

1. NOTE

Thanks for choosing our valve regulated sealed free maintenance AGM battery. In order to use the battery safely and properly, please read the user manual before use. Please keep the manual so can accordingly when need.

The cell mentioned below means 2V unit cell in battery, accordingly, 12V battery has 6 cells, and 6V battery has 3 cells.

2. FOR SAFETY

Before use the battery, please read the manual carefully, as improper use may lead to battery leakage, hot, fat, explode even casualties. If you can not read this manual, please contact with us before use.

DANGER

1. Battery may release hydrogen, so please do not install this battery in the sealed environment or equipment which may occur spark.
2. Never connect with direct conductor between positive terminal and negative terminal of battery, and confirm the tool such as spanner used to install the battery is covered by electrical insulator. Because battery short circuit may lead to explode even casualties.
3. Never use this battery together with other different type battery (such as NiCD battery), otherwise may have risk of explode.

WARNING

1. Please charge the battery according to this manual, other ways may lead to battery leakage or other damage in risk.
2. Do not install the battery in humid area, to avoid battery terminals been corroded or electric shock risk.
3. Please wear insulating gloves when testing batteries, to avoid electric shock risk.
4. Please confirm the positive and negative correct when using batteries.
5. Do not put the battery near fire.
6. Do not open the battery, may lead to battery leakage or risk of fire.
7. Please replace the battery once expired, to avoid battery leakage or risk of fire.
8. Please flush with water once contact sulfuric acid with eye or skin.

ATTENTION

1. Do not use the battery once it is corroded, break, fat or hot, please contact with us at once to avoid risk.
2. Keep the battery away from children.
3. Below is the battery normal use temperature range, if work beyond this may shorten the battery life or lead to damage:
Charge: 0~40°C Discharge: -15~45°C Storage: -30~40°C
4. The discharge current can not be higher than the limits, to avoid battery leakage, hot or explode.
5. Move the battery from the equipment which not been used long time, as the over discharge of battery will shorten the battery life and performance.
6. Do not weld on battery terminals directly, to avoid battery leakage.
7. Do not use the battery inverted.
8. Do not crash the battery.
9. Do not clean the battery with organic solution, cleaner, paint or oil, to avoid the cover leak.

3. INSTRUCTIONS

3.1 CHARGE

A. FLOAT CHARGE

1. The constant charge voltage of battery is 2.27V/cell (25°C). When ambient temperature is below 5°C or above 35°C, adjust the constant charge voltage according to the temperature compensation factor, the recommended factor is -3.3m V/°C/cell.
2. The initial charge current is 0.25CA or less, C means the rated capacity Ah of battery, A means current Amp.
3. Suggest to charge in ambient temperature between 5°C and 35°C, to extend battery life.

B. CYCLE CHARGE

1. The constant charge voltage of battery is 2.37~2.40V/cell (25°C). When ambient temperature is below 5°C or above 35°C, adjust the constant charge voltage according to the temperature compensation factor, the recommended factor is -5m V/°C/cell.
2. The initial charge current is 0.25CA or less, C means the rated capacity Ah of battery, A means current Amp.
3. To avoid over charge, suggest to stop charging or reduce the constant charge voltage to 2.275V/cell (25°C) after finish charging.
4. Suggest to charge in ambient temperature between 5°C and 35°C, to extend battery life.
5. If need fast charge, please contact us.

3.2 DISCHARGE

1. The continuous discharge current can not higher than 3CA, and maximum discharge current (5s) can not higher than 6CA.
2. The discharge current and end of discharge voltage according to Table1. Long time over discharge will shorten battery life.

Table1: (C means the rated capacity Ah of battery)

Discharge Current (A)	End of Discharge Voltage (V/cell)
(A)<0.1C	1.80
0.1C≤(A)<0.2C	1.75
0.2C≤(A)<1.0C	1.70
(A)≥1.0C	1.60

3. Recharge the battery immediately after discharge, do not stock the battery before charge full. If the battery has not been charged long time after discharge, it will be problem to recharge to full capacity.

3.3 INSTALL

1. Confirm the battery appearance normal then install the battery to fixed place. Please ensure the battery install tightly and safely, to avoid strike or distortion.
2. When the battery installed in equipment, please keep it away from heater (transformer etc.), install it vertically in the place as low as possible, and ensure good ventilation.
3. The battery may release harmful gas, Do not install it in sealed environment and keep away from flammable (switches or fuse).
4. Use correct torque on all terminals, ensuring every connecting nut and screw is secure; see torque settings as Table 2

Table 2 Suggested Torque

S/N	Terminal	Torque
T1	M5	2.0~3.0 N*m
T2	M6	4.0~6.0 N*m
T3	M8	10~14 N*m
T4	M10	17~19 N*m

5. Do not make the terminal distortion or weld directly.
6. Caution:
 - A. Avoid exposed to sunlight.
 - B. Avoid radiation with extreme infrared ray or ultraviolet ray.
 - C. Avoid contact with organic fog, dust or corrosive gas.
 - D. Avoid unusual vibration.
7. When connect the battery with charger or load equipment, ensure the switch is off, and connect the battery positive with positive of charger and equipment, the battery negative with negative of charger of equipment.
8. Do not mix use batteries with different capacity, different type or new and old.

4. CAUTIONS

4.1 BEFORE USE

A. STORAGE AND AUXILIARY CHARGE

1. During storage, the battery will discharge itself, place the battery in the environment cool and dry. Auxiliary charge at least once must be realize every three months, 100% full discharge and charge at least once must be realize every 12months.

CHARGE	CHARGE TIME (H)	AMBIENT TEMPERATURE (°C)
CONSTANT VOLTAGE 2.45V/cell	6-12	5-35
CONSTANT CURRENT 0.05CA	6-12	

2. Please charge the stock battery to full before use it.

B. TRANSPORT

1. Avoid violent vibration or strike.
2. Place the battery vertically during transport.

4.2 DAILY INSPECT AND USE

1. The battery will damage and need replace when happen below:
 - A. Voltage unusual.
 - B. Any physics affect (strike or distortion)
 - C. Battery leakage.
 - D. Very hot.
2. Clean the battery just with wet cloth, Do not clean the battery with organic solution, cleaner, paint or oil, to avoid the cover leak.
3. 100% full discharge and charge must be realized at least once every 6months. User must inspect the battery capacity every year. The charge after discharge adopt constant voltage charge with limit current.
Voltage: 2.40V~2.45V/cell, Current<0.2CA, Time: 18~24hours.

5.BATTERY APPLICATION

Electric Powered Vehicles
Power Tools
Telecommunication
Control System
Medical Equipments
UPS systems
Solar and Wind
Emergency systems

VALVE REGULATED SEALED AGM/GEL BATTERY

USER MANUAL