

INSTRUCTIONS FOR USE

1. TEST FOR VEHICLE ALTERNATOR

A faulty alternator will result in damage to a battery either through undercharging or overcharging. Connect red clip to battery + and black clip to battery -.

- a) Run engine with all electrical equipment (headlamps, windscreen wipers, rear screen demist, etc.) switched OFF
- b) Run engine with all electrical equipment switched ON.

For both tests, GREEN should be on, RED should be OFF, for all engine speeds above idle. RED ON is an indication of alternator overcharging, which will result in the frequent need for the replacement of lamp bulbs, the need for frequent battery topping up with distilled water, and the premature failure of batteries, particularly sealed batteries.

RED and GREEN both OFF is an indication that the alternator is undercharging or is not charging at all. If the alternator is not charging at all, then the battery will quickly become discharged, and eventually the lights will become dim and the engine will refuse to start. If the alternator is merely undercharging then there is a danger that the battery will become flat, particularly if the car has short stop / start journeys, or on journeys when the headlamps, windscreen wipers, rear screen demist, etc. are used. The battery may need frequent manual recharging. A battery maintained in a partially discharged state will have a shortened life.

2. TEST OF BATTERY CHARGE

The state of charge of a battery can be measured by an accurate measurement of battery voltage. However, it takes some time for a battery voltage to settle down following a period of charge or discharge.

If the battery is not in the car, and has not been used for some time (over 12 h), simply connect KFZ-POWERCHECK to the battery as shown in Figure 1, and observe the lamp indicators. If the battery is in the car and has recently been used, then carry out the following procedure: switch on the car headlamps for 1 minute without the engine running (this removes the 'surface charge' from the recent charging). Then switch off the headlamps and disconnect the battery from the car. Wait at least 15 minutes before connecting KFZ-POWERCHECK to the battery and observing the lamp indicators.

3. BATTERY POWER TEST

This test will indicate whether the battery is faulty and should be replaced. Ensure that the battery has recently been fully recharged. Connect the KFZ-POWERCHECK as shown in figure 1. Switch the ignition of your car on and run as much electrical equipment (headlamps, windscreen wipers, rear screen demist, etc.) for approx. 3 minutes. If the battery is faulty, the green LED will turn off during the test. When the green LED shows O.K., the battery should have a useful life left.

CAUTION: Do not carry out these tests for more than a maximum of 6 minutes. Stop the test immediately if the green LED turns off during the test. If the battery passes the test, but cranking is slow or laboured, then this is an indication of a fault elsewhere, such as solenoid, earth strap, starter motor or battery connections. A jammed starter motor will give a failure indication almost immediately, even with a good battery.

4. CONTROL OF BATTERY CHARGE WHEN CHARGING WITH EXTERNAL BATTERY CHARGES

A battery charger should not be allowed to overcharge a battery. This will result in the rapid loss of battery electrolyte and the need for frequent 'topping up'.

The charging of 'Maintenance Free' and other sealed batteries should be carefully carried out, either by a voltage controlled battery charger or by 'KFZ-POWERCHECK' used together with a conventional non-automatic battery charger.

Ensure that the battery charger is switched off at the mains. Connect the battery charger and 'KFZ-POWERCHECK' to the battery as shown in figure 2. Switch on at the mains. (NOTE: Avoid sparks: switch on the battery charger after connecting the battery charger to the battery.)

Discontinue charging as soon as the TOP light (labelled 'Lichtmaschine defekt Überladung') comes on. Switch off the battery charger before disconnecting.

SPECIFICATION:

Alternator overcharging (Lichtmaschine defekt Überladung): LED on at 14.8V \pm 0.1V and above. **Alternator O.K.** (Lichtmaschine O.K.): LED on at 13.8V \pm 0.1V, off at 14.8V \pm 0.1V. **Battery full charge** (Battery Ladungs Zustands Anzeige): LED 75-100% on at 12.7V \pm 0.05V and above, LED 25-75% on at 12.45V \pm 0.05V, off at 12.7 \pm 0.05V, LED 0-25% on at 12.2V \pm 0.05V, off at 12.45V \pm 0.05V. **Battery power test** (Battery Belastungstest): LED on at 9.8V \pm 0.1V and above. **Supply:** 6 to 16V. **Protection:** Supply to 30V for 1 second. Fully protected against reverse connection and short circuit.