

# Control Data® 9415 Wren™ 5¼-Inch Rigid Disk Drive

Designed for Original Equipment Manufacturers (OEM)

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CONTROL  
DATA

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The Control Data 9415 Wren Disk Drive is a 5¼-inch unit that provides 19 or 32 megabytes of unformatted storage. Data is stored on non-removable, lubricated media contained in an ultra clean, sealed recording environment.

The 9415 mounts vertically or horizontally in the same space as a 5¼-inch Flexible Disk Drive (FDD).

## Features

- Full data recovery circuits
- User-defined sectoring
- Ultra clean, sealed head, disk and actuator chamber
- Rotary voice coil actuator
- Dedicated head-landing zone
- Automatic actuator restraint
- Manual shipping lock
- Advanced, high stability head
- Microcomputer control
- Closed loop servo system
- Brushless DC motor
- Large-Scale Integrated (LSI) circuits
- Low noise level for office use
- No preventive maintenance
- Maximum power dissipation less than 130 Btu per hour
- Internal shock mounts
- Vertical or horizontal mounting
- Same mounting as 5¼-inch FDD



## Description

The 9415 Wren contains two or three disks that are located in an environmentally sealed chamber. No unfiltered outside air is drawn into the unit. Air is recirculated within the disk/actuator chamber and passes through a filter to ensure a contamination-free environment.

The latest rigid disk technology is used in the 9415 Wren. This includes low-mass, lightly-loaded, read/write heads, attached to a precisely controlled rotary-arm voice coil head positioner. A microcomputer and a dedicated servo surface provide head positioning control. No head alignment or adjustments are required.

The servo positioning system, combined with Phase-Locked Oscillator (PLO) data recovery and reference clocking, increase data integrity and provide precise recovery of written data.

The 9415 can be configured radially, or up to three drives in a daisy-chain configuration. The 9415 also can be placed in a daisy-chain configuration with flexible disk drives.

## Applications

- Desktop computers
- Small business systems
- Word processing systems
- Automated office multi-user systems
- Distributed processing networks
- Process control
- Automated test equipment
- Numerical control
- CAD/CAM systems

## Specifications

### Functional

Capacity (Unformatted)*	32 Mbyte	19 Mbyte
Number of Disks	3	2
Data Surfaces	5	3
Servo Surfaces	1	1

### Recording

Track Density	800 tracks/in
Tracks Per Surface*	635
Track Capacity	10,080 bytes
Data Recording Code	MFM
Bit Density	8730 bits/in
Data Transfer Code	NRZ plus clock
Transfer Rate	4.84 Mbits/s
Positioning Method	Rotary voice coil actuator
Seek Time	
Track-to-Track	10 ms
Average	50 ms
Maximum	100 ms
Step Pulse Rate	50 kHz
Spindle Speed	3,600 r/min ( $\pm 1\%$ )
Latency	8.33 ms

### Reliability

Soft Read Errors	1 in $10^{10}$ bits read, maximum
Hard Read Errors	1 in $10^{12}$ bits read, maximum
Seek Errors	1 in $10^6$ seeks, maximum
Preventive Maintenance Adjustments	None
MTBF	10,000 hours
Service Life	5 years

### Power Requirements

DC	+12 V ( $\pm 5\%$ ) +5 V ( $\pm 3\%$ )
Power Dissipation	28 W, typical
AC	Not required

### Environmental

Operating Temperature	10° C to 46° C (50° F to 115° F)
Operating Humidity	20% to 80% RH
Altitude, Sea Level Ref.	-300 to +2,000 m (-983 to +6,562 ft)

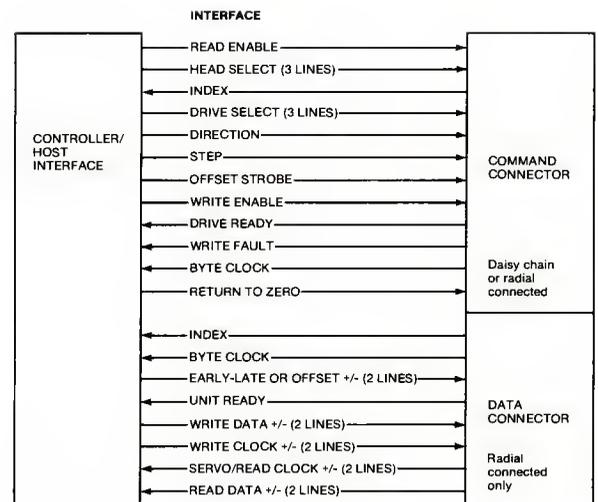
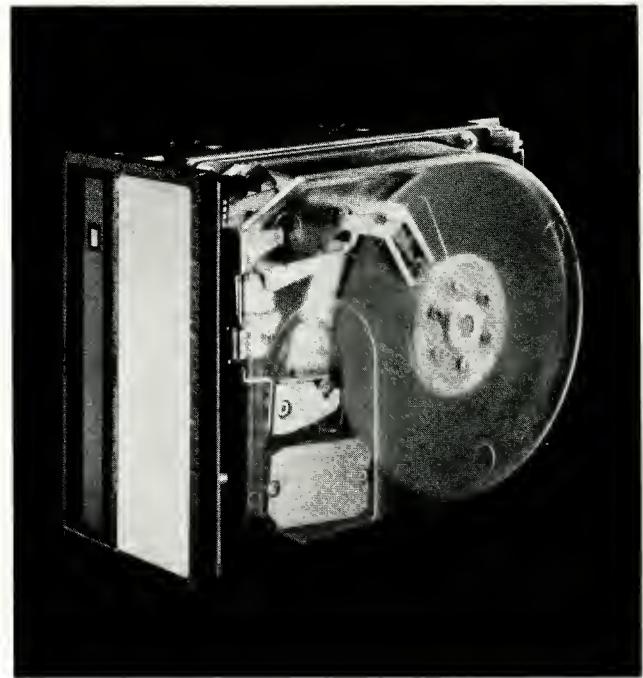
### Physical Characteristics

Height	82.55 mm (3.25 in)
Width	147 mm (5.75 in)
Depth	203 mm (8 in)
Weight	2.82 kg (6.2 lb)

### Options and Accessories

Power supply with cables  
Front panel with indicator  
Maintenance manual  
Suitcase tester

\*Not including spares



Control Data sales offices are located in principal cities throughout the world.

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Specifications subject to change without notice.