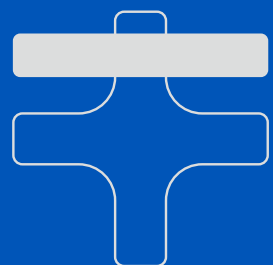


BATTERY CHARGER



No.9DS21



Please wear proper safety gear while working.



Overview Instruction

- Please read this instruction carefully before operation.
- It is designed and manufactured according to EN60335-2-29
- For its start-up function, it is applied to recharge lead-acid cell and accumulators in a motorcycle, car, tractor, and boat for starting.
- With input and output fuse and ground wire Line on the supply cable, it is very safe and reliable.
- There is control switch for recharging current and star-up, and so current is adjustable.

Specifications

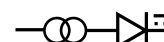
Model	9DS21-10	9DS21-20
CHANGE VOLTAGE	12-24V	12-24V
INPUT VOLTAGE	230V	230V
CHARGE POWER	1 KW	6.4 KW
START POWER	2 KW	10 KW
EFFECTIVE CHARGING CURRENT	45A	90A
START CURRENT	180A	360A
MAX STARTING CURRENT	300A	570A
MAX RATED REFERENCE CAPACITY	450AH	1050AH
APPLICABLE BATTERY	LEAD-ACID BATTERY	LEAD-ACID BATTERY
PROTECTION CLASS	IP21	IP21
Dimension	630 x 330 x 290 mm	705 x 400 x 315 mm





1. Current indication
2. Switch
3. Voltage indication
4. Clamps
5. Wheel

Definition of symbols

EN60335-2-29 : Standards for household appliances

 : Single phase transformer-rectifier

 : Symbol of secondary battery
 : Please read the instruction carefully before application.

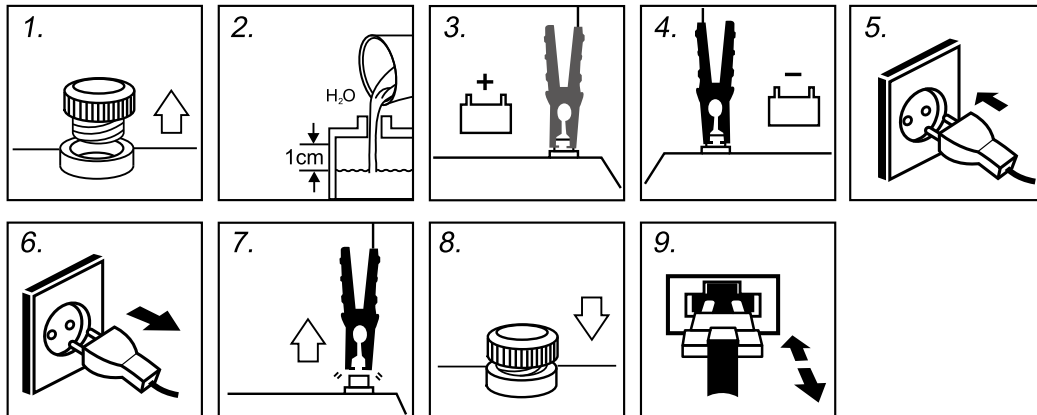
 : Housesupply

IP21 : Degree of Protection

Safety regulations

For personal and property safety, please comply with the following safety regulations.

- It may produce combustible and caustic acidity gas in course of recharging.
- Please operate at ventilative places, avoid flame and spark, no smoking.
- Shell protection degree is IP21, forbidden to expose to rain or snow.
- Put the charger upright when recharging ,do not incline.
- Don't block the vent which is for heat abstraction.
- Please recharge according to instructions of the accumulator and vehicles.
- Load and unload of the accumulator after cutting off the power supply.
- Maintenance and repair to the charger should be operated by technicians.
- Replace the fuse and cable with the same specifications.



- Open the cell! cover when charging.
- No connection between electrodes of the cell when electrifying.
- Don't connect the cell ramps contrarily.(Namely anode ramp "red" connects the cathode of the cell, and cathode ramp black connects the anode of the cell.)
- Non-rechargeable cells cannot be charged.
- The replaced fuse must have the same specification with the original one.

Do not replace it with other electric conducting material. Replacement for power cable should be carried out by technicians.

Application Regulation for charger and cell

In order to protect the machine, please comply with the following regulations.

1. Notice for application of the cell

- When the electrical charge is insufficient, terminal voltage of the cell will display the normal voltage, that the terminal voltage of 6V cell is 6V, otherwise the terminal voltage of 12V is 12V.

Moreover, the main physical phenomenon for judging the quantity of electric charge is battery electrolyte specific gravity. Generally speaking, when the specific gravity of battery electrolyte is 1.28Kg/L, the electric charge is full; if it is lower than 1.16Kg/L, the cell is empty.

Voltage of the cell will be departed the normal level only when charging. It will be lower than normal terminal voltage and higher when charging. If the load has been stopped for period of time(about 10-30 minutes), but the terminal voltage is still lower than normal, the main possibility is bad quality of the cell.

- Open the cell cover to observe if the electrolyte is enough.
- Electrolyte in the cell is dilute sulfuric acid. It is caustic. If it splash to skin and clothes, please rinse with clear water immediately and go to the hospital in time.

2. Charging Correctly

- Cells with same capability parallel connection or in series are allowed to be charged. The terminal voltage after parallel connection or in series must match the output voltage of the charger. In order to make the current through every cell is the same.
- Connect the cell: Connect anode ramp (red) with anode of the cell, and connect the corresponding wire holder (6V or 12V) on the charger. Likewise connect cathode (black) ramp with the wire holder of cathode in the cell. When recharging a cell in the car, please connect the chassis after the terminal without connection of the chassis. Please keep the junction points far away from the cell and fuel pipe.

- Plug in and turn the switch to "ON", "start-up" to charging position, there is current display on the ammeter. Adjust the charging current into the right range (according to DIN 41774.)

Set charging time In course of charging, temperature of electrolyte should not be higher than 450C. If it is higher than 450C before finishing, please reduce charging current.

- Charging complete: electrolyte specific gravity approaches 1.28Kg/L; and the terminal voltage of the cell exceeds 1.2 times of the rated voltage-There are exquisite bubbles in electrolyte.
- Please close power supply before disconnection clips with the cell .

3.Complementary charging for under filling cells

- Utility time (receptivity for charging current is different.) and remaining quantity of electric charge will affect consistency of charging finishing time.
So please select the underfilling one to make complementarity.

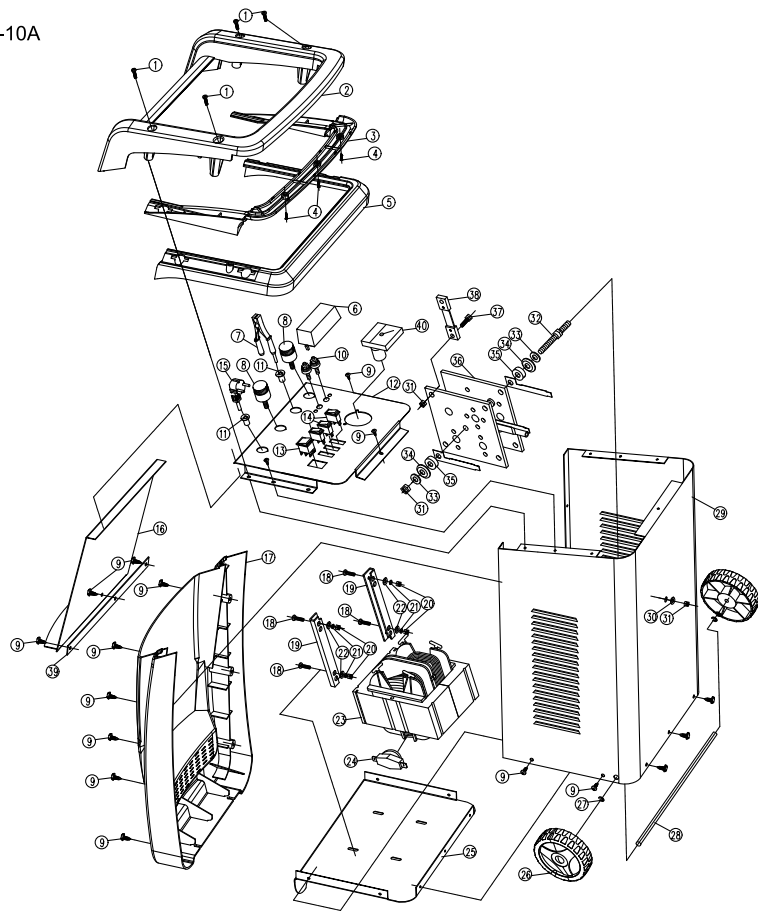
4. Operation guide for Assistant Start-up

Quick charging for 10-15 minutes. It must be according to duty cycle of the certain product

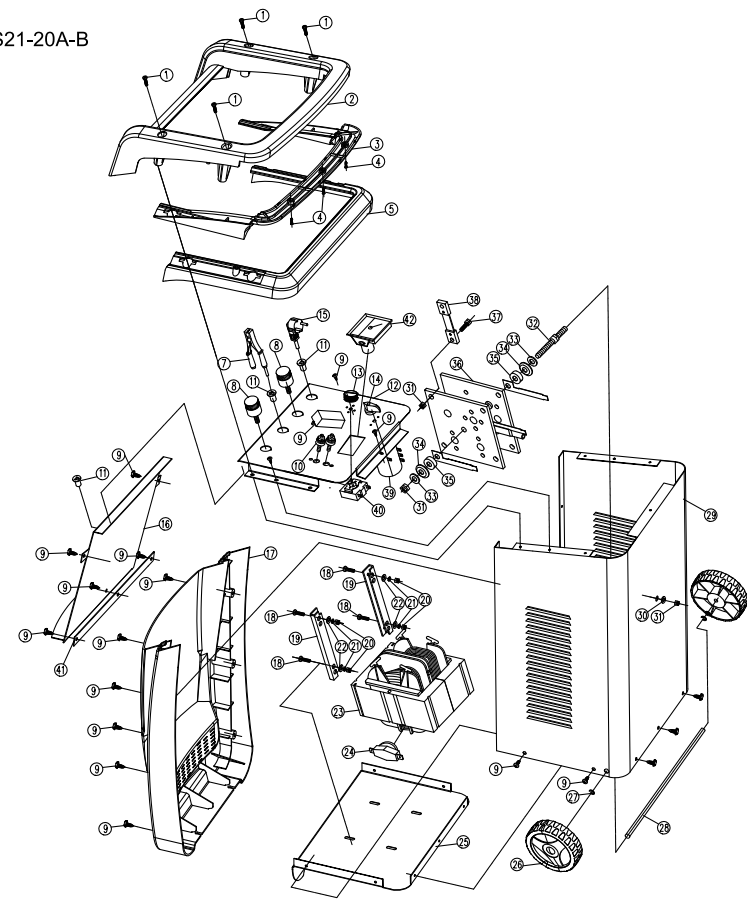
- Connect arbitrary terminal of the charger to non-chassis connector of the motor, (the same polarity, viz. anode with anode),the other polarity connects the chassis connector of the motor.
- Read the manufacturer's instruction of engine starting.
- Plug in and turn the power switch to "ON" and turn switch of Cell, Startup" to start-up", start the engine.
- Special notice: Starting time is 3 seconds for each time, wait for 120 seconds before the second start-up. Only allow 5 continuous start-ups. Wait for 10 minutes after 5 continuous start-up before next start-up.

Maintenance and Repair

- Periodical maintenance and repair is required for normal service and safety of the machine.
Any improper or wrong operation will lead to machine fault and damage.
- Warranty for the machine is 1 year after date of purchasing. Users can repair the machine in the dealer's or appointed service centers in the name of its invoice.
- Please disconnect power supply of the switchboard and the machine before maintenance.
- Clean inside and outside of the machine periodically with air or cotton yarn. Examine and repair power switch, ground device, current adjustor, fuse,inner cable, clip and bolts periodically.
Screw down the loose bolts and clear the rust.
- Periodically check insulation resistance of the welder with insulating-resistance meter. Insulation resistance between primary winding and secondary winding, each winding and earth should be not less than 1 MO. Let technicians replace the failure parts. Check inlet and outlet fuses if there is no current output.
- If the current is too high during course of charging that causes the transformer overheat and there is no current. The reason is the inside overheat protector has been started. The charging will resume automatically when the transformer cool down.



INDEX NO.	DESCRIPTION	REQ'D NO.	INDEX NO.	DESCRIPTION	REQ'D NO.
1	M5x16 cross half round screw	4	21	M5 spring washer	4
2	Plastic handle	1	22	M5 gasket	4
3	Plastic handle cover	1	23	Transformer	1
4	St 3x8 cross half round screw	3	24	Heat protection	1
5	Plastic plate cover	1	25	Bottom cover	1
6	Insurance cover	1	26	Wheel	2
7	Battery clamp	1	27	Shaft circlip	4
8	Battery charger quick joint	2	28	Shaft	1
9	St5x12 cross half round screw	21	29	Back cover	1
10	333 connector	2	30	M8 gasket	1
11	Holder	2	31	M8 screw	2
12	Top cover	1	32	M8x80 hexagon screw	1
13	Power switch	1	33	M8 spring washer	2
14	Voltage indicator	3	34	M8 gasket	2
15	Power cable	1	35	Ø8x10 sleeve	2
16	Front cover	1	36	Rectifier bridge	1
17	Body mask	1	37	M6x20 cross half round screw	1
18	M5x25 cross half round screw	4	38	Shunt	1
19	Transformer bracket	2	39	Beam	1
20	M5 screw	4	40	Current indication	1



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10	333 connector	2	31	M8 screw	2
11	Holder	2	32	M8x80 hexagon screw	1
12	Top cover	1	33	M8 spring washer	2
13	Timer knob	1	34	M8 gasket	2
14	Gear knob	1	35	Ø8x10 sleeve	2
15	Power cable	1	36	Rectifier bridge	1
16	Front cover	1	37	M6x20 cross half round screw	1
17	Body mask	1	38	Shunt	1
18	M5x25 cross half round screw	4	39	Gear knob	1
19	Transformer bracket	2	40	Timer knob	1
20	M5 screw	4	41	Beam	1
21	M5 spring washer	4	42	Current indication	1