Cord length : m ( ft )	2.0 (6.6)	

The chargeable batteries		
Voltage	Type No.	Charging time
7.2 V	7000 (Ni-Cd. 1.3Ah)	approx. 60 min.
	7002 (Ni-Cd. 2.0Ah)	approx. 90 min.
	7033 (Ni-MH. 2.2Ah)	approx. 100 min.
9.6 V	9000 (Ni-Cd. 1.3Ah)	approx. 60 min.
	9100 (Ni-Cd. 1.3Ah)	approx. 60 min.
	9120 (Ni-Cd. 1.3Ah)	approx. 60 min.
	9002 (Ni-Cd. 2.0Ah)	approx. 90 min.
	9102 (Ni-Cd. 2.0Ah)	approx. 90 min.
	9102A (Ni-Cd. 2.0Ah)	approx. 90 min.
	9122 (Ni-Cd. 2.0Ah)	approx. 90 min.
	9033 (Ni-MH. 2.2Ah)	approx. 100 min.
	9133 (Ni-MH. 2.2Ah)	approx. 100 min.
	9134 (Ni-MH. 2.6Ah)	approx. 115 min.
	9135 (Ni-MH. 3.0Ah)	approx. 130 min.

Both Ni-Cd. and Ni-MH batteries can be charged

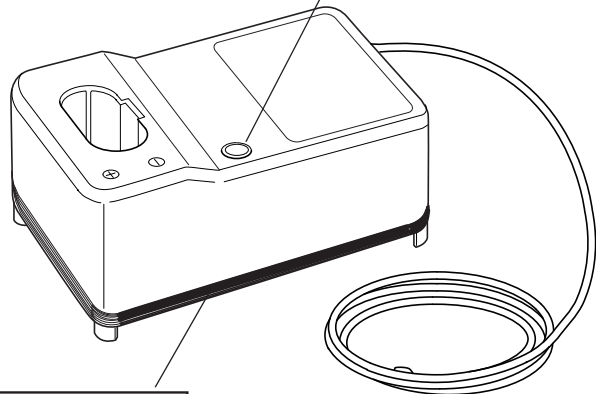
Equipped with trickle charge (maintenance charge) mode

If the full charged battery would be left in charger, the charger will switch into trickle charge (maintenance charge) mode to prevent spontaneous discharging. This mode functions for 24 hours.

Even if the heated battery (the battery from just operated machine) will be inserted in the charger, the charging process will be started automatically after battery's cooling down.

Red lamp indicates "Stand by to charge" and " Be in charging process".

< Note > In the above case, the battery may not be charged completely, because full charged condition is recognized with thermostat as indicated in the diagram below. It is recommended to charge after battery cools.

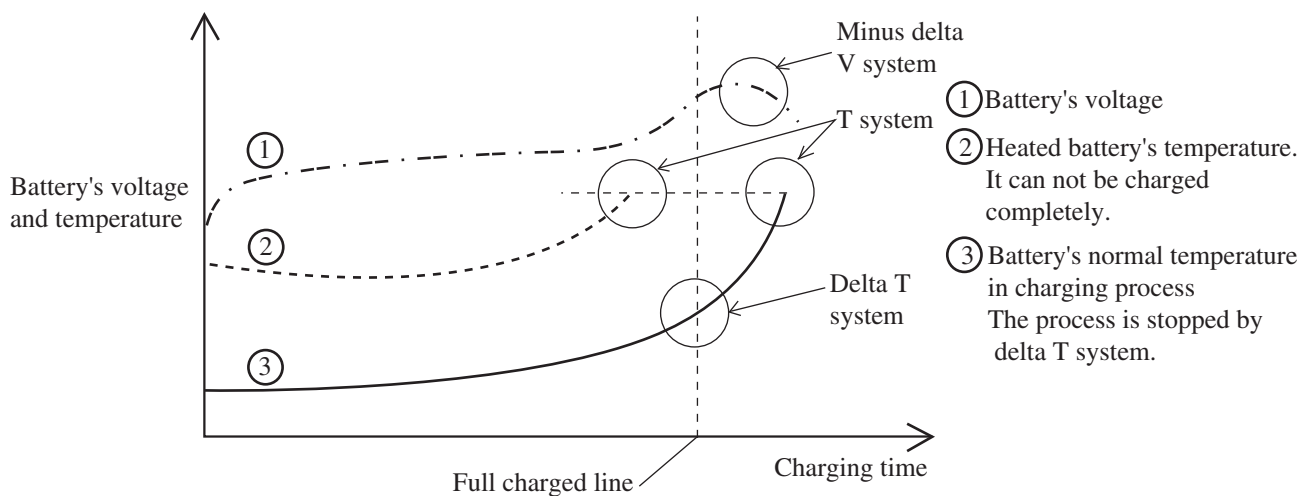


Black bottom color indicates that it can charge both Ni-Cd. and Ni-MH. batteries.

**Charging system**

\* Controlling by micro computer : The installed micro computer recognizes the full charged condition, and selects the optimum way to stop the charging process, from the followings.

- A) Minus delta V system : Stop the charging process with recognizing the battery's voltage drop.
- B) Delta T system : Stop the charging process with recognizing the change of battery's temperature. ( This system is applied to only the charger of 4 terminal-type.)
- C) T system : Stop the charging process with recognizing the battery's temperature which is input in the micro computer in advance. For instance the charging process is to be stopped at 45°C for 1.3Ah battery, and at 60°C for 1.7 - 2.2Ah battery.
- D) Timer system : Stop the charging process in 150 minutes after starting the charge, if the full charged condition would not be recognized with any of the above 3 systems.



\* Transformer for producing charging voltage : Superior in cost performance.

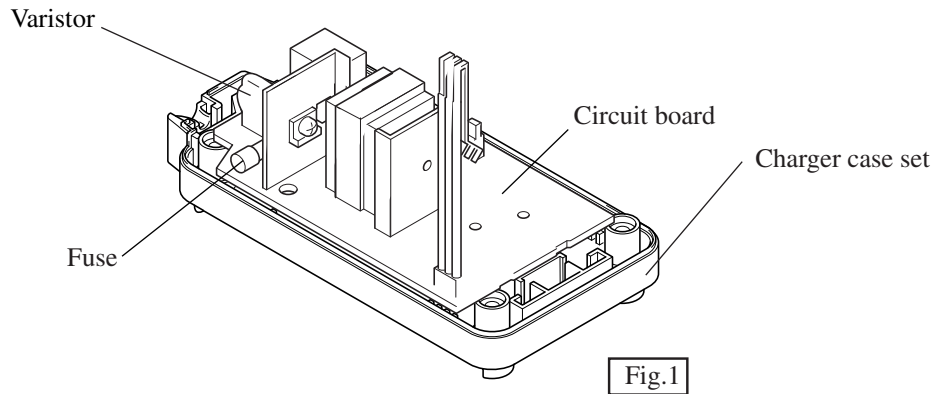
\* Trickle charging mode : Continue to produce very small charging current (approx. 40mA) for full charged battery left in charger.

## ► Repair

- <1> The circuit board can not be repaired, because the circuit itself are molded on the board with the urethane resin.  
It has to be replaced completely with new one.
- <2> In case of damaged varistor or fuse, they can be repaired according to the following procedure without replacing the circuit board.

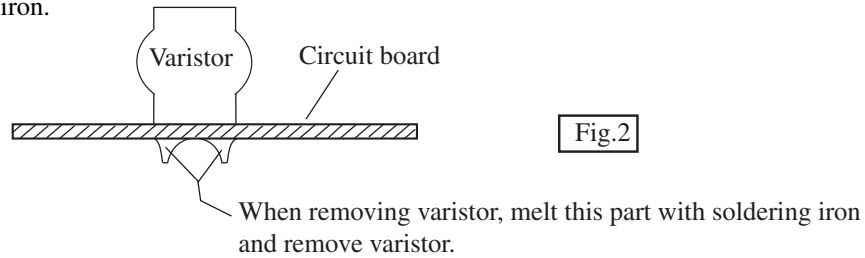
(1) How to find broken varistor

- a. In case that the surface of varistor (ref. to the following illustration) has broken or has become black, and fuse has been cut, the varistor has been damaged.
- b. Varistor can be damaged easily, if the charger is plugged in a double voltage of the rating one.
- c. It is considered that the varistor has been broken for other reasons, if the fuse is broken while the surface of varistor is not damaged. In this case circuit board has to be replaced.

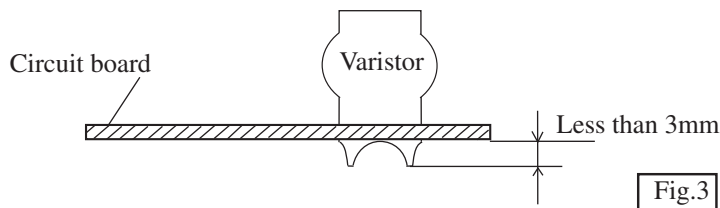


(2) Replacing damaged varistor

- a. Varistor is assembled on circuit board with solder. Remove it from circuit board with soldering iron.



- b. Assemble new varistor to the circuit board by soldering.
- c. Cut the surplus of varistor's wire with nipper.



(3) Replacing damaged fuse

- a. Fuse is assembled on circuit board with solder. Remove it from circuit board with soldering iron.
- b. Assemble new fuse to the circuit board by soldering.
- c. Cut the surplus of fuse's wire with nipper.

