SWSD5-SA 3.57-GB
5.25-Inch Disk Drive SBB
For Sun™ Product Notes

StorageWorks™

Thank you for purchasing our SWSD5-SA StorageWorks Building Block (SBB), designed and manufactured by Digital Equipment Corporation. Please note that this drive is preformatted and prelabled for Sun and is ready to go.

Brief Overview of SWSD5-SA Drive:

This 5.25-inch drive has a formatted capacity of 3.57 GB. It features an average seek time of <12 ms and an average latency of 5.6 ms, providing an average data-access time of <17.6 ms. The drive uses a banded recording technique to keep the bit density constant regardless of track radius, obtaining media transfer rates as high as 5.5 MB/s. This drive has a 512-KB segmented cache buffer to maximize the cache hit rate for sequential reads.

The SWSD5-SA drive also offers unsurpassed data integrity, featuring a 264-bit ECC technique that can correct up to 11 non-contiguous bytes per block. The drive layout ensures proper addressing by providing four separate copies of the header for each sector, along with embedded servo data for fine-tuning the head position. In addition, the drive electronics add end-to-end checksum error detection code (EDC) to the data to ensure the integrity of the data returning to the system bus.

Other special features of note include:
- Fast SCSI-2 interface.
- Downloadable SCSI firmware.
- Automatic sector reallocation.
- Parity on cache RAM.
- 300,000-hour MTBF.
- Self diagnostics.
- Tagged command queuing.
- UL, CSA, and VDE standards.

/etc/format.dat Information:

For your convenience, we have labeled this drive with a format utility for the following settings, giving the drive traditional partitions, so that you can install this unit and get it up and running quickly. Note that we designated a fixed *nsect* value, even though this banded drive allows a different number of sectors/track, depending on the radius of a given track. We determined this value by dividing the total number of blocks by the total number of heads, dividing that result by the total number of cylinders, and then rounding down the result to the next lower whole number. Some partition sizes also were selected to be consistent with the *newfs* command. (For example, the "g" partition was reduced to avoid truncation of the last cylinder group.) We recommend that you enter this information into your */etc/format.dat* file so that the data will be readily available for any possible future use:

```
disk_type = "DEC_RZ74" \
  : ctlr = SCSI : fmt_time = 9 \
  : ncyl = 3053 : acyl = 2 : pcyl = 3055 : nhead = 25 : nsect = 91 \
  : rpm = 5400 : bpt = 46952
```

For SunOS systems, the partition data is as follows:

```
partition = "DEC_RZ74" \
  : disk = "DEC_RZ74" : ctlr = SCSI \
  : a = 0, 65975 : b = 29, 193375 : c = 0, 4192825 \
  : g = 114, 3931200 : h = 1843, 2752750
```

For Solaris systems, the partition data is as follows:

```
partition = "DEC_RZ74" \
  : disk = "DEC_RZ74" : ctlr = SCSI \
  : 0 = 0, 65975 : 1 = 29, 193375 : 2 = 0, 4192825 \
  : 6 = 114, 3931200 : 7 = 1843, 2752750
```

Note: Your operating system may impact your capability to successfully create file systems greater than 2.0 gigabytes in size.

SWSD5-SA Specifications:

Physical Configuration	
Number of discs (platters)	13
Number of read/write heads	25
Servo	Embedded
Unformatted capacity	4,520 MB
Formatted capacity	3,572 MB
Number of cylinders	3,055
Tracks per surface	3,055
Track capacity (bytes)	40,960–61,440
Bytes/sector	512
Sectors/track	79–119
Sectors/drive	6,976,375

Power Requirements	
Seeking current	
+5 Vdc +/-5% (typical)	1.0 A
+12 Vdc +/5% (typical)	2.5 A
Power consumption:	
Active (100% seeking)	35 W
Active (40% seeking)	
Idle	29 W

Performance Specifications	
Interface transfer rate:	
Synchronous	10 MB/s
Asynchronous	5 MB/s
Media transfer rate	3.6 – 5.5 MB/s
Cache buffer	512 KB
Track-to-track seek:	1.3 ms

Recording	
Track density	2,756 tpi
Bit density	44,000 bpi
Areal density	121 MB/in^2
Recording method	RLL (1,7)

Physical	
Height	82.8 mm/3.25 inches
Width	146 mm/5.75 inches
Length	208 mm/8.21 inches
Weight	3.0 Kg/6.7 lbs

Environmental Specifications	
Non-Operating:	
Temperature	-40° C to 66° C
Humidity (RH)	8% to 95%, noncondensing
Operating:	
Temperature	10° C to 50° C
Humidity (RH)	10% to 90%, noncondensing
Shock	10 G peak half sine 10 ms duration
Vibration	22–500 Hz @ 0.5 G peak
Acoustics:	
Seeking	50 dBA @ 1.0 meter
Idle	39 dBA @ 1.0 meter

Power On Test

Disk drive status is displayed by two LEDs on the front of the storage device (Figure 1). Each LED has three states: *on, off,* and *flashing*. When the drive is powered on, both LEDs flash as a hardware/lamp test and then assume the following normal operating status activity:

- The left LED (green) is a device-controlled activity LED and is on or flashing when the drive is active.

- The right LED (amber) is the drive fault LED and indicates an error condition when either on or flashing.

Figure 1 Disk Drive Status LEDs