Battery Safety

Any device that stores energy can be dangerous. There is a lot of explosive power in a gallon of gasoline, but when handled with some knowledge its use can be made relatively safe. Batteries are no different in that with the proper precautions and safety practices, they can be handled in a safe manner. Working with batteries poses two hazards: potentially explosive gases that are given off during discharging and charging, and sulfuric acid, which is highly corrosive. The following is an 8 -point safety list that will help keep these two hazards under control:

1. **ABSOLUTELY NO SMOKING, SPARKS (FROM STATIC ELECTRICITY OR OTHER SOURCES) OR OPEN FLAMES AROUND OR NEAR BATTERIES.** Batteries can produce hydrogen gas that is highly flammable when combined with oxygen; if these gases ignite the battery case can rupture or explode.

2. **On Conventional batteries, loosen vent caps when charging and ventilate the entire charging area.** A build-up of hydrogen and oxygen levels within the battery, or in the area where it's being charged, can create a fi re hazard.

3. If a battery feels hot to the touch during charging, stop charging and allow it to cool before resuming. Excessive heat damages the plates, and a battery case that's too hot during charging can rupture.

4. On Conventional batteries, **REMOVE THE RED SEALING CAP FROM THE VENT ELBOW.** Never put the red sealing cap back on the battery once it is removed. If sealing cap is left on, gases trapped inside the battery can explode. For the same reason, make sure the vent tube isn't kinked or blocked. See illustration on page 15.

5. Properly connect battery chargers leads to the battery: positive to positive, negative to negative. Unplug the charger, or turn it off before connecting or disconnecting the leads. This will minimize the chance of creating sparks when connecting or removing the leads from the battery.

6. **Always wear eye protection, protective gloves and protective clothing when handling a battery.**

7. Clean up acid spills immediately, using a water and baking soda solution to neutralize battery acid (1 lb. baking soda in 1 gal. water).

8. Make sure battery acid fill containers are clearly marked and work areas are well lighted. If **sulfuric acid is swallowed or splashed in the eyes, take immediate action.** Sulfuric acid in the eyes can cause blindness. While the diluted sulfuric acid used as electrolyte can burn the skin, this type of injury is generally less serious. Ingesting, or swallowing sulfuric acid can cause serious internal injuries or death.

Remedies for contact with sulfuric acid:

■ **External** – flush with water

■ **Internal** – drink large quantities of milk or water, followed by milk of magnesia, vegetable oil or raw, beaten eggs. Call a poison control center or doctor immediately

■ **Eyes** – flush for several minutes with water, get immediate medical attention

Battery Fill Procedure

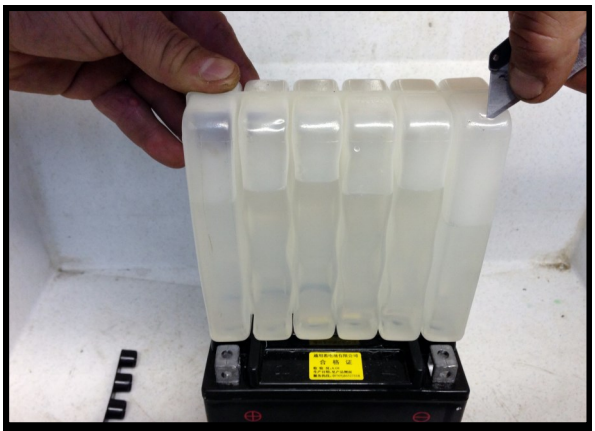
1 Place battery in a sink. Remove the battery cell seal.

4 Place the battery acid container on top of the battery. Be sure to properly align the container with the battery cells.

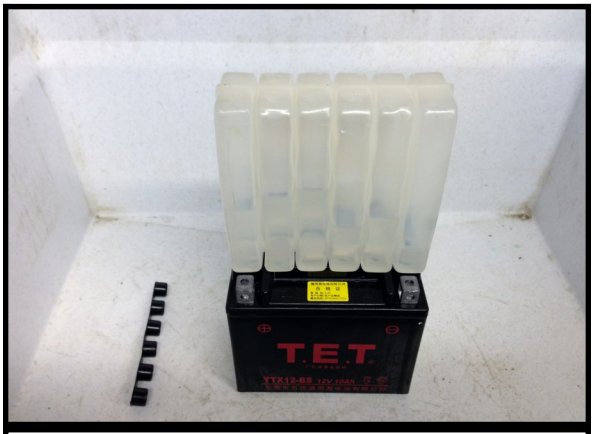
2 Carefully open the package containing the battery acid and hardware. Set the hardware package aside for later use.

5 Gently press the battery acid container into the battery cells. This will puncture the foil caps and allow the battery acid to flow.

3 Remove the plastic cap from the battery acid container. IMPORTANT: DO NOT DISCARD THE PLASTIC CAP. Set the plastic cap aside for later use.



6 The battery acid container needs to be vented to allow the acid to flow from the container easier. With a sharp knife or thumbtack, poke a hole in the TOP of each of the battery acid container's cells.



7 Allow the battery acid to fill the battery while putting the go kart together or at least for 30 minutes. This will also allow the battery to absorb the acid and vent properly.

8 Remove the acid container from the top of the battery and properly discard. Set the plastic cap (from Step 9) into the top of the battery making sure that ...

9 Make sure cap lines up correctly. If not properly aligned, the cap can become damaged and it will not fit properly. Firmly press cap into top of battery.

10 After making sure that the cap is properly inserted, gently tap the cap into place. Make sure to work your way from one end to the other and the repeat until the battery is flush to the top of the battery.