HP 98786A/98788A CE Handbook

HP 9000 Series 300 Computers

HP Part Number 98786-90039

HEWLETT PACKARD

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Printing History

New editions of this manual will incorporate all material updated since the previous edition. Update packages may be issued between editions and contain replacement and additional pages to be merged into the manual by the user. Each updated page will be indicated by a revision date at the bottom of the page. A vertical bar in the margin indicates the changes on each page. Note that pages which are rearranged due to changes on the previous page are not considered revised.

The manual printing date and part number indicate its current edition. The printing date changes when a new edition is printed. (Minor corrections and updates which are incorporated at print do not cause the print date to change.) The manual part number changes when extensive technical changes are incorporated.

November 1986 . . . Edition 1.

July 1988 . . . Edition 2. Includes HP 98786A and HP 98788A Monitors.

February 1990 . . . Edition 3. Revised and updated to replace Edition 2.

Notices

Radio Frequency Interference Statements

FCC Statement

Federal Communications Commission
Radio Frequency Interference Statement
(U.S.A. Only)

The Federal Communications Commission (in Subpart J of Part 15, Docket 20780) has specified that the following notice be brought to the attention of the users of this product.

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

VCCI Statement (Japan Only)

この装置は，第一種情報装置(商工業地域において使用されるべき情報装置)で商工業地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会（VCCI）基準に適合しております。

従って，住宅地域またはその隣接した地域で使用すると，ラジオ，テレビジョン受信機等に受信障害を与えることがあります。

取扱説明書に従って正しい取り扱いをして下さい。

HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

Manufacturer's Declaration (Germany Only)

Herstellerbescheinigung

Hiermit wird bescheinigt, daß dieses Gerät in Übereinstimmung mit den Bestimmungen der Postverfügung 1046/84 funkentstört ist. Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Safety Considerations

WARNINGs, CAUTIONs, and Notes

Warnings, cautions and notes are used throughout this document to alert the user to conditions of importance. They are used as follows:

- WARNINGS contain information which, if not observed, could result in injury to personnel or loss of life.
- CAUTIONS contain information which, if not observed, could result in damage to or destruction of equipment.
- Notes contain information that will assist you in accomplishing the job.

Examples:

WARNING

The power supply presents a hazard to personnel. Extreme care must be taken when connecting voltmeter probes to the test points. De-energize the product by turning it off and removing its power cord before connecting or removing test probes.

CAUTION

The printed circuit assemblies in this product are susceptible to damage by electro-static discharge. Extreme care must be taken when handling printed circuit assemblies. Use an Anti-static Workstation while handling printed circuit assemblies.

Note

Hewlett-Packard supports repair of this product only to the assembly level. The fault is diagnosed to the assembly that is causing the problem. That assembly is then replaced with a new or rebuilt one.

Table of Contents

Product Description 1

Introduction

This handbook contains information about both the HP 98786A and HP 98788A monochrome monitors. Differences are noted as needed.

WARNING

Hazardous voltages exist in these monitors. Power must be removed before servicing the monitor. Switch the power switch to OFF and remove the power cord.

This manual should be used in conjunction with the Hardware Support Documentation for the host computer.

Technical Information

Display Features

Cathode ray tube.	
HP 98786A.	43.18 cm (17 inches) diagonal.
HP 98788A.	48.26 cm (19 inches) diagonal.
Viewable area.	
HP 98786A.	31.2 cm (12.28 inch) by 23.4 cm (9.21 inch).
HP 98788A.	34.3 cm (13.50 inch) by 27.4 cm (10.75 inch).
Scan.	Non-interlaced.
Frame rate.	60 Hz.
Raster.	
HP 98786A.	1024 by 768 Pixels.
HP 98788A.	1280 by 1024 Pixels.
Horizontal Scan Frequency.	
HP 98786A.	47.7 KHz.
HP 98788A.	63.34 KHz.
Band width.	60 Hz to 70 MHz ± 3 dB.
DC Reproduce ratio.	100%.
Rise time.	7 nano-seconds maximum.
Fall time.	7 nano-seconds maximum.
Overshoot.	Less than 10%.
Undershoot.	Less than 10%.
Ringing.	Less than 10%.

Performance

Geometric distortion.	Less than ±1.0% of vertical picture height.
Brightness.	35 foot-lamberts (100 IRE units white signal input), with the CONTRAST at maximum.

Regulatory

Germany.	VDE, CISPR
United States.	FCC Class A standards, UL.
Canada.	CSA, IEC.

4 Product Description

Environmental/Installation/PM 2

Environmental

Power Requirements

Switch selected line voltage.	95 through 125 Vac. 195 through 250 Vac.
Line fuse.	95 through 125 Vac: 3.0 Amperes/250 V. 195 through 250 Vac: 1.5 Amperes/250 V.
Line frequency.	48 through 66 Hz.
Power consumption.	
HP 98786A.	80 Watts maximum.
HP 98788A.	150 Watts maximum.
Heat dissipation.	
HP 98786A.	68.8 kcal/hr (273 BTU/hr).
HP 98788A.	149.7 kcal/hr (512 BTU/hr).

Environmental

Operating temperature.	10°C to +40°C (50°F to 104°F).
Storage temperature.	−40°C to +65°C (−40°F to +149°F).
Ambient humidity.	10 through 80% relative humidity, non-condensing.
Maximum altitude.	3,352 meters (11,000 ft).

Physical

Height.	
HP 98786A.	38.0 cm (14.96 inches).
HP 98788A.	42.0 cm (16.5 inches)
Width.	
HP 98786A.	43.5 cm (17.1 inches).
HP 98788A.	48.0 cm (18.9 inches).
Depth.	
HP 98786A.	37.0 cm (14.6 inches).
HP 98788A.	40.7 cm (16.0 inches).
Net Weight.	
HP 98786A.	20.0 Kg (44 pounds).
HP 98788A.	21.8 Kg (48 pounds).

Wiring

Refer to HP 9000 Series 200/300/500 Site Preparation Manual, Part Number 09000-90041, and verify power receptacle wiring and contact retention force for all electrical receptacles supplying power to system devices. If wiring is not correct and safe, do not install equipment until corrected.

Unpacking

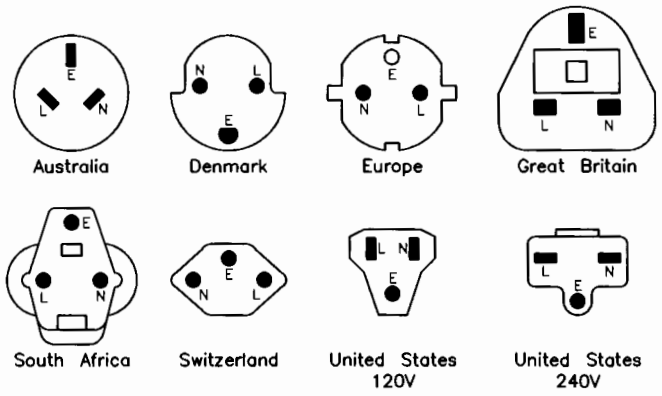
Unpack equipment and set it near where it will be used. Leave accessories in anti-static containers.

Monitor Installation

The monitor requires little in the way of installation, other than positioning it to minimize glare on the display and keeping it out of direct sunlight.

1. Locate the video cable. It has a BNC connector on one end and an RCA connector on the other.
2. Connect the BNC end to the monitor.
3. Connect the other end to the interface card in the computer.
4. Locate the audio cable. It has an RCA "banana" connector on each end.
5. Connect either end to the audio input of the monitor.
6. Connect the other end to the interface card in the computer.

Power Cord Options



Country	Display P/N	Opt.	Voltage
Australia	8120–1369	901	250V, 6A
Denmark	8120–2956	912	250V, 6A
Europe	8120–1689	902	250V, 6A
Great Britain	8120–1351	900	250V, 6A
South Africa	8120–4211	917	250V, 10A
Switzerland	8120–2104	906	250V, 6A
United States	8120–1378	903	120V, 10A
United States	8120–0698	904	240V, 10A

NOTE: Plugs are viewed from connector end. Shape of molded plug may vary within country.

Power cords supplied by HP have polarities matched to the power–input socket on the computer.

- L = Line or Active Conductor (also called "live" or "hot")
- N = Neutral or Identified Conductor
- E = Earth or Safety Ground

Figure 2-1. Available Power Cord Options

Line Voltage and Fuse Selection

Before you can safely operate the monitor, the line voltage selector switch located on the rear panel must be set to the correct position and the proper fuse installed. If the line voltage at the power outlet is between 95 and 125 volts, slide the switch to read "115V". If the voltage is between 195 and 250 volts, slide the switch to read "220V" or "230V".

CAUTION

Be sure the line voltage select switch is set correctly before connecting the power cord.

Table 2-1. Line Voltage Selector Switch Settings

Line Voltage	HP 98786 Setting	HP 98788 Setting
95-125 V	UP (115V)	LEFT (115V)
195-250 V	DOWN (220V)	RIGHT (230V)

Fuse Replacement

Check the fuse and be sure the correct value is installed.

CAUTION

Replacement fuses must be rated for 250 volts, and must not exceed the current rating indicated on the rear panel. Equipment damage or fire may result.

Table 2-2. Fuse Information

Line Voltage	Fuse Rating	HP Part Number
115 V	3.0 A/250 V	65R29822A07-MOT
220 V	1.5 A/250 V	65R29822A06-MOT

Preventive Maintenance

Cleaning

The HP monitors have been painted with a durable, long lasting, non-toxic paint. To clean the case, follow the instructions below.

CAUTION

Chemical spray-on cleaners used for appliances and other household applications may damage the finish. These and other chemical cleaners should not be used.

The CRT glass should be cleaned only with clean water.

Before cleaning the plastic case parts of the monitor, unplug the power cord and remove any interconnecting cables. Dampen a clean, soft, lint free cloth with a solution of clean water and mild soap. Wipe the soiled areas, ensuring that no cleaning solution gets inside. For cleaning more heavily soiled areas, a 50% solution of clean water and isopropyl alcohol may be used. Then dry with a clean, soft, lint-free, dry cloth.

Configuration 3

Introduction

HP monitors do not require configuration.

12 Configuration

Troubleshooting 4

Introduction

Troubleshooting the monitor consists of observing the symptoms on the CRT or making voltage measurements, then diagnosing the problem from the information you have collected. After diagnosing the problem, replace the inoperative assembly (or make the necessary adjustment), and confirm correction of the problem.

Note

Hewlett Packard supports repair only to the assembly level. The trouble is diagnosed to the assembly that is causing the problem, which is then replaced.

Always reinstall any assembly that does not affect the condition or problem.

Tools Required

- 1/4 inch nut driver.
- VOM, HP 3435A or equivalent.
- Oscilloscope, HP 1741A, with 10:1 probe, or equivalent (100 MHz bandwidth).
- Tuning tool, non-metallic, non-magnetic, hex, HP 8710-1388.
- Crosspoint screwdriver.

Troubleshooting Techniques

Divide the possible problems you will encounter into these general categories:

- Unit not working.
- Working unit without display.
- Working unit with display problems.

The Low Voltage Power Supply in this monitor is a switching power supply. If you listen you can hear the oscillator "whistling" (high pitched tone) as the monitor is powered up. If the Low Voltage Power Supply "chirps" (interrupted high pitched tone) the supply is unloaded. Check all connections to the supply.

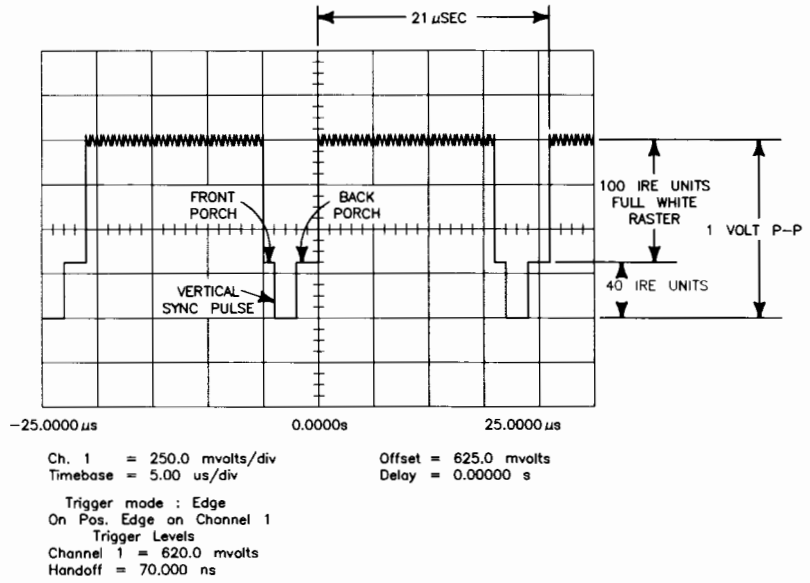


Figure 4-1. Composite Video Signal Waveform

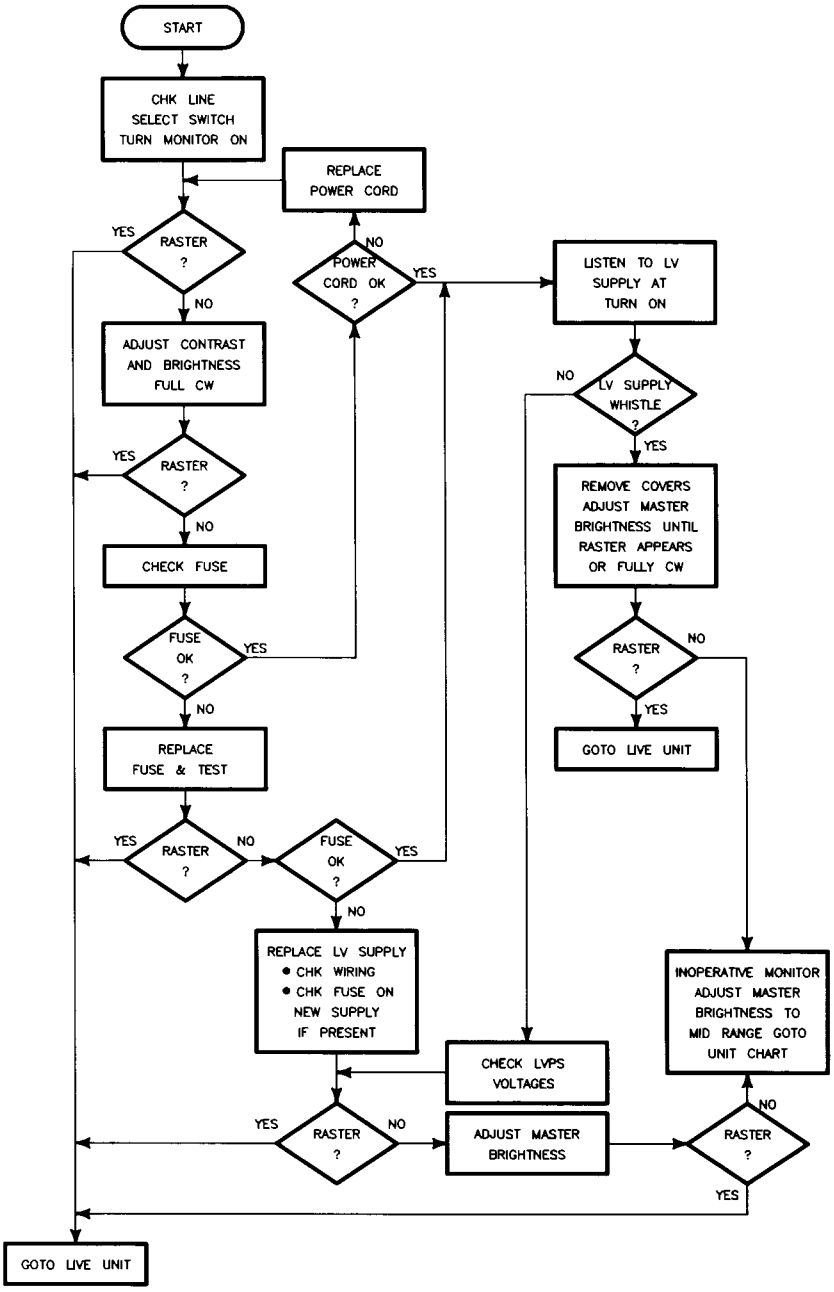


Figure 4-2. Preliminary Troubleshooting

Monitor With Raster

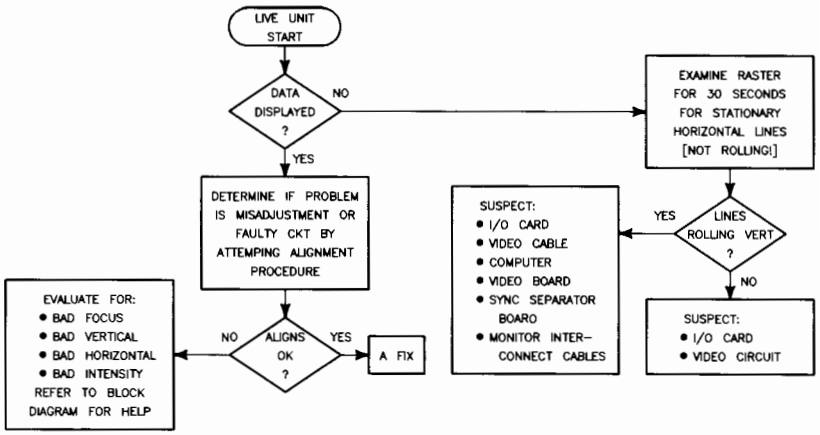


Figure 4-3. Working Unit With Raster

Monitor Without Raster

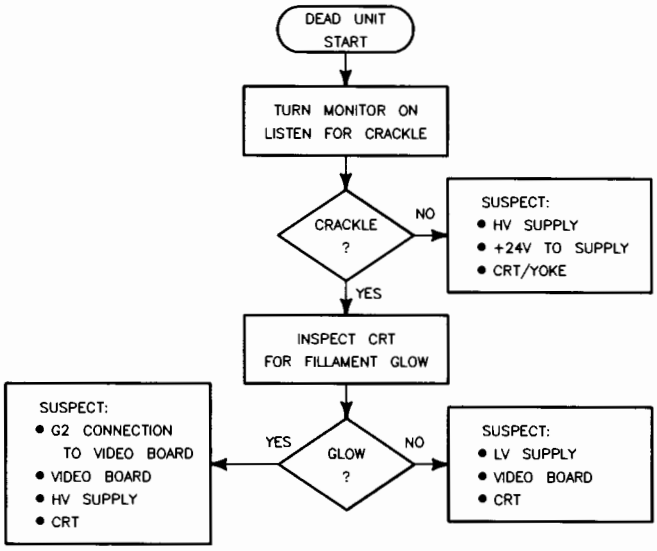


Figure 4-4. Working Unit Without a Raster

Diagnostics 5

There are no diagnostics for HP monitors. Refer to the Series 300 Test Tools Manual for test patterns and information about how to access and use them.

Adjustments 6

Introduction

When adjustments are needed, these procedures will explain how to accomplish them.

Tools Needed

Here is a list of tools needed to make adjustments to the monitor:

- HP 1741A, with 10:1 probe, or equivalent (100 MHz Bandwidth).
- Tuning tool, HP part number 8710-1388.
- 1/4 inch nut driver.
- Series 300 Test Tools:
  - 3.5 inch Disc (09800-12300).
  - 5.25 inch Disc (09800-12500).
- 381 mm (15 inch) plastic scale graduated in millimeters and inches.
- Minolta TV-Color Analyzer II Model 2150.

Getting Inside

WARNING

Lethal voltages exist inside the monitor. Remove power by disconnecting power cord before removing any cover.

Use extreme caution when working on energized monitors.

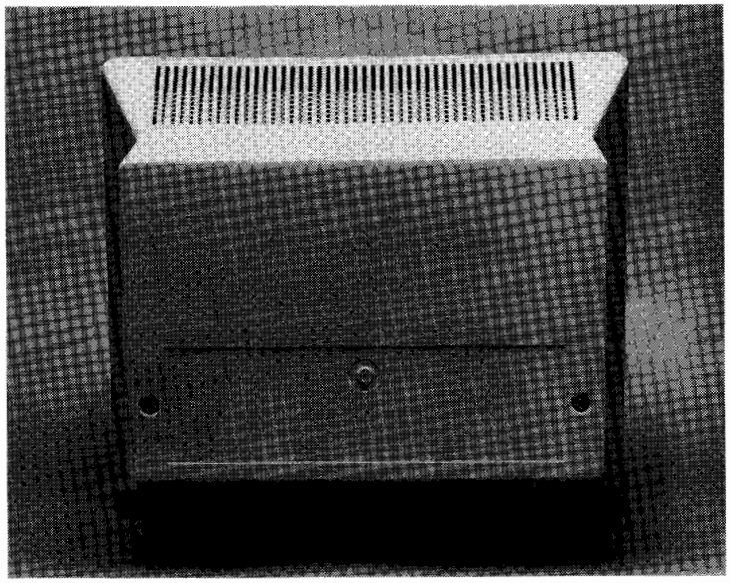


Figure 6-1. Cover Removal (HP 98788)

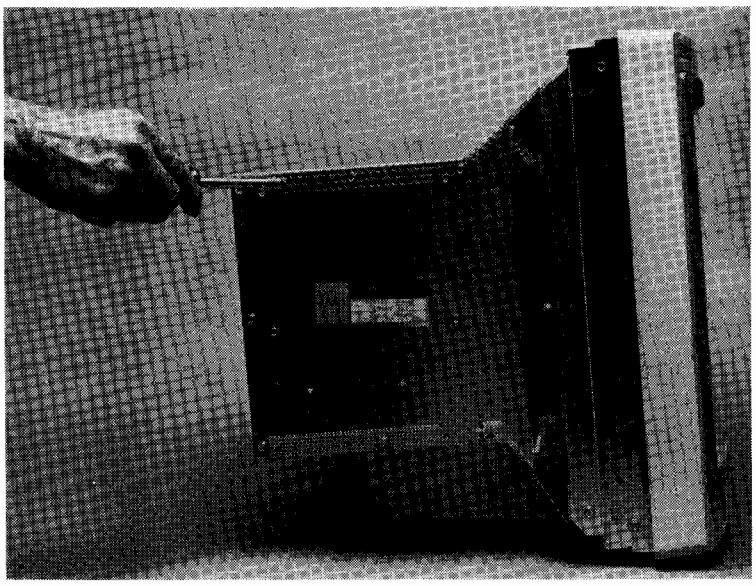


Figure 6.2. Shield Removal (HP 98788)

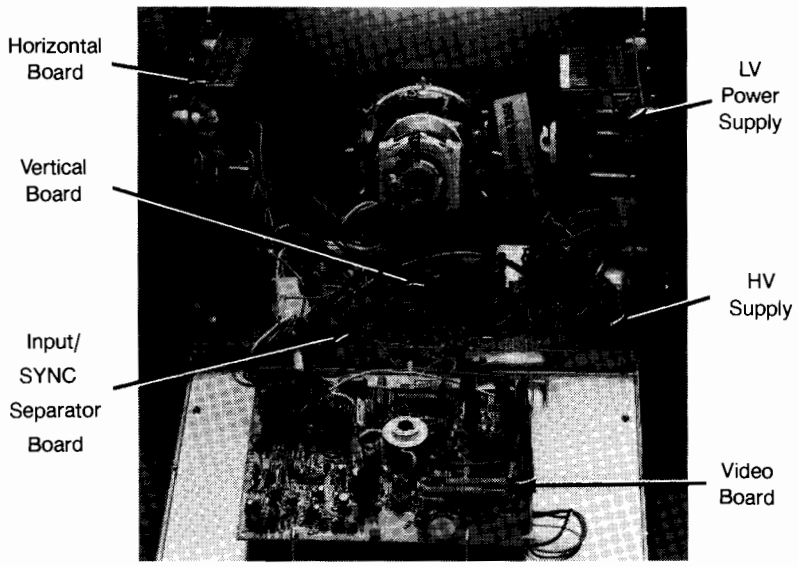


Figure 6-3. Assembly Location

Table 6-1. Adjustment Summary

Cont.	Function	Location
L-202	Video Peaking	Video Board (Do Not Adjust)
L-203	Video Peaking	Video Board (Do Not Adjust)
R-206	Contrast	Front Panel
R-275	Master Brightness	Vertical Board
R-278	Brightness	Front Panel
R-314	Vertical Hold	Vertical Board
R-316	Vertical Size	Vertical Board
R-324	Vertical Linearity	Vertical Board
R-333	Vertical Centering	Vertical Board
L-402	Horizontal Linearity	Horizontal Board
R-406	Horizontal Delay	Horizontal Board
R-418	Horizontal Oscillator	Horizontal Board
R-440	Horizontal Centering	Horizontal Board
R-467	Horizontal Size	Horizontal Board
R-519	Bias	Vertical Board
R-528	Top/Bottom Focus	Vertical Board
R-529	Sides Focus	Vertical Board
R-543	Center Focus	Vertical Board
R-560	E-W Pincushion	Vertical Board
R-589	Corners Focus	Vertical Board
Yoke	Trapezoidal Adjustment	Yoke (Magnets)
Yoke	Pincushion/Barrel	Yoke (Magnets)
Yoke	Centering Ring	Yoke (Centering Rings)

Adjustments

Follow these procedures, in order, if you determine that the monitor needs adjustment.

Adjustment Preset

Insure horizontal centering jumper is in the lower (right shift) position. Preset the following controls to the indicated positions.

Table 6-2. Adjustment Preset

Function	Control	Preset	Location
Raster Horizontal centering	R-440	Counter Clockwise	Horizontal Bd.
Raster Vertical centering	R-333	Mechanical center	Vertical Bd.
Master brightness	R-275	Counter Clockwise	Vertical Bd.
Contrast	R-206	Mechanical center	Front Panel
Horizontal Oscillator	R-418	Mechanical center	Horizontal Bd.
Brightness	R278	Clockwise	Front Panel

Signal Input

Refer to the Series 300 Test Tools Manual for information on loading and displaying the patterns needed for alignment of your monitor.

Initial Brightness Adjustment

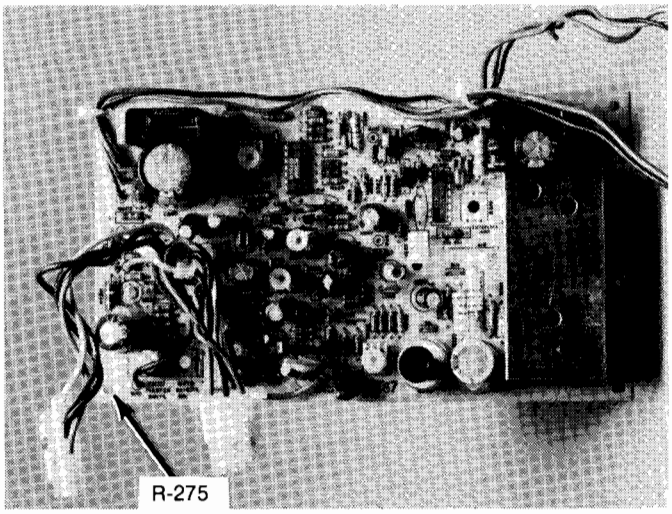


Figure 6-4. Master Brightness Adjustment Location

Brightness adjustment (on the Vertical board) is performed in two steps to:

1. Allow the raster to be observed.
2. Set the brightness to the proper level.

To Allow the Raster to be Observed:

1. Set the contrast control on the front panel to minimum (fully CCW).

Note

If P/J201 of the Video board has the shields on pin 3, the contrast control may be minimum when fully CW.

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2. Set the brightness control on the front panel to maximum (fully CW).

3. Adjust the master brightness control (R-275) on the Vertical board to threshold (raster just visible) (Figure 6-4).

Final brightness adjustment will be explained later.

Monitor Adjustments

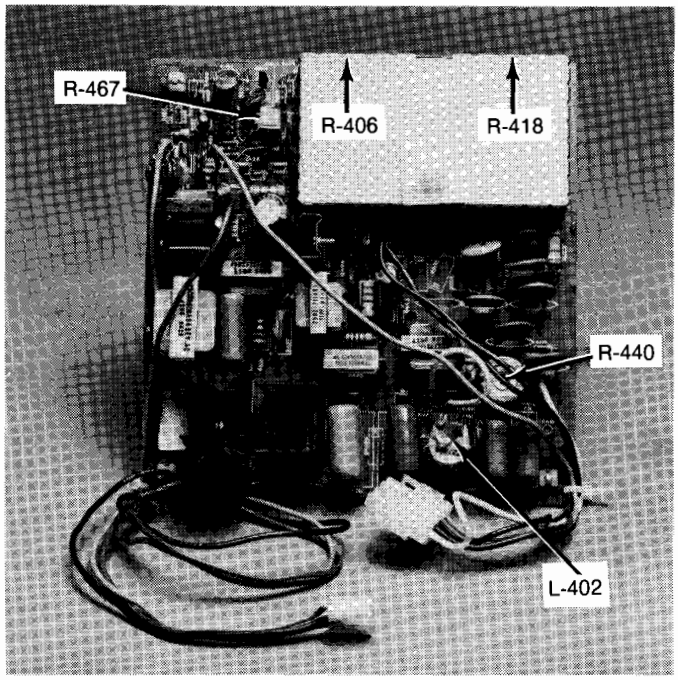

Figure 6-5. Horizontal Board Adjustments

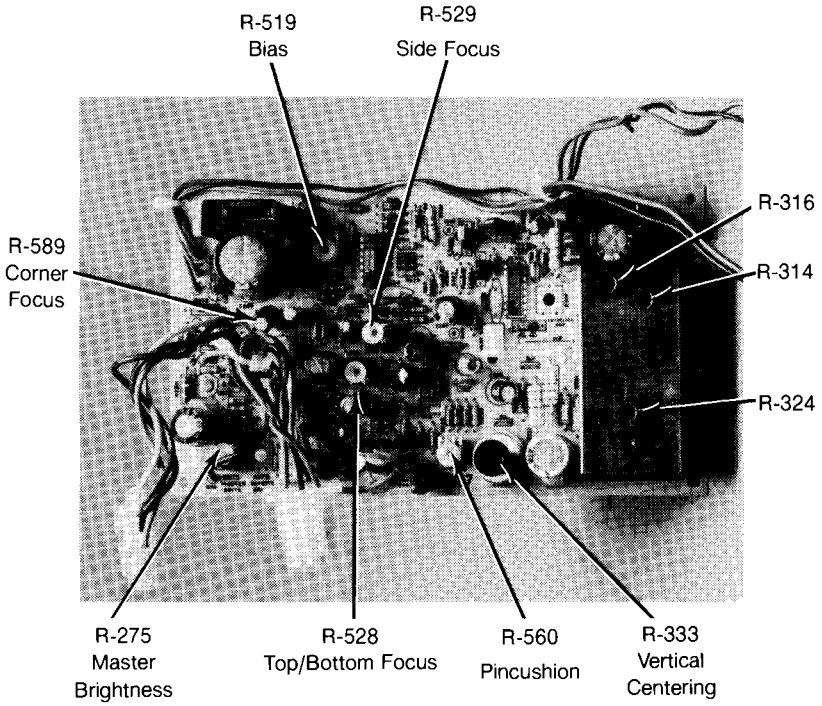

Figure 6-6. Vertical Board Adjustments

Table 6-3. Adjustment Preset

Adj.	Function	Location	Desired Result
R-418	Horizontal Oscillator	Horizontal Board	Lock Picture Horizontally
R-314	Vertical Hold	Vertical Board	Lock Picture Vertically
R-406	Horizontal Delay	Horizontal Board (in Cage)	Center Picture in Raster
R-467	Horizontal Size	Horizontal Board (Behind Cage)	Adjust Picture to 312 mm (12.28 inches) or 343 mm (13.5 inches) Width
L-402	Horizontal Linearity	Horizontal Board	Equal Spacing of Vertical Lines in the Dis played Grid
R-316	Vertical Size	Vertical Board (Inside Shield)	Adjust Picture to 234 mm (9.31 inches) or 274 mm (13.75 inches) Height
R-324	Vertical Linearity	Vertical Board (Inside Shield)	Equal Spacing of Horizontal Lines in the Displayed Grid

Repeat the horizontal and vertical adjustments for size and linearity until all desired results are met.

Continue with these adjustments.

Table 6-4. Adjustments

Adj.	Function	Location	Desired Result
R-440	Horizontal Centering	Horizontal Board	Center Picture Horizontally in the Raster
R-333	Vertical Centering	Vertical Board	Center Picture Vertically in the Raster

Final Brightness Adjustment

1. Adjust brightness control on front panel to mid range.
2. Adjust contrast control on front panel to maximum (CW) rotation.

Note

If P/J201 of the Video board has the shields on pin 3, the contrast control may be maximum when fully CCW.

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3. Select clear white raster.
4. Adjust R-275, master brightness control, for a just extinguished raster.

E-W Pincushion

Adjust R-560 for straight right and left sides.

Focus

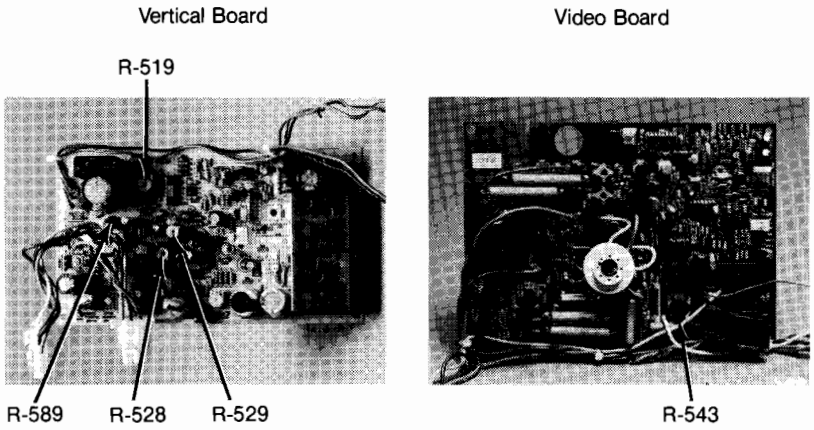

Figure 6-7. Focus Control Locations

To adjust the monitor focus:

1. Attach the scope probe to the blue lead of the CRT connector on the Video board.
2. Preset these controls to maximum CCW:
   - R-519. Bias.
   - R-528. Top/Bottom Focus.
   - R-529. Side Focus.
   - R-589. Corner Focus.
3. Preset scope controls to:
   - Vertical to 2V/division.
   - Horizontal to 5 msec/division.

   Use a 10:1 probe.

4. Adjust R-528 for a vertical rate signal of 100 Vp-p. Adjust R-519 CW until clipping (flat area) at bottom of wave form just disappears (Figure 6-8).

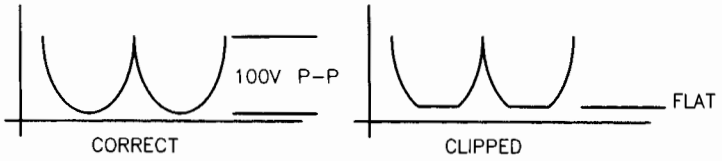

Figure 6-8. Vertical Rate Signal Waveform

5. Adjust these controls to optimize Focus:

Table 6-5. Focus Adjustment Controls

Control	Location	Screen Location
R-543	Video board	Center
R-528	Vertical board	Top/Bottom Center of CRT
R-589	Vertical board	Corners
R-529	Vertical board	Left/Right Center of CRT

6. Recheck vertical rate wave form for clipping and readjust R-528 to eliminate clipping.
7. Optimize focus adjustments without vertical rate waveform clipping.

Systems 7

HP monitors are supported on HP 9000 Series 300 computers only.

Replaceable Parts 8

Fuses

The monitors use the following fuses.

Table 8-1. Fuses

HP Part No.	Description
65R29822A07-MOT	Fuse, 3.0 A/250 V
65R29822A06-MOT	Fuse, 1.5 A/250 V

KP 98786A Parts List

Table 8-2. HP 98786A Assemblies (Pre August 1988)

Part Number	Description
SR-28HP4A32-MOT	Horizontal Board
SR-28HP4A30-MOT	Vertical Board *
SR-28HP4A31-MOT	Video Board
SR-28HP4A33-MOT	Input/Sync Separator
SR-26082A03-MOT	High Voltage Supply *
SR-26083A33-MOT	Low Voltage Power Supply
SR26083A55-MOT	CRT/Yoke Replacement Module
15-27552A02-MOT	17 inch Rear Cover (Basket)
98781-40801	17 inch Bezel

* In August 1988, the Vertical board and the High Voltage Supply were redesigned and the interconnecting cables were changed. Each new repair assembly may require an adaptor cable to mate with the remaining "old assembly". Otherwise, the new and old assemblies are interchangeable.

When ordering pre August 1988 Vertical boards or High Voltage Supplies, you may receive either the old or new parts (depending on when the old parts are exhausted from stock). To ensure minimum delay in repair, it is recommended that you have an adaptor kit on hand or order one with the parts.

New Assemblies

The new assemblies and the adapter kit part numbers for the HP 98786A are:

Table 8-3. HP 98786A New Assemblies (After August 1988)

Part Number	Description
SR-28HP4B30-MOT	Vertical Board
SR-26082B03-MOT	High Voltage Supply
SR-30HPKA01-MOT	Adaptor Cable Kit

HP 98788A Parts List

Table 8-4. HP 98788A Assemblies (Pre August 1988)

Part Number	Description
SR-28HP6A39-MOT	Horizontal Board
SR-28HP6A30-MOT	Vertical Board *
SR-28HP6A31-MOT	Video Board
SR-28HP6A33-MOT	Input/Sync Separator
SR-26082A03-MOT	High Voltage Supply *
SR-26084A58-MOT	Low Voltage Power Supply
SR26084A64-MOT	CRT/Yoke Replacement Module
SR26084A73-MOT	19 in. Rear Cover (Basket)
13-27645A01-MOT	19 in. Bezel
36-27643A01-MOT	Power Button and Rod
98781-64401	Tilt-Swivel
40-29852A05-MOT	Power Switch

* In August 1988, the Vertical board and the High Voltage Supply were redesigned and the interconnecting cables were changed. Each new repair assembly may require an adaptor cable to mate with the remaining "old assembly". Otherwise, the new and old assemblies are interchangeable.

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New Assemblies

The new assemblies and the adapter kit part numbers for the HP 98788A are:

Table 8-5. HP 98788A New Assemblies (After August 1988)

Part Number	Description
SR-28HP6B30-MOT	Vertical Board
SR-26082B03-MOT	High Voltage Supply
SR-30HPKA01-MOT	Adaptor Cable Kit

Accessories

Table 8-6. HP 98786A Accessories

Part Number	Description	Exchange
98544-69571	Video Interface Board (CPU)	Yes
98544-87945	Cable Kit, High Resolution Monitor (contains 5061-6533 video cable and 8120-4704 audio cable)	No

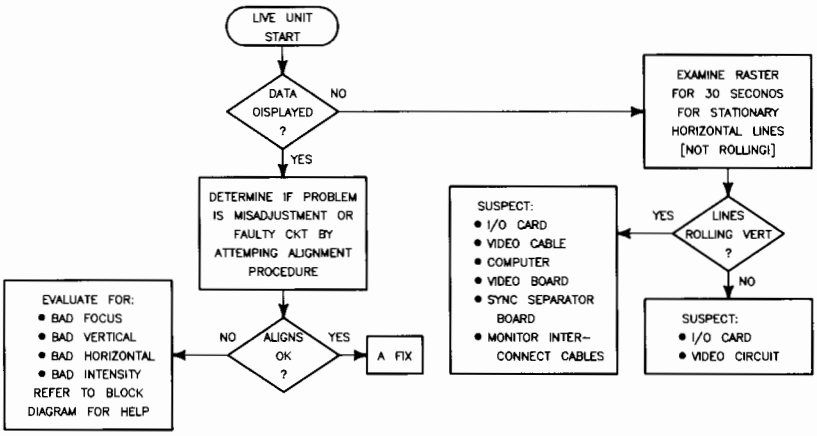
Table 8-7. HP 98788A Accessories

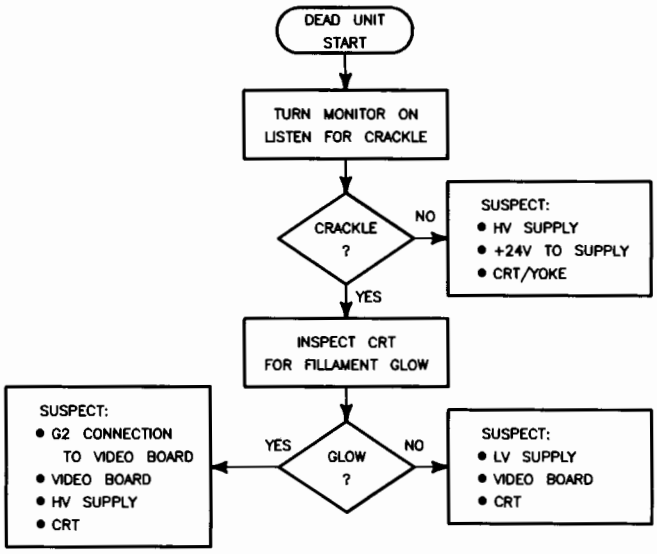
Part Number	Description	Exchange
98548-69570	Video Interface Board (CPU)	Yes
98544-87945	Cable Kit, High Resolution Monitor (contains 5061-6533 video cable and 8120-4704 audio cable)	No

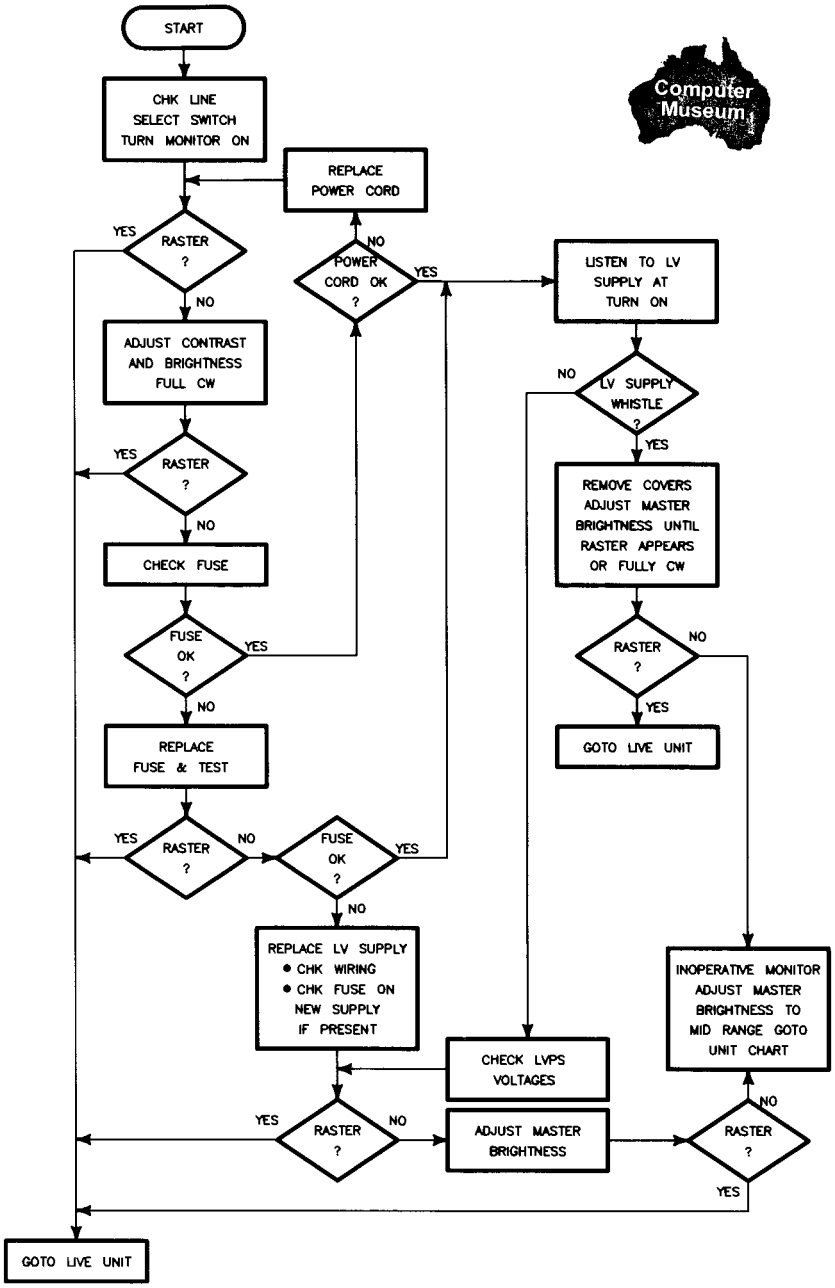
Diagrams 9

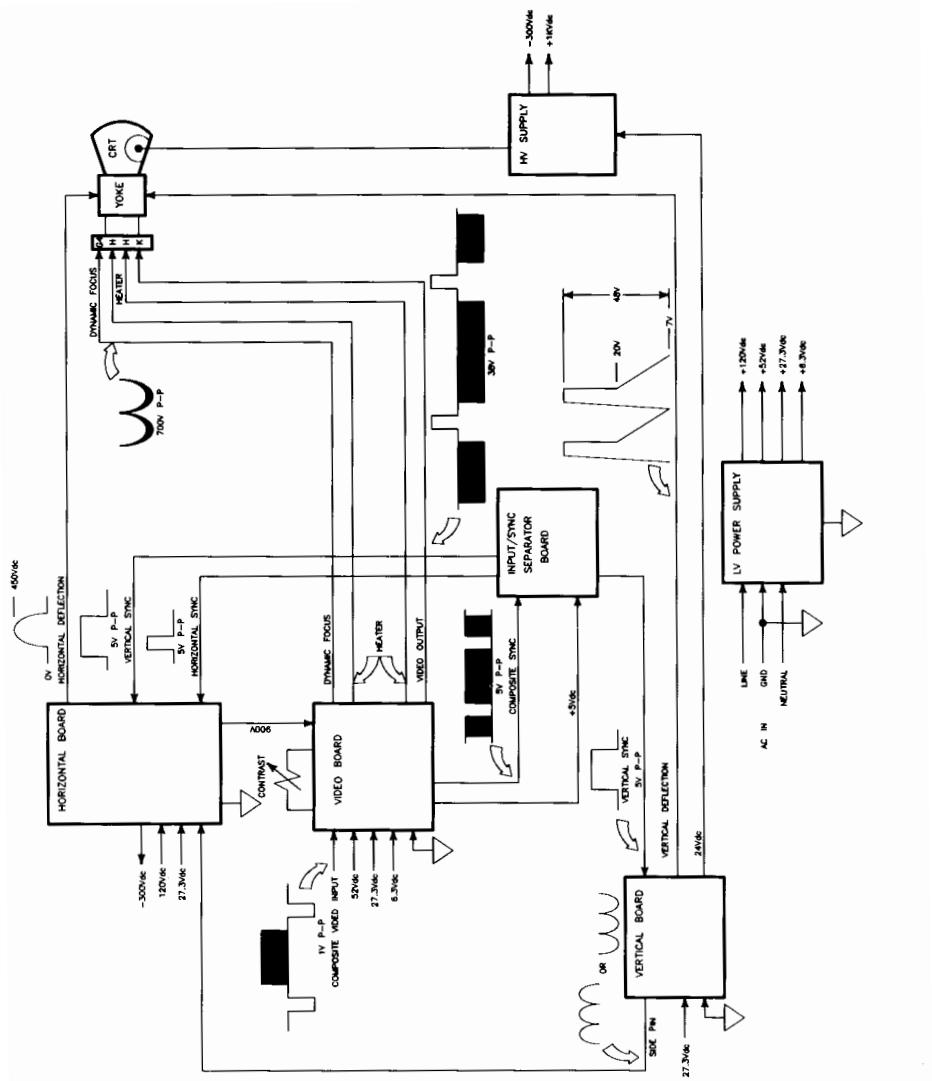
Introduction

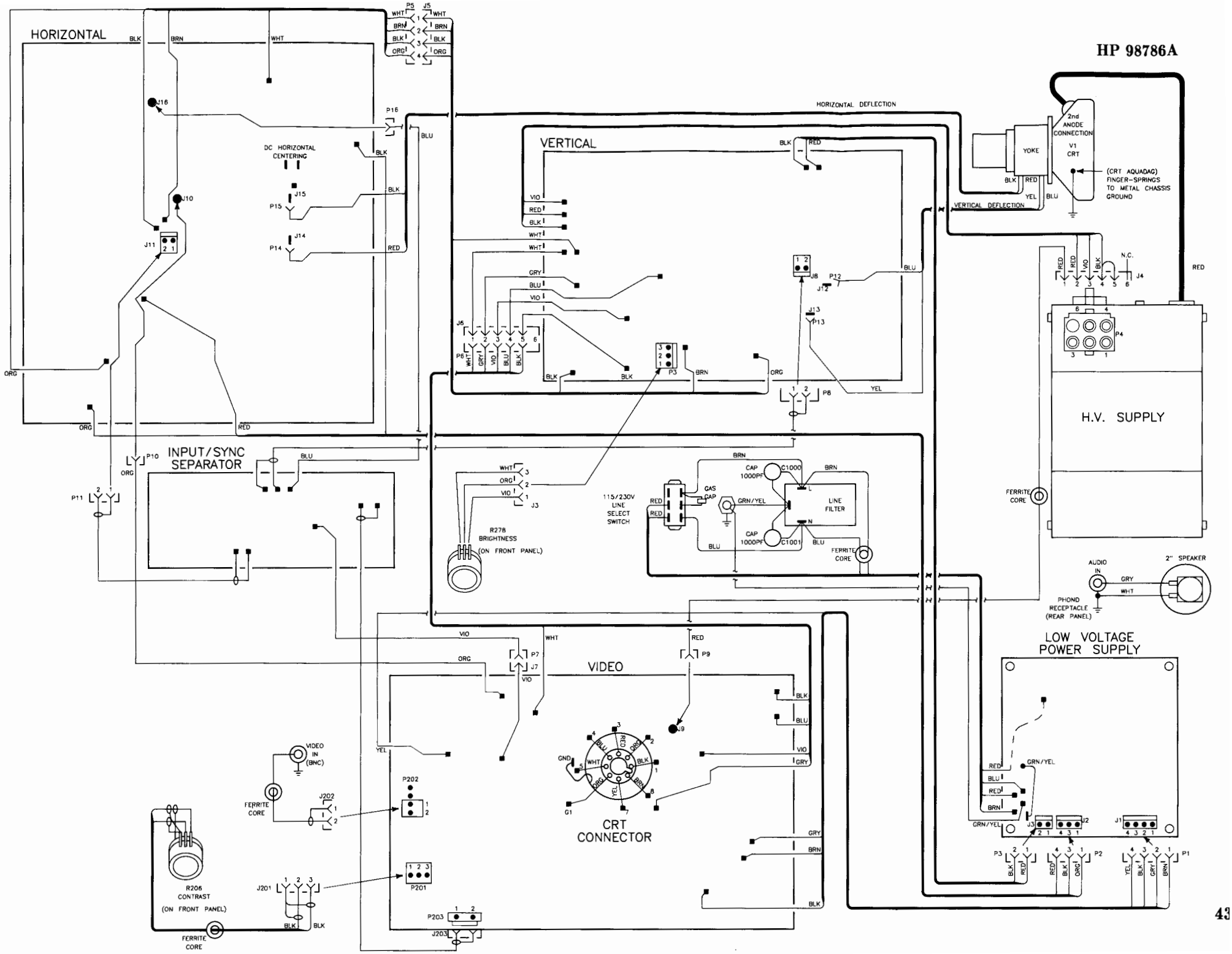
Copies of drawings used in this handbook are included here.

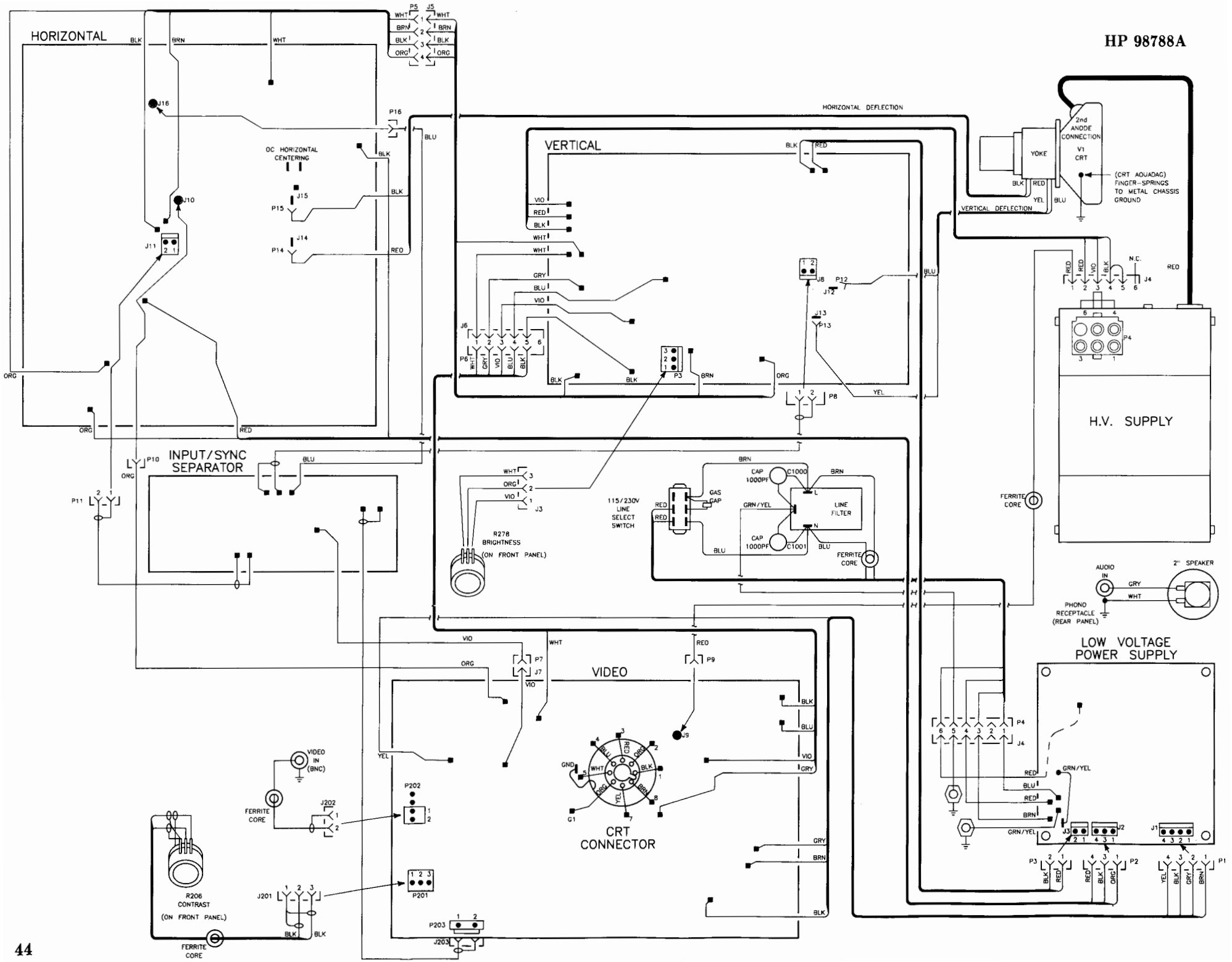



DEAD UNIT
START
TURN MONITOR ON
LISTEN FOR CRACKLE
CRACKLE
?
NO
YES
SUSPECT:
• HV SUPPLY
• +24V TO SUPPLY
• CRT/YOKE
INSPECT CRT
FOR FILLAMENT GLOW
GLOW
?
YES
NO
SUSPECT:
• G2 CONNECTION
TO VIDEO BOARD
• VIDEO BOARD
• HV SUPPLY
• CRT
SUSPECT:
• LV SUPPLY
• VIDEO BOARD
• CRT


START
CHK LINE SELECT SWITCH TURN MONITOR ON
RASTER ?
YES
NO
ADJUST CONTRAST AND BRIGHTNESS FULL CW
RASTER ?
YES
NO
CHECK FUSE
FUSE OK ?
YES
NO
REPLACE FUSE & TEST
RASTER ?
YES
NO
FUSE OK ?
YES
NO
REPLACE POWER CORD
POWER CORD OK ?
NO
YES
REPLACE LV SUPPLY
• CHK WIRING
• CHK FUSE ON NEW SUPPLY IF PRESENT
RASTER ?
YES
NO
GOTO LIVE UNIT
LISTEN TO LV SUPPLY AT TURN ON
LV SUPPLY WHISTLE ?
NO
YES
REMOVE COVERS ADJUST MASTER BRIGHTNESS UNTIL RASTER APPEARS OR FULLY CW
RASTER ?
NO
YES
GOTO LIVE UNIT
CHECK LVPS VOLTAGES
ADJUST MASTER BRIGHTNESS
INOPERATIVE MONITOR ADJUST MASTER BRIGHTNESS TO MID RANGE GOTO UNIT CHART
RASTER ?
NO
YES


HV SUPPLY
-300Vdc
+14Vdc
CRT
YOKE
DYNAMIC FOCUS
HEATER
7000V P-P
30V P-P
48V
20V
7V
INPUT/SYNC SEPARATOR BOARD
LV POWER SUPPLY
+120Vdc
+52Vdc
+27.3Vdc
+8.3Vdc
LINE
GND
NEUTRAL
AC IN
450Vdc
0V
HORIZONTAL DEFLECTION
5V P-P
VERTICAL SYNC
HORIZONTAL SYNC
DYNAMIC FOCUS
HEATER
VIDEO OUTPUT
5V P-P
COMPOSITE SYNC
+5Vdc
A006
CONTRAST
HORIZONTAL BOARD
VIDEO BOARD
VERTICAL SYNC
5V P-P
VERTICAL DEFLECTION
24Vdc
-300Vdc
120Vdc
27.3Vdc
1V P-P
COMPOSITE VIDEO INPUT
52Vdc
27.3Vdc
8.3Vdc
OR
VERTICAL BOARD
SIDE PIN
27.3Vdc


HORIZONTAL
VERTICAL
HORIZONTAL DEFLECTION
VERTICAL DEFLECTION
YOKE
2nd ANODE CONNECTION
V1 CRT
(CRT AQUADAG) FINGER-SPRINGS TO METAL CHASSIS GROUND
DC HORIZONTAL CENTERING
H.V. SUPPLY
INPUT/SYNC SEPARATOR
R278 BRIGHTNESS (ON FRONT PANEL)
115/230V LINE SELECT SWITCH
GAS GAP
CAP 1000PF
LINE FILTER
FERRITE CORE
AUDIO IN
2" SPEAKER
PHOND RECEPTACLE (REAR PANEL)
LOW VOLTAGE POWER SUPPLY
VIDEO
VIDEO IN (BNC)
CRT CONNECTOR
R206 CONTRAST (ON FRONT PANEL)


HORIZONTAL
VERTICAL
HORIZONTAL DEFLECTION
VERTICAL DEFLECTION
YOKE
2nd ANODE CONNECTION
V1 CRT
(CRT AQUADAG) FINGER-SPRINGS TO METAL CHASSIS GROUND
H.V. SUPPLY
FERRITE CORE
OC HORIZONTAL CENTERING
INPUT/SYNC SEPARATOR
R278 BRIGHTNESS (ON FRONT PANEL)
115/230V LINE SELECT SWITCH
GAS CAP
CAP 1000PF
C1000
C1001
LINE FILTER
AUDIO IN
2" SPEAKER
PHONO RECEPTACLE (REAR PANEL)
VIDEO
VIDEO IN (BNC)
CRT CONNECTOR
LOW VOLTAGE POWER SUPPLY
R206 CONTRAST (ON FRONT PANEL)

References 10

Related Documentation

These manuals are available for the HP 98786A and HP 98788A monitors.

Table 10-1. Reference Manuals

Manual	Part Number
HP 98786A Installation Note	98786-90601
HP 98788A Installation Note	98788-90601
HP 98786A Hardware Support	98786-90030
HP 98788A Familiarization Guide	98788-90000
Series 200/300 Test Tools Manual	09800-90001

Service Notes 11

Introduction

This is a section where you can save service notes that pertain to the HP 98786A and HP 98788A monitors.