

**TL820 Automated Tape Library  
for DLT Cartridges**

**Diagnostic Software  
User's Manual**

**EK-TL820-SM  
Revision A02**

EK-TL820-SM, Revision A02, February 8, 1995, Made in USA.

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### **FCC STATEMENT**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Any changes or modifications made to this equipment may void the user's authority to operate this equipment.

Operation of this equipment in a residential area may cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### **CISPR-22 WARNING!**

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

### **ACHTUNG!**

Dieses ist ein Gerät der Funkstörgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten, in welchen Fällen der Benutzer für entsprechende Gegenmassnahmen verantwortlich ist.

### **ATTENTION!**

Ceci est un produit de classe A. Dans un environnement domestique, ce produit peut causer des interférences radio lectriques. Il appartient alors a l'utilisateur de prendre les mesures appropriées.

### **NOTICE FOR USA AND CANADA ONLY**

If shipped to USA, use the UL LISTED power cord specified below for 100-120 V operation. If shipped to CANADA, use the CSA CERTIFIED power cord specified below for 100-120V operation.

Plug Cap	Parallel blade with ground pin (NEMA 5-15P Configuration)
Cord	Type: SJT, three 16 or 18 AWG wires
Length	Maximum 15 feet
Rating	Minimum 10 A, 125 V

### **ATTENTION**

LIRE LA REMARQUE DANS LE MODE D'EMPLOI

## REMARQUE

CETTE REMARQUE NE CONCERNE QUE LES ÉTATS-UNIS ET LE CANADA.

En cas d'envoi aux États-Unis, utiliser le cordon d'alimentation certifié UL et convenant pour 100-120 V.

En cas d'envoi au CANADA, utiliser le cordon d'alimentation CERTIFIÉ CSA et convenant pour 100-120 V.

Fiche	Broches paralléus avec une broche de mise à la terre (configuration NEMA 5-15P)
Cordon	Type: SJT, trifilaire 16 ou 18 AWG
Longueur	Maximum 15 pieds
Capacité	Minimum 10 A, 125 V

## ZU IHRER SICHERHEIT

### Vorsicht

Um Feuergefahr und die Gefahr eines elektrischen Schlages zu vermeiden, darf das Gerät weder Regen noch Feuchtigkeit ausgesetzt werden.

Um einen elektrischen Schlag zu vermeiden, darf das Gehäuse nicht geöffnet werden. Überlassen Sie Wartungsarbeiten stets nur einem Fachmann.

### Achtung

Da der interne Laserstrahl in Ihre Augen eindringen und Verletzungen verursachen kann, darf das Gehäuse nicht selbst geöffnet werden. Überlassen Sie Wartungsarbeiten stets nur einem Fachmann.

Die Verwendung von Brillen, Kontaktlinsen usw. vergrößert die Gefahr.

### Zur besonderen Beachtung

#### Zur Sicherheit

Sollte ein fester Gegenstand oder Flüssigkeit in das Geräteinnere gelangen, trennen Sie das Gerät von der Wandsteckdose ab und lassen Sie es von einem Fachmann überprüfen, bevor Sie es weiter verwenden.

Zum Abziehen des Kabels fassen Sie stets am Stecker und niemals am Kabel selbst an.

#### Zur Aufstellung

Stellen Sie das Gerät weder auf einer weichen Unterlage (z. B. Decke, Teppich) noch in der Nähe von Vorhängen, Tapeten usw. auf, da hierdurch die Ventilationsöffnungen blockiert werden können.

#### Zur Reinigung

Verwenden Sie zur Reinigung des Gehäuses, des Bedienungspultes und der Bedienelemente ein trockenes, weiches Tuch oder ein weiches, leicht mit mildem Haushaltsreiniger angefeuchtetes Tuch. Lösemittel wie Alkohol oder Benzin dürfen nicht verwendet werden, da diese die Gehäuseoberfläche ungreifen.

## LASER STATEMENT

CLASS 1 LASER PRODUCT

LASER KLASSE 1

APPAREIL À LASER DE CLASSE 1

PRODUCTO LÁSER DE CLASE 1

LUOKAN 1 LASERLAITE



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# ***Introduction***

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## Purpose

The *Diagnostic Software User's Manual* provides the tools needed to effectively maintain and service the TL820 Automated Tape Library, part number TL820-xx (the part number is on the product label located on the rear of the unit).

This manual includes the following:

- Section 2.0 “Installing the Diagnostic Software,” provides installation requirements and procedures that facilitate easy installation of the Diagnostic Software.
- Section 3.0 “Using the Diagnostic Software,” provides information on how to start the software. This section also provides screen structure and function key definitions.
- Section 4.0 “Diagnostic Functions,” provides detailed function descriptions and instructions on how to access and perform the functions.

## Conventions Used in this Guide

-  **Warning** *Paragraphs marked by the warning icon indicate potential hazards to personal safety and are included to prevent injury.*
-  **Caution** *Paragraphs marked by the caution icon indicate potential hazards to equipment and are included to prevent damage to equipment.*

## References

### Contacts

To obtain further information and/or copies of documentation on this product, contact:

U.S. Software Supply Business  
Digital Equipment Corporation

10 Cotton Road

Nashua, New Hampshire 03063-1260

The part number of each document will be required at the time of order.

### Related Documentation

---

Table 1: Related documentation

Document Number	Document Title	Document Description
EK-TL820-OP	TL820 Operator's Guide	This guide defines the control functions, operational procedures and end user maintenance procedures for the TL820 library.
EK-TL820-PG	TL820 Facilities Planning and Installation Manual	This guide describes facilities requirements and installation procedures for the TL820 library.
EK-TL820-SV	TL820 Field Service Manual	This manual contains procedures for field isolation and replacement/repair of faulty components on a TL820 library, as well as instructions and guidelines for periodic maintenance to keep the system running at its best.

# ***Installing the Diagnostic Software***

# **2**

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## Installing the Diagnostic Software Program

To install the Diagnostic Software Program (DSP), do the following:

**Note** *The program requires approximately 270K of disk space.*

1. Insert the diskette into your floppy disk drive, i.e., drive “A”.
2. At the “C:\>” prompt, type: **a:\install** <ENTER>

**Note** *The INSTALL program creates a sub-directory called TAPELIB on the C drive. The files described in Table 2 are copied into the TAPELIB directory.*

Table 2: TAPELIB directory

File	Description
README.DOC	This file contains the most up-to-date information about the product, installation instructions and detailed distribution contents.  To view README.DOC: at the “C:\TAPELIB>” prompt, type: <b>more&lt; readme.doc</b> <ENTER>
TAPELIB.BAT	This is a batch file that, when executed, invokes the TAPELIB DSP.
TAPELIB.EXE	This is the executable file.
TAPELIB.HLP	This is the online help file.
TAPELIB.MSG	This is the online error message data file.
TAPELIB.NDX	This is the online error message index file.
INSTALL.BAT	This is the installation batch file.

The DSP interfaces to the tape library over an RS-232 serial link. It runs from communications port #1 (COM1) as the default, or from COM2 if the /c2 switch is set when invoking the diagnostics.



### **Caution**

*The DSP is intended to be used for troubleshooting and testing of the library by trained Field Service Engineers. Using the DSP as a demonstration tool may result in damage to the hardware.*

## Modifying the Autoexec.BAT File

To invoke the DSP from any directory, the path environment variable must include the DSP home directory. Modify your AUTOEXEC.BAT file to incorporate this setting so that the batch files can be found.

To modify the AUTOEXEC.BAT file, incorporate the following:

```
path=c:\TAPELIB;%path% <ENTER>
```

**Note** *Reset the computer after modifying the AUTOEXEC.BAT file.*

## Using Online Help

The on-line help file, TAPELIB.HLP, can be viewed at any time when running the software by pressing the <F1> function key. Help explains how to use the software and describes special features. (Entering <Shift> <F1> gives a more detailed description of the function in question.)

If you wish, you can modify this file to include additional information. However, no line can be longer than 60 characters (a tab is equivalent to four character spaces) and the total file size must be under 5000 bytes.

## Online Error Messages

The DSP automatically displays an error code description whenever an error is received from the component being diagnosed. These error descriptions are contained in the error message data file called TAPELIB\_ERR.MSG. An index file, TAPELIB\_ERR.NDX, is generated to provide brief explanations of each error code.

The error message file should not contain lines longer than 38 characters (a tab is equivalent to four character spaces). Since each error code is a unique key word, the code must be preceded by '@@'. The message file should also contain the '@' as the last key word.

Changes to this file should only be made by authorized service personnel. Invoke the utility to generate a new index file when changes are made to the data file.

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## Starting the Diagnostic Software

Start the Diagnostic Software Program (DSP) by entering the following command at the “**C:\>**” prompt: `TAPELIB /m /d /cX <ENTER>`

**Note** *One blank space between the filename and each parameter.*

where:

- /m** indicates a monochrome display. (If this variable is omitted, the software assumes a color monitor is being used.)
- /d** enables the software to capture messages to/from the diagnostic COM port. (Messages are logged in the file `CAPTURE.TXT` in the DSP home directory.)
- /cX** if specified, uses the COM port “X” (1 or 2) for communication to the host. (Supported ports are COM1 and COM2. The default is COM1.)

Examples for different start-up configurations are shown in Table 3.

Table 3: Start-up Configurations

Example	Mode	Display	Port
TAPELIB	normal usage	color	COM1
TAPELIB /d	debug	color	COM1
TAPELIB /m	normal	monochrome	COM1
TAPELIB /m /d	debug	monochrome	COM1
TAPELIB /c2	normal	color	COM2

## Exiting the Diagnostic Software

Exit the DSP by pressing the “**ESC**” key from the Main Menu Bar.

The software will prompt with “**Y/N**” (Yes/No).

Type “**Y**” <ENTER> to exit and terminate the DSP.

## Menu Structure

The DSP screen is divided into three main functions:

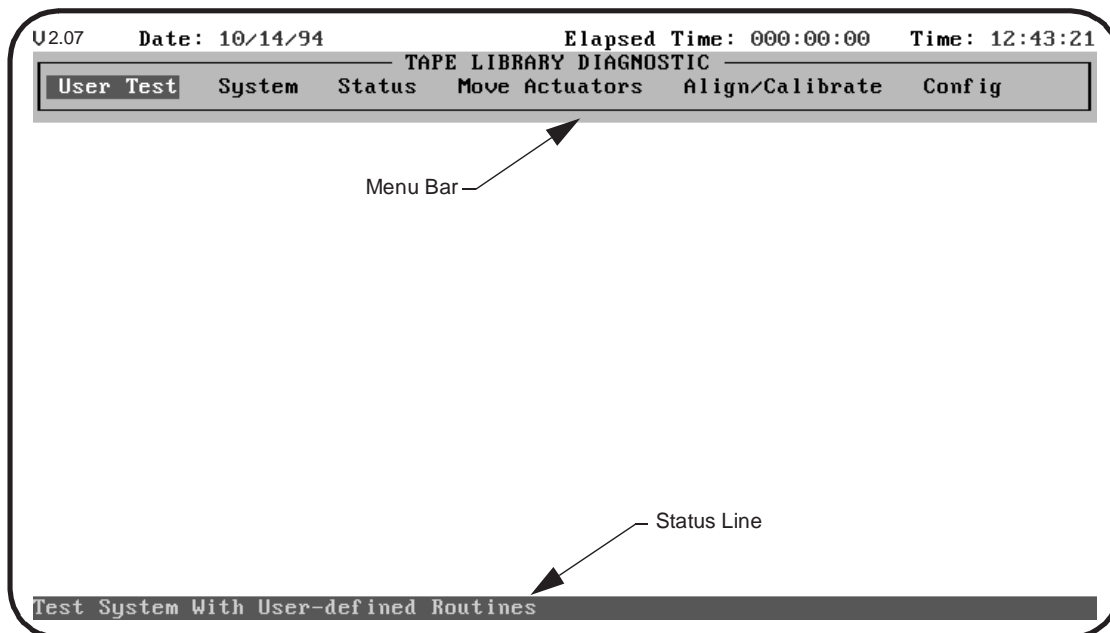
- the Main Menu
- the Return Status Window
- the Command Status Window

The windows are opened differently, however, all windows may be closed by pressing <ESC>.

**Note** *Some tests must be stopped by pressing <CTRL><END> before the window can be exited.*

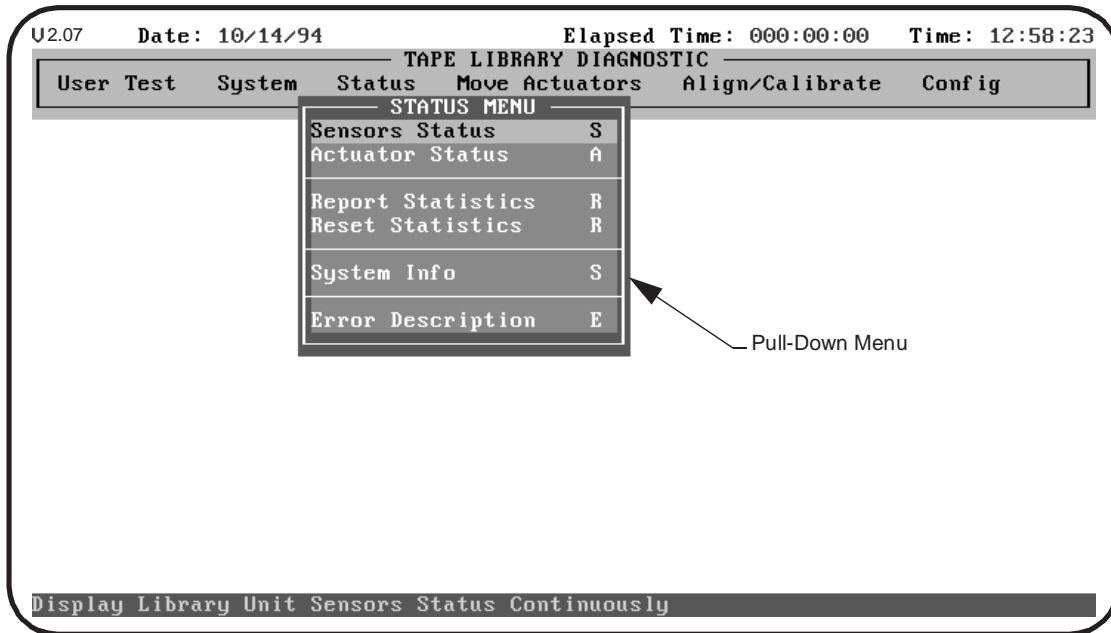
## Main Menu

The Main Menu contains the Menu Bar and Status Line. The Menu Bar displays the six main categories of diagnostic functions. The Status Line displays a brief description of the function being performed.



## Pull-Down Menus

Highlight your desired main menu by using the left-arrow <←> and right-arrow <→> keys and then press the <ENTER> key. The pull-down menu is displayed, listing the available options. Use the up-arrow <↑> and down-arrow <↓> keys to scroll through the options. Once the option is highlighted, press <ENTER> to begin the test. (You can also type-in the key letter that is located to the right of the option.)

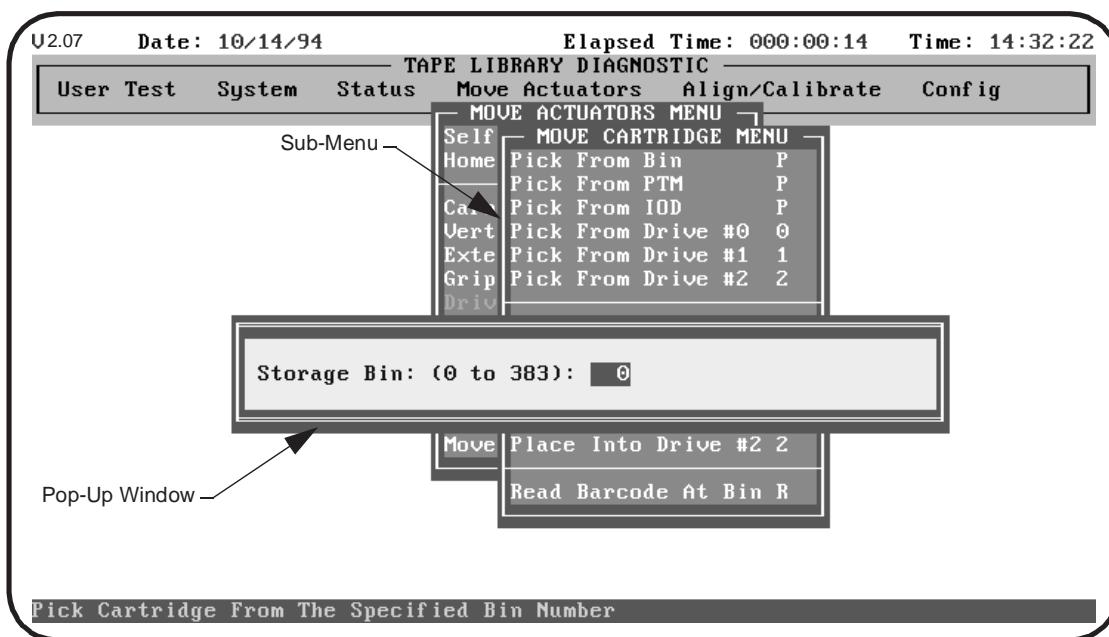


## Sub-Menus and Pop-Up Windows

A “greater than” symbol (>) preceding the key letter indicates that further information is available and necessary prior to executing the function. Once the desired option is selected, a sub-menu is displayed providing further selections, and/or a pop-menu prompts you for additional information.

Select the appropriate option in the sub-menu and/or enter the requested information in the pop-up window. Press <ENTER> to start the test.

**Note** Press <ESC> to exit the sub-menus and pop-up windows.





## Return Status Window

The Return Status Window displays detailed information of the selected function. This window also displays information regarding LOOP MODE, such as the current loop cycle.

```

V2.07  Date: 11/02/94  Elapsed Time: 000:00:01  Time: 13:55:29
-----
Tape Library Diagnostic
User Test  System  Status  Move Actuators  Align/Calibrate  Config
-----
RETURN STATUS
Light Curtain Sensor:  NOT Interrupted
Carousel Sensor:      (HOME) NOT Interrupted (FACE)  Interrupted
Bin Pack Sensor:      (1st)  Interrupted (2nd)  Interrupted
Bin Pack Sensor:      (3rd)  Interrupted (Exp)  NOT Interrupted
Vertical Sensor:      (HOME) NOT Interrupted (LIMIT) NOT Interrupted
Cassette In Gripper: (FRONT) NOT Interrupted (REAR) NOT Interrupted
Extension Sensor:     (HOME) Actuated (LIMIT) NOT Actuated
Doors Sensor:         CLOSED Watchdog: NOT FAULTED
System Status:        OFF-LINE, NOT Emergency STOPPED
Calibration Sensor:   Interrupted Temperature-> 77.7031
Outport:              FULL Inport Door Sensor: OPEN
Cartridge In Inport: PRESENT NOT REGISTERED
PTM STOPS:            UP DOWN
Left Tray:            OCCLUDED Left Gate: OCCLUDED
Right Gate:           OCCLUDED Right Tray: OCCLUDED

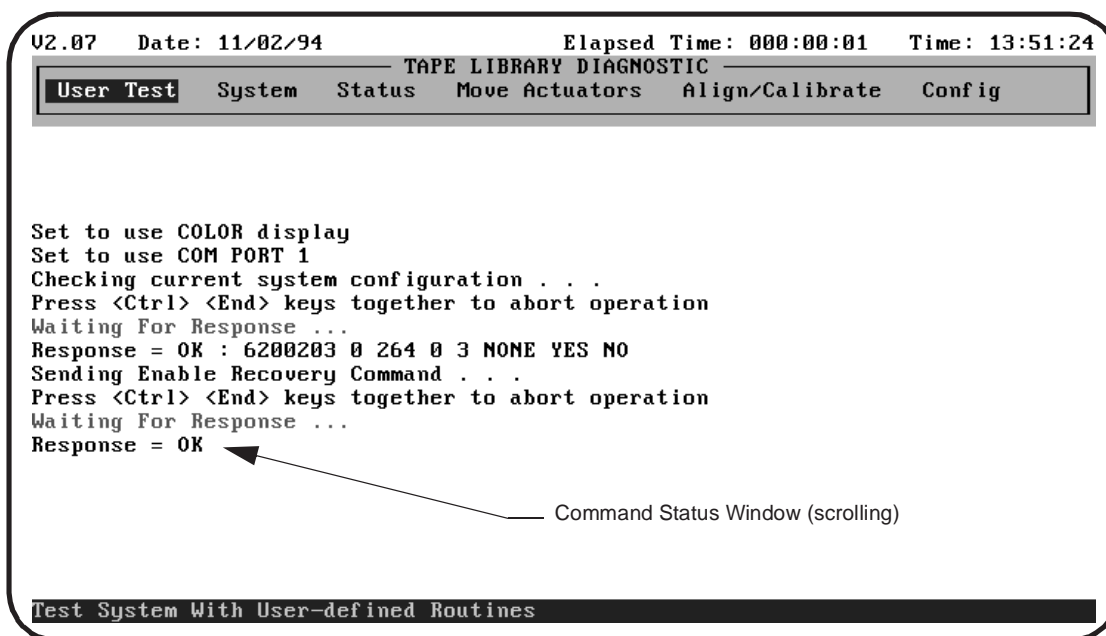
TEST Mode, Press <END> key to exit .....
Pausing for 4 seconds
nd Is
For R
= OK : 0 0 1 1 1 1 0 0 0 0 1 0 0 0 0 77.703125 1 1 1 1 0 1 1 1 1 1 0 1
Display Library Unit Sensors Status Continuously
  
```

Return Status Window

## Command Status Window

The Command Status Window displays the communication between the diagnostic port and the library. For each command sequence it lists the number of commands executed and the elapsed time.

The Command Status Window is often hidden by pull-down menus and pop-ups. To view the window, press the <HOME> key. Use the PageUp, PageDown, and arrow keys to view the portions of the window that have already scrolled off the screen. Press the <ESC> key to return the window to its previous size and to return to the previous window.



The screenshot shows a terminal window titled "TAPE LIBRARY DIAGNOSTIC". At the top, it displays "U2.07 Date: 11/02/94 Elapsed Time: 000:00:01 Time: 13:51:24". Below this is a menu bar with options: "User Test", "System", "Status", "Move Actuators", "Align/Calibrate", and "Config". The main area contains the following text:

```
Set to use COLOR display
Set to use COM PORT 1
Checking current system configuration . . .
Press <Ctrl> <End> keys together to abort operation
Waiting For Response ...
Response = OK : 6200203 0 264 0 3 NONE YES NO
Sending Enable Recovery Command . . .
Press <Ctrl> <End> keys together to abort operation
Waiting For Response ...
Response = OK
```

An arrow points from the text "Command Status Window (scrolling)" to the "Response = OK" line. At the bottom of the window, a status bar reads "Test System With User-defined Routines".

## Function and Control Keys

Function and control keys allow you to move around the menus and execute the diagnostic functions with flexibility and control. Review the descriptions in Table 4, before using the function and control keys.

Table 4: Function and Control Keys

Key(s)	Function	Description
F1	Help	Displays the help file. Use the “PageUp” and “PageDown” or the arrow keys to scroll. Press the “ESC” key to exit the help file and return to your original position.
F2	View Error Description	Displays the expanded Error Description for the last error returned. Press the “ESC” key to exit the error file. (This function is not currently supported.)
F3	View Test Command File	Displays a TEST command file stored on disk. This key is only valid in the lower section of the User Test menus. Press the “ESC” key to exit the TEST command file.
ENTER or RETURN	Make a Selection	Selects a menu option, picks a specific parameter for a command, or toggles (select/deselect) a configuration item.
HOME	Command Status	Displays the Command Status window. Use the “PageUp”, “PageDown” and arrow keys to display information not currently in the window. Press the “ESC” key to restore the original window and resume operation.
END	Terminate Loop and Test Mode	<p>Set the LOOP MODE by selecting “USER TEST” “L”. LOOP MODE causes the software to send a command (or a series of commands defined in a test routine) continuously.</p> <p>TEST MODE is automatically set when any of the pre-defined and the user defined test routines are chosen.</p> <p>Upon receiving the “END” key, the software waits for the response of the most recent command, then terminates the command sequence and returns to the menu selection.</p>

Key(s)	Function	Description
CTRL END	Abort Command	<p>Aborts the current executing command and returns to the menu selection. This command terminates LOOP MODE and TEST MODE automatically.</p> <p>When an abort command is sent out, the response displays in the Command Status window.</p>
ALT C	Start Capture Mode	<p>Starts the capture mode by defining commands for test routines. Select the commands by pressing the &lt;ENTER&gt; key at the desired menu option.</p> <p>To exit from the capture mode, press "<b>ALT</b>" "<b>E</b>". The maximum number of commands that can be captured in a test file is 25. The maximum number of user defined test routines is 15.</p>
ALT E	End Capture Mode	<p>Terminates the capture mode. The user defined test command sequence file will be saved on disk under a user-specified name with a file extension of "TST."</p> <p>If the file already exists, you have the option to either append to or overwrite the existing file. The new test routine will be added to the TEST menu selection automatically.</p>

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## **Diagnostic Functions**

This section provides detailed instructions for each of the diagnostic functions. Each subsection provides a screen illustration of the corresponding submenu, a description of the options that can be selected and additional features or rules that apply specifically to that option.

The options in this chapter are arranged in the order in which they appear in the Main Menu Screen, from left-to-right.

## Main Menu

The Main Menu screen contains six categories of diagnostic functions. Use the left-arrow <←> and right-arrow <→> keys to highlight an option. When highlighted, a pull-down menu appears listing the options available. Press the <ENTER> key to select the desired option.





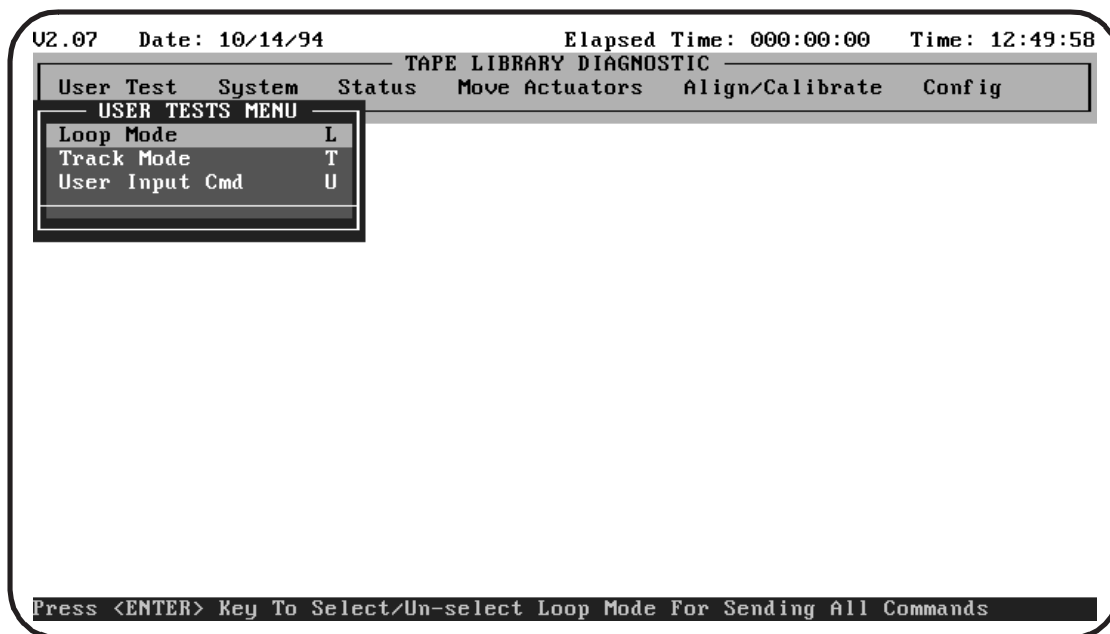
---

Table 5: Main Menu  
Descriptions

<b>Menu</b>	<b>Description</b>
User Test	Provides the ability to log all messages scrolled in the command window to disk, enter commands in ASCII strings of characters and displays user defined filenames when a test routine has been created using the “capture” mode of diagnostics.
System	Provides high level commands that exercise entire hardware components.
Status	Provides feedback from various sensors, displays system statistics information and system information (i.e. model #, firmware revision and configuration).
Move Actuators	Provides low level commands that allow the movement of individual actuators and provides a means to move cartridges within the library.
Align/Calibrate	Provides an option to move the carousel to its alignment face, and other options to set the vertical position of bin slots and tape drives within the library.
Config	Sets system configuration, initializes an inventory sequence and enables/disables recovery capabilities.

## User Tests Menu

The User Test menu enables or disables the LOOP MODE, provides the capability to log all background window messages to a disk file, allows input of commands in ASCII strings and displays filenames generated from the diagnostics “capture”.



Select a specific test by either using the <↑> and <↓> keys to scroll through the options or by entering the key letter located to the right of the option. Once the option is highlighted, press <ENTER> to execute the selection.

## Loop Mode

Loop Mode allows you to repeat the same command or sequence of commands continuously. To enable Loop Mode:

1. Highlight the Loop Mode selection.
2. Press <ENTER>.

A LOOP MODE indicator will flash at the top of the screen as long as Loop Mode is enabled, and the option will be prefaced with a '>>'.>>

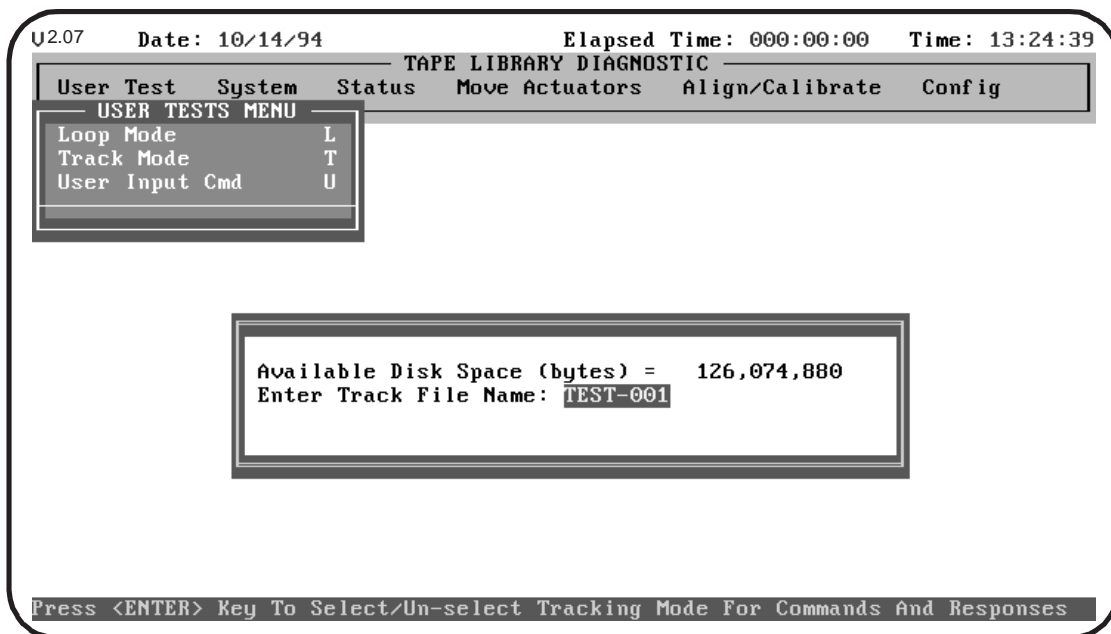
All subsequent commands or command sequences entered will be repeated continuously. Any command running in Loop Mode may be terminated by pressing the <END> key. Upon receiving the <END> key, the software will wait for the completion of a command or cycle, then terminate the command sequence and return to the menu selection.

If <END> fails to terminate the command, enter <CTRL><END> to abort the command and return to the menu selection.

To disable the LOOP MODE indicator, highlight the Loop Mode selection again and press <ENTER>.

## Track Mode

Track Mode provides the capability to log all messages scrolled in the Command Status window to disk file called TAPELIB.TRK (unless a different name is specified at the command prompt when Track Mode is selected).



## User Input Command

User Input Command allows commands to be entered via an ASCII string of characters. This option is used as a development tool and prompts for a password before becoming functional. This option is not expected to be used in normal field service of the TL820.

## Pre-Defined Script Tests (sample.TST)

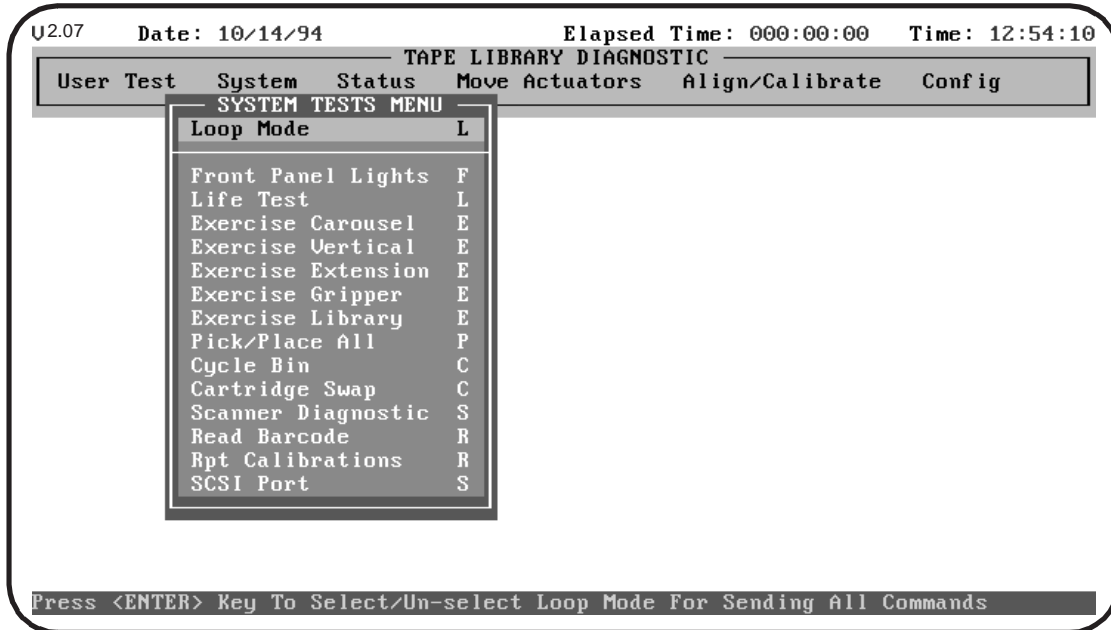
The selections at the bottom of the User Test menu reflect the diagnostic routines that you create. Create diagnostic routines by capturing one or more commands and saving the commands to a disk file. To capture commands, do the following:

1. Press <ALT> C.
2. Select the commands you want to save.
3. Press <ALT> E to end the capture mode.

The command sequence will be saved on disk in a file named 'sample.TST', where 'sample' is the file name you specify. If the file name you select already exists, you may choose to either append it, or overwrite it. All files with the.TST extension will be automatically added to the User Test menu.

## System Menu

The System Menu provides high level command options that exercise entire hardware components as well as test routines that run all components of the library during the same routine.



Select a specific test by either using the ↑ and ↓ keys to scroll through the options, or by entering the key letter which is located to the right of the option. Once the option is highlighted, press <ENTER> to begin the test.

### Loop Mode

See “Loop Mode” on page 4-6 for a detailed description of this option.

### Front Panel Lights

The Front Panel Lights option cycles the front panel two digit display from 00 thru FF, and cycles standby and fault indicators on and off.

### Life Test

Life Test is a special test used in accelerated life testing. This option requires a password and will not be used on units in the field.

## Exercise Carousel

Exercise Carousel moves the carousel through all available positions. Use this option to verify that the carousel will move from face to face and stop on the proper face flag.

## Exercise Vertical

Exercise Vertical moves the vertical axis through all available positions. Use this option to verify the proper operation of the vertical axis and of the vertical home and limit sensors.

## Exercise Extension

Exercise Extension moves the extension axis through all available positions. Use this option to verify the proper operation of the extension axis and of the extension home and limit sensors.

## Exercise Gripper

Exercise Gripper moves the gripper through all available positions. Use this option to verify the proper operation of the gripper assembly and gripper all effect sensors.

## Exercise Library

Exercise Library picks one cartridge from each of the 24 binpacks and moves it to a new location, exercising all major components of the system in the process. When the Exercise Library routine starts, it first picks the cartridge from slot location 179 and moves it to slot location 0. Then it picks a cartridge from another location and moves it to location 179. This process continues until 24 different cartridges (one from each bin pack) have been picked and moved to a new location.

Use this option to verify the proper operation of the system after replacing any major component (FRU).

**Note** *Do not run Exercise Library if the customer is sensitive to the position of the tape cartridges within the library. This test moves cartridges but does not return them to their original locations.*

To run Exercise Library, all bin locations must be filled with the exception of bin slot 0 and the gripper must be free. To remove the cartridge from bin slot 0 and free the gripper, do the following:

1. Use the Pick from Bin option (see “Move Cartridges”) to remove the cartridge at bin slot 0.

2. Remove the tape from the gripper by either opening the front door of the library and manually removing the cartridge from the gripper, or by using the Place into Drive option from the same menu, to place the cartridge into a tape drive. (It is recommended that you run Exercise Library as an overall test after servicing the library. This test can also be used as a demonstration of library operation.)

## Pick/Place All

Pick/Place All moves every cartridge in the system to a new location. Like Exercise Library, this test requires that all bin locations must be filled with the exception of bin slot 0 and the gripper must be free.

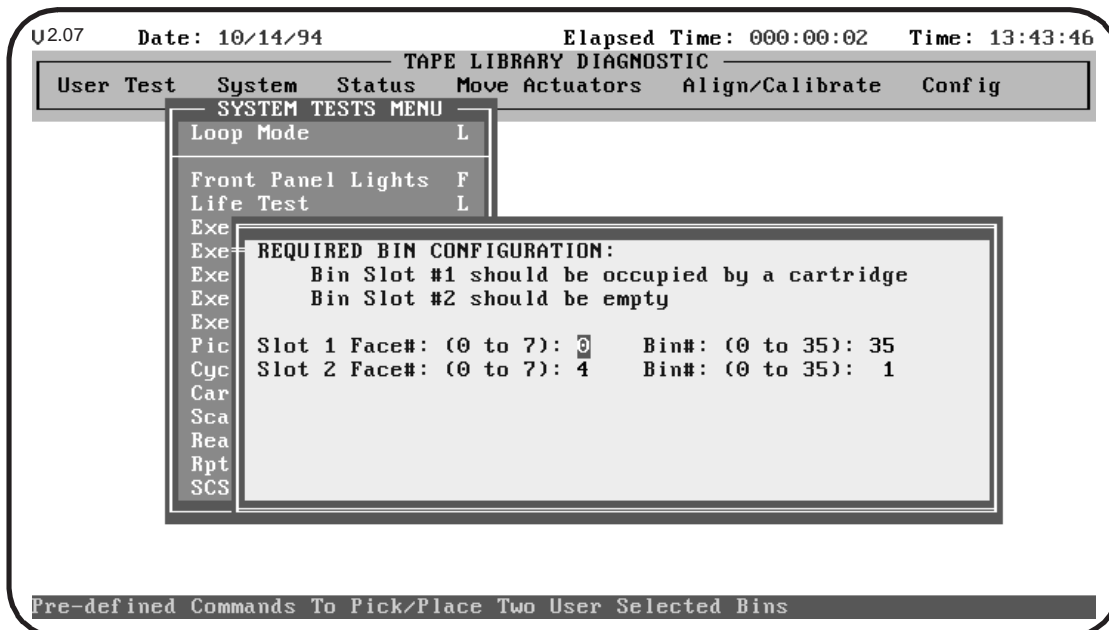
**Note** *Do not run Exercise Library if the customer is sensitive to the position of the tape cartridges within the library. This test moves cartridges but does not return them to their original locations.*

## Cycle Bin

This test will move the cartridge in bin #0 to every other bin slot on the carousel. The test takes approximately 45 minutes. (Ensure that all binpacs are empty, except for bin #0, before executing this test.)

## Cartridge Swap

Cartridge Swap identifies two bin slots in the carousel and moves a single cartridge between the two designated bin slots.



To perform a Cartridge Swap, do the following:

1. Select the Cartridge Swap option. You will be prompted to identify one bin slot as occupied and one bin slot as empty.
2. After the software checks the designated slots, you will be prompted to replace the cartridge at the occupied slot with a "MAINTA" labeled cartridge.
3. The software will check the occupied slot for the "MAINTA" label. If found, the cartridge will be moved from the designated occupied slot to the designated empty slot and then back.

**Note** *If a cartridge is found with a label other than a "MAINTA" label, you will be prompted for confirmation to continue the Cartridge Swap function.*

## Scanner Diagnostic

Scanner Diagnostic moves the vertical carriage to bin location 0, scans the cartridge and reports the cartridge label information in the Return Status window. The software scans the barcode label and reports about every 1 second. Press the <END> key to interrupt the scan function.

## Read Barcode

Read Barcode performs a scan without moving the vertical carriage. The barcode label information is reported in the Return Status window. The software scans the barcode label and reports about every 1 second. Press the <END> key to interrupt the scan function.

**Note** *When performing this test, position the in front of the. If the scanner is not aimed at a barcode label, the Return Status window will return a NO READ message.*

## Rpt Calibrations

Report calibrations is a combination of library commands that provides an overview of the library's current calibration settings

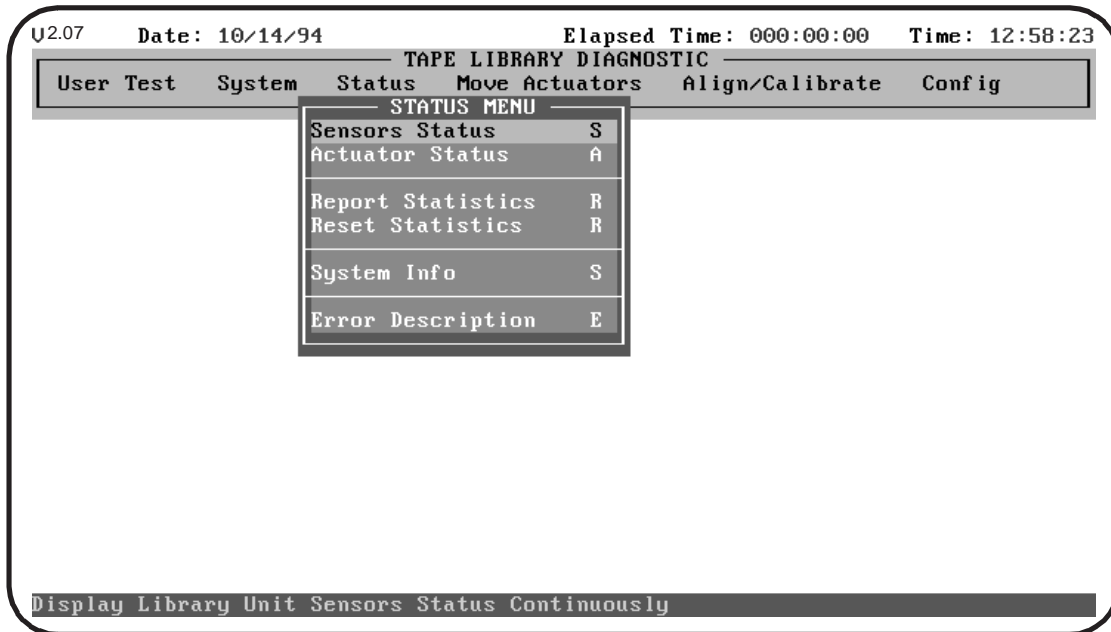
## SCSI Port

SCSI Port diagnostics are currently not available.



## Status Menu

The Status Menu reports all sensor and actuator status throughout the library, reports all statistics information and reports the System information (i.e. model #, firmware revision and configuration) in the Return Status Window.



Select a specific test by either using the ↑ and ↓ keys to scroll through the options, or by entering the key letter which is located to the right of the option. Once the option is highlighted, press <ENTER> to begin the test.

A '>' preceding the key letter of an option in a pull-down menu indicates that further information is necessary prior to starting the test. An additional menu appears after you select this function, giving you further selections or prompting you to enter additional information.

## Sensors Status

Sensor Status displays the current condition of each sensor and the switches in the system. The display shows the status of every sensor in the library, pauses (for 4 seconds), and then updates the display with the current condition of each sensor. Press the <END> key to interrupt the Sensor Status function.

Use this option to test for proper operation of each sensor and switch in the library.

## Actuator Status

Actuator Status reports the position of each of the four actuators (carousel, vertical, extension, gripper) in the library. The display shows the position of every actuator in the library, pauses (for 4 seconds), and then updates the display with the current changes in each actuator location. Press the <END> key to interrupt the Actuator Status function.

Use this option to test for proper operation and tracking of each actuator.

**Note** *Be sure that you have performed a “Self Test All” and “Home All” before interrogating Actuator Status. If you do not perform these functions, you may receive erroneous status information.*

## Report Statistics

This option displays a screen of statistical information.

## Reset Statistics

Reset Statistics resets the statistics table. Selecting this option generates a pop-up for a password that is not available to Field Service. Resetting the statistics is reserved for development use only.

## System Info

System Info reports the model number, current firmware revision and configuration of the library.

## Error Description

This feature displays the description of the SCSI error code that you enter.

U2.07    Date: 10/14/94    Elapsed Time: 000:00:41    Time: 13:58:15

TAPE LIBRARY DIAGNOSTIC

User Test	System	Status	Move Actuators	Align/Calibrate	Config
-----------	--------	--------	----------------	-----------------	--------

STATUS MENU

Sensors Status	S
Actuator Status	A
Report Statistics	R

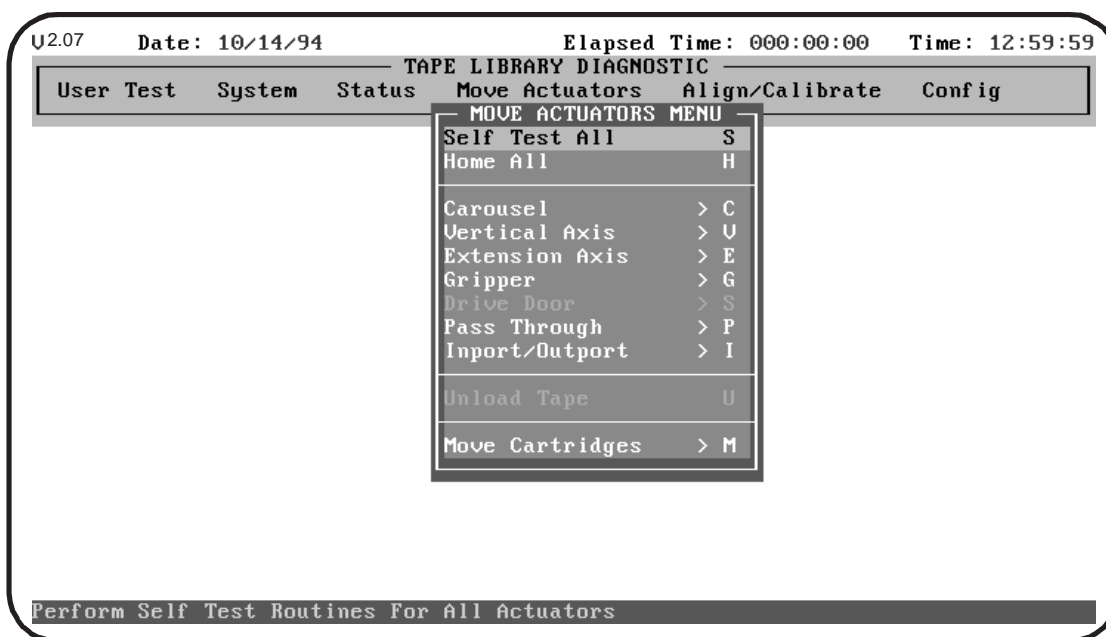
Enter Error Code in the format <SSAAQQ>  
where SS = Sense Key  
and AA = Additional Sense Key  
and QQ = Qualifier for Additional Sense Key  
e.g. 0B8302

Error Code:

Display The Error Description For A Specified Error Code

## Move Actuators Menu

The Move Actuators menu provides the capability to test the actuators, (carousel, vertical axis, extension axis and gripper motor), open and close the “Drive Door”, test the operation of the “Pass Through”, the “Inport/Outport”, unload a tape from a tape drive (“Unload Tape”) and move individual cartridges within the library (“Move Cartridges”).



Select a specific test by either using the ↑ and ↓ keys to scroll through the options or by entering the key letter located to the right of the option. Once the option is highlighted, press <ENTER> to execute the test.

### Self-Test All

Self-Test All sends a short electrical pulse to each motor in the system and then reads the encoder or sensors data associated with each motor to see if the motor, encoder and sensors responded as instructed.

### Home All

Home All returns all actuators to their home position.

### Carousel Sub-Menu

Carousel tests individual movements of the carousel.

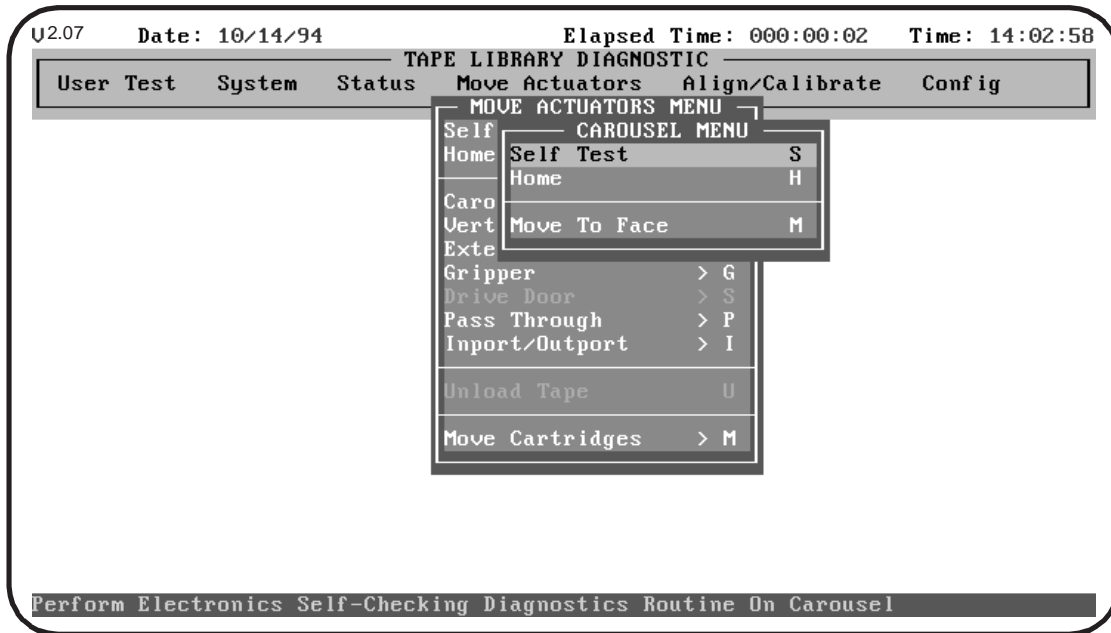


Table 6: Carousel Sub-Menu Options

Option	Description
Self Test	Sends a short pulse to the carousel and then reads the encoder information which comes back to verify that both the motor and encoder are working properly.
Home	Sends the carousel to its home position.
Move To Face	Enter a face from 0 to 7 to move the carousel to that position.

## Vertical Axis Sub-Menu

Vertical Axis tests individual movements of the vertical axis.

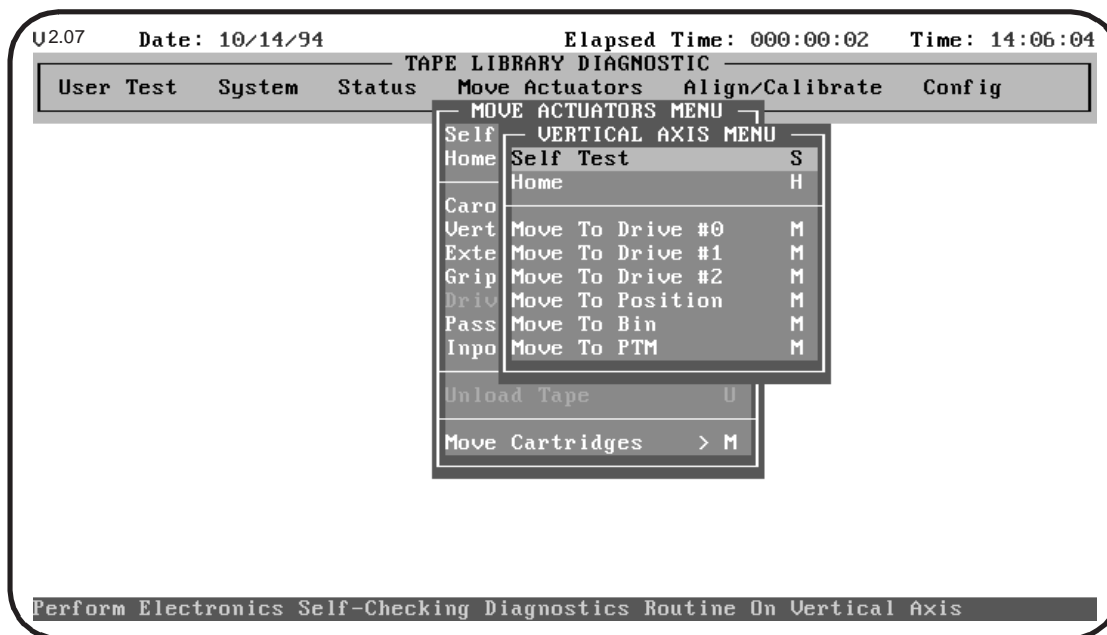


Table 7: Vertical Axis

Option	Description
Self Test	Sends a short pulse to the vertical drive motor and then reads the encoder information which comes back to verify that both the motor and encoder are working properly.
Home	Returns the vertical axis to its home position.
Move To Drive #0	Moves the vertical axis directly in front of tape drive 0.
Move To Drive #1	Moves the vertical axis directly in front of tape drive 1.
Move To Drive #2	Moves the vertical axis directly in front of tape drive 2.
Move To Position	Moves the vertical axis to a position relative to the home location. Enter a number to specify the relative position. The relative position is specified in inches. A positive number moves the axis down toward the binpacks. A negative number moves the axis up toward the tape drives.
Move To Bin	Enter a bin number to move the vertical axis to a location in front of a bin.
Move To PTM	Position the vertical axis to the Pass Through location.

## Extension Axis Sub-Menu

Extension Axis tests individual movements of the extension axis.

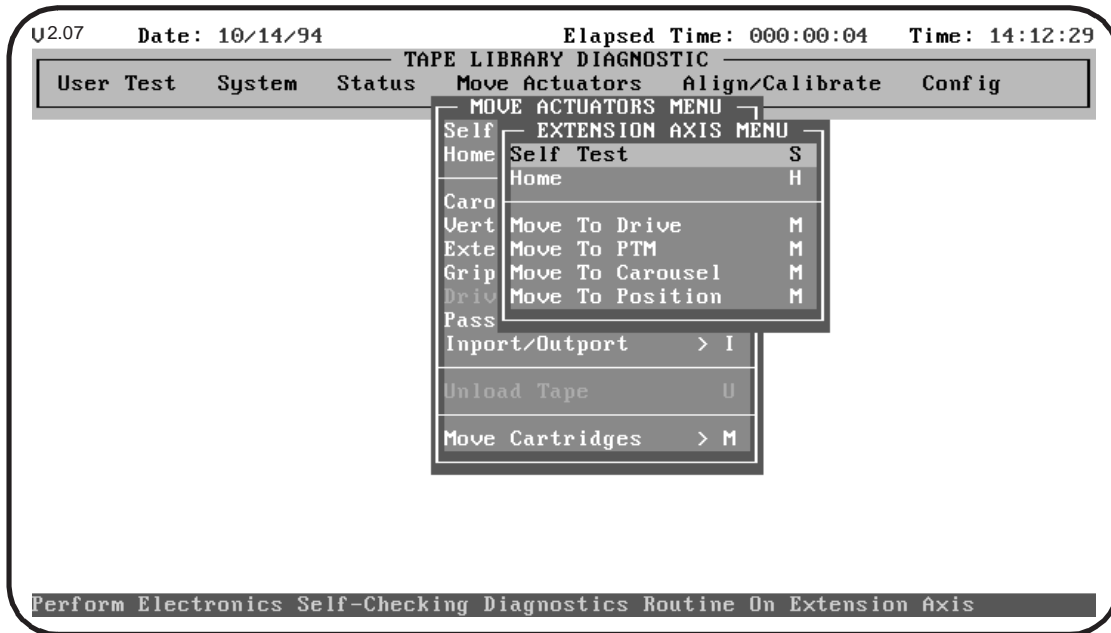


Table 8: Extension Axis Sub-Menu Functions

Option	Description
Self Test	Sends a short pulse to the extension motor and then reads the encoder data verifying that both the motor and encoder are working properly.
Home	Returns the extension axis to its home position.
Move To Home	Returns the extension axis to its home position.
Move To Drive	Moves the extension axis forward to the position required to pick from a drive.
Move To PTM	Moves the extension axis forward to the position required to pick a cartridge from the PTM.
Move To Carousel	Moves the extension axis forward to the position required to pick a cartridge from the carousel.
Move To Position	Moves the extension axis to a position relative to the home location. Enter a number to specify the relative position.

## Gripper Sub-Menu

Gripper tests individual movements of the gripper assembly.

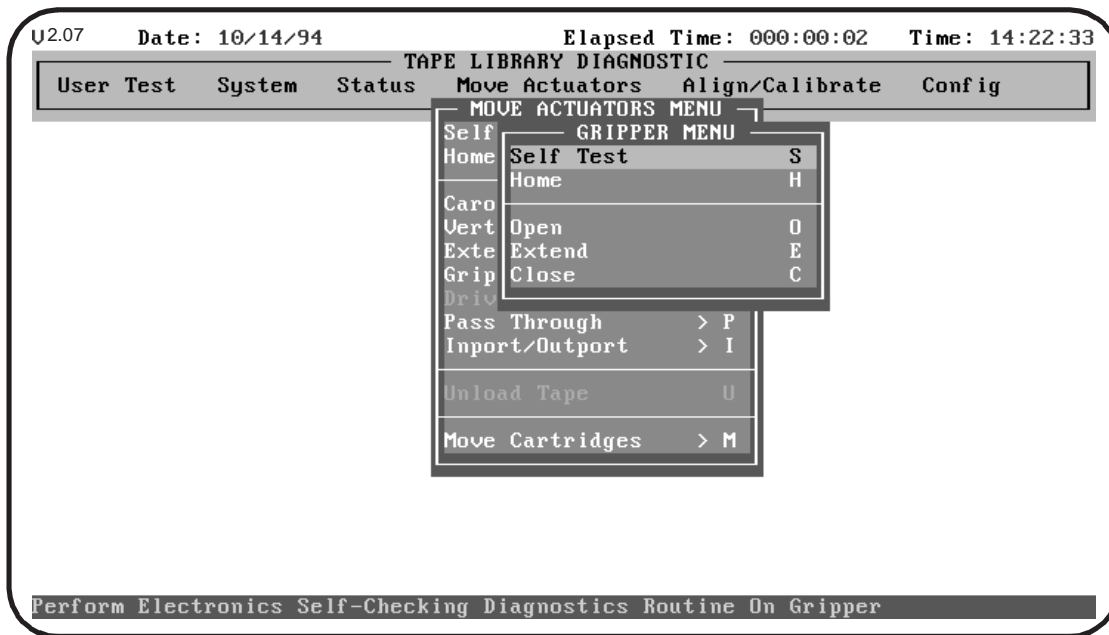


Table 9: Gripper Sub-Menu Functions

Option	Description
Self Test	Sends a short pulse to the gripper motor and then reads the sensor information which comes back to verify that both the motor and sensors are working properly.
Home	Returns the gripper to its home position.
Open	Opens the gripper jaws without extending the cartridge pusher.
Extend	Extends the gripper jaws and extends the cartridge pusher forward.
Close	Retracts the cartridge pusher and closes the jaws.



## Drive Door Sub-Menu

Drive Door tests individual movements of the stepper motor on the tape drive doors. Enter the appropriate drive (0-2) in the pop-up window to execute the test.

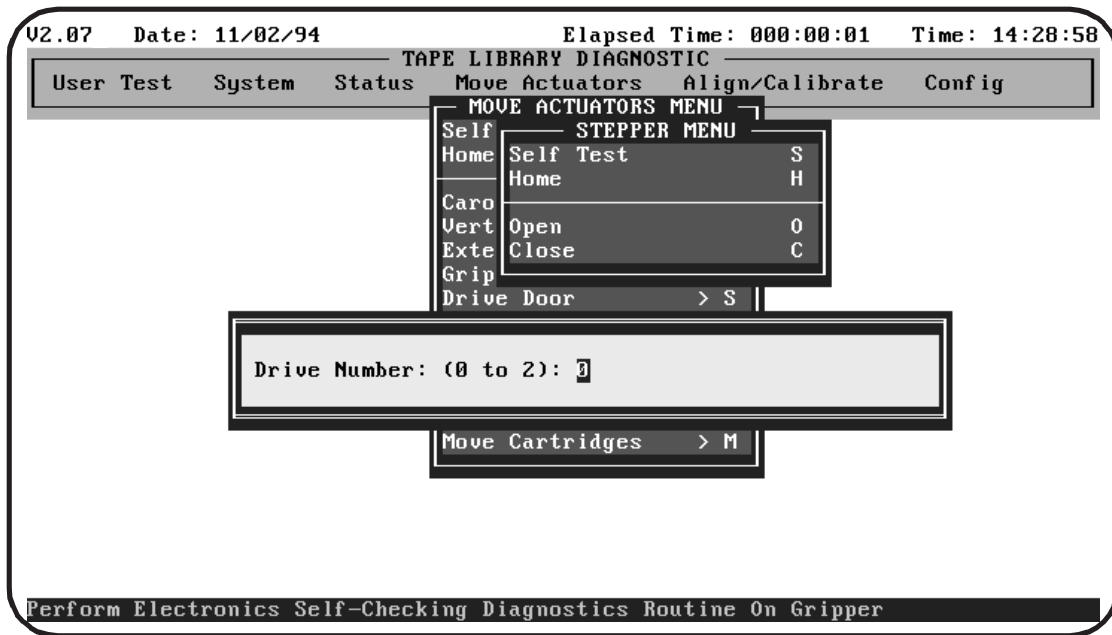


Table 10: Drive Door Sub-Menu Functions

Option	Description
Self Test	Verifies sensor and stepper motor operation. Opens and closes drive door.
Home	Closes drive door.
Open	Opens drive door and ejects the DLT.
Close	Closes drive door.

## Pass Through Sub-Menu

Pass-Through tests individual movements of the Pass-Through Mechanism.



Table 11: Pass Through  
 Sub-Menu Functions

Option	Description
Self Test	Sends a short pulse to the PTM drive motor and gate solenoid then reads the encoder and sensor information which comes back to verify that both the motor, encoder and sensors are working properly. This test requires that a cartridge be present on the PTM conveyor. A prompt will appear on the display if a cartridge is not found.
Pick	Picks a cartridge from the PTM into the gripper jaws. This test requires that a cartridge be present on the PTM conveyor. A prompt will appear on the display if a cartridge is not found.
Place	Places a cartridge from the gripper jaws to the PTM conveyor. This test requires that a cartridge be in the gripper. A prompt will appear on the display if a cartridge is not found.

## Inport/Outport Sub-Menu

Inport/Outport tests individual movements of the IOD.

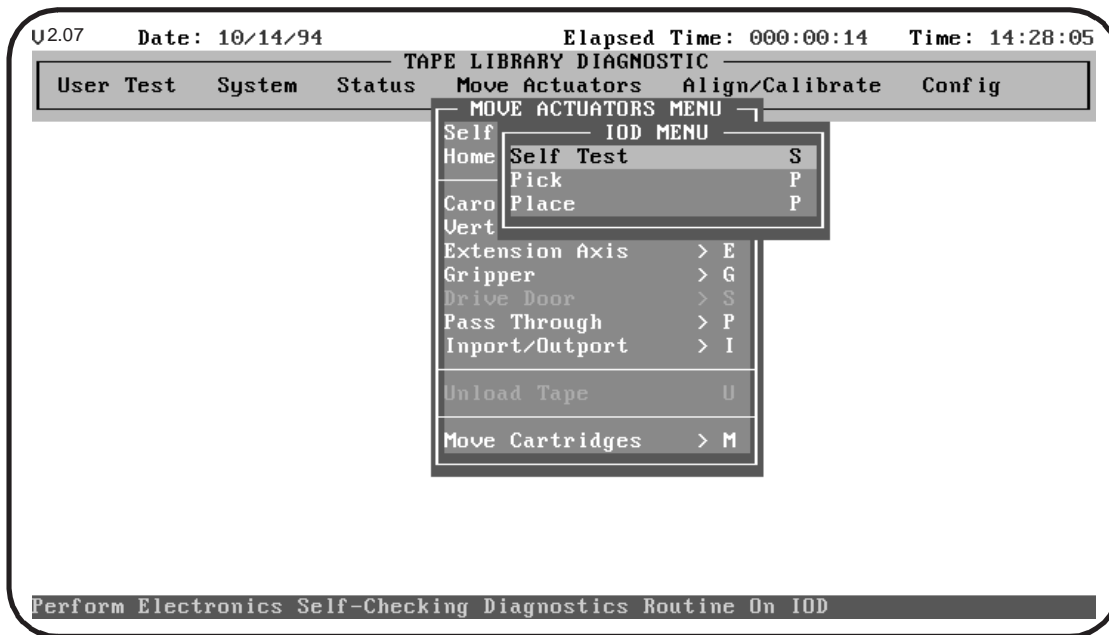


Table 12: Inport/ Outport Sub-Menu Functions

Option	Description
Self Test	Moves a cartridge onto the PTM conveyor belts. To perform the Self-Test, do the following: 1) Select Self-Test and wait for the green light on the IOD to illuminate. 2) Press the lit Inport Open Door Switch. 3) Insert a cartridge into the IOD Inport Tray and close the door. 4) Perform a PTM Self Test to move the cartridge to the center of the PTM.
Pick	Performs a pick operation from the PTM. To perform a Pick, do the following: 1) Select Pick and wait for the green light on the IOD to illuminate. 2) Press the lit Inport Open Door Switch. 3) Insert a cartridge into the Inport Tray and close the door. (Once the door is closed, the PTM will move the cartridge to its center where a pick operation will be performed.
Place	Places a cartridge in the IOD. Make sure a cartridge is present in the gripper. Once in the gripper, the cartridge is placed on the PTM conveyor and the PTM will move the cartridge to the outport stacker of the IOD.

## Unload Tape

This option performs the same function as the Tape Drive Status/ Control Panel Unload (UNLOAD DRIVE) switch on the tape drive that you specify. That is, it rewinds the DLT to the beginning-of-tape. (If you want to eject the DLT, see "Drive Door".)

At the pop-up window, type-in the number of the drive that you want to unload ("Drive Number: (0 to 2):") and press <ENTER>.

**Note**     *When you execute this command, the tape will completely rewind. Depending on the tape position, it will take 10 to 120 seconds before the OPERATE HANDLE indicator lights.*

## Move Cartridges Sub-Menu

Move Cartridges picks and places cartridges from one bin to another or from a bin to either of the tape drives.

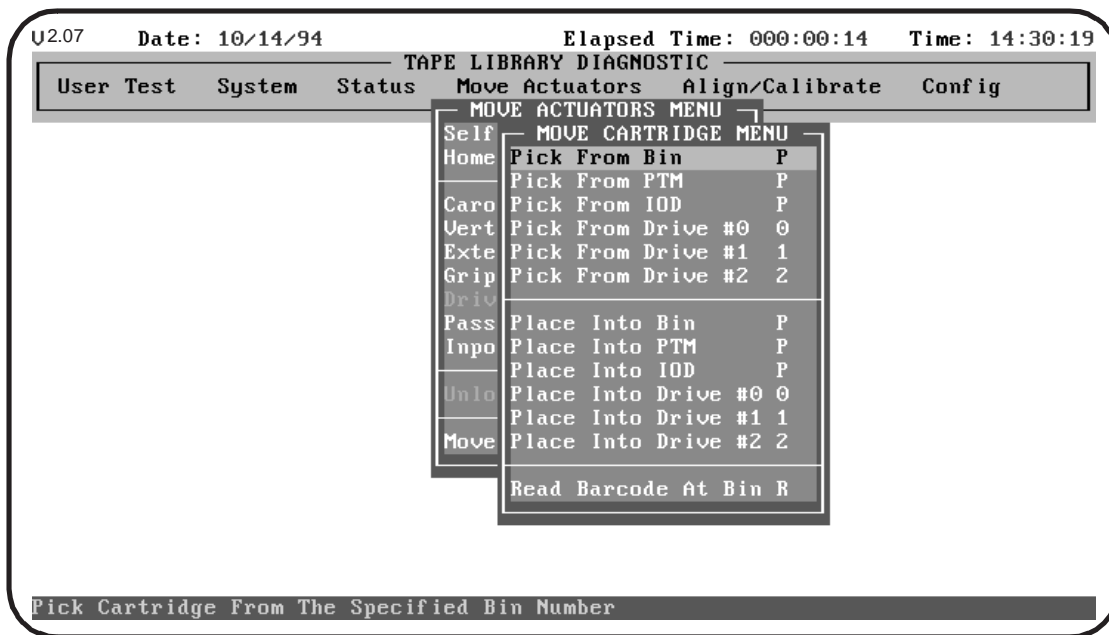
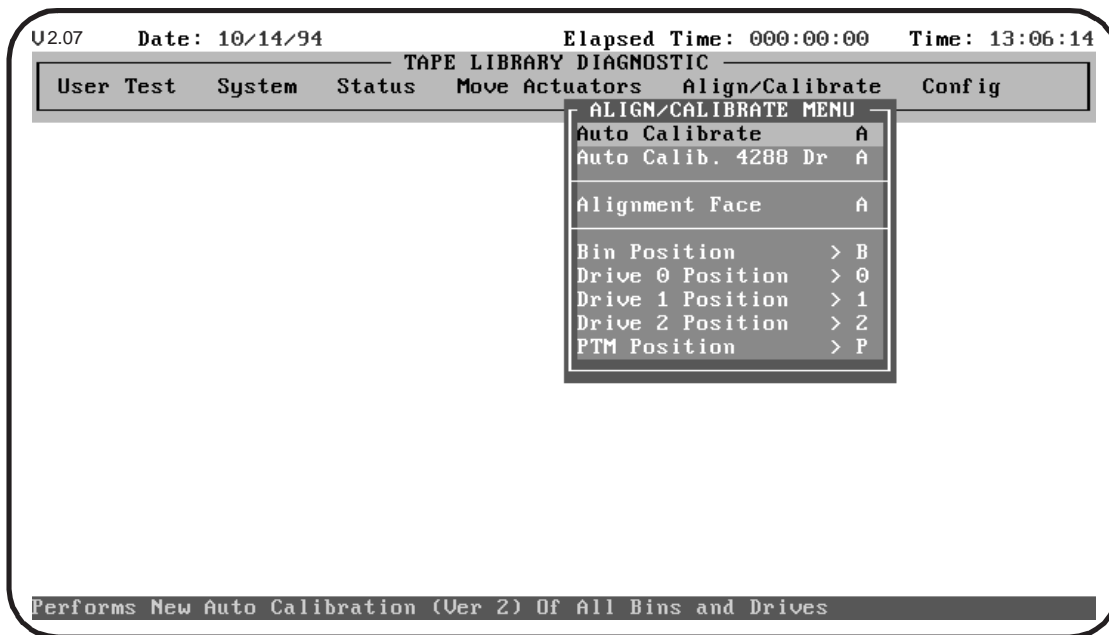


Table 13: Move Cartridges Sub-Menu Functions

Option	Description
Pick From Bin	Picks a cartridge from the requested bin. Enter the desired bin number.
Pick From PTM	Picks a cartridge from the PTM.
Pick From IOD	Picks a cartridge (transferred from the IOD to the PTM) from the PTM.
Pick From Drive #0/ #1/#2	Picks a cartridge from the specified tape drive.
Place Into Bin	Places a cartridge into the requested bin. Enter the desired bin number.
Place Into PTM	Places a cartridge into the PTM.
Place Into IOD	Places a cartridge into the PTM for transfer to the IOD
Place Into Drive #0/ #1/#2	Places a cartridge into the specified tape drive.
Read Barcode at Bin R	Reads the cartridge barcode information from the specified bin.

## Align/Calibrate Menu

The Align/Calibrate Menu provides the capability to perform automatic calibration. This sets the vertical location value for each bin location, each tape drive and the PTM. There is also an option to spin the carousel to the optimum “alignment face”, as well as options to report the vertical location value for each bin slot, tape drive and the PTM.



Select a specific test by either using the <↑> and <↓> keys to scroll through the options or by entering the key letter located to the right of the option. Once the option is highlighted, press <ENTER> to execute the selection.

## Auto Calibrate

Setting vertical calibration is the process of identifying the vertical location of each bin slot, each tape drive and the PTM. Once identified, vertical calibration values are stored in non-volatile RAM (NVRAM).

Setting vertical calibration requires using the Alignment/Calibration Tool Kit (refer to Document EK-TL820-SV “TL820 Field Service Manual”).

To set the vertical calibration values, do the following.

1. Open the front door of the library.
2. Locate the alignment label by removing the bottom binpack and turning the carousel slightly counterclockwise. (The alignment label is located on the bottom of the cabinet just to the right of the light curtain bracket.)

**Note** *The alignment label indicates the proper face to use when performing vertical calibration. The alignment label also indicates whether the carousel alignment tool should be installed near the top or the bottom of the carousel.*

3. Record the information on the alignment label.
4. In the Move Actuators menu, select the Self Test All option. The system will perform a self-test that takes approximately 6 seconds.
5. Select the Home All option. The system will perform a home all that takes approximately 45 seconds.
6. Select the Align/Calibrate menu.
7. Select the Alignment Face option. Enter the face number recorded on the alignment label. The carousel will spin to that face.
8. Open the front door of the library and remove all binpacks from the face.
9. Gently install the carousel alignment tool on the carousel:
  - If the alignment label indicated TOP, install the tool on the top buttons that support the TOP binpack.
  - If the alignment label indicated BOTTOM, install the tool on the top buttons that support the BOTTOM binpack.

**Note** *If the carousel moves even slightly when installing the carousel alignment tool, use the Move Actuators-Carousel menu to move the carousel to any other face, then use the Align/Calibrate-Alignment Face option to move the carousel back to the alignment face. This will ensure that the alignment face is positioned at its centerline.*

10. Install the front door interlock override tool.

11. Using the Move Actuators-Gripper menu, open the gripper jaws and install the gripper alignment tool. Close the gripper jaws on the tool so that the tool is held securely.

**Note** *It is important that the left edge of the gripper alignment tool (as viewed when standing inside the open door) be seated directly against the cartridge guide plate on the left edge of the extension axis.*

12. Attach the cable connector on the tool to the QSPI PWA. The QSPI PWA is located underneath the extension axis assembly.

**Note** *The tape drives are numbered 0 through 2 from bottom to top.*

13. Install the tape drive alignment cartridges in the tape drives.
14. Gently move the stops on the PTM to a perpendicular position and install the PTM alignment cartridge.

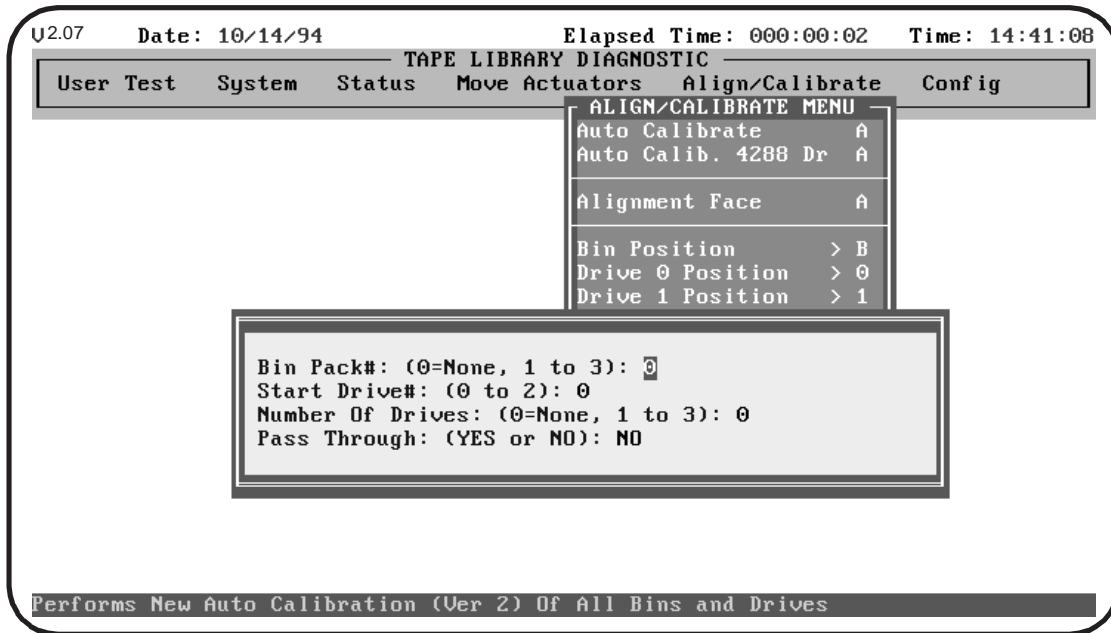
**Note** *Set the alignment cartridge on the conveyor belt with the left edge of the tool flush against the two stops at the left of the PTM. Allow the stops to go back to their starting positions.*

15. Close the front door.
16. In the Align/Calibrate menu, select the Auto Calibrate option.
  - Enter 2 for Bin Pack # – 2 is where the triangular carousel alignment tool is located, at the middle or #2 binpack location.
  - Enter “0” as the Start Drive.
  - Enter “3” for number of drives.
  - Enter “Yes” for Pass Through.
  - Press the <ENTER> key.

When Auto calibration begins, the vertical and extension axes will move until the sensor on the gripper alignment tool finds the sensor interrupt flag on the front of the carousel alignment tool, the tape drive alignment cartridge and the PTM alignment cartridge. The gripper will pause as each flag is found and write the vertical calibration value for the associated position to NVRAM.

Since each carousel bin slot has a fixed vertical position relative to every other bin slot, it is only necessary to calibrate one bin slot and all bin slots will be updated simultaneously. Therefore, when the gripper finds the carousel alignment tool flag it will pause and write the entire calibration table for all bin slots in the library to NVRAM.





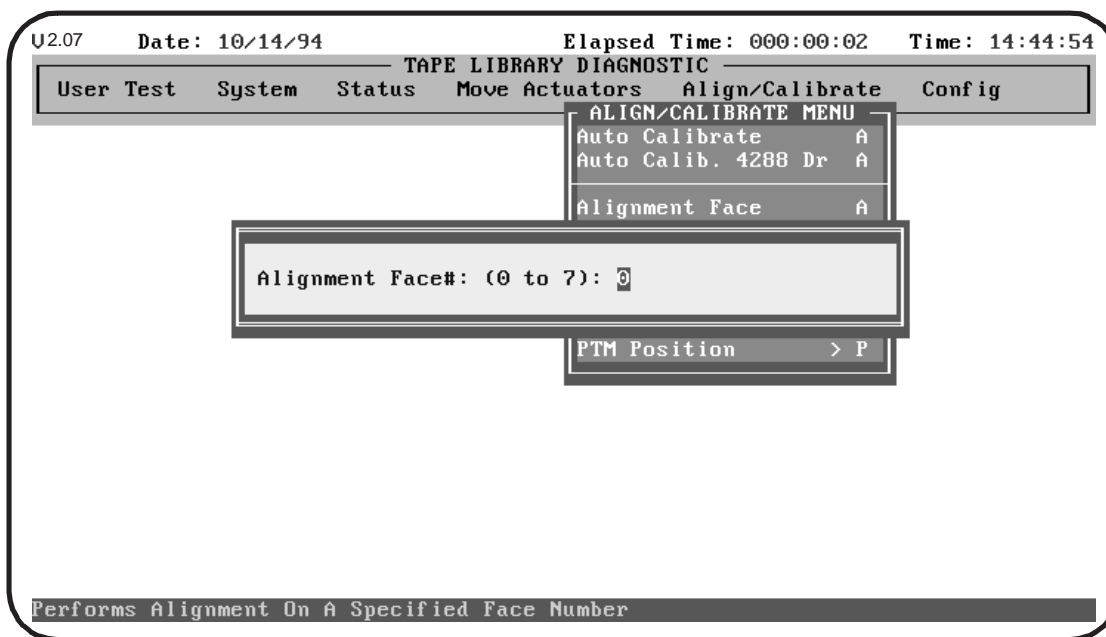
## Alignment Face

Alignment Face spins the carousel to the proper alignment face as identified on the alignment label, which is located on the bottom of the cabinet just to the right of the light curtain bracket. The alignment face is the face of the carousel that has been identified during the manufacturing process to provide the most accurate condition for alignment of the vertical carriage in relation to the carousel.

Therefore, the face indicated on the label is the proper face to use when performing vertical calibration. The alignment label also indicates whether the carousel alignment tool should be installed near the top or the bottom of the carousel. The alignment face is called for when performing horizontal alignment and vertical calibration procedures as described in the Document EK-TL820-SV "TL820 Field Service Manual" and Document EK-TL820-PG "TL820 Facilities Planning and Installation Manual").

The alignment face will vary from library to library but will always remain the same once it has been identified.

To identify the Alignment Face, the following pop-up appears:

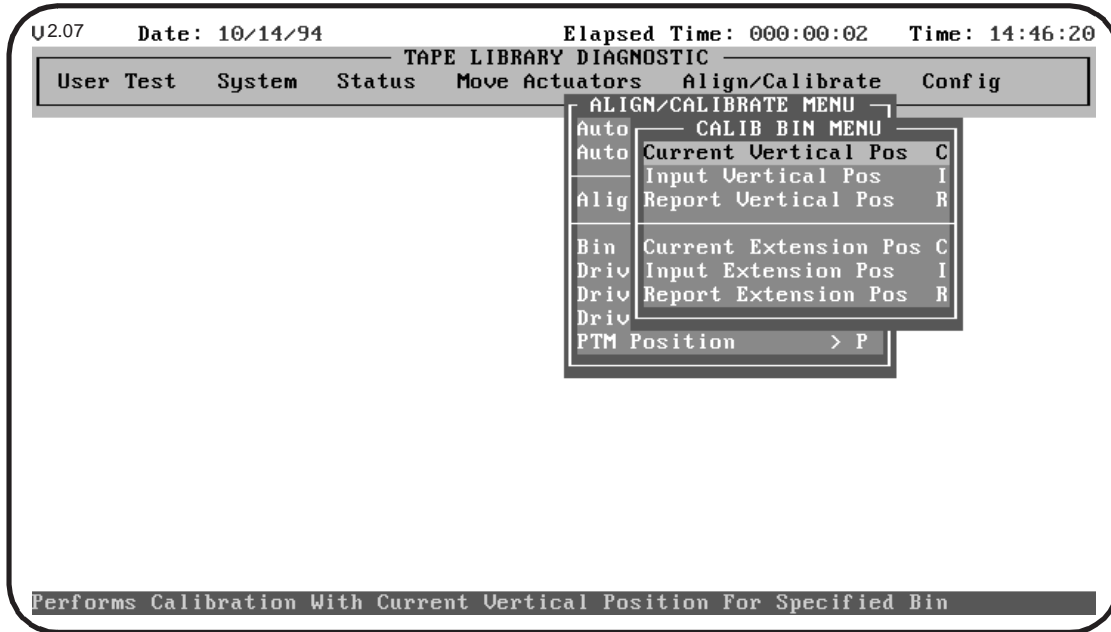


Enter the alignment face number as listed on the alignment label.

## Bin Position Sub-Menu

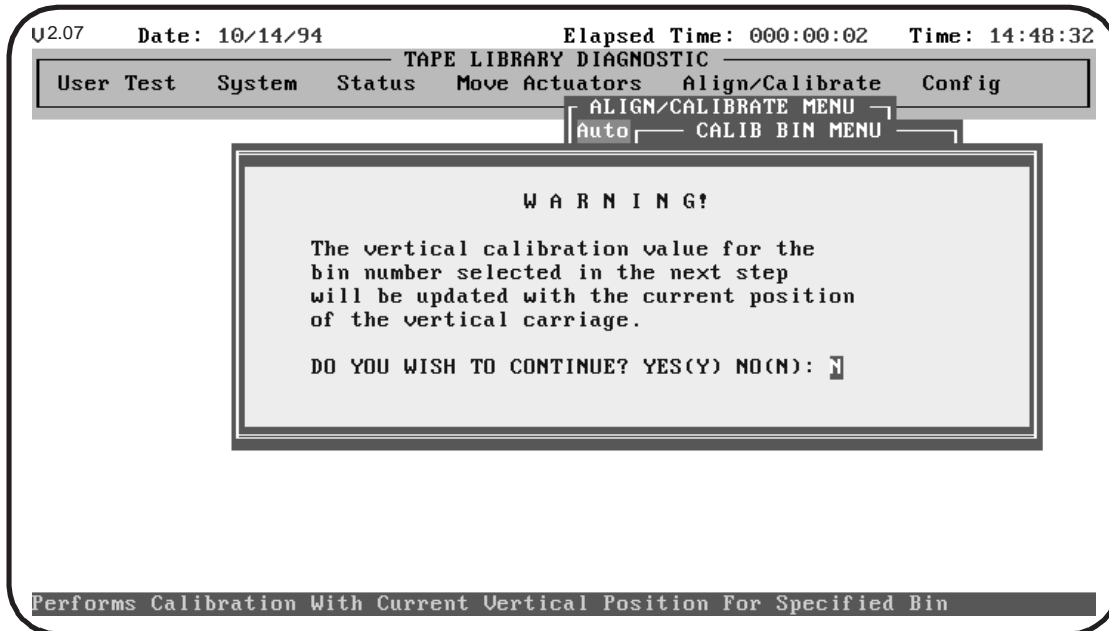
Bin Position provides the capability to report or change the vertical location value and the extension location value for each bin slot in the library.

**Note** *It is not possible to change the vertical or extension position value of one bin slot independent of all the other bin slots. Each bin location has a fixed vertical value relative to all other bin locations. When any bin vertical position is changed all bin vertical positions will be changed accordingly. Also there is only one bin extension position and it will be used for every bin location.*



## Current Vertical Pos

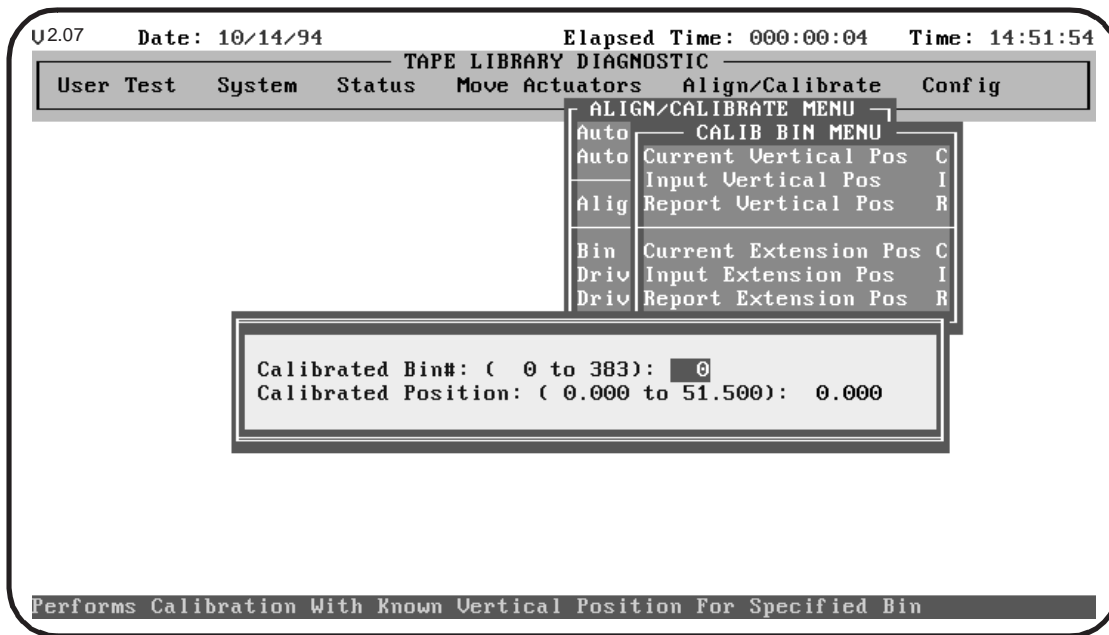
Current Vertical Position updates the vertical location value for the specified bin with the “current” physical location of the vertical axis. A limiting parameter range is set for each bin location so that it is not possible to set the vertical location value outside of these parameters.



Enter <Y> to clear the warning. When cleared, enter the desired storage bin number and press the <ENTER> key.

## Input Vertical Pos

Input Vertical Position updates the vertical calibration value for the specified bin. Calibration values for each bin are protected by a parameter range. Any data outside of these parameters will generate an error and will not update the calibration value. This option is useful if it is necessary to replace the robotic controller board and the vertical calibration values for a single bin location is known.

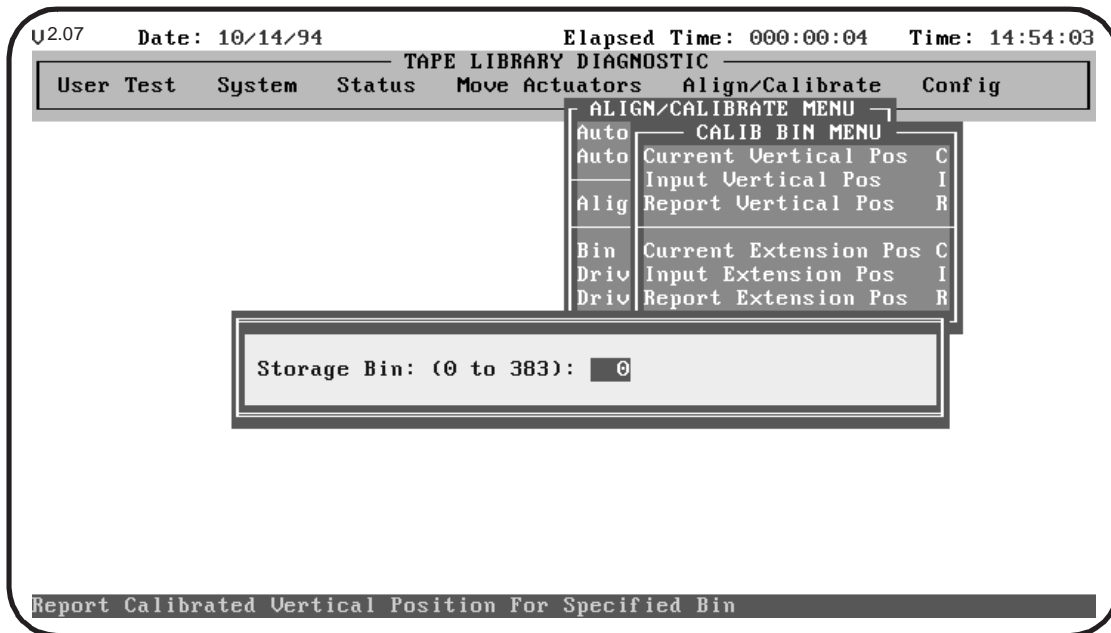


Enter the desired storage bin number and the desired vertical calibration value.

**Note** *Remember that while any bin number may be selected, changing the calibration of that bin also changes the calibration value of all bin locations. One bin location cannot be set independently of the other bins. All bins are fixed in relation to each other. If the calibration value of one bin location is changed, all bin locations will change correspondingly.*

## Report Vertical Pos

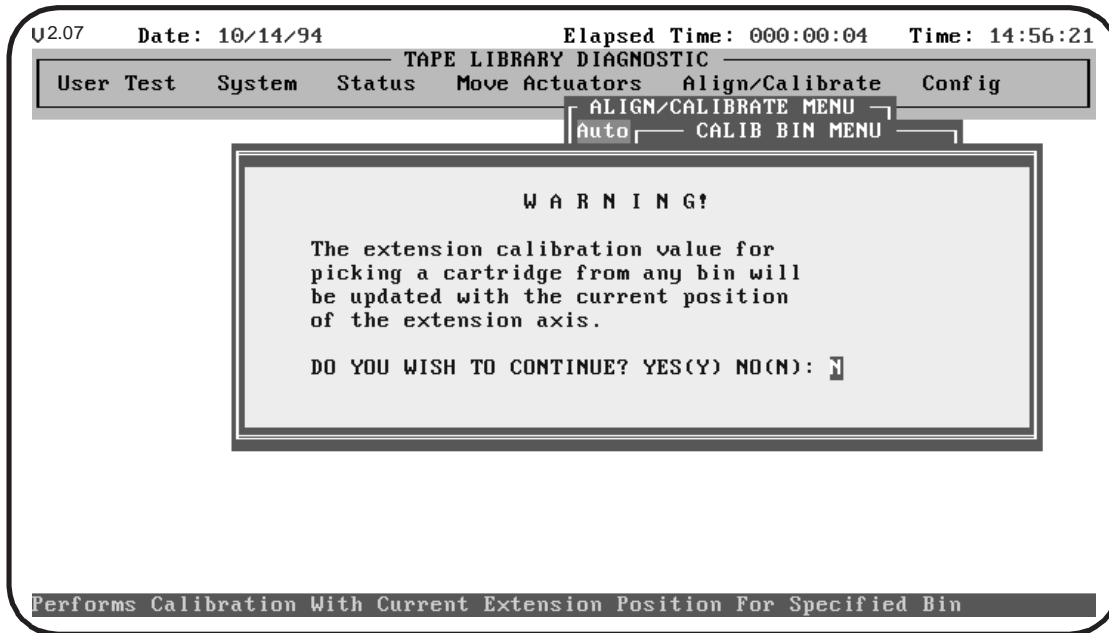
Report Vertical Position displays the current vertical calibration value for a specified bin.



Enter the desired bin number and the current vertical calibration value for the bin to be displayed.

## Current Extension Pos

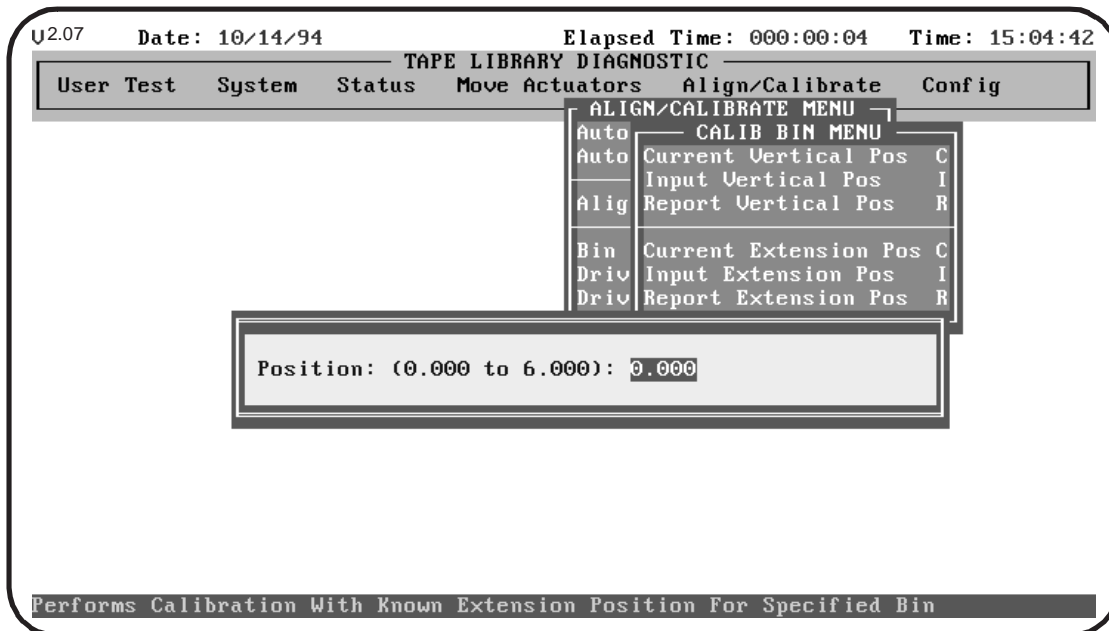
Current Extension Position writes in the current physical location of the extension axis as the calibration value for picking a cartridge from any bin location on the carousel.



Enter <Y> to clear the warning. When cleared, enter the desired calibration value and press the <ENTER> key.

## Input Extension Pos

Input Extension Position updates the extension calibration value for the specified bin.



Enter the desired extension calibration position for picking a cartridge from any bin location on the carousel.

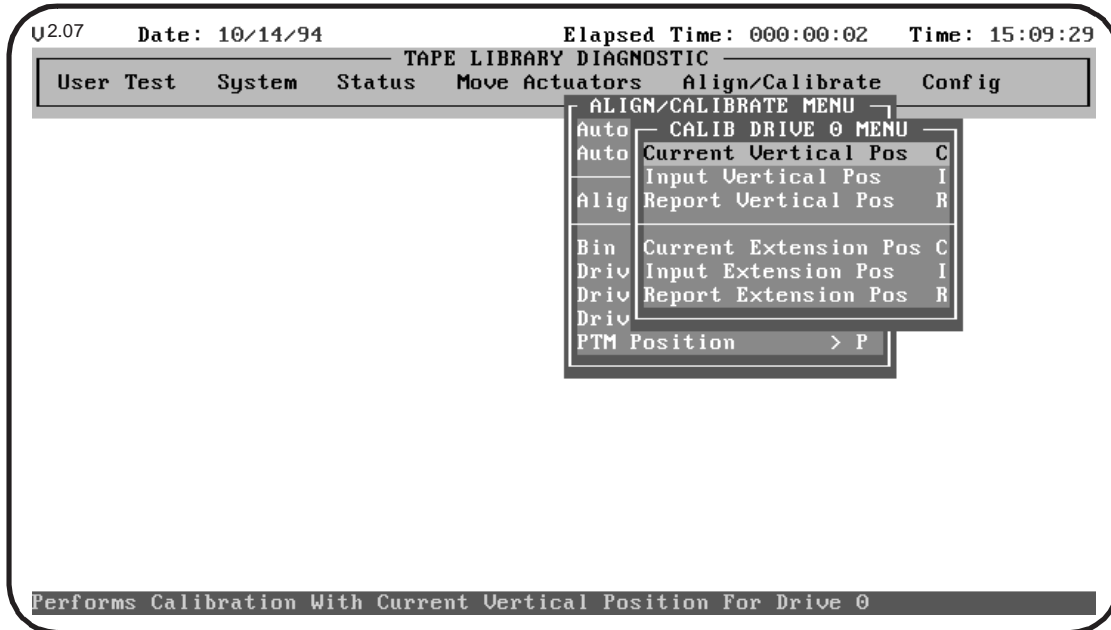
## Report Extension Position

Report Extension Position displays the current extension calibration value for picking a cartridge from any bin location on the carousel.



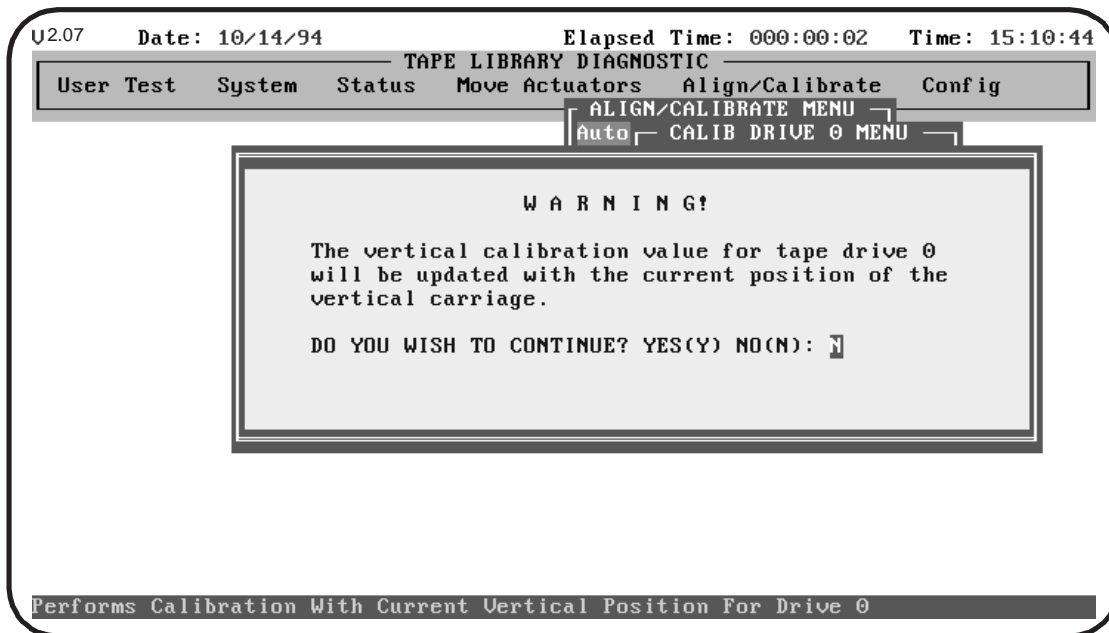
## Drive 0, 1 and 2 Position Sub-Menus

The sub-menu options “Drive 0 Position”, “Drive 1 Position” and “Drive 2 Position” provide the capability to report or change the vertical location value and the extension location value for tape drive #0 (lowest tape drive), #1 (middle drive) and/or #2 (top drive) in the library.



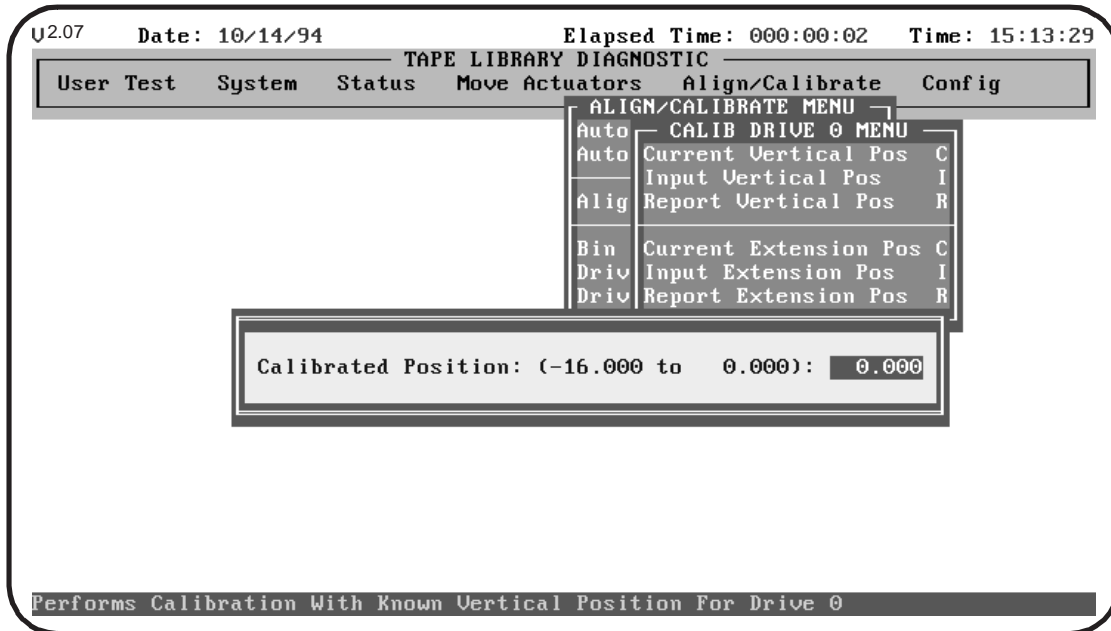
## Current Vertical Pos

Current Vertical Position writes in the current physical location of the vertical carriage as the calibration value for inserting a cartridge into tape drive #0, #1 or #2.



## Input Vertical Pos

Input Vertical Position position the vertical carriage in front of tape drive #0, #1 or #2.



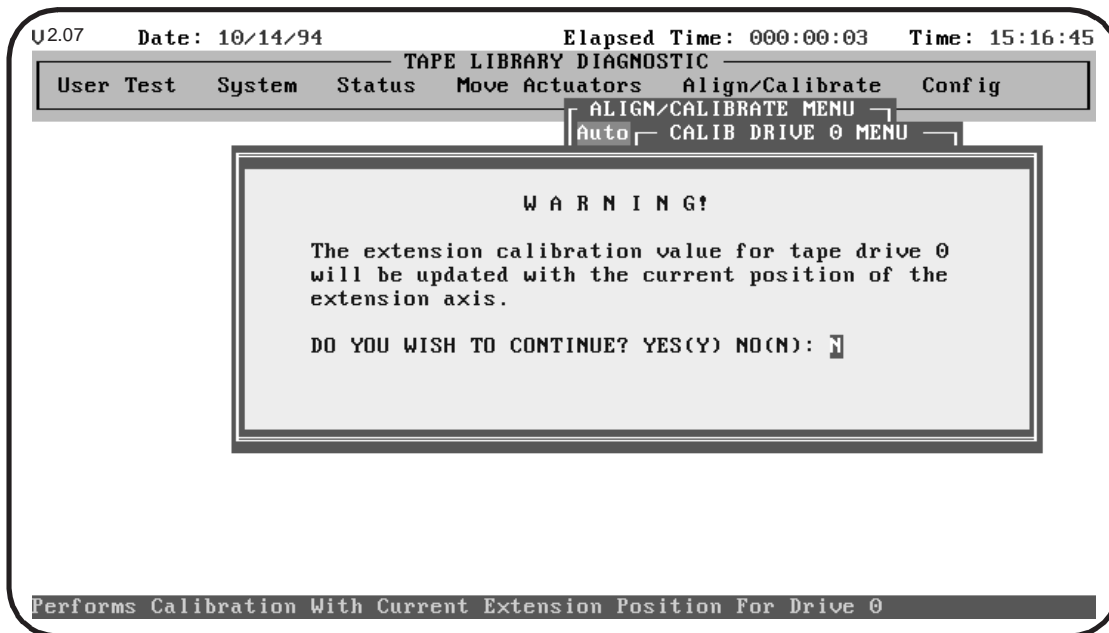
Enter the desired vertical calibration value to position the vertical carriage in front of tape drive #0, #1 or #2.

## Report Vertical Pos

Report Vertical Position displays the current vertical calibration value for inserting a tape into tape drive #0, #1 or #2.

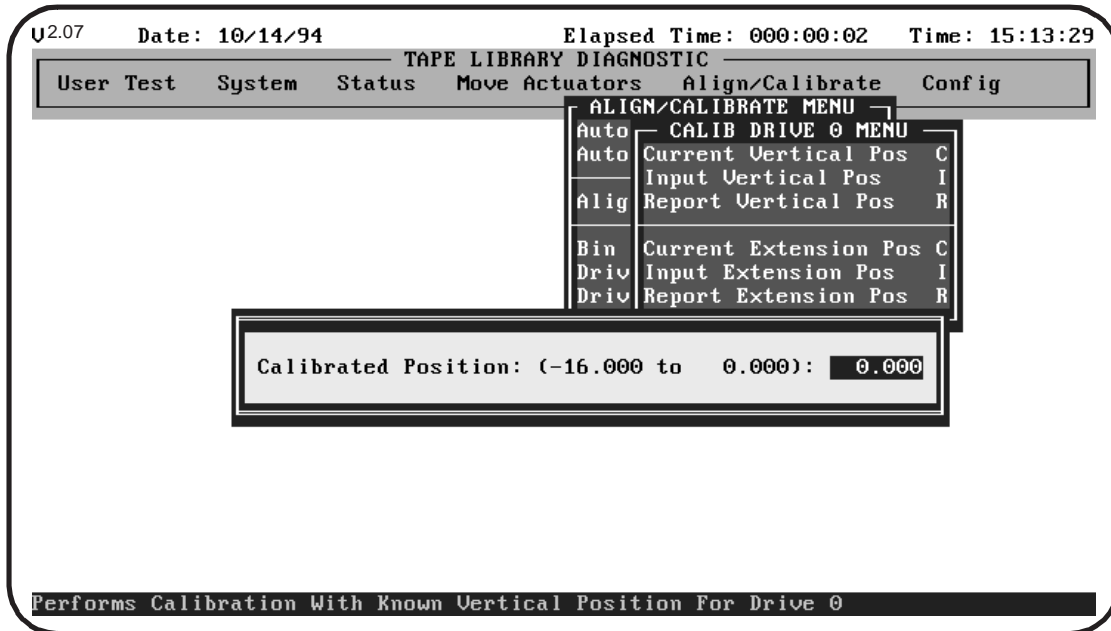
## Current Extension Pos

Current Extension Position writes in the current physical location of the extension axis as the calibration value for picking a cartridge from tape drive #0, #1 or #2.



## Input Extension Pos

Input Extension Position updates the extension calibration position for picking cartridges from tape drive #0, #1 or #2.



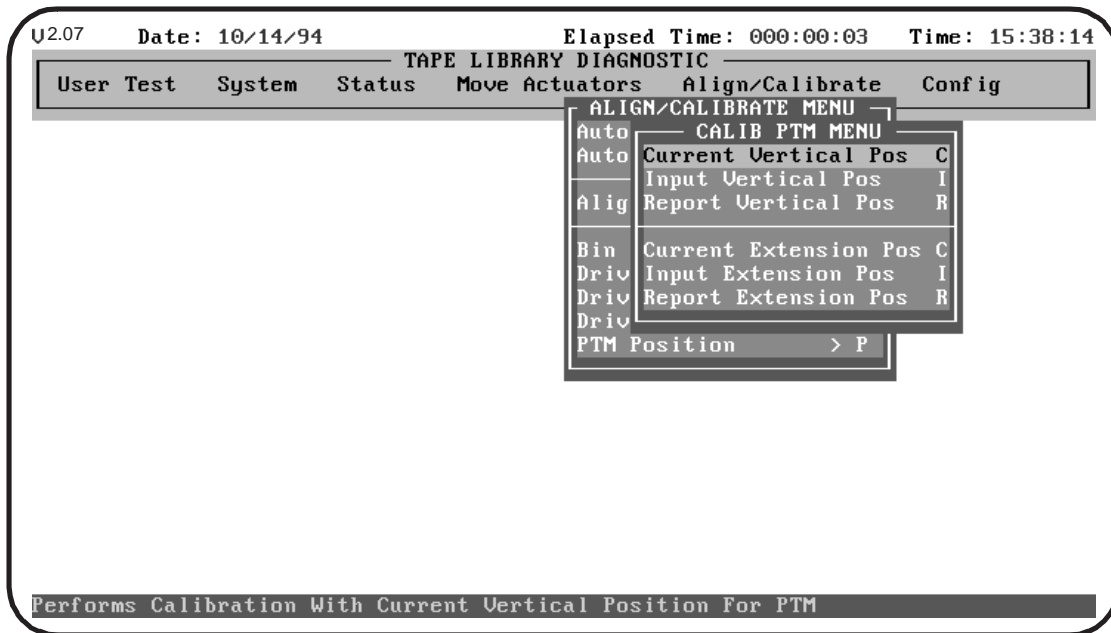
Enter the desired extension calibration position for picking a cartridge from tape drive #0, #1 or #2.

## Report Extension Pos

Report Extension Position display the current extension calibration value for inserting a cartridge into tape drive #0, #1 or #2.

## PTM Position Sub-Menu

PTM Position provides the capability to report or change the vertical location value and the extension location value for the Pass-Through Mechanism.

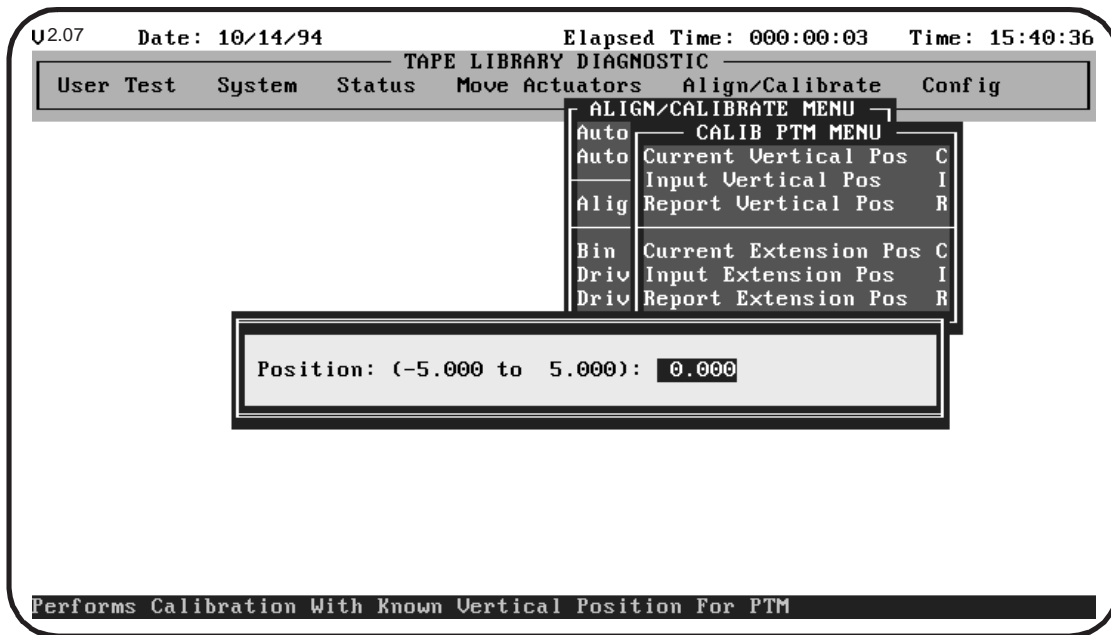


## Current Vertical Pos

Current Vertical Position writes in the current physical location of the vertical carriage as the calibration value for inserting a cartridge into the PTM. Enter <Y><ENTER> to clear the warning before proceeding.

## Input Vertical Pos

Input Vertical Position positions the vertical carriage in front of the PTM.



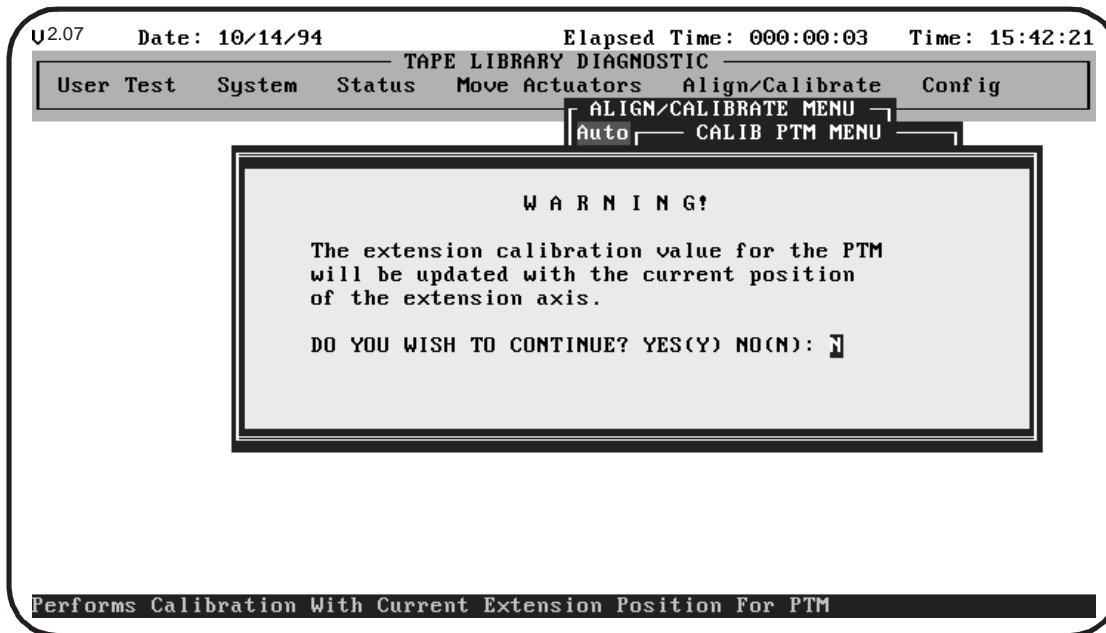
Enter the desired vertical calibration value to position the vertical carriage in front of the PTM.

## Report Vertical Pos

Report Vertical Position displays the current vertical calibration value for inserting a tape into the PTM.

## Current Extension Pos

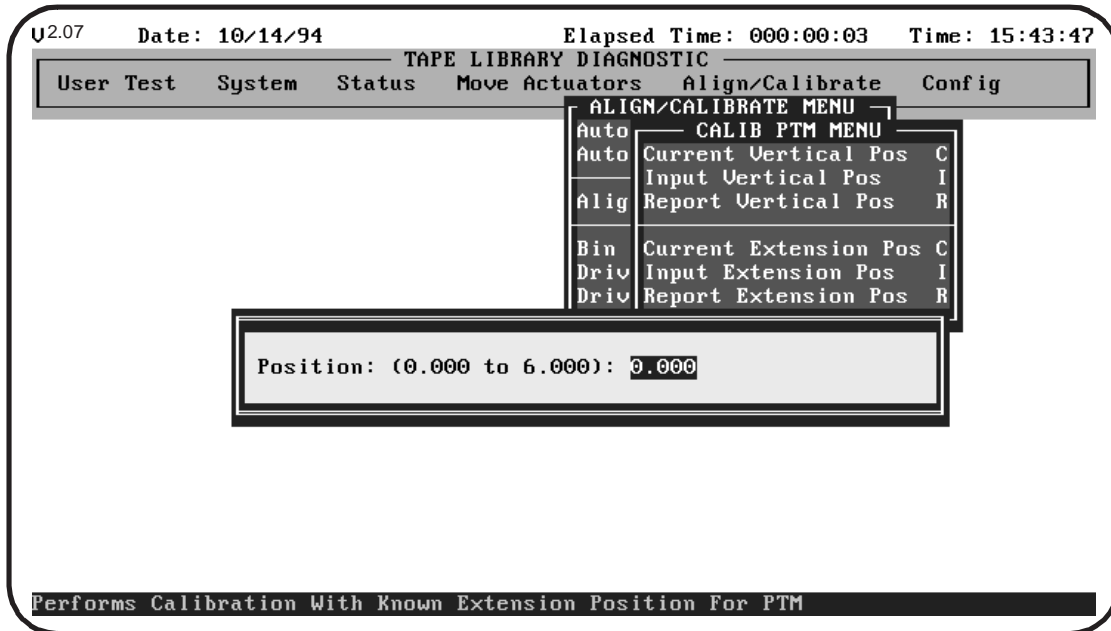
Current Extension Position writes in the current physical location of the extension axis as the calibration value for picking a cartridge from the PTM.





## Input Extension Pos

Input Extension Position updates the extension calibration position for picking cartridges from the PTM.



Enter the desired extension calibration position for picking a cartridge from the PTM.

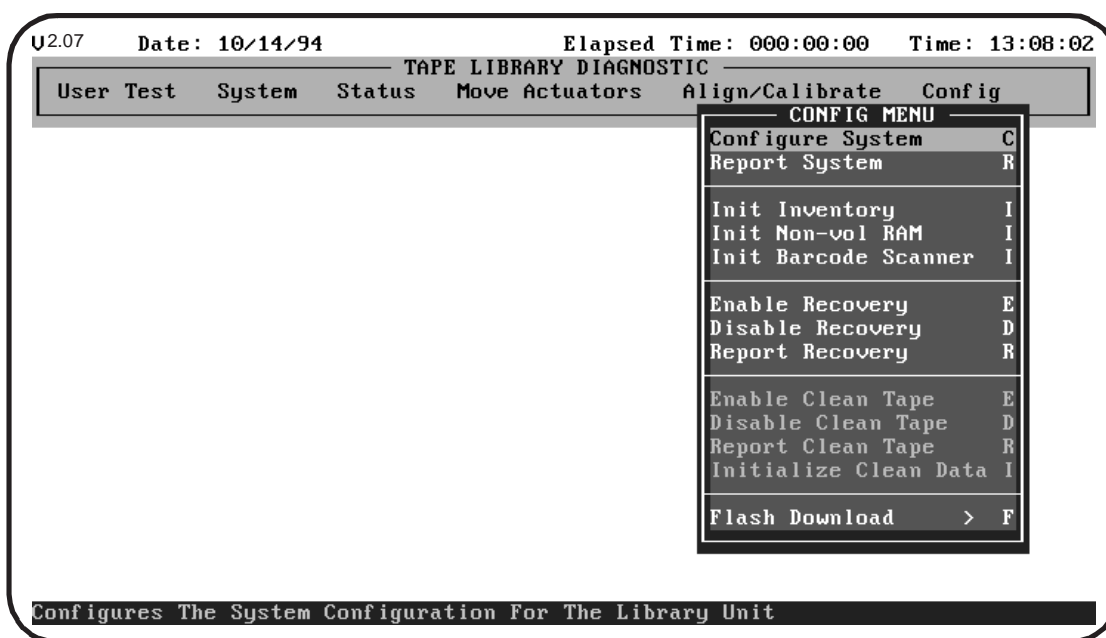
## Report Extension Pos

Report Extension Position display the current extension calibration value for inserting a cartridge into the PTM.

## Config Menu

The Config Menu provides the capability to:

- Set the overall library configuration including: LUN, model number, number of bins, number of tape drives, if an IOD and/or a PTM is present, if binpack sensors are present
- Enable/disable recovery options
- Report the current system configuration
- Initialize a cartridge inventory sequence and
- Initialize NVRAM



Select a specific test by either using the <↑> and <↓> keys to scroll through the options or by entering the key letter located to the right of the option. Once the option is highlighted, press <ENTER> to execute the selection.

## Configure System

Configure System sets the library configuration.

```
U2.07  Date: 11/02/94  Elapsed Time: 000:00:01  Time: 14:13:39
----- TAPE LIBRARY DIAGNOSTIC -----
User Test  System  Status  Move Actuators  Align/Calibrate  Config
                                     CONFIG MENU
                                     Configure System  C
                                     Report System    R

Use the arrow keys to pick a model number,
Press <ENTER> key to select:
Model# List      Model Number: 6200203
6200202
6200203
6200204
6200205
6200206
6200207
6200213
6200216

[0]Command Issu
Waiting For Res
Response = OK : 6200203 0 264 0 3 NONE YES NO
Configures The System Configuration For The Library Unit
```

```
U2.07  Date: 11/02/94  Elapsed Time: 000:00:01  Time: 14:18:41
----- TAPE LIBRARY DIAGNOSTIC -----
User Test  System  Status  Move Actuators  Align/Calibrate  Config
                                     CONFIG MENU
                                     Configure System  C
                                     Report System    R

Use the arrow keys to pick a model number,
Press <ENTER> key to select:
Model Number: 6200213
Logical Unit#: (0 to 4): 0
# Of Bins: (264 or 352): 264
Number Of Drives: (0=None, 1 to 3): 3
IOD: Left, Right, None: LEFT
Pass Through: Yes or No: YES
Binpack Sensor Present: Yes or No: NO

[0]Command Issu
Waiting For Res
Configures The System Configuration For The Library Unit
```

Table 14: System  
Configuration Parameters

Entry	Description
Model Number	<p>Select the model number for the TL820 from the pop-up menu. The Model Number of your library is based on the <b>Revision Number</b> of the library as follows:</p> <p>If the <b>REV#</b> (revision number), on the library identification label, begins with the letter “<b>A</b>”, i.e., <b>Axx</b>, select (highlight) <b>6200203</b> from the pop-up list and press &lt;ENTER&gt;.</p> <p>If the <b>REV#</b> (revision number), on the library identification label, begins with the letter “<b>B</b>”, i.e., <b>Bxx</b>, select (highlight) <b>6200213</b> from the pop-up list and press &lt;ENTER&gt;.</p> <p style="text-align: center;"><b>Note</b>     <i>Libraries with a Model Number of 6200213 (Revision “B”) support the Automatic Cleaning Feature.</i></p> <p>(You can find the identification label {<b>REV#</b>} on the rear connector panel of the library.)</p>
Logical Unit Number	<p>If you are configuring only one library, the unit number will always be “0”. If you are configuring multiple units, numbering is 0 through 4, from left to right when viewing the multi-library configuration from the front. (The diagnostic PC will need to be cabled to each individual library to set each logical unit number.)</p>
# of Bins	<p>Enter the number of storage bins in the library. The default is 264.</p>
Number of Drives	<p>Enter “3” for the number of tape drives in the library. The default is 3.</p>
IOD	<p>If an IOD is present, enter “left” for the IOD configuration.</p>
Pass-Through	<p>Enter “yes” for the pass through configuration.</p>
Binpack Sensor Present	<p>Enter “no” for binpack sensor present.</p>

## Report System

Report System displays the current library configuration, including Model Number, Logical Unit Number, Number of Bins, Number of Tape Drives, IOD, Pass Through and Binpack Sensor configuration.

## Init Inventory

Init Inventory initializes a cartridge inventory sequence that scans the entire carousel and records the location and identity of all labeled cartridges. If all bin slots in the library are filled with barcode labeled cartridges, the entire inventory sequence will take approximately 3.5 minutes.

## Init Non-vol RAM

Use this option to initialize or reset NVRAM. (The vertical calibration values are kept in NVRAM on the robotic controller board (MPU). If a new MPU is installed in the library, it is recommended that NVRAM be initialized before performing the calibration procedures.)

## Init Barcode Scanner

Initializes the barcode scanner. The barcode scanner will beep when it is initialized.

## Enable Recovery

When recovery is enabled, robotics commands sent from the diagnostic PC (or host) will be sent a second time if the first attempt is unsuccessful.

**Note** *When the library is powered-on, the enable/disable recovery switch is enabled. It can only be disabled by using the Diagnostic Software.*

## Disable Recovery

When recovery is disabled, unsuccessful commands will generate an error response after the 1st attempt. Always leave recovery enabled when returning the library for operator use.

## Report Recovery

Indicates whether recovery is enabled or disabled. (The “<<” symbols preceding “Report Recovery” indicate that recovery is enabled.)

## Enable Clean Tape

Use this option to activate auto-cleaning.

**Note** *When enabled by the diagnostic software, auto-cleaning is temporary. When the library is powered-off, auto-cleaning is disabled.*

## Disable Clean Tape

Use this option to deactivate auto-cleaning.

## Report Clean Tape

Indicates whether cleaning is enabled or disabled and provides status of each drive, i.e., whether cleaning is needed or not as well as showing the bin location and number of uses for each cleaning cartridge in the library.

## Initialize Clean Data

Use this option to initialize auto-cleaning default values after installation of the support hardware and before enabling the auto-clean option.

## Flash Download Sub-Menu

Flash download is used to download the library robotics firmware via the serial port. The library robotics firmware downloaded through this method will remain in the system until new robotics firmware is downloaded.

**Note** *To use the Flash Download option, the library requires firmware 3K or later. Some revisions of firmware require specific boot block revisions.*

To use the Flash Download option, do the following:

**Note** *The hex file for downloading (e.g., 5200XX3N.HEX) must be copied into the same directory as "TAPELIB".*

1. Verify that the library is in STANDBY mode.
2. Select the appropriate firmware option from the sub-menu and press <ENTER>.

**Note** *The download process takes approximately 5-10 minutes.*

3. If the library does not return to either ONLINE or STANDBY, repeat the process.

# Glossary

TL820 library	An automated library system developed for storing and handling DLT cartridges.
alignment	In the context of this manual, alignment refers to the mechanical adjustments required for successful operation of the TL820 library.
alignment toolkit	A set of alignment aids available to authorized field service personnel.
auto-clean	<p>This term refers to the Automatic Drive Cleaning feature. Two modes of drive cleaning support are available on library units with a Model Number of 6200213: Host Initiated and Fully Automatic.</p> <p>In Host Initiated Cleaning Mode, drive cleaning is enabled by your System Administrator at the host computer. Although the library unit will internally track cleaning cartridge movement and use, the library unit provides no cleaning support in this mode. The host is responsible for all cleaning functions such as detecting when a drive requires cleaning, tracking and selecting cleaning cartridges, initiating media movement of the cleaning cartridge to the drive and determining when a cleaning cartridge has been “used up”.</p> <p>Drive cleaning in the Fully Automatic Cleaning Mode is also enabled by your System Administrator at the host computer. However, in this mode, the library unit monitors each drive’s status to determine when a drive requires cleaning and initiates action when that determination is made. In this case, the library unit selects an available cleaning cartridge, handles media movement of the cleaning cartridge to and from the drive and supervises the cleaning operation in the drive. The library unit tracks cleaning cartridges within the library, monitors cleaning cartridge use and determines when a cleaning cartridge has been “used up”. A “used up” cleaning cartridge is exported from the library under control of the library.</p> <p><b>NOTE:</b> <i>The library is shipped with Automatic Drive Cleaning disabled. The Automatic Drive Cleaning feature can be enabled using the Diagnostic Software Package. However, when the library power is cycled, the feature is disabled.</i></p>
automated cartridge library	A robotic storage and retrieval system for cartridges.

barcode	In the context of this manual, the machine-readable label on DLT cartridges.
barcode decoder	The portion of the barcode scanner which decodes the barcode and is mounted in the rear of the cabinet.
barcode scan head	The portion of the barcode scanner which senses the barcode and is mounted on the vertical carriage. See barcode decoder.
binpack	A removable rack that stores up to eleven DLT cartridges inside an TL820 library. It attaches to the carousel inside an TL820 library.
calibration	In the context of this manual, calibration refers to the software measurements and configuration required for successful operation of the TL820 library.
carousel	The eight-sided rotating prism in the center of the library which holds bin packs with DLT cartridges.
carousel belt	The drive belt connecting the carousel motor/gearbox to the carousel.
carousel face	One side of the eight-sided carousel.
control panel	The panel containing the display, fault light, and control buttons on the front door of the TL820 library.
door interconnect board	The electronics board located on the front door to which the cables crossing the hinge are connected.
EIA/TIA-574	A serial communications cabling and protocol standard for nine-pin connectors, sometimes referred to as RS-232.
electronics module	The metal frame holding the optional SCSI adapter and control electronics and all the electronics attached to it.
extension axis assembly	Mounted onto the vertical axis, the extension axis assembly consists of the gripper assembly and the horizontal axis on which the gripper assembly is mounted.
extension axis belt	The drive belt connecting the extension motor/gearbox to the gripper.
FCC Class A	Standard established by the U.S. Federal Communications Commission governing electromagnetic emissions.
FSE	Field Service Engineer
gripper assembly	The assembly which mounts on the extension axis and grips cartridges; sometimes called the gripper.
host	Host computer.
host computer	The computer which issues high-level pick and place commands to control the TL820 library.



IOD	The Inport/Outport Device, located at the cutout on the left side of the TL820 library, allows insertion and removal of single cartridges into and out of the library.
LED	Light Emitting Diode.
library	A single TL820 cabinet and the robotics therein.
mounting kit	Kits supplied with TL820 libraris for installing tape drive systems in the unit.
MTBF	Mean Time Between Failures.
MTTR	Mean Time To Repair.
MUC	The Multi-Unit Controller is an option that serves two functions. It is a SCSI adapter and it permits the library host computer to control up to five attached basic or expansion TL820 libraris.
online	Ready for communication with a host computer.
PC	Personal Computer.
pick	The act of removing a cartridge from one location in preparation for placing it in another location.
place	The act of placing a cartridge in a location after it has been picked from another location.
power distribution box	A box located in the left rear of the TL820 cabinet which contains receptacles for providing power to the various components of the library and switches for turning the power on and off.
PTM	The Pass-Through Mechanism is the motor-driven, high-speed conveyor that transports cartridges between adjacent libraris in a multi-unit TL820 tape library. It is used in conjunction with the IOD when importing or exporting single cartridges.
PROM	Programmable Read-Only Memory.
rear connector panel	Located at the bottom rear of the cabinet, the rear connector panel contains the fans and the connectors for attaching external cabling to the library.
SCSI	Small Computer System Interface communications standard for attaching peripheral equipment to computers.
tape drive	The mechanism which reads and writes data to and from a tape.
tape drive alignment cartridge	An alignment aid in the general form of a DLT cartridge which has flanges to keep it from being stuck in a drive.
UL	Underwriters Laboratories.

vertical belt	The drive belt connecting the vertical motor to the vertical axis assembly.
vertical carriage assembly	The crossbar and linear bearings mounted onto the vertical rails and everything mounted on the crossbar.
ZIF connector	A Zero Insertion Force connector used for electrical wiring.

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