

CONTROL DATA® 844-2 MASS STORAGE SUBSYSTEM

CONTROL DATA
CORPORATION



The CONTROL DATA Mass Storage Subsystem consists of up to eight 844-2 Disk Storage Units, with associated single or dual 7054 or 7654 storage controllers. This provides a large-capacity, multi-access storage device, using removable disk packs. Each drive has a capacity of 708 million bits, and an expanded subsystem with eight on-line drives, has a capacity of 5.7 billion bits. Additional data may be stored off-line, using Model 872 Disk Packs.

The 844-2 cabinet contains a single drive mechanism. This achieves modularity on a unit basis, and permits the addition of a single disk storage unit at a time.

A track-packing method consisting of 4,000 bits per inch, coupled with a track density of 200 tracks per inch, yields the total usable capacity of 708 million bits per drive. Head positioning is controlled by a voice-coil positioner, with an average positioning time of 30 milliseconds. The disk rotates at 3600 RPM, providing an average latency time of 8.3 milliseconds. The high bit density and rotational speed combine to provide a transfer rate of 7.8 million bits per second.

7.8 million bits

The 7054 Disk Controller is used with the CDC CYBER 70/Models 72, 73, and 74. The 7654 Disk Controller is used with the Model 76. Using a single controller, it is possible to perform multiple-overlapped seek operations concurrently with one read or write operation. Two controllers in a subsystem provides two simultaneous data transfers (read and/or write) to any two drives, while retaining the multiple seek feature.

The disk controller includes a small, programmable processor. The ability to program the processor enhances the normal operation of the subsystem and provides for more diagnostics and recovery capability.

CDC Model 872 Disk Packs are used with the 844-2 Disk Storage Units. The 872 consists of a stack of eleven, 14-inch diameter, magnetic recording disks. Nineteen surfaces are used for data recording and one is used for permanently-recorded positioning information.

841 MULTIPLE DISK DRIVE SPECIFICATIONS

RECORDING FORMAT/CAPABILITY

Capacity (8 spindles):

- Sector —8340 bits/640 characters
(14 sectors per track)
- Track —53,760 bits/8,690 characters
- Cylinder—1,075,200 bits/179,200 characters
- Spindle—215,040,000 bits/35,840,000 characters
- MDD (8 spindles) 1,720,320,000 bits/286,720,000 characters

Recording Mode: Double Frequency

Recording Density: 1530 BPI (outer track)
2220 BPI (inner track)

Tracks per Surface: 200 (plus 3 spares)

PROCESSING SPEED

Bit Rate: 2.50 million bits per second

Spindle Speed: 2400 RPM

ACCESSING TIME (Direct Seek on Track)

Full Stroke: 135 Milliseconds

Average: 75 Milliseconds

One Track: 24.5 Milliseconds

DISK PACK

Type: CDC 871 or equivalent (IBM 2316)

Number of Disks: 11

Usable Surfaces: 20

Diameter: 14 inches

Coating: Magnetic Oxide

POWER

Power Source: 208 VAC, 3 Phase, Wye

Standby: Current—3 amps per phase
Power dissipation—0.9 KW

Operating: Current—1 spindle—5 amps/phase
—2 spindles—7 amps/phase
Power Dissipation—1 spindle—1.3 KW
—2 spindles—1.8 KW

PHYSICAL

Size per Cabinet (Maximum 5)

Height: 67 inches

Width: 32 inches

Depth: 40 inches (excluding controller)

Weight: With 1 spindle—800 pounds
With 2 spindles—1200 pounds

Environment—Operating:

Temperature: 60 to 90° F.

Humidity: 10 to 80% R.H. (non-condensing)

Environment—Non-operating:

Temperature: Minus 30 to Plus 150°F.

Humidity: 5 to 95% R.H. (non-condensing)

Heat Dissipation: 1 spindle —4460 BTU/Hr.
2 spindles—6180 BTU/Hr.

Specifications are subject to change without notice.