Scalar® 1000 Library

Operator Guide

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Document number: 6-00054-02 Rev A
Published: 22 June 2004

Printed in the USA

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About this Guide

Overview

This guide contains information and instructions necessary for the safe operation of the Scalar 1000 [1] Library. This chapter is organized as follows:

Intended Audience

This guide is intended for operators, trained customer specialists, and maintenance personnel of the service partner who interacts with the Scalar 1000.

Organization

This publication contains chapters detailing the operation of the Scalar 1000. The chapters topics include:

Chapter 1	*About this Guide* - Describes the intended audience, organization, associated documents, explanation of symbols and notes, and how to obtain additional assistance.
Chapter 2	*System Description* - Describes general information, library modules, internal components, connectivity, and I/O status and control.
Chapter 3	*Safety* - Describes the hazard symbols, messages, safety features, and considerations for safe operation.
Chapter 4	*Operation* - Describes the Operator Panel, the Scalar 1000 start-up and shutdown operations, and the Remote Management Unit operations and menus.

1. Scalar 1000 is a registered trademark of ADIC. Throughout the remainder of this document the Scalar 1000 library is referred to as the Scalar 1000 or the library.

Chapter 5	*Menus and Commands* - Describes the Scalar 1000 menus and commands.
Chapter 6	*Processing Media* - Describes the Insert / Eject Station, media types, media processing, and cleaning media.
Chapter 7	*Error Messages* - Describes message processing, Service Action Code (SACs), and Operator Intervention Messages.
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Associated Documents

6-01151-*xx*	Scalar 1000 Maintenance Guide
6-00055-*xx*	Scalar 1000 SCSI Reference Manual

Explanation of Symbols and Notes

The following symbols and highlighted passages note important information.

Detailed explanations for the above symbols are provided in *Hazard Alert Messages* on page 3-3.

<1> + <2>	Press these keys simultaneously.
Italics	Headline, for example, Chapter 2, *Description* File name, for example, *AMUINST.EXE*
Bold	Terms appearing on the Operator Panel for example, **Utilities** Operating element / key on the Operating Panel
`Courier`	Command line, Switch position, for example, `ON, OFF`

ADIC Technical Assistance Center

If problems cannot be solved with the aid of this document, contact the ADIC Technical Assistance Center (ATAC).

- In the USA: 800.827.3822
- Outside the USA, toll free: 00.800.9999.3822
- email: support@adic.com

Before contacting the ATAC, make sure you have the Serial Number for your library. To locate the Serial Number, do one of the following:

- Open the Control Module (CM) back door. Look for the Serial Number located in the upper left inside panel.
- From the Operator Panel Main Menu, select `Database Menu` ►`Config Dialog`. The library Serial Number is listed in the **Serial#** field.

Regulatory Notices

Federal Communication Commission Class A Notice

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. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

To meet FCC emissions limits, properly shielded and grounded cables and connectors must be used. The user accepts responsibility for radio or television interference caused by improperly shielded or grounded cables and connectors or by unauthorized modifications or changes to the equipment. Unauthorized modifications or changes could void the user's authority to operate the equipment.

Obtain a copy of the following booklet:
FCC Interference Handbook, 1996, available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00450-7.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Use only shielded cables for connecting peripherals to this device to reduce the possibility of interference with radio and television reception. Using shielded cables ensures that you maintain the appropriate FCC radio frequency emissions compliance (for a Class A device) or FCC certification (for a Class B device) of this product.

In compliance with FCC regulations, the following information is provided on the device or devices covered in this document.

Product Name	Scalar 1000
Model number	SC1000
Company name	Advanced Digital Information Corporation
	PO Box 97057
	Redmond, WA 98073-9757 USA
	(425) 881-8004

IC Notice (Canada Only)

Most tape libraries are classified by the Industry Canada (IC) Interference-Causing Equipment Standard #3 (ICES-003) as Class A digital devices. To determine which classification (Class A or B) applies to your tape library, examine all registration labels located on the bottom or the back panel of your library. A statement in the form of “IC Class A ICES-3” or “IC Class B ICES-3” will be located on one of these labels.

Note that Industry Canada regulations provide that changes or modifications not expressly approved by the tape library manufacturer could void your authority to operate this equipment.

This Class A (or Class B, if so indicated on the registration label) digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe B (ou Classe A, si ainsi indiqué sur l’étiquette d’enregistration) respecte toutes les exigences du Reglement sur le Materiel Brouilleur du Canada.

EN 55022 Compliance (Czech Republic Only)

This device belongs to category A devices as described in EN 55022, unless it is specifically stated that it is a category B device on the specification label. The following applies to devices in category A of EN 55022 (radius of protection up to 30 meters). The user of the device is obliged to take all steps necessary to remove sources of interference to telecommunication or other devices.

Pokud není na typovém štitku počítače uvedeno, že spadá do třídy A podle EN 55022, spadá automaticky do třídy B podle EN 55022. Pro zařízení zařazená do třídy A (ochranné pásmo 30m) podle EN 55022 platí následující. Dojde-li k rušení telekomunikačních nebo jinych zařízení, je uživatel povinen provést taková opatření, aby rušení odstranil.

CE Notice

Marking by the symbol CE indicates compliance of this tape library to the EMC (Electromagnetic Compatibility) directive of the European Community. Such marking is indicative that this tape library meets or exceeds the following technical standards:

EN 55022:1998	Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment. This system is an EN 55022 Class A device.
EN 50082-1	"Information technology equipment - Immunity characteristics Limits and methods of measurements."
EN 61000-3-2	Harmonic current emissions test.
EN61000-3-3	Voltage fluctuations and flicker in low-voltage supply systems test.
EN 61000-4-2	Electrostatic discharge immunity test.
EN 61000-4-3	Radiated, radio-frequency, electromagnetic field immunity test.
EN 61000-4-4	Electrical fast transient / burst immunity test.
EN 61000-4-5	Surge immunity test.

EN 61000-4-6	Immunity to conducted disturbances, induced by radio-frequency fields.
EN 61000-4-8	Power frequency magnetic field immunity test.
EN 61000-4-11	Voltage dips, short interruptions and voltage variations immunity test.
EN 60950:1992 + Amd.1:1993 + Amd.2:1993 with considerations to Amd.3:1995	Safety of Information Technology Equipment including “Electrical Business Equipment.”

VCCI Notices (Japan Only)

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

この装置は、第一種情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI- A

NOTE: VCCI regulations provide that changes or modifications not expressly approved by the Dell Computer Corporation could void your authority to operate this equipment.

Declaration of Conformity

The signed Declaration of Conformity is on file with Advanced Digital Information Corporation, 17275 NE 67th Court, Redmond, Washington 98052, and ADIC Europe, ZAC des Basses Auges 1, rue Alfred de Vigny, 78112 Fourqueux, France.

2

System Description

General Description

Note
If the ADIC 8590/IBM 3590 tape drive is installed in either the Control or the Expansion Module, the modules must be of the large footprint type. Adding an extension frame to a normal frame increases the depth of the frame.

The Scalar 1000 automates the storage, retrieval, and control of 3590, LTO, DLT, SDLT, and AIT cartridge tapes. Cartridges are mounted and dismounted in tape drives using application software from the host without operator intervention.

The Scalar 1000 is a linear storage library that can be expanded from a single media library to a mixed media library. The Scalar 1000 consists of a Control Module (CM) and up to three Expansion Modules (EMs). See Figure 2-1 on page 2-5. The CM contains library control hardware, the Cartridge Accessor, an Insert/Eject Station (I/E) Station, an Operator Panel, cartridge storage cells, and tape drives. The EM can contain tape drives and cartridge storage.

The Scalar 1000 can be configured for approximately 118 to 1182 cartridges (the cartridge capacity depends on the library configuration and features installed). See Table 2-1.

Table 2-1 Drives and Storage Capacities

	High Profile	Low Profile		
	3590/DLT	**LTO**	**DLT/SDLT**	**AIT**
Drives	1 - 16	1 - 48	1 - 48	1 - 48
Cartridges	118 - 788	140 - 938	118 - 788	237 - 1182

Cartridge storage quantity varies by the number of modules and tape drives in the modules. Table 2-2 lists the quantity of media contained by the storage cells for the CM and EMs configured for the different media types.

Table 2-2 Scalar 1000 Configurations

Frame	High Profile		Low Profile				
	Tape Drives	3590/DLT Cartridge Capacity	AIT Tape Drives	AIT Cartridge Capacity	DLT/ SDLT/ LTO Tape Drives	DLT/SDLT Cartridge Capacity	LTO Cartridge Capacity
Control Module	1 - 2 3 - 4	158 118	2 - 12	237	1 - 6 7 - 12	158 118	200 152
Control Module and 1 Expansion Module	1 - 2 3 - 4 5 - 6 7 - 8	368 328 288 248	2 - 12 14 - 24	552 432	1 - 6 7 - 12 13 - 18 19 - 24	368 328 288 248	450 402 352 306
Control Module and 2 Expansion Modules	1 - 2 3 - 4 5 - 6 7 - 8 9 - 10 11 - 12	578 538 498 458 418 378	2 - 12 14 - 24 26 - 36	867 747 627	1 - 6 7 - 12 13 - 18 19 - 24 25 - 30 31 - 36	578 538 498 458 418 378	700 652 604 556 508 460
Control Module and 3 Expansion Modules	1 - 2 3 - 4 5 - 6 7 - 8 9 - 10 11 - 12 13 - 14 15 - 16	788 748 708 668 628 588 548 508	2 - 12 14 - 24 26 - 36 38 - 48	1182 1062 942 822	1 - 6 7 - 12 13 - 18 19 - 24 25 - 30 31 - 36 37 - 42 43 - 48	788 148 708 668 628 588 548 508	950 902 854 806 758 710 662 641

When mixing high-profile drive technology with DLT / SDLT, the CM must be configured for high-profile drive technology, while DLT / SDLT consumes separate EMs.

Modules

The Scalar 1000 Library consists of two types of modules: a Control Module (CM) and an Expansion Module (EM). The information in this section is organized as follows:

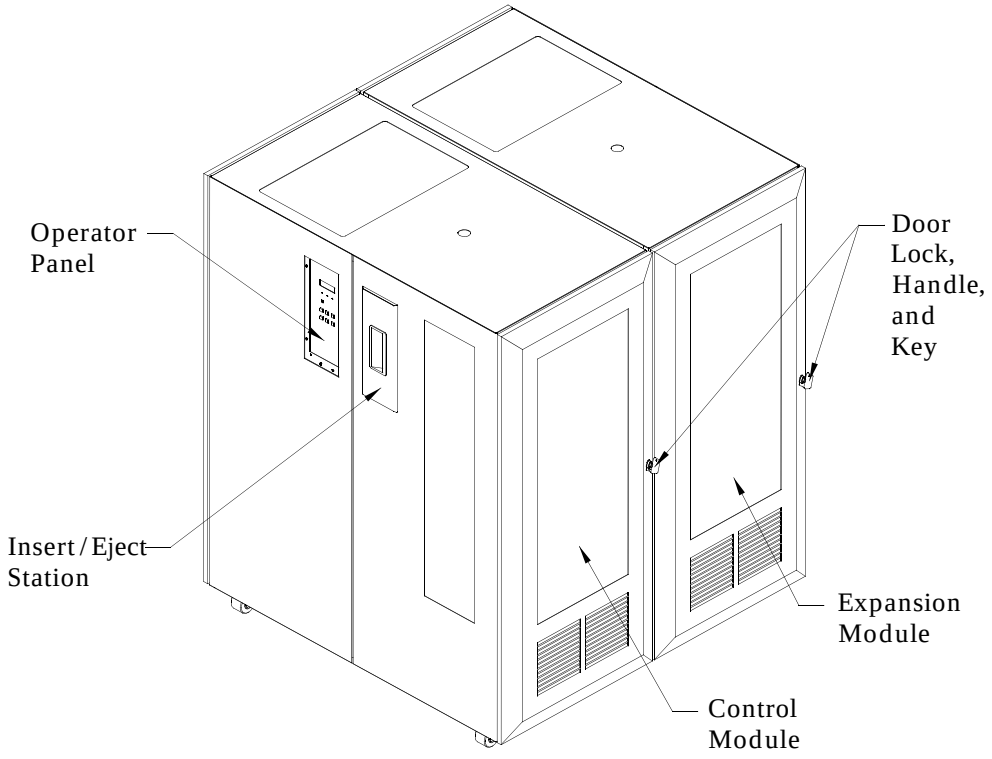


Figure 2-1 Control Module and Expansion Module

Control Module

The CM is a single module, standalone Scalar 1000 library. It contains an Operator LCD panel, AC and DC power supplies, robot control electronics, and host interfaces. It can be attached to an EM to create an expanded Scalar 1000 library. The CM differs in tape and drive bay capacity. See Figure 2-1 on page 2-5.

Each drive bay has the space equivalent of 48 LTO, 40 SDLT, 44 3590, or 60 AIT cartridges. Each drive bay accommodates:

- One or two 3590 or High Profile DLT tape drives
- One to six DLT / SDLT or LTO tape drives
- From 1 to 12 AIT tape drives

Expansion Module

The EM extends the length of the aisle and adds drives and cartridges to the library. The Scalar 1000 maximum configuration includes three EMs. These modules extend the X-rails (top and bottom) which allow the Accessor to travel the length of the library. See Figure 2-1 on page 2-5.

Internal Components

The Scalar 1000 consists of the following internal components:

- Tape Drives
- Cartridge Storage
- Cartridge Accessor
- Tape Cartridges
- Insert / Eject Station

Tape Drives

The Scalar 1000 supports the following tape drives:

- 3490E type drive (Plasmon / Philips LMS TD 3610)
- NCTP type drive (Plasmon / Philips NCTP)
- 3590 type drive (IBM 3590-B1A / EMASS 8590)
- 3590 type drive (IBM 3590-E1A)
- DLT type high profile drive (Quantum Models 4001 and 7001)
- DLT type low profile drive (Quantum Models 4001S, 7001S, and 8001S)
- SDLT type drive (Quantum SDLT-220 and SDLT-320)
- AIT type drive (Sony Model SDX-310C, SDX-500C, and SDX-700C)
- LTO-1 type drive (IBM Ultrium TD1)
- LTO-2 type drive (IBM Ultrium TD2)

Cartridge Storage

The Scalar 1000 contains cartridge storage cells in all attached modules in addition to any tape drives installed. The CM must be the first frame in the library.

Table 2-3 shows the coordinates for the storage cells for libraries with Firmware 2.24 or earlier installed.

Table 2-3 Storage Cell Coordinates for Firmware 2.24 or Earlier

Frame	Column	Row
01 - 04	A - E	01 - 63

The Frame number can be from one to four; the Columns are letters A to E in each module; the Rows are numbered from top to bottom (1 to 42 for 3590 and DLT cartridges, and 1 to 63 for AIT cartridges).

For libraries with Firmware level 2.3 or later, use the following coordinate system to locate different elements (storage cell, drive, etc.) within the library. See Table 2-4.

Table 2-4 Element Coordinates for Firmware 2.3 or Later

Element Type	ID	Frame (Module)	Section	Column	Row
Storage	S	01 - 04	1 - 4	A - E	01 - 18
I/E Station	I	01	1	A	01 - 18
Drives	D	01 - 04	1 - 2	A - B	01 - 06

The Element Type can be *I* for I/E Station, *D* for Drive, and *S* for Storage. The frame number can be from one to four. The Sections are numbered, for storage, from one to four top to bottom, and for drives, one to two bottom to top. The Columns are letters A to E in each section, the Rows are numbered 1 to a maximum of 18 from top to bottom depending on the section. See Figure 2-2 on page 2-9.

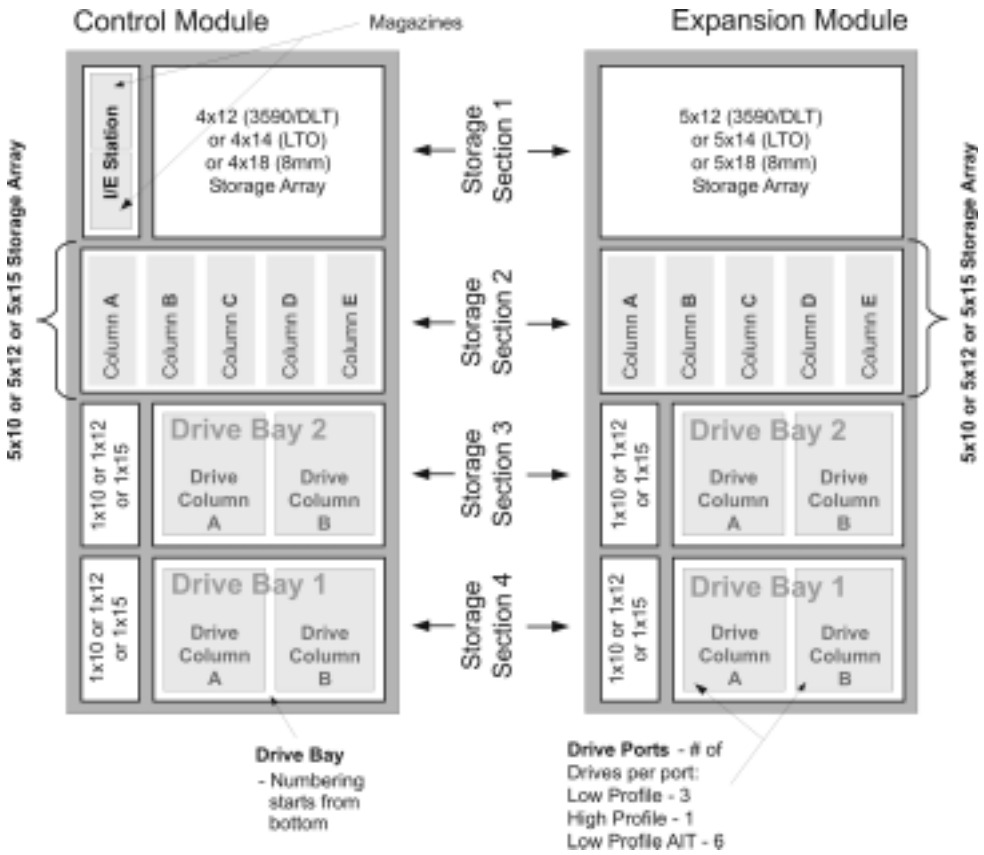


Figure 2-2 Coordinate System

Figure 2-2 shows additional information that can be used to identify various fields in the coordinate system.

To manipulate the media within the library, the host must reference each movement with source and target designations. Element indexing / addressing specifies precisely which cells within the library are to be used.

See Table 2-5 on page 2-10 through Table 2-7 on page 2-11 for information about indexing / addressing.

Table 2-5 Library Internal Indexing for Firmware 2.30 or Earlier

Element Type	Internal Indexing Range	
	3590/DLT	AIT
Storage	0 - 787	0 - 1181
I/E Station	788 - 799	1182 - 1199
Drives	800 - 847	1200 - 1247
Cartridge Accessor	848	1248

Table 2-6 Library Internal Indexing for Firmware 3.0 or Later

Element Type	Indexing Range		
	3590/DLT/SDLT	LTO	AIT
Storage	0 - 787	0 - 937	0 - 1181
I/E Station	1182 - 1193	1182 - 1193	1182 - 1199
Drives	1200 - 1247	1200 - 1247	1200 - 1247
Cartridge Accessor	1248	1248	1248

Table 2-7 Library External Addressing for Firmware 3.0 or Later

Element Type	External Addressing Range		
	3590/DLT/SDLT	**LTO**	**AIT**
Cartridge Accessor	1 (0x0001)	1 (0x0001)	1 (0x0001)
I/E Station	16 - 27 (0x0010) - (0x001B)	16 - 27 (0x0010) - (0x001B)	16 - 33 (0x0010) - (0x0021)
Drives	256 - 303 (0x0100) - (0x012F)	256 - 303 (0x0100) - (0x012F)	256 - 303 (0x0100) - (0x012F)
Storage	4096 - 4883 (0x1000) - (0x1313)	4096 - 5033 (0x1000) - (0x13A9)	4096 - 5277 (0x1000) - (0x149D)

Cartridge Accessor

The Cartridge Accessor identifies and moves cartridges between the storage cells, tape drives, and the Insert/Eject Station. See Figure 2-3.

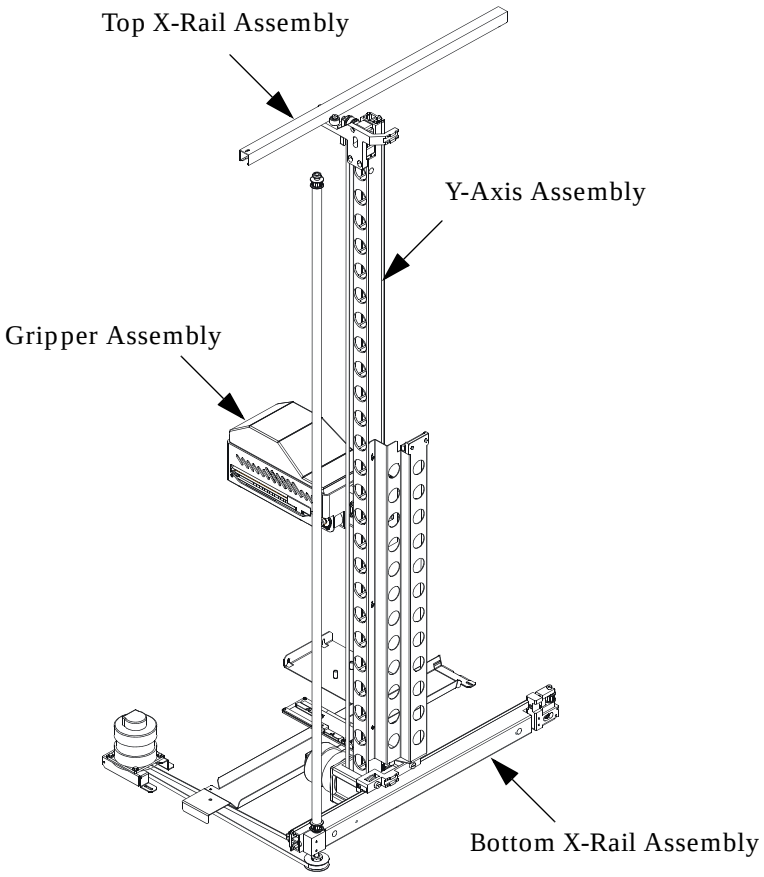


Figure 2-3 Cartridge Accessor

The Cartridge Accessor has:

- A gripper assembly for mounting a cartridge gripper and a barcode scanner.
    - A cartridge gripper picks and places cartridges in storage cells, tape drives, or the Insert/Eject station.
    - A barcode scanner reads the external labels on the cartridges. The barcode scanner is used during the inventory and teach processes.
- An X-Axis drive for moving the gripper assembly the length of the rails in the CM and the EMs.
- A Y-Axis drive for moving the gripper assembly vertically in the CM and the EMs.

Tape Cartridges

Each tape cartridge in the Scalar 1000 must have an external label that is operator and machine readable to identify the barcode number. The external label contains a minimum of 5 characters and a maximum of 16 characters for the barcode depending on the operating modes.

The Scalar 1000 can operate in one of three modes:

- Default Mode - six characters (up to two additional characters are ignored)
- Media ID mode - six characters, plus one or two media identifiers, or for AIT, a checksum character (ignored).
- Extended Mode - 5 to 16 characters, may include media identifiers and checksum values.

The barcode number is composed of uppercase A to Z characters and numeric 0 to 9 characters. The Scalar 1000 currently supports Code 39 and Storage Technology-type labels.

In Media ID mode, seven or eight characters are used to identify the cartridge and type. The cartridge type is one or two characters that are either separate from or included with the barcode label.

For additional information, see *Understanding Barcodes* on page 10.

Insert/Eject Station

The Insert / Eject (I / E) Station allows insertion and ejection of cartridges without interrupting the normal operation of the library.

The I / E Station is designed to handle cartridge magazines. Each magazine is capable of holding six ½-inch cartridges or nine AIT cartridges. A maximum of two magazines of any types can be present in the I / E Station. To locate the I / E Station, see Figure 2-1 on page 2-5.

Connectivity

The Scalar 1000 offers several different connectivity options, allowing the library to support a wide range of backup topologies and applications. Flexible library connectivity delivers active support for loop and switched fabric Fibre Channel protocols, along with SCSI.

SAN Connectivity

The Scalar 1000 can be connected to a Fibre Channel Storage Area Network (SAN) via the SNC.

For LTO-2 drives, each SNC 5100 controls up to three drives. With 4 SNCs, you can connect 12 drives.

For other drives, each SNC 5100 controls up to four drives. With 3 SNCs, you can connect 12 drives.

The SNC provides four SCSI bus connections, one ethernet, and two Fibre Channel connections. The SNC allows native SCSI devices (for example: robot controller and tape drives) to be seen by any hosts that are attached to the SAN.

The library controller and the tape drives access the SAN via the SNCs that can be installed in a Scalar 1000 CM or EM. See Figure 2-4 on page 2-15.

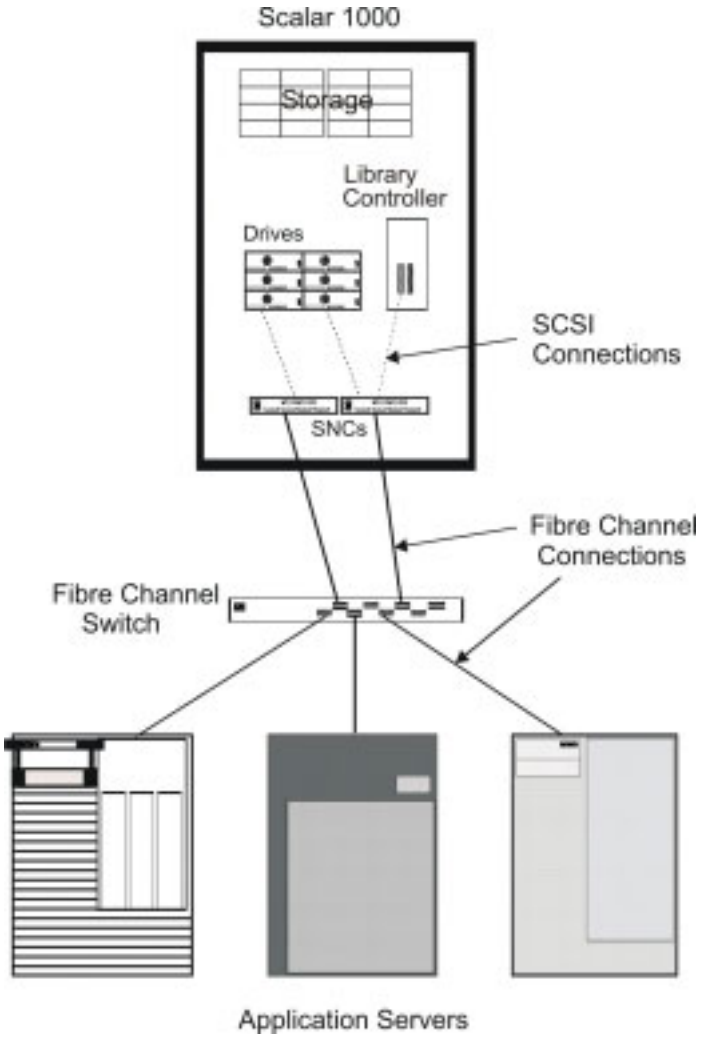


Figure 2-4 Indirect Fibre Channel Attachment

SCSI Connectivity

The Scalar 1000 can be directly connected to one or two SCSI buses. Because each SCSI bus is independent, it can be Single Ended, High Voltage Differential, or Low Voltage Differential. Both ends of each bus must be terminated and a terminator is shipped with each SCSI adapter card ordered.

The minimum configuration of a Scalar 1000 library requires one SCSI adapter (Single Ended, High Voltage Differential, or Low Voltage Differential).

Although the Scalar 1000 can be attached to a wide SCSI bus, it is not a wide SCSI device and its SCSI ID must be in the range of 0 to 7. See Figure 2-5.

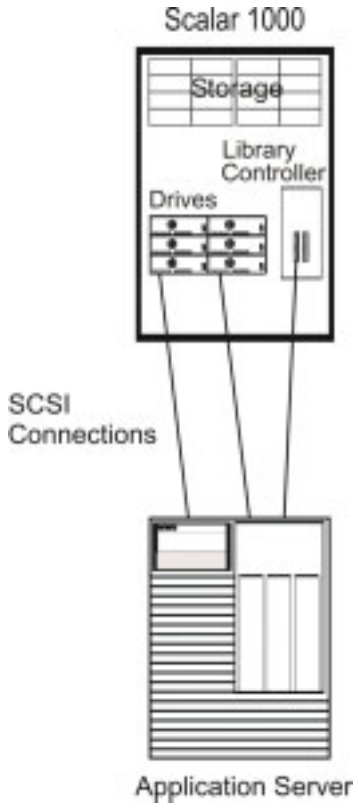


Figure 2-5 Direct SCSI Attachment

Scalar DLC Option

The Scalar 1000, through an optional Scalar Distributed Library Control (Scalar DLC), provides the industry's most advanced combination of management and diagnostics.

The Scalar DLC attaches to the library SCSI bus.

The host continues to directly attach to the drives via a SCSI Interface.

See the ADIC Scalar DLC documentation for detailed description of the interfaces supported. See Figure 2-6.

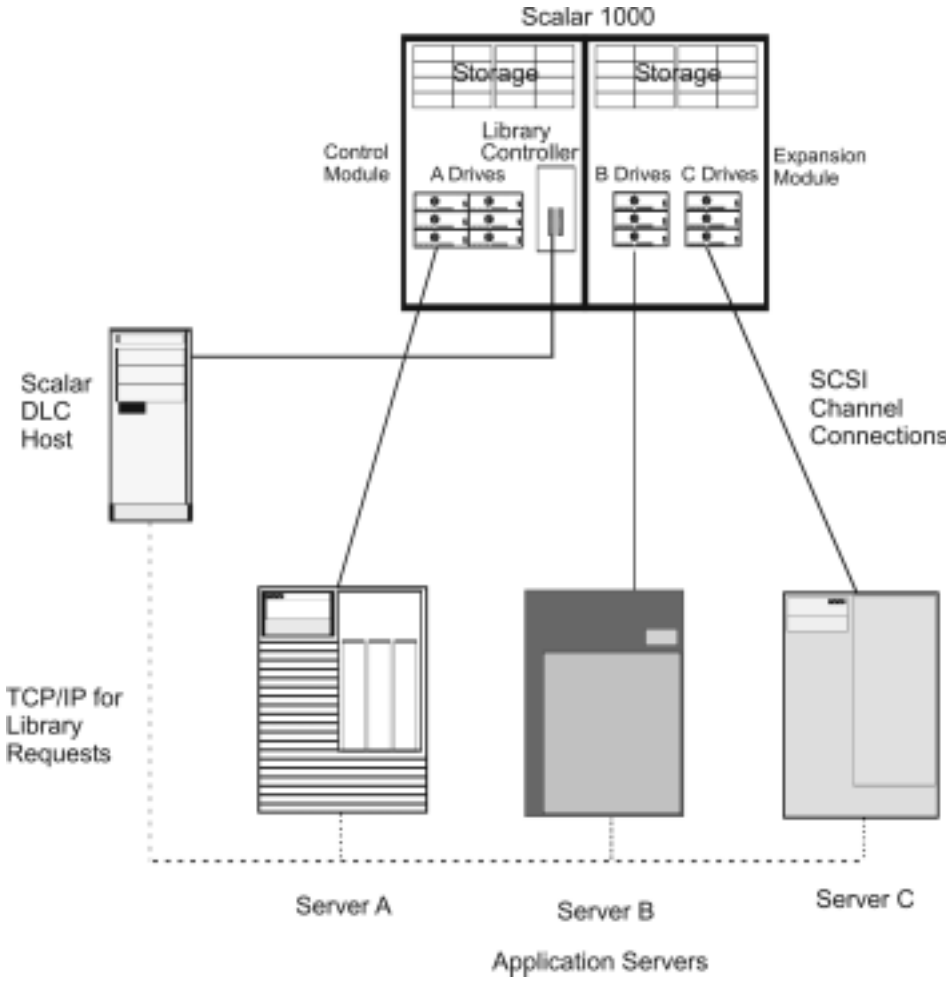


Figure 2-6 Network Attachment

Remote Management Unit

The factory-installed Remote Management Unit (RMU) in each system uses a standard web browser for remote library access.

The supported browsers are:

- Microsoft Internet Explorer version 4.0 and above
- Netscape Navigator version 4.7 and above

With an RMU, you are able to do the following:

- Update RMU firmware
- Update library firmware
- Access the library status
- Make configuration changes
- Access the library Operator Panel
- Access Scalar 1000 documentation
- Retrieve library command and event logs

The RMU supports Simple Network Management Protocol (SNMP) version 2.0 and acts as an SNMP-server. The RMU acquires Tape Alert 3.0 compatible information from the library over the serial interface port and sends that information to a SNMP manager. The RMU also detects a power loss and generates a SNMP trap for notification.

3

Safety

Overview

Note
In addition to the safety instructions in this guide, local and professional safety rules apply.

Avoid dangerous situations while operating the Scalar 1000 by following all safety procedures and operating the equipment carefully. Read and follow all instructions in this guide.

It is mandatory that operators of the Scalar 1000 library understand and comply with all instructions contained in this guide and other related documentation.

Intended Use

This equipment is designed for processing magnetic tape cartridges and any other application is not considered the intended use. The user assumes all risk and ADIC shall not be held liable for damage arising from unauthorized use of the library.

Hazard Alert Messages

ADIC classifies hazards in several categories. Table 3-1 shows the relationship of the symbols, signal words, actual hazards, and possible consequences.

Table 3-1 Hazard Alert Message

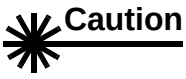
Symbol	Damage to ...	Signal Word	Definition	Consequence
	**Persons**	**DANGER**	Imminent hazardous situation	Death or serious injury
		WARNING	Potential hazardous situation	Possible death or serious injury
		CAUTION	Less hazardous situation	Possible minor or moderate injury
	**Persons**		Imminent hazardous electrical situation	Death or serious injury

Table 3-1 Hazard Alert Message (Continued)

Symbol	Damage to ...	Signal Word	Definition	Consequence
	**Material** **Person**	**Caution** **Warning**	Potential damaging situation Potential hazardous situation	Possible damage to the product or environment Possible death or serious injury
	**Material**	**Static Sensitive**	Potential electronic damaging situation	Possible damage to the product
		Note	Tips for operators	No hazardous or damaging consequences
			Important or useful information	No hazardous or damaging consequences

Specially emphasized paragraphs in this guide warn of danger or draw attention to important information. These paragraphs and their associated symbols include:

The danger exists of a fatal electric shock. At places designated with this symbol, electrical current can be present. Before starting any work, always confirm that all electrical connections are free of electrical current.



This symbol indicates the presence of a laser.
Caution - use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

When used with the signal word Warning, this symbol warns of a dangerous situation that threatens personnel with serious injury or death.

When used with the signal word Caution, this symbol means that specific regulations, rules, notices, and working procedures must be observed. Ignoring this symbol can lead to equipment damage or destruction or to other property damage.

This symbol indicates that the risk of equipment damage exists due to static discharge.

☞ **Note**

This symbol draws attention to user tips. No dangerous or damaging consequences for personnel or property are associated with this symbol.

This symbol indicates important or useful information. No dangerous or damaging consequences for personnel or property are associated with this symbol.

Area of Application

☞ **Note**
Other manufacturer documentation is an integral part of the Scalar 1000 documentation set.

This information applies to the entire Scalar 1000 family. Further safety instructions for components used in the equipment are not invalidated by these instructions.

Protective Devices

The Scalar 1000 is equipped with the following protective devices:

- Monitored locked access to the library
- Main Circuit Breaker switch

Library Access

The Scalar 1000 is completely surrounded by an enclosure. The library can only be accessed through monitored access doors.

The enclosure around the library separates the danger area of the Scalar 1000 library from the normal working area. The danger area of the library is the area in which personnel can be injured by component movements.

⚠ **Warning**

Movements of mechanical components in the library can cause serious injury. Access to the library is restricted to authorized personnel only.

⚠ **Warning**

Look into the aisle before you apply library power to make sure there are no obstructions or personnel present. Mechanical movement within the library can cause serious injury.

Mechanical Lock

The library access doors can only be opened with a key from the outside. Authorized personnel are responsible for the security of the key.

Main Circuit Breaker (Power) Switch

Switching off the Main Circuit Breaker switch removes all power and causes the movement electronics to shut off. All movements of the Accessor stop immediately. In case of danger to personnel or property, immediately switch off the Main Circuit Breaker switch.

Caution

Except in emergencies, stop the Scalar 1000 with the normal shutdown procedure before switching off the Main Circuit Breaker switch. ADIC is not responsible for damage caused by improper use of the Main Circuit Breaker switch; such risk lies entirely with the user.

Warning

Movements of mechanical components in the Scalar 1000 can cause serious injury. Before turning the Main Circuit Breaker switch on and restarting the Scalar 1000, confirm that no danger exists to personnel or property.

Warning

Look into the aisle before you apply library power to make sure there are no obstructions or personnel present. Mechanical movement within the library can cause serious injury.

4

Operation

Overview

This chapter describes the Operator Panel, Scalar 1000 start and shutdown procedures, and the Remote Management Unit (RMU) operations and menus.

Using the Operator Panel

The Operator Panel is an interactive path between the operator and the Scalar 1000. See Figure 4-1 on page 4-4.

Scalar 1000 operator can perform the following functions listed below:

- Starting the Scalar 1000
- Shutting down the Scalar 1000
- Handling media

Refer to *Inserting Media* on page 6 and *Ejecting Media* on page 8 for media handling procedures. In the case of equipment failures, the operator can perform media processing.

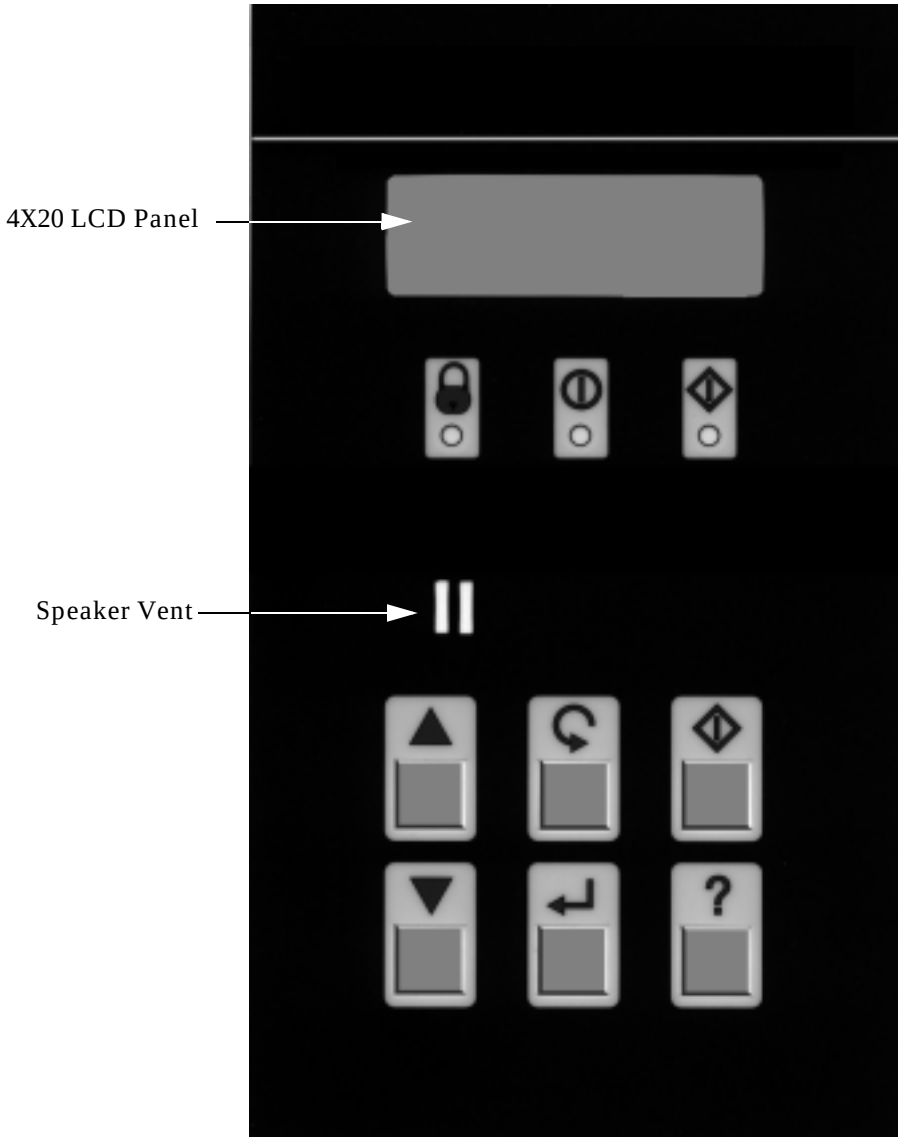


Figure 4-1 Operator Panel

Table 4-1 illustrates and describes Operator Panel indicators.

Table 4-1 Operator Panel Indicators

Indicator	Description
	The **Locked** indicator illuminates when the Insert/Eject Station is locked. While locked, no media may be added or removed through the Insert/Eject Station.
	The **Power On** indicator illuminates when power is applied to the Scalar 1000 library.
	The **Ready** indicator illuminates when the Scalar 1000 is ready to accept commands or execute Accessor movements.

Table 4-2 illustrates and describes Operator Panel push-buttons.

Table 4-2 Operator Panel Push-Buttons

Push-Button	Description
	Use **Up Arrow** to: • scroll the display to show the previous lines. • move the cursor (>) up from selection to selection. • increment the current value in a numerical entry field.

Table 4-2 Operator Panel Push-Buttons (Continued)

Push-Button	Description
	Use **Down Arrow** to: • scroll the display to show next line. • move the cursor (>) down from selection to selection. • decrement the current value in a numerical entry field.
	Use **Enter** to: • select the current option as the next action to be performed by the library, the cursor (>) indicates the chosen option. • act as a TAB button to the next required entry field when multiple field entries are being entered. In this case, the button cycles through all the entry locations until the **Accept** option is chosen (with **Y**).
	Use **Escape** to: • leave the current menu and return to the previous menu, if it exists. • Leave the Help menu and return to the previous menu.
	Use **Help** to display help text for the current selected item if available. In this mode, the **Arrow** buttons can be used to scroll through the help text and the **Escape** button is used to exit help.
	Use **Ready** to transition the library from a Ready state to Not Ready or Not Ready to the Ready state.

Holding down the push-buttons will cycle through the options. The longer the push-button is held down, the faster it will cycle.

Starting the Scalar 1000

Use the following procedure to start the Scalar 1000.

⚠ Caution

If an RMU is installed in the library, wait at least one minute between powering down and powering up the library. This allows the RMU to properly reset.

Step 1 Make sure that all doors are closed and mechanically locked on the Control Module (CM) and any Expansion Modules (EMs).

Step 2 Locate the Main Circuit Breaker switch in the lower right corner at the back of the CM and each EM.

See Figure 4-2 for the location of the Main Circuit Breaker switch.

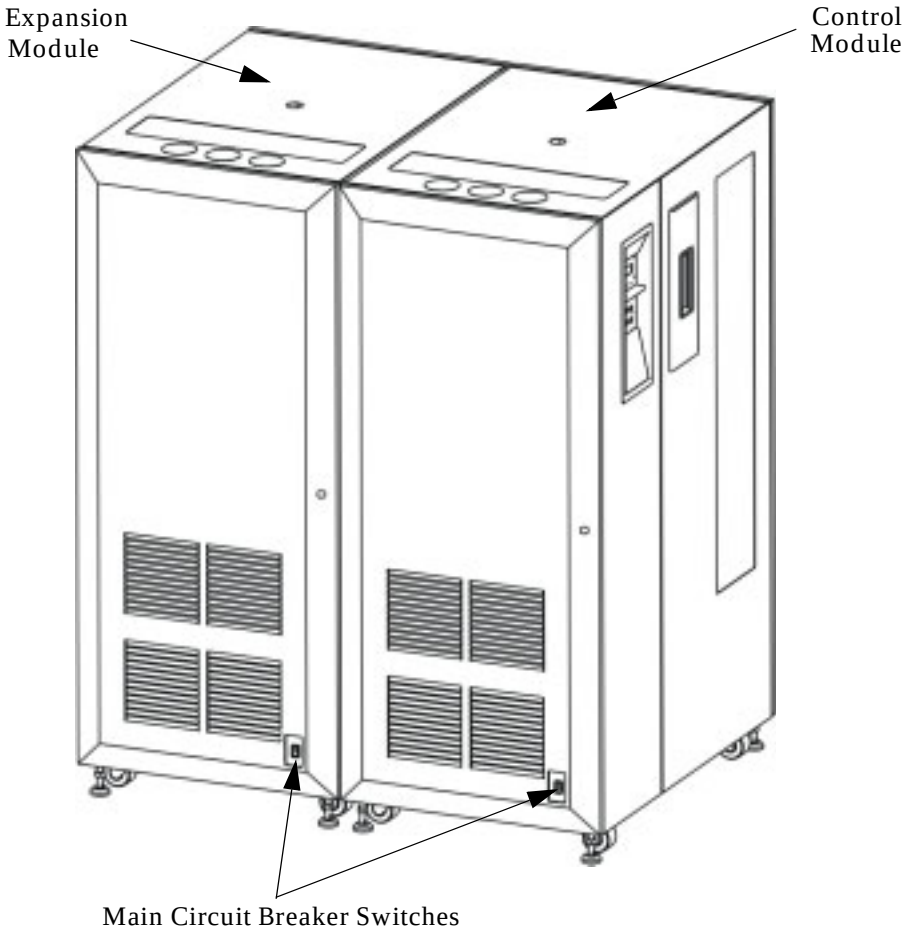


Figure 4-2 Main Circuit Breaker Switch Locations (Back View of CM/EM)

Step 3 Set the Main Circuit Breaker switch on each EM to ON.

Step 4 Set the Main Circuit Breaker switch on the CM to ON.

Warning

Movements of mechanical components in the Scalar 1000 can cause serious injury. Before turning the Main Circuit Breaker switch ON, confirm that no danger exists to personnel or property.

Warning

Look into the aisle before you apply library power to make sure there are no obstructions or personnel present. Mechanical movement within the library can cause serious injury.

Power is applied to the Scalar 1000. The CM embedded software starts the boot process. The Power On indicator illuminates and the Initial Screen displays status.

The firmware initiates a self test procedure, performs an auto-configuration, and inventories the library. When all firmware procedures are complete the Operator Panel LCD screen displays the Main Screen. See Figure 4-3.

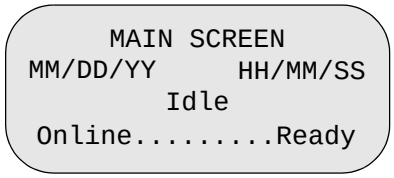


Figure 4-3 Main Screen

Shutting Down the Scalar 1000

You can shutdown the Scalar 1000 using the normal shutdown procedure (recommended for most situations) or the emergency shutdown procedure.

Attention

Except in emergency situations, shutdown the Scalar 1000 using the normal shutdown and not the emergency shutdown procedure.

Normal Shutdown

Use the following shutdown procedure to shutdown the Scalar 1000.

If an RMU is installed in the library, wait at least one minute between powering down the library and powering up the library. This allows the RMU to properly reset.

Step 1 If necessary, use the ↺ button to return to the Main Menu. The selector defaults to the Mode selection.

Step 2 Press the ↵ button.

Step 3 From the Mode screen, use the ▼ button to select the Shutdown mode.

Step 4 Press the ↵ button.

The cursor moves to Shutdown mode and the state automatically changes to Shutdown. The Accessor completes the current task, returns to the home position, and the reboot message appears. See Figure 4-4.

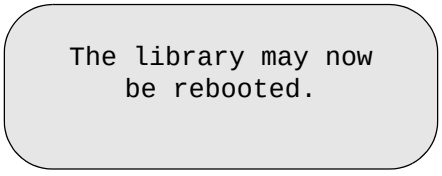


Figure 4-4 Reboot Message

Step 5 Locate the Main Circuit Breaker switch in the lower right corner at the back of the CM.

See Figure 4-2 on page 4-7 for the location of the Main Circuit Breaker switch.

Step 6 Set the Main Circuit Breaker switch to OFF.

Power is removed from the Scalar 1000. All Accessor movements halt immediately.

Step 7 Repeat Step 5 and Step 6 for each additional EM.

Emergency Shutdown

Use the following shutdown procedure only in emergency situations.

⚠ Caution

Except in emergency situations, shutdown the Scalar 1000 using the normal shutdown procedure before switching off the Main Circuit Breaker. Refer to *Normal Shutdown* on page 4-9 for more information.

Step 1 Locate the Main Circuit Breaker switch in the lower right corner at the back of the CM.

See Figure 4-2 on page 4-7 for the location of the Main Circuit Breaker switch.

Step 2 Set the Main Circuit Breaker switch to OFF.

The Gripper does a controlled gravity descent to the bottom and Accessor movements halt.

Step 3 For each additional EM:

a. Locate the Main Circuit Breaker switch at the lower right corner in the back of the CM.

See Figure 4-2 on page 4-7 for the location of the Main Circuit Breaker switch.

b. Set the circuit breaker to OFF.

Power is removed from the Scalar 1000. All Accessor movements halt immediately.

Restarting the Scalar 1000

Use the following procedure to restart the Scalar 1000.

Power up must be delayed by one minute after a power down condition to allow the RMU to properly reset.

Step 1 If applicable, correct any situations that required the Scalar 1000 shutdown.

Step 2 Refer to *Starting the Scalar 1000* on page 4-7 for instructions on the Scalar 1000 start procedure.

Using the Remote Management Unit

The Remote Management Unit (RMU) is a component in the library that provides remote access to the library by means of a Web browser. All functions listed here are available without the need of a dedicated server (or separate software).

The RMU performs the following functions:

- Provides remote operation of all library Operator Panel functions by means of a Web browser.
- Allows you to check the status of the system, firmware levels, and other useful information.
- Updates RMU firmware.
- Supports Simple Network Management Protocol (SNMP) version 2.0 and acts as an SNMP-server, generating SNMP traps and responding to SNMP requests.
- Supports ADIC Library Management Information Base (MIB) version 2.0.
- Acquires Tape Alert 3.0 information from the library and sends that information to an SNMP manager.
- Detects a power loss and generates an SNMP trap for notification.
- Enables the retrieval of library logs, and drive and RMU diagnostic files.
- Allows RMU configuration changes such as network, users, and date/time.
- Provides online access to documentation.

The following screen is the opening screen of the RMU.

Supported Browsers

The RMU supports the following browsers:

- Microsoft Internet Explorer version 5.0 and above
- Netscape Navigator version 4.01 for Unix and 4.7X for other environments

System Administrator Responsibilities

The System Administrator (SA) must setup the RMU for proper operation. The SA responsibilities include establishing a network address for the RMU and establishing the Uniform Resource Locator (URL).

The network address consists of an Internet Protocol (IP) address, subnet mask, and gateway IP address. Refer to *RMU Submenu* on page 5-87 for information about setting the network address via the Operator Panel.

After the network address has been established, the SA should use the web browser to test the RMU and URL. Once the URL has been verified and accounts have been created, the SA can distribute the URL address to the potential RMU users. The SA can delete users and change any user password.

RMU Prerequisites

The RMU requires a network address that consists of an Internet Protocol (IP) address, subnet mask, and gateway IP Address.

Once you have this information, input it to the RMU by means of the Operator Panel. For more information, see the instructions that follow.

Setting up the RMU

Once you have obtained a network address for the RMU, enter this information into the RMU by means of the library Operator Panel.

To configure the RMU

Step 1 From Operator Panel Main Menu, select Setup ► Library ►RMU.

The RMU Submenu is shown.

```
>Name...
 IP...
```

Step 2 Select **Name**.

The Name Dialog is shown.

```
Name : webтoot3


           Accept : N
```

Step 3 Enter the hostname using the **Up**, **Down**, and **Next** buttons.

Step 4 Select **Y** to accept the changes.

Step 5 Select **IP**.

The IP Dialog is shown.

```
IP : 100<100.100.100
Sub: 255.255.255.255
Gat: 100.100.100.100
             Accept: N
```

Step 6 Using the **Up**, **Down**, and **Next** buttons, enter the IP address, Subnet Mask, and Gateway IP address.

Step 7 Select **Y** to accept the changes.

Accessing the RMU

Before you begin using the RMU, make certain you have configured your RMU with the correct network address.

To access the RMU

Step 1 Open a Web browser.

Step 2 Point your browser to the RMU IP address, excluding any leading zeros. For example, if your IP address is 182.073.056.205, go to the following address: http://182.73.56.205.

The RMU user interface appears.

☞ **Note**
For information on determining or setting your RMU IP address, see *Setting up the RMU* on page 4-13.

Logging into the RMU

☞ **Note**
The default user login and password are *admin* and *secure*, respectively.

Some of the features of the RMU require you to log in.

To log into the RMU

- When prompted, enter your user name and password.

Note, the user name and password are case sensitive.

Checking Status and General Information

You can use the RMU to remotely check the status of a library and obtain general information about the library. For example, you can check drive status or get the firmware level of your library.

To check status and obtain general information

Step 1 Click the **Status** tab.

The following information appears:

- **Library Status** - Indicates whether the library is online or offline.
- **Drive Status** - Indicates the type and quantity of tape drives in the library.
- **RMU User** - Indicates the user name and IP address of the current user.
- **Hostname** - Indicates the hostname of the RMU.
- **IP Address** - Indicates the IP address for the RMU connection.
- **MAC Address** - Indicates the Media Access Control (MAC) address of the RMU. This is also the serial number of the RMU.
- **Library Serial #** - Indicates the library serial number.
- **SNMP** - Indicates whether SNMP requests and alerts are enabled or disabled.
- **SNMP Alerts** - Indicates whether the SNMP Alert notification feature is enabled or disabled.
- **Library Firmware** - Indicates the current level of library firmware.
- **RMU Firmware** - Indicates the current level of RMU firmware.

Configuring Network Parameters

You can reconfigure the hostname, IP address, subnet mask, and gateway address through the RMU. This feature requires you to log in to the RMU. See *Logging into the RMU* on page 4-14 for more information.

To configure the network parameters

Step 1 Click the **Configuration** tab.

Step 2 In the **Network Configuration** area, enter the new hostname, IP address, subnet mask, and gateway address.

Step 3 Click **Submit** and review your changes (indicated in red).

Step 4 Enter your password and click **Confirm** to complete the procedure.

The new values are saved. Note that you may need to redirect your Web browser if you are logged out.

Configuring SNMP

Simple Network Management Protocol (SNMP) is a set of protocols used to manage nodes on an IP network. You can configure the RMU to send alerts to and respond to requests from an SNMP management application.

To configure SNMP

Step 1 Click the **Configuration** tab.

Step 2 In the **SNMP Configuration** area, do the following:

- To enable or disable the feature, select **ON** or **OFF** in the **SNMP Enabled** drop-down.
- To enable or disable SNMP alerts, select **ON** or **OFF** in the **Alerts Enabled** drop-down. SNMP must be enabled if you want SNMP alerts enabled.
- In **Manager**, enter the SNMP server address.
- In **Public Name**, enter the name of the read-only SNMP community.
- In **Private Name**, enter the name of the read / write SNMP community.

Step 3 Click **Submit** and review your changes (indicated in red).

Step 4 Enter your password and click **Confirm** to complete the procedure.

The new values are saved. Note that you may need to redirect your Web browser if you are logged out.

Step 5 Click **Done**.

You may be instructed to reboot the RMU.

Downloading the SNMP MIB File

The SNMP Management Information Base (MIB) file allows an SNMP management application to understand the SNMP database and alerts generated by the RMU. If you are running an SNMP management application and need the library MIB, you can download it by means of the RMU.

To download the SNMP MIB file

Step 1 Click **SNMP MIB** in the left pane of the RMU interface.

Step 2 Right-click **Download SNMP MIB** and click **Save Target As**.

Step 3 Browse to your SNMP management server and click **Save**.

You will need to load the MIB file into the SNMP management application.

Configuring RMU Users

You can add unique users to the RMU. However, only one administrator-level user is allowed, and it is automatically given the user name *admin*.

Adding/Removing Users

Only the admin account can add or remove users.

To add or remove a user

Step 1 When prompted, log in as *admin*.

Step 2 Click the **Configuration** tab.

Step 3 In the **User Configuration** area, do one of the following:

- If you are adding a user:

  a. In the **Management Action** drop-down, click **Create User**.

  b. In **Edit New**, enter the new user name.

c. In **Password**, enter the new user's password and then confirm it in **Re-enter Password**.

- If you are deleting a user:

  a. In the **Management Action** drop-down, click **Delete User**.

  b. In **Select One**, select the user you want to remove.

Step 4 Click **Submit** and review your changes (indicated in red).

Step 5 Enter the *admin* password and click **Confirm** to complete the procedure.

Changing a Password

At any time, you can change your RMU password. If you are the administrator, you can also change other users' passwords.

To change a password

Step 1 Click the **Configuration** tab.

Step 2 In the **User Configuration** area, select **Change User Password** from the **Management Action** drop-down.

☞ **Note**
Only the admin can modify another user's password.

Step 3 If not already selected, select the appropriate user account from the **Select One** drop-down.

Step 4 In **Password**, enter the new user's password and then confirm it in **Re-enter Password**.

Step 5 Click **Submit** and review your changes (indicated in red).

Step 6 Enter your password and click **Confirm** to complete the procedure.

Configuring the Time and Date

You can configure the date and time for the RMU. The date and time will be used in the RMU log file to report when events occurred.

To configure the date and time

Step 1 Click the **Configuration** tab.

Step 2 Enter the date and time in the **Date and Time** area.

Step 3 Click **Submit** and review your changes (indicated in red).

Step 4 Enter your password and click **Confirm** to complete the procedure.

Synchronizing with an NTP Server

You can connect the RMU to a network time (NTP) server to automatically set the time.

Note
If using a time server, the Scalar 1000 synchronizes with the RMU.

To synchronize with an NTP server

Step 1 Click the **Configuration** tab.

Step 2 In the **Date and Time** area, select **ON** from the **Synchronization with NTP Server** drop-down menu.

Step 3 In the **NTP Server IP Address** field, enter the IP address of the NTP server.

Step 4 In the **Timezone** field, enter the time zone deviation for the NTP server. To get a list of timezone offsets, click **list of timezones**.

Step 5 Click **Submit** and review your changes (indicated in red).

Step 6 Enter your password and click **Confirm** to complete the procedure.

Updating Firmware

You can update firmware for the RMU. Before you update firmware, you need to have the firmware file in a location that is accessible from the RMU interface. Firmware updates can be found on www.adic.com.

To update firmware

Step 1 Click the **Firmware** tab.

Step 2 Select the firmware you would like to update.

Step 3 Click **Browse** and browse to the location of the firmware update file.

Step 4 Click **Update Firmware**.

The firmware updates. If the RMU was selected for a firmware update, the RMU will reboot.

Note
Downloading firmware can take several minutes.

Viewing Diagnostic Files (Library and RMU Logs)

From the RMU, you can view the diagnostic information (logs) for the attached library and RMU. This information can assist technical support personnel when diagnosing problems.

To view diagnostic files

Step 1 Click the **Diagnostics** file tab.

Step 2 Select the file you would like to view. The available options are:

- **Library Command Log** - Provides an event (command, errors, and so on) log for the library.
- **Library Error Log** - Same as the Library Command Log.
- **RMU Support Log** - Provides support logs for the RMU.
- **RMU Error Log** - Provides error logs for the RMU.

Step 3 Click **Retrieve selected file**.

The file loads.

Step 4 Click **Display File** to view the file in a separate browser window.

Using the Operator Panel (via the RMU)

The RMU provides access to the library by means of a virtual Operator Panel.

To use the Operator Panel

- Click the **Operator panel** tab.

  A graphical representation of the Operator Panel appears. You can click the softkeys and control the library the same way that you would from the front of the library. For more information on the Operator Panel, see *Using the Operator Panel* on page 4-3.

Viewing Logs

You can view the most current entries in the library command log without downloading the entire log file.

To view the log

- Click the **Logs** tab.

  The command log appears with the most recent entry at the top of the list.

Getting Help

The RMU provides access to help for the following items:

- **Contents** - Provides a description of each of the tabs on the RMU interface.
- **Documentation** - Provides a link to the user documentation for the library.
- **SNMP MIB** - Provides information on the SNMP MIB file. For more information, see *Configuring SNMP* on page 4-16.
- **Support** - Provides information on contacting technical support.

- **Version** - Provides the current revision level of the RMU firmware.

To get help

- Click on the item in the left pane of the RMU interface.

  The information appears in a separate browser window.

5

Menus and Commands

Overview

This chapter describes the Scalar 1000 menus and commands.

Note
The information menus are not dynamically updated. To view changes, reselect the menu that was changed.

The Operator Panel is a menu-driven interface that provides library status and current operating parameters to the Scalar 1000 Library.

Through this interface you may select, view, or change many of the library parameters. See the Operator Panel directory structure in Figure 5-1 on page 5-7.

Using the Operator Panel Menu

Use the Operator Panel push-buttons to access each menu or menu option. All menus and their respective options are grouped according to function.

Accessing the Menu

Proceed as follows to use the Operator Panel menu buttons to select menu options:

Step 1 Press the ▲ (Up arrow) button or the ▼ (Down arrow) button to scroll through the current selection, or to move the cursor to a new option.

Step 2 Press the ↵ (Enter) button to activate your selection.

Step 3 Press the ↶ (Escape) button to return to the previous option.

Each time you press the Escape button, you will move back one step in the menu tree. If you continue to press Escape, you will return to the Main Menu.

Special Characters or Cursors

A menu option can be preceded or followed by one or more of the following special characters or cursors:

Note
If no special character follows the option, the selected action will commence immediately.

► When this character follows the option, the next menu contains more options.

... When these characters follow the option, the next menu requests or supplies information.

> When this cursor precedes the option, the option is available for selection. Press the ↵ button to select the option. Press the ? button to view information about the option. Press the ▲ or ▼ button to select between the previous or next options.

< When this cursor follows the option, you can scroll predefined values with the ▲ and ▼ buttons for the selected option.

^ When this cursor appears below the option, you can scroll predefined values with the ▲ and ▼ buttons for the selected option.

Refer to the *Using the Operator Panel* on page 4-3 for detailed information.

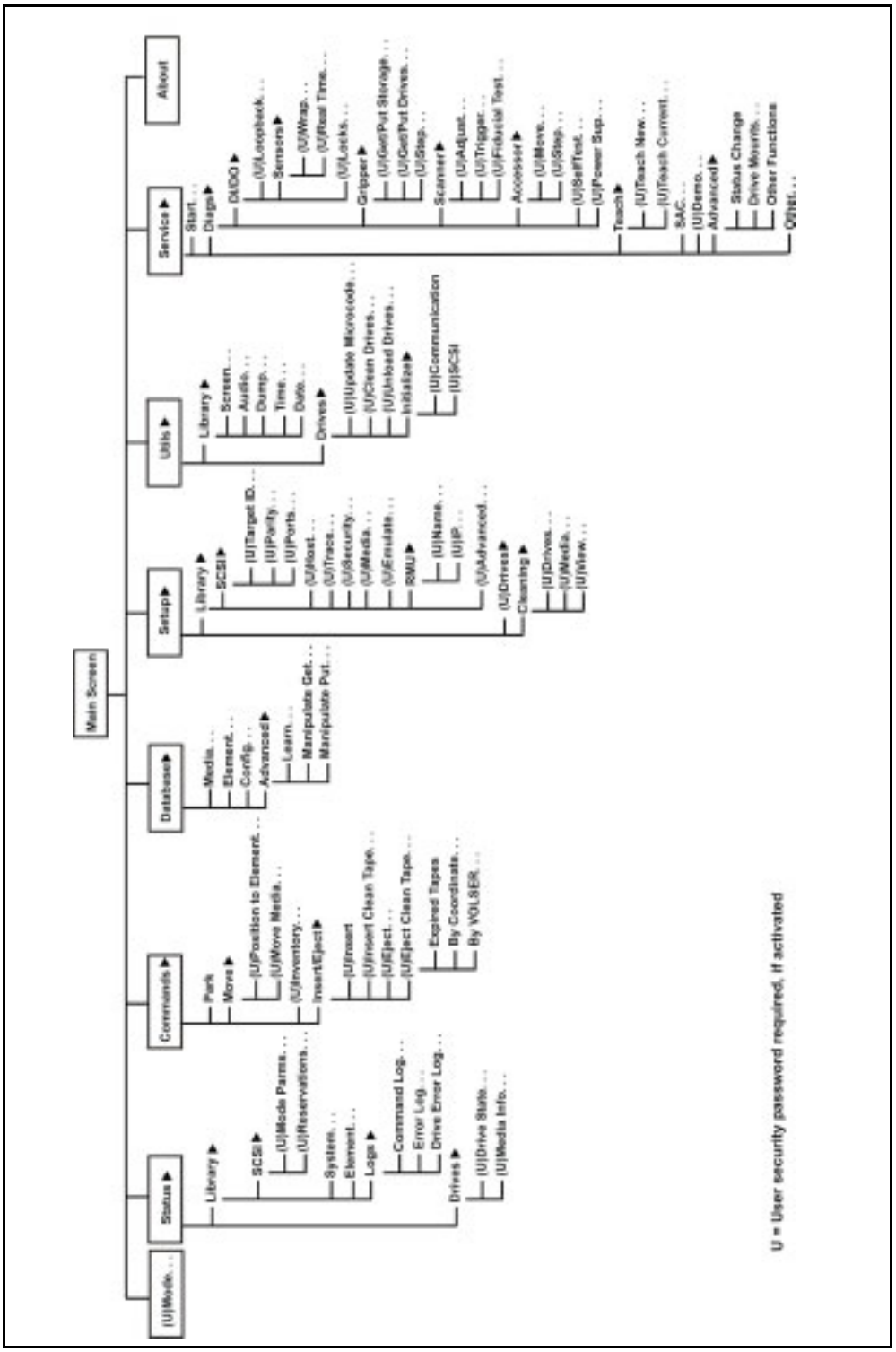


Figure 5-1 Operator Panel Directory Structure

Help Button

Help is common to all menus, submenus, dialogs, and screens. Using Help while the cursor (< or >) is at a desired location, provides information about that entry.

To use Help proceed as follows:

Step 1 Press the ? (Help) button to view help on a menu selection.

The help text appears for the current selection.

Step 2 Press the ▲ (Up arrow) button or the ▼ (down arrow) button to move between help continuation screens.

Step 3 Press the ↩ (Escape) button to return to the previous selection.

Each time you press the Escape button, you will move back one step in the menu tree. If you continue to press Escape, you will return to the Main Menu.

Operator Intervention Message

If an error condition causes an operator intervention message to appear, refer to Table 7-2 Operator Intervention Messages on page 7-23 and Table 7-3 Error Log Reporting on page 7-28.

Main Menu

Path: `Main Menu`

Note

The button can always be used to escape to the previous menu.

The Main Menu is the first available menu after the Main screen. Refer to *Using the Operator Panel* on page 4-3 for detailed Main Menu information. All subsequent menus and options are selected from the Main Menu. See Figure 5-2.

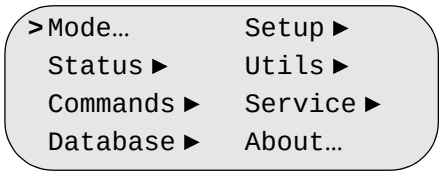


Figure 5-2 Main Menu

Depending on your selection, you have the following options:

- *Mode Dialog* on page 5-10
- *Status Menu* on page 5-12
- *Commands Menu* on page 5-35
- *Database Menu* on page 5-62
- *Setup Menu* on page 5-71
- *Utils Menu* on page 5-97
- *Service Menu* on page 5-113
- *About Screen* on page 5-148

Mode Dialog

Path: `Main Menu ▶Mode Dialog`

Use the `Mode Dialog` to change the library operating mode. For example, you can set the library to Online or Offline. See Figure 5-3.

```
Offline .......   Ready
>Online
 Ready
                Accept: N
```

Figure 5-3 Mode Dialog

Parameter	Value
Mode	Online Offline Shutdown
State	Ready Not Ready
Accept	**Y** to accept changes **N** to reject changes

Note
If Shutdown is selected for the Mode parameter, Shutdown is automatically displayed for the State parameter.

When toggling between the Ready and Not Ready states, the following two screens, refer to Figure 5-4 and Figure 5-5 appear. When Shutdown is selected, the Shutdown Screen appears. See Figure 5-6.

```
Changing state to:
      >READY<
```

Figure 5-4 Ready Screen

```
Changing state to:
     >NOT READY<
```

Figure 5-5 Not Ready Screen

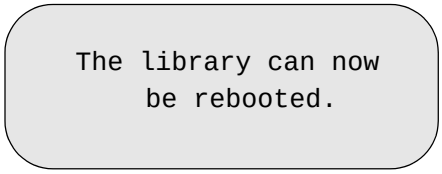


Figure 5-6 Shutdown Screen

Table 5-1 details the state and mode descriptions available under the Mode screen.

Table 5-1 Operating State and Mode

State	Mode	Description
Ready	Online	The normal host controlling condition. Host commands are processed.
	Offline	The normal operator controlling condition. Operator commands are processed. Most host commands are not processed.
Not Ready	Online	Aisle power is not present. Host commands not involving the Accessor are processed.
	Offline	Aisle power is not present. Most operator and host commands are not processed.
Shutdown	Shutdown	Properly shuts down the library. All commands issued by the host are completed, and no other commands are accepted. The RUM issues SNMP traps and then also shuts down. The library (and RMU) must be power cycled to leave this state.

Status Menu

Path: `Main Menu ▶Status Menu`

Use the `Status Menu` to access views of your library operating statistics. See Figure 5-7.

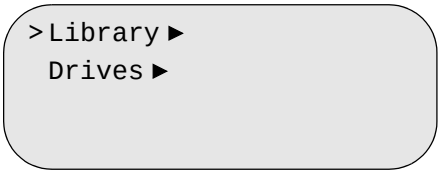


Figure 5-7 Status Menu

Depending on your selection, you have the following options:

- *Library Submenu* on page 5-13
- *Drives Submenu* on page 5-30

Library Submenu

Path: Main Menu ►Status Menu ►Library Submenu

Use the Library Submenu to access SCSI, System, Element, and Log files for viewing or printing history. See Figure 5-8.

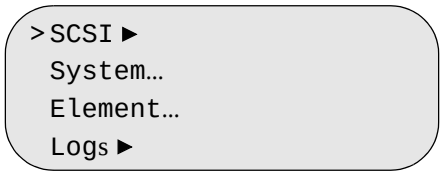


Figure 5-8 Library Submenu

Depending on your selection, you have the following options:

- *SCSI Submenu*
- *System Dialog* on page 5-20
- *Element Dialog* on page 5-22
- *Logs Submenu* on page 5-26

SCSI Submenu

Path: Main Menu ►Status Menu ►Library Submenu ►SCSI Submenu

Use the SCSI Submenu to view different SCSI parameter. See Figure 5-9.

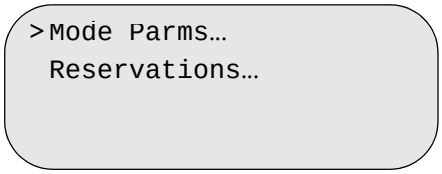


Figure 5-9 SCSI Submenu

Depending on your selection, one of the following appears:

- *Mode Parms Dialog* on page 5-14
- *Reservations Dialog* on page 5-19

Mode Parms Dialog

Path: `Main Menu ▶Status Menu ▶Library Submenu ▶SCSI Submenu ▶Mode Parms Dialog`

Use `Mode Parms` to view the current, default, or saved Mode Parameter pages. For example, you can view an individual element address or see if the library has Mixed-Media Support enabled. See Figure 5-10 and refer to the *Scalar 1000 SCSI Reference Manual* for additional information about the Scalar 1000 Mode Parameters.

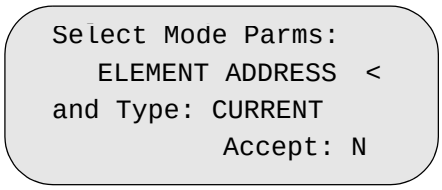


Figure 5-10 Mode Parms Dialog

Parameter	Value
Mode Parms	Element Address Mixed-Media Parity LCD
Type	Current Default Saved
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, one of the response screens appears. Refer to Figure 5-11 on page 5-15. Otherwise, the changed parameters continue to display but no action is taken.*

Element Address

Use `Element Address` to check current, default, or saved addresses of the Accessor, storage cell, I/E station, or tape drives. See Figure 5-11.

```
Base MT : 00001
Base ST : 04096
Base IE : 00016
Base DT : 00256
```

Figure 5-11 Element Address Screen

Parameter	Value
Base MT	Current, default, or saved base Accessor address
Base ST	Current, default, or saved base Storage Cell address
Base IE	Current, default, or saved base Insert/Eject station address
Base DT	Current, default, or saved base tape drive address

Mixed-Media Support

Use `Mixed-Media Support` to see barcode processing or if the read element, unique additional sense code qualifier, or mixed mode is enabled.

When `Mixed-Media Support` is selected, the Mixed-Media screen appears. See Figure 5-12.

```
MediaID  :N      Mixed: N
Ext RES  :              N
Ext ASCQ :              N
Ext BC   :              N
```

Figure 5-12 Mixed-Media Screen

Parameter	Value
Media ID	**Yes** indicates that the library is processing barcode media identifiers. **No** indicates that the library is not processing barcode media identifiers. If the library is NOT operating in Media ID mode, the Extended RES, Extended ASCQ, and Extended barcode are not applicable.
Ext RES	**Yes** indicates that Extended Read Element Status is enabled to show element and media domains / types. **No** indicates that Extended Read Element Status is disabled.
Ext ASCQ	**Yes** indicates that Vendor Unique Additional Sense Code Qualifiers are currently enabled. **No** indicates that Vendor Unique Additional Sense Qualifiers are currently disabled.
Ext BC	**Yes** indicates that reported barcode will include the media type identifier. **No** indicates that reported barcode will not include the media type identifier.

Mixed	**Yes** indicates that the library is operating in mixed mode and allows for non-installed devices which may be addressable by the SCSI host. **No** indicates that the library is not operating in mixed mode and all non-installed devices / cells will NOT be addressable by the SCSI host.

Parity

Use `Parity` to view the current, default, or saved parity. This view also displays the retries that are allowed in each selection. See Figure 5-13.

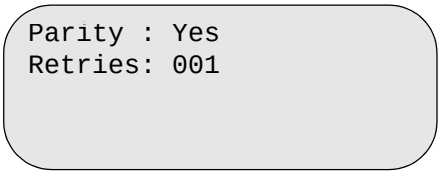


Figure 5-13 Parity Screen

Parameter	Value
Parity	**Yes** indicates that current, default, or saved SCSI parity is enabled. **No** indicates that current, default, or saved SCSI parity is is disabled.
Retries	Indicates the current number of transmission retries allowed (000–999) due to SCSI parity errors

LCD

Use `LCD` to view current, default, or saved library security. See Figure 5-14.

```
Security: Disabled
Line    : 1<
    MAIN MENU
(default)
```

Figure 5-14 LCD Dialog

Parameter	Value
Security	**Disabled** indicates that library security is currently disabled. **Enabled** indicates that library security is currently enabled.
Line	Indicates the currently displayed text line (1–4).
Text	Corresponding line of main menu text with up to 20 characters.
default	Displays which of the three modes (current, default, or saved) is being displayed.

Reservations Dialog

Path: `Main Menu ▶Status Menu ▶Library Submenu ▶SCSI Submenu ▶Reservations Dialog`

Use the `Reservations Dialog` to view a specific element, or the entire library. See Figure 5-15.

This reservation remains in effect until:

- The initiator that made the reservation sends another command with the same Reservation Identification number (this supersedes any previous reservation).
- The initiator that made the reservation sends a RELEASE command.

A reset or a power-on of the library is performed.

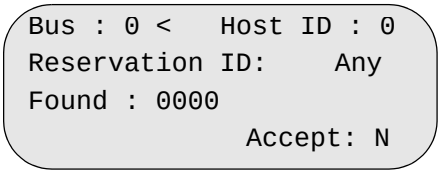


Figure 5-15 Reservation Dialog

Parameter	Value
Bus	Displays the SCSI Bus ID number (0–1)
Host ID	Displays the Host ID number (0–7)
Reservation ID	Displays the host's reservation identifier (0x00–0xFF, Any)
Found	The value of the Found parameter in the Reservation Dialog is supplied by the library firmware and cannot be changed.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Response Dialog appears. See Figure 5-16 on page 5-20. Otherwise, the changed parameters continue to display but no action is taken.*

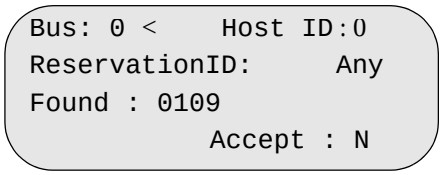


Figure 5-16 Response Dialog

Parameter	Value
Found	Indicates the number of reserved elements which match the Bus, Host ID, and Reservation ID parameters.
Accept	**Y** to accept **N** to reject

System Dialog

Path: `Main Menu ▶Status Menu ▶Library Submenu ▶System Dialog`

Use the `System Dialog` to view library operating statistics. For example, the number of installed cartridges, number of free cells, or the number of Gets performed by the library. See Figure 5-17.

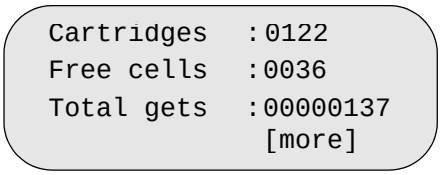


Figure 5-17 System Dialog

Parameter	Value
Cartridges	Displays the number of cartridges in the library: (0000–0787 for ½-inch and SDLT / DLT cartridges) (0000–1181 for AIT cartridges) (0000–0951 for LTO cartridges)
Free cells	Displays the number of free storage cells: (788 - for ½-inch and SDLT / DLT) (1182 for AIT cells) (0951 for LTO cells)
Total gets	The total number of gets from elements (00000000 - 99999999)
[more]	More information on the Continuation Screen.

When [more] is selected, the Continuation Screen appears. See Figure 5-18.

```
Moves   : 000013225
X meters: 000005187
Y meters: 000011148
              [more]
```

Figure 5-18 Continuation Screen

Parameter	Value
Moves	Total move media commands that have been executed
X meters	Total meters traveled by the Accessor in the horizontal direction
Y meters	Total meters traveled by the Accessor in the vertical direction
[more]	More information on the Continuation Screen

When [more] is selected, the Continuation Screen appears. See Figure 5-19.

```
Get retries : 000008
Put retries : 000010
Scan retries: 000009
I/E closes  : 000050
```

Figure 5-19 Continuation Screen

Parameter	Value
Get retries	Total recovered get operations
Put retries	Total recovered put operations
Scan retries	Total recovered barcode scan operations
I/E closes	Total times the I/E station has been closed

Element Dialog

Path: `Main Menu ►Status Menu ►Library Submenu ►Elements Dialog`

Use the `Element Dialog` to display the barcode and source of a cartridge at an element address. See Figure 5-20.

```
Enter Desired
Coord: S< 01 2 A 01
OR Element : 00000
          Accept: N
```

Figure 5-20 Element Dialog

Parameter	Value
Coord	The first field indicates the type of cell (I for I/E Station, D for Drive, S for Storage cell). The second field displays module numbers that can be modified if EMs are present (1–4). The third field indicates the storage cell section (1–4), drive bay (1–2), or IE station number. The fourth field indicates the column of the section (A–E), drive port (A–B), or IE station column. The fifth field indicates the row of the column. (01–12 for ½-inch and SDLT/DLT coordinates) (01–14 for LTO coordinates) (01–18 for AIT coordinates)
Element	Displays the element number that corresponds to the coordinate parameter.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Response Dialog appears. See Figure 5-21. Otherwise, the changed parameters continue to display but no action is taken.*

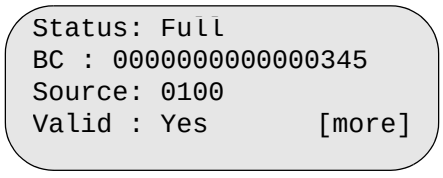


Figure 5-21 Response Dialog

Parameter	Value
Status	**Full** indicates that a cartridge is present in the element **Empty** indicates that a cartridge is not present in the element
BC	Indicates the barcode label as found on the cartridge when the Status indicates Full
Source	Indicates the original location from which this cartridge came
Valid	**Yes** indicates that the results shown are based on an inventory of the elements **No** indicates that the results shown are not based on an inventory of the elements
[more]	More information on the Continuation Screen

When [more] is selected, the Continuation Screen appears. See Figure 5-22.

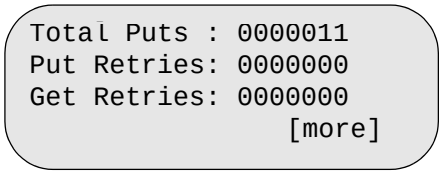


Figure 5-22 Continuation Screen

Parameter	Value
Total Puts	Indicates the total number of puts (0000000–99999999) that occurred at this element
Put Retries	Indicates the total number of put retries (0000000–99999999) that occurred at this element
Get Retries	Indicates the total number of get retries (0000000–99999999) that occurred at this element

[more]	More information on the Continuation Screen

When [more] is selected, the Continuation Screen appears. See Figure 5-23.

```
Reserved   :     No
Reserve ID :     N/A
Reserved by:     N/A
```

Figure 5-23 Continuation Screen

Note
When not reserved, Reserve ID and Reserved by parameters are not applicable.

Parameter	Value
Reserved	**Yes** indicates the element is reserved by a SCSI host. **No** indicates the element is not reserved. When not reserved, Reserve ID and Reserved by parameters are not applicable (N / A).
Reserve ID	Indicates the reserve ID.
Reserved by	Indicates the library port and SCSI ID of the reserving host.

Logs Submenu

Path: `Main Menu ▶Status Menu ▶Library Submenu ▶Logs Submenu`

Use the `Logs Submenu` to view command, or error log history. See Figure 5-24.

```
>Command Log…
 Error Log…
 Drive Error Log…
```

Figure 5-24 Logs Submenu

Depending on your selection, you have the following options:

- *Command Log Dialog*
- *Error Log Dialog* on page 5-28
- *Drive Error Log Dialog* on page 5-30

Command Log Dialog

Path: `Main Menu ▶Status Menu ▶Library Submenu ▶Logs Submenu ▶Command Log Dialog`

Use the `Command Log Dialog` to view a running history log of library operations. A service representative retrieves this data for problem analysis. See Figure 5-25.

```
11/10/99     18:25:24.88
SCSIDONE INQ : Status
good
```

Figure 5-25 Command Log Dialog

Press the ↵ button to print the command log and the response dialog is displayed. See Figure 5-26.

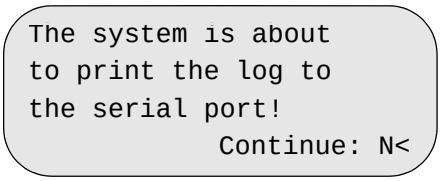


Figure 5-26 Response Dialog

Parameter	Value
Continue	**Y** to print the log to the serial port **N** to not print the log to a serial port

☞ **Note**
These screens may flash by quickly.

*If **Y** is selected for the Continue parameter value, the two Response Screens appear. See Figure 5-27 and Figure 5-28. Otherwise, the changed parameter continues to display but no action is taken.*

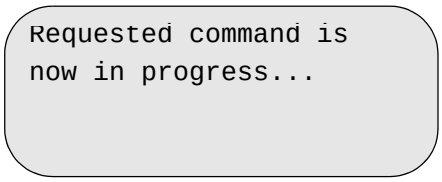


Figure 5-27 Response Screen

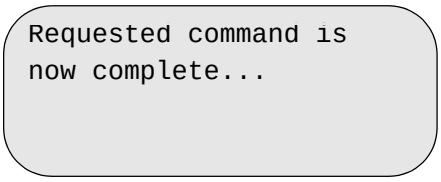


Figure 5-28 Response Screen

Error Log Dialog

Path: `Main Menu ▶Status Menu ▶Library Submenu ▶Logs Submenu ▶Error Log Dialog`

Use the Error Log Dialog to view a running history of errors that have occurred. See Figure 5-29.

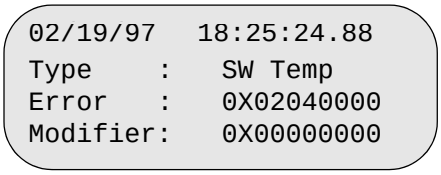


Figure 5-29 Error Log Dialog

Parameter	Value
Type	Indicates the type of error. Record the error type in *Error Log Codes* on page 7-28.
Error	Indicates the error identifier. Record the error identifier in *Error Log Codes* on page 7-28.
Modifier	Indicates the error modifier. Record the error modifier in *Error Log Codes* on page 7-28.

Press the ↵ button to print the error log and the Response Dialog appears. See Figure 5-30.

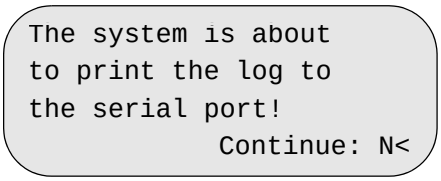


Figure 5-30 Response Dialog

Parameter	Value
Continue	**Y** to print the log to the serial port. **N** to not print the log to a serial port.

Note
These screens may flash by quickly.

*If **Y** is selected for the Continue parameter value, the two Response Screens appear. See Figure 5-31 and Figure 5-32.*

Otherwise, the changed parameter continues to display but no action is taken.

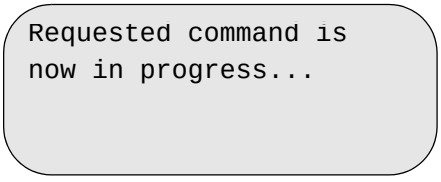


Figure 5-31 Response Screen

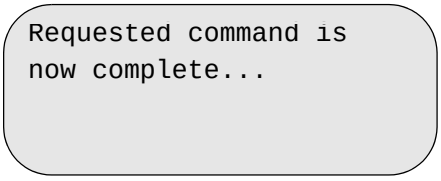


Figure 5-32 Response Screen

Drive Error Log Dialog

Path: `Main Menu ▶Status Menu ▶Library Submenu ▶Logs Submenu ▶Drive Error Log Dialog`

Note
This command is not yet available.

Use the `Drive Error Log` to view a history of drive error conditions. See Figure 5-33.

```
THIS FUNCTION IS NOT
YET AVAILABLE
Press Escape.
```

Figure 5-33 Drive Error Log Dialog

Drives Submenu

Path: `Main Menu ▶Status Menu ▶Library Submenu ▶Drives Submenu`

Use the `Drives Submenu` to view drive, media, or firmware information. See Figure 5-34.

```
>Drive State…
 Media Info…
```

Figure 5-34 Drives Submenu

Depending on your selection, one of the following displays will appear:

- *Drive State Dialog* on page 5-31
- *Media Info Dialog* on page 5-32

Drive State Dialog

Path: `Main Menu ►Status Menu ►Library Submenu ►Drives Submenu ►Drive State Dialog`

Note
The library must be offline.

Use the `Drive State Dialog` to view the current state of the selected drive. See Figure 5-35.

```
Drive: 1200<
State: Loaded
Clean Required: No
                [more]
```

Figure 5-35 Drive State Dialog

Parameter	Value
Drive	Indicates the element index of the desired drive: (01200–01247 for all AIT, SDLT/DLT and LTO drives) (01200–01215 for all ½-inch drives)
State	Information supplied by the library firmware. Displays the condition of the drive: (LOADED, UNLOADED, LOADING, UNLOADING, EJECTED, EMPTY, DRIVE ERROR, UNKNOWN)
Clean Required	Information supplied by the library firmware. Displays Yes or No to clean or not clean the drive.
[more]	More information on the Continuation Screen

Note
The Continuation Screen could take several seconds to return with the information.

When [more] is selected, the Continuation Screen appears. See Figure 5-36.

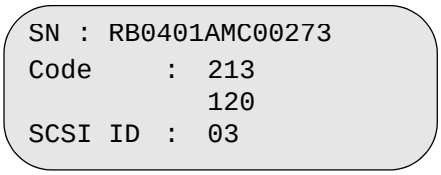


Figure 5-36 Continuation Screen

Parameter	Value
SN	Indicates the drive serial number
Code	Indicates the current controller and drive firmware level of the drive
SCSI ID	Indicates the current SCSI ID of the drive (00–15)

Media Info Dialog

Path: `Main Menu` ▶ `Status Menu` ▶ `Library Submenu` ▶ `Drives Submenu` ▶ `Media Info Dialog`

Use the `Media` Info Dialog to display media information in loaded drive elements. See Figure 5-37.

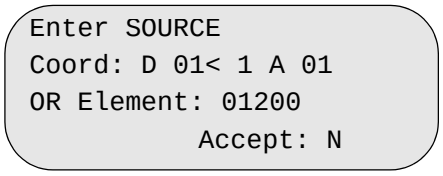


Figure 5-37 Element Dialog

Parameter	Value
Coord	The first field displays the type of cell (I for I/E Station, D for Drive, S for Storage cell). The second field displays module numbers that can be modified if EMs are present (1–4).

	The third field displays the storage cell section (1–4), drive bay (1–2), or IE station number. The fourth field displays the column of the section (A–E), drive port (A–B), or IE station column. The fifth field displays the row of the column. (01–12 for ½-inch and SDLT / DLT coordinates) (01–14 for LTO coordinates) (01–18 for AIT coordinates)
Element	Displays the element number that corresponds to the coordinate parameter.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Response Screen appears. See Figure 5-38. Otherwise, the changed parameters continue to display but no action is taken.*

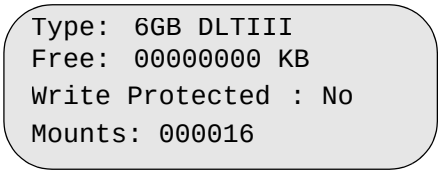


Figure 5-38 Response Screen

Parameter	Value
Type	Displays the type of drive media: (for SDLT/DLT: NO TAPE, UNKNOWN, CLEAN TAPE, TK50 R0, TK70 R0, 2.6Gb DLT III, 6Gb DLT IV, 10Gb DLT III, 15Gb DLT IIIXT, 20Gb DLT IV, 35Gb DLTIV, 40Gb DLT IV, SDLT I) (for LTO: 100GB for LTO-1, 200GB for LTO-2) (for AIT: UNKNOWN, AIT WRITEABLE, AIT PARTITIONED, CLEAN TAPE, AIT MIC)
Free	Indicates the amount of free space in B, KB, or MB remaining on the drive media.
Write Protected	**Yes** indicates that the cartridge is write protected. **No** indicates that the cartridge is not write protected.
Mounts	Indicates the number of times the media has been mounted into a drive.

Commands Menu

Path: Main Menu ▶Commands Menu

Use the Commands Menu to access commands that perform a motion within the library. See Figure 5-39.

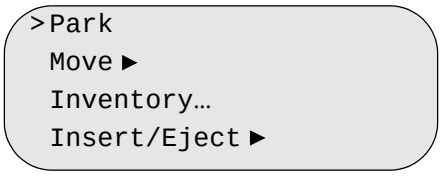


Figure 5-39 Commands Menu

Depending on your selection, you have the following options:

- *Park* on page 5-36
- *Move Submenu* on page 5-36
- *Inventory Dialog* on page 5-43
- *Insert/Eject Submenu* on page 5-45

Park

Path: Main Menu ►Commands Menu ►Park

Use Park to retract the gripper and return the Accessor to the home position. The two Response Screens appear.
See Figure 5-40 and Figure 5-41.

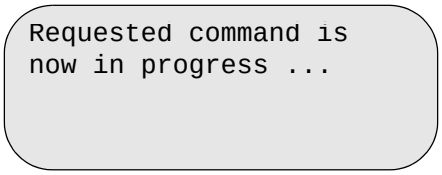


Figure 5-40 Response Screen

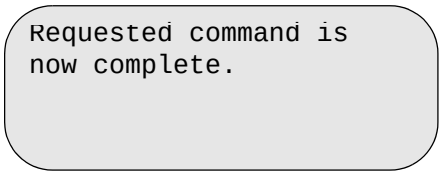


Figure 5-41 Response Screen

Move Submenu

Path: Main Menu ►Commands Menu ►Move Submenu

Note
The Scalar 1000 must be Offline and Ready to use the commands under the Move Menu.

Use the Move Submenu to position the gripper or scanner, or to move media. See Figure 5-42.

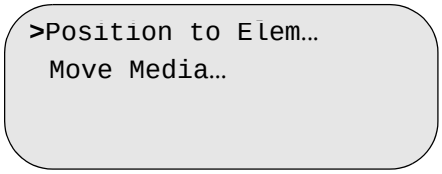


Figure 5-42 Move Submenu

Depending on your selection, you have the following options:

- *Position to Elem Dialog* on page 5-37
- *Move Media Dialog* on page 5-39

Position to Elem Dialog

Path: `Main Menu ►Commands Menu ►Move Submenu ►Position to Elem Dialog`

Use the `Position to Elem` to move the Accessor in front of a specific element. See Figure 5-43.

```
Enter TARGET
Coord: S< 01 2 A 01
OR Element : 00000
          Accept: N
```

Figure 5-43 Position to Elem Dialog

Parameter	Value
Coord	The first field indicates the type of cell (I for I/E Station, D for Drive, S for Storage cell). The second field displays module numbers that can be modified if EMs are present (1–4). The third field indicates the storage cell section (1–4), drive bay (1–2), or IE station number. The fourth field indicates the column of the section (A–E), drive port (A–B), or IE station column. The fifth field indicates the row of the column. (01–12 for ½-inch and SDLT/DLT coordinates) (01–14 for LTO coordinates) (01–18 for AIT coordinates)
Element	Displays the element index that corresponds to the coordinate parameter.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, two Response Screens appear. See Figure 5-44 and Figure 5-45. Otherwise, the changed parameters continue to display but no action is taken.*

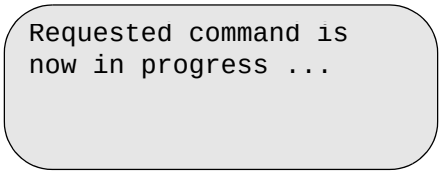


Figure 5-44 Response Screen

The Accessor positions itself in front of the specific element.

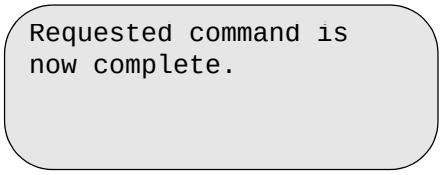


Figure 5-45 Response Screen

Move Media Dialog

Path: `Main Menu ▶Commands Menu ▶Move Submenu ▶Move Media Dialog`

Use the `Move Media Dialog` to move cartridges between elements without host intervention. See Figure 5-46.

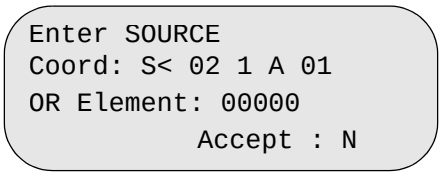


Figure 5-46 Move Media Dialog

Parameter	Value
Coord	The first field indicates the type of cell (I for I/E Station, D for Drive, S for Storage cell). The second field displays module numbers that can be modified if EMs are present (1–4). The third field indicates the storage cell section (1–4), drive bay (1–2), or IE station number. The fourth field indicates the column of the section (A–E), drive port (A–B), or IE station column. The fifth field indicates the row of the column. (01–12 for ½-inch and SDLT/DLT coordinates) (01–14 for LTO coordinates) (01–18 for AIT coordinates)
Element	Displays the element number that corresponds to the coordinate parameter.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Target Menu appears. See Figure 5-47. Otherwise, the changed parameters continue to display but no action is taken.*

```
Enter TARGET
Coord: I< 01 1 A 01
OR Element: 01182
          Accept : N
```

Figure 5-47 Target Dialog

Parameter	Value
Coord	The first field displays the type of cell (I for I/E Station, D for Drive, S for Storage cell). The second field displays module numbers that can be modified if EMs are present (1–4). The third field displays the storage cell section (1–4), drive bay (1–2), or IE station number. The fourth field displays the column of the section (A–E), drive port (A–B), or IE station column The fifth field displays the row of the column. (01–12 for ½-inch and SDLT/DLT coordinates) (01–14 for LTO coordinates) (01–18 for AIT coordinates)
Element	Displays the element number that corresponds to the coordinate parameter
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Response Screens appear. See Figure 5-48 on page 5-41 and Figure 5-49 on page 5-41. Otherwise, the changed parameters continue to display but no action is taken.*

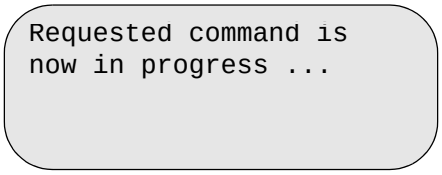


Figure 5-48 Response Screen

The Accessor moves the cartridge between the selected Source and Target elements.

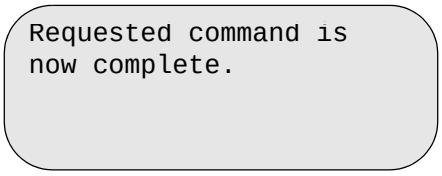


Figure 5-49 Response Screen

If a Move Media is attempted without an inventory, the following screen appears. See Figure 5-50.

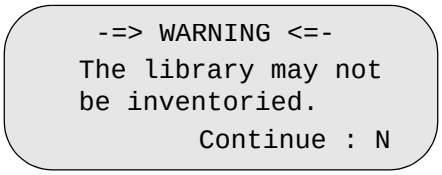


Figure 5-50 Warning Dialog

Parameter	Value
Continue	**Y** to continue **N** to return to the previous menu

*If **Y** is selected for the Continue parameter, the Warning message is removed.*

If the Partitioned flag is set the following screen appears. See Figure 5-51.

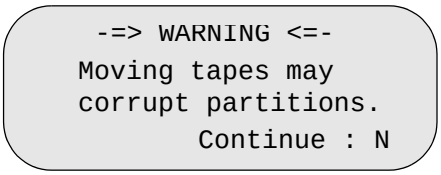


Figure 5-51 Warning Dialog

Parameter	Value
Continue	**Y** to continue **N** to return to the previous menu

*If **Y** is selected for the Continue parameter, the Warning message is removed.*

Inventory Dialog

Path: Main Menu ▶Commands Menu ▶Inventory Dialog

Use the Inventory Dialog to inventory specific elements. See Figure 5-52.

```
Starting Inventory
Coord: S 02 1< A 01
OR Element: 00000
             Accept : N
```

Figure 5-52 Inventory Dialog

Parameter	Value
Coord	The first field indicates the type of cell (I for I/E Station, D for Drive, S for Storage cell). The second field displays module numbers that can be modified if EMs are present (1–4). The third field indicates the storage cell section (1–4), drive bay (1–2), or IE station number. The fourth field indicates the column of the section (A–E), drive port (A–B), or IE station column. The fifth field indicates the row of the column. (01–12 for ½-inch and SDLT/DLT coordinates) (01–14 for LTO coordinates) (01–18 for AIT coordinates)
Element	Displays the element number that corresponds to the coordinate parameter.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Number of Elements Dialog appears. See Figure 5-53. Otherwise, the changed parameters continue to display but no action is taken.*

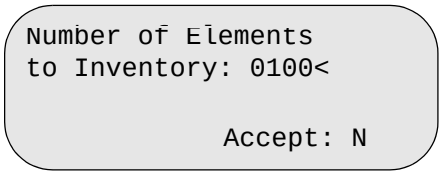


Figure 5-53 Number of Elements Dialog

Parameter	Value
Elements	Indicates the number of elements to inventory
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Response Screens appear. See Figure 5-54 and Figure 5-55. Otherwise, the changed parameters continue to display but no action is taken.*

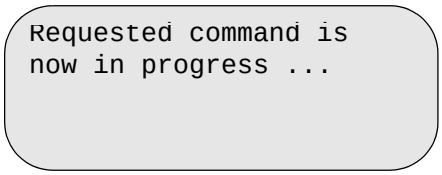


Figure 5-54 Response Screen

The barcode scanner inventories the specified storage cells.

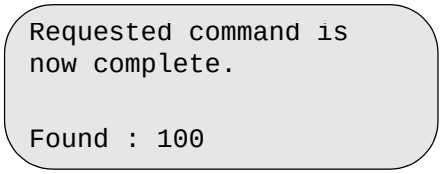


Figure 5-55 Response Screen

Parameter	Value
Found	Indicates the total number of cartridges detected

Insert/Eject Submenu

Path: `Main Menu ►Commands Menu ►Insert/Eject Submenu`

Use the `Insert/Eject Submenu` to insert or eject a clean tape into or out of the library. See Figure 5-56.

Note
Use this option to insert or eject cartridge(s) without host intervention.

```
>Insert
 Insert Clean Tape...
 Eject…
 Eject Clean Tape►
```

Figure 5-56 Insert/Eject Submenu

Depending on your selection, you have the following options:

- *Insert Screen*
- *Insert Clean Tape Dialog* on page 5-47
- *Eject Dialog* on page 5-52
- *Eject Clean Tape Submenu* on page 5-55

Insert Screen

Path: `Main Menu ►Commands Menu ►Insert/Eject ►Insert Screen`

Use `Insert Screen` to move all cartridges found in the Insert / Eject stations to the first available empty storage cells. See Figure 5-57. If there are cartridges in the Insert / Eject station, the response screen appears. See Figure 5-57.

```
Insert in progress
Source: 1182
Target: 0000
```

Figure 5-57 Insert Screen

The Current Source and Target elements are updated.
See Figure 5-58 on page 5-46.

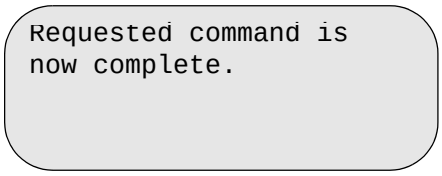


Figure 5-58 Response Screen

If a Move Media is attempted without an inventory, the following screen appears. See Figure 5-59.

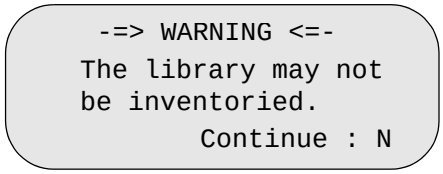


Figure 5-59 Warning Dialog

Parameter	Value
Continue	**Y** to continue **N** to return to the previous menu

*If **Y** is selected for the Continue parameter, the Warning message is removed.*

If the Partitioned flag is set, the following screen appears. See Figure 5-60.

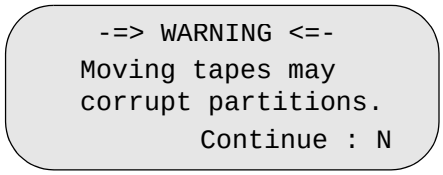


Figure 5-60 Warning Dialog

Parameter	Value
Continue	**Y** to continue **N** to return to the previous menu

*If **Y** is selected for the Continue parameter, the Warning message is removed.*

Insert Clean Tape Dialog

Path: `Main Menu ►Commands Menu ►Insert/Eject ►Insert Clean Tape Dialog`

Use the `Insert Clean Tape Dialog` to move the selected cleaning cartridge from the Insert / Eject station to the designated empty storage cells. See Figure 5-63 on page 5-48.

If a Move Media is attempted without an inventory, the following screen appears. See Figure 5-61.

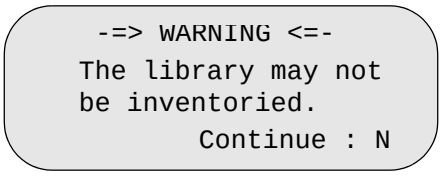


Figure 5-61 Warning Dialog

Parameter	Value
Continue	**Y** to continue **N** to return to the previous menu

*If **Y** is selected for the Continue parameter, the Warning message is removed.*

If the Partitioned flag is set, the following screen appears. See Figure 5-62.

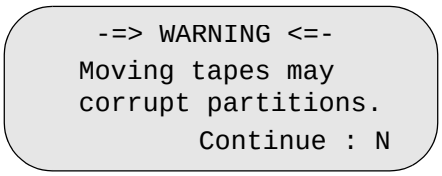


Figure 5-62 Warning Dialog

Parameter	Value
Continue	**Y** to continue **N** to return to the previous menu

*If **Y** is selected for the Continue parameter, the Warning message is removed.*

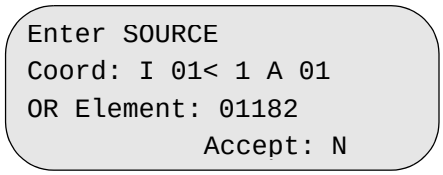


Figure 5-63 Insert Clean Tape Dialog

Parameter	Value
Coord	The first field indicates the type of cell (I for I/E Station, D for Drive, S for Storage cell). The second field displays module numbers that can be modified if EMs are present (1–4). The third field indicates the storage cell section (1–4), drive bay (1–2), or IE station number. The fourth field indicates the column of the section (A–E), drive port (A–B), or IE station column. The fifth field indicates the row of the column. (01–12 for ½-inch and SDLT/DLT coordinates) (01–14 for LTO coordinates) (01–18 for AIT coordinates)
Element	Indicates the Insert/Eject station element number where the insert operation starts.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Insert Range Dialog appears. See Figure 5-64. Otherwise, the changed actions continue to display but no action is taken.*

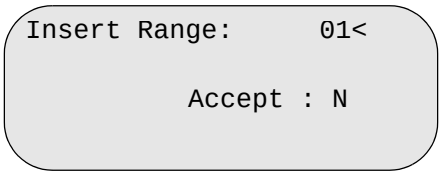


Figure 5-64 Insert Range Dialog

Parameter	Value
Insert Range	Indicates the number of elements for the insert operation (01–12 for ½-inch, SDLT / DLT, and LTO elements)(01–18 for AIT elements)
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Target Dialog appears. See Figure 5-65. Otherwise, the changed actions continue to display but no action is taken.*

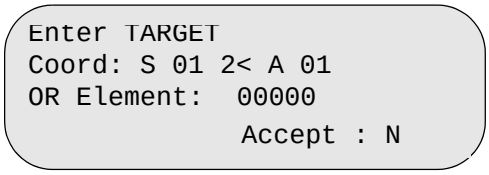


Figure 5-65 Target Dialog

Parameter	Value
Coord	The first field is the cell type (I for I / E Station, D for Drive, S for Storage cell). The second field displays module numbers that can be modified if EMs are present (1–4). The third field is the storage cell section (1–4), drive bay (1–2), or IE station number.

Note
The starting address is indicated by the Coordinate or Element parameter. If several cleaning tapes are inserted, the Coordinate or Element is specified for the first empty cell in a group of consecutive empty cells.

	The fourth field indicates the column of the section (A–E), drive port (A–B), or IE station column. The fifth field indicates the row of the column. (01–12 for ½-inch and SDLT / DLT coordinates) (01–14 for LTO coordinates) (01–18 for AIT coordinates)
Element	Displays the element number that corresponds to the coordinate parameter.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Usage Dialog appears. See Figure 5-66. If **N** is selected, the changed parameters continue to display but no action is taken.*

```
Type:          SDLT
Current Usage: 000<
Maximum Usage: 000
              Accept: N
```

Figure 5-66 Usage Dialog

Parameter	Value
Type:	Type of cleaning cartridge. The library uses the installed media type and drive type to identify the type of cleaning cartridge. If the library identifies the cleaning type, it automatically displays on the control panel. If there is more than one drive type for the installed media domain, then the user MUST select the cleaning media type.

For example:
If DLT and SDLT drives are installed in the library, the user must select a DLT or SDLT cleaning cartridge.

Listed below are media domains and types:

Domain	Type
Half	3480/90E
	IBM 3590
	Plasmon NCTP
DLT	DLT
	SDLT
8 mm	AIT
LTO	IBM LTO

Current Usage	The number of times the cleaning cartridge has been used (000–511).
Maximum Usage	The maximum number of allowable uses for the cleaning cartridge (000–511).
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Accessor moves the number of cleaning cartridges to the designated range of storage cells. See Figure 5-67.*

*If **N** is selected, the changed parameters continue to display but no action is taken.*

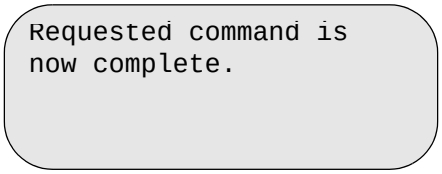


Figure 5-67 Response Screen

Eject Dialog

Path: `Main Menu ►Commands Menu ►Insert/Eject ►Eject Dialog`

Use the `Eject Dialog` to remove cartridges without opening the service or access doors, or without host intervention. The final destination is a slot in the Insert / Eject station. See Figure 5-70 on page 5-53.

If a Move Media is attempted without an inventory, the following screen appears. See Figure 5-68.

```
 -=> WARNING <=-
The library may not
be inventoried.
       Continue : N
```

Figure 5-68 Warning Dialog

Parameter	Value
Continue	**Y** to continue **N** to return to the previous menu

*If **Y** is selected for the Continue parameter, the Warning message is removed.*

If the Partitioned flag is set, the following screen appears. See Figure 5-69.

```
 -=> WARNING <=-
Moving tapes may
corrupt partitions.
       Continue : N
```

Figure 5-69 Warning Dialog

Parameter	Value
Continue	**Y** to continue **N** to return to the previous menu

*If **Y** is selected for the Continue parameter, the Warning message is removed.*

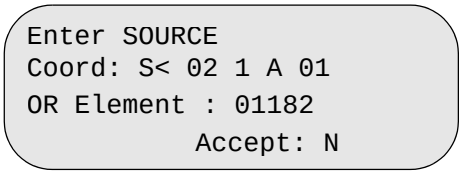


Figure 5-70 Eject Dialog

Parameter	Value
Coord	The first field indicates the type of cell (I for I/E Station, D for Drive, S for Storage cell). The second field displays module numbers that can be modified if EMs are present (1–4). The third field indicates the storage cell section (1–4), drive bay (1–2), or IE station number. The fourth field indicates the column of the section (A–E), drive port (A–B), or IE station column. The fifth field indicates the row of the column. (01–12 for ½-inch and SDLT/DLT coordinates) (01–14 for LTO coordinates) (01–18 for AIT coordinates)
Element	Displays the element number that corresponds to the coordinate parameter.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Eject Screen appears. See Figure 5-71. Otherwise, the changed actions continue to display but no action is taken.*

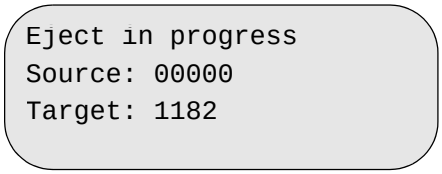


Figure 5-71 Eject Screen

The cartridge is ejected to the first available empty cell in the Insert/Eject station. The Response Screen appears. See Figure 5-72.

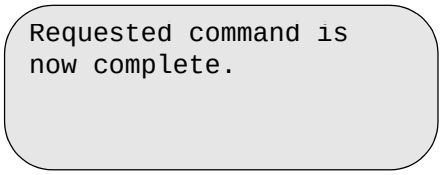


Figure 5-72 Response Screen

Eject Clean Tape Submenu

Path: Main Menu ►Commands Menu ►Insert/Eject ►Eject Clean Tape Submenu

Use the Eject Clean Tape Submenu to remove a cleaning cartridge from the library. See Figure 5-73.

```
>Expired Tapes
 By coordinate...
 By VOLSER...
```

Figure 5-73 Eject Clean Tape Submenu

Depending on your selection, you have the following options:

- *Expired Tapes*
- *By Coordinate Dialog* on page 5-57
- *By Volser Dialog* on page 5-60

Expired Tapes

Path: Main Menu ►Commands Menu ►Insert/Eject ►Eject Clean Tape Submenu ►Expired Tapes

Use the Expired Tapes to remove expired cleaning cartridges from the library without opening the service or access door, or without host intervention. This function searches the cleaning tape database and ejects tapes to the Insert / Eject station if available.

If a Move Media is attempted without an inventory, the following screen appears. See Figure 5-74.

```
  -=> WARNING <=-
The library may not
be inventoried.
       Continue : N
```

Figure 5-74 Warning Dialog

Parameter	Value
Continue	**Y** to continue **N** to return to the previous menu

*If **Y** is selected for the Continue parameter, the Warning message is removed.*

If the Partitioned flag is set, the following screen appears. See Figure 5-75.

```
 -=> WARNING <=-
Moving tapes may
corrupt partitions.
       Continue : N
```

Figure 5-75 Warning Dialog

Parameter	Value
Continue	**Y** to continue **N** to return to the previous menu

*If **Y** is selected for the Continue parameter, the Warning message is removed.*

```
Eject in progress
Source: 0123
Target: 1182
```

Figure 5-76 Expired Tapes Screen

The current source and target elements are updated. After completion, the response screen shows command complete.

```
Requested command is
now complete.
```

Figure 5-77 Response Screen

By Coordinate Dialog

Path: `Main Menu ►Commands Menu ►Insert/Eject ►Eject Clean Tape Submenu ►By Coordinate`

Use the `By Coordinate Dialog` to remove a cleaning cartridge without opening the service or access door, or without host intervention. See Figure 5-80 on page 5-58.

If a Move Media is attempted without an inventory, the following screen appears. See Figure 5-78.

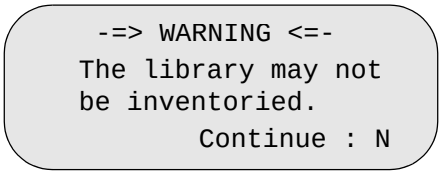


Figure 5-78 Warning Dialog

Parameter	Value
Continue	**Y** to continue **N** to return to the previous menu

*If **Y** is selected for the Continue parameter, the Warning message is removed.*

If the Partitioned flag is set, the following screen appears. See Figure 5-79.

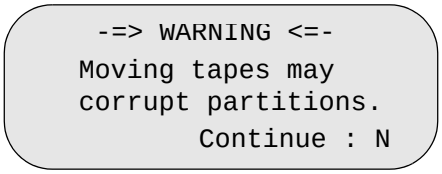


Figure 5-79 Warning Dialog

Parameter	Value
Continue	**Y** to continue **N** to return to the previous menu

*If **Y** is selected for the Continue parameter, the Warning message is removed.*

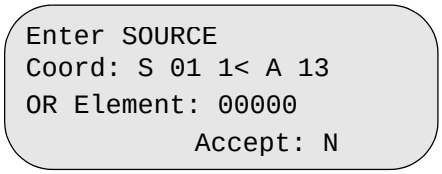


Figure 5-80 Eject Clean Tape By Coordinate Dialog

Parameter	Value
Coord	The first field indicates the type of cell (I for I / E Station, D for Drive, S for Storage cell). The second field displays module numbers that can be modified if EMs are present (1–4). The third field indicates the storage cell section (1–4), drive bay (1–2), or IE station number. The fourth field indicates the column of the section (A–E), drive port (A–B), or IE station column. The fifth field indicates the row of the column. (01–12 for ½-inch and SDLT / DLT coordinates) (01–14 for LTO coordinates) (01–18 for AIT coordinates)
Element	Displays the element number that corresponds to the coordinate parameter.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Clean Media Eject Screen appears. Otherwise, the changed actions continue to display but no action is taken. See Figure 5-81.*

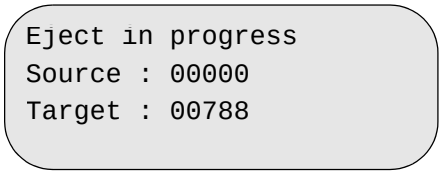


Figure 5-81 Eject Clean Tape By Coordinate Screen

The cartridge is ejected to the first available empty cell in the Insert/Eject station. The Response Screen appears. See Figure 5-82.

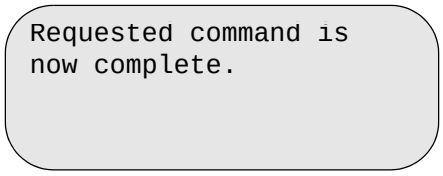


Figure 5-82 Response Screen

By Volser Dialog

Path: Main Menu ►Commands Menu ►Insert/Eject ►Eject Clean Tape Submenu ►By VOLSER

Use the By VOLSER to remove cleaning cartridges from the library without opening the service or access door, or without host intervention, when the cartridge is not expired or the coordinate is not known to the user. See Figure 5-83. This function only displays cartridges that can be physically ejected from the library.

```
BC: 20018
Status: Valid
Count: 009    IE: OK
Index: 001<   Eject: N
```

Figure 5-83 By VOLSER Dialog

Parameter	Value
BC	This field displays the cleaning cartridge VOLSER. This is the barcode label that is present on the cartridge.
Status	**Expired** This cleaning cartridge has expired. **Valid** The cleaning cartridge is configured and usable. **In Progress** The cleaning cartridge is configured and a cleaning operation is currently in progress.
Count	This is the number of clean cycles the cartridge can be used before it is expired.
IE	**OK** The Insert / Eject station has available empty slots to eject this cartridge. **FULL** The Insert / Eject station is full. To eject cartridges the operator must remove cartridges from the Insert / Eject station.

	N/A There are no Insert / Eject cells available. The operator must remove a magazine of another type of media from the Insert / Eject station. Insert an empty magazine of the correct media type to eject this cleaning cartridge.
Index	Shows the current database index (1 - 128)
Eject	**Y** Eject this cleaning cartridge **N** Do not eject this cleaning cartridge **-** The operator cannot eject this media because the IE station is full, no magazine of the correct media type is installed in the IE Station, or a cleaning operation is in progress.

*If **Y** is selected for the Accept parameter value, the Clean Media Eject Screen appears. Otherwise, the changed actions continue to display but no action is taken. See Figure 5-84.*

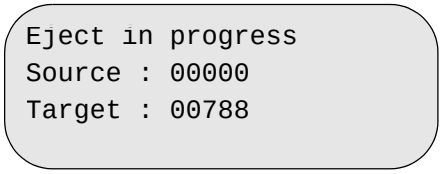


Figure 5-84 Eject Clean Tape By VOLSER Screen

The cartridge is ejected to the first available empty cell in the Insert/Eject station. The Response Screen appears. See Figure 5-85.

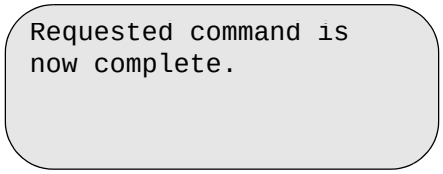


Figure 5-85 Response Screen

Database Menu

Path: `Main Menu ▶Database Menu`

Use the `Database Menu` to access information about the type of media, elements, or configuration of your library. See Figure 5-86.

Figure 5-86 Database Menu

Depending on your selection, you have the following options:

- *Media Dialog* on page 5-63
- *Element Dialog* on page 5-64
- *Config Dialog* on page 5-67
- *Advanced Dialog* on page 5-69

Media Dialog

Path: Main Menu ►Database Menu ►Media Dialog

Use the Media Dialog to obtain information about a specific cartridge based on the barcode label.

- In default mode, six characters are required.
- In media ID mode, seven or eight characters are required.
- In extended mode, five characters are required. However, up to 16 characters may be entered.

Figure 5-87 shows the Media Dialog.

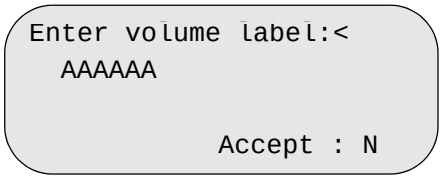


Figure 5-87 Media Dialog

Parameter	Value
AAAAA	Indicates the volume label (A–Z, 0–9, ^)
Accept	**Y** to accept changes **N** to reject changes

Press the ↵ button to confirm the changes.

*If **Y** is selected for the Accept parameter value, the Response Screen, refer to Figure 5-88, appears. Otherwise, the changed parameters continue to display but no action is taken.*

Note
If in extended mode, the space value (^) erases the remaining values.

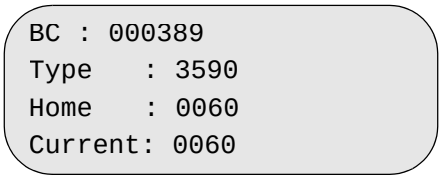


Figure 5-88 Response Screen

Parameter	Value
BC	Indicates the value specified in the Media Dialog.

Type	Indicates the cartridge media type (SDLT I, DLTIII, DLTIIIXT, DLT IV, 3480, 3490E, 3590, 3590 DL, NCTP, AIT, LTO1, LTO2).
Home	Indicates the home location of the cartridge.
Current	Indicates the current location of the cartridge.

Element Dialog

Path: `Main Menu` ▶ `Database Menu` ▶ `Element Dialog`

Use the `Element Dialog` to select specific element information from the database. See Figure 5-89.

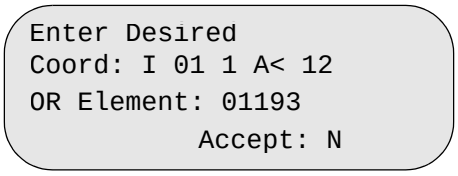


Figure 5-89 Element Dialog

Parameter	Value
Coord	The first field indicates the type of cell (I for I/E Station, D for Drive, S for Storage cell). The second field displays module numbers that can be modified if EMs are present (1–4). The third field indicates the storage cell section (1–4), drive bay (1–2), or IE station number. The fourth field indicates the column of the section (A–E), drive port (A–B), or IE station column.

	The fifth field indicates the row of the column. (01–12 for ½-inch and SDLT / DLT coordinates) (01–14 for LTO coordinates) (01–18 for AIT coordinates)
Element	Displays the element number that corresponds to the coordinate parameter.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Response Dialog appears. See Figure 5-90. Otherwise, the changed actions continue to display but no action is taken.*

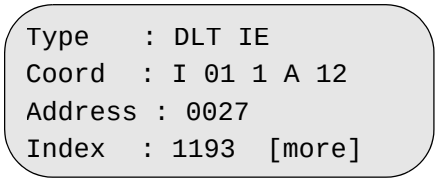


Figure 5-90 Response Dialog

Parameter	Value
Type	Displays the element type (3480 IE, SDLT / DLT IE, MIXED IE, AIT IE, LTO IE, 3480 STOR, DLT STOR, AIT STOR, LTO STOR, 3480 DRIVE, 3590 DRIVE, NCTP DRIVE, DLT4 DRIVE, SDLT 220, SDLT 320, DRIVE, DLT7 DRIVE, AIT DRIVE, LTO 1 DRIVE, LTO 2 DRIVE).
Coord	Displays the element coordinate location.
Address	Displays the current SCSI element address.
Index	Displays the database element index.

[more]	More selections on the Continuation Menu.

When [more] is selected, the Continuation Screen appears. See Figure 5-91.

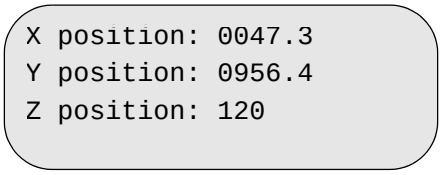


Figure 5-91 Configuration Screen

Parameter	**Value**
X position	Indicates the horizontal coordinate in millimeters.
Y position	Indicates the vertical coordinate in millimeters.
Z position	Indicates the depth coordinate.

Config Dialog

Path: `Main Menu ►Database Menu ►Config Dialog`

Use the `Config Dialog` to view the current library configuration. See Figure 5-92.

```
Serial#: 201100001
Frames : 1
Cells  : 158
Drives : 2   [more]
```

Figure 5-92 Config Dialog

Note
If the Operator suspects a library configuration problem, use the Teach New option. Refer to *Teach New Dialog* on page 5-138.

Parameter	Value
Serial#	The serial number of the library
Frames	The number of frames (1–4)
Cells	The number of storage cells (1–788 for ½-inch and SDLT / DLT cells) (1–950 for LTO cells) (1–1181 for AIT cells)
Drives	The number of drives (1–48 for ½-inch, SDLT / DLT and LTO drives) (2–48 for AIT drives)
[more]	More information on the Continuation Screen

When [more] is selected, the Continuation Screen appears. See Figure 5-93.

Figure 5-93 Continuation Screen

The screen is a graphical representation of the configuration of the library.

Parameter	Value
ISSSS	Insert / Eject station (I) and 4 columns of Storage Cells (S)
SSSSS	5 columns of Storage Cells (S)
SSSSS	5 columns of Storage Cells (S)
S3D2D	1 column of Storage Cells (S) and the number (1, 2, 3, 4, 5, 6) of drives (D) in each column of the bottom drive bay

Advanced Dialog

Path: Main Menu ►Database Menu ►Advanced Dialog

The Advanced Dialog functions are password protected and reserved for use by Customer and Product Engineering Services only. See Figure 5-94.

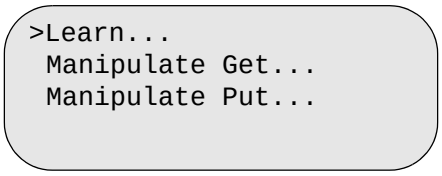


Figure 5-94 Advanced Dialog

Depending on your selection, you have the following options:

- *Learn Dialog*
- *Manipulate Get* on page 5-70
- *Manipulate Put* on page 5-70

Learn Dialog

Path: Main Menu ►Database Menu ►Advanced Dialog ►Learn Dialog

The Learn Dialog is password protected and is reserved for Customer and Product Engineering Services only.
See Figure 5-95.

Figure 5-95 Learn Dialog

Parameter	Value
Password	Selects the password (0000–9999)
Accept	**Y** to accept the changes **N** to reject the changes

Manipulate Get

Path: `Main Menu ►Database Menu ►Advanced Dialog ►Manipulate Get`

The `Manipulate Get` is password protected and is reserved for Customer and Product Engineering Services only. See Figure 5-96.

Figure 5-96 Manipulate Get

Parameter	Value
Password	Selects the password (0000–9999)
Accept	**Y** to accept the changes **N** to reject the changes

Manipulate Put

Path: `Main Menu ►Database Menu ►Advanced Dialog ►Manipulate Put`

The `Manipulate Put` is password protected and is reserved for Customer and Product Engineering Services only. See Figure 5-97.

Figure 5-97 Manipulate Put

Parameter	Value
Password	Selects the password (0000–9999)
Accept	**Y** to accept the changes **N** to reject the changes

Setup Menu

Path: `Main Menu ▶Setup Menu`

Use the `Setup Menu` to change the physical or logical operational characteristics of the Library. See Figure 5-98.

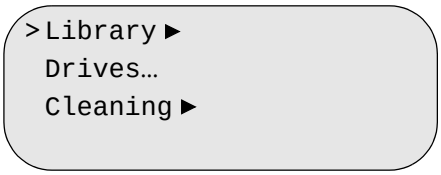


Figure 5-98 Setup Menu

Depending on your selection, you have the following options:

- *Library Submenu* on page 5-72
- *Drives Dialog* on page 5-91
- *Cleaning Submenu* on page 5-93

Library Submenu

Path: `Main Menu ►Setup Menu ►Library Submenu`

Use the `Library Submenu` to change the library defaults. See Figure 5-99.

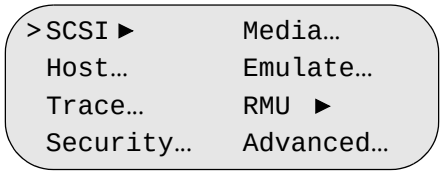


Figure 5-99 Library Submenu

Depending on your selection, you will have the following options:

- *SCSI Submenu* on page 5-73
- *Host Dialog* on page 5-77
- *Trace Dialog* on page 5-78
- *Security Dialog* on page 5-79
- *Media Dialog* on page 5-84
- *Emulate Dialog* on page 5-86
- *RMU Submenu* on page 5-87
- *Advanced Dialog* on page 5-89

SCSI Submenu

Path: `Main Menu ▶Setup Menu ▶Library Submenu ▶SCSI Submenu`

Use the `SCSI Submenu` to set the library SCSI ID and parity, and to view the SCSI bus type. See Figure 5-100.

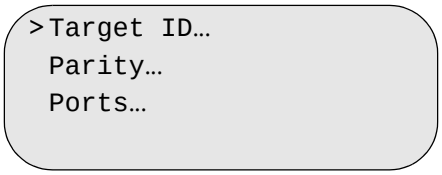


Figure 5-100 SCSI Submenu

Depending on your selection, you will have the following options:

- *Target ID Dialog* on page 5-74
- *Parity Dialog* on page 5-75
- *Ports Dialog* on page 5-76

Target ID Dialog

Path: `Main Menu ▶Setup Menu ▶Library Submenu ▶SCSI Submenu ▶Target ID Dialog`

Note
The Scalar 1000 defaults to SCSI ID 6.

Use the `Target ID Dialog` to set the library SCSI ID. Changes will not take effect until library power is cycled. See Figure 5-101.

```
Target ID:   Next   Now
    Bus 0:    4<     4
    Bus 1:    4      4
              Accept: N
```

Figure 5-101 Target ID Dialog

Parameter	Value
Bus 0: Next	Next indicates the SCSI ID address that takes effect for bus port 0 after power is cycled (0–7).
Bus 0: Now	Now indicates the SCSI ID address that is currently in effect (0–7) for bus port 0.
Bus 1: Next	Next indicates the SCSI ID address that takes effect for bus port 1 after power is cycled (0–7).
Bus 1: Now	Now indicates the SCSI ID address that is currently in effect (0–7) for bus port 1.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the screen updates to reflect the changes. Otherwise, the changed parameters continue to display but no action is taken.*

Parity Dialog

Path: Main Menu ►Setup Menu ►Library Submenu ►SCSI Submenu ►Parity Dialog

Use the Parity Dialog to set the SCSI bus parity. Changes will not take effect until library power is cycled. See Figure 5-102.

```
                Next   Now
Parity          Yes<   Yes
Retries         001    001
                Accept: N
```

Figure 5-102 Parity Dialog

Parameter	Value
Parity Next	**YES** to enable SCSI parity **NO** to disable SCSI parity
Parity Now	If parity is disabled, the retries parameter is ignored.
Retries Next	Sets the number of retries (000–255) allowed when a SCSI parity error is detected.
Retries Now	Displays the current number of retries (000–255) allowed when a SCSI parity error is detected.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the screen updates to reflect the changes. Otherwise, the changed parameters continue to display but no action is taken.*

Ports Dialog

Path: `Main Menu ►Setup Menu ►Library Submenu ►SCSI Submenu ►Ports Dialog`

Use the `Ports Dialog` to view the current SCSI bus type and usage. See Figure 5-103.

```
          INSTALLED  TYPE
Bus 0:       YES     HVD
Bus 1:       NO      -
```

Figure 5-103 Ports Screen

Parameter	Value
Bus 0 : INSTALLED	**YES** indicates the port is installed. **NO** indicates the port is Not installed.
Bus 0 : TYPE	**HVD** indicates the bus is high voltage differential. **LVD** indicates the bus is low voltage differential. **SE** indicates the bus is single ended.
Bus 1 : INSTALLED	**YES** indicates the port is installed. **NO** indicates the port is Not installed.
Bus 1 : TYPE	**HVD** indicates the bus is high voltage differential. **LVD** indicates the bus is low voltage differential. **SE** indicates the bus is single ended.

Host Dialog

Path: `Main Menu ▶Setup Menu ▶Library Submenu ▶Host Dialog`

Use the `Host Dialog` to view the type of host control and partition state
See Figure 5-104.

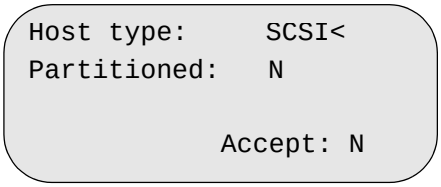


Figure 5-104 Host Dialog

Parameter	Value
Host type	**SCSI** indicates SCSI control.
Partitioned	The SCSI mode select command sets or clears the flag. It is displayed here for information only. If set to Y, the library will warn the operator that moving media within the library may corrupt host application defined partitions.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the screen updates to reflect the changes. Otherwise, the changed parameters continue to display but no action is taken.*

Note
At present, only SCSI control is supported.

Trace Dialog

Path: `Main Menu ▶Setup Menu ▶Library Submenu ▶Trace Dialog`

Use the `Trace Dialog` to define and enable the serial service port. See Figure 5-105.

```
Trace output
USE: NONE/RMU<

       Accept: N
```

Figure 5-105 Trace Dialog

Parameter	Value
USE	**SERIAL** indicates information is returned via the serial port. **NONE/RMU** is the default to allow the port to be used for RMU communication. **VCONSOL** is used for development only.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the screen updates to reflect the changes. Otherwise, the changed parameters continue to display but no action is taken.*

☞ **Note**
If the RMU is not installed, this option must be set to SERIAL in order to prevent a SAC from being posted.

Security Dialog

Path: `Main Menu ▶Setup Menu ▶Library Submenu ▶Security Dialog`

Use the `Security Dialog` to change the Operator Panel LCD Security mode or the password that protects it. The Operator Panel can also be secured by the host. Whichever method is used to secure the Operator Panel, it must be the method used to release the security. See Figure 5-106.

```
Security Enabled: N<
Change password : N

         Accept : N
```

Figure 5-106 Security Dialog

Switching Security From Off to On

Parameter	Value
Security Enabled	**Y** to enable LCD security (**N** indicates that LCD security is not enabled.)
Change password	**Y** if the password is to be changed, refer to *Changing the Password* on page 5-82. **N** if the password is not to be changed. If no password has been set since the library was rebooted, the operator will be forced to change the password. Refer to *Changing the Password* on page 5-82.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter and the security parameter is enabled, the Password Dialog appears. See Figure 5-107.*

*If **N** is selected for the Accept parameter, the changed parameters continue to display but no action is taken.*

Figure 5-107 Password Dialog

Parameter	Value
Password	Indicates the password (0000–9999)
Accept	**Y** to accept changes **N** to reject changes

Press the ↵ button to confirm the changes.

*If **Y** is selected for the Accept parameter value and the password is verified, the response screens appears. See Figure 5-108.*

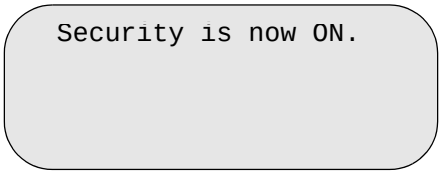


Figure 5-108 Security is ON Screen

Switching Security From On to Off

Parameter	Value
Security Enabled	**N** to disable LCD security. (**Y** indicates that LCD security is enabled.)
Change Password	**N** indicates that the password cannot be changed at this point.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter and the security parameter is disabled, the Password Dialog appears. See Figure 5-109.*

*If **N** is selected for the Accept parameter, the changed parameters continue to display but no action is taken.*

Figure 5-109 Password Dialog

Parameter	Value
Password	Indicates the password (0000–9999)
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value and the password is verified, the response screen appears. See Figure 5-110.*

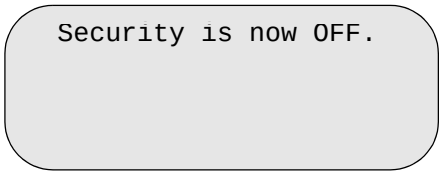


Figure 5-110 Security is OFF Screen

Changing the Password

Parameter	Value
Security	If the Security is to be changed, refer to *Switching Security From Off to On* on page 5-79 or *Switching Security From On to Off* on page 5-81.
Password	**Y** to change LCD password **N** to leave the LCD password as it is
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter and the change password parameter is enabled, the Change Password Dialog appears. Otherwise, the changed parameters continue to display but no action is taken.*

Figure 5-111 Change Password

Parameter	Value
Old	Indicates the password to be changed (0000–9999).
New	Indicates what the password will be changed to (0000–9999).
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value and the old password is verified, the password is changed and the Changed Password Screen appears. See Figure 5-112. If **N** is selected for the Accept parameter, the changed parameters continue to display but no action is taken.*

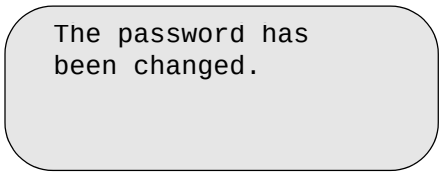


Figure 5-112 Password Changed

*If **Y** is selected for the Accept parameter value and the old password is not verified, the Invalid Password Screen appears. See Figure 5-113.*

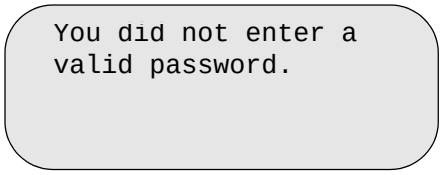


Figure 5-113 Invalid Password

Media Dialog

Path: `Main Menu ▶Setup Menu ▶Library Submenu ▶Media Dialog`

Use the `Media Dialog` to control the settings for media handling and reporting. The host software must support mixed-media types if the library is operating in mixed mode. See Figure 5-114.

For additional information, refer to the *Scalar 1000 SCSI Reference Manual*.

```
Volser:     Media ID<
Add ID: Y   Mixed:  Y
Extend: Y   ASCQ    Y
            Accept: N
```

Figure 5-114 Media Dialog

Note
If the value of the **Volser** parameter is changed, an inventory is required.

Parameter	Value
Volser	**MEDIA ID** Media Identifier support is enabled. The library shall scan barcode media identifiers. This mode requires the use of six- character barcodes with one or two-character media identifiers. **DEFAULT** indicates that the library supports six character barcode labels, or media ID mode labels that have an additional seventh or eighth media ID character. The barcode is stored and reported as a six-character barcode (ignoring any media IDs). **EXTENDED** indicates that the library supports 5 to 16-character barcode labels, which may indicate any mixed-media IDs and / or checksums.

Note
If Media ID is NOT selected, Add ID, Extend, and ASCQ will be set to N.

Add ID	**Y** indicates that the media identifier is added to the front of the barcode label for RES and RVEA. **N** indicates that the media identifier is NOT added to the front of the barcode label for RES and RVEA.
Extend	**Y** indicates that extended (Extend_RES) element descriptor status is enabled. **N** indicates that extended element descriptor status is disabled.

Note
A Teach New defaults to Mixed=Y when more than one media domain is found in the library.
Auto-Teach will not change this value unless a configuration change has been made, and the library performs a new teach.

Mixed	When mixed-media is enabled, the library presents all possible I/E cell positions. Depending on the magazine, some may be presented as uninstalled through SCSI, RES and RVEA. For additional information, see *SCSI Element Addressing (document 400122)*. **Y-** mixed-media is enabled and presents I/E gaps **N -** collapses I/E gaps
ASCQ	**Y -** use vendor ASC/ASCQs **N -** use standard SCSI-2 ASC/ASCQs
Accept	**Y -** to accept changes **N** - to reject changes

*If **Y** is selected for the Accept parameter value, the screen updates to reflect the changes. Otherwise, the changed parameters continue to display but no action is taken.*

Emulate Dialog

Path: `Main Menu ▶Setup Menu ▶Library Submenu ▶Emulate Dialog`

Use the `Emulate Dialog` to change the library operating mode. Different emulation modes cause the library to respond to SCSI **INQUIRY** commands in a manner consistent with the listed library emulation type. Changes will NOT take effect until the library power is cycled. See Figure 5-115.

```
Select library type :
  NATIVE <

              Accept : N
```

Figure 5-115 Emulate Dialog

Parameter	Value
Library type	NATIVE STK 9710 EXB 480 EMASS
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the screen updates to reflect the changes. Otherwise, the changed parameters continue to display but no action is taken.*

Note
Refer to the *Scalar 1000 SCSI Reference Manual* for all command processing. Refer to *Associated Documents* on page 1-4 for more information.

RMU Submenu

Path: Main Menu ▶Setup Menu ▶Library Submenu ▶RMU Submenu

The Scalar 1000 is factory equipped with a Remote Management Unit (RMU) which allows web-based library management via the Ethernet port.

Use the RMU Submenu to set the initial values of the RMU network parameters for remote access.
See Figure 5-116.

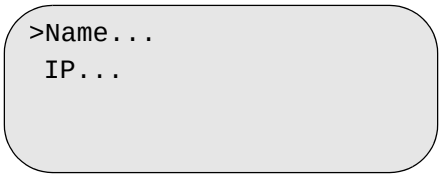


Figure 5-116 RMU Submenu

Depending on your selection, you have the following options:

- *Name Dialog*
- *IP Dialog* on page 5-88

Name Dialog

Path: Main Menu ▶Setup Menu ▶Library Submenu ▶RMU Submenu ▶Name Dialog

Use Name Dialog to define the host name for the RMU.

Figure 5-117 Name Dialog

IP Dialog

Path: `Main Menu ►Setup Menu ►Library Submenu ►RMU Submenu ►IP Dialog`

Use the `IP Dialog` to set the IP, Subnet, and Gateway network addresses for RMU library communication. See Figure 5-118.

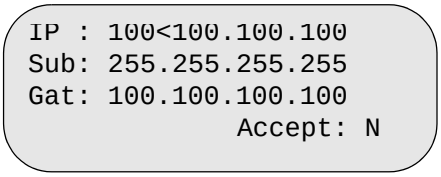


Figure 5-118 IP Dialog

Parameter	Value
IP	Indicates the IP address (four sets of numbers 0–255).
Sub	Indicates the Subnet address (four sets of numbers 0–255).
Gat	Indicates the Gateway (four sets of numbers 0–255).
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the screen updates to reflect the changes. Otherwise, the changed parameters continue to display but no action is taken.*

Advanced Dialog

Path: Main Menu ▶Setup Menu ▶Advanced Dialog

Use the Advanced Dialog to enable or disable the automatic configuration, calibration, or cartridge scan when the library power has been cycled. See Figure 5-119.

If Auto Inventory is disabled, the element status is not known until the host issues an Initialize Element Status command or an Inventory is performed via the Operator Panel.

If Auto Inventory is enabled, an automatic cartridge inventory is executed on each power cycle.

Any changes in the Operating Mode parameter value should be made by authorized Service Personnel.
The default is set to 02.

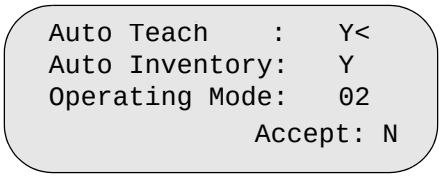


Figure 5-119 Advanced Dialog

Parameter	Value
Auto Teach	**Y** to enable Auto Teach for automatic configuration and calibration on each power cycle **N** to disable Auto Teach on each power cycle
Auto Inventory	**Y** to enable Auto Inventory for automatic cartridge scanning inventory on each power cycle **N** to disable Auto Inventory on each power cycle
Operating Mode	**0** to select no library initiated **UNLOAD** command before a move. **1** to select a three second delay before a Get operation is performed on a SDLT / DLT drive after detecting that a tape

	was ejected **2** to allow the Scalar 1000 to issue an **UNLOAD** command to the Model 4001S, Model 7001S, Model 8001S, AIT3102, AIT5002, AIT5102, AIT7002, and NCTP drives before a move if the cartridge is not ejected by the host **3** to activate options 1 and 2 **4** to disable automatic cartridge recovery on PUT failures **5** to activate options 1 and 4 **6** to activate options 2 and 4 **7** to activate options 3 and 4
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the screen updates to reflect the changes. Otherwise, the changed parameters continue to display but no action is taken.*

Drives Dialog

Path: `Main Menu ►Setup Menu ►Drives Dialog`

Use the `Drives Dialog` to modify the SCSI ID for all drive models except TD3610, 3590-B1A, 3590-E1A, Ultrium-TD1 (LTO-1), and Ultrium-TD2 (LTO-2).

See Figure 5-120.

```
Drive ID Override:
   Enabled <
Set Drive ID:    N
             Accept:  N
```

Figure 5-120 Drives Dialog

Note
Drive ID Override does not work on LTO drives..

Parameter	Value
Drive ID Override	**Enabled** allows the operator to enable the setting of SCSI ID for supported drives **Disabled** prevents the library from setting the SCSI ID for supported drives
Set Drive ID	**Y** to view and set the drive SCSI ID **N** to not change the drive SCSI ID
Accept	**Y** to accept changes **N** to reject changes

If Enabled is selected or was previously selected for the Drive ID Override parameter and Y is selected for the Set Drive Id and the Accept parameters, the SCSI ID Dialog appears. Refer to Figure 5-121 on page 5-92.

If Drive ID Override is disabled and Y is selected for Accept, the changed parameters continue to display but no new screen action is displayed.

— or —

*If **N** is selected for the Accept parameter, the changed parameters continue to display but no action is taken.*

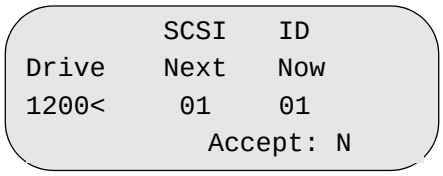


Figure 5-121 SCSI ID Dialog

Parameter	Value
Drive	Indicates the element index of the drive (01200–01247 for SDLT / DLT, and AIT)
Next	Next indicates the SCSI ID address that takes effect after power is cycled (0–15).
Now	The SCSI ID address that is currently in effect (0–15).
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the screen updates to reflect the changes. Otherwise, the changed parameters continue to display but no action is taken.*

Cleaning Submenu

Path: `Main Menu ►Setup Menu ►Cleaning Submenu`

Use the `Cleaning Submenu` to select how and when you want to clean your drive. See Figure 5-99.

```
>Drives…
 Media…
 View…
```

Figure 5-122 Cleaning Submenu

Depending on your selection, you have the following options:

- *Drives Dialog*
- *Media Dialog* on page 5-94
- *View Dialog* on page 5-96

Drives Dialog

Path: `Main Menu ►Setup Menu ►Cleaning Submenu ►Drives Dialog`

Use the `Drives Dialog` to select automatic or scheduled (specifying a time) cleaning for all tape drive models except TD-3610, 3590-B1A, and 3590-E1A. See Figure 5-123.

```
AutoClean:          Y<
Schedule:     Delayed
   Hours: 00   Min :00
          Accept:: N
```

Figure 5-123 Drives Dialog

Parameter	Value
AutoClean	**Y** to enable automatic drive cleaning **N** to reject automatic drive cleaning

Note
If **Immediate** cleaning is selected, no time values can be entered.

Schedule	**Immediate** to allow drive cleaning when requested by the drive. **Delayed** to schedule drive cleaning for requesting drives at the specified time.
Hours	Hour (00–23) that cleaning should start.
Min	Minute (0–59) that cleaning should start.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the screen updates to reflect the changes. Otherwise, the changed parameters continue to display but no action is taken.*

Media Dialog

Path: `Main Menu ▶Setup Menu ▶Cleaning Submenu ▶Media Dialog`

Use the `Media Dialog` to specify the barcode number to choose a cleaning tape of a specific media in the library. See Figure 5-124.

A barcode mask is a valid, partial barcode label that can be followed by a wildcard character (*). Barcode labels that match the mask are marked as cleaning tapes. The barcode mask must not match more than a maximum of 127 cleaning tapes.

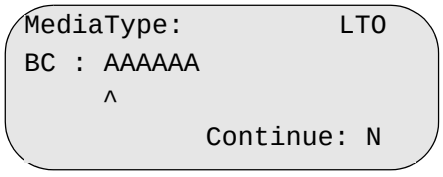


Figure 5-124 Media Dialog

Parameter	Value
Media Type	Selects one of the following medium types: 3480/90E, 3590, NCTP, DLT, SDLT, AIT, and IBM LTO

BC	Indicates the barcode mask of the cleaning cartridge(s). Searches the database for cartridges that match the mask you provide, and marks them as cleaning cartridges. You must select a barcode mask that matches only cleaning cartridges. If the barcode mask matches other than the cleaning cartridges, later cleaning operations will fail.
Continue	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Continue parameter value, the Usage Dialog appears. Refer to Figure 5-125. Otherwise, the changed parameters continue to display but no action is taken.*

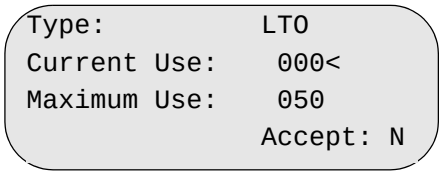


Figure 5-125 Usage Dialog

Parameter	Value
Type:	Type of cleaning cartridge. Listed below are media domain and types: Domain / Type Half / 3480/90E IBM 3590 Plasmon NCTP DLT / DLT SDLT 8 mm / AIT LTO / IBM LTO
Current Usage	Specifies the number of times the cleaning cartridge has been used (000–511).

Note
If the BC mask selects more than one cleaning tape, the current and maximum usage parameter values are applied to each cleaning tape.

Maximum Usage	Specifies the number of times the cleaning cartridge can be used (000–511).
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the screen updates to reflect the changes. Otherwise, the changed parameters continue to display but no action is taken.*

View Dialog

Path: `Main Menu ►Setup Menu ►Cleaning Submenu ►View Dialog`

Use the `View Dialog` to see how much a specific cleaning tape has been used. See Figure 5-126.

```
BC: CLN001
Status: Reset
Max: 000 Count: 000
Index: 001<RESET: N
```

Figure 5-126 View Dialog

Parameter	Value
BC	Indicates the cleaning tape barcode label.
Status	**Expired** indicates cleaning tape has expired. **Missing** indicates configured cleaning tape is not present within the library. **Valid** indicates cleaning tape is configured and is usable.
Max	Indicates the maximum allowed usage count (000–511).
Count	Indicates the current usage count.
Index	Indicates the current cleaning tape database index.

RESET	**Y** to accept changes and purge the barcode label from the Cleaning database. **N** to reject changes

*If **Y** is selected for the Reset parameter value, the changed parameter values are accepted. Otherwise, the changed parameters continue to display but no action is taken.*

Utils Menu

Path: `Main Menu ►Utils Menu`

Use the `Utils Menu` to perform library utilities. For example, set screen controls or date and time. See Figure 5-127.

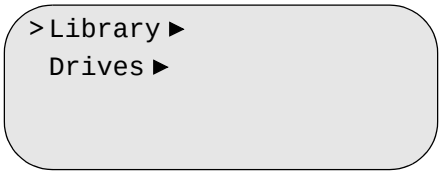


Figure 5-127 Utils Menu

Depending on your selection, you have one of the following options:

- *Library Submenu*
- *Drives Submenu* on page 5-103

Library Submenu

Path: `Main Menu ►Utils Menu ►Library Submenu`

Use the `Library Submenu` to set your Operator Panel LCD parameters, change passwords, enable the audio alarm, or set the time and date. See Figure 5-128.

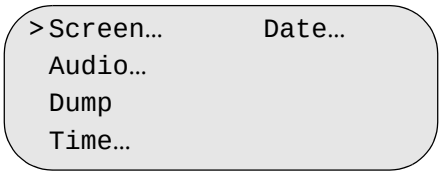


Figure 5-128 Library Menu

Depending on your selection, you have the following options:

- *Screen Dialog*
- *Audio Dialog* on page 5-100
- *Dump* on page 5-101
- *Time Dialog* on page 5-101
- *Date Dialog* on page 5-102

Screen Dialog

Path: `Main Menu ▶Utils Menu ▶Library Submenu ▶Screen Dialog`

Use the `Screen Dialog` to control the Operator Panel LCD screen. See Figure 5-129.

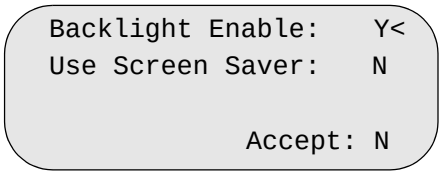


Figure 5-129 Screen Dialog

Parameter	Value
Backlight Enable	**Y** to enable LCD backlighting **N** to disable LCD backlighting
Use Screen Saver	**Y** to enable the screen saver **N** to disable the screen saver
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for Use Screen Saver and Accept parameters, the Timeout Value Dialog appears. Refer to Figure 5-130. Otherwise, the screen returns to the Library Menu. Refer to Figure 5-128 on page 5-97.*

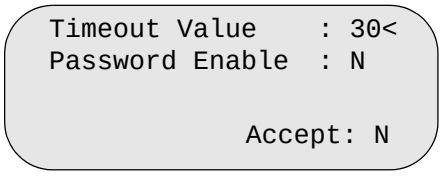


Figure 5-130 Timeout Value Dialog

Parameter	Value
Timeout Value	**10 - 60** minutes (default = 30)
Password Enable	**Y** to enable a screen saver password **N** to disable a screen saver password
Accept	**Y** to accept changes **N** to reject changes

Note
Password enable can change from Y to N only if a password was previously set.

*If Password enable changes from **N** to **Y** or **Y** to **N** and Accept changes to **Y**, the Password Dialog appears. See Figure 5-131. Otherwise, the screen returns to the Library Menu. Refer to Figure 5-128 on page 5-97.*

Figure 5-131 Password Dialog

Parameter	Value
Enter password	Selects the password (0000–9999)
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value while the Password enable is set to Y, the password is changed. See Figure 5-132.*

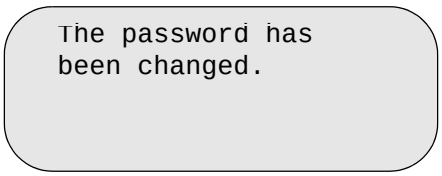


Figure 5-132 Password Change Dialog

*Otherwise, if **Y** is selected for the Accept parameter value while the Password enable is set to **N**, the password protection is removed. If the password is entered incorrectly, the following Invalid Dialog appears. See Figure 5-133.*

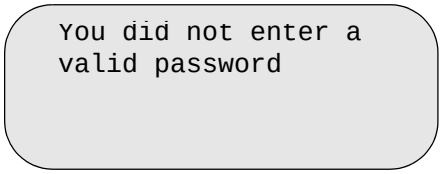


Figure 5-133 Invalid Password Dialog

Audio Dialog

Path: Main Menu ►Utils Menu ►Library Submenu ►Audio Dialog

Use the Audio Dialog to enable or disable the audio alarm. See Figure 5-134.

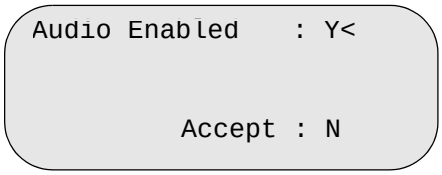


Figure 5-134 Audio Dialog

Parameter	Value
Audio Enabled	**Y** to enable audio **N** to disable audio
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the screen updates to reflect the changes. Otherwise, the changed parameters continue to display but no action is taken.*

Dump

Path: Main Menu ▶Utils Menu ▶Library Submenu ▶Dump

This function is no longer operational.

The following Response Screen will be displayed. See Figure 5-135.

```
The code dump is now
completed.
```

Figure 5-135 Response Screen

Time Dialog

Path: Main Menu ▶Utils Menu ▶Library Submenu ▶Time Dialog

Use the Time Dialog to set the library 24 hour time format. See Figure 5-136.

The library does not automatically adjust for Daylight Savings Time.

```
Hour  : 18<
Min   : 24
Sec   : 25
              Accept: N
```

Figure 5-136 Time Dialog

Parameter	Value
Hour	Indicates the hour of the day (00–23)
Min	Indicates the minute of the hour (00–59)
Sec	Indicates the second of the minute (00–59)
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the screen updates to reflect the changes. Otherwise, the changed parameters continue to display but no action is taken.*

Date Dialog

Path: `Main Menu ▶Utils Menu ▶Library Submenu ▶Date Dialog`

Use the `Date Dialog` to set the library date. See Figure 5-137.

```
Year  : 00<
Month : 08
Day   : 16
              Accept: N
```

Figure 5-137 Date Dialog

Parameter	Value
Year	Indicates the last two digits of the year (00–99)
Month	Indicates the two digits of the month (01–12)
Day	Indicates the two digits of the day (01–31)
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the screen updates to reflect the changes. Otherwise, the changed parameters continue to display but no action is taken.*

Drives Submenu

Path: `Main Menu ▶Utils Menu ▶Drives Submenu`

Use the `Drives Submenu` to change drive status or operations. See Figure 5-138.

The menu selection supports all drive models except for TD-3610, 3590-B1A, and 3590-E1A.

```
>Update Microcode…
 Clean Drives…
 Unload Drives…
 Initialize ▶
```

Figure 5-138 Drives Submenu

Depending on your selection, you have the following options:

- *Update Microcode Dialog* on page 5-104
- *Clean Drives Dialog* on page 5-108
- *Unload Drives Dialog* on page 5-110
- *Initialize Submenu* on page 5-111

Update Microcode Dialog

Path: `Main Menu ▶Utils Menu ▶Drives Submenu ▶Update Microcode Dialog`

Note
Perform an Inventory before updating drive firmware. If you do not perform an inventory, the library may prompt you to perform one.

Use the `Update Microcode Dialog` to initiate a drive firmware update. See Figure 5-140.

Drive firmware is upgraded with a drive firmware tape. You select an I/E or storage slot in which to store the firmware tape, then select a target drive and a range of drives.

The library moves the firmware tape to each selected drive, then back to the original storage slot. All other operations are prohibited while the upgrade is in progress.

After selecting `Update Microcode` from the Drives Submenu, one of the following dialogs display depending on whether the library has been inventoried:

If the library has been Inventoried, the Update Microcode Dialog displays. See Figure 5-140 on page 5-105.

If the library needs to be Inventoried, the Inventory Warning message displays on the Operator Panel. See to See Figure 5-139.

```
      -=>Warning<=-
The library may not be
inventoried.
          Continue : N
```

Figure 5-139 Inventory Warning

Parameter	Value
Continue	**Y** to continue **N** to return to the previous menu

*If **Y** is selected for the Continue parameter, the library Inventories the tape drives and the Update Microcode Dialog displays. See Figure 5-140 on page 5-105.*

*If **N** is selected for the continue parameter, the update does not continue and the Drives Submenu displays. See Figure 5-138 on page 5-103.*

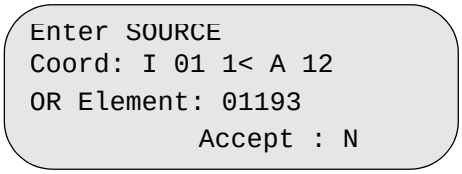


Figure 5-140 Update Microcode Dialog

Parameter	Value
Coord	The first field indicates the type of cell (I for I/E Station, D for Drive, S for Storage cell). The second field displays module numbers that can be modified if EMs are present (1–4). The third field indicates the storage cell section (1–4), drive bay (1–2), or IE station number. The fourth field indicates the column of the section (A–E), drive port (A–B), or IE station column. The fifth field indicates the row of the column. (01–12 for ½-inch and SDLT/DLT coordinates) (01–14 for LTO coordinates) (01–18 for AIT coordinates)
Element	Displays the element number that corresponds to the coordinate parameter.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Element Dialog appears. See Figure 5-141. Otherwise, the changed actions continue to display but no action is taken.*

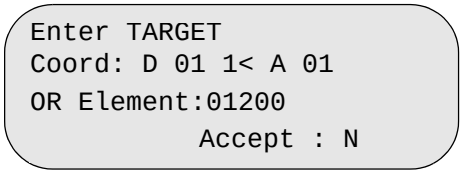


Figure 5-141 Element Dialog

Parameter	Value
Coord	The first field indicates the type of cell (I for I/E Station, D for Drive, S for Storage cell). The second field displays module numbers that can be modified if EMs are present (1–4). The third field indicates the storage cell section (1–4), drive bay (1–2), or IE station number. The fourth field indicates the column of the section (A–E), drive port (A–B), or IE station column. The fifth field indicates the row of the column. (01–12 for ½-inch and SDLT/DLT coordinates) (01–14 for LTO coordinates) (01–18 for AIT coordinates)
Element	Displays the element number that corresponds to the coordinate parameter.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Drive Range Dialog appears. See Figure 5-142. Otherwise, the changed actions continue to display but no action is taken.*

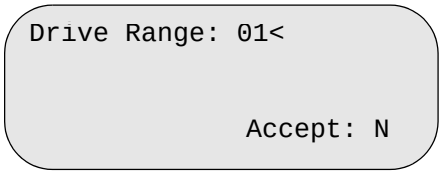


Figure 5-142 Drive Range Dialog

Parameter	Value
Drive Range	Indicates the number of drives to receive the firmware update. Drives are in order of their element address.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Response Screen appears. See Figure 5-143. Otherwise, the changed actions continue to display but no action is taken.*

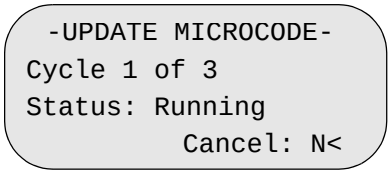


Figure 5-143 Response Screen

Parameter	Value
Status	**Running** indicates that the current command is in progress. **Completed** indicates the firmware on all the drives in the cycle has been updated. **Canceled** indicates the cycle has been canceled. **ERROR!** indicates an error has occurred.
Cancel	**Y** to cancel the cycle **N** to continue the cycle

*If **Y** is selected for the Cancel parameter, the cycle is canceled and the Cancel parameter does not appear.*

Clean Drives Dialog

Path: `Main Menu ►Utils Menu ►Drives Submenu ►Clean Drives Dialog`

Use the `Clean Drives Dialog` to initiate a drive cleaning operation. See Figure 5-144.

The library selects a drive cleaning tape from a library storage slot and places it in the selected drive. When cleaning is complete, the library returns the cleaning tape to the library storage slot.

All other operations are prohibited while drive cleaning is in progress.

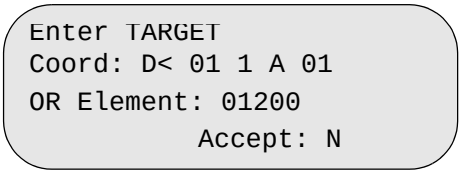


Figure 5-144 Clean Drives Dialog

Parameter	Value
Coord	The first field indicates the type of cell (I for I / E Station, D for Drive, S for Storage cell). The second field displays module numbers that can be modified if EMs are present (1–4). The third field indicates the storage cell section (1–4), drive bay (1–2), or IE station number. The fourth field indicates the column of the section (A–E), drive port (A–B), or IE station column.

	The fifth field indicates the row of the column. (01–12 for ½-inch and SDLT / DLT coordinates) (01–14 for LTO coordinates) (01–18 for AIT coordinates)
Element	Displays the element number that corresponds to the coordinate parameter.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Progress Screen appears, see Figure 5-145, followed by the Response Screen. See Figure 5-146. Otherwise, the changed actions continue to display but no action is taken.*

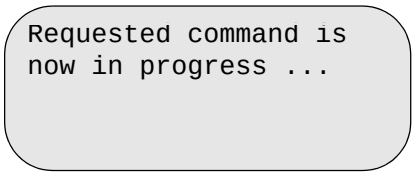


Figure 5-145 Progress Screen

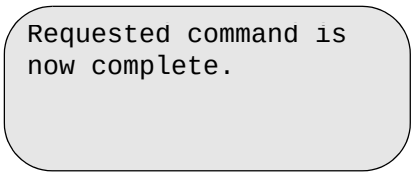


Figure 5-146 Response Screen

Unload Drives Dialog

Path: `Main Menu ▶Utils Menu ▶Drives Submenu ▶Unload Drives Dialog`

Use the `Unload Drives dialog` to eject a tape from the specified drive. See Figure 5-147.

```
Enter SOURCE
Coord: D 01< 1 A 01
OR Element: 01200
           Accept: N
```

Figure 5-147 Unload Drives Dialog

Parameter	Value
Coord	The first field indicates the type of cell (I for I/E Station, D for Drive, S for Storage cell). The second field displays module numbers that can be modified if EMs are present (1–4). The third field indicates the storage cell section (1–4), drive bay (1–2), or IE station number. The fourth field indicates the column of the section (A–E), drive port (A–B), or IE station column. The fifth field indicates the row of the column. (01–12 for ½-inch and SDLT/DLT coordinates) (01–14 for LTO coordinates) (01–18 for AIT coordinates)
Element	Displays the element number that corresponds to the coordinate parameter.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Progress Screen appears, see Figure 5-148, followed by the Response Screen, see Figure 5-149. Otherwise, the changed actions continue to display but no action is taken.*

```
Requested command is
now in progress ...
```

Figure 5-148 Progress Screen

```
Requested command is
now complete.
```

Figure 5-149 Response Screen

Initialize Submenu

Path: `Main Menu` ►`Utils Menu` ►`Drives Submenu` ►`Initialize Submenu`

Use the `Initialize Submenu` to initiate communication with all drives. See Figure 5-150.

```
>Communication
 SCSI
```

Figure 5-150 Initialize Submenu

Depending on your selection, you have the following options:

- *Communication* on page 5-112
- *SCSI* on page 5-112

Communication

Path: `Main Menu ▶Utils Menu ▶Drives Submenu ▶Initialize Submenu ▶Communication`

Use `Communication` to initiate communication tests to the drives and initialize the drive state of all tape drive models except TD-3610, 3590-B1A, and 3590-E1A. See Figure 5-151 and Figure 5-152.

```
Requested command is
now in progress ...
```

Figure 5-151 Progress Screen

```
Requested command is
now complete.
```

Figure 5-152 Response Screen

SCSI

Path: `Main Menu ▶Utils Menu ▶Drives Submenu ▶Initialize Submenu ▶SCSI`

Use `SCSI` to initialize your previously set SCSI IDs. See Figure 5-153 and Figure 5-154.

```
Requested command is
now in progress ...
```

Figure 5-153 Progress Screen

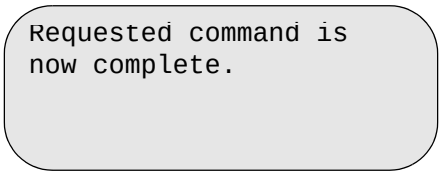


Figure 5-154 Response Screen

Service Menu

Path: Main Menu ▶ Service Menu

Use the Service Menu to select library diagnostics or exercisers. These options should only be used by trained service representatives or administrators. See Figure 5-155.

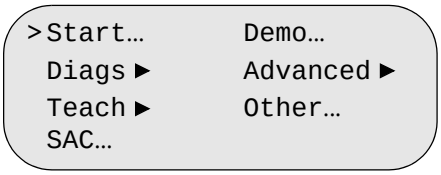


Figure 5-155 Service Menu

Depending on your selection, you have the following options:

- *Start Dialog* on page 5-114
- *Diags Submenu* on page 5-116
- *Teach Submenu* on page 5-138
- *SAC Dialog* on page 5-143
- *Demo Dialog* on page 5-143
- *Advanced Dialog* on page 5-146
- *Other Dialog* on page 5-147

Start Dialog

Path: `Main Menu ►Service Menu ►Start Dialog`

Use the `Start dialog` to check and reset Preventative Maintenance (PM) SAC codes. The dialog flow will be either Start Dialog with No Errors or Start Dialog with Errors (displays the last SAC Code). See Figure 5-156.

```
PM Due:      01/01/98
X Remain:    00500000
Y Remain:    000500000
Reset PM values?  N<
```

Figure 5-156 Preventive Maintenance Due Dialog

Parameter	Value
PM Due	Date preventative maintenance is due
X Remain	Distance remaining on the X-direction until PM
Y Remain	Distance remaining on the Y-distance until PM
Reset PM values	**Y** to reset PM values **N** to keep PM values

*If **Y** is selected for the Reset PM values parameter value, the Confirm Change Dialog is displayed. See Figure 5-157.*

*If **N** is selected, the Preventative Maintenance Due dialog continues to display but no action is taken.*

```
Confirm change?   N<
```

Figure 5-157 Confirm Change Dialog

Parameter	Value
Confirm change	**Y** to confirm reset of PM values **N** to reject reset of PM values

*If **Y** is selected for the Confirm Change parameter value, the Preventative Maintenance Due dialog displays with reset values.*

*If **N** is selected for the Confirm Change parameter value, the Preventative Maintenance Due displays with values unchanged.*

When the Escape button is pressed, the flow continues with either the Start Dialog with No Errors display (Figure 5-158 on page 5-115) or the Start Dialog with Errors display (Figure 5-159 on page 5-115).

This second option provides information for a service call. The Service Action Code (SAC) is based on the displayed error code. Refer to Service Action Codes on page 7-3 for additional information. Refer to the Scalar 1000 Maintenance Manual for a course of action related to the displayed SAC.

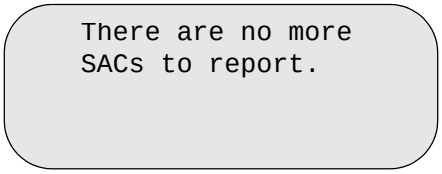


Figure 5-158 Start Dialog with No Errors

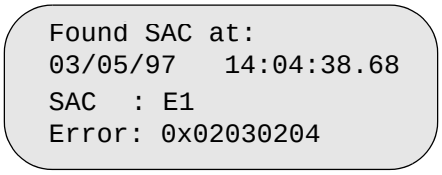


Figure 5-159 Start Dialog with Errors

Diags Submenu

Path: `Main Menu ►Service Menu ►Diags Submenu`

Note
Diagnostics are grouped according to functional areas.

Use the `Diags Submenu` to run library diagnostics. See Figure 5-160.

```
>DI/DO ►      SelfTest…
 Gripper ►    PowerSup…
 Scanner ►
 Accessor ►
```

Figure 5-160 Diags Submenu

Depending on your selection, you have the following options:

- *DI/DO Submenu* on page 5-117
- *Gripper Submenu* on page 5-121
- *Scanner Submenu* on page 5-130
- *Accessor Submenu* on page 5-133
- *SelfTest Dialog* on page 5-136
- *PowerSup Dialog* on page 5-137

DI/DO Submenu

Path: `Main Menu ►Service Menu ►Diags Submenu ►DI/DO Submenu`

Use the (Digital Input / Digital Output) `DI/DO Submenu` to perform system tests. See Figure 5-161.

Figure 5-161 DI/DO Submenu

Depending on your selection, you have the following options:

- *Loopback Dialog*
- *Sensors Submenu* on page 5-118
- *Locks Dialog* on page 5-121

Loopback Dialog

Path: `Main Menu ►Service Menu ►Diags Submenu ►DI/DO Submenu ►Loopback Dialog`

Use the `Loopback Dialog` to send test signals from the main control card to other system cards and return. See Figure 5-162.

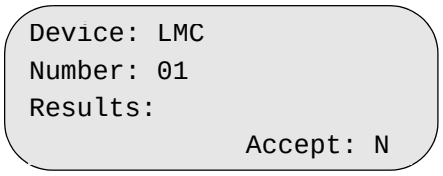


Figure 5-162 Loopback Dialog

Parameter	Value
Device	Indicates the loopback tests to run (LMC, LGR, LPN).
Number	Indicates which device number should be tested. This field is always set to 01 because there is only one of each device to be tested in the Scalar 1000.

Results	A blank indicates that no test has been run. **Passed** indicates that the previous test executed successfully. **Failed** indicates that the previous test did not execute successfully.
Accept	**Y** to accept change **N** to reject changes

Sensors Submenu

Path: `Main Menu ►Service Menu ►Diags Submenu ►DI/DO Submenu ►Sensors`

Use the `Sensors Submenu` to test the sensors in real-time. See Figure 5-164.

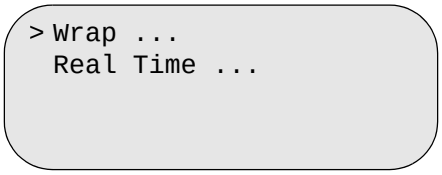


Figure 5-163 Sensors Submenu

Depending on your selection, you have the following options:

- *Wrap Dialog* on page 5-118
- *Real Time* on page 5-120

Wrap Dialog

Path: `Main Menu ►Service Menu ►Diags Submenu ►DI/DO Submenu ►Sensors ►Wrap`

Use the `Wrap Dialog` to test the ability of the system to report state changes. See Figure 5-164 on page 5-119.

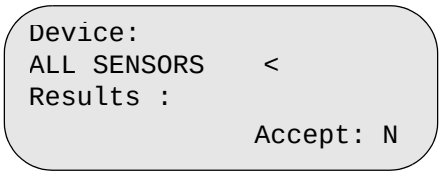


Figure 5-164 Wrap Dialog

Parameter	Value
Device	Indicates the list of sensors to test (All, Gripper_Tach, IE_Lock, Y_Home, X_Home, Touch_Tip, Gripper_Open, Retract_Complete, IE_Open).
Results	Blank indicates no test has been run. **Passed** indicates that the previous test executed successfully. **Failed** indicates that the previous test did not execute successfully.
Accept	**Y** to accept changes **N** to reject changes

Real Time

Path: `Main Menu ▶Service Menu ▶Diags Submenu ▶DI/DO Submenu ▶Sensors ▶Real Time`

Use `Real Time` to indicate the state changes of the sensors in real time. See Figure 5-165.

```
GripTach=0 YHome=0
TouchTip=0 XHome=0
GripOpen=X IELock=0
RetrComp=0 IEOpen=0
```

Figure 5-165 Real Time

Parameter	Value
GripTach	**0** indicates an ON state. **1** indicates an OFF state.
TouchTip	**0** indicates not touching. **1** indicates touching.
GripOpen	**0** indicates closed. **1** indicates open. **X** indicates not implemented.
RetrComp	**0** indicates not retracted. **1** indicates retracted.
YHome	**0** indicates not home. **1** indicates home.
XHome	**0** indicates not home. **1** indicates home.
IELock	**0** indicates not locked. **1** indicates locked.
IEOpen	**0** indicates closed. **1** indicates open.

Locks Dialog

Path: Main Menu ▶Service Menu ▶Diags Submenu ▶DI/DO Submenu ▶Locks Dialog

Use the Locks Dialog to exercise the I/E station lock without opening and closing the station. See Figure 5-166.

If media removal has been prevented by the host, the I/E station should not be unlocked by this method.

```
Pressing Enter will
toggle the lock.
State : Unlocked
```

Figure 5-166 Locks Dialog

Parameter	Value
State	**Locked** indicates that the Insert/Eject station is locked. **Unlocked** indicates that the Insert/Eject station is unlocked.

Gripper Submenu

Path: Main Menu ▶Service Menu ▶Diags Submenu ▶Gripper Submenu

Use the Gripper Submenu to select Get/Put actions for storage or a drive. See Figure 5-167.

```
>Get/Put Storage…
 Get/Put Drives…
 Step…
```

Figure 5-167 Gripper Submenu

Depending on your selection, you have the following options:

- *Get/Put Storage Dialog* on page 5-122
- *Get/Put Drives Dialog* on page 5-125
- *Step Dialog* on page 5-128

Get/Put Storage Dialog

Path: `Main Menu ▶Service Menu ▶Diags Submenu ▶Gripper Submenu ▶Get/Put Storage Dialog`

Use the `Get/Put Storage Dialog` to start Get and Put of all cartridges in a specified range. No element-to-element movements take place. See Figure 5-168.

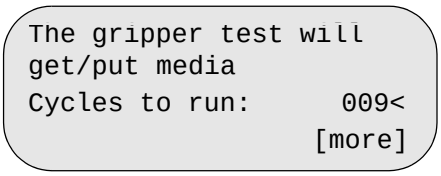


Figure 5-168 Get/Put Storage Dialog

Parameter	Value
Cycles to run	Indicates the number of cycles to run (1–999)
[more]	More selections on the Continuation Menu

When [more] is selected, the Continuation Screen appears. See Figure 5-169.

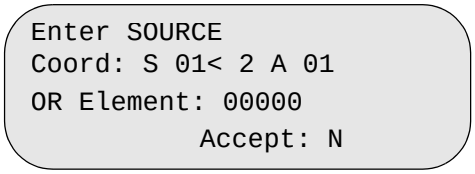


Figure 5-169 Continuation Dialog

Parameter	Value
Coord	The first field indicates the type of cell (I for I/E Station, D for Drive, S for Storage cell). The second field displays module numbers that can be modified if EMs are present (1–4).

	The third field indicates the storage cell section (1–4), drive bay (1–2), or IE station number. The fourth field indicates the column of the section (A–E), drive port (A–B), or IE station column. The fifth field indicates the row of the column. (01–12 for ½-inch and SDLT / DLT coordinates) (01–14 for LTO coordinates) (01–18 for AIT coordinates)
Element	Displays the element number that corresponds to the coordinate parameter.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Number of Elements Dialog appears.*
See Figure 5-170. Otherwise, the changed parameters continue to display but no action is taken.

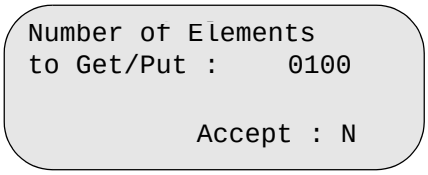


Figure 5-170 Number of Elements Dialog

Parameter	**Value**
Get / Put	Selects the number of elements where get / put operations are applied (0000–1200)
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Response Dialog appears. See Figure 5-171 on page 5-124. Otherwise, the changed parameters continue to display but no action is taken.*

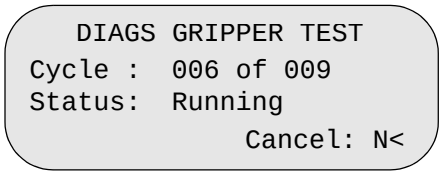


Figure 5-171 Response Dialog

Parameter	Value
Cycle	The number of completed test cycles of the requested cycles.
Status	Shows the status of the indicated cycle (Running, Completed, Error, Canceled).
Cancel	**Y** to cancel the test **N** to continue running the test

*If **Y** is selected for the Cancel parameter value, the test is cancelled. Otherwise, the test continues.*

Note
If the operation stops, the **Cancel** parameter no longer displays.

Get/Put Drives Dialog

Path: `Main Menu ▶Service Menu ▶Diags Submenu ▶Gripper Submenu ▶Get/Put Drives Dialog`

Use the `Get/Put Drives dialog` to start an existing GET and PUT of all cartridges in a specified range to a specific drive. See Figure 5-172.

The menu selection supports all tape drive models except TD-3610, 3590-B1A, and 3590-E1A.

```
The gripper test will
get/put media
Cycles to run:     009<
                 [more]
```

Figure 5-172 Get/Put Drives Dialog

Parameter	Value
Cycles to run	Indicates the number of cycles to run (1–999).
[more]	More selections on the Continuation Menu.

When [more] is selected, the Continuation Dialog appears. See Figure 5-173 on page 5-125.

```
Enter SOURCE
Coordinate : D 01 1< A 01
OR Element : 01200
          Accept : N
```

Figure 5-173 Continuation Dialog

Parameter	Value
Coord	The first field indicates the type of cell (I for I/E Station, D for Drive, S for Storage cell). The second field displays module numbers that can be modified if EMs are present (1–4). The third field indicates the

	storage cell section (1–4), drive bay (1–2), or IE station number. The fourth field indicates the column of the section (A–E), drive port (A–B), or IE station column. The fifth field indicates the row of the column. (01–12 for ½-inch and SDLT / DLT coordinates) (01–14 for LTO coordinates) (01–18 for AIT coordinates)
Element	Displays the element number that corresponds to the coordinate parameter.
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Number of Drives Dialog appears. See Figure 5-174. Otherwise, the changed parameters continue to display but no action is taken.*

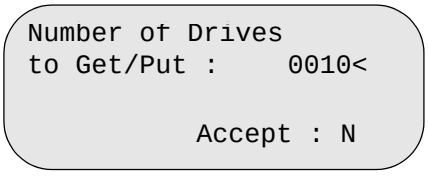


Figure 5-174 Number of Drives Dialog

Parameter	**Value**
Get / Put	Selects the number of elements where the Get / Put operation is applied (0000–0048 for all elements).
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Response Dialog appears. See Figure 5-175. Otherwise, the changed parameters continue to display but no action is taken.*

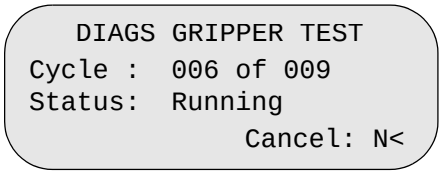


Figure 5-175 Response Dialog

Parameter	Value
Cycle	The number of completed test cycles of the requested cycles.
Status	Shows the status of the indicated cycle (Running, Completed, Error, Canceled).
Cancel	**Y** to cancel the test **N** to continue running the test

*If **Y** is selected for the Cancel parameter value, the test is cancelled. Otherwise, the test continues.*

Note
If the operation stops, the **Cancel** parameter no longer displays.

Step Dialog

Path: `Main Menu ▶Service Menu ▶Diags Submenu ▶Gripper Submenu ▶Step Dialog`

Use `Step` to set low-level control of Gripper functions. The function should be used by trained service personnel. See Figure 5-176.

```
This test should be
used by trained
personnel ONLY!
          Continue: N<
```

Figure 5-176 Step Dialog

Parameter	Value
Continue	**Y** to continue the test **N** to cancel the test

*If **Y** is selected for the Continue parameter value, the Response Screen appears. See Figure 5-177.*

```
Media      None<
Grip:      OPEN
Reach:     RETRACTED
Speed:     NORMAL
```

Figure 5-177 Continuation Dialog

Parameter	Value
Media	**LTO** limits open / close range for an LTO tape cartridge. **AIT** limits open / close range for an AIT tape cartridge. **DLT IIIXT** limits open / close range for a CompacTape IIIXT tape cartridge. **DLT IV** limits open / close range for a CompacTape IV tape cartridge. **DLT III** limits open / close

	range for a CompacTape III tape cartridge. **SDLT** limits open / close range for an SDLT tape cartridge. **NCTP** limits open / close range for a half-inch tape cartridge. **3590_DL** limits open / close range for a half-inch tape cartridge. **3590** limits open / close range for a half-inch tape cartridge. **3490** limits open / close range for a half-inch tape cartridge. **3480** limits open / close range for a half-inch tape cartridge.
Grip	**Open** indicates the Gripper is open. **Closed** indicates the Gripper is closed.
Reach	**Retracted** indicates the Gripper is retracted. **Extended** indicates the Gripper is extended
Speed	**Normal** uses predefined normal speed. **Slow** uses predefined slow speed.

Scanner Submenu

Path: Main Menu ▶Service Menu ▶Diags Submenu ▶Scanner Submenu

Use the Scanner Submenu to adjust and test the barcode scanner. See Figure 5-178.

```
>Adjust...
 Trigger...
 Fiducial Test...
```

Figure 5-178 Scanner Submenu

Depending on your selection, one of the following appears:

- *Adjust Dialog* on page 5-130
- *Trigger Dialog* on page 5-131
- *Fiducial Test Dialog* on page 5-132

Adjust Dialog

Path: Main Menu ▶Service Menu ▶Diags Submenu ▶Scanner Submenu ▶Adjust Dialog

Use the Adjust Dialog to position the barcode scanner beam over a specific location to adjust the beam. This function should be used only by trained service personnel. See Figure 5-179. Refer to the *Scalar 1000 Maintenance Guide* for the step by step procedure to adjust the scanner.

```
DIAGS SCANNER ADJUST
Adjust scanner until
beam is level.
Y: 1005.0< X:0267.0
```

Figure 5-179 Adjust Dialog

Parameter	Value
Y	Indicates the returned vertical position value of the scanner (it should be 1005.0 ± 0.2).

X	Indicates the returned horizontal position value of the scanner (it should be 0267.0 ± 0.2).
↵	Press this button to select X or Y.

Note
Do not use the up or down arrows to change gripper positions because scanner adjustment will be invalid.

Trigger Dialog

Path: `Main Menu` ▶ `Service Menu` ▶ `Diags Submenu` ▶ `Scanner Submenu` ▶ `Trigger Dialog`

Use the `Trigger Dialog` to trigger the barcode scanner to read, decode, and display whichever barcode label is within the range of the beam. See Figure 5-180.

```
  SCANNER TRIGGER
Pressing Enter will
trigger scanner
BC :000389
```

Figure 5-180 Trigger Dialog

Parameter	Value
BC	Returns the barcode label information for the storage cartridge.

Fiducial Test Dialog

Path: `Main Menu ►Service Menu ►Diags Submenu ►Scanner Submenu ►Fiducial Test Dialog`

Use the `Fiducial Test dialog` to test the scanner for proper operation. See Figure 5-181.

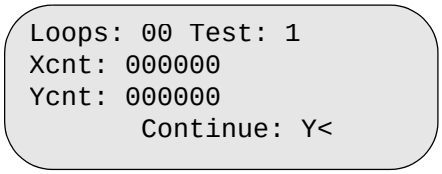


Figure 5-181 Fiducial Test Dialog

Parameter	Value
Loops	Displays how often the test has been run.
Test	**1** will read the first storage fiducial and display the found edge coordinates. **2** will read the Insert / Eject Station fiducial and display the found edge coordinates.
Xcnt	Displays the x edge position count in tenths of a mm.
Ycnt	Displays the Y edge position count in tenths of a mm.
Continue	**Y** to continue running the test **N** to cancel the test.

Accessor Submenu

Path: Main Menu ▶Service Menu ▶Diags Submenu ▶Accessor Submenu

Use the Accessor Submenu to move the Accessor in a selected pattern. See Figure 5-182.

Figure 5-182 Accessor Submenu

Depending on your selection, you have the following options:

- *Move Dialog* on page 5-134
- *Step Dialog* on page 5-135

Move Dialog

Path: `Main Menu ▶Service Menu ▶Diags Submenu ▶Accessor Submenu ▶Move Dialog`

Use the `Move Dialog` to move the Accessor in a figure eight pattern without accessing cartridges. See Figure 5-183.

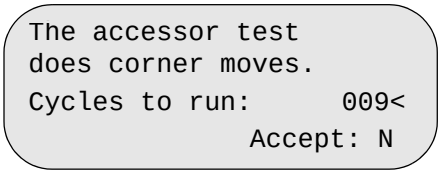


Figure 5-183 Move Dialog

Parameter	Value
Cycles to Run	Indicates the desired cycle count (001–999).
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Response Dialog appears. Refer to Figure 5-184. Otherwise, the changed parameters continue to display but no action is taken.*

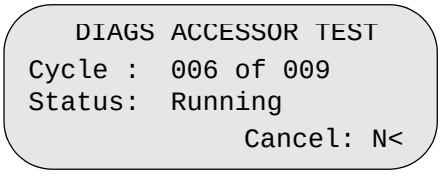


Figure 5-184 Response Dialog

Parameter	Value
Cycle	Displays the number of completed test cycles of requested cycles.
Status	Displays the current cycle (Running, Completed, Error, Canceled).
Cancel	**Y** to cancel the test **N** to continue running the test

*If **Y** is selected for the Cancel parameter value, the test is cancelled. Otherwise, the test continues.*

Note
If the operation stops, the **Cancel** parameter no longer displays.

Step Dialog

Path: Main Menu ▶Service Menu ▶Diags Submenu ▶Accessor Submenu ▶Step Dialog

Use the Step Dialog to set Gripper low level control. This function should only be used by trained service personnel. See Figure 5-185.

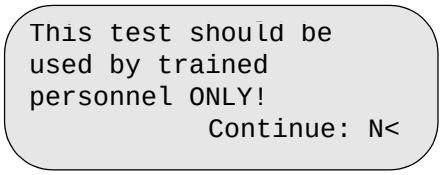


Figure 5-185 Step Dialog

Parameter	Value
Continue	**Y** to continue the test **N** to cancel the test

*If **Y** is selected for the Continue parameter value, the Movement Dialog appears. See Figure 5-186.*

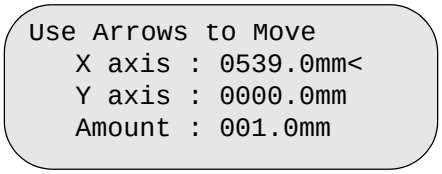


Figure 5-186 Movement Dialog

Parameter	Value
X axis	Displays X axis location.
Y axis	Displays Y axis location.
Amount	Indicates move step distance (1, 10–100 mm).
↵	Press this button to select X, Y, or Amount.

Note
Use the up or down arrows to change Amount (step size) or move gripper.

SelfTest Dialog

Path: Main Menu ▶Service Menu ▶Diags Submenu ▶SelfTest Dialog

Use the SelfTest Dialog to run a predetermined sequence of diagnostics and exercisers. See Figure 5-187.

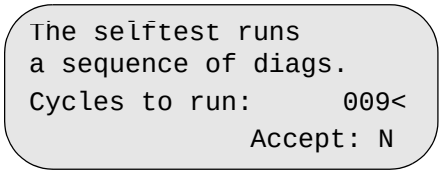


Figure 5-187 SelfTest Dialog

Parameter	Value
Cycles to Run	Indicates the desired cycle count (001–999).
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Response Dialog appears. See Figure 5-188. Otherwise, the changed parameters continue to display but no action is taken.*

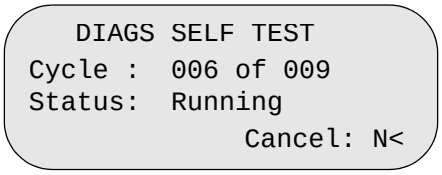


Figure 5-188 Response Dialog

Parameter	Value
Cycle	The number of completed test cycles of the requested cycles.
Status	Shows each test as it runs (Loopback, Sensors, Lock, Unlock, Open, Close, Extend, Retract, Move, Scanner), then displays the status of the indicated cycle (Completed, Error, Canceled).
Cancel	**Y** to cancel the test **N** to continue running the test

Note
If the operation stops, the **Cancel** parameter no longer displays.

*If **Y** is selected for the Cancel parameter value, the test is cancelled. Otherwise, the test continues.*

PowerSup Dialog

Path: `Main Menu ►Service Menu ►Diags Submenu ►PowerSup Dialog`

Use the `PowerSup Dialog` to display the installed dual power supplies. See Figure 5-189.

This screen shows installed DC power supply status with respect to AC input and DC output, indicating whether the power supplies are functioning properly.

If dual power supplies are not installed, the Function Not Available Screen appears. See Figure 5-190.

```
1. 24V   DC: Y    AC: Y
1. 48V   DC: Y    AC: Y
2. 24V   DC: Y    AC: Y
2. 48V   DC: Y    AC: Y
```

Figure 5-189 Power Supply Screen

```
This function is not yet
available. Press Escape
```

Figure 5-190 Function Not Available Screen

Teach Submenu

Path: Main Menu ►Service Menu ►Teach Submenu

Use the Teach Submenu to reset and re-initialize the library configuration. See Figure 5-191.

```
>Teach New…
 Teach Current…
```

Figure 5-191 Teach Submenu

Depending on your selection, you have the following options:

- *Teach New Dialog*
- *Teach Current Dialog* on page 5-140

Teach New Dialog

Path: Main Menu ►Service Menu ►Teach Submenu ►Teach New Dialog

Note
A successful Teach New operation clears all cell statistics.

Use the Teach New Dialog to reset and re-initialize the library configuration and calibration information. Before a the teach operation begins, you are presented with the option to save all learned offsets in the database. If a teach is performed and is successful, all previous information is destroyed. An inventory is required after the Teach New Dialog operation. Refer to Figure 5-192.

Caution

Keeping learned offsets could damage your library. Only trained service personnel should keep learned offsets.

```
A teach new will
clear and reset the
complete database.
          Continue: N
```

Figure 5-192 Teach New Dialog

Parameter	Value
Continue	**Y** to continue the teach new **N** to return to the previous menu

*If **Y** is selected for the Continue parameter value, the Keep Learned Offsets Dialog (Figure 5-193 on page 5-139).*

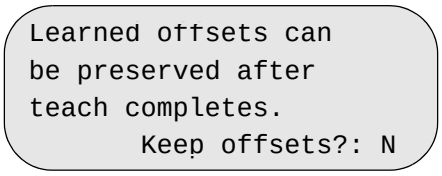


Figure 5-193 Keep Learned Offsets Dialog

Parameter	Value
Keep offsets?	**Y** to keep learned offsets **N** to reject keeping learned offsets. **N** is the default setting.

*If **Y** is selected for the Keep offsets parameter value, the Conformation Screen (Figure 5-194 on page 5-139) appears.*

*If **N** is selected, the Progress Screen (Figure 5-195 on page 5-140) appears followed by the Response Screen (Figure 5-196 on page 5-140) or the error screen (Figure 5-197 on page 5-140)*

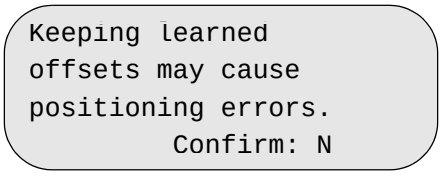


Figure 5-194 Confirmation Screen

⚠ Caution

Keeping learned offsets could damage your library. Only trained service personnel should keep learned offsets.

Parameter	Value
Confirm	**Y** to confirm keeping learned offsets **N** to reject keeping learned offsets. **N** is the default setting.

*If **Y** is selected for the Confirm parameter value, the Progress Screen (Figure 5-195 on page 5-140) appears followed by the Response Screen (Figure 5-196 on page 5-140) or the error screen (Figure 5-197 on page 5-140).*

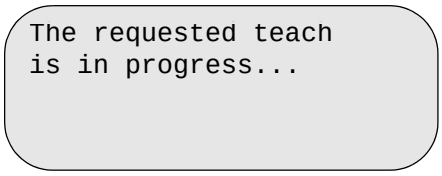


Figure 5-195 Progress Screen

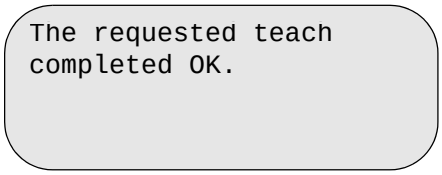


Figure 5-196 Response Screen

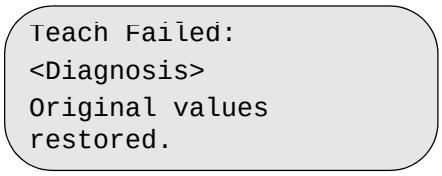


Figure 5-197 Error Screen

Teach Current Dialog

Path: Main Menu ▶Service Menu ▶Teach Submenu ▶Teach Current Dialog

Use the Current Dialog to re-calibrate the library coordinate information. All previous configuration and inventory information is retained. See Figure 5-198.

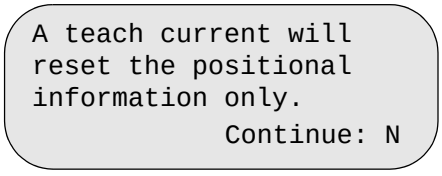


Figure 5-198 Teach Current Dialog

Parameter	Value
Continue	**Y** to continue the teach current **N** to return to the previous menu

*If **Y** is selected for the Continue parameter value, the Keep Learned Offsets Dialog (Figure 5-199 on page 5-141).*

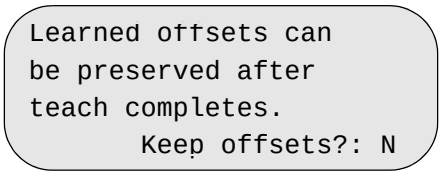


Figure 5-199 Keep Learned Offsets Dialog

Parameter	Value
Keep offsets?	**Y** to keep learned offsets **N** to reject keeping learned offsets. **N** is the default setting.

*If **Y** is selected for the Keep offsets parameter value, the Conformation Screen (Figure 5-200 on page 5-141) appears.*

*If **N** is selected, the Progress Screen (Figure 5-201 on page 5-142) appears.*

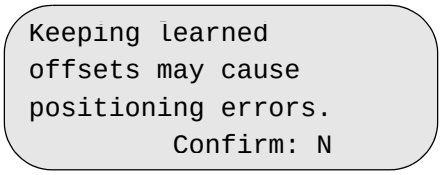


Figure 5-200 Confirmation Screen

Parameter	Value
Confirm	**Y** to confirm keeping learned offsets **N** to reject keeping learned offsets. **N** is the default setting.

*If **Y** is selected for the Confirm parameter value, the Starting and Ending Dialog (Figure 5-201 on page 5-142) appears.*

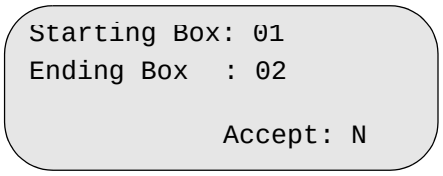


Figure 5-201 Starting and Ending Dialog

Parameter	Value
Starting Box	Indicates which frame to begin the Teach Current operation (1–4 depending on the number of EMs).
Ending Box	Indicates which frame to end the Teach Current operation (1–4 depending on the number of EMs).
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter value, the Progress Screen, refer to Figure 5-202 on page 5-142, appears followed by the Response Screen, refer to Figure 5-203 on page 5-142.*

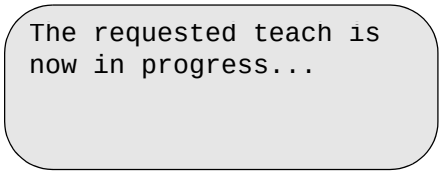


Figure 5-202 Progress Screen

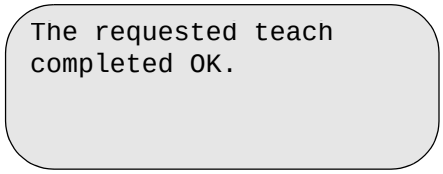


Figure 5-203 Response Screen

SAC Dialog

Path: Main Menu ►Service Menu ►SAC Dialog

Use the SAC Dialog to see an explanation of the displayed Service Action Code. See Figure 5-204.

```
Enter SAC to lookup:
SAC: E1
I/E station door is
not closed
```

Figure 5-204 SAC Dialog

For additional information on the SAC codes, refer to *Service Action Codes* on page 7-3.

Demo Dialog

Path: Main Menu ►Service Menu ►Demo Dialog

Use the Demo Dialog to move cartridges from storage element-to-storage element, but not to the tape drives. You must enter the correct password to use this dialog.
See Figure 5-205 and Figure 5-206.

Note
At least one storage element for each media type must be empty for the Demo option to run.

```
Enter password:
       [0000]
        ^
            Accept: N
```

Figure 5-205 Password Dialog

```
For demo, all media
will be moved.
 Cycles to Run:  009<
           Accept: N
```

Figure 5-206 Demo Dialog

Parameter	Value
Cycles to Run	Indicates the desired cycle count (001–020).
Accept	**Y** to accept changes **N** to reject changes

*If **Y** is selected for the Accept parameter, the Include Drives Dialog appears. See Figure 5-207. Otherwise, the changed parameters continue to display but no action is taken.*

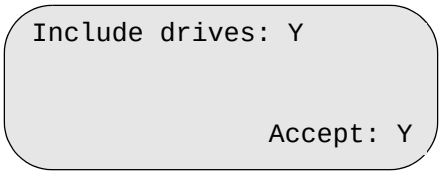


Figure 5-207 Include Drives Dialog

Parameter	Value
Include Drives	**Y** indicates that the drives will be included in the cycling of the cartridges. **N** indicates that the drives will not be included in the cycling of the cartridges.
Accept	**Y** to accept the changes **N** to reject the changes

*If **Y** is selected for the Accept parameter value, the Response Dialog appears. See Figure 5-208. Otherwise, the changed parameters continue to display but no action is taken.*

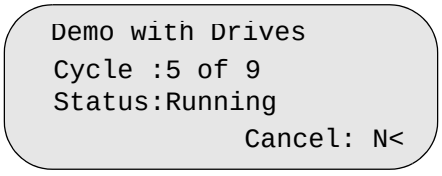


Figure 5-208 Response Dialog

Parameter	Value
Cycle	Indicates the number of completed test cycles of the requested cycles.
Status	Shows the status of the indicated cycle (Running, Completed, Error, Canceled).
Cancel	**Y** to cancel the test **N** to continue running the test

Note
If the operation stops, the **Cancel** parameter no longer displays.

If a Move Media is attempted without an inventory, the following screen appears. See Figure 5-209.

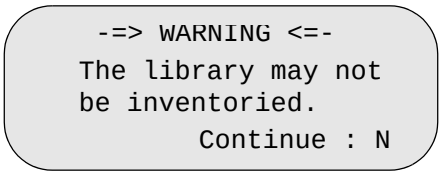


Figure 5-209 Warning Dialog

Parameter	Value
Continue	**Y** to continue **N** to return to the previous menu

*If **Y** is selected for the Continue parameter, the Warning message is removed.*

If the Partitioned flag is set, the following screen appears. See Figure 5-210.

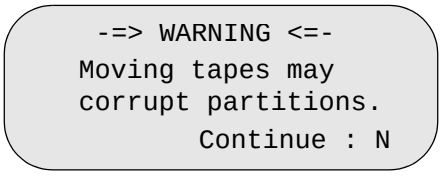


Figure 5-210 Warning Dialog

Parameter	Value
Continue	**Y** to continue **N** to return to the previous menu

*If **Y** is selected for the Continue parameter, the Warning message is removed.*

Advanced Dialog

Path: Main Menu ►Service Menu ►Advanced Dialog

The options on the Advanced Dialog are used by product engineering services and they are password protected. See Figure 5-211.

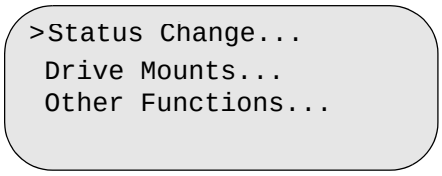


Figure 5-211 Advanced Dialog

After making a selection, the password dialog appears.

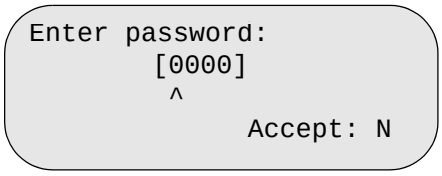


Figure 5-212 Password Dialog

Other Dialog

Path: `Main Menu ►Service Menu ►Other Dialog`

Use the `Other Dialog` to change the Increase GDR and Soft Accel settings for the library.

The Increase GDR setting indicates how many times the scanner must read the same barcode label before it can report a valid barcode number to the library. By default, the scanner reads a barcode label once when performing an inventory, which is indicated by an Increase GDR setting of **N**. To increase the number of times a scanner reads a barcode label from one to three times for an inventory, set the Increase GDR setting to **Y**.

The Increase GDR setting is ignored in all modules that contain 3590, 3480, or NCTP media and all libraries that use the MEDIA ID mode. For libraries that contain AIT, DLT, and LTO media, the Increase GDR setting can be set to **Y**. ADIC recommends setting the Increase GDR to **Y** if you are using AIT media in the DEFAULT or EXTENDED mode. For more information on media modes, refer to *Understanding Barcodes* on page 10.

The Soft Accel setting indicates how fast the Cartridge Accessor accelerates and decelerates when moving along the X-axis. By default, the Cartridge Accessor accelerates and decelerates at a slow speed, which is indicated by a Soft Accel setting of **Y**.

Figure 5-213 Other Dialog

Parameter	Value
Increase GDR	**Y** indicates a GDR of 3 for inventory.
	N indicates a GDR of 1 for inventory.
Soft Accel	**Y** indicates that the Cartridge Accessor accelerates and decelerates at a low speed when moving along the X-axis.

	N indicates that the Cartridge Accessor accelerates and decelerates at a high speed when moving along the X-axis.
Accept	**Y** to accept the changes. **N** to reject the changes.

*If **Y** is selected for the Accept parameter value, the screen updates to reflect the changes. Otherwise, the changed parameters continue to display but no action is taken.*

About Screen

Path: `Main Menu ►About Screen`

The `About Screen` displays your library and RMU firmware version (embedded software). See Figure 5-214 and Figure 5-215.

```
    FIRMWARE LEVEL
  (c) Copyright 2001
Library 640A.XXXXX
RMU   160A
```

Figure 5-214 About Screen (RMU Connected)

```
    FIRMWARE LEVEL
  (c) Copyright 2001
Library 640A.XXXXX
RMU   Not Connected
```

Figure 5-215 About Screen (RMU Not Connected)

6

Processing Media

Overview

This chapter contains information about tape cartridge maintenance, how to insert and eject media, barcode labels, and how to clean media.

Tape Cartridge Maintenance

The library uses magnetic tape cartridge technology to collect, backup, and archive data. Magnetic tape is made of flexible plastic that is coated with ferromagnetic material on one side. Simple care and handling will protect your cartridges.

Tape cartridges can survive years of use in a library environment, but cartridges wear out over time. Worn media can also cause damage to drives and potentially lead to a loss of data. Refer to the media manufacturer's specifications for tape cartridge life.

To reduce the chance of problems with your tape cartridges or damage to your tape drive, follow these guidelines:

- *Inspecting Tape Cartridges* below
- *Handling Tape Cartridges* on page 4
- *Storing Tape Cartridges* on page 4
- *Acclimating Tape Cartridges* on page 5
- *Transporting Tape Cartridges* on page 5

Inspecting Tape Cartridges

Before inserting new cartridges into the library, inspect them for damage caused by shipping or mishandling. For specific instructions about data recovery when media has been damaged, refer to the drive or tape cartridge manufacturer’s specifications.

Inspect tape cartridges in the following situations:

- If a cartridge has been dropped from a height greater than three feet.
- If the tape drive becomes inoperable after loading a tape cartridge.
- If the cartridge has been stored in a dusty environment without a case.

Do not use the tape cartridges in the following situations:

- If there is condensation in or on the cartridge.
- If the cartridge has cracks or other physical damage.
- If the cartridge casing is split at the seams.
- If the leader pin is broken, loose, or dislodged from its housing.

Handling Tape Cartridges

The Scalar 1000 provides extra I/E station magazines and dust covers for handling and storing cartridges. The magazines also allow for inserting and ejecting cartridges to and from the library without library disruption.

Use the following tips when handling cartridges:

- Remove dust on the outside of the cartridges with a damp cloth.
- Do not touch the tape leader.
- Do not expose cartridges to moisture or direct sunlight.
- Do not expose cartridges to magnetic fields.
- Do not open the cartridge door unnecessarily because this can expose the cartridge to contamination or physical damage.
- Do not drop cartridges or subject cartridges to physical shock.

Storing Tape Cartridges

Use the following tips when storing cartridges:

- While cartridges are not in the library, store them in either their protective cases, the IE station magazines with dust covers, or in individual protective cases.
- The storage environment should not exceed temperature and humidity requirements as described in the drive manufacturer specifications.
- When cartridges are stored in an extended archival environment, always orient the cases so that the reel axis is horizontal with the surface on which the cartridges are stored. Use protective cases if storage containers are accommodating.

- Never stack cartridges in a stack of more than five.
- Do not place cartridges on or near devices that may produce magnetic fields such computer monitors or motors. Such exposure can alter or erase data on the cartridge.

Acclimating Tape Cartridges

When media is introduced to a new environment, the media must acclimate to the new environment prior to being used.

- Unpack media if in shipping containers and allow media to acclimate to new environment for 24 hours in protective cases.
- Make sure that there is not any condensation in or on the tape cartridge.
- Make sure that the environmental temperature and humidity is within levels specified per the tape drive specifications.

Transporting Tape Cartridges

The following tips will help you move your tapes from one location to another:

- If you are shipping tape cartridges, ship them in a jewel case or equivalent.
- Place cartridges in plastic wrap to protect them from moisture, dust, and other contaminants.
- When carrying cartridges or shipping them, always orient the cases so that the reel axis is horizontal within the case and shipping box.
- Pack cartridges snugly so that the cartridges do not rattle around.
- Use a rigid box surrounded by adequate shock-absorbent material.
- Clearly mark the box with the proper orientation.

Inserting Media

Two methods of inserting storage cartridges into the library are listed below:

- *Using the Insert/Eject Station* on page 6
- *Manually Inserting Cartridges* on page 7

Using the Insert/Eject Station

Using the Insert/Eject (I/E) Station to insert cartridges does not disrupt library operations. The I/E Station contains two cartridge magazines. To insert cartridges through the I/E Station, follow this procedure.

Step 1 Pull on the handle of the I/E Station.

The I/E Station slides out.

Step 2 Remove the cartridge magazine.

Step 3 Insert the cartridge into the storage cell in the cartridge magazine.

Step 4 Place the cartridge magazine into the I/E Station.

Step 5 Close the I/E Station.

The library locks the I/E Station. The Accessor scans the cartridge magazine and the cartridge. The library unlocks the I/E Station.

Step 6 Move the cartridge to the desired storage cell with the SCSI **MOVE MEDIUM** command from the host.

The Accessor moves the cartridge to the requested storage cell location.

— or —

Issue the **Insert** command from the Operator Panel. Refer to *Insert Screen* on page 5-45.

The Accessor moves the cartridge to the first available storage cell location.

— or —

Issue the Move Media command from the Operator Panel. Refer to *Move Media Dialog* on page 5-39.

The Accessor moves the cartridge to the requested storage cell location.

Manually Inserting Cartridges

STATIC SENSITIVE

There are two levels of access control. The first level is a mechanical key lock. The second level is password protection invoked by the host SCSI **Mode Select** command, LCD Page Security option, or through the Operator Panel Security option.

To manually insert media, follow this procedure.

If enabled, all locks must be disabled before the procedure will succeed.

Step 1 If the password option is enabled, enter the password.

Step 2 Use the Operator Panel to place the library into the NOT READY state. Refer to *Mode Dialog* on page 5-10.

The Accessor completes any current task and returns to the home position.

Step 3 Using the key, unlock and open the library door.

Caution

Step 4 Place the cartridge into the desired storage cell.

Step 5 Close and lock the door.

Step 6 Place the library in the READY state. Refer to *Mode Dialog* on page 5-10.

Step 7 If the library does not perform an inventory within one minute, execute a SCSI **INITIALIZE ELEMENT STATUS** or a library Operator Panel **Inventory** command.

Ejecting Media

Removing media from the library is accomplished by using the I/E Station. Alternately, the cartridge could be manually removed from a specific storage cell location by the operator.

Using the Insert/Eject Station

Using the I/E Station to remove cartridges does not disrupt library operations. To remove cartridges through the I/E Station, follow this procedure.

Step 1 Issue a SCSI **MOVE MEDIUM** command from the host with the source storage cell and the destination I/E Station cell.

— or —

Execute the **Eject** command from the Operator Panel. Refer to *Eject Dialog* on page 5-52.

The I/E Station is locked while the Accessor moves the cartridge. After the move completes, the I/E Station unlocks.

Step 2 Pull on the handle to open the I/E Station.

Step 3 Remove the cartridge magazine from the I/E Station.

Step 4 Remove the cartridge from the storage cell.

Step 5 Replace the cartridge magazine into the I/E Station.

Step 6 Close the I/E Station.

Manually Removing Cartridges

There are two levels of access control. The first is a mechanical lock which is manipulated by the key. The second is password protection which is invoked by either the host SCSI **Mode Select** command, LCD Page Security option, or through the Security option on the Operator Panel.

To manually remove media, follow this procedure.

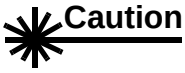
If locks are enabled, all locks must be disabled before the procedure will successfully work.

Step 1 If the password option is enabled, enter the password.

Step 2 Use the Operator Panel to place the library into the NOT READY state. Refer to *Mode Dialog* on page 5-10.

The Accessor completes any current task and returns to the home position.

Step 3 Using the key, unlock and open the library door.



Step 4 Remove the cartridge from the desired storage cell.

Step 5 Close and lock the door.

Step 6 Place the library in the READY state. Refer to *Mode Dialog* on page 5-10.

Step 7 If the library does not perform an inventory within one minute, execute a SCSI **INITIALIZE ELEMENT STATUS** or a library Operator Panel **Inventory** command.

Understanding Barcodes

Each tape cartridge in the Scalar 1000 must have an external label that is operator and machine readable to identify the barcode number. A barcode uses only uppercase letters A-Z and / or numeric values 0-9. The Scalar 1000 supports Code 39 and Storage Technology type barcode labels.

There are three media modes:

- EXTENDED - Labels may have 5 to 16 characters (media identifiers and checksums have no special meaning)
- DEFAULT - Labels may have six characters, or six characters plus one or two media identifier characters.
- MEDIA ID - Labels must have six characters and one or two media identifier characters.

The ½-inch media identifier is a separate single character barcode label that follows the six character label. All other media identifiers are included with the six character VOLSER on the same barcode label. See Table 6-1 on page 11.

Note

The six character AIT barcode labels contain a seventh character checksum, which is ignored in DEFAULT media mode, is reported as A in MEDIA ID mode, and interpreted as part of the barcode in EXTENDED mode.

Table 6-1 Barcode Label Characters

Mode	Media Type	Barcode		Reported to Host[a]		Source
		Volser Characters	Media ID	Domain	Media ID	
Default	All	6	Not required	See below	1, D, or A	
Extended	All	5 - 16	Part of volser	See below	1, D, or A	
Media ID	3480 (1/2)	6	1	0	1	(Tri-Code) American Eagle Systems, Inc. or (Tri-Optic) Engineered Data Products
	3490E (1/2)	6	E	0	E	
	3590 (1/2)	6	J	0	J	
	3590DL[c] (1/2)	6	K	0	K	
	NCTP (1/2)	6	M	0	M	
	CompactTape III	6	C	1	C	Engineered Data Products 1703-0C
	CompactTape IV	6	D	1	D	Engineered Data Products 1703-0D
	CompactTape IIIXT	6	E	1	E	Engineered Data Products 1703-0E
	SDLT tape I	6	S	1	S	Engineered Data Products
	AIT	6	Checksum[b]	2	A	
	AIT-2	6	Checksum[b]	2	A	
	AIT-3	6	Checksum[b]	2	A	
	LTO-1	6	L1	3	1	
	LTO-2	6	L2	3	2	

a. Reported to Host if Extended RES is enabled.
b. AIT cartridges have a checksum instead of a Media ID. The library does NOT use checksum to verify the barcode.
c. DL = 3590 E1A

Barcode Labels

For customers who want to print barcode labels, the labels must meet the ANSI MH10.8M-1983 standard and other additional requirements. The following list outlines the ANSI MH10.8M-1983 standard and additional requirements:

- ANSI MH10.8M-1983 Standard
  - Number of digits:
    - 5 to 16 in extended mode
    - six (seven or eight including media ID characters) in default and media ID mode
  - Background reflection: at least 25 percent
  - Print contrast: at least 75 percent
  - Ratio: at least 2.2
  - Module: 250 mm
  - Print tolerance: ± 57 mm
- Additional requirements
  - Length of the rest zones: a minimum of 5 mm
  - No black marks can be present in the intermediate spaces or rest zones.
  - No white areas may be present on the bars
  - A nine digit barcode must not match the serial number of the extension modules nor the command module (library serial number), otherwise it will be ignored.
  - Each label should be applied in the upper right corner of the tape cartridge recess (in the loaded orientation).
- Quality Testing

Using the Operator Panel, select `Main Menu ►Database ► Config` to get the library serial number. The Expansion Module (EM) serial number can be read from the lower right tab on the first storage section in each frame.

Compliance with these specifications can be checked and documented with the Ergilaser 3000 High Density barcode measuring device that is manufactured by the Laetus Company.

If barcode scanning labels are purchased, the individual media labels are supported if they are acquired from the sources listed in Table 6-2.

Table 6-2 Supported Labels

Media	Label	Source
Model 8490 IBM 3590 NCTP	Tri-Code	American Eagle Systems, Inc.
	Tri-Optic	Engineered Data Products
DLT-III		Engineered Data Products 1703-0C
DLT-IV		Engineered Data Products 1703-0D
DLT-IIIXT		Engineered Data Products 1703-0E
SDLT		Engineered Data Products
AIT Series (8 mm)		Engineered Data Products
LTO		Engineered Data Products

Applying Barcode Labels

All barcode labels are applied to the front of a cartridge. Depending on the media type, barcode labels are either stickers that adhere to the front of the cartridge or are cutouts that slide into an indentation on the front of the cartridge.

See Figure 6-1 on page 14 for more information on applying a barcode label.

Caution

Do not place a barcode label on top of a cartridge. Placing a barcode label on top of a cartridge can cause an inventory to fail.

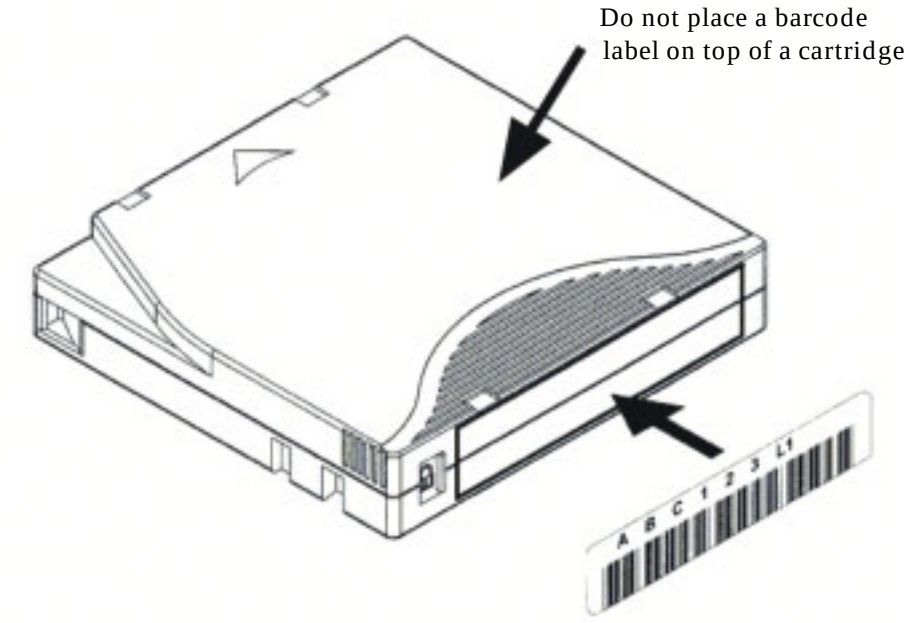


Figure 6-1 Barcode Label Application (LTO example)

Barcode Label Restrictions

Note
Duplicate volsers are not supported even for different media types.

The Scalar 1000 supports a range of media labels. With media ID enabled, some additional restrictions apply.

The label types supported in media ID enabled and media ID disabled are illustrated in Figure 6-2.

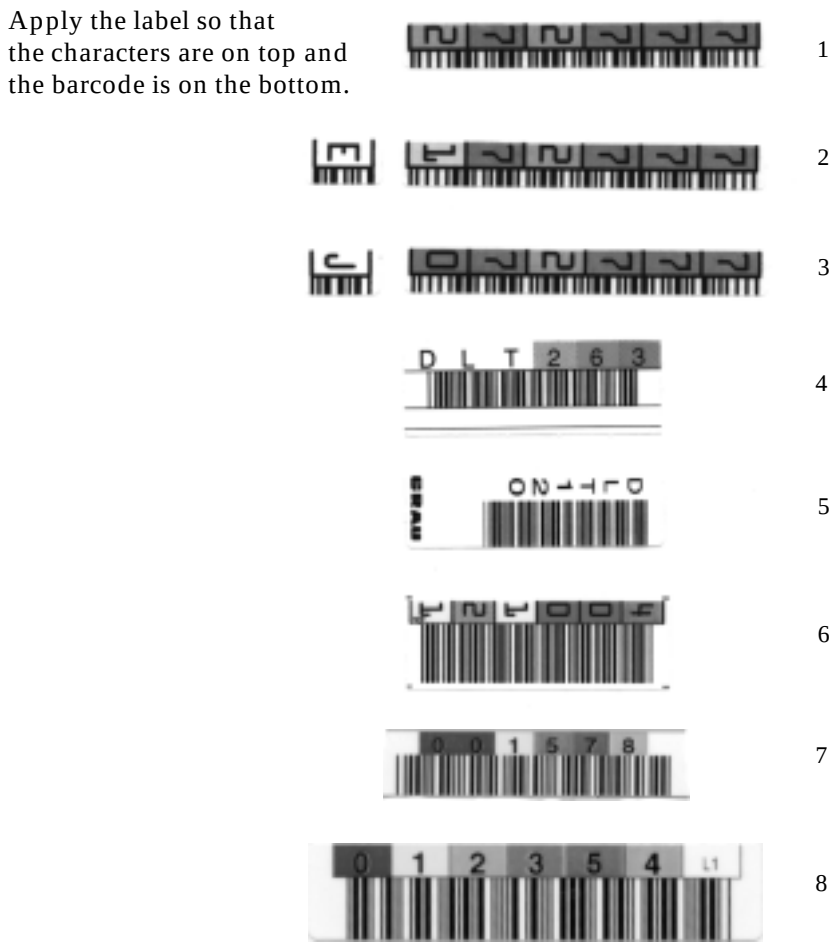


Figure 6-2 Barcode Label Examples

The numeric listing above each label type identifies the restriction associated with the label.

1 This is a six character Tri-Optic forward printed label for a half-inch cartridge. This label can be used only when media ID is disabled.

2	This is a six character Tri-Optic forward printed label with one additional character media identifier for a half-inch cartridge. This label can be used in both media ID enabled and media ID disabled applications.
3	This is a six character Tri-Optic forward printed label with one additional character media identifier for a half-inch cartridge. This label can be used in both media ID enabled and media ID disabled applications.
4	This is a six character Code 39 forward printed label for a DLT cartridge. This label can be used only when media ID is disabled.
5	This is a six character Code 39 forward printed label for a DLT cartridge. This label can be used only when media ID is disabled.
6	This is a seven character Code 39 backward printed label. The embedded additional seventh character identifies the DLT cartridge media type. This label can be used in both media ID enabled and media ID disabled applications.
7	This is a six character plus checksum, forward printed label for an AIT cartridge. This label can be used in both media IE enabled and media ID disabled applications.
8	This is an eight character forward printed label for an LTO cartridge. This label can be used in media ID mode and with media ID disabled.

All labels are restricted to lengths of 5 to 16 characters in extended mode, and 6 characters plus a media identifier in the default and media ID modes. In default mode, the media identifier is ignored by the library firmware. In media ID mode, the media identifier is required.

The seventh or eighth character media identifier may be separate from the barcode label, as in the case of ½-inch media, or may be embedded in the barcode label, as in the case of SDLT / DLT media.

The AIT barcode labels do not provide media identifier characters but contain an embedded checksum character, which will be disregarded by the library firmware in default and media ID modes. In extended mode, the checksums and media identifiers are reported as part of the barcode label.

Cleaning Drives

Note
It is suggested that cleaning tapes have white labels and the first three letters for the Volser number are CLN.

Note
A data tape may be bad if it causes several drives to request cleaning.

Note
A library cleaning tape is a tape that is inserted into the library using the `Insert Cleaning Tape` dialog, or was identified to the library with the `Setup Cleaning Media` dialog.

Most tape drives use a cleaning tape for occasional cleaning. Many cleaning tapes use a mild abrasive to clean the drives read / write head and cleaning too frequently shortens the life of the drive.

If a drive still requests cleaning after it has been cleaned, a drive cleaning failure message appears on the Operator Panel. This message does NOT interfere with library operation but simply notifies the operator to prevent cleaning tapes from being used excessively by a bad drive. The library will not clean the same drive twice in succession.

The library reports a cleaning tape missing if it is removed without using `Eject Clean Tape`.

If this has accidentally been done, use the Operator Panel (Setup ▶Cleaning ▶View) to record the **Max** and **Count** numbers for future use and then **Reset** the entry. The Clean Tape can stay out of the library or be re-introduced using the Insert Cleaning Tape procedure.

There are five ways to clean the drives in a Scalar 1000:

- *Manual Clean without Library Cleaning Tapes*
- *Manual Clean with Library Tapes* on page 19
- *Immediate AutoClean* on page 20
- *Library Delayed AutoClean* on page 21
- *Host Controlled Cleaning* on page 22

Manual Clean without Library Cleaning Tapes

Note
You must supply a cleaning tape, because this cleaning procedure does not use a library cleaning tape.

Use this manual cleaning procedure when the library is full and the cleaning tape space is needed for data tapes.

You can also use this cleaning procedure when there is no library-to-drive communication and the host application is not cleaning the drives. You can physically look at each drive to determine if it requires cleaning, then clean the drive.

After the drive Cleaning Required indicator lights, you should wait no more than 24 hours for a low-activity time, then proceed as follows:

Step 1 Direct the host to remove any tape from the drive and suspend all library activity.

Step 2 Insert a good cleaning tape into the I/E station. Set the library mode to Offline.

Step 3 Using the Operator Panel, go to the Move Media screen (Main Menu ►Commands ►Move ►Move Media) and select the I/E station as **Source**, and the drive as **Target**. Move the cleaning tape to the drive.

When drive cleaning is complete, the drive will eject the cleaning tape. After the tape is ejected, use the Operator Panel to go to the Move Media screen (Main Menu ►Commands ►Move ►Move Media) and select the drive as the **Source** and the I/E as the **Target**. Move the cleaning tape back to the I/E station.

Step 4 Remove the cleaning tape, record its use, and set the library mode to Online. The library is ready for the host to take control and resume normal operation.

Manual Clean with Library Tapes

Note
Be aware that most cleaning cartridges are abrasive and burnish the heads of the drive they are cleaning. Burnishing causes wear on the tape drive heads. Cleaning too frequently can reduce the life of a tape drive.

You must have at least one good cleaning tape entered into the library before beginning this procedure. For further information, refer to *Inserting a Cleaning Cartridge* on page 25 or *Declaring a Cleaning Cartridge* on page 27.

Use this procedure if all of the following are true:

- Host application does not perform drive cleaning.
- Host timeout for moves from the drives is too short to include cleaning.
- The host timeout for moves cannot be extended.
- You do not want to use Delayed Auto Clean.

Advantage:
Of manual cleaning with library tapes over manual cleaning without library tapes is:

- The library counts each time the cleaning tape is used.
- You do not have to know where the cleaning tape is located in the library or how many times it has been used.
- You select the drive, the library automatically cleans the drive and moves the tape back to its storage position.

Note
This procedure uses the library cleaning tapes. Tape use counts will be updated in the library database. There must be library-to-drive communication to use this procedure.

Disadvantage:
Library storage slots are used for cleaning tapes. If you need space in the library, use manual cleaning without library tapes.

After the drive Cleaning Required indicator illuminates, you should wait no more than 24 hours for a low-activity time then proceed as follows:

Step 1 Direct the host to remove any tape from the drive and suspend all library activity.

Step 2 Set the library mode to Offline.

Step 3 Using the Operator Panel, go to the Clean Drives screen (Main Menu ►Utils ►Drives ►Clean Drives), and select the target drive. The library selects a cleaning tape, inserts it into a drive, waits until drive cleaning is complete, returns the cleaning tape to its original location, increments the usage counter, and displays the `Requested command is now complete` message.

Step 4 Set the library mode to Online. The library is ready for the host to take control and resume normal operation.

Immediate AutoClean

Note
Be aware that most cleaning cartridges are abrasive and burnish the heads of the drive they are cleaning. Burnishing causes wear on the tape drive heads. Cleaning too frequently can reduce the life of a tape drive.

You must have at least one good cleaning tape entered into the library before beginning this procedure. For further information, refer to *Inserting a Cleaning Cartridge* on page 25 or *Declaring a Cleaning Cartridge* on page 27.

During a move from a drive to a storage location, a drive reports to the library, that it requires cleaning. If AutoClean is enabled, the library puts the cartridge it is moving into a storage slot, but does not report to the host that the move is complete. Instead, the library selects the cleaning tape and inserts it into the drive.

After the cleaning process is complete, the cleaning tape is ejected and moved back to storage, the use counter increments, and the library reports to the host that the move is complete.

Advantages:
You do not have to set the library offline to clean a drive. Library operation is not interrupted by the cleaning operation.

This procedure checks the drive after every unload and automatically cleans the drive only when necessary.

Some host applications cannot tell when the drive requires cleaning, so they implement cleaning by a load or mount count (for example, after every 50 tape loads or mounts to the drive).

If the load count is too small, it results in unneeded drive cleaning which results in unnecessary head wear, which shortens the life of the drive.

If the load count is too big, the drive may require cleaning but not receive it. This results in dirty heads during read / write operations and possibly lost data.

Disadvantage:
This procedure extends the time to move media from a drive to a storage position. Some drives can take more than 5 minutes to clean. If the host application cannot wait that long, the move operation that contained the cleaning operation fails.

Library storage slots are used for cleaning tapes. If you cannot spare storage slots in the library then you should use manual cleaning without library tapes.

Library Delayed AutoClean

Note
Be aware that most cleaning cartridges are abrasive and burnish the heads of the drive they are cleaning. Burnishing causes wear on the tape drive heads. Cleaning too frequently can reduce the life of a tape drive.

You must have at least one good cleaning tape entered into the library before beginning this procedure. For further information, refer to *Inserting a Cleaning Cartridge* on page 25 or *Declaring a Cleaning Cartridge* on page 27.

Use this procedure to clean your drives at a time of your choice if all of the following are true:

- Host application does not perform drive cleaning
- Host timeout for moves from the drives is too short to include cleaning
- The host timeout for moves cannot be extended

At your preset time, the library checks the drive. If the drive reports to the library that it requires cleaning, and AutoClean is enabled, and the drive is empty, the library selects the cleaning tape and inserts it into the drive.

After the cleaning process is complete, the tape is ejected, moved back to storage, and the use counter is incremented.

Advantage:
Provides extended drive life because it prevents a weak tape from being mistaken for a dirty drive and prevents cleaning the drive too frequently. For additional information, refer to *Immediate AutoClean* on page 20.

Host Controlled Cleaning

Use this procedure if host drive cleaning cannot be disabled. The host application is responsible for defining, using, and tracking cleaning tapes.

Library AutoClean must be disabled. The host must not share the library controlled cleaning tapes because the library does not track host-directed cleaning, and consequently, does not increment the use counter.

Some host applications do not recognize the drive cleaning request. They count the number of loads to determine when to clean. For additional information, refer to *Immediate AutoClean* on page 20.

Enabling Library AutoClean

The host should not share Scalar 1000 controlled cleaning media. If a host uses the Scalar 1000 firmware controlled cleaning media, the Scalar 1000 firmware will not update cleaning media usage information.

Use this procedure to set autoclean. For further information, refer to *Drives Dialog* on page 5-93.

Path: `Setup Menu ►Cleaning Submenu`

Step 1 Follow the path and the Cleaning Submenu appears. See Figure 6-3.

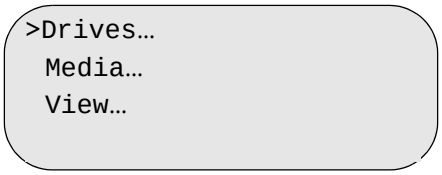


Figure 6-3 Cleaning Submenu

Step 2 Select Drives and the AutoClean dialog appears. See Figure 6-4.

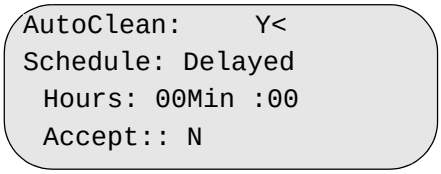


Figure 6-4 AutoClean Dialog

Step 3 Select AutoClean, set the schedule (immediate or delayed), Hours, Min (time to start the cleaning), Accept.

Immediate - every dismount causes the firmware to check for a cleaning request from the drive. If the firmware receives a clean drive request, the drive is cleaned immediately, and the tape move complete response is delayed until the cleaning process is complete.

It is recommended that the host extend the timeout period normally associated with waiting for a dismount response.

Delayed - sets the cleaning process time by setting the Hours and Min option values.

Note

Use the Delayed option for routine or normal downtime because the Scalar 1000 will go NOT READY for the duration of the cleaning operation.

Using Cleaning Cartridges

This section contains the following information:

Inserting a Cleaning Cartridge

Path: `Commands Menu ▶ Insert/Eject Submenu ▶ Insert Clean Tape Dialog`

For further information refer to *Insert Clean Tape Dialog* on page 5-47.

Proceed as follows to move cleaning tapes into the library:

Step 1 Follow the path and the Insert Clean Tape Dialog appears. See Figure 6-5.

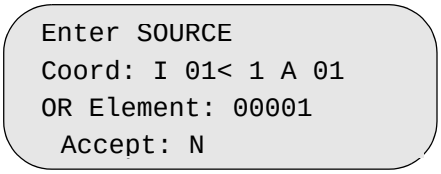


Figure 6-5 Insert Clean Tape Dialog

Step 2 Enter the source Coord, Index, and Accept. The Insert Range Dialog appears. See Figure 6-6.

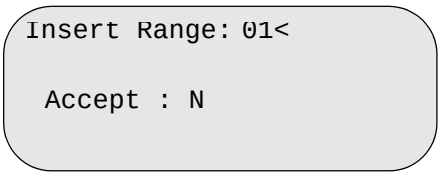


Figure 6-6 Range Dialog

Note
It is possible to use the I/E Station as storage for cleaning media but is not recommended.

Step 3 Enter the number of cells that may contain cleaning tapes in the I/E station (Insert Range), and Accept. See Figure 6-7.

```
Enter TARGET
Coord: S 01< 1 A 01
OR Element: 00001
 Accept : N
```

Figure 6-7 Enter Target Dialog

Note
If the tape type is known to the library, that type is displayed on the Operator LCD, if not, the type must be selected.

Step 4 Enter the Target Coord (the starting address of enough consecutive empty storage cells to contain all of the cleaning tapes in the specified I/E station range), OR Element, and Accept. See Figure 6-8.

```
Type:LTO
Current Usage: 000<
Maximum Usage: 050
 Accept: N
```

Figure 6-8 Current Dialog

Note
Maximum used:
SDLT/DLT = 20
LTO = 50
AIT = 35

Step 5 Enter Current (how many times the cleaning tape has been used), Max (how many times the cleaning tape can be used before it must be ejected), Accept. If several cleaning tapes are inserted, all get the same usage setup. When the insert operation completes the Command Complete Dialog appears. See Figure 6-9.

```
Requested command is
now complete.

Tapes inserted: 001
```

Figure 6-9 Command Complete Dialog

Ejecting a Cleaning Cartridge

You can eject a cleaning cartridge from the library three different ways:

- The Expired Tapes method. Refer to *Expired Tapes* on page 5-55 for more information.
- The Coordinate Dialog method. Refer to *By Coordinate Dialog* on page 5-57 for more information.
- The Volser Dialog method. Refer to *By Volser Dialog* on page 5-60 for more information.

Declaring a Cleaning Cartridge

If a cleaning cartridge has been introduced into the library by means other than Insert Cleaning Tape, use this menu to inform the library that this tape is a Cleaning Tape. For further information, refer to *Media Dialog* on page 5-94.

Path: `Setup Menu ►Cleaning Submenu ►Media Dialog`

Step 1 Follow the path and the Media Dialog appears. See Figure 6-10.

```
Media Type: LTO <
BC : AAAAAA

 Continue: N
```

Figure 6-10 Media Dialog

Step 2 Enter the Media Type (DLT, SDLT, AIT, LTO, 3480 / 90E, 3590, NCTP), BC (Barcode of cleaning tape you want to declare. Use an * for ranges of barcodes). See Figure 6-11.

```
Media Type: LTO <
BC : CLN001

 Continue: N
```

Figure 6-11 Selected Cleaning Tape

Note
It is suggested that cleaning tapes have white labels and the first three letters for the Volser number are CLN.

Step 3 Continue **Y** to accept the changes and the usage dialog appears. See Figure 6-12.

```
Type:LTO
Current Use: 000<
Max Use: 050
 Accept: N
```

Figure 6-12 Usage Dialog

Step 4 Enter Current Use (how many times the cleaning tape has been used), Maximum Use (how many times the cleaning tape can be used), and Accept.

Viewing Cleaning Cartridge Status

Check to see the status of your cleaning tapes. For further information, refer to *View Dialog* on page 5-96.

Path: `Setup Menu ▶Cleaning Submenu ▶View Dialog`

Step 1 Follow the path and the View Dialog appears to show you the BC number, Status (Reset, Expired, In Progress, Missing, or Valid), Max (times you can use the tape), Count (how many times the tape has been used), Index (clean tape entry order), and Reset (to change the Status to Reset).
See Figure 6-13.

```
BC: CLN001
Status: Reset
Max: 000 Count: 000
Index: 001<RESET: N
```

Figure 6-13 View Dialog

7

Error Messages

Overview

When a failure occurs, the Scalar 1000 firmware performs error recovery and reporting. If the failure requires a service call, Service Action Codes (SACs) are generated and posted to the Operator Panel. When operator intervention is required, a message is generated at the Operator Panel.

This chapter is organized as follows:

Service Action Codes

Table 7-1 lists the SACs and the corresponding actions that can be performed by an operator.

Reboot the library to see if the problem goes away. If the problem still exists, perform the actions listed for the SAC in the order presented, starting with Action 1 and continuing down the list until the problem is resolved or you are instructed to call the ATAC.

Table 7-1 SAC Reporting

Reported SAC	Perform these actions
01	**Type 1 library software errors including microcode and operating system errors.**
	Action 1 To recover from the error, shutdown and restart the library by using the Operator Panel (`Main Menu ►Mode Dialog`) or the Main Circuit Breaker switch on the AC Power Compartment in the lower right corner at the back of the CM. For more information, refer to *Shutting Down the Scalar 1000* on page 4-9 and *Starting the Scalar 1000* on page 4-7. **Note: Wait at least one minute between powering off and powering on the library.** **Action 2** If the problem is not corrected or persists, retrieve command and error log information. Refer to *Viewing Diagnostic Files (Library and RMU Logs)* on page 4-20 for information on how to retrieve logs. **Action 3** Contact ATAC. Refer to *ADIC Technical Assistance Center* on page 1-5 for ATAC contact information.

Table 7-1 SAC Reporting (Continued)

Reported SAC	Perform these actions
02	**Type 2 library software errors including microcode and operating system errors.**
	Action 1 To recover from the error, shutdown and restart the library by using the Operator Panel (`Main Menu ▶Mode Dialog`) or the Main Circuit Breaker switch on the AC Power Compartment in the lower right corner at the back of the CM. For more information, refer to *Shutting Down the Scalar 1000* on page 4-9 and *Starting the Scalar 1000* on page 4-7. **Note: Wait at least one minute between powering off and powering on the library.** **Action 2** If the problem is not corrected or persists, retrieve command and error log information. Refer to *Viewing Diagnostic Files (Library and RMU Logs)* on page 4-20 for information on how to retrieve logs. **Action 3** Contact ATAC. Refer to *ADIC Technical Assistance Center* on page 1-5 for ATAC contact information.
03	**Type 3 library software errors including microcode and operating system errors.**
	Action 1 To recover from the error, shutdown and restart the library by using the Operator Panel (`Main Menu ▶Mode Dialog`) or the Main Circuit Breaker switch on the AC Power Compartment in the lower right corner at the back of the CM. For more information, refer to *Shutting Down the Scalar 1000* on page 4-9 and *Starting the Scalar 1000* on page 4-7. **Note: Wait at least one minute between powering off and powering on the library.** **Action 2** If the problem is not corrected or persists, retrieve command and error log information. Refer to *Viewing Diagnostic Files (Library and RMU Logs)* on page 4-20 for information on how to retrieve logs. **Action 3** Contact ATAC. Refer to *ADIC Technical Assistance Center* on page 1-5 for ATAC contact information.

Table 7-1 SAC Reporting (Continued)

Reported SAC	Perform these actions
04	**Type 4 library software errors including microcode and operating system errors (the errors are not mapped).**
	Action 1 To recover from the error, shutdown and restart the library by using the Operator Panel (`Main Menu ►Mode Dialog`) or the Main Circuit Breaker switch on the AC Power Compartment in the lower right corner at the back of the CM. For more information, refer to *Shutting Down the Scalar 1000* on page 4-9 and *Starting the Scalar 1000* on page 4-7. **Note: Wait at least one minute between powering off and powering on the library.** **Action 2** If the problem is not corrected or persists, retrieve command and error log information. Refer to *Viewing Diagnostic Files (Library and RMU Logs)* on page 4-20 for information on how to retrieve logs. **Action 3** Contact ATAC. Refer to *ADIC Technical Assistance Center* on page 1-5 for ATAC contact information.
05	**A permanent library software error occurred.**
	Action 1 To recover from the error, shutdown and restart the library by using the Operator Panel (`Main Menu ►Mode Dialog`) or the Main Circuit Breaker switch on the AC Power Compartment in the lower right corner at the back of the CM. For more information, refer to *Shutting Down the Scalar 1000* on page 4-9 and *Starting the Scalar 1000* on page 4-7. **Note: Wait at least one minute between powering off and powering on the library.** **Action 2** If the problem is not corrected or persists, retrieve command and error log information. Refer to *Viewing Diagnostic Files (Library and RMU Logs)* on page 4-20 for information on how to retrieve logs. **Action 3** Contact ATAC. Refer to *ADIC Technical Assistance Center* on page 1-5 for ATAC contact information.

Table 7-1 SAC Reporting (Continued)

Reported SAC	Perform these actions
10	**Barcode scanner communications failed.**
	Action 1 To recover from the error, shutdown and restart the library by using the Operator Panel (`Main Menu ▶Mode Dialog`) or the Main Circuit Breaker switch on the AC Power Compartment in the lower right corner at the back of the CM. For more information, refer to *Shutting Down the Scalar 1000* on page 4-9 and *Starting the Scalar 1000* on page 4-7. **Note: Wait at least one minute between powering off and powering on the library.** **Action 2** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
11	**Barcode scanner communications is OK, data received from the Barcode scanner is bad.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
12	**Barcode scanner communication is OK, barcode scanner reports that data is bad.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
13	**Cannot read tape cartridge barcode label.**
	Action 1 Check the tape cartridge barcode label to ensure that it meets specifications and is installed properly. Refer to *Understanding Barcodes* on page 10 for more information. Look for the following: • A damaged or dirty label • Library not configured for correct media mode • Too few (less than 5) or too many (more than 16) characters on the barcode label. The cell in question is displayed with the SAC. **Action 2** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.

Table 7-1 SAC Reporting (Continued)

Reported SAC	Perform these actions
14	**Cannot read the Serial Number label during a Teach operation.**
	Action 1 Check the Serial Number barcode label to make sure that it is installed properly and not damaged or dirty. The Serial Number barcode label is located on the lower right corner of the first 5x10, 5x12, or 5x15 Storage Assembly in the CM (below the Teach Master barcode label). The Serial Number barcode label contains a barcode and readable serial number. Example: 201100031. **Action 2** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
15	**The Barcode scanner is not capable of fully supporting all different labels in a Mixed-Media Library.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
20	**Serial Port Connection failures.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
21	**NVRAM failures.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
22	**Failure to communicate with the Operator Panel.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
23	**An unexpected interrupt is received.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.

Table 7-1 SAC Reporting (Continued)

Reported SAC	Perform these actions
30	**A fatal error is detected in SCSI Port 0.**
	Action 1 Verify that the library Port 0 is configured by using the Operator Panel. (`Main Menu ►Setup ►Library ►SCSI ►Ports`). Verify that it is installed and that the correct type is shown. **Action 2** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
31	**A fatal error is detected in SCSI Port 1.**
	Action 1 Verify the Library SCSI Port 1 is properly configured by using the Operator Panel. (`Main Menu ►Setup ►Library ►SCSI ►Ports`). Verify that it is installed and that the correct type is shown. **Action 2** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
32	**Wrong SCSI bus connection is detected.**
	Action 1 Verify that the Host SCSI bus is the same type (HVD, LVD, or SE) as the Library SCSI Adapter card in Port 0 by using the Operator Panel. (`Main Menu ►Setup ►Library ►SCSI ►Ports`) **Action 2** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
33	**Wrong SCSI bus connection is detected.**
	Action 1 Verify that the Host SCSI bus is the same type (HVD, LVD, or SE) as the library SCSI Adapter card in Port 1 by using the Operator Panel. (`Main Menu ►Setup ►Library ►SCSI ►Ports`) **Action 2** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.

Table 7-1 SAC Reporting (Continued)

Reported SAC	Perform these actions
34	**A general SCSI failure is detected.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
35	**A fatal SCSI error is detected but the Port is unknown.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
39	**An Ethernet Network error was detected by the Remote Management Unit (RMU).**
	Action 1 Make sure the Ethernet cable is properly connected to the RMU and that you have a valid link and activity LEDs illuminated on the Ethernet port. **Action 2** Verify that the network the RMU is connected to is working properly. **Action 3** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
40	**The Library Aisle power cannot be enabled.**
	Action 1 Check that all front doors are closed and properly locked. **Action 2** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
41	**The Library Aisle power cannot be disabled, failures are detected in the Digital In/Digital Out (DI/DO) circuitries.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
42	**A wrong library configuration is detected, the data reporting the number of frames (modules) installed is different than expected.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.

Table 7-1 SAC Reporting (Continued)

Reported SAC	Perform these actions
43	**An unknown library configuration id detected, the barcode scanner is unable to read the fiducial label located in the 4x12 (4x18 AIT) or the 5x12 (5x18 AIT) Storage Assembly during a Teach operation. See Figure 2-2 on page 2-9 for more information on Storage Assembly locations.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
44	**An unknown fiducial label is detected during a Teach operation.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
45	**During a Get or Put operation, the calculated X position exceeded the allowable limits.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
46	**During a Get or Put operation, the calculated Y position exceeded the allowable limits.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
50	**A tape cartridge is not properly seated in the storage cell.**
	Action 1 Make sure the tape cartridge in question is properly installed in its storage cell. **Action 2** Reteach the library using the Operator Panel. (`Main Menu ▶Service ▶Teach ▶Teach New`) **Action 3** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.

Table 7-1 SAC Reporting (Continued)

Reported SAC	Perform these actions
60	**Cannot complete Lock/Unlock I/E station commands.**
	Action 1 Open and close the I/E Station and observe the I/E locked indicator on the Operator Panel. The I/E lock LED should remain illuminated while the I/E Station is locked. See Table 4-1 on page 4-5 for more information on the I/E locked indicator. **Action 2** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
61	**The Insert/Eject Station Door Closed Sensor error threshold is exceeded.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
70	**Failures detected in the Gripper Assembly Finger Open operation.**
	Action 1 Perform a Teach Current operation (`Main Menu ►Service ►Teach ►Teach Current`). **Action 2** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
71	**Failures detected in the Gripper Assembly Finger Close operation.**
	Action 1 Reboot the library. Refer to *Shutting Down the Scalar 1000* on page 4-9 and *Starting the Scalar 1000* on page 4-7 for more information. **Action 2** Perform a Teach Current operation (`Main Menu ►Service ►Teach ►Teach Current`). **Action 3** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.

Table 7-1 SAC Reporting (Continued)

Reported SAC	Perform these actions
72	**A Get command is issued but the sensor indicated that a cartridge is already present in the Gripper Assembly.**
	Action 1 Look into the Gripper Assembly and see if a cartridge is present. **Action 2** If a cartridge is found, perform the actions in SAC **E0**. **Action 3** Perform a Teach Current operation (`Main Menu ►Service ►Teach ►Teach Current`). **Action 4** If no cartridge is found in the Gripper Assembly, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
73	**Failures detected in the Gripper Assembly Touch Tip operation.**
	Action 1 Perform a Teach Current operation (`Main Menu ►Service ►Teach ►Teach Current`). **Action 2** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
74	**A Get command is issued but the sensor indicated that the location is empty.**
	Action 1 Check the location (storage cell or drive) to see if a cartridge is present. **Action 2** If no cartridge is found in the location, perform the actions in SAC **02.** **Action 3** Perform a Teach Current operation (`Main Menu ►Service ►Teach ►Teach Current`). **Action 4** If a cartridge is found, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.

Table 7-1 SAC Reporting (Continued)

Reported SAC	Perform these actions
75	**A failure is detected in the Gripper Assembly.**
	Action 1 Perform a Teach Current operation (`Main Menu ►Service ►Teach ►Teach Current`). **Action 2** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
76	**A Teach failure is caused by the Accessor out of alignment condition.**
	Action 1 Perform a Teach Current operation (`Main Menu ►Service ►Teach ►Teach Current`). **Action 2** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
77	**Failures detected in the Gripper Assembly during a Retract operation.**
	Action 1 Perform a Teach Current operation (`Main Menu ►Service ►Teach ►Teach Current`). **Action 2** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.

Table 7-1 SAC Reporting (Continued)

Reported SAC	Perform these actions
78	**A Put command is issued but the sensor indicated that the cartridge is not present in the Gripper Assembly.**
	Action 1 Check the Gripper Assembly and see if a cartridge is present. **Action 2** Perform a Teach Current operation (`Main Menu ►Service ►Teach ►Teach Current`). **Action 3** Do one of the following: • If a cartridge is found, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5. • If no cartridge is found in the Gripper Assembly, perform the actions in SAC **02**.
79	**Failures detected in putting a cartridge into a SDLT/DLT tape drive.**
	Action 1 Check the SDLT / DLT tape drive to ensure that it is powered on and working properly. Refer to the SDLT / DLT Maintenance Guide for any SDLT / DLT drive problem. **Action 2** Perform a Teach Current operation (`Main Menu ►Service ►Teach ►Teach Current`). **Action 3** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
7A	**Failures detected in the Gripper Assembly Reach/Retract operations.**
	Action 1 Perform a Teach Current operation (`Main Menu ►Service ►Teach ►Teach Current`). **Action 2** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.

Table 7-1 SAC Reporting (Continued)

Reported SAC	Perform these actions
7B	**Failure detected in a Teach Master operation. This failure is most likely to occur when a Teach operation is executed as part of the Installation process or during machine power up.**
	Action 1 Perform a Teach Current operation (`Main Menu ►Service ►Teach ►Teach Current`). **Action 2** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
7C	**Failures detected in the Gripper Assembly Reach operation.**
	Action 1 Check for obstruction in the cell. Obstruction can be an unlabeled cartridge or a cartridge in the cell during a Put operation. **Action 2** Perform a Teach Current operation (`Main Menu ►Service ►Teach ►Teach Current`) **Action 3** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
7D	**Failures detected while getting a cartridge from the Tape Drive.**
	Action 1 Check for a tape in the tape drive and do one of the following: • If there is a tape cartridge in the tape drive, manually eject it, insert it in the I/E Station, and retry the operation that failed. • If there is not a tape cartridge in the tape drive, continue with Action 2. **Action 2** Perform a Teach Current operation (`Main Menu ►Service ►Teach ►Teach Current`). **Action 3** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.

Table 7-1 SAC Reporting (Continued)

Reported SAC	Perform these actions
7E	**Failures detected while pushing a cartridge into a tape drive feed slot.**
	Action 1 Check the cartridge for any physical damage. **Action 2** Perform a Teach Current operation (`Main Menu ►Service ►Teach ►Teach Current`). **Action 3** If there is no physical damage to the cartridge, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
80	**Failures detected in the X-Axis Servo system.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
81	**Failures detected in the Y-Axis Servo system.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
82	**An unexpected Motors Control condition was received.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
83	**The Locate Fiducial Command failed with no target found. This failure happens most likely during an initial installation of the library.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
84	**Y-Axis failed to reach target.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.

Table 7-1 SAC Reporting (Continued)

Reported SAC	Perform these actions
85	**X-Axis failed to reach target.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
86	**The first full speed move command issued when the Accessor is at home position failed.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
87	**The Accessor cannot move away from the X-Axis home position.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
88	**The Accessor cannot move away from the Y-Axis home position.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
90	**An LSC1 card was detected by the Library firmware when an LSC2 card is required for this Library configuration to operate.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
91	**An LMC1 card was detected by the Library firmware when an LMC3 card is required for this Library configuration to operate.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
92	**An LBI1 card was detected by the Library firmware when an LBI2 card is required for this Library configuration to operate.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.

Table 7-1 SAC Reporting (Continued)

Reported SAC	Perform these actions
93	**A failure was detected in the drive communication hardware within the Library. The Library cannot communicate with one or more tape drives (note the physical location of the failing tape drive. This information is presented with the SAC).**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
94	**Communication was established between the Library and the tape drive but the Library cannot determine the status of a particular tape drive.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
96	**The Library detected a tape drive hardware failure.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
97	**Firmware detected that the LGR card installed in the Library can not be used with this level of firmware. One of the following conditions exist:** • A new level of firmware is installed in a Library with an old-style gripper and old style LGR card. • The library is upgraded to the new style gripper and LGR card but does not have the latest level of firmware installed.
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
A0	**An error has been detected in the communication path between the Library Controller and the RMU.**
	Action 1 Verify the Trace output is set to NONE/RMU (`Main Menu` ► `Setup` ►`Library` ►`Trace Dialog`). Refer to *Trace Dialog* on page 5-78 for more information. **Action 2** If the problem is not corrected or persists, contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.

Table 7-1 SAC Reporting (Continued)

Reported SAC	Perform these actions
D0	**The Library detected that one of the DC Power supplies has failed. This error condition only occurs in Libraries equipped with the Redundant DC Power Supplies Feature.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
D1	**The Library detected that AC input to one bank of the DC Power supplies is missing. This error condition only occurs in Libraries equipped with the Redundant DC Power Supplies Feature.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
F0	**Failures were detected while running the diagnostic loop test from the LSC card to the LMC card.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
F1	**Failures were detected while running the diagnostic loop test from the LSC card to the LPN1 card.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
F2	**Failures were detected while running the diagnostic loop test from the LSC card to the LGR card.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
F3	**Failures were detected while running the diagnostic loop test from the LSC card to all sensors on the Gripper Assembly.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.

Table 7-1 SAC Reporting (Continued)

Reported SAC	Perform these actions
F4	**Failures were detected while running the diagnostic loop test from the LSC card to all sensors on the Insert/Eject Station.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
F5	**Failures were detected while running the diagnostic loop test from the LSC card to the X-Axis home sensor.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
F6	**Failures were detected while running the diagnostic loop test from the LSC card to the Y-Axis home sensor.**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
F7	**Failures detected in the LSC card during Power On Self Test (POST).**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
F8	**Failures detected in the LMC card during Power On Self Test (POST).**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
F9	**Failures detected in the LGR card during Power On Self Test (POST).**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.
FA	**Failures detected in the LAM1 card during Power On Self Test (POST).**
	Action 1 Contact ATAC. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.

Table 7-1 SAC Reporting (Continued)

Reported SAC	Perform these actions
FB	**Preventive Maintenance is required.**
	Action 1 Contact ATAC to schedule Preventive Maintenance. For contact information, refer to *ADIC Technical Assistance Center* on page 1-5.

Operator Intervention Messages

Table 7-2 describes some of the operator intervention messages. Each intervention message is composed of four lines. The third and / or fourth lines may contain variable information specific to the message. For SAC indications, refer to *Service Action Codes* on page 7-3. For Code error modifiers, refer to the *Scalar 1000 Maintenance Guide*.

Table 7-2 Operator Intervention Messages

Message Lines	Variables
Alert not found. Press Enter.	None
WARNING! The accessor could not be parked. [OK]	None
WARNING! Moving tapes may corrupt partitions. Continue: %X	%X = Y to continue
-=>ERROR!<=- Initialization Error Code: 0x%X	%X = 8 digits hex error modifier
-=>PERM ERROR!<=- CALL FOR SERVICE SAC :%X Code:0x%Y	%X = 2 digit hex %Y = 8 digit hex error modifier
-=>PERM ERROR!<=- SYSTEM WILL REBOOT SAC :%X Code:0x%Y	%X = 2 digit hex %Y = 8 digit hex error modifier
->SYSTEM REBOOTED<- NEW CODE LOADED Version %XXXX.%YYYYY	current version %X = 4 digit major rev %Y = 5 digit minor rev
->SYSTEM REBOOTED<- RECOVERED FROM ERROR SAC :%X Code:0x%Y	%X = 2 digit hex %Y = 8 digit hex error modifier

Table 7-2 Operator Intervention Messages (Continued)

Message Lines	Variables
->SYSTEM REBOOTED<- CALL FOR SERVICE SAC :%X Code:0x%Y	%X = 2 digit hex %Y = 8 digit hex error modifier
->TOO MANY ERRORS!<- CALL FOR SERVICE SAC :%X Code:0x%Y	%X = 2 digit hex %Y = 8 digit hex error modifier
->ATTENTION!<- PM SERVICE DUE Please call to schedule maintenance	None
INTERVENTION NEEDED! Please open and close the I/E station door again.	None
INTERVENTION NEEDED! Unexpected door open detected. Check all doors for closure.	None
INTERVENTION NEEDED! Single-ended device detected on diff. SCSI bus port 0.	None
INTERVENTION NEEDED! Single-ended device detected on diff. SCSI bus port 1.	None
INTERVENTION NEEDED! Check SCSI bus port0 connector and/or termination.	None
INTERVENTION NEEDED! Check SCSI bus port1 connector and/or termination.	None

Table 7-2 Operator Intervention Messages (Continued)

Message Lines	Variables
INTERVENTION NEEDED! Remove cartridge in gripper, place back into storage.	None
INTERVENTION NEEDED! Storage may be full, or IE magazine types may be incorrect.	None
SERVICE MODE Cannot go online Replace Terminator	None
BAD MEDIA Cannot get type. Please label media. Cell %X (%Y %Z %A %B)	%X = index number %Y = frame number %Z = section letter %A = column number %B = row number
INTERVENTION NEEDED! Remove cartridge from cell. Cell %X (%Y %Z %A %B)	%X = index number %Y = frame number %Z = section letter %A = column number %B = row number
CELL IS OBSTRUCTED Please check to see if cell is empty. Cell %X (%Y %Z %A)	%X = index number %Y = frame number %Z = section letter %A = column number %B = row number
CELL IS EMPTY Please check to see if cell is full. Cell %X (%Y %Z %A %B)	%X = index number %Y = frame number %Z = section letter %A = column number %B = row number
LBI2 COMM FAILED Please correct the interface. Box: %X	%X = frame number

Table 7-2 Operator Intervention Messages (Continued)

Message Lines	Variables
DRIVE COMM FAILED Please verify drive communication path. Drive %X (%Y %Z %A %B)	%X = index number %Y = frame number %Z = section letter %A = column number %B = row number
DRIVE SCSI ID FAILED Please verify drive SCSI ID setting for drive %X (%Y %Z %A %B)	%X = drive number %Y = frame number %Z = section letter %A = column number %B = row number
BUTTON PUSH FAILED Please correct drive push-button state. Drive %X (%Y %Z %A %B)	%X = index number %Y = frame number %Z = section letter %A = column number %B = row number
TAPE PUSH FAILED Please remove tape from drive. Drive %X (%Y %Z %A %B)	%X = index number %Y = frame number %Z = section letter %A = column number %B = row number
CLEAN TAPE MISSING A previously defined tape is missing: volser %X	%X = volser number
CLEAN TAPE EXPIRED Please remove the cleaning tape number %X volser %Y.	%X = tape number %Y = volser number
WARNING! The accessor could not be parked. [OK]	None
NO CLEANING TAPE Please insert a cleaning tape for drive %X.	%X = index number
INTERVENTION NEEDED! Locate dropped cartridge, place back into storage.	None

Table 7-2 Operator Intervention Messages (Continued)

Message Lines	Variables
DRIVE CLEAN FAILED A cleaning operation failed to clean	None
POWER SUPPLY ERROR Check AC connection and 24V converter number %X	%X = 24 Volt Converter Number
POWER SUPPLY ERROR Check AC connection and 48V converter number %X	%X = 48 Volt Converter Number
POWER SUPPLY ERROR Check AC box and AC connection to primary/second DC supplies	None
INVALID LABEL Please check cart. for valid label %X %Y (%Z %A %B %C)	%X = type ID %Y = index number %Z = frame number %A = section letter %B = column number %C = row number
DRIVE INIT FAILED Please correct drive initialization for drive %X (%Y %Z %A %B)	%X = index number %Y = frame number %Z = section letter %A = column number %B = row number

Error Log Codes

If an error occurs, record the error information from the Error Log screen for future reference. Refer to *Error Log Dialog* on page 5-28.

Table 7-3 Error Log Reporting

Type	Error	Modifier	Date Error Occurred

Index

- E -

- G -

- H -

- I -

- L -

- M -

- N -

- O -

- P -

- R -

- S -

- T -

- U -

- V -