



The Westco and Panasonic batteries are sealed-for-life, maintenance-free batteries. However maintenance-free only means that you don't have the hassle of topping up the battery with water as it is sealed. You still have to keep the battery charged so that it doesn't lose capacity or stop working altogether. Failure to maintain the charge will damage the battery.

### **Battery Maintenance.**

All automotive batteries expect to be kept charged and degrade if left partially or fully discharged. The MX-5 is especially sensitive to battery degradation as the battery is a relatively small size for the size of the engine (compared to other cars with the same capacity of engine).

Mazda themselves recognised this back in 1992 and issued Technical Service Bulletin 005/92 "Battery Handling for Vehicles in Storage". Mazda recommend disconnecting the battery if the car is to be left standing for long periods. This is because there are a number of devices still connected to the battery and drain it even when the ignition is switched off. The Radio is permanently connected to preserve the memories and the Engine Management ECU stays connected as well.

**We recommend disconnecting the battery if the car is being left for periods longer than approximately a week. This avoids damaging the battery by keeping it permanently in a semi-discharged state. We also recommend monitoring the state of charge of the battery whilst disconnected so that it doesn't become severely discharged.**

The Westco AGM and Panasonic Gel batteries have one of the lowest self discharge-rates of any lead-acid battery, but if left connected to the car's electrical system they will discharge in a matter of days and will eventually suffer loss of capacity or permanent damage. **Always disconnect the battery when leaving the car for long periods.**

To make the battery disconnection a quick and simple process we recommend using our battery disconnect switch (part number SI4011).

**Please note that allowing a battery to be damaged by allowing it to become severely discharged will not be covered by warranty.**

### **Charging:**

It is worth noting that AGM and Gel Sealed batteries do not work like open wet lead-acid batteries found on other cars. They cannot be charged at anything more than a trickle charge. They are Sealed-for-life batteries and need to be charged at a low charge rate (less than 2 Amps) so that any gas produced by the charging process is recombined within the battery. If the battery is charged at too high a rate then the battery will vent gas in order to prevent too high a pressure in the battery case. If this happens the battery will lose capacity, in effect damaging the battery and voiding any warranty.

**Please note that even when on the car, the alternator only charges the battery at a trickle charge rate.** If it charged at anything more than that, the battery would explode. So if the battery is flat and you get the car running, you would have to run it for 5 days non-stop to fully charge the battery.

We get lots of issues with cars that are being left for a week or two and then run at the weekend. In these cases, it's worth noting that running the car for a few hours trickle-charging the battery may not put back into the battery the amount of charge that has been taken out during the previous week or two by leaving the battery connected to the car.

If your Westco or Panasonic battery needs charging we recommend using an intelligent charger suitable for AGM and Gel batteries such as our Optimate 4 (part number SI2819).

If the battery is discharged, because it needs to be charged at a low rate, then the charging process may take a number of days before the the battery is fully charged. Typically 5-7 days for a fully discharged battery.

**Under no circumstances use a battery charger that is not designed for AGM or Gel batteries as this will damage the Westco AGM and Panasonic Gel batteries.**

If you are charging the battery with it still fitted in the boot, it is recommended you disconnect the battery to avoid the vehicle electronics producing a false reading and fooling the charger into overcharging the battery.

**As long as these instructions are adhered to you should enjoy many years of trouble-free life from your Westco or Panasonic battery.**