



TEKFAK 113

TV SCHEMATICS COVER 16 MANUFACTURERS • HUNDREDS OF CHASSIS & MODEL NUMBERS • PUBLISHED
BY ELECTRONIC TECHNICIAN/DEALER MAGAZINE 1 EAST FIRST STREET DULUTH MINNESOTA 55802

ADMIRAL

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Color TV Chassis:

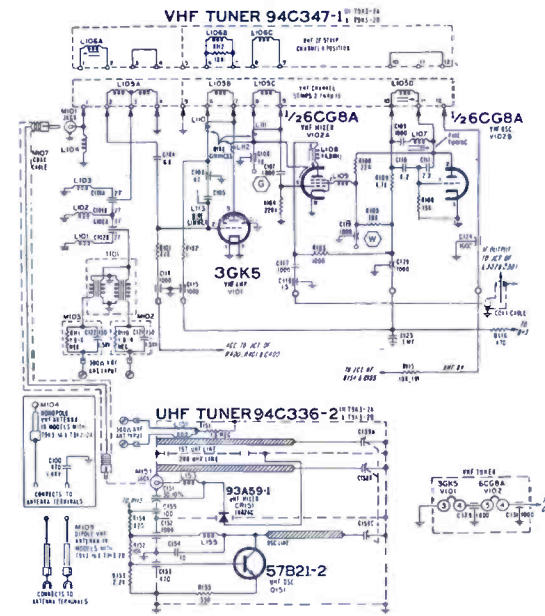
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TEKFAX 113

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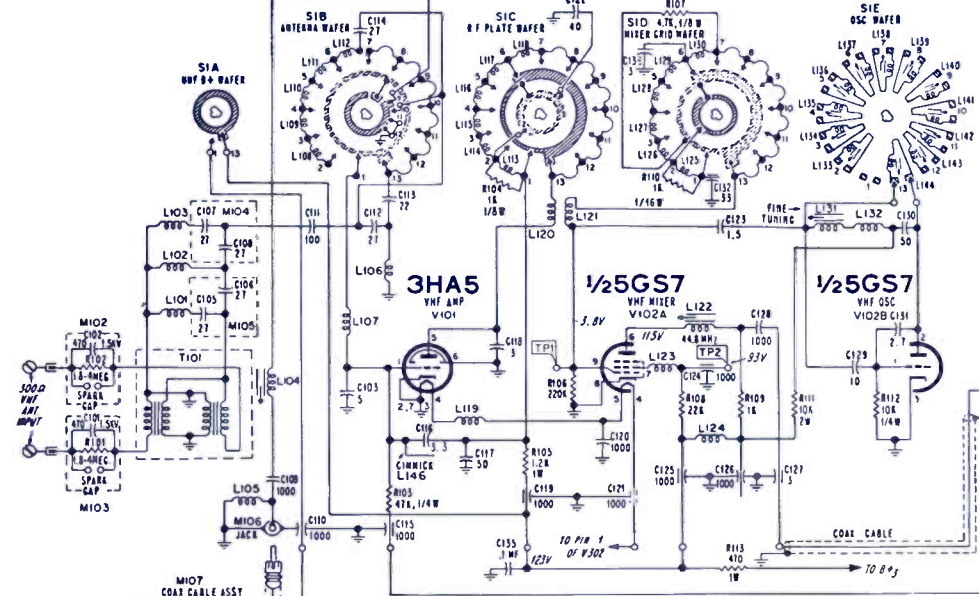
ADMIRAL

TV Chassis
T9K3-1A,1B

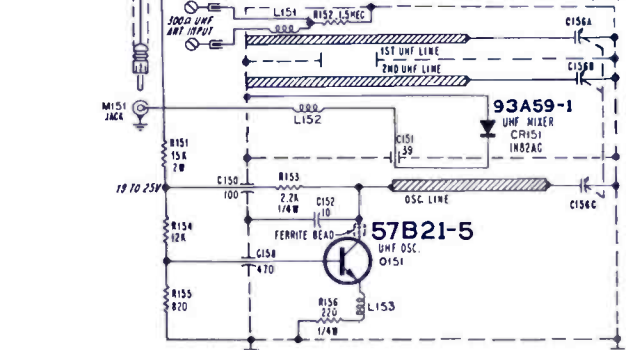


SYMBOL	DESCRIPTION	ADMIRAL PART NO.
R208	1M vol control w/switch	75C149-10
R311	25K, contrast control	75A149-9
R411	5M, height triple control	75C129-3
R417	1.2M, vert hold triple control	75C129-3
R421	500K, vert lin	75C129-3
R501	5.5Ω, fusible resistor	61C48-1
C503A	250 μf, 165v elect	67A30-11
C503B	150 μf, 150v elect	67A30-11
C503C	200 μf, 150v elect	67A30-11
L202	ratio detect	72C132-82
L301	47.25M trap	72C308-8
L401	horiz lock coil	94D17-19
L501	filter choke	74A18-63
T201	audio output xformer	79C124-3
T302	2nd IF xformer	72C310-1
T303	sound take off coil	72C185-7
T401	vert output xformer	79C139-5
T402	deflect yoke assembly	700C1089-12
T403	horiz output	79D138-14
	VHF tuner-1A	94A363-2
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VHF TUNER 94C363-2 IN T9K3-1A & T9K3-1B

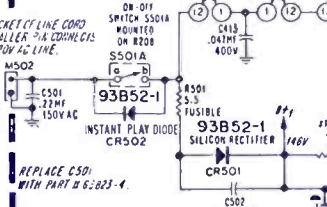
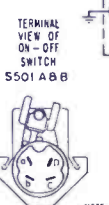


UHF TUNER 94C361-2 IN T9K3-1A & T9K3-1B

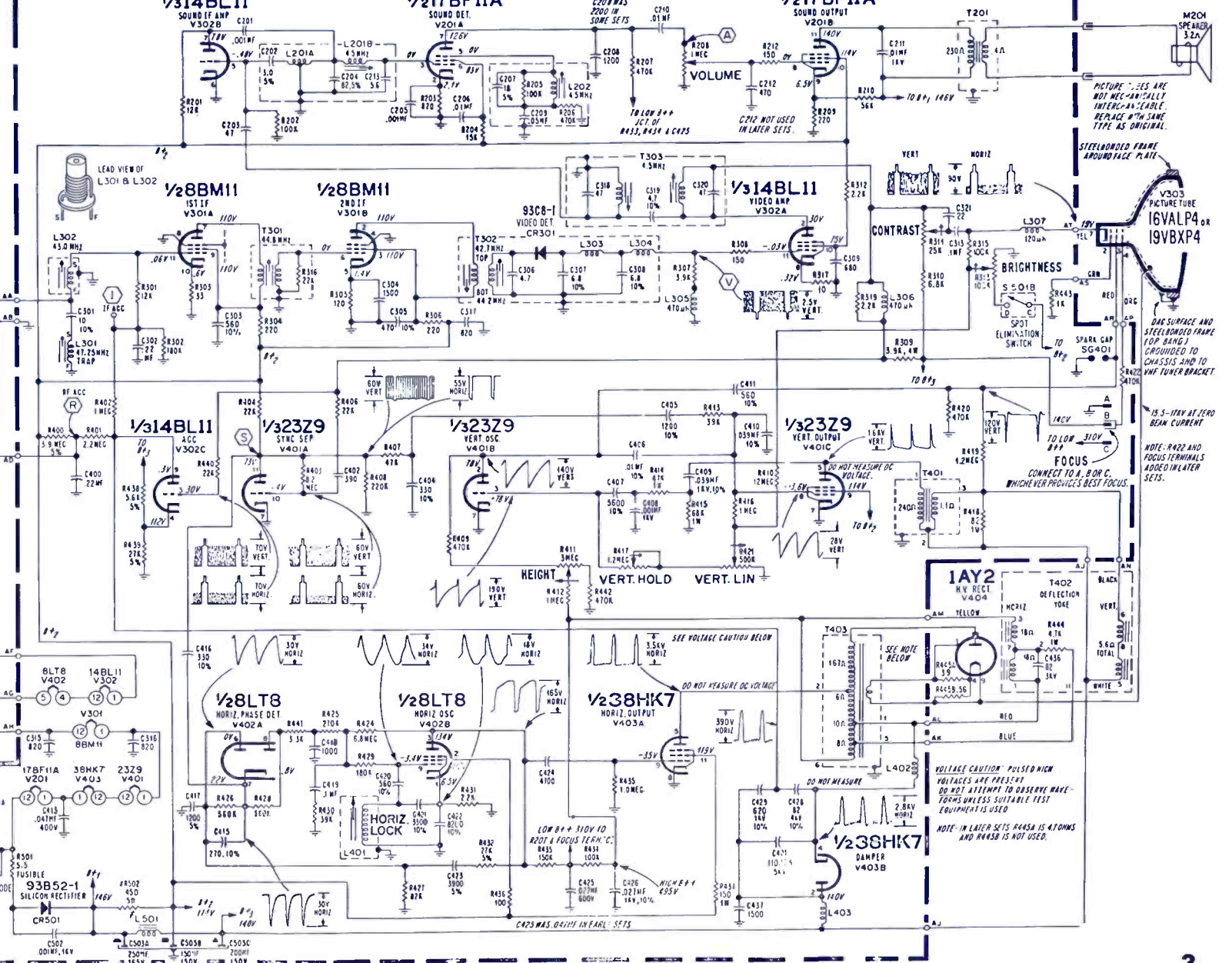


RUN CHANGES
Start of production.

SCHEMATIC NOTES:
 * CHASSIS GROUND.
 * PART NOT MOUNTED ON PRECISION WIRED SYSTEM.
 * VOLTAGE WILL VARY WITH SETTING OF CONTROLS.
 * RESISTOR VALUES 1/20 WATT, 10%, CAPACITOR VALUES IN PICOGRAMS, UNLESS OTHERWISE INDICATED.
 * DO VOLTAGES MEASURED AT 120V AC LINE, NO SIGNAL, MAX. CONTRAST & BRIGHTNESS & MIN. VOLUME WITH VFM.
WARNING: USE ISOLATION TRANSFORMER WHEN SERVICING WITH CABINET BACK REMOVED.



PRECISION WIRED SYSTEM 714E459-10



PICTURE TUBES ARE NOT NECESSARILY INTERCHANGIBLE. REPLACE WITH SAME TYPE AS ORIGINAL.

16V14P4 or 19VBXP4

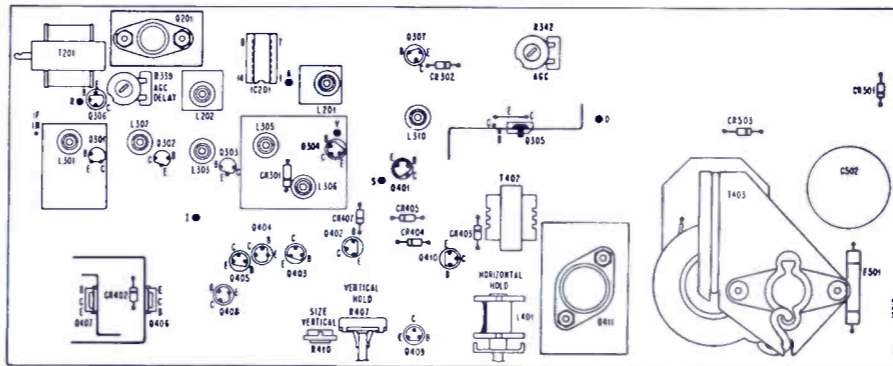
DAK SURFACE AND STEELBONDED FRAME (TOP BAND) IS MOUNTED TO CHASSIS AND TO VHF TUNER BRACKET.

NOTE: R422 AND FOCUS TERMINALS ADDED IN LATER SETS.

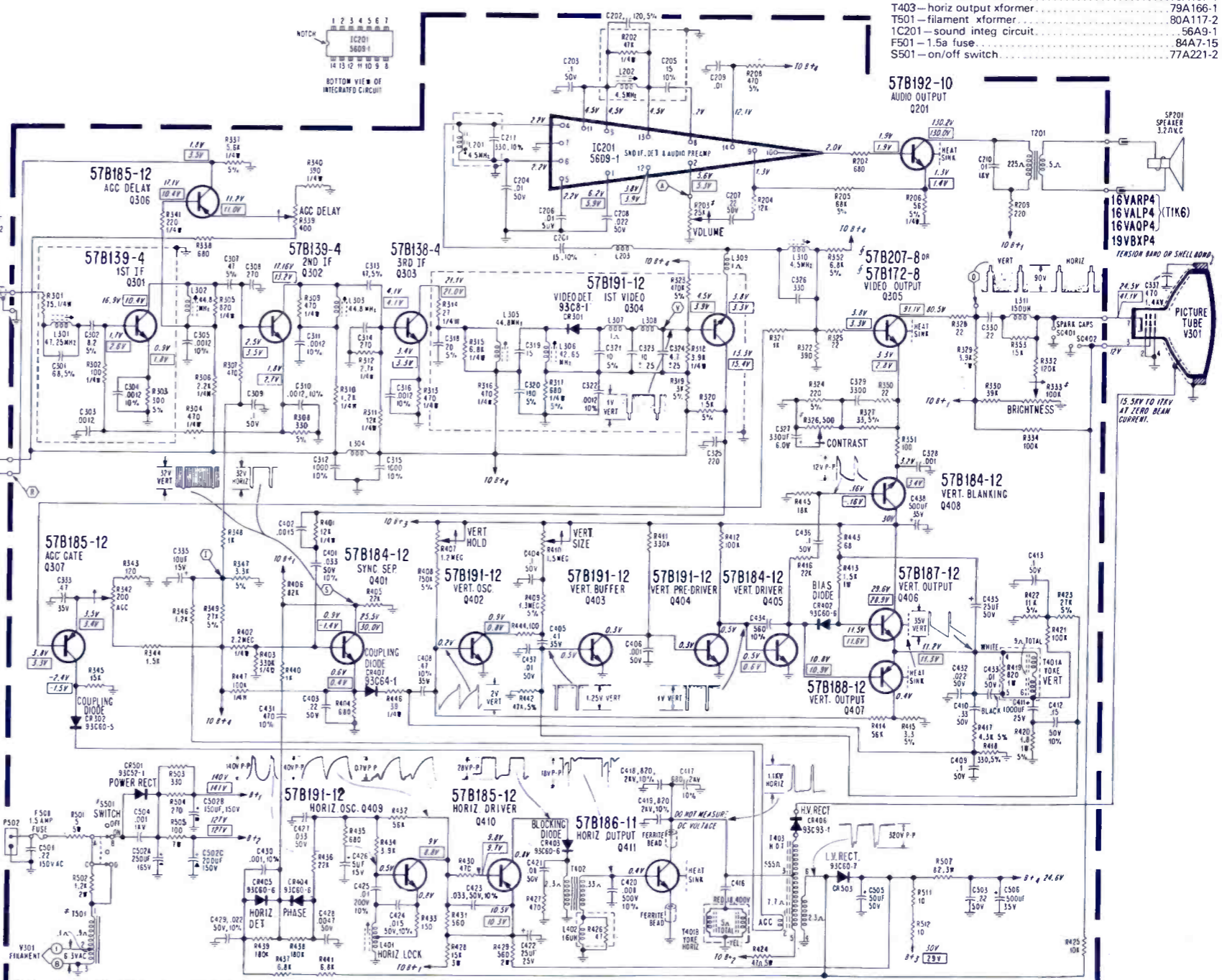
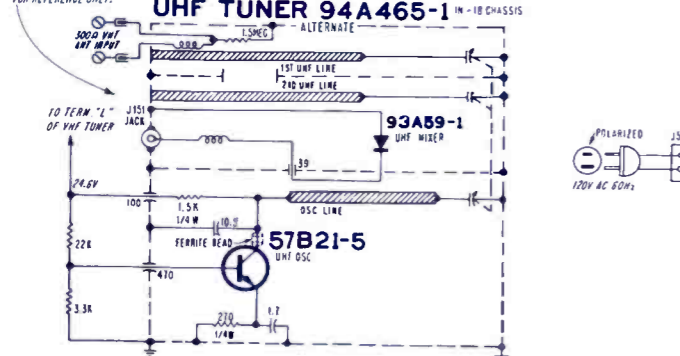
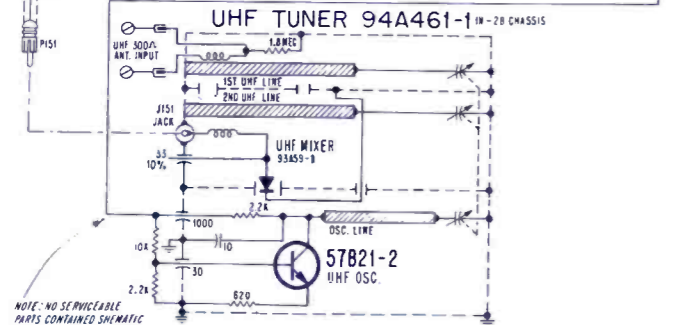
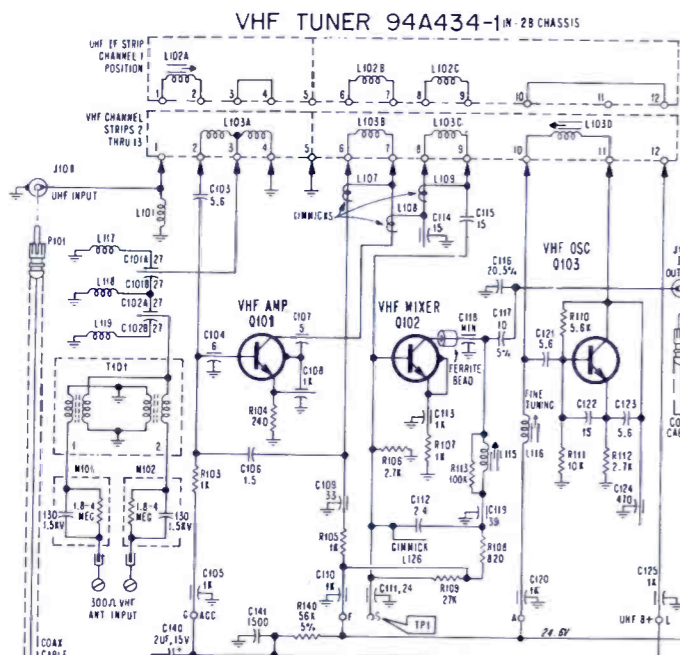
VOLTAGE CAUTION: POSITIVE DC VOLTAGES ARE PRESENT. DO NOT ATTEMPT TO OBSERVE WAVEFORMS UNLESS SUITABLE TEST EQUIPMENT IS USED.
 NOTE: IN LATER SETS R445A IS ATOMS AND R445B IS NOT USED.

ADMIRAL

TV Chassis
TK6



SYMBOL	DESCRIPTION	ADMIRAL PART NO.
C502A	— 250 μ f 165v electro	67A30-11
C502B	— 150 μ f 150v electro	67A30-11
C502C	— 200 μ f 150v electro	67A30-11
R505	— 100n, 10% 7w	61A59-101-172
R203	— 25K volume	75A167-9
R326	— 500n contrast	75A167-5
R333	— 100K brite	75A167-4
R339	— 400n AGC delay	75A101-50
R342	— 200n AGC	75A101-49
R407	— 1.2M vert hold	75A191-1
R410	— 1.5M vert size	75A101-57
L201	— sound input coil	72A317-1
L202	— 4.5MHz sound coil	72A317-6
L310	— 4.5MHz trap	72A317-1
L401	— horiz lock coil	94A480-1
T201	— audio output xfomer	79A124-7
T401A		
B	— deflect yoke	700A1089-15
T402	— horiz drive xfomer	79A167-1
T403	— horiz output xfomer	79A166-1
T501	— filament xfomer	80A117-2
1C201	— sound integ circuit	56A9-1
F501	— 1.5a fuse	84A7-15
S501	— on/off switch	77A221-2

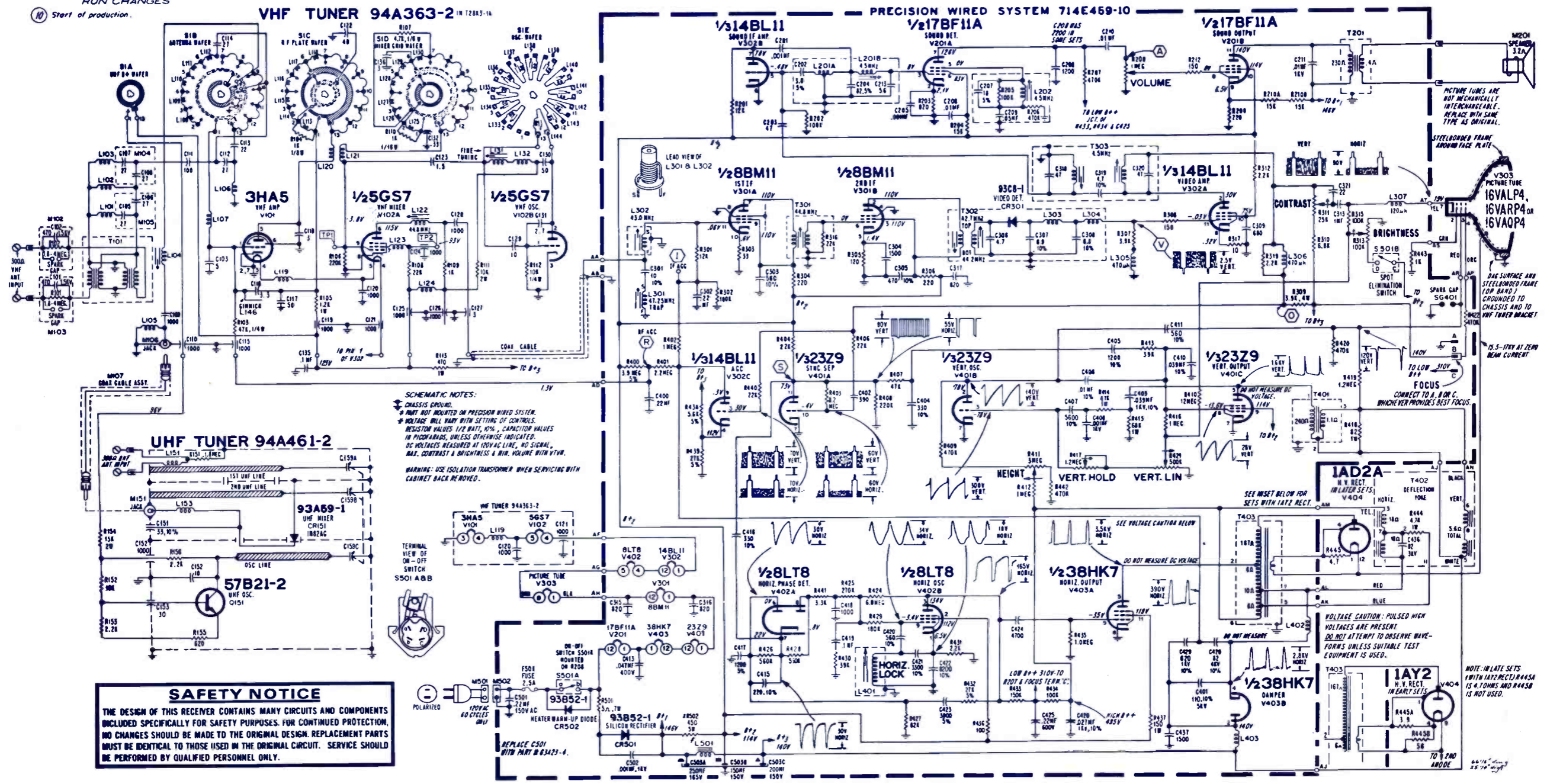


NOTE: NO SERVICABLE PARTS CONTAINED HEREIN FOR REFERENCE ONLY.

SYMBOL	DESCRIPTION	ADMIRAL PART NO.
R208	—1M vol control T28K3	75A149-10
R311	—25K, contrast control T28K3	75A149-9
R313	—100K, brite control T28K3	75A149-8
R411	—5M height, triple control	75A129-3
R417	—1.2M vert hold, triple control	75A129-3
R421	—500K, vert lin, triple control	75A129-3
C503A	—250 μ f, 165v, electrolytic	67A30-11
C503B	—150 μ f, 150v, electrolytic	67A30-11
C503C	—200 μ f, 150v, electrolytic	67A30-11
L201A,B	—sound 1F & phase shift coil	72C301-4
L202	—ratio detect	72C132-82
L301	—47.25MHz trap	72C308-8
L401	—horiz lock coil	94D17-19
L501	—filter choke	74A18-63
T201	—audio output xformer	79C124-3
T303	—sound take off coil	72C185-7
T401	—vert output xformer	79C139-5
T402	—deflect yoke assembly	700C1089-12
T403	—horiz output	79A138-20
F501	—2.5a fuse	84A7-14
S501A,B	—on/off switch	77A221-1
	UHF tuner	94A465-2
	VHF tuner	94A363-2

MODEL CHART					
MODEL	FINISH	CRT	VHF	UHF	CHASSIS
16P617	Walnut	16VARP4	94A363-2	94A465-2	T28K3-1A
19P807	Walnut	19VBXP4	94A363-2	94A465-2	T29K3-1B
SK 19P837C	Walnut	19VBXP4	94A363-2	94A465-2	T29K3-1B

RUN CHANGES
 Start of production.



ADMIRAL
 TV Chassis
 T28K3

ADMIRAL

Color-TV Chassis
K19

MARCH • 1973

NOTES: UNLESS OTHERWISE SPECIFIED: RESISTANCE VALUES ARE IN OHMS, 10K, 1/2 WATT; CAPACITANCE VALUES FOR HIGHER ARE IN PF; CAPACITANCE VALUES LESS THAN 1 ARE IN UF; INDUCTANCE VALUES ARE IN MH.
⊕ INDICATES CHASSIS GROUND, ⊕ CABINET GROUND. N = CYCLES PER SECOND.

DC VOLTAGES ARE MEASURED WITH VTVM PLACED BETWEEN POINTS INDICATED & CHASSIS GROUND. LINE VOLTAGE SET AT 120V AC & ALL CONTROLS SET FOR NORMAL PICTURE UNLESS OTHERWISE INDICATED. VOLTAGE READINGS ARE TAKEN WITHOUT SIGNAL, WITH VHF TUNER SET AT UNUSED CHANNEL. VOLTAGES SHOWN IN BRACKETS () ARE MEASURED WITH RECEIVER TUNED TO A COLOR SIGNAL.
Ⓜ INDICATES THESE VOLTAGES MAY VARY WITH VIDEO CONTENT OF THE PROGRAM BEING RECEIVED AND ARE AVERAGE READINGS.

TRANSISTOR CAUTION: TO AVOID DAMAGE TO TRANSISTORS, DO NOT OPERATE CHASSIS WITH PICTURE TUBE DAG DISCONNECTED FROM CHASSIS GROUND. DO NOT TURN SET ON WITH TRANSISTOR(S), TUBE(S) OR LEADS REMOVED OR UNSOLDERED. DO NOT ARC 2ND ANODE LEAD TO CHASSIS GROUND. DISCHARGE 2ND ANODE ONLY TO

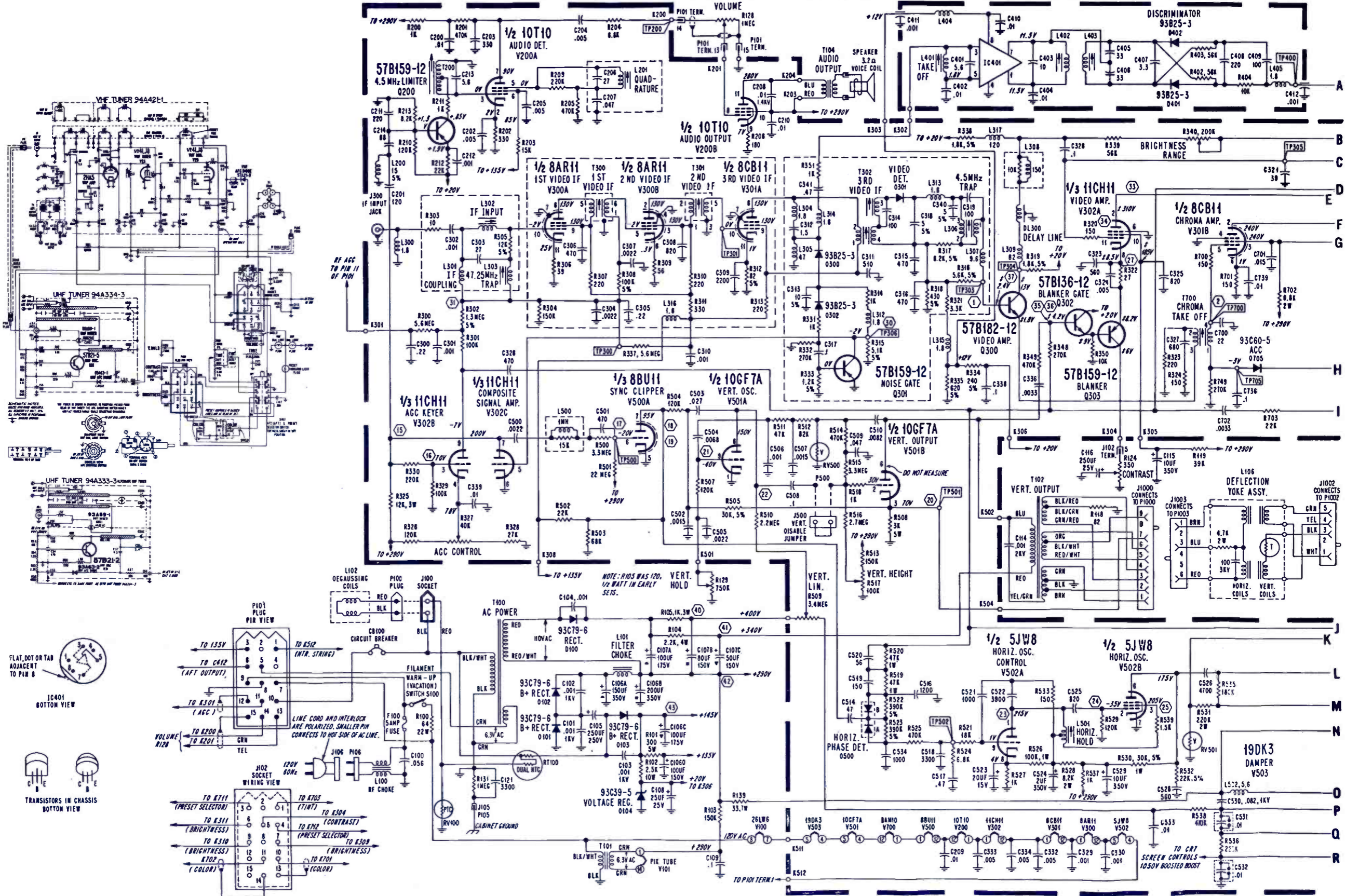
PICTURE TUBE DAG OR DAG GROUND. USE CAUTION TO PREVENT ACCIDENTAL SHORT BETWEEN COMPONENT TERMINALS OR TO CHASSIS GROUND. DO NOT APPLY EXCESSIVE HEAT TO TRANSISTOR LEADS. DO NOT USE AN ORDINARY OHMMETER FOR RESISTANCE MEASUREMENT. USE VTVM ON R-100 RANGE OR HIGHER.

Ⓜ RUN NUMBER INDICATES CHANGE(S) INCORPORATED AS GIVEN UNDER THAT RUN NUMBER, AS WELL AS ALL LOWER RUN CHANGES.

Ⓜ SYMBOLS IN RECTANGLES INDICATE TEST POINT CONNECTIONS.

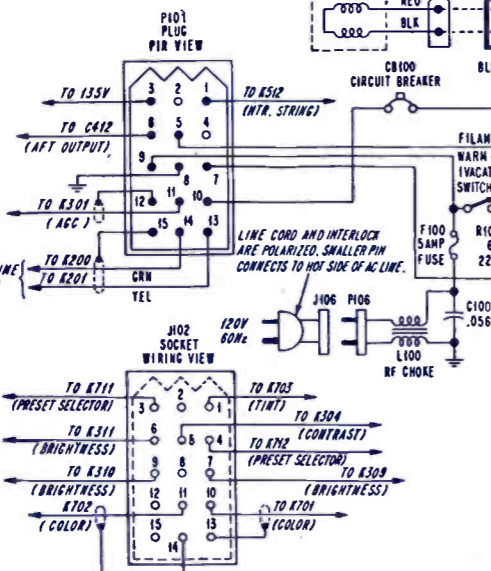
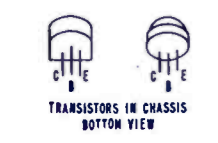
Ⓜ HEXAGONS IDENTIFY WAVEFORM OBSERVATION LOCATIONS. CONDITIONS FOR TAKING WAVEFORM MEASUREMENTS ARE GIVEN WITH WAVEFORM PHOTOS.

WARNING: CHASSIS IS CONNECTED DIRECTLY TO ONE SIDE OF AC POWER LINE. USE AN ISOLATION TRANSFORMER WHEN SERVICING TO AVOID THE POSSIBILITY OF ACCIDENTAL ELECTRICAL SHOCK & DAMAGE TO TEST EQUIPMENT.



REPLACE THE TUNER WITH A SERVICE APPROVED UNIT FROM THE LIST OF PARTS IN THE SERVICE MANUAL. CONTACT THE MANUFACTURER FOR THE LOCATION OF THE SERVICE MANUAL. THE LOCATION OF THE SERVICE MANUAL IS LISTED IN THE SERVICE MANUAL.

UHF TUNER 94A333-3 (REAR VIEW OF TUNER)

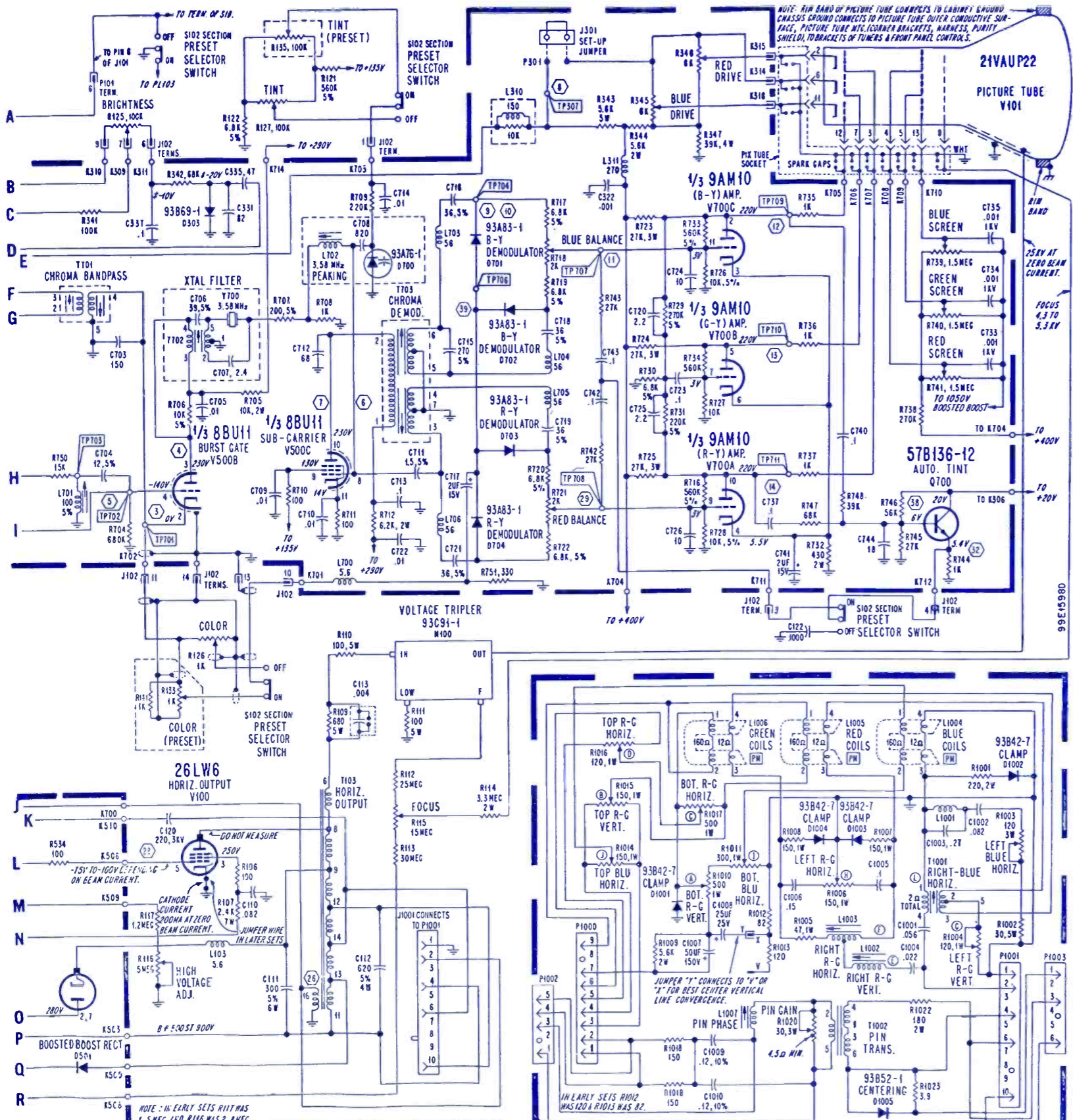


SYMBOL	DESCRIPTION	ADMIRAL PART NO.
R115	15M focus cont	75A108-7
R116	5M high volt cont	75A135-48
R129	750K vert hold cont, K-19	75A186-1
R129	750K vert hold cont, 2K19	75A134-28
R327	40K AGC cont	75A155-9
R340	200K bright range cont	75A155-10
R718	2K blue balance cont	75A101-40
R739	1.5M blue screen cont	

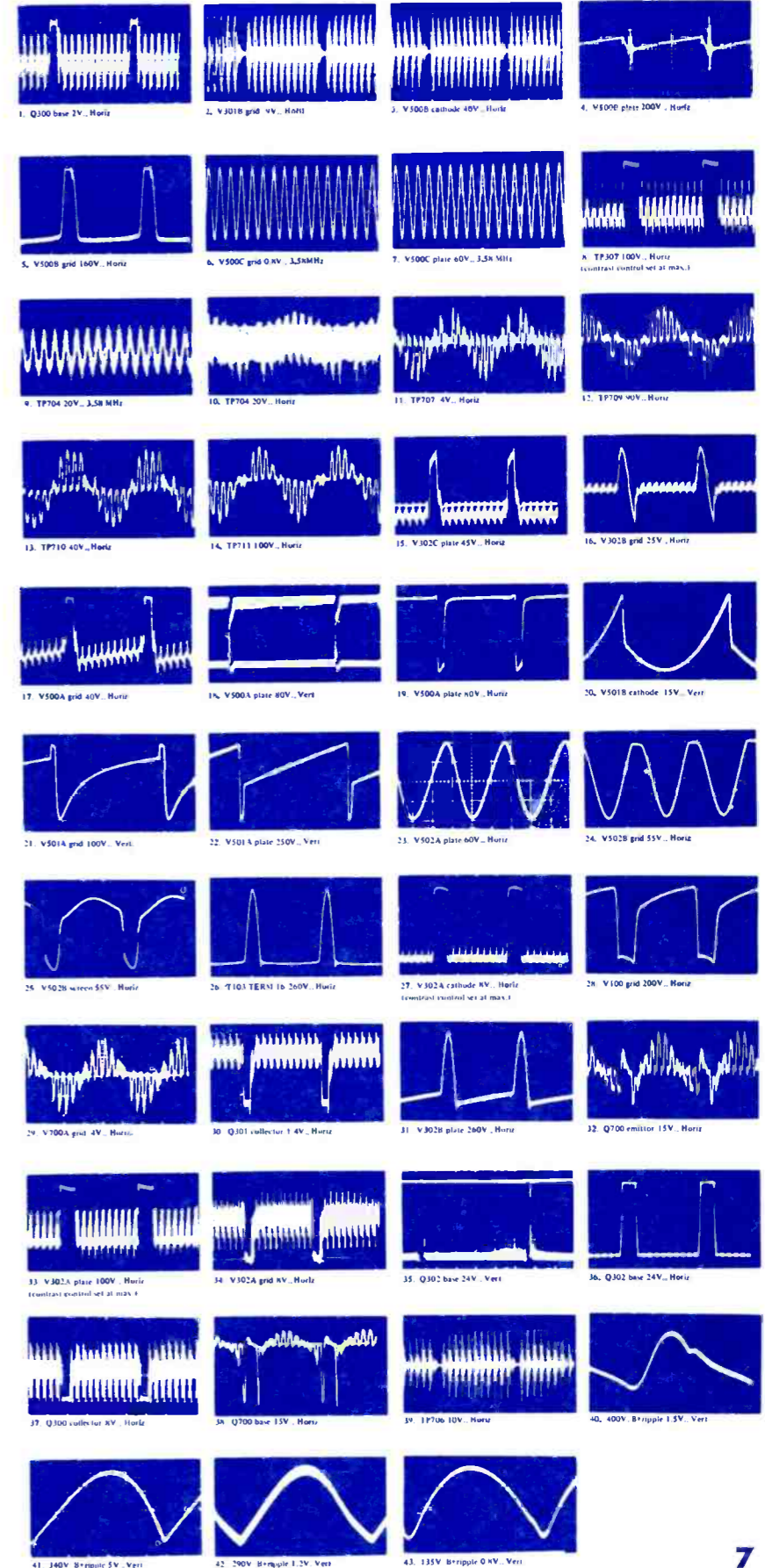
R740	1.5M green screen cont	75A155-1
R741	1.5M red screen cont	
RT100	dual thermistor, NTC	61A53-3
RV500	varistor	61A65-1
C106A	150µf, 250V, electr	
C106B	200µf, 350V, electr	67A15-412
C106C	D=100µf, 175V, electr	
C107A	100µf, 175V, electr	
C107B	80µf, 150V, electr	67A15-511
C107C	50µf, 150V, electr	

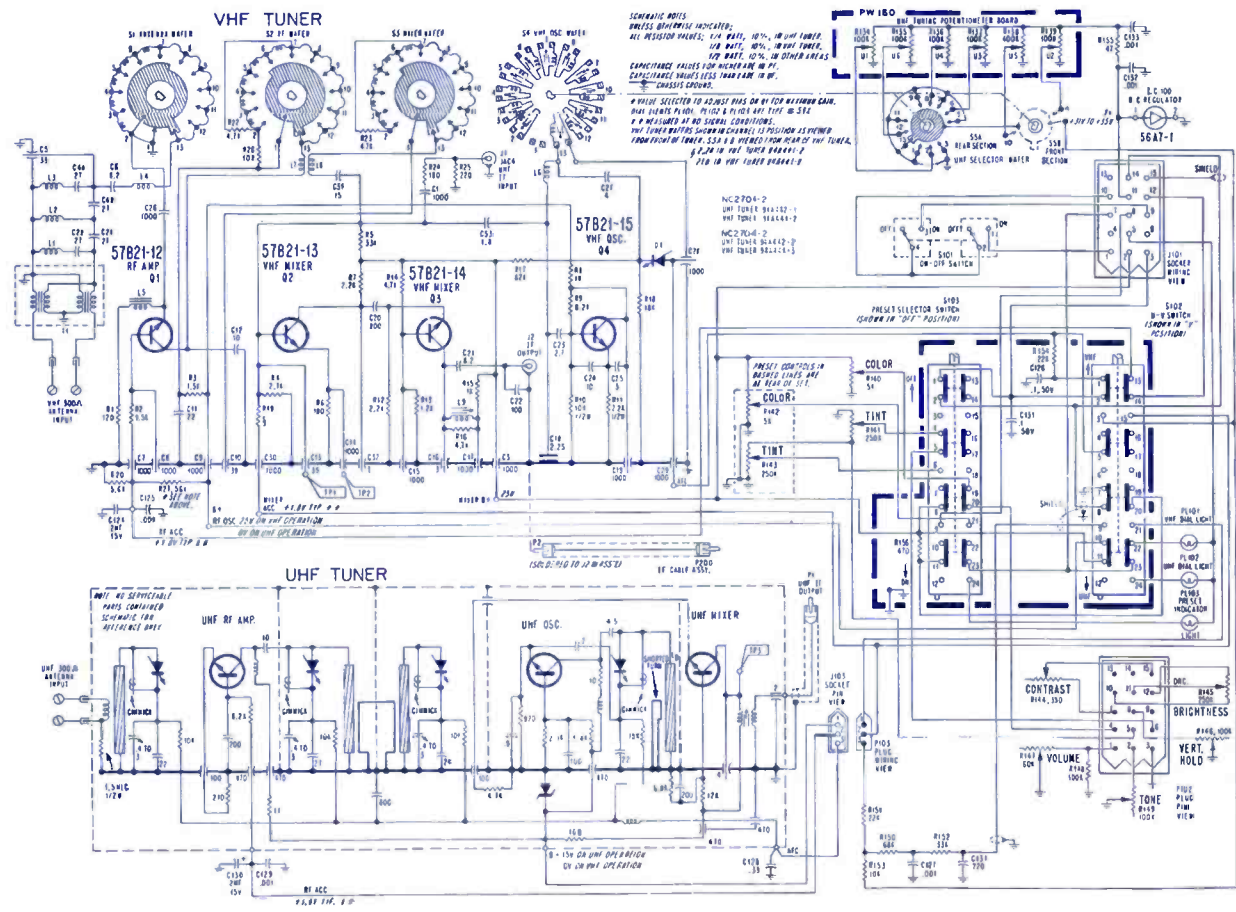
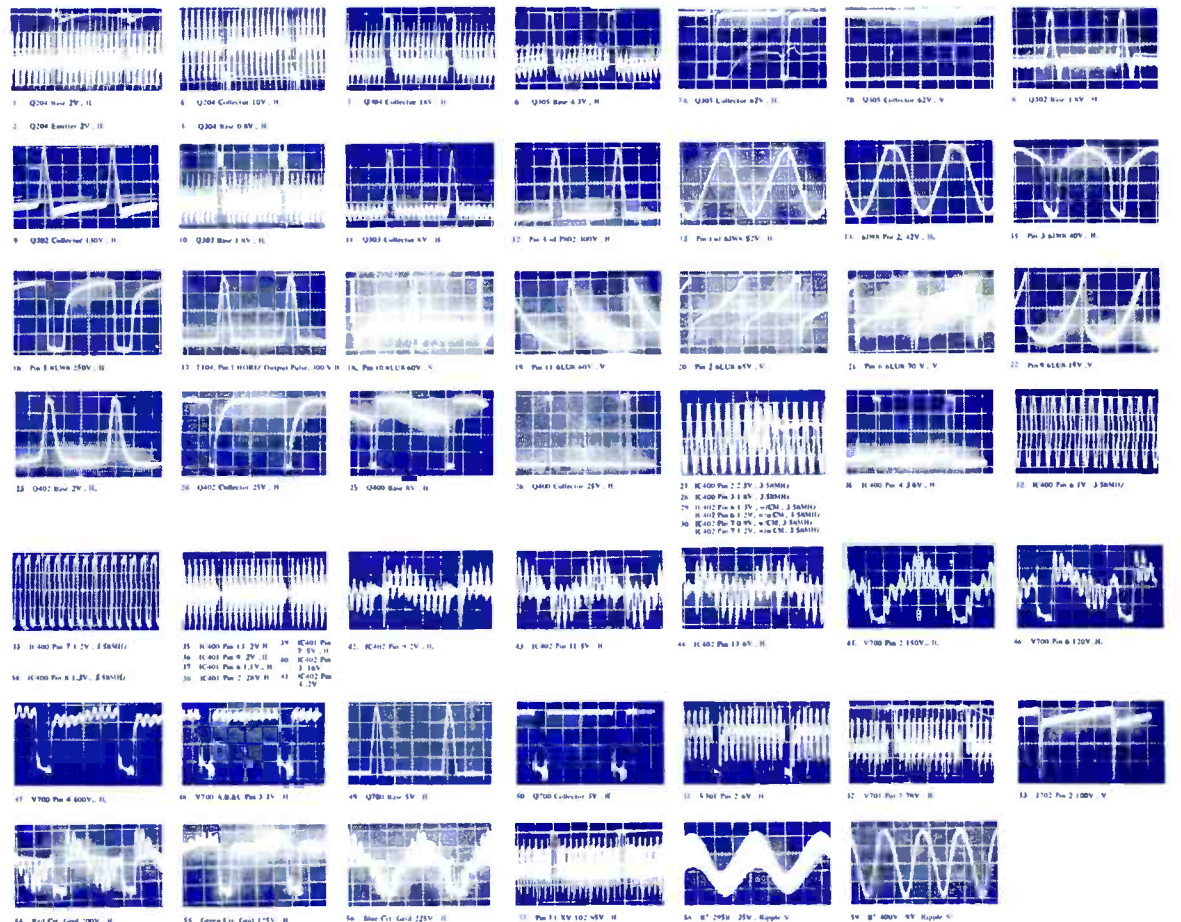
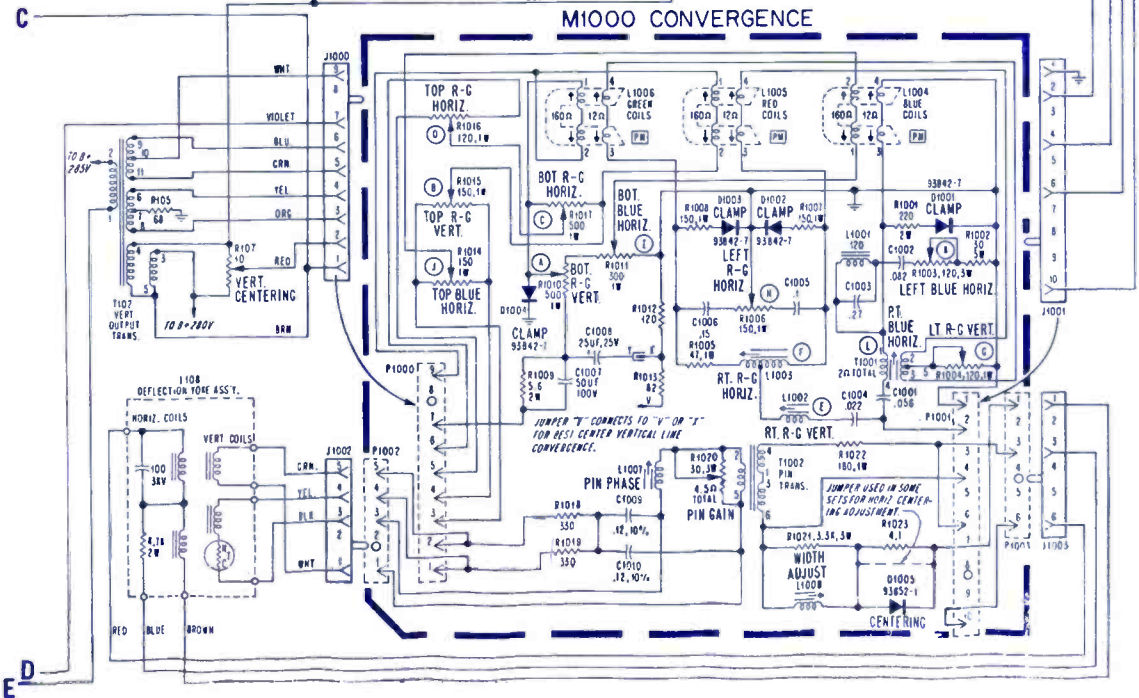
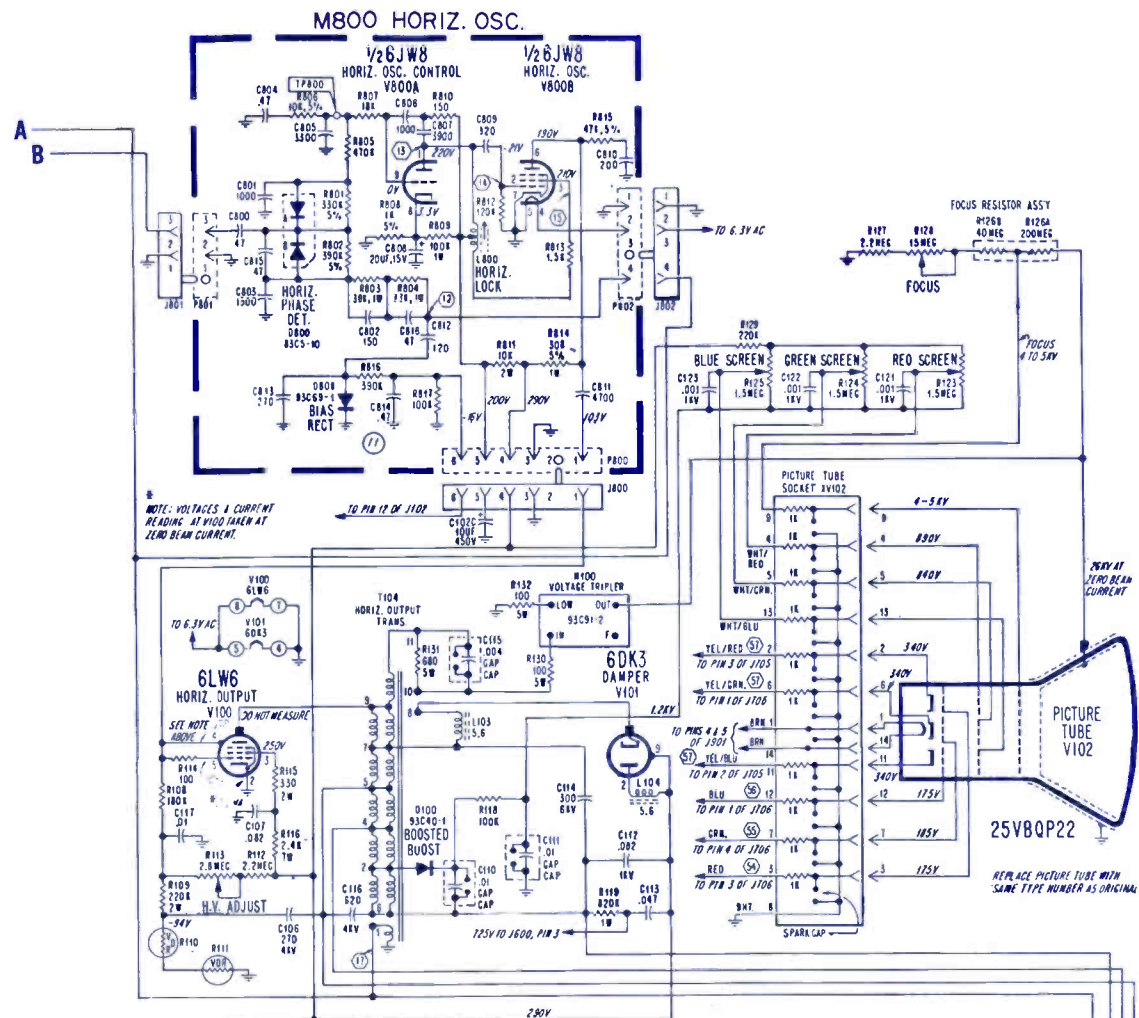
L100	line choke	73A31-1
L201	quadrature coll	72A366-1
L303	47.25MHz trap	72A359-3
L306	4.5MHz trap	72A367-1
L501	horiz hold coil	94A351-1
L702	3.58MHz peaking coil	72A364-1
T100	power xfomer	80A116-3
	deflection yoke	94A377-12
	VHF tuner	94A421-1
	CRT filament xfomer	80A119-1

T103	vert output xfomer	79A153-4
T103	horiz output xfomer	79A164-1
T104	audio output xfomer	79A88-7
T200	45MHz driver xfomer	72A303-17
T700	chroma take-off xfomer	72A368-1
T701	chroma bandpass xfomer	72A358-1
T703	chroma demodulator xfomer	72A357-1
M100	high volt tripler	93A91-1
F100	5A fuse	84A7-13



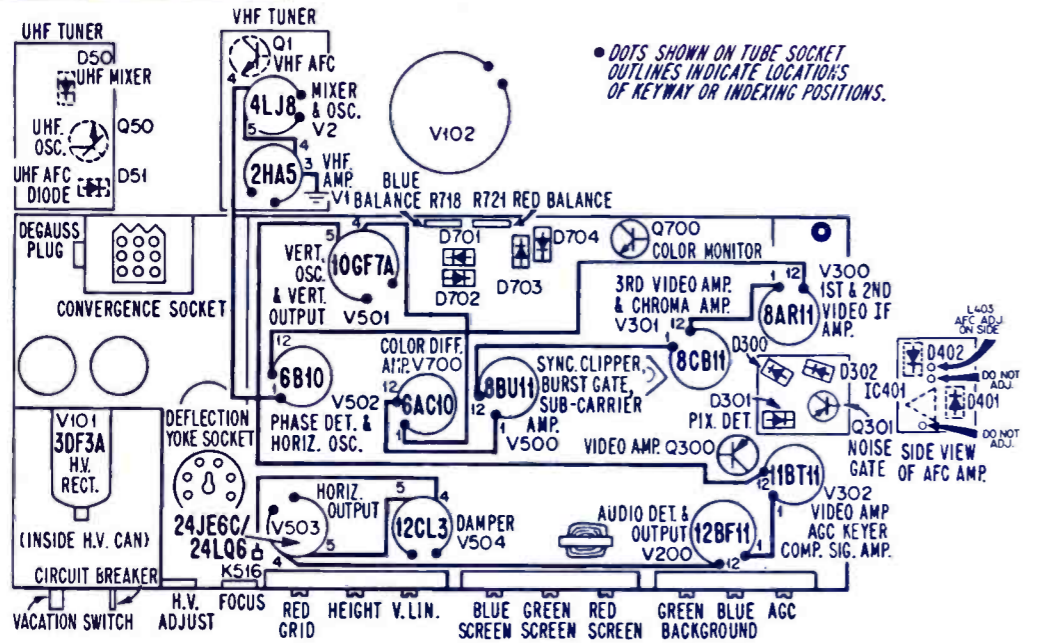
ADMIRAL Color-TV Chassis K19





ADMIRAL

Color-TV Chassis
8K18



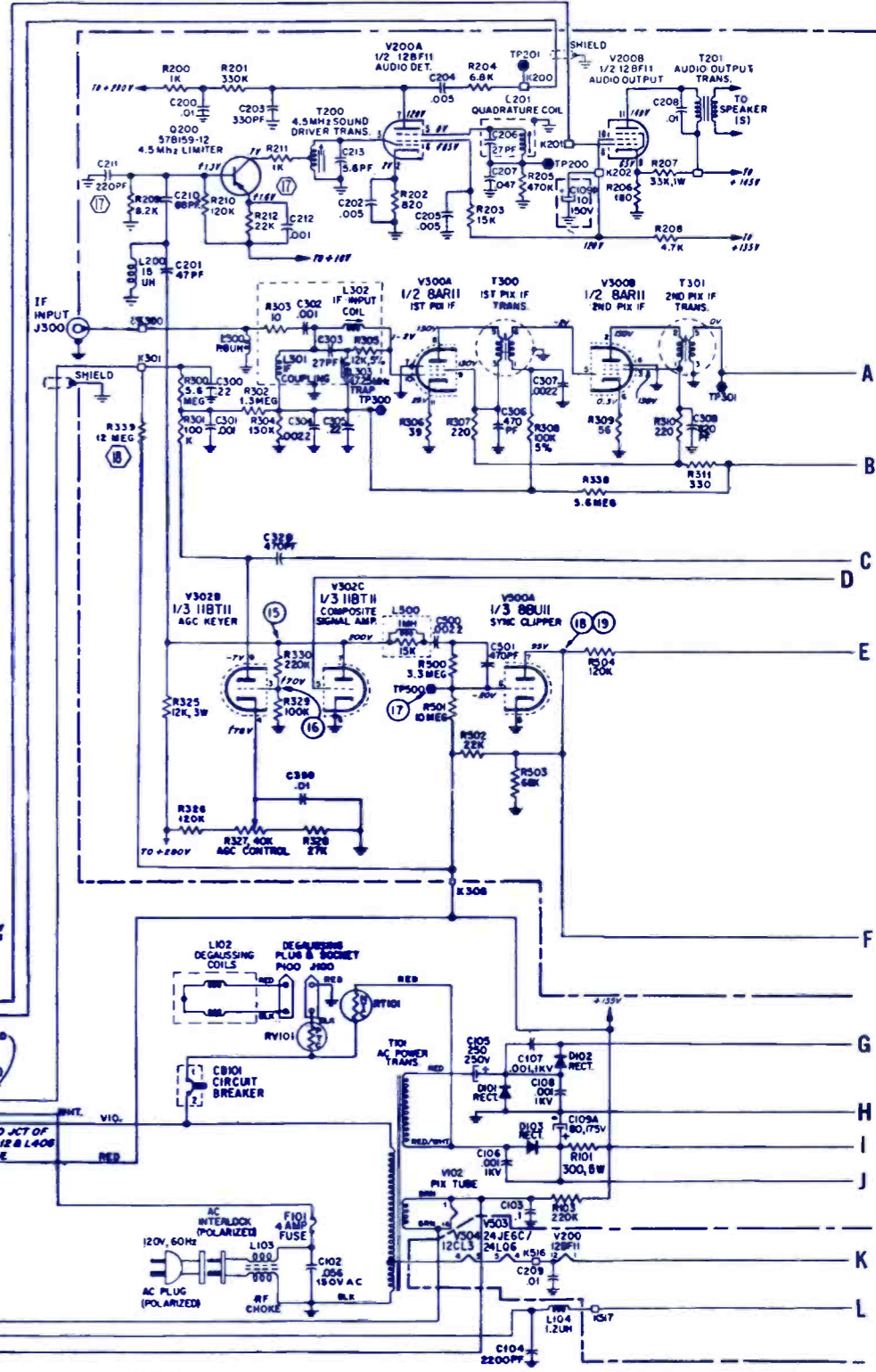
SYMBOL DESCRIPTION ADMIRAL COLOR-TV PART NO.

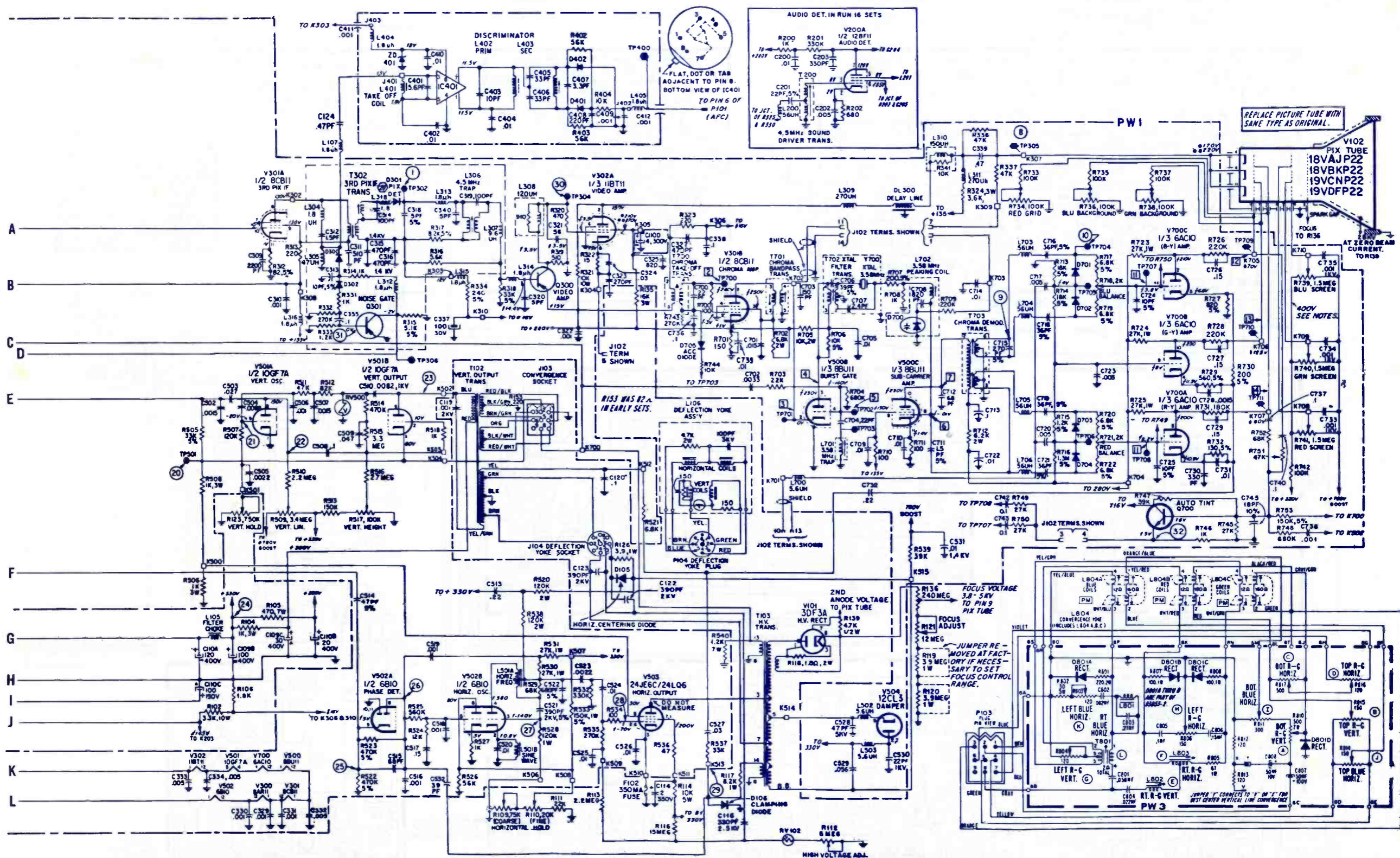
R109-75K, horiz. hold-coarse	75A177-2
R110-20K, horiz hold-fine	75A177-2
R112-500K, high voltage, adjust	75A159-12
R121-12M, focus control	75A157-14
R123-750K, vert hold control	75A135-46
R127-volume control	75A135-46
R509-3.4M, vert lin, triple cont	75A155-8
R517-100K, vert height, triple cont	75A155-8
R734-100K, red grid, triple cont	75A155-8
R739-1.5M, blue screen, triple cont	75A155-1
R740-1.5M, green screen, triple cont	75A155-1
R741-1.5M, red screen, triple cont	75A155-1
RV101-VDR	61A52-2
RV102-VDR	61A46-13
RT101-thermistor (degauss)	61A57-5
RV500-varistor, vert	61A65-1
C109A-80 n, 175v, electro	67A15-410
C109B-100 n, 400v, electro	67A15-410
C109C-30 n, 400v, electro	67A15-410
C109D-10 n, 150v, electro	67A15-410
C110A-120 n, 400v, electro	67A15-409
C110B-20 n, 400v, electro	67A15-409
C110C-100 n, 150v, electro	67A15-409
C110D-4 n, 300v, electro	67A15-409
L105-filter choke	74A31-1
L106-yoke, deflect	94A379-4
L201-sound quad coil	72A366-1
L306-4.5MHz trap coil	72A367-1
L501A, B-horiz freq sinewave coil	72A373-1
T101-power xfmr	80C116-1
T102-vert output xfmr	79D153-5
T103-horiz output xfmr	79D162-2
T200-4.5MHz driver xfmr	72A361-1
T201-audio output xfmr	79A151-1
T700-chroma take-off xfmr	72A368-1
CB101-circuit breaker	84A17-16
F101-4a fuse	84A7-12
F102-.35a fuse	84A28-8

• DOTS SHOWN ON TUBE SOCKET OUTLINES INDICATE LOCATIONS OF KEYWAY OR INDEXING POSITIONS.

RUN CHANGES

- (16) Start of production
- (17) 4.5MHz limiter circuitry added. See inset at right for 4.5MHz Sound Driver and Audio Detector in Run 16 sets.
- (18) To simplify circuitry 12 meg resistor removed from tuner cluster B connected from point K301 to K308 as R339.
- (19) No service significance.
- (20) L318 was added to eliminate possibility of "tweet" in some areas.





6. LINE VOLTAGE INPUT SET AT 120V AC.
 7. (V) INDICATES THE VOLTAGE WILL VARY WITH FINE TUNING SETTING FROM 0V TO 3%.
 VOLTAGE AT PINS 4, 5 & 6 OF PICTURE TUBE WILL VARY WITH SETTING OF SCREEN CONTROLS.
 NUMBERS IN CIRCLES OR SQUARES IDENTIFY WAVEFORM OBSERVATION LOCATIONS.
 CONDITIONS FOR TAKING WAVEFORM MEASUREMENTS ARE GIVEN WITH WAVEFORM PHOTOGRAPHS.
 INDICATES VOLTAGES WILL VARY WITH VIDEO CONTENT OF PICTURE RECEIVED & ARE AVERAGE READINGS.
 (B) INDICATES VOLTAGES WILL VARY WITH BACKGROUND CONTROL SETTINGS.

SAFETY NOTICE
 THE DESIGN OF THIS RECEIVER CONTAINS MANY CIRCUITS AND COMPONENTS INCLUDED SPECIFICALLY FOR SAFETY PURPOSES. FOR CONTINUED PROTECTION, NO CHANGES SHOULD BE MADE TO THE ORIGINAL DESIGN. REPLACEMENT PARTS MUST BE IDENTICAL TO THOSE USED IN THE ORIGINAL CIRCUIT. SERVICE SHOULD BE PERFORMED BY QUALIFIED PERSONNEL ONLY.

ADMIRAL
 Color-TV Chassis
 8K18

ADMIRAL

Color-TV Chassis
12K18

- NOTES:
1. ALL RESISTORS ARE 1/2 WATT, 10%, UNLESS OTHERWISE NOTED.
 2. ALL CAPACITORS ARE IN MFD, UNLESS OTHERWISE NOTED.
 3. CAUTION USE ISOLATION TRANS. WHEN WORKING ON CHASSIS.
 4. DC VOLTAGES MEASURED WITH "VTVM" PLACED BETWEEN POINTS INDICATED & CHASSIS GRND, WITH NORMAL SIGNAL INPUT.
 - (V) INDICATES VOLTAGE READING TAKEN WITH BRIGHTNESS CONT. AT MAXIMUM ROTATION (FULL CW).
 - (V(=)) INDICATES VOLTAGE READINGS TAKEN WITH BRIGHTNESS CONT. AT MINIMUM ROTATION (FULL CCW).
 - (P) INDICATES VOLTAGE READING TAKEN WITH COLOR BAR GENERATOR PRODUCING 3V PP AT TP303.
 6. WAVEFORMS ARE OBSERVED WITH NORMAL SIGNAL INPUT.

7. (V) INDICATES THE VOLTAGE WILL VARY WITH FINE TUNING SETTING FROM 0V TO 1.3V. VOLTAGE AT PINS 4, 5, & 6 OF PICTURE TUBE WILL VARY WITH SETTING OF SCREEN CONTROLS. NUMBERS IN CIRCLES OR SQUARES IDENTIFY WAVEFORM OBSERVATION LOCATIONS. CONDITIONS FOR TAKING WAVEFORM MEASUREMENTS ARE GIVEN WITH WAVEFORM PHOTOGRAPHS.
- (V) INDICATES VOLTAGES WILL VARY WITH VIDEO CONTENT OF PICTURE RECEIVED & ARE AVERAGE READINGS.
- (V(=)) INDICATES VOLTAGES WILL VARY WITH BACKGROUND CONTROL SETTING.

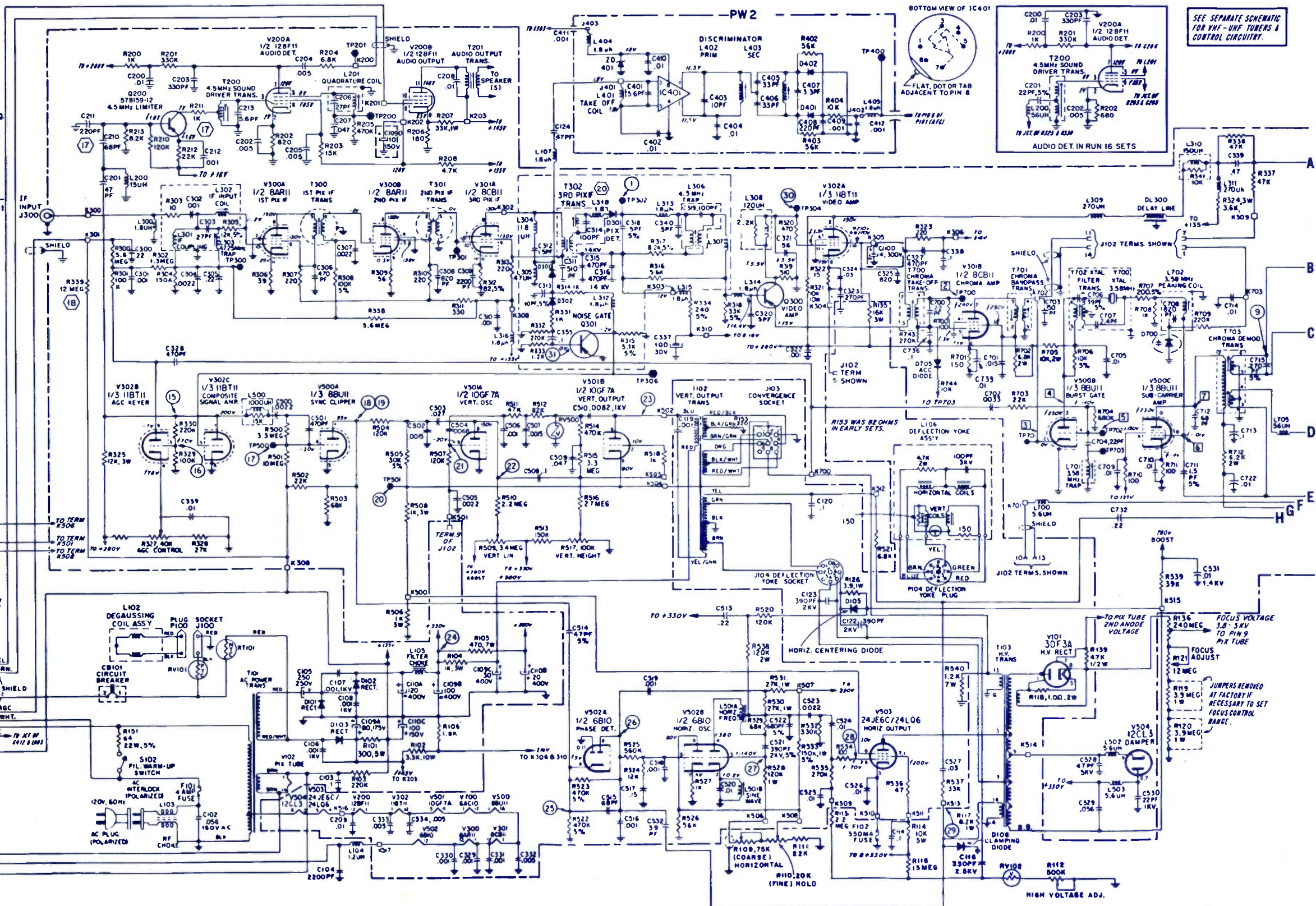
BOTTOM VIEW OF TRANSISTORS IN CHASSIS



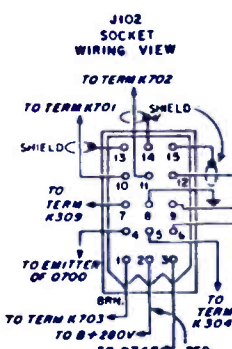
- CHASSIS GROUND.
8. LINE VOLTAGE INPUT SET AT 120 AC

RUN CHANGES

- 16 Start of production
- 17 4.5MHz limiter circuitry added. See inset at right for 4.5MHz Sound Driver and Audio Detector in Run 16 sets.
- 18 To simplify circuitry 12 meg resistor removed from tuner cluster & connected from point K301 to K308 as R339.
- 19 No service significance.
- 20 L318 was added to eliminate possibility of "tweel" in some areas.



SEE SEPARATE SCHEMATIC FOR VHF-UFV TUNERS & CONTROL CIRCUITRY.



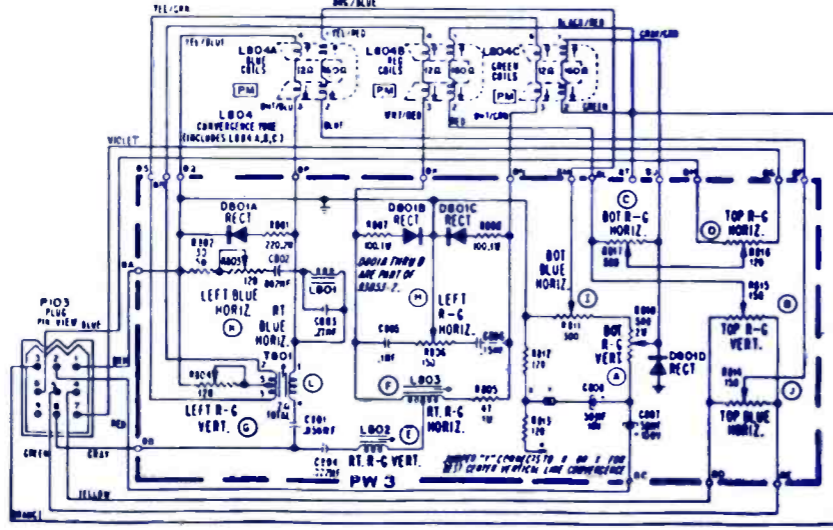
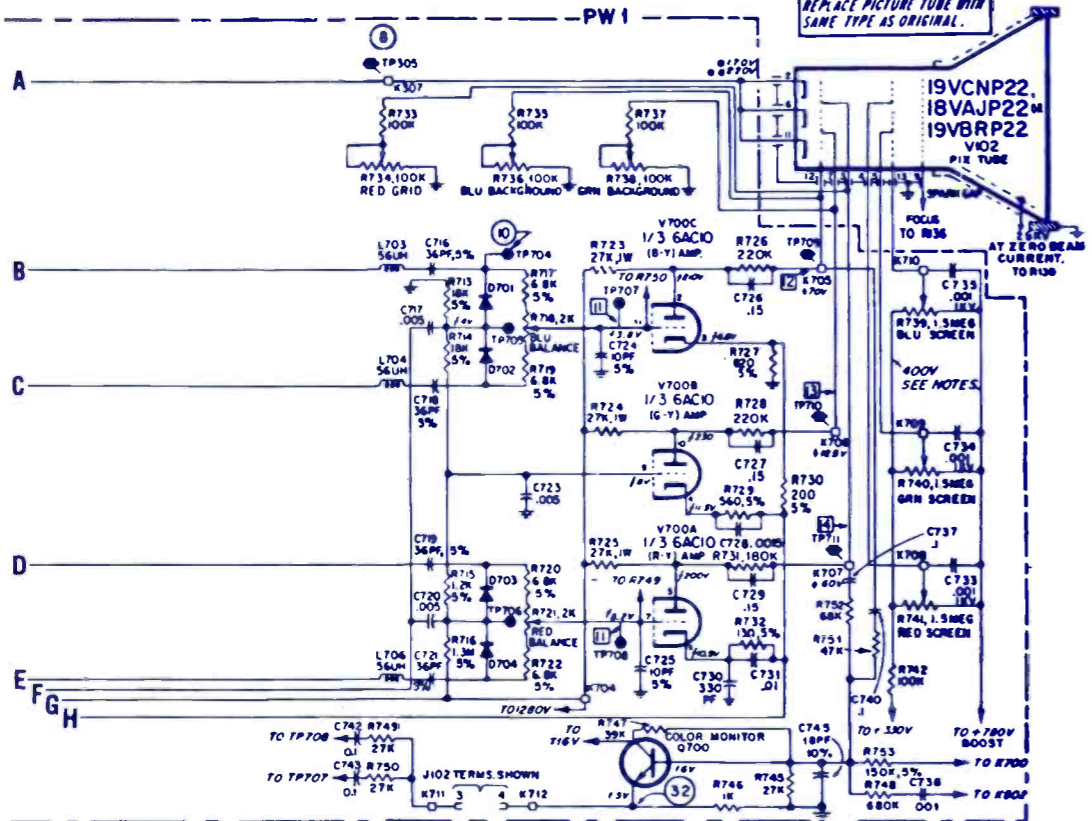
JUMPERS REMOVED AT FACTORY IF NECESSARY TO SET FOCUS CONTROL RANGE.

HIGH VOLTAGE ADJ.

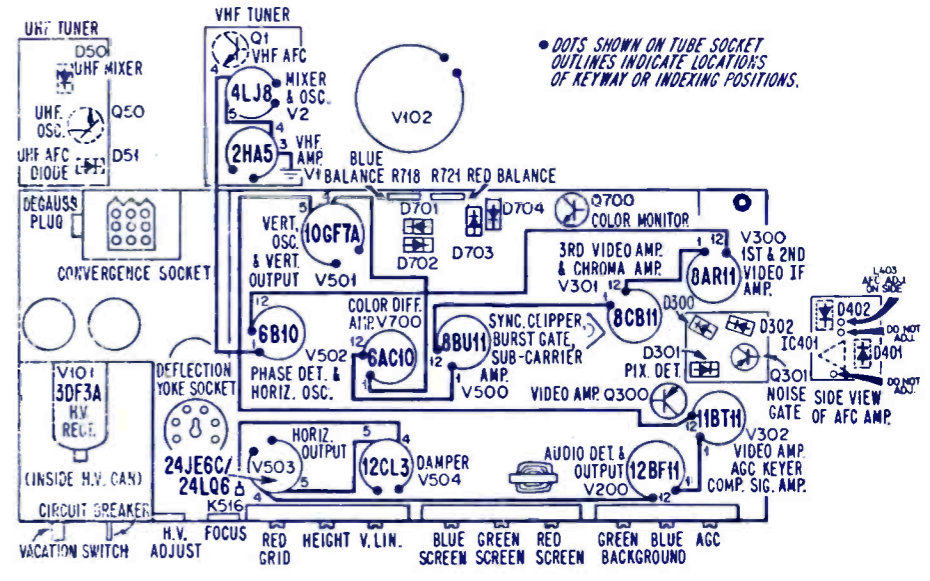
SAFETY NOTICE

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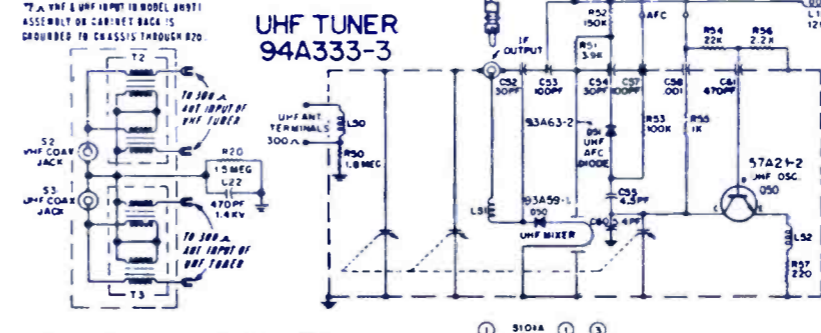
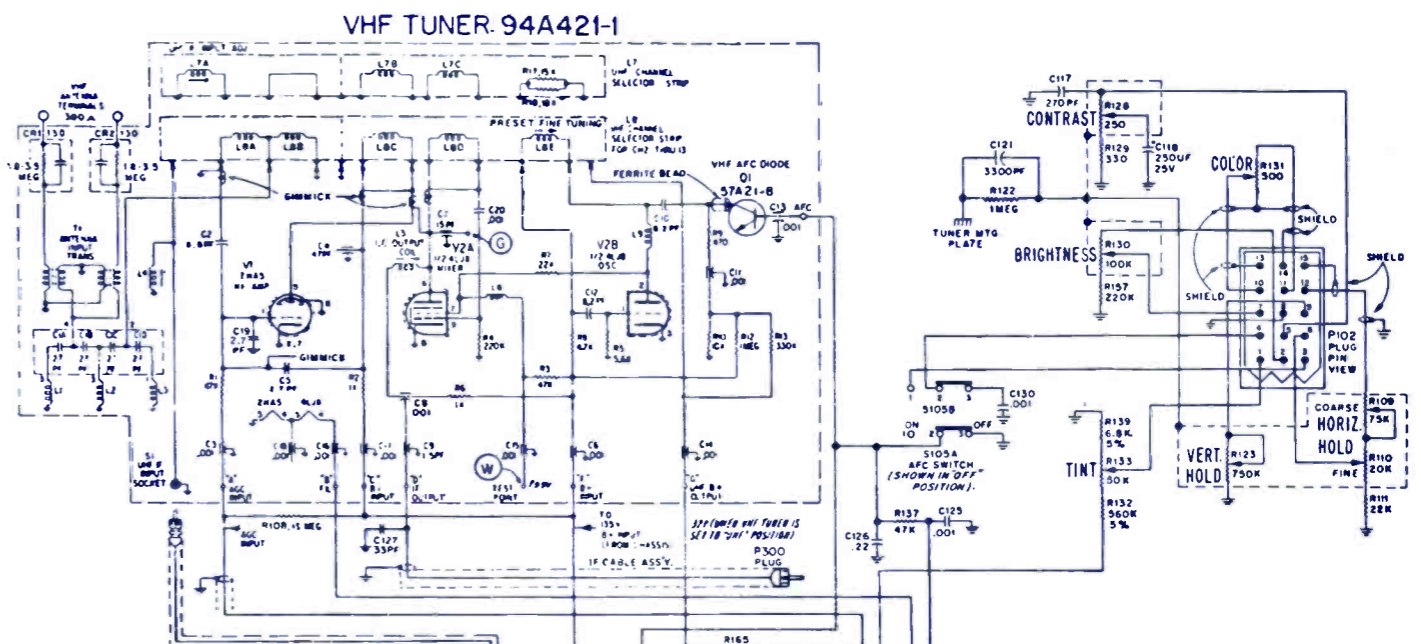
REPLACE PICTURE TUBE WITH SAME TYPE AS ORIGINAL.



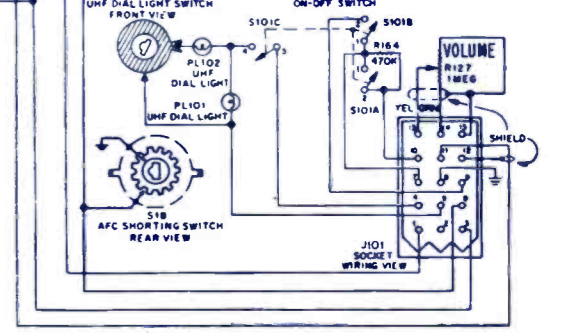
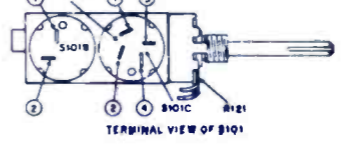
SYMBOL	DESCRIPTION	ADMIRAL PART NO.
R112	500K, HV adj cont	75A159-12
R121	12M focus cont	75A157-14
R123	750K, vert hold cont	See Tuner
R127	1M vol cont	
R136	240M focus bleeder	61A66-2
R509	3.4M vert lin	75A155-8
R517	100K, vert height triple cont	75A155-8
R734	100K, red grid	75A155-8
R718	2K blue balance cont	75A101-40
R721	2K red balance cont	75A101-40
RV101	VDR	61A52-2
RV102	VDR	61A46-13
RT101	thermistor	61A57-5
RV500	varistor vert	61A65-1
L106	yoke deflect	94A379-4
L201	sound quad coil	72A366-1
C109A	80µf, 175v	67A15-410
C109B	100µf, 400v	67A15-410
C109C	30µf, 400v	67A15-410
C109D	10µf, 150v electrolytic	67A15-410
C110A	120µf, 400v	67A15-409
C110B	20µf, 400v	67A15-409
C110C	100µf, 150v	67A15-409
C110D	4µf, 300v electrolytic	67A15-409
L501A, B	horiz frequency sine wave coil	72A373-1
L701	3.58MHz trap coil	72A363-1
T101	power xformer	80C116-1
T102	vert output xformer	79D153-5
T103	horiz output xformer	79D162-2
T200	4.5MHz driver xformer	72A303-17
T201	audio output xformer	79A151-1
T700	chroma take off xformer	72A368-1
T701	chroma bandpass xformer	72A358-1
T702	crystal filter xformer	72A362-1
T703	chroma demod xformer	72A357-1
CB101	circuit breaker 1.5a	84A17-16
F101	4a fuse	84A7-12
F102	35 fuse	84A28-8



TOP DRAWING OF 12K18 CHASSIS



SCHEMATIC NOTES: UNLESS OTHERWISE INDICATED:
 ALL RESISTOR VALUES ARE IN OHMS UNLESS OTHERWISE SPECIFIED.
 ALL CAPACITOR VALUES ARE IN P.F. UNLESS OTHERWISE SPECIFIED.
 CRASSIS GROUND IS CONTROL PANEL GROUND.
 P101, P102 ARE 1/8\"/>



VHF TUNER IS SHOWN IN CHANNEL 13 POSITION. FROM REAR OF VHF TUNER, AFC SHORTING SWITCH S18 MAKES CONTACT MOMENTARILY WHILE SELECTING CHANNELS.

ADMIRAL
 Color-TV Chassis
 12K18

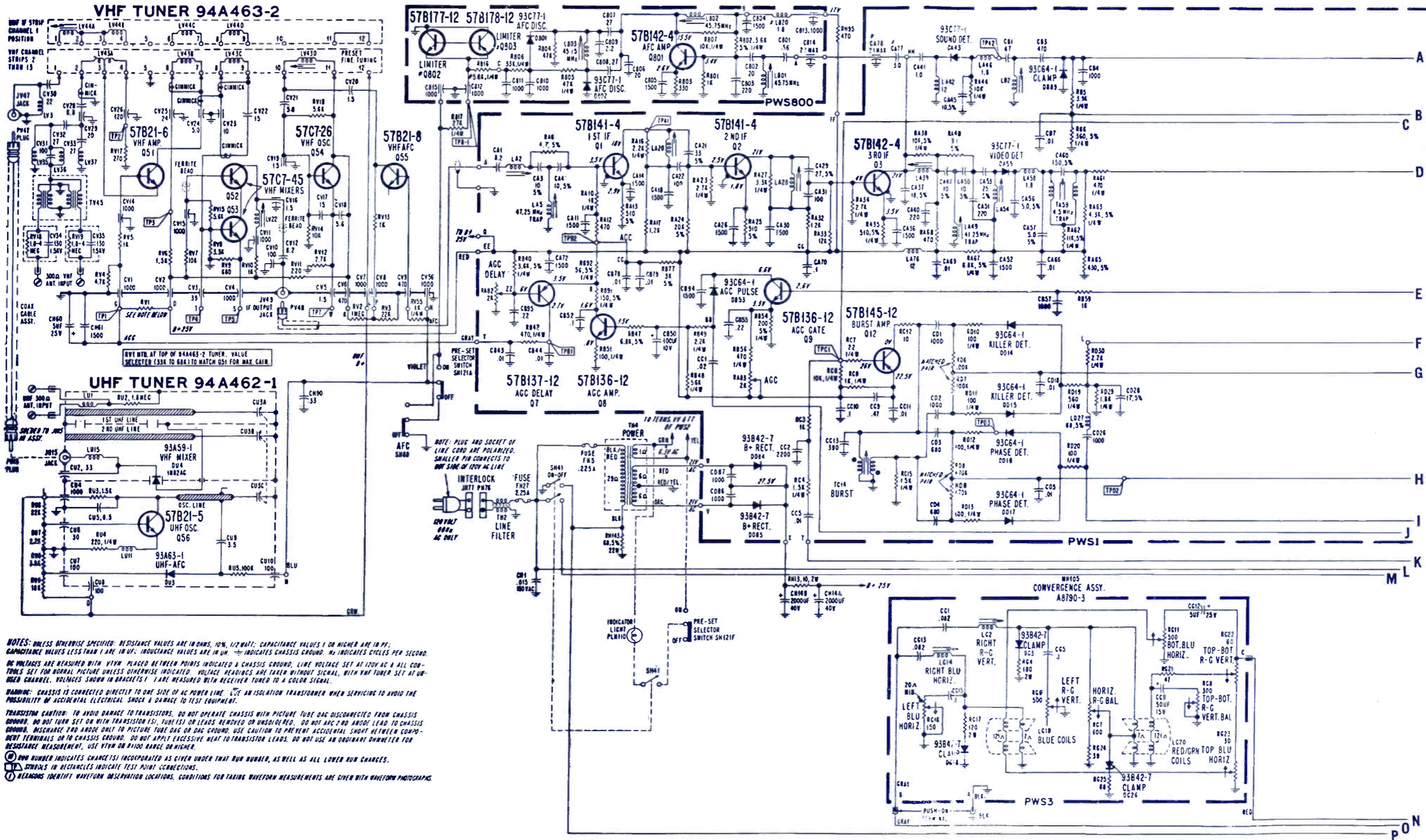
ADMIRAL

Color TV Chassis
T41K10, T42K10

SYMBOL	DESCRIPTION	ADMIRAL PART NO.
	RA82-2K AG Delay	75A101-31
	RA83-2K AGC Control	75A101-31
	RC64-10K Color Killer Control	75A101-18
	RD3B-400Ω, Reactance Control	75A101-35
	RE54-Vertical Size Control	
	RE55-Vertical Hold	75A95-18
	RE56-Vertical Line Cont., 300K	Triple Cont.

RH28-2K, Brightness Control	75A140-25
RH29-350Ω, Contrast Control	75A140-26
RH34-500Ω, Side Tint Control	75A140-17
RH39-500Ω, Color Slide Control	75A140-18
RH39-Dual Control-Contrast & Color (T43K10-1A)	75A194-2
RH39-Dual Control-Contrast & Color (T42K10-1A)	75A194-3
RH42-50K, Volume On/Off Control	75A140-24

RH69-Voltage Dependent Resistor	61A46-7
RH103-Color Control, 1K, 20%, Preset	75A135-52
RH104-Tint Control 500K, 20%, Preset	75A135-51
RH117-Preset Contrast Control, 350Ω	75A135-54
RH118-Preset Brightness Control, 2K	75A135-53
RH125-High Voltage adj 5 M, Control	75A135-57
RH128-VDR	61A46-15
RH132-VDR	61A46-15
RH133-VDR	61A46-15



NOTES: UNLESS OTHERWISE SPECIFIED: RESISTANCE VALUES ARE IN OHMS, 10%, 1/2 WATT; CAPACITANCE VALUES 1 OR HIGHER ARE IN P.F.; CAPACITANCE VALUES LESS THAN 1 ARE IN U.F.; INDUCTANCE VALUES ARE IN OHM. ⊕ INDICATES CHASSIS GROUND. Hz INDICATES CYCLES PER SECOND. DC VOLTAGES ARE MEASURED WITH TV SET PLACED BETWEEN POINTS INDICATED & CHASSIS GROUND, LINE VOLTAGE SET AT 120V AC & ALL CONTROLS SET FOR NORMAL PICTURE UNLESS OTHERWISE INDICATED. VOLTAGE READINGS ARE TAKEN WITHOUT SIGNAL, WITH VHF TUNER SET AT UNUSED CHANNEL. VOLTAGES SHOWN IN BRACKETS () ARE MEASURED WITH RECEIVER TUNED TO A COLOR SIGNAL.

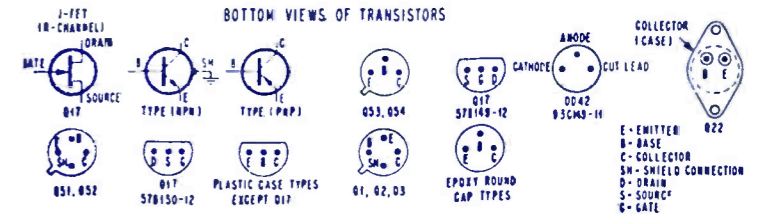
WARNING: CHASSIS IS CONNECTED DIRECTLY TO ONE SIDE OF AC POWER LINE. USE AN ISOLATION TRANSFORMER WHEN SERVICING TO AVOID THE POSSIBILITY OF ACCIDENTAL ELECTRICAL SHOCK & DAMAGE TO TEST EQUIPMENT.

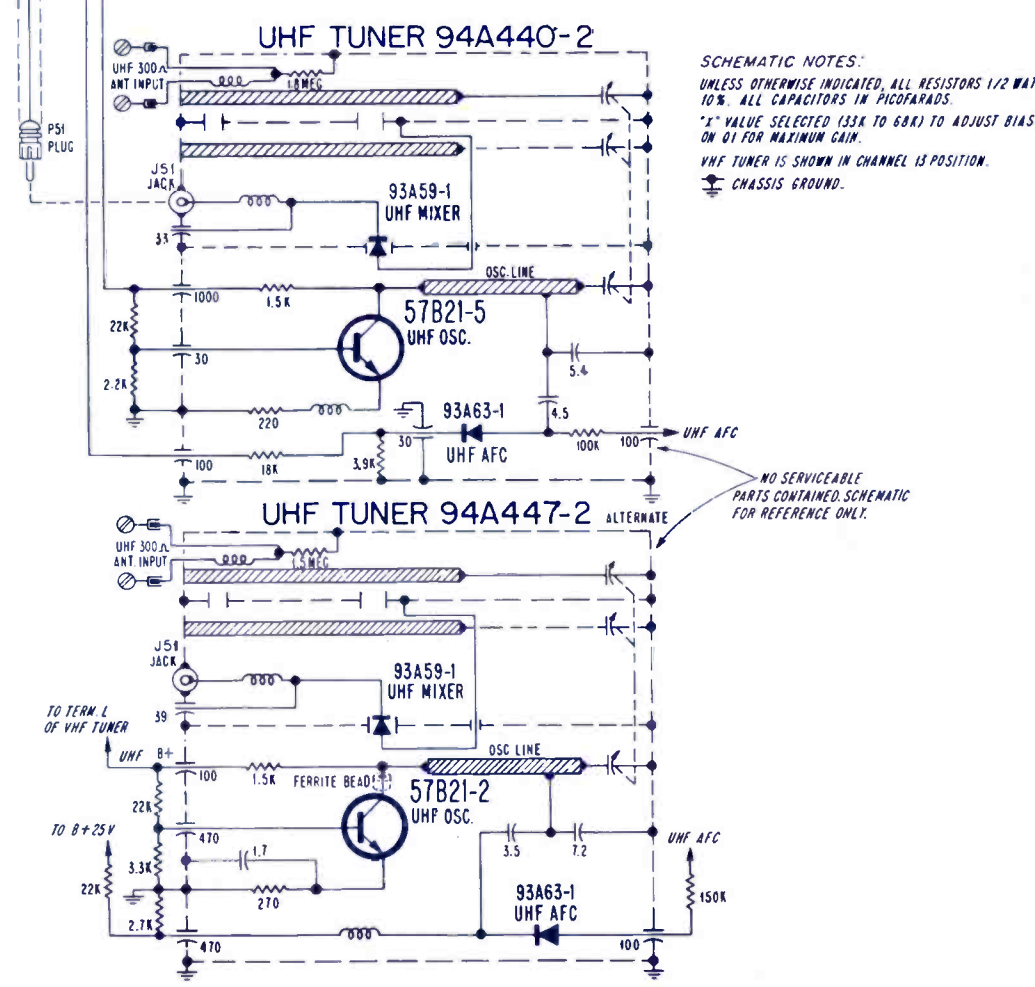
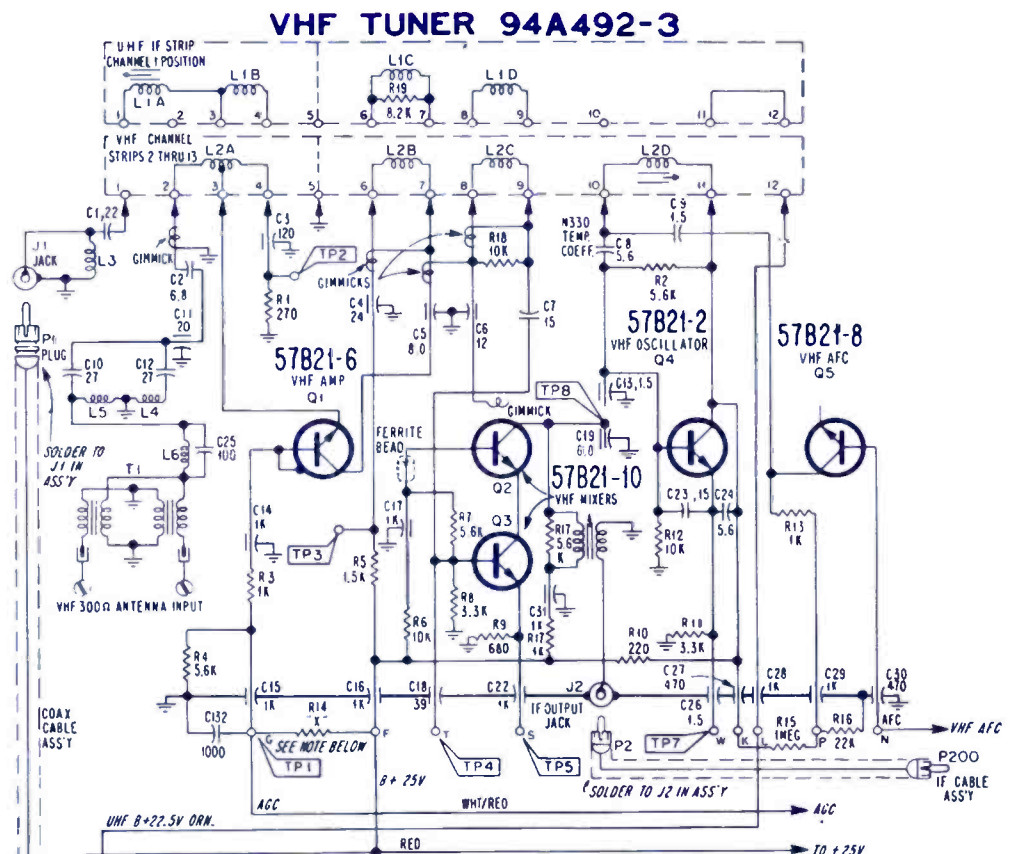
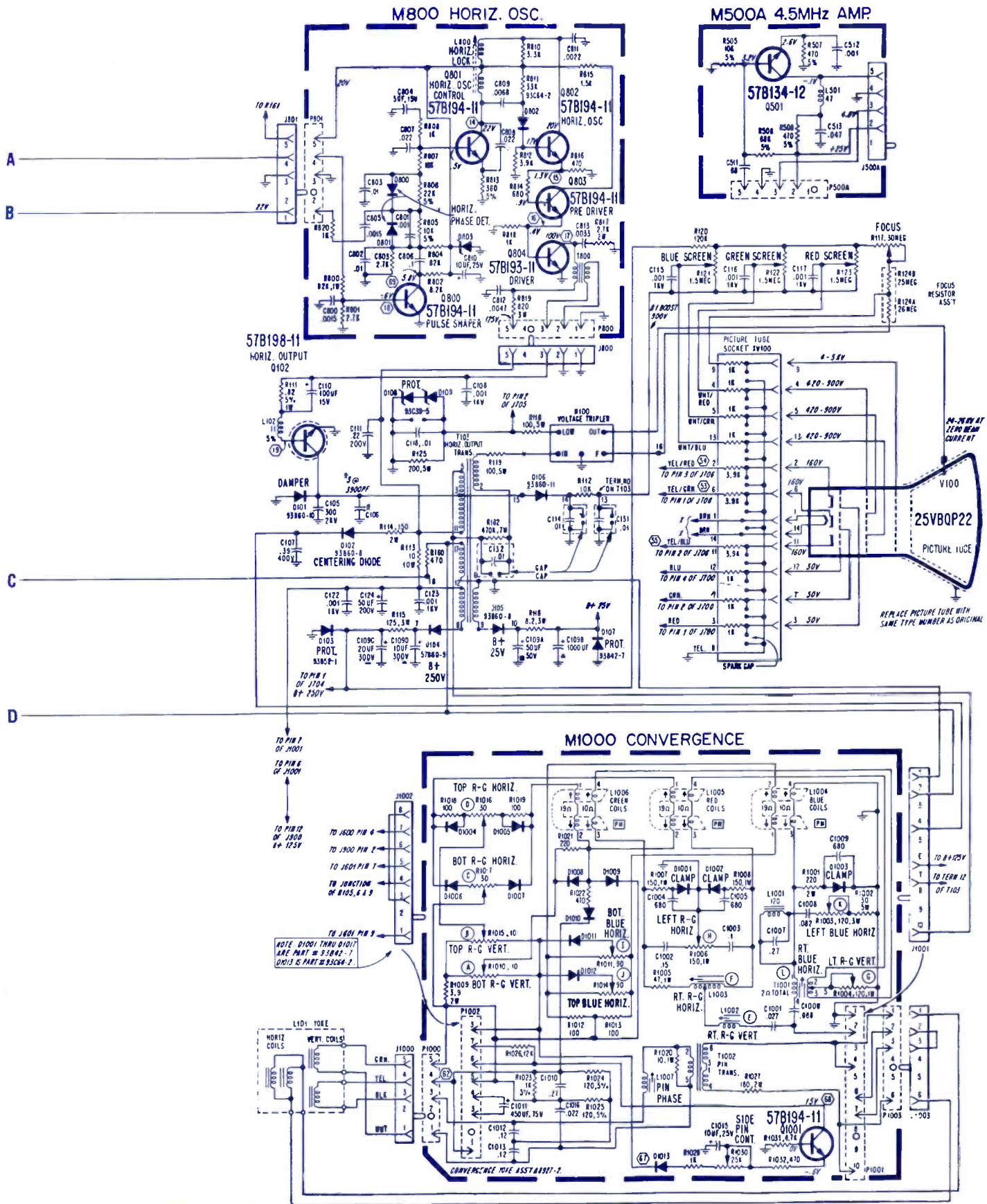
TRANSISTOR CAUTION: TO AVOID DAMAGE TO TRANSISTORS, DO NOT OPERATE CHASSIS WITH PICTURE TUBE DAG DISCONNECTED FROM CHASSIS GROUND. DO NOT TURN SET ON WITH TRANSISTOR (S), TUBE (S) OR LEADS REMOVED OR UNSOLDERED. DO NOT ARC 2ND ANODE LEAD TO CHASSIS GROUND. DISCHARGE 2ND ANODE ONLY TO PICTURE TUBE DAG OR DAG GROUND, USE CAUTION TO PREVENT ACCIDENTAL SHORT BETWEEN COMPONENT TERMINALS OR TO CHASSIS GROUND. DO NOT APPLY EXCESSIVE HEAT TO TRANSISTOR LEADS. DO NOT USE AN ORDINARY OHMMETER FOR RESISTANCE MEASUREMENT, USE 10M OR R100 RANGE OR HIGHER.

Ⓜ NUMBER INDICATES CHANGE(S) INCORPORATED AS GIVEN UNDER THAT RUM NUMBER, AS WELL AS ALL LOWER RUM CHANGES.

Ⓢ STRIKES IN RECTANGLES INDICATE TEST POINT CORRECTIONS.

Ⓜ WAVEFORMS IDENTIFY WAVEFORM OBSERVATION LOCATIONS. CONDITIONS FOR TAKING WAVEFORM MEASUREMENTS ARE GIVEN WITH WAVEFORM PHOTOGRAPHS.





SCHEMATIC NOTES:
UNLESS OTHERWISE INDICATED, ALL RESISTORS 1/2 WATT, 10%. ALL CAPACITORS IN PICOFARADS.
"X" VALUE SELECTED (33K TO 68K) TO ADJUST BIAS ON Q1 FOR MAXIMUM GAIN.
VHF TUNER IS SHOWN IN CHANNEL 13 POSITION.
⊥ CHASSIS GROUND.

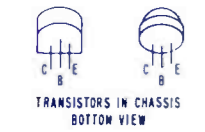
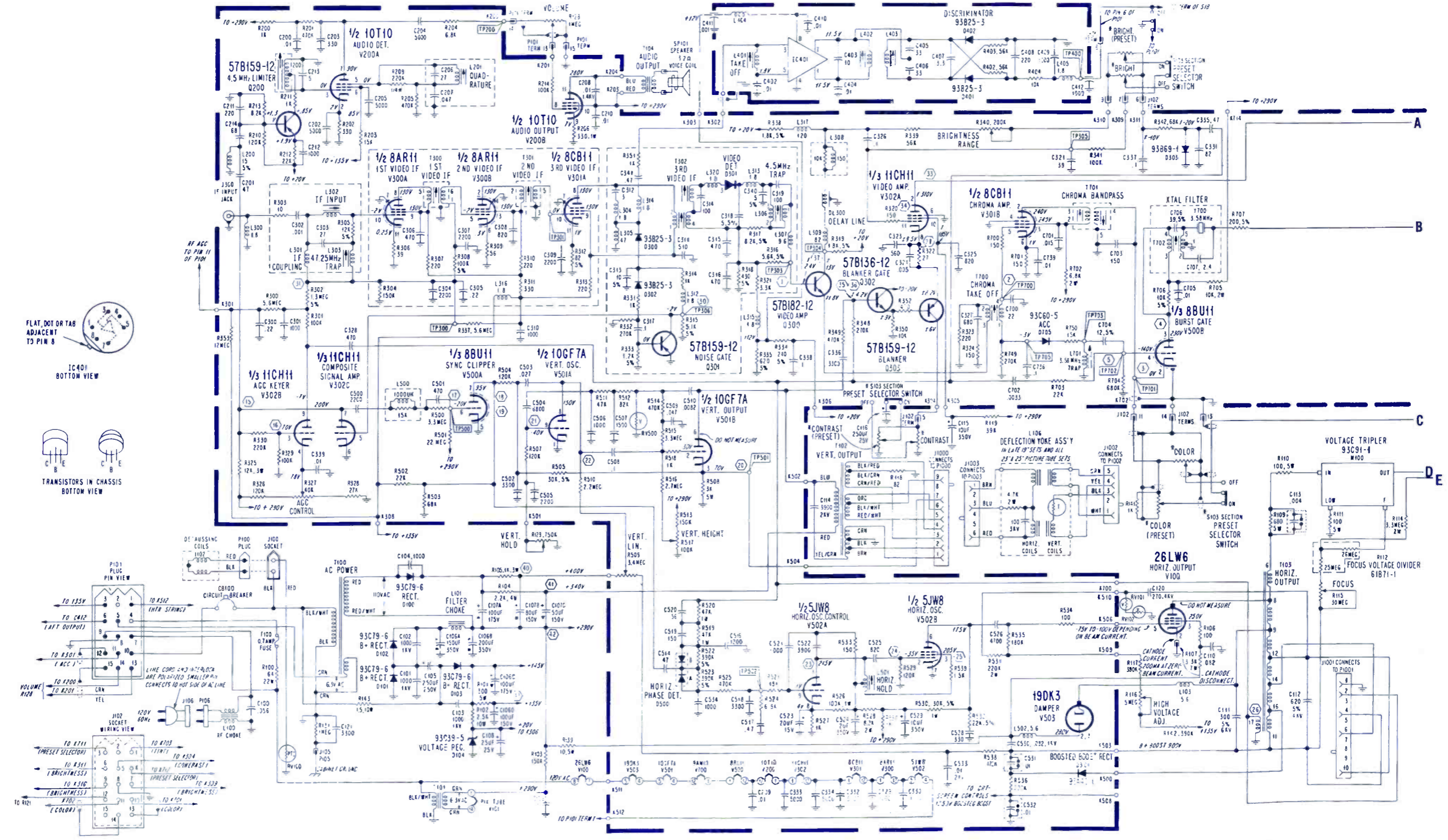
NO SERVICEABLE PARTS CONTAINED. SCHEMATIC FOR REFERENCE ONLY.

ADMIRAL
Color TV Chassis M24

ADMIRAL

Color TV Chassis
3K19

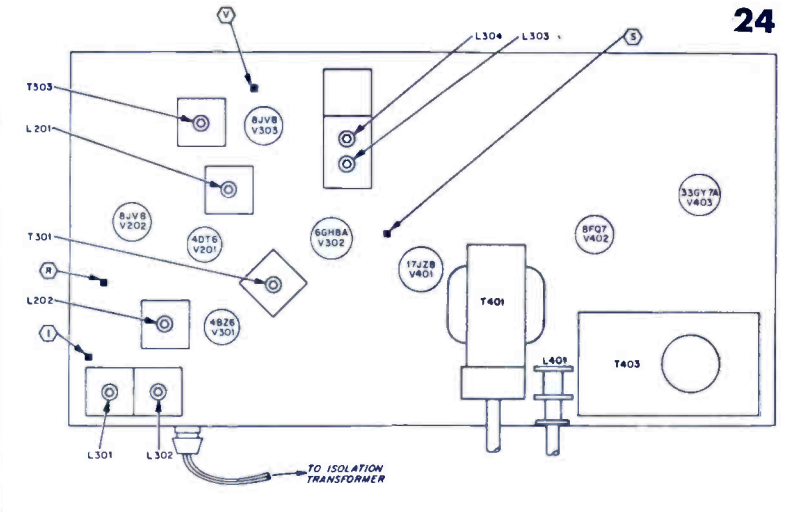
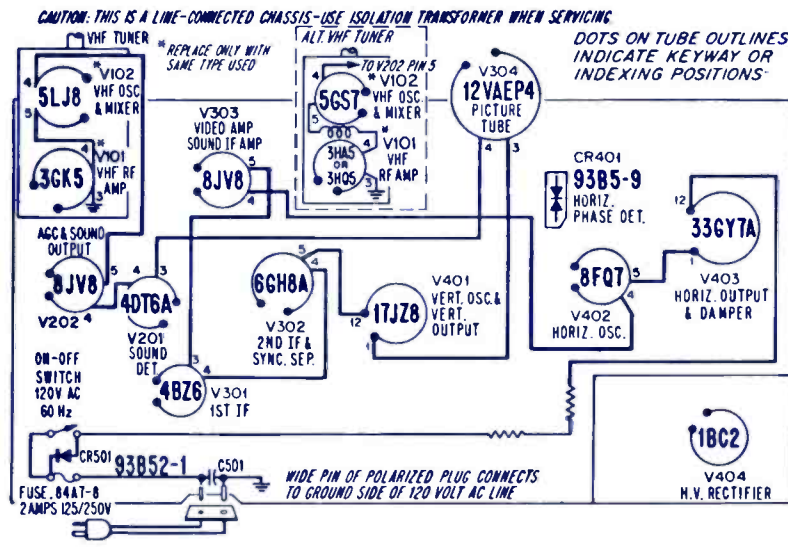
SYMBOL	DESCRIPTION	ADMIRAL PART NO.
R112	focus voltage divider	61A71-1
R115	15M focus cont.	75A108-8
R116	5.0M high voltage cont.	75A135-48
R129	750K vert hold cont.	75A135-46
R327	40K AGC cont.	75A155-9
R340	200K brite range cont.	75A155-10
R509	3.4M vert lin cont.	
R517	100K height cont.	
R739	1.5M blue screen cont.	75A155-1
R740	1.5M green screen cont.	75A155-1
R741	1.5M red screen cont.	75A155-1
RV 101		
102	VDR.	61A46-13
RV500	varistor.	61A65-1
C106A	150µf, 250v elect	67A15-412
C106B	200µf, 350v elect	67A15-412
C106C,D	100µf, 175v elect	67A15-412
C107A	100µf, 175v elect	67A15-511
C107B	80µf, 150v elect	67A15-511
C107C	50µf, 150v elect	67A15-511
L100	line choke	73A31-16
L101	filter choke	74A31-1
L201	quad coil	72A366-1
L303	47.25MHz trap	72A359-3
L306	4.5MHz trap	72A367-1
L501	horiz hold coil	94A351-1
L701	3.58 trap	72A414-1
L702	3.58MHz peaking coil	72A364-1
T100	power xformer	80A116-3
T101	CRT filament xformer	80A119-1
T102	vert output xformer	79A153-4
T103	horiz output xformer	79A164-3
T104	audio output xformer	79A88-7
T700	chroma take-off xformer	72A368-1
T701	chroma bandpass xformer	72A358-1
T703	chroma demod xformer	72A357-1
M100	high voltage tripler	93A91-1
CB100	2.6a circuit breaker	84A17-15
Y700	3.58MHz crystal	93A74-1



AIRLINE

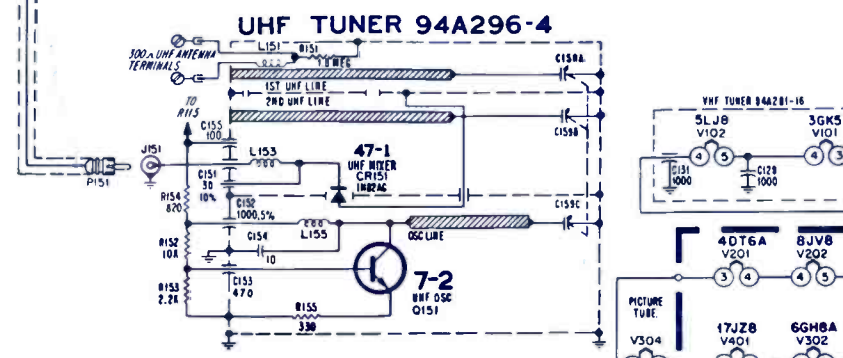
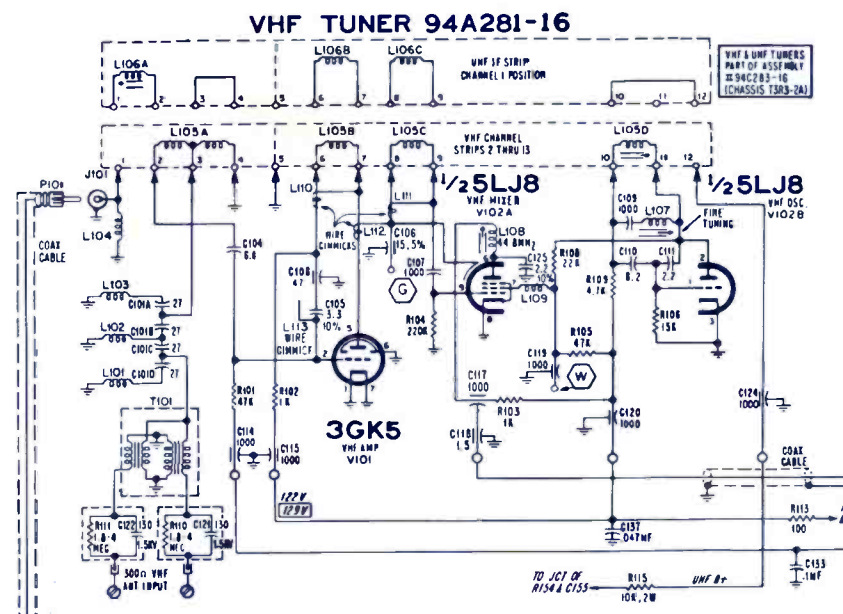
TV Model
GAI-11253A/B

SYMBOL	DESCRIPTION	AIRLINE PART NO.
C504 A, B, C	250 μ / 165v - 150 μ / 150v - 200 μ / 150v electrolytic	67A30-11
R208	500K on/off/volume	75A1-185
R320	30K video	75A12-13
R418	5M, height	75A101-16
R422	1.2M, vert hold	75A100-8
R466	500K, vert lin	75A101-17
L201 A, B	coil, sound IF	72A301-2
L202	coil, quad (includes C207)	72A132-77
L301	coil, 47.25MHz trap	72A296-4
L401	coil, horiz hold	94A17-19
T201	x-former, audio output	79A124-5
T303	x-former, sound take-off, 4.5MHz	72A185-5
T401	x-former, vert output	79A139-4
T402	deflection yoke	94A372-2
T403	x-former, horiz output	79A138-15
CR301	diode, video detector, 1N60	93A8-1
CR401	diode, horiz phase detector	93A5-9
F501	fuse, 2 a (plgtail)	84A7-8



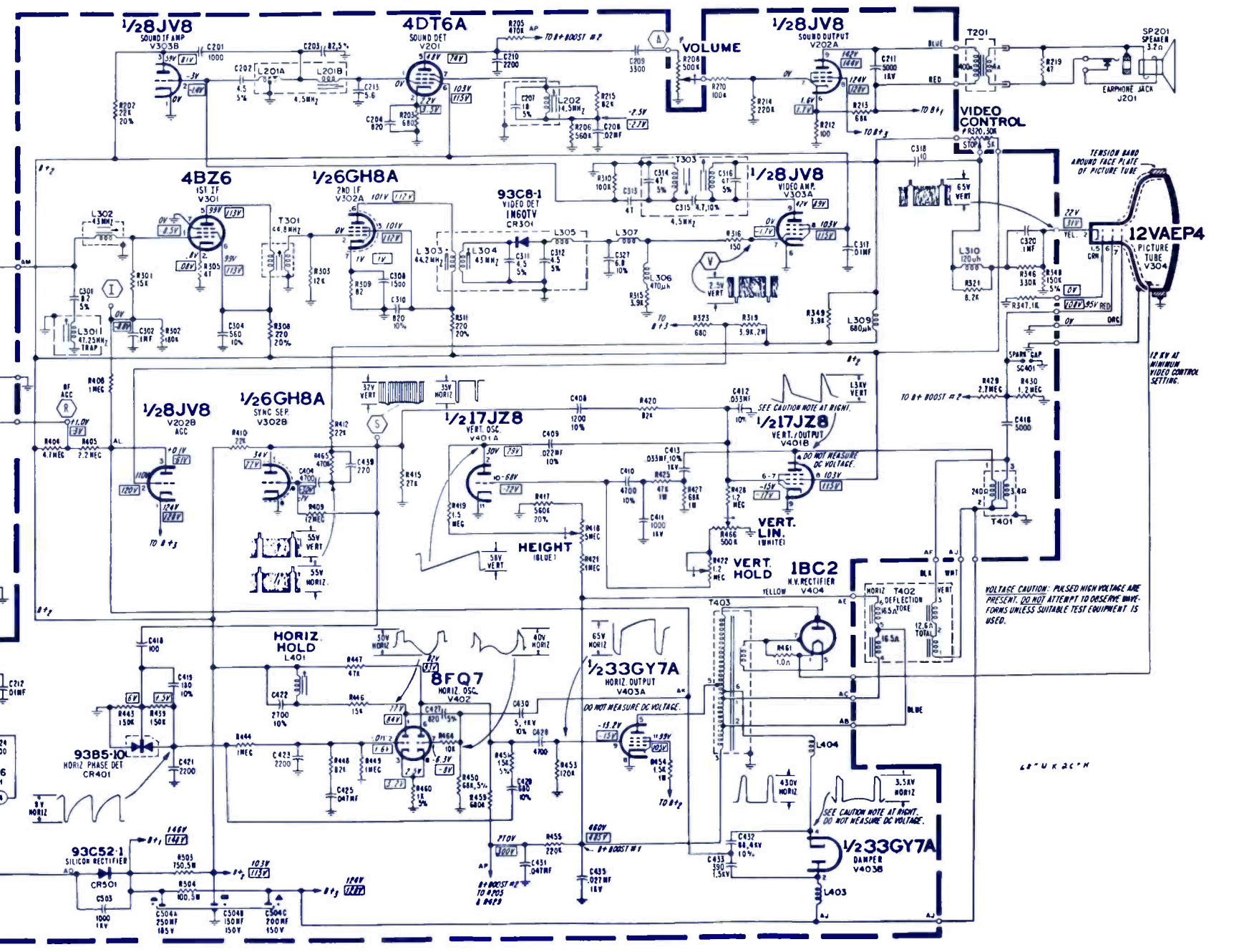
Top View of Chassis Showing Alignment Locations and Test Points

Tube Location Chart



SCHEMATIC NOTES:
 1. PART NOT MOUNTED ON PRECISION WIRED SYSTEM.
 2. VOLTAGE WILL VARY WITH SETTING OF CONTROLS.
 3. RESISTOR VALUES 1% UNLESS OTHERWISE INDICATED.
 4. CAPACITOR VALUES IN MICROFARADS UNLESS OTHERWISE INDICATED.
 5. DC VOLTAGES MEASURED WITH VTVM AT 120V AC LINE, MAX CONTRAST & BRIGHTNESS AND MIN VOLUME. DC VOLTAGES IN BOX MEASURED WITH SIGNAL OF MEDIUM SIGNAL STRENGTH. VOLTAGES NOT IN BOX MEASURED WITH NO SIGNAL.
 6. CHASSIS GROUND.
WARNING: USE ISOLATION TRANSFORMER WHEN SERVICING WITH CABINET BACK REMOVED.

NOTE: PLUG & SOCKET OF LINE CORD ARE POLARIZED. SMALLER PIN CONNECTS TO HOT SIDE OF 120V AC LINE.

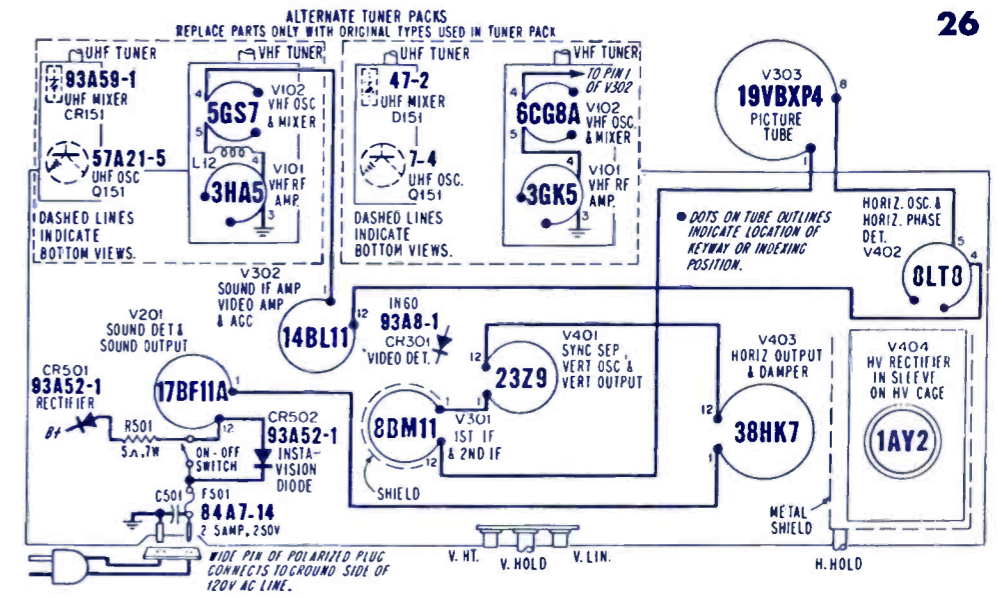


12" x 8" x 20" M

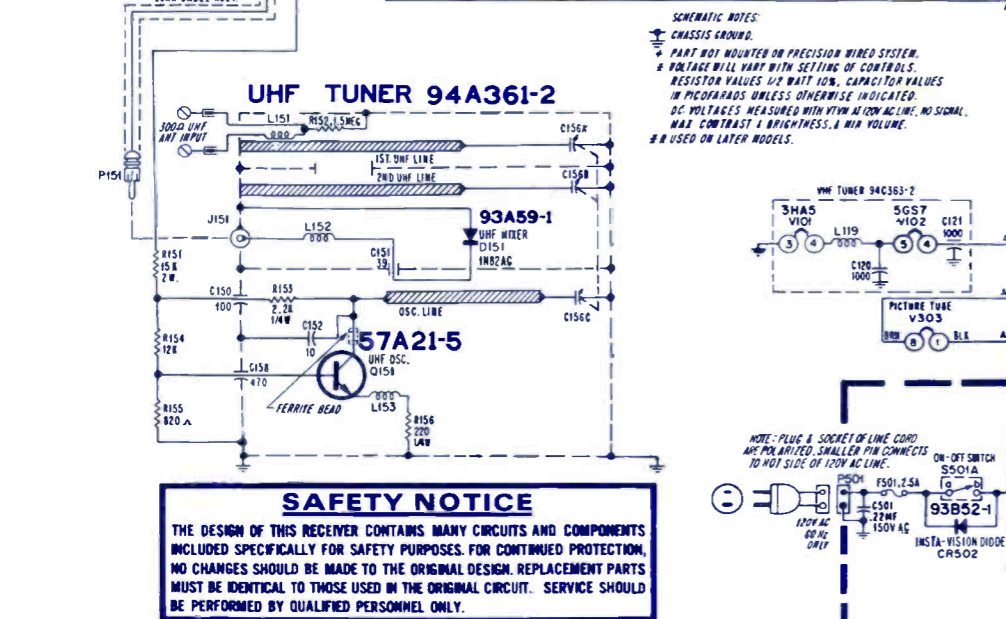
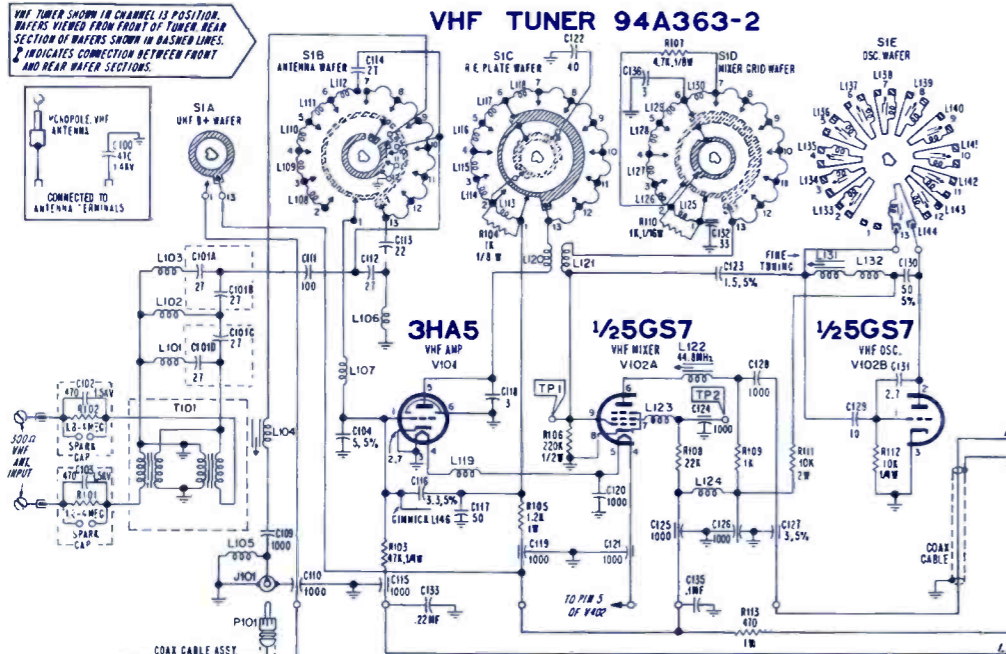
AIRLINE

TV Models
GAI-13133C,D

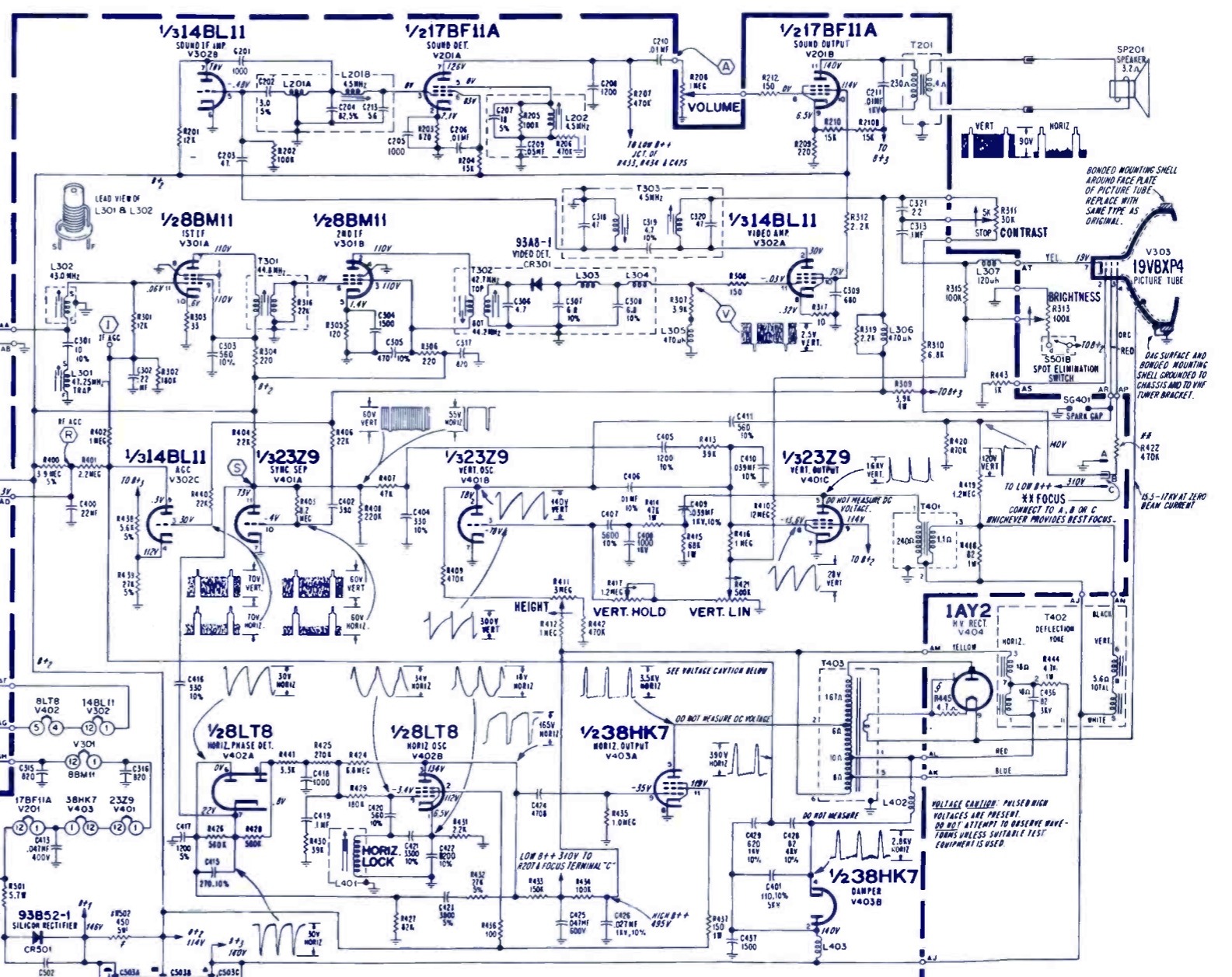
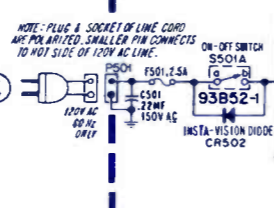
SYMBOL	DESCRIPTION	AIRLINE PART NO.
C503A, B	-.250 μ f/165V, 150 μ f/160V	67A30-11
C	200 μ f/150V electrolytic	75A149-10
R208	1M volume	75A112-13
R31T	30K contrast	75A129-3
R411	3M, height	75A129-3
R417	1.2M, vert hold	75A129-3
R421	500K, vert lin	75A129-3
L201A, B	-coil, sound 1F	72A301-4
L202	-coil, quad	72A132-82
L401	-coil, horiz osc lock	94A17-19
T201	-xformer, audio output	79A124-3
T301	-xformer, 1st 1F, 44.8MHz	72A308-2
T302	-xformer, 2nd 1F, 42.7MHz inc. C306	72A310-1
T401	-xformer, vert output	79A139-5
T402	-deflect yoke inc. C436 & R444	750A1089-12
T403	-xformer, horiz output	79A138-22



VHF TUNER SHOWN IN CHANNEL 13 POSITION. WAFERS VIEWED FROM FRONT OF TUNER. REAR SECTION OF WAFERS SHOWN IN DASHED LINES. Φ INDICATES CONNECTION BETWEEN FRONT AND REAR WAFER SECTIONS.



SCHEMATIC NOTES:
 * PART NOT MOUNTED ON PRECISION WIRED SYSTEM.
 * VOLTAGE WILL VARY WITH SETTINGS OF CONTROLS.
 * RESISTOR VALUES 1/2 WATT 10%, CAPACITOR VALUES IN PICOFARADS UNLESS OTHERWISE INDICATED.
 * DC VOLTAGES MEASURED WITH VTVM AT 100V AC LINE, NO SIGNAL, MAX. CONTRAST & BRIGHTNESS, & MIN. VOLUME.
 * Φ IS USED ON LATER MODELS.

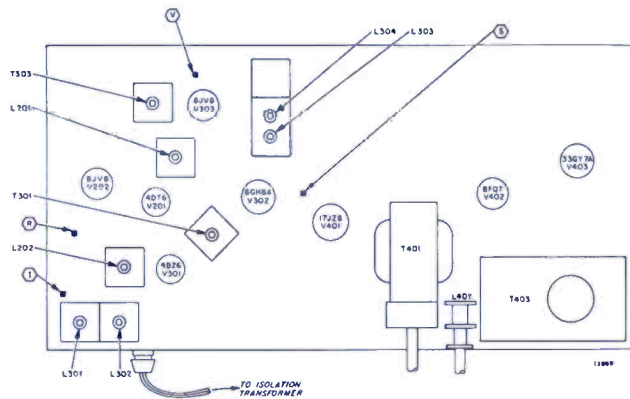


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VOLTAGE CAUTION: PULSED HIGH VOLTAGES ARE PRESENT. DO NOT ATTEMPT TO OBSERVE WAVEFORMS UNLESS SUITABLE TEST EQUIPMENT IS USED.

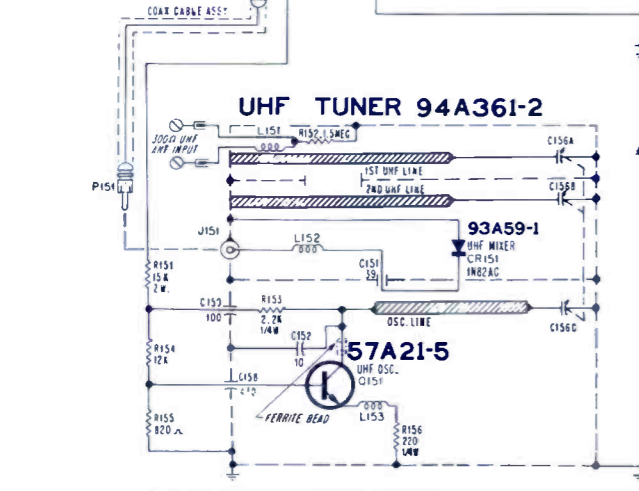
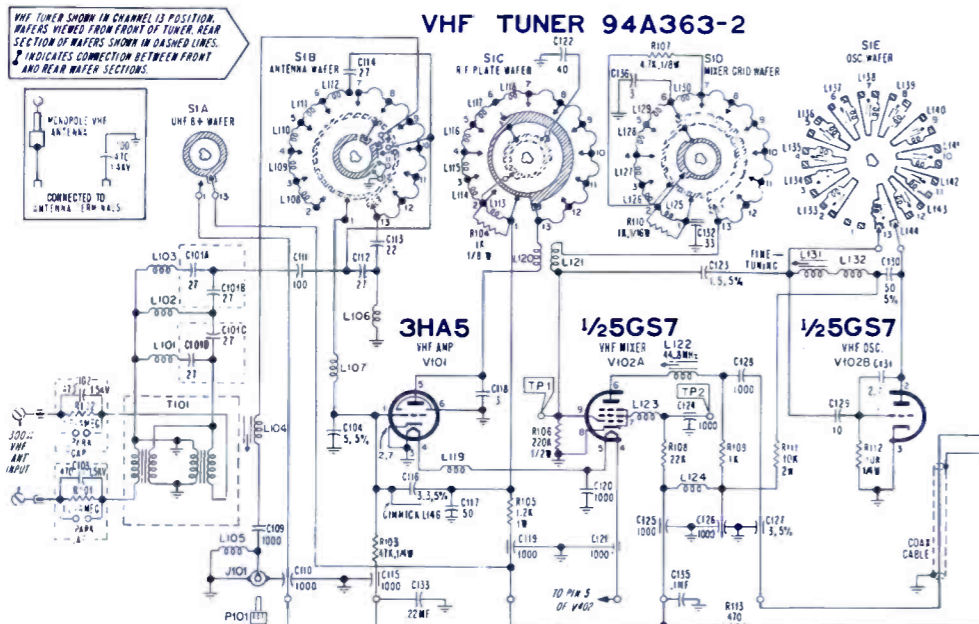
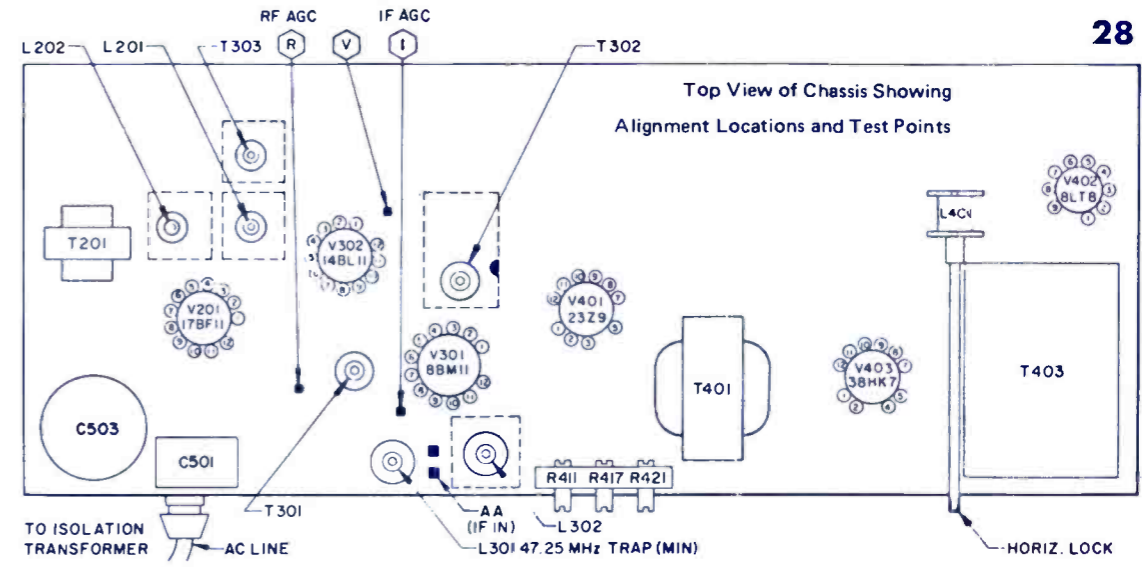
SYMBOL	DESCRIPTION	AIRLINE PART NO.
C504A, B, C	250 μ F/165V, 150 μ F/150V, 200 μ F, 150V, electrolytic	67A30-11
R208, S501	500K, on/off, volume	75A1-185
R320	30K, video	75A112-13
R418	5M, height	75A101-16
R422	1.2M, vert hold	75A100-8
R466	500K, vert lin	75A101-17
L202	coil, quadrature w/C207	72A132-77

L401	coil, horiz hold	94A17-19
T201	x-former, audio output	79A124-5
T303	x-former, sound take-off	72A185-5
	4.5 MHz, w/C315, 314, 316	
T401	x-former, vert output	79A139-4
T402	deflect yoke	94A372-2
T403	x-former, horiz output	79A138-1
CR301	diode, video detector, IN60	93A8-1
CR401	diode, horiz phase detector	93A5-9

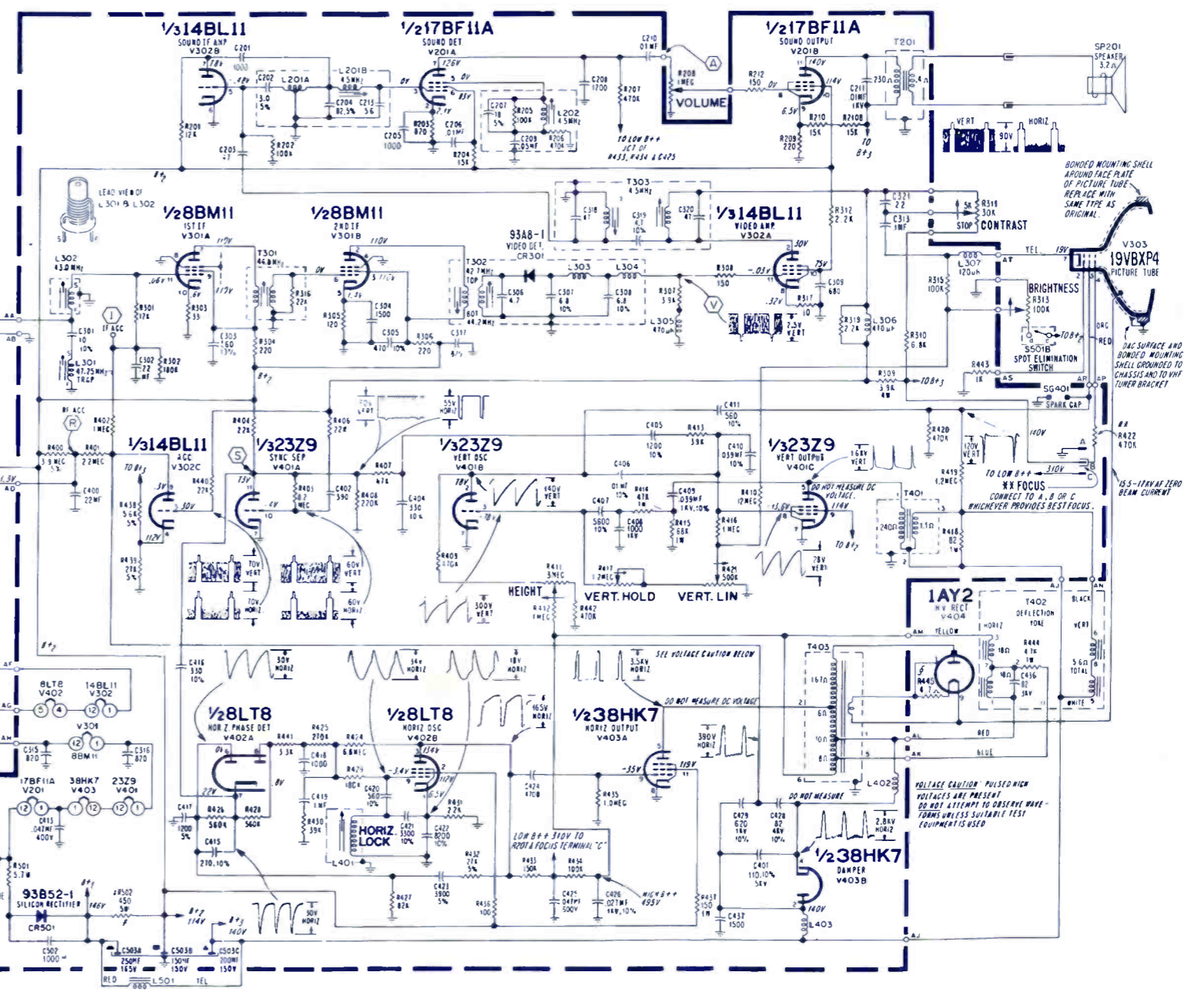


AIRLINE

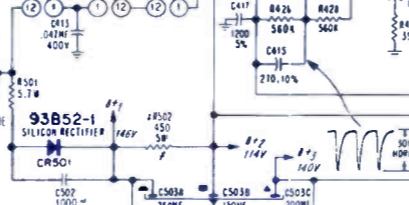
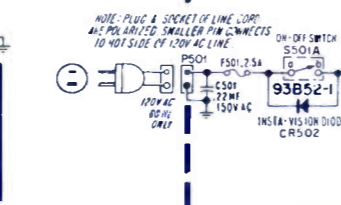
TV Models
GAI-13133A/B



SCHEMATIC NOTES
 * CHASSIS GROUND
 * PART NOT MOUNTED ON PRECISION WIRED SYSTEM.
 * RESISTOR VALUES 1/2 WATT 10%. CAPACITOR VALUES IN PICOFARADS UNLESS OTHERWISE INDICATED.
 * DC VOLTAGES MEASURED WITH VTM AT 100V AC LINE. NO SIGNAL.
 * MAX. CONTRAST & BRIGHTNESS, 1 MIN VOLUME.
 * #4 USED ON LATER MODELS.



SAFETY NOTICE
 THE DESIGN OF THIS RECEIVER CONTAINS MANY CIRCUITS AND COMPONENTS INCLUDED SPECIFICALLY FOR SAFETY PURPOSES. FOR CONTINUED PROTECTION, NO CHANGES SHOULD BE MADE TO THE ORIGINAL DESIGN. REPLACEMENT PARTS MUST BE IDENTICAL TO THOSE USED IN THE ORIGINAL CIRCUIT. SERVICE SHOULD BE PERFORMED BY QUALIFIED PERSONNEL ONLY.

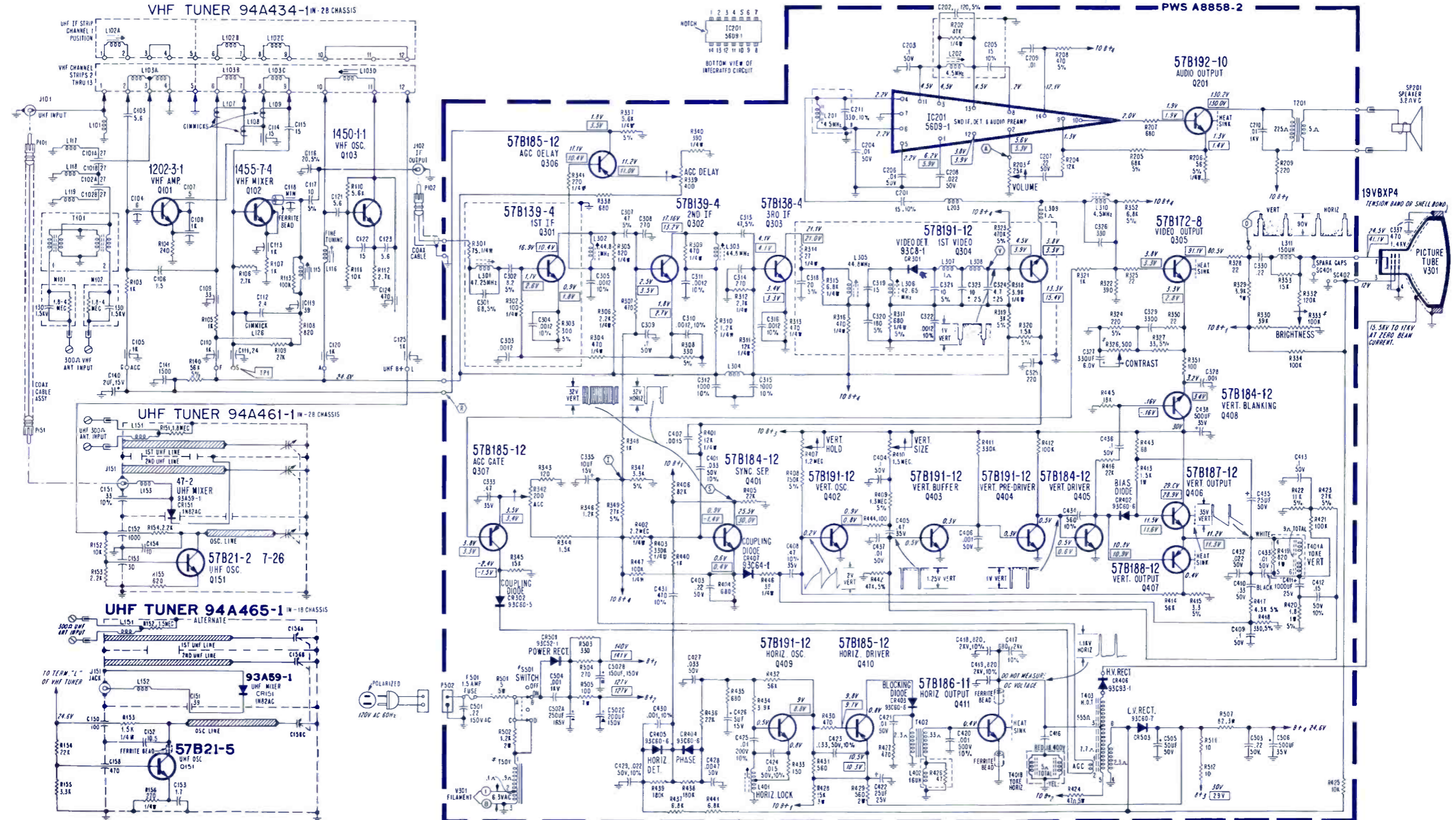
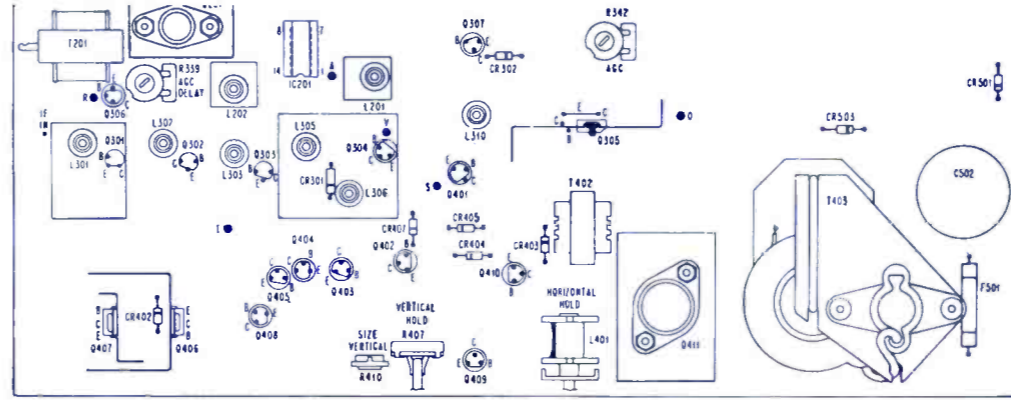


VOLTAGE CAUTION: PULSED HIGH VOLTAGES ARE PRESENT!
 DO NOT ATTEMPT TO OBSERVE WAVEFORMS UNLESS SUITABLE TEST EQUIPMENT IS USED.

BONDED MOUNTING SHELL AROUND FACE PLATE OF PICTURE TUBE. REPLACE WITH SAME TYPE AS ORIGINAL.
 BRIGHTNESS
 STOP CONTRAST
 VERT. HOLD
 VERT. LIN
 15-5-17AV AT ZERO BEAM CURRENT

SYMBOL	DESCRIPTION	PART NO.
C502A, B, C	—250 μ f/165v, 150 μ f/150v, 200 μ f/160v, Electrolytic	67A30-11
R203	—25K volume	75A167-9
R326	—500 Ω contrast	75A167-5
R333	—100K brightness	75A167-4
R339	—400 Ω AGC delay	75A101-50
R342	—200 Ω AGC	75A101-49
R407	—1.2M, vert hold	75A191-1
R410	—1.5M, vert size	75A101-11
L202	—coil, 4.5MHz, phase shifting	72A317-6
L301	—coil, 47.25MHz trap	72A316-4

L306	—coil, video detector	72A316-15
L310	—coil, sound take-off	72A317-1
L401	—coil, horiz osc (lock)	94A480-1
T401A, B	—yoke, deflection	750A1089-15
T402	—x-former, horiz driver	79A167-1
T403	—x-former, horiz output	79A166-1
T501	—autoframer, filament	80A117-2
CR302	—diode, AGC coupling	93A60-5
CR402	—diode, bias	93A60-6
IC201	—integrated circuit, sound IF, det pre-amp	56A9-1
F501	—fuse, 1.5a	84A7-15



AIRLINE
TV Models
GAI-13444A/44B

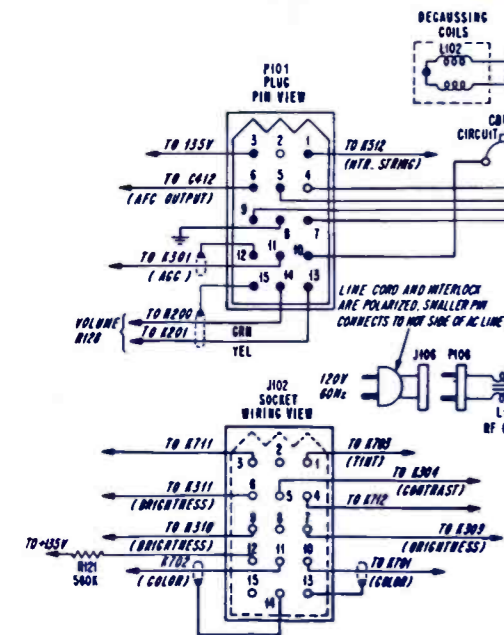
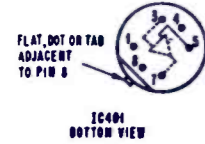
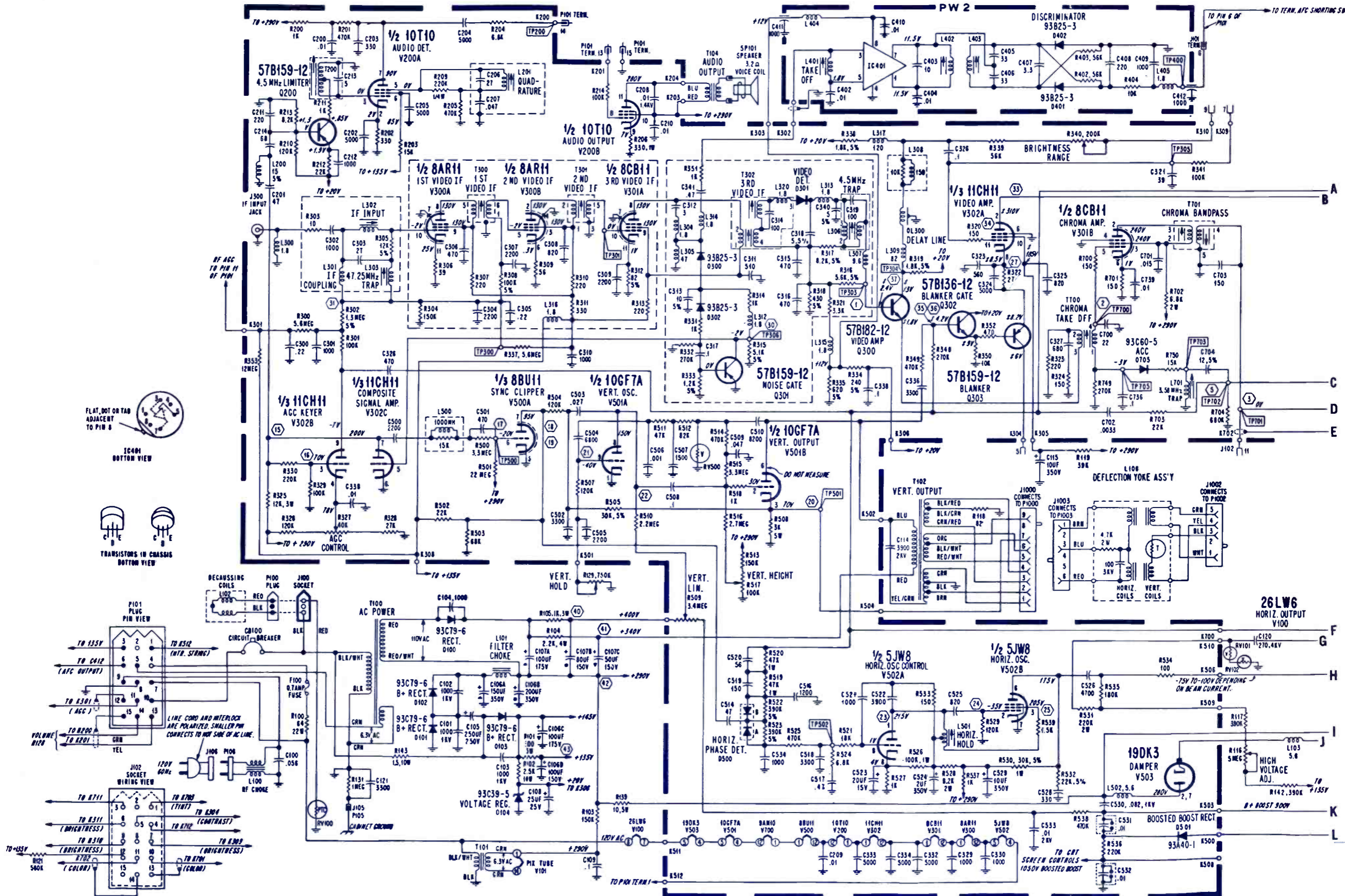
AIRLINE

TV Model GAI-17025A

SYMBOL	DESCRIPTION	AIRLINE PART NO.
C106A	150µf, 250V, electrolytic	67A15-412
C106B	200µf, 350V, electrolytic	75A108-8
C106C	100µf, 175V, electrolytic	75A135-48
C106D	100µf, 150V, electrolytic	75A135-48
R115	control focus 30M	75A155-10
R116	control high voltage adj 5M	75A155-10
R124A, B	control contrast 700n/700n	75A195-3
R125A, B	control brightness 200K/200K	75A195-4
R126A, B	control color 1K/1K	75A195-2

R127A, B	control tint 100K/100K	75A195-1
R128	control volume 1M	75A189-18
R129	control vert hold 750K	75A135-46
R327	control AGC 40K	75A155-9
R345	control blue drive 6K	75A155-9
R346	control red drive 6K	75A155-9
R340	control brightness range 200K	75A155-10
R509	control vert lin 3.4M	75A155-10
R517	control vert height 100K	75A155-10
L106	coils deflect yoke assembly	94A440-1
L201	coil quad	72A366-1

L501	coil horiz hold	94A351-1
T100	x-former, power	80A116-3
T103	x-former horiz output	79A164-3
T104	x-former audio output	79A88-7
T200	x-former 4.5MHz sound driver	72A303-17
T700	x-former chroma take off	72A368-1
T703	x-former chroma demod	72A357-1
M100	voltage tripler	93A91-1
CB100	circuit breaker 2.6a	84A17-15
	tuner UHF	94A440-1
	tuner VHF	94A421-1



26LW6
HORIZ. OUTPUT
V100

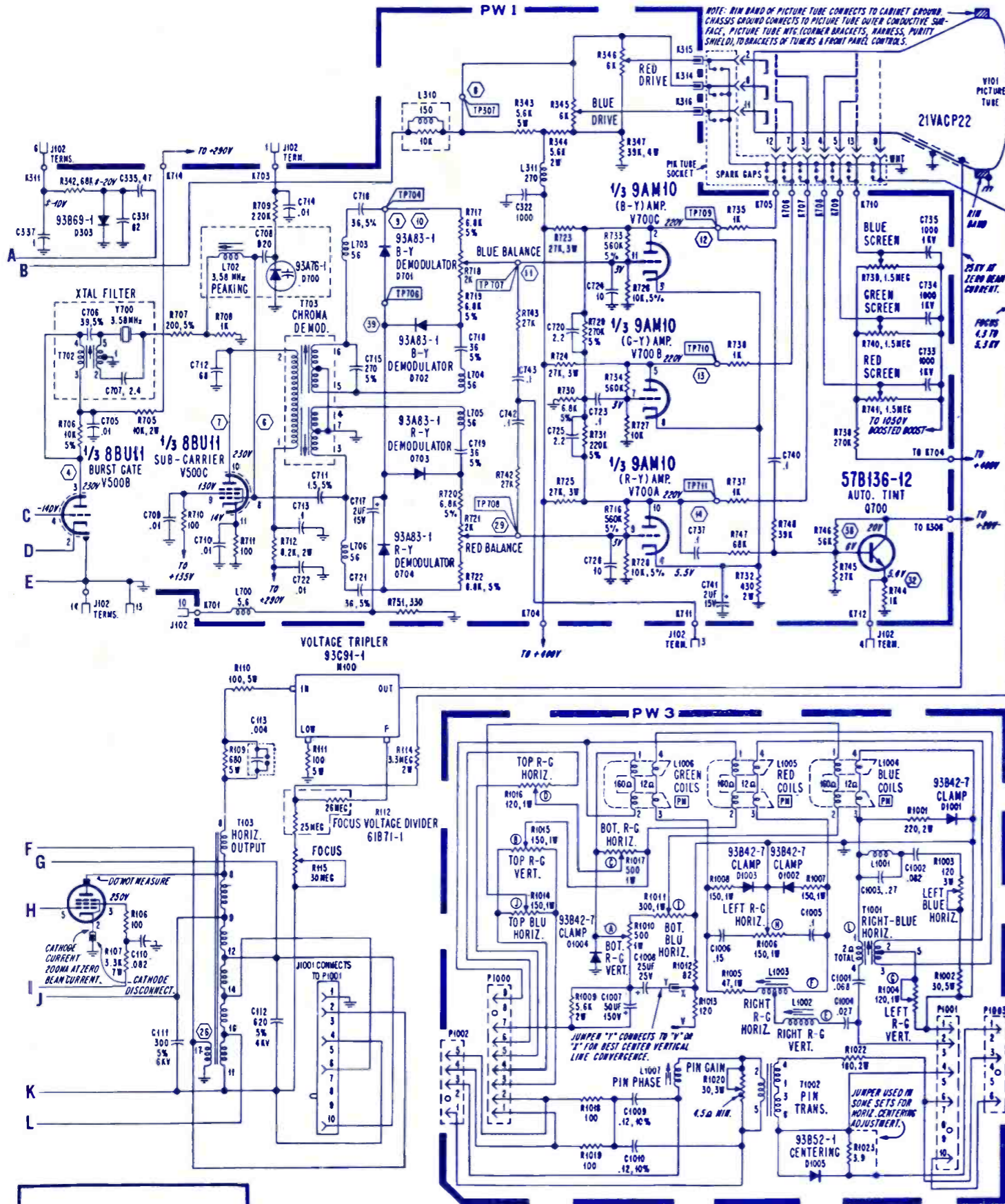
190K3
DAMPER
V503

BOOSTED BOOST
RECT
93A40-1

HIGH VOLTAGE
ADJ.
R116

B+ BOOST 900V

SCREEN CONTROLS
100V BOOSTED BOOST



AIRLINE TV Model GA1-17025A

NOTES: UNLESS OTHERWISE SPECIFIED: RESISTANCE VALUES ARE IN OHMS, 10%, 1/2 WATT; CAPACITANCE VALUES 100 HIGHER ARE IN PF; CAPACITANCE VALUES LESS THAN 1 ARE IN UF; INDUCTANCE VALUES ARE IN UH.
 * INDICATES CHASSIS GROUND, ** CABINET GROUND, #x = CYCLES PER SECOND.

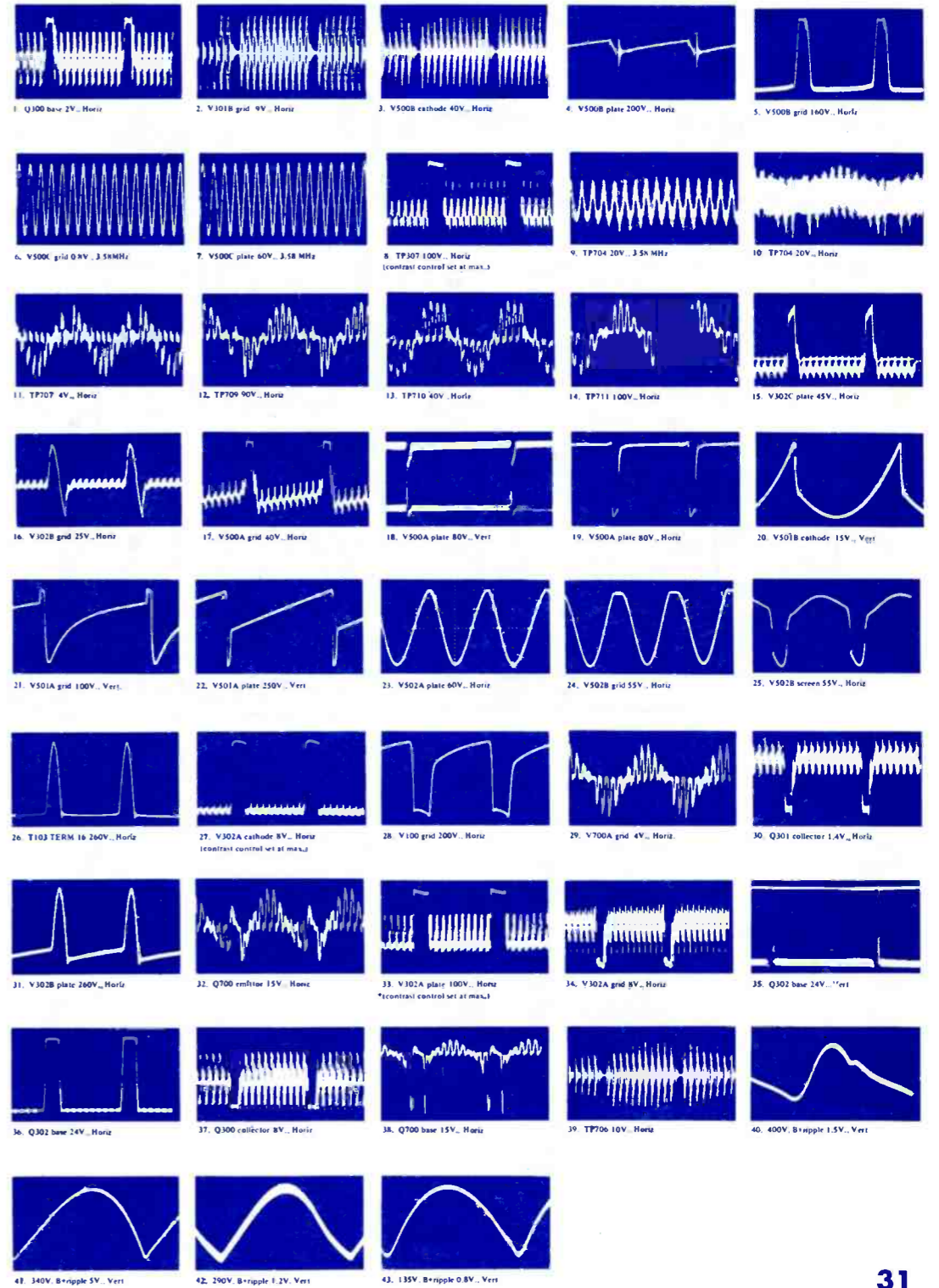
DC VOLTAGES ARE MEASURED WITH VTVM PLACED BETWEEN POINTS INDICATED & CHASSIS GROUND. LINE VOLTAGE SET AT 120V AC & ALL CONTROLS SET FOR NORMAL PICTURE UNLESS OTHERWISE INDICATED. VOLTAGE READINGS ARE TAKEN WITHOUT SIGNAL, WITH VHF TUNER SET AT UNUSED CHANNEL. VOLTAGES SHOWN IN BRACKETS () ARE MEASURED WITH RECEIVER TUNED TO A COLOR SIGNAL.
 † INDICATES THESE VOLTAGES MAY VARY WITH VIDEO CONTENT OF THE PROGRAM BEING RECEIVED AND ARE AVERAGE READINGS.

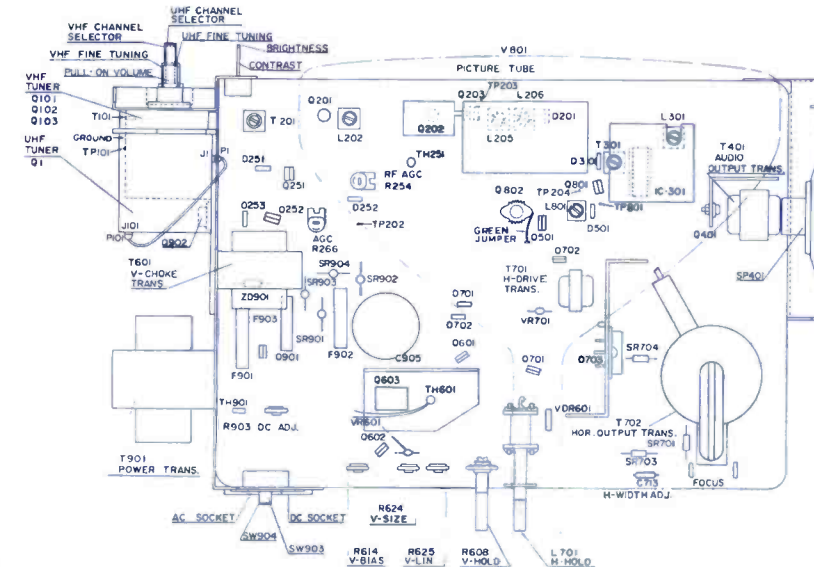
TRANSISTOR CAUTION: TO AVOID DAMAGE TO TRANSISTORS, DO NOT OPERATE CHASSIS WITH PICTURE TUBE DISCONNECTED FROM CHASSIS GROUND. DO NOT TURN SET ON WITH TRANSISTOR(S), TUBE(S) OR LEADS REMOVED OR UNSOLDERED. DO NOT ARC 2ND ANODE LEAD TO CHASSIS GROUND. DISCHARGE 2ND ANODE ONLY TO PICTURE TUBE DAG OR DAG GROUND. USE CAUTION TO PREVENT ACCIDENTAL SHORT BETWEEN COMPONENT TERMINALS OR TO CHASSIS GROUND. DO NOT APPLY EXCESSIVE HEAT TO TRANSISTOR LEADS. DO NOT USE AN ORDINARY OHMMETER FOR RESISTANCE MEASUREMENT, USE VTVM ON R x 100 RANGE OR HIGHER.

TP SYMBOLS IN RECTANGLES INDICATE TEST POINT CONNECTIONS.

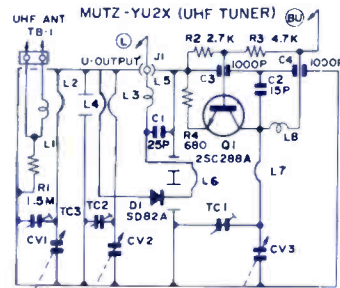
Ⓛ RECTANGLES IDENTIFY WAVEFORM OBSERVATION LOCATIONS. CONDITIONS FOR TAKING WAVEFORM MEASUREMENTS ARE GIVEN WITH WAVEFORM PHOTOS.

WARNING: CHASSIS IS CONNECTED DIRECTLY TO ONE SIDE OF AC POWER LINE. USE AN ISOLATION TRANSFORMER WHEN SERVICING TO AVOID THE POSSIBILITY OF ACCIDENTAL ELECTRICAL SHOCK & DAMAGE TO TEST EQUIPMENT.



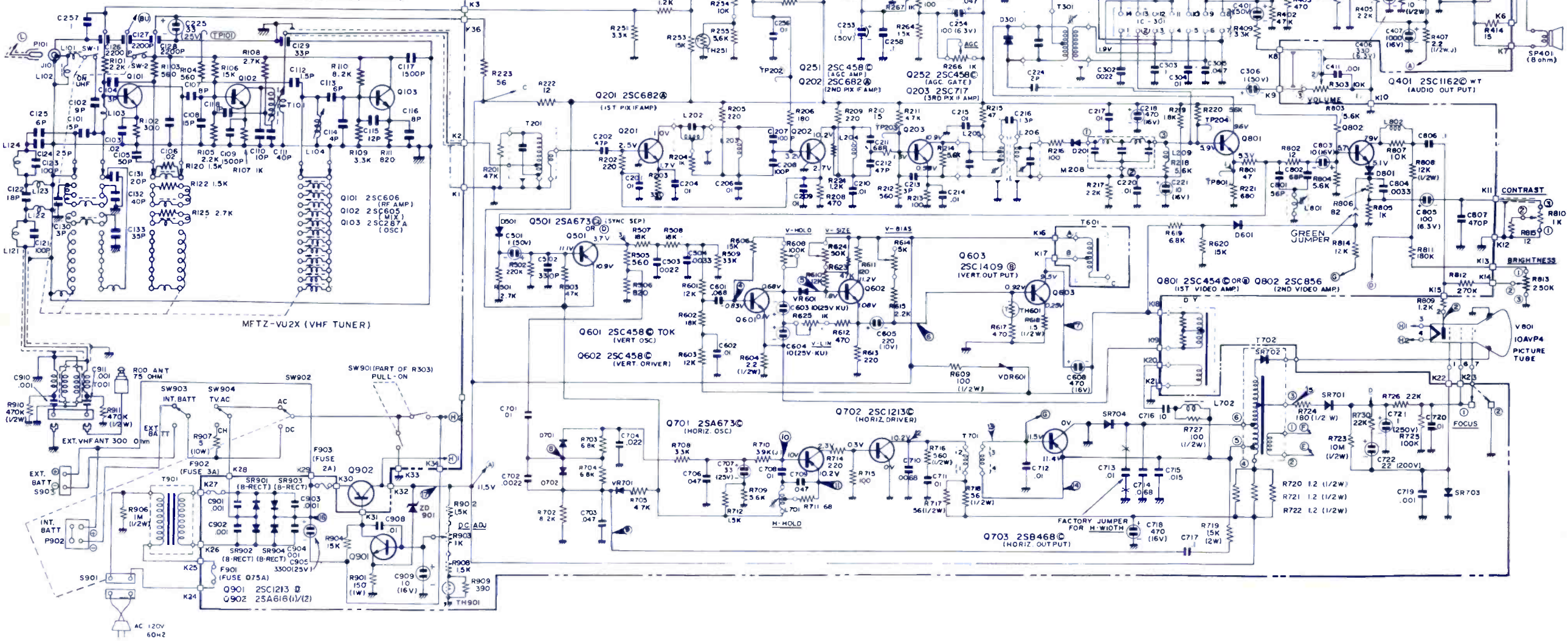


SYMBOL	DESCRIPTION	AIRLINE MODEL NO.
R254	10K RF AGC	J25635
R266	1K AGC	TV25111
R303		
SW901	10K volume w/on-off switch	J25636
R608	100K vert hold	J25637
R614	5K vert bias	J25638
R624	50K vert size	J25639
R625	1K vert lin	J25640
R810	1K contrast	J25641
R813	250K brite	J25642
R903	1K voltage adjust	J25643
L301	coil sound detect	J611143
L701	coil horiz hold	J611144
L801	coil 4.5MHz trap	TV62258
T401	x-former audio output	J62762
T601	x-former vert choke	TV11169
T701	x-former horiz driver	J62763
T702	x-former horiz output incl SR702	J62764
T901	x-former power	J62765
M208	filter pix detect	J611140
TH251	therm AGC	J241263
TH601	therm vert	J241264
TH901	therm B +	J241264
VDR601	voltage dependent resistor vert	TV24250
VR601	varistor vert	J241261
VR701	varistor horiz	J241261
F901	fuse 0.75A, 250V, slo-blo pigtail	J18512
F902	fuse 3A, 125V slo-blo pigtail	J315003
F903	fuse 2A, 125V slo-blo pigtail	J315002
	tuner UHF	J35447
	tuner VHF	J35446
	yoke deflect	J611145

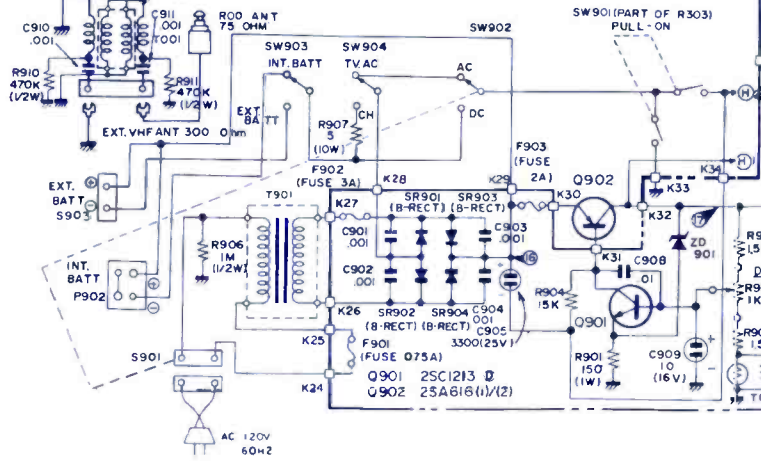


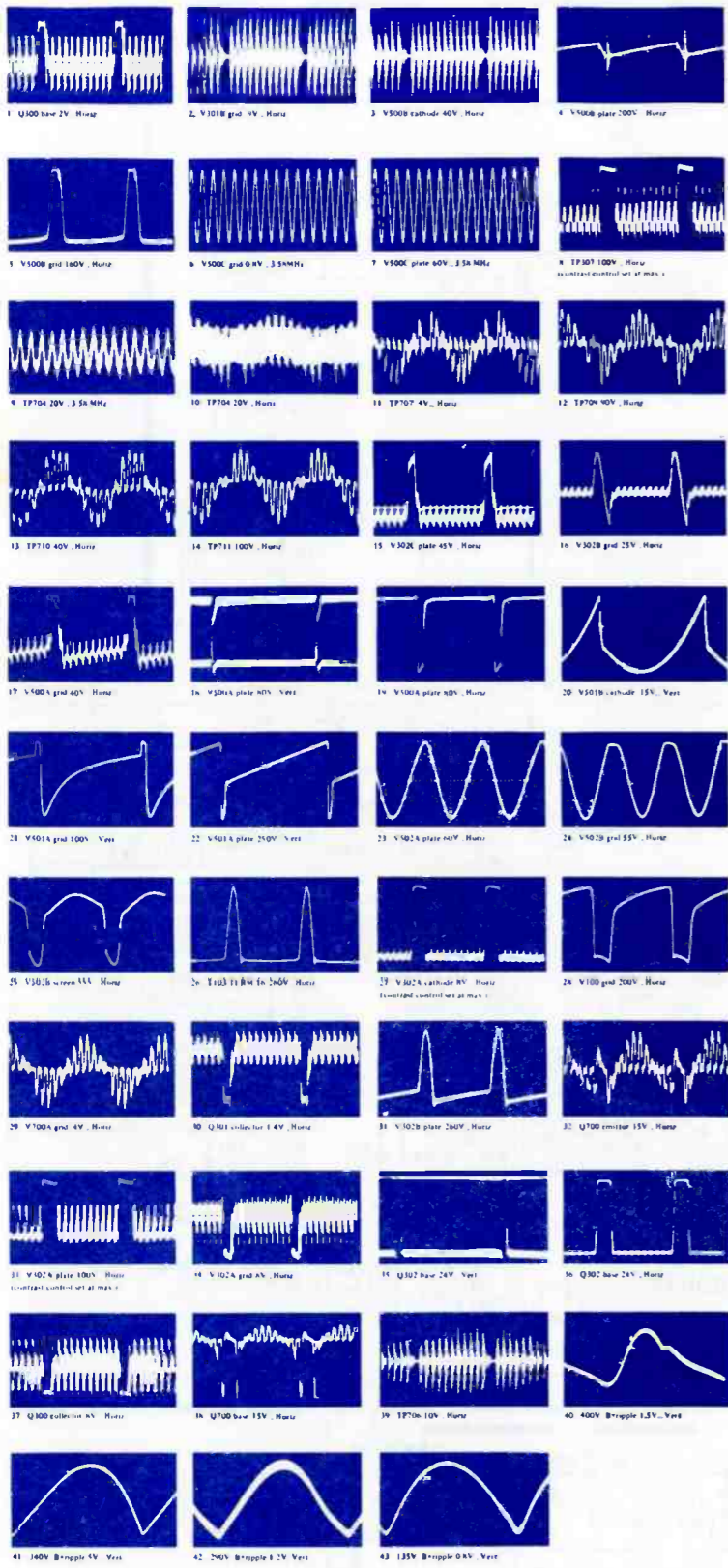
IC-301
(SIF AMP, SIF DET AND AUDIO AMP)

DUNKO64 I TAPA, B

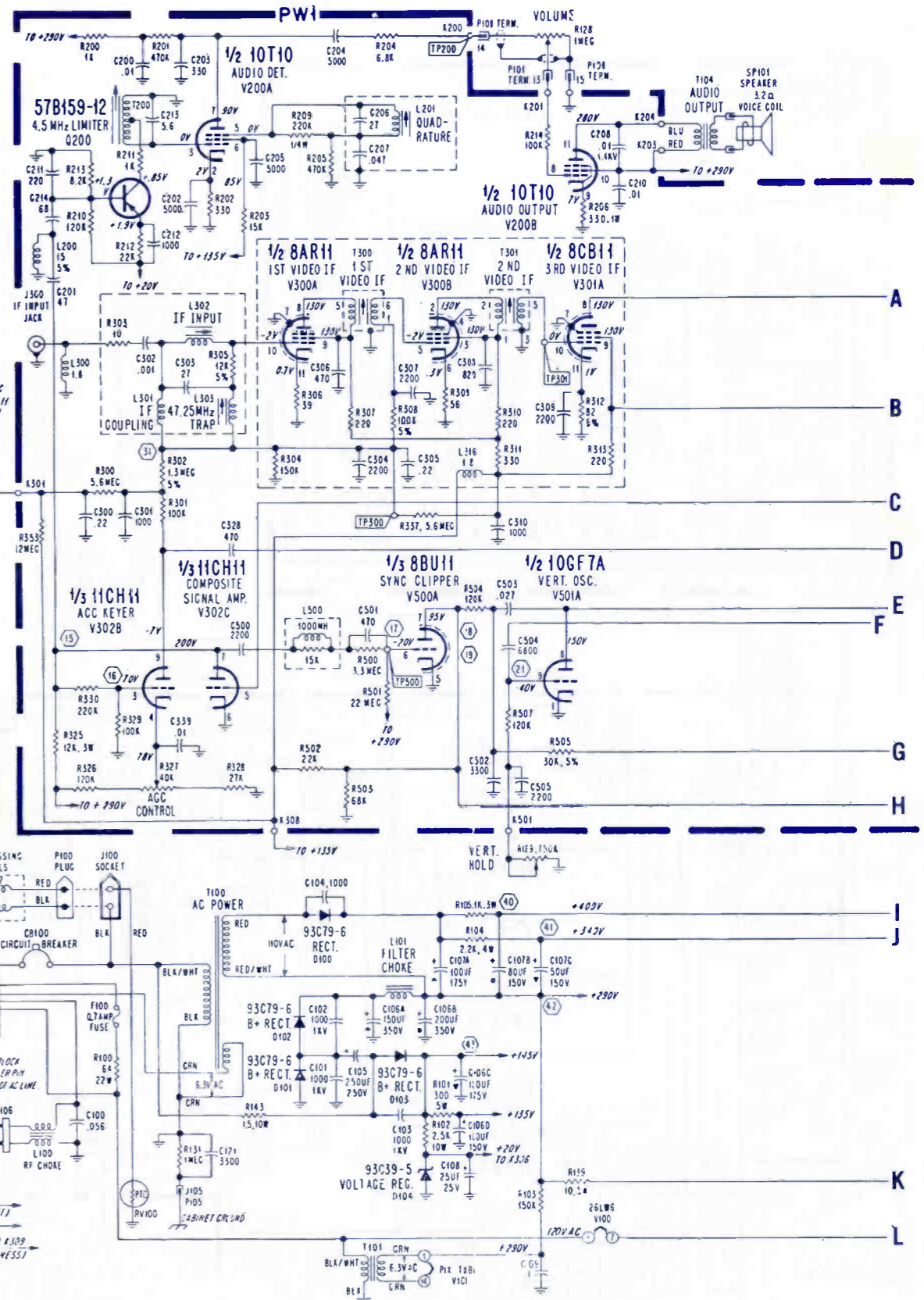
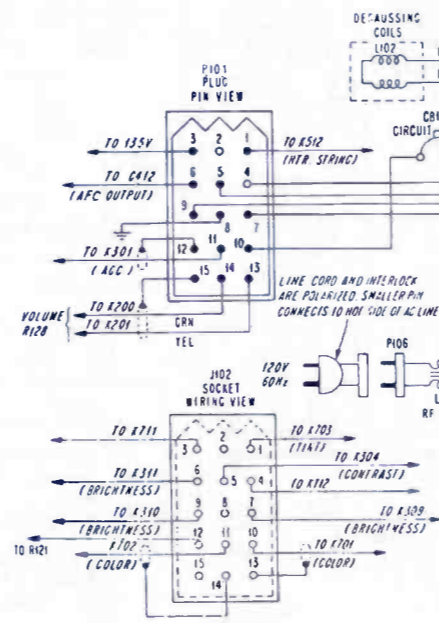


MFTZ-YU2X (VHF TUNER)

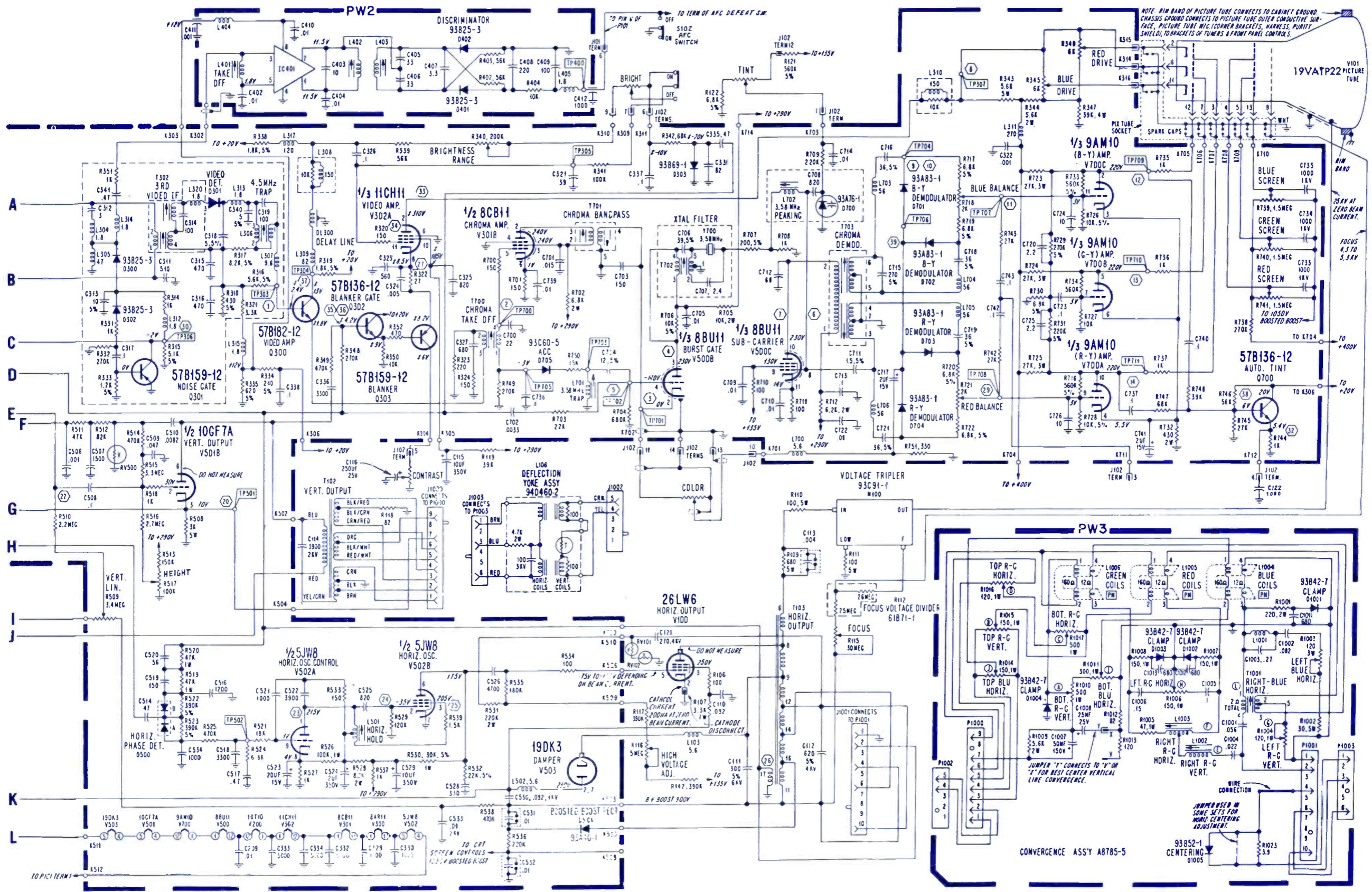


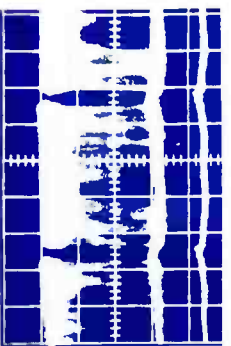


SYMBOL	DESCRIPTION	AIRLINE PART NO.
C106A	150 μ f, 250v, electrolytic	67A15-412
C106B	200 μ f, 350v, electrolytic	67A15-412
C106C	100 μ f, 175v, electrolytic	67A15-511
C106D	100 μ f, 150v, electrolytic	67A15-511
C107A	100 μ f, 175v, electrolytic	67A15-511
C107B	80 μ f, 150v, electrolytic	67A15-511
C107C	50 μ f, 150v, electrolytic	67A15-511
R112	voltage divider, focus	61A71-1
RV101,102	VDR	61A46-13
RV500	varistor	61A65-1
R115	control, focus 130M	75A108-8
R116	control, high voltage adjust, 5M	75A135-48
R124	control, contrast 350 n	75A140-3
R125	control, brightness, 100K	75A140-13
R126	control, color, 500 n	75A140-22
R127	control, tint, 50K	75A140-23
R128	control, volume, ON/OFF, 1M	75A189-3
R129	control, vert hold, 750K	75A135-46
L101	filter choke	74A31-1
L106	deflection yoke assembly	94A379-10
L201	coil, quadrature (inc. C206)	72A366-1
L306	coil, 4.5MHz trap	72A367-1
L501	coil, horiz hold	94A351-2
T100	x-former, power	80A116-3
T101	x-former, pix filament	80A119-1
T102	x-former, vert. output	79A153-4
T103	x-former, horiz. output	79A164-3
T104	x-former, audio output	79A88-7
T200	x-former, 4.5MHz, sound driver	72A303-17
T700	x-former, chroma take-off	72A368-1
T701	x-former, chroma bandpass	72A358-1
M100	voltage tripler	93A91-1
IC401	integrated circuit	56A1-1
CB100	circuit breaker, 2.6a	84A17-15
F100	fuse, .7a	84A28-13
	tuner, UHF	94A396-3
	tuner, VHF	94A423-1

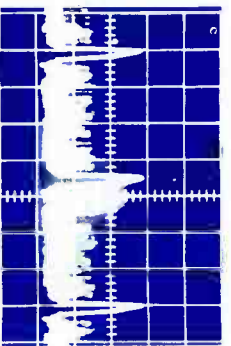


AIRLINE
Color-TV Model
GAI-12914B

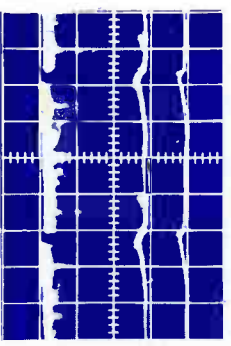




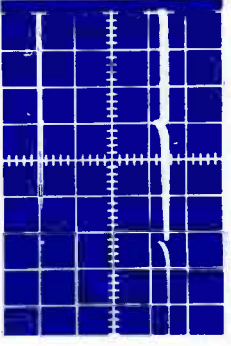
1. Vert. Rate 2.2V P-P



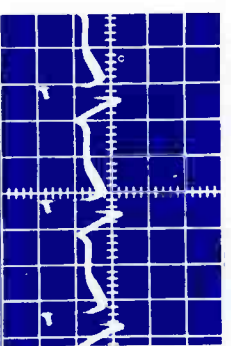
2. Horiz. Rate 14.8V P-P



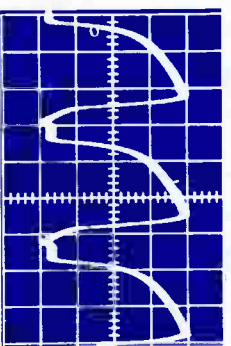
3. Vert. Rate 2.0V P-P



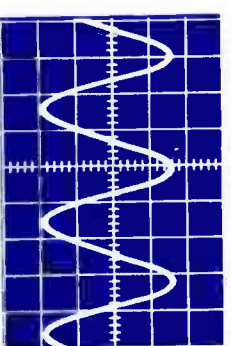
4. Horiz. Rate 34V P-P



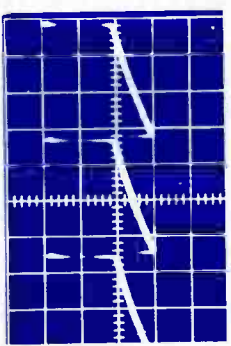
5. Horiz. Rate 11.5V P-P



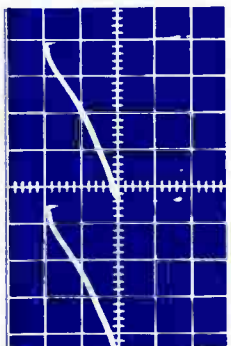
6. Horiz. Rate 20V P-P



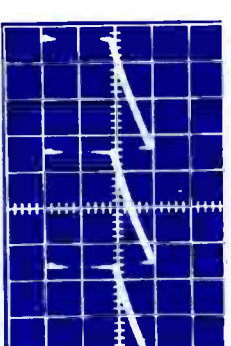
7. Horiz. Rate 180V P-P



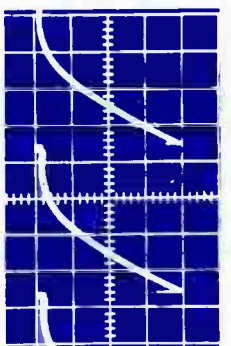
8. Vert. Rate 150V P-P



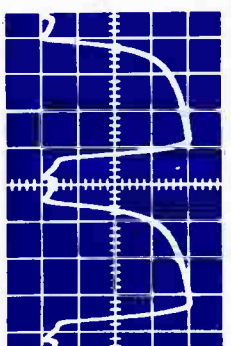
9. Vert. Rate 8V P-P



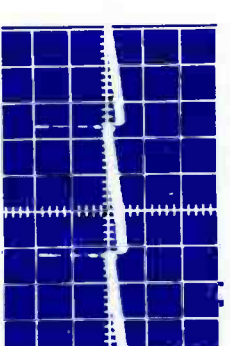
10. Vert. Rate 150V P-P



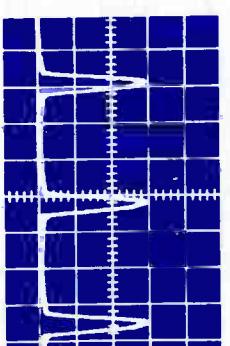
11. Vert. Rate 20V P-P



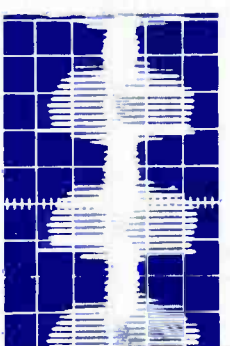
12. Horiz. Rate 205V P-P



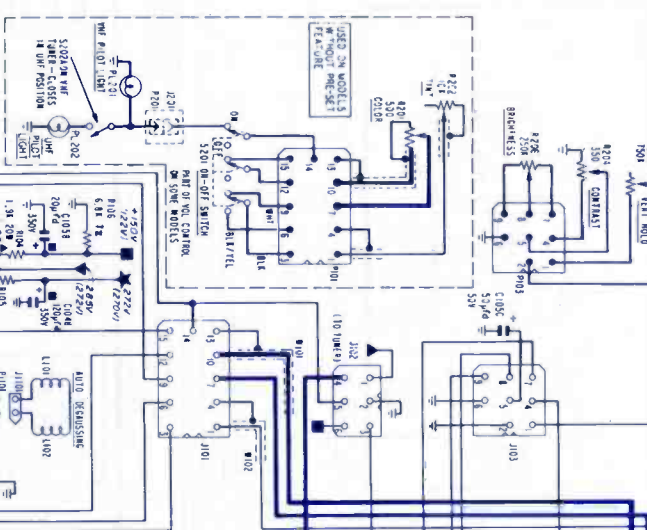
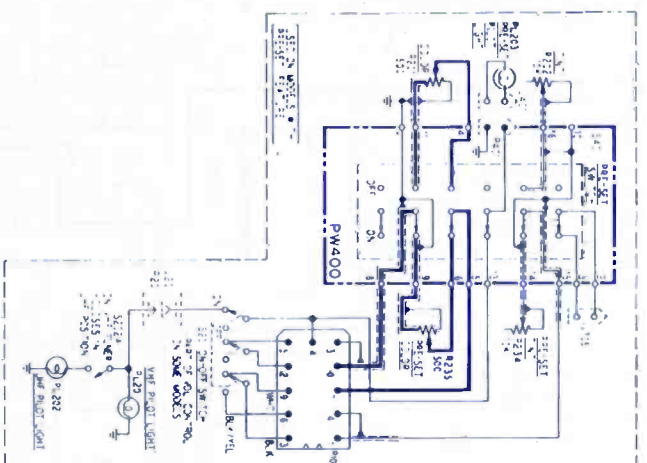
13. Vert. Rate 120V P-P



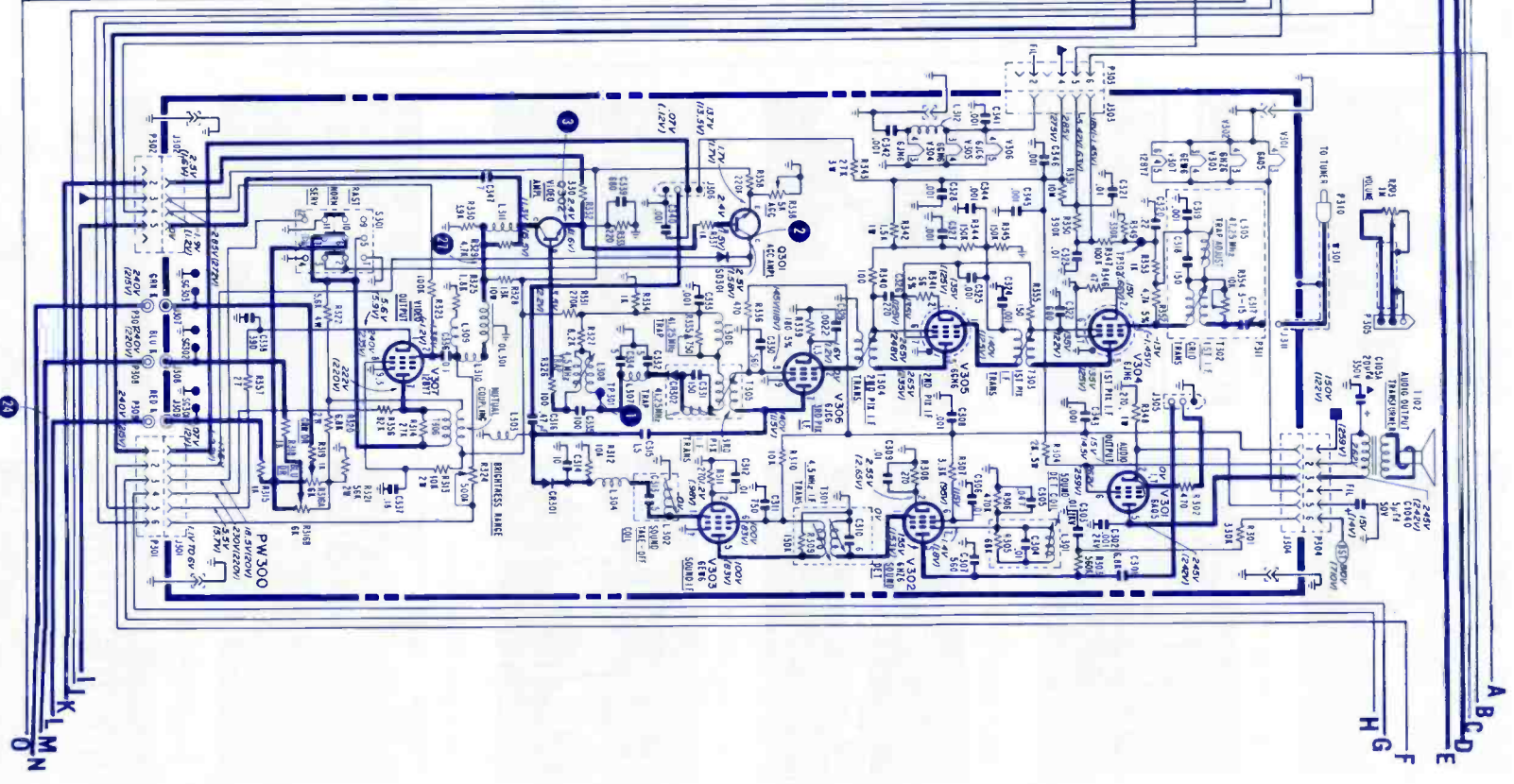
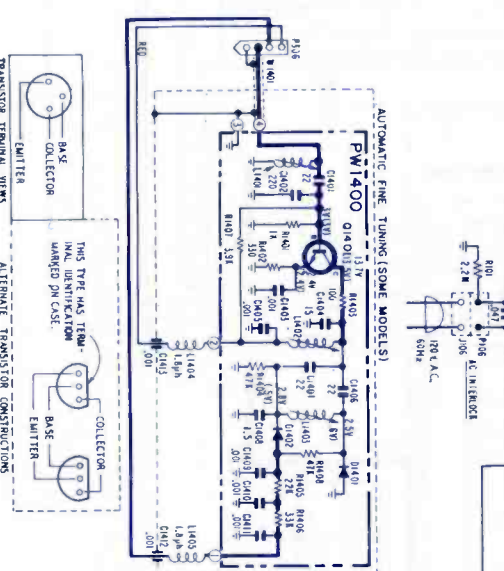
14. Horiz. Rate 300V P-P



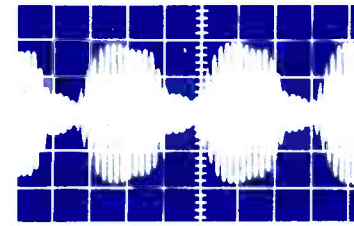
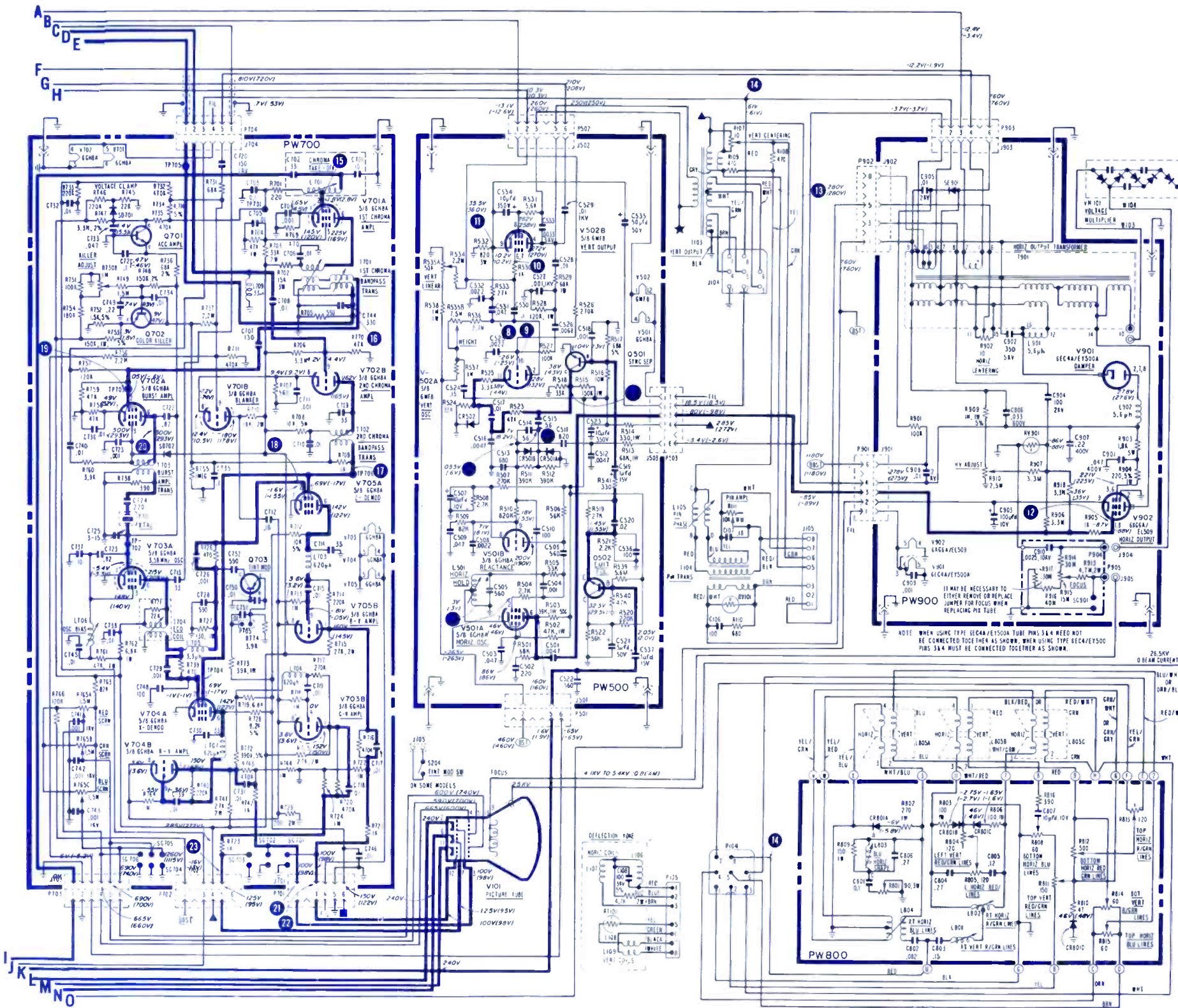
15. Horiz. Rate 2.4V P-P



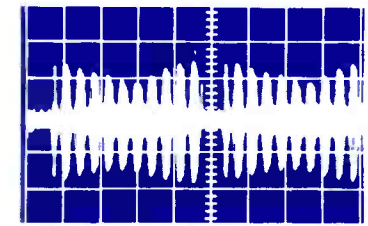
ALL DC VOL. ACES SHOWN ON THE SCHEMATIC ARE MEASURED WITH A HIGH IMPEDANCE VTVM. VOLTAGE READINGS IN BRACKETS TAKEN WITH ZERO SIGNAL. VOLTAGE READINGS NOT IN BRACKETS ARE WITH A STRONG SIGNAL FROM A COLOR BAR GEN. VOLTAGE VARIATIONS MAY BE EXPECTED DUE TO NORMAL PRODUCTION TOLERANCES. ALL RESISTANCE VALUES IN OHMS & 1/2 WATT OR UNLESS OTHERWISE NOTED. R=1.000 M=1000.000 ALL CAPACITANCE VALUES LESS THAN 1NF ARE ABOVE IN PPM UNLESS OTHERWISE NOTED. SP-SPARK CAP



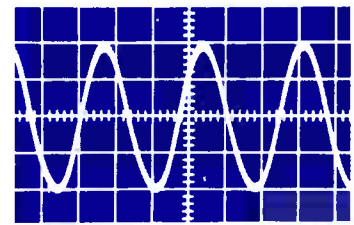
A B C D E F G H I J K L M N O



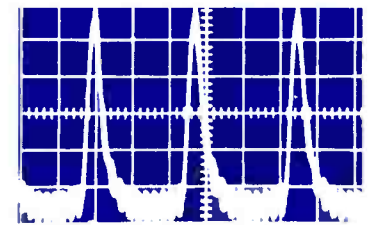
*16. Horiz. Rate 6.8V P-P



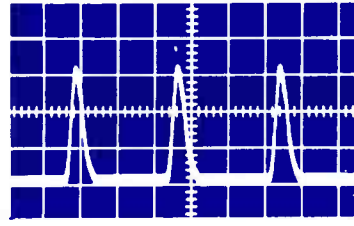
*17. Horiz. Rate 6.8V P-P



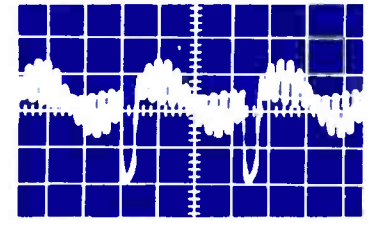
18. Horiz. Rate 8.0V P-P



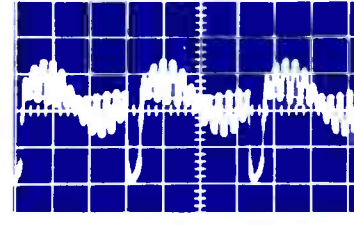
*19. Horiz. Rate 60V P-P



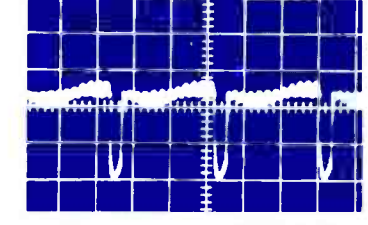
*20. Horiz. Rate 165V P-P



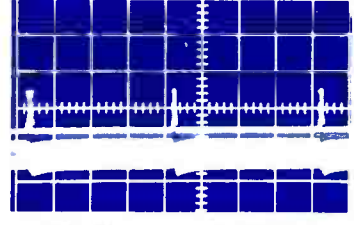
*21. Horiz. Rate 170V P-P



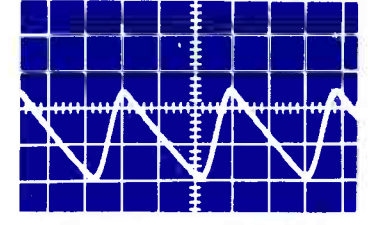
*22. Horiz. Rate 170V P-P



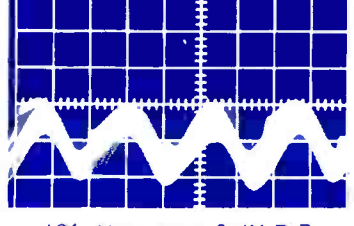
*23. Horiz. Rate 135V P-P



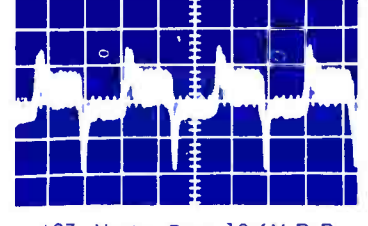
*24. Vert. Rate 125V P-P



*25. Vert. Rate 13.0V P-P



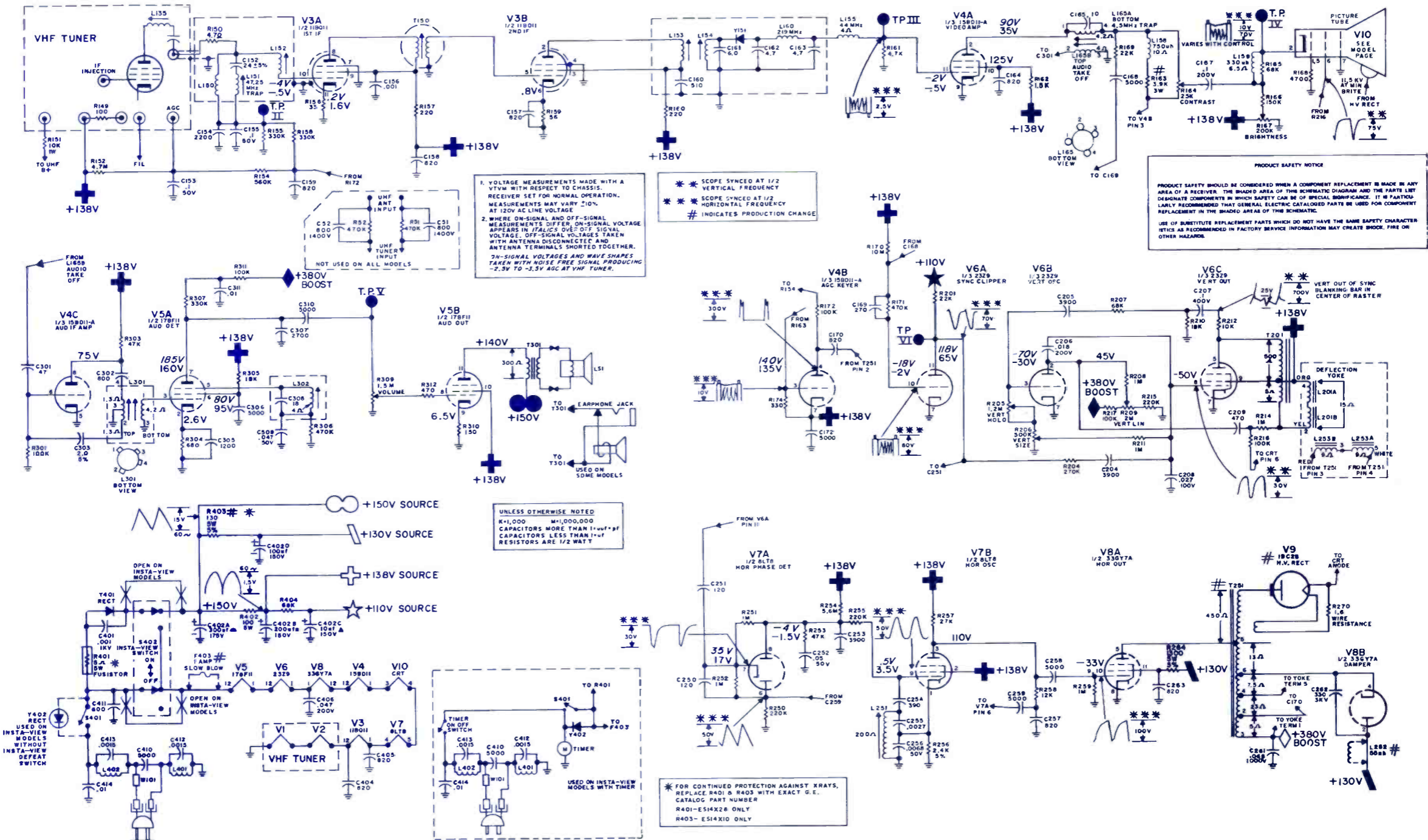
*26. Vert. Rate 0.4V P-P



*27. Horiz. Rate 10.6V P-P

SYMBOL	DESCRIPTION	GENERAL ELECTRIC PART NO.
R401	5w, 5%, fuse resistor	ES14X28
	triple control	ES49X2
R205	1.2M, vert hold	
R206	500K, height	
R209	2M, vert lin.	
	triple control	ES49X10
R164	25K, contrast	(Short)
R167	200K, brightness	(Shafts)
R309	1.5M, volume w/S401	
	triple control	ES49X4
R164	25K, contrast	(Long)
R167	200K, brightness	(Shafts)
R309	1.5M, volume w/S401	
C402A	300 μ f, 175v	ES31X254

C402B	200 μ f, 150v	
C402C	10 μ f, 150v	
C402D	100 μ f, 150v	
L151	coil, 47.25MHz trap	ES36X3
L153	coil, video detector (Primary)	ES36X757
L154	coil, video detector (secondary)	ET36X587
L165	coil, 4.5MHz trap, sound takeoff	ES36X4
L201A, B	yoke, deflection 21 mm, toroidal	ES76X48
L251	coil, horiz osc	EU35X1
L301	coil, 4.5MHz, audio interstage	ES61X1
L302	coil, quad	ES36X665
T201	x-former, vert output	ES64X6
T251	x-former, horiz output	ES77X10
T301	x-former, audio output	ES64X1
	fuse, 4a, fast-blo, W101	EPI0X52
	fuse 1a, slo-blo, F403	ES10X7

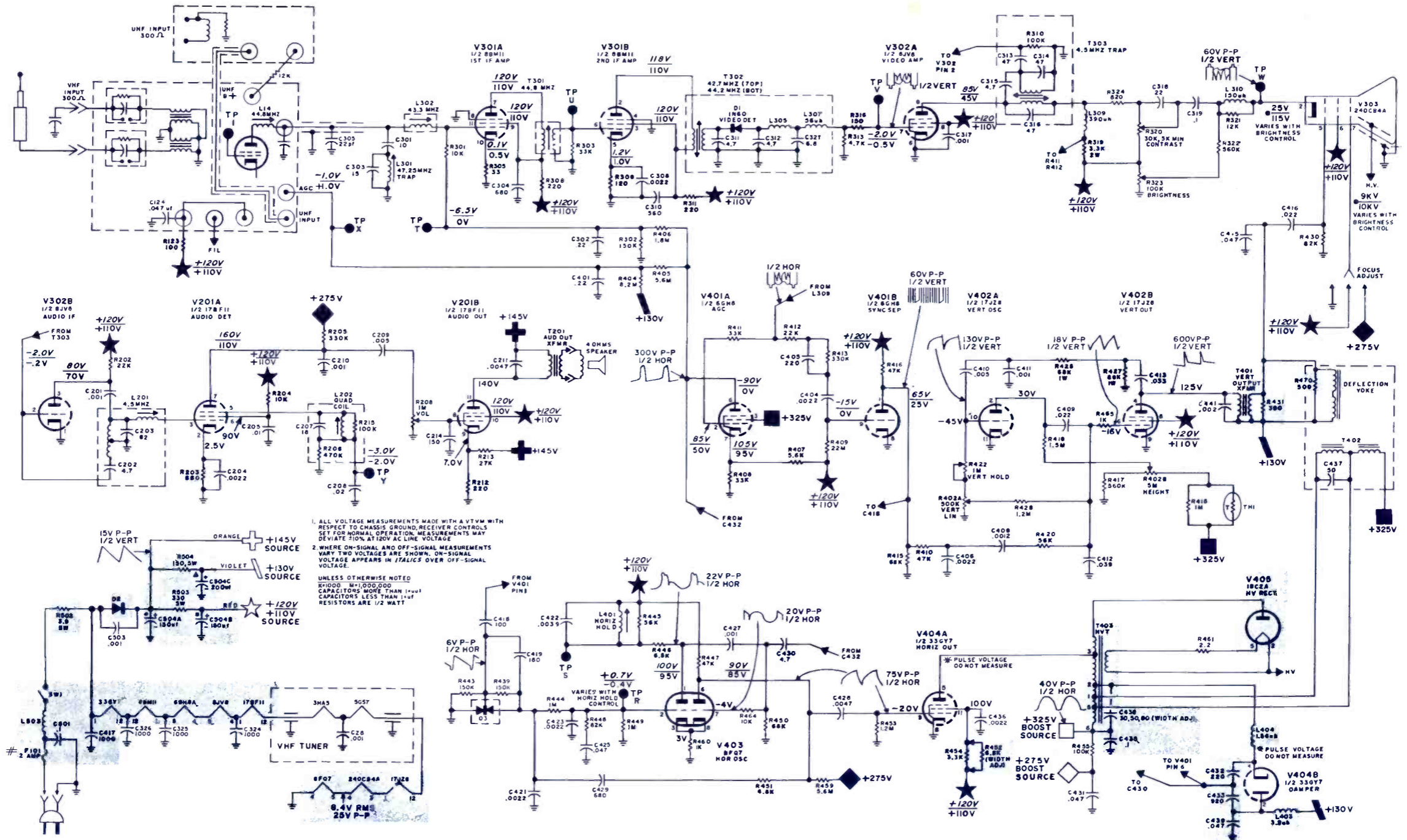


GENERAL ELECTRIC
 TV Chassis
 12SE/15SE/S3

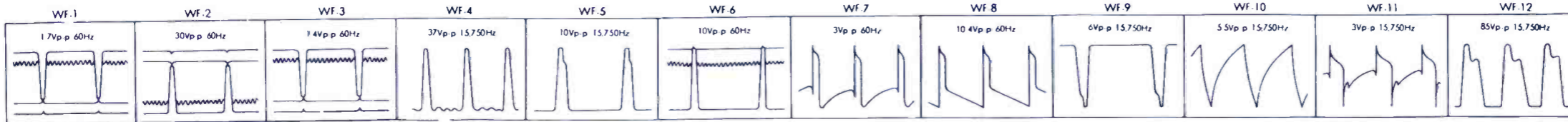
SYMBOL DESCRIPTION GENERAL ELECTRIC PART NO.

R502-3.9 Ω	ES14X17
R503-330 Ω , $\pm 5\%$, 5w	ES14X18
R504-150 Ω , $\pm 5\%$, 5w	ES14X19
C504-capacitor, electro, 150 μ f, 165v, 150 μ f, 150v, 200 μ f, 150v	ES31X26
C725-470P, $\pm 20\%$, 1.4kv dc, 150vac	EP18X3
D3-diode, dual, horiz AFC	ES49X36
L202-coil, quad	ES57X6
L301-coil, 47.25MHz trap	ES36X49
	ES36X50

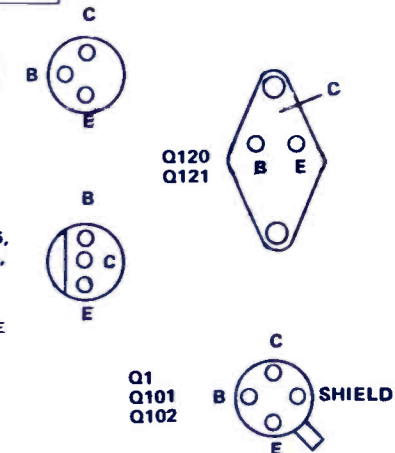
L401-coil, horiz, stab	ES36X56
T201-xformer, audio output	ES64X8
T302-xformer, video 1F detect	ES61X7
T303-xformer, audio 1F	ES61X8
T401-xformer, vert output	ES64X9
T403-xformer, horiz output	ES77X9
deflect yoke	ES76X4
fuse, 2a	ES10X9 (F101)
thermistor (TH 1)	ES14X15
tuner, UHF	ES85X7
tuner, VHF	ES86X7



1. ALL VOLTAGE MEASUREMENTS MADE WITH A VTVM WITH RESPECT TO CHASSIS GROUND. RECEIVER CONTROLS SET FOR NORMAL OPERATION. MEASUREMENTS MAY DEVIATE 10% AT 120V AC LINE VOLTAGE.
 2. WHERE ON-SIGNAL AND OFF-SIGNAL MEASUREMENTS VARY TWO VOLTAGES ARE SHOWN. ON-SIGNAL VOLTAGE APPEARS IN *ITALICS* OVER OFF-SIGNAL VOLTAGE.
 UNLESS OTHERWISE NOTED
 R1000 M=1,000,000
 CAPACITORS MORE THAN 1 μ f
 CAPACITORS LESS THAN 1 μ f
 RESISTORS ARE 1/2 WATT



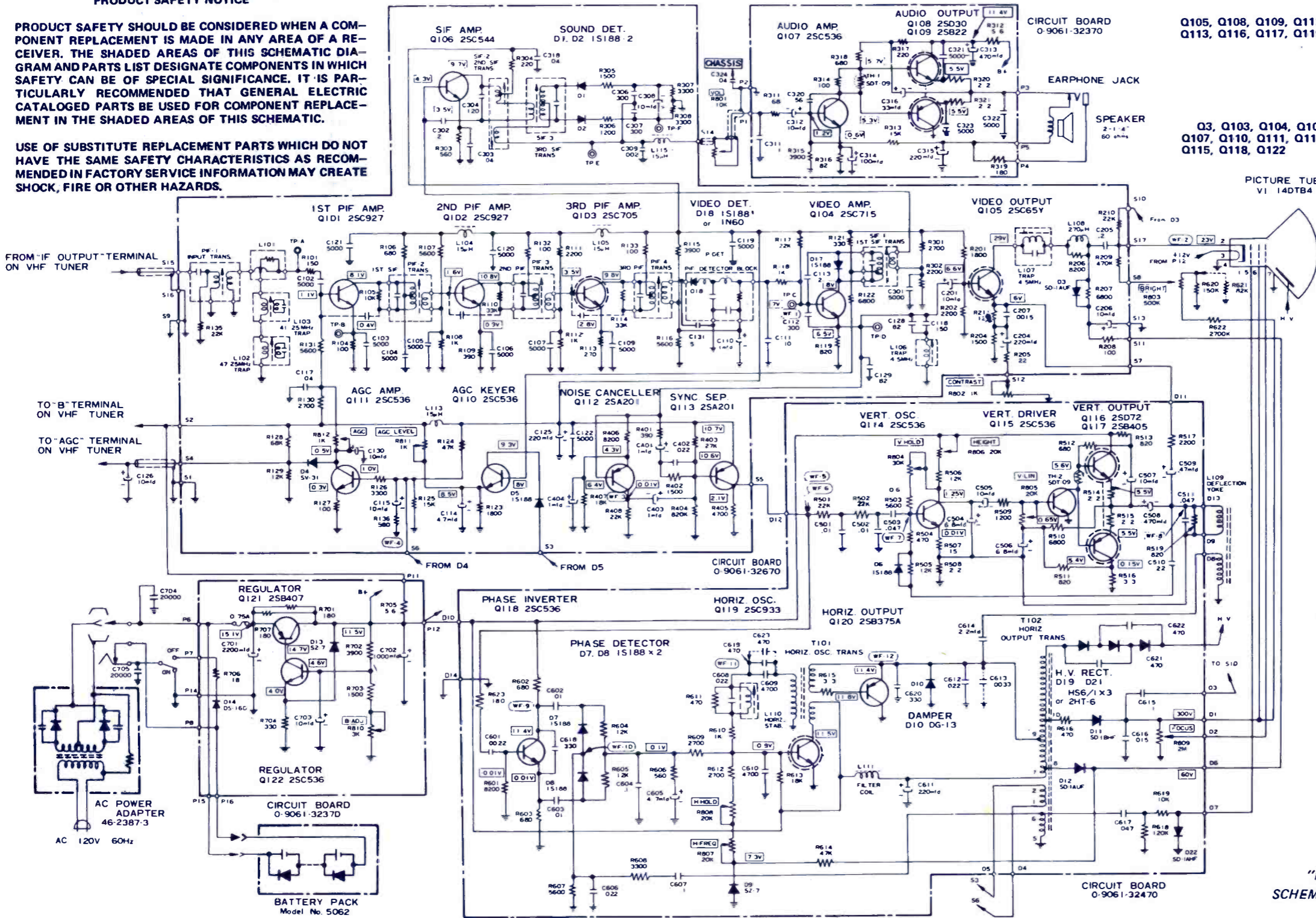
**TRANSISTOR
BASE DIAGRAMS**



PRODUCT SAFETY NOTICE

PRODUCT SAFETY SHOULD BE CONSIDERED WHEN A COMPONENT REPLACEMENT IS MADE IN ANY AREA OF A RECEIVER. THE SHADED AREAS OF THIS SCHEMATIC DIAGRAM AND PARTS LIST DESIGNATE COMPONENTS IN WHICH SAFETY CAN BE OF SPECIAL SIGNIFICANCE. IT IS PARTICULARLY RECOMMENDED THAT GENERAL ELECTRIC CATALOGED PARTS BE USED FOR COMPONENT REPLACEMENT IN THE SHADED AREAS OF THIS SCHEMATIC.

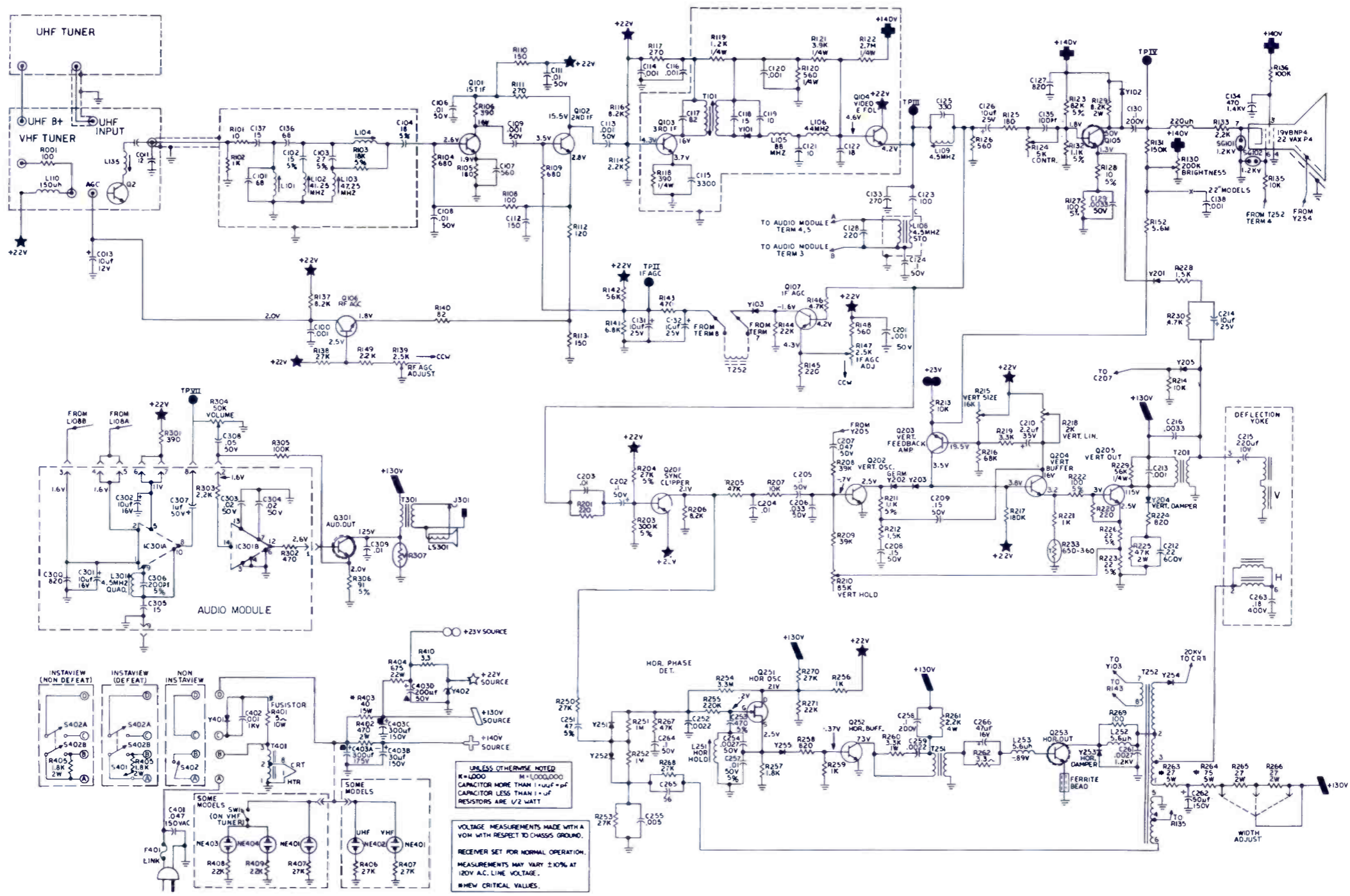
USE OF SUBSTITUTE REPLACEMENT PARTS WHICH DO NOT HAVE THE SAME SAFETY CHARACTERISTICS AS RECOMMENDED IN FACTORY SERVICE INFORMATION MAY CREATE SHOCK, FIRE OR OTHER HAZARDS.

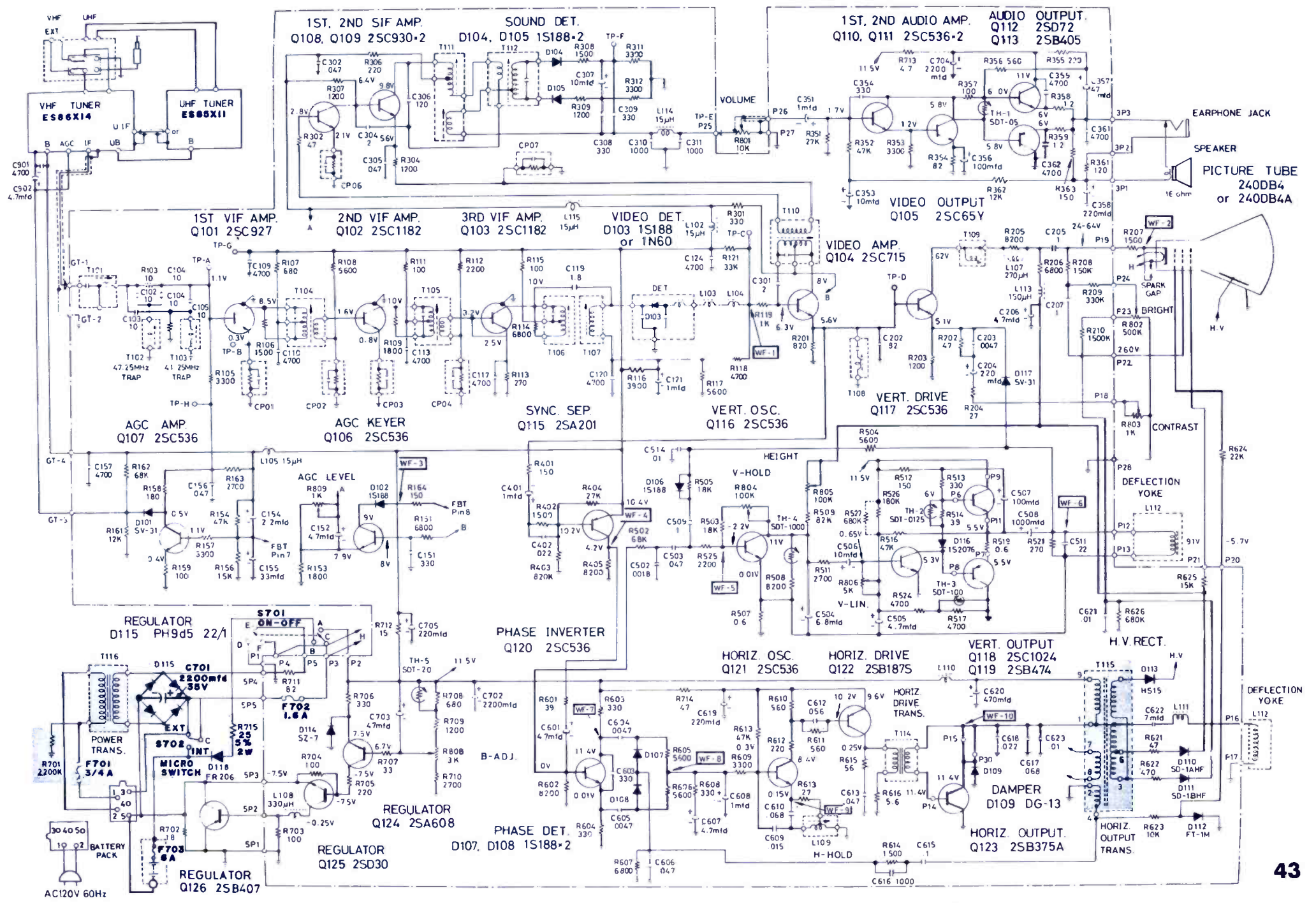
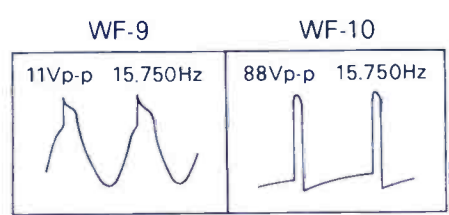
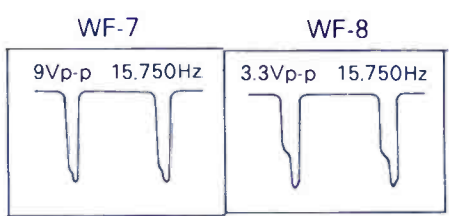
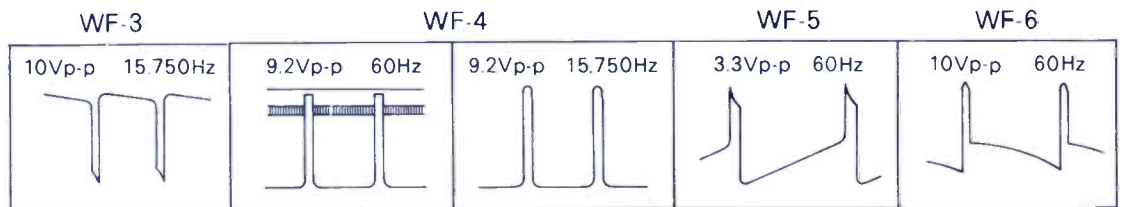
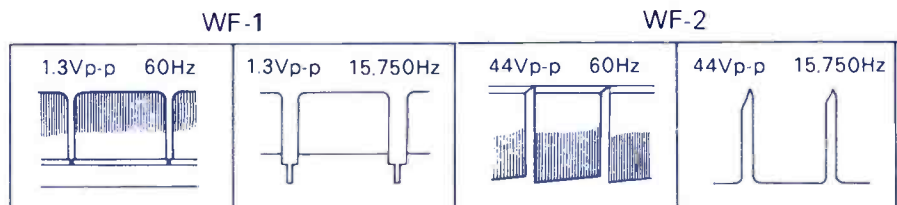


- NOTES:**
1. All resistance values in ohms K=1,000 M=1,000,000.
 2. Unless otherwise noted in schematic, all capacitors less than 1 are expressed in mfd and the values larger than 1 are in pF.
 3. Voltage reading taken with "VTVM" from point indicated to chassis ground, Tuner on unused channel, contrast at maximum, AGC at fully clockwise, other controls at normal, line voltage 120 volts.
 4. All waveforms measured with strong signal input, contrast set to give normal picture and AGC line operating normally.
 5. Voltage reading may vary $\pm 20\%$.
 6. If picture is too wide, clip the wire near C613 by using a nipper. This wire may have been opened in some chassis as a result of factory adjustment.

**"R" CHASSIS
SCHEMATIC DIAGRAM**

**GENERAL
ELECTRIC**
TV Chassis R-1





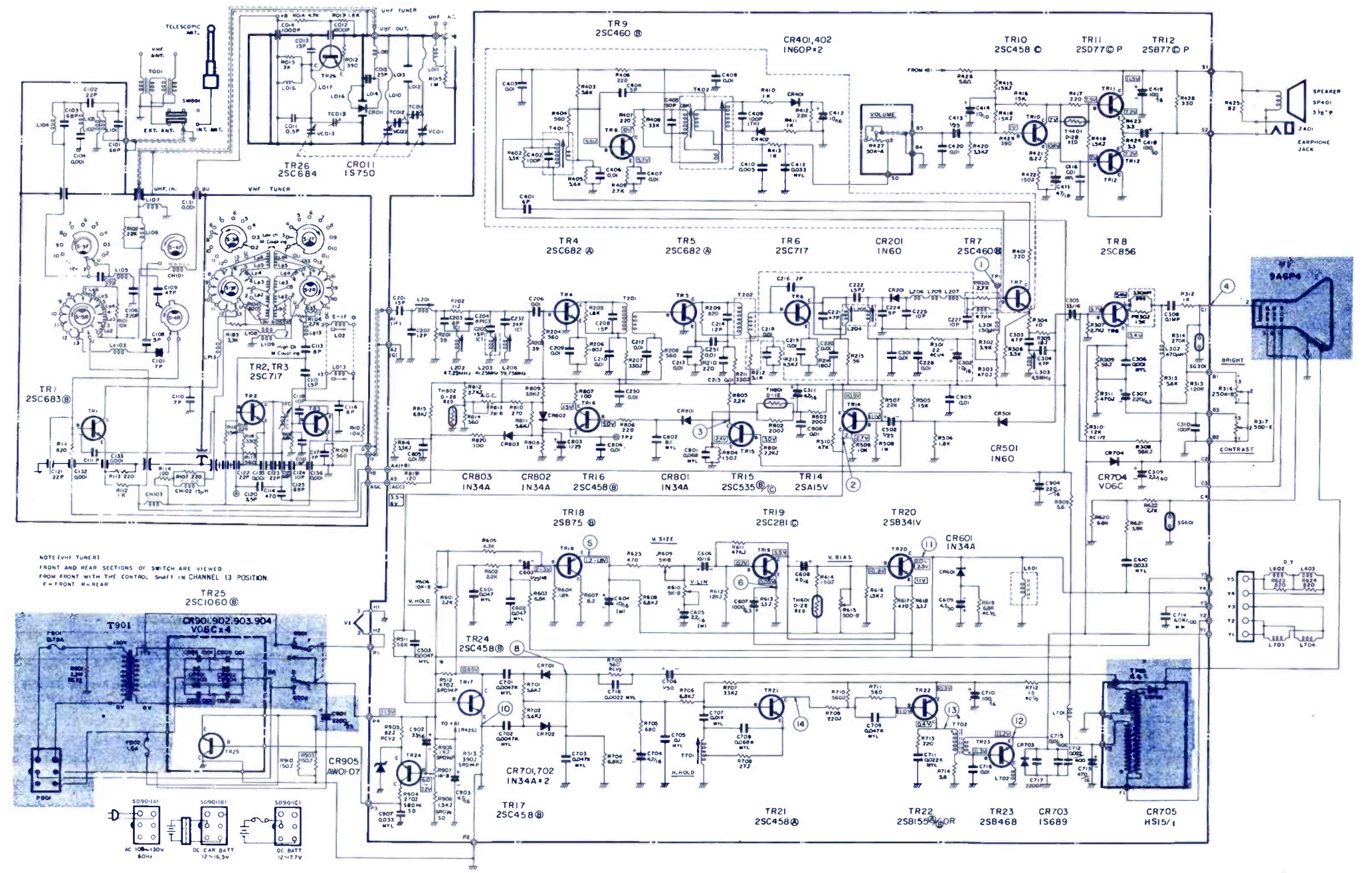
SYMBOL	DESCRIPTION	GENERAL ELECTRIC PART NO.
L109	coil horiz osc	ES35X6
L110	coil horiz filter choke	ES36X93
L112	deflect yoke	ES76X7
T102	x-former 47.25MHz trap	ES36X97
T108	x-former 4.5MHz trap	ES36X104
T109	x-former 4.5MHz trap	ES36X66
T110	x-former audio take off	ES61X14
T111	x-former audio detect	ES61X15
T112	x-former audio detect	ES56X3
T115	x-former HV assembly	ES77X13
T116	x-former power	ES88X3
	fuse .75A fast blo F701	ES10X8
	fuse 1.6A slo blo F702	ET10X6
	fuse 6A fast blo F703	ES10X14
	tuner UHF	ES85X11
	tuner VHF	ES86X14

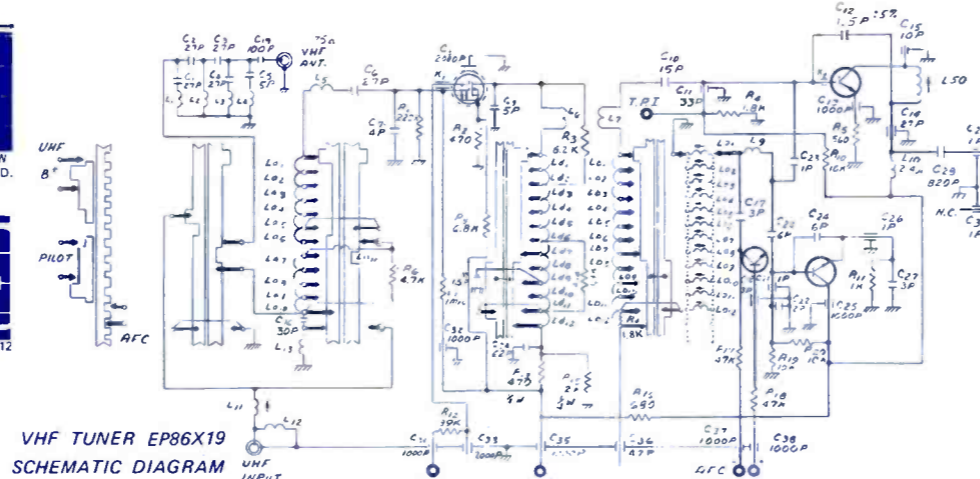
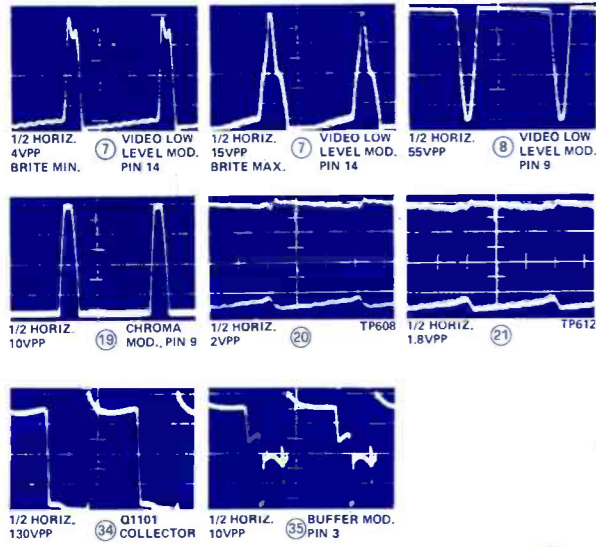
GENERAL ELECTRIC
TV Chassis R-2
(Late Production)

GENERAL ELECTRIC

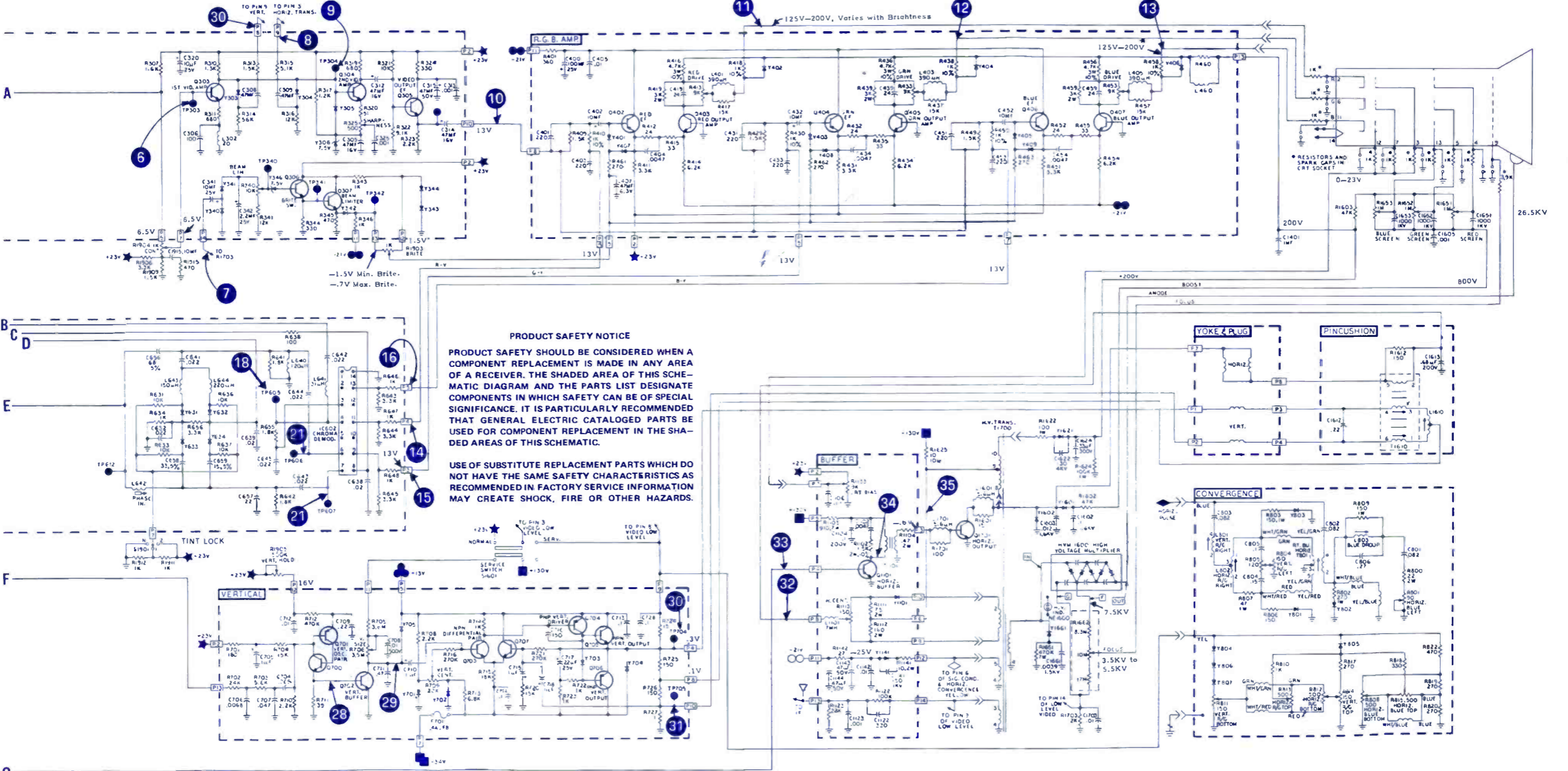
TV Chassis T-6

SYMBOL	DESCRIPTION	GENERAL ELECTRIC PART NO.
R901	— 2.2M ½w 10%	ES14X53
C901	— 2200µf 10% 25v	ES31X37
L204	— IF	ES36X72
L206	— filter	ES36X73
L207	— filter	ES36X74
L701	— horiz filter	ES36X48
L702	— horiz filter	ES36X78
T701	— horiz osc	ES35X5
T702	— horiz drive	ES51X4
T703	— horiz output xformer	ES77X11
T901	— power xformer	ES86X2
	deflect yoke	ES76X5
	fuse .75Z	ES10X6
	fuse 1.6A	ES10X5
	tuner VHF	ES86X13



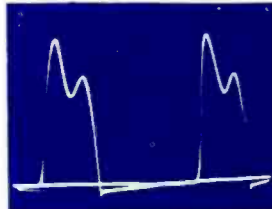


SYMBOL	DESCRIPTION	GENERAL ELECTRIC PART NO.
R1201	degaussing switch	EP39X4
R205	IF AGC, 250 Ω	EP49X142
R206	RF AGC, 250 Ω	EP49X142
R325	peaking, 500 Ω	EP49X140
R340	brite limit, 10K	
R413	red drive	
R433	green drive	EP49X141
R453	blue drive	
R606	k-iller adj, 50K	EU49X35
R619	chroma gain equal, 2.5K	ES49X628
R623	ACC adj, 100K	EP49X143
R706	vert size, 3.5M	EP49X144
R1113	horiz centering, 150 Ω	EP49X147
R1133	CRT bias	EP49X148
R1315	H V adj, 2K	EP49X90
R1651	red screen, 1M	
R1652	green screen, 1M	EP49X131
R1653	blue screen, 1M	
C1206A	1900 μ f, +100-10%, 40v	EP31X42
C1206B	1900 μ f, +100-10%, 40v	
C1206C	1900 μ f, +100-10%, 40v	
L207	41.25MHz trap	EP36X92
L215	4.5MHz trap	EP36X111
L222	choke	ES36X751
L501	audio take-off	EP36X106
L502	quad	EP36X107
L617	chroma, 4.3MHz	EP36X112
L634	phase, 3.58MHz	EP36X112
L642	chroma phase	EP36X112
L1001	horiz. osc. (Hold)	EP35X2
T1200	power line choke	EU36X856
T1201	power xformer	EP62X34
T1202	CRT filament	EP64X22
T1700	high voltage	EP77X13
IC201	IF	EP84X1
IC202	AFC	EP84X5
IC501	audio	EP84X6
IC601	chroma processor	EP84X7
IC602	chroma demod. tripler, H. V. (H. V. M. 1600)	EP84X3
	yoke, deflection	EP766X10

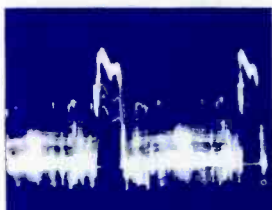




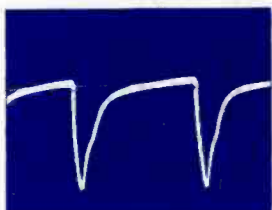
1 2 HORIZ. RATE
3.5 VPP



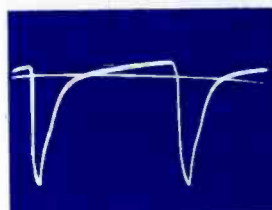
1 2 HORIZ. RATE
180 VPP



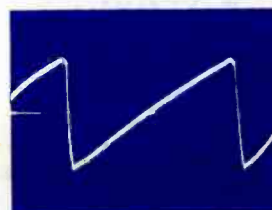
1 2 HORIZ. RATE
12 VPP



1 2 HORIZ. RATE
75 VPP



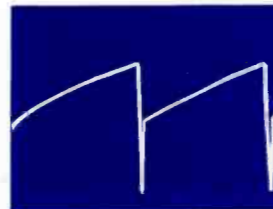
1 2 HORIZ. RATE
34 VPP



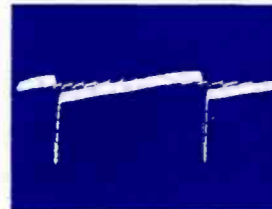
1 2 HORIZ. RATE
8 VPP



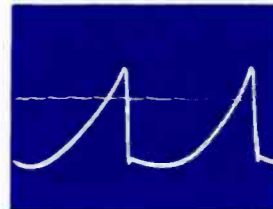
1 2 VERT. RATE
80 VPP



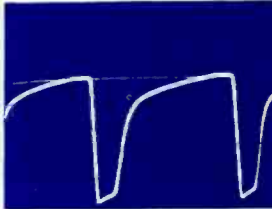
1 2 VERT. RATE
210 VPP



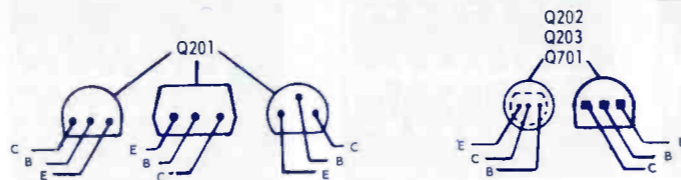
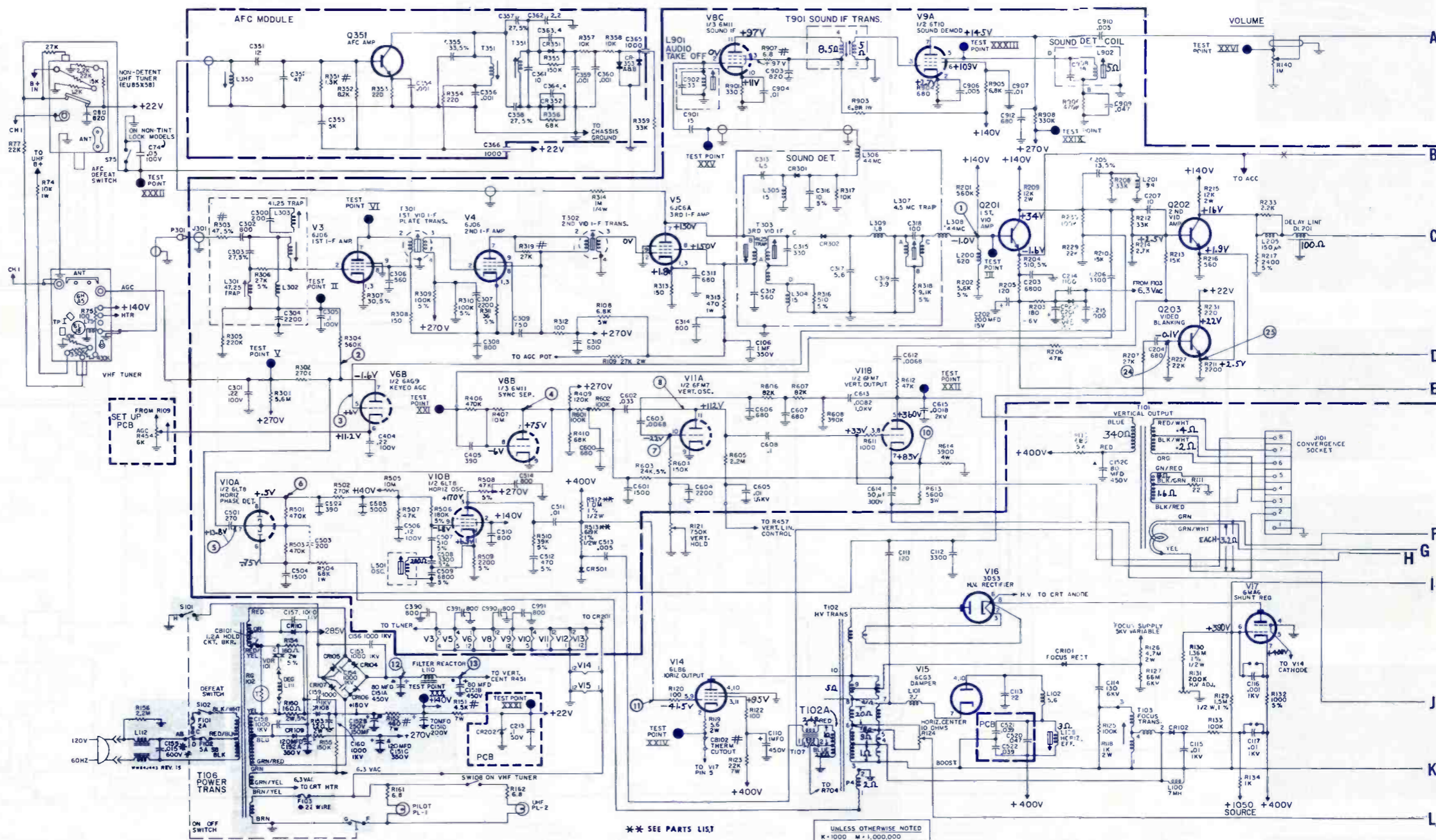
1 7 VERT. RATE
85 VPP



1 2 VERT. RATE
18 VPP

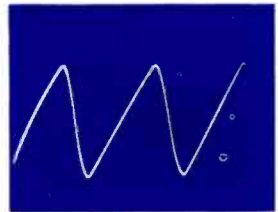


1 2 HORIZ. RATE
270 VPP

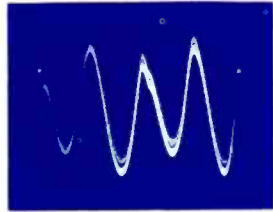


TRANSISTORS--BOTTOM VIEWS

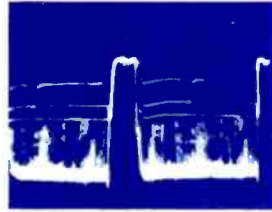
GENERAL ELECTRIC
Color-TV
Chassis KE-II/EB



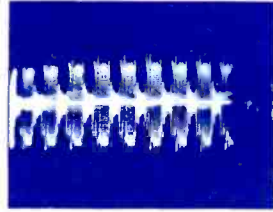
1/2 VERT. RATE
22 VPP C 151 A



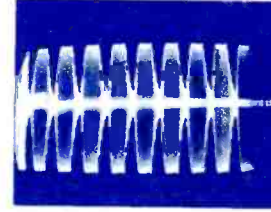
1/2 VERT. RATE
1.5 VPP C 151 B



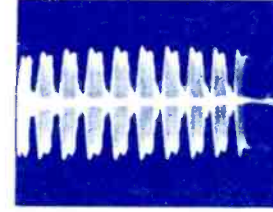
1/2 HORIZ. RATE
120 VPP R466



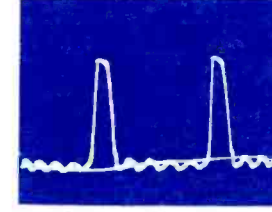
1/2 HORIZ. RATE
110 VPP V12, PIN 5
KEYED RAINBOW
GENERATOR



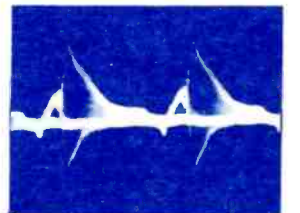
1/2 HORIZ. RATE
6 VPP V12, PIN 3
KEYED RAINBOW
GENERATOR



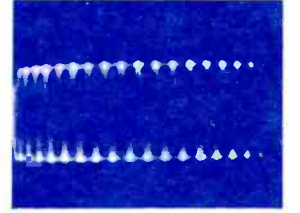
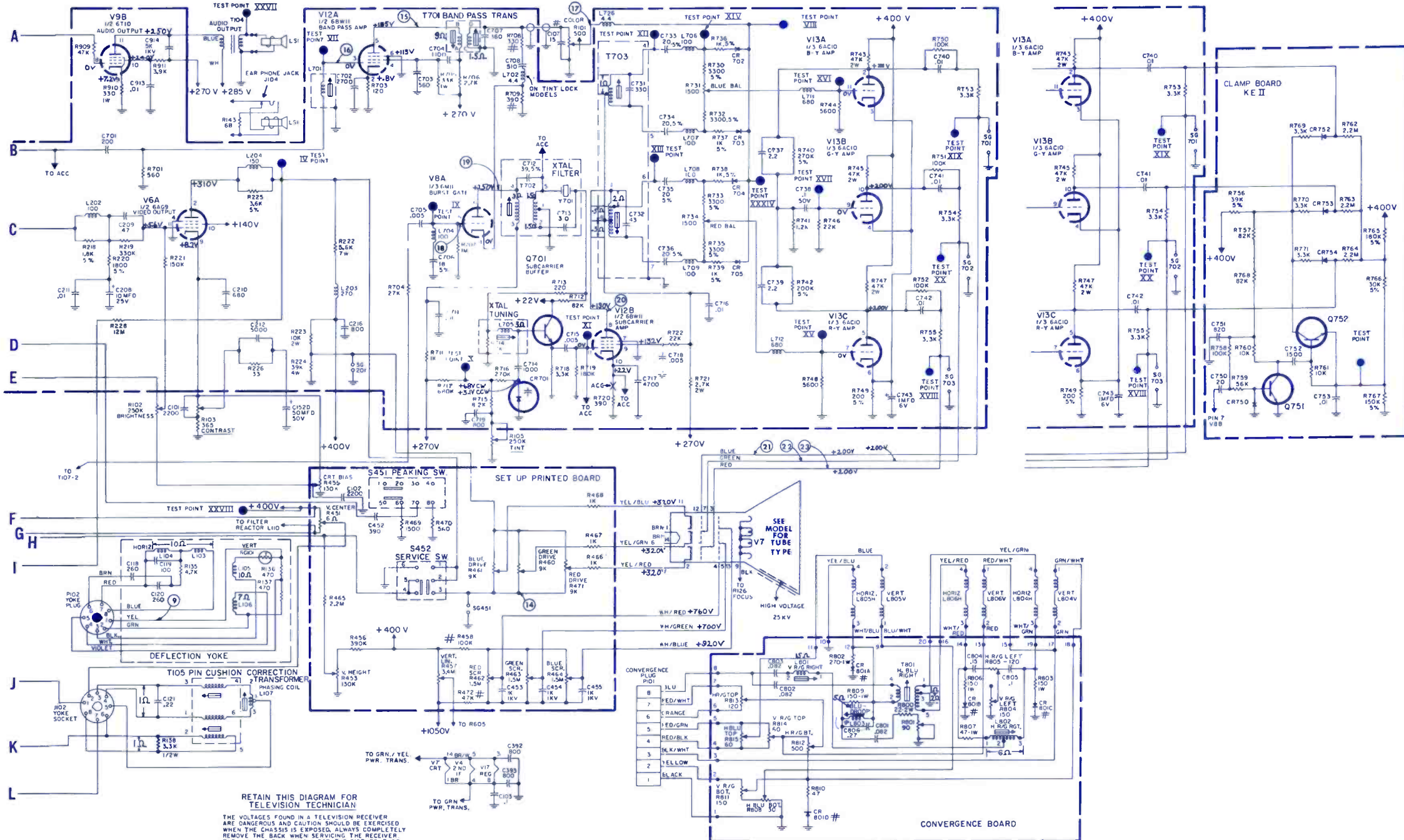
1/2 HORIZ. RATE
40 VPP TP V111
KEYED RAINBOW
GENERATOR



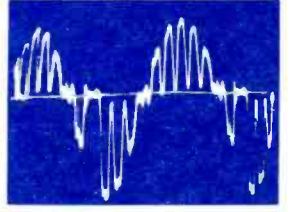
1/2 HORIZ. RATE
120 VPP V8, PIN 5
KEYED RAINBOW
GENERATOR



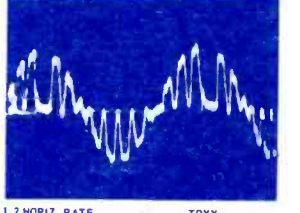
1/2 HORIZ. RATE
200 VPP V8, PIN 6
KEYED RAINBOW
GENERATOR



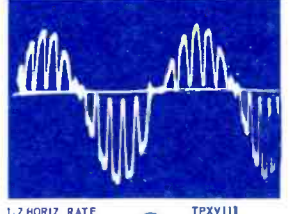
1/2 HORIZ. RATE
100 VPP V12, PIN 8
KEYED RAINBOW
GENERATOR



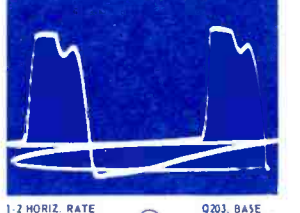
1/2 HORIZ. RATE
270 VPP TPXIX
KEYED RAINBOW
GENERATOR



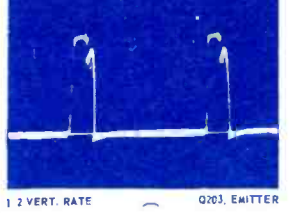
1/2 HORIZ. RATE
70 VPP TPXX
KEYED RAINBOW
GENERATOR



1/2 HORIZ. RATE
260 VPP TPXVIII
KEYED RAINBOW
GENERATOR



1/2 HORIZ. RATE
28 VPP Q203, BASE
OFF-THE-AIR
SIGNAL



1/2 VERT. RATE
Q203, EMITTER

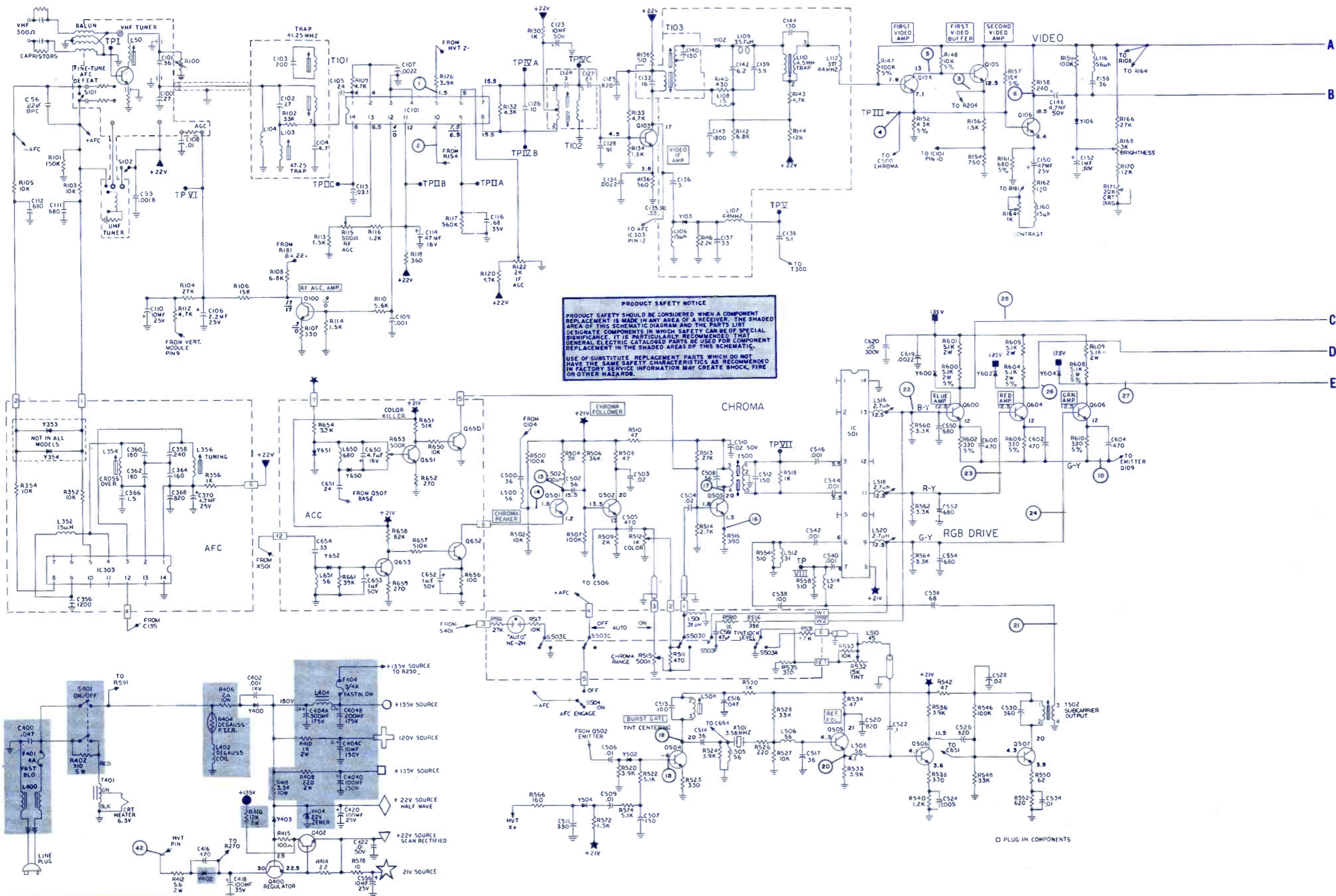
RETAIN THIS DIAGRAM FOR TELEVISION TECHNICIAN

THE VOLTAGES FOUND IN A TELEVISION RECEIVER ARE DANGEROUS AND CAUTION SHOULD BE EXERCISED WHEN THE CHASSIS IS EXPOSED. ALWAYS COMPLETELY REMOVE THE BACK WHEN SERVICING THE RECEIVER. THE HIGH-VOLTAGE SUPPLY FOR THE PICTURE TUBE ANODE WILL GIVE AN UNPLEASANT SHOCK. ALWAYS DISCHARGE THE PICTURE TUBE ANODE TO THE CHASSIS ON NON-ENERGIZED RECEIVER BEFORE HANDLING THE TUBE.

SECONDARY HUMAN REACTIONS TO OTHERWISE HARMLESS SHOCKS HAVE BEEN KNOWN TO CAUSE INJURY SINCE THE HIGH VOLTAGE IS PRODUCED FROM THE B+ VOLTAGE. CERTAIN PORTIONS OF THE HIGH VOLTAGE GENERATING CIRCUIT ARE DANGEROUS AND EXTREME CAUTION SHOULD BE OBSERVED.

THE PICTURE TUBE IS HIGHLY EVACUATED AND IF BROKEN, GLASS FRAGMENTS WILL BE VIOLENTLY EJECTED. WHEN HANDLING THE PICTURE TUBE ALWAYS WEAR GOGGLES AND PROTECTIVE CLOTHING.

* SPECIAL FOR 120V AC POWER LINE
DO NOT SUBSTITUTE
** MATCHED PAIR



PRODUCT SAFETY NOTICE

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USE OF SUBSTITUTE REPLACEMENT PARTS WHICH DO NOT HAVE THE SAME SAFETY CHARACTERISTICS AS RECOMMENDED IN FACTORY SERVICE INFORMATION MAY CREATE SHOCK, FIRE OR OTHER HAZARDS.

GENERAL ELECTRIC
Color-TV Chassis
10QA

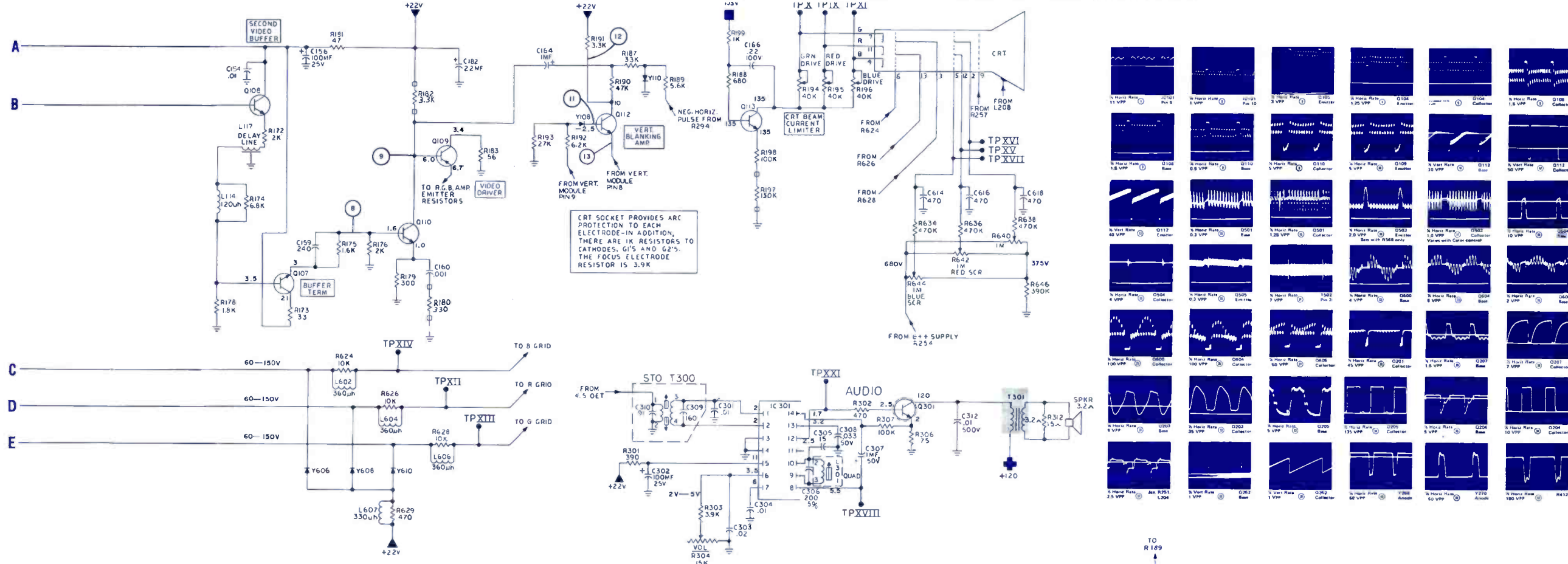
GENERAL ELECTRIC
Color-TV Chassis
10QA

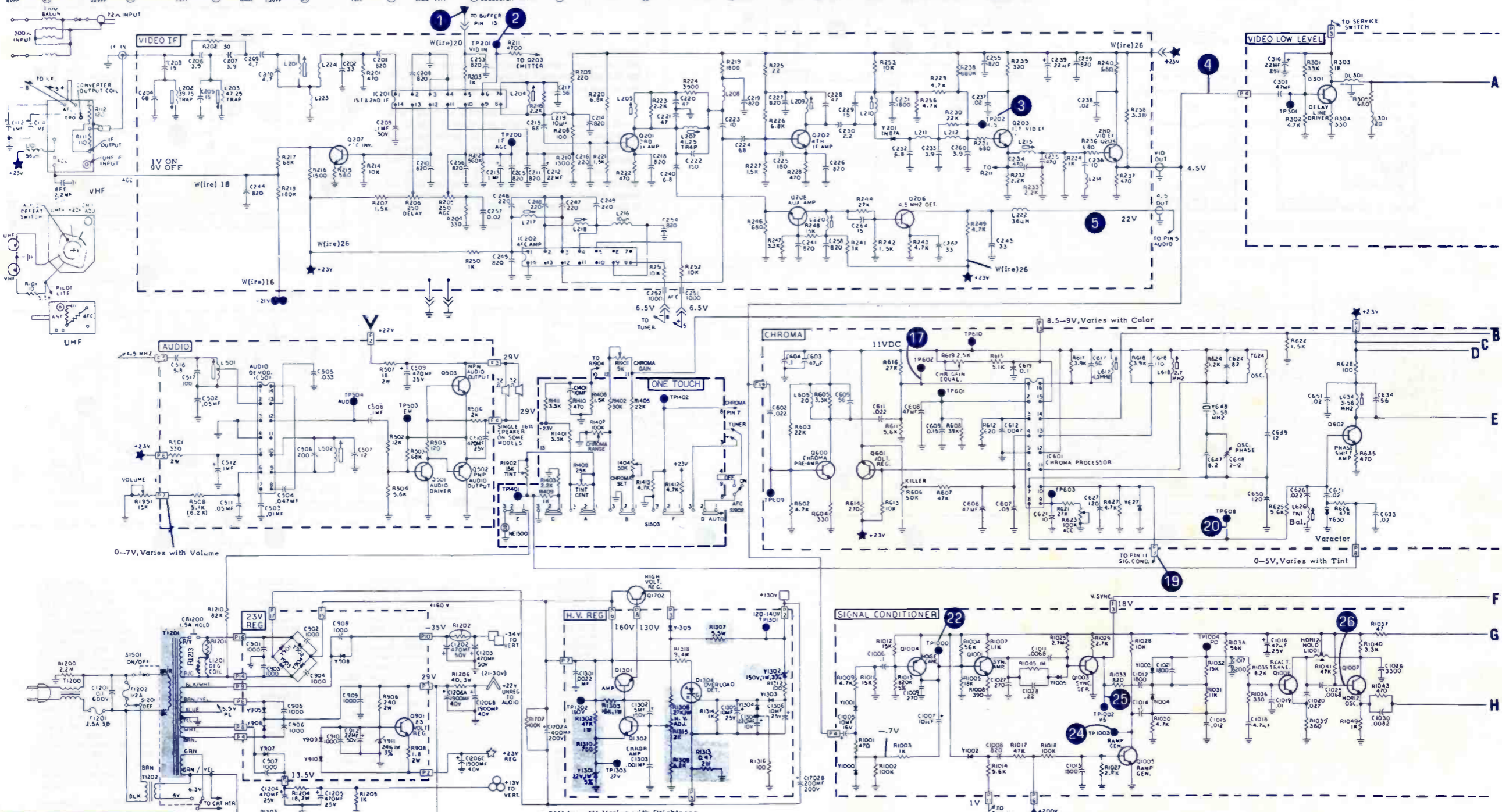
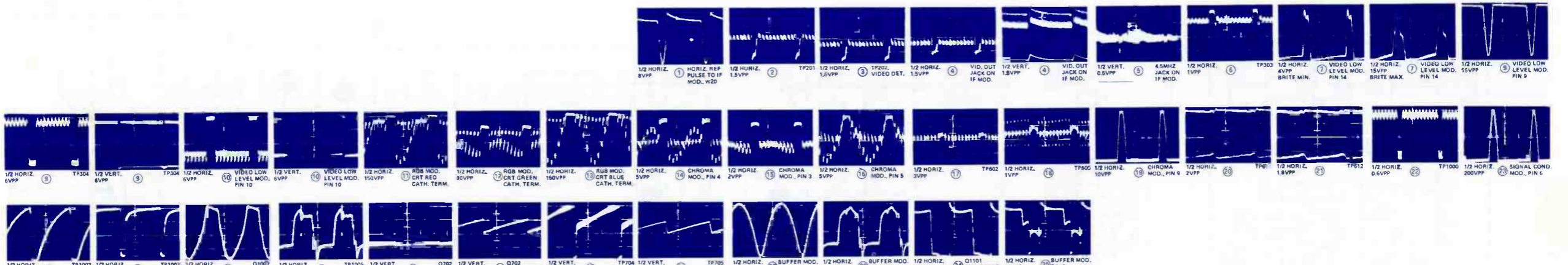
SYMBOL DESCRIPTION GENERAL ELECTRIC PART NO.

- R115—RF AGC 500n, 20% dual control EP49X92
- R122—IF AGC, 2K EP49X94
- R196—blue drive, 40K dual control EP49X95
- R263—vert hold, 500K
- R270—vert height, 500K
- R277—vert center, 2K EP49X90
- R515—chroma range 500n EP49X159
- R653—color killer, 500K ES49X535

- C404A—300μf, 175v EP31X28
- C404B—200μf, 175v
- C404C—10μf, 150v
- C404D—100μf, 150v
- L112—coil, 44MHz trap conv. yoke assembly EP36X4
- L202—coil horiz osc w/core EP62X32
- L301—coil quad w/core EP36X55
- L301—coil quad w/core EP36X83
- IC101—integ ckt IF, AGC EP84X1
- IC301—integ ckt audio EP84X2

- IC303—integ ckt AFC mod EP84X4
- IC501—integ ckt demod EP84X3
- fuse 4a fast blo F401 EP10X52
- fuse 5a fast blo F404 EP10X3
- T202—xformer horiz buffer EP64X19
- T204—HV xformer, w/air gap EP77X11
- T301—xformer audio output ET64X105
- T401—xformer filament EP64X21
- T500—xformer chroma bandpass EP61X14
- T502—coil 3.58 output xformer w/core EP36X84



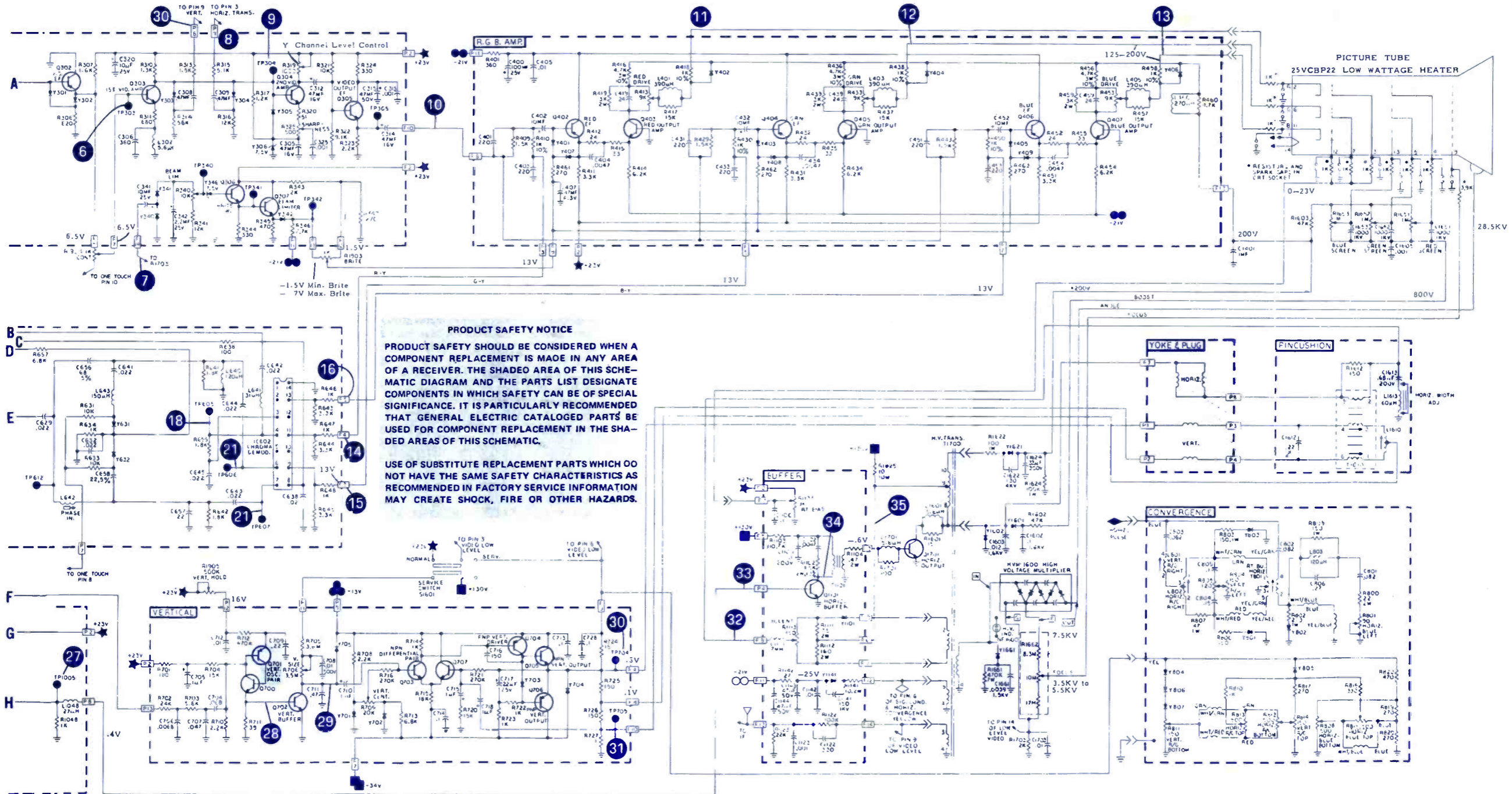


GENERAL ELECTRIC
 Color-TV Chassis
 25MB

SYMBOL DESCRIPTION GENERAL ELECTRIC PART NO.

R1625-10 Ω, 10%, 10w	EP14X52
R1661-470K, 10%, 7w	EP14X57
R205-1F AGC, 250 Ω, 20%	EP49X142
R206-RF AGC, 250 Ω, 20%	EP49X142
R340-brite limit, 10K, 20%	EP49X140
R413-red drive	EP49X141
R433-green drive	EP49X141
R453-blue drive	EP49X141
R606-killer adj 50K, 20%	EU49X35
R619-chroma gain equal 5K, 30%	ES49X627
R623-ACC adj 100K, 20%	EP49X143
R706-vert size, 3.5M	EP49X144
R709-vert center	EP49X147
R1113-horiz center 150 Ω	EP49X148
R1133-CRT bias	EU49X35
R1404-chroma set 50K	EP49X96
R1408-tint center 20K	EP62X42
R1662-focus pot asm	EP36X92
L207-41.25MHz trap	EP36X111
L215-4.5MHz trap	EP36X105
DL301-delay line	EP36X107
L502-quad	EP36X107

L617-chroma, 4.3MHz	EP36X112
L618-chroma 2.7MHz	EP36X112
L626-coil tint bal adj	EP36X112
L634-phase, 3.58MHz	EP36X112
L642-chroma phase	EP36X112
L1001-horiz osc hold	EP35X2
L1610-pincushion phasing coil	EP36X74
T624-3.58MHz osc	EP36X113
T1201-power xformer	EP62X34
T1202-CRT filament	EP64X22
T1700-high voltage	EP77X13
IC201-IF	EP84X1
IC202-AFC	EP84X5
IC501-audio	EP84X6
IC601-chroma processor	EP84X7
IC602-chroma demod	EP84X3
fuse .4a 250v fast blo F701	EP10X18
fuse 2.5a 125v slo blo F1201	EP10X13
fuse .5a 250v fast blo F1202	ES10X43
tripler HV HVM 1600	EP62X41
tuner VHF solid state	EP86X19
tuner UHF solid state	EP85X13
Yoke deflect	EP76X10

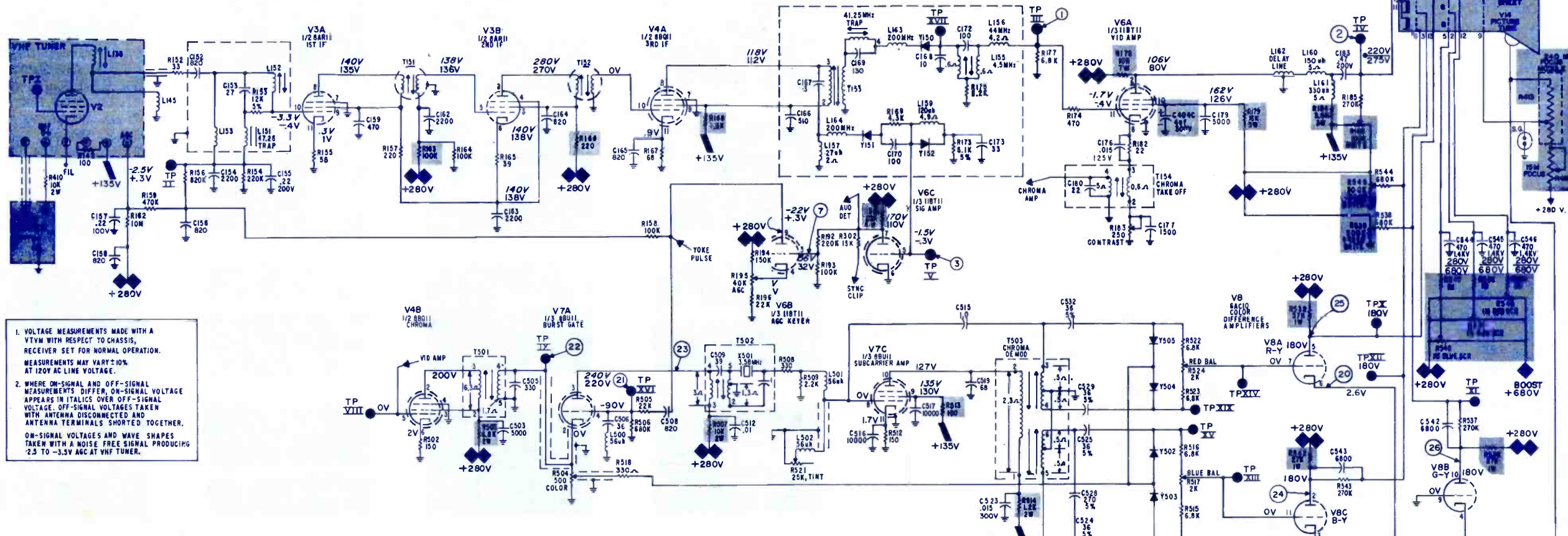


PRODUCT SAFETY NOTICE

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USE OF SUBSTITUTE REPLACEMENT PARTS WHICH DO NOT HAVE THE SAME SAFETY CHARACTERISTICS AS RECOMMENDED IN FACTORY SERVICE INFORMATION MAY CREATE SHOCK, FIRE OR OTHER HAZARDS.

NOTE: CRT SOCKET HAS BUILT IN SPARK GAP. USE ONLY EXACT REPLACEMENT PART.



1. VOLTAGE MEASUREMENTS MADE WITH A VTVM WITH RESPECT TO CHASSIS. RECEIVER SET FOR NORMAL OPERATION. MEASUREMENTS MAY VARY ±10% AT 120V AC LINE VOLTAGE.

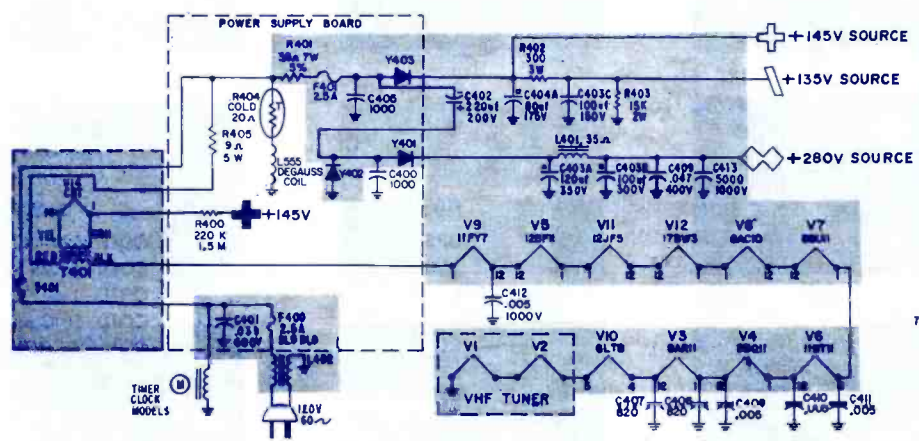
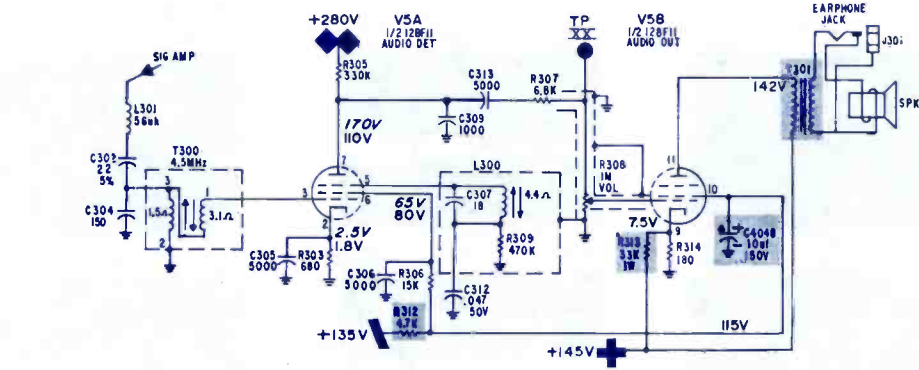
2. WHERE ON-SIGNAL AND OFF-SIGNAL MEASUREMENTS DIFFER, ON-SIGNAL VOLTAGE APPEARS IN ITALICS OVER OFF-SIGNAL VOLTAGE. OFF-SIGNAL VOLTAGES TAKEN WITH ANTENNA DISCONNECTED AND ANTENNA TERMINALS SHORTED TOGETHER. ON-SIGNAL VOLTAGES AND WAVE SHAPES TAKEN WITH A NOISE FREE SIGNAL PRODUCING -2.5 TO -3.5V AGC AT VHF TUNER.

UNLESS OTHERWISE NOTED
 R=1,000 Ω M=1,000,000 Ω
 CAPACITORS MORE THAN 1 μF IN P.P.T.
 CAPACITORS LESS THAN 1 μF IN P.P.T.
 RESISTORS ARE 1/2W

PRODUCT SAFETY SHOULD BE CONSIDERED WHEN A COMPONENT REPLACEMENT IS MADE IN ANY AREA OF A RECEIVER. THE SHADED AREA OF THIS SCHEMATIC DIAGRAM AND THE PARTS LIST DESIGNATE COMPONENTS IN WHICH SAFETY CAN BE OF SPECIAL SIGNIFICANCE. IT IS PARTICULARLY RECOMMENDED THAT GENERAL ELECTRIC CATALOGUED PARTS BE USED FOR COMPONENT REPLACEMENT IN THE SHADED AREA OF THIS SCHEMATIC.

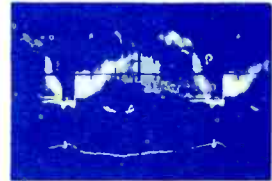
USE OF SUBSTITUTE REPLACEMENT PARTS WHICH DO NOT HAVE THE SAME SAFETY CHARACTERISTICS AS RECOMMENDED IN FACTORY SERVICE INFORMATION MAY CREATE SHOCK FIRE OR OTHER HAZARDS.

73W300037 REV. 4

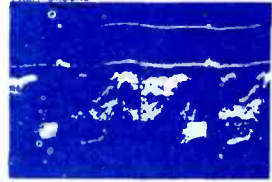


GENERAL ELECTRIC
 Color-TV Chassis
 10HE

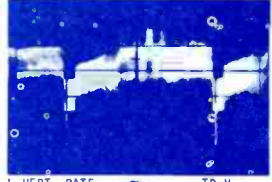
WAVEFORMS FOR POINTS INDICATED



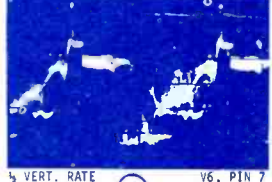
1/2 VERT. RATE
4 VOLTS PEAK
FROM GROUND (1) TP III
BROADCAST
SIGNAL



1/2 VERT. RATE
95 VPP (2) TP IV
BROADCAST
SIGNAL



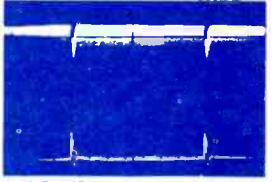
1/2 VERT. RATE
2 VPP (3) TP V
BROADCAST
SIGNAL



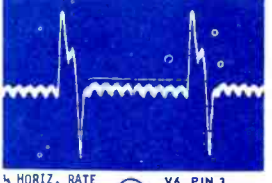
1/2 VERT. RATE
65 VPP (4) V6, PIN 7
BROADCAST
SIGNAL



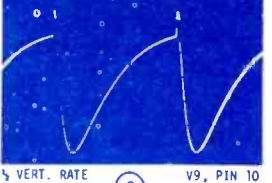
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50 VPP (5) TP VI
BROADCAST
SIGNAL



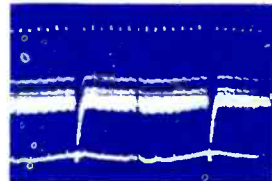
1/2 VERT. RATE
70 VPP (6) V7, PIN 7
KEYED RAINBOW
GENERATOR



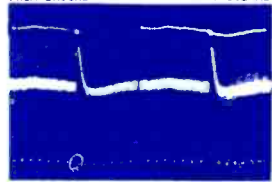
1/2 HORIZ. RATE
26 VPP (7) V6, PIN 3
KEYED RAINBOW
GENERATOR



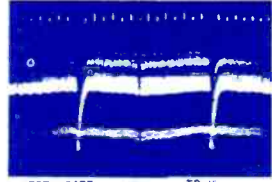
1/2 VERT. RATE
80 VPP (9) V9, PIN 10
KEYED RAINBOW
GENERATOR



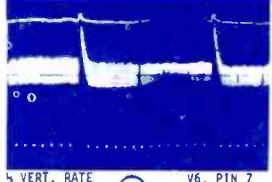
1/2 VERT. RATE
4 VOLTS PEAK
FROM GROUND (1) TP III
CROSSHATCH
GEN. SIGNAL



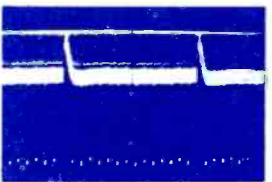
1/2 VERT. RATE
95 VPP (2) TP IV
CROSSHATCH
GEN. SIGNAL



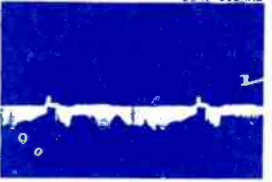
1/2 VERT. RATE
2 VPP (3) TP V
CROSSHATCH
GEN. SIGNAL



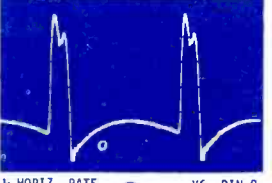
1/2 VERT. RATE
65 VPP (4) V6, PIN 7
CROSSHATCH
GEN. SIGNAL



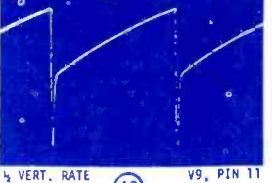
1/2 VERT. RATE
50 VPP (5) TP VI
CROSSHATCH
GEN. SIGNAL



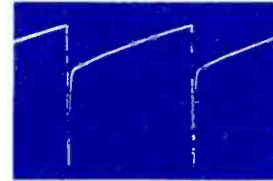
1/2 VERT. RATE
26 VPP (7) V6, PIN 3
KEYED RAINBOW
SIGNAL



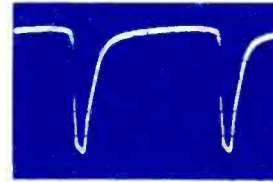
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250 VPP (8) V6, PIN 9
KEYED RAINBOW
SIGNAL



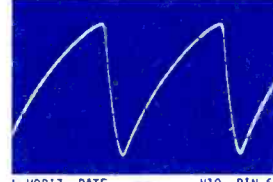
1/2 VERT. RATE
240 VPP (10) V9, PIN 11
KEYED RAINBOW
SIGNAL



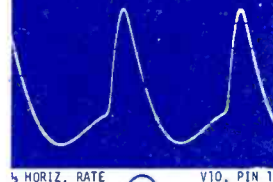
1/2 VERT. RATE
200 VPP (11) V9, PIN 3



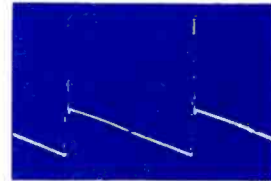
1/2 HORIZ. RATE
28 VPP (13) V10, PIN 7



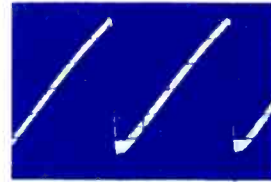
1/2 HORIZ. RATE
45 VPP (15) V10, PIN 6



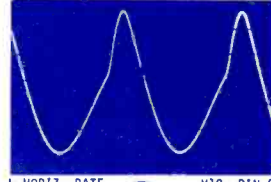
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30 VPP (17) V10, PIN 1



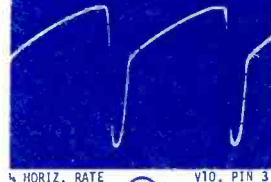
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880 VPP (12) V9, PIN 5



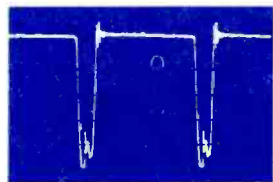
1/2 HORIZ. RATE
3 VPP (14) V10, PIN 8



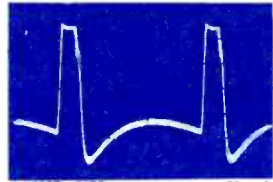
1/2 HORIZ. RATE
45 VPP (16) V10, PIN 9



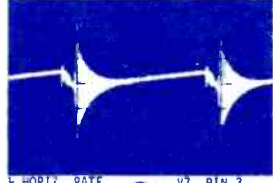
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150 VPP (18) V10, PIN 3



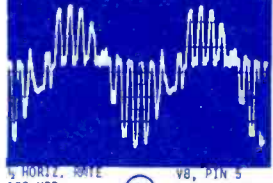
1/2 HORIZ. RATE
200 VPP (19) T252, PIN 4



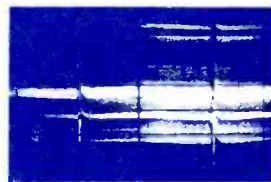
1/2 HORIZ. RATE
140 VPP (21) TP XVI



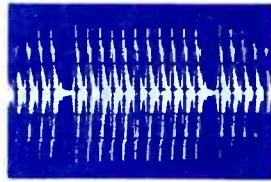
1/2 HORIZ. RATE
200 VPP (23) V7, PIN 3
KEYED RAINBOW
GENERATOR



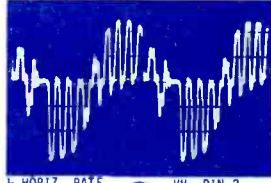
1/2 HORIZ. RATE
180 VPP (25) V8, PIN 5
KEYED RAINBOW
GENERATOR



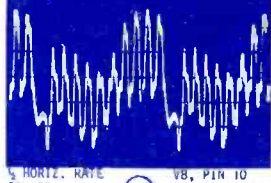
1/2 VERT. RATE
2 VPP (20) V8, PIN 6



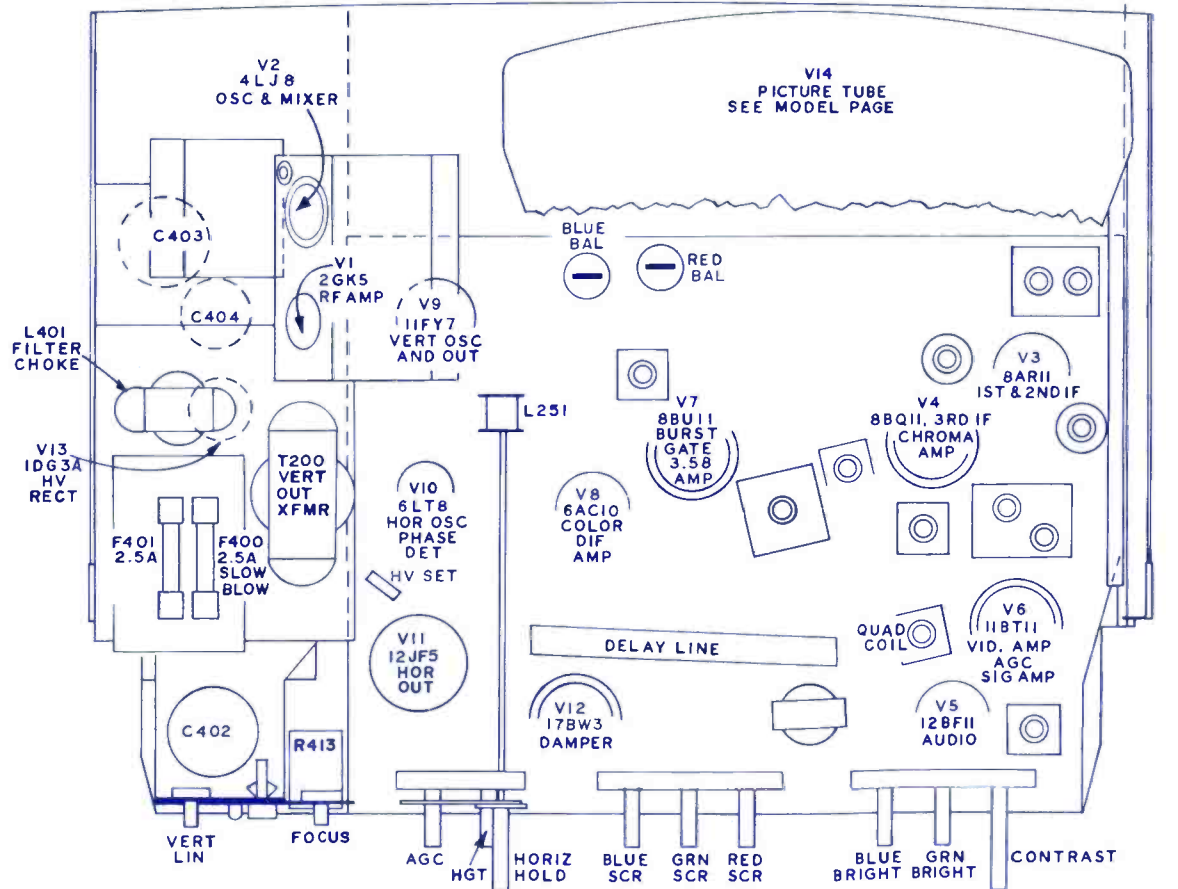
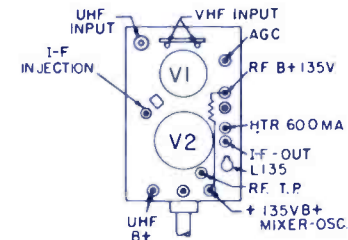
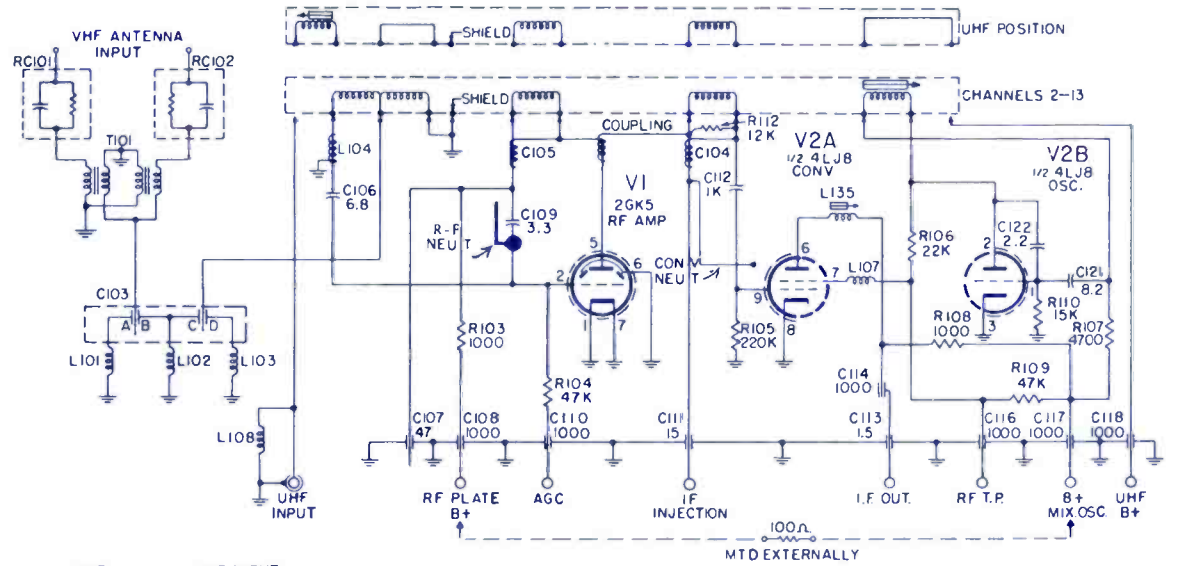
1/2 HORIZ. RATE
35 VPP (22) TP IX
KEYED RAINBOW
GENERATOR

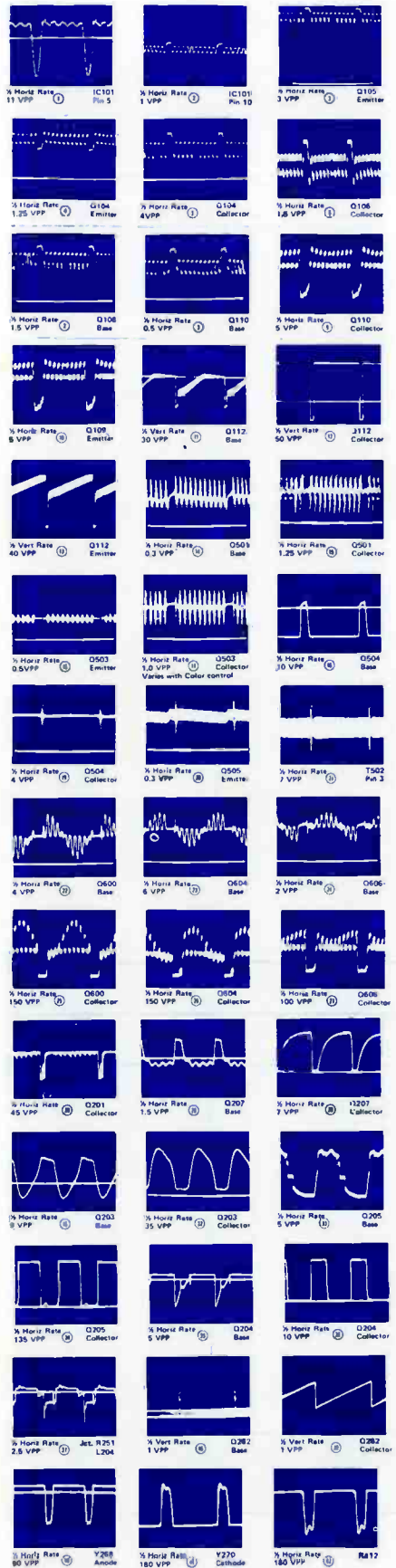


1/2 HORIZ. RATE
180 VPP (24) V8, PIN 2
KEYED RAINBOW
GENERATOR



1/2 HORIZ. RATE
50 VPP (26) V8, PIN 10
KEYED RAINBOW
GENERATOR

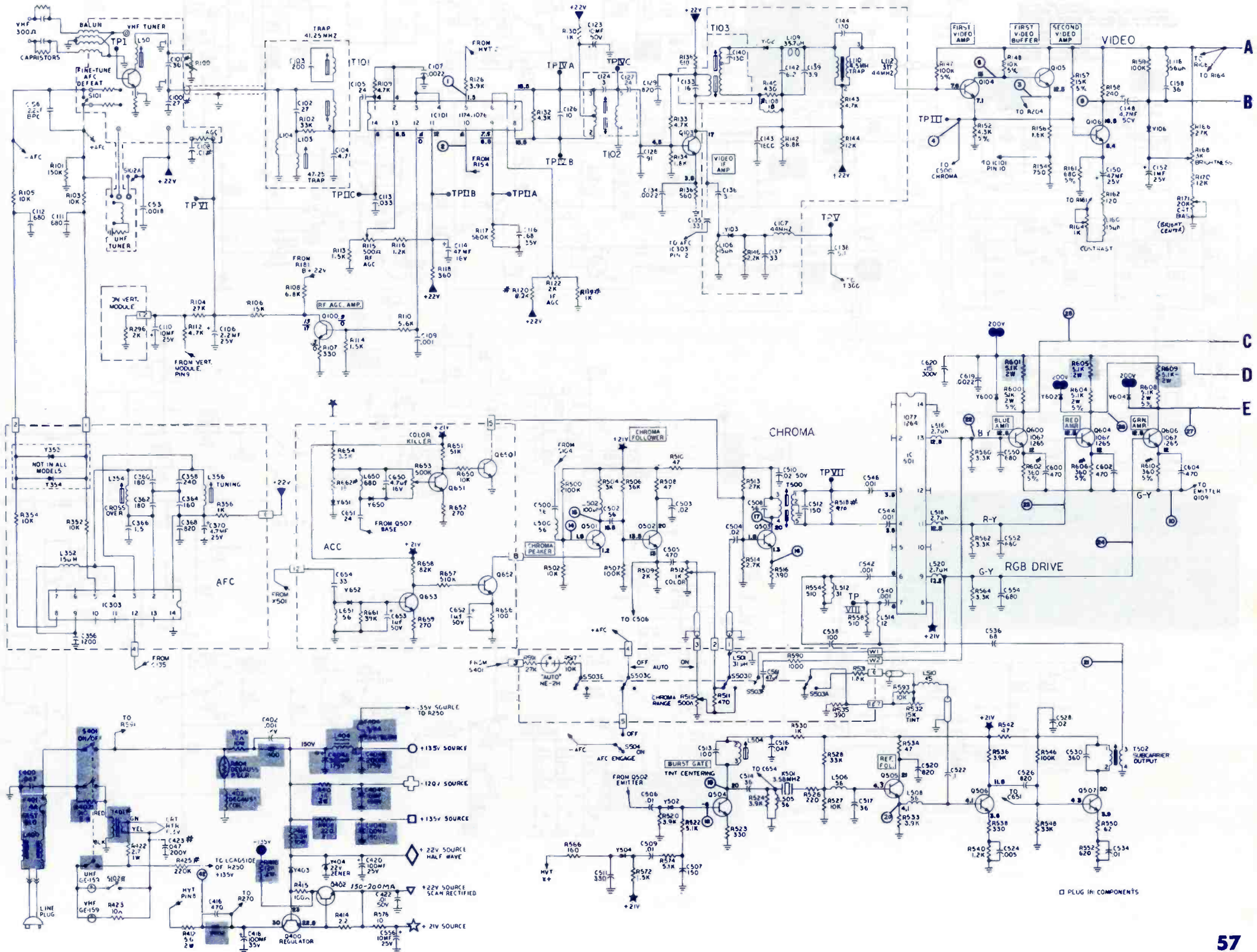




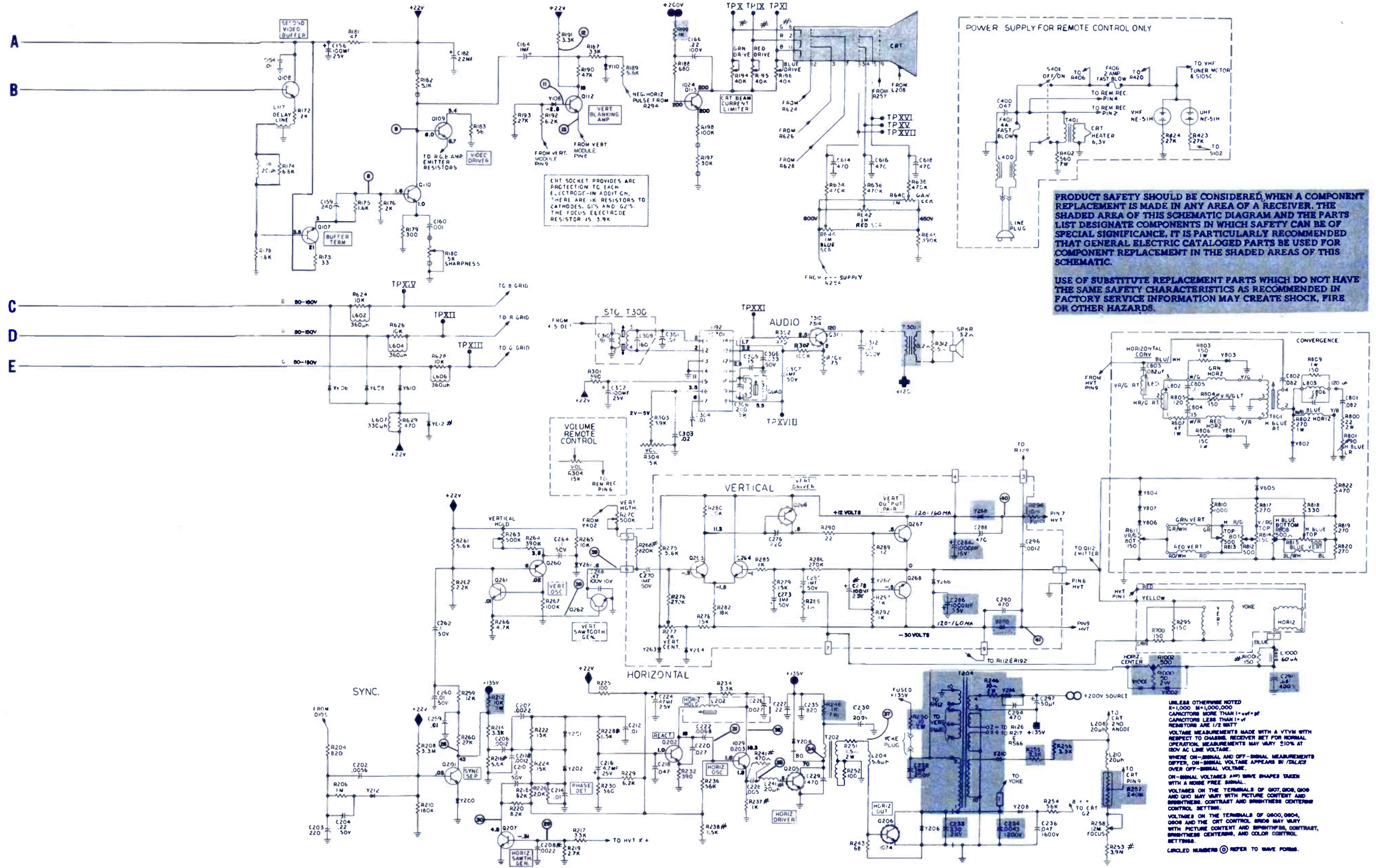
SYMBOL	DESCRIPTION	GENERAL ELECTRIC PART NO.
R115	RF AGC, 500n	EP49X92
R180	sharpness, 5K dual control	EP49X125
R263	vert hold, 500K	EP49X95
R270	vert height, 500K	
R277	vert centering, 2K	EP49X90
R515	chroma range, 500n triple control	EP49X159
R640	green screen, 1M	EP49X93
R642	red screen, 1M	

R644	blue screen, 1M	
R653	color killer, 500K	ES49X535
R1002	centering, 500n	EP49X160
C404A	300µf, 175v	EP31X28
C404B	200µf, 175v	
C404C	10µf, 150v	
C404D	100µf, 150v	
L110	coil 4.5MHz trap asm. w/core	EP61X13
L112	coil 44MHz trap	EP36X4
L202	coil horiz osc w/core	EP76X11
L301	coil quad w/core	EP36X55
		EP36X83

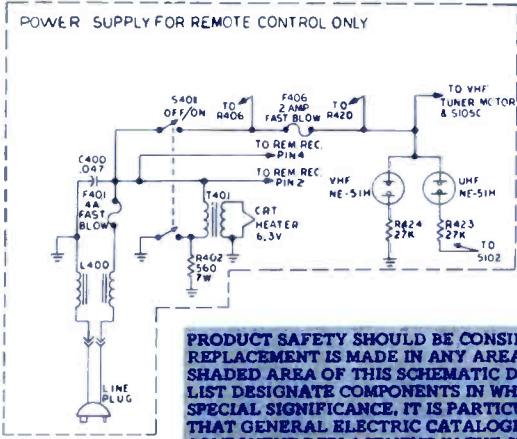
T202	xformer horiz buffer	EP64X19
T204	HV xformer, w/air gap	EP77X18
T301	xformer audio output	EP64X105
T401	xformer filament	EP64X26
T500	xformer chroma bandpass	EP61X14
T502	coil 3.58 output xformer	EP36X84
1C101	integ ckt IF AGC	EP84X1
1C301	integ ckt audio	EP84X2
1C303	integ ckt AFC module	EP84X4
1C501	integ ckt demod	EP84X3
	fuse 4a fast blow F401	EP10X19
	fuse .75a fast blo F404	EP10X17



GENERAL ELECTRIC
Color-TV Chassis
19QA



CRT SOCKET PROVIDES ARC PROTECTION TO EACH ELECTRODE-IN ADDITION, THERE ARE 1K RESISTORS TO CATHODES, G1'S AND G2'S. THE FOCUS ELECTRODE RESISTOR IS 3.9K.



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UNLESS OTHERWISE NOTED
K=1,000 M=1,000,000
CAPACITORS MORE THAN 1- μ F + μ F
CAPACITORS LESS THAN 1- μ F
RESISTORS ARE 1/2 WATT

VOLTAGE MEASUREMENTS MADE WITH A VTVM WITH RESPECT TO CHASSIS. RECEIVER SET FOR NORMAL OPERATION. MEASUREMENTS MAY VARY \pm 10% AT 120V AC LINE VOLTAGE.

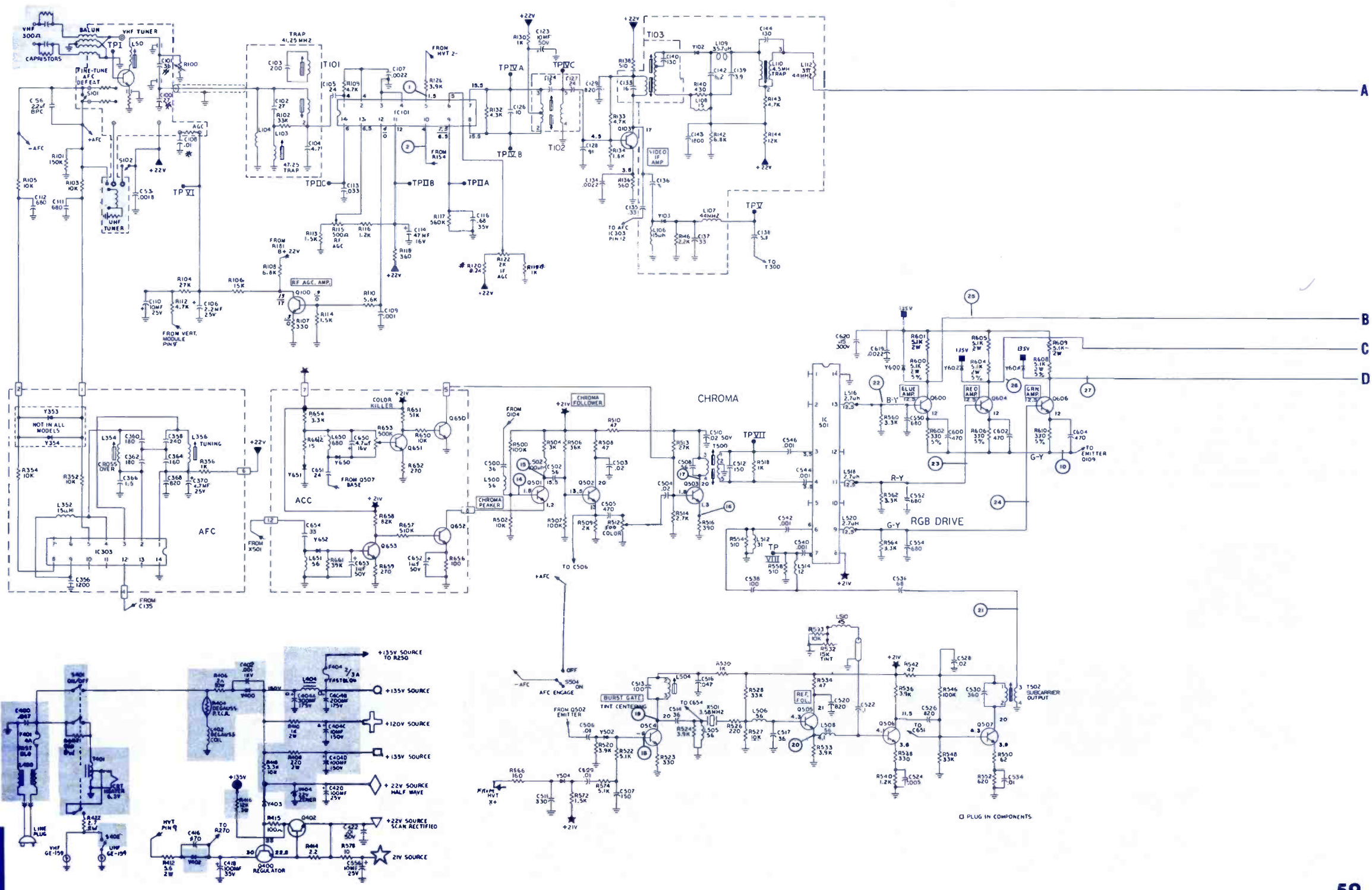
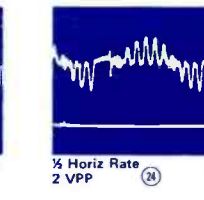
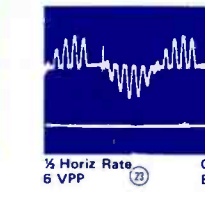
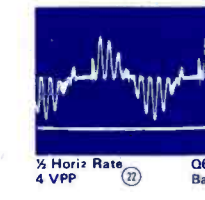
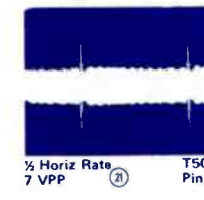
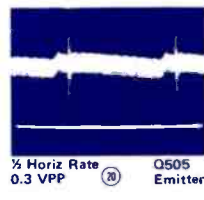
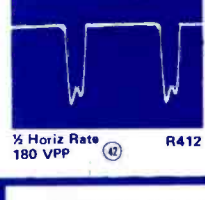
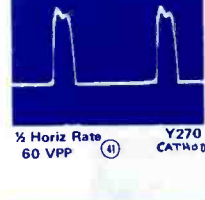
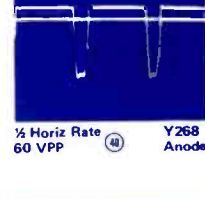
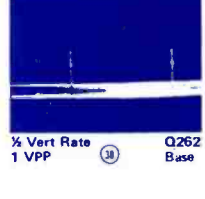
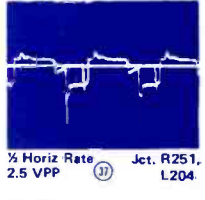
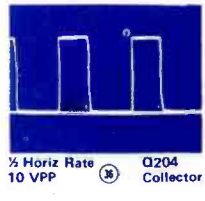
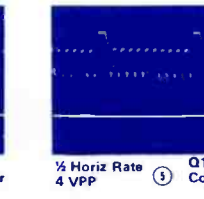
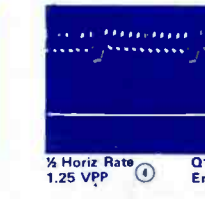
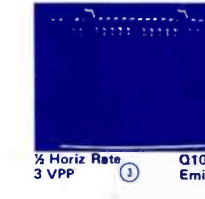
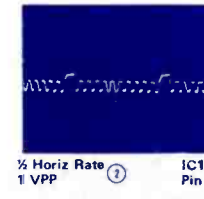
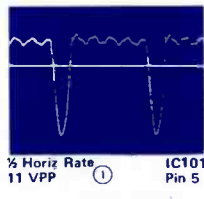
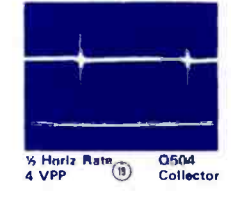
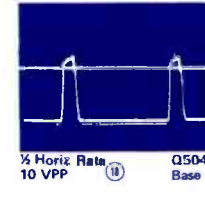
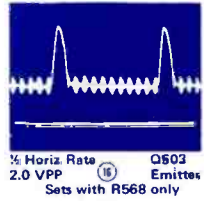
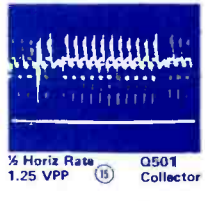
WHERE ON-BIRMAL AND OFF-BIRMAL MEASUREMENTS DIFFER, ON-BIRMAL VOLTAGE APPEARS IN ITALICS OVER OFF-BIRMAL VOLTAGE.

ON-BIRMAL VOLTAGES AND WAVE SHAPES TAKEN WITH A NOISE FREE SIGNAL.

VOLTAGES ON THE TERMINALS OF Q107, Q109, Q112 AND Q113 MAY VARY WITH PICTURE CONTENT AND BRIGHTNESS, CONTRAST AND BRIGHTNESS CENTERING CONTROL SETTINGS.

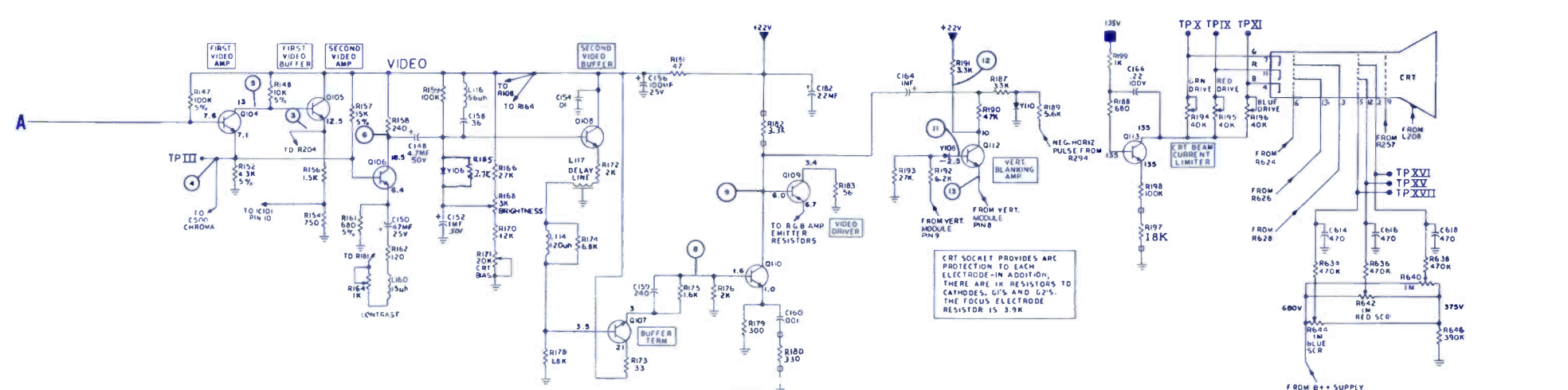
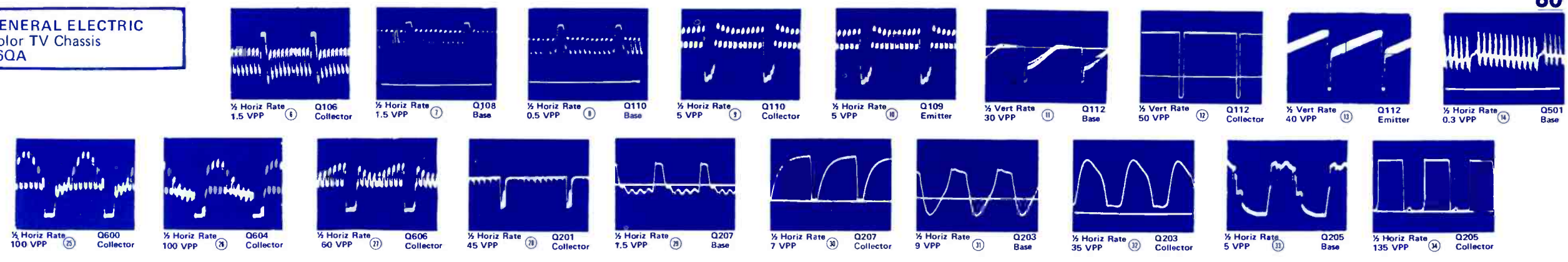
VOLTAGES ON THE TERMINALS OF Q203, Q204, Q206 AND Q207 MAY VARY WITH PICTURE CONTENT AND BRIGHTNESS, CONTRAST, BRIGHTNESS CENTERING, AND COLOR CONTROL SETTINGS.

CIRCLED NUMBERS (C) REFER TO WAVE FORMS.

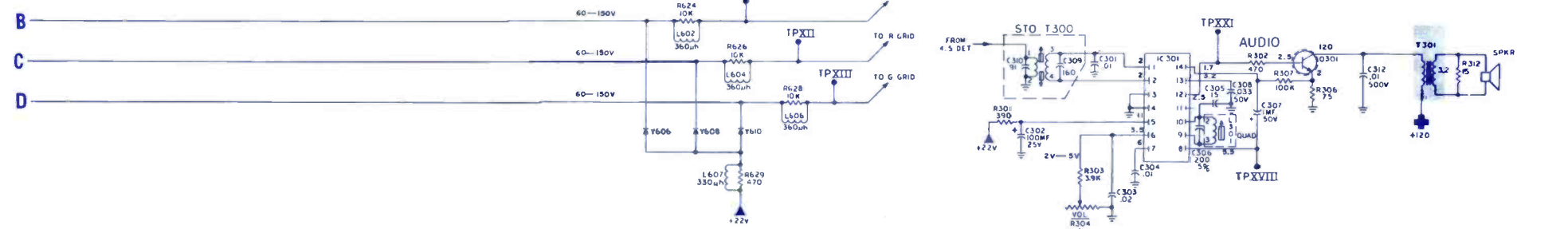


GENERAL ELECTRIC
Color TV Chassis 16QA

GENERAL ELECTRIC
Color TV Chassis
16QA



PRODUCT SAFETY SHOULD BE CONSIDERED WHEN A COMPONENT REPLACEMENT IS MADE IN ANY AREA OF A RECEIVER. THE SHADED AREAS OF THIS SCHEMATIC DIAGRAM AND THE PARTS LIST DESIGNATE COMPONENTS IN WHICH SAFETY CAN BE OF SPECIAL SIGNIFICANCE. IT IS PARTICULARLY RECOMMENDED THAT GENERAL ELECTRIC CATALOGED PARTS BE USED FOR COMPONENT REPLACEMENT IN THE SHADED AREAS OF THIS PARTS LIST. USE OF SUBSTITUTE REPLACEMENT PARTS WHICH DO NOT HAVE THE SAME SAFETY CHARACTERISTICS AS RECOMMENDED IN FACTORY SERVICE INFORMATION MAY CREATE SHOCK, FIRE OR OTHER HAZARDS.



Indicates to see Production Changes.

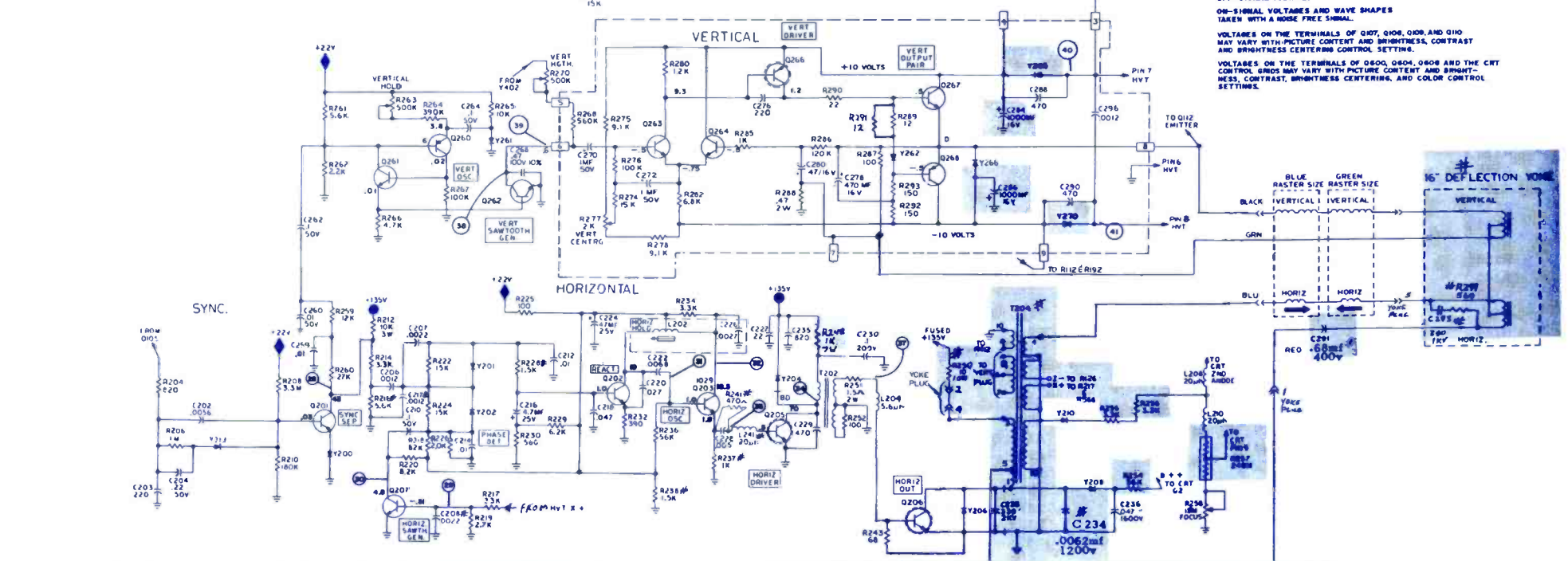
UNLESS OTHERWISE NOTED
 R=100Ω M=1000Ω
 CAPACITORS MORE THAN 1-μF OF
 CAPACITORS LESS THAN 1-μF
 RESISTORS ARE 1/2 WATT

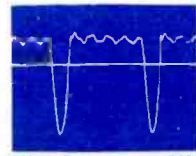
VOLTAGE MEASUREMENTS MADE
 WITH A VTVM WITH RESPECT TO
 CHASSIS. RECEIVER SET FOR NORMAL
 OPERATION. MEASUREMENTS MAY
 VARY 50% AT 120V AC LINE VOLTAGE.
 WHERE ON-SIGNAL AND OFF-SIGNAL
 MEASUREMENTS DIFFER, ON-SIGNAL
 VOLTAGE APPEARS IN ITALICS OVER
 OFF-SIGNAL VOLTAGE.
 ON-SIGNAL VOLTAGES AND WAVE SHAPES
 TAKEN WITH A NOISE FREE SIGNAL.

VOLTAGES ON THE TERMINALS OF Q107, Q108, Q109, AND Q110
 MAY VARY WITH PICTURE CONTENT AND BRIGHTNESS, CONTRAST AND
 BRIGHTNESS CENTERING CONTROL SETTINGS.

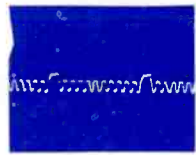
VOLTAGES ON THE TERMINALS OF Q600, Q604, Q606 AND THE CRT
 CONTROL GRIDS MAY VARY WITH PICTURE CONTENT AND BRIGHT-
 NNESS, CONTRAST, BRIGHTNESS CENTERING, AND COLOR CONTROL
 SETTINGS.

SYMBOL	DESCRIPTION	GENERAL ELECTRIC PART NO.
R115	RF AGC, 500Ω	EP49X92
	Dual Control	
R122	IF AGC, 2K	
R171	CRT Bias, 20K	EP49X96
R180	Sharpness, 5K	EP49X125
	Dual Control	EP49X97
R258	Focus, 15 M	
	Dual Control	EP49X95
R263	Vertical Hold, 500K	
R270	Vertical Height, 500K	
R277	Vertical Centering, 2K	EP49X90
R653	Color Killer, 500K	ES49X535
C404A	300 μf, 175V	EP31X28
C404B	200 μf, 175V	
C404C	10 μf, 150V	
C404D	100 μf, 150V	
L110	Coil, 4.5 Trap Asm. w/Core	EP61X13
L112	Coil, 44MHz Trap	EP36X4
	Defl. Yoke & Plug Asm.	EP76X15
L202	Coil, Horiz. Osc.	EP36X55
L301	Coil, Quadrature	EP36X83
T204	H.V. xformer, w/Air Gap	EP77X19
T301	xformer, Audio Output	ET64X105
T401	xformer, Filament	EP64X20
T500	xformer, Chroma Bandpass	EP61X14
IC101	Integrated Ckt., IF, AGC	EP84X1
IC301	Integrated Ckt., Audio	EP84X2
IC303	Integrated Ckt., AFC Module	EP84X4
IC501	Integrated Ckt. Demod.	EP84X3





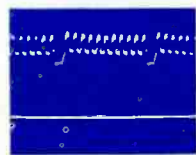
1/2 Horiz Rate 11 VPP IC101 Pin 5



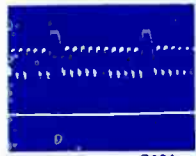
1/2 Horiz Rate 1 VPP IC101 Pin 10



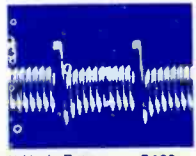
1/2 Horiz Rate 3 VPP Q105 Emitter



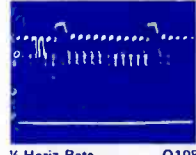
1/2 Horiz Rate 1.25 VPP Q104 Emitter



1/2 Horiz Rate 4 VPP Q104 Collector



1/2 Horiz Rate 1.5 VPP Q106 Collector



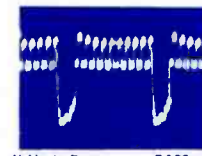
1/2 Horiz Rate 1.5 VPP Q108 Base



1/2 Horiz Rate 0.5 VPP Q110 Base



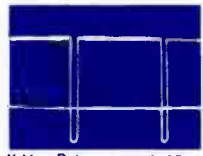
1/2 Horiz Rate 5 VPP Q110 Collector



1/2 Horiz Rate 5 VPP Q109 Emitter



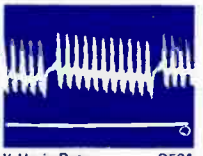
1/2 Vert Rate 30 VPP Q112 Base



1/2 Vert Rate 50 VPP J112 Collector



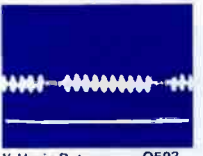
1/2 Vert Rate 40 VPP Q112 Emitter



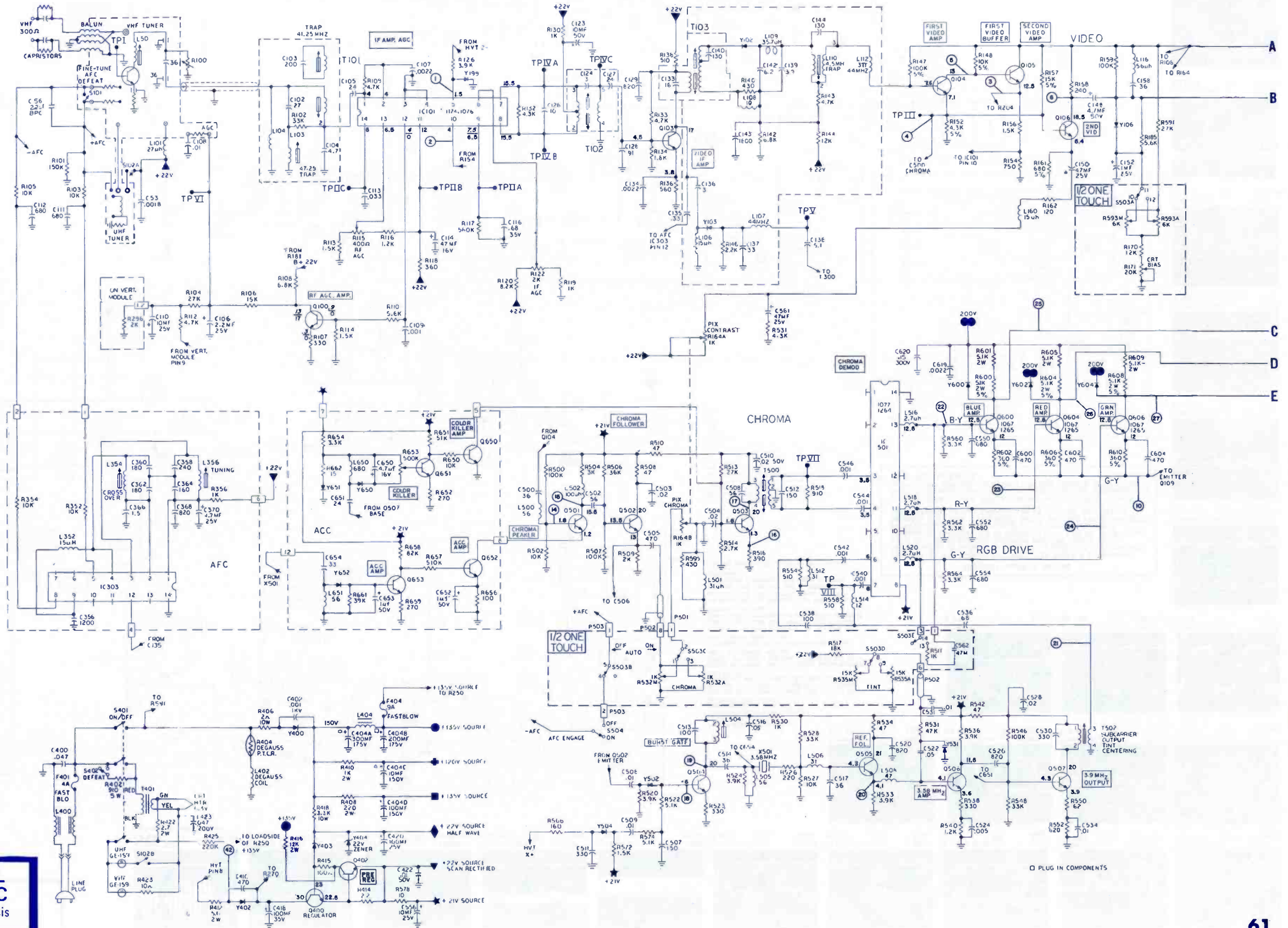
1/2 Horiz Rate 0.3 VPP Q501 Base



1/2 Horiz Rate 1.25 VPP Q501 Collector

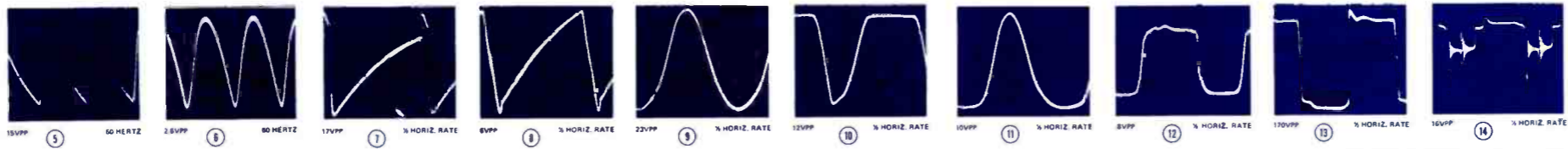


1/2 Horiz Rate 0.5 VPP Q503 Emitter



GENERAL ELECTRIC
Color TV Chassis
QB

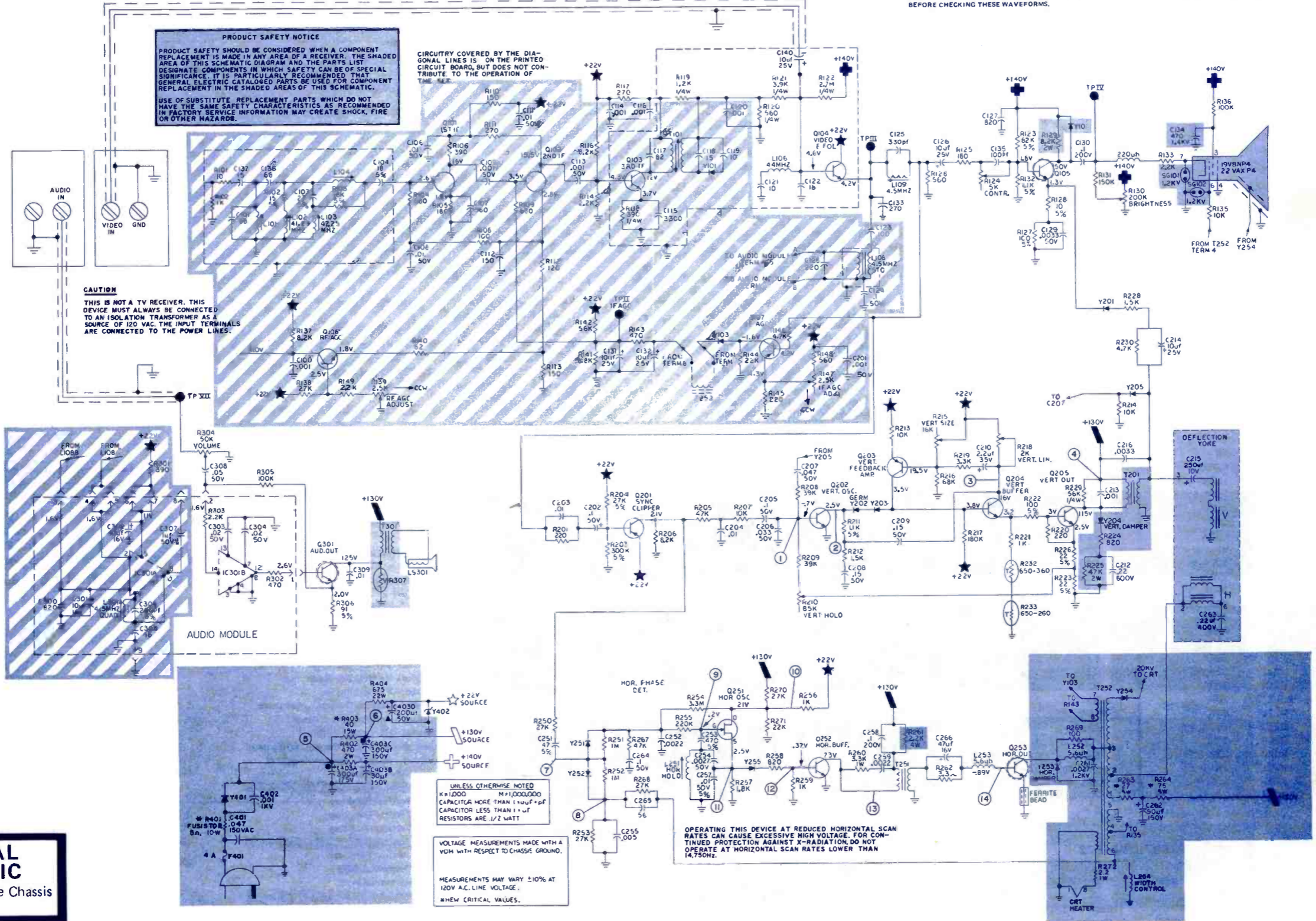
control-triple	ES49X61
R210—height, 85K	
R215—vert size, 16K	
R218—vert lin, 2.5K	
R232—thermistor assembly	ES41X5
R233—thermistor, 650 Ω, 10%	ES14X27
R307—VDR 180-200V	ES13X3
C403A—300 μf, electro, 175V	ES31X38
C403B—30 μf, electro, 150V	
C403C—300 μf, electro, 150V	
C403D—200 μf, electro, 50V	
L106—coil 44MHz trap, 36.7 μf	ES36X84
L109—coil 4.5MHz trap	ES36X120
L251—coil horiz osc	ES36X88
L264—coil width	ES36X121
T201—x-former vert output	ES64X11
T251—x-former horiz buffer	ES64X12
T252—x-former high voltage	ES77X19
T301—x-former audio output	ES64X13



DISCONNECT ANY EXTERNAL SIGNAL SOURCES BEFORE CHECKING THESE WAVEFORMS.

PRODUCT SAFETY NOTICE
 PRODUCT SAFETY SHOULD BE CONSIDERED WHEN A COMPONENT REPLACEMENT IS MADE IN ANY AREA OF A RECEIVER. THE SHADED AREA OF THIS SCHEMATIC DIAGRAM AND THE PARTS LIST DESIGNATE COMPONENTS IN WHICH SAFETY CAN BE OF SPECIAL SIGNIFICANCE. IT IS PARTICULARLY RECOMMENDED THAT GENERAL ELECTRIC CATALOGED PARTS BE USED FOR COMPONENT REPLACEMENT IN THE SHADED AREAS OF THIS SCHEMATIC.
 USE OF SUBSTITUTE REPLACEMENT PARTS WHICH DO NOT HAVE THE SAME SAFETY CHARACTERISTICS AS RECOMMENDED IN FACTORY SERVICE INFORMATION MAY CREATE SHOCK, FIRE OR OTHER HAZARDS.

CIRCUITRY COVERED BY THE DIAGONAL LINES IS ON THE PRINTED CIRCUIT BOARD, BUT DOES NOT CONTRIBUTE TO THE OPERATION OF THE SET.



UNLESS OTHERWISE NOTED
 K=1,000 M=1,000,000
 CAPACITOR MORE THAN 1 μF OF pF
 CAPACITOR LESS THAN 1 μF
 RESISTORS ARE 1/2 WATT

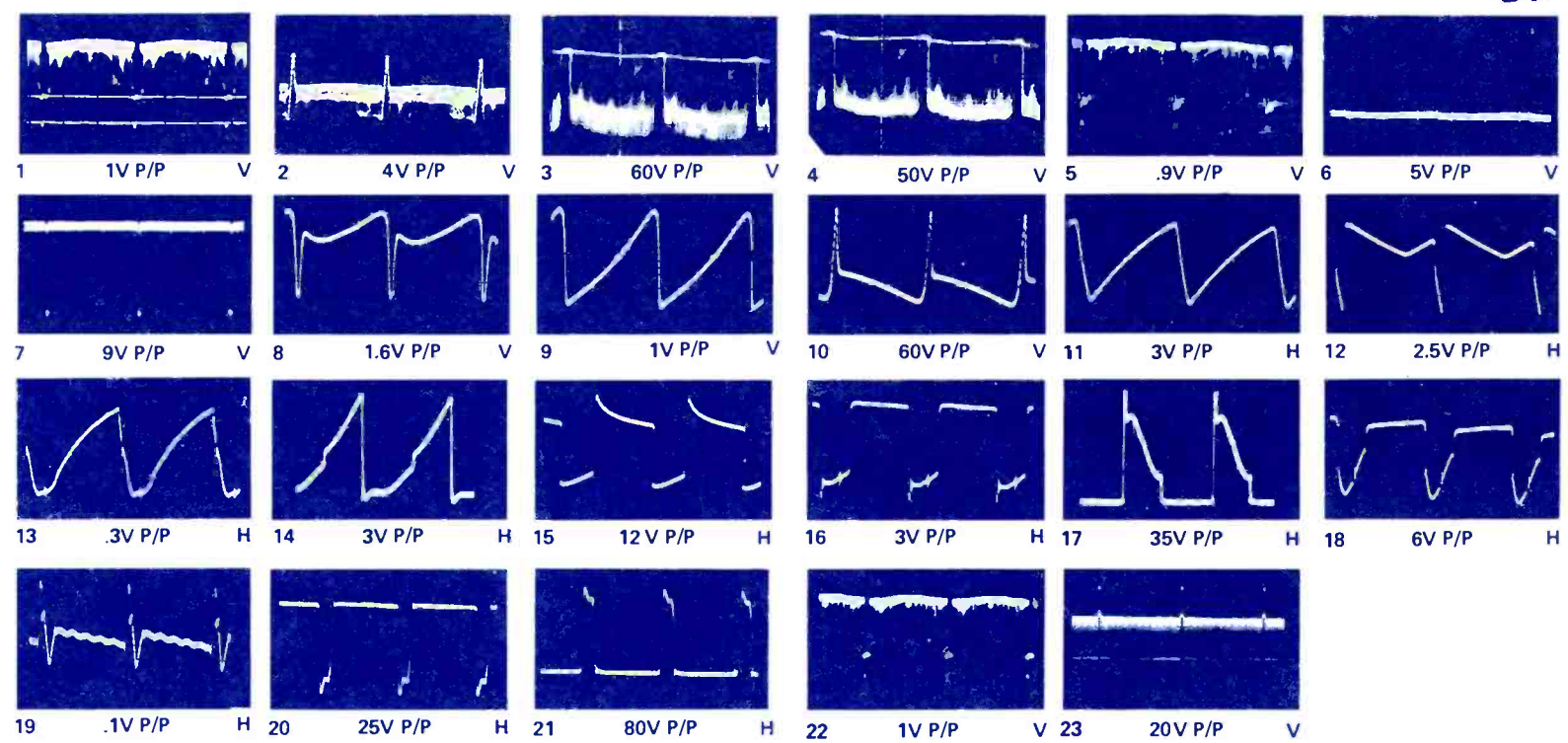
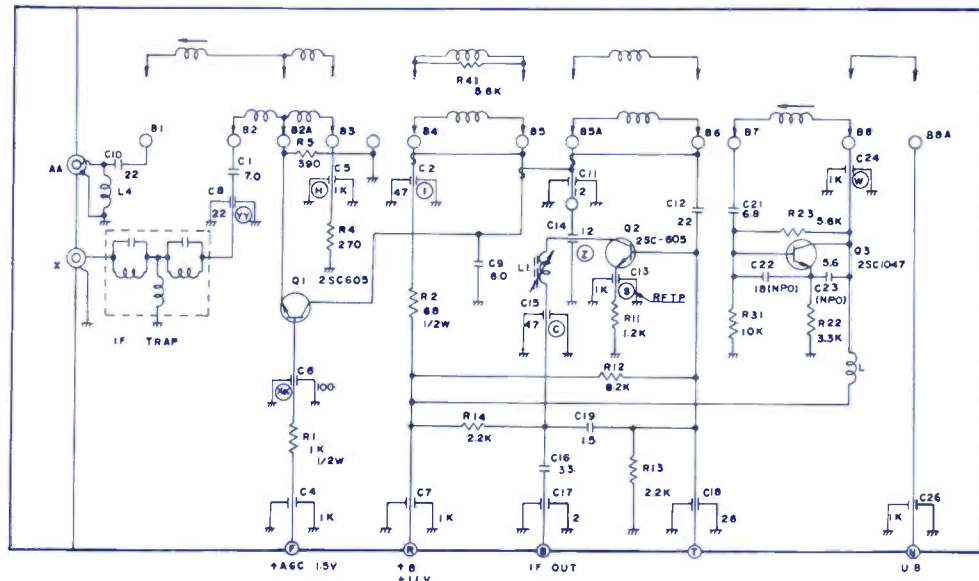
VOLTAGE MEASUREMENTS MADE WITH A
 VOM WITH RESPECT TO CHASSIS GROUND.
 MEASUREMENTS MAY VARY ±10% AT
 120V A.C. LINE VOLTAGE.
 #HEW CRITICAL VALUES.

OPERATING THIS DEVICE AT REDUCED HORIZONTAL SCAN
 RATES CAN CAUSE EXCESSIVE HIGH VOLTAGE. FOR CON-
 TINUED PROTECTION AGAINST X-RADIATION, DO NOT
 OPERATE AT HORIZONTAL SCAN RATES LOWER THAN
 14,750HZ.

GENERAL ELECTRIC
 Display Device Chassis
 MUA

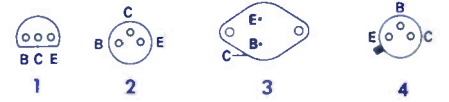
MAGNAVOX
TV Chassis
T969 Series

VHF TUNER

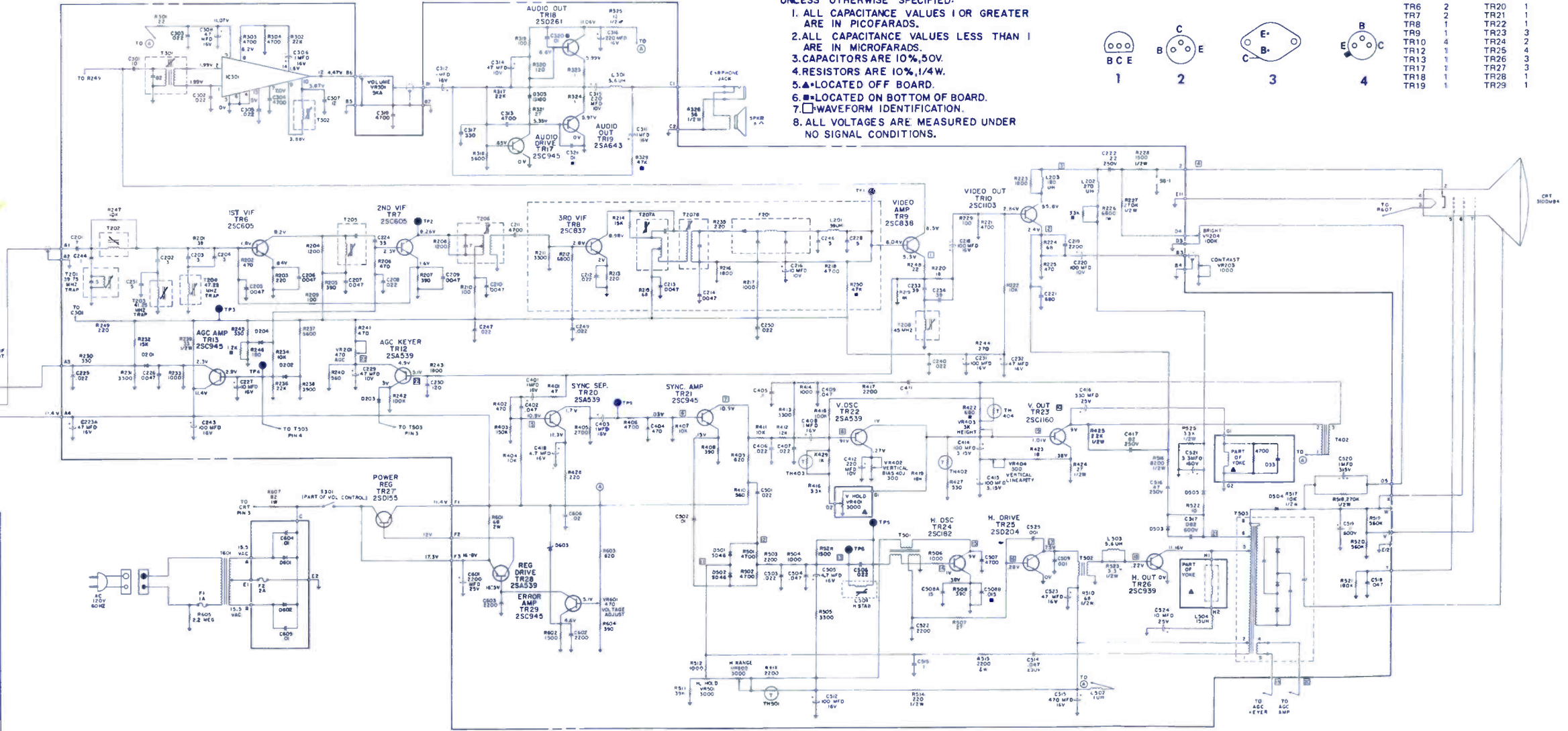
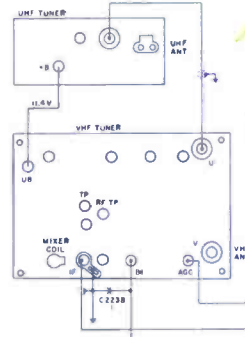


- NOTES:
UNLESS OTHERWISE SPECIFIED:
1. ALL CAPACITANCE VALUES 1 OR GREATER ARE IN PICOFARADS.
2. ALL CAPACITANCE VALUES LESS THAN 1 ARE IN MICROFARADS.
3. CAPACITORS ARE 10%, 50V.
4. RESISTORS ARE 10%, 1/4W.
5. Δ = LOCATED OFF BOARD.
6. ▢ = LOCATED ON BOTTOM OF BOARD.
7. □ = WAVEFORM IDENTIFICATION.
8. ALL VOLTAGES ARE MEASURED UNDER NO SIGNAL CONDITIONS.

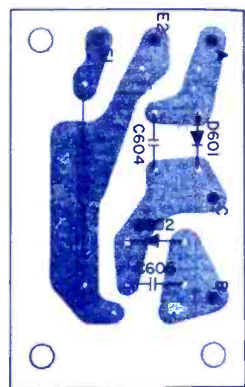
TRANSISTOR BASING

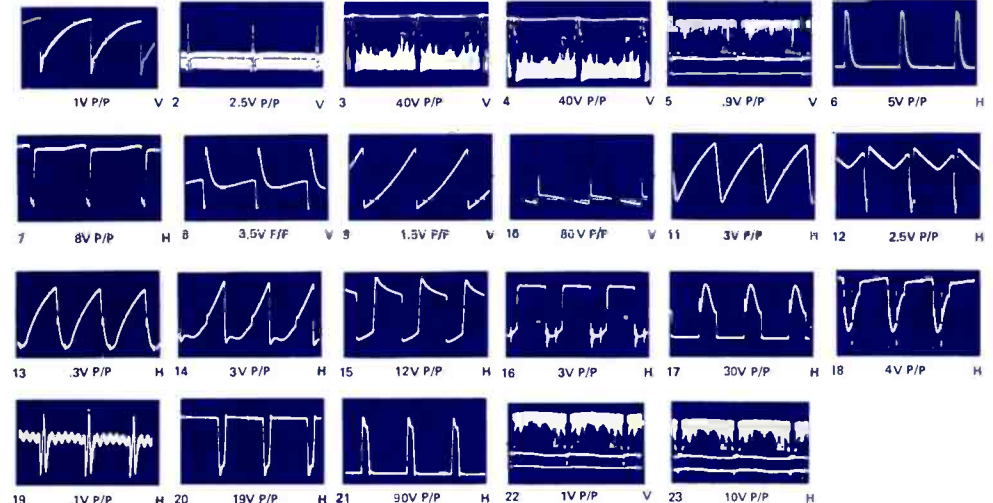


TR6	2	TR20	1
TR7	2	TR21	1
TR8	1	TR22	1
TR9	1	TR23	3
TR10	4	TR24	2
TR11	1	TR25	4
TR12	1	TR26	3
TR13	1	TR27	3
TR17	1	TR28	1
TR18	1	TR29	1
TR19	1		

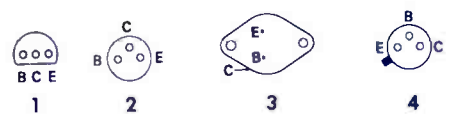


POWER SUPPLY BOARD
BOTTOM VIEW

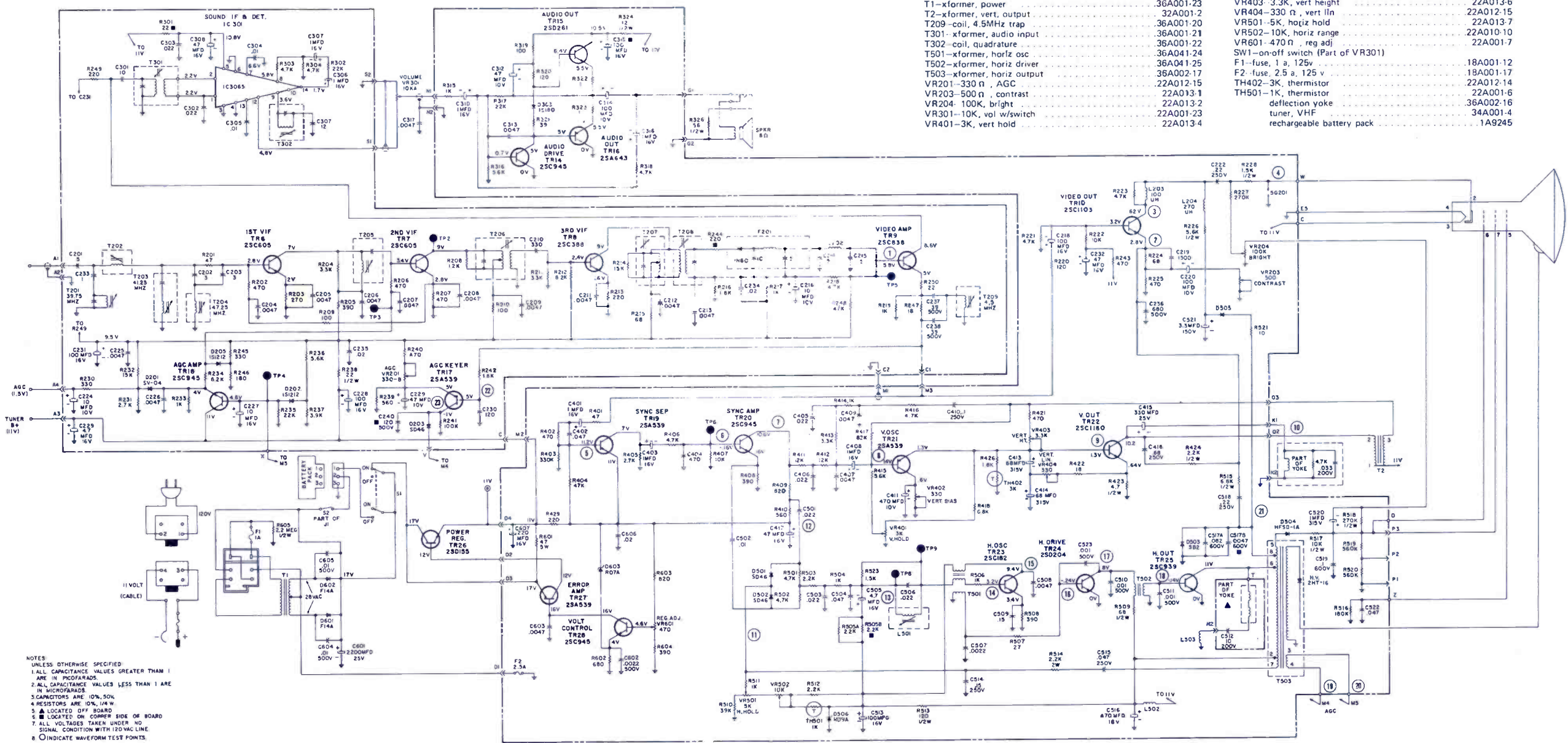




TRANSISTOR BASING



TR-6	2	TR-18	1
TR-7	2	TR-19	1
TR-8	1-2	TR-20	1
TR-9	1-2	TR-21	1
TR-10	4	TR-22	3
TR-11	1	TR-23	1-2
TR-12	1	TR-24	4
TR-13	1	TR-25	3
TR-14	1	TR-26	3
TR-15	1	TR-27	1
TR-16	1	TR-28	1
TR-17	1		

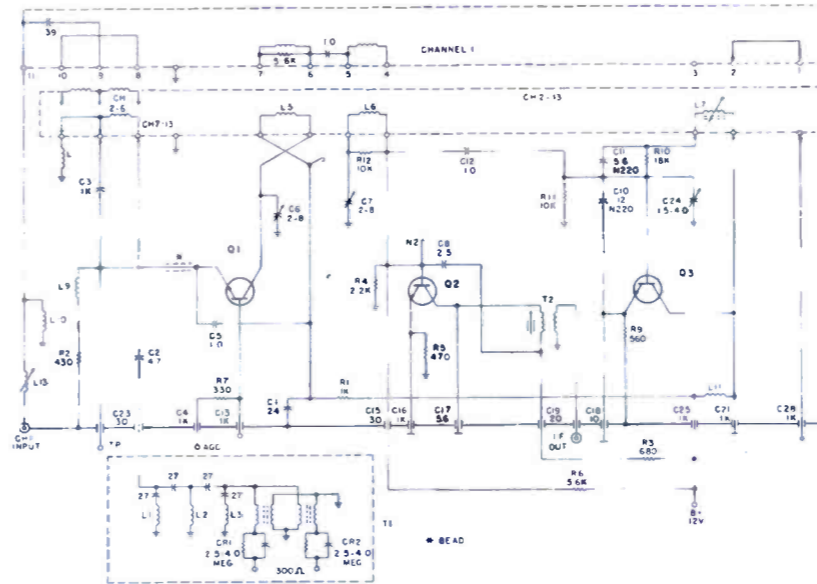


SYMBOL	DESCRIPTION	MAGNAVOX PART NO.
T1	x-former, power	36A001-23
T2	x-former, vert. output	32A001-2
T209	coil, 4.5MHz trap	36A001-20
T301	x-former, audio input	36A001-21
T302	coil, quadrature	36A001-22
T501	x-former, horiz osc	36A041-24
T502	x-former, horiz driver	36A041-25
T503	x-former, horiz output	36A002-17
VR201	330 n AGC	22A012-15
VR203	500 n contrast	22A013-1
VR204	100K, bright	22A013-2
VR301	10K, vol w/switch	22A001-23
VR401	3K, vert hold	22A013-4
VR402	330n, vert bias	22A012-15
VR403	3.3K, vert height	22A013-6
VR404	330 n, vert lin	22A012-15
VR501	5K, horiz hold	22A013-7
VR502	10K, horiz range	22A010-10
VR601	470 n, reg adj	22A001-7
SW1	on-off switch (Part of VR301)	
F1	fuse, 1 a, 125v	18A001-12
F2	fuse, 2.5 a, 125 v	18A001-17
TH402	3K, thermistor	22A012-14
TH501	1K, thermistor	22A001-6
	deflection yoke	36A002-16
	tuner, VHF	34A001-4
	rechargeable battery pack	1A9245

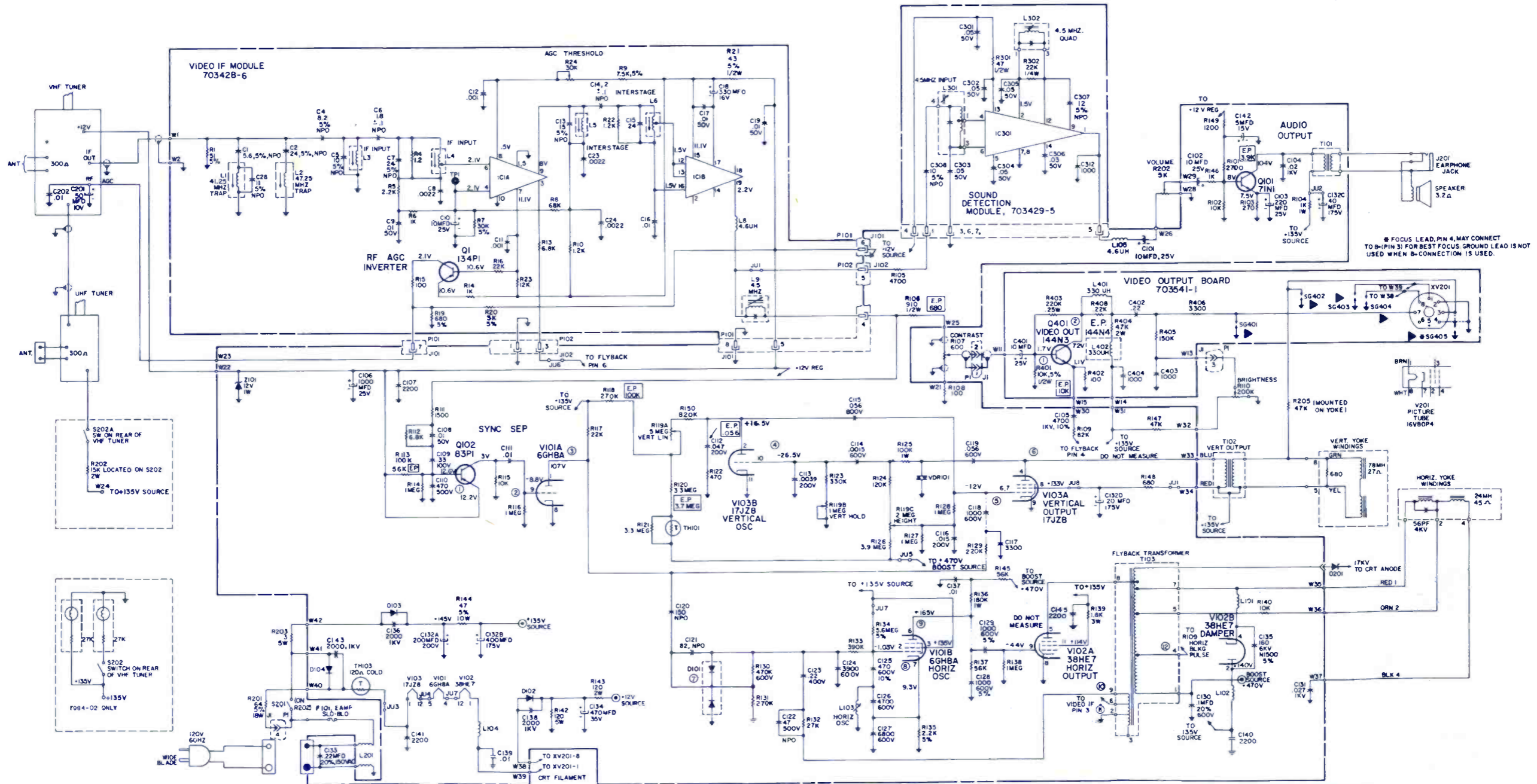
NOTES
 UNLESS OTHERWISE SPECIFIED:
 1. ALL CAPACITANCE VALUES GREATER THAN 1 ARE IN MICROFARADS.
 2. ALL CAPACITANCE VALUES LESS THAN 1 ARE IN MICROFARADS.
 3. CAPACITORS ARE 10%, 50%
 4. RESISTORS ARE 10%, 1/4 W
 5. Δ LOCATED OFF BOARD
 6. Δ LOCATED ON CORNER SIDE OF BOARD
 7. ALL VOLTAGES TAKEN UNDER NO SIGNAL, CONDITION WITH 120 VAC LINE.
 8. ○ INDICATE WAVEFORM TEST POINTS.

MAGNAVOX
 TV Chassis
 T968

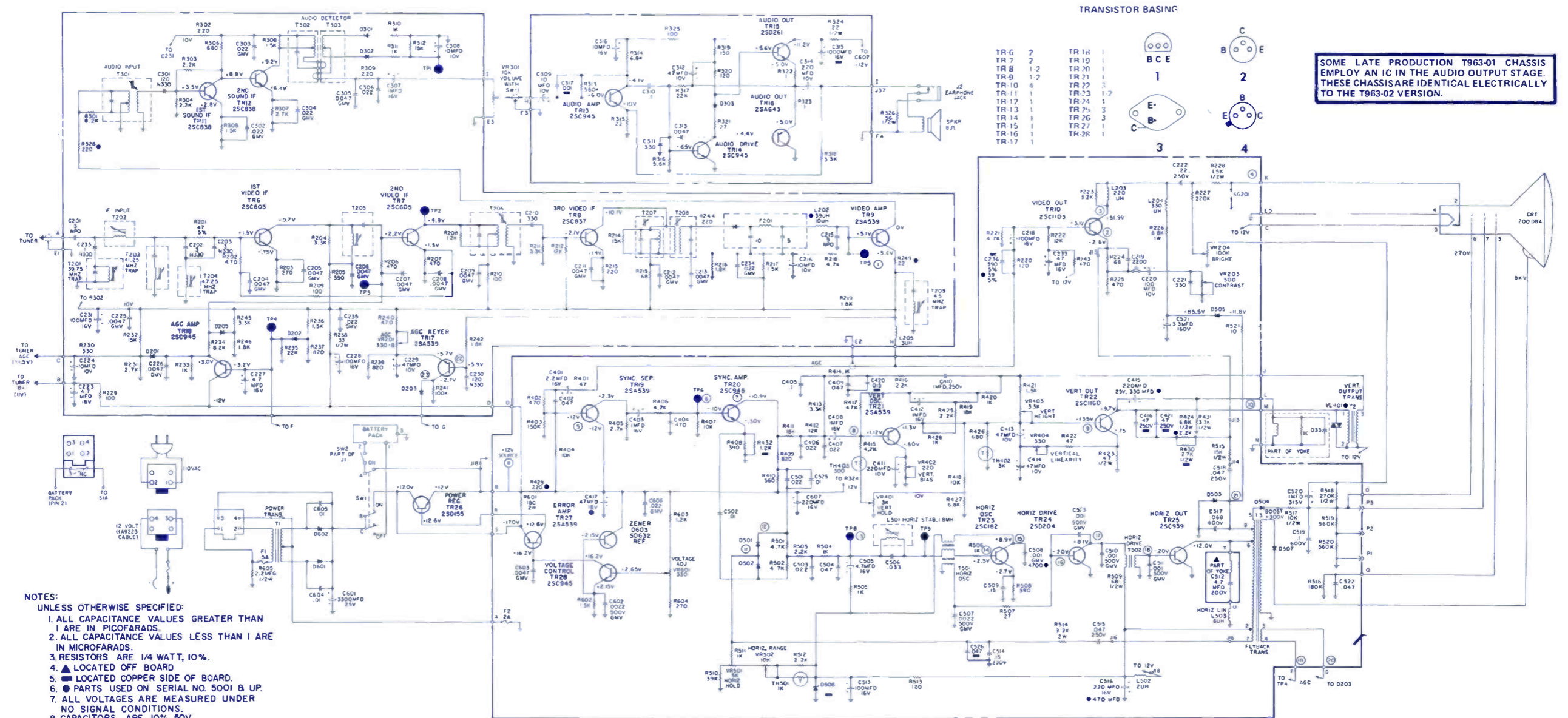
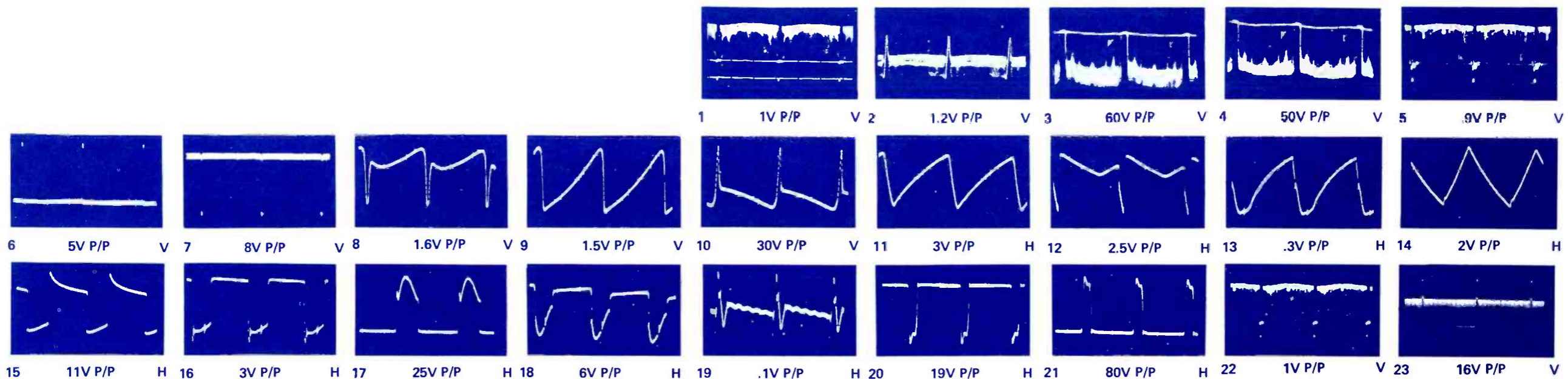
MAY • 1973



SYMBOL	DESCRIPTION	PART NO.
L103	horiz osc coil	361367-7
L201	line filter	361400-3
T101	audio output xformer	320382-2
T102	vert output xformer	320390-1
T103	high volt xformer	361484-1
C132A, B, C	electr 200µf, 200v, 400µf, 40µf, 20µf, 175v	270099-32
R119A, B, C	vert lin, hold & height	220266-7
D201	high volt rect diode	530119-8
TH101	thermistor	230130-6
TH103	thermistor	230170-8
VDR101	varistor	230167-6
F101	fuse, 2a, slo-blo	180865-5200



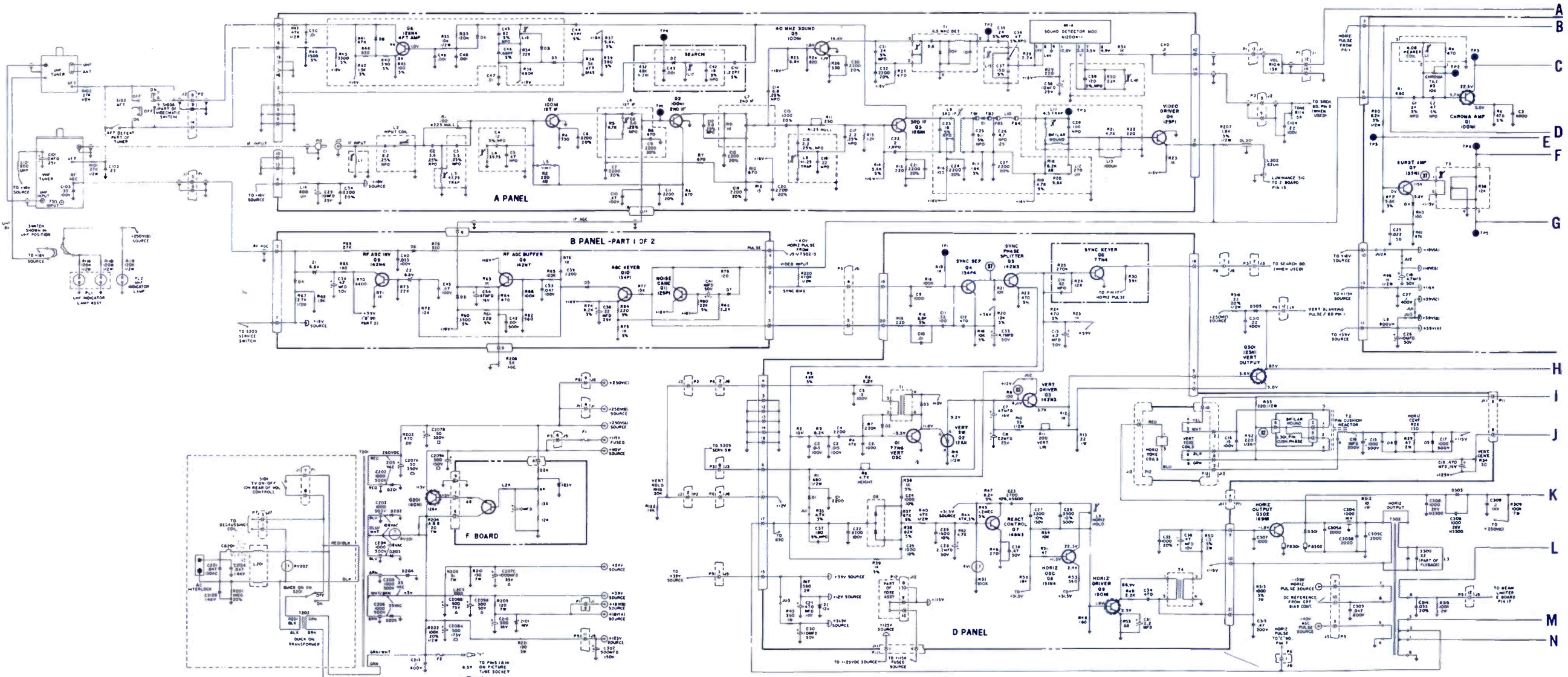
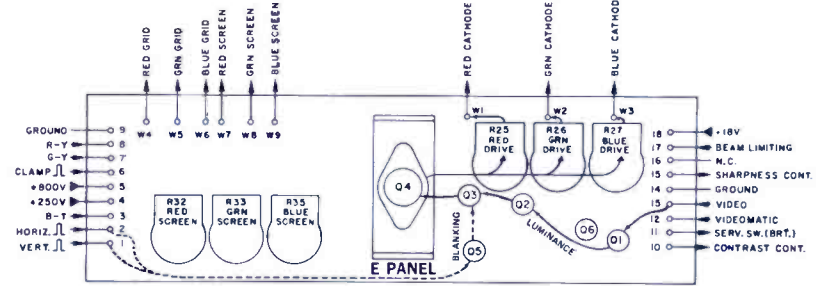
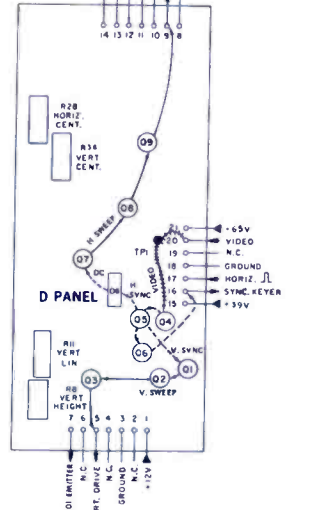
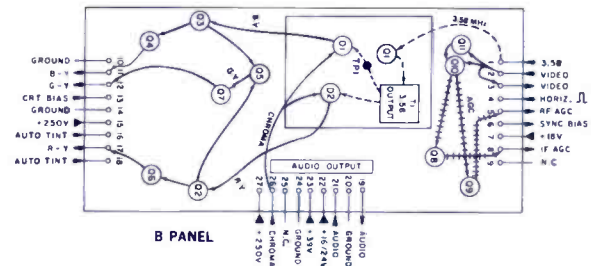
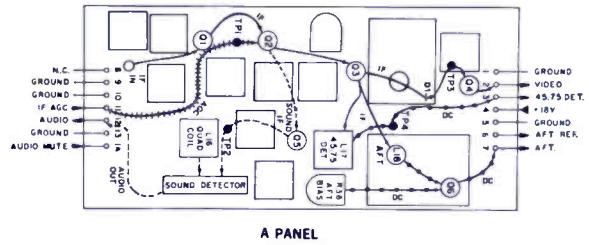
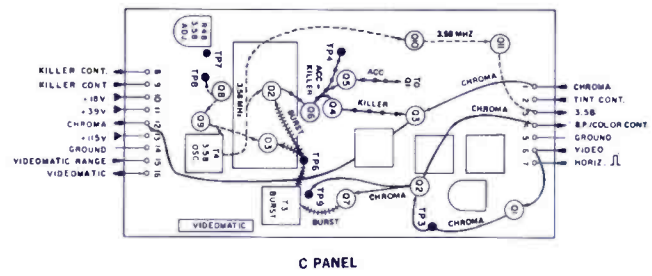
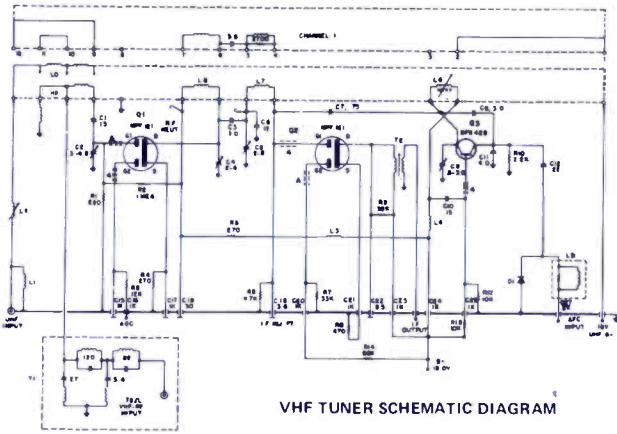
* FOCUS LEAD, PIN 4, MAY CONNECT TO PIN 3 FOR BEST FOCUS. GROUND LEAD IS NOT USED WHEN B-C CONNECTION IS USED.

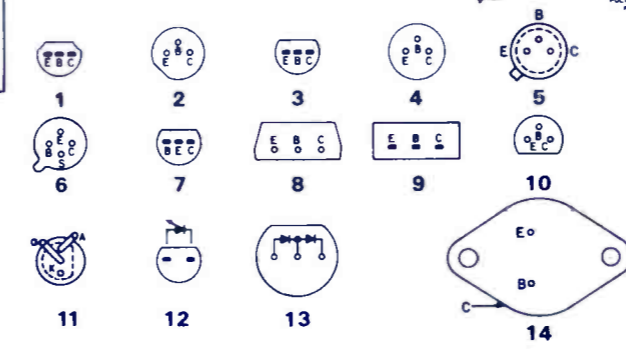
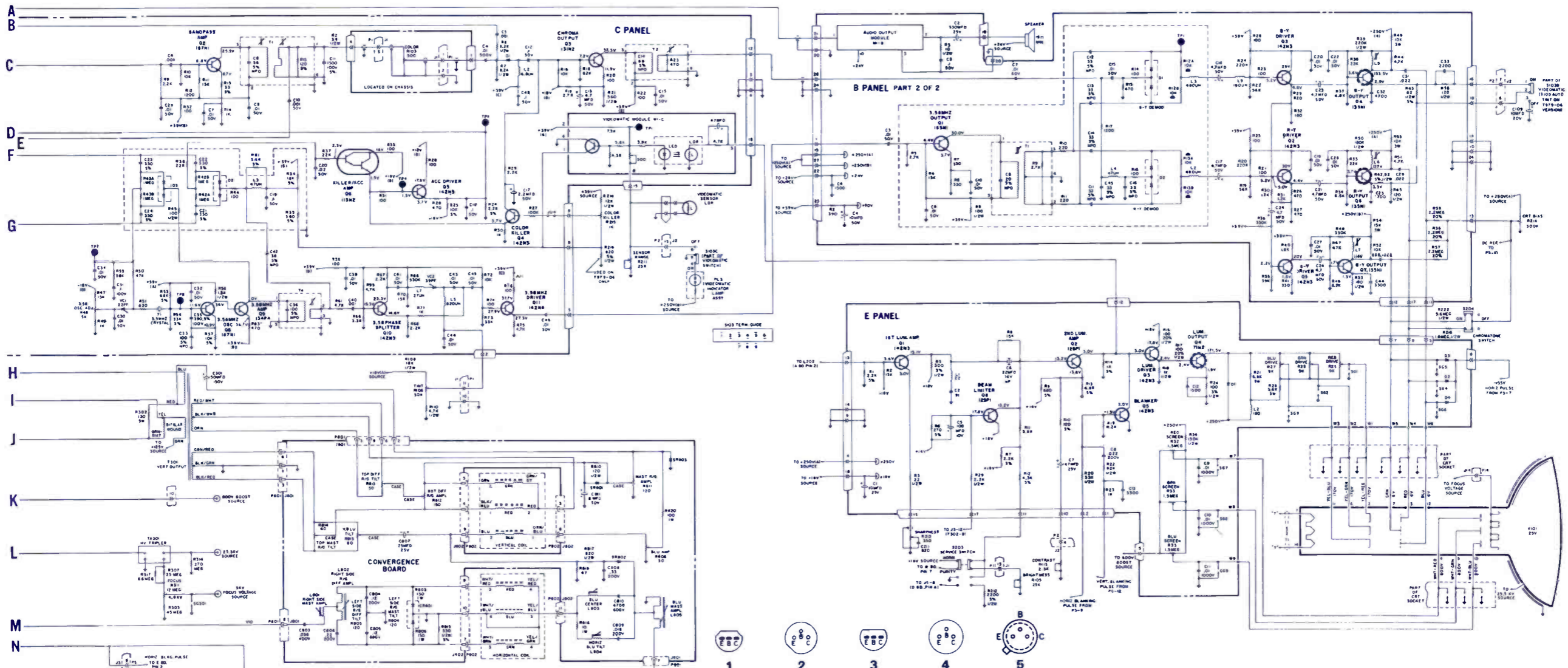
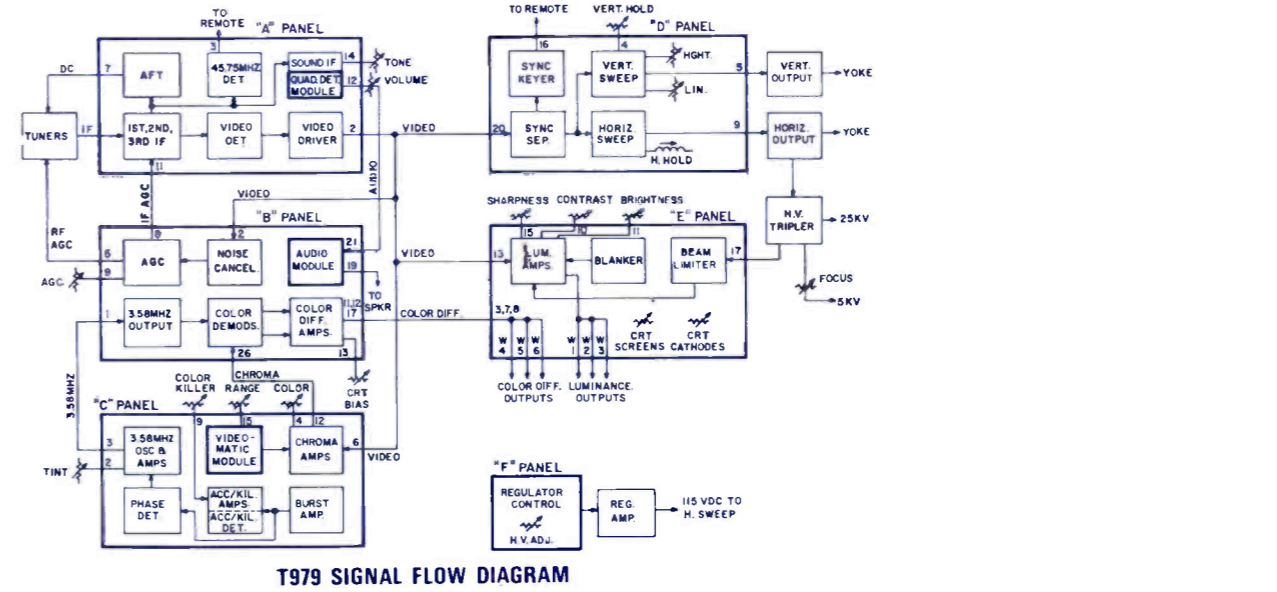
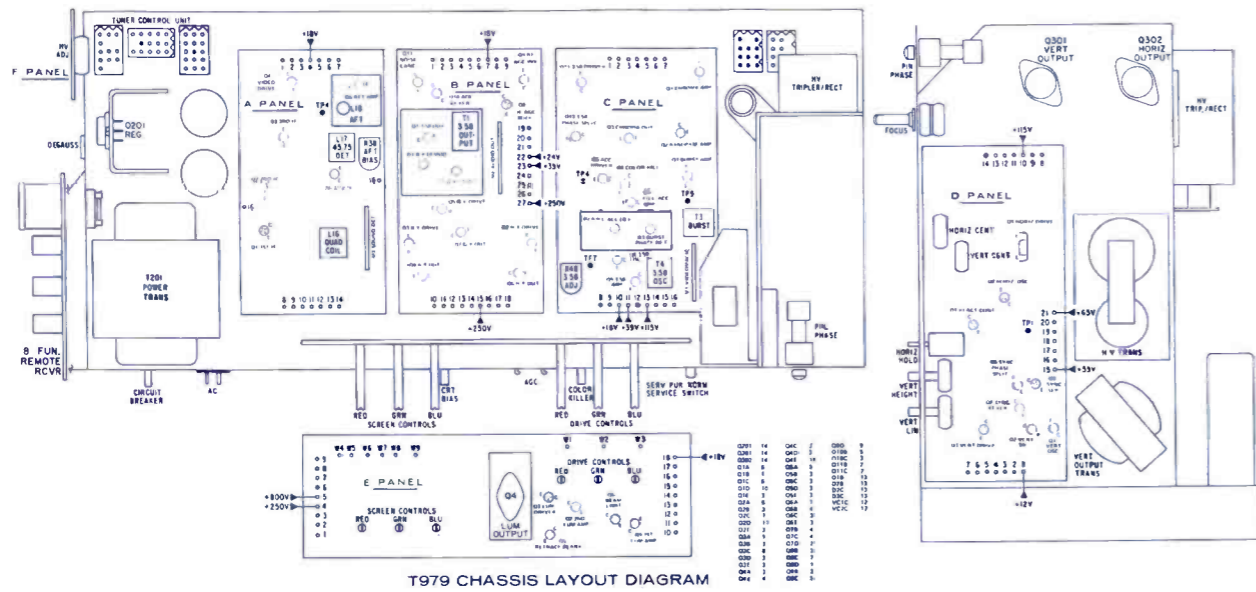


SOME LATE PRODUCTION T963-01 CHASSIS EMPLOY AN IC IN THE AUDIO OUTPUT STAGE. THESE CHASSIS ARE IDENTICAL ELECTRICALLY TO THE T963-02 VERSION.

MAGNAVOX

Color-TV
Chassis T979

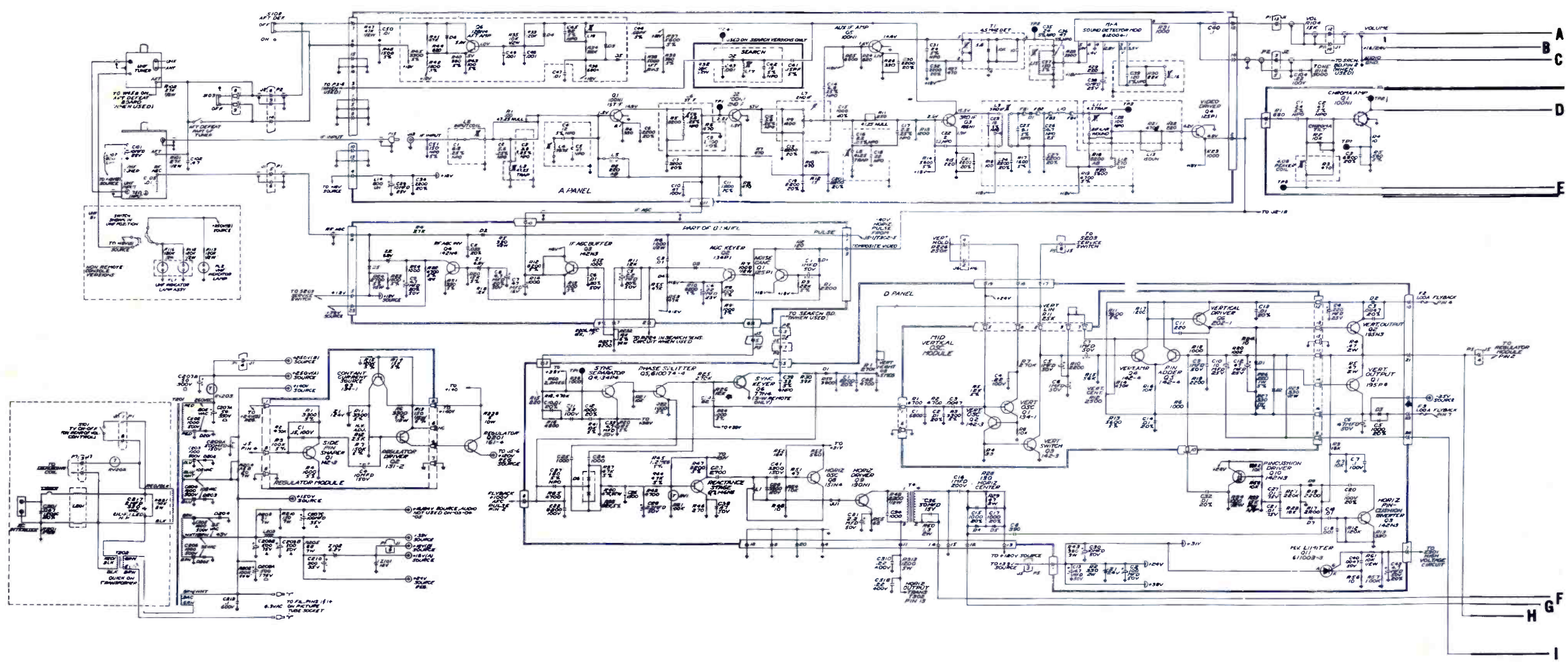


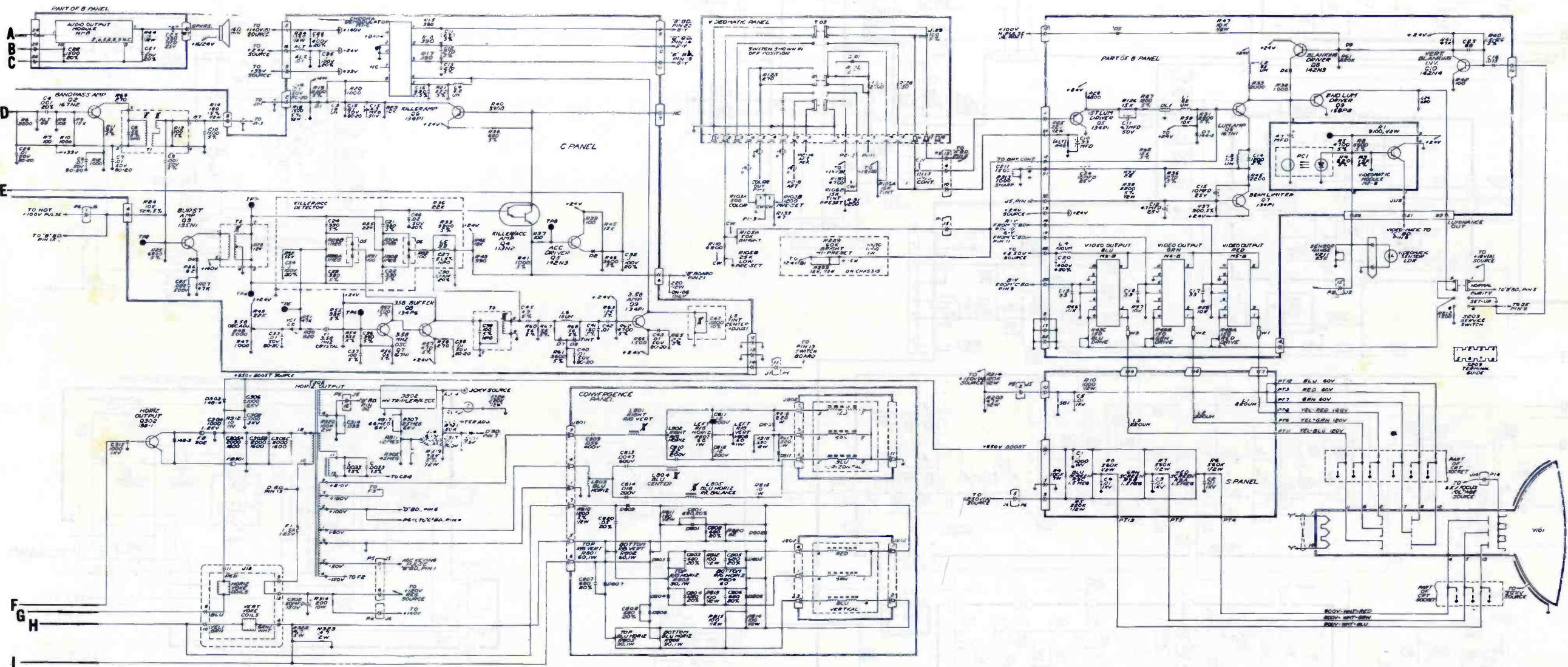


Q201	14	Q4C	3	Q2C	7	Q6C	3	Q8D	9
Q301	14	Q4D	2	Q2D	11	Q6E	3	Q10B	9
Q302	14	Q4E	14	Q2E	3	Q7B	4	Q10C	3
Q1A	6	Q5A	6	Q3A	1	Q7C	4	Q11B	2
Q1B	1	Q5B	3	Q3B	3	Q7D	2	Q11C	3
Q1C	6	Q5C	3	Q3C	8	Q8B	3	D1B	13
Q1D	10	Q5D	3	Q3D	3	Q8C	7	D2B	13
Q1E	3	Q5E	3	Q3E	3	Q8D	1	D3C	13
Q2A	6	Q6A	1	Q4A	3	Q9B	3	VC1C	12
Q2B	3	Q6B	4	Q4B	4	Q9C	5	VC2C	12

MAGNAVOX
Color-TV
Chassis T979

MAGNAVOX
Color-TV Chassis T989





MAGNAVOX
Color-TV Chassis T989

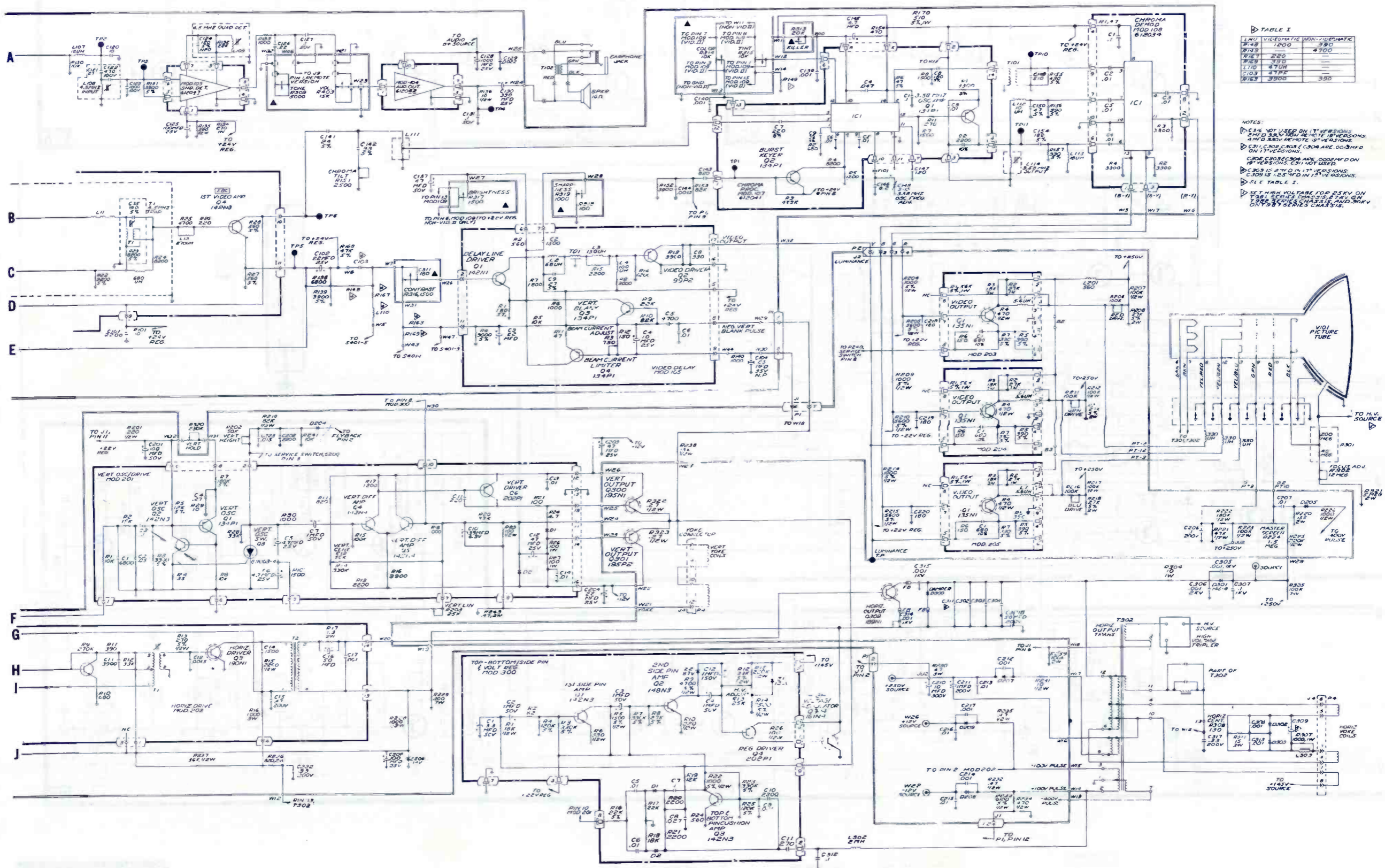


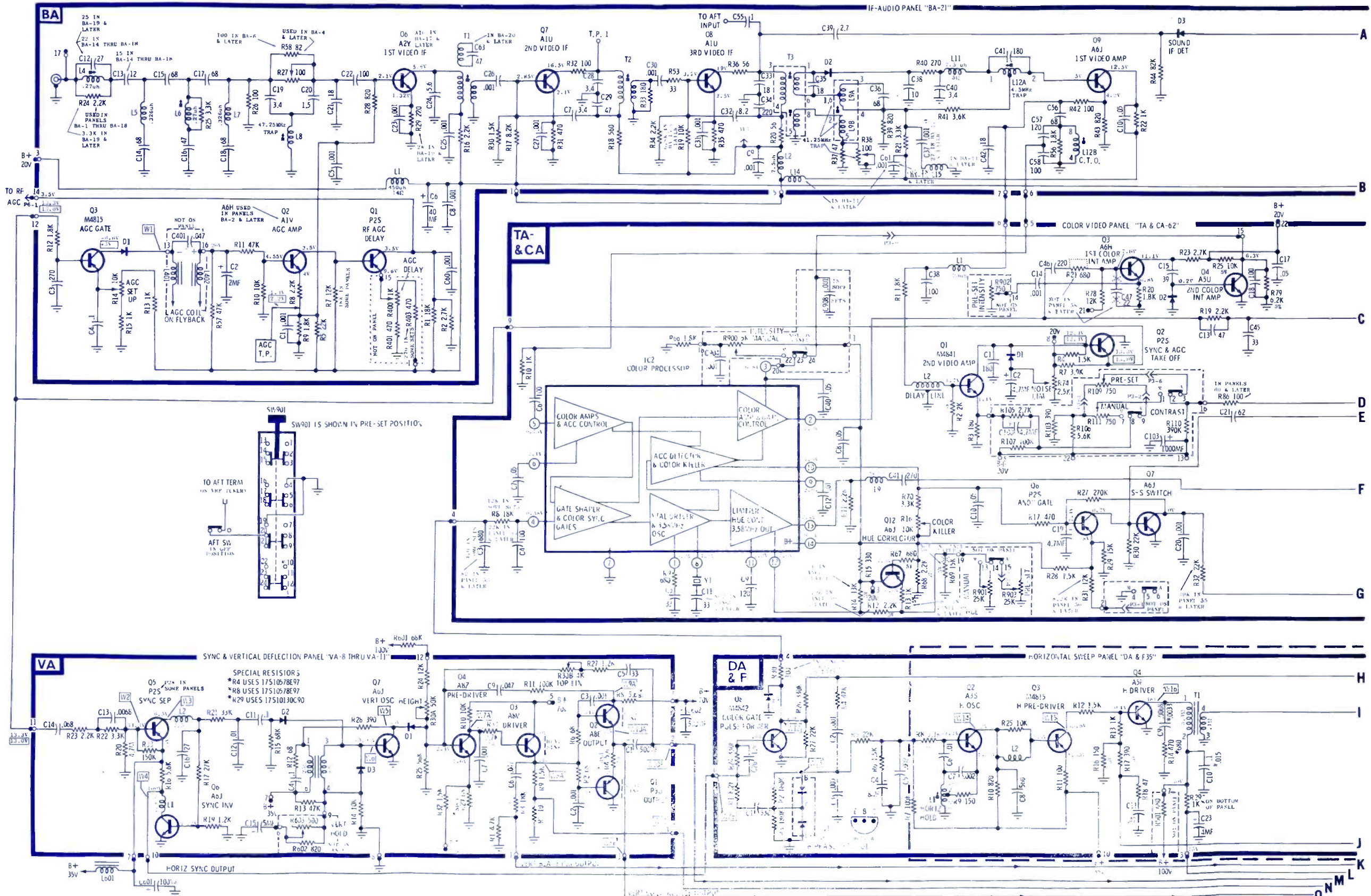
TABLE I

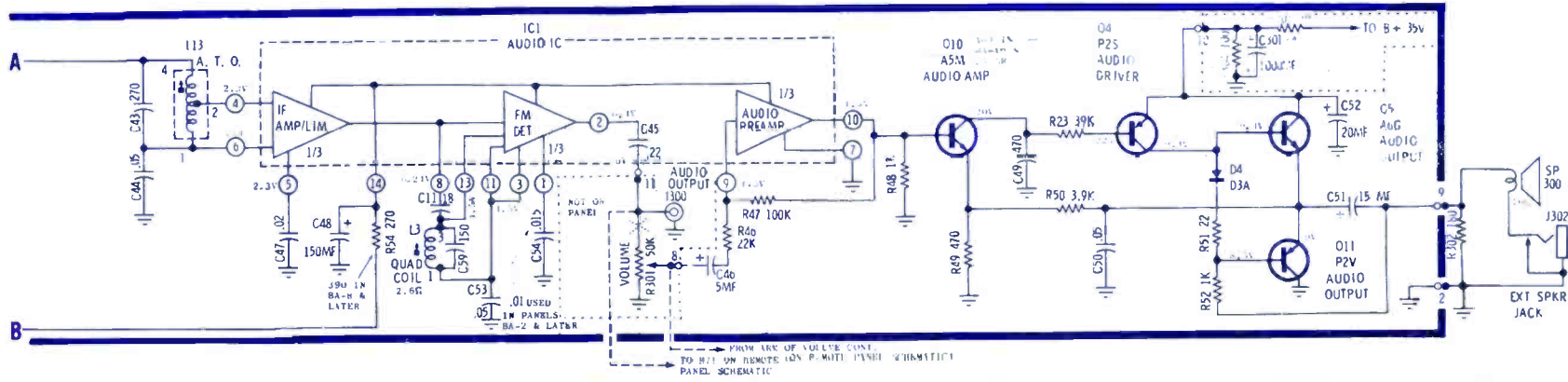
LNH VIDEO MATING NON-VIDEOMATIC		
R148	1200	330
R149	280	4700
R150	330	
L170	47UH	
C103	57K	
R163	3300	330

NOTES:
 ▶ C216 NOT USED ON 17" VERSIONS
 ▶ 2ND SIDE PIN AMP. RESISTOR VALUES 4 AND 50V. RETAIN 50V VERSIONS
 ▶ C217, C208, C209 (C208 ARE OMITTED ON 17" VERSIONS. C217 NOT USED)
 ▶ C306, C307, C308 ARE OMITTED ON 17" VERSIONS. C311 NOT USED
 ▶ C309 IS 2ND SIDE PIN 17" VERSIONS
 ▶ C309 IS 1ST SIDE PIN 17" VERSIONS
 ▶ SEE TABLE I.
 ▶ SET HIGH VOLTAGE FOR ESKV ON T881 SERIES CHASSIS. 27KV ON T882 SERIES CHASSIS. 15KV ON 500V ON T887 SERIES CHASSIS.

MAGNAVOX
 Color-TV Chassis
 T981, T982, T987

SYMBOL	DESCRIPTION	PART NO.	
CB800	Circuit breaker	80C66390A22	
R109	contrast: dual: 750Ω manual & preset (R-111)	18D65082A39	
R213	focus: 10M	18D67502A20	
R218	master brightness: 1.5K	18D67858A21	
R219	brightness: dual, preset 2K & manual 1K (R223)	18D65082A40	
R301	vol, 50K, incl on-off switch (E19TS931)	18D67562C31	
R400	AGC delay, 1K	18D67858A06	
R507	HV adjust, 180K	18D67858A09	
R603	vert hold, 500Ω	18D65082A43	
R901	hue, dual 25K, manual & preset (R903)	18D65082A42	
R902	part of R900		
T501	HV xformer	24D70809A04	
T800	power xformer	25D68548A15	





IMPORTANT NOTES

PANEL DESCRIPTION & COMPONENT IDENTIFICATION
EACH PANEL IS ASSIGNED A LETTER DESIGNATION (A-J) WHICH IDENTIFIES THE PANEL. SEE CHART BELOW.

PANEL CODING	PANEL FUNCTION
A	IMP. TUNER
BA OR TA	IF AMP/LIM
CA	COLOR VIDEO
DA	HORIZONTAL DEFLECTION
EA	PINCUSHION
FA	CONVERGENCE
GA	POWER SUPPLY
HA	AFC (AFT)
IA	VERTICAL DEFLECTION
JA	REMOTE CONTROL

EACH COMPONENT IS IDENTIFIED WITH A REFERENCE NUMBER AND A PREFIX LETTER (e.g., R23) WHICH IS RELATED TO LEGEND ON THE PANELS. ALL "ON" PANEL COMPONENTS ARE IDENTIFIED BY ONE OR TWO DIGIT NUMBERS (1 THRU 9).

ALL "OFF" PANEL COMPONENTS ARE IDENTIFIED BY A 3 DIGIT NUMBER, WHICH VARIES WITH CIRCUIT ASSOCIATION AS INDICATED BELOW.

ASSOCIATED CIRCUIT	REFERENCE DESIGNATION
IF & VIDEO	100 139
PIA TUBE	200 299
AUDIO	300 399
AGC/SYNE	400 499
NOISE & HI VOLTAGE	500 599
VERTICAL	600 699
CONVERGENCE	700 799
POWER SUPPLY	800 899
COLOR CIRCUIT	900 999

VOLTAGE MEASUREMENTS EXCEPT WHERE NOTED, TAKEN FROM POINT INDICATED TO CHASSIS WITH A VTVM (1-10V).

AC INPUT TO RECEIVER 122V. VOLTAGE READINGS TAKEN WITH AIR SIGNAL AND ALL CONTROLS AT THEIR NORMAL SETTING.

VOLTAGE READINGS WILL VARY WITH ASSOCIATED CONTROL SETTINGS AND SIGNAL STRENGTH.

2. WAVEFORM MEASUREMENTS: COLOR WAVEFORMS TAKEN WITH A COLOR BAR GENERATOR PROVIDING A SIGNAL OF STANDARD GATED RAINBOW (10 BAR) TYPE COLOR BAR PATTERN. RECEIVER ADJUSTED FOR NORMAL VIEWING AS IN TRANSMITTED AIR SIGNAL.

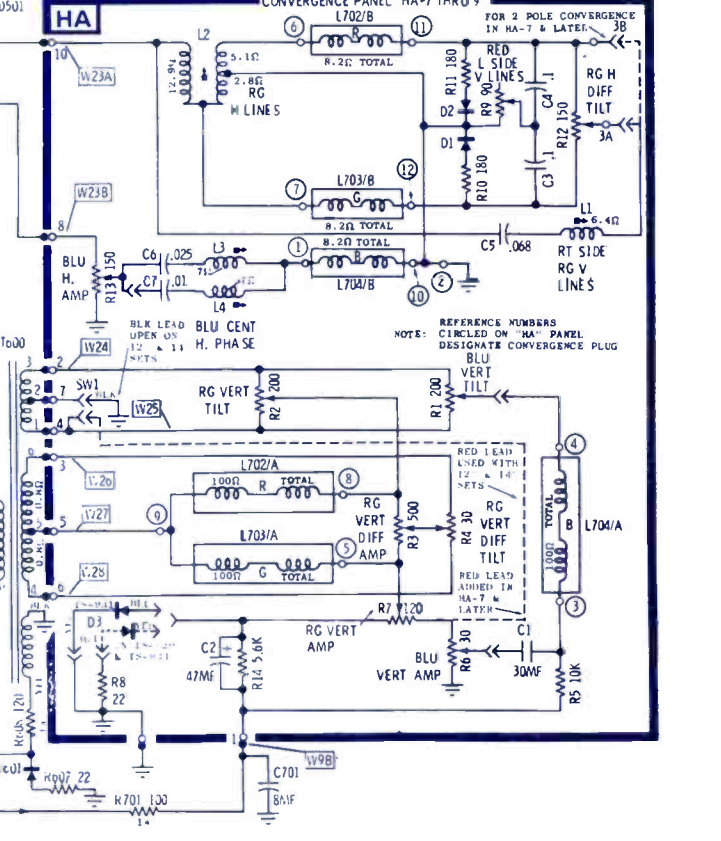
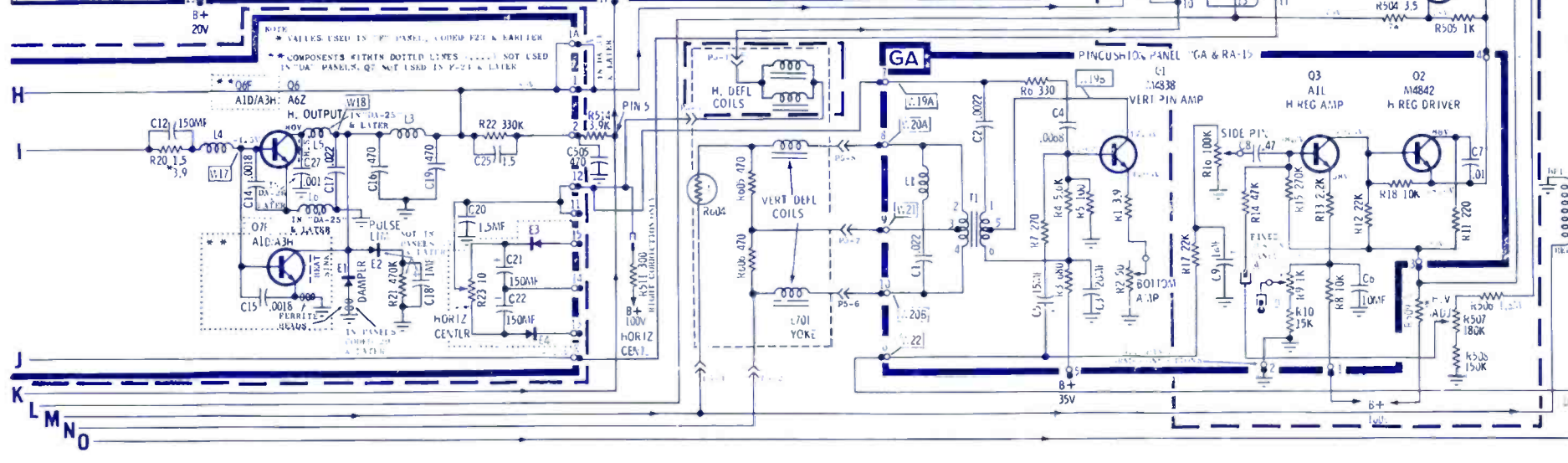
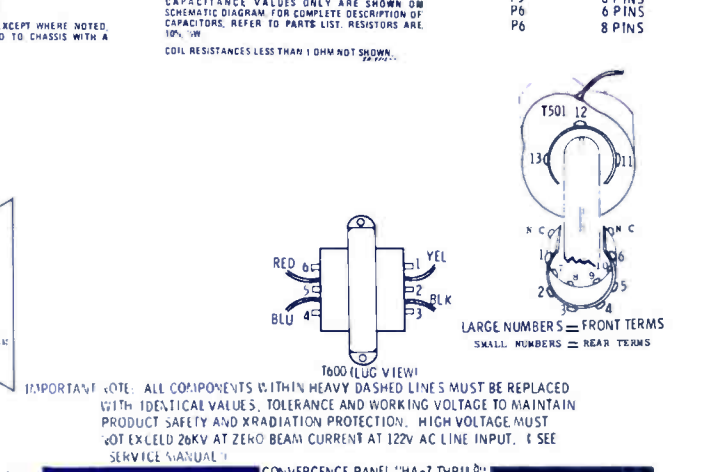
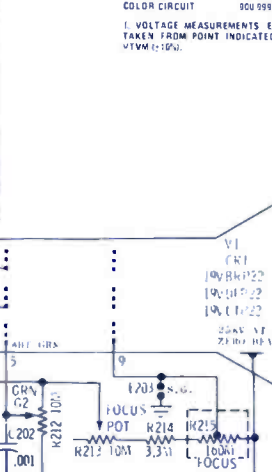
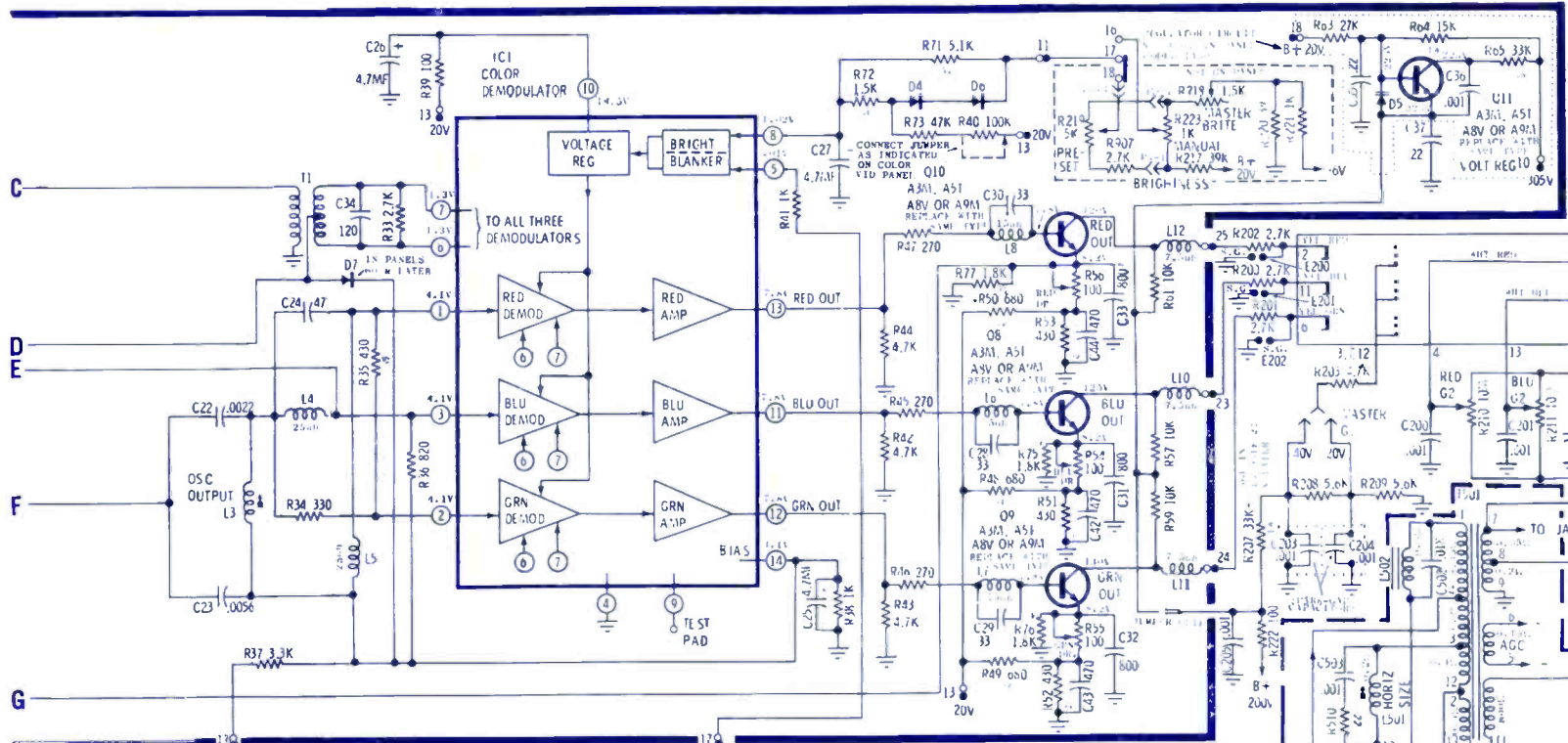
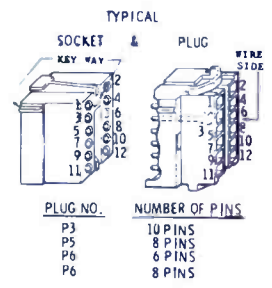
IF THE COLOR BAR PATTERN ON THE SCREEN IS USED TO DETERMINE THE RANGE ON PROPER SETTING OF THE HUE CONTROL, THE 2ND VISIBLE BAR (FROM LEFT) WILL BE THE CORRECT BAR THAT CORRESPONDS TO RED. THE FIRST BAR (FROM LEFT) IS NOT IDEALLY VISIBLE BECAUSE IT IS PARTIALLY BLANKED AND THE MASTER IS SLIGHTLY OVERSCANNED. TO SEE THE FIRST COLOR BAR, ADJUST THE HORIZONTAL HOLD CONTROL IN THE DIRECTION THAT CAUSES THE MASTER TO SHIFT TOWARD THE RIGHT. THEN RE-ADJUST CONTROL TO CENTER OF ITS RANGE.

3. ALL VIDEO AND COLOR WAVEFORMS TAKEN WITH A WIDEBAND SCOPE AND A PROBE WITH LOW IMPEDANCE CAPACITY. SHAPE AND PEAK-TO-PEAK AMPLITUDES MAY VARY DEPENDING ON CALIBRATION AND TYPE OF TEST EQUIPMENT USED, AND CONTROL SETTINGS.

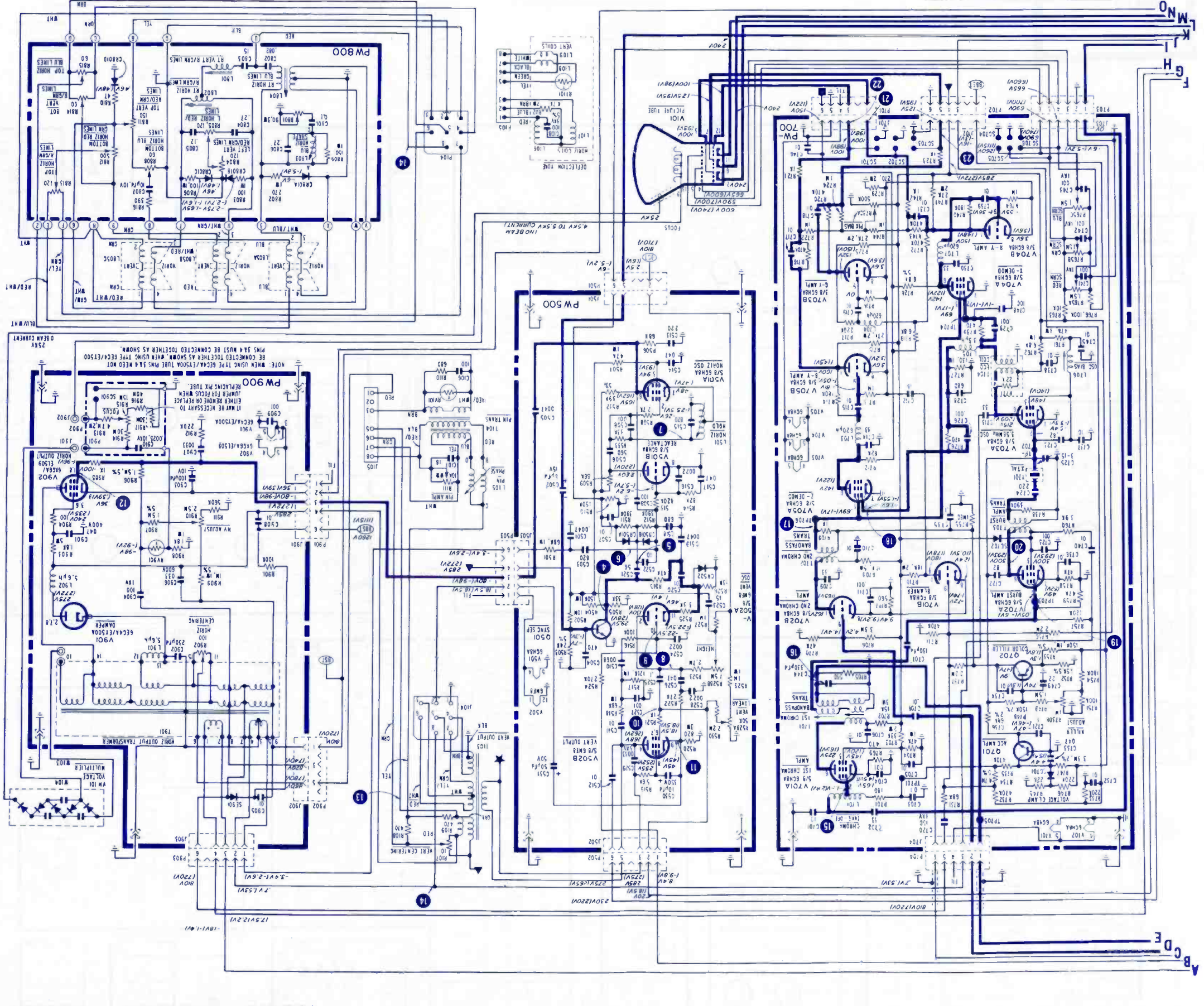
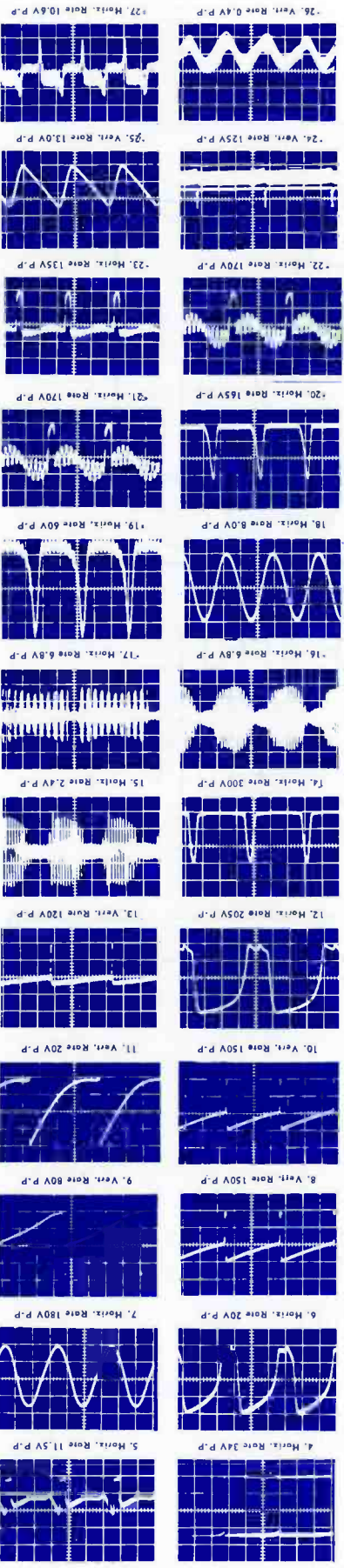
4. THE OUTPUT WAVEFORMS OF THE IC COLOR DEMODULATOR CAN BE OBSERVED AT THE COLLECTOR OF THE VIDEO OUTPUT TRANSISTORS OR TERMINALS 25, 26, AND 27 ON COLOR VIDEO PANEL.

UNLESS OTHERWISE SPECIFIED, CAPACITOR VALUES LESS THAN ONE (1) MF. ALL OTHERS IN CAPACITANCE VALUES ONLY ARE SHOWN ON SCHEMATIC DIAGRAM FOR COMPLETE DESCRIPTION OF CAPACITORS, REFER TO PARTS LIST. DESIGNATORS TAKEN FROM POINT INDICATED TO CHASSIS ARE 10% TOL.

COIL RESISTANCES LESS THAN 1 OHM NOT SHOWN.



MOTOROLA
Color-TV Chassis
TS-931

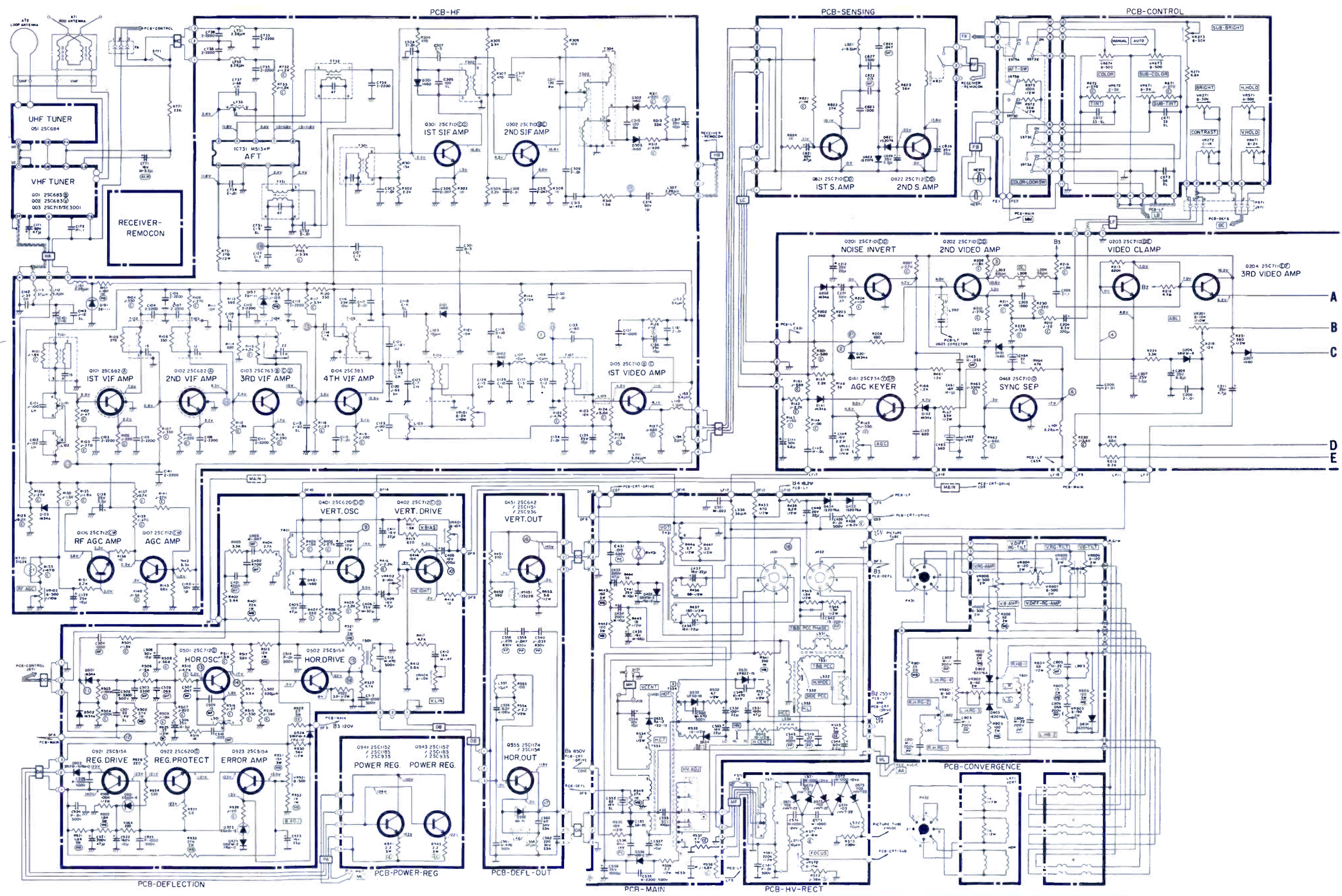


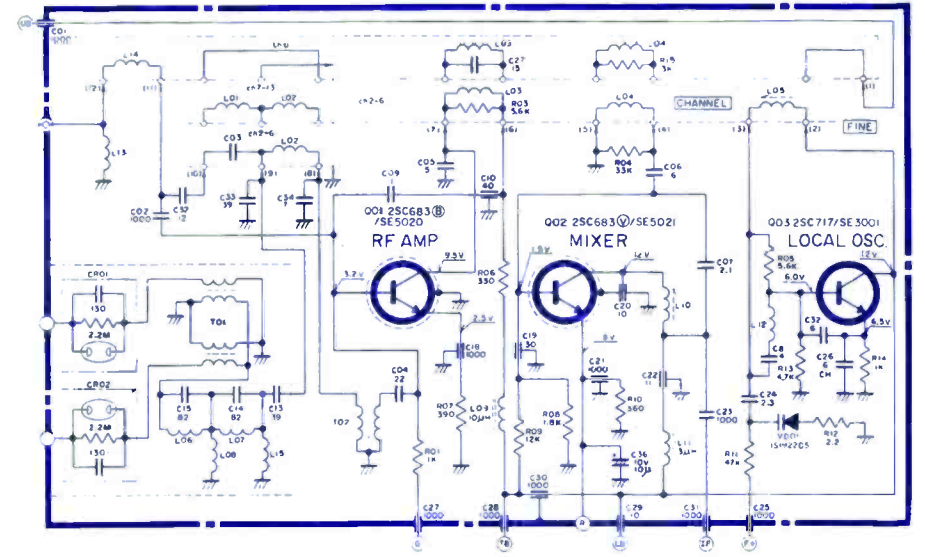
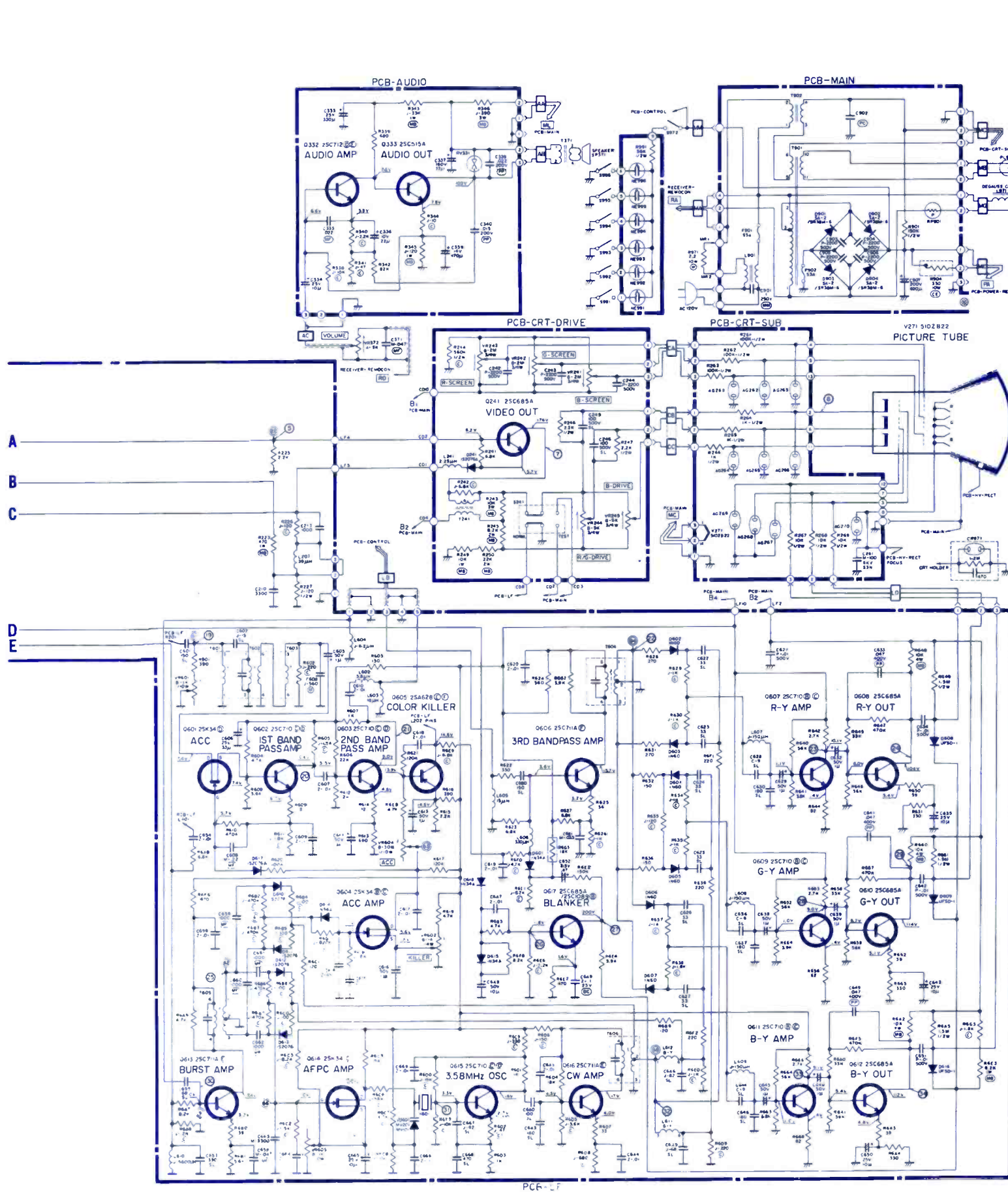
MGA
Color-TV Model
CS-197

SYMBOL	DESCRIPTION	PART NO.
IC731	Integrated circuit M5134P AFT	260P00301
RV331	varistor	265P02001
T301	sound IF	327P02002
T304	sound detector	330P02903
T371	audio output xformer	327P01402
T401	vert OSC	328P00302
T431	vert output	329C01901
T534	horiz output xformer	336B00202
T571	flyback	334P05802

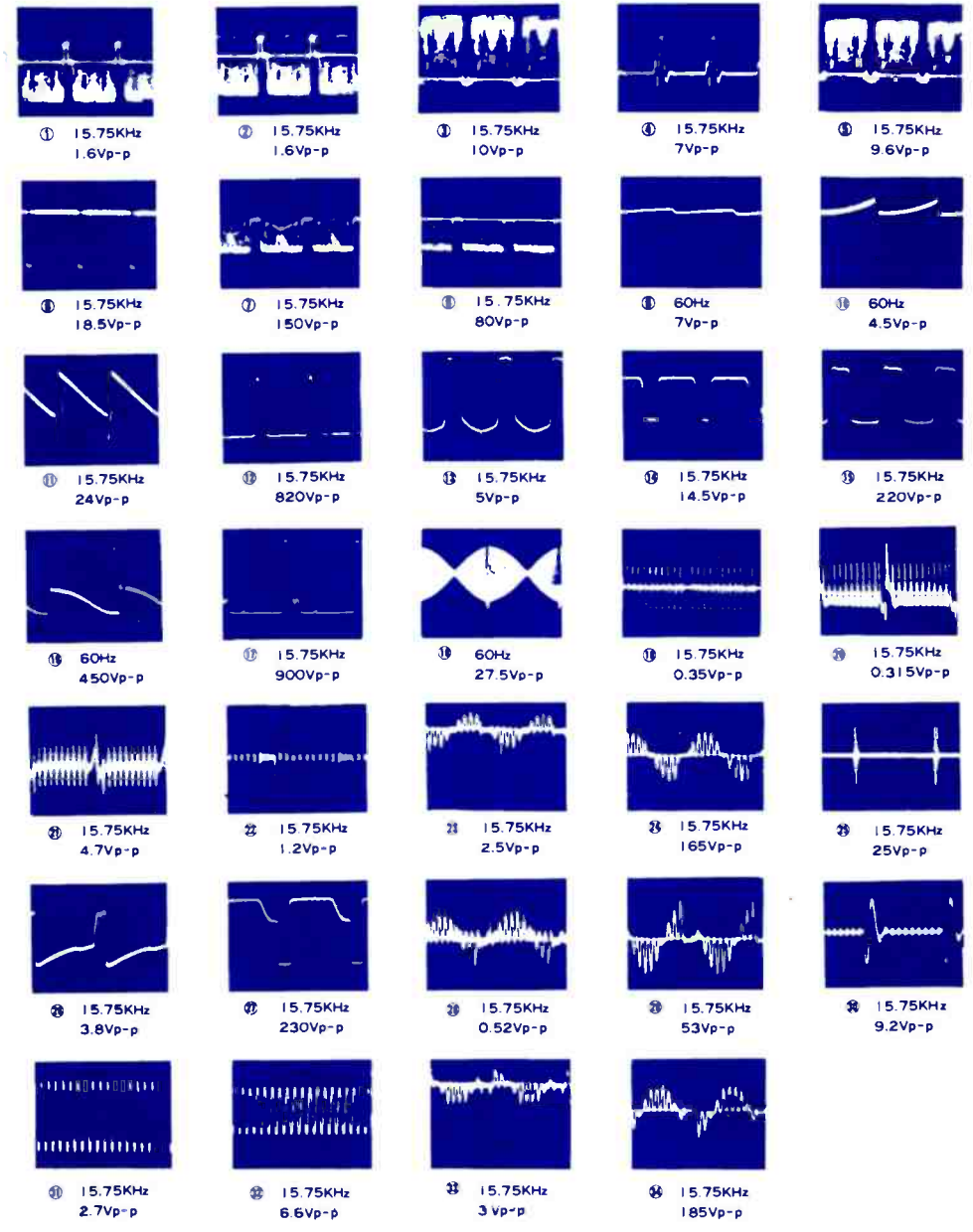
T601	chroma take-off	349P03301
T602	chroma 1st band pass	349P03401
T604	chroma output	349P03601
T605	chroma burst	349P03701
T901	power	350P03504
L471	deflection yoke	330P02903
L501	horiz OSC	332C00201
L532	horiz width	335C00102
VR271	bright cont	120C14901
VR272	contrast cont	120C14006
VR273	sub-bright cont	129D03803

VR372	pull-on/vol cont	120C13505
VR401	vert bias	129D03304
VR402	height	129D03304
VR404	vert lin	129D03304
VR471	vert hold cont	120C14101
VR571	horiz hold cont	120C14306
VR602	killer cont	129D03301
VR672	tint cont	120C14102
F571	Fuse, 1a	283D01801
F902	fuse, 3a	283D02005
F901	fuse, 5a	283D02006





A
B
C
D
E



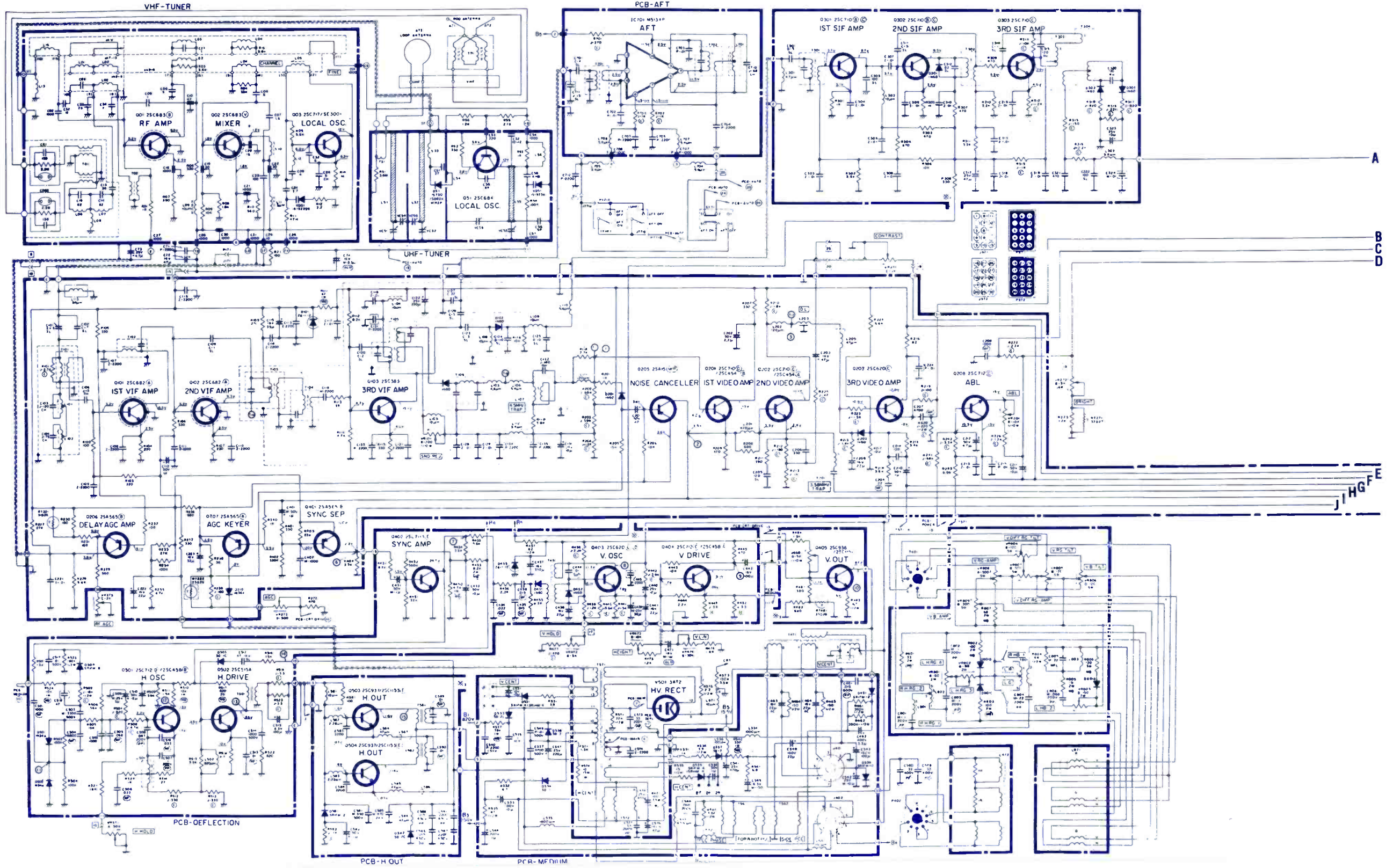
MGA

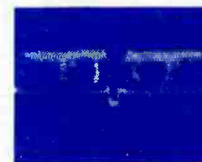
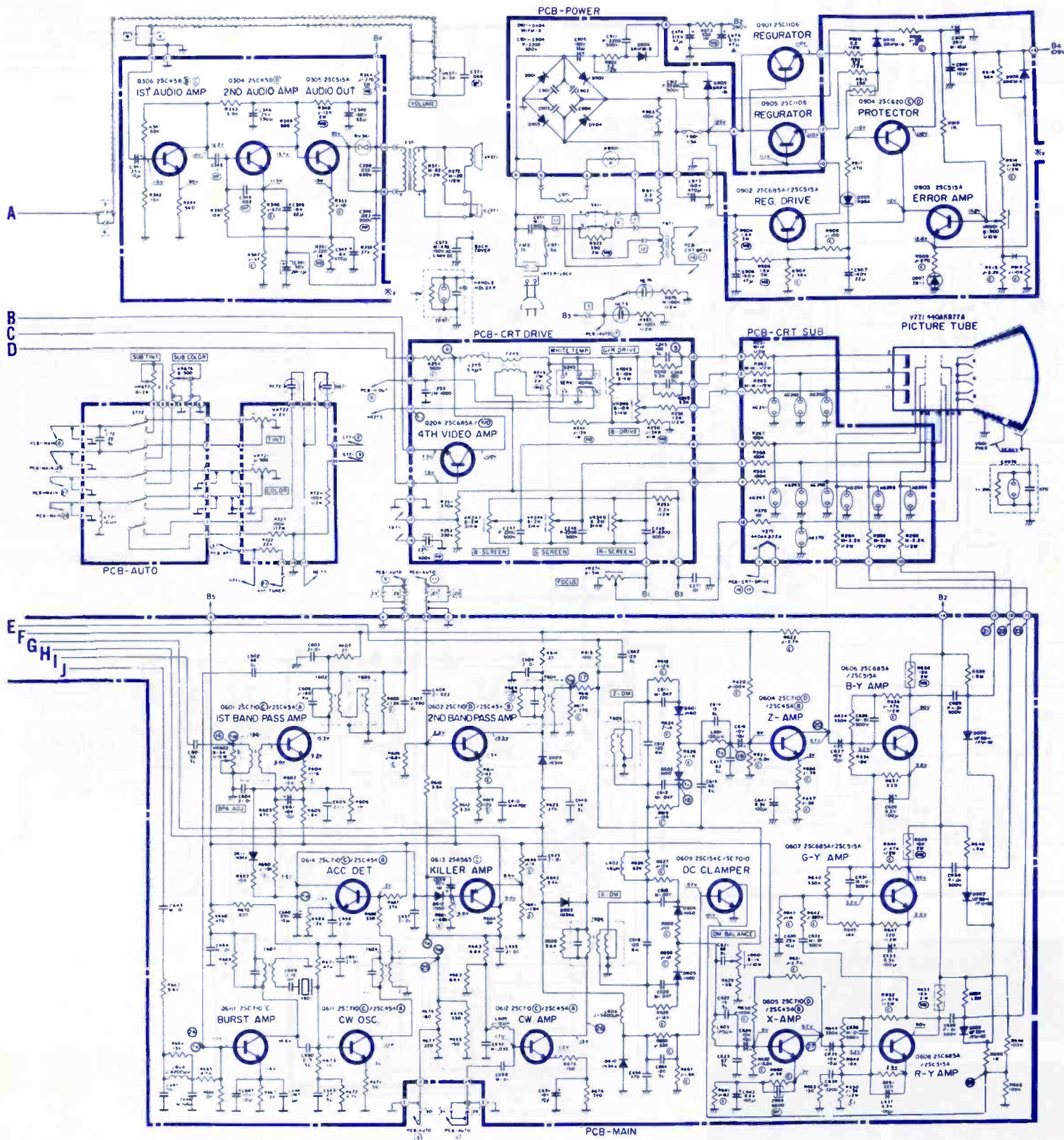
Color-TV Model
CS-165

SYMBOL	DESCRIPTION	PART NO.
T371	—audio output xformer	352P01401
T431	—vert osc xformer	409P00101
T471	—vert output xformer	329P00801
T501	—horiz drive xformer	336P00503
T571	—flyback xformer	334P05501
T572	—react xformer	409B00301
T603	—1st bandpass amp xformer	349P01201
T604	—2nd bandpass amp xformer	349P01301
T607	—burst amp xformer	349P01701
T971	—power xformer	350C03001
L205	—peaking 47MHK	325C01009
L472	—deflect yoke	330P02904

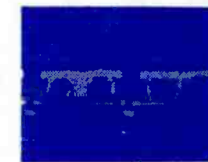
L501	—horiz osc coil	332P00501
VR271	—1K contrast control	120C10101
VR272	—5K brite control	120C12208
VR273	—500n AGC control	121C01001
VR274	—5M focus control	129P00402
VR275	—2K RF-AGC control	121C01101
VR371	—5K SW-volume control	120C13105
VR472	—5K vert hold	120C12208
VR473	—10K height control	121C01104
VR474	—30K vert lin control	121C01403
VR481	—semifixed 0.1w B-5K vert bias control	129D02505
VR571	—50K horiz hold control	120C12209
VR677	—2K sub tint control	121C03009
VR721	—slide 500n color control	129C02201

VR722	—slide 2K tint control	129C02204
main		920B02202
CRT drive		920B02302
medium		920B02001
power		920B02102
auto color		920B02403
CRT sub		920C04101
deflect		920C04402
AFT		920C04203
convergence		920B01601
F531	—fuse 1a	283P00101
F571	—fuse 1.5a	283D00106
F971	—fuse 5a	283D01607
F972	—fuse 5a	283D01607

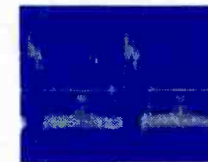




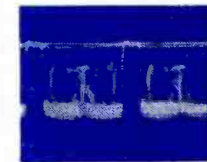
① 15.75KHz
1.2VP-P



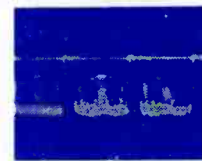
② 15.75KHz
1.25VP-P



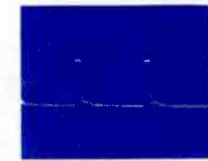
③ 15.75KHz
6VP-P



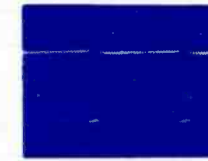
④ 15.75KHz
100VP-P



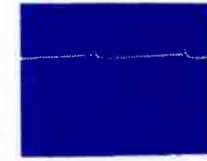
⑤ 15.75KHz
80VP-P



⑥ 15.75KHz
11VP-P



⑦ 15.75KHz
35VP-P



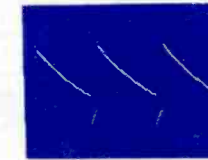
⑧ 60Hz
6VP-P



⑨ 60Hz
3.6VP-P



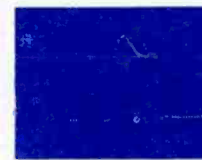
⑩ 60Hz
420VP-P



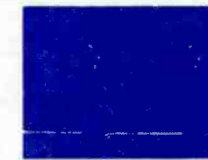
⑪ 15.75KHz
34VP-P



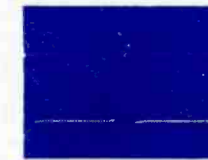
⑫ 15.75KHz
15VP-P



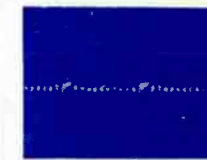
⑬ 15.75KHz
220VP-P



⑭ 15.75KHz
860VP-P



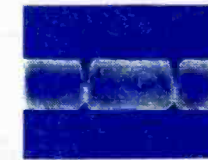
⑮ 15.75KHz
860VP-P



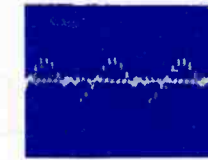
⑯ 15.75KHz
0.3VP-P



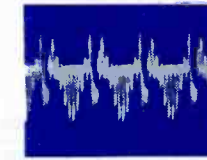
⑰ 15.75KHz
0.6VP-P



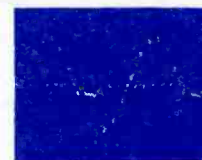
⑱ 60Hz
5VP-P



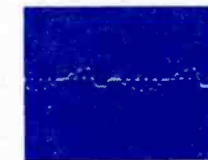
⑲ 15.75KHz
0.2VP-P



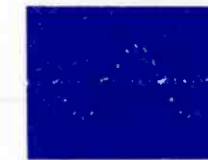
⑳ 15.75KHz
0.6VP-P



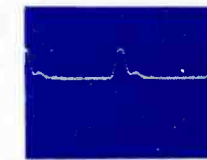
㉑ 15.75KHz
80VP-P



㉒ 15.75KHz
24VP-P



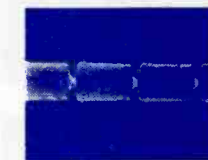
㉓ 15.75KHz
80VP-P



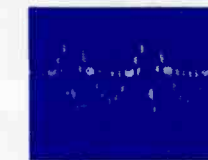
㉔ 15.75KHz
3.2VP-P



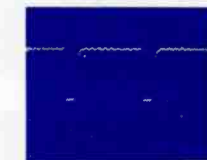
㉕ 60Hz
4VP-P



㉖ 60Hz
2VP-P



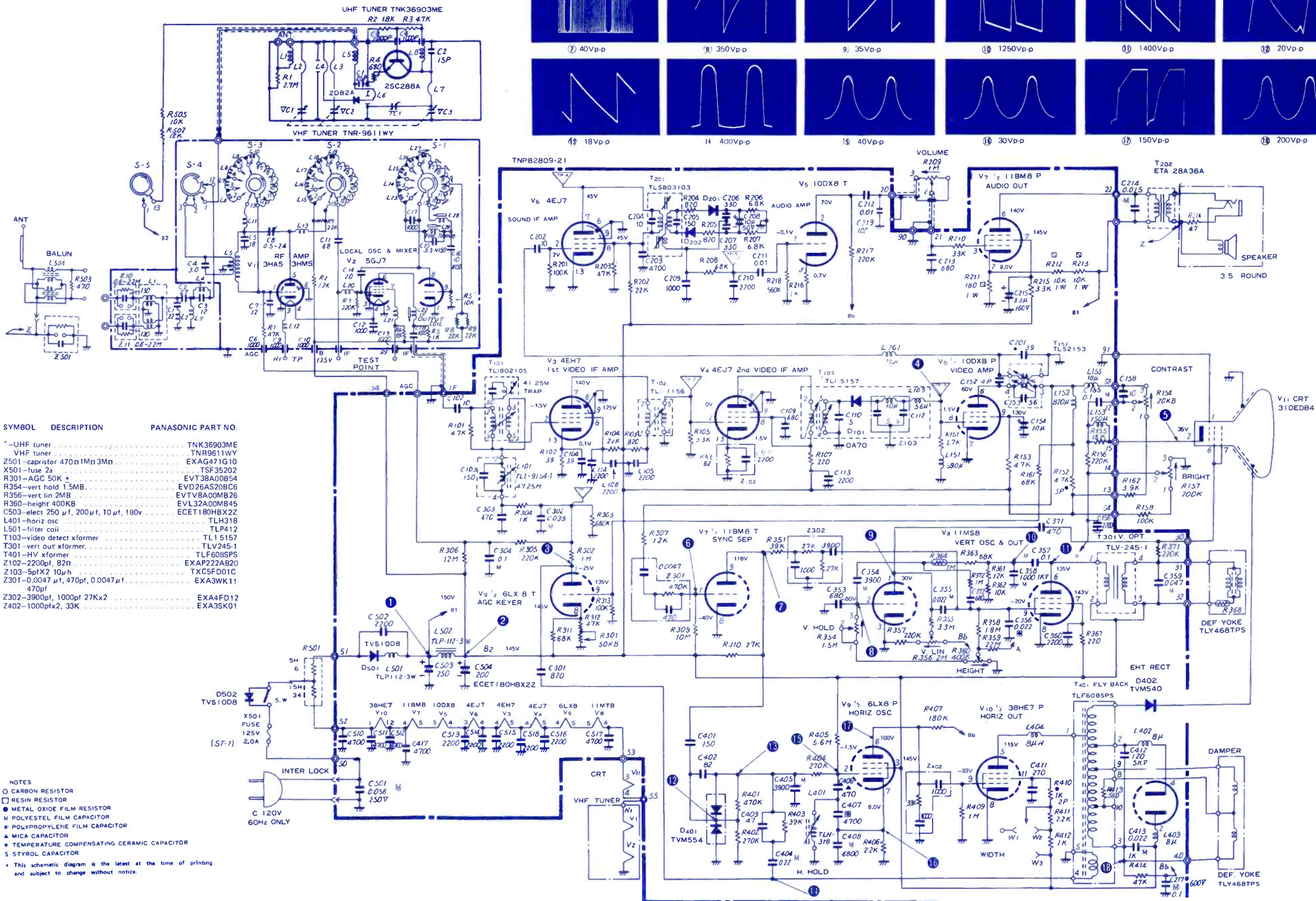
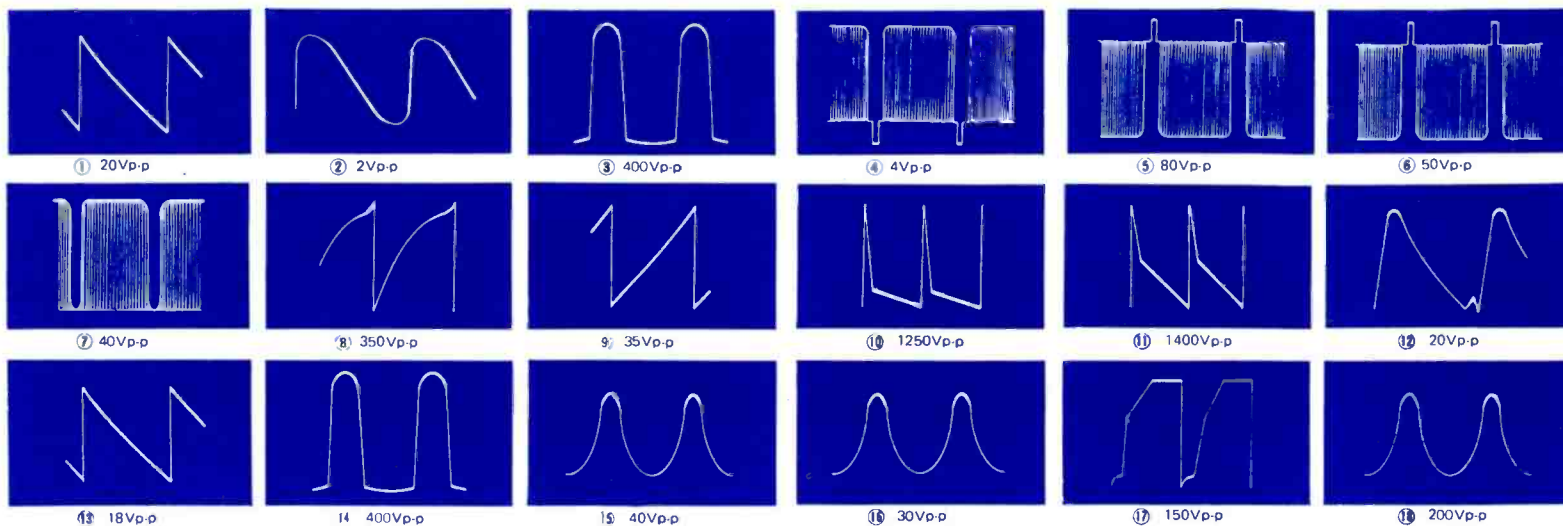
㉗ 15.75KHz
0.4VP-P



㉘ 15.75KHz
135VP-P

PANASONIC

TV Model AN-182

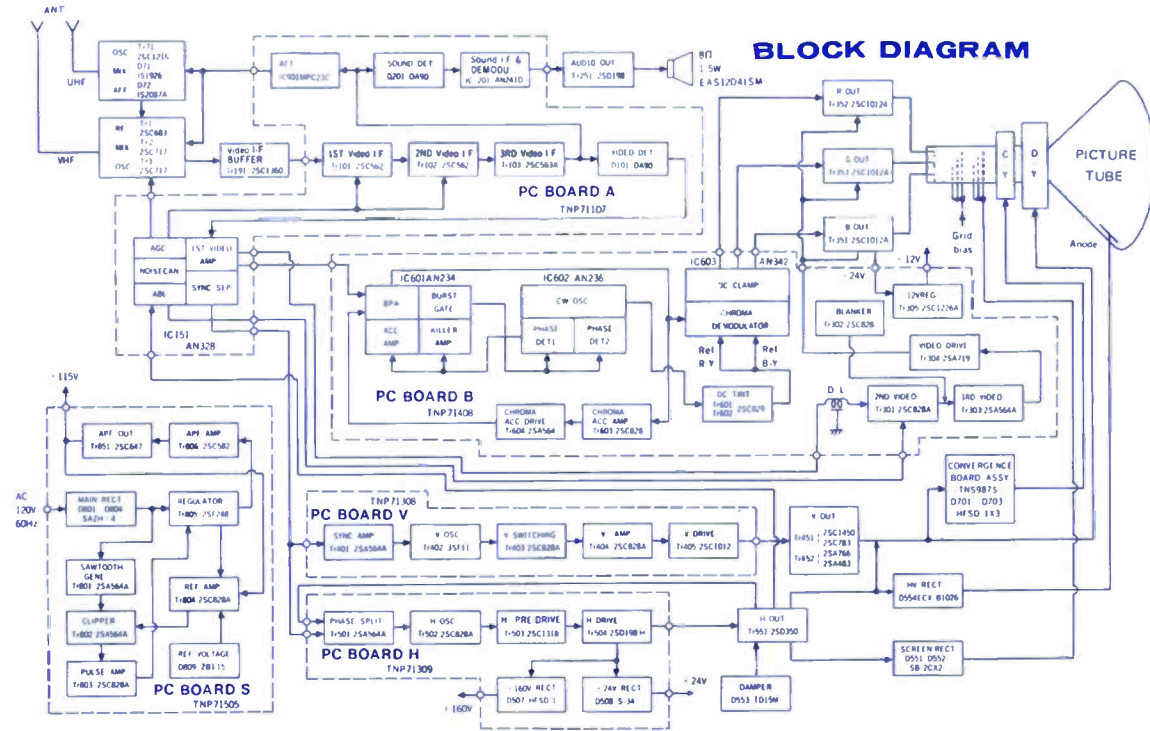
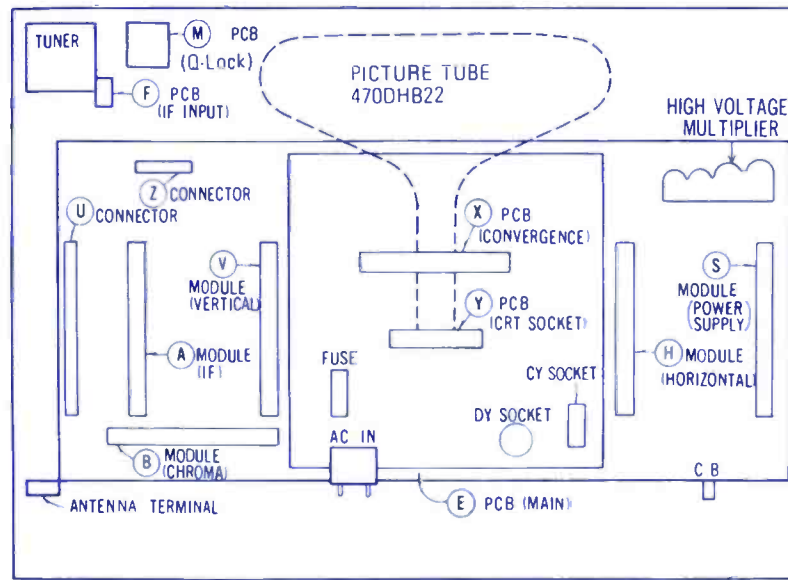
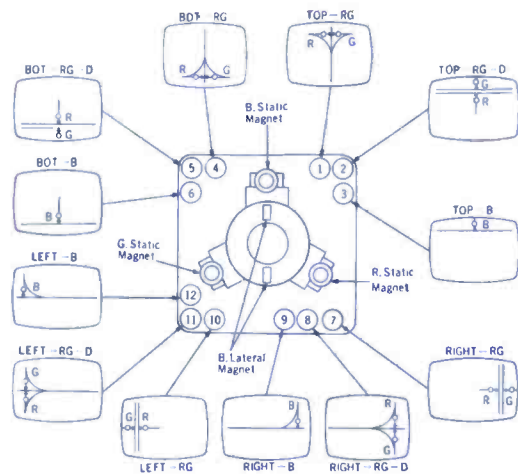


SYMBOL DESCRIPTION PANASONIC PART NO.

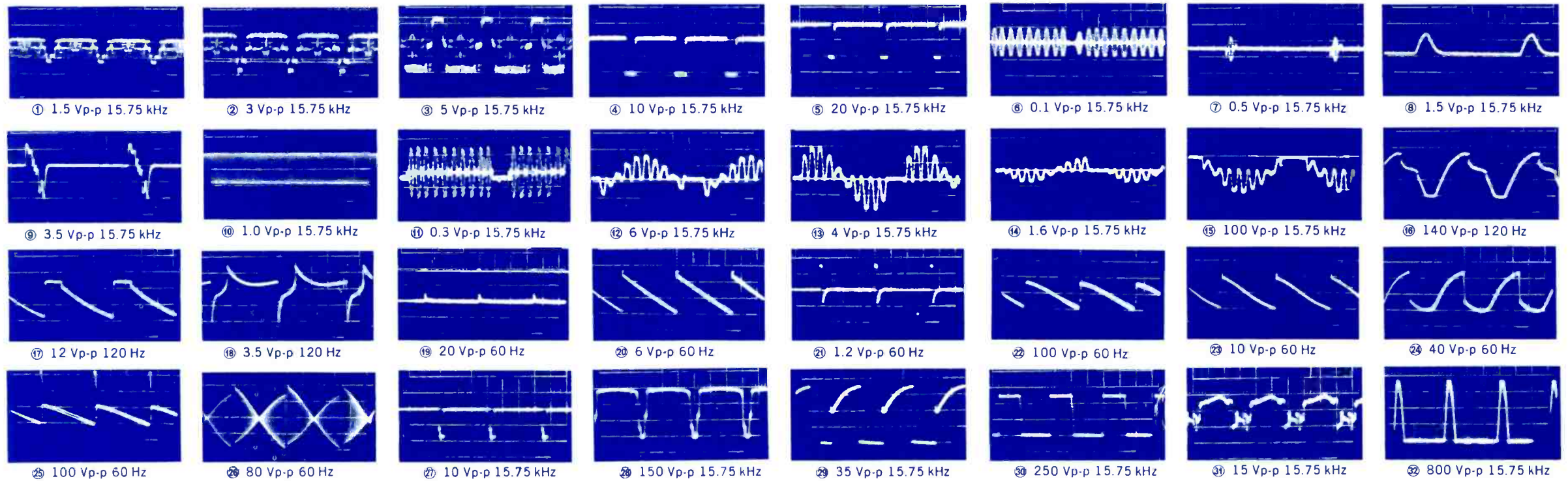
*-UHF tuner	TNK36903ME
VHF tuner	TNR9611WY
Z501-capristor 470n1Mn3Mn	EXAG471G10
X501-fuse 2a	TSF35202
R301-AGC 50K +	EVT38A00854
R354-vert hold 1.5MB	EVD26AS20BC6
R356-vert lin 2MB	EVTV8A00MB26
R360-height 400KB	EVL32A00MB45
C503-elect 250 μf, 200μf, 10μf, 180v	ECET180HBX2Z
L401-horiz osc	TLH318
L501-filter coil	TLP412
T103-video detect xformer	TL1 5157
T301-vert out xformer.	TLV245-1
T401-HV xformer	TLF608SPS
Z102-2200pf, 82n	EXAP222AB20
Z103-5pfX2 10uh	TXC5FD01C
Z301-0.0047 μf, 470pf, 0.0047μf, 470pf	EXA3WK11
Z302-3900pf, 1000pf 27Kx2	EXA4FD12
Z402-1000pfx2, 33K	EXA3SK01

- NOTES**
- CARBON RESISTOR
 - RESIN RESISTOR
 - METAL OXIDE FILM RESISTOR
 - M POLYESTER FILM CAPACITOR
 - POLYPROPYLENE FILM CAPACITOR
 - ▲ MICA CAPACITOR
 - ▲ TEMPERATURE COMPENSATING CERAMIC CAPACITOR
 - S STYROL CAPACITOR

* This schematic diagram is the latest at the time of printing and subject to change without notice.



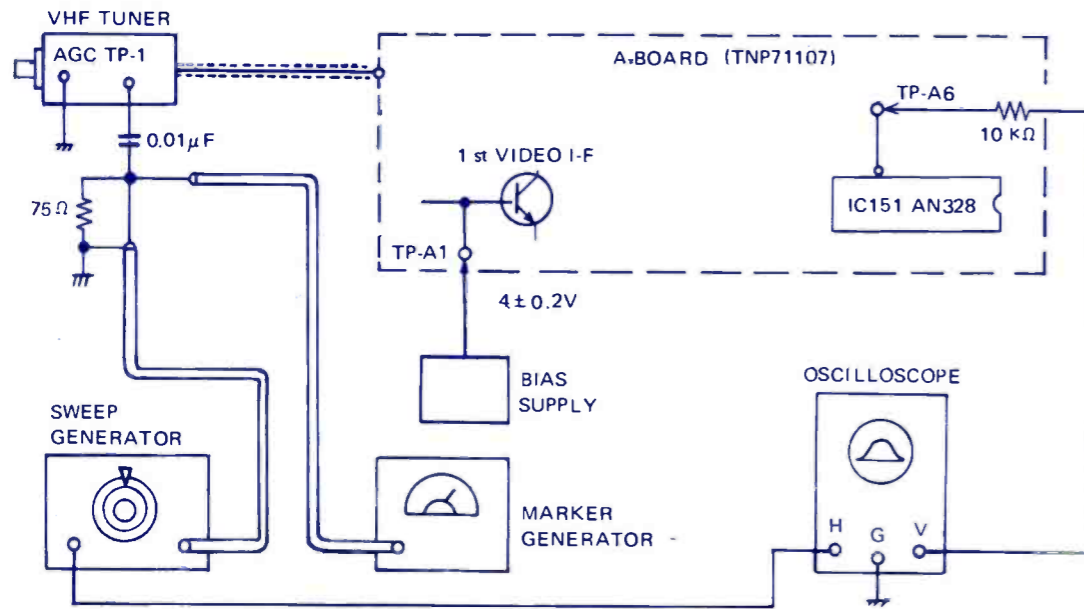
These waveforms were taken with the receiver AGC control adjusted for peak-to-peak output of 1.8 Volts at the test point of TP-A6. All monochrome voltages were taken with normal signal and all chroma voltages were taken with a color bar generator connected to antenna input terminals. Chroma peak-to-peak voltages were taken with the color control set for 1/3 turn (approximately) of its control range, tint control set for proper color bars (approximately) mid-range and all other controls set for normal viewing.



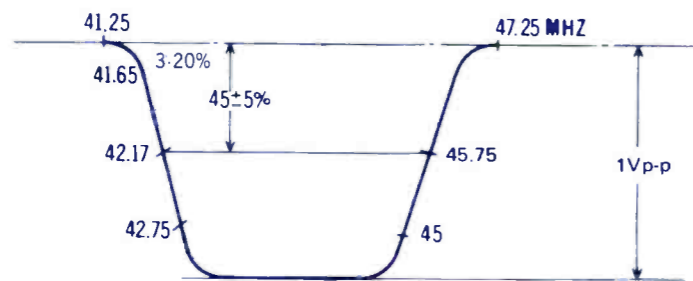
SWEEP ALIGNMENT OF VIDEO I-F

PREPARATION STEP

1. Set channel selector to an unused channel.
2. Connect oscilloscope, sweep and marker generator as shown in figure 28.
3. Supply bias voltage 4 ± 0.2 V between TPA1 (Positive side) and ground on A-Board (See figure 28 and 63).
4. Connect the TV power source to outlet and set the power switch to "ON" position.
5. Adjust sweep generator's output level by attenuator to get the appropriate waveform, about 1 Vp-p, 16 cm, on oscilloscope.



(Fig. 28)



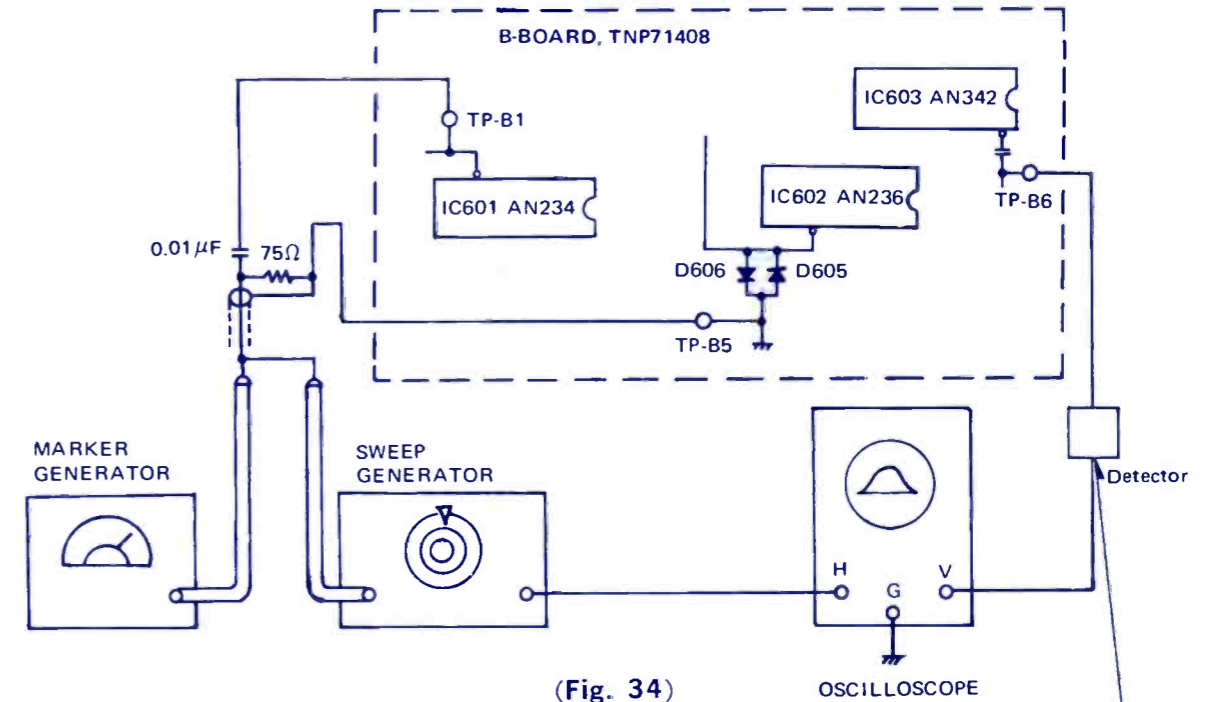
(Fig. 29)

ALIGNMENT PROCEDURE

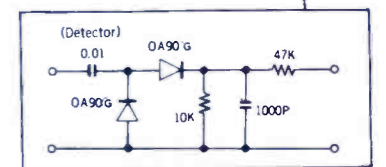
1. Adjustment of T103, T104 and T105 (See figure 63).
2. Adjustment of T191 on A-Board (TNP71107).
The three cores in T191 can change the maximum gain and incline of waveform. Normally, T191 does not need realign, if it not replaced.
3. Adjustment of traps.
T106 is trap for 41.25 MHz and L192 is for 47.25 MHz.

PREPARATION STEP

1. Set channel selector to an unused channel.
2. Set Q-Locke switch to OFF position.
3. Set KILLER control (R608) in B-Board fully counter clockwise (See figure 61).
4. Set PANA-BRIGHT control fully clockwise.
5. Set COLOR control fully clockwise.
6. Connect jumper between TPB2 and TPB3 (See figure 61).
7. Supply bias voltage 4 ± 0.2 V between TPA1 (Positive) and ground (See figure 63).
8. Connect oscilloscope at TPB6, detector, sweep and marker generator at TPB1 as shown in figure 34.
9. Connect the TV power source to outlet and set power switch to "ON" position.



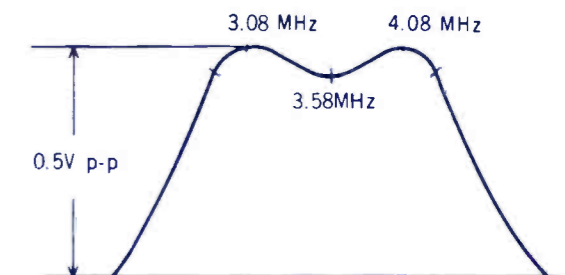
(Fig. 34)



(Fig. 35)

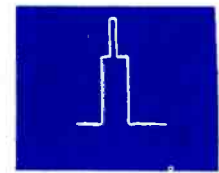
ALIGNMENT PROCEDURE

1. Adjust T601 and T602 on B-Board (See figure 61) for response as shown in figure 36. 3.08 MHz and 4.08 MHz markers are almost equal and maximum gain.
2. Observe that the waveform disappears, when control is in clockwise position. Turn the color killer control (R608) clockwise, then return it to its original position.

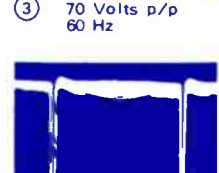




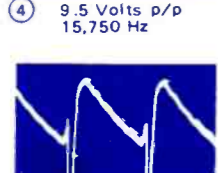
① 4.5 Volts p/p
15,750 Hz



② 4.5 Volts p/p
60 Hz



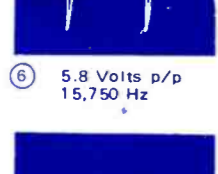
③ 70 Volts p/p
60 Hz



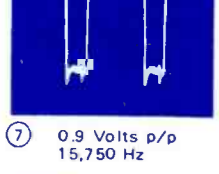
④ 9.5 Volts p/p
15,750 Hz



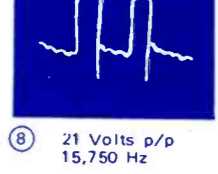
⑤ 9.5 Volts p/p
60 Hz



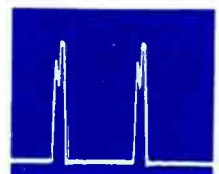
⑥ 5.8 Volts p/p
15,750 Hz



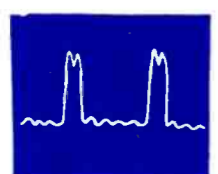
⑦ 0.9 Volts p/p
15,750 Hz



⑧ 21 Volts p/p
15,750 Hz



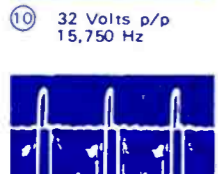
⑨ 105 Volts p/p
15,750 Hz



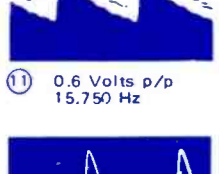
⑩ 32 Volts p/p
15,750 Hz



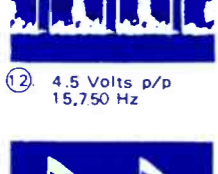
⑪ 0.6 Volts p/p
15,750 Hz



⑫ 4.5 Volts p/p
15,750 Hz



⑬ 4.4 Volts p/p
60 Hz



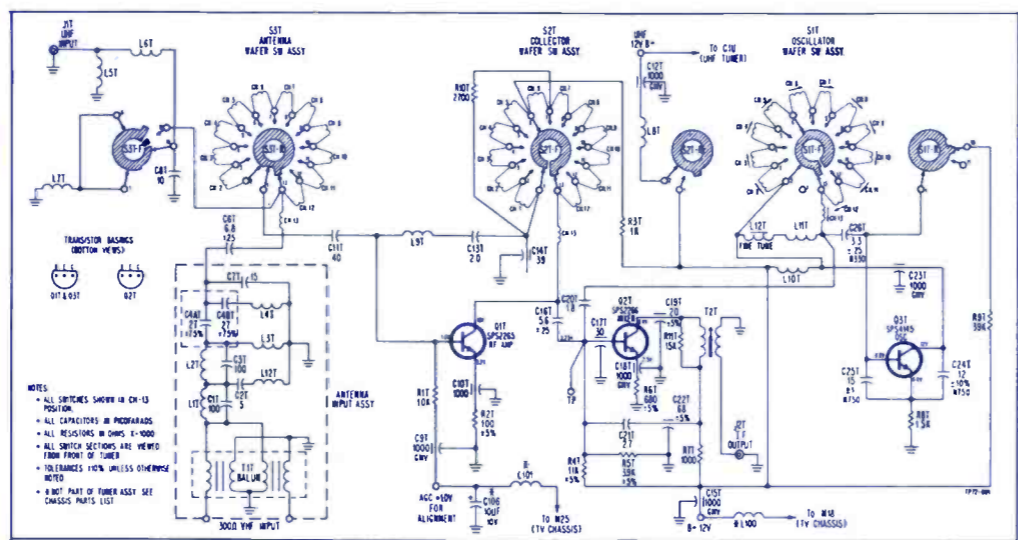
⑭ 3.8 Volts p/p
60 Hz



⑮ 3.6 Volts p/p
60 Hz



⑯ 112 Volts p/p
60 Hz



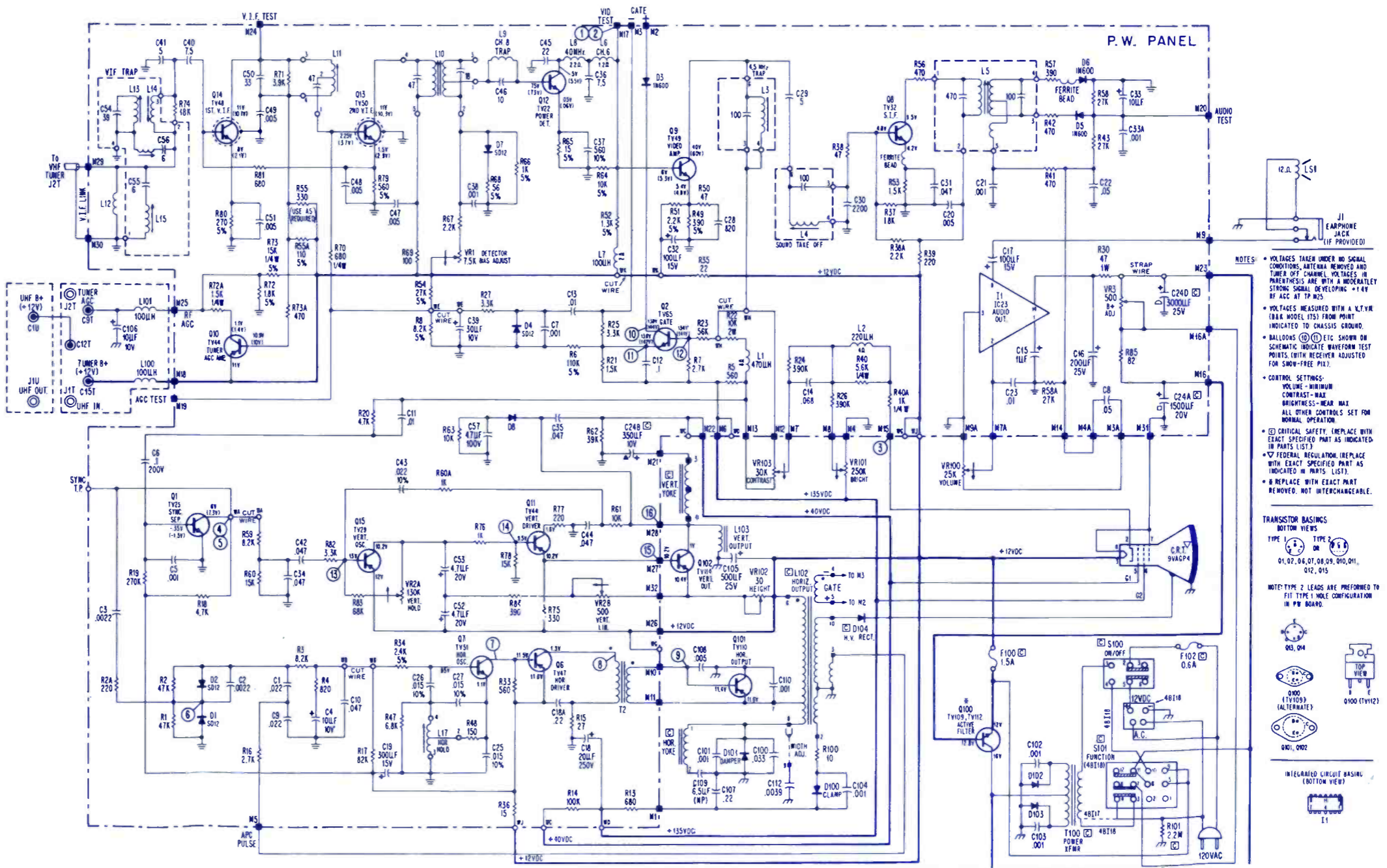
SCHMATIC DIAGRAM—VHF TUNER

	NO SIG.			WITH SIG.*		
	E	B	C	E	B	C
Q1	0	-35V	6V	0	-1.5V	7.3V
Q2	136V	134V	139V	142V	141V	144V
Q6	11.8V	11.5V	1.3V			
Q7	1.1V	95V	11.5V			
Q8	4.2V	4.8V	9.2V			
Q9	5.4V	6V	40V	4.8V	5.3V	60V
Q10	11V	10.9V	1.1V	11V	10V	1.4V
Q11	10.2V	9.5V	1.6V			
Q12	0.5V	73V	5.5V	0.6V	72V	5V
Q13	1.5V	2.25V	11V	2.9V	3.7V	10.3V
Q14	8V	1.5V	11V	2.1V	2.8V	10.1V
Q15	12V	13V	10.2V			
Q100	12V	12.8V	16V			
Q101	11.6V	11.6V	0			
Q102	10.4V	10.2V	1V			

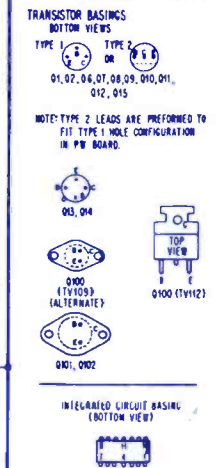
TRANSISTORS

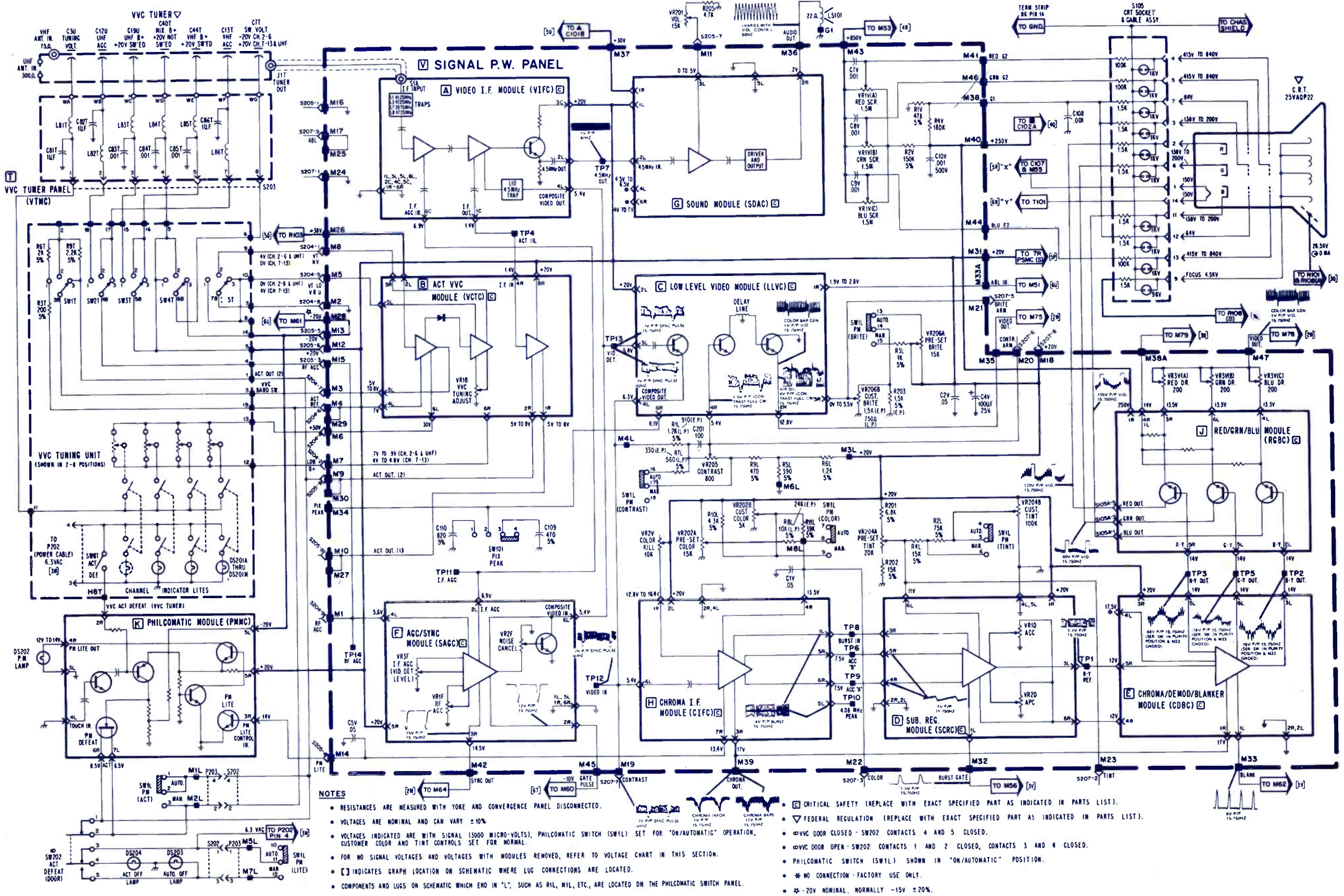
*WITH MODERATELY STRONG SIGNAL. CONTROLS SET FOR NORMAL PICTURE. +1.4V RF AGC BEING DEVELOPED AT TP M25. (ONLY SHOWN WHERE DIFFERENT THAN NO SIGNAL CONDITION.)

SYMBOL	DESCRIPTION	PHILCO-FORD PART NO.
C24A	3000µf/25v/1500µf	30-2585-33
B	C-20v, 350µf/10v power supply	45-2656-72
F100	1.5A, fast blow, B+	
F102	6a	
L4	sound take-off coil	32-4901-1
L5	ratio det coil	32-4906-1
L13	41.25 MHz trap coil	32-4652-80
L17	horiz osc coil	32-4938-2
L102	horiz output xformer	32-10202-1
S100	on-off, ac (slide)	42-2186-7
T100	power xformer	32-10159-2
VR3	500n B+ adjust	33-5650-6
VR100	25K, vol control	33-5658-2
VR101	250K, brightness control	33-5658-1
VR102	30n height control	33-5620-9
VR	30K, contrast control	33-5624-14
	fuse, 3a, fast blow	45-2069-18
	tuner, VHF (TT 185)	76-14324-1
	yoke	32-10201-1



- NOTES
- VOLTAGES TAKEN UNDER NO SIGNAL CONDITIONS. ANTENNA REMOVED AND TUNER OFF. CHANNEL VOLTAGES IN PARENTHESES ARE WITH A MODERATELY STRONG SIGNAL DEVELOPING +14V RF AGC AT TP M25.
 - VOLTAGES MEASURED WITH A N.T.V.M (B&K MODEL 175) FROM POINT INDICATED TO CHASSIS GROUND.
 - BALLOONS (10) ETC. SHOWN ON SCHEMATIC INDICATE WAVEFORM TEST POINTS. (WITH RECEIVER ADJUSTED FOR SNOW-FREE PIX.)
 - CONTROL SETTINGS:
VOLUME—MINIMUM
CONTRAST—MAX
BRIGHTNESS—NEAR MAX
ALL OTHER CONTROLS SET FOR NORMAL OPERATION
 - CRITICAL SAFETY. (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST.)
 - FEDERAL REGULATION. (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST.)
 - REPLACE WITH EXACT PART REMOVED. NOT INTERCHANGEABLE.

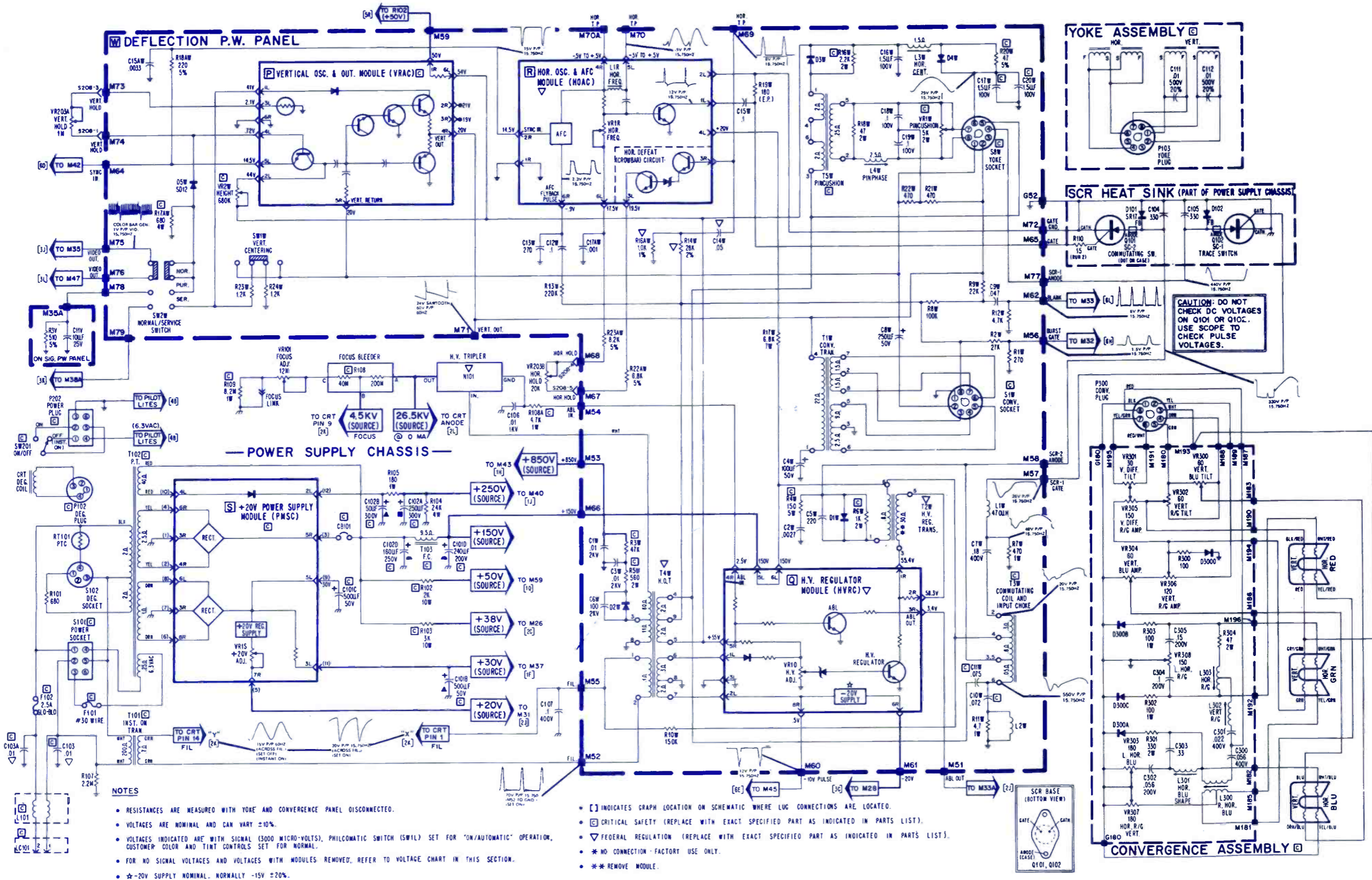




- NOTES**
- RESISTANCES ARE MEASURED WITH TONE AND CONVERGENCE PANEL DISCONNECTED.
 - VOLTAGES ARE NOMINAL AND CAN VARY $\pm 10\%$.
 - VOLTAGES INDICATED ARE WITH SIGNAL (3000 MICRO-VOLTS), PHILCOMATIC SWITCH (SW1L) SET FOR "ON/AUTOMATIC" OPERATION, CUSTOMER COLOR AND TINT CONTROLS SET FOR NORMAL.
 - FOR NO SIGNAL VOLTAGES AND VOLTAGES WITH MODULES REMOVED, REFER TO VOLTAGE CHART IN THIS SECTION.
 - [] INDICATES GRAPH LOCATION ON SCHEMATIC WHERE LUG CONNECTIONS ARE LOCATED.
 - COMPONENTS AND LUGS ON SCHEMATIC WHICH END IN "L", SUCH AS R1L, M1L, ETC., ARE LOCATED ON THE PHILCOMATIC SWITCH PANEL.
 - [] CRITICAL SAFETY (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST).
 - [] FEDERAL REGULATION (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST).
 - [] VVC DOOR CLOSED - SW202 CONTACTS 4 AND 5 CLOSED.
 - [] VVC DOOR OPEN - SW202 CONTACTS 1 AND 2 CLOSED, CONTACTS 3 AND 4 CLOSED.
 - [] PHILCOMATIC SWITCH (SW1L) SHOWN IN "ON/AUTOMATIC" POSITION.
 - [] * NO CONNECTION - FACTORY USE ONLY.
 - [] $\pm 20V$ NOMINAL, NORMALLY $-15V \pm 20\%$.

PHILCO-FORD
Color-TV Chassis
3CY91

PHILCO-FORD
Color-TV Chassis
3CY91



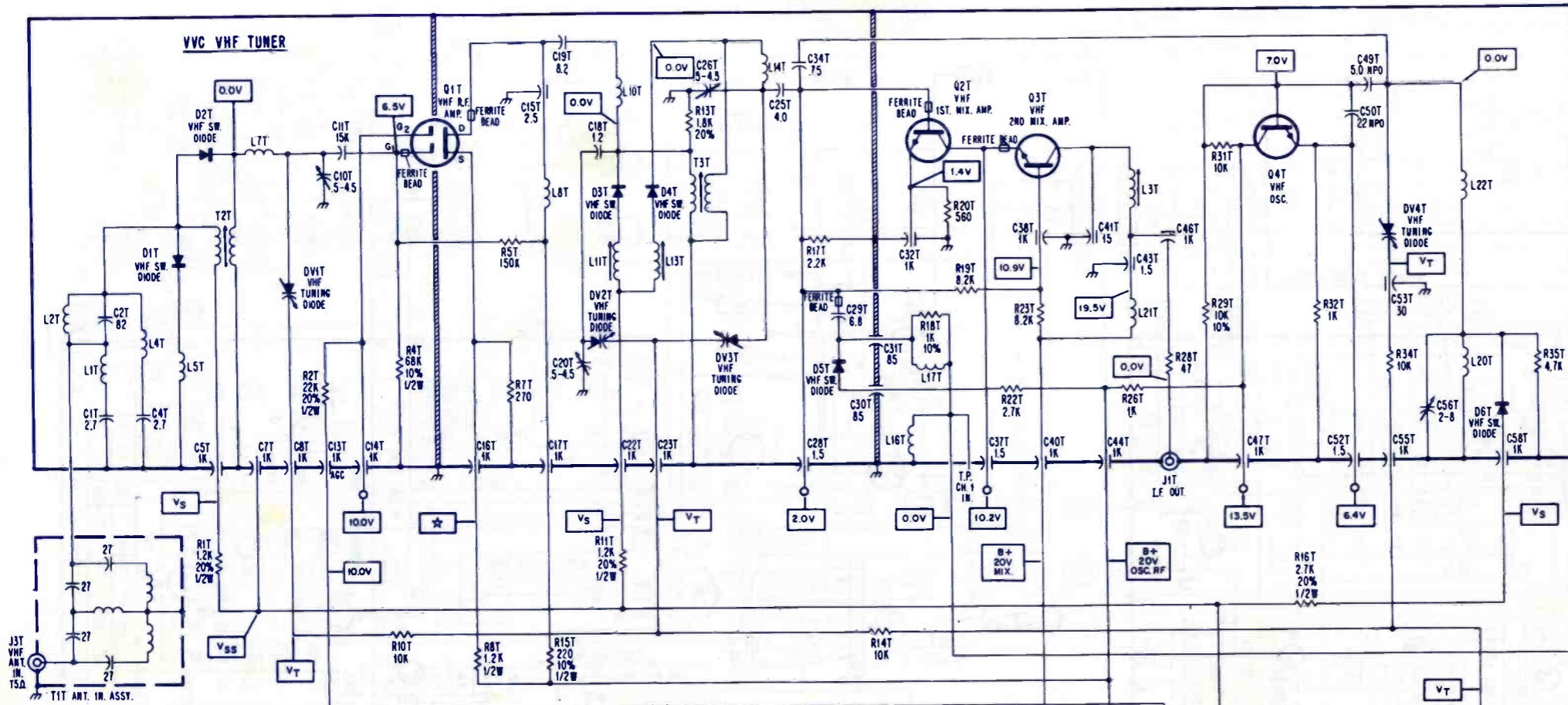
NOTES

- RESISTANCES ARE MEASURED WITH YOKE AND CONVERGENCE PANEL DISCONNECTED.
- VOLTAGES ARE NOMINAL AND CAN VARY ±10%.
- VOLTAGES INDICATED ARE WITH SIGNAL (3000 MICRO-VOLTS), PHILCOMATIC SWITCH (SW1) SET FOR "ON/AUTOMATIC" OPERATION, CUSTOMER COLOR AND TINT CONTROLS SET FOR NORMAL.
- FOR NO SIGNAL VOLTAGES AND VOLTAGES WITH MODULES REMOVED, REFER TO VOLTAGE CHART IN THIS SECTION.
- ★ -20V SUPPLY NOMINAL. NORMALLY -15V ±20%.

- [] INDICATES GRAPH LOCATION ON SCHEMATIC WHERE LUG CONNECTIONS ARE LOCATED.
- ⚠ CRITICAL SAFETY (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST).
- ⚠ FEDERAL REGULATION (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST).
- * NO CONNECTION - FACTORY USE ONLY.
- ** REMOVE MODULE.

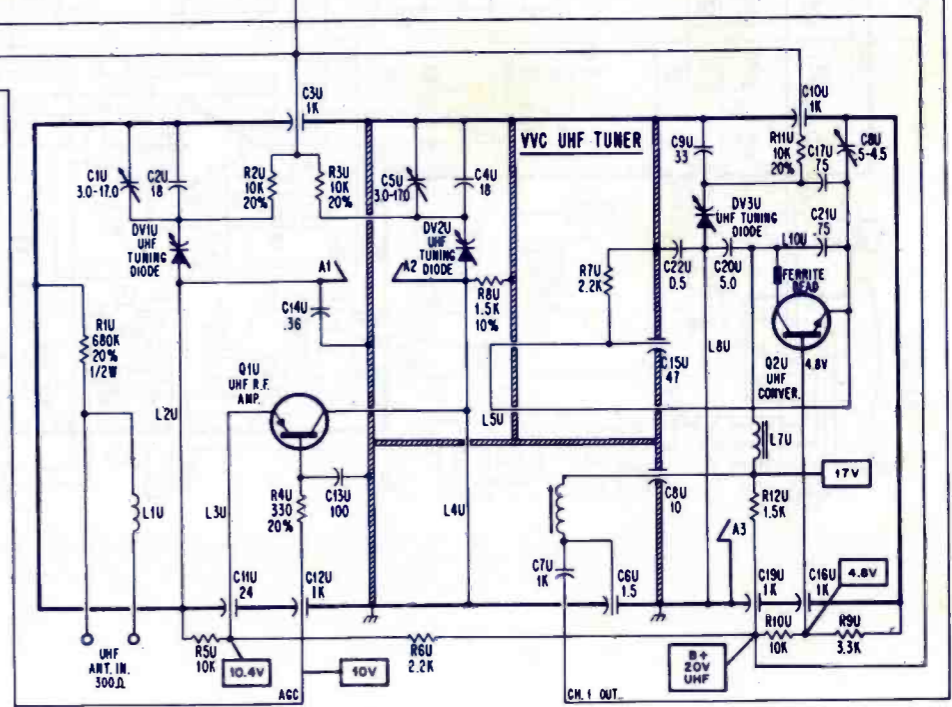
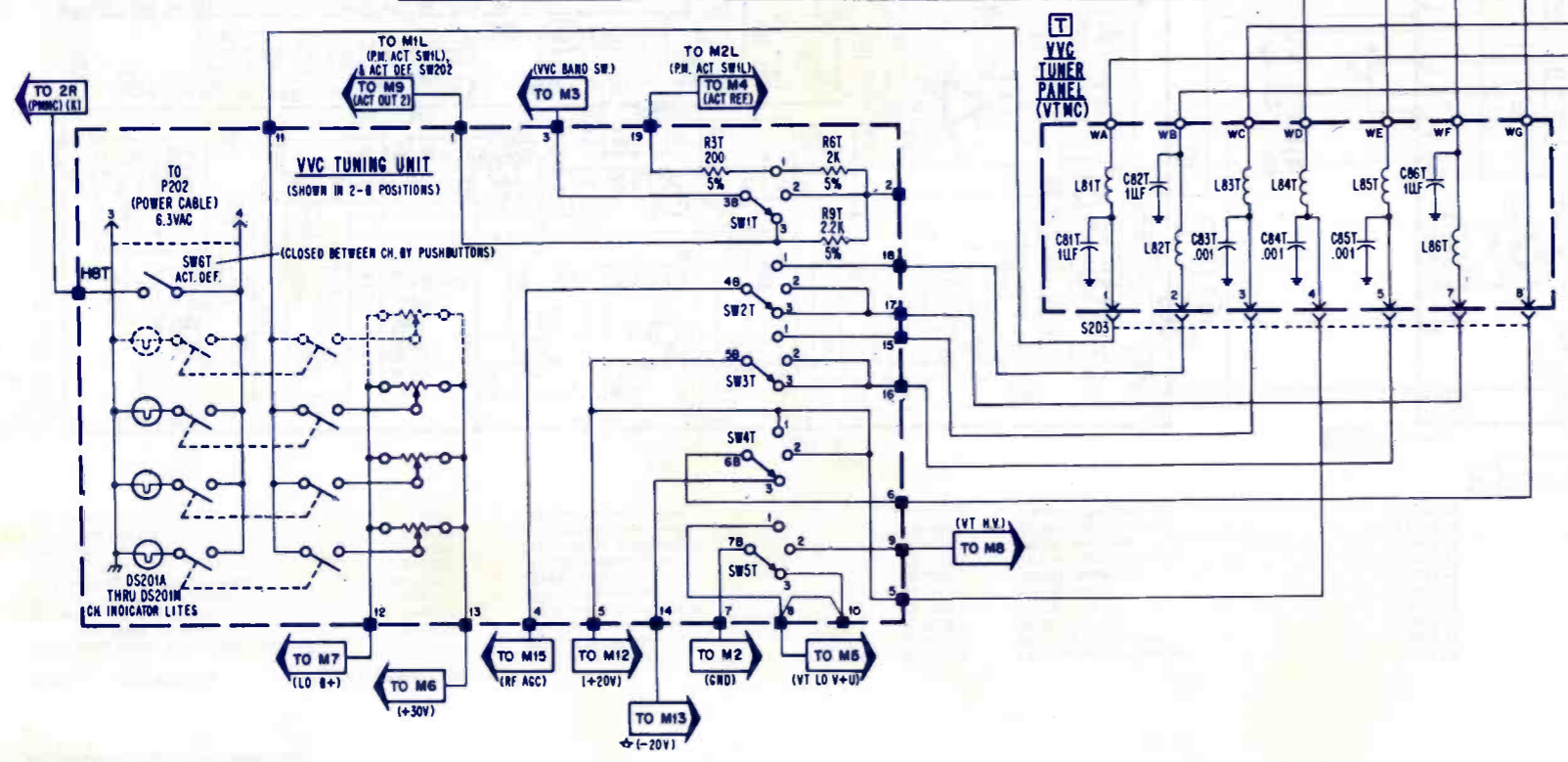
CAUTION: DO NOT CHECK DC VOLTAGES ON Q101 OR Q102. USE SCOPE TO CHECK PULSE VOLTAGES.





NOTES

- CAPACITANCE (UNLESS OTHERWISE SPECIFIED) VALUES LESS THAN ONE - MICROFARAD (UF) VALUES ABOVE ONE - PICOFARADS (PF)
- ALL RESISTANCES IN OHMS (K - 1000, M - MEGOHMS) 1/4 WATT ± 5% UNLESS OTHERWISE SPECIFIED.
- V_T D.C. VOLTAGES MEASURED WITH D.C. VTVM ± 5% WITH RESPECT TO GND. (NO SIGNAL)
- V_T TUNING VOLTAGE +1 TO +25VDC (DEPENDS ON CHANNEL)
- V_{SS} SWITCHING SUPPLY VOLTAGE +20V - HIGH CHANNEL (7-13 & UHF) -20V - LOW CHANNEL (2-6)
- V_S SWITCHING VOLTAGE +0.8V - HIGH CHANNEL (7-13 & UHF) -20V - LOW CHANNEL (2-6)
- ★ -20V SUPPLY NOMINAL. NORMALLY -15V ± 20%



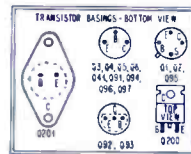
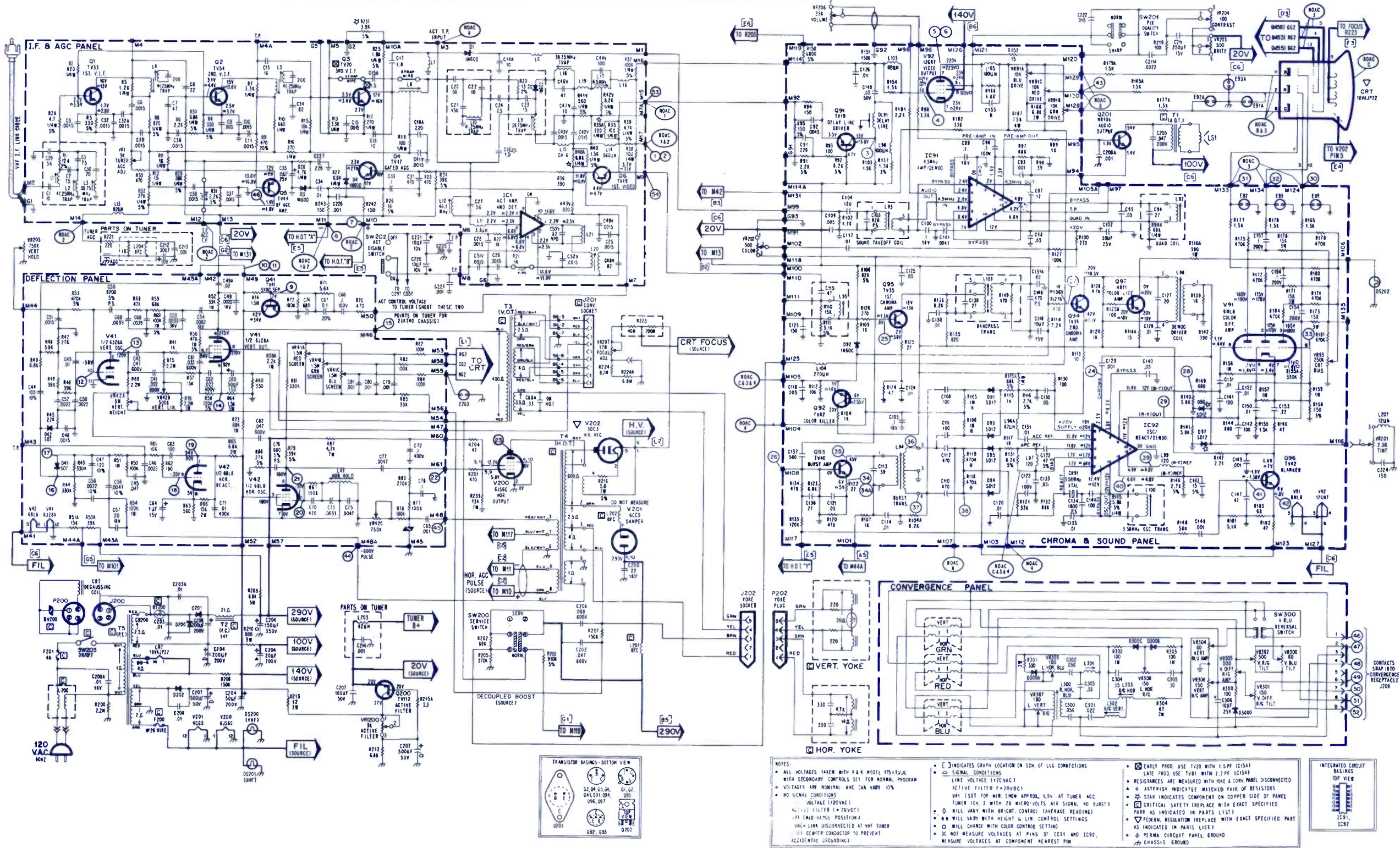
PHILCO-FORD
Color-TV Chassis
3CY91

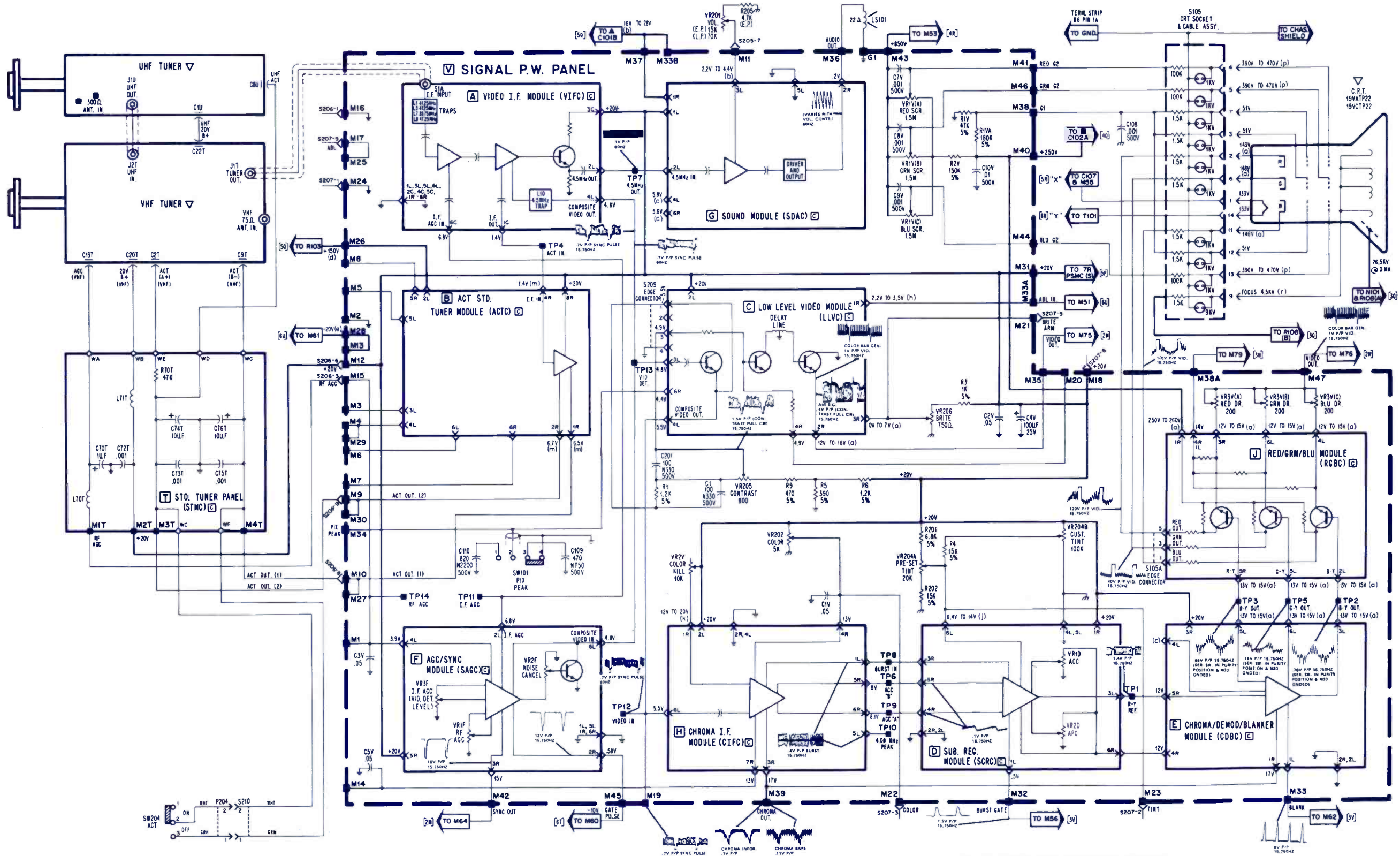
SYMBOL DESCRIPTION PHILCO-FORD PART NO.

C204—200 μ /120V, 150 μ /135V, 20 μ /120V	30-2625-3
50 μ /200V, B+ filter	46-5002-6
IC1—act amp. & det. (3CR41)	46-5002-8
IC91—IC3, 4.5MHz amp./demod.	46-5002-21
IC92—IC21 color osc/react/demod.	32-4891-2
L1—horiz hold	32-4876-1
L92—quad	32-4936-3
L93—sound take-off	32-4936-1
L94—burst trans	32-4931-1

L95—chroma take-off	32-4878-3
L100—3.58MHz osc	32-4932-2
L101—chroma bandpass	32-4929-1
R224—6.8M, focus control	33-1385-1
RT200—degaussing	33-1376-6
RV55—horiz bias	33-1379-2
RV200—degaussing coil	33-1379-1
T1—x-former, audio output	32-10156-1
T2—x-former, filter choke	32-10155-3
T3—vert output, x-former	32-10167-1

T4—x-former, horiz output	32-10111-7
VR1—3K AGC adjust	33-5628-14
VR93—CRT bias	33-5628-12
VR201—tint	33-5649-25
VR202—color	33-5648-14
VR203—brightness	33-5631-18
VR204—contrast	33-5631-19
VR205—vert hold	33-5631-16
VR206—on-off/volume	33-5646-14
VR207—12M, focus adj	33-5631-24



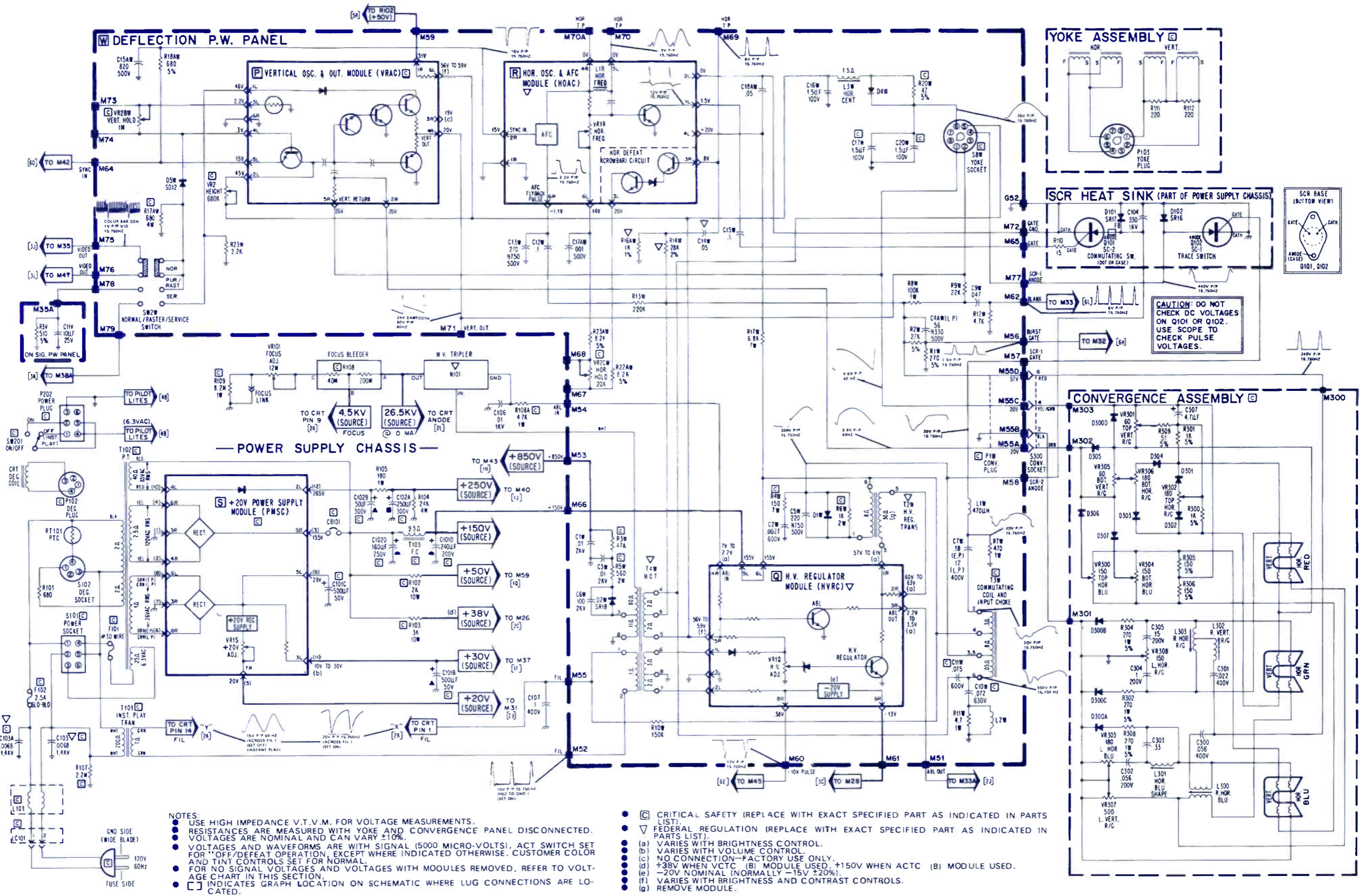


NOTES:

- USE HIGH IMPEDANCE V.T.V.M. FOR VOLTAGE MEASUREMENTS.
- RESISTANCES ARE MEASURED WITH YOKE AND CONVERGENCE PANEL DISCONNECTED.
- VOLTAGES ARE NOMINAL AND CAN VARY ±10%.
- VOLTAGES AND WAVEFORMS ARE WITH SIGNAL (5000 MICRO-VOLTS), ACT SWITCH SET FOR "OFF/DEFEAT OPERATION, EXCEPT WHERE INDICATED OTHERWISE. CUSTOMER COLOR AND TINT CONTROLS SET FOR NORMAL.
- FOR NO SIGNAL VOLTAGES AND VOLTAGES WITH MODULES REMOVED, REFER TO VOLTAGE CHART IN THIS SECTION.

- [] INDICATES GRAPH LOCATION WHERE LUG CONNECTIONS ARE LOCATED.
- [C] CRITICAL SAFETY (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST).
- [F] FEDERAL REGULATION (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST).

- (a) VARIES WITH BRIGHTNESS CONTROL.
- (b) VARIES WITH VOLUME CONTROL.
- (c) NO CONNECTION—FACTORY USE ONLY.
- (d) +38V WHEN VCTC. (B) MODULE USED, +150V WHEN ACTC. (B) MODULE USED.
- (e) -20V NOMINAL (NORMALLY -15V ±20%).
- (f) VARIES WITH BRIGHTNESS, CONTRAST AND COLOR CONTROLS FROM ALL CCW TO ALL CW.
- (g) VARIES WITH TINT CONTROL.
- (h) VARIES WITH COLOR KILLER CONTROL.
- (i) ACT SWITCH SET FOR "ON" OPERATION.
- (m) VARIES WITH SCREEN CONTROL.
- (r) VARIES WITH FOCUS CONTROL.

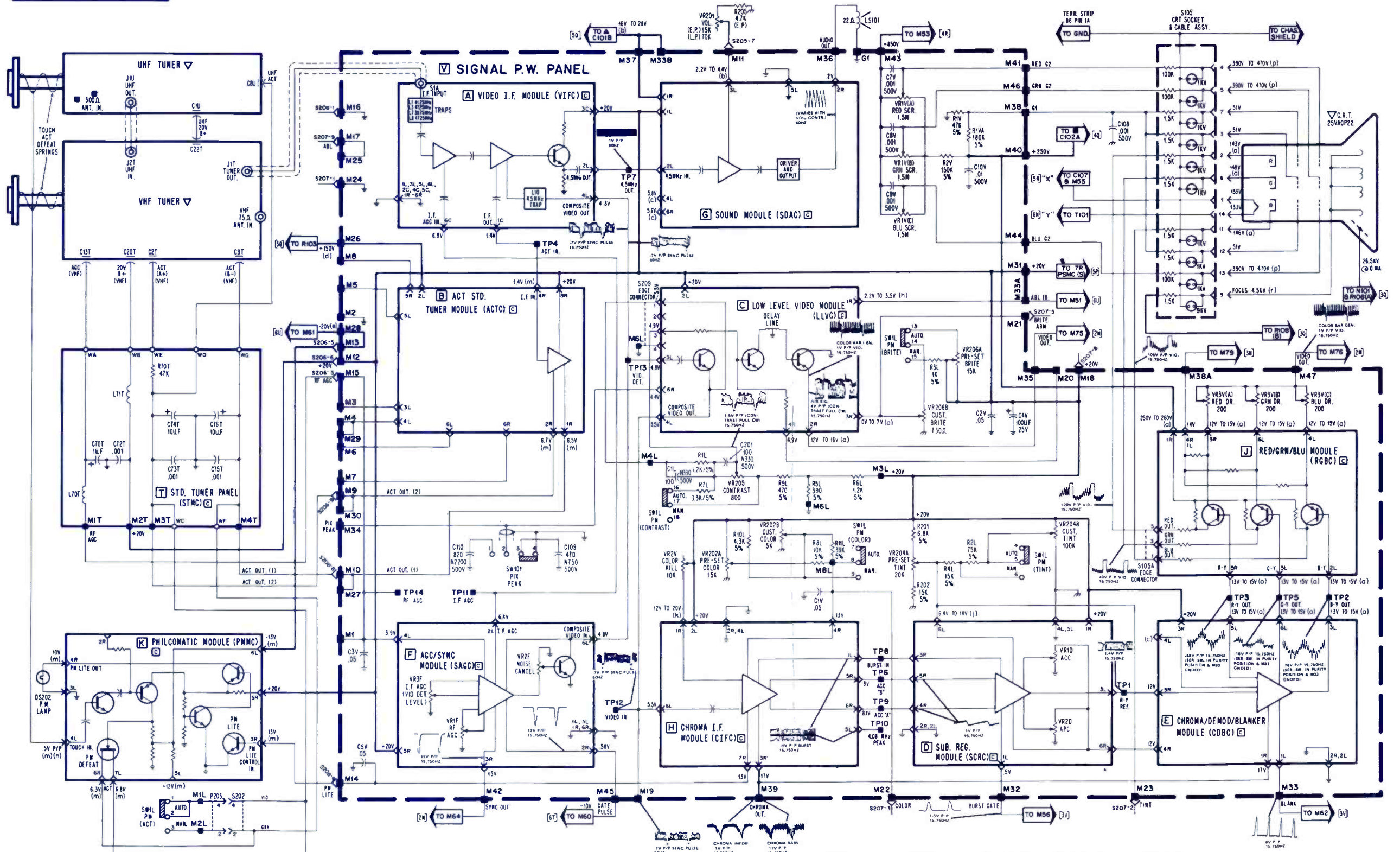


NOTES:

- USE HIGH IMPEDANCE V.T.V.M. FOR VOLTAGE MEASUREMENTS.
- RESISTANCES ARE MEASURED WITH YOKE AND CONVERGENCE PANEL DISCONNECTED.
- VOLTAGES ARE NOMINAL AND CAN VARY ±10%.
- VOLTAGES AND WAVEFORMS ARE WITH SIGNAL (5000 MICRO-VOLTS), ACT SWITCH SET FOR "OFF/DEFEAT OPERATION, EXCEPT WHERE INDICATED OTHERWISE. CUSTOMER COLOR AND TINT CONTROLS SET FOR NORMAL.
- FOR NO SIGNAL VOLTAGES AND VOLTAGES WITH MODULES REMOVED, REFER TO VOLTAGE CHART IN THIS SECTION.
- [] INDICATES GRAPH LOCATION ON SCHEMATIC WHERE LUG CONNECTIONS ARE LOCATED.

- [C] CRITICAL SAFETY (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST).
- [V] FEDERAL REGULATION (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST).
- (a) VARIES WITH BRIGHTNESS CONTROL.
- (b) VARIES WITH VOLUME CONTROL.
- (c) NO CONNECTION—FACTORY USE ONLY.
- (d) +38V WHEN VCTC. (B) MODULE USED, +150V WHEN ACTC (B) MODULE USED.
- (e) -20V NOMINAL (NORMALLY -15V ±20%).
- (f) VARIES WITH BRIGHTNESS AND CONTRAST CONTROLS.
- (g) REMOVE MODULE.

PHILCO-FORD
Color-TV Chassis
4CS71



NOTES:
 ● USE HIGH IMPEDANCE V.T.V.M. FOR VOLTAGE MEASUREMENTS.
 ● RESISTANCES ARE MEASURED WITH YOKE AND CONVERGENCE PANEL DISCONNECTED.
 ● VOLTAGES ARE NOMINAL AND CAN VARY ±10%.
 ● VOLTAGES AND WAVEFORMS ARE WITH SIGNAL (5000 MICRO-VOLTS), PHILCOMATIC SWITCH (SW1L) SET FOR "OFF/MANUAL OPERATION, EXCEPT WHERE INDICATED OTHERWISE. CUSTOMER COLOR AND TINT CONTROLS SET FOR NORMAL.

● FOR NO SIGNAL VOLTAGES AND VOLTAGES WITH MODULES REMOVED, REFER TO VOLT-AGE CHART IN THIS SECTION.
 ● [] INDICATES GRAPH LOCATION ON SCHEMATIC WHERE LUG CONNECTIONS ARE LO-CATED.
 ● [] CRITICAL SAFETY (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST).
 ● ∇ FEDERAL REGULATION (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST).
 ● COMPONENTS AND LUGS ON SCHEMATIC WHICH END IN "L", SUCH AS R1L, M1L, ETC., ARE LOCATED ON THE PHILCOMATIC SWITCH PANEL.
 ● PHILCOMATIC SWITCH (SW1L) SHOWN IN "ON/AUTOMATIC" POSITION.

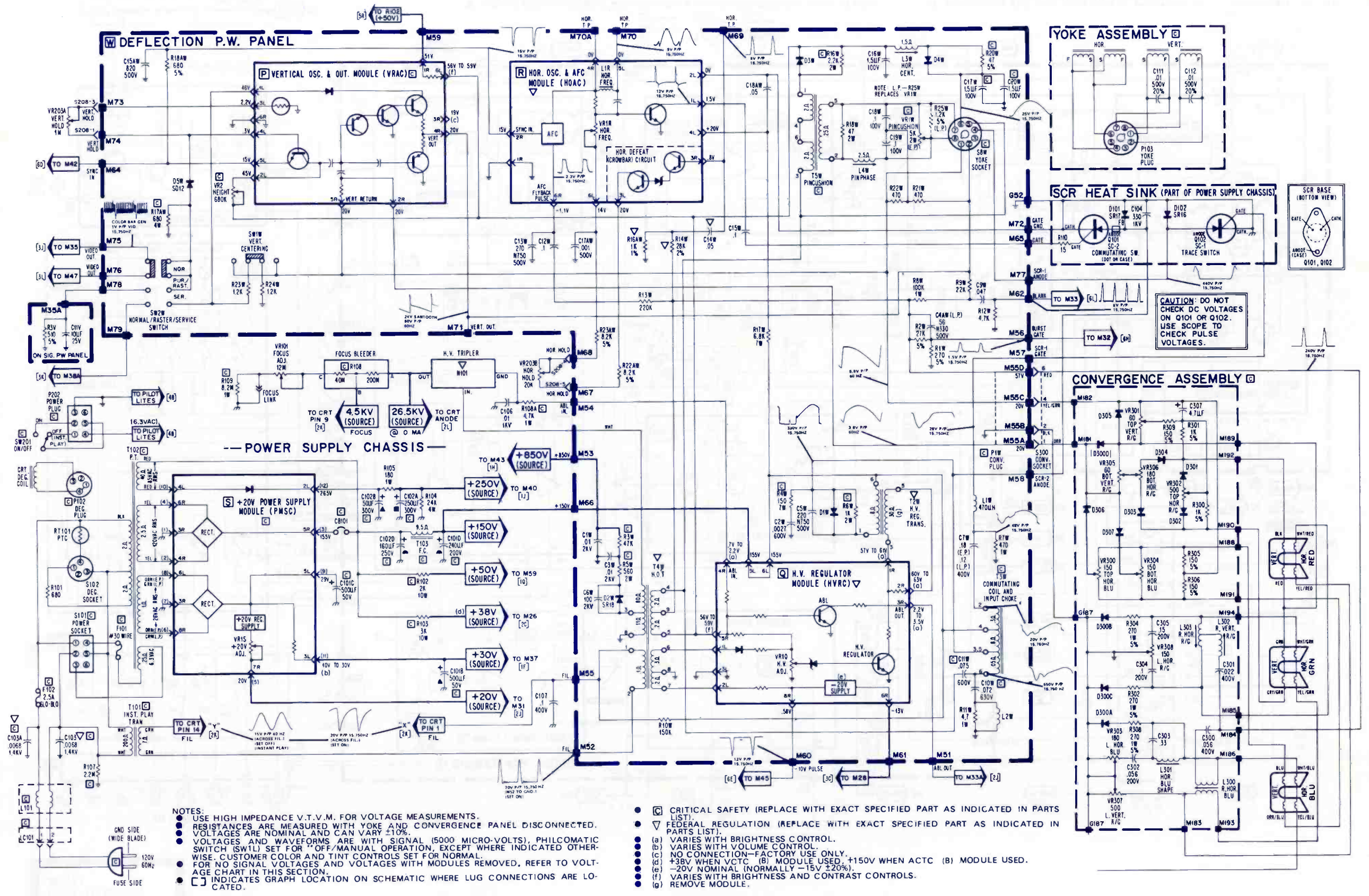
SCHEMATIC DIAGRAM—SIGNAL PW PANEL & STANDARD TUNERS—4CY90 (25") CHASSIS

● (a) VARIES WITH BRIGHTNESS CONTROL.
 ● (b) VARIES WITH VOLUME CONTROL.
 ● (c) NO CONNECTION—FACTORY USE ONLY.
 ● (d) +38V WHEN VCTC (B) MODULE USED, +150V WHEN ACTC (B) MODULE USED.
 ● (e) -20V NOMINAL (NORMALLY -15V ±20%).
 ● (f) VARIES WITH BRIGHTNESS, CONTRAST AND COLOR CONTROLS FROM ALL CCW TO ALL CW.
 ● (g) VARIES WITH TINT CONTROL.
 ● (h) VARIES WITH COLOR KILLER CONTROL.
 ● (i) PHILCOMATIC SWITCH SET FOR "ON/AUTOMATIC" OPERATION.
 ● (j) HAND ON FINE TUNE KNOB.
 ● (k) VARIES WITH SCREEN CONTROL.
 ● (l) VARIES WITH FOCUS CONTROL.

SYMBOL	DESCRIPTION	PHILCO-FORD PART NO.
	yoke assembly	76-14328-2
SW1L	Philcomatic, push-push, switch	42-2181-1
T102	power xformer.	32-10198-1
VR101	12M, focus adjust	33-5655-19
VR201	15K, volume slide	33-5656-2
VR202	color, A-15K/service pre-set, B-5K/ customer	33-5644-22
		33-5644-11
VR203	vert hold, A-1M horiz hold, B-20K	33-5644-8

VR204	tint, A20K/service preset, B-100K/	33-5644-23
A/B	customer	33-5644-10
VR205	contrast, 800 n	33-5655-10
		33-5655-7
C101	500 μ f/50v, 500 μ f/50v, 240 μ f/200v	30-2616-33
B/C/D	B + filter	30-2616-33
C102	250 μ f/300v, 50 μ f/300v, 160 μ f/250v	30-2626-14
A/B/D	B + filter	30-2626-14
L3W	horiz centering coil	32-4979-4

SW1W	vert centering switch	42-2178-1
T2W	high volt regulator	32-10183-1
T4W	HV xformer	32-10181-2
VR2W	680K, height	33-5654-5
VR1V	1.5M, 3 sect red, green, blue	33-5645-6
A/B/C	screens	33-5628-25
VR2V	10K, color killer	33-5628-25
VR3V	200 n, 3 sect., red, green & blue	33-5654-1
A/B/C	drives	33-5654-1



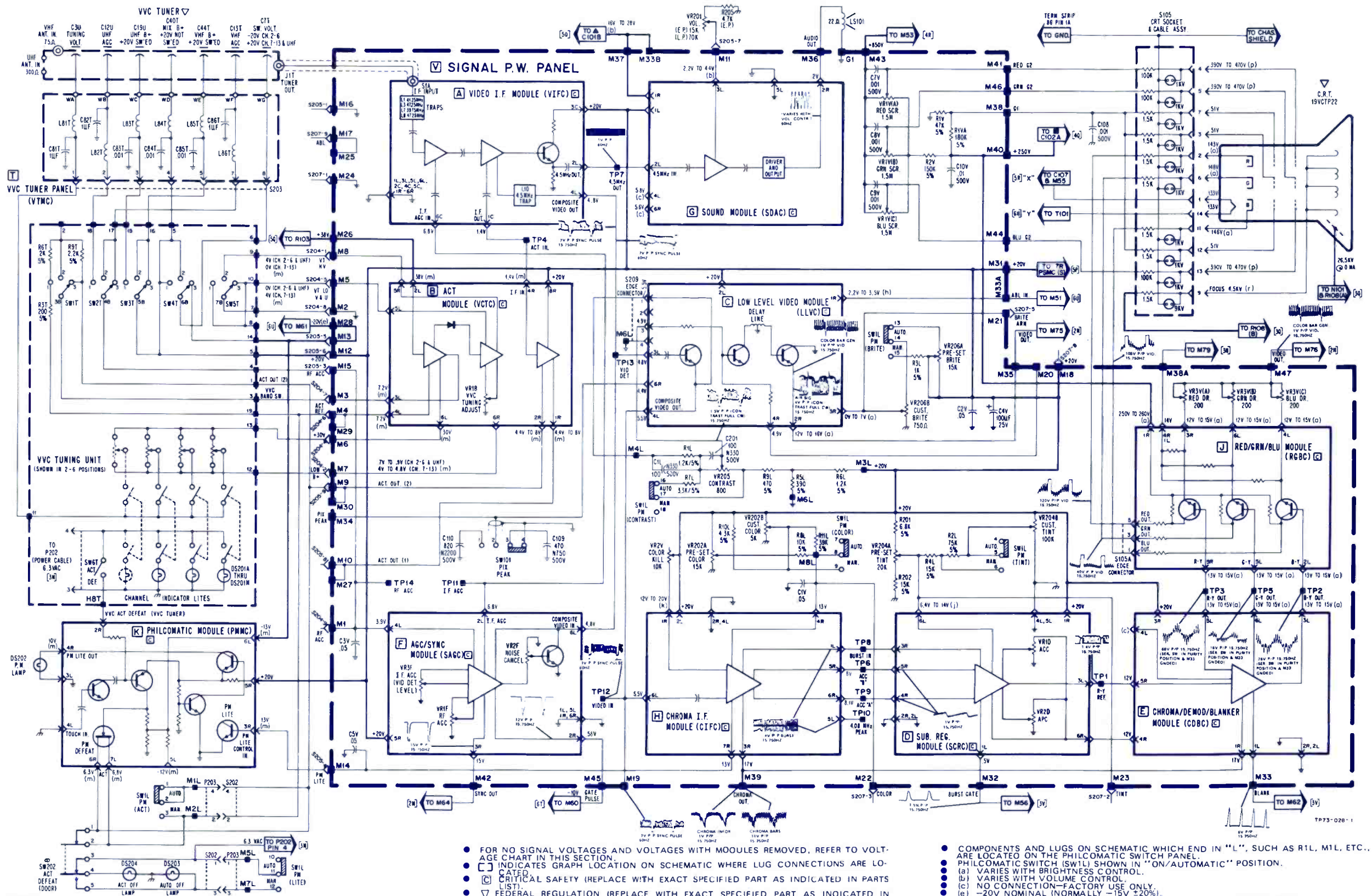
- NOTES:**
- USE HIGH IMPEDANCE V.T.V.M. FOR VOLTAGE MEASUREMENTS.
 - RESISTANCES ARE MEASURED WITH YOKE AND CONVERGENCE PANEL DISCONNECTED.
 - VOLTAGES ARE NOMINAL AND CAN VARY $\pm 10\%$.
 - VOLTAGES AND WAVEFORMS ARE WITH SIGNAL (5000 MICRO-VOLTS), PHILCOMATIC SWITCH (SW1L) SET FOR "OFF/MANUAL OPERATION, EXCEPT WHERE INDICATED OTHERWISE. CUSTOMER COLOR AND TINT CONTROLS SET FOR NORMAL.
 - FOR NO SIGNAL VOLTAGES AND VOLTAGES WITH MODULES REMOVED, REFER TO VOLTAGE CHART IN THIS SECTION.
 - [] INDICATES GRAPH LOCATION ON SCHEMATIC WHERE LUG CONNECTIONS ARE LOCATED.
 - [] CRITICAL SAFETY (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST).
 - [] FEDERAL REGULATION (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST).
 - (a) VARIES WITH BRIGHTNESS CONTROL.
 - (b) VARIES WITH VOLUME CONTROL.
 - (c) NO CONNECTION—FACTORY USE ONLY.
 - (d) +38V WHEN VCTC (B) MODULE USED, +150V WHEN ACTC (B) MODULE USED.
 - (e) -20V NOMINAL (NORMALLY $-15V \pm 20\%$).
 - (f) VARIES WITH BRIGHTNESS AND CONTRAST CONTROLS.
 - (g) REMOVE MODULE.

PHILCO-FORD
Color-TV Chassis
4CY90

SCHEMATIC DIAGRAM—DEFLECTION PW PANEL, POWER SUPPLY, & CONVERGENCE PANEL—4CY90 (25") CHASSIS

PHILCO-FORD

Color TV Chassis
4CS73



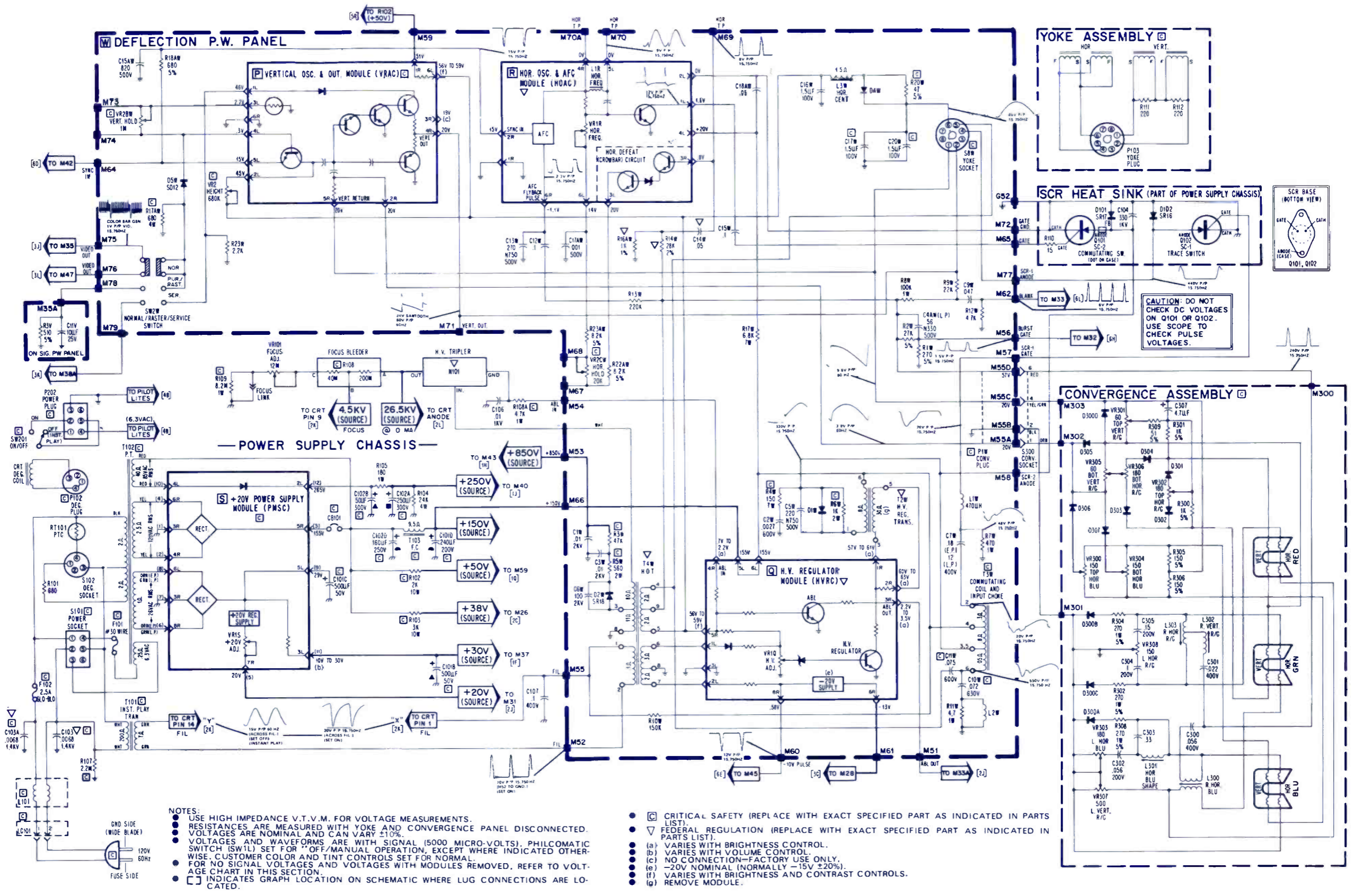
NOTES:

- USE HIGH IMPEDANCE V.T.V.M. FOR VOLTAGE MEASUREMENTS.
- RESISTANCES ARE MEASURED WITH YOKE AND CONVERGENCE PANEL DISCONNECTED.
- VOLTAGES ARE NOMINAL AND CAN VARY ±10%.
- VOLTAGES AND WAVEFORMS ARE WITH SIGNAL (5000 MICRO-VOLTS). PHILCOMATIC SWITCH (SW1) SET FOR "OFF/MANUAL OPERATION, EXCEPT WHERE INDICATED OTHERWISE. CUSTOMER COLOR AND TINT CONTROLS SET FOR NORMAL.

SCHEMATIC DIAGRAM—SIGNAL PW PANEL & VVC TUNER—4CS73 (19'') CHASSIS

- FOR NO SIGNAL VOLTAGES AND VOLTAGES WITH MODULES REMOVED, REFER TO VOLTAGE CHART IN THIS SECTION.
- INDICATES GRAPH LOCATION ON SCHEMATIC WHERE LUG CONNECTIONS ARE LOCATED.
- CATED.
- ⊕ CRITICAL SAFETY (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST).
- ▽ FEDERAL REGULATION (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST).

- COMPONENTS AND LUGS ON SCHEMATIC WHICH END IN "L", SUCH AS R1L, M1L, ETC., ARE LOCATED ON THE PHILCOMATIC SWITCH PANEL.
- PHILCOMATIC SWITCH (SW1) SHOWN IN "ON/AUTOMATIC" POSITION.
- (a) VARIES WITH BRIGHTNESS CONTROL.
- (b) VARIES WITH VOLUME CONTROL.
- (c) NO CONNECTION—FACTORY USE ONLY.
- (d) -20V NOMINAL (NORMALLY -15V ±20%).
- (h) VARIES WITH BRIGHTNESS, CONTRAST AND COLOR CONTROLS FROM ALL CCW TO ALL CW.
- (j) VARIES WITH TINT CONTROL.
- (k) VARIES WITH COLOR KILLER CONTROL.
- (m) PHILCOMATIC SWITCH SET FOR "ON/AUTOMATIC" OPERATION.
- (p) VARIES WITH SCREEN CONTROL.
- (r) VARIES WITH FOCUS CONTROL.



NOTES:

- USE HIGH IMPEDANCE V.T.V.M. FOR VOLTAGE MEASUREMENTS.
- RESISTANCES ARE MEASURED WITH YOKE AND CONVERGENCE PANEL DISCONNECTED. VOLTAGES ARE NOMINAL AND CAN VARY $\pm 10\%$.
- VOLTAGES AND WAVEFORMS ARE WITH SIGNAL (5000 MICRO-VOLTS), PHILCOMATIC SWITCH (SW1L) SET FOR "OFF/MANUAL OPERATION, EXCEPT WHERE INDICATED OTHERWISE. CUSTOMER COLOR AND TINT CONTROLS SET FOR NORMAL.
- FOR NO SIGNAL VOLTAGES AND VOLTAGES WITH MODULES REMOVED, REFER TO VOLTAGE CHART IN THIS SECTION.
- [] INDICATES GRAPH LOCATION ON SCHEMATIC WHERE LUG CONNECTIONS ARE LOCATED.

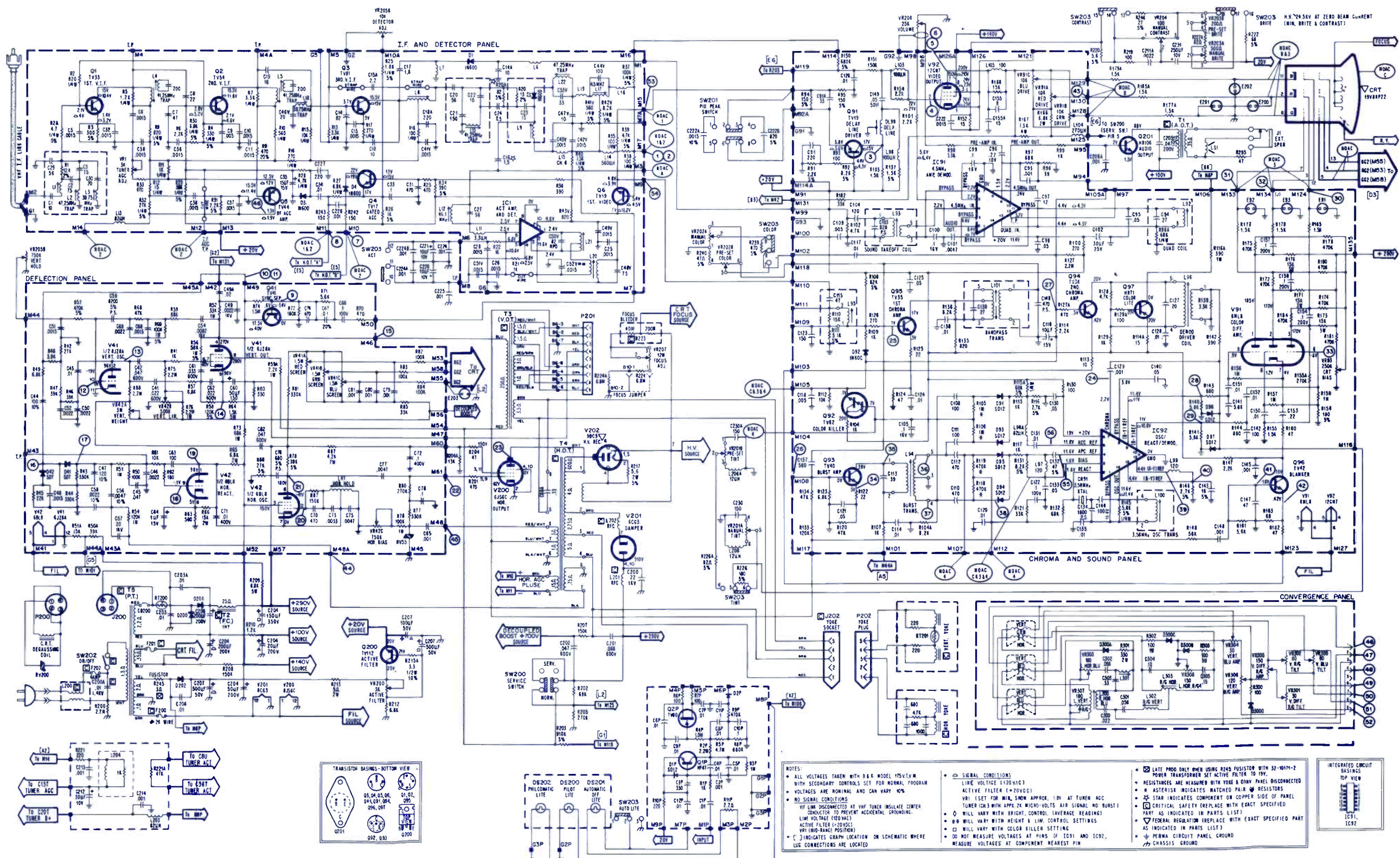
- [] CRITICAL SAFETY (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST).
- ∇ FEDERAL REGULATION (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST).
- (a) VARIES WITH BRIGHTNESS CONTROL.
- (b) VARIES WITH VOLUME CONTROL.
- (c) NO CONNECTION—FACTORY USE ONLY.
- (e) -20V NOMINAL (NORMALLY -15V $\pm 20\%$).
- (f) VARIES WITH BRIGHTNESS AND CONTRAST CONTROLS.
- (g) REMOVE MODULE.

PHILCO-FORD
Color TV Chassis
4CS73

SYMBOL DESCRIPTION PHILCO-FORD PART NO.

C204A	— 200µf/200v, 150µf/350v, 20µf/200v thru D — 50µf/200v, B + filter	30-2625-3
C207A	— 500, 500, 100µf/50v, +20v supply	42-2136-10
B, C	— active filter base & emit	30-2625-2
CB200	— power AC	42-2136-10
IC1	— act IC	46-5002-6
IC91	— IC-8, aud/I.F./det IC	46-5002-8
IC92	— IC-21, osc/react/det IC	46-5002-21
L41	— horiz hold coil	32-4891-2
L92	— sound quad, coil	32-4876-1
L93	— sound T.O. coil	32-4936-3
L94	— burst xformer	32-4931-1
L95	— chroma TO	32-4878-3
L100	— 3.58MHz osc out coil	32-4932-2
L101	— bandpass xformer TO	32-4929-1
R223	— focus bleeder	33-1390-1

R245	— 3n fusistor	33-1381-5
RV55	— horiz bias varistor	33-1379-2
RV200	— degaussing coil	33-1379-1
SW202	— on/off power AC	42-2167-4
T1	— audio output xformer	32-10156-1
T2	— filter choke	32-10155-3
T3	— vert output xformer	32-10167-1
T5	— power LP	32-10171-2
T5	— power EP	32-10171-2
VR42	— A-vert ht, B-lin, C-horiz bias	33-5627-3
VR93	— CRT bias	33-5628-12
VR202A, B	— 500n, color, manual & preset	33-5644-20
VR203A, B	— brightness manual & preset	33-5644-18
VR204	— 100n contrast	33-4555-6
VR205A, B	— 750K, vert hold 10K, det adjust	33-5644-21
VR206	— 25K, volume	33-5656-1
	tuner ITT152CD UHF	76-13827-13
	tuner TT191C VHF	76-14296-4



NOTES:

- ALL VOLTAGES TAKEN WITH B & R MODEL 175V.T.M. WITH SECONDARY CONTROLS SET FOR NORMAL PROGRAM
- VOLTAGES ARE NOMINAL AND CAN VARY 10%
- NO SIGNAL CONDITIONS
- IF LHM DISCONNECTED AT VHF TUNER INSULATE CENTER CONDUCTOR TO PREVENT ACCIDENTAL GROUNDING
- LHM VOLTAGE (120VAC) ACTIVE FILTER (+20VDC) VPI (NO-BLANK POSITION)
- [] INDICATES GRAPH LOCATION ON SCHEMATIC WHERE LOG CONNECTIONS ARE LOCATED

SIGNAL CONDITIONS

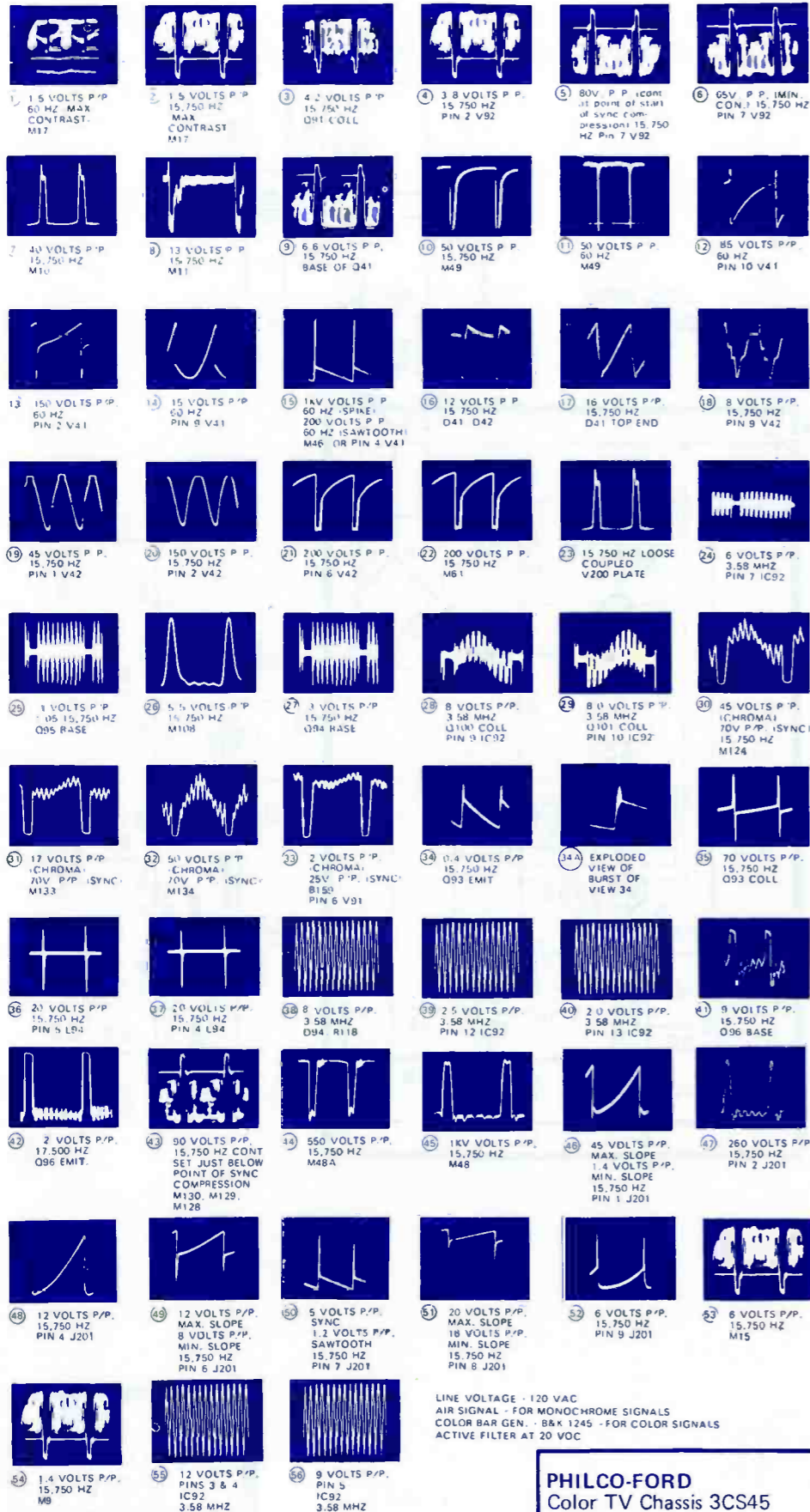
- LINE VOLTAGE (120VAC)
- ACTIVE FILTER (+20VDC)
- VPI (SET FOR MIN. SLOW APPROX. 10% AT TUNER ACC TUNER CH3 WITH 2K MICRO-VOLTS AND SIGNAL, NO BURST)
- [] WILL VARY WITH BRIGHT. CONTROL (AVERAGE READINGS)
- [] WILL VARY WITH HEIGHT A LIM. CONTROL SETTINGS
- [] WILL VARY WITH COLOR KILLER SETTING
- DO NOT MEASURE VOLTAGES AT PINS OF IC91 AND IC92, MEASURE VOLTAGES AT COMPONENT NEAREST PIN

INTEGRATED CIRCUIT BASINGS TOP VIEW

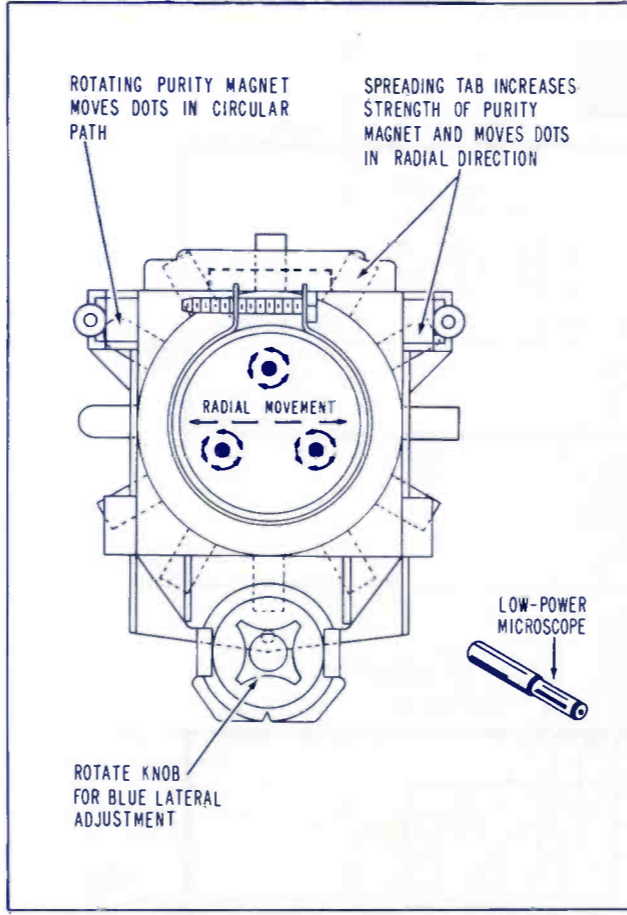
- LATE PROD ONLY WHEN USING R245 FUSISTOR WITH 32-10171-2 POWER TRANSFORMER SET ACTIVE FILTER TO 19V.
- RESISTANCES ARE MEASURED WITH TUBE & GND PANEL DISCONNECTED
- * ASTERISK INDICATES MISMATCHED PAIR OF RESISTORS
- [] CRITICAL SAFETY COMPONENT (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST)
- [] FEDERAL REGULATION (REPLACE WITH EXACT SPECIFIED PART AS INDICATED IN PARTS LIST)
- [] PERMA CIRCUIT PANEL GROUND
- [] CHASSIS GROUND

OSCILLOSCOPE WAVEFORM PATTERNS

These waveforms were taken with the receiver AGC control adjusted for an approximate peak-to-peak output of two volts at the video detector, using an air signal. Do not reset AGC control when using color bar generator. All monochrome voltages taken with average air signal and all chroma voltages taken with a color bar generator connected to the antenna input terminals. The chroma peak-to-peak voltages were taken with the chroma control set for 0.3V peak-to-peak at center tap of chroma control at M102 and the tint control set for proper color bars (approximately mid-range), color bar generator output set for +1.5 VDC at M109, all other controls set for normal viewing. The frequencies shown are those of the waveforms, not the sweep rate of the oscilloscope. All voltages taken with a wide band scope having a 5 MHz bandwidth similar to B&K Model 1450. Line voltage 120V.



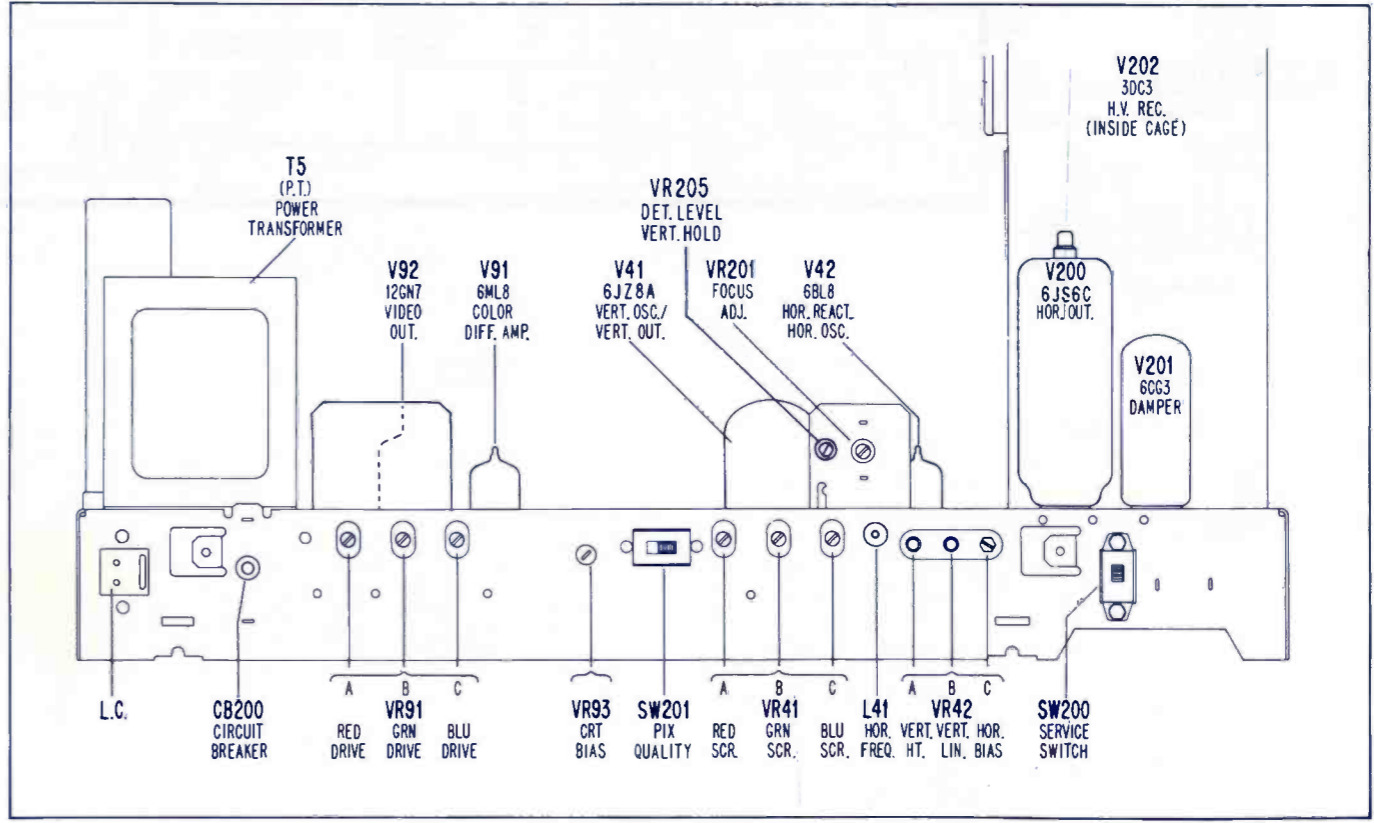
PHILCO-FORD
Color TV Chassis 3CS45



CENTER LANDING ADJUSTMENTS

CRT	
PIN	VOLTAGE
2 R-K	-270
3 R-G1	-50
4 P-G2	440 10 560
5 G-G2	48 10 460
6 G-K	270
7 G-1	R4
11 R-A	272
12 B-G1	40
13 B-G2	480 10 660

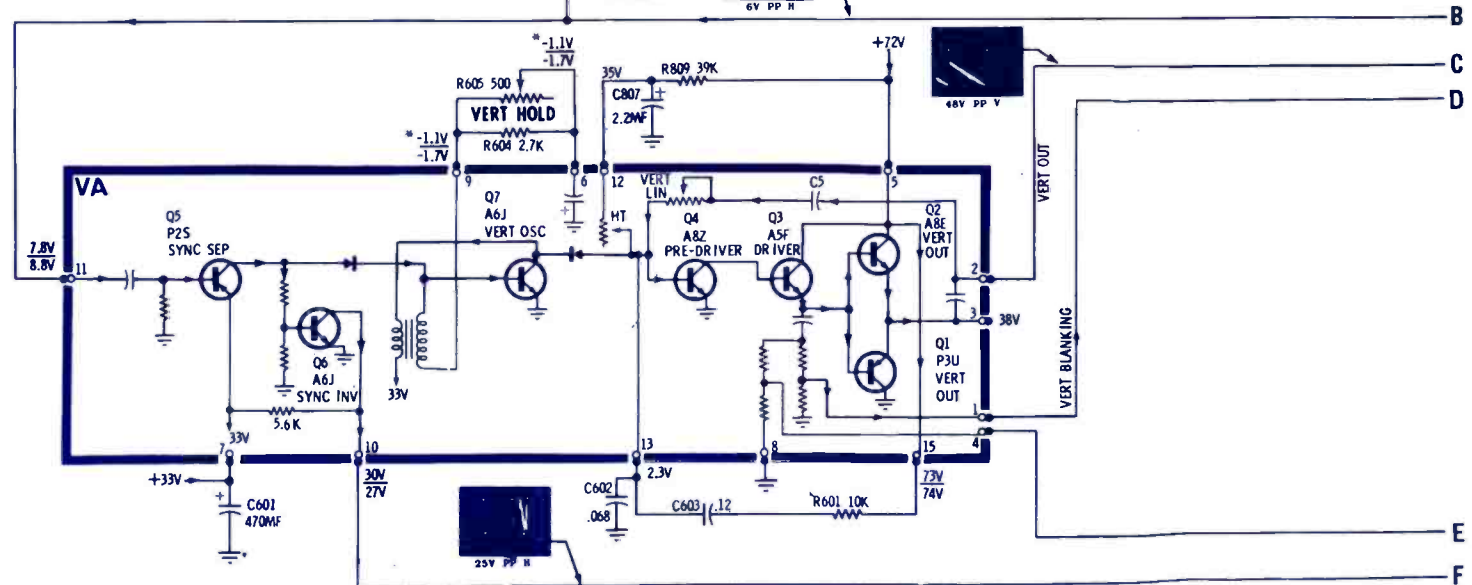
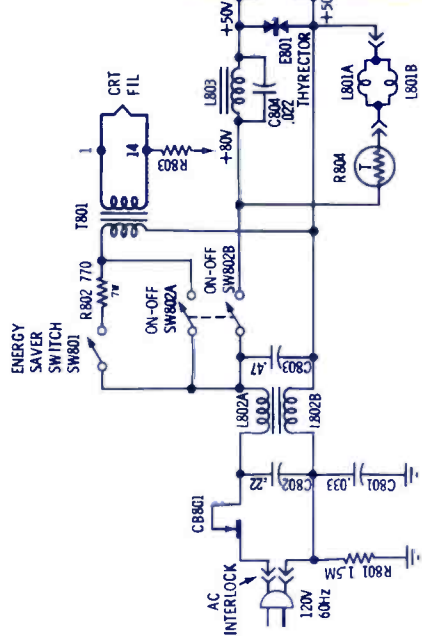
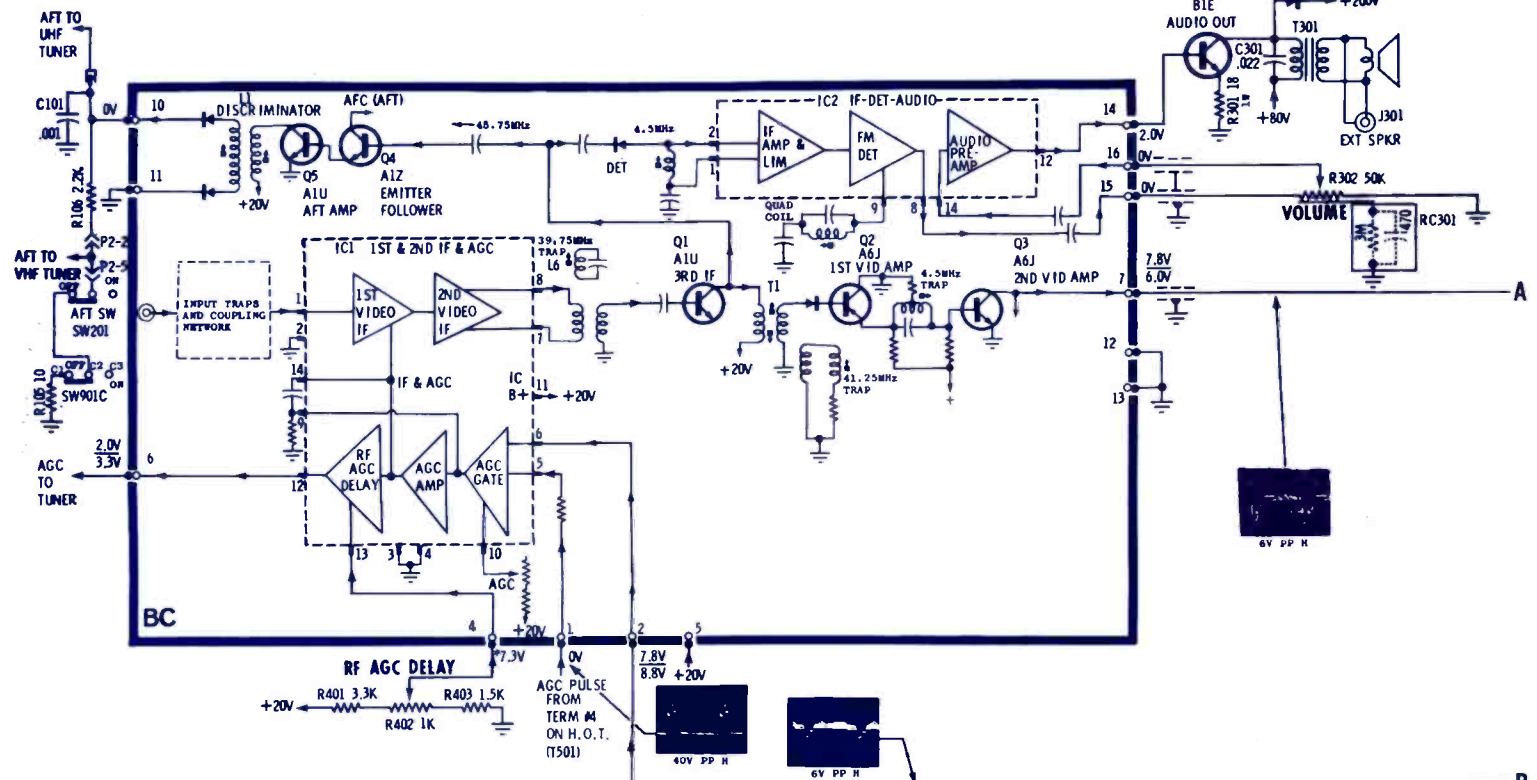
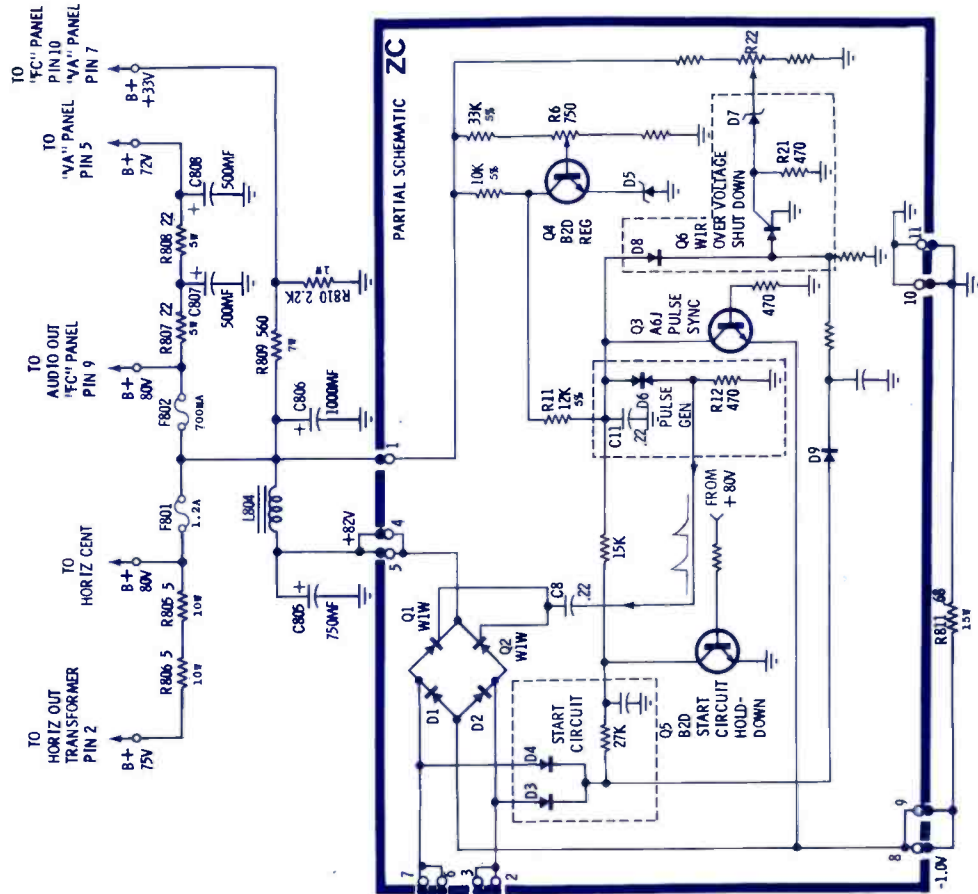
NOTES
CRT S-45
BRIGHTNESS FULL CCW
CONTRAST FULL CCW
CHROMA FULL CCW
SERVICE SW. NORMAL
LINE VOLTAGE 120VAC



CRT COLOR TEMPERATURE ADJ.

QUASAR

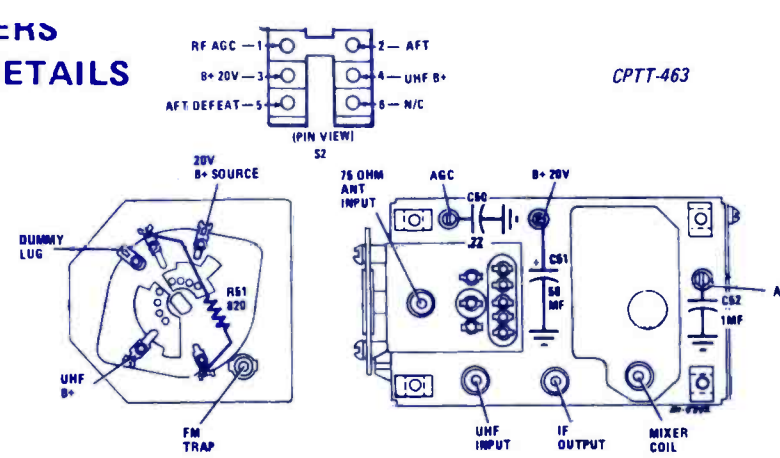
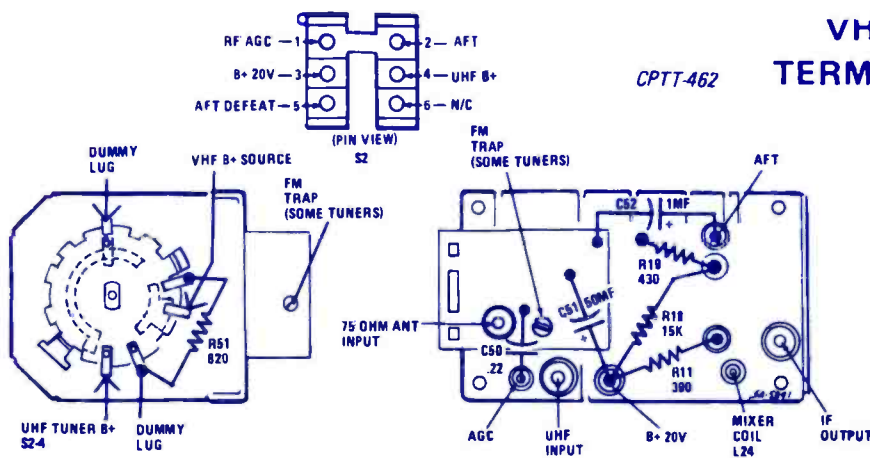
Color TV Chassis
17TS-941, C19, E19,
19TS-941



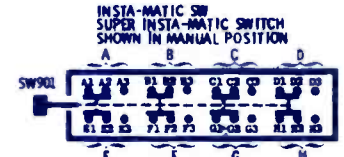
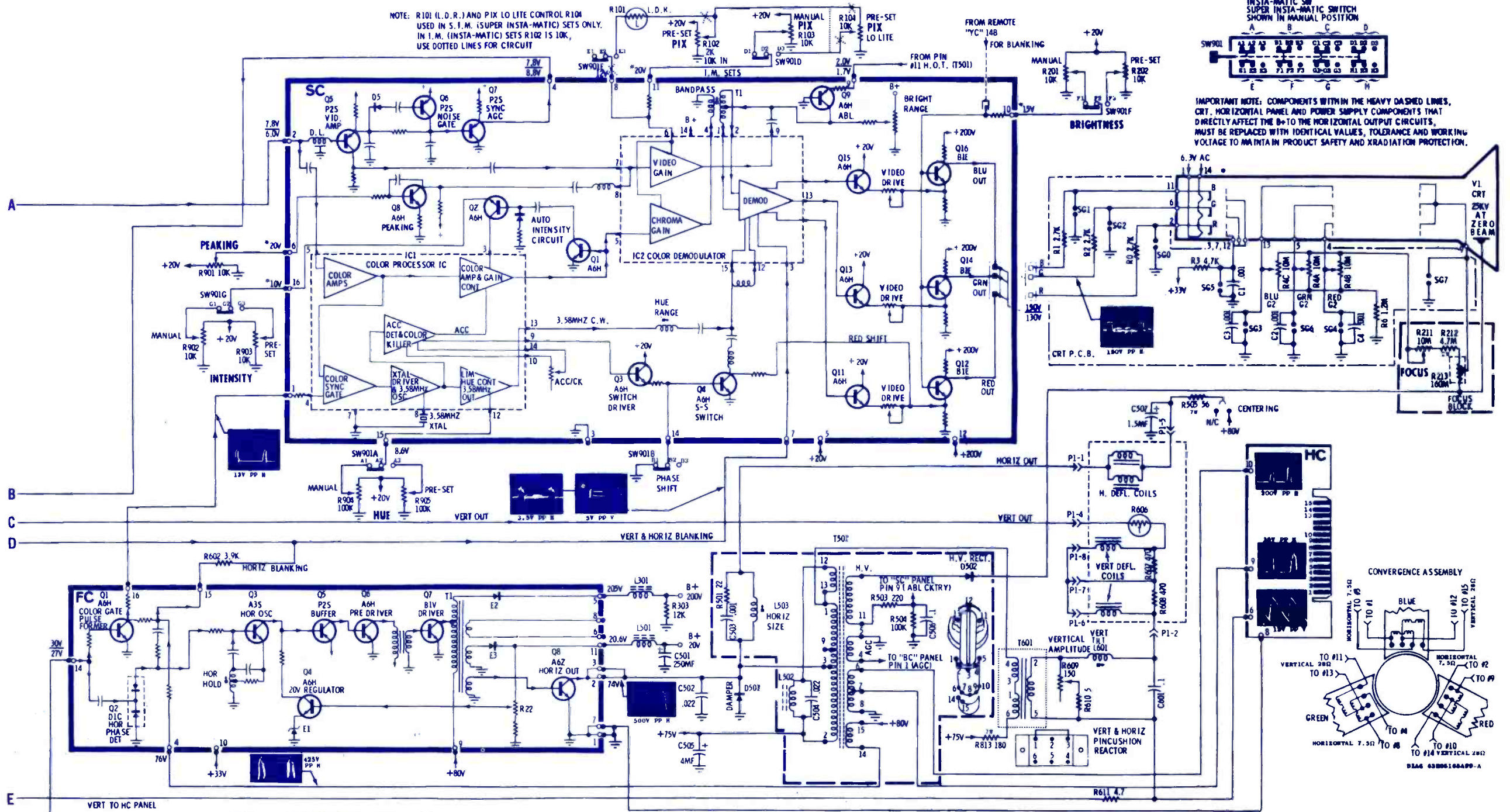
VHF TUNERS TERMINAL DETAILS

CPTT-462

CPTT-463



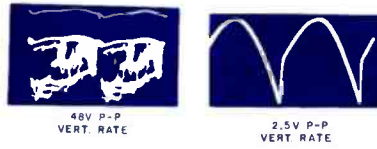
NOTE: R101 (L.D.R.) AND PIX LO LITE CONTROL R104 USED IN S.I.M. (SUPER INSTA-MATIC) SETS ONLY. IN I.M. (INSTA-MATIC) SETS R102 IS 10K, USE DOTTED LINES FOR CIRCUIT



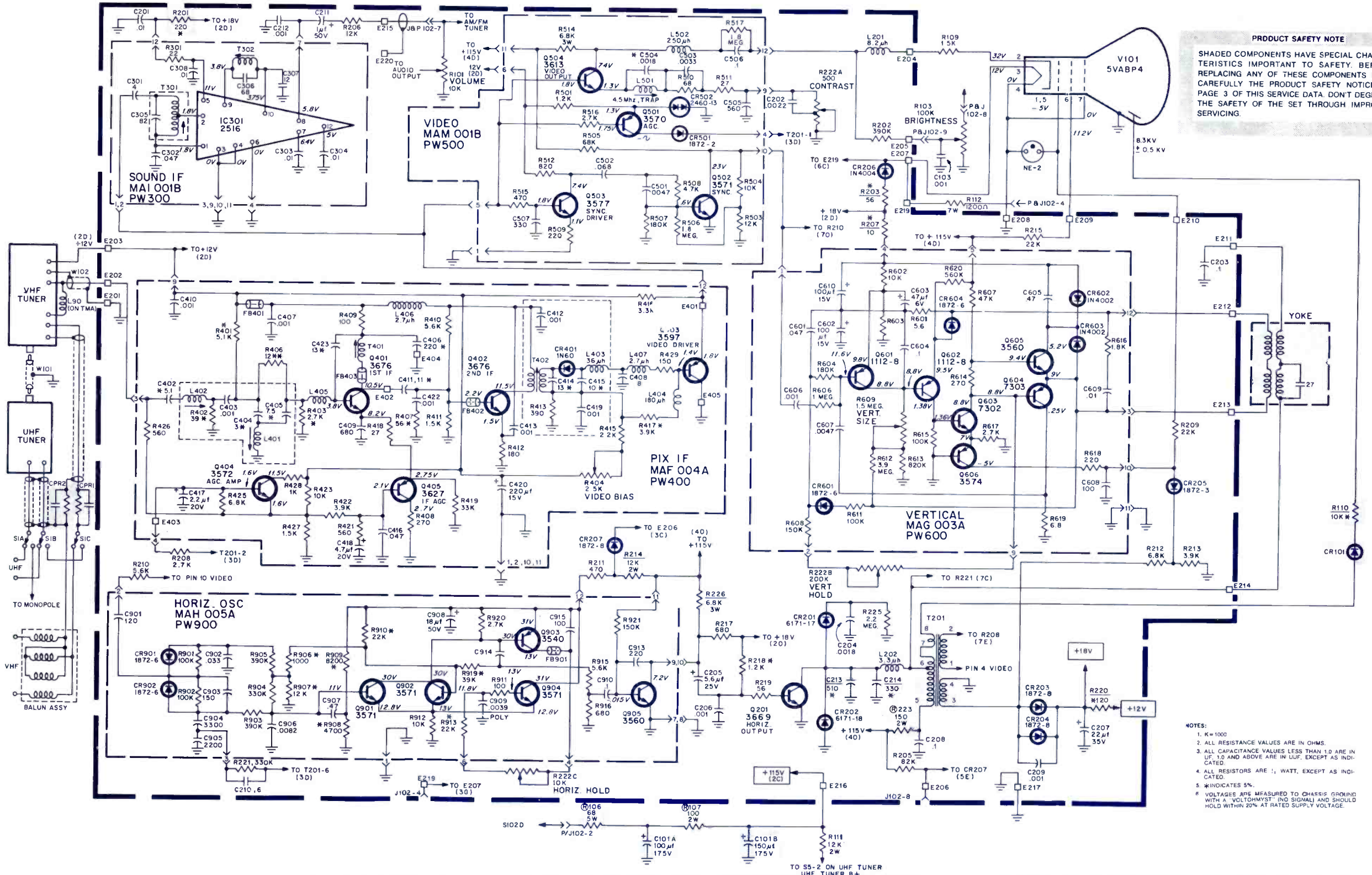
IMPORTANT NOTE: COMPONENTS WITHIN THE HEAVY DASHED LINES, CRT, HORIZONTAL PANEL AND POWER SUPPLY COMPONENTS THAT DIRECTLY AFFECT THE B+ TO THE HORIZONTAL OUTPUT CIRCUITS, MUST BE REPLACED WITH IDENTICAL VALUES, TOLERANCE AND WORKING VOLTAGE TO MAINTAIN PRODUCT SAFETY AND RADIATION PROTECTION.

QUASAR ELECTRONICS
Color TV Chassis 17TS-941,
C19, E19, 19TS-941

NOTE: ALL OFF PANEL CIRCUITS ARE SHOWN COMPLETE. ALL PANEL SCHEMATICS ARE SIMPLIFIED TO SHOW PANEL FUNCTIONS ONLY.



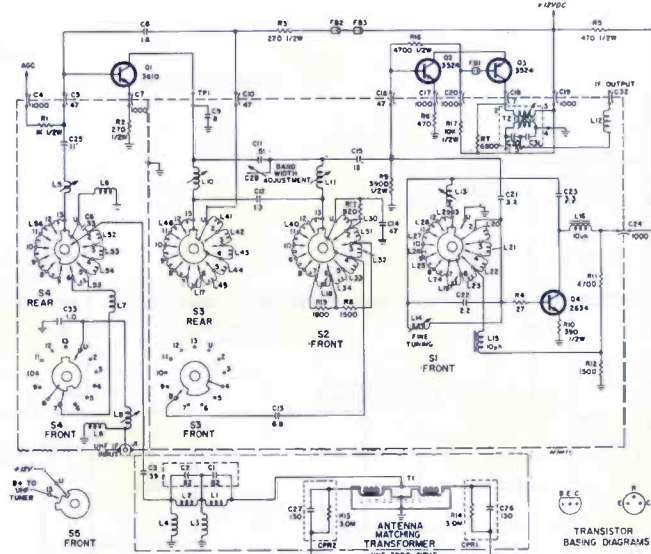
SYMBOL	DESCRIPTION	RCA PART NO.
C101	2 section elect	137324
CPR1	circuit encapsulated	132650
CPR2	circuit encapsulated	132650
F101	fuse	137325
	yoke, deflection assembly	137347
T301	x-former	130120
T302	x-former	130121
PW400	module, complete MAF004A	137326
PW500	module, complete MAM001B	131951
PW600	module, complete MAG003A	137327
PW900	module, complete MAH005A	137328



PRODUCT SAFETY NOTE

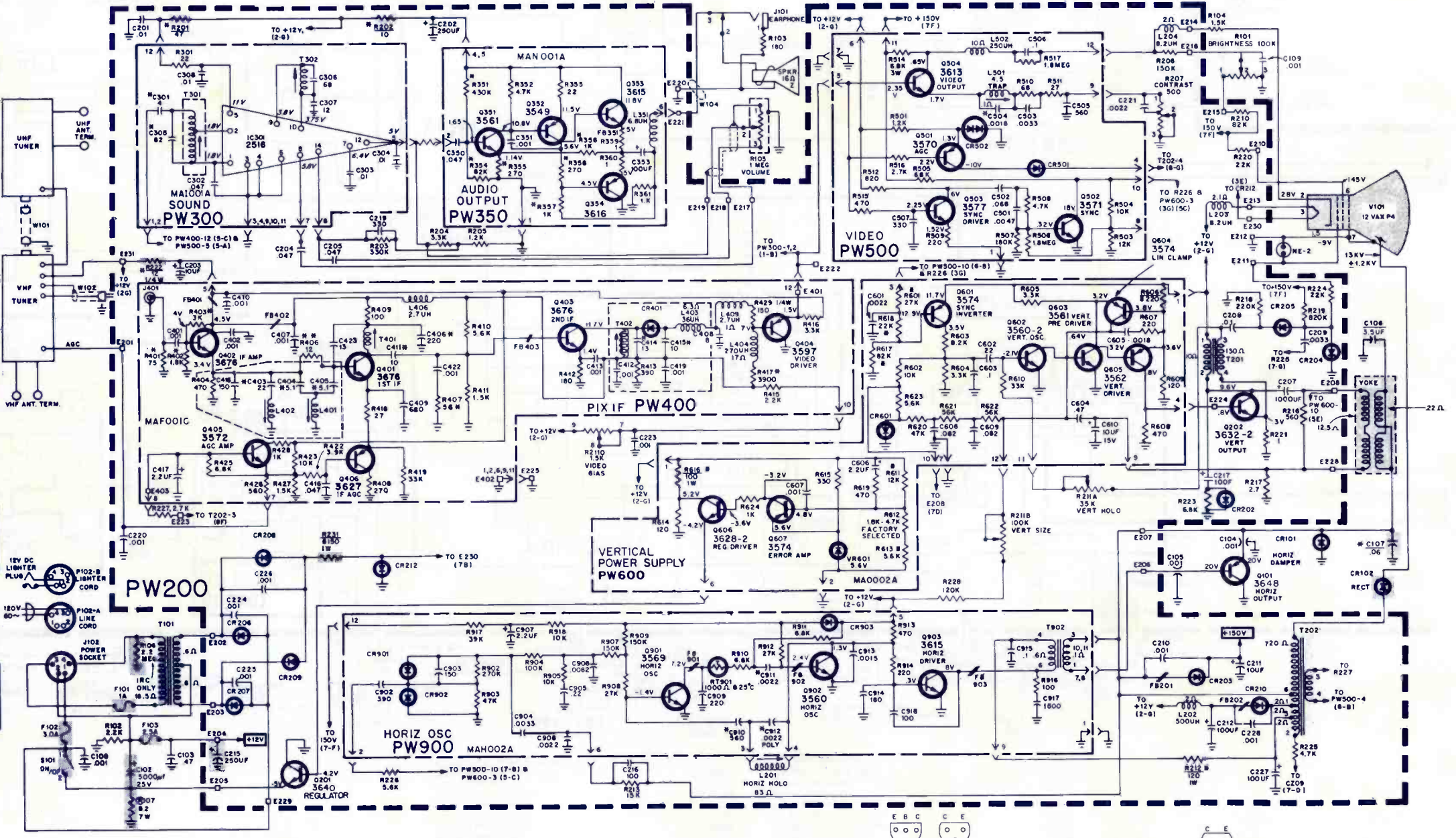
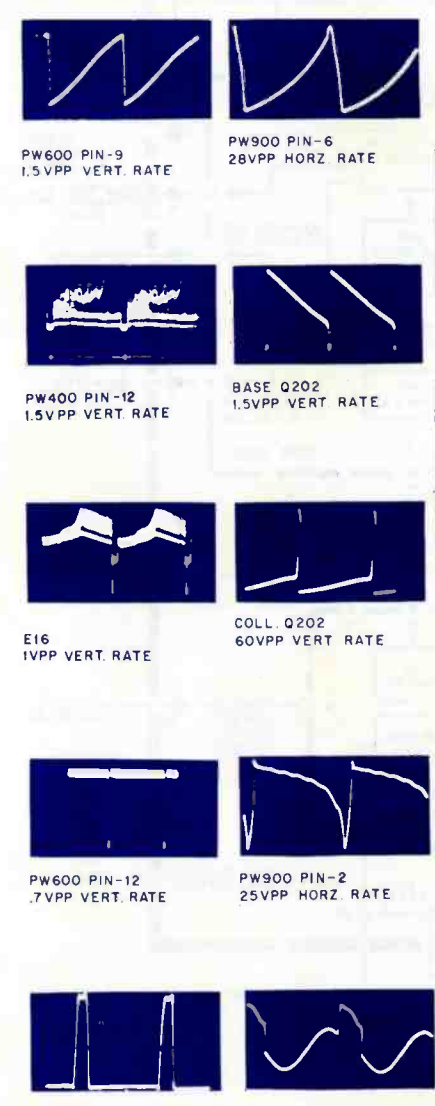
SHADED COMPONENTS HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS READ CAREFULLY THE PRODUCT SAFETY NOTICE ON PAGE 3 OF THIS SERVICE DATA. DON'T DEGRADE THE SAFETY OF THE SET THROUGH IMPROPER SERVICING.

- NOTES:**
1. K=1000
 2. ALL RESISTANCE VALUES ARE IN OHMS.
 3. ALL CAPACITANCE VALUES LESS THAN 1.0 ARE IN UF, 1.0 AND ABOVE ARE IN UF, EXCEPT AS INDICATED.
 4. ALL RESISTORS ARE 1/2 WATT, EXCEPT AS INDICATED.
 5. *INDICATES 5%.
 6. VOLTAGES ARE MEASURED TO CHASSIS GROUND WITH A VOLTMETER (NO SIGNAL) AND SHOULD HOLD WITHIN 20% AT RATED SUPPLY VOLTAGE.

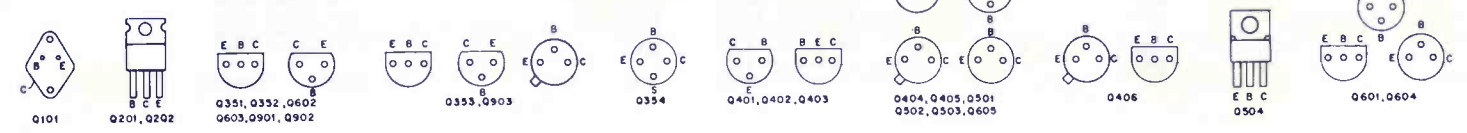


KRK 176B/150A
TUNER SCHEMATICS

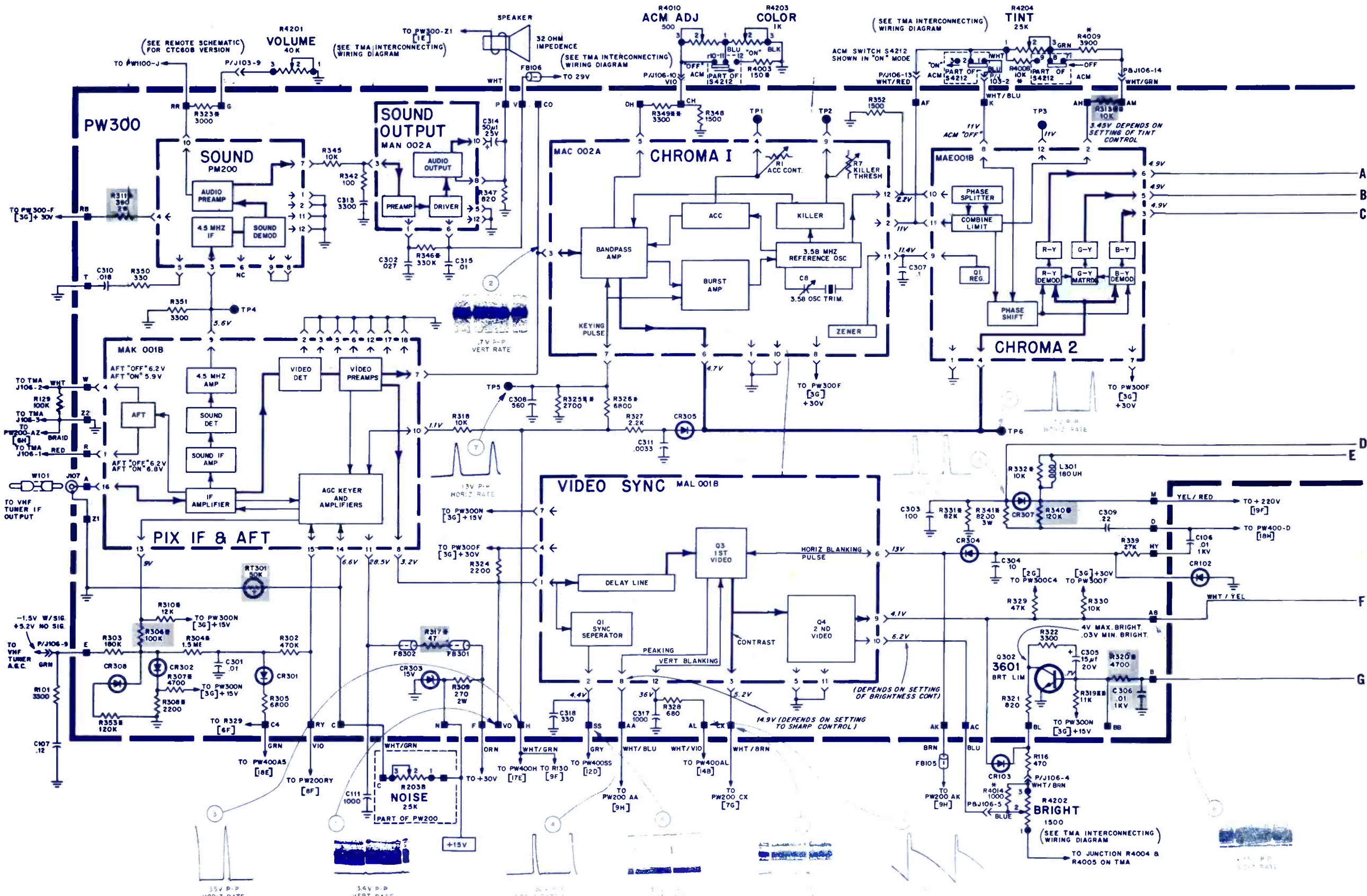
SYMBOL	DESCRIPTION	RCA PART NO.
R101	control, brite	128154
R105	control, volume w/s101	128153
T101	power xformer	135812
R207	control, contrast	132554
R211	control, vert hold, size/bias	131794
T202	x-former, high voltage	135746
	yoke deflect	135733
1C301	circuit, integ	130751
T902	x-former sound output	132848

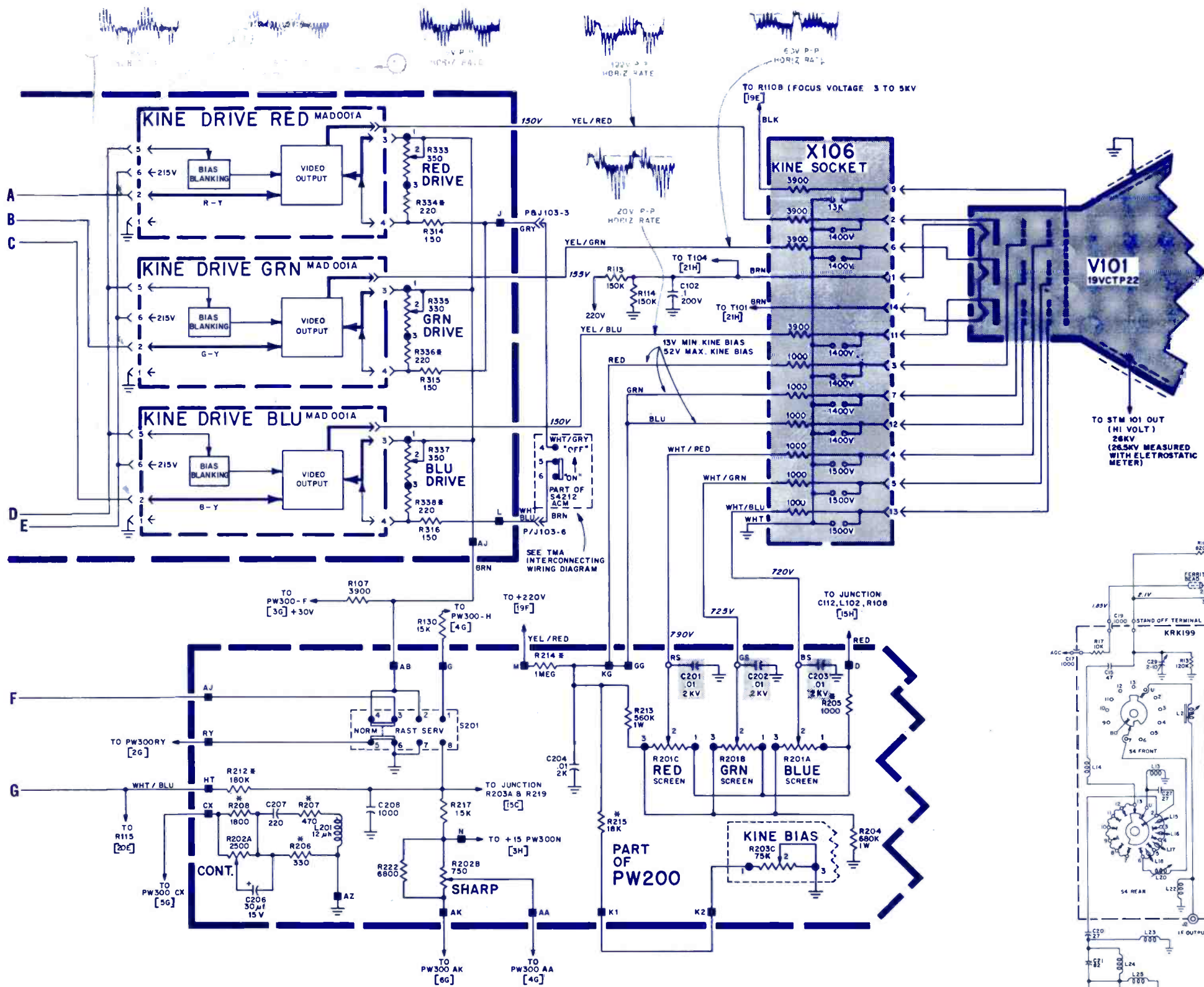


RCA CORP.
TV Chassis
KCS187

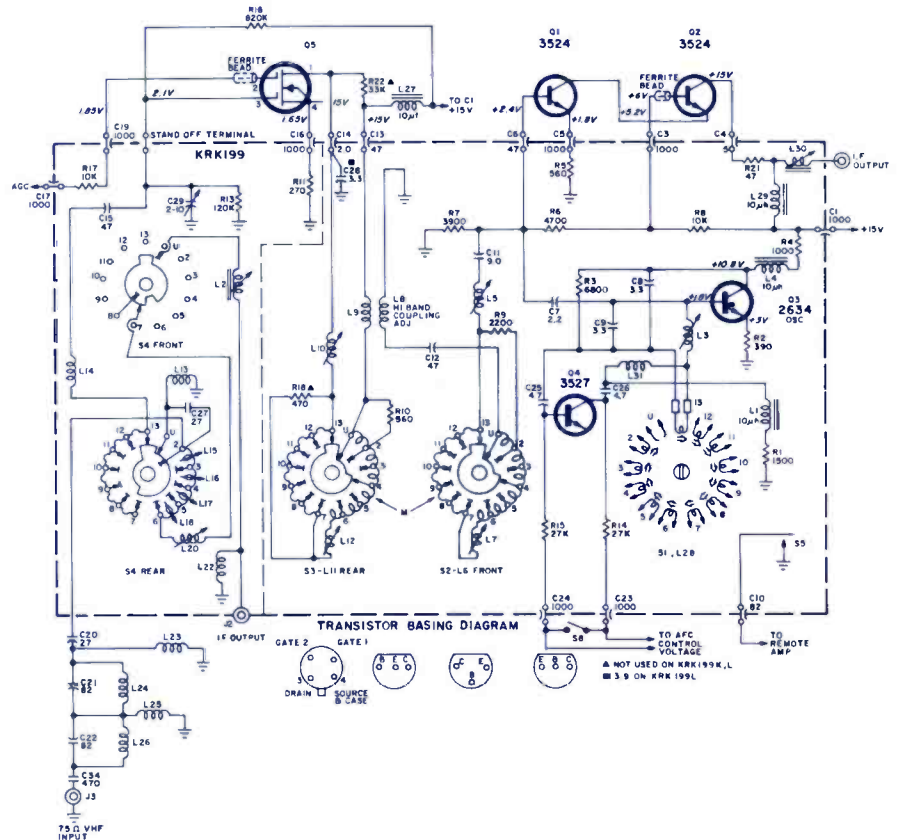


SYMBOL	DESCRIPTION	RCA PART NO.
R4201	control, volume	137475
R4202	control, brightness	137477
R4203	control, color	137476
R4204	control, tint	137478
C103	3 section elect	132588
C104	3 section elect	132380
C105	3 section elect	132644
CB101	circuit breaker	138123
T101	x-former	132594
R201A	control blue screen	132163
R201B	control green screen	132163
R201C	control red screen	132163
R202A	control contrast	137668
R202B	control sharp	137668
R202C	control vert hold	137668
R203A	control vert height	137669
R203B	control noise	137669
R203C	control kine bias	137669
RT301	thermistor	116109
T401	x-former	137674
RV1101	varistor	133589
R7	control killer	132170
R9	control ACM adj yoke, deflection	133497

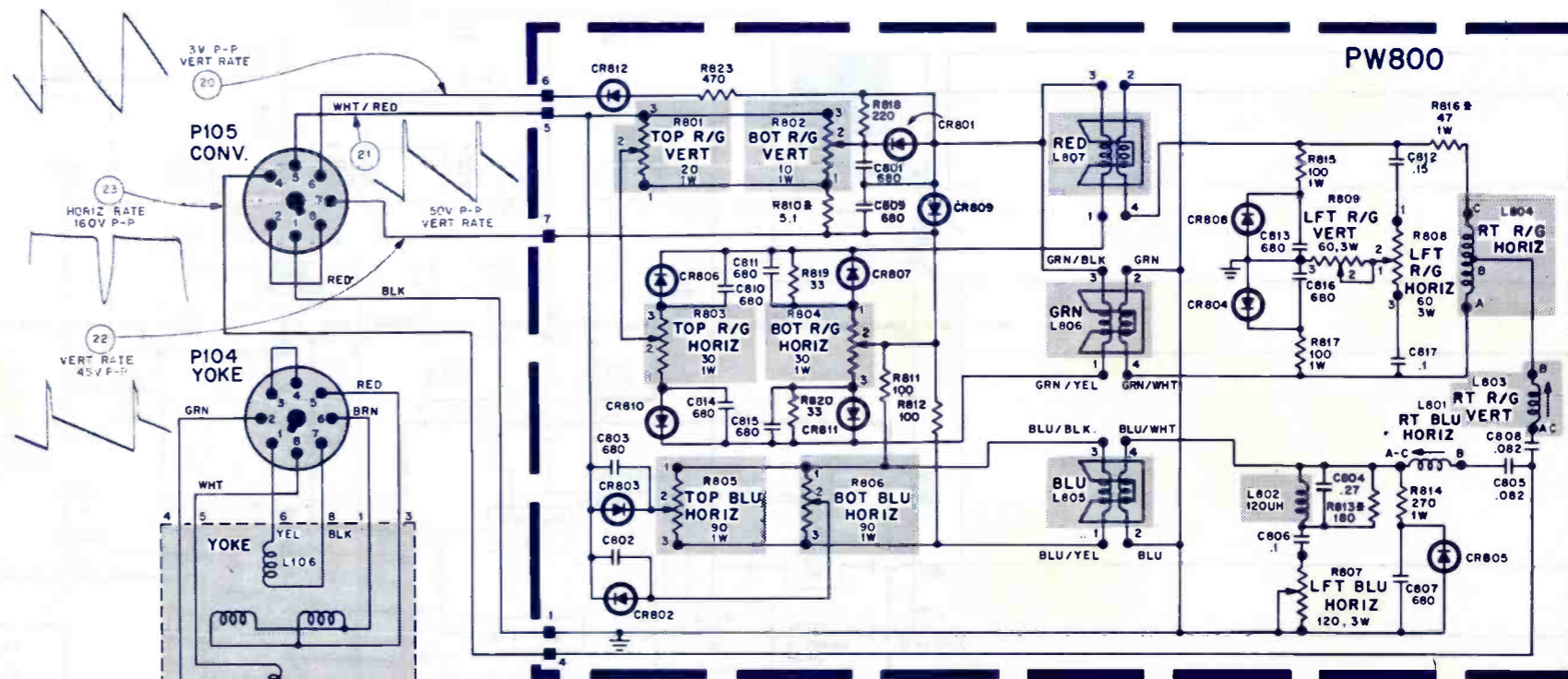




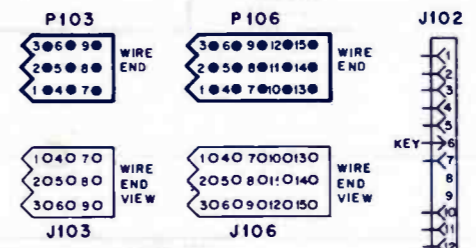
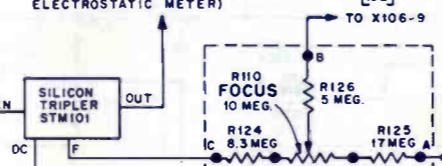
TUNER SCHEMATIC



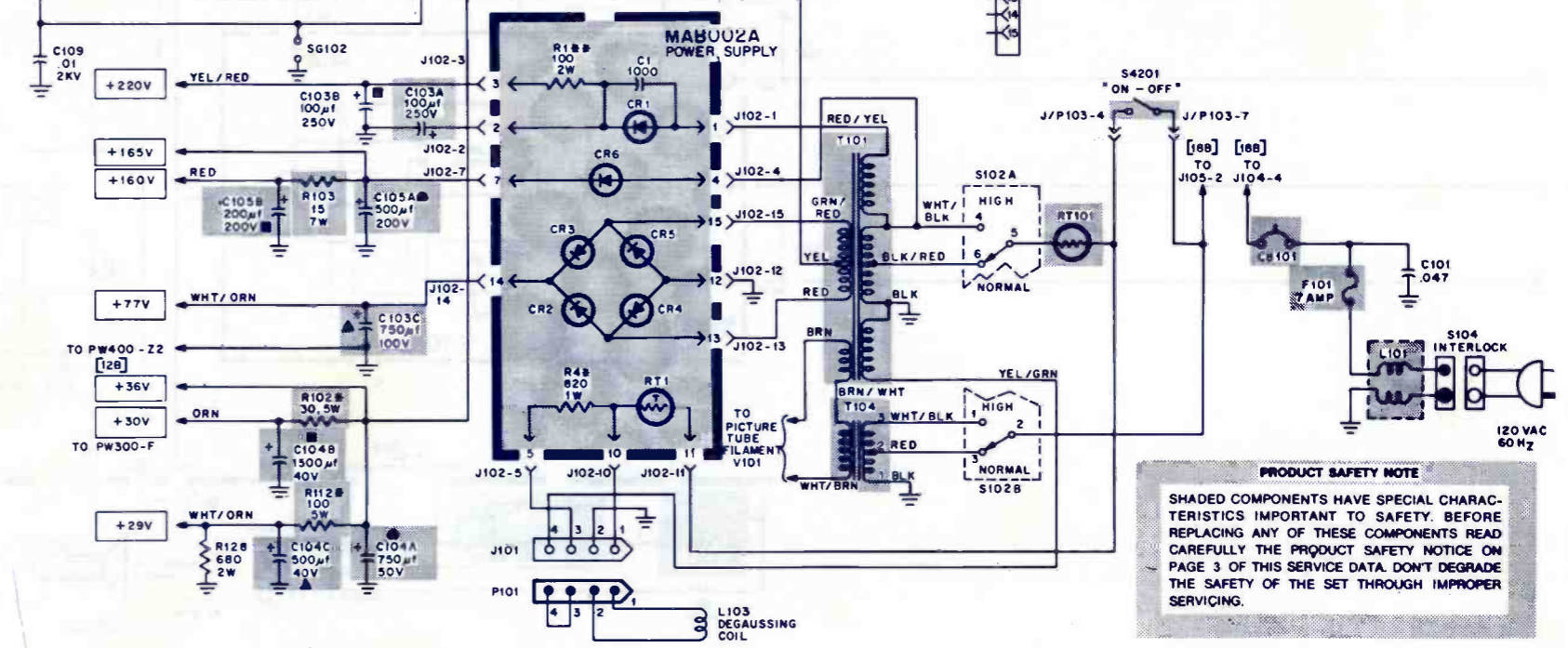
RCA SALES CORP.
 Color-TV Chassis
 CTC60 Series



TO PICTURE TUBE ULTOR ANODE
26KV (26.5KV MEASURED WITH
ELECTROSTATIC METER)



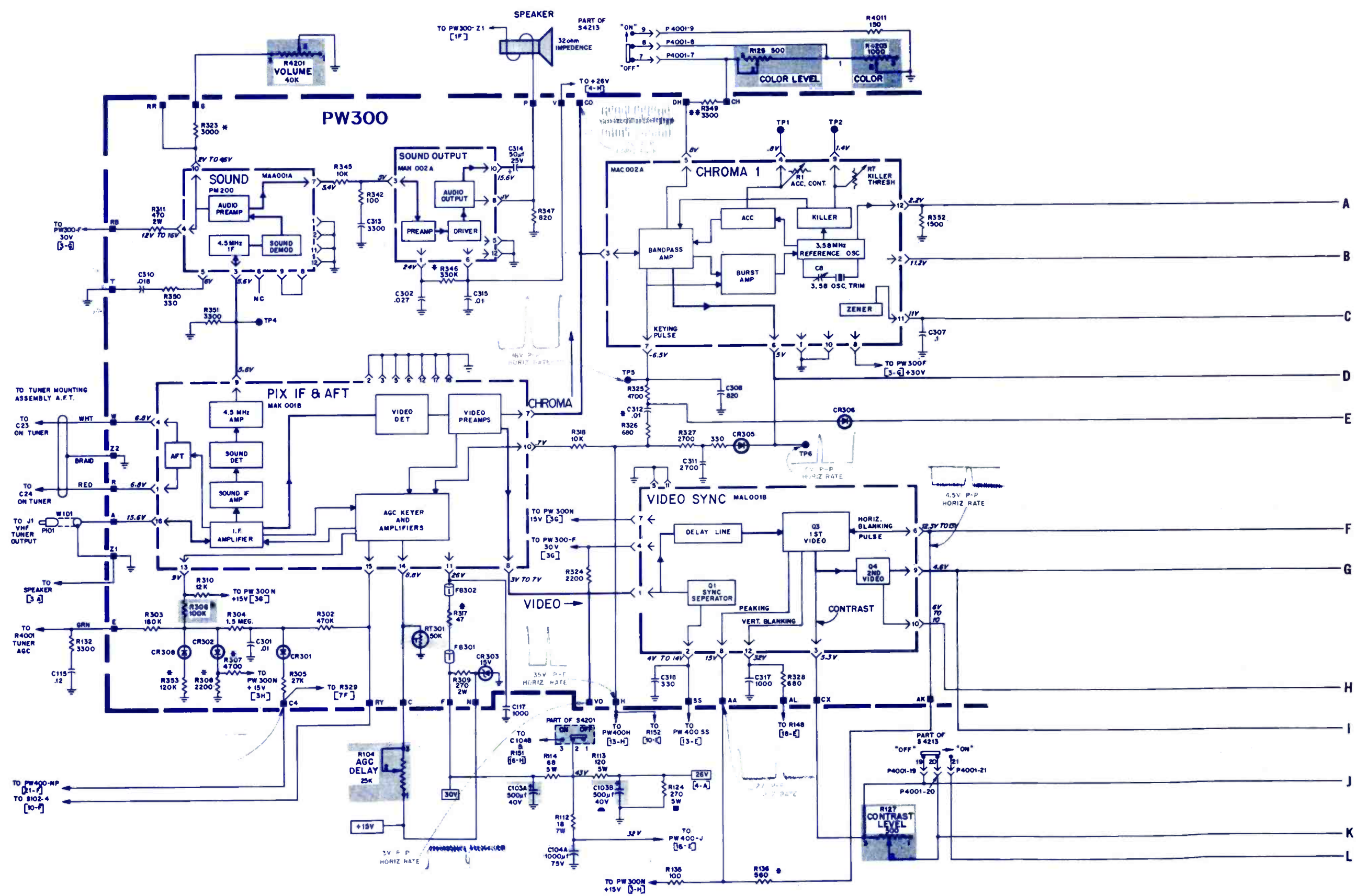
- NOTES**
1. RESISTANCE VALUES ARE IN OHMS K=1000.
 2. CAPACITANCE VALUES 1.0 AND ABOVE ARE IN μ F, LESS THAN 1.0 ARE IN μ F, UNLESS OTHERWISE SPECIFIED.
 3. # INDICATES 5% TOLERANCE.
 4. ## INDICATES 2% TOLERANCE.
 5. VOLTAGES ARE MEASURED TO CHASSIS GROUND WITH A "VOLTMYST" (NO SIGNAL APPLIED) AND SHOULD HOLD WITHIN $\pm 20\%$ AT RATED SUPPLY VOLTAGE. VOLTAGES SHOULD HAVE A POSITIVE POTENTIAL UNLESS OTHERWISE SPECIFIED.
 6. WAVEFORMS TAKEN WITH COLOR BAR (DOT-BAR) GENERATOR SIGNAL APPLIED AT 100% MODULATION.



PRODUCT SAFETY NOTE

SHADED COMPONENTS HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS READ CAREFULLY THE PRODUCT SAFETY NOTICE ON PAGE 3 OF THIS SERVICE DATA. DON'T DEGRADE THE SAFETY OF THE SET THROUGH IMPROPER SERVICING.

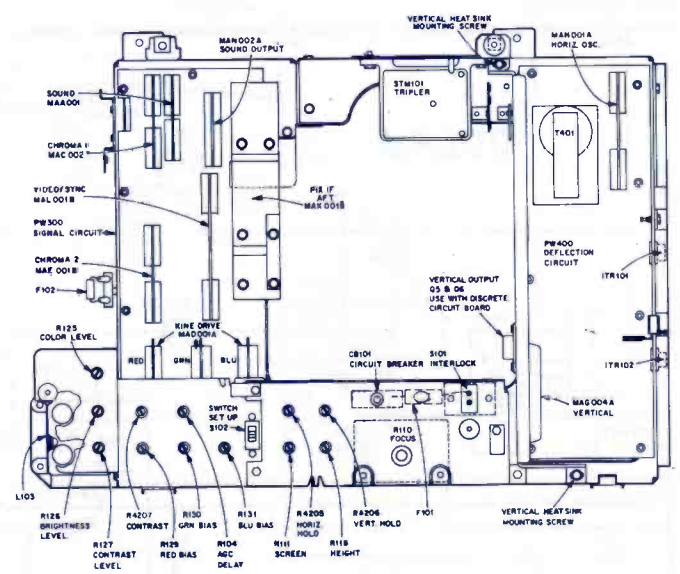
RCA CORP.
Color-TV Chassis
CTC62



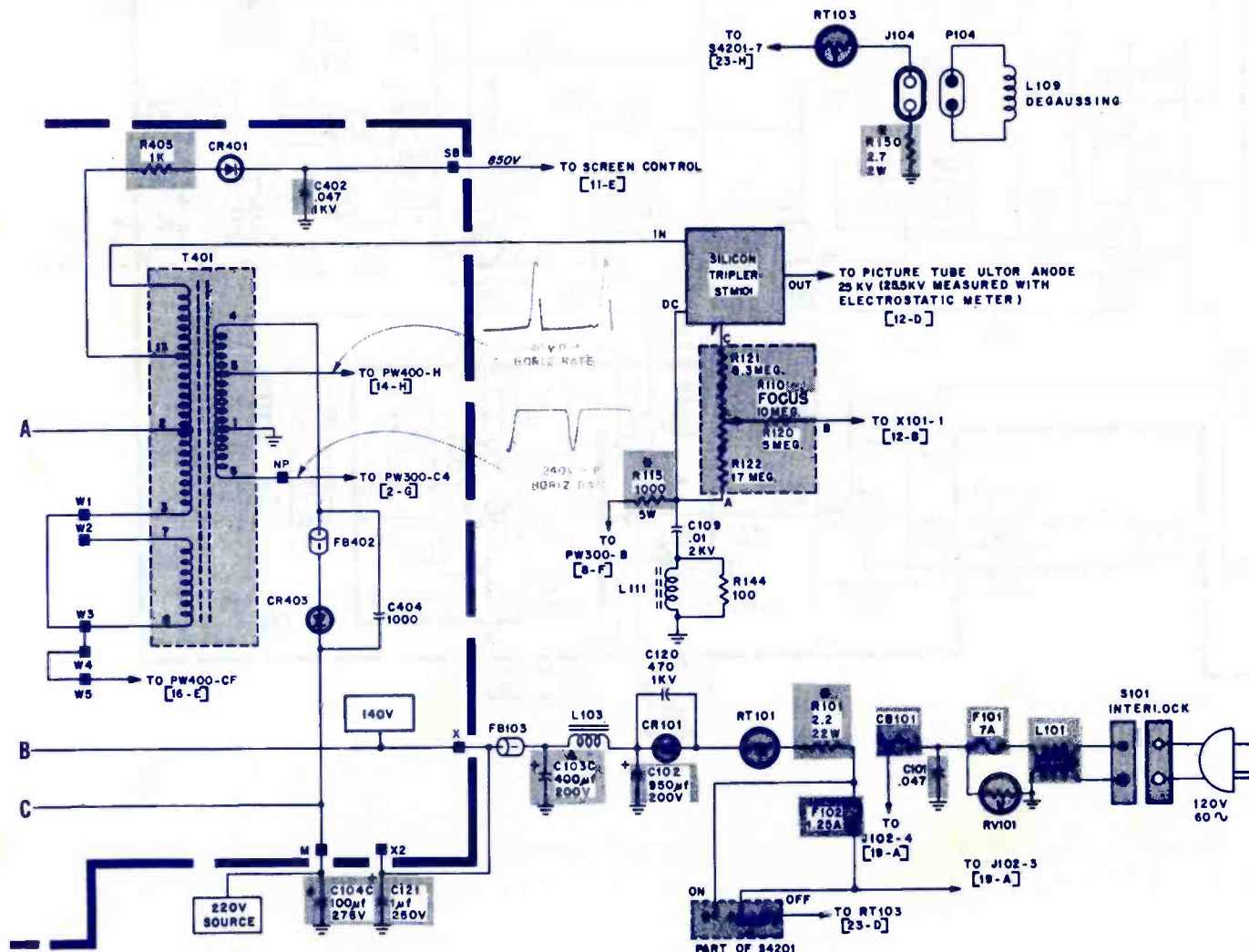
NOTES:

1. RESISTANCE VALUES ARE IN OHMS X=1000.
2. CAPACITANCE VALUES 1.0 AND ABOVE ARE IN μ F, LESS THAN 1.0 ARE IN μ F, UNLESS OTHERWISE SPECIFIED.
3. # INDICATES 5% TOLERANCE.
4. 2# INDICATES 2% TOLERANCE.
5. VOLTAGES ARE MEASURED TO CHASSIS GROUND WITH A "VOLTOHMIST" (NO SIGNAL APPLIED) AND SHOULD HOLD WITHIN 20% AT RATED SUPPLY VOLTAGE. VOLTAGES SHOULD HAVE A POSITIVE POTENTIAL UNLESS OTHERWISE SPECIFIED.
6. WAVEFORMS TAKEN WITH COLOR BAR (DOT - BAR) GENERATOR SIGNAL APPLIED AT 100% MODULATION.
7. ON/OFF SWITCH (S4201) IN OFF POSITION.

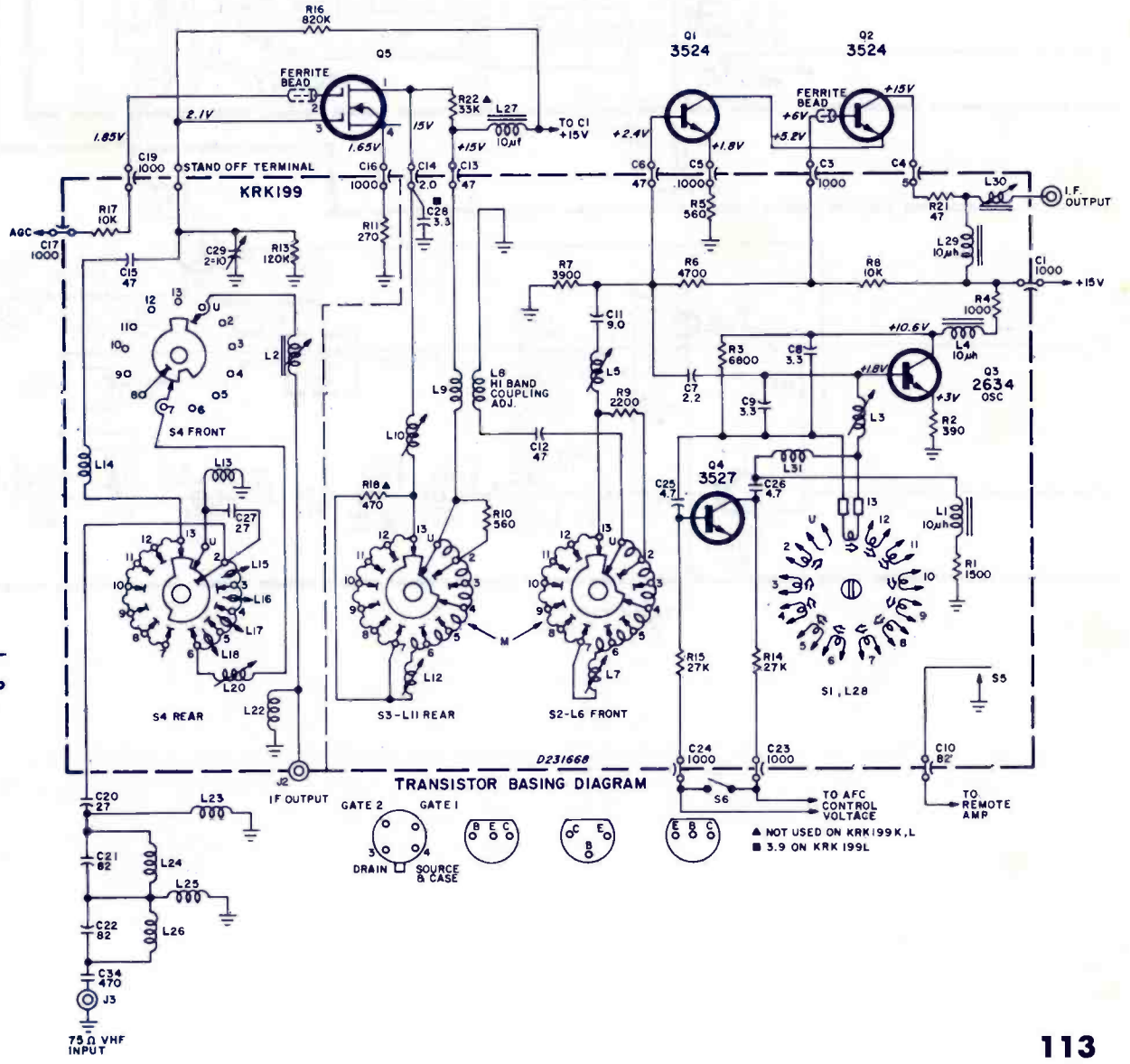
PRODUCT SAFETY NOTE
 SHADED COMPONENTS HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS READ CAREFULLY THE PRODUCT SAFETY NOTICE ON PAGE 3 OF THIS SERVICE DATA. DON'T DEGRADE THE SAFETY OF THE SET THROUGH IMPROPER SERVICING.



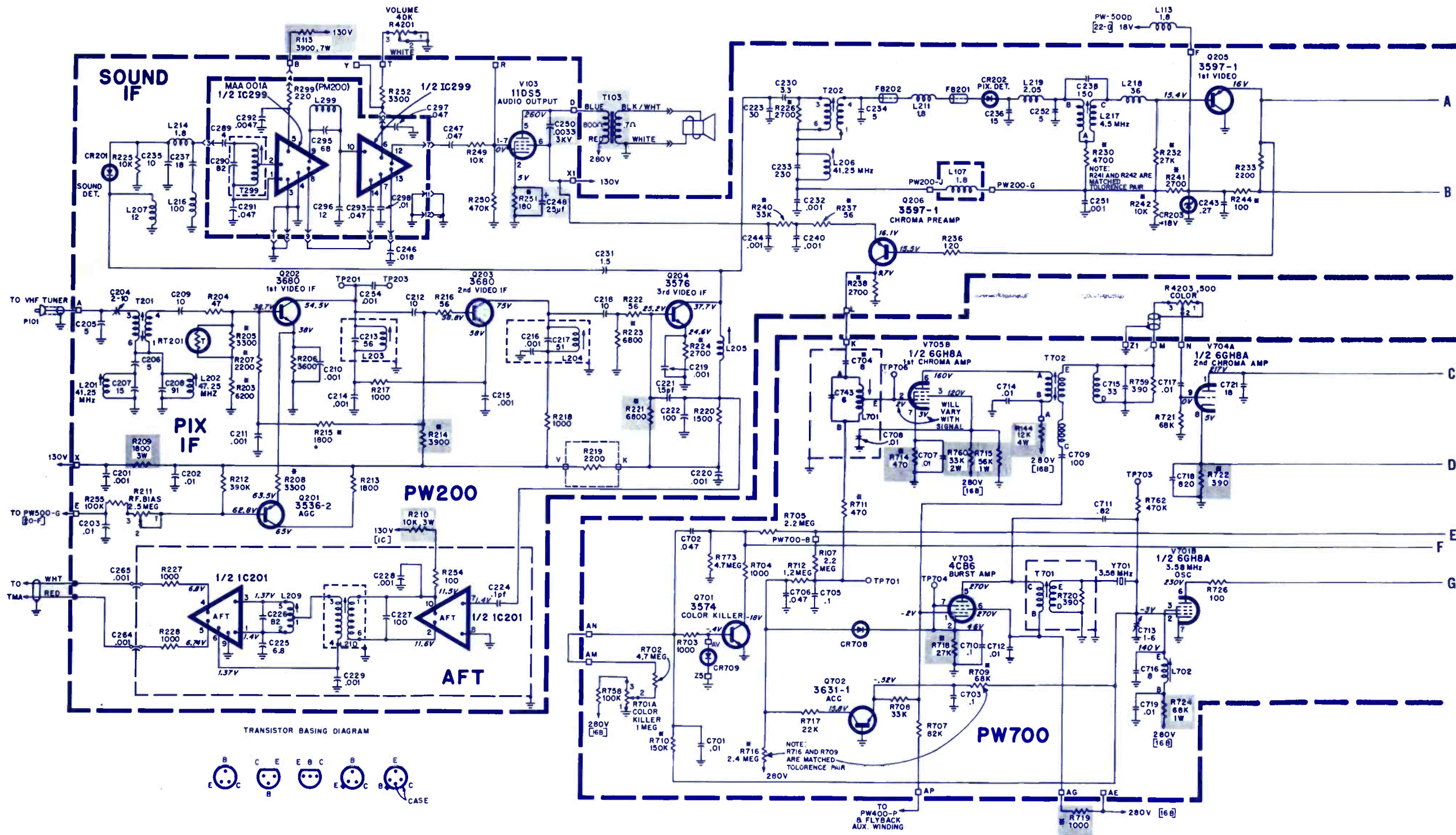
SYMBOL	DESCRIPTION	RCA PART NO.
C103	- 3 section elect	138011
C104	- 3 section elect	138012
CB101	- breaker-circuit	138017
1TR101	- thyristor	138032
1TR102	- thyristor	138033
R104	- control noise	138021
R110	- control focus	135696
R118	- control vert height	138026
R125	- control, color level	138156
R126	- control, brite level	138155
R127	- control, contrast level	138154
R4205	- control horiz hold	138027
R4206	- control vert hold	138025
R4207	- control contrast	138020
RT301	- therm	116109
RT401	- therm	137240
T401	- x-former, high voltage	138164
1C299	- circuit-integ	130751
L299	- coil discrim	130121
T299	- x-former sound	130120
R1	- control ACC adj	132170
R7	- control killer	132170
L1	- coil	132137
L2	- coil	132821
L4	- coil	136692
L2	- coil	126834
R15	- control horiz adj	132170
T1	- x-former driver	126729
L7	- chroma take-off	132136
T1	- x-former trap	132839
T2	- x-former trap	132157

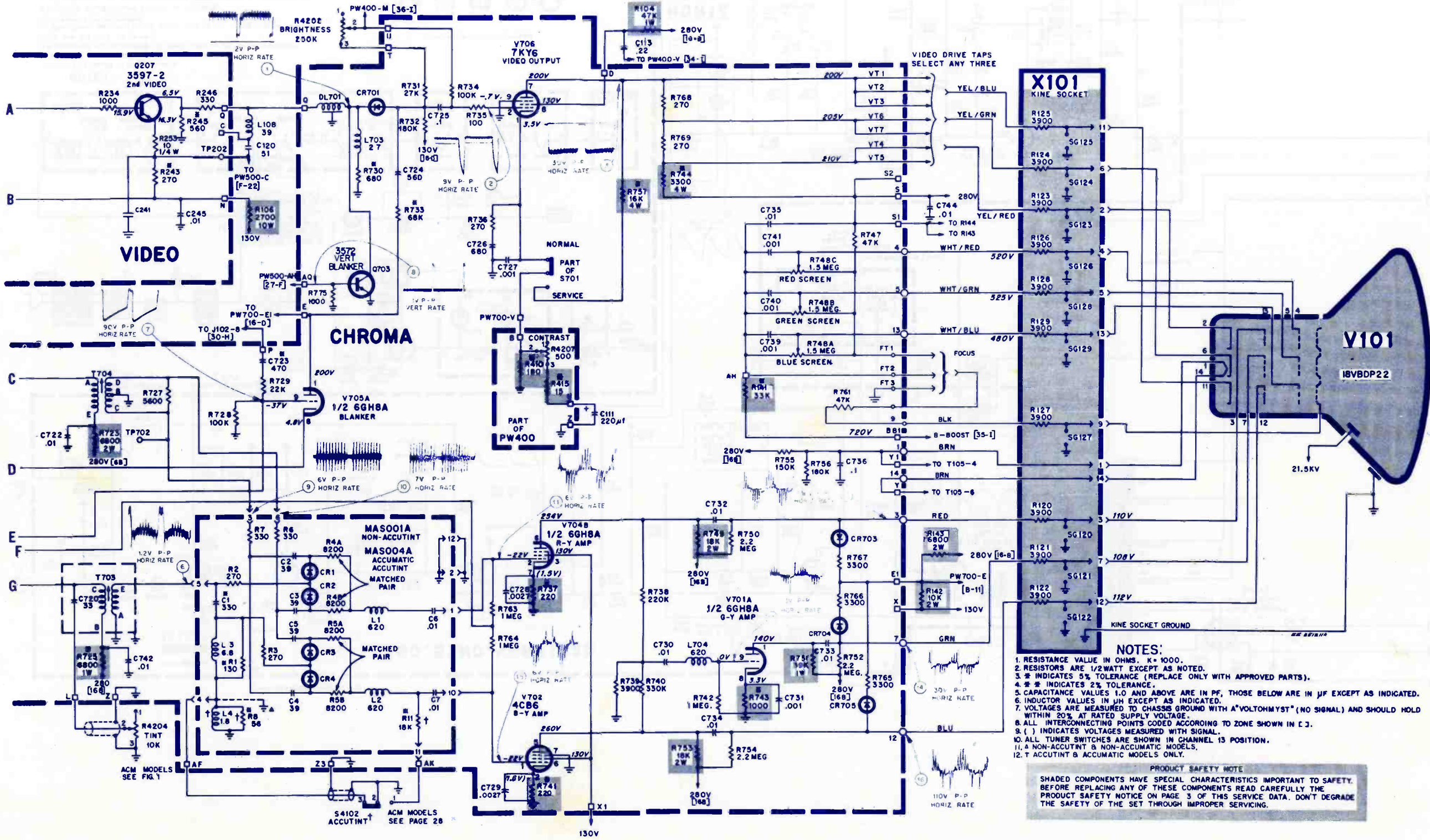


KRK 199, KRK 207 TUNER SCHEMATIC



RCA CORP.
 Color-TV Chassis
 CTC62



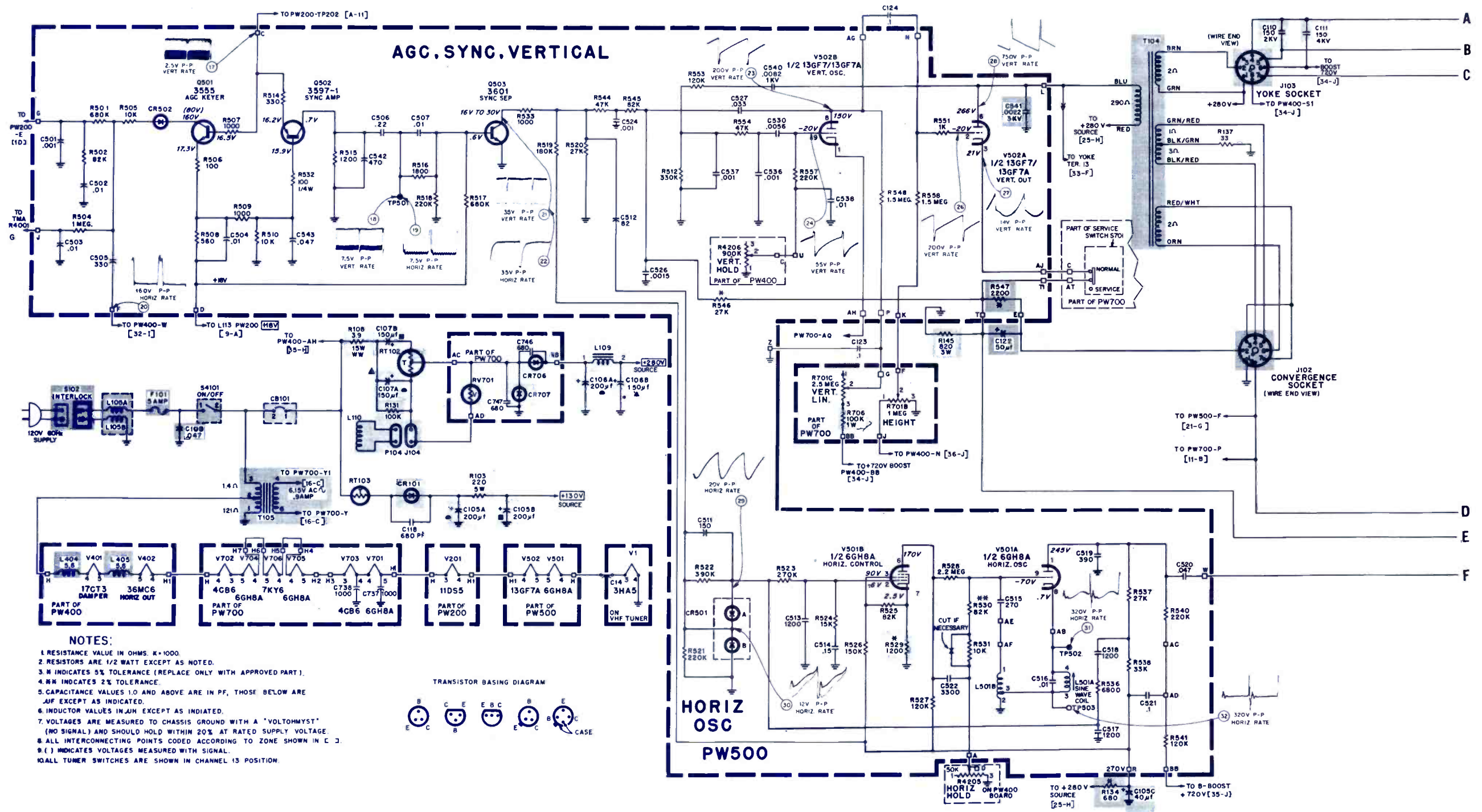


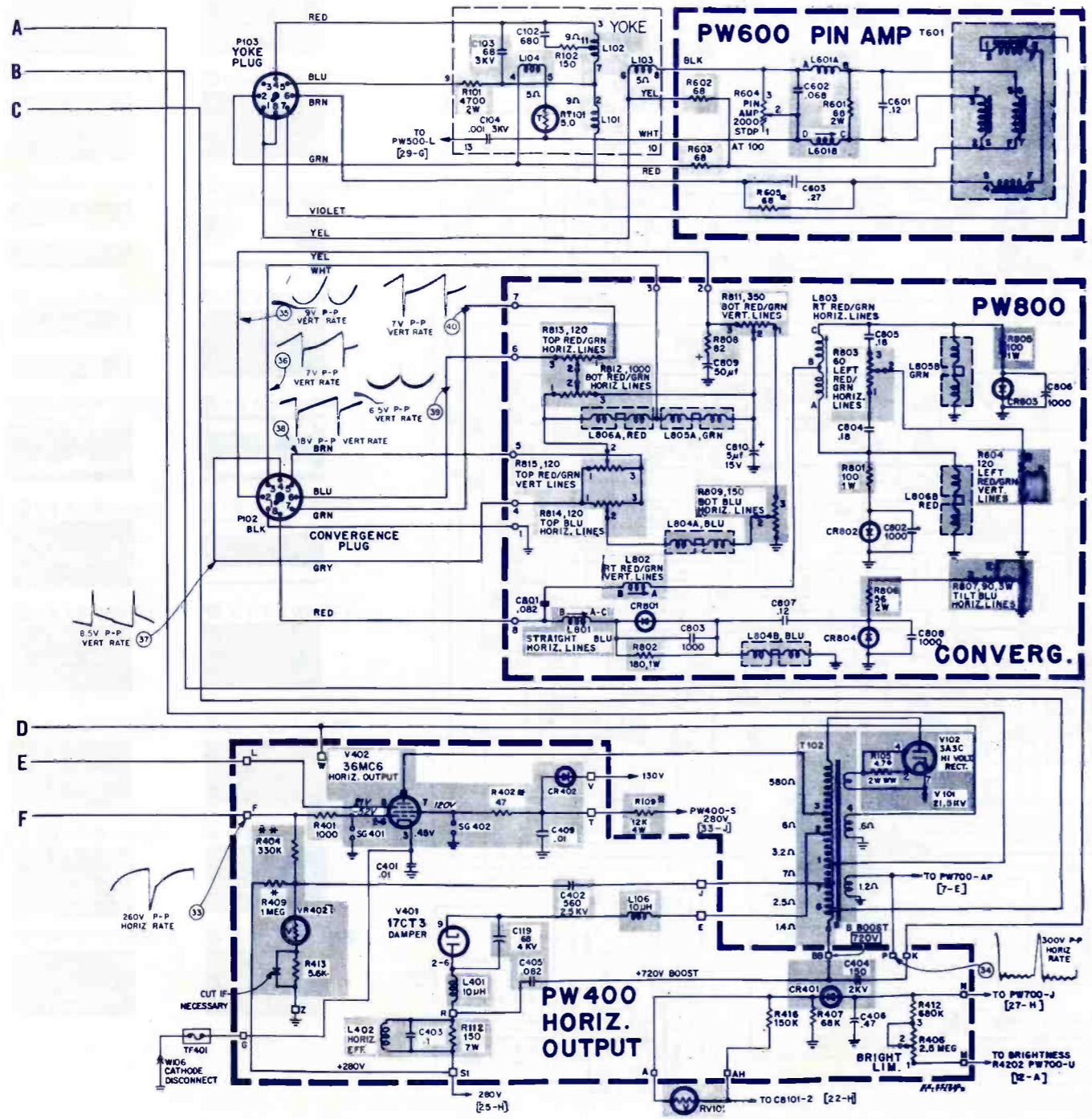
- NOTES:**
1. RESISTANCE VALUE IN OHMS. K = 1000.
 2. RESISTORS ARE 1/2WATT EXCEPT AS NOTED.
 3. * INDICATES 5% TOLERANCE (REPLACE ONLY WITH APPROVED PARTS).
 4. ** INDICATES 2% TOLERANCE.
 5. CAPACITANCE VALUES 1.0 AND ABOVE ARE IN PF, THOSE BELOW ARE IN μ F EXCEPT AS INDICATED.
 6. INDUCTOR VALUES IN μ H EXCEPT AS INDICATED.
 7. VOLTAGES ARE MEASURED TO CHASSIS GROUND WITH A "VOLTOHMYST" (NO SIGNAL) AND SHOULD HOLD WITHIN 20% AT RATED SUPPLY VOLTAGE.
 8. ALL INTERCONNECTING POINTS CODED ACCORDING TO ZONE SHOWN IN C.3.
 9. () INDICATES VOLTAGES MEASURED WITH SIGNAL.
 10. ALL TUNER SWITCHES ARE SHOWN IN CHANNEL 13 POSITION.
 11. A NON-ACCUTINT & NON-ACCUMATIC MODELS.
 12. T ACCUTINT & ACCUMATIC MODELS ONLY.

PRODUCT SAFETY NOTE

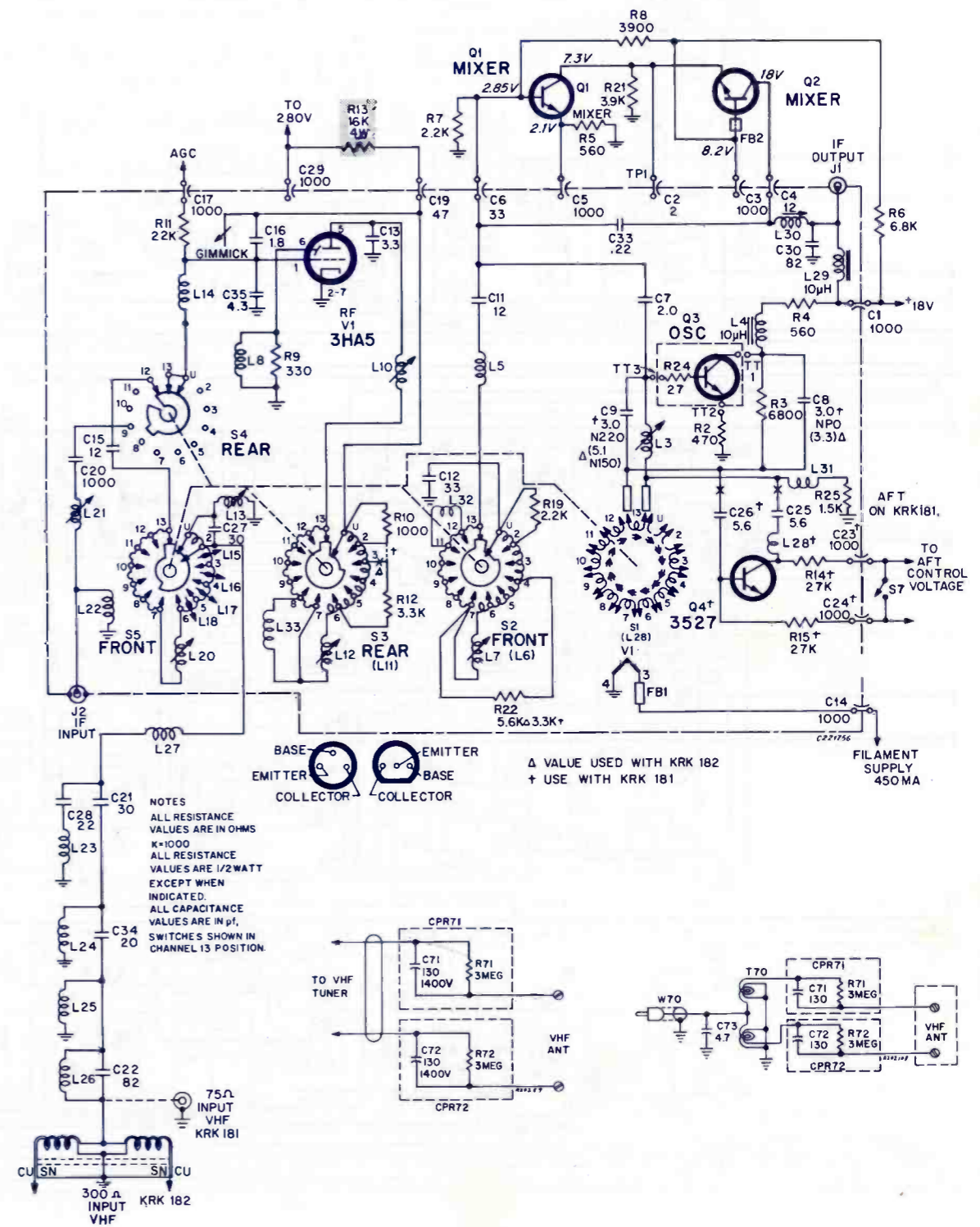
SHADED COMPONENTS HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS READ CAREFULLY THE PRODUCT SAFETY NOTICE ON PAGE 3 OF THIS SERVICE DATA. DON'T DEGRADE THE SAFETY OF THE SET THROUGH IMPROPER SERVICING.

RCA CORP
CTC 53 Series





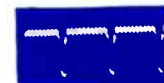
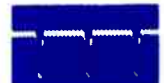








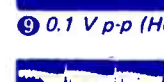
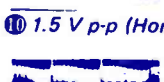
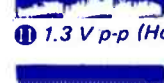
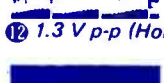

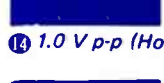
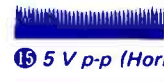
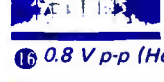
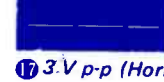
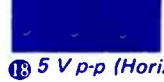
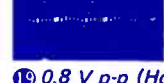



VHF TUNER SCHEMATIC DIAGRAM

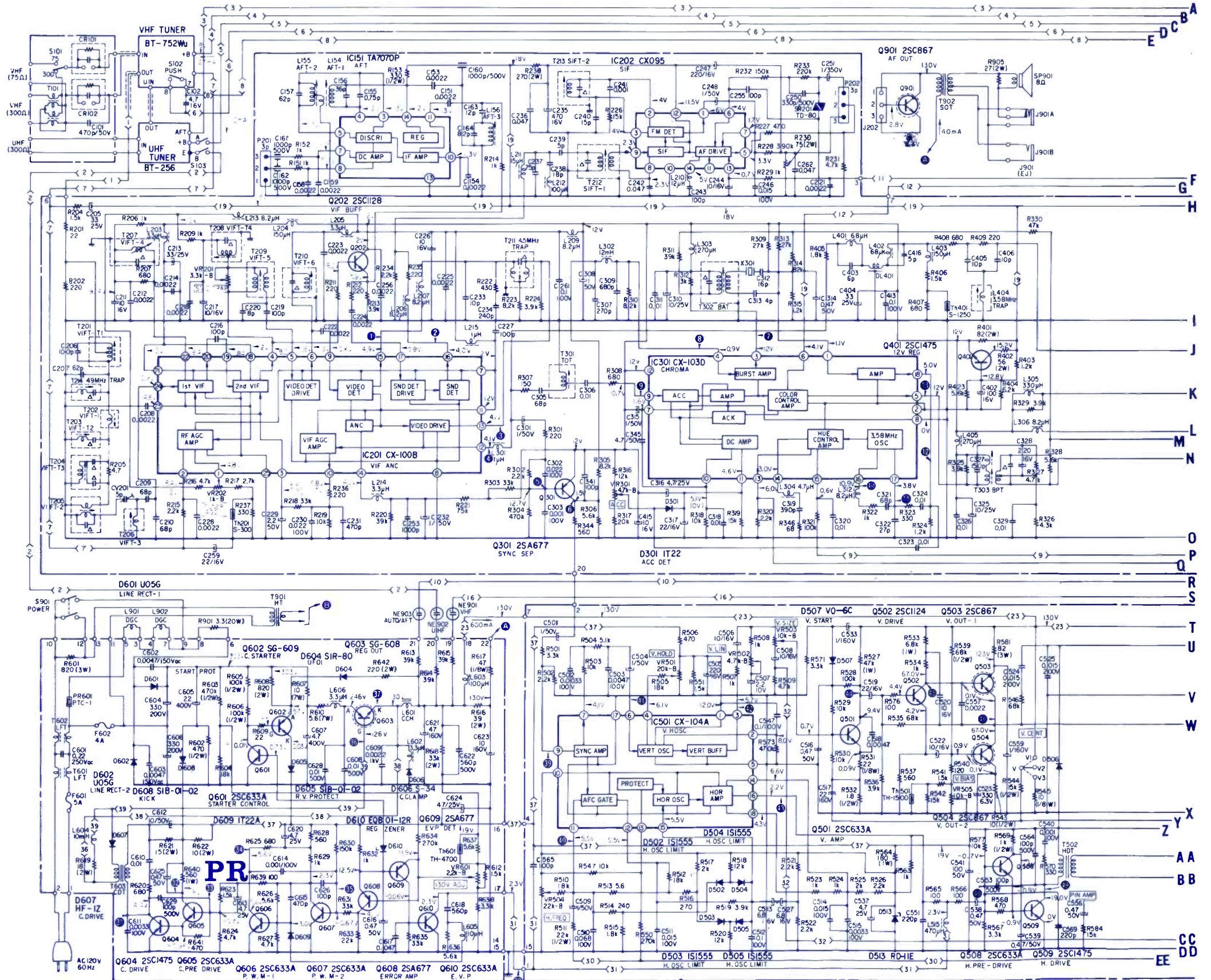


SONY

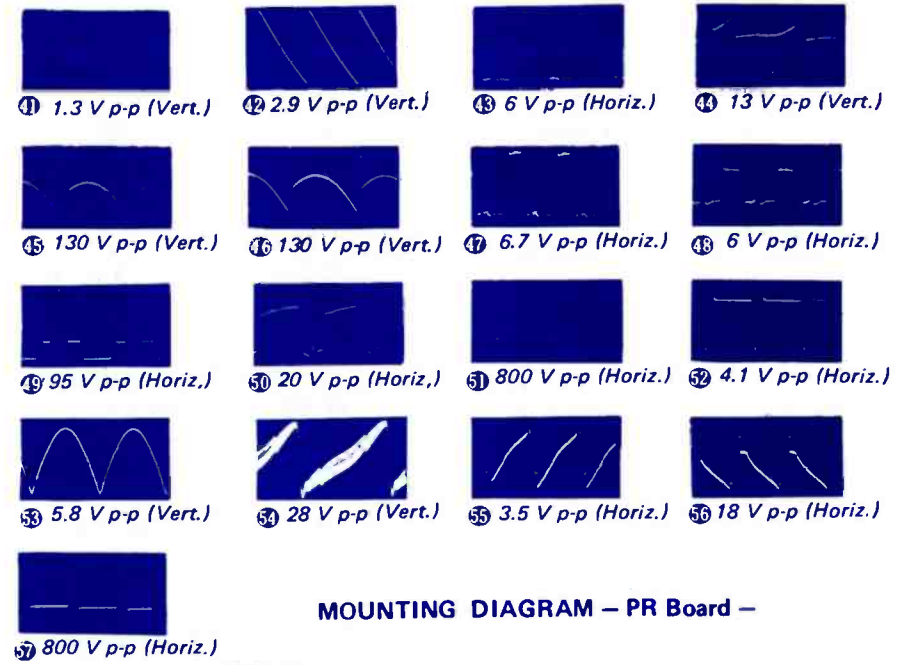
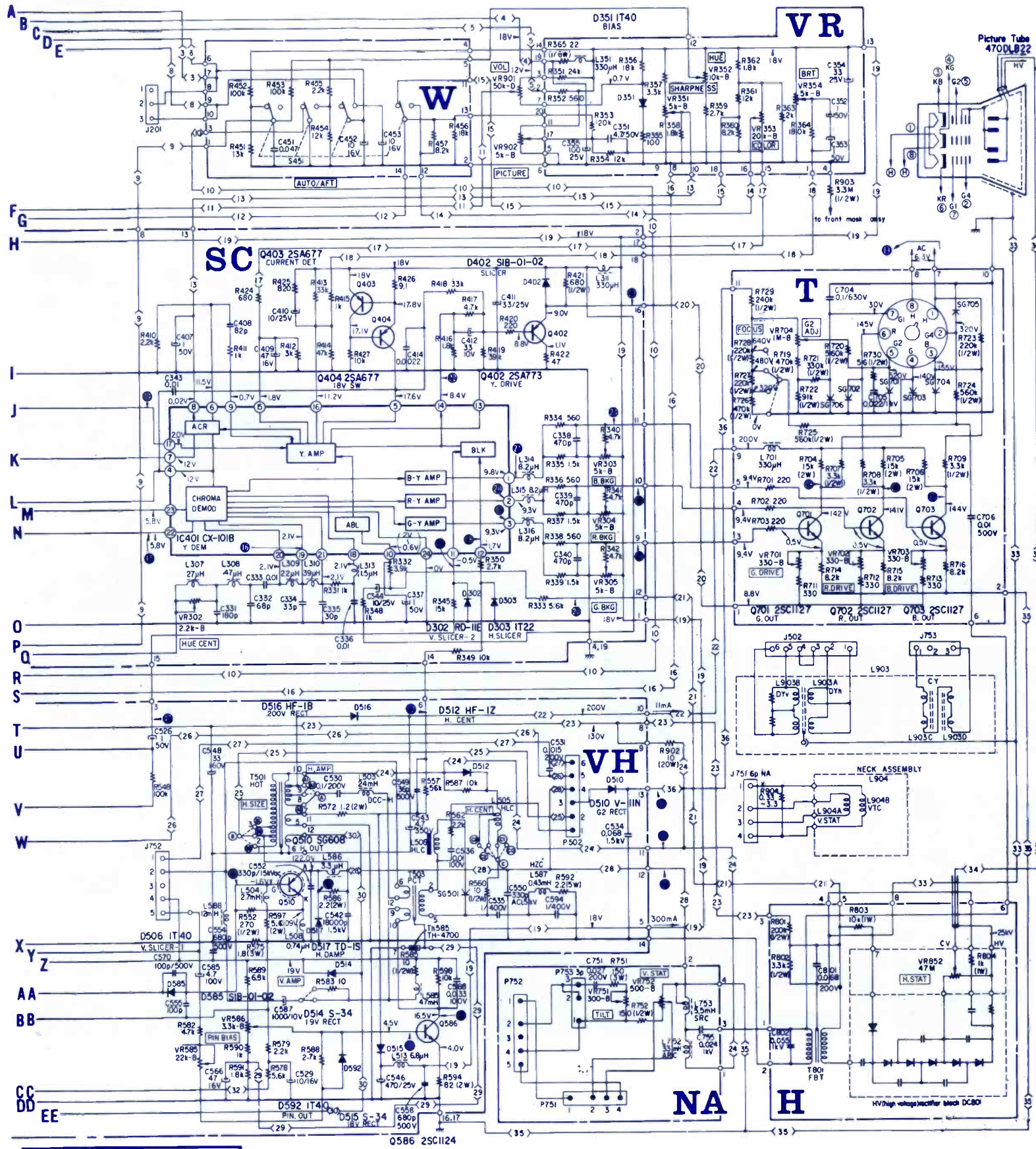
Color-TV Model KV-1722

 25 2.0 V p-p (Horiz.)
  26 0.8 V p-p (Horiz.)
  28 110 V p-p (Horiz.)
  29 130 V p-p (Horiz.)
  30 120 V p-p (Horiz.)

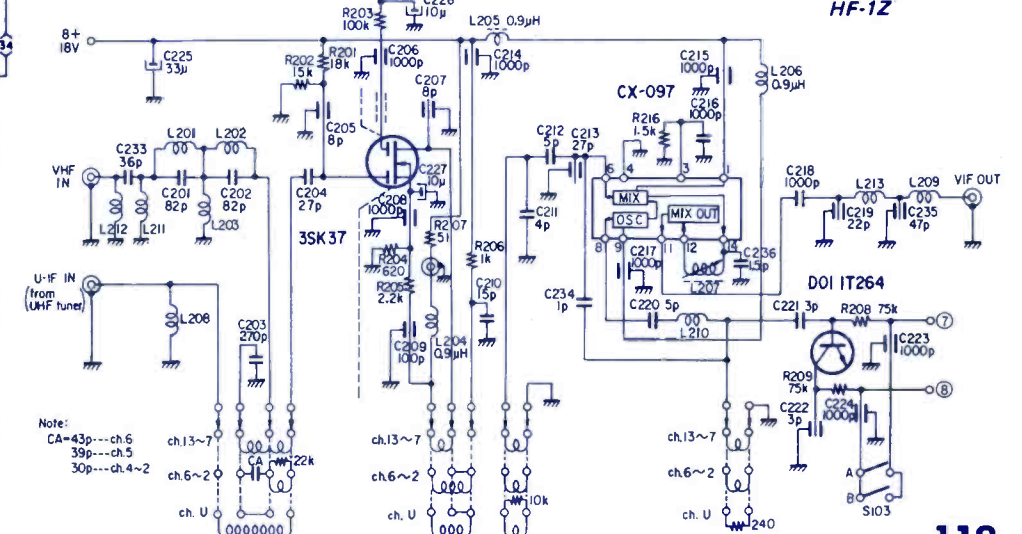
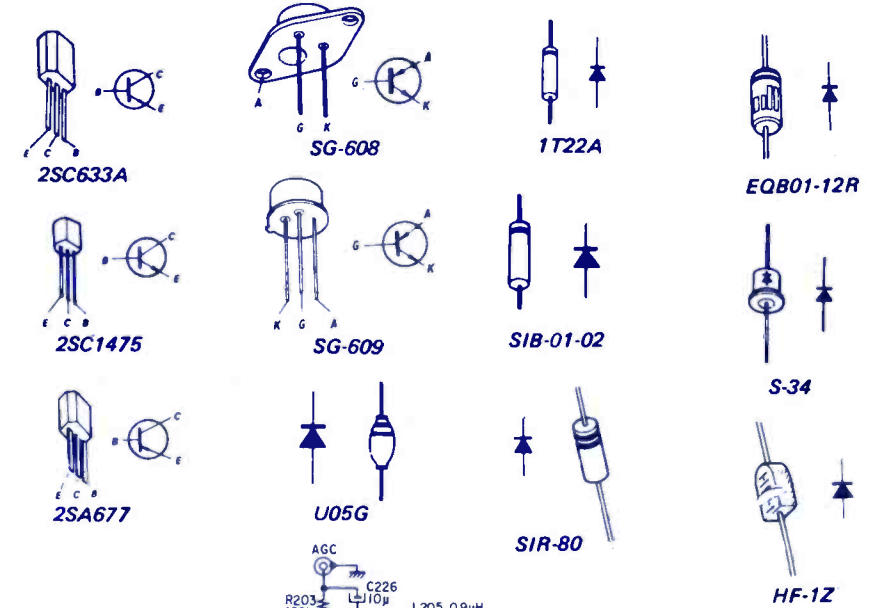
-  1 3.5 V p-p (Horiz.)
-  2 3.5 V p-p (Horiz.)
-  3 3.5 V p-p (Horiz.)
-  4 3.5 V p-p (Horiz.)
-  5 1.5 V p-p (Horiz.)
-  6 14 V p-p (Horiz.)
-  7 9 V p-p (Horiz.)
-  8 6 V p-p (Horiz.)
-  9 0.1 V p-p (Horiz.)
-  10 1.5 V p-p (Horiz.)
-  11 1.3 V p-p (Horiz.)
-  12 1.3 V p-p (Horiz.)
-  13 2.5 V p-p (Horiz.)
-  14 1.0 V p-p (Horiz.)
-  15 5 V p-p (Horiz.)
-  16 0.8 V p-p (Horiz.)
-  17 3 V p-p (Horiz.)
-  18 5 V p-p (Horiz.)
-  19 0.8 V p-p (Horiz.)
-  20 2.0 V p-p (Horiz.)
-  21 2.7 V p-p (Horiz.)
-  22 10 V p-p (Horiz.)
-  23 7 V p-p (Horiz.)
-  24 2.5 V p-p (Horiz.)



① 50 V p-p (Horiz.) ② 2.5 V p-p (Horiz.) ③ 5 V p-p (Horiz.) ④ 11.5 V p-p (Horiz.) ⑤ 10 V p-p (Horiz.) ⑥ 400 V p-p (Horiz.) ⑦ 400 V p-p (Horiz.) ⑧ 15 V p-p (Vert.) ⑨ 14 V p-p (Horiz.) ⑩ 0.9 V p-p (Horiz.)

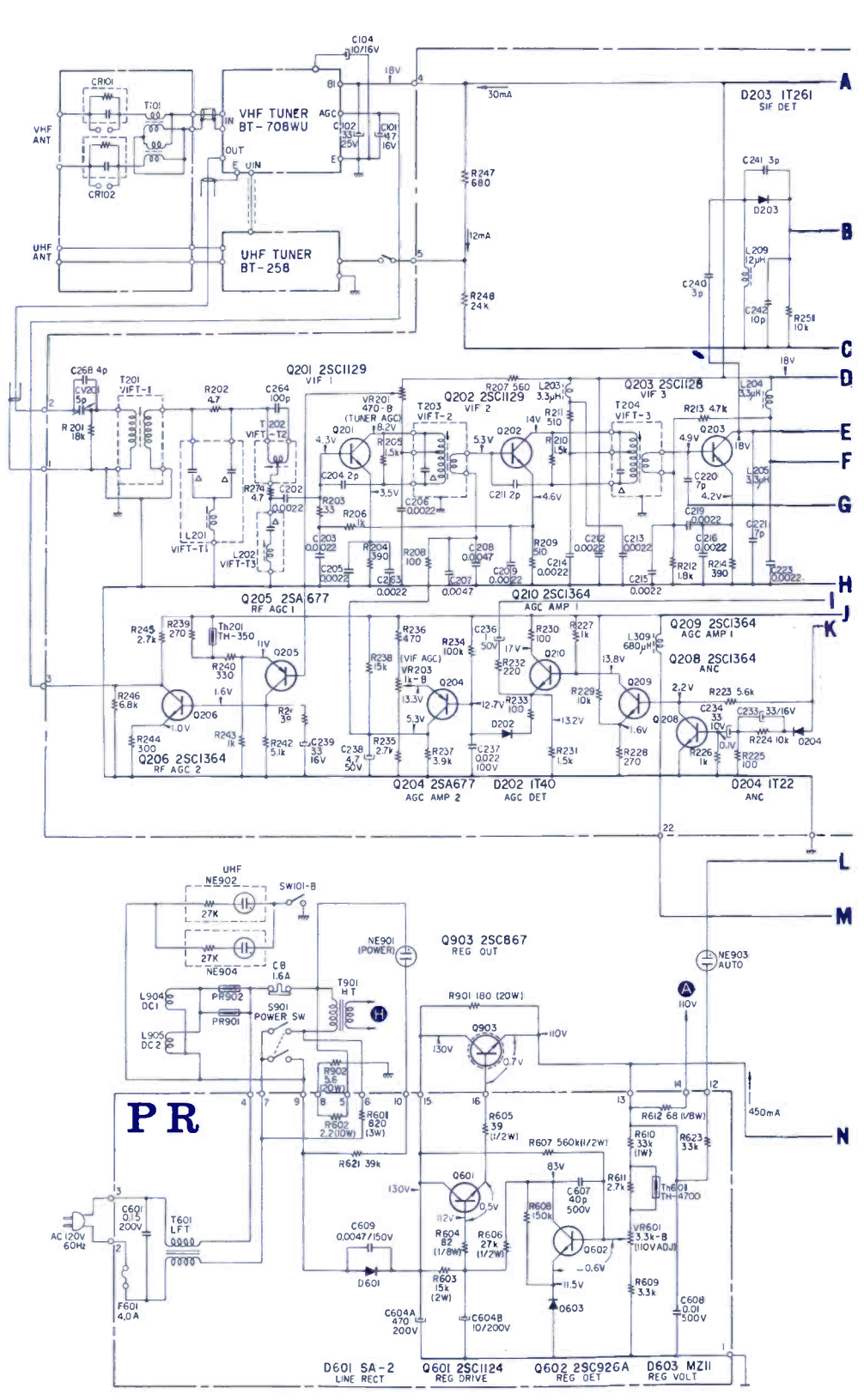
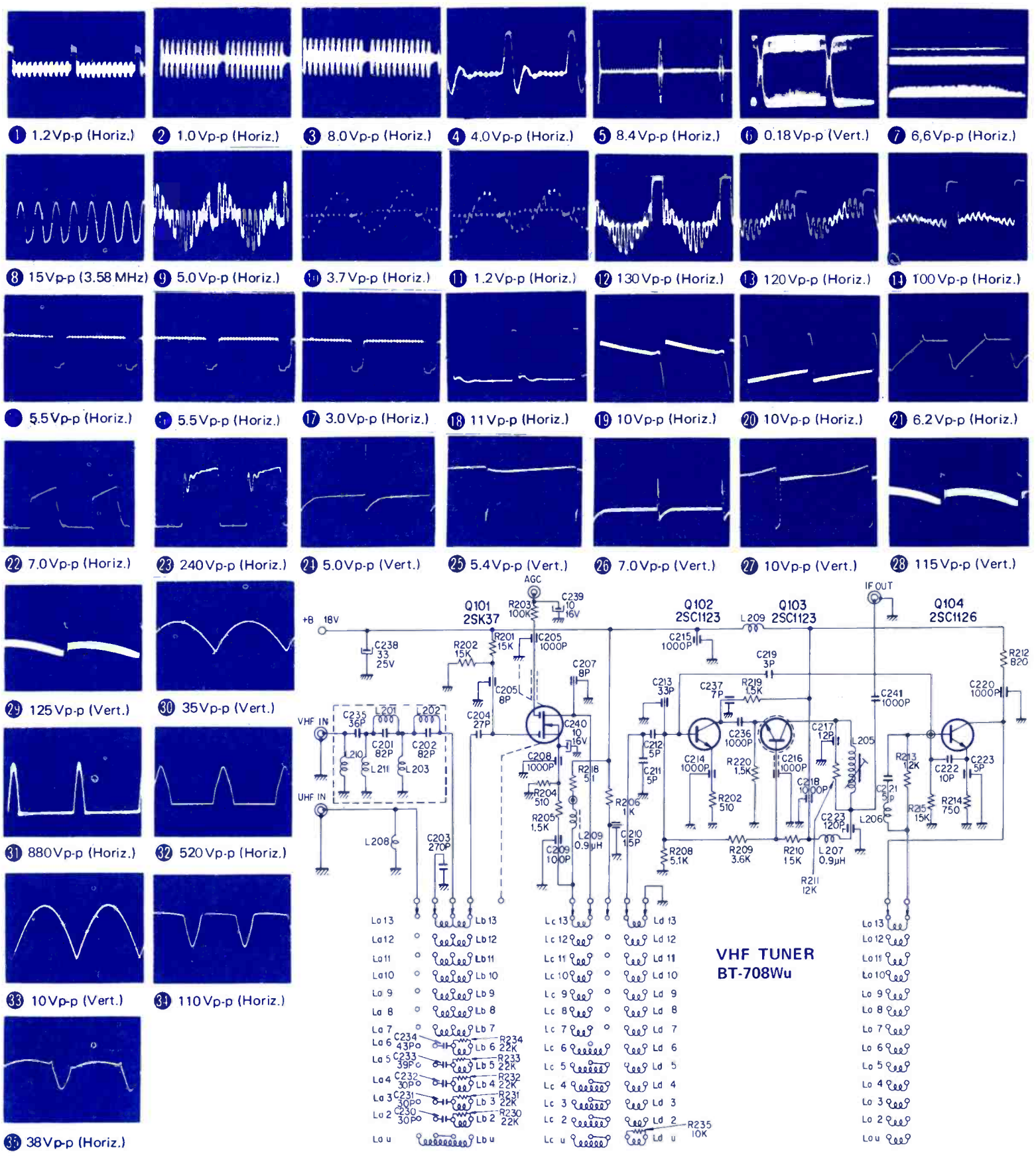


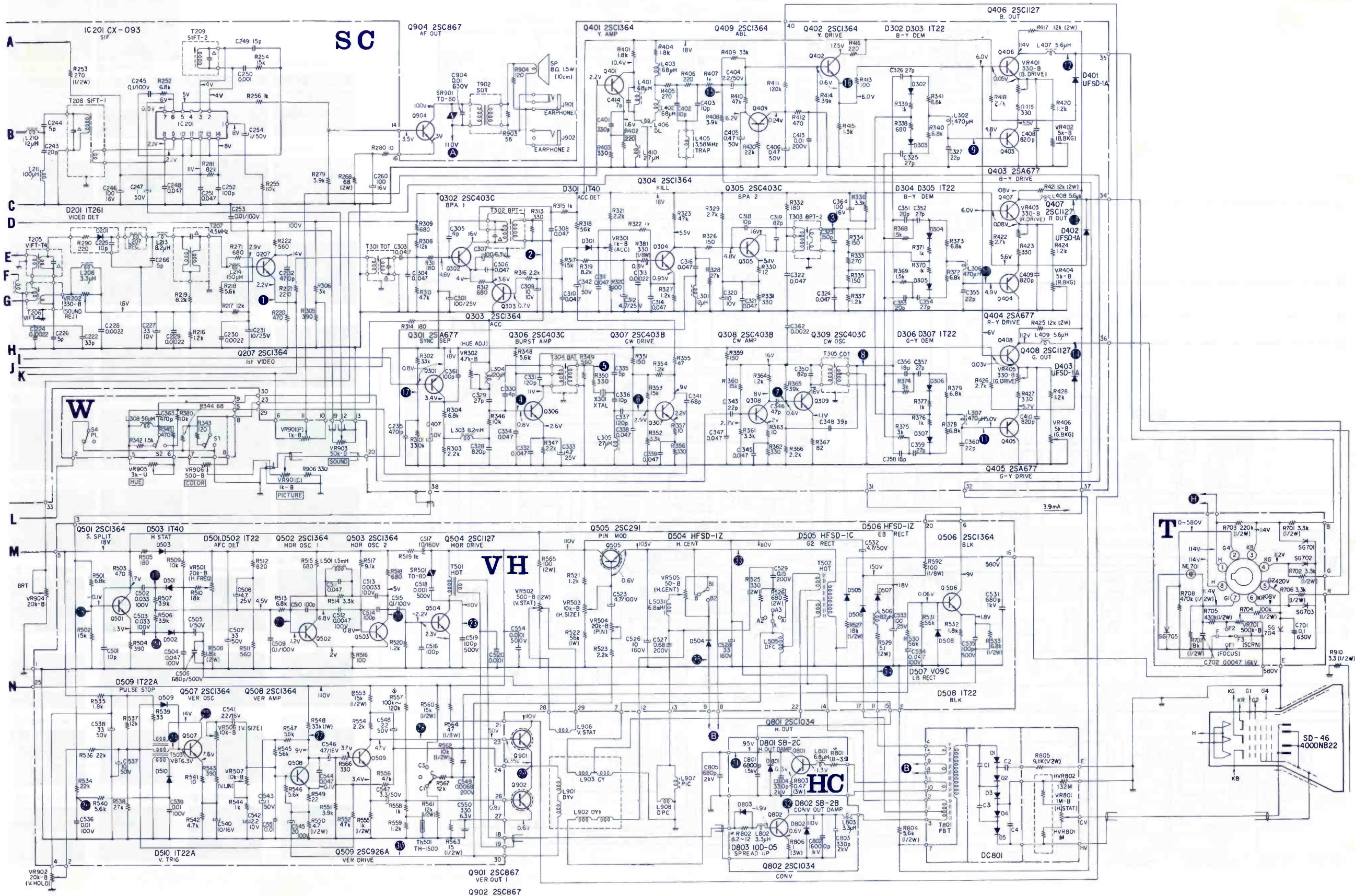
MOUNTING DIAGRAM - PR Board -



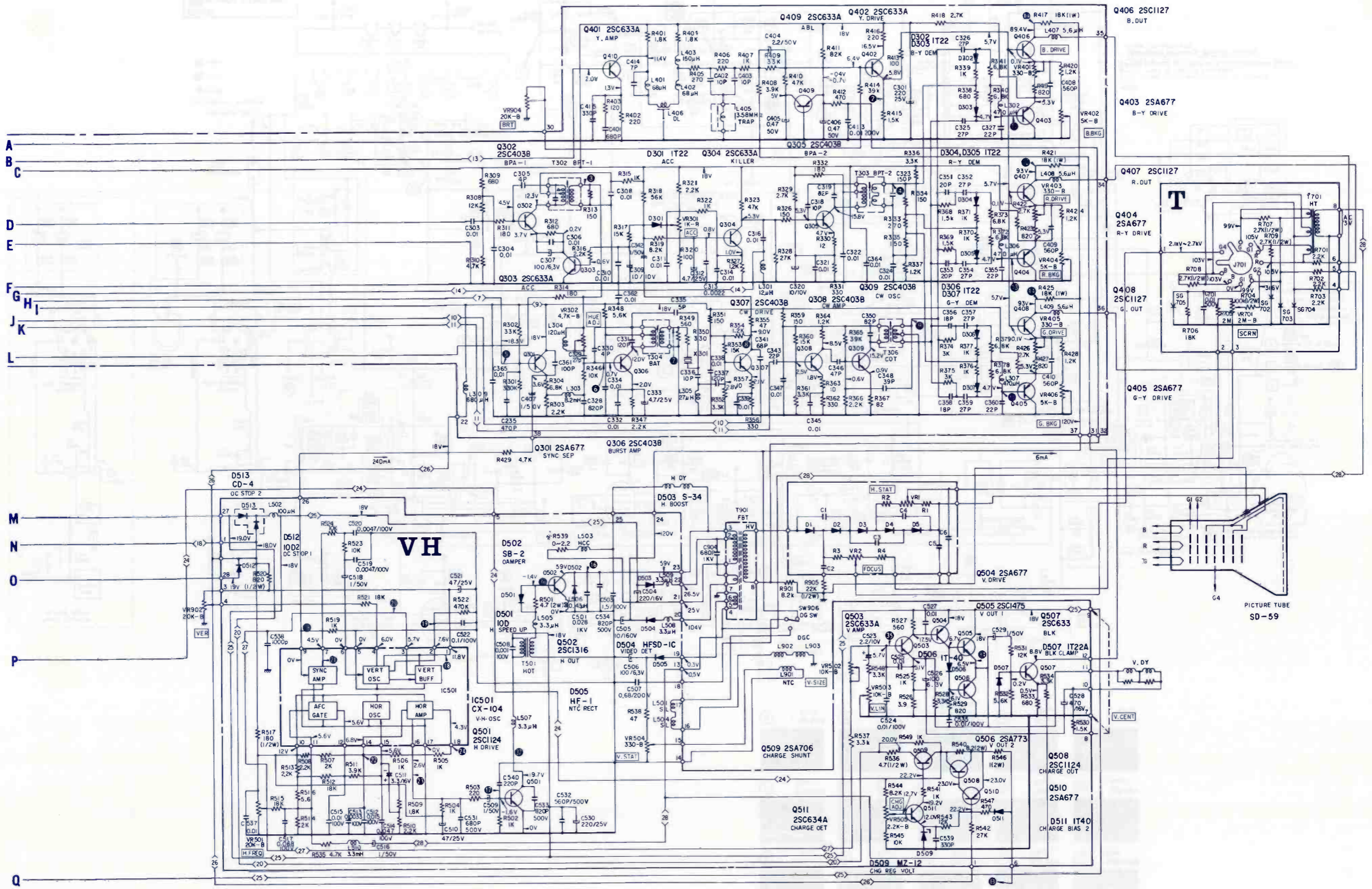
SYMBOL	DESCRIPTION	SONY PART NO.
L405	3.58MHz coil wave trap	1-409-193-00
T207	4.5MHz xformer wave trap	1-409-146-00
T304	xformer burst amp	1-405-372-00
T502	xformer horiz output	1-439-113-00
T503	xformer vert osc	1-435-008-00
T801	flyback xformer assembly	1-439-121-00
T902	xformer sound output	1-427-307-00
VR202	330-B sound reject	1-222-515-00
VR301	1 k-B ACC control	1-222-517-00
VR302	4.7k-B hue adjust	1-222-518-00
VR501	20k-B horiz frequency	1-222-725-00
VR503	10k-B horiz size	1-222-512-00
VR505	50-B horiz centering	1-223-017-00
VR506	10k-B vert size	1-222-512-00
VR507	10k-B vert lin	1-222-512-00
VR901	1k-B picture control	1-222-383-00
VR902	20k-B vert hold	1-222-388-00
VR903	50k-D volume control	1-222-688-00
VR904	20k-B brite control	1-222-388-00
VR905	3k-U hue control	1-222-386-00
VR906	500-B color control	1-222-386-00
	deflect yoke	1-451-081-00
CB	1.6a circuit breaker	1-515-168-00

SONY
Color TV Model
KV-1500



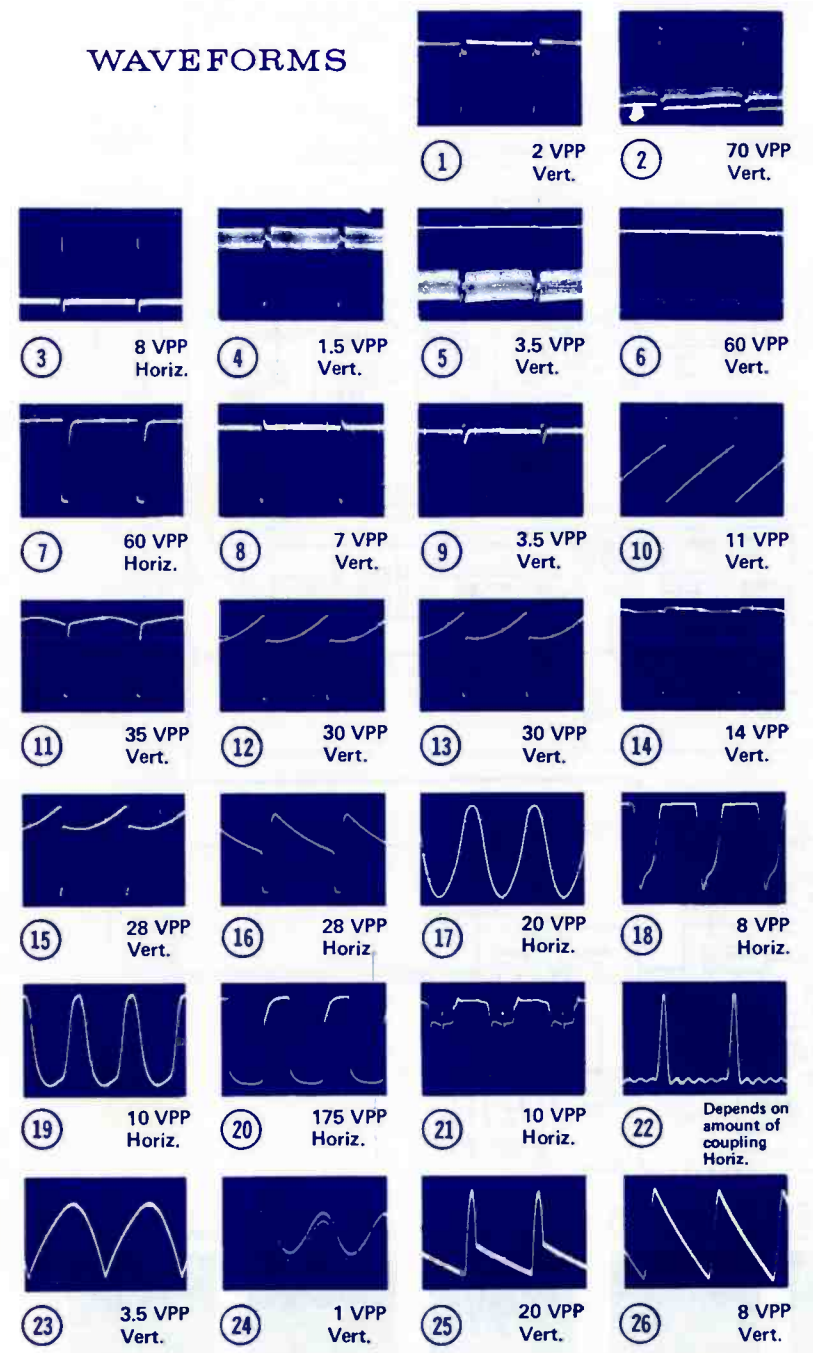


SONY
Color TV Model
KV-1500



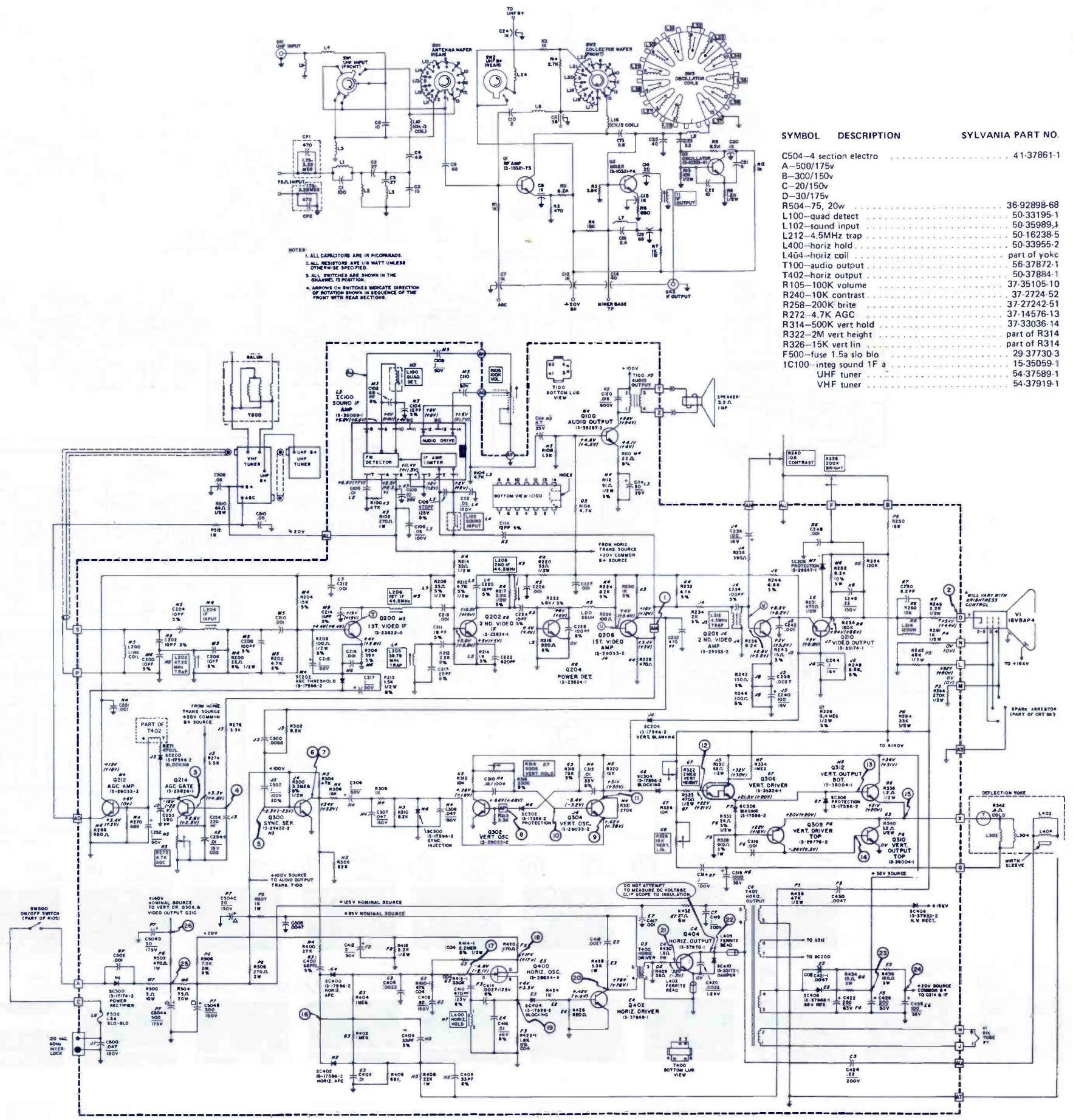
SONY
Color TV Model
KV-5000

WAVEFORMS



COPYRIGHT

VHF SCHEMATIC DIAGRAM



SYMBOL	DESCRIPTION	SYLVANIA PART NO.
C504-4	section electro	41-37861-1
A-	500/175v	36-92898-68
B-	300/150v	50-33195-1
C-	20/150v	50-35989-1
D-	30/175v	50-16238-5
R504-75	20w	50-33955-2
L100	quad detect	part of yoke
L102	sound input	56-37872-1
L212	4.5MHz trap	50-37884-1
L400	horiz hold	37-35105-10
L404	horiz coil	37-2724-52
T100	audio output	37-14576-13
T402	horiz output	37-33036-14
R105	100K volume	part of R314
R240	10K contrast	29-37730-3
R258	200K brite	15-35059-1
R272	4.7K AGC	54-37589-1
R314	500K vert hold	54-37919-1
R322	2M vert height	
R326	15K vert lin	
F500	fuse 1.5a slo blo	
1C100	integ sound 1F a	
	UHF tuner	
	VHF tuner	

SYLVANIA
TV Chassis A16-1

SYLVANIA

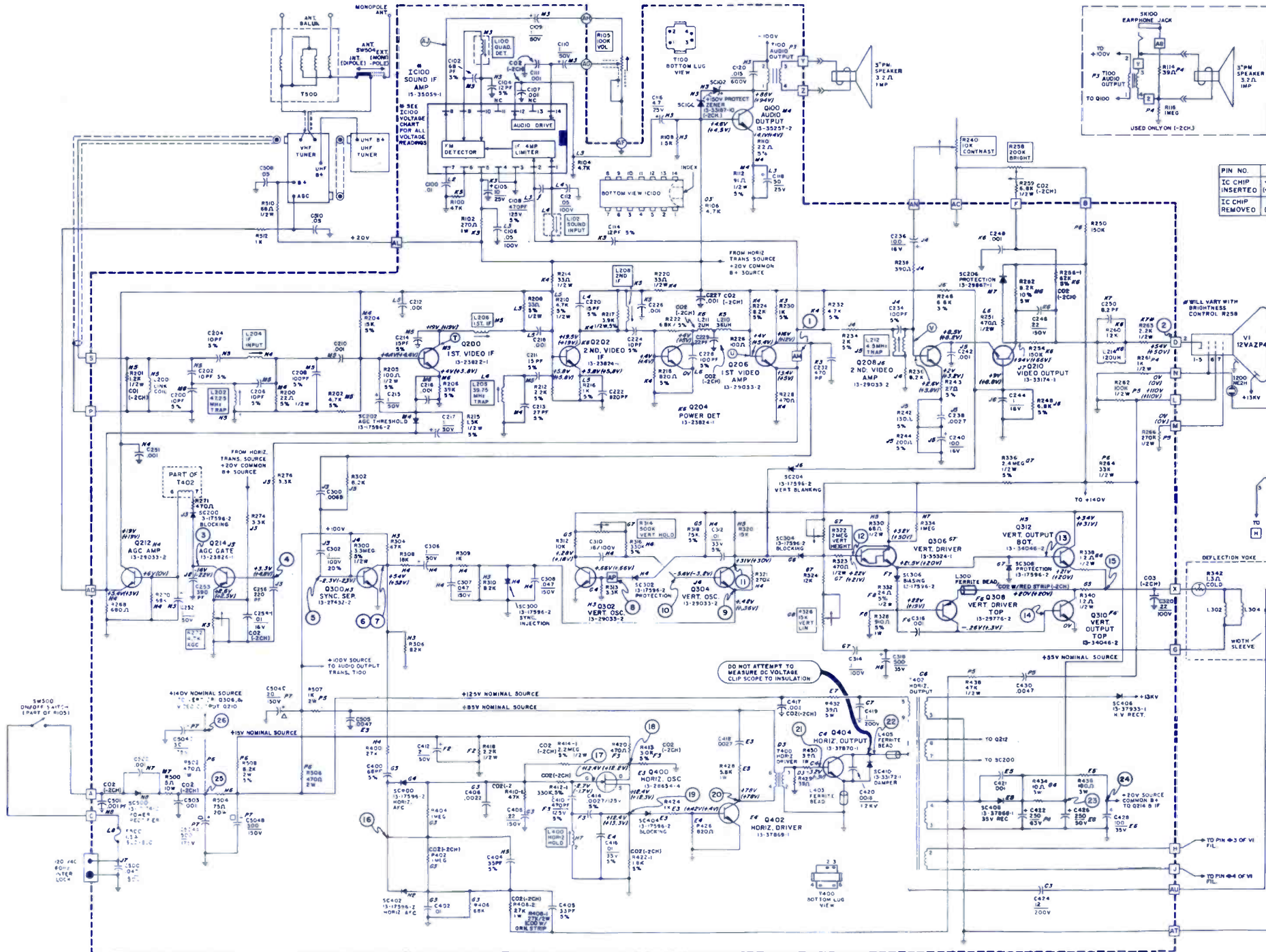
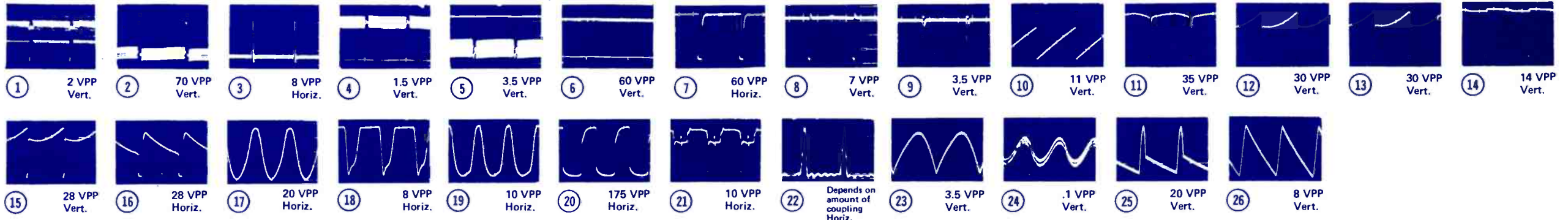
TV Chassis
A12-1, -2

SYMBOL DESCRIPTION PART NO.

C504—4 section elect. 41-37861-1
A—500/175v
B—300/150v
C—20/150v
D—30/175v

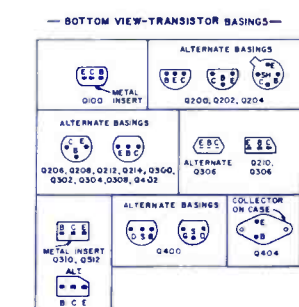
L100—coil, quad detector 50-33195-1
L400—coil, horiz hold 50-33955-2
L402—coil, horiz part of yoke
T100—x-former, audio output 56-37872-1
T400—x-former, horiz driver 56-37922-1
T402—x-former, horiz output 50-37934-1
R105—100K, vol 37-35105-10

R240—10K, contrast 37-27242-50
R258—200K, brightness 37-27242-49
R272—4.7K, AGC 37-14576-13
R314—500K, vert hold 37-33036-14
R322—2M, vert height part of R314
R326—15K, vert lin. part of R314
VHF tuner 54-37919-1



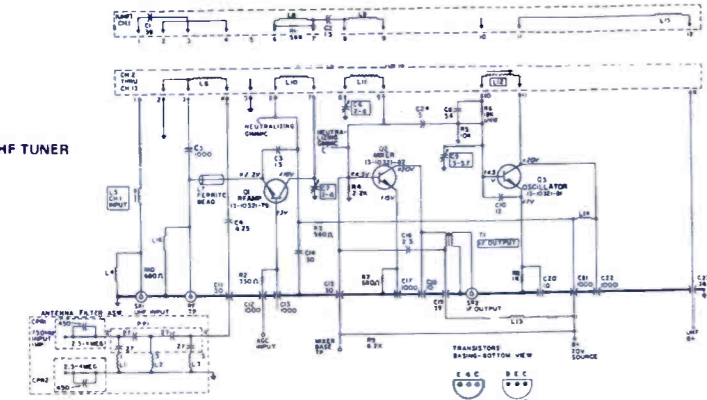
— IC100 VOLTAGE CHART —

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
IC CHIP INSERTED	+2V	+2V	0V	+12V	+2.2V	+0.8V	+5.2V	+3.6V	+3.6V	N.C.	+5V	N.C.	+16V	
IC CHIP REMOVED	0V	0V	0V	+24V	+6.2V	+6.2V	0V	+2.0V	0V	0V	0V	+5.2V	0V	+1.1V

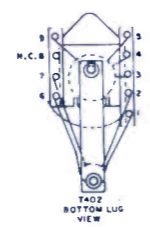


- NOTES
- ALL CAPACITORS ARE IN MFD, 500V UNLESS OTHERWISE SPECIFIED.
 - ALL RESISTORS ARE 1/4 WATT, 10% UNLESS OTHERWISE SPECIFIED.
 - ARROWS ON CONTROLS INDICATE DIRECTION OF CLOCKWISE ROTATION.
 - SQUARE WIRE PINS [] ARE TEST POINTS AND WIRE WRAP CONNECTION.
 - SCHEMATIC SYMBOLS [] ARE TEST POINTS.
 - EXAMPLE: (R2) LETTER AND NUMBER NEAR COMPONENT DESIGNATOR PRINTED CIRCUIT CO-ORDINATE.

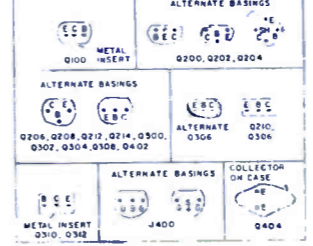
VHF TUNER



NOTE:
1. ALL CAPACITORS ARE IN PFD, 500V UNLESS OTHERWISE SPECIFIED.
2. ALL RESISTORS ARE 1/4 WATT, 10% UNLESS OTHERWISE SPECIFIED.
3. ALL VOLTAGES ARE TAKEN WITH NEGATIVE UNLESS SPECIFIED.

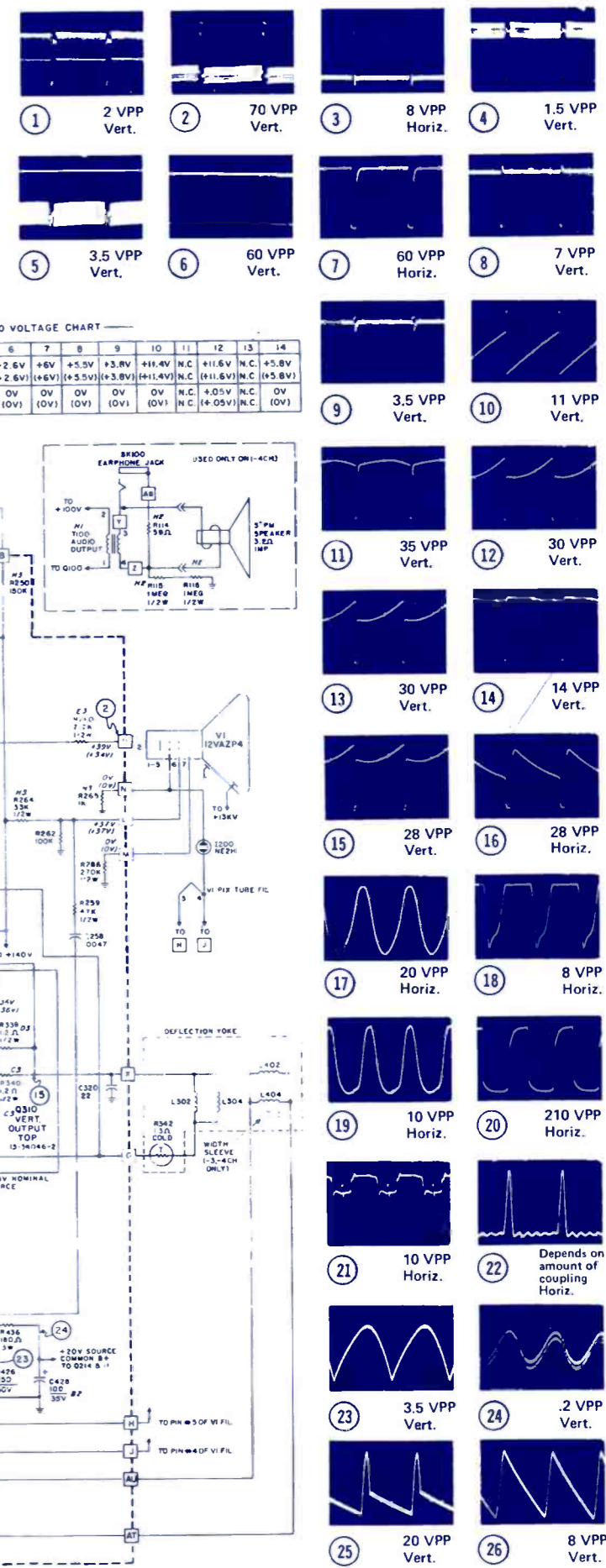


- C504 - 4 section electrolytic. 41-37861-1
- A 500-175v
 - B 300-150v
 - C 20-150v
 - D 30-175v
- L100 - quad coil 50-33195-2
 - L102 - sound input coil 50-35989-1
 - L206 - 1st IF xformer 57-23832-4
 - L208 - snd IF xformer 57-23832-4
 - L212 - 4.5MHz trap coil 50-37714-3
 - L400 - horiz hold coil 50-33955-2
 - T100 - audio output xformer 56-37872-1
 - T400 - horiz driver xformer 56-37822-1
 - T402 - horiz output xformer 50-39372-1
 - R105 - 100K volume 37-35105-10
 - R240 - 1K contrast 37-39237-4
 - R258 - 200K brite 37-27242-57
 - R272 - 4.7K AGC 37-14576-13
 - R314 - 500K vert hold 37-33063-14
 - F500 - fuse 1.5a slo blo 29-27730-3
 - IC100 - Integ sound IF/det 15-35059-1



NOTES:
1. ALL CAPACITORS ARE IN PFD, 500V UNLESS OTHERWISE SPECIFIED.
2. ALL RESISTORS ARE 1/4 WATT, 10% UNLESS OTHERWISE SPECIFIED.
3. ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION.
4. SQUARE WIRE PINS ARE TEST POINTS AND WIRE WRAP CONNECTION.
5. ROUND CONNECTIONS ARE WIRE BOLTS IN P.C. PANEL.
6. SCHEMATIC SYMBOLS ARE TEST POINTS.
7. EXAMPLES OF LETTERS AND NUMBER NEAR COMPONENT DESIGNATES PRINTED CIRCUIT CO-ORDINATE.

WAVE FORMS

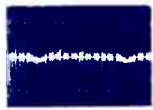


* IC100 VOLTAGE CHART

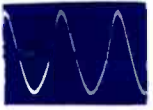
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14
IC CHIP INSERTED	+1.9V	+1.9V	0V	+12V	+2.6V	+2.6V	+6V	+5.5V	+3.8V	+1.4V	N.C.	+11.6V	N.C.	+5.8V
IC CHIP REMOVED	0V	0V	0V	+26V	+26V	0V	0V	0V	0V	0V	N.C.	+0.5V	N.C.	0V



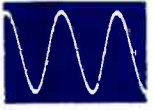
8 .22 VPP
3.58MHz



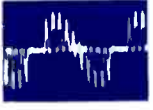
9 4 VPP
Horiz.



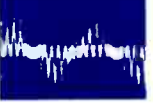
10 .52 VPP
3.58MHz



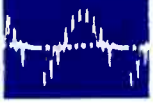
11 9 VPP
3.58MHz



12 5.5 VPP
Horiz.



13 1.7 VPP
Horiz.



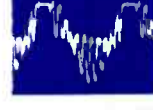
14 6.6 VPP
Horiz.



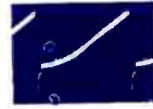
15 70 VPP
Horiz.



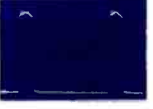
16 54 VPP
Horiz.



17 80 VPP
Horiz.



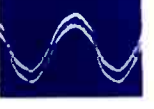
30 26 VPP
Vert.



31 4.8 VPP
Horiz.



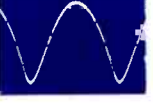
32 40 VPP
Horiz.



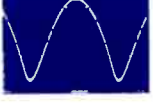
33 72 VPP
Vert.



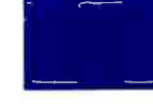
34 4 VPP
Vert.



35 8 VPP
Vert.



36 10 VPP
Vert.



37 3.2 VPP
Horiz.



38 120 VPP
Horiz.



39 420 VPP
Horiz.



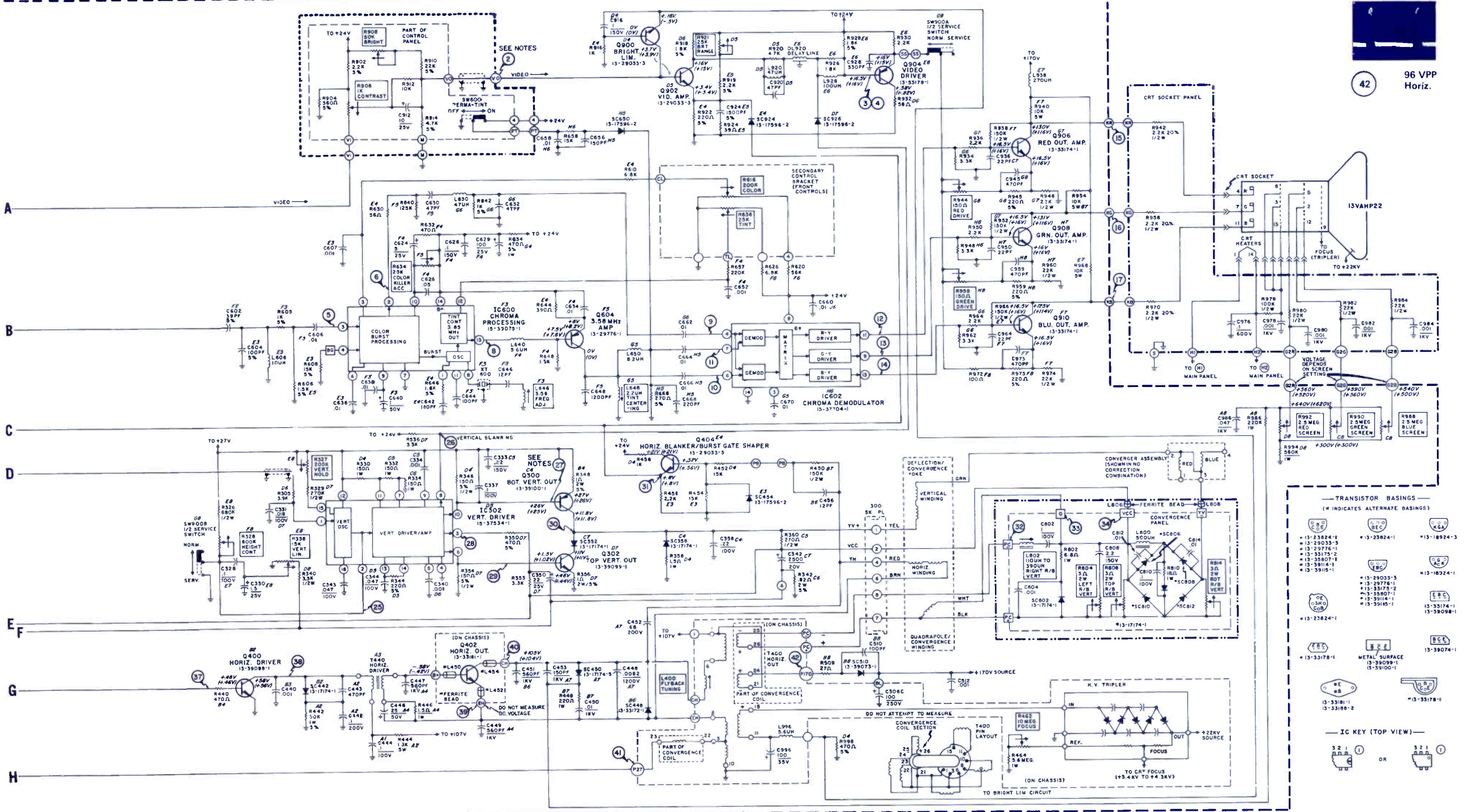
40 440 VPP
Horiz.



41 240 VPP
Horiz.

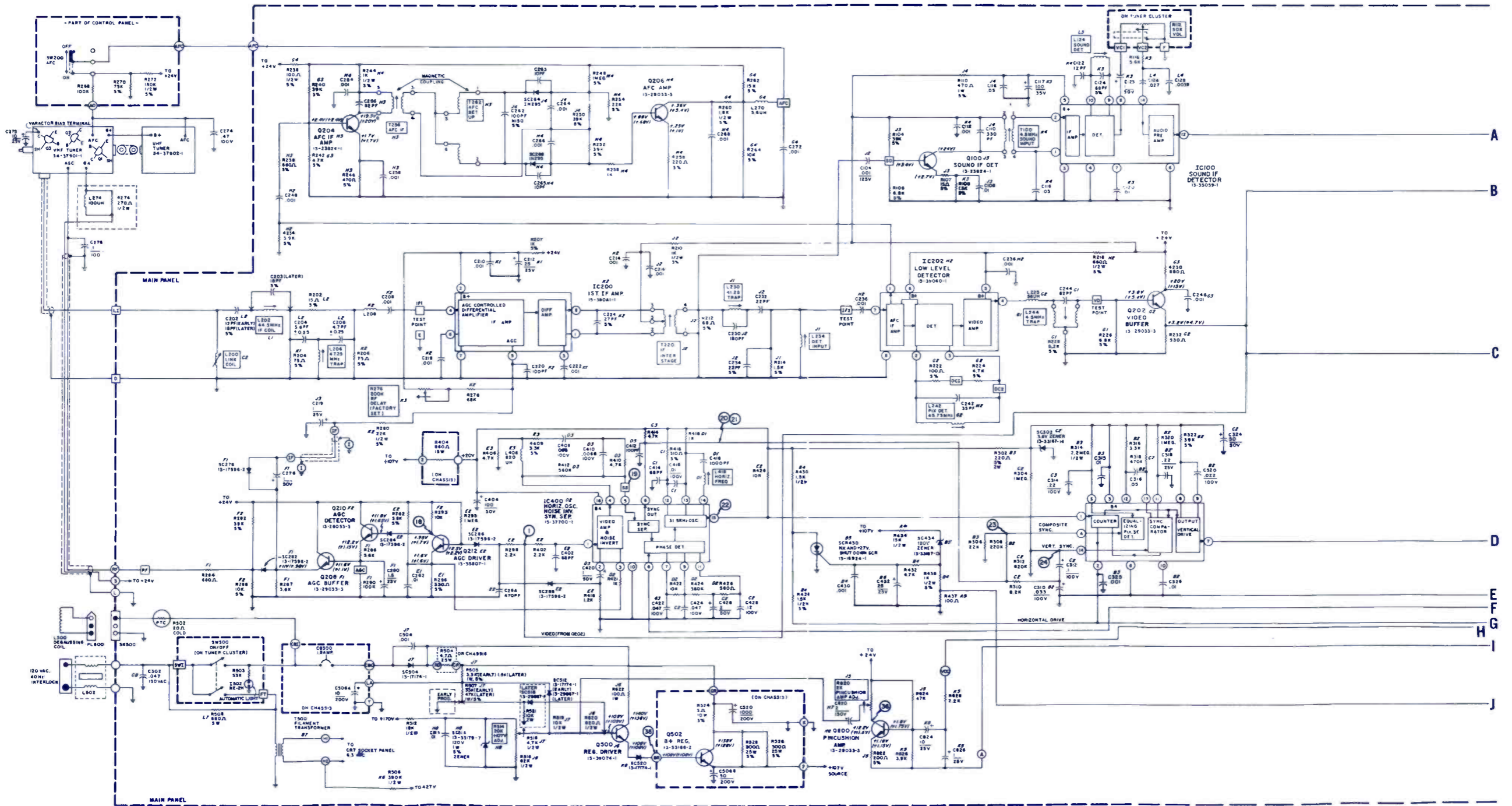
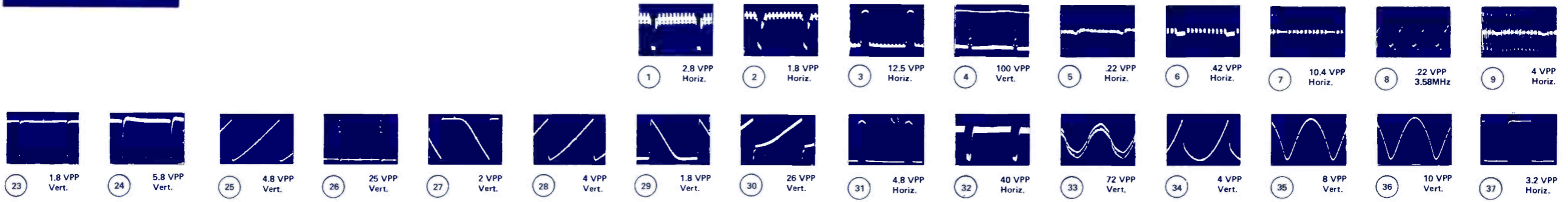


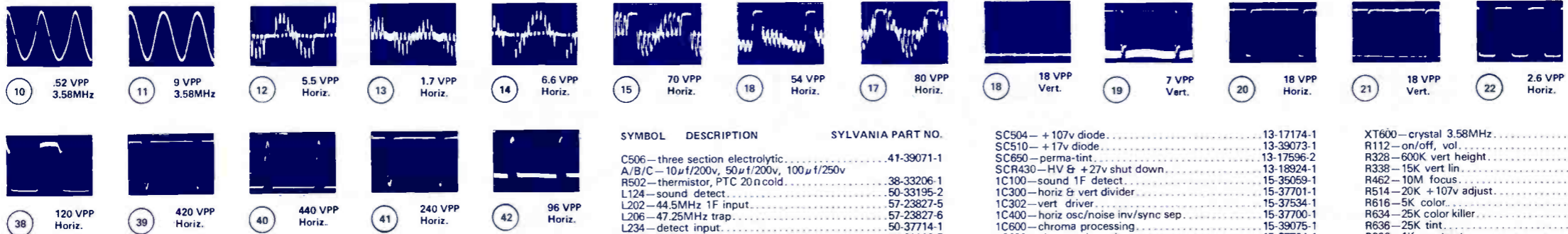
42 96 VPP
Horiz.



SYLVANIA

Color-TV Chassis
E06-2



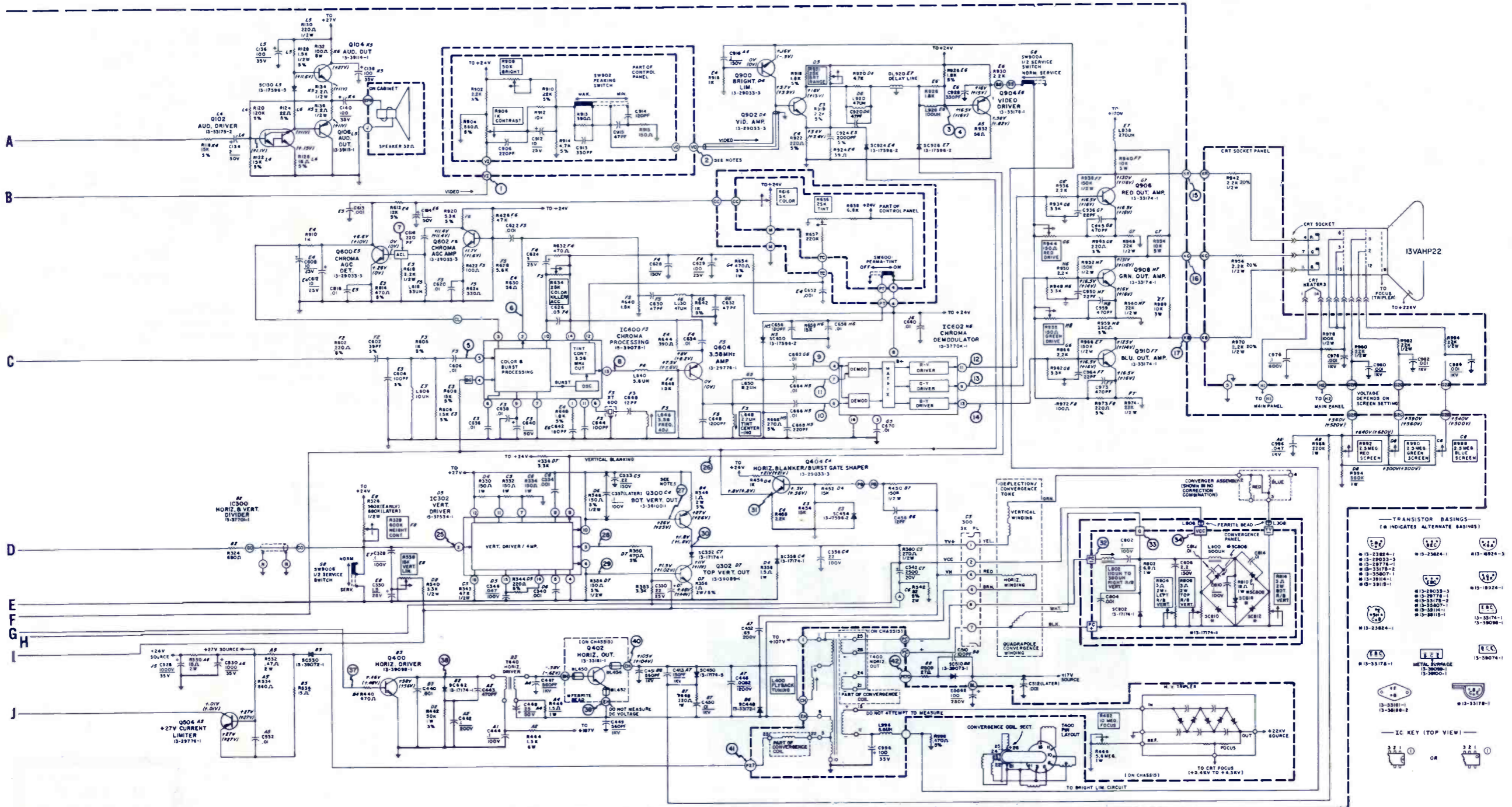


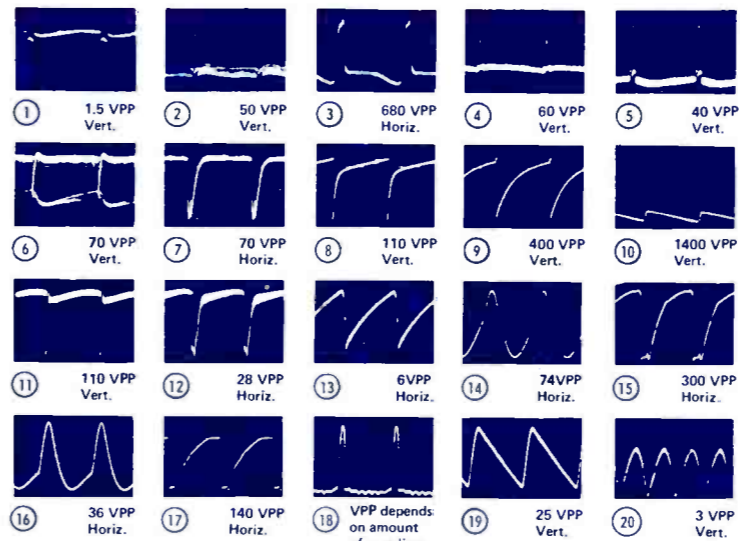
SYMBOL DESCRIPTION SYLVANIA PART NO.

C506	—three section electrolytic	41-39071-1
A/B/C	—10µf/200v, 50µf/200v, 100µf/250v	
R502	—thermistor, PTC 20 n.cold	38-33206-1
L124	—sound detect.	50-33195-2
L202	—44.5MHz 1F input.	57-23827-5
L206	—47.25MHz trap.	57-23827-6
L234	—detect input.	50-37174-1
L242	—45.75MHz pix detect.	57-23832-5
L244	—4.5MHz trap.	50-35309-1
L400	—flyback tuning.	50-39163-1
L418	—horiz freq.	50-39121-1
L502	—line choke.	50-29833-3
L646	—3.58 freq adj.	50-39052-1
L648	—tint centering.	50-39053-1
SC448	—damper	13-33172-1

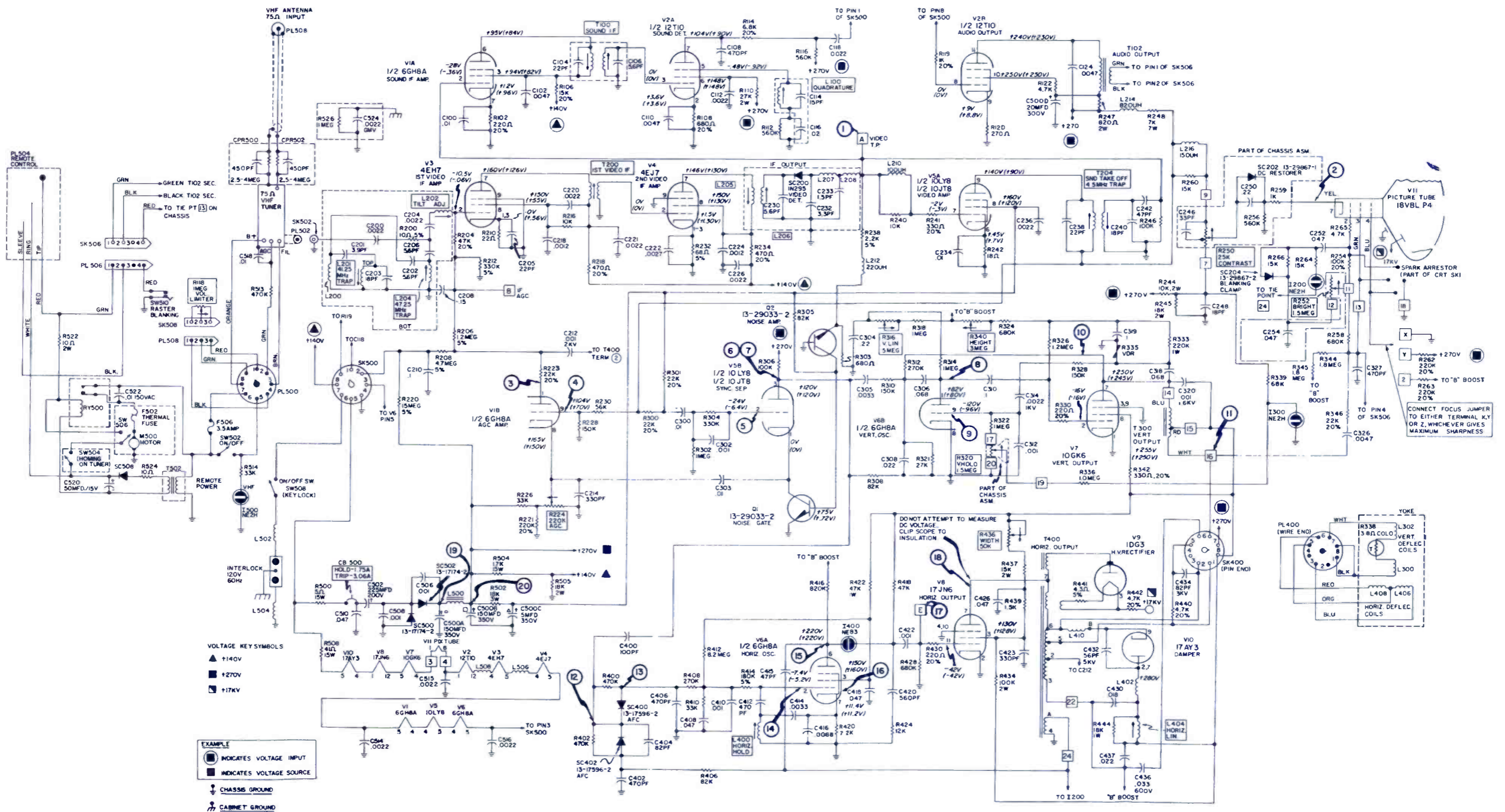
SC504	— +107v diode.	13-17174-1
SC510	— +17v diode.	13-39073-1
SC650	—perma-tint.	13-17596-2
SCR430	—HV & +27v shut down.	13-18924-1
IC100	—sound 1F detect.	15-35059-1
IC300	—horiz & vert divider.	15-37701-1
IC302	—vert driver.	15-37534-1
IC400	—horiz osc/noise inv/sync sep.	15-37700-1
IC600	—chroma processing.	15-39075-1
IC602	—chroma demod.	15-37704-1
T100	—4.5MHz sound input.	50-39084-1
T400	—high voltage xformer.	50-39010-1
T400	—horiz driver xformer.	56-39101-1
T500	—filament xformer.	50-39078-1
CB500	—circuit breaker.	29-33346-13
DL920	—delay line.	32-37710-1
SW600	—switch perma tint.	33-16011-15

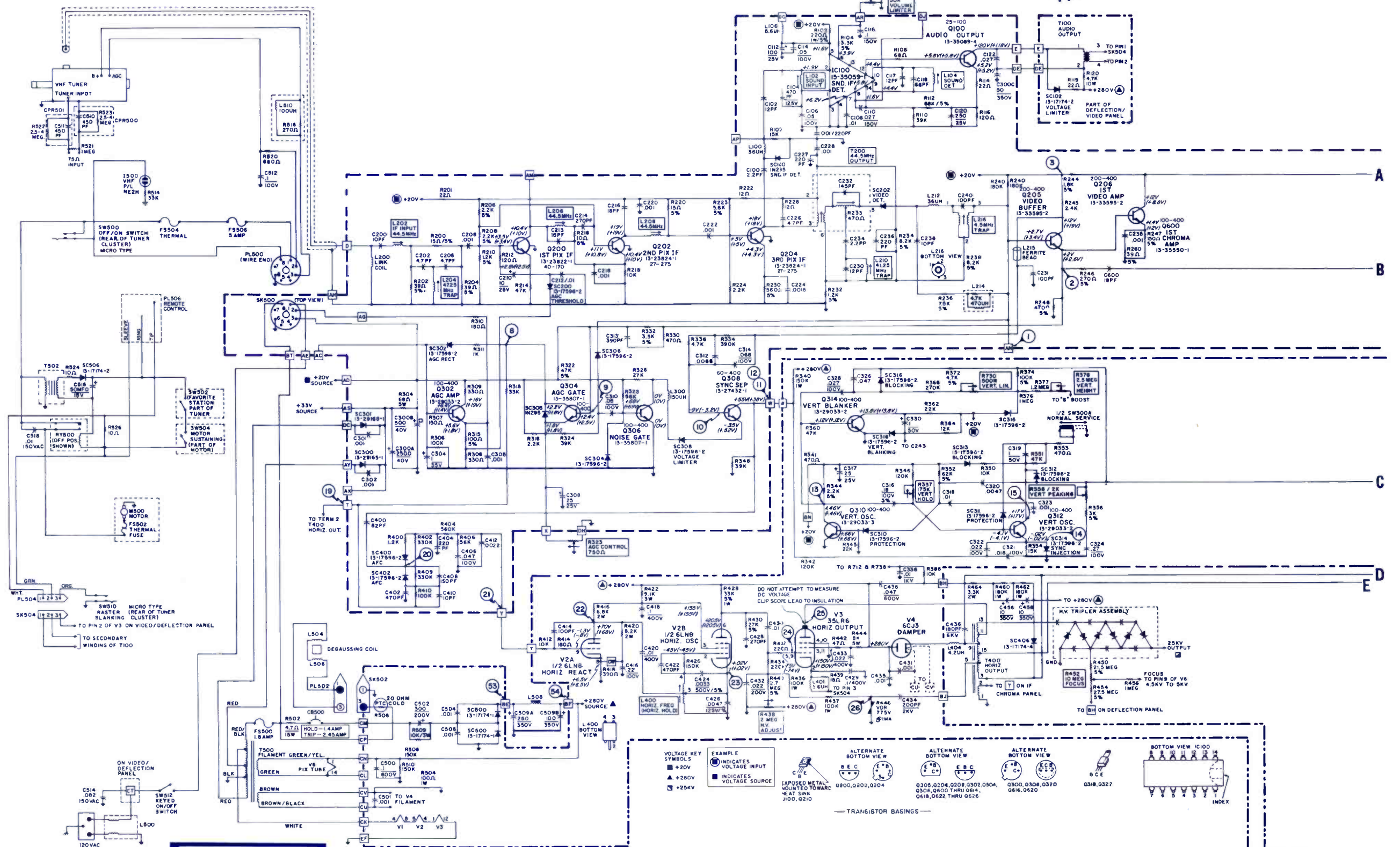
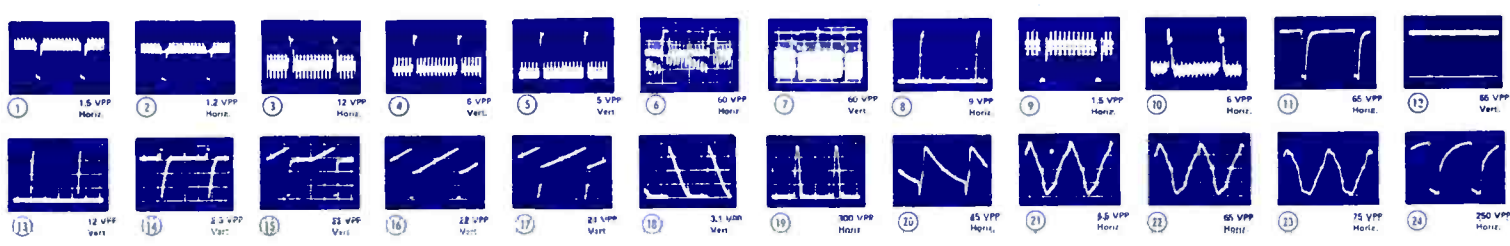
XT600	—crystal 3.58MHz	26-39051-1
R112	—on/off, vol.	37-33081-1
R328	—600K vert height.	37-33036-17
R338	—15K vert lin.	part of R328
R462	—10M focus.	37-17320-8
R514	—20K +107v adjust.	37-33036-18
R616	—5K color.	37-15904-2
R634	—25K color killer.	37-14576-19
R636	—25K tint.	part of R616
R906	—1K contrast.	37-15902-5
R908	—50K brite.	part of R906
R921	—25K brite range.	37-14576-19
R988	—2.5M blue screen.	37-33036-11
R990	—2.5M green screen.	part of R988
R992	—2.5M red screen.	part of R988
	tripler HV.	32-39091-1
VHF		54-37901-1



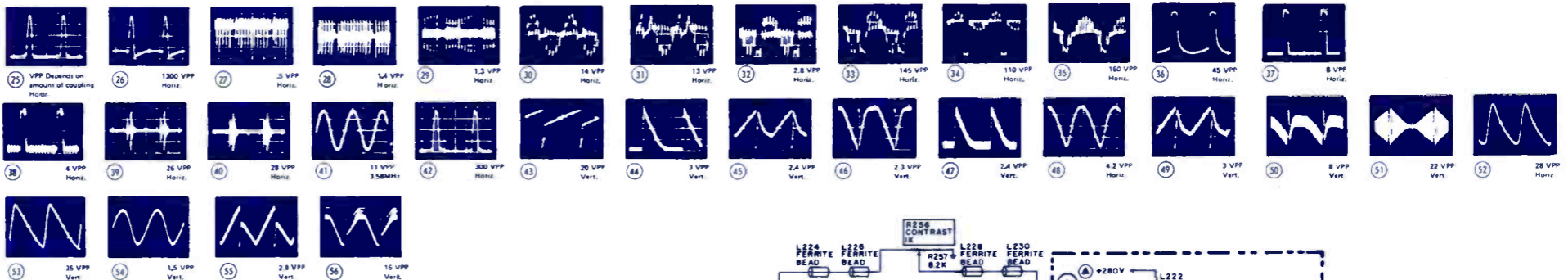


SYMBOL	DESCRIPTION	SYLVANIA PART NO.
L102	— sound input	50-35989-1
L500	— choke power line	50-29833-3
T400	— horiz output	50-35345-1
T500	— filament	55-33937-1
T502	— LV power	55-11121-1
SC608	— varicap	13-29777-2
CB500	— circuit breaker	29-33346-12
FS506	— fuse 5a	29-91256-7
	triple asm high voltage	32-33057-4

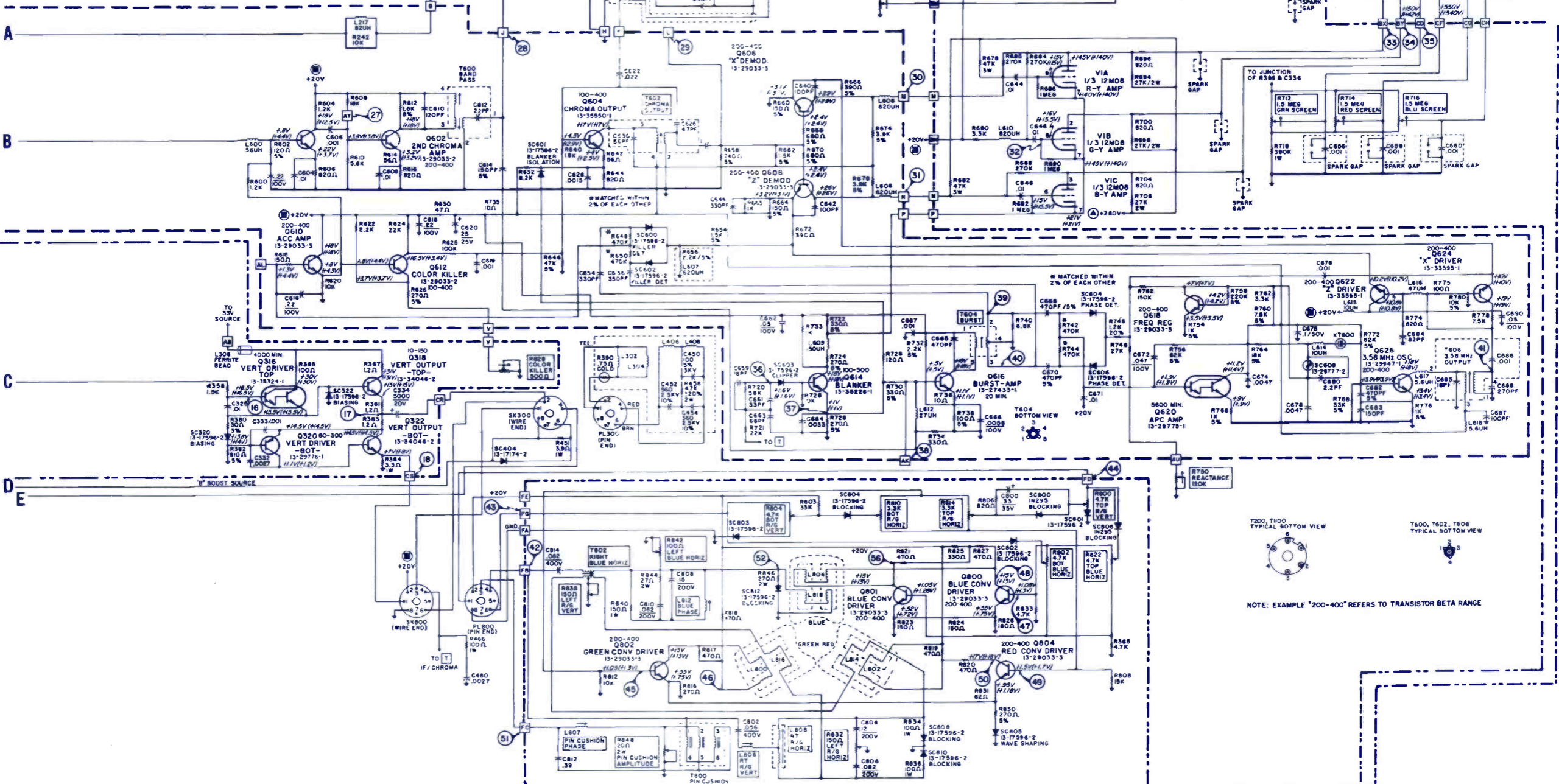
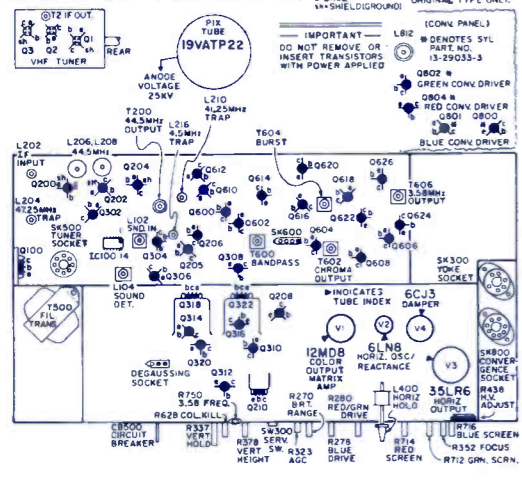




SYLVANIA
Color-TV Chassis
D19-10



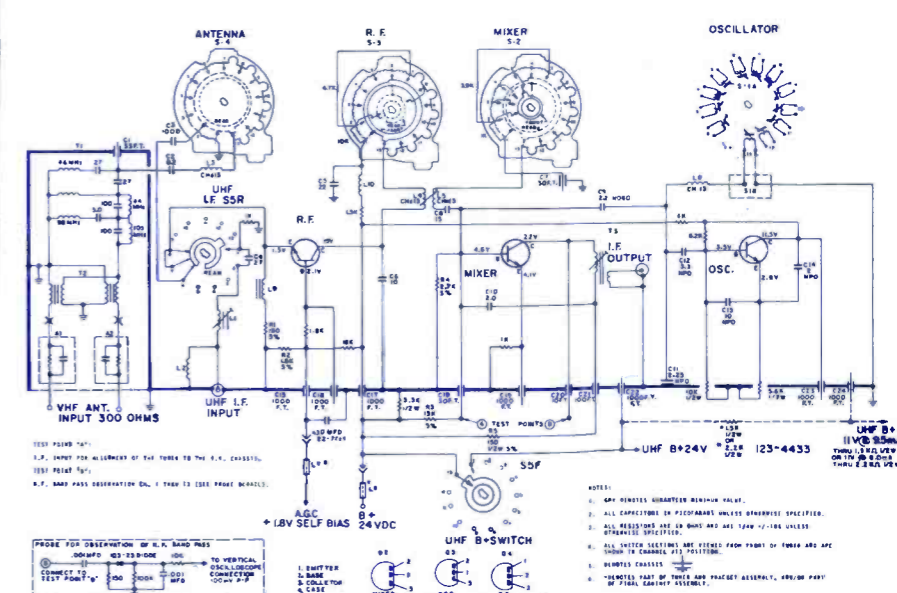
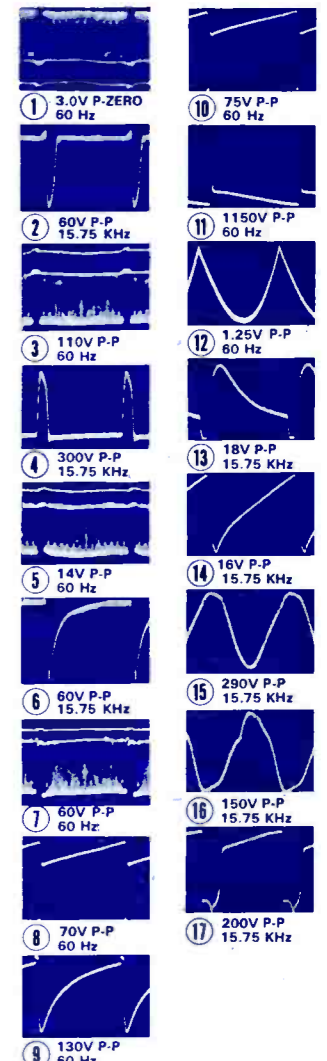
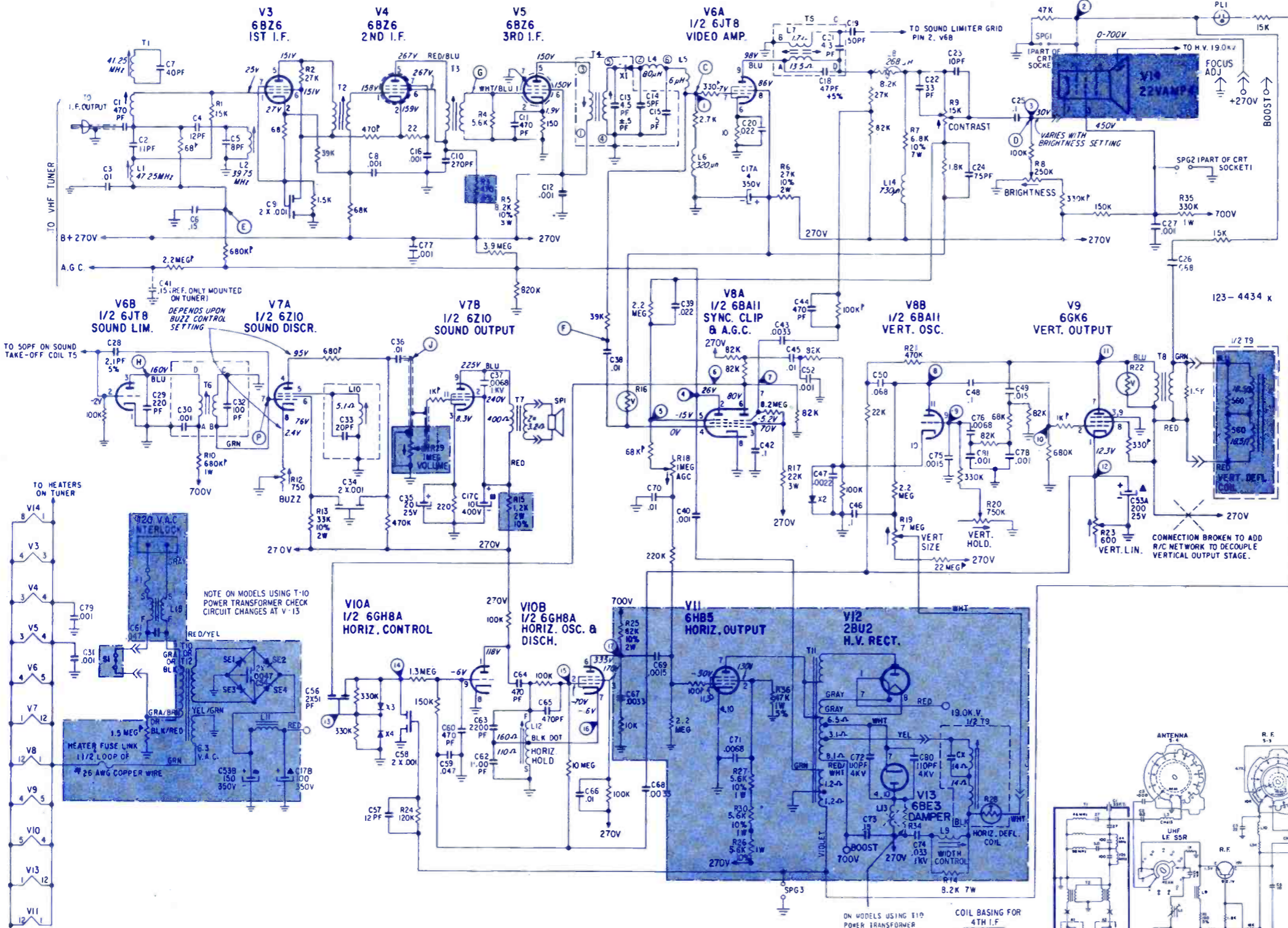
TRANSISTOR LAYOUT (D19-10 CH.)
CHASSIS CONNECTED TO ONE SIDE OF AC LINE.



SYMBOL DESCRIPTION ZENITH PART NO.

C17A-4 μf elect cap, 350v	22-7138	R16-volt dependent resistor	63-5058	L11-filter choke	95-3081
C17B-100 μf elect cap, 350v	22-7137	R19-7M vert size control	63-6433	T5-sound take-off coil	S-86248
C17C-10 μf elect cap, 400v		R20-75K vert hold control	63-7185	T7-audio output trans	95-2393
C35A-200 μf elect cap, 25v		R23-600K, vert lin control	63-8720	T8-vert output trans	95-2333
C35B-150 μf elect cap, 350v		R8-250K bright control	63-5380	T9-yoke	95-2874
R8-250K bright control	63-5380	R9-15K contrast control	63-6491	T10-power trans	95-3033
R9-15K contrast control	63-6491	R12-750K buzz control	63-8719	T11-horiz sweep trans	S-93755

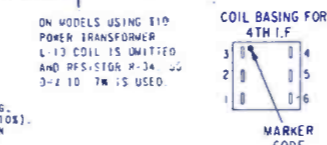
R16-volt dependent resistor	63-5058	L11-filter choke	95-3081
R19-7M vert size control	63-6433	T5-sound take-off coil	S-86248
R20-75K vert hold control	63-7185	T7-audio output trans	95-2393
R23-600K, vert lin control	63-8720	T8-vert output trans	95-2333
R8-250K bright control	63-5380	T9-yoke	95-2874
R9-15K contrast control	63-6491	T10-power trans	95-3033
R12-750K buzz control	63-8719	T11-horiz sweep trans	S-93755



NOTES:
ALL WAVEFORMS TAKEN ON AIR SIGNAL DEVELOPING 3.5 VOLTS PEAK-TO-ZERO AT TEST POINT "C", AND ALL CONTROLS SET FOR NORMAL VIEWING.
ALL VOLTAGES MEASURED FROM CHASSIS TO POINTS INDICATED.
ALL VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED.
ALL D.C. VOLTAGES TO BE MEASURED WITH A VACUUM TUBE VOLTMETER HAVING 11 MEGOHM INPUT RESISTANCE.
ALL VOLTAGE MEASUREMENTS TO BE MADE WITH NO SIGNAL PRESENT. NORMAL SETTING OF CONTROLS AND CHANNEL SELECTOR SET TO CHANNEL 2 UNLESS OTHERWISE SPECIFIED.
FOR CAPACITOR CAPACITY TOLERANCES SEE LEGEND.

ALL RESISTORS ARE ±10% TOLERANCE, CARBON, 1/2 WATT UNLESS OTHERWISE SPECIFIED.
RESISTANCE MEASUREMENTS SHOWN WITH COIL DISCONNECTED FROM CIRCUIT.
COIL RESISTANCES NOT GIVEN ARE UNDER ONE OHM.
CATHODE RAY TUBE 2ND ANODE VOLTAGE TO BE MEASURED WITH ELECTROSTATIC OR 20P MIN. 7MM PER VOLT HIGH VOLTAGE METER.
ARROWS ON POTENTIOMETERS INDICATE CLOCKWISE ROTATION.
INDICATES CHASSIS GROUND
INDICATES VOLTAGE SOURCE
INDICATES WAVEFORM (SEE WAVEFORM CHART)
PICTURE TUBE 2ND ANODE VOLTAGE TO BE MEASURED WITH

ELECTROSTATIC KILOVOLT METER WITH BRIGHTNESS AND CONTRAST CONTROLS FULL COUNTER-CLOCKWISE.
C1-CAPACITOR VALUE SELECTED FOR MINIMUM YOKE RINGING. VARIES WITH A RANGE OF 47 PF TO 72 PF (S.E.V. ±10%). WHEN NECESSARY, REPLACE WITH EXACT VALUE FOUND IN YOKE.
CIRCLED LETTERS INDICATE ALIGNMENT AND TEST POINTS WHERE APPLICABLE.
C - DETECTOR OUTPUT
D - VIDEO OUTPUT
E - I.F. AGC
F - GROUND FOR I.F. ALIGNMENT
G - 3RD I.F. GRID
H - SOUND LIMITER PLATE
J - SOUND OUTPUT
K - SOUND DISC GRID
INDICATES ±20% TOLERANCE MAY BE USED.
INDICATES INSULATED BRACKET - GROUND PLANE (FOR MONOPOLE ANTENNA)

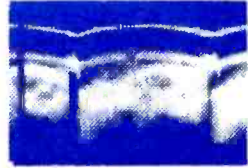
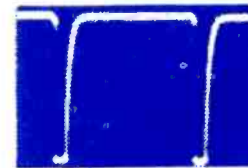


ON MODELS USING T10 POWER TRANSFORMER L13 COIL IS OMITTED AND RESISTOR R-34 3-1-10 7W IS USED.

NOTES:
1. GRY DENOTES SHARTEST RESONANT VALUE.
2. ALL CAPACITORS IN PARALLEL UNLESS OTHERWISE SPECIFIED.
3. ALL RESISTORS ARE 20 OHMS AND ARE 1/2W UNLESS OTHERWISE SPECIFIED.
4. ALL LATCH SELECTORS ARE PULSED FROM POINT OF TUNER AND ARE TUNED TO CHANNEL 12 POSITION.
5. SHOWN CHASSIS.
6. *INDICATES PART OF TUNER AND FRACKET ASSEMBLY, OTHER PART OF TUNER CHASSIS ASSEMBLY.



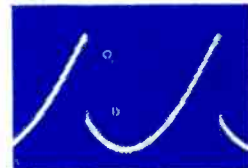
1 3.5V P-ZERO
60 Hz



2 60V P-PV
60 Hz



3 7V P-PV
60 Hz



4 24V P-PV
15.75 KHz



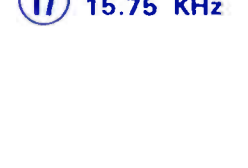
5 24V P-PV
60 Hz



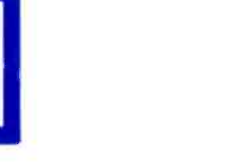
6 32V P-PV
15.75 KHz



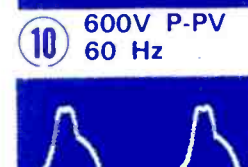
7 9V P-PV
60 Hz



8 3.2V P-PV
60 Hz



9 4.8V P-PV
60 Hz



10 600V P-PV
60 Hz



11 13V P-PV
60 Hz



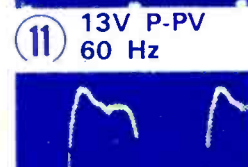
12 16V P-PV
15.75 KHz



13 16V P-PV
15.75 KHz



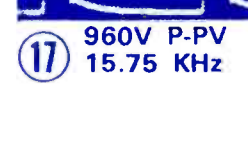
14 2.8V P-PV
15.75 KHz



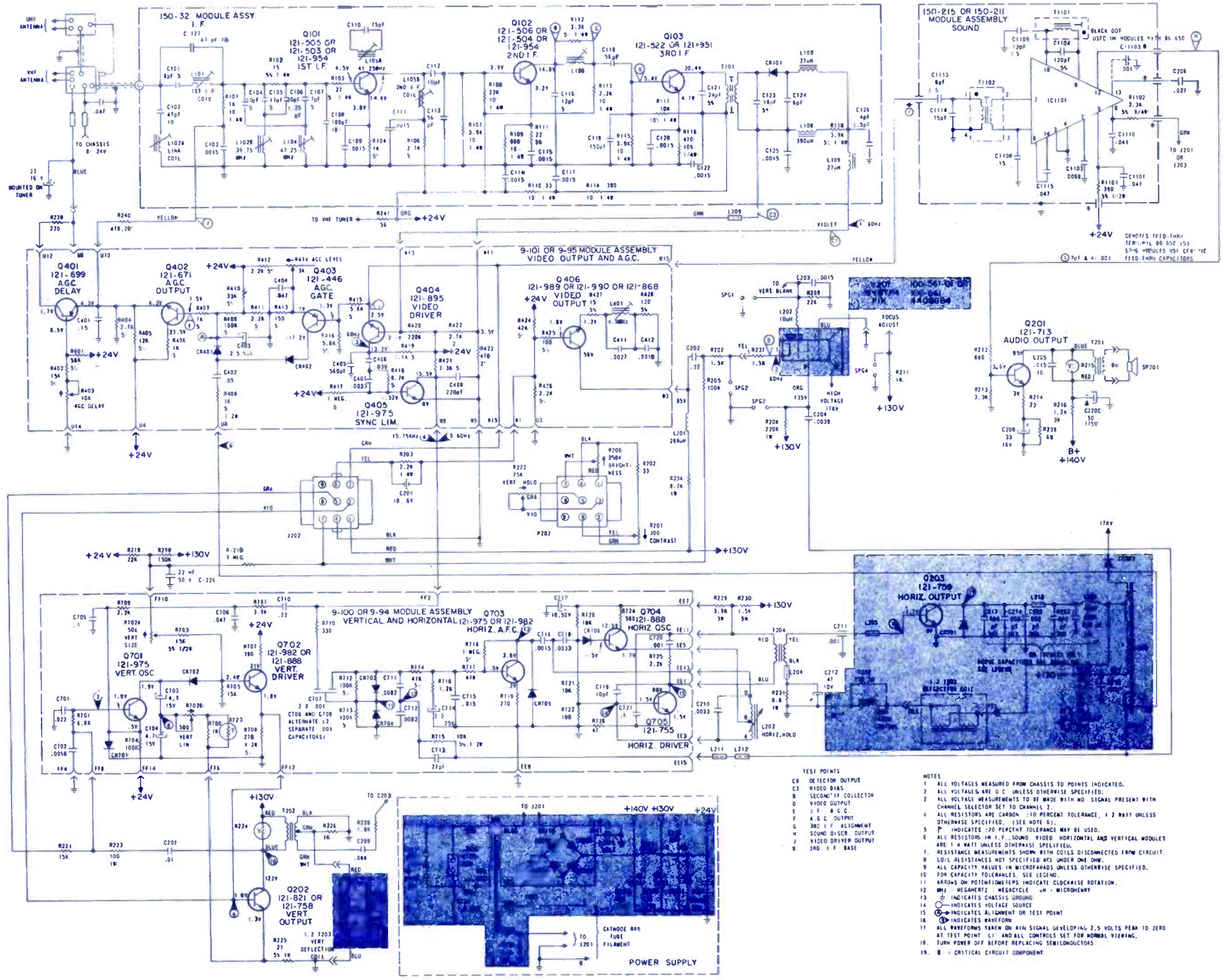
15 170V P-PV
15.75 KHz



16 36V P-PV
15.75 KHz



17 960V P-PV
15.75 KHz



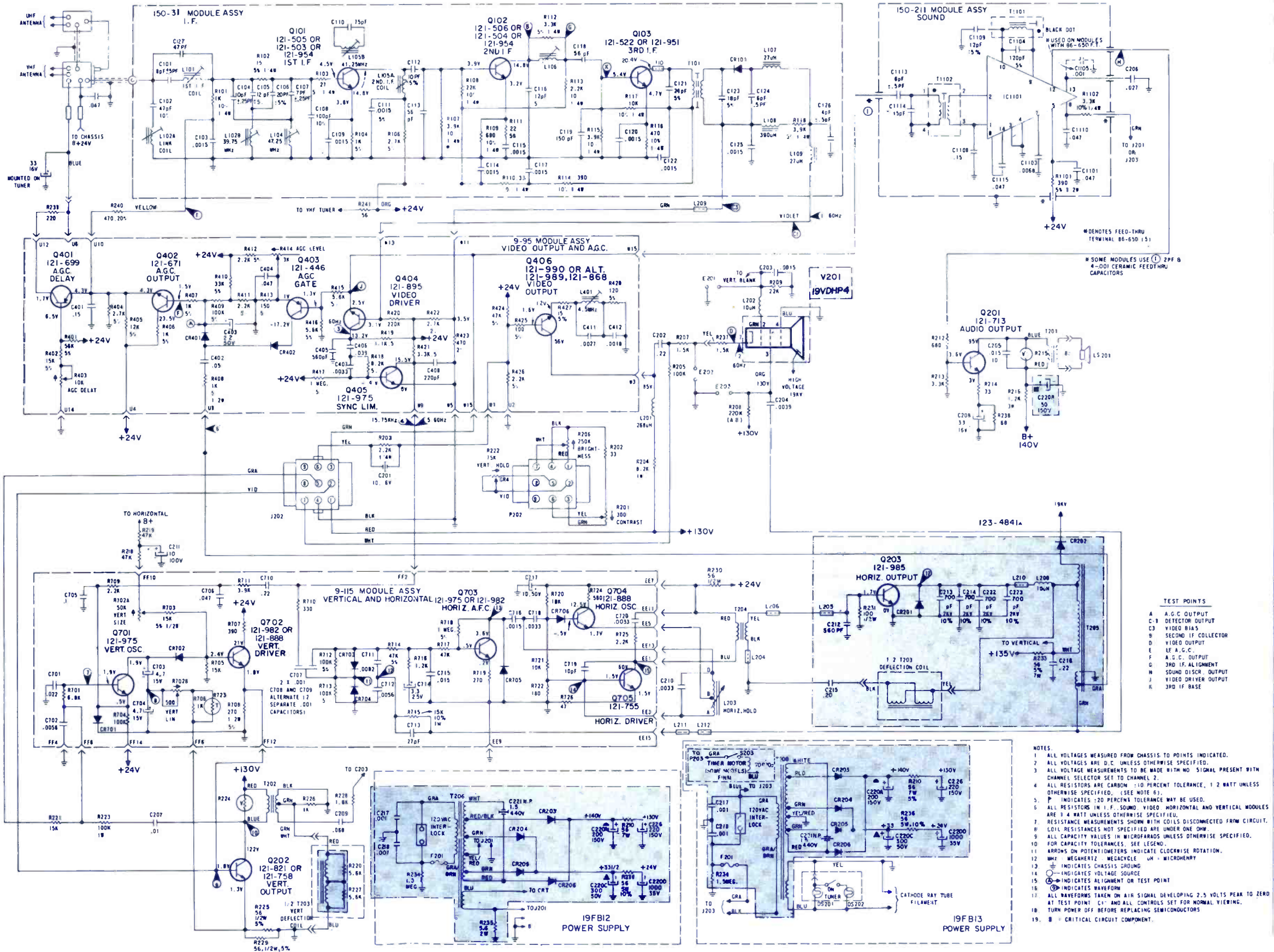
ZENITH
TV Chassis
16EB12/16EB12X

ZENITH

TV Chassis 19FB12, 13

SYMBOL	DESCRIPTION	ZENITH PART NO.
C220A	— 200µf elect capacitor 150v	22-7314
C220B	— 50µf elect capacitor 150v	22-7314
C220C	— 300µf elect capacitor 50v	22-7314
C220D	— 1000µf elect capacitor 35v	22-7314
R215	— varistor	63-5440
R224	— varistor	63-10281
R723	— thermistor	63-10290
L203	— horiz hold coil	95-3100

T201	— audio output xformer	95-3120
T202	— vert output xformer	95-3094-01
C220C	— yoke assembly	S94147-01
T205	— horiz output xformer	S-97079
T1102	— quad xformer	95-2620
CR202	— high volt rectifier	103-258
IC1101	— integ circuit	221-48
F201	— fuse .61 slo blo	136-108

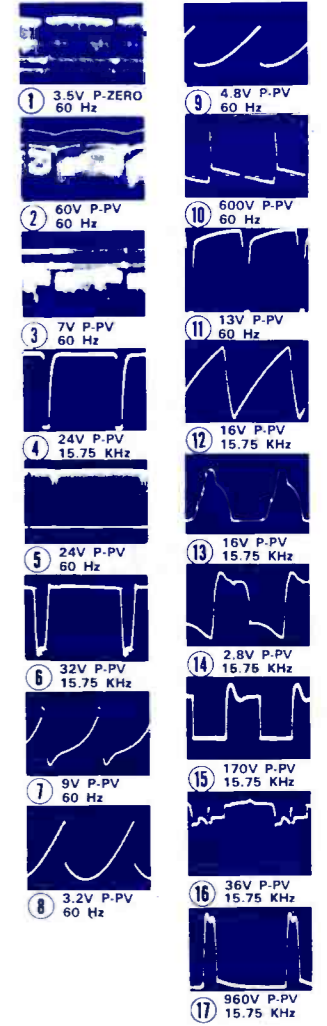
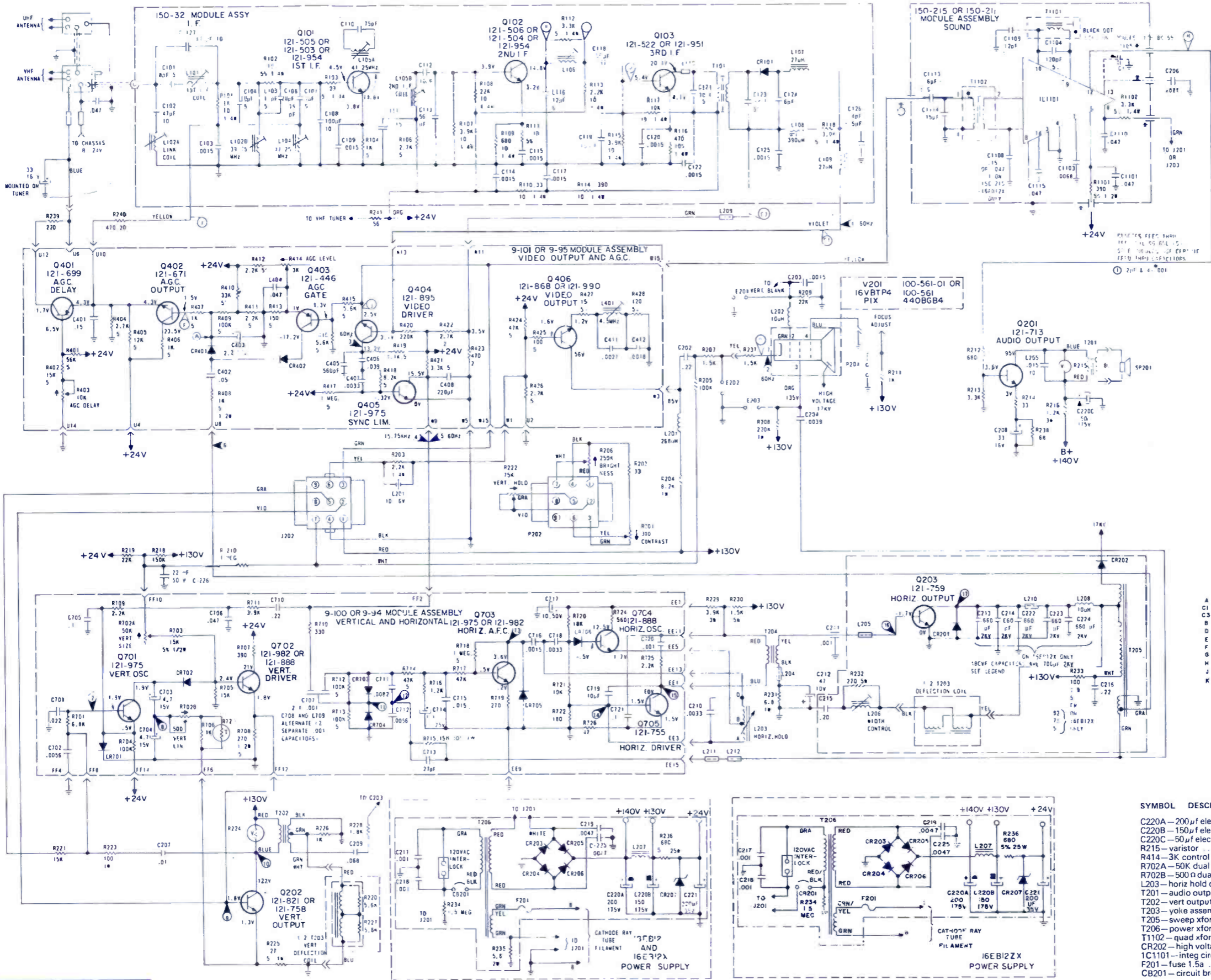


- 1 3.5V P-ZERO 60 Hz
- 2 60V P-PV 60 Hz
- 3 7V P-PV 60 Hz
- 4 24V P-PV 15.75 KHz
- 5 24V P-PV 60 Hz
- 6 32V P-PV 15.75 KHz
- 7 9V P-PV 60 Hz
- 8 3.2V P-PV 60 Hz
- 9 4.8V P-PV 60 Hz
- 10 600V P-PV 60 Hz
- 11 13V P-PV 60 Hz
- 12 16V P-PV 15.75 KHz
- 13 16V P-PV 15.75 KHz
- 14 2.8V P-PV 15.75 KHz
- 15 170V P-PV 15.75 KHz
- 16 36V P-PV 15.75 KHz
- 17 960V P-PV 15.75 KHz

TEST POINTS

A	A.G.C. OUTPUT
C	DETECTOR OUTPUT
D	VIDEO BIAS
E	SECOND I.F. COLLECTOR
F	VIDEO OUTPUT
G	LE A.G.C.
H	A.G.C. OUTPUT
J	3RD I.F. ALIGNMENT
K	SOUND DISCR. OUTPUT
L	VIDEO DRIVER OUTPUT
M	3RD I.F. BASE

- NOTES:
- 1 ALL VOLTAGES MEASURED FROM CHASSIS TO POINTS INDICATED.
 - 2 ALL VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED.
 - 3 ALL VOLTAGE MEASUREMENTS TO BE MADE WITH NO SIGNAL PRESENT WITH CHANNEL SELECTOR SET TO CHANNEL 2.
 - 4 ALL RESISTORS ARE CARBON -10 PERCENT TOLERANCE, 1/2 WATT UNLESS OTHERWISE SPECIFIED. (SEE NOTE 6).
 - 5 P INDICATES ±20 PERCENT TOLERANCE MAY BE USED.
 - 6 ALL RESISTORS IN I.F., SOUND, VIDEO HORIZONTAL AND VERTICAL MODULES ARE 1/4 WATT UNLESS OTHERWISE SPECIFIED.
 - 7 RESISTANCE MEASUREMENTS SHOWN WITH COILS DISCONNECTED FROM CIRCUIT.
 - 8 COIL RESISTANCES NOT SPECIFIED ARE UNDER ONE OHM.
 - 9 ALL CAPACITY VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
 - 10 ALL CAPACITY TOLERANCES, SEE LEGEND.
 - 11 ARROWS ON POTENTIOMETERS INDICATE COUNTERCLOCKWISE ROTATION.
 - 12 MHZ MEGAHERTZ MEGACYCLE UH MICROHENRY
 - 13 INDICATES CHASSIS GROUND
 - 14 INDICATES VOLTAGE SOURCE
 - 15 INDICATES ALIGNMENT OR TEST POINT
 - 16 INDICATES WAVEFORM
 - 17 ALL WAVEFORMS TAKEN ON AIR SIGNAL DEVELOPING 2.5 VOLTS PEAK TO ZERO AT TEST POINT C1 AND ALL CONTROLS SET FOR NORMAL VIEWING.
 - 18 TURN POWER OFF BEFORE REPLACING SEMICONDUCTORS
 - 19 B = CRITICAL CIRCUIT COMPONENT.



TEST POINTS

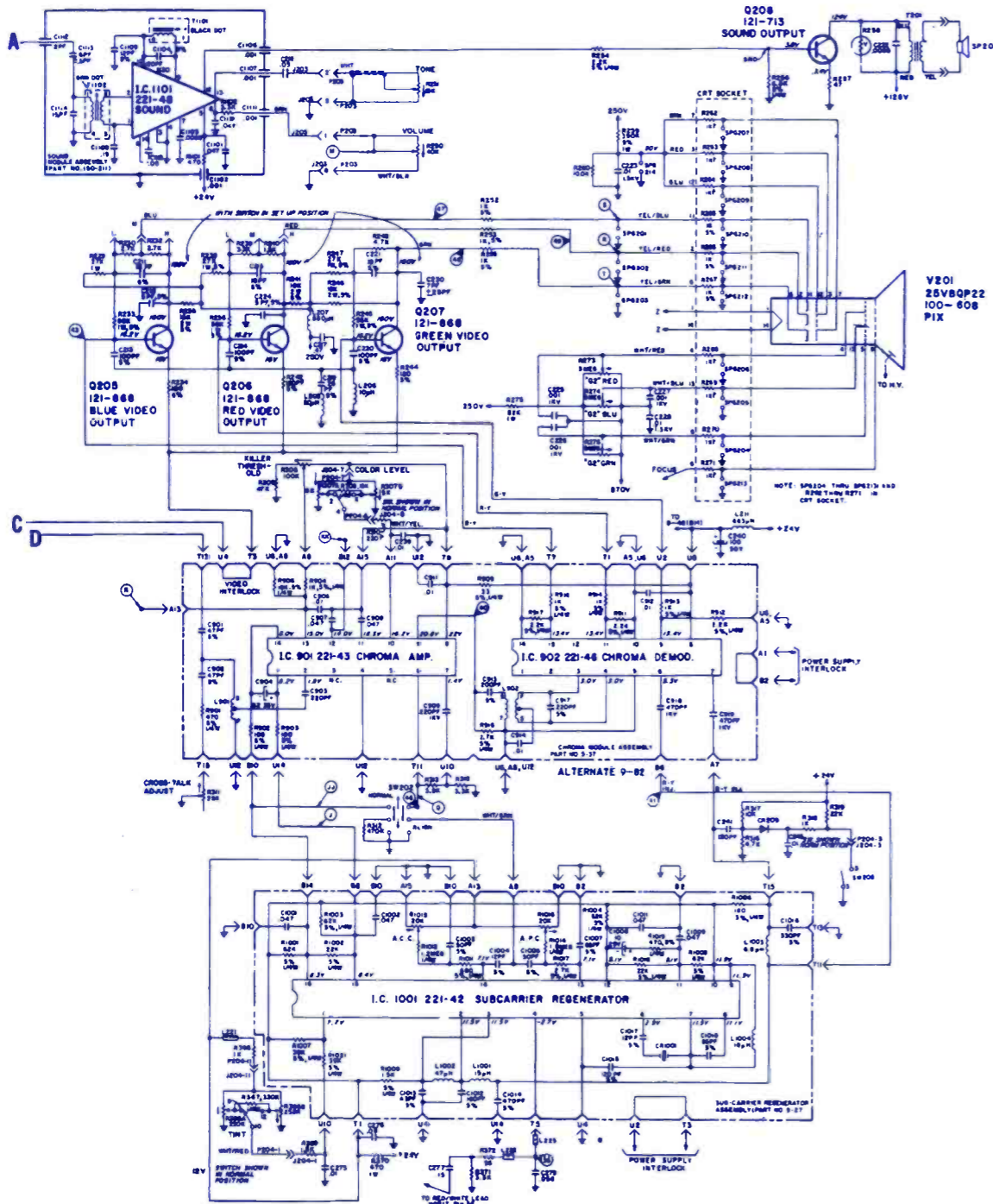
A	AGC OUTPUT
C1	DETECTOR OUTPUT
C3	VIDEO BIAS
D	SECOND I.F. COLLECTION
B	VIDEO OUTPUT
E	I.F. A.G.C.
F	A.G.C. OUTPUT
G	3RD I.F. ALIGNMENT
H	SOUND DISC. OUTPUT
J	VIDEO DRIVER OUTPUT
K	3RD I.F. BASE

SYMBOL	DESCRIPTION	ZENITH PART NO.
C220A	—200µf electrolytic cap 175v	22-7201
C220B	—150µf electrolytic cap 175v	22-7201
C220C	—50µf electrolytic cap 175v	22-7201
R215	—varistor	63-5440
R414	—3K control AGC level	63-10148
R702A	—50K dual control vert size	63-10225-01
R702B	—500Ω dual control vert lin.	63-10225-01
L203	—horiz hold coil	95-3100
T201	—audio output xformer	95-3120
T202	—vert output xformer	95-3094
T203	—yoke assembly	95-3126
T205	—sweep xformer	95-94397
T206	—power xformer	95-3131
T1102	—quad xformer	95-2789
CR202	—high voltage rectifier	103-239-02
1C1101	—integ circuit	221-48
F201	—fuse 1.5a	136-29
CB201	—circuit breaker 1.2a	85-976-03

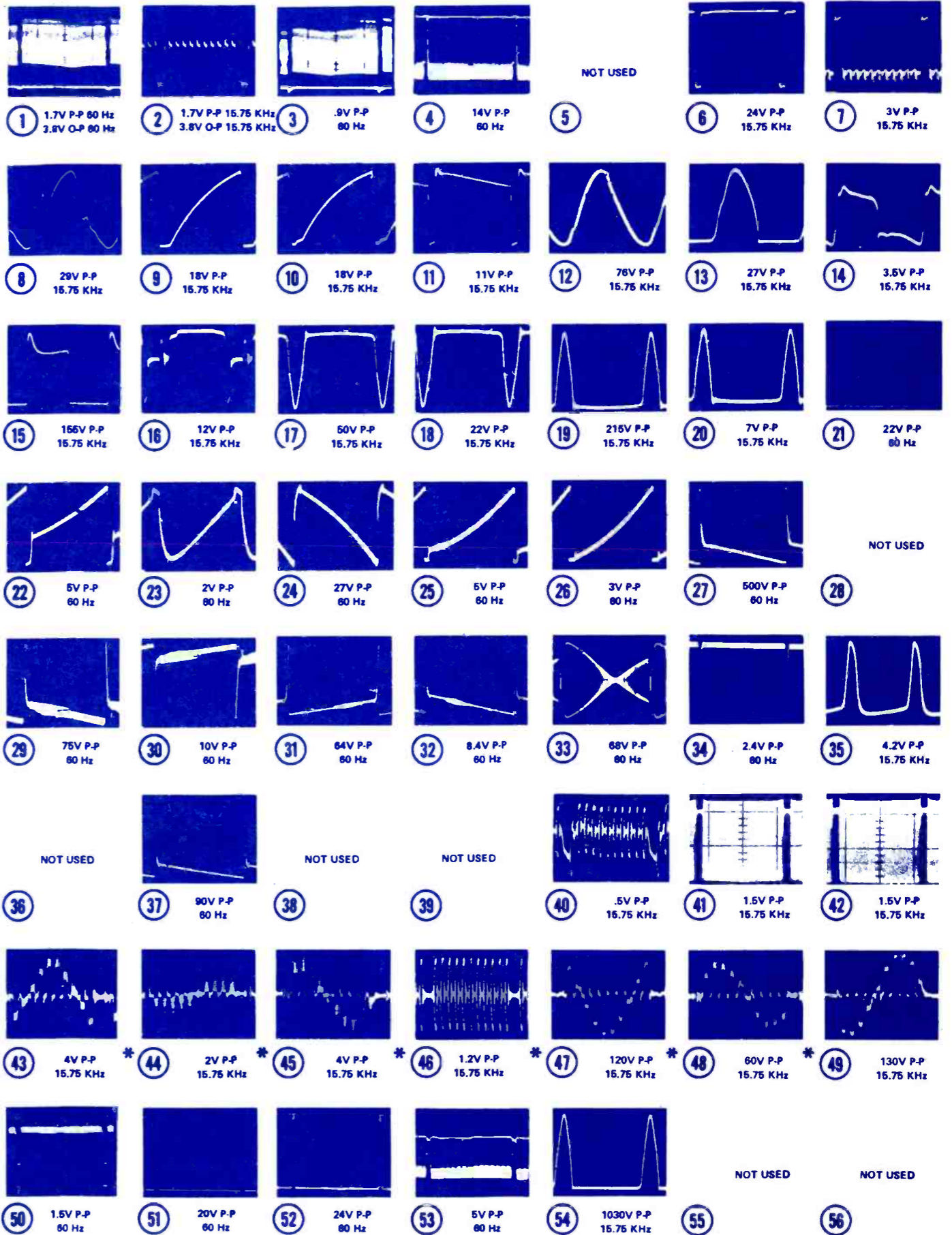
ZENITH
TV Chassis
16B12X, ZX

SYMBOL	DESCRIPTION	ZENITH PART NO.
C263A	—280 µf electr cap 250 v	22-6346
C263B	—200 µf electr cap 250v	
C263C	—300 µf electr cap 175v	
C203D	—40 µf electr cap 175v	
R324	—thermistor	63-0667
R363	—15M, focus control	63-9967
R711	—thermistor	63-8788
R1013	—20K, A.C.C. control	63-8576
L105	—41.25MHz trap	20-3287
L-113	—4.5MHz trap	20-3289
L201	—3.58MHz trap coil	20-1838
L213	—filter choke (125v)	95-2894
L214	—horiz osc coil	S-56875

L901	—chroma take-off coil	95-2982
T201	—audio output xformer	95-2883
T202	—vert output xformer	95-3072
T204	—deflection yoke	95-2880 or S-93256
	(not interchangeable)	
T205	—power xformer	95-2954
T207	—horiz sweep xformer	S-93297
T208	—filament xformer	95-2953-01
A701	—integrator unit	87-11
F201	—2.25 a bel-fuse	13892
F202	—heater fuse link 2½ min. loop of No. 24 AWG copper wire	91-2061
F203	—400 ma bel-fuse	138-99
	VHF tuner	175-1810



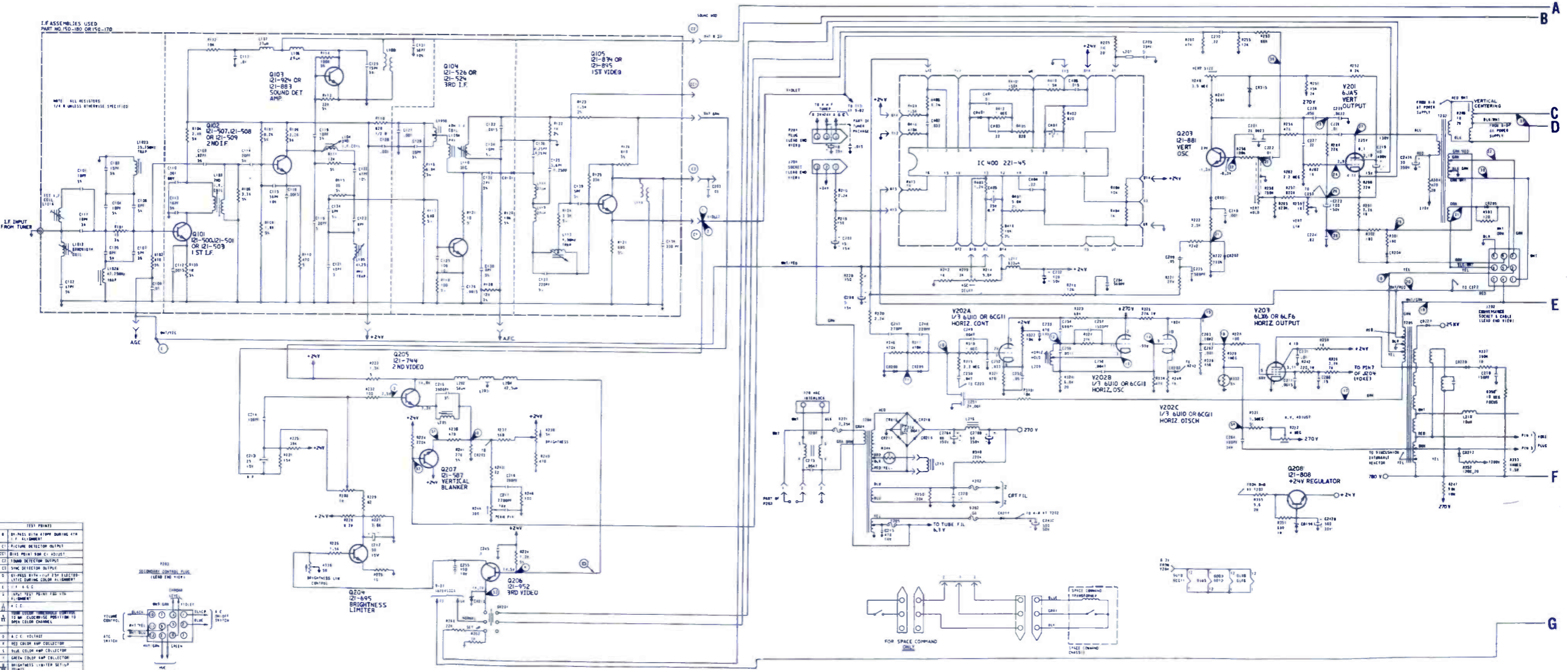
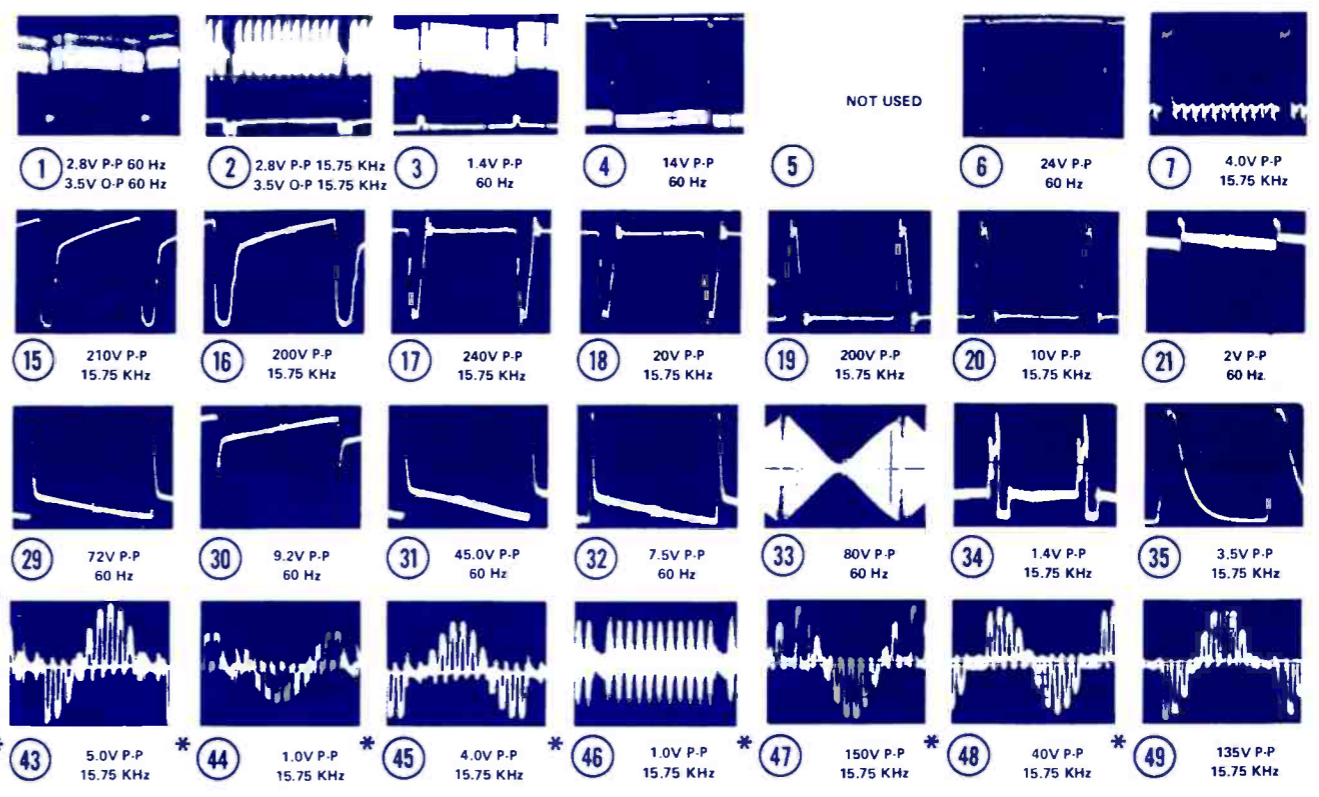
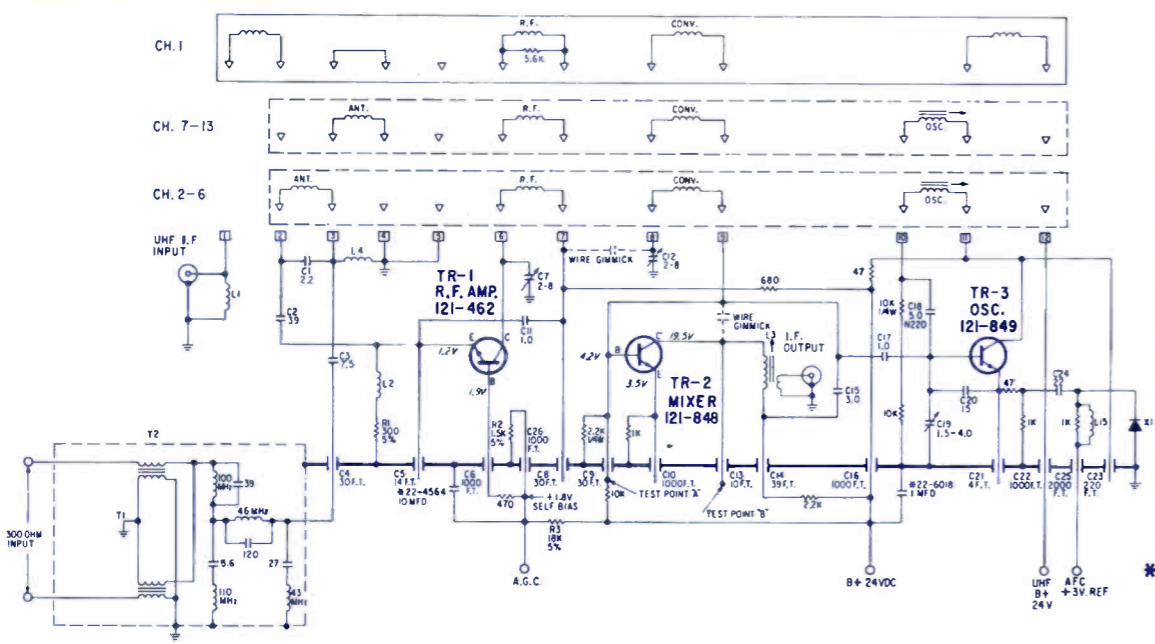
* FOR WAVEFORMS 43 THROUGH 49, BYPASS TEST POINT "D" WITH 1.0 MF CAPACITOR.

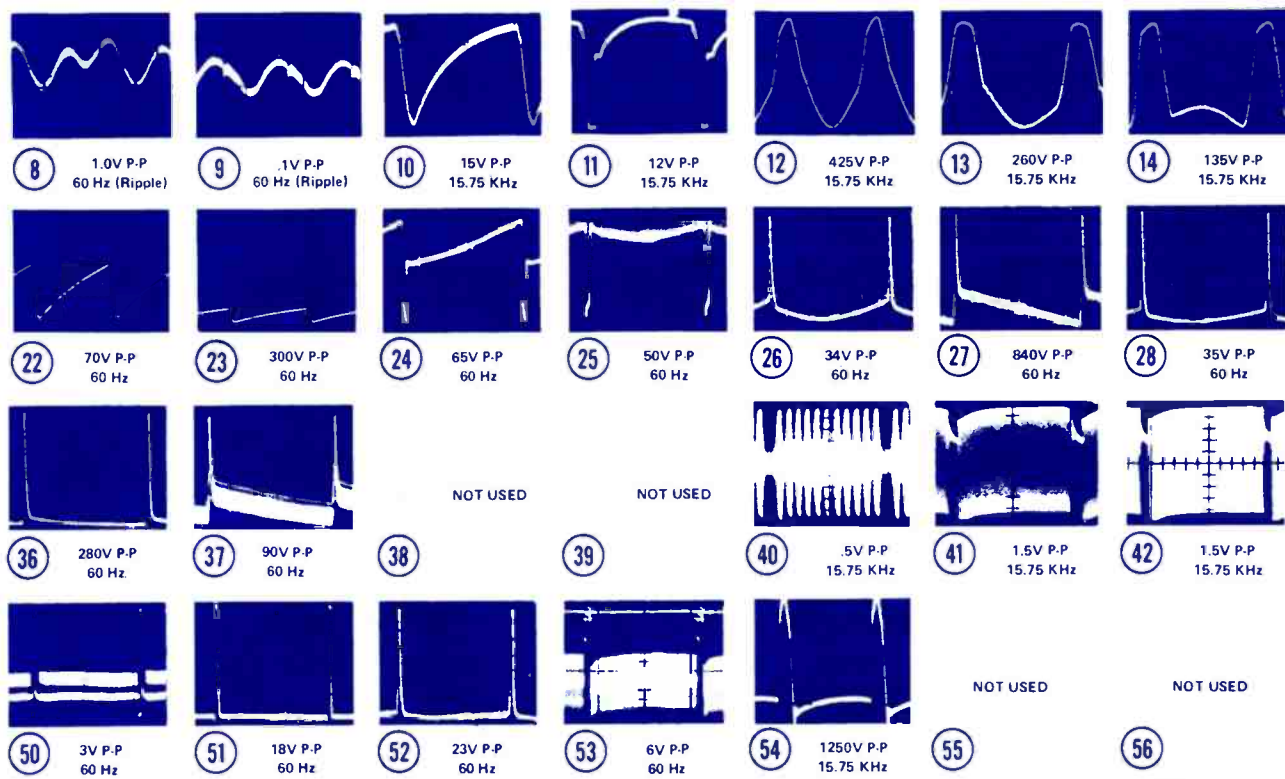


ZENITH
Color-TV Chassis
25DC57

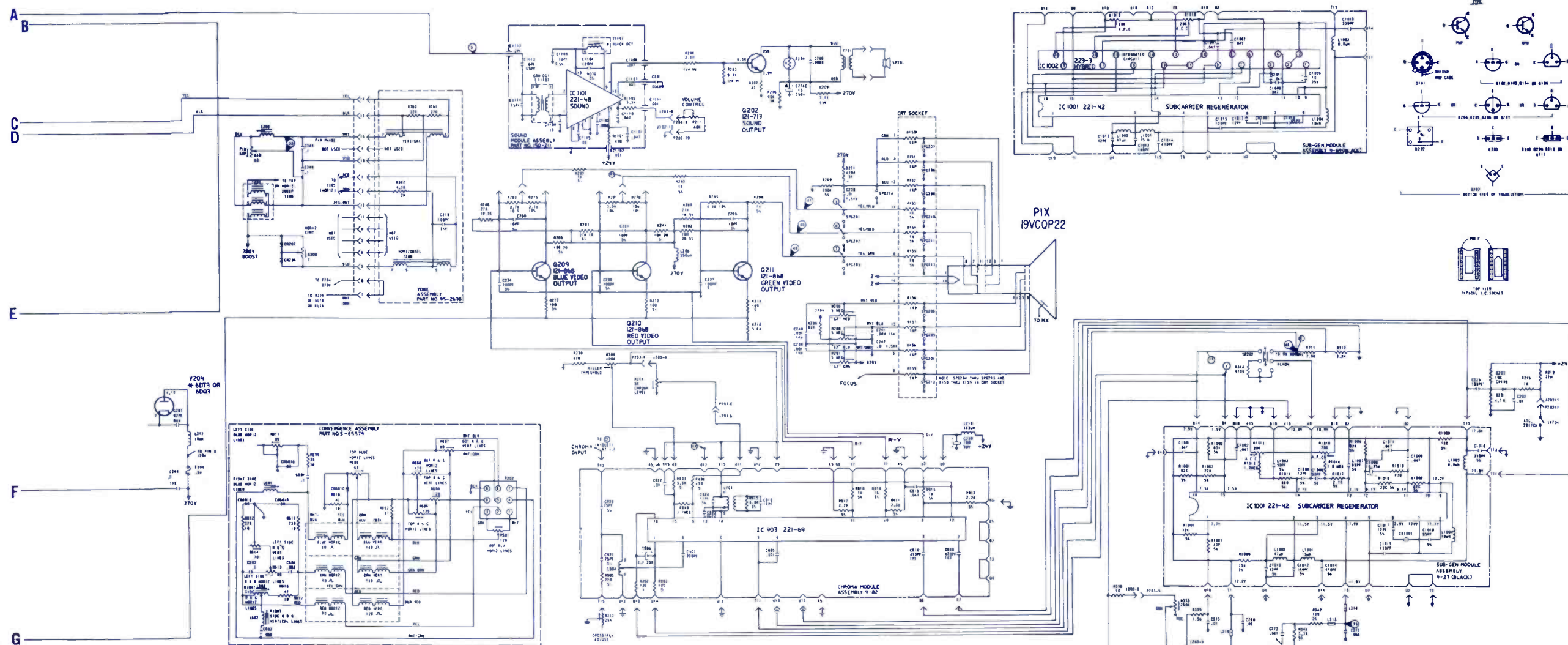
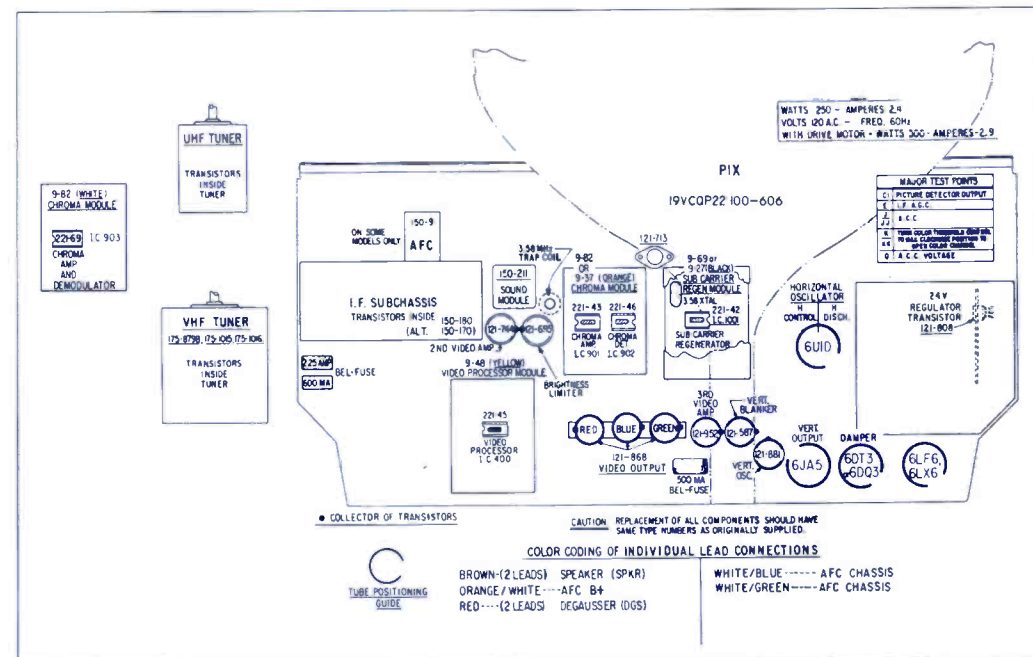
ZENITH

Color-TV Chassis
19DC21



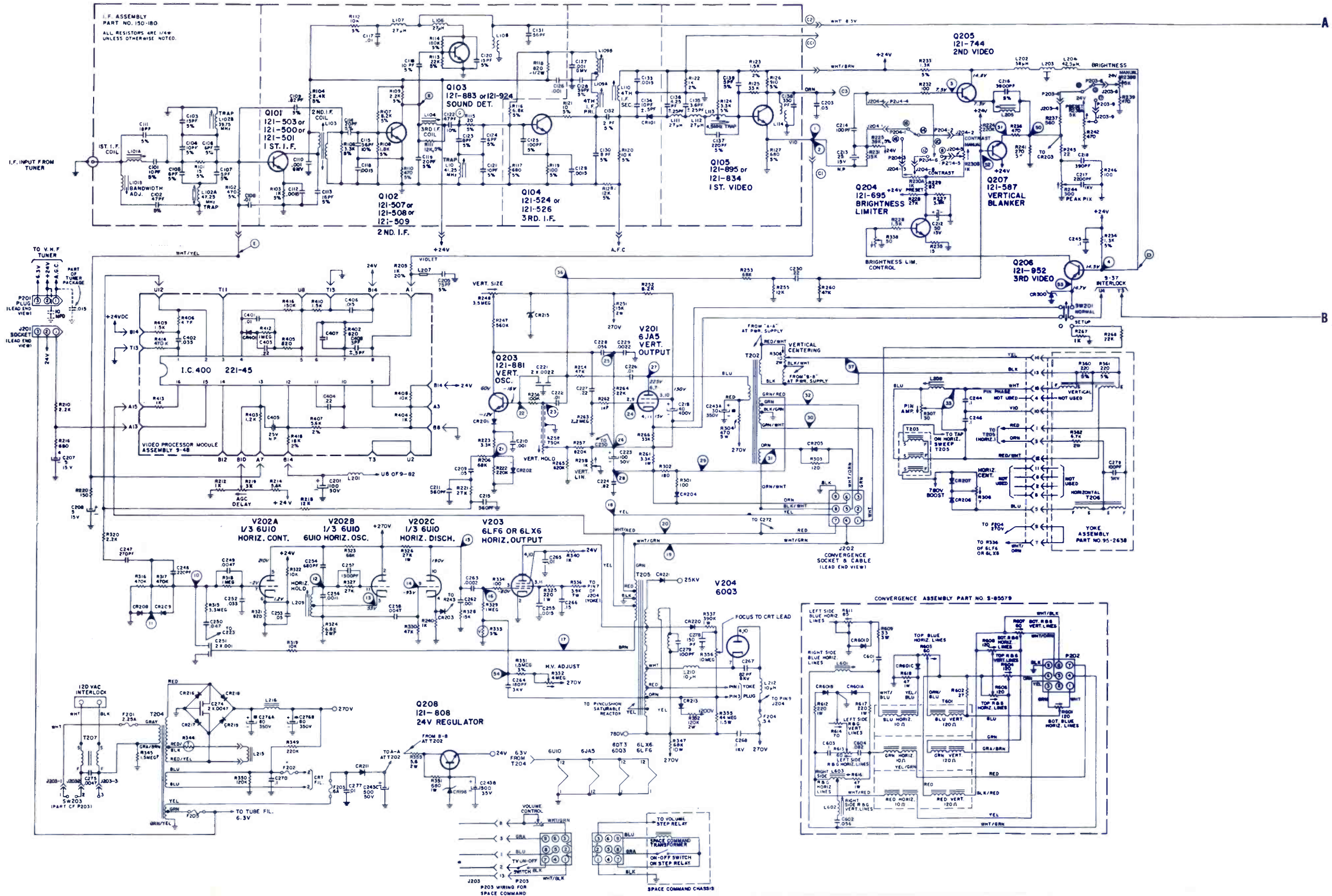


* FOR WAVEFORMS 43 THROUGH 49, BYPASS TEST POINT "D" WITH 1.0 MF CAPACITOR.



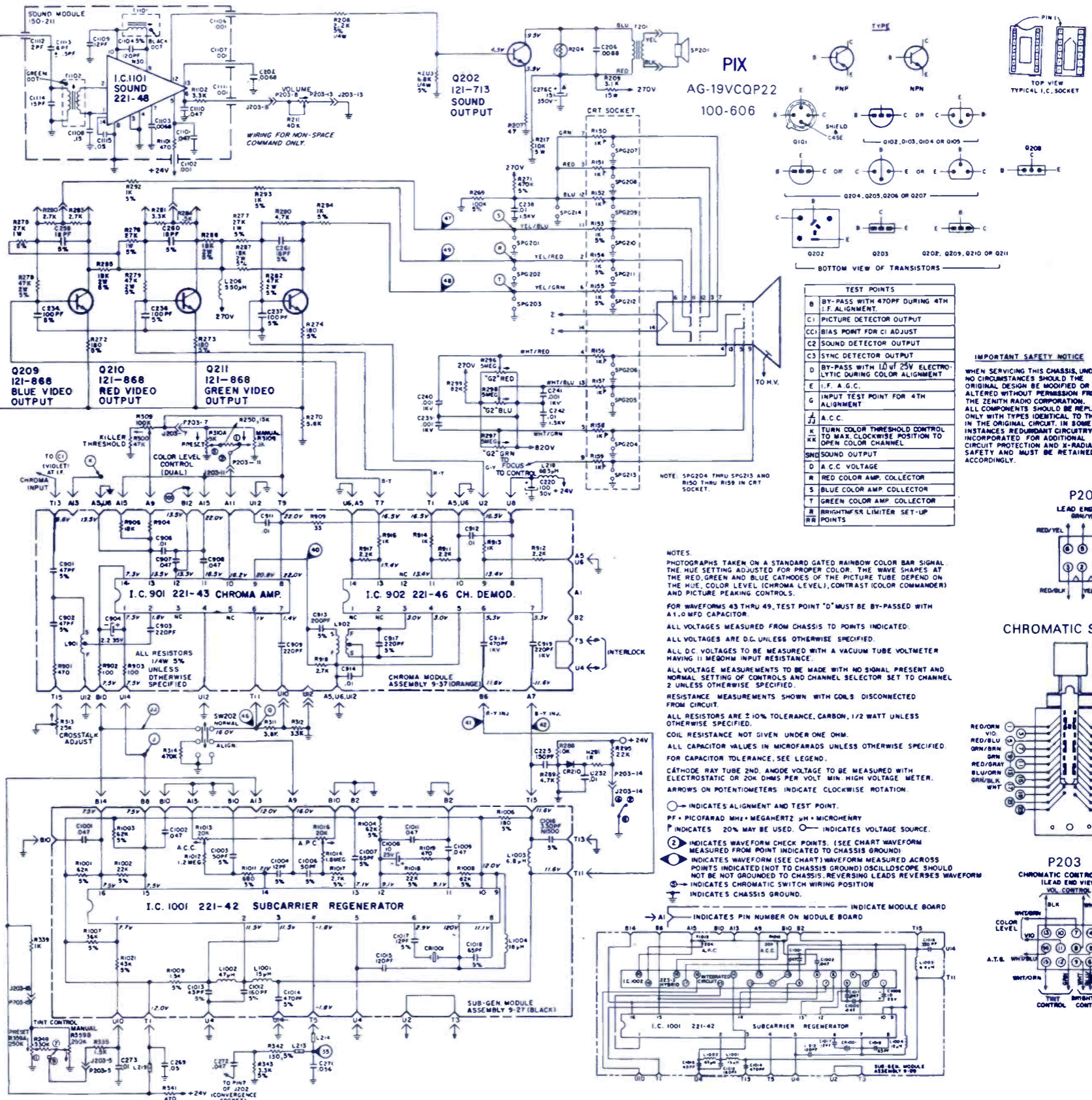
ZENITH

Color-TV Chassis
19DC11

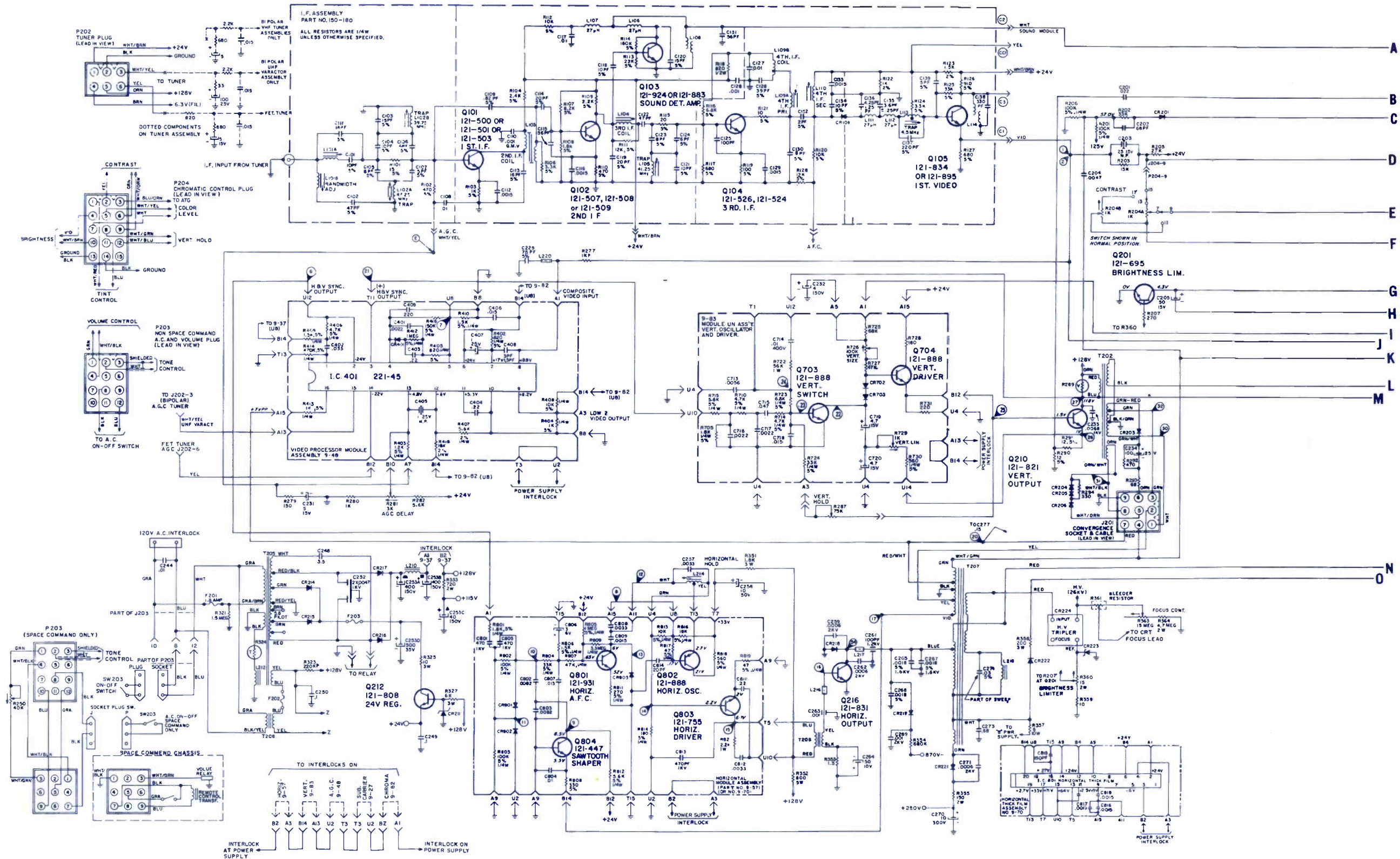


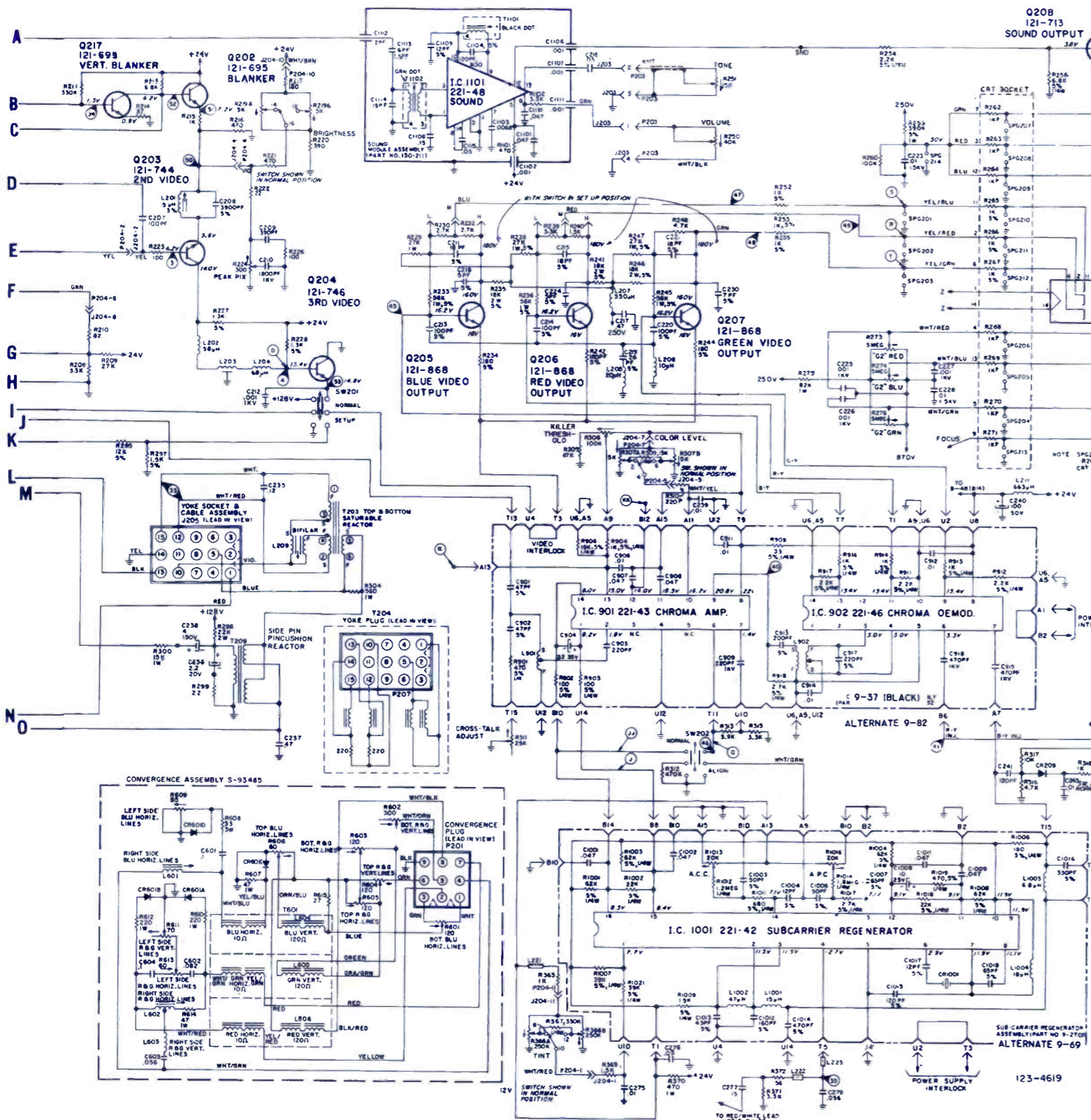
A

B

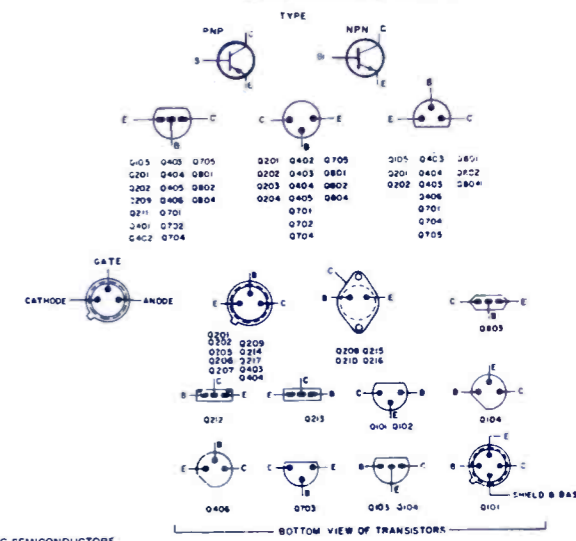
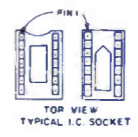


ZENITH
Color-TV
Chassis 25DC56





TEST POINTS	
B	BY-PASS WITH 470PF DURING 4TH T.F. ALIGNMENT.
C1	PICTURE DETECTOR OUTPUT
C2	BIAS POINT FOR CI ADJUST
C2	SOUND DETECTOR OUTPUT
D	BY-PASS WITH 10UF 25V ELECTROLYTIC DURING COLOR ALIGNMENT
E	I.F. A.C.C.
G	JMPUT TEST POINT 80B 8TH T.F. ALIGNMENT
J	A.C.C.
K	TURN COLOR THRESHOLD CONTROL TO MAX CLOCKWISE POSITION TO OPEN COLOR CHANNEL
K	A.C.C.
M	SOUND OUTPUT
Q	A.C.C. VOLTAGE
R	R-Y COLOR AMP PLATE
S	B-Y COLOR AMP PLATE
Y	G-Y COLOR AMP PLATE
W	BRIGHTNESS LIMITER SET-UP POINTS



NOTES

TURN POWER OFF BEFORE REPLACING SEMICONDUCTORS. PHOTOGRAPHS TAKEN ON A STANDARD GATED RAINBOW COLOR BAR SIGNAL THE HUE SETTING ADJUSTED FOR PROPER COLOR. THE WAVE SHAPES AT THE RED, GREEN AND BLUE CATHODES OF THE PICTURE TUBE DEPEND ON THE HUE, COLOR LEVEL (CHROMA LEVEL), CONTRAST (COLOR COMMANDER) AND PICTURE PEAKING CONTROLS.

FOR WAVEFORMS 43 THRU 49, TEST POINT "D" MUST BE BY-PASSED WITH A 1.8MFD CAPACITOR.

ALL VOLTAGES MEASURED FROM CHASSIS TO POINTS INDICATED.

ALL VOLTAGES ARE DC UNLESS OTHERWISE SPECIFIED.

ALL DC VOLTAGES TO BE MEASURED WITH A VACUUM TUBE VOLTMETER HAVING 11 MEGOHM INPUT RESISTANCE.

ALL VOLTAGE MEASUREMENTS TO BE MADE WITH NO SIGNAL PRESENT AND NORMAL SETTING OF CONTROLS AND CHANNEL SELECTOR SET TO CHANNEL 2 UNLESS OTHERWISE SPECIFIED.

RESISTANCE MEASUREMENTS SHOWN WITH COILS DISCONNECTED FROM CIRCUIT.

ALL RESISTORS ARE 2% TOLERANCE, CARBON, 1/2 WATT UNLESS OTHERWISE SPECIFIED.

COIL RESISTANCE NOT GIVEN UNDER ONE OHM.

ALL CAPACITOR VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED FOR CAPACITOR TOLERANCE, SEE LEGEND.

CATHODE RAY TUBE 2ND ANODE VOLTAGE TO BE MEASURED WITH ELECTROSTATIC OR 20K OHMS PER VOLT MIN. HIGH VOLTAGE METER.

ARROWS IN POTENTIOMETERS INDICATE CLOCKWISE ROTATION.

○ INDICATES ALIGNMENT AND TEST POINT

PF = PICOFARAD MHZ = MEGAHERTZ μH = MICROHENRY

⊕ INDICATES 20% MAY BE USED ○ INDICATES VOLTAGE SOURCE

② INDICATES WAVEFORM CHECK POINTS (SEE CHART WAVEFORM MEASURED FROM POINT INDICATED TO CHASSIS GROUND)

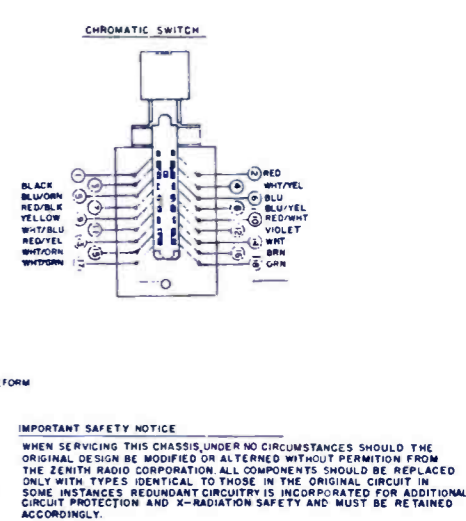
⊕ INDICATES WAVEFORM (SEE CHART) WAVEFORM MEASURED ACROSS POINTS INDICATED (NOT TO CHASSIS GROUND) OSCILLOSCOPE SHOULD NOT BE GROUNDED TO CHASSIS, REVERSING LEADS REVERSES WAVEFORM

⊕ INDICATES CHROMATIC SWITCH WIRING POSITION

⊕ INDICATES CHASSIS GROUND

→ A1 → INDICATES PIN NUMBER ON MODULE BOARD

→ I1 → INDICATE MODULE BOARD

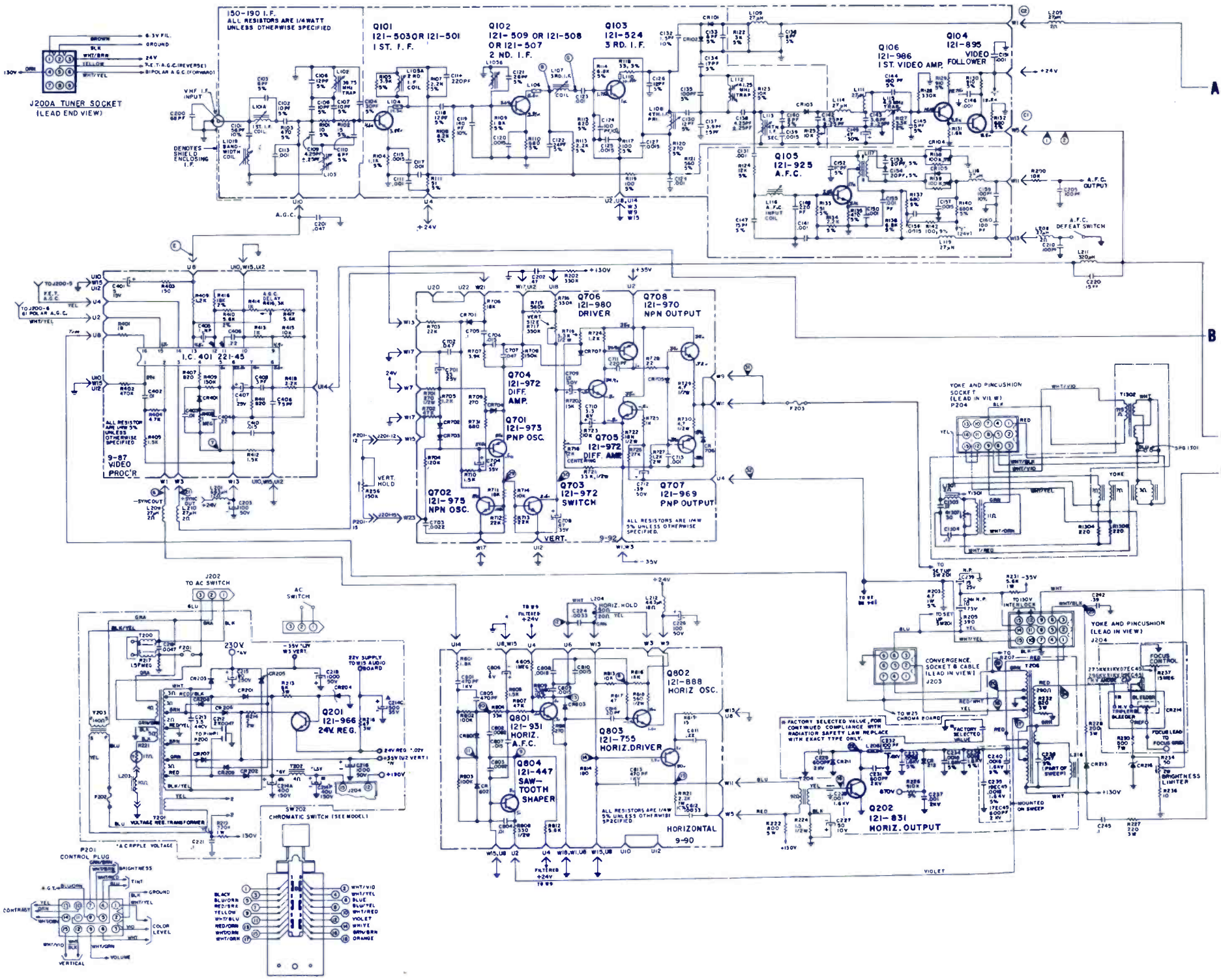
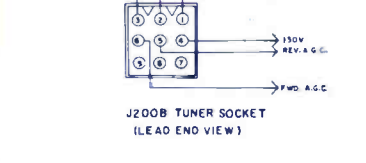
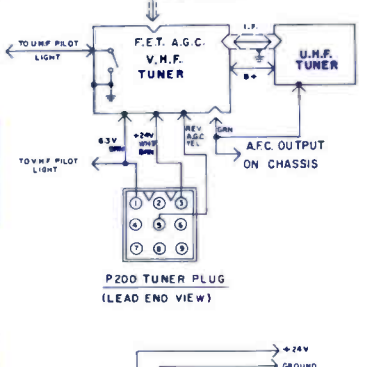
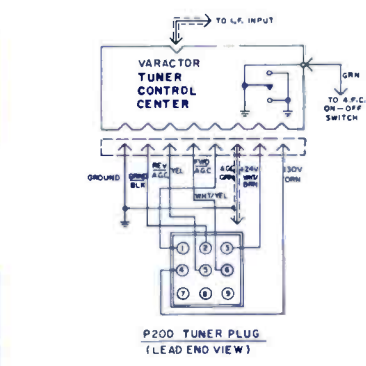
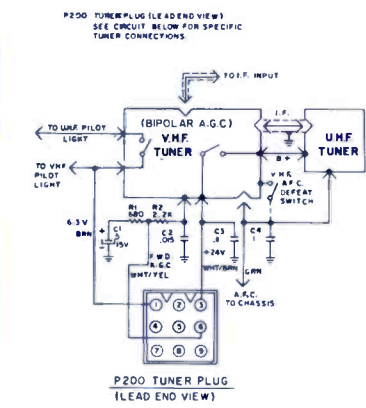
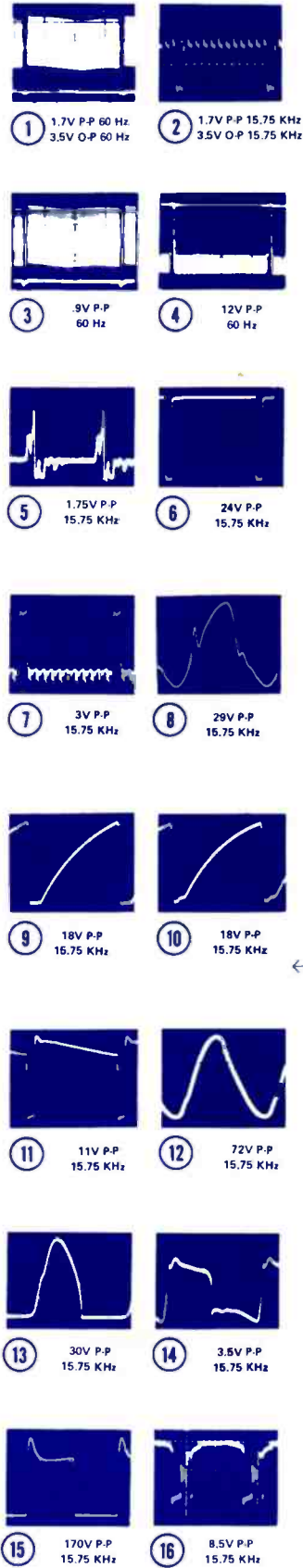


IMPORTANT SAFETY NOTICE

WHEN SERVICING THIS CHASSIS UNDER NO CIRCUMSTANCES SHOULD THE ORIGINAL DESIGN BE MODIFIED OR ALTERED WITHOUT PERMISSION FROM THE ZENITH RADIO CORPORATION. ALL COMPONENTS SHOULD BE REPLACED ONLY WITH TYPES IDENTICAL TO THOSE IN THE ORIGINAL CIRCUIT. IN SOME INSTANCES REDUNDANT CIRCUITRY IS INCORPORATED FOR ADDITIONAL CIRCUIT PROTECTION AND X-RADIATION SAFETY AND MUST BE RETAINED ACCORDINGLY.

ZENITH

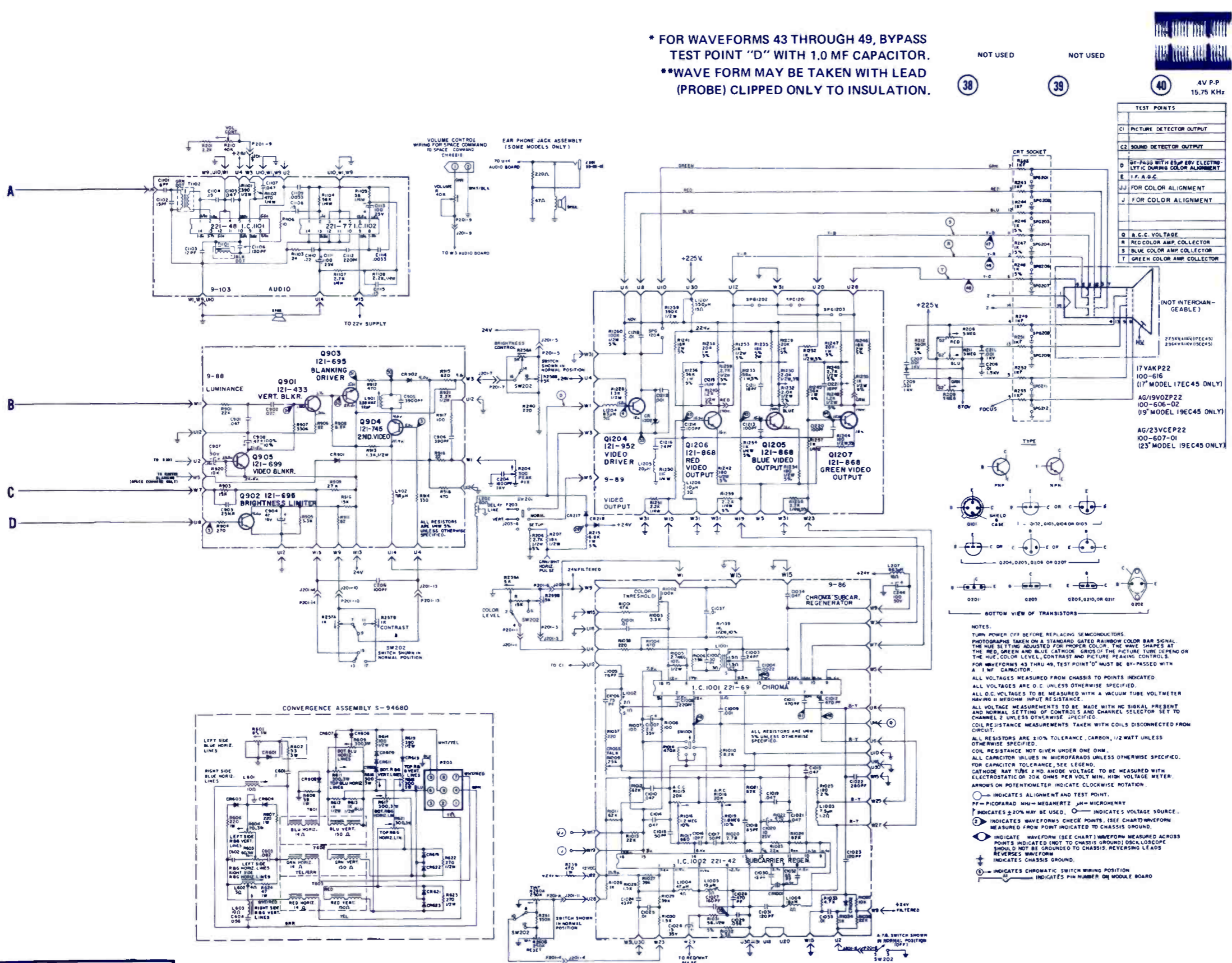
Color-TV Chassis
17EC45/19EC45



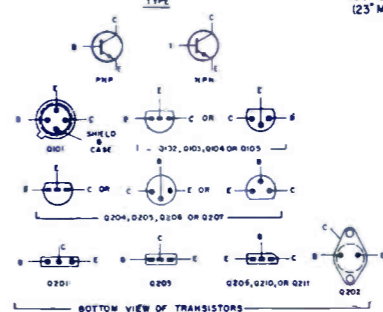
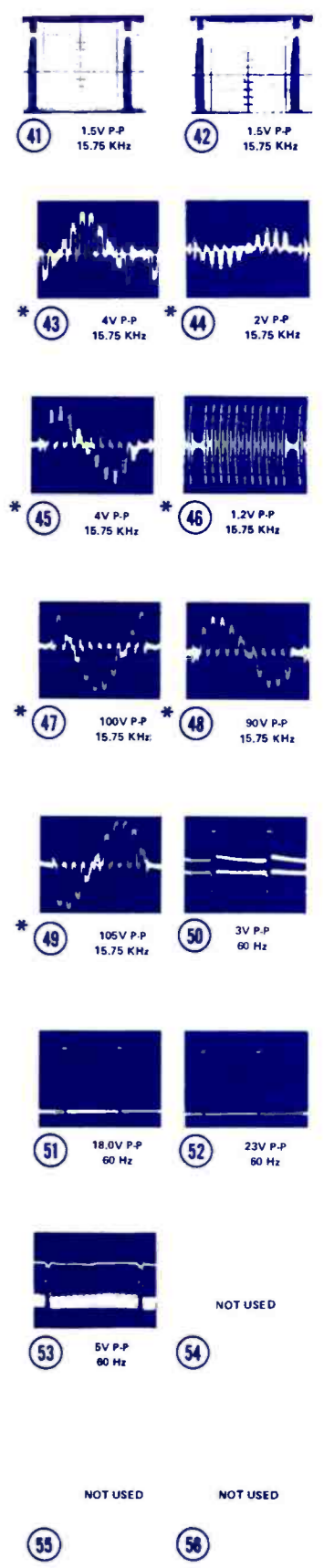
DRAWING NO. 123-480

NOT USED NOT USED 28 50V P-P 15.75 KHz 29 20V P-P 60 Hz 30 5V P-P 60 Hz 31 30V P-P 60 Hz 32 4.8V P-P 60 Hz 33 NOT USED 34 3.0V P-P 60 Hz 35 4.2V P-P 15.75 KHz 36 NOT USED 37 NOT USED

* FOR WAVEFORMS 43 THROUGH 49, BYPASS TEST POINT "D" WITH 1.0 MF CAPACITOR.
 ** WAVE FORM MAY BE TAKEN WITH LEAD (PROBE) CLIPPED ONLY TO INSULATION.



TEST POINTS	
C1	PICTURE DETECTOR OUTPUT
C2	SOUND DETECTOR OUTPUT
D	BY-PASS WITH 0.01μF 50V ELECTROLYTIC CAPACITOR COLOR ALIGNMENT
E	I.F. A.G.C.
J1	FOR COLOR ALIGNMENT
J2	FOR COLOR ALIGNMENT
Q	A.C.C. VOLTAGE
R	RED COLOR AMP. COLLECTOR
S	BLUE COLOR AMP. COLLECTOR
T	GREEN COLOR AMP. COLLECTOR



NOTES:
 TURN POWER OFF BEFORE REPLACING SEMICONDUCTORS.
 PHOTOGRAPHS TAKEN ON A STANDARD GATED RAINBOW COLOR BAR SIGNAL. THE HUE SETTING ADJUSTED FOR PROPER COLOR. THE WAVE SHAPES AT THE RED, GREEN AND BLUE CATHODE GROS OF THE PICTURE TUBE DEPEND ON THE HUE, COLOR LEVEL, CONTRAST AND PICTURE PEAKING CONTROLS.
 FOR WAVEFORMS 43 THRU 49, TEST POINT "D" MUST BE BY-PASSED WITH A 1 MF. CAPACITOR.
 ALL VOLTAGES MEASURED FROM CHASSIS TO POINTS INDICATED.
 ALL VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED.
 ALL D.C. VOLTAGES TO BE MEASURED WITH A VACUUM TUBE VOLTMETER HAVING 11 MEGOHM INPUT RESISTANCE.
 ALL VOLTAGE MEASUREMENTS TO BE MADE WITH NO SIGNAL PRESENT AND NORMAL SETTING OF CONTROLS AND CHANNEL SELECTOR SET TO CHANNEL 2 UNLESS OTHERWISE SPECIFIED.
 COIL RESISTANCE MEASUREMENTS TAKEN WITH COILS DISCONNECTED FROM CIRCUIT.
 ALL RESISTORS ARE 210% TOLERANCE, CARBON, 1/2 WATT UNLESS OTHERWISE SPECIFIED.
 COIL RESISTANCE NOT GIVEN UNDER ONE OHM.
 ALL CAPACITOR VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
 FOR CAPACITOR TOLERANCE, SEE LEGEND.
 CATHODE RAY TUBE 2ND ANODE VOLTAGE TO BE MEASURED WITH ELECTROSTATIC OR 20K OHMS PER VOLT MIN. HIGH VOLTAGE METER.
 ARROWS ON POTENTIOMETER INDICATE CLOCKWISE ROTATION.
 ○ INDICATES ALIGNMENT AND TEST POINT.
 P = PICOGRAM, M = MEGANERT, μ = MICROHENRY.
 ○ INDICATES VOLTAGE SOURCE.
 ○ INDICATES WAVEFORMS CHECK POINTS. (SEE CHART) WAVEFORM MEASURED FROM POINT INDICATED TO CHASSIS GROUND.
 ○ INDICATE WAVEFORM (SEE CHART) WAVEFORM MEASURED ACROSS POINTS INDICATED (NOT TO CHASSIS GROUND) OSCILLOSCOPE SHOULD NOT BE GROUND TO CHASSIS. REVERSING LEADS REVERSES WAVEFORM.
 ⊕ INDICATES CHASSIS GROUND.
 ⊙ INDICATES CHROMATIC SWITCH WIRING POSITION.
 ○ INDICATES PIN NUMBER ON MODULE BOARD.

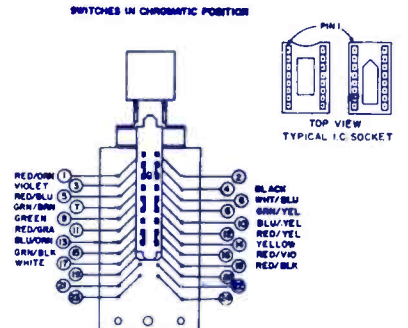
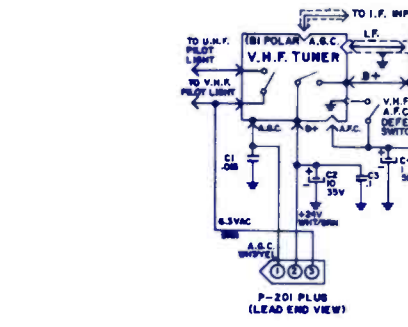
ZENITH
 Color-TV Chassis
 17EC45/19EC45

ZENITH

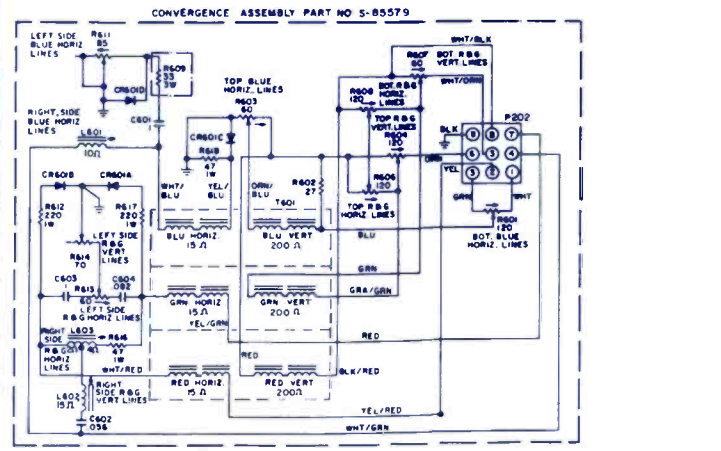
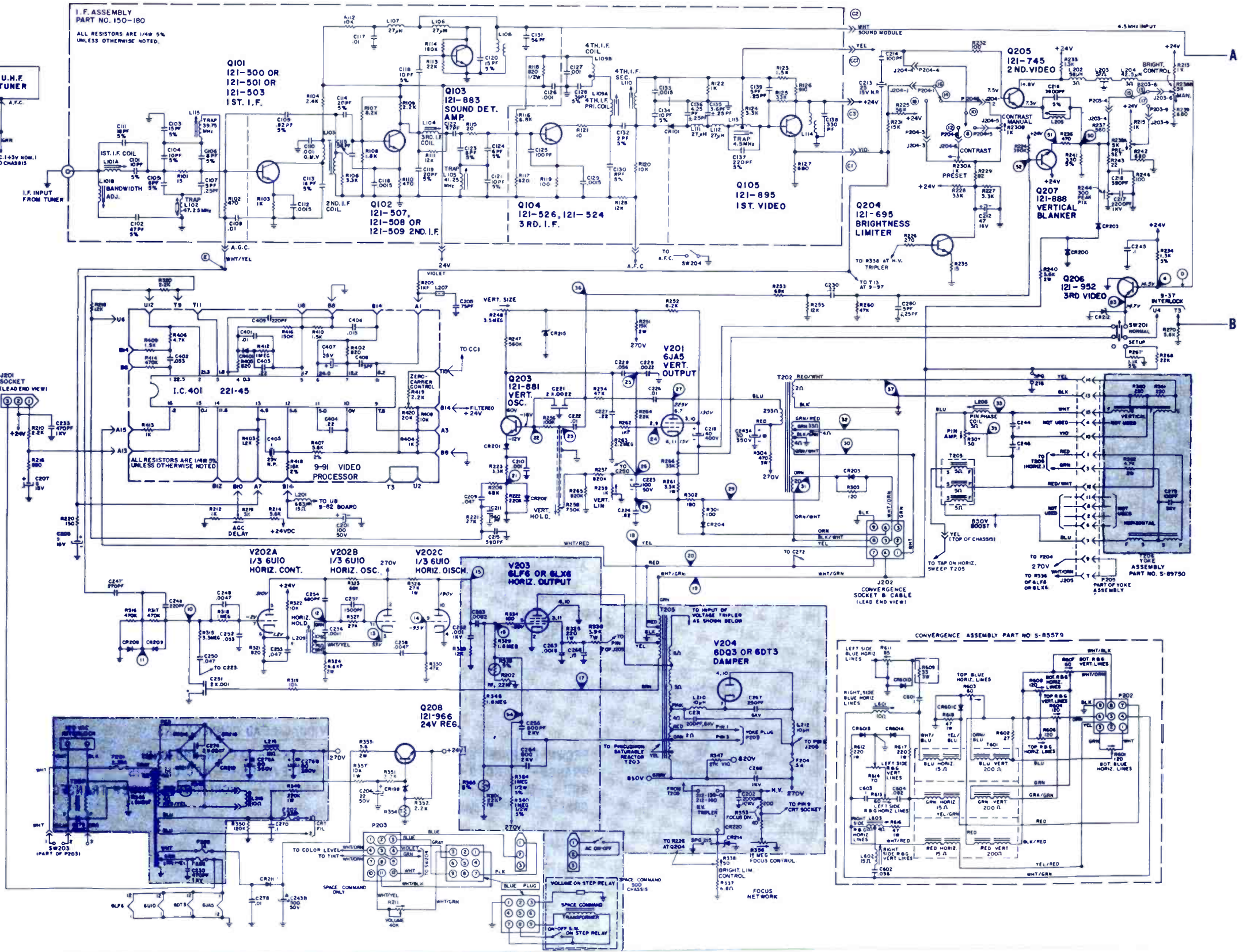
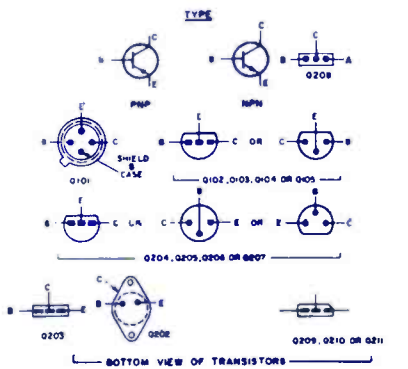
Color-TV Chassis
19EC13

SYMBOL	DESCRIPTION	ZENITH PART NO.
C276A	—80 μ f electro cap, 350v	22-7230
C276B	—80 μ f electro cap, 350v	22-7230
C276C	—15 μ f electro cap, 350v	22-7230
R219	—3K AGC delay control $\frac{1}{2}$ w	63-9116
R230A	—contrast control (preset)	63-9269
R230B	—contrast control (manual)	63-9269
R238A	—5K brite control (preset)	63-9282
R238B	—5K brite control (manual)	63-9282
R244	—300n peak pix control	63-9119
R248	—3.5M vert size control	63-9115
R307	—30n pincushion amp control	63-8473
R309	—100K killer threshold control	63-8501

R310A	—5K chroma level control	63-9117	preset
R313	—25K CTA control	63-9117	63-9117
R333	—voltage dependent resistor 5%	63-8688	63-8688
R338	—50n brite limiter control	63-8689	63-8689
R344	—therm	63-9166	63-9166
R353	—focus divider	63-9897	63-9897
R356	—15M focus control	63-9961	63-9961
R365	—voltage dependent resistor 5%	63-8688	63-8688
R420	—20K detect level control	63-8676	63-8676
R1013	—20K AGC control	63-8676	63-8676
R1016	—20K APC control	63-8676	63-8676
L203	—delay line	S-91401	S-91401
L205	—3.58MHz trap coil	20-1838	20-1838
L209	—horiz osc coil	S-86164	S-86164
L216	—filter choke	95-2917	95-2917
L901	—chroma take-off coil 9-97 module	95-3080	95-3080
L902	—2nd chroma output coil 9-97 module	S-86109	S-86109
T202	—vert output xformer	95-3083	95-3083
T204	—power xformer	95-3116	95-3116
T205	—horiz xformer	S-90754	S-90754
T206	—deflect yoke	S-89750	S-89750
T207	—AC line choke	95-2964	95-2964
T1101	—detect xformer	95-2789	95-2789
F202	—3a fuse pigtail type	136-47	136-47
F203	—1a bel-fuse	136-71	136-71
F204	—5a bel-fuse/with leads	S-90985	S-90985



TEST POINTS
B BY-PASS WITH 470PF DURING 4TH I.F. ALIGNMENT
C1 PICTURE DETECTOR OUTPUT
CC1 BIAS POINT FOR CI ADJUST
C2 SOUND DETECTOR OUTPUT
C3 SYNC DETECTOR OUTPUT
D BY-PASS WITH 25 μ 25V ELECTROLYTIC DURING COLOR ALIGNMENT
E I.F. A.G.C.
F INPUT TEST POINT FOR 4TH ALIGNMENT
G A.C.C.
H TURN COLOR THRESHOLD CONTROL TO MAX. CLOCKWISE POSITION TO OPEN COLOR CHANNEL
SP3 SOUND OUTPUT
Q A.C.C. VOLTAGE
R RED COLOR AMP. COLLECTOR
S BLUE COLOR AMP. COLLECTOR
T GREEN COLOR AMP. COLLECTOR
RR BRIGHTNESS LIMITER SET-UP POINTS



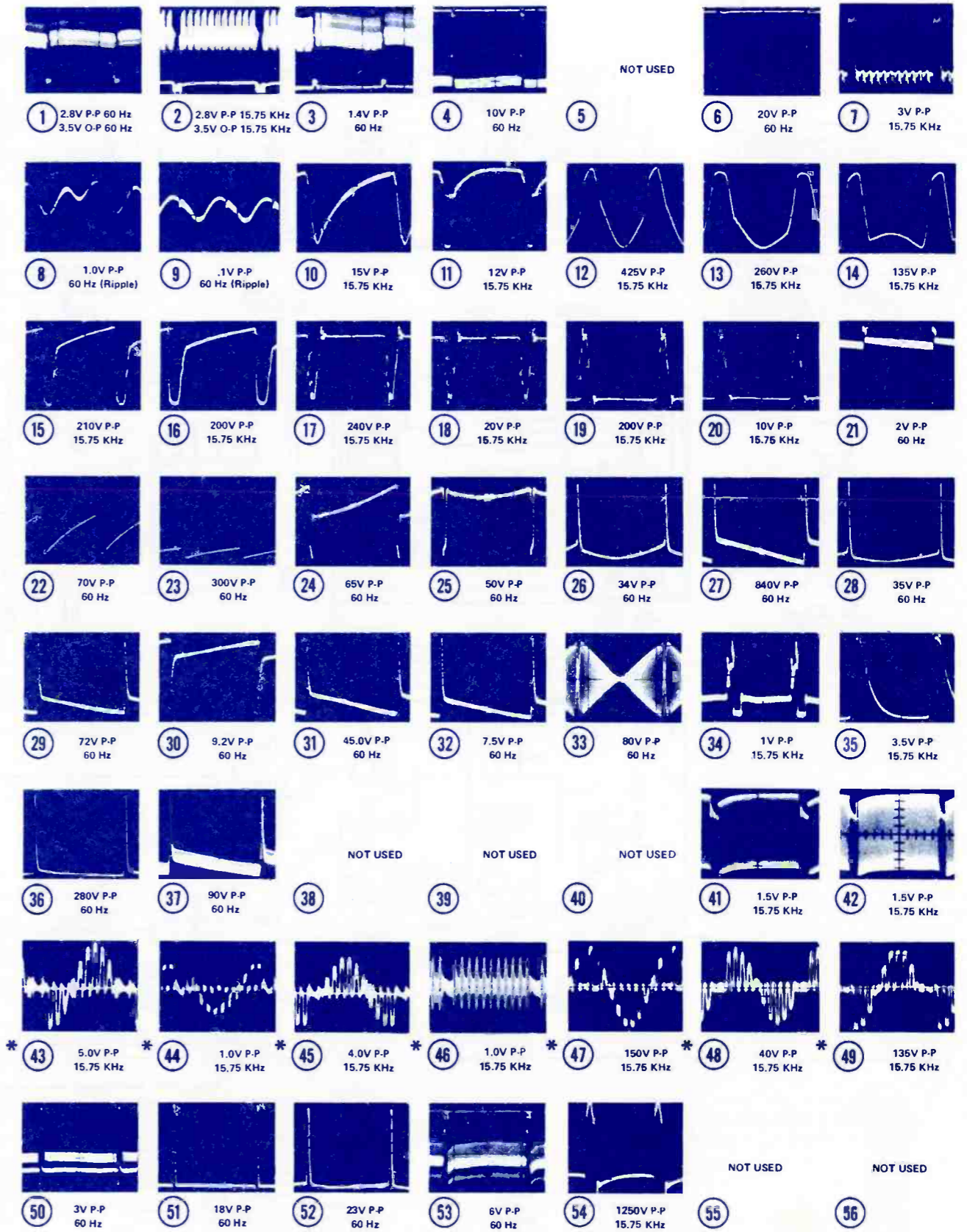
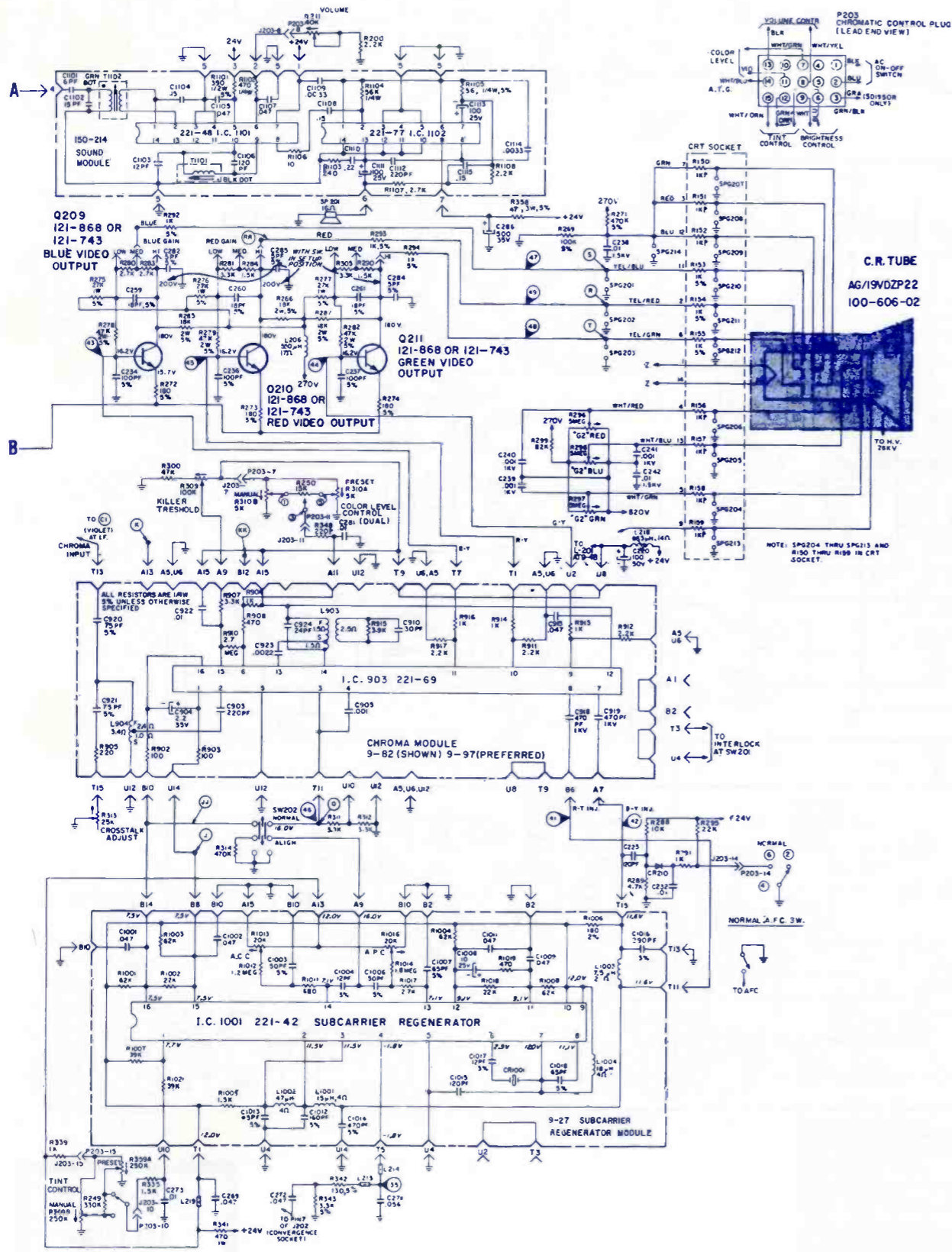
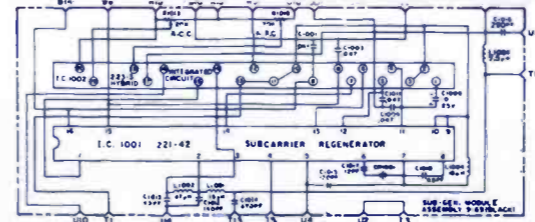
NOTES:
 TURN POWER OFF BEFORE REPLACING SEMICONDUCTORS.
 PHOTOGRAPHS TAKEN ON A STANDARD GATED RAINBOW COLOR BAR SIGNAL. THE TINT SETTING ADJUSTED FOR PROPER COLOR. THE WAVE SHAPES AT THE RED, GREEN AND BLUE CATHODES OF THE PICTURE TUBE DEPEND ON THE TINT, COLOR LEVEL, CONTRAST AND PICTURE PEAKING CONTROLS. FOR WAVEFORMS 43 THRU 49, TEST POINT "D" MUST BE BY-PASSED WITH A 0.1 μF CAPACITOR.

ALL VOLTAGES MEASURED FROM CHASSIS TO POINTS INDICATED.
 ALL VOLTAGES ARE DC UNLESS OTHERWISE SPECIFIED.
 ALL DC VOLTAGES TO BE MEASURED WITH A VACUUM TUBE VOLTMETER HAVING 11 MEGOHM INPUT RESISTANCE.
 ALL VOLTAGE MEASUREMENTS TO BE MADE WITH NO SIGNAL PRESENT AND

NORMAL SETTING OF CONTROLS AND CHANNEL SELECTOR SET TO CHANNEL 2 UNLESS OTHERWISE SPECIFIED.
 RESISTANCE MEASUREMENTS SHOWN WITH COILS DISCONNECTED FROM CIRCUIT.
 ALL RESISTORS ARE 2-10% TOLERANCE, CARBON, 1/2 WATT UNLESS OTHERWISE SPECIFIED.
 COIL RESISTANCE NOT GIVEN UNDER ONE OHM.

ALL CAPACITOR VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED FOR CAPACITOR TOLERANCE. SEE LEGEND.
 CATHODE RAY TUBE 2ND ANODE VOLTAGE TO BE MEASURED WITH ELECTROSTATIC OR 20K OHMS PER VOLT MIN. HIGH VOLTAGE METER. ARROWS ON POTENTIOMETERS INDICATE CLOCKWISE ROTATION.

○ INDICATES ALIGNMENT AND TEST POINT.
 PF = PICO FARAD NMH = MEGAHERTZ μM = MICRONEMBY
 P INDICATES 50% MAY BE USED. ○ INDICATES VOLTAGE SOURCE FROM CIRCUIT.
 ② INDICATES WAVEFORM CHECK POINTS (SEE WAVEFORM CHART) WAVEFORM MEASURED FROM POINT INDICATED TO CHASSIS GROUND.
 ⊕ INDICATES CHASSIS GROUND. ⊙ INDICATES CHROMATIC SW. WIRING POSITION.
 ⊕ INDICATES MODULE BOARD.
 A1 INDICATES PIN NUMBER ON MODULE BOARD.
 ⊕ INDICATES WAVEFORM (SEE CHART) WAVEFORMS MEASURED ACROSS POINTS INDICATED (NOT CHASSIS GROUND) OSCILLOSCOPE SHOULD NOT BE GROUND TO CHASSIS. REVERSING LEADS REVERSES WAVEFORM.



* FOR WAVEFORMS 43 THROUGH 49, BYPASS TEST POINT "D" WITH 1.0 MF CAPACITOR.

ZENITH
 Color-TV Chassis
 19EC13

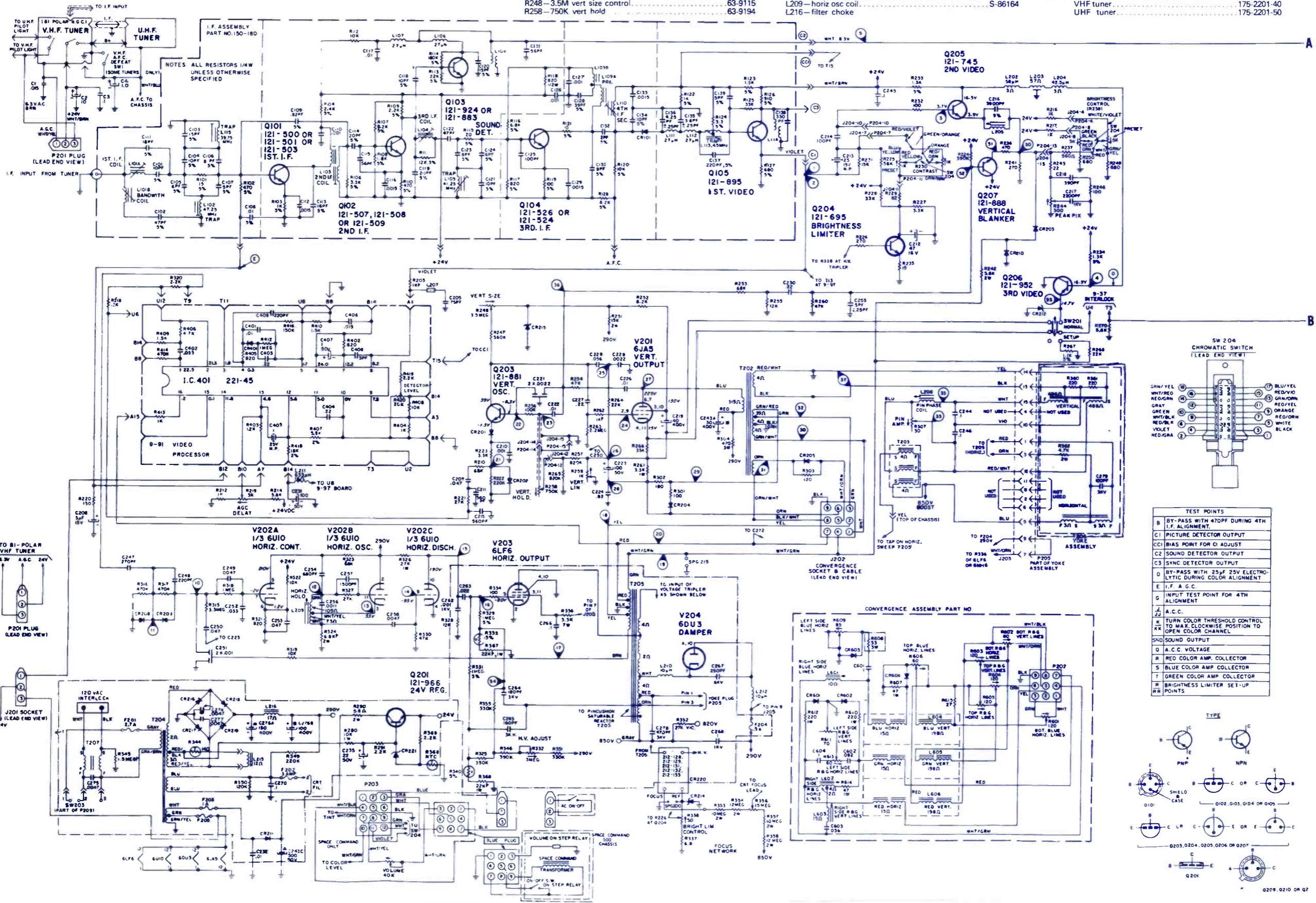
ZENITH

Color-TV Chassis
23EC15

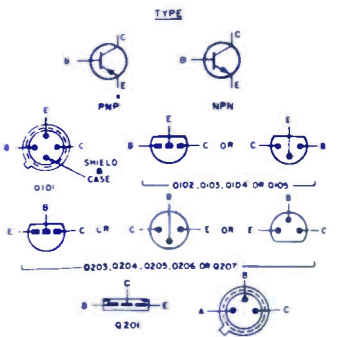
SYMBOL	DESCRIPTION	ZENITH PART NO.
C243A	—30µf electrolytic cap 400v	
C243B	—500µf electro cap 35v	22-7066
C243C	—500µf electrolytic cap 50v	
C276A	—150µf electrolytic cap 400v	22-7237
C276B	—100µf electrolytic cap 400v	22-7237
R219	—3K AGC delay control 1/2w.	63-9116
R230	—contrast control	63-9193
R238	—5K brite control	63-9927
R244	—300n peak picture control	63-9119
R248	—3.5M vert size control	63-9115
R258	—750K vert hold	63-9194

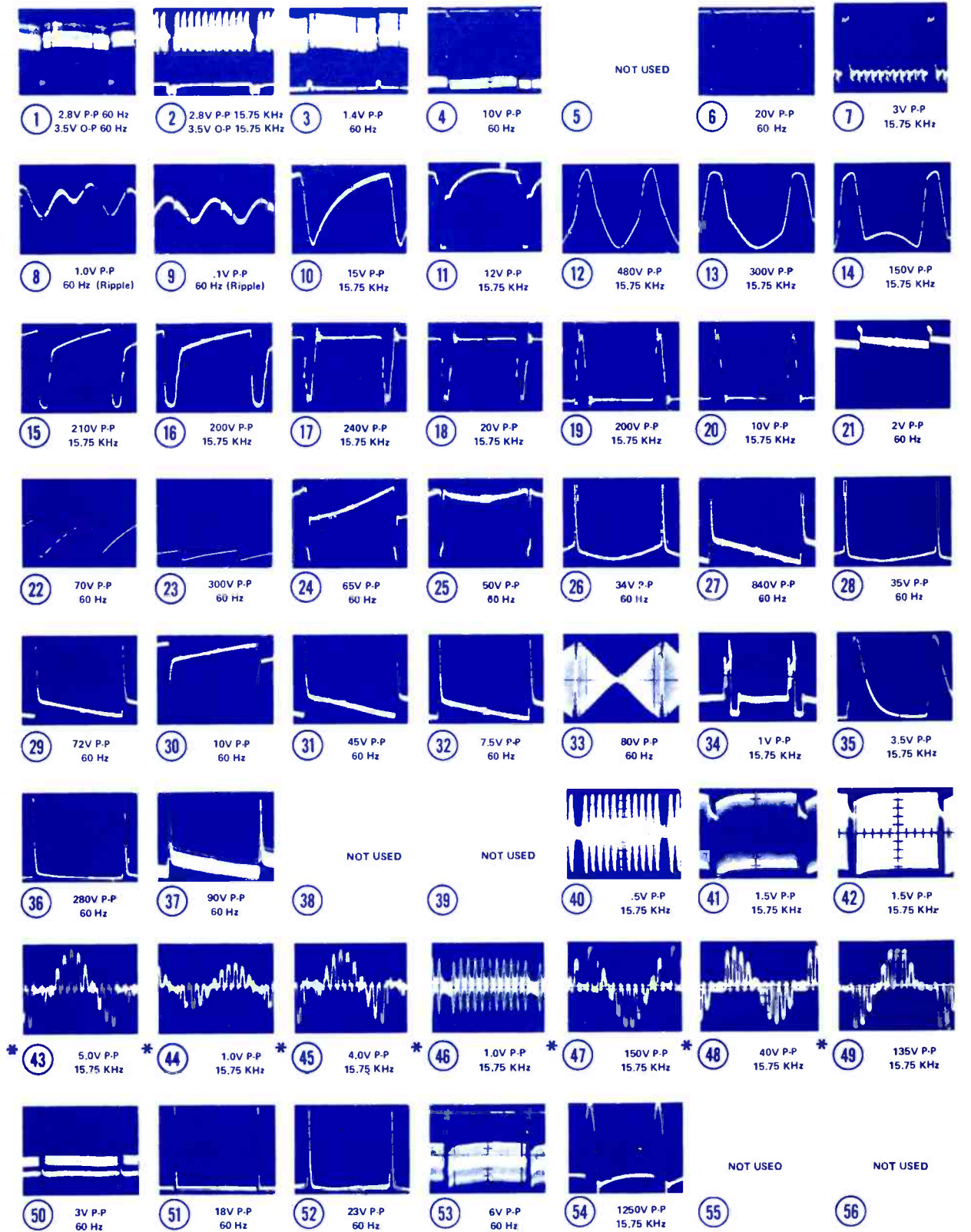
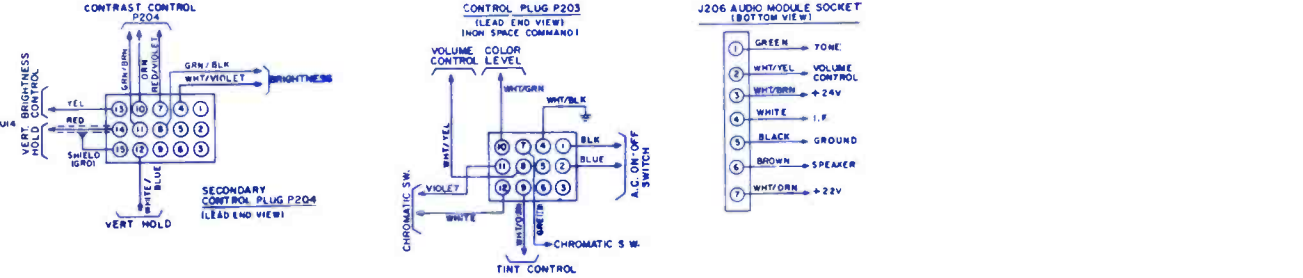
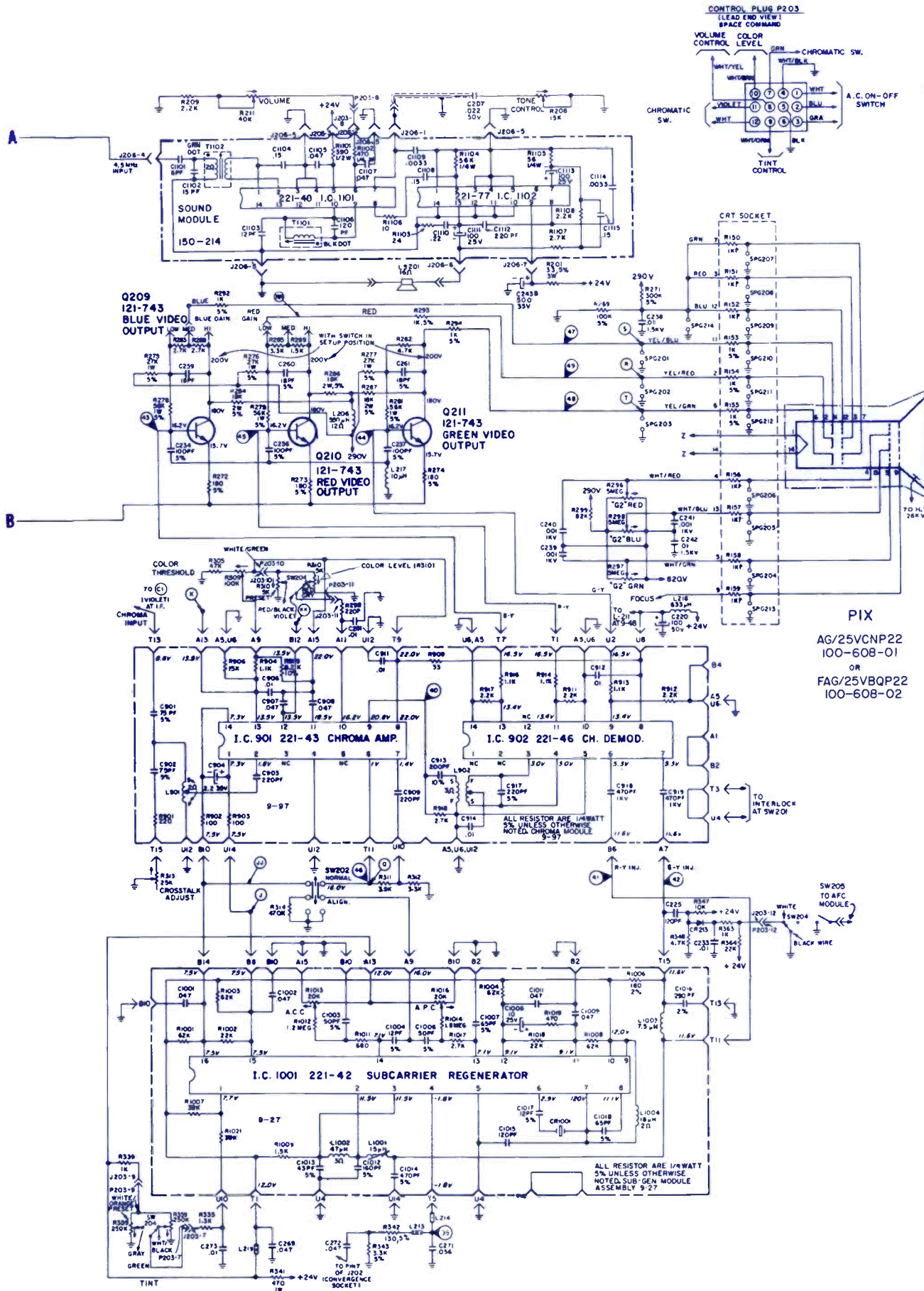
R259	—1K vert lin control	63-9066
R309	—100K killer threshold control	63-8501
R333	—voltage dependent resist 5%	63-8688
R338	—50n brite limiter control	63-8989
R344	—thermistor	63-8687
R353	—focus divider	63-9897
R354	—thermistor	63-10180
R365	—voltage dependent resist 5%	63-8688
R1013	—20K ACC control	63-8576
L105	—41.25MHz trap	20-3287
L113	—4.5MHz trap	20-3289
L209	—horiz osc coil	S-86164
L216	—filter choke	

T202	—vert output xformer	95-3083
T203	—saturable reactor	95-3004
T204	—power xformer	95-3116
T205	—horiz sweep xformer	S-90754
T206	—deflect yoke	S-89750
T207	—AC line choke	95-2964
T1102	—4.5MHz input coil	95-2620
F201	—2.25a bel fuse	136-92
F202	—3a pigtail fuse	136-47
F204	—.5a bel fuse/with leads	S-90985
F205	—heater fuse link	91-2061
	VHF tuner	175-2201-40
	UHF tuner	175-2201-50



TEST POINTS	
B	BY-PASS WITH 470PF DURING 4TH I.F. ALIGNMENT.
C1	PICTURE DETECTOR OUTPUT
CC1	BIAS POINT FOR CI ADJUST
C2	SOUND DETECTOR OUTPUT
C3	SYNC DETECTOR OUTPUT
D	BY-PASS WITH 25µF 25V ELECTROLYTIC DURING COLOR ALIGNMENT
E	I.F. A.G.C.
G	INPUT TEST POINT FOR 4TH ALIGNMENT
J	A.C.C.
K	TURN COLOR THRESHOLD CONTROL TO MAX. CLOCKWISE POSITION TO OPEN COLOR CHANNEL
SN0	SOUND VOLTAGE
Q	A.C.C. VOLTAGE
R	RED COLOR AMP. COLLECTOR
S	GREEN COLOR AMP. COLLECTOR
T	BLUE COLOR AMP. COLLECTOR
RR	BRIGHTNESS LIMITER SET-UP POINTS



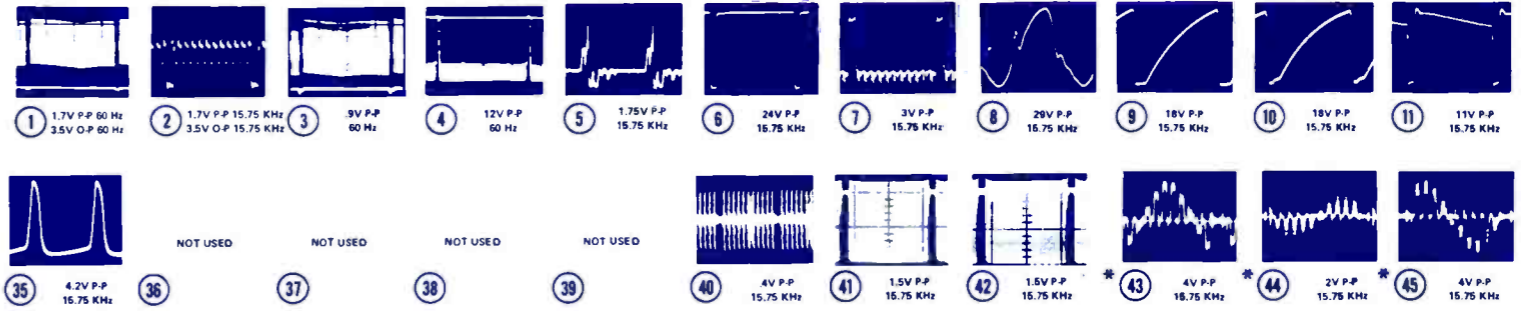


* FOR WAVEFORMS 43 THROUGH 49, BYPASS TEST POINT "D" WITH 1.0 MF CAPACITOR.

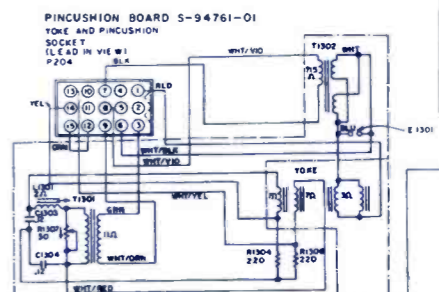
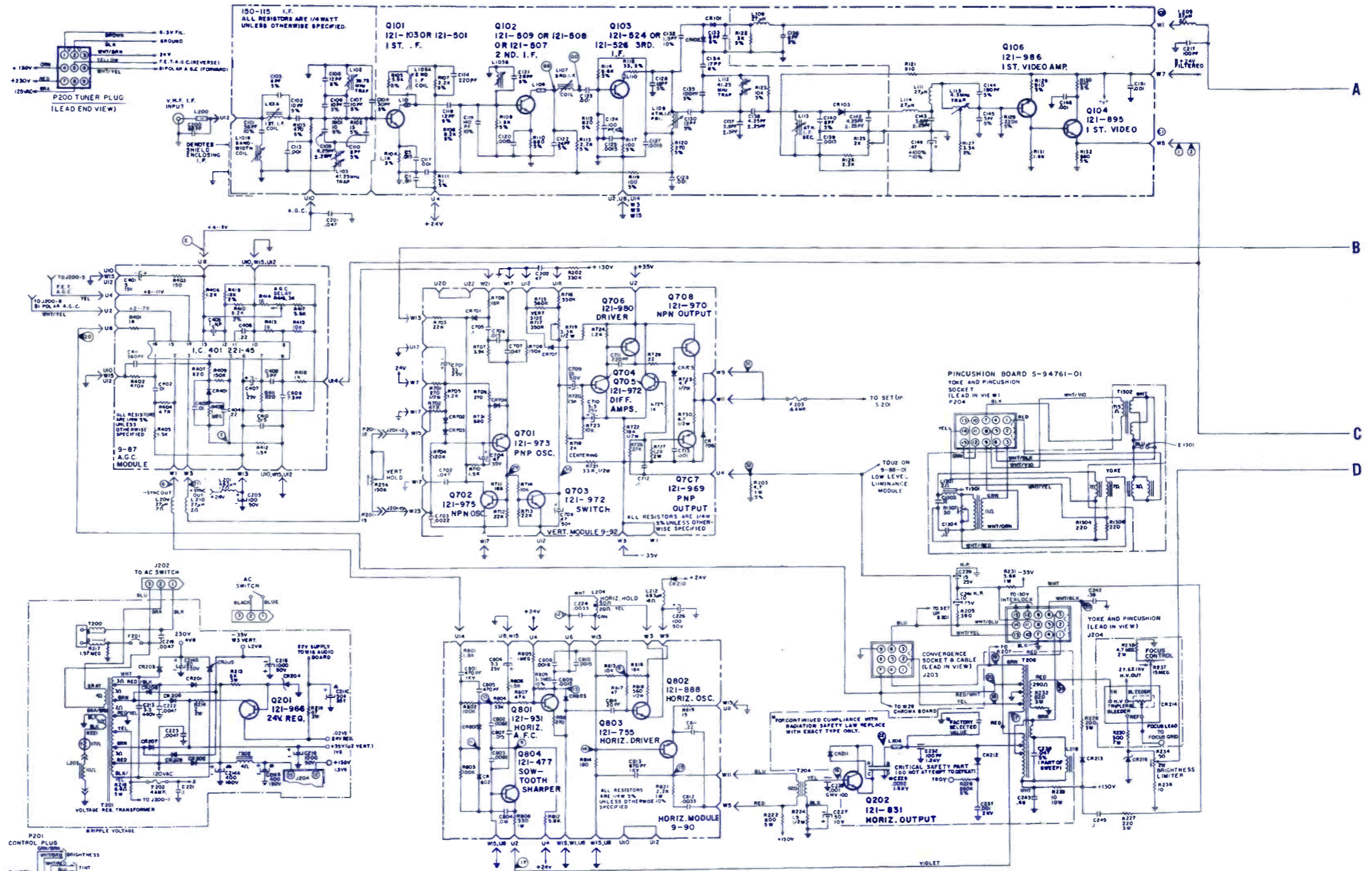
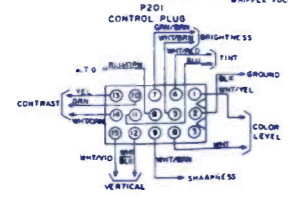
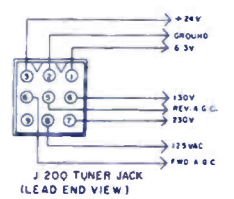
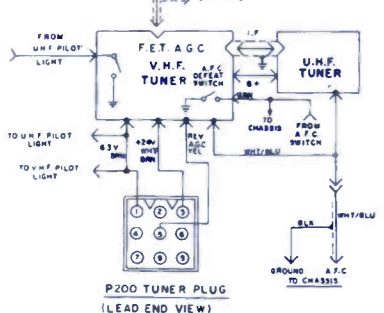
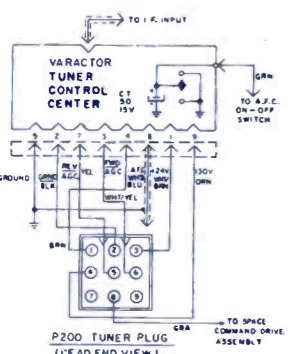
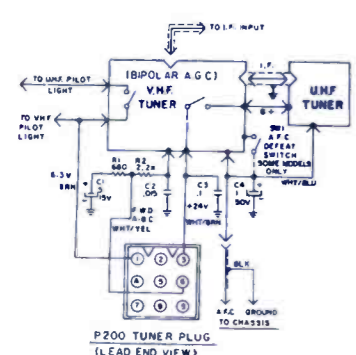
ZENITH
Color-TV Chassis
23CE15

ZENITH

Color TV Chassis
17FC35

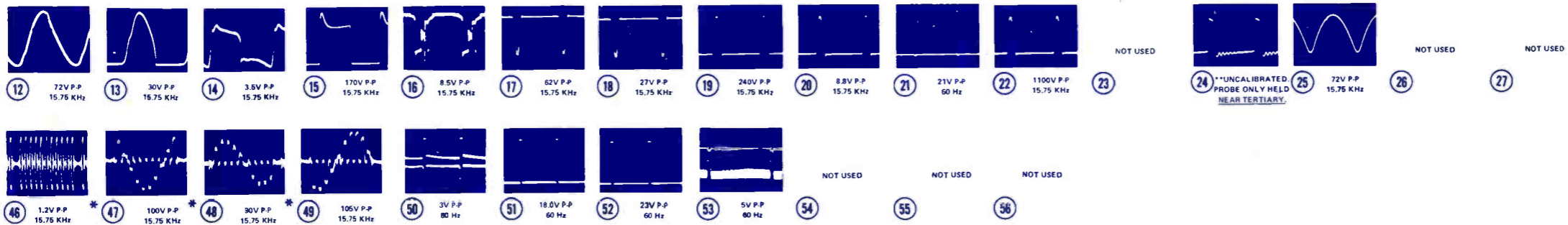


P200 TUNER PLUG (LEAD END VIEW)
SEE CIRCUIT BELOW FOR SPECIFIC
TUNER CONNECTIONS.

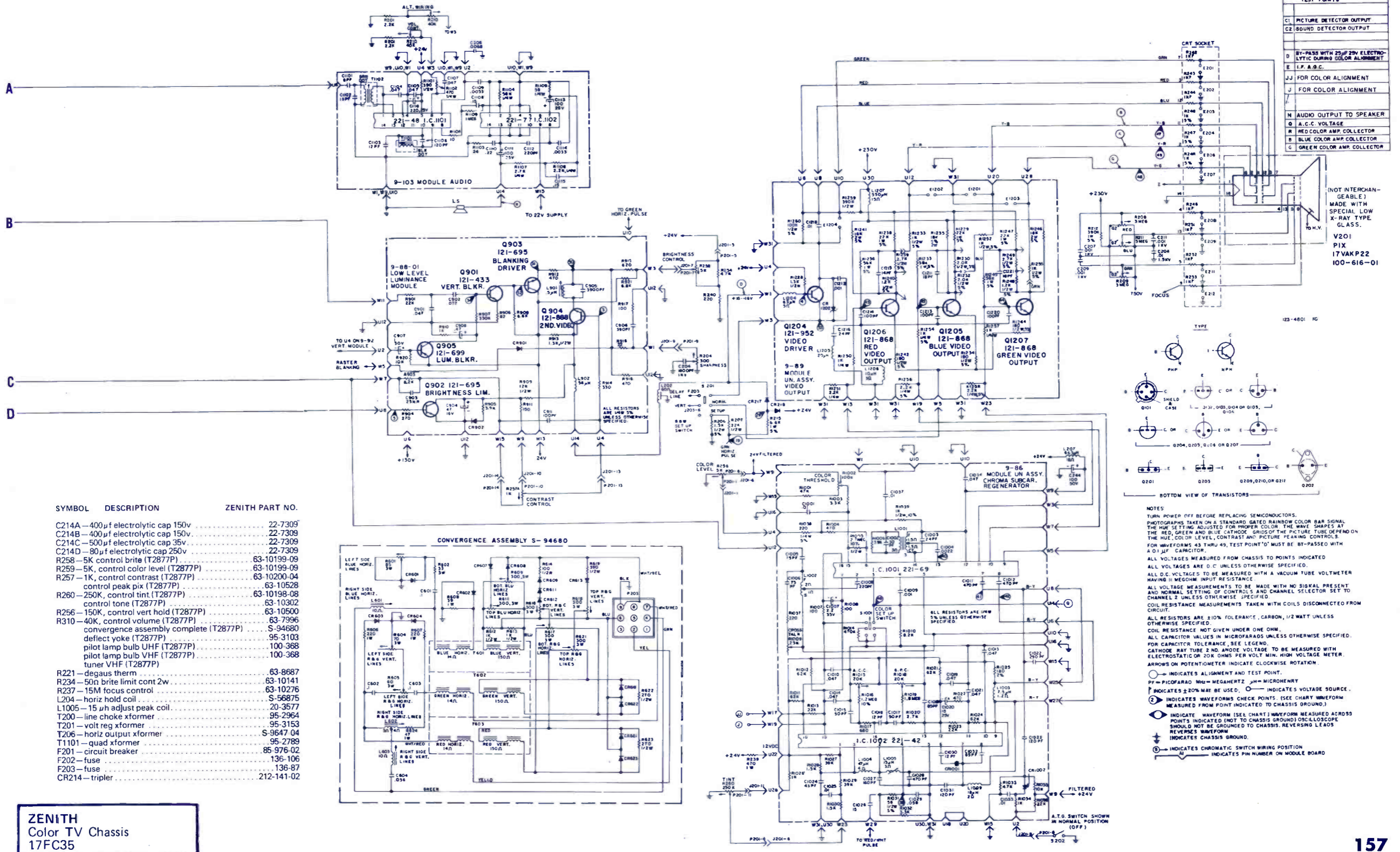


POP CONTINUED COMPLIANCE WITH RADIATION SAFETY LAW REPLACE WITH EXACT TYPE ONLY.

CRITICAL SAFETY PART (DO NOT ATTEMPT TO REPAIR)

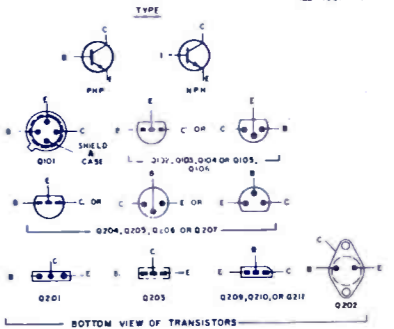


* FOR WAVEFORMS 43 THROUGH 49, BYPASS TEST POINT "D" WITH 1.0 MF CAPACITOR.



TEST POINTS	
C1	PICTURE DETECTOR OUTPUT
C2	SOUND DETECTOR OUTPUT
D	BYPASS WITH 25µF 20V ELECTROLYTIC DURING COLOR ALIGNMENT
E	I.F. A.C.
JJ	FOR COLOR ALIGNMENT
J	FOR COLOR ALIGNMENT
N	AUDIO OUTPUT TO SPEAKER
Q	A.C.C. VOLTAGE
R	RED COLOR AMP. COLLECTOR
B	BLUE COLOR AMP. COLLECTOR
G	GREEN COLOR AMP. COLLECTOR

(NOT INTERCHANGEABLE) MADE WITH SPECIAL LOW X-RAY TYPE GLASS.
V201
PIX
17VAKP22
100-616-01



- NOTES
- TURN POWER OFF BEFORE REPLACING SEMICONDUCTORS.
 - PHOTOGRAPHS TAKEN ON A STANDARD GATED RAINBOW COLOR BAR SIGNAL THE HUE SETTING ADJUSTED FOR PROPER COLOR. THE WAVE SHAPES AT THE RED, GREEN AND BLUE CATHODE GRIDS OF THE PICTURE TUBE DEPEND ON THE HUE, COLOR LEVEL, CONTRAST AND PICTURE PEAKING CONTROLS. FOR WAVEFORMS 43 THRU 49, TEST POINT "D" MUST BE BY-PASSED WITH A 0.1 µF CAPACITOR.
 - ALL VOLTAGES MEASURED FROM CHASSIS TO POINTS INDICATED
 - ALL VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED.
 - ALL D.C. VOLTAGES TO BE MEASURED WITH A VACUUM TUBE VOLTMETER HAVING 10 MEGOHM INPUT RESISTANCE.
 - ALL VOLTAGE MEASUREMENTS TO BE MADE WITH NO SIGNAL PRESENT AND NORMAL SETTING OF CONTROLS AND CHANNEL SELECTOR SET TO CHANNEL 2 UNLESS OTHERWISE SPECIFIED.
 - COIL RESISTANCE MEASUREMENTS TAKEN WITH COILS DISCONNECTED FROM CIRCUIT.
 - ALL RESISTORS ARE ±10% TOLERANCE, CARBON, 1/2 WATT UNLESS OTHERWISE SPECIFIED.
 - COIL RESISTANCE NOT GIVEN UNDER ONE OHM.
 - ALL CAPACITOR VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED. FOR CAPACITOR TOLERANCE, SEE LEGEND.
 - CATHODE RAY TUBE 2ND ANODE VOLTAGE TO BE MEASURED WITH ELECTROSTATIC OR 20K OHMS PER VOLT MIN. HIGH VOLTAGE METER. ARROWS ON POTENTIOMETER INDICATE CLOCKWISE ROTATION.
 - INDICATES ALIGNMENT AND TEST POINT.
 - PF = PICOFARAD MHZ = MEGAHERTZ µM = MICROHENRY
 - INDICATES ±20% MAY BE USED. ○ INDICATES VOLTAGE SOURCE.
 - INDICATES WAVEFORMS CHECK POINTS. (SEE CHART WAVEFORM MEASURED FROM POINT INDICATED TO CHASSIS GROUND.)
 - INDICATE WAVEFORM (SEE CHART) WAVEFORM MEASURED ACROSS POINTS INDICATED (NOT TO CHASSIS GROUND) OSCILLOSCOPE SHOULD NOT BE GROUND TO CHASSIS. REVERSING LEADS REVERSES WAVEFORM.
 - INDICATES CHASSIS GROUND.
 - INDICATES CHROMATIC SWITCH WIRING POSITION
 - INDICATES PIN NUMBER ON MODULE BOARD

SYMBOL	DESCRIPTION	ZENITH PART NO.
C214A	400 µf electrolytic cap 150v	22-7309
C214B	400 µf electrolytic cap 150v	22-7309
C214C	500 µf electrolytic cap 35v	22-7309
C214D	80 µf electrolytic cap 250v	22-7309
R258	5K control brite (T2877P)	63-10199-09
R259	5K control color level (T2877P)	63-10199-09
R257	1K control contrast (T2877P)	63-10200-04
	control peak pix (T2877P)	63-10528
R260	250K control tint (T2877P)	63-10198-08
	control tone (T2877P)	63-10302
R256	150K control vert hold (T2877P)	63-10500
R310	40K control volume (T2877P)	63-7996
	convergence assembly complete (T2877P)	95-3103
	deflect yoke (T2877P)	95-3103
	pilot lamp bulb UHF (T2877P)	100-368
	pilot lamp bulb VHF (T2877P)	100-368
	tuner VHF (T2877P)	100-368
R221	degaus therm	63-8687
R234	50n brite limit cont 2w	63-10141
R237	15M focus control	63-10276
L204	horiz hold coil	S-56875
L1005	15 µh adj just peak coil	20-3577
T200	line choke xformer	95-2964
T201	volt reg xformer	95-3153
T206	horiz output xformer	S-9647 04
T1101	quad xformer	95-2789
F201	circuit breaker	85-976 02
F202	fuse	136-106
F203	fuse	136-87
CR214	tripler	212-141-02

ZENITH
Color TV Chassis
17FC35

