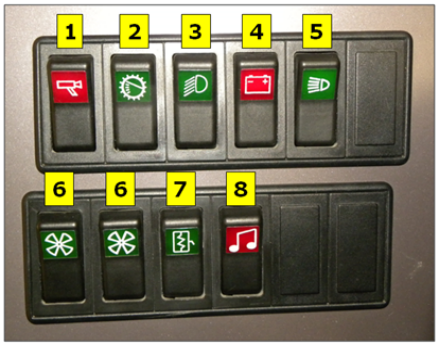
Battery Boost
Use and Troubleshooting

Overview

The battery boost is typically used when the Chassis battery is too drained to start the Trek – it allows power from the House batteries to flow to the Chassis battery, enabling you to start the Trek. See below for instructions.

In the case where the Generator is started by the House batteries, if your house batteries are drained and you therefore cannot start the generator, you can also use the battery boost. See below for instructions.



The switch that controls the flow is called the boost solenoid. This solenoid is normally in an Open state, isolating the Chassis battery from the House batteries. When the Battery Boost switch on the dashboard is pressed and held, the solenoid is activated (closes), allowing power from the House batteries to flow to the Chassis battery. See below for a diagram of the solenoid and wiring.

On the 1998 2830 Trek, the switch is wired so that the power to activate (close) the boost solenoid comes from the House batteries.

Using the Battery Boost to Start the Trek

Start the generator to help maintain a charge on coach batteries. Alternatively, connect to shore power to maintain a charge on coach batteries

1. Turn the ignition key to On, but do not try to start
2. Press and hold the dashboard Boost switch (#4) for a few minutes before trying to start the engine
3. Keep the Boost switch depressed as you crank the engine
4. Release the switch once engine starts

Using the Battery Boost to Start the Generator

(assuming the House batteries are normally used to start the generator)

1. Start the Trek and keep her running
2. Have a helper press and hold the Boost switch while you start the generator
3. Release the boost switch once the generator starts

TROUBLESHOOTING

If the battery boost does not appear to be working, follow these steps. These tests assume that the chassis battery and house batteries both have a good charge (12+ volts).

1. Confirm that the Boost fuse is good – lift the engine "hood" door and look to the right for the Accessory fuse box. The Boost fuse is the 5 amp fuse, at the very top

2. The battery boost solenoid is mounted behind the House batteries, on the inside of the frame rail. Raise the Trek and secure with jack-stands and chocks. Get under the Trek and locate the solenoid.
3. Have a helper turn the ignition key to On and press the boost switch on the dashboard – you should hear a click from the solenoid. If you do not hear anything, use a multimeter to check across the two small terminals at the top of the solenoid while the boost switch is being pressed – there should be 12vdc (plus or minus)
    a. If not, check each small terminal to chassis ground while the boost switch is still pressed – one of them should have 12vdc and the other should read zero or very, very low.
        i. The terminal that does not read 12vdc is the ground side. Use the multimeter to check for continuity between the wire attached to that terminal and chassis ground. If there is no continuity (Open), then that ground wire has a break or disconnect in it somewhere. Trace it back to troubleshoot.
        ii. If neither reads 12vdc, then you need to check the dashboard rocker switch (should show a Open when not engaged and continuity when engaged), and/or the wiring to and from the dashboard rocker switch
    b. If there is 12vdc from one of the small terminals to ground but not across the two terminals when your helper presses the boost switch, clean the small terminals and connectors at the solenoid
        i. Make sure your helper has released the boost switch
        ii. One at a time, remove the wires/cables from each small solenoid terminal and thoroughly clean both the wire/cable end and the solenoid terminal with WD40 and a small wire brush. Wipe dry after cleaning and reconnect. Be careful not to make contact with either of the larger terminals – there should be 12vdc going to both and you could get shocked
        iii. Recheck the voltage while your helper is pressing the boost switch on the dashboard. If voltage is still not present, the solenoid is probably bad.
4. Your helper should release the boost switch
5. Assuming you hear a click at the solenoid when your helper presses the boost switch on the dashboard, use a multimeter to measure the voltage of each large terminal on the solenoid to chassis ground. You should read approximately 12vdc at each terminal. This test confirms the chassis battery and house batteries are connected to the solenoid.
    a. If you cannot get a reading on one or both of the large terminals to ground, follow the wire from the large terminal to confirm it is going to the Chassis battery or to the House batteries.
        i. If you find connectors/joins along the cable run, use the multimeter to check across them for continuity. If something is disconnected, correct the problem. If it is necessary to reconnect, repair, or replace cables be sure to disconnect the source battery(s) first
    b. If the cabling from the solenoid to the source battery looks good but you still cannot get a reading, it could be that the connections at the solenoid and/or battery terminals need to be cleaned – disconnect the source batteries first – if available, use dielectric grease on the terminals

i. Chassis battery – disconnect the battery ground and then the positive cable

ii. House batteries – disconnect the battery ground and then the positive cable from the batteries that supplies the solenoid.

iii. One at a time, remove the wire from each large solenoid terminal and thoroughly clean the wire connector and the solenoid terminal with WD40 and the brush. Reconnect after cleaning

iv. At the battery end, remove and thoroughly clean the cable connector and the terminal with WD40 and the brush. Reconnect after cleaning

v. House batteries – reconnect the positive cable that supplies the solenoid and then reconnect the battery ground cable

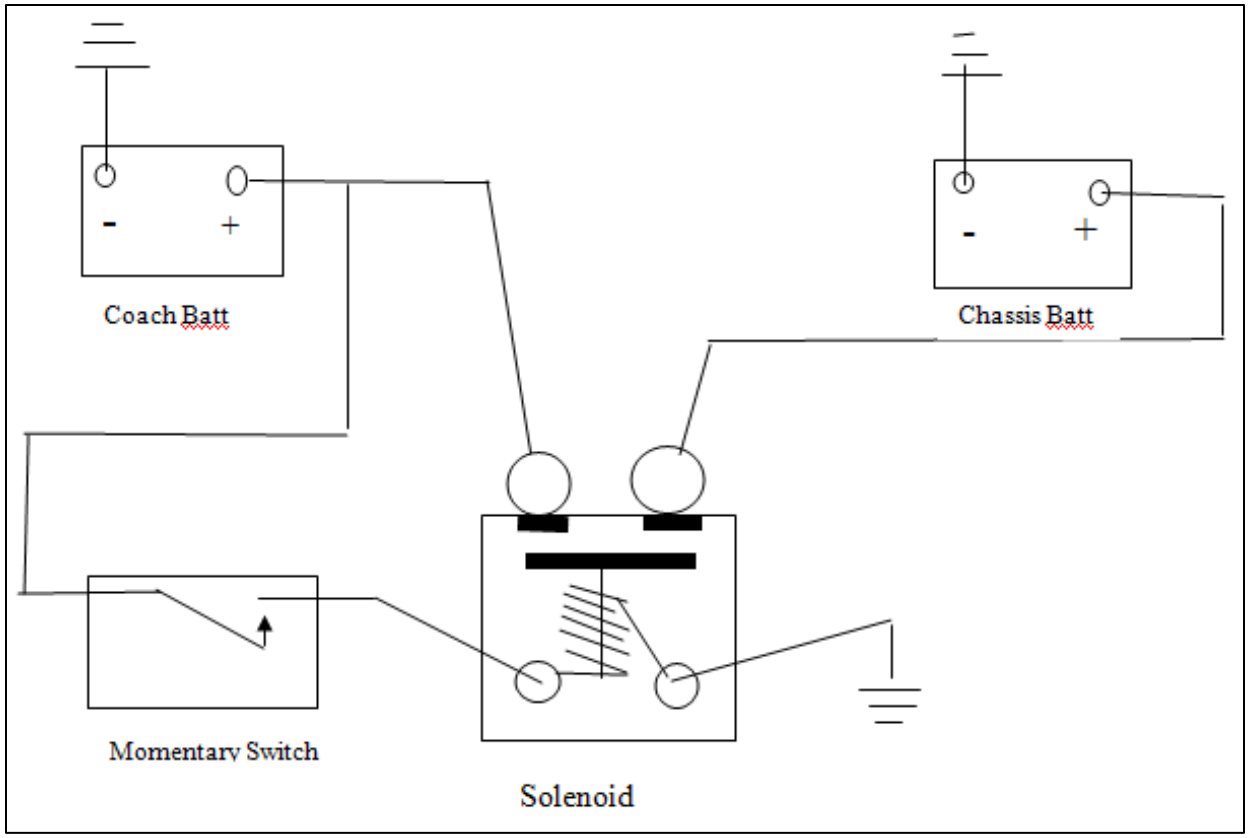
vi. Chassis battery – reconnect the positive cable and then the ground cable

vii. Recheck for 12vdc from each large terminal on the solenoid to ground. If you still do not have 12vdc, then there is a bad cable from that terminal to it's source battery. Continue to troubleshoot that issue, to include cleaning and tightening any connections, etc.

6. Once you have confirmed there is +12vdc from each large terminal to ground, connect the meter leads across the two big terminals on the solenoid to read the difference between the voltages of the two batteries. Unless the charge on one of the battery sources is much lower than the other, the voltage difference should be very small, such as .5vdc to 1vdc. This confirms that the solenoid is in the Open position, which is should be when the boost switch is NOT pressed
7. With the meter leads still across the two big terminals on the solenoid…
    a. Have your helper turn on the ignition and press and hold the dashboard battery boost switch – the voltage across the terminals should equalize and the reading should go to zero (0)vdc
    b. Then have the helper release the switch – the voltage should return to the reading you got in step b.
    c. This sequence confirms that the solenoid itself is working. If the readings do not change as described, the solenoid is probably bad. See below for the replacement part number.

Replacement Part - Original Part No. is Cole-Hersee 24059 (85 Amps). If you need to replace it, might as well get a more robust solenoid: p/n 24143 (200 Amps)

According to Lowell on Trek Tracks, here is how the boost solenoid is wired:


-
+
Coach Batt
-
+
Chassis Batt
Momentary Switch
Solenoid