BATTERY TESTING

The goals of battery testing are: To determine if some of the batteries need to be replaced (Goblin and F24) and for F24 Teams to determine which two of their six batteries are the best, for Racing, the next best pair for Qualifying, and the third best, for Practice.

The testing procedure is a bit exacting, but worth it if the Team wishes to reach maximum performance.

1. Each battery to be tested should be labeled with a letter or number for identification.
2. If possible, batteries should be stored and TESTED up off the floor to keep the temperature more stable.
3. The battery to be tested must be fully charged. An overnight charge is ideal but an eight hour charge is OK if the charger indicates the battery is fully charged.
4. Ideally this should be done at a temperature of 25 degrees Centigrade, 77 degrees Fahrenheit. If batteries are stored in a classroom, they are more likely going to be at about 20 C or 68 F. Measure the temperature, if possible, with an Infrared Thermometer. Point the thermometer at the metal terminal of the battery to be consistent.
5. The battery should be allowed to set about one hour after being removed from the charger to “Rest” before testing.
6. Set the volt meter to the 20 volt DC scale for the test.
7. Test the voltage of the battery and record result with the battery’s letter/number ID.
8. Find the Voltage of the battery on the chart below. Don’t attempt to test a battery at less than 15C or 59F.

25C or 77F 20C or 68F 15C or 59F

Perfect 12.88 12.76 12.64

Near Perfect 12.73 12.61 12.49

80% 12.70 12.58 12.46

70% 12.57 12.45 12.33

60% 12.49 12.37 12.25

50% 12.39 12.27 12.15

Note that a perfect, new, battery is likely to test at less than the Perfect battery voltage listed on the first charge cycle. Batteries require two charge/discharge cycles to reach near the maximum performance.

For Goblins, batteries testing at less than the 80% level should be considered for replacement.

For F24s, batteries testing at the 70% level should be for Practice only. Each Team should have at least one pair of batteries that test at the 80% level or above for Races. If not, the lowest two batteries should be considered for replacement.

Hint: If a Team wishes to be fully competitive at the Races, they should have their race batteries as close to the perfect temperature of 25C or 77F as practical. Green Prix are generally held in cool weather. Don’t set the batteries intended for the race on cold pavement. Consider leaving them in the cab of a vehicle to keep them somewhat warm until it is time to install them for the race. After use, recharge batteries as soon as practical to preserve performance.

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