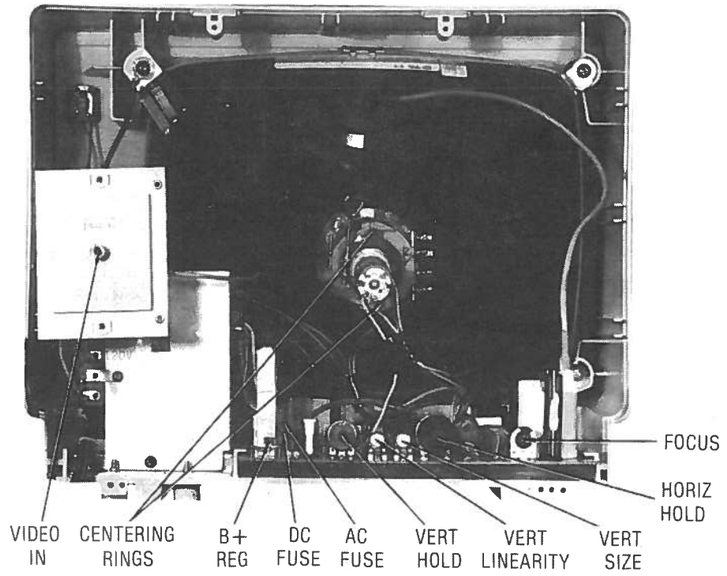


CABINET—REAR VIEW

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

Remove four screws holding cabinet back and two screws holding the Video In Jack panel and slide the back off. Disconnect the HV anode, CRT socket, deflection yoke connectors, power transformer connector, front panel controls connector, LED indicator connector, video input connector, DC Power Regulator Transistor connector and ground leads. Slide the main board out of the cabinet. Remove four screws from the cabinet bottom and slide the power transformer assembly out of the cabinet. Remove knobs from cabinet front. Remove two screws holding the control assembly to the cabinet front and remove the control assembly.

CRT REMOVAL

Follow the "Chassis Removal" procedure and lay the set facedown on a soft protective surface. Loosen and remove the CRT neck assemblies. Remove four screws holding the CRT to the cabinet front and lift the CRT out of the cabinet. **Do not** lift the CRT by the neck.

SERVICING IN THE FIELD

CRT IMPLOSION PROTECTION AND CLEANING

Implosion protection is an integral part of the picture tube, cleaning accomplished without CRT removal.

FUSE DEVICES

A 3-amp fuse is used for low-voltage power-supply protection. (See Placement Chart.)

A 750mA fuse is used for AC line protection. (See Placement Chart.)

POWER INDICATOR ACCESSIBILITY

Indicator is accessible after removing cabinet back.

HORIZONTAL OSCILLATOR

Adjustment of the horizontal hold is accomplished by the proper setting of the Horiz Hold Coil (See Placement Chart.)

WIDTH

The width may be varied by adjusting the width Coil (L404). (See Placement Chart.)

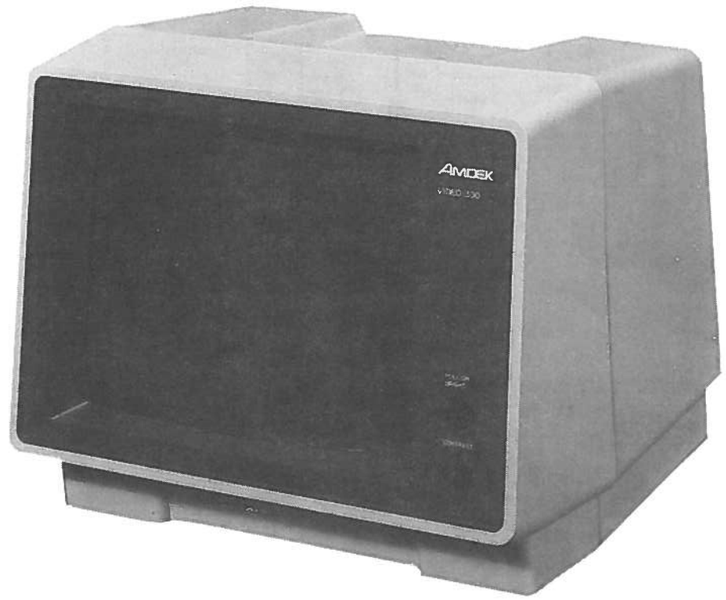
FOCUS

The focus may be varied by a focus control. (See photo, Cabinet-Rear View.)

CENTERING

Centering is accomplished by proper adjustment of two magnetic rings located on the yoke rear cover.

CMT3-2 AMDEK MODEL VIDEO 300



CMT3-2 AMDEK MODEL VIDEO 300

PRELIMINARY SERVICE CHECKS

ENCLOSED

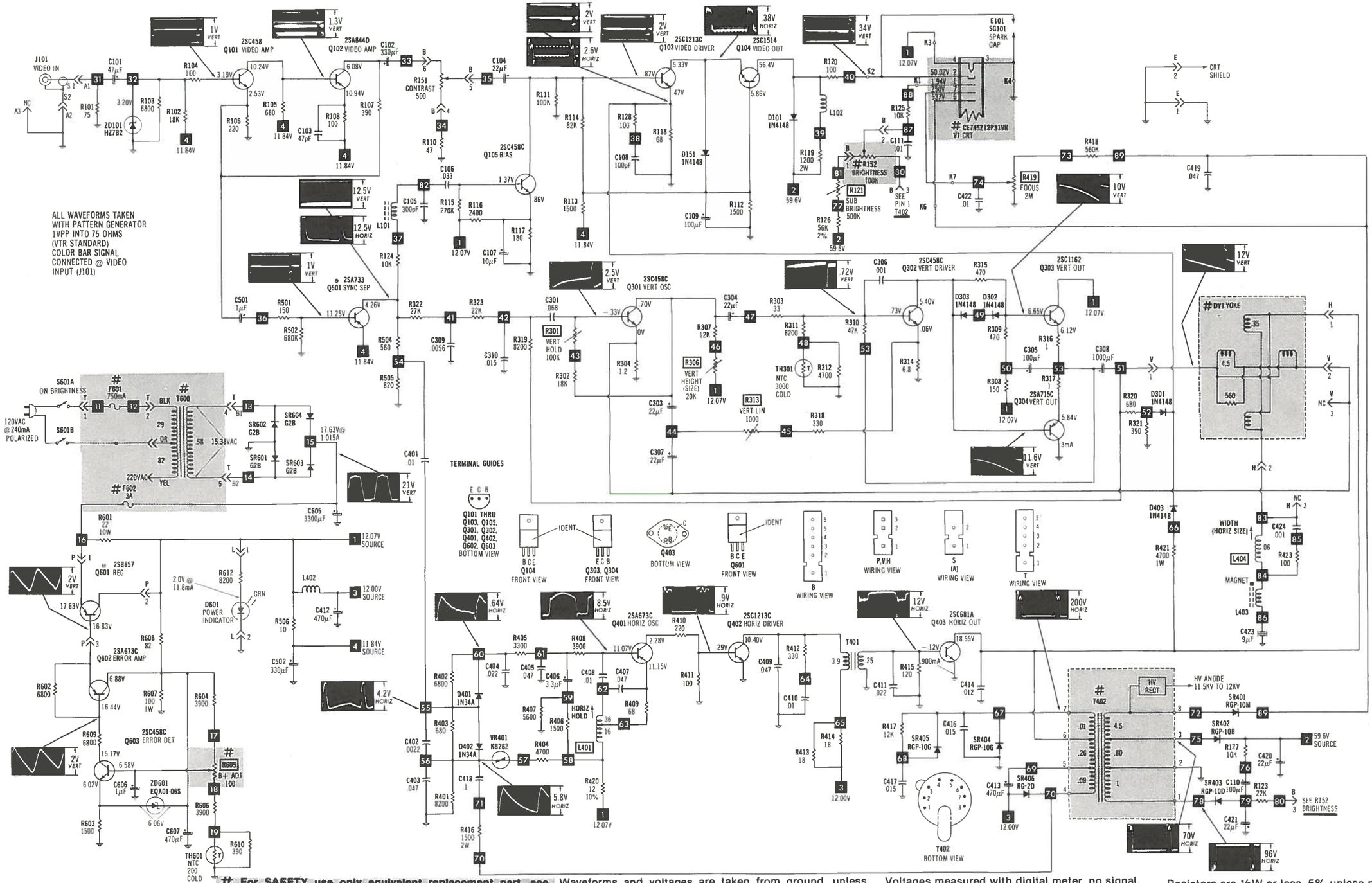
SAFETY PRECAUTIONS

See page 4.

INDEX

SAMS™ Howard W. Sams & Co., Inc.
4300 West 62nd Street, P.O. Box 7092, Indianapolis, Indiana 46206 U.S.A.

4300 West 62nd Street, P.O. Box 7092, Indianapolis, Indiana 46206 U.S.A.
Printed in U.S. of America. 84CF14906 DATE 8-84



A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE™

 # For SAFETY use only equivalent replacement part, see parts list.

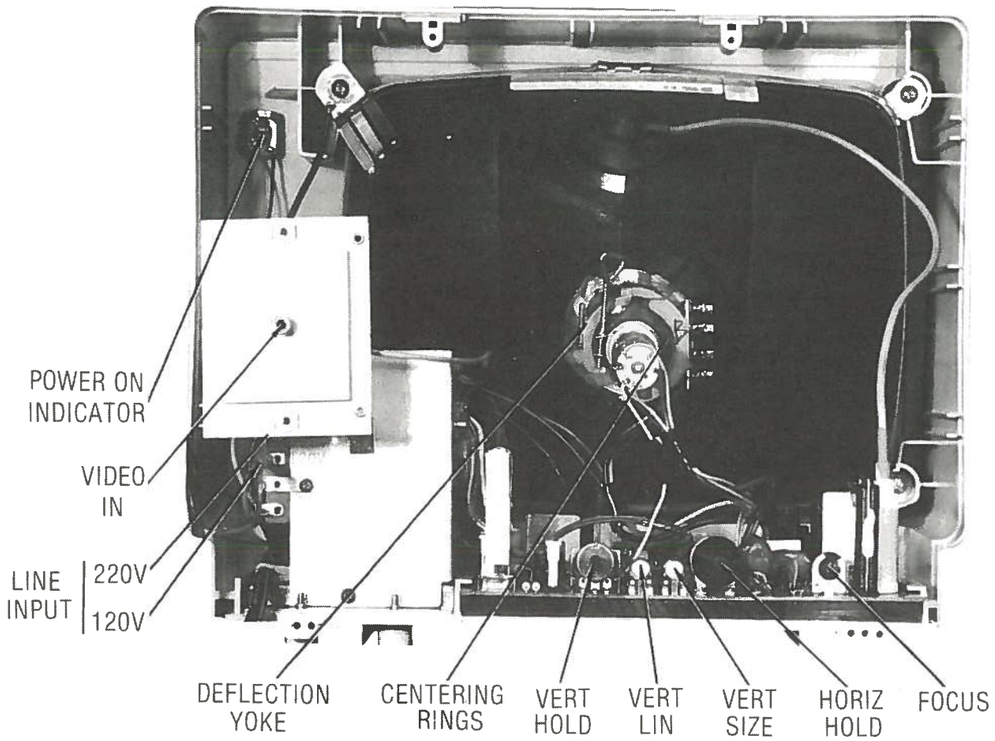
—⊸— Circuitry not used in some versions
--- Circuitry used in some versions
⊖ See parts list
⏚ Ground

Waveforms and voltages are taken from ground, unless noted otherwise.
Waveforms: triggered scope, keyed rainbow generator.
Item numbers in rectangles appear in the alignment/adjustment instructions.
Supply voltages maintained as shown at input.

Voltages measured with digital meter, no signal.
Controls adjusted for normal operation.
Terminal identification may not be found on unit.
Capacitors are 50 volts or less, 5% unless noted.
Electrolytic capacitors are 50 volts or less, 20% unless noted.

Resistors are ½W or less, 5% unless noted.
Value in ( ) used in some versions.

PRELIMINARY SERVICE CHECKS (Continued)



CABINET—REAR VIEW

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

Remove four screws holding cabinet back and two screws holding the Video In Jack panel and slide the back off. Disconnect the HV anode, CRT socket, deflection yoke connectors, power transformer connector, front panel controls connector, LED indicator connector, video input connector, DC Power Regulator Transistor connector and ground leads. Slide the main board out of the cabinet. Remove four screws from the cabinet bottom and slide the power transformer assembly out of the cabinet. Remove knobs from cabinet front. Remove two screws holding the control assembly to the cabinet front and remove the control assembly.

CRT REMOVAL

Follow the "Chassis Removal" procedure and lay the set facedown on a soft protective surface. Loosen and remove the CRT neck assemblies. Remove four screws holding the CRT to the cabinet front and lift the CRT out of the cabinet. **Do not** lift the CRT by the neck.

PRELIMINARY SERVICE CHECKS

This data provides the user with a time-saving service tool which is designed for quick isolation and repair of monitor malfunctions.

Check all interconnecting cables for good connection and correct hook-up before making service checks.

PARTS LIST AND DESCRIPTION

ITEM	PART NO.	DESCRIPTION
#DY1	COIL-DEF-1057	Deflection Yoke
F601	FUSE-1009	Fuse (750mA @250V, Pigtail)
F602	FUSE-1048	Fuse (3A @125V, Pigtail)
Q601	ST-2SB857C or ST-2SB566C	DC Voltage Regulator Transistor
R151	VBR-R-1150	Contrast Control
#R152	SWR-R-1021	Brightness Control
#S601	SWR-1021	On-Off Switch
#SR601	RECI-SI-1003	Rectifier Diode
#SR602	RECI-SI-1003	Rectifier Diode
#SR603	RECI-SI-1003	Rectifier Diode
#SR604	RECI-SI-1003	Rectifier Diode
#T402	TRNS-FB-2006	Horiz Output Transformer
#T600	TRNS-POWER-3003	Power Transformer

For SAFETY use only equivalent replacement part

SAMS™ Howard W. Sams & Co., Inc.
4300 West 62nd Street, P.O. Box 7092, Indianapolis, Indiana 46206 U.S.A.

4300 West 62nd Street, P.O. Box 7092, Indianapolis, Indiana 46206 U.S.A.
Printed in U.S. of America. 84CF14906 DATE 8-84

SERVICE CHECKS

SEE INTERCONNECTING DIAGRAM, PLACEMENT CHART, AND PHOTOS TO MATCH THE NUMBER IN THE CIRCLES WITH THOSE IN THE FOLLOWING DATA FOR SERVICE CHECKS TO BE PERFORMED.

NOTE: Check the components under the following categories and replace if defective.

① **DEAD MONITOR**

(A) Check for 120VAC from pin 2 of plug T to the 120V tap of T600. If 120VAC is missing, remove power.

(B) Check Fuse F601.

(C) Check On-Off Switch (S601).

(D) Check for 17.63V at pin 1 of plug P. If 17.63V is missing, check for possible shorts to ground at pin P1 (resistance should measure about 54 Ohms). If no shorts, check the following components.

(E) Check Fuse F602.

(F) Check Diodes SR601 thru SR604.

(G) Check Power Transformer (T600) voltage and resistance.

(H) Check for 12.07V at pin 2 and 16.83V at pin 3 of plug P. If the voltages are not correct, remove power, disconnect plug P and check the DC Voltage Regulator Transistor (Q601) with a transistor tester.

② **NO DISPLAY**

(A) Check Video In Jack, for good connection.

(B) Check CRT HV Anode and pin voltages. Remove power, remove CRT board and check the CRT filament resistance, pins 3 and 4 (39 ohms). If voltage and resistance are correct, check CRT with CRT Tester.

(C) Check deflection yoke connector plugs H and V. Remove power and check deflection yoke resistance.

③ **BLACK LEVEL**

(A) Check Contrast Control (R151).

TEST EQUIPMENT AND TOOLS

TEST EQUIPMENT

Digital Volt/Ohm Meter
Crosshatch Generator
High Voltage Probe
CRT Tester
Transistor Tester

TOOLS

Phillips Screwdriver
7/16" Nutdriver Socket
Soldering Iron

MISCELLANEOUS ADJUSTMENTS

NOTE: Pattern generator with 1Vp-p into 75 ohms (VTR Standard) output used with appropriate pattern.

INITIAL MONITOR TEST

Connect a crosshatch generator to the Video In Jack. Turn the Monitor On and adjust the Brightness and Contrast controls for the best display. Check the adjustment of the Vert Hold, Horiz Hold, Vert Lin, Vert Size and Focus controls. If any of these controls produce erratic operation, clean that control with a spray contact cleaner and recheck.

ADJUSTMENTS

NOTE: Connect a crosshatch generator to the Video In Jack for the following adjustments.

FOCUS ADJUSTMENT

Adjust the Focus Control (R419) for sharp, well defined lines on the display.

VERT AND HORIZ HOLD ADJUSTMENT

Adjust the Vert Hold Control R307) and Horiz Hold Coil (L401) for the most stable display.

VERT SIZE ADJUSTMENT

Adjust the Vert Size Control (R306) for the desired height on the dispiay.

VERT LIN ADJUSTMENT

Adjust the Vert Lin Control (R313) for even spacing between the vertical iines on the display.

VOLTAGE REGULATOR ADJUSTMENT

Connect a voltmeter to pin P2 of Piug P. Adjust the Voltage Regulator Control (R605) for 12.07V.

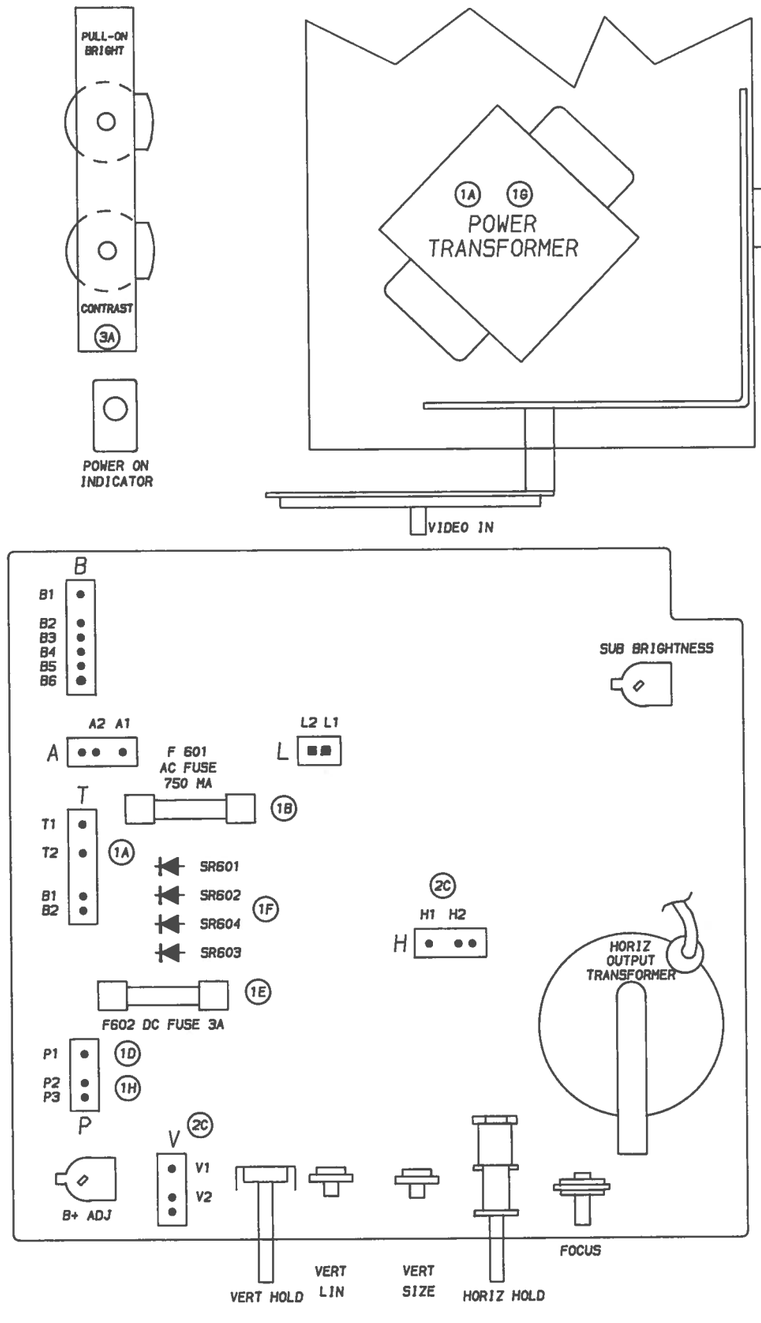
SUB BRIGHTNESS ADJUSTMENT

Connect a crosshatch generator to the Video In Jack. Set the Brightness and Contrast Controls to Maximum clockwise position.

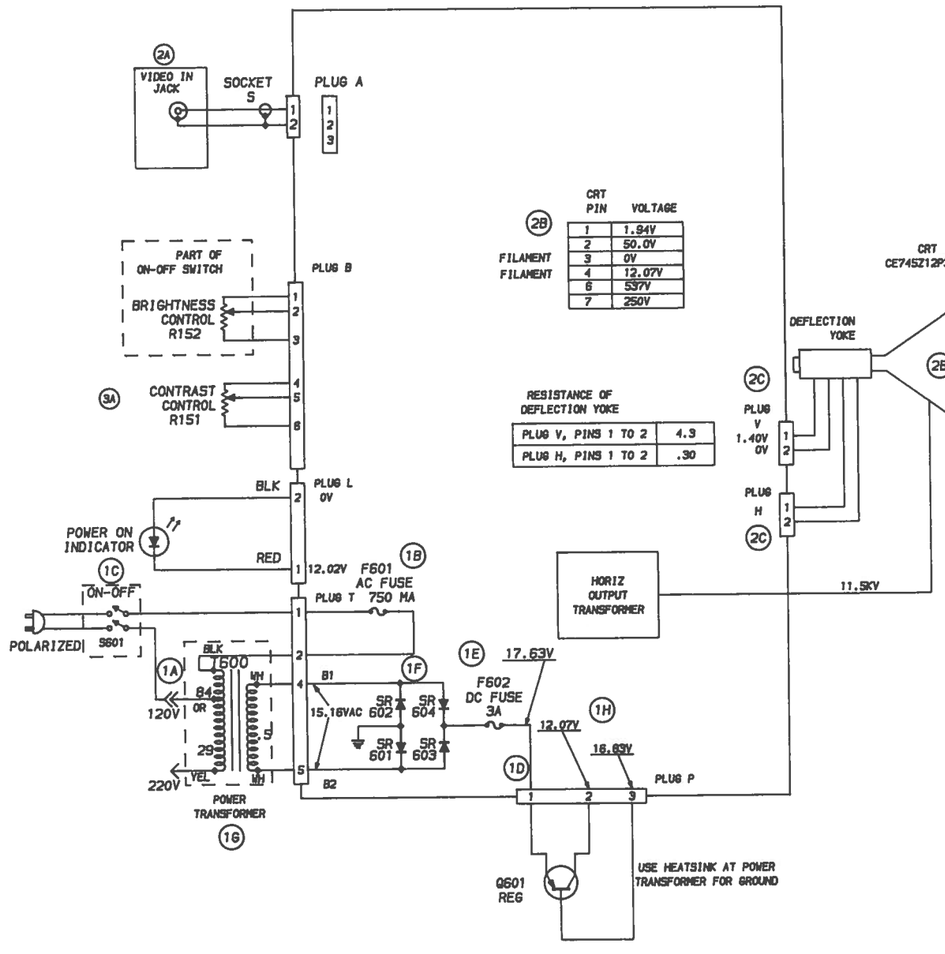
Adjust the Sub Brightness Control (R121) for Maximum brightness without retrace lines.

CENTERING ADJUSTMENT

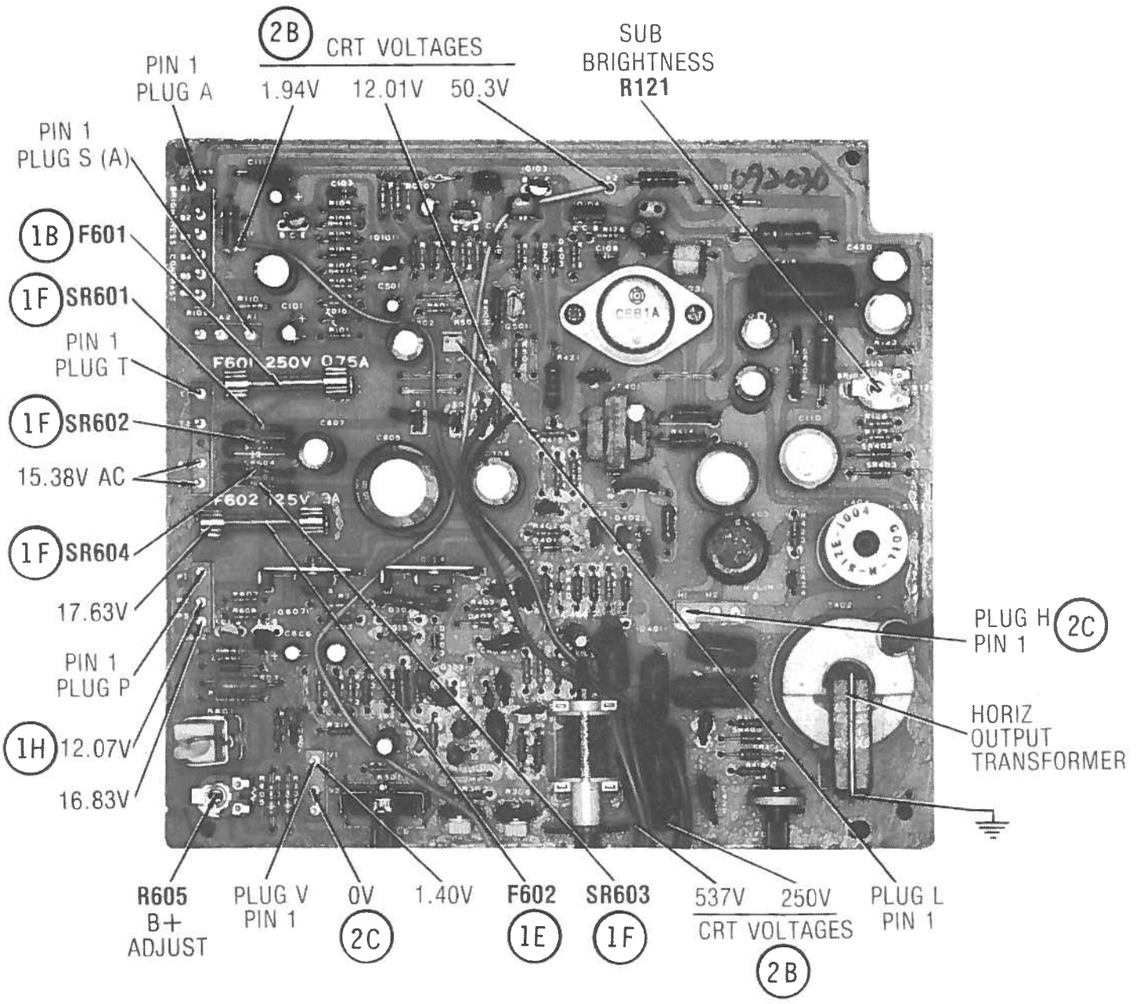
Center the CRT display by adjusting the two magnetic centering rings located on the deflection yoke rear cover.

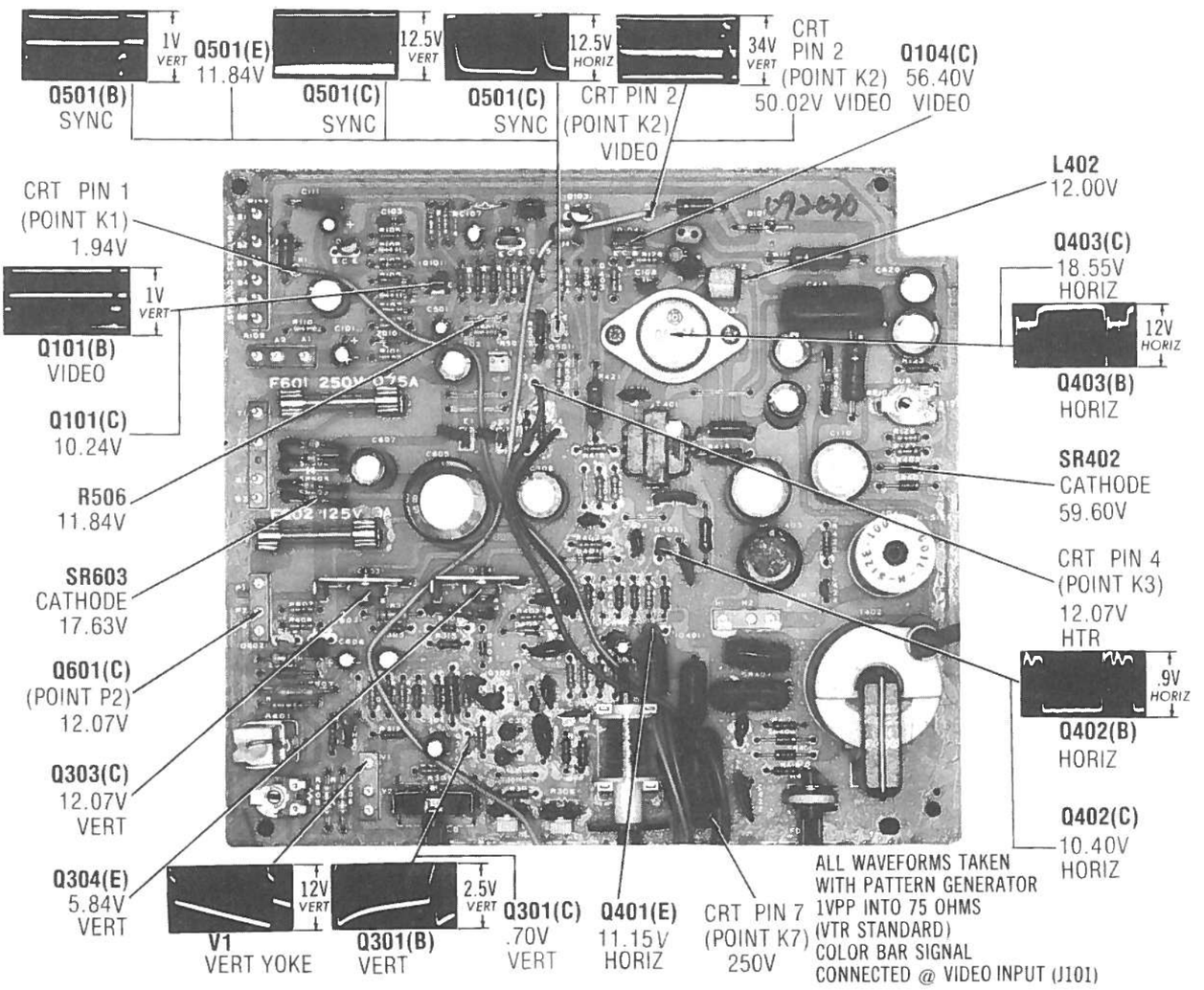


PLACEMENT CHART



INTERCONNECTING DIAGRAM





PRELIMINARY SERVICE CHECKS (Continued)

TROUBLESHOOTING (Continued)

pin 2 of the CRT, check the voltages and components associated with pins 1, 2, 3, 4, 6 and 7 of the CRT and check the condition of CRT. If the retrace lines are not being blanked out, check the blanking Diodes D301 and D403. If the monitor has low or excessive brightness, check the voltages on Transistors Q103, Q104 and Q105 and the CRT and also check the condition of the CRT.

SYNC

If there is no vertical or horizontal sync, check the voltages, waveforms and components associated with the Sync Sep Transistor (Q501). If there is no vertical sync, check Capacitors C309 and C310 and Resistors R322 and R323. If there is no horizontal sync, check Capacitors C401 thru C406, Diodes D401 and D402 and Resistors R401 thru R408, R504 and R505 and Varistor VR401.

VERTICAL

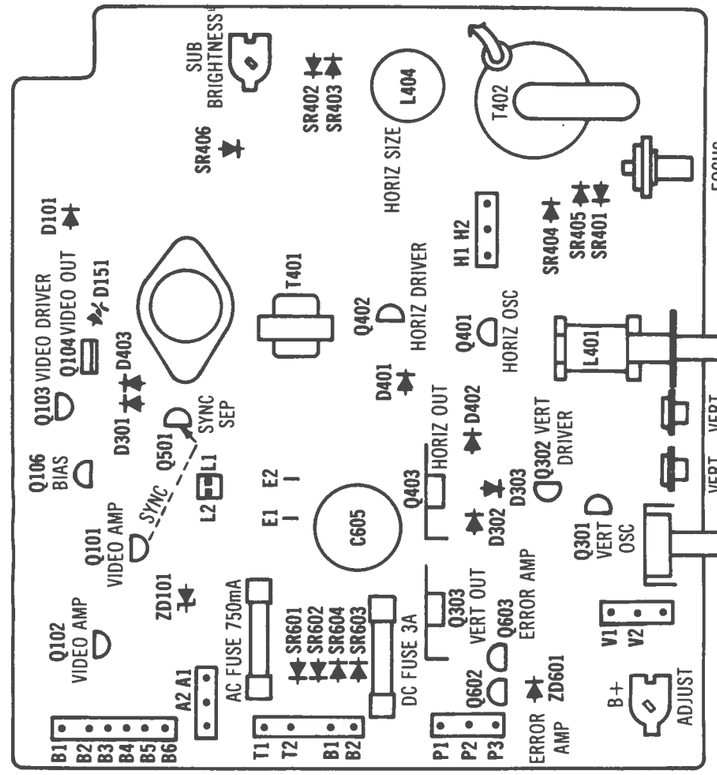
If there is no vertical sweep, inject a vertical signal at the base of the Vert Driver Transistor (Q302). If the vertical sweep returns, check the voltages, waveforms and components associated with the Vert Oscillator Transistor (Q301). If the vertical sweep does not return, check the voltages and components associated with the Vert Driver Transistor (Q302) and the Vert Out Transistors (Q303 and Q304) and check Diodes D302 and D303, Capacitor C308 and the Deflection Yoke (DY1). Poor vertical linearity or foldover may be caused by the vertical feedback and bias circuits. Check the condition of Electrolytic Capacitors C303, C304, C305, C307 and C308. Refer to the "Resistance Measurement Chart" and check for possible changes in feedback and bias circuitry resistance. If the vertical is off frequency, check the voltages and components associated with Transistor (Q301).

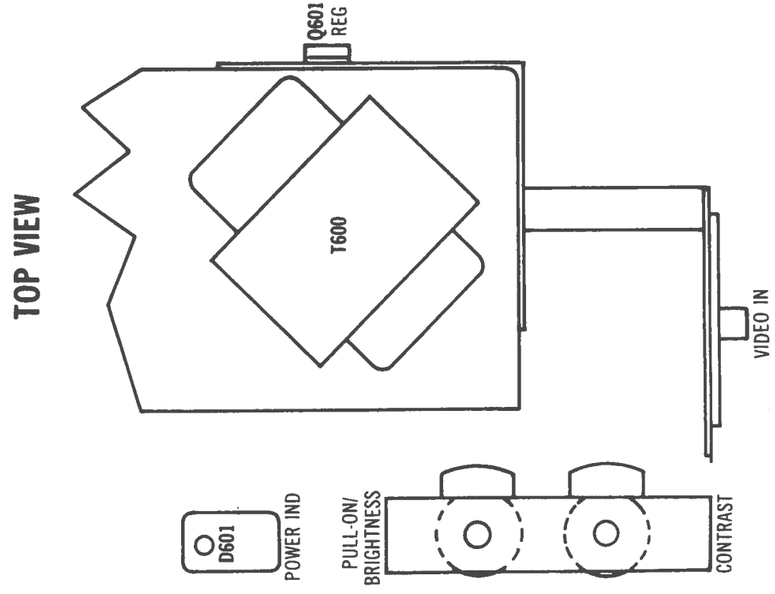
RESISTANCE MEASUREMENTS

MEASUREMENTS TAKEN WITH LOW POWER OHMS METER

ITEM	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 12	PIN 13	PIN 14
Y1	INF	INF	0	41		INF	INF							
ITEM	E	B	C		ITEM	E	B	C		ITEM	E	B	C	
Q101	220	1030	720		Q302	7.2	875	1120		Q403	0	.76	100K(1)	
Q102	1400	720	594		Q303	666	643	32		Q501	41	INF	1342	
Q103	68	902	1620		Q304	664	1120	0		Q601	53	INF	31	
Q104	1620	755	INF		Q401	127	25K	320		Q602	INF	INF	55	
Q105	167V	1094	902		Q402	0	99	44		Q603	817	1477	INF	
Q301	1.7	880	1073											

(1) Reading may vary according to the condition of the electrolytic in the circuit.





PLACEMENT CHART

SAFETY PRECAUTIONS

Before returning the monitor to the user, perform the following safety checks.

1. Inspect all the lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the monitor.

2. Verify that all the chassis insulators are properly installed and are not broken.

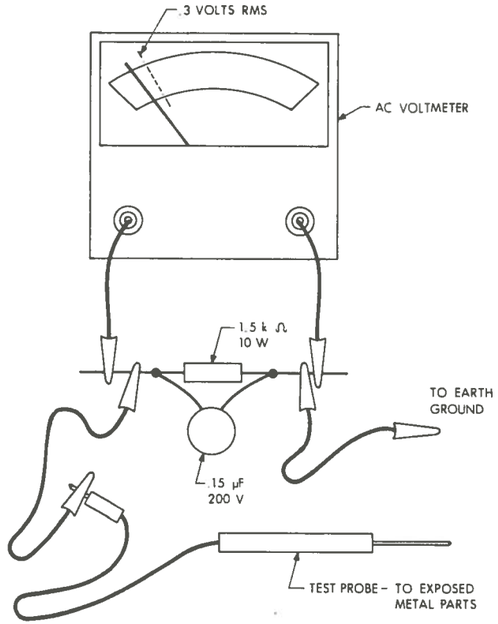
3. To be sure that no shock hazard exists, check for leakage current in the following manner.

   a) Plug the AC line cord directly into a 120 volt AC outlet.

   b) Using two clip leads, connect a 1.5K ohm, 10 watt resistor paralleled by a 0.15μF capacitor in series with all exposed metal parts and a known earth ground, such as water pipe or conduit.

   c) Use a VTVM or VOM with 1000 ohm per volt, or higher, sensitivity and measure the AC voltage drop across the resistor. (See Figure below)

   d) Move the resistor connection to an earth exposed metal part having a return path to the chassis (screw heads, knobs, control shafts, control panel and RCA phone jack, etc.) Any reading of 0.3 volt RMS (this corresponds to 0.2 milliamp. AC) or more is excessive and indicates a potential shock hazard which must be corrected before returning the monitor to the owner.



Courtesy of the Manufacturer

TROUBLESHOOTING AID

Note: Waveforms taken with triggered scope, Keyed-Rainbow generator. Schematic voltages measured with digital meter, no signal. Controls adjusted for normal operation.

PICTURE OR SOUND

NO PIC, NO RASTER: Check AC power supply, sources generated from Horizontal Output Transformer (T402) and Video circuit. Refer to "Troubleshooting" Power Supply, Video and Horizontal circuits.

NO PIC, HAS RASTER: Refer to "Troubleshooting" Video circuit.

LOW OR EXCESSIVE BRIGHTNESS: Check Video and Luminance circuits. Refer to "Troubleshooting" Video circuit.

SWEEP

NO RASTER: Check HV Rectifier, Rectifier (SR401) and Horizontal circuit. Refer to "Troubleshooting" Horizontal circuit.

NO VERT DEFLECTION: Refer to "Troubleshooting" Vertical circuit.

POOR VERT LIN OR FOLDOVER: Refer to "Troubleshooting" Vertical circuit.

POOR HORIZ LIN OR FOLDOVER: Refer to "Troubleshooting" Horizontal circuit.

NARROW PICTURE: Refer to "Troubleshooting" Horizontal circuit.

VERT OFF FREQUENCY: Refer to "Troubleshooting" Vertical circuit.

HORIZ OFF FREQUENCY: Refer to "Troubleshooting" Horizontal circuit.

SYNC

NO VERT/HORIZ SYNC: Refer to "Troubleshooting" Sync circuit.

TROUBLESHOOTING

POWER SUPPLY

Check the AC Line Fuse (F601) and the DC Fuse (F602). If Fuse F601 is open, check for possible shorts at Diodes SR601 thru SR604 and also check the winding of Power Transformer (T600). If Fuse F602 is blown, check for a possible short to ground at the Reg Transistor (Q601). Check for possible shorted Horizontal Output Transistor (Q403) or shorted Vertical Output Transistors (Q303 and Q304). Check for 17.63V at Fuse F602. If the voltage is incorrect, check Diodes SR601 thru SR604. Check for 12.07V at the collector of Transistor Q601. If 12.07V is missing or not regulated properly, check the voltages and components associated with the Error Det Transistor (Q603), Error Amp Transistor (Q602) and Reg Transistor (Q601). Check for 59.60V at the cathode of Diode SR402. If the voltage is incorrect or missing, check Diode SR402 and Capacitor C420.

HORIZONTAL

Check for 18.55V at the collector of the Horizontal Output Transistor (Q403). If 18.55V is missing check Diode SR406, coil L402, Capacitor C413 and the winding, pin 4 to pin 6, on the Horizontal Output Transformer (T402). Inject a horizontal signal at the base of Transistor Q403. If the high voltage returns, check the voltages, waveforms and components associated with the Horizontal Oscillator Transistor (Q401) and the Horizontal Driver Transistor (Q402). If the high voltage doesn't return, check Transistor (Q403), Diodes SR404 and SR405, Capacitors C416, C417 and C423, Transformer (T402), Deflection Yoke (DY1), High Voltage Rectifier SR401 and Coils L403 and L404. Check for possible shorts to ground at the secondary of Transformer T402 that could be loading down the horizontal circuits. Poor horizontal linearity or foldover may be caused by the condition of Capacitors C411, C413, C414, C416, C417, C423 or C424, the Deflection Yoke (DY1) or by Coils L403 or L404. If the horizontal is off frequency, check the waveforms at Diodes D401 and D402, check the adjustment of the Horizontal Hold Coil (L401) and also check the voltages and components associated with Transistor (Q401). If the monitor has a narrow picture, check the power supply source voltages at 12.07V source and at 12.00V source and also check the waveforms at Transistors (Q402 and Q403).

VIDEO

Connect a video signal to the Video In Jack (J101) and check the waveform at the base of the Video Amp Transistor (Q102). If the waveform is missing, check the voltages and components associated with the Video Amp Transistor (Q101) and check Capacitor C101 and Zener Diode ZD101. Also check the waveform at pin 2 of the CRT. If the waveform is missing, check the adjustment of the Contrast Control (R151) and the voltages, waveforms and components associated with Transistor (Q102), Bias Transistor (Q105), Video Driver Transistor (Q103) and Video Out Transistor (Q104). If the voltages and waveforms are normal at

CMT3-2

AMDEK
MODEL VIDEO 300

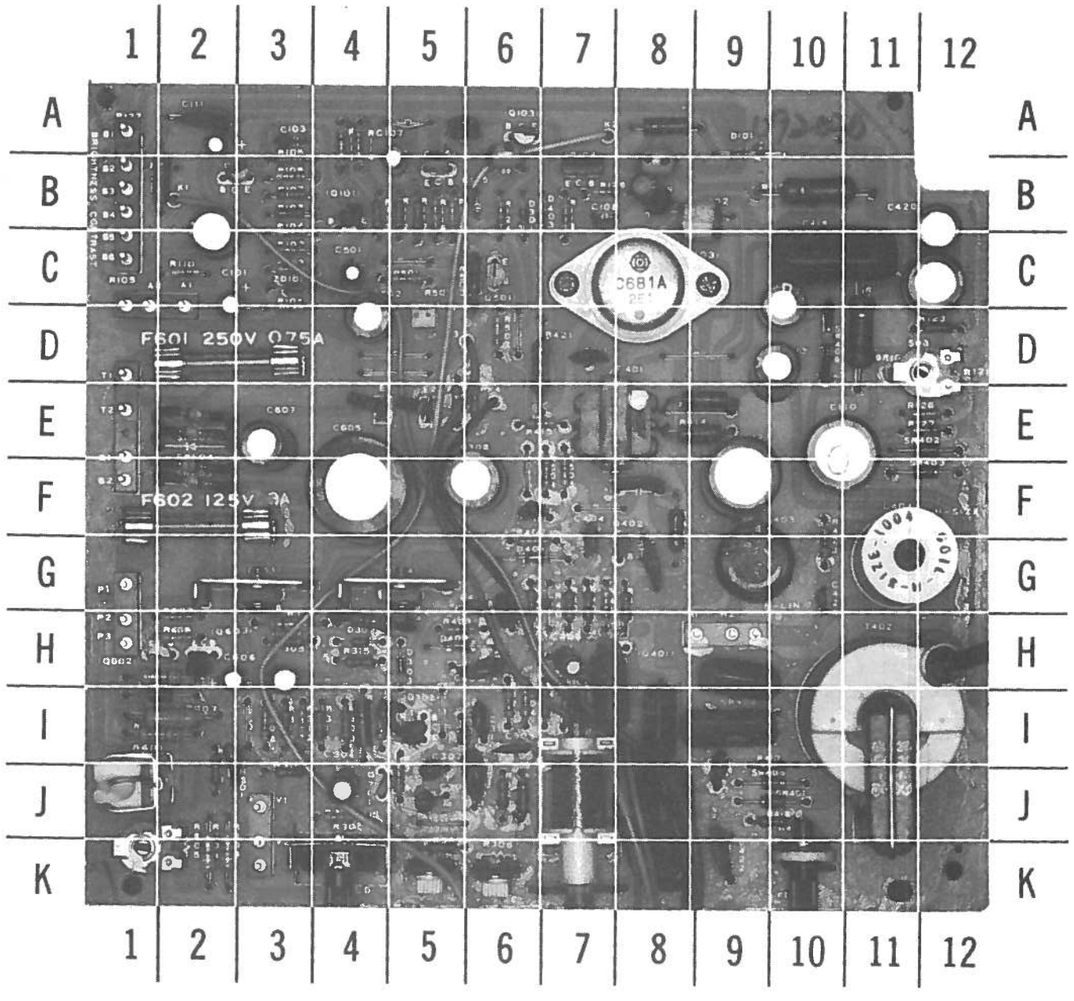
A Howard W. Sams CIRCUITRACE Photo

MAIN BOARD

5

MAIN BOARD

12



A Howard W. Sams GRIDTRACE™ Photo

MAIN BOARD GridTrace LOCATION GUIDE

A	C-1	Q303	G-3	R420	J-6
B	B-1	Q304	G-5	R421	D-7
C101	C-2	Q401	H-7	R423	G-10
C102	C-2	Q402	G-8	R501	C-5
C103	A-3	Q403	C-8	R502	D-6
C104	A-2	Q501	C-6	R504	F-7
C105	B-6	Q602	H-2	R505	F-7
C106	A-6	Q603	H-2	R506	C-6
C107	B-5	R201	D-3	R601	J-1
C108	B-7	R202	C-3	R602	H-2
C109	B-8	R203	C-3	R603	I-2
C110	E-10	R204	C-3	R604	K-2
C111	A-2	R205	B-3	R605	K-1
C301	J-6	R206	B-3	R606	K-2
C303	J-5	R207	B-3	R607	I-2
C304	J-4	R208	B-3	R608	H-2
C305	H-3	R210	C-2	R609	H-2
C306	I-5	R211	A-4	R610	J-2
C307	J-5	R212	B-5	SR401	J-10
C308	F-6	R213	B-4	SR402	E-12
C309	I-6	R214	A-4	SR403	F-12
C310	I-6	R215	B-5	SR404	I-9
C401	F-6	R216	B-5	SR405	J-10
C402	G-6	R217	B-5	SR406	D-10
C403	G-6	R218	B-7	SR601	E-2
C404	G-7	R219	B-10	SR602	E-2
C405	H-6	R220	A-8	SR603	F-2
C406	H-7	R221	D-12	SR604	F-2
C407	I-7	R223	D-12	T	E-1
C408	I-8	R224	B-6	T401	E-7
C409	G-8	R225	B-2	T402	I-11
C410	F-8	R226	E-12	TH301	I-4
C411	D-7	R227	E-12	TH601	I-2
C412	C-10	R228	B-7	V	J-3
C413	D-10	R301	K-4	VR401	G-7
C414	H-9	R302	J-4	ZD101	C-3
C416	I-9	R303	I-4	ZD601	I-2
C417	J-9	R304	I-4		
C418	C-10	R306	K-6		
C419	J-8	R307	K-5		
C420	B-12	R308	I-3		
C421	C-12	R309	H-3		
C422	K-9	R310	I-3		
C423	F-9	R311	I-4		
C424	G-10	R312	I-3		
C501	C-4	R313	K-5		
C502	D-4	R314	I-4		
C605	F-4	R315	H-4		
C606	H-2	R316	H-3		
C607	E-3	R317	H-4		
D101	A-9	R318	J-5		
D151*	C-7*	R319	J-3		
D301	B-6	R320	E-6		
D302	H-4	R321	E-5		
D303	H-5	R322	I-6		
D401	G-6	R323	J-6		
D402	H-5	R401	G-6		
D403	B-7	R402	G-6		
F601	D-2	R403	H-5		
F602	F-2	R404	I-6		
H	H-9	R405	G-7		
L101	B-6	R406	I-7		
L102	B-8	R407	G-7		
L401	J-7	R408	I-7		
L402	B-9	R409	I-7		
L403	G-9	R410	G-8		
L404	G-11	R411	G-7		
P	H-1	R412	F-8		
Q101	B-4	R413	E-9		
Q102	B-3	R414	E-9		
Q103	A-6	R415	E-7		
Q104	B-7	R416	D-11		
Q105	B-5	R417	J-10		
Q301	J-4	R418	J-10		
Q302	I-5	R419	K-10		

* Located on other side of board.

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

FUSE DEVICES

	ITEM No.	DESCRIPTION	REPLACEMENT DATA				NOTES
			MFGR. PART No.		BUSS PART No.		
			DEVICE	HOLDER	DEVICE	HOLDER	
#	F601	750mA @ 250V Fast-Action	FUSE-1009				
#	F602	3A @ 125V Slow-Blow	FUSE-1048				

For SAFETY use only equivalent replacement part.

MISCELLANEOUS

	ITEM No.	PART NAME	MFGR. PART No.	NOTES
	D601	LED	SP-RT5-521G	Power Indicator
	E101	Spark Gap	SPARK-AG-20MKT	
	J101	Jack		Video Input
	S601A,B	Switch	SWR-1021	Power On/Off (Part of Brightness Control)
#	V1	CRT	CE745Z12P31VR	
		Cord	CORD-AC-052B	AC Power
		CRT Socket	SD052	
		P.C. Board	PWB-1275	Main

For SAFETY use only equivalent replacement part.

CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

ITEM	PART No.
Cabinet Rear	CAB-B-1169
Cabinet Front	CAB-A-1169

ITEM	PART No.
Knob, Power On/Off & Brightness	KNOB-1008-BLK
Knob, Contrast	KNOB-1008-BLK

WIRING DATA

High Voltage Lead	Use BELDEN No.	8869 (17 KV)
Shielded Hook-up Wire	Use BELDEN No.	8401 or 8421 (Single-Conductor)
		8208 (Two-Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No.	8529 (Solid) Available In 13 Colors
		8522 (Stranded) Available In 13 Colors

PARTS LIST AND DESCRIPTION

When ordering parts, state Model, Part Number, and Description

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFGR. PART No.	REPLACEMENT DATA						ZENITH PART No.
			ECG PART No.	GENERAL ELECTRIC PART No.	MOTOROLA PART No.	NTE PART No. (Formerly TCG)	RCA PART No.	WORKMAN PART No.	
D101	1N4148	SD-1N4148	ECG519	GE-514	1N4935	NTE519	SK3100/519	WEP925/519	103-131
D151	1N4148	SD-1N4148	ECG519	GE-514	1N4935	NTE519	SK3100/519	WEP925/519	103-131
D301 thru D303	1N4148	SD-1N4148	ECG519	GE-514	1N4935	NTE519	SK3100/519	WEP925/519	103-131
D401,2	1N34A	SD-1N34A	ECG109	1N34AS	1N34A	NTE109	SK3087	WEP134/109	103-Z9001
D403	1N4148	SD-1N4148	ECG519	GE-514	1N4935	NTE519	SK3100/519	WEP925/519	103-131
Q101	2SC458C	ST-2SC458C	EOG85	GE-210	2N4401*	NTE85	SK3124A/289A	WEP910/289	121-972*
Q102	2SA844D	ST-2SA844D	EOG234	GE-65	2N5679*	NTE234	SK3247/234	WEP907/234	121-Z9005
Q103	2SC1213C	ST-2SC1213C	EOG289A	GE-268	2N4401*	NTE289A	SK3122	WEP910/289	121-Z9065
Q104	2SC1514	ST-2SC1514	EOG376	GE-251	T1P50	NTE376	SK9362/376	WEP779/198	121-Z9028
Q105	2SC458C	ST-2SC458C	EOG85	GE-210	2N4401*	NTE85	SK3124A/289A	WEP910/289	121-972*
Q301,2	2SC458C	ST-2SC458C	EOG85	GE-210	2N4401*	NTE85	SK3124A/289A	WEP910/289	121-972*
Q303	2SC1162	ST-2SC1162C	EOG184	GE-247	2N5191	NTE184	SK3253/295	WEP900/186A+	121-Z9008
Q304	2SA715C	ST-2SA715C	EOG374			NTE374	SK9042/374	WEP374/374	121-Z9105
Q401	2SA673C	ST-2SA673C	EOG290A	GE-269	2N4403*	NTE290A	SK9132	WEP911/290A	121-Z9003*
Q402	2SC1213C	ST-2SC1213C	EOG289A	GE-268	2N4401*	NTE289A	SK3122	WEP910/289	121-Z9065
Q403	2SC681AYL	ST-2SC681AYL	EOG283	GE-36	2N6233	NTE283	SK3439/163A	WEP707/162	121-Z9090
Q501	2SA733	ST-2SA733Q	EOG290A	GE-48	2N4403*	NTE290A	SK3114A/290A	WEP62/159*	121-Z9067
	2SA1015Y	ST-2SA1015Y	EOG290A	GE-82*	2N4403*	NTE290A	SK9132	WEP911/290A	121-Z9003*
Q601	2SB857C	ST-2SB857C	EOG55	GE-303	MJE15031	NTE55	SK3441/292	WEP781/292	121-Z9048
	2SB566C	ST-2SB566C	EOG292	GE-303	MJE15031	NTE292	SK9113/378	WEP781/292	121-Z9048
Q602	2SA673C	ST-2SA673C	EOG290A	GE-269	2N4403*	NTE290A	SK9132	WEP911/290A	121-Z9003*
Q603	2SC458C	ST-2SC458C	EOG85	GE-210	2N4401*	NTE85	SK3124A/289A	WEP910/289	121-972*
SR401	RGP-10M	REC1-SI-1023	EOG552	GE-511		NTE552	SK9000/552	WEP172/506	103-287
SR402	RGP-10B	REC1-SI-1005	EOG5552	GE-511		NTE552	SK9000/552	WEP172/506	103-287
SR403	RGP-10D	REC1-SI-1002	EOG552	GE-511		NTE552	SK9000/552	WEP172/506	103-287
SR404,5	RGP-10G	REC1-SI-154	EOG552	GE-511		NTE552	SK9000/552	WEP172/506	103-287
SR406	RG-2D	REC1-SI-1053	EOG552	GE-511		NTE552	SK9000/552	WEP172/506	103-287
# SR601 thru # SR604	G2B	REC1-SI-1003	EOG552	GE-511		NTE552	SK9000/552	WEP172/506	103-287
VR401	KB262	SV-KB262	EOG605			NTE605	SK3864/605	WEP605/605	103-Z9044
ZD101	HZ7B2	SZ-HZ7B2	EOG5014A	GEZD-6.8	1N5235B	NTE5014A	SK6A8/5014A	WEP1415/5014	103-Z9044
ZD601	EQA01-06S	REC1-SI-175	EOG5012A	GEZD-6.0	1N5233B	NTE5012A	SK6A0/5012A	WEP1413/5012	103-Z9009

For SAFETY use only equivalent replacement part.
* Lead configuration may vary from original.
+ Rotate 180° to conform with original lead configuration.

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	MFGR. PART No.
C101	47 16V	CUF-1.6-472J
C102	330 10V	CUF-1-331Y
C104	22 16V	CUF-1.6-222Y
C107	10 25V	CUF-2.5-102Y
C109	100 10V	CUF-1-101Y
C110	100 160V	CUF-16-101Y
C303	22 10V 10%	DTLL-1-222M
C304	22 16V 20%	EU-1.6-222M
C305	100 10V	CUF-1-101Y
C307	22 10V 10%	DTLL-1-222M
C308	1000 16V	CUF-1.6-100Y
C406	3.3 50V	CUF-5-333H
C412	470 16V	CUF-1.6-471Y
C413	470 16V	CUF-1.6-471Y
C420	22 100V	CUF-10-222Y
C421	22 160V	CUF-16-222Y
C423	9 35V NP	NP-35-903J
C501	1 50V	CUF-5-103H
C502	330 16V	CUF-1.6-331Y
C605	3300 35V	CU-3.5-330Y
C606	1 50V	CUF-5-103H
C607	470 16V	CUF-1.6-417Y

CAPACITORS

ITEM No.	RATING	MFGR. PART No.
C103	47 50V	DSLX-5-478J
C105	300 50V	DX-5-307K
C106	.033 50V 10%	ML-5-335K
C108	100 50V	DSLX-5-107J
C111	.01 500V	DX-50-105P
C301	.068 50V 5%	ML-5-685J
C306	.001 50V	DX-5-106K
C309	.0056 50V 10%	DX-5-566K
C310	.015 50V 10%	ML-5-155K
C401	.01 50V 10%	ML-5-105K
C402	.0022 50V 10% .01 50V 10%	ML-5-226K
C403	.047 50V 10%	ML-5-475K
C404	.022 50V 10%	ML-5-225K
C405	.047 50V 10%	ML-5-475K
C407	.047 200V 5%	PFA-20-475J
C408	.01 200V 5%	PFA-20-105J
C409	.047 50V	DX-5-475Z
C410	.01 500V	DX-50-105P
C411	.022 50V 10%	ML-5-225K
# C414	.012 630V 5%	PFA-63-125J
# C416	.015 630V 5%	PFB-63-155J
C417	.015 50V 10%	ML-5-155K
C418	.1 400V	PFC-40-104M
C419	.047 630V 5%	PFB-63-475J
C422	.01 500V	DX-50-105P
C424	.001 50V 10%	DX-5-106K

For SAFETY use only equivalent replacement part.

CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM NO.	FUNCTION	RESISTANCE	MFGR. PART NO.	NOTES
R121	Sub Brightness	500K	VR-SF-1096	
R151	Contrast	500	VRB-R-1150	
# R152	Brightness/Power Switch	100K	SWR-R-1021	
R301	Vert Hold	100K	VRB-R-1154	
R306	Vert Height (Size)	20K	VR-SF-1120	
R313	Vert Linearity	1000	VR-SF-1121	
R419	Focus	2M	VR-SF-1097	
# R605	B+ Adjust	1000	VR-SF-309	

For SAFETY use only equivalent replacement part.

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA MFGR. PART No.	NEW-TONE PART No.	WORKMAN PART No.
R126	56K 5% 1/4W Carbon Film	1/4P-563J	QW356	22-1138
# R601	22 5% 10W WW	10LCU-220J-W	10W022	
# R604	3900 5% 1/2W Carbon Film	1/2P-392J	HW239	22-2110
# R606	3900 5% 1/2W Carbon Film	1/2P-392J	HW239	22-2110
# R610	390 5% 1/4W Carbon Film	1/4P-391J	QW139	22-1086
TH301	3000 Cold NTC	SH-5KD5		FR1008
# TH601	200 Cold NTC	SH-D2BS		FR1020

For SAFETY use only equivalent replacement part.

COILS (RF-IF)

ITEM No.	FUNCTION	MFGR. PART No.
L101	Peaking (15uH)	PLKA-150K
L102	RF Choke (5.6uH)	PLKA-SR6K
L402	RF Choke (27uH)	CHOKE-IF-280
L403	Horiz Linearity	COIL-H-LINE-1019

COILS & TRANSFORMERS (Sweep Circuits)

ITEM No.	FUNCTION	REPLACEMENT DATA MFGR. PART No.	OTHER IDENTIFICATION	THORDARSON PART No.
# DY1	Yoke Horiz 160uH 90° Vert 7mH	COIL-DEF-1057		
L401	Horiz Hold	COIL-H-HOLD-539		
L404	Width	COIL-H-SIZE-1004		
T401	Horiz Driver	TRNS-H-OPT-236	2360	
# T402	Horiz Output	TRNS-FB-2006	FB2006	

For SAFETY use only equivalent replacement part.

TRANSFORMER (Power)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING	REPLACEMENT DATA MFGR. PART No.	THORDARSON PART No.	NOTES
# T600	120VAC @ 240mAAC	15.38VAC @ 1.015ADC		TRNS-POWER-3003 Power 3003 (1)		(1) On unit number

For SAFETY use only equivalent replacement part.