

# ***RZ40 9.1 GB Narrow Disk Drive StorageWorks Building Block***



Product Notes

---

*This Product Note contains the replacement considerations, disk specifications, and application notes for the DS-RZ40-VA 9.1 GB Narrow disk drive SBB.*

---

## **Overview of StorageWorks Building Blocks**

Thank you for purchasing one of our disk StorageWorks Building Blocks (SBB), designed and manufactured by Digital Equipment Corporation. This device is compatible with SCSI single-ended interface standards and has been certified and is supported on StorageWorks RAID Array Subsystems.

## **Specifications**

Special features of note include:

- 9.1 GB SCSI disk drive in SBB
- Leading edge technology – Magneto Resistive (MR) heads
- 7200 rpm; 8 ms average seek time
- Asynchronous and Synchronous data -transfer protocol
- Programmable sector size reallocation
- Tagged command queuing and multi-initiator support
- Staggered disk spin-up
- Self diagnostics
- 5-year warranty
- UL, CSA, and VDE standards

The disk drive has been designed to be compatible with many data-storage applications and is ready to be used when attached to qualified Industry-standard SCSI Adapter and corresponding driver software. The drive identifies itself when interrogated by the SCSI driver software.

The drive has a turn-on circuit that automatically spins up the drive after a delay period. The delay period is equal to the disk specific predetermined delay (see Table 4) times the SCSI ID of the drive; e.g., drive in SCSI ID2 delays 2 times the predetermined delay before spin-up; drive in SCSI ID6 delays 6 times the predetermined delay before spin-up, etc. This arrangement is required for operating systems that do not have a facility for motor spin-up; it lets successive drives in an array automatically spin up following a staggered delay.

This sequence avoids excessive loading of the power supply. If your specific operating system is not compatible with this automatic "spin up" feature, please contact your supplier for instructions.

Some SCSI adapters provide options in the adapter set-up menu to allow automatic spin-up of the disk drive motor. Although not required by the drive, the automatic spin-up feature may be enabled, if other disk drive devices sharing the same SCSI adapter require it. SCSI adapters that have jumper or switch options to simultaneously spin up disk drive motors should not have that function enabled. The staggered spin-up feature within the disk sequences power to the disk drive motors one at a time. This sequencing avoids out-of-specification surges of power supply current that, under extreme conditions, could cause the supply to turn off.

**Table 1 Disk Drive Physical Data**

<b>SBB Physical Data</b>	
<b>Disk drive Model</b>	<b>RZ40</b>
Height	51 mm/2.0 inches
Width	121 mm/4.8 inches
Length	216 mm/8.5 inches
Weight	1.05 Kg/2.31 lbs

**Table 2 Disk Drive Environmental Data**

<b>Environmental</b>	
Non-Operating:	
Temperature	-40 <sup>o</sup> C to +66 <sup>o</sup> C
Humidity (RH)	5% to 95%, noncondensing
Operating:	
Temperature	+5 <sup>o</sup> C to +50 <sup>o</sup> C
Humidity (RH)	8% to 80%, noncondensing
Shock	10 G peak half-sine 11 ms duration
Vibration	22–400 Hz @ 0.5 G

**Table 3 Disk Drive Power Requirements**

<b>Power Requirements</b>	
<b>Disk Drive Model</b>	<b>RZ40</b>
Seeking current (Max.)	
+5 Vdc +/-5%	0.91 A
+12 Vdc +/-5%	1.18 A
Power consumption: (Typical)	
Active	15.5 W
Idle	13.2 W

**Table 4 Disk Drive Logical configuration**

<b>Logical Configuration</b>	
Disk Drive Model	<b>RZ40</b>
# of disks (platters)	10
# of read/write heads	20
Servo	Embedded
Formatted capacity	9.10 GB
Number of cylinders	5,273
Tracks per surface	5,273
Bytes/sector	512
Sectors/drive	17,773,523
Spin-up Delay	4–12 Sec

## Application Notes

---

### Notes Regarding Hierarchical Storage Operating Firmware (HSOF) Software Versions

The RZ40 9.1 GB Narrow disk drive requires the following StorageWorks Array controller software as a prerequisite for support:

HSOF V3.1 for HSx30/40 controllers

HSOF V5.1 for HSx50 controllers

HSx30/40 controllers carry a 1 year update warranty. Customers within the 1 year update period who have registered their controller will receive notification of the software availability.

**NOTE**

The 1 year warranty does not apply to the HSx50 controller.

Array controller customers who have MCS Media and Documentation Distribution (MDDS) contracts will receive notification of the software availability. Customers who are not under warranty or MDS contract may contact their DIGITAL Distributor or DIGITAL Sales Representative to purchase MCS services or the software.

---

### Notes for DIGITAL Unix Users

The RZ40 9.1GB Narrow disk drive requires DIGITAL UNIX operating software to be Version 3.2D or 4.0.

---

### Notes for OpenVMS Users

The RZ40 9.1 GB Narrow disk drive requires OpenVMS operating software to be at least Version 6.0 for OpenVMS VAX. OpenVMS Alpha users require Version 6.2.

---

Digital Equipment Corporation does not warrant that the predicted values represent any particular unit installed for customer use. The actual values will vary from unit to unit. These specifications are subject to change without notice. Digital is not responsible for inadvertent errors. StorageWorks™ is a trademark of Digital Equipment Corporation.