

**Life Fitness Cross-Trainers 90X, 93X, 95Xe, and 95Xi**  
**TROUBLESHOOTING GUIDE**

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
No Power	Faulty Battery	Using Multi-meter, verify that battery the Voltage is greater than 6 Volts DC. Replace battery if voltage is below 6 volts DC
	Main Cable connection	Verify that Main Cable is plugged into both Console and Power Control Board. Check for loose wires at connectors. Replace if necessary.
	Faulty Reed Switch	Using a Multi-meter, verify continuity of Reed Switch Cable Assembly. See wiring diagram. Replace Reed Switch if necessary.
	Magnet	Verify presence of magnet on drive pulley. If not present, install new one.
Console lights and then fails	Faulty battery	Using Multi-meter, verify that battery Voltage is greater than 6 Volts DC. Replace battery if voltage is below 6 volts DC
	Faulty Reed Switch	Using a Multi-meter, verify continuity of Reed Switch Cable Assembly. See wiring diagram. Replace Reed Switch if necessary.
No LEDs or random LEDs lit on display	Faulty battery	Using Multi-meter, verify that battery Voltage is greater than 6 Volts DC. Replace battery if voltage is below 6 volts DC
	Faulty cable connection or damage to Main Cable	Verify that Main Cable is properly plugged into Console. Inspect Main Cable for damage or crimps. Using a Multi-meter, verify continuity on Main Cable.
	Faulty Console or Power Control Board	Using a Multi-meter, verify 6VDC at console connector, pins 4(+) and 11 (GND). If voltage is present, replace console. If not, replace Power Control Board.
Unit Auto starts but does not read RPM	Faulty cable or faulty cable Connection.	Verify cable connections at Console, Power Control Board and Alternator, and check for loose wires and/or loose connectors. Using a Multi-meter.  Verify continuity of all cables associated with above components.  Replace any defective cables.

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Unit does not Auto Start	Faulty Battery	Using Multi-meter, verify that battery the Voltage is greater than 6 Volts DC. Replace battery if voltage is below 6 volts DC
	Magnet	Verify presence of magnet on drive pulley. If not present, install new one.
	No RPM	Operator must be pedaling unit in order for Auto Start feature to activate.
	Faulty Cable Connection at Console, Power Control Board or Reed Switch	Verify that cable connections at Console, Power Control Board and Reed Switch are properly plugged in.  Using a Multi-meter, verify continuity on all cables. Replace any defective cables.
	Faulty Power Control Board	Using a Multi-meter verify continuity on the Reed Switch cable and Main Cable. If both are verified as good, the replace the Power Control Board.
No Load	Faulty cables, Power Control Board or Alternator	Verify cable connections at Console, Power Control Board and Alternator, and check for loose wires and/or loose connectors.  Using a Multi-meter, verify continuity of all cables associated with above components.  Enter diagnostic state 3, execute the field duty cycle test and increase the duty load. If the load does not increase, replace the Alternator.
Noisy during operation	Loose hardware	Verify that all hardware has been tightened, and that Loctite 242 is applied where necessary.
	Pedal Rollers worn or dirty	Inspect pedal rollers for debris or wear and replace if necessary.
	Debris in Pedal Roller track	Clean Pedal Roller track.
	Worn bearings	Replace bearings and associated shaft. Instructions included with kit.
	Alternator	Relieve tension on the Alternator belt.  Spin flywheel for smoothness. If thumping occurs, faulty alternator.  Replace Alternator

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SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Erratic Heart Rate from Life Pulse sensors	Life Pulse sensors dirty from usage or from being cleaned with incorrect solution	Clean Life Pulse Sensors with mild soap and water. Replace sensors if condition warrants.
	User is repositioning hands while acquiring Heart rate reading	Instruct user on proper technique for acquiring Heart Rate readings.
	Pinched Heart Rate Cable	Remove Deadshaft Covers and Console. Inspect connection between user arm Heart Rate cables and Console Heart Rate cable. Using a Multi-meter verify continuity from hand sensor to Heart Rate cable connector at back of console. Then check from Hand sensor to frame ground to verify presence of shorts. Replace any defective cables.
No Heart Rate from Life Pulse sensors	Pinched Heart Rate Cable	Remove Deadshaft Covers and Console. Inspect connection between user arm Heart Rate cables and Console Heart Rate cable. Using a Multi-meter verify continuity from hand sensor to Heart Rate cable connector at back of console. Then check from Hand sensor to frame ground to verify presence of shorts. Replace any defective cables.
	Faulty Heart Rate cable connection	Remove Deadshaft Covers and Console. Inspect connection between user arm Heart Rate cables and Console Heart Rate cable. Using a Multi-meter verify continuity from hand sensor to Heart Rate cable connector at back of console. Replace any defective cables.
	Inadequate contact with Life Pulse sensors	Full contact must be maintained on all Life Pulse sensors in order to obtain Heart Rate reading.
	Faulty Life Pulse sensors	Replace sensors. See How To....Replace Life Pulse Sensors
	Faulty Console Board	Replace Console Board. See How To....Replace Console Board.

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SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
No Heart Rate reading using Polar transmitter. (Telemetry equipped units only).	Transmitter is not making good contact with body or positioned incorrectly	Reposition transmitter on chest. Moisten transmitter for better contact with skin to enable it to obtain a stronger signal.
	User is out of monitoring range	User must be within three feet (one meter) of receiver on unit.
	Telemetry option turned off	Verify that Telemetry is turned ON in Diagnostics. See Diagnostics section.
	Faulty connection between Console and Receiver	Verify that Polar Heart Rate cable is properly connected. Using a Multi-meter, verify continuity between receiver jack and cable connector at Console. Replace cable if necessary.
	Faulty Receiver	Swap receiver with known working one. Replace receiver if necessary
	Faulty Transmitter	Test transmitter on known working unit if possible. Replace transmitter if necessary.
	Faulty Console Board	Replace Console Board. See How To....Replace Console Board.
Erratic Heart Rate using Polar transmitter. Telemetry equipped units only.	Cross talk from another transmitter. Possible interference from other electronic devices.	Position Cross Trainer at least three feet or one meter from unit with telemetry or from other electronic devices.
	Faulty Console Board	Replace Console Board. See How To....Replace Console Board.

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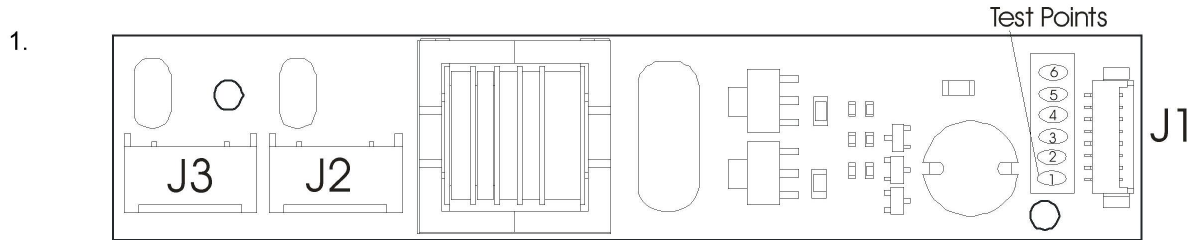
<b>SYMPTOM</b>	<b>PROBABLE CAUSE</b>	<b>CORRECTIVE ACTION</b>
Screen is blank	LCD Back-Light	Replace/reconnect LCD/Touch Screen.
	Back-Light Power Inverter bad	Replace/reconnect back-light inverter.
	LCD Screen failure	Replace/reconnect LCD/Touch Screen.
	Problem on the Single Board Computer	Replace Single Board Computer.
Channels do not change.	Keypad malfunction.	Run Keypad test in diagnostics.
	Interface PC board defective	Replace Interface PC board.
Sound does not change.	Keypad malfunction.	Run Keypad test in diagnostics.
	Interface PC Board defective.	Replace Interface PC Board.
No sound.	Faulty Headphones.	Test with known good Headphones. Replace Headphones if necessary.
	Faulty Headphone Jack assembly.	Replace Headphone Jack assembly.
	Faulty cable to Headphone jack assembly	Replace Headphone Jack assembly.
	Problem on the Single Board Computer	Replace Single Board Computer
	Problem on Interface Board	Replace Interface Board.
	Air/cable setting may not be correct.	Follow the setup procedures in the Operation Manual.
Unable to receive any channels when using cable.	Air/cable setting may not be correct.	Follow the setup procedures in the Operation Manual.
	Coax cable may be bad	Replace Coax cable
	Coax may be unplugged	Check connection on Coax cable.
Snow and noise appear on the screen.	Air/cable setting may not be correct.	Follow the setup procedures in the Operation Manual.
	Coax cable may be bad	Replace COAX Cable
Screen is dark	LCD Back-Light	Replace and reconnect LCD Touch Screen
	The Back-Light Power Inverter bad.	Replace and reconnect the Back-Light Inverter.
Screen does not respond to touch.	Touch Screen failure	Replace and reconnect the LCD Touch Screen
	Problem with Single Board Computer.	Replace Single Board Computer.
Wrong buttons activate when the screen is touched.	Touch Screen not calibrated correctly.	Calibrate Touch Screen in Diagnostics or replace LCD Touch Screen.

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**TROUBLESHOOTING GUIDE – TESTING THE INVERTER BOARD**

Special Service Tools Required: Multi-meter

**CAUTION! HIGH VOLTAGE ON CONNECTORS J2 AND J3**



Remove the Entertainment System Console from the Unit.

2. Remove Rear Cover from the Console Assembly.
3. Plug in Power Supply and Remote Control to the Console
4. Press the Power On Key on the Remote Control.
5. TEST NO. 1: Place the Red Lead from the multi-meter onto Test Point 1 and the Black Lead onto Test Point 3. Voltage should be 12 Vdc (+/- .5V).
6. TEST NO. 2: Place the Red Lead from the multi-meter onto Test Point 5 and the Black Lead to Test Point 3. Voltage should be 12 Vdc (+/- .5V)

PROBLEM	SOLUTION
No Voltage on TP1	Replace Cable, Remote, or Main PC Board.
Voltage present on TP1	Replace the Inverter Board
Voltage on TP1 and TP2 but NO Voltage on TP5	Replace Cable between Inverter Board and Main PC Board

TEST POINT	VOLTAGE	DESCRIPTION	PIN NUMBER
TP 1 & 2	12 Vdc	VIN	1 & 2
TP 3 & 4	0 Vdc	Ground	3 & 4
5	12 Vdc	Enable	5
5	0 Vdc	Disable	5
6	Not Used	Not Used	6/7/8

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**TROUBLESHOOTING GUIDE – TESTING THE POWER SUPPLY CABLE**

Special Service Tools Required: Multi-meter

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1. Unscrew the Retaining Nut securing the Power Cable Plug. Remove the Cable.
2. Using a Multi-meter, touch the Red Lead to the POSITIVE area on the Cable, which is the center of the cable. Next touch the Black Lead to the NEGATIVE area, which is the side of the inner Cable. The voltage should read 12 Vdc.

