

Troubleshooting the Incline System

The lift motor is a 12 Vdc motor with an internally driven 1K Ω (Ohms) potentiometer used to track ramp position. Because the lift motor is a DC motor, direction is controlled by the polarity applied to the lift motor. When a positive voltage is applied to the motor, the motor will move upward. When a negative voltage is applied to the motor, the motor will move downward. As the motor moves, the 1 K Ω (Ohms) potentiometer is rotated via an internal gear drive system. The potentiometer's changing resistance is fed to the incline control system and converted to an A/D (analog to digital) number that is used in the to indicate ramp position.

The operating system has a battery monitoring system. If the battery voltage falls below 11 Vdc when stride height movement is initiated or the battery voltage falls below 10 Vdc after the ramp movement has been initiated, ramp movement will be stopped and the message **ERROR 46** will be displayed. Stride Height motion will not be enabled until such time as the battery voltage exceeds the above limits. The battery voltage must be raised to correct this condition either by battery charging or battery replacement. This is strictly a battery problem and not a incline system or lift motor problem.

1 If an Error 40 (no incline movement) is being displayed continue with step 2. If an Error 42 is being displayed (incline out of range) skip to step 12.

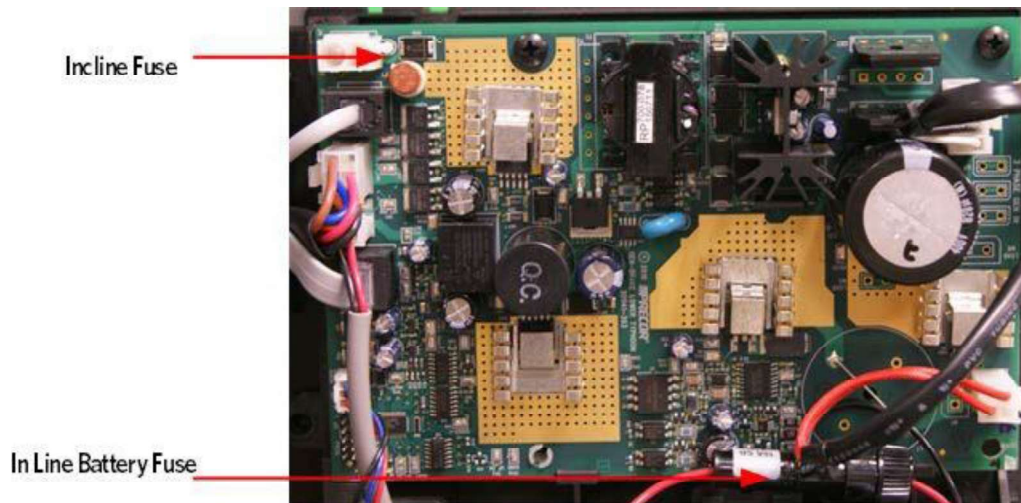
2 If the incline moves briefly and then displays an Error 40, skip to step 12. If the incline does not move prior to displaying the Error 40 continue with step 3.

3 Remove the gasket, top cover, front cover, back cover, center beam cover, back cover and right side cover. Check the battery voltage which should be approximately 12 vdc. Remove the in-line 10 amp slow blow 3AG fuse and check with the ohms setting on the multi-meter. The fuse should read 1 ohm or less.

4 Remove the F1 fuse (6.3 amps) from the lower PCA. See Diagram 6.4.

Check the fuses resistance using an ohmmeter. The fuse should read 1 ohm or less. If the reading is significantly high, replace the fuse. If the fuse is good or replacing the fuse does not correct the problem, continue with step 5.

Figure 63: Lower PCA Fuse Locations



5 Enter the diagnostic program per procedure, [P80 Settings. 51](#)) or [Accessing the P30 Diagnostic Software.](#) Using the diagnostic program allows you to test the incline system without continuously pedaling the unit if you have an external power supply. Otherwise, you will need to continue to pedal the unit. Connect a DC volt meter to the J3 connector on the lower PCA as follows: voltmeter common lead to terminal 3 (black wire) and voltmeter "hot" lead to terminal 2 (red wire). Using the **STRIDE HEIGHT** \uparrow, \downarrow keys operate the incline. The voltmeter should read +12 Vdc approximately when the incline is instructed to move upward and -12 Vdc approximately when the incline is instructed to move downward.

6 If when the **STRIDE HEIGHT** keys are pressed, the display does not indicate that the incline is moving or the A/D numbers are not changing, troubleshoot the upper PCA and keypad per procedure [P80 Troubleshooting. 106](#)), or [P30 Troubleshooting. 41](#)).

7 If the voltage measurements in step 5 are correct continue with step 8. If the either voltage measurement in step 5 is significantly low, replace the battery.

8 If voltage is significantly low, verify that all of the wires in the cable inserted in to J3 of the lower PCA are securely inserted into the connector housing and providing a good electrical connection.

9 If the voltage measurements in step 5 are correct and the motor does not move replace the lift motor. If the either voltage measurement in step 5 is significantly low, replace the motor.

10 If you have performed all of the above tests and are unable to resolve the problem, contact Precor customer support

11 Enter the diagnostic program per [P80 System Tests. 63](#)), or [Accessing the P30 Diagnostic Software.](#) and advance to the **STRIDE HEIGHT**. If the A/D reading is either 0 or 255, skip to step 15.

12 Using the **STRIDE HEIGHT** \uparrow, \downarrow keys operate the incline. If the A/D reading tracks the incline movement smoothly without skips, calibrate the lift motor per, [Calibrating the lift motor. 137](#)) and re-test incline functions in a normal operating mode.

13 If the A/D reading was erratic and did not smoothly follow incline motion, visually check the connections between the intermediate cable and the J3 connector on the lower PCA.

14 Exit the diagnostics program, and leave the unit idle long enough for it to "shut off". Disconnect the red battery lead from terminal M6 of the lower PCA. Remove the intermediate cable from the J3 connector of the lower PCA. Using an ohmmeter, test between terminal 4 (brown wire) and terminal 6 (orange wire) of the cable. The ohmmeter should read approximately 1000 ohms (+/- 20 percent).

15 Test between terminal 4 (brown wire) and terminal 5 (blue wire) of the intermediate cable and between terminal 5 (blue wire) and terminal 6 (orange wire) of the intermediate cable. These two readings should total approximately 1000 ohms (+/- 20 percent).

16 If the readings in steps 14 and 15 are significantly high or low, replace the lift motor. Calibrate the lift motor per, *Calibrating the lift motor*.

Troubleshooting the COMM Data Cable

- 1 Remove the Consoles access cover.
- 2 Remove the right side cover as per procedure, *Cover Replacement*.
- 3 Disconnect the COMM Data cable from the upper PCA and the lower PCA.
- 4 External of the upper column, connect a replacement COMM Data cable to the lower PCA and the upper PCA.
- 5 Check operation as described in *Checking AMT Operation*
If the unit works properly, replace the interconnect cable.
- 6 If you have performed all of the procedures above and have been unable to correct the problem, call Precor customer support.

Preventive Maintenance

Preventive maintenance measures are either scheduled or unscheduled. Scheduled preventive maintenance activities are included here so that you are aware of preventive measures performed on a regular basis.

Regular Preventive Maintenance (Owner)

Cleanliness of the AMT and its operating environment will keep maintenance problems and service calls to a minimum. Precor recommends that you perform the following preventive maintenance schedule.

After Each Use

- ◆ Wipe down the covers, handlebars and stairarms with a damp cloth.

Daily Maintenance

Clean the AMT's frame, covers, stairarms and foot pedals using water or a 30:1 solution of Simple Green® and water. Wipe the surface of the electronic console with a damp sponge or soft cloth. Dry with a clean towel. A 30:1 solution of Simple Green® and water or Contec Athletix® wipes are the only cleaning products that have been tested and approved for use on the AMT. The use of an acid (citric) based cleaner is not authorized by Precor.

Weekly Maintenance

- ◆ Vacuum underneath the AMT, following these steps:
 1. Unplug the optional external power supply (when equipped) from the AC outlet
 2. Remove the platform at the rear of the AMT.
 3. Carefully lift the rear of the AMT and move it to a temporary location.
 4. Vacuum the rug or damp mop the floor.
 5. Make sure that the floor is dry before returning the AMT to its original position and replacing the platform.
- ◆ Re-level the AMT to ensure that the two leveling feet are in contact with the floor.
- ◆ Thoroughly test the AMT per, **Checking the AMT Operation**, including heart rate.
- ◆ Cardio Theater cord management must be observed.

Quarterly Maintenance

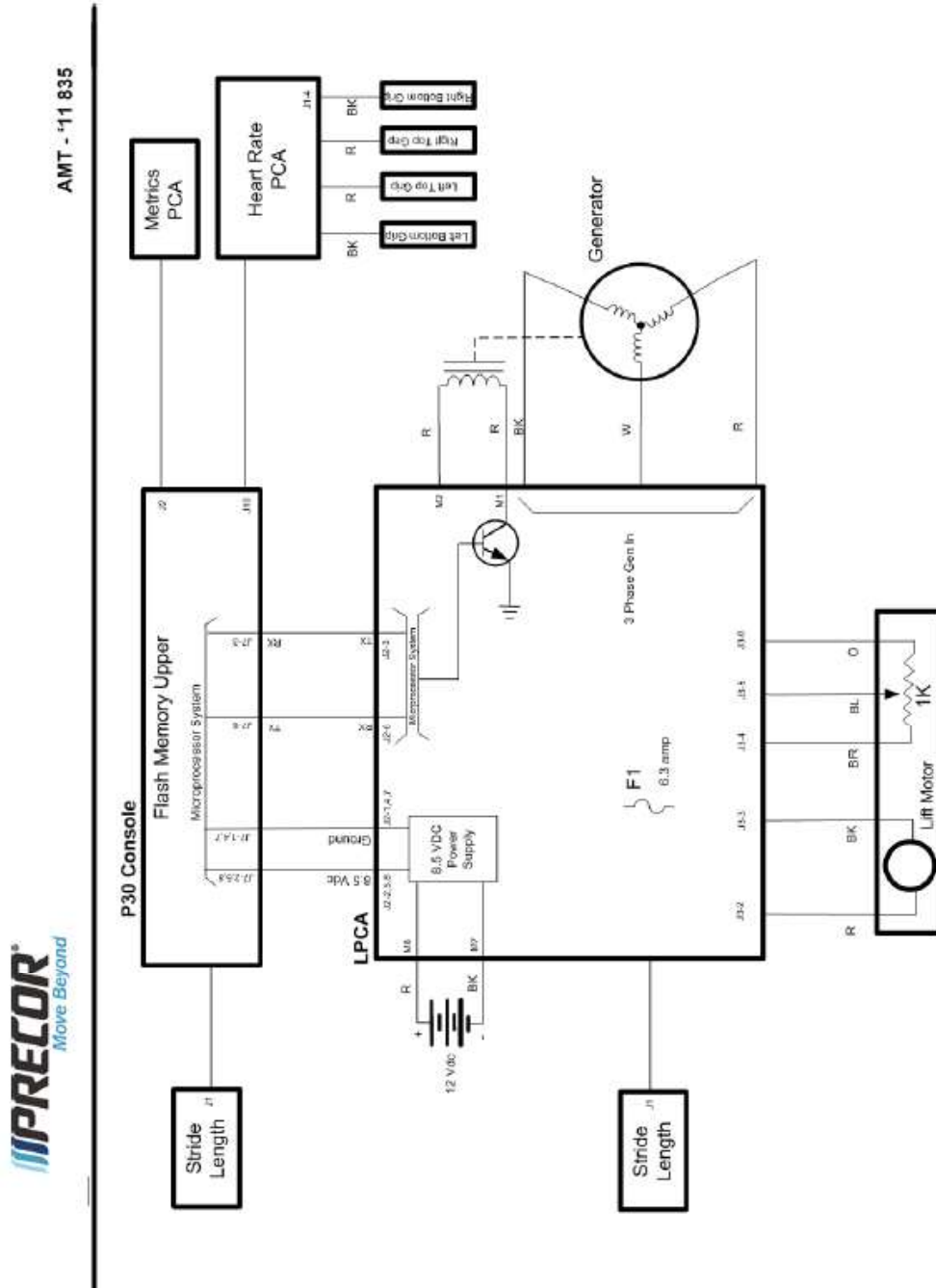
1. Remove the side covers per, **Cover Replacement** procedure.

2. Check the belt alignment and tension as in *Inspection and Adjustment Procedures*.
3. Clean the inside of the AMT.
4. Inspect fasteners for proper tightness and torque.
5. Check for excessive noise during vertical and horizontal operation.
6. Replace the side covers.
7. Re-level the AMT to ensure that the two leveling "feet" are in contact with the floor.

On-Site Preventive Maintenance (Service Technician)

- ◆ When you are called to service a AMT, perform these preventive maintenance activities:
 - ◆ Perform the software diagnostics. Check LED and keypad function. Record the odometer reading.
 - ◆ Check stride rate and stride length sensor function (is the stride rate and stride length displayed when the unit is in operation?).
 - ◆ Visually inspect the drive belts and flat belts for cracks, fraying or excessive wear.
- ◆ When furnished, inspect the optional power supply cords. If a power supply cord(s) is damaged, install a new power supply.
- ◆ Visually examine all wires and check connectors and wire connections. Secure connections and replace wiring as necessary.
- ◆ Cardio Theater cord management must be observed.

System Block Diagram



Wiring Diagram

AMT 12 Wiring Diagram

