

Model 6068 Operation

Please carefully review this entire document information before proceeding.

TO CHARGE 12 VOLT BATTERIES:

- a. This charger is designed to charge all standard 12 volt automotive batteries.
- b. There are four types of batteries; standard, recombination, low maintenance, and maintenance free.
 1. "Standard" batteries have both negative and positive plates of lead-antimony alloy.
 2. "Recombination" batteries are sealed and have no free electrolyte. The gases produced in charging are "recombined" and recycled to the plates and separators. If charged at voltages higher than recommended, the gases will not be able to recombine quickly enough to prevent permanent water loss from the battery.
 3. "Low maintenance" batteries have one plate made from lead-antimony and one made from a lead-calcium alloy. This reduces gassing and water loss.
 4. "Maintenance free" some batteries have both plates made from lead-calcium alloy, others (AGM) have separators that trap the electrolyte, and others (GEL) have electrolyte in a gel-like substance. With these battery types it is very important to limit the maximum voltage level.
- c. If two types of batteries are to be charged at one time, do not exceed the lower of the recommended end of charge voltages.
- d. As a group of batteries are charged, the output current of the charger will decrease and the output voltage will rise.
- e. For fast charging, keep the voltage adjusted to the top of the acceptable range, being careful not to exceed the current rating of the charger (110A).
- f. Unsupervised charging (overnight) is not recommended unless the operator is familiar with the rate settings in order to make the adjustments necessary to keep the battery voltage below the maximum level without supervision. As the current drops, the voltage will climb. The number of batteries, temperature, and the state of charge of the batteries will all effect the charging characteristics. Experience will be the best teacher when it comes to your particular set of charging circumstances.
- g. If the batteries are to be "float" charged for more than 24 hours, the voltage should be turned down to 13.5 or less to prevent excessive gassing of the batteries.

PARALLEL CHARGING

- a. Connecting the batteries in parallel allows a person to charge a number of batteries at one time using only one 12 volt charger.
- b. The amount of charge being put into the batteries should not exceed the rating of the charger (110A).
- c. The amount of charge that each battery receives will depend upon the state of charge, condition, and temperature of all the batteries being connected together and other factors.
- d. Connecting discharged batteries to a rack of fully charged batteries will not cause the charged batteries to become discharged.
- e. When a rack of batteries have various states of charge, the most discharged battery will receive the largest amount of charge first. Once it is charged up equal to another battery, then the two will charge together at an equal rate.

The coarse and Fine rate adjustments on the front of the unit are used to govern the output. There are a number of factors that determine where these selector switches should be, such as the number of batteries connected, the type of batteries connected, the state of discharge of the batteries connected, etc. For this reason there is no standardized setting for which to charge the batteries.

***** It is extremely important to know what type of batteries you are charging so that the unit can be adjusted to prevent overcharging and damage to the batteries. *****

Here are some steps to get you started:

1. Make sure the power switch is OFF
2. Connect only 12 volt batteries to the unit (or two 6 volts in series), be mindful of the battery polarity!
3. Determine the type batteries connected and the maximum acceptable charging voltage.
4. Set both selector switches to the LO position
5. Turn the POWER switch ON
6. Observe the charging voltage and make adjustments using the COARSE and FINE rate switches to bring the voltage on the meter to approximately $\frac{3}{4}$ to $1\frac{1}{4}$ volts less than the maximum acceptable charging voltage but not exceeding the maximum (110A) charger current rating. The COARSE rate switch will make larger changes in the output and the FINE rate switch will make smaller changes in the output. Start by using the COARSE rate switch first. The more batteries you have connected, the higher you will need to set the COARSE rate switch. When the voltage is close to where it needs to be, use the FINE rate switch to "fine" tune the voltage to the exact place you want it.
7. Periodically monitor the "on charge" voltage to make sure the charger does not exceed the maximum acceptable voltage. The batteries may be disconnected when they reach their maximum acceptable voltage or by check the specific gravity.

8. If a more complete charge is desired, then when the charger reaches the maximum voltage level lower the output $\frac{3}{4}$ to 1 Volt by turning down the rate switches. This can be continued several times until the voltage levels off (does not rise over time).
9. When the batteries have reached a full state of charge, turn the power switch to the OFF position and disconnect the batteries. Care should be taken because the clamps could still be energized by other batteries in the circuit.
10. Batteries should be monitored for temperature; this is particularly important when charging older used batteries or trying to recondition batteries. Battery should never get too hot to touch or more than 130°F.

The following Charts are for reference only; output can and will vary due to AC Voltage levels and tap settings.

