

Software Update Instructions

Date 16 June 2010 ☒ original ☐ revised	Software Version/Release	Warranty ☐ Parts ☐ Labor ☒ Normal Warranty	Pages 13	Author Bart Bizon
Document No.:	SW10051401R			
Subject:	Instructions Console Software Update thru CSAFE port			
Time Required:	☒ 15 min ☐ 30 min ☐ 45 min ☐ 1 hr+			
Distribute To:	☒ Internal ☒ Dealer ☒ ISO ☐ Installer			
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DESCRIPTION

This document describes the software update process of the following consoles:

- Pre-Classic
- Classic,
- Achieve,
- NDT,
- Integrity.

This process is also applicable to updating the DSP Motor Controller software.

All of the updates are done using a PC/laptop computer and additional hardware described below in the Required Tools section.

This description is applicable to any console software version of the affected models listed below. It is possible that there are more legacy products out in the field that can be updated using this procedure. The ones listed below are the models that are most prevalent in the field. Should a need arise for software updates of the products that are not listed below, a technician is asked to contact Field Engineering department by e-mail at FieldEngineering@LifeFitness.com.

AFFECTED MODELS

Model	Alpha Code ¹	Starting Serial Number	Ending Serial Number	Software part number series ²
Achieve Consoles	Console Prefix			
Treadmill Console Software	LED LET	100 000	999 999	K70[r]-12610-0000 (latest "r": D)
Non-Treadmill Console Software	LEN LEI LEM	100 000	999 999	K70[r]-12611-0000 (latest "r": D)
NDT Consoles	Console Prefix			
Treadmill Console Software	CCT	100 000	999 999	K70[r]-12619-0000 (latest "r": B)
Non-Treadmill Console Software	CCN	100 000	999 999	K70[r]-12620-0000 (latest "r": B)
Display Processor Software	CCT CCN	100 000	999 999	K70[r]-12621-0000 (latest "r": B)
Bitmap Software	CCT CCN	100 000	999 999	K70[r]-12622-0000 (latest "r": C)
Integrity Consoles	Console Prefix			
Treadmill Console Software	RDK RDJ SLT SLJ	100 000	999 999	K86[r]-12601-0000 (latest "r": A)
Non-Treadmill Console Software	EJM TJL	100 000	999 999	K86[r]-12602-0000 (latest "r": A)
Bitmap/Message Software	RDK RDJ SLT SLJ EJM TJL	100 000	999 999	K86[r]-12603-0000 (latest "r": A)
DSP Motor Controller³				
DSP Software	Varies	Varies	Varies	K58[A-H]-12621-0000 K58[A-H]-12622-0000 K65[B-D]-12602-0000
Treadmills (Legacy Console)	Base Prefix			
	TST	100 000	999 999	K58[r]-12616-0000 (latest "r": P)
	TTJ	100 000	999 999	
	ATT	100 000	999 999	
	TCT	100 000	999 999	
	TSS	100 000	999 999	

Model	Alpha Code ¹	Starting Serial Number	Ending Serial Number	Software part number series ²
	TTD	100 000	999 999	
	TTW	100 000	999 999	
	TTL	100 000	999 999	
Bikes (Legacy Console)	Base Prefix			
	LRI	100 000	999 999	K63[r]-12604-0000 (latest "r": H)
	CCS	100 000	999 999	
	LCI	100 000	999 999	
	CCP	100 000	999 999	K63[r]-12610-0000 (latest "r": A)
	CCU	100 000	999 999	
	CEM	100 000	999 999	
Cross Trainers (Legacy Console)	Base Prefix			
	CLX	100 000	999 999	K61[r]-12614-0000 (latest "r": B)
	XTD	100 000	999 999	
	ACJ	100 000	999 999	
	AXB	100 000	999 999	
	XTN	100 000	999 999	

Notes:

¹ Alpha Code – on newer products this code (A-Z) is related to the prefix of the serial number that is placed on the console; on the legacy products, this prefix is related to the base serial number.

² Software part number series – the series of software part numbers that the particular product can be programmed with. The "r" letter denotes the revision of this software, the latest of which is indicated under the software part number series number. This revision is current at the time of this writing.

³ The DSP Motor Controller is currently used across many platforms; ability to reprogram it can be limited by the console software itself.

REQUIRED TOOLS

1. A personal computer (PC) or a laptop computer with a USB and a working Internet connection and all necessary Microsoft-recommended updates installed;
2. Applicable external power supplies;
3. Reprogramming software:
 - a. Life Fitness Flash Programmer (version 1.0.4, build 10.1.7.1, K87B-12601-0000);
4. Reprogramming hardware:
 - a. a DB9-to-RJ45 adapter (LF part number: AK58-00122-0000);
 - b. a USB-to-serial converter (LF part number: 0017-00021-3153);
 - c. network patch cable.

A graphical representation of the above items (a. through c.) is shown below.

DB9-to-RJ45 adapter



USB-to-serial converter



Network patch cable



PROCEDURE

Overview of steps:

1. Install the Life Fitness-approved USB-to-serial converter (LF part number: 0017-00021-3153), install device drivers;
2. Connect the hardware components (USB-to-serial, DB9-to-RJ45 converter, network patch cable);
3. Locate and install the reprogramming software;
4. Download the target software to the PC/laptop;
5. Update the microcontroller(s) of the console or the motor controller.

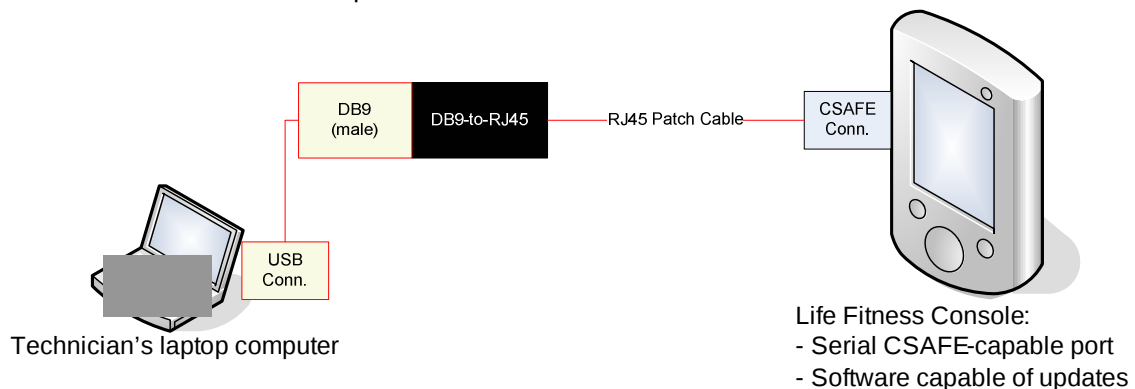
Step Details:

1 Install the Life Fitness-approved USB-to-serial converter, install device drivers.

- 1.1 Plug in the USB-to-serial converter (LF part number: 0017-00021-3153) to the USB port.
- 1.2 If prompted to do so, follow the installation and verification instructions displayed on the screen and documented in **UG10051801N - USB-to-Serial Converter Installation (section: DESCRIPTION OF THE DEVICE DRIVERS INSTALLATION PROCEDURE)** procedure.

2 Connect the hardware components (USB-to-serial, DB9-to-RJ45 converter, network patch cable).

- 2.1 Connect the hardware components as shown below.



3 Locate and install the reprogramming software.

- 3.1 Log in to www.lftechsupport.com.
- 3.2 Click on the Software Releases tab.
- 3.3 Click on the LF Flash Programmer [link](#), save the file to a location of your choice.
- 3.4 Run the LFFlashProgrammerSetup.msi.
- 3.5 Follow the installation procedure as prompted by the installation program.

4 Download the target software to the PC/laptop.

- 4.1 Target software is available at www.lftechsupport.com >> Software Releases (tab) >> S19 Software Files (link).
- 4.2 Download the zipped s19 file that you intend to program to the target in to a directory of your choice.
- 4.3 Unzip the target s19 file.

5 Update the console microcontroller(s) of the console or the motor controller.

The Life Fitness Flash Programmer software utility can be used to update the following target software of the overall system:

- a. The (main) Console Processor;
- b. The (New Display Technology, NDT) Display Processor;
- c. The (New Display Technology, NDT) CCD Bitmap Memory;
- d. The Motor Controller.

Definitions of the above terms:

- a. The (main) Console Processor
This is the processor responsible for executing the workout logic, diagnostic states, and other background processes; the software running on this processor is responsible for the core functionality of the product, i.e. bike, cross-trainer, summit, treadmill.
- b. The (NDT) Display Processor – mostly used in the Asian and European markets.
This is the processor responsible for driving the dot-matrix passive LCD display message center module of the NDT console. This processor responds to messages sent from the Console Processor.
- c. The (NDT) CCD Bitmap Memory – mostly used in the Asian and European markets.
This is the memory module responsible for storing character maps that the Display Processor uses to compose messages with.
- d. The Motor Controller
The above name refers to the software residing on the motor controller's processor. This software is responsible for controlling the main drive motor and the incline motor.

- 5.1 Make sure that the hardware components are connected as described in section 2 of this document (above).
- 5.2 Utilizing procedures described in the Technical User Guide, UG10051801N -- USB-to-Serial Converter Installation, section name: VERIFICATION OF THE SOLUTION p. 6 of the UG10051801N, make sure that the USB-to-serial converter had been properly installed. Also, note the COM port number which the emulated port was assigned. If the emulated COM port is not recognized by the LF Flash Programmer application, change the emulated COM port number to that of lower order, i.e. 1 – 9. For instructions on how to change the port number, please refer to UG10051801N -- USB-to-Serial Converter Installation, section name: CHANGING THE SERIAL PORT NUMBER.
- 5.3 Power the target system up.

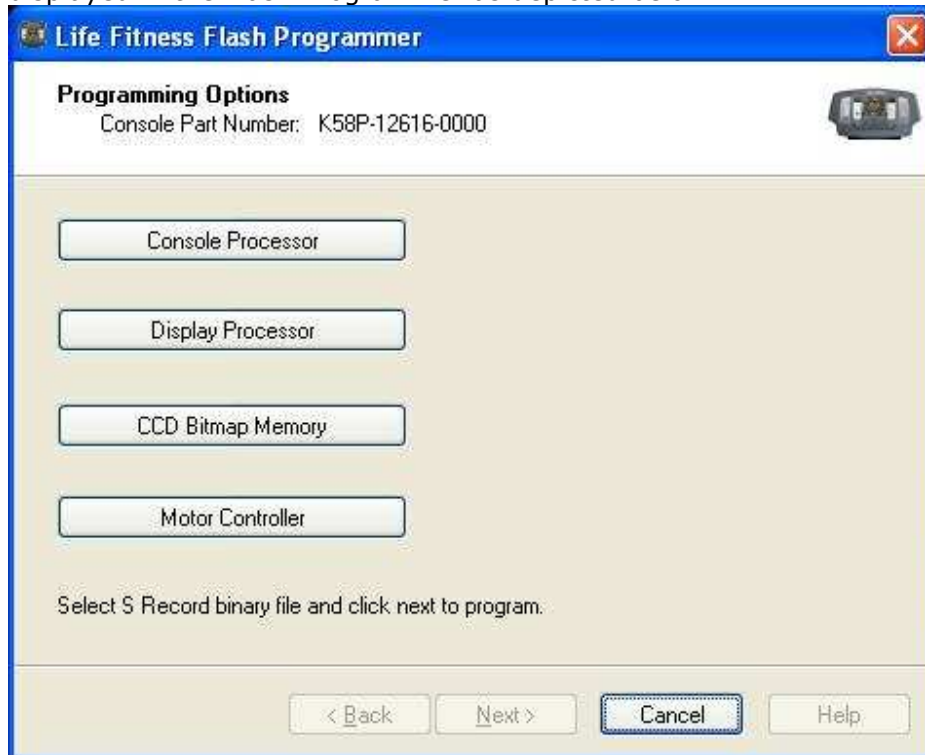
- 5.4 Launch the LF Flash Programmer software, which will display the following screen (see next page):



- 5.5 Click the "Next >" button which will result in the below screen:



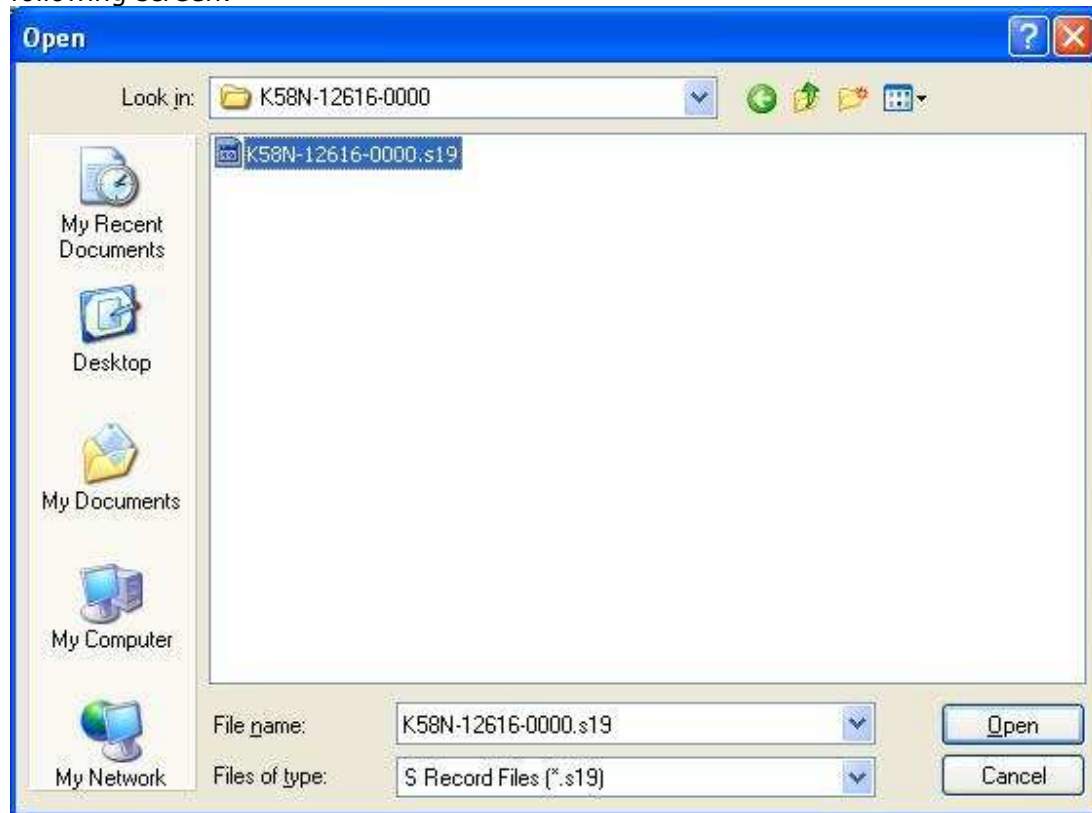
- 5.6 Select the serial port that is being emulated by the USB-to-serial converter (it may be different than the one shown on the above and the subsequent pictures)
- 5.7 Click on the "**Next >**" button which will result in the following:
 - 5.7.1 The LED console that is being reprogrammed will go blank
 - 5.7.2 The software part number(s) that the console is programmed with will be displayed in the Flash Programmer as depicted below:



Note:

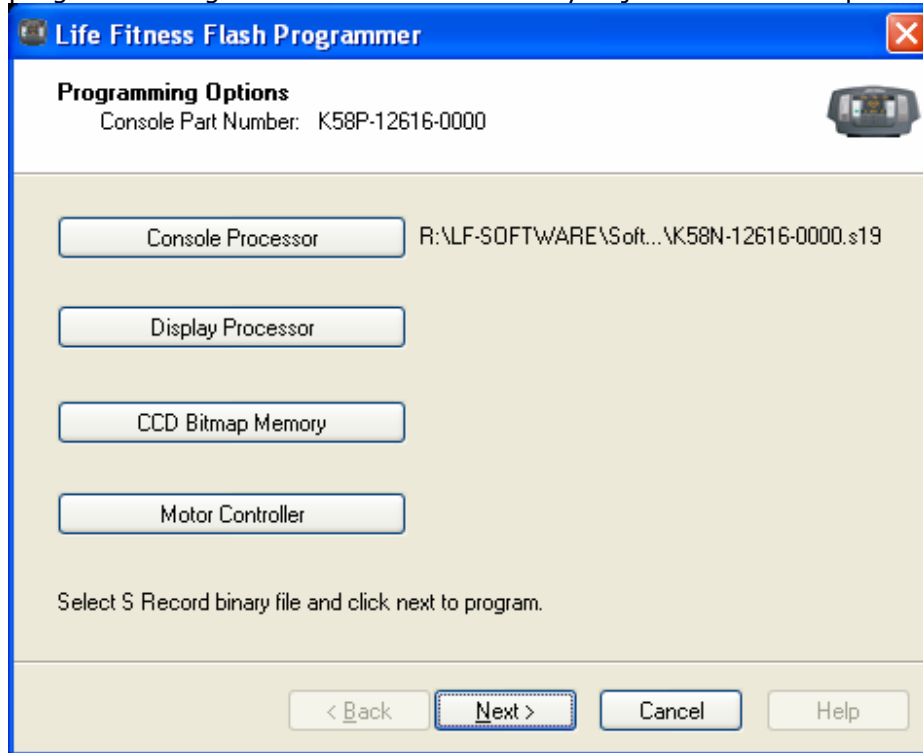
In this example a Classic LED console is being updated. The software part number installed in the console is K58P-12616-0000. The Classic LED console has only one processor, a Console Processor. Consequently, only the Console Processor software can be modified to an older or newer revision of software.

- 5.8 Click on the “**Console Processor**” button depicted above. This results in the following screen:



- 5.9 Select the desired s19 file. If your file does not show up in the listing, check if you are accessing the intended directory and if the file is unzipped.
- 5.10 Click on the “**open**” button shown in the picture above.

- 5.11 Clicking on the **"Open"** button shows the path and the name of the file that will be programmed right next to the button that you just clicked. See picture below.

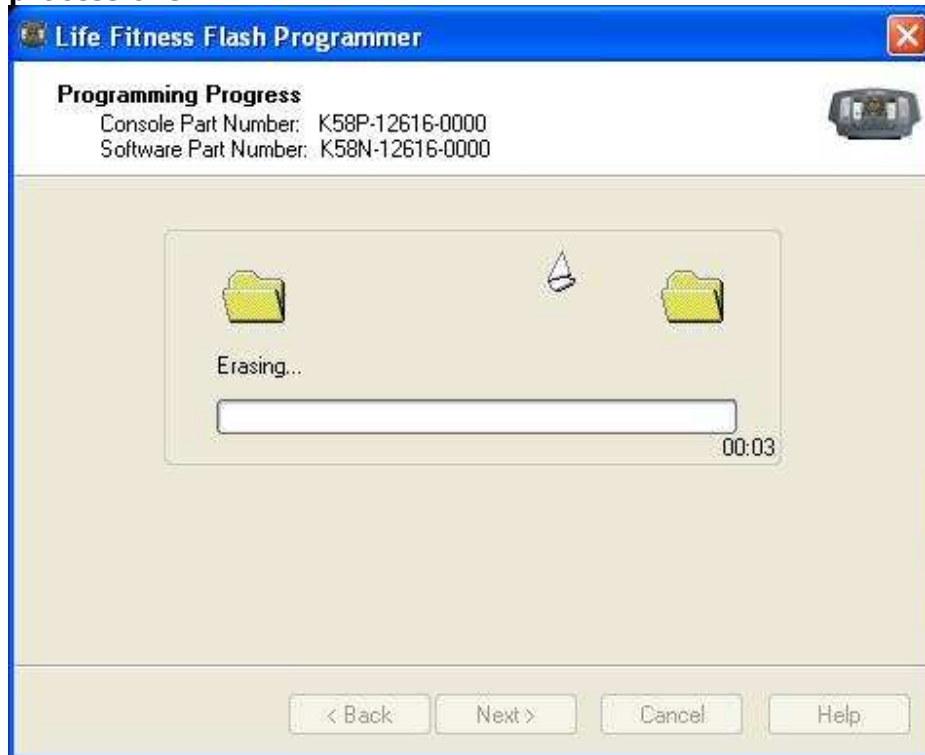


- 5.12 Click on the **"Next >"** button shown above.

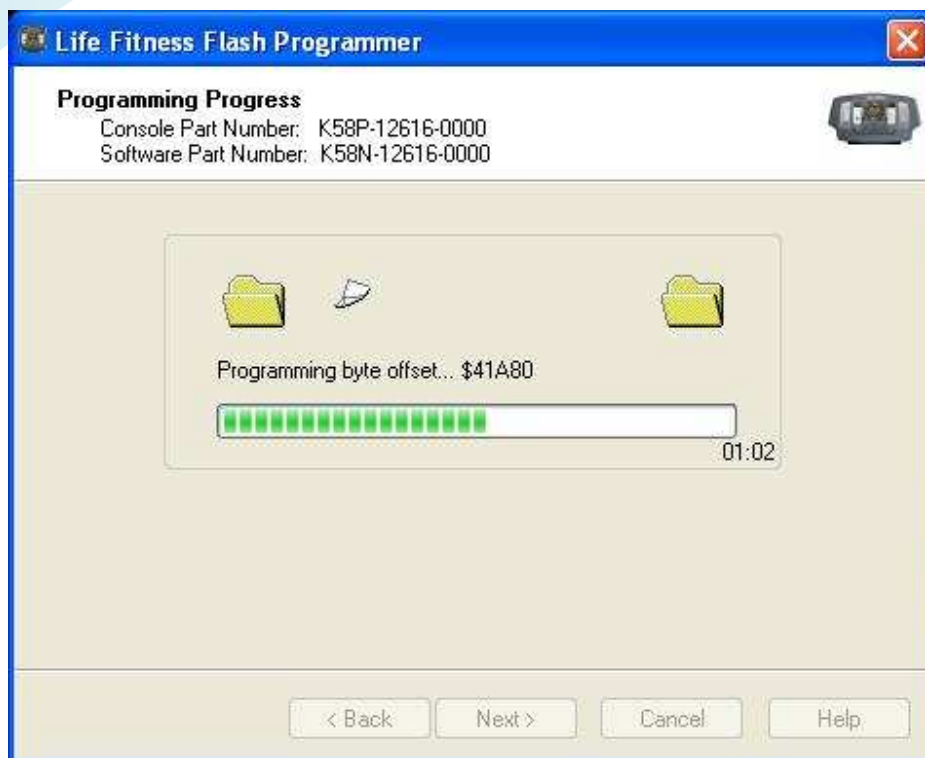
- 5.13 Clicking on the "Next >" button results in the erase screen shown below.

Note:

While the console is being reprogrammed, you must not use any other applications on your computer. Activating any windows will cause the reprogramming process to fail. In case of failure start the reprogramming process over.



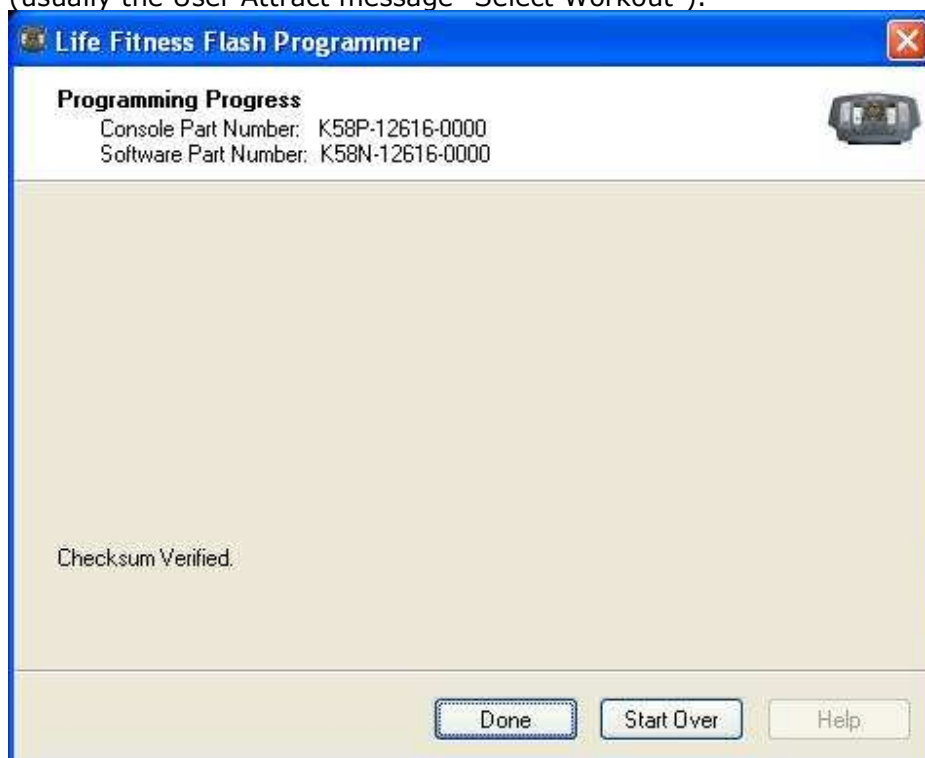
The above erase screen automatically transitions to the programming screen shown below (next page):



Note:

The time needed to reprogram a console varies and is dependent upon the size of the software being programmed into the console.

- 5.14 As soon as the programming is over, the following screen will be displayed. The console that was being reprogrammed will reset and will display its first state (usually the User Attract message "Select Workout").



- 5.15 To reprogram another console select the "**Start Over**" button. To exit the application, select the "**Done**" button.

Note:

To reprogram a motor controller, display processor, and the bit map memory proceed with the above steps in a similar fashion keeping in mind that you must click on a suitable button shown in the step 5.6.2.