

Disk Drive

CONTROL DATA OEM

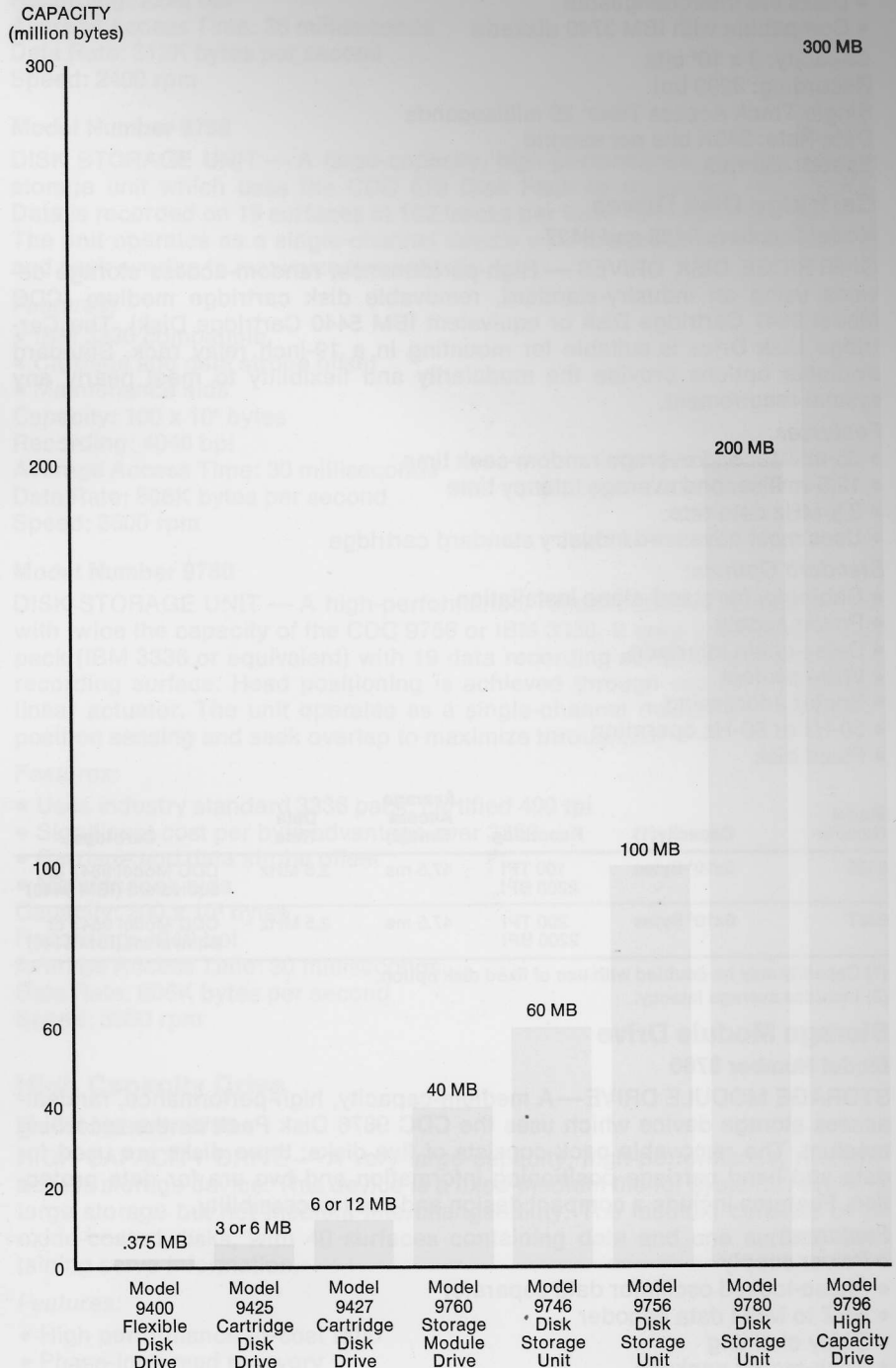
The World Leader in OEM Peripheral Equipment

International  
Product



9780 Disk Storage Unit

The following described disk drives are a complete family of rotating memory devices — from the .3-million-byte Flexible Disk Drive to the 300-million-byte High-Capacity Drive. Control Data can supply disk drive systems to meet any requirement. This chart depicts the disk drive family.



## Flexible Disk Drive

### Model Number 9400

**FLEXIBLE DISK DRIVE** — A random-access, high-performance storage device employing a 7½-inch flexible disk as the recording medium. The disk, which is enclosed in a protective envelope, is made of Mylar and has a magnetic-oxide surface. The envelope is held in a fixed position through a center hole while data is accessed through a slit extending from the center of the disk to its outer edge. This slit enables the magnetic heads to contact the surface while the disk is rotated by the drive spindle.

#### Features:

- Lightweight, easily portable, mailable media
- Small size for mounting in any convenient location
- Easy loading and accessing
- Disks are interchangeable
- Compatible with IBM 3740 diskette

Capacity: 3 x 10<sup>6</sup> bits

Recording: 3200 bpi

Single Track Access Time: 20 milliseconds

Data Rate: 240K bits per second

Speed: 360 rpm

## Cartridge Disk Drives

### Model Numbers 9425 and 9427

**CARTRIDGE DISK DRIVES** — High-performance, random-access storage devices using an industry-standard, removable disk cartridge medium (CDC Model 9847 Cartridge Disk or equivalent IBM 5440 Cartridge Disk). The Cartridge Disk Drive is suitable for mounting in a 19-inch relay rack. Standard available options provide the modularity and flexibility to meet nearly any system requirement.

#### Features:

- 35-millisecond average random-seek time
- 12.5-millisecond average latency time
- 2.5-MHz data rate
- Uses most advanced industry standard cartridge

#### Standard Options:

- Cabinetry for stand-alone installation
- Power supply
- Daisy-chain interface
- Write protect
- Sector addressing
- 50-Hz or 60-Hz operation
- Fixed disk

Model Number	Capacity(1)	Recording	Average Access Time(2)	Data Rate	Cartridge
9425	3x10 <sup>6</sup> Bytes	100 TPI 2200 BPI	47.5 ms	2.5 MHz	CDC Model 9847 or equivalent (IBM 5440)
9427	6x10 <sup>6</sup> Bytes	200 TPI 2200 BPI	47.5 ms	2.5 MHz	CDC Model 9847 or equivalent (IBM 5440)

(1) Capacity may be doubled with use of fixed disk option.

(2) Includes average latency.

## Storage Module Drive

### Model Number 9760

**STORAGE MODULE DRIVE**—A medium-capacity, high-performance, random-access storage device which uses the CDC 9876 Disk Pack as the recording medium. The removable pack consists of five disks; three disks are used for data and head carriage positioning information and two are for data protection. Features include a compact design and easy accessibility.

#### Features:

- Power supply
- Phase-locked oscillator data separator
- NRZ to MFM data encoder
- Daisy chaining
- Rack-mount package
- Base cabinet
- 2400 rpm, 6.45 MHz data rate

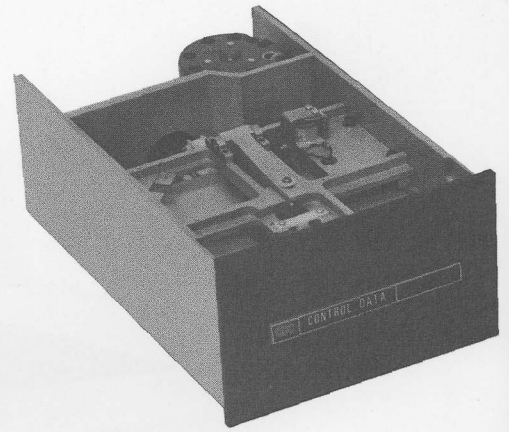
Capacity: 40 x 10<sup>6</sup> bytes per spindle

Recording: 6038 bpi

Average Access Time: 30 milliseconds

Data Rate: 1.2M bytes per second

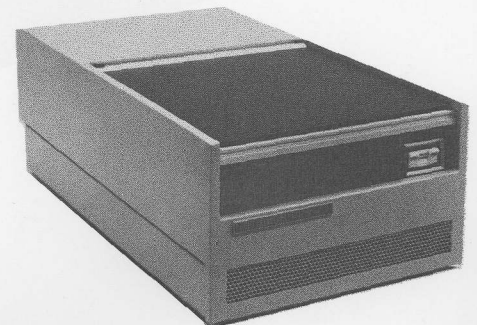
Speed: 3600 rpm



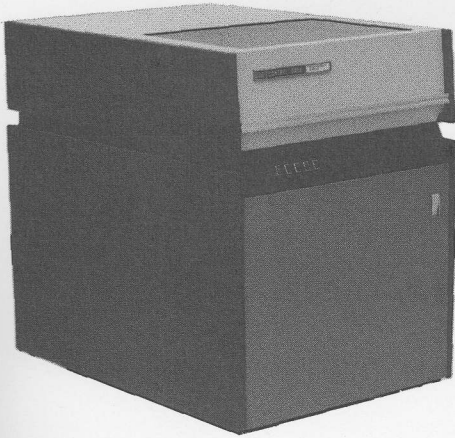
9400 Flexible Disk Drive



9425 Cartridge Disk Drive



9760 Storage Module Drive



9746 Disk Storage Unit



9756 Disk Storage Unit  
9780 Disk Storage Unit

## Disk Storage Units

### Model Number 9746

**DISK STORAGE UNIT** — A large-capacity, high-performance, random-access storage device which uses the CDC 9873 Disk Pack (or equivalent). The pack contains eleven disks, with information stored on twenty surfaces at 200 tracks per inch, 400 tracks per surface.

#### Features:

- Absolute addressing
- Use of simplified TTL interface, single-ended transmission system
- Use of industry standard 20-surface disk pack (IBM 2316)
- Significant cost-per-byte advantage over available 30M or 60M byte products

Capacity:  $60 \times 10^6$  bytes

Recording: 2220 bpi

Average Access Time: 35 milliseconds

Data Rate: 312K bytes per second

Speed: 2400 rpm

### Model Number 9756

**DISK STORAGE UNIT** — A large-capacity, high-performance, random-access storage unit which uses the CDC 879 Disk Pack or equivalent (IBM 3336). Data is recorded on 19 surfaces at 192 tracks per inch, 404 tracks per surface. The unit operates as a single-channel device with rotational position sensing and seek overlap to maximize throughput.

#### Features:

- IBM 3330 compatible
- Carriage and data strobe offset
- Maintenance aids

Capacity:  $100 \times 10^6$  bytes

Recording: 4040 bpi

Average Access Time: 30 milliseconds

Data Rate: 806K bytes per second

Speed: 3600 rpm

### Model Number 9780

**DISK STORAGE UNIT** — A high-performance, random-access storage device with twice the capacity of the CDC 9756 or IBM 3330. It uses a removable disk pack (IBM 3336 or equivalent) with 19 data recording surfaces and one servo recording surface. Head positioning is achieved through use of a voice-coil linear actuator. The unit operates as a single-channel device with rotational position sensing and seek overlap to maximize throughput.

#### Features:

- Uses industry standard 3336 pack, certified 400 tpi
- Significant cost per byte advantage over 3330
- Carriage and data strobe offset
- Maintenance aids

Capacity:  $200 \times 10^6$  bytes

Recording: 4040 bpi

Average Access Time: 30 milliseconds

Data Rate: 806K bytes per second

Speed: 3600 rpm

## High Capacity Drive

### Model Number 9790

**HIGH CAPACITY DRIVE** — A very-large-capacity, high-performance, random-access storage device. This device is a fixed-medium file for systems requiring large storage but not medium interchangeability. The medium consists of 22 oxide-coated disks, with 40 surfaces containing data and one surface containing servo information.

#### Features:

- High performance-to-cost ratio
- Phase-lock read recovery
- Absolute addressing
- Carriage and data strobe offset
- Maintenance aids

Capacity:  $300 \times 10^6$  bytes

Recording: 6000 bpi

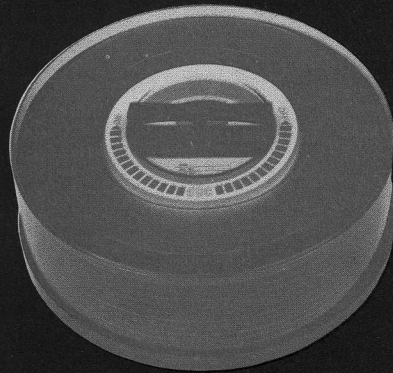
Average Access Time: 50 milliseconds

Data Rate: 38.7M bits per second





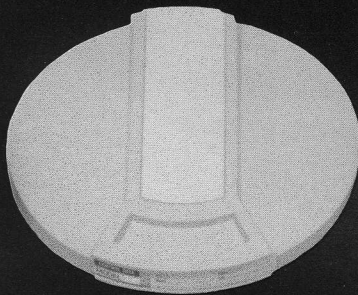
9849 Disk Pack



9869 Disk Pack

9871 Disk Pack

9879 Disk Pack



9846 Cartridge Disk Pack



## Disk Packs

### Model Number 9849

DISK PACK — This pack has six 14-inch-diameter disks with 10 useable disk surfaces and 20 sectors. This disk pack is compatible with IBM 1316.

### Model Number 9851

DISK PACK — This pack has six 14-inch-diameter disks with 10 useable disk surfaces and 32 sectors. Used primarily with CDC systems. This pack is also available to the OEM Customer who has installed the required sector option.

### Model Number 9869

DISK PACK — This pack has eleven 14-inch-diameter disks with 20 useable surfaces and 1 index slot. This Disk Pack is compatible with the IBM 2316.

### Model Number 9871

DISK PACK — This pack has eleven 14-inch-diameter disks with 20 useable surfaces and 14 sectors. Used primarily with CDC systems, but can also be used on OEM units if sector option is installed.

### Model Number 9876

DISK PACK — This pack has five 14-inch-diameter disks with 5 useable data surfaces and one servo track surface. The cannister-type pack has two protective disks; one on the top and one on the bottom. The pack has 200 tracks per inch, 6000 bits per inch. It is used with the CDC 9760 Storage Module Drive.

### Model Number 9879

DISK PACK — This pack has eleven 14-inch-diameter disks with 19 useable data surfaces and one servo-track surface, 200 TPI, 4000 BPI. Used with CDC 9754 Disk Storage Unit. This Disk Pack is compatible with IBM 3336.

### Model Number 9846

CARTRIDGE DISK PACK — This cartridge has a single 14-inch-diameter disk with 2 useable surfaces, 100 TPI, 1100 BPI. Used on the IBM 2310 Cartridge Disk Drive, and compatible with the IBM 2315.

### Model Number 9847

CARTRIDGE DISK PACK — This cartridge has a single 14-inch-diameter disk with 2 useable surfaces, 100 TPI. Used with CDC 9425 Cartridge Disk Drive, and compatible with the IBM 5444.

### Model Number 9848

CARTRIDGE DISK PACK — This cartridge has a single 14-inch-diameter disk with 2 useable surfaces, 200 TPI. Used only with CDC 9427 Cartridge Disk Drive.

## Customer Engineering Packs

CDC eleven-high, six-high and cartridge Customer Engineering Disk Packs are highly precise maintenance and alignment tools for use with CDC and IBM or equivalent drives. These packs contain information pre-recorded under controlled conditions by a high-precision writing device. This pre-recorded information is used for head alignment, index-transducer assembly circumferential adjustment, head-angle checks, carriage alignment, read/write head tracking adjustment, and other maintenance checks.

All alignment information recorded on the CDC packs has been related to and is compatible with the IBM Customer Engineering Alignment Packs.

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