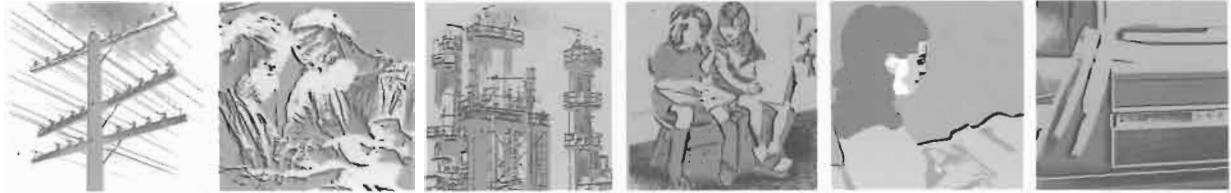


MODEL 7900A DISC DRIVE



The Hewlett-Packard 7900A Disc Drive is a random-access moving-head dual-disc memory device, compactly designed for use as a peripheral unit in small and medium size computing systems. It uses a permanent disc and a 2315 type of cartridge. Data capacity totals five million bytes on-line, with an unlimited amount of shelf storage. A photoelectric positioning system, working in conjunction with a velocity transducer and voice-coil-driven actuator, provides exceptionally fast and accurate head positioning over a wide temperature range. Average seek time is less than 30 milliseconds.

FEATURES

Heads

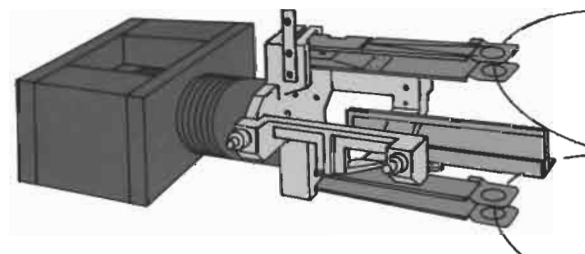
Ceramic Shoe with Ferrite Core, Straddle Erase
Hardness — Rockwell 45 N Scale: 80
Ramp Loaded

Recording

Double Frequency, 2200 bits/inch on inner track,
100 tracks/inch, 203 tracks/surface.

Actuator

Voice coil actuator with position and velocity feedback.



Positioning

To guarantee interchangeability a photo-optical system positions any actuator within three ten-thousandths of an inch to its nominal position. Positioning system contains photo cells for both position and direction feedback. These cells are wired back-to-back for stable operation during variations in temperature and lamp intensity. No mechanical linkages in positioner.

Servo holds position with a servo stiffness of ten pounds per mil. Solid aluminum cast main-base provides a stable platform for the components in the servo system.

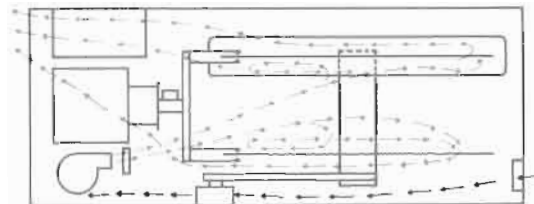
Carriage

Stainless steel rails life tested in excess of two hundred million seeks.

Air Filtration & Circulation

65 CFM squirrel cage blower distributes air to both discs.

Absolute filter located at outlet side of blower. All air passing over the discs goes through this filter.



Rotation

2400 RPM belt driven by a 3450 RPM AC induction motor with dynamic brake.

Drive Electronics

- Absolute cylinder addressing
- Seek overlap for multiple drives on one controller
- Heads retract on power failure or drive malfunction
- Drive does not hang up on wrong address but instead provides status information.
- Drive produces all control, and status functions with TTL compatible logic signals.
- Differential line drivers/receivers for data

Electronic Interface Lines

Inputs:	Outputs:
Drive Select	Bus (5 lines)
Set Cylinder	Drive Ready
Set Head & Sector Control	Access Ready
Bus (8 lines)	Sector Pulse
	Sector Compare
	Ground

Daisy Chaining

Allows using up to four disc drives per controller and I/O cable.

Interchangeability

Any disc written on any 7900A within its operating temperature (10° to 40°C) can be read on any other 7900A unit operating within that temperature range.

Write Protection

Write protect on either disc (switch setting inside cartridge door).

7900A DISC DRIVE SPECIFICATIONS

Large Data Capacity

Approximately 48 million bits structured as follows when in 24 sector format.

APPROXIMATE	TOTAL BITS PER	DATA BITS PER	DATA BYTES PER	SECTORS PER	TRACKS PER	CYLINDERS PER	RECORDING SURFACES	DISCS PER
Byte	8	8						
Sector	2.6K	2K	256					
Track	60K	50K	6K	24				
Cylinder	240K	200K	25K	96	4			
Surface	12M	10M	1.25M	4.8K	200+3	200+3		
Disc	24M	20M	2.5M	9.6K	400	200	2	
Drive	48M	40M	5M	19.2K	800	200	4	2

Device Type

Moving-head, dual disc; 1 fixed, 1 removable.

Fast Data Access

Head Positioning (including settling time)

Track-to-Track (Average)	.7 ms
Random Average	30 ms
203 Tracks (Maximum)	55 ms

Rotational Delay (latency)

Average (1/2 revolution)	12.5 ms
Maximum (1 revolution)	25 ms

Data Transfer

8 Bit Bytes/Second	312 thousands
Bits/Second	2.5 million

Cartridge Change at 60 Hz Power

Stop Time	.25 seconds
Start Time	.30 seconds

Environmental

Temperature

Operating	+50° to +104°F
	+10° to +40°C
Nonoperating	-4° to +149°F
	-20° to +65°C

Humidity 8% to 80% non-condensing

Attitude (pitch and roll) ±30 degrees about either axis

Altitude 0 to 10,000 ft

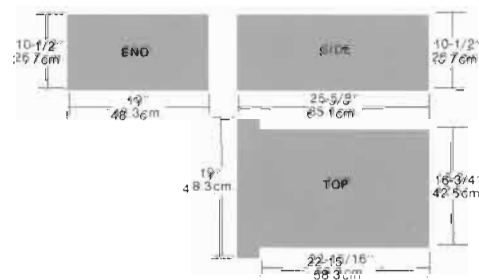
Absolute Filtering 0.3 micron filter

Positive Air Pressure maintained during cartridge change

Compact Physical Dimensions

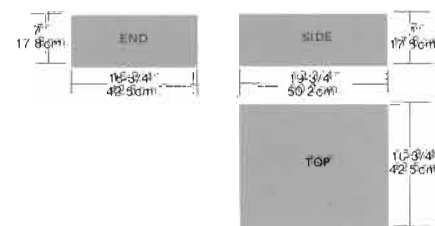
7900A Disc Drive

Weight 117 lbs (53.1 kg)
 Size (fits standard EIA rack)



13215A Power Supply

Weight 55 lbs (25 kg)
 Size (fits standard 19 inch EIA rack)



Power Requirements

100/120V ±10%, 60 Hz ±2%, 3.4A, 1φ

100/120V ±10%, 50 Hz ±2%, 4.1A, 1φ

200/220/240V ±10%, 60 Hz ±2%, 1.7A, 1φ

200/220/240V ±10%, 50 Hz ±2%, 2.0A, 1φ