Topic: **Battery Maintenance, EVERYTHING you NEED to know!**
New URL: http://forums.tdiclub.com/showthread.php?p=315458

Posted by **Drivbiwire** (Member # 1366) on September 07, 2001, 05:36:

With the 2000 Auto TDI's and ALL 2001+ TDI's VW is now using a load shedding alternator. How this works is the alternator just like the air conditioning system shuts off when the power demand from the engine exceeds a certain value predicated on the throttle position sensor and the ECU's perception of the scenario.

What this means is the battery more than ever has to carry at times the high load systems on the car such as the cooling fans, Glow plug heater circuits (manual transmissions), Glow plugs (after glow phase), Blower, headlights, seat heaters, radio, CD player, windshield wipers, Windows etc for short periods of time.

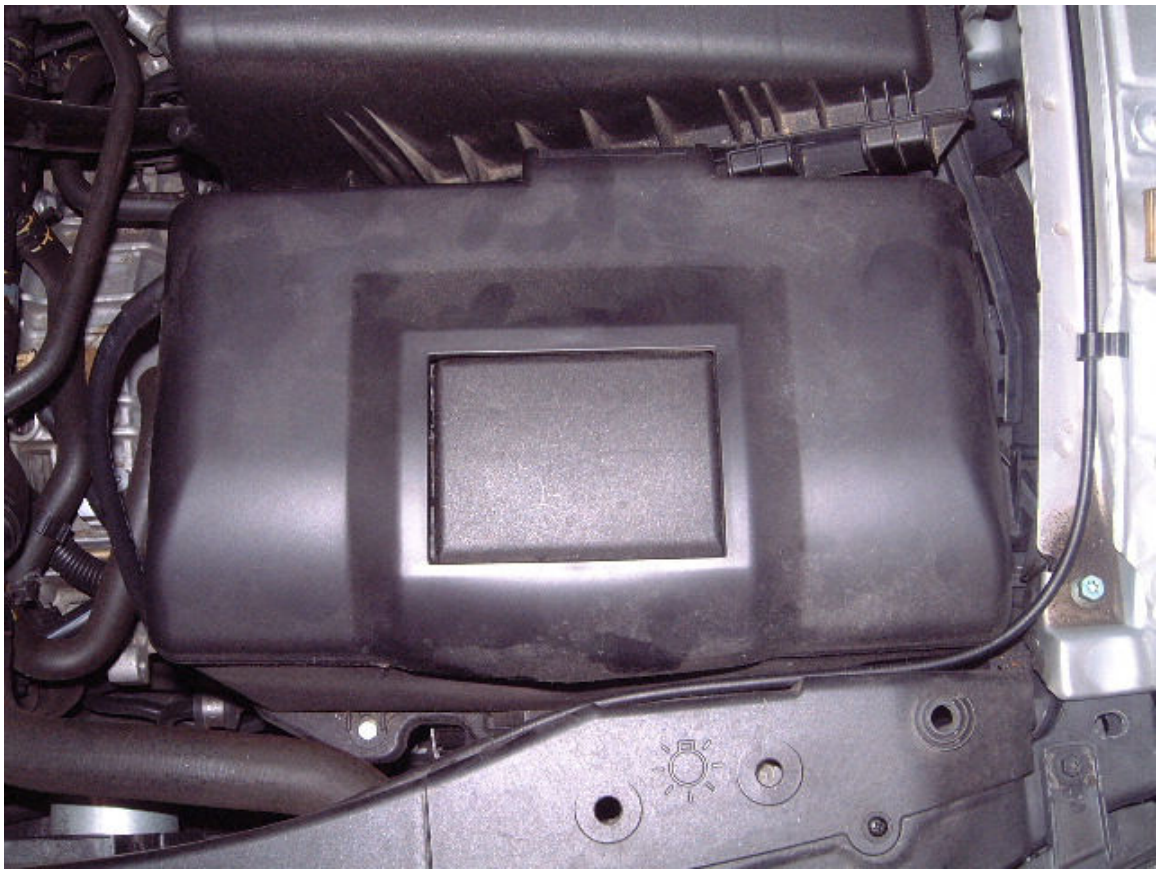
Most people do not realize what the function of an alternator is in a modern automobile. The alternator it only installed to "Maintain" the battery and "NOT" to recharge it. The reason is the alternator is a a dumb device that will not put out any extra effort to charge the battery. This is regardless of how long or how often you drive your car. It's possible to drive 6 hours on the highway and still have a battery that is depleted. The reason is it takes 24-48 hours for a battery to fully charge using a standard 10 amp charge rate. A battery charger can force amperage to the battery bringing the batteries stored charge back to normal.

With VW batteries they require the addition of water from time to time. All you need is some inexpensive distilled water to top the cells off. The reason you need distilled is that the normal amounts of calcium and other minerals found in tap water can coat the lead plates preventing the battery cells from accepting a full charge. Also if the mineral deposits get large enough they will eventually short out the cell killing the battery.

In the simplest of terms the only way to measure a battery charge is to check each of the 6 non-interconnected cells with a hydrometer. These can be purchased at any automotive store for around $.99 (expensive huh). You simply insert the tester into the cell using it like a turkey baster draw some acid into the tester. Most have 3-4 colored balls. The idea is to float all the balls in the tester. If any do not float this means the battery is not fully charged and additional charging must be performed.

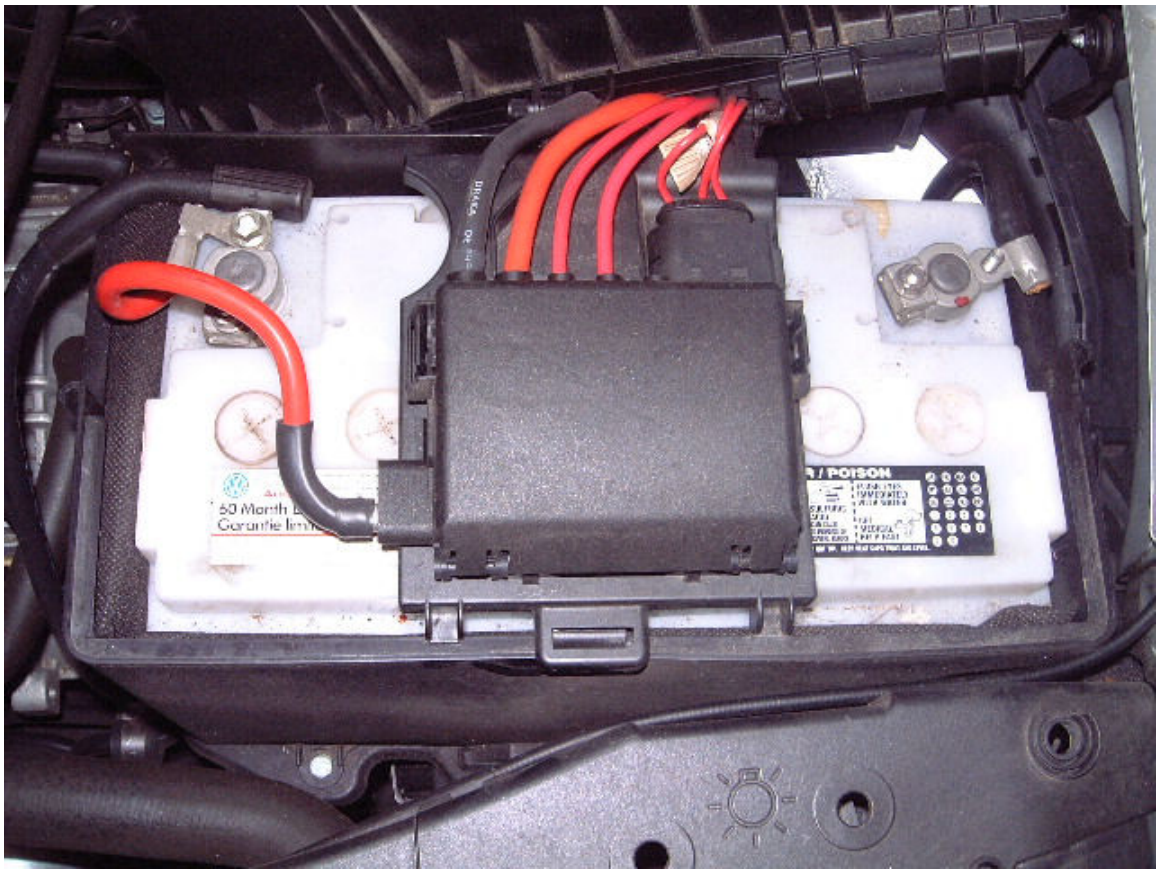
I'll go through the basic steps of testing the battery. I took some pictures of my 2000 Auto TDI. It has all the goodies and every time I check it the battery has been 75% charged. I usually have to add just a bit of water to bring the cells up to the full mark.

**Here is a picture of the battery and the battery cover. On the 2000-2001 they have a lift top, on the 2002 they use a cover that lifts vertically up and off the battery.**

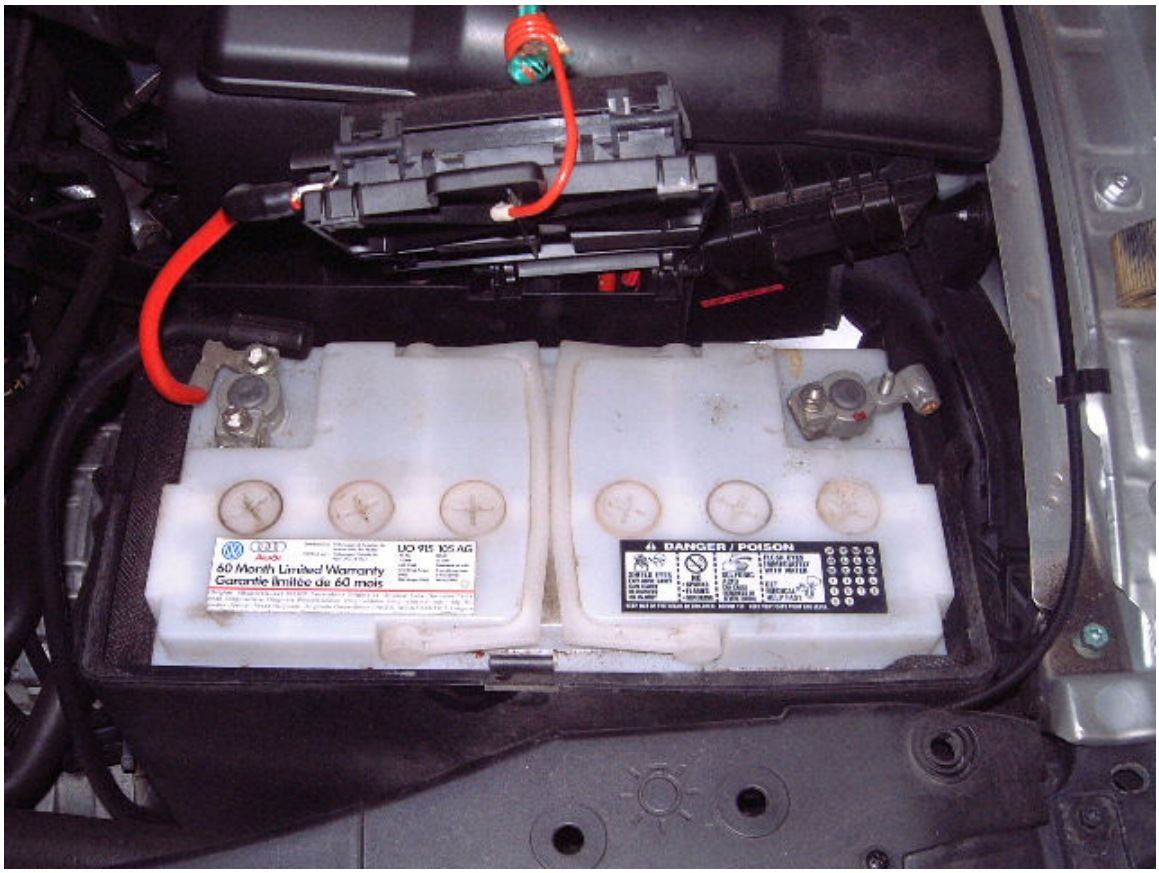


**Here is a picture of the battery and the battery cover. On the 2000-2001 they have a lift top, on the 2002 they use a cover that lifts vertically up and off the battery.**

**Raise the cover or lift it off depending on the type of cover you have. If you have the type that lifts straight up there is a release button on the passenger side of the battery, if you look you will see it it's about the size of a quarter.**

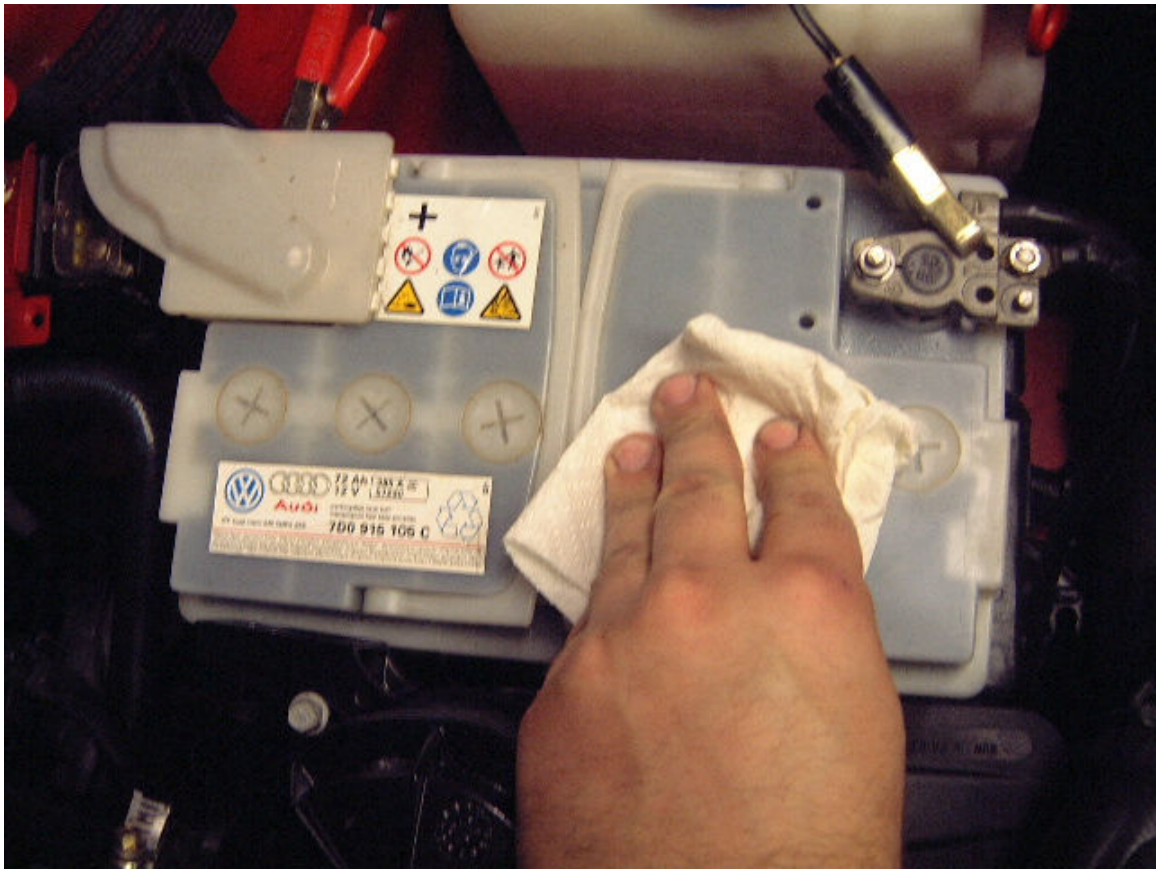


**Here is a picture of the battery with the cover removed and the fuse holder secured**

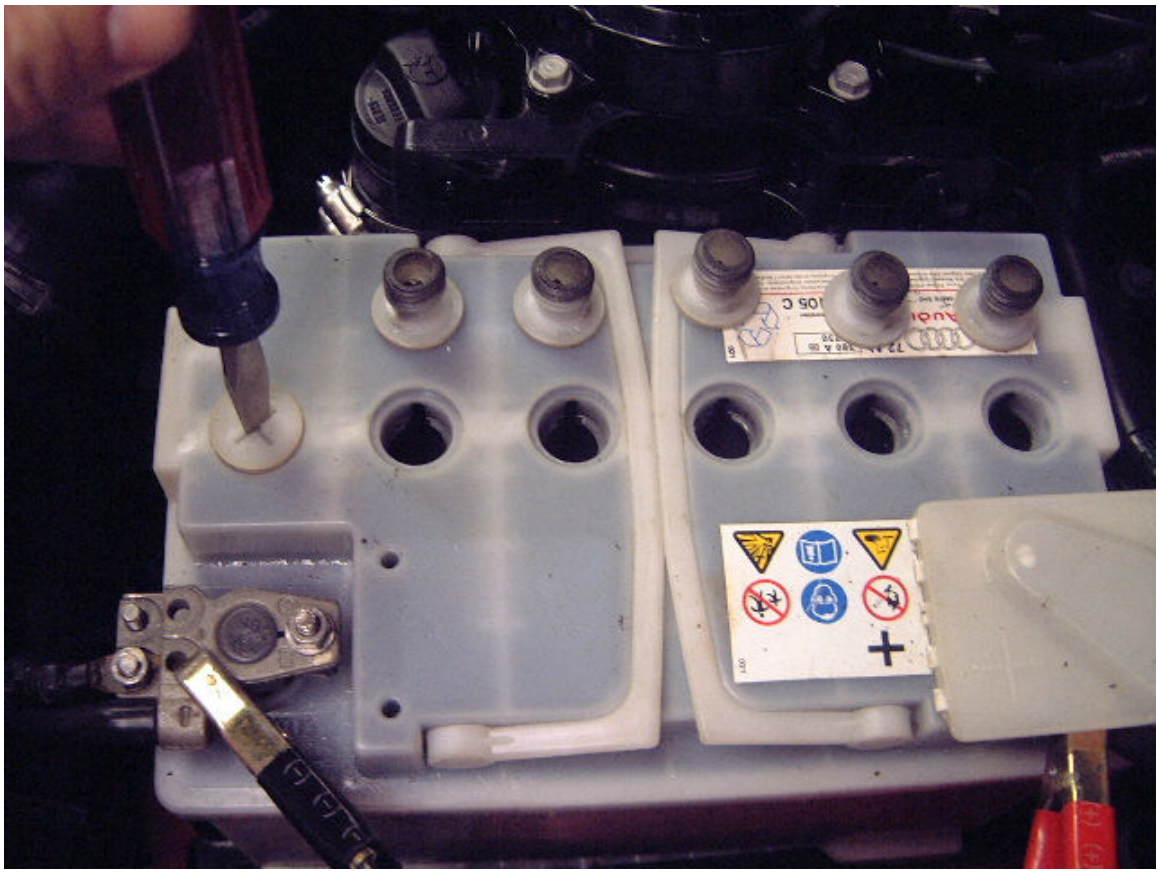



**Lift the fuse holder up and off the battery top. I secured mine with a little bungee, if it works use it right?**

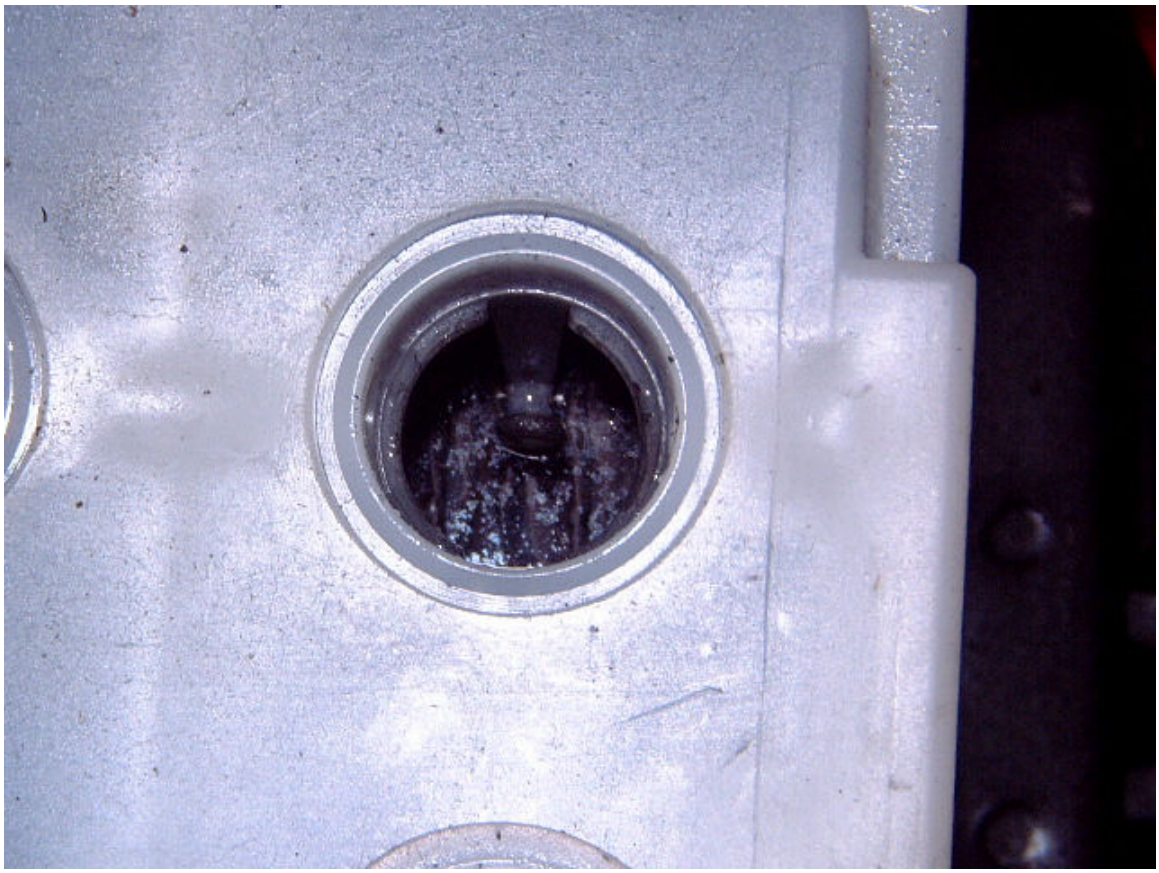
**Next and very important! wipe clean the top of the battery! You don't want any contaminants falling into the battery or worse yet something that can neutralize the acid! If you notice my battery does not have the white strip of sticky paper over the holes. If you have this just use a razor to cut the paper around the individual filler ports to unscrew the caps. The caps on your battery are identical to these they are just covered with the paper.**



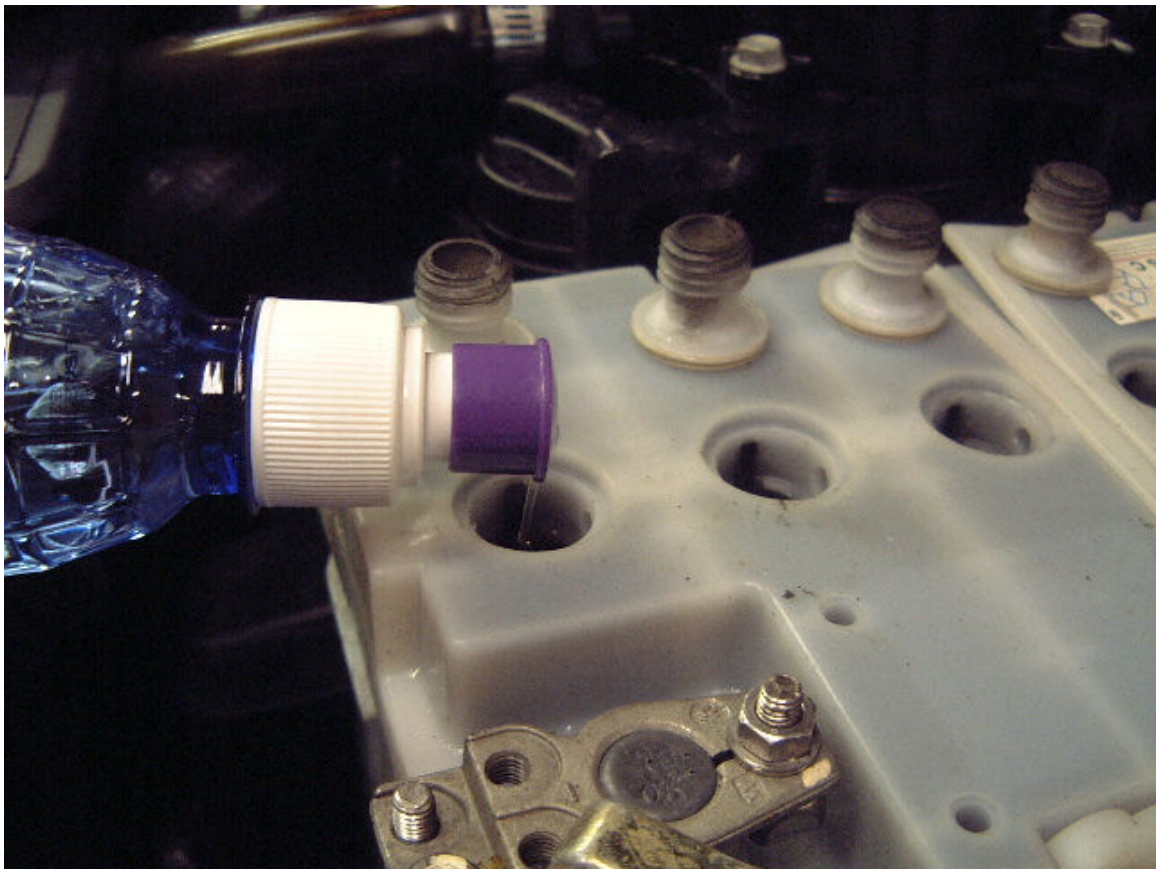
**Just to play it safe use eye protection when doing this, this is sulfuric acid and it can do some VERY serious damage to your eyes if it should splash! Now unscrew each of the caps and set the o-ring sealed caps on the battery as depicted.**



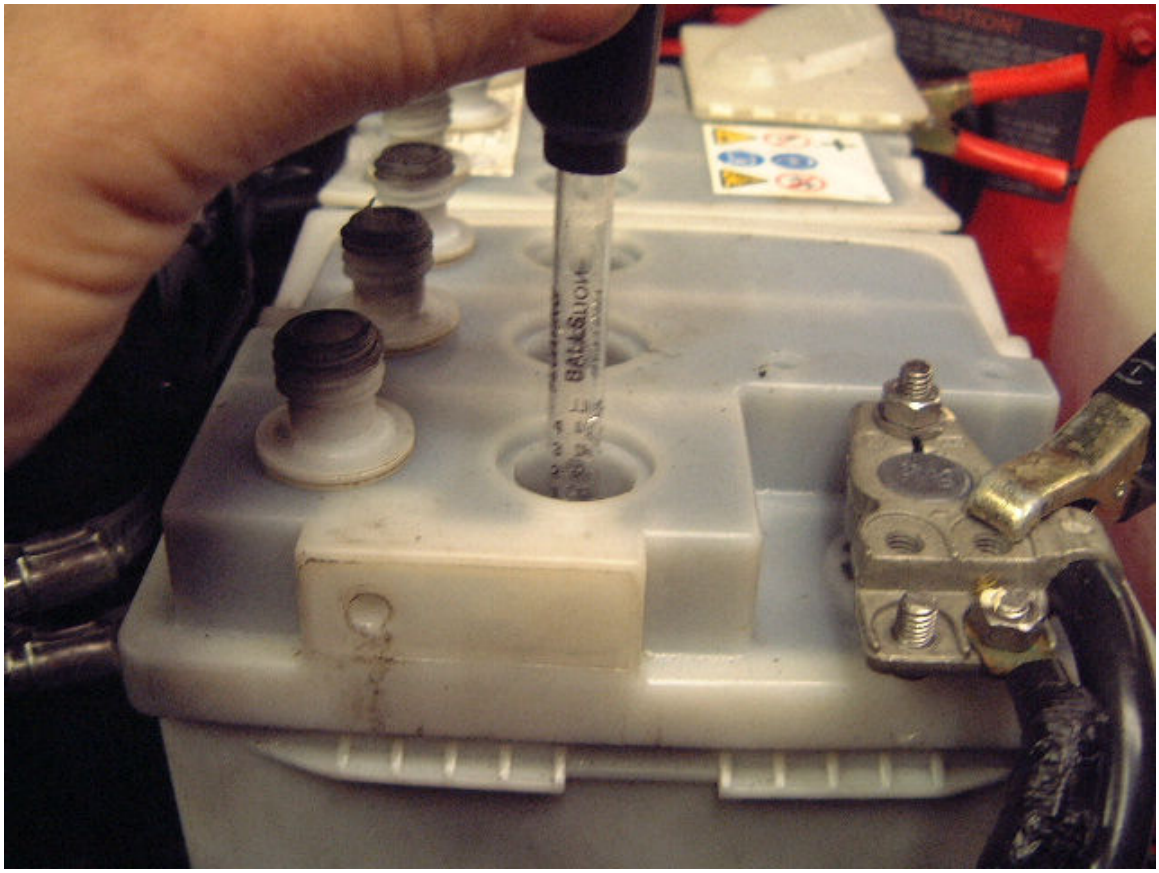
**If you look into each of the cells this is what you will see. My battery has a little "L" that marks the highest level that the acid should be at. The acid level should touch the "L" but under no circumstances should the cell EVER be topped off. If it is the acid will leak out of the battery and corrode everything in the engine bay!**



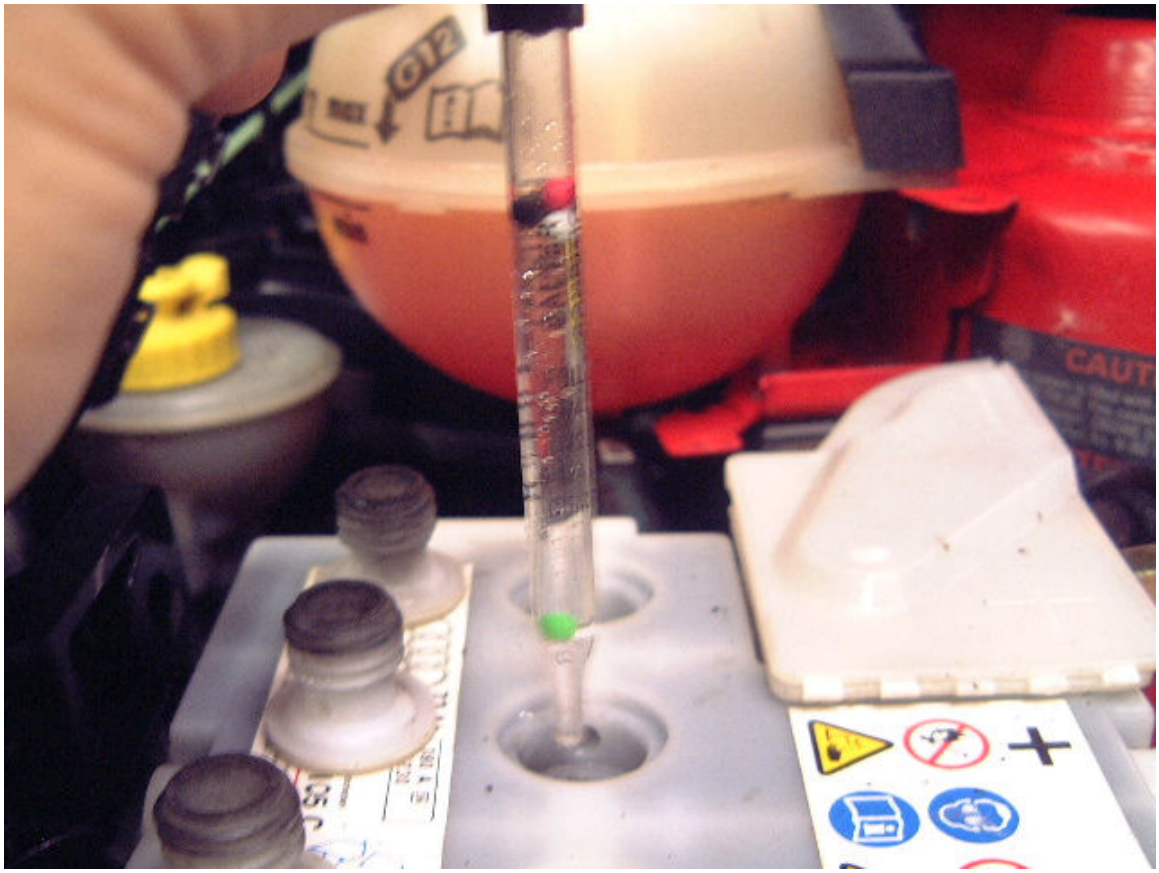
**If the water needs to be added put some in a water bottle with a pop top and use it to dispense the water into each of the cells. You could also use a real turkey baster to pour the correct amount of water into the cells.**



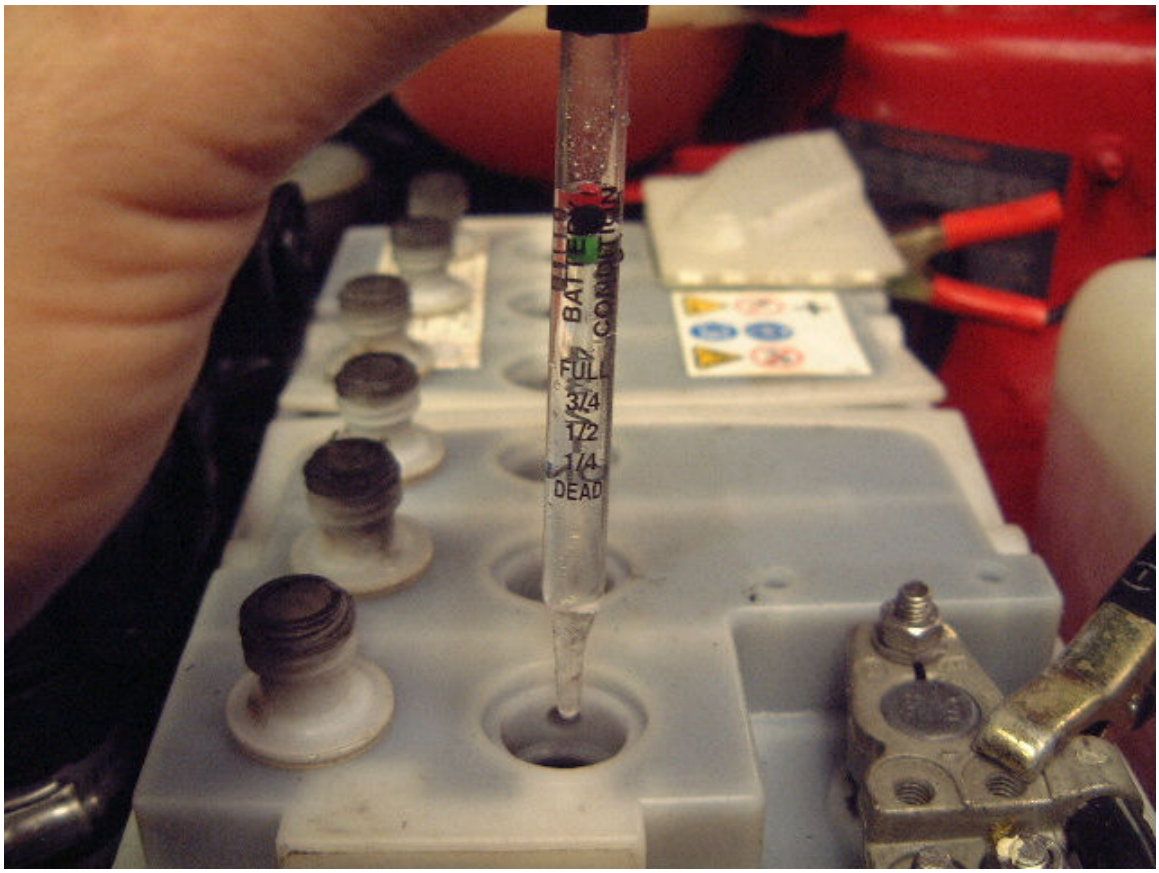
**Take your $.99 hydrometer like mine and using it like a turkey baster check each of the cells.**



**As you can see my battery is not fully charged despite being driven on a regular basis. The green ball that is not floating indicates that the battery is only 75% charged. If I had to "guess" leaving the battery on the charger for 24 hours will bring all the cells up based on this test.**

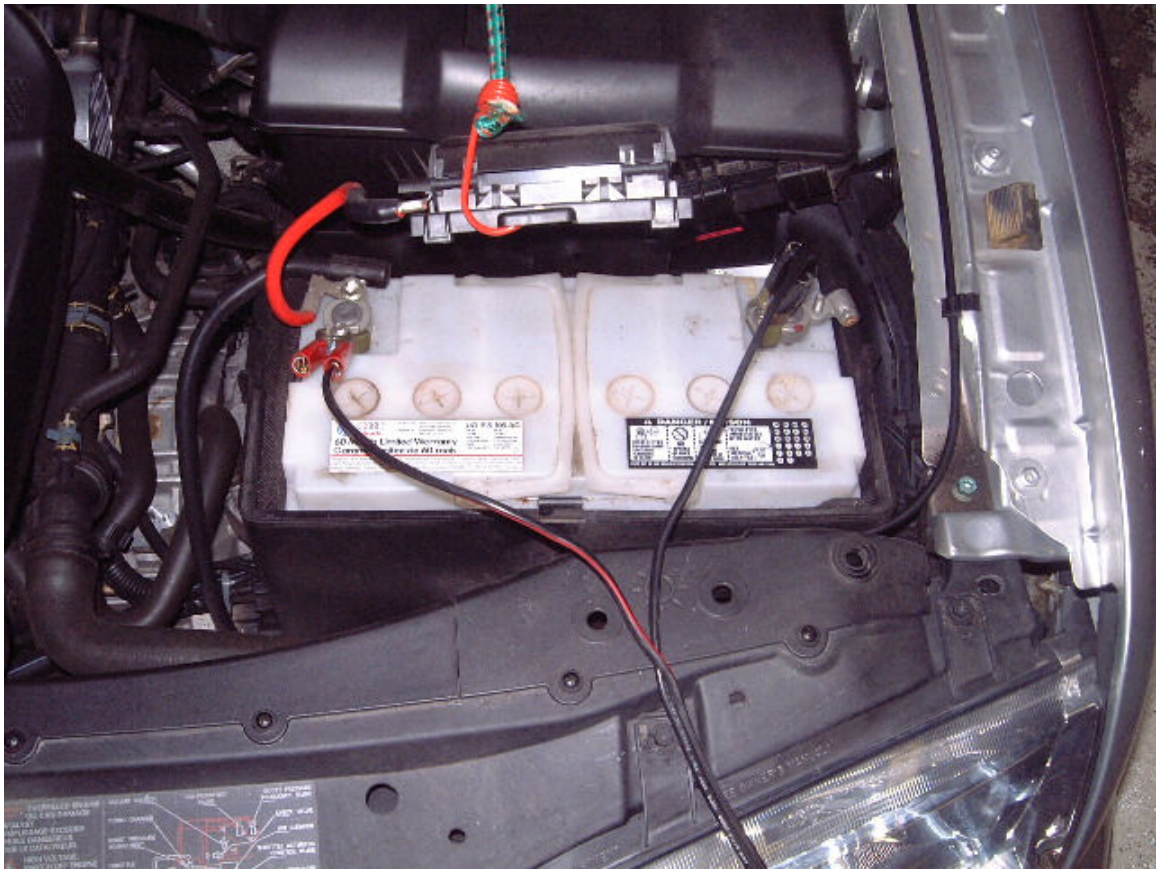


**On this cell all the balls are floating. This only indicates that this cell is fully charged. It's hard to see but there are four balls in the tester that are floating at the top.**



**When your done testing and filling the cells close up the battery and get your battery charger. I got mine from Walmart for $20.00. It has 2 amp trickle, 10amp charge and 50amp start assist as well as a selector for deep cycle marine batteries (don't use that setting on an automotive battery).**

**Here is a picture of the battery charger hooked up. Its also possible to charge the battery with the cover on. I will shoe that picture next.**



**This is a picture of the battery charger connected without having to remove the battery cover**

I hope this helps out
DB