

 Information the way you want it	Disc Tape Software	Site Index	Power Search				
		search					
Support	Employment	Investor Relations	Press Room	Sales	Dealer Locator	Where to Buy	Contact Seagate

Python 4586NP

Python 4mm DAT Autoloader (DDS-2) 5.25-inch x full height internal Tape Drive. Capacity: native 16.0 gigabytes using 120-Meter Tapes with 4-cassette magazine, up to 96.0 gigabytes using 12-cassette magazine with hardware compression. SCSI-2 Interface, Single-ended, async/sync transmission. Performance: 400 Kbytes/sec native, 800 Kbytes/sec with compression Transfer Rate, 1 Mbytes Buffer. Flashable Firmware EEPROM

NOTE! This model number may apply to another drive. Check firmware. See Peregrine 4586NP, if drive has 5.xx-400 firmware.

[Peregrine 4586NP](#)

[FAQs](#)[Operations](#)[Spec Sheet](#)[Media](#)[Jumpers/Switches](#)[Cable/Term](#)[Software](#)[Controller](#)[Firmware](#)[Accessories](#)[Maintenance](#)

Disc	Tape	Software						
	Support	Employment	Investor Relations	Corporate	Sales	Dealer Locator	Where to Buy	Contact Us

The following table lists pin assignments for the power connector for the 4586NP Autoloader.

<i>Pin</i>	<i>Assignment</i>
1	+12 VDC
2	+12 return
3	+5 return
4	+5 VDC

4586NP Autoloader Performance Specifications

The following table lists performance specifications for the 4586NP Autoloader.

<i>Feature</i>	<i>Specification</i>
Capacity—single cartridge (without data compression)	1.3 gigabytes (GB) on a 60 meter (m) DAT cartridge 2.0 GB on a 90 m DAT cartridge
Capacity—4 cartridge magazine (without data compression)	5.2 GB on 60 m DAT cartridges 8.0GB on 90 m DAT cartridges
Capacity—single cartridge (with data compression)	2.6 GB on a 60 m DAT cartridge (typical) 5.2 GB on a 60 m DAT cartridge (maximum ¹) 4.0 GB on a 90 m DAT cartridge (typical) 8.0 GB on a 90 m DAT cartridge (maximum ¹) 4.0 GB on 120 m MP+ cartridge (DDS-2)
Capacity—4 cartridge magazine (with data compression)	10.4 GB with 60 m DAT cartridge (typical) 20.8 GB with 60 m DAT cartridges (maximum ¹) 16.0 GB with 90 m DAT cartridges (typical) 32.0 GB with 90 m DAT cartridges (maximum ¹) 16.0 GB with 120 m MP+ cartridges (DDS-2)
Recording density	61,000 bits/inch
Flux density	76,250 flux transfers/inch
Track packing density	1,869 tracks/inch (DDS and DDS-DC) 2,804 tracks/inch (DDS-2)
Areal density	171 Megabits/square inch
Error recovery	Read-after-write Reed Solomon ECC (C3—3 levels)
Recording unrecoverable errors	Less than 1 in 10 ¹⁵ data bits
Tape drive type	Computer grade 4 direct drive (4DD) mechanism
Head configuration	2 read heads, 2 write heads
Recording format (without data compression)	ANSI/ECMA DDS
Recording format (with data compression)	ANSI/ECMA DDS-DC/DDS-2DC (DCLZ)
Recording media	4-mm DAT tape (qualified media recommended) 4-mm MP+ tape (qualified media recommended)
Recording method	Helical scan (R-DAT)
Cartridge	29 in. x 2.1 in. x 0.4 in.

¹Nominal maximum only; can be exceeded for highly compressible data.



Configuring Internal DAT Autoloader - 4586NP

The 4586NP Autoloader can be installed horizontally (facing up only) or vertically with the left side down.

Setting SW1 Switchbank Operational Switches

Before you install the Autoloader in the computer, you must check the switch settings on switchbank SW1. You must also consider the termination requirements for your installation and make any adjustments necessary.

Set the configuration switches (SW1 switches 1 through 8) which can be accessed at the rear of the drive. These switches allow you to set up the following configuration options:

- SCSI device address (S1 through S3)
Default = SCSI ID 0 (S1 through S3 = OFF)
- Media Recognition System (MRS) mode (S4)
Default = MRS OFF (S4 = ON)
- Parity check enable/disable (S5)
Default = Parity disabled (S5 = OFF)
- DDS pass-through mode enable/disable (S6)
Default = Pass-through mode disabled / (DDS-DC data compression is ENABLED)(S6=OFF)
- Switch S7 is reserved and must be in the OFF position.
- Power-on self-test enable/disable (S8)
Default = Power-on self-test disabled (S8 = OFF)

If you need to change any default settings, refer to the following information:

Note: The drive must be turned OFF, then ON in order for the switch settings to take effect, or a SCSI bus reset must be received.

SCSI Device Address (S1 through S3)

The three switches S1 through S3 correspond to the SCSI device address identification bits 0 (LSB) through 2 (MSB), respectively, which provides the SCSI ID. The default setting is SCSI device address 0 (S1 through S3 = OFF).

- **Note 1: The Autoloader uses a single SCSI ID.**

Note 2: Each SCSI device on a bus must have a unique SCSI ID. The SCSI host controller generally uses ID 7. In some systems, the boot drive uses ID 0.

Note 3: If you set the SCSI ID by these switches, you must leave the jumper settings for External SCSI ID set to 0. (See Section below – External SCSI Address Port)

Media Recognition System (MRS)(S4)
The S4 switch enables or disables Media Recognition System (MRS) mode. The default is MRS disabled (S4 = ON).

S4 = ON disables MRS
S4 = OFF enables MRS

- **Note 1: If S4 is ON, the drive reads or writes both MRS and non-MRS 4-mm media.**

Note 2: If S4 is OFF, the drive only writes to MRS media. The drive reports a check condition if the media is non-data grade, and the Sense Key will be 07, Data Protect. The additional Sense Code and qualifier will be 30/ 00, Incompatible Media Installed. The drive reads any kind of 4-mm media when S4 is OFF.

Note 3: Use of non-DDS media might appear to give satisfactory results, but the inferior specifications of such media might cause data integrity problems.

Parity Enable/Disable (S5)
The S5 switch enables or disables parity checking for the SCSI bus. The default is parity disabled (S5 = OFF).
S5 = ON enables parity checking
S5 = OFF disables parity checking

DDS Pass-Through Mode Enable/Disable (S6)

The S6 switch enables or disables DDS pass-through mode. The default is DDS pass-through mode disabled (S6=OFF).
S6 = ON enables DDS pass-through mode (DDS-DC Data Compression is DISABLED.)
S6 = OFF disables DDS pass-through mode (DDS-DC Data Compression is ENABLED.)

- **Note 1: When S6 is OFF, DDS-DC data compression is enabled during writing. When S6 is ON, DDS-DC data compression is disabled. When being read by the Autoloader, DDS-DC compressed data is always decompressed, regardless of the position of S6.**

Note 2: The function of the S6 switch can be over-ridden by the proper SCSI MODE SELECT command* issued from the host computer. Regardless of the position of S6, the MODE SELECT command can enable or disable data compression.

Reserved Switch (S7)

The S7 switch is reserved and should be left in its factory default setting.

Power-on Self-Test Mode Enable/Disable (S8)

The S8 switch enables or disables execution of power-on self-test diagnostics when the power comes ON. If ON, the drive will only respond to SCSI commands after successful completion of the test (about 5 seconds).

S8 = ON enables power-on self-test mode

S8 = OFF disables power-on self-test mode (Default)

Setting Termination and Other Switches

Single-ended Terminators

The last unit in a daisy chain of SCSI devices must have terminators installed. Two terminator single-inline packages (SIPs) are available. When you install the terminator, be sure to align pin 1 on the terminator sockets with pin 1 on the SIPs.

Terminator Power

A 2-pin header (JP4), accessible through the cutout, allows you to enable +5-volt terminator power if needed for terminators or other SCSI devices.

- The factory default for the Autoloader is with terminator power disabled (jumper shunt over one pin), which is normal operation.
- To enable terminator power, place the jumper shunt over the two pins. Be sure it is firmly in place.

caution! If the jumper is installed, be careful not to short the TERMPWR signal to ground. The terminator power fuse is located beside the terminator power jumper to prevent damage to Autoloader components in case the terminator power is shorted. If terminator power is enabled and the SCSI cable is connected upside down, this fuse may blow to prevent damage to the Autoloader itself. In that case, return the Autoloader to an authorized Seagate repair facility.

Drawer DIP Switch

When the drawer is open, a four-position DIP switch is available on the upper right top surface of the drawer (facing the unit).

Switch 1 is used to change the orientation of the characters on the 8-digit, front-panel display between horizontal and vertical. Default = horizontal position (Switch 1 OFF)

- If you are operating the Autoloader in the horizontal position, set switch 1 to OFF.
- For vertical operation/orientation (left side down), set switch 1 to ON.

Note: Because the firmware of the loader must determine the direction in which to rotate the rollers, be sure to set the DIP switch for the display to be the same as the actual orientation of the drive.

Switch 2 determines whether or not the first cartridge in the magazine is automatically inserted into the Autoloader. Default = automatic insertion (Switch 2 ON)

- For automatic insertion of the first cartridge from the magazine, set switch 2 to ON.
- Set switch 2 to OFF to prevent automatic insertion of the first cartridge.

Switch 3 is reserved.

Switch 4 is a dummy switch.

Language DIP Switch (Accessible through the Top Cutout)

When the drawer is open, a seven-position DIP switch is accessible through the top cutout. Check all switch positions before you install the Autoloader to be sure that the settings reflect the correct operational choices for your needs.

The following text explains the switch settings.

Switches 1 and 2 determine the language selection for the display of the Autoloader as shown in the following table:

	Switch 1	Switch 2
English	Off	Off
French	Off	On
German	On	Off
Spanish	On	On

The default language is English. If you need to change the language, you must set switches 1 and 2 before you install the Autoloader.

Switch 3 determines the action taken after the Autoloader accesses the last cartridge in the magazine. You can select Continuous Cycle mode by setting switch 3.
Default = OFF

- To go to the first cartridge after the last cartridge (continuous cycle), set switch 3 to ON.
- To stop after the last cartridge, set switch 3 to OFF.

caution! Continuous Cycle mode may overwrite existing data.

Switch 4 determines whether the display is high or normal density.
Default = ON

- For a high intensity display, switch 4 should be ON.
- For a normal intensity display, switch 4 should be OFF.

Switch 5 determines whether or not the Autoloader self-test sequence runs on power up.
Default = OFF

- To enable the self-test sequence, switch 5 should be ON.
- To disable the self-test sequence, switch 5 should be OFF.

Switches 6 and 7 are reserved.

Serial Port

For manufacturer's use.

External SCSI Address Port

A 6-pin header on a PCB at the rear of the drive allows remote SCSI address selection. For example, if an OEM chooses to enclose the Autoloader in an external housing, the 6-pin header for SCSI address jumper selection could be made available through a cutout in the external case rear panel.

Follow the switch settings for selecting the SCSI address in the chart below. To turn S1, S2, or S3 ON, place a jumper shunt over the two vertical pins for each switch required. To turn S1, S2, or S3 OFF, remove the jumper shunt from the two vertical pins. The default setting is SCSI device address 0.

SCSI ID	S3	S2	S1
0	OFF	OFF	OFF
1	OFF	OFF	ON
2	OFF	ON	OFF
3	OFF	ON	ON
4	ON	OFF	OFF
5	ON	OFF	ON
6	ON	ON	OFF
7	ON	ON	ON

- **Note 1: Each SCSI device on a bus must have a unique SCSI ID. The SCSI host controller generally uses ID 7. In some systems, the boot drive uses ID 0.**

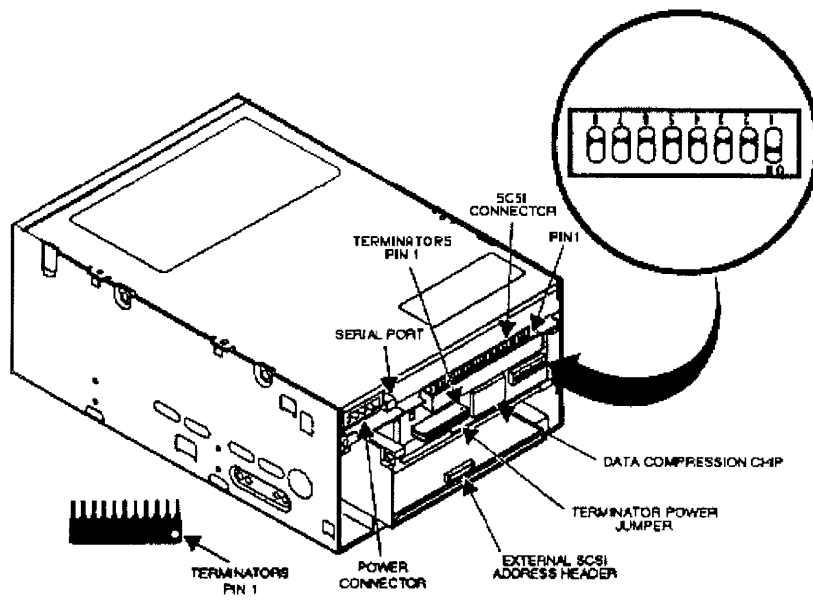
Note 2: Set the DIP switches S1, S2, and S3, all to OFF to use the external SCSI address port.









NOTE on SEQUENTIAL OPERATION:

There are no jumpers or switches that control Sequential Operation. You can operate the autoloader sequentially or access the drive directly using SCSI commands*.

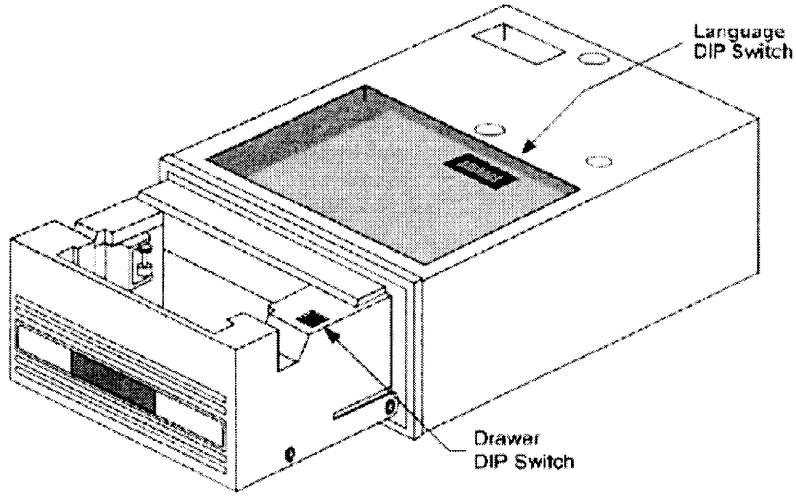
- Sequential operation allows host computers to access the cartridges one after the other and does not require special software to directly control autoloader movement. You can use the UNLOAD command to affect cartridge movement.
- SCSI direct-access commands provide the host computer with total direct control of all autoloader movement.

* See DAT Tape Drives and Autoloaders SCSI Manual, October, 1995 Part#10002663-001 Stocking #601-089 or DAT Tape Drives and Autoloaders SCSI Manual, February, 1997 Part#10002663-003

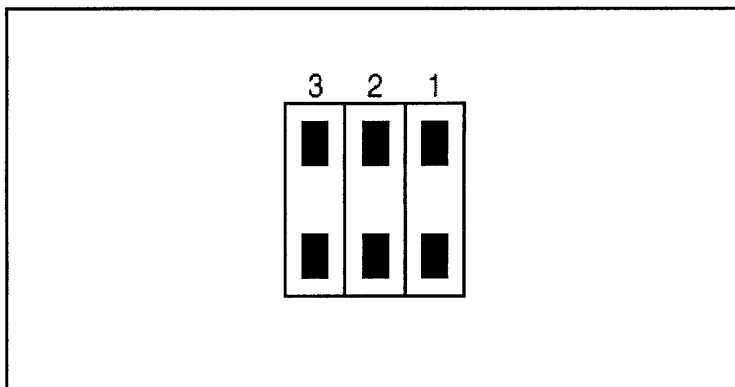


S8 	S7 	S6 	S5 	S4 	S3 	S2 	S1 - OFF 
Self-Test	Reserved	DDS Pass-Through	Parity	MRS Mode	SCSI ID		* Default Settings - ON
ON = Enable OFF = Disable		ON = DDS OFF = DDS-DC Data Compression Drives Only	ON = Enable OFF = Disable	ON = All OFF = MRS	OFF OFF OFF 0	OFF OFF ON 1	OFF ON OFF 2
					OFF ON ON 3	ON OFF OFF 4	ON OFF ON 5
					ON ON OFF 6	ON ON ON 7	

* Shown: General Purpose
default settings only



External SCSI Address Port



DAT Autoloader Drive Operation

Orientation	Operational Specifications	Environmental Considerations
What LED Lights mean	How the tape drive cleaning tape works	Sequential Mode / Direct Access Operation
Audio Capability	Tape Stuck in drive	Autoloader Error Codes
Error 61	Blinking Lights on drive	Single Cassette Operation
Magazine Operation	SCSI ID	

Orientation:

The autoloader can be installed horizontally (facing up only) or vertically with the left side down. Be sure to change the dip switch for the display to match the chosen orientation. (See Configuration / Jumper and Dip Switch information for details on a particular autoloader model.)

Operational Specifications:

Specification	Operational	Non-operational
Temperature	+41° to +113° F ¹ (+5° to +45° C)	- 40° to +149° F ² (- 40° to +65° C)
Relative humidity	20% to 80% non-condensing ¹	0% to 90% non-condensing ²
Shock (1/2 sine wave)	10 Gs peak, 11 msec	50 Gs peak, 11 msec

¹ Mechanism and media

² Mechanism

Environmental Considerations:

Following the guidelines listed below can minimize the possibility of extreme temperature or humidity conditions causing problems with the drive:

- Place the drive in a position that provides stable temperatures. Do not place the drive near open windows, fans, heaters, or doors.
- Use DDS cartridges only at temperatures between 5°C (40°F) and 40°C (113°F). The cartridges can be stored at temperatures down to -40°C (-40°F). Although the storage specifications range from 5°C to -40°C, do not leave cartridges in severe temperature conditions—such as in a car in bright sunlight. Avoid extreme changes in temperature or humidity whenever possible.
- If cartridges are exposed to temperatures or humidity outside the specified operating environment, condition the cartridges by exposure to the operating environment for a time at least equal to the period the cartridges were exposed to the out-of-spec environment (to a maximum of 24 hours).
- Do not read from or write to cartridges when a temperature change of 10°C per hour is occurring.

Tape Stuck in Drive

Power on the unit with the open / close button depressed. If the tape fails to eject, contact [Seagate Technical Tape Support](#) for additional troubleshooting.

Blinking Lights

- [See LED information](#).
- Cycle the power on the autoloader and CPU.
- If this does not return the drive to normal operating condition, contact [Seagate Technical Tape Support](#) for further troubleshooting.

Error 61

This error is most commonly seen at install. It is normally caused by not removing all of the shipping hardware ([shipping brackets](#) or [shipping card](#)) or by using mounting screws that are too long and jam the drawer mechanism.

How the DDS cleaning tape functions in the tape drive:

To clean the heads of the autoloader internal drive, use only a Seagate-qualified DDS DAT cleaning cartridge designed for DDS drives. Seagate offers a cleaning cartridge, Model 91301 that you may order from [Seagate Express](#).

The DDS cleaning cartridge contains the correct recognition holes to allow the drive to recognize that it is a cleaning cartridge. Follow these general guidelines to use the cleaning cartridge:

- Insert the cleaning cartridge (either single cartridge or magazine operation). The autoloader drive immediately detects that the cartridge is a cleaning

cartridge. The drive loads and runs the cartridge for about 30 seconds, then ejects the cartridge without rewinding it.

Note: Each time the cleaning cartridge is loaded, a new, unused portion of cleaning tape is advanced over the entire tape path. Eventually, the entire tape is used, and a new cleaning cartridge is required. (A cleaning cartridge provides approximately 30 uses.) The autoloader does not rewind the cartridge. If the cleaning cartridge has been used up, the drive ejects the cleaning cartridge and the amber LED flashes rapidly.

 **Caution!** Do not use an audio DAT cleaning cartridge. The autoloader will not properly recognize it.

Sequential Mode / Direct Access Operation

The drive can operate in a sequential mode that will appear to the software as a standard drive with an 8 to 32 GB tape loaded (depending on the specific drive and tape loaded). An eject tape command will cause the tape to eject and the magazine to unload. This should work with most software that supports a standard DAT drive, but is not a supported configuration with our software that does explicitly list the autoloaders as supported. This mode normally requires that the magazine be inserted into the drawer and allowed to run its own initialization. If you manually step tapes, it will no longer be in sequential mode.

The second mode is SCSI direct access command mode. This allows the host system total control of the autoloader movements. This would require software that explicitly lists the autoloader as supported.

SCSI ID:

Both the loader mechanism and the DAT drive use the same SCSI ID. The DAT drive uses LUN (Logical Unit) 0 and the loader uses LUN 1. For information on setting the SCSI ID for a particular model, see the Configuration / Jumper and Dip Switch section.

Audio Capability:

Seagate **distribution** DAT drives do not support audio. The drive is physically capable of supporting audio, but the standard distribution firmware does not contain the code required to support audio. Certain third party companies have the firmware modified to include audio support. The firmware is the property of the third party company and is not available for distribution by Seagate.



Autoloader Magazine Operation

Loading Cartridges in a Magazine

To load cartridges in the magazine, follow these steps:

1. Hold the magazine with the flat, back side so the cartridge slots face out.
2. Insert each DAT cartridge in a cartridge slot with the arrow on the cartridge facing the opening. The cartridge should firmly seat in the cartridge slot.

Closed Drawer Operation—Four-Cartridge Magazine

The autoloader senses when a four-cartridge magazine is used, and it automatically closes the drawer and loads the first cartridge. The following steps guide you through typical closed drawer operation using the four-cartridge magazine:

1. Press the Eject button on the front panel to open the drawer. (All LED's are off unless an error has occurred.) The drawer opens, and the 8-digit LED display indicates OPERATOR, to signify that operation action is needed.
2. Once the magazine is filled with as many cartridges as you want, align it over the loading port so that the protrusions on the side of the magazine fit the cutouts in the loading port. The flat, back side of the magazine faces out; the cartridges face into the drive.
3. Set the magazine gently in place in the loading port. Do not force the magazine. The magazine fits down into the port and automatically positions itself. The autoloader scans the magazine, senses that it is a four-cartridge magazine, positions to cartridge slot #2, and then automatically closes the drawer.
4. The autoloader then positions to cartridge slot #1 (top most cartridge) and checks that the cartridge is inserted correctly. If the cartridge is correctly inserted in the magazine, the slot number flashes slowly on the 8-digit LED display. The autoloader retrieves the cartridge from the magazine; pulls the cartridge into the cartridge opening; and loads the cartridge.

Note: If you choose to load a different cartridge, push the Step button to select the cartridge as shown on the 8-digit LED display.

5. Complete the read or write operations on the cartridges in the magazines.
6. When you want to remove the magazine, press the

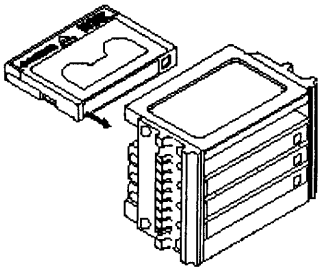
Eject button on the front panel. Any cartridge currently loaded is then rewound and ejected from the drive into the magazine cartridge slot.

7. The drawer is released and automatically opened. The magazine then moves to the dismount position so you can remove it.

Open Drawer Operation—Twelve-Cartridge Magazine

When you use a 12-cartridge magazine, the autoloader automatically senses the multiple cartridges and locks the drawer in the open position. The following steps guide you through typical open drawer operation using a magazine larger than the four-cartridge magazine:

1. Press the Eject button on the front panel to open the drawer. (All LED's are off unless an error has occurred.) The drawer opens automatically, and the 8-digit LED display indicates OPERATOR, to signify that operation action is needed.
2. Once the magazine is filled with as many cartridges as you want, align it over the loading port so that the protrusions on the side of the magazine fit the cutouts in the loading port. The flat, back side of the magazine faces out; the cartridges face into the drive.
3. Set the magazine gently in place in the loading port. Do not force the magazine. The magazine fits down into the port, and the magazine locks into position. The autoloader scans the magazine and determines that it is larger than a four-cartridge magazine. The drawer is then locked in the open position and cannot be closed until the magazine is dismounted. The autoloader positions the magazine to the first full slot available. The slot number is displayed on the 8-digit LED display.
4. To insert the cartridge in slot #1 in the drive, press the Step button.
5. Complete the read or write operations on the cartridges in the magazines.
6. When you want to remove the magazine, press the Eject button on the front panel. Any cartridge currently loaded is then rewound and ejected from the drive into the magazine cartridge slot. The magazine is also unlocked so you can remove it.



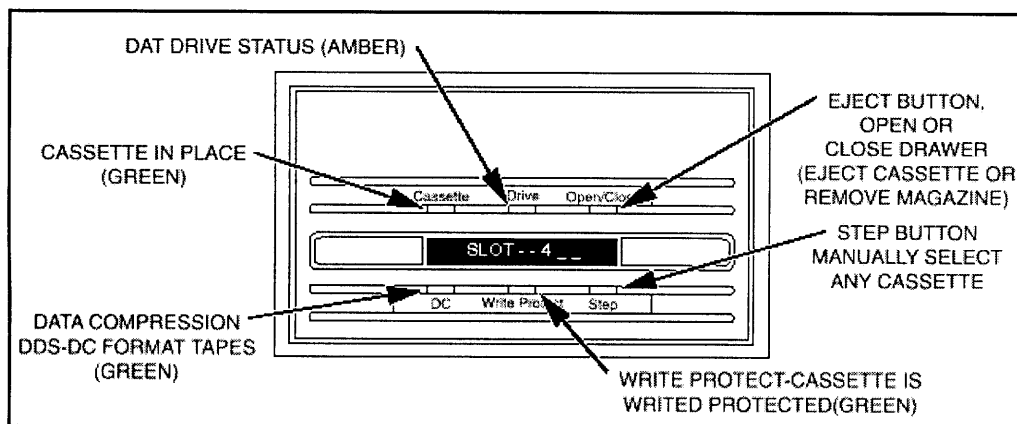
Inserting Cartridge into Magazine



Front Panel LED and Button Operation

The front panel of the autoloader contains four LED's, an 8-digit, alphanumeric, dot matrix LED display, and two pushbuttons. One LED indicates whether or not data compression or decompression is in use; another LED indicates the cartridge status; and yet another LED indicates the DAT drive status. Additionally, a cartridge write-protected LED indicates whether or not the cartridge is write protected. The Step button enables you to select cartridges in the magazine, and you use the Eject button to eject tapes and open the drawer.

Autoloader Front Panel



The 8-digit LED display provides operating information for each magazine for normal as well as error conditions. The front panel, 8-digit LED display allows for multi-language support.

The following table summarizes front-panel LED operation.

LED	Action	Meaning
Amber	ON (lit)	The drive is reading or writing the tape.
Amber	Flashing Rapidly	A hardware fault occurred, or dew was detected.
Green (cartridge)	ON (lit)	A cartridge is inserted and does NOT generate excess errors.
Green (cartridge)	Flashing Slowly	A cartridge is inserted but generates excessive errors beyond a predefined error threshold. (Warning only) Use a DDS cleaning cartridge to clean the heads.
Green (cartridge)	Flashing Slowly (with amber LED flashing)	A prerecorded audio cartridge is inserted and is being played automatically.
Green (cartridge)	Flashing Rapidly	The drive could not write the tape correctly. (Error) Use a DDS DAT cleaning cartridge to clean the heads.
Green (compression)	ON (lit)	A data compression or decompression operation is in progress on the current cartridge.
Green (write protect)	ON (lit)	A write-protected cartridge is currently loaded.

Drive Status LED—Amber

The amber, rectangular Drive Status LED (labeled Drive on the front panel) indicates the following conditions:

- When ON (lit), the drive is reading or writing the tape. (SCSI or DAT activity is present.) During a SCSI Prevent Media Removal command, the LED is always ON.

Note: Do not push the eject button while this LED is ON. If you do, the operation in progress is aborted and the cartridge is ejected, possibly causing a loss of data.

- When flashing rapidly, a hardware fault has occurred. If this situation occurs immediately after power-on (and power-on self-test is enabled – see Configuration / Jumper and Dip Switch section for more information), the power-on self-test may have failed. In that case, the drive will not operate.

Cartridge Status LED—Green

The green, rectangular Cartridge Status LED (labeled Cartridge on the front panel) indicates the following conditions:

- When ON (lit), a cartridge is inserted and does NOT generate excess errors.
- When flashing slowly, a cartridge is inserted but generates excessive errors beyond a predefined DDS error threshold. First, clean the drive heads using an approved DDS DAT cleaning cartridge (such as the Seagate Model 91301).

Note: As routine maintenance, the drive heads should be cleaned after every 25 hours of operation. See the Maintenance section for the particular autoloader model.

- If the LED continues flashing or flashes when ejecting the cartridge, use a new cartridge for future writes. Otherwise, operation is proceeding normally. This signal is a warning only.
- When flashing slowly in conjunction with the amber LED, a prerecorded audio cartridge is inserted and is being played automatically.
- When flashing rapidly, the drive could not write the tape correctly (maximum rewrite count exceeded). The WRITE operation failed. First, clean the drive heads using an approved DDS DAT cleaning cartridge, such as the Seagate Model 91301. If the LED continues flashing, use a new cartridge for future writes.

Data Compression LED—Green

Whenever a compression or decompression operation

occurs for a loaded cartridge, the LED labeled DC on the front panel is illuminated. Only for autoloaders supporting compression.

Write-Protect LED—Green

Whenever a write-protected cartridge is loaded, the LED labeled Write Protect on the front panel is illuminated.

8-Digit LED Display

The 8-digit, alphanumeric LED display on the front panel of the autoloader indicates the status of each magazine slot.

- When the drawer is closed and no magazine is present, the display indicates four dots.
- When the drawer is closed and a magazine is present, the display identifies the magazine cartridge slot that is positioned in front of the drive unit. The display indicates one or two digits in the range of 1 through 4 for the cartridge slot.
- When the drawer is open and a magazine other than a four-cartridge magazine is present, the autoloader identifies the multiple cartridge magazine and locks the magazine and drawer in place. The display identifies the magazine cartridge slot that is positioned in front of the drive unit. The display indicates one or two digits in the range of 1 through 12 for the cartridge slot.
- If the slot positioned in front of the drive does not contain a cartridge, the digits flash rapidly.
- If the slot contains a correctly inserted cartridge, the digits identify the slot. The slow flash continues for five seconds after the magazine is stepped to the next slot with the Step button. Once a cartridge is inserted, the Cartridge Status LED illuminates and the slot number is displayed continuously.
- If a cartridge is not correctly inserted in the magazine, the display shows the message CHK MAG (Check Magazine).
- Whenever the autoloader requires operator intervention, the display shows OPERATOR. When the OPERATOR message is displayed, the autoloader reports NOT READY to any SCSI commands received from the host computer.

The messages that might be displayed on the 8-digit LED display are listed in the following table.

8-digit Display Meaning of Message

0 TAPE	This message alternates with the CHK MAG message to indicate that the magazine contains no cartridges.
---------------	--

n TAPE	After the drawer is closed, this message displays for 2 seconds to show the number of cartridges in the magazine.
CHK MAG	The cartridge is not correctly inserted in the magazine, or the magazine contains no cartridges.
CLEAN	A cleaning cycle is occurring on a manually inserted cartridge.
CLEAN n	A cleaning cycle is occurring on cartridge n, which was loaded from the magazine.
CLOSING	The drawer is closing.
END MAG	In sequential mode operation, the magazine is at its end.
EJECT	A manually inserted cartridge is being ejected.
EJECT n	A cartridge is being ejected to slot n.
EJECTING	The magazine is being ejected to the dismount position.
ERASE	A manually inserted cartridge is being erased.
ERASE n	The cartridge from slot n is being erased.
ERROR n	A loader mechanism error occurred. See the following table for an explanation of the errors.
LOAD	A manually inserted cartridge is being initialized.
LOAD n	The cartridge from slot n is being loaded and initialized.
OPENING	The drawer is opening.
OPERATOR	Operation action is required because a magazine is not in place.

READ	A manually inserted cartridge is being read.
READ n	The cartridge from slot n is being read.
READY	A manually inserted cartridge is in the drive, and the drive is ready.
READY n	The cartridge from slot n is in the drive, and the drive is ready.
REWIND	A manually inserted cartridge is rewinding.
REWIND n	The cartridge from slot n is rewinding.
SCANNING	The magazine is being initialized.
SEARCH	A space command is being processed on a manually inserted cartridge.
SEARCH n	A space command is being processed on the cartridge from slot n.
SEL n	The slot number shown is being selected with the step button.
SEL SLOT	The magazine is present, but a cartridge is not inserted in the drive.
SLOT n	This message alternates with the CHK MAG message to show that the cartridge in the slot is incorrectly inserted.
WRITE	A manually inserted cartridge is being written.
WRITE n	The cartridge from slot n is being read.

Loader Mechanism Error Messages

Error 10	Magazine Initialization Failure (1st part of Scanning)
Error 11	Magazine Initialization Failure (2nd part of Scanning)
Error 20	Magazine Ejection Failure
Error 30	Magazine Positioning Failure (moving up)
Error 31	Magazine Positioning Failure (moving down)
Error 40	Cassette Insertion Failure
Error 41	Cassette Insertion Failure (can't clamp on)
Error 42	Cassette Insertion Failure (can't clamp off)
Error 50	Cassette Ejection Failure
Error 51	Cassette Ejection Failure (can't clamp on)
Error 52	Cassette Ejection Failure (can't clamp off)
Error 60	Drawer Closing Failure
Error 61	Drawer Opening Failure (more information)
Error 70	Magazine Position Lost
Error B2	Magazine Initialization Failure (drawer closed)
Error B3	Magazine Initialization Failure (drawer closed)
Error F0	Power-up Failure

Step Pushbutton

You use the Step pushbutton to manually select any cartridge in the magazine for insertion into the drive.

- When you push this button, any current cartridge is returned to the magazine, and the magazine is stepped to the next slot in sequence.
- If a cartridge is present in the new slot, as shown by the SEL n message on the LED display, the cartridge is inserted into the drive after a 5-second delay. This 5-second delay provides time for you to step to a different slot if you wish.
- When you first insert the magazine, the first push of the Slot pushbutton causes the cartridge in slot #1 to be inserted in the drive after a 5-second delay. When the magazine is stepped beyond its last slot, it then steps to the first slot—slot #1.

Eject Pushbutton

You use the Eject pushbutton to eject the currently loaded cartridge and also to remove the magazine from the autoloader (dismount).

- When a four-cartridge magazine is inserted and the drawer closed, pushing the Eject pushbutton causes the current cartridge to be returned to the magazine, and the drawer to be released and automatically opened. You can then access the magazine.

When you operate the autoloader with the drawer open, such as with a 12-slot magazine, pushing the Eject button first causes the cartridge to be returned to the magazine; then causes the magazine to move to the dismount position so you can remove it.



Loading/Unloading a Single Cartridge in the Autoloader

In addition to magazine operation, you can also use single cartridges with the autoloader. For single cartridge operation, follow these steps:

1. Press the Eject button on the front panel to open the drawer. (All LED's are off unless an error has occurred.) The drawer opens, and the 8-digit LED display indicates OPERATOR, to signify that operation action is needed.
2. Insert the cartridge into the slot. The arrow on the cartridge faces into the cartridge opening.
3. Gently push against the back spine of the cartridge until the drive pulls the cartridge into the cartridge opening. The Cartridge Status LED illuminates, and OPERATOR is displayed on the 8-digit LED display.

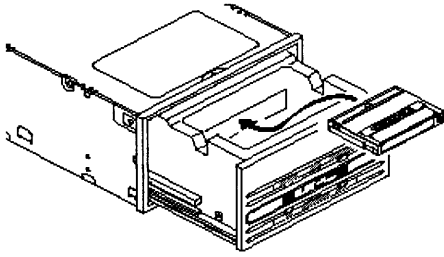
Note: The drawer may be either closed or open.

4. Complete the read or write operation.
5. Press and hold the Eject button on the front panel for more than one second to unload the cartridge. Once you press the eject button, the autoloader drive updates the system log, rewinds the tape, and then ejects the cartridge.

Note: The time between pressing the eject button and cartridge ejection may be several seconds.

6. Ease the cartridge out into the loading port opening and lift it out.





Putting the Cartridge in Place