



**DECstation 5000 Model 200  
Hardware Installation Guide**

EK-365AA-IN-002

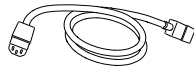
# Cords, cables, terminators, adapters, and connectors on the system unit and expansion boxes



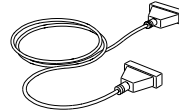
Power cord



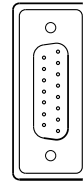
ThinWire T-connector with two ThinWire terminators



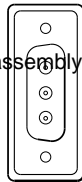
Monitor-to-system-unit power cable



ThickWire Ethernet cable



Color video cable assembly



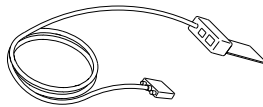
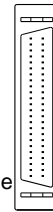
ThickWire Ethernet loopback connector



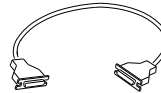
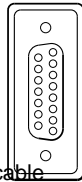
Gray scale video cable assembly



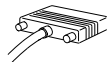
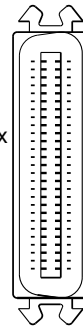
System-unit-to-expansion-box cable



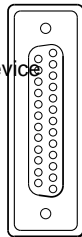
Keyboard-mouse cable



18-inch box-to-box expansion cable



Communication device cable connector



Expansion-box terminator



Communications connector adapter



Serial cable for console terminal



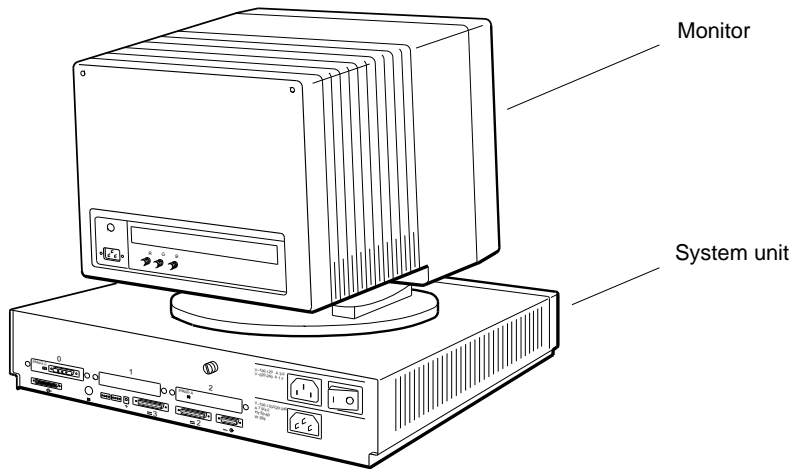
WSE20041

## Set up the system unit and monitor.

*Warning: It takes two people to unpack the monitor, system unit, and BA42 storage expansion box safely.*

*Cautions: Placing the system unit on its side blocks air vents and causes the unit to overheat.*

*Placing the monitor near electromagnetic devices, such as printers or electric pencil sharpeners, or near magnetized objects, such as filing cabinets or steel beams in walls, can interfere with its performance.*



WSE21090

Be sure the on/off switches on the system unit and monitor are in the off position.

Press the 0 on the on/off switch on the system unit, the 19-inch VRT19 color monitor, the 16-inch VR297 color monitor, and the VR262 gray scale monitor. Press and release the on/off switch on the 19-inch VR299 color monitor.



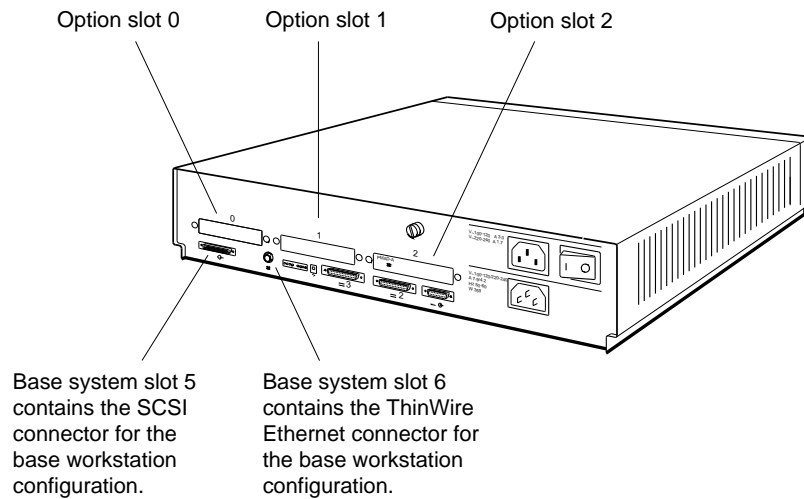
Press the 0 on this type of switch.



Press and release this type of switch.

WSE21101

Familiarize yourself with base system slots 5 and 6 and with the three option slots on the back of the system unit.



WSE21074

The basic workstation comes with a SCSI connector in base slot 5 and a ThinWire Ethernet connector in base slot 6 on the system unit.

You can have option modules in option slots 0, 1, and 2.

Direct memory access priority for the option slots is as follows:

- Slot 2—Highest priority. Use this slot to connect hardware you want to access memory first.
- Slot 1—Next highest priority.
- Slot 0—Lowest priority.

## Set up any expansion boxes.

You can connect up to seven SCSI devices to a SCSI connector on the system unit so long as the amount of internal and external cabling does not exceed 19 feet 8 inches in length.

*Caution: Using more than 19 feet 8 inches (236 inches) of cable, including cable inside expansion boxes, to connect devices to a given SCSI connector on the system unit can make those devices unreliable.*

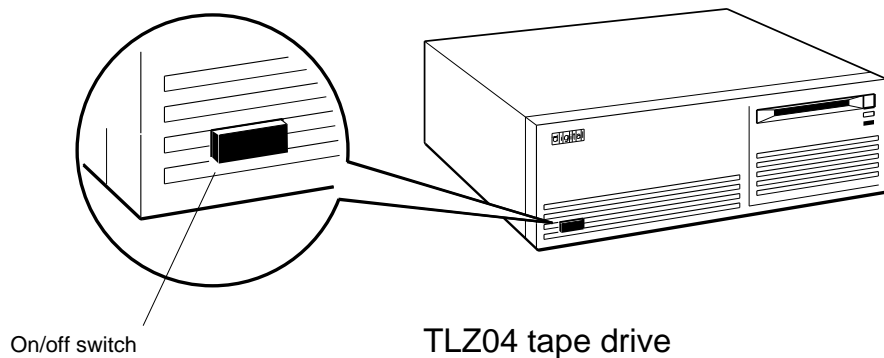
When you stack your storage device expansion boxes, use the following table to determine how much cable you will be using.

Cable	Length
BA42 storage expansion box internal cable	30 inches
TK50Z tape drive internal cable	14 inches
RRD40 optical compact disc drive internal cable	6.5 inches
TLZ04 tape drive internal cable	38 inches
50-pin to 50-pin box-to-box external cable	18 inches
68-pin to 50-pin system-unit-to-expansion-box external cable	74 inches

Be sure expansion box on/off switches are in the off position.

Press the 0 on the on/off switch on the BA42 storage expansion box, the TK50Z tape drive expansion box, and the RRD40 optical compact disc drive expansion box.

Press and release the on/off switch on the TLZ04 tape drive to turn it on and off.

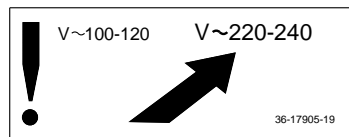
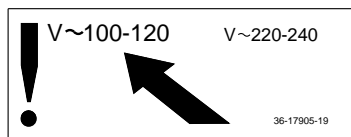


WSE21094

## Check voltage requirements.

The voltage for many devices, including most monitors, must match that of your power source. Where necessary, a yellow voltage label that covers the power connector on your device tells you the voltage requirements for that device.

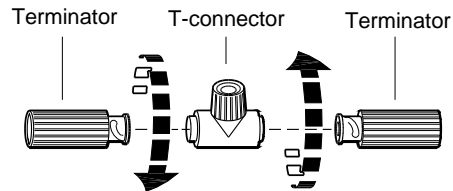
*Caution: Connecting a device to a power source that does not meet the voltage requirements of that device can damage the device.*



WSE21021

## Terminate ThinWire Ethernet.

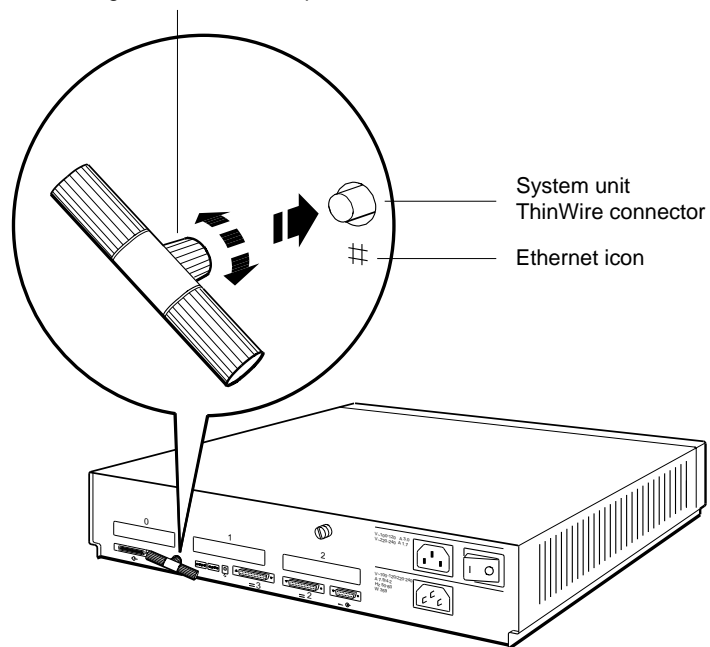
First terminate the ThinWire T-connector.



WSE21089

Then connect the T-connector to the ThinWire connector in base slot 6 on the system unit.

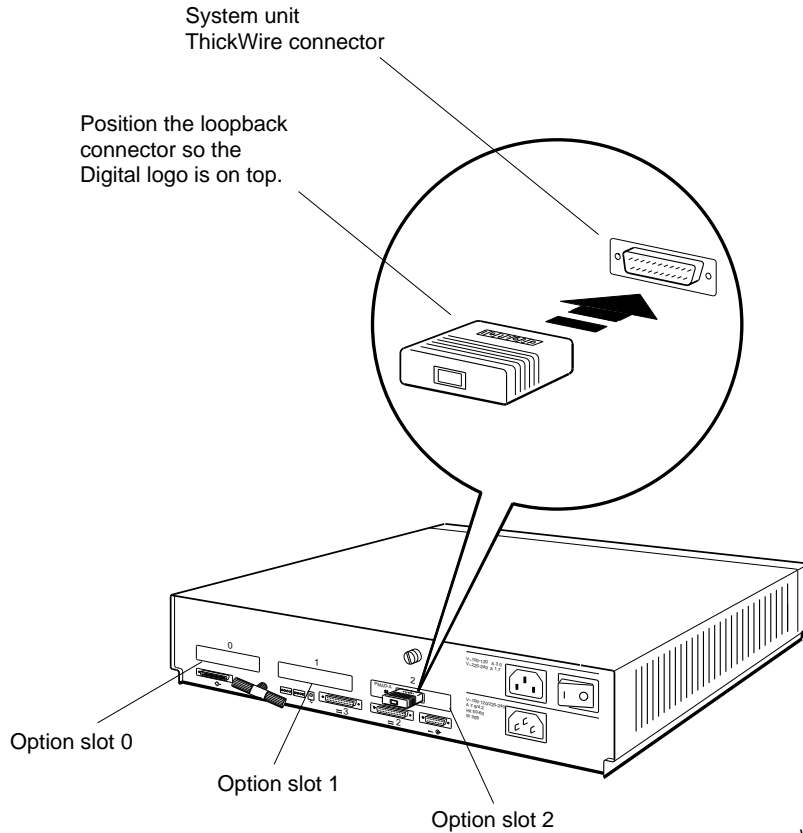
Twist the ribbed portion of the T-connector from side to side until you can push it into the system unit connector. Then turn it to the right until it locks into place.



WSE21071

## Attach any ThickWire loopback connectors.

Optional ThickWire Ethernet connectors can be present in any of the option slots on the back of the system unit. Each must have a loopback connector in place until the Ethernet cable is connected to the system unit and the network.



WSE21073

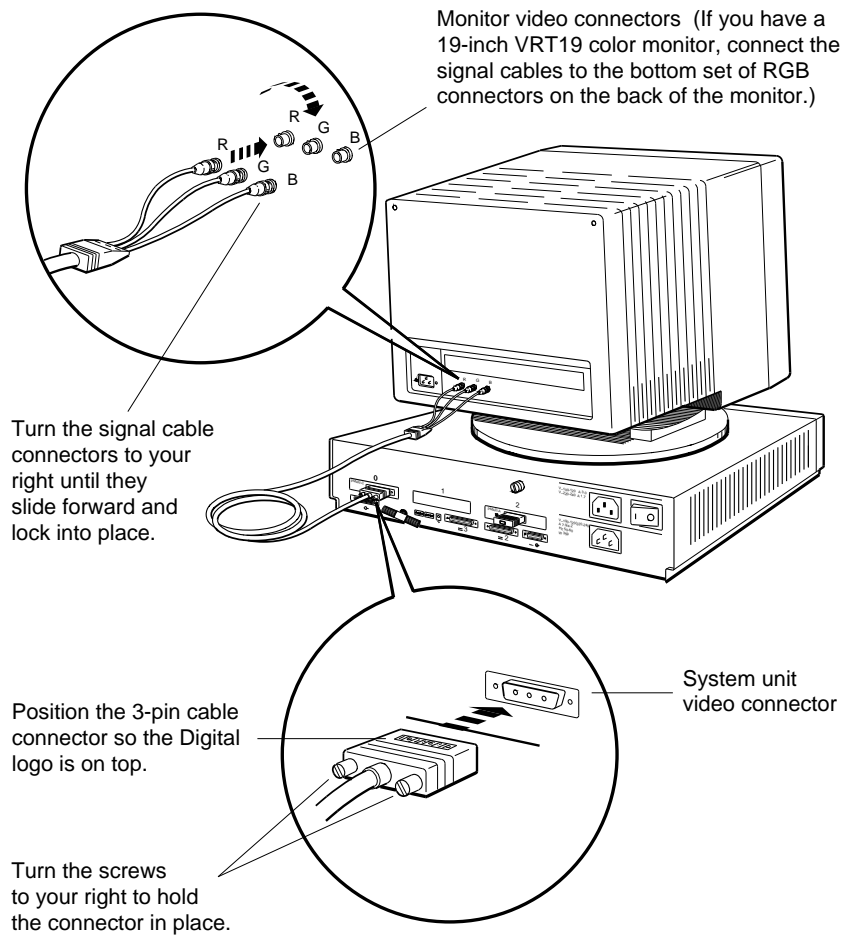


## Connect the monitor to the system unit.

To connect a gray-scale monitor, turn to page 8.

To connect a color monitor

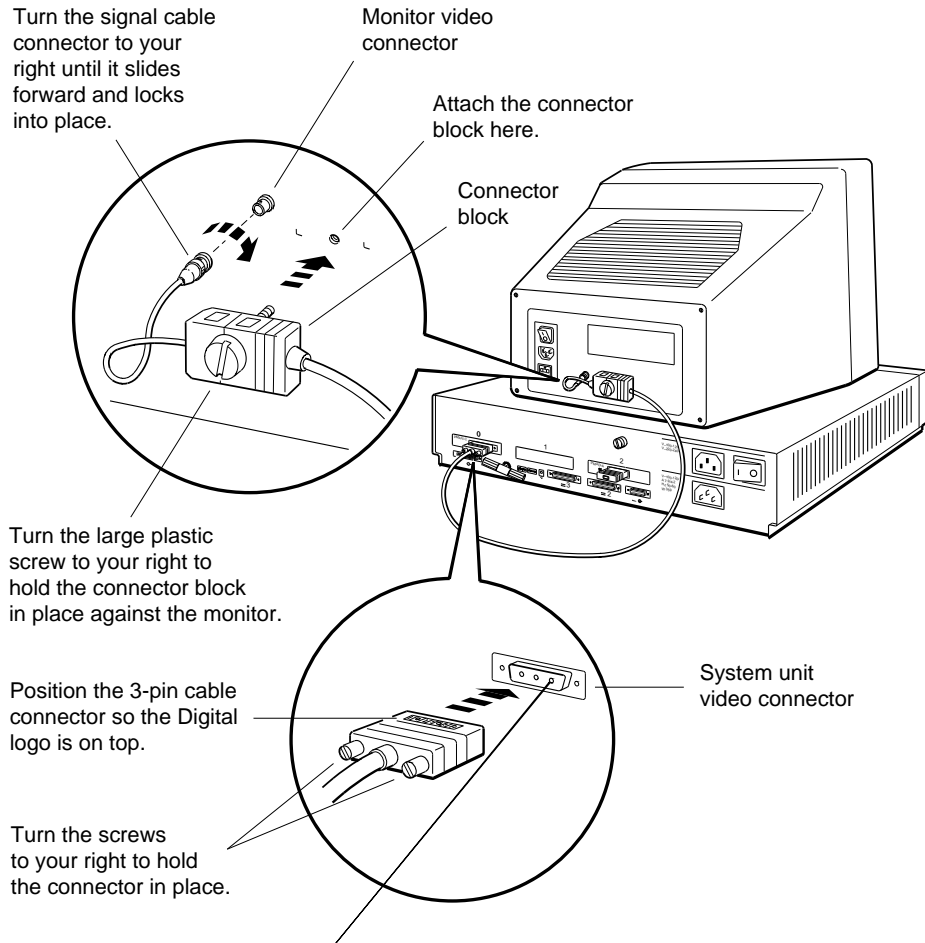
Connect the RGB signal cables on the video cable assembly to the monitor. Then connect the 3-pin connector to the video connector on the system unit.



WSE21069

## To connect a gray-scale monitor

First attach the round signal cable connector on the video cable assembly to the monitor and the 3-pin connector to the video connector on the system unit. Then attach the connector block to the back of the monitor.

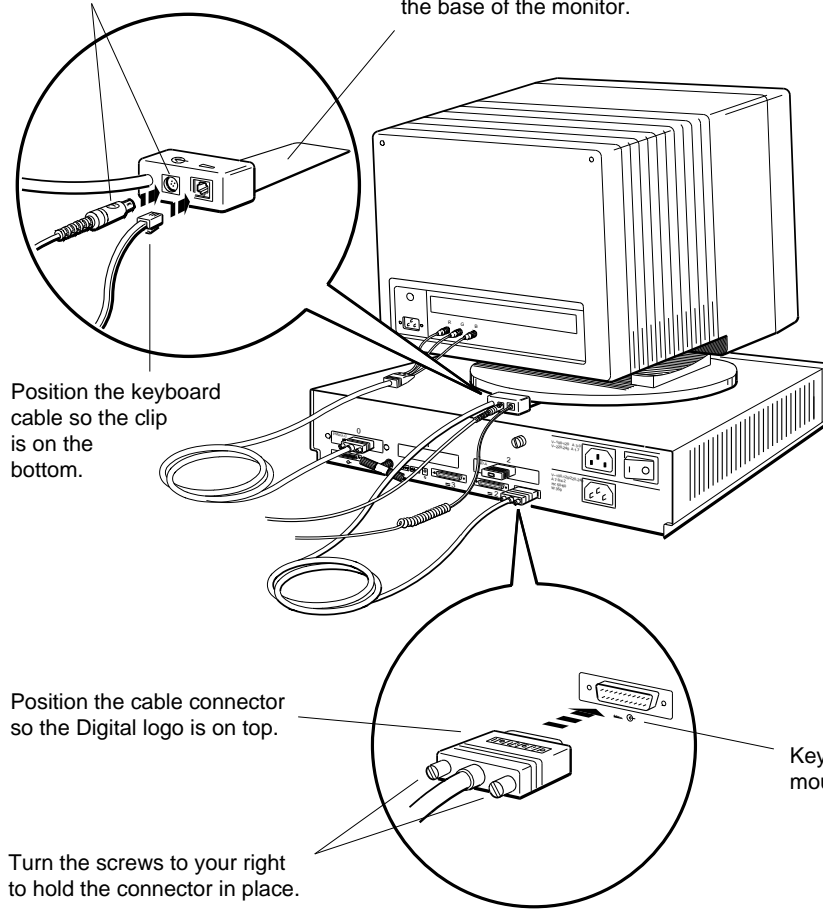


WSE21086

## Connect the keyboard and the mouse or tablet to the connector block.

Align the icon on top of the mouse cable connector with the mouse icon on the connector block.

Lift the back of the monitor slightly and slide the plastic flap on the connector block under one of the feet on the base of the monitor.



Position the keyboard cable so the clip is on the bottom.

Position the cable connector so the Digital logo is on top.

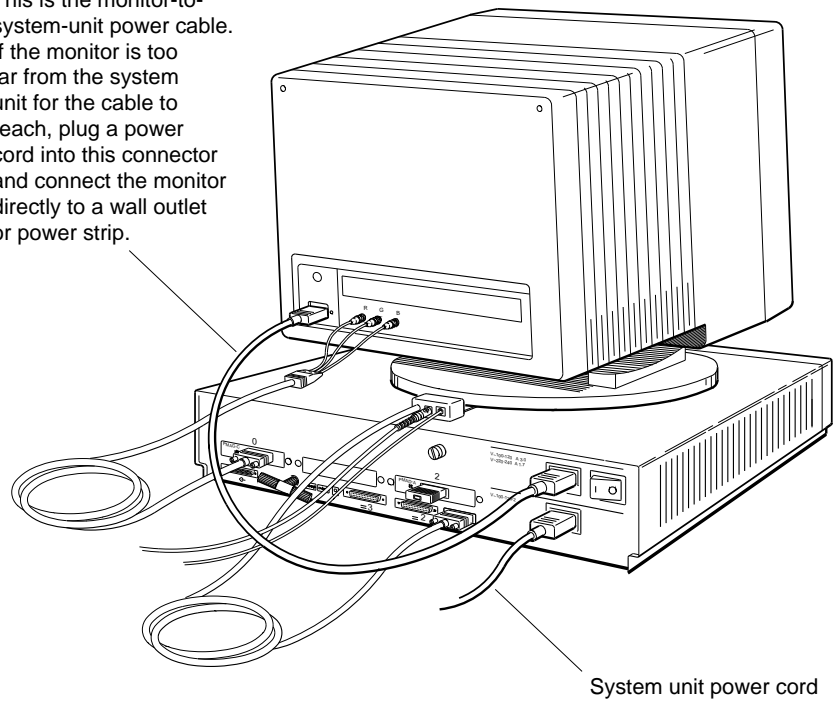
Turn the screws to your right to hold the connector in place.

Keyboard and mouse icons

WSE21070

## Connect the system unit power cord and the monitor-to-system-unit power cable or monitor power cord.

This is the monitor-to-system-unit power cable. If the monitor is too far from the system unit for the cable to reach, plug a power cord into this connector and connect the monitor directly to a wall outlet or power strip.



WSE21072

Turn on the monitor and system unit and set the keyboard language.

Turn on the monitor and then the system unit.

When the system unit completes the power-up self-test successfully, the following language menu appears on the screen:

1) Dansk	9) Français (Suisse Romande)
2) Deutsch	10) Italiano
3) Deutsch (Schweiz)	11) Nederlands
4) English	12) Norsk
5) English (British/Irish)	13) Português
6) Español	14) Suomi
7) Français	15) Svenska
8) Français (Canadien)	16) Vlaams

(1..16): \_

At the language prompt [(1..16): \_], type the number displayed to the left of the language of your choice. Then press Return. When the language has been set, the console prompt (>>) appears on the screen.

If anything other than a language menu appears, if no display at all appears on your screen when you turn on the system unit and monitor, or if anything other than the console prompt (>>) appears after you set the language, see Chapter 9 of the *DECstation 5000 Model 200 Hardware Operator's Guide* for troubleshooting instructions.

## Run the system self-test.

When the system power-up self-test has completed successfully, the console prompt (>>) appears on the screen. To run the system self-test, type **test** at the console prompt and press Return.

As the system performs the subtests that make up the system self-test, the subtest being performed is briefly identified in a display in the lower-left corner of the screen. When the system self-test has completed successfully, the console prompt (>>) appears on the screen.

If the console prompt is not displayed, or if anything in addition to the console prompt appears on the screen at this point, see Chapter 9 of the *DECstation 5000 Model 200 Hardware Operator's Guide* for troubleshooting instructions.

## Check Your Workstation Configuration.

To be sure your option and memory modules have been installed correctly and are working properly, type **cnfg** at the console prompt (>>) and press Return. A display similar to the following appears on the screen:

```
>> cnfg
7: KN02-AA DEC      T5.2a      TCF0      ( 24 MB)
6: PMAD-AA DEC      T5.2a      TCF0      (enet: 08-00-2b-0f-45-72)
5: PMAZ-AA DEC      T5.2a      TCF0      (SCSI = 7)
2: PMAD-AA DEC      X5.1f      TCF0      (enet: 08-00-2b-0f-45-31)
1: PMAZ-AA DEC      X5.1e      TCF0      (SCSI = 7)
0: PMAG-BA DEC      T5.2a      TCF0      (CX -- d=8)
>>
```

The last three lines of the sample display show what option modules are present in the system unit.

Look at the lines that begin with 0:, 1:, and 2:. These lines represent the option slots on the system unit.

Note that empty option slots are not represented in the configuration display.

The letters in parentheses at the end of each option slot display line tell you what kind of option module is present in that slot.

- **CX** shows that the module in that slot is a color frame buffer.

A color frame buffer can be installed in any of the three option slots.

- **PX** shows that you have a 2D graphics module.

A 2D graphics module can be installed in option slot 0 or 1.

- **DA: PXG** shows that you have a low 3D graphics module.

The following is a sample configuration display for a low 3D graphics module:

```
1: PMAG-DA DEC T5.1A TCF0 (DA: PXG -- D=8, Z=24)
```

A low 3D graphics module is installed in option slots 0 and 1 and is displayed in option slot 1.

- **EA: PXG** shows that you have a mid 3D graphics module.

The following is a sample configuration display for a mid 3D graphics module:

```
1: PMAG-DA DEC T5.1A TCF0 (EA: PXG -- D=8, Z=24)
```

A mid 3D graphics module is installed in option slots 0 and 1 and is displayed in option slot 1.

- **FA: PXG\_T** shows that you have a high 3D graphics module.

A high 3D graphics module is installed in all three option slots and is displayed in option slot 1.

- **SCSI** shows that you have a SCSI option module.

A SCSI module can be installed in any of the three option slots.

- `enet`: shows that you have a ThickWire Ethernet option module.

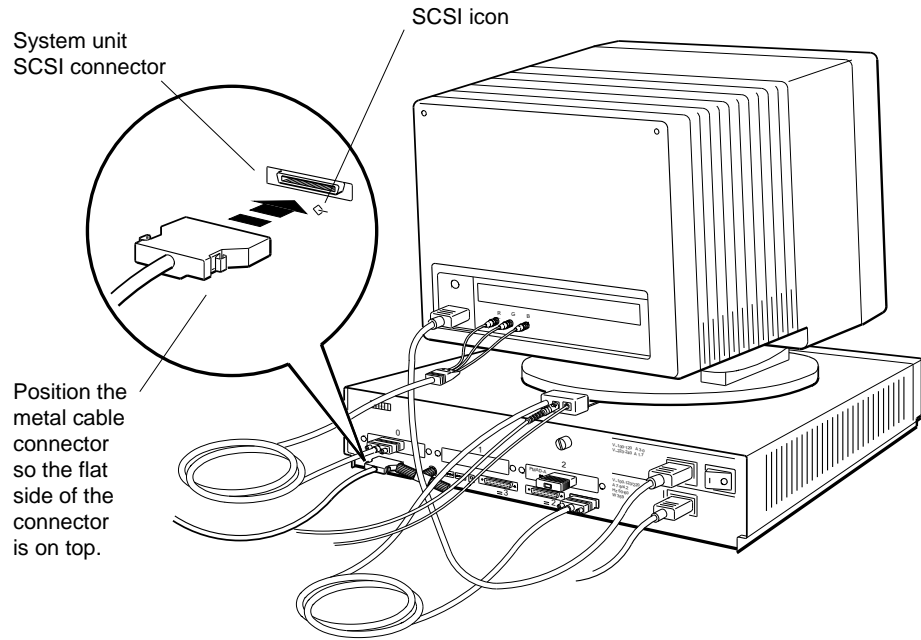
A ThickWire module can be installed in any of the three option slots.

If the modules you ordered for your workstation do not appear on the configuration display, turn to Chapter 9 of the *DECstation 5000 Model 200 Hardware Operator's Guide* for troubleshooting instructions.



**Connect a system-unit-to-expansion-box cable to each SCSI connector on the system unit.**

**Turn off the system unit and any expansion boxes.**



WSE21131

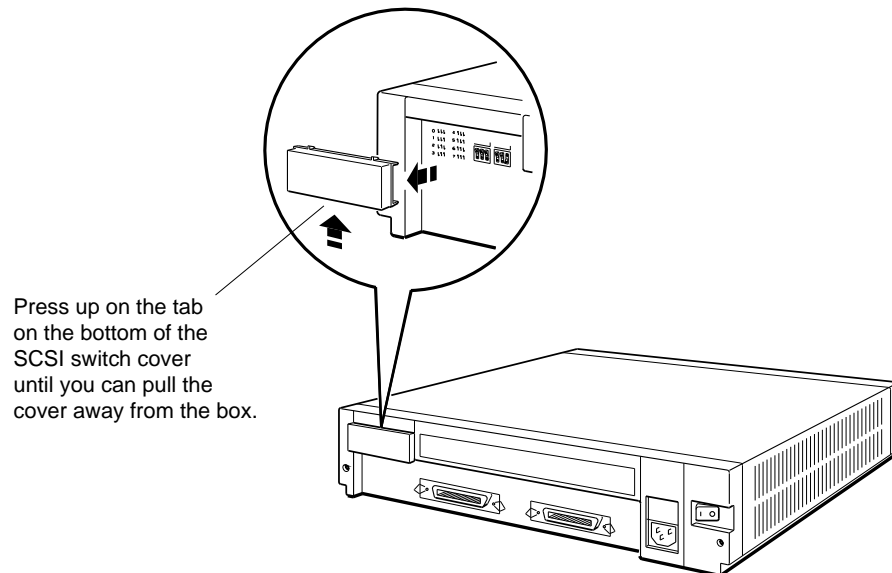
## Set SCSI ID switches on storage device expansion boxes.

Each expansion device connected to a SCSI connector must be assigned a SCSI ID number for that connector.

The back of each expansion box has switches that you use to set the SCSI ID number for the drive or drives inside that box, except for floppy disks and tape drives inside a BA42 expansion box.

SCSI ID switches for these drives are located directly on the drives. Set the switches on the drives themselves instead of the switches on the expansion box.

SCSI switches on the BA42 storage expansion box are protected by a plastic cover that must be removed before you can set the switches. Use these switches to set ID numbers for hard disk drives inside the box.



WSE21063

ID numbers available for expansion devices are 0 through 6. When assigning numbers, assign ID 0 to the device that connects directly to the system unit, assign ID 1 to the next device, and so on.

*Important: Be sure to assign a different ID number to each drive connected to a given SCSI option module. If two drives have the same number, the workstation does not recognize the drives correctly.*

If you have a BA42 storage expansion box, consider the drive on the right side of the box as you face the back of the box to be closer to the system unit than the one on the left.

Use the switch settings listed in the following table to set the SCSI switches on the backs of your expansion boxes. Remember that SCSI ID switches for floppy disk and tape drives inside a BA42 are located directly on the drives. Set the switches on the drive itself instead of the switches on the expansion box.

ID Number	Hard Disk Drive RRD40 Compact Disc Drive <sup>1</sup> TZ30 Tape Drive <sup>2</sup>	TK50Z Tape Drive TLZ04 Tape Drive <sup>3</sup> RX23 Floppy Disk Drive RX33 Floppy Disk Drive
7	Reserved	Reserved
6	Up Up Down	Down Down Up
5	Up Down Up	Down Up Down
4	Up Down Down	Down Up Up
3	Down Up Up	Up Down Down
2	Down Up Down	Up Down Up
1	Down Down Up	Up Up Down
0	Down Down Down	Up Up Up

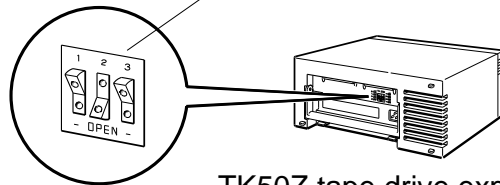
<sup>1</sup>Switch 4 on the RRD40 optical compact disc drive has no effect on the ID number.

<sup>2</sup>Switch 1 (the left switch) on the TZ30 tape drive should always be in the up position. ID switch settings listed for this drive start with switch 2.

<sup>3</sup>Switch 1 (the left switch) on the TLZ04 tape drive should always be in the down position. ID switch settings listed for this drive start with switch 2.

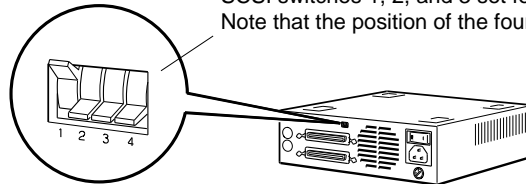
The following are sample switch settings for the four types of expansion boxes.

SCSI switches set for ID number 5 (Down Up Down).



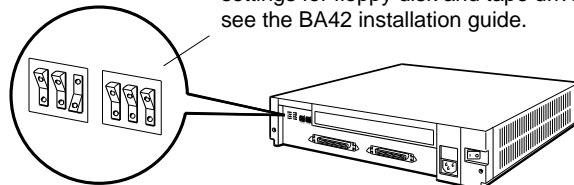
TK50Z tape drive expansion box

SCSI switches 1, 2, and 3 set for ID number 4 (Up Down Down). Note that the position of the fourth switch has no effect.



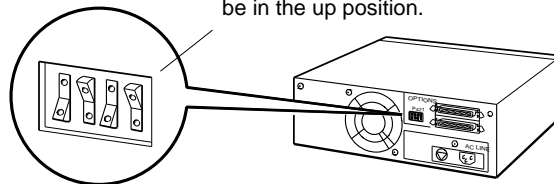
RRD40 optical compact disc drive expansion box

Hard disk drive SCSI switches set for ID numbers 1 (Down Down Up) on the left and 0 (Down Down Down) on the right. For SCSI switch settings for floppy disk and tape drives inside this box, see the BA42 installation guide.



BA42 storage expansion box

SCSI switches set for ID number 5 (Down Up Down beginning with the second switch). The first switch should always be in the up position.

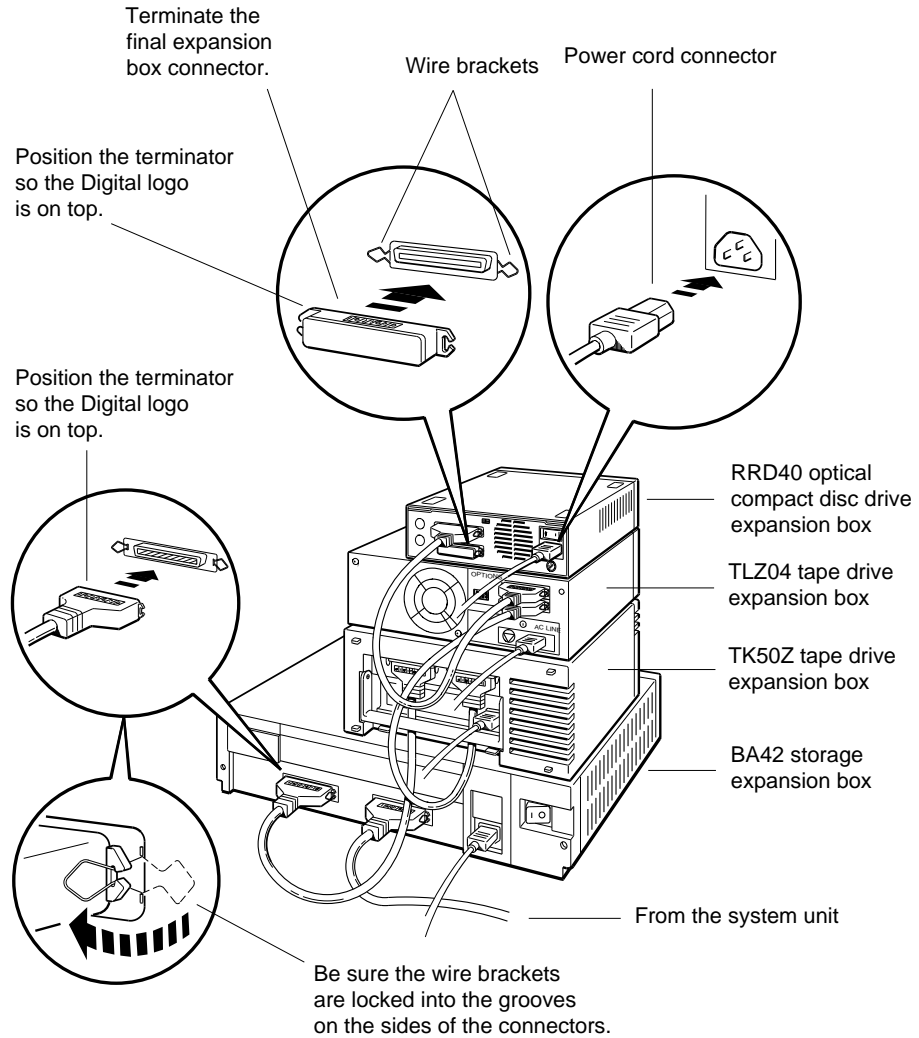


TLZ04 tape drive expansion box

WSE21075

## Connect expansion boxes.

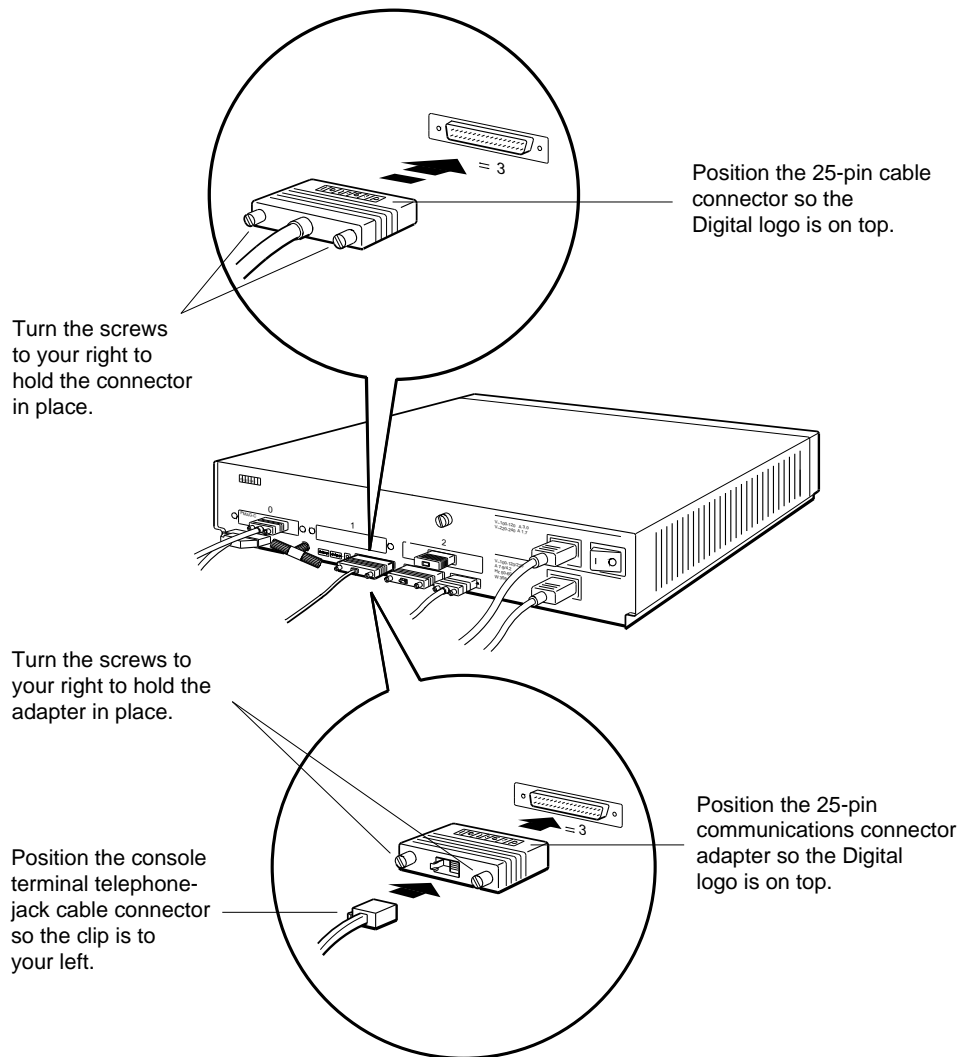
Connect the system-unit-to-expansion-box cable and any box-to-box cables. Then connect a power cord to each expansion box.



WSE21076

## Connect optional communication devices.

If a communication device cable has a 25-pin cable connector on one end, connect the cable directly to the system unit. If it has a telephone-jack type of connector on one end, use a communications connector adapter to connect the cable to the system unit.

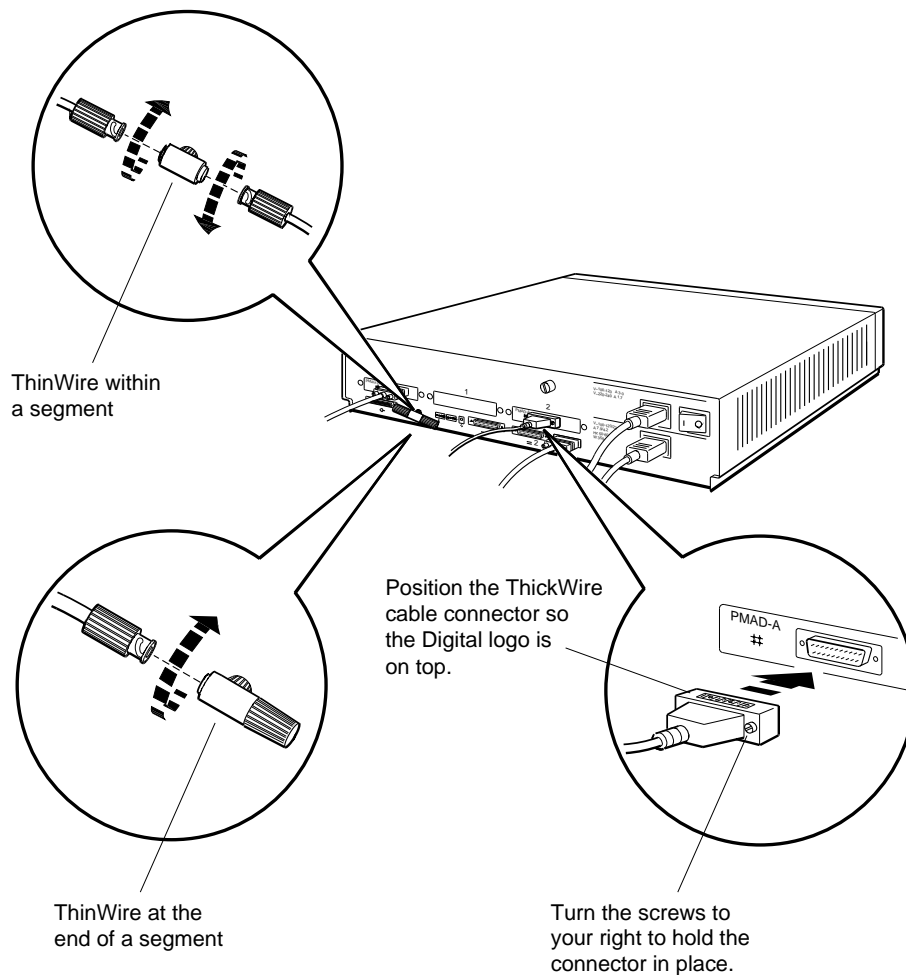


WSE21077

## Connect any Ethernet cables to the system unit.

Remove any ThinWire terminators and ThickWire loopback connectors if necessary. To remove ThinWire terminators, twist the left-hand terminator away from you and the right-hand terminator toward you until you can pull them away from the T-connector.

Then attach the cable connector.



WSE21078

## Turn on the workstation and run the system self-test.

Turn on the monitor by pressing the 1 on the on/off switch on a 16-inch VR297 color monitor, a 19-inch VRT19 color monitor, and a 19-inch gray scale monitor. Press and release the on/off switch on a 19-inch VR299 color monitor.

Next turn on any expansion boxes and then the system unit. Press and release the on/off switch on the TLZ04 tape drive. Press the 1 on the on/off switch on any other expansion boxes and on the system unit.

When the system has completed the power-up self-test successfully and the console prompt (>>) appears on the screen, run the system self-test. Type **test** at the console prompt and press Return.

If anything but the console prompt appears on the screen at the end of the system self-test, refer to Chapter 9 of the *DECstation 5000 Model 200 Hardware Operator's Guide* for troubleshooting instructions.

If the workstation will not be on a network, prepare to install the worksystem software as described on page 24.

If the workstation will be on a network, turn to page 23 and find your Ethernet station address.



To find your Ethernet station address

Type **cnfg** at the console prompt (>>) and press Return.

A display similar to the following appears on the screen:

```
>> cnfg
7: KN02-AA DEC T5.2a TCF0 (24 MB)
6: PMAD-AA DEC T5.2a TCF0 (enet: 08-00-2b-0f-45-72)
5: PMAZ-AA DEC T5.2a TCF0 (SCSI = 7)
2: PMAD-AA DEC X5.1f TCF0 (enet: 08-00-2b-0f-45-31)
1: PMAZ-AA DEC X5.1e TCF0 (SCSI = 7)
0: PMAG-BA DEC T5.2a TCF0 (CX -- d=8)
>>
```

In this display, lines that contain `enet:` show Ethernet station addresses. The number of the option slot containing that Ethernet connector appears at the beginning of the line.

The sample display shows two Ethernet station addresses:

- The line that starts with `6:` contains the first Ethernet address. The first section of the display shows that the Ethernet connector with this address is in base slot 6.
- The second Ethernet address appears on the line that starts with `2:`. The Ethernet connector with this address is in option slot 2.

Once you know your Ethernet station address, have your system manager connect your workstation to the network and arrange to install the worksystem and other software.

## Install worksystem software.

Before you install the worksystem software, make sure you have the following:

- The *ULTRIX Basic Installation Guide*
- The ULTRIX release notes and the *ULTRIX Advanced Installation Guide*
- An ULTRIX TK50 Tape Cartridge Kit or an ULTRIX CDROM Optical Compact Disc Kit containing media and installation documents
- A tape or optical compact disc drive for loading the tape or compact disc
- The owner's guide for the drive you will use
- Either a hard disk drive on which to install the worksystem software or, if you are loading from a network, an Ethernet hardware connection

To load the worksystem software from a network, contact your system manager, who will perform the installation for you.

To use a TK50 tape drive to perform a basic worksystem software installation, follow the instructions on page 25.

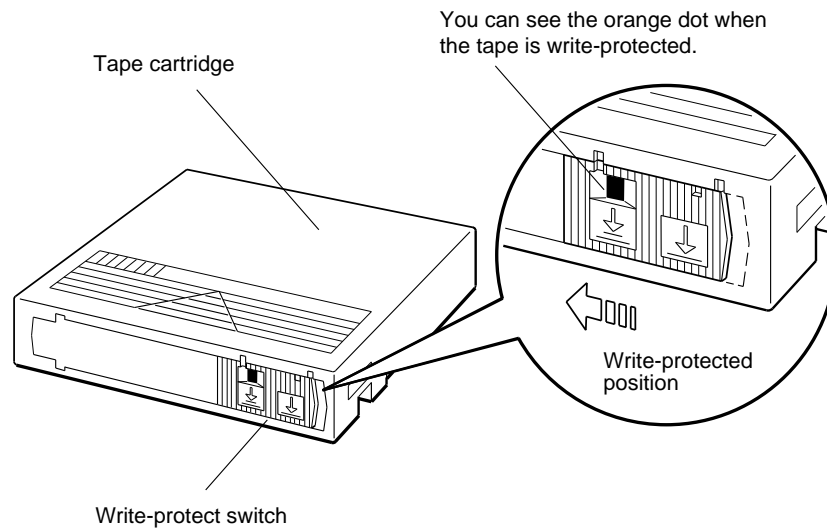
To use an RRD40 optical compact disc drive to perform a basic worksystem software installation, turn to page 29.

To use a disk inside a BA42 to install software, see the *BA42 Storage Expansion Box Installation Guide* that came with that expansion box.

## To use a tape drive

1. Remove the tape cartridge labeled “ULTRIX/UWS SUPPORTED (RISC)” from your ULTRIX TK50 Tape Cartridge Kit and make sure it is write-protected.

Set aside any other tape cartridges that came with the tape cartridge kit and the tape drive.



WSE21132

2. Determine the SCSI ID number assigned to your tape drive.
  - a. Type **cnfg** and the slot number of the SCSI module at the console prompt (>>) and press Return. A configuration display similar to the following appears on the screen.

```
>>cnfg 5
5: PMAZ-AA DEC T5.2a TCF0 (SCSI = 7)
-----
DEV  PID VID REV SCSI DEV
=====
rz1  RZ55 (C) DEC DEC 0700 DIR
rz4  RRD40 (C) DEC DEC 0700 CD-ROM
tz6                                     SEQ
>>
```

- b. Look at the lines under the DEV column in the display and find the line that begins with tz followed by a number. This is the line that describes the tape drive.

The number following tz shows the SCSI ID number assigned to the tape drive. In the sample display, the ID number assigned to the tape drive is 6.

3. Open the tape drive door, raise the flap of the tape drive until it locks into the up position, and load the ULTRIX/UWS-SUPPORTED (RISC) tape cartridge into the drive as shown in the picture on page 28.
4. Press the flap of the tape drive down and push the red indicator light in. The *TK50 Tape Drive Owner's Guide* contains detailed instructions on use of the drive.
5. When the red and green lights on the drive both glow steadily, type **boot** followed by the slot number, /tz and the SCSI ID number. Then press Return.

Thus, for the tape drive in the sample display, you would type

**boot 5/tz6**

If ?IO: 5/tz6 (bb rd) appears, make sure you have the tape cartridge labeled "ULTRIX/UWS SUPPORTED (RISC)" in the drive.

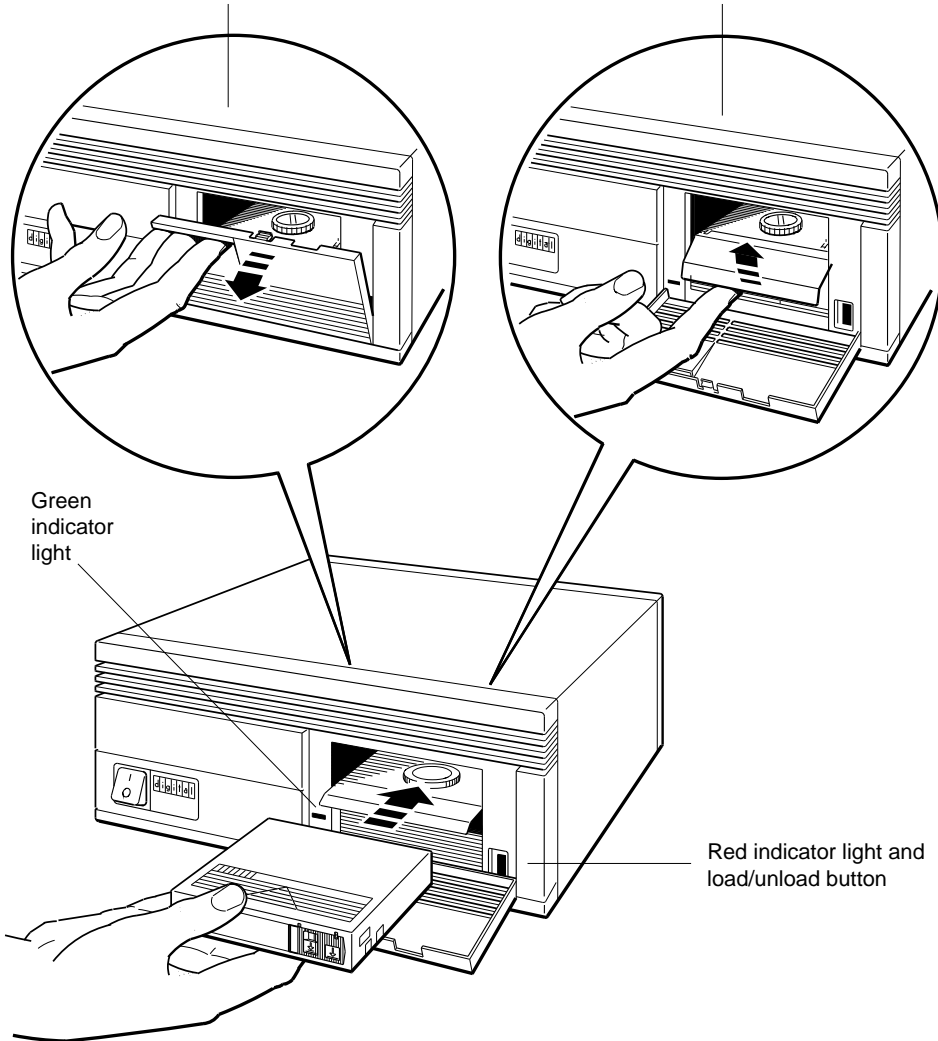
From this point on, you can complete the basic installation by following the instructions that appear on your screen.

As you follow the instructions on your screen, be sure you understand them fully before you respond. The entire installation should take approximately 50 minutes. When the installation is complete, the login screen with the Digital logo appears on your monitor.

When you are finished, follow the instructions in the *TK50 Owner's Guide* to remove the tape from the drive.

Insert 3 fingers behind the lip on the left side of the top of the drive door and pull the door away from the drive to open it.

Raise the flap behind the bottom of the door until the flap locks into position.



WSE21095

## To use an optical compact disc drive

1. Remove the disc labeled "ULTRIX/UWS (RISC)" from your ULTRIX RRD40 Optical Compact Disc Kit.
2. Determine the SCSI ID number assigned to your disc drive.
  - a. Type **cnfg** and the slot number of the SCSI module at the console prompt (>>) and press Return. A configuration display similar to the following appears on the screen.

```
>>cnfg 5
5: PMAZ-AA DEC T5.2a TCF0 (SCSI = 7)
-----
DEV  PID                               VID      REV      SCSI DEV
=====
rz1  RZ55      (C) DEC  DEC      0700    DIR
rz4  RRD40     (C) DEC  DEC      0700    CD-ROM
tz6                                     SEQ
>>
```

- b. Look at the lines in the PID column in the display and find the line that reads RRD40. This is the line that describes the optical compact disc drive.

Look at the number that follows `rz` in the DEV column for the RRD40 drive. This is the SCSI ID number assigned to the compact disc drive. In the sample display, the ID number assigned to the compact disc drive is 4.

3. Load the ULTRIX/UWS (RISC) compact disc into the drive and remove the caddy from the drive.

If necessary, see the *RRD40 Optical Compact Disc Drive Owner's Guide* for instructions on using the drive.

4. When both green lights on the compact disc drive glow steadily, type **boot**, then the slot number, **/rz** followed by the SCSI ID number, and **/vmunix -a**, and press Return.

For the compact disc drive in the sample display, you would type

**boot 5/rz4/vmunix -a**

From this point on, you can complete the basic installation by following the instructions that appear on your screen.

As you follow these instructions, be sure you understand them fully before you respond. The entire installation should take approximately 50 minutes. When the installation is complete, the login screen with the Digital logo appears on your monitor.

When you are finished, follow the instructions in the *RRD40 Optical Compact Disc Drive Owner's Guide* to remove the compact disc from the drive.

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