DEC 3000 Model 900 Deskside Workstations

Digital's Systems and Options Catalog

DEC 3000 Model 900 Deskside Workstations

Product Description

The DEC 3000 Model 900 workstation represents the high end of Digital's Alpha 64-bit architecture workstation family. This workstation extends the power and range of workstation computing for all business needs.

The Model 900 workstation features a 275-MHz CPU. This is Digital’s highest performance industry-standard deskside workstation, providing 189 SPECint92 and 264 SPECfp92 performance. It is the system of choice for applications that require the fastest CPU performance available, such as financial modeling, structural analysis, and electrical simulation

The Model 900 workstation provides the greatest expansion capability available in the industry today. The system supports 100-Mbyte/second I/O and graphics expansion slots, internal disk storage capacity of over 8 Gbytes and 1 Gbyte of memory. A second integral Fast SCSI-2 controller supports seven external devices and a Dual Fast SCSI-2 TURBOchannel option supports an additional 14 external storage devices. The DEC 3000 Model 900 workstation can be expanded to accommodate the most powerful 3D graphics requirements. For custom configurations, it is also available as a rackmountable workstation.

The DEC 3000 Model 900 workstation is the machine for developing and running very large data analysis and modeling/simulation programs. It is the ideal platform for users who need source code re-compiled and who want to use the same system for testing and deployment. The Model 900 suits the needs of technical users who need very fast graphics and CPU power for mechanical CAD, scientific analysis, data reduction/display, medical imaging, scientific modeling and animation/visualization; and commercial users who require large database retrieval such as financial analysis, insurance processing, network management and stock/options analysis. Users of older workstations can easily migrate to a DEC 3000 Model 900 system.

Step 1—Systems

Select system. 120 V Packaged systems include power cord and U.S. keyboard. 120 V Base systems include power cord; keyboard must be ordered separately. 240 V systems require country-specific power cord and keyboard. Software media and documentation is recommended for first system on site. Select software from Step 10, if required.

- **U.S. Orders only:** Options ordered with Packaged systems in the U.S. will be shipped outside the system enclosure. No additions can be made to a Packaged system order in the U.S.
- Options ordered with Base systems will be factory installed unless specified as **spares**.
- Minimum operating system software required is DEC OSF/1 V2.0 or OpenVMS V6.1; or later**.**
- Packaged and Base systems ordered with a disk include factory-installed software (FIS). FIS includes the latest version of operating system, DEC Open3D, cluster and networking software.

DEC 3000 Model 900 Deskside Systems include

- DECchip 21064A 275-MHz CPU with 2-Mbyte secondary cache
- TURBOchannel I/O interconnect—6 slots total
- 64, 128, or 256 Mbytes of memory
- Thick wire Ethernet (AUI) connector and 10BaseT (twisted pair) connector
- Two Fast SCSI-2 controllers (one internal/one external) with Direct Memory Access
- EIA-232 serial communication (synchronous/asynchronous) port
- ISDN port
- Printer/console port
- Audio in/out
- Audio headset
- Monitor (Packaged systems only)
- U.S. keyboard, 120 V Packaged systems only. Base systems must order keyboard.
- Three-button mouse
- 1.8-meter (6-foot) power cord, 120 V systems
- 3-meter (10-foot) video cable
- 3-meter (10-foot) keyboard/mouse cable
- DEC OSF/1 2-user base license, DEC Open3D license, DEC PHIGS runtime license, MMS runtime license, DECspin audio license, NAS 250 license **or** OpenVMS base license, OpenVMS 1-user license, DEC Open3D license, DEC PHIGS runtime license, NAS 250 license
- English-language user documentation

Packaged Systems

Order Number	Operating System	Memory	Monitor	Graphics		Available TURBOchannel Slots	RZ28=2.1 GB* RRD43=600 MB
Model 900 Packaged Systems							
PE541-AA†	DEC OSF/1	64 Mbytes	21 in C VRC21	ZLX-E1	8-plane 2D/3D	5	2.1 GB/600 MB
PE541-BA†	DEC OSF/1	64 Mbytes	21 in C VRC21	ZLX-M2	24-plane 3D	3	2.1 GB/600 MB
PE541-LA†	OpenVMS	64 Mbytes	21 in C VRC21	ZLX-E1	8-plane 2D/3D	5	2.1 GB/600 MB
PE541-MA†	OpenVMS	64 Mbytes	21 in C VRC21	ZLX-M2	24-plane 3D	3	2.1 GB/600 MB

***** Internal disk includes factory-installed software (FIS). FIS is not a substitute for software media and documentation; see Ste p 10.
† Model 900 Packaged systems ship with appropriate monitor according to geography.

Oracle Rdb Advantage Client Packaged Systems

- Systems include Oracle Rdb License

Order Number xA = U.S. variants xB = non U.S.	Operating System	Memory	Monitor	Graphics		Available TURBOchannel Slots	RZ28=2.1 GB* RRD43=600 MB
Model 900 Oracle Rdb Advantage Client Packaged Systems							
PE541-FA/FB	DEC OSF/1	64 Mbytes	21 in C VRC21	ZLX-E1	8-plane 2D/3D	5	2.1 GB/600 MB
PE541-SA/SB	OpenVMS	64 Mbytes	21 in C VRC21	ZLX-E1	8-plane 2D/3D	5	2.1 GB/600 MB

***** Internal disk includes factory-installed software (FIS). FIS is not a substitute for software media and documentation; see Step 10.
† Model 900Packaged systems ship with appropriate monitor according to geography.

Step 1—Systems *(continued)*

Oracle 7 Advantage Client Packaged Systems

- Systems include Oracle7 License

Order Number xA = U.S. variants xB = Non U.S.	Operating System	Memory	Monitor		Graphics	Available TURBO-channel Slots	RZ28=2.1 GB* RRD43=600 MB
Model 900 Packaged Systems							
PE541-GA/GB	DEC OSF/1	64 Mbytes	21 in C VRC21	ZLX-E1	8-plane 2D/3D	5	2.1 GB/600 MB
PE541-TA/TB	OpenVMS	64 Mbytes	21 in C VRC21	ZLX-E1	8-plane 2D/3D	5	2.1 GB/600 MB

* Internal disk includes factory-installed software (FIS). FIS is not a substitute for software media and documentation; see Step 10.
† Model 900 Packaged systems ship with appropriate monitor according to geography.

Base Systems–require keyboard, graphics option, and monitor

120 V Base systems include power cord; order country-specific power cord for 240 V use.

Order Number	Operating System	Memory	Monitor	Graphics	Available TURBO-channel Slots
PE540-CA	DEC OSF/1	64 Mbytes	Required	Required	6
PE540-DA	DEC OSF/1	128 Mbytes	Required	Required	6
PE540-EA	DEC OSF/1	256 Mbytes	Required	Required	6
PE540-NA	OpenVMS	64 Mbytes	Required	Required	6
PE540-PA	OpenVMS	128 Mbytes	Required	Required	6
PE540-RA	OpenVMS	256 Mbytes	Required	Required	6

Note: Systems ordered with one factory installed internal disk drive include factory-installed software (FIS). FIS is not a substitute for software media and documentation.

Step 2—Memory

System supports four memory options; 1-Gbyte maximum per system. Memory modules can be mixed.

MS15-CA 32-Mbyte ECC memory (8 x 4-Mbyte 4-Mbit 80-ns DRAM)
MS15-DA 64-Mbyte ECC memory (8 x 8-Mbyte 4-Mbit 80-ns DRAM)
MS15-EA 128-Mbyte ECC memory (8 x 16-Mbyte 16-Mbit 70-ns DRAM)
MS15-FA 256-Mbyte ECC memory (8 x 32-Mbyte 16-Mbit 70-ns DRAM)

Note: 1 Gbyte of memory can only be obtained by starting with a 256-Mbyte system (there are four memory option slots).

Step 2a—Memory Trade-In for Upgrade Systems

Some Model 800 systems include 32 Mbytes of memory. To configure 64-Mbyte, 128-Mbyte, or 256-Mbyte systems without losing a memory slot for future expansion, select memory upgrade

MS15-UE* 32 to 64-Mbyte ECC memory upgrade
MS15-UF* 32 to 128-Mbyte ECC memory upgrade
MS15-UG* 32 to 256-Mbyte ECC memory upgrade
MS15-UH† 64 to 256-Mbyte ECC memory upgrade

* Require return of original 32-Mbyte (MS15-CA) memory
† Requires return of original 64-Mbyte (MS15-DA) memory

Step 3—Storage

Select storage devices if required

- An RZ28 disk drive is recommended as a system device. An RZ25L, RZ26L, or RZ28 disk drive is recommended as a data/swap device.
- DEC OSF/1 systems require one system disk; OpenVMS systems can be networked configurations with supported page/swap functions
- Internal Fast SCSI-2 controller supports six internal devices; external Fast SCSI-2 controller supports a maximum of seven external SCSI devices. Select SCSI-2 TURBOchannel option cards if additional external storage is required. Maximum of five SCSI-2 TURBOchannel option cards supported per system.
- See Step 3c, External Storage, for SCSI cabling information

Step 3a—Internal Storage

- System supports six internal storage devices.
- Packaged systems include one RRD43 CD-ROM drive and at least one disk drive.
- Slots 1 and 2 support 5.25-inch removable media device (RX26, RRD43, TLZ06, TZK11); one additional internal removable media device supported.
- Slots 3–6 support 3.5-inch hard disk drives (RZ25L, RZ26L, RZ28).

Packaged systems include RRD43 600-Mbyte CD-ROM reader.
Note: Software distribution is only available on CD-ROM.

Removable media devices

RX26-FT	2.8-Mbyte 3.5-inch diskette drive (requires 5.25-inch half-height bay)
RRD43-HM	600-Mbyte 5.25-inch half-height CD-ROM drive
TLZ06-MF	4.0-Gbyte 5.25-inch half-height 4-mm DAT drive
TLZ07-MF	8.0-Gbyte 5.25-inch half-height 4-mm DAT drive
TZK11-MF	2.0-Gbyte 5.25-inch half-height QIC tape drive

Hard disk drives

RZ25L-EJ	535-Mbyte 3.5-inch half-height disk drive
RZ26L-EJ	1.0-Gbyte 3.5-inch half-height disk drive
RZ28-EJ	2.1-Gbyte 3.5-inch half-height disk drive

Note: Systems ordered with one RZ25L, RZ26L, or RZ28 include factory-installed software (FIS).

Step 3b—External Storage

Systems support seven external devices on integral external Fast SCSI-2 controller. Select SCSI-2 TURBOchannel option cards if more are required. Maximum of five SCSI-2 TURBOchannel option cards supported per system.

- Dual Fast SCSI-2 option card supports 14 additional external devices
- Fast Wide Differential SCSI-2 option cards support 7 additional external devices

Dual Fast SCSI-2 TURBOchannel Option Card

PMAZC-AA

Fast Wide Differential SCSI-2 TURBOchannel Option Card

- 16-bit-wide SCSI bus supports 8-and 16-bit devices
- Over 1200 I/Os per second throughput
- Supported with HSZ10 and HSZ40
- Supports up to seven SCSI devices
- Customer installable

KZTSA-AA*	Fast Wide Differential SCSI-2 Option Card—requires one TURBOchannel slot

***** KZTSA-AA can be connected to StorageWorks products using a DWZZA adapter. See Chapter 8, *Storage Devices*, for ordering information.

Step 3b—External Storage *(continued)*

Single Drive Expansion

RRD43-FA	600-Mbyte 5.25-inch half-height compact disk drive
TKZ09-BA*	5-Gbyte 5.25-inch 8-mm cartridge tape drive
TKZ60-BA*	3480/TA90-compatible cartridge tape drive
TLZ06-DA	4.0-Gbyte 5.25-inch half-height 4-mm DAT tape drive
TLZ07-DA	8.0- Gbyte 5.25-inch half-height 4-mm DAT tape drive
TSZ07-CA*	140-Mbyte 1600/6250 BPI reel to reel tape drive
TZK11-DA	2.0-Gbyte 5.25-inch half-height QIC tape drive
TZ85-TA	2.6-Gbyte 5.25-inch cartridge tape subsystem
TZ86-TA	6.0-Gbyte 5.25-inch cartridge tape subsystem, requires SCSI cable
SZ100-AA[†#]	SZ100 includes seven TZ85 (2.6-Gbyte) cartridge tapes and loader; requires SCSI cable
SZ106-AA[†#]	SZ106 includes seven TZ86 (6.0-Gbyte) cartridge tapes and loader; requires SCSI cable

* Supported under OpenVMS V6.1 or later.
† OpenVMS support only
\# Not currently available on the Model 900 systems

Note: Storage devices include 120 V power cord. See Chapter 8, *Storage Devices*, for 240 V power cord and SCSI cable ordering information.

StorageWorks Expansion Units (BA350 and BA353)

- BA350 Deskside Expansion Unit supports maximum of seven 3.5-inch half-height or two 5.25-inch SCSI devices
- BA353 Desktop Expansion Box supports three 3.5-inch half-height or two 3.5-inch half-height and one 5.25-inch half-height drive
- BA350 and BA353 Expansion units include 120 V power cord, order country specific power cord for 240 V use.
- Order SCSI cable separately; (BC09D-xx system box to BA350/BA353, or BN21H-xx when SCSI-2 TURBOchannel option card installed).

StorageWorks BA350 Deskside Expansion Unit

BA350-KB	StorageWorks deskside expansion unit includes: BA350-SB basic shelf, BA35X-HA universal ac power supply, pedestal mounting kit, and North American power cord

StorageWorks BA353 Desktop Expansion Box

BA353-AA	StorageWorks desktop expansion box
BA353-AE	StorageWorks desktop expansion box with one RRD43 5.25-inch half-height CD-ROM drive
BA353-AJ	StorageWorks desktop expansion box with TZK11 2.0-Gbyte, 5.25-inch half-height QIC tape drive

Supported SCSI devices

SCSI devices may be purchased separately and are customer installable

		BA353	**BA350**
RZ25L-VA	535-Mbyte 3.5-inch half-height disk drive	X	X
RZ26L-VA	1.0-Gbyte 3.5-inch half-height disk drive	X	X
RZ28-VA	2.1-Gbyte 3.5-inch half-height disk drive	X	X
RZ28B-VA	2.1-Gbyte 3.5-inch half-height disk drive	X	X
RZ73-VA	2.0-Gbyte 5.25-inch full-height disk drive		X
RZ74-VA	3.57-Gbyte 5.25-inch full-height disk drive		X
RRD43-VA	600-Mbyte 5.25-inch half-height compact disk drive		X
RRD43-VU*	600-Mbyte 5.25-inch half-height compact disk drive		X
TZK11-VA	2.0-Gbyte 5.25-inch half-height QIC tape drive		X
TZ86-VA	6.0-Gbyte 5.25-inch cartridge tape drive		X
TZ87-VA	2.0-Gbyte 5.25-inch cartridge tape drive		X

* 600-Mbyte CD-ROM drive can be added to RRD43-VA or TZK11-VA for a total of two 5.25-inch drives in one carrier.

Step 3b—External Storage *(continued)*

Country-specific 2.5-meter power cord—required for BA350/BA353 expansion units:

BN27X-09	U.S., Japan, Canada
BN15A-2E	Australia, New Zealand
BN13A-2E	Austria, France, Germany, Finland, Holland, Norway, Sweden, Portugal, Spain, Belgium
BN12A-2E	U.K., Ireland
BN14A-2E	Switzerland
BN16A-2E	Denmark
BN17A-2E	Italy
BN18V-2E	India
BN18W-2E	Israel

Refer to Chapter 8, *Storage Devices*, for additional BA350 modular storage shelf configurations.

TURBOchannel Extender (TCE) Expansion Box

Note: Contact Digital Services before attaching existing TcE box to Model 900 systems.

TcE expansion box supports TURBOchannel extender and three half-height devices: one half-height removable media device and two half-height hard disk drives. TcE includes base connector card and cable, SCSI cable, and 120 V power cord.

- TcE supports one dual-or triple-width TURBOchannel graphics card, leaving five additional slots available in the system for other TURBOchannel options.
- TcE level D03 (or greater) required.
- TcE supports one TURBOchannel option card.
- System supports maximum of six TcE boxes (one per TURBOchannel slot)
- TcE can be daisychained with other external storage devices but must be last device in chain.
- TcE connected to 240 V systems require a country-specific power cord.

PMTCE-AA	TcE, no options, no disks

VELOCITOR Storage Subsystems* (DEC OSF/1 Systems Only)

TURBOchannel-based IPI (Intelligent Peripheral Interface) disk subsystem supports up to eight drives on a single controller. Requires one TURBOchannel slot (maximum of three). Supports controller-based striping or shadowing.

2L-RIT01-AA*	3-Gbyte disk drive in tabletop enclosure, 1.5-foot cable, documentation
2L-RIT02-AA*	6-Gbyte (two 3-Gbyte disk drives) in tabletop enclosure, 1.5-foot cable, documentation
2L-RITCL-BA*	TURBOchannel to IPI controller, DEC OSF/1 driver, 10-foot cable, documentation

* Not currently available on Model 900.
See Chapter 8, *Storage Devices*, for further ordering information.

Step 3c—SCSI Cables and Cabling Information

SCSI cabling recommendations:

- Maximum cable length for SCSI-2 (5 Mbytes/second) = 4 meters (13 feet)
- Maximum cable length for Fast SCSI-2 (10 Mbytes/second) = 3 meters (10 feet)
- Maximum cable length for FWD SCSI-2 (20 Mbytes/second) = 25 meters
- Include internal cabling in expansion box when calculating maximum bus length. Digital expansion boxes include approximately 1 meter of internal SCSI cable. (The Model 900's internal SCSI cable does not need to be considered in these calculations.)
- Devices that operate in Fast SCSI-2 mode include: RZ25L, RZ26L, RZ28, RZ73

SCSI Cables

BC19J-xx	SCSI large 50-pin connector to large 50-pin connector (system box to SZ03, SZ12)
BC09D-06	SCSI large 50-pin connector to small 50-pin connector (system box to BA350 modular storage shelf/BA353)
BN21H-xx	SCSI small 50-pin connector to small 50-pin connector (Dual-SCSI-2 TURBOchannel option to BA353/BA350)
BN21K-xx	SCSI 68-pin connector to 68-pin connector (FWD SCSI-2 TURBOchannel option to KZTSA to BA353/BA350)

Step 4—TURBOchannel Graphics Options and Monitors–required for Base Systems

- Base systems require a graphics option and monitor.
- ZLX-E1, -M1, and -M2 graphics options require specific versions of DEC Open3D software media:
  Model 900 DEC OSF/1 systems require DEC Open3D V2.3 or higher
  Model 900 Open VMS systems require DEC Open3D V2.4
- ZLX-E2 and -E3 graphics options require DEC Open3D V2.4 software media for all Model 900 systems.
- ZLX-L1 graphics options require DEC Open3D V2.4 or later, and DEC OSF/1 V3.0 or later; or DEC Open3D V2.5 or later, and OpenVMS V6.1 or later.
- ZLX-L2 graphics options require DEC Open3D V2.5 or later; operating system requirements are DEC OSF/1 V3.0 or later **or** OpenVMS V6.1 or later.
- One 3D graphics option supported per system.
- Graphics cards installed in the TURBOchannel Extender (TcE) box require one TURBOchannel slot. Remaining five TURBOchannel slots are available for other TURBOchannel options. See Step 3b for additional information.
- Monitor cables included with each graphics option.

Order Number		Graphics Options	TURBOchannel Slots Required	Compatible monitor	Hz
PMAGD-AA	ZLX-E1	8-plane 2D/3D TURBOchannel color graphics accelerator, 1280 x 1024, 72 Hz, 2 Mpixels graphics memory	1	17-inch C VRT17-HA/H4 21-inch C VRC21-HA/H4	72 72
PMAGD-BA	ZLX-E2	24-plane 2D/3D TURBOchannel color graphics accelerator, 1280 x 1024, 72 Hz 2 Mpixels graphics memory	1		
PMAGD-CA	ZLX-E3	24-plane 2D/3D TURBOchannel color graphics accelerator, 24-bit Z-Buffer 1280 x 1024, 72 Hz 4 Mpixels graphics memory	1		
PMAGC-AA	ZLX-M1	24-plane 3D TURBOchannel color graphics accelerator, Double buffered, Z-Buffer 1 rendering processor 4 Mpixels graphics memory	2		
PMAGC-AT	ZLX-M1	24-plane 3D TURBOchannel color graphics accelerator installed in TcE expansion box	1		
PMAGC-BA	ZLX-M2	24-plane 3D TURBOchannel color graphics accelerator, double buffered, 24-bit Z-Buffer 2 rendering processor 8 Mpixels graphics memory	3		
PMAGC-BT	ZLX-M2	24-plane 3D TURBOchannel color graphics accelerator installed in TcE expansion box	1		
PMAGC-DA	ZLX-L1	24-plane 3D TURBOchannel color graphics accelerator, 24-bit image, 24-bit Z buffering, 24-bit double buffer, 4-Mpixels total graphics memory	2		
PMAGC-EA	ZLX-L2	24-plane 3D TURBOchannel color graphics accelerator, 24-bit image, 24-bit Z buffering, 24-bit double buffer, 4-Mpixel accumulation buffering, 8-Mpixels total graphics memory	3		

Step 4a—Multi-Screen TURBOchannel Graphics Options (Field Installed)

To build a multi-screen system, add TURBOchannel graphics cards and select compatible monitors from Step 4. Each additional monitor requires a country-specific power cord from Step 11.

- Add graphics card for each additional monitor provided there are free TURBOchannel slots. Six monitors are supported per system.
- Graphics options cannot be mixed.
- DEC OSF/1 and OpenVMS systems support maximum of six graphics option cards with six monitors.

Multi-screen systems expand monitor area. They are single-user systems, with one keyboard and one mouse.

- Monitor cables included with each graphics option.
- TcE graphics options can be used with multiple monitors.

Step 5—TURBOchannel Multimedia Options–DEC OSF/1 Systems Only (Field Installable)

Workstations running DEC OSF/1 include a license for Multimedia Services. See Step 10 for ordering information on Multimedia Services Runtime documentation kit and Multimedia Services Development kit license and documentation.

Sound and Motion (J300)—requires one TURBOchannel slot

- Audio/video single-slot TURBOchannel option that works with ANY graphics option
- Features include:
  - NTSC, PAL, SECAM full motion video input
  - NTSC, PAL video output
  - JPEG compression and decompression
  - 4–48 kHz audio (including CD-quality)
- Supported by Multimedia Services for DEC OSF/1 and Multimedia Services Development kit for DEC OSF/1

AV300-AA* Sound and motion J300

* DEC OSF/1 systems only.

Step 6—TURBOchannel Communications Options (Field Installable)

Each option requires one TURBOchannel slot

		Maximum Per System*
PMAD-AA/AB	Thick wire Ethernet TURBOchannel option card	5
DEFTA-FA	DEC FDDIcontroller/TURBOchannel (fiber-optic)	2
DEFTA-AA	DEC FDDIcontroller/TURBOchannel–TURBOchannel-to-FDDI adapter SAS (single attachment station), fiber	5
DEFTA-DA	DEC FDDIcontroller/TURBOchannel–TURBOchannel-to-FDDI adapter DAS (dual attachment station), fiber	5
DEFTA-UA	DEC FDDIcontroller/TURBOchannel–TURBOchannel-to-FDDI adapter SAS (single attachment station), copper	5
DETRA-AA	DEC TRNcontroller 700; TURBOchannel-to-Token-Ring adapter	2
DJ-30APS-AA	Prestoserve option card (DEC OSF/1 systems only)	1

***Assumes ZLX-E1 graphics in one TURBOchannel slot and no other TURBOchannel option installed

Step 7—Networking Adapters (Field Installable)

Systems include thick wire Ethernet (AUI) connector and 10BaseT (twisted pair) connector. A ThinWire adapter is available separately. Right-angle Ethernet cables are not supported.

DECXM-AA ThinWire Ethernet station adapter

Select desired length of cable to connect ThinWire adapter to base system. Do not attach adapter directly to base system module.

BNE4C-xx	Thick wire 802.3/Ethernet cable (-xx refers to length in meters: -02/-05 meters)
BNE3H-xx	Thick wire transceiver cable with straight connector–PVC (-xx refers to length in meters=-05/-10/-20/-40 meters)
BNE3L-xx	Thick wire transceiver cable with straight connector–Teflon (-xx refers to length in meters=05/-10/-20/ -40 meters)
BN26L-xx	10BaseT (twisted pair) cable (-xx refers to length meters)
BC16M-xx	ThinWire Ethernet cable -xx refers to length in feet=-06/-15/-30 feet)

Step 8—Optional Input/Output Devices

Tablet can be used in place of the mouse. Audio headset (input/output capability) uses the MJ audio connector.

VSXXX-AB*	28-x 28-cm (11-x 11-in.) tablet with a 2-button stylus and a 4-button puck
VSXXX-JA	Audio headset (included with all systems)

Lighted Programmable Function Keyboard (LPFK) and Programmable Function Dials (PFD) can be ordered as a pair or separately. LPFK and PFD packages listed below include a Peripheral Control Module (PCM) which provides multiplexing of both LPFK and PFD into a single EIA-232 port. Each package includes a power supply, cables, and user documentation.

VSX10-AA/A3†	Combination Lighted Programmable Function Keyboard (LPFK) and Programmable Function Dials (PFD) package, 120 V/240 V
VSX20-AA/A3†	Lighted Programmable Function Keyboard (LPFK) package, 120 V/240 V
VSX30-AA/A3†	Programmable Function Dials (PFD) package, 120 V/240 V

* Not supported on multi-screen systems.
† Supported on 3D graphics systems only.

Step 9—Printers

Refer to Chapter 9, *Terminals, Scanners, Printers*, for ordering information.

Step 10—Software

Select user licenses and additional software as required. Media and documentation is recommended for first system on site.

Software Processor Code = **G**

Minimum Operating System Software Required:	**DEC OSF/1 Systems**	**OpenVMS Systems**
Model 900	DEC OSF/1 V2.0	OpenVMS V6.1 or later

DEC OSF/1 User Licenses

DEC OSF/1 Interactive User Licenses

DEC OSF/1 Interactive User Licenses are **not** specific to a single system and can be moved from one system to another at user discretion

QL-MT7A9-BB	DEC OSF/1 Interactive 1-user license
QL-MT7A9-BC	DEC OSF/1 Interactive 2-user license
QL-MT7A9-BD	DEC OSF/1 Interactive 4-user license
QL-MT7A9-BE	DEC OSF/1 Interactive 8-user license
QL-MT7A9-BF	DEC OSF/1 Interactive 16-user license
QL-MT7A9-BG	DEC OSF/1 Interactive 32-user license
QL-MT7A9-BH	DEC OSF/1 Interactive 64-user license
QL-MT7AA-BR	DEC OSF/1 Interactive 128-user license
QL-MT7AB-BR	DEC OSF/1 Interactive 256-user license
QL-MT7AG-6H	DEC OSF/1 Interactive unlimited user license
QL-MT5AG-AA	DEC OSF/1 developer’s extension license

DEC OSF/1 Media and Documentation

QA-MT4AA-H8	DEC OSF/1 media and documentation (base, developer, server) on CD-ROM
QA-MT4AA-GZ	DEC OSF/1 base hardcopy documentation
QA-MT5AA-GZ	DEC OSF/1 developer's extension hardcopy documentation

Step 10—Software *(continued)*

DEC OSF/1 Layered Products CD-ROM

QA-054AA-H8	Layered products media and documentation for DEC OSF/1 on CD-ROM

OpenVMS Distributed Interactive User Licenses

OpenVMS Distributed Interactive User Licenses are not specific to a single system and **can** be moved between systems at user discretion. OpenVMS Distributed Interactive User Licenses can also be shared across an OpenVMS Cluster.

Note: OpenVMS Distributed Interactive User Licenses are architecture-specific and **cannot** be shared across a mixed OpenVMS Cluster (OpenVMS and OpenVMS VAX systems)

QL-MT3A9-BB	OpenVMS Distributed Interactive 1-user license
QL-MT3A9-BC	OpenVMS Distributed Interactive 2-user license
QL-MT3A9-BD	OpenVMS Distributed Interactive 4-user license
QL-MT3A9-BE	OpenVMS Distributed Interactive 8-user license
QL-MT3A9-BF	OpenVMS Distributed Interactive 16-user license
QL-MT3A9-BG	OpenVMS Distributed Interactive 32-user license
QL-MT3A9-BH	OpenVMS Distributed Interactive 64-user license
QL-MT3AA-BR	OpenVMS Distributed Interactive 128-user license
QL-MT3AB-BR	OpenVMS Distributed Interactive 256-user license

OpenVMS Media and Documentation

QA-MT1AA-H8	OpenVMS media and documentation on CD-ROM
QA-MT1AB-GZ	OpenVMS base hardcopy documentation
QA-MT1AA-GZ	OpenVMS extended hardcopy documentation

OpenVMS Layered Products CD-ROM

QA-03XAA-H8	Layered products media and documentation for OpenVMS on CD-ROM

NAS 250 Advance Kit

NAS 250 advance kit is included with system. Media available on layered products CD-ROM

DEC PHIGS Runtime License

DEC PHIGS Runtime license is included with all systems. Media available on layered products CD-ROM

QL-OKBAA-2B	OpenVMS DEC PHIGS Development license
QL-0A8AM-2B	DEC OSF/1 DEC PHIGS Development license

DEC Open3D License

DEC Open3D license is included with all systems. Media available on layered products CD-ROM. Note software version requirement for ZLX graphics options

DEC Open3D software version required for:	DEC OSF/1 Systems	OpenVMS Systems
Model 900 with ZLX-E1, M1, and M2 graphics	DEC Open3D V2.3	DEC Open3D V2.4
Model 900 with ZLX-E2 and E3 graphics	DEC Open3D V2.4	DEC Open3D V2.4
Model 900 with ZLX-L1 graphics	DEC Open3D V2.4	DEC Open3D V2.5
Model 900 with ZLX-L2 graphics	DEC Open3D V2.5	DEC Open3D V2.5

Step 10—Software *(continued)*

Multimedia Services for DEC OSF/1

Workstations running DEC OSF/1 include a license for Multimedia Services for DEC OSF/1 . Media available on layered products CD-ROM. Order Multimedia Services Runtime documentation kit and Multimedia Services Development kit license and documentation separately

QA-20YAA-GZ	Multimedia Services Runtime documentation
QL-20ZAG-AA	Multimedia Services Development kit license
QA-20ZAA-GZ	Multimedia Services Development kit documentation

DEC SoftPC for DEC OSF/1 Systems

DEC SoftPC, an optional layered product, allows a DEC 3000 workstation running DEC OSF/1 to run MS-DOS programs with no added hardware. DEC SoftPC with an installed Windows 3.1 kit also runs Windows applications. Media available on layered products CD-ROM

QL-0HSAM-3B	DEC SoftPC License for DEC OSF/1

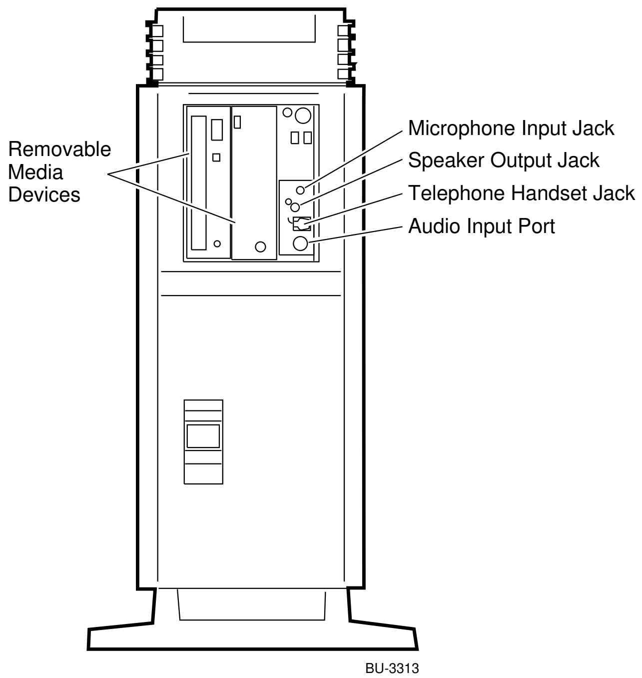
Step 11—Power Cords and Keyboards

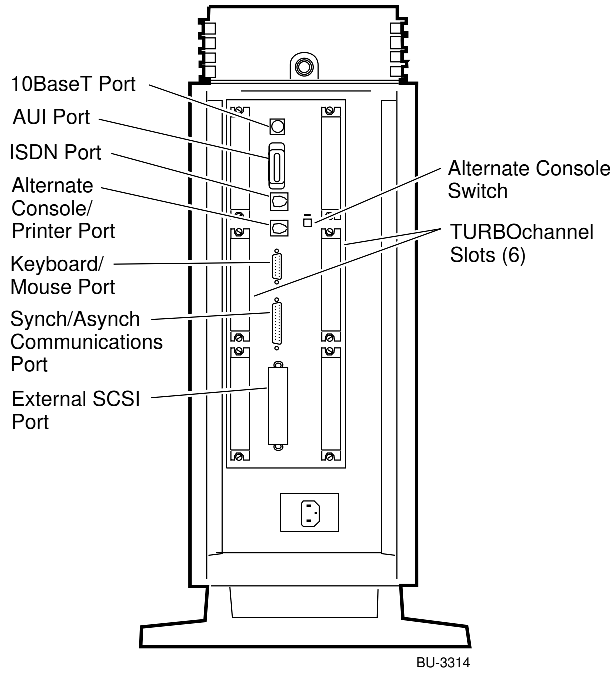
120 V Packaged systems include power cord and U.S. keyboard. 120 V Base systems include power cord; order keyboard separately. 240 V Packaged and Base systems require country-specific power cord and keyboard.

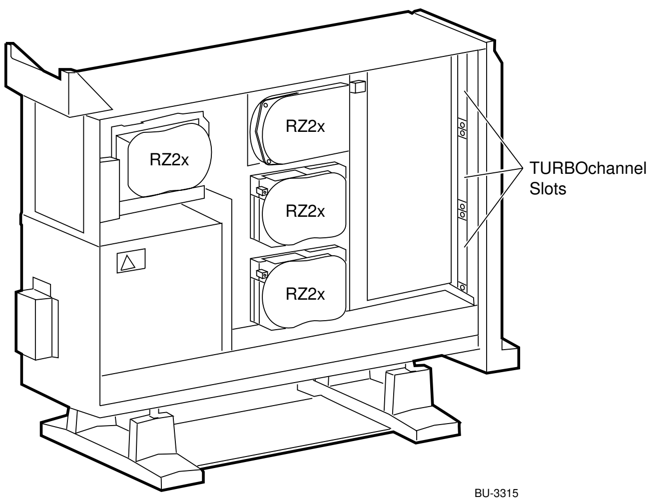
Power Cord	Standard Keyboard	Unix Keyboard	Country	Language
BN27X-09	**LK401-AA**	**LK421-AA**	U.S.	English
BN13A-2E	**LK401-AG**	**LK421-AA**	Austria	German/Austrian
BN13A-2E	**LK401-AB**	**LK421-AA**	Belgium	Flemish
BN16A-2E	**LK401-AD**	**LK421-AA**	Denmark	Danish
BN13A-2E	**LK401-AF**	**LK421-AA**	Finland	Suomi
BN13A-2E	**LK401-AP**	**LK421-AA**	France	French
BN13A-2E	**LK401-AH**	**LK421-AA**	Holland	Dutch
BN18W-2E	**LK401-AT**	**LK421-AA**	Israel	Hebrew
BN17A-2E	**LK401-AI**	**LK421-AA**	Italy	Italian
BN27X-09	**LK401-AJ**	**LK421-AJ**	Japan	Katakana
BN13A-2E	**LK401-AN**	**LK421-AA**	Norway	Norwegian
BN13A-2E	**LK401-AV**	**LK421-AA**	Portugal	Portuguese
BN13A-2E	**LK401-AS**	**LK421-AA**	Spain	Spanish
BN13A-2E	**LK401-AM**	**LK421-AA**	Sweden	Swedish
BN14A-2E	**LK401-AK**	**LK421-AA**	Switzerland	French
BN14A-2E	**LK401-AL**	**LK421-AA**	Switzerland	German
BN12A-2E	**LK401-AA**	**LK421-AA**	U.K./Ireland	English
BN15A-2E	**LK401-AA**	**LK421-AA**	Australia/N.Z.	English
BN27X-09	**LK401-AQ**	**LK421-AA**	Canada	English
BN27X-09	**LK401-AC**	**LK421-AA**	Canada	French
BN18V-2E	**LK401-AC**	**LK421-AA**	India	English

Note: See DEC 3000 Model 900 deskside system diagrams.

DEC 3000 Model 900 Deskside Workstation Specifications







DEC 3000 Model 900 Deskside Workstation Diagrams

Specifications

TURBOchannel	100-Mbyte/s burst speed
Fast SCSI-2 bus	10-Mbyte/s transfer rate
FWD SCSI-2 (KZTSA)	20-Mbyte/s transfer rate
Ethernet	10-Mbit/s thick wire standard
FDDI	100 Mbits/s
Power Requirements	
Voltage/Phase/Watts	120 V/240 V, single phase, 480 ac Watts
Operating Environment	
Temperature	10° to 40° C (50° to 104° F) [DEC class B]
Temperature change rate (maximum)	11° C/hr (20° F/hr)
Relative humidity	
Maximum wet bulb	28° C (82.4° F)
Maximum dew point	2° C (36° F)
Maximum operating altitude	2400 m (8000 ft) @ 36° C (97° F)
Physical Characteristics	**Pedestal**
Height	62.7 cm (24.7 in.)
Width	22.3 cm (8.8 in.)
Depth	75.4 cm (29.7 in.)
Weight	29.5 kg (65 lb) diskless
Input Devices	
Keyboard LK401	105 sculptured keys,
LK421*	20 special-function keys
Mouse output	Three buttons, 200 pulses per inch
Graphics tablet	27.9 x 27.9 cm (11 x 11 inches)
Lighted Programmable Function Keyboard (LPFK)	32 individually programmable function keys in 4-6-6-6-6-4 array
Programmable Function Dials (PFD)	Eight individually programmable function dials with 360-degree rotation (256-bit resolution)arranged in two vertical rows of four dials

* DEC OSF/1 systems only.