

H. TROUBLESHOOTING GUIDE

Brakes are slow to respond

- Re-bleed the trailer brakes and actuator.
- If the trailer is equipped with drum brakes, re-adjust the drum brakes to the trailer manufacturer's recommended running clearance.
- Slow response can be caused by trailer wiring that is too small. See Section C. ELECTRICAL INSTALLATION REQUIREMENTS – WIRE SIZE IS CRITICAL / LOW VOLTAGE CONDITION.
- Slow response can be caused by brake lines that are too restrictive on the trailer (i.e. small diameter / long length restrictive fittings / routings).
 - The trailer brake lines must be at least 3/16 inches in diameter / steel tubing is preferred over flexible hoses.
 - If it is not practical to locate the HydraStar™ unit closer to the brakes, consider increasing the size of the trailer brake lines.

Unit will not run or the unit will not shut off

- Verify that the trailer and tow vehicle are wired according to the electrical schematic shown on page 5.
- Perform the following checks to determine if the unit is functioning properly:

Step 1

- With the unit running and brake pressure applied, determine that a minimum of 8.5 volts DC are reaching the HydraStar's™ black wire.
- Check to see if the white ground wire runs directly to the tow vehicle ground. IT MUST NOT BE GROUNDED TO THE TRAILER ONLY. IT IS IMPORTANT THAT THIS GROUND WIRE RUNS DIRECTLY TO THE TOW VEHICLE'S BATTERY GROUND. NO EXCEPTIONS.

Step 2

- Detach all wires from the HydraStar™ leaving only the blue, black, white, and yellow or blue w/ white striped wires. It is important that the unit is disconnected from any other wires going to the towing vehicle or breakaway switch and breakaway battery. Failure to do so may result in a faulty test.

Step 3

- Using a 12 volt battery, connect the white wire to the negative (-) terminal of the battery.
- Connect the black wire to the positive (+) terminal of the battery.
- The motor should not run.
- If the motor runs, the unit needs repaired.

Step 4

- Leave the white wire connected to the negative (-) terminal of the battery.
- Connect the blue and black wires together to the positive (+) terminal of the battery.
- The motor should run and the unit should pressurize.
- If this does not occur, the unit needs repaired.

Step 5

- Leave the white wire connected to the negative (-) terminal of the battery.
- Connect only the yellow or blue w/ white striped wire to the positive (+) terminal of the battery.
- The motor should run and the unit should pressurize.
- If this does not occur, the unit needs repaired.

Step 6

- If the unit checks OK, reconnect the wires leading to the trailer plug and repeat steps 2 through 4. If you do not get the same results as before, the problem is in the trailer wiring or the electronic brake controller.

Breakaway test procedure

- Pull the breakaway switch on the trailer.
 - If the unit runs and builds pressure, the problem most likely is a defective in-cab controller or defective wiring between the tow vehicle and HydraStar™ unit.
 - If the unit runs but will not build pressure, the problem most likely is a defective proportional valve in the HydraStar™ unit and the actuator should be returned for repair.

- If the unit still does not run after the breakaway battery is fully charged, verify that the voltage between the white wire and the yellow or blue w/ white stripe wire is at least 12 volts.
 - ◆ If the voltage is less than 12 volts, either the breakaway switch or the breakaway wiring is defective.
 - ◆ If the voltage is greater than 12 volts, the HydraStar™ actuator should be returned for repair.
 - ◆ After completing the above steps, reset the breakaway switch.

Trailer brakes too aggressive

- Reduce the gain setting on the in-cab electronic brake controller.
- Check brake adjustment.

Trailer brakes not aggressive enough

- Increase the gain setting on the in-cab electronic brake controller.

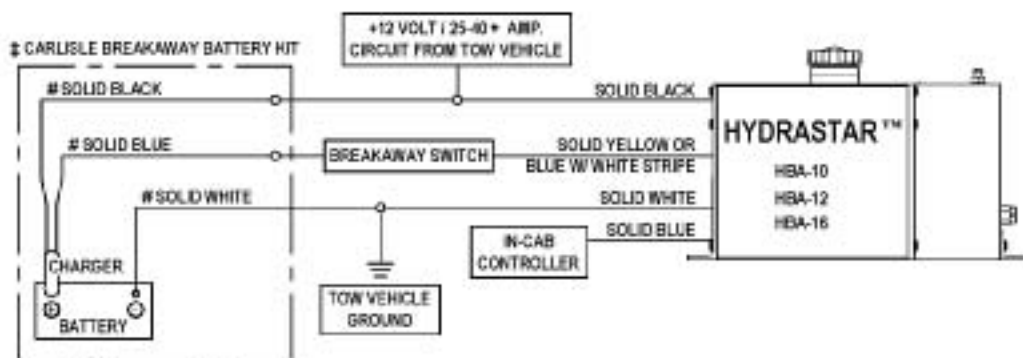
Clicking sound comes from unit on a repetitive basis

- Make sure the brake controller is on Carlisle's approved list. See Section C. ELECTRICAL INSTALLATION REQUIREMENTS – REQUIRES AN ELECTRONIC IN-CAB CONTROL.

Brakes will not release

- Loosen bleeder or brake line connection. If brakes remain locked, out-of-round drums, worn, jammed, or broken shoes or pads most likely caused the problem.
- Make sure the in-cab controller is on the "approved list". (See Section C. ELECTRICAL INSTALLATION REQUIREMENTS – REQUIRES AN ELECTRONIC IN-CAB CONTROLLER.) Check to see if the in-cab controller is putting out power when the brakes are not being used.
- Disconnect trailer plug and positive terminal on breakaway battery on the trailer. If the brakes release, the problem is electrical.
 - Check to see if an adapter plug is used. If an adapter plug is being used, make sure the pins from one plug go to the corresponding pins on the second plug. Make sure power is going to the HydraStar™ as shown in the service manual. (See ELECTRICAL SCHEMATIC below.) Try running current direct by using jumpers from a fully charged 12 volt battery, and from the in-cab controller output wire.
 - If the HydraStar™ works, reconnect the positive lead to the breakaway battery. If the HydraStar™ does not function correctly, the problem is in the wiring of the breakaway battery circuit, or if equipped with a trickle charger, the wiring of the charger may be incorrect. Do not rely on wire color codes. Use the schematic in the HydraStar™ service manual. (See ELECTRICAL SCHEMATIC below.)
 - In some cases, the problem is in the vehicle plug wiring. Make sure the plug pins go to the proper terminals on the trailer plug.

ELECTRICAL SCHEMATIC



* = COLD TEMPERATURE (BELOW 0° F) APPLICATIONS REQUIRE 40 AMP.

‡ = THIS ELECTRICAL SCHEMATIC REPRESENTS THE USE OF A CARLISLE BREAKAWAY BATTERY KIT. PLEASE NOTE THAT IF YOU ARE USING A DIFFERENT BREAKAWAY BATTERY KIT, THERE MAY BE A DIFFERENT NUMBER OF WIRES AND THE CHARGING +12VOLT, BREAKAWAY, AND GROUND CIRCUITS MAY BE IDENTIFIED BY COLORS OTHER THAN THOSE DEPICTED IN THIS SCHEMATIC. PLEASE CONSULT THE MANUFACTURER'S INSTRUCTIONS TO IDENTIFY THE AFOREMENTIONED CIRCUITS.

= CIRCUITS FOR THE CARLISLE BREAKAWAY BATTERY KITS WILL BE IDENTIFIED AS FOLLOWS:

CHARGING +12 VOLT CIRCUIT - BLACK
 BREAKAWAY CIRCUIT - BLUE
 GROUND CIRCUIT - WHITE