HP SureStore Optical Jukebox 160ex/320ex/400ex/300mx/600mx/700mx

Service Manual

Edition 1

Manufacturing Part Number: HP Part No. C1160-90031

Greeley, CO USA

Notice

Printing History

New editions of this manual incorporate all material updated since the previous edition. The manual printing date and part number indicate the current edition. The printing date changes when a new edition is printed. (Minor corrections and updates incorporated at reprint do not change this date.)

Part Number C1160-90031 Edition 1 August 2000

Typographical Conventions

The following typographical conventions are used in this manual:

Emphasis: Denotes important information.

Keycap: Keys on the control panel.

`Computer Output`: Information displayed in the display window and menu items that you can select.

WARNING **Warnings call attention to a procedure or practice that could result in personal injury if not correctly performed. Do not proceed until you fully understand and meet the required conditions.**

CAUTION Cautions call attention to an operating procedure or practice that could damage the product if not correctly performed. Do not proceed until you understand and meet the required conditions.

NOTE Notes provide information that aid in understanding the operation of the product.

In This Manual

This user's guide includes:

Contents

Contents

Contents

Contents

Contents

Contents

Figures

Figures

Tables

Tables

1 Product Information

Overview

This chapter gives information on the following topics:

- technical specifications
- environmental specifications
- replacing the control panel assembly
- other documents that apply to this product

Technical Specifications

Table 1-1 Technical Specifications

Characteristics	Description
5.2-GB Drive Characteristics	
Rotational speed (rpm)	• 3000 (5.2 Gb media) • 3600 (650 Mb, 1.2 Gb, 2.6 Gb media)
Average seek, typical (ms)	25.0
Average access time, typical (ms)	35
Write transfer rate - max sustained (Mb/s)	• 2.1 (5.2 Gb media) • 1.7 (2.6 Gb media) • 1.2 (1.2 Gb media)
Burst transfer rate -fast synchronous (Mb/s)	10
Burst transfer rate - synchronous (Mb/s)	5
Burst transfer rate - asynchronous (Mb/s)	3
Raw read/write error rate	Less than 2.0x10-4 errors / total bytes read
Buffer size (Mbytes)	1
Read buffering	Readaheads
Write buffering	Immediate reporting write re-ordering
Interface	Single-ended

Table 1-1 Technical Specifications

Characteristics	Description
9.1-Gb Drive	
Rotational speed (rpm)	• 3000 (9.1 Gb media) • 3300 (5.2 Gb media) • 3600 (2.6 Gb media)
Average seek, typical (ms)	25.0
Average access time, typical (ms)	35
Write transfer rate - max sustained (Mb/s)	• 3.1 (9.1 Gb media) • 2.5 (5.2 Gb media) • 2.0 (2.6 Gb media)
Burst transfer rate -fast synchronous (Mb/s)	20
Burst transfer rate - synchronous (Mb/s)	5
Burst transfer rate - asynchronous (Mb/s)	6.7
Raw read/write error rate	Less than 2.0x10-4 errors / total bytes read
Buffer size (Mbytes)	1
Read buffering	Readaheads
Write buffering	Immediate reporting write re-ordering
Interface	Single-ended

Table 1-1 Technical Specifications

Characteristics	Description
Physical Characteristics	
Height (cm, inches)	180.8, 71.2
Width (cm, inches)	87.6, 34.5
Depth (cm, inches)	73.4, 28.9
Net weight (kg, lbs))	226.3, 498.8
Packaged weight (kg, lbs)	301.6, 665

Environmental Specifications

Table 1-2 Environmental Specifications

Characteristics	Robotics	Drive	Media
Temperature (o C)			
Operating	10 to 40	5 to 45	10 to 60
Non-operating w/o disk	- 40 to 70	- 40 to 60	10 to 60
Max. Temperature gradient (o C /hr)	10	10	10
Transportation - <14 consecutive days			-40 to 60
Humidity, non-condensing (%)			
Relative operating	10 to 90	5 to 90	10 to 80
Non-operating w/o disk	5 to 95	5 to 95	10 to 90
Maximum wet bulb (o C)	29	29	29

Table 1-2 Environmental Specifications

Characteristics	Robotics	Drive	Media
Shock , non-operating (g/ms)			
End use, handling, half-sine	150 / 3	25 / 11	760 mm drop to 2mm vinyl-covered concrete
Transportation, trapezoidal (g/cm/s)	30 / 523	30 / 742	
Vibration, 5-500 Hz range (g rms)			
Operating, maximum acceleration (g rms)	0.21	0.3	>0.21
Non-operating random (g rms)	2	3	
Non-operating, swept-sine (g, 0-peak)	0.5	0.1	
Altitude (meters, feet)			
Operating	4,572 / 15,000		
Non-operating	15,240 / 50,000		
Acoustic emissions (dB - L noise power emission level)			
Operating (dB - L noise)	61.5		
Idle	47		

Table 1-2 Environmental Specifications

Characteristics	Robotics	Drive	Media
Particulates (µg/cm3)			
	<200		
Electrostatic discharge (kV)			
Airgap (operating)	5 to 15	0 to 10	
Airgap (non-operating survival)	0 to 25	0 to 25	
Direct contact (operating)	0 to 4	0 to 4	
Cooling requirements (CFM)			
		15 (bidirectional through drive)	

Table 1-3 Power Requirements

Line voltage (Vac)	100 - 127, 200-240
Line frequency (Hz)	50 - 60
Power consumption, typical (Watts, BTU)	300, 1023
Power consumption (Watts, BTU)	340, 1,160
Current (amperes)	6 (120 V) 5 (240 V)

Table 1-4 Reliability

Mean swaps between failure (MSBF) - robotics	2,000,000
Mean swaps between failure (MSBF) -drive	750,000

Table 1-4 Reliability

Mean time between failure (MTBF) - robotics (power-on hours	100,000
Mean time between failure (MTBF) - drive (power-on hours)	100,000
Mean time to repair (hours)	2
Preventive maintenance	none required* * for high-usage or zero downtime installations, see the Product Support Plan for special preventative maintenance schedules

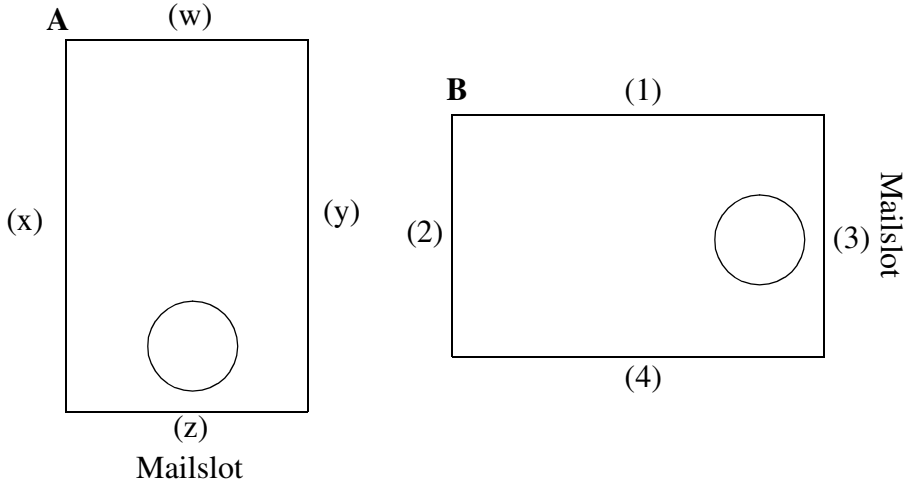
Table 1-5 Product Certifications

Safety	EN 60950/IEC 950 UL 1950 listed or recognized
Electromagnetic emissions	FCC Class “A”, CISPR 22, Class “A” Class “A” EN 55022/CISPR 22, Level “A”; VCCI Level 2
Laser	CDRH 21 CFR Chapter 1, Subpart J IEC 825

Clearance Requirements

A minimum 70-80 mm (3 in.) is required behind the rear panel to allow air to circulate.

Figure 1-1 Clearance Requirements



- Figure A is usually in a row of peripheral cabinets.
  - — Rear (w) requires 56 cm (18 in.) for cooling and service.
  - — Front (z) requires 86 cm (34 in.) for operator access.
  - — Sides (x) and (y) can be adjacent to other cabinets; the service panel (y) would be accessed by pulling the cabinet forward on it wheels.
- Figure B orientation represents free standing or against a wall.
  - — Rear (1) requires 61 cm (24 in.) for service access.
  - — Sides (2) and (3) require 30.5 cm (12 in.) for service, operator access, and cooling.
  - — Front (4) requires 61 cm (24 in.) for service and operator access, plus additional space if the cabinet must be moved to access the rear panel (1).

Location Requirements

Position the jukebox away from sources of particulate contamination such as frequently-used doors and walkways, stacks of supplies that collect dust, printers, and smoke-filled rooms.

Responsibilities

Customer site preparation/verification and installation are the customer's or reseller's responsibility; HP will perform the site preparation/verification and/or installation on a time-and-materials basis.

2 Installation

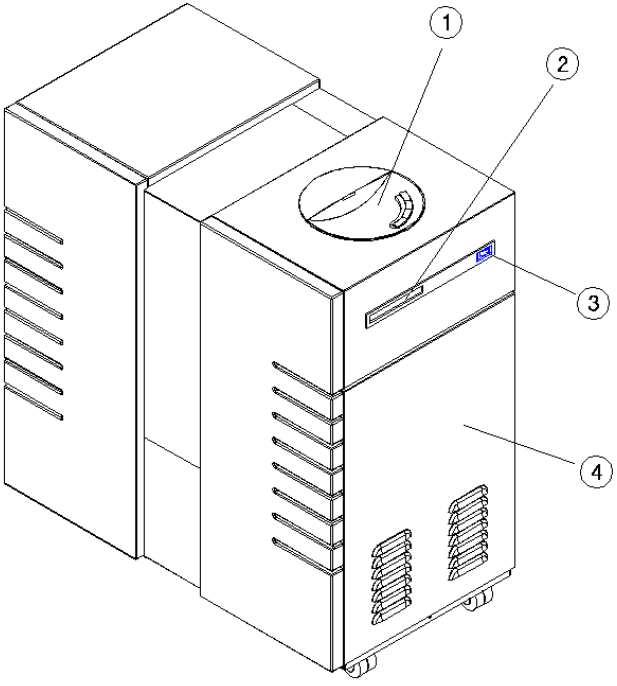
Overview

This chapter gives information on the following topics:

- identifying controls and features
- connecting SCSI cables to the jukebox
- connecting the jukebox as the only peripheral
- connecting the jukebox with other peripherals
- connecting power
- configuring write verify
- default SCSI IDs in normal and LUN addressing
- moving and shipping the jukebox

Identifying Controls and Features

Figure 2-1 **Right Side**



1	Control panel	Used to manually control and monitor operation of the jukebox. A full description of the controls and indicators is in Chapter 3.
2	Mailslot	Used to load and eject optical disks.
3	Power switch	Used to power the jukebox on and off.
4	Right access panel	A panel that covers access to the optical drives and interposer PCA.

Figure 2-2 Left Side