
Diagnositics

The Elliptical Edge contains several customizing and diagnostics features. The customizing feature allows you to tailor unit operation to suit your particular needs. Diagnostics features let you view accumulated data related to machine usage, and check critical operating parameters as an aid in maintenance and troubleshooting.

These features include:

- **Diagnostic LEDs** - Provide an indication of the operating status of the Load Control Board (LCB) and the alternator.
- **Display Maintenance Mode** - Displays start-up and shut-down service messages as a result of self-test or when scheduled periodic maintenance is required.
- **Display Settings Mode** - Lets you modify certain operating and display settings for the unit.
- **Service Settings Mode** - Displays accumulated statistical data related to machine usage.
- **Service Messages** - Display during machine use if certain electrical failures or out-of-tolerance conditions are detected.
- **System Measurements Mode** - Lets you monitor critical electrical parameters under both idle and in-use conditions.

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The Load Control Board (LCB) is equipped with three diagnostic LEDs. These LEDs provide indications of the operating status of the LCB and the alternator.

The LCB diagnostic LEDs function as follows:

LED	FUNCTION
D2	This Led provides a steady series of flashes, at 20-per-second, indicating communication between the LCB and the display panel is functional. If this LED is off or flashes erratically, replacement of the LCB, the display panel or the communication cable may be required.
D3	This LED provides a steady series of flashes, at one-per-second, indicating the LCB microprocessor is functional and the loop circuit is operating. If this LED is off or flashes erratically, replacement of the LCB may be required.
D13	This LED is normally off. If alternator output voltage exceeds 19 volts, the LED lights steady on. This condition will also cause the "Needs Service" message to display (see Display Maintenance Mode for details).

*NOTE: The diagnostic LEDs provide a **general** indication of certain equipment malfunctions. Refer to Section 4, Troubleshooting to aid in locating the most likely cause of the problem.*

Display Maintenance Mode



The Elliptical Edge displays start-up or shutdown service messages if a display code is detected during use, or when periodic maintenance is due.

Service Messages at Start-up

The unit performs a self-test at the beginning of every workout. The self-test is initiated as soon as operation of the unit begins, and continues throughout the duration of the workout. If a failure in an electronic circuit or component is detected, one of the following messages will display:

Key Down	One or more keys on the keypad(s) are stuck in the depressed (on) position; maintenance service is required. Call Star Trac Customer Support for assistance.
Needs Service	Self-test has detected an electronic component failure; maintenance service is required. Call Star Trac Customer Support for assistance. Specific service messages describing the equipment malfunction or failure can be accessed and viewed using the Service Settings feature. Additional troubleshooting information is provided in Section 4.

Service Message at Shutdown

The Elliptical Edge displays a "Time for Service" message when a periodic (preventive) maintenance procedure is due. This message displays for 2~3 seconds at the end of a workout session. Call Star Trac Customer Support for assistance. Preventive maintenance procedures are outlined in Section 2.

The Display Settings Mode lets you view and modify several unit settings, which affect the way the machine operates during a workout. Use the keypad to enter the Display Settings Mode, view the current settings and make any desired changes.

To enter the Display Settings Mode:

1. Press and hold the "Enter", "0" and "1" keys at the same time.
2. While continuing to hold the "Enter" and "0" keys; release the "1" key. The unit will beep once, and the message "Display Settings" will show in the upper information display.
3. Release the "Enter" and "0" keys.

Once the unit is in the Display Settings Mode, use the keypad to select and enter changes to unit settings:

KEY	FUNCTION
"Scroll" Key	Press the "Scroll" key to scroll through the display settings and select the setting you wish to view or change (for each setting, the current value is displayed in the upper information window). Pressing and holding the "Scroll" key will scroll continuously through the available settings.
"Up-Down Arrow" Keys	Use the "Up-Down Arrow" keys to scroll through the available values for the setting and to select a new value. When a new value for the setting has been selected, press the "Scroll" key to save the new value and advance to the next setting.
	<i>NOTE: To return display settings to their original values after changes have been made and saved, you must MANUALLY re-enter the factory-default settings.</i>
"Enter" Key	Press the "Enter" key to exit the Display Settings Mode and return to the standard operating mode.

Display Settings Mode

The following display settings may be changed using the keypad as previously described:

SETTING	DESCRIPTION	DEFAULT VALUE
Maximum Work Time	Sets the maximum workout time, in minutes.	60 minutes
Heart Rate	Enables/disables the Polar heart rate pickup	Polar
Units	Sets the units display to English or Metric: <ul style="list-style-type: none">English - distance is displayed in tenths of a mile; speed is displayed in miles-per-hour; weight is displayed in poundsMetric - distance is displayed in tenths of a kilometer; speed is displayed in kilometers-per-hour; weight is displayed in kilograms.	English
Weight	Sets the weight displayed as default when a preset program is selected. This value is a default only; users are prompted to enter their actual weight (used for calculating total calories burned).	155

NOTE: When setting metric units, weight must be set at 70 kg.

The Elliptical Edge records and stores usage data which may be used as an aid in maintaining the unit and diagnosing malfunctions. The Service Settings Mode lets you view this usage data, as well as software version numbers and the serial number and date of manufacture for the unit.

To enter the Service Settings Mode:

1. Press and hold the "Enter", "0" and "2" keys at the same time.
2. While continuing to hold the "Enter" and "0" keys, release the "2" key. The unit will beep once, and the message "Service Settings" will show in the upper information display.
3. Release the "Enter" and "0" keys.

Once the unit is in the Service Settings Mode, use the keypad to view service settings, service messages, or system measurements.

The following stored data may be viewed while in the Service Settings Mode:

ITEM	DESCRIPTION
Display Version	Version of software currently installed in the display.
LCB Version	Version of software currently installed in the Load Control Board.
Serial#	Serial number of the unit.
Manufacture Date	Unit manufacture date (displayed as DDMMYY).
Workout Hours	Total number of operating hours accumulated on the unit to date.
Workout Distance	Total number of distance units accumulated on the machine to date. Distance units are displayed in either miles or kilometers (depending on the "Units" selection (English or Metric) chosen in "Display Settings").
Battery Hours	Total number of hours the battery has been used under power (displayed in thousands of hours). Need to reset to zero when battery replaced.
Last Keystrokes	Displays the last five keys pressed prior to a software or system failure.

Service Messages



The Elliptical Edge self-test function monitors the electronics while a workout is in progress. If a malfunction or failure in a monitored circuit occurs during a workout, the "Needs Service" message displays (as described in Display Maintenance Mode), and a specific service message is set. Service message can be accessed and viewed from the Service Settings Mode.

To view Service Messages:

- On entering the Service Settings Mode, press the "5" key while in "service settings". "Service message" will display in the upper information display.
- Press the "Scroll" key to view service messages (if any have been set). Pressing and holding the "Scroll" key will advance through all service messages.
- Press the "Enter" key to exit Service Messages and return to the Service Settings Mode.

The following service messages may be set by the self-test function:

MESSAGE	DEFINITION
No Communication	A communication failure has occurred between the upper display and the Load Control Board (LCB). Communications cable or LCB replacement may be required.
No Alternator Output	The alternator is not producing an output voltage (the unit will not provide a load/workout to the user). Alternator, load resistor or alternator cable harness replacement may be required.
Alternator Field Open	The alternator field has an open circuit. Alternator, alternator cable harness or LCB replacement may be required.
No Load	The alternator is working, but the unit is not providing a load (workout) to the user. Alternator cable harness or LCB replacement may be required.
Low Battery	<p>The battery charge voltage is low. This may be a result of low usage. The battery can be recharged either by operating the machine by connecting the external wall-powered power pack and the machine is in use for several hours. With the machine not in use the recharging of the battery will take 24 hours to reach full charge.</p> <p>NOTE: If the "Low Battery" message is set frequently, battery replacement or charging system service may be required.</p>

The System Measurements Mode lets you measure critical voltages in the battery/alternator circuits, under both idle and operating conditions.

To enter the System Measurements Mode:

- On entering the Service Settings Mode, press the “8” key while in “service settings”. “Measurements” will display in the upper information display.
- Press the “Scroll” key to view the system measurements available.
- Press the “Enter” key to exit the System Measurements Mode and return to the Service Settings Mode.

Once the unit is in the System Measurements Mode, use the [Arrow Keys] to select the desired system measurement.

The following voltage measurements may be taken while in the System Measurements Mode:

MEASUREMENT	DESCRIPTION
Battery Voltage	<p>Measures and displays battery output voltage while the unit is idle. Output voltage for a normal battery should range between 6.2~7.7 volts.</p> <ul style="list-style-type: none"> • Output voltage below 6.2 volts indicates a low battery charge or a damaged battery. • Output voltage above 7.7 volts indicates a fault in the Load Control Board.
Alternator Voltage	<p>Measures and displays alternator output voltage while the unit is in use. To check the alternator output voltage:</p> <ul style="list-style-type: none"> • Pedal the unit at a speed above 1.5 miles-per-hour. • Alternator output voltage should range between 11.5~13.5 volts. Voltages outside this range indicate a fault in the Load Control Board.
Wall Power	<p>Measures and displays the voltage delivered to the unit from an optional external wall-powered power pack while the unit is idle. An acceptable power pack voltage will range between 11.0~18.0 voltage. The power pack should be replaced if the voltage is outside this range.</p>
Load Voltage	<p>Measures and displays the voltage generated across the workout loading resistor while the unit is in use. To measure the load voltage:</p> <ul style="list-style-type: none"> • Pedal the unit at a speed above 1.5 miles-per-hour. • Load voltage should range between 1.0~10.0 volts. Voltages outside this range indicate a fault in the Load Control Board. A lower voltage indicates a high resistance which is normal.