



ETCHED LCD CONSOLES DIAGNOSTICS TECHNICAL CERTIFICATION TRAINING

Field Engineering | 2010

LifeFitness
WHAT WE LIVE FOR

Course Objectives

- » Introduction
- » Entering Diagnostics: Treadmills and Non-treadmills
- » Helpful Hints:
 - ◆ General
 - ◆ Treadmills
 - ◆ Non-treadmills
- » Diagnostics Structure
- » Summary

Introduction

- » The Etched LCD diagnostic states are very different from the LED-based products due to substantial system differences of the two product families.

Entering Diagnostics: Treadmills and Non-treadmills

- » In order to enter diagnostics execute the following:
 - ◆ When the console is powered up a "WAIT" message will be displayed on the screen.
 - ◆ Diagnostics can be accessed from Idle mode only.
 - ◆ Once the "WAIT" message disappears, enter Diagnostics mode by pressing and holding the PAUSE key until the word "DIAGNOSTIC" appears on the console

Note:

The above procedure is MUCH DIFFERENT than the ones used with the LED-based consoles.

The most common mistake is related to not waiting for the WAIT message to vanish AND then pressing the PAUSE key.

Helpful Hints – General

- » The diagnostic states are documented in the service manuals.
- » The most-often used state on all products is the Software Version state – when working with Customer Support Services, you may be asked to provide the numbers that are shown in this state.

Helpful Hints – Treadmills

- » The most often used diagnostic state is calibration – every time a controller, a console, or any of the motors is changed, calibration must be performed.

Helpful Hints – Non-treadmills

- » Non-treadmill consoles can be used freely between bikes and cross trainers.
- » The cable that plugs in to the MAIN on-board connector is keyed.
- » The lower center-left window displays cable ID. For the bikes the value is between 220 and 235. For the cross trainers the value is less than 10.

Diagnostics Structure

- » Unlike the Commercial products' diagnostics structure, this one is flat and very compact.
- » The below is the list of diagnostic states available in the Deluxe and Basic Consoles:
 - ◆ Software Version
 - ◆ Display Test
 - ◆ Keypad Test
 - ◆ Calibration (treadmill only, with auto and manual calibration)
 - ◆ Hardware Test
 - ◆ Heart Rate Test
 - ◆ Statistics
 - ◆ Photoshoot Menu (with contrast and brightness adjustments)
 - ◆ Watchdog Test
- » A brief discussion of the above diagnostic states follows.

Diagnostics Structure (cont.)

- » The purpose of the Deluxe and Basic Consoles' diagnostic states is described below:
 - ◆ Software Version
 - > Used to identify the programmed version of software
 - ◆ Display Test
 - > Used to identify issues related to segment drivers
 - ◆ Keypad Test
 - > Used to identify issues related to stuck keys of the keypad
 - ◆ Calibration (treadmill only) – contains auto and manual calibration
 - > Used to calibrate the min., mid., and max. speed points of the main drive belt; also used to calibrate the min and the max. incline values.
 - ◆ Hardware Test
 - > Used to display elevation's A/D value, the actual speed, the PWM value for the speed, input power, cable ID, A/D value for the tilt sensor.

Diagnostics Structure (cont.)

- » The purpose of the Deluxe and Basic Consoles' diagnostic states is described below (cont.):
 - ◆ Heart Rate Test
 - > Used to test the heart rate functionality
 - ◆ Statistics
 - > Accumulated workout time, accumulated lift time, and accumulated distance
 - ◆ Photoshoot Menu (with contrast and brightness adjustments)
 - > Displays a simulated workout window for the purpose of making an advertisement
 - > Allows to adjust brightness
 - ◆ Watchdog Test
 - > A purely engineering test that a technician most likely will not have to execute – it tests microcontroller's internal watch dog mechanism

Summary

- » In this presentation we had discussed the following subjects:
 - ◆ We talked about diagnostics in general: purpose, getting in, navigating
 - ◆ We introduced the notion that diagnostics are supposed to be used from the system's point of view
 - ◆ We discussed common diagnostic states that exist in majority of Life Fitness products
 - ◆ We discussed product specific diagnostic states that can be used in troubleshooting of the specific functionality

Questions





THANK YOU!

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