## Issue Summary
ERROR E-7 Requiring Calibration of the DC Incline motor and VR

## Applies To
Treadmill models 1210, 3100, 3106, 3108, 3110, 3120, 32XX, 61XX(E), 62XX(N), 6300, 6310 and 6320.

## Detailed Problem Description
ERR E-7 indicates that the DC incline motor and the variable resistor (VR) are not synchronized. Signal from the VR is not being received properly. Mechanical and/or electrical calibration is needed to reset this error message.

## Procedure Overview
1) Mechanical Calibration
2) Electrical Calibration
3) Test Equipment Operation

### NOTE:
Disconnect power and allow 2 – 3 minutes for equipment to fully discharge before performing electrical work to avoid personal injury and/or damage to equipment.

A) Locate and remove the retaining screws on the motor cover. Lift the motor cover to remove. Invert motor cover and set it aside; place screws inside cover.

B) Gently tip the equipment on its side. Use a towel between contact points on hard flooring to keep from damaging floors and/or equipment.
<table>
<thead>
<tr>
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C) Locate and remove the incline set pin. First, remove the kotter pin before attempting to remove the incline set pin from the machine. Place the kotter pin and incline set pin in the motor cover.

D) Rotate the lower section of the incline strut until the red line is flush with the end of the upper section of the strut.

E) Return the incline strut to the original placement and replace the incline set pin.

**NOTE:** Be sure to replace the kotter pin to secure the incline set pin.

F) Return equipment to its upright position and reconnect the power source. Turn the equipment ON.
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Applies To  Treadmill models 1210, 3100, 3106, 3108, 3110, 3120, 32XX, 61XX(E) and 62XX(N)

NOTE: The equipment is powered up during this process. Take appropriate precautions to avoid personal injury and equipment damage from electrical shock.

A) Locate and remove the retaining screws on the VR box cover. Lift the VR box cover to remove. Invert VR box cover and set it aside; place screws inside cover. DO NOT disconnect any wires.

B) Using a multimeter set to read 20VDC, test the VR voltage for the appropriate zero-incline reading. In the VR box, locate the 3-pin connector (blue/green/red wires).

1) Place the ground (black) multimeter probe on the ground wire (BLUE / PIN 1) connector terminal, making sure to maintain metal-to-metal contact. (Illustration #3)

2) Place the positive (red) multimeter probe on the adjustment wire (GREEN / PIN 2) connector terminal, making sure to maintain metal-to-metal contact. (Illustration #3)

C) Check the VR Zero Incline reading against the chart to determine calibration status. (Chart #1)

D) If the voltage reading for the lowest incline (0% or -3% depending on model)

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SportsArt Tech Tip

CHART #1

does not match the listed voltage on the chart, manually rotate the VR Gear until the voltage readings match.

<table>
<thead>
<tr>
<th>Model</th>
<th>Incline Position (low)</th>
<th>VR Voltage</th>
<th>Incline Position (high)</th>
<th>VR Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1210</td>
<td>0%</td>
<td>1.20 VDC</td>
<td>12%</td>
<td>3.30 VDC</td>
</tr>
<tr>
<td>3100 / 3120 / 3150</td>
<td>0%</td>
<td>3.55 VDC</td>
<td>15%</td>
<td>1.20 VDC</td>
</tr>
<tr>
<td>3106 / 3108 / 3110</td>
<td>0%</td>
<td>1.20 VDC</td>
<td>15%</td>
<td>3.80 VDC</td>
</tr>
<tr>
<td>3200 / 3250</td>
<td>0%</td>
<td>1.20 VDC</td>
<td>15%</td>
<td>3.55 VDC</td>
</tr>
<tr>
<td>6100 / 6150</td>
<td>0%</td>
<td>3.55 VDC</td>
<td>15%</td>
<td>1.20 VDC</td>
</tr>
<tr>
<td>6100E / 6150E</td>
<td>0%</td>
<td>1.20 VDC</td>
<td>15%</td>
<td>3.55 VDC</td>
</tr>
<tr>
<td>6200 / 6200N</td>
<td>-3%</td>
<td>1.20 VDC</td>
<td>22%</td>
<td>3.55 VDC</td>
</tr>
<tr>
<td>6300 / 6310</td>
<td>0%</td>
<td>1.20 VDC</td>
<td>15%</td>
<td>3.75 VDC</td>
</tr>
<tr>
<td>6320</td>
<td>-3%</td>
<td>1.20 VDC</td>
<td>22%</td>
<td>3.75 VDC</td>
</tr>
</tbody>
</table>

3) Test equipment operation

A) Incline UP
B) Incline DOWN
C) Recalibration (if needed)
D) Replacement (if needed)
E) Completion

A) Operate the incline motor set up. Press the incline up key. Display incline values increase. Up LED on the drive board lights. Incline operates up.
B) Operate the incline motor set down. Press the incline down key. Display incline values decrease. Down LED on the drive board lights. Incline operates down.
C) If ERR7 appears again, inspect VR calibration. Recalibrate (if needed.)
D) Replacements (if needed):
   1) If VR loses its calibration, replace it.
   2) If incline motor engages, but incline shaft does not move, a gear inside the motor has broken. Replace the gear, or the motor.
   3) If incline motor gets voltage but does not operate, replace the incline motor.
E) Replace the motor cover and retaining screws.

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