



Danger of
battery acid



Note operating
instruction



Danger of
explosion



No Smoking
No Naked Flames
No sparks



Wear protective
glasses



Keep away
from children



Do not throw away



Recyclable Material



Auto / Truck / SUV



DRY

DRY CHARGED BATTERY



Respected Customer

Thank you for choosing our starter battery. To protect your benefits and to ensure a better performance, please read this manual carefully before using the battery.



This is a dry-charged storage battery Usage and maintenance guidance

1. Remove the vent plugs, take off the inspection seal from the plugs (or penetrate the sealing wax), or remove the seal from the acid-filling plugs.
2. Add standard electrolyte at the density of $1.28 \pm 0.005 \text{ g/cm}^3$ (25°C) and tighten the vent plugs (or the filling plugs). Ensure that the liquid level is above the "lower level" line, or above the protection board (10-20mm partitions).
3. Place the battery there for 20-30 minutes before it can be used. It is recommended to give the battery an initial charge when the liquid temperature is below 35 °C. Avoid idling the battery for too long after acid is filled.
4. Check the liquid level periodically when the battery is in use. If necessary, add distilled water (pure water). If the liquid loses too fast, please check voltage of the regulator in the vehicle. Don't add sulfuric acid or impure water taken from rivers or wells.
5. Ensure that the vent plugs are not blocked when the battery is stored or filled with acid, to prevent the battery from possible deformation or explosion.



Installation guidance

1. Before installing or uninstalling the battery, turn off the engine and all electrical equipments of the vehicle. To unmount the battery, disconnect the "-" (negative) pole first and then the "+" (positive) pole. While,

to mount the battery, connect the "+" pole with the negative wire of the vehicle first and then the "-" pole with the positive wire. Apply anti-acid grease or vaseline on the poles and wires to keep the connection firm and clean. Operate carefully to avoid short circuit.



Warning: reverse connection may damage the battery as well as other electrical equipments.

2. Recharge the battery immediately after it is discharged. Do not leave a power-deficit battery for a long time without recharge.
3. Recharge the battery outside the vehicle if its voltage drops, starting performance worsens or car lights get dimmer.
4. Pay special attention to the "+" and "-" signs. Make sure that connection with the recharger is correct. Reverse connection may damage the battery.
5. Initial charging: The current (in Ampere) for recharge shall be 1/200f the nominal capacity (e.g. 3A for N60), and the recharge duration is 3-4 hours.
6. Constant current charging: For the second recharge, the current shall be 1/10 of the nominal capacity (e.g. 6A for N60), and the duration is 12-16 hours. Pay attention to the battery temperature. Suspend the recharge process if the temperature exceeds 45°C, and resume only after it drops below 45°C.
7. Constant voltage current limiting charging: charging voltage should be 16V. Maximum current should be no more than 0.2*C20A (e.g. 16A for MF80Ah). The charging process should not be stopped until the charging current stable at zero for 2~3 hours, or just refer to the suggested charging time, that is: 16~20 hours.
8. Routinely check voltage of regulator in the vehicle, whose output voltage should be strictly limited within 13.3V-14.4V. Otherwise it will damage the battery.



Safety Rules

1. Do not spill the acid which is highly corrosive.
2. If the acid has splashed onto the skin or clothes, wash immediately with plenty of water (or soap water). If it gets into eyes, wash with water and consult the doctor as soon as possible.
3. Keep the battery out of children's reach.
4. Batteries, when recharged in serial connection, are at a high voltage. To avoid electric shocks, please be extra careful when you have to touch the wires or connection poles.



Cautions

1. The battery should be stored at a dry, clean and ventilated place, at the temperature within 5 °C -35 °C, and should not be exposed directly to the sun. Tighten the vent plugs before use.
2. The battery will generate flammable gases during recharge process. To avoid explosion, keep it at a well ventilated place and away from heat and fire. Warning: remove the vent plugs before the battery is recharged, to avoid deformation and explosion.
3. The storage time of the dry-charged battery should not exceed one year. Please recharge the battery before use if it is already in storage for over one year. If the battery is filled with acid, please recharge the battery every other month, and completely recharge and discharge it once every 3 months. Moreover, adjust both the level and the density of the acid.
4. No additive can improve the battery performance.
5. Don't dispose of scraped batteries as common household waste.