



TROUBLESHOOTING

GENERAL TROUBLESHOOTING GUIDELINES

This section outlines several tests to systematically identify and isolate the cause of problems in the electrical system and the drive train. This troubleshooting section is organized into four basic problem sections: Electrical System, Console Diagnostics, Speed Control, and the Drive Train. The first step is to identify the problem. Once you have identified the problem, perform all the tests in exactly the same order as written. Refer to the "Parts Removal and Replacement" section of this *Manual* for all disassembly and assembly instructions. To order a replacement part, or to get help with the troubleshooting process, contact our Customer Service Department at (800) 331-3578. International customers should contact their local distributor or call (206) 823-1825.

TROUBLESHOOTING THE ELECTRICAL SYSTEM

The electrical system consists of: the power supply and the console. In order to identify the component that is causing the problem, you must systematically test the system. You will need a volt-ohm meter (multimeter) to conduct portions of the following procedures. The console and power supply are not serviceable by the owner. If either of these parts are inoperable, they must be replaced. Opening the console or the power supply will void the warranty.

The Console Fails to Power Up

- A. Perform a visual check of the machine. Check the following things first:
 - 1. Is the power supply plugged in?
 - 2. Is the indicator light lit on the power supply? If it is, proceed to step #3. If the light is not on, reset the circuit breaker. If the light is still not on, replace the power supply.
 - 3. Replace or exchange your console with a console you know is good and retest the machine.
- B. Verify AC power.
 - 1. Disconnect the AC power cord from the AC wall outlet.
 - 2. Verify that the AC wall outlet is supplying the correct power in one of two ways: a) Use an AC voltmeter to verify that the AC line voltage is between 100 and 120 VAC (or between 220 and 240 VAC, if applicable) at the AC wall



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outlet; or b) Plug in an alternate AC-powered device (a lamp, for example). If the AC wall outlet is supplying the correct power, proceed to step #3. If the voltage is outside the range or if the device does not work when plugged into the AC wall outlet, consult an electrician for further assistance and then retest the AC wall outlet.

3. Plug the AC power cord into the wall outlet and proceed to the next section.

C. Verify DC power.

1. Make sure that the AC power cord is plugged in and that the AC wall outlet is delivering the proper voltage.
2. The indicator light should be lit. If it is, proceed to step #3. If the indicator is not lit, reset the circuit breaker. If the indicator light is still not lit, replace the power supply and test the new power supply.
3. Disconnect the cable from the DC power connector located on the bottom cover. Use a DC voltmeter to verify 10-16 VDC at the end of the DC cable. Pin #1 is positive and pin #2 is negative. Proceed to step #5 if the VDC is within the range. Replace the power supply if the VDC is outside the range and test the new power supply.
4. Remove the right side cover. Reconnect the DC power cable to the machine. Locate the relay/resistor circuit board located just inside the frame, midway between the top and bottom steps (refer to Wiring Diagram 1). There are three red indicator lights along the bottom edge of the relay assembly circuit board. They are labeled, from top to bottom: Field, Power, and Relay. Ensure the black and white wire power connector (labeled J2 on the relay resistor circuit board) is securely connected to the relay resistor circuit board.
 - a. The Power light should be lit. If it is, go to step #6. If it is not, disconnect the power connector from the J2 position on the relay assembly circuit board (refer to Wiring Diagram 2). Use a DC voltmeter to measure the VDC at the power connector. Hole #1 (the white wire) is positive and hole #2 (the black wire) is negative. The reading should be between 15 and 17 VDC. If you are not getting power to the connector, replace the power connector assembly and retest.
 - b. If you are getting the correct voltage at the power connector, reconnect it to the J2 position on the relay assembly circuit board.



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Disconnect the main cable connector at the J1 position of the relay assembly circuit board. Check the VDC reading at the silver tabs on the relay assembly circuit board. Tab #4 (labelled +/WHT) is positive and tab #5 (labelled GND/BLK) is negative (refer to Wiring Diagram 2). You should get a reading between 15 and 17 VDC. If your reading is not within the range, replace the relay assembly circuit board and retest.

- c. If you are getting the correct voltage at tabs #4 and #5, check the VDC reading at the connector labelled position J1 on the relay assembly circuit board. Pin #4 is positive and pin #5 is negative. You should get a reading between 15 and 17 VDC. If your reading is not within the range, replace the relay assembly circuit board and retest.
 - d. If all of the above power tests produce VDC readings that are within range and the Power indicator light is still not lit, the Power indicator light is probably inoperable. Replace the relay assembly circuit board and retest.
5. Ensure that all of the wires you disconnected in steps 5a-5c are securely reconnected. Remove the console and disconnect the console cable. Use a DC voltmeter to measure the VDC at pin #9 (positive) and pin #1 (negative) of the console cable connector. You should get a reading between 15 and 17 VDC. If the reading is not within the range, replace the cable assembly and retest.
6. If the problem still exists, contact the Customer Service Department at StairMaster® Sports/Medical Products, Inc.