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INSTRUCTIONS FOR INSTALLING PART # 40102 AND # 40103

Dual battery kit operation;

The selector switch has three positions, which operates the system.

Switch centered; the main battery is used only for vehicle operation. The solenoid is not activated and the auxiliary battery will not be charged.

Switch activating green light position; the main and auxiliary batteries are connected for charging and starting and the green light is illuminated when the key is in the on position.

Switch activating the red light position; the main and auxiliary batteries are connected together and the red light is illuminated at all times regardless of ignition switch position.

This short list of tools will make your installation a fast and easy process. We strongly recommend that you read the instructions and review the installation process before beginning your installation. This will help to familiarize you with the kit and any extra tools not listed that you may need for your specific application. Parts that you will or may need which are not included in this kit are listed on the parts list sheet in the back. All parts not included are available through your dealer.

½ inch drill motor	½ inch drill bit
¾ inch drill bit	5/16 inch drill bit
Wire cutters/strippers/crimpers	One (1) small hammer
One (1) small 12 volt test lamp	One (1) center punch
Standard combination wrenches	

Additionally you will need any special tools to remove your stock battery cables. These tools will vary with the make and model of your vehicle. Please ensure that you have the necessary tools before beginning the installation.

The following installations are in seventeen (17) steps. These numbered steps must be followed from one (1) through seventeen (17) without skipping number sequence.

Our Cirkit Boss Good Samaritan Dual Battery System will contain the following parts:

- 1 Isolator solenoid
- 1 Mode controller switch and harness
- 2 Indicator lights
- 2 Circuit protection fuses
- 1 Bag containing mounting hardware, tie wraps and connector terminals

This list is for parts needed and/or recommended for your Dual Battery conversion but not included in the kit:

1. Battery
2. Auxiliary battery tray
3. Heavy-duty oversize battery cables to prevent voltage drop.
4. Auxiliary battery hold down for secure remote mounting of your extra battery.

Always be sure to avoid pulling or stretching the wires. Always route wires away from moving objects and heat sources as these can cause kit failure and/or fire hazard. Such areas are found around the steering joints, foot pedals and hand brake, heater/AC controls, etc. The exhaust and cigarette lighter are a few sources of heat.

BEFORE STARTING WORK ON THE ELECTRICAL SYSTEM REMOVE THE BATTERY NEGATIVE CABLE TO PREVENT SHOCK AND FIRE HAZARDS. RECONNECT ONLY WHEN NEEDED FOR TESTING AND DISCONNECT WHEN THAT STEP IS FINISHED.

Step #1

Find a suitable location for the solenoid close to the main battery. It is best to locate it in line with the positive battery cable, since this cable will be connected to the isolator solenoid. **Make sure the isolator will make a good ground through it's mounting!**

Step #2

Mark two (2) points for the solenoid mounting bolts and center punch these points. Now drill two (2) 5/16 inch holes at these points. **MAKE SURE YOU DON'T DRILL INTO ANY WIRES, FUEL LINES OR BRAKE LINES ON THE BACK SIDE OF THE MOUNTING SURFACE.**

Step #3

Mount the solenoid, making sure to place one (1) of the bolts through the solenoid ground strap, using the two (2) mounting bolts provided. Be sure to use the lock washers to ensure a safe and vibration resistant mounting.

Step #4

Disconnect your main battery positive cable at this time and replace it with two new cables of suitable length. One (1) must run from the battery to the isolator solenoid and the other from the starter solenoid to isolator solenoid. **Note:** Both cables are secured to the same side of the isolator solenoid. These connector points are large 5/16 inch copper studs. Please use a ½ inch wrench to support the inboard nut on the 5/16 inch post to prevent damage to the isolator solenoid while installing the cables. (This is not necessary on the water-resistant models.) The other post should be blank of wires at this time and will be used later for the auxiliary battery. **NOTE:** It is recommended that you upgrade to a larger cable size at this time. A minimum of #2 cable is recommended. (Factory battery cables are #4 or #6 and are for minimum light duty cable.)

NOTE: ON GM, CHRYSLER AND SOME JEEP / AMC VEHICLES THE STARTER SOLENOID IS MOUNTED ON THE STARTER. ON FORD AND SOME EARLY JEEP / AMC VEHICLES THE STARTER SOLENOID IS MOUNTED ON THE FENDER, DO NOT REMOVE THE STARTER SOLENOID. RUN A SEPARATE CABLE FROM THE STARTER SOLENOID TO THE MAIN BATTERY SIDE OF THE ISOLATOR SOLENOID TO COMPLETE YOUR CIRCUIT.

Step #5

Moving into the driver's compartment, we will now mount the mode control switch and indicator lights. Find a suitable location to mount the control switch. (This should be convenient to the driver and in easy reach but out of the way of accidental operation or damage.)

Step #6

Check to make sure that the mounting location has ample room for switch mounting and wire routing directly behind it. Mark the mounting spot for drilling.

Step #7

Center punch the marked spot and drill the mounting hole when you are sure the location is correct. Mount the mode control switch with a nut on the back side and the tightening nut on the outside.

Step #8

Install the indicator lights into the dash, or easily seen surface, by drilling a 5/16" hole for each light and carefully routing the attached wires through the hole from the front.

Step #9

Attach the red and red/black wires of the control switch to the wires of the red indicator light and the green and green/black wires of the control switch to the wires of the green indicator light using the red (pink colored for water proof systems) butt connectors supplied. Attach the black wire of the switch to a good ground. Note; Cut off any excess wire from the control switch before splicing.

Step #10

Use the 12 volt test lamp to locate a power source that is hot with the key in the run and start position only. It will be necessary to reconnect the main battery cables for this test. These locations can be found at the ignition switch or fuse block on most vehicles. On GM vehicles, the fuse block usually has an open connection marked "Ign." or "Run." On Ford and other vehicles the installer will usually have to locate a wire at the key switch or fuse block. To test the wire, connect one side of the 12 volt test lamp to ground and the other to the wire. The lamp should light only when the key is in the run and start position. If it is not on in both these positions the kit will not function as advertised and usefulness of the system will be reduced. It is very important that this connection does not have power with the key off or in the accessory position. Connect one (1) of the enclosed fuse holders to the power wire located above. **Note:** Your part's bag contains a "T" tap for the connection at the fuse box. Disconnect the main battery negative cable to prevent shock and/or fire hazard while installing system.

Step #11

Route the loose end of the control harness wire loom to the wire connection point located in Step #10 above. Completely strip the **green** wire away from the other two (2) wires and cut to the desired length and connect to the wire connection point found in Step #10. Be sure to use one of the fuses provided in the kit on this connection to ensure proper circuit protection and reduce fire hazards.

Step #12

Locate a suitable factory hole in the firewall and route the control wire loom through the hole, bare ends only. **Note:** If no factory hole exists you can drill a 3/4 inch hole in a safe location to route the wires through. Always use the grommet supplied in the kit when drilling your own hole to prevent possible short circuit and fire. **Failure to use the grommet could void your warranty!**

Step #13

Route the control loom to the isolator, taking care to avoid the fan, carburetor linkage and other movement areas. Also, avoid the exhaust manifolds and EGR valve. Use the furnished split loom dress-up package to cover the wires at this time. Loosely secure the loom with the tie-wraps included in the kit. **DO NOT TIE IT DOWN SOLID AT THIS TIME.**

Step #14

You are now ready to connect the control wire loom to the isolator solenoid. First make sure the loom is not in the way of any obstacles as described above.

Step #15

Install the **yellow** wire to the coil positive connection (the small terminal opposite the terminal with the black ground wire attached) at the isolator solenoid. The **brown** wire connects to the opposite side of the isolator solenoid as in Step #4. Install a fuse between the isolator solenoid and the **brown** wire using a large 5/16 inch eye terminal and butt connector for this. **Note:** Water-resistant kits include heat shrink sealing terminal eyes. Use a hair dryer or other heat source to shrink the terminal covering for a waterproof seal.

Be sure to use the remaining fuse provided in the kit on the *brown* wire connection to ensure proper circuit protection and reduce fire hazards.

Step #16

You will now need to mount the auxiliary battery tray in a suitable location, along with your auxiliary battery. Run a cable from the ground Neg. (-) post to the frame or engine. If you mount it to the engine, you will need to leave enough slack for the motor mount movement. Do not connect this cable to the battery yet. **Note:** Use a minimum of #2 cable for your auxiliary battery hookup. If you are unsure of your cable size please call for technical assistance. **Note:** Cables are not furnished in kit.

Step #17

Next, route a cable from the auxiliary battery positive post to the isolator post for the auxiliary battery. This should be the large 5/16 inch post with only one (1) small wire (brown) from the control wire harness connected to it. Take care to avoid the fan and other hazard areas as in previous steps. Please use the ½ inch wrench to again support the inboard nut to prevent damage to your isolator solenoid, this is not necessary on the water-resistant models.

Your system is now installed. You should connect the two (2) battery negative terminals at this time. Check that all connections are tight and continue to the system test.

SYSTEM TESTING

1. Place the mode control switch in mode two (2), this is the middle switch position. The red and green indicators should not light; indicating the system is off.
2. Turn the key to the accessory position first then the run and start positions. **Note:** The indicator should remain off in all key positions.
3. Move the mode control switch to the position with the green light illuminated. This is the mode one (1) position. In this position the indicator should be green with the key in the run and start position and off with key off or in the accessory position.
4. Place the system in mode three (3), this is the switch position opposite mode one (1). In this mode the indicator should shine RED always, regardless of the key position.

NOTE: Anytime the indicator is shining RED or GREEN the control wire connection on the isolator solenoid should have power. Inversely it should not have power when the mode indicator is off.

If these tests prove positive your system is fully functional. If for some reason the system fails one of these tests please call for technical assistance. **Please read your operating instructions before operating your vehicle.**

We recommend that you use Optima batteries or an equivalent with our Dual Battery Systems.

SUGGESTED CONNECTION POINTS FOR ACCESSORIES, WHEN USED WITH OUR DUAL BATTERY SYSTEM.

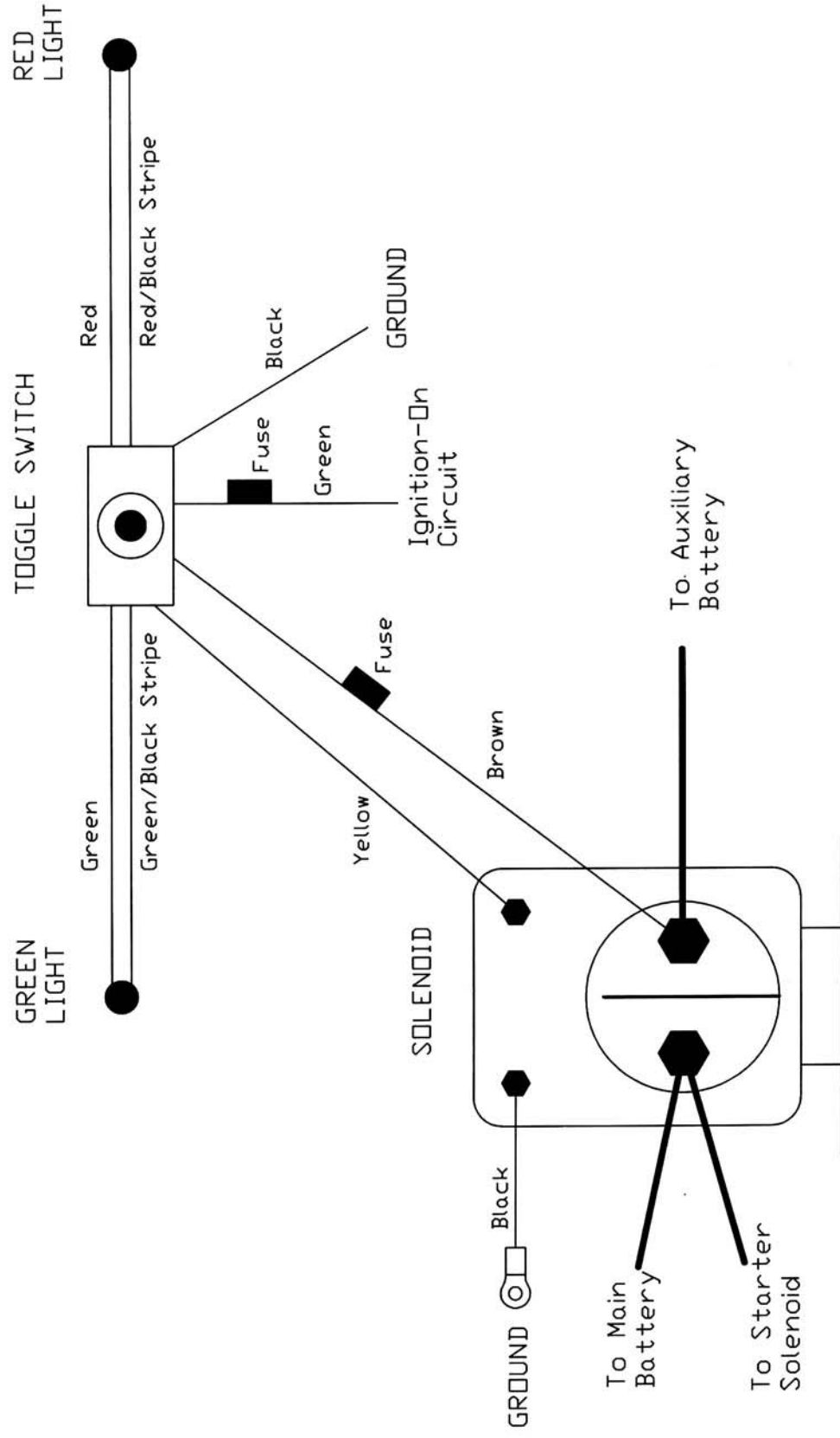
Winches

Connect your winch positive power cable to the main battery. This is to allow the alternator to power the winch along with the main battery when in mode two (2). Winching in mode two (2) will hold the auxiliary battery in reserve for jump-starting. This is important if you stall the motor or turn the key off after winching without allowing the main battery to recharge. **Note:** It is best to run the engine 5 to 10 minutes after a winching operation to recharge the main battery. Connecting the winch to the main battery is opposite from all other dual battery systems. When using the Cirkit Boss Good Samaritan Dual Battery System you must connect the winch to the main battery for optimum winch operation.

Stereos and Amplifiers

Connect your car radio and amplifiers to the stock, main, battery. This will allow the system to turn off with the key. By connecting the stereo in this manner you will make sure that the stereo will not drain the main battery by being left on accidentally when exiting the vehicle. Always connect the stereo to the accessory side of the key.

40102/40103 CirKit Boss Wiring Schematic



Painless Performance Limited Warranty and Return Policy

Chassis harnesses, fuel injection harnesses and Striker ColdShot are covered under a lifetime warranty.

All other products manufactured and/or sold by Painless Performance are warranted to the original purchaser to be free from defects in material and workmanship under normal use. Painless Performance will repair or replace defective products without charge during the first 12 months from the purchase date. No products will be considered for warranty without a copy of the purchase receipt showing the sellers name, address and date of purchase. You must return the product to the dealer you purchased it from to initiate warranty procedures.