

# VR299

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## Installing and Using the VR299 Color Monitor

Order No. EK-VR299-IN

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2nd Edition,

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## **ABOUT THIS MANUAL**

This guide describes how to install, operate, and maintain your VR299 monitor. Perform the steps in sequence.

## **ABOUT THE VR299**

The VR299 is a color monitor with a 480 mm (19 in) screen. When connected to a host system, the VR299 can display information you send to the host system and information the host system sends to you.

## **BEFORE YOU START**

The kind of host system you have affects the way you prepare to operate your monitor. Refer to your host system manuals for the following information.

- Must any option module be installed in the host system to support your monitor?
- Do you have your host system's video cable assembly?
- Do you have your power cord?

## **WARNINGS, CAUTIONS, NOTES**

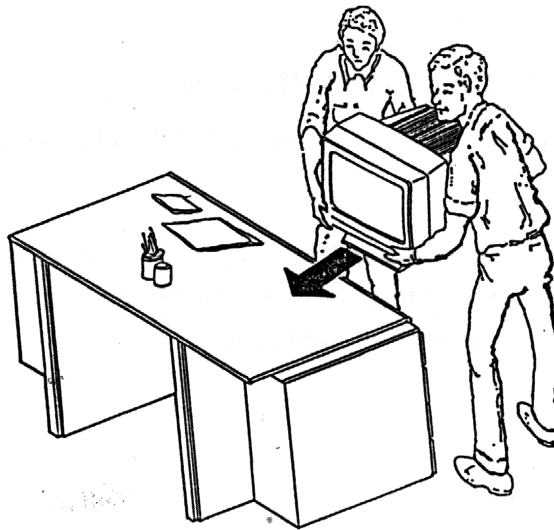
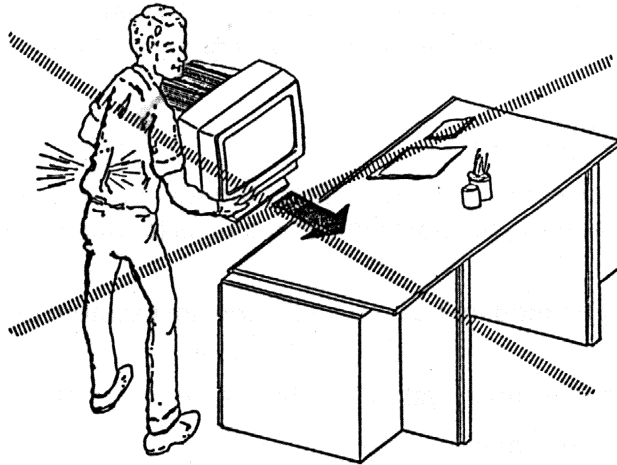
The warnings, cautions, and notes in this installation manual have specific purposes.

**WARNINGS** contain important information that relate to personal safety.

**CAUTIONS** contain information to prevent damage to the equipment.

**NOTES** contain general information.

# UNPACKING

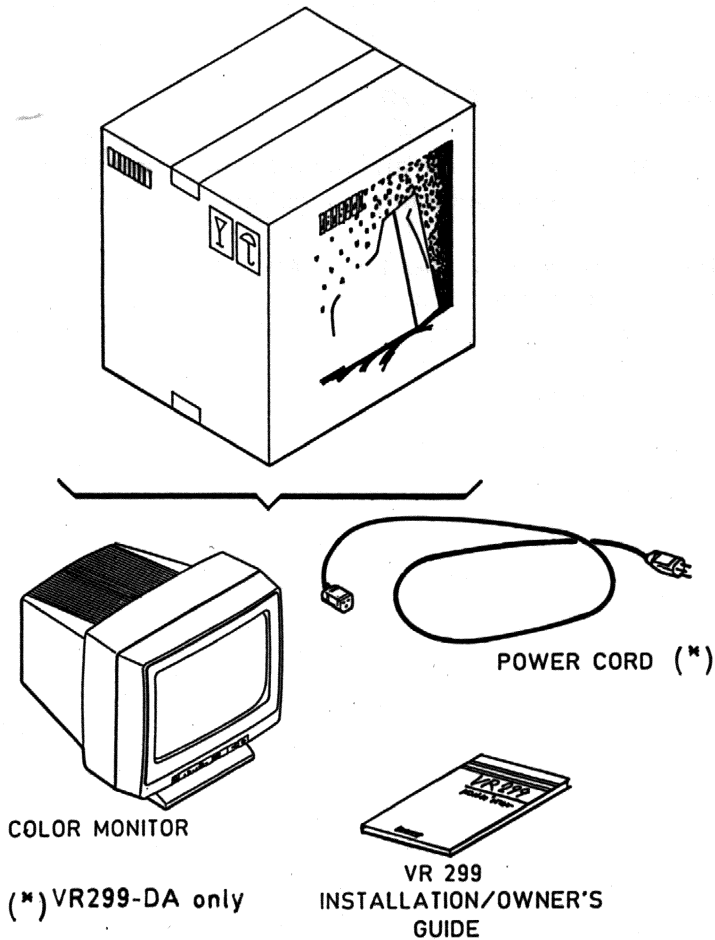


**Unpack the carton and check the contents.**

**NOTE:** *The power cord may be supplied separately.*

**CAUTION:** *This procedure requires two people. The shipping weight of the monitor is less than 37 kilograms (82 pounds). The weight of the monitor is 32 kilograms (71 pounds).*

Save the shipping carton and the packing material in case you need to return the monitor for service.



## **Check for missing or damaged items.**

If you discover missing items, contact your sales representative. If you discover damaged items, contact your delivery agent.

## **Call Digital Equipment Corporation when you need help.**

Refer to the Repairs section in this manual for the correct phone number. Be ready to report the model number and serial number of your monitor.

## **Avoid damage to your diskettes.**

The electromagnetism from your monitor may damage diskettes by distorting or erasing the magnetic patterns. Do not place any magnetic media on or near your monitor.

## **Select the monitor's location.**

Refer to the Specification section at the end of this manual for information you should consider when selecting a location for the monitor.

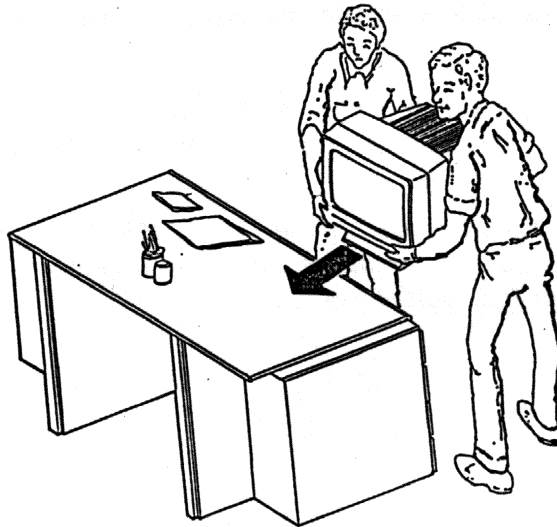
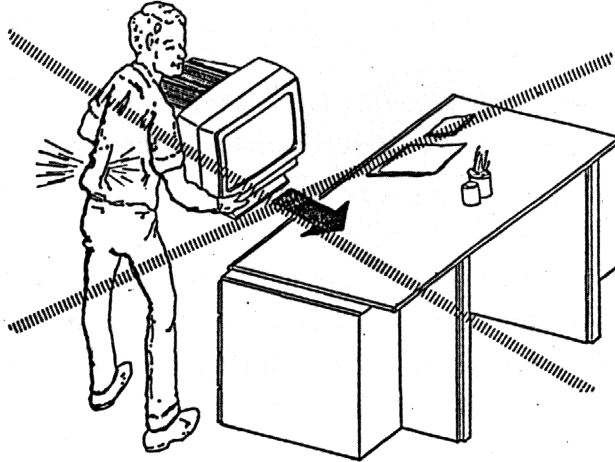
The VR299 is susceptible to ambient magnetic fields that can cause display interference. You can correct this problem by moving the VR299 to a different position or remove the affective item. See "Problem Solving" for direction.



## INSTALLATION

**Place the monitor on a level surface.**

**CAUTION:** *This procedure requires two people. The monitor weighs 32 kilograms (71 pounds).*



## **Connect the signal cables to the monitor.**

*NOTE: If your host system needs a color option to work with your monitor, make sure the option is installed and your host system is turned on.*

The video cable assembly (host system cable) is shipped with your host system. Refer to your host system documentation for information.

1. Face the rear of the monitor.
2. Swivel the monitor all the way to the left to access the signal cable connectors.
3. Locate the signal cable connectors on the monitor.
4. Connect the signal cables to the monitor in the following order.

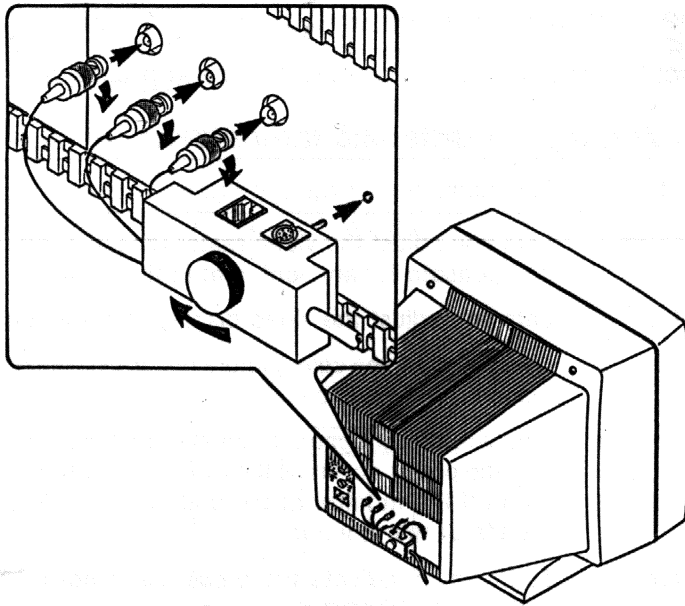
*NOTE: Push each cable in and turn each connector clockwise until it clicks and locks in place.*

- a. Connect the blue signal cable to the connector labeled B.
- b. Connect the green signal cable to the connector labeled G.
- c. Connect the red signal cable to the connector labeled R.

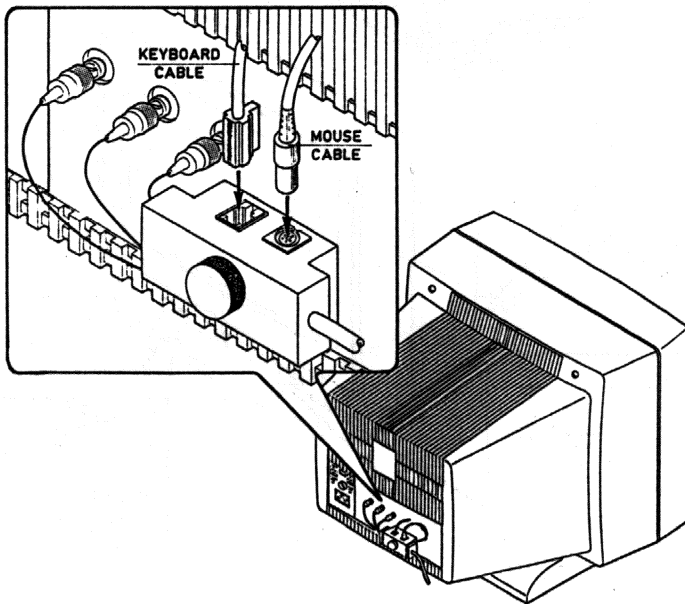
## **Screw the video cable assembly into the cable mounting plate.**

Turn the screw until it is tight. Make sure the video cable assembly is flat against the cable mounting plate when you start and finish securing the cable to the monitor.

*CAUTION: Failure to secure the video cable assembly screw to the cable mounting plate may strain the cable and may also cause radio emissions in excess of FCC guidelines.*



**Connect the keyboard cable and mouse cable to the video cable assembly.**

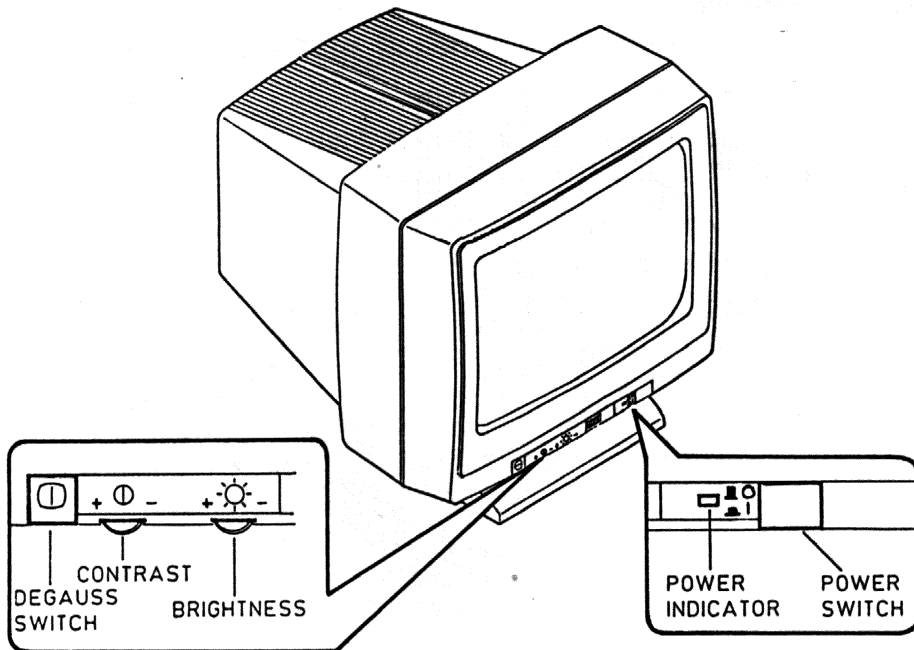


## Locate the monitor controls and power indicator.

Table 1 describes the monitor controls and power indicator.

**Table 1: Monitor controls and indicator**

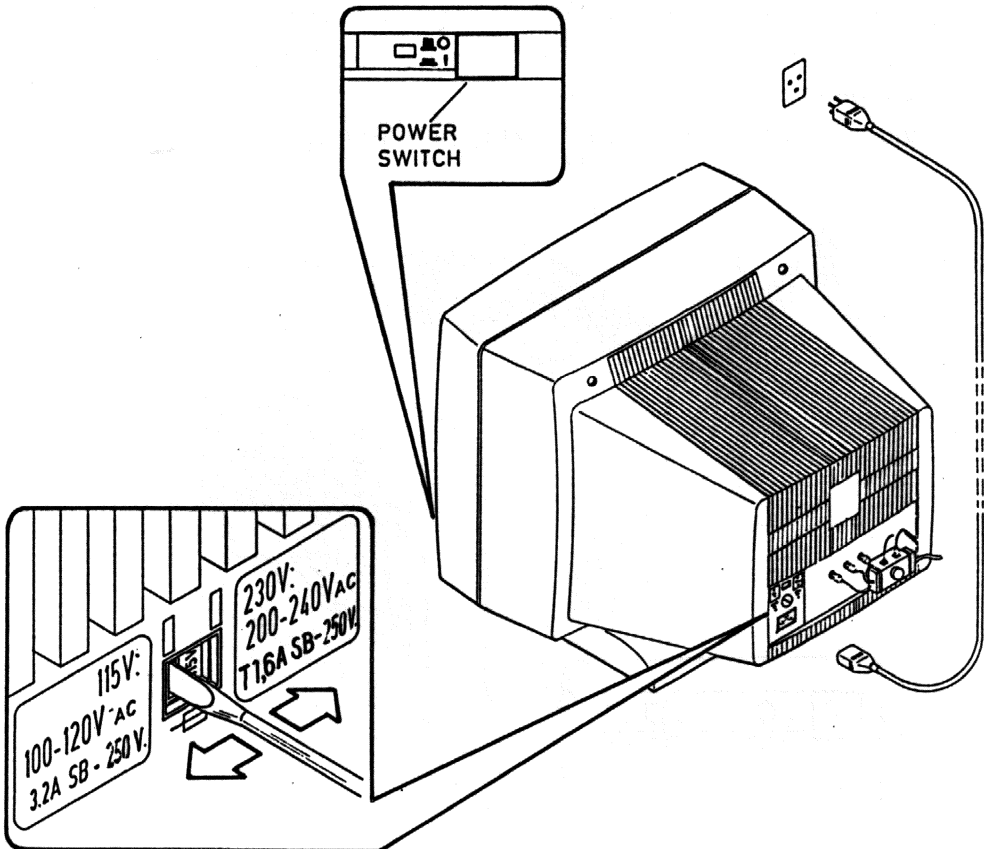
Control/Indicator	Function
Brightness control	Lets you adjust the video raster (background intensity) to compensate for ambient light in the room.
Contrast control	Lets you adjust the video display to a suitable intensity.
Degauss switch	Lets you clear the color picture distortion caused by external magnetic interference.
Power on/off switch	Lets you turn the monitor on and off. Press the switch in to turn the power on. Press the switch out to turn the power off. Turn off the monitor at the end of the workday to extend the life of the monitor.
Power indicator (green)	Turns on to indicate the presence of power. Turns off to indicate the absence of power.



**CHECK THAT THE MAINS VOLTAGE SELECTOR IS IN THE CORRECT POSITION.**

**Connect the power cord first to the monitor, then to the wall outlet.**

**CAUTION:** *To avoid damaging a monitor that has been moved inside from a cold environment, let the monitor warm to room temperature before you turn it on.*



## OPERATION

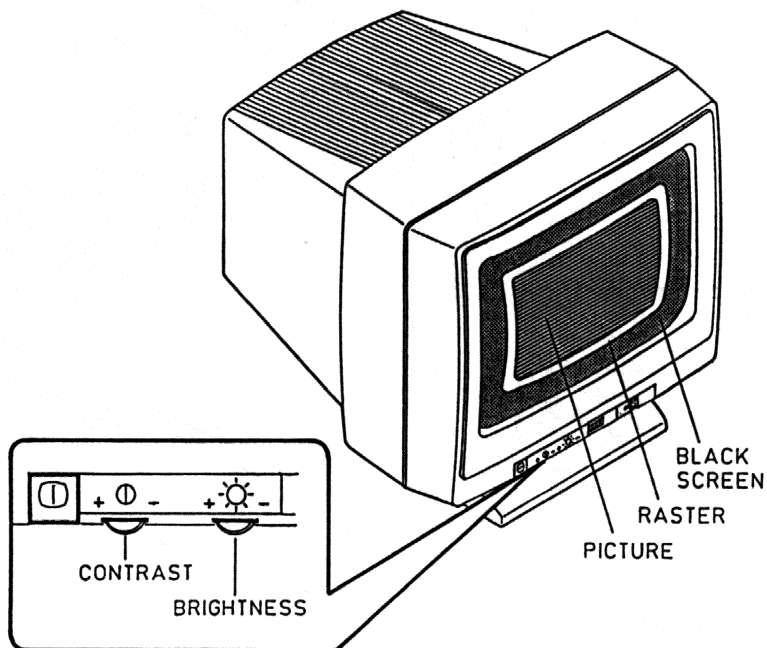
**Set the monitor power switch to the on position.**

Watch for the green power indicator to turn on. Wait about 30 seconds for a video display.

**NOTE:** *If the green power indicator does not turn on, or if a video display does not appear, refer to the Identifying and Correcting Problems table in the Maintenance section of this manual.*

**Set the brightness and contrast controls.**

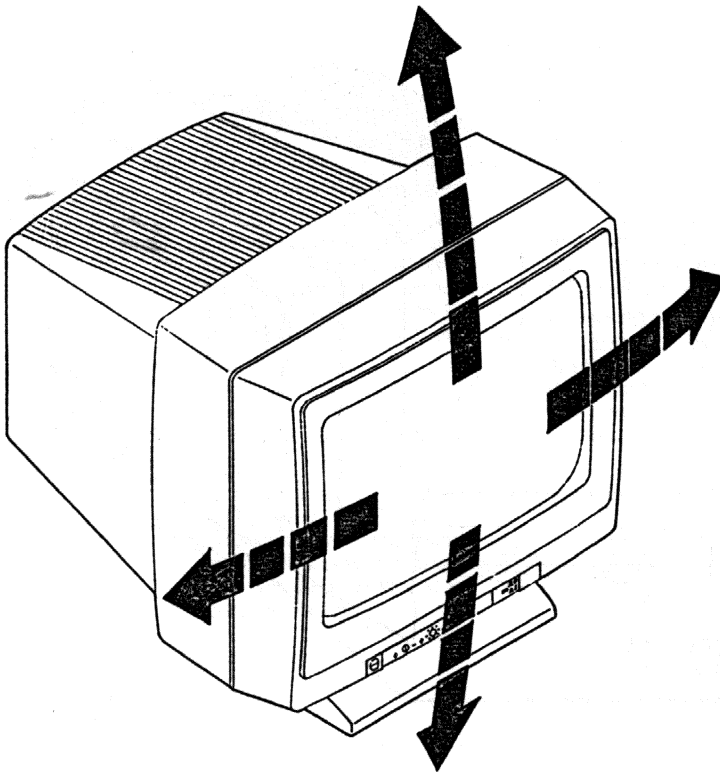
1. Increase both the brightness and contrast to maximum.
2. Decrease the brightness until the raster (background intensity) just disappears.
3. Adjust the contrast to your viewing preference.



## Adjust the tilt-swivel stand to a comfortable viewing angle.

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

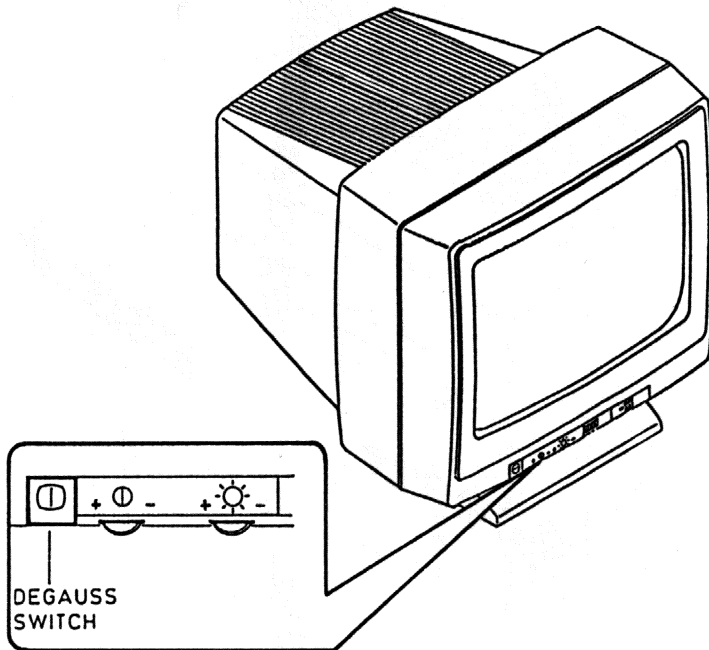
To set the angle, tilt the monitor forward or backward to the desired position. You can swivel the monitor about its base and still maintain the tilt angle.



## Press the degauss switch, if necessary.

The monitor may show signs of poor color purity after swivel action. Poor color purity exists if you see other colors scattered in different places in the screen display. Press the degauss switch to correct color distortions.

**NOTE:** *If you need to press the degauss switch again, wait 10 minutes to allow the circuit to fully reactivate.*





## MAINTENANCE

### Cleaning the Screen

NOTE: *Before cleaning the screen, turn your monitor off and wait 20 seconds to let static electricity dissipate.*

Clean the screen with the Digital-approved screen cleaning kit (Digital part number VT1XX-KF).

### Replacing the Fuse

**Warning:** For continued protection against fire, replace only with same type and rating of fuse.

**Attention:** Pour des raisons de protection anti-incendie, veuillez à toujours utiliser des fusibles de même type et de même calibre.

**Achtung:** Zur Verhütung von Brandgefahr nur durch Sicherung gleichen Typs und Nennwerts ersetzen.

注意: 火災事故防止のため、ヒューズ交換の際には同一タイプで同一定格のヒューズを使用のこと。

**Attenzione:** per proteggere da pericolo di incendio, sostituire solo con fusibili dello stesso tipo e amperaggio.

**Waarschuwing:** Om brandgevaar te voorkomen dient de zekering alleen te worden vervangen door een zekering van hetzelfde type en met dezelfde veiligheidsnorm.

**Varning:** Av brandsäkerhetsskäl, byt endast ut säkringarna mot en säkring av samma typ och styrka.

**ATENCIÓN:** para asegurar una protección continua contra incendios, sustituya siempre el fusible por otro del mismo tipo y características.

**Varoitus:** Tulipalovaaran vältämiseksi varokkeet on vaihdettava vain samantyyppisiin ja-tehoisiin varokkeisiin.

**Advarsel:** Sikringer må erstattes med samme type og verdi for å gjenopprette full beskyttelse mot brann.

**Advarsel!** For at forhindre, at der skal opstå ildebrand, er det vigtigt, at det er samme type der udskiftes med samt også samme sikringstype.

警告 防止起火只可更換同類型及額定值保險絲

See fig. on sheet 12

## Replacing the Fuse

Your monitor is equipped with a fuse which has the following value according to the mains voltage.

Mains Voltage

115 V.

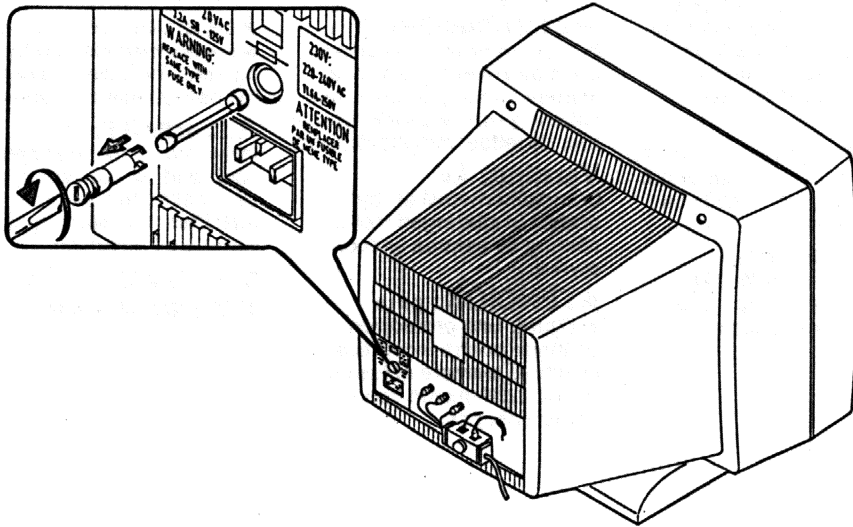
230 V.

Fuse Value

3.2 A SB - 250 V.

1.6 A SB - 250 V.

Push off the power switch and wait 10 seconds; then unplug the power cord. By screw driver turn 90° anticlockwise the fuse cap-Take out it-Replace the fuse.



## Identifying and Correcting Problems

Problems on the screen display can come from a number of sources: your host system, power sources, nearby electromechanical sources, or the monitor itself.

The following troubleshooting table deals primarily with monitor problems. The table also helps you determine if the problem is in the monitor, a source external to the monitor, or an input device. The following input devices can be sources of problems.

- Keyboard
- Mouse
- Tablet
- Host video cable assembly
- Host system

When you have a problem with your monitor, follow these steps.

1. Note the symptoms of the problem.
2. Check the Symptom column in Table 2 for a match.
3. Check the conditions 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 advice in Suggested Solution column.

If you perform all the suggested solutions and the problem still exists, refer to the Repairs section. That section describes the procedures to call for service.

**Table 2: Identifying and Correcting Problems**

<b>Symptom</b>	<b>Possible Cause</b>	<b>Suggested Solution</b>
Power indicator does not turn on when you turn the monitor on.	Powercord is not connected to the power source or the monitor.	Turn the monitor off. Reconnect the power cord to the power source and the monitor. Turn the monitor on.
	No power at 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 off. Contact Field Service.
Screen is blank but power indicator is on.	Host system's cathode-ray tube (CRT) screen saver feature is activated.	Press any key to reactivate the display.
	Brightness and contrast controls are turned down.	Turn brightness and contrast controls up.
	Signal cables are not connected to the monitor or the host system.	Refer to Installation section of this manual and host system manual for correct procedures to install the cables. Reconnect the signal cables.
	Monitor or host system is faulty.	Turn the monitor and system off. Contact Field Service.
Video is displayed but display does not respond to input devices (keyboard, mouse, tablet). An error message may be displayed.	One of the input devices is disconnected.	Turn the monitor and host system off. Connect the input device. Turn the monitor and host system on.

**Table 2 (Cont.): Identifying and Correcting Problems**

<b>Symptom</b>	<b>Possible Cause</b>	<b>Suggested Solution</b>
	One of the input devices has a faulty or loose connection.	Turn the monitor and host system off. Disconnect and reconnect the input devices. Turn the monitor and host system on.
	Host system or one of the input devices is faulty.	Turn the monitor and host system off. Contact Field Service.
Raster can be displayed by turning up the brightness control, but no video or cursor can be seen even when the contrast control is at maximum.	Signal cables are disconnected on the monitor or the host system.	Refer to the Installation section of this manual and host system manual for correct procedures to install the cables. Reconnect the signal cables.
	Monitor or host system is faulty.	Contact Field Service.
Screen display is distorted, flickering, or rolling.	Green signal cable has loose connection, or is not connected to the monitor or the host system.	Refer to the Installation section of this manual and host system manual for correct procedures to install the cables. Reconnect the green signal cable.
		Monitor or host system is faulty. Turn the monitor and host system off. Contact Field Service.

## Table 2 (Cont.): Identifying and Correcting Problems

Symptom	Possible Cause	Suggested Solution
Red or blue color is missing.	Red or blue signal cable has loose connection, or is not connected to the monitor or host system.	Refer to the Installation section of this manual and host system manual for correct procedures to install the cables. Reconnect the red or blue signal cable.
	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, the host system or the cable for the missing color is faulty.	Contact Field Service.
	Monitor is faulty. Verify this problem by performing the same procedure described in the previous step. If the missing color does not return, the monitor is faulty.	Contact Field Service.
Screen display foreign colors (bad purity).	Monitor has been swiveled.	Press degauss switch.
<p><b>CAUTION:</b> <i>Before moving the monitor, turn the monitor off and wait 20 seconds to allow static electricity on the CRT to dissipate.</i></p>		
	Electromagnetic interference exists. In most cases, if purity problems cannot be corrected by pressing the degauss switch then electromagnetic interference exists.	Move any electromechanical device, such as an electric pencil sharpener, away from the monitor or move the monitor.
	Monitor is faulty.	Contact Field Service.

## **REPAIRS**

If you are unable to correct the problem with your monitor, refer to the Service section in your host system owner's manual.

## **DIGITAL SERVICE**

Digital provides a wide range of maintenance programs that cover small systems and monitors. These include on-site, carry-in, and mail-in maintenance services. 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.

### **DECservice**

DECservice provides preferred 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**

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

### **Site Servicenter**

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

### **Per Call**

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

**DECall**

Similar to Per Call Service. However, you pay a fixed fee per call with an annual retainer fee.

**Off-Site Service**

Digital also provides several options for off-site service.

**Carry-In Servicenters**

Digital 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**

This mail-in service is for module and subassembly repairs. DECmailer provides five-day turnaround.

**HOW TO GET SERVICE**

Digital has central service center in your area to help you keep your system running at peak efficiency. To find out more about Digital's hardware and software service offerings.

**In the United States**

Call 1-800-554-3333

**Worldwide**

Contact your local Digital Field Service office.



## **SPECIFICATIONS**

### **Dimensions**

Height	47 cm (18.5 in)
Width	50,6 cm (19.9 in)
Depth	52,5 cm (20.66 in)
Weight	32 kg (71 lb)
Shipping weight	37 kg (82 lb)

**Tilt range** -5 + 15°

**Swivel range** ± 120°

### **Display**

cathode Ray Tube (CRT)	480 mm (20 in, 19V) Color phosphor, medium short persistence P22 RGB phosphor 0,32 mm trio-dot pitch shadow mask A.R. Bonded panel 58% light output transmission
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### **Video input**

Composite video  
Red: 0.7 Vpp / 75 ohm  
Green (with sync): 1 Vpp / 75 ohm  
Blue: 0.7 Vpp / 75 ohm

### **Display characteristics**

1024 pixels horizontal x 864 lines vertical  
giving approximate picture size of 326 mm  
x 275 mm  
Maximum contrast no less than 25 footlam-  
berts (fl)

## **Timing**

### **Horizontal rate timing**

Frequency	54.054 kHz
Front porch	160 ns
Sync pulse	1850 ns
Back porch	1680 ns
Blanking interval	3.70 $\mu$ s (maximum)
Active video time	14.8 $\mu$ s
Horizontal period	18.5 $\mu$ s
Pixels displayed	1024

### **Vertical rate timing**

Frequency	60 Hz
Front porch	0 Horizontal lines
Sync pulse	3 Horizontal lines
Blanking interval	37 Horizontal lines
Active video time	16.0 ms
Vertical period	16.67 ms
Lines displayed	864

### **Video rate (bandwidth)**

Pixel frequency	70 MHz
Pixel period	14.45 ns (nominal)

**Power**

Voltage range (switch selectable)	DA Model, 100–120 V~ D3, D4 models, 200–240 V~
Rated current	DA Model, 2.2 A D3, D4 models, 1.1 A
Frequency	50/60 Hz
Power consumption	150 Watts/250 VA (maximum)

<b>External controls and indicators</b>	Brightness
	Contrast
	Degauss
	Power switch
	Power indicator

<b>Operating temperature</b>	10° to 40° C (50° - 104° F)
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<b>Humidity</b>	10% to 95% relative humidity (with maximum wet bulb of 32° C and minimum dew point of 2° C noncondensing)
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