

# Instructions for use and safety

## 12V Flooded Lead-Acid Batteries



Operating instructions. Retain these instructions with the vehicle handbook.



Always wear eye protection when handling batteries.



Keep batteries away from children.



No smoking, avoid naked 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.



Batteries contain lead and should be recycled. Never dispose them as domestic waste.



Pb

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### GENERAL RECOMMENDATIONS FOR FILLED AND CHARGED LEAD-ACID BATTERIES

The symbols on the battery indicate the safety warnings. Batteries not handled and used correctly can be a danger, read the instructions in full prior to carrying out any work on the battery. Batteries are heavy; take care for lifting and carrying. Please read and follow carefully all the instructions in this document, on the battery and in the vehicle handbook. Avoid clothing that may create static electricity. Keep the battery upright to prevent spillage. If acid is ingested seek immediate professional medical attention. Do not induce vomiting and drink a lot of water. In the event of contact with skin or eyes wash immediately with copious amounts of water for several minutes. Seek immediate medical attention for eyes. For spillages again wash immediately with water or soapy water or acid neutraliser such as soda. Dry charged batteries should be filled and charged only in approved workshops. Lead-Acid batteries produce an explosive mixture of oxygen and hydrogen in use and on charge. Any spark, including electrostatic discharge, could ignite these gasses. Use antistatic cloths and insulated tools when fitting. 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.

**A. STORAGE AND HANDLING.** Batteries are filled with acid and should be kept upright at all times. 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. Wear goggles and suitable protective clothes including rubber gloves (self protection and spark avoidance). When removing 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 and lightly grease terminals (petroleum jelly). On reinstalling ensure correct connection to the live (usually positive) terminal first (any incorrect connection can instantly damage the vehicle's electrics). Check connections are tight. Where available fit terminal cover to live (usually positive) terminal to prevent shorts. Ensure terminals and connectors will be clear of closed bonnet (hood). Use components from replaced battery such as pipes, elbows, terminal covers to ensure secure and safe fit. Where hold-down adaptors are fitted ensure these are removed when the fitment does not require them to help ensure secure fitting.

**C. MAINTENANCE.** Ensure the battery and connections are kept clean and dry. Use antistatic damp cloth to wipe the battery down. If there is access to refill, check electrolyte level regularly. If necessary refill deionised

or demineralised water to ensure that plate/separator stacks are covered by electrolyte. If the battery has consumed not only water but apparently electrolyte (acid) seek advice. Do not overfill. The battery may need recharging in the event the car does not start. (See battery charging "D").

**D. CHARGING** (using charging devices). Sparks can cause explosions especially during and after charging. Only charge off vehicle in a well ventilated area. Disconnect and connect as described in "B". Only use direct current (DC) automatic regulated chargers. Charge voltage should be 14.4 volts maximum. 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 power supply to 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.

**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 vehicle or battery is not required for an extended period the battery should be disconnected as in "B" (check no damage will be done to the vehicle by long periods of storage without power), carry out charge as "D" and store as "A". Before refitting ensure voltage is above 12.4 volts. Refit as in "B". If the vehicle requires power during storage check the battery voltage monthly and recharge if battery drops below 12.3 volts.

**G. DISPOSAL.** Old batteries should be recycled through a registered scheme. The supplier of the new battery will have access to such a scheme. We advise that this is the best way to correctly dispose of failed batteries

**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 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.