

**Personal System/2
8517 and 9517 Color Displays
Hardware Maintenance
Reference**

IBM Personal System/2 8517 and 9517 Color Displays

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Insert the following pages behind the full-length tab labeled "Personal System/2 Displays".

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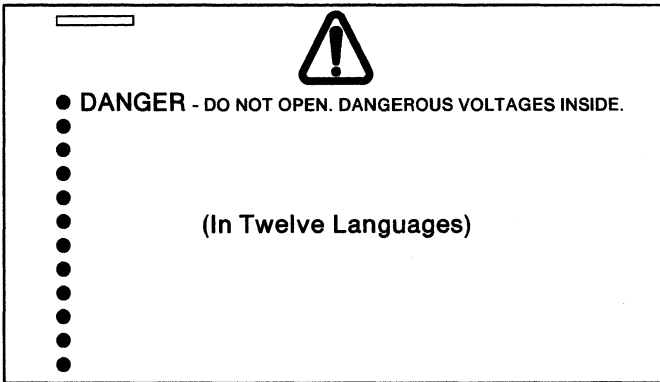
IBM Personal System/2 PS/2

Safety

Safety Labels

The following safety labels are used on the IBM 8517 and 9517 Displays. Small symbols are also used to identify high voltages on some components.

On the underside of the rear cover



On the rear panel of the electromagnetic interference shield

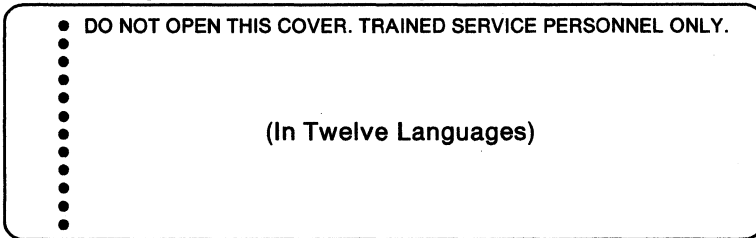


Figure 1. Safety Labels

Safety at Work

This product meets IBM safety standards.

The following information has been included in this publication for the use and safety of IBM personnel. For more information, see *Electrical Safety for IBM Service Representatives, S229-8124*, and *Safety/Health Guidelines for IBM Service Representatives, S241-5493*.

Use these rules to ensure general safety:

- Observe good housekeeping in the area of the machines during maintenance and after completing it.
- Use only field-supply items (such as adhesives, cleaning fluids, lubricants, paints, and solvents), approved by IBM and supplied under an IBM part number.
- When lifting any heavy object:
 1. Ensure that you can stand safely without slipping.
 2. Balance the weight of the object between your two feet.
 3. Use a slow lifting force. Never move suddenly or twist when you attempt to lift.
 4. Lift by standing or by pushing up with your leg muscles; this action removes the strain from the muscles in your back. *Do not attempt to lift any objects that you think are too heavy for you.*
- Do not perform any action that causes hazards to the customer or that makes the equipment unsafe.
- Put removed covers and other parts in a safe place, away from all personnel, while you are servicing the machine.
- Always keep your tool case away from walk areas so that other persons will not trip over it; for example, put it under a desk or table.
- Do not wear clothing that can be trapped in the moving parts of a machine. Ensure that your sleeves are fastened or are rolled up above the elbows. If your hair is long, fasten it.

- Do not wear jewelry, chains, metal-frame eyeglasses, or metal fasteners for your clothing.

Note: Remember: a metal object lets more current flow if you touch a live conductor.

- Insert the ends of your necktie or scarf inside other clothing or fasten the necktie with a clip, preferably nonconductive, approximately 8 centimeters (3 inches) from the ends.

- Wear safety glasses when you are:

- Using a hammer to drive pins or similar parts
- Drilling with a power hand-drill
- Using spring hooks or attaching springs
- Soldering parts
- Cutting wire or removing steel bands
- Cleaning parts with solvents, chemicals, or cleaning fluids
- Working in any other conditions that might be hazardous to your eyes.

- Before you start the machine, ensure that other service representatives and the customer's personnel are not in a hazardous position.

- After maintenance, reinstall all safety devices such as shields, guards, labels, and ground wires. Exchange any safety device that is worn or defective for a new one.

Note: Remember: safety devices protect personnel from hazards. You destroy the purpose of the devices if you do not reinstall them before completing your service call.

- Reinstall all covers correctly before returning the machine to the customer.

Cathode Ray Tube (CRT) Safety

See also *General Safety CEM 100 (87)*.

The primary hazard of CRTs is flying glass as a result of an implosion. The following sections describe different phases of CRT safety. All phases are equally important and negligence in any area could result in possible injury to an employee or customer.

Any additional information or variation from this information will be included in CEM/Service Aids.

Storage of CRTs

1. Cathode ray tubes must be enclosed when received, transported, or otherwise moved from area to area.

If they are shipped in a carton, they must be in the original carton or one of equivalent strength, and securely sealed to prevent accidental opening. Also, original or equivalent packing materials and forms must be placed inside the carton to give the CRT proper support and protection. If CRTs are transported in a unit or piece of equipment, the equipment must be able to contain the glass fragments should an implosion occur.

2. CRTs should be stacked as directed on the manufacturer's carton. When in doubt, stack with faceplate (viewing surface) down. Cartons should not be stacked more than two high.
3. CRT storage areas must be away from the normal flow of material handling equipment and pedestrian traffic. Also, storage areas must be dry to ensure that cartons will not absorb moisture and collapse.

Maintenance and Installation of CRTs

1. No one shall be permitted to install, adjust, maintain, replace, or handle high-vacuum CRTs until they have reviewed these instructions.
2. CRTs when received, transported, or otherwise moved from area to area should be completely enclosed in their original shipping cartons and sealed.

3. When handling CRTs, personnel must wear safety equipment at all times. The minimum safety equipment required is:
 - a. Safety glasses - IBM part number 5715010.
 - b. Long-sleeved garment.
4. CRTs under vacuum will not be permitted to remain out of their cartons unless they are under test or inspection.
5. Do not scratch or bump any part of the CRT because this may weaken the glass and cause it to implode.
6. Before removing any CRT, discharge all stored potential that may exist on the anode button or base socket pins and the capacitor in the high voltage supply.

Note: Some CRTs contain a conductive coating on both the inside and outside surfaces to form a capacitor. Within some CRTs, a second capacitive charge builds up following the original discharge. It is therefore important to discharge each CRT a second time immediately before removal.
7. Do not handle CRTs by the neck alone. The neck is the weakest part of the CRT and is easily broken. Always handle CRTs with two hands. If the CRT is shipped with a lifting strap, use this strap for removing a CRT from, and placing a CRT into, the shipping container.
8. When CRTs are inserted or removed from equipment, they must be supported by the large end while carefully guiding the neck in or out of position. The lifting strap, if available, can be used in this process.
9. Do not place the CRT on a table or bench when there is any possibility of the CRT rolling. If it is necessary to place a CRT anywhere except in its special carton, a piece of felt or other soft material should be placed under it to prevent scratching the glass. Place larger CRTs vertically on their faces, and not on their sides, to prevent the possibility of rolling.

10. When a CRT is removed from equipment, it should be enclosed in its shipping container as soon as possible to reduce the chances of breaking. Cathode ray tubes should each be placed in their cartons with the large face end up and the neck down. Ensure that the weight of the CRT is not resting on the neck. The container should be sealed securely with strong tape and, to prevent tipping, turned over so the CRT is positioned face down.

Disposal of CRTs

Field personnel must not release the vacuum in CRTs. Dispose of CRTs in accordance with existing safe working procedures.

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IBM Personal System/2 8517 and 9517 Color Displays

The IBM* Personal System/2* 8517 and 9517 Color Displays are analog displays with five externally controlled resolutions. The displays are available in the following models:

Model 8517001	Low Voltage	Northern Hemisphere (United States, Canada)
Model 8517002	Universal Voltage	Northern Hemisphere
Model 9517001	Low Voltage	Northern Hemisphere (United States, Canada)
Model 9517002	Universal Voltage	Northern Hemisphere
Model 9517003	Universal Voltage	Southern Hemisphere

All models have the following features:

- 432-mm (17-in.) visible screen
- Tilt swivel stand
- Six operating modes (8517), five operating modes (9517)
- Contrast and brightness controls
- Power-on LED indicator
- Power-on/off pushbutton
- Display self-test with a white screen test pattern
- Analog video inputs that allow an infinite number of colors
- Automatic degaussing
- Very low magnetic field (VLMF) characteristics
- Low electrostatic field (ESF), except Model 8517001
- Meets Swedish MPR-II guidelines for electric and magnetic emissions (9517)
- Complies with the International Organization for Standardization (ISO) 9241/3 standard for visual display clarity (9517)
- 1.8-m (6-ft) signal cable with 15-pin, D-type connector
- 1.8-m (6-ft) detachable power cord.

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Operation

The display receives separate red, green, and blue analog signals through the signal cable (75 ohms impedance). Separate horizontal and vertical synchronization signals are also received through the signal cable.

Each model can be used in one of several operating modes to give different screen characteristics.

The polarity of the synchronization signals controls the modes of operation which set the vertical frequencies, to vary the maximum number of lines that can be displayed.

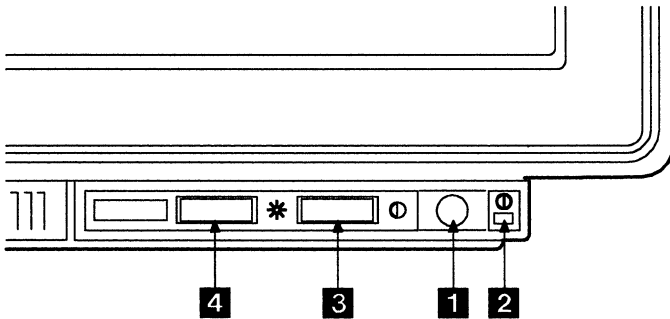
Table 1. 8517 Display, mode characteristics

Mode	Horizontal	Vertical	Resolution	Interlaced
1	+	-	738 x 362	No
2	-	+	738 x 414	No
3	-	-	656 x 496	No
4	+	+	1024 x 768	Yes
4	+	+	1024 x 768	No
5	-	+	1360 x 1024	Yes

Table 2. 9517 Display, mode characteristics

Mode	Horizontal	Vertical	Resolution	Interlaced
1	+	-	738 x 362	No
2	-	+	738 x 414	No
3	-	-	656 x 496	No
4	+	+	1024 x 768	No
5	-	+	1360 x 1024	Yes

Operator Controls and Power-On Indicator



Power Switch

When the switch is set to OFF, the pushbutton is level with the surface of the control panel. Press the pushbutton **1** to turn power on to the display. Press again to turn the power off; the pushbutton returns to its original position.

Power-on Indicator

The power-on indicator (green LED) **2** lights when power is turned on at the display and electrical power is present.

Contrast Control

To increase contrast, move the control **3** from left to right.

Brightness Control

To increase brightness, move the control **4** from left to right. This control has a center detent position (indicated by a click).

Physical Characteristics

The following information is for all models of the displays.

Size

- Height 409 mm (16.1 in.), including tilt swivel stand
- Width 412 mm (16.2 in.)
- Depth 458 mm (18.1 in.).

Weight

- 22 kg (48.5 lb), excluding stand.

Environment

- Temperature:
 - Operating 10° to 35°C (50 to 95°F)
 - Storage 1° to 60°C (33 to 140°F)
 - Shipping –20° to 60°C (–4 to 140°F).
- Humidity:
 - Operating 8% to 80%
 - Storage 5% to 80%
 - Shipping 5% to 100%

Note: The higher levels of humidity for shipping allow for condensation, but not direct contact with moisture.

- Maximum altitude 2000 m (6565 ft).

Power dissipation

- 130 watts maximum

Electrical

- Model 8517001: 90 to 137 V ac, 47 to 63 Hz
- Model 8517002: 90 to 265 V ac, 47 to 63 Hz
- Model 9517001: 90 to 137 V ac, 47 to 63 Hz
- Model 9517002: 90 to 265 V ac, 47 to 63 Hz
- Model 9517003: 90 to 265 V ac, 47 to 63 Hz

Functional Characteristics 8517 Display

Video input: analog, direct-drive, 75 ohm, 0 to 0.7 V.

CRT faceplate: dark, antiglare (silica coated)

The functional characteristics of the display depend on the operating mode:

MODE→	1	2	3
Horizontal deflection rate (kilohertz)	31.5	31.5	31.5
Vertical deflection rate (frames/second)	70	70	60
Horizontal blanking time (microseconds)	5.72	5.72	5.72
Vertical blanking time (milliseconds)	2.76	1.12	0.92
Vertical addressability (lines)	362	414	496
Interlace ratio	1:1	1:1	1:1

MODE→	4	4	5
Horizontal deflection rate (kilohertz)	35.5	57	56.5
Vertical deflection rate (frames/second)	43.5	70	51.5
Horizontal blanking time (microseconds)	5.35	4.41	4.5
Vertical blanking time (milliseconds)	0.69	0.82	0.65
Vertical addressability (lines)	768	768	1024
Interlace ratio	2:1	1:1	2:1

Note: There are two mode 4s available; the program providing the mode automatically selects one of them, depending on the adapter in use. If the display is moved to a display adapter with a higher resolution, it may have to be serviced for adjustments to the higher mode.

Functional Characteristics 9517 Display

Video input: analog, direct-drive, 75 ohm, 0 to 0.7 V.

CRT faceplate: dark, antiglare (silica coated)

The functional characteristics of the display depend on the operating mode:

MODE→	1	2	3
Horizontal deflection rate (kilohertz)	39.5	39.5	39.5
Vertical deflection rate (frames/second)	88	88	75
Horizontal blanking time (microseconds)	4.56	4.56	4.56
Vertical blanking time (milliseconds)	2.26	0.89	0.74
Vertical addressability (lines)	362	414	496
Interlace ratio	1:1	1:1	1:1

MODE→	4	5
Horizontal deflection rate (kilohertz)	58	58
Vertical deflection rate (frames/second)	72	53
Horizontal blanking time (microseconds)	4.40	4.38
Vertical blanking time (milliseconds)	0.67	0.65
Vertical addressability (lines)	768	1024
Interlace ratio	1:1	2:1

Removal and Replacement

This chapter describes how to remove parts of the display.

CAUTION:

The display must never be left unattended with the covers removed and power turned on in a customer environment.

Each main part of the display has its own removal procedure, for example, "Tilt Swivel Stand." Where a *step* in a specific procedure represents a complete *procedure* that is described separately, a reference to that complete procedure is given. For example:

1. Turn power off at the system unit (see "Powering Off the System" on page 8).
2. Remove the tilt swivel stand (see "Tilt Swivel Stand" on page 11).
3. Remove the rear cover (see "Rear Cover" on page 12).

The steps show you where you can find the complete instructions for each procedure.

Replacement

To replace a part, reverse the removal procedure and observe any additional replacement instructions.

Always ensure that parts are located correctly and latched into position (where applicable) before securing.

Alignment Procedures

After replacing any field replacement units (FRUs), do the appropriate alignment procedures.

Refer to the *IBM Personal System/2 8517 and 9517 Color Displays Hardware Maintenance Service* for alignment instructions.

Powering Off the System

CAUTION:

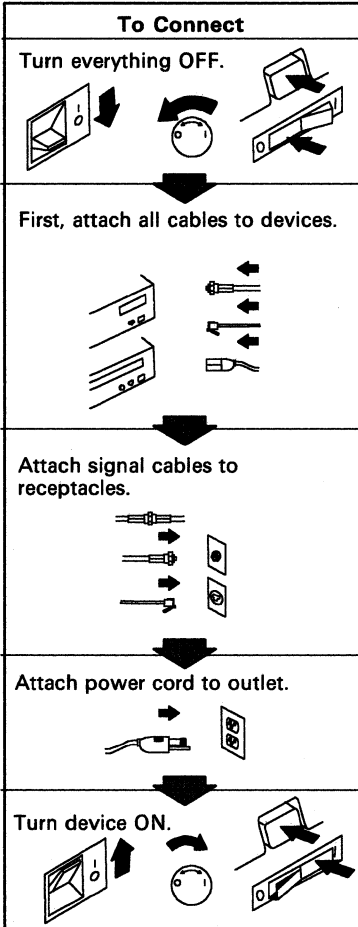
Before removing any part of the display:

- 1. Turn power off at the system unit and all attached devices.**
- 2. Turn power off at the display, and wait for five seconds.**
- 3. Disconnect all power cords from power outlets and the display.**
- 4. Disconnect all connecting cables.**

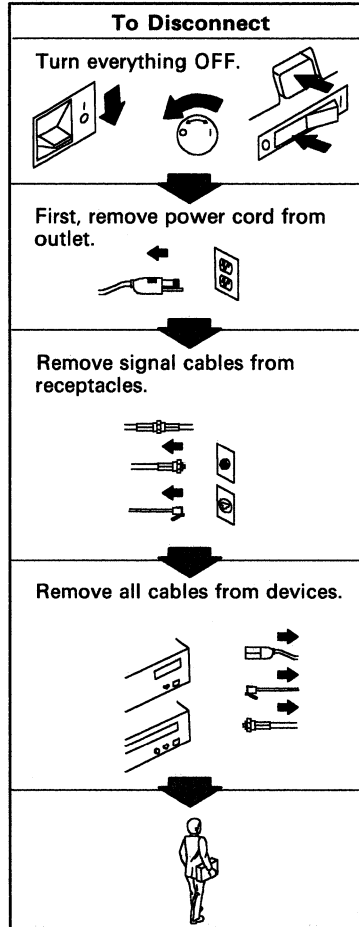


DANGER:

Electrical current from power, telephone, and communication cables is hazardous. To avoid shock hazard, connect and disconnect cables as shown below when installing, moving or opening the covers of this product or attached devices. The power cord must be used with a properly-grounded outlet.



Note: In the U.K., by law, the telephone cable must be connected after the power cord.



Note: In the U.K., by law, the power cord must be disconnected after the telephone line cable.

Figure 2. Electrical Safety

Safety Check for Chassis Ground

After reassembling the display, do the following safety check before connecting the power cord.

1. Connect a multimeter between the ground pin on the power connector and a rear cover securing screw (chassis).
2. Check that the resistance is no more than 0.1 ohm, after compensating for the resistance of the meter leads.

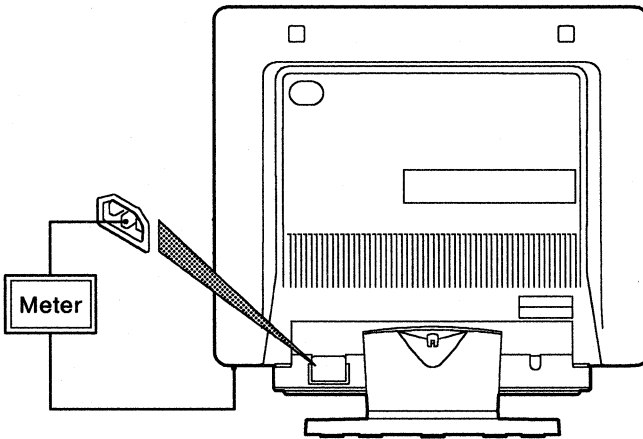


Figure 3. Safety Check

Tilt Swivel Stand

1. Turn power off at the system unit and the display, and disconnect all cables (see “Powering Off the System” on page 8).
2. Place the display on its front cover, protected with a soft cloth or similar material.
3. Remove the thumbscrew **1**, disengage the locating hooks **2**, and move the tilt swivel stand away from the display.

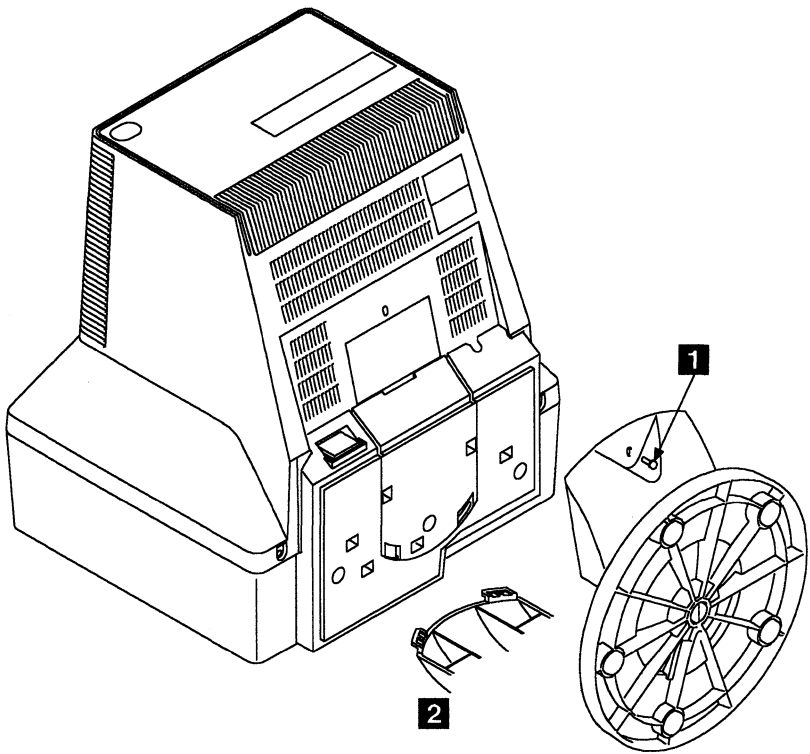


Figure 4. Removing the Tilt Swivel Stand

Rear Cover

1. Turn power off at the system unit and the display, and disconnect all cables (see "Powering Off the System" on page 8).
2. Remove the tilt swivel stand (see "Tilt Swivel Stand" on page 11).
3. Remove the covers **1** from the two securing screws **2** on the top of the rear cover **3**.
4. Remove the four screws **2** from the rear cover.
5. Ease the rear cover away from the display.

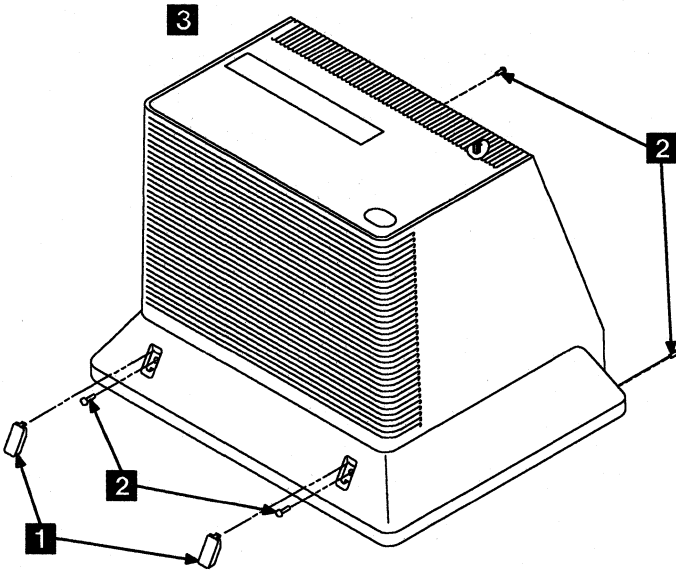


Figure 5. Removing the Rear Cover

Pod Assembly

The pod contains the control and filter cards.

1. Turn power off at the system unit and the display, and disconnect all cables (see "Powering Off the System" on page 8).
2. Remove the tilt swivel stand (see "Tilt Swivel Stand" on page 11).
3. Remove the rear cover (see "Rear Cover" on page 12).
4. Remove the three screws **1** securing the pod.
5. Disconnect the earth lead **2** from the card tray.
6. Release the two latches **3** with a flat-bladed screwdriver and ease the pod back.
7. Remove the power connector **4** from the filter card to the analog card.
8. Remove the connector **5** from the control card to the analog card.

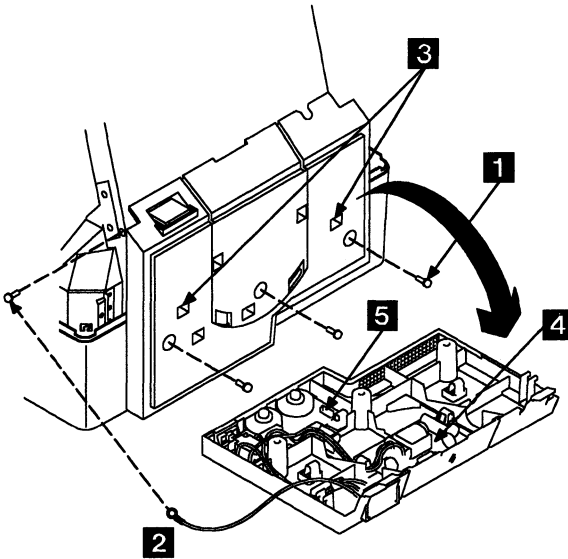


Figure 6. Removing the Pod

Electromagnetic Interference Shield

1. Turn power off at the system unit and the display, and disconnect all cables (see “Powering Off the System” on page 8).
2. Remove the tilt swivel stand (see “Tilt Swivel Stand” on page 11).
3. Remove the rear cover (see “Rear Cover” on page 12).
4. Remove the three screws **1** from each side of the shield, and the ground wire **2**.
5. Lift the shield at the back and move it away from the retaining slots on the Integrated Tube Component (ITC) shield.

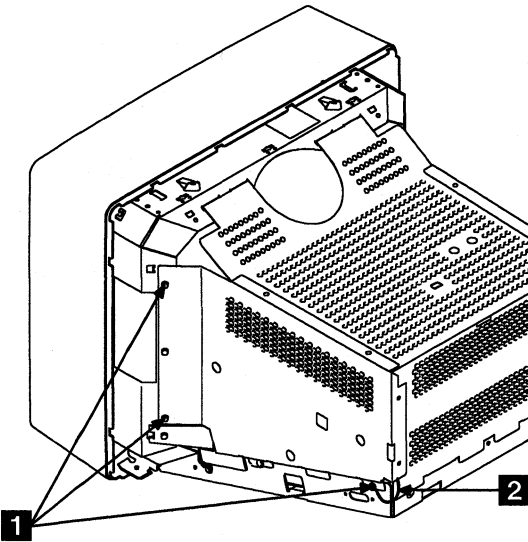


Figure 7. Removing the Electromagnetic Interference Shield

Replacement

Ensure that the spring tabs on the bottom of the interference shield are correctly disposed on either side of the card tray, and the ground wire is reconnected.

High Voltage Discharge Procedure

DANGER

- **Hazardous voltages are present on the analog and video cards.**
- **The extra high tension (EHT) voltage on the CRT anode cap exceeds 25 kV. Use extreme caution when working on the display with the power turned on and the covers removed.**
- **Some adjustments require you to place tools close to the EHT voltage. For safety and performance reasons, only plastic or insulated tools should be used.**
- **Remove all jewelry before starting any repair process.**
- **Never leave the display unattended with the covers removed. This applies whether or not the power cord is connected to the power outlet.**
- **With the power cord connected, voltage may be present at the power supply card even with the power turned off.**
- **A static charge may be present at the power cord connector, at the rear of the display, if the power cord is disconnected before the power is turned off. Always turn the power off first, then wait approximately five seconds before unplugging the power cord from the back of the display.**
- **Under fault conditions, a static charge can remain on the CRT anode long after the power cord has been disconnected. For this reason, it is important to discharge the CRT anode before disconnecting the anode lead.**

To avoid any shock hazards, when working in the area of the high voltage anode lead, discharge the CRT anode to ground. Use the following:

- Screwdriver, flat-bladed
- Jumper (part 7838690) or equivalent, with two alligator clips (part 7838688). Alternatively use meter lead kit (part 6428104).

Please read the complete discharge procedure before starting; then continue in the order given.

1. Turn power off at the system unit and the display, and disconnect all cables (see "Powering Off the System" on page 8).
2. Remove the tilt swivel stand (see "Tilt Swivel Stand" on page 11).
3. Remove the rear cover (see "Rear Cover" on page 12).
4. Remove the pod (see "Pod Assembly" on page 13). Connect the jumper between the ITC shield and the uninsulated part of the screwdriver shaft. Discharge the anode of the CRT **1** to the ITC shield (ground).

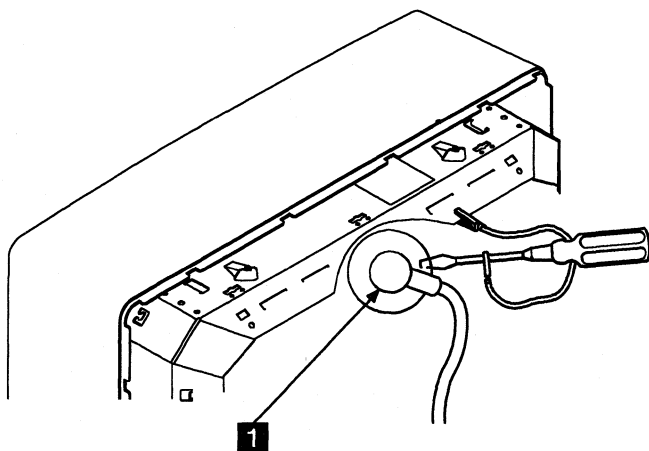


Figure 8. CRT Discharge

5. **Do not touch any conductive parts when discharging high voltages.** Insert the blade of the screwdriver under the anode suction cup until the tip touches the anode connector.
6. Do this several times to ensure a complete discharge.
7. Carefully remove the anode suction cup from the CRT.

Note: Remove the anode suction cup immediately after discharge, to prevent the CRT capacitance from recharging. If you are delayed for more than a minute, perform the discharge procedure again.

Notes:

Video Card

1. Turn power off at the system unit and the display, and disconnect all cables (see “Powering Off the System” on page 8).
2. Remove the tilt swivel stand (see “Tilt Swivel Stand” on page 11).
3. Remove the rear cover (see “Rear Cover” on page 12).
4. Remove the pod (see “Pod Assembly” on page 13).
5. Remove the electromagnetic interference shield (see “Electromagnetic Interference Shield” on page 14).
6. Discharge the CRT anode (see “High Voltage Discharge Procedure” on page 15).
7. Refer to Figure 9 on page 19.
8. Remove the video shield ground strap **1** from the chassis.
9. Remove the DAG lead **2** from the video shield.
10. Remove the black lead **3** from the EHT transformer.
11. Remove the red lead to the EHT transformer from the H.STAT **7** potentiometer.
12. Remove the two connectors **4** from the analog card to the video card.
13. Loosen (but do not remove) the screw **5** that secures the video card clamp to the CRT.
14. Ease the video card away from the neck of the CRT. The final movement requires a slight bias outward on the right side.
15. When the video card is clear of the CRT, remove the five connectors **6** from the base of the video card.

Replacement

1. Replace the connectors on the base of the card.
2. Check that the CRT pins are straight and the video card is aligned correctly with the CRT base, before replacing the card and securing the clamp.
3. Reconnect the remaining connections, including the CRT anode.

Note: Adjustments are required for video levels and cutoffs.

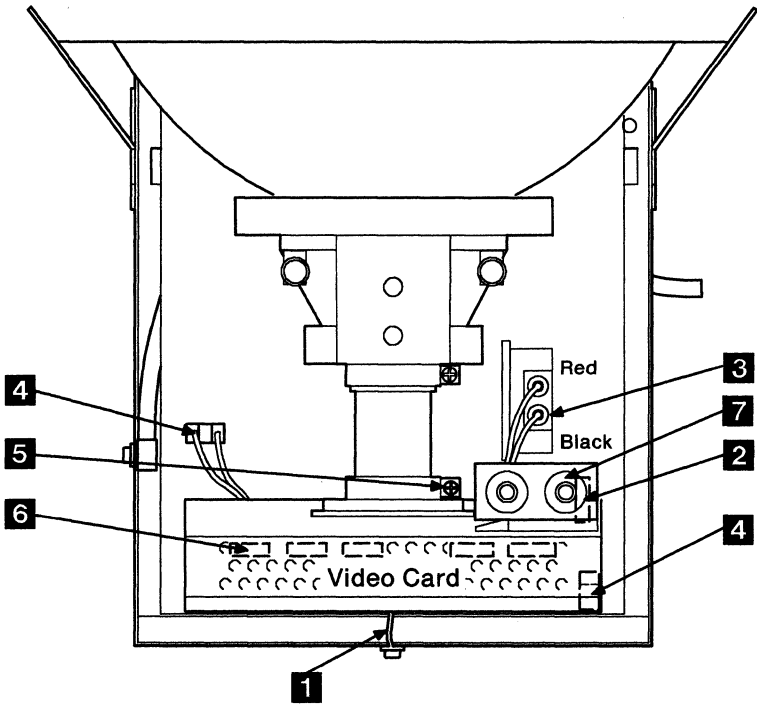


Figure 9. Removing the video card

Card Tray

1. Turn power off at the system unit and the display, and disconnect all cables (see "Powering Off the System" on page 8).
2. Remove the tilt swivel stand (see "Tilt Swivel Stand" on page 11).
3. Remove the rear cover (see "Rear Cover" on page 12).
4. Remove the pod (see "Pod Assembly" on page 13).
5. Remove the electromagnetic interference shield (see "Electromagnetic Interference Shield" on page 14).
6. Discharge the CRT anode (see "High Voltage Discharge Procedure" on page 15).
7. Remove the video card (see "Video Card" on page 18).
8. Place the display on its front cover, protected by a soft cloth or similar material.
9. Refer to Figure 10 on page 21.
10. Remove the connector **1** from the analog card and release the cable tie on the card tray lug.
11. Remove connector D21 (9517 only).
12. Remove two screws **2** from the card tray lugs and the ground lead **4** (9517 only).
13. Move the card tray away from the ITC shield and remove the connector **3** from the analog card.

CAUTION:

Take care not to damage the neck of the CRT.

Observe all safety notices for handling CRTs.

Replacement

Ensure that the connectors to the analog card are replaced, and check that all of the other analog card connectors are in place.

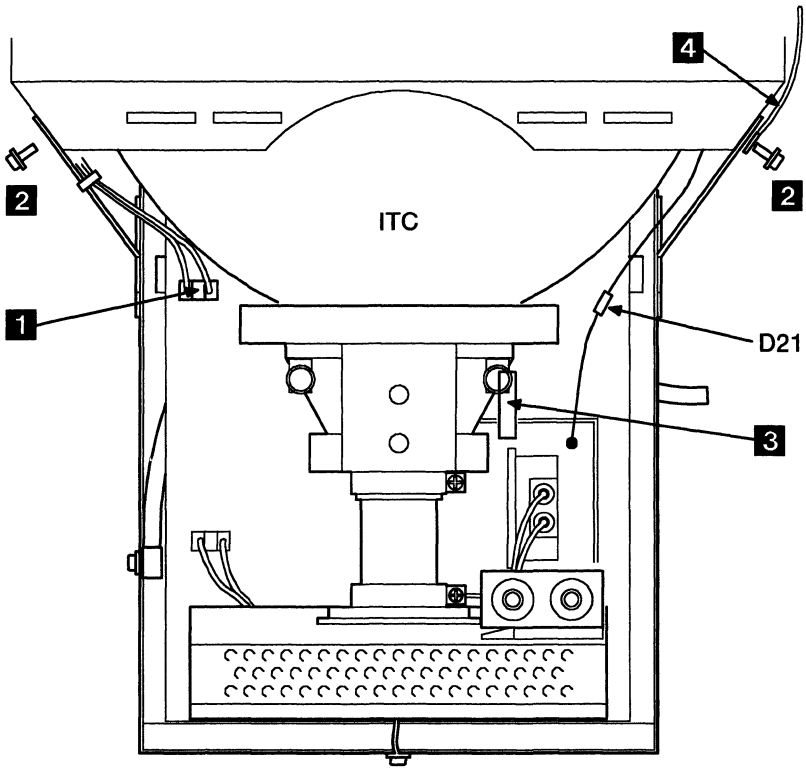


Figure 10. Removing the Card Tray

Analog Card

1. Turn power off at the system unit and the display, and disconnect all cables (see “Powering Off the System” on page 8).
2. Remove the tilt swivel stand (see “Tilt Swivel Stand” on page 11).
3. Remove the rear cover (see “Rear Cover” on page 12).
4. Remove the pod (see “Pod Assembly” on page 13).
5. Remove the electromagnetic interference shield (see “Electromagnetic Interference Shield” on page 14).
6. Discharge the CRT anode (see “High Voltage Discharge Procedure” on page 15).
7. Remove the video card (see “Video Card” on page 18).
8. Remove the card tray (see “Card Tray” on page 20).
9. Remove two screws **1**.
10. Release the two cable ties **2** on the pod cable and the power cable.
11. Move the analog card away from the retaining mounts **3** and lift it out.

Replacement

Ensure the connector to the analog card is put through the slot at the front of the card tray.

Note: Geometry adjustments are required after replacing the analog card.

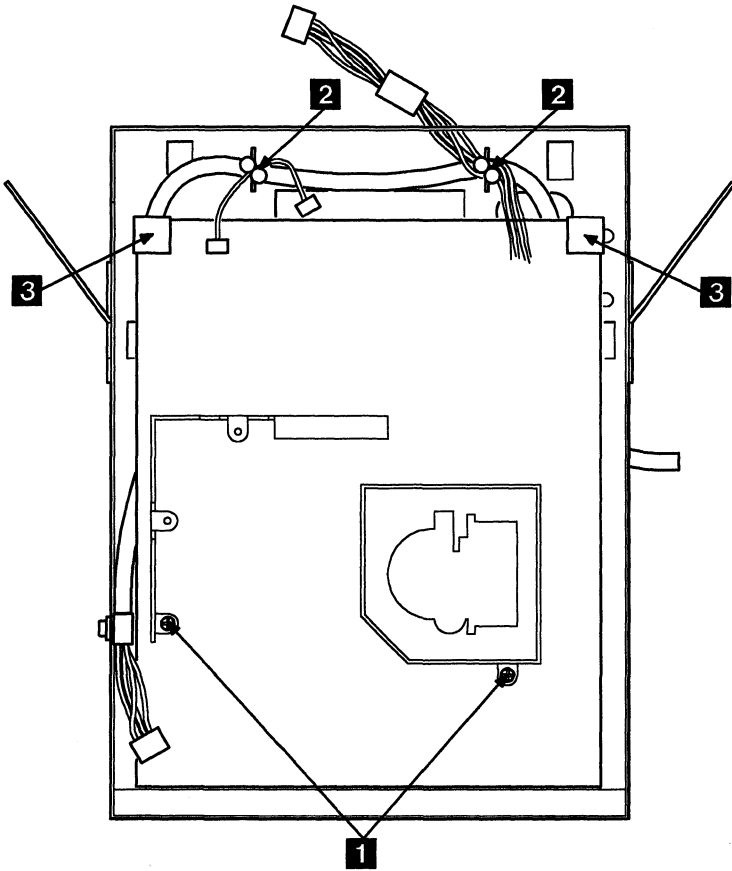


Figure 11. Removing the Analog Card

Signal Cable

The signal cable is clamped to the card tray.

1. Turn power off at the system unit and the display, and disconnect all cables (see “Powering Off the System” on page 8).
2. Remove the tilt swivel stand (see “Tilt Swivel Stand” on page 11).
3. Remove the rear cover (see “Rear Cover” on page 12).
4. Remove the pod (see “Pod Assembly” on page 13).
5. Remove the electromagnetic interference shield (see “Electromagnetic Interference Shield” on page 14).
6. Discharge the CRT anode (see “High Voltage Discharge Procedure” on page 15).
7. Remove the video card (see “Video Card” on page 18).
8. Remove the card tray (see “Card Tray” on page 20).
9. Remove the analog card (see “Analog Card” on page 22).
10. Refer to Figure 12 on page 25.
11. Remove the P-clip **1** from the card tray.
12. Release the two cable ties **2**.
13. Turn the card tray over.
14. Release the metal clamp **3** from the underside of the card tray.
15. Ease the signal cable out from the card tray.

Replacement:

Ensure that both the P-clip and the clamp are in contact with the braid of the signal cable.

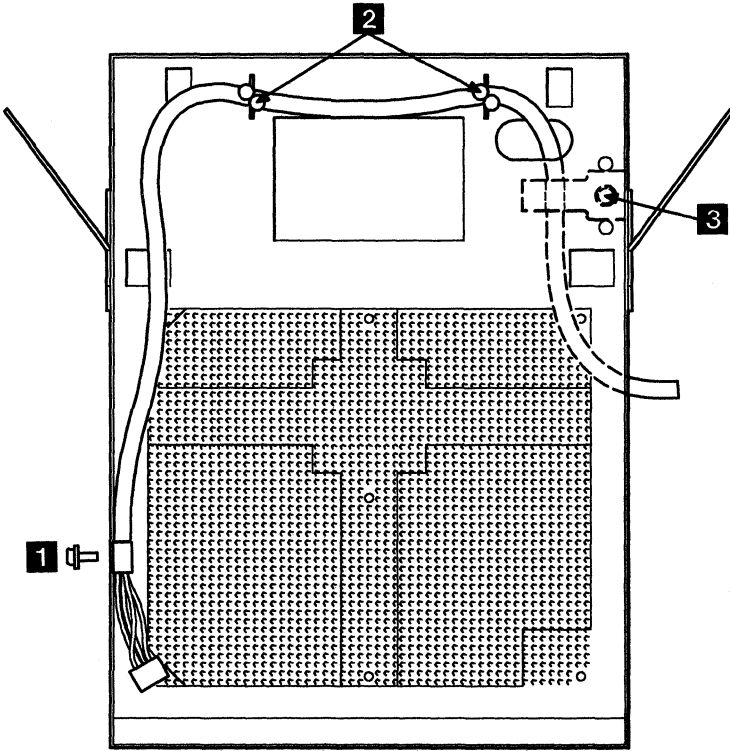


Figure 12. Removing the Signal Cable

Integrated Tube Component (ITC)

CAUTION:

Refer to CRT safety notices before handling CRTs.

1. Turn power off at the system unit and the display, and disconnect all cables (see "Powering Off the System" on page 8).
2. Remove the tilt swivel stand (see "Tilt Swivel Stand" on page 11).
3. Remove the rear cover (see "Rear Cover" on page 12).
4. Remove the pod (see "Pod Assembly" on page 13).
5. Remove the electromagnetic interference shield (see "Electromagnetic Interference Shield" on page 14).
6. Discharge the CRT anode (see "High Voltage Discharge Procedure" on page 15).
7. Remove the video card (see "Video Card" on page 18).
8. Remove the card tray (see "Card Tray" on page 20).
9. Place the display on its front cover, protected by a soft cloth or similar material.
10. Refer to Figure 13 on page 27.
11. Remove the four screws **1** from each corner of the front cover.
12. Remove the ITC ground lead **4** from the ITC shield.
13. Remove the ITC shield **2**.
14. Remove the ITC **3** from the front cover.

Replacement

Ensure that the ITC is aligned correctly before tightening the securing screws.

Note: Adjustments are required for geometry, video levels and cutoff, after replacing the ITC.

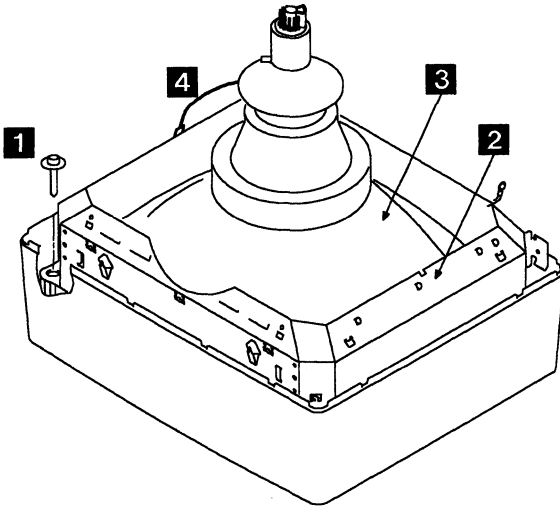


Figure 13. Removing the ITC

Notes:

Locations

Safety Grounds

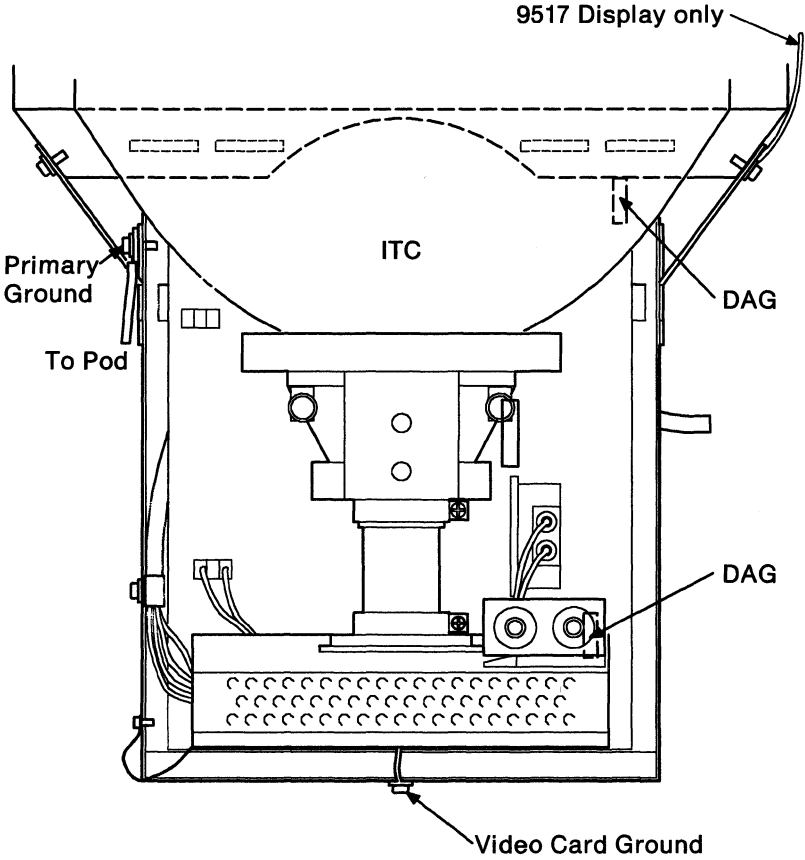


Figure 14. Safety Grounds

Parts Locations

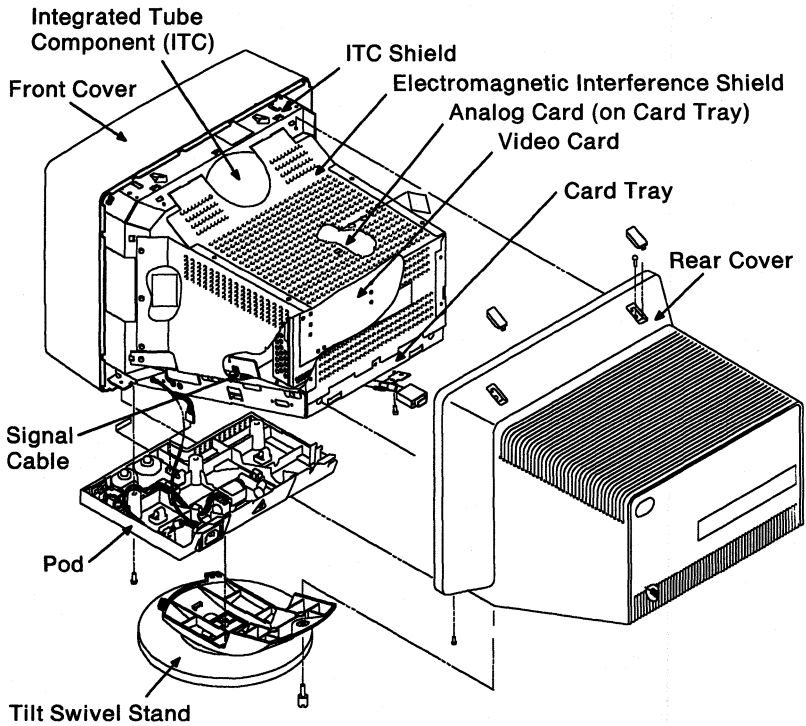


Figure 15. Parts Locations

Analog and Video Card Connectors

Figure 16 shows the location of the analog and video card connectors.

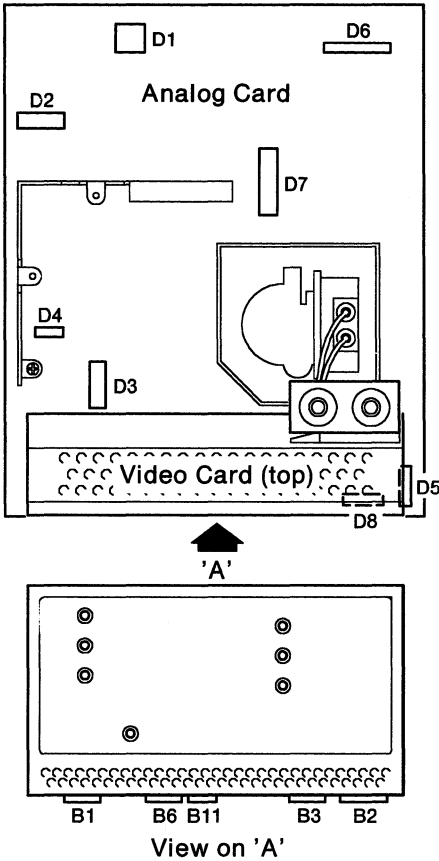


Figure 16. Analog and Video Card Connectors

Power Connector

Figure 17 shows the power connector (CEE 22) and its location.

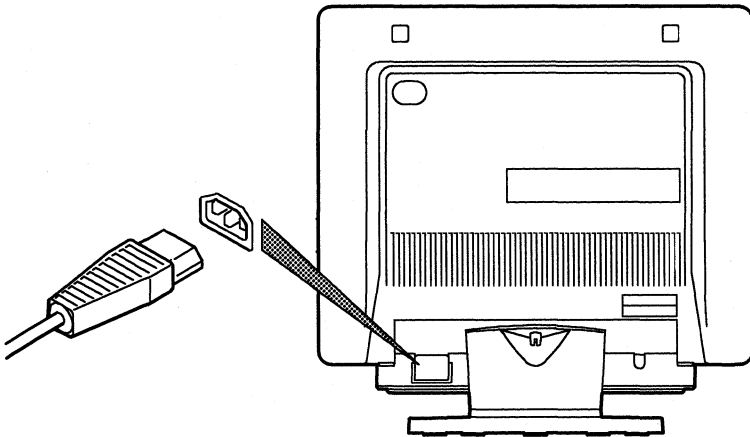


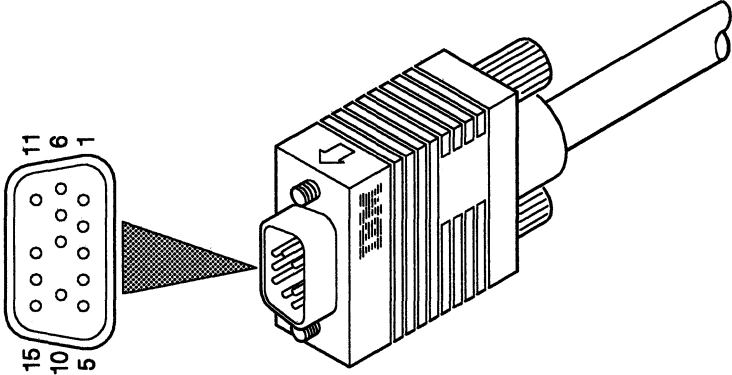
Figure 17. Power Connector

Power Cord

The display connects to the electricity supply outlet through a three-core, unshielded cable 1.8 m (6 ft) long with a three-pin, molded connector. The complete cable assembly is referred to as the power cord.

Signal Cable Connection 8517 Display

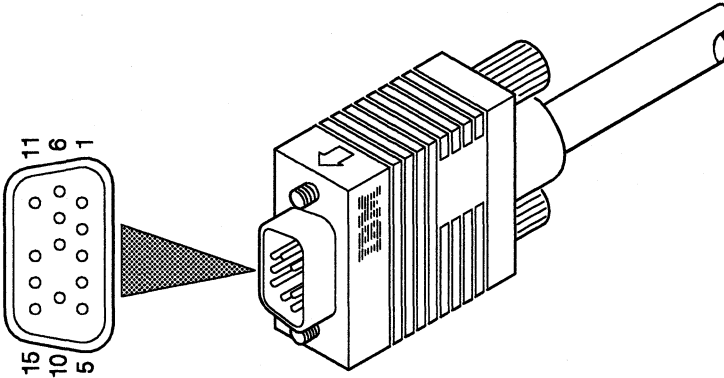
This is a 15-pin, D-type connector. It is molded to the end of a 1.8-m (6-ft) cable that is attached inside the display. Details of the connector, pin numbering, and signal names are shown below.



Pin	Signal Name	Pin	Signal Name
1	Video Red	9	(No pin)
2	Video Green	10	Ground
3	Video Blue	11	Monitor Sense Ground
4	Monitor Sense Ground	12	(No pin)
5	Self test	13	Horizontal Synchronization
6	Video Red Return	14	Vertical Synchronization
7	Video Green Return	15	Monitor Sense Horizontal Synchronization
8	Video Blue Return		

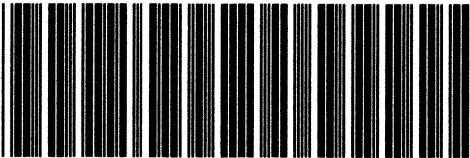
Signal Cable Connection 9517 Display

This is a 15-pin, D-type connector. It is molded to the end of a 1.8-m (6-ft) cable that is attached inside the display. Details of the connector, pin numbering, and signal names are shown below.



Pin	Signal Name	Pin	Signal Name
1	Video Red	9	(No pin)
2	Video Green	10	Ground
3	Video Blue	11	Monitor Sense Ground
4	Monitor Sense Horizontal Synchronization	12	(No pin)
5	Self test	13	Horizontal Synchronization
6	Video Red Return	14	Vertical Synchronization
7	Video Green Return	15	Monitor Sense Horizontal Synchronization
8	Video Blue Return		

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