

Helix Lateral Trainer Service Instructions

Topic: Troubleshooting - Console Does Not Light

Applies to HLT2500, HLT3000, HLT3500 (LED console)

Date: 8-9-2018

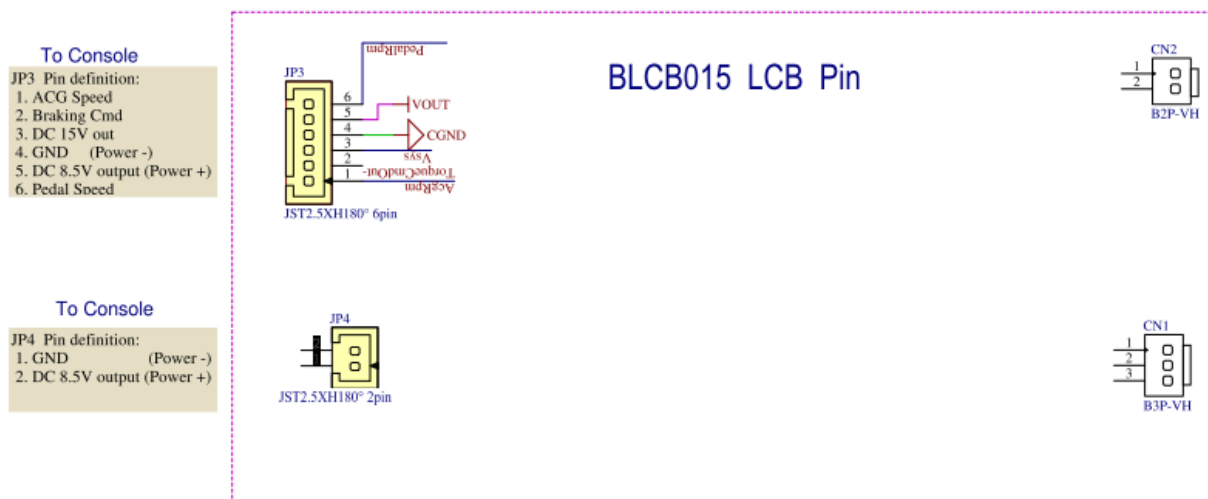
Situation: Someone exercises on the unit, but the console does not light. Normally, the console lights and remains lit while someone exercises on the unit.

Diagnostic Challenge: Trace the power supply. Where power ends, the problem begins. The following guide leads you through tests of components in the power supply system. Proceed until you find where the power supply ends. Then replace that part.

1. Generator - The source of all power in these products, the generator connects to the lower control board at CN1, a white connector with three wires -- a red, a black, and a white wire. Disconnect this connector from the lower board. Adjust your electric multi-meter to the AC power setting. Place one probe onto the end of one wire; place the other probe onto the end of another wire. Have someone exercise on the machine. While the machine is in use, there should be VAC output. The faster the user exercises, the higher the output. Test every combination of these three wires. There should be VAC output across each combination.

Past experience: Generators have been very reliable; they have rarely been the source of power supply issues.

Figure 1 - Helix Lower Control Board Connections



2. Lower control board – Input - Inspect the lower control board for burnt components. Look especially close at components near the generator connector. Are components cracked? Are there burn marks at their base? Cracked or burnt components indicate damage to the lower control board.

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3. Lower control board – Output - Test whether the lower control board is putting out power to the console. Disconnect wires at the JP4 connector. Adjust your electric multi-meter to the DC power setting. At the JP4 connector, place one probe onto one connector pin; place the other probe onto the other connector pin. Have someone exercise on the machine. While the machine is in use, there should be about 8.5 VDC output across those pins.

Past experience: Faulty lower control boards have sometimes caused power supply issues.

4. Wire Cables from the Lower Control Board to the Console - Inspect wires at the lower control board. Disconnect and reconnect these wires to make sure they are plugged in properly. JP3 connects to the lower cable. Follow this lower cable up to its connection with the upper cable, under the covers, near the serial number. Disconnect and reconnect this connection to make sure the connection is secure. Follow the upper cable up to its connection with the wires outside the console. Disconnect and reconnect this connection to inspect it. Inspect the wires outside the console. They often get pinched during assembly. Remove screws to open the console cover and check wires inside the console. These wires sometimes get disconnected, especially when consoles have been removed often.

Past experience: Bad wire connections and crimped wires are an obvious cause of power supply issues.

5. Console - If all the components tested so far are working properly, and wires are not pinched or gashed and their connections are secure, and the console does not light when someone exercises on the unit, then replace the console.

6. Batteries - Consoles on HLT2500, HLT3500, and HLT3000 require 4 AA NMH rechargeable batteries. The use of traditional, non-rechargeable batteries causes odd operational glitches and poor performance at low RPMs and high resistance. Traditional, non-rechargeable batteries can also leak battery acid inside the console. Always use four AA NMH rechargeable batteries in these consoles.

Batteries have one main function in these consoles – to stabilize the power supply. This is most evident in two scenarios:

- Without batteries, when you change the direction of rotation, the console will black out. With batteries, the console will remain lit. Batteries maintain power supply to the console while the generator isn't rotating, before it changes direction.

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- When you work out at high resistance and low RPM, the power demanded by the resistance starves the console of power, which causes it to shut off. Using AA NMH rechargeable batteries in the console greatly remedies this situation, allowing the console to remain lit longer, despite operation at low RPM and high resistance.

If you have questions or suggestions, please contact bob@helixco.com, (617) 710-8638. Thank you.