

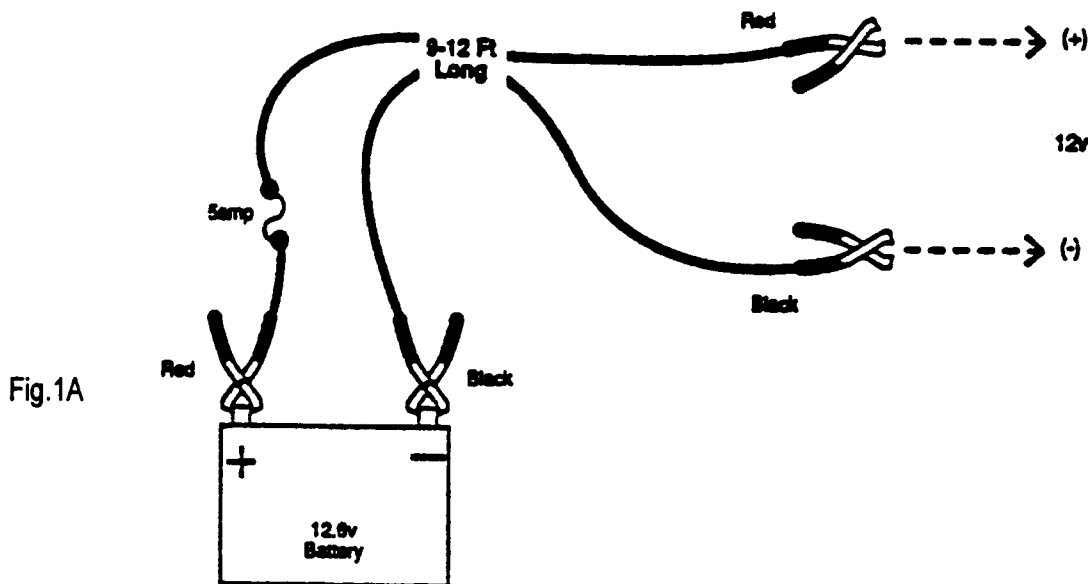
HOW TO PROTECT COMPUTER MEMORIES

Most vehicle computers will use a 12 volt input spare to maintain memory circuits. This should be verified before using the following procedures. Some vehicles using 24 volt systems while running could also use 24 volts to maintain computer memory circuits. You must know which one is used on the vehicle you are servicing. Some vehicles could use both a 12 volt and 24 volt source to keep memories alive. In that case, you will use both of the following methods given here at the same time.

The first step is to turn the ignition circuit, and any accessories that are connected to the HOT-AT-ALL-TIMES circuit, to the OFF position. Then do the following:

12 VOLT SYSTEMS: Connect a spare 12 volt battery to the vehicle's electrical system BEFORE replacing the vehicle's batteries. Construct a simple two-wire test lead with a large red and black alligator clip at both ends and a five amp fuse soldered into the red wire.

This Two Wire Test Lead is shown in Figure 1A. Leads should be 9 to 12 feet long.



Connect one end of the red alligator clip to the positive terminal of a fully charged spare battery. Then connect one end of the black alligator clip to the negative terminal. Then connect the red alligator clip to the 12 volt output terminal on the alternator. Finally, connect the black alligator clip to a good chassis ground away from the battery compartment.

24 VOLT SYSTEMS: Connect a spare 24 volt battery pack to the vehicle's electrical system **BEFORE** replacing the vehicle's batteries. Construct a simple Two Wire Test Lead with a large red and black alligator clip at both ends and a five amp fuse soldered into the red wire. The Two Wire Test Lead is shown in Figure 1B. Leads should be 9 to 12 feet long.

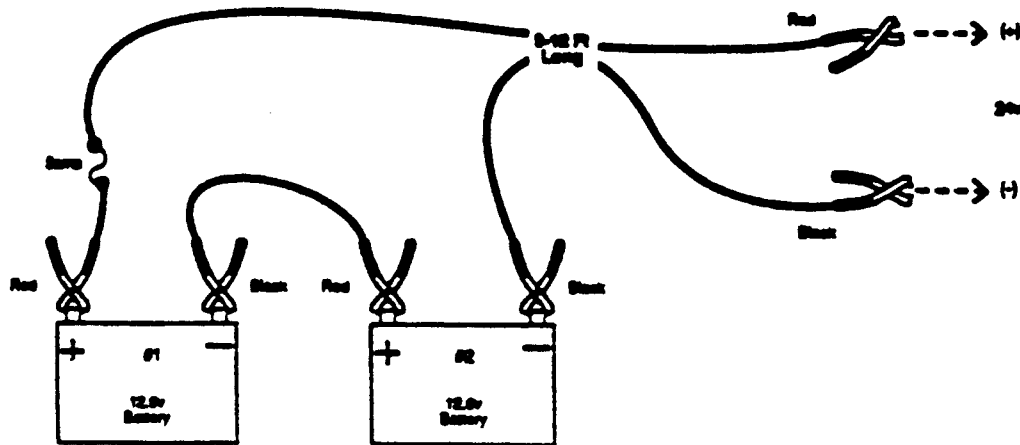


Fig.1B

Place two batteries next to each other. Connect a short jumper wire from the negative terminal of Battery #1 to the positive terminal of Battery #2. This places the batteries in series.

Then connect the red alligator clip of the wire test lead to the (+) terminal of Battery #1 and the black alligator clip to the (-) terminal of Battery #2. This puts 24 volts at the other end of the Two Wire Test Lead. Connect the other end of the red alligator clip to the 24 volt output terminal on the alternator. Now, connect the black alligator clip to a good chassis ground away from the battery compartment.

With either the 12 or 24 volt battery back-up system in use, all memories will stay powered up while the vehicle batteries are being replaced.

WARNING: REMEMBER THAT THE POSITIVE BATTERY CABLE IN THE VEHICLE IS STILL "HOT" WHILE THE SPARE BATTERY IS CONNECTED.

If the positive battery lead in the vehicle is accidentally grounded, the 5 amp fuse will blow in the Two Wire Test Lead and electrically disconnect the spare battery. All computer memories will power down. Replace the five amp fuse and reconnect the spare battery before proceeding. Even though memories have powered down and data is lost, the spare battery pack will still protect the memories from voltage spikes as the battery cables are re-connected.