Troubleshooting: 9000 Series Treadmills

INDEX

Troubleshooting: 9000 Series Treadmills

continued

DATA CABLE

Large Data Cable

The large data cable carries the communication between the lower board and the upper board. The large data cable has 8 pins (wires)

- 1 PWM
- 1 RPM/Sensor
- 1 Down Elevation
- 1 Up Elevation
- 1 Vcc (+5)
- 2 Grounds
- 1 Elevation Potentiometer signal

Small Data Cable

The small data cable carries power (11 volts) from the lower board to the upper board. This is the only function for the small data cable. The small data cable has 6 pins (wires)

- 3 Power
- 3 Grounds

Always make sure your 11V or CNS LED is lit on the lower board. The 11V or CNS LED is indication that the lower board is sending power to the small data cable.

Have a spare set of data cables at all times: Damaged or defective data cables are the #1 cause of treadmill failure. DATA CABLE DAMAGE IS NOT ALWAYS VISIBLE.

To properly test data cable:

1. Connect new data cable to the upper board.
2. Connect data cable to the lower board without pulling through mast.
3. Test the treadmill

DEFECTIVE DATA CABLE SYMPTOMS

Large Data Cable Symptoms

1. E2 (T9200 & T9250 ONLY)
2. E5
3. E6
4. E9
5. No Elevation or speed function
6. No Elevation
7. No Speed
8. Deck goes to max at start
9. Run away speed

Small Data Cable symptoms

1. No power to the upper board
2. Loss of power to the upper board, intermittent shutdown

To troubleshoot a bad large data cable for most models - Enter engineering mode (see engineering mode for specific treadmill). If the elevation window in calibrations reads 000 in Px there no signal from the lower board to the upper console.

Troubleshooting: 9000 Series Treadmills

ERROR MESSAGES

NOVRAM ERRORS: (for more information see DGA3J or DGB1J Engineering Guides)

NOVRAM - DGA3J: Px values "Init"(flashes on board and beeps) on power up. Px values stored in NOVRAM are outside valid ranges or the checksum is invalid. The system checks for a valid P6 configuration. It writes the default values with respect to P6, if valid. If not, it writes default values to the NOVRAM based on a "4" (T9350) configuration. No user interface necessary - occurs on power up.
P6 value may need to be recalibrated depending on model: This console will reconfigure itself for a T9350.

NOVRAM - DGA3J: User program values "UCLr" (flashes on board and beeps) on power up. Time, speed, and elevation values stored in NOVRAM are outside valid ranges or the checksum is invalid. The system clears the user program values. No user interface necessary - occurs on power up. If "init" occurs, "UCLr" also occurs afterwards, but not vice versa.

NOVRAM - DGB1J: Same NOVRAM error as the DGA3J except the treadmill will reconfigure itself for a T9600HRT. P6 value may need to be recalibrated depending on the model: *NOVRAM - DGB1J*: Same NOVRAM error as the DGA3J

ERROR MESSAGE CODES

If an error occurs during auto-calibration of new console, an over-ride of the error may be necessary. On the speed key numeric press "5", "9", then "3". Cycling the power may be necessary.

E2*	T9200 & T9250 only. E2 is the only error programmed into the software. There are no E2 errors for T9300 through T9700 treadmills.
E4	Incline position is outside the tolerances
E5	Elevation stall condition
E6	Signal from elevation is lost
E7	Belt is accelerating too fast
E9	Signal from speed sensor is lost

***E2**: Solution (T9200 & T9250 are the only treadmills with this error)
E2 is the only error message programmed into the software for the T9200 and T9250. Troubleshooting an E2 on the T9200 and T9250 can be difficult. Use information provided in all the Error Solutions for assistance in pin pointing the problem.

1. If the elevation motor is jammed. (Humming and too warm)
   - Remove elevation motor tube from elevation rack
   - Unjam or replace elevation motor
   - Check all connections
   - Test/change large data cable (use large data cable information provided in the data cable portion of this guide)
   - Make sure the tube end of the elevation motor is in the correct location on the worm gear
   - Make sure the P4 value in calibrations is correct before reinstalling the tube end of the elevation motor to the elevation rack
   - Auto-Calibrate the treadmill

Troubleshooting: 9000 Series Treadmills

continued

E4: Solution
1. Check power to the treadmill, as insufficient voltage to the treadmill can cause this error to reoccur. Check the power socket that the tread is plugged into. Eliminate any extension cords or surge protectors (plug the tread directly into a functional power source). Make sure the circuit is not overloaded. Make sure the circuit is NON-GFI.
2. Calibrate (See engineering mode for specific treadmill).
3. If calibrations do not hold, replace upper console.

Note: Usually simultaneous with an E6.

E5: Solution
1. Check large data cable connections at the lower and upper boards
2. Check the elevation plug connection at the lower board.
3. Calibrate (See engineering mode for specific treadmill).
   a) If dashes appear and it says DGA3 in profile reboot treadmill.
      Reboot treadmill
         Turn tread on
         Remove safety magnet
         Turn tread off
         After 15 seconds turn tread on
         Place safety magnet in the console
      Or:
         Turn power off
         Remove Safety key
         Unplug treadmill
         After 15 seconds plug tread in
         Turn tread on
         Place safety magnet in the console
   b) If console enters engineering check the calibrations of P4 and P5.
4. Test/change large data cable (use large data cable information provided in the data cable portion of this Guide)
5. Replace lower board
6. Replace elevation motor

E6: Solution
1. Check the elevation plug connection at the lower board.
2. Check ALL large data cable connection at the lower and upper boards.
3. Calibrate (See engineering mode for specific treadmill)
4. Test/change large data cable (use large data cable information provided in the data cable portion of this Guide).
5. Replace elevation motor

E7/E9: Solution
1. Certain lower boards have an LED that flashes when the magnet on the roller passes the sensor. Adjust sensor position if LED does not flash. See lower board basic troubleshooting for lower boards with the LED.
2. Unplug RPM sensor at the lower board. Check continuity. Treadmill will operate without sensor but cannot Auto-calibrate. Calibrate manually.
3. Replace RPM sensor

Troubleshooting: 9000 Series Treadmills

continued

MAINTENANCE MESSAGES:

The T9600 and T9700 have maintenance messages programmed into the software (see the DGB1J Engineering Guide). These messages indicate that the treadmill has reached the recommended number of hours of use since the last lubrication (LUBE HRS) or the recommended distance since the last cleaning (CLEAN) or the motor brushes (BRUSH) should be replaced. This is NOT an error message and the treadmill can continue to be used, providing the user arranges for the appropriate service. The purpose of the maintenance messages is to assist the user in observing a maintenance schedule that will help provide the most reliable service for their treadmill.

Once the appropriate maintenance service has been performed, the hours or distance can be reset in Engineering Mode. See the DGB1J Engineering Guide for the specific Px step.

NO BELT MOVEMENT

Symptom	Solution
Console functions properly Elevation functions properly	1. Check all connections, (large data cable and motor leads) at the lower board. If drive motor leads look abnormal, replace drive motor and lower board 2. Check calibrations (See engineering mode for specific treadmill) 3. Check if PWM LED on lower board is not on after the treadmill is started. Test /replace large data cable, then calibrate. 4. Check if PWM LED on lower board is on. Check Drive motor brushes and commutator for debris or wear. 5. Check Drive motor for short. 6. Check running belt and deck for damage and proper wax. 7. Replace lower board 8. Replace drive motor

Please reference specific version of Lower Board basic troubleshooting: This can help you determine which component may be defective. The LED's on the lower board are indications of how the PWM and other components are functioning.

BELT MOVEMENT WON'T GO OVER .5 MPH

Symptom	Solution
Can not increase speed after start	1. Check calibrations (See engineering mode for specific treadmill) 2. Replace touch pad (touch pad is not part of the overlay)

Troubleshooting: 9000 Series Treadmills

continued

RUNAWAY BELT

Symptom	Solution
Zero to fast in seconds (Console does **not** reflect increase in speed)	1. Replace lower board • Lower board has a damaged component or moisture on it 2. Inspect and clean brushes and commutator. Replace worn brushes. 3. Replace power cord
Accelerates normal (no stop) (Console reflects increase in speed)	1. Replace touch pad 2. Check calibrations (See engineering mode for specific treadmill) 3. Replace upper board
Treadmill running belt starts before start button is pressed	1. Check touch pad 2. Replace lower board

TREADMILL TRIPS THE CIRCUIT BREAKER ON POWER UP

Symptom	Solution
Breaker on the tread	1. Check all connections at the switch, power cord, breaker and the lower board (See wiring diagram); replace Power Cord and Leads 2. Check running belt and deck for proper wax 3. Replace breaker 4. Replace lower board
Breaker in the building	1. Check the power socket that the tread is plugged into. Eliminate any extension cords or surge protectors (plug the tread directly into a functional power source). Make sure the circuit is not overloaded. Make sure the circuit is NON-GFI. 2. Check all connections at the switch, power cord, breaker and the lower board (See wiring diagram) 3. Check Power Cord for damage 4. Replace lower board

Troubleshooting: 9000 Series Treadmills

continued

TREADMILL RUNNING BELT SURGES

Symptom	Solution
Running belt surges	1. Check the power socket that the tread is plugged into. Eliminate any extension cords or surge protectors (plug the tread directly into a functional power source). Make sure the circuit is not overloaded. Make sure the circuit is NON-GFI. 2. Adjust IR comp on the lower board* 3. Adjust running belt to proper tension 4. Adjust drive belt to the proper tension 5. Check front roller pulley for slippage 6. Check motor brushes 7. Replace lower board 8. Replace drive motor

* Adjusting the IR comp (blue box on the lower board): Turn the IR comp pot clockwise and start the treadmill @ 1MPH and adjust the IR comp pot counterclockwise until the tread belt surges. Turn the IR comp pot a little bit clockwise until the tread belt stops surging.

TREADMILL STALLS

Symptom	Solution
Treadmill running belt stops during a workout Upper board and elevation function properly.	1. Check running deck for any rough spots. Make sure to feel the middle where the customer works out. 2. Wax the deck 3. Check Drive motor connections at the lower board. If drive motor leads look abnormal, replace drive motor and lower board 4. Replace lower board

Troubleshooting: 9000 Series Treadmills

continued

NO POWER TO THE TREADMILL

Symptom	Solution
Power switch does not glow.	1. Check the power socket that the tread is plugged into. Eliminate any extension cords or surge protectors (plug the tread directly into a functional power source). Make sure the circuit is not overloaded. Make sure the circuit is NON-GFI. Make sure the tread is not on the power cord. 2. Check power cord, power switch and breaker for any damage or bad wiring 3. Check that the AC LED is lit on the lower board. If lit, tread has power. Replace switch. 4. Check breaker, reset if necessary. (replace breaker) 5. Check continuity at switch, (if none replace switch)
Blank Console Power switch is glowing NOTE: - - - - on the console is not a blank console. Insert safety magnet. T9500 ONLY (One LED on the PWM)	1. Console Power Supply LED on the lower board (Refer to the specific version of the lower board basic troubleshooting). If LED is not lit, check if Fuse F2 on lower board is good. If fuse is good, replace lower board. 2. Check small data cable 3. Test reed switch * 4. Replace upper board * Replace fuse in the lower board (3 amp slow blow)

* To test the reed switch: Remove the reed switch from the upper board. Use a standard screwdriver to short both pins in the upper board. (If the console lights up, replace the reed switch)

NOTE: All treadmills with an Emergency stop button: Emergency stop button leads must be connected to the upper board in order for the console to power up.

TREADMILL DRIVE MOTOR STALLS

Symptom	Solution
Drive motor stops during workout	1. Wax running deck 2. Check running belt and deck for debris 3. Check drive motor leads at the lower board. If the lead look abnormal replace the motor and the lower board* 4. Check LED's on the lower board (See specific version lower board basic troubleshooting) 5. Test/change large data cable (use large data cable information provided in the data cable portion of this Guide) 6. Replace the lower board 7. Replace drive motor

* Always change any leads for drive motor if they appear to be abnormal.

Troubleshooting: 9000 Series Treadmills

continued

ELEVATION PROBLEMS

Symptom	Solution
Elevation does not move when key is pressed	1. Check data cable connections at the lower and the upper boards 2. Calibrate (See engineering mode guide for specific treadmill) 3. Check that the Up Elevation LED on lower board lights when the Up key is pressed and the Down Elevation LED lights when the Down key is pressed. 4. Test/change large data cable (use large data cable information provided in the data cable portion of this Guide) 5. Replace touch pad (touch pad is not part of the overlay) 6. Replace lower board 7. Replace elevation motor
Elevation does not reach minimum or maximum	1. Calibrate: enter engineering mode and reset elevation values (see engineering mode guide for specific treadmill)
Elevation jumps to maximum elevation on power up	1. Test/change large data cable (use large data cable information provided in the data cable portion of this Guide) 2. Calibrate: enter engineering mode and reset elevation values (see engineering mode guide for specific treadmill) 3. Replace lower board 4. Replace elevation motor
Elevation goes to maximum when start is pressed	1. Replace touch pad (touch pad is not part of the overlay)

NOISE PROBLEMS

Symptom	Solution
Knocking or thumping noise	1. Make sure that the machine is properly leveled. 2. Check wax build up on the front and rear rollers, scrape off excessive wax. 3. Loosen the rear roller adjustment bolts and retention the running belt (if the running belt is over-tightened it will put an excessive load on the roller bearings) 4. Check drive (front) roller pulley 5. Check deck bolts 6. Lubricate pivot points 7. Replace roller

- Use the treadmill for about one week. This will sometimes let the roller bearings seat on the roller axle.
- The running belt can conform to the shape of the rollers while packaged. Use the tread for about one week to smooth out the running belt.

Troubleshooting: 9000 Series Treadmills

continued

NOISE PROBLEMS (continued)

Symptom	Solution
Squeaking or chirping noise under front motor cover	1. Adjust motor pulley and align with front roller pulley 2. Remove drive belt and check the grooves in the belt for debris. Clean drive belt, motor pulley and front roller pulley. 3. Replace drive belt 4. Remove and inspect motor brushes. Check for abnormal wear, if brush is worn, replace motor brushes 5. Stone motor commutator 6. Check motor bearings and drive roller bearings. *

* Checking drive motor or roller bearings - Place a screwdriver on the roller or the motor, you should be able to feel the bearing noise in your hand (Place your ear on the opposite end of the screwdriver and hear the bearing noise)

Symptom	Solution
Growling or grinding noise under front motor cover	1. Check drive motor alignment 2. Check that drive motor pads are in place on the motor bracket 3. Check if the flywheel is wobbling (indicates a bent motor shaft). 4. Check motor bearings and drive roller bearings. *

* Checking drive motor or roller bearings - Place a screwdriver on the roller or the motor, you should be able to feel the bearing noise in your hand (Place your ear on the opposite end of the screwdriver and hear the bearing noise)

DECK AND BELT PROBLEMS

Symptom	Solution
Running belt slips	1. Adjust running belt to proper tension 2. Adjust drive belt to the proper tension 3. Check pulley on the drive roller
Treadmill belt tracks to one side	1. Check to make sure that the running belt is tensioned. If one side has too much tension, tightening the other side will not center belt. 2. If the running belt still moves to the left or fight side, adjust the angle of the roller so the belt centers itself. Make sure to adjust each side with the same amount of adjustment working on / turns on the rear roller Allen bolt. 3. Check under the tread for foreign objects

Troubleshooting: 9000 Series Treadmills

continued

DECK AND BELT PROBLEMS (continued)

Symptom	Solution
Deck squeaks, knocks or makes thunking noise	1. Check to make sure the drive roller is aligned properly 2. Check roller pulley 3. Check deck surface for debris and loose wax 4. Make sure treadmill is leveled properly 5. Check rollers for wax build up 6. Grease and tighten deck bolts 7. Lubricate pivot points 8. Check elevation rack for cracks 9. Check deck for cracks

HEART RATE FUNCTION:

Symptom	Solution
Dashes on console where heart rate is displayed	1. Transmitter does not contact with user's chest very well. a. Make sure that the transmitter is moistened. b. Try positioning transmitter differently on body. Ex: Higher, lower, turn transmitter upside down, or across the back 2. The transmitter is not sending a signal, test/replace the battery. 3. There is no signal being received. a. Test the HR receiver with simulator b. Check receiver connections c. Replace receiver. d. Replace console
Console displays a "0" in HR window	1. A signal is being received but not being translated into a readable number. a. Replace HR receiver b. Replace Console
Erratic signal	1. The battery in the transmitter is too low. 2. The receiver is picking up outside signals a. Test HR with all other electrical devices in area turned off. Ex: TV's, Computer monitors, home security, electric dog fence, and various motors.
No Heart-Rate Training function	1. Check configurations. The 9300 does not have the HRT mode (P7)

Note: All Vision Fitness Heart-Rate transmitters have an operational life of approximately 2500 hours.