

Procedure 6.5 - Troubleshooting the Lift System

Note:

The lift motor is disabled when the EFX is not being used. The speed sensor must detect motion in order for lift operation to be enabled. In the following procedures, when lift motor movement is being tested the stairarms must be in motion. Before performing this procedure, ensure that the speed sensor is operating normally per Procedure 6.4.

Note:

On version 1 units manufactured prior to August 16, 1998 a single lift connector (J4) was used. On subsequent units the lift motor wiring is in the J3 connector and the lift potentiometer wiring is in the J4 connector. This text will use the connections used on current production units. For version 1 units manufactured prior to August 16, 1998, convert the lift connections as shown:

CONNECTION 8/16/98 AND LATER

J3 terminal 1
J3 terminal 2
J3 terminal 3
J4 terminal 1
J4 terminal 2
J4 terminal 3

CONNECTION PRIOR TO 8/16/98

J4 terminal 1
J4 terminal 2
J4 terminal 3
J4 terminal 4
J4 terminal 5
J4 terminal 6

1. If the lift motor will not move skip to step 7. If the lift motor moves and an error occurs continue with step 2.
2. Access the diagnostics program per Procedure 3.2 and proceed to the lift calibration portion of the diagnostics program. If the lift calibration number is 0 or 255 skip to step 3. Operate the lift, if the lift calibration number does not increment as the lift moves, skip to step 3. If the calibration number increments as the lift moves, re-calibrate the lift per Procedure 5.3. If re-calibration does not correct the problem, continue with step 3.
3. Set the on/off switch in the 'off' position. Using an ohmmeter, measure between terminal 1 (brown or green wire) and terminal 3 (orange wire) of the J4 connector on the lower PCA. The measurement should be approximately 10 K Ω (or 1K Ω depending on manufacturer). If the measurement is open (∞) or significantly high or low, replace the lift motor.
4. Using an ohmmeter, measure between terminals 1 and 2 of J4 and measure between 2 and 3 of J4 on the lower PCA. The two measurements should total approximately 10 K Ω (or 1K Ω depending on manufacturer). If the measurement is open (∞) or significantly high or low, replace the lift motor.
5. If you have performed all of the above tests and an error still occurs when the lift motor operates, there are three parts that could cause the problem. There are not any good tests to check these parts other than substituting a known good part. They are lower PCA, ribbon cable and upper PCA. Replace only one part at a time. If the new part does not correct the problem, replace the original part.

6. If you have performed all of the above tests and the lift system is still not functioning, call Precor Technical Support.
7. Set the circuit breaker in the *off* position. Remove the F2 (2 amp slow blow) fuse from the lower PCA. Measure the fuse with an ohmmeter. The measurement should be 1 Ω or less. If the fuse is good, re-insert the fuse and skip to step 9. If the fuse is open (∞) or significantly high, replace the fuse. Before operating the lift motor it is necessary to perform a continuity test on the lift motor.
8. Remove the J3 connector from the lower board. Using an ohmmeter, measure between terminals 1 and 3 of J3, between terminals 1 and 2 of J3 and between terminals 2 and 3 of J3. The measurements should be approximately 20.5 Ω , 20.5 Ω and 41 Ω , respectively. If any of the measurements are significantly low, replace the lift motor. If any of the readings are open (∞) or significantly high, check the lift motor cable and connectors. Repair any wires or connections that are bad. If the cable and connectors are good, replace the lift motor.
9. Re-insert the J3 connector in the lower PCA. Set the on/off switch in the *on* position. Using an AC voltmeter, monitor the voltage between terminals 1 and 2 (red and white wires) of the J3 connector. Enter the manual program and press the **RAMP ▲** key. The measurement should be approximately 120 Vac (line voltage). If the voltage is present and the lift motor moves normally, skip to step 10. The voltage will only be present until such time as an error occurs. If line voltage is not present skip to step 11. If line voltage is measured but the motor does not move, replace the lift motor.
10. Monitor terminals 1 and 3 (white and black wires) of J3. Enter the manual program and press the **RAMP ▼** key. The measurement should be approximately 120 Vac (line voltage). If the voltage is present and the lift motor moves normally skip to step 12. The voltage will only be present until such time as an error occurs. If line voltage is measured but the motor does not move, replace the lift motor.
11. If line voltage is not present in both steps 9 and 10, connect a dc voltmeter between TP3 and TP6 on the Lower PCA (See Diagram 7.2). The DC voltmeter should read approximately 5.5 Vdc. Walk on the unit and press the **CROSSRAMP ▼** key. The DC voltmeter should read near 0 Vdc and the ramp should go downward. Connect a dc voltmeter between TP4 and TP6 on the Lower PCA (See Diagram 7.2). The DC voltmeter should read approximately 5.5 Vdc. Pedal on the unit and press the **CROSSRAMP ▲** key. The DC voltmeter should read near 0 Vdc and the ramp should go upward.
12. If all of the voltages in step 11 were correct but the ramp did not move in both directions replace the LPCA.
13. If one or more of the voltages in step 11 were incorrect the problem is either one of the interconnect cables or the Upper PCA. If the display does not indicate that the ramp is moving in both directions when the appropriate **CROSSRAMP** key is pressed the problem is either the Upper PCA or the keypad (display housing). Use Procedures 6.1, 6.2 and 6.3 to determine if the problem is an interconnect cable, keypad or Upper PCA.
14. If you have performed all of the above tests and the lift system is still not functioning, call Precor Technical Support.