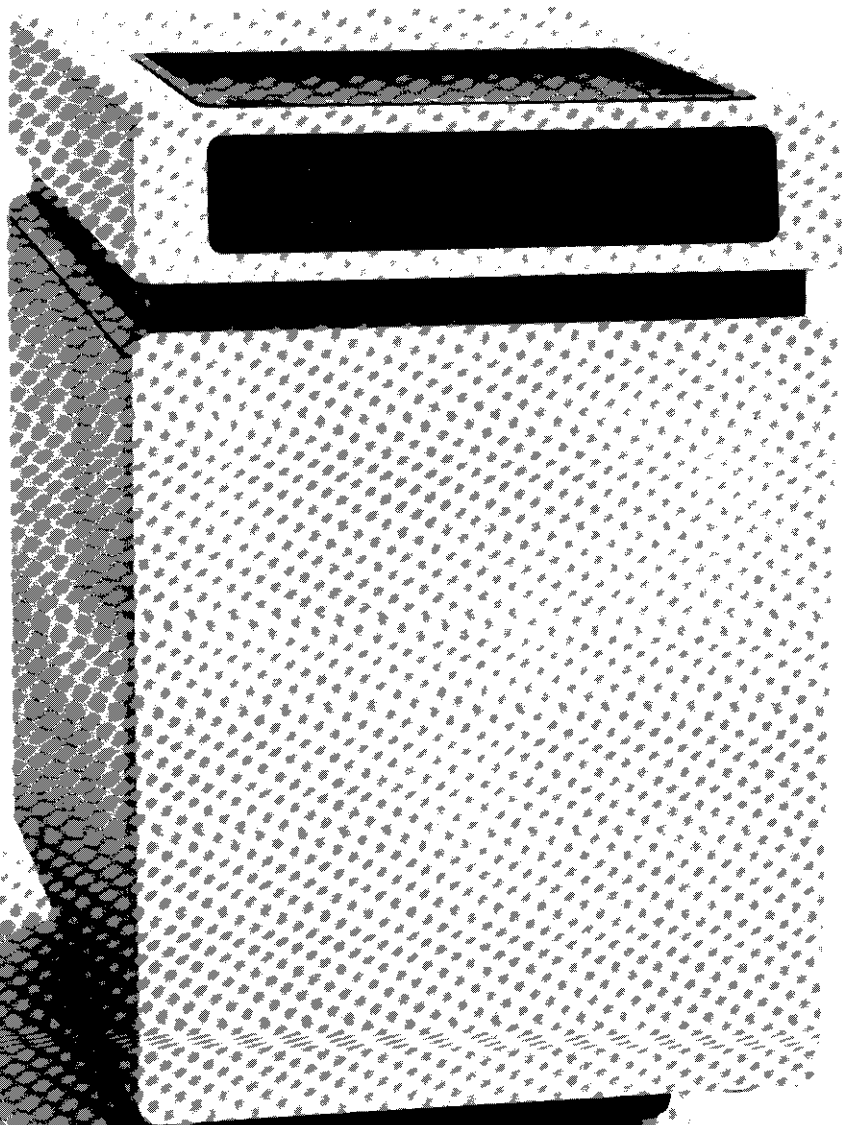


# HP 7933H Disc Drive

 HEWLETT  
PACKARD

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The HP 7933H Disc Drive is a fixed media device that provides high levels of performance, reliability, and serviceability. The performance of the 7933H promotes overall greater system efficiency. The advanced reliability and serviceability features are reflected by the exceptionally low maintenance costs of this product. Major contributions include a powerful microprocessor-based controller with sophisticated internal diagnostics, and state-of-the-art packaging.

## Features

- 404 Mbytes of formatted storage
- 1.0 Mbyte/s transfer rate
- Front panel diagnostic access and readout
- Integral microprocessor controller
- Automatic head alignment
- Sector and track sparing
- Automatic error correction
- HP-IB compatible\*

## Description Performance

The 7933H contributes significantly to the overall high performance of HP systems with its 24 ms seek time and 1.0 Mbyte/second transfer rate. The increased system throughput and system uptime are achieved by integrating a sophisticated controller into each drive. The unique capabilities of the controller include: sector and track sparing which maximizes media utilization, automatic error detection and correction which eliminate CPU involvement for data correction, and rotational position sensing which increases system efficiency.

## Reliability

Major contributions to reliability are the result of an automatic head alignment capability which reduces maintenance requirements, and a real time error correction process which ensures high data integrity.

## Serviceability

System uptime is increased through the 7933H's ease of service. The foam-molded cabinetry allows quick access to all replaceable assemblies without the need for special tools. Even the enclosed media module is removable to provide easy access for servicing. Another major contribution is the keypad and alphanumeric display on the front panel, providing a human interface to diagnostics. These diagnostics monitor drive operations and troubleshoot problems to the board level. They can be initiated through the front panel interface, offline, or under program control.



\* HP-IB: Not just IEEE-488, but the hardware, documentation and support that delivers the shortest path to a computation system.

## Operating specifications

### Seek time

(A typical drive at 25°C, nominal line voltage and normal operating conditions)

Track-to-track: 5 ms  
Average random: 24 ms  
Full stroke: 42 ms

### Rotation

Speed: 2700 rpm  
Average rotational latency: 11.1 ms

### Data transfer rate

Nominal: 1.00 Mbyte/s  
Internal burst rate of drive: 1.25 Mbyte/s

## Operating characteristics

### Data capacity (formatted)

Item	Data Bits Per	Data Bytes Per	Sectors Per	Tracks Per
Sector	2,048	256		
Track	188,416	23,552	92	
Surface	248,897,536	31,112,192	121,532	1,321
Drive	3,235,667,968	404,458,496	1,579,916	17,173

## Overall characteristics

### Heat dissipation

1400 Watts (4778 Btu/hr)

### Electromagnetic emissions

Radiated and conducted interference:

- HP 7933H — For U.S.A., designed to meet FCC Docket 20780 for Class A computing devices.
- HP 7933H — For Europe, designed to meet VDE 0871 for Level A computing devices. FTZ licensed on some HP systems. Refer to your local sales representative for more information.

Magnetic operating: < 10 gauss at any surface

Magnetic nonoperating: < 2 milligauss at 7 ft on all surfaces

### Safety

The 7933H meets all applicable safety standards of the following:

IEC 380 and 435  
UL 114 and 478  
CSA C22.2 no. 143 and 154

## Physical characteristics

### Dimensions

Height: 82.5 cm (32.5 in.)  
Width: 55.2 cm (21.7 in.)  
Depth: 83.4 cm (32.8 in.)

## Weight

Net: 154 kg (339.5 lb)

Shipping: 191.9 kg (423.0 lb)

## Environmental requirements

**Note:** The environmental specifications listed herein apply when this device is not connected to a Hewlett-Packard (HP) system. When this device is connected with HP systems, the more stringent environmental specifications listed for any single HP device within the HP system are applicable and supersede these specifications.

## Temperature

Operating: 10° to 40°C (50° to 104°F)

Optimum operating: 20° to 30°C (68° to 86°F)

Nonoperating: -40° to 65°C (-40° to 149°F)

Rate of change may not exceed 20°C (36°F) per hour.

## Relative humidity

Operating: 8% to 80% with maximum wet bulb temperature not to exceed 25.6°C (78°F), noncondensing.

Nonoperating: 5% to 95% with maximum wet bulb temperature not to exceed 29.5°C (85°F), noncondensing.

## Altitude

Operating: Between sea level and 4 600 m (10,000 ft). For altitudes between 3 000 m to 4 600 m (10,000 to 15,000 ft), temperature is restricted to 35°C (95°F) maximum.

Nonoperating: 305 m (1,000 ft) below sea level to 15 240 m (50,000 ft)

## Electromagnetic susceptibility operating range

The 7933H has been successfully type tested under conditions of radiated and conducted interference. Operation at levels exceeding these may result in degraded performance and is not warranted.

Radiated: 14 kHz to 1 GHz < 3V/m

Conducted: 30 Hz to 50 kHz < 3V rms  
50 kHz to 400 MHz < 1V peak-to-peak

Electrostatic discharge: 15 kV

Magnetic: 47.5 to 198 Hz < 5 gauss  
30 to 30,000 Hz < 100 ptesla

Power line transients (per IEEE 587):

Oscillatory Wave: > 1.5 kV

Unidirectional Wave: > 1.0 kV

**Note:** Before installing the HP 7933, refer to the *Site Environmental Requirements Manual*, part no. 5955-3456, available from your local Hewlett-Packard Sales Office.

## Power requirements

AC Voltage ( $\pm 10\%$ ): 120, 208, 220, 240

Frequency: 47.5 to 63 Hz

Phase: Single

Power: 1400 Watts maximum

Current: 7.6A maximum at 208V

## System configurations\*

- Total cable length is limited to 1 m per equivalent HP-IB load.
- One 7933H places one equivalent load on each of the HP-IB lines.



## Ordering information HP 7933H

404-megabyte disc drive, integral controller, power supply, stand-alone cabinet, and 1-metre HP-IB cable. Standard 208-volt operation.

**Note:** All power cords are hard wired.

## Available options

120 — For 120-volt operation

220 — For 220-volt operation in U.S. and Canada

221 — For 220-volt operation in Continental Europe

222 — For 220-volt operation in Switzerland

223 — For 220-volt operation in Denmark

241 — For 240-volt operation in United Kingdom

242 — For 240-volt operation in Australia and New Zealand

## Accessories supplied with each 7933H

Operator Manual: 07930-90901

Installation Manual: 07930-90902

Site Environmental Requirements Manual:  
5955-3456

## Accessory available through an HP supply organization

Service Manual: 07930-90903

*For information concerning alternate cable lengths, contact your nearest HP Sales Office.*

Hewlett-Packard, in a continuing effort to offer excellent products at a fair value, reserves the right to change specifications, designs, and models without notice.

*\*Consult the appropriate system configuration guide for specific constraints in conjunction with the host CPU.*

For assistance call the HP regional office nearest you: Eastern 301/258-2000, Midwest 312/255-9800. Southern 404/955-1500, Western 213/877-1282, Canadian 416/678-9430. Or write to: Hewlett-Packard, 1820 Embarcadero Road, Palo Alto, California 94303; in Europe: Hewlett-Packard S.A., 7 rue du Bois-du-Lan, P.O. Box CH-1217 MEYRIN 2, Geneva, Switzerland; elsewhere in the world: Hewlett-Packard Intercontinental, 3495 Deer Creek Road, Palo Alto, California 94304.



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