



***BATTERY USE GUIDE and
WARRANTY CERTIFICATE***

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1. Follow the safety rules for using the battery.
2. As a result of electrochemical processes, the battery can release an explosive mixture of gases that reacts with short-circuits, loose electrical connections, static currents, and other sources of sparking, as well as open flames, which creates an explosive hazard.
3. Use only anti-static cleaning agents to clean the battery.
4. The electrolyte of the battery causes very dangerous and difficult-to-treat chemical burns. Prevent it from coming into contact with the eyes, skin or clothes. If such contact occurs, wash the electrolyte off with plenty of alkaline water and seek medical help.
5. Do not allow an electrolyte-filled battery to tilt more than 45 degrees.
6. When using AGM and GEL batteries, use the guidance for their use provided by the manufacturers.
7. Prevent the use of batteries that have mechanical damage.
8. Do not leave the battery in direct sunlight.
9. Dispose of used batteries only at specialised waste collection facilities.
10. During transport, the battery pole terminal caps must be placed on the terminal of the appropriate pole.
11. Damaged batteries must only be disposed of at specialised waste collection facilities, following the transport safety rules.
12. **Starter-type batteries are intended for use only in operating internal combustion engines of vehicles.**
13. **It is forbidden to use such batteries for any other purposes (discharging/charging, emergency power supply, etc.).**
14. When installing the battery, apply sufficient force to tighten its clamp nuts.
15. Once the warranty period expires, regularly check the density and voltage of the battery electrolyte without load.
16. If these differ from the values specified by the manufacturer during the warranty period, there is a good chance that the fault is in the vehicle's power supply system.

Arrange for the battery and your vehicle's power supply system to be inspected/maintained by qualified technicians.

17. In vehicles equipped with 2 or more batteries, replace all batteries at the same time.
18. Use an appropriate type of charger (electrolyte, AGM, GEL) to charge the battery.
19. Follow the instructions for using battery chargers.
20. Never charge:
 - a) Frozen batteries;
 - b) Batteries with mechanical damage;
 - c) Batteries with a low electrolyte level;
 - d) Batteries that heat up during charging (to temperatures above 45 °C).
21. Do not install equipment, switches, or other electric devices that can cause sparks near the battery.
22. When operating the battery in cold weather, keep in mind that the electrochemical processes of the battery slow down if the electrolyte's temperature falls below +10 °C, reducing the capacity of the battery to accumulate energy.
23. The starting current and electrolyte density are measured once the battery warms up to +20 °C.
24. Operating discharged and deeply discharged batteries results in the sulphation of the plates (a white substance accretes on the plates in the battery). Signs of sulphation after charging the battery include light-coloured and cloudy electrolyte, reduced starting current, different electrolyte density in different cells.
25. Using the battery at an incorrect charge level, excessively loading the battery due to damage in the electrical system of the vehicle, or choosing a wrong battery leads to increased wear of the battery. This can be identified by the dark colour of the electrolyte and low start current.
26. Regularly maintain the battery.
27. In vehicles and equipment with multiple batteries in use at the same time, swap the locations of the batteries in the circuit at least once every 3 months to achieve even wear.
28. The battery must be in a charged state throughout its operating time.
29. Keep body of the battery clean.
30. Regularly clean the pole clamps and coat them with a chemically neutral protective grease.
31. Monitor the electrolyte level.
32. Store the battery in a dry, clean, well-ventilated room, with an optimum ambient temperature of +15 °C.

Warranty claims are satisfied in the following cases:

1. The voltage value is that of a charged battery, the electrolyte density in all cells is 1.27 kg/l, the electrolyte is clear after charging, but the battery delivers a low starting current and fails the load test.

Cause: Defective connection between the individual cells of the battery.
Production defect.

2. After charging, the voltage and electrolyte density in the battery correspond to those of a deeply discharged battery (approx. 10 V, 1.1 kg/l). The battery tester indicates 'Bad cell'.

Cause: A short circuit in one of the cells. Production defect.

3. Frozen electrolyte in one of the battery's cells.

Cause: A short circuit in one of the cells. Production defect.

4. Electrolyte leakage between the battery cover and body. No traces of mechanical damage visible.

Cause: Connection seam not fully bonded. Production defect.

5. Closed-type battery explosion. Warranty applies only if:

a) the body shows no mechanical damage;

(b) the pole terminals do not have any burns and thermal damage;

(c) the amount of electrolyte in the cells is low, and its density is >1.29 kg/l.

Cause: Defective connection between the individual cells or plates of the battery. Production defect.

Possible warranty claim rejection cases:

Problem: CANNOT START THE ENGINE.

Signs:

1. The voltage of the battery without load is as high as 12.5 V, the electrolyte level is uniform in all cells, density under 1.26 kg/l.

Cause:

a) battery insufficiently charged;

b) operating problems in the vehicle's electrical system;

c) frequent engine starts and short trips;

d) there was a current leak when the vehicle was parked (not all electric devices were switched off);

e) prolonged storage of the battery without recharging.

Solution: Charging the battery (possible solution) / replacing the battery.

2. The battery is charged, but delivers insufficient starting current, quickly loses charge on its own, shows dark electrolyte, with dark deposits on section caps. Battery voltage <12.5 V during operation.

Cause: Incorrect choice of battery, large number of power consumers (power converters, computers, etc.).

Solution: Replace the battery.

3. Dark accretions on battery cell plugs, dark electrolyte, reduced electrolyte level, voltage >12.8 V.

Cause: Excessively long or intensive charging of the battery.

Solution: Replace the battery.

4. Battery voltage before charging <12.5 V, low start current, the battery cannot be fully charged, different electrolyte density in its cells, the electrolyte contains a light substance.

Cause: Sulphation of the battery's plates, storing it in an uncharged state.

Solution: Replace the battery.

5. Frozen electrolyte.

Cause: (Deeply) discharged battery.

Solution: Charging the battery (possible solution) / replacing the battery.

6. Deformation of the body of the battery, different electrolyte densities in its cells.

Cause: The battery has been exposed to below-zero temperatures.

Solution: Charging the battery (possible solution) / replacing the battery.

7. The density of the electrolyte in one or more cells of the battery does not correspond to the possible voltage of the battery cells (see charging table).

Cause: The electrolyte level in the battery was increased by adding electrolyte and not distilled water.

Solution: Replace the battery.

8. The battery's electrolyte contains impurities, foaming, crystals.

Cause: Dirty electrolyte, additives.

Solution: Replace the battery.

9. The battery gauge shows negative voltage.

Cause: The battery was charged with reverse polarity.

Solution: Replace the battery.

Problem: ELECTROLYTE LEAKS FROM THE BATTERY.

Signs:

1. Damp battery terminals, corrosion at clamps.

Cause: mechanical impact on wire clamps, pole terminals. Damaged terminal seal.

Solution: Replace the battery.

2. Electrolyte leakage through ventilation openings.

Cause: excessively charged battery, too much distilled water in the battery.

Solution: Replace the battery.

Problem: BATTERY BODY CRACKED, NO TRACES OF MECHANICAL EFFECTS. STICKERS FADED, LIGHT SPOTS ON THE BODY AND STICKERS.

Signs:

1. Direct exposure to sunlight (ultraviolet light).

Cause: Direct exposure to sunlight (ultraviolet light).

Solution: Replace the battery.

Battery sticker meaning:



Information about the battery, its use and installation.



Wear protective goggles.



Keep the electrolyte and the battery away from children.



Avoid open flames, short-circuit sparks and smoking.



Explosive hazard, producing a mixture of explosive gases when charged.



Risk of chemical burns.



Do not leave the battery in the sun uncovered. A discharged battery can freeze, do not leave in cold conditions.



First aid. If the electrolyte comes in contact with the eyes, wash it off with a large quantity of water. Seek medical help.



Disposal. Dispose of used batteries at specialised waste disposal facilities.

WARRANTY CERTIFICATE

Battery model, capacity in A/h, identification No: _____

Vehicle, engine volume, m3: _____

Vehicle fuel type: _____

Sale date: _____

Charging indicator readings:

Battery electrolyte density 1.27–1.28 kg/l (all cells)

Battery voltage without load 12.6–12.8 V (all cells)

Seller, branch: _____ Buyer: _____

Battery charging level	Electrolyte density at +25 °C	12 V battery voltage 6 h charging cycle	Electrolyte freezing point, °C
Recharged	>1.28 kg/l	>12,8 V	-70
Charged	1.27–1.28 kg/l	12,6 - 12,8 V	-40
Partially discharged	1.20–1.26 kg/l	12,2 - 12,5 V	-20
Discharged	1.12–1.19 kg/l	11,8 - 12,1 V	-12
Deeply discharged	<1.12 kg/l	<11,8 V	-4

If the warranty claim is rejected, the buyer covers the cost of expert examination and transport. The electrolytic batteries offered by AUTO KADA SIA may only be used as a power source for road vehicle electrical systems and for the lighting systems of vehicle semi-trailers and trailers. No battery warranty claims are considered for vehicles equipped with auxiliary equipment that is connected to the vehicle's electrical system. The seller assumes the liability for the sale of an incorrect battery.

Seller, branch: _____ Buyer: _____

All claims for batteries (distributed by AUTO KADA SIA) are reviewed with the involvement of certified experts (paid service).

Before installing the battery, the client must ensure that the voltage of the battery is 12.6–12.8V, and charge it if necessary!

If you have any questions, the AUTO KADA SIA sales staff will be happy to help you.