

Wren™ V Half-Height 5¼-inch Disk Drives

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Designed for Original Equipment Manufacturers (OEM)

The Control Data Wren V Half-Height is a high-performance, 190-megabyte (formatted) Winchester disk drive with an embedded SCSI controller.

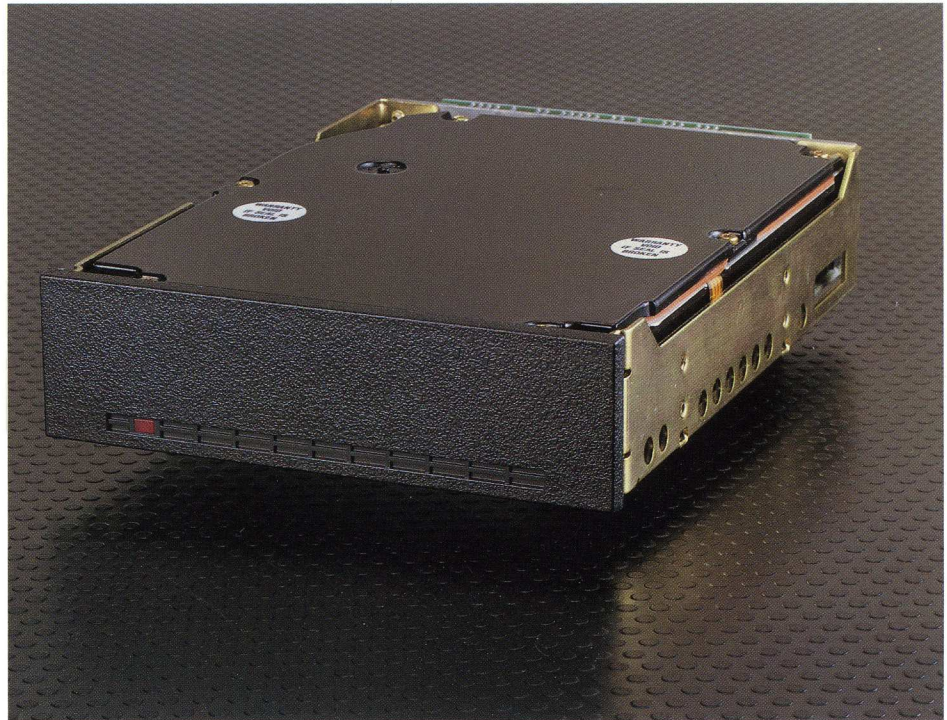
The Wren V Half-Height uses zoned bit recording, which provides more user capacity with fewer heads and disks than conventional recording techniques.

A patented, low-mass, straight-arm rotary voice coil actuator and tri-phase servo positioning (patent pending) help the Wren V Half-Height achieve 18-millisecond average seek. The Wren V Half-Height features both synchronous and asynchronous operation.

Features such as a sealed head/disk assembly with lifetime internal air filtration and humidity control contribute to an outstanding 40,000-hour MTBF.

Features

- 190 megabytes formatted
- Zoned bit recording
- Supports SCSI Common Command Set
- 15 MHz disk transfer rate (max)
- 4 megabyte synchronous transfer
- 2.5 megabyte asynchronous transfer
- 32 kilobyte data buffer
- 18-millisecond average seek
- Tri-phase servo positioning
- Patented, balanced, low-mass, straight-arm rotary voice coil actuator
- Closed-loop, dedicated servo system
- 40,000-hour MTBF
- Automatic thermal compensation
- Dedicated head landing zone
- Automatic actuator restraint/shipping lock
- Sealed HDA with lifetime internal air filtration and humidity control
- Integral HDA isolation mounts
- Epoxy coated base casting
- Adaptive slimming (patent pending)
- Surface mount electronics
- In-hub spindle motor
- 5 bels or less audible noise
- Vertical or horizontal mounting



**You Cannot
Outdistance
Control Data**



Product Safety Standards

All Wren family products meet requirements for UL, CSA and VDE certification. Wren drives are supplied as Class A computing devices per FCC rules governing radio frequency and electromagnetic interference.

Maintenance and Spares

All Control Data products are backed by a comprehensive maintenance and spares support program.

Repair

Control Data provides a dedicated repair facility for all Wren family products.

The Wren Family

The Wren family provides a range of models from 48 to 574 megabytes.

- Wren II: 48 to 96 MB
 - ST506
 - ESDI
- Wren II HH: 51 MB
 - ST506
- Wren III: 101 to 182 MB
 - ESDI
 - SCSI
- Wren III HH: 106 MB
 - ESDI
 - SCSI
- Wren IV: 320 MB
 - SCSI
- Wren V: 344 to 574 MB
 - ESDI
 - SCSI
- Wren V HH: 190 MB
 - SCSI

SPECIFICATIONS

94221-190

Capacity (Mbytes)

Unformatted	209
Formatted (1024 Bytes/sector)	190

Configuration

Number of disks	3
Data surfaces	5
Servo surface	1
Tracks per surface	1,547
Recording method	2, 7 RLL (ZBR)

Performance

Rotation speed	3,600 rpm
Average latency	8.33 ms
Seek time	
Single track	4 ms
Average	18 ms

Interface

Type	SCSI
Transfer rate (Mbytes/sec)	
Asynchronous	2.5 max
Synchronous	4.0 max

Reliability and Maintainability

Error Rate	
Recoverable	1 in 10 ¹⁰ bits read, max
Unrecoverable	1 in 10 ¹² bits read, max
Seek	1 in 10 ⁶ seeks, max
MTBF	40,000 hours
MTTR	½ hour
Preventive maintenance	None
Service life	5 years or 30,000 hours

Power Requirements

DC	+12 V (± 5%) + 5 V (± 5%)
Power dissipation	Less than 20 watts typical

Environmental

Temperature	
Operating	10 to 50° C (50 to 122° F)
Storage	-10 to 54° C (14 to 130° F)
Transit	-40 to 70° C (-40 to 158° F)
Relative humidity	
Operating	8 to 80%
Storage	8 to 90%
Transit	5 to 95%
Altitude	
Operating	-300 to 3000 m (-1,000 to 10,000 ft)
Transit	-300 to 12,000 m (-1,000 to 40,000 ft)
Acoustical noise	
Sound power—idle	5.0 bels or less

Physical

Height	41.28 mm (1.625 in)
Width	147 mm (5.75 in)
Depth	203 mm (8.0 in)
Weight	1.9 kg (4.2 lbs)

Distributed by:

Specifications subject to change without notice.

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

 CONTROL DATA

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