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### NOTICE

This Service Manual describes the most typical product of this model. If there are any specific differences between this Manual and the servicing unit, please contact Hitachi Denshi sales office in your area.

## PRODUCT SAFETY NOTICE

### (1) X-RAY RADIATION

The primary source of X-ray radiation in this monitor is the picture tube. The tube used in this monitor is especially constructed to limit X-ray radiation emission.

For continued X-ray radiation protection, the replacement tube must be the same type as the original, Hitachi approved one.

### (2) PRODUCT SAFETY NOTE

Many electrical and mechanical parts in this monitor have special safety related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded necessarily be rated for higher voltages, wattage, etc. Electrical components having such features are identified by marking with a symbol on the schematic diagram and parts list in this manual.

The use of a substitute replacement component which the Hitachi recommended replacement one, shown in the parts list in this manual, may create shock, fire, X-radiation, or other hazards.

**MODEL VM-910A**  
**VIDEO MONITOR**  
**Service Manual**

## 1. GENERAL

The Hitachi VM-910A is a high performance 9-inch video monitor designed to provide an excellent quality picture display of video signals from a CCTV camera or other video signal sources. VM-910A features high reliability IC and transistor circuitry.

## 2. SPECIFICATIONS

Format	U, C type ... EIA 525 lines E/K type ... CCIR 625 lines
Sync System	Internal (can be modified for external sync)
Input Signal	1.0 V <sub>p-p</sub> composite video; sync negative
Input Impedance	75 $\Omega$ or high impedance bridge connection
Effective Picture Size	182 mm (7.17") x 136 mm (5.35")
CRT	9-inch, 90° deflection, 230 BTB 4 or equivalent
Power Requirement	U, C type ... 117 V AC 60 Hz E/K type ... 100/117/220/240 V AC 50 Hz
Power Consumption	28 W
Ambient Temperature	-10 to +50 °C (+14 to 122 °F)
Dimensions	219 mm (W) x 219 (W) x 234 (D) mm (Approx. 8.62 x 8.62 x 9.21 in)
Weight	6 kg (12 lbs)
Electrical Performance	Horizontal: 500 lines
Resolution	Vertical: 300 lines
Video Gain	More than 35 dB: continuously
Video Linearity	Within $\pm 5\%$ to 60 V <sub>p-p</sub> output (APL 50 % stairstep signal)
Signal to Noise Ratio	Hum: better than 50 dB Synchronous: better than 40 dB

Deflection Linearity	Within 2 % (at center, with respect to picture height)
Power Source Voltage	Abnormal operation shall not occur against +10 % variation with respect to the rated AC input.
Insulation Resistance	More than 10 M $\Omega$ (DC 500 V) between AC input and chassis.

### 3. NAMES OF EACH SECTION

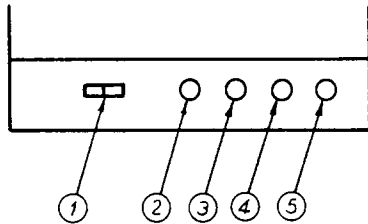


Fig. 1 Front Panel

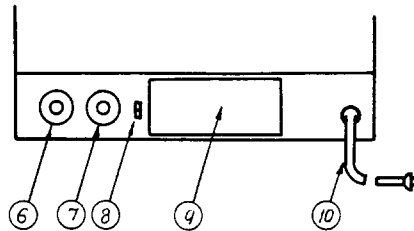


Fig. 2 Rear Panel

- |   |             |   |
|---|-------------|---|
| ① | POWER       | Power supply ON/OFF switch. When set to ON, picture is obtained after a few seconds.  |
| ② | V.HOLD      | Adjust control when picture rolls upwards or downwards. If picture rolls downwards, adjust control slowly until rolling stops.<br>At this position, since circuit free oscillator frequency and signal sync frequency are the same, set V.HOLD control to just slightly clockwise of this position. |
| ③ | H.HOLD      | Adjust control when picture sync rolls toward left or right, or to slightly change the picture position toward the left or right. Normally, picture remains synchronized within full range of control.  |
| ④ | BRIGHT      | Control for adjusting picture brightness.   |
| ⑤ | CCNTR(CCNT) | Control for adjusting picture contrast.   |
| ⑥ | VIDEO IN    | Use coaxial cable to connect video input signal to this connector.  |
| ⑦ | VIDEO OUT   | Employ when using "bridge through" connection of the input signal to other equipment (see following)  |

- ⑧ 75  $\Omega$  ON-OFF Termination switch for input video signal.  
When VIDEO OUT ⑦ connector is not being used for bridge through connection, set this switch to ON. If video input signal is bridged through to other equipment, set this switch to OFF and terminate signal at the final unit in the signal line at 75  $\Omega$  (see equipment operating instructions). In cases when this monitor is the final unit, set switch to ON.
- ⑨ BLANK PANEL Use this space for modifying video monitor to external sync type.
- ⑩ Power Cord Connect to commercial AC power source.

## 4. ADJUSTMENT PROCEDURE

### 4.1 B/W MAIN-1 PCB

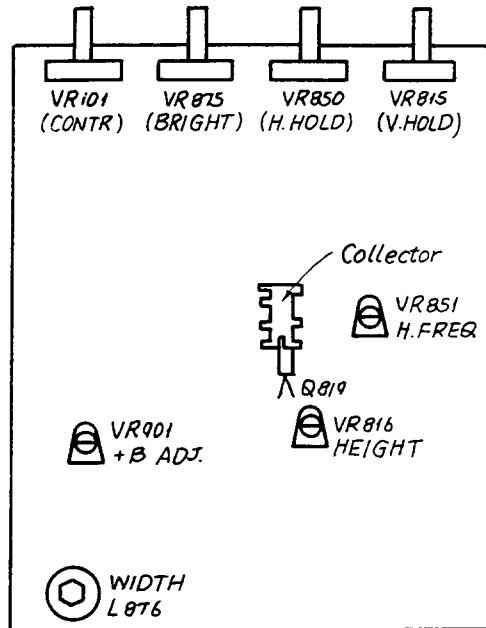


Fig. 3

- 1) +B Voltage (VR901)  
Connect DC voltmeter between chassis (GND) and Q819 collector (heatsink) and with trimmer driver turn [+B ADJ] to adjust. This is normally adjusted for  $12 \pm 0.5$  V.
- 2) H.FREQ (VR851)  
Adjust if picture rolls toward left or right. Set H FREQ (VR851) to position where picture does not roll with full range operation of H. HOLD control or when POWER switch is operated ON-OFF.  
In this case, care must be taken for not touching a metal screwdriver to Q819 collector.
- 3) V.HOLD (VR815)  
Turn control left and right. In center of range where upward or downward picture roll begins, set control to position where optimum interlace is obtained.

4) HEIGHT (VR816)

Adjust vertical amplitude. Set to position where picture vertical amplitude completely fills CRT mask, but loss of raster does not occur. If vertical roll is obtained at this time, readjust V.HOLD (VR815).

5) Linearity coil (L875)

Linearity coil is installed at the place marked with L876. The place marked with L875 is shorted.

#### 4.2 CRT section adjustments

1) Picture Inclination

Deflection yoke can be turned by loosening clamp screw.

When adjusting, press yoke toward CRT and observe vertical inclination condition near center of picture.

Tighten deflection yoke clamp screw firmly after adjusting.

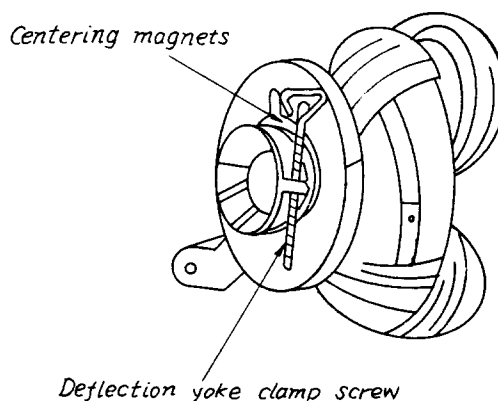


Fig. 4 Deflection yoke

2) Picture Position

Perform by mutually adjusting deflection yoke centering magnets (2 magnets). Magnetic field is strongest when both magnets are overlapped, at which position picture movement becomes greatest. Note that if picture position is changed excessively by using the centering magnets, deflection distortion and impaired linearity can occur. Some movement in horizontal direction can also occur when H.HOLD control is operated.

3) Width coil

Adjusts horizontal amplitude. Set to position where picture horizontal amplitude completely fills CRT mask, but loss of raster does not occur. Be sure to use a plastic hexagonal core driver for adjusting this coil. A metal tool (Allen wrench, etc.) can damage the core.



### 4.3 Adjustment notes

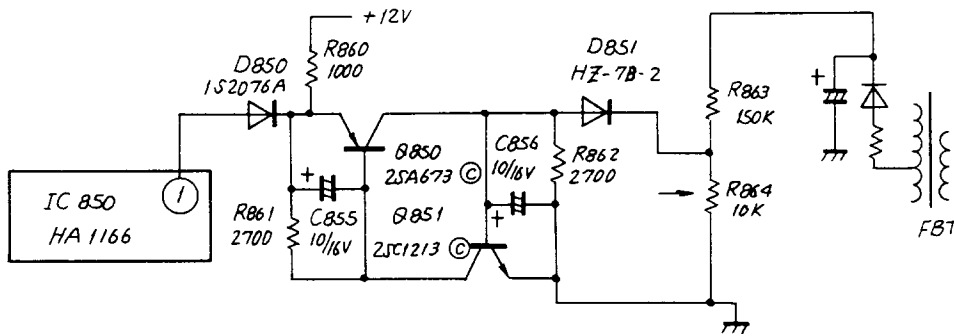


Fig. 5 X-ray prevention circuit

A X-ray prevention circuit is adopted in the horizontal deflection circuit. Note that in the following circumstances, horizontal oscillation stops and raster is not obtained.

- 1) Power supply voltage rises excessively above +12 V.
- 2) H.Freq. is reduced sharply.
- 3) Breakdown of resonating capacitors C867 & C868.

In even oscillation stops, set POWER switch to OFF and inspect for above 3 items.

To re-establish oscillation:

- 1) Return above 3 items to normal operating mode.
- 2) Set POWER switch to OFF and wait several seconds before setting it to ON.

## 5. MODIFICATION PROCEDURE

### Modification for external sync operation

- 1) Circuit diagram modification

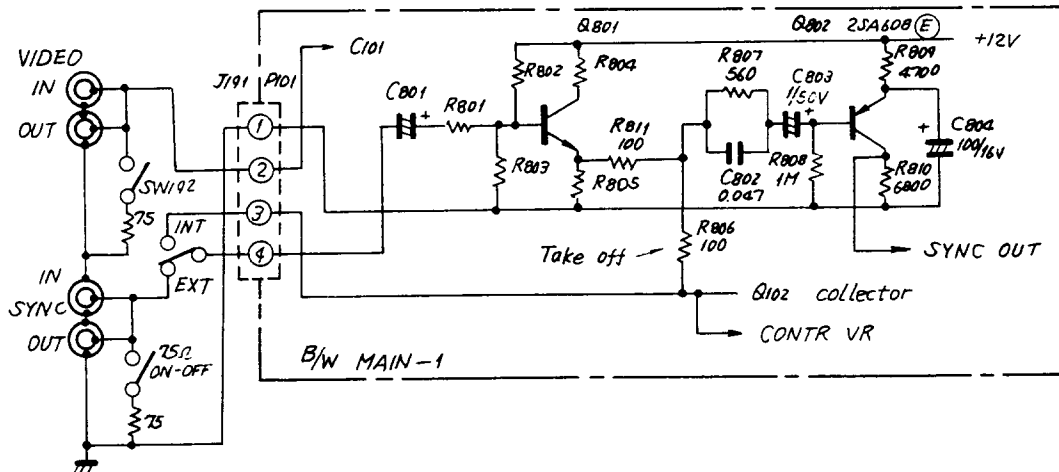


Fig. 6

- 2) Parts list

Part Code	Symbol	Description	Qty
JHS0022		UHF type connector, S-I 9321	2
SSV0105		Slide switch, SS(F) 12-07	2
RCR3875		Carbon resistor R1/4W 75Ω $\pm 5\%$	1
JYX0156		Terminal 29002#2	2
HTC0148	Q 801	Transistor 2SC458 C	1
RCE0139	R 801	Carbon resistor 1/4W 10kΩ $\pm 5\%$	1
"	802	" " " " " "	1
"	803	" " " " " "	1
RCE0137	804	" " " " 100Ω " "	1
RCE0172	805	" " " " 2000Ω " "	1
RCE0137	811	" " " " 100Ω " "	1
CEX0148	C 801	Elyc capacitor 16WV 33μF $\pm 50\%$ $-10\%$	1

3) Assembly wiring

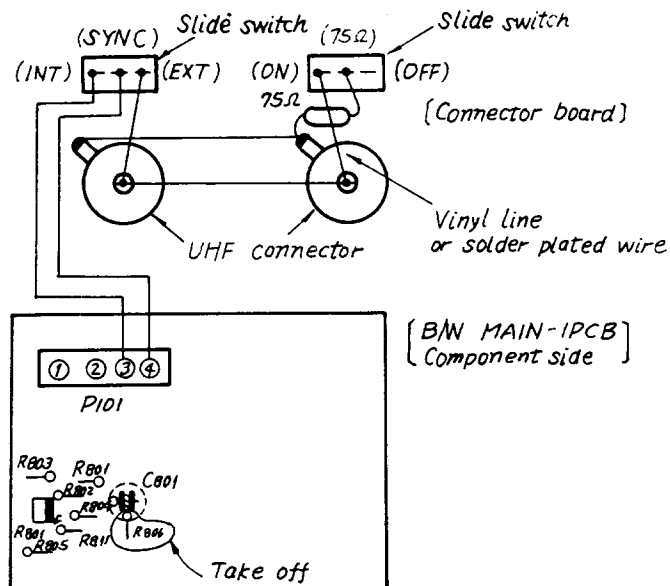


Fig. 7

4) Wiring steps

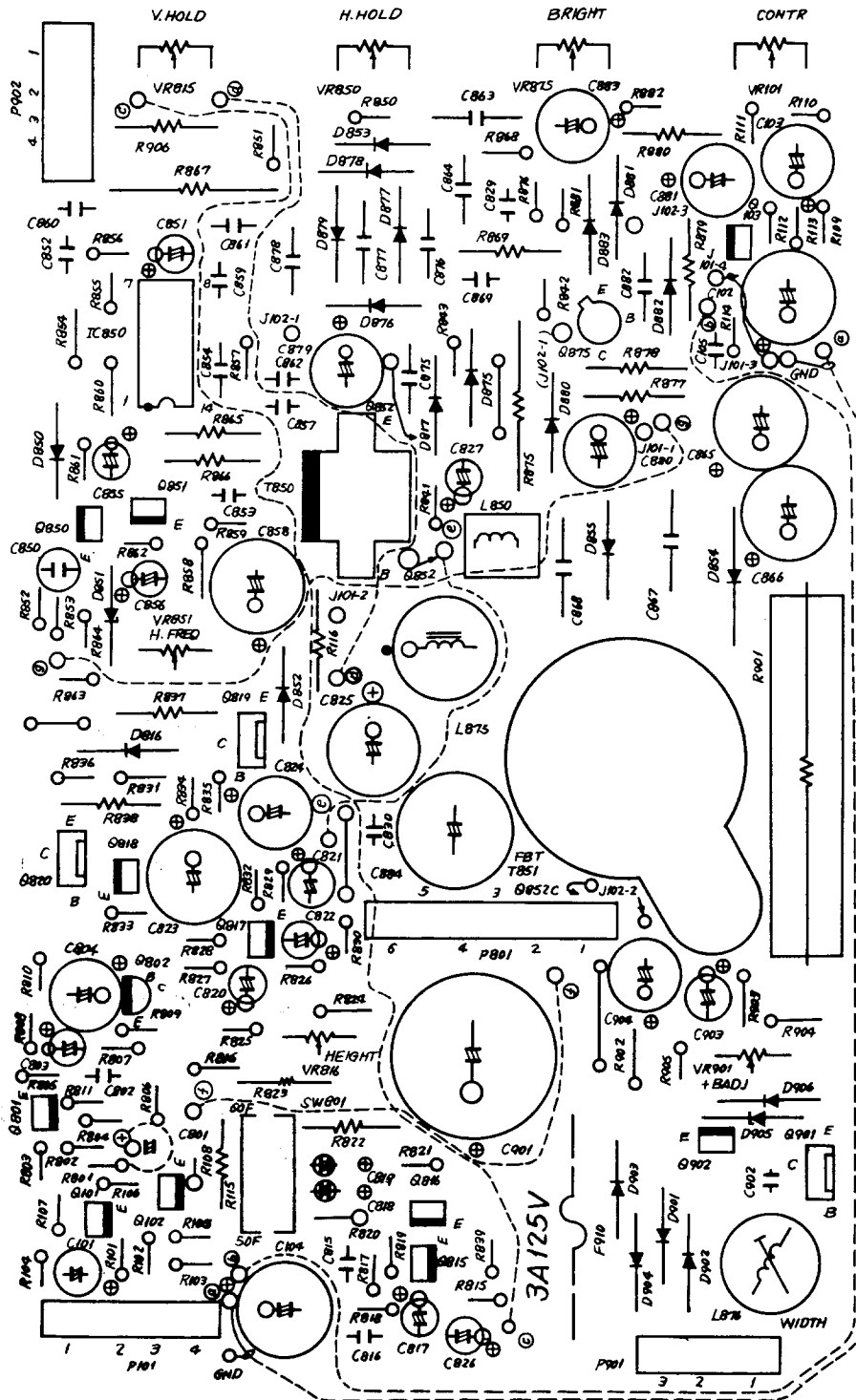
- a) Remove the blank panel.
- b) Install a UHF connector (and a slide switch) to the external sync connector panel.
- c) Make connection as illustrated in Fig. 7.
- d) Install the external sync connector panel instead of the blank panel.
- e) Remove R806 from B/W MAIN-1 PCB.
- f) Add Q801, R801-805, R811 and C801 onto B/W MAIN-1 PCB.

5) Operating check

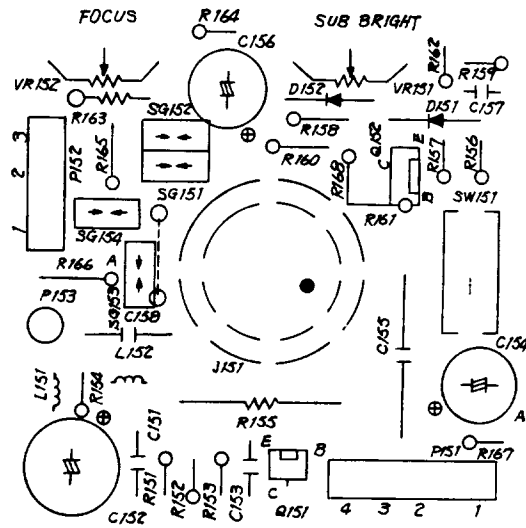
Apply specified signal (sync  $4 \pm 2$  V) and confirm operation. If sync signal is lower than specification, change R801 value by approx. 1 kΩ.

# 6. ELECTRICAL PARTS ARRANGEMENT

## B/W MAIN-1 PCB



# CRT-2 PCB



## 7. ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTICE --- Components marked with a  $\Delta$  have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this manual. Do not degrade the safety of this monitor through improper servicing.

### B/W MAIN-1 PCB

Part Code	Symbol	Description	Remarks
ILH0073	IC 850	<u>IC</u>	
		HA1166	
<u>Transistors</u>			
HTC0148	Q 101	2SC458-C-	
HTC0148	102	Not Used	
	103	2SC458-C-	
HTA0152	802	2SA608-E-	
HTC0148	815	2SC458-C-	
"	816	"	
HTA0085	817	2SA673-C-	
HTC0148	818	2SC458-C-	
HTD0073	819	2SD726-C-	
HTD0069	820	2SB690-C-	
HTA0085	$\Delta$ 850	2SA673-C-	
HTC0057	$\Delta$ 851	2SC1213-C-	
HTC0424	$\Delta$ 852	2SC681A	
HTD0073	901	2SD726-C-	
HTA0085	902	2SA673-C-	
<u>Diodes</u>			
HDS0110	D 101	1S2076A	
HDS0110	816	1S2076A	
"	817	"	
HDS0110	850	1S2076A	
HDH0124	$\Delta$ 851	HZ-7B-2	
HDS0110	852	1S2076A	
HDX0043	$\Delta$ 853	V09C	
HDX0014	854	U06C	
HDX0043	$\Delta$ 855	V09C	
HDX0043	$\Delta$ 875	V09C	
"	$\Delta$ 876	"	
"	$\Delta$ 877	"	
"	$\Delta$ 878	"	
"	$\Delta$ 879	"	
"	$\Delta$ 880	"	
HDV0013	$\Delta$ 901	V03C	
"	$\Delta$ 902	"	
"	$\Delta$ 903	"	
"	$\Delta$ 904	"	
HDH0033	905	HZ6B	
HDS0110	906	1S2076A	
<u>Resistors</u>			
RCE0138	R 101	Carbon 1/4W 1000 $\Omega$	$\pm 5\%$
RCE0177	102	" " 22k $\Omega$	"
"	103	" " "	"
RCE0139	104	" " 10k $\Omega$	"
RCE0137	105	" " 100 $\Omega$	"
RCE0206	106	Not Used	
	107	Carbon 1/4W 390 $\Omega$	$\pm 5\%$
RCE0137	108	Not Used	
	109	Carbon 1/4W 100 $\Omega$	$\pm 5\%$
RCE0177	110	" " 22k $\Omega$	"
RCE0138	111	" " 1000 $\Omega$	"
RCE0139	112	" " 10k $\Omega$	"
RCE0247	113	" " 8200 $\Omega$	"
RCE0138	114	" " 1000 $\Omega$	"
RCR3891	115	Not Used	
	116	Carbon 1/2W 8.2 $\Omega$	$\pm 5\%$

Part Code	Symbol	Description	Remarks
RCE0137	R 806	Carbon 1/4W 100 $\Omega$	$\pm 5\%$
RCE0226	807	" " 560 $\Omega$	"
RCE0141	808	" " 1M $\Omega$	"
RCE0216	809	" " 4700 $\Omega$	"
RCE0238	810	" " 6800 $\Omega$	"
RCE0227	815	Carbon 1/4W 5600 $\Omega$	$\pm 5\%$
RCE0216	816	" " 4700 $\Omega$	"
"	817	" " "	"
RCE0228	818	" " 56k $\Omega$	"
RCE0227	819	" " 5600 $\Omega$	"
RCE0196	820	" " 3300 $\Omega$	"
RCE0167	821	" " 1800 $\Omega$	"
RCR3899	822	" 1/2W 12 $\Omega$	"
RCR3885	823	" " 2.2 $\Omega$	"
RCE0186	824	" 1/4W 2700 $\Omega$	"
RCE0177	825	" " 22k $\Omega$	"
RCE0228	826	" " 56k $\Omega$	"
RCE0177	827	" " 22k $\Omega$	"
RCE0156	828	" " 1500 $\Omega$	"
RCE0174	829	" " 22 $\Omega$	"
RCE0147	830	" " 1200 $\Omega$	"
RCE0166	831	" " 180 $\Omega$	"
RCE0196	832	" " 3300 $\Omega$	"
RC0225	833	" " 56 $\Omega$	"
RCE0175	834	" " 220 $\Omega$	"
"	835	" " "	"
RCE0236	836	" " 68 $\Omega$	"
RCR3883	837	" 1/2W 1 $\Omega$	"
"	838	" " "	"
RCE0138	839	" 1/4W 1000 $\Omega$	"
"	840	Not Used	
RCE0177	841	Carbon 1/4W 22k $\Omega$	$\pm 5\%$
RCE0195	842	" " 330 $\Omega$	"
RCE0158	850	Carbon 1/4W 150k $\Omega$	$\pm 5\%$
RCE0198	851	" " 330k $\Omega$	"
RCE0157	852	" " 15k $\Omega$	"
RCE0158	853	" " 150k $\Omega$	"
"	854	" " "	"
RCE0157	855	" " 15k $\Omega$	"
RCE0247	856	" " 8200 $\Omega$	"
RCE0176	857	" " 2200 $\Omega$	"
RCE0196	858	" " 3300 $\Omega$	"
RCE0247	859	" " 8200 $\Omega$	"
RCE0138	860	" " 1000 $\Omega$	"
RCE0186	861	" " 2700 $\Omega$	"
"	862	" " "	"
RCE0158	$\Delta$ 863	" " 150k $\Omega$	"
RCE0139	$\Delta$ 864	" " 10k $\Omega$	"
RCR3893	$\Delta$ 865	" 1/2W 100 $\Omega$	"
RCR3892	$\Delta$ 866	" " 10 $\Omega$	"
RMR2976	$\Delta$ 867	Metal 2W 4700 $\Omega$	"
RMR2951	$\Delta$ 868	" 1W 10k $\Omega$	"
RMR3002	$\Delta$ 869	" " 6800 $\Omega$	"
RMR2973	$\Delta$ 875	Metal 2W 33 $\Omega$	$\pm 5\%$
RCE0217	882	Carbon 1/4W 47k $\Omega$	$\pm 5\%$
RCR4050	889	Carbon 1/4W 100k $\Omega$	$\pm 5\%$
RWE0001	$\Delta$ 901	Wire Wound 10W 27 $\Omega$	$\pm 5\%$
RCR3937	902	Carbon 1/2W 330 $\Omega$	"
RCE0176	903	" 1/4W 2200 $\Omega$	"
RCE0156	904	" " 1500 $\Omega$	"
RCE0136	905	" " 10 $\Omega$	"

Part Code	Symbol	Description	Remarks
<u>Capacitors</u>			
CEX0184	C 101	Elyc 16V 33μF	
CEX0172	102	" 10V 330μF	
CEX0180	103	" 16V 100μF	
CEX0185	104	" 330μF	
CCT0098	105	Ceramic 50V 0.047μF	
CQA0013	802	Plastic 50V 0.047μF	±10%
CEX0218	803	Elyc " 1μF	
CEX0180	804	" 16V 100μF	
CQA0013	815	Plastic 50V 0.047μF	±10%
CQA0015	816	" " 0.1μF	"
CEX0218	817	Elyc " 1μF	
CSC0173	818	Tantal 16V 10μF	+20%
CST0398	819	" 2.2μF	"
CEX0179	820	Elyc " 10μF	
CEX0184	821	" 33μF	
CEX0218	822	" 50V 1μF	
CEX0185	823	" 16V 330μF	
CEX0180	824	" 100μF	
CEX0169	825	" 10V 1000μF	
CEX0218	826	" 50V 1μF	
CEX0184	827	" 16V 33μF	
CQA0015	830	Plastic 50V 0.1μF	±10%
CQS0020	850	Plastic 50V 0.0033μF	±5%
CEX0218	851	Elyc " 1μF	
CQA0007	852	Plastic " 0.0047μF	±5%
CCU0113	853	Ceramic " 560 pF	"
"	854	" " "	"
CEX0179	855	Elyc 16V 10μF	
"	856	" " "	
CQA0011	857	Plastic 50V 0.022μF	±5%
CEX0185	858	Elyc 16V 330μF	
CQA0013	859	Plastic 50V 0.047μF	±10%
"	860	" " "	"
"	861	Not Used	
CQA0005	862	Plastic 50V 0.002μF	±10%
CQT0023	△ 863	" 250V 0.22μF	+20%
CQT0010	△ 864	" 0.1μF	"
CEX0185	△ 865	Elyc 16V 330μF	
"	△ 866	" " "	
CQD0012	△ 867	Plastic 630V 0.047μF	±10%
CQD0006	△ 868	" 0.022μF	"
CQT0012	△ 875	Plastic 250V 0.047μF	±10%
"	△ 876	" " "	"
"	△ 877	" " "	"
"	△ 878	" " "	"
CEX0248	△ 879	Elyc 450V 1μF	
CEX0238	△ 880	" 160V 3.3μF	
"	881	Not Used	
"	882	" " "	
CEX0237	△ 883	Elyc " (BP) 160V 1μF	
CEX0210	△ 884	" 25V 4.7μF	
CEE0054	△ 901	Elyc 25V 3300μF	
CQA0009	902	Plastic 50V 0.01μF	±10%
CEX0184	903	Elyc 16V 33μF	
CEX 0180	904	" 100μF	
<u>Var. Resistors</u>			
RDR0432	VR 101	Carbon 1000Ω	CONTR
RDR0425	815	Carbon 5000Ω	V HOLD
RDV0198	816	" " "	
RDR0426	850	Carbon 50kΩ	H HOLD
RDV0198	851	" 5000Ω	
RDR0433	△ 875	Carbon 500kΩ	BRIGHT
RDV0197	901	Carbon 1000Ω	
<u>Coils</u>			
TLF0041	L △ 850	27μH ±10%	
TLL0050	L △ 876	LC-0168	
<u>Transformers</u>			
TTH0006	T △ 850	H. Drive HD-12	
TTT0226	△ 851	FBT TC-0448	

Part Code	Symbol	Description	Remarks
<u>Connectors</u>			
JBX0342	P △ 101	9952#3 (4P)	
JBX0344	8	"	
JBX0344	801	9952#5 (6P)	
JBX0341	901	9952#2 (3P)	
JBX0368	J △ 101	34203#3 (4P)	
JBX0367	△ 102	34202#3 (3P)	
Pin 29002-2 (for J101-102)			
7 pcs			
<u>Miscellaneous</u>			
EFG0525	F △ 901	Fuse 3A	J, E/K type
EFL0140	△ "	" 3A UL	U, C type
EFY0002	XF 901	Fuse Clip 85PN-0815	2 pcs (J, E/K)
ETS0112	"	Terminal 9773	2 pcs (U, C)
"	XR 901	" "	2 pcs
EHX0023	RQ 819	Heat Sink 4054907	
"	820	" "	
SSV0109	SW 801	Switch, Slide SSFB12-07P	

### CRT-2 PCB

Part Code	Symbol	Description	Remarks
<u>Transistor</u>			
HTC0085	Q △ 151	2SC1514	
<u>Resistors</u>			
RCE0225	R 151	Carbon 1/4W 56Ω	±5%
RCE0215	152	" 470Ω	"
RCE0165	153	" 18Ω	"
RCE0186	154	" 2700Ω	"
RMR2980	△ 155	Metal 2W 6800Ω	"
RCE0218	159	Carbon 1/4W 470kΩ	±5%
"	160	Not Used	
RCE0156	161	Carbon 1/4W 1500Ω	±5%
RCE0216	162	" 4700Ω	"
RCR4073	163	" 2200Ω	"
RCE0178	164	" 220kΩ	"
RCE0140	165	" 100kΩ	"
"	166	" " "	"
<u>Var. Resistors</u>			
RCR3896	VR 151	Carbon 1/2W 100kΩ	±5%
RCE0140	152	" 1/4W "	"
<u>Capacitors</u>			
CCU0109	C 151	Ceramic 50V 220 pF	±5%
CEX0172	152	Elyc 10V 330μF	
CQA0005	153	Plastic 0.0022μF	±10%
CEX0237	△ 154	Elyc 160V 1μF	
CQT0026	△ 155	Plastic 250V 0.47μF	±20%
CQT0016	158	Plastic 400V 0.047μF	±20%
<u>Coils</u>			
TLF0068	L 151	120μH ±10%	
TLF0067	152	100μH "	
<u>Connectors</u>			
JBX0342	P 151	9952#3 (4P)	

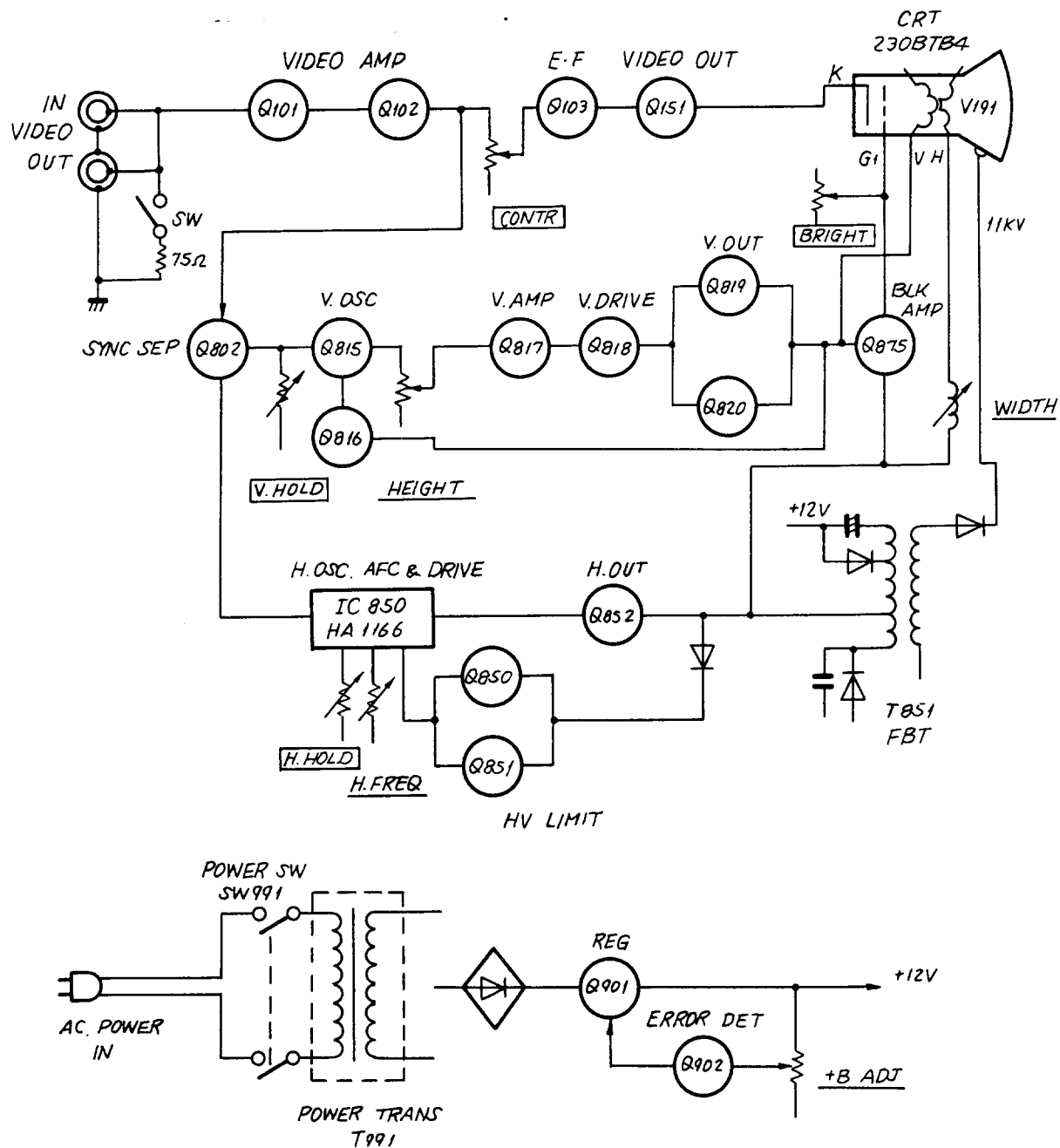
Part Code	Symbol	Description	Remarks
JBX0341 ETP0069	P 152 153	9952#2 (3P) Contact pin_GT	
<u>Miscellaneous</u>			
EZZ0056	SG $\Delta$ 151	Spark Gap AG-20-2kV	
EZZ0056	152	Not Used	
EZZ0056	$\Delta$ 153	Spark Gap AG-20-2kV	
DYX0010	J 151	CRT Socket 1426#2	

## CHASSIS

Part Code	Symbol	Description	Remarks
DPX0067	V $\Delta$ 191	<u>Picture Tube</u> 230BTB4	
RCR4118	R 191	<u>Resistor</u> Carbon 1/4W 75 $\Omega$ $\pm$ 5%	
<u>Transformers</u>			
TTT0116	T $\Delta$ 991	Power TC-0444A	J type
TTT0117	$\Delta$ "	" TC-0445	U, C type
TTT0130	$\Delta$ "	" TC-0464	E/K type
<u>Switches</u>			
SSV0105	SW 191	Slide SS(F) 12-07	
SSS0063	$\Delta$ 991	See San SDE-4SB-2	
JYX0262		Pin 29002-2 (for J191, 891 & 991)	13 pcs
JYX0169		Pin 29000 (for J194)	
JBX0368	J 191	34203#2 (4P)	
JBX0374	194	34338 (1P)	
JHS0022	195	S-19321 M-type	
"	196	"	
JBX0370	$\Delta$ 891	34205#2 (6P)	
JBX0367	$\Delta$ 991	34202#2 (3P)	
<u>Miscellaneous</u>			
TLL0113	DY $\Delta$ 891	DEF Yoke LC-0165B	
BBZ0073	P $\Delta$ 991	Code Set VM-1165B (2.5m)	J type
BBZ0060	$\Delta$ "	" VM-0033 (8F)	U type
BBZ0055	$\Delta$ "	" VM-0099 (8F)	E/K type
BBZ0159	$\Delta$ "	" VM-0033 (8F)	C type
EFL0089	F $\Delta$ 991	Fuse 1A	U, C, E/K
ETB0384	XF 991	Terminal ML-3182-5P	U, C, E/K

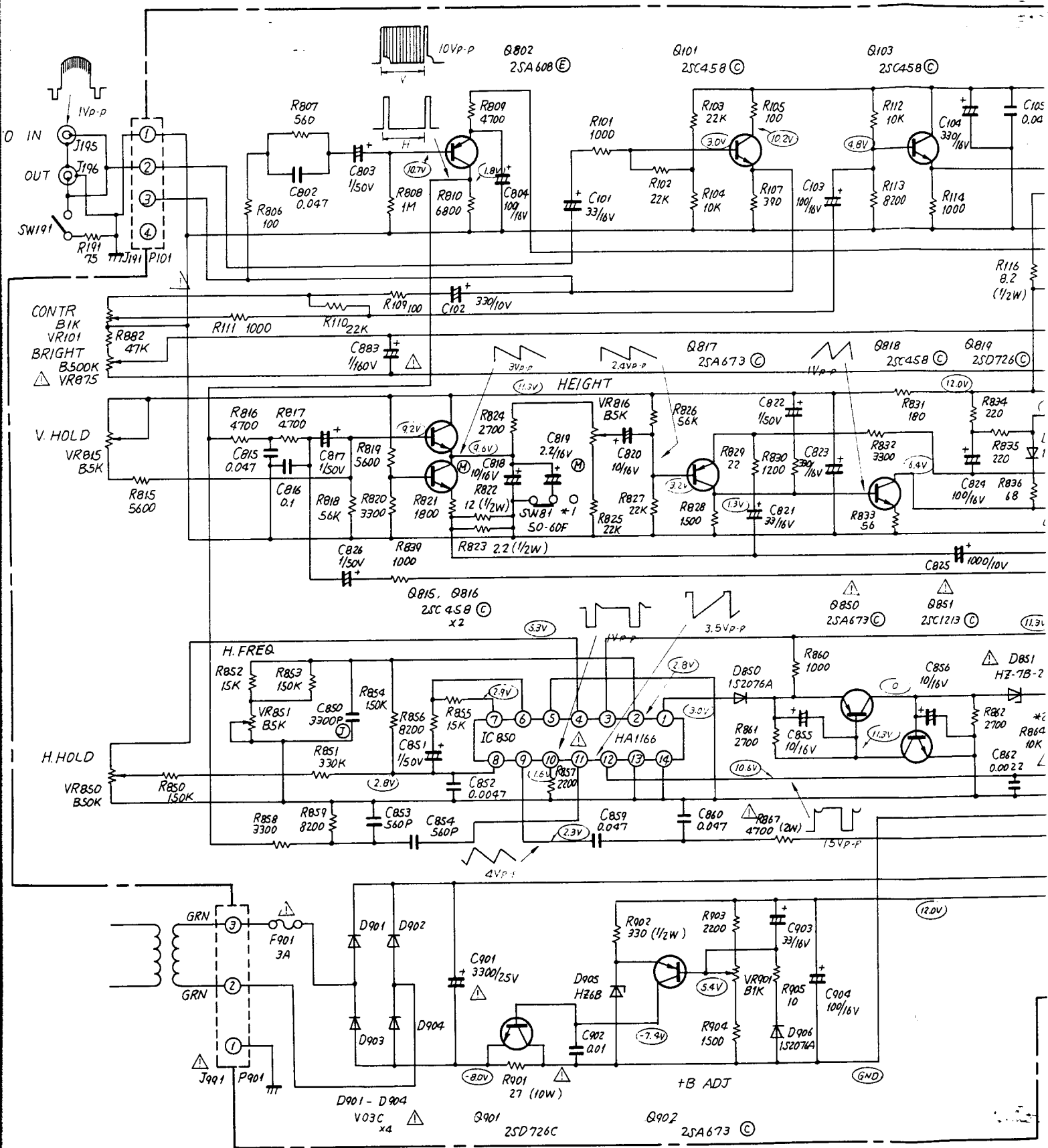


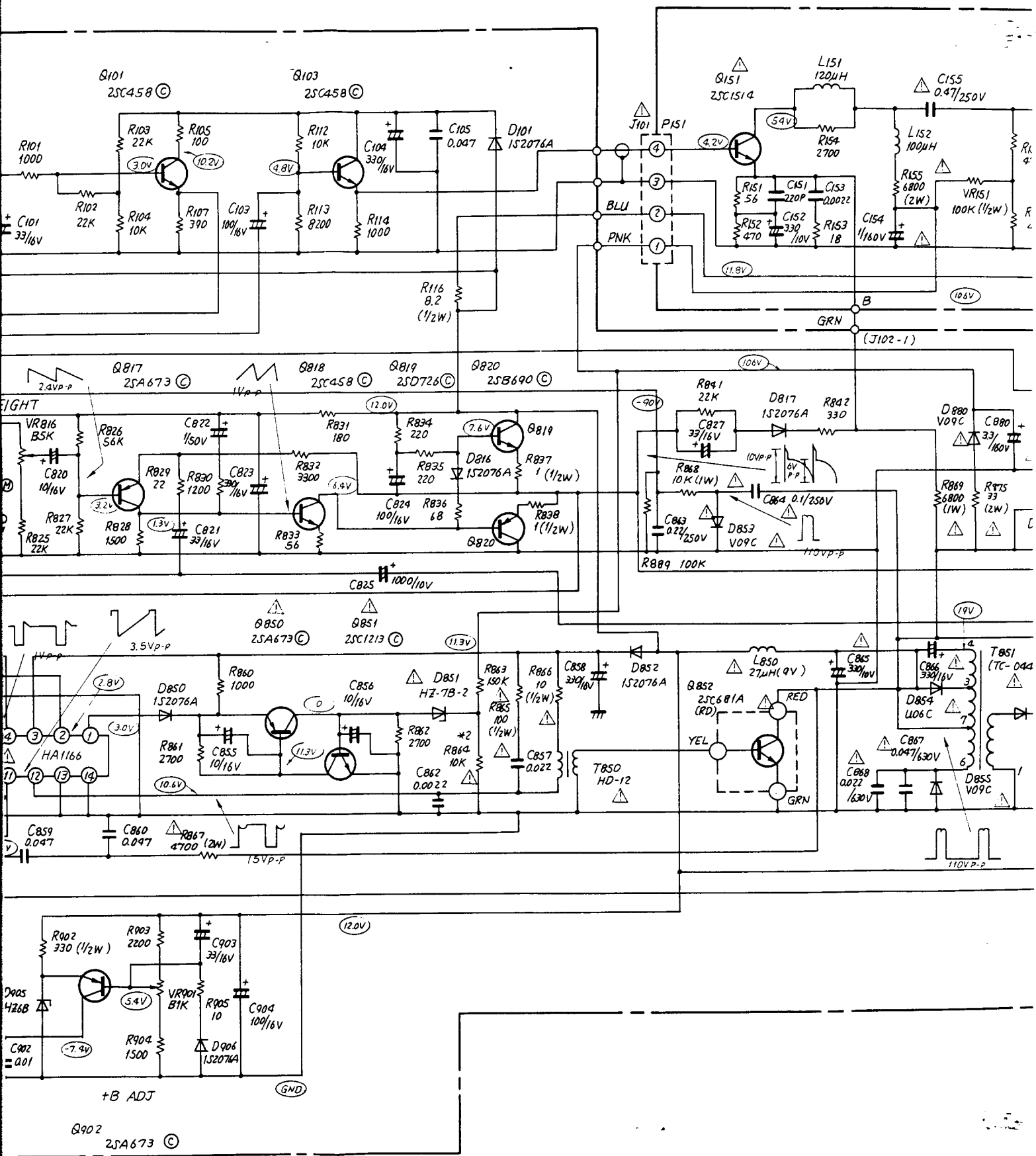
## 8. BLOCK DIAGRAM

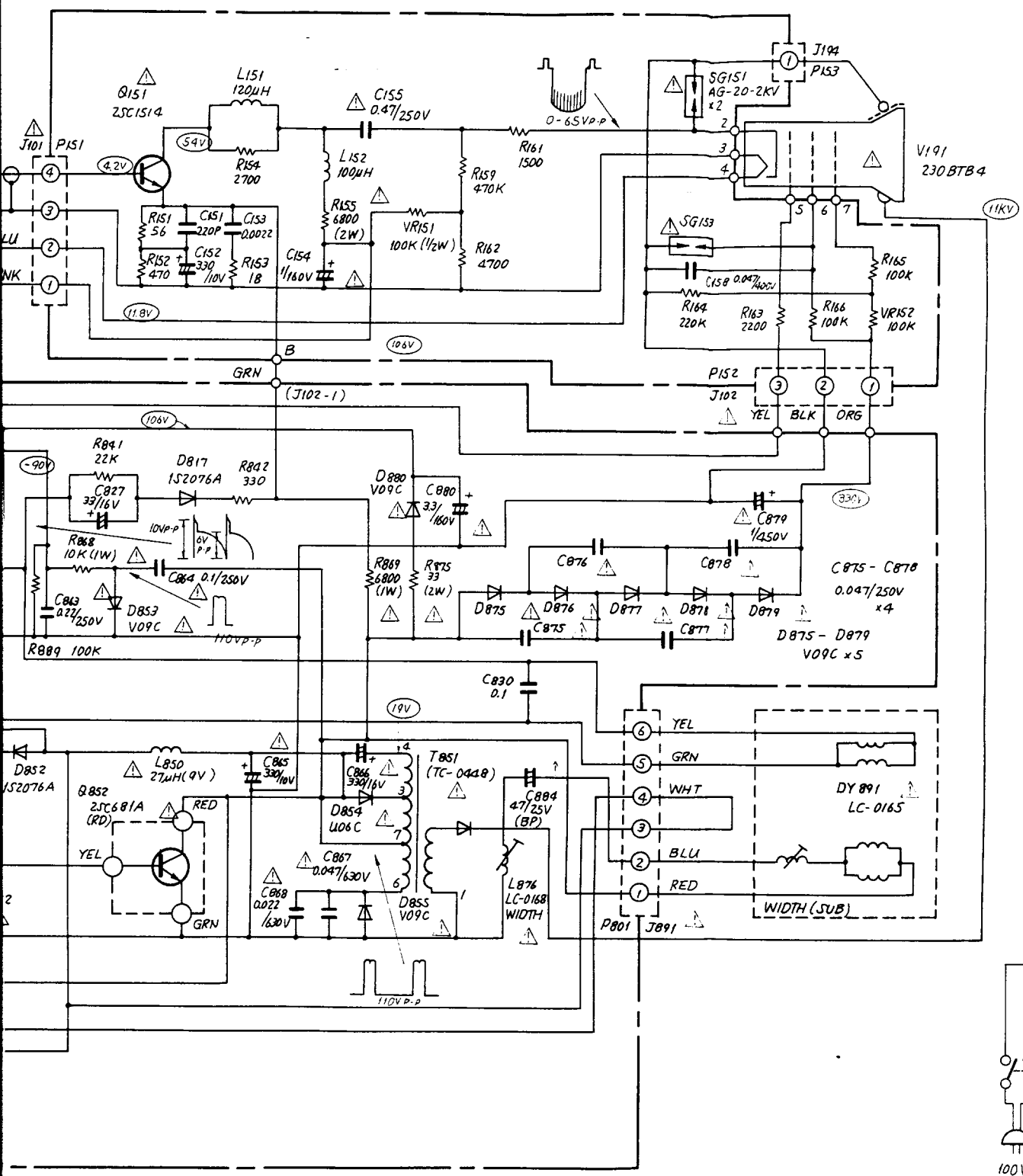


VIDEO MONITOR, VM-910A  
BLOCK DIAGRAM

# SCHEMATIC DIAGRAM







Notes

- 1. U
- 2. U
- 3. \*
- 4. \*

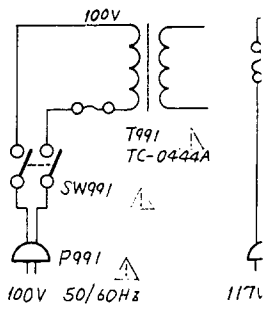
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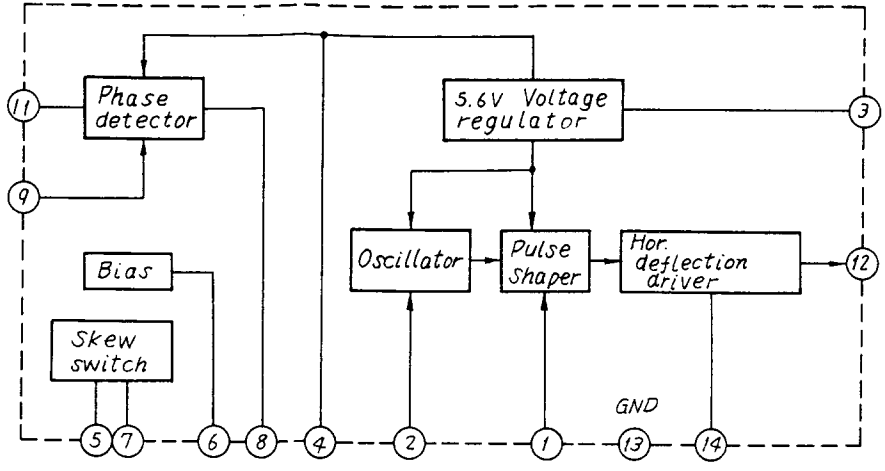
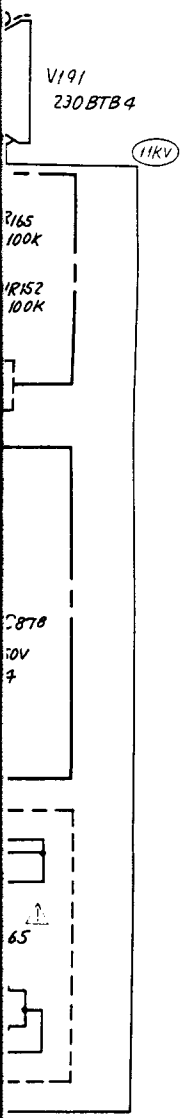
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VM-910AJ





Block Diagram for IC 850 HA1166

Notes

1. Unless otherwise specified, all resistors are in ohms, 1/4 watt.
2. Unless otherwise specified, all capacitors are in  $\mu\text{F}$ , 50V.
3. \*1. Used only for J type.
4. \*2. Factory adjusted.

PRODUCT SAFETY NOTICE

Components marked with a  $\Delta$  have special characteristics important to safety. Before replacing any of these components, read carefully the "PRODUCT SAFETY NOTICE" of this manual. Do not degrade the safety of this MONITOR through improper servicing.

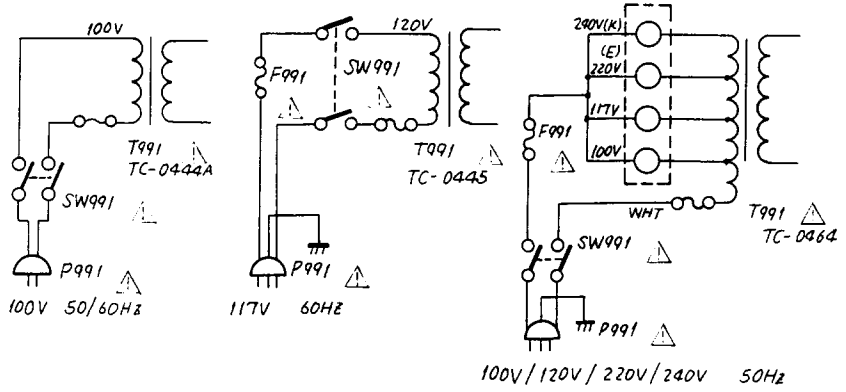
FUNDAMENTAL SCHEMATIC DIAGRAM

Differences may be found between this schematic diagram and the servicing unit due to various improvements made hereafter.

VM-910AJ

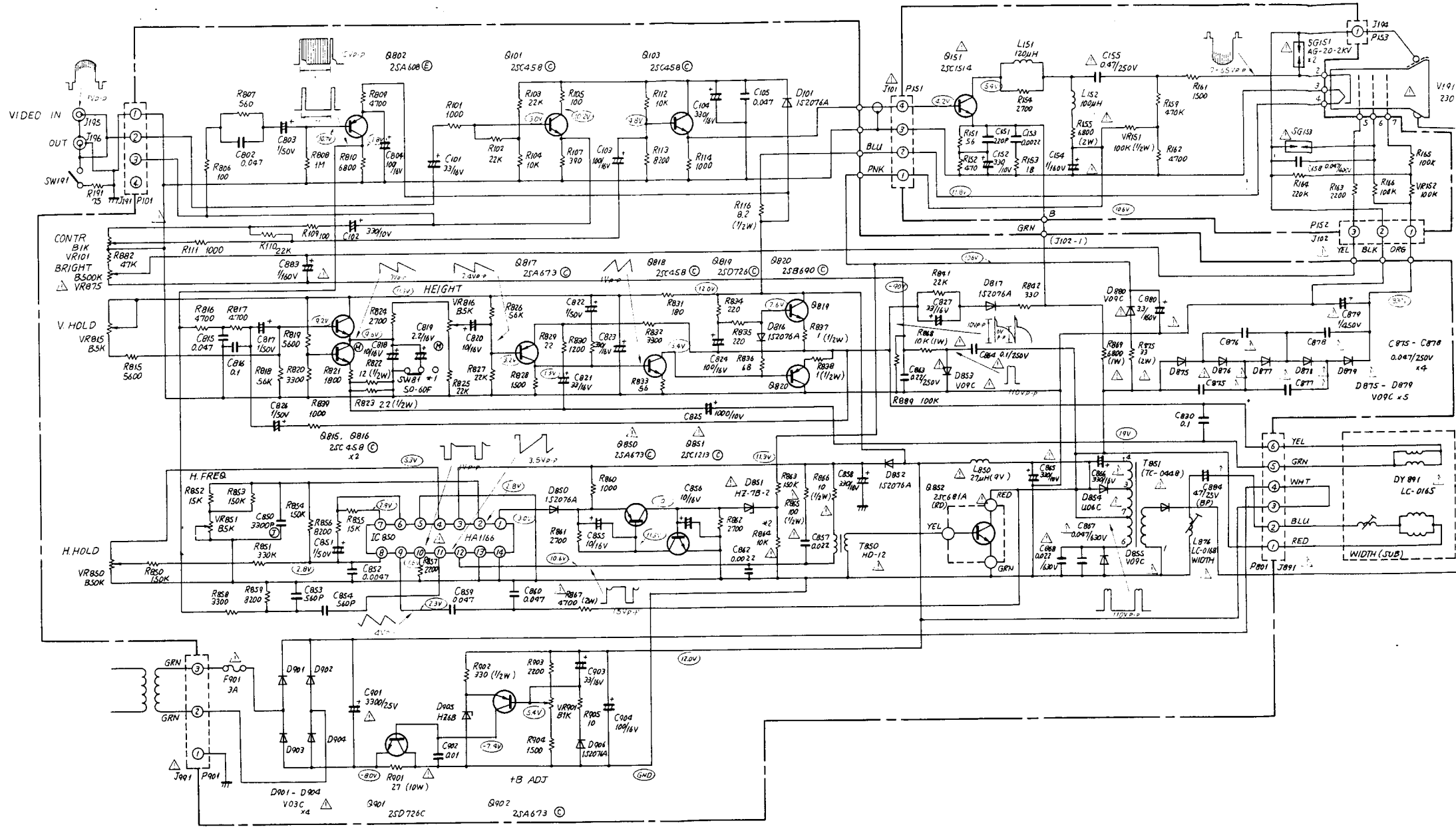
VM-910AUC

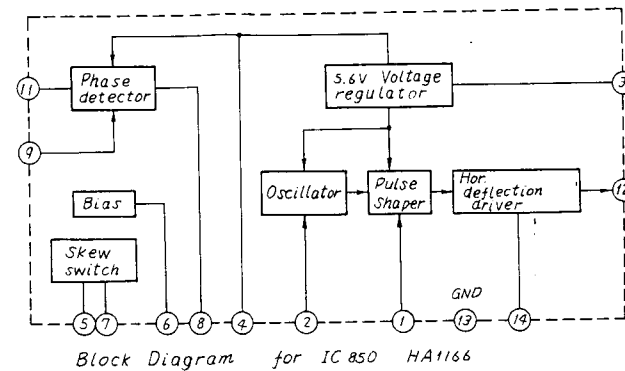
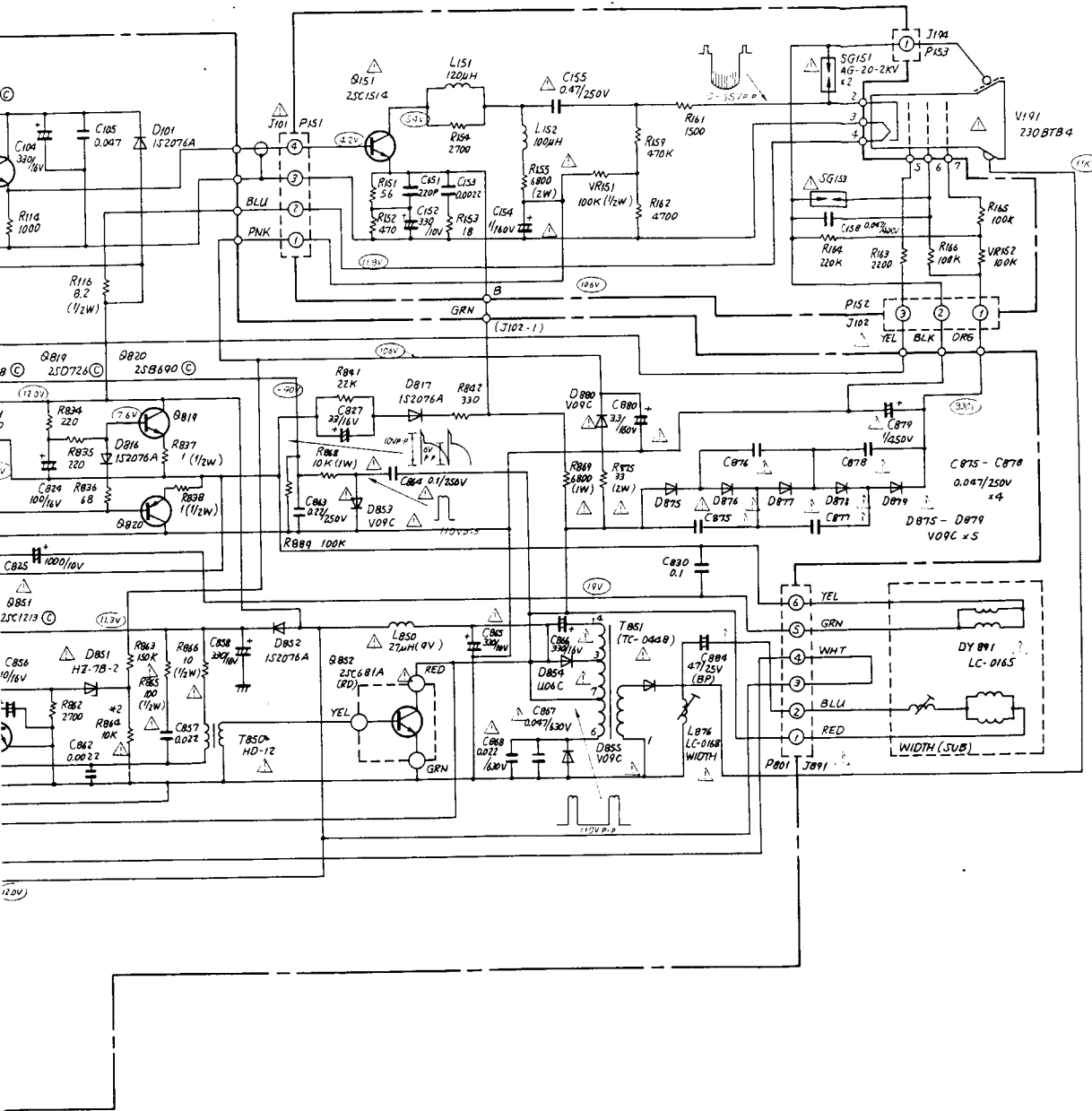
VM-910AE/K



VIDEO MONITOR, VM-910A  
SCHEMATIC DIAGRAM

# 9. SCHEMATIC DIAGRAM





Notes

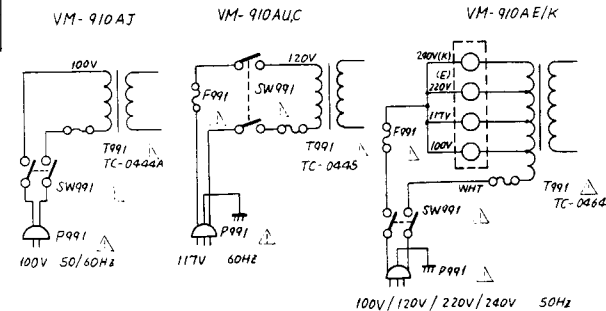
- 1 Unless otherwise specified, all resistors are in ohms,  $\frac{1}{4}$  watt.
- 2 Unless otherwise specified, all capacitors are in  $\mu$ F, 50V.
- 3 \*1. Used only for J type.
- 4 \*2. Factory adjusted

PRODUCT SAFETY NOTICE

Components marked with a  $\Delta$  have special characteristics important to safety. Before replacing any of these components, read carefully the "PRODUCT SAFETY NOTICE" of this manual. Do not degrade the safety of this MONITOR through improper servicing.

FUNDAMENTAL SCHEMATIC DIAGRAM

Differences may be found between this schematic diagram and the servicing unit due to various improvements made hereafter.



VIDEO MONITOR, VM-910A

SCHEMATIC DIAGRAM

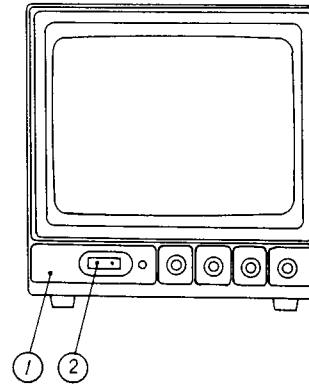
## 10. MECHANICAL PARTS LIST AND EXTERNAL VIEW

### 1) CRT replacement

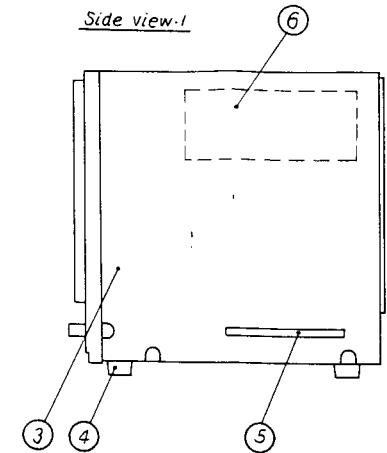
1. Take out 2 screws from both sides of front mask (1) and remove front mask.
2. Take out 2 screws each from top and bottom of rear cover (16) and remove rear cover.
3. Remove deflection yoke (9) and CRT-2PC board (12).
4. Remove 4 CRT mounting nuts.
5. Remove CRT from front of unit and replace.
6. Reassembly by reversing above steps.

Part Code	Symbol	Description	Remarks
1002995C	1	Mask, Front	
8322426A	2	Power Switch	
3022087A	3	Cabinet	
4058587A	4	Foot	U, C type
8354069A	5	Label, Side	" , CSA
3024612B	6	Picture Tube	
4054315A	7	Heat Sink	E type
8354079D	8	Deflection Yoke	U, C type
8316098A	9	Label, X-Ray	
8318896A	10	" , UL	
4054721B	11	CRT-2PCB	
4054721C	12	Switch	
3024848A	13	Panel, Blank	
4058790B	14	" , Connector	U type
4054278A	15	Bush, Power Cord	C, E, K type
8355628A	16	Cover, Rear	
2012735A	17	Protector	
2012726B	18	Label, CSA	C type
4044797E	19	" , UL-CSA	U, C type
4053815A	20	Chassis	U, E, K type
4056872A	21	"	C type
	22	Lug C5	U, C type
	23	Power Transformer	
	24	PCB Holder	
	25	B/W MAIN-1 PCB	

Front view



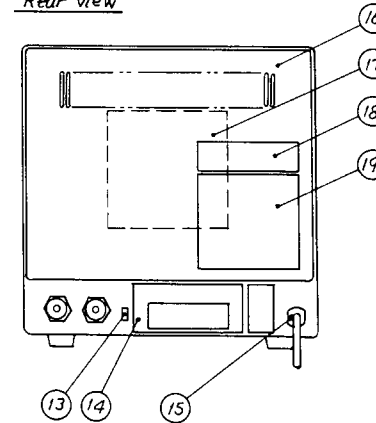
Side view-1



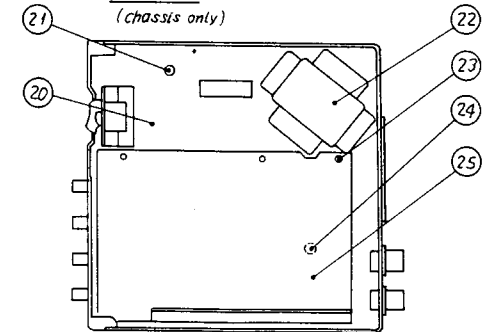
### 2) B/W MAIN PC board replacement

1. Take out 2 screws from both sides of front mask (1) and remove front mask.
2. Take out 2 screws each from top and bottom of rear cover (16) and remove rear cover.
3. Place monitor on its side and take out 4 screws from both sides of cabinet (3).
4. Place chassis (20) in the normal position.
5. Disconnect connectors of B/W MAIN-1 PC board.
6. Take out 2PC board mounting screws [at side of heatsink (8)]. (At opposite side held by PC board holder.)
7. Remove PC board and replace.
8. Reassemble by reversing above steps.

Rear view



Top view (chassis only)



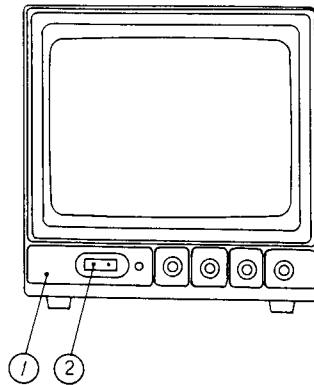


**LIST AND EXTERNAL VIEW**

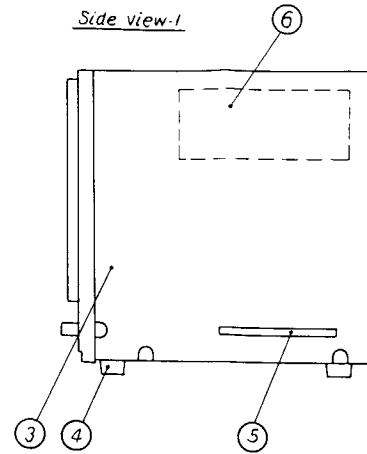
from both sides of  
 and remove front mask.  
 each from top and  
 er (16) and remove  
 yoke (9) and CRT-  
 nting nuts.  
 front of unit and  
 ersing above steps.  
 placement  
 from both sides of  
 and remove front mask.  
 each from top and  
 er (16) and remove  
 s side and take out  
 sides of cabinet (3).  
 in the normal  
 ors of B/W MAIN-1  
 d mounting screws  
 x (8) ].  
 eld by PC board  
 and replace.  
 ersing above steps.

Part Code	Symbol	Description	Remarks
1002995C	1	Mask, Front	
	2	Power Switch	
8322425A	3	Cabinet	
1022087A	4	Foot	
4058587A	5	Label, Side	U,C type
8354080A	6	" , CSA	
	7	Picture Tube	
1024612B	8	Heat Sink	
	9	Deflection Yoke	
4054115A	10	Label, X-Ray	E type
8354079D	11	" , UL	U,C type
	12	CRT-PCB	
	13	Switch	
8316098A	14	Panel, Blank	
8318896A		" , Connector	U type
4054721B	15	Bush, Power Cord	C, E, K type
4054721C		"	type
1024848A	16	Cover, Rear	
4058790B	17	Protector	C type
4054279A	18	Label, CSA	U,C type
8355628A	19	" , UL-CSA	U, E, K type
2012726A	20	Chassis	type
		"	C type
2012726B	21	Lug C5	
4044797E	22	Power Transformer	
	23	PCB Holder	U, C type
4051815A	24	"	
4056872A	25	B/W MAIN-1 PCB	

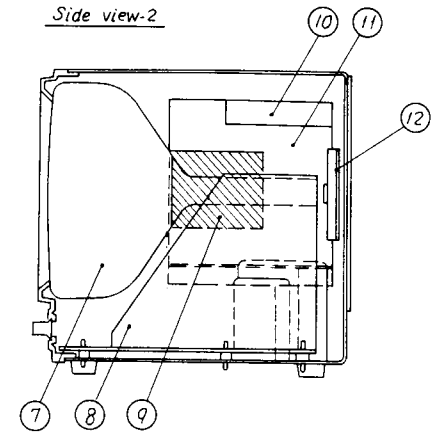
*Front view*



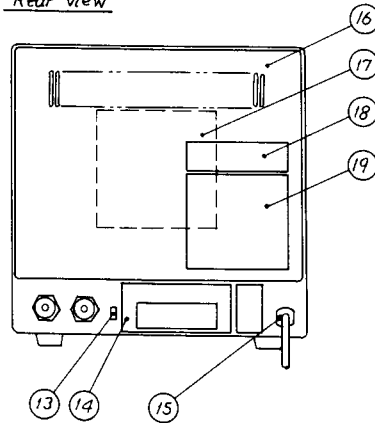
*Side view-1*



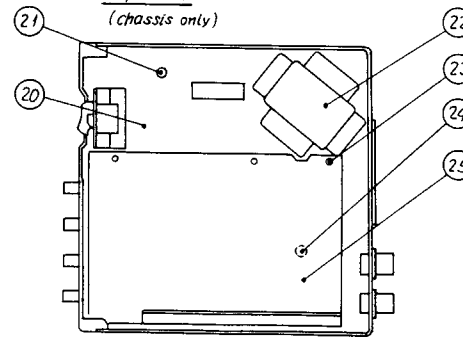
*Side view-2*



*Rear view*



*Top view (chassis only)*



**VIDEO MONITOR, VM-910A  
 EXTERNAL VIEW**