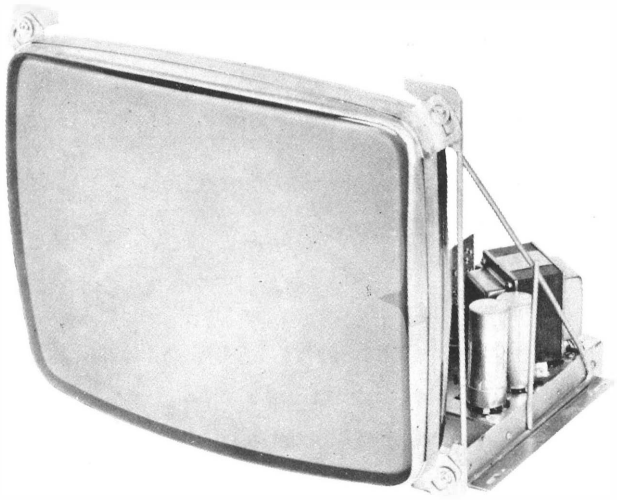
SERVICE MANUAL

TV Monitor

MODEL TM-600
TM-623



GENERAL

TM-600 and TM-623 is a Television Monitor for video game. Designed for operation either from a main supply of 115 Volts/50-60 Hz AC or 230 Volts/50-60 Hz AC.

The complete monitor incorporates 1 Picture tube, 1 Integrated circuit, 20 Silicon Transistors, 18 Silicon diodes, 2 Germanium diodes, 1 High Voltage Selenium diode.

This model is equipped with 5 V/3 A power supply for the operation of TTL control board and operation double pulse type AFC circuit to obtain stable picture.

TEC VIDEOELECTRONICS INC

SPECIFICATIONS

POWER SUPPLY INPUT

115 Volts/230 volts 50-60 Hz ± 10 %

POWER CONSUMPTION

60 Watts

VIDEO INPUT

0.5 Volts composite P/P for 100 Volts
2.5 Volts P/P maximum.
Sync negative at input.

PICTURE TUBE

19″ (500 mm), 114° deflection.
23″ (584. 20mm), 110° deflection.
Integral implosion Protection.

HIGH VOLTAGE

18 KV nominal at 0 Microamperes
beam current.

HORIZONTAL RETRACE TIME

12 microseconds maximum.

RESOLUTION

500 Lines minimum at picture center.

SCANNING FREQUENCY

Horizontal 15.750 Hz ± 500 Hz
Vertical 50-60 Hz

TONE BURST AMPLIFIER

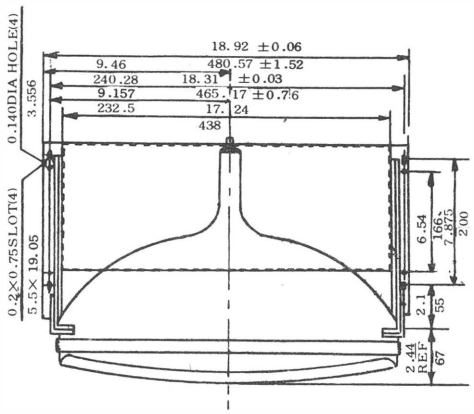
5 Watts peak output with TTL drive
at nominal line, fully adjustable
4 Watts peak output at low line.

ENVIRONMENT

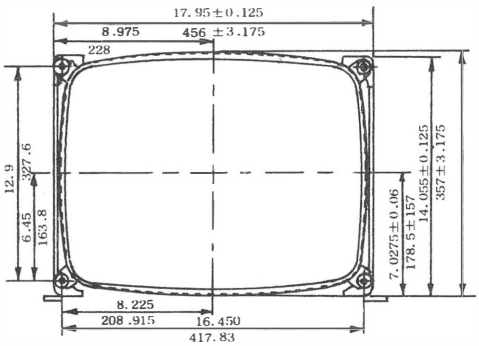
Operation : Maximum ambient temperature
50°C(122°F)
Storage : Temperature range from −40°C
to +65°C

DIMENSIONS: INCHS
MILLIMETER

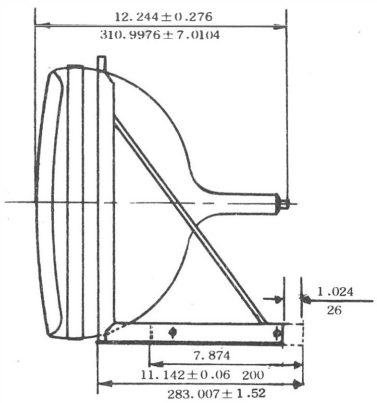
TOP VIEW (TM-600)



FRONT VIEW

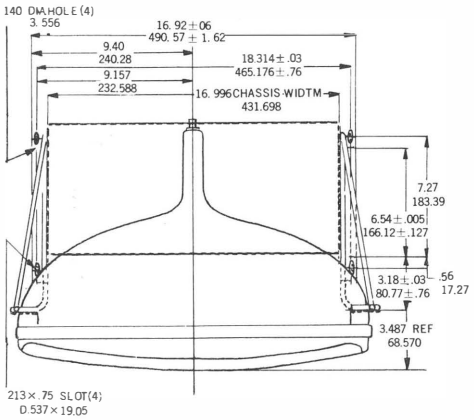


SIDE VIEW

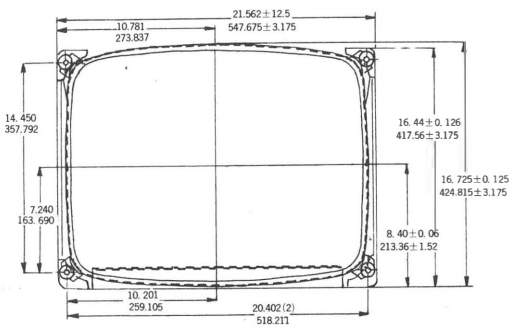


DIMENSIONS: INCHS
MILLIMETER

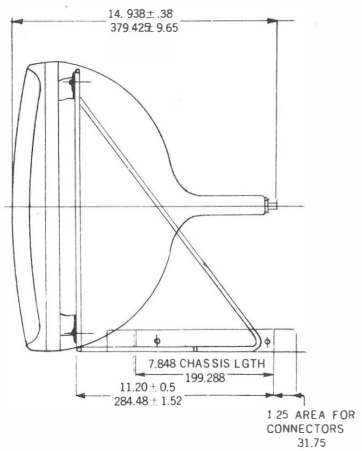
TOP VIEW (TM-623)

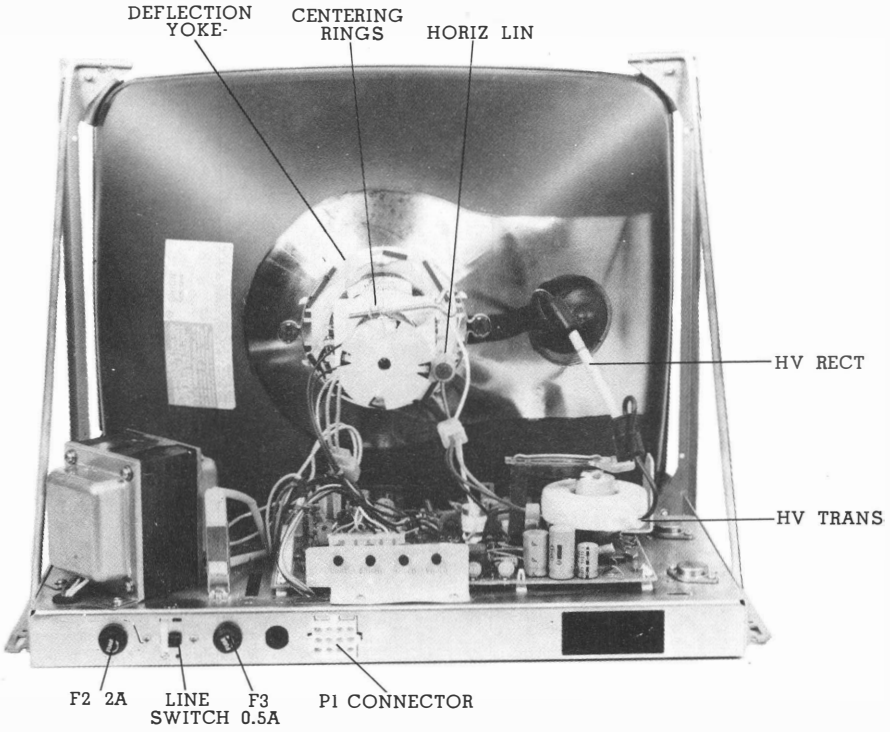


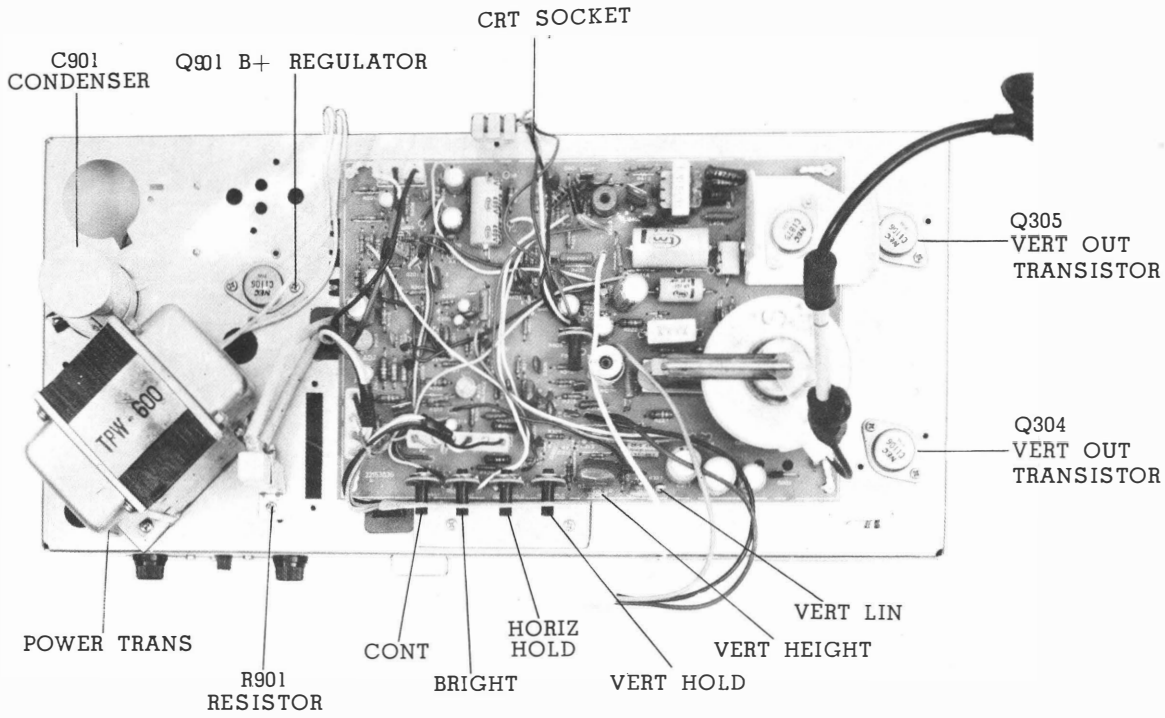
FRONT VIEW

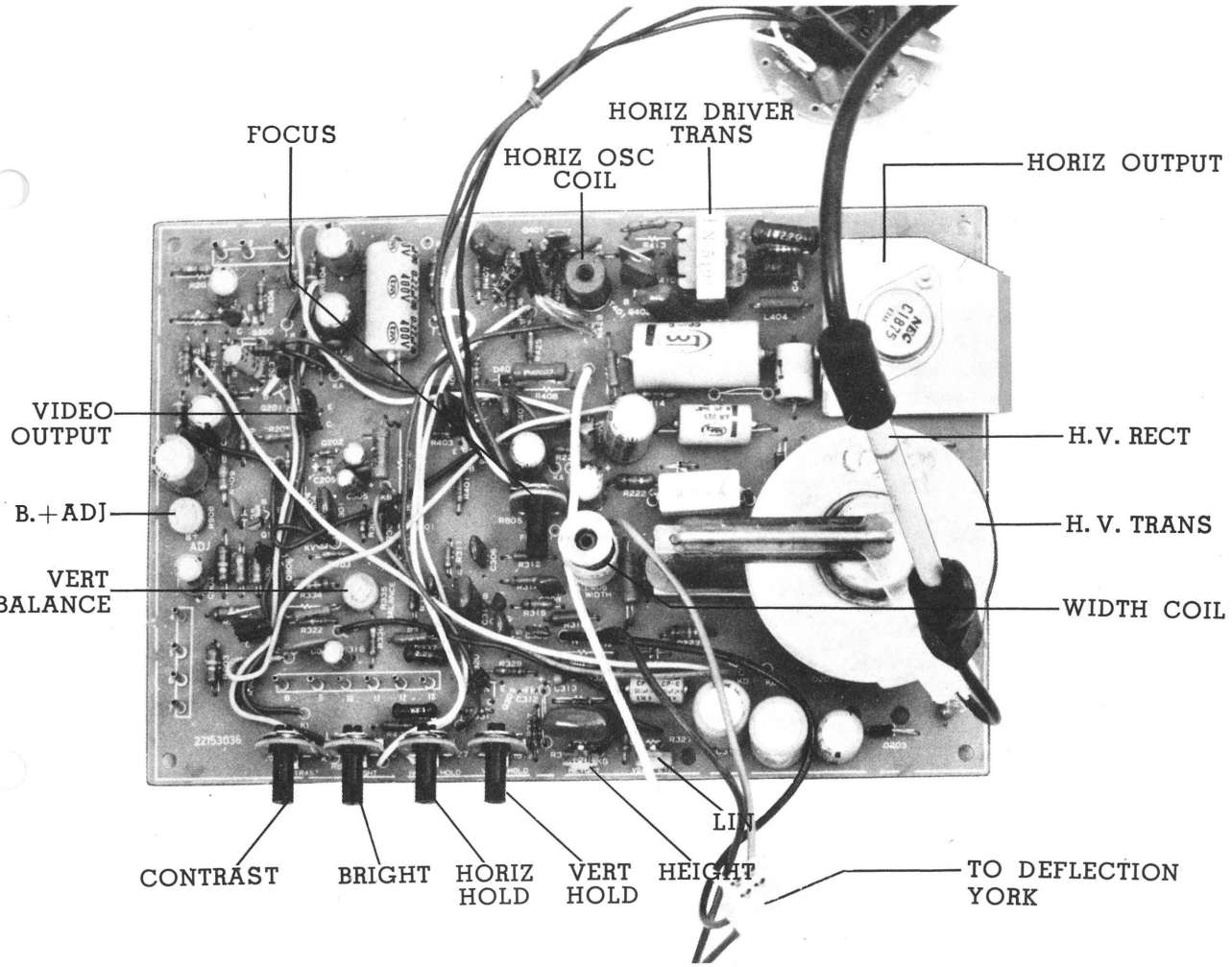


SIDE VIEW




DEFLECTION YOKE
CENTERING RINGS
HORIZ LIN
HV RECT
HV TRANS
F2 2A
LINE SWITCH
F3 0.5A
P1 CONNECTOR


CRT SOCKET
C901 CONDENSER
Q901 B+ REGULATOR
Q305 VERT OUT TRANSISTOR
Q304 VERT OUT TRANSISTOR
TPW-600
POWER TRANS
R901 RESISTOR
CONT
BRIGHT
HORIZ HOLD
VERT HOLD
VERT HEIGHT
VERT LIN


FOCUS
HORIZ DRIVER TRANS
HORIZ OSC COIL
HORIZ OUTPUT
VIDEO OUTPUT
B.+ADJ
VERT BALANCE
H.V. RECT
H.V. TRANS
WIDTH COIL
LIN
CONTRAST
BRIGHT
HORIZ HOLD
VERT HOLD
HEIGHT
TO DEFLECTION YORK

REPLACEMENT PARTS LIST

SAFETY CRITICAL COMPONENTS NOTE

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REF NO	PART NO	DESCRIPTION
ELECTRICAL PARTS		
PCB1	2215303600	MAIN PCB
A 801	485TM60003	CRT PCB
TRANSISTOR AND IC		
Q200	5310500202	MPS9700T 1st VIDEO AMP
		or MPS834
Q201	5310500261	MPS9750T 2nd VIDEO AMP
		or MPS4356
Q202	5310500410	2N6558 VIDEO OUTPUT
		or MPSU-10
Q301	5310500261	MPS9750T SYNC SEPERATOR
		or MPS4356
Q302	5310500201	MPS9700U VERT OSC
		or MPS834
Q303	5300500201	MPS9700U VERT AMP
		or MPS834
Q304	4310400030	2SC1106 VERT OUTPUT
Q305		or 2N6307
Q400	5310500202	MPS9700T PHASE INV
		or MPS834
Q401	5310500202	MPS9700T HORIZ OSC
		or MPS834
Q402	5310500410	2N6558 HORIZ AMP
		or MJE9742
		or 2N4354
Q403	5310400040	2SC1875 HORIZ OUTPUT
		or MJ205
* Q901	5310400030	2SC1106 POWER REGULATOR
		or MJ3430
Q902	5310500410	2N6558 REGULATOR AMP
	or 5310500070	MPS-U04
Q903	5310500280	LM1796 REFERENCE AMP
		or MPS-D01
CRT AND DIODE		
* V 801	5380000060	500SB4 CRT
D 203	5340200280	MR9712 SILICON DIODE
		or IN4004 L.V.RECTIFIER
D 204	5340200430	1N4148 SILICON DIODE
		or IN4002 BLANKIG CLIP
D 205	5340200430	1N4148 SILICON DIODE
		or IN4002 BLANKIG CLIP
D 206	5340200430	1N4148 SILICON DIODE
		or IN4002 BLANKIG CLIP
REF NO	**PART NO**	**DESCRIPTION**
D 207	5340020280	MR9712 200V RECT
		or IN4004
D208	5340200430	IN4148 SILICON DIODE
D 301	5340200260	MR-9701 RECTIFIER
		or 1N4148 SILICON DIODE
D 401	5340100040	AA143 PHASE DET
		or 1N60
D 402	5340100040	AA143 PHASE DET
		or 1N60
D 403	5340200300	MR9722 DAMPER
* D 404	5340400120	TV20-2 K80J H.V. RECTIFER
		or HS30/1b
D 801	5340200290	MR9713 400V RECT
		or 1N4006
D 901	5340200270	MR9704 RECTIFIER
		or 1N4005 SILICON DIODE
D 902	5340200270	MR9704 RECTIFIER
		or 1N4005 SILICON DIODE
D 903	5340200270	MR9704 RECTIFIER
		or 1N4005 SILICON DIODE
D 904	5340200270	MR9704 RECTIFIER
		or 1N4005 SILICON DIODE
D 906	5340300220	1N5858A ZENER DIODE
	or 5340300310	IN6002A
COILS AND TRANS		
* L 401	589515015	TDY1005 D.Y. COIL
L 402	589512015	HCH1005 HORIZ CHOCK COIL
L 403	589512012	HC2-035 CHOKE COIL
L 404	589512012	HC2-035 CHOKE COIL
L 405	589514013	AZ-9177 DM WIDTH COIL
L 406	589514016	LH-15J54 LIN COIL
T 401	589514015	TLN-506BX HORIZ OSC
T 402	589518012	TLN-519 HORIZ DRIVE
* T 403	589517017	TFB-1006AS F.B.T
* T 901	589519021	TPW-600 POWER TRANS
		TPW-623
RESISTORS		
R 201	RD-4L471J-	470 ohm J $\frac{1}{4}$ W
R 202	RD-4L223J-	22 K ohm J $\frac{1}{4}$ W
R 203	RD-4L563J-	56 K ohm J $\frac{1}{4}$ W
R 204	RD-4L471J-	470 ohm J $\frac{1}{4}$ W
R 207	RD-4L560J-	5E ohm J $\frac{1}{4}$ W

REPLACEMENT PARTS LIST

	R 208	RD-4L102J	1 K ohm J	¼ W
	R 210	RS-029562 J	5.6K ohm J	2 W
	R 215	RD-42101J	1 K ohm J	¼ W
*	R 216	RD-4L101J	100 ohm J	¼ W
*	R 217	RD-4L470J	47 ohm J	½ W

REF NO	PART NO	DESCRIPTION		
	R 218	RD-4L223J	22 K ohm J	¼ W
	R 219	RD-4L563J	56 K ohm J	¼ W
	R 220	RD-4L102J	1 K ohm J	¼ W
	R 221	RD-4L102J	1 K ohm J	¼ W
	R 222	RD-2L102J	1 K ohm J	½ W
	R 223	RD-2L102J	1 K ohm J	½ W
	R 224	RD-2L122J	1.2 K ohm J	½ W
*	R 226	RS01P101J	100 ohm J	1 W
	R 227	RD-2L123J	12 K ohm J	½ W
	R 228	RD-2L105J	1.5 K ohm J	½ W
	R 229	RD-4M681J	680 ohm J	¼ W
	R 302	RD-4M331J	330 ohm J	¼ W
	R 303	RD-4L562J	5.6 K ohm J	¼ W
	R 304	RD-4M102J	1 K ohm J	¼ W
	R 308	RD-4M104J	100K ohm J	¼ W
	R 309	RD-4M155T	1.5 Mohm J	¼ W
	R 310	RD-4M332J	3.3 K ohm J	¼ W
	R 311	RD-4M563J	56 K ohm J	¼ W
	R 312	RD-4L 182J	1.8 K ohm J	¼ W
	R 313	RD-4L 153J	15 K ohm J	¼ W
	R 314	RD-4L 183J	18 K ohm J	¼ W
	R 315	RD-4L 203J	20 K ohm J	¼ W
	R 316	RS-2P333J	33 K ohm J	½ W
	R 327	RD-4L 104J	100K ohm J	¼ W
	R 320	RD-4L 124J	120K ohm J	¼ W
	R 322	RD-4L 224J	220K ohm J	¼ W
	R 323	RD-4L 433J	43 K ohm J	¼ W
	R 324	RD-4L 471J	470 ohm J	¼ W
	R 326	RD-4L 152J	1.5 K ohm J	¼ W
	R 339	RD-4L 101J	100 ohm J	¼ W
	R 331	RD-4M331J	330 ohm J	¼ W
	R 332	RD-4L 102J	1 K ohm J	¼ W
	R 333	RS01P682J	6.8 K ohm J	1 W
	R 334	RD-2L 183J	18 K ohm J	½ W
	R 336	RD-4L 221J	220 ohm J	¼ W
	R 337	5160122901	2.2 ohm J	½ W
	R 338	RS-2P 150J	15 ohm J	½ W
	R 339	5160112901	1.2 ohm J	½ W
	R 340	RS01P220T	22 ohm J	1 W
	R 401	RD-4L 153J	15 K ohm J	¼ W
	R 402	RD-4L 821J	820 ohm J	¼ W
	R 403	RD-4M561J	560 ohm J	¼ W
	R 404	RD-4M103J	10 K ohm J	¼ W
	R 405	RD-4M103J	10 K ohm J	¼ W
	R 406	RD-4L 272J	2.7 K ohm J	¼ W
	R 407	RD-4L 681J	680 ohm J	¼ W
	R 408	RS02P682J	4.7 K ohm J	½ W
	R 419	RD-4L 270J	27 ohm J	¼ W
	R 410	RD-4L 182J	1.8 K ohm J	¼ W
	R 411	RD-4L 151J	150 ohm J	¼ W
	R 412	RD-4L 561J	560 ohm J	¼ W
	R 413	RS01P682J	6.8 K ohm J	1 W
	R 414	RD-2L 221J	220 ohm J	½ W
	R 415	5160122903	2.2 ohm J	1 W

REF NO	PART NO	DESCRIPTION		
	R 416	RD-2L 569J	5.6 ohm J	½ W
	R 417	RS02P182J	1.8 K ohm J	2 W
	R 418	RS01P123J	12 K ohm J	1 W
*	R 420	RX05P220J	22 ohm J	5 W
*	R 421	RD-2L 569J	5.6 ohm J	½ W
	R 422	RD-4L 470J	47 ohm J	1 W
	R 425	RD-4L 153J	15 K ohm J	¼ W
	R 426	RD-4L 153J	15 K ohm J	¼ W
	R 802	RD-2L 154J	150 K ohm J	½ W
	R 804	RD-2I 684J	680 K ohm J	½ W
	R 811	RD-2L 221J	220 Ω J	½ W
*	R 901	RX20P251J	250 ohm J	20W
	R 902	RD-2L 101J	1 K ohm J	½ W
	R 903	RD-2L 123J	12 K ohm J	½ W
	R 904	RD-2L 123J	12 K ohm J	½ W
	R 905	RD-2L 223J	22 K ohm J	½ W
	R 906	RD-2L 563J	56 K ohm J	½ W
	R 907	RD-2L 563J	56 K ohm J	½ W
	R 909	RD-2L 682J	6.8 K ohm J	½ W

CONTROLS

R 211	553102005E	1 K ohm	Contrast
R 319	553104005B	100K ohm	Vet Hold
R 321	553124008B	220K ohm	Vet Height
R 327	553472008B	4.7 K ohm	Vet Linearity
R 335	553102007B	1 K ohm	Vet Balance
R 427	553303005B	30 K ohm	Horiz Hold
R 803	553254005B	250K ohm	Bright
R 805	553205005B	2 Mohm	Focus
R 908	553472007B	4.7 K ohm	B+ADJ

CAPACITORS

C 201	CE2G1C470	47m F mF	16V
C 202	CE2G1F101	100 m F	25V
C 203	CE2G1C220	22 m F	16V
C 204	CE2G1H101	100 m F	35V
C 205	CE2G1C220	2. 2m F	16V
C 206	C1SL1H561K	660 pF K	50V
C 207	CE2G0J221	220m F	16V

REPLACEMENT PARTS LIST

REF NO	PART NO	DESCRIPTION	
C 208	5270322401	0.22mF M	400V
C 210	CE2G1H220	22mF	35V
C 211	CE2G1H339	3.3mF	50V
C 213	CK1F2H102K	0.001mF	500V
C 220	CE2G2F330	3 3mF	250V
C 301	CQ1M1H473K	0.047mF K	50V
C 304	CK1B1H391K	470pF K	50V
C 305	CE2G1H478	0.47mF	50V
C 306	56405333	0.033mF K	50V
C 307	CQ1M1H562K	0.0056mF K	50V
C 308	CQ1M1H273K	0.027mF K	50V
C 309	CQ1M1H123K	0.012mF K	50V
C 311	CQ1M1H124K	0.12mF K	50V
C 312	CQ1M1H392K	0.0039mF K	50V
C 313	DS5D1C229M	2.2mF	16V
C 314	CQ1M1H474J	0.47mF	50V
C 315	CQ1M1H333K	0.033mF K	50V
C 316	CF2G1A470	47mF	10V
C 317	CE2G2A101	100mF	100V
C 318	CK1E2H103K	0.01mF	500V
C 319	5270310301	0.01mF	630V
C 401	CQ1M1H103K	0.01mF K	50V
C 402	CQ1M1H103K	0.01mF K	50V
C 403	CQ1M1H393K	0.039mF K	50V
C 404	CK1B2H151	150mF	500V
C 405	CE2G1H339	3.3mF	50V
C 406	CQ1M1H104K	0.1mF K	50V
C 407	CQ1M1H223K	0.022mF KJ	50V
C 408	CQ1M1H683K	0.068mF J J	50V
C 409	CE2G1F470	47mF	25V
C 410	CK1B2H681K	680pF K	500V
C 411	CK1B2H222K	0.0022mF K	500V
C 412	CK1B1H152K	0.0015mF K	50V
C 413	C B1H102K	0.001mF K	50V
* C 414	CK1B3D471K	470pF K	2KV
C 415	CQ1M2A104K	0.1mF K	100V
* C 416	5270333201	0.0033mF	1.5KV
C 417	CE2G2C100	10mF	160V
C 418	5270333401	0.33mF K	200V
C 419	56635101	100mF	35V
C 420	56625471	470mF	25V
C 801	5270356302	0.056mF K	630V
C802	CKIE3C102P	1000pF	1.5KV
* C 901	5240700400	450mF	200V
C 902		100mF	160V
C 904	F2G2C229	2.2mF	160V
C 905	CK1F2H102K	0.001mF	500V

REF NO	PART NO	DESCRIPTION
DISCHARGE GAPS		
Z 801, Z 802, Z 803	599030001	EGP-H751A
SWITCHES		
* SW-1	PE13-1567	115V/230V Power Line Slide Switche
FUSES		
* F 902	6990620011	250V 2A
* F 903	5990610013	250V 0.5A
MECHANICAL PARTS		
* K 001	22-463020	Nate-N-Look Connector (AMP)
	S-A3915	Transistor Socket (SMK)
*	TM60085001	FUSE HOLDER
*	or TM60085001	FUSE HOLDER
K 005	1-380826-0	Stand OFF Fastener (AMP)
P 401	PE19-1569	4P Plug ASS' (Yoke Line)
P 402	PE- 19-1570	4F Recep ASS' (Yoke Line)
P 403	PE19-1571	3P Connector ASS' (Video INPUT)
A 621	PE19-1572	4P Connector ASS' (Q901 Line)
A 631	PE19-1573	6P Connectpr ASS' (Q304 Q305 Line)
P 406	PE19-1574	2P Plug ASS' (Heater Line)
P 407	PE19-1575	2P Recep ASS' (Heater Line)
TE901	PE19-1576	Terminator 6Pin
E 001	135431015	Earth Plate
F 001	22-164001	Frame
H 003	5432001 1	Plate Heat Sink A
Q403D	54320011	Plate Heat Sink C
	4853711000	Supporter

Design and specifications are subject to change without notice.

SERVICEMAN RESISTANCE CHECK WARNING

Before returning the monitor to the customer make resistance measurement between each side of power supply circuit (P1-9 and P1-10) and chassis frame.

Resistance must exceed 5 meg ohms

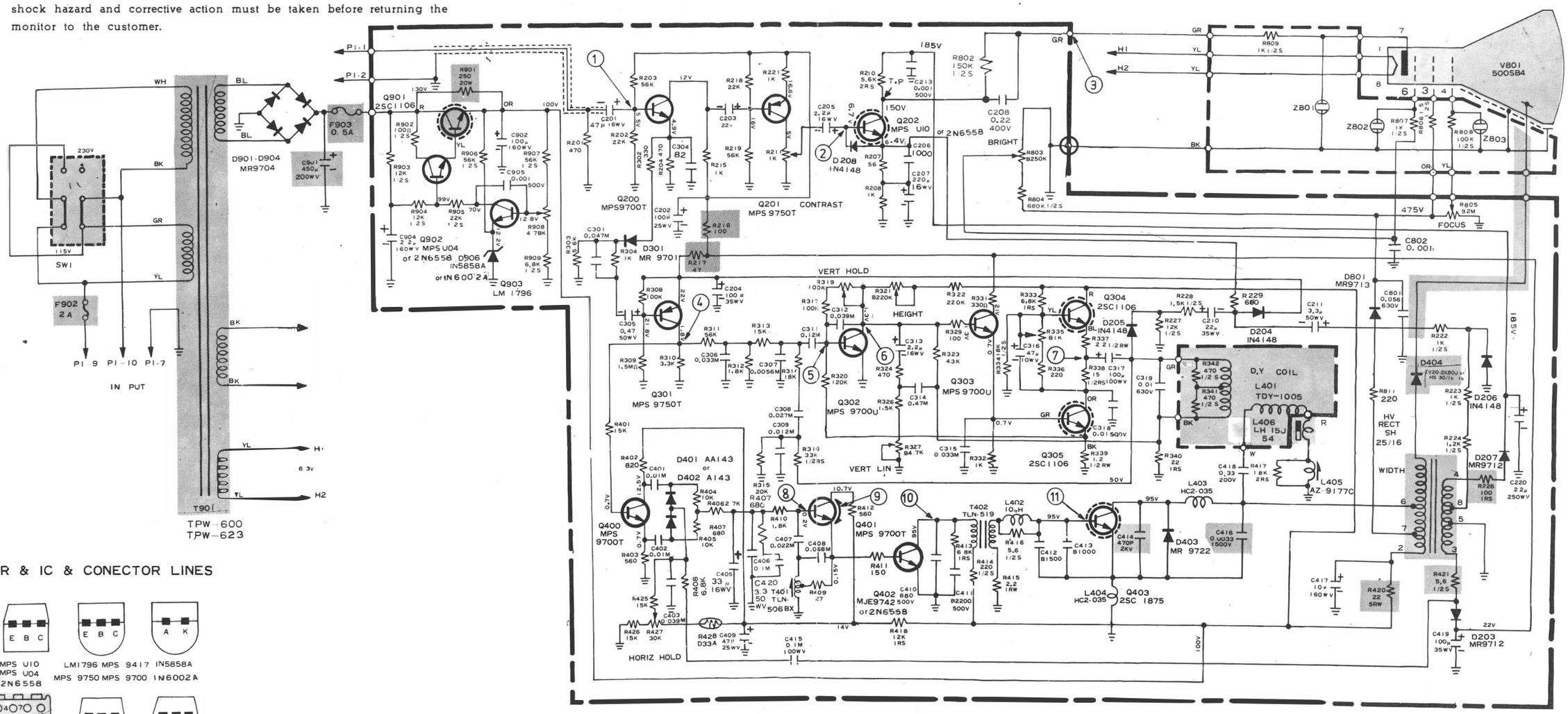
Any measurements not within the limits outlined above are indicative of shock hazard and corrective action must be taken before returning the monitor to the customer.

REPLACEMENT PARTS LIST

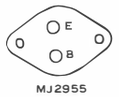
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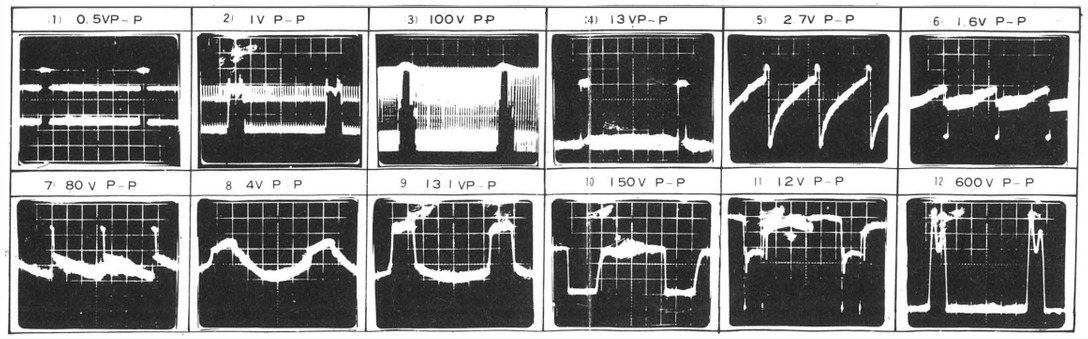
SCHEMATIC DIAGRAM



TR & IC & CONECTOR LINES



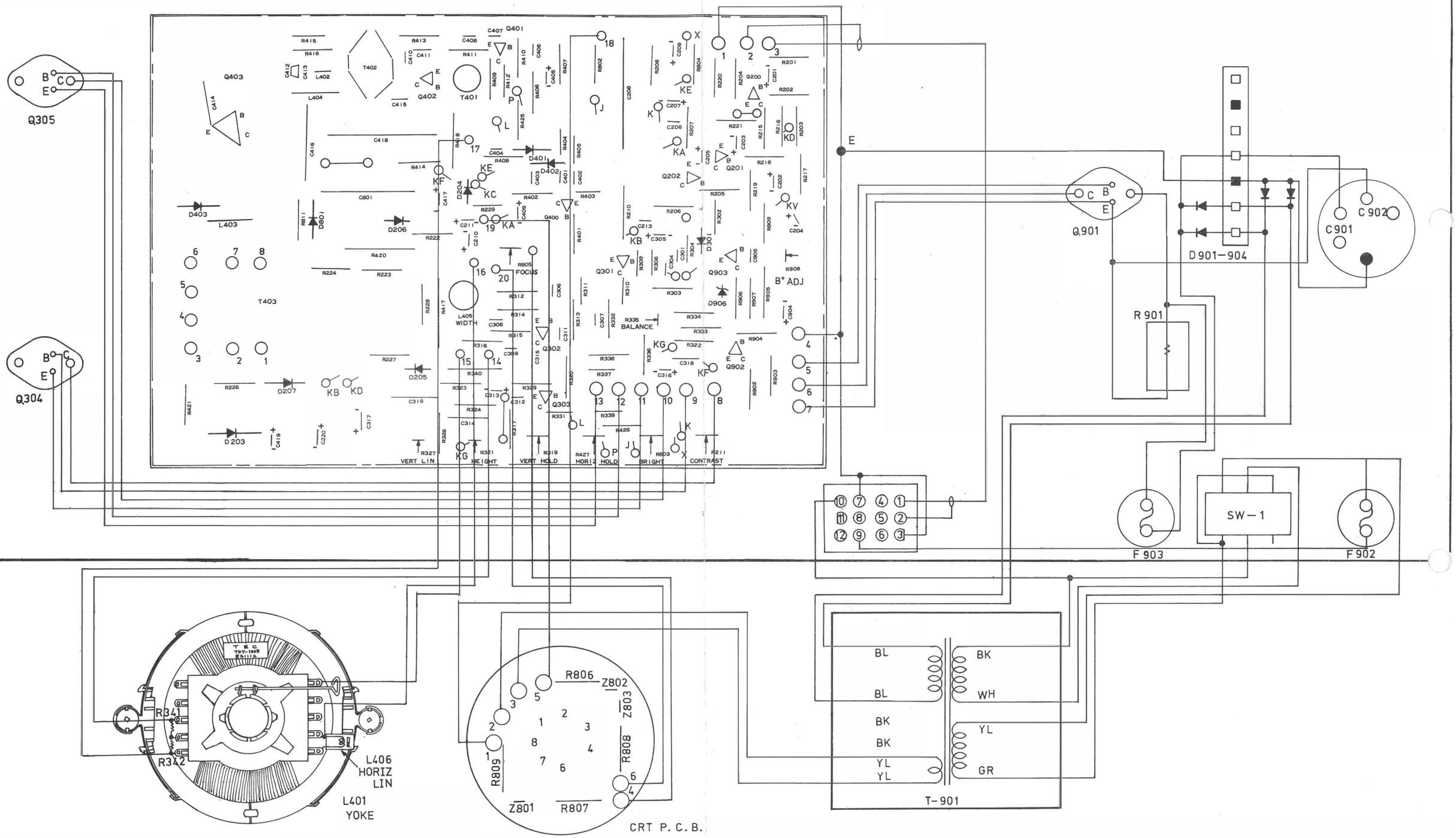
WAVE FORM



NOTES

1. ALL RESISTANCE VALUES IN OHM K=1,000 M=1,000,000
2. UNLESS OTHER WISE NOTED IN SCHEMATIC DIAGRAM ALL CAPACITORS VALUES LESS THAN 1 ARE EXPRESSED IN MFD AND THE VALUES MORE THAN 1 ARE IN PFD
3. VOLTAGE READINGS ARE TAKEN WITH "VTVM" FROM POINT INDICATED TO CHASSIS TO GROUND
4. ALL WAVE FORMS ARE MEASURED WITH STRONG SIGNAL IN PUT CONTRAST SET TO GIVE NORMAL PICTURE
5. THIS SCHEMATIC DIAGRAM COVERS BASIC OR REPRESENTATIVE CHASSIS ONLY THERE MAY BE SOME COMPONENT OR PARTIAL SCHEMATIC DIFFERENCE BETWEEN ACTUAL CHASSIS AND THE SCHEMATIC DIAGRAM

WIRING DIAGRAM



BOTTOM VIEW



TEC VIDEOELECTRONICS INC

ADDRESS: 3190 CORONADO DRIVE,
SANTACLARA, CA. 95050
TEL : (408) 246-5428
TWX : 910 338 7633

Part No. 48560013

Printed in KOREA