Procedure to recover deeply discharged ODYSSEY® batteries

For safety reasons many 6V/12V automotive/commercial type chargers will not turn on when an attempt is made to charge any style 12V battery that has a very low open circuit voltage (OCV). For example, a charger set for 12V charging connected to a 12V battery that has an OCV less than 4-5V, the charger senses it is connected to a 6V battery (which it is not) and therefore will not initiate a charge because it is set for 12V charging.

Your ODYSSEY battery has very high recharge efficiency and is robust enough to accept a charge even when its OCV is less than 5.0V. As long as the charger's output voltage does not rise above 15.0V the following procedure should allow you to bypass the charger's safety circuit and safely attempt to recover (charge) the ODYSSEY Battery. One note; ODYSSEY batteries that have been operated over a prolonged period of time and have not routinely been charged back to near or full charge will have developed sulfated oxide and can be more difficult to recover. In some cases, if the sulfation condition is well developed especially over time, it may not be possible to achieve full capacity. This condition is not a warrantable claim as it is not the result of a factory manufacturing defect but abuse or neglect in the application.

With the charger connected and even though the battery has a low OCV and the charger does start up, then a full recharge should be attempted. Monitor the battery temperature and if it should get hot to the touch (125+°F, 51°C), then stop charging and allow the battery to cool. Once at room temperature, reengage charging and allow to fully charge. Test for capacity and if still low, discharge to 10.0V and recharge again and retest.

If the charger will not engage, the following procedure can be used –

1. Using jumper cables connect the positive terminal of a healthy battery to the positive terminal of the dead ODYSSEY battery; then connect the negative terminal of the healthy battery to the negative terminal of

the ODYSSEY battery. If you are using the battery in a car, do not run the engine during this operation.

2. Monitor the voltage of the ODYSSEY battery with a good quality voltmeter until it reads 11.5-11.8V.
3. Disconnect the jumper cables on the ODYSSEY battery, then quickly connect the positive cable of the charger to the positive terminal of the ODYSSEY battery; then connect the negative cable to the negative terminal of the ODYSSEY battery.
4. The charger needs to be of a minimum charge current capability per the chart below.
5. Plug the charger into standard wall AC power and start monitoring the battery voltage.
6. Make sure the charge voltage at the battery terminals does not exceed 15.0V and continue charging for approximately 8 hours.
7. Disconnect the charger and allow the battery to sit open circuit with no connections for 12 hours or install the battery and turn the headlights on for 2 minutes to remove the charging surface charge voltage. Turn the headlights off, allow the battery to rest for a few minutes and read its voltage. A fully charged ODYSSEY battery will read 12.84V verifying a full charge.

Battery Models	Minimum Charging Amperage
PC310 – PC680	6 amps*
PC925 - PC1200	12 amps*
PC1220 – PC1750	25 amps*
PC1800-PC2250	50 amps*

* Recommended charging amperages are for single (boost) recovery charge cycles, not for repetitive deep cycle charging.