

## SIMPLE PIC PULSER / DESULFATOR INSTRUCTIONS

**DO NOT CONNECT THE PULSER DIRECTLY TO THE BATTERY CHARGER – CONNECT IT TO THE BATTERY & THEN CONNECT THE CHARGER TO THE BATTERY. MAKE SURE THE BATTERY CHARGER IS UNPLUGGED FROM THE MAINS SUPPLY BEFORE CONNECTING/ DISCONNECTING. DO NOT CHARGE BATTERIES ABOVE 15V AS THE DESULPHATOR IS NOT DESIGNED FOR VOLTAGES ABOVE THIS.**

1. The start-up sequence for the PIC desulphator is that initially no LED's will light then after a short period the GREEN LED will illuminate and then after a further 3-4seconds the RED LED will illuminate and the unit will emit a circa 1KHz buzzing tone.
2. Please ensure that any battery charging activities are carried out in a reasonably well ventilated environment. This is particularly relevant here as you will both hear and see sparks generated as you connect this desulphator. This is perfectly normal, but possibly 'alarming' to the first time user.
3. Also ensure that as a minimum you wear suitable eye protection when working with and around charging batteries
4. The battery to be recovered must, ideally, measure at least 10.5V 'open circuit'. Any less than this and the cause of the battery's deterioration may well be more than sulphation and this device is unlikely to function as intended i.e. recover a sulphated battery.
5. Ensure that the electrolyte levels are adequate prior to starting, these should be checked regularly whilst the desulphator is in use. It may seem obvious but don't do this with the desulphator connected, they don't like water.

Maintaining the electrolyte levels is critical when using a desulphator, the units generate sparks and if the battery plates become exposed these sparks will ignite the hydrogen gas present and potentially, cause the battery to explode.

6. The desulphator can be used in conjunction with a simple trickle battery charger. **We would caution against using the desulphator in conjunction with more modern intelligent chargers such as those available from Ctek unless:-**

**While the typical unfiltered battery charger is not a problem, some other types of loads, such as inverters, might shunt away some of the desulphator's output. In such a case, place a choke in series with one of the inverter leads to keep the high frequency spikes from travelling further. This can be a simple ferrite toroid with one or two turns through it, or a few ferrite beads placed over the wire.**

7. The desulphator can be left connected whilst the trickle charger is connected/ disconnected from the battery. I re-iterate, **do not leave the desulfator connected solely to the battery charger.**
8. Having said this, the desulphator can be used on its own, i.e. without a charger until the battery voltage drops to 12.0V (10.5V if a deep cycle type), i.e. trickle charge the battery in conjunction with the desulphator until a peak is reached and then disconnect the charger and let the desulphator 'pull' the battery voltage down. Depending on the state of the battery this could be several days.
9. If you have a voltmeter, the simplest indication of the battery improving will be the maximum voltage achieved after charging each time. This should rise noticeably during the first week and then reduce over time.

The next best reliable indicator is putting a load on it, i.e. put it in a vehicle and try starting it – probably the simplest 'load test' around.

10. I cannot emphasise enough the importance of ensuring the voltage level doesn't drop below 12.0V (10.5V for a deep cycle) at any time. It is almost certain irreversible battery damage will result.
11. Ready built desulphators have been bench tested prior to despatch.
12. These devices are supplied with integral reverse polarity and thermal overheat protection.

If you connect the device to the battery the wrong way around the internally mounted PPTC type fuse will react. Just remove the desulphator from the battery, allow a short period for the 'fuse' to cool and connect the correct way around.

The thermal overheat operates automatically when the case internal temperature reaches 60°C. The device will cut-out automatically and the RED LED will flash indicating the cause of the 'failure' to be overheating.

Once the unit has cooled below 60°C it will resume operation automatically.

If your unit does this frequently please let us know.