
Operating instructions. Retain these instructions with the vehicle handbook


Always wear eye protection when handling batteries


Keep batteries away from children


No smoking, avoid open flames or creating sparks near batteries


Explosion hazard. Batteries emit an explosive mixture of hydrogen and oxygen during and after charging


Corrosive hazard. Wear protective equipment to shield eyes, hands, and clothing

Valve regulated lead-acid battery. Never manipulate to open cells

GENERAL RECOMMENDATIONS FOR 12V VRLA (VALVE REGULATED LEAD-ACID) BATTERIES

The symbols on the battery indicate the safety warnings. Batteries not handled and used correctly can be a danger, read and follow carefully the instructions in this document, on the battery and in the vehicle handbook in full prior to carrying out any work on the battery. Lead acid batteries should only be used for the purpose for which they are designed. Improper uses can be dangerous and can create a safety risk. Batteries are heavy, take care lifting and carrying. In case of battery breakage wash immediately any spillage with water, soapy water or acid neutralised such as soda. VRLA batteries could eventually release small amounts of an explosive gas mixture during use, stock and charge so air-tight containers are not recommended. For battery banks, a proper grounding is recommended to prevent electrostatic charge generation.

A. STORAGE AND HANDLING. Batteries are filled with acid and should be protected against any impact able to break its case. Batteries should have at least one terminal covered to prevent accidental shorts. Store in a cool dry well ventilated place. Exclude storage where sparks may be generated.

B. CONNECTING/DISCONNECTING. Switch off all vehicle electrical components. Please note battery replacement may require registration of the new battery in the vehicle. Fail to register the new battery may lead to vehicle malfunction. Check user vehicle manual or seek

professional advice. Wear goggles and suitable protective clothes including rubber gloves. When removing a battery, disconnect earth lead (usually negative) first. Avoid short circuits by careful use of any metal tools. Clean battery tray and clamp new battery securely; do not over tighten. Clean terminal clamps. On reinstalling ensure correct connection to the live (usually positive) terminal first (any incorrect connection can damage sensible electrics). Check connections are tight and lightly grease terminals (petroleum jelly). Where available fit terminal cover to live (usually positive) terminal to prevent shorts. Ensure terminals and connectors will be clear of closed compartment cover. Check that protective terminal caps are covering all unused terminals.

C. MAINTENANCE. VRLA batteries don't require any water addition. Ensure the battery and connections are kept clean and dry. Use antistatic damp cloth to wipe the battery down to prevent electrostatic sparks. Do not open or remove vents. Never add acid nor distilled water. The battery may need recharging when voltage drops below 12,5V as described in "D".

D. CHARGING (using charging devices). Sparks can cause explosions especially during and after charging. Preferably charge off vehicle in a well-ventilated area, unless you use a battery tender/charger designed to be used on vehicle. Disconnect and connect as described in "B". Only use direct current (DC) automatic regulated chargers. The charge voltage should be 14.4 volts maximum for VRLA batteries. Follow the charger instructions. With charger not connected to the mains connect (+) cable to (+) battery terminal and (-) cable to (-) battery terminal. Switch on charger from as remote a position as possible. Charging is sufficient to allow battery to be refitted when the voltage has been stable (14.4 volts) for two hours or more. Switch off the power supply to the charger before disconnecting. If the battery temperature becomes hot to the touch cease charging and seek professional advice. It is important not to create any sparks after charging the battery, as this is the time when the accumulation of explosive gasses is at its maximum. It is recommended that batteries are left for at least 12 Hours after the charge current is switched off before reinstalling or use.

E. JUMP STARTING FOR CARS. It is not a recommended procedure. If it is deemed essential, follow the instructions in the car manual.

F. TEMPORARY STORAGE. If the battery is not required for an extended period it should be disconnected as in "B" (check no damage will be done to the equipment by long periods without power), carry out charge as "D" and store as "A". Before refitting, ensure voltage is above 12,5V. Refit as in "B". If equipment require power during storage, keep the battery connected but check the voltage monthly and recharge if battery drops below 12,5V.

G. DISPOSAL. Old batteries should be recycled through a registered scheme. The supplier of the new battery will help to you to accede to such a scheme. We advise that this is the only way to correctly dispose of spent batteries.

H. WARRANTY. Products are warranted against faulty workmanship and/or material according to applicable law only. Proof of purchase is required to claim. Warranty does not cover incorrect fitment, inadequate storage, inadequate charging, accidental damage or faults on vehicle electrical systems and other forms of abuse. A battery replaced under warranty is only warranted to the end of the original battery warranty period. Batteries left for long periods out of use will fail owing to neglect.

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This revision table applies also for this document's translations

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REVISION			
CHANGE LEVEL	**SECTION**	**REVISION**	**REASON FOR CHANGE**
2 August 2024	All	Creation	Creation

Note: changes from previous edition are highlighted in grey in order to be immediately visible