Installing and Using the VR320 Color Monitor

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About This Manual

VR320 Color Video Monitor

The VR320 is a color video monitor with a direct-view antiglare screen and an auto-ranging power supply for worldwide operation. Its built-in tilt-swivel stand lets you adjust the screen for your viewing comfort. When connected to a host system, the VR320 can display information sent by the host system.

Before You Start

This guide describes how to install, operate, and maintain your VR320 color monitor. You do not have to know a lot about computers to install the VR320 monitor. Follow the steps in sequential order. No tools are needed.

The kind of host system you have affects the way you prepare to operate your monitor. Check the host system documentation to see if you need a **color video option** installed in your host system to support the VR320 color monitor.

Check the host system package for the following:

- Video cable
- Keyboard
- Mouse (if ordered)
- Power cord

Conventions

This document uses the following conventions:

Convention	Meaning
CAUTION	Provides information to prevent damage to the equipment.
NOTE	Provides general information.
WARNING	Provides information that relates to personnel safety.
❶	Refers to a number in a black circle in an illustration.

1
Unpacking

Identify the boxes.

If any boxes or items inside the boxes are missing or damaged:

- Contact your salesperson.
- Contact your delivery agent.

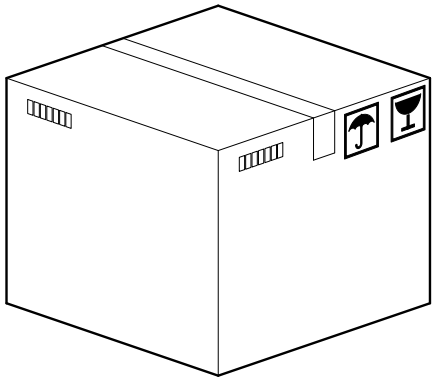
NOTE
The monitor power cord comes with the host system.

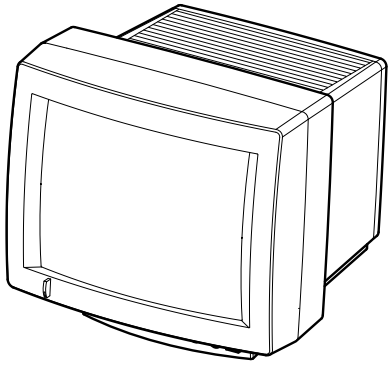
IMPORTANT: Save the opened boxes and the packing material in case you need to return the monitor for any reason.

Unpack the monitor box.

The contents in the monitor box consist of the VR320 color monitor and this manual.

WARNING
The monitor weighs approximately 29 kg (63 lbs). Because of the monitor weight, it will require two people to unpack the monitor box and place it on a level surface.





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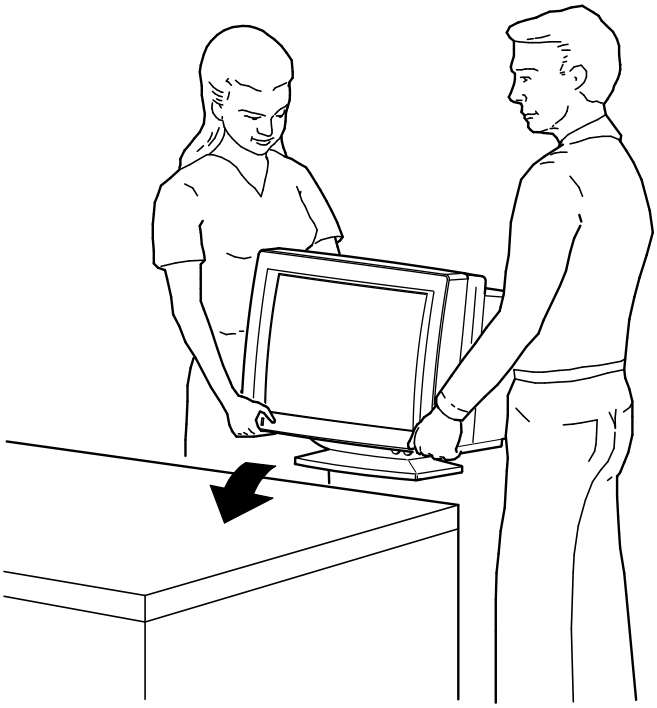
Place the monitor on a level surface.



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2
Installation

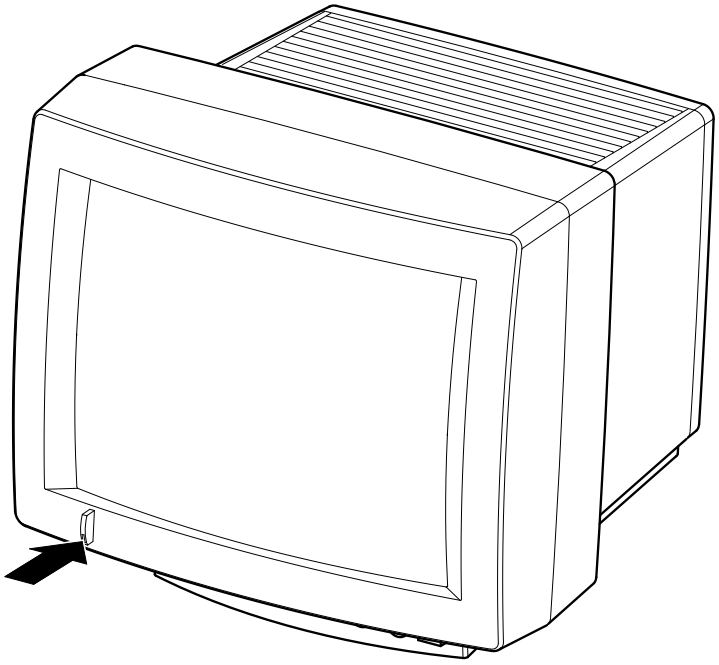
NOTES

The monitor can operate at either 66 Hz or 72 Hz. The monitor is preset for the system as ordered before it is shipped. If you wish to change the monitor to another system, you need to check the refresh rate of the new system. If it is different from the initial system refresh rate, contact your local Customer Services office.

If your host system needs a color video option with your monitor, make sure the option is installed.

Model Number	Pixels x Lines	Refresh Rate	Applicable Area
VR320-CA	1280 x 1024	66 Hz	Northern Hemisphere
VR320-C4	1280 x 1024	66 Hz	Southern Hemisphere
VR320-DA	1280 x 1024	72 Hz	Northern Hemisphere
VR320-D4	1280 x 1024	72 Hz	Southern Hemisphere

Make sure the power switch is in the out position (off).



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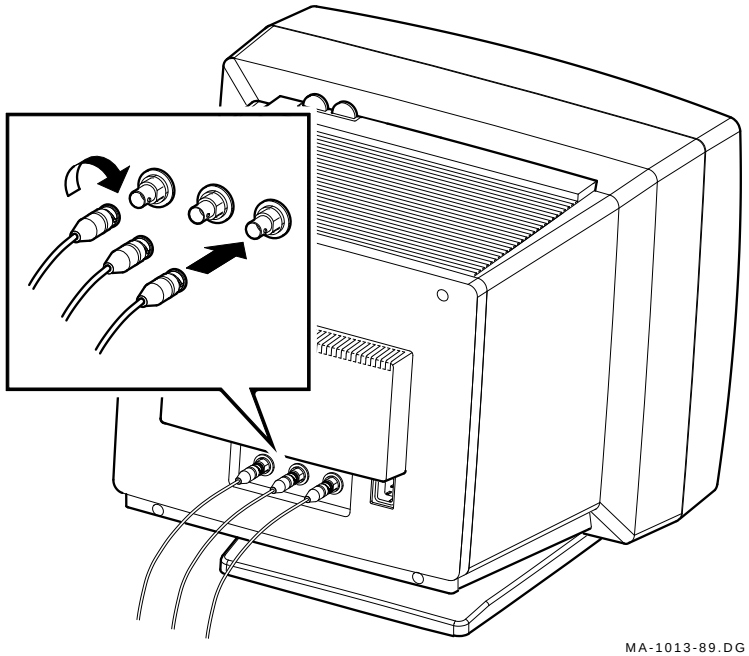
Connect the video cable to the monitor.

NOTE
The video cable is shipped with your host system.

1. Attach each BNC connector to the back of the monitor as follows. Then turn the connector right until it locks in place.
   - Red cable —→ **R**.
   - Green cable —→ **G**.
   - Blue cable —→ **B**.
2. Connect the other ends of the cable to the host system.



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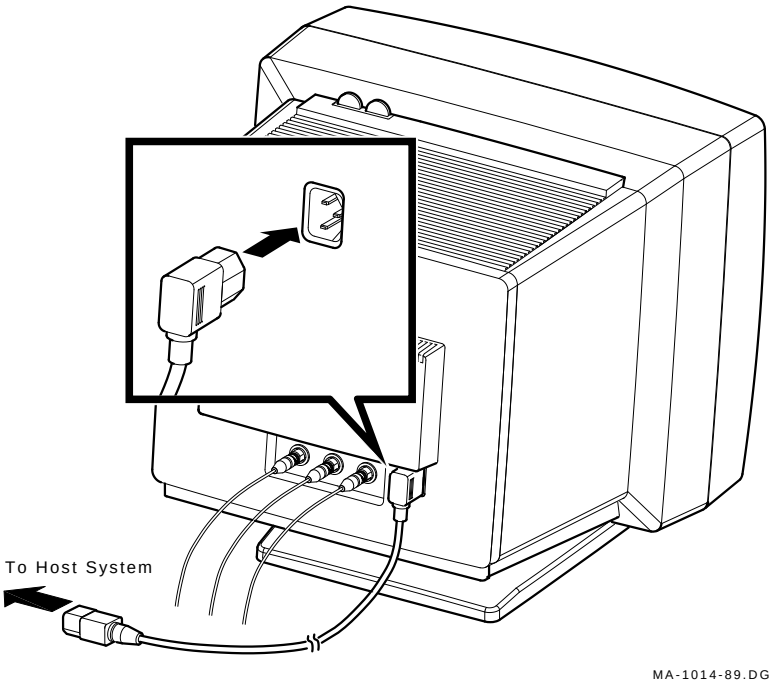
Connect the power cord.

NOTE
The power supply automatically selects the correct voltage.

1. Plug the power cord **firmly** into the power connector on the back of the monitor.
2. Connect the other end of the power cord to the host system.



3
Operation

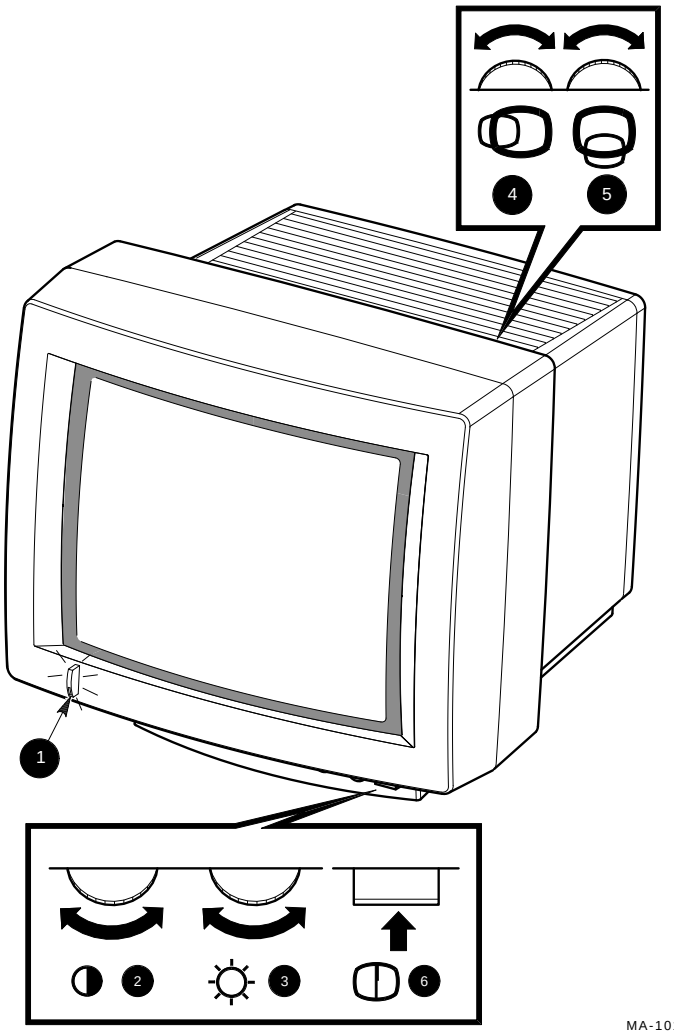
CAUTION
To avoid damage to the monitor, allow a cold monitor to warm to room temperature before turning it on.

Identify monitor controls and power indicator.

Use Table 3–1 and the next illustration to identify the monitor controls and power indicator.

Table 3–1 Monitor Controls and Power Indicator

Item	Control/Indicator	Function
❶	Power switch/ indicator	Turns the power on and off. When the power is on, the switch is lit up. For extended monitor life, switch the power off when not in use.
❷	Contrast	Adjusts the video display intensity.
❸	Brightness	Adjusts the video background intensity.
❹	Horizontal centering	Adjusts the horizontal position of the active area with respect to the bezel.
❺	Vertical centering	Adjusts the vertical position of the active area with respect to the bezel.
❻	Degauss	Eliminates color distortion.



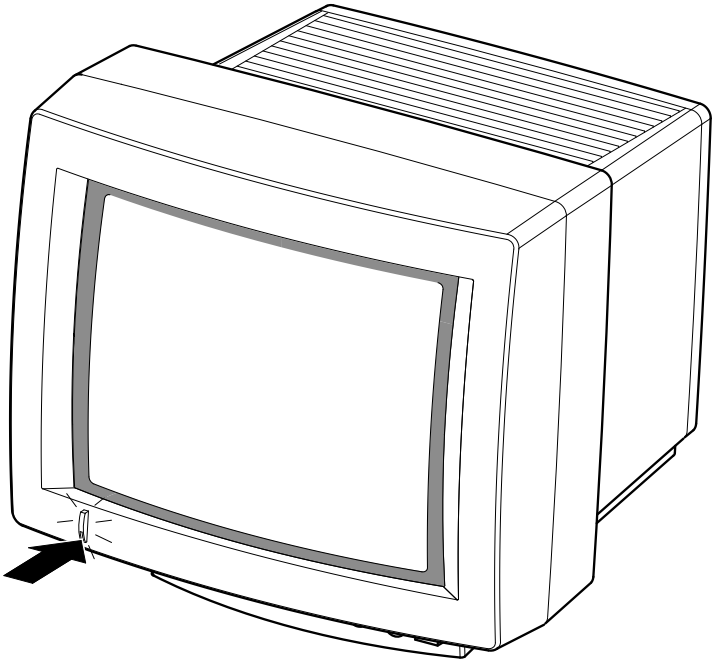
Monitor Controls and Indicator

Turn the system power on.

Make sure your host system is on; then, push in the video monitor power switch.

The power switch should light up. Wait about 20 seconds for a video display.

NOTE
If the video display is not visible within 20 seconds, or if the switch did not light up, refer to Chapter 4 of this manual.



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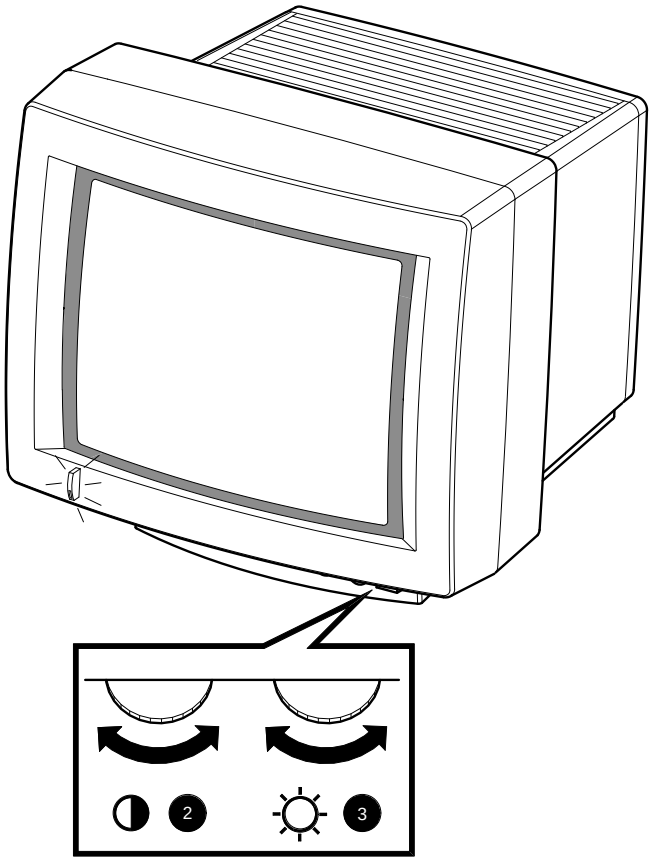
Adjust the contrast and brightness controls.

1. Set the contrast ❷ and brightness ❸ to the maximum level.
2. Decrease the brightness just until the background intensity disappears.
3. Adjust the contrast to your viewing preference.



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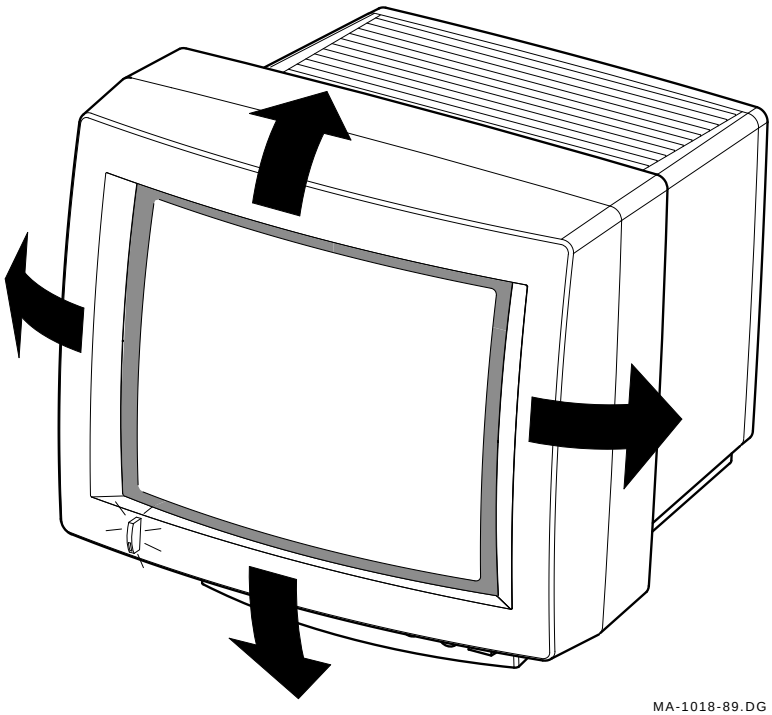
Adjust the tilt-swivel stand.

CAUTION
The monitor does not swivel in a complete circle. If you try to swivel the monitor in a complete circle, you could damage the base.

You can swivel the monitor about its base and still maintain the tilt angle.

Using two hands, **gently** press down on the top, or pull up on the bottom, of the front of the monitor.



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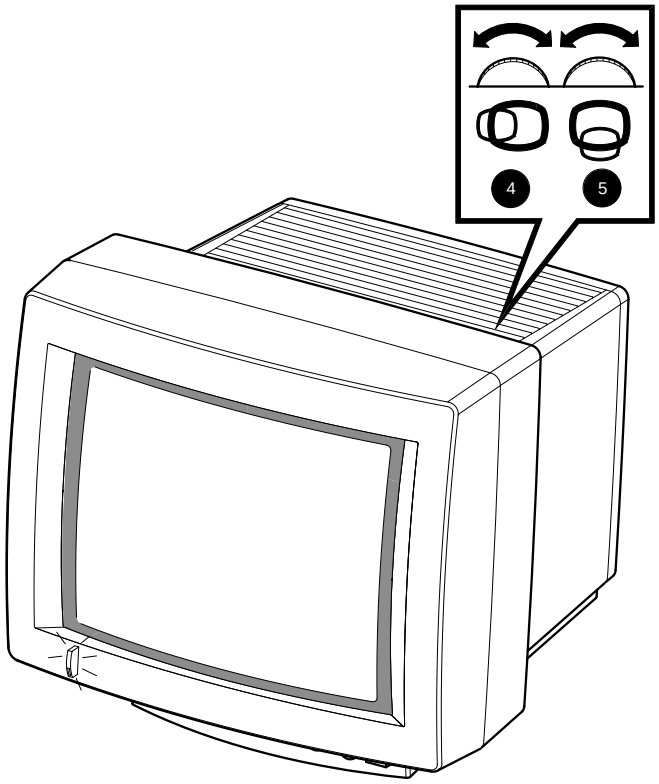
Adjust the centering controls.

If necessary, adjust the horizontal centering ❹ and vertical centering ❺ controls for a centered display.



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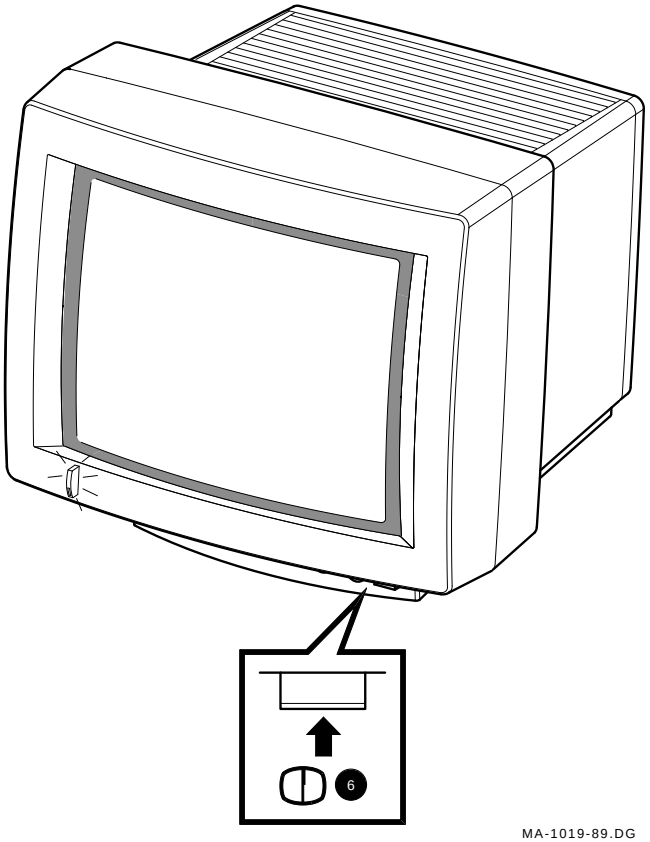
Press the degauss switch for clear color.

The monitor may develop poor color after the swivel action. If you see other colors scattered on the screen, press the degauss switch ❻.

NOTE
If the color is still poor, wait 10 minutes before pressing the degauss switch again to allow the circuit to fully reactivate.



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4
Maintenance

Clean the screen.

Before cleaning the screen, turn the monitor power switch off and wait 20 seconds to let static electricity dissipate.

Clean the screen with a good quality, nonabrasive, nonflammable glass cleaner.

Identify and correct problems.

Table 4–1 will help you determine if the problem is in the monitor or in a source external to the monitor. The following devices can be sources of problems:

- Host video cable
- Host system
- Nearby power or electrical sources

If you have a problem with the monitor, follow these steps:

1. Note the symptoms of the problem.
2. Check your symptoms against the Symptom column in Table 4–1.
3. Check the cause(s) for that symptom in the Possible Cause column. If the column contains more than one possible cause, check the possible causes and their suggested solutions in the order listed.
4. Follow the steps in the Suggested Solution column.

Table 4–1 Identifying and Correcting Problems

Symptom	Possible Cause	Suggested Solution
Power indicator does not light up when you turn the monitor power switch on.	Power cord is not connected to the power source or the monitor.	Turn the monitor power switch off. Reconnect the power cord to the power source and the monitor. Turn the monitor power switch on.
	There is no power at the wall outlet.	Check the outlet by plugging in a lamp. If the lamp does not work, call the responsible facilities person.
	Monitor is faulty.	Turn the monitor power switch off. Contact Customer Services.
Screen is blank, but power indicator is on.	Host system screen saver feature is activated.	Press any key to reactivate the display.
	Brightness and contrast controls are set too low.	Increase the brightness and contrast control settings. A raster should be displayed.
	Host system power switch is not turned on.	Turn the host system power switch on.
	Signal cables are not connected to the monitor or the host system.	Refer to Chapter 2 of this manual and the host system documentation to reconnect the signal cables.
	Monitor or host system is faulty.	Turn the monitor power switch off. Contact Customer Services.
Screen displays poor color.	Monitor has been swiveled.	Press degauss switch to correct color distortions.

Table 4–1 (Cont.) Identifying and Correcting Problems

Symptom	Possible Cause	Suggested Solution
Raster can be seen using the brightness control, but no video or cursor can be seen using the contrast control.	Signal cables are disconnected to the monitor or the host system.	Refer to Chapter 2 of this manual and the host system documentation to reconnect the signal cables.
	Monitor or host system is faulty.	Turn the monitor power switch off. Contact Customer Services.
Erratic or moving colors on the screen. Screen display may be distorted, flickering, or rolling. Green color may be missing.	Electromagnetic interference is coming from other appliances.	Press Degauss switch. If color problems cannot be corrected, then electromagnetic interference exists. Therefore, move any electromechanical device, such as a fan, a motor, or an electric pencil sharpener, away from the monitor or move the monitor.
	(CAUTION: Before moving the monitor, turn the monitor off and wait 20 seconds to let static electricity dissipate.)	
	Green signal cable has a loose connection or is not connected to the monitor or the host system.	Refer to Chapter 2 of this manual and the host system documentation to reconnect the cable.
	Wrong variation (66 or 72 Hz) of the monitor for the system.	Contact Customer Services to check your monitor and change the variation if needed.
	Monitor or host system is faulty.	Turn the monitor power switch off. Contact Customer Services.

Table 4–1 (Cont.) Identifying and Correcting Problems

Symptom	Possible Cause	Suggested Solution
Red or blue color is missing.	Red or blue signal cable is loose or is not connected to the monitor or host system.	Refer to Chapter 2 of this manual and the host system documentation to reconnect the cables.
	Host system or cable for the missing color is faulty.	Verify this problem by swapping the red and blue signal cables on the monitor. If the missing color returns, then the host system or the cable for the missing color is faulty.
	Monitor is faulty.	Verify this problem by again swapping the red and blue signal cables on the monitor. If the missing color does not return, then the monitor is faulty. Turn the monitor power switch off. Contact Customer Services.
Display area is not centered on the screen.	Centering adjustments are not correct, or there is magnetic interference in the area.	Use the horizontal and vertical adjustments to adjust the display area.
	The monitor is faulty.	Turn the monitor power switch off. Contact Customer Services.

NOTE

If you perform all the suggested solutions and the problem still exists, refer to the "Service" section in your host system owner's manual. If that does not work, refer to Chapter 5 of this manual for service options.

5
Service

Digital provides a wide range of maintenance programs that cover small systems and terminals. You can use these programs to select a plan that suits your service needs.

On-Site Repair

Digital offers fast, low-cost, quality maintenance performed at your site by Digital-trained Service Specialists. There are several on-site services available which are described next.

DECservice

DECservice provides on-site service with a guaranteed response time when equipment is located within a specified distance of the service facility. DECservice guarantees a continuous repair effort until service is restored. You can choose the hours of coverage, up to 24 hours a day, 7 days a week.

BASIC Service

BASIC service provides on-site service during regular business hours, Monday through Friday.

Site Servicenter

The Site Servicenter repair service provides an on-site technician for a predetermined, periodic time interval, if you have at least 50 terminals or small systems and can provide workspace at your site. This repair service is provided for a variety of models.

Per Call

The Per Call service is a noncontractual offering that provides on-site repair based on time and materials. Per Call service is available during regular business hours, Monday through Friday.

DECall

DECall provides similar service as the Per Call service; however, the difference is you pay a fixed fee per call with an annual retainer fee.

Off-Site Service

Digital also provides several options for off-site service which are described below.

Carry-In Servicenters

Digital Carry-In Servicenters are located in major cities around the world. They offer convenient, cost-effective repair service with a 48-hour turnaround time. Both contract and Per Call coverage is offered.

DECmailer

DECmailer provides mail-in service for module and subassembly repairs. DECmailer provides a five-day turnaround time.

How To Get Service

Digital has a central service center in your area to help you keep your system running efficiently. To find out more about Digital hardware and software service offerings:

In the United States

Call 1-800-554-3333

Worldwide

Contact your local Digital Customer Services office.

6
Specifications

Dimensions	
Height	457 mm (18 in)
Width	495 mm (19.5 in)
Depth	452 mm (17.8 in)
Weight	∼29 kg (∼63 lb)
Tilt Range	-5° forward to +15° backward
Swivel Range	± 90° (left and right)
Display	
Cathode ray tube (CRT)	483 mm (19 in) diagonal
Display Area	1280 pixels horizontal x 1024 lines vertical. Approximate picture size = 342 mm (13.5 in) x 273 mm (10.75 in) with a 5:4 aspect ratio.
Light Transmissivity	58% nominal

Video Input	Red (with sync) 1 Vpp, 75 ohm, ac or dc coupled Green (with sync) 1 Vpp, 75 ohm, ac or dc coupled Blue (with sync) 1 Vpp, 75 ohm, ac or dc coupled
Video Timing	See Table 6–1.
Electrical Requirements	
AC input voltage	88 - 132 Vac or 176 - 264 Vac, auto-ranging, single phase, 3-wire
Line frequency	47 to 63 Hz
Power consumption	220 watts maximum
Operating Temperature	10° to 40° C (50° to 104° F)
Humidity	10% to 95% relative humidity Maximum wet bulb = 32° C Minimum dew point = 2° C (noncondensing)

Table 6–1 Video Timing—1280 × 1024 Resolution

	Pixels:	**1280 x 1024**	**1280 x 1024**
	Refresh Rate:	**@72 Hz**	**@66 Hz**
Horizontal frequency		77.13 kHz	70.66 kHz
Vertical frequency		72.56 Hz	66.47 Hz
Pixel frequency		130.81 MHz	119.84 MHz
Pixel period		7.64 ns	8.34 ns
Horizontal Timing	**no. pixels**	**µs**	**µs**
Entire line	1696	12.97	14.15
Active visible line	1280	9.79	10.68
Blanking interval	416	3.18	3.47
Sync front porch	32	0.245	0.267
Sync pulse	160	1.22	1.34
Sync back porch	224	1.71	1.87
Vertical Timing	**no. lines**	**ms**	**ms**
Vertical period (Entire frame)	1063	13.78	15.04
Visible raster	1024	13.28	14.49
Blanking interval	39	0.506	0.552
Sync front porch	3	0.03889	0.04246
Sync pulse	3	0.03889	0.04246
Sync back porch	33	0.4279	0.4670