

ECO CHARGER Rev.

Produced by EC Japan



TYPE	4312201	5424151
Target battery	12V lead-acid battery	24V lead-acid battery
	20Ah to 100Ah capacity starter and deep cycle battery *1	
	Batteries beyond 100Ah can also be handled by changing the setting	
Battery voltage range	6.0V~18.0V	15.0V~35.0V
Action modes	REPAIR / CHG / DISCHG (Select from 3 modes)	
Number of setting patterns	Four patterns can be set for each operation mode	
Change methods by the internet	When you connect a personal computer to the internet, you can change settings.	
	When you connect a personal computer, you can change settings for operation and check.	
Repair method	Intermittent charging method	
Maximum charge voltage	DC 22V	DC 36V
Maximum charging current	20A (Continuous)	15A (A short time)
		12A (Continuous)
Maximum discharge current	20A (Continuous)	15A (A short time)
		12A (Continuous)
Rank determination function	Determine the state of the battery in the rechargeable charging and display with ranking	
	Grade A good , Grade B still usable , Grade C bad	
Cooling method	Forced air cooling by fan	
	Periodic maintenance of the air filter is required	
Power supply	AC. 85V~AC.264V (50/60Hz±10%)	
	Supply to the terminal block of the rear panel (a 2 m cable for AC.100V is attached as standard)	
Power consumption	Maximum 650W	Maximum 800W
	In case of maximum dynamic charge	In case of maximum dynamic charge
Recharging time	About 10 hours	About 12 hours
(Discharging 100Ah batteries by 75%)		
ELECTRICITY POWER CONSUMPTION	About 4.5kWh	About 7.5kWh
(Discharging 100Ah batteries by 75%)		
Battery connection method	Connect to the terminal block of the front panel (a pair of 2 m cable with grip is attached as standard)	
Operating environment	Ambient temperature : 0℃~35℃	
	Ambient humidity : less than 90%RH (No condensation)	
External dimensions (mm)	W440 x D400 x H140 (Rubber foot/Protrusion not included)	

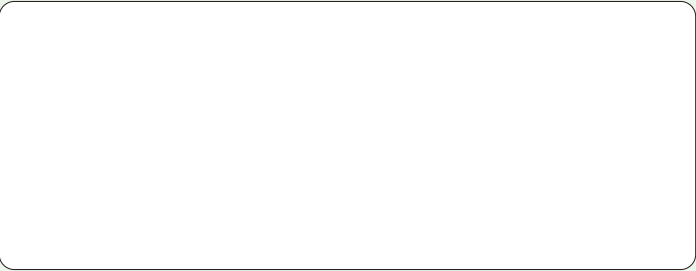
*1 : Recharging operations may not be fully functional depending on conditions of batteries.
Please note that specifications and appearances may be changed without notice.

MANNERS FOR CUSTOMERS

Please be sufficiently thoughtful of your neighbors so as not to inconvenience the surroundings when using this device.

Manufacturer
EC Japan Co.,Ltd.

Participating Organization
Academic-industry cooperation
National Institute of Technology,
Toyama College

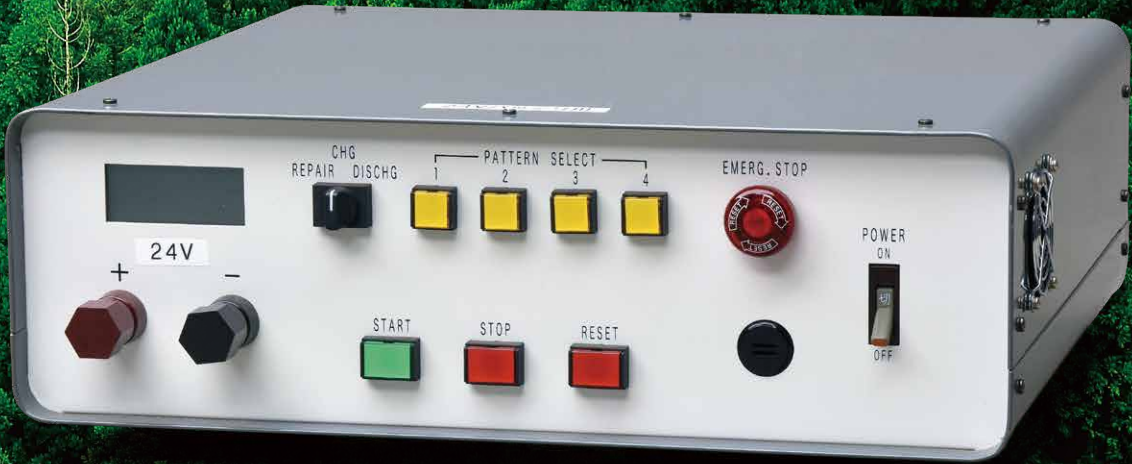


ECO CHARGER Rev.

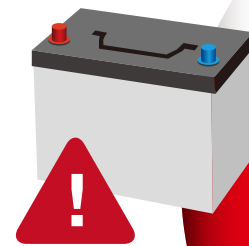
Multifunction Lead Battery Charger



Sparing no effort in the
protection of our precious Earth



Easy restoration of lead batteries



**Battery Restoration Enables
(instead of replacement)**

**Drastic
Cost
Reduction**

Results

Cost reduction

**Preservation of
Earth's resources**

**Expansion of new business
and employment**

**Contribution to
eco-protection**

**Costs
involved:**

**Eco Charger Rev
unit cost**

**Small
labor cost**

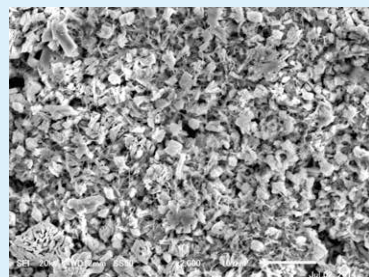
**Small
electricity cost**

*Battery may not be charged to 100% depending on its condition.

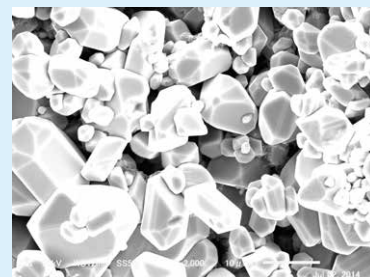
Battery Life

Electricity is generated by means of chemical reactions between the pole plate and sulphuric acid solution. However, non-conductive lead sulfate is generated at the same time, crystallizing on the pole plate. This decreases the current conductivity and discharge capacity. This is the mechanism of battery life.

Electron microscope image of negative electrode



New battery



After deterioration



After restoration

Restoration Power of the ECO CHARGER Rev.



The innovative Eco Charger Rev. electrolyzes sulfation (lead sulfate) by means of a unique method (constant-current intermittent charging system), which was developed based on test results over 10 years by academic-industry cooperation (National Institute of Technology, Toyama College).

Patented
(Patent No. 6362252)

Studies in Science and Technology
<http://www.union-services.com/sst/sst-6.html>
Multifunction lead battery charger Vol.6 No.2, 2017

Conventional restoration



Radio frequency pulse voltage application

Innovative restoration



Removal of sulfation by
constant-current intermittent charging

Various Functions

1. On-site program modification
2. Data transmission
3. Remote operation
4. Charge, discharge and recovery modes
5. Current and voltage monitoring

ECO CHARGER Rev. Product Lineup

12V Model Charger

Batteries for starting vehicle engines and deep cycle batteries (28Ah~200Ah)



24V Model Charger

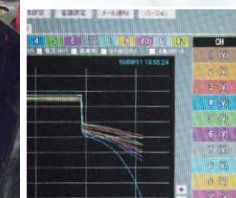
Batteries for starting large vehicle engines and 24V deep cycle batteries (28Ah~200Ah)



48V model (~400Ah)



48V150A Discharge Tester
(Defective cell inspection for deep cycle batteries)



Defective cell location