

# INTRODUCING THE 7906

## GENERAL DESCRIPTION

The HP 7906 Disc Drive is a high-performance, random-access, mass-storage device designed for use as a peripheral unit with small- and medium-size systems. The disc drive has a combination fixed disc and a front-loading, removable disc cartridge.

All HP 7906's contain a sophisticated fault detection system which senses abnormal drive conditions and indicates the fault through a group of four light-emitting diode indicators on the control printed-circuit assembly. This advanced serviceability feature facilitates troubleshooting and reduces time to diagnose and repair failures.

In addition, HP 7906's which contain an integrated controller have a self-test feature which further facilitates troubleshooting.

## DISC MEDIA

HP seeks to provide the best possible total disc performance through extensive testing, selection, and control over all the critical components that make up an HP disc product. Because of the unique interdependence of total disc performance and the head/media interface, disc drive specifications and reliability can only be assured when using HP media products.

Undesirable alteration of the media surface environment can result from improper cleaning. The cleaning of HP media products using a nonapproved process is, therefore, not recommended.

Any damage sustained to the heads or media, or any consequential damage resulting from the use of non-HP media or improperly cleaned media, is excluded from warranty or service contract coverage but will be repaired subject to HP's standard time and material charges. Use of non-HP media, however, does not affect the warranty and service contract coverage of other components of the drive not associated with the head/media interface.

## ENVIRONMENTAL CONSIDERATIONS

### TEMPERATURE AND HUMIDITY

Although the HP 7906 Disc Drive has been designed and manufactured to operate over a wide range of environmental conditions, it is important to use the disc drive within the limits specified in table 1 to ensure disc cartridge interchangeability.

The temperature of the disc cartridge with respect to the disc drive must be within  $\pm 3^{\circ}\text{C}$  ( $\pm 5.4^{\circ}\text{F}$ ) of each other to ensure optimum performance. If the waiting time is not critical and disc cartridges are stored in another area, the temperature of the storage area should be maintained between  $-15^{\circ}\text{C}$  and  $60^{\circ}\text{C}$  ( $5^{\circ}\text{F}$  and  $140^{\circ}\text{F}$ ) with the relative humidity between 0 and 95 percent. If the temperature and relative humidity of the storage area are different than the operating area, the disc cartridges must be allowed two hours for environmental stabilization when brought into the operating area.

Table 1. Temperature/Humidity Considerations

**AMBIENT TEMPERATURE**

- Operating: 10°C to 40°C (50°F to 104°F) rate of temperature change not to exceed 20°C (36°F)/hour
- Nonoperating: -40°C to 65°C (-40°F to 149°F) rate of temperature change not to exceed 20°C (36°F)/hour

**RELATIVE HUMIDITY**

- Operating: 8% to 80% with maximum wet bulb temperature not to exceed 25.6°C (78°F), non-condensing
- Nonoperating: 5% to 95%
- Note: The disc drive must not be turned on if there are signs of moisture condensation in or on the disc drive.

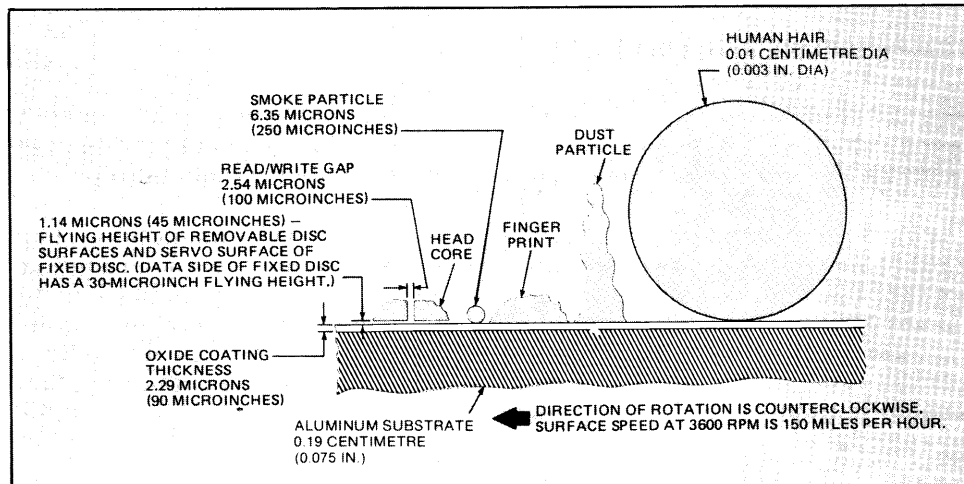
**ALTITUDE**

- Operating: Sea level to 4 572 m (15,000 ft)
- Nonoperating: Sea level to 15 240 m (50,000 ft)

**CLEANLINESS**

Shown below are the critical elements involved in the disc read/write process, i.e., the read/write gap, the flying height of the heads, and the thickness of the oxide coating on the disc surfaces. The flying height is an average value due to the surface irregularities of both heads and disc. Also shown are various types of contaminants and their size relationships. A contaminant particle hard enough and of the right size may scratch either the oxide coating or the head surface. Even if not hard enough to scratch, it may be large enough to increase the head disc spacing, thereby causing data errors. Therefore, to prevent potential damage or data losses, it is extremely important to maintain the cleanliness of the air within the disc drive.

Air entering the disc drive passes through a prefilter, which traps the larger contaminant particles, and then through an absolute filter, which traps 99 percent of all contaminants down to 0.3 micron in size. By trapping the larger particles, the pre-filter extends the life of the more costly absolute filter. To ensure that clean air will



Head/Media Critical Elements

be present, the air flow through the filters must be checked on a regularly scheduled basis. The preventive maintenance schedule requires that the absolute filter output air pressure be measured every six months when the disc drive is operated in a clean environment. When the disc drive is operated in a severe environment, such as one in which unusual amounts of dust, smoke, moisture, oil vapor, or other foreign matter are present, the absolute filter output air pressure should be measured more frequently. Refer this measurement and any filter replacement to service-trained personnel.

## STORAGE

Special considerations must be taken for storage of disc cartridges. It is highly desirable to have disc cartridges stored in environmental surroundings that are nearly identical with those of the operating area. Storing disc cartridges in the same area where the disc drive is located will avoid the waiting time for disc drive and disc cartridge temperature equalization.

Disc cartridges should always be stored in a clean, dust-free area and should not be stacked more than two high when lying flat. It is advisable to provide storage cabinets with shelves adjusted to the appropriate height. Disc cartridges should not come in contact with any magnetic material and should not be stored directly on top of the disc drive. A magnetic field with an intensity greater than 50 oersteds near a disc cartridge can cause loss of information.

## ACCESSORIES

The following accessories may be ordered with the disc drive or separately from your local Hewlett-Packard Sales and Support Office. A list of HP Sales and Support Offices is provided at the back of this manual.

HP Model No.	Description
HP 10833B	HP-IB Interface Cable (2 m) (6.55 ft)
HP 12904A	Slide Mounting Kit
HP 19510D	Slide Mounting Kit
HP 12940A	Formatted Disc Cartridge
HP 13013D	Multi-Unit Cable, 3.66 m (12 ft)
HP 13013D-001	Multi-Unit Cable, 1.83 m (6 ft)
HP 13013D-002	Multi-Unit Cable, 5.49 m (18 ft)
HP 13013D-003	Multi-Unit Cable, 2.44 m (8 ft)
HP 13213D	Data Cable, 3.05 m (10 ft)
HP 13213D-001	Data Cable, 7.62 m (25 ft)
HP 13213D-002	Data Cable, 15.24 m (50 ft)
HP 13213D-003	Data Cable, 22.86 m (75 ft)
HP 13213D-004	Data Cable, 1.83 m (6 ft)

## SUPPORTING DOCUMENTATION

The following documentation may be ordered from a Hewlett-Packard Sales and Support Office. Sales and Support Offices are listed at the back of this manual.

- *HP 7906D Disc Drive Installation Manual*, part no. 07906-90912.
- *HP 7906D Disc Drive Service Manual*, part no. 07906-90913.