ELECTRONIC
TECHNICIAN / DEALER

TEKFAX 109

VOLUME 9

TV SCHEMATICS OVER 21 MANUFACTURERS COVERS HUNDREDS OF CHASSIS & MODEL NUMBERS

PUBLISHED BY ELECTRONIC TECHNICIAN/DEALER MAGAZINE, HARBRACE BUILDING, DULUTH, MINNESOTA 55802

TEKFAX 109

VOLUME 9

TV SCHEMATICS ☐ OVER 21 MANUFACTURERS ☐ COVERS HUNDREDS OF CHASSIS & MODEL NUMBERS

PUBLISHED BY ELECTRONIC TECHNICIAN/DEALER MAGAZINE, OJIBWAY BUILDING, DULUTH, MINN. 55802

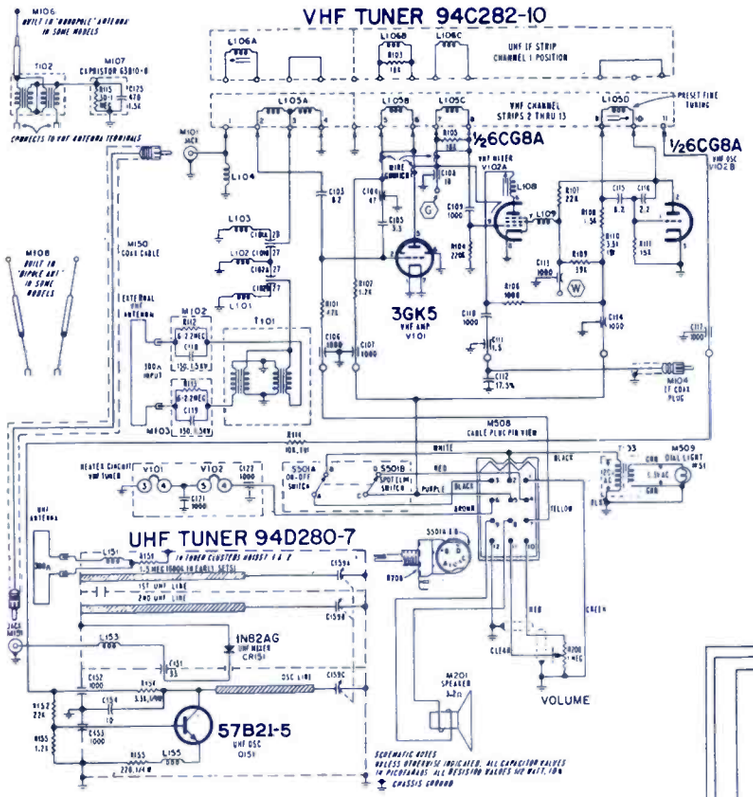
ADMIRAL
TV Chassis G5, 2G5, 3G5, 5G5, 7G5, 9G5

SYMBOL	DESCRIPTION	ADMIRAL PART NO.
R210	27K 1w	60B14-273
R304	22K 1w	60B14-223
R311	2.7K 1w	60B14-272
R320	4.7K 4w	61C24-441
R322	30K contrast control	75C20-183
R323	brightness control G5, 7G5, 9G5	75D20-184
	2G5	75D20-187
	5G5	75D117-4
R402A	500K vert lin cont Dual Control	75C107-3
R402B	5M height control	
R422	vert hold control G5, 5G5, 7G5, 9G5	75D20-185
	2G5	75D20-186
R423	220Ω 1w	60B14-221
R427	100K 1w	60B14-104
R440,441	47K 1w	60B14-473
R454	1500Ω 3w	61C24-329
R456	27K 1w	60B14-273
R457	4.7K 1w	60B14-472
R460	1K 5% ½w	60C28-92
R502	5Ω 10w fusible	61C20-24
R503	6.8K 1w	60B14-682
C203	82pf 5% 500v NPO cer disc	65D10-98
C207	18pf 5% 500v NPO cer disc	65D10-121
C208	.02μf 500v GMV cer disc	65D10-280
C212	.01μf 1kv cer disc	65D10-373
C301	6.8pf .25% 500v NPO, cer disc	65D10-102
C312	4.7pf 5% cer disc	65C40-38
C316,317	47pf 5% 500v cer disc	65D10-92
C403	.001μf GMV 1kv cer disc	65B10-147
C406	330pf 10% 5kv cer disc	65D10-266
C413	.033μf 10% 1kv mylor	64C2-53
C415,416	.047μf 1kv mylor	64C2-30
C418	100pf 5% 500v NPO cer disc	65D10-105
C419	15pf 10% 500v N750 cer disc	65D10-135
C424	100pf 5% 500v NPO	65D10-105
C430	5pf 10% 1kv N750 cer disc	65D10-345
C432	68pf 10% 5kv cer disc	
C432	110pf 5kv cer disc G5, 5G5 & 9G5	6510D-249
C434	82pf 3kv cer disc	65D10-13
C435	.1μf 1kv mylor	64C2-52
C436	.003μf 1kv mylor	64C2-53
C437,438	100pf 10% 500v N1500 cer disc	65D10-84
C502	.01μf GMV 1.4kv cer disc	65D10-65
C503	.001μf 1kv cer disc	65B10-147
C504A	200μf 200v	
C504B	150μf 150v elect	67D15-382
C504C	150μf 150v	
L201A&B	IF & Phase coil	72C208-6
L202	quod coil	72C132-66
L301	47.25MHz trap	72C296-2
L302	IF input coil	72C296-1
L304	filament choke	73C31-12
L305	RF choke	73C31-3
L307	RF choke	73C31-4
L308	peaking coil	73C5-53
L309	video peaking coil	73C5-20
L310	peaking coil	73C5-40
L401	horiz lock coil	94D17-16
L403	spook choke	73C37-17
L404	RF choke	73B31-11
L502	filter choke	74A18-53
L503	ac line choke	73D31-1
T201	audio out xformer	79C88-6
T301	first IF xformer	72C132-70
T302	second IF xformer	72C132-71
T303	third IF & video det	72C261-5
T304	sound take-off xformer	72C185-2
T401	vert out xformer	79C100-12
T403	horiz out xformer ossy	750C647-4
CR301	diode video det	93C8-1
CR401	diode horiz phase det	93A5-9
CR501	silicon rectifier	93B52-1
M504	circuit breaker	84B17-4

RUN CHANGES

(10) *Start of production*

(11) *No service significance.*



SCHEMATIC NOTES:

⏚ CHASSIS GROUND

* PART NOT MOUNTED ON PRECISION WIRED SYSTEM.

* VOLTAGES WILL VARY WITH SETTING OF CONTROLS.

UNLESS OTHERWISE INDICATED, ALL CAPACITOR VALUES IN PICOFARADS. ALL RESISTOR VALUES ARE 1/2 WATT 10%.

G5, 2G5, 3G5, 7G5 & 9G5 CHASSIS ARE ELECTRICALLY IDENTICAL, EXCEPT FOR VALUES OF C432 & PICTURE TUBE TYPES.

5G5 CHASSIS, IN SOME SETS HAVE A SPOT ELIM. CIRCUIT, SEE INSET.

VOLTAGES MEASURED WITH VTVM AT 120V AC LINE.

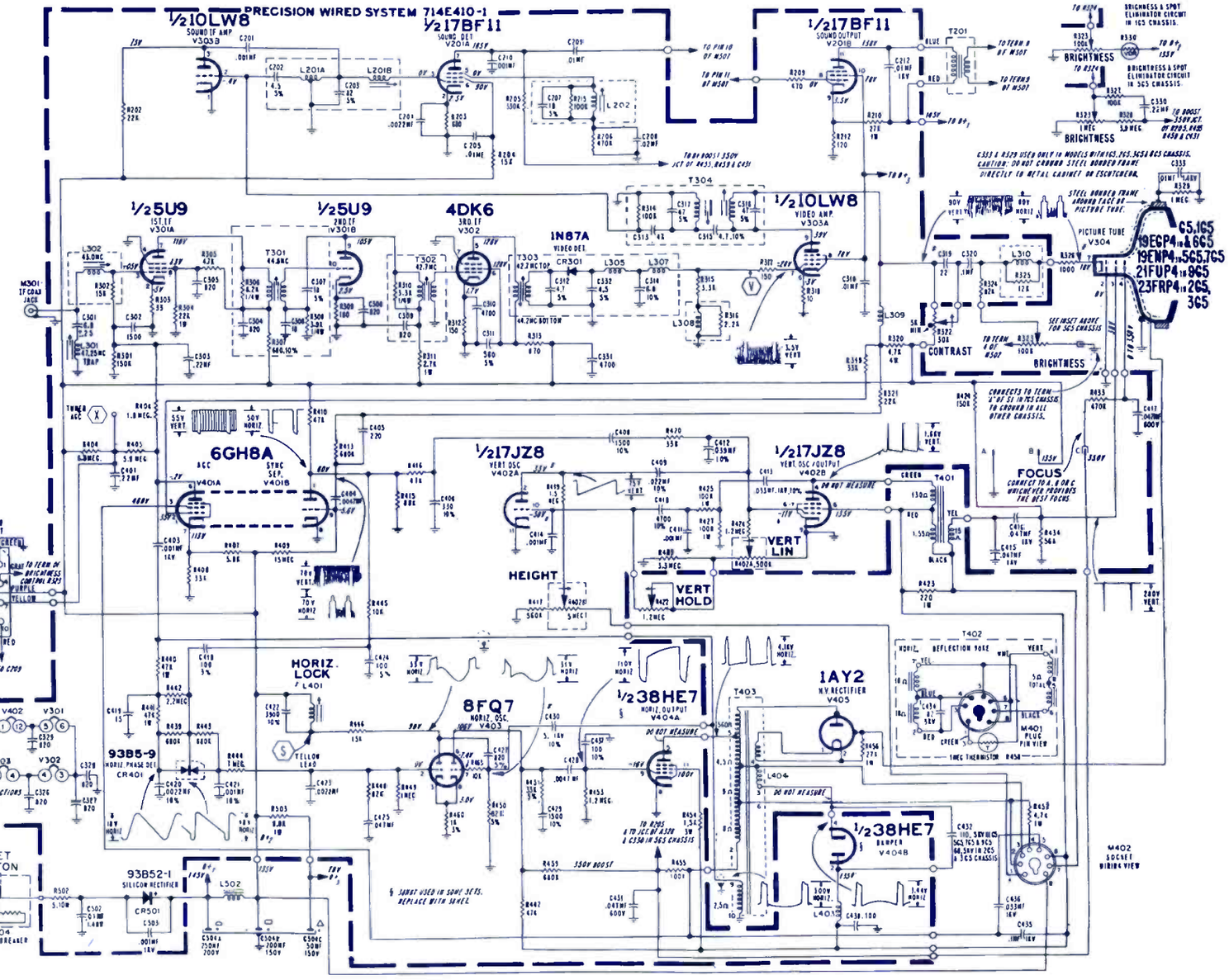
NO SIGNAL ON UNUSED UHF CHANNEL.

ALL CONTROLS IN NORMAL OPERATING POSITION.

WAVEFORMS TAKEN WITH TRANSMITTED SIGNAL.

CONTROLS SET FOR NORMAL PICTURE.

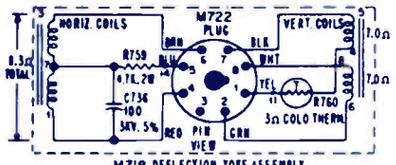
PEAK-TO-PEAK VOLTAGES MAY VARY SLIGHTLY.



ADMIRAL
Color TV Chassis
H12 & IH12

More Data on Opposite Page

SYMBOL	DESCRIPTION	ADMIRAL PART NO.
R301	10K, Adj. Sound Rej. Control	75B101-2
R306A & B	150K, 2w, Matched Pair	60C55-2
R315	750Ω, Sound Rej. Control	75B101-3
R523	700K, Blue Background	75C95-9
R530	700K, Red Background	
R535	700K, Green Background	
R601	120Ω, 2w, Left Blue Horiz. Control	75C64-5
R604	120Ω, 2w, Left R-G Vert. Control	75C64-5
R605	150Ω, 2w, Left R-G Horiz. Control	75C64-7
R608	300Ω, 2w, Bottom Blue Horiz. Control	75C64-33
R611	500Ω, Bottom R-G Vert. Control	75C64-31
R613	120Ω, 2w, Top R-G Horiz. Control	75C64-5
R615	150Ω, 2w, Top Blue Horiz. Control	75C64-7
R702	1M, Color Killer Control	75C110-2
R703	500Ω, Color Intensity Control (H12)	75C118-10
R704	60K, AGC Control	75C96-8
R705	3.4M, Vert. Size Control	75C96-20
R712	10Ω, Vert. Centering Control	75C64-17
R713	1.1K, Tint Control (H12)	75C118-11
R714, 761	Bright. & Tone Control (H12)	75C118-13
R715	Contrast Control & Peaking Sw (H12)	75C102-4
R724	100K, Vert. Hold Control (H12)	75C118-3
R725	300K, Vert. Lin. Control	75C110-1
R726	3.3M, ½w, Special	60C67-335
R734	10Ω, Horiz. Centering Cont.	75D64-30
R738	47M, 6kv	60B30-4
R743	1M, Master Screen Control	75C112-6
R745	3.8K, ½w, Arc Proof	60C67-392
R752	150K, 2w, 10%	61C24-273
R757	8K, Pin Cushion Amp. Control	75C112-9
R760	Thermistor, Part of Yoke	61C27-1
R764A & B	1.5M, Matched Pair, to 4%	60C55-3
R766	500K, HV Adjustment Control	75C96-11
C403	2µf, 350v, Electrolytic	67D4-59
C408	1200pf, Cer. Disc	65D10-339
C415	2700pf, 1.6kv, Tublar Mylar	64C34-22
C416	1000pf, Cer. Disc	65D10-320
C424	2.2pf, 1kv, Cer. Disc	65D10-369
C426	1500pf, Cer. Disc	65D10-103
C431	1500µf, 1kv, Cer. Disc	65D10-46
C436	47pf, NPO, Cer. Disc	65D10-303
C440	3300pf, 500v, Cer. Disc	65D10-289
C442	3300pf, 5%, Dipped Mica	65D48-24
C447	1200pf, 500v, Dipped Mica	65C80-63
C450	180µf, 1kv	65D10-278
C452-453	1000pf, 1.4kv, Cer. Disc	65D10-248
C455	1000pf, 1.4kv, Cer. Disc	65D10-248
C456	2200pf, 1.4kv	65D10-214
C457	560pf, N1500, Cer. Disc	65D10-296
C511, 512	5.6pf, NPO, Cer.	65D6-170
C514, 515	5.6pf, NPO, Cer.	65D6-170
C518	270pf, Cer. Disc	65D10-360
C526	390pf, 10%, 500v, Cer. Disc	65D10-169
C528	82pf, NPO, Cer. Disc	65D10-312
C531	120pf, N1500, 500v, Cer. Disc	65D10-136
C532	33pf, NPO, Cer. Disc	65D10-217
C542	120pf, N750, 500v, Cer. Disc	65D10-306
C701	120pf, 500v, N1500, Cer. Disc	65D10-211
C702	.0068µf, 1.6kv, Mylar	64C2-58
C703	.0015µf, 2kv, Mylar	64C2-83
C710A & B	80µf, 450v Dual, Electrolytic	67C15-384
C711A	80µf, 450v, Electrolytic	67C15-380
C711B	30µf, 450v	
C711C	20µf, 250v	
C711D	50µf, 50v	
C715	130pf, 6kv, Cer. Disc	65D10-270
C719	10µf, 350v, Electrolytic	67C4-68
C727	.01µf, 1kv, Cer. Disc	65D10-361
C729	820pf, 1kv, Cer. Disc	65D10-383
C733, 734	100pf, 10%, 3kv, N1500, Cer. Disc	65D10-77
C739A	50µf, 450v	67C15-381
C739B	20µf, 450v	
C739C	4µf, 450v	
C741	3300µf, 2kv, Cer. Disc	65D10-244
L301	47.25MHz Trap	72C251-1
L302-303	Filament Choke	73C37-2
L304	Choke, 5.6µh, 10%	73C55-18
L305	12µh Coil	73B44-8
L306	4.5MHz Sound Trap	72B216-5
L307	1.8µh Coil	73B53-231
L308	1.8µh Coil	73B45-231
L309	12µh Coil	73B45-251
L401	120µh Coil, Video Peaking	73B55-12
L402	150µh Coil	73B55-13
L403	Sound Take Off Coil	72B287-2
L404	Quadrature Coil	72B287-1
L501A & B	Bandpass Input Coil & Trap	72C268-3
L502	Bandpass Coil	72C269-2
L503, 504	3.58MHz Trap	72C286-1
L506, 507	120µh Coil, 5%	73C55-26
L508	62µh Coil	73B55-2
L509	120µh Coil, 2.2K, Res.	73C57-19
L510	220µh Coil	73B55-15
L511	180µh Coil	73B55-6
L512, 513	5.6µh Coil	73C55-18
L514	62µh Coil	73B55-2
L516	5.6µh Coil	73C53-243
L601	Right R-G Vertical Coil	94C3051
L602	Right R-G Horizontal Coil	94C305-2
L603A	Blue Convergence Coil Assy.	94D303-60
L603B	Red Convergence Coil Assy.	94D303-61
L603C	Green Convergence Coil Assy.	94D303-59
L604	Blue Shaper Coil	94C305-5
L701	62µh with R701, 1M	73B46-21
L703	Filter Choke	74C27-3
L704	Horizontal Hold Coil	94A268-3
L705	5.6µh Coil	73B45-243
L706	5.6µh Coil	73C55-18
L709	62µh Coil with 1.8K	73B46-40
L710	Pin Cushion Phase Coil	74D277-2
L711	.47µh Coil, Peaking	73C55-20
L712	Width Coil	73C90-1
L713	Horizontal Efficiency Coil	94D176-3
L714	Line Choke	78C31-16
T301	1st IF Grid xformer	72C251-2
T302	1st IF Plate xformer	72C251-3
T303	2nd IF xformer	72C251-3
T304	3rd IF xformer	72B220-2
T401	Sound IF xformer	72B218-5
T501	Burst xformer	72B284-3
T502	E.C.O. xformer	72B285-1
T601	Right Blue Horiz. xformer	94D305-3
T701	Audio Output xformer	79D33-86
T702	Vertical Output xformer	79D106-6
T703	Power xformer	80D88-3
T704	Horiz. Output & HV xformer	79D126-1
T705	Pin Cushion Correction xformer	79D112-4
CR301	Sound Detector, IN87A	93C8-1
CR403, 404	Power Rectifier	93B52-1
CR405, 406	Power Rectifier	93C52-1
CR601A	Rectifier	93C53-2
CR601B	Rectifier	
CR601C	Rectifier	
CR601D	Rectifier	
M705	Circuit Breaker	84D17-9
M718	Deflection Yoke	94A304-2



M718 DEFLECTION YOKE ASSEMBLY

SCHEMATIC NOTES:

⏚ CHASSIS GROUND

PART NOT MOUNTED ON PRECISION WIRED SYSTEM. RESISTOR VALUES 1/2 WATT, 10% & CAPACITOR VALUES IN MICROFARADS UNLESS OTHERWISE INDICATED. SEE SEPARATE SCHEMATIC FOR VHF-UHF TUNERS AND CONTROL CIRCUITRY.

RESISTANCE VALUES OF COILS LESS THAN 1Ω NOT SHOWN.

VOLTAGES MEASURED WITH VTVM AT 120VOLTS AC LINE. NO SIGNAL ON UNUSED UHF CHANNEL.

ALL CONTROLS IN NORMAL OPERATING POSITION

* THIS PART IS LOCATED UNDER THE SHIELD CAN OF L403

M702 CONNECTS TO M754 ON TUNER CLUSTER SCHEMATIC.

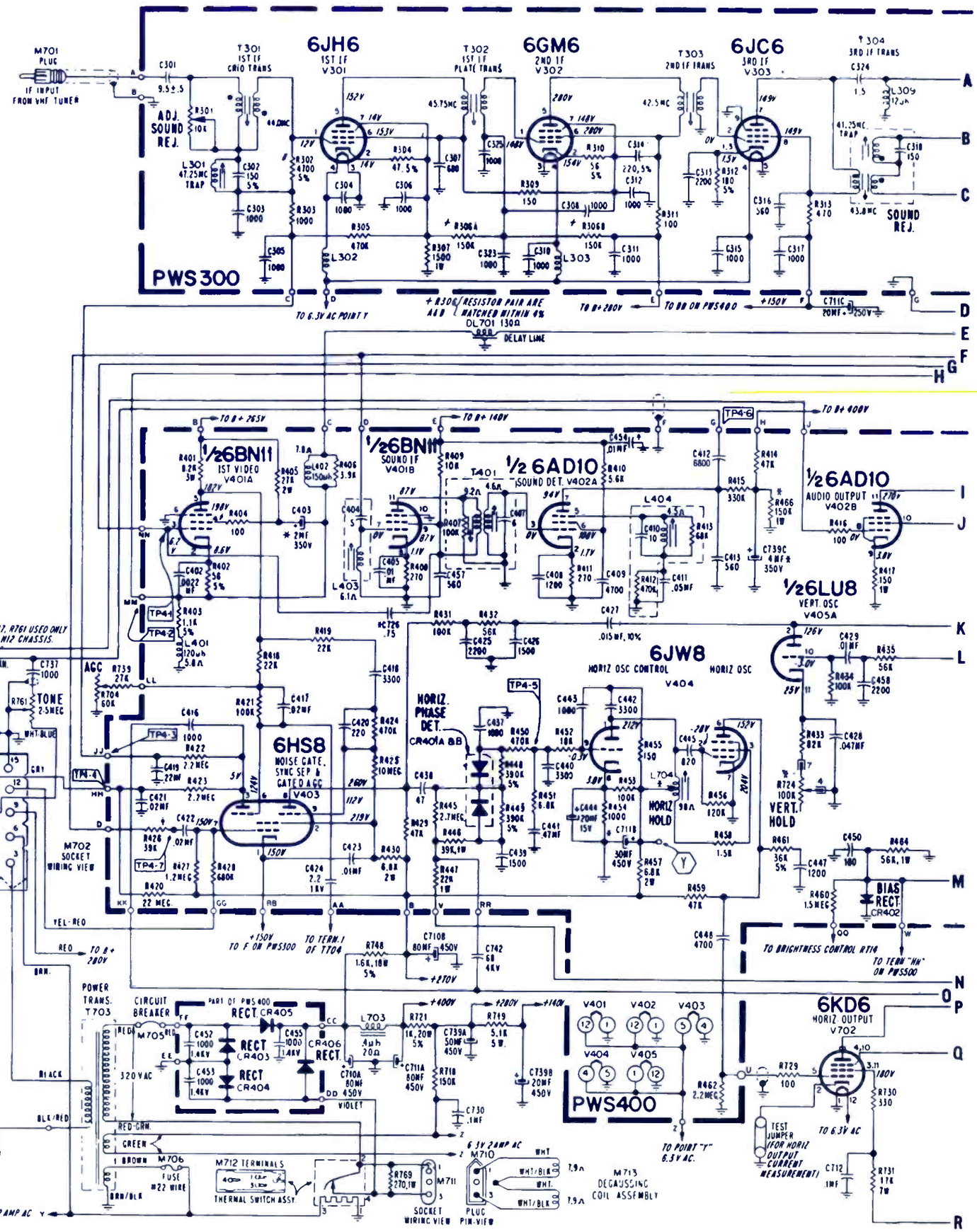
CONNECTIONS TO M716 SHOWN ON THIS SCHEMATIC. M716 CONNECTS TO M715 SHOWN ON TUNER CLUSTER SCHEMATIC

M716 SOCKET WIRING VIEW

NOTE CONTROL CABLE PLUG & SOCKET USED ON IH12 CHASSIS ONLY.

INDICATES SOCKET TERMINAL

INDICATES PLUG TERMINAL



ADMIRAL
Color TV Chassis H12 & IH12

23EGP22, 25SP22 OR 25AP22A

PWS500

PWS600

½6X9 IST BAND PASS AMP V501A

½6X9 2ND BAND PASS AMP V501B

6LE8 DEMODULATOR V502

½6AF9 BURST AMP. V503A

½6GH8A COLOR KILLER V504A

½6GH8A 3.58MC OSC. V504B

½6AF9 2ND VIDEO AMP V503B

½6LU8 VERT OUTPUT V405B

3AT2 H.V. RECT. V704

2BA2 OR 2AV2 FOCUS RECT V705

6BK4B SHUNT REG. V703

6CG3 OR 6CE3 DAMPER V706

T702 VERT. OUTPUT TRANSFORMER

T705 PIN CUSHION CORRECTOR

T704 HORIZ. OUTPUT & HV TRANS

T501 BURST TRANS.

T502 E.C.O. TRANS.

T601

M602 CONVERGENCE YOKE (INCLUDES L603A, B & C)

M708 SOCKET WIRING VIEW

M717 YOKE SOCKET WIRING VIEW YOKE ASSY. SHOWN AT LEFT OF SCHEMATIC

PICTURE TUBE V701

M719 SPARK GAP

M720 SPARK GAP

M721 SPARK GAP

M714 SPARK GAP

M703 SPARK CAP

M709 SPEAKER 3.2Ω VC

BLUE BACKGROUND

RED BACKGROUND

GREEN BACKGROUND

MASTER SCREEN

CONTRAST

BRIGHTNESS

TINT

H.V. ADJUST

HORIZ. CENTERING

FOCUS

VERT. CENTERING

PIN CUSHION AMPLITUDE

PIN CUSHION PHASE

VERT. SIZE

VERT. LIN.

HORIZ EFF.

COLOR KILLER

SOUND DET

VIDEO DET.

AUDIO OUTPUT

BLANKING DIODE

CR601A RECT.

CR601B RECT.

CR601C RECT.

CR601D RECT.

BLUE SHAPER

LFT. BLUE HORIZ.

RT. BLUE HORIZ.

LFT R-G VERT

LFT. R-G HORIZ.

RT. R-G HORIZ.

RT. R-G VERT.

BOT. R-G HORIZ.

TOP R-G HORIZ.

BOT. BLUE HORIZ.

TOP R-G VERT.

TOP BLUE HORIZ.

BOT. R-G VERT

NOTE: R523, R530 & R535 MAY BE 500K IN SOME EARLY SETS.

TERM "X" OF WIDTH COIL L712 IS CONNECTED TO TERM "4" OF T704 FOR PROPER RASTER WIDTH IN AREAS OF NORMAL LINE VOLTAGE IF WIDTH IS INSUFFICIENT DUE TO LOW LINE VOLTAGE, COMPLETELY DISCONNECT AND REMOVE L712. IF WIDTH IS EXCESSIVE, DUE TO HIGH LINE VOLTAGE, CONNECT TERM "A" OF L712 TO TERM "3" OF T704

JUMPER WIRE SET AT FACTORY, CONNECTED TO A, B OR C FOR BEST CONVERGENCE OF BLUE HORIZONTAL LINES AT TOP AND BOTTOM OF RASTER.

JUMPER CONNECTED TO TERMINAL "H", "U" OR "G" TO PROVIDE BEST RED & GREEN HORIZONTAL CONVERGENCE AT TOP & BOTTOM OF RASTER.

JUMPER "Y" CONNECTS TO "V", OR "X" FOR BEST CENTER VERTICAL LINE CONVERGENCE

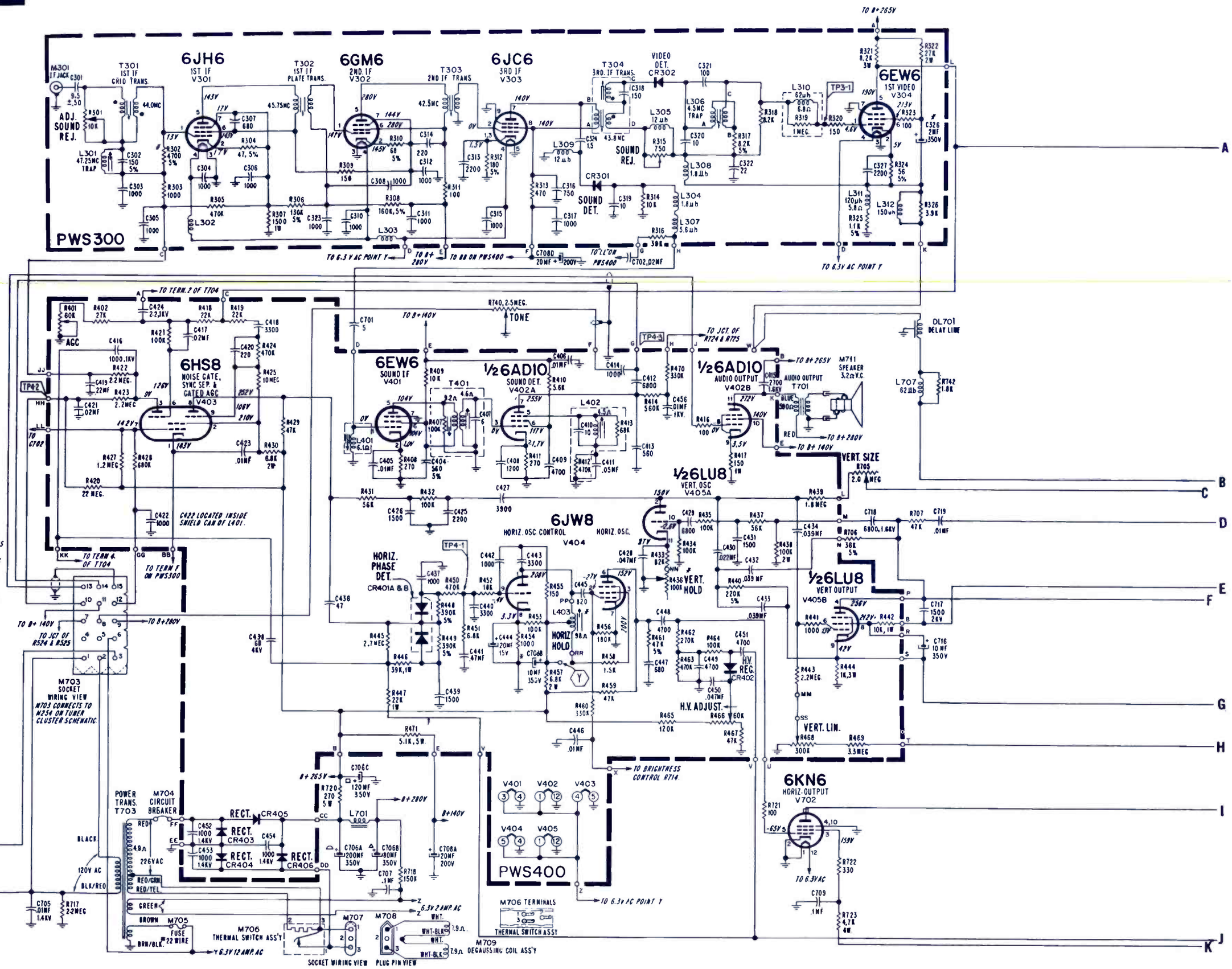
SHOWN IN CCW (SOFT) POSITION PEARING SWITCH

ADMIRAL
Color TV Chassis H10

More Data on Opposite Page

RUN CHANGES

(10) Start of production

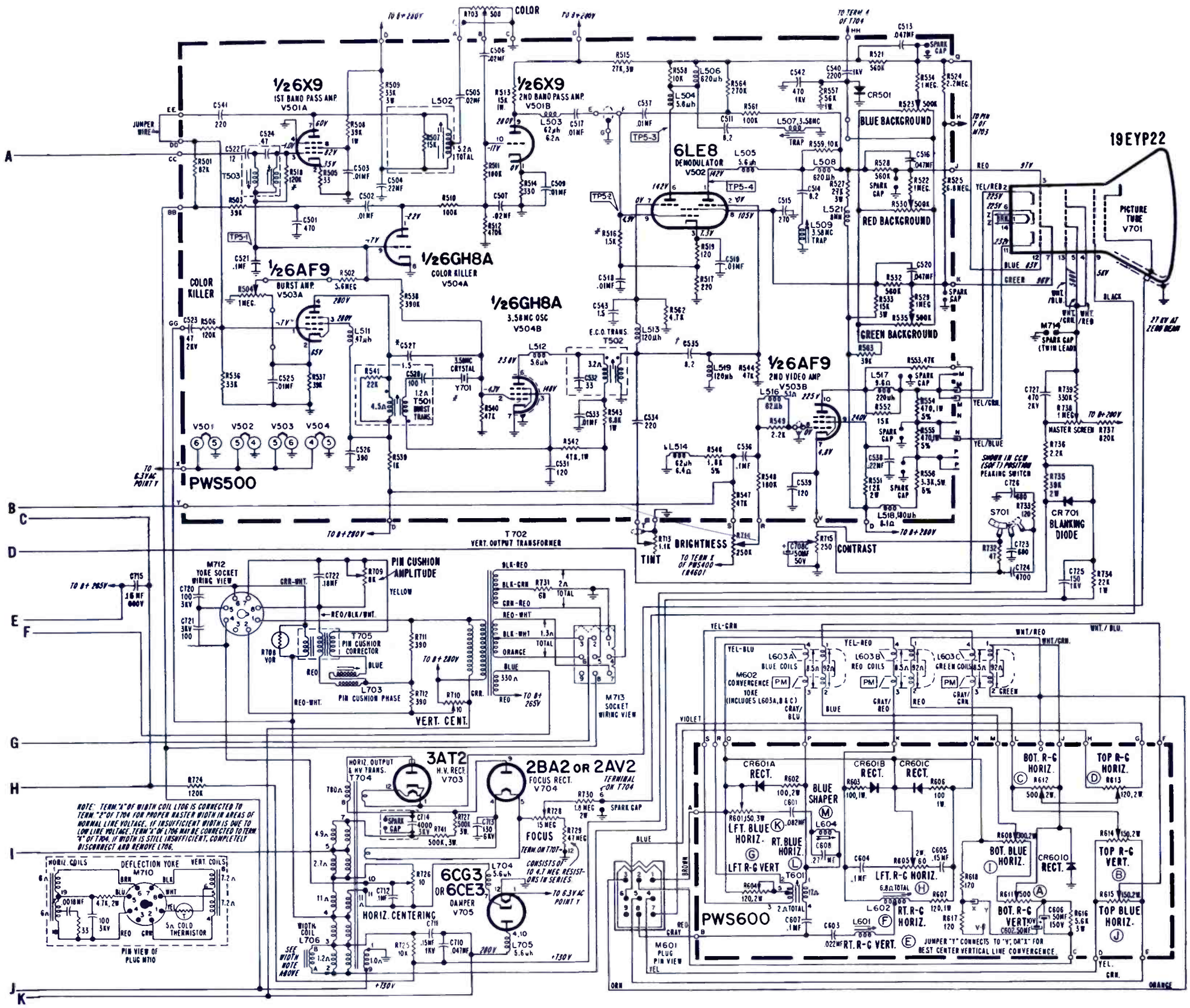


SCHEMATIC NOTES

- CHASSIS GROUND
- # PART NOT MOUNTED ON PRECISION WIRED SYSTEM RESISTOR VALUES 1/2 WATT, 10% & CAPACITOR VALUES IN PICOFARADS UNLESS OTHERWISE INDICATED. SEE SEPARATE SCHEMATIC FOR VHF-UHF TUNERS AND CONTROL CIRCUITRY.
- RESISTANCE VALUES OF COILS LESS THAN 1Ω NOT SHOWN.
- VOLTAGES MEASURED WITH VTVM AT 120VOLTS AC LINE. NO SIGNAL ON UNUSED UHF CHANNEL
- ALL CONTROLS IN NORMAL OPERATING POSITION.
- * C535 INSIDE SHIELD OF T501.

More Data on Opposite Page

SYMBOL	DESCRIPTION	ADMIRAL PART NO.
R301	10K adj sound rejection cont	75B101-8
R315	750Ω sound rejection cont	75C101-3
R321	8.2K 3w	61C24-347
R401	60K AGC control	75C101-9
R444	1K 3w	61C24-325
R466	60K HV adjust control	75C101-12
R468	300K vert lin control	75C101-10
R471	5.1K 5w	61C24-542
R504	1M color killer control	75C101-11
R523 — R530 — R535	background triple control	75C95-7
R556	3.3K 5% 5w	61C23-537



ADMIRAL
Color TV Chassis H10

R601 — 150Ω 3w 1 blue horiz	75C64-34
R605 — 60Ω 2w 1 r-g horiz cont	75C64-2
R608 — 300Ω 2w bottom blue horiz control	75C64-33
R611 — 500Ω 2w bottom r-g vert control	75C64-31
R614 — 150Ω 2w top r-g vert control	75C64-7
R703 — 500Ω color intensity control	75C118-10
R708 — voltage dependent resistor	61C46-2
R709 — 8K PC amplitude control	75C110-9
R713 — 1.1K tint control	75C118-11
R714 — 250K bright dual control	75C118-13
R740 — 2.5M tone dual control	
R715 — 250Ω contrast cont & peaking switch S701	75C118-12
R720 — 270Ω 5w	61C20-70
R726 — 10Ω horiz centering cont	75D64-30
R729 — 4.7M 10% special	60C67-475
R736 — 100K vert hold control	75C118-3
R738 — 1M master screen control	75C112-6
C302 — 150pf 5% 125v poly	65C80-55
C314 — 220pf 5% 500v N2200 cer disc	65D10-330
C316 — 750pf 5% 500v N2200 cer disc	65D10-368
C404 — 560pf 5% 500v N1500 cer disc	65D10-296
C411 — .05μf 5% 500v cer disc	65C45-41
C415 — .0027μf 1.6kv mylar	64C34-22
C416 — .001μf 1kv cer disc	65D10-320
C424 — 2.2pf 10% 1kv N750 cer disc	65D10-369
C432 — .039μf 10% 600v max drift 2% mylor	64C26-25
C438 — 68pf 10% 4kv N1500 cer disc	65D10-275
C442 — .001μf 5% 500v dipped mica	65C48-25
C443 — 3300pf 5% 500v dipped mica	65C48-24
C445 — 820pf 10% 500v poly	65C80-18
C447 — 680pf 5% 500v dipped mica	65D48-19
C452,53 — 1000pf 1.4kv cer disc	65D10-248
C514 — 8.2pf 5% 500 v NPO cer disc	65D10-131
C523 — 47pf 10% 2kv N220 cer disc	65D10-269
C528 — 100pf 5% 500v NPO cer disc	65D10-105
C540 — 2200pf 1kv cer disc	65D10-42
C542 — 470pf 1kv cer disc	65D10-350
C705 — .01μf 1.4kv UL cer disc	65D10-348
C706A — 200μf 350v	
C706B — 80μf 350v elect	67D15-392
C706C — 120μf 350v	
C708A — 20μf 200v	
C708A — 10μf 350v elect	67D15-394
C708C — 50μf 50v	
C713 — 130pf 6kv N2200 cer disc	65D10-270
C714 — 4000pf 3kv spark gap cap	65C139-2
C717 — .0015μf 10% 2kv tub	65C2-83
C718 — .0068μf 1.6kv tub	64C2-58
C720,21 — 100pf 3kv cer disc	65D10-77
C725 — 150pf 10% 1kv cer disc	65D10-317
C727 — 470pf 2kv cer disc	65D10-374
L301 — 41.25MHz trap	75C251-1
L302 — fil choke	73B37-2
L304 — 1.8μh choke	73B45-231
L305 — 12μh choke	73B44-8
L306 — 4.5MHz trap	72C216-5
L307 — 5.6μh choke peaking	73C55-18
L310 — 62μh choke peaking	73B46-21
L311 — 120μh choke peaking	73C55-12
L312 — 150μh choke	73C55-13
L401 — snd takeoff coil	72C287-2
L402 — quad coil	72C287-3
L403 — horiz osc coil	94D268-2
L502 — bandpass coil	72C269-4
L506 — 620μh choke peaking	73C55-21
L507 — 3.58MHz trap	72C286-2
L601 — RT r-g vert coil	94C305-1
L602 — RT r-g horiz coil	94C305-2
L603A&B — convergence coils	94C276-1
L604 — blue shaper coil	94C305-4
L701 — filter choke	74B27-3
L703 — pin cushion phase coil	94D277-1
L704 — spook choke	73C55-18
L706 — width choke	73A90-1
T301 — first IF grid xformer	72C251-2
T303 — second IF xformer	72C251-3
T304 — third IF xformer	72C220-2
T401 — snd IF xformer	72C216-6
T501 — burst xformer	72C284-4
T502 — ECO xformer	72C285-2
T503 — bandpass input coil	72C302-1
T601 — RT blue horiz xformer	74C305-3
T701 — audio output xformer	79D33-94
T703 — power xformer	80C92-3
T704 — horiz output xformer	79D118-1
T705 — pin cushion corrector xformer	79D112-3
DL701 — delay line	72D217-3
CR301 — snd det diode	93C8-1
CR302 — video det diode	93C8-1
CR601C&D — convergence rectifier	93B53-2
Y701 — 3.58MHz crystal	93C22-3
M704 — circuit breaker	84D17-11
M706 — thermo switch	77C160-3
M709 — degaussing coil assembly	700C625-5
VHF tuner assy	94E286-1
UHF tuner assy	94E278-7

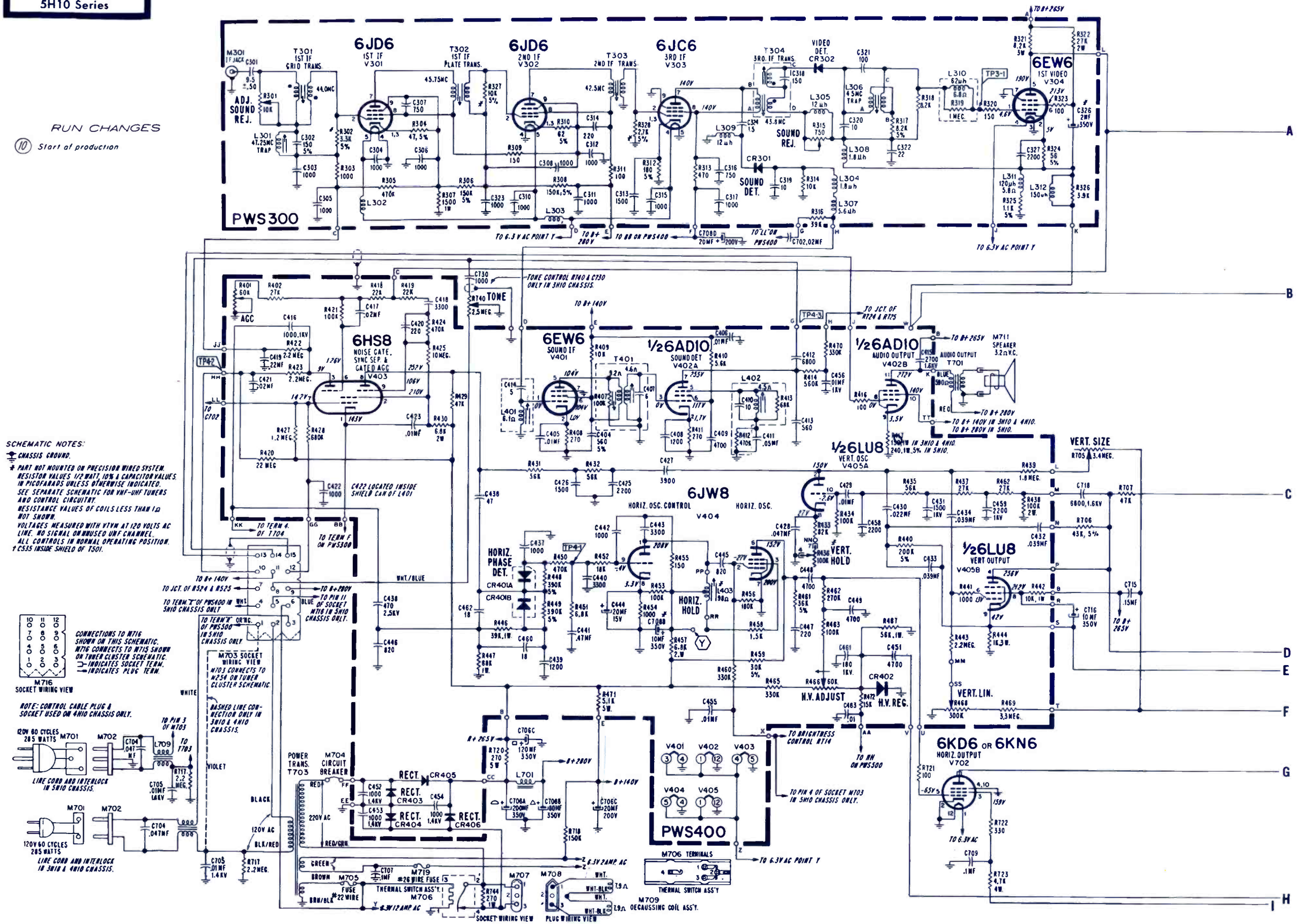
ADMIRAL

Color TV Chassis
3H10, 4H10,
5H10 Series

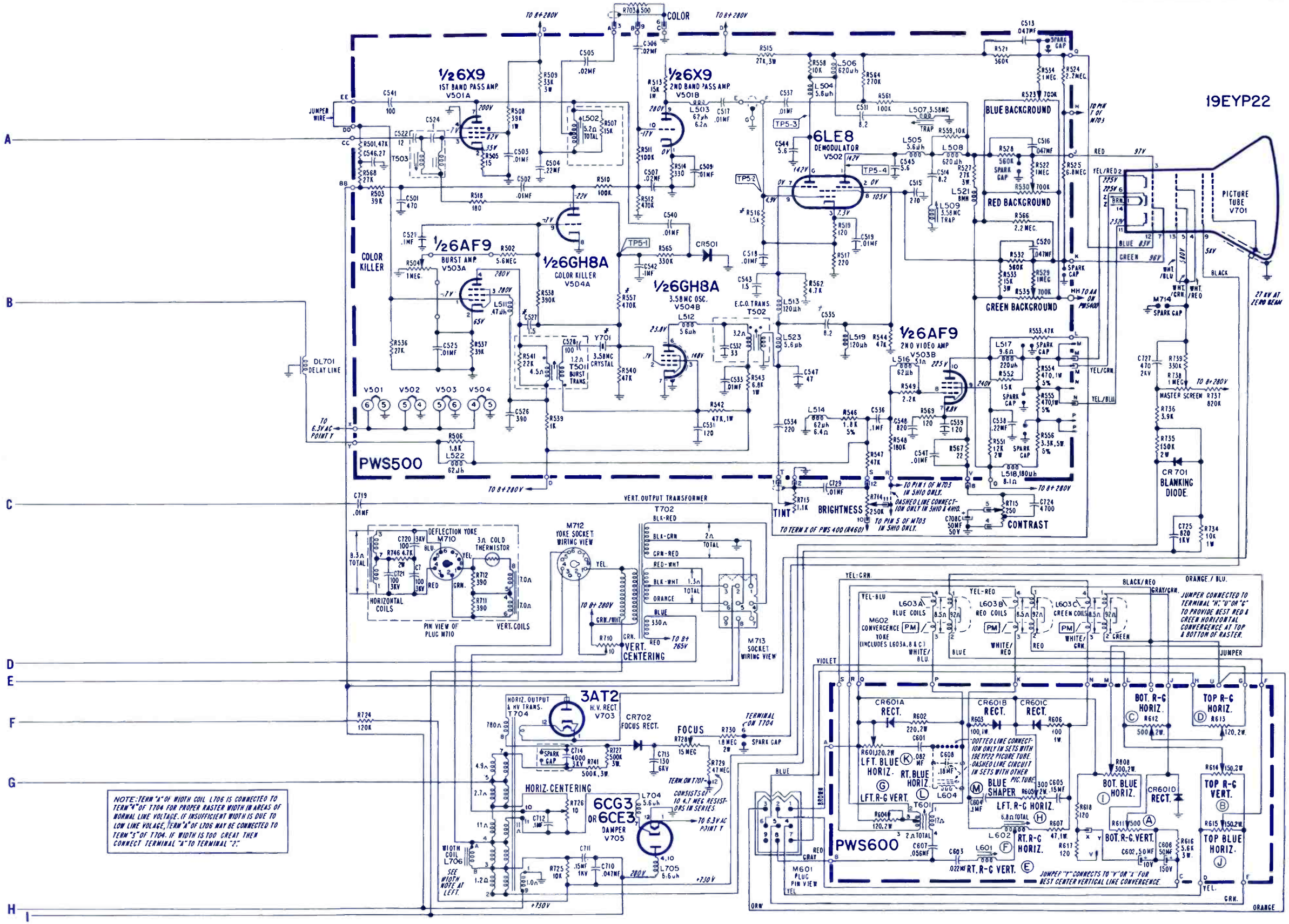
More Data on Opposite Page

RUN CHANGES

(10) Start of production



More Data on Opposite Page

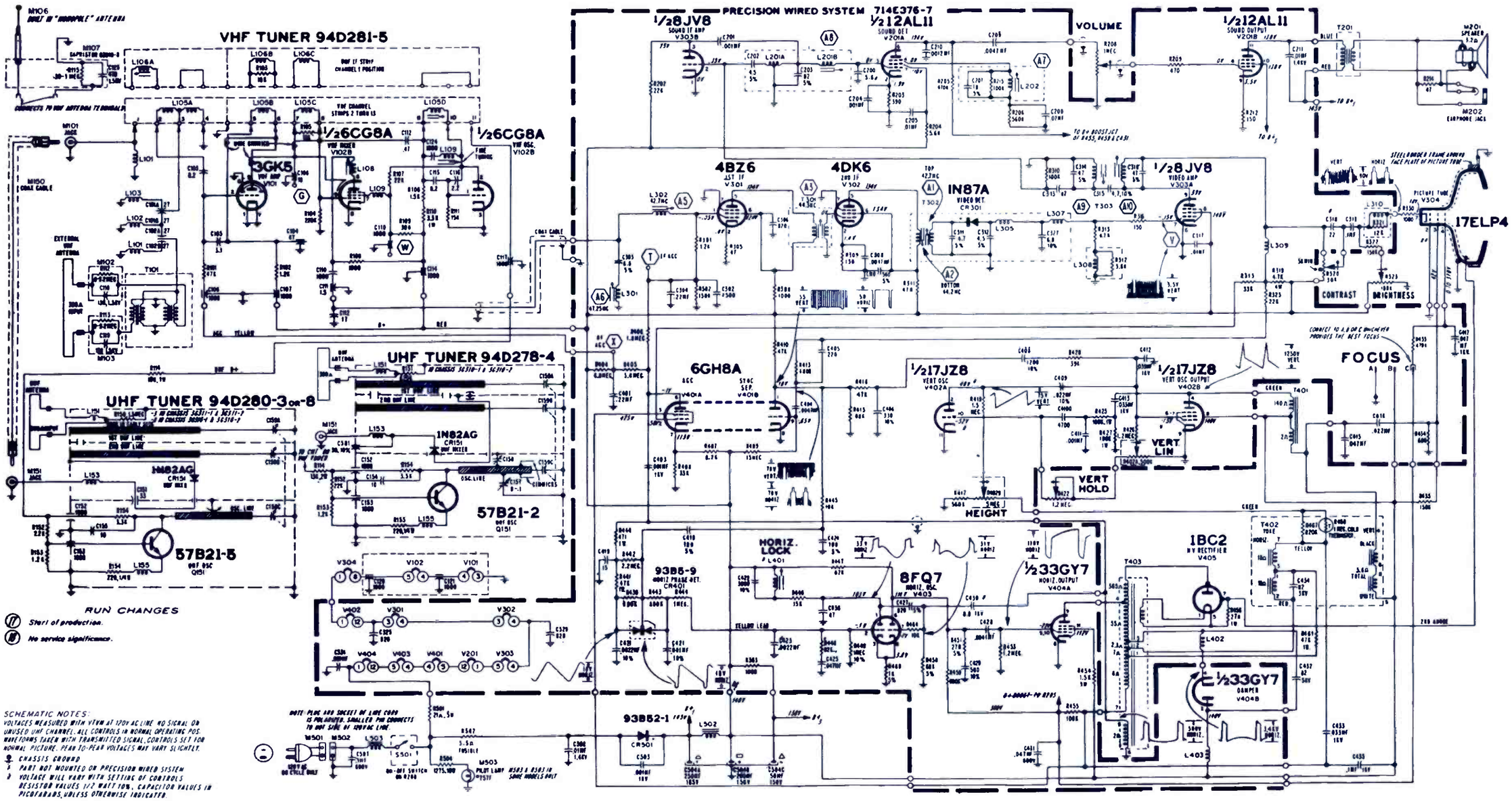


ADMIRAL
TV Chassis 3G3 Series

ELECTRONIC TECHNICIAN **TEKFAX**

SYMBOL	DESCRIPTION	ADMIRAL PART NO.
R319	4.7K 4w	61B24-441
R450	68K 5% ½w	60C7-683
R451	27K 5% ½w	60C7-273
R458	1M thermistor	61C41-1
R460	1K 5% ½w	60C28-92
R501	21Ω 5w	61B20-53
R502	5.5 fusible	61B48-1
R805	15K 1w with 94D233-10, UHF	60C14-153
R208	1M volume control w/switch	75C1-167
R320	30K contrast control	75C20-183
R323	100K bright control	75D20-184
R402A	550K vert lin control dual	75C107-3
B	5M height	
R422	1.2M vert hold control	75D20-185
C203	82pf —5% NPO cer disc	65D10-98
C211	.01μf 1.4kv cer disc	65D10-373
C303	6.8pf 5% NPO cer disc	65D10-102
C304	.22μf 200v poly	64B41-55
C311	4.7pf 5% cer tubular	65D40-38
C314	47pf 5% NPO cer disc	65D10-92
C331	.001μf 1kv cer disc	65D10-320
C403	.001μf 1kv cer disc	65D10-147
C413	.033μf 1kv tubular	64B2-53
C418	100pf NPO cer disc	65D10-105
C427	820pf 5% .5kv poly	65C80-44
C430	5pf 1kv 10% N750 cer disc	65D10-345
C432	82pf 5kv N1500 cer disc	65D10-337
C435	.1μf 1kv tubular	64C2-52
C502	.01μf 1.4kv cer disc	65D10-65
C504A	250μf 165v	
B	200μf 200v	67D15-382
C	50μf 150v	
L201A, B	IF xformer & phase shifting coil	72C208-6
L202	quad coil	72C132-61
L301	47.25MHz trap	72C296-2
L302	IF input coil	72C296-1
L305	IF self resonant choke	73C31-3
L307	RF choke	73C31-4
L308	peaking coil	73C5-42
L309	peaking coil	73C5-44
L310	peaking coil	73C5-40
L401	horiz lock coil	94D17-16
L402	spook choke	73B31-11
L403	RF choke	73B37-17
L502	filter choke	74C18-56
L503	line choke	73B31-1
T201	audio output xformer	79D33-87
T301	1st IF xformer	72C132-42
T302	det & interstage xformer	72C261-2
T303	snd take-off & 4.5MHz trap	72C185-2
T401	vert output xformer	79D100-11
T402	deflection yoke	750C305-29
T403	horiz output xformer	70D109-4
CR301	diode video det 1N87A	93C8-1
CR401	diode horiz phase det (dual)	93A5-9
	tuner UHF G310-1,4	94D256-1
	G336-1	94E233-10
	tuner VHF	94D260-3

SCHEMATIC DIAGRAM OF 3G310-2 & 3G316-2 CHASSIS

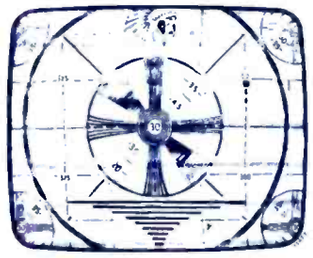


ADMIRAL
TV Chassis H1-1A, H2-1A

CLEANING PICTURE WINDOW AND CABINET

The steelbond picture tube in your set simplifies cleaning by eliminating the need for a separate glass panel in the picture window. Wash face of tube with cloth dampened with mild, soapy water or your favorite glass cleaner. Never let water run behind picture frame. Clean picture frame and cabinet with soap and water. Rinse face of picture tube and cabinet with clean cloth dampened with clear water and dry thoroughly with soft, lint-free cloth. **WARNING:** Never use scouring abrasives which may scratch cabinet or picture window surfaces, nor turpentine, naphtha, benzine, mineral spirits, or other hydrocarbon solvents which will damage cabinet parts.

CAUTION: Set must be turned off when washing picture window and cabinet.

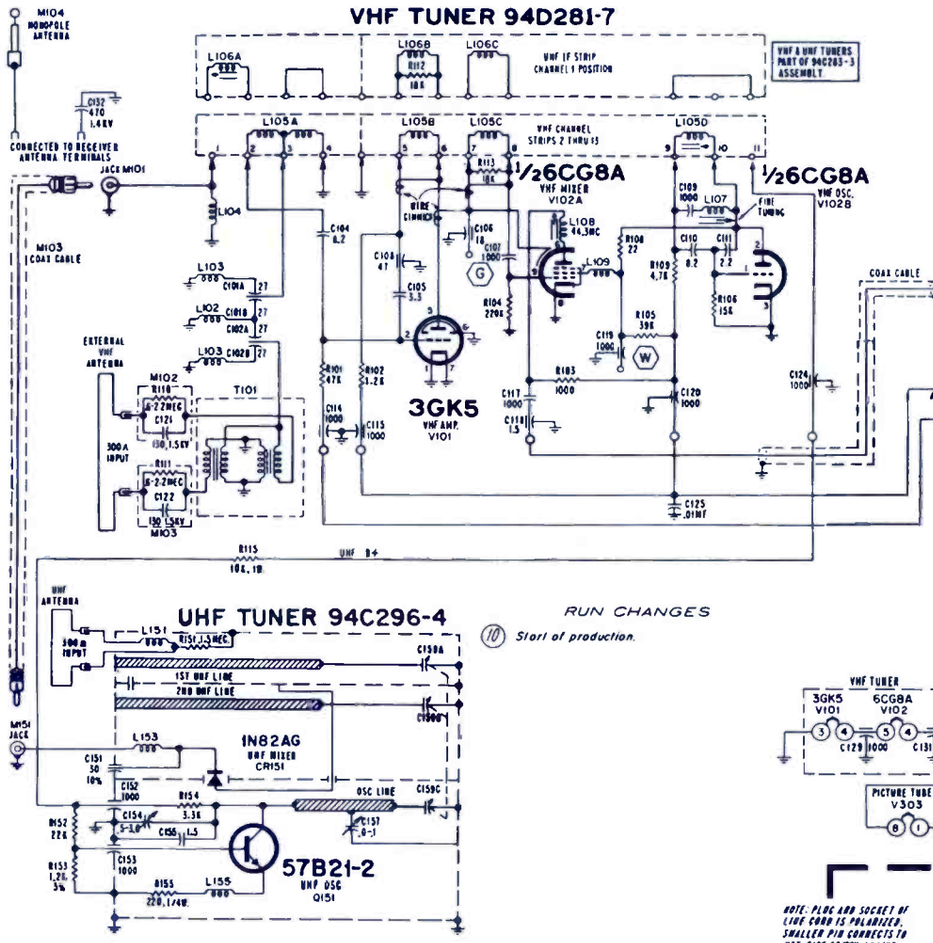


FINE TUNING: If dark bars across the screen appear in time with speech and music, adjust Fine Tuning slightly in either direction until bars disappear.

IDEAL PICTURE QUALITY: When properly adjusted, the ideal picture will be clearly defined, steady and will have various shades of white, gray, and black.

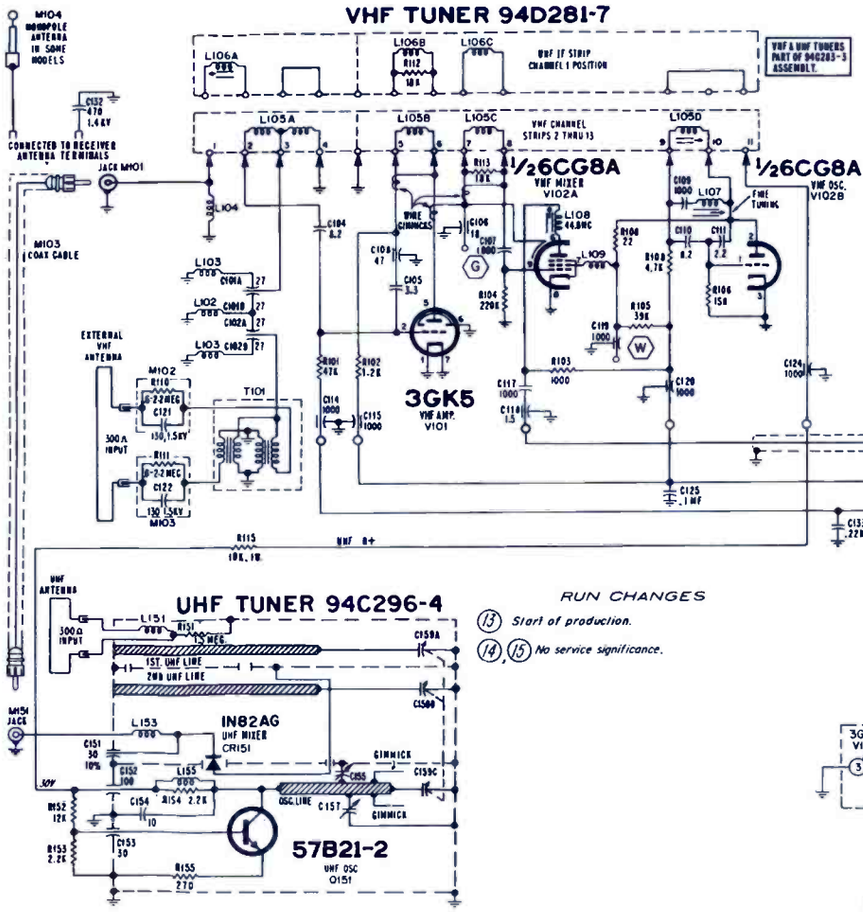
HORIZONTAL HOLD: If picture "slips sideways" or "tears" when changing channels, adjust in direction reducing number of diagonal lines across screen until lines disappear and picture is steady.

PRECISION WIRED SYSTEM 714E424-1

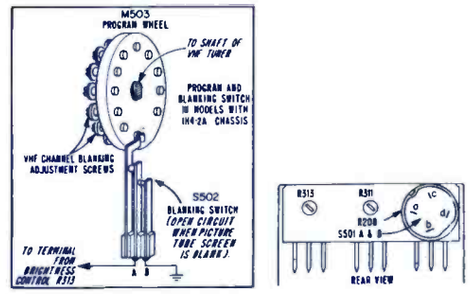


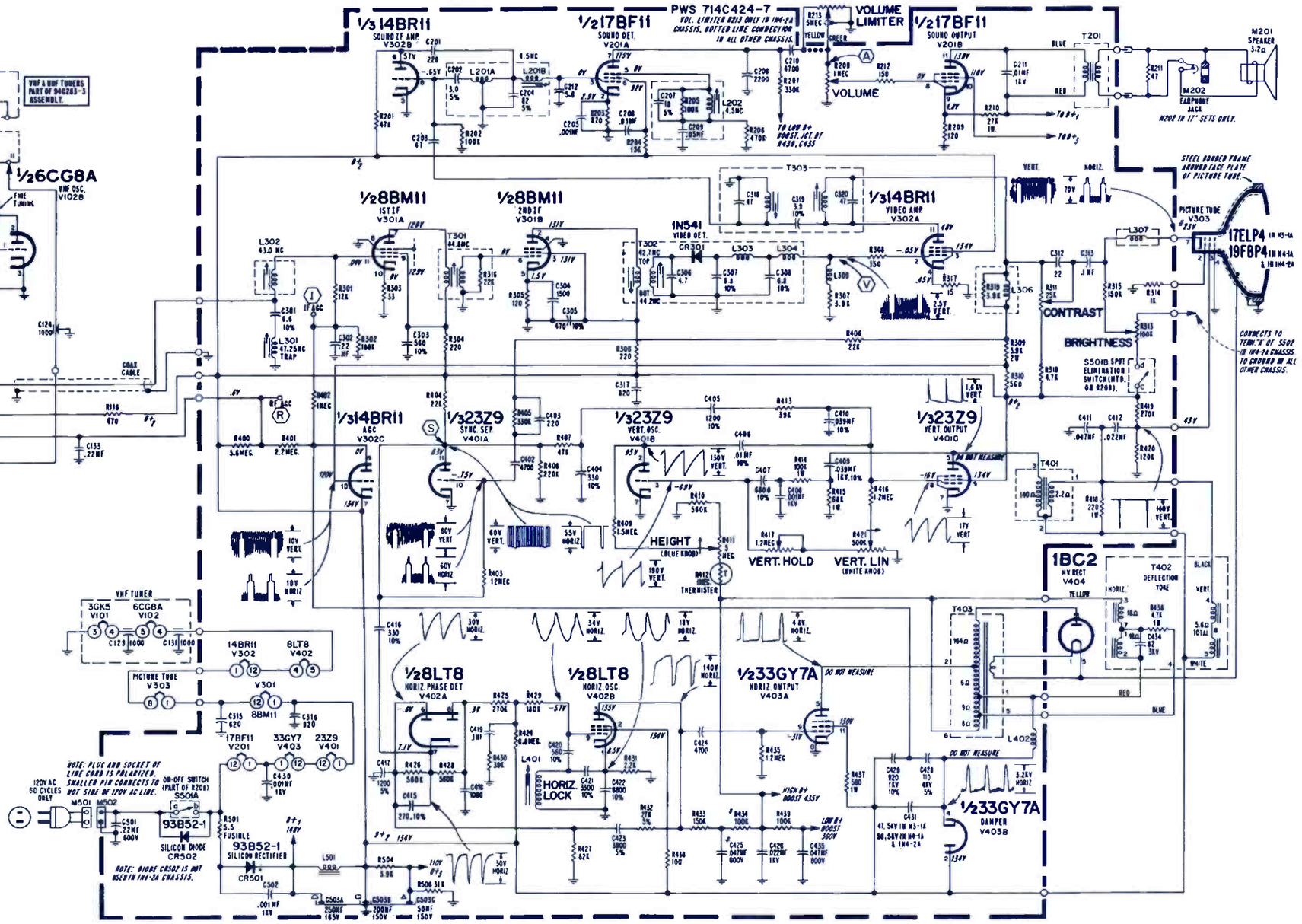
ADMIRAL

TV Chassis H3-1A, H4-1A, 1H4-2A

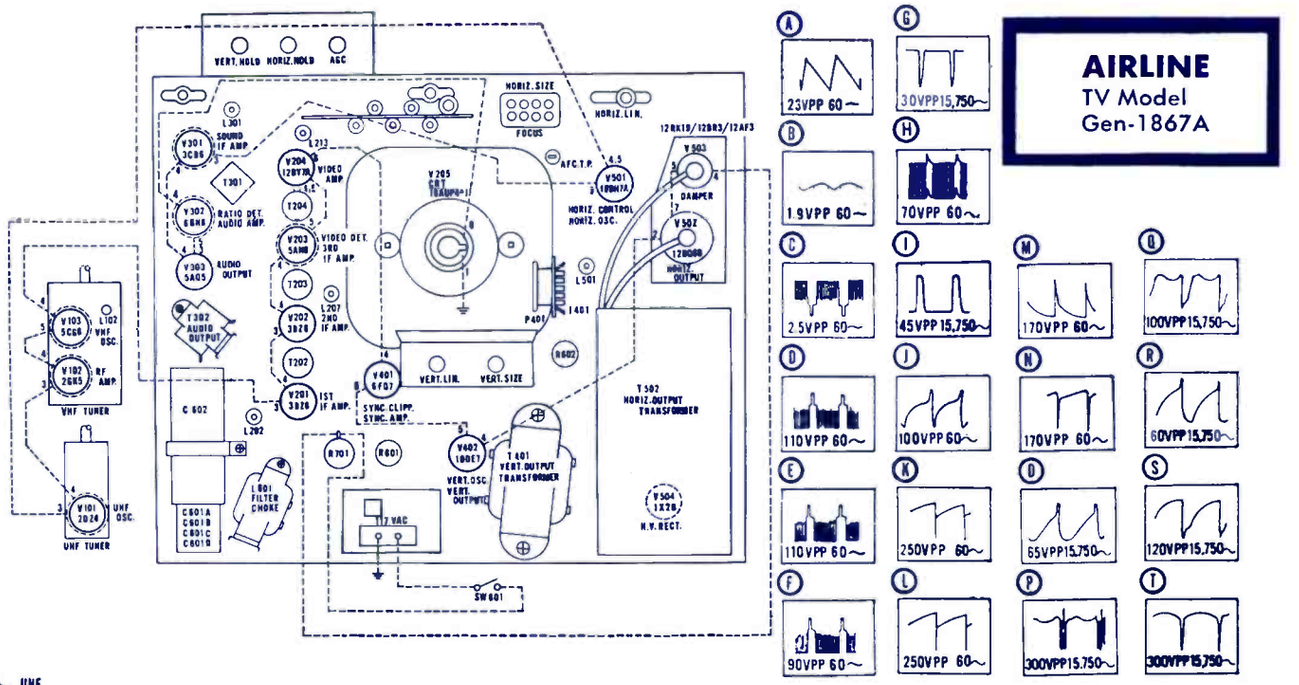


SCHEMATIC NOTES:
- CHASSIS GROUND.
- PART NOT MOUNTED ON PRECISION WIRED SYSTEM.
- VOLTAGE WILL VARY WITH SETTING OF CONTROLS. RESISTOR VALUES 1/2 WATT 10%, CAPACITOR VALUES IN MICROFARADS, UNLESS OTHERWISE INDICATED. DC VOLTAGES MEASURED AT 120V AC LINE, NO SIGNAL, MAX. CONTRAST & BRIGHTNESS, & MIN. VOLUME WITH VTVM





AIRLINE
TV Model
Gen-1867A



OSCILLOSCOPE WAVEFORM PATTERNS

The waveforms shown on the schematic diagram are as observed on a Tektronix type 524D wide band television oscilloscope with the receiver tuned to a reasonably strong signal and a normal picture. The voltages shown on each waveform are the approximate peak to peak amplitudes. The frequency accompanying each waveform indicates the repetition rate of the waveform not the sweep rate of the oscilloscope. If the waveforms are observed on the oscilloscope with a poor high frequency response, the corners of the pulses will tend ta be more rounded than those shown on the schematic diagram and the amplitude of any high frequency pulse will tend to be less.

DC SOCKET VOLTAGES

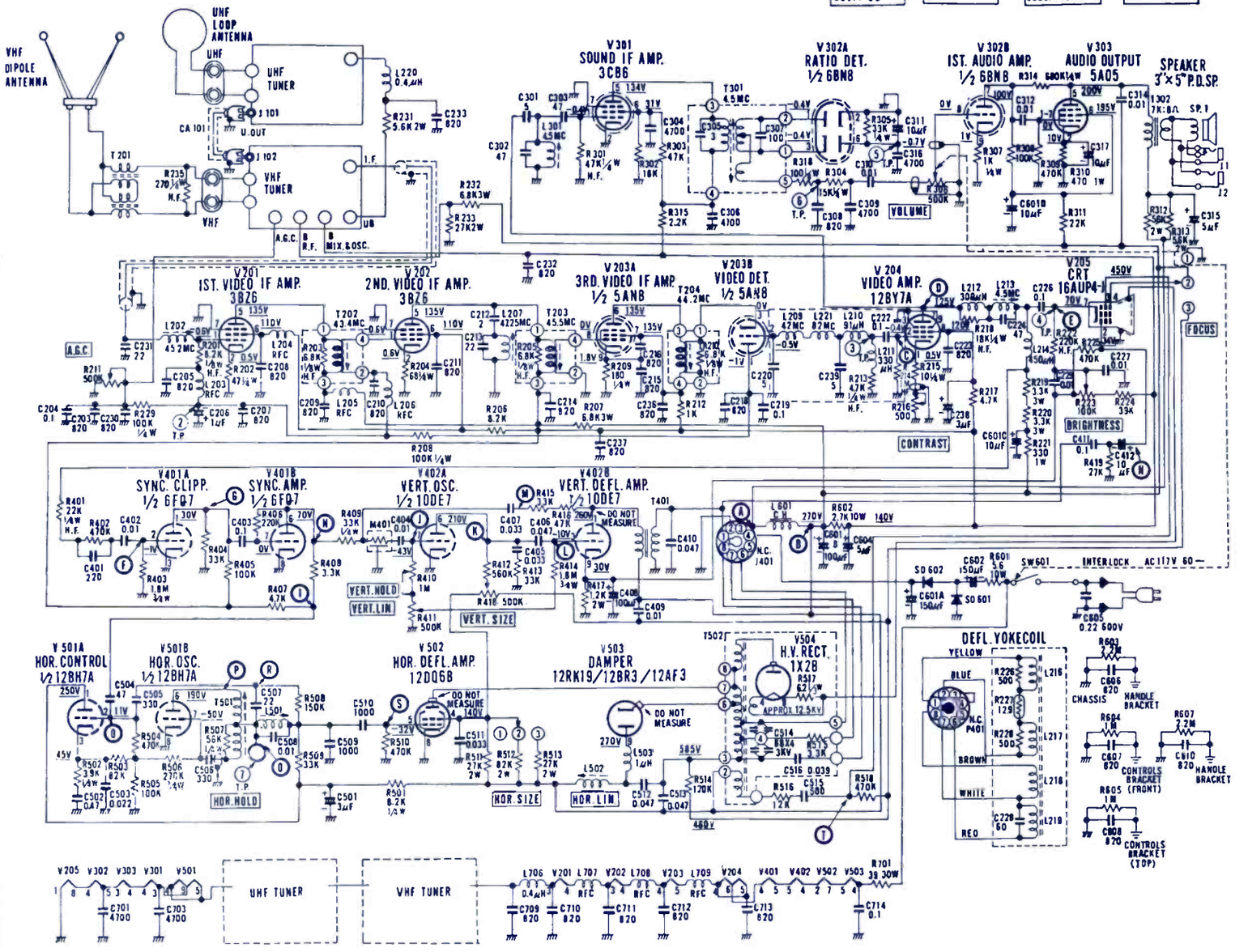
All DC voltages shown on the schematic are measured with a high impedance VTVM and under zero signal conditions, when AGC and Contrast Control are fully turned clockwise.

NOTE: 1. ALL CAPACITOR VALUES LESS THAN 1 ARE IN MFD. AND VALUES GREATER THAN 1 IN PF (MICROMICROFARADS). ALL RESISTANCE VALUES ARE IN OHMS 1/2 WATT UNLESS OTHERWISE INDICATED.

2. WAVEFORMS WERE TAKEN WITH CONTROLS SET FOR A NORMAL PICTURE R211 WAS SET FOR 2.5V (ZERO TO PEAK) AT T.P. ③.

3. CIRCLED NUMBERS AND LETTERS REPRESENT TEST POINT.

SYMBOL — DESCRIPTION	AIRLINE MODEL PART NO.
R207 — 6.8K 3w 10% carbon	TV2308
R211 — 500K AGC control	TV2548
R216 — 500Ω contrast control	TV2549
R223 — 100K brightness control	TV2550
R227 — 12.9Ω thermistor	TV2310
R232 — 6.8K 3w 10% carbon	TV2308
R306 — 500K volume control (incl. SW601)	TV2551
R410 — 1M vert hold control	TV2552
R411 — 500K vert lin control	TV2553
R413 — 33K 0.5w 5% carbon	CB5333
R418 — 500K vert size control	TV2554
R503 — 82K 0.5w 5% carbon	CB5382
R505 — 100K 0.5w 5% carbon	CB5410
R506 — 270K 0.75w 5% carbon	CC5427
R509 — 33K 0.5w 5% carbon	CB5333
R517 — 6.2K 0.33w 5% WW	WB5262
R601 — 5.6Ω 10w 5% WW	TV2311
R602 — 2.7K 10w 10% WW	TV2312
R701 — 39Ω 30w 5% WW	TV2313
C206 — 1μf 50v elect	TV3287
C227 — .01μf 250v ceramic	DD-103
C228 — 60pf 3kv ceramic 10%	TV3375
C238 — 3μf 350v elect	TV3292
C305 — 3pf 250v ceramic ±0.5p	DD-030
C311 — 10μf 50v elect	TV3289
C315 — 5μf 300v elect	TV3290
C317 — 10μf 50v elect	TV3289
C408 — 100μf 50v elect	TV3291
C412 — 10μf 50v elect	TV3289
C501 — 3μ 350v elect	TV3292
C601A — 150μf 350v elect block	TV3296
C601B — 100μf 350v elect block	TV3296
C601C — 10μf 350v elect block	TV3296
C601D — 10μf 350v elect block	TV3296
C602 — 150μf 180v elect	TV3294
C604 — 5μf 300v elect	TV3290
L202 — coil 1st IF 45.2MHz (incl. R201)	TV6199
L207 — coil adjustable 47.25MHz trap	TV61101
L209 — coil 42MHz video det	TV61188
L210 — coil 91μh video grid	TV61103
L211 — coil 330μh video grid	TV61104
L212 — coil 300μh +18KHF peaking	TV61105
L213 — coil adjustable 4.5MHz trap (incl. C224)	TV61106
L214 — coil 450μh peaking	TV61107
L216 — coil vert yoke	
L217 — coil vert (incl. R226, R227)	
L218 — coil horiz R228, C228, P401	TV61108
L219 — coil horizontal & centering rings	
L221 — coil 82MHz video det	TV61189
L301 — coil adjustable sound input 4.5MHz (incl. C302)	TV61111
L501 — coil horiz ringing	TV61112
L502 — coil horiz lin	TV61113
L503 — coil 1μh RF choke A	TV61114
L601 — coil 0.64h line choke	TV61115
L707 — coil 1μh RF choke A	TV61114
T201 — balun	TV6293
T202 — xformer, 2nd IF 43.4MHz (Incl. R203)	TV6294
T203 — xformer, 3rd IF 45.5MHz (incl. R205)	TV6295
T204 — xformer 4th IF 44.2MHz (incl. R210)	TV6296
T301 — xformer, adjustable 4.5MHz ratio (incl. C305 & C307)	TV6297
T302 — xformer, audio output	TV1165
T401 — xformer vert output G	TV1166
T501 — xformer horiz osc H	TV1167
T502 — xformer horiz output (Incl. R515, R517, C514 & C516)	TV1168
SD601 — diode silicon power rectifier	TV2496
SD602 — diode silicon power rectifier	TV2496
tuner VHF	TV3553
tuner UHF	TV3554

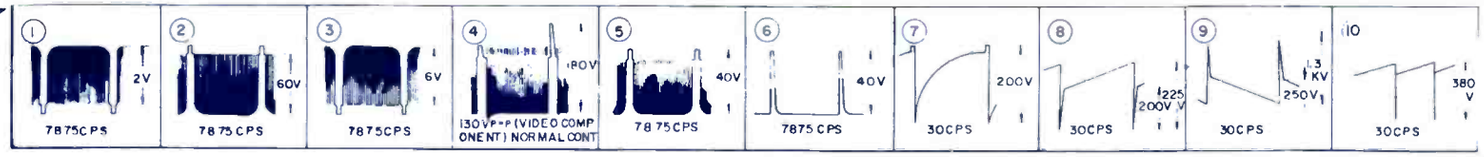


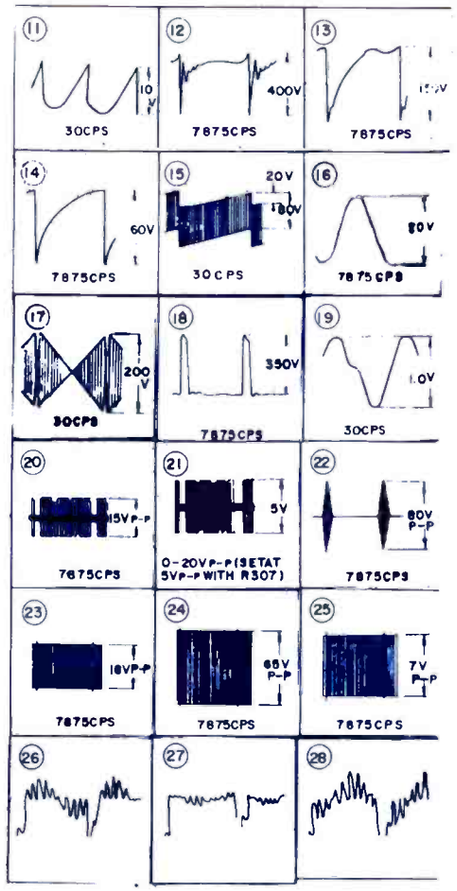
AIRLINE

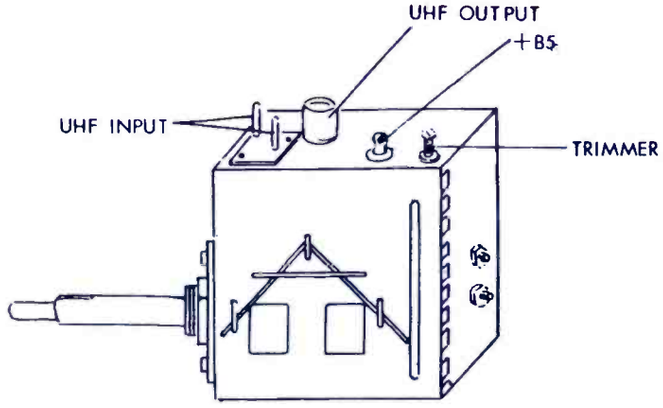
Color TV Model
GEN-8077A,-
GEN-8447A

PT5-5U2W(63-8447)
NT5-5U2W(63-8077)

UT5-1U2



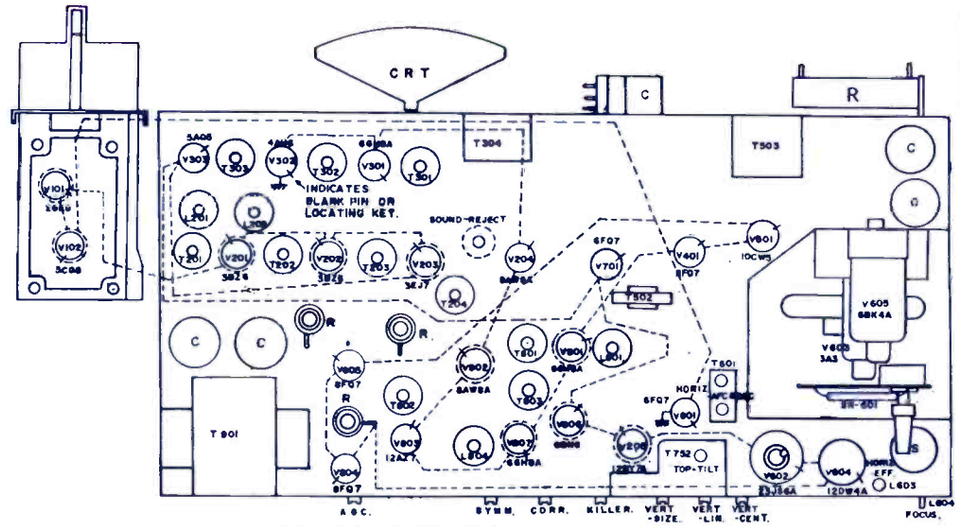




UHF TUNER (UT5-1U2)

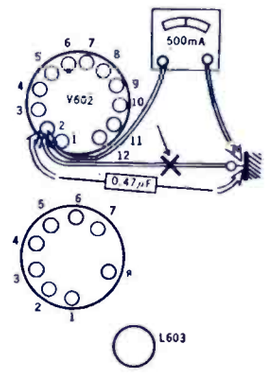
ELECTRICAL SPECIFICATIONS

ANTENNA INPUT IMPEDANCE...300 ohms balanced
CONVERGENCE.....Magnetic
FOCUS ..... Electrostatic
AUDIO POWER OUTPUT RATING ... 1.0 Watts max.
INTERMEDIATE FREQUENCIES
Picture I-F Carrier Frequency.....45.75 mc.
Sound I-F Carrier Frequency.....41.25 mc.
Color Sub-Carrier Frequency ... 42.17 mc. (Nominal)
PICTURE SIZE.....Approximately 168 SQ. IN.
POWER INPUT ..... 120 volts AC, 60 cycle
POWER RATING.....340 watts total
SPEAKER SIZE AND TYPE ..... See Parts List
SWEEP DEFLECTION.....Magnetic
TELEVISION R-F FREQUENCY RANGE
All 12 VHF channels.....54 mc. to 88 mc., 174 mc. to 216 mc.
All 70 UHF channels..... 470 mc. to 890 mc.



CHASSIS LAYOUT

AIRLINE
Color TV Model GEN-8077A, GEN-8447A



TOP AND BOTTOM PIN-CUSHION ADJUSTMENT

The top and bottom pin-cushion adjustment is pre-set at the factory and normally needs no further adjustment. If necessary, adjustment may be made by adjusting for straight horizontal lines at the top and bottom of the raster. "Horizontal Efficiency Coil adjustment" should be performed prior to making pin-cushion adjustments.

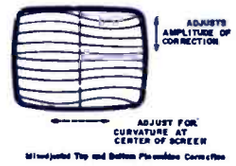
1. The receiver should be allowed to run at least 5 minutes with cross-hatch or horizontal line pattern on the screen.
2. Turn CORR-AMP. (R752) and SYMM. (R756) fully to the right.
3. Turn TOP-TILT (T752) screw to make the upper picture symmetric to the center line of picture.
4. After turning the SYMM. (R756) fully to the left, turn BOTTOM-TILT (L751) screw to make the lower picture symmetric to the center line of picture.
5. After turning the SYMM (R756) to make the horizontal line at the picture center straight, minimize CORR-AMP (R752) so that the picture may be corrected properly.

Horizontal Efficiency Coil Adjustment

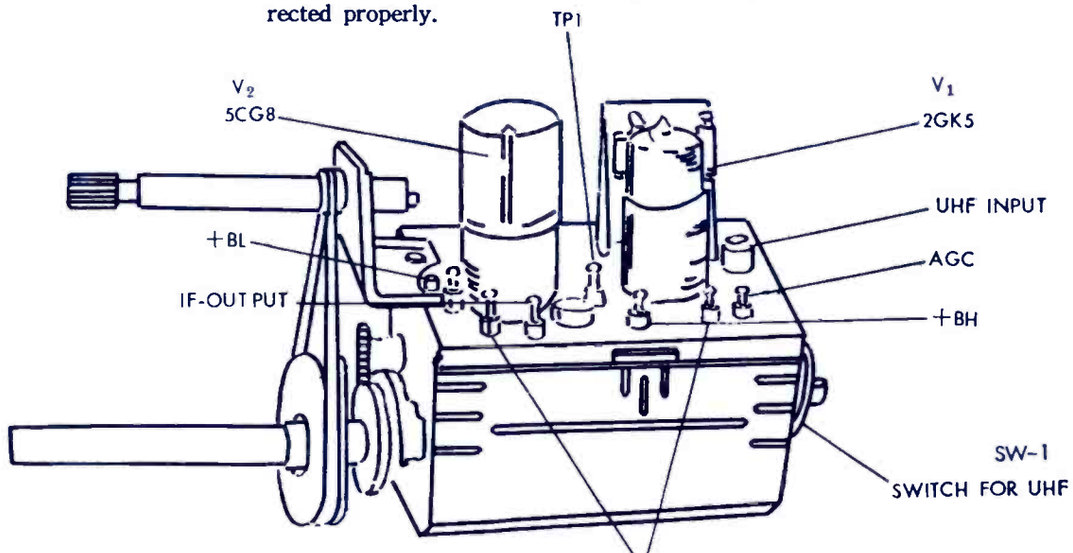
1. Open the lead at Pin 2 (cathode) of V602 (23JS6A).
2. Insert a milliammeter (500 MA range) between Pin 2 of V602 and ground. (Positive lead to pin 2)
3. Bypass the meter with a 0.47μF capacitor, as shown.
4. Turn the receiver on and allow to run about 3 minutes.
5. Adjust Horizontal Efficiency Coil (L603) for minimum reading (approximately 180 MA) on the meter.

AGC ADJUSTMENT

Turn the AGC control clockwise until the picture begins to bend or otherwise distort, and then retard the control slightly below the point where the distortion is eliminated. Change channels and observe the AGC performance on a strong, local broadcast. Retard the AGC control again if the picture does not immediately reappear when changing channels.



Horizontal and Bottom Pincushion Correction



VHF TUNER (PT5-5U2W)

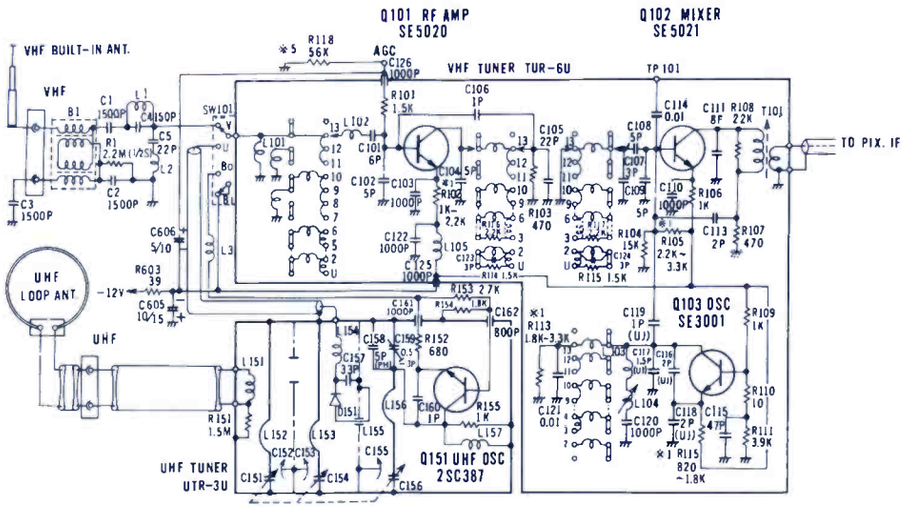
TUBE AND TRANSISTOR COMPLEMENT

V1	2GK5	VHF Amplifier
V2A & B	5CG8	VHF Oscillator & Mixer
Q51	GMO-380	UHF Oscillator
D51	1S-750	UHF Mixer
V201	3BZ6	1st Picture IF Amplifier
V202	3BZ6	2nd Picture IF Amplifier
V203	3EJ7	3rd Picture IF Amplifier
V204A & B	8AW8A	1st Video Amplifier & Sync. Separator
V205	12BY7A	2nd Video Amplifier
V801A & B	6GH8A	1st Bandpass Amplifier & Killer
V802A & B	8AW8A	2nd Bandpass Amplifier & Burst Amplifier
V803A & B	12AZ7	X & Z Demodulators
V804A & B	8FQ7	R-Y Amplifier & B-Y Amplifier
V805A & B	8FQ7	G-Y Amplifier & Blanker
V806A & B	6BN8	Phase Detector & Killer Detector
V807A & B	6GH8A	3.58 mc Oscillator & Reactance Control
V401A & B	8FQ7	Sync. Limiter & Vertical Oscillator
V501	10CW5	Vertical Output
V601A & B	6FQ7	Horizontal Oscillator & AFC Control
V602	23JS6A	Horizontal Output
V603	3A3	High Voltage Rectifier
SR601	HS-7/1	Focus Rectifier
V604	12DW4A	Damper
V605	6BK4A	Shunt Regulator
V701A & B	6FQ7	Dynamic Pincushion Corrector & Keyed AGC
V301A & B	6GH8A	1st Sound IF Amplifier & Audio Amplifier
V302	4AU6	2nd Sound IF Amplifier
V303	5AQ5	Audio Output
V901	490EB22	Picture Tube
	490JB22	Picture Tube
	490LB22	Picture Tube

Refer to Parts List for Replacement Instructions.

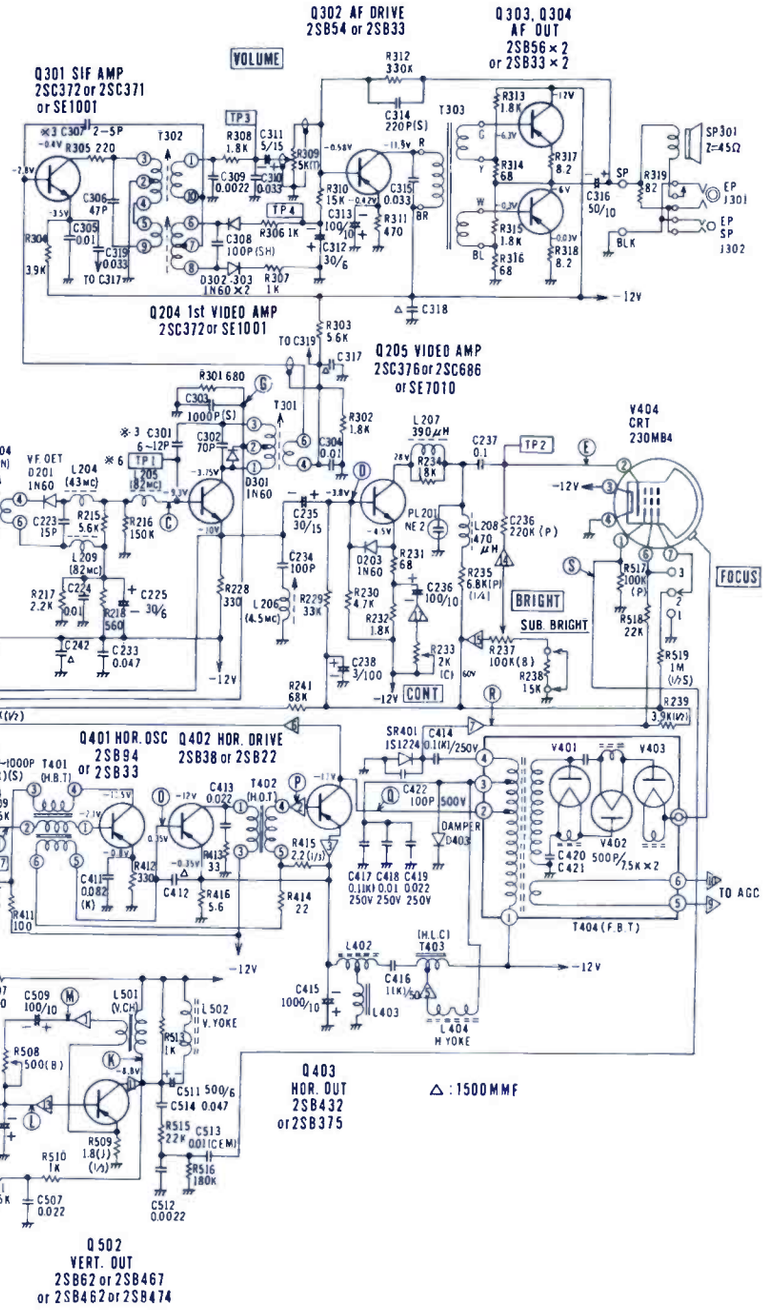
SYMBOL	DESCRIPTION	AIRLINE PART NO.
C405	.001μf 1000v 10% tubular (mica)	TV 3176
C507	10μf 250v elect (non polarized)	TV 32125
C602	50pf 2kv 10% discap	TV 33242
C610	700pf 500v 10% tubular (mica)	TV 3196
C617	50pf 5000v 10% discap	TV 33243
C618	130pf 5000v 10% discap	TV 33229
C624,C625	500pf 3000v 10% discap	TV 33244
C627	50pf 5kv 10% ceragap (discap)	TV 33243
C757	.004μf 500v 10% tubular (Mica)	TV 3191
C901	.1μf 10% special	TV 33101
C904 A,B C905 A,B	100μf/100μf@450v elect	TV 32124
C906 A,B	60μf/60μf@450v elect	TV 32116
C918 A,B,C,D	20μf/20μf/20μf/20μf@450v elect	TV 32114
R213	6K 3w 10% carbon	TV 2301
R315,R316,R317	12K 3w 10% carbon	TV 2338
R414	6K 3w 10% carbon	TV 2301
R513	3K 20w 10% WW	TV 2349
R607	70K 3/4w 10% carbon	CC 5368
R625	60M 5kv special	TV 2381
R722	6.8K 3w 10% special	TV 2353
R726	5.6K 4w 10% special	TV 2355
R727	33K 4w 10% special	TV 2356
R801	6K 3w 10% carbon	TV 2301
R901	6Ω 30w 10% WW	TV 2382
R903	600Ω 30w 10% WW	TV 2383
R904 A,B	20Ω/28Ω 30w 10% WW	TV 2384
R216	750Ω pot snd reject (8V-045)	TV 25135
R258	250K pot brightness (8V-348)	TV 2543
R263	500Ω pot contrast (8V-306)	TV 2541
R310, SW-901	500K pot volume w/on-off switch (8V-075UL)	TV 25167
R404	500K pot AGC (8V-266)	TV 25144
R502	1M pot vert hold (8V-172)	TV 2540
R504	5M pot vert size (8V-269)	TV 25146
R507	100K pot vert lin (8V-265)	TV 25143
R512	50Ω pot ver centering	TV 25168
R610	1M pot horiz hold (8V-172)	TV 2540
R623	100Ω pot horiz centering	TV 25169
R629	500K pot HV adjust	TV 25170
R702	150Ω pot convergence B-2 (8V-034)	TV 25134
R705	60Ω pot convergence RG-3 (8V-032)	TV 25132
R706	60Ω pot convergence RG-4 (8V-032)	TV 25132
R708	120Ω pot convergence RG-A1 (8V-033)	TV 25133
R709	30Ω pot convergence B-A (8V-031)	TV 25131
R711	60Ω pot convergence RG-T1 (8V-032)	TV 25132
R724	5K pot G Drive (8V-057)	TV 25138
R731	500K pot CRT bias (8V-059)	TV 25140
R733	1M pot G screen (8V-058)	TV 25139
R752	100K pot correct amp (8B-265)	TV 25143
R756	10K pot symmetry amp (8V-004)	TV 25124
R806	500Ω pot color	TV 25171
R838	1.5K pot tint (8V-055)	TV 25137
R840	1M pot color killer (8V-197)	TV 25142
L201	coil 47.25MHz trap (2TIF-419)	TV 62279
L202	coil 41.25MHz trap (2TIF-420)	TV 62280
L203	coil peaking (TL-250)	TV 61303
L205	coil 4.5MHz trap (2TIF-481)	TV 62281
L207	coil peaking (TL-280)	TV 61280
L206	coil peaking (TL-252)	TV 61304
L209	coil peaking (TL-279)	TV 61279
L210	coil peaking (TL-281)	TV 61281
L211	coil delay line (TL-962)	TV 61305
L213	coil peaking (TL-282)	TV 61282
L601	coil snivet (TL-601)	TV 61175
L603	coil horiz efficiency (2TL-904)	TV 61344
L604	coil focus (2TL-908)	TV 61348
L701	coil convergence control assy RG-2 (TL-71)	TV 61297
L702	coil convergence control assy RG-1 (TL-70)	TV 61298
L721	coil peaking (TL-286)	TV 61286
L722	coil peaking (TL-285)	TV 61285
L751	coil bottom tilt pincushion control (TL-49)	TV 61293
L801	coil chroma take-off (2TL-913)	TV 61347
L802	coil peaking (TL-258)	TV 61284
L803	coil peaking (TL-258)	TV 61284
L804	coil reactance (2TL-912)	TV 61352
L805	coil phase (TL-75)	TV 61353
L806	coil peaking (TL-230)	TV 6188
L901	coil automatic degaussing (TL-915)	TV 61351
L902	coil filter choke (9T-177)	TV 11162
L903,L904	coil RF choke (TL-603)	TV 6191
T201	xformer 1st pix IF (2TIF-416)	TV 62276
T202	xformer 2nd pix IF (2TIF-417)	TV 62277
T203	xformer 3rd pix IF (2TIF-418)	TV 62278
T204	xformer video det assy	TV 61302
T301	xformer 1st snd IF (TIF-494)	TV 62282
T303	xformer snd demodulator (TIF-535)	TV 62291
T304	xformer audio output (7T-167)	TV 1185
T501	xformer vert oscillator (9T-160)	TV 11147
T502	xformer vert conver reactor (9T-162)	TV 11149
T503	xformer vert output (8T-182)	TV 11145
T601	xformer horiz. osc (2TL-905)	TV 61354
T602	xformer horiz output (8FT-620)	TV 11163
T701	xformer convergence control assy 8-1 (TL-72)	TV 61298
T702	convergence assy (TL-82) w/leads	TV 61299
T752	xformer top tilt pincushion control (TL-84)	TV 61301
T801	xformer chroma 1st band pass (TL-59)	TV 61294
T802	xformer chroma 2nd band pass (2TL-906)	TV 61355
T803	xformer burst phase (TL-14)	TV 61288
T804	xformer 3.58MHz osc (2TL-912)	TV 61352
T901	xformer power (5T-184)	TV 11164
M401	capristor (PRC-302)	TV 3452
M901,M902	filter (2TL-914)	TV 61307
F901	fuse 4.0 amp 125v pigtail (slo-blo)	315004
	tuner VHF GEN-8077A (NT5-5U2W)	TV 35128
	tuner VHF GEN-8447A (PT5-5U2W)	TV 35129
	tuner UHF (UT5-1U2)	TV 35130
	yoke deflection (assy)	TV 61306

AIRLINE
TV Model
GEN-1967A



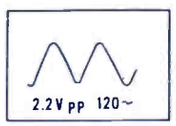
DC VOLTAGES

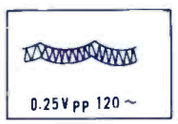
All DC voltages shown on the schematic are measure with a high impedance VTVM and under zero signal conditions, when AGC and Contrast Control are fully turned clockwise.

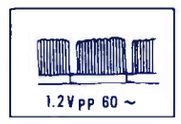


NOTE :

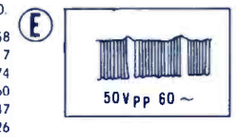
※1. Resistor R102, R105, R113 and R115 represents resistance value for alignment.
※2. Resistor R223, R207, R211, R219 and R245 represents resistance value for alignment.
※3. Capacitor C212, C218, C222, C301 and C307 represents capacitance value for alignment.
※4. Resistor R409 and R504 represents resistance value for alignment.
※5. Resistor R118 will not be used in most production.
※6. TP : Test Point.

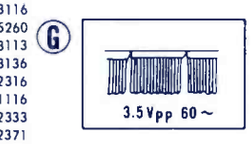


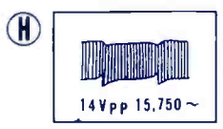


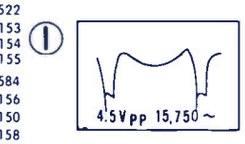


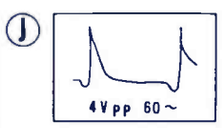
SYMBOL	DESCRIPTION	AIRLINE PART NO.
C409	680pf 500v 10% poly	TV3158
C415	1000μf 10v elect (tubular)	TV32117
C416	1μf 50v 10% film	TV3174
C419	.022μf 250v mylor (special)	TV3160
C420, C421	500pf 7.5kv discap	TV33137
C508	100μf 25v elect	TV321226
C510	30μf 15v elect	TV323116
C511	500μf 6v elect (tubular)	TV325260
C513	.01μf 400v oil	TV33113
C601	1500pf 1.4kv discap	TV33136
C604A,B	2000μf/2000μf 15v elect	TV322316
C605	10μf 15v elect (tubular)	TV321116
R415	2.2Ω ½w 10% WW	TV2333
R509	1.8Ω ½w 5% WW	TV2371
R601	2.2M ½w 20% corbon	CB1522
R225	5K pot AGC	TV25153
R233	2K pot contrast	TV25154
R237	100K pot brightness	TV25155
R309	5K pot volume	TV2584
R404	2K pot horiz freq	TV25156
R405	500Ω pot horiz hold	TV25150
R505	20K pot vert hold	TV25158
R506	2K pot vert size	TV2586
R508	500Ω pot vert lin	TV25159
L1	coil RF choke	TV61308
L2	coil RF choke	TV61309
L201	coil 41.25MHz trap	TV61311
L202	coil 47.25MHz trap	TV61310
L203	coil 39.75MHz trap	TV61312
L204	coil 4μh HF filter choke	TV61313
L205	coil 2μh HF filter choke	TV61199
L206, C234	coil 4.5MHz trap	TV61314
L207	coil 390μh peaking	TV61315
L208	coil 470μh peaking	TV61316
L401	coil horiz stabilizing	TV61203
L402	coil horiz lin	TV61317
L403	coil horiz choke	TV61318
L501	coil vert choke	TV61245
L601	coil power choke	TV61246
T201	xformer 44MHz 1st pix IF	TV62196
T202	xformer 45MHz 2nd pix IF	TV62198
T203	xformer 45MHz 3rd pix IF	TV62198
T204	xformer 44MHz 4th pix IF	TV62200
T301, C302	xformer snd IF	TV62180
T302	xformer ratio det	TV62203
T303	xformer oudio driver	TV11114
T401	xformer horiz osc	TV62204
T402	xformer horiz driver	TV62205
T403	xformer horiz lin	TV62274
T404	xformer high voltage	TV98161
T601	xformer power	TV11151
Q502	transistor 2SB62 vert output	TV24162
SR401	rectifier 1S1224 100v	TV24224
SR601, SR602	rectifier DS-IP -12v	TV24180
VA501	varistor YV-3 temp compensation	TV24135

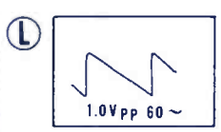


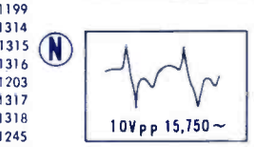


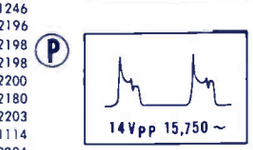


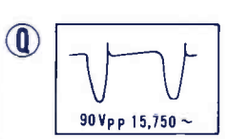


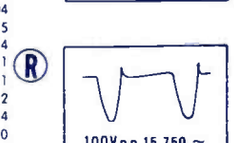


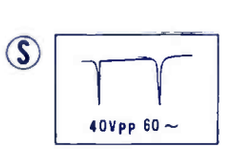


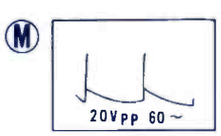






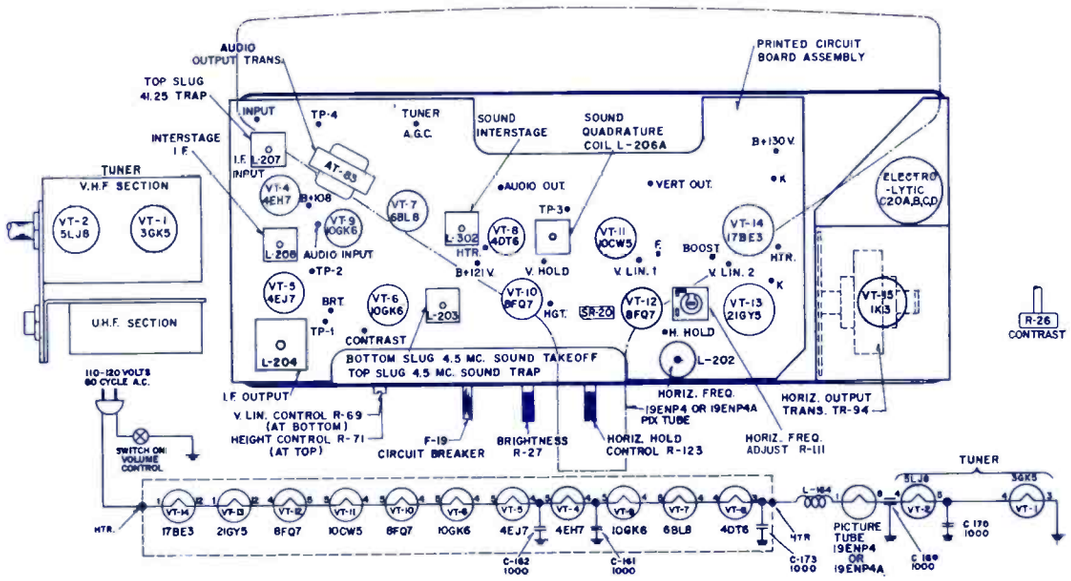


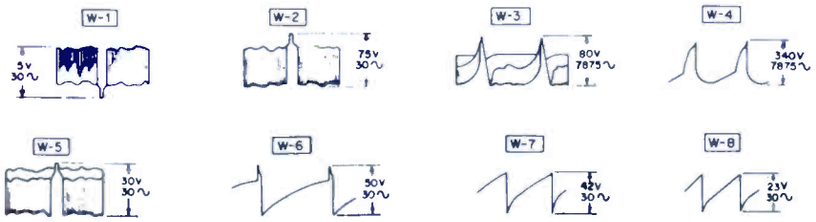




Note : † Indicates value may vary in production.

AIRLINE
TV Model GHJ-3067A, GHJ-3367A

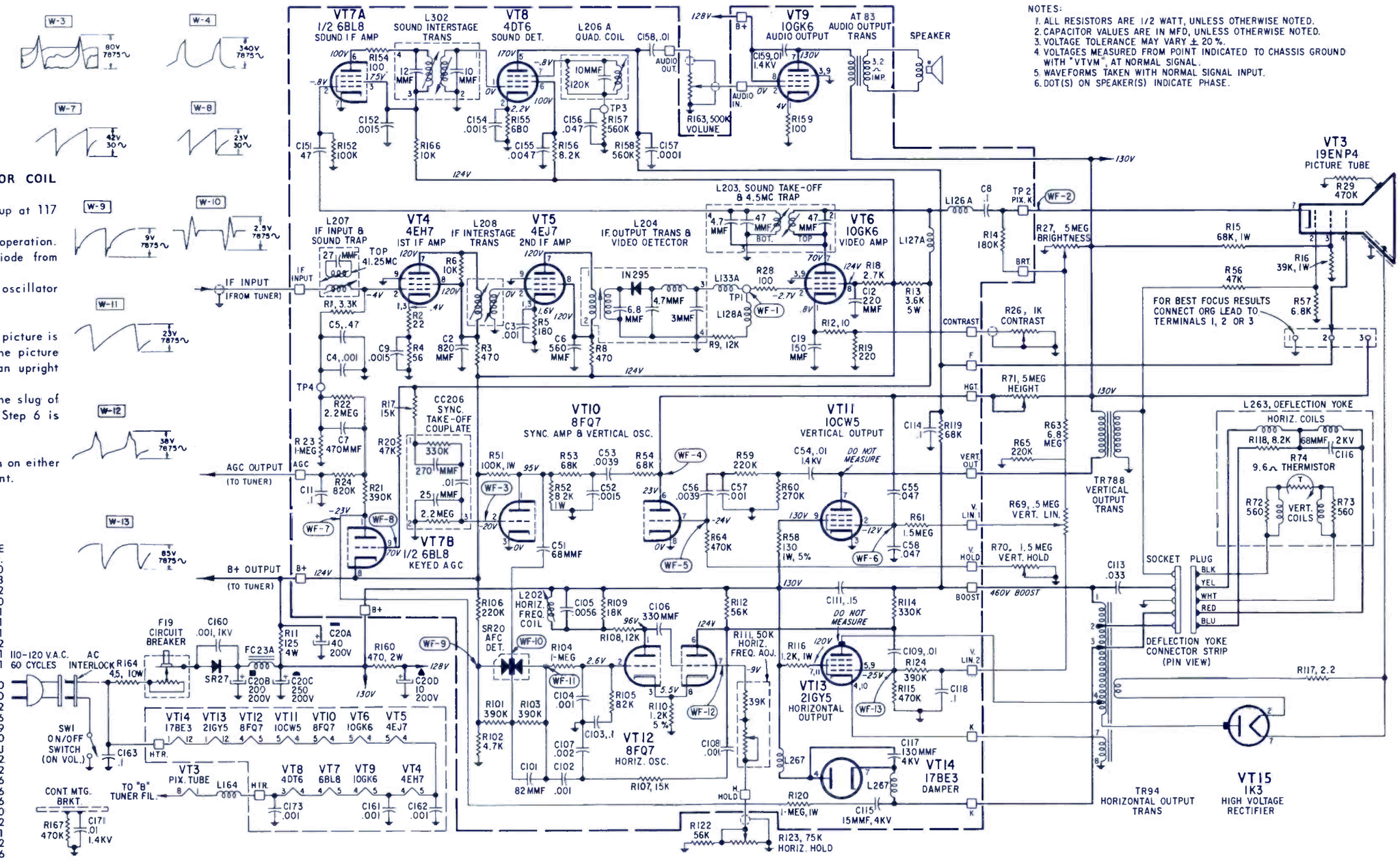




HORIZONTAL FREQUENCY AND OSCILLATOR COIL ADJUSTMENT (SHOP)

1. Turn receiver on and allow adequate warm up at 117 V.A.C. line.
2. Tune in station and set controls for normal operation.
3. Remove SR-20 horizontal AFC selenium diode from socket.
4. Apply direct short across L202 horizontal oscillator coil.
5. Set R123 horizontal hold control to mid-range.
6. Adjust R111 horizontal frequency adjust until picture is nearest to lock-in setting. At this point, the picture will tend to slide slowly horizontally in an upright position.
7. Remove short across L202 coil and adjust the slug of coil L202 until the condition described in Step 6 is again obtained.
8. Replace SR-20 diode in socket.
9. Check R123 horizontal hold control for pull-in on either side of center. If necessary, recheck adjustment.

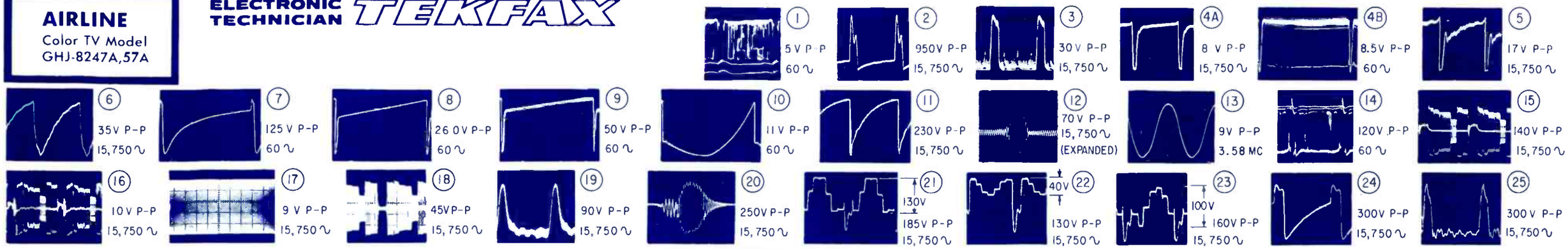
SYMBOL	DESCRIPTION	AIRLINE PART NO.
R-13	3.6K 5w 10%, WW	053-362510
R-58	130Ω 1w 5%, carbon	CC5113
R-110	1.2K ½w 5%, carbon	CB5212
R-164	4.5Ω 10w 10%, WW	053-458110
C-2	820pf 500v 20%, disc cer	DD-821
C-6	560pf 500v 10% disc cer	DD-561
C-7	470pf 500v 10% disc cer	DD-471
C-9, 52, 154	1500pf 500v 20%, disc cer	DD-152
C-12	220pf 500v 10%, disc cer	DD-221
C-19	150pf 500v 20%, disc cer	DD-151
C-20A, B,C, D	40-200-250-10µf 200v elect	034-018800
C-51	68pf 500v 10%, disc cer	DD-680
C-53	3900pf 500v 10%, disc cer	DD-392
C-54, 159	.01µf 1.4kv 20%, disc cer	826-103826
C-56	3900pf 400v 10%, tubular	6PS-D39
C-101	82pf 500v 10%, disc cer	DD-820
C-106	330pf 500v 10%, mica	CD15-F331J
C-107	2000pf 500v 10%, disc cer	DD-202
C-109, 158	.01µf 500v 20%, disc cer	DD-1032
C-115	15pf 4kv 10%, disc cer	825-150016
C-116	68pf 2kv 10%, disc cer	885-680916
C-117	130pf 4kv 10%, disc cer	826-131016
C-151	47pf 500v 10%, disc cer	DD-470
C-155	4700pf 500v 20%, disc cer	DD-472
C-157	100pf 500v 10%, disc cer	DD-101
C-160	1000pf 1kv 20%, disc cer	DD-102
C-171	.01µf 1.4kv 10%, disc cer	837-103826



NOTES:
1. ALL RESISTORS ARE 1/2 WATT, UNLESS OTHERWISE NOTED.
2. CAPACITOR VALUES ARE IN MFD, UNLESS OTHERWISE NOTED.
3. VOLTAGE TOLERANCE MAY VARY ± 20 %.
4. VOLTAGES MEASURED FROM POINT INDICATED TO CHASSIS GROUND WITH "VTVM", AT NORMAL SIGNAL.
5. WAVEFORMS TAKEN WITH NORMAL SIGNAL INPUT.
6. DOT(S) ON SPEAKER(S) INDICATE PHASE.

AIRLINE
Color TV Model
GHJ-8247A,57A

ELECTRONIC TECHNICIAN **TEKFAX**

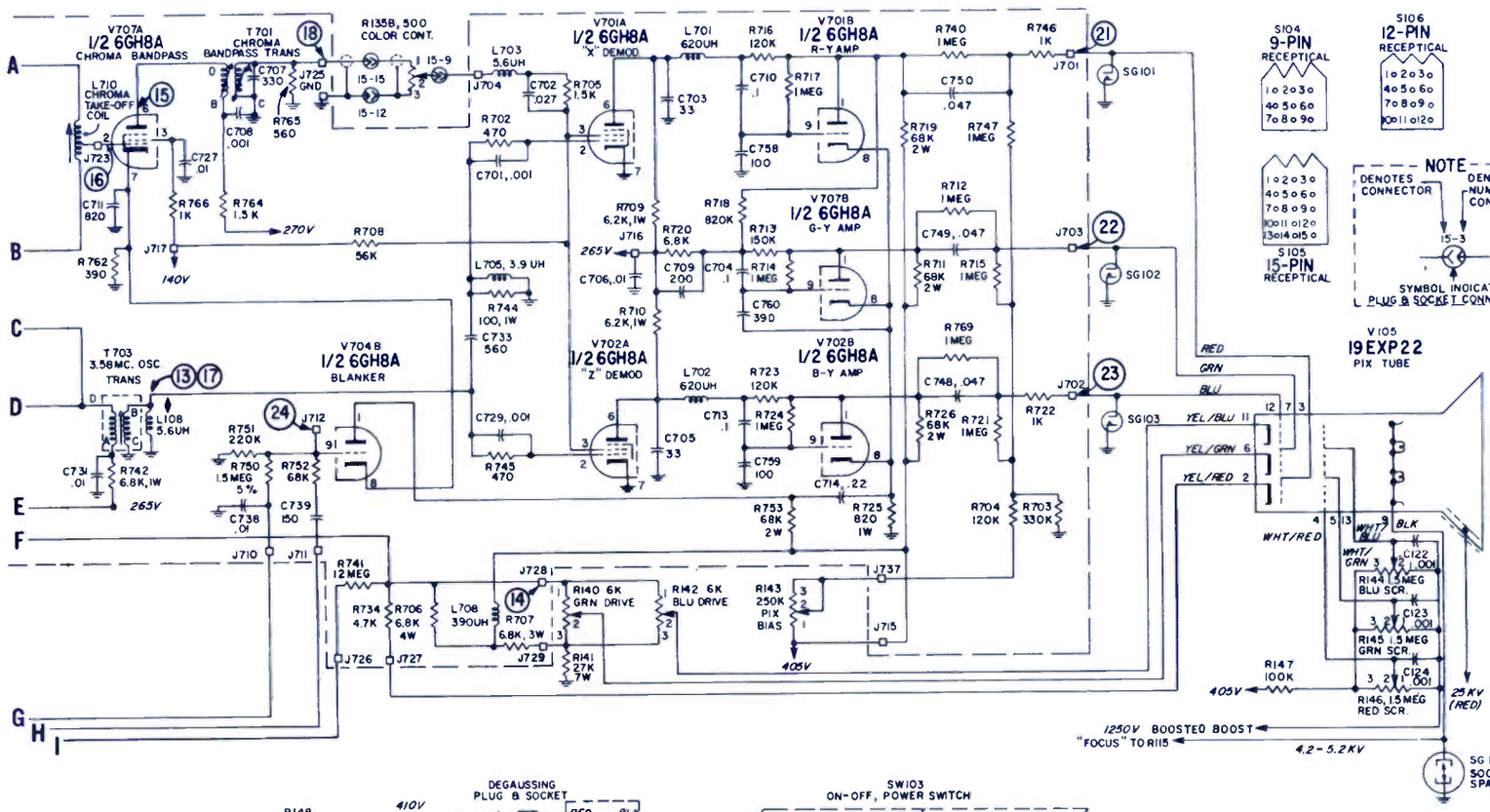


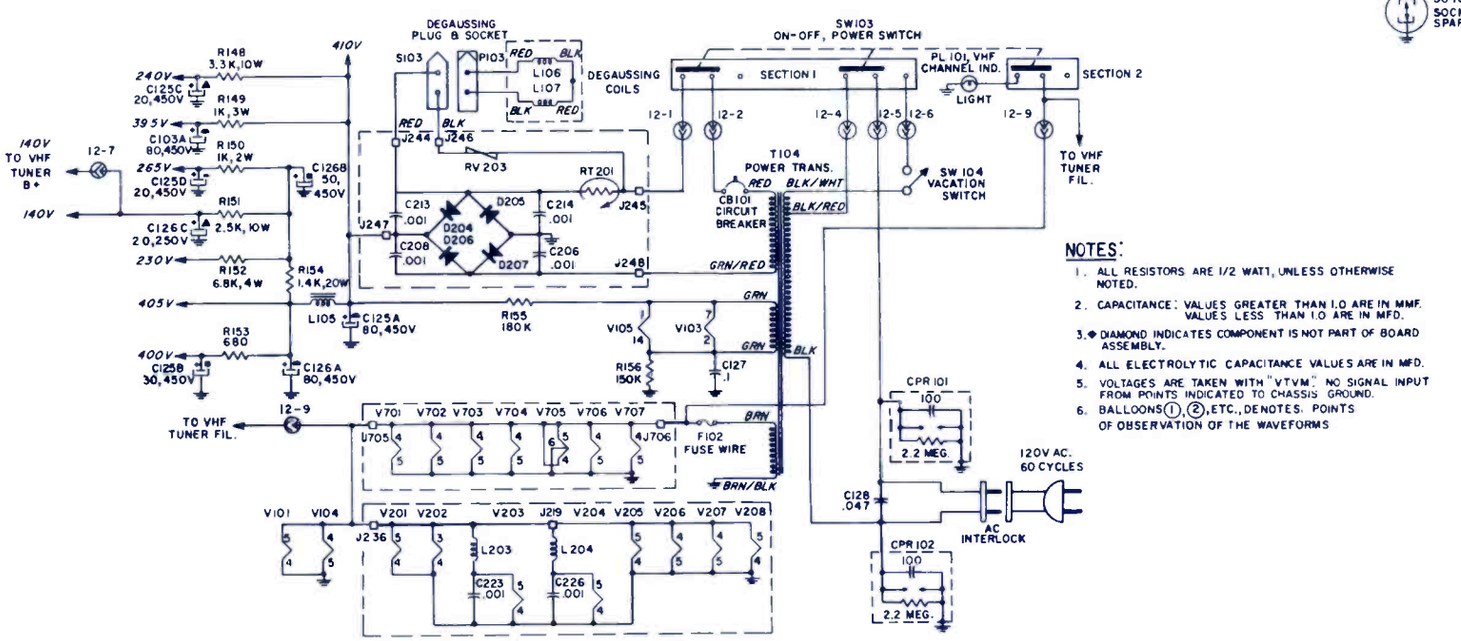
TELEVISION WAVEFORMS

NOTE: USE LOW-CAPACITY PROBE WHEN OBSERVING WAVEFORMS

SYMBOL	DESCRIPTION	AIRLINE PART NO.
C103A, C103B	80µf 450v	
C103C	25µf 25v	
	2µf 350v elect	034-025800
C107,115	.01µf 1.4kv +80-20% ceramic	837-103896
C106	130pf 6kv 20% N2200 ceramic	035-033300
C108,109	130pf 2.5kv 10% N2200 ceramic	035-043200
C111	68pf 4kv 10% N1500 ceramic	886-680017
C116	22pf 1kv 20% N750 ceramic	10TCU-Q22
C117	1000pf 2kv 20% ceramic	046-015500
C125A, C125B	80µf 450v	
	30µf 450v elect	034-027000
C125C	20µf 450v	
C125D	20µf 450v	
C126A	80µf 450v	
C126B	50µf 450v elect	034-026000
C126C	20µf 250v	
C126D	50µf 50v	
C216	3-15pf ceramic trimmer	050-003500
C232,233	10pf 500v ±5% NPO ceramic	10TC-Q10
C255	390pf 2kv 5% N1500 ceramic	886-391957
C262	680pf 500v 5% mica	045-007300
C707	330pf 500v 5% mica	047-007200
C733	560pf 500v 5% mica	045-008600
R109	13K 7w 10% film	054-133710
R110,111	1200Ω 4w 10% film	054-122410
R113	66M 6kv 20% film	057-000400
R131,132	15K 5w 10% film	054-153510
R141	27K 7w 10% film	054-273710
R151	25K 10w 10% WW	053-252110
R154	14K 20w 10% WW	053-142310
R126	15K trimmer pot	055-055400
RT201	thermistor	057-001200
RV201	voltage dependent resistor	057-000200
RV202	voltage dependent resistor	057-001600
RV203	voltage dependent resistor	057-001300
R706	6800Ω 4w 10% film	054-682410
L101,102	5.6µh RF choke coil	111-021200
L103	horiz efficiency coil	111-036200
L104	deflection yoke assembly w/cable and plug	027-032900
L105	filter choke	032-002600
L201	47.25MHz trap coil	109-036000
L203,204	filament choke	111-035100
L205	4.5MHz trap coil	109-034700
L206,210,212	1.8µh choke coil	111-021000
L207	36µh peaking coil	111-036900
L208	horiz osc coil	110-003800
L211	12µh choke coil	111-036800
L213	3.9µh choke coil	111-036400
L214	60µh peaking coil	111-035000
L215	82µh choke coil	111-034900
L701,702	620µh coil	111-036700
L703,711	5.7µh coil	111-036500
L704	68µh coil	111-035400
L705	3.9µh coil	111-036400
L706	27µh coil	111-035200
L707	620µh coil	111-037000
L708	390µh coil	111-036600
L709	47µh coil	111-035300
L710	chroma take-off coil	109-033800
L712	120µh coil	111-021400
L801	R/G vert lines coil	111-031800
L802	R/G horiz lines coil	111-031700
L803	blue horiz shape coil	111-031900
L804	blue horiz lines coil	111-031600
T101	horiz output xformer	033-012800
T102	vert output xformer	033-013300
T103	audio output xformer	031-009400
T104	power xformer	033-012900
T105	focus xformer	111-032200
T201	snd take-off xformer	109-034100
T202	4.5MHz interstage xformer	109-034200
T203	4.5MHz demodulator xformer	109-034300
T204	1st pix IF input xformer	109-034400
T205	1st pix IF plate xformer	109-034500
T206	2nd pix IF xformer	109-034600
T701	chroma bond-pass xformer	109-035700
T702	burst amplifier xformer	109-033700
T703	3.58MHz osc xformer	109-035600
R103	AGC 50K	055-058200
R106	horiz hold 35K	055-057100
R112	vert hold 750K	055-057000
R117	vert lin 3.4M	055-058100
R119	vert height 100K	055-057500
R121	horiz centering 10Ω	056-039100
R125	high voltage 500K	055-036500
R127	vert centering 10Ω	056-037700
R130A	volume 1M	
R130B	brightness 250K	055-058400
R135A	tint 6K	
R1358	color 500K	055-055600
R139	contrast 1200	055-055500
R140	green drive 6K	055-057600
R142	blue drive 6K	055-057700
R143	pix tube bias 250K	055-057300
R144	blue screen adjust 1.5M	055-058000
R145	green screen adjust 1.5M	055-057900
R146	red screen adjust 1.5M	055-057800
R153	color killer 1M	055-057400
R801,808,814,815	60Ω 3w WW	056-046800
R804,811	150Ω 2w WW	056-047300
R805,813	120Ω 2w WW	056-047200
R812	500Ω 3w WW	056-046700
D101	diode focus rectifier	004-003200
D102	diode boost rectifier	004-003100
	chroma boord	073-036000
CB101	circuit breaker 3amp	009-002500
CPR101,102	couplate 2.2M/100pf/5.6.	134-039400
DL101	delay line	117-036100
F101	fuse .4amp slo-blo	099-002800
SG101,102,103	spark gap	140-000300
SW102	switch video peaking	146-007800
SW103	switch ON/OFF power	146-010500
	tuner VHF } see tuner parts list	006-018600
	tuner UHF } see tuner parts list	006-018901

AIRLINE
Color TV Model GHJ-8247A,57A

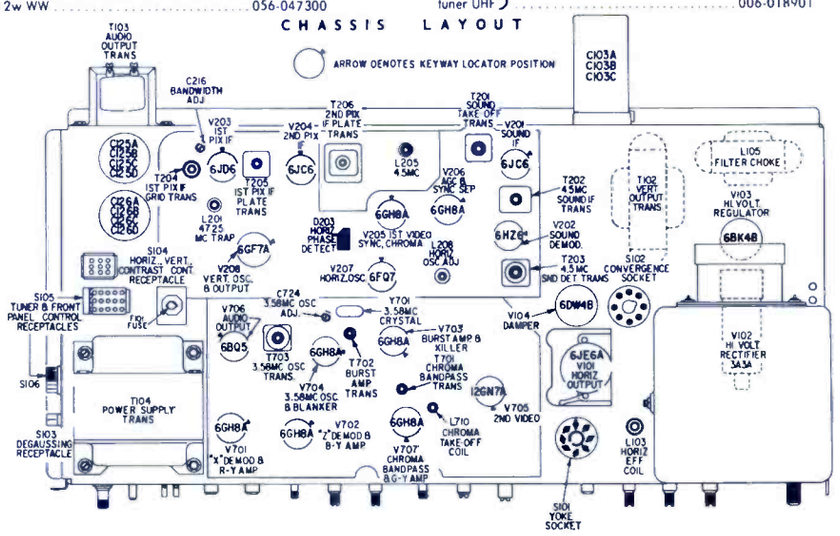




NOTES:

1. ALL RESISTORS ARE 1/2 WATT, UNLESS OTHERWISE NOTED.
2. CAPACITANCE: VALUES GREATER THAN 1.0 ARE IN MMF. VALUES LESS THAN 1.0 ARE IN MFD.
3. ◆ DIAMOND INDICATES COMPONENT IS NOT PART OF BOARD ASSEMBLY.
4. ALL ELECTROLYTIC CAPACITANCE VALUES ARE IN MFD.
5. VOLTAGES ARE TAKEN WITH "VTVM". NO SIGNAL INPUT FROM POINTS INDICATED TO CHASSIS GROUND.
6. BALLOONS (1), (2), ETC., DENOTES POINTS OF OBSERVATION OF THE WAVEFORMS

CHASSIS LAYOUT



VOLTAGE CHART

TUBE	FUNCTION	PIN 1	2	3	4	5	6	7	8	9
V1 6HA5	R-F Amplifier	0	0	0	6.3AC	120	0	0		
V2 6HB7	VHF Osc. Mixer	0	-2.4	0	0	6.3AC	130	130	135	0
V101 6JE6A	Horizontal Output	130	-55	0	0	6.3AC	-55	130	35	0
V102 3A3A	High Voltage Rectifier		25KV					25KV		
V103 6BK4B	Shunt Regulator	400				390				
V104 6DW4B	Damper		400		6.3AC	0		400		DO NOT MEASURE
V201 6JC6	Sound IF Amplifier	1.5	0	1.5	0	6.3AC	N.C.	95	95	0
V202 6HZ6	Sound Demodulator	0	1.2	6.3AC	0	135	115	0.5		
V203 6JD6	1st Pix IF Amplifier	0.6	0	0.6	0	6.3AC	N.C.	95	95	0
V204 6JC6	2nd Pix IF Amplifier	1.5	0	1.5	0	6.3AC	N.C.	165	165	0
V205 6GH8A	1st Vid. Sync. AGC, Chroma	140	-2.0	140	0	6.3AC	260	0	8.5	6.0
V206 6GH8A	AGC & Sync Separator	85	70	250	6.3AC	0	-10	90	0	-20
V207 6FQ7	Horizontal Oscillator	25	0.3	1.0	6.3AC	0	260	-115	0	0
V208 6GF7A	Vert. Osc. & Output	0	60	70	0	6.3AC	260	0	8.5	6.0
V701 6GH8A	"X" Demod. & R-Y Amp.	125	-2.8	2.8	6.3AC	0	250	0	12	10
V702 6GH8A	"Z" Demod. & B-Y Amp.	125	-2.8	2.8	6.3AC	0	250	0	12	10
V703 6GH8A	Burst Amp. & Color Killer	▲-5.5 -12	▲-2.4 4	255	6.3AC	0	400	55	0	-2
V704 6GH8A	3.58 Mc Osc. & Blanker	120	6.0	150	6.3AC	0	215	0	3.0	-80
V705 12GN7A	2nd Video Amplifier	0	*1.0 **-8.0	0	6.3AC	6.3AC	0	*290 **360	*85 **165	0
V706 6BQ5	Audio Output	N.C.	0	6.5	6.3AC	0	N.C.	230	N.C.	240
V707 6GH8A	Chroma Band-pass & G-Y Amplifier	125	▲-3.0 -11	160	6.3AC	0	255	▲3.0 2.0	12	10

N. C. No Connection

MEASURING CONDITIONS

DC voltages measured with VTVM placed between point measured and chassis ground.
Channel selector set to active channel. Unless otherwise noted, brightness and contrast controls set for normal picture on screen.

*Denotes readings taken with brightness control at maximum rotation (fully CW).
**Denotes readings taken with brightness control at minimum rotation (fully CW).
▲Denotes readings taken with color signal.

Line voltage input set at 120 Volts AC.

CAUTION: Exercise extreme care to avoid shock hazard. Dangerous pulsed high voltages are present at V101, V102, V103 and V104. Exercise extreme care when measuring near these tubes.

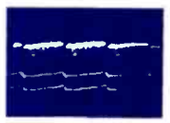
AIRLINE
TV Models GMW
1447A,57A

SYMBOL	DESCRIPTION	AIRLINE PART NO.
C-3A,3B	40-300μf @ 275-50v elect	CE-0052
C-5A,5B,5C,5D	40-80-100-40μf @ 275-275-250-250v elect	CE-0051
C-7	1μf 12v elect	CE-100-1
C-10	47μf 4kv 10% cer disc	CC-206
C-15,16	150pf N1500 4kv cer disc	CC-301-3
C-100	150pf NPO 500v cer disc	CC-300-253-0
C102	390pf Z5P 500v 10% cer disc	CC-300-258-0
C-103,117	1000pf GMV 500v cer disc	DD-102G
C-104	330pf Z5P 500v 10% cer disc	CC-300-257-0
C105	33pf N150 500v 10% cer disc	CC-300-623-0
C-110	560pf Z5P 500v 20% cer disc	CC-300-210-0
C-116	.01μf 1kv 20% cer disc	CC-301-2
C-120	820pf Z5P 500v 10% cer disc	CC-300-262
C-125	10pf N750 500v 10% cer disc	10TCU-Q10
C-209	.022μf 1.6kv molded tubular	CP-201-3
R-8	500Ω 4w 10%	RG-500-14
R-13	56K 3w 10% glass	RG-5601-13
R-14	1.8Ω ½w 10% WW	RW-0018-18
R-20,21	8.2K 3w 10% glass	RG-8201-13
R-25	22K 3w 10% glass	RG-2202-13
R-113	3.9K 3w 10%	RG-3901-13
R-1A,1B	dual, vert hold 1.5M (A) brilliance 350K (B)	VC-0094
R-2A,2B	dual on-off volume 1M (A) contrast 600Ω (B)	VC-0093
R-3	vert height 750Ω	VC-0081
R-23	horiz hold 100K	VC-0082
R-202	vert linearity 3M	VC-0088
	couplate sync	PAK-0103
	fuse 3.3a type N	33303.2
	tuner VHF	PR-0370
	tuner UHF	PR-0371

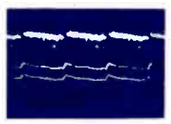
ELECTRICAL SPECIFICATIONS

Power Supply.....100-120 volts 60 cycle A.C.
Power Consumption.....175 watts
Power Output..... 1.3 watts (max.)
1.0 watts (10% distortion)
Tuning Ranges.....VHF - Channels 2 thru 13
UHF - Channels 14 thru 83
Intermediate Frequency...Picture - 45.75 Mc
Sound - 41.25 Mc
Antenna Input Impedance..300 ohms balanced
Intercarrier Sound System.4.5 Mc
Loud Speaker.....One 4"P. M. ,.50 oz. mag.
Voice Coil Impedance.....3.2 ohms 400 cycles
Focus.....Electrostatic

WF-1
70V P-P
60

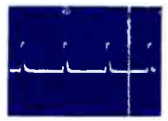


WF-2
4.5V P-P
60



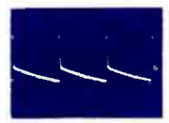
WF-3
95V P-P
60

WF-4
140V P-P
60



WF-5
75V P-P
7875

WF-6
200V P-P
60



WF-7
125V P-P
60

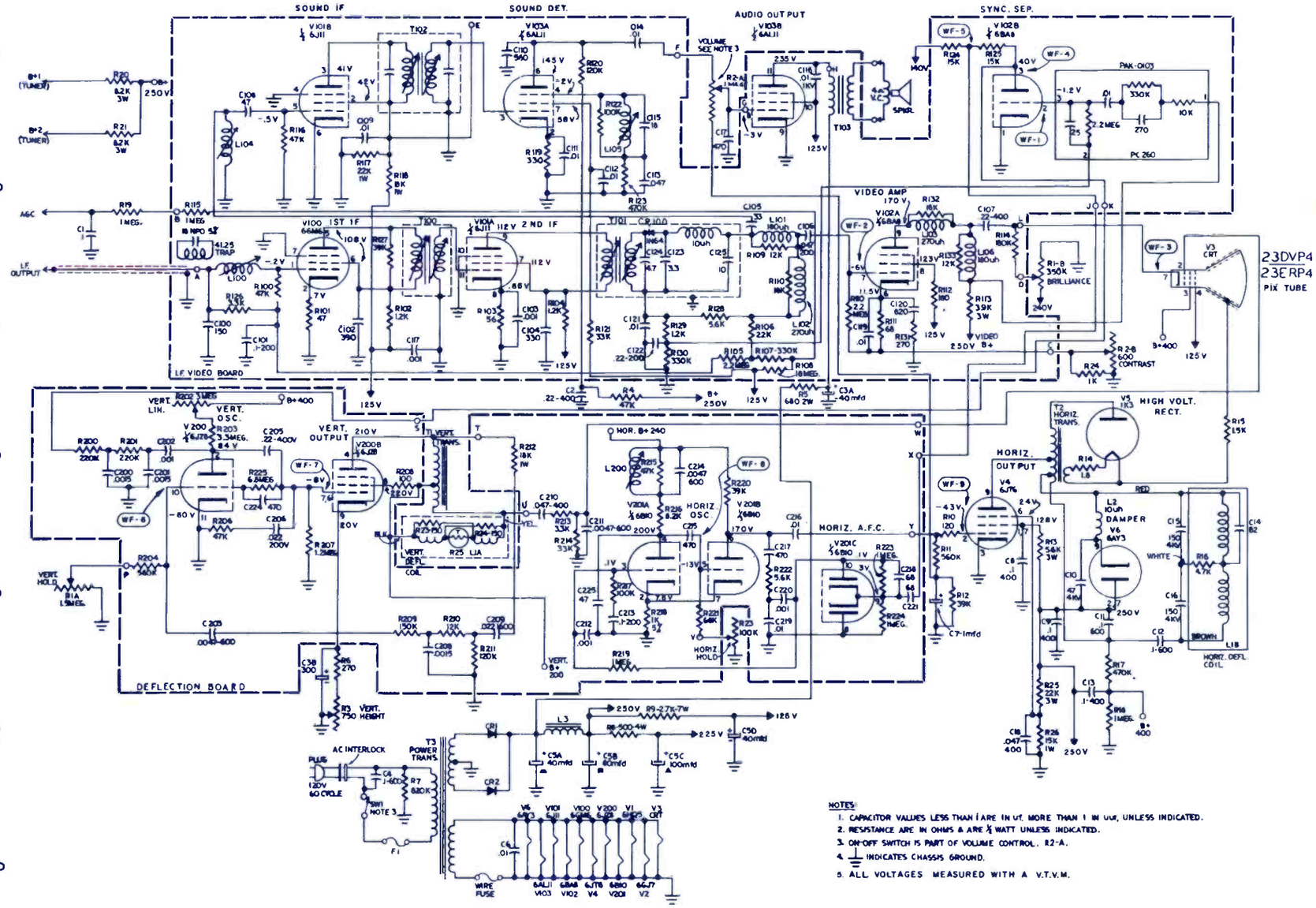
WF-8
60V P-P
7875

WF-9
200V P-P
7875

ALIGNMENT OF HORIZONTAL OSCILLATOR

Tune in a good signal and allow the receiver to warm up adequately at normal line voltage. Then follow the procedures listed.

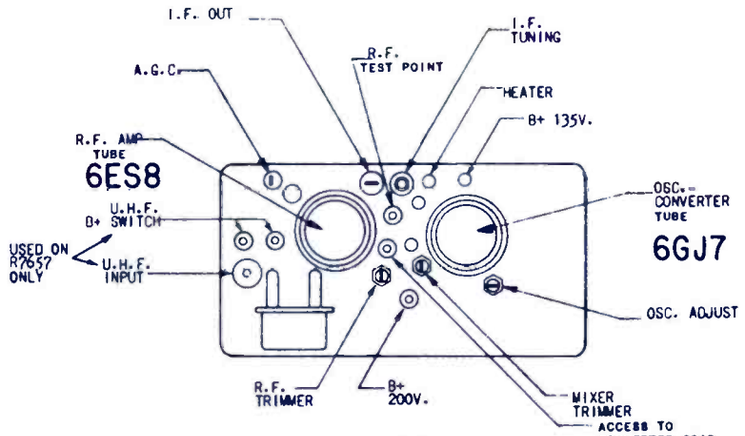
1. Tune in the receiver properly and adjust picture below an over-contrast condition.
2. Short out the ringing coil L-200 with a jumper wire across the coil.
3. Short to ground Pin No. 3 of V-201A (6B10).
4. Adjust Horizontal Hold Control for a single picture.
5. Remove short from Ringing Coil, and adjust the core entering the coil from the top of the chassis, until a single picture is attained.
6. Remove short from Pin No. 3 of V-201A to ground and the picture will snap into sync.

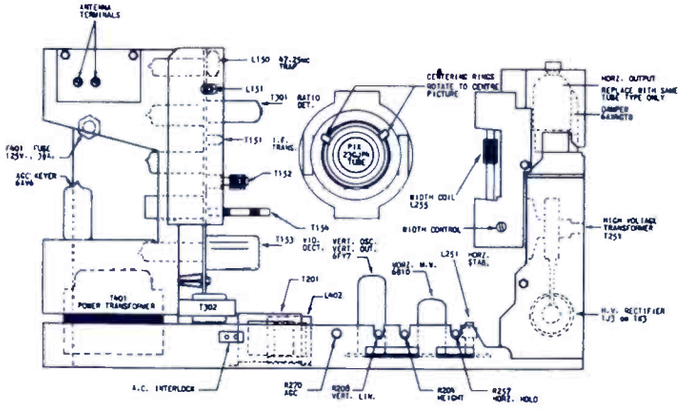


CANADIAN GENERAL ELECTRIC
TV Chassis M649

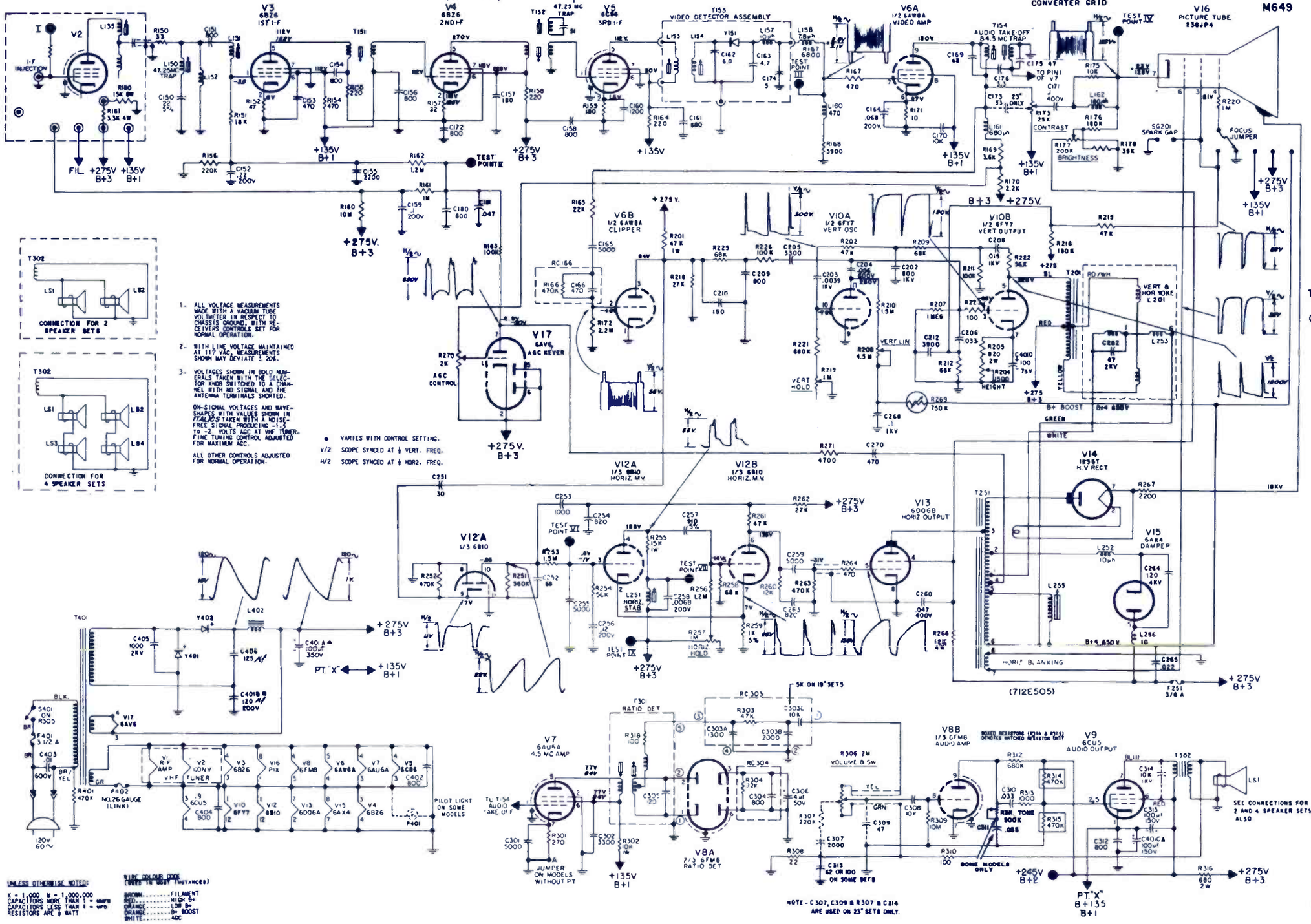
TUNER CROSS REFERENCE LIST

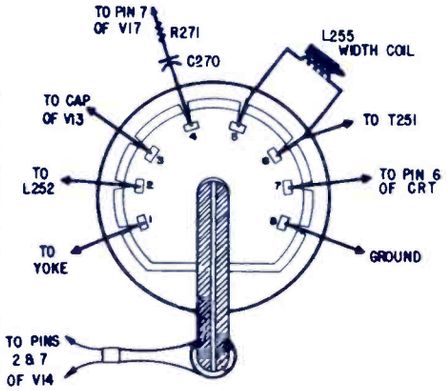
MODEL	CAT. #	TUNER DRAWING #	VENDOR CODE		MODEL	CAT. #	TUNER DRAWING #	VENDOR CODE	
23-222	R7653	177A9139	"ET"		33T65	R7653	177A9139	"ET"	
23-24	R7653	177A9139	"ET"		35T63	R7655	861D680	"ET"	
					35T64	R7655	861D680	"ET"	
23-25	R7653	177A9139	"ET"		35T64U	R7657	861D681	"ET"	(VHF)
						R7656	4VM4471-2		(UHF)
31T65	R7655	861D680	"ET"						
31T67	R7655	861D680	"ET"		36T62	R7655	861D680	"ET"	
31T67U	R7657	861D681	"ET"	(VHF)	36T64	R7655	861D680	"ET"	
	R7656	4VM4471-2		(UHF)	36T64U	R7657	861D681	"ET"	(VHF)
						R7656	4VM4471-2		(UHF)
32T61	R7655	861D680	"ET"						
32T61U	R7657	861D681	"ET"	(VHF)	36T66	R7655	861D680	"ET"	
	R7656	4VM4471-2		(UHF)					
					36T67	R7655	861D680	"ET"	
32T64	R7655	861D680	"ET"						
32T65	R7655	861D680	"ET"		39T62	R7655	861D680	"ET"	
32T66	R7655	861D680	"ET"		39T62U	R7657	861D681	"ET"	(VHF)
						R7656	4VM4471-2		(UHF)





TUBE & ADJUSTMENT LOCATIONS M649





T251 WIRING

1. ALL VOLTAGE MEASUREMENTS MADE WITH A VACUUM TUBE VOLTMETER IN RESPECT TO CHASSIS GROUND, WITH RECEIVERS CONTROLS SET FOR NORMAL OPERATION.
2. WITH LINE VOLTAGE MAINTAINED AT 117 VAC, MEASUREMENTS SHOWN MAY DEVIATE ± 20%.
3. VOLTAGES SHOWN IN BOLD NUMERALS TAKEN WITH THE SELECTOR KNOB SWITCHED TO A CHANNEL WITH NO SIGNAL AND THE ANTENNA TERMINALS SHORTED.

ON-SIGNAL VOLTAGES AND WAVESHAPES WITH VALUES SHOWN IN ITALICS TAKEN WITH A NOISE-FREE SIGNAL PRODUCING -1.5 TO -2 VOLTS AGC AT VHF TUNER. FINE TUNING CONTROL ADJUSTED FOR MAXIMUM AGC.

ALL OTHER CONTROLS ADJUSTED FOR NORMAL OPERATION.

• VARIES WITH CONTROL SETTING.
V/2 SCOPE SYNCED AT ½ VERT. FREQ.
H/2 SCOPE SYNCED AT ½ HOR2. FREQ.

UNLESS OTHERWISE NOTED:
K = 1,000 M = 1,000,000
CAPACITORS MORE THAN 1 = μμfd
CAPACITORS LESS THAN 1 = mfd
RESISTORS ARE ½ WATT

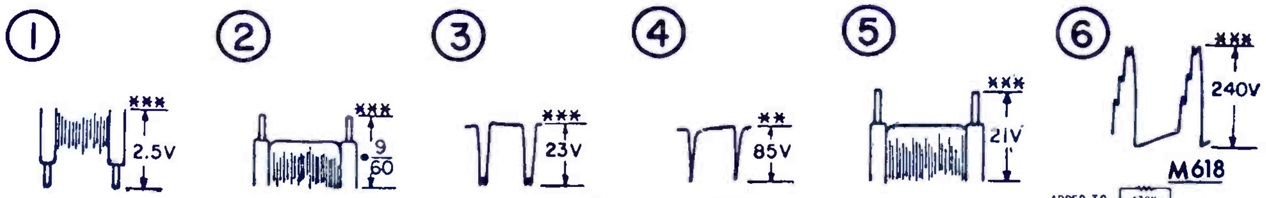
WIRE COLOUR CODE (USED IN MOST INSTANCES)
BROWN.....FILAMENT
RED.....HIGH B+
ORANGE.....LOW B+
ORANGE.....B+ BOOST
WHITE.....AGC

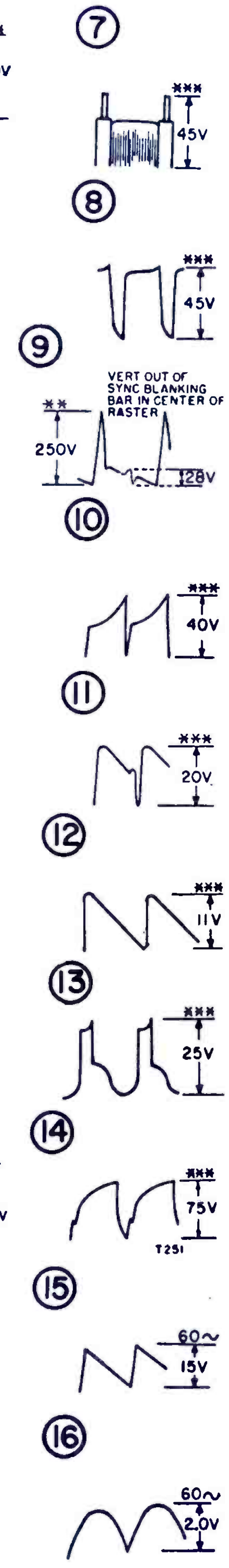
NOTE - C307, C309 & R307 & C314 ARE USED ON 23" SETS ONLY.

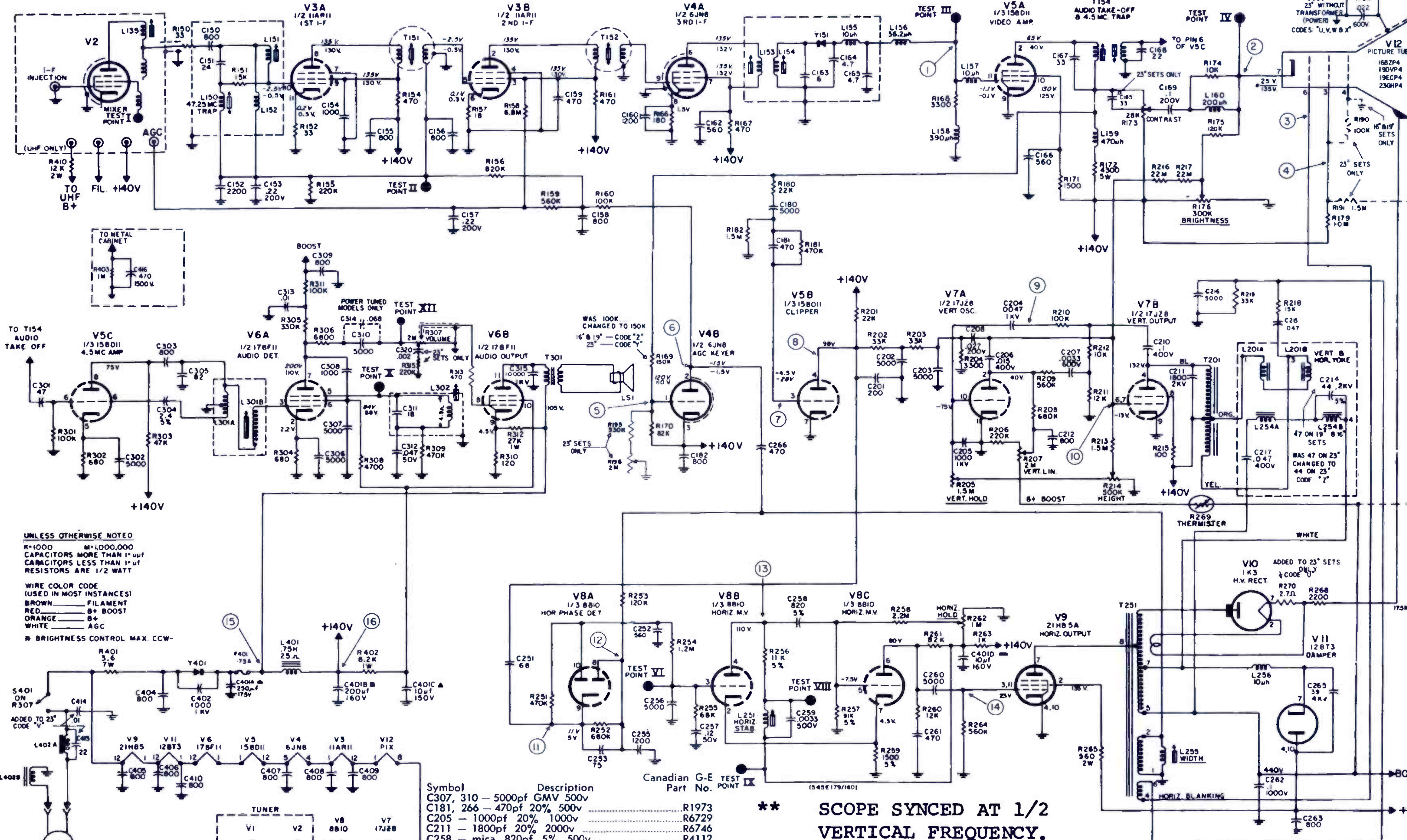
SYMBOL	DESCRIPTION	CANADIAN G-E PART NO.
L152	coil IF	R5565
L151	coil 1st IF grid	R4655
L157	coil choke 10μh 20%	R6402
L158	coil choke 7.8μh 10%	R4650
L60	coil choke 470μh 7%	R6733
L161	coil choke 240μh 7%	R5328
L251	coil horiz stobilizing	R6618
L255	coil width	R6672
T302	xformer audio output	R6044
T251	xformer horiz output	R7652
T401	xformer power	R7570
T151	xformer 1st IF plate	R5329
T152	xformer 2nd IF plate	R6272
T153	video det assy	R6151
T154	xformer audio take-off and trap	R5809
T201	xformer vert output	R6612
T301	xformer ratio det	R4955
L201	yoke deflection	R6620
Y151	diode	R1889
Y401,Y402	diode silicon rect	R6048
R269	thermistor 750K	R6897
RC166	RC unit 470K/470μf	R4917
RC304	RC unit 22K/800μf	R4648
C303A,B,C	—	R5318
R303	RC circuit de-emphosis network	
F251	fuse 0.375 amp slo-blo	R4962
F401	fuse 3.5 amp bayonet type	R5340
L402	reactor filter	R6611
R204	control vert size 1.5K	R6674
R208	control vert lin 4.5M	R6886
R257	control horiz hold 1M	R4256
R270	control AGC 2K	R7544
C150	ceromic 22pf 5% 500v NPO	R4625
C264	ceramic 120pf 10% 4kv T.C.	R6614
C202	ceramic 800pf 20% 1500kv	R4631
C405,C502	ceramic 1000pf GMV 2000v	R4935
C203	paper 0039μf 10% 1000v	R4618
C314	ceromic .01μf GMV 1000v	R3034
C152	mylar .22μf 20% 200v	R6386
C313	electrolytic 100μf 150v	R4637
C406	elect 125μf 200v	R6047
C401A,B	100μf 120v 120μf 200v	R6616
C401C,D	100μf 150v 100μf 125v	
R177	control bright 200K (Model 31T65)	R7176
R173	control contrast 25K (Model 31T65)	R7180
R219	control vert hold 1M (Model 31T65)	R7178
R311	control tone 300K (Model 31T65)	R7658
R306	control vol 2M (Model 31T65)	R7174

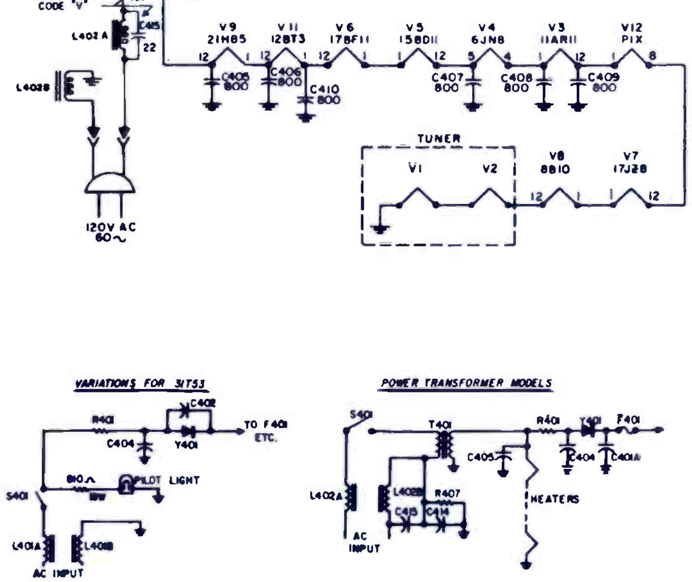
CANADIAN GENERAL ELECTRIC
TV Chassis M618

ELECTRONIC TECHNICIAN TEKFAX









Symbol	Description	Canadian G-E Part No.
C307, 310	5000pf GMV 500v	
C181, 266	470pf 20% 500v	R1973
C205	1000pf 20% 1000v	R6729
C211	1800pf 20% 2000v	R6746
C258	mica 820pf 5% 500v	R4112
C401A, B	elect 250µf 175v/200µf 160v	R7003
L150	coil, 47.25MHz link	R6735
L302	coil, quad	R7001
T151	xformer, 1st IF	R6999
T152	xformer, 2nd IF	R6739
T154	xformer, audio take-off and trap	R7000
T201	xformer, vert output	R7004
T251	xformer, horiz output 16" & 19" sets only	R7092
T251	xformer, horiz output 23" sets only	R7085
T301	xformer, audio output 16" & 19" sets only	R7005
T301	xformer, audio output 23" sets only	R7084
	yoke, deflection, models 95T51 95T52, 95T53 only	R7294
	yoke, deflection 23" sets only	R7118
	yoke, deflection all other models	R7050
R176	control, brightness 300K	R7191
R173	control, contrast 25K	R7189
R205	control, vert hold 1.5M	R7190
R307	control, vol 2M	
S401	switch, ac power	R7192
T401	xformer, power	R7317
T401	xformer, power	R7173

** SCOPE SYNCED AT 1/2 VERTICAL FREQUENCY.

*** SCOPE SYNCED AT 1/2 HORIZONTAL FREQUENCY.

● VARIES WITH CONTROL SETTING.

WAVE SHAPES TAKEN WITH A NOISE FREE SIGNAL PRODUCING -2.5 to -3.5 volts AGC AT THE VHF TUNER. FINE TUNING CONTROL ADJUSTED FOR MAXIMUM AGC.

ALL OTHER CONTROLS ADJUSTED FOR NORMAL OPERATION.

NOTES:

1. ALL VOLTAGE MEASUREMENTS MADE WITH A VACUUM TUBE VOLTMETER WITH RESPECT TO CHASSIS GROUND, WITH RECEIVER CONTROLS SET FOR NORMAL OPERATION.
2. WITH LINE VOLTAGE MAINTAINED AT 120 V. AC. MEASUREMENTS MAY DEVIATE ±10%.
3. VOLTAGES SHOWN IN BOLD MADE WITH THE SELECTOR KNOB SWITCHED TO A CHANNEL WITH NO SIGNAL AND THE ANTENNA TERMINALS SHORTED.
4. WHEN VOLTAGE IN *ITALICS* IS NOT SHOWN, VOLTAGE IN BOLD IS THE SAME FOR EITHER ON SIGNAL OR OFF SIGNAL. ON SIGNAL VOLTAGES SHOWN IN *ITALICS* TAKEN WITH A NOISE FREE SIGNAL PRODUCING -2.5 TO -3.5 VOLTS AGC AT VHF TUNER. FINE TUNING CONTROL ADJUSTED FOR MAXIMUM AGC.

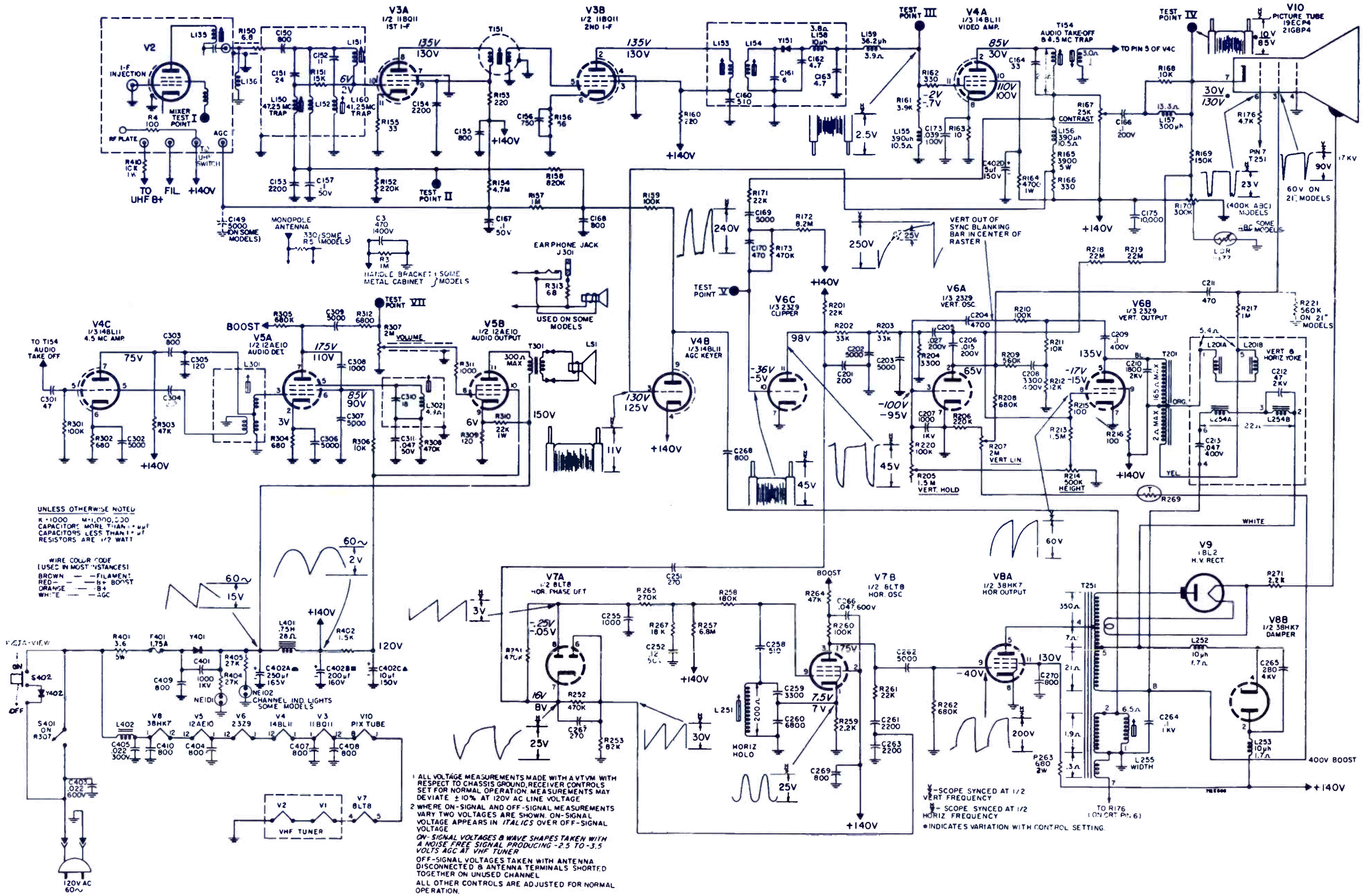
ALL OTHER CONTROLS ARE ADJUSTED FOR NORMAL OPERATION.

✱ BRIGHTNESS CONTROL AT MAX. CCW.

CANADIAN GENERAL ELECTRIC
TV Chassis M687

ELECTRONIC TECHNICIAN TEKFAX

SYMBOL	DESCRIPTION	CANADIAN GENERAL ELECTRIC PART NO.
C204	Capacitor-paper .0047μf 10% 1kv	R5684
C264	capacitor-paper .1μf 1kv	R6745
C402A,B,C,D	capacitor-elect 250μf 165v 200μf 160v 10μf 150v 5μf 160v	R7440
L150	coil-link trap	R6735
L151	coil-1st IF grid	R6736
L153	coil-video det primary	R6738
L154	coil-video sec assy	R6738
L155,6	coil-choke 390μh	R4944
L157	coil-choke 300μh	R7446
L158	coil-choke 10μh	R7445
L159	coil-choke 36.2μh	R6731
L160	coil-link trap	R6824
L251	coil-horz osc	R7448
L252,L253	coil-choke 10μh	R7994
L301A,B	coil-4.5MHz/s interstage	R8201
L302	coil-quad	R7001
L401	coil-filter reactor	R7451
L402	coil-filament choke 100μh	R8367
L255	coil-width	R7009
L201,L254	yoke-deflection	R7434
R207	control-vert lin 2M	R6995
R214	control-height 500K	R6996
R269	thermistor 150K	R7442
F401	fuse 1.75a cup high voltage socket mount	R7573 R7008
T301	xformer audio O.P.	R6851
T151	xformer 1st IF plate	R7372
T154	xformer audio take-off trap	R8568
T251	xformer horiz output	R7575
T201	xformer vert output	R8570



UNLESS OTHERWISE NOTED
K = 1000 M = 1,000,000
CAPACITORS MORE THAN 1 μμf
CAPACITORS LESS THAN 1 μμf
RESISTORS ARE 1/2 WATT

WIRE COLOR CODE (USED IN MOST INSTANCES)
BROWN — FILAMENT
RED — B+ BOOST
ORANGE — B+
WHITE — AGC

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.

ON-SIGNAL VOLTAGES & WAVE SHAPES TAKEN WITH A NOISE FREE SIGNAL PRODUCING -2.5 TO -3.5 VOLTS AGC AT VHF TUNER

OFF-SIGNAL VOLTAGES TAKEN WITH ANTENNA DISCONNECTED & ANTENNA TERMINALS SHORTED TOGETHER ON UNUSED CHANNEL

ALL OTHER CONTROLS ARE ADJUSTED FOR NORMAL OPERATION.

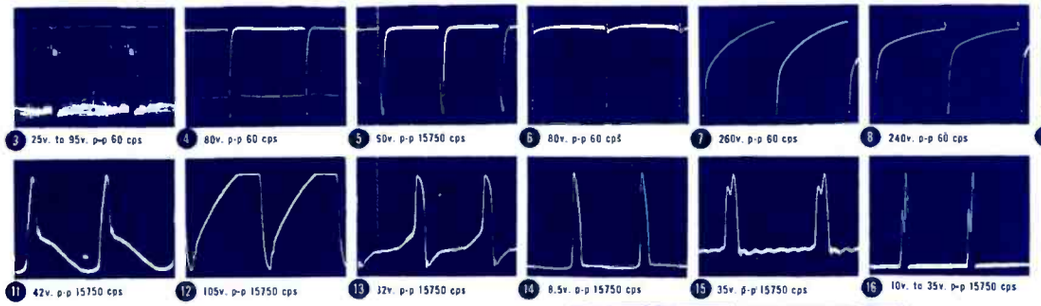
⊻ – SCOPE SYNCED AT 1/2 VERT FREQUENCY

⊼ – SCOPE SYNCED AT 1/2 HORIZ FREQUENCY

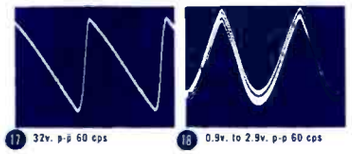
• INDICATES VARIATION WITH CONTROL SETTING.

CORONADO
TV Model TV2-9454A

ELECTRONIC TECHNICIAN **TEKFAX**



OSCILLOSCOPE WAVEFORM PATTERNS



SYMBOL	DESCRIPTION	CORONADO PART NO.
C108	.01µf 1kv cer	80X0099-061
C211	.15µf 200v mylor	343X1544-020
C407	330pf 500v mica	357X5331-152
C414	68pf 3kv cer	80X0098-029
C417	.033µf 400v mylor	342X3334-040
C418	56pf 5kv cer	80X0098-006
C420A	125µf 300v	
C420B	100µf 50v	
C420C	20µf 300v dry elect	45X0521-001
C420D	10µf 300v	
C421A	125µf 300v	
C421B	60µf 300v dry elect	45X0520-001
C421C	20µf 50v	
R104	22K 1.0 carbon	340X4223-810
R110	1M on-off volume control	Part of 78X0056-006 (see misc)
R211	47K 1w carbon	340X4473-810
R221	82K 1w carbon	340X4823-810
R223	5.6K 10w film	43X0450-014
R307	330Ω 1w carbon	340X4331-810
R413	2.5K 15.0 WW	43X01313-001
R416	6.8K 7w WW	43X0450-015
R417	47K 20 carbon	340X5473-810
R419	10K 1w carbon	340X4103-820
R421	32 10w WW	43X0401-021
R422	5.0 15w WW	43X0317-001
L100	sound IF coil	9A2611-001
L101	quad grid coil	9A2595-001
L200	input grid coil	9A2541-001
L201	choke tweet filter	9A2432-001
L204	peaking coil 500µh	36A0094-006
L203	peaking coil 500µh	36A0094-005
L205	peaking coil 60µh	36A0094-015
L206	sound take-off coil	9A2599-001
L208	choke filament	9A2543-001
L400	filter choke	52X0112-004
L401	horiz osc coil	9A2515-001
L402	damper choke	9A2380-001
T100	audio output xformer	51X0240-001
T200	1st PIF xformer	9A2540-001
T201	2nd PIF xformer	9A2539-001
T202	3rd PIF & det xformer	9A2606-001
T300	vert output xformer	51X0239-001
T400	horiz output xformer	53X0425-001
	on off volume & contrast switch control	78X0056-006
	capristor (M202)	76X0068-001
	capristor (M401)	76X0069-001
	capristor (M301)	76X0070-001
	capristor (M101)	76X0071-001
	capristor (M201)	76X0072-001
	silicon diode (SD-200)	66X0038-001
	selenium diode (SD400)	66X0025-001
	crystal diode (D201)	66X0020-001
	silicon transistor (Q200)	86X0006-001
	deflection yoke ossy	9A2477-002
	circuit breaker	2A0568-001
	VHF tuner	25A1245-004
	UHF tuner	25A1248-003
R214	500 det level control	40X0592-001
R225	500K bright control	40X0585-021
R227	350 contrast control	Part of 78X0056-006 (see misc)
R310	1K vert lin control	40X0585-032
R311	7.5M height control	40X0585-012
R312	1.5M vert hold control	40X0585-023
R405	hor hold coorse control	40X0590-001
R414	50K horiz hold fine control	40X0585-024

DC SOCKET VOLTAGES

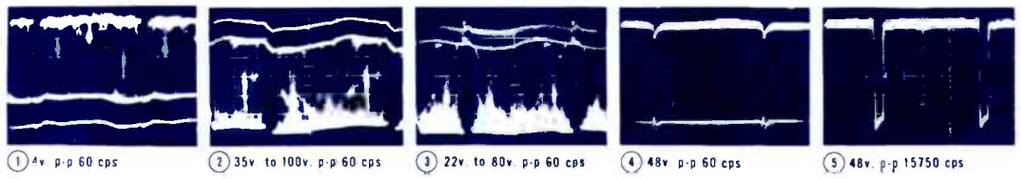
All DC socket voltages shown on the schematic are measured with a high impedance VTVM and under zero conditions.

NOTES

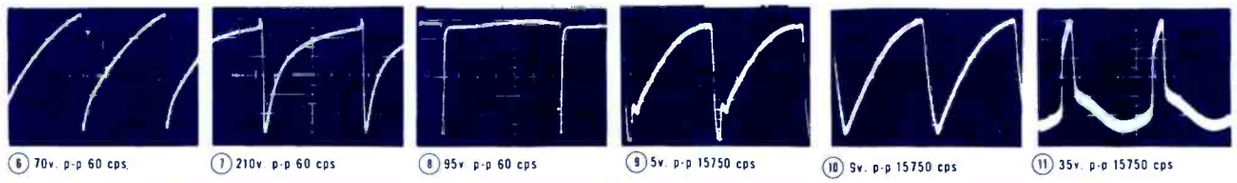
All resistance values in ohms and half watt unless otherwise noted.
All capacitance values less than 1.0 IN MF and above 1.0 IN PF., unless otherwise noted.
Coil resistance values less than 1.0 OHM, are not shown.

K=1,000 MEG=1,000,000

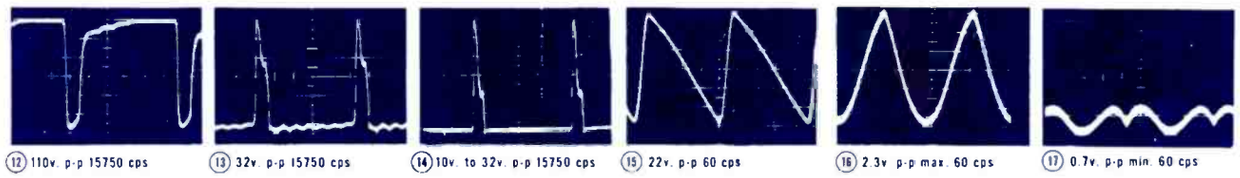
CORONADO
TV Model TV2-9453A



(1) 4v. p-p 60 cps (2) 35v. to 100v. p-p 60 cps (3) 22v. to 80v. p-p 60 cps (4) 48v. p-p 60 cps (5) 48v. p-p 15750 cps



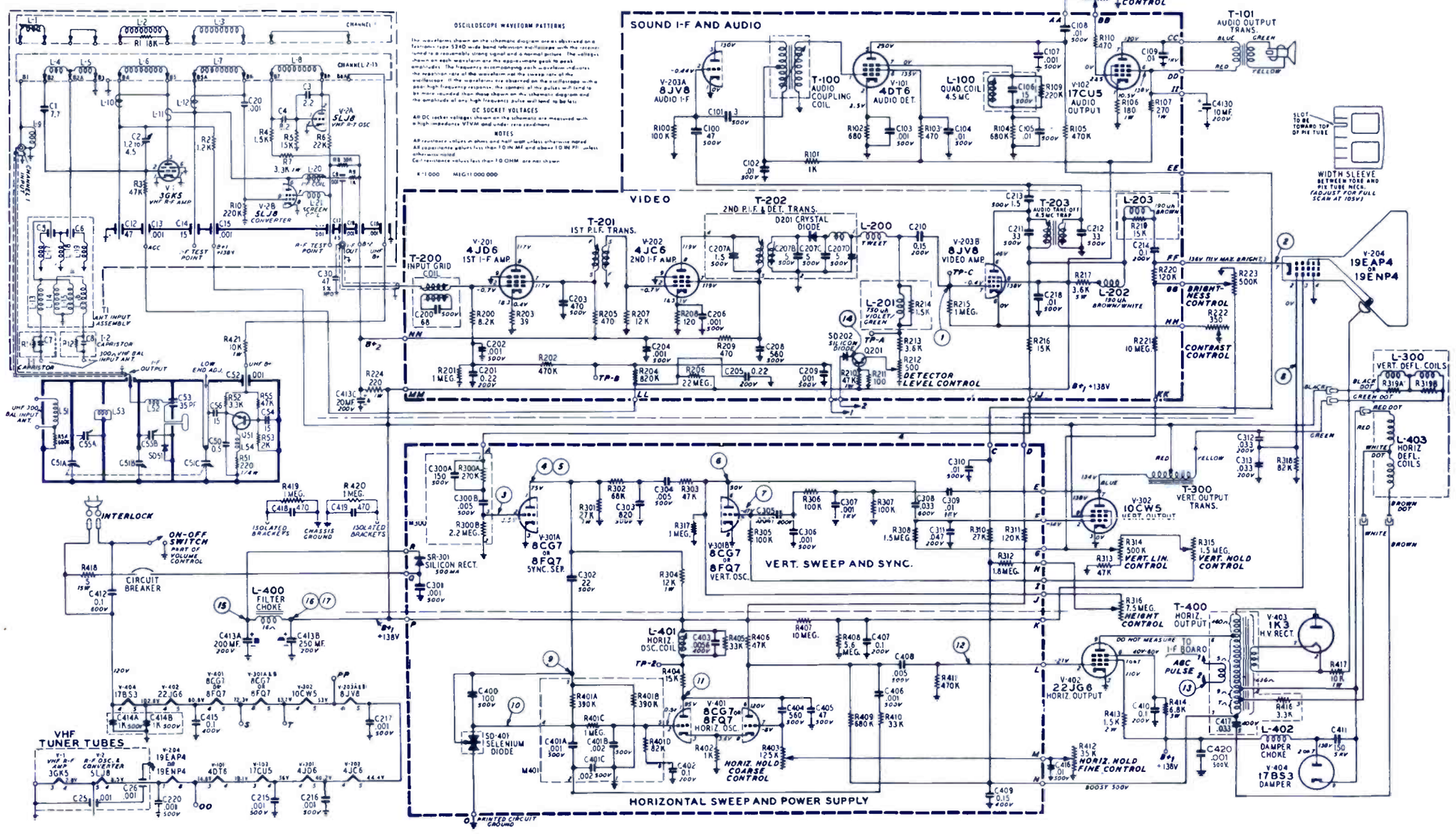
(6) 70v. p-p 60 cps. (7) 210v. p-p 60 cps (8) 95v. p-p 60 cps (9) 5v. p-p 15750 cps (10) 5v. p-p 15750 cps (11) 35v. p-p 15750 cps

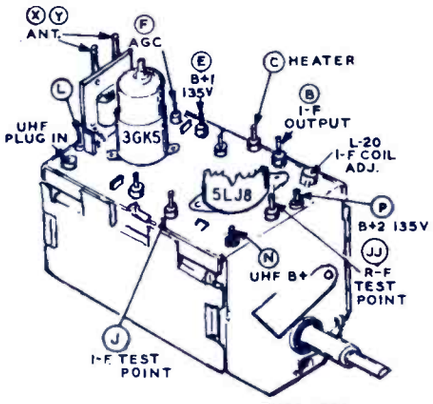


(12) 110v. p-p 15750 cps (13) 32v. p-p 15750 cps (14) 10v. to 32v. p-p 15750 cps (15) 22v. p-p 60 cps (16) 2.3v p-p max. 60 cps (17) 0.7v. p-p min. 60 cps

CENTERING OF 19" RECEIVERS

These Receivers using the 114° picture tubes are more subject to pin cushion and linearity problems when not properly centered than are the 90° type sets. Should you experience any difficulty with either of these problems, a careful check of centering should be made. Exact centering and adjustment of the height and linearity controls will result in an improved picture in nearly all cases.





Top Tuner Adjustments

T1100-4528
25A1245

SYMBOL	DESCRIPTION	CORONADO PART NO.
C108	1.0M on-off vol control	36X0453-002
R212	det level control 500Ω	40X0592-001
R222	350Ω contrast control	40X0585-027
R223	500K brightness control	40X0585-010
R314	500K vert lin control	40X0585-004
R315	1.5M vert hold control	40X0585-008
R316	7.5M height control	40X0585-002
R412	35K horiz hold control (fine)	40X0585-044
C109	.01μf 1kv ceramic	80X0099-061
C404	560pf 500v poly	46X0528-005
C411	150pf 5kv ceramic	80X0098-009
C413A	200μf	
C4138	250μf	
C413C	20μf 200v dry elect	45X0519-001
C413D	10μf	
C414A		
C414B	1K pf 500v dual ceramic	80X0003-001
R217	3.6K 5.0 pyrex	43X0331-001
R413	1.5K 2.0 pyrex	43X0450-013
R414	6.8K 3.0 pyrex	43X0378-001
R418	5.0Ω 15WW	43X0317-001
L100	quad coil	9A2595-001
L200	choke tweet filter	9A2432-001
L201	peaking coil — 750μh	36A0094-002
L202	peaking coil 190μh	36A0094-001
L203	peaking coil 190μh	36A0094-010
L400	filter choke	52X0102-006
L401	horiz osc coil	9A2515-001
L402	damper choke	9A2380-001
T100	snd IF coil	9A2597-001
T101	audio output xformer	51X0235-001
T200	IF input coil	9A2642-001
T201	1st PIF xformer	9A2622-001
T202	2nd PIF xformer	9A2650-001
T300	vert output xformer	51X0229-003
T400	horiz output xformer	53X0433-001
	tuner VHF	25A1245-007
	tuner UHF	25A1260-001
	deflection yoke assy	9A2604-001
	capristor (M-403)	76X0018-001
	capristor (M-300)	76X0068-001
	capristor (M-401)	76X0069-001
	transistor (Q201)	86X0006-001
	circuit breaker	2A0568-001

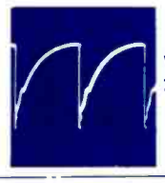
CORONADO
Color TV Model
TV21-9643A

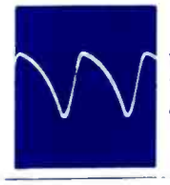
ELECTRONIC TECHNICIAN **TEKFAX**


WF-9
165VP-P
60~

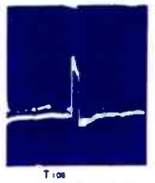

WF-10
750VP-P
60~

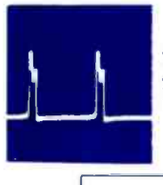

WF-11
19VP-P
60~

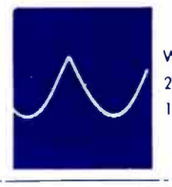

WF-12
280VP-P
15,750~

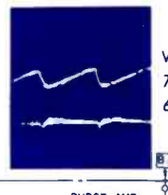

WF-13
24VP-P
60~


WF-14
0.08VP-P
60~


WF-15
150VP-P
60~

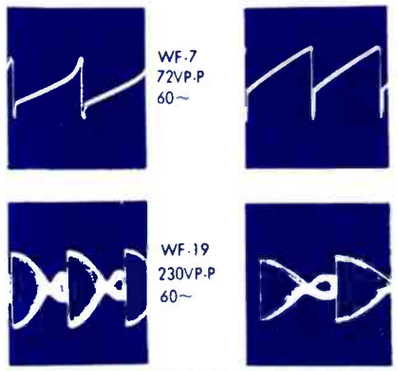

WF-16
240VP
15,750~


WF-17
2VP-P
15,750~

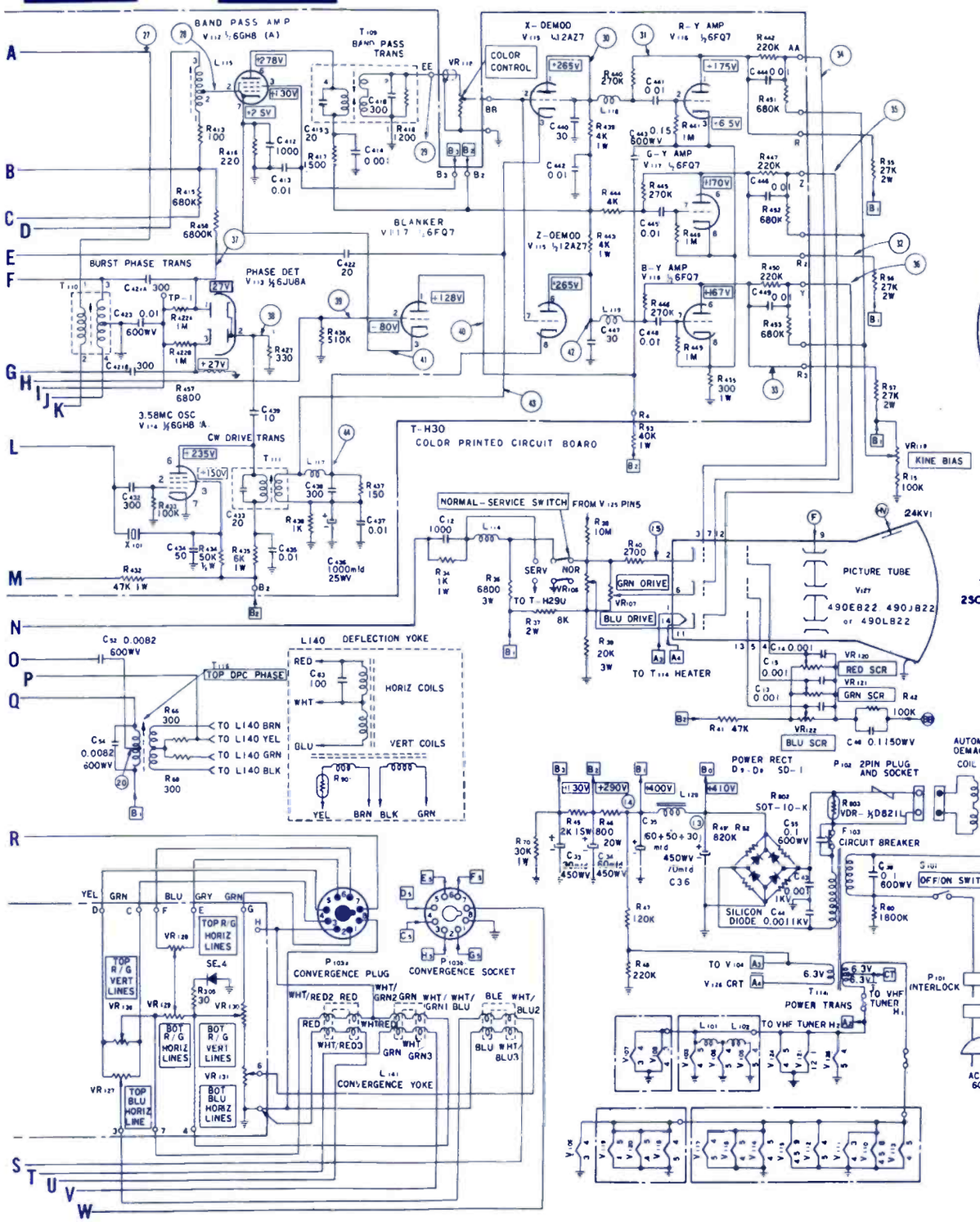

WF-18
72VP-P
60~

SYMBOL	DESCRIPTION	CORONADO PART NO.
T101	1st video IF	T-S1810
T102	47.25MHz trap	T-S1519
T103	2nd video IF	T-S1038
T104	3rd video IF	T-S1040
T105	video det	T-S1039
T106	4.5MHz trap	T-S2706
T107	2nd snd IF	T-S2016
T108	audio output	T-V108
T109	bond poss	T-S3002
T110	burst phase	T-S3001
T111	3.58MHz osc	T-S3004
T112	vert output	T-W32
T113	H.V. flyback	T-F86A
T114	power	T-P42AA
T115	Rt. horiz blueline	T-A38
T116	top-bottom pin	T-A39
L101	heater choke	T-L106
L102	heater choke	T-L106
L103	12µh peaking	T-L50D
L104	100µh peaking	T-L2501
L105	12µh peaking	T-L50
L107	200µh peaking	L-2505
L109	quad	T-S2014
L110	480µh peaking	T-L2006
L113	150µh peaking	T-L2516
L114	180µh peaking	T-L65
L115	chroma take off	T-S3003
L116	reactance	T-S3005
L117	4.7µh peaking	T-L1002
L119	1500µh filter	T-L7010
L120	horiz osc	T-A41
L123	12µh peaking	T-L67
L125	efficiency	T-A90
L126	Rt. R/G vert lines	T-A36
L127	RT. R/G horiz lines	T-A37
L128	filter choke	T-B25
L130	delay line	T-S308
L135	bottom pin	T-A20
L136	convergence correcting blue	T-A40
L137	70µh peaking	T-L2514
L138	degoussing	T-L7068
L139	fin	T-A95
L140	deflector yoke	T-D70
L141	convergence yoke	T-D68
D1	vdeo det	T-E1014
D3	H.F. burst amp	T-E1029
D4ab	AFC	T-E1061A
D5	power rectifier silicon	T-E1050
SE1	convergence diode selenium degaussing coil voltage regulator diodes (4 used)	T-E1011 T-E1078
VR101	snd reject 500Ω	T-G0046
VR102	vol cont and off/on switch 500K	T-G6425
VR104	brightness 250K	T-G1848
VR105	contrast 500Ω	T-G1808
VR106	blue drive 5K	T-G1012
VR108	AGC 5K	T-G1012
VR109	vert hold 1M	T-G1820
VR110	vert lin 1M	T-G1002
VR111	vert height 100K	T-G1010
VR112	vert center 15Ω	T-G1832
VR113	focus 500K	T-G1802
VR114	H.V. adjust 500K	T-G0025
VR115	horiz center 15Ω	T-G1832
VR116	color killer 1M	T-G1002
VR117	hue 1K	T-G1853
VR118	color 500Ω	T-G1855
VR119	kine bios 500K	T-G1802
VR121	green screen 1M	T-G1002
VR124	left R/G horiz lines	T-G20068
VR126	top R/G vert lines	T-G2030
VR131	bottom blue horiz lines	T-G2031
VR132	horiz hold 1M	T-G1820
VR133	vert peaking 5K	T-G0006
VR134	DPC balance 50K	T-G0501
VR135	sub brite 1M	T-G0012
R3	5K 3w	RW-54
R46	800Ω 20w	
R72	12K 3w	
R901	thermistor (part of L140)	T-E1059
C24	500pf 5kv ceramic	500SL5K
C27	500pf plastic film	CC-152
C30	50µf elect (part of C33-C34)	T-C8164V
C33	30µf elect (part of C30-C34)	T-C8164V
C34	60µf elect (part of C30-C33)	T-C8164V
C51	500pf 1kv ceramic	CC-630S
C59	50pf 5kv ceramic	CC-130
C64	60-50-30µf elect	T-C8164SNR
C317	100µf 100v elect	CC-102
C327	400pf plastic film	CC-115
C336	.001 1kv ceramic	
C404	.5µf met paper	CC-17
C428	.1µf met paper circuit breaker 1.75A	40AM1 T-E2709

CORONADO
Color TV Model TV21-9643A



ANTENNA INPUT IMPEDANCE	300 ohms balanced
CONVERGENCE	Magnetic
FOCUS	Electrostatic
INTERMEDIATE FREQUENCIES	
Picture I-F Carrier Frequency	45.75 mc.
Sound I-F Carrier Frequency	41.25 mc.
Color Sub Carrier Frequency	42.17 mc. (Nominal)
PICTURE SIZE	Approx. 170 sq. in. on a 490EB22 Kinescope
POWER INPUT RATING	350 watts total, 120 volts, AC, 60 cycle
SWEEP DEFLECTION	Magnetic
TELEVISION R-F FREQUENCY RANGE	
Any of 70 UHF channels	470 mc. to 890 mc.
Any of 12 VHF channels	54 mc. to 88 mc., 174 mc. to 216 mc.



CHECK OF VHF R-F OSCILLATOR ADJUSTMENTS (FIELD)

Tune in all available stations to see that receiver R-F oscillator is adjusted to the proper frequency on all channels.

Remove the channel selector knob by loosening the set screw.

There are thirteen gears around the disc on the tuner face, one for each channel from 2 through 13. The one in the "U" position is not used. Center line tuning for each channel as shown in Figure 5.

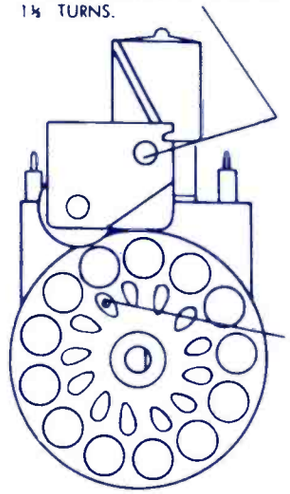
Rotate the channel selector to a channel received in your area.

Then adjust the channel oscillator slug for the best picture and sound. Repeat the steps for all other channels.

NOTE: This is a critical adjustment and should be performed by a qualified service technician.

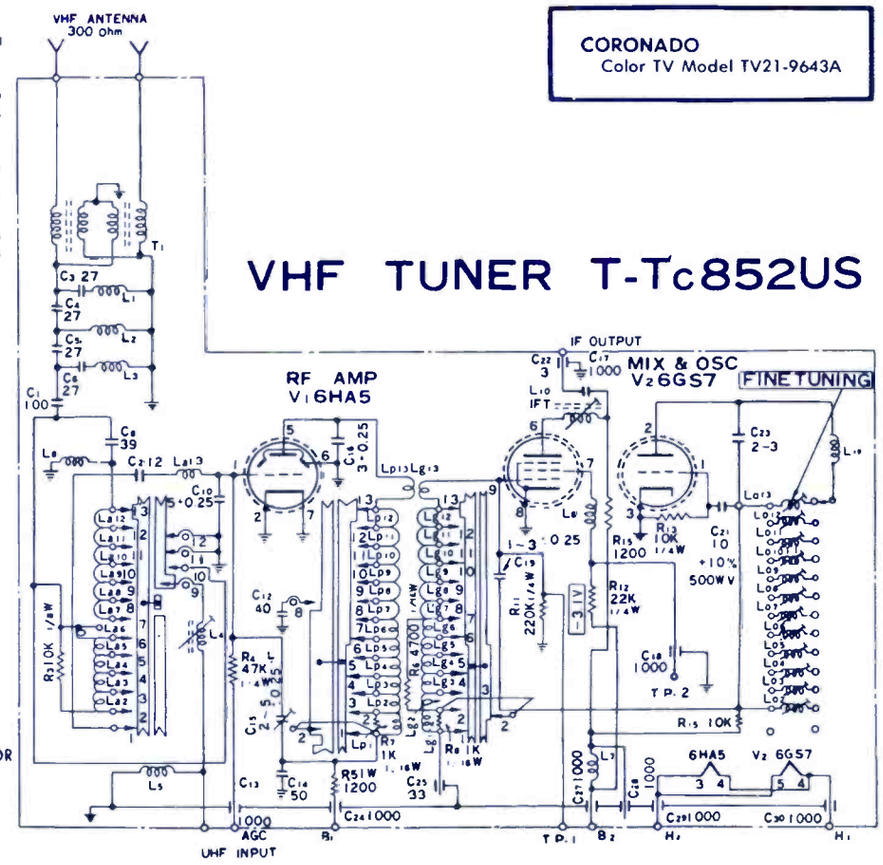
After the oscillator slugs are properly set, the "One-Set" fine tuning gears may be readjusted at any time to maintain identical tuning for all channels as the channel selector is rotated.

SET FINE TUNING TO CENTER OF ITS RANGE. TURN FINE TUNING SHAFT CLOCKWISE WHILE DEPRESSING IT UNTIL A CLICK IS HEARD. THEN TURN IT COUNTER CLOCK WISE 1½ TURNS.

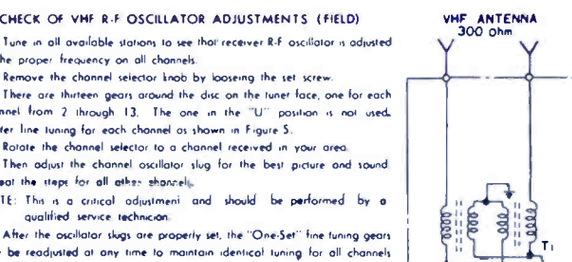


VHF R-F OSCILLATOR ADJUSTMENT

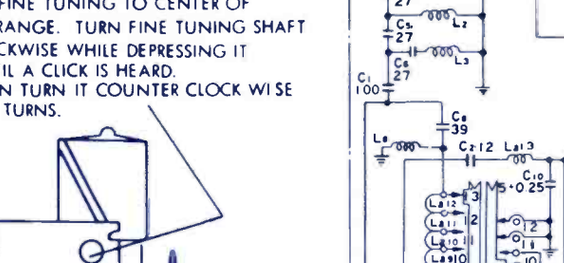
VHF TUNER T-Tc852US



UHF TUNER T-T1026US



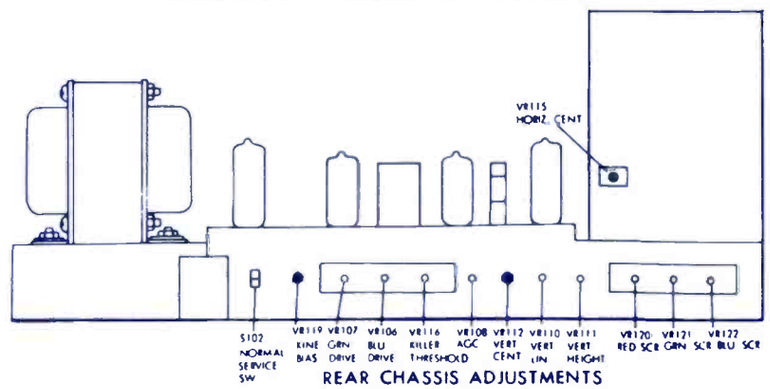
UHF TUNER TOP VIEW



VHF TUNER TOP VIEW

CORRECTIONS TO SCHEMATIC

R119	1200
R204	270
R205	68K omit
R206	3900
R207	68K
R208	390K
C3	0.005



REAR CHASSIS ADJUSTMENTS

CORONADO
TV Model
TV2-9552A, 53A

25A1245-006 VHF TUNER SCHEMATIC

SARKES-TARZIAN PART NO. 742-525

SCHEMATIC IS DIVIDED INTO FOUR SECTIONS. WITH EACH SECTION HAVING ITS OWN SERIES OF REFERENCE NUMBERS.

ALL RESISTANCE VALUES IN OHMS AND HALF WATT UNLESS OTHERWISE SPECIFIED.

ALL CAPACITANCE VALUES LESS THAN 1.0 IN MF. AND ABOVE 1.0 IN PF., UNLESS OTHERWISE NOTED.

COIL RESISTANCE VALUES LESS THAN 1.0 OHM ARE NOT SHOWN.

K=1000 MEG.=1,000,000

SYMBOL	DESCRIPTION	CORONADO PART NO.
C109	.01μf 1kv cer	80X0099-061
C210	.15μf 200v mylar	343X1544-020
C214	.1μf 200v mylar	343X1044-020
C307	1K pf 1kv cer	80X0099-016
C312	.033μf 200v mylar	342X3334-020
C313		
C404	560pf 500v poly	46X0528-005
C411	150pf 5kv cer	80X0098-009
C413A	200μf	
C413B	250μf 200v dry elect	45X0519-001
C413C	20μf	
C413D	10μf	
C414A	1K pf 500v dual cer	80X0003-001
C414B		
R106	180 1w carbon	339X4181-810
R107	270 1k carbon	339X4271-810
R206	22M 5w carbon	339X3226-810
R210	47K 1w carbon	339X4473-810
R217	3.6K 5w pyrex	43X0331-001
R301	27K 1w carbon	340X4273-810
R413	1.5K 2w pyrex	43X0450-013
R414	6.8K 3w pyrex	43X0378-001
R418	5.0 15w WW	43X0317-001
L100	quad coil	9A2595-001
L200	choke tweet filter	9A2432-001
L201	peaking coil 750μh	36A0094 002
L202	peaking coil 190μh	36A0094-001
L203	peaking coil 190μh	36A0094-010
L400	filter choke	52X0102-006
L401	horiz osc coil	9A2515-001
L402	damper choke	9A2380-001
T100	snd IF coil	9A2597-001
T101	audio output xformer	51X0235-001
T200	IF input coil	9A2642-001
T201	1st PIF xformer	9A2622-001
T202	2nd PIF xformer	9A2650-001
T203	snd take-off coil	9A2599-001
T300	vert output xformer	51X0229-003
T400	horiz output xformer	53X0433-001
	tuner VHF	25A1245-006
	tuner UHF	25A1260-001
	deflection yoke assy	9A2604-001
	silicon rectifier (SR301)	66X0023-001
	selenium diode (SD401)	66X0025 001
	capristor (M403)	76X0018-001
	capristor (M300)	76X0068-C01
	capristor (M401)	76X0069-001
	selenium diode (SD202)	66X0038 001
	transistor (Q201)	86X0006-001
	circuit breaker	2A0568-001
	3" x 5" PM speaker	10A0645-001
R108	1M on off vol control	36X0453-002
R212	500 det level control	40X0592-001
R222	350 contrast control	40X0585-027
R223	500K brightness control	40X0585 010
R314	500K vert lin control	40X0585-004
R315	1.5M vert hold control	40X0585-008
R316	7.5M height control	40X0585-002
R403	125K horiz hold control (coarse)	40X0590-002
R412	35K horiz hold control (fine)	40X0585-044

UHF TUNER

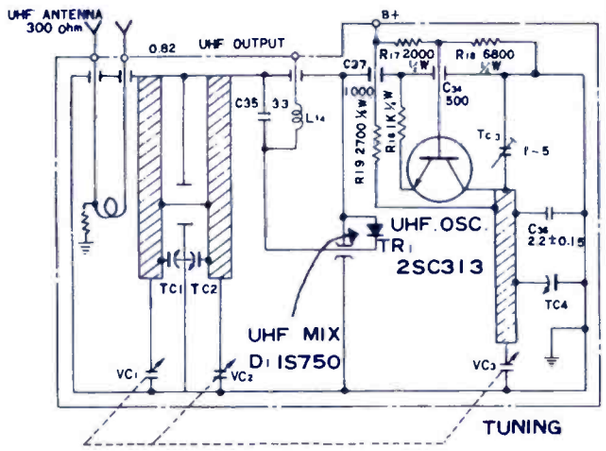
SYMBOL	DESCRIPTION	CORONADO PART NO.
D1	video det	1N60
D2	silicon rectifier (1N5558)	T-E1024C
T201	AF output	T-V120
T202	vert output	T-W27
T203	horiz output (flyback)	T-F76A-33
T204	deflection yoke	T-D41A
L102	heater choke	T-L06
L103	47.25MHz trap	T-S1525
L104	video IF input	T-S1814
L105	video trap	T-S1526
L106	first video	T-S1022
L107	video det	T-S1023
L108	filter coil	T-L7030
L109	filter coil	T-L7030
L110	snd take-off and trap	T-S2009
L111	peaking coil (270μh)	T-L2005
L112	peaking coil (480μh)	T-L2006
L113	peaking coil (220μh 5k)	T-L2004
L114	4.5MHz snd IF	T-S2010
L115	quad	T-S2011
L116	horiz stabilizer	T-A25
L117	RF choke	T-L07
L118	combination coil	T-L7069
L202	line filter	T-L08
L203	filter choke	T-B28A
VR101	AGC 100K	T-G0031T
VR102	height 1M	T-G0032T
VR103	vert lin 300K	T-G0033T
VR104	Horiz hold 45K	T-G0034
VR105	horiz range 100K	T-G0039
VR204	vert hold 1M	T-G2024
VR211	contrast 30K	T-G2023
VR212	brightness 100K	T-G2025
VR221	vol on-off 500K	T-G2017
R114	4.7K 3w	RC-607
R200	12K 2w	RC-720
R221	680Ω 2w	RW-27
R241	3Ω 5w	5FJ3
C106	0.22μf @ 150wv	TCC-010
C124	50μf @ 6wv	CE-174-2
C151	3μf @ 300wv	300CT3
C170	1000μf poly @ 500wv	
C244	250-200-30μf @ 200wv	690-147
	VHF tuner	T-T8659 USP20
	UHF tuner	T-T1025US

CORONADO
TV Model TV
21-9367A

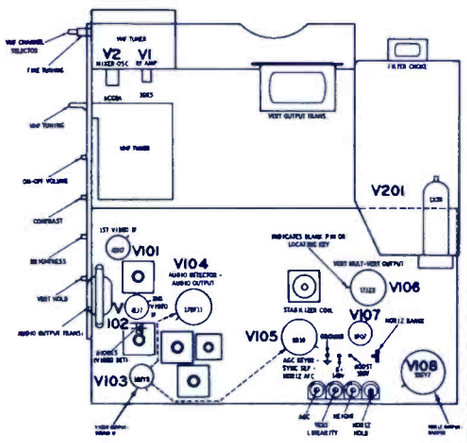
CAUTION

ONE SIDE OF AC LINE CONNECTED TO CHASSIS

TUBES	VHF - Twelve, UHF - One Transistor
POWER SUPPLY	110-120 Volts AC, 60 Cycles — RATING 101 Watts @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75 MC, Sound IF 41.25 MC (Intercarrier)



TUBE PLACEMENT CHART



SERVICING IN THE FIELD

SAFETY GLASS
For picture tube and safety glass cleaning, it is necessary to remove the chassis. (See Disassembly Instructions.)

FUSE
A 2 Amp. fuse is used for L.V. power supply and filament protection. (See "Tube Placement Chart" for location.)

VHF OSCILLATOR ADJUSTMENT
Set Fine Tuning control at center of its range and adjust oscillator slug (one for each channel) for best sound and picture.

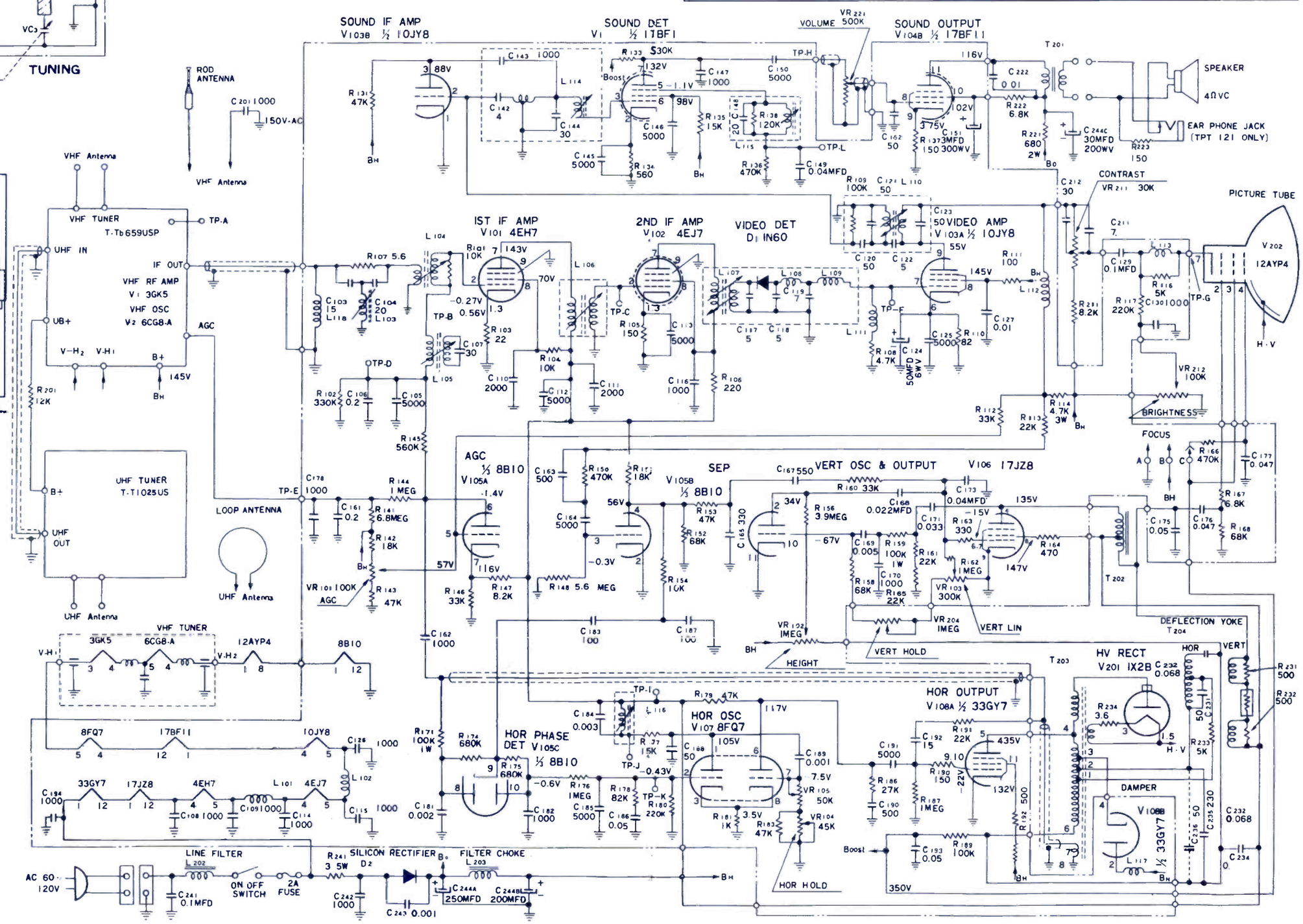
AGC
AGC may be varied by means of an AGC control. (See "Tube Placement Chart" for location.)

FOCUS
The focus may be varied by connecting the lead from resistor R-166 from pin 4 of picture tube to various voltage points. (For location see "Tube Placement Chart.)

CENTERING
Centering is accomplished by two magnetic rings located on rear cover of yoke.

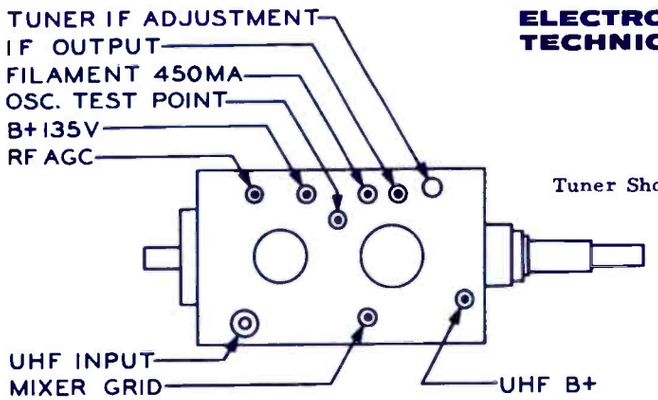
HORIZONTAL LINEARITY
Horizontal linearity can be adjusted by turning the disc magnets located on each side of the yoke.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT
Coorse adjustment of the horizontal hold is accomplished by the proper setting of the Horizontal Stabilizer coil and Horizontal Range control. (See "Tube Placement Chart", for location.)

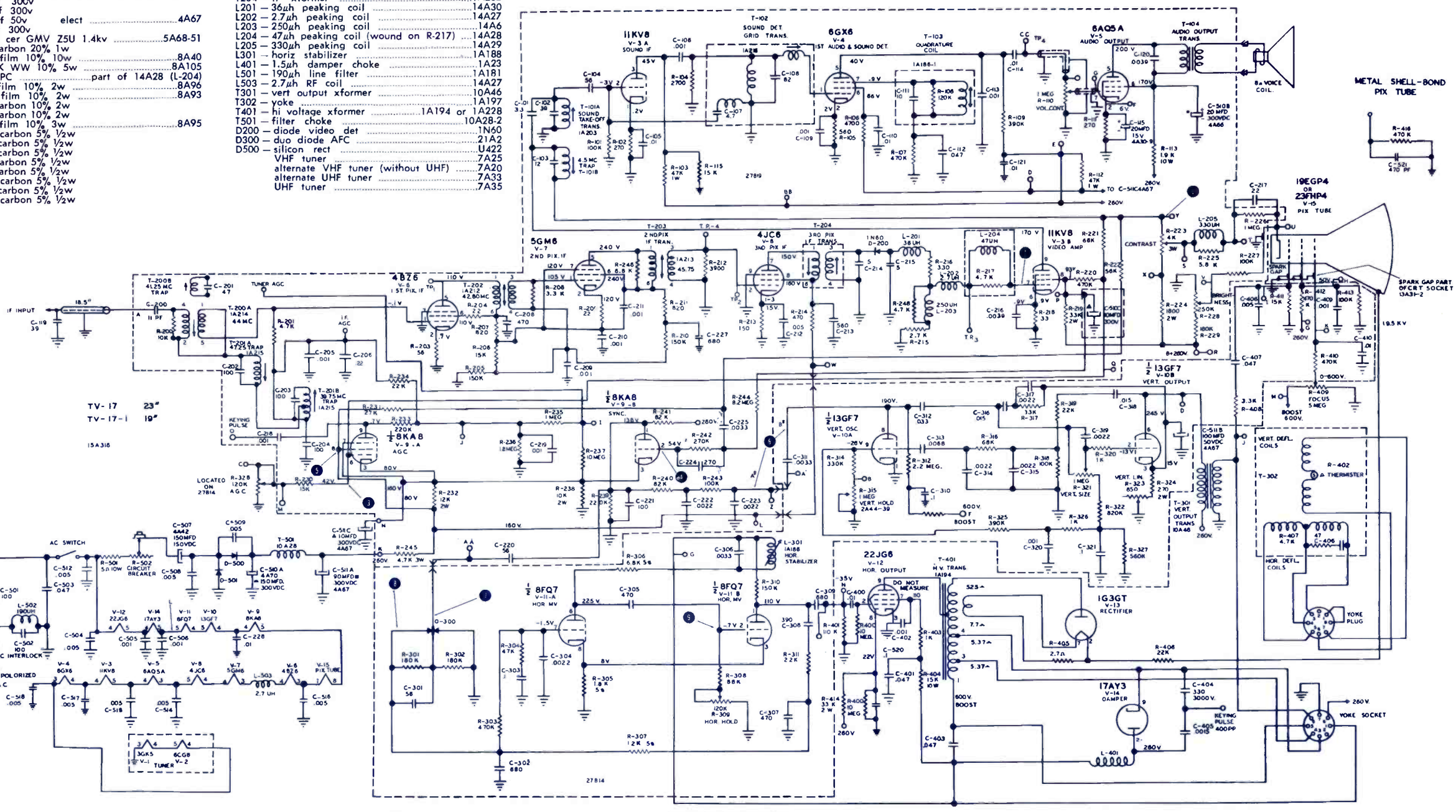


CURTIS MATHES
TV Chassis
TV-17, 17-1

SYMBOL	DESCRIPTION	CURTIS MATHES PART NO.
C101	3.3pf cer .25pf NPO .5kv (part of 1A203)	5A51-42
C104	56pf cer 5% NPO .5kv	5A51-46
C107	4.7pf cer 5% NPO .5kv (part of 1A216)	5A51-43
C115	20pf elect 15v	4A30-9
C118	.01µf cer GMV Z5U .5kv	5A51-23
C119	39pf cer 5% NPO .5kv	5A68-21
C200	11pf cer 5% NPO 1kv	5A51-68
C201	47pf silver mica part of 1A214(T-200)	
C208	470pf cer 5% N750 .5kv	5A51-22
C212	.005µf cer 10% Z5D 1kv	5A51-55
C213	560pf cer 5% N1500 .5kv	5A51-5
C214	5pf cer 5% NPO .5kv	5A51-63
C220	56pf cer 5% NPO .5kv	5A51-46
C305	470pf silver mica 5% 300v	
C306	.0033µf silver mica 10% 300v	
C307	470pf cer 5% N750 .5kv	5A51-22
C316	.015µf tubular 20% 1kv	5A52-315
C406	47pf cer 10% 2kv part of yoke 1A210(T302)	
C410	.01µf cer GMV Z5U 1kv	5A51-57
C505	.001µf cer GMV Z5U 1kv	5A68-60
C510A	150pf 300v	
B	20pf 300v elect	4A70
C	10pf 300v	
C511A	90pf 300v	
B	100pf 50v elect	4A67
C	10pf 300v	
C521	470pf cer GMV Z5U 1.4kv	5A68-51
R103	47K carbon 20% 1w	
R113	1.9K film 10% 10w	8A40
R114	3.750K WW 10% 5w	8A105
R217	4.7K PC part of 14A28 (L-204)	
R219	33K film 10% 2w	8A96
R224	1.8K film 10% 2w	8A93
R232	12K carbon 10% 2w	
R238	10K carbon 10% 2w	
R245	4.7K film 10% 3w	8A95
R301	180K carbon 5% ½w	
R305	1.8K carbon 5% ½w	
R306	6.8K carbon 5% ½w	
R307	12K carbon 5% ½w	
R308	68K carbon 5% ½w	
R310	150K carbon 5% ½w	
R311	2.2K carbon 5% ½w	
R318	100K carbon 5% ½w	
R324	270Ω carbon 10% 2w	
R402	5Ω thermistor part of deflection yoke	
R404	10K WW 5% 7w	8A86
R405	2.7 carbon 5% 1w	
R407	4.7K carbon part of yoke 1A210 (T-302)	
R413	100k carbon 5% ½w	
R414	33K film 10% 2w	8A96
R502	3a circuit breaker	6A46-1
R110	1M pot volume control w/switch	2A89
R223	4K pot 3w contrast control	8A52-10
R228	250K pot bright control	2A44-40
R309	120K pot horiz hold	2A44-36
R315	1M pot vert hold	2A44-39
R321	1M pot vert size	2A44-35
R323	850Ω pot vert lin	2A44-29
R328	120K pot AGC control	2A44-36
R409	5M pot focus control	2A44-41
T101	snd take-off xformer and 4.5MHz trap	1A203
T102	snd det grid xformer	1A216
T103	quad coil	1A186-1
T104	audio output xformer	10A48-1
T200	44MHz xformer and 41.25MHz trap	1A214
T201	47.25MHz and 39.75MHz traps	1A215
T202	42.80MHz IF xformer	1A212
T203	IF xformer	1A213
T204	IF xformer	1A202
L201	36µh peaking coil	14A30
L202	2.7µh peaking coil	14A27
L203	250µh peaking coil	14A6
L204	47µh peaking coil (wound on R-217)	14A28
L205	330µh peaking coil	14A29
L301	horiz stabilizer	1A188
L401	1.5µh damper choke	1A23
L501	190µh line filter	1A181
L503	2.7µh RF coil	14A27
T301	vert output xformer	10A46
T302	yoke	1A197
T401	hi voltage xformer	1A194 or 1A228
T501	filter choke	10A28-2
D200	diode video det	1N60
D300	duo diode AFC	21A2
D500	silicon rect	U422
	VHF tuner	7A25
	alternate VHF tuner (without UHF)	7A20
	alternate UHF tuner	7A33
	UHF tuner	7A35



Tuner Showing Terminal Identification



DUMONT
TV Chassis
120804A,B 805A,B
806B 807A,B

PICTURE OPTIMIZER AND NOISE-LOK ADJUSTMENTS

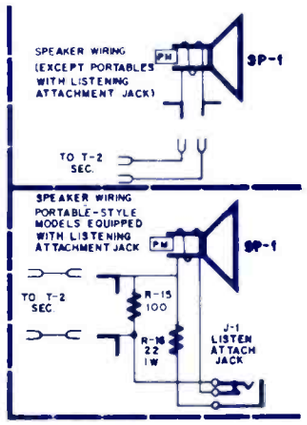
1. Rotate the Picture Optimizer and Noise Lok controls fully counterclockwise (as viewed from rear of cabinet).

2. Tune to the strongest channel and rotate the Picture Optimizer slowly clockwise until the receiver begins to overload (sync instability, sound buzz, kinks in picture), then back off slightly counterclockwise to eliminate overload, continuing an additional approximate ten degrees beyond this point to assure a proper safety factor. If the receiver does not overload when the control has been rotated fully, leave it in this position.

3. With the receiver still tuned to strongest channel, rotate the Noise Lok control slowly clockwise until the picture begins to overload (sync instability, sound buzz, kinks in picture), then back off slightly to eliminate this condition. With controls properly set, switch channels to verify setting for strongest signals. This optimizes operation of the Noise Lok for mixed signal conditions (strong and weak). However, in extreme fringe areas it is possible to improve the picture stability by further clockwise adjustment of the control.

HORIZONTAL DRIVE ADJUSTMENT

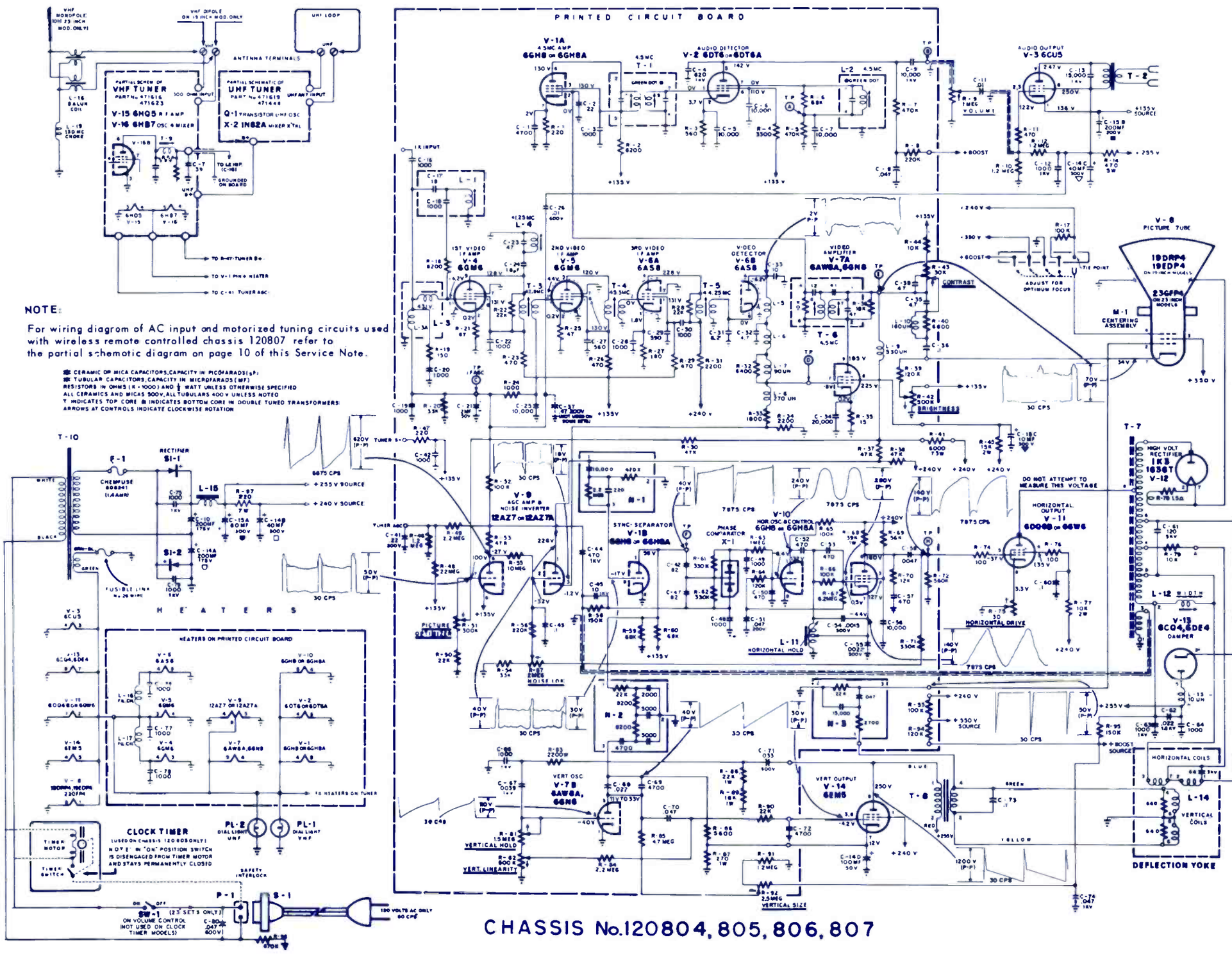
The horizontal drive control, located just below the horizontal output tube, should normally be in its most clockwise position (minimum resistance in circuit). If overdrive bars (indicated by white vertical lines in the raster) appear at this setting, slowly rotate R-75 in a counterclockwise direction until the lines just disappear.



SYMBOL	DESCRIPTION	DUMONT PART NO.
R74	resistor 470Ω 10% 5w	397149
R41	resistor 6K 10% 7½w	394243
R97	resistor 220Ω 10% 7w	394234
R9	control vol 1M w/sw (except ch 120805)	390874
R9	control vol 1M less sw (ch 120805 only)	390875
R42,92	control dual bright & vert size (19 in. sets)	390628
R42	control bright (23 in. sets)	390837
R43	control contrast (19 in. sets)	390706
R51,57	control dual pict opt noise lok	390740
R75	control horiz drive 30Ω 2w	390625
R81,82	control dual vert hold & lin (19 in. sets)	390629
R81	control vert hold (23 in. sets)	390838
R82,92	control dual vert lin & size (23 in. sets)	390839
C4	cap cer 820pf 1kv	929051K
C9	cap cer 10,000pf 1kv	929023K
C10	cap elect 200uf 175v	925629
C12	cap cer 1,000pf 1kv	929000
C13	cap cer 15,000pf 1kv	929028
C14	40/40µf/ 300v 100µf/50v 200µf/275v	925628
C15	cap elect 80/10µf/300v 200µf/200v	925514
C21	cap elect 2µf 50v	925578
L1	adjacent channel snd trap	720315
L2	snd quad coil	720404
L3	input IF coil 45MHz	720419
L3A	RF choke 45MHz (IF input)	705042
L4	self channel snd trap	720317
L5	RF choke 45MHz	705040
L6	RF choke 82MHz	705041
L7	peaking coil 90µh	708406
L8	peaking coil 270µh	708405
L9	peaking coil 530µh	708404
L10	peaking coil 180µh	708401
L11	hariz osc coil	716148
L12	width coil	708416
L13	RF choke 10µh	705021
L14	deflection yoke assem (19 in. sets)	708403
L14	deflection yoke assem (23 in. sets)	708402
L15	filter choke B+ rect	737047
L16,17	RF choke filament	705031
L18	input balun VHF ant (23 in. sets only)	720456
L19	input choke VHF ant (23 in. sets only)	705051
T1	snd interstage xformer	720486
T2	audio output xformer	734221
T3,4,5	bifilar IF xformer 45MHz	720318
T6	snd toke-off coil & 4.5MHz trap	720447
T7	horiz output xformer	738191
T8	vert output xformer	738189
T10	power xformer	730126
F1	fuse 1.4 amp chem type	808241
N1	couplate sync sep	923175
N2	couplate vert integrator	923159
N3	couplate vert retroce supp	923174
Q1	tr UHF osc (part of UHF tuner)	
X1	dual diode assem horiz phasing	817074
X2	diode UHF mixer (part of UHF tuner) VHF tuner	471616

NOTE:

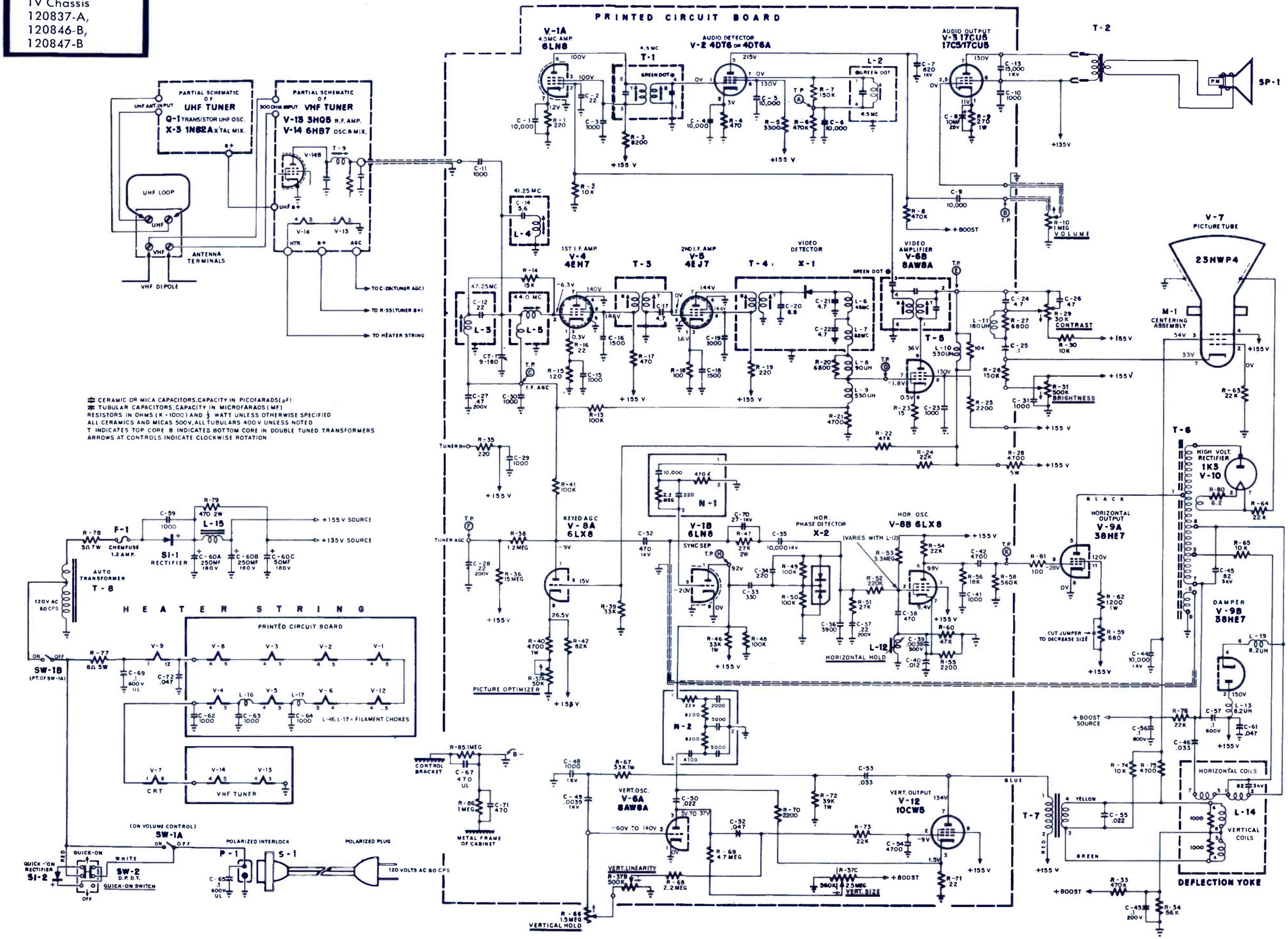
For wiring diagram of AC input and motorized tuning circuits used with wireless remote controlled chassis 120807 refer to the partial schematic diagram on page 10 of this Service Note.



CHASSIS No.120804, 805, 806, 807

DUMONT

TV Chassis
120837-A,
120846-B,
120847-B



⇌ CERAMIC OR MICA CAPACITORS, CAPACITY IN PICOFARADS (pF)
✱ TUBULAR CAPACITORS, CAPACITY IN MICROFARADS (MF)
RESISTORS IN OHMS (K = 1000) AND ½ WATT UNLESS OTHERWISE SPECIFIED
ALL CERAMICS AND MICAS 500V, ALL TUBULARS 400 V UNLESS NOTED
T INDICATES TOP CORE B INDICATES BOTTOM CORE IN DOUBLE TUNED TRANSFORMERS
ARROWS AT CONTROLS INDICATE CLOCKWISE ROTATION

DUMONT
TV Chassis
120856A, B
120857A, B

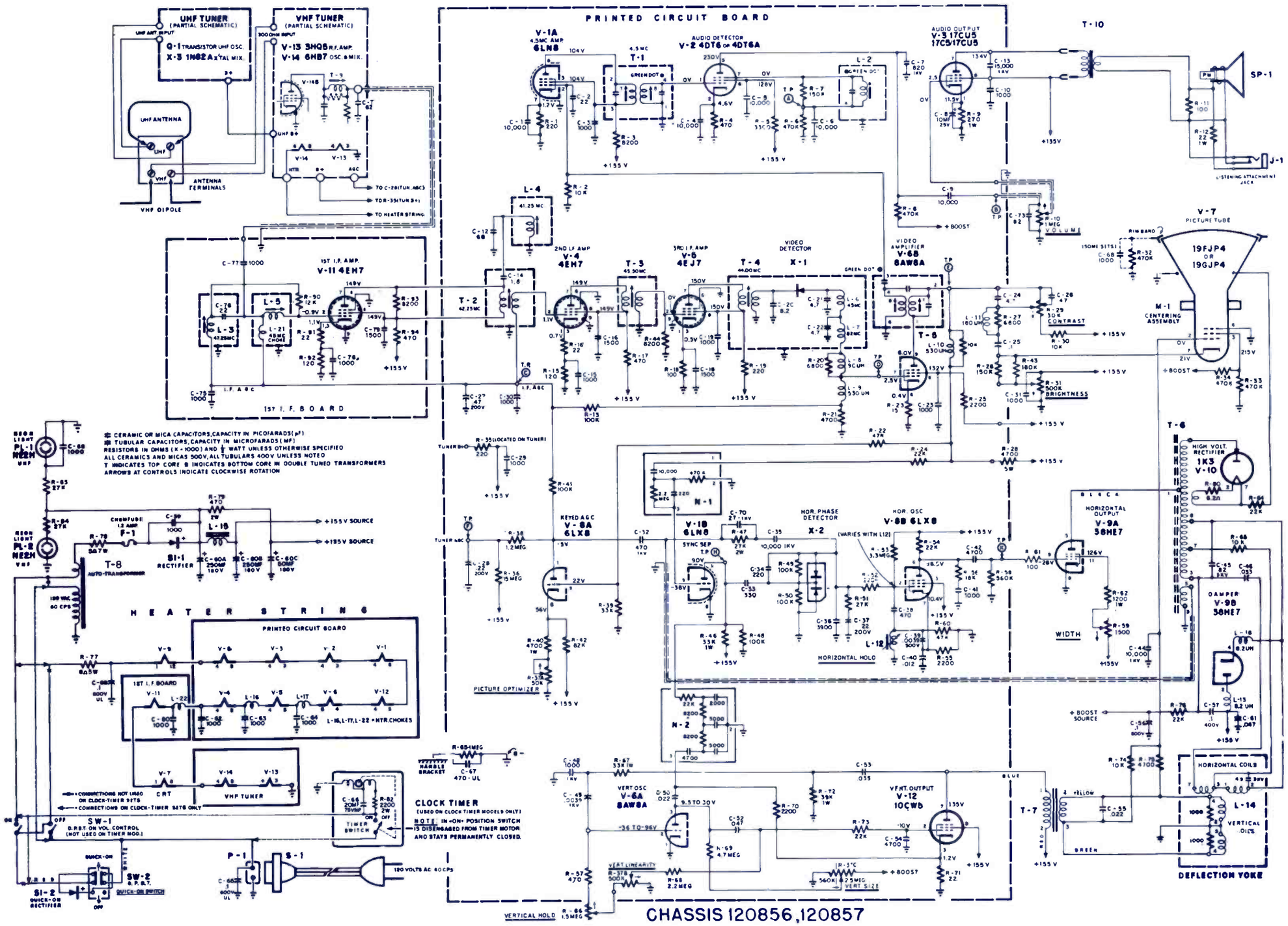
RESISTANCE READINGS CHART, TV CHASSIS

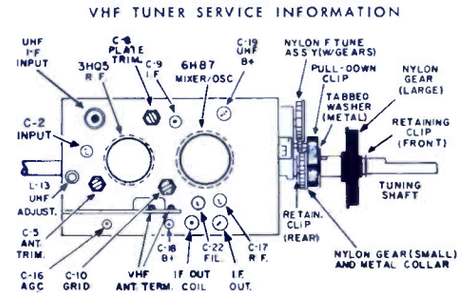
Ref. No.	Tube Type	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9	Pin 10	Pin 11	Pin 12
V-1	6LN8	*33k	10k	*8.2k	(filament)		*8.2k	220	0	2.7m			
V-2	4DT6A	10	470	(filament)		1.4m	*3.3k	470k					
V-3	17C5/CU5	270	20 to 1m	(filament)		20 to 1m	*540	*600					
V-4	4EH7	142	100k	142	(filament)		0	*470	*470	0			
V-5	4EJ7	100	8.2k	100	(filament)		0	*220	*220	0			
V-6	8AW8A	0	.5m to 2m	5m to 6m	(filament)		15	90	*2.2k	*4.4k			
V-7	CRT	(fil.)	3.2k	350k	*0	--	--	82k to 230 k	(fil.)				
V-8	6LX8	205k	320k	*0	(filament)		*22k	2.2k	5 to 32k	33k			
V-9	38HE7	(fil.)	*22	--	500k	500k	--	--	0	560k	--	*1.2k	(fil.)
V-10	1K3	--	(inf.)	--	(inf.)	--	--	(inf.)			(Plate Cap: 500k)		
V-11	4EH7	142	100k	142	(filament)		0	*8.6k	*470	0			
V-12	10CW5	--	2.2m to 2.7m	22	(filament)		--	*250	--	*0			

NOTES: All resistance readings are in ohms, unless otherwise specified ("k" denotes kilohms; "m" denotes megohms).
* Asterisk indicates measurements taken with common lead of VTVM connected to junction of L-15 and C-60B (B+ point).

RESISTANCE MEASUREMENTS were taken with no power applied. Where readings are affected by control settings, both maximum and minimum values are indicated.

ALL MEASUREMENTS were taken between points indicated and chassis ground (unless otherwise noted), using an RCA Voltohmyst or an equivalent VTVM. All readings obtained may vary plus or minus 10% due to normal component tolerances and strength of input signal to chassis under test.

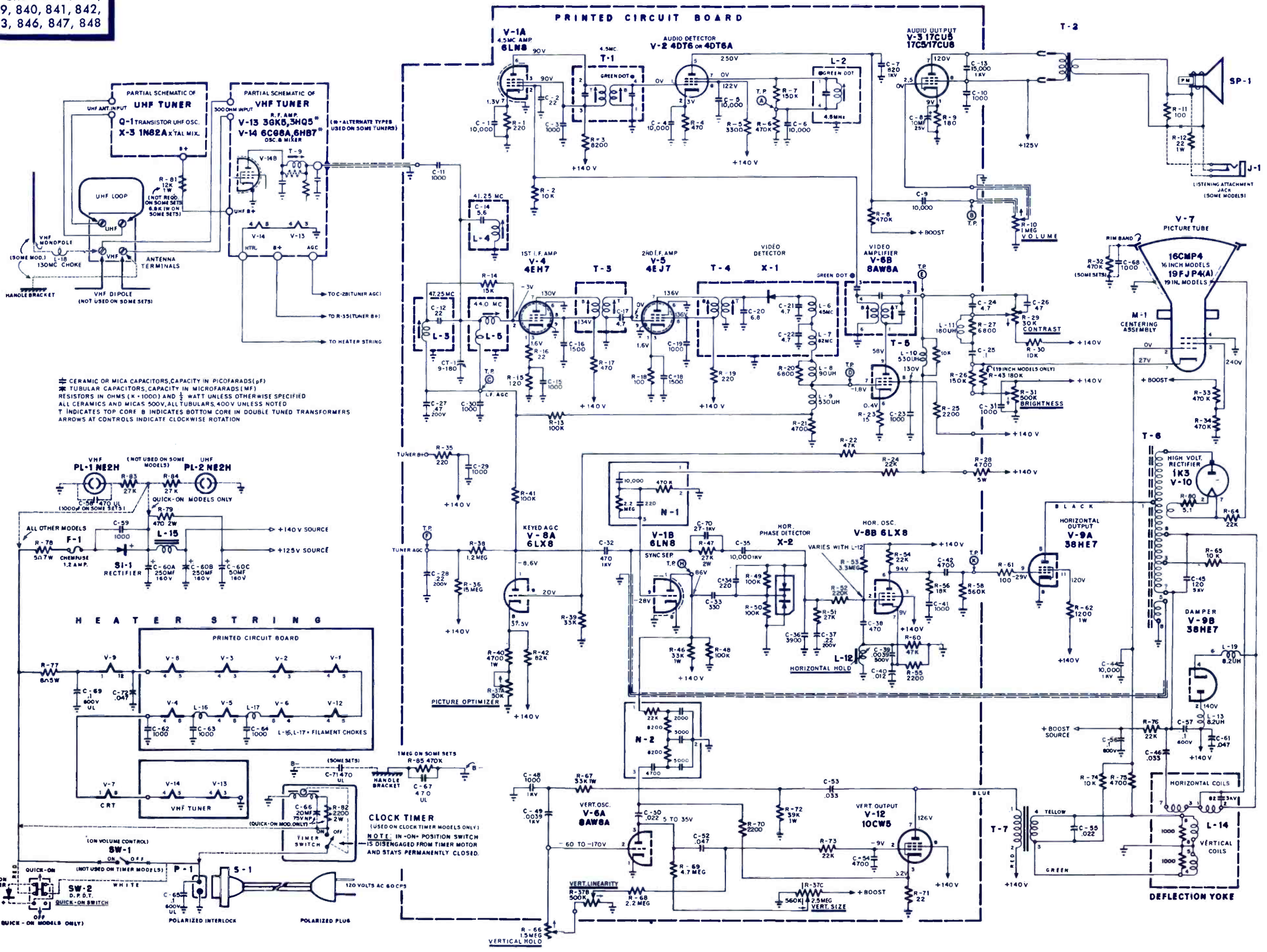




SYMBOL	DESCRIPTION	DUMONT PART NO.
R28	resistor 4.7K WW 5w	397158
R77	resistor 8Ω WW 10% tol 5w	394284
R78	resistor 5Ω WW 10% tol 7w	394216
CT1	cap variable trimmer 9 to 180pf	900221
C1, 4, 6	cap cer 10,000pf GMV Z5U	928924X
C2	cap cer 22pf 10% top NPO	928824
C8	cap elect 10μf 25v	925458
C12	cap cer 68pf 10% tol NPO	928828X
C13	cap cer 15,000pf 20% tol 1kv	929028K
C29, 30	cap cer 1000pf GMV	928933X
C32	cap cer 470pf 10% tol 1kv	928934K
C35	cap cer 10,000pf 20% tol 1kv	929023K
C45	cap cer 82pf 5% tol 5kv	929040
C48	cap cer 1000pf 10% tol 1kv	929024K
C49	cap molded .0039μf 10% tol 1kv	924832M
C60A, B, C	cap elect 250/250/50μf 180v	925664
C66	cap elect 20μf (non-pol) 75v	925656
C70	cap cer 27pf N1500 1kv	929157
R10	volume control 1M w/switch (ch 120856)	390920
R10	volume control 1M less switch (ch 120857)	390919
R29	contrast control 30K	390894
R31	bright control 500K	390895
R37A	picture optimizer control 50K	390766
R37B	vert lin control 500K	part of R37A
R37C	vert size control 2.5M	part of R37A
R59	horiz size control 1.5K	390927
R66	vert hold control 1.5M	390896
L2	snd quad coil 4.5MHz	720404
L3	adjacent channel snd trap 47.25MHz	720452
L4	self-channel snd trap 41.25MHz	720317
L5	IF input coil 45MHz	720541
L6	choke video det 45MHz	705040
L7	choke video det 82MHz	705041
L8	peaking coil video amp 90mh	708406
L9	peaking coil video amp 530mh	708404
L11	peaking coil video amp 180mh	708401
L12	horiz osc coil	716151
L13	choke damper plate 8.2mh	705058
L14	deflection yoke assem	708481
L15	filter choke power supply	737058
L16, 17	filament choke	705031
L19	choke damper cathode 8.2mh	705058
L21	choke IF input 45MHz	705040
L22	filament choke	705031
T1	snd interstage xformer 4.5MHz	720513
T2, 3	IF xformer interstage	720540
T4	IF xformer video det	720455
T5	snd take-off xformer 4.5MHz	720512
T6	horiz output xformer	738210
T7	vert output xformer	738193
T8	ac step-up xformer	730143
T9	IF output coil (part of VHF tuner)	
T10	audio output xformer (part of SP-1)	
F1	fuse 1.2a	808236
N1	couplate sync separator	923059
N2	couplate vert integrator	923159
S12	silicon rect quick-on	817161
X1	diode video det type 1N295	817077
X2	dual diode assem horiz phase comparator	817074
X3	diode UHF mixer types 1N82A (part of UHF tuner)	965073

EMERSON
TV Chassis 120837, 839, 840, 841, 842, 843, 846, 847, 848

ELECTRONIC TECHNICIAN TEKFAX



≠ CERAMIC OR MICA CAPACITORS, CAPACITY IN PICOFARADS (pF)
* TUBULAR CAPACITORS, CAPACITY IN MICROFARADS (MF)
RESISTORS IN OHMS (K = 1000) AND ½ WATT UNLESS OTHERWISE SPECIFIED
ALL CERAMICS AND MICAS 500V, ALL TUBULARS, 400V UNLESS NOTED
† INDICATES TOP CORE B INDICATES BOTTOM CORE IN DOUBLE TUNED TRANSFORMERS
ARROWS AT CONTROLS INDICATE CLOCKWISE ROTATION

EMERSON
TV Chassis
120804, 805, 806, 807, 823

PRINTED CIRCUIT BOARD

VHF MONOPOLE (ON 23 INCH MOD. ONLY)
VHF DIPOLE ON 19 INCH MOD. ONLY
UHF LOOP
ANTENNA TERMINALS
L-16 BALUN COIL
L-18 130 MC CHOKE
PARTIAL SCHEM. OF VHF TUNER PART No. 471616 471623
V-15 6HQ5 R F AMP
V-16 6HB7 OSC & MIXER
300 OHM INPUT
PARTIAL SCHEMATIC OF UHF TUNER PART No. 471619 471648
Q-1 TRANSISTOR UHF OSC.
X-2 1N82A MIXER X'TAL
UNBAL. INPUT
TO I.F. INPP. (C-16)
GROUNDED ON BOARD
TO R-47 (TUNER B+)
TO V-1 PIN 4 (HEATER)
TO C-41 (TUNER AGC)

SPEAKER WIRING CONSOLE AND LO-BOY MODELS USING TWO SPEAKERS
SP-1
SP-2
TO T-2 SEC.
NOTE: PROPER PHASING OF SPEAKERS MUST BE OBSERVED

SPEAKER WIRING PORTABLE-STYLE MODELS EQUIPPED WITH LISTENING ATTACHMENT JACK
R-15 100
R-16 22 1W
J-1 LISTEN ATTACH JACK

SPEAKER WIRING ALL MODELS USING A SINGLE SPEAKER. (EXCEPT PORTABLES WITH LISTENING ATTACHMENT JACK)

V-1A 4.5 MC AMP 6GH8 OR 6GM8A
AUDIO DETECTOR V-2 6DT6 OR 6DT6A
AUDIO OUTPUT V-3 6CU5
T-1 4.5 MC
L-2 4.5 MC
T-2
+135 V SOURCE
+ 255 V
+ BOOST
R-9 1MEG VOLUME

I.F. INPUT
L-1
L-3
L-3A
L-4 41.25 MC
1ST VIDEO I.F. AMP V-4 6GM6
2ND VIDEO I.F. AMP V-5 6GM6
3RD VIDEO I.F. AMP V-6A 6AS8
VIDEO DETECTOR V-6B 6AS8
VIDEO AMPLIFIER V-7A 6AW8A, 6GN8
T-3 41.25 MC
T-4 45.3 MC
T-5 44.25 MC
T-6 4.5 MC
L-5
L-6
L-7 90 UH
L-8 270 UH
L-9 560 UH
L-10 180 UH
CONTRAST
BRIGHTNESS
+ 240 V
+ 350 V
+ BOOST
R-17 100 K
TIE POINT
ADJUST FOR OPTIMUM FOCUS
V-8 PICTURE TUBE
19DRP4 19EDP4 ON 19 INCH MODELS
23GFP4 ON 23 INCH MODELS
M-1 CENTERING ASSEMBLY
+ 350 V
30 CPS
7DV

T-7
HIGH VOLT RECTIFIER 1K3 1636T V-12
DO NOT ATTEMPT TO MEASURE THIS VOLTAGE
HORIZONTAL OUTPUT V-11 6DQ6B OR 6GW6
HORIZONTAL DRIVE
L-12 WIDTH
V-13 6CQ4, 6DE4 DAMPER
DO NOT ATTEMPT TO MEASURE AT THIS POINT
L-13 10 UH
HORIZONTAL COILS
L-14 VERTICAL COILS
DEFLECTION YOKE
+ BOOST SOURCE
+ 255 V SOURCE
+ 240 V SOURCE

T-10
F-1 CHEMFUSE 808241 (1.4 AMP)
RECTIFIER SI-1
SI-2
L-15
+ 255 V SOURCE
+ 240 V SOURCE
FUSIBLE LINK No. 26 WIRE
WHITE
BLACK
GRN-BL
GREEN
H E A T E R S
HEATERS ON PRINTED CIRCUIT BOARD
TO HEATERS ON TUNER

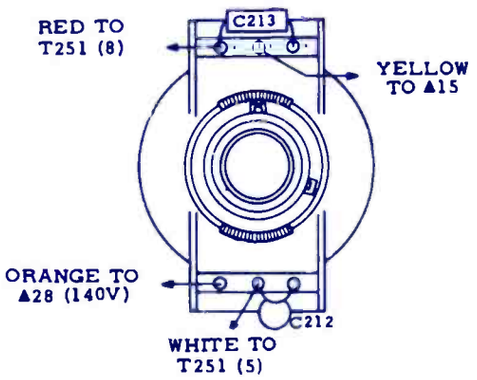
CLOCK TIMER (USED ON CHASSIS 120805 ONLY)
NOTE: IN "ON" POSITION SWITCH IS DISENGAGED FROM TIMER MOTOR AND STAYS PERMANENTLY CLOSED
TIMER MOTOR
TIMER SWITCH
SAFETY INTERLOCK
PL-2 DIAL LIGHT UHF
PL-1 DIAL LIGHT VHF
P-1
S-1
SW-1 (23 SETS ONLY) ON VOLUME CONTROL (NOT USED ON CLOCK TIMER MODELS)
120 VOLTS AC ONLY 60 CPS

V-9 AGC AMP & NOISE INVERTER 12AZ7 OR 12AZ7A
N-1
N-2
N-3
V-10 HOR. OSC. & CONTROL 6GH8 OR 6GM8A
SYNC. SEPARATOR V-1B 6GH8 OR 6GM8A
PHASE COMPARATOR X-1
L-11 HORIZONTAL HOLD
PICTURE OPTIMIZER
NOISE LOK
VERT. OSC V-7B 6AW8A, 6GN8
VERTICAL HOLD
VERT. LINEARITY
VERT OUTPUT V-14 6EM5
VERTICAL SIZE
VERTICAL DRIVE
30 CPS
7875 CPS

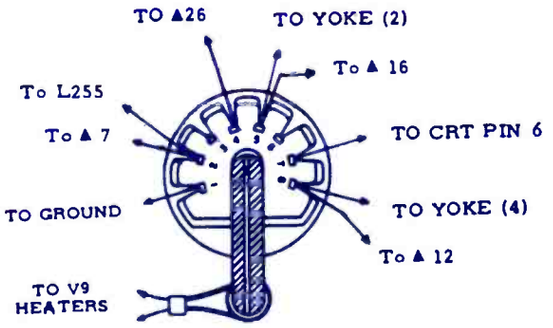
≠ CERAMIC OR MICA CAPACITORS, CAPACITY IN PICOFARADS (pF)
≠ TUBULAR CAPACITORS, CAPACITY IN MICROFARADS (MF)
RESISTORS IN OHMS (K = 1000) AND ½ WATT UNLESS OTHERWISE SPECIFIED
ALL CERAMICS AND MICAS 500V, ALL TUBULARS 400V UNLESS NOTED
T INDICATES TOP CORE B INDICATES BOTTOM CORE IN DOUBLE TUNED TRANSFORMERS
ARROWS AT CONTROLS INDICATE CLOCKWISE ROTATION

GENERAL ELECTRIC
TV Chassis DD

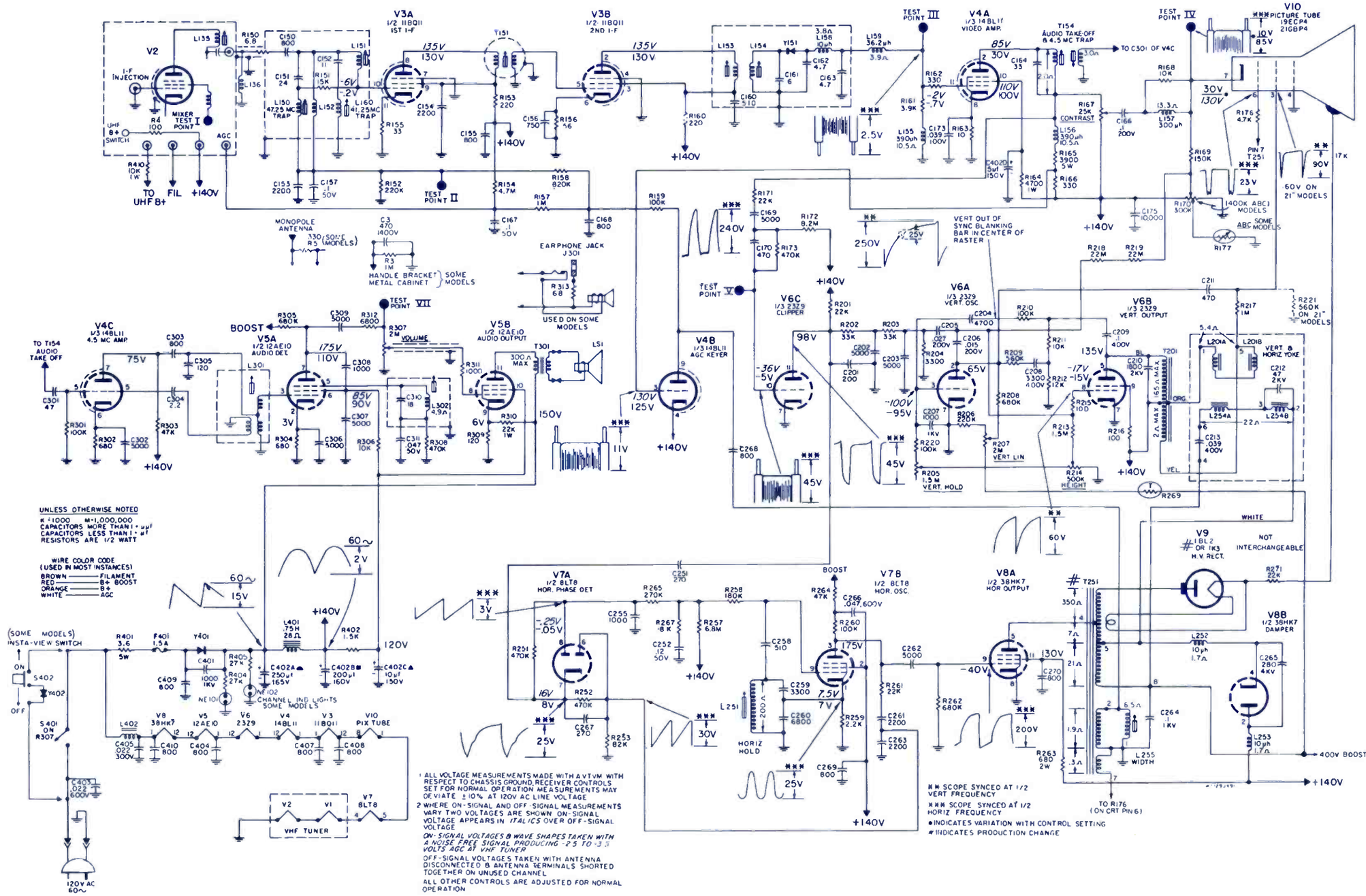
ELECTRONIC TECHNICIAN TEKFAX



YOKE WIRING

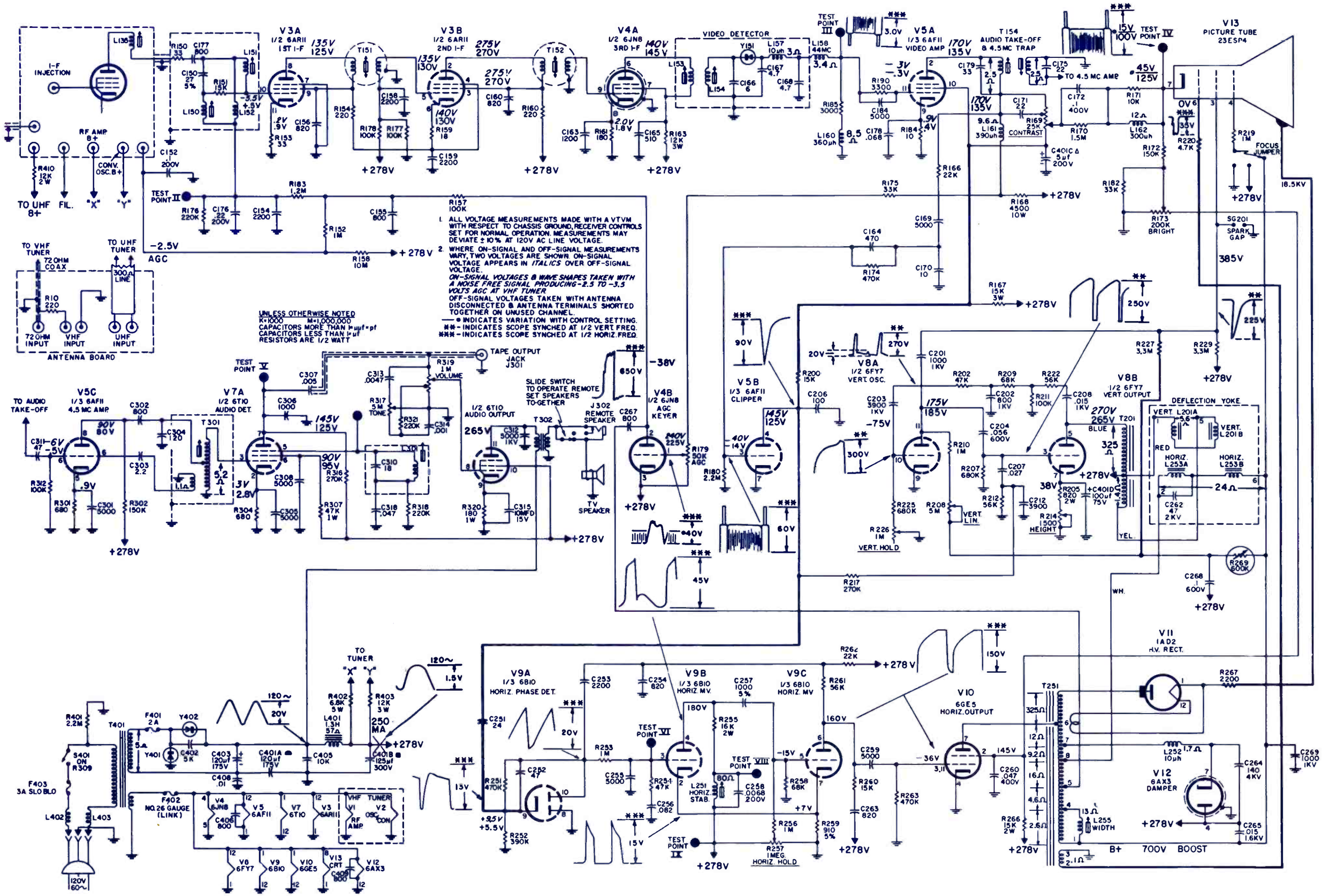


T251 WIRING



SYMBOL DESCRIPTION	GENERAL ELECTRIC PART NO.
R164 — 4.7K 1w	
R165 — 3.9K 5w	
R263 — 680Ω 2w	
R310 — 22K 1w	
R410 — 10K 1w	
R269 — 125K 25% 25°C thermistor	ET14X197
R401 — 3.6Ω 10% 7w WW	ET14X183
R177 — light dependent resistor 225Ω to 9K 30%	ET41X39
R207 — 2M 30% vert lin	ET49X499
R214 — 500K 20% vert size	ET49X500
R167 — 25K contrast	SEE
R170 — 300K brightness (400K ABC) Models	MODEL
R205 — 1.5M vert hold	SHEET
R307/S401 — 2M volume w/oc switch	
C402A — 250µf +100/—10% 200v	
C4028 — 200µf +100/—10% 200v	ET31X231
C402C — 10µf +100/—10% 200v	
C402D — 10µf +100/—10% 200v	
C3 — 470pf GMV 1400v	ET22X151
C151 — 24pf 10% 500v NPO	ET18X123
C152 — 11pf 10% 500v N3300	ET18X597
C155 — 800pf 20% 500v SS HiK	ET22X80
C156 — 750pf 10% 500v SSHiK	ET22X174
C160 — 510pf 10% 500v SSHiK	ET22X145
C164 — 33pf 20% 500v NPO	ET18X186
C175 — .01µf +150-0% 450v semi HiK	ET22X22
C201 — 200pf 10% 500v SSHiK	ET22X209
C207 — 1000pf 20% 1kv SSHiK	ET22X188
C210 — 1800pf 20% 2kv SSHiK	ET22X161
C211 — 470pf 20% 500v NPD	ET22X90
C212 — 47pf 10% 2kv N2200	ET18X459
C258 — 510pf 5% 500v char D	ET19X86
C260 — 6800pf 10% 100v mylar D.D.	ET25X59
C265 — 280pf 10% 4kv N1500	ET18X374
C267 — 270pf 10% 500v N750	ET18X598
C303 — 800pf 10% 500v SSHiK	ET22X80
C304 — 2.2pf 5% 500v comp	ET21X12
C305 — 120pf 10% 500v N2200	ET18X544
C306 — 5000pf GMV 500v semi HiK	ET22X67
C310 — 18pf 10% 500v N470	ET18X399
C401 — 1000pf GMV 2kv SSHiK	ET22X101
L136 — coil converter plate choke	ET36X747
L150 — coil 47.25MHz link assem. w/core	ET36X647
L151 — coil 1st IF grid w/core	ET36X824
L152 — coil IF link shunt	ET36X725
L153 — coil video det primary w/core	ET36X825
L154 — coil video det sec w/core	ET36X587
L155 — coil choke 390µh 7% single pi	ET36X264
L156 — coil choke 390µh 7% single pi	ET36X264
L157 — coil choke 300µh 7% single pi	ET36X718
L158 — coil choke 10µh	ET36X420
L159 — coil choke 36.2µh 44MHz	ET36X583
L160 — coil 41.25MHz link trap assy	ET36X823
L201,L254 — yoke toroidal deflection less centering ring retainer and spacer with magnets	ET76X39
L251 — coil horiz osc	ET35X51
L252,L253 — coil choke 10µh 10%	ET36X105
L255 — coil width control	ET36X774
L301 — coil 4.5MHz interstage w/core	ET36X778
L302 — coil quad w/core	ET36X732
L401 — reactor-B+ filter choke	ET63X65
L402 — coil choke filament	ET36X833
T151 — xformer 1st IF w/core	ET61X162
T154 — xformer sound take off 4.5MHz trap with core	ET36X854
T201 — xformer vert output	ET64X106
T251 — coil horiz output xformer w/cap and lead assy	ET77X104
T251 — coil horiz output xformer w/cap and lead assy	ET77X95
T301 — xformer audio output	ET64X105
fuse 1.5 amp 250v fast blaw F401	ET10X42
UHF tuner miniature continuous interchangeable w/ET85X57	ET85X54
UHF tuner miniature continuous interchangeable w/ET85X54	ET85X57
VHF tuner 13 position triode	ET86X277

GENERAL ELECTRIC
TV Chassis ETV



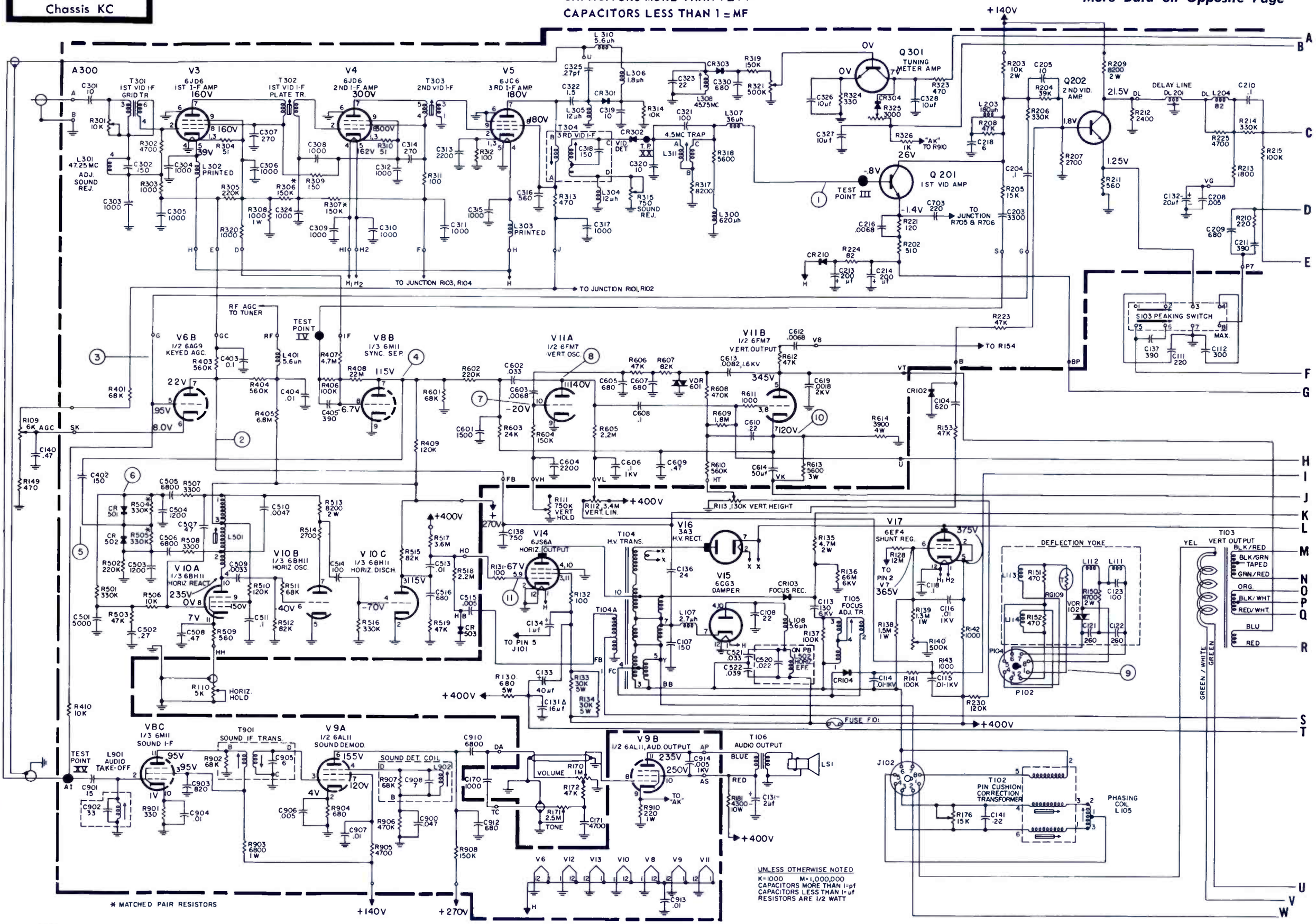
GENERAL ELECTRIC
Color TV
Chassis KC

ELECTRONIC TECHNICIAN **TEKFAX**

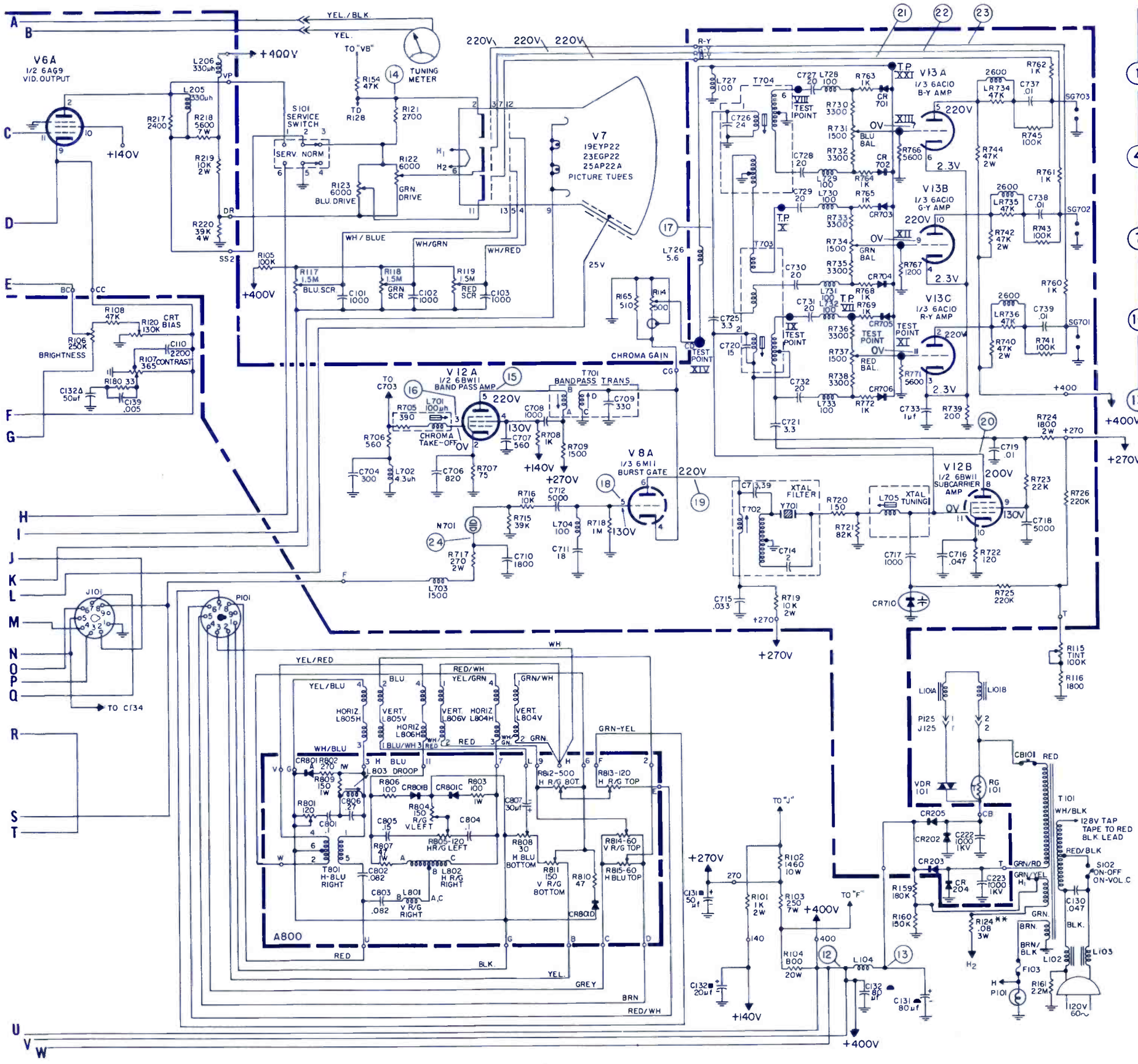
RESISTANCE VALUES IN OHMS
K=1000 MEG=1,000,000
UNLESS OTHERWISE NOTED
CAPACITORS MORE THAN 1 = PF
CAPACITORS LESS THAN 1 = MF

ALL VOLTAGES MEASURED WITH A VTVM AND NO SIGNAL INPUT WITH LINE VOLTAGE AT 120VAC, VOLTAGES SHOWN MAY DEVIATE ± 20%
SIGNIFIES PRODUCTION CHANGES

More Data on Opposite Page

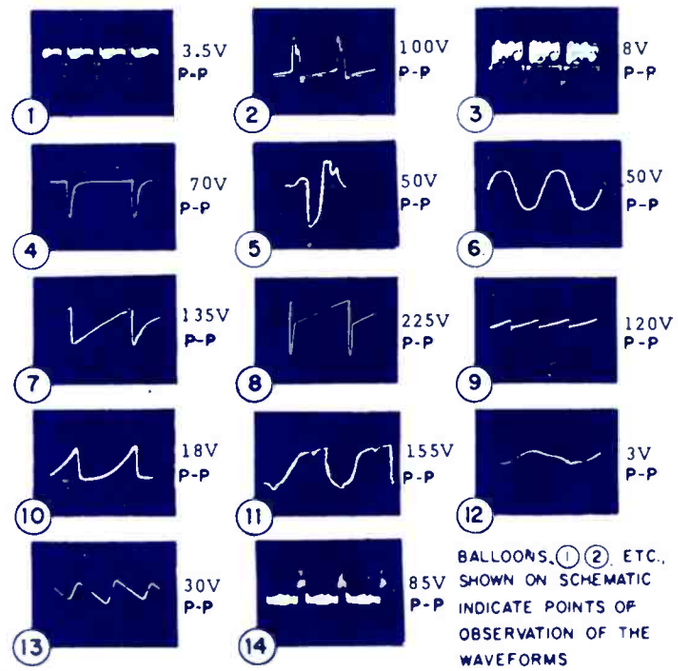


More Data on Opposite Page



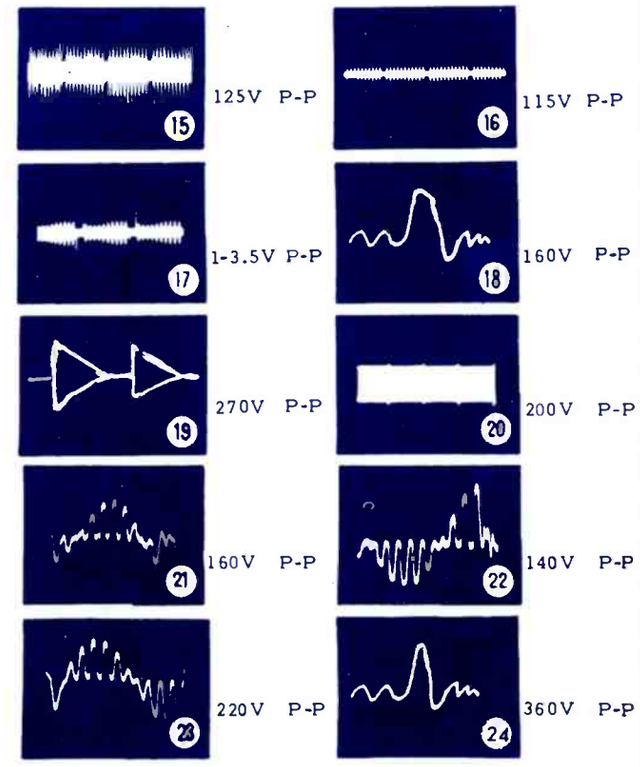
MISCELLANEOUS WAVEFORMS

GENERAL ELECTRIC
Color TV Chassis KC



BALLOONS ① ② ETC., SHOWN ON SCHEMATIC INDICATE POINTS OF OBSERVATION OF THE WAVEFORMS

CHROMA WAVEFORMS



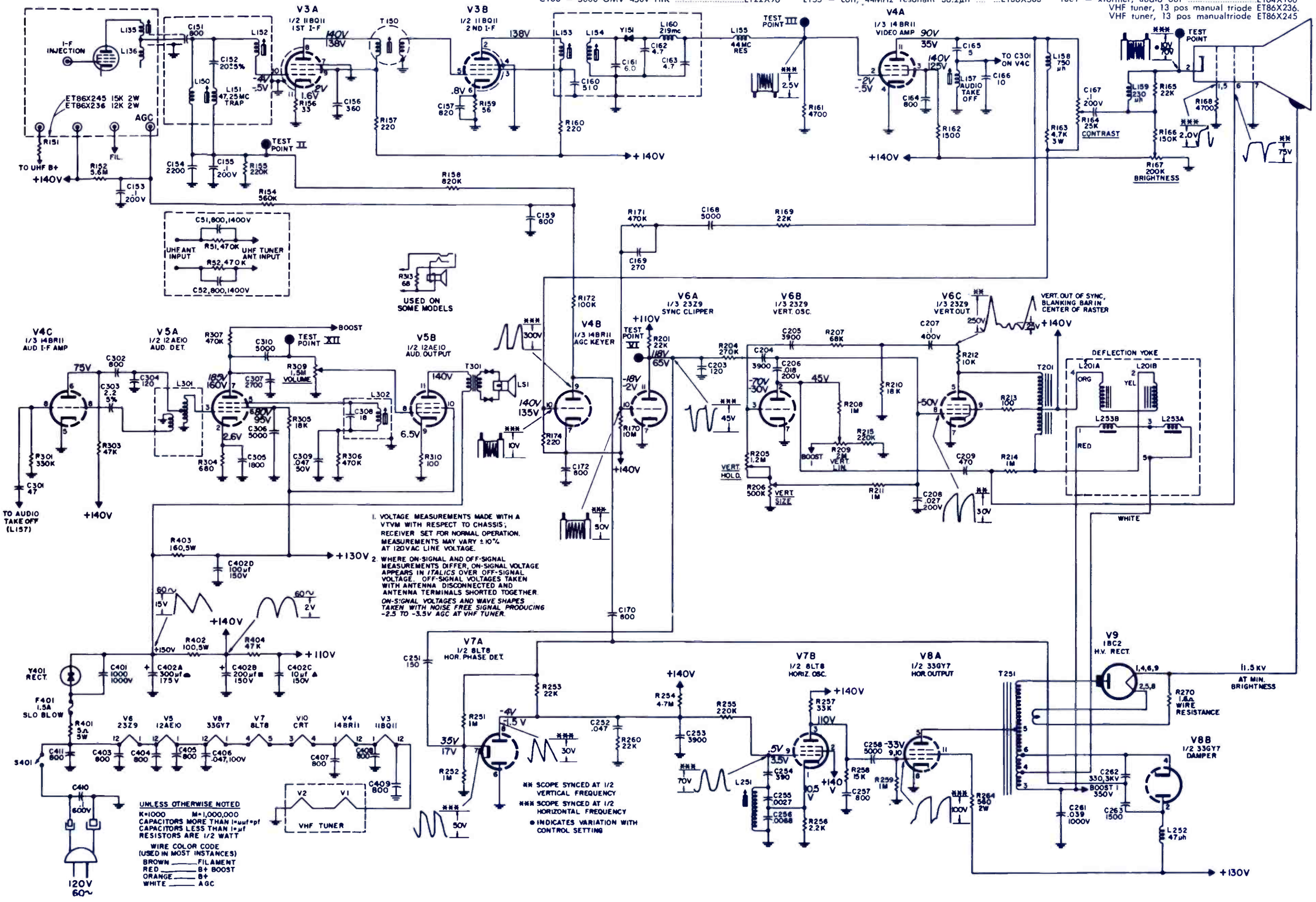
NOTE: CHROMA WAVEFORM TESTS PERFORMED WITH STRONG COLOR BAR PATTERN AND R115 AT 25% OF RANGE. USE LOW CAPACITY PROBE (2µµf.) AND WIDE BAND SCOPE TO OBSERVE WAVEFORMS AND VOLTAGES BELOW

GENERAL ELECTRIC
TV Chassis SC

SYMBOL	DESCRIPTION	GE PART NO.
R164	25K contrast	ET49X552
R205	1.2M vert hold	ET49X609
R151	12K 2w w/VHF Tuner ET86X236	ET14X104
R151	15K 2w w/VHF Tuner ET86X245	ET14X145
R163	4700 3w 10%	ET14X133
R270	1.6 (resistive lead HV filament)	ET65X36
R401	5Ω 5w WW 10%	common
R403	160 5w WW 10%	ET14X200
C402A	300µf 175v	ET31X254
C152	20 5% NPO	ET18X321
C161	6pf N750	ET18X424
C162, C163	4.7 20% NPO	ET18X501
C168	5000 GMV 450v HiK	ET22X96
C251	150 N750	ET18X499
C254	390 N750	ET18X576
C301	47 5% N750	ET18X253
C303	2.2 5% composition	ET2 X45
C304	120 N750	ET18X559
C308	18 N470	ET18X399
C310	5000 GMV 450v HiK	ET22X96
C401	1000 GMV 1400v HiK	ET22X58
L136	coil, choke 9.3µh	ET36X784
L150	coil, IF link choke	ET36X785
L151	coil, 47.25MHz trap	ET36X753
L152	coil, 1st IF grid	ET36X754
L153	coil, 2nd IF plate (primary)	ET36X757
L154	coil, video det (secondary)	ET36X587
L155	coil, 44MHz resonant 36.2µh	ET36X583
L157	coil, audio take-off	ET36X663
L158	coil, 750µh 7% single Pi	ET36X376
L159	coil, 227µh special	ET36X758
L160	coil, 219MHz 1.8µh	ET36X722
L201A, B	yoke, def 20MM to roidal	ET76X41
L253A, B		
L251	coil, horiz osc	ET35X51
L252	coil, 47µh damper choke	ET36X834
L301A, B	coil, audio interstage	ET36X786
L302	coil, quadrature	ET36X665
T150	xformer, IF	ET61X163
T201	xformer, vert out	ET64X111
T251	xformer, horiz out w/gap plate cap & lead	ET77X98
T301	xformer, audio out	ET64X100

VHF tuner, 13 pos manual triode ET86X236.
VHF tuner, 13 pos manualtriode ET86X245

V10
12CDP4/16CQP4
12BMP4/16CFP4
PICTURE TUBE



1. VOLTAGE MEASUREMENTS MADE WITH A VTVM WITH RESPECT TO CHASSIS; RECEIVER SET FOR NORMAL OPERATION. MEASUREMENTS MAY VARY ±10% AT 120VAC 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 NOISE FREE SIGNAL PRODUCING -2.5 TO -3.5V AGC AT VHF TUNER.

** SCOPE SYNCED AT 1/2 VERTICAL FREQUENCY
*** SCOPE SYNCED AT 1/2 HORIZONTAL FREQUENCY
● INDICATES VARIATION WITH CONTROL SETTING

UNLESS OTHERWISE NOTED
K=1000 M=1,000,000
CAPACITORS MORE THAN 1=uuf=pf
CAPACITORS LESS THAN 1=µf
RESISTORS ARE 1/2 WATT

WIRE COLOR CODE (USED IN MOST INSTANCES)
BROWN ——— FILAMENT
RED ——— B+ BOOST
ORANGE ——— B+
WHITE ——— AGC

TRANSISTOR BASE DIAGRAM

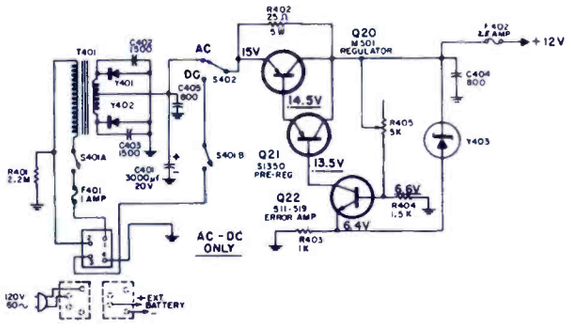
INFORMATION PRINTED ON COMPONENT SIDE OF CIRCUIT BOARD
▶ ARROW POINTS TO BASE CONNECTION OF TRANSISTOR
+ INDICATES POSITIVE ELECTROLYTIC CAPACITOR CONNECTION

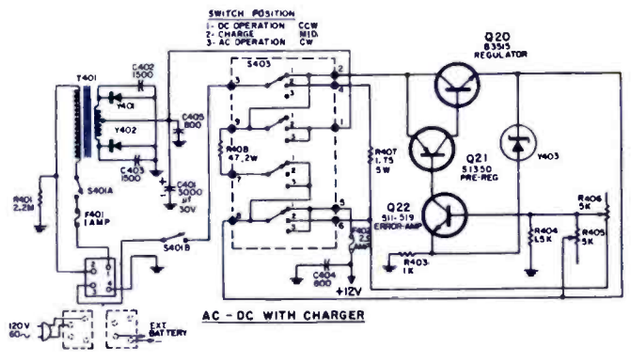
SYMBOL	DESCRIPTION	GE PART NO.
R145	5.1K 5%	
R147	12K 5%	
R215	4.3Ω 5%	
R258	360Ω 5%	
R408	47Ω 2w	
R209	thermistor 3K 25% at 25°C ¼w	ET14X213
R216	varistor 17v 25% 1ma	ET14X212
R402	25Ω 10% 5w WW	common
R407	1.75Ω 10% 5w WW control triplet	ET14X211 ET49X626
R125	contrast 25K 30%	
R127	brightness 200K 30%	
R313	volume on-off 1.5M	
S401	30% w/ac rotary switch	
R133	RF AGC 2.5K 20%	ET49X628
R140	AGC 1K 30% control triplet	ET49X632 ET49X629
R208	vert hold 400Ω 30%	
R211	lin 50Ω 30%	
R214	height 500Ω 30%	
R405	regulator 5K 30%	ET49X627
R406	charger 5K 30%	ET49X627
C101, C102	1000pf 500v GMV HiK	ET22X76
C108	10pf 10% 500v NPO cer	ET18X226
C109	800pf 20% 500v SSHiK cer	ET22X80
C115	1000pf 10% 500v SSHiK cer	ET22X117
C116	1.2pf 5% 500v comp	ET21X22
C117	1000pf 10% 500v SSHiK cer	ET22X117
C122	1000pf 10% 500v SSHiK cer	ET22X117
C125	10pf 5% 500v NPO cer	ET18X226
C127	220pf 10% 500v N750	ET18X539
C129	2700pf 10% 500v St HiK cer	ET22X193
C140	1000pf GMV 500v HiK cer	ET22X76
C201	50,000pf +80 —20% 50v HiK	ET22X191
C258	47pf 5% 500v N750	ET18X253
C266	3μf 20% 50v paper metalized	ET25X68
C307	240pf 10% 500v sil mica	ET19X76
C128	30μf +100 —10% 6v axial ld min	ET31X243
C131	10μf +30 —10% 15v stand-up min	ET31X241
C132, 134	10μf +100 —10% 6v axial ld min	ET31X238
C135	200μf +100 —10% 15v stand-up min	ET31X263
C142	1μf +100 —10% 25v axial ld min	ET31X267
C203	5μ +30 —10% 15v stand-up min	ET31X240
C206, C207	300μf +50 —30% 8v stand-up min	ET31X246
C208	5μf +30 —10% 50v stand-up min	ET31X260
C210	300μf +50 —10% 8v stand-up min	ET31X246
C253	5μf +30 —10% 15v stand-up min	ET31X240
C259	150μf +100 +10% 12v	ET31V273
C262	30μf +150 —10% 150v stand-up min	ET31X276
C263	1000μf +100 —10% 15v	ET31X274
C265	30μf +150 —10% 150v stand-up min	ET31X276
C302	200μf +100 —10% 15v stand-up min	ET31X263
C309, C310	10μf +100 —10% 6v axial ld min	ET31X238
C311	50μf +100 —10% 6v axial ld min	ET31X262
C312, C313	200μf +100 —10% 15v stand-up min	ET31X263
C401	3000μf +100 —10% 30v	ET31X275
L102	coil 41.25MHz IF trap	ET36X839
L103	coil IF link	ET36X839
L104	coil 47.25MHz IF trap	ET36X842
L107	coil choke 200μh 7% single pi	ET36X645
L201	coil choke .65μh 12.5Ω dc resistance vert inductance	ET63X68
L202, L251	coil deflection yoke vert and horiz	ET76X45
L252	coil horiz osc	ET35X54
L253	coil choke 1000μh 7%	ET36X843
L254	coil choke 2000μh 7%	ET36X844
T101, T102	xformer IF 1st & 2nd	ET61X178
T103	xformer video det	ET56X59
T104	xformer 4.5MHz trap and sound take-off	ET61X160
T252	xformer horiz output	ET77X97
T300	xformer 4.5MHz audio interstage	ET51X32
T301	xformer ratio det	ET56X62
T401	xformer power	ET88X99
	bulb neon NE83/5AH NE2	ET41X6
	speaker 2½ in. 16Ω voice coil imp	ET95X54
	switch rotary ac dc single pole two position S402	ET39X33
	switch rotary ac dc charge four pole three position S403	ET39X34
Y251	diode germ horiz phase det	ET16X1
Y253	diode horiz damper	ET57X39
Y255	diode silicon boost rect	ET57X35
Y303	diode germ 4.5MHz limiter	ET16X1

TC CHASSIS REPLACEMENT PARTS LIST (CONT'D)

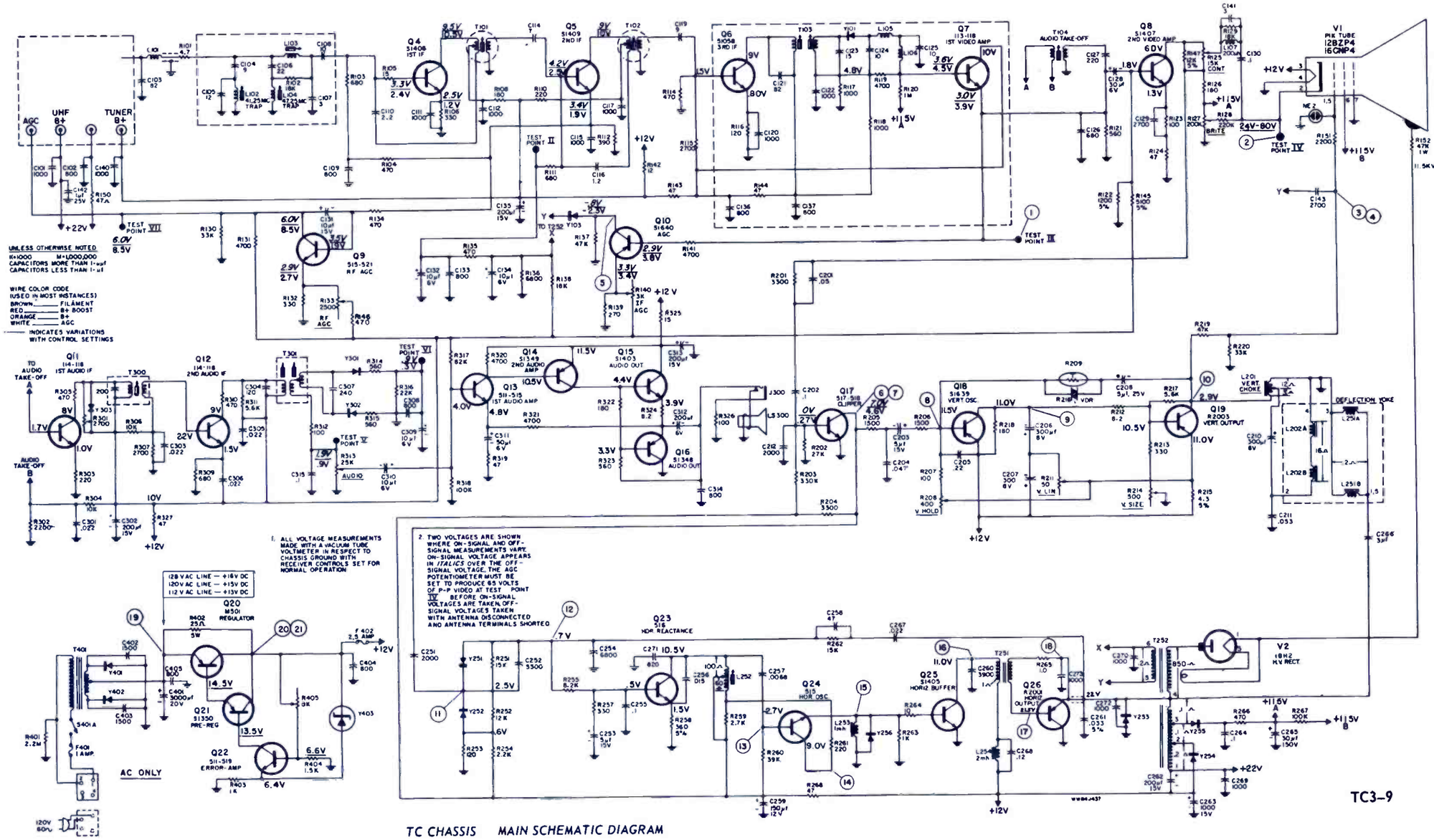
TRANSISTORS		
CAT. NO.	SYMBOL	DESCRIPTION
ET15X21	Q4	NPN—Silicon, First IF Amplifier
ET15X21	Q5	NPN—Silicon, Second IF Amplifier
ET15X9	Q6	NPN—Silicon, Third IF Amplifier
ET15X23	Q7	NPN—Silicon, 1st Video Amplifier
ET15X34	Q8	NPN—Silicon, 2nd Video Amplifier
ET15X10	Q9	NPN—Silicon, RF AGC
ET15X36	Q10	PNP—Silicon, AGC Keyer
ET15X23	Q11	NPN—Silicon, 1st Audio IF Amplifier
ET15X23	Q12	NPN—Silicon, 2nd Audio IF Amplifier
ET15X37	Q13	NPN—Silicon, 1st Audio Amplifier
ET15X38	Q14	PNP—Silicon, 2nd Audio Amplifier
ET15X20	Q15	NPN—Silicon, Audio Output
ET15X33	Q16	PNP—Silicon, Audio Output
ET15X42	Q17	NPN—Silicon, Sync Clipper
ET15X39	Q18	PNP—Silicon, Vertical Oscillator
† ET15X40	Q19	PNP—Germanium, Vertical Output
† ET15X43	Q20	PNP—Germanium, Series Regulator
ET15X44	Q20	NPN—Silicon, Series Regulator (Charger Models)
ET15X33	Q21	PNP—Silicon, Pre-Regulator
ET15X11	Q22	NPN—Silicon, Error Amplifier
ET15X45	Q23	NPN—Silicon, Horizontal Reactance
ET15X41	Q24	NPN—Silicon, Horizontal Oscillator
ET15X20	Q25	NPN—Silicon, Horizontal Buffer
† ET15X26	Q26	PNP—Horizontal Output

† When replacing transistor be sure to apply a coat of silicone grease (ET90X23) to the bottom side of the replacement unit.





TC CHASSIS



TC CHASSIS MAIN SCHEMATIC DIAGRAM

TC3-9

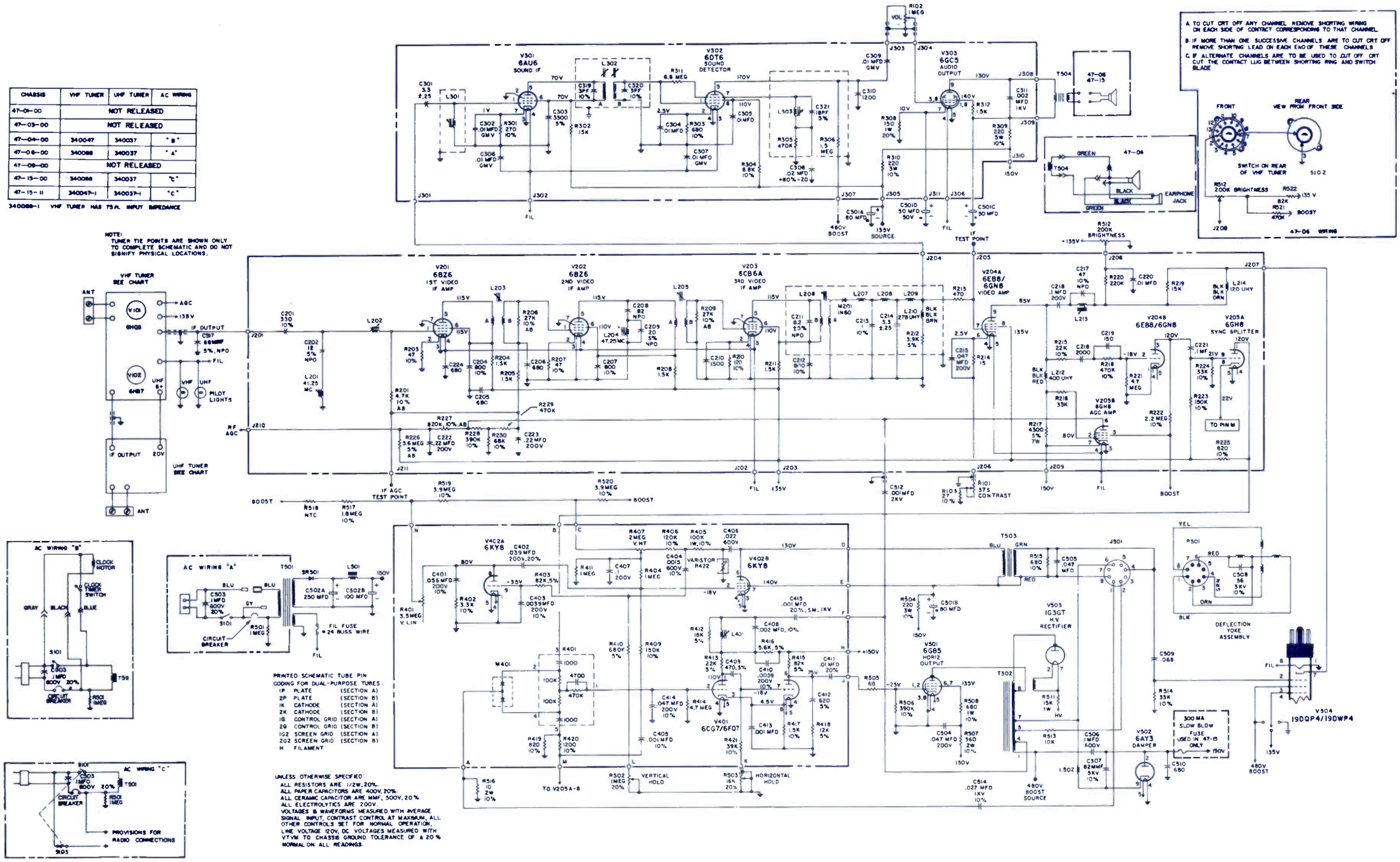
MAGNAVOX
TV Chassis 47
Series

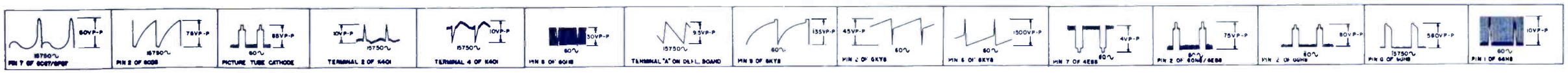
ELECTRONIC TECHNICIAN TEKFAX

SYMBOL	DESCRIPTION	MAGNAVOX PART NO.
L201	41.25MHz trap	360843-1
L202	video IF input coil	360848-2
L202	video IF input coil (47-05, 12, & 14)	360848-1
L203	1st video IF coil	360849-1
L204	47.25MHz trap	360842-1
L205	2nd video IF coil	360849-2
L206	3rd video IF coil	360849-3
L207	90MHz coil	360852-2
L208	177MHz coil	360852-3
L209	43MHz coil	360852-1
L210	278µh peaking coil	360853-1
L211	43MHz coil	360851-1
L212	400µh peaking coil	360853-2
L213	4.5MHz trap	360851-1
L214	120µh peaking coil	360853-3
L215	39.75MHz trap	360850-1
L216	47.25MHz trap	360842-1
L301	4.5MHz snd take-off coil	360845-1
L302	4.5MHz coil	360846-1
L304	RF choke	360968-1
L401	horiz osc coil	360854-1
L501	filter choke	320125-1
L502	RF choke	360783-1
T501	power xformer	300210-1
T502	HV xformer	360998-1
T504	audio xformer	320309-2
C208	cer 82pf 5% (NPO)	250088-184
C209	cer 20pf 5% (NPO)	250373-2005
C214	cer 3.3pf ±.25pf (NPO)	250373-3397
C219	mica 150pf, 10%	
C223	elect 2µf 50v	270082-701
C301	cer 3.3pf ±.1pf (NPO)	250373-3397
C303	cer 3300pf 5%	
C311	cer 2000pf 1kv	
C410	mylar 3900pf 10%	250369-1
C415	silver mica 1000pf	250364-554
C501	elect 80/80/50µ 200v, 50µf 50v elect 250/100µf, 200v	270021-104
C502	elect 250/100/5µf 200v	270021-108
C507	cer 82pf 10% 5kv	250475-30
C514	paper .027µf 10% 1kv (special)	250290-13
C517	cer 68pf 5% (NPO)	250508-6805
C517	cer 47pf 5% (NPO)	250508-4705
R217	4.3K 5% 7w	240086-2
R422	voltage dependent resistor	230167-2
R504	220 5w (WW)	240080-57
R507	560 2w (WW)	240090-1
R516	10 2w	
R518	thermistor	230130-2
R528	light dependent resistor	230156-1
R529	30K 5%	
R102	1M off-on(vol 47-06, 08 & 13)	220126-78
R101	1M off-on-vol (47-15)	220126-94
R401	3.5M vert lin	220193-6
R407	2M height	220193-5
R502	1M vert hold	220146-63
R503	16K horiz hold	220146-55
R512	200K bright	220146-10
R522	400K LDR range adjust	220146-35
R523	2.5M focus	220146-18
R525	50K contrast	220146-60
M201	det diode (1N60)	530065-1
CB101	circuit breaker	180723-3

CHASSIS	VHF TUNER	UHF TUNER	AC WIRING
47-08-00	NOT RELEASED		
47-03-00	NOT RELEASED		
47-04-00	340047	340037	"B"
47-06-00	340088	340037	"A"
47-09-00	NOT RELEASED		
47-15-00	340088	340037	"C"
47-15-11	340047-1	340037-1	"C"

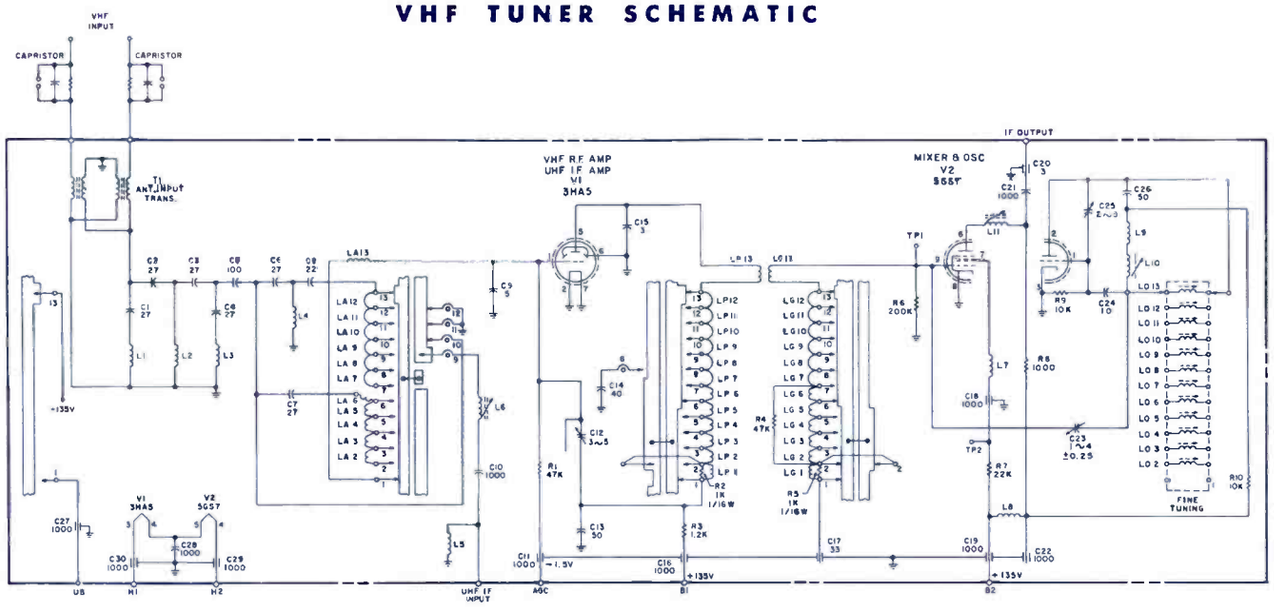
340088-1 VHF TUNER HAS 75Ω INPUT IMPEDANCE

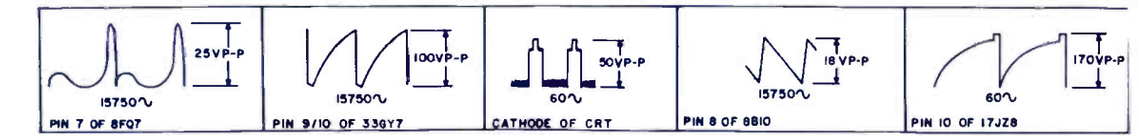


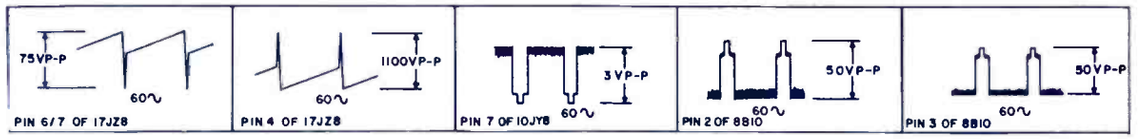


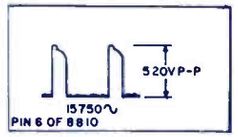
MAGNAVOX
TV Chassis
T923 Series

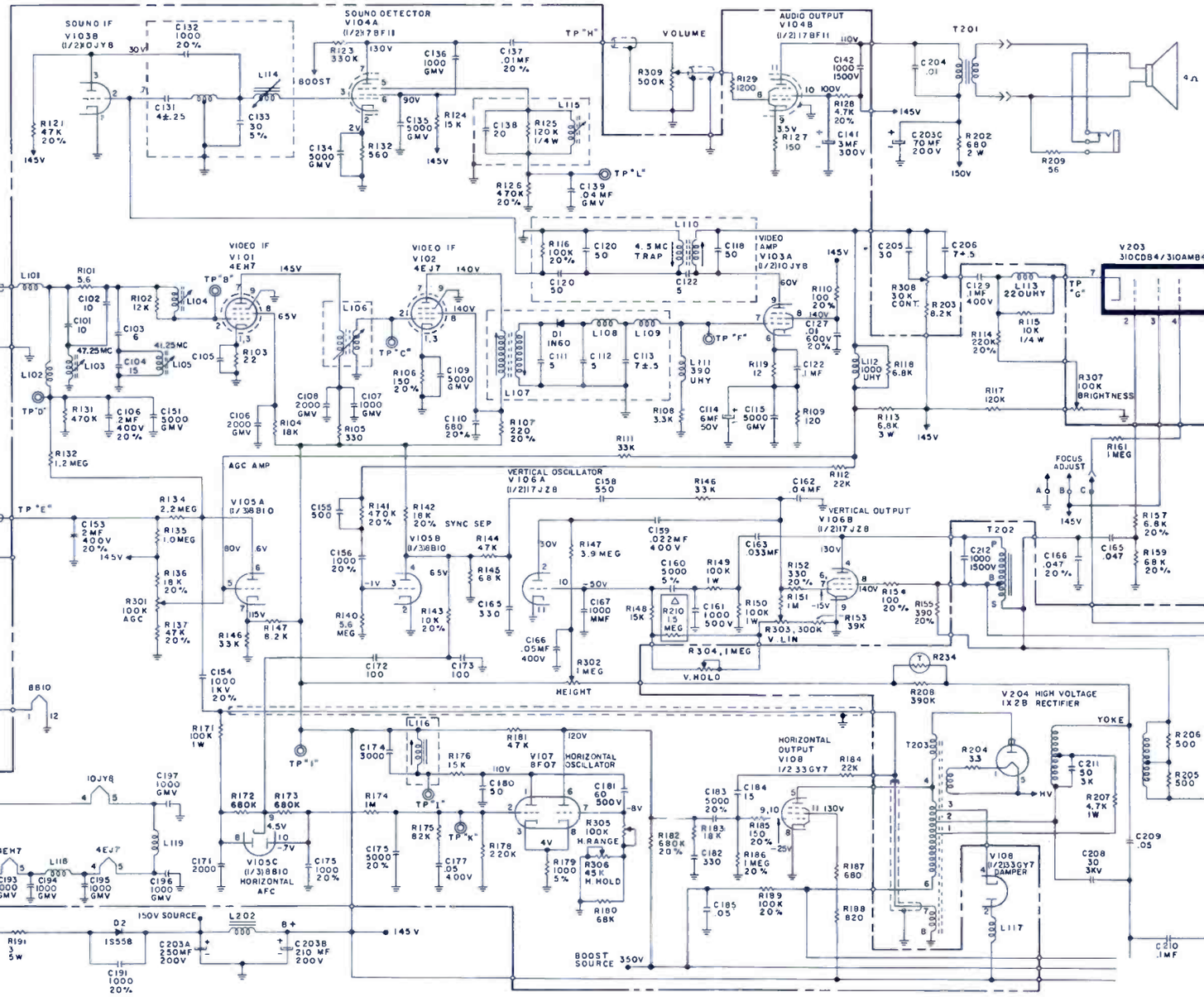
VHF TUNER SCHEMATIC

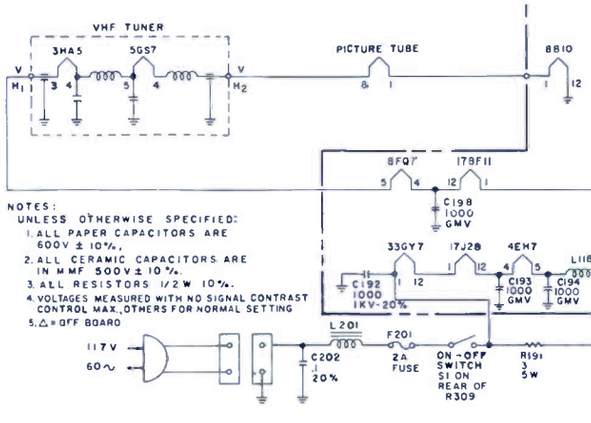








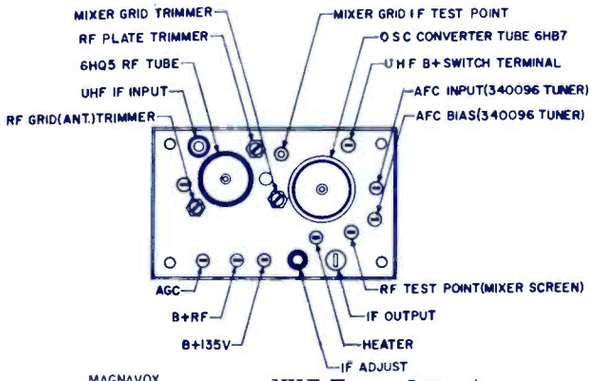




SYMBOL	DESCRIPTION	MAGNAVOX PART NO.
L101	video IF link coil	361049-24
L102	video IF AGC coil	361049-25
L103	47.25MHz trap	361049-23
L104	video IF input coil	361049-21
L105	41.25MHz trap	361049-22
L106	video IF xformer	361049-29
L107	video det xformer	361049-30
L109	tweet coil	361050-6
L110	4.5MHz snd take-off & trap	361049-26
L111	390μh peaking coil	361050-18
L112	1000μh peaking coil	361050-19
L113	220μh peaking coil	361050-17
L114	snd IF coil	361049-27
L115	quad coil	361049-28
L116	horiz osc coil	361123-2
L117	damper plate coil	361125-1
L118	heater RF choke	361124-1
L201	ac line choke	361126-1
L202	filter reactance coil	320143-1
T201	audio output xformer	320141-1
T202	vert output xformer	320142-1
T204	deflection yoke	361121-1
C101	cer 5pf 5%	250497-26
C114	elect 6μf 50v	270073-8
C131	cer 4pf 5%	250528-4097
C134	cer 5000pf	250505-5024
C160	paper .005μf 5% 600v	250532-3
C161	poly 1000pf 10%	250525-1023
C180	cer 50pf 10%	250528-5009
C181	mylar 1000pf 10% 600v	250201-1
C192	cer 1000pf 1.5kv	250175-27
C195	cer 1000pf	250505-1024
C203	elect 250/210/70μf 200v	270075-4
C211	cer 50pf 10% 3kv	250497-21
R101	5.6Ω 5%	230174-153
R134	2.2M	
R171	100K 1w	
R191	3Ω 5w	240076-39
R202	680Ω 2w	
R207	4.7K 1w	
R224	thermistor	230130-2
R301	100K AGC control	220191-3
R302	1M height	part of R301
R303	300K vert lin	part of R301
R304	1M vert hold	220192-5
R305	100K horiz range	220192-12
R306	45K horiz hold	part of R301
R307	100K bright	220192-6
R308	30K contrast	220192-4
R309	500K off on vol	220192-11
F201	2A-250v fuse	180843-1
D2	silicon rectifier	530082-2
	VHF tuner	340119-1
	UHF tuner	340121-1

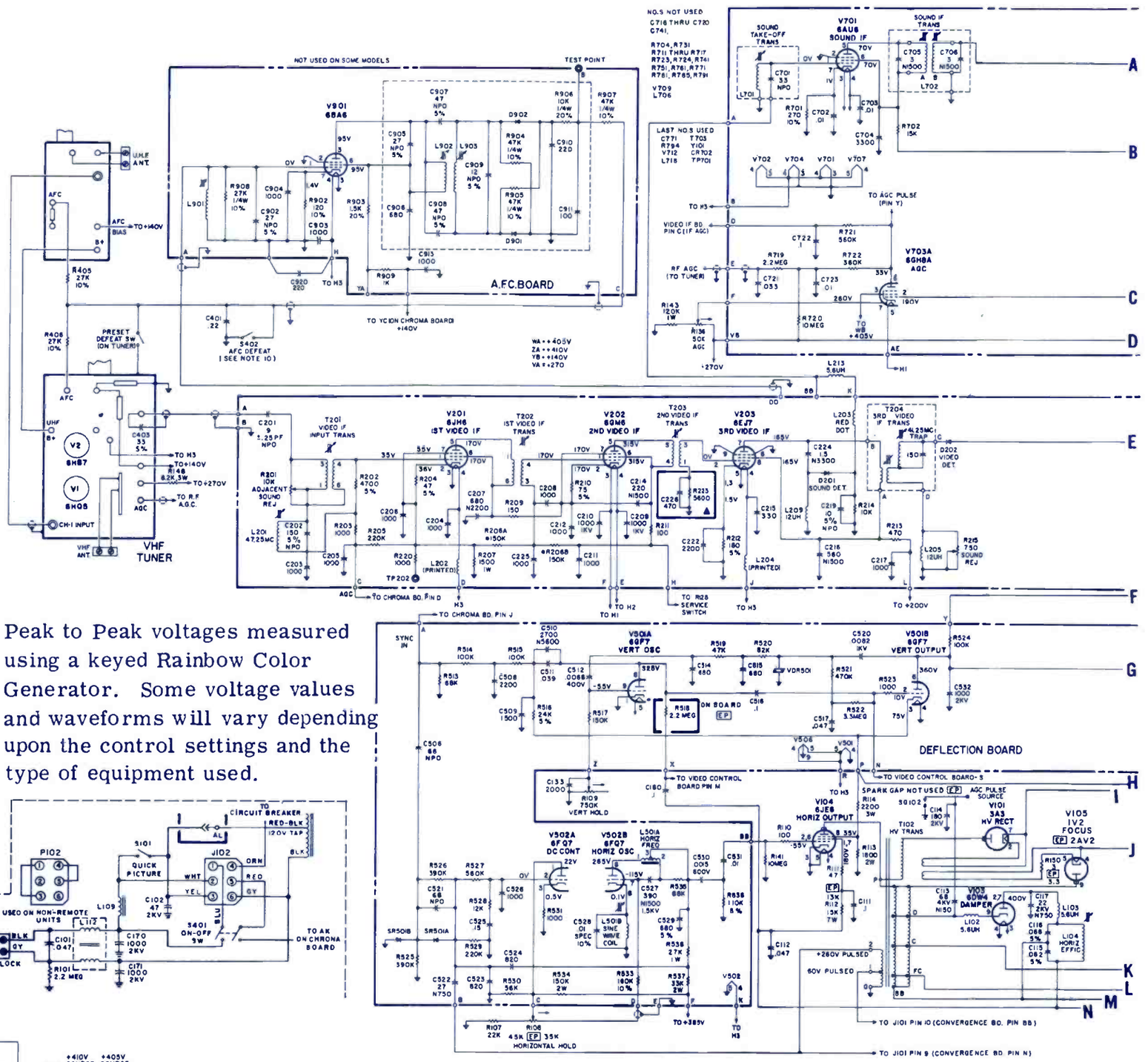
MAGNAVOX
Color TV Chassis
T911 Series

ELECTRONIC TECHNICIAN **TEKFAX**

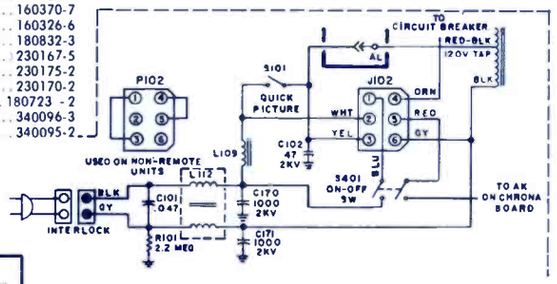


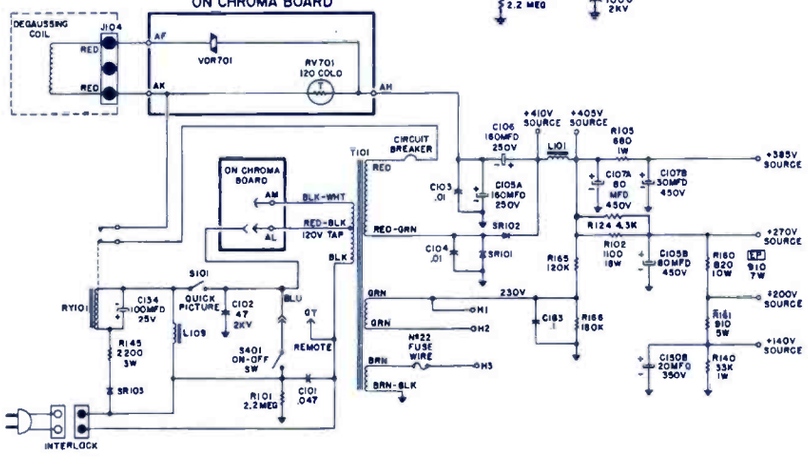
VHF Tuner Layout

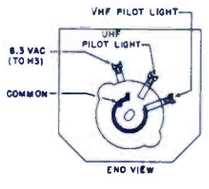
SYMBOL DESCRIPTION	MAGNAVOX PART NO.
T101 — power xformer	300238-1
T102 — H.V. xformer	361197-1
T103 — focus xformer	361240-3
T104 — vert output xformer	320317-2
T105 — audio output xformer	320130-3
T106 — pin cushion xformer	361134-3
T201 — video IF input xformer	360951-1
T202 — 1st video IF xformer	360951-6
T203 — 2nd video IF xformer	360951-5
T204 — 3rd video IF xformer & 41.25MHz trap	360952-2
T701 — bandpass xformer	361192-1
T702 — burst xformer	361094-1
T703 — 3.58MHz osc xformer	361198-1
L101 — reactance choke	320124-4
L102 — 5.6µh choke	360676-5
L104 — horiz efficiency coil	361022-3
L106 — 62µh peaking coil	361091-2
L109 — reactance choke (int audio version)	320232-3
L110 — 5.6µh choke	360676-7
L111 — pin cushioning phasing coil	361135-1
L112 — line filter	361250-1
L201 — 47.25MHz trap	360951-4
L203 — 177MHz tweet coil	360852-5
L206 — 4.5MHz trap	360953-2
L212 — 86MHz tweet coil	360852-4
L501 — horiz osc & sinc wave coil	360960-3
L601 — 145µh peaking coil	361091-3
L602 — 310µh peaking coil	361091-4
L701 — snd take-off coil	360845-2
L702 — snd IF coil	360846-3
L703 — quad coil	360847-2
L704 — RF choke	360968-1
L705 — 620µh peaking coil	360853-11
L707 — 150µh peaking coil	360853-5
L711 — 86MHz tweet coil	360852-4
L712 — reactance coil	360963-4
L717 — chroma take-off coil	360959-4
L801 — R/G Master amp coil	361092-1
L802 — R/G differential amp coil	361092-3
L803 — blue center coil	361092-1
L804 — horiz blue tilt coil	361188-1
L805 — blue master amp coil	361092-5
L901 — AFC input coil	361080-1
L902 — AFC discriminator (primary)	361080-2
L903 — AFC discriminator (secondary)	361080-5
deflection yoke	361290-302
C102 — ceramic 47pf 2000v	
C105 — elect 160µf 250v 80µf 450v	270071-6
C106 — elect 160µf 250v	270071-3
C107 — elect 80/30/50µf 450v	270071-7
C113 — ceramic 68pf 10% 4000v (N1500)	250475-24
C114 — ceramic 180pf 5% 2000v	
C117 — ceramic 22pf 1000v (N750)	250475-7
C119 — ceramic .01µf 1400v (w/spark gap)	250562-1
C130 — elect 20µf 450v 20/20µf 350v	270023-42
C130 — elect 20µf 450v 20µf 350v	270023-43
C201 — ceramic 9.1µf ±.25 pf (NPO)	250373-9197
C207 — ceramic 680pf 10% (N2200)	250236-56
C214 — ceramic 220pf 10% (N1500)	250236-59
C217 — ceramic 1000pf	
C510 — ceramic 2700pf 10% (N5600)	250236-64
C525 — polystyrene .15µf 75v	250555-37
C527 — ceramic 390pf 5% 1500v (N1500)	250236-63
C528 — paper .01µf 10% 400v (special)	250484-1
C529 — mica 680pf 5%	
C701 — ceramic 3.3pf ±.25pf (NPO)	250546-3397
C705 — ceramic 3pf 10% (N1500)	250529-3099
C735 — silver mica 270pf 5%	
C746 — ceramic 330pf 5% (N1500)	250529-3315
C907 — ceramic 47pf 5% (NPO)	250546-4705
R102 — 1100Ω 18 w (WW)	240088-4
R106 — 4300Ω 5w (glass)	230150-533
R112 — 15K 7w (glass)	230150-746
R113 — 1800Ω 2w (glass)	230160-65
R114 — 220Ω 3w (glass)	230150-326
R117 — 66M 20% (6kv breakdown)	230161-1
R124 — 4300Ω 5w (glass)	230150-533
R127 — 1000Ω 3w (glass)	230150-318
R129 — 1800Ω 3w (glass)	230150-324
R145 — 2200Ω 3w (glass)	230150-330
R161 — 910Ω 5w (glass)	230150-517
R162 — 18K 4w (glass)	230150-448
R617 — 5600Ω 4w	230150-436
R780 — 27K 2w (glass)	230160-79
R792 — 270Ω 3w (glass)	230150-304
R794 — 27K 2w (glass)	230160-79
R108 — 45K horiz hold (see note)	220146-69
R109 — 750K vert hold	220146-50
R120 — 500K HV adjust	220189-4
R126 — 10Ω 2w vert centering	220181-1
R131 — 1M color killer	220208-34
R133 — 600Ω contrast	220146-29
R134 — 3M tone	220146-26
R136 — 50K AGC	220208-33
R138 — 100Ω sharpness	220146-62
R164 — 2500Ω CRT bias	220181-11
R201 — 10K adj snd rejection	220182-1
R215 — 750Ω snd rejection	220166-4
R401 — 1M off-on-vol (911-02 only)	220135-12
R401 — 1M off-on-vol (all others)	220135-14
R402 — 500Ω color	220126-91
R404 — 250K bright (911-03-AA only)	220135-13
R404 — 250K bright (all others)	220126-82
C406 — 5.2 to 67pf hue	260189-4
R604 — 6000 green drive	220166-14
R605 — 6000 blue drive	220166-15
R611 — 1.5M blue screen	220166-17
R616 — 100K height	220166-20
R804 — 120Ω R/G master tilt (horiz)	220167-6
R812 — 150Ω R/G differential amp (vert)	220167-5
R813 — 30Ω R/G differential tilt (vert)	220167-4
CR101 — selenium rectifier	530097-3
SR101 — silicon rectifier	530088-2
D201 — germanium diode	530065-2
CR701A,B — matched silican diodes	170733-1
SR801 — silicon diode	530098-1
D902 — germanium diode	530105-1
S104 — chromatone switch	160370-7
RY101 — degaussing relay	160326-6
SG701 — spark gap	180832-3
VDR501 — varistor	230167-5
VDR701 — varistor	230175-2
RV701 — thermistor	230170-2
circuit breaker	180723 - 2
VHF tuner (AFC versions)	340096-3
VHF tuner (non AFC versions)	340095-2

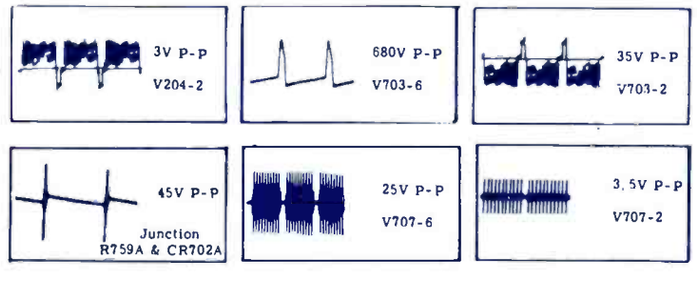


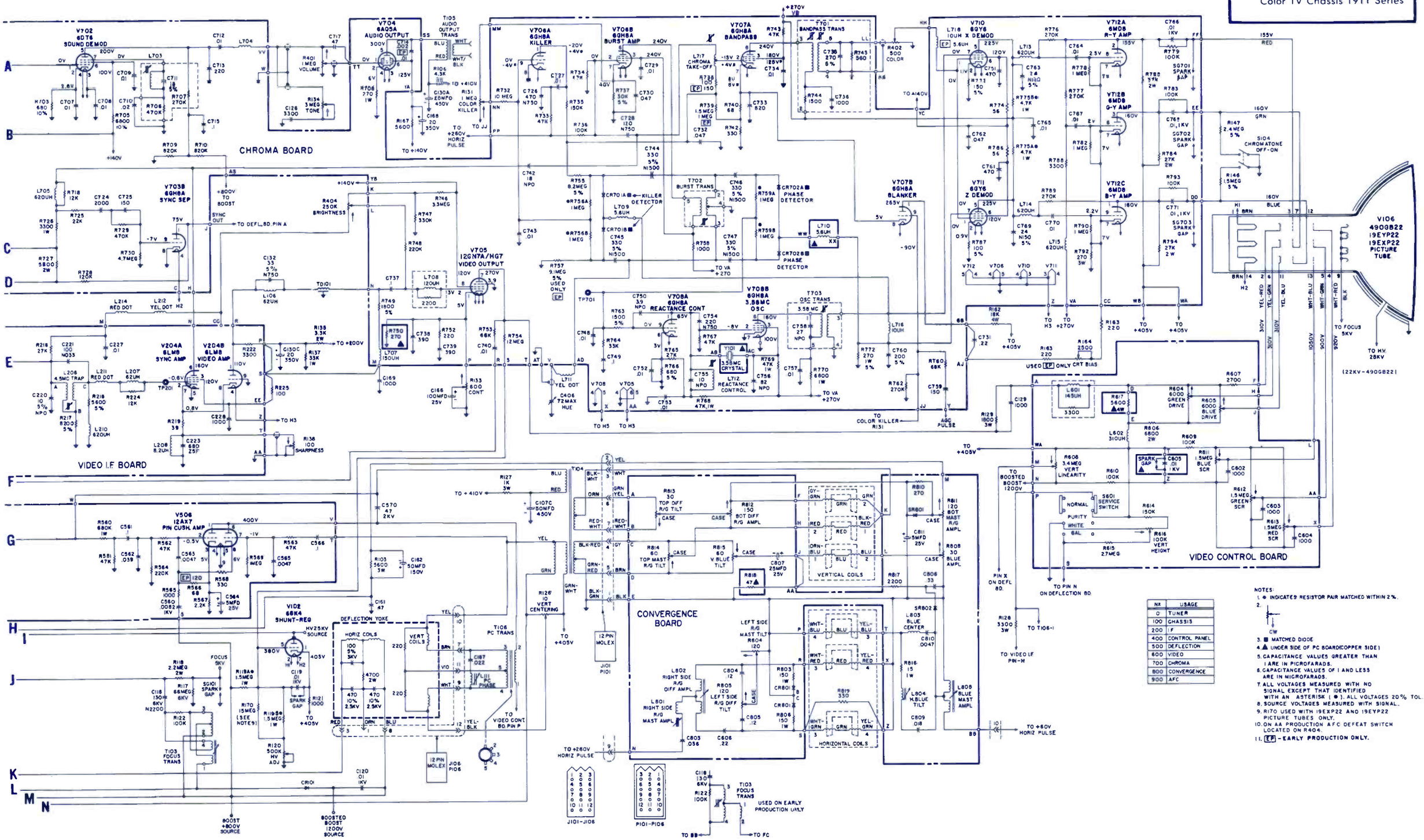
Peak to Peak voltages measured using a keyed Rainbow Color Generator. Some voltage values and waveforms will vary depending upon the control settings and the type of equipment used.





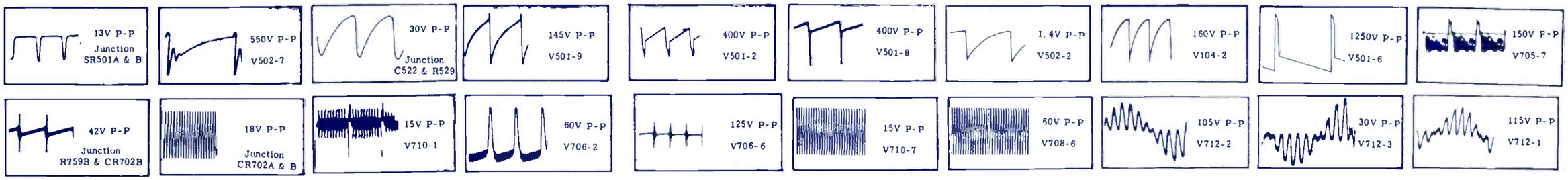






NO	USAGE
0	TUNER
100	CHASSIS
200	I.F
400	CONTROL PANEL
500	DEFLECTION
600	VIDEO
700	CHROMA
800	CONVERGENCE
900	AFC

NOTES:
1. ✱ INDICATES RESISTOR PAIR MATCHED WITHIN 2%.
2. CW
3. ■ MATCHED DIODE
4. ▲ UNDER SIDE OF PC BOARD(COPPER SIDE)
5. CAPACITANCE VALUES GREATER THAN 1 ARE IN MICROFARADS.
6. CAPACITANCE VALUES OF 1 AND LESS ARE IN MICROFARADS.
7. ALL VOLTAGES MEASURED WITH NO SIGNAL EXCEPT THAT IDENTIFIED WITH AN ASTERISK (✱). ALL VOLTAGES 20% TOL.
8. SOURCE VOLTAGES MEASURED WITH SIGNAL.
9. R170 USED WITH 19EXP22 AND 19EYP22 PICTURE TUBES ONLY.
10. ON AA PRODUCTION AFC DEFEAT SWITCH LOCATED ON R404.
11. EP - EARLY PRODUCTION ONLY.



COLOR TELEVISION CHASSIS

SPECIFICATIONS

Power Source Rating

Frequency	60 cycles
Voltage	117 volts
Wattage	330 watts
Tuning Range	Channels 2-83
Antenna Input Impedance	Balanced 300 ohms

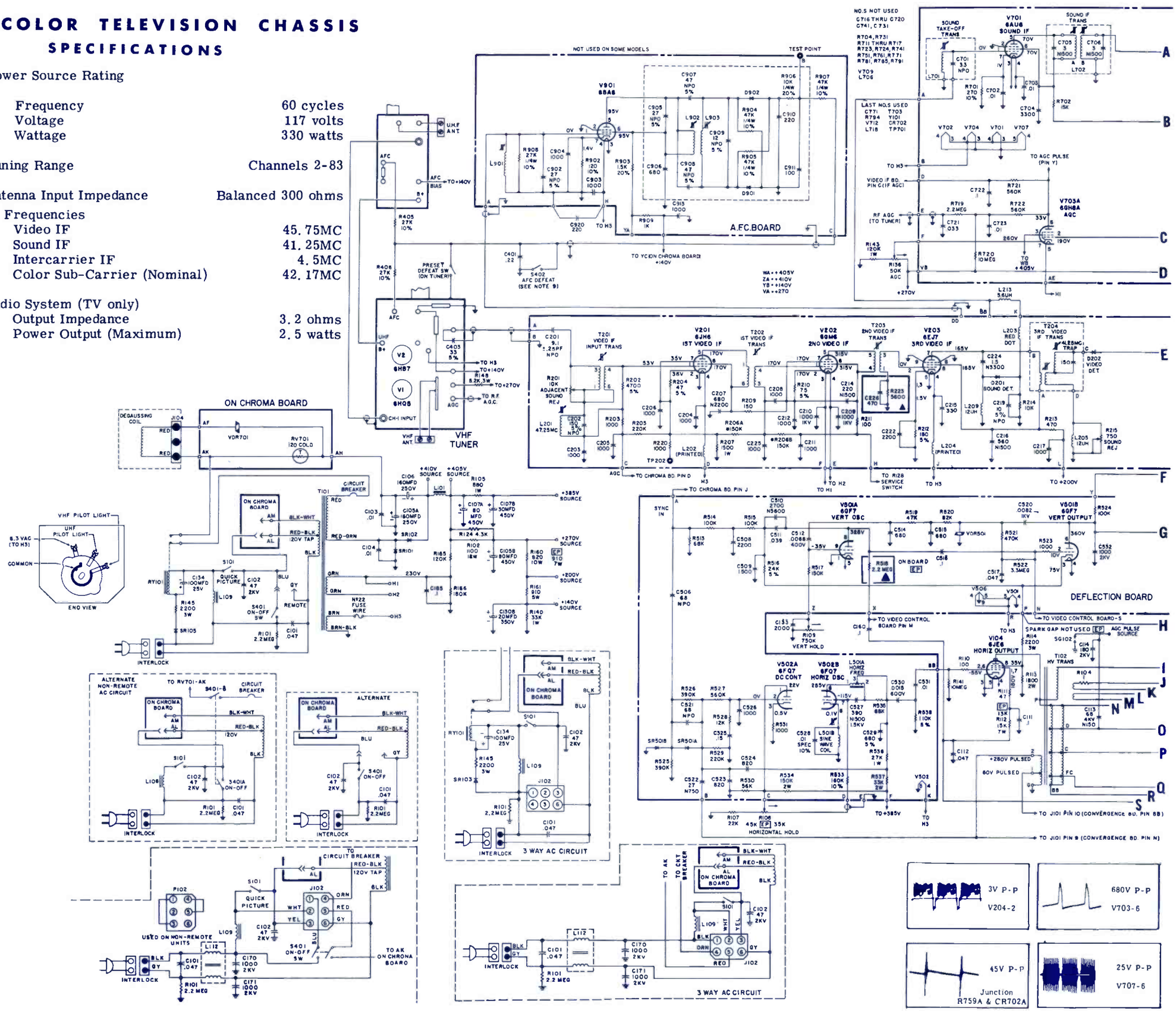
IF Frequencies

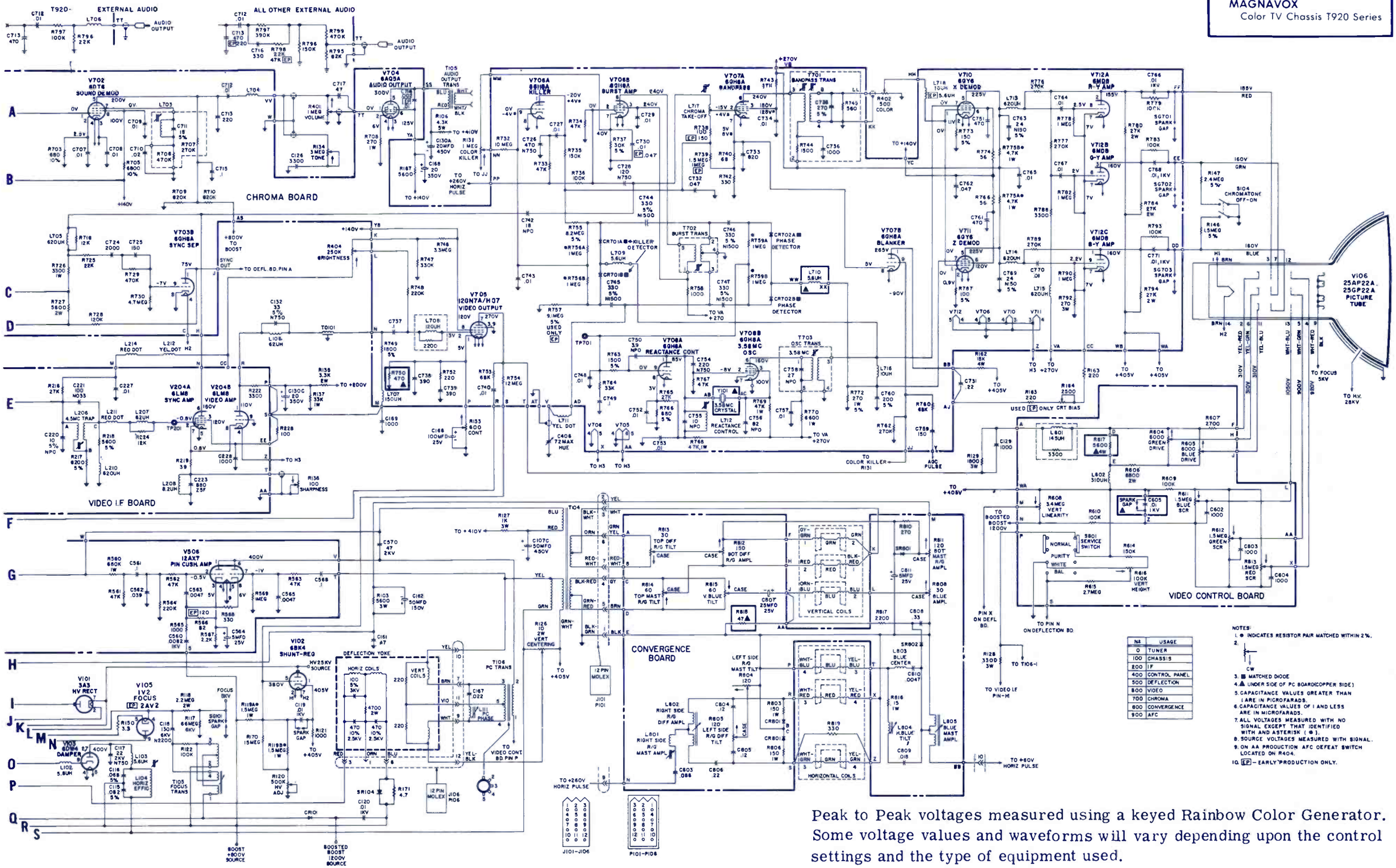
Video IF	45.75MC
Sound IF	41.25MC
Intercarrier IF	4.5MC
Color Sub-Carrier (Nominal)	42.17MC

Audio System (TV only)

Output Impedance	3.2 ohms
Power Output (Maximum)	2.5 watts

SYMBOL	DESCRIPTION	MAGNAVOX PART NO.
T101	power xformer	300238-1
T102	H.V. xformer	361197-1
T103	focus xformer	361240-3
T104	vert output xformer	320317-2
T105	audio output xformer	320130-3
T106	pin cushion xformer	361134-3
T201	video IF input xformer	360951-1
T202	1st video IF xformer	360951-6
T203	2nd video IF xformer	360951-5
T204	3rd video IF xformer & 41.25MHz trap	360952-2
T701	bandpass xformer	361192-1
T702	burst xformer	361094-2
T703	3.58MHz osc xformer	361198-1
L101	reactance choke	320124-4
L103	5.6µh choke	360676-5
L104	horiz efficiency coil	361022-3
L109	reactance choke (Int audio version)	320232-3
L110	5.6µh choke	360676-7
L111	pin cushioning phasing coil	361135-1
L112	line filter	361250-1
L203	177MHz tweet coil	360852-5
L206	4.5MHz trap	360953-2
L208	8.2µh coil	360677-11
L210	620µh peaking coil	361043-3
L501	horiz osc & sinc wave coil	360960-3
L701	snd take off coil	360845-2
L702	snd IF coil	360846-3
L703	quad coil	360847-2
L707	150µh peaking coil	360853-5
L713	620µh peaking coil	360853-11
L717	chroma take-off coil	360959-4
L802	R/G differential amplitude coil	361092-3
L804	horiz blue tilt coil	361188-1
L805	blue master amplitude coil	361092-5
	deflection yoke	361290-102
C105	elect 160µf 250v 80µf 450v	270071-6
C106	elect 160µf 250v	270071-3
C107	elect 80/30/50µf 450v	270071-7
C113	ceramic 68pf 10% 4000v (N1500)	250475-24
C118	ceramic 130pf 6000v (N2200)	250475-11
C119	ceramic .01µf 1400v (w/spark gap)	250562-1
C130	elect 20µf 450v 20/20µf 350v	270023-42
C130	elect 20µf 450v 20µf 350v	270023-43
C219	ceramic 10pf 5% (NPO)	250508-1005
C527	ceramic 390pf 5% T500v (N1500)	250236-63
C528	paper .01µf 10% 400v (special)	250484-1
C564	elect 5µf 25v	270082-603
C735	silver mica 270pf 5%	
C760	mica 200pf 5%	
C771	ceramic .01µf 1000v	
R102	1.1K 18w (WW)	240088-4
R106	4.3K 5w (glass)	230150-533
R112	15K 7w (glass)	230150-746
R113	1.8K 2w (glass)	230160-65
R114	220Ω 3w (glass)	230150-326
R117	66M 20% (6kv breakdown)	230161-1
R128	3.3K 3w (glass)	230150-330
R129	1.8K 3w (glass)	230150-324
R145	2.2K 3w (glass)	230150.330
R160	820Ω 10w (WW)	240082-71
R161	910Ω 5w (gloss)	230150-517
R162	18K 4w (gloss)	230150-448
R206A,B	150K (matched within 2%)	
R617	5.6K 4w	230150-436
R759A,B	1M (matched within 2%)	
R780	27K 2w (glass)	230160-79
R792	270Ω 3w (gloss)	230150-304
R794	27K 2w (glass)	230160-79
R108	45K horiz hold (see note)	220146-69
R109	750K vert hold	220146-50
R120	500K H.V. Adjust	220189-4
R126	10Ω 2w vert centering	220181-1
R131	1M color killer	220208-34
R133	600Ω contrast	220146-29
R134	3M tone	220146-26
R136	50K AGC	220208-33
R138	100Ω sharpness	220146-62
R164	2.5K CRT bias	220181-11
R201	10K adj snd rej	220182-1
R215	750Ω snd rejection	220166-4
R401	1M off on vol	see chart
R402	500Ω color	see chart
R404	250K bright	see chart
C406	5.2 to 67pf hue	see chart
R604	6K green drive	220166-15
R608	3.4M vert lin	220166-19
R611	1.5M blue screen	220166-17
R804	120Ω R/G Master tilt (horiz)	220167-6
R813	30Ω R/G differential tilt (vert)	220167-4
R814	60Ω R/G master tilt (vert)	220167-5
RY101	degaussing relay	160326-6
TD101	delay	360949-5
VDR501	varistor	230167-5
VDR701	varistor	230175-2
RV701	thermistor	230170-2
	circuit breaker	180723-2
	VHF tuner	see chart
	UHF tuner	see chart

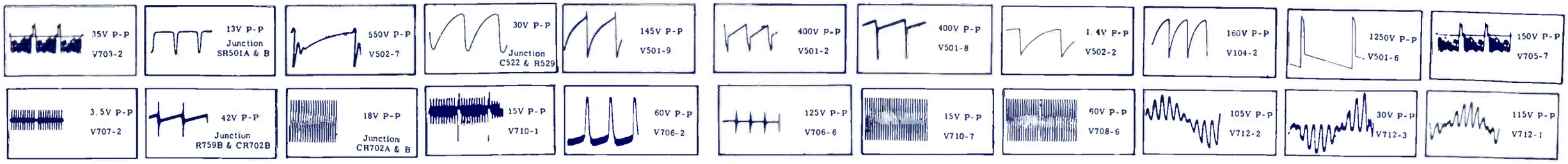




NO	USAGE
0	TUNER
100	CHASSIS
200	IF
400	CONTROL PANEL
500	DEFLECTION
600	VIDEO
700	CHROMA
800	CONVERGENCE
900	AFC

NOTES:
1. ● INDICATES RESISTOR PAIR MATCHED WITHIN 2%.
2. ▲ CW
3. ■ MATCHED DIODE
4. ▲ UNDER SIDE OF PC BOARD(COPPER SIDE)
5. CAPACITANCE VALUES GREATER THAN 1 ARE IN PICROFARADS.
6. CAPACITANCE VALUES OF 1 AND LESS ARE IN MICROFARADS.
7. ALL VOLTAGES MEASURED WITH NO SIGNAL EXCEPT THAT IDENTIFIED WITH AN ASTERISK (✱).
8. SOURCE VOLTAGES MEASURED WITH SIGNAL.
9. ON AA PRODUCTION AFC DEFEAT SWITCH LOCATED ON R404.
10. [EP] – EARLY PRODUCTION ONLY.

Peak to Peak voltages measured using a keyed Rainbow Color Generator. Some voltage values and waveforms will vary depending upon the control settings and the type of equipment used.

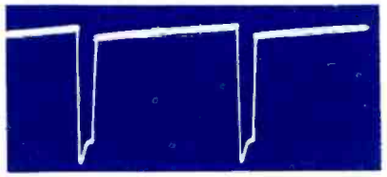


MAGNAVOX
TV Chassis T921

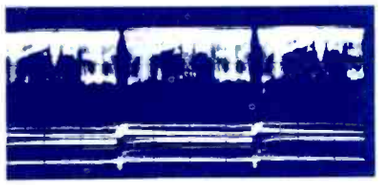
ELECTRONIC TECHNICIAN TEKFAX

VOLTAGE WAVEFORMS

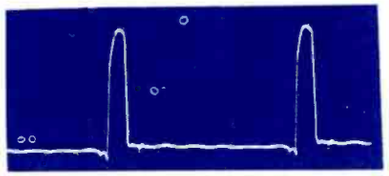
T14 Base
.8V P/P



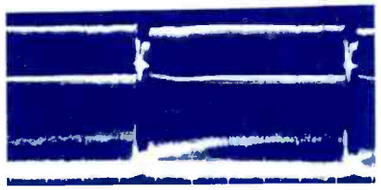
T31 Collector
6.4V P/P



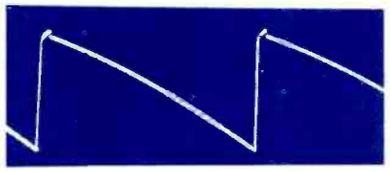
T17 Collector
.8V P/P



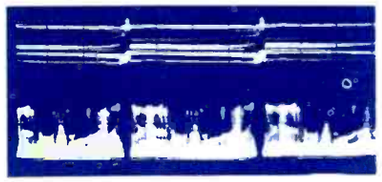
T31 Emitter
6V P/P



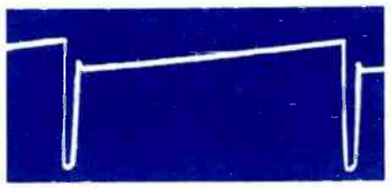
T18 Collector
2V P/P



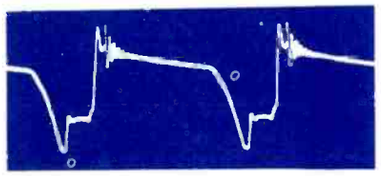
T34 Base
1.3V P/P



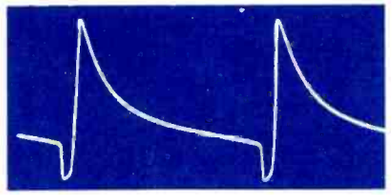
Picture Tube Cathode
35V P/P



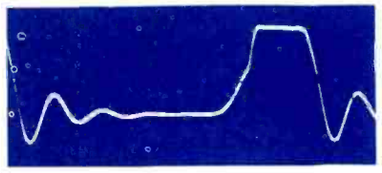
T34 Collector
45V P/P



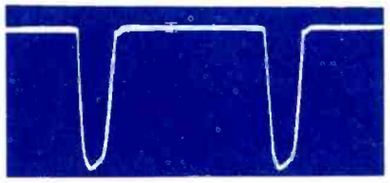
T42 Base
2.8V P/P



T32 Base
3.8V P/P



T42 Collector
20V P/P

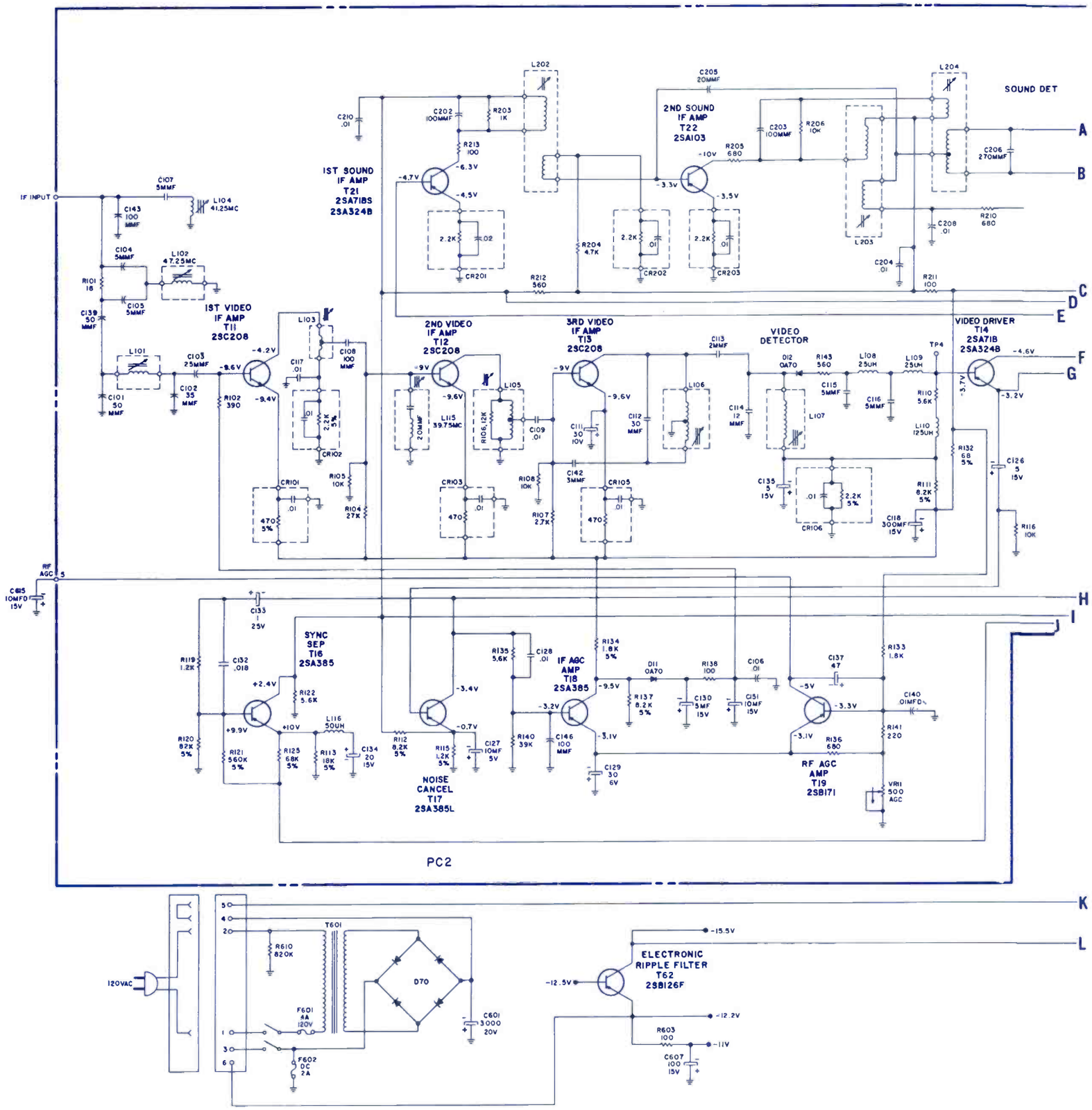


T61 Emitter
80V P/P

TRANSISTOR COMPLEMENT

Ref.	Function	Type	Ref.	Function	Type
T1	VHF RF Amplifier	T1XM05	T21	Sound IF Amplifier	2SA324B
T2	VHF Mixer	2SA376	T22	Sound IF Amplifier	2SA103
T3	VHF Oscillator	2SA378	T31	Sync Amplifier	2SC324H
T4	UHF Oscillator	GM380	T32	Vertical Oscillator	2SB176
T11	1st Video IF Amp	2SC208	T33	Vertical Amplifier	2SB172F
T12	2nd Video IF Amp	2SC208	T34	Vertical Output	2SB126V

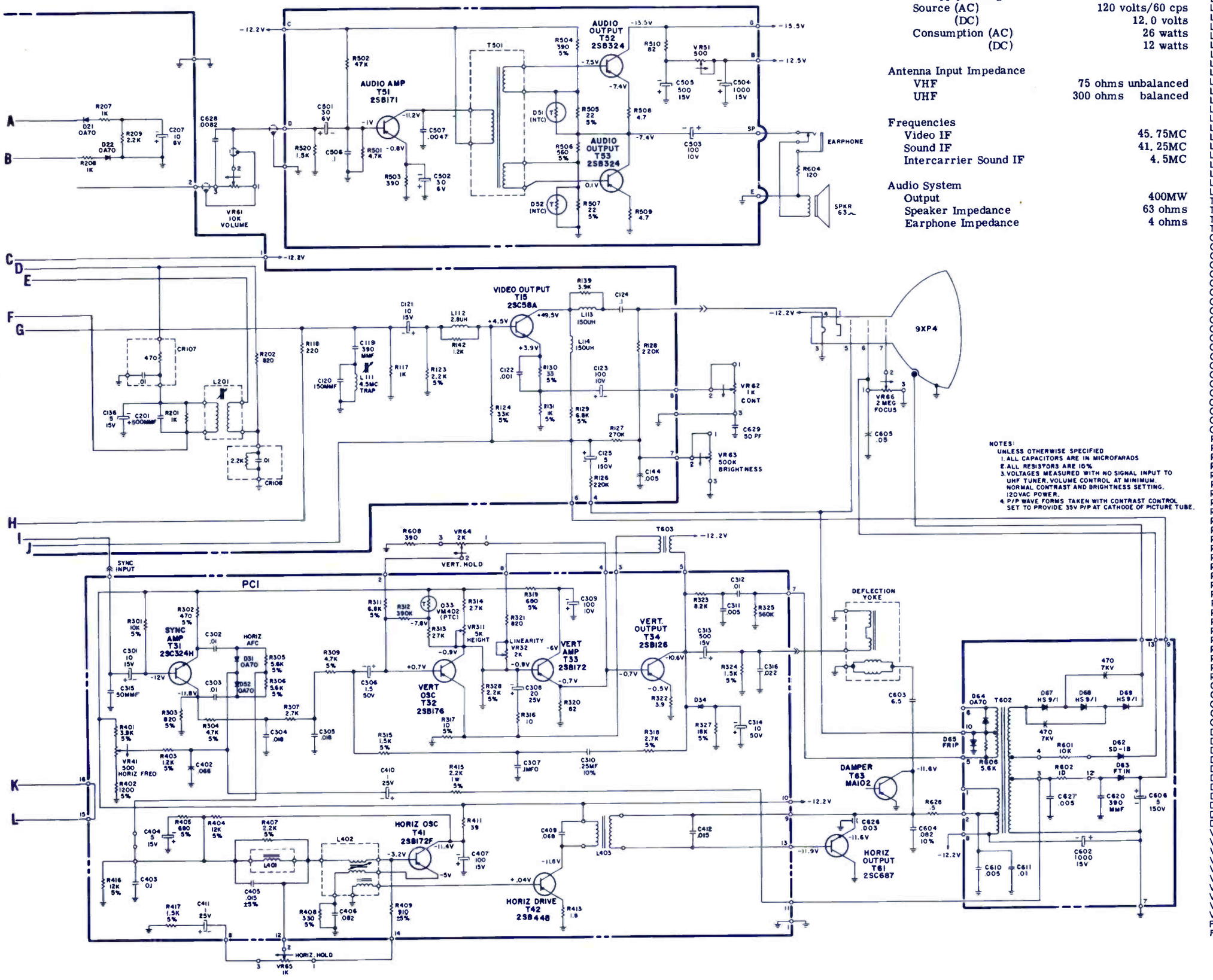
More Data on Opposite Page



T13	3rd Video IF Amp	2SC208	T41	Horizontal Oscillator	2SB172FN
T14	Video Driver	2SA324B	T42	Horizontal Drive	2SB448
T15	Video Output	2SC58A	T51	Audio Amplifier	2SB171
T16	Sync Separator	2SA385	T52	Audio Output	2SB324
T17	Noise Cancellor	2SA385L	T53	Audio Output	2SB324
T18	AGC Keyer	2SA385	T61	Horizontal Output	2SC687
T19	AGC Amplifier	2SB171	T62	Voltage Regulator	2SB126F
			T63	Damper	MA102

More Data on Opposite Page

MAGNAVOX
TV Chassis T921



SPECIFICATIONS

Power Supply Rating	
Source (AC)	120 volts/60 cps
(DC)	12.0 volts
Consumption (AC)	26 watts
(DC)	12 watts
Antenna Input Impedance	
VHF	75 ohms unbalanced
UHF	300 ohms balanced
Frequencies	
Video IF	45.75MC
Sound IF	41.25MC
Intercarrier Sound IF	4.5MC
Audio System	
Output	400MW
Speaker Impedance	63 ohms
Earphone Impedance	4 ohms

NOTES:
UNLESS OTHERWISE SPECIFIED
1. ALL CAPACITORS ARE IN MICROFARADS
2. ALL RESISTORS ARE 10%
3. VOLTAGES MEASURED WITH NO SIGNAL INPUT TO UHF TUNER, VOLUME CONTROL AT MINIMUM, NORMAL CONTRAST AND BRIGHTNESS SETTING. 120VAC POWER.
4. P/P WAVE FORMS TAKEN WITH CONTRAST CONTROL SET TO PROVIDE 35V P/P AT CATHODE OF PICTURE TUBE.

SYMBOL — DESCRIPTION	MAGNAVOX PART NO.
L101 — video IF Input coil	361272-2
L102 — 47.25MHz trap	361271-1
L103 — 1st video IF coil	361271-4
L104 — 41.25MHz trap	361271-5
L105 — 2nd video IF coil	361271-6
L106 — 3rd video IF coil (primary)	361272-3
L107 — 3rd video IF coil (secondary)	361272-4
L108 — 25μh tweet coil	361273-1
L110 — 125μh peaking coil	361273-2
L111 — 4.5MHz trap	361271-7
L112 — 2.8μh peaking coil	361273-3
L113 — 150μh peaking coil	361273-4
L115 — 39.75MHz trap	361271-8
L116 — 50μh peaking coil	361273-5
L201 — 4.5MHz snd take-off coil	361271-9
L202 — snd IF xformer	361272-5
L203 — snd det coil (pri)	361272-6
L204 — snd det xformer (sec)	361272-7
L401 — horiz stabilizing coil	361272-8
L402 — horiz osc coil	320340-1
L403 — horiz driver xformer	320340-2
L601 — deflection yoke	361274-1
T501 — audio driver xformer	320340-1
T601 — power xformer	300244-1
T602 — hi voltage xformer	361275-1
T603 — vert lin xformer	320340-3
C104 — cer 5pf 5%	250508-5197
C111 — elect 30μf 10v	
C118 — elect 300μf 15v	270068-423
C122 — poly 1000pf	250586-1
C125 — elect 5μf 150v	270102-1
C129 — elect 30μf 6v	270068-210
C134 — elect 20μf 15v	270068-408
C135 — elect 5μf 15v	270068-403
C140 — cer .01μf GMV	250454-1202
C144 — cer 5000pf GMV	250454-1201
C207 — elect 10μf 6v	270068-205
C301 — elect 30μf 10v	270068-405
C314 — elect 10μf 50v	270068-705
C410 — elect 1μf 25v	270102-2
C503 — elect 100μf 10v	270068-419
C504 — elect 1000μf 15v	270082-43
C505 — elect 500μf 15v	270068-428
C601 — elect 3000μf 20v	270102-5
C602 — elect 1000μf 15v	270082-430
C606 — elect 5μf 150v	270102-1
C607 — elect 100μf 15v	270082-417
C615 — elect 10μf 15v	270082-425
R113 — 18K 5%	
R115 — 1.2K 5%	
R117 — 1K 5%	
R120 — 82K 5% ½w	
R121 — 560K 5% ½w	
R123 — 2.2K 5%	
R124 — 33K 5% ½w	
R125 — 68K 5% ½w	
R126 — 220K 10% ½w	
R127 — 270K 10% ½w	
R129 — 6.8K 5% ½w	
R312 — 390K 10% ½w	
R315 — 1.5K 5%	
R316 — 10Ω 5%	
R322 — 3.9Ω 10% ½w	
R325 — 560K 10% ½w	
R413 — 1.8Ω 10% ½w WW	240099-1
R415 — 2.2K 5% 1w	
R416 — 12K 5%	
R417 — 1.5K 5%	
R506 — 560Ω 5%	
R601 — 10K 10% ½w	
R602 — 10Ω 10% ½w	
R603 — 100Ω 10% ½w	
R604 — 120Ω 10% ½w	
R606 — 5.6K 10% ½w	
R628 — .5Ω 10% ½w	240099-2
CR101 — printed pac (.01μf & 470-5%)	250582-1
CR102 — printed pac (.01μf & 2200-5%)	250582-2
CR103 — printed pac (.01μf & 470)	250582-3
CR201 — printed pac (.02μf & 2200)	250582-5
CR202 — printed pac (.01μf & 2200)	250582-4
D11 — AGC diode	530123-1
D12 — video det diode	530123-1
D21 — audio det diode	530123-1
D31 — horiz AFC diode	530123-1
D33 — thermistor (PTC)	230182-1
D34 — damping selenium diode	530124-1
D62 — focus voltage diode	530123-3
D63 — video output B+ diode	530123-4
D64 — damping diode	530123-1
D65 — damping diode	530123-5
D67 — selenium rect	530124-2
VR11 — .5K AGC adj	220234-1
VR31 — 5K height adj	220234-2
VR32 — 2K vert lin adj	220234-3
VR41 — .5K horiz freq adj	220234-1
VR51 — .5K B+ supply adj	220234-1
VR61 — 10K off-on volume	220235-1
VR62 — 1K contrast	220235-2
VR63 — 500K bright	220235-3
VR64 — 2K vert hold	220235-4
VR65 — 1K horiz hold	220235-5
F601 — 400ma fuse	180857-1
F602 — 2a fuse	180857-2
VHF tuner	340113-1
UHF tuner	340114-1

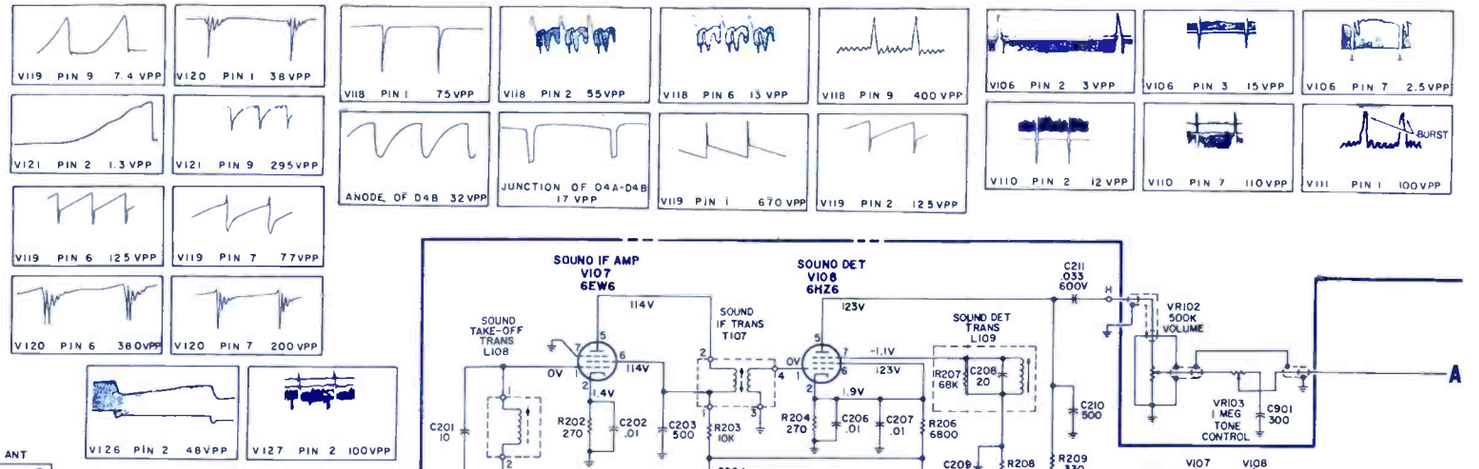
MAGNAVOX
COLOR TV Chassis
T922 Series

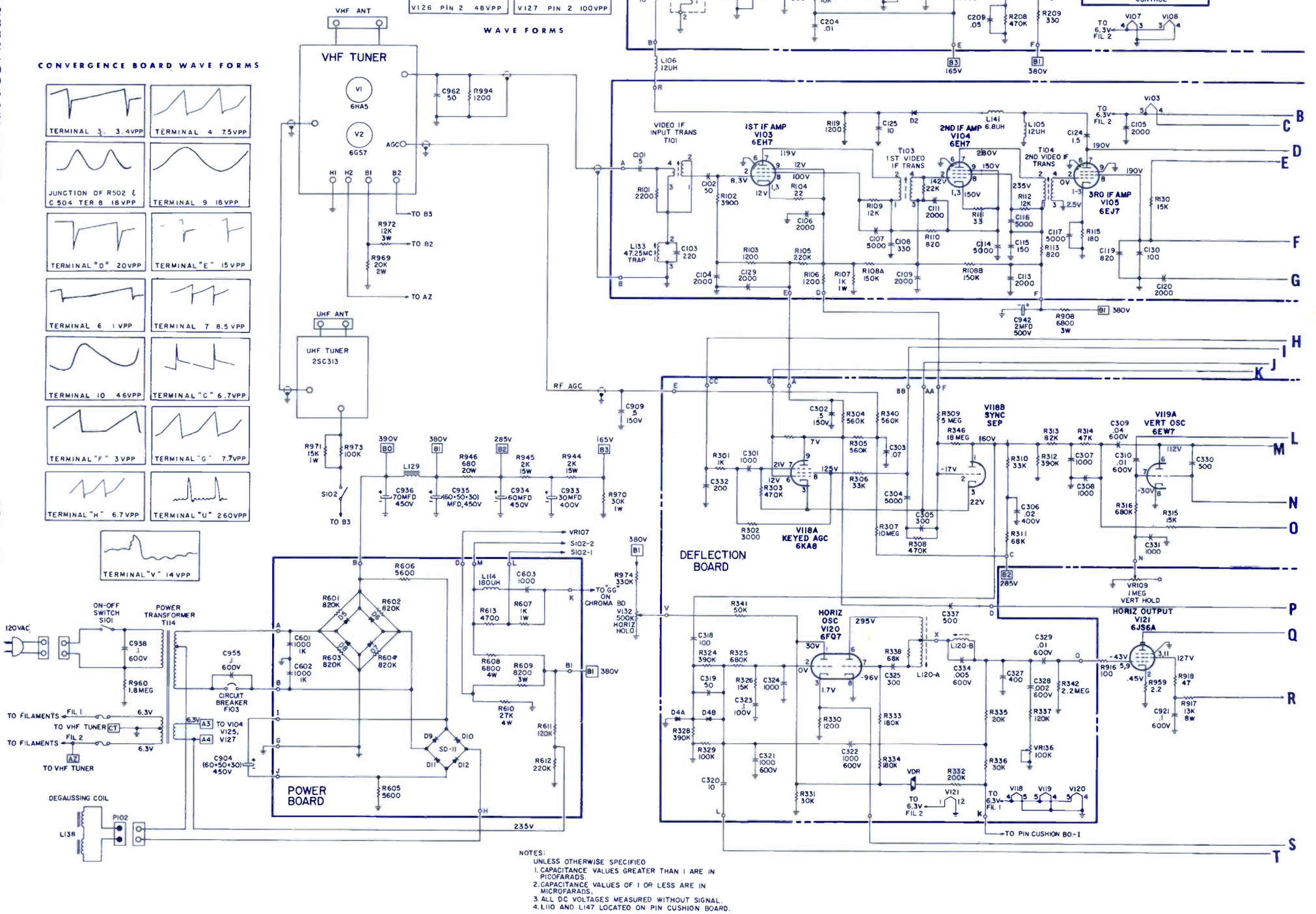
ELECTRONIC TECHNICIAN TEKFAX

SYMBOL	DESCRIPTION	MAGNAVOX PART NO.
T101	video IF input xformer	361278-1
T103	1st video IF xformer	361278-2
T104	2nd video IF xformer	361278-3
T105	3rd video IF xformer	361278-4
T106	4.5MHz trap	361278-5
T107	snd IF xformer	361278-6
T108	audio output xformer	320342-3
T109	chroma bandpass xformer	361278-7
T110	burst phase xformer	361278-8
T111	3.58MHz osc xformer	361278-9
T112	vert output xformer	320342-1
T113	H.V. xformer	361281-1
T114	power xformer	300246-1
T115	convergence coil	361279-1
T116	top pin cushion phase xformer	361279-2
T118	focus xformer	361279-3
L104	100µh peaking coil	361280-3
L106	12µh choke	361280-2
L107	270µh peaking coil	361280-4
L108	snd take-off xformer	361278-10
L109	4.5MHz quad coil	361278-10
L110	470µh choke	361280-5
L111	150µh peaking coil	361280-6
L113	120µh peaking coil	361280-8
L114	180µh peaking coil	361280-7
L116	reactance coil	361278-12
L117	4.7µh choke	361280-9
L118	1500µh coil	361280-12
L119	1500µh coil	361280-12
L120	horiz osc coil	361278-13
L125	horiz efficiency coil	361278-14
L127	red green diff amp coil	361279-5
L129	filter choke	320342-2
L130	delay line	361282-1
L135	bottom pin cushion phase coil	361279-6
L136	blue center coil	361279-7
L137	68µh peaking coil	361280-10
L138	degaussing coil	361283-1
L147	horiz lin coil	361278-16
L901	deflection yoke	361285-1
C128	elect 2µf 500v	
C427	cer 5pf ±.5pf 500v NPO	
C436	elect 100µf 25v	270082-017
C601	cer .001µf 10% 2kv	
C707	cer 500pf 1kv	
C924	cer 500pf 20% 7kv	
C933	elect 60/50/30µf 450v	270101-1
C936	elect 70µf 450v	270101-2
C939	cer 100pf 10% 3kv N3300	
C954	200pf 5kv	
C964	elect 60/50/30µf 450v	270101-1
R108A	150K 5%	
R108B	160K 5%	
R124	47K 5% 2w	230160-199
R307	10M 5%	
R346	18M 5%	
R608	6.8K 4w	230150-438
R609	8.2K 3w	230150-340
R610	27K 4w	230150-452
R709	1.5K 3w	230150-322
R710	33K 3w	230150-354
R711	3K 2w	230160-170
R903	2.7K 6w	230150-728
R911	5K 2w	230160-176
R917	13K 8w	240082-199
R922	60M 2w	230161-1
R946	680Ω 5% 20w	240100-3
R956	27K 2w	230160-193
R958	500Ω 2w	230160-152
R969	20K 2w	230160-190
R972	12K 3w	230150-344
VR101	500Ω snd rejection	220237-6
VR102	500K vol	220236-6
VR103	1M tone	220236-3
VR104	250K bright	220236-5
VR106	5K blue drive	220237-4
VR107	5K green drive	220237-4
VR108	5K AGC	220237-4
VR109	1M vert hold	220236-2
VR110	1M vert lin	220237-2
VR111	100K vert height	220237-3
VR112	15 vert centering	220237-5
VR114	500K HV adjust	220237-1
VR116	1M killer threshold	220237-2
VR117	1.2K hue	220236-2
VR118	500 chroma level	220236-4
VR119	500K kine bias	220236-7
VR124	100 convergence	220237-10
VR129	150 convergence	220237-11
VR132	500K horiz hold	220237-7
VR134	100K pin cushion balance	220237-3
VR135	1M sub bright	220237-7
VR136	100K horiz drive	220237-8
D1	video det diode	530127-1
D4A-B	horiz AFC diode	530127-5
	circuit breaker 1¾a	180853-1
	VHF tuner	340115-1
	UHF tuner	340116-1
VDR	voltage dependent resistor	230183-1

CONVERGENCE BOARD WAVE FORMS

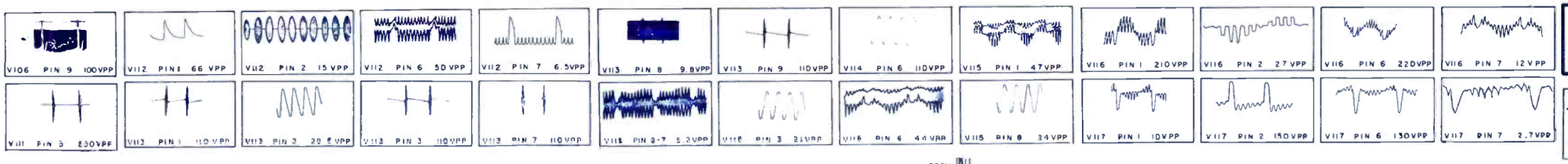
WAVE FORMS

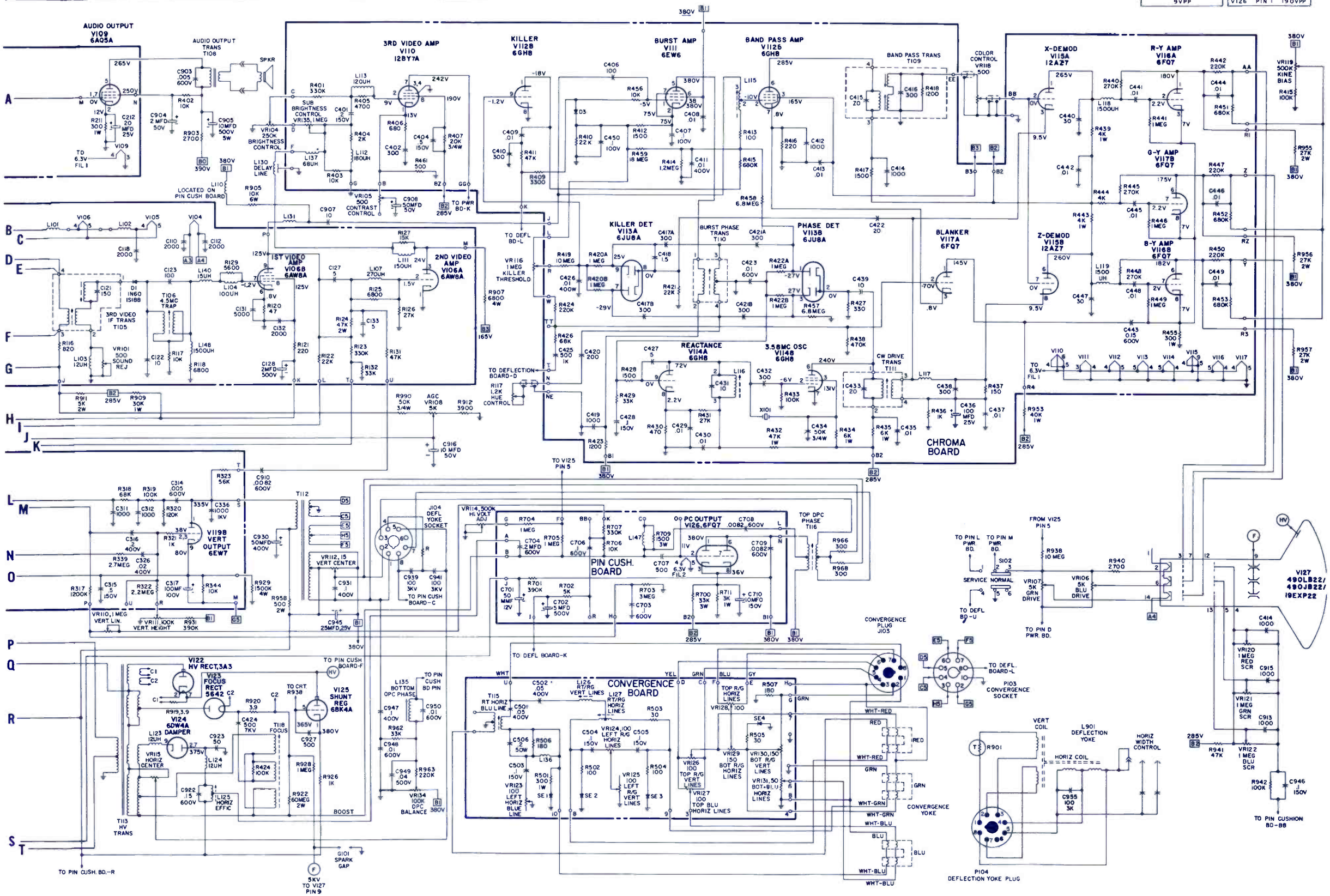




NOTES:
UNLESS OTHERWISE SPECIFIED
1. CAPACITANCE VALUES GREATER THAN 1 ARE IN PICOFARADS.
2. CAPACITANCE VALUES OF 1 OR LESS ARE IN MICROFARADS.
3. ALL DC VOLTAGES MEASURED WITHOUT SIGNAL.
4. L110 AND L147 LOCATED ON PIN CUSHION BOARD.

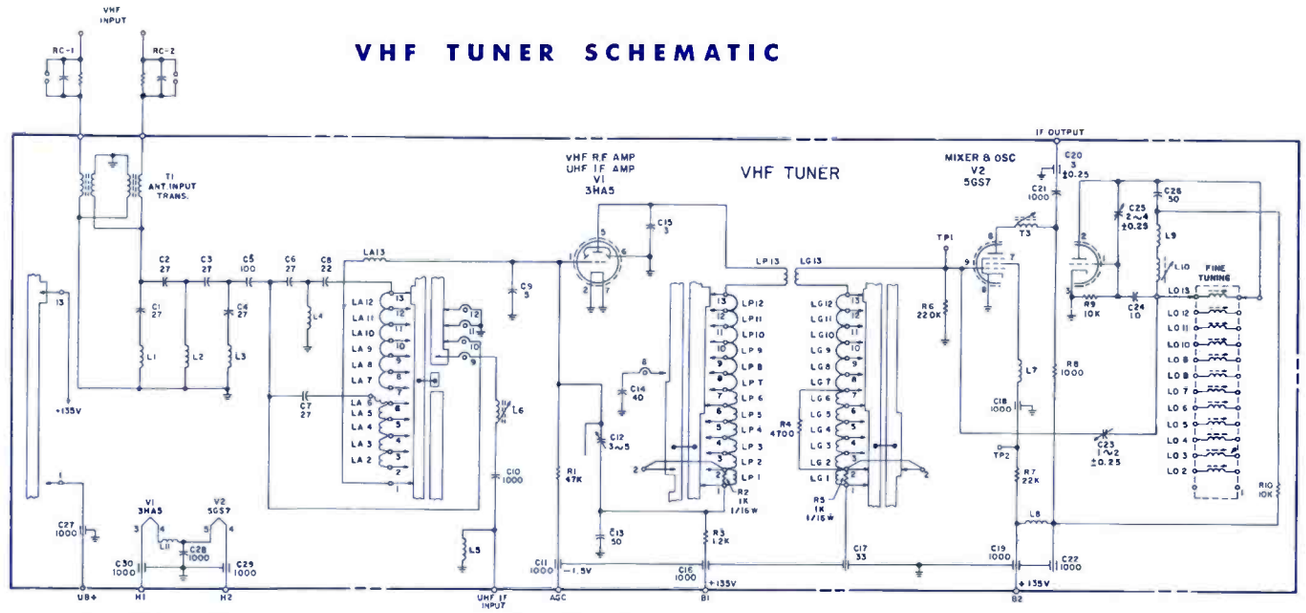
MAGNAVOX
Color TV Chassis T922 Series

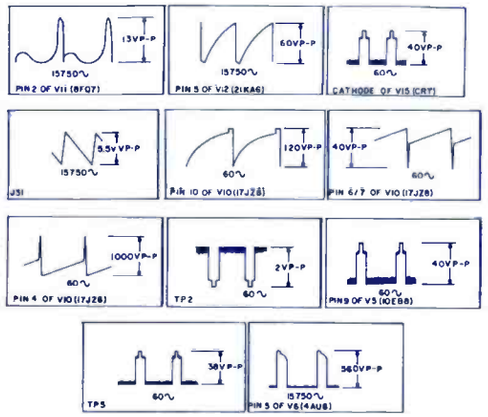




MAGNAVOX
TV Chassis
T925 Series

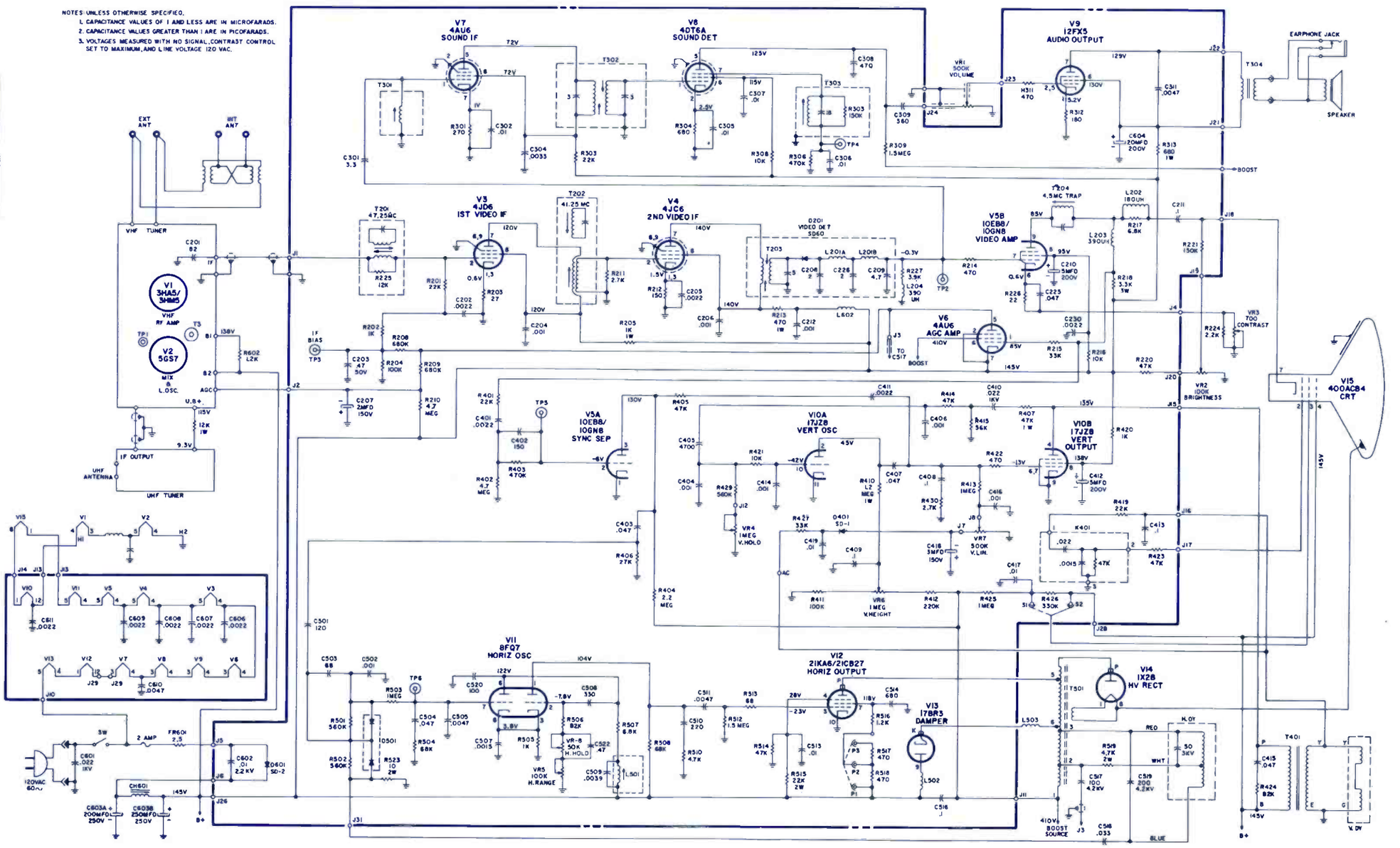
VHF TUNER SCHEMATIC





SYMBOL	DESCRIPTION	MAGNAVOX SERVICE PART NO.
CH601	ac Line Choke	320148-2
L201A	Tweet Choke	361050-23
L201B	Tweet Choke	361050-22
L202	180µh Peaking Coil	361050-24
L203	390µh Peaking Coil	361050-25
L204	390µh Peaking Coil	361050-25
L501	Horiz Stabilizing Coil	361129-2
L502	Damper Plate Coil	361050-27
L503	Filter Choke	361050-20
L602	Line Choke	361050-21
T201	Video IF Input Coil & 47.25 MHz Trap	361049-31
T202	1st Video IF xformer & 41.25 MHz Trap	361049-32
T203	2nd Video IF xformer	361049-33
T204	4.5MHz Trap	361049-34
T301	4.5MHz Sound Take-Off Coil	361049-36
T302	4.5MHz Sound IF xformer	361049-37
T303	Quadrature Coil	361049-35
T304	Audio Output xformer	320144-2
T401	Vertical Output xformer	320147-2
T501	Horiz Output xformer	361048-4
	Deflection Yoke	361047-3
	VHF Antenna Input xformer	361049-38
C410	Oil Filled, 0.22µf 1 kv	250319-317
C517	Ceramic, 100pf, 4.2kv	250497-59
C519	Ceramic, 200pf 4.2 kv	250497-62
C603	Electrolytic, 200µf 250µf 250v	270075-5
C604	Electrolytic, 20µf 200v	270074-20
	Controls	
VR1	500K Volume W/AC Switch	220192-15
VR2	100K Bright	220192-17
VR3	700Ω Contrast	220192-16
VR4	1M Vertical Hold	220192-18
VR5	100K Horiz. Range	220191-4
VR6	1M Vertical Height	220191-4
VR7	500K Verticol Linearity	220191-4
VR8	50K Horiz. Hold	220191-4
	Miscellaneous	
	Fuse, 2 amp, 125v	180865-1200
FR601	Fusable Resistor, 2.5Ω 10w	240076-39
K401	Verticol Blanking Pac	250499-7
	VHF Tuner	340135-1
	UHF Tuner	340136-1

NOTES: UNLESS OTHERWISE SPECIFIED,
1. CAPACITANCE VALUES OF 1 AND LESS ARE IN MICROFARADS.
2. CAPACITANCE VALUES GREATER THAN 1 ARE IN PICOFARADS.
3. VOLTAGES MEASURED WITH NO SIGNAL, CONTRAST CONTROL SET TO MAXIMUM, AND LINE VOLTAGE 120 VAC.



SCHEMATIC DIAGRAM - TS-597A-00 THRU A-02

NOTES:

VOLTAGE MEASUREMENTS
1. TAKEN FROM POINT INDICATED TO CHASSIS WITH A VTVM ± 20%.
2. LINE VOLTAGE MAINTAINED AT 120V AC.
3. * VARIES WITH CONTROL SETTINGS.
4. ** SPECIAL COMPONENTS. SEE PARTS LIST.
5. TAKEN WITH CONTRAST CONTROL AT MINIMUM AND ALL OTHER CONTROLS IN NORMAL OPERATING POSITION.
6. WHERE TWO VOLTAGES ARE SHOWN, UPPER VOLTAGE - WITH NO SIGNAL INPUT; TUNER ON CHANNEL WITH LEAST NOISE AND ANTENNA TERMINALS SHORTED. LOWER VOLTAGES - WITH TUNER ON STRONG STATION AND OUTSIDE ANTENNA.

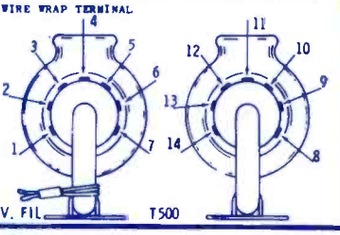
WAVEFORM MEASUREMENTS
1. TAKEN FROM POINT INDICATED TO CHASSIS WITH A WIDE-BAND OSCILLOSCOPE.
2. OSCILLOSCOPE SYNCED NEAR SWEEP RATE INDICATED.
3. TAKEN WITH STRONG SIGNAL, CONTRAST CONTROL AT MAXIMUM; ALL OTHER CONTROLS IN NORMAL OPERATING POSITION.

——— INDICATES PRINTED CIRCUIT BOARD

UNLESS OTHERWISE SPECIFIED, CAPACITORS ARE DISC CERAMIC. 500V DC. TOLERANCE & CHARACTERISTIC AS NOTED: IF TOLERANCE IS NOT GIVEN, CAPACITORS ARE GMV (GUARANTEED MIN. VALUE) TYPE. TUBULAR CAPACITORS ARE 20% 400V DC. DECIMAL VALUES IN MF, ALL OTHERS IN PF. RESISTORS ARE ALL 10% 1/2W.

□ NUMBERS AND LETTERS IN BOXES INDICATE TEST POINTS AND ARE CROSS-REFERENCED TO THE PARTS LOCATION ILLUSTRATIONS.

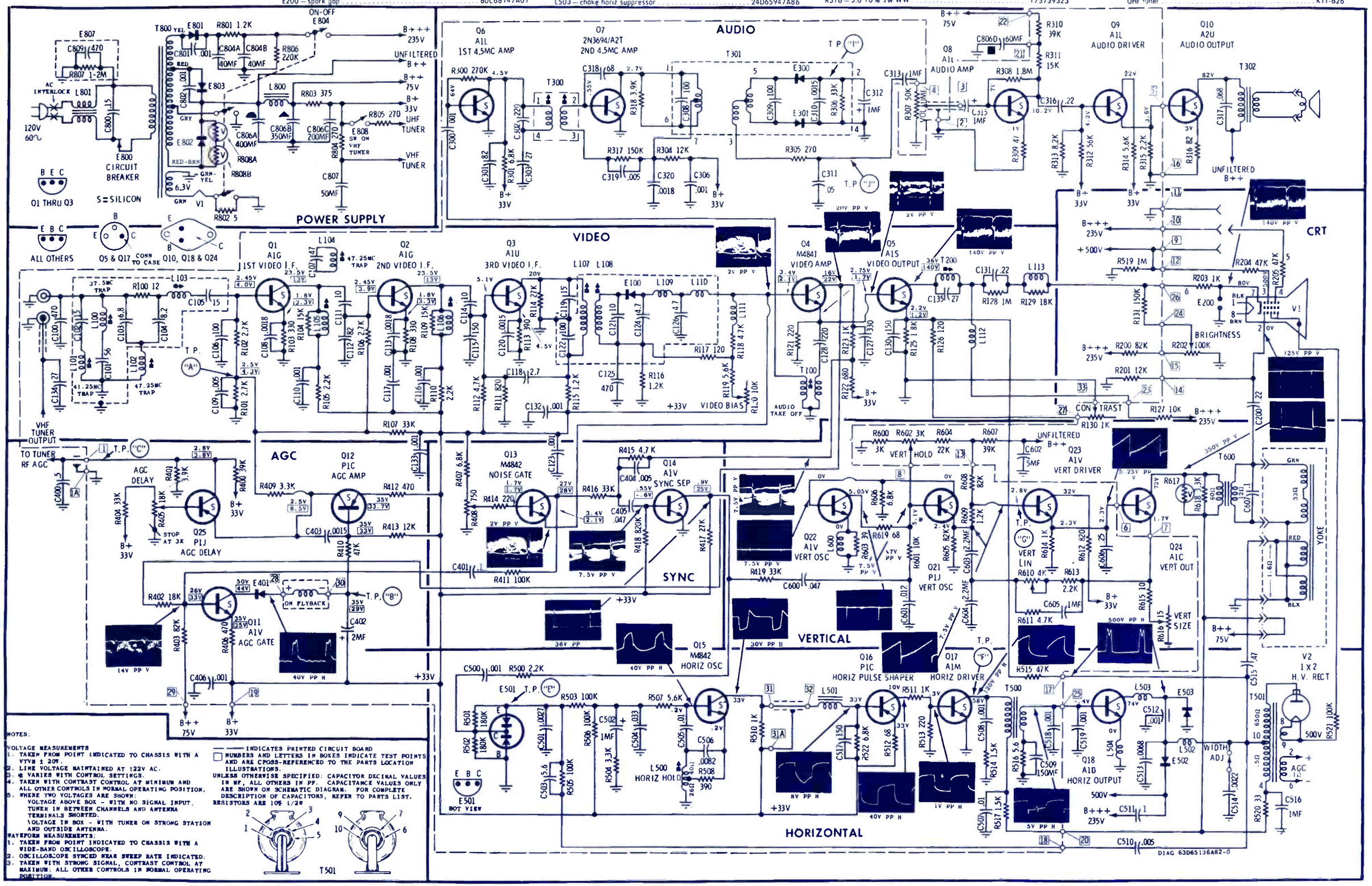
○ INDICATES WIRE WRAP TERMINAL



MOTOROLA
TV Chassis TS-458

ELECTRONIC TECHNICIAN **TEKFAX**

SYMBOL	DESCRIPTION	MOTOROLA PART NO.
C514	.0022µf 10% 1000v	8G10246A06
C804	40µf/300v 40µf/300v	23C65891A06
C805	40µf/300v 40µf/300v	23C65891A06
C806	400µf/125v 60µf/40v 350µf/100v 200µf/40v	23C65807A29
C807	50µf/50v elect (use 23C60119A06)	23C65808A12
E200	spark gap	80C68147A01
E401	diode crystal (AGC gate)	48C67120A02
E800	circuit breaker	80C66390A18
L100	37.5MHz trap incls core	24D67754A20
L101	41.25MHz trap incls core	24D67754A21
	41.25MHz trap incls core (A-01 and later)	24D67754A23
L102	47.25MHz trap incls core	24D67754A22
L103	1st IF base incls core	24D67754A23
L105	1st IF & 47.25MHz trap incl core	24V68607A31
L106	2nd IF interstage	24D67754A27
L107	3rd IF primary incls core	24D67754A23
L108	3rd IF secondary incls core	24D67754A25
L110	choke IF resonant 8.8µh	24C66772A11
L112	compensating 900µh	24D68002A38
L113	compensating 200µh/18K	24D68002A42
L500	horiz osc incls core	24D68130A03
L501	horiz pulse shaping 6600µh/10K (8.00 & earlier only)	24D68002A35
L502	choke horiz suppressor	24D65947A85
L503	choke horiz suppressor	24D65947A86
L600	compensating 1000µh/39	24D68002A40
L700	yoke defl 114° (P/N 24D68523A01 & 24D68554A01)	24G10250A04
L800	choke filter	25D67554A11
L801	choke line	24V68611A85
	choke IF resonant 8.8µh (balun choke)	24C66772A11
T100	4.5MHz trap & A.T.O. incls core	24D68822A02
T300	4.5MHz interstage	24D68822A01
T301	ratio det incls E300, E301, C308, C309, C310, R306	24V66550A80
T302	audio output	25D67552A16
T500	horiz driver	25D67440A03
T501	horiz output xformer complete pri-sec winding can be purchased separately	24D68804A03
T600	vert output	25D65840A22
T800	power	25D6814A01
R127	10K 10% 7w WW	175135542
R516	1.0 10% 2w WW (use 17K561979)	175132815
R516	5.6 10% 2w WW	175739323
R520	33Ω 10% 5w WW	17S132786
R617	varistor (vert)	6C66263A08
R700	thermistor (on yoke)	6C65884A07
R802	5 10% 5w WW	175745634
R803	375 10% 10w WW	175135771
R806A	varistor (power supply)	6C66263A08
R806B	varistor (power supply)	6C66263A08
R120	1st video bias 10K	18D66401A19
R130	contrast 1K	18D67502A07
R202	brightness 100K	18D67637A49
R307	on off & volume 50K	18D68418A01
R405	RF AGC delay 18K	18D66401A20
R408	vert lin 4K noise gate 750Ω	18D67678A03
R602	vert hold 3K	18D67637A50
R610	vert lin 4K noise gate 750Ω	18D67678A03
R616	vert size 15Ω WW	18D68447A01
	VHF tuner	5CPTT-394
	UHF tuner	KTT-622
	UHF tuner	KTT-626



NOTES:

VOLTAGE MEASUREMENTS
1. TAKEN FROM POINT INDICATED TO CHASSIS WITH A VTVM ± 20%.
2. LINE VOLTAGE MAINTAINED AT 122V AC.
3. * VARIES WITH CONTROL SETTINGS.
4. TAKEN WITH CONTRAST CONTROL AT MINIMUM AND ALL OTHER CONTROLS IN NORMAL OPERATING POSITION.
5. WHERE TWO VOLTAGES ARE SHOWN:
   VOLTAGE ABOVE BOX - WITH NO SIGNAL INPUT, TUNER IN BETWEEN CHANNELS AND ANTENNA TERMINALS SHORTED.
   VOLTAGE IN BOX - WITH TUNER ON STRONG STATION AND OUTSIDE ANTENNA.

WAVEFORM MEASUREMENTS:
1. TAKEN FROM POINT INDICATED TO CHASSIS WITH A WIDE-BAND OSCILLOSCOPE.
2. OSCILLOSCOPE SYNCED NEAR SWEEP RATE INDICATED.
3. TAKEN WITH STRONG SIGNAL, CONTRAST CONTROL AT MAXIMUM; ALL OTHER CONTROLS IN NORMAL OPERATING POSITION.

—— INDICATES PRINTED CIRCUIT BOARD
□ NUMBERS AND LETTERS IN BOXES INDICATE TEST POINTS AND ARE CROSS-REFERENCED TO THE PARTS LOCATION ILLUSTRATIONS.
UNLESS OTHERWISE SPECIFIED: CAPACITOR DECIMAL VALUES IN MF, ALL OTHERS IN PF. CAPACITANCE VALUES ONLY ARE SHOWN ON SCHEMATIC DIAGRAM. FOR COMPLETE DESCRIPTION OF CAPACITORS, REFER TO PARTS LIST.
RESISTORS ARE 10% 1/2W

MOTOROLA
TV Chassis TS594

GENERAL INFORMATION

The receivers in this manual employ a horizontally mounted chassis containing an 11-transistor etched board sub-chassis on which are mounted the small-signal circuits. These include the video and audio IF amplifiers, video amplifiers, sync, AGC and noise gate circuits. The chassis also has 8 tubes employed in the sweep and audio output circuits and the VHF tuner. The UHF tuner is transistorized.

The diode complement consists of 10 diodes and 2 silicon power rectifiers on the chassis plus 1 diode in the UHF tuner.

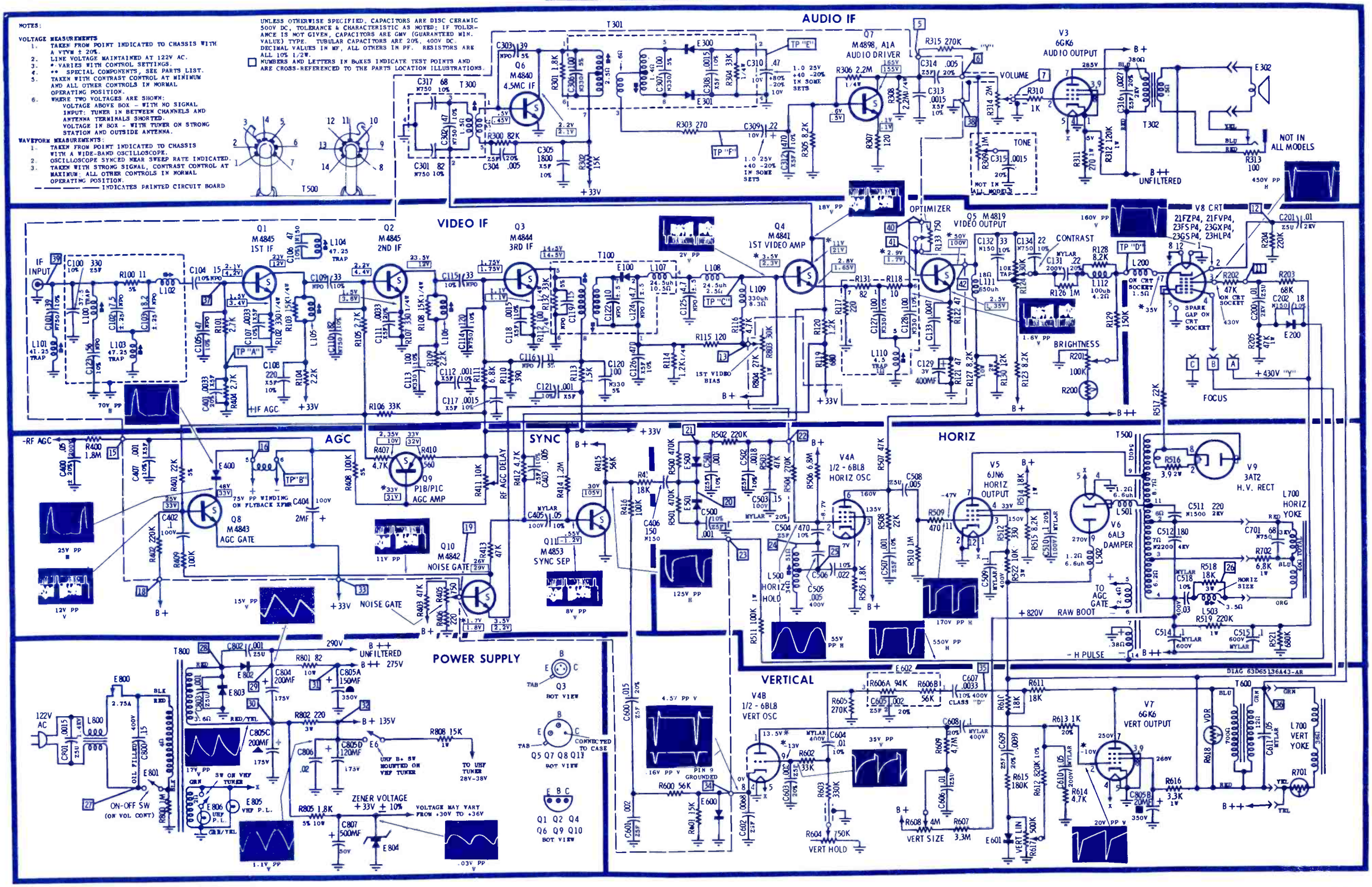
ELECTRICAL SPECIFICATIONS

Power Rating: 145 watts

Source: 120 volts, 60 cycle AC

INTERMEDIATE FREQUENCIES

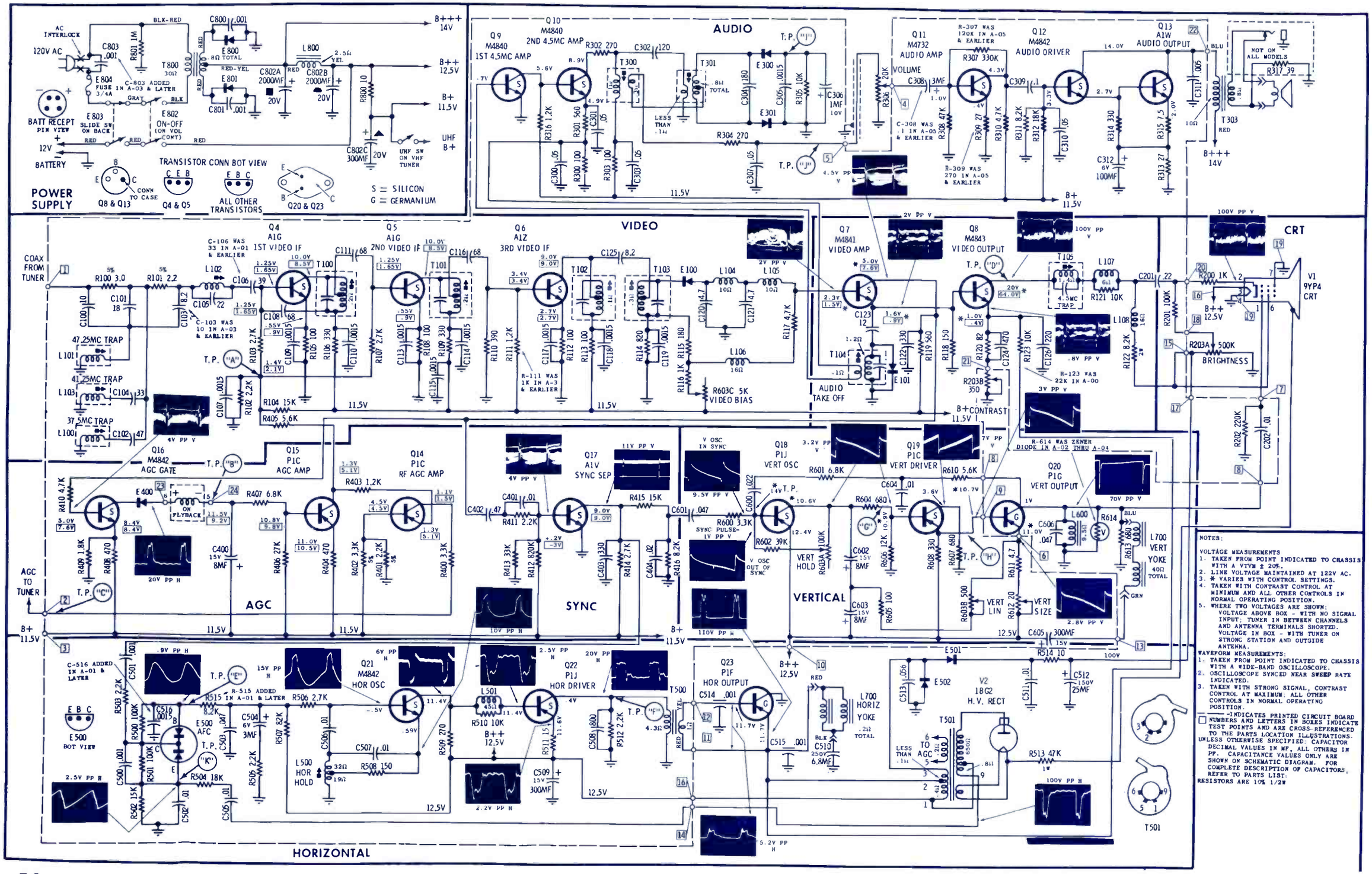
IF: Video 45.75Mc
Sound 41.25Mc
Sound IF: 4.5Mc



MOTOROLA
TV Chassis
TS-460 Series

ELECTRONIC TECHNICIAN **TEKFAX**

SYMBOL	DESCRIPTION	MOTOROLA PART NO.
C109	.0015μf +80–20% 100v Z5V	2I5180C69
C120	4.7pf ±.5pf 100v NPO	2I5180C57
C300	.05μf +80–20% 50v Z5V	2I5135660
C306	1μf +50–20% 10v lytic (use 23C43280A01)	23C63827A09
C308	3μf 6v lytic	23C63827A02
C309	.1μf 10% 160v poly class "D" (use 8510191A46)	8510191A38
C402	.47μf 20% 100v mtlz poly	8510212A09
C500	.001μf 20% 500v Z5F	2I5129821
C504	3μf +40–20% 6v lytic (use 23C43280A21)	23C63827A02
C507	.01μf 10% 160v poly class "D"	8510191A35
C509	300μf 15v lytic	23C60496A14
C510	6.8μf 20% 250v mtlz poly	8510212A19
C512	25μf/150v lytic	23C62914A07
C602	8μf +30–10% 15v lytic	23C66135A16
C800	.001μf +80–20% 500v Z5U	2I5180C56
C802	2000/20v 2000/20v 300/20v lytic	23C65807A28
E300	diode crystal (ratio det)	48C65837A02
E500 A&B	diode dual (phase det)	48S134917
E501	rectifier silicon: horiz pulse rectifier (DIE)	48S134939
E502	rectifier silicon damper (DIE)	48S134939
E804	fuse: ¾ amp 125v	6S5136038
L100	37.5MHz trap incl core	24D67754A16
L101	47.25MHz trap incl core	24D67754A18
L102	44.00MHz base coil incl core	24D67754A19
L103	41.25MHz trap incl core	24D67754A16
L104	choke IF resonant: 46MHz	24C66772A08
L105	compensating: 25μh	24D68002A43
L106	compensating: 550μh	24D68002A31
L107	compensating 180μh/10K	24D68002A04
L500	horiz osc incl core	24D68130A02
L501	horiz pulse shaping 3600 μh/10K	24D68002A33
L600	choke vert output	25D675S4A10
L700	yoke deflection 90°	24D68531A01
L800	choke filter	25D67554A09
Q4	1st IF amp (A1G)	48S134904
Q5	2nd IF amp (A1G)	48S134904
Q6	3rd IF amp (A1Z)	48S134937
Q7	1st video amp (M4841)	48S134841
Q8	video output (M4843)	48S134843
Q9	1st 4.5MHz amp (M4840)	48S134840
Q10	2nd 4.5MHz amp (M4840)	48S134840
Q11	1st audio amp (M4732)	48S134732
Q12	audio driver (M4842)	48S134842
Q13	audio output (A1W)	48S134935
Q14	RF AGC amp (P1C)	48S134910
Q15	AGC amp (P1C)	48S134910
Q16	AGC gate (M4842)	48S134842
Q17	sync separator (A1V)	48S134933
Q18	vert osc (P1J)	48S134943
Q19	vert driver (P1C)	48S134910
Q20	vert output (P1G)	48S134938
Q21	horiz osc (M4842)	48S134842
Q22	horiz driver (P1J)	48S134943
Q23	horiz output (P1F)	48S134934
T100	1st IF interstage complete	24D68339A02
T101	2nd IF interstage complete	24D68339A02
T102	3rd IF primary complete	24D68339A01
T103	3rd IF secondary complete	24D68339A01
T104	audio take off complete	24D68339A04
T105	4.5MHz trap complete	24D68339A03
T300	4.5MHz trap complete	24D68339A03
T300	ratio det primary incl core	24D68339A05
T301	ratio det secondary incl core	24D68339A06
T303	audio output	25D67552A15
T500	horiz driver	25D67440A02
T501	horiz output & HV complete	24D67561A03
T800	power	25D68499A01
R122	8200 10% 2w fixed film (use 6R120579)	17S753337
R614	varistor (vert)	6C65702A01
R203, A&B	brightness & controst: brt 500K (panel) cont 350Ω (rear)	18D65082A38
R306	vol on-off sw 20K	18D67559A27
R603A,B,C	vert hold vert lin video bias 100K 500Ω 5K	18D67678A04
R612	vert size 20Ω WW	18D68447A05



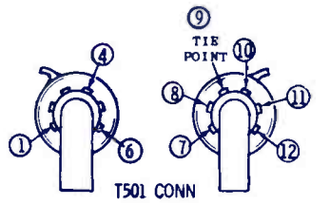
MOTOROLA
TV Chassis TS-461

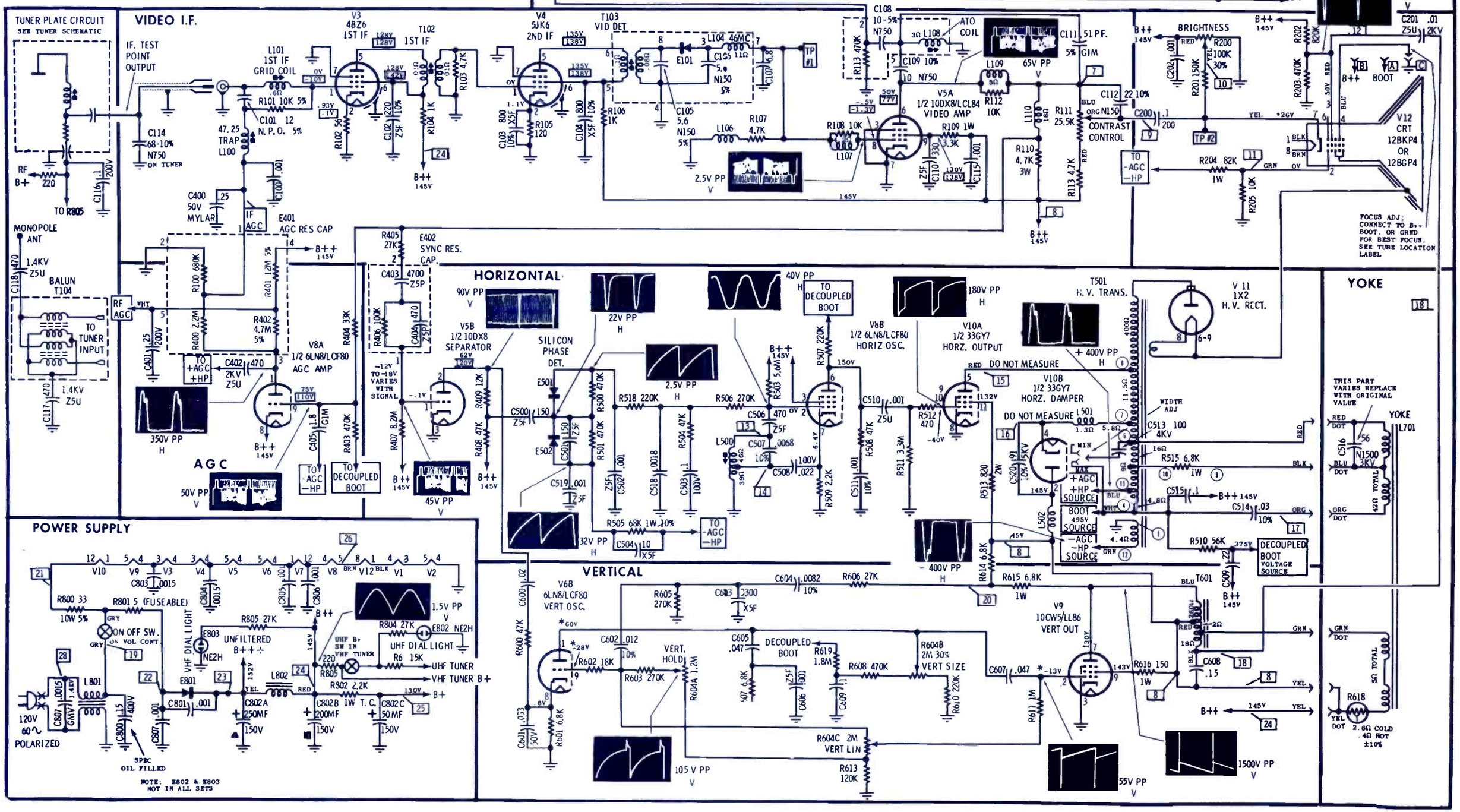
WAVEFORM MEASUREMENTS
1. TAKEN FROM POINT INDICATED TO CHASSIS WITH A WIDE-BAND OSCILLOSCOPE.
2. OSCILLOSCOPE SYNCED NEAR SWEEP RATE INDICATED.
3. TAKEN WITH STRONG SIGNAL, CONTRAST CONTROL AT MAXIMUM: ALL OTHER CONTROLS IN NORMAL OPERATING POSITION.

* INDICATES VOLTAGE VARIES WITH CONTROL SETTINGS.
** INDICATES SPECIAL COMPONENTS, SEE REPLACEMENT PARTS LIST FOR PROPER REPLACEMENT PART NUMBER.

UNLESS OTHERWISE SPECIFIED: CAPACITORS ARE DISC CERAMIC 500V DC, TOLERANCE & CHARACTERISTIC AS NOTED; IF TOLERANCE IS NOT GIVEN CAPACITORS ARE GMV (GUARANTEED MIN. VALUE) TYPE. TUBULAR CAPACITORS ARE 20% 400V DC. DECIMAL VALUES IN MF ALL OTHERS IN PF. RESISTORS ARE ALL 10% 1/2 WATT UNLESS SPECIFIED.

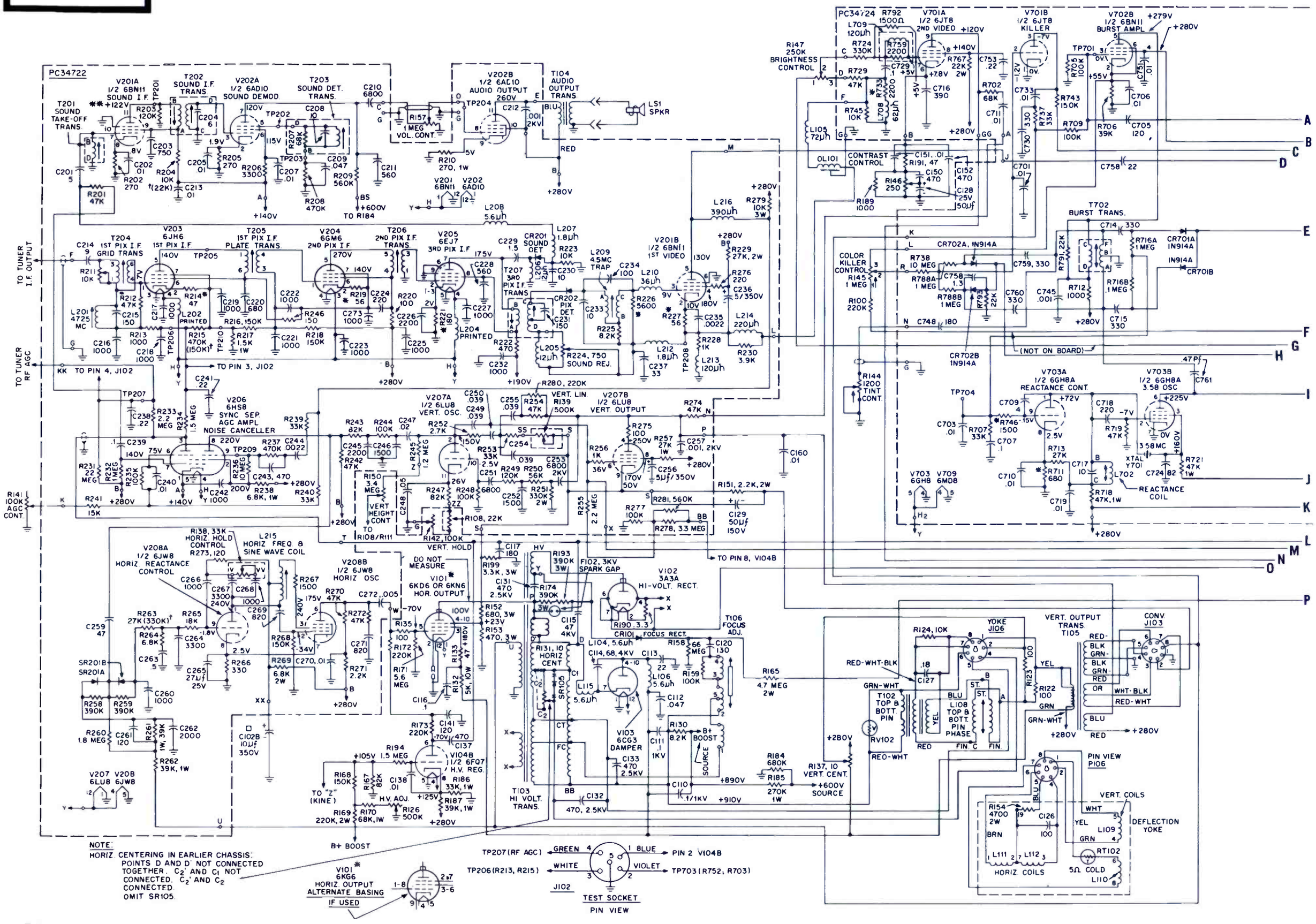
NOTES:
VOLTAGE MEASUREMENTS
1. TAKEN FROM POINT INDICATED TO CHASSIS WITH A VTVM. ±20%
2. LINE VOLTAGE MAINTAINED AT 120V AC.
3. TAKEN WITH CONTRAST CONTROL AT MINIMUM AND ALL OTHER CONTROLS IN NORMAL OPERATING POSITION
4. WHERE TWO VOLTAGES ARE SHOWN:
   VOLTAGE ABOVE BOX-WITH NO SIGNAL INPUT, TUNER ON CHANNEL WITH LEAST NOISE AND ANTENNA TERMINALS SHORTED.
   VOLTAGE IN BOX-WITH TUNER ON STRONG STATION AND OUTSIDE ANTENNA.



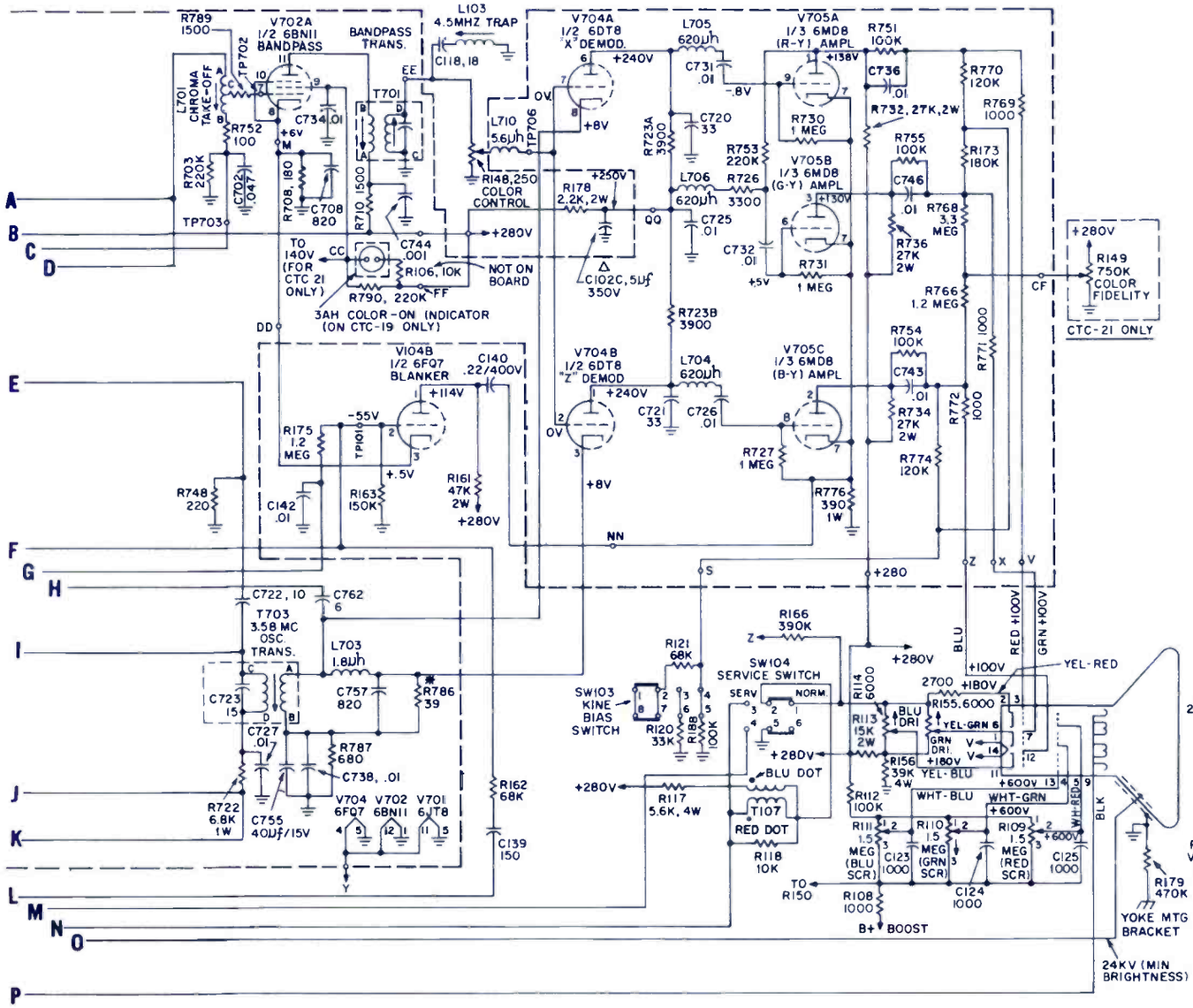


OLYMPIC
Color TV Chassis
CTC 19/21 Series

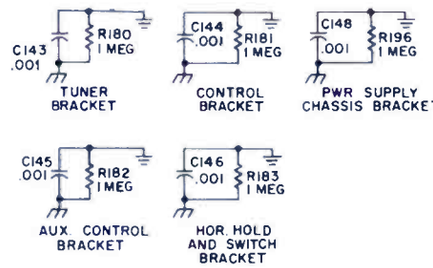
More Data on Opposite Page



More Data on Opposite Page



SYMBOL	DESCRIPTION	OLYMPIC PART NO.
	tuner UHF	CL34315
	tuner VHF (CTC20)	CL34654
	tuner VHF (CTC 19, 21)	CL34835
C101A,B,C	200µf, 20µf, 20µf, 350v	C034801
C101A,B,C	250µf, 20µf, 20µf 350v elect (CTC 19, 21)	C034860
C102A,B,C	20µf, 10µf, 5µf 350v elect (CTC 20)	C034800
C102A,B,C	250µf, 10µf, 5µf 350v elect (CTC 19, 21)	C034861
C104	47pf ±10% 1.4kv	CCD47UK6
C109	.01µf ±20% 1.5kv	C034853



NOTES:

RESISTANCE VALUES IN OHMS, K=1000.
*INDICATES 5% TOLERANCE.

CAPACITANCE VALUES LESS THAN 1 IN µf, 1 AND ABOVE IN Pf UNLESS OTHERWISE INDICATED

VOLTAGES MEASURED WITH VTVM AND WITH NO SIGNAL INPUT, AND SHOULD HOLD WITHIN ±20% WITH 120VAC SUPPLY. CONTROLS SET FOR NORMAL OPERATION.

** NOTE: THESE READINGS TAKEN WITH PIN 7 V201A GROUNDED.

† LATEST PRODUCTION

OLYMPIC
Color TV Chassis CTC 19/21 Series

C110 — .1µf ±20% 1kv poper mylar	C034854
C113 — 22pf ±20% 1kv	CCD220M1
C114 — 68pf ±10% 4kv	C032092-42
C116 — .1µf ±20% 600v	CMMD6104M
C117 — 180pf ±10% 1kv	CCD181K1
C122 — 470pf ±10% 2.5kv	CCD471K2
C144 — 1000 pf +80% −20% 1.4kv	CCD102Z1
CB101 — breaker circuit (CTC20)	RL34856
CB101 — breaker circuit (CTC19,21)	RL34856-1
CR101 — rectifier (focus)	RF32103-1
L101 — reactor instant-on (CTC20)	CK34731
L101 — reactor instant-on (CTC19,21)	CK34732
L102 — choke filter (CTC19,21)	CK34653
L102 — choke filter (CTC20)	CK34653-1
L103 — trap 4.5MHz (CTC19,21)	CL35311
L105 — coil peaking 72µh ±10%	CL32099-6
L106 — choke RF 3.6µh ±10%	CK32098-243
L108 — coil pincushion top and bottom	CL34090-2
L115 — choke RF 3.6µh ±10%	CK32098-243
L116 — coil peaking 220µh (CTC20)	CL32345-13
L117 — coil peaking 560µh (CTC20)	CL32345-14
Q101 — transistor 2N2430 (CTC19,21)	AS34280
R110 — 1.5M ±30% ¼w var (gr screen)	PT32067-20
R114 — 6K ±20% ½w var (blue drive)	PT32067-17
R117 — 5.6K ±10% 4w (CTC19,21)	RE32087-43
R121 — 39K ±10% 3w (CTC20)	RE32085-63
R124 — 15K ±20% var (pin ampl) (CTC20)	PT34091
R137 — 10Ω WW (CTC19,21) var (vert centering)	PT32066-17
R138 — 33K ±20% var (horiz hold)	PT34849
R139 — 500K var (vert lin)	PT32067-27
R141 — 100K ±30% ¼w var (AGC)	PT32067-25
R142 — 100K ±20% ½w var (vert hold)	PT32065-28
R144 — 1.2K ±20% ¼w var (tint) (CTC20,21)	PT32065-31
R145 — 1M ±30% ¼w var (contrast) CTC19,21)	PT32067-2
R146 — 250Ω ±20% ¼w var (contrast)(CTC20)	PT32065-33
R147 — 250K ±20% ¼w var (bright)	PT32065-30
R148 — 500Ω ±20% ½w var (color) (CTC20,21)	PT32065-29
R149 — 750K ±30% ¼w var (col fid) (CTC20,21)	PT32065-32
R150 — 3.2M ±30% ¼w var (v. height)	PT32067-24
R152 — 680Ω ±10% 3w	RE34096
R153 — 470Ω ±10% 3w	RE34852
R155 — 6K ±20% ½w var (green drive)	PT32067-16
R157 — 1M with slide switch (volume) (CTC20,21)	PT34747
R165 — 4.7Ω ±20% 2w	RED475M
R174 — 390K ±10% 2w	RED394K
R195 — 15K ±10% 2w (CTC19,21)	RED153K
R199 — 3.3K 3w	RE32085-37
RT101 — thermistor	RE33795
RV101 — varistor	RE33794
RV102 — varistor ±15% @ 1ma, 175v	RE34098
RV103 — varistor (CTC19,21)	RE32314-1
T101 — xformer, filament (CTC19,21)	TR34648
T101 — xformer power (CTC20)	TR34651
T102 — xformer pin cushion	TR34093-1
T103 — xformer, horiz output	TR34650
T104 — xformer audio output	TR33549-1
T105 — xformer, vert output	TR34652
T106 — coil focus	CL32071-5
T107 — coil mutuol coupling (CTC19,21)	CL32106-1
C212 — 1000pf ±10% 2kv	C032097-3
C236 — 5µf 350v elect	CO34730
C243 — 470pf ±10% 1kv	CCC471K1
C253 — 6800pf ±20% 2kv	CCC682M1
C257 — 1000pf ±10% 2kv	C032097-3
C264 — 3300pf ±20% 1kv	CCC332M1
C271 — 820pf ±10% 1kv	CCC821K1
CR201 — diode crystal	1N60-1
L201 — xformer 47.25MHz	TR32444-6
L206 — coil 12µh	CK32098-251
L207 — coil 1.8µh	CK32391-231
L208 — coil 5.6µh	CK32098-243
L209 — trap 4.5MHz	CL32422-4
L210 — coil 36µh	CL32100-13
L212 — coil 1.8µh	CK32391-231
L213 — coil 120µh	CL32442-15
L214 — coil 220µh	CL32442-9
L215 — coil (hor freq sine wave osc)	CL34719
L216 — coil peaking 390µh ±10%	CL32100-27
R211 — 10K 0.2w var	PT32381-1
R251 — 330K ±10% 2w	RED-P334K
R279 — 10K ±10% 3w	RE32085-49
T201 — xformer, snd take-off	TR32413-3
T202 — xformer, snd IF, with C204/6pf	TR32423-4
T203 — xformer snd detector with 68K/R207 and 10pf/C208	TR32413-2
T204 — xformer 1st pix IF grid	TR32444-3
T205 — xformer 1st pix IF plate	TR32444-8
T206 — xformer 2nd pix IF	TR32444-7
T207 — xformer 3rd pix IF with 150pf/C 231	TR32421-2
SR201A — rectifier, selenium	RF32426-7
C706 — .01µf 1kv cer	CCC103M4
C708 — 820µf 1kv cer	CCC821K1
C716 — 390µf 1kv cer	CCC391K1
C720 — 33µf 1kv cer	CCC330M2
C722 — 10µf 1kv cer	CCC100K1
C730 — 330µf 1kv cer	CCC331J1
C748 — 180pf ±10% 1kv	CCC181K2
CR7018 — diode crystal	RF34661
L701 — coil chroma take-off	CL32420-3
L702 — coil reactance	CL32418-2
L703 — coil 1.8µh (CTC19,21)	CK32391-231
L703 — coil 10µh (CTC20)	CL32442-8
L704 — coil peaking 620µh	CL32442-14
L709 — coil 120µh (with R739/2200)	CL32442-13
L710 — coil 5.6µh	CK32391-243
T701 — xformer band pass (with C713/330pf)	TR32424-2
T702 — xformer burst phase	TR32419-2
T703 — xformer 3.58 ECO (with C723/15pf)	TR32411-3
Y701 — resonator piezoelectric 3.58MHz	CR32077-1
L801 — coil	CL32417-1
L802 — coil	CL32417-4
R801 — 120Ω 1w var	PT32066-5
R808 — 60Ω 1w var	PT32066-2
R812 — 500Ω 1w var	PT32066-26
R813 — 30Ω 1w var	PT32066-6
SR801 — rectifier silicon	RF32101-9
T801 — coil horiz convergence	CL34517

OLYMPIC
Color TV Model
CT-910

TUBE AND TRANSISTOR COMPLEMENT

Television Chassis

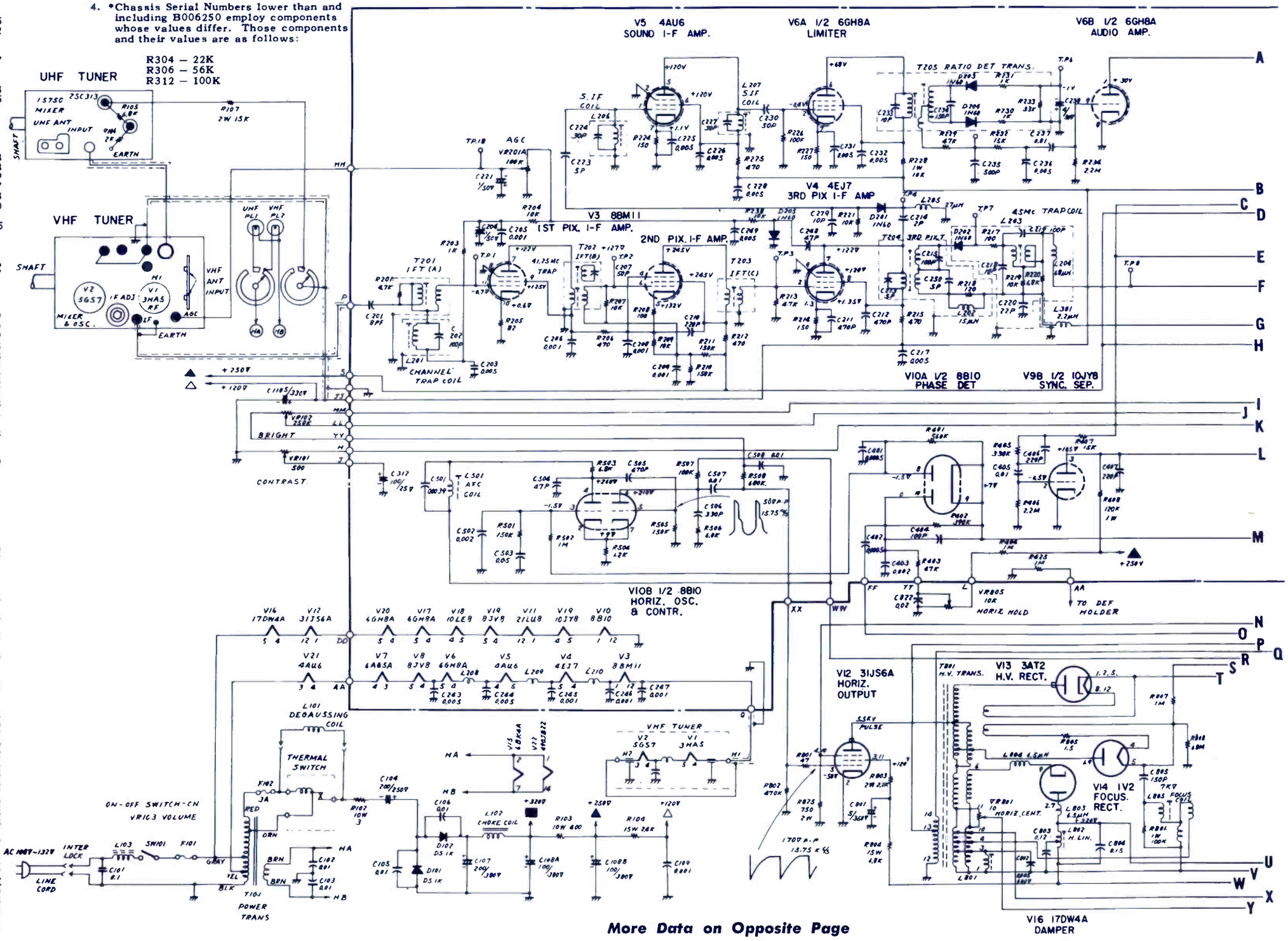
8BM11	1st and 2nd Picture I-F Amplifier
4EJ7	3rd Picture I-F Amplifier
4AU6	Sound I-F Amplifier
6GH8A	Limiter and Audio Amplifier
6AQ5	Audio Output
8JV8	1st Video Amplifier and Blanker
10JY8	2nd Video Amplifier and Sync Separator
8B10	Phase Detector and Horizontal Oscillator
21LU8	Vertical Oscillator and Output
31JS6A	Horizontal Output
3AT2	High Voltage Rectifier
1V2	Focus Rectifier
6BK4A	Shunt Regulator
17DW4A	Damper
6GH8A	1st Bandpass Amplifier and Color Killer
10LE8	Demodulator
8JV8	Burst Amplifier and 2nd Bandpass Amplifier
6GH8A	3.58 mc Oscillator and Reactance Control
4AU6	Pincushion Correction
490JB22	Picture Tube
1N60	Video Detector, Germanium
1N60	Sound Detector, Germanium
1N60	AGC Detector, Germanium
1N60 X2	Ratio Detector, Germanium
SD-1	Pulse Chopper, Silicon
1S33X 2	Color Phase Detector, Germanium

NOTE

1. ALL CAPACITANCE VALUES ARE MF BUT P MEAN PF.
2. ALL RESISTANCE VALUES IN OHM. K=1000 M=MEG OHM.
3. ALL VOLTAGE MEASURED WITH ELECTRONIC VOLTMETER AND WITH NO SIGNAL INPUT, AND SHOULD WITHIN ± 20% WITH 120 VOLT AC SUPPLY.
4. *Chassis Serial Numbers lower than and including B006250 employ components whose values differ. Those components and their values are as follows:

R304 — 22K
R306 — 56K
R312 — 100K

SYMBOL	DESCRIPTION	OLYMPIC PART NO.
C107	100μf +100μf 380v	COJ60238
C112	10μf 350v	COJ60234
C241	10μf 50v	COJ60233
C311	.01μf ±20% 1200v	
C312	100μf 25v	COJ60236
C415	1μf 400v	COJ60229
C611	100pf ±10% 1.5kv	
C612	10pf ±10% 1.5kv	
C707	50μf 150v	COJ60235
C801	5μf 350v	COJ60232
C805	150pf ±10% 6kv	
C817	100pf ±10% AC3 kv	
C818	200μf 15v	COJ60237
C819	.002μf ±20% 1200v	
C821	80pf ±10% AC3 kv	
R102	3 10w	REJ60224
R103	400 10% 10w	REJ60225
R219	10K 5% 1/8w	
R325	10K ±10% 3w	
R326	6.8K ±10% 3w	
R608	15K ±10% 4w	
R804	6.8K ±10% 7.5w	
R808	68M ±20% (4.5kv)	REJ60233
VR101	500 var contrast control	PTJ60213
VR102	250K var bright control	PTJ60209
VR103	500K var ON-OFF vol control	PTJ60207
VR104	500 var color control	PTJ60208
VR105	1.2K var tint control	PTJ60210
VR201A	100K-500K-1M var AGV HV (VR501A) — ADJ and color killer (VR601B)	PTJ60215
VR302B	5k-5k-1M var green background (VR301B) — blue background and red (VR602B) — bias	PTJ60216
VR603C	1M 1M (VR604C) — 1M 1M var green bias (VR402C) — blue bias vert lin and (VR401C) — vert height	PTJ60217
VR701	100 var blue left control	PTJ60219
VR702	60 var vert left control	PTJ60220
VR704	100 var red amplifier control	PTJ60219
VR801	10 var horiz center control	PTJ60214
VR802	1K var pin correct balance control	PTJ60218
VR804	500K var vert hold control	PTJ60211
VR805	10K var horiz hold control	PTJ60212
L101	degaussing coil	SAJ60162
L102	power source choke coil	CKJ60181
L103	choke coil	CKJ60198
L201	channel trap coil	CLJ60184
L202	inductor 15μh	
L203	4.5MHz trap coil	CLJ60188
L204	inductor 68μh	
L205	inductor 28μh	
L207	2nd and IF coil	CLJ60189
L208	IF choke coil	
L210	IF choke coil	
L301	inductor 2.2μh	
L302	inductor 120μh	
L303	inductor 180μh	
L306	inductor 220μh	
L307	inductor 560μh	
L308	inductor 680μh	
L501	AFC coil	CLJ60200
L601	peaker coil	CLJ60197
L602	inductor 2500μh	
L603	inductor 680μh	
L605	color phase coil	
L606	reactance coil	CLJ60196
L701	convergence coil (C) blue right control	TRJ60206
L702	convergence coil (A) vert right control	CLJ60204
L703	convergence coil (B) horiz right control	CLJ60205
L704	convergence yoke	
L801	width coil	CLJ60201
L802	horiz lin coil	CLJ60202
L803	choke coil	
L804	choke coil	
L805	focus coil	CLJ60203
L806	pin phase control coil	CLJ60190
L807	deflection yoke	CLJ60177
T101	power xformer	TRJ60180
T121	audio output	TRJ60182
T201	1st pix IF trans grid	TRJ60183
T202	1st pix IF trans plate	TRJ60185
T203	2nd pix IF xformer	TRJ60186
T204	3rd pix IF	TRJ60187
T205	ratio det xformer	TRJ60192
T601	bandpass xformer	TRJ60195
T602	burst phase xformer	TRJ60194
T603	3.58MHz osc xformer	TRJ60193
T801	high voltage xformer	TRJ60179
T802	pin correct xformer	TRJ60191
T803	vert output xformer	TRJ60178
TD301	delay line	DLJ60199
D101	silicon rectifier	D81K
D203	with ratio det trans	IN60
TCH-2426H-1	VHF tuner	CLJ60175
TCH-2155-2	UHF tuner	CLJ60176
SP-1056	speaker	SKJ60161
EP-2980	thermal switch	SWJ60222



More Data on Opposite Page

ELECTRICAL SPECIFICATIONS

Television Instrument

ANTENNA INPUT IMPEDANCE ..... 300 ohms balanced
CONVERGENCE ..... Magnetic
FOCUS ..... Electrostatic
AUDIO POWER OUTPUT RATING ..... 1.5 Watts Maximum
INTERMEDIATE FREQUENCIES
Picture I-F Carrier Frequency ..... 45.75 mc
Sound I-F Carrier Frequency ..... 41.25 mc
Color Sub-Carrier Frequency ..... 42.17 mc (Nominal)
POWER INPUT ..... 120 volts AC, 60 cycle
POWER RATING ..... 280 watts total

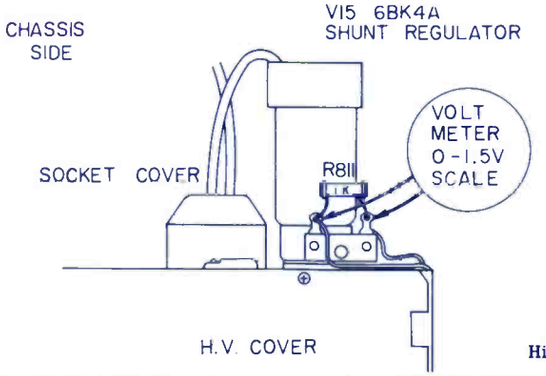
SWEEP DEFLECTION ..... Magnetic
TELEVISION R-F FREQUENCY RANGE
All 12 VHF television channels ..... 54 mc to 88 mc, 174 mc to 216 mc
All 70 UHF Channels ..... 470 mc to 890 mc

VHF TUNER

3HA5 ..... R-F Amplifier
5GS7 ..... Mixer and Oscillator

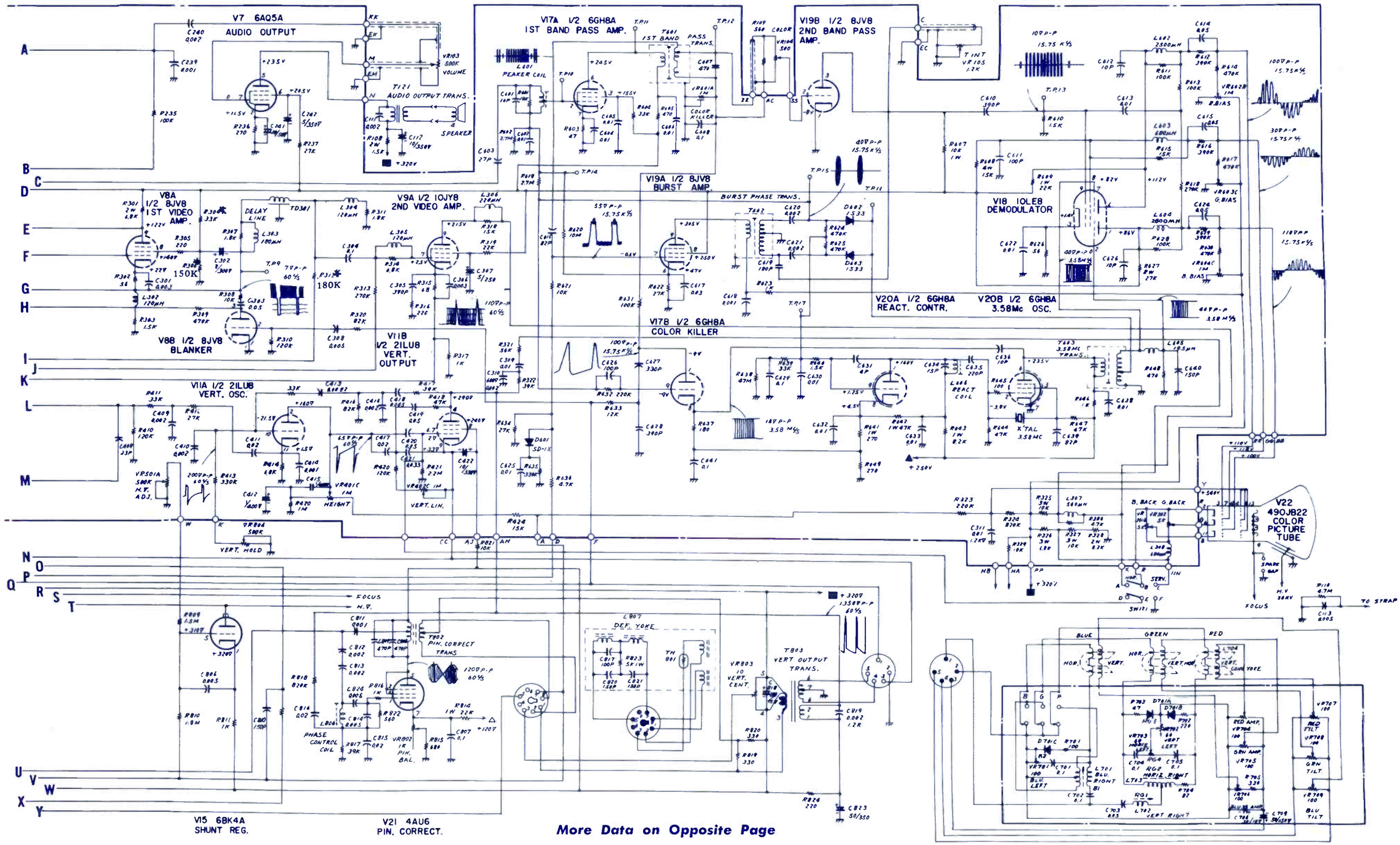
UHF TUNER

2SC313 ..... Oscillator
1S750 ..... Mixer



High Voltage Alignment

OLYMPIC
Color TV Model CT-910



More Data on Opposite Page

OLYMPIC
TV Chassis 9P56, 57, 58

ELECTRONIC TECHNICIAN TEKFAX

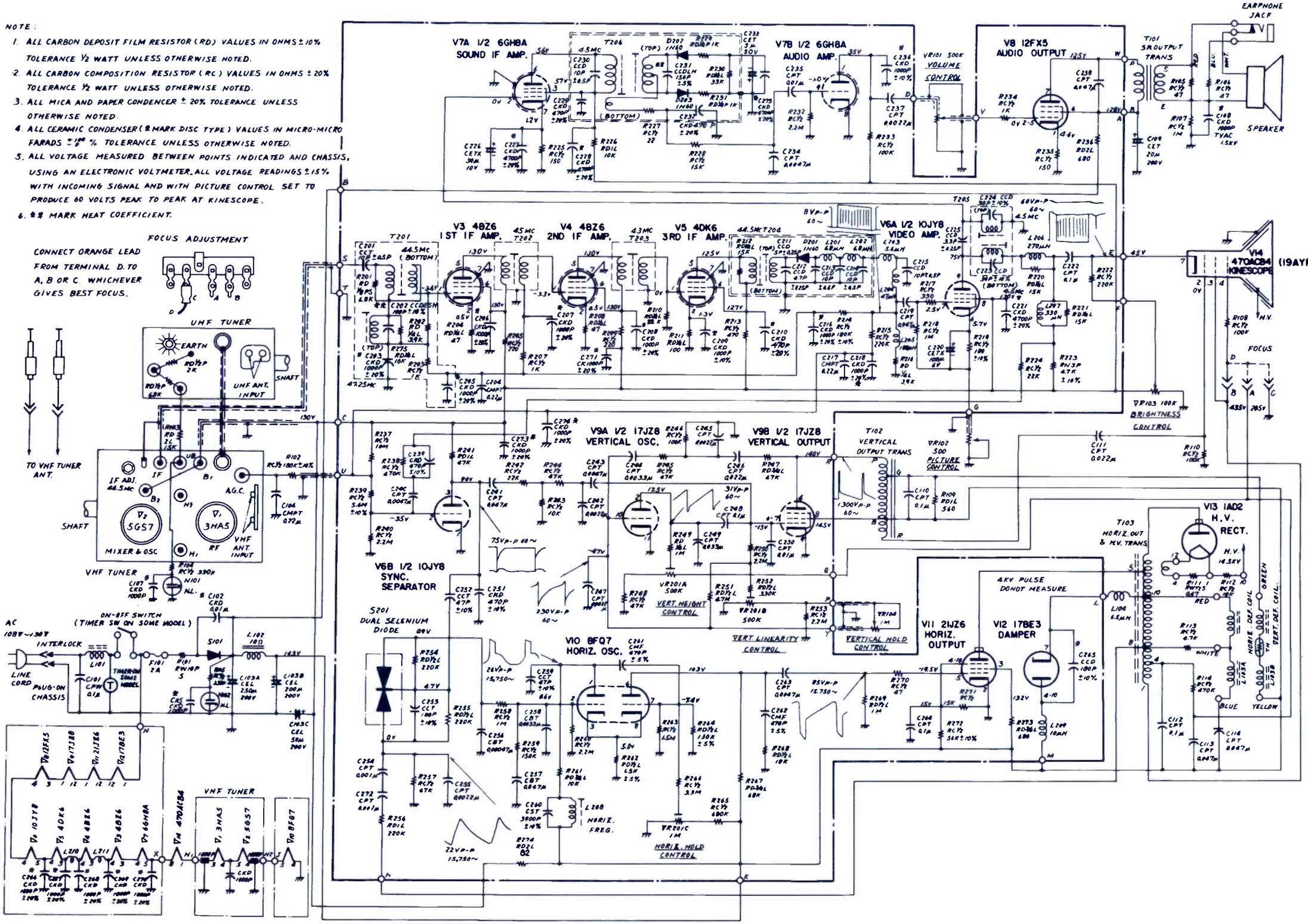
SYMBOL	DESCRIPTION	OLYMPIC PART NO.
VR101	500K variable (volume) 9P58	PTJ60485
VR101	500K variable (volume) (power on-off) 9P56 and 9P57	PTJ33392
VR102	500K variable (picture)	PTJ33393
VR103	100K variable (brightness) 9P57 and 9P58	PTJ60483
VR104	1M variable (vert hold) 9P57 and 9P58	PTJ60486
VR104	1M variable (vert hold) 9P56	PTJ33395
VR201A	500K variable (vert height)	PTJ60111
VR201B	500K variable (vert lin)	PTJ60111
VR201C	1M variable (horiz hold)	PTJ60111
R101	5Ω ±10% 10w	REJ33209
R236	680Ω ±10% 2w	REJ60480
R274	82Ω ±10% 2w	REJ60482
C103	250μf +200μf +50μf 200v	COJ33413
C108	1000pf +100% −0	
C109	20μf 200v	COJ33414
C220	100μf 6v	COJ60319
C234	0.0047μf ±20% 30μf 10v	COJ31391
T101	speaker output	TRJ33387
T102	vert output	TRJ60103
T103	voltage high	TRJ60105
T201	I-F-T A input	TRJ60314
T202	I-F-T D 1st	TRJ60320
T203	I-F-T B 2nd	TRJ60315
T204	I-F-T C 3rd	TRJ60316
T205	snd I-F-T	TRJ33022
T206	ratio det	TRJ33241
L101	coil choke	CLJ60479
L102	choke filter	CLJ33385
L103	yoke deflection	CLJ60106
L104	coil choke 6.5μh	CLJ60478
L201	coil choke 6.8μh	CLJ60471
L203	coil inductor 5.6μh	CLJ60472
L204	coil inductor 47μh	CLJ60473
L205	coil inductor 180μh	CLJ60474
L206	coil inductor 270μh	CLJ60475
L207	coil inductor 330μh	CLJ60476
L208	coil horiz freq	CLJ33390
L209	coil choke 10μh	CLJ60477
L210	coil choke	CLJ60484
F101	fuse 2 amp	FUJ31376
	tuner VHF (9P56, 9P57 and 9P58)	CLJ60107
	tuner UHF (9P56)	CLJ60142
	tuner UHF (9P57 and 9P58)	

NOTE:

1. ALL CARBON DEPOSIT FILM RESISTOR (RD) VALUES IN OHMS ± 10% TOLERANCE ½ WATT UNLESS OTHERWISE NOTED.
2. ALL CARBON COMPOSITION RESISTOR (RC) VALUES IN OHMS ± 20% TOLERANCE ½ WATT UNLESS OTHERWISE NOTED.
3. ALL MICA AND PAPER CONDENCER ± 20% TOLERANCE UNLESS OTHERWISE NOTED.
4. ALL CERAMIC CONDENSER (# MARK DISC TYPE) VALUES IN MICRO-MICRO FARADS ± % TOLERANCE UNLESS OTHERWISE NOTED.
5. ALL VOLTAGE MEASURED BETWEEN POINTS INDICATED AND CHASSIS, USING AN ELECTRONIC VOLTMETER. ALL VOLTAGE READINGS ± 15% WITH INCOMING SIGNAL AND WITH PICTURE CONTROL SET TO PRODUCE 60 VOLTS PEAK TO PEAK AT KINESCOPE.
6. ## MARK HEAT COEFFICIENT.

FOCUS ADJUSTMENT

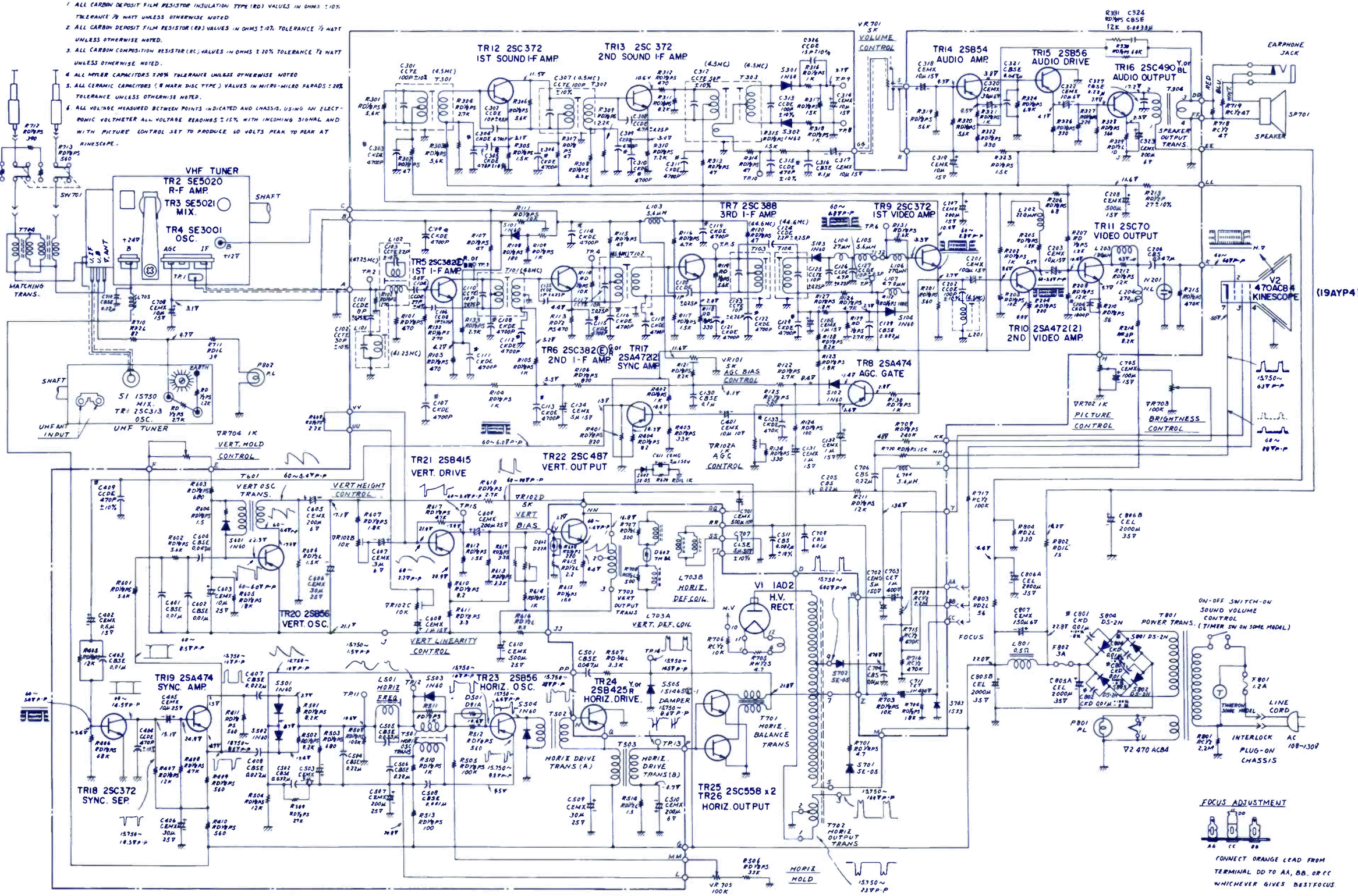
CONNECT ORANGE LEAD FROM TERMINAL D. TO A, B OR C. WHICHEVER GIVES BEST FOCUS.



OLYMPIC
TV Chassis
9P59/60 Series

SYMBOL	DESCRIPTION	OLYMPIC PART NO.
VR101	AGC bias control	PTJ60437
VR102A	AGC control	PTJ60436
VR102B	vert height control	PTJ60436
VR102C	vert lin control	PTJ60436
VR102D	vert bias control	PTJ60436
VR701	vol control	PTJ60432
VR702	picture control	PTJ60433
VR703	brightness control	PTJ60434
VR704	vert hold control	PTJ60435
VR705	horiz hold control	PTJ60434
C805A	2000µf ±20% 35v	
C805B	2000µf ±20% 35v	
C806A	2000µf ±20% 35v	
C806B	2000µf ±20% 35v ±100%	
T101	1st pix IF	
T102	2nd pix IF	
T103	3rd pix IF	
T104	video det	
T301	1st snd IF	TRJ60440
T302	2nd snd IF	TRJ60550
T303	ratio det	TRJ60441
T304	audio output	TRJ60427
T501	horiz osc	TRJ60428
T502	horiz drive (A)	TRJ60422
T503	horiz drive (B)	TRJ60423
T601	vert osc	TRJ60421
T701	horiz balance	TRJ60426
T702	high voltage	TRJ60421
T703	vert output	TRJ60421
T801	power supply	TRJ60420
L101	coil trap snd IF	CLJ60409
L102	coil trap channel	CLJ60408
L103	coil inductor 5.6µh	TRJ60442
L106	coil inductor 270µh	TRJ60445
L107	coil inductor 470µh	TRJ60446
L201	coil trap 4.5MHz	CLJ60027
L202	coil inductor 220µh	TRJ60444
L501	coil horiz AFC	CLJ60458
L703	yoke deflection	CLJ60425
L705	coil filter choke	CLJ60431
S1	UHF mixer 1575	
S301	ratio det 1N60	
S501	horiz phase det 1N60	
S802	bridge rectifier DS-2N	RFJ60039
D501	thermistor D91A	
D602	thermistor D22A	
D603	thermistor 8Ω ±10%	
N201	lamp neon	BUJ60438
F801	fuse 1.2amp	
F802	fuse 3.0amp	
	tuner VHF (K310130) USA-1	CLJ60429
	tuner UHF	CLJ60430

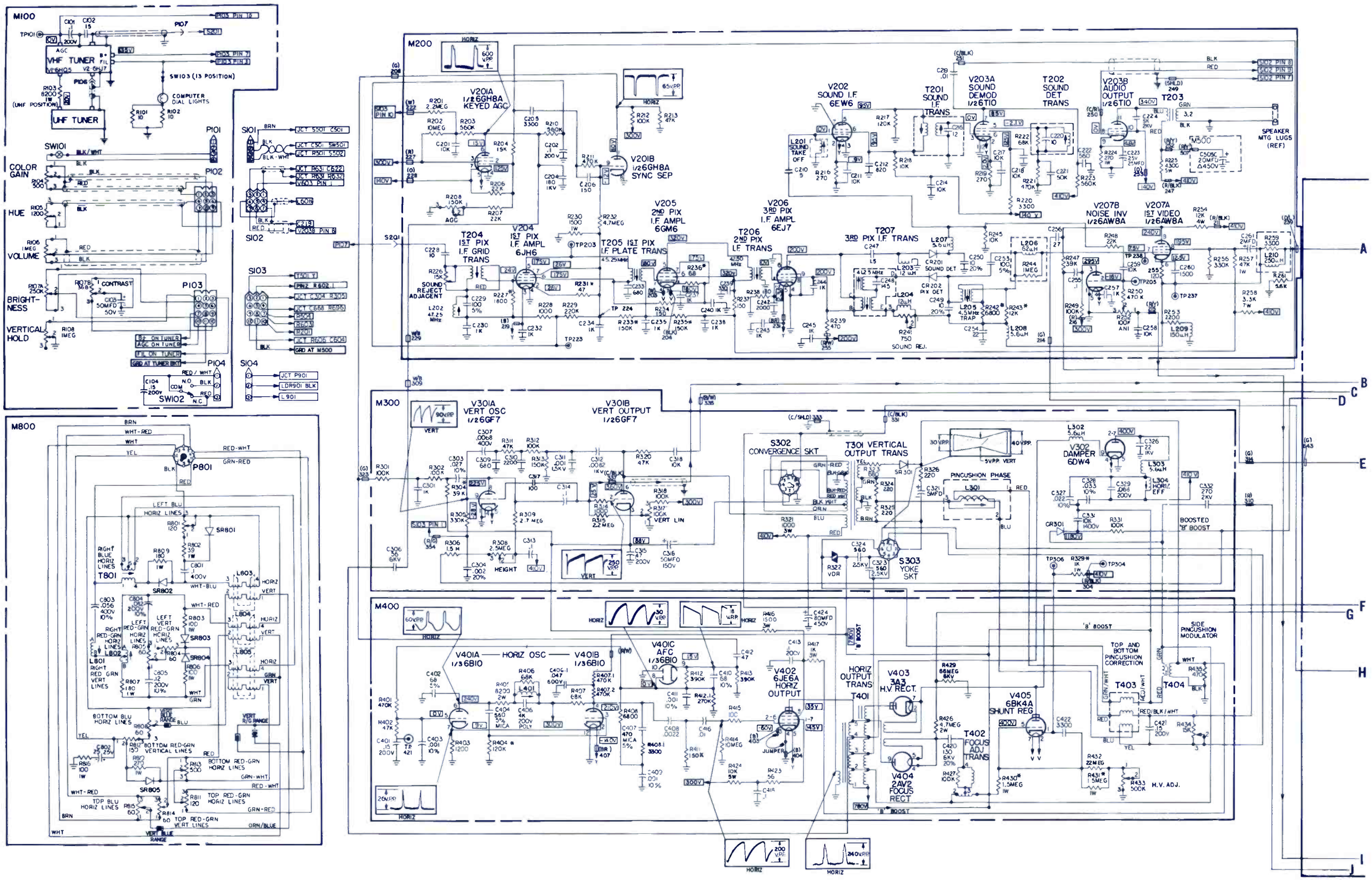
NOTE:
1. ALL CARBON DEPOSIT FILM RESISTOR INSULATION TYPE (RD) VALUES IN OHMS ±10% TOLERANCE ½ WATT UNLESS OTHERWISE NOTED.
2. ALL CARBON DEPOSIT FILM RESISTOR (RD) VALUES IN OHMS ±10% TOLERANCE ½ WATT UNLESS OTHERWISE NOTED.
3. ALL CARBON COMPOSITION RESISTOR (RC) VALUES IN OHMS ± 20% TOLERANCE ½ WATT UNLESS OTHERWISE NOTED.
4. ALL MYLER CAPACITORS ±20% TOLERANCE UNLESS OTHERWISE NOTED
5. ALL CERAMIC CAPACITORS (B MARK DISC TYPE) VALUES IN MICRO-MICRO FARADS ±20% TOLERANCE UNLESS OTHERWISE NOTED.
6. ALL VOLTAGE MEASURED BETWEEN POINTS INDICATED AND CHASSIS, USING AN ELECTRONIC VOLTMETER ALL VOLTAGE READINGS ±15%, WITH INCOMING SIGNAL AND WITH PICTURE CONTROL SET TO PRODUCE 60 VOLTS PEAK TO PEAK AT KINESCOPE.



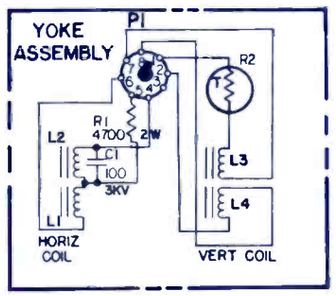
PACKARD BELL

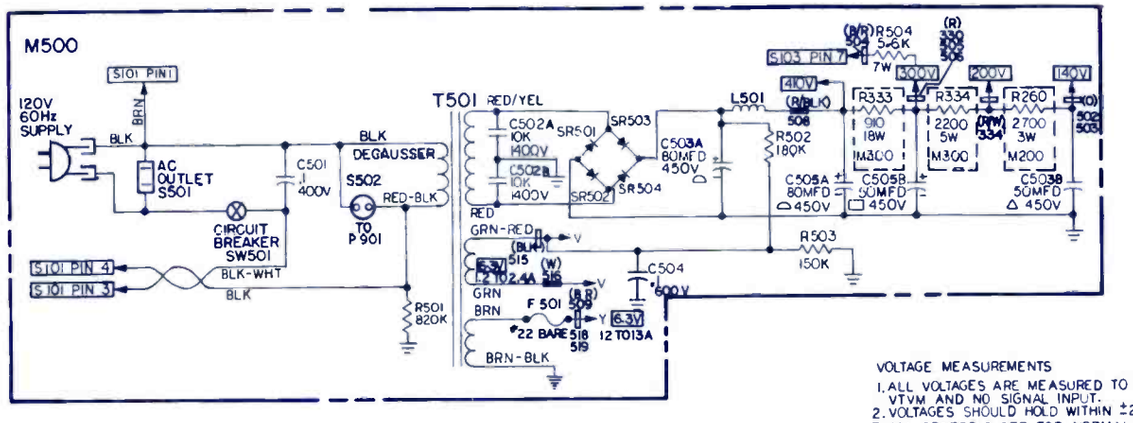
Color TV Chassis
98C15

More Data on Opposite Page



More Data on Opposite Page





VOLTAGE MEASUREMENTS

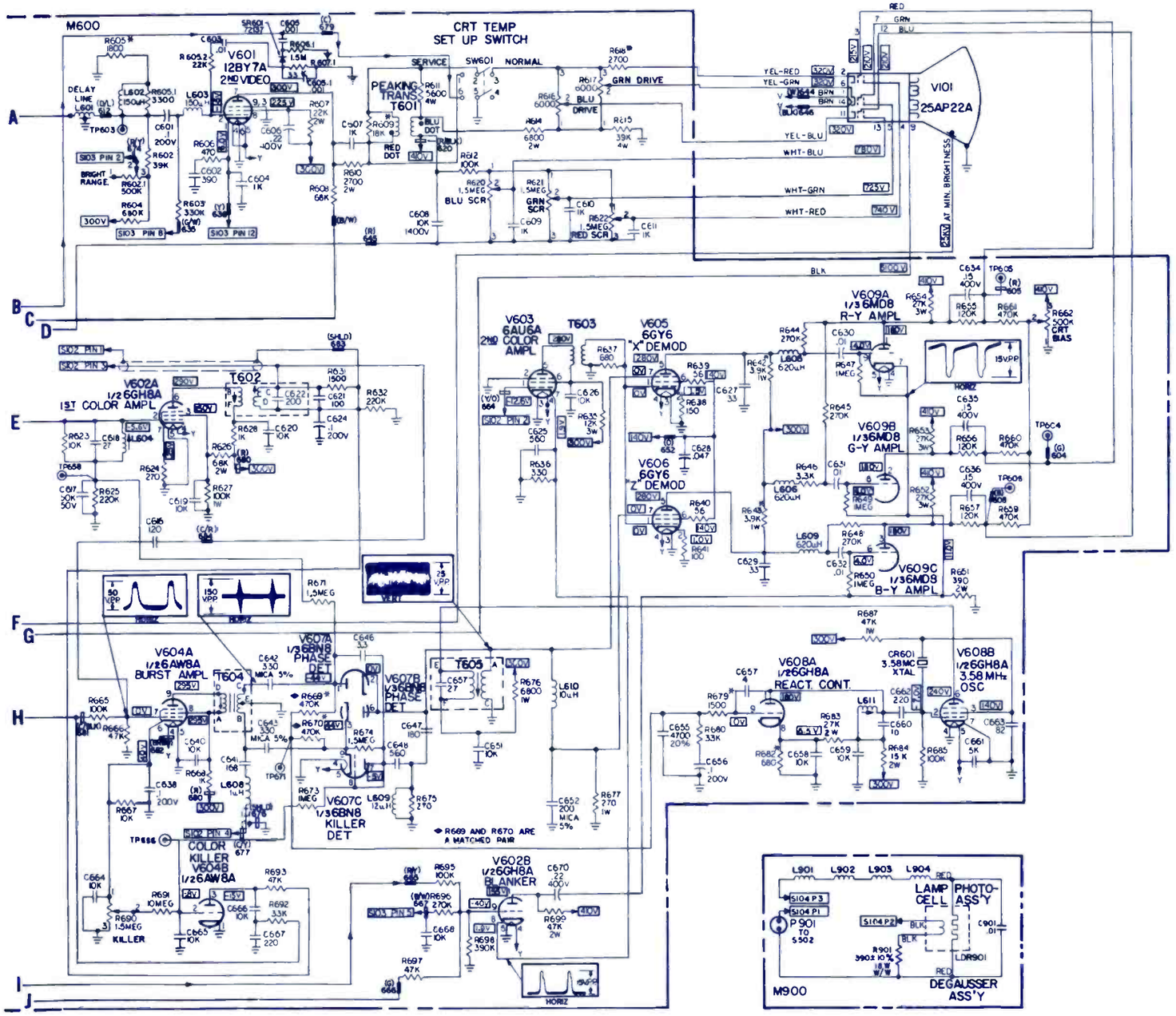
1. ALL VOLTAGES ARE MEASURED TO CHASSIS GROUND WITH VTVM AND NO SIGNAL INPUT.
2. VOLTAGES SHOULD HOLD WITHIN ±20% WITH 120V AC SUPPLY.
3. ALL CONTROLS SET FOR NORMAL RECEPTION. TURN CONTRAST AND BRIGHTNESS CONTROLS TO MINIMUM.
4. VOLTAGES ARE POSITIVE, EXCEPT WHEN PRECEDED BY A MINUS SIGN.

NOTES:

1. K=1000.
2. ALL RESISTANCE VALUES IN OHMS, ½W ±10%, UNLESS OTHERWISE NOTED.
3. ALL CAPACITANCE VALUES LESS THAN 1.0 ARE IN µF, 1.0 AND ABOVE ARE IN PF, EXCEPT AS NOTED.
4. * INDICATES 5% RESISTORS.
5. ROTATION OF ALL CONTROLS IS CLOCKWISE FROM TERMINALS 1–3.
6. VOLTAGES MEASURED WITH 1MEG, ½W RESISTOR IN SERIES WITH PROBE.
7. ALL CERAMIC CAPACITORS 500V ±10% UNLESS OTHERWISE NOTED.
8. ALL MYLAR MOLDED CAPACITORS 600V ±20%, UNLESS OTHERWISE NOTED.
9. SOCKETS VIEWED FROM WIRING SIDE.

COLOR ABBREVIATIONS:

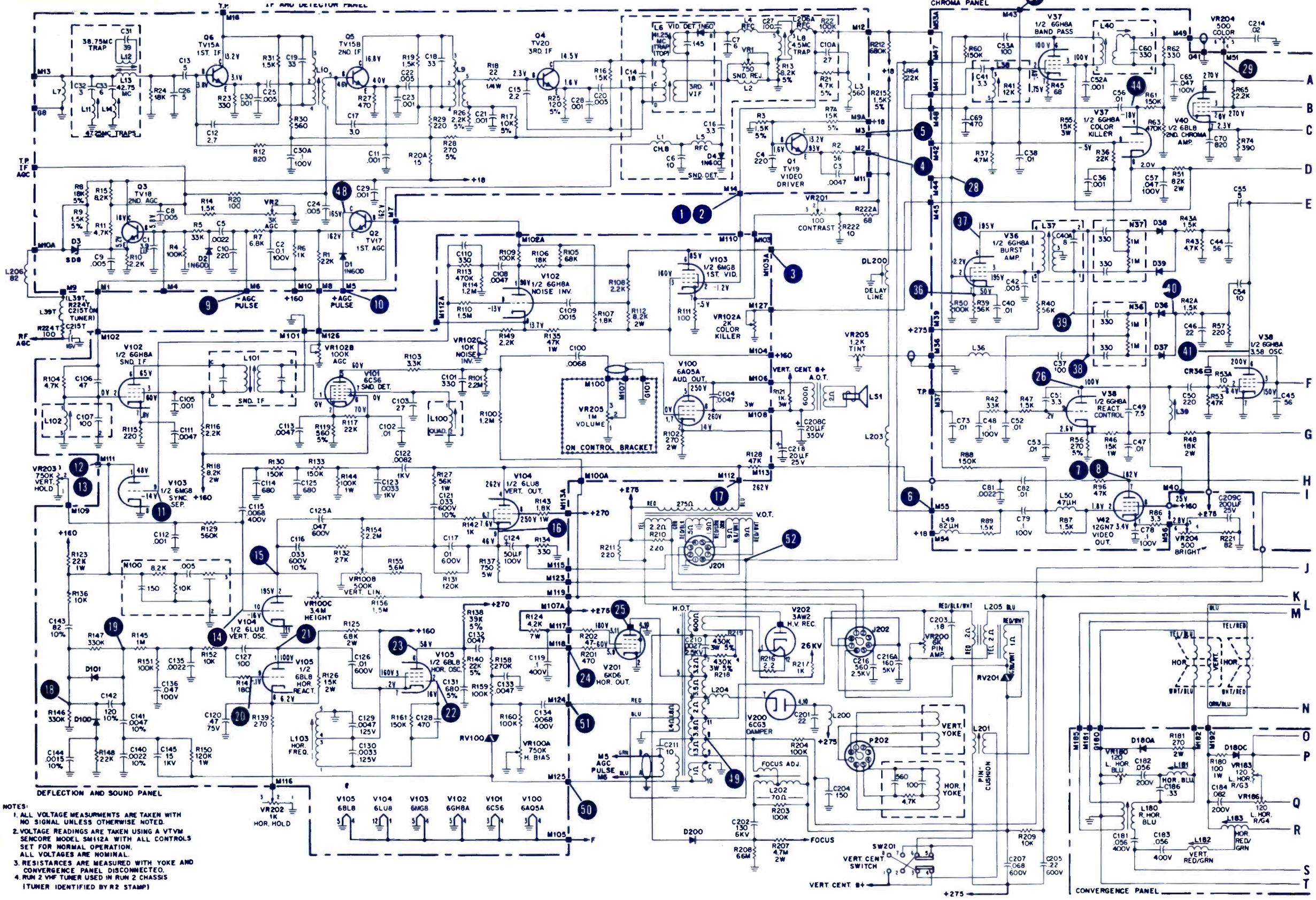
BLACK - BLK
BROWN - BR
RED - R
ORANGE - O
YELLOW - Y
GREEN - G
BLUE - B
WHITE - W
CABLE - C
SHIELD - SHLD
DELAY LINE - D/L



SYMBOL	DESCRIPTION	PACKARD BELL PART NO.
C102	cer 15pf 10% NPO	23803
C204	cer 180pf 10% 1kv Z5P	24558
C206	cer 150pf 5% NPO	23684
C210	cer 5pf 5% NPO	23 5RO 501 027
C224	cer 5000pf 20% 2kv	23 502 202 043
C229	cer 100pf 5% NO33	23691
C306	cer 56pf 20% 6kv N1500	23696
C311	cer 1000pf 10% 1.4kv Z5F	23768
C312	Mylar .0082µf 10% 1kv	23 822 102 011
C317	cer 100pf 5% NO33	23691
C321	elect 5µf 50v non-polarized	24146
C323	cer 560µf 10% 2.5kv N3300	23 561 252 034
C326	cer 22pf 1kv N750	23697
C331	cer .01µf GMV 1.4kv	23834
C403	Mylar .001µf 10% .6kv	23 102 601 014
C404	mica 560pf 5%	23299
C407	mica 470pf 5%	23294
C420	cer 130pf 6kv N2200	24547
C424	elect 80µf 450v	24284
C503A	80µf 450v elect B — 50µf 450v	24244
C505A	80µf 450v elect B — 50µf 450v C — 20µf 450v (in M200)	24285
C608	cer .01µf 1.4kv	23834
C627	cer 33pf 10% NPO	23619
C642	mica 330pf 5%	23282
C647	cer 180pf 5% N750	24505
C652	mica 200pf 5%	23298
C660	cer 10pf 5% NPO	23636
R104	.5K color gain	25706A
R105	1.2K hue	25707A
R106	1M volume	25703A
R107A	250K bright B — 368Ω contrast	25704A
R108	1M vert hold	25705A
R208	150K AGC	25691
R226	15K 10% 2w adj ch snd rej	25699
R241	750Ω 30% snd rej	25642
R252	100K ANI	25685
R317	100K vert lin	25685
R308	2.5M height	25687
R433	500K hi voltage adj	25614
R434	15K pincushion correction	25709A
R602.1	500K bright range	25614
R616	6K blue drive	25708-2A
R617	6K grn drive	25708-1A
R620	1.5M blue screen	25682-2
R621	1.5M grn screen	25682-3
R622	1.5M red screen	25682-1
R662	500K CRT bias	25684
R690	1.5M color killer	25682-4
L201	snd take-off	29914A
L202	trap 47.25MHz	29866A
L203	choke RF 12µh 10%	29646C
L205	trap 4.5MHz	29802B
L206	LR network 62µh & 1M (R244)	29650
L207	RF choke 5.6µh 10%	29787D
L209	RF choke 150µh 10%	29771
T201	snd IF xformer	29915A
T202	snd det xformer	29916B
T203	audio output xformer 3.2Ω	89466A
T204	1st IF grid xformer	29767A
T205	1st IF plate xformer	29768A
T206	2nd IF xformer	29769E
T207	3rd IF xformer	29803C
L301	pincushion phasing	29895A
L302	RF choke 5.6µh 10%	29787D
L304	horiz eff	29897
T301	vt output xformer	89591B
L401	horiz osc	29861
T401	horiz output	89592
T402	focus	29917
T403	pincushion correction	89581-2G
T404	pincushion modulator	89593
L601	delay line	29749
L602	150µh 10%	29771
L604	chroma take-off	29744B
L605	620µh 5%	29669D
L608	choke 1µh	29124A
L609	choke 12µh 10%	29646C
L611	reactance control	29748B
T601	video peaking	29810A
T602	bandpass incls C622	29821B
T603	2nd bandpass	29822B
T604	burst phase	29815B
T605	CW driver	29898
CR201	snd det	72080
CR202	picture det	72080
CR301	diode rect	72111
CR601	crystal 3.58MHz	72059
SR301	silicon rect	72113
R224	270Ω 1w	73218
R225	4.3K 5w	73309
R227	1.8K 5%	73028-1
R230	1.5K 1w	73227
R233	150K 5%	73051-1
R242	6.8K 5%	73035-1
R243	12K 5%	73038-1
R254	12K 4w	73302
R258	3.3K 7w	73304
R260	2.7K 3w (on M500)	73331
R304	39K 5%	73044-1
R309	2.7M 5%	73066-1
R321	1K 3w	73317
R322	voltage dependent resistor 1ma 175v	73510
R329	1K 5% 1w	73225-1
R333	910Ω 18w WW (in M500 on schematic)	73786
R334	2.2K 5w (in M500 on schematic)	73332
R404	120K 5%	73050-1
R405	8.2K 2w	73436
R416	1.5K 3w 10%	73798
R417	1K 10% 3w	73317
R424	10K 5w	73338
R426	4.7M 2w	73469
R429	66M 6kv	73501
R430	1.5M 5% 1w	73263-1
R605	1.8K 5%	73028-1
R607	22K 2w	73312
R609	18K 5%	73040-1
R610	2.7K 2w	73305
R611	5.6K 4w	73301
R614	6.8K 2w	73324
R615	39K 4w	73325
R618	2.7K 5%	73030-1
R626	68K 2w	73447
R635	12K 3w	73310
R642	3.9K 5% 1w	73232-1
R651	390Ω 2w	73339
R652	27K 3w	73323
R669	470K 5%	73057-1
R676	6.8K 1w	73235
R679	1.5K 5%	73027-1
R682	680Ω 5%	73023-1
R683	27K 2w	73311
R684	15K 2w	73308
SW101	push on push off 5A	86839B
SW102	degaussing	86118A
SW501	circuit breaker	86722
L501	choke coil	89557C
T501	power xformer	89585A
F501	fuse no. 22 solid wire	92041
	tuner UHF	10843A
	tuner VHF	10835A

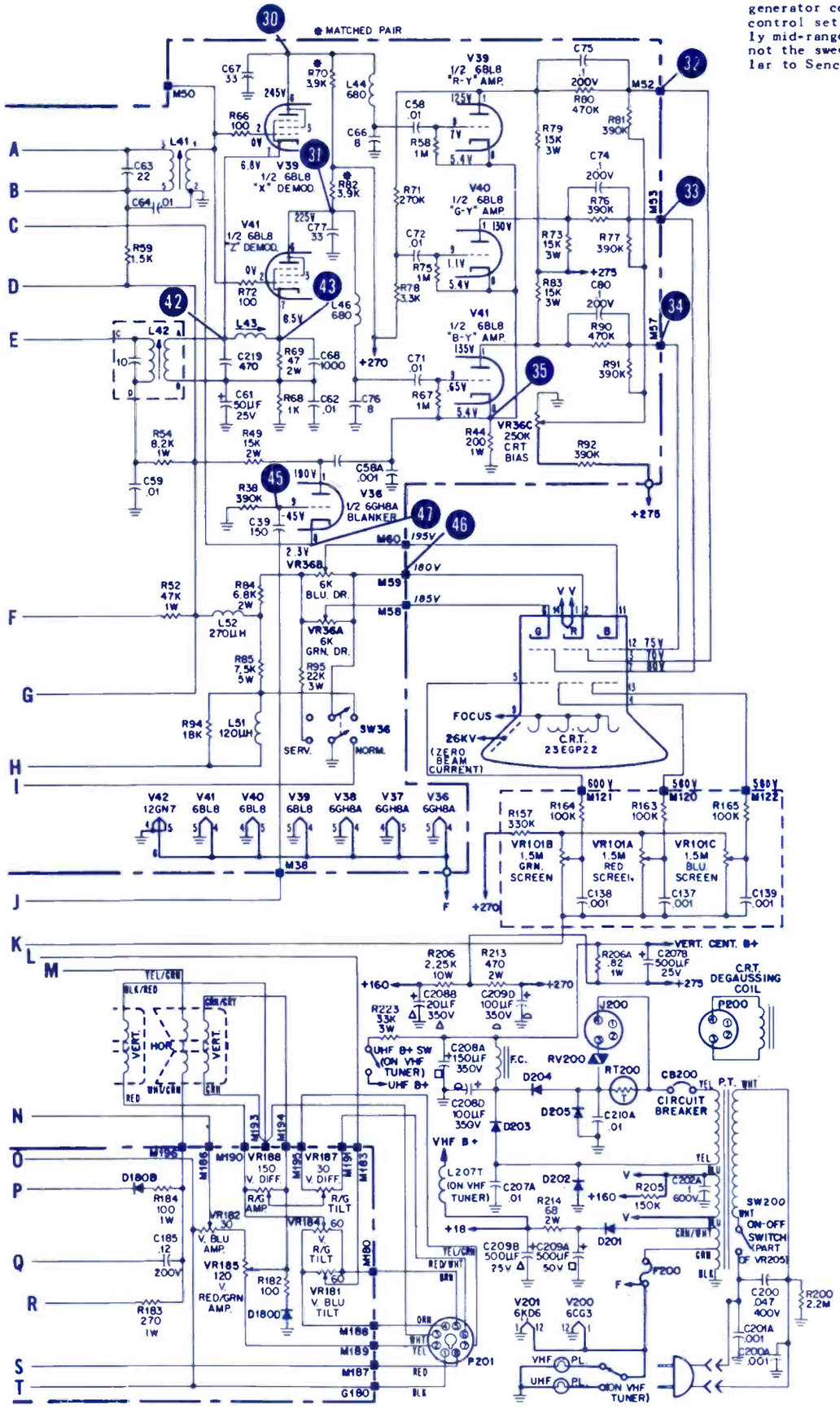
PHILCO
Color TV Chassis
16NT82, 16QT85,
17KT50

More Data on Opposite Page



NOTES:
1. ALL VOLTAGE MEASURMENTS ARE TAKEN WITH NO SIGNAL UNLESS OTHERWISE NOTED.
2. VOLTAGE READINGS ARE TAKEN USING A VTVM SENCORE MODEL SM112A WITH ALL CONTROLS SET FOR NORMAL OPERATION. ALL VOLTAGES ARE NOMINAL.
3. RESISTARCES ARE MEASURED WITH YOKE AND CONVERGENCE PANEL DISCONNECTED.
4. RUN 2 VHF TUNER USED IN RUN 2 CHASSIS (TUNER IDENTIFIED BY R2 STAMP)

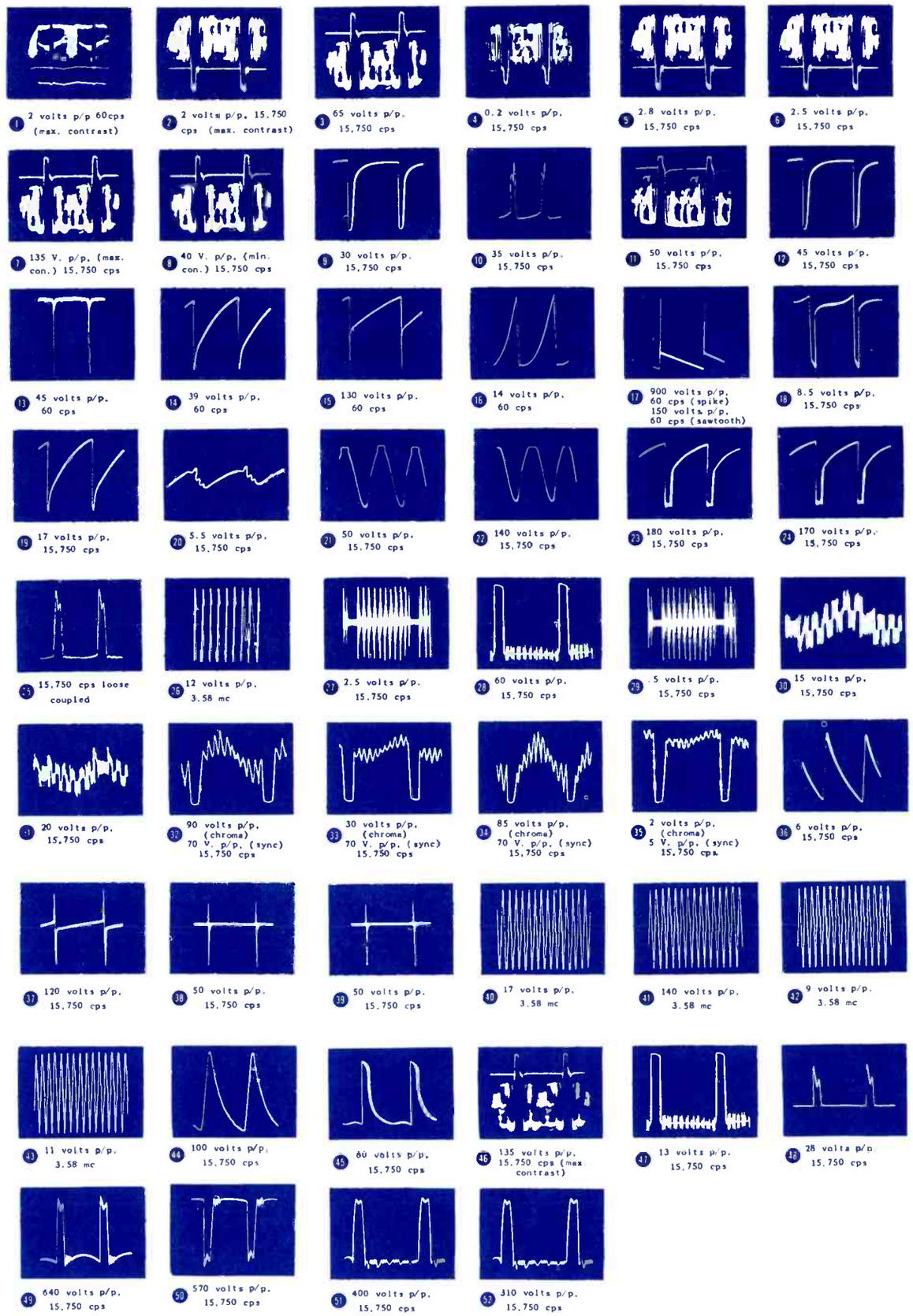
More Data on Opposite Page



OSCILLOSCOPE WAVEFORM PATTERNS

PHILCO
Color TV Chassis 16NT82, 16QT85, 17KT50

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 0.5V peak-to-peak at Pin 2 of V40 and the tint control set for proper color bars (approximately mid-range), 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 5MC bandwidth similar to Sencore Model PS127.

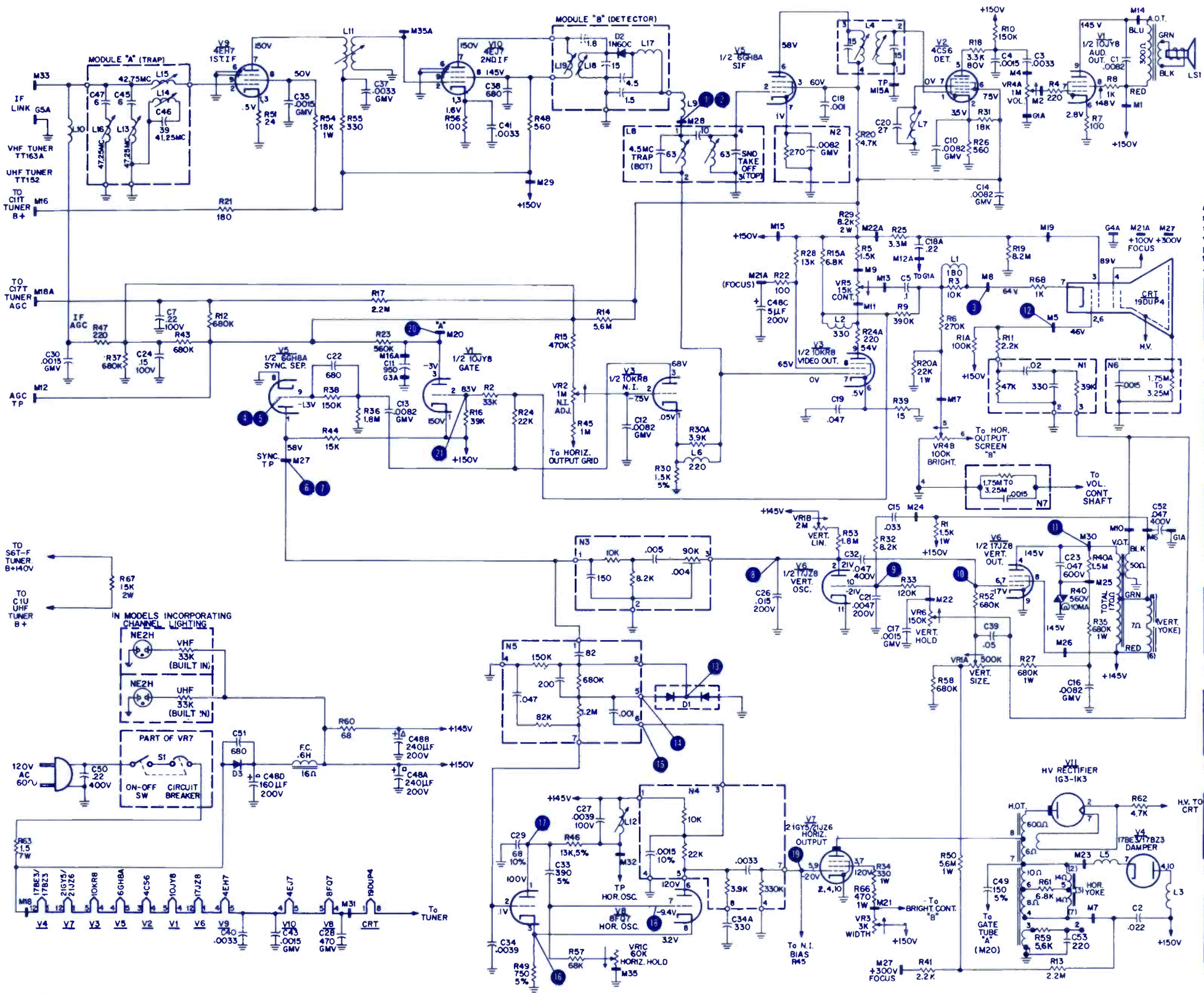


1. 2 volts p/p 60cps (max. contrast)
2. 2 volts p/p, 15,750 cps (max. contrast)
3. 65 volts p/p, 15,750 cps
4. 0.2 volts p/p, 15,750 cps
5. 2.8 volts p/p, 15,750 cps
6. 2.5 volts p/p, 15,750 cps
7. 135 V. p/p. (max. con.) 15,750 cps
8. 40 V. p/p. (min. con.) 15,750 cps
9. 30 volts p/p, 15,750 cps
10. 35 volts p/p, 15,750 cps
11. 50 volts p/p, 15,750 cps
12. 45 volts p/p, 15,750 cps
13. 45 volts p/p, 60 cps
14. 39 volts p/p, 60 cps
15. 130 volts p/p, 60 cps
16. 14 volts p/p, 60 cps
17. 900 volts p/p, 60 cps (spike) 150 volts p/p, 60 cps (sawtooth)
18. 8.5 volts p/p, 15,750 cps
19. 17 volts p/p, 15,750 cps
20. 5.5 volts p/p, 15,750 cps
21. 50 volts p/p, 15,750 cps
22. 140 volts p/p, 15,750 cps
23. 180 volts p/p, 15,750 cps
24. 170 volts p/p, 15,750 cps
25. 15,750 cps loose coupled
26. 12 volts p/p, 3.58 mc
27. 2.5 volts p/p, 15,750 cps
28. 60 volts p/p, 15,750 cps
29. .5 volts p/p, 15,750 cps
30. 15 volts p/p, 15,750 cps
31. 20 volts p/p, 15,750 cps
32. 90 volts p/p, (chroma) 70 V. p/p. (sync) 15,750 cps
33. 30 volts p/p, (chroma) 70 V. p/p. (sync) 15,750 cps
34. 85 volts p/p, (chroma) 70 V. p/p. (sync) 15,750 cps
35. 2 volts p/p, (chroma) 5 V. p/p. (sync) 15,750 cps
36. 6 volts p/p, 15,750 cps
37. 120 volts p/p, 15,750 cps
38. 50 volts p/p, 15,750 cps
39. 50 volts p/p, 15,750 cps
40. 17 volts p/p, 3.58 mc
41. 140 volts p/p, 3.58 mc
42. 9 volts p/p, 3.58 mc
43. 11 volts p/p, 3.58 mc
44. 100 volts p/p, 15,750 cps
45. 80 volts p/p, 15,750 cps
46. 135 volts p/p, 15,750 cps (max contrast)
47. 13 volts p/p, 15,750 cps
48. 28 volts p/p, 15,750 cps
49. 640 volts p/p, 15,750 cps
50. 570 volts p/p, 15,750 cps
51. 400 volts p/p, 15,750 cps
52. 310 volts p/p, 15,750 cps

PHILCO-FORD
TV Chassis 17J25

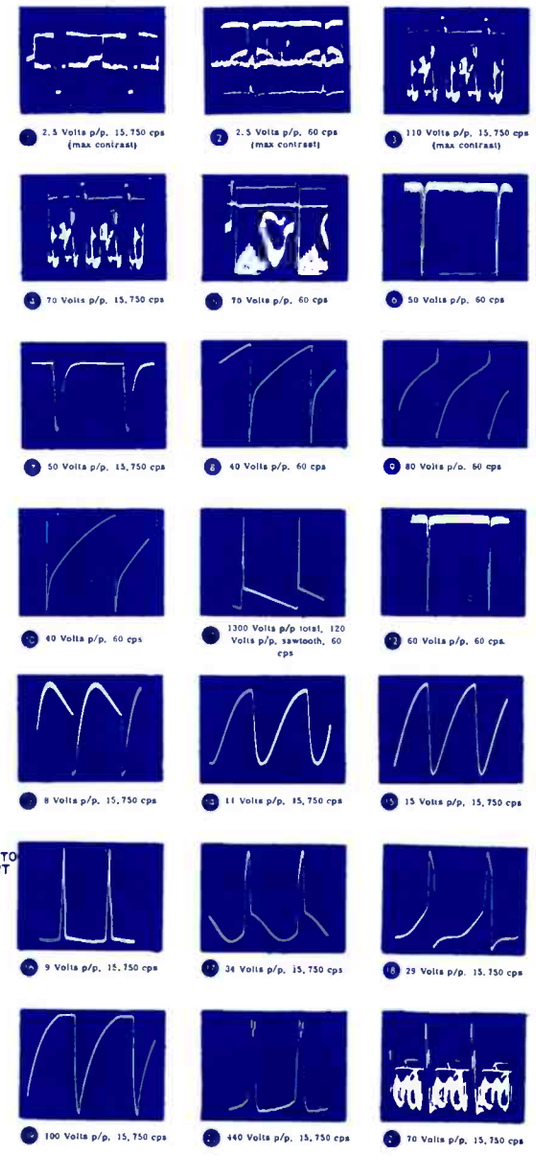
ELECTRONIC TECHNICIAN TEKFAX

SYMBOL	DESCRIPTION	PHILCO PART NO.
C48	160/240 240/5 @ 200v elec	30-2601-33
D1	phase comp diode	34-8037-1
D2	2nd det diode	34-8022-6
D3	rect silicon diode	34-8054-7
Coils		
L1	180 plate series	32-4762-7
L2	330 plate shunt	32-4762-20
L3	choke 60MHz RF choke damper	32-4112-62
L4	interstage snd IF	32-4745-13
L5	choke 60MHz damper coth	32-4112-62
L6	220mh noise inv. coth	32-4762-25
L7	quad snd det	32-4876-1
L8	4.5MHz trap & snd takeoff	32-4688-14
L9	Ch 6 beat video det	32-4645-7
L10	tuner coupling	32-4652-96
L11	1st IF plate	32-4686-34
L12	horiz stabilizer	32-4754-3
L13	47.25MHz trap	32-4652-78
L14	41.25MHz trap	32-4652-80
L15	1st grid pole	32-4652-79
L16	47.25MHz trap	32-4652-78
L17	40MHz trap 2nd det	32-4837-1
L18	video det	32-4652-79
L19	2nd IF plate	32-4652-78
L18	video det	32-4652-79
L19	2nd IF plate	32-4652-78
Networks		
N1	retrace supp	30-6024-9
N2	SIF cathode	30-6031-16
N3	vert int	30-6030-12
N4	horiz osc	30-6057-1
N5	phase comp	30-6035-2
N6	isolation CRT	30-6058-2
N7	isolation vol control	30-6058-2
R15A	6.8K 3w video plate	
R40	varistor 560v 10ma	
R63	1.5Ω 7w fil & B+	
S1	on-off pwr (part of VR4)	
A.O.T.	audio output xformer	32-10013-4
H.O.T.	horiz output xformer	32-10008-7
V.O.T.	vert output xformer	32-10012-6
F.C.	B+ filter choke xformer	32-10010-5
VR1	2M vert lin 500K v size 60K horiz hold	33-5595-8
VR2	1M noise adjust	33-5613-1
VR3	3K width	33-5620-1
VR4	100K bright 1M vol & on-off sw	33-5618-24
VR5	15K contrast	33-5619-29
VR6	150K vert hold	33-5619-3
	vos panel less/comp (early prod.)	27-10657-9
	(later prod.)	27-10657-11
	(Module "A") panel VIF trap	27-10561-9
	(Module "B") panel VIF det	27-10561-4
	tuner UHF TT152	76-13827-1
	tuner VHF TT163A	76-13579-5
	yoke & cable assy	76-12942-4



OSCILLOSCOPE WAVEFORMS

These waveforms were taken with the receiver adjusted for an approximate output of 2.5V p/p at the video detector. Voltage readings taken with raster just filling screen and all controls set for normal picture viewing except for photos 1, 2, and 3 where contrast was at maximum. The voltages given are approximate peak-to-peak values. The frequencies shown are those of the waveforms...not the sweep rate of the oscilloscope. All readings taken with Model PS127 Sencore Oscilloscope.



PHILCO
TV Chassis 17J27, 27A

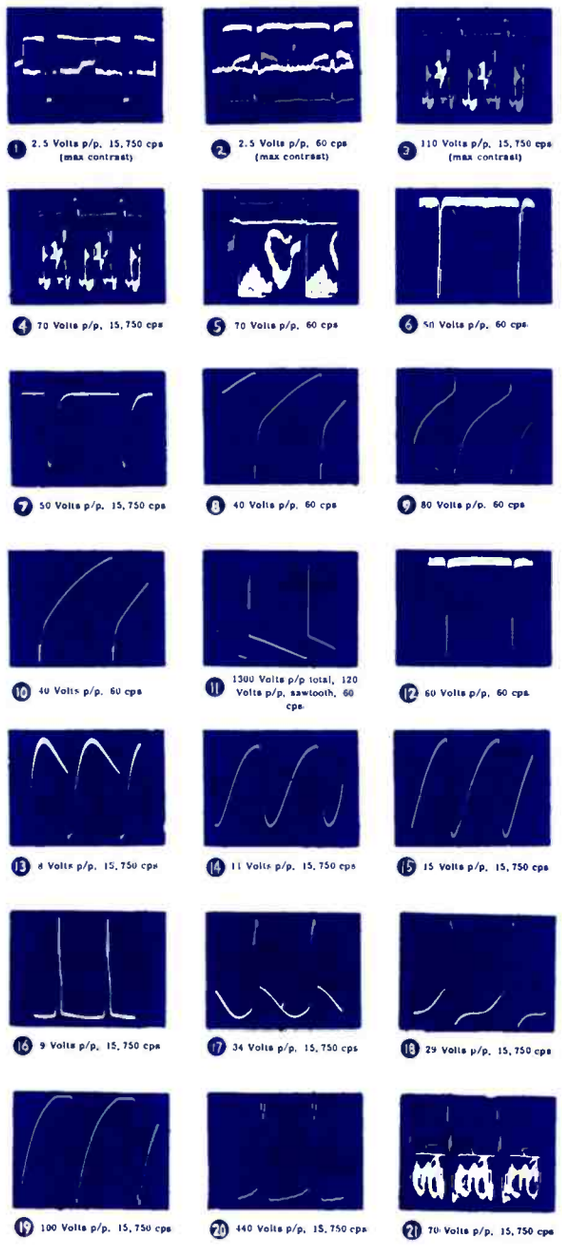
SYMBOL	DESCRIPTION	PHILCO PART NO.
	CAPACITORS	
C48	240/240/5/160µf 200v filter	30-2601-33
C49	150pf 5kv (horiz yoke) gate coupling	30-1246-31
	DIODES	
D1	phase comp	34-8037-1
D2	2nd det	34-8022-6
D3	silicon B+ rect	34-8054-7
	COILS	
L1	180mh video plate	32-4762-7
L2	330mh video plate	32-4762-20
L3	choke 60MHz damper plate	32-4112-62
L4	interstage snd IF	32-4745-13
L5	choke 60MHz damper cath	32-4112-62
L6	220mh N.I. cath	32-4762-25
L7	quad snd det	32-4876-1
L8	4.5MHz trap snd take-off	32-4688-14
L9	ch 6 beat video det	32-4645-7
L10	tuner coupling	32-4652-96
L11	1st IF plate	32-4686-34
L12	horiz stabilizer	32-4754-3
L13	47.25MHz trap	32-4652-78
L14	41.25MHz trap	32-4652-80
L15	1st grid pole	32-4652-79
L16	47.25MHz trap	32-4652-78
L17	40MHz trap	32-4837-1
L18	video det	32-4652-79
L19	2nd VIF plate	32-4652-78
	NETWORKS	
N1	retrace supp	30-6024-9
N2	SIF cath	30-6031-16
N3	vert integrator	30 6030-12
N4	horiz osc	30-6057-1
N5	phase comp	30-6035-2
N6	isolation CRT band	30-6085-2
	RESISTORS	
R13	2.2M boost	
R15A	6.8K 3w video plate	33-1363-46
R21	180Ω tuner B+	
R40	varistor 560v @ 10ma	33-1373-6
R63	1.5Ω 7w fil drop	33-1363-134
R66	47Ω 1w earphone jack	
R67	15K 2w UHF B+	
	SWITCHES	
S1	on-off power & circuit breaker	Part of VR7
	TRANSFORMERS	
A.O.T.	audio output	32-10013-2
F.C.	choke B+ filter	32-10010-8
H.O.T.	horiz output	32-10008-7
V.O.T.	vert output	32-10012-5
	CONTROLS	
VR1	2M vert lin 500K vert size 60K horiz hold	33-5595-8
VR2	1M noise adjust	33-5613-1
VR3	3K width	33-5620-1
VR4	100K bright	33-5605-36
VR5	15K contrast	33-5605-38
VR6	15K vert hold	33-5605-37
VR7	1M volume on-off	33-5619-18
	PERMA CIRCUIT PANELS	
	antenna	27-10955-1
	yoke & cable assem	76-12942-4
	MECHANICAL PARTS	
	housing HV socket	27-6310-7
	tuner VHF TT162B (17J27A only)	76-13945-1
	tuner VHF TT162A (17J27 only)	76-13579-6

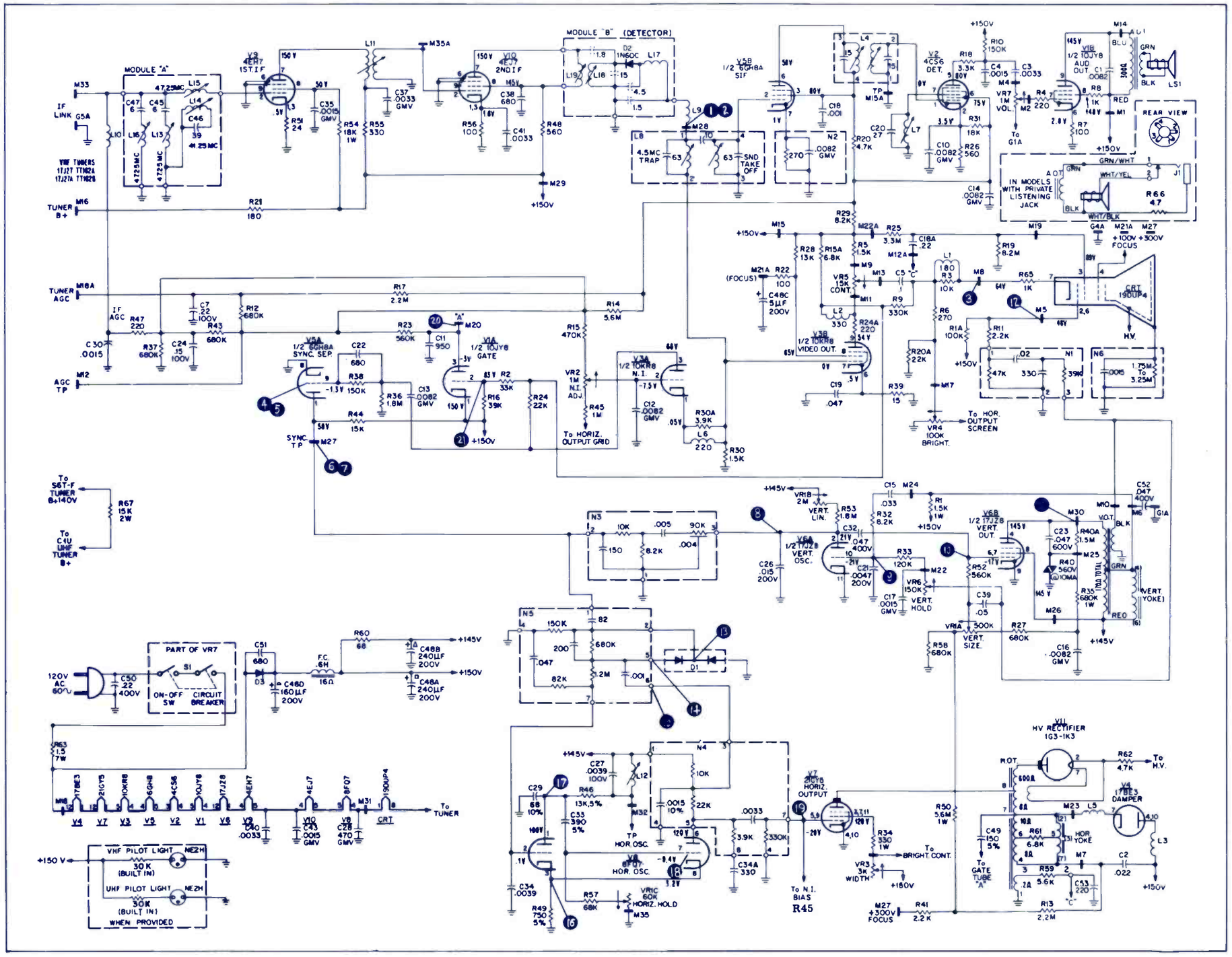
NOTES:

1. ALL VOLTAGES TAKEN UNDER NO SIGNAL CONDITIONS. ANTENNA REMOVED AND TUNER OFF CHANNEL.
2. VOLTAGES MEASURED WITH A V.T.V.M. FROM POINT INDICATED TO CHASSIS GROUND.
3. COIL RESISTANCES READ WITH COIL IN CIRCUIT.
4. BALLOONS 10 11 ETC. SHOWN ON SCHEMATIC INDICATE WAVEFORM TEST POINTS.
5. CONTROL SETTINGS:
   - VOLUME - MINIMUM
   - CONTRAST - MID-RANGE
   - BRIGHTNESS - MID-RANGE
   - ALL OTHER CONTROLS SET FOR NORMAL OPERATION.

OSCILLOSCOPE WAVEFORMS

These waveforms were taken with the receiver adjusted for an approximate output of 2.5V p/p at the video detector. Voltage readings taken with raster just filling screen and all controls set for normal picture viewing except for photos 1, 2 and 3 where contrast was at maximum. The voltages given are approximate peak-to-peak values. The frequencies shown are those of the waveforms...not the sweep rate of the oscilloscope. All readings taken with Model PS127 Sencore Oscilloscope.





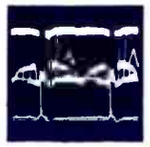
PHILCO-FORD
TV Chassis 17NT45

ELECTRONIC TECHNICIAN **TEKFAX**

OSCILLOSCOPE WAVEFORMS

These waveforms were taken with the receiver adjusted for an approximate output of 2.5V p/p at the video detector. Voltage readings taken with raster just filling screen and all controls set for normal picture viewing except for photos 1, 2 and 3 where contrast was at maximum. The voltages given are approximate peak-to-peak values. The frequencies shown are those of the waveforms...not the sweep rate of the oscilloscope. All readings taken with Model PS127 Sencore Oscilloscope.


1. 2.5 volts p/p, 15, 750 cps


2. 2.5 volts p/p, 60 cps


3. 115 volts p/p, 15,750 cps

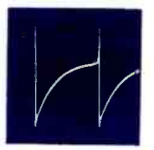

4. 100 volts p/p, 15,750 cps


5. 100 volts p/p 60 cps

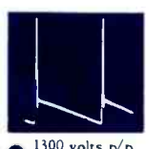

6. 55 volts p/p 60 cps


7. 55 volts p/p, 15,750 cps

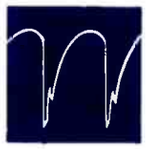

8. 50 volts p/p, 60 cps

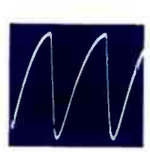

9. 85 volts p/p, 60 cps


10. 50 volts p/p, 60 cps


11. 1300 volts p/p total, 130 volts p/p sawtooth, 60 cps


12. 115 volts p/p, 60 cps


13. 11.5 volts p/p, 15,750 cps

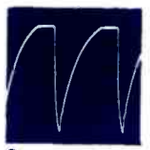

14. 15 volts p/p, 15,750 cps


15. 21 volts p/p, 15,750 cps


16. 14 volts p/p, 15,750 cps


17. 48 volts p/p, 15,750 cps


18. 42 volts p/p, 15,750 cps

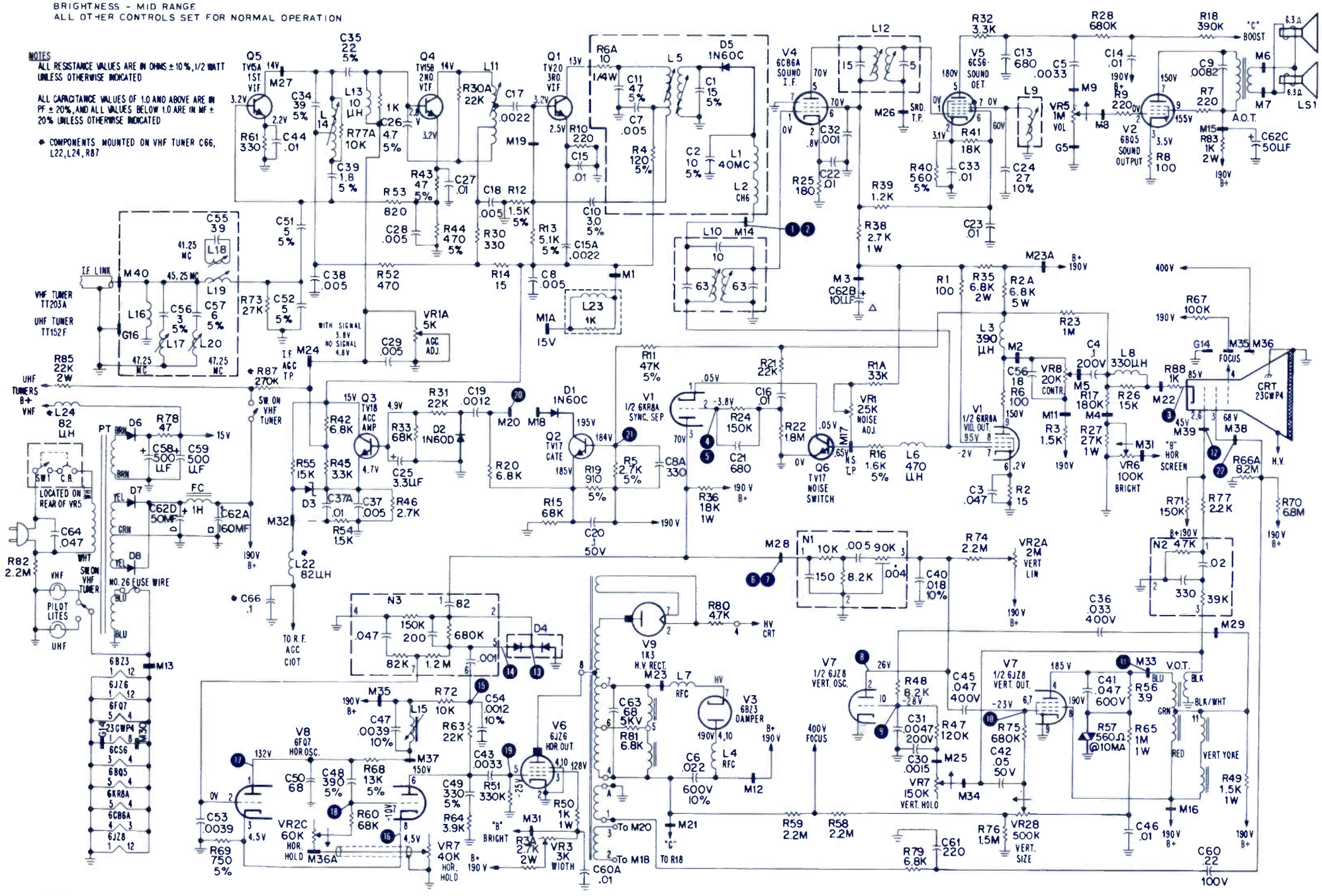

19. 140 volts p/p, 15,750 cps


20. 22 volts p/p, 15,750 cps


21. 12 volts p/p, 15,750 cps


22. 90 volts p/p, 15,750 cps

NOTES:
1. ALL VOLTAGES TAKEN UNDER NO SIGNAL CONDITIONS. ANTENNA REMOVED AND TUNER OFF CHANNEL.
2. VOLTAGES MEASURED WITH A V.T.V.M. FROM POINT INDICATED TO CHASSIS GROUND.
3. COIL RESISTANCES READ WITH COIL IN CIRCUIT.
4. BALLOONS SHOWN ON SCHEMATIC INDICATE WAVEFORM TEST POINTS.
5. CONTROL SETTINGS:
   - VOLUME - MINIMUM
   - CONTRAST - MID RANGE
   - BRIGHTNESS - MID RANGE
   - ALL OTHER CONTROLS SET FOR NORMAL OPERATION



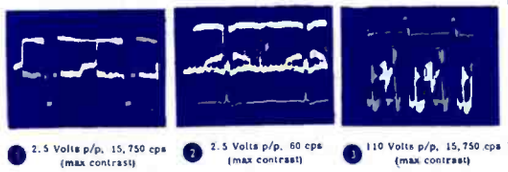
SYMBOL	DESCRIPTION	PHILCO PART NO.
C59	500µf/20v 15v supply	30-2614-2
C62	50/160/10/50µf @ 200v filter	30-2601-45
C63	68pf hariz yoke	30-1246-19
D2	1N60D AGC filter	34-8022-7
D3	zener AGC	34-8057-10
D4	dual selenium phase comp	34-8037-1
D5	1N60C video det	34-8022-6
D8	silicon rect B+	34-8054-11
L1	50MHz det chake	32-4837-1
L2	chan 6 dropout	32-4645-7
L3	390µh video plate	32-4762-11
L4	60MHz damper plate	32-4112-62
L5	3rd VIF	32-4884-5
L6	470µh 2nd det	32-4762-22
L7	60MHz damper cath	32-4112-62
L8	330µh video plate series	32-4762-20
L9	quad snd det	32-4876-1
L10	4.5MHz trap & snd takeaff	32-4688-13
L11	2nd VIF	32-4885-7
L12	SIF interstage	32-4745-12
L13	chake 2nd VIF base	32-4887-2
L14	1st VIF	32-4885-6
L15	hariz stabilizer	32-4754-3
L16	tuner coupling	32-4652-96
L17	47.25MHz trap	32-4652-78
L18	41.25MHz trap	32-4652-80
L19	1st base pole	32-4652-79
L20	47.25MHz trap	32-4652-78
L22	82µh tuner AGC	32-4762-27
L23	chake +15v supply	32-4887-2
L24	82µh tuner +15v	32-4762-27
N1	vert integrator	30-6030-12
N2	vert retroce	30-6024-9
N3	phase comp	30-6035-2
Q1	TV20 3rd IF	34-6000-72
Q2	TV17 AGC gate	34-6001-63
Q3	TV18 AGC amp	34-6001-64
Q4	TV15B 2nd IF	34-6000-70
Q5	TV15A 1st IF	34-6000-69
Q6	TV17 noise switch	34-6001-63
R2A	6.8K 5w videa plate	33-1363-82
R57	varistor vert damp	33-1373-6
S1	on-off pwr. (part of VR5)	
AOT	audio output	32-10039-1
FC	filter choke B+	32-10010-9
HOT	hariz autput	32-10074-1
PT	Power	32-10064-1
VOT	vert output	32-10012-8
VR1	25K noise adjust	33-5613-6
VR1A	5K AGC adjust	33-5613-5
VR2	500K vert size 2M vert lin 60K hariz hold	33-5595-12
VR3	3K width	33-5609-9
VR5	1M vol on-off	33-5619-28
VR6	100K brightness	33-5619-26
VR7	40K hariz hold 150K vert hold	33-5618-31
VR8	20K contrast	33-5619-25
	tuner UHF TT152F	76-13827-3
	tuner VHF TT203A	76-13955-2
	yoke & cable assy	76-12942-11

PHILCO-FORD
TV Chassis 17J28

SYMBOL	DESCRIPTION	PHILCO PART NO.
C48	160/240/5@200v elec	30-2601-33
D1	phase comp	34-8037-1
D2	2nd det	34-8022-6
D3	rect silicon	34-8054-7
L1	180 plate series	32-4762-7
L2	330 plate shunt	32-4762-20
L3	choke 60MHz RF choke damper	32-4112-62
L4	interstage snd IF	32-4745-13
L5	choke 60MHz damper coth	32-4112-62
L6	220mh noise inv coth	32-4762-25
L7	quad snd det	32-4876-1
L8	xformer 4.5MHz trap & snd take off	32-4688-14
L9	ch 6 beat video det	32-4645-7
L10	tuner coupling	32-4652-96
L11	1st IF plate	32-4686-34
L12	horiz stabilizer	32-4753-3
L13	47.25MHz trap	32-4652-78
L14	41.25MHz trap	32-4652-80
L15	1st grid pole	32-4652-79
L16	47.25MHz trap	32-4652-78
L17	40MHz trap 2nd det	32-4837-1
L18	video det	32-4652-79
L19	2nd IF plate	32-4652-78
N1	retrace supp	30-6024-9
N2	SIF cathode	30-6031-16
N3	vert int	30-6030-12
N4	horiz osc	30-6057-1
N5	phase comp	30-6035-2
N6	isolation CRT	30-6058-2
N7	isolation vol control	30-6058-2
R63	1.5Ω 7w fil & B+	33-1363-134
A.O.T.	audio output	32-10013-4
H.O.T.	horiz output	32-10008-7
V.O.T.	vert output	32-10012-6
F.C.	B+ filter choke	32-10010-5
VR1	2M V lin-500K V size 60K horiz hold	33-5595-8
VR2	1M noise adjust	33-5613-1
VR3	3K width	33-5620-1
VR4	100K bright 1M vol on-off sw	33-5618-24
VR5	15K contrast	33-5619-29
VR6	150K vert hold	33-5619-3
	tuner UHF TT152	76-13827-1
	tuner VHF TT162C	76-13945-4
	yoke & cable assy	76-12942-4

OSCILLOSCOPE WAVEFORMS

These waveforms were taken with the receiver adjusted for an approximate output of 2.5V p/p at the video detector. Voltage readings taken with raster just filling screen and all controls set for normal picture viewing except for photos 1, 2 and 3 where contrast was at maximum. The voltages given are approximate peak-to-peak values. The frequencies shown are those of the waveforms...not the sweep rate of the oscilloscope. All readings taken with Model PS127 Sencore Oscilloscope.



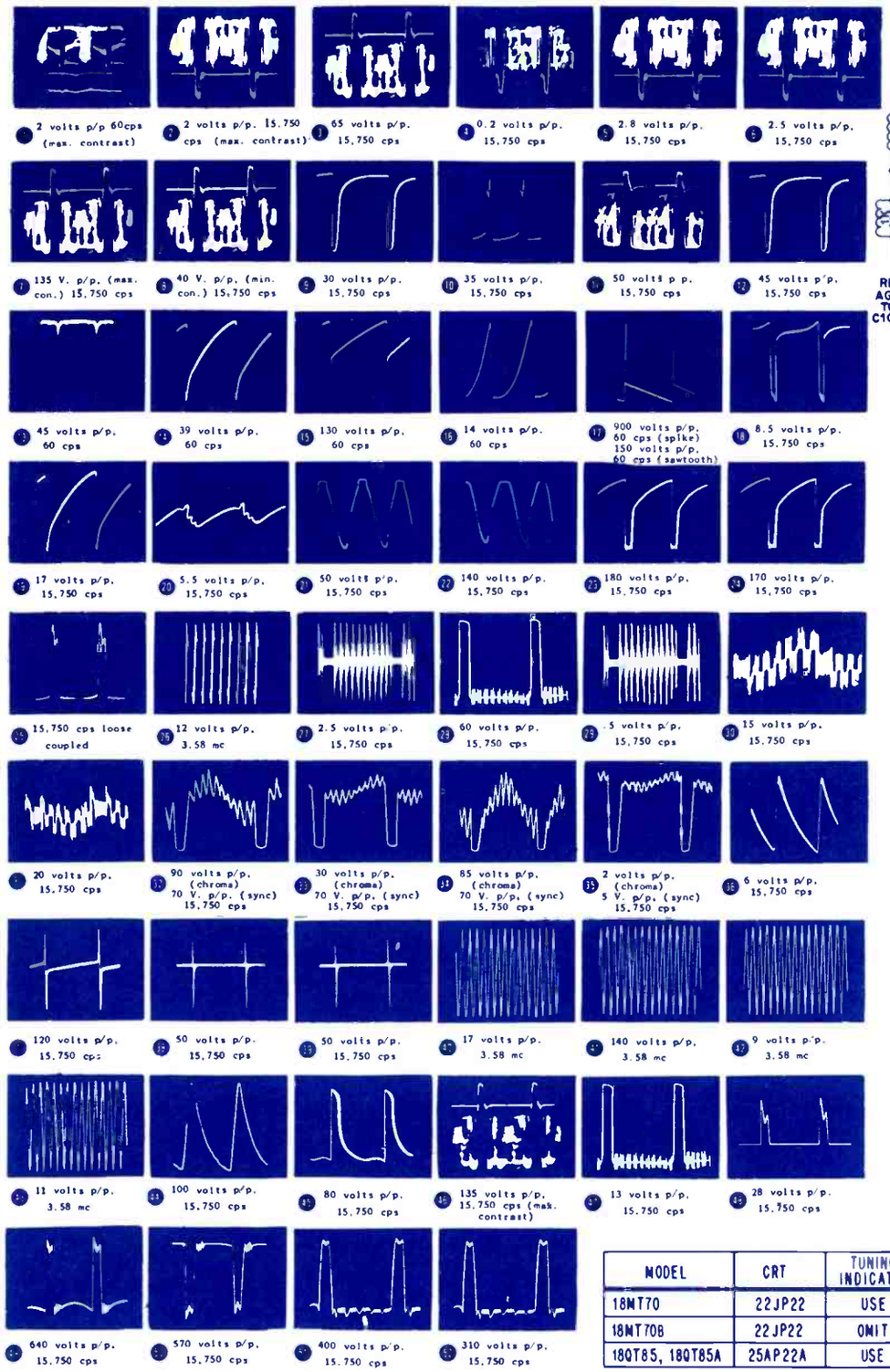
1. 2.5 Volts p/p, 15,750 cps (max contrast)
2. 2.5 Volts p/p, 60 cps (max contrast)
3. 110 Volts p/p, 15,750 cps (max contrast)
4. 70 Volts p/p, 15,750 cps
5. 70 Volts p/p, 60 cps
6. 50 Volts p/p, 60 cps
7. 50 Volts p/p, 15,750 cps
8. 40 Volts p/p, 60 cps
9. 80 Volts p/p, 60 cps
10. 40 Volts p/p, 60 cps
11. 1300 Volts p/p total, 120 Volts p/p, sawtooth, 60 cps
12. 60 Volts p/p, 60 cps
13. 8 Volts p/p, 15,750 cps
14. 10 Volts p/p, 15,750 cps
15. 15 Volts p/p, 15,750 cps
16. 9 Volts p/p, 15,750 cps
17. 34 Volts p/p, 15,750 cps
18. 29 Volts p/p, 15,750 cps
19. 100 Volts p/p, 15,750 cps
20. 440 Volts p/p, 15,750 cps
21. 70 Volts p/p, 15,750 cps

PHILCO-FORD
Color TV Chassis
18QT85/18MT70

ELECTRONIC TECHNICIAN TEKFAX

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 0.5V peak-to-peak at Pin 2 of V40 and the tint control set for proper color bars (approximately mid-range), 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 5MC bandwidth similar to B & K Model 1450.

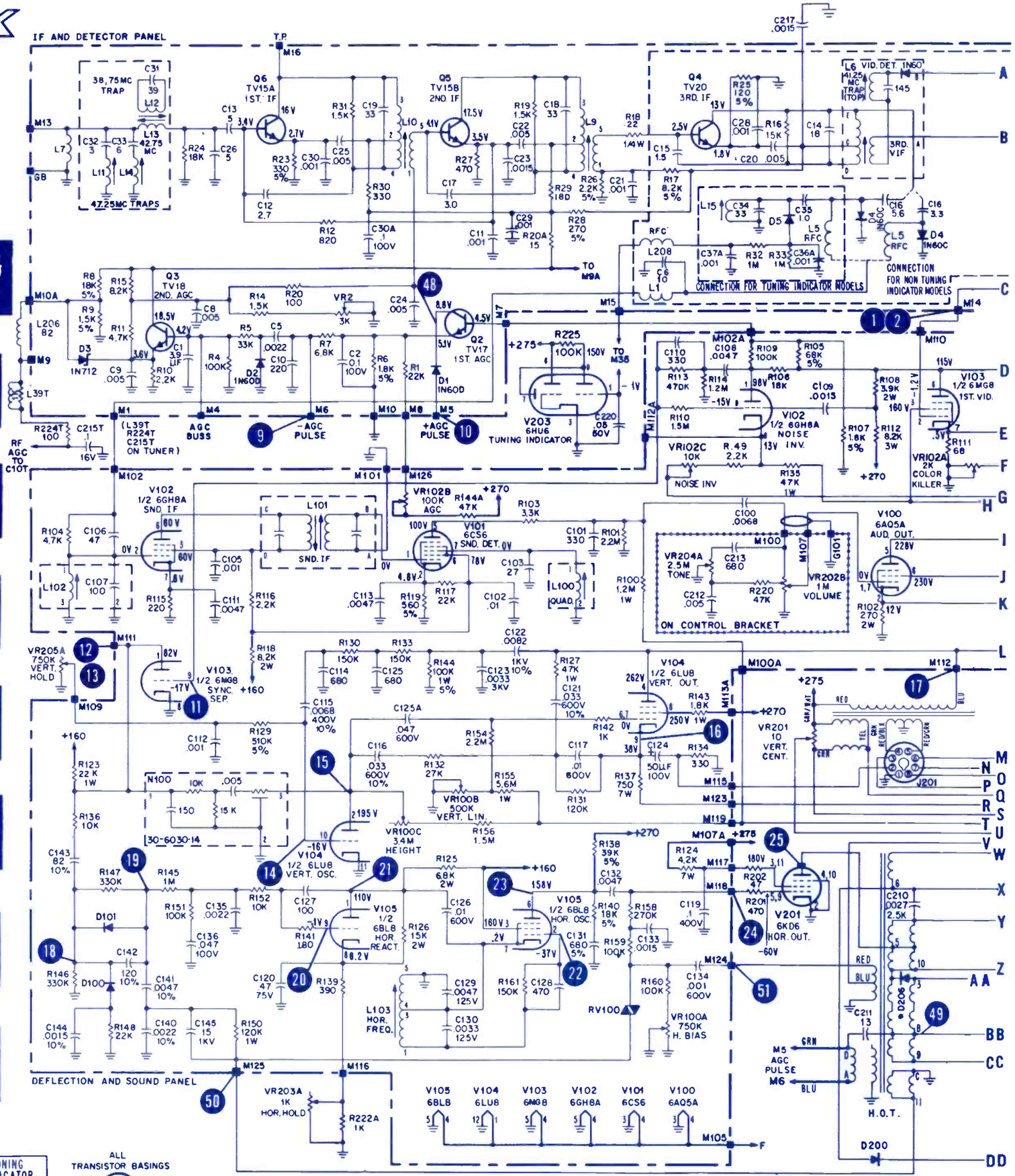


1. 2 volts p/p 60cps (max. contrast)
2. 2 volts p/p. 15,750 cps (max. contrast)
3. 65 volts p/p. 15,750 cps
4. 0.2 volts p/p. 15,750 cps
5. 2.8 volts p/p. 15,750 cps
6. 2.5 volts p/p. 15,750 cps
7. 135 V. p/p. (max. con.) 15,750 cps
8. 40 V. p/p. (min. con.) 15,750 cps
9. 30 volts p/p. 15,750 cps
10. 35 volts p/p. 15,750 cps
11. 50 volts p p. 15,750 cps
12. 45 volts p'p. 15,750 cps
13. 45 volts p/p. 60 cps
14. 39 volts p/p. 60 cps
15. 130 volts p/p. 60 cps
16. 14 volts p/p. 60 cps
17. 900 volts p/p. 60 cps (spike) 150 volts p/p. 60 cps (sawtooth)
18. 8.5 volts p/p. 15,750 cps
19. 17 volts p/p. 15,750 cps
20. 5.5 volts p/p. 15,750 cps
21. 50 volts p'p. 15,750 cps
22. 140 volts p/p. 15,750 cps
23. 180 volts p/p. 15,750 cps
24. 170 volts p/p. 15,750 cps
25. 15,750 cps loose coupled
26. 12 volts p/p. 3.58 mc
27. 2.5 volts p'p. 15,750 cps
28. 60 volts p/p. 15,750 cps
29. 5 volts p/p. 15,750 cps
30. 15 volts p/p. 15,750 cps
31. 20 volts p/p. 15,750 cps
32. 90 volts p/p. (chroma) 70 V. p/p. (sync) 15,750 cps
33. 30 volts p/p. (chroma) 70 V. p/p. (sync) 15,750 cps
34. 85 volts p/p. (chroma) 70 V. p/p. (sync) 15,750 cps
35. 2 volts p/p. (chroma) 5 V. p/p. (sync) 15,750 cps
36. 6 volts p/p. 15,750 cps
37. 120 volts p/p. 15,750 cps
38. 50 volts p/p. 15,750 cps
39. 50 volts p/p. 15,750 cps
40. 17 volts p/p. 3.58 mc
41. 140 volts p/p. 3.58 mc
42. 9 volts p'p. 3.58 mc
43. 11 volts p/p. 3.58 mc
44. 100 volts p/p. 15,750 cps
45. 80 volts p/p. 15,750 cps
46. 135 volts p/p. 15,750 cps (max. contrast)
47. 13 volts p/p. 15,750 cps
48. 28 volts p/p. 15,750 cps
49. 640 volts p/p. 15,750 cps
50. 570 volts p/p. 15,750 cps
51. 400 volts p/p. 15,750 cps
52. 310 volts p/p. 15,750 cps

MODEL	CRT	TUNING INDICATOR
18MT70	22JP22	USE
18MT708	22JP22	OMIT
18QT85, 18QT85A	25AP22A	USE

ALL TRANSISTOR BASINGS

BOTTOM VIEW

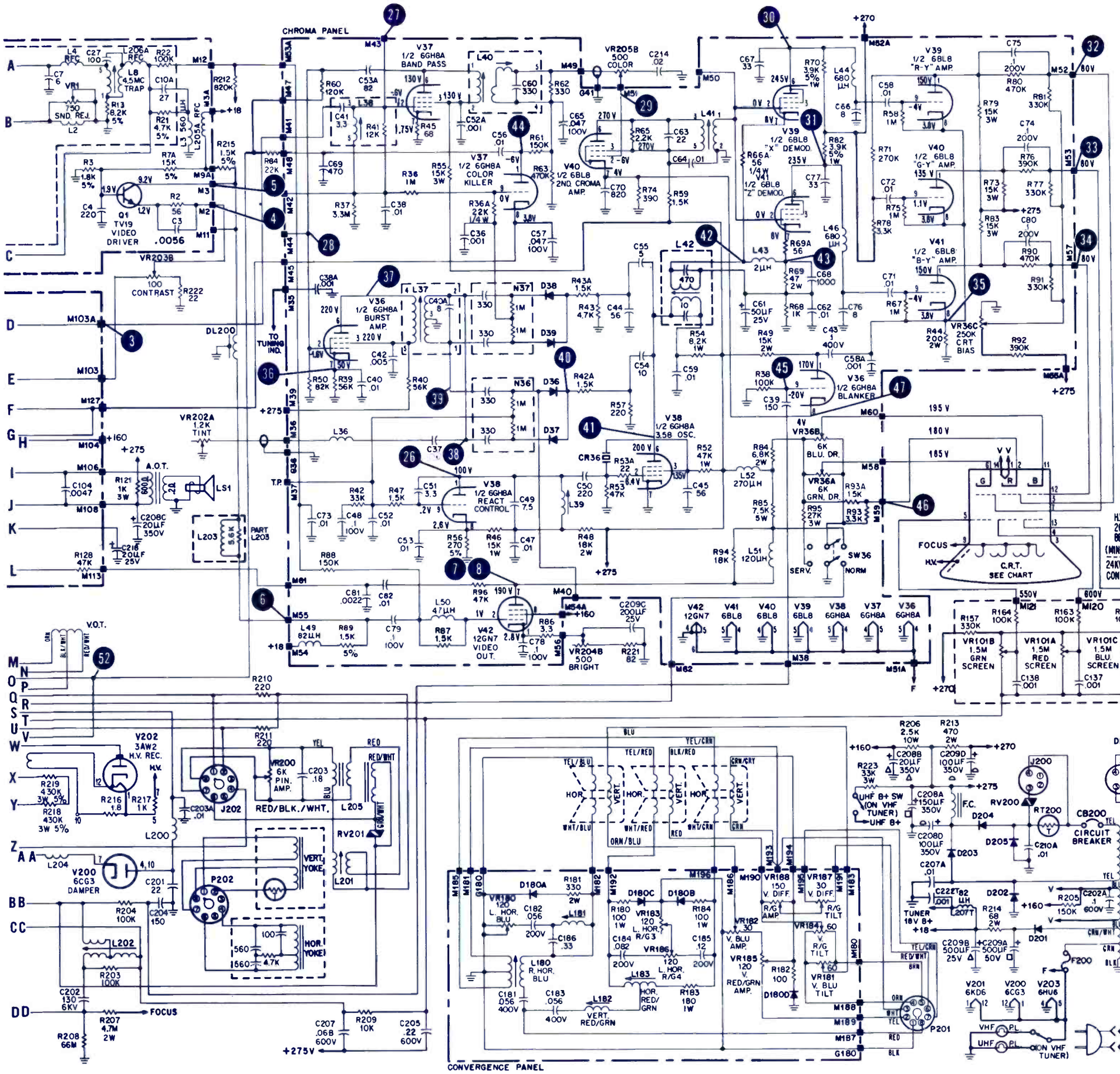


NOTES

1. ALL VOLTAGE MEASUREMENTS ARE TAKEN WITH NO SIGNAL UNLESS INDICATED OTHERWISE.
2. VOLTAGE READINGS ARE TAKEN WITH VTVM B & K MODEL 175 WITH ALL CONTROLS SET FOR NORMAL OPERATION. ALL VOLTAGES ARE NOMINAL.
3. RESISTANCE ARE MEASURED WITH YOKE AND CONVERGENCE PANEL DISCONNECTED.
4. BALLOONS (1), (2), ETC. INDICATE WAVE FORM TEST POINTS.

PHILCO-FORD

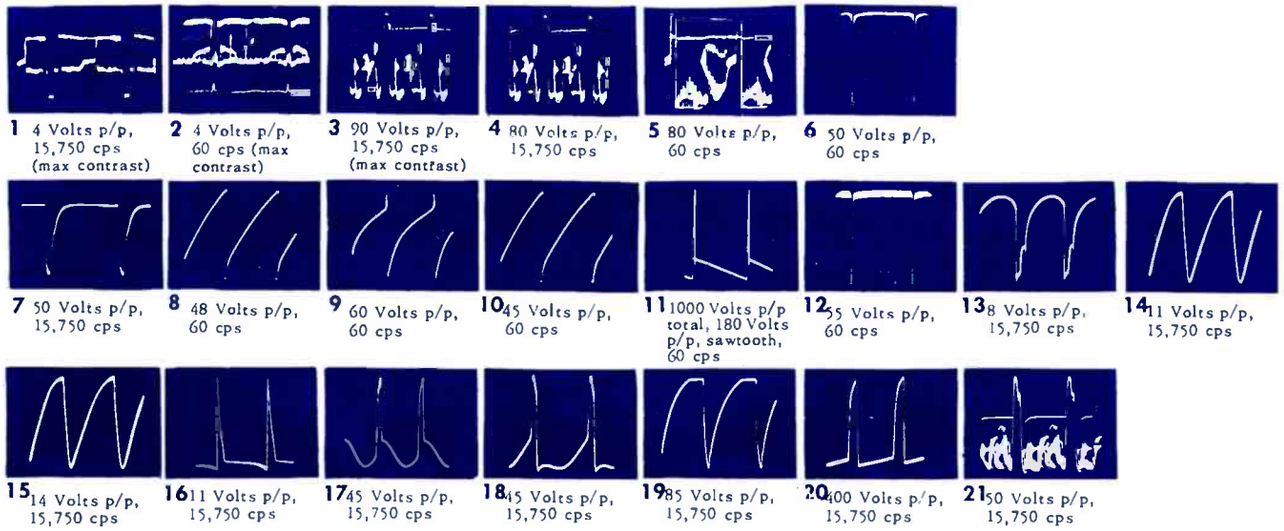
Color TV Chassis 18QT85/18MT70



SYMBOL	DESCRIPTION	PHILCO-FORD PART No.
C208	150-20-20-100/350v B+ filter	30-2601-40
C209	500-500/40v 200-25v 50/350v B+ filter	30-2601-48
CB200	power ac	42-2136-6
CR36	3.58MHz osc	34-8043-4
D1	1N60C AGC	34-8022-6
D2	1N60D AGC	34-8022-7
D3	1N712 zener	34-8057-9
D200	sel rect focus	34-8053-3
L1	ch 8 beat	32-4645-44
L2	12mh snd reject	32-4762-23
L3	560mh det peak	32-4762-13
L4	RF 40MHz	32-4837-1
L5	RFC 40MHz	32-4837-1
L6	xformer 3rd IF	32-4868-2
L7	IF input	32-4652-66
L8	xformer 4.5MHz trap	32-4869-1
L9	xformer 2nd IF	32-4893-2
L10	xformer 1st IF	32-4893-1
L11	47.25MHz trap	32-4652-78
L12	39.75MHz trap	32-4652-80
L13	1st IF pole	32-4652-79
L14	47.25MHz trap	32-4652-78
L15	variable tun indic	32-4912-1
L36	tint control	32-4645-44
L37	xformer burst amp plate	32-4890-1
L38	1st chroma grid	32-4878-2
L39T	tuner AGC (on tuner)	32-4887-1
L40	xformer 1st chroma plate	32-4888-1
L41	xformer 2nd chroma plate	32-4889-1
L42	xformer 3.58MHz ref	32-4879-3
L44	680mh demod plate	32-4762-14
L49	82mh delay line	32-4762-3
L51	120mh video plate	32-4762-5
L52	270mh video plate	32-4762-9
L100	quad	32-4876-1
L101	xformer snd interstage	32-4745-12
L102	SIF grid	32-4876-3
L103	horiz freq	32-4891-1
L182	R/G vert	32-4881-1
L200	damper	32-4112-62
L201	pincushion	32-4894-1
L202	focus	32-4895-1
L203	13mh delay line choke	32-4838-2
L205	xformer pincushion	32-10049-1
L208	tuning ind	32-4837-2
DL200	delay line	32-4839-2
N36	phase det	30-6055-1
N37	phase det	30-6055-1
N100	vert int	30-6030-14
Q1	TV19 video drive	34-6001-65
Q2	TV17 1st AGC	34-6001-63
Q3	TV18 2nd AGC	34-6001-64
Q4	TV20 3rd IF	34-6000-72
Q5	TV15B 2nd IF	34-6000-70
Q6	TV15A 1st IF	34-6000-69
R48	18K 2w react plate	33-1363-136
R49	15K 2w blanker plate	33-1363-137
R55	15K 3w 1st chroma screen	33-1363-135
R84	6.8K 2w video out plate	33-1363-142
R85	7.5K 5w video out plate	33-3451-1
R95	27K 3w video plate	33-3451-2
R124	4.2K 7w horiz out screen	33-1363-143
R125	6.8K 2w horiz react plate	33-1363-142
R126	15K 2w horiz react cath	33-1363-137
R206	2.5K 160v drop	33-1363-147
R208	66M focus	33-1352-10
RT200	degaussing	33-1376-3
RV100	horiz bias	33-1379-2
RV200	degaussing	33-1379-1
RV201	pincushion clamp	33-1379-3
VR1	750Ω 41.25MHz trap	33-5613-2
VR2	AGC	33-5613-3
VR36	A-grn drive B-blu drive C-CRT bias	33-5595-19
VR100	A-horiz bias, B-V lin, C-height	33-5627-2
VR101	A-red scrn B-grn scrn C-blue scrn	33-5595-20
VR102	A — color killer B — AGC C — noise inv	33-5627-1
VR180	120Ω left horiz blue	33-5609-10
VR181	60Ω vert blue tilt	33-5609-4
VR182	30Ω vert blue amp	33-5609-3
VR183	120Ω horiz R/G3	33-5609-5
VR184	60Ω vert R/G tilt	33-5609-4
VR185	120Ω vert R/G amp	33-5609-5
VR186	120Ω L horiz R/G 4	33-5609-5
VR187	30Ω V diff tilt	33-5609-3
VR188	150Ω V diff R/G amp	33-5609-6
VR200	6K pincushion amp	33-5623-19
VR201	10Ω vert cent	33-5609-1
VR202A	1.2K tint (omit for 18QT85A)	33-5623-20
VR202	1M vol 1.2K tint (18QT85A only)	33-5618-28
VR202	1M vol-on-off (omit for 18QT85A)	33-5623-26
VR203	1K H hold 100Ω contrast	33-5618-25
VR204	2.5M tone 500Ω bright	33-5618-27
VR205	750K v hold 500Ω color	33-5618-22
A.O.T.	audio output	32-10057-1
F.C.	filter choke	32-10044-1
H.O.T.	horiz output	32-10079-1
P.T.	power	32-10048-1
V.O.T.	vert output	32-10080-1
	chroma assy w/comp	38-10371
	chroma (less comp)	27-11236-3
	defl. & snd (less comp)	27-11237-2
	tuning indicator w/comp (omit for 18MT70B)	38-10240
	tuner UHF (TT152F) (18QT85A only)	76-13827-7
	tuner UHF (TT147)	76-14011-1
	tuner VHF (TT204) (18QT85A only)	76-13962-1
	tuner vhf (TT204A)	76-13962-2
	yoke assy	76-13910-3

PHILCO

TV Chassis
17C21,A,V,AV



OSCILLOSCOPE WAVEFORMS

These waveforms were taken with the receiver adjusted for an approximate output of 4 V p/p at the video detector. Voltage readings taken with raster just filling screen and all controls set for normal picture viewing except for photos 1, 2, and 3 where contrast was at maximum. The voltages given are approximate peak-to-peak values. The frequencies shown are those of the waveforms...not the sweep rate of the oscilloscope. All readings taken with Model PS127 Sencore Oscilloscope.

RESISTANCE CHART

SYM-BOL	TUBE	FUNCTION	PIN NUMBERS 1	2	3	4	5	6	7	8	9	10	11	12
V1	4CS6	Sound Detector	5.5Ω	560Ω	FIL	FIL	200K	12K	2.5Ω					
V2	10JY8	Video Amp. & Gated AGC	4.5K	25K	1.2M	FIL	FIL	0Ω	5.2K	14K	10K			
V3	12FX5	Audio Output	82Ω	0Ω	FIL	FIL	0Ω	16K	14K					
V4	6GH8A	Snd. IF & Sync. Sep.	15K	5Ω	13K	FIL	FIL	12K	150Ω	0Ω	1.8M			
V5	17JZ8	Vert. Osc.	FIL	3.5M	1MF.	14K	1MF	1.2M	1.2M	14K	0Ω	150K	0Ω	FIL
V6	8FQ7	Horiz. Osc.	22K	2.2M	820Ω	FIL	FIL	40K	12M	820Ω	0Ω			
V7	4EH7	1st Video IF	20Ω	600K	20Ω	FIL	FIL	0Ω	14K	20K	0			
V8	4EJ7	2nd Video IF	100Ω	0Ω	100	FIL	FIL	0Ω	14K	14K	0Ω			
V9	38EH7	Horiz. Out & Damper	FIL	12K	NC	0M	0M	NC	NC	0Ω	330K	NC	18K	FIL

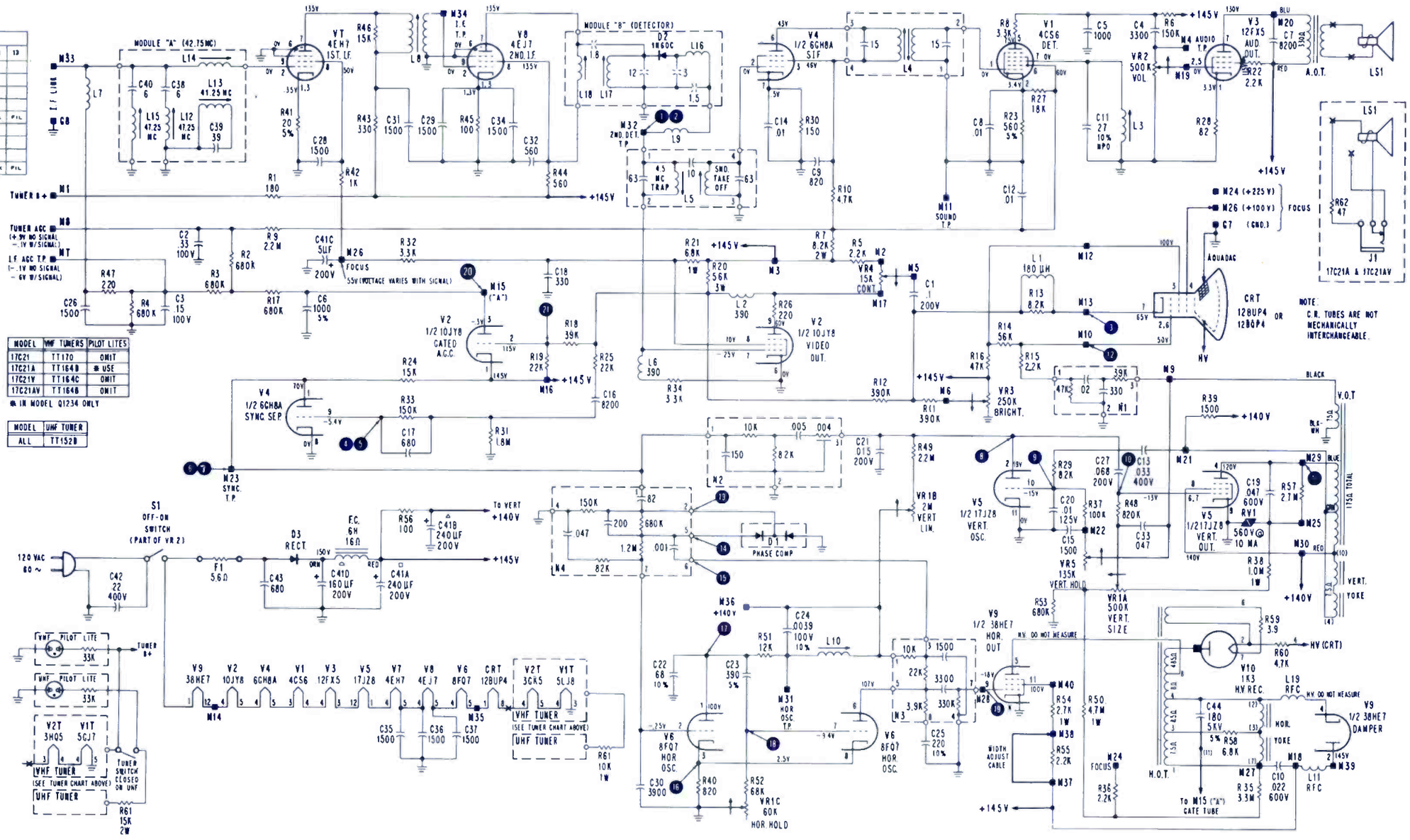
*Depends on meter polarity

SYMBOL	DESCRIPTION	PHILCO PART NO.
C41	240/240/160/5μf/200v B+ filter (17C21 & 21A)	30-2601-33
	240/240/160/5μf/200v B+ filter (17C21V & 21AV)	30-2601-49
D1	dual phase comp	34-8037-1
D2	1N60C 2nd det	34-8022-6
L1	180mh CRT cathode (17C21 & 21A)	32-4762- 7
	180mh CRT cathode (17C21V & 21AV)	32-4902-10
L2	390mh video plate (17C21 & 21A)	32-4762-11
	390mh video plate (17C21V & 21AV)	32-4902-14
L3	quad snd det	32-4876-1
L4	snd IF (17C21 & 21A)	32-4745-13
	snd IF (17C21V & 21AV)	32-4745-12
L5	4.5MHz trap and snd take-off	32-4688-14
L7	tuner cplg	32-4652-101
L8	1st IF plate	32-4686-34
L9	ch 6 beat video det	32-4645-7
L10	horiz stabilizer	32-4754-3
L11	RFC 60MHz damper plate	32-4112-63
L12	47.25MHz trap	32-4652-78
L13	41.25MHz trap	32-4652-80
L14	1st grid pole	32-4652-79
L15	47.25MHz trap	32-4652-78
L16	40MHz choke video det	32-4837-1
L17	video det coil	32-4652-79
L18	2nd IF plate	32-4652-78
L19	RFC 60MHz damper cathode	32-4112-63
N1	retrace suppress	30-6024-9
N2	vert integrator	30-6030-12
N3	horiz osc	30-6057-1
N4	phase comp	30-6035-2
R20	5.6K 3w video plate	33-1363-39
RV1	varistor 560v @ 10ma vert out	33-1373-6
F1	5.6Ω fusistor	33-1366-21
A.O.T.	audio output	32-10013-5
F.C.	filter choke .6 hy (17C21 & 21A)	32-10010-10
	filter choke .6 hy (17C21V & 21AV)	32-10075-1
H.O.T.	horiz output	32-10008-8
V.O.T.	vert output	32-10012-9
VR1	500K v size 2M v lin 60K H hold	33-5596-16
VR2	500K vol & on-off sw	33-5619-22
VR3	250K brightness	33-5619-21
VR4	15K contrast	33-5619-20
VR5	135K vert hold	33-5619-23
	VIF trap assy w/comp (module "A")	38-10213
	VIF trap panel less/comp	27-10561-9
	VIF det assy w/comp (module "B")	38-10214
	yoke & cable assy	76-12942-9
	tuner UHF TT152B (all chassis)	76-13827-2
	tuner VHF TT170 (17C21)	76-13978-1
	tuner VHF TT164B (17C21A & 21AV)	76-13945-3
	tuner VHF TT164C (17C21V)	76-13579-8

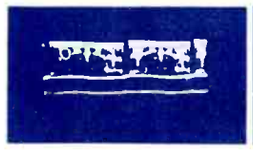
MODEL	VHF TUNERS	PILOT LITES
17C21	TT170	OMIT
17C21A	TT164B	* USE
17C21V	TT164C	OMIT
17C21AV	TT164B	OMIT

* IN MODEL Q1234 ONLY

MODEL	UHF TUNER
ALL	TT152B



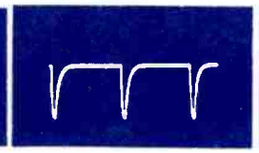
RCA VICTOR
TV Chassis KCS156



① TP-3
SECOND DETECTOR
VERTICAL RATE 2V P-P

② V101 PINS 2 & 6
HORIZONTAL OUTPUT GRID
HORIZONTAL RATE 130V P-P

③ TP-5
SYNC PLATE
VERTICAL RATE 60V P-P



④ TP-5
SYNC PLATE
HORIZONTAL RATE 60V P-P

⑤ V206B PIN 9
VERTICAL OSCILLATOR GRID
VERTICAL RATE 180V P-P

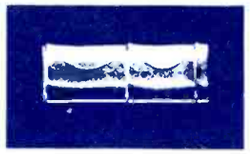
⑥ V206A PIN 2
VERTICAL OUTPUT GRID
VERTICAL RATE 28V P-P

⑦ V205B PIN 9
VIDEO AMPLIFIER PLATE
VERTICAL RATE 110V P-P

⑧ V205B PIN 9
VIDEO AMPLIFIER PLATE
HORIZONTAL RATE 110V P-P

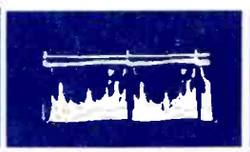
⑨ V205A PIN 2
AGC GRID
VERTICAL RATE 80V P-P

⑩ V205A PIN 2
AGC GRID
HORIZONTAL RATE 80V P-P



⑪ SR201 CATHODE JUNCTION
HORIZONTAL PHASE DETECTOR
VERTICAL RATE 12V P-P

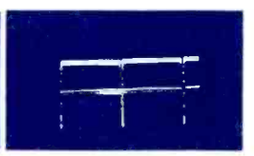
⑫ SR201 CATHODE JUNCTION
HORIZONTAL PHASE DETECTOR
HORIZONTAL RATE 12V P-P



⑬ R224 & C246 JUNCTION
(ZONE 1B PW200 BOARD)
VERTICAL RATE 100V P-P

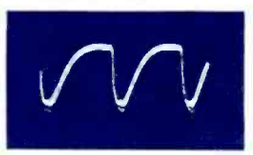
⑭ V205A PIN 3
AGC PLATE
HORIZONTAL RATE 330V P-P

⑮ V105 PIN 3
KINESCOPE 1ST ANODE
HORIZONTAL RATE 40V P-P

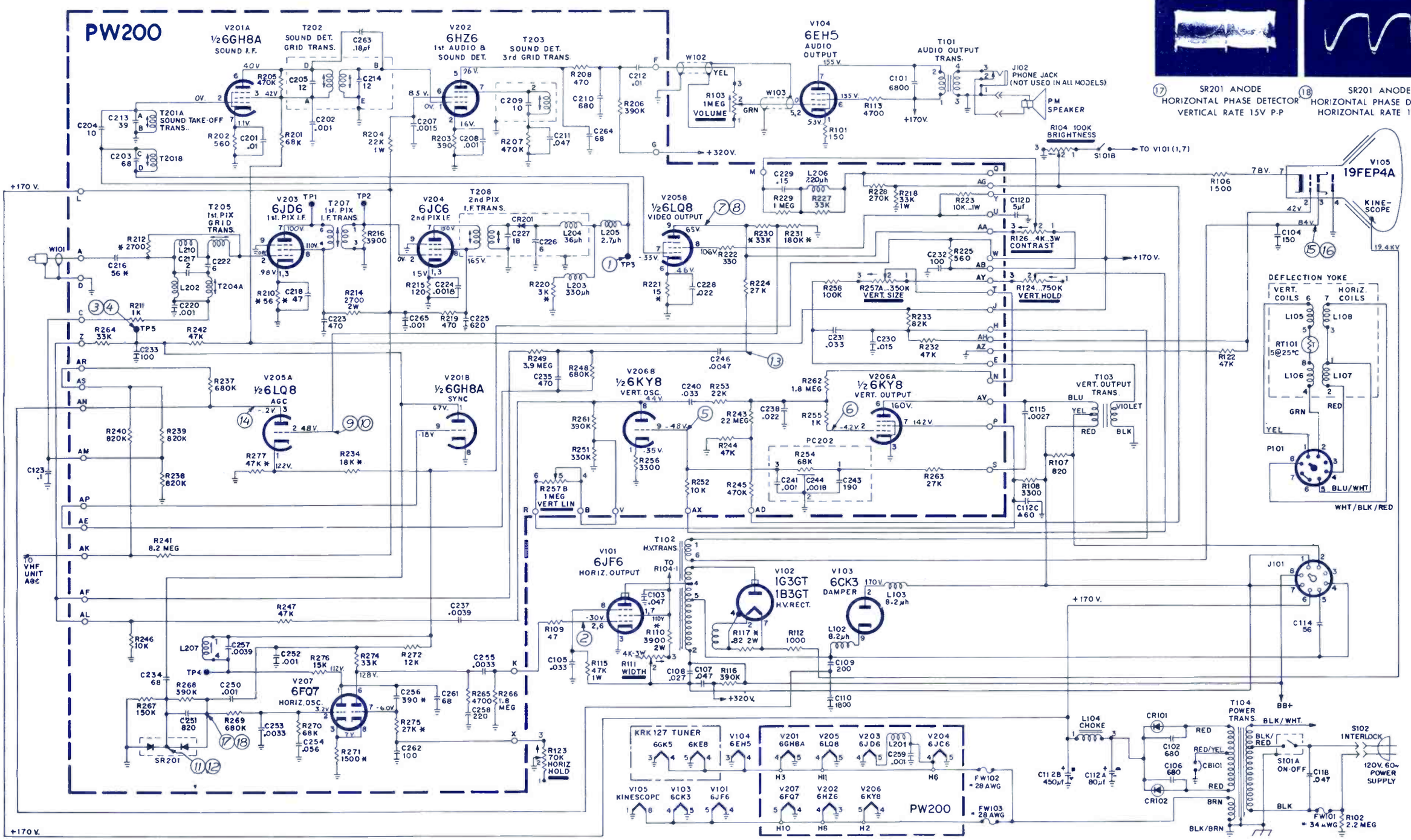


⑯ V105 PIN 3
KINESCOPE 1ST ANODE
VERTICAL RATE 130V P-P

⑰ SR201 ANODE
HORIZONTAL PHASE DETECTOR
VERTICAL RATE 15V P-P

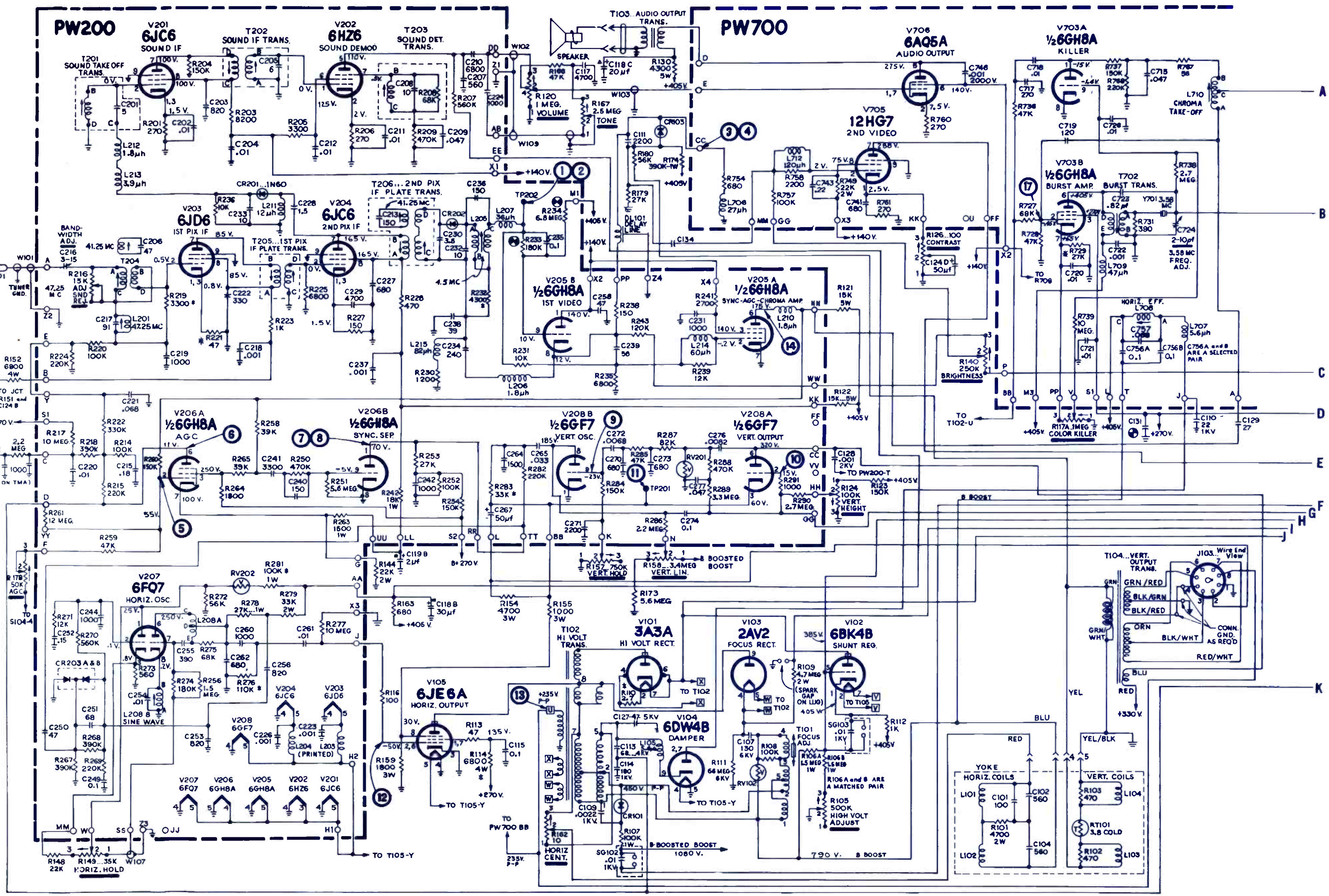


⑱ SR201 ANODE
HORIZONTAL PHASE DETECTOR
HORIZONTAL RATE 15V P-P



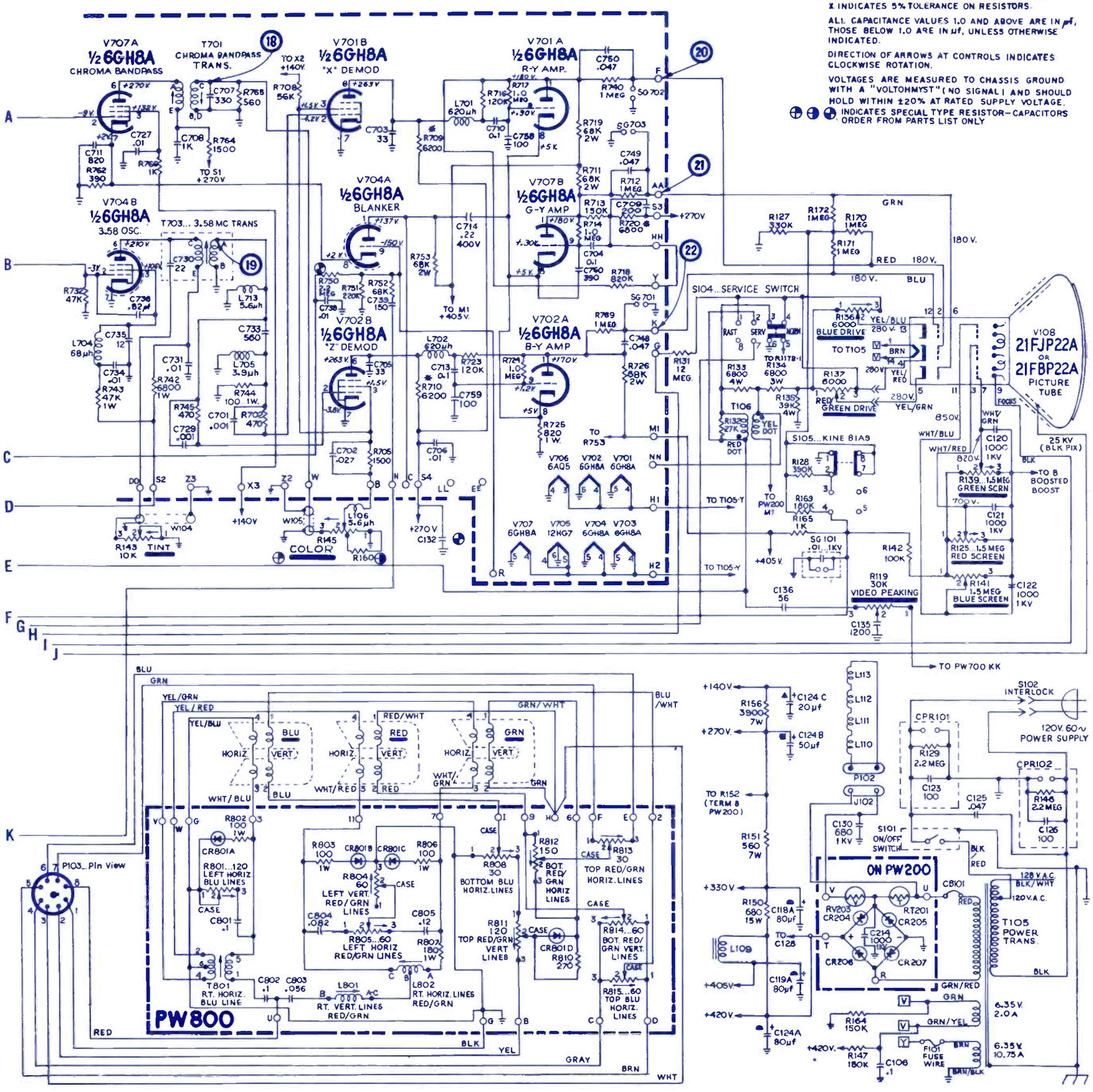
RCA VICTOR
Color TV Chassis
CTC20

More Data on Opposite Page

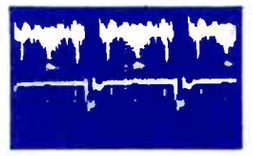


More Data on Opposite Page

NOTES:
K=1000.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL RESISTORS ARE ½ WATT EXCEPT AS NOTED.
‡ INDICATES 5% TOLERANCE ON RESISTORS.
ALL CAPACITANCE VALUES 1.0 AND ABOVE ARE IN μf, THOSE BELOW 1.0 ARE IN μf, UNLESS OTHERWISE INDICATED.
DIRECTION OF ARROWS AT CONTROLS INDICATES CLOCKWISE ROTATION.
VOLTAGES ARE MEASURED TO CHASSIS GROUND WITH A "VOLTOHMYST" (NO SIGNAL) AND SHOULD HOLD WITHIN ±20% AT RATED SUPPLY VOLTAGE.
◓◑◒ INDICATES SPECIAL TYPE RESISTOR–CAPACITORS ORDER FROM PARTS LIST ONLY



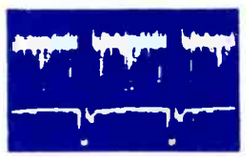
CTC20C CHASSIS VOLTAGE WAVEFORMS



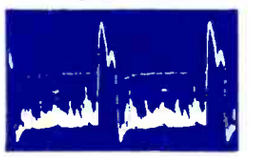
① TP202
2nd Detector Test Point
Horizontal Rate 4V P-P

② TP202
2nd Detector Test Point
Vertical Rate 4V P-P

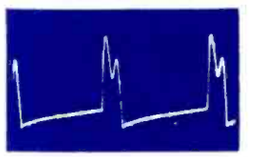
③ PW700-CC
1st Video Luminance Signal
Vertical Rate 2.5V P-P



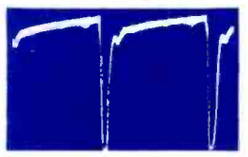
④ PW700-CC
1st Video Luminance Signal
Horizontal Rate 2.5V P-P



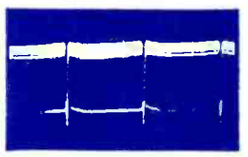
⑤ V206-A-2
AGC Grid
Horizontal Rate 30V P-P



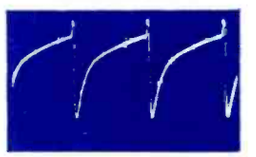
⑥ V206-A-6
AGC Keying Pulse
Horizontal Rate 650V P-P



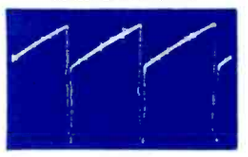
⑦ V206-B-1
Sync Separator Plate
Horizontal Rate 70V P-P



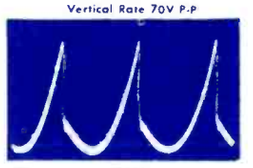
⑧ V206-B-1
Sync Separator Plate
Vertical Rate 70V P-P



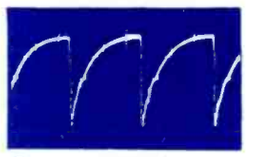
⑨ V208B-9
Vertical oscillator grid
Vertical Rate 90V P-P



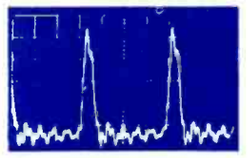
⑩ V208A-2
Vertical output grid
Vertical Rate 250V P-P



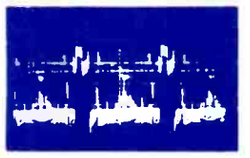
⑪ TP201
Vertical output cathode
Vertical Rate 15V P-P



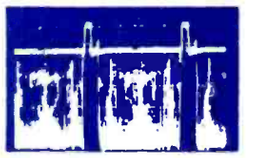
⑫ V105-2, 6
Horizontal output grid
Horizontal Rate 200V P-P



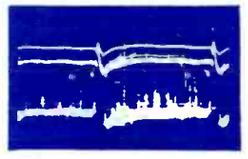
⑬ T102-U (AFC Reference and convergence pulse)
Horizontal Rate 235V P-P



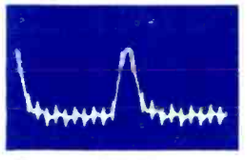
⑭ V205-6
Sync. AGC Chroma Amplifier
Horizontal Rate 170V P-P



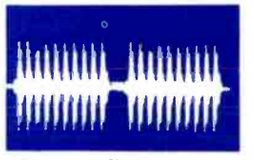
⑮ R136-3 (Blue drive control)
Video ("Y" signal)
Horizontal Rate 150V P-P



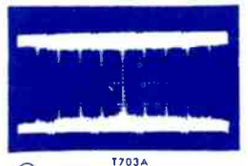
⑯ R136-3 (Blue drive control)
Video ("Y" signal)
Vertical Rate 150V P-P



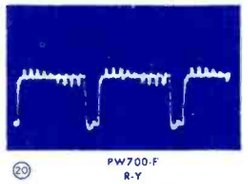
⑰ V703B-2
Burst Amplifier grid
Horizontal Rate 65V P-P



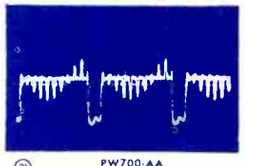
⑱ T701-C
Bandpass amplifier output
Horizontal Rate 25V P-P



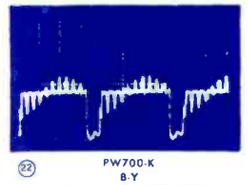
⑲ T703A
3.58 mc oscillator output
Horizontal Rate 15V P-P



⑳ PW700-F
R-Y
Horizontal Rate 100V P-P



㉑ PW700-AA
G-Y
Horizontal Rate 40V P-P



㉒ PW700-K
B-Y
Horizontal Rate 120V P-P

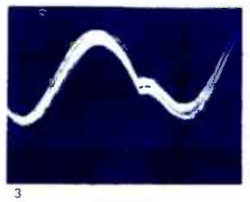
NOTE:
Voltage Waveforms taken with a wideband oscilloscope using a low capacitance probe. Color Bars from the WR64A Color Bar / Dot / Crosshatch Generator used for the chroma circuit voltage waveforms.

RCA VICTOR
Color Chassis
CTC22 Series

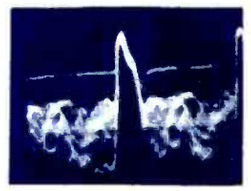
ELECTRONIC TECHNICIAN **TEKFAX**

1 PW200 TP1
4V P-P (VERT.)
2ND DETECTOR

2 PW200 TP1
4V P-P (HORIZ.)
2ND DETECTOR



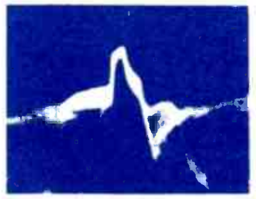
3 PW400S
2.5V P-P VERT. RATE
B PLUS RIPPLE

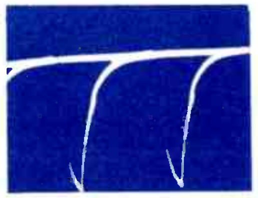


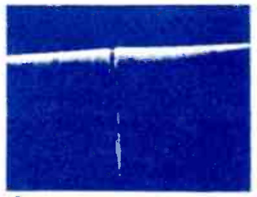
4 PW500C
50V P-P HORIZ. RATE
SYNC AGC OUTPUT

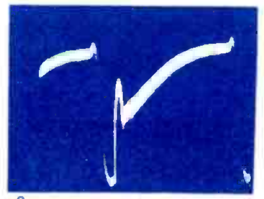
5 TP501
50V P-P (VERT.)
SYNC SEPARATOR GRID

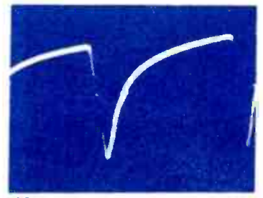
SYMBOL	DESCRIPTION	RCA PART NO.
R112	control — volume with switch S101	120773
R113	control — brightness	120775
R114	control — color	120776
R115	control — tint	120774
R116	control — color killer	120805
R120	control — vert lin	120807
R121	control — vert height	120805
R123	control — AGC	120804
R216	control — adj snd rej 7.5K	120808
R406	hi-voltage adj	120806
R420A	control — contrast, vert hold horiz hold	120809
R601A	control — red drive green drive video peak	120811
R602A	control — red, green, blue screen	120812
R801	control — left blue	114627
R804	control — right blue horiz lines 100Ω 1w	120949
R811	control — top red/green vert lines	116635
R814	control — bottom red/green vert lines	105059
C105	4 section elect	120789
	A — 40μf 350v	
	B — 2μf 175v	
	C — 100μf 300v	
	D — 50μf 50v	
C106	2 section elect	120790
	A — 150μf 350v	
	B — 100μf 350v	
C107	2 section elect	120787
	A — 50μf 250v	
	B — 250μf 175v	
C110	0.0033μf ±10% 1.6kv paper	119585
C115	0.0018μf ±10% 1kv paper	121448
C216	3 — 15pf trimmer	116502
C217	150pf ±5% 500v mica	269865
C222	330pf ±10% 500v mica	79191
C227	430pf ±5% 500v mica	
C228	1.5pf ±0.25pf 500v ceramic NPO	
C519	270pf ±5% 500v mica	
C540	0.0028μf ±20% 1kv paper	109818
C712	0.82pf ±5% 500v headed lead	116500
C714	10pf ±5% 500v ceramic NPO	
C721	2 — 10pf trimmer	116501
C8101	breaker-circuit	120784
CR101	silicon	113998
CR104	silicon (killer delay)	119596
CR202	1N60	112524
CR401	damper	120818
CR501	AFC	109474
	A — AFC	
	B — AFC	
DL101	line delay	120786
F101	fuse 7 amp 250v	120785
L105A/B	AC line filter	
L201	47.25MHz trap	121447
L203	100μh	117380
L204	5.6μh	109171
L205	4.5MHz trap	121446
L206	1.8μh	109248
L207	36μh	116056
L211	12μh RF choke	120831
L213	3.9μh	116507
L214	120μh (used with R239)	120795
L401	horiz efficiency	120794
L403	4.7μh RF choke	120839
L501	horiz sine wave	109947
	A — horiz sine wave	
	B — horiz sine wave	
L701	chroma take-off	120797
L702	osc strength	120798
L707	620μh	109257
L709	27μh	116511
L710	330μh	118710
L803	120μh	118245
PW800	convergence-complete convergence ossy	120052
R108	2Ω 7w WW	115350
R118	6.8K 4w	107541
R125	10K 7w	
R412	680Ω 2w WW	
R530	82K ±2%	120810
RT102	thermistor-120Ω cold	107191
RV101	varistor 870v at 1.0ma	112876
SG401	capacitor spark gap	120819
T102	horiz output	120820
T103	audio output	120822
T104	vert output	120821
T105	filament 6.3 vac. 8A	120823
T201	sound take-off	120824
T202	4.5MHz driver	120828
T203	snd quad	120825
T204	IF input and 41.25MHz trap	116560
T205	pix IF	120826
T206	pix IF output and 41.25MHz trap	120827
T701	band-pass	120817
T703	3.58MHz osc	120815
Y101	crystal 3.58MHz	105330
R102	resistor 220Ω ±10% ½w (part of yoke)	502122
RT101	thermistor 1.3Ω cold	120891
	yoke deflection	120890

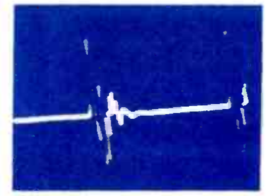

6
TP501
60V P-P (HORIZ.)
SYNC SEPARATOR GRID

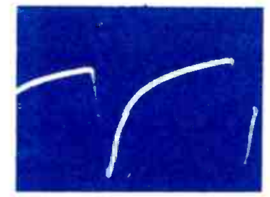

7
JUNCTION R516 & R545
70V P-P (HORIZ.)
SYNC SEPARATOR PLATE

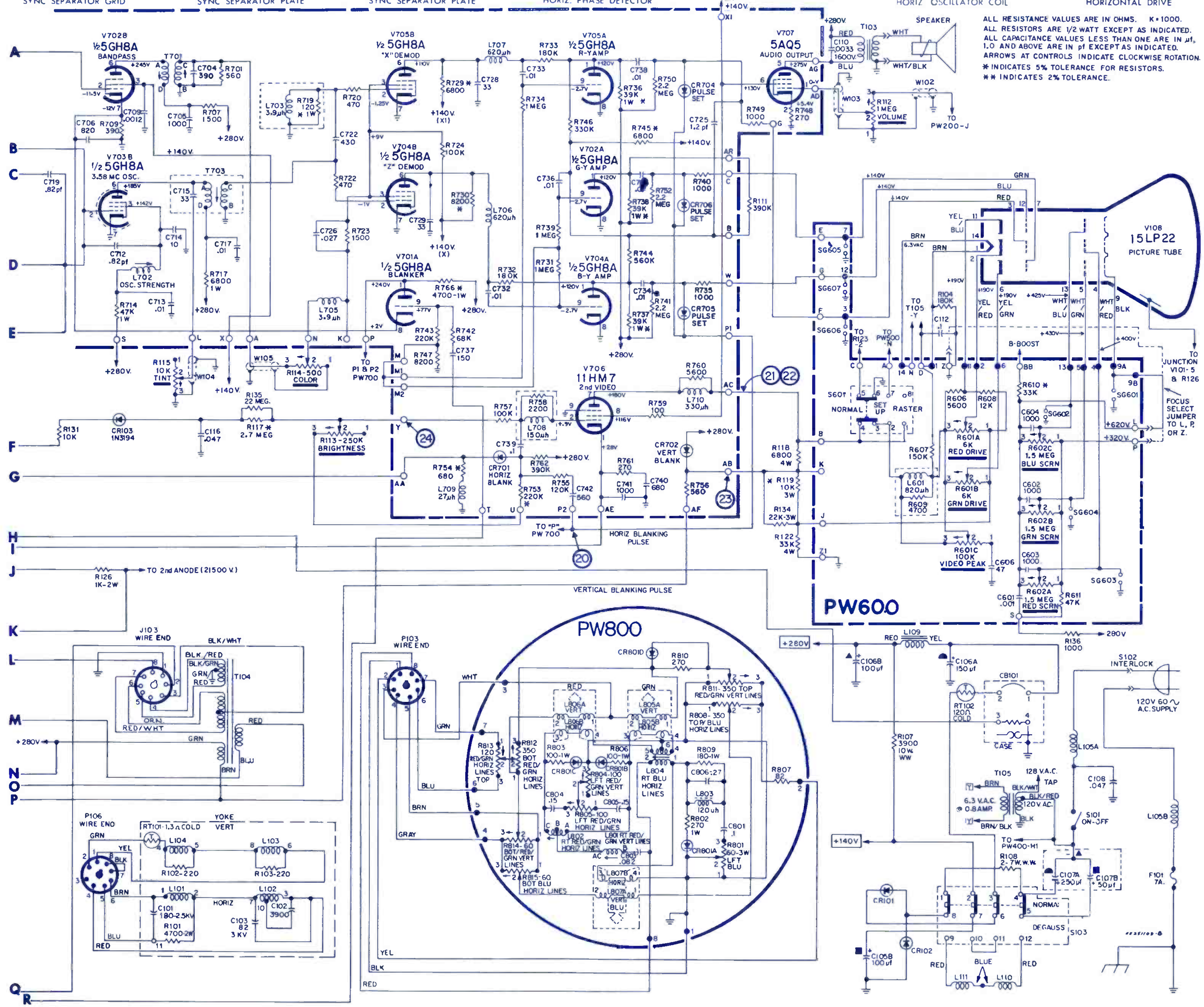

8
JUNCTION R516 & R545
80V P-P (VERT.)
SYNC SEPARATOR PLATE


9
COMMON CATHODE
13V P-P (HORIZ.)
HORIZ. PHASE DETECTOR

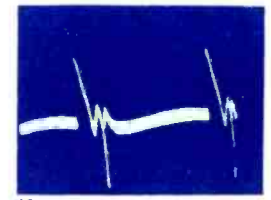

10
V503-9 (C515)
300V P-P (HORIZ.)
HORIZ OSCILLATOR GRID

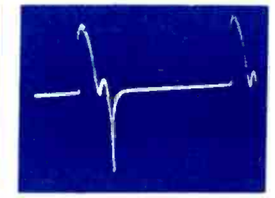

11
TP503
300V P-P HORIZ
HORIZ OSCILLATOR COIL

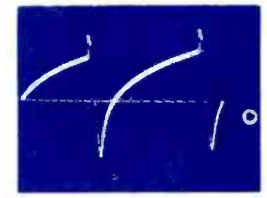

12
PW500W
300V P-P (HORIZ.)
HORIZONTAL DRIVE



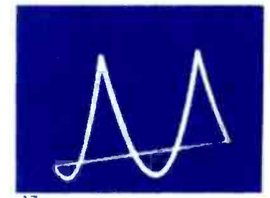
ALL RESISTANCE VALUES ARE IN OHMS. K = 1000.
ALL RESISTORS ARE 1/2 WATT EXCEPT AS INDICATED.
ALL CAPACITANCE VALUES LESS THAN ONE ARE IN µf, 1.0 AND ABOVE ARE IN pf EXCEPT AS INDICATED.
ARROWS AT CONTROLS INDICATE CLOCKWISE ROTATION.
* INDICATES 5% TOLERANCE FOR RESISTORS.
** INDICATES 2% TOLERANCE.

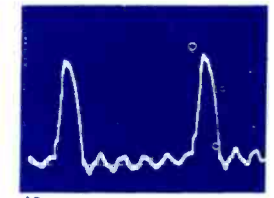

13
V504-2
50V P-P (HORIZ.)
PULSE REGULATOR CONTROL GRID

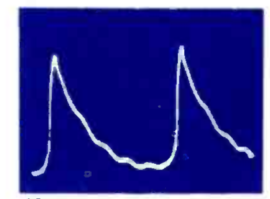

14
V401 PIN 1 AND 7
750V P-P (HORIZ.)
PULSE REGULATOR SCREEN GRID

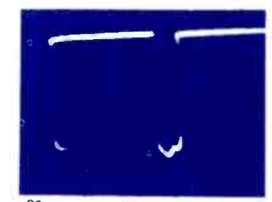

15
V502-9 (R557)
100V P-P (VERT.)
VERT. OSCILLATOR GRID


16
V502-2 (R551)
300V P-P (VERT.)
VERT. OUTPUT GRID


17
PW500T
11V P-P (VERT.)
VERT. OUTPUT CATHODE

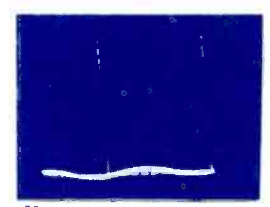

18
PW700-E
280V P-P (HORIZ.)
KILLER AND BURST GATE PULSE

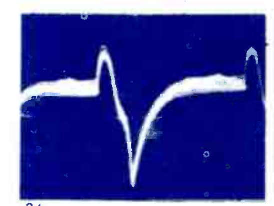

19
V703-1 KILLER PLATE
70V P-P HORIZ. RATE
HORIZONTAL PULSE


20
PW700 P2 (BLANKER PLATE)
150V P-P HORIZ.
PLATE BLANKER PULSE

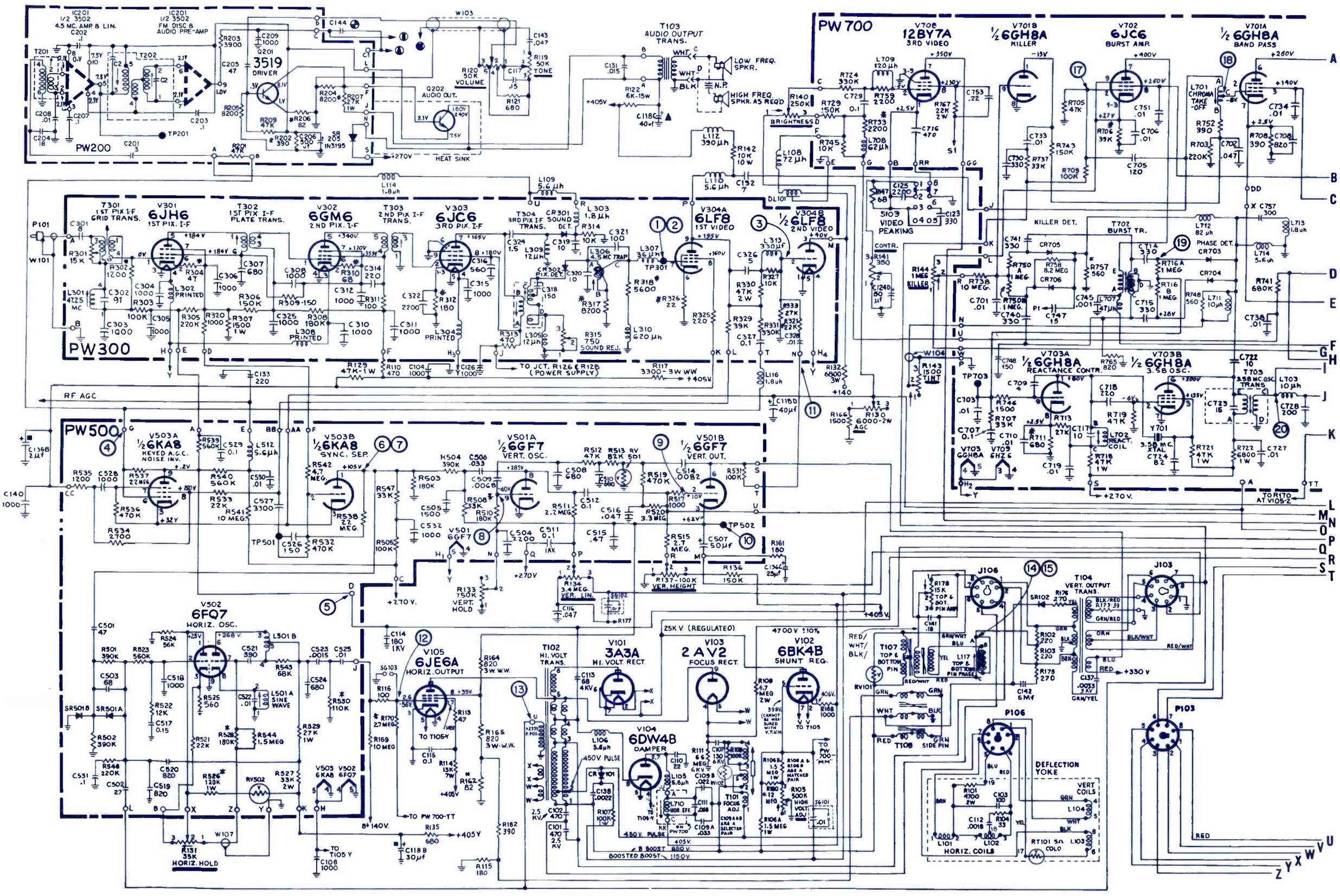

21
PW700-AC
100V P-P (HORIZ.)
LUMINANCE VIDEO FROM DELAY LINE


22
PW700-AC
170V P-P (VERT.)
LUMINANCE VIDEO OUTPUT


23
PW700-AB
700V P-P VERT. PLATE
VERT. BLANKING PULSE


24
PW700-Y
12V P-P (HORIZ.)
INPUT FROM BRIGHTNESS CONTROL

More Data on Opposite Page



ELECTRICAL SPECIFICATIONS
Television Instrument

ANTENNA INPUT IMPEDANCE ..... 300 ohms balanced
CONVERGENCE ..... Magnetic
FOCUS ..... Electrostatic
AUDIO POWER OUTPUT RATING ..... 2.0 watts max.

INTERMEDIATE FREQUENCIES
Picture I-F Carrier Frequency ..... 45.75 mc.
Sound I-F Carrier Frequency ..... 41.25 mc.
Color Sub-Carrier Frequency ..... 42.17 mc. (Nominal

PICTURE SIZE
Approx. 295 sq. in. (min.) on a 25AP22A Picture Tube

POWER INPUT ..... 120 volts AC, 60 cycle

SWEEP DEFLECTION ..... Magnetic

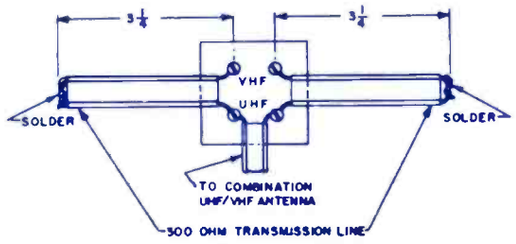
TELEVISION R-F FREQUENCY RANGE
All 12 VHF television Channels ..... 54 mc. to 88 mc.
174 mc. to 216 mc.
All 70 UHF Channels ..... 470 mc. to 890 mc.

RCA VICTOR
Color TV Chassis CTC25 Series

POWER RATING ..... (Manual) 335 watts total
Remote Control Models ..... 380 watts total
(with Channel Selector Motor engaged)

REMOTE CONTROL FREQUENCIES

Tint Up	34.25 KC
Tint Down	35.75 KC
Color Up	44.75 KC
Color Down	37.25 KC
Volume Up	43.25 KC
Volume Down	38.75 KC
VHF Channel	40.25 KC



Combination VHF/UHF Antenna Matching

More Data on Opposite Page

RESISTANCE VALUES IN OHMS K=1000

CAPACITANCE VALUES LESS THAN 1 IN μf = 1 AND ABOVE IN μμf, UNLESS OTHERWISE INDICATED.

DIRECTION OF ARROWS AT CONTROLS INDICATES CLOCKWISE ROTATION.

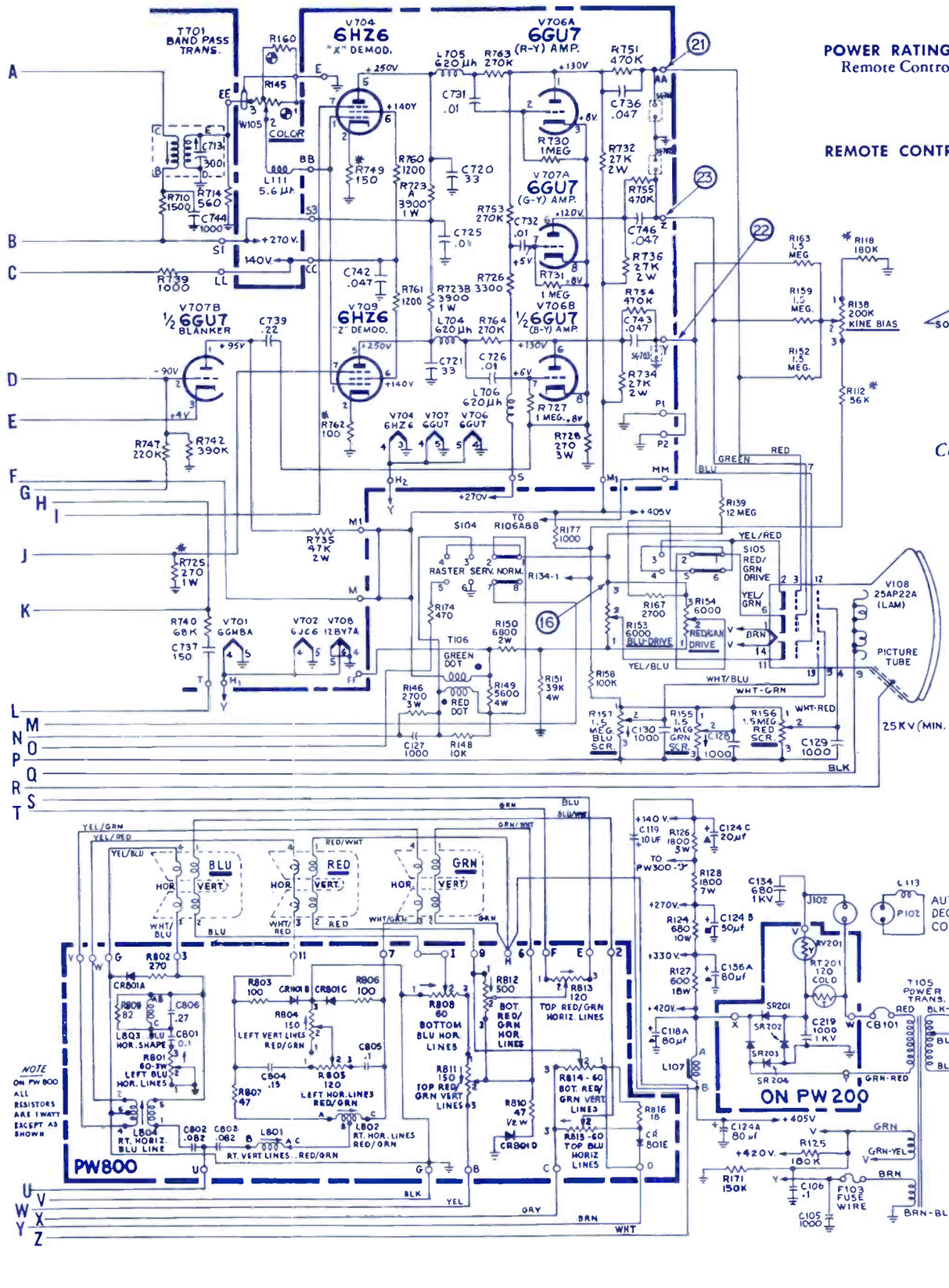
VOLTAGES MEASURED WITH "VOLTOHMYST" AND WITH NO SIGNAL INPUT, AND SHOULD HOLD WITHIN ± 20% WITH 120 VOLT A.C. SUPPLY.

# INDICATES 5% TOLERANCE.

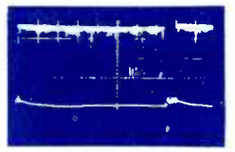
▲ CTC25A– OMIT
CTC25B– W103

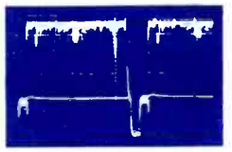
● CTC25A– PW200C
CTC25B– PW200C1

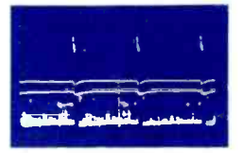
◑ CTC25A– W103
CTC25B– OMIT

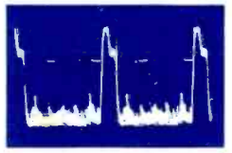


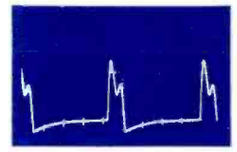
CTC25 CHASSIS SIGNAL WAVEFORMS


1 VERTICAL RATE 3V P-P
TP301
2ND DETECTOR TEST POINT

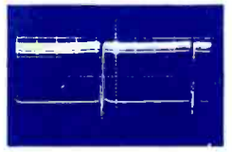

2 HORIZONTAL RATE 3V P-P
TP301
2ND DETECTOR TEST POINT

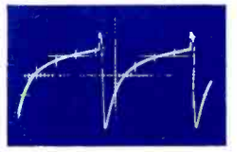

3 VERTICAL RATE 5V P-P
V504B 6LF8-2
2ND VIDEO AMP. GRID

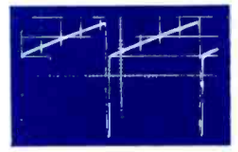

4 HORIZONTAL RATE 25V P-P
PW300-G (6KA8-6)
AGC GRID

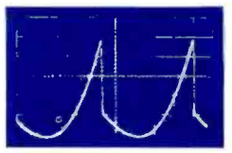

5 HORIZONTAL RATE 750V P-P
PW300-D (6KA8-9)
AGC KEYING PULSE

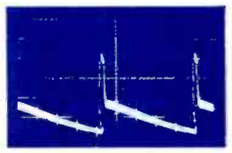

6 HORIZONTAL RATE 60V P-P
V503B 6KA8-1
SYNC SEPARATOR PLATE

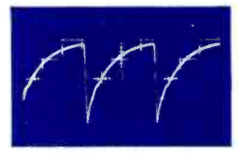

7 VERTICAL RATE 100V P-P
V503B 6KA8-1
SYNC SEPARATOR PLATE

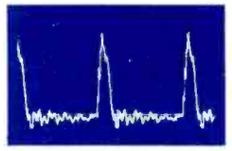

8 VERTICAL RATE 100V P-P
V501A 6GF7-9
VERTICAL OSCILLATOR GRID

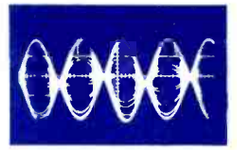

9 VERTICAL RATE 300V P-P
V501B 6GF7-2
VERTICAL OUTPUT GRID


10 VERTICAL RATE 10V P-P
TP502
VERTICAL OUTPUT CATHODE

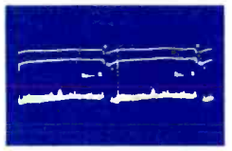

11 VERTICAL RATE 8.5V P-P
PW300-N
VERTICAL BLANKING PULSE

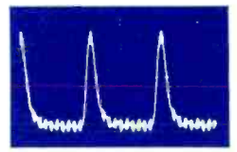

12 HORIZONTAL RATE 200V P-P
V105 6JE6-2, 6
HORIZONTAL OUTPUT GRID

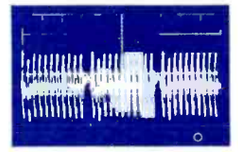

13 HORIZONTAL RATE 250V P-P
T102-U (AFC REFERENCE AND CONVERGENCE PULSE)

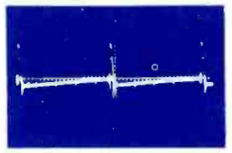

14 HORIZONTAL RATE 40V P-P
L117-A (GROUND POINT R178-2)
TOP AND BOT. PIN AMP.

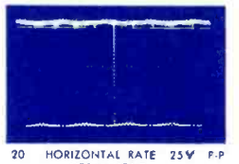

15 VERTICAL RATE 40V P-P
L117-A (GROUND POINT R178-2)
TOP AND BOT. PIN AMP.

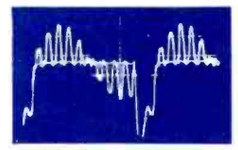

16 VERTICAL RATE 60V P-P
S104-1 (SERVICE SWITCH)
VIDEO ("Y" SIGNAL)

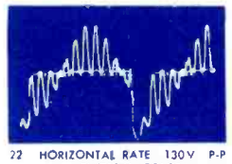

17 HORIZONTAL RATE 50V P-P
V702 6JC6-2 (COLOR)
BURST AMPLIFIER GRID

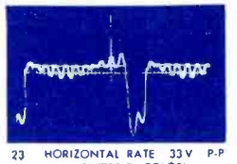

18 HORIZONTAL RATE 3V P-P
V701A 6GH8A-2 (COLOR)
BAND PASS AMPLIFIER


19 HORIZONTAL RATE 90V P-P
V705A 6JU8-1 (COLOR)
PHASE DETECTOR

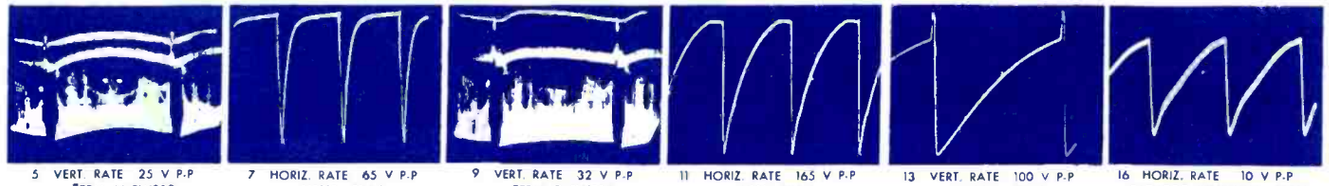

20 HORIZONTAL RATE 25V P-P
V704 6HZ6-7
"X" DEMODULATOR


21 HORIZONTAL RATE 100V P-P
PW700-AA (COLOR)
RED—"Y"


22 HORIZONTAL RATE 130V P-P
PW700-Y (COLOR)
BLUE—"Y"


23 HORIZONTAL RATE 33V P-P
PW700-Z (COLOR)
GREEN—"Y"

RCA VICTOR
TV Chassis KCS161



5 VERT. RATE 25 V P-P
TERM. N PW200
SYNC TAKE-OFF

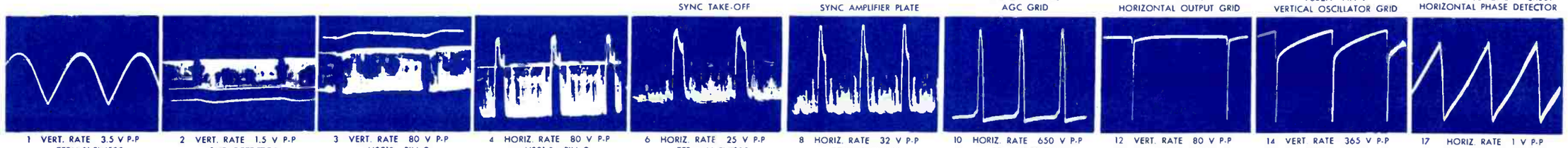
7 HORIZ. RATE 65 V P-P
V501B PIN 1
SYNC AMPLIFIER PLATE

9 VERT. RATE 32 V P-P
TERM. D PW500
AGC GRID

11 HORIZ. RATE 165 V P-P
V101 PIN 6
HORIZONTAL OUTPUT GRID

13 VERT. RATE 100 V P-P
V502A PIN 9
VERTICAL OSCILLATOR GRID

16 HORIZ. RATE 10 V P-P
CATHODE JUNCTION SR501
HORIZONTAL PHASE DETECTOR



1 VERT. RATE 3.5 V P-P
TERM 81-PW500
270V R+ RIIS

2 VERT. RATE 1.5 V P-P
2ND DETECTOR
TP2

3 VERT. RATE 80 V P-P
V201B PIN 9
VIDEO AMPLIFIER PLATE

4 HORIZ. RATE 80 V P-P
V201-B PIN 9
VIDEO AMPLIFIER PLATE

6 HORIZ. RATE 25 V P-P
TERM. N PW200
SYNC TAKE-OFF

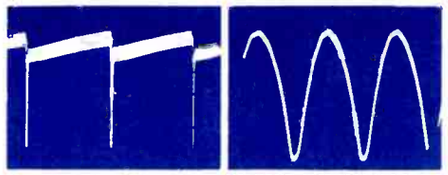
8 HORIZ. RATE 32 V P-P
TERM. D PW500
AGC GRID

10 HORIZ. RATE 650 V P-P
TERM. A PW500
AGC PLATE

12 VERT. RATE 80 V P-P
PIN 2 V105
KINESCOPE GRID

14 VERT. RATE 365 V P-P
V502B PIN 2
VERTICAL OUTPUT GRID

17 HORIZ. RATE 1 V P-P
ANODE SR501-C555
HORIZ. PHASE DETECTOR

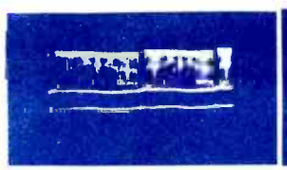


15 VERT. RATE 110 V P-P
PIN 1 J101 (YOKE SOCKET)
VERT. OUTPUT TRANS. SEC.

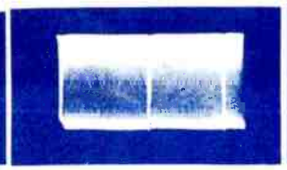
18 HORIZ. RATE 325 V P-P
PIN 4 J101 (YOKE SOCKET)
(B BOOST) HORIZ. YOKE WINDINGS

RCA VICTOR
TV Chassis KCS 164

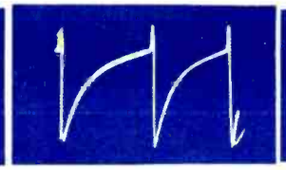
KCS164 CHASSIS VOLTAGE WAVEFORMS



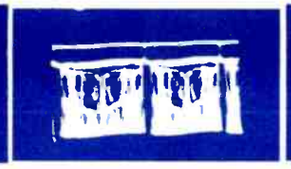
① TP-3
SECOND DETECTOR
VERTICAL RATE 2V P-P



③ TP-5
SYNC PLATE
VERTICAL RATE 60V P-P



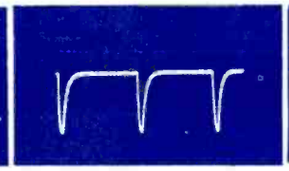
⑤ V206B PIN 9
VERTICAL OSCILLATOR GRID
VERTICAL RATE 180V P-P



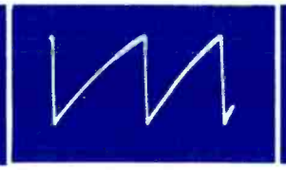
⑦ V205B PIN 9
VIDEO AMPLIFIER PLATE
VERTICAL RATE 110V P-P

⑨ V205A PIN 2
AGC GRID
VERTICAL RATE 80V P-P

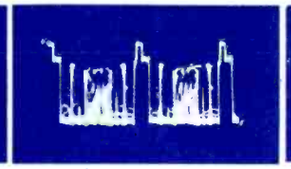
② V101 PINS 2 & 6
HORIZONTAL OUTPUT GRID
HORIZONTAL RATE 130V P-P



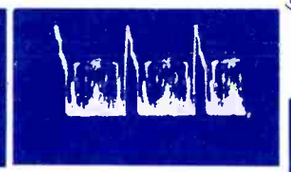
④ TP-5
SYNC PLATE
HORIZONTAL RATE 60V P-P



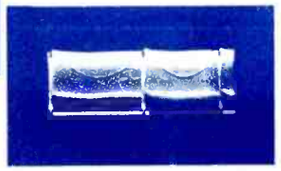
⑥ V206A PIN 2
VERTICAL OUTPUT GRID
VERTICAL RATE 28V P-P



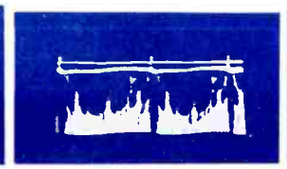
⑧ V205B PIN 9
VIDEO AMPLIFIER PLATE
HORIZONTAL RATE 110V P-P



⑩ V205A PIN 2
AGC GRID
HORIZONTAL RATE 80V P-P



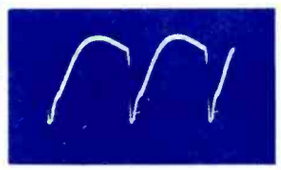
⑪ SR201 CATHODE JUNCTION
HORIZONTAL PHASE DETECTOR
VERTICAL RATE 12V P-P



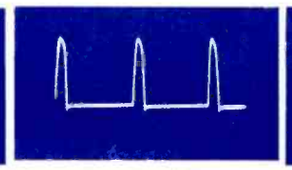
⑬ R224 & C246 JUNCTION
(ZONE 1B PW200 BOARD)
VERTICAL RATE 100V P-P

⑮ V105 PIN 3
KINESCOPE 1ST ANODE
HORIZONTAL RATE 40V P-P

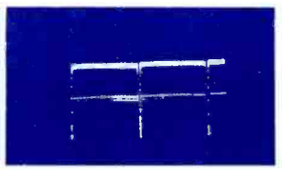
⑰ SR201 ANODE
HORIZONTAL PHASE DETECTOR
VERTICAL RATE 15V P-P



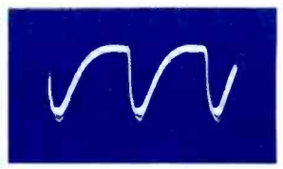
⑫ SR201 CATHODE JUNCTION
HORIZONTAL PHASE DETECTOR
HORIZONTAL RATE 12V P-P



⑭ V205A PIN 3
AGC PLATE
HORIZONTAL RATE 330V P-P



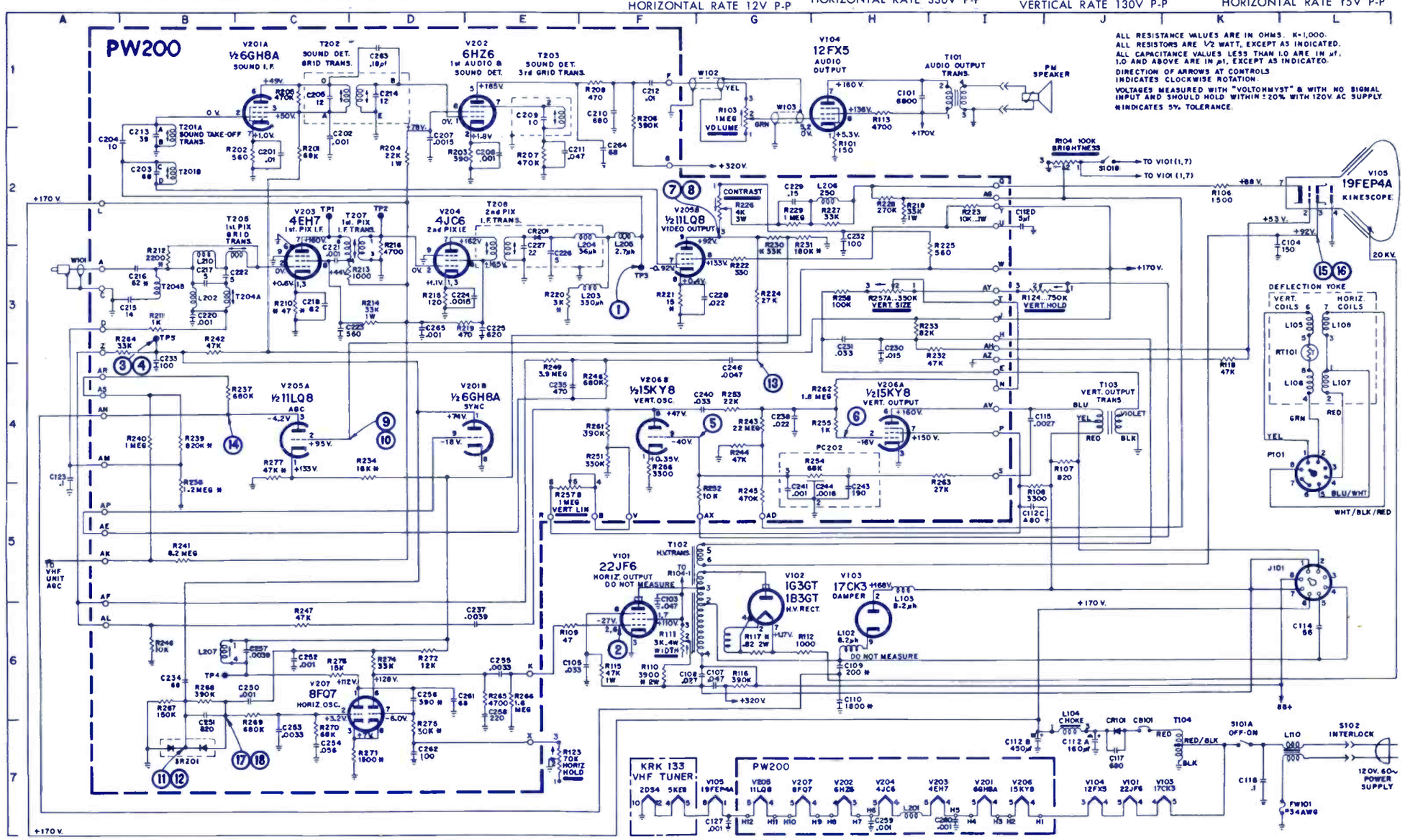
⑯ V105 PIN 3
KINESCOPE 1ST ANODE
VERTICAL RATE 130V P-P



⑱ SR201 ANODE
HORIZONTAL PHASE DETECTOR
HORIZONTAL RATE 15V P-P

SYMBOL	DESCRIPTION	RCA VICTOR PART NO.
C109	cer 200pf 5% 4000 N1500	119193
C110	film 1800pf 5% 500v	
C112	4 sec elect	115481
C112A	160µf 200v	
	B 450µf 200v	
	C 60µf 200v	
	D 5µf 200v	
C114	cer 56pf 10% 2000v N2200	109293
C115	paper .0027µf 10% 1000v	
C117	cer 680pf 20% 1000v	113165
C204	cer 10pf ±0.5pf 500v NPO	
C215	cer 14pf 5% 500v N075	
C216	cer 62pf 5% 500v N750	
C217	cer 5pf ±0.25pf 500v NPO	
C218	cer 62pf 5% 500v N750	
C222	cer 5pf ±0.25pf 500v NPO	
C226	cer 5pf 10% 500v N750	
C227	cer 22pf 5% 500v N220	
C256	cer 390pf 5% 500v	
C261	cer 68pf 20% 500v N750	104224
CB101	breaker circuit 1.2 amp	113950
CR101	diode silicon rect 1N3194	113998
CR201	diode 2nd det	112524
L102	reactor RF choke 8.2µh	107385
L103	reactor RF choke 8.2µh	107385
L104	reactor filter choke	115426
L108	coil part of yoke	
L110	reactor line choke	114293
L202	coil RF	114315
L203	coil peaking 330µh	113280
L204	coil peaking 36µh	116056
L205	coil peaking 2.7µh	107463
L206	coil peaking 250µh	109944
L207	coil horiz efficiency	114486
L210	coil RF	118697
R110	3.9K 5% 2w	522239
R117	WW .82Ω 10% 2w	227522
R210	47Ω 5% ½w	502047
R212	2.2K 5% ½w	502222
R214	3.3K 10% 1w	512333
R220	3K 5% ½w	502230
R221	15Ω 5% ½w	502015
R230	3.3K 5% ½w	502333
R231	180K 5% ½w	502418
R232	47K 10% ½w (IRC)	118496
R234	18K 5% ½w	502318
R238	1.2M 5% ½w	502512
R239	820K 5% ½w	502482
R271	1.5K 5% ½w	502215
R275	37K 5% ½w (IRC)	118988
R277	47K 5% ½w	502347
SR201	diode selenium	109474
T101	xformer output	118409
T102	xformer hi voltage	118498
T103	xformer vert output	118502
T104	xformer power	118527
T201A, B	coil 4.5MHz trap	114489
T203	coil quad	118410
T204A, B	coil 47.25MHz 39.75MHz traps	114313
T205	xformer 1st IF grid	118696
T207	xformer 2nd pix	109158
T208	coil 3rd pix IF	114317
	ant VHF telescoping rod (LH)	113361
	ant VHF telescoping rod (RH)	116572
	speaker 3x5 PM 3.2Ω	112713
RT101	thermistor temp compensating 5.0Ω part of yoke, cold	118375
	yoke def	118526
R103	control on-off volume	
R104	control bright (part of TMA)	
R111	control width	118505
R123	control horiz hold	118503
R124	control vert hold	118504
R226	control contrast	114260
R257A, B	control vert size vert lin	518408
S101A, B	switch TV on-off (on TMA)	

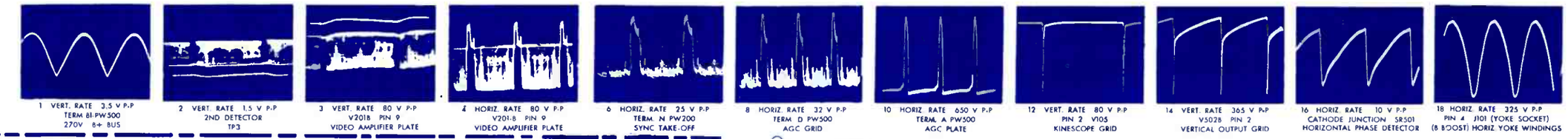
KCS164 CHASSIS CIRCUIT SCHEMATIC

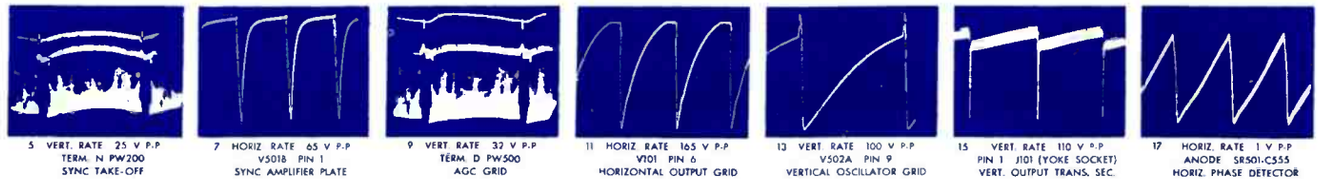


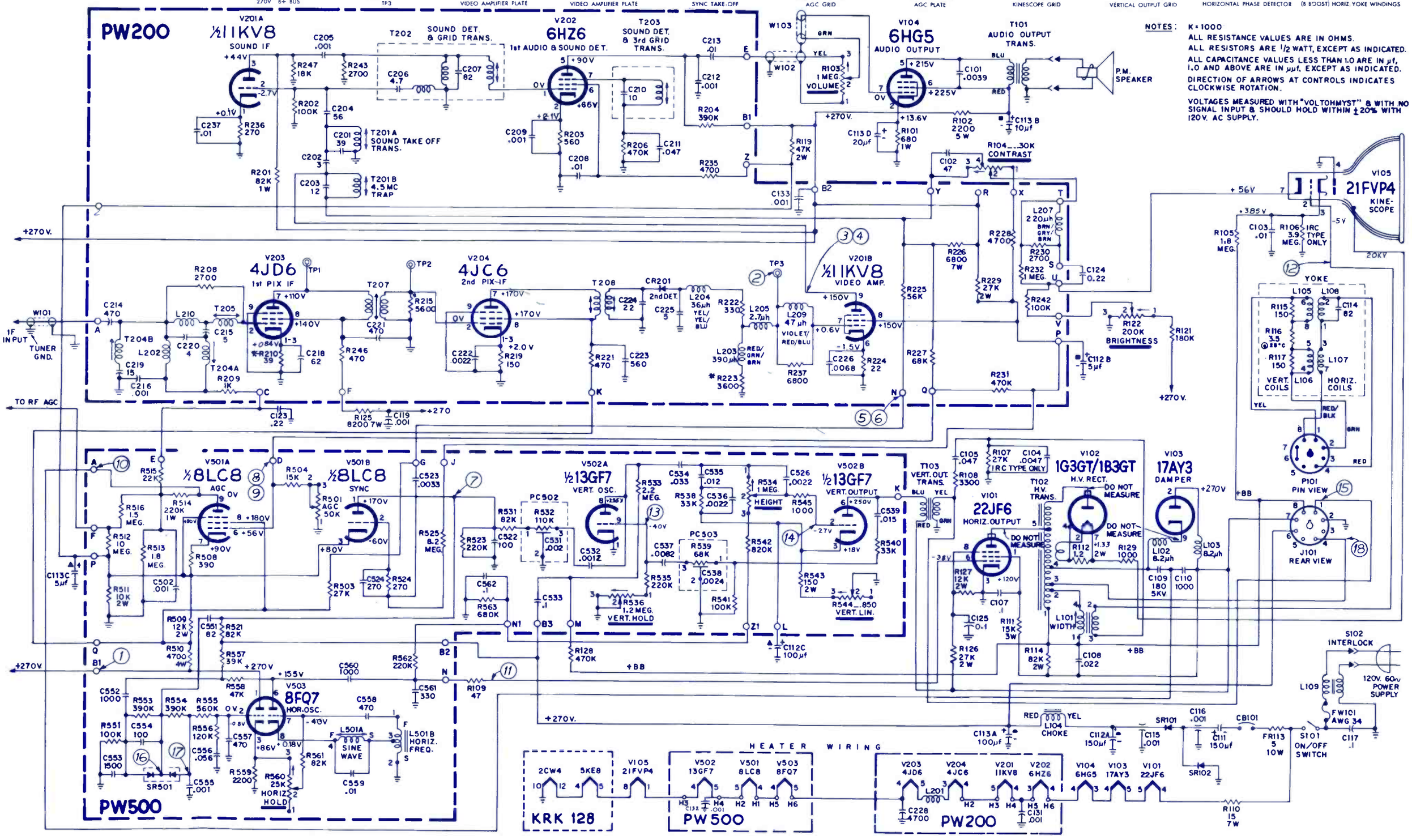
RCA VICTOR
TV Chassis
KCS162 Series

ELECTRONIC TECHNICIAN TEKFAX

VOLTAGE WAVEFORMS

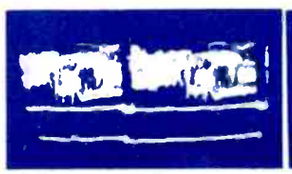






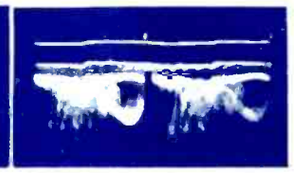
NOTES:
K = 1000
ALL RESISTANCE VALUES ARE IN OHMS.
ALL RESISTORS ARE 1/2 WATT, EXCEPT AS INDICATED.
ALL CAPACITANCE VALUES LESS THAN 1.0 ARE IN µf, 1.0 AND ABOVE ARE IN µµf, EXCEPT AS INDICATED.
DIRECTION OF ARROWS AT CONTROLS INDICATES CLOCKWISE ROTATION.
VOLTAGES MEASURED WITH "VOLTOHMYST" & WITH NO SIGNAL INPUT & SHOULD HOLD WITHIN ±20% WITH 120V. AC SUPPLY.

RCA VICTOR
TV Chassis
KCS165 Series

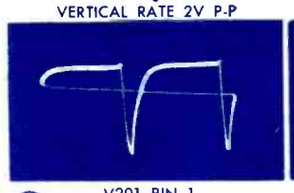


① TP-3
SECOND DETECTOR
VERTICAL RATE 2V P-P

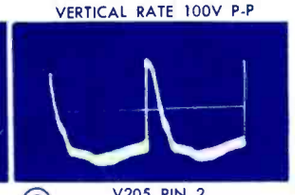
② V205 PIN 9
VIDEO OUTPUT PLATE
VERTICAL RATE 100V P-P



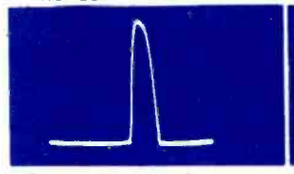
③ C246 & C235 JUNCTION
ZONE 2B, PW-200
VERTICAL RATE 10V P-P



④ V201 PIN 1
SYNC PLATE
HORIZONTAL RATE 55V P-P

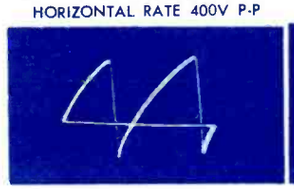


⑤ V205 PIN 2
AGC GRID
HORIZONTAL RATE 35V P-P

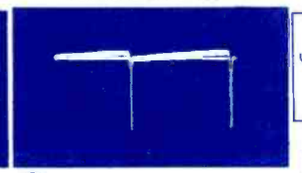


⑥ V205 PIN 3
AGC PLATE
HORIZONTAL RATE 400V P-P

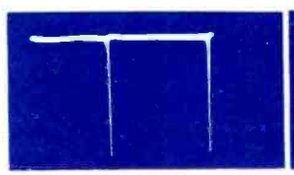
⑦ V206 PIN 9
VERTICAL OSCILLATOR GRID
VERTICAL RATE 160V P-P



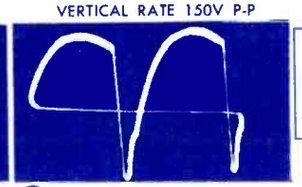
⑧ V206 PIN 2
VERTICAL OUTPUT GRID
VERTICAL RATE 25V P-P



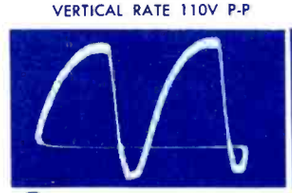
⑨ PW-200, TERMINAL "L"
VERTICAL OUTPUT TRANSFORMER
VERTICAL RATE 150V P-P



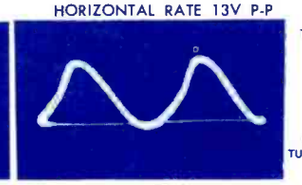
⑩ V105 PIN 1
PICTURE TUBE GRID
VERTICAL RATE 110V P-P



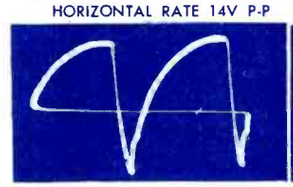
⑪ SR201 CATHODE JUNCTION
HORIZONTAL PHASE DETECTOR
HORIZONTAL RATE 13V P-P



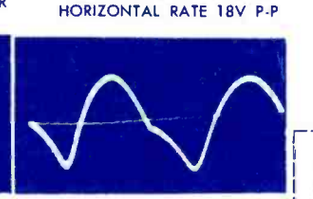
⑫ SR201 ANODE
HORIZONTAL PHASE DETECTOR
HORIZONTAL RATE 14V P-P



⑬ TP-4
HORIZONTAL SINE WAVE
HORIZONTAL RATE 18V P-P

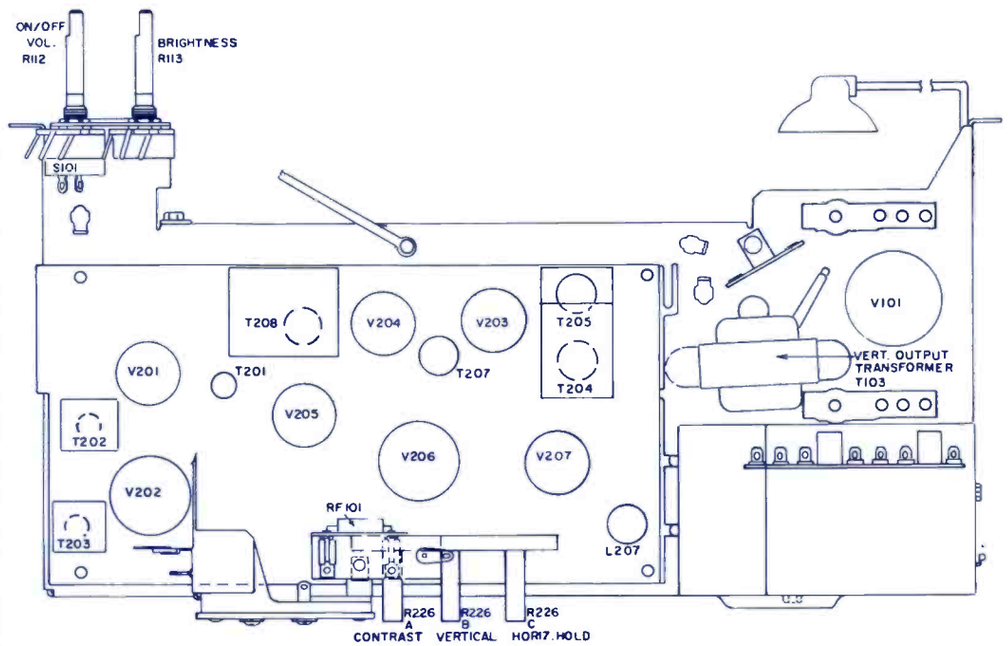


⑭ V101 PIN 9
HORIZONTAL OUTPUT GRID
HORIZONTAL RATE 100V P-P

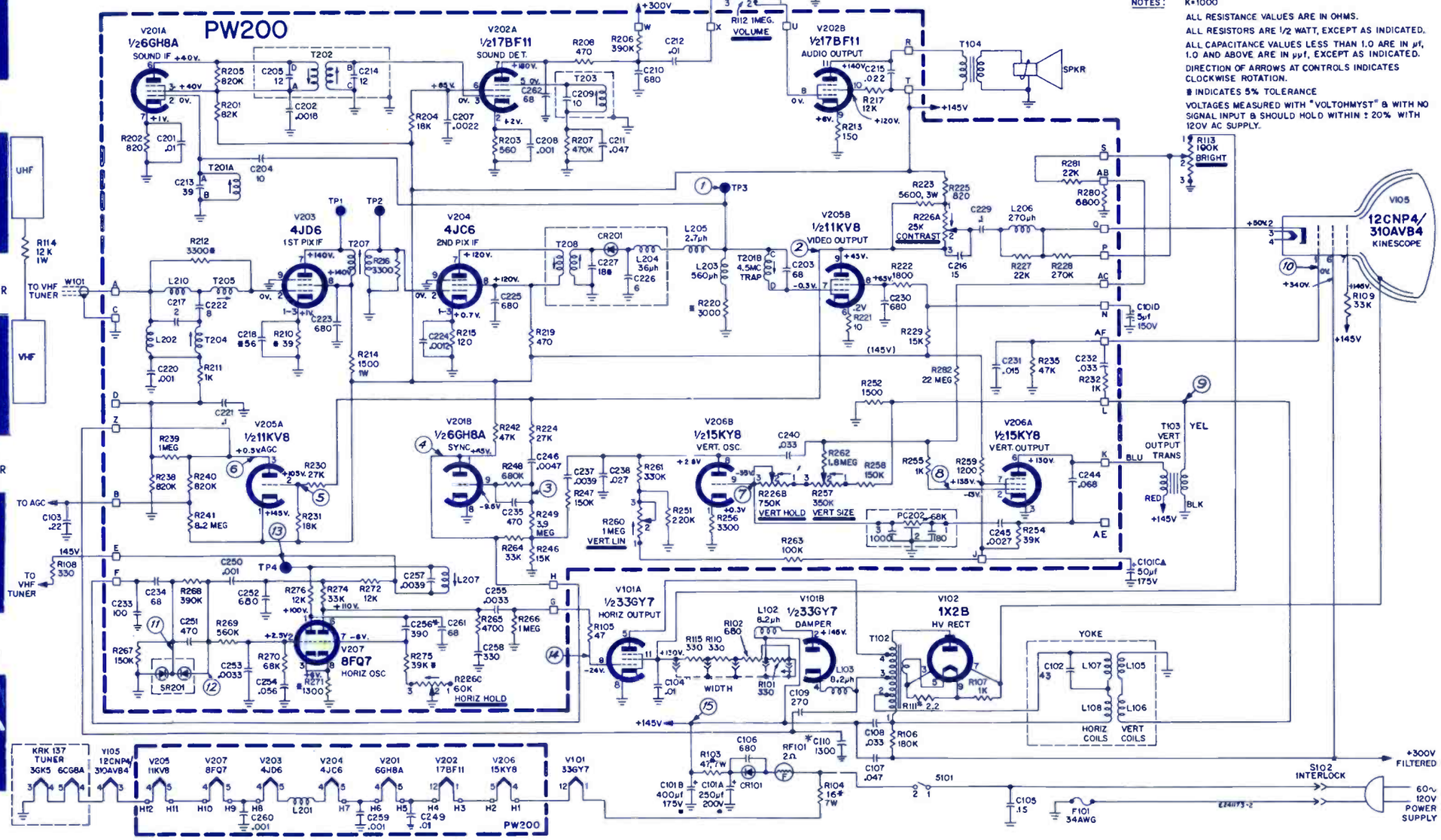


⑮ PW-200 TERMINAL "T"
145V B+ RIPPLE
VERTICAL RATE 1.5V P-P

SYMBOL	DESCRIPTION	RCA PART NO.
R112	control vol with S101	120395
R113	control brightness	121220
R226A,B,C	control contrast vert & horiz hold	121222
R257	control vert size	121223
R260	control vert lin	121221
S101	switch part of R112	
	tuner KRK137A	121254
	tuner UHF complete	121088
C101	4 section elect	121798
	A — 250μf 200v	
	B — 400μf 175v	
	C — 50μf 175v	
	D — 5μf 150v	
C102	43pf ±5% 2Kv ceramic N1500 part of yoke	121236
C103	.22μf ±20% 100v mica	
C109	270pf ±5% 3v ceramic N1500	121224
C257	.0039μf ±10% 100v mica	
CR101	diode silicon rectifier 1N3194	113998
CR201	diode det	112524
F101	fuse 2½in. 34AWG	
RF101	fuse resistor 2Ω .9A	121086
L102	RF choke 8.2μh	107385
L202	RF choke	114315
L203	560μh	114488
L204	36μh	116056
L205	2.7μh	107463
L206	270μh	115427
L207	stabilizer	114486
L210	RF choke	118697
PW200	circuit printed complete less tubes	121488
R103	47Ω ±5% 7w WW	121229
R104	16Ω ±5% 7w WW	121228
R114	12K 1w	512312
R210	39Ω ±5% metal oxide	121230
R212	3.3K ±5% metal oxide	228714
R216	3.3K ±5% film	228714
R220	3K ±5% metal oxide	227097
R223	5.6K 3w	104180
R271	1.3K ±5% metal oxide	228710
R275	39K ±5% metal oxide	227104
SR201	diode selenium	109474
T102	horiz output	121213
T103	vert output	121212
T104	audio output	121803
T201A,B	4.5MHz	114489
T202	snd IF	118411
T203	quad	118410
T204	47.25 trap	113097
T205	IF input	113097
T207	pix IF	109158
T208	pix IF output	114317
	yoke deflection	121211



KCS165 Chassis Layout Drawing



NOTES:
K=1000
ALL RESISTANCE VALUES ARE IN OHMS.
ALL RESISTORS ARE 1/2 WATT, EXCEPT AS INDICATED.
ALL CAPACITANCE VALUES LESS THAN 1.0 ARE IN μf, 1.0 AND ABOVE ARE IN μμf, EXCEPT AS INDICATED.
DIRECTION OF ARROWS AT CONTROLS INDICATES CLOCKWISE ROTATION.
‡ INDICATES 5% TOLERANCE
VOLTAGES MEASURED WITH "VOLTOHMYST" ® WITH NO SIGNAL INPUT ® SHOULD HOLD WITHIN ± 20% WITH 120V AC SUPPLY.

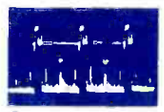
RCA VICTOR
TV Chassis
KCS157 Series

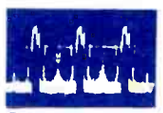
ELECTRONIC TECHNICIAN **TEKFAX**


1 TP202 PIX DETECTOR TEST POINT HORIZONTAL RATE 3.0V P-P


2 TP202 PIX DETECTOR TEST POINT VERTICAL RATE 1.0V P-P


3 Q705C VIDEO OUTPUT COLLECTOR VERTICAL RATE 60V P-P

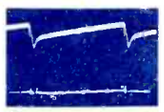

4 Q705C VIDEO OUTPUT COLLECTOR VERTICAL RATE 60V P-P


5 TP204 SYNC SEPARATOR INPUT HORIZONTAL RATE 4.0V P-P

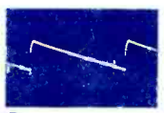

6 TP204 SYNC SEPARATOR INPUT VERTICAL RATE 4.0V P-P

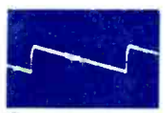

7 PW200-AD AGC KEYING PULSE HORIZONTAL RATE 18V P-P


8 Q707C SYNC OUTPUT HORIZONTAL RATE 12V P-P

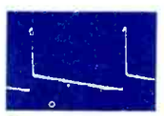

9 Q707C SYNC OUTPUT VERTICAL RATE 12V P-P


10 Q506B VERTICAL OSCILLATOR BASE VERTICAL RATE 4.5V P-P

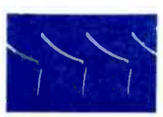

11 Q507B VERTICAL DRIVER BASE VERTICAL RATE 1.0V P-P


12 PW200-AE VERTICAL OUTPUT BASE VERTICAL RATE 1.0V P-P

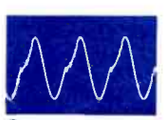

13 PW200-AC VERTICAL OUTPUT COLLECTOR VERTICAL RATE 45V P-P

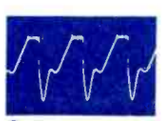

14 PW200-AL JUNCTION VERT HOLD & VERT LIN VERTICAL RATE 20V P-P

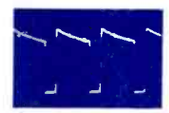

15 PW200-AM HORIZONTAL REFERENCE HORIZONTAL RATE 100V P-P


16 SR501 CATHODE JUNCTION HORIZONTAL RATE 25V P-P


17 SR501 ANODE HORIZONTAL RATE 80V P-P

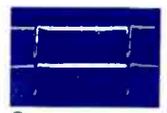

18 TP203 HORIZONTAL SINE WAVE COIL HORIZONTAL RATE 3.0V P-P

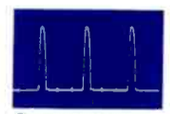

19 Q504B HORIZONTAL OSCILLATOR BASE HORIZONTAL RATE 3.5V P-P


20 Q504C HORIZONTAL OSCILLATOR COLLECTOR HORIZONTAL RATE 18V P-P


21 Q505C HORIZONTAL DRIVER COLLECTOR HORIZONTAL RATE 15V P-P


22 V101-1 KINESCOPE GRID-HORIZONTAL BLANKING HORIZONTAL RATE 45V P-P


23 V101-3 KINESCOPE GRID-VERTICAL BLANKING VERTICAL RATE 80V P-P


24 T102-4 (PW200-AG) HORIZONTAL OUTPUT EMITTER HORIZONTAL RATE 100V P-P

NOTES:

RESISTANCE VALUES IN OHMS. K=1000. ⌇ INDICATES JUMPER WIRE

CAPACITANCE VALUES LESS THAN 1 IN μf, 1 AND ABOVE IN pf, UNLESS OTHERWISE INDICATED.

VOLTAGES MEASURED WITH "VOLTOHMYST" AND WITH NO SIGNAL INPUT AND SHOULD HOLD WITHIN +-20% WITH 120VOLT A.C. SUPPLY.

COMPONENT LOCATIONS ON SCHEMATIC ARE REFERENCED BY ZONE NUMBERS SHOWN IN REPLACEMENT PARTS LIST.

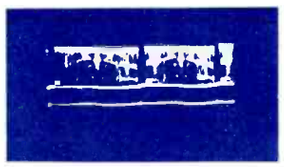
*INDICATES 5% TOLERANCE.

SYMBOL	DESCRIPTION	RCA CHASSIS NO.
C105	3,000μf 20v elec	119357
C106	1,000μf 15v elec	119360
C107	470pf ±20% 6kv ceramic	119353
C110	100μf 25v elec	108020
C116	250μf 15v elec	119359
C226	1800pf +5% 125v film	119349
CB101	Breaker-Circuit 95amp	119736
CR103	Diode – zener 400mw ZA6.8	119720
CR202	Diode – silicon FDM 1000	119597
F102	Fuse – gloss 2a	102182
L107	Coil – choke 500μh	116058
L201	Coil – IF input	119743
L202	Reactor – 2.4μh	107463
L203	Coil – 36μh	116056
L204	Coil – peaking 250μh	119742
L205	Coil – peaking 2.7μh	109248
L206	Coil – peaking 250μh	119742
L501	Coil – 4.6mh/6mh	119745
Q101	regulator 3515	119721
Q102	horizontal output 3514	119722
Q103	vertical output 3512	119723
Q104	regulator driver 2447	116077
Q201	1st pix 3516	119823
Q202	2nd pix 3517	119824
Q203	3rd pix 3518	119825
Q204	1st video 3505	118713
Q205	video output 2474	116081
Q206	noise cancellation 3511	119725
Q207	sync separator 3510	119724
Q208	audio driver 3506	119726
Q209	audio output 3507 (Q209 & Q210 matched pair)	118727
Q210	audio output 3507 (209 & 210 matched pair)	119727
Q501	AGC amp 3508	119728
Q502	AGC gate 2448	116078
Q503	IF AGC 3508	119728
Q504	horiz oscillator 3513	119822
Q505	horiz driver 2495	116087
Q506	vertical oscillator 3523	119730
Q507	vertical driver 2482	116084
CR102	control B+ adjust	119365
CR103	control bright	119363
CR107	control volume – on-off (includes S101)	119364
A	(contrast	
CR2368	control (vertical hold	119362
C	(horiz. hold	
R510	2.2K ±5%	502222
R511	1.2K ±5%	502212
R512	1100Ω ±5%	502111
R516	82K	502382
CR546	control vert height	120917
CR547	control vert linearity	119366
RT501	Thermistor – 15 @25 c	119737
RT502	Thermistor – 3300 @25 c	119738
	TRANSFORMERS:	
T101	power	119733
T102	high voltage	119734
T103	vertical output	119735
T201	4.5MHz input	119618
T203	ratio detector	119634
T204	IF input	119746
T205	IF input	119747
T206	1st pix IF	119750
T207	2nd pix IF	119748
T208	3rd pix IF	119749
T209	4.5MHz trap	119748
T501	horiz oscillator	119731
T502	horiz driver	119732
	Yoke – deflection	119060

RCA VICTOR
TV Chassis KCS
163 Series

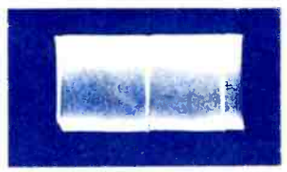
KCS163 SERIES CHASSIS WAVEFORMS

SYMBOL	DESCRIPTION	RCA VICTOR PART NO.
C102	cer 680pf 20% 1kv	113165
C106	cer 680pf 20% 1kv	113165
C110	fixed film 1800pf 5% 500v N150	
C112	4 sec elect	118401
	A – 80µf 200v	
	B – 450µf 200v	
	C – 60µf 175v	
	D – 5µf 175v	
C215	cer 14pf 5% 500v N075	
C216	cer 62pf 5% 500v N750	
C218	cer 62pf 5% 500v N750	
C226	cer 5pf ±0.5pf 500v NPO	
C227	cer 22pf 5% 500v N220	
C256	cer 390pf 5% 500v N750	
CB101	breaker circuit	118400
CR201	diode selenium	112524
L102	reactor RF choke 8.2µh	107385
L104	reactor filter choke	115426
L202	coil RF	
L203	coil peaking 330µh	113280
L204	coil peaking 36µh	116056
L205	reactor RF choke 2.7µh	107463
L206	coil peaking 220µh	115438
L207	coil horiz freq and sine wave	114486
L209	coil reactor	
L210	coil RF	118697
R102	2.2M 20% ½w (IRC type)	114928
R110	3.9K 5% 2w	522239
R115	47K 10% 1w	512347
R204	22K 10% 1w	512322
R210	47Ω 5% ½w	502047
R218	33K 10% 1w	512333
R103	control volume (on TMA)	
R104	control bright (on TMA)	
R111	control width	118407
R123	control horiz hold	118404
R124	control vert hold	118405
R126	control contrast	118406
R257A, B	control vert size vert lin	118408
RV101	thermistor 48v at 1ma KCS163B	118506
S101A	switch TV on-off (on TMA)	
	B – switch TV on-off (on TMA)	
SR201	diode selenium	109474
T101	xformer output	118409
T102	xformer hi voltage	118397
T103	xformer vert output	118403
T104	xformer power	118398
T201	xformer snd take-off 4.5MHz trap	114489
T202	xformer 4.5MHz driver	118411
T203	coil quad	118410
T204A	xformer 1st pix IF grid trap	114313
	B – xformer 1st pix IF grid trap	114313
T205	xformer 1st pix IF grid	118696
T207	xformer 2nd pix IF	109158
T208	xformer 3rd pix IF	114317
R103	control volume (on TMA)	
R104	control bright (on TMA)	
R111	control width	118407
R123	control horiz hold	118404
R124	control vert hold	118405
R126	control contrast	118406
R257A, B	control vert size vert lin	118408
	ant VHF telescoping rod (LH)	113361
	ant VHF telescoping rod (RH)	116572
	speaker 3x5 P.M. 3.2Ω	112713
	thermistor temp compensating 5.0Ω cold (part of yoke)	118375
	yoke def	118526
	VHF tuner	KRK133D, F
	UHF tuner	KRK120RJ, TJ, UJ

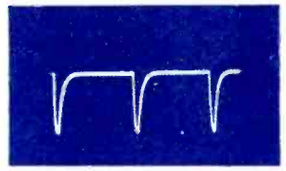


① TP-3
SECOND DETECTOR
VERTICAL RATE 2V P-P

② V101 PINS 2 & 6
HORIZONTAL OUTPUT GRID
HORIZONTAL RATE 130V P-P



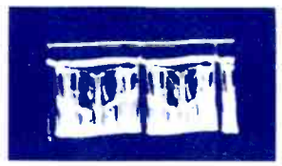
③ TP-5
SYNC PLATE
VERTICAL RATE 60V P-P



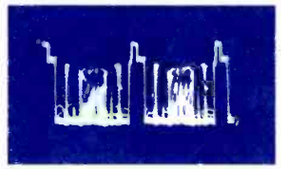
④ TP-5
SYNC PLATE
HORIZONTAL RATE 60V P-P

⑤ V206B PIN 9
VERTICAL OSCILLATOR GRID
VERTICAL RATE 180V P-P

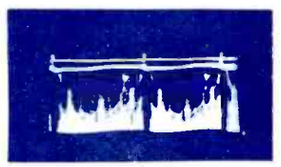
⑥ V206A PIN 2
VERTICAL OUTPUT GRID
VERTICAL RATE 28V P-P



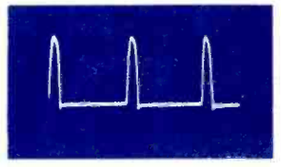
⑦ V205B PIN 9
VIDEO AMPLIFIER PLATE
VERTICAL RATE 110V P-P



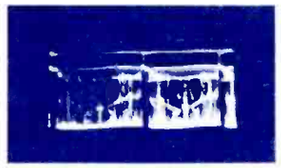
⑧ V205B PIN 9
VIDEO AMPLIFIER PLATE
HORIZONTAL RATE 110V P-P



⑬ R224 & C246 JUNCTION
(ZONE 1B PW200 BOARD)
VERTICAL RATE 100V P-P

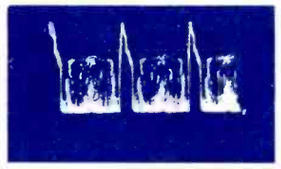


⑭ V205A PIN 3
AGC PLATE
HORIZONTAL RATE 330V P-P

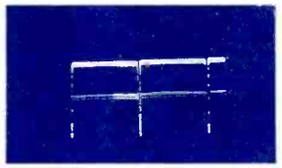


⑨ V205A PIN 2
AGC GRID
VERTICAL RATE 80V P-P

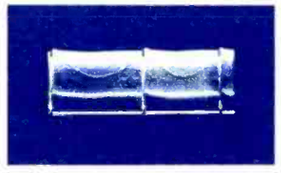
⑮ V105 PIN 3
KINESCOPE 1ST ANODE
HORIZONTAL RATE 40V P-P



⑩ V205A PIN 2
AGC GRID
HORIZONTAL RATE 80V P-P

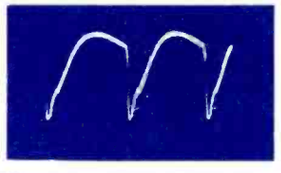


⑯ V105 PIN 3
KINESCOPE 1ST ANODE
VERTICAL RATE 130V P-P

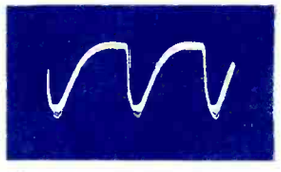


⑪ SR201 CATHODE JUNCTION
HORIZONTAL PHASE DETECTOR
VERTICAL RATE 12V P-P

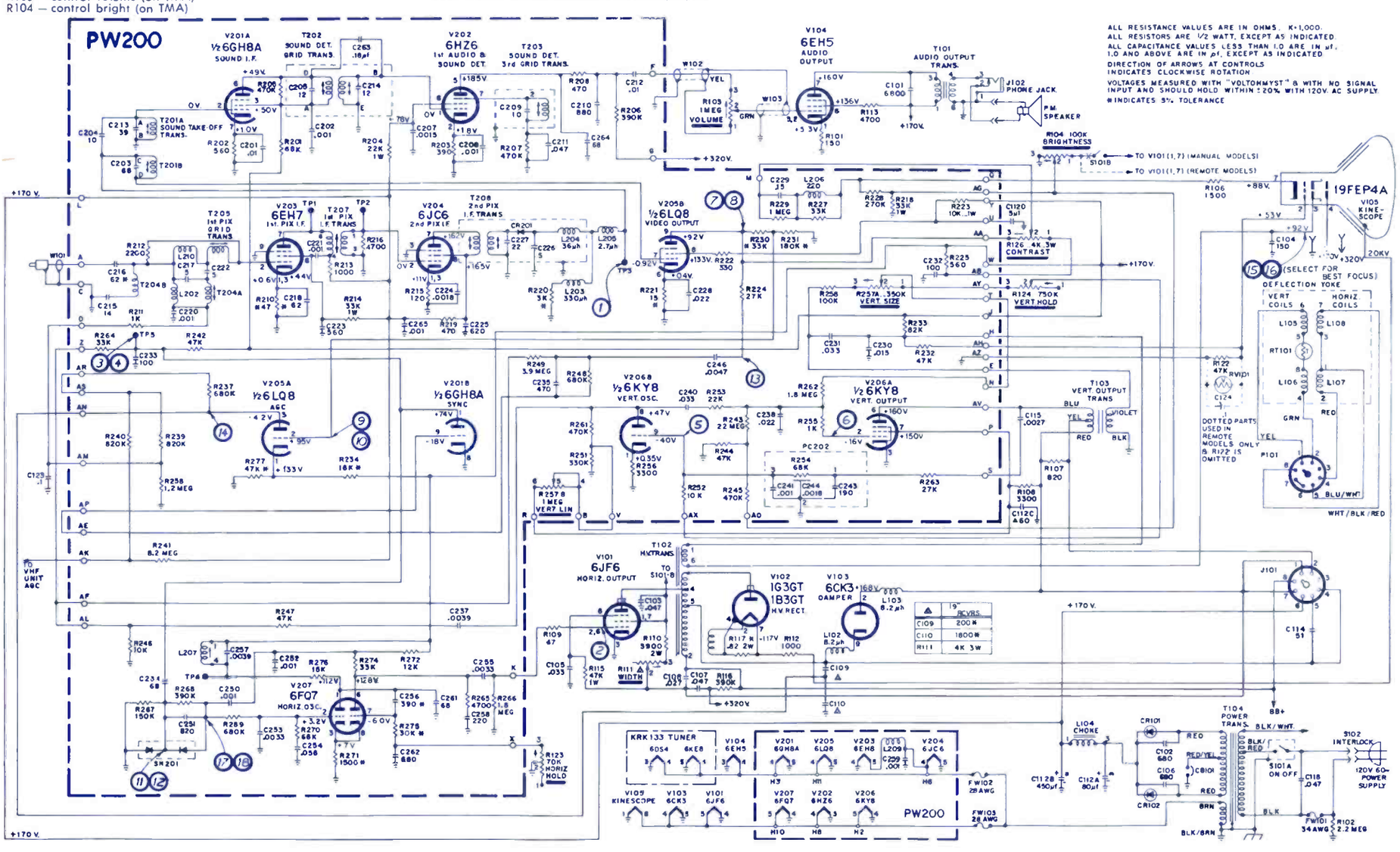
⑰ SR201 ANODE
HORIZONTAL PHASE DETECTOR
VERTICAL RATE 15V P-P



⑫ SR201 CATHODE JUNCTION
HORIZONTAL PHASE DETECTOR
HORIZONTAL RATE 12V P-P



⑱ SR201 ANODE
HORIZONTAL PHASE DETECTOR
HORIZONTAL RATE 15V P-P

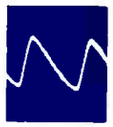


SEARS—SILVERTONE

TV Model 720, 7121

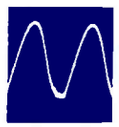
ELECTRONIC TECHNICIAN **TEKFAX**

WF-1



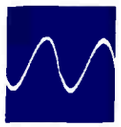
35V P-P
60 ∿

WF-2



3V P-P
60 ∿

WF-3

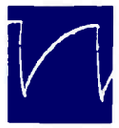


2V P-P
60 ∿

WF-4

50V P-P
7875 ∿

WF-5



150V P-P
7875 ∿

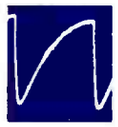
WF-6

150V P-P
7875 ∿

WF-7

8V P-P
7875 ∿

WF-8



18V P-P
7875 ∿

WF-9

56V P-P
60 ∿

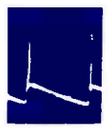
WF-10

128V P-P
60 ∿

WF-11

200V P-P
60 ∿

WF-12



1040V P-P
60 ∿

WF-13

96V P-P
60 ∿

WF-14

2.6V P-P
60 ∿

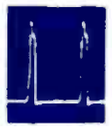
WF-15

98V P-P
60 ∿

WF-16

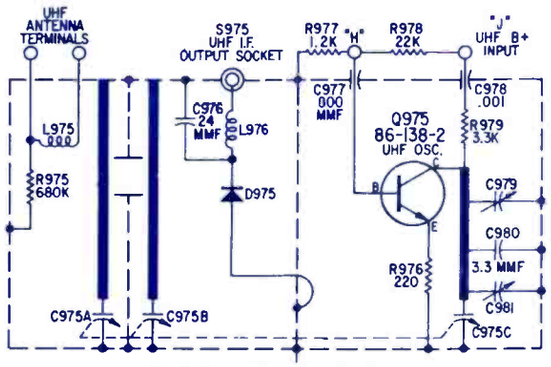
570V P-P
7875 ∿

WF-17



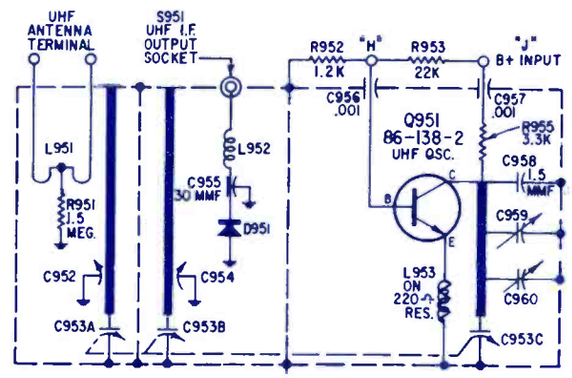
570V P-P
7875 ∿

SYMBOL	DESCRIPTION	SEARS SILVERTONE PART NO.
C2	— disc .01μf 1kv	12-103854-6
C4	— disc 8.2pf ±1pf N750	12-829294-2
C6	— disc 4.7pf ±25pf NPO	12-470271-2
C8	— tublar 1.5pf 10% NPO gimmick	20-1-0
C14	— disc .02μf +80% —20%	12-203724-6
C23	— disc 12pf 5% NPO	12-120281-2
C24	— disc 150pf 5% NPO	20-619-0
C63	— polystyrene film 390pf 5%	20-277-1
C66	— disc .01μf 1kv GMV	20-355-0
C67	— disc .001μf +80% —20% 1kv Z5U	12-102874-4
C102A, B, C	— elect 100μf 300v (A) 200μf 300v (B) 2μf 300v (C)	18-139-5
C103A, B, C	— elect 20μf 300v (A&B) 50μf 50v (C)	18-52-3
C109	— disc .001μf +80% —20%	12-102854-3
C112	— elect 150μf 175v	18-203-5
C116	— disc 240pf 3kv N1500	12-241516-8
C117	— disc 300pf 3kv N1500	12-301516-8
R14	— 7.5K 5w 5%	63-75255
R23	— 4.3K 5%	64-43205
R24	— 5.1K 5%	64-51205
R51	— 1K horiz frequency control	24-570
R72	— 39K	63-39301
R101	— 1M volume & pull on push off switch	24-851
R102	— 3.4M brightness	24-703
R103	— 30K contrast	24-717
R104	— 3.4M focus	24-491
R105	— 5M vert height	24-437
R106	— 1.5M vert hold	24-706
R107	— 750Ω vert lin	24-520
R111	— 2K 10w 5%	61-209-0
R115	— 5.6K 5w 5%	68-56255
R124	— 4.5Ω 10w WW	61-191-0
R125	— 13.5Ω 4w WW	61-270-0
R126	— circuit breaker (1.5 amp)	43-12-2
R133	— dep oxide 1K	61-10201-3
R134, R135	— dep oxide 22K	61-22301-3
RC101	— .001μf capacitor 4.7M resistor	13-17-3
L1	— coil quad	10-74-5
L2	— coil peaking 270μh wound on 15K resistor	10-150-1
L3	— coil peaking 775μh	10-254-1
L4	— coil filament choke	10-156-1
L5	— coil peaking 330μh	10-253-1
L6	— coil IF input & 41.25 MHz trap	10-62-3
L7	— coil 47.25MHz trap	10-63-3
L8	— coil tweet 12μh	10-65-1
L9	— coil peaking 90μh	10-256-1
L101	— deflection yoke & plug	80-47-4
L102	— choke horiz suppression	10-242-1
L103	— coil choke RF	10-124-1
L104	— coil horiz stabilizer	10-75-5
L105	— choke filter	80-20-6
L106	— choke line radiation	10-264-1
T1	— xformer 4.5MHz sound IF	10-53-3
T2	— xformer 4.5MHz trap & sound take off	10-209-1
T3	— xformer 1st IF	10-58-3
T4	— xformer IF output	10-59-3
T101	— xformer audio output	80-198-1
T102	— xformer vert output	80-20-2
T103	— xformer horiz output	80-42-3
D1	— germanium diode video detector	86-10-1
D51	— dual diode	86-9-1
SR101, SD102	— rectifier silicon (500ma)	86-54-3



UHF TUNER (95-403-0)

NOTE: A 22DE4 (V104) Damper Tube may be used in same chassis, if replacement is necessary always replace with same number removed.

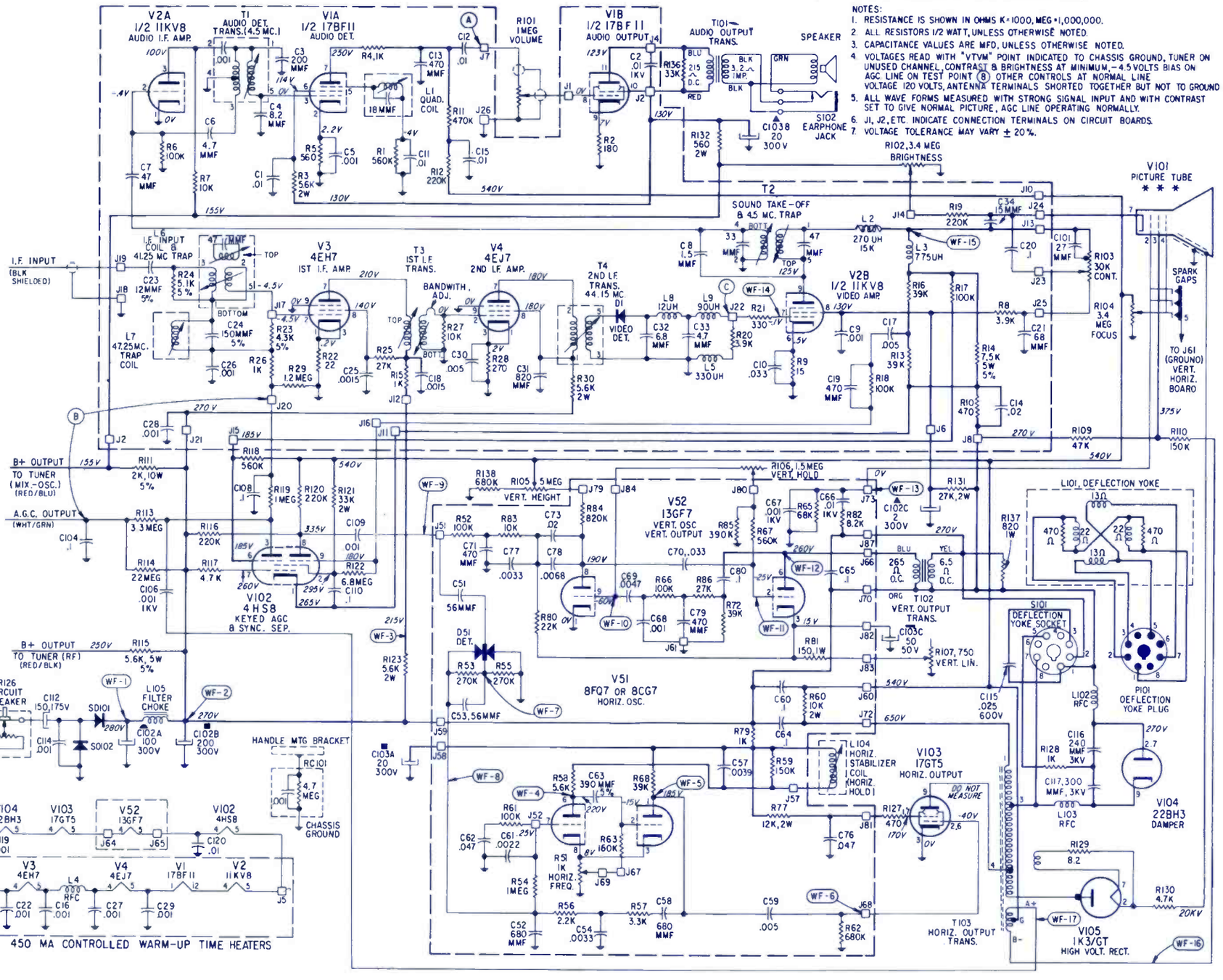


UHF TUNER (95-446-0)

*** 19" Picture Tube - 19DQP4 or 19DWP4

CAUTION: Discharging or metering of second anode of picture tube must be to main chassis only

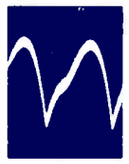
NOTES:
1. RESISTANCE IS SHOWN IN OHMS K=1000, MEG=1,000,000.
2. ALL RESISTORS 1/2 WATT, UNLESS OTHERWISE NOTED.
3. CAPACITANCE VALUES ARE MFD, UNLESS OTHERWISE NOTED.
4. VOLTAGES READ WITH "VTVM" POINT INDICATED TO CHASSIS GROUND, TUNER ON UNUSED CHANNEL, CONTRAST & BRIGHTNESS AT MINIMUM, -4.5 VOLTS BIAS ON AGC LINE ON TEST POINT (8) OTHER CONTROLS AT NORMAL LINE VOLTAGE 120 VOLTS, ANTENNA TERMINALS SHORTED TOGETHER BUT NOT TO GROUND
5. ALL WAVE FORMS MEASURED WITH STRONG SIGNAL INPUT AND WITH CONTRAST SET TO GIVE NORMAL PICTURE, AGC LINE OPERATING NORMALLY.
6. J1, J2, ETC. INDICATE CONNECTION TERMINALS ON CIRCUIT BOARDS.
7. VOLTAGE TOLERANCE MAY VARY ± 20%.



SEARS-SILVERTONE
TV Models 7110, 7111, 7114, 7128, 7131

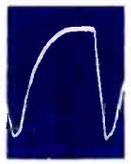
WF-1

18V P-P
30 ∿

WF-2

.64V P-P
30 ∿

WF-3

85V P-P
30 ∿

WF-4

4V P-P
7875 ∿

WF-5

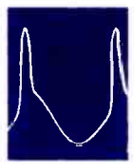
10V P-P
7875 ∿

WF-6

290V P-P
30 ∿

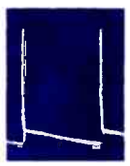
WF-7

104V P-P
7875 ∿

WF-8

21V P-P
7875 ∿

WF-9

30V P-P
30 ∿

WF-10

1360V P-P
30 ∿

WF-11

130V P-P
30 ∿

WF-12

6V P-P
30 ∿

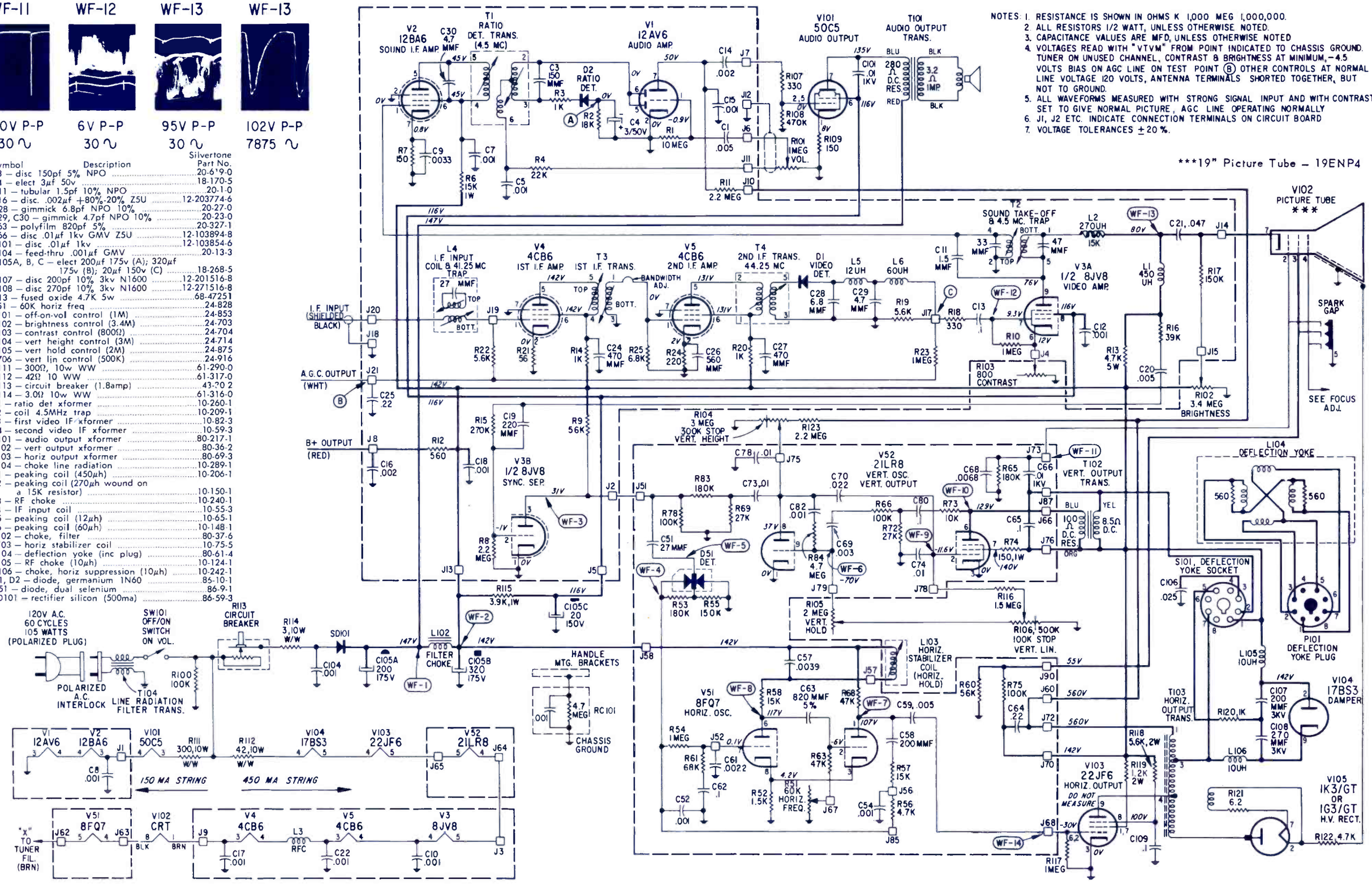
WF-13

95V P-P
30 ∿

WF-13

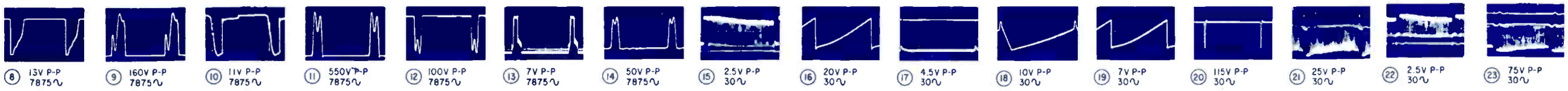
102V P-P
7875 ∿

Symbol	Description	Silvertone Part No.
C3	disc 150pf 5% NPO	20-6'9-0
C4	elect 3μf 50v	18-170-5
C11	tubular 1.5pf 10% NPO	20-1-0
C16	disc. .002μf +80%-20% Z5U	12-203774-6
C28	gimmick 6.8pf NPO 10%	20-27-0
C29, C30	gimmick 4.7pf NPO 10%	20-23-0
C63	polyfilm 820pf 5%	20-327-1
C66	disc .01μf 1kv GMV Z5U	12-103894-8
C101	disc .01μf 1kv	12-103854-6
C104	feed-thru .001μf GMV	20-13-3
C105A, B, C	elect 200μf 175v (A); 320μf 175v (B); 20μf 150v (C)	18-268-5
C107	disc 200pf 10% 3kv N1600	12-201516-8
C108	disc 270pf 10% 3kv N1600	12-271516-8
R13	fused oxide 4.7K 5w	68-47251
R51	60K horiz freq	24-828
R101	off-on-vol control (1M)	24-853
R102	brightness control (3.4M)	24-703
R103	contrast control (800Ω)	24-704
R104	vert height control (3M)	24-714
R105	vert hold control (2M)	24-875
R706	vert lin control (500K)	24-916
R111	300Ω, 10w WW	61-290-0
R112	42Ω 10 WW	61-317-0
R113	circuit breaker (1.8amp)	43-?0 2
R114	3.0Ω 10w WW	61-316-0
T1	ratio det xformer	10-260-1
T2	coil 4.5MHz trap	10-209-1
T3	first video IF xformer	10-82-3
T4	second video IF xformer	10-59-3
T101	audio output xformer	80-217-1
T102	vert output xformer	80-36-2
T103	horiz output xformer	80-69-3
T104	choke line radiation	10-289-1
L1	peaking coil (450μh)	10-206-1
L2	peaking coil (270μh wound on a 15K resistor)	10-150-1
L3	RF choke	10-240-1
L4	IF input coil	10-55-3
L5	peaking coil (12μh)	10-65-1
L6	peaking coil (60μh)	10-148-1
L102	choke, filter	80-37-6
L103	horiz stabilizer coil	10-75-5
L104	deflection yoke (inc plug)	80-61-4
L105	RF choke (10μh)	10-124-1
L106	choke, horiz suppression (10μh)	10-242-1
D1, D2	diode, germanium 1N60	85-10-1
D51	diode, dual selenium	86-9-1
SD101	rectifier silicon (500ma)	86-59-3

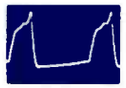


NOTES:
1. RESISTANCE IS SHOWN IN OHMS K 1,000 MEG 1,000,000.
2. ALL RESISTORS 1/2 WATT, UNLESS OTHERWISE NOTED.
3. CAPACITANCE VALUES ARE MFD, UNLESS OTHERWISE NOTED
4. VOLTAGES READ WITH "VTVM" FROM POINT INDICATED TO CHASSIS GROUND. TUNER ON UNUSED CHANNEL, CONTRAST & BRIGHTNESS AT MINIMUM, -4.5 VOLTS BIAS ON AGC LINE ON TEST POINT (B) OTHER CONTROLS AT NORMAL LINE VOLTAGE 120 VOLTS, ANTENNA TERMINALS SHORTED TOGETHER, BUT NOT TO GROUND.
5. ALL WAVEFORMS MEASURED WITH STRONG SIGNAL INPUT AND WITH CONTRAST SET TO GIVE NORMAL PICTURE, AGC LINE OPERATING NORMALLY
6. J1, J2 ETC. INDICATE CONNECTION TERMINALS ON CIRCUIT BOARD
7. VOLTAGE TOLERANCES ±20%.

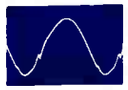
***19" Picture Tube – 19ENP4



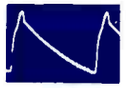
⑧ 13V P-P 7875∿ ⑨ 160V P-P 7875∿ ⑩ 11V P-P 7875∿ ⑪ 550V P-P 7875∿ ⑫ 100V P-P 7875∿ ⑬ 7V P-P 7875∿ ⑭ 50V P-P 7875∿ ⑮ 2.5V P-P 30∿ ⑯ 20V P-P 30∿ ⑰ 4.5V P-P 30∿ ⑱ 10V P-P 30∿ ⑲ 7V P-P 30∿ ⑳ 115V P-P 30∿ ㉑ 25V P-P 30∿ ㉒ 2.5V P-P 30∿ ㉓ 75V P-P 30∿



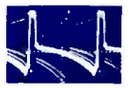
⑦ 23V P-P 7875∿



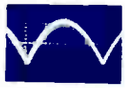
⑥ 16V P-P 7875∿



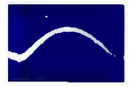
⑤ 9V P-P 7875∿



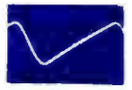
④ 8V P-P 7875∿



③ 2.25V P-P 30∿

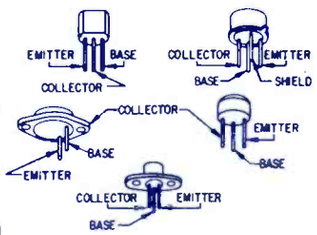


② 0.2V P-P 30∿



① 11V P-P 30∿

NOTES:
1. RESISTANCE IS SHOWN IN OHMS K=1,000 MEG=1,000,000.
2. ALL RESISTORS 1/2 WATT, UNLESS OTHERWISE NOTED.
3. CAPACITANCE VALUES ARE MFD. UNLESS OTHERWISE NOTED.
4. VOLTAGES READ WITH "VTVM" FROM POINT INDICATED TO CHASSIS GROUND TUNER ON UNUSED CHANNEL, CONTRAST, BRIGHTNESS AND VOLUME AT MINIMUM, OTHER CONTROLS AT NORMAL, LINE VOLTAGES 120 VOLTS AC, ANTENNA TERMINALS SHORTED TOGETHER, BUT NOT TO GROUND.
5. ALL WAVEFORMS MEASURED WITH STRONG SIGNAL INPUT AND WITH CONTRAST SET TO GIVE NORMAL PICTURE, AGC LINE OPERATING NORMALLY.
6. J1, J2 ETC. INDICATE CONNECTION TERMINALS ON CIRCUIT BOARDS.
7. VOLTAGE TOLERANCES ± 10%.
8. NUMBERS WITHIN CIRCLES REFER TO WAVEFORM NUMBERS.



BOTTOM VIEW OF TRANSISTORS

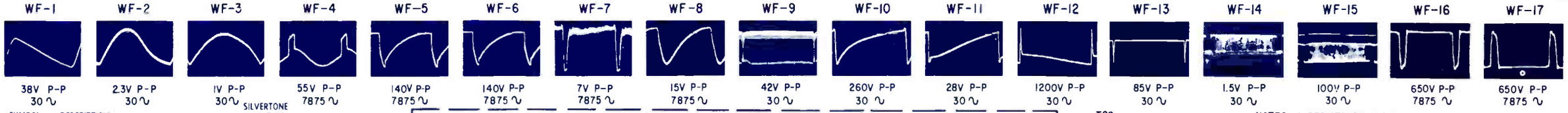
TRANSISTOR ORDERING INFORMATION

*Transistors are marked with a T-number.

Replacements should be ordered by the part number shown in Parts List.

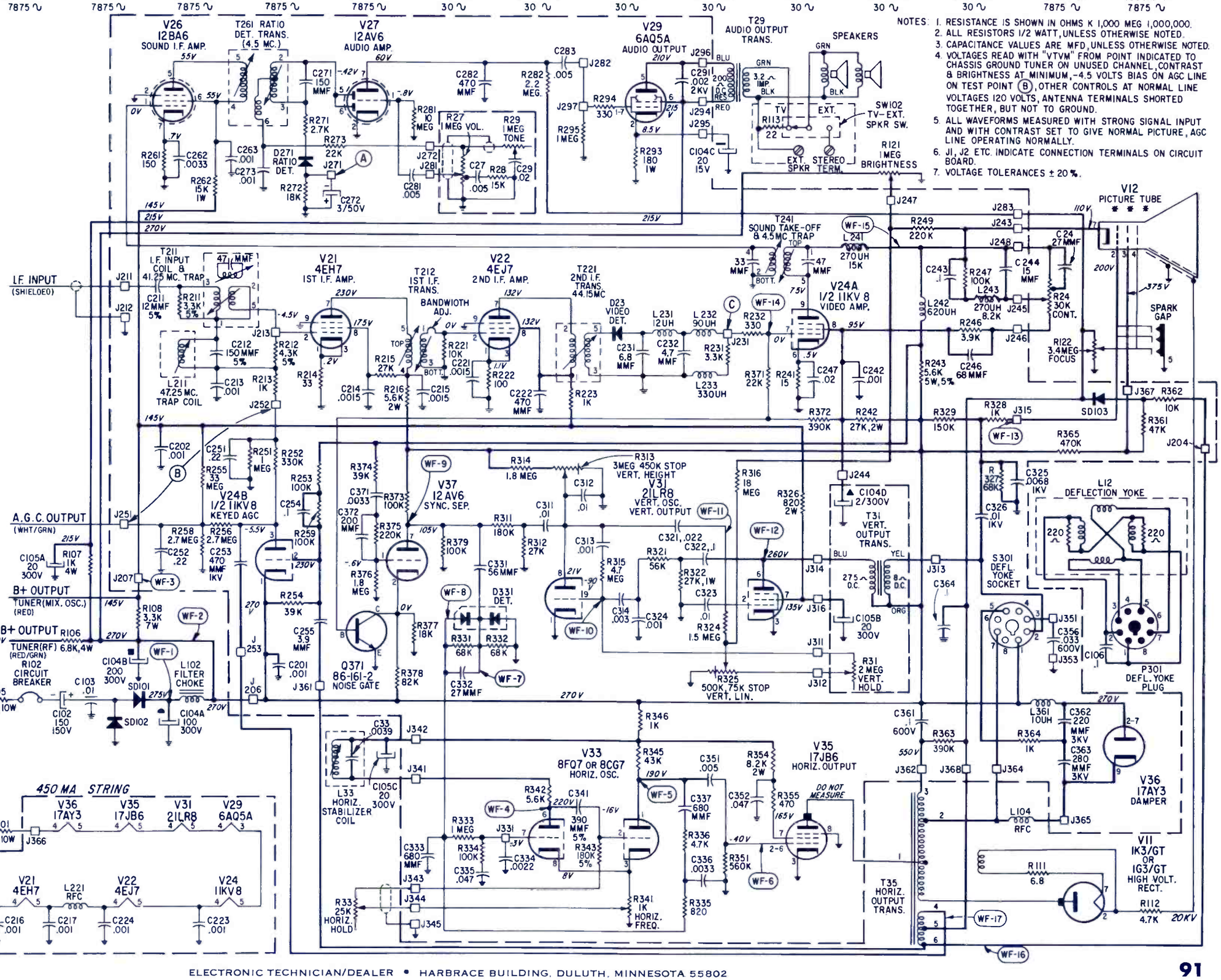
***19" Picture Tube – 19ENP4

SILVERTONE
TV MODEL 7151, 7152, 7154, 7155, 7156, 7157, 7158



SYMBOL	DESCRIPTION	SILVERTONE PART NO.
R24	30K (contrast)	24-753
R27	1M (vol push pull on-off)	24-873
R29	1M (tone)	24-947
R31	2M (vert hold)	24-794
R33	25K (horiz hold)	24-751
R121	1M (brightness control)	24-754
R122	3.4M (focus)	24-491
R313	3M (vert Height control)	24-817
R325	500K (vert lin)	24-816
R341	1K (horiz freq control)	24-570
C104A,B,C,D	elect 100µf 300v(A); 200µf 300v(B); 20µf 15v(C); 2µf 300v(D)	18-156-5
C105A,B,C	elect 20µf 300v (A,B,C)	18-96-3
C211	disc 12pf 5% NPO	12-120281-2
C212,C271	disc 150pf 5% NPO	20-619-0
C246	disc 68pf 10% GP	12-680764-2
C253	disc 470pf 1kv Z5U	12-471804-3
C291	disc .002µf 2kv	20-623-0
C325	disc. .0068µf +80% −20% 1kv	12-682874-6
C326	disc .01µf GMV 1kv	12-103894-8
C341	polyfilm 390pf 5%	20-277-1
C362	disc 220pf 3kv	12-221566-8
C363	disc 280pf 3kv	12-281516-8
R101	32.5Ω 10w	61-272-0
R102	circuit breaker (1.5 amps)	43-12-2
R103	565Ω 5% 15w WW	61-297-0
R104	1.2K 5% 10w	63-12295
R105	4.5Ω 10w	61-191-0
R106	6.8K fused oxide 4w	68-68241
R107	1K fused oxide 4w	68-10241
R108	3.3K 7w	63-33271
R111	6.8Ω 5%	63-68905
R211	3.3K 5%	64-33205
R212	4.3K 5%	64-43205
R243	5.6K 5% 5w	68-56255
R343	180K 5%	64-18405
T29	xformer audio output	80-255-1
T31	xformer vert output	80-31-2
T35	high voltage xformer & bose w/high voltage leads & R11	84-17923
T101	choke line radiation	10-289-1
T211	coil input IF 41.25MHz trap	10-62-3
T212	coil first video IF xformer	10-58-3
T221	coil second video IF xformer	10-59-3
T241	coil 4.5MHz trap	10-209-1
T261	coil ratio det xformer	10-260-1
L12	deflection yoke & Plug	80-51-4
L33	horiz stabilizer coil	10-75-5
L102	choke filter	80-44-6
L104	coil choke	10-242-1
L211	coil 47.25MHz trap	10-86-3
L221	coil filament choke	10-240-1
L231	coil peaking (12µh)	10-65-1
L232	coil peaking (90µh)	10-256-1
L233	coil peaking (330µh)	10-253-1
L241	coil peaking (150µh)	10-255-1
L242	coil peaking (620µh)	10-236-1
L243	coil peaking (270µh) (wound on 8.2K resistor)	10-170-1
L361	coil horiz suppression	10-124-1
D23,D271	diode video and ratio det	86-10-1
Q371	transistor (noise gate)	86-161-2
	circuit board (complete with all components except tubes)	35-13325
	circuit board only	25-152-0

NOTES:
1. RESISTANCE IS SHOWN IN OHMS K 1,000 MEG 1,000,000.
2. ALL RESISTORS 1/2 WATT, UNLESS OTHERWISE NOTED.
3. CAPACITANCE VALUES ARE MFD, UNLESS OTHERWISE NOTED.
4. VOLTAGES READ WITH "VTVM" FROM POINT INDICATED TO CHASSIS GROUND TUNER ON UNUSED CHANNEL, CONTRAST & BRIGHTNESS AT MINIMUM, −4.5 VOLTS BIAS ON AGC LINE ON TEST POINT (B), OTHER CONTROLS AT NORMAL LINE VOLTAGES 120 VOLTS, ANTENNA TERMINALS SHORTED TOGETHER, BUT NOT TO GROUND.
5. ALL WAVEFORMS MEASURED WITH STRONG SIGNAL INPUT AND WITH CONTRAST SET TO GIVE NORMAL PICTURE, AGC LINE OPERATING NORMALLY.
6. J1, J2 ETC. INDICATE CONNECTION TERMINALS ON CIRCUIT BOARD.
7. VOLTAGE TOLERANCES ± 20 %.

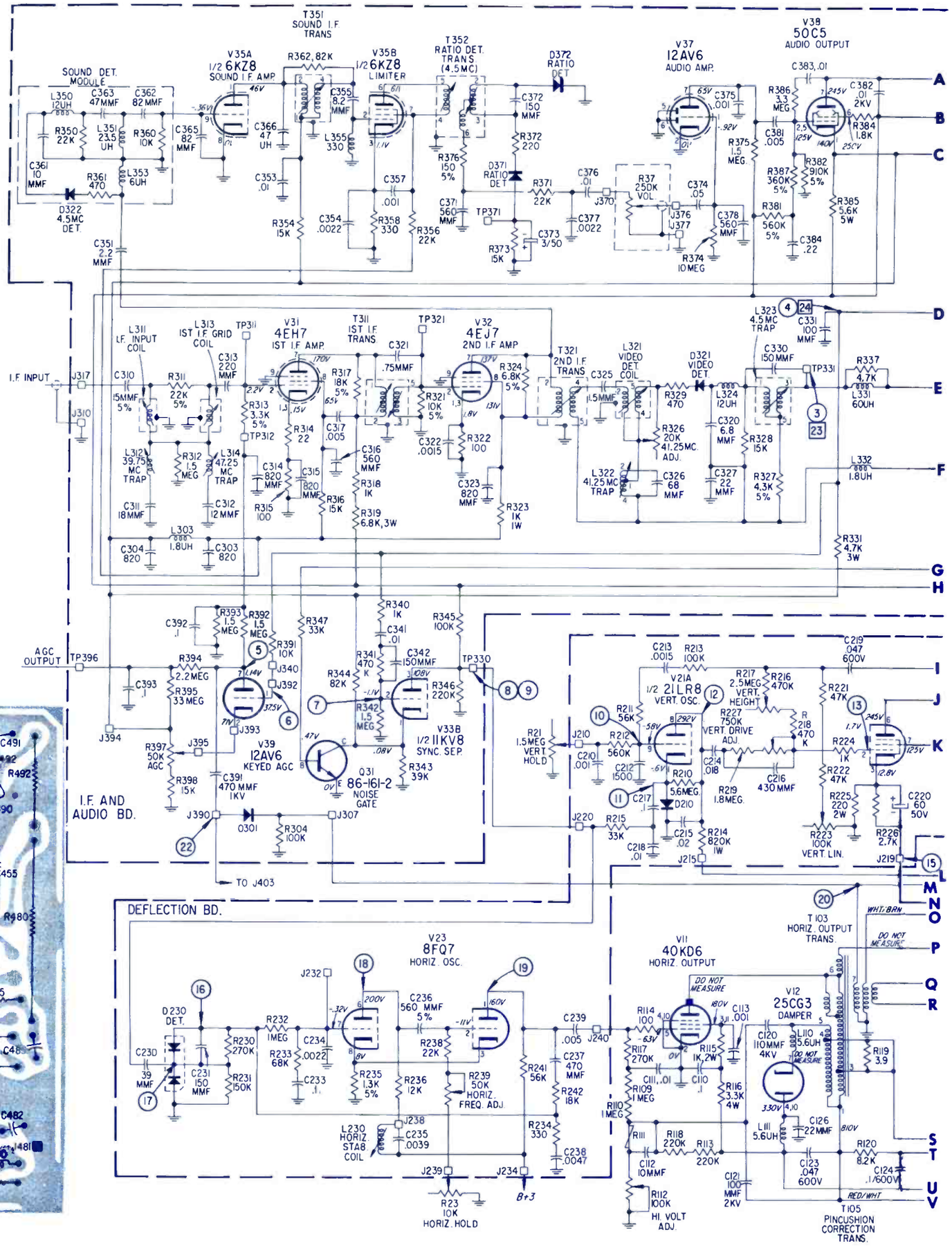


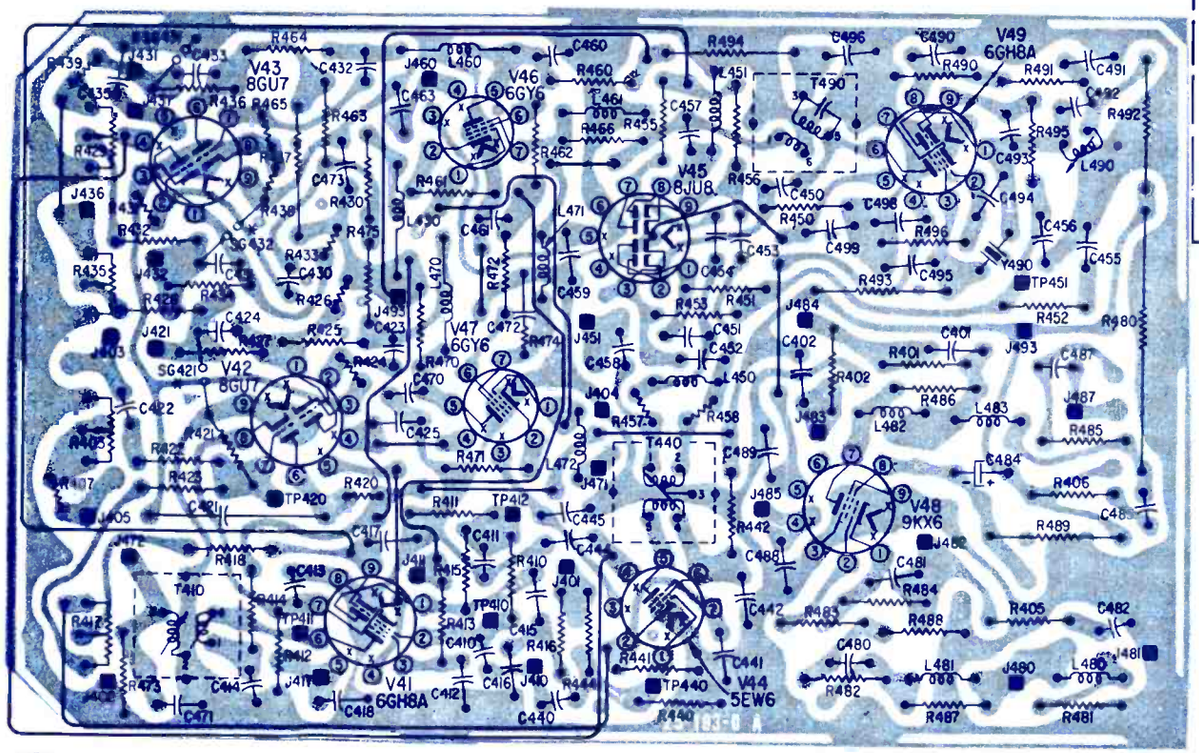
SILVERTONE
Color TV Chassis
528.72280,81,82

ELECTRONIC TECHNICIAN **TEKFAX**

SYMBOL	DESCRIPTION	SILVERTONE NO.
C101	Elec 200/175v	18-64-2
C102A,B,C	Elec 25µf 350v (A) 400 uf 350v (B) 80µf 350v (C)	18-105-3
C103A,B,C	Elect 300µf 200v (A) 250µf 350v (B) 100µf 350v (C)	18-106-3
C120	Disc 110pf 4 v N1500	20-653-0
R4	Thermistor	61-94-1
CR14	Control Chromix 1M	24-799
CR21	Control Bright 1M	24-930
CR23	Control Horiz Hold 10K	24-893
CR37	Control on/off Volume 250K	24-966
CR45	Control Tint 1.8K	24-988
CR47	Control Color 500Ω	24-958
CR48	Control Contrast 150Ω	24-983
CR49	Control Vert Hold 1.5Ω	24-1033
R100	4.5Ω 10w WW	61-191-0
R101	2.2Ω 10w	61-323-0
R102	70Ω 5w Dep Oxide	68-70051
R108	Thermistor (120Ω cold)	61-78-1
R111	Varistor	61-87-1
CR112	Control, High Voltage (Adjust)	24-951
CR121	Control Pincushion Corrector 10KΩ	24-821
CR131	Control Focus 15M	24-830
CR134	Control w.w. Vert Cent 10Ω	24-547
CR160	Control Red Screen 2M	24-957
CR161	Control Green Screen 3M	24-956
CR162	Control Blue Screen 2M	24-957
R200	Varistor	61-91-1
R201	300Ω 10w W.W. 5% (Chassis 72281, 72282 only)	61-299-0
CR217	Control 2.5Ω (Vert Height)	24-832
CR223	Control 100K (Vert. Lin.)	24-897
CR227	Control 750K (Drive Adj.)	24-902
R228	Varistor	61-95-1
CR239	Control 50K +30% (Horiz. Freq)	24-926
R303	13.5Ω 4w W.W.	61-270-0
R319	6.8Ω 3w Dep Oxide	68-68231
CR326	Control 20K 41.25MHz Trap)	24-987
R385	5.6K 5w W.W.	61-299-0
CR397	Control 50K (AGC)	24-833
CR403	Control Brite Limit 2.5M	24-976
CR417	Control 1M (Color Killer)	24-981
CR435	Drive Control (Blue)	24-976
R451, R453)	1M (matched pair)	63-10501
R455, R456)	1M (matched pair)	63-10501
R480	3.9K 7w Dep Oxide	68-39271
R510	60Ω 3w W.W.	24-880
T101	xformer (Audio Output)	80-246-1
T102	xformer (Vert Output)	80-42-2
T103	xformer (Horiz Output)	80-76-3
T104	xformer (Filament)	80-19-5
T105	xformer (Pincushion)	80-15-7
T311	Coil 1st I.F	10-72-3
T321	Coil 2nd I.F	10-73-3
T331	Coil, Chroma Take Off	10-109-3
T351	Coil, Sound I.F	10-66-3
T352	Coil Ratio Detector	10-328-1
T410	xformer Chroma Drive	10-268-1
T440	Coil Burst Phase	10-250-1
T490	Coil 3.58 Oscillator xformer	10-258-1
T501	Coil Blue Horizontol	10-101-5
L14	Yoke Deflection	80-67-4
L101	Choke Filter	80-51-6
L102,L103	Choke, Line Rodiation	10-149-1
L116,L117	Coil degaussing (Top)	10-98-5
L120	Coil Pincushion	10-125-5
L140	Coil Peaking 100µh	10-337-1
L230	Coil Horiz Stabilizer	10-34-5
L315	Choke, Filament	10-156-1
L322	Coil 41.25MHz Trap	10-101-3
L323	Coil 4.5MHz Trap	10-68-3
L324	Coil Tweet 12µh	10-65-1
L331	Coil Peaking 60µh	10-341-1
L351	Coil Peaking 23.5µh	10-333-1
L430,L460,L470	Coil Peaking 620µh	10-339-1
L472	Coil Peaking 5.6µh	10-272-1
L483	Coil Peaking 560µh	10-316-1
L501	Coil Horiz Convergence	10-126-5
L502	Coil Vert Convergence	10-102-5
D321,D322	Diode Germanium (Detector)	86-10-1
D371,D372	Diode Germanium (Ratio Detector)	86-15-1
Y490	Crystal	33-8-3
Q31	Noise Gate	86-161-2
CB101	Circuit Breaker (3.5a)	43-33-2
TD331	Delay Line	23-22-2

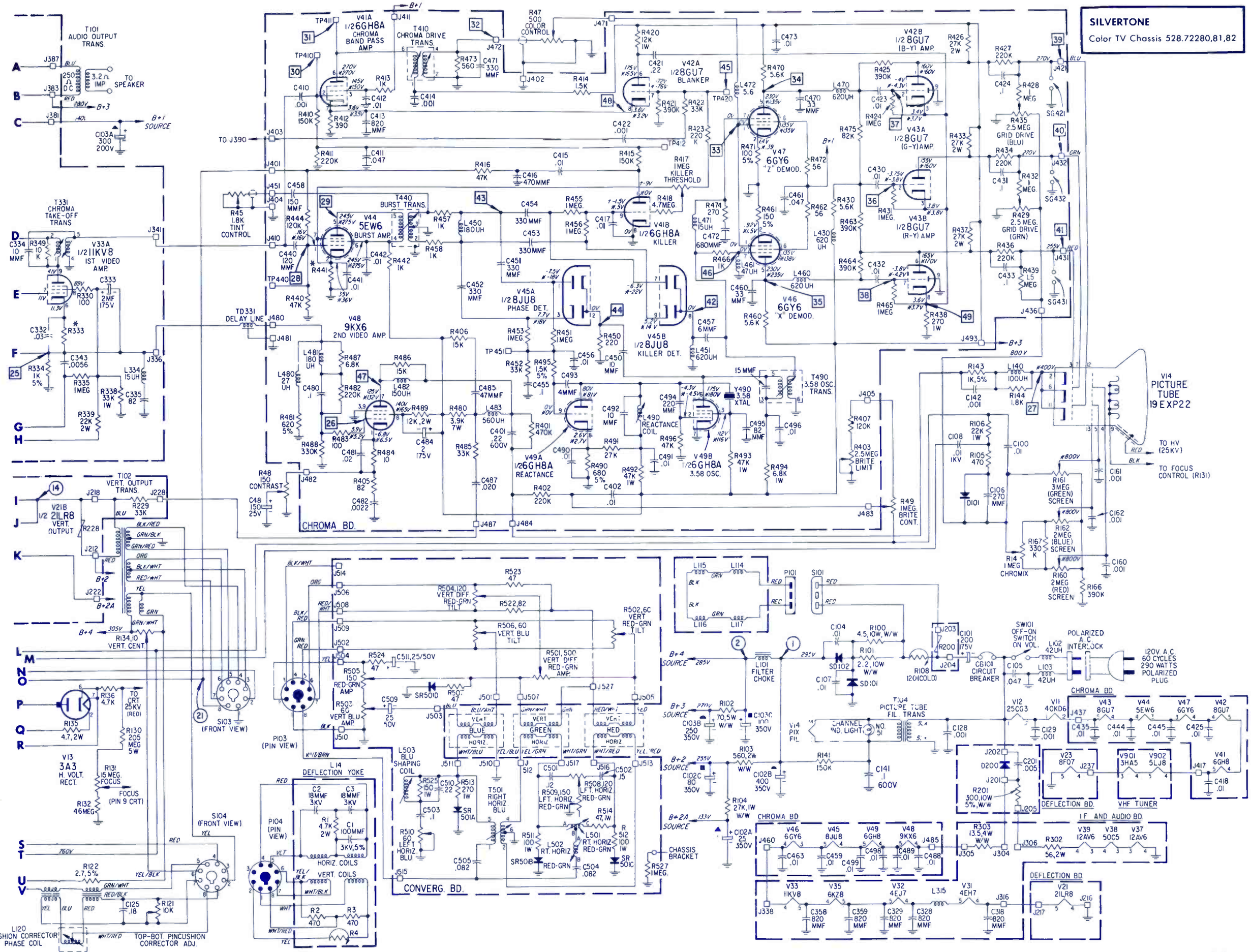
NOTES:
1. RESISTANCE IS SHOWN IN OHMS K=1000, MEG=1,000,000.
2. ALL RESISTORS ARE 1/2 WATT, UNLESS OTHERWISE NOTED.
3. CAPACITANCE VALUES ARE MFD, UNLESS OTHERWISE NOTED.
4. VOLTAGES READ WITH "VTVM" FROM POINT INDICATED TO CHASSIS GROUND, NO SIGNAL INPUT. ANTENNA SHORTED TOGETHER BUT NOT TO GROUND, LINE VOLTAGE 120 V.A.C.
5. CHROMA VOLTAGES WERE TAKEN WITH AIR SIGNAL.
6. * THESE VOLTAGES MEASURED DURING COLOR RECEPTION.
7. † READING WILL VARY DEPENDING ON KILLER CONTROL SETTING.
8. NUMBERS WITHIN CIRCLES, SQUARES & HALF MOON REFER TO WAVEFORM NUMBERS.



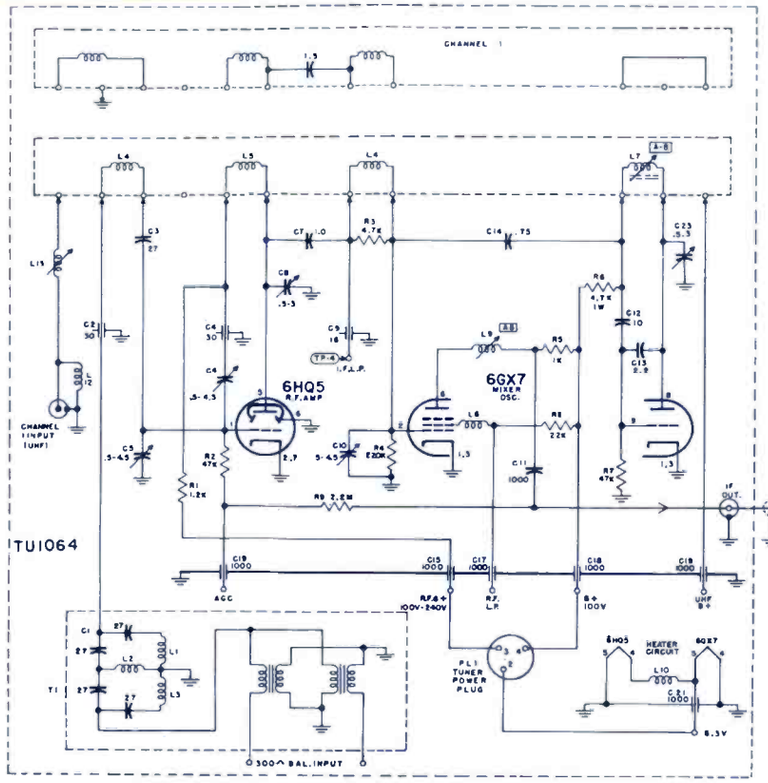


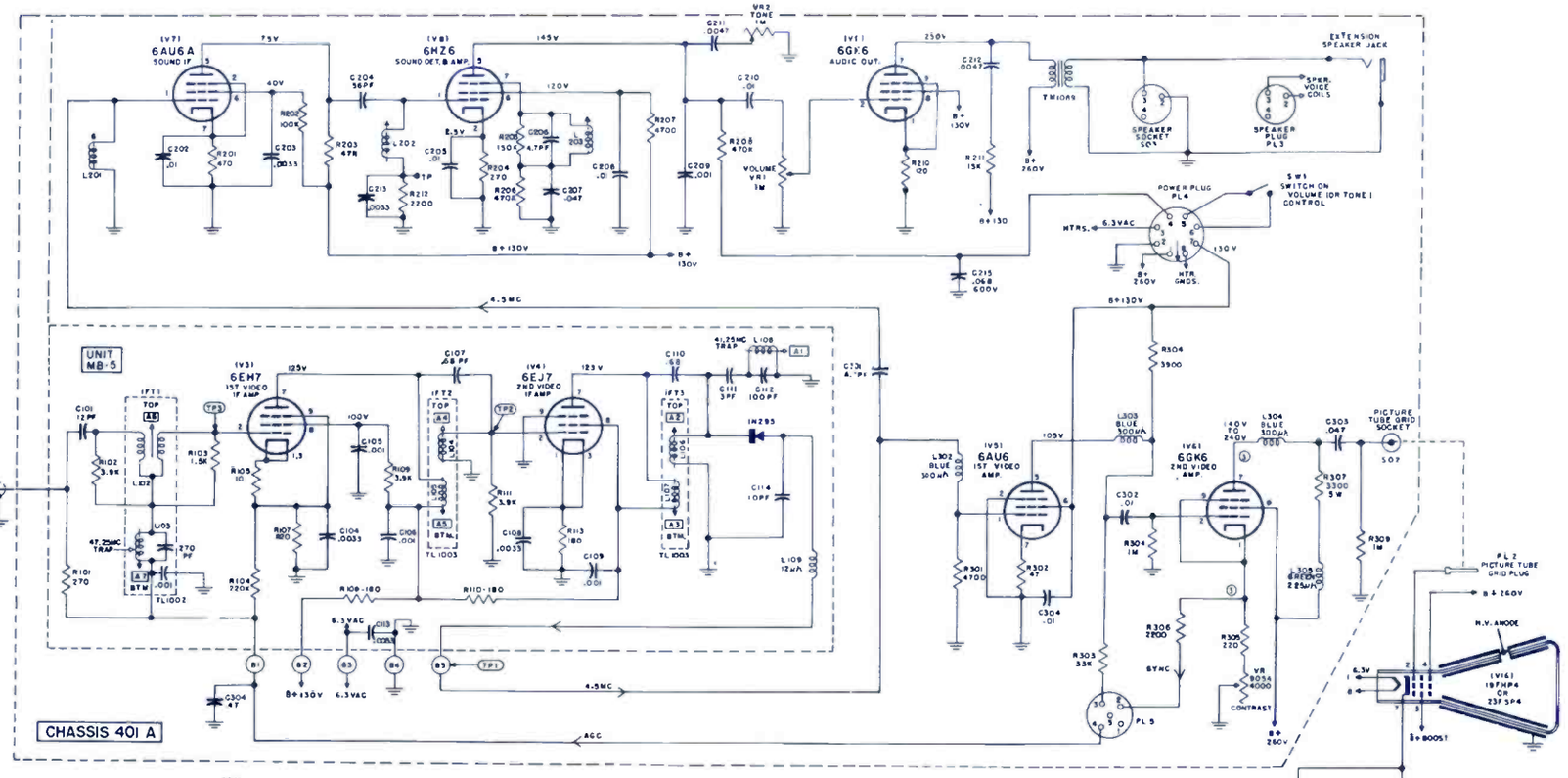
NOTES:
1. WIRING DIAGRAM SHOWN FROM CIRCUIT SIDE OF BOARD.
2. SOLID LINES INDICATE WIRE JUMPERS.
3. (*) COMPONENTS MARKED WITH ASTERISK ARE LOCATED ON CIRCUIT SIDE OF BOARD.

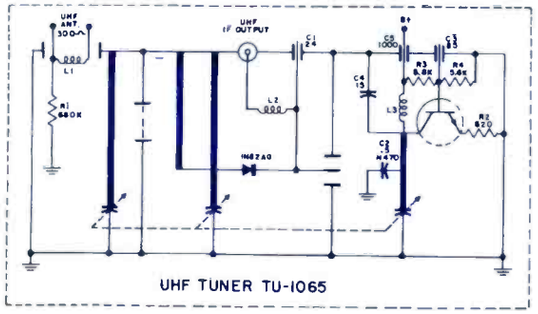
SILVERTONE
Color TV Chassis 528.72280,81,82

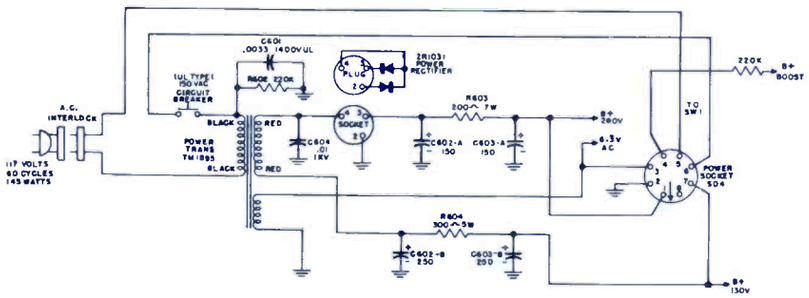


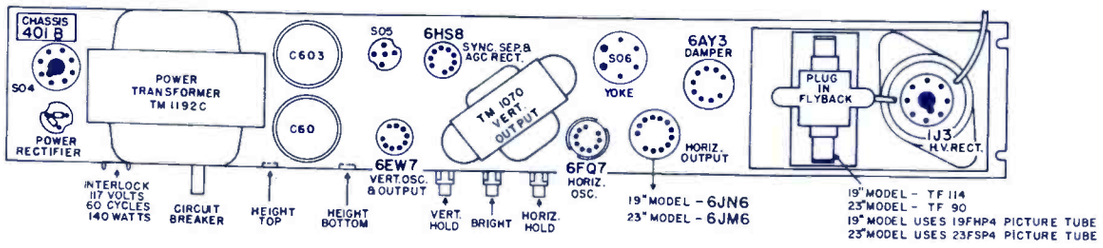
SETCHELL-CARLSON
TV Chassis 401

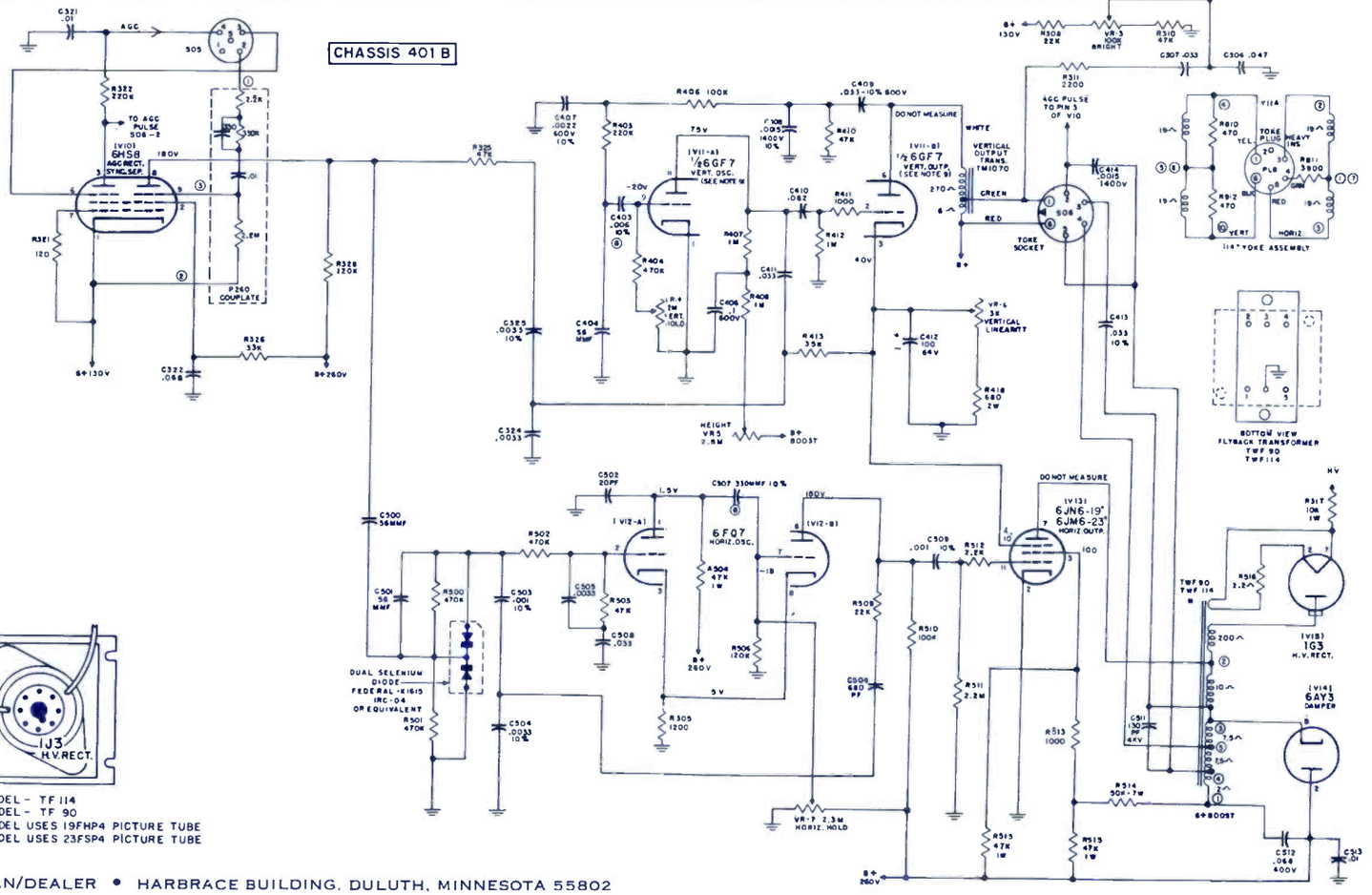






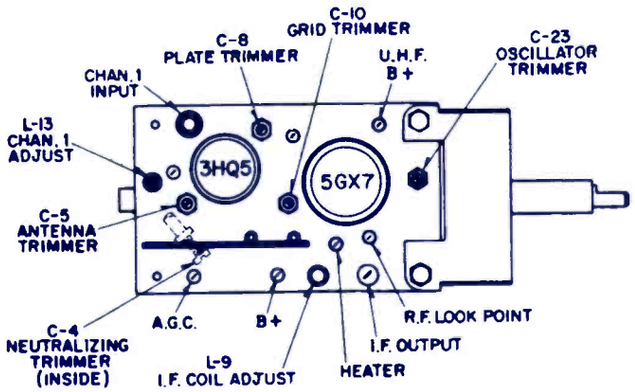




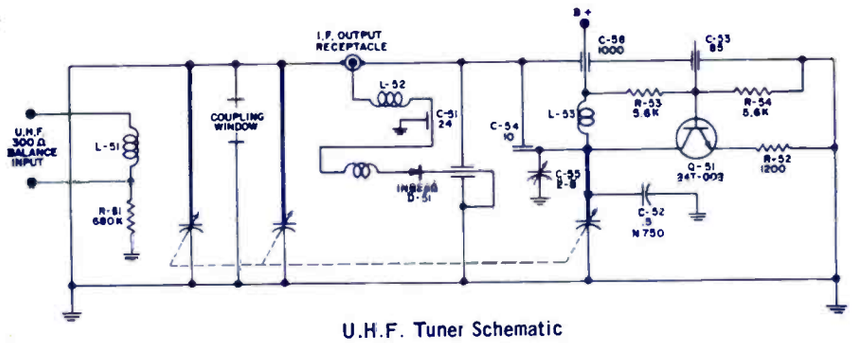


SONORA

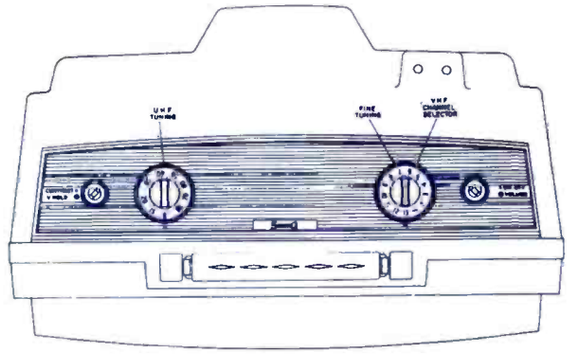
TV Model S65P198



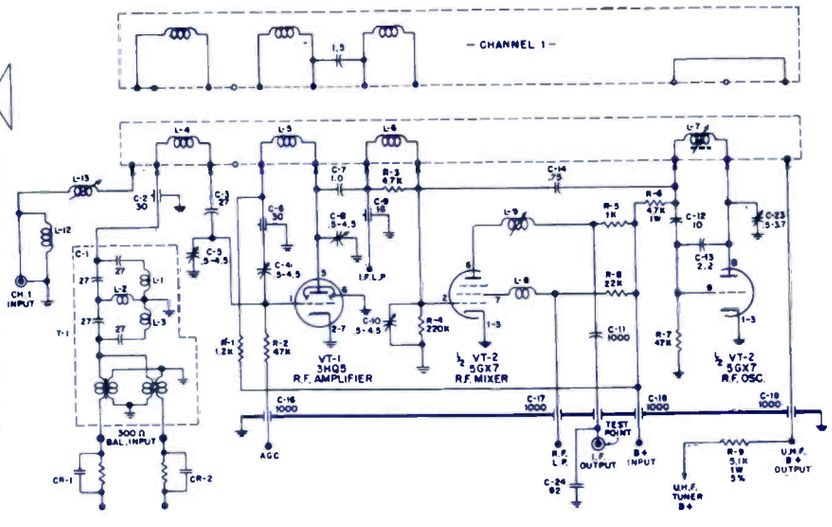
V.H.F. Tuner Adjustments



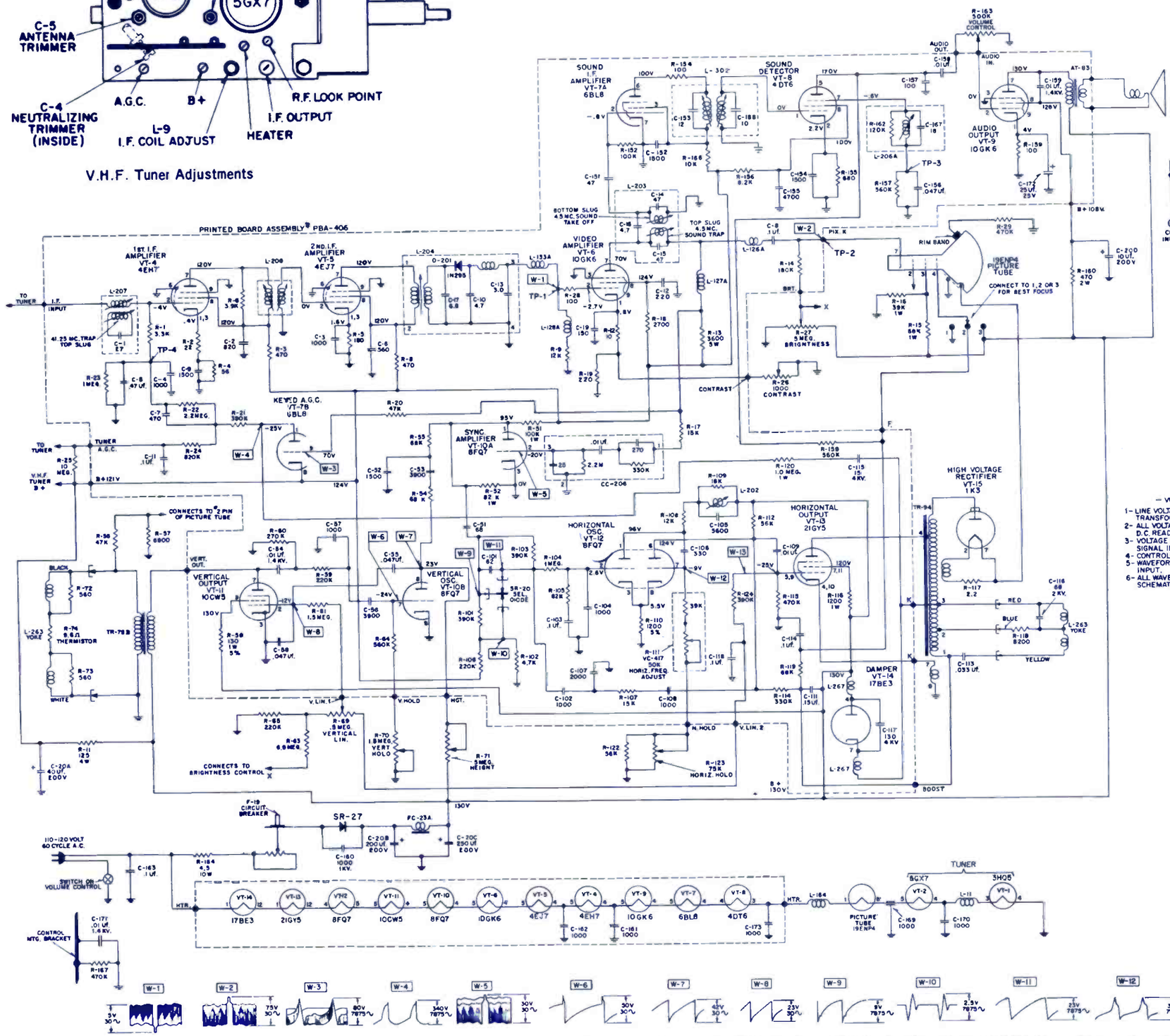
U.H.F. Tuner Schematic



Top View



V.H.F. Tuner Schematic



— VOLTAGES & WAVEFORMS —

1- LINE VOLTAGE 115 A.C. THROUGH ISOLATION TRANSFORMER.
2- ALL VOLTAGES SHOWN ON SCHEMATIC ARE D.C. READINGS.
3- VOLTAGE READINGS TAKEN WITH NORMAL SIGNAL INPUT USING A V.T.V.M.
4- CONTROLS SET FOR NORMAL OPERATION.
5- WAVEFORMS TAKEN WITH NORMAL SIGNAL INPUT.
6- ALL WAVEFORM VOLTAGES SHOWN ON SCHEMATIC ARE PEAK TO PEAK READINGS.

V.H.F. Tuner Schematic

SYMBOL DESCRIPTION	SONORA PART NO.
L267 — choke coil	111-026700
FC23A — choke filter	032-002301
L164 — choke heater	111-016400
F19 — circuit breaker	099-001900
L202 — coil horiz osc	109-020200
L207 — coil input IF	109-020700
L128A — coil RF choke	111-012801
L133A — coil RF choke	111-013301
L206A — coil snd quad	109-020601
L126A — coil video peaking	111-012601
L127A — coil video peaking	111-012701
C54, 159 — condenser .01μf 1.4kv 20%	826-103826
C115 — condenser 15pf 4kv 10%	825-150016
C117 — condenser 130pf 4kv 10%	826-131016
C160 — condenser 1000pf 1kv 20%	834-102726
connector anode	084-013900
couplate sync take-off	134-020600
D201 — diode video det 1N295	002-000600
SR20 — diode selenium horiz AFC	003-002000
C20A, B, C, D — elect 20/200/250/10μf 200v	034-018800
C172 — elect 25μf 25v	034-017900
SR27 — rect silicon	004-002700
R9 — resistor 5.1K 1w 5%	051-512150
R11 — resistor 125Ω 4w 10%	054-059500
R13 — resistor 3.6K 5w 10% WW	053-362510
R164 — resistor 4.5Ω 10w 10% WW	053-458110
R27 — control bright 5M	055-032100
R26, 70 — control contrast 1K vert hold 1.5M	055-039300
R71 — control height 5M	055-035100
R111 — control horiz freq adj 50K	055-041700
R123 — control horiz hold 75K	055-032000
R163 — control on-off volume 500K	055-039200
R69 — control vert lin 500K	055-035000
speaker 4in. P.M.	055-017500
terminal strip yoke	154-017300
R74 — thermistor 9.6Ω cold	057-056500
AT83 — xformer audio output	031-008300
TR94 — xformer horiz output	033-009400
L208 — xformer IF interstage	109-020800
L204 — xformer IF output	109-020400
L302 — xformer snd interstage	109-030200
L203 — xformer snd take-off & 4.5MHz trap	109-020300
TR78B — xformer vert output	033-007802
UHF tuner	006-015800
VHF tuner	006-012900
width device	107-056400
L263 — yoke deflection	027-026300

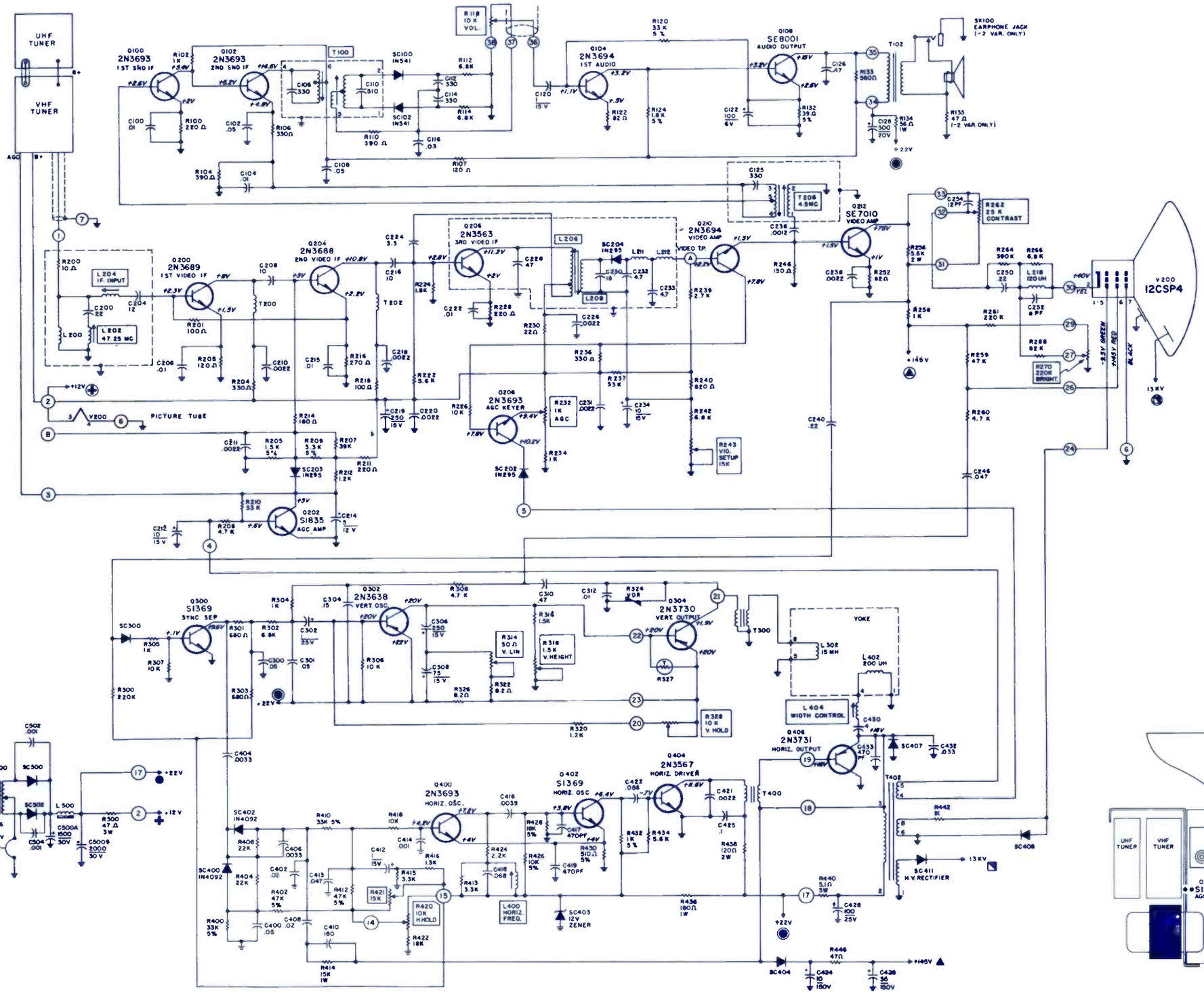
SYLVANIA
TV Chassis
AO4-1, -2

ELECTRONIC TECHNICIAN TEKFAX

TRANSISTOR CROSS REFERENCE LIST

SCHEMATIC CODING	SYLVANIA PART NO	SYLVANIA TYPE NO	MANUFACTURERS TYPE NO	EIA TYPE NO
Q100	13-15808-1	SI363	SE1001 (F)	2N3693
Q102	13-15808-1	SI363	SE1001 (F)	2N3693
Q104	13-15840-1	SI364	SE1002 (F)	2N3694
Q108	13-15833-1		SE8001 (F)	
Q200	13-15841-1	SI360	SE5002 (F)	2N3689
Q202	13-15840-2	SI835		
Q204	13-15835-1	SI361	SE5001 (F)	2N3688
Q206	13-15810-1	SI362	SE3001 (F)	2N3563
Q208	13-15808-1	SI363	SE1001 (F)	2N3693
Q210	13-15840-1	SI364	SE1002 (F)	2N3694
Q212	13-15809-1	SI366	SE7010 (F)	
Q300	13-15808-2	SI369		
Q302	13-16570-1	SI367		2N3638
Q304	13-17608-1		TA2083 (R)	2N3730
Q400	13-15808-1	SI363	SE1001 (F)	2N3693
Q402	13-15808-2	SI369		
Q404	13-15842-1	SI368		2N3567
Q406	13-17607-1		TA1928A (R)	2N3731
			(F)-FAIRCHILD	
			(R)-RCA	

SCHEMATIC DIAGRAM A04-1,-2



SCHEMATIC NOTES

PICTURE TUBE HIGH VOLTAGE ANODE MAY HAVE A POTENTIAL OF 13,000 VOLTS.
OBSERVE ALL HIGH VOLTAGE PRECAUTIONS WHEN SERVICING THE CHASSIS.

VOLTAGE MEASUREMENT CONDITIONS UNLESS OTHERWISE SPECIFIED.

1. Voltages measured to chassis using VTVM.
2. AC power source 120 volt 60 cycle line.
3. Contrast and Brightness control set to minimum.
4. Voltage values shown are average readings. Variations may be observed due to normal production tolerances.

SPECIAL VOLTAGE MEASUREMENT CONDITIONS

Ⓟ Picture tube anode voltage measured with VTVM high voltage probe at line voltage of 120 volts under conditions of normal signal, no brightness and correct scan size.

GENERAL SCHEMATIC NOTES

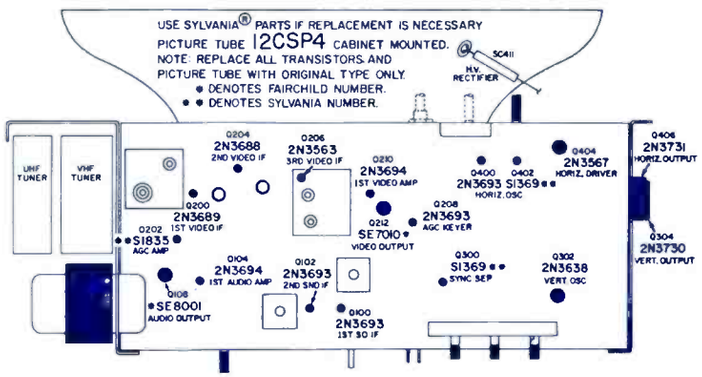
1. Encircled numbers indicate tie points.
2. All capacitors are in MFD unless otherwise specified.
3. Plugs and sockets are shown as viewed from the bottom.
4. Arrows on controls indicate direction of clockwise rotation.

PARTS CODING

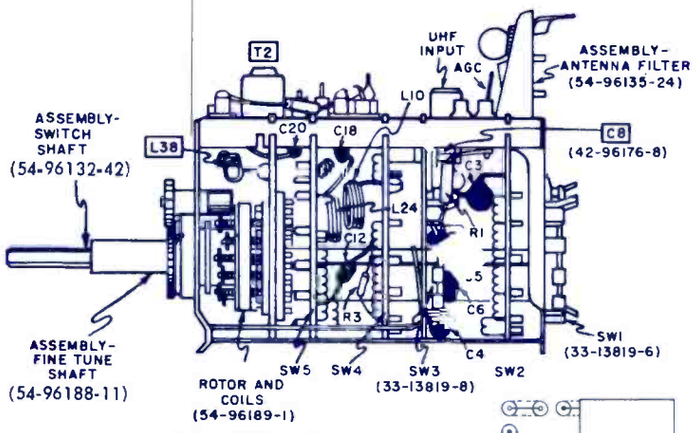
Sound Section	100-199
Video Section	200-299
Vert. and Sync Section	300-399
Horiz. and H.V. Section	400-499
L.V. Supply, Misc.	500-599

SYMBOL	DESCRIPTION	SYLVANIA PART NO.
C500	— Two sec elect	41-17955-1
	A — 1500/30v	
	B — 2000/30v	
R324	— VDR	38-15257-10
R440	— 5.1Ω 5w	36-92898-32
R500	— 47Ω 3w	36-92898-37
L206	— video det primary	57-15796-1
L208	— video det secondary	57-15797-1
L400	— horiz freq	50-15834-1
L404	— width	50-17909-1
T100	— ratio det	57-15790-1
T102	— audio output	56-17960-1
T200	— video IF	50-11378-3
T202	— video IF	60-11378-3
T206	— snd take-off	57-17964-1
T300	— vert output	56-17961-1
T400	— horiz driver	56-15823-2
T402	— high voltage	50-17956-2
T500	— power	55-17958-1
R118	— 10K volume on-off	37-17615-5
R232	— 1K AGC	37-11632-12
R243	— 15K video setup	37-14576-3
R262	— 25K contrast	37-17320-2
R270	— 220K bright	37-95323-65
R314	— 50Ω vert lin	part of R232
R318	— 1.5K vert height	part of R232
R238	— 10K vert hold	37-95323-61
R420	— 10K horiz hold	37-95323-61
R421	— 15K horiz freq	37-14576-3
CB502	— circuit breaker	29-17620-1
SC100	— diode snd det	1N541
SC102	— diode snd det	1N541
SC202	— diode AGC keyer	1N295
SC203	— diode AGC delay	1N295
SC204	— diode video det	1N295
SC300	— diode sync	1N4092
SC400	— diode AFC	1N4092
SC402	— diode AFC	1N4092
SC403	— diode regulator	13-14879-2
SC404	— diode series damper	13-14627-1
SC407	— diode damper	13-17825-1
SC411	— diode high voltage rect	13-16106-1
SC502	— diode rect	13-14627-1
SC504	— diode rect	13-14627-1
	speaker 3x5 PM	12-97623-4
	yoke deflection	51-17957-1

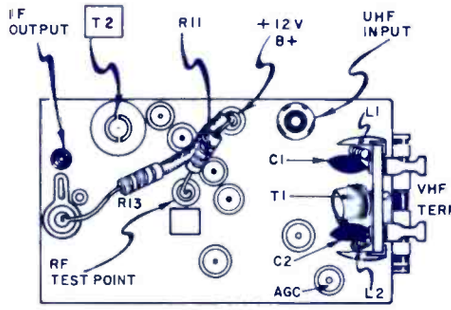
TRANSISTOR LAYOUT



SYLVANIA
TV Chassis
A06-1,-2



SIDE VIEW
(54-17907-2)



TOP VIEW
(54-17907-2)

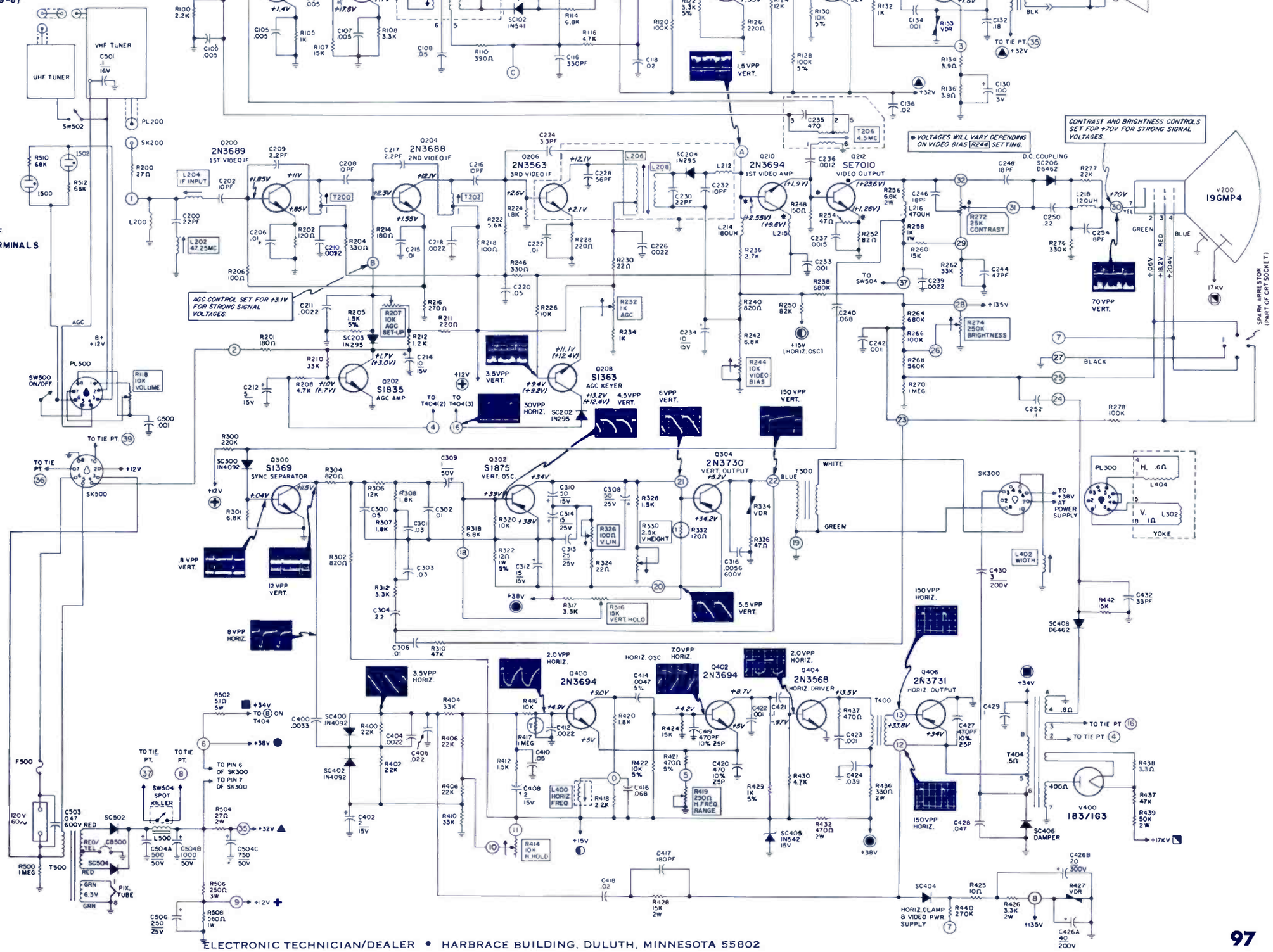
SYMBOL	DESCRIPTION	SYLVANIA PART NO.
C426	2 Section elect	41-17920-1
	A – 40/200v	
	B – 20/300v	
C430	3/200v metalized paper	45-15829-1
C504	3 section elect	41-15803-2
	A – 500/50v	
	B – 1000/50v	
	C – 750/50v	
R133	VDR	38-15257-8
R332	120 thermistor	38-15838-1
R334	VDR	38-15257-8
R417	1M thermistor	38-11780-2
R427	VDR	38-15257-6
R502	5.1Ω 5w	36-92898-32
R506	250Ω 3w	35-92495-27
L100	filter	50-92043-3
L200	fink	50-17680-4
L202	47.25MHz trap	57-11637-1
L204	IF input	57-11611-1
L206	video det	57-15796-1
L208	video det	57-15797-1
L212	tweet	50-11634-1
L214	peaking 180µh	50-15318-11
L215	filter	50-11378-1
L216	peaking 470µh	50-15318-16
L218	peaking 120µh	50-15318-9
L302	vert deflection	part of yoke
L400	horiz freq	50-23311-1
L402	width	50-17909-1
L404	horiz deflection	part of yoke
L500	8 plus choke	56-15827-3
T100	ratio det	56-15790-1
T102	audio output	56-15789-5
T200	video IF	57-15795-1
T202	video IF	57-15795-1
T206	snd take off	57-17997-1
T300	vert output	56-17914-1
T400	horiz drive	56-15822-1
T404	high voltage (horiz scan)	50-17913-1
T500	power	55-23308-1
R118	10K vol on/off	37-17935-1
R207	10K AGC set up	37-14576-2
R232	1K AGC	37-11632-11
R244	10K video bias	37-16224-1
R272	25K contrast	37-15065-3
R274	250K brightness	37-15064-5
R316	15K vert hold	37-15065-9
R326	100Ω vert lin	37-11632-11
R330	2.5K height	37-11632-11
R414	10K horiz hold	37-95323-63
R419	250Ω horiz freq	37-17349-3
C8500	circuit breaker	29-16012-5

SCHEMATIC NOTES

1. ALL VOLTAGES MEASURED TO CHASSIS USING VTVM.
2. VOLTAGES NOT IN BRACKETS TAKEN WITH NO SIGNAL APPLIED, ANTENNA INPUT SHORTED AND GROUNDED TO CHASSIS, CONTRAST AND BRIGHTNESS CONTROLS AT MINIMUM SETTING.
3. VOLTAGES IN BRACKETS TAKEN WITH A STRONG SIGNAL, CONTRAST AND BRIGHTNESS CONTROLS SET FOR 70V PEAK TO PEAK AT YELLOW LEAD OF PICTURE TUBE.

TRANSISTOR CROSS REFERENCE LIST

SCHEMATIC CODING	SYLVANIA PART NO.	SYLVANIA TYPE NO.	MANUFACTURERS TYPE NO.	EIA TYPE NO.
Q100	13-15808-1	SI363	SE1001 (F)	2N3693
Q102	13-15808-1	SI363	SE1001 (F)	2N3693
Q104	13-15840-1	SI364	SE1002 (F)	2N3694
Q106	13-15840-1	SI364	SE1002 (F)	2N3694
Q108	13-23594-1	S2298		
Q200	13-15841-1	SI360	SE5002 (F)	2N3689
Q202	13-15840-2	SI835		
Q204	13-15835-1	SI361	SE5001 (F)	2N3688
Q206	13-15810-1	SI362	SE3001 (F)	2N3563
Q208	13-15808-1	SI363	SE1001 (F)	2N3693
Q210	13-15840-1	SI364	SE1002 (F)	2N3694
Q212	13-15809-1	SI366	SE7010 (F)	
Q300	13-15808-2	SI369		
Q302	13-16570-2	SI875		2N3638
Q304	13-17608-1		TA2083 (R)	2N3730
Q400	13-15840-1	SI364	SE1002 (F)	2N3694
Q402	13-15840-1	SI364	SE1002 (F)	2N3694
Q404	13-15842-1	SI642		2N3568
Q406	13-17607-1		TA1928A (R)	
			(F)=FAIRCHILD (R)=RCA	



SYLVANIA
TV Chassis A06, A07 Series

ELECTRONIC TECHNICIAN TEKFAX

PICTURE TUBE HIGH VOLTAGE ANODE MAY HAVE A POTENTIAL OF 17,000 VOLTS.
OBSERVE ALL HIGH VOLTAGE PRECAUTIONS WHEN SERVICING THE CHASSIS.

— PARTS CODING —

Sound Section	100-199
Video Section	200-299
Vert. and Sync Section	300-399
Horiz. and H.V. Section	400-499
L.V. Supply, Misc.	500-599

VOLTAGE MEASUREMENT CONDITIONS UNLESS OTHERWISE SPECIFIED.

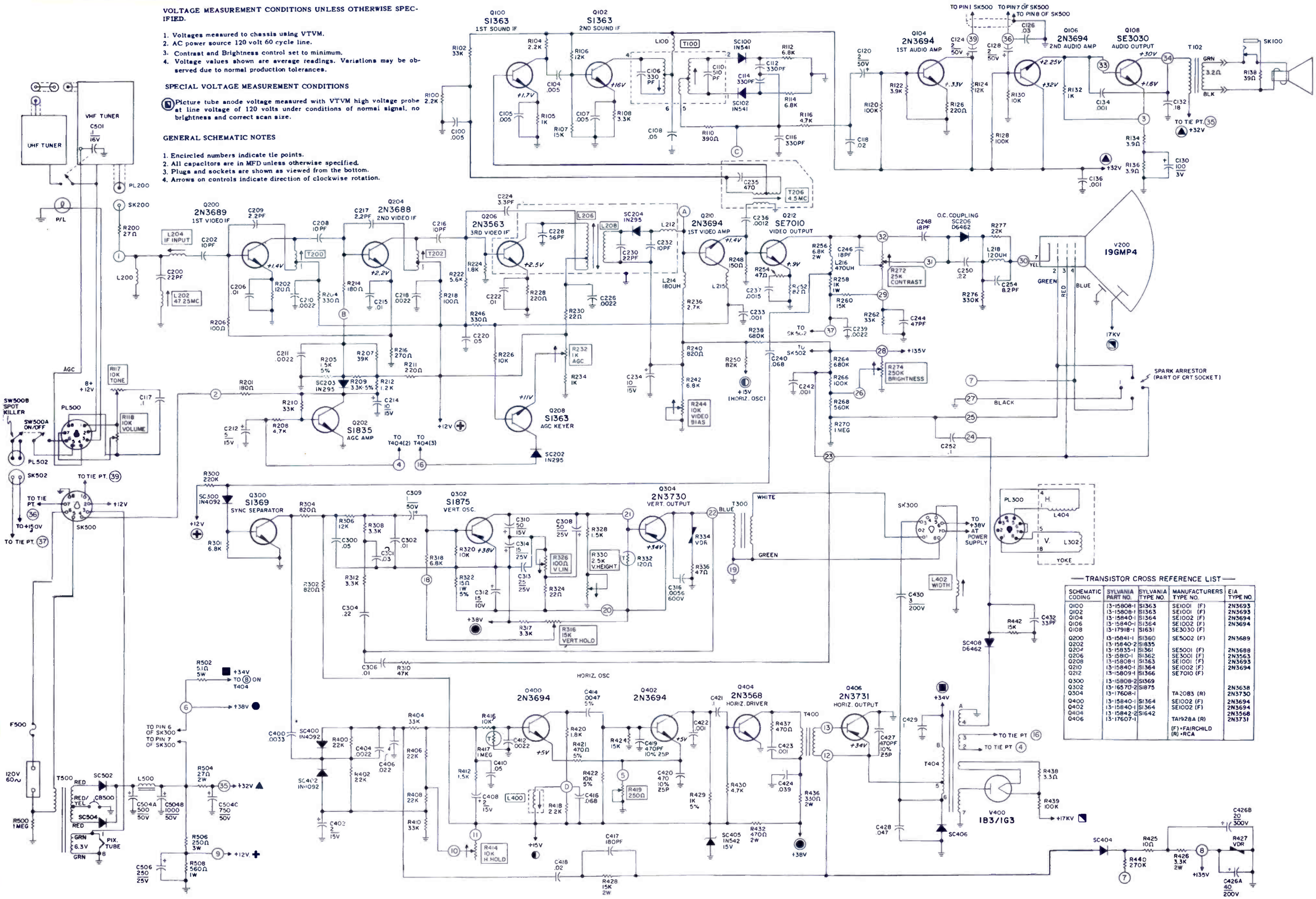
1. Voltages measured to chassis using VTVM.
2. AC power source 120 volt 60 cycle line.
3. Contrast and Brightness control set to minimum.
4. Voltage values shown are average readings. Variations may be observed due to normal production tolerances.

SPECIAL VOLTAGE MEASUREMENT CONDITIONS

Picture tube anode voltage measured with VTVM high voltage probe at line voltage of 120 volts under conditions of normal signal, no brightness and correct scan size.

GENERAL SCHEMATIC NOTES

1. Encircled numbers indicate tie points.
2. All capacitors are in MFD unless otherwise specified.
3. Plugs and sockets are shown as viewed from the bottom.
4. Arrows on controls indicate direction of clockwise rotation.

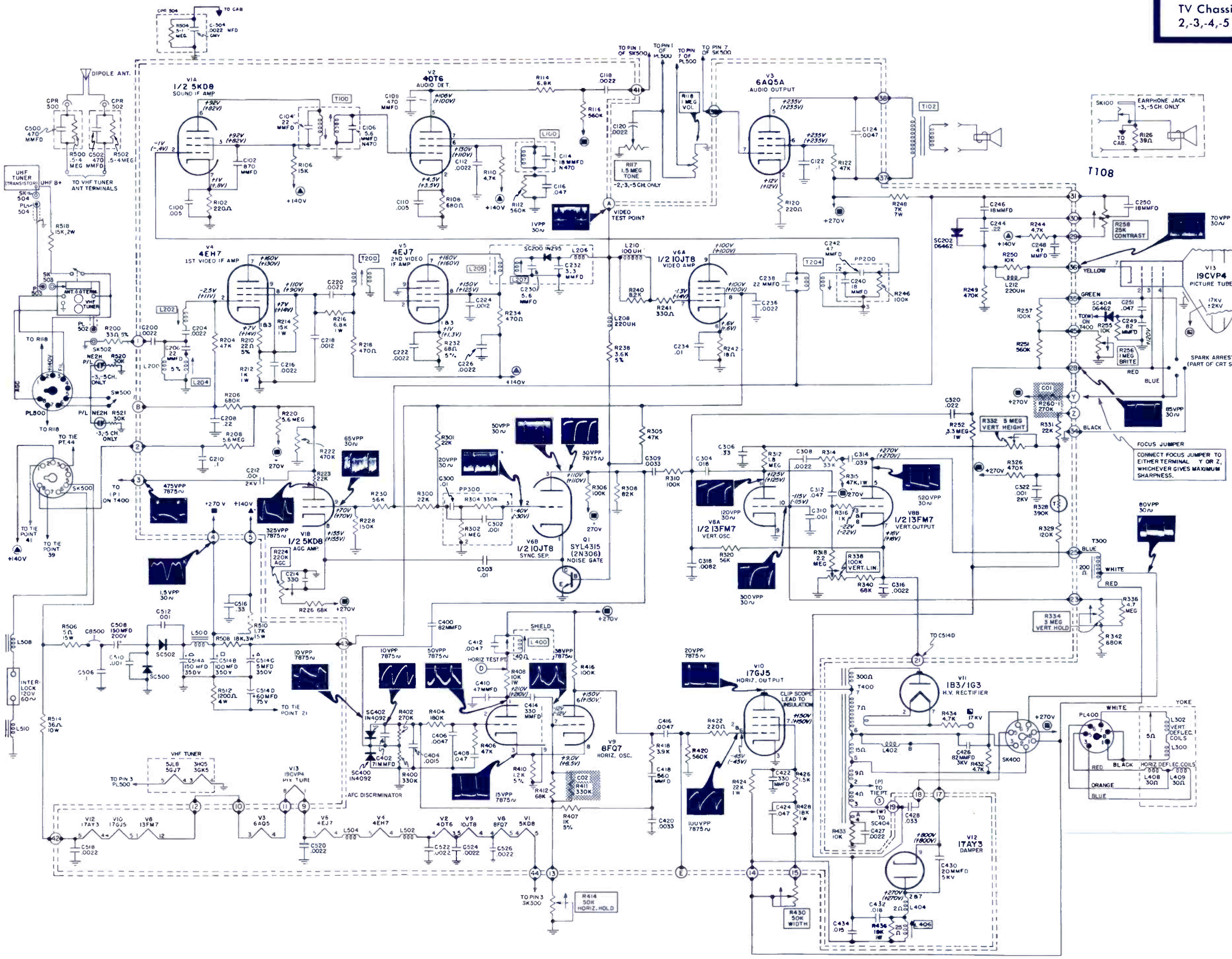


— TRANSISTOR CROSS REFERENCE LIST —

SCHEMATIC CODING	SYLVANIA PART NO.	SYLVANIA TYPE NO.	MANUFACTURERS TYPE NO.	EIA TYPE NO.
Q100	13-15808-1	SI363	SE1001 (F)	2N3693
Q102	13-15808-1	SI363	SE1001 (F)	2N3693
Q104	13-15840-1	SI364	SE1002 (F)	2N3694
Q106	13-15840-1	SI364	SE1002 (F)	2N3694
Q108	13-17918-1	SI631	SE3030 (F)	
Q200	13-15841-1	SI360	SE5002 (F)	2N3689
Q202	13-15840-2	SI835		
Q204	13-15835-1	SI361	SE5001 (F)	2N3688
Q206	13-15810-1	SI362	SE3001 (F)	2N3563
Q208	13-15808-1	SI363	SE1001 (F)	2N3693
Q210	13-15840-1	SI364	SE1002 (F)	2N3694
Q212	13-15809-1	SI366	SE7010 (F)	
Q300	13-15808-2	SI369		
Q302	13-15670-2	SI875		2N3638
Q304	13-17608-1		TA2083 (R)	2N3730
Q400	13-15840-1	SI364	SE1002 (F)	2N3694
Q402	13-15840-1	SI364	SE1002 (F)	2N3694
Q404	13-15842-2	SI642		2N3568
Q406	13-17607-1		TA1928A (R)	2N3731
			(F)=FAIRCHILD (R)=RCA	

SYLVANIA

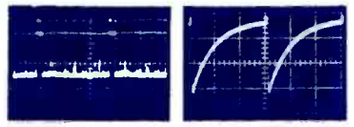
TV Chassis B06-1,-2,-3,-4,-5



SYLVANIA
Color Chassis
DO1, -1,2,8

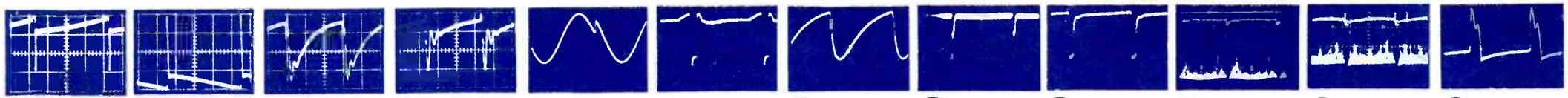
ELECTRONIC TECHNICIAN **TEKFAX**

WAVEFORMS

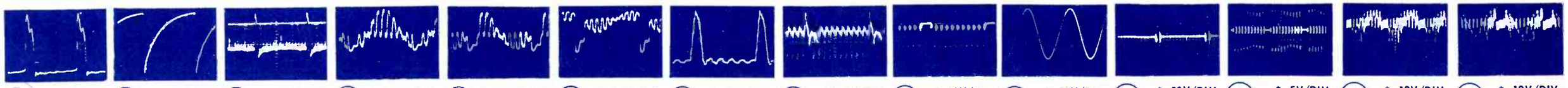


① 2V/DIV. Vert. ② 50V/DIV. Vert.

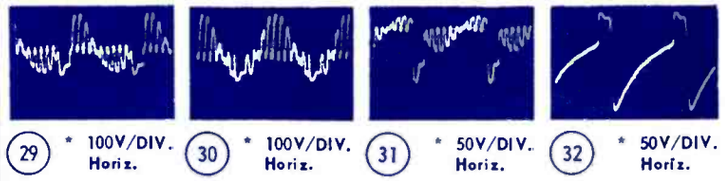
More Data on Opposite Page



(3) 50V/DIV. Vert. (4) 200V/DIV. Vert. (5) 5V/DIV. Horiz. (6) 200V/DIV. Horiz. (7) 20V/DIV. Horiz. (8) 5V/DIV. Horiz. (9) 10V/DIV. Horiz. (10) 20V/DIV. Vert. (11) 20V/DIV. Horiz. (12) 20V/DIV. Vert. (13) 20V/DIV. Vert. (14) 200V/DIV. Horiz.

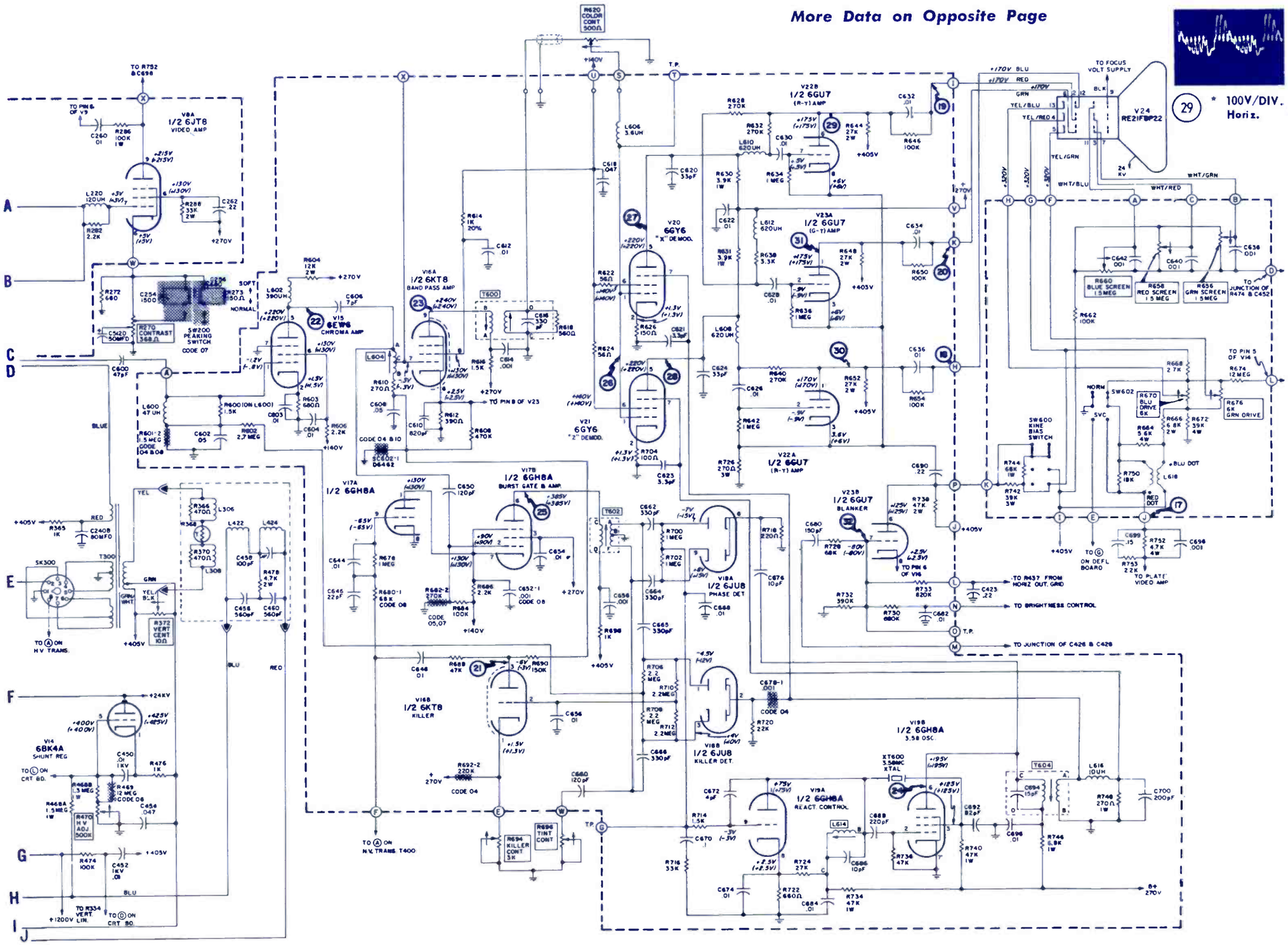


(15) 50V/DIV. Horiz. (16) 50V/DIV. Horiz. (17) 50V/DIV. Vert. (18) * 100V/DIV. Horiz. (19) * 100V/DIV. Horiz. (20) * 50V/DIV. Horiz. (21) * 50V/DIV. Horiz. (22) * 2V/DIV. Horiz. (23) * 20V/DIV. Horiz. (24) * 20V/DIV. 3.58 MC (25) * 20V/DIV. Horiz. (26) * 5V/DIV. Horiz. (27) * 10V/DIV. Horiz. (28) * 10V/DIV. Horiz.



(29) * 100V/DIV. Horiz. (30) * 100V/DIV. Horiz. (31) * 50V/DIV. Horiz. (32) * 50V/DIV. Horiz.

More Data on Opposite Page



SCHEMATIC NOTES

IMPORTANT

READ THESE INSTRUCTIONS CAREFULLY AND OBSERVE THE CONDITIONS NOTED WHEN TAKING VOLTAGE READINGS OR OBSERVING WAVEFORMS.

PICTURE TUBE HIGH VOLTAGE ANODE MAY HAVE A POTENTIAL OF 24,000 VOLTS. OBSERVE ALL HIGH VOLTAGE PRECAUTIONS WHEN SERVICING THE CHASSIS. DO NOT OPERATE THE RECEIVER WITH THE HIGH VOLTAGE COVER REMOVED. USE SAFETY GOGGLES AND GLOVES WHEN HANDLING THE PICTURE TUBE.

VOLTAGE MEASUREMENT CONDITIONS UNLESS OTHERWISE SPECIFIED.

1. Voltage measured to chassis using VTVM.
2. AC power source 120 volt 60 cycle line.
3. Voltage readings in brackets taken with no input; channel selector set to a free channel, antenna disconnected, antenna terminals shorted together and grounded to chassis.
4. Voltage readings not in brackets taken with a strong signal input; tuner set to a strong local station.
5. Contrast and Brightness control set for normal picture.
6. Voltage values shown are average readings. Variations may be observed due to normal production tolerances.

WAVEFORM MEASUREMENT CONDITIONS

1. Waveforms taken using a strong signal (test pattern).
2. All controls set for a normal viewing picture.
3. Waveforms measured with respect to chassis using a TEKTRONIC 535 oscilloscope. (Other type oscilloscopes may alter waveform shapes or amplitude.)
4. The terms "VERT" or "HORIZ" refer to scope frequency.
5. V/DIV refer to peak voltage per each major division.
6. Waveforms marked with an (*) were taken using a color bar generator as signal source.

GENERAL SCHEMATIC NOTES

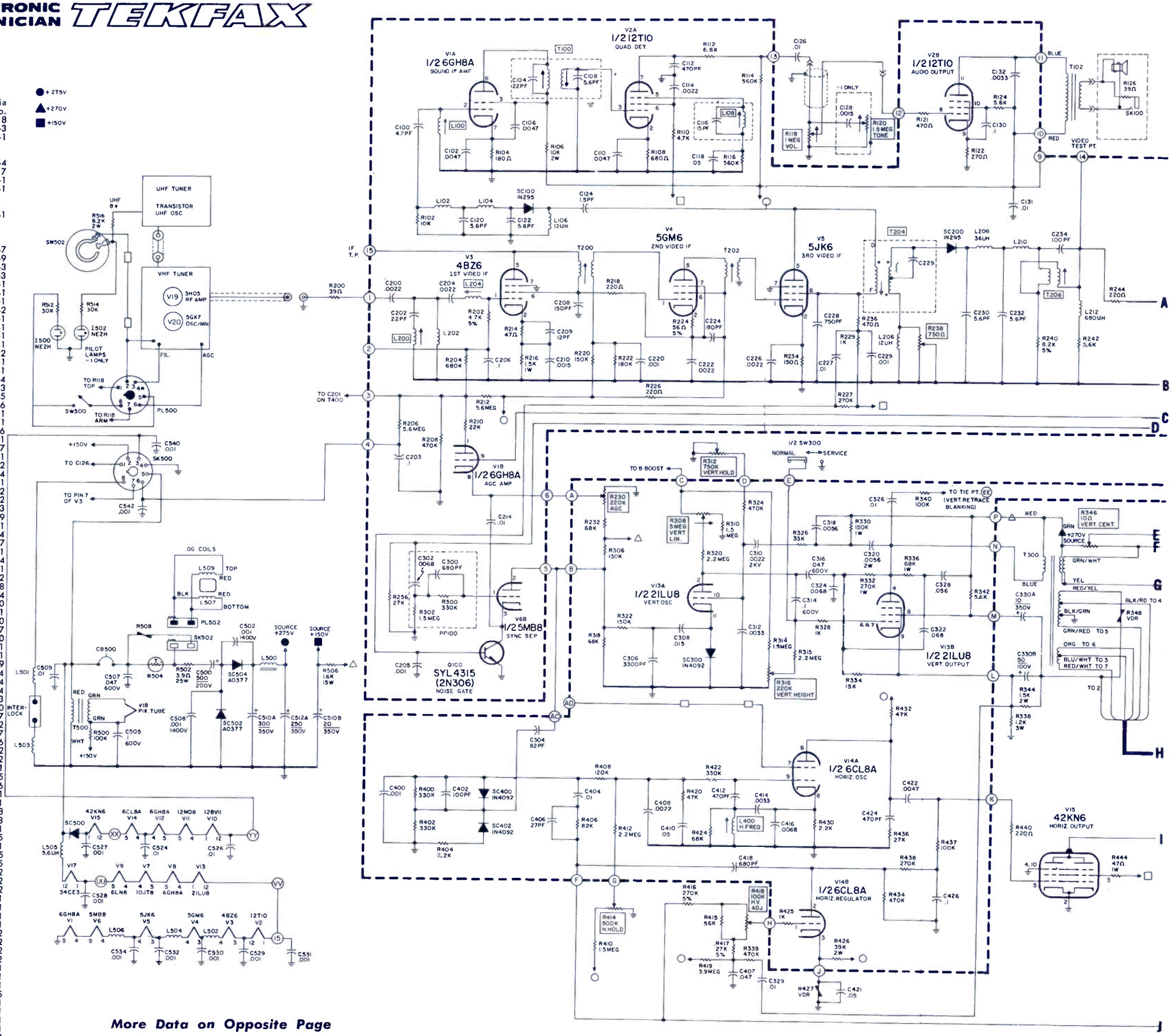
1. Encircled letters on edge of printed circuit indicate tie points, corresponding with those shown on printed board parts layout.
2. (- -) denotes printed board areas.
3. All capacitors are in microfarads unless otherwise specified.
4. Arrows on controls indicate direction of clockwise rotation.

PARTS CODING

Sound Section	100-199
Video Section	200-299
Vert. and Sync Section	300-399
Horiz. and H. V. Section	400-499
L. V. Supply and Misc.	500-599
Chroma Section	600-799
Convergence Section	800-899

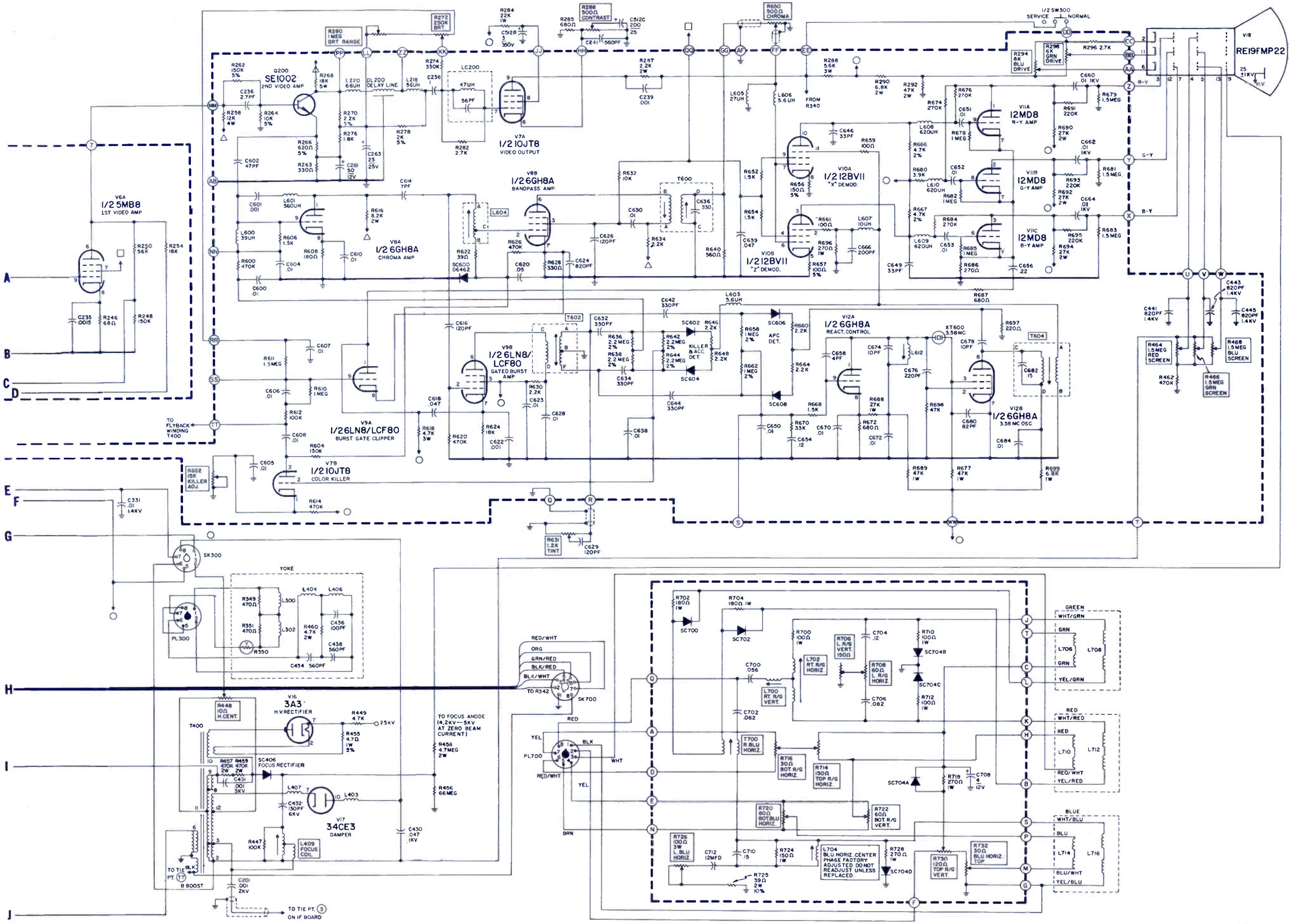
SYLVANIA
Color TV Chassis
DO5 Series

Symbol — Description	Sylvania Part No.
C204 — .001 2kv	43-84222-18
C310 — 2200pf 2kv	45-15907-3
C330 — 2 section elect	41-23157-1
A — 10/350v	
B — 50/100v	
C370 — 5600pf 2kv	45-15907-4
C432 — 130pf 6kv	43-84222-17
C500 — 500/200v elect	41-17315-1
C510 — 2 section elect	41-17316-1
A — 300/350v	
B — 20/350v	
C512 — 3 section elect	41-17317-1
A — 250/350v	
B — 3/350v	
C — 200/25v	
R348 — VDR	38-15257-7
R427 — VDR	38-15257-9
R456 — 20M	35-97961-3
R502 — 3.9Ω 25w	36-92898-33
R504 — thermistor	38-17071-1
R508 — VDR	38-17072-1
L100 — snd take off	50-23213-1
L108 — quad	50-23213-2
L200 — IF trap	57-11637-1
L204 — IF input	57-17842-1
L400 — horiz osc	50-17326-1
L403 — RF choke	50-92043-1
L500 — choke	56-17568-2
L501 — choke	50-17838-1
L503 — choke	50-17838-1
L604 — chroma take off	50-16184-4
L612 — reactance	50-16185-3
L700 — horiz convergence	50-16248-5
L702 — horiz convergence	50-16248-6
L704 — convergence	50-17850-1
T100 — snd interstage	57-11606-1
T102 — audio output	56-16018-6
T200 — 1st IF interstage	57-23095-1
T202 — 2nd IF interstage	57-15906-7
T204 — IF output	57-17517-1
T300 — vert output	56-17559-2
T400 — high voltage	50-17314-4
T500 — filament	55-23040-1
T600 — band pass	50-16190-2
T602 — burst phase	50-16191-2
T604 — 3.58MHz output	50-16192-3
T700 — R/Blue horiz convergence	50-16248-9
R118 — 1M vol/on/off	37-23046-1
R120 — 1.5M tone (—1 Ch only)	37-23044-4
R230 — 220K AGC	37-11632-7
R238 — 750Ω snd trap adjust	37-17321-1
R272 — 250K brightness	37-17073-14
R280 — 1M brightness range	37-17931-1
R288 — 500Ω contrast	37-17073-12
R294 — 6K blue drive	37-11632-8
R298 — 6K green drive	part of R294
R308 — 5M vert lin	part of R230
R312 — 750K vert hold	37-17073-11
R316 — 220K vert height	part of R230
R346 — 10Ω vert centering	37-16021-17
R414 — 500K Horiz hold	37-17073-10
R418 — 100K HV adjust	37-17349-1
R448 — 10Ω horiz centering	37-17539-1
R464 — 1.5M blue screen	37-11632-9
R466 — 1.5M green screen	part of R464
R468 — 1.5M red screen	part of R464
R602 — 15K color killer	part of R294
R631 — 1.2K tint	37-17073-13
R650 — 500Ω chroma	37-17073-20
R706 — 150Ω left/R/G vert	37-16021-7
R708 — 60Ω left/R/G horiz	37-16021-2
R714 — 150Ω top/R/G horiz	37-16021-7
R716 — 30Ω bottom/R/G horiz	37-16021-6
R720 — 60Ω bottom/B horiz	37-16021-2
R722 — 60Ω bottom/R/G vert	37-16021-2
R726 — 100Ω left/B/horiz	37-16021-21
R730 — 120Ω top/R/7 vert	37-16021-5
R732 — 30Ω top/B/horiz	37-16021-6
CB500 — circuit breaker	29-17312-1
DL200 — delay line	32-23216-1
I500 — lamp, neon	30-97684-8
I502 — lamp, neon	30-97684-8
PP100 — plate sync take off	32-23041-1
Q100 — transistor, noise gate	syl 4315
Q200 — transistor, 2nd video amp	13-15840-1
SC100 — diode	1N295
SC200 — diode, video det	1N295
SC300 — diode	1N4092
SC400 — diode	1N4092
SC402 — diode	1N4092
SC406 — diode, selenium rectifier	13-16106-1
SC500 — diode, silicon rectifier	13-17557-1
SC502 — diode, silicon rectifier	13-17557-1
SC504 — diode, silicon rectifier	13-17557-1
SC602 — diode, FDM1006	13-17596-2
SC604 — diode, FDM1006	13-17596-2
SC606 — diode, FDM1006	13-17596-2
SC608 — diode, FDM1006	13-17596-2
SC700 — diode, silicon	13-10102-1
SC702 — diode, silicon	13-10102-1
SC704 — diode, silicon	13-17569-1
SW300 — switch, service	33-16011-5
SW502 — switch, dial light	33-17709-1
XT600 — crystal 3.58MHz	26-16162-1
blue lateral and purity assy	22-15948-1
spark gap	29-17857-1
yoke, convergence	51-17083-3
yoke, deflection	51-17570-2



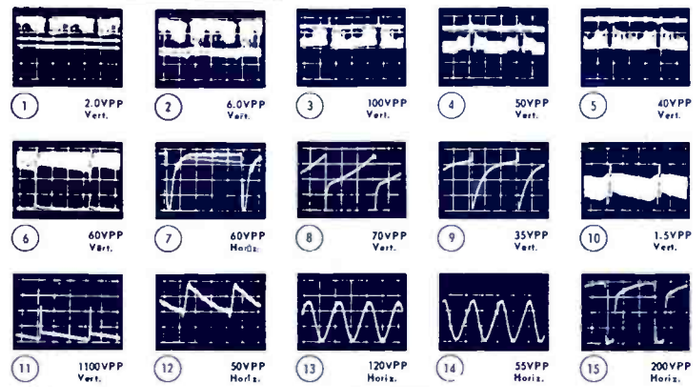
More Data on Opposite Page

More Data on Opposite Page

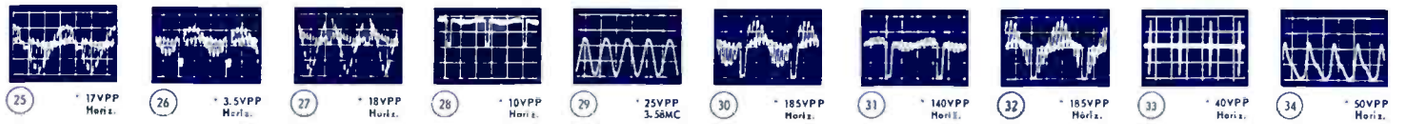


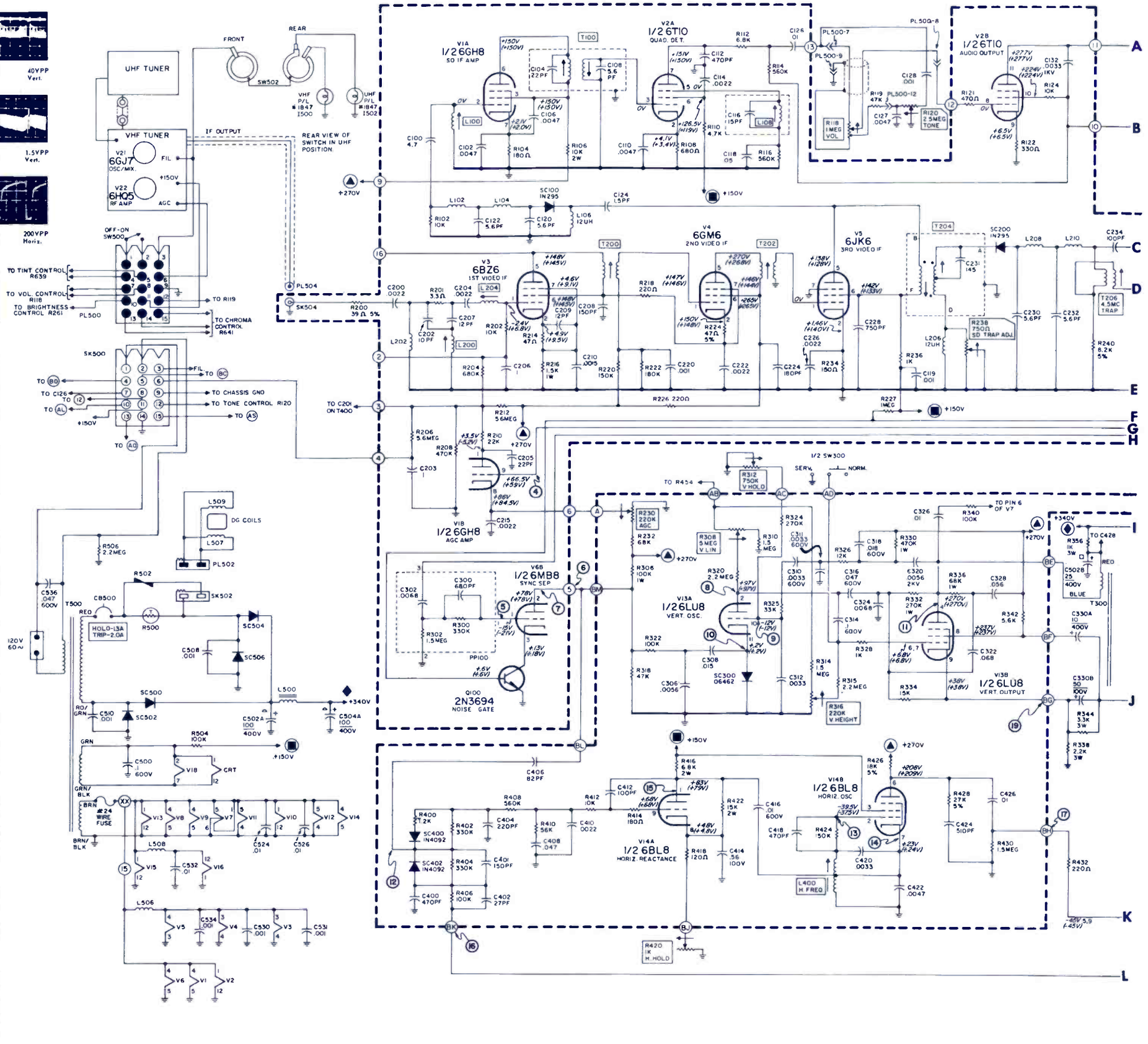
SYLVANIA
Color TV
Chassis D07-1,-2

ELECTRONIC TECHNICIAN **TEKFAX**

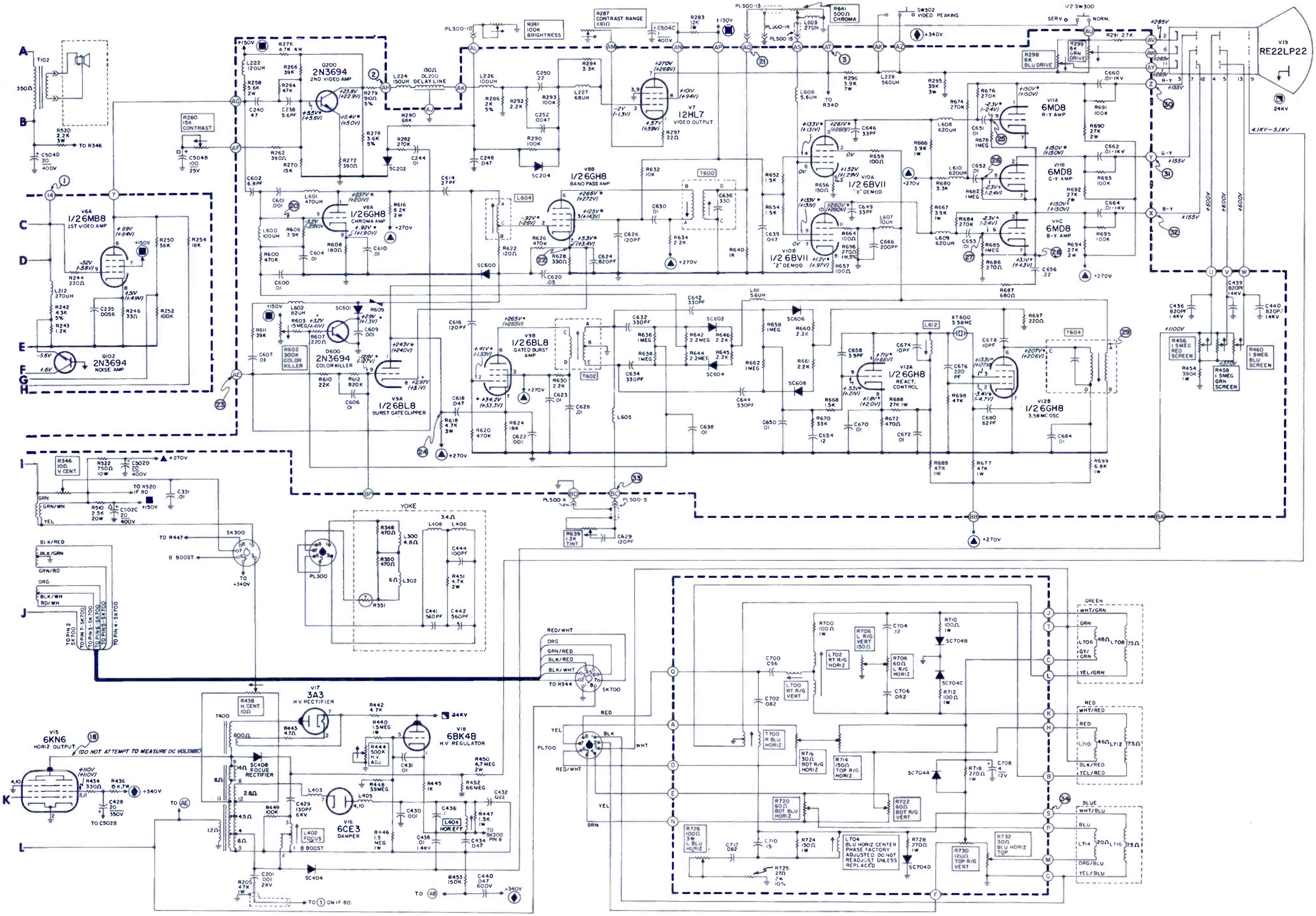


SYMBOL	DESCRIPTION	SYLVANIA PART NO.
C320	.0056 2kv	45-15907-4
C330	2 Section Electrolytic	41-23484-1
	A — 10/400v	
	B — 50/100v	
C428	20/350v-Electrolytic	41-96355-5
C429	130pf 6kv	43-84222-17
C502	4 Section Electrolytic	41-2348-1
	A — 100/400v	
	B — 25/400v	
	C — 20/400v	
	D — 20/400v	
C504	4 Section Elec.	41-23480-1
	A — 100/200v	
	B — 100/25v	
	C — 1/400v	
	D — 20/400v	
R500	Thermistor	38-17071-1
R502	VDR (Voltage Dependent Resistor)	38-17072-1
R609	VDR (Voltage Dependent Resistor)	38-15257-11
R118	1M Volume/On/Off (-1 CH only)	37-15536-5
R118	1M-Volume/On/Off (-2 CH only)	37-15536-6
R120	1.5M Tone (-1 CH only)	37-23479-4
R230	220K AGC	37-11632-7
R238	750Ω Sound Trap Adjust	37-17321-1
R260	15K Contrast	37-23479-3
R261	100K Bright	37-23479-6
R298	6K Blue Drive	37-11632-9
R299	6K Green Drive	Part of R298
R308	5M Vert. Lin	Part of R230
R312	750K Vert Hold	37-23479-2
R316	220K Vert Height	Part of B230
R346	10Ω Vert Centering	37-16021-7
R420	1K Horiz Hold	37-23479-1
R438	10Ω Horiz Centering	37-17539-1
R444	500K H.V. Adjust	37-16020-27
R456	1.5M Red Screen	37-11632-9
R458	1.5M Green Screen	Part of R456
R460	1.5M Blue Screen	Part of R456
R602	500K Color Killer	Part of R298
R639	1.2K Tint	37-23479-7
R641	500Ω Chroma	37-23479-5
R706	150Ω Left/R/G Vert.	37-16021-7
R708	60Ω Left/R/G Horiz.	37-16021-2
R714	150Ω Top/R/G Horiz.	37-16021-7
R716	30Ω Bottom/R/G Horiz.	37-16021-5
R720	60Ω Bottom/B Horiz.	37-16021-2
R722	60Ω Bottom/R/G Vert.	37-16021-2
L100	Sound Take Off	50-23213-1
L108	Quodrature	50-23213-2
L200	IF Trap	57-11637-1
L204	IF Input	57-23094-1
L400	Horiz Oscillator	50-23508-1
L405	RF Choke	50-92043-1
L500	Choke	56-17568-3
L604	Chroma Take Off	50-16184-4
L612	Reactance	50-16185-3
L700	Horiz. Convergence	50-16248-5
L702	Horiz. Convergence	50-16248-6
L704	Convergence	50-17850-1
T100	Sound Interstage	57-11606-1
T102	Audio Output	56-16018-6
T200	1st IF Interstage	57-23095-1
T202	2nd IF Interstage	57-15906-7
T204	IF Output	57-17517-1
T300	Vertical Output	56-17559-3
T400	High Voltage	50-23506-1
T500	Power xformer	55-23504-1
T600	Band Pass	50-16190-2
T604	3.58MHz Output	50-16192-3
T700	r/Blue Horiz. Convergence	50-16248-9
CB500	Circuit Breaker	29-23493-1
DL200	Delay Line	32-23216-1
PP1100	Plate Sync Take Off	32-23041-1
Q100	Transistor Noise Gate	13-23916-1
Q102	Transistor Noise Amp	13-23916-1
Q200	Transistor 2nd Video Amp	13-15840-1
Q600	Transistor Color Killer	13-15840-1
SC100	Diode	IN295
SC200	Diode Video Det.	IN295
SC500,SC502	Diode Silicon Rectifier	13-17174-1
XT600	Crystal 3.58MHz	26-16162-1
	Yoke Convergence	51-17083-3
	Yoke Deflection	51-23503-1



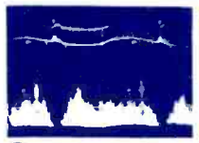


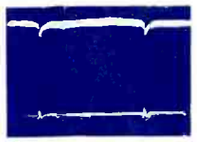
SYLVANIA
Color TV Chassis D07-1,-2



TRUETONE
TV Model 2DC1803

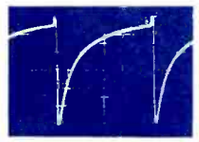
ELECTRONIC TECHNICIAN TEKFAX

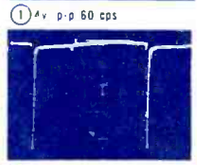

(3) 22v. to 80v. p-p 60 cps

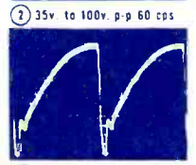

(4) 48v. p-p 60 cps

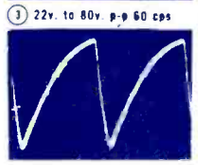

(5) 48v. p-p 15750 cps

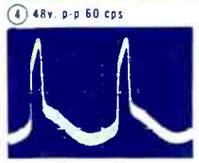

(6) 70v. p-p 60 cps

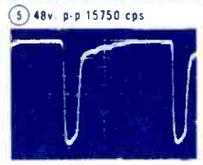

(7) 210v. p-p 60 cps

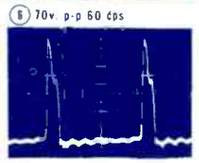

(8) 95v. p-p 60 cps

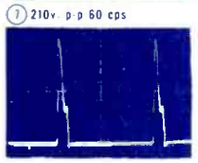

(9) 5v. p-p 15750 cps

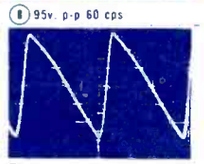

(10) 9v. p-p 15750 cps

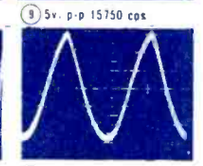

(11) 35v. p-p 15750 cps


(12) 110v. p-p 15750 cps


(13) 32v. p-p 15750 cps

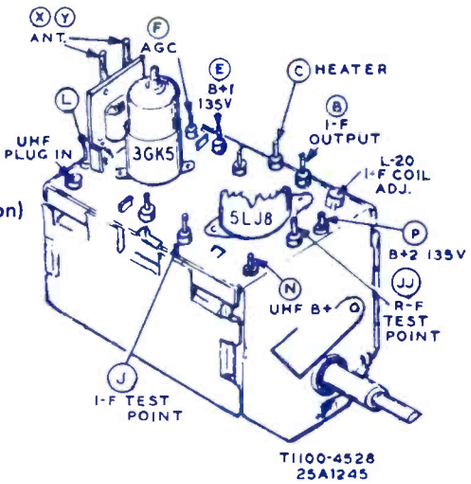

(14) 10v. to 32v. p-p 15750 cps


(15) 22v. p-p 60 cps


(16) 2.3v. p-p max. 60 cps

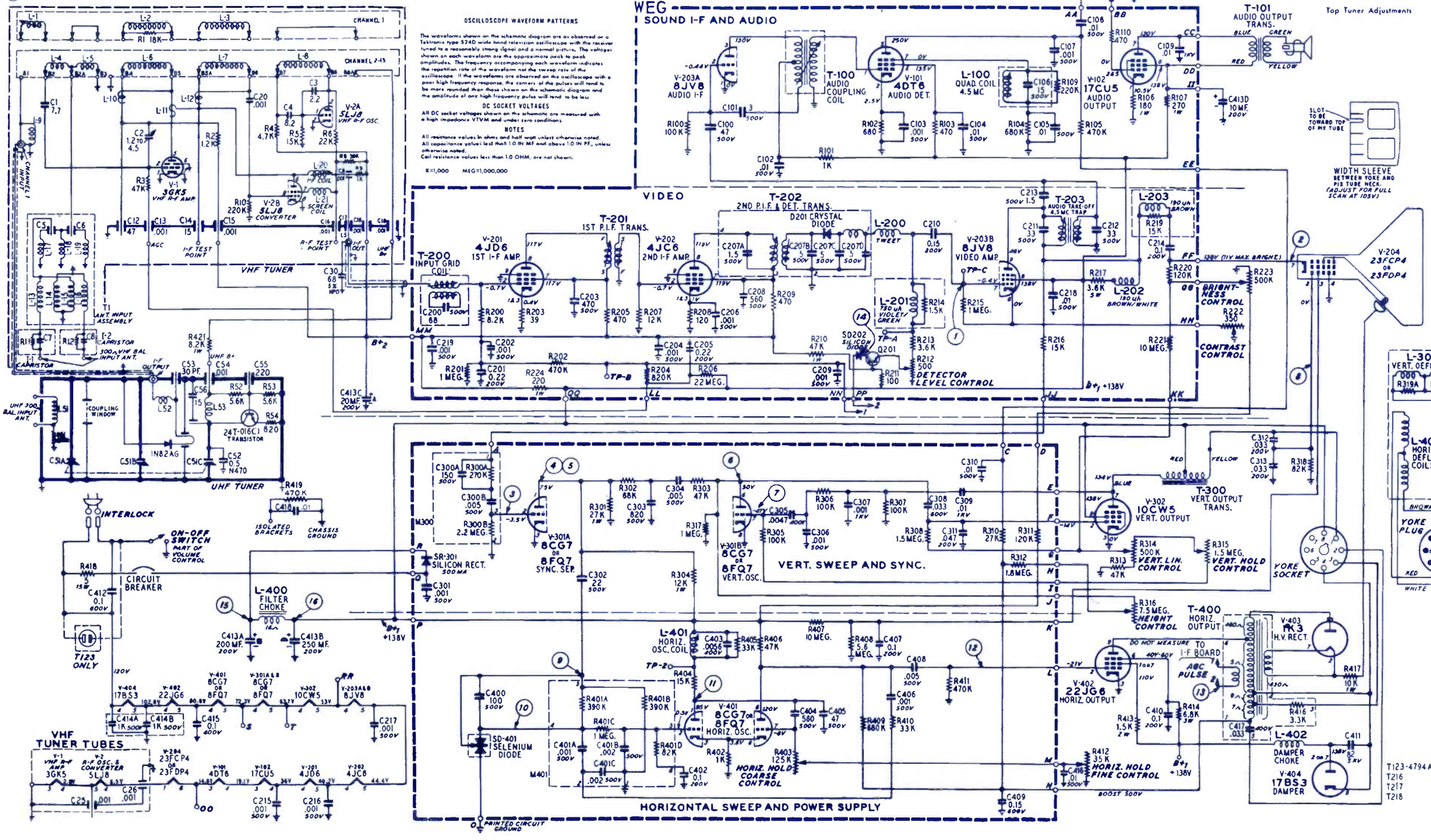
ELECTRICAL SPECIFICATIONS

Power Supply	120 Volts AC 60 cycles only
Power Consumption	115 Watts
Power Output	1.0 Watt 0.7 Watts (10% Distortion)
Tuning Range	Channels 2 thru 83
Intermediate Freq.	Picture—45.75 MC Sound—41.25 MC
Antenna Input Imp.	300 Ohms Balanced
Intercarrier Sound System	4.5 MC
Focus	Electrostatic



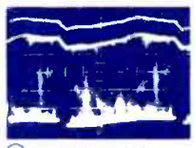
T1100-4528
25A1245

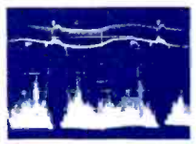
Top Tuner Adjustments

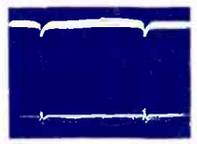


TRUETONE
TV Model 2DC1605


(1) 4v. p-p 60 cps

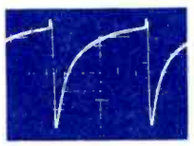

(2) 35v. to 100v. p-p 60 cps


(3) 22v. to 80v. p-p 60 cps


(4) 48v. p-p 60 cps

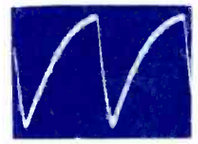

(5) 48v. p-p 15750 cps

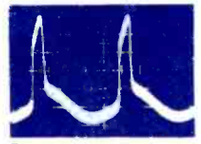

(6) 70v. p-p 60 cps

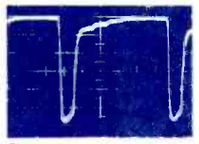

(7) 210v. p-p 60 cps

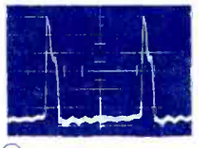

(8) 95v. p-p 60 cps

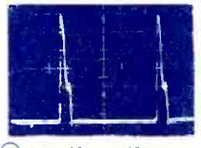

(9) 5v. p-p 15750 cps


(10) 9v. p-p 15750 cps

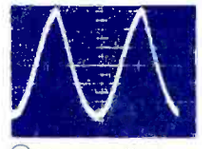

(11) 35v. p-p 15750 cps

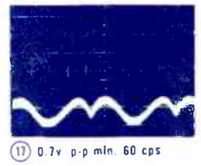

(12) 110v. p-p 15750 cps

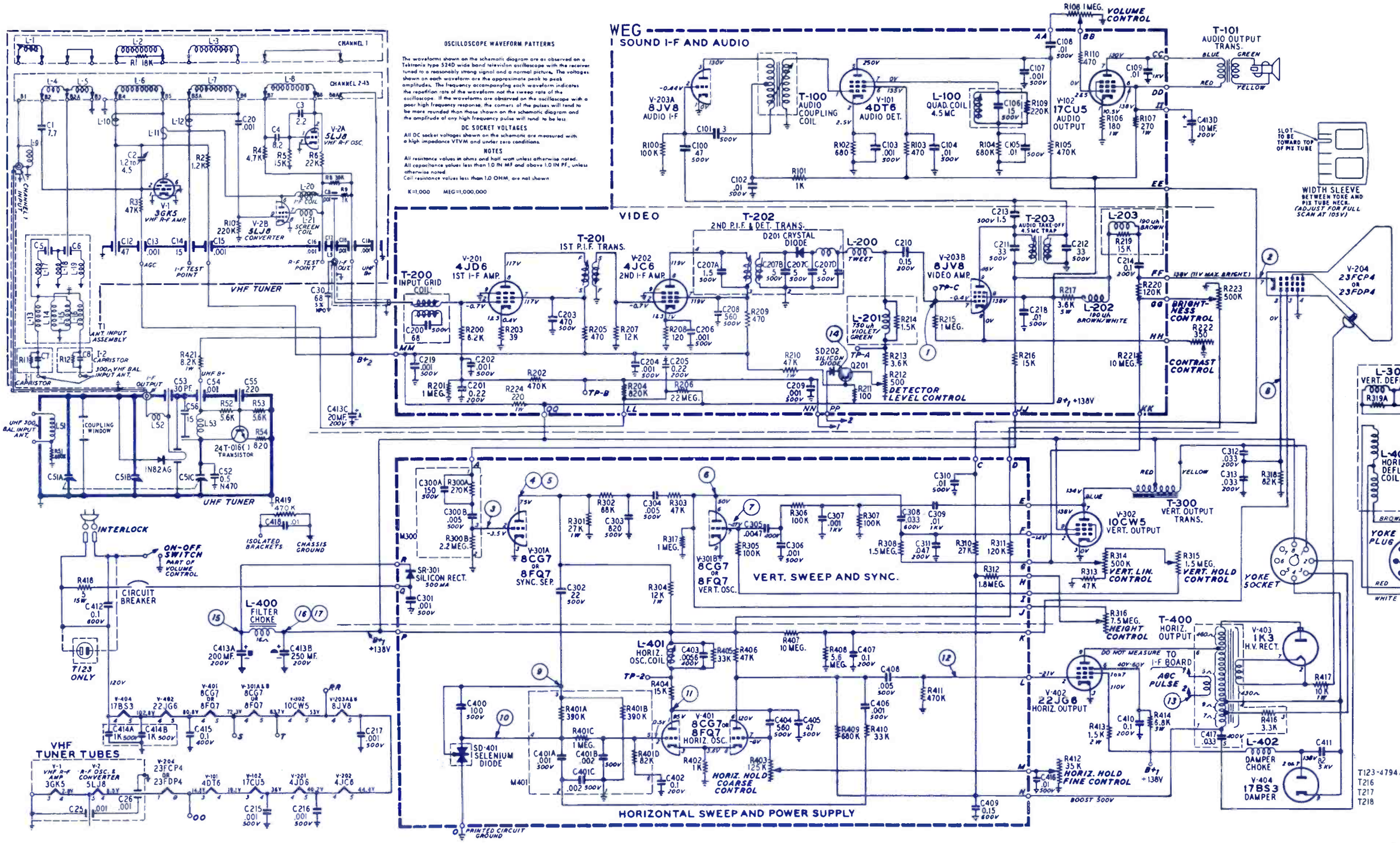

(13) 32v. p-p 15750 cps


(14) 10v. to 32v. p-p 15750 cps


(15) 22v. p-p 60 cps


(16) 2.3v. p-p max. 60 cps

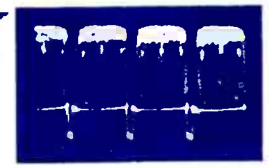

(17) 0.7v. p-p min. 60 cps

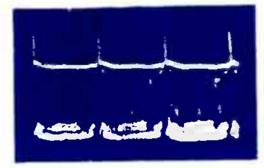


TRUETONE

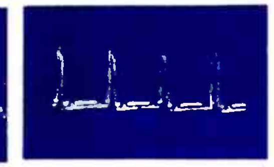
Color TV Model
2DC3555

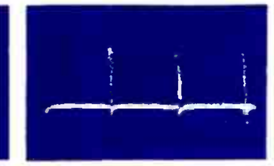
ELECTRONIC TECHNICIAN **TEKFAX**

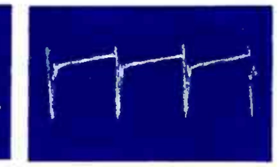

❶ 11Vp/p, 60cps


❷ 112Vp/p, 60cps

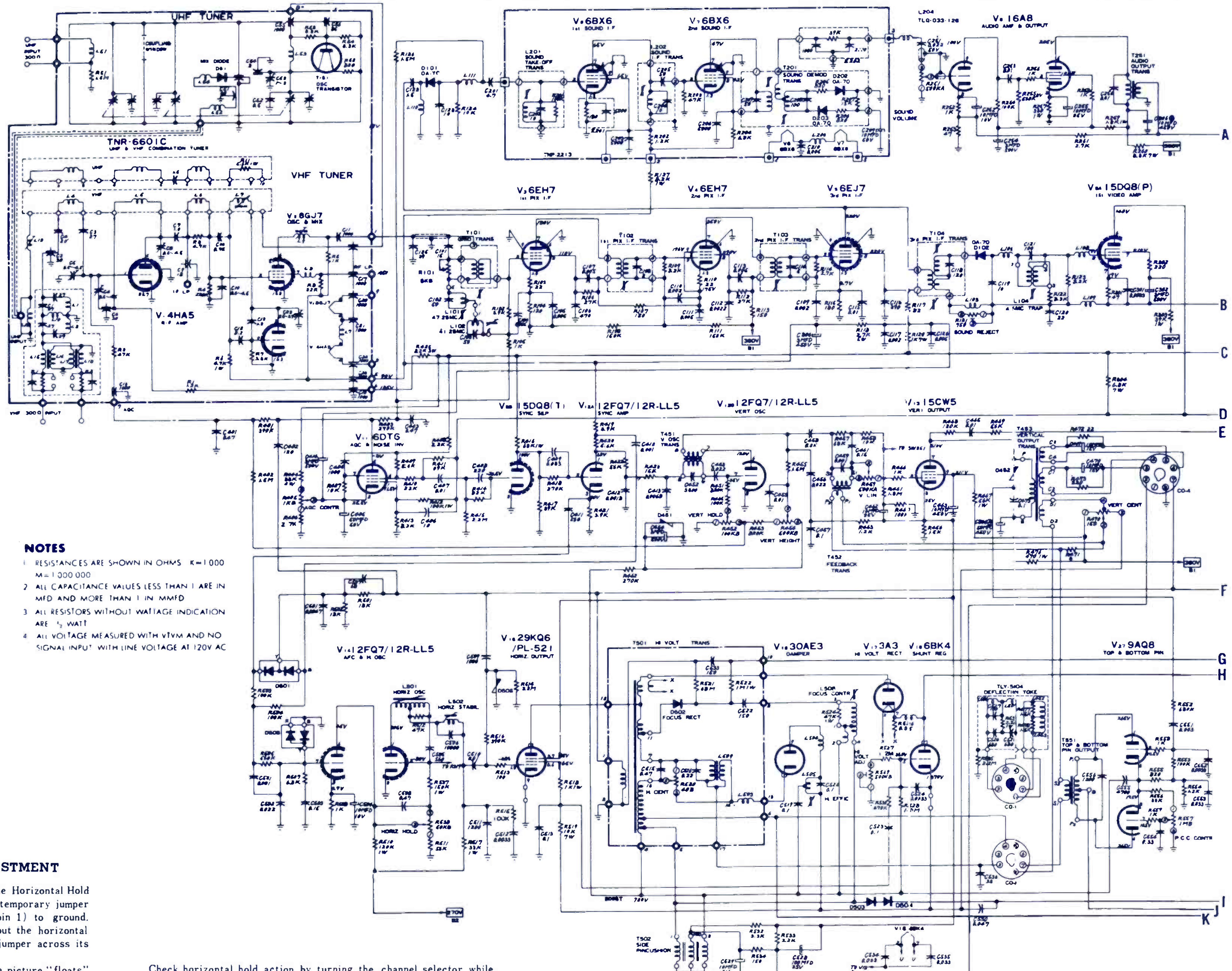

❸ 320Vp/p, 15,750cps


❹ 30Vp/p, 60cps


❺ 64Vp/p, 60cps


❻ 180Vp/p, 60cps

SYMBOL	DESCRIPTION	TRUETONE PART NO
R121	control snd rejection	EVD-NOAA00BJ2
R251	control off-on-vol	EVA-A06L26A55
R311	control brightness	EVV-MOAL40B55
R317	control contrast	EVA-B0AL40E52
R355	control blue drive	EVT-FIAS10B53
R360	control blue screen	EVT-G8AS10B26
R405	control AGC	EVD-NOAA00B13
R452	control vert hold	EVV-MOAL40B15
R454	control vert height	EVD-NOAS10B55
R459	control vert line	EVD-NOAS10A55
R470	control vert centering	EVW-S6AB01BC1
R520	control horiz centering	EVW-S7AB01B41
R529	control high vol adj	EVT-G8AS10B55
R538	control horiz hold	EVV-MOAL40B54
R557	control top & bottom pin	EVD-NOAA00B16
R601	control killer threshold	EVD-NOAS10B16
R607	control tint	EVV-MOAL25B13
R617	control color	EVV-MOAL25B52
R623	control chroma output	EVJ-KOAA00032
R701	control left horiz red & green	EVW-MIAB01B22
R707	control horiz left blue	EVW-MIAB01BC2
R716	control vert red & green master amplitude	EVW-M1AB01B61
R118	metal oxide, 2.7K ±10% 7w	ERG-5PSK272
R120	metal oxide, 1K ±10% 7w	ERG-7PSK102
R260	metal oxide, 3.3K ±10% 7w	ERG-7P5K332
R364	WW, 3.3K ±10% 6w	ERM-6PK332
R801	WW, 560Ω 30w	ERM-30H561
C530	oil tubular, 0.047µf ±20% 1kv	ECN-D10473M
C536	ceramic, 33pf ±10% 6kv	ECC-D60330K
C551	oil tubular, 0.003µf ±10% 1kv	ECN-D10302K
C555	oil tubular 4, 700pf ±10% 1kv	ECN-D10472K
C637	polystyrene, 200pf ±10% 2kv	ECQ-S20201K
C804	elect, 40µf 450v	ECE-P450VD40A
C805	elect, 80µf +40µf 450v	ECE-P450VBX1A
C806	elect, 50µf +10µf +3µf 450v	ECE-P450VB63A
CR201	180Ω 5,000pf	EXA-2PK72
CR202	39K, 1,000pf	EXA-3HK71
L101	coil, 47.25MHz trap	TL1-53052
L102	coil, 41.25MHz trap	TL1-53053
L103	coil, peaking 12µh	TLQ-120-106
L104	coil, 4.5MHz trap	TLS-51003
L105	coil, peaking 12µh	TLQ-120-139
L108	coil, peaking 70µh	TLQ-700-999
L109	coil, peaking 3.3µh	TLQ-033-126
L111	reactor, filter choke 12µf	TLQ-120-106
L201	trans, sound take-off	TLS-1510
L202	trans, sound IF	TLS-1408
L203	coil, heater choke	TLP-408
L204	coil, RF choke 3.3µh	TLQ-033-126
L501	trans. horiz. osc	TLH-312
L502	coil, horiz. stabilizing	TLH-203-1
L504	coil, reactor 12µh	TLQ-120-106
L505	coil, horiz. efficiency	TLH-5602
L508	coil, focus	TLH-5902
L601	trans, chroma take-off	TLK-1005
L603	coil, peaking 620µh	TLQ-621-999
L607	coil, peaking 90µh	TLQ-900-999
L608	coil, 3.58MHz phase control	TLK-4102
L701	coil, horiz. right red and green	TLC-1105
L703	coil, horiz. right blue	TLC-1202-1
L803	coil, heater choke	TLP-463-2
L804	coil, heater choke	TLP-451-2
L806	coil, heater choke	TLP-451-2
L809	coil, filter choke	TLK-5102
T101	trans, 1st pix. IF grid trans.	TL1-51251
T102	trans. 1st pix. IF	TL1-51252
T103	trans, 2nd pix. IF	TL1-51253
T104	trans, 3rd pix. IF	TL1-52251
T201	trans, Sound demodulator	TLS-3310
T251	trans, audio output	ETA-48E27M
T451	trans, vert. osc	TLV-101
T452	trans, vert. feed back	TLV-5405
T453	trans, vert. output	TLV-5204
T501	trans, high voltage	TLF-5002-1
T502	trans, side pincushion	TLH-5702
T551	trans, top and bottom pin output	TLV-5504
T601	trans, 1st band-pass	TLK-3103
T602	trans, 2nd band-pass	TLK-3204
T603	trans, burst phase	TLK-2003
T604	trans. 3.58MHz osc	TLK-4005
T801	trans. power	TLP-5213
	deflection yoke assy.	TLY-5304
D451	varistor, voltage clamp	ERV-08RC3471K
D452	varistor, voltage clamp	ERV-08RC3421K
D501	rectifier, horiz. AFC	TVS-TC0.09m 21/3
D502	rectifier, focus	TVS-HS 7/1
D506	varistor, voltage clamp	ERV-08RC3331S
D805	varistor, ADG	ERV-10DC1120M
D806	thermistor, ADG	TRT-D20JY101M
CB	circuit breaker	TSF-3150-9
TD-301	line, delay line	TLK-801 (883)



NOTES

1. RESISTANCES ARE SHOWN IN OHMS K=1 000 M=1 000 000
2. ALL CAPACITANCE VALUES LESS THAN 1 ARE IN MFD AND MORE THAN 1 IN MMFD
3. ALL RESISTORS WITHOUT WATTAGE INDICATION ARE ½ WATT
4. ALL VOLTAGE MEASURED WITH VTVM AND NO SIGNAL INPUT WITH LINE VOLTAGE AT 120V AC

HORIZONTAL OSCILLATOR ADJUSTMENT

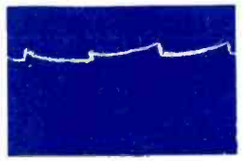
Tune in a station in a normal fashion. Set the Horizontal Hold Control (R538) to the center of its range. Place a temporary jumper from the Sync. Separator tube grid (V9B 15DQ8 pin 1) to ground. Picture will lose vertical and horizontal sync. Short out the horizontal stabilizing coil (L502) by placing another temporary jumper across its terminals.

Adjust horizontal oscillator coil (L501) so that the picture "floats" horizontally. Remove the jumper across the horizontal stabilizing coil (L502). Adjust L502 so that the picture "floats" horizontally. Remove the jumper from the Sync. Separator grid to ground.

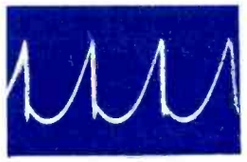
Check horizontal hold action by turning the channel selector while rotating the Horizontal Hold Control back and forth.

Should it not be possible to obtain horizontal sync. by adjusting the Horizontal Hold Control (R538).

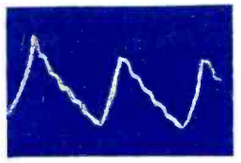
TRUETONE
Color TV Model 2DC3555



❼ 140Vp/p, 60cps

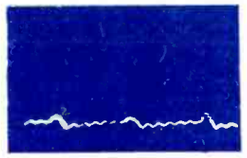


❽ 6Vp/p, 60cps



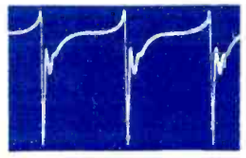
❾ 17Vp/p, 15,750cps

❿ 21Vp/p, 15,750cps

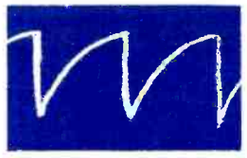


⓫ 17Vp/p, 15,750cps

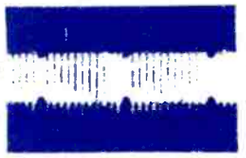
⓬ 140Vp/p, 15,750cps



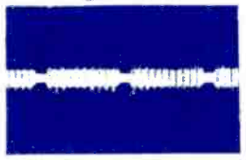
⓭ 490Vp/p, 15,750cps



⓮ 140Vp/p, 15,750cps

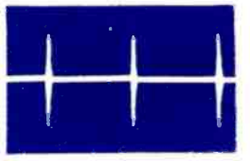


⓯ 9Vp/p, 15,750cps

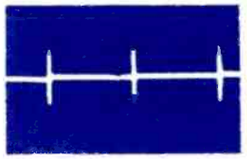


⓰ 2Vp/p, 15,750cps

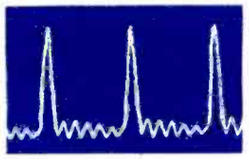
⓱ 4Vp/p, 15,750cps



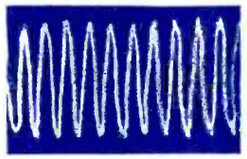
⓲ 330Vp/p, 15,750cps



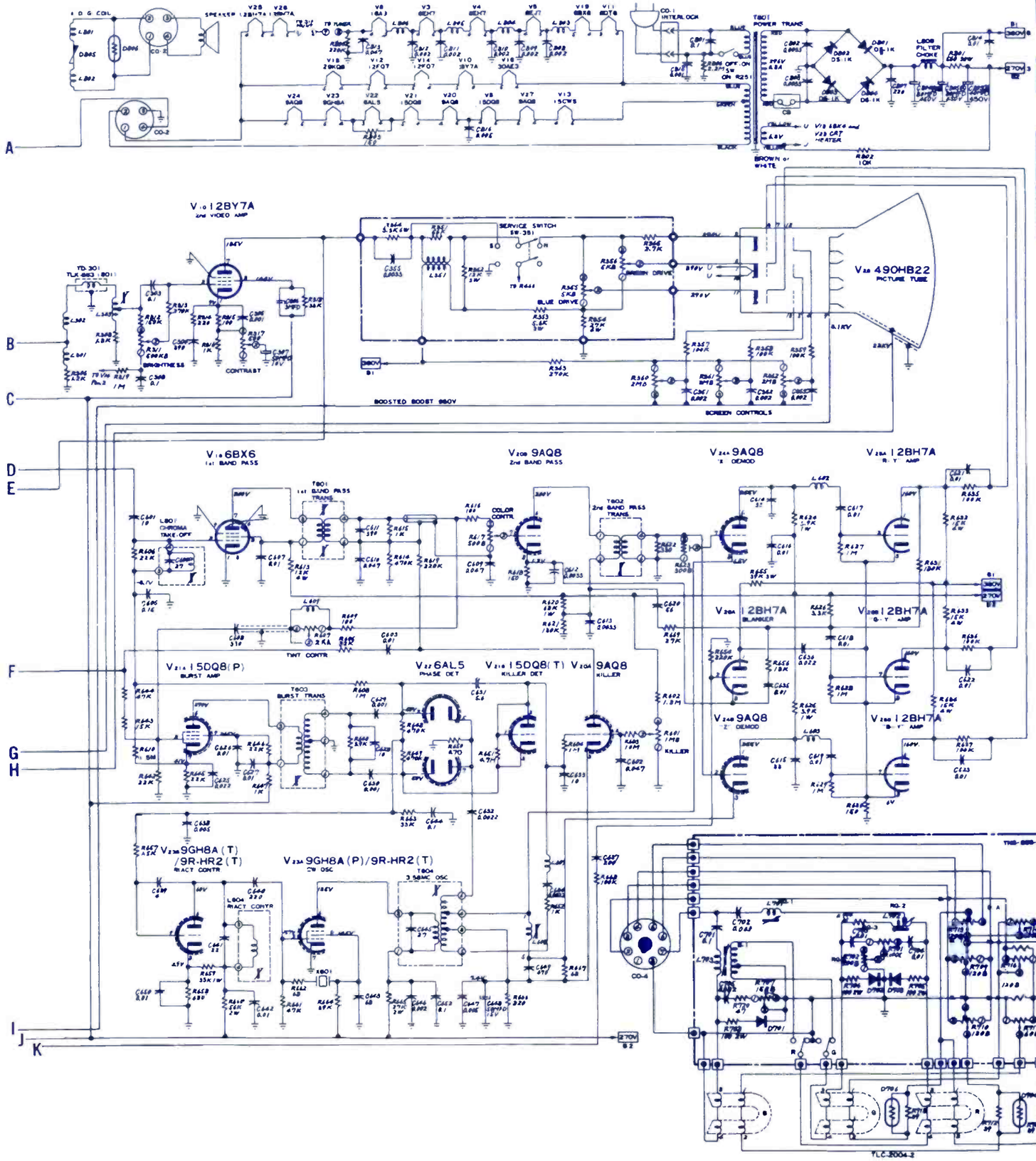
⓳ 100Vp/p, 15,750cps

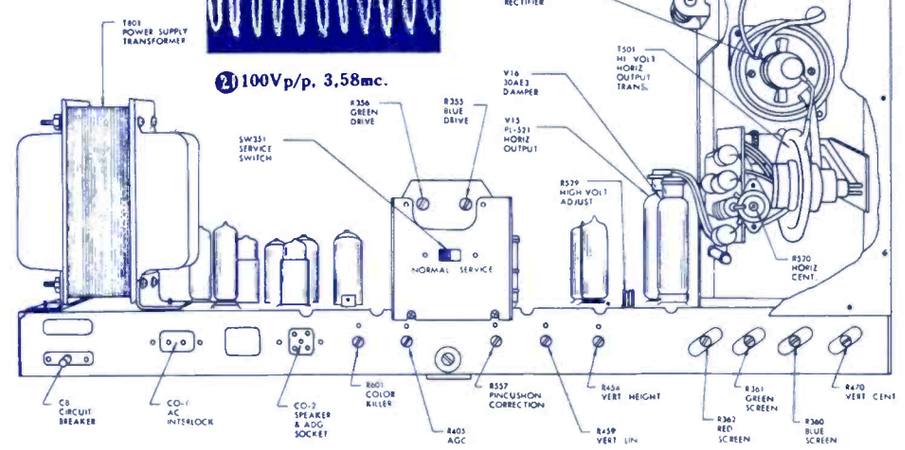


⓴ 200Vp/p, 15,750cps

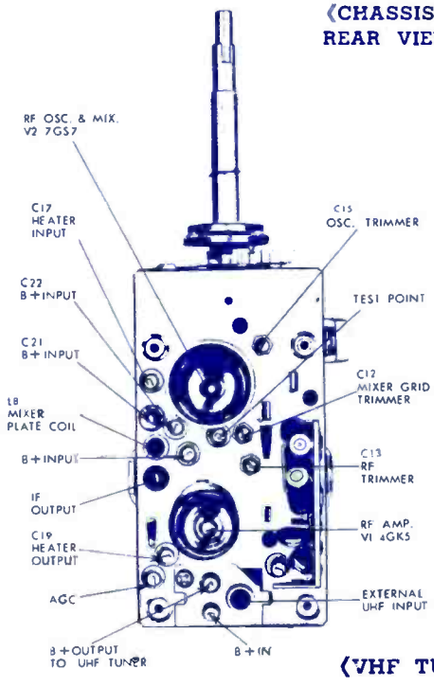


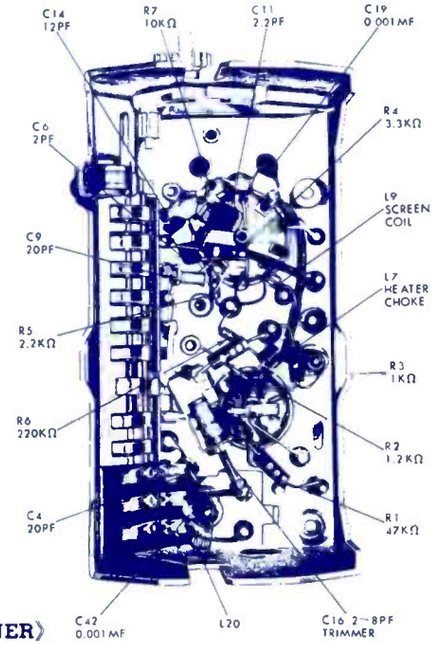
㉑ 100Vp/p, 3,58mc.





⟨CHASSIS⟩ REAR VIEW





⟨VHF TUNER⟩

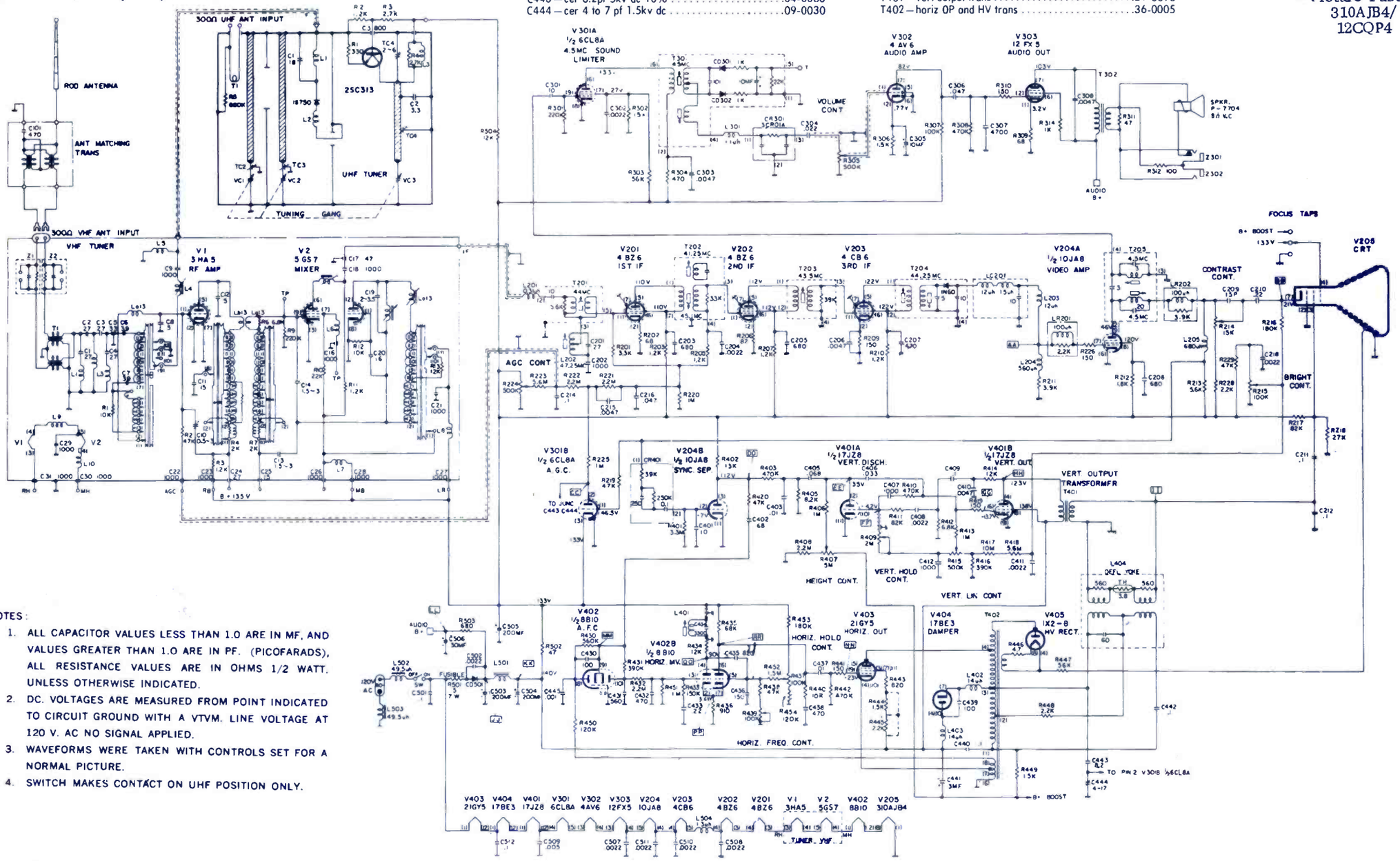
TRUETONE
TV Model 2DC3712

ELECTRONIC TECHNICIAN TEKFAX

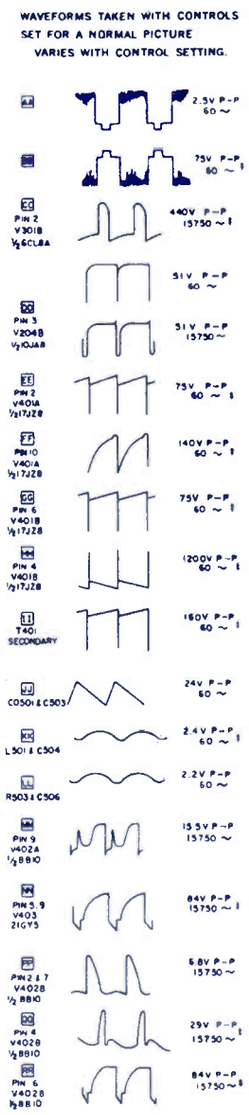
COIL AND TRANSFORMER DC RESISTANCES

1. Ringing coil (L401) ..... 100 ohm
2. Fly back transformer (402)
   - Terminal #1 - #4 ..... 31.6 ohm
   - #4 - HT ..... 395 ohm
   - #6 - #8 ..... 2.2 ohm
3. Vertical output transformer (T401)
   - Primary (#1 - #2) ..... 265 ohm
   - Secondary (#3 - #4) ..... 2.5 ohm
4. Deflection yoke (L404)
   - Horizontal coil ..... 33.7 ohm
   - Vertical coil ..... 10.0 ohm
5. Sound output transformer (T302)
   - Primary ..... 220 ohm
   - Secondary ..... 0.64 ohm
6. Chocking coil (L501) ..... 23.5 ohm

SYMBOL	DESCRIPTION	TRUETONE PART NO.
R213	oxi film 5.6K 4w 10%	12-0124
R214	contrast control	14-0121
R215	bright control	14-0122
R224	AGC adjust	14-0119
R305	on off and vol control	14-0123
R407	height control to R415	14-0126
R409	vert hold control	14-0125
R414	car film 12K 1w 5%	12-0122
R415	vert control to R407	14-0126
R437	horiz hold control	14-0124
R439	high freq adjust	14-0120
R501	resistor fusible	13-0010
R503	oxi film 680Ω 4w 10%	12-0126
R504	oxi film 12K 4w 10%	12-0127
CR301	capacitor resistor comb	35-0029
CR401	capacitor resistor comb	35-0028
C210	met pap 0.22μf 150v dc 20%	01-0003
C211	met pap 0.1μf 150v dc 20%	01-0004
C305	ele 10μf 10v dc	06-0305
C439	cer 100pf 5kv dc 10%	04-0084
C443	cer 8.2pf 5kv dc 10%	04-0086
C444	cer 4 to 7 pf 1.5kv dc	09-0030
C501	pap 0.1μf 1500v dc 20%	01-0012
C502	cer 2200pf 1.5kv dc	04-0085
C503	elect 200x200x200x30μf 180v	06-0061
L201	choke coil	24-0234
L202	adjacent channel trap assy	24-0245
L203	peaking coil	24-0236
L204	peaking coil	24-0237
L205	peaking coil	24-0238
L401	ringing coil	24-0241
L402	choke coil	24-0235
L404	deflection yoke assy	36-0004
L501	choke b + supply filter	24-0242
L502	ac line filter	24-0232
L504	choke coil	24-0233
LR201P	peaking coil w/resistor	24-0239
LR202P	peaking coil w/resistor	24-0240
T1	antenna match trans assy	24-0244
T201	IF input trans assy	22-0309
T202	2nd IF trans assy	22-0310
T203	3rd IF trans assy	22-0311
T204	4th IF trans assy	22-0312
T205	sound IP and 4.5MHz assy	24-0243
T302	audio output trans	21-0097
T401	vert output trans	21-0098
T402	horiz OP and HV trans	36-0005



WAVEFORMS TAKEN WITH CONTROLS SET FOR A NORMAL PICTURE VARIES WITH CONTROL SETTING.



NOTES:

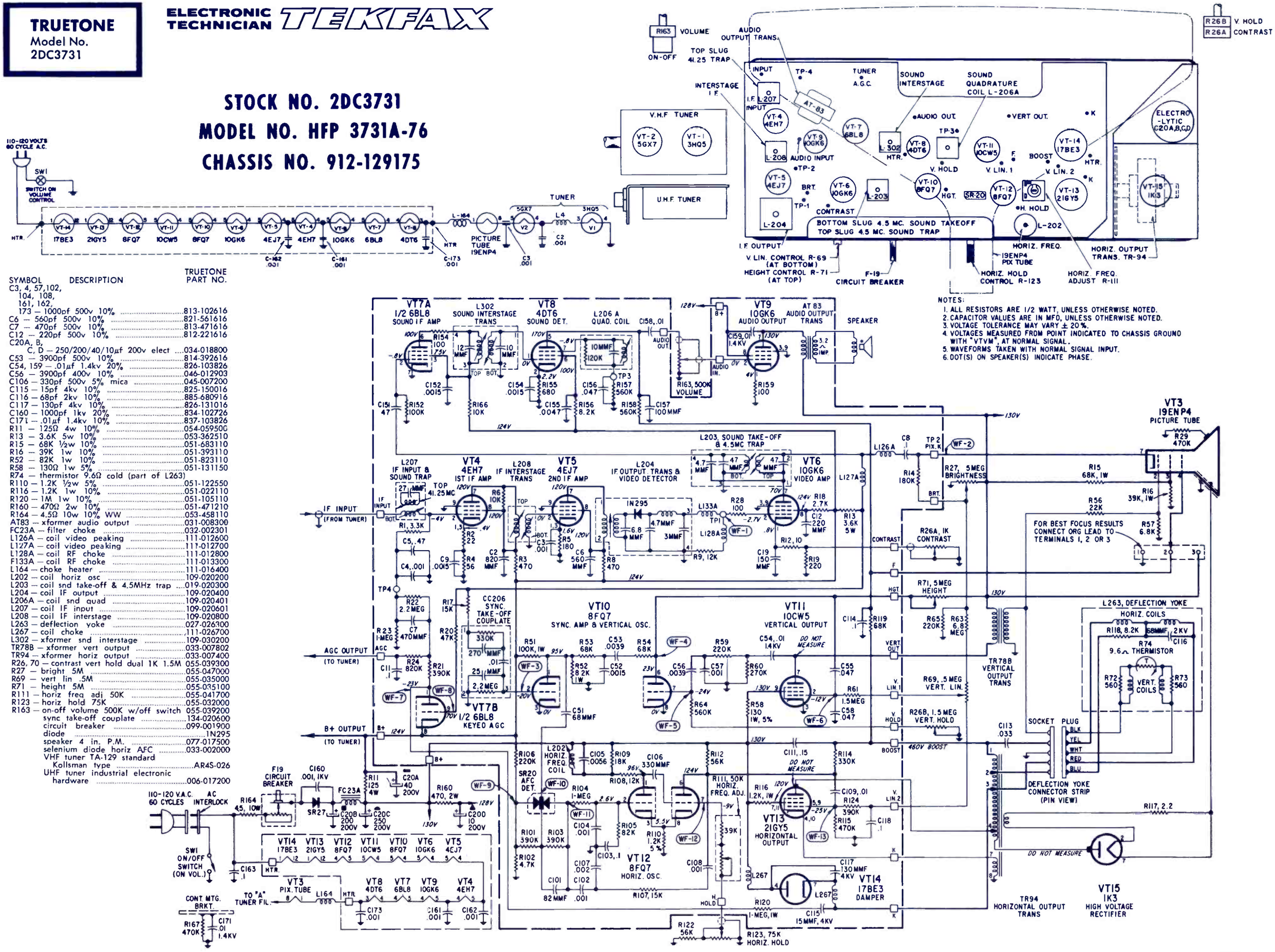
1. ALL CAPACITOR VALUES LESS THAN 1.0 ARE IN MF, AND VALUES GREATER THAN 1.0 ARE IN PF. (PICOFARADS), ALL RESISTANCE VALUES ARE IN OHMS 1/2 WATT. UNLESS OTHERWISE INDICATED.
2. DC. VOLTAGES ARE MEASURED FROM POINT INDICATED TO CIRCUIT GROUND WITH A VTVM. LINE VOLTAGE AT 120 V. AC NO SIGNAL APPLIED.
3. WAVEFORMS WERE TAKEN WITH CONTROLS SET FOR A NORMAL PICTURE.
4. SWITCH MAKES CONTACT ON UHF POSITION ONLY.

FEATURES:

1. Tubes, Diodes, Transistor and Picture Tube:
   - Tubes -
     - 3HA5 — VHF tuner RF amplifier
     - 5GS7 — VHF tuner mix & osc.
     - 4BZ6 — 1st IF amplifier
     - 4BZ6 — 2nd IF amplifier
     - 4CB6 — 3rd IF amplifier
     - 10JA8 — Video amplifier & sync separator
     - 6CL8A — Sound IF amplifier & AGC keyer
     - 4AV6 — Audio amplifier
     - 12FX5 — Audio output amplifier
     - 17JZ8 — Vertical osc. & output amplifier
     - 8B10 — AFC & horizontal osc.
     - 21GY5 — Horizontal output amplifier
     - 17BE3 — Damper
     - 1X2B — High voltage rectifier
   - Diodes -
     - 1N60 — Video detector
     - 1N60 (2 pcs.) — Sound FM demodulator
     - 1S750 — UHF tuner mix.
     - SD-1 — Power rectifier
   - Transistor -
     - 2SC313 — UHF tuner osc.
   - Picture Tube -
     - 310AJB4/12CQP4 — Picture tube

TRUETONE
Model No.
2DC3731

STOCK NO. 2DC3731
MODEL NO. HFP 3731A-76
CHASSIS NO. 912-129175



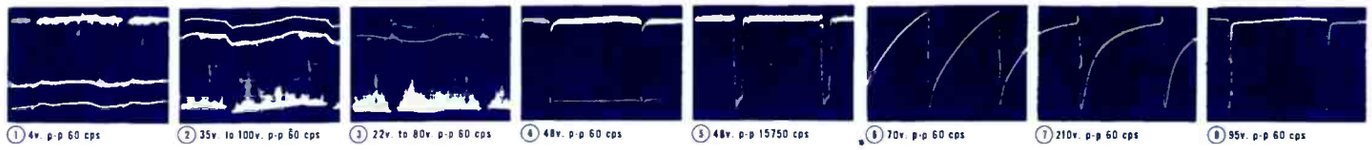
SYMBOL	DESCRIPTION	TRUETONE PART NO.
C3, 4, 57, 102, 104, 108, 161, 162, 173	1000pf 500v 10%	813-102616
C6	560pf 500v 10%	821-561616
C7	470pf 500v 10%	813-471616
C12	220pf 500v 10%	812-221616
C20A, B, C, D	250/200/40/10µf 200v elect	034-018800
C53	3900pf 500v 10%	814-392616
C54, 159	.01µf 1.4kv 20%	826-103826
C56	3900pf 400v 10%	046-012903
C106	330pf 500v 5% mica	045-007200
C115	15pf 4kv 10%	825-150016
C116	68pf 2kv 10%	885-680916
C117	130pf 4kv 10%	826-131016
C160	1000pf 1kv 20%	834-102726
C171	.01µf 1.4kv 10%	837-103826
R11	125Ω 4w 10%	054-059500
R13	3.6K 5w 10%	053-362510
R15	68K ½w 10%	051-683110
R16	39K 1w 10%	051-393110
R52	82K 1w 10%	051-823110
R58	130Ω 1w 5%	051-131150
R74	thermistor 9.6Ω cold (part of L263)	
R110	1.2K ½w 5%	051-122550
R116	1.2K 1w 10%	051-022110
R120	1M 1w 10%	051-105110
R160	470Ω 2w 10%	051-471210
R164	4.5Ω 10w 10% WW	053-458110
AT83	xformer audio output	031-008300
FC23A	filter choke	032-002301
L126A	coil video peaking	111-012600
L127A	coil video peaking	111-012700
L128A	coil RF choke	111-012800
F133A	coil RF choke	111-013300
L164	choke heater	111-016400
L202	coil horiz osc	109-020200
L203	coil snd take-off & 4.5MHz trap	019-020300
L204	coil IF output	109-020400
L206A	coil snd quad	109-020401
L207	coil IF input	109-020601
L208	coil IF interstage	109-020800
L263	deflection yoke	027-026300
L267	coil choke	111-026700
L302	xformer snd interstage	109-030200
TR78B	xformer vert output	033-007802
TR94	xformer horiz output	033-007400
R26, 70	contrast vert hold dual 1K 1.5M	055-039300
R27	bright 5M	055-047000
R69	vert lin .5M	055-035000
R71	height 5M	055-035100
R111	horiz freq adj 50K	055-041700
R123	horiz hold 75K	055-032000
R163	on-off volume 500K w/off switch	055-039200
	sync take-off couplate	134-020600
	circuit breaker	099-001900
	diode	1N295
	speaker 4 in. P.M.	077-017500
	selenium diode horiz AFC	033-002000
	VHF tuner TA-129 standard Kollsman type	AR4S-026
	UHF tuner industrial electronic	
	hardware	006-017200

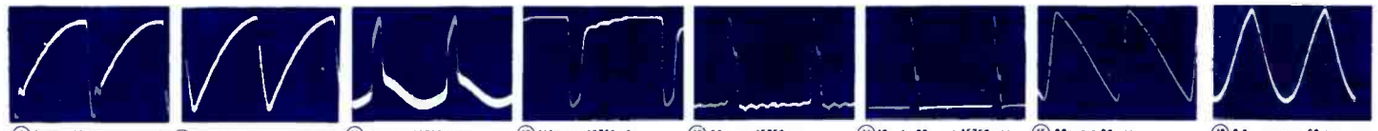
NOTES:
1. ALL RESISTORS ARE 1/2 WATT, UNLESS OTHERWISE NOTED.
2. CAPACITOR VALUES ARE IN MFD, UNLESS OTHERWISE NOTED.
3. VOLTAGE TOLERANCE MAY VARY ± 20%.
4. VOLTAGES MEASURED FROM POINT INDICATED TO CHASSIS GROUND WITH "VTVM", AT NORMAL SIGNAL.
5. WAVEFORMS TAKEN WITH NORMAL SIGNAL INPUT.
6. DOT(S) ON SPEAKER(S) INDICATE PHASE.

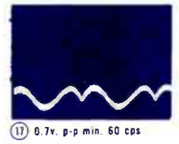
TRUETONE
TV Model 2DC3741

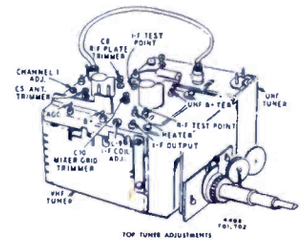
ELECTRONIC TECHNICIAN TEKFAX

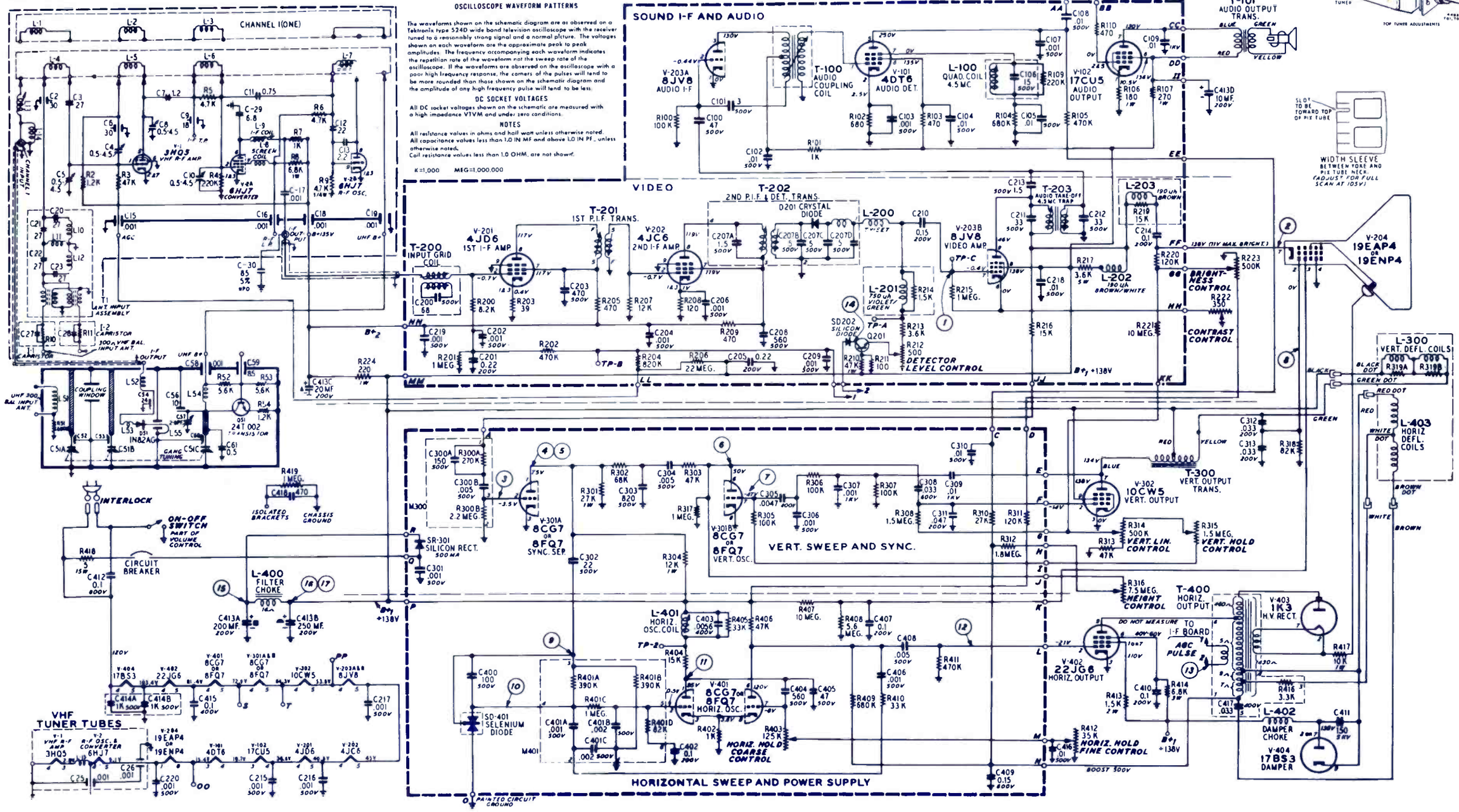
SYMBOL	DESCRIPTION	TRUETONE PART NO.
C109	.01µf 1kv cer	80X0099-061
C307	1Kpf 1kv cer	80X0099-016
C309	.01µf 1kv cer	80X0099-061
C411	150pf 5kv cer	80X0098-009
C413A	200µf 200v dry elect	45X0519-001
C413B	250µf 200v dry elect	45X0519-001
C413C	20µf 200v dry elect	45X0519-001
C413D	10µf 200v dry elect	45X0519-001
C414A	1Kpf 500v dual cer	80X0003-001
C414B	1Kpf 500v dual cer	80X0003-001
R108	1.0M on-off volume control	36X0453-001
R212	500Ω det level control	40X0592-001
R217	3.6K 5.0 pyrex	43X0331-001
R222	350Ω contrast control	40X0585-030
R223	500K brightness control	40X0585-010
R314	500K vert lin control	40X0585-004
R315	1.5M vert hold	40X0585-008
R316	7.5M height control	40X0585-002
R403	125K horiz hold control (coarse)	40X0590-002
R412	35K horiz hold control (find)	40X0585-044
R413	1.5K 2.0 pyrex	43X0450-013
R414	6.8K 3.0 pyrex	43X0378-001
R418	5.0 15.0 WW	43X0317-001
L100	quad coil	9A2595-001
L200	choke tweet filter	9A2432-001
L400	filter choke	52X0102-006
L401	horiz oscillator coil	9A2515-001
L402	damper choke	9A2380-001
T100	sound IF coil	9A2597-001
T101	audio output xformer	51X0235-001
T200	IF input coil	9A2642-001
T201	1st IF xformer	9A2622-001
T202	2nd IF xformer	9A2623-001
T203	sound take-off coil	9A2599-001
T300	vert output xformer	51X0229-003
T400	horiz output xformer	53X0433-001
	deflection yoke assy	9A2604-001
	transistor (Q201)	86X0006-001











OSCILLOSCOPE WAVEFORM PATTERNS

The waveforms shown on the schematic diagram are as observed on a Tektronix type 524D wide band television oscilloscope with the receiver tuned to a reasonably strong signal and a normal picture. The voltages shown on each waveform are the approximate peak to peak amplitudes. The frequency accompanying each waveform indicates the repetition rate of the waveform not the sweep rate of the oscilloscope. If the waveforms are observed on the oscilloscope with a poor high frequency response, the corners of the pulses will tend to be more rounded than those shown on the schematic diagram and the amplitude of any high frequency pulse will tend to be less.

DC SOCKET VOLTAGES

All DC socket voltages shown on the schematic are measured with a high impedance VTVM and under zero conditions.

NOTES

All resistance values in ohms and half watt unless otherwise noted. All capacitance values less than 1.0 IN MF and above 1.0 IN PF unless otherwise noted.
Coil resistance values less than 1.0 OHM, are not shown.

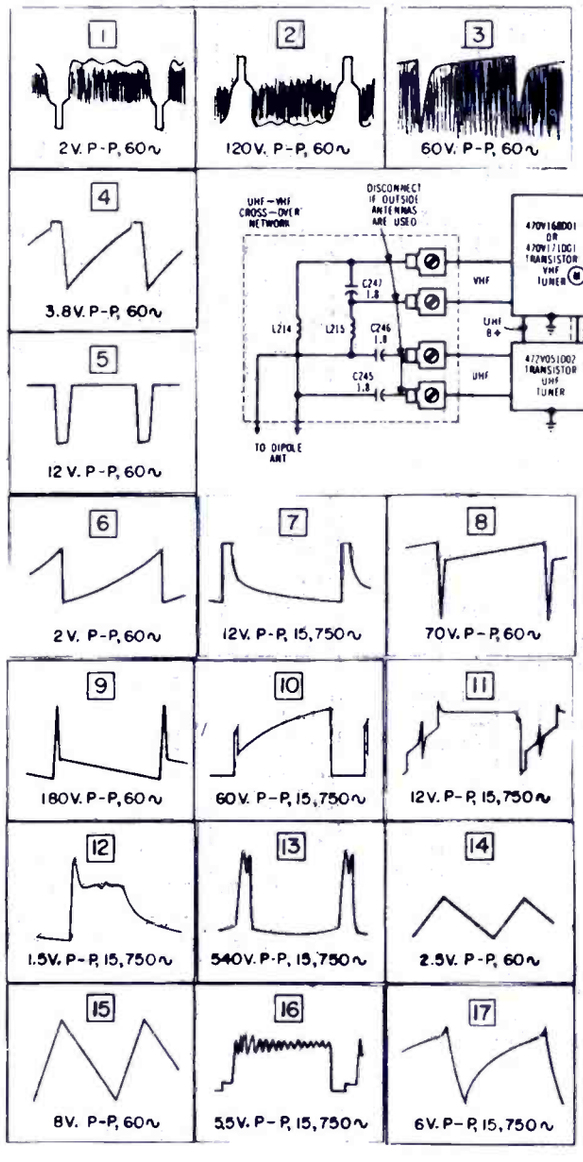
K=1,000 MEG=1,000,000

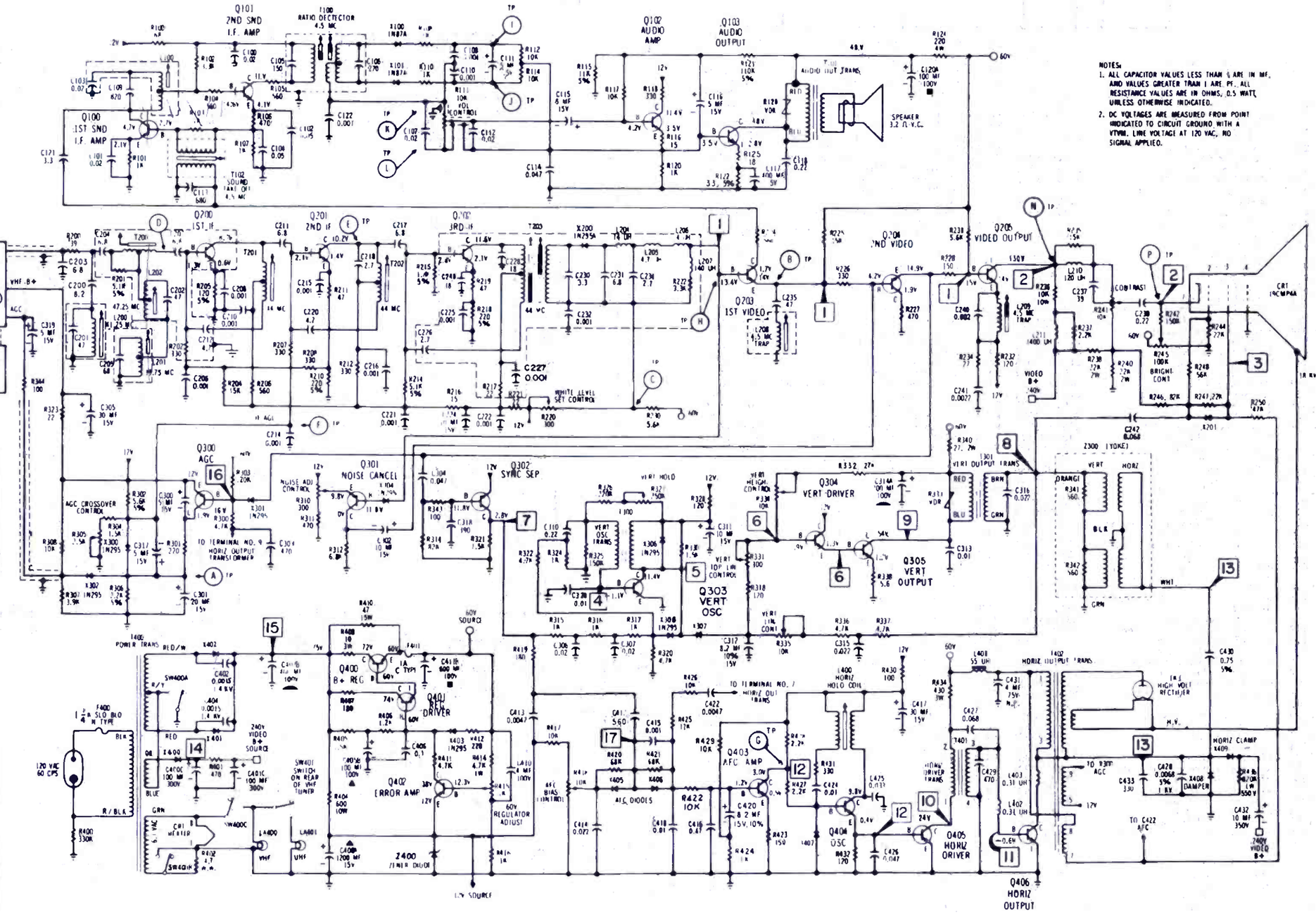
WESTINGHOUSE
TV Chassis
Y-2483-1

SYMBOL	DESCRIPTION	WESTINGHOUSE PART NO.
C114	.047µf 200v Mylar	210V234A73
C117	400µf 5v elect	218V012H43
C301	20µf 15v elect	218V012H48
C312	8.2µf 15v tantalum 10%	218V063B01
C314A	200µf 100v elect includes C120A and C408A	218V053H23
C317	5µf 15v elect	218V060H04
C402	.0015µf 1.4kv cer	215V160A03
C404	.0015µf 1.4kv cer	215V160A03
C405B	100µf 100v elect includes C407B and C411B	218V053H22
C407B	400µf 100v elect includes C405B and C411B	218V053H22
C408A	1200µf 15v elect includes C120A and C314A	218V053H23
C410	4µf 100v elect	218V056H15
C411B	600µf 100v elect includes C405B and C407B	218V053H22
C428	.0068µf 1kv poly 5%	210V336A82
C433	330pf 1kv cer N2200	215V393A31
R115	11K ½w 5% carbon	250V211A13
R121	110K ½w 5% carbon	250V211A14
R122	33Ω ½w 5% carbon	250V213A30
R124	220Ω 4w 10% WW	251V020H59
R205	120Ω ½w 5% carbon	250V211A21
R210	220Ω ½w 5% carbon	250V212A21
R218	220Ω ½w 5% carbon	250V212A21
R236	10K 10w 10% WW	251V014H58
R302	5.6K ½w 5% carbon	250V215A62
R306	2.2K ½w 5% carbon	250V212A22
R338	5.6Ω ½w 10% WW	259V003H41
L100	coil adj tapped 4.5MHz	230V031H05
L200	coil adj 41.25MHz trap	230V151C01
L201	coil adj 39.75MHz trap	230V151C02
L206	coil 14µh det filter	230V130H04
L208	coil adj 4.5MHz trap	230V031H03
L209	coil adj 4.5MHz trap	230V031H04
L211	coil 1400µh shunt peaking	230V141H11
L214	coil .13µh ant network	230V152A01
L400	coil adj tapped horiz osc	230V153B01
L403	coil .31µh horiz choke	230V065H04
T100	xformer ratio det	235V140C01
T101	xformer audio output	430V156H01
T102	xformer adj snd take-off	235V046C02
T200	xformer adj IF input	235V139C01
T201	xformer adj 1st IF 44MHz	235V048H05
T202	xformer adj 2nd IF 44MHz	235V048H05
T203	xformer adj 3rd IF 44MHz	235V138C01
T300	xformer vert osc	430V163B01
T301	xformer vert output	430V164C01
T400	xformer power	410V066C01
T401	xformer horiz driver	430V162B01
T402	xformer horiz output	493V022C01
Z300	yoke deflection	490V021C01
X101	diode 1N87A ratio det	296V015H01
X200	diode 1N295A video det	296V006H02
S201	diode silicon vert blanking	296V020B01
X300	diode 1N295 AGC decouple	296V002H07
X304	diode 1N295 noise cancel base	296V002H07
X308	diode 1N295 vert sync decouple	296V002H07
X400	diode silicon rect 250v source	295V028V03
X401	diode silicon rect 60v source	295V028C02
X405	diode silicon AFC bias	296V020B01
X407	diode silicon HMV circuit	296V020B01
X408	diode silicon damper	295V029C01
X409	diode silicon horiz clamp	295V028C03
Z400	diode Zener 12v regulator	296V019B01
R111	volume control 10K incl SW400A, B, C	270V146H04
R220	white level control 300Ω	270V174C01
R241	contrast control 30K	270V175C01
R245	bright control 100K	270V175C02
R305	AGC crossover control 2.5K	270V174C02
R310	noise level control 300Ω	270V174C01
R327	vert hold control 250K	270V175C03
R331	vert lin top control 300Ω	270V173C02
R334	height control 30K	270V174C04
R335	vert lin control 10K	270V174C03
R415	regulator control 1K	270V130H06
R418	AFC bias control 10K	270V174C03
SW401	switch rear of 470V171D01 tuner	756V105B01
SW401	switch rear of 470V168D01 tuner	part of tuner
	tuner VHF replaces 470V168D01	470V171D01
	tuner UHF	472V051D02

TRANSISTOR AND TUBE COMPLEMENT

	Picture Tube	19CMP4A			
	High voltage rectifier	1K3/1G3GT			
Q100	1st sound IF	297V072C04	Q301	Noise cancel	297V073C02
Q101	2nd sound IF	297V072C04	Q302	Sync. seperator	297V073C02
Q102	Audio amplifier	297V074C03	Q303	Vertical oscillator	297V074C06
Q103	Audio output	297V071C01	Q304	Vertical driver	297V074C04
Q200	1st video IF	297V072C03	Q305	Vertical output	297V068C01
Q201	2nd video IF	297V072C03	Q400	Voltage regulator	297V075C01
Q202	3rd video I.F	297V072C01	Q401	Regulator driver	297V074C04
Q203	1st video amp	297V073C01	Q402	Error amplifier	297V074C05
Q204	2nd video amp	297V073C01	Q403	A.F.C. amplifier	297V074C02
Q205	Video output	297V070C01	Q404	Horizontal oscillator	297V074C04
Q300	AGC amplifier	297V073C02	Q405	Horizontal driver	297V071C02
			Q406	Horizontal output	297V069C01





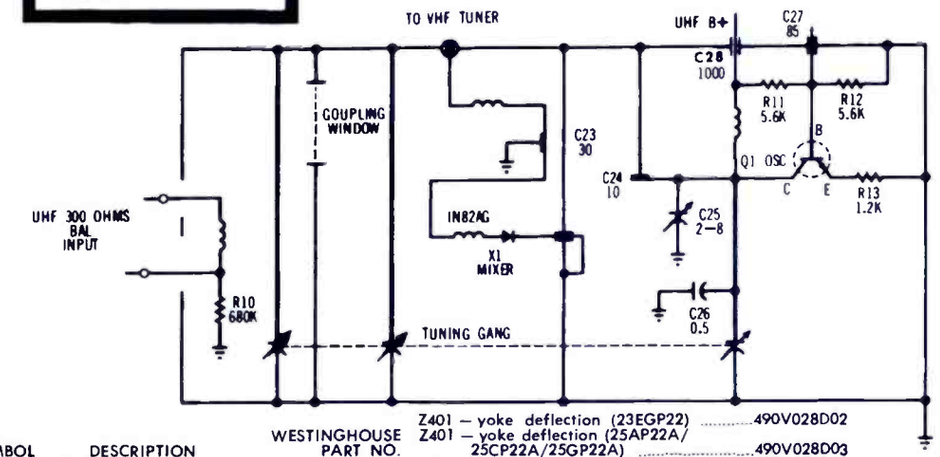
NOTES:
1. ALL CAPACITOR VALUES LESS THAN 1 ARE IN MF, AND VALUES GREATER THAN 1 ARE PF. ALL RESISTANCE VALUES ARE IN OHMS, 0.5 WATT UNLESS OTHERWISE INDICATED.
2. DC VOLTAGES ARE MEASURED FROM POINT INDICATED TO CIRCUIT GROUND WITH A VTVM. LINE VOLTAGE AT 120 VAC, NO SIGNAL APPLIED.

WESTING-HOUSE

Color TV Chassis
V2655-2-3-4-7-8-13-14

ELECTRONIC TECHNICIAN TEKFAX

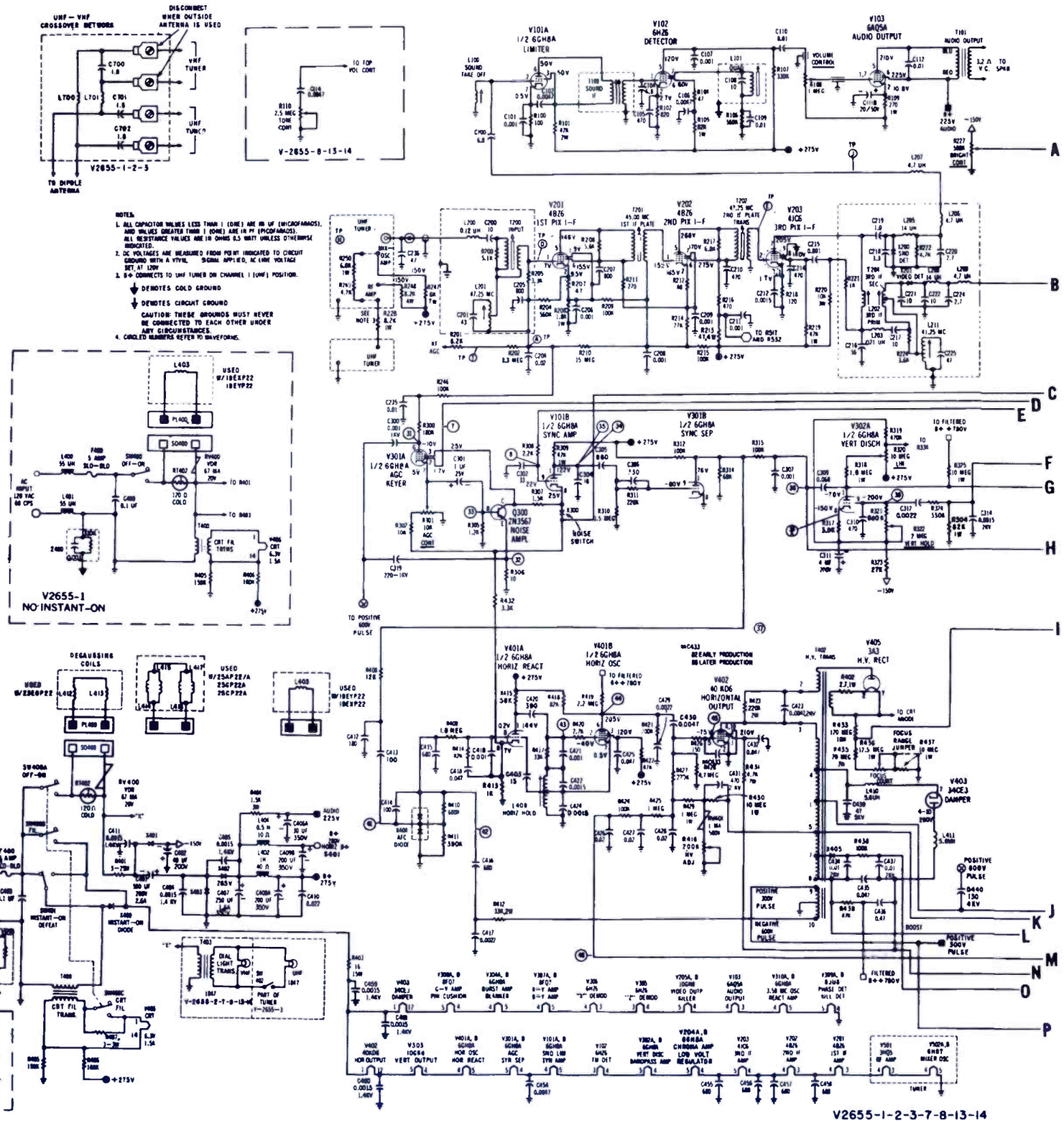
More Data on Opposite Page



SYMBOL DESCRIPTION	WESTINGHOUSE PART NO.
C104 — 6.8pf .5kv cer NPO	215V126A89
C111B — 20μf 50v elect incl C227B C237B C409B	218V054H32
C217 — 10pf cer NPO	215V300H76
C219 — 1pf .5kv fixed composition	217V011A09
C227B — 40μf 50v elect incl C111B C237B C409B	218V054H32
C237B — 100μf 50v elect incl C111B C227B C409B	218V054H32
C312 — .0022μf 630v film dielectric	210V312A22
C314 — .0015μf 2kv cer Z5F	215V318H20
C406A — 30μf 350v elect incl C231A C408A	218V053H24
C407 — 250μf 350v 1.6a elect	218V056H16
C408A — 200μf 350v elect incl C231A C406A	218V053H24
C409B — 200μf 350v elect incl C111B C227B C237B	218V054H32
C411 — .0015μf 1.4kv cer GMV	215V160A03
C420 — 390pf 5% 630v film dielectric	210V313A21
C422 — .0015μf 5% 630v film dielectric	210V290H05
C423 — .0047μf 2kv cer Z5F	215V318A24
C424 — .0015μf 5% 630v film dielectric	210V311A52
C431 — 470pf 2kv cer N2200	215V434A71
C434 — .01μf 2kv cer N2200	215V300H63
C439 — 47pf 5kv cer Z5F	215V454A70
C440 — 130pf 4kv cer N2200	690V037H59
C444 — 800pf 2kv cer Z5F	215V318H18
C445 — 470pf 2kv cer Z5F	215V318H22
C449 — 100pf 4kv V2655-7	part of yoke
C459 — .0015μf 1.4kv cer GMV	215V160A04
C518 — 33pf .5kv cer NPO	215V123A30
C525 — 33pf .5kv cer NPO	215V123A30
C527 — .02μf 1kv gap-cap Z5U	215V703C01
C531 — 330pf 5% .5kv mica	213V186B01
C541 — 3.9pf .5kv cer NPO	215V543A99
C549 — 200pf .5kv mica	213V186B03
C900 — 470pf 1.5kv cer	215V300H66
DL216 — delay line	753V044C01
L100 — coil adj snd take-off	230V031H01
L101 — coil adj quad coil	230V031H01
L200 — coil fixed .12μh	230V065H02
L201 — coil adj 47.25MHz trap (tapped)	230V076H01
L206 — coil RF choke 4.7μh	230V130H01
L211 — coil adj 41.25MHz trap (tapped)	230V076H01
L212 — coil fixed 68μh	230V141H12
L215 — reactor 68μh 5%	230V019H24
L400 — reactor ac line filter 55μh	230V125H01
L402 — reactor filter choke 1H	430V121H02
L403 — coil degaussing used w/19EXP22 19EYP22	230V175C02
L404 — reactor filter choke .5H	430V161B01
L409 — coil adj horiz hold (tapped)	230V183B01
L410 — coil RF choke 5.6μh	230V130H10
L500 — coil adj chroma take-off	230V031H01
L501 — coil adj chroma interstage (tapped)	230V188B01
L502 — coil RF choke 5.6μh	230V141H15
L504 — coil fixed 680μh	230V141H13
L507 — coil adj reactance (3.58MHz)	230V192B01
L508 — coil fixed 10μh	230V141H14
L700 — coil crossover network	230V152A01
L801 — coil rt red/grn vert lines	230V187B01
L803 — coil blue shape	230V186B01
L804 — coil rt blue horiz lines	230V185B01
T100 — xformer snd input	235V141B01
T101 — xformer audio output 3.2Ω	430V154H01
T200 — xformer IF input	235V049H02
T201 — xformer 1st IF plate	235V048H01
T202 — xformer 2nd IF plate	235V048H04
T204 — xformer IF output	235V049H02
T205 — xformer 4.5MHz trap	235V145B01
T400 — xformer CRT heater 6.3v 1.3a	410V070C01
T402 — xformer horiz output	493V023D01
T404 — xformer vert pincushion adj	230V191C01
T405 — xformer vert output	430V182C01
T500 — xformer bandpass	235V142C01
T501 — xformer burst	235V143B01
T502 — xformer 3.58MHz osc	235V144B01
Z401 — yoke deflection (19EXP22/19EY22)	490V028D01
Z401 — yoke deflection (23EGP22)	490V028D02
Z401 — yoke deflection (25AP22A/ 25CP22A/25GP22A)	490V028D03
Q200 — tr video amp SE5025	297V074C09
Q300 — tr noise amp 2N3567	297V074C06
X200 — diode crystal snd det	296V006H02
X201 — diode crystal video det	296V006H02
X202 — diode sync amp cath	296V020B01
X300 — diode video amp collector	296V020B01
X402 — rect silicon B+ supply (600ma)	295V028C04
X404 — diode selenium horiz AFC	296V004H01
X405 — rect silicon boost voltage (2ma)	295V034C01
XT500 — crystal 3.58MHz	296V023C01
R108 — 1M control volume incls SW400 off-on V2655-1	270V146C05
R108 — 1M control volume incls SW400A,B,C, (V2655-2,-3)	270V146C06
R108 — 1M control volume incls SW400A,B,C R230 V2655,-7,-8,-13	270V194C01
R110 — 2.5M tone control V2655-8,-13	270V152H13
R227 — 500K control bright	270V154H05
R230 — 250Ω control contrast V2655-1, -2, -3	270V159H30
R230 — 250Ω control, contrast R108 & SW400A,B,C V2655-7, -8, -13	270V194C01
R301 — 10K control AGC	270V174C03
R320 — 10M control vert lin	270V159H29
R322 — 2M control vert hold	270V159H31
R332 — 100K control height vert	270V159H19
R416 — 200K control hi voltage adj	270V159H20
R436 — 12.5M control focus	270V191C01
R440 — 30K control vert pin amp	270V130H11
R446 — 10Ω control vert centering 3k WW	270V190D07
R519 — .5K control color	270V154H04
R556 — 1M control killer thresh	270V159H21
R557 — 12.K control tint	270V154H03
R600 — 6K control blue drive	270V159H27
R604 — 1.5M control blue screen	270V159H24
R605 — 9K w/3K stop control grn drive	270V159H28
R607 — 1.5M control grn screen	270V159H25
R801 — 60Ω 3w control left blue horiz lines WW	270V187C02
R804 — 150Ω 1w control left red/grn vert lines WW	270V181C06
R805 — 120Ω 1w control left red/grn horiz lines WW	270V181C04
R808 — 60Ω 1w control bot blue horiz lines WW	270V181C03
R812 — .5k 1w control bot red/grn horiz lines WW	270V187C01
Q200 — tr video amp (SE5025)	297V074C09
Q300 — tr noise amp (2N3567)	297V074C06
RT402 — thermistor 120Ω cold	259V022B01
RT404 — thermistor	part of yoke
RV301 — varistor vert output grid	259V015H03
RV400 — varistor automatic degaussing	259V017C02
RV401 — varistor horiz	259V015H01
F400 — fuse 125v slo blo type N-5A	758V001H14
R213 — 47Ω 4w carbon	251V020H79
R220 — 10K 3w carbon	251V014H16
R232 — 5.6K 10w carbon	251V014H78
R427 — 6K 7w	251V014H74
R248 — 8.2K 4w	251V014H28
R401 — 3Ω 35w Candohm	251V028H13
R403 — 16Ω 15w Candohm	251V028H14
R404 — 1.5K 3w WW	259V009H01
R407 — 3Ω 3w	251V033H27
R431 — 4.7K 7w	251V014H04
R432 — 3.3K ½w WW	250V213A32
R433 — 120M 10w	259V023B01
R435 — 20M 2w	259V023B02
R449 — 4.7K 2w carbon	part of yoke
R500 — 15K 2w carbon	250V411A53
R520A, B — 3.9K 1w matched pair carbon	690V038H16
R522 — 10K 2w	250V421A03
R533 — 270Ω 3w carbon	690V038H17
R535 — 27K 2w carbon	250V412A73
R601 — 8.2K 2w carbon	250V428A22
R606 — 22K 3w carbon	251V014H09
R816 — 47Ω 2w carbon	250V424A70
VHF tuner 470V176D03/D04	
UHF tuner 472V053D01	

BLACK AND WHITE BALANCE

1. Connect antenna to VHF antenna terminals.
2. Set the Service Switch to service position.
3. Starting with the red screen control, rotate the control until it barely produces a horizontal center line, then back-off the red screen control until the line just disappears. Repeat the procedure for the blue and green screen controls.
4. Return the service switch to normal position.
5. Adjust the blue and green drive controls for good white in high brightness portion of picture.
6. If highlights are still too red, interchange RED and GREEN cathode leads at green Drive Control, these are push on clips.
7. If still too red, turn green drive control down, which will reduce the red cathode drive.



More Data on Opposite Page

WESTINGHOUSE
Color TV Chassis V2655-2-3-4-7-8-13-14

CONVERGENCE

Preliminary Instructions

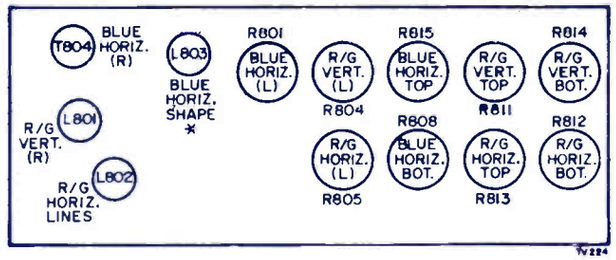
1. CAUTION: Do not adjust the blue horizontal shape coil, L803 for convergence purposes. This coil is on the convergence PC board but is not part of the convergence set-up.
2. Adjust for size, linearity, focus, center convergence, purity and picture centering before beginning convergence.
3. Degauss TV receiver.

CENTER CONVERGENCE

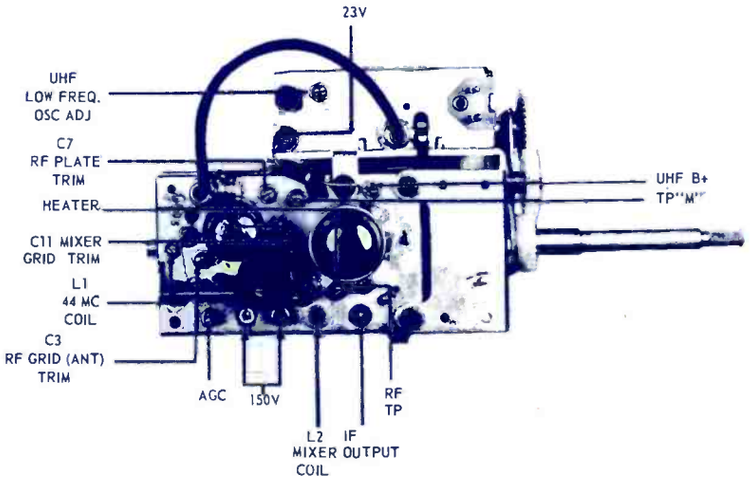
Connect a dot crosshatch generator to the VHF channel as required to be suitable for that generator.

Lower the brightness level to a point where the patterns are sharp and clearly visible without blooming.

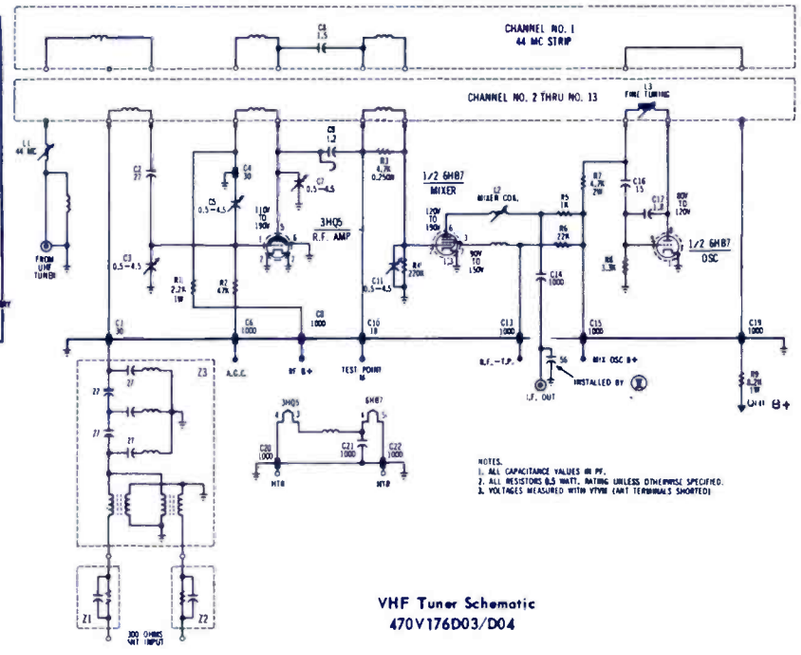
Adjust the red, green and blue convergence magnets and the blue lateral magnet for best center convergence of the three beams. Center convergence of the three beams must be as close as possible before complete convergence begins.



Convergence Panel



Top View of VHF Tuner 470V176D04 and UHF Tuner 472V053D01



VHF Tuner Schematic
470V176D03/D04

CHASSIS	CRT (V4063)	FEATURES
V2655-1	19EXP22-90°-NON BONDED	NO DIAL LIGHTS NO INSTANT ON
V2655-2	19EXP22-90°-BONDED	ONE DIAL LIGHT INSTANT ON
V2655-3	19EXP22-90°-BONDED	TWO DIAL LIGHTS INSTANT ON
V2655-7	23EGP22-92°-BONDED	ONE DIAL LIGHT INSTANT ON
V2655-8	23EGP22-92°-BONDED 25AP22/A-90°-BONDED 25GP22A-90°-BONDED 25CP22A-90°-BONDED	ONE DIAL LIGHT INSTANT ON TONE CONTROL
V2655-13	25AP22/A-90°-BONDED 25CP22A-90°-BONDED 25GP22A-90°-BONDED	ONE DIAL LIGHT INSTANT ON TONE CONTROL
V2655-14	25AP22/A-90°-BONDED 25CP22A-90°-BONDED 25GP22A-90°-BONDED	ONE DIAL LIGHT INSTANT ON TONE CONTROL

WESTING-HOUSE

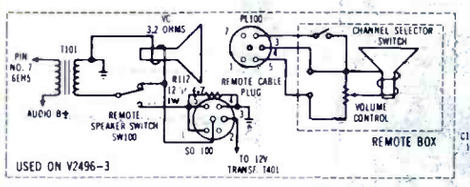
TV Chassis
V-2496 Series

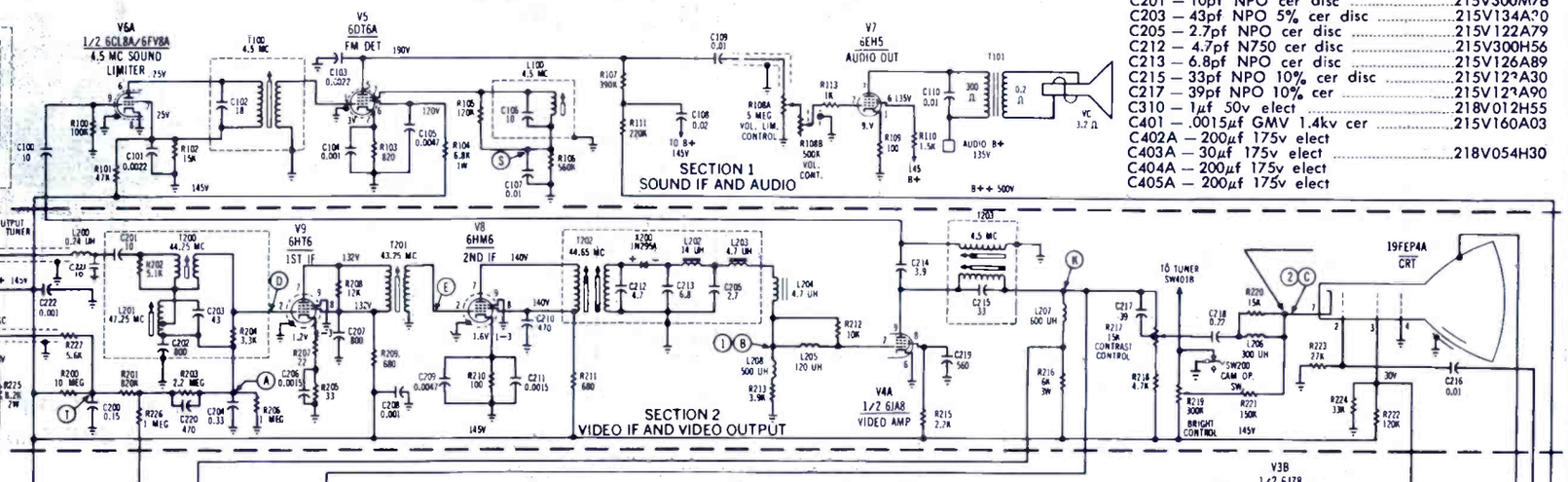
ELECTRONIC TECHNICIAN **TEKFAX**

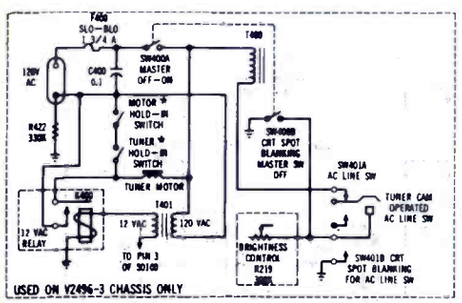
TUBE COMPLEMENT AND RESISTANCE CHART

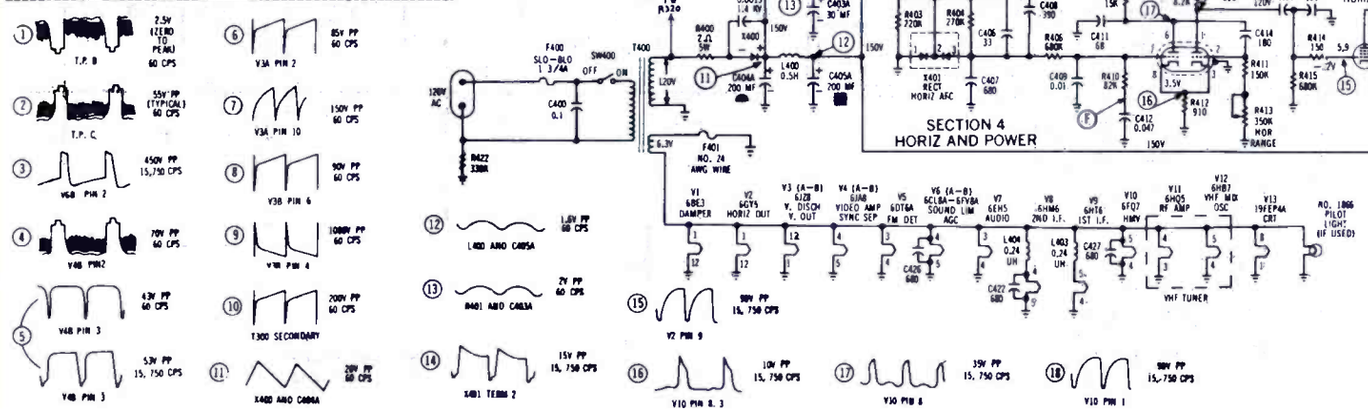
TUBE	TYPE	FUNCTION	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9	Pin 10	Pin 11	Pin 12
V1	6BE3	Damper	Fil		* 23	* 23			*500K			* 23		0
V2	6GY5	Horiz Out	Fil	680K		.2	680K	*23	*1.8K		680K	.2	*1.8K	0
V3	6JZ8	Vert Disch Vert Out	Fil	*5M		*175		1.3M		*23	0	1.4M	0	0
V4	6JA8	Video Amp Sync Sep	0	2.5M	*4.7K	Fil	0	0	▲300	*2.2K	*4.8K			
V5	6DT6A	FM Det	4	820	Fil	0	*1.2M	*6.9K	680K					
V6	6CL8A/6FV8A	Sound Lim AGC	*74K	3.6M	*70	Fil	0	12K	12K	0	100K			
V7	6EH5	Audio Out	120	2M	Fil	0		*1.9K	*1K					
V8	6HM6	2nd IF Amp	100	.2	100	0	Fil		*540	*540	0			
V9	6HT6	1st IF Amp	55	1M	55	Fil	0		*540	*540	0			
V10	6FQ7	Horiz MV	*43K	220K	910	0	Fil	*15K	1.2M	910	0			
V11	6HQ5	RF Amp	3M	0	0	Fil	*1.3K	0	0					
V12	6HB7	Osc-Mixer	0	220K	0	0	Fil	*1.1K	*22K	*4.7K	3.3K			
V13	19FEP4A	CRT	0	0	47K	0			*75K	Fil				
V14	1G3GT/1K3	HV Rect	I N F I N I T E											

Resistance measured from pin of tube to circuit ground, except values marked *.
* Resistance measured from pin of tube to junction of L400 and X400.
▲ R x 100 scale.







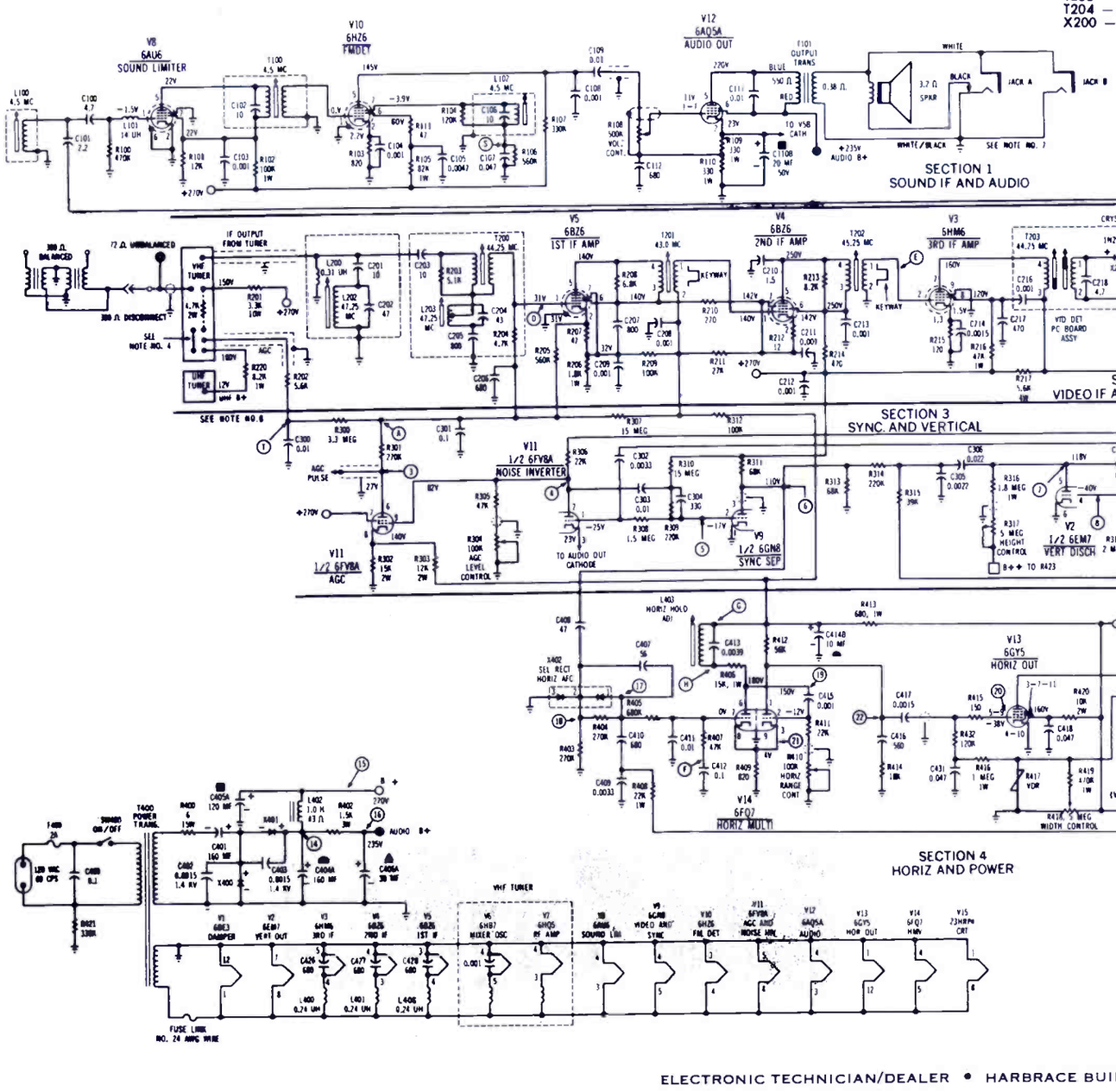


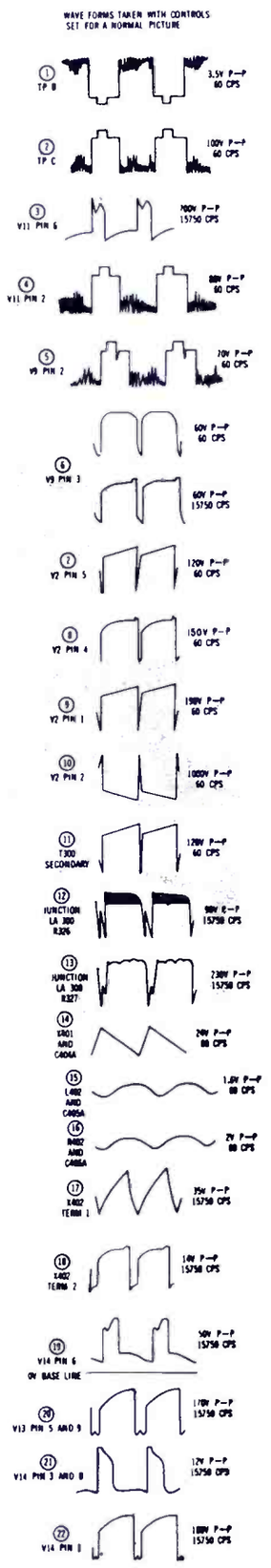
*NOTE:
1. ALL CAPACITOR VALUES LESS THAN 1 ARE IN MF, AND VALUES GREATER THAN 1 ARE IN PF (MICROMICROFARADS). ALL RESISTANCE VALUES ARE IN OHMS, 0.5 WATT UNLESS OTHERWISE INDICATED.
2. DC VOLTAGES ARE MEASURED FROM POINT INDICATED TO CIRCUIT GROUND WITH A VTVM. LINE VOLTAGE AT 120 V.A.C., NO SIGNAL APPLIED.
3. WAVEFORMS WERE TAKEN WITH CONTROLS SET FOR A NORMAL PICTURE.

SYMBOL DECRIPTTON	WESTINGHOUSE PART NO.
C100 — 10pf N750 10% cer disc	215V300H47
C102 — 18pf N750 10% cer disc	215V121A80
C106 — 10pf N750 10% cer disc	215V300H47
C108 — .02 μf GMV Z5U cer	215V300H25
C201 — 10pf NPO cer disc	215V300M76
C203 — 43pf NPO 5% cer disc	215V134A30
C205 — 2.7pf NPO cer disc	215V122A79
C212 — 4.7pf N750 cer disc	215V300H56
C213 — 6.8pf NPO cer disc	215V126A89
C215 — 33pf NPO 10% cer disc	215V123A30
C217 — 39pf NPO 10% cer	215V123A90
C310 — 1μf 50v elect	218V012H55
C401 — .0015μf GMV 1.4kv cer	215V160A03
C402A — 200μf 175v elect	
C403A — 30μf 175v elect	218V054H30
C404A — 200μf 175v elect	
C405A — 200μf 175v elect	
C406 — 33pf NPO 10% cer disc	215V123A30
C411 — 68pf NPO 10% cer disc	215V126A80
C414 — 180pf 500v 5% polystyrene	210V290H09
C416 — .390pf Z5F 2kv cer disc	215V318H03
C418 — 150pf 5kv 10% cer	215V300H85
C419 — 15pf 2kv 10% cer	215V431A50
C420 — 3-25pf AGC trimmer	217V511H02
C424 — 75pf 3kv 10% cer	215V300H91
C425 — 39pf NPO 10% cer disc	215V123A90
C428 — 120pf 500v 5% polystyrene	210V290H11
R108A — vol limit control 5M incl: SW400A, B	
B — vol control 500K	270V166H02
R202 — 5.1K 5%	259V003H28
R213 — 3.9K 5%	250V213A92
R216 — 6K 3w	251V014H41
R217 — control, 15K contrast V-2496-1	270V159H04
R217 — control, 15K contrast V-2496-2-3	270V159H11
R219 — control, 300K brightness	270V159H05
R309 — control, 5M height incl: R316, R413	270V155H05
R310 — control, 2M vert hold	270V159H10
R316 — control, 500K vert lin incl R309, R413	270V155H05
R412 — 910 5%	250V219A11
R413 — control, 250K horiz range incl R309, R316	270V155H05
R418 — 5.6 1w WW	251V005A69
L100 — coil, adj 4.5Mc quad	230V031H01
L200 — coil, 24μh IF link	230V065H06
L201 — coil, adj 47.25Mc	230V076H01
L202 — coil, 14μh	230V130H02
L203 — coil, 4.7μh	230V130H01
L204 — coil, 4.7μh	230V130H01
L205 — coil, 120μh	230V141H03
L206 — coil, 300μh	230V141H08
L207 — coil, 600μh	230V141H02
L208 — coil, 500μh	230V141H04
L400 — reactor, .5h filter choke	430V161B01
L401 — coil, adj horiz hold	230V144H01
L402 — coil, 14μh	230V130H02
L403 — coil, .24μh	230V065H06
L404 — coil, .24μh	230V065H06
T100 — xformer, adj 4.5Mc snd lim	235V046H01
T101 — xformer, audio output	430V154H02
T200 — xformer, IF input 44.25Mc	235V049H02
T201 — xformer, 1st IF 43.25Mc	235V048H04
T202 — xformer, 2nd IF 44.65Mc	235V094H05
T203 — xformer, aud input & 4.5MHz trap	235V076H04
T204 — xformer, ant balun	235V125B01
T300 — xformer, vert out	430V039H08
T400 — xformer, power	410V060H01
T401 — xformer, relay V-2496-3	410V062H01
T402 — xformer, horiz out	493V020C02
Z401 — yoke, deflection 114	490V017C01
R108A — volume limit 5M incl: SW400A, B, volume, 500K	270V166H02
R217 — contrast, 15K V-2496-1	270V159H04
R217 — contrast, 15K V-2496-2-3	270V159H11
R219 — brightness	270V159H05
R309 — height 5M incl: R316, R413	270V155H05
R310 — vert hold 2M	270V159H10
R316 — vert lin 500K incl: R309, R413	270V155H05
R413 — horiz range 250K incl: R309, R316	270V155H05
F400 — fuse ¾A 125v slo-blo	758V001H10
K400 — relay 12v ac V-2496-3	753V029H01
S0100 — socket 6 pin V-2496-3	754V058H01
SW100 — switch, slide, remote spkr V-2496-3	756V018H02
SW200 — switch CRT blanking	756V086H02
SW400A — switch off-on B — (part of R108A, B)	270V166H02
SW401A — switch, ac line and CRT B — spot blanking V-2496-3	756V093H02
X200 — diode, crystal vid det 1N295A	296V006H02
X300 — diode, germ vert bias	296V002H08
X400 — diode, silicon rect	295V006H03
X401 — diode, dual sel horiz AFC	296V004H01

Symbol	Description	Westinghouse Part No.
C102 —	10pf 500v N750 cer	215V611A00
C110B —	20μf 50v elect (incl C221B, C310B, C414B)	218V054H29
L100 —	coil, adj 4.5MHz limiter grid	230V083H01
L101 —	coil, 14uh RF choke	230V130H02
R108 —	control, vol 500K incl R231 SW400	270V166H04
T100 —	xformer, 4.5MHz FM det grid	235V046H01
T101 —	xformer, audio output 3.2Ω	430V154H01
C201 —	10pf 500v NPO 5% cer	215V131A00
C202 —	47pf 500v NPO 5% cer	215V134A70
C203 —	10pf 500v NPO cer	215V300H76
C204 —	43pf 500v NPO 5% cer	215V134A30
C218 —	4.7pf 500v N750 cer	215V300H56
C220 —	2.7pf 500v NPO cer	215V122A79
C221B —	4μf 350v elect (incl C110B, C414B)	218V054H29
L200 —	coil, .31uh RF choke	230V065H04
L202 —	coil, adj 47.25MHz trap	230V076H02
L203 —	coil, adj 47.25MHz trap tapped	230V076H01
L204 —	coil, reactor 22uh	230V142H01
I205 —	coil, reactor 22uh	230V142H01
L207 —	coil, peaking 225uh	230V141H05
L208 —	coil, adj 4.5MHz	230V030H09
L209 —	coil, peaking 400uh	230V141H07
L210 —	coil, peaking 140uh	230V141H06
R201 —	3.3K 10w	251V014H48
R203 —	5.1K 5%	259V003H28
R217 —	5.6K 4w	251V014H45
R218 —	1.5K 5%	250V211A52
R224 —	control, contrast 15K	270V159H12
R230 —	2K 4w	251V014H37
R231 —	control, brightness 300K incl R108, SW400	270V166H04
R232 —	3.3K 7w	251V014H38
T200 —	xformer, adj 44.25MHz IF input	235V049H01
T201 —	xformer, adj 43.0MHz 1st IF	235V048H01
T202 —	xformer, adj 45.25MHz 2nd IF	235V048H04
T203 —	xformer, adj 44.25μf 3rd IF	235V116H01
T204 —	xformer, balun 300/75Ω	235V125H01
X200 —	diode, video det 1N295A	296V006H02
C310B —	100μf 50v elect (incl C110B, C221B, C414B)	218V054H29
LA300 —	lamp neon horiz blanking, RLT-2-27-1A	756V517H01
R304 —	control, AGC level 100K part of quadruple control assy (incl R317, R410, R418)	270V162H01
R317 —	control, height 5M part of quadruple control assy (incl R304, R410, R418)	270V162H01
R319 —	control, vert hold 2M	270V159H10
R324 —	680, 3w	251V014H51
R325 —	control, vert lin 1K 3w	270V138H02
T300 —	xformer, vert output	430V039H09
C401 —	160μf 200v 1.5A elect	218V025H65
C402 —	.0015μf 1.4kv GMV cer	215V160A03
C403 —	.0015μf 1.4kv GMV cer	215V160A03
C404A —	160μf 350v elect	
C405B —	120μf 350v elect	218V053H20
C406A —	30μf 350v elect	
C407 —	56pf 500v NPO cer	215V125A60
C408 —	47pf 500v NPO cer	215V124A70
C419 —	33pf 2kv cer 10%	215V318H10
C423 —	150pf 1kv cer 10%	215V391A51
C424 —	33pf 4kv cer 10%	215V318H10
F400 —	fuse 2A, 125v slo-blo	758V001H09
L400 —	coil, .24uh	230V065H06
L401 —	coil, .25uh	230V065H06
L402 —	choke, filter 1.0hy	430V121H02
L403 —	coil, adj horiz hold incl: extension shaft	230V144H01
R400 —	6Ω 15w candohm	251V028H12
R402 —	1.5K 3w WW	259V009H01
R409 —	820 5%	250V218A21
R410 —	control horiz range 100K part of quadruple control assy (incl R304, R317, R418)	270V162H01
R417 —	VDR	259V015H01
R418 —	control, width 5M part of quadruple control assy (incl R304, R317, R410)	270V162H01
R422 —	150 10w	251V014H50
R426 —	thermistor, 8Ω cold 1Ω hot	690V011H08
T400 —	xformer, power	410V069C01
T401 —	xformer, horiz out	493V018H01
X400 —	diode, silicon rectifier 500ma	295V006H03
X401 —	diode, silcion rectifier 500ma	295V006H03
X402 —	diode, selenium AFC	296V004H01
Z401 —	yoke assy (incl centering magnets resistors & wires)	490V017C03

NOTES:
1. ALL CAPACITANCE VALUES LESS THAN 1 ARE IN MF AND VALUES GREATER THAN 1 ARE IN PF WHILE ALL RESISTANCE VALUES ARE IN OHMS, 0.5 WATT UNLESS OTHERWISE INDICATED.
2. D-C VOLTAGES MEASURED FROM B— WITH A VTVM, NO SIGNAL APPLIED, LINE VOLTAGE AT 120 V.A.C.
3. WAVEFORMS WERE WITH CONTROLS SET FOR NORMAL PICTURE.
4. MAKES CONTACT ON CHAN NO. 1.
5. CIRCLED NUMBERS REFER TO WAVEFORMS.
6. UHF TUNER ASSY R220 NOT INCLUDED IN V7498—1.
7. WHEN USING ONLY ONE EXTERNAL SPEAKER USE JACK A.

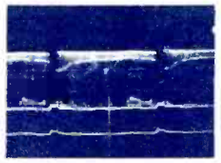




WESTINGHOUSE
TV Chassis V-2498 Series

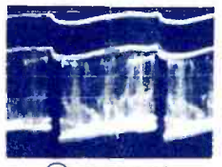
WESTING-HOUSE
TV Chassis V-2652-2

ELECTRONIC TECHNICIAN **TEKFAX**

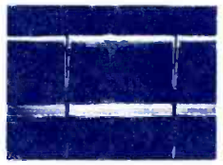


① 1V P-P (V)
BASE T14

② 3V P-P (V)
BASE T15



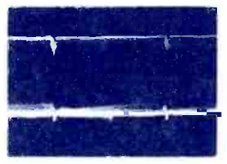
③ 32V P-P (V)
CRT PIN 1



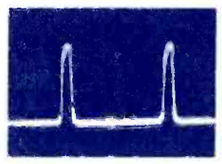
④ 60V P-P (H)
T602 #10

⑤ .9V P-P (V)
BASE T16

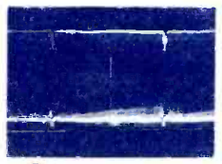
⑤ .9V P-P (H)
BASE T16



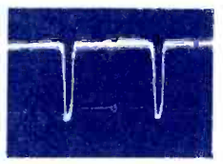
⑥ 13V P-P (V)
(W) ON DEFL. PCB



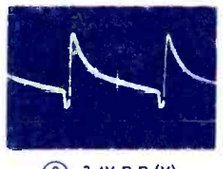
⑥ 11V P-P (H)
(W) ON DEFL PCB



⑦ 7V P-P (V)
COLLECTOR T31



⑦ 11V P-P (H)
COLLECTOR T31



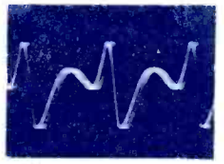
⑧ 3.4V P-P (V)
BASE T34

⑨ 1.6V P-P (V)
BASE T33

⑩ 1.5V P-P (V)
BASE T34

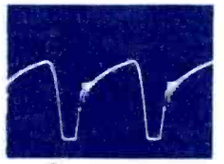
⑪ 50V P-P (V)
COLLECTOR T34

⑫ 15V P-P (V)
JUNC. R315, C310

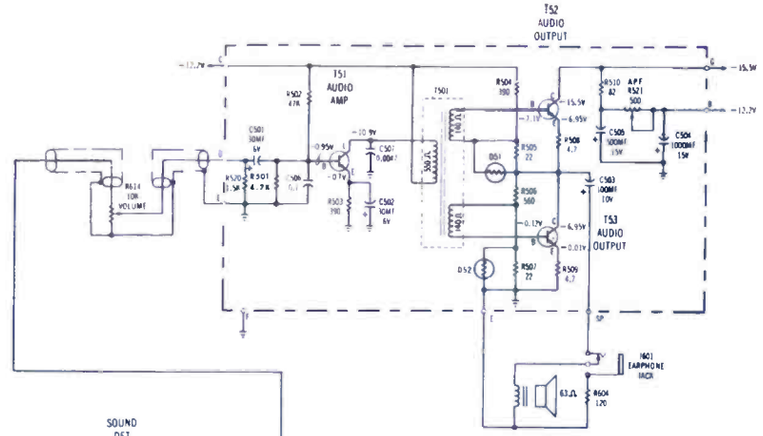


⑬ 3V P-P (H)
JUNC. L401, L402

⑭ 15V P-P (H)
BASE T41

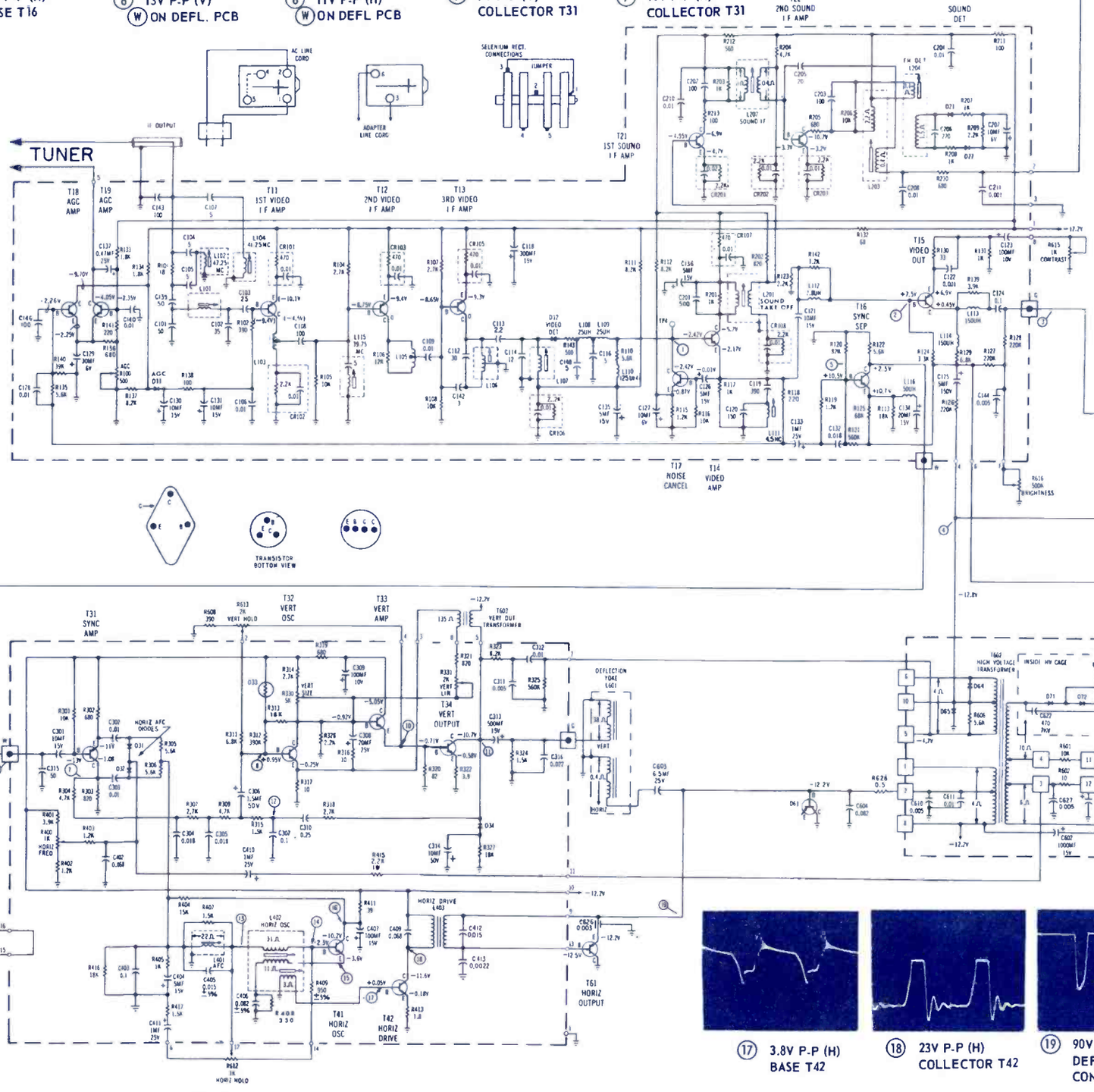


⑮ 11V P-P (H)
EMITTER T41



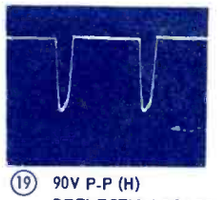
WAVEFORMS

(V) = VERTICAL RATE
(H) = HORIZONTAL RATE
CIRCLED NUMBERS REFER TO POINTS ON SCHEMATIC OR PC BOARDS



⑰ 3.8V P-P (H)
BASE T42

⑱ 23V P-P (H)
COLLECTOR T42

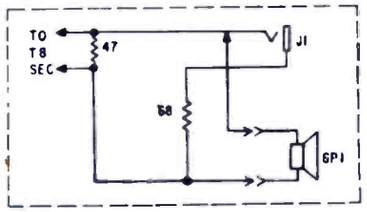


⑲ 90V P-P (H)
DEFLECTION BOARD
CONTACT #9

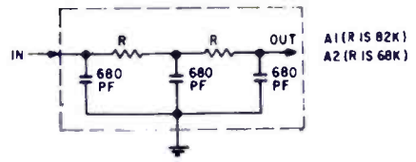
NOTES:
1. RESISTANCES ARE SHOWN IN OHMS. 1/4—1/2 WATT UNLESS OTHERWISE SPECIFIED.
2. ALL CAPACITANCE VALUES LESS THAN 1 ARE IN MFD, VALUES GREATER THAN 1 ARE IN MICROFARADS (MF) UNLESS OTHERWISE SPECIFIED.
3. DC VOLTAGES ARE READ WITH A VTVM FROM POINTS INDICATED TO CIRCUIT GROUND, WITH ALL CONTROLS SET FOR NORMAL PICTURE. AC LINE VOLTAGE SET FOR 120V.
4. ALL WAVEFORMS ARE PEAK TO PEAK VOLTAGES WHEN VIDEO INPUT ⑦ IS SET TO 0.8V PP AND CONTRAST, BRIGHTNESS CONTROLS ARE SET FOR MAXIMUM. CIRCLED NUMBERS REFER TO WAVEFORMS.

ZENITH
TV Chassis 13X15

EARPHONE JACK ASSEMBLY (MODEL X1225 ONLY)



EQUIVALENT CIRCUIT OF A1 & A2



V3
4BZ6
1 ST. IF

V4
4BZ6
2 ND. IF

V5
4BZ6
3RD. IF

V6A
1/2 10JT8
VIDEO AMP.

V13 PIX
12BEP4 OR 12CBP4
(NOT INTERCHANGEABLE)

V6B
1/2 10JT8
SOUND LIMITER

V7A
1/2 17ABI0
SOUND DISCR.

V7B
1/2 17ABI0
SOUND OUTPUT

V8
4HS8 AGC
& SYNC. CLIP

V9A
1/2 17JZ8
VERT. OSC.

V9B
1/2 17JZ8
VERT. OUTPUT

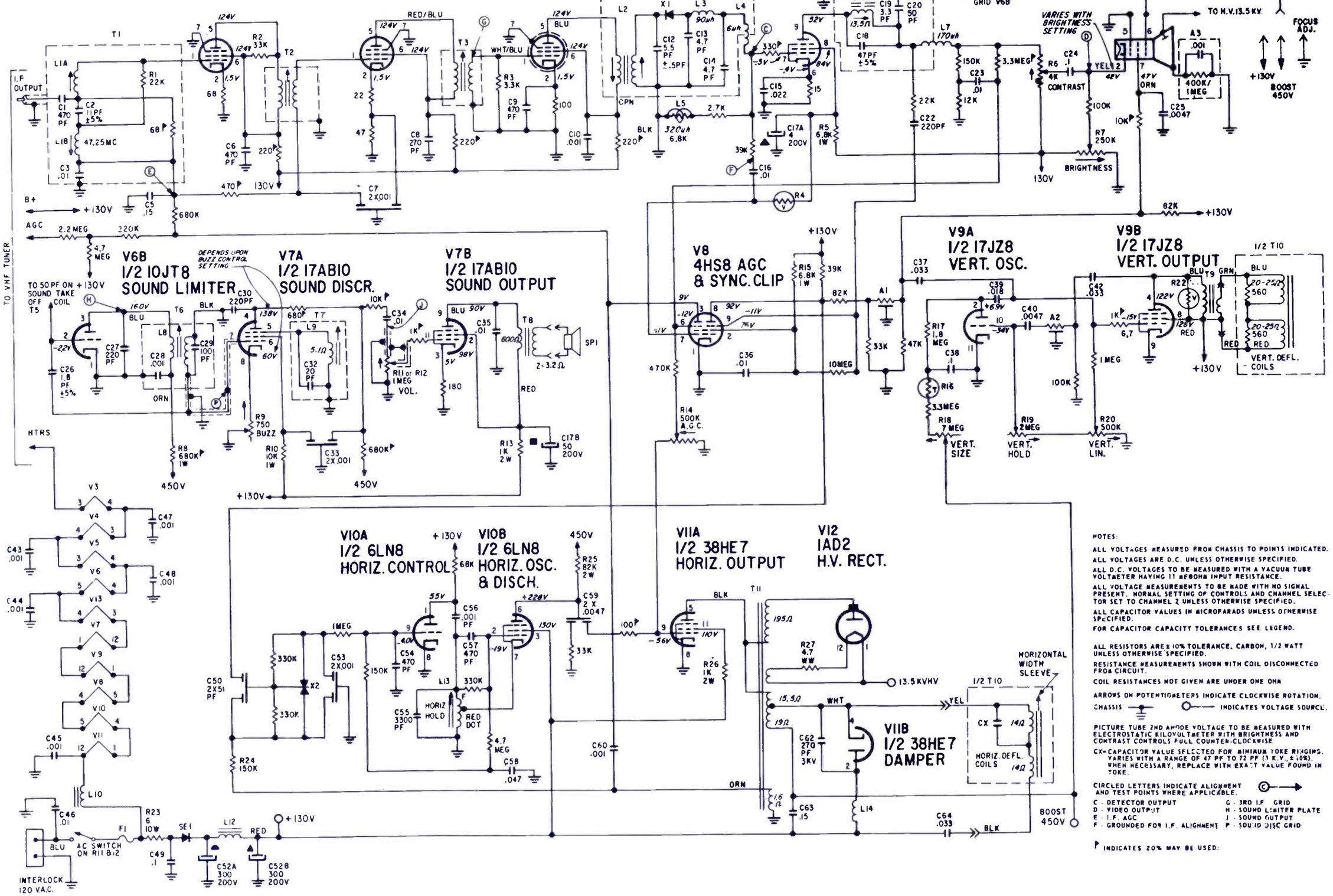
V10A
1/2 6LN8
HORIZ. CONTROL

V10B
1/2 6LN8
HORIZ. OSC.
& DISCH.

V11A
1/2 38HE7
HORIZ. OUTPUT

V12
1AD2
H.V. RECT.

V11B
1/2 38HE7
DAMPER



NOTES:

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.

ALL CAPACITOR VALUES IN MICROFARADS 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

ARROWS ON POTENTIOMETERS INDICATE CLOCKWISE ROTATION.

CHASSIS ⏚ — O— INDICATES VOLTAGE SOURCE.

PICTURE TUBE 2ND ANODE VOLTAGE TO BE MEASURED WITH ELECTROSTATIC KILOVOLTMETER WITH BRIGHTNESS AND CONTRAST CONTROLS FULL COUNTER-CLOCKWISE

CX= CAPACITOR VALUE SELECTED FOR MINIMUM YOKE RINGING. VARIES WITH A RANGE OF 47 PF TO 72 PF (3 K.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 - GROUNDED FOR I.F. ALIGNMENT
G - 3RD I.F. GRID
H - SOUND LIMITER PLATE
J - SOUND OUTPUT
P - SOUND DISC GRID

▶ INDICATES 20% MAY BE USED.

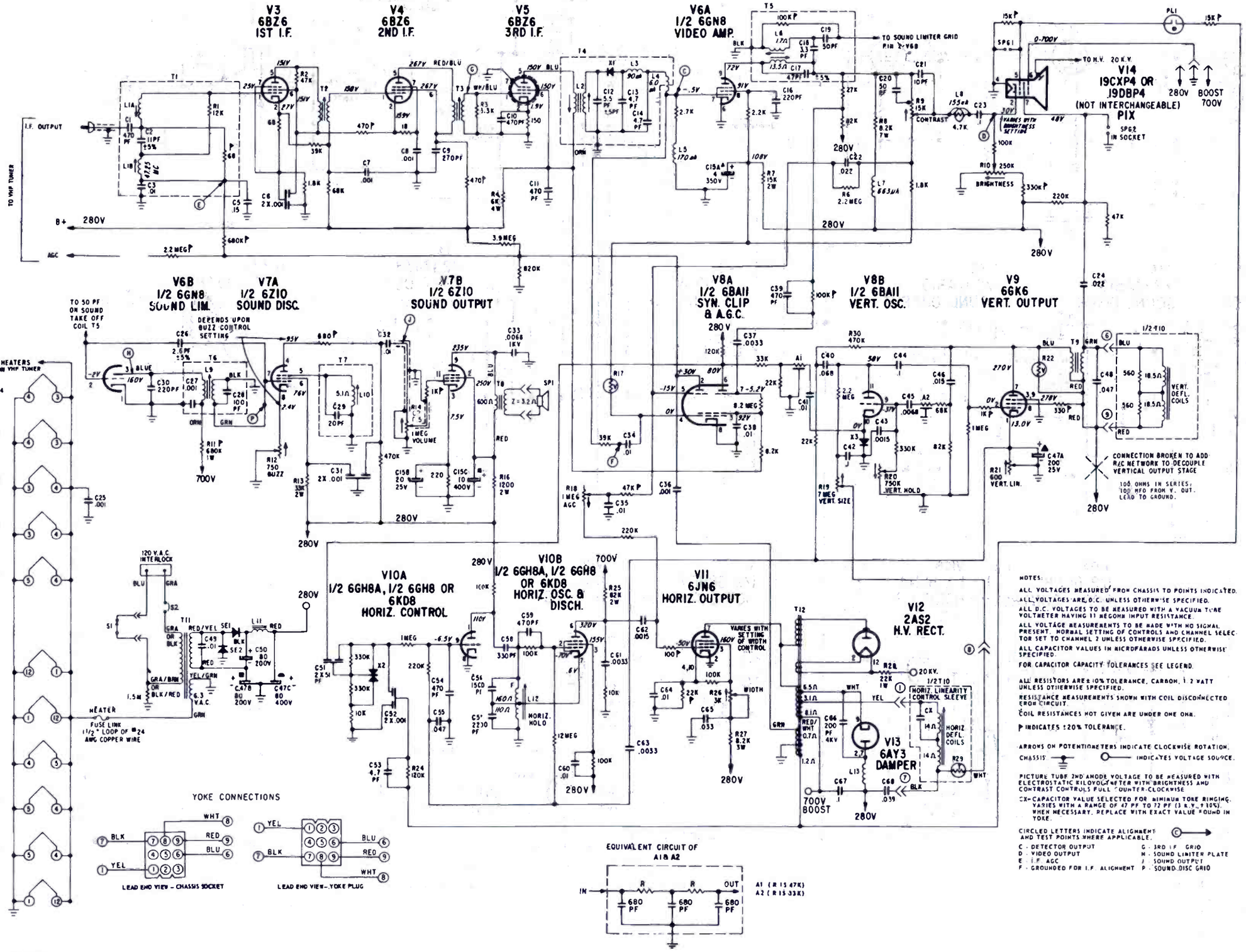
ZENITH
TV Chassis 14N27

AGC ADJUSTMENT

Tune in a strong TV signal and slowly turn the AGC control until a point is reached where the picture distorts and buzz is heard in the sound. The control should then be backed down from this position and set at a point comfortably below the level of intercarrier buzz, picture distortion and improper sync. This setting corresponds in general to 2.5 volts peak-to-peak at the Video Detector stage in the 13X15, 14N26Z and 14N27 chassis.

HORIZONTAL HOLD CONTROL

The horizontal hold control is equipped with a stop which limits knob rotation to approximately 270 degrees. To adjust the AFC, remove the knob and turn the shaft to a position where it is virtually impossible to disrupt horizontal synchronization when switching from channel to channel. After adjustment, install the knob with its pointer centered between the stops.



NOTES:

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.

ALL CAPACITOR VALUES IN MICROFARADS 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.

▶ INDICATES ±20% TOLERANCE.

ARROWS ON POTENTIOMETERS INDICATE CLOCKWISE ROTATION.

CHASSIS ⏚ ○ INDICATES VOLTAGE SOURCE.

PICTURE TUBE 2ND ANODE VOLTAGE TO BE MEASURED WITH ELECTROSTATIC KILOVOLTMETER WITH BRIGHTNESS AND CONTRAST CONTROLS FULL COUNTER-CLOCKWISE

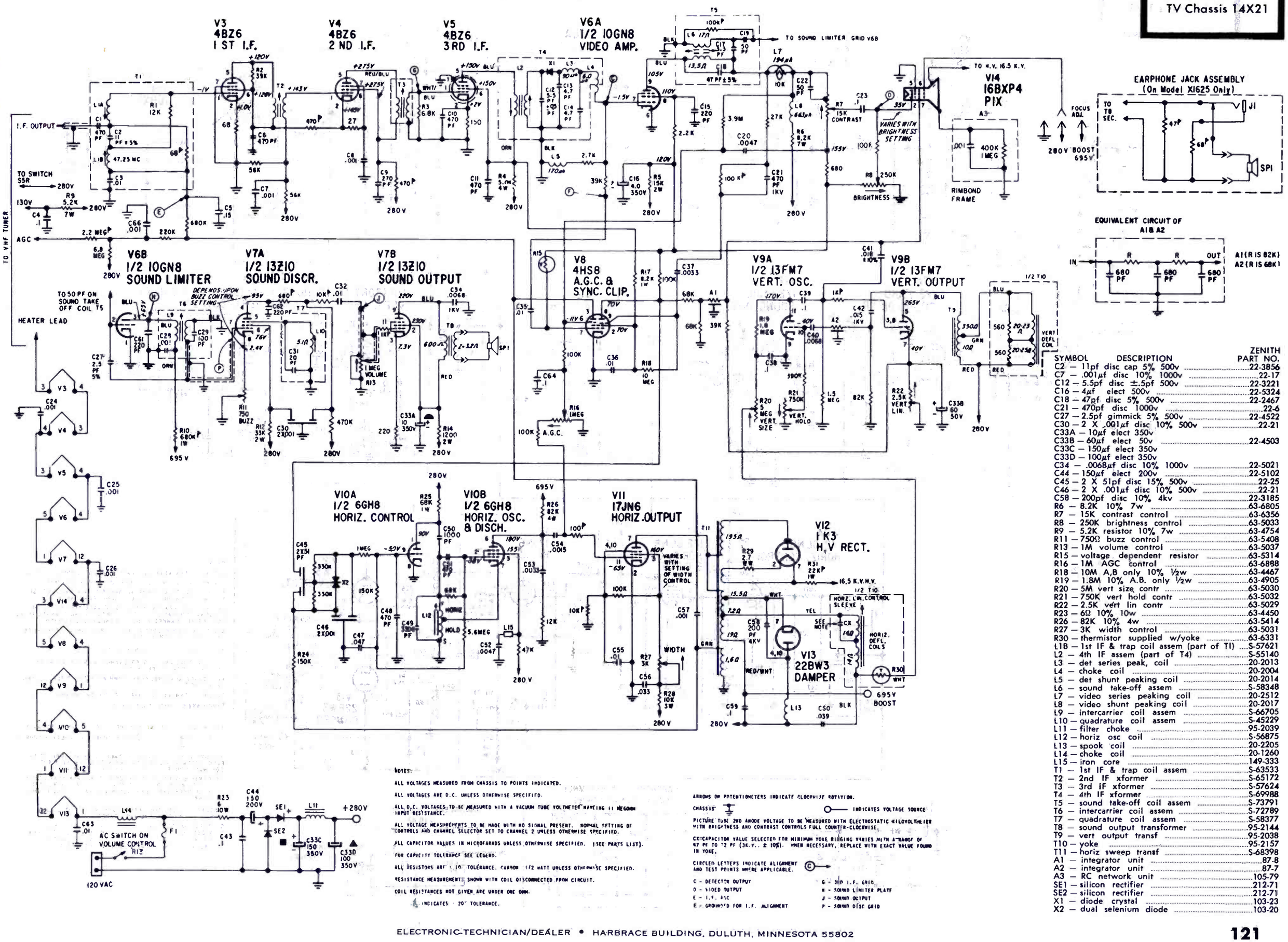
CX= CAPACITOR VALUE SELECTED FOR MINIMUM TONE RINGING. VARIES WITH A RANGE OF 47 PF TO 72 PF (3 R.Y. ± 10%). WHEN NECESSARY, REPLACE WITH EXACT VALUE FOUND IN TONE.

CIRCLED LETTERS INDICATE ALIGNMENT AND TEST POINTS WHERE APPLICABLE. Ⓒ →

C - DETECTOR OUTPUT
D - VIDEO OUTPUT
E - I.F. AGC
F - GROUNDED FOR I.F. ALIGNMENT
G - 3RD I.F. GRID
H - SOUND LIMITER PLATE
J - SOUND OUTPUT
P - SOUND DISC GRID

SYMBOL	DESCRIPTION	ZENITH PART NO.
C2	11pf disc 5% .5kv	22-3856
C6	2 x .001µf disc 10% .5kv	22-21
C7	.001µf disc 10% 1kv	22-17
C12	5.5pf .5pf .5kv	22-3221
C15A	4µf 350v	
	B – 20µf 25v elect	22-2744
	C – 10µf 400v	
C17	47pf disc 5% .5kv	22-2467
C26	2.6pf gimmick 5% .5kv	22-3483
C28	100pf mica 10% .5kv	22-5106
C29	20pf disc 10% .5kv	22-3139
C30	220pf mica 10% .5kv	22-2926
C33	.0068µf disc 10% 1kv	22-5021
C39	470pf disc 10% 1kv	22-6
C47A	200µf elect 25v	
	B – 80µf 200v elect	22-3863
	C – 80µf 400v	
C50	80µf elect 200v	22-3965
C51	2 x 51pf disc 15% .5kv	22-25
C53	4.7pf gimmick 20% .5kv	22-1516
C54	470pf disc 20% 1kv	22-6
C56	1500pf poly 10% .5kv	22-3916
C58	330pf mica 10% .5kv	22-2667
C62	.0015µf disc 10% .5kv	22-12
C63	.0033µf disc 20% .5kv	22-11
C64	.01µf disc .5kv	22-4617
C66	200pf 10% 4kv	22-3185
R1	12K AB only ½w	63-2845
R2	47K AB only ½w	63-2872
R3	3.3K AB only ½w	63-5384
R4	6K 4w	63-3579
R7	15K 10% 2w	63-5719
R8	8.2K 10% 7w	63-6805
R17	voltage dependent resistor	63-5494
R22	voltage dependent resistor	63-6445
R24	120K IRC only 10% ½w	63-5315
R25	82K 10% 2w	63-5750
R27	8.2K 10% 3w	63-4098
R28	22K 1w	63-6125
R29	thermal resistor mounted in yoke	63-5187
R30	470K AB only 10% ½w	63-4084
R10	250K bright control	63-4996
R12	750K buzz control	63-3284
R14	1M volume control & switch	63-5126
R16	1.2K 10% 2w	63-5441
R18	1M AGC delay control	63-4833
R19	7M vert size control	63-6433
R20	750K vert hold control	63-4995
R21	.6K vert lin control	63-5312
R26	3K width adj	63-5031
L1A,B	1st IF & trap coil	S-57621
L2	4th IF coil	S-55140
L3	det series peaking coil	20-2013
L4	choke coil	20-2004
L5	det shunt peaking coil	20-2014
L6	snd take-off coil	S-54785
L7	video shunt peaking coil	20-2017
L8	video series peaking coil	20-2501
L9	intercarrier coil	S-66705
L10	quad coil	S-45229
L11	filter choke	95-2189
L12	horiz osc coil	S-56876
L13	spook coil	20-2005
T1	1st IF & 47-25MHz trap coil	S-63559
T2	2nd IF xformer	S-69486
T3	3rd IF xformer	S-57624
T4	4th IF xformer	S-57625
T5	snd take-off xformer	S-58035
T6	intercarrier coil	S-67633
T7	quad coil	S-45831
T8	snd output xformer	95-2142
T9	vert output xformer	95-2389
T10	yoke	95-2334
T11	power xformer	95-2141
		or 95-2084
T12	horiz sweep xformer	S-72102
X1	diode crystal	103-23
X2	dual selenium diode	103-20
X3	crystal diode	103-79
A1	integrator unit	87-4
A2	integrator unit	87-5
PL1	neon bulb (NE2H)	100-251
S2	circuit breaker	85-762
SE1	silicon rect	212-27
SPG1	spark gap	52-957
SP1	speaker	

ZENITH
TV Chassis 14X21



SYMBOL	DESCRIPTION	ZENITH PART NO.
C2	— 11pf disc cap 5% 500v	22-3856
C7	— .001μf disc 10% 1000v	22-17
C12	— 5.5pf disc ±.5pf 500v	22-3221
C16	— 4μf elect 500v	22-5324
C18	— 47pf disc 5% 500v	22-2467
C21	— 470pf disc 1000v	22-6
C27	— 2.5pf gimmick 5% 500v	22-4522
C30	— 2 X .001μf disc 10% 500v	22-21
C33A	— 10μf elect 350v	
C33B	— 60μf elect 50v	22-4503
C33C	— 150μf elect 350v	
C33D	— 100μf elect 350v	
C34	— .0068μf disc 10% 1000v	22-5021
C44	— 150μf elect 200v	22-5102
C45	— 2 X 51pf disc 15% 500v	22-25
C46	— 2 X .001μf disc 10% 500v	22-21
C58	— 200pf disc 10% 4kv	22-3185
R6	— 8.2K 10% 7w	63-6805
R7	— 15K contrast control	63-6356
R8	— 250K brightness control	63-5033
R9	— 5.2K resistor 10% 7w	63-4754
R11	— 750Ω buzz control	63-5408
R13	— 1M volume control	63-5037
R15	— voltage dependent resistor	63-5314
R16	— 1M AGC control	63-6888
R18	— 10M A,B only 10% ½w	63-4467
R19	— 1.8M 10% A.B. only ½w	63-4905
R20	— 5M vert size contr	63-5030
R21	— 750K vert hold contr	63-5032
R22	— 2.5K vert lin contr	63-5029
R23	— 6Ω 10% 10w	63-4450
R26	— 82K 10% 4w	63-5414
R27	— 3K width control	63-5031
R30	— thermistor supplied w/yoke	63-6331
L1B	— 1st IF & trap coil assem (part of T1)	S-57621
L2	— 4th IF assem (part of T4)	S-55140
L3	— det series peak, coil	20-2013
L4	— choke coil	20-2004
L5	— det shunt peaking coil	20-2014
L6	— sound take-off assem	S-58348
L7	— video series peaking coil	20-2512
L8	— video shunt peaking coil	20-2017
L9	— intercarrier coil assem	S-66705
L10	— quadrature coil assem	S-45229
L11	— filter choke	95-2039
L12	— horiz osc coil	S-56875
L13	— spook coil	20-2205
L14	— choke coil	20-1260
L15	— iron core	149-333
T1	— 1st IF & trap coil assem	S-63533
T2	— 2nd IF xformer	S-65172
T3	— 3rd IF xformer	S-57624
T4	— 4th IF xformer	S-69988
T5	— sound take-off coil assem	S-73791
T6	— intercarrier coil assem	S-72789
T7	— quadrature coil assem	S-58377
T8	— sound output transformer	95-2144
T9	— vert output transf	95-2038
T10	— yoke	95-2157
T11	— horiz sweep transf	S-68398
A1	— integrator unit	87-8
A2	— integrator unit	87-7
A3	— RC network unit	105-79
SE1	— silicon rectifier	212-71
SE2	— silicon rectifier	212-71
X1	— diode crystal	103-23
X2	— dual selenium diode	103-20

NOTES:

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.

ALL CAPACITOR VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED. (SEE PARTS LIST).

FOR CAPACITY TOLERANCE 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.

± INDICATES ± 20% TOLERANCE.

ARROWS ON POTENTIOMETERS INDICATE CLOCKWISE ROTATION.

CHASSIS ⏚ — ○ INDICATES VOLTAGE SOURCE

PICTURE TUBE 2ND ANODE VOLTAGE TO BE MEASURED WITH ELECTROSTATIC KILOVOLTMETER WITH BRIGHTNESS AND CONTRAST CONTROLS FULL COUNTER-CLOCKWISE.

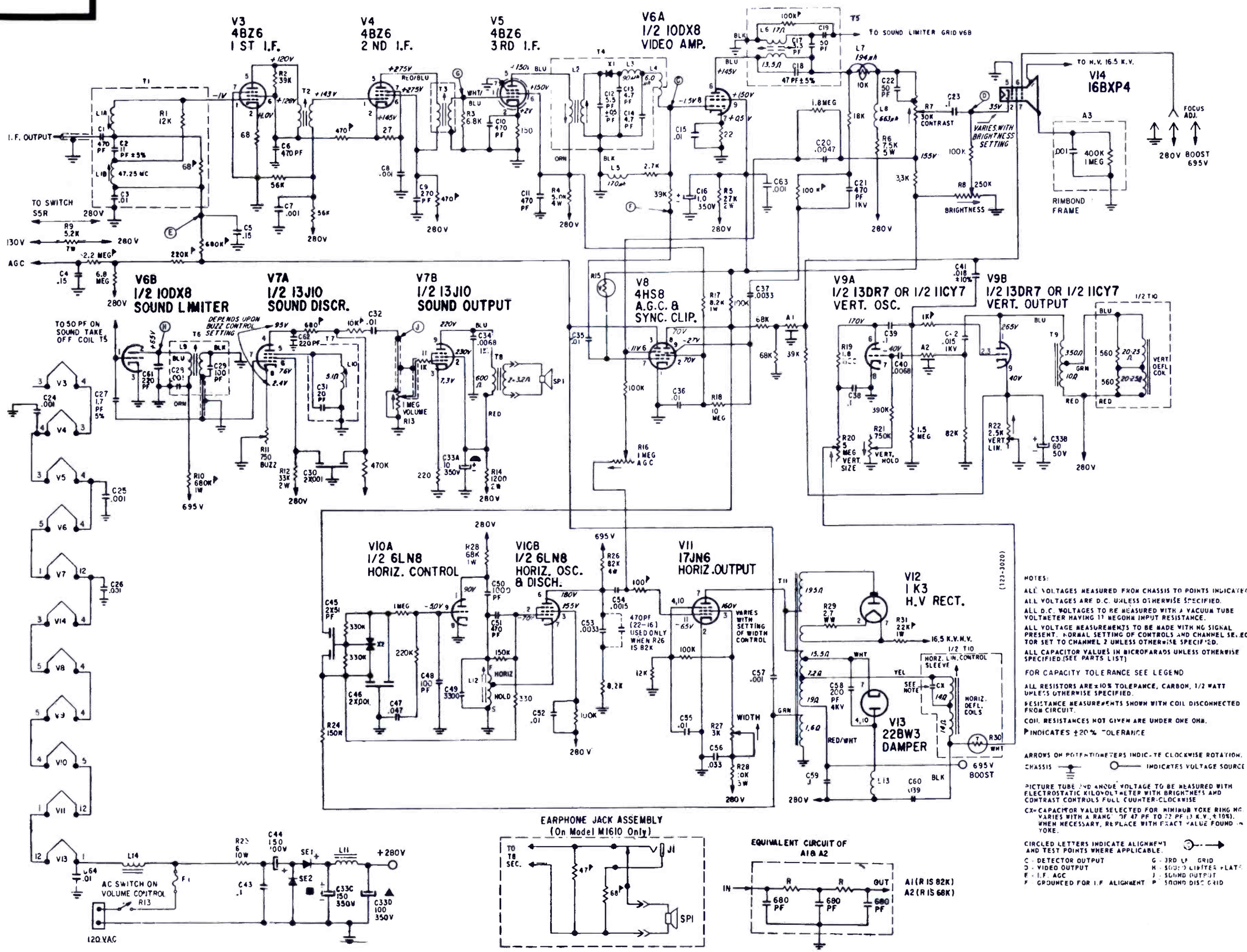
CX=CAPACITOR VALUE SELECTED FOR MINIMUM YOKE RINGING VARIES WITH A RANGE OF 47 PF TO 72 PF (3K.V.. ± 10%). WHEN NECESSARY, REPLACE WITH EXACT VALUE FOUND IN YOKE.

CIRCLED LETTERS INDICATE ALIGNMENT AND TEST POINTS WHERE APPLICABLE. Ⓒ

C - DETECTOR OUTPUT
D - VIDEO OUTPUT
E - I.F. AGC
F - GROUNDED FOR I.F. ALIGNMENT
G - 3RD I.F. GRID
H - SOUND LIMITER PLATE
J - SOUND OUTPUT
P - SOUND DISC GRID

ZENITH
TV Chassis 14M21

Schematic Diagram of 14M21 Chassis.



NOTES:

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.

ALL CAPACITOR VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED (SEE PARTS LIST)

FOR CAPACITY TOLERANCE 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.

▶ INDICATES ±20% TOLERANCE

ARROWS ON POTENTIOMETERS INDICATE CLOCKWISE ROTATION.

CHASSIS — INDICATES VOLTAGE SOURCE

PICTURE TUBE 2ND ANODE VOLTAGE TO BE MEASURED WITH ELECTROSTATIC KILOVOLTMETER WITH BRIGHTNESS AND CONTRAST CONTROLS FULL COUNTER-CLOCKWISE

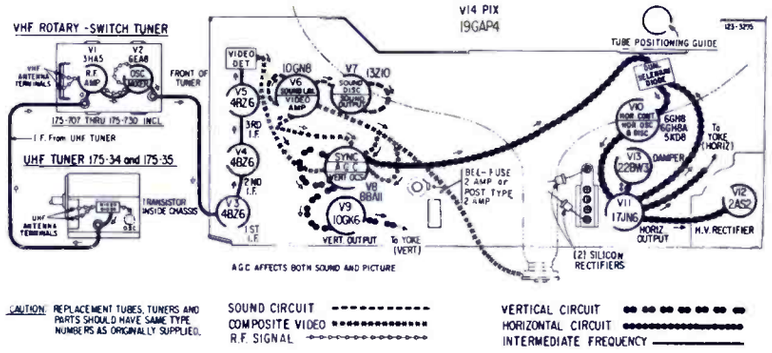
CX = CAPACITOR VALUE SELECTED FOR MINIMUM YOKE RING NO. VARIES WITH A RANGE OF 47 PF TO 72 PF (13 K.V. ± 10%). WHEN NECESSARY, REPLACE WITH EXACT VALUE FOUND IN YOKE.

CIRCLED LETTERS INDICATE ALIGNMENT AND TEST POINTS WHERE APPLICABLE. ⊙→

C - DETECTOR OUTPUT
D - VIDEO OUTPUT
E - I.F. AGC
F - GROUNDED FOR I.F. ALIGNMENT
G - 3RD I.F. GRID
H - SOUND LIMITER PLATE
J - SOUND OUTPUT
P - SOUND DISC. GRID

ZENITH
TV Chassis 14N29Z

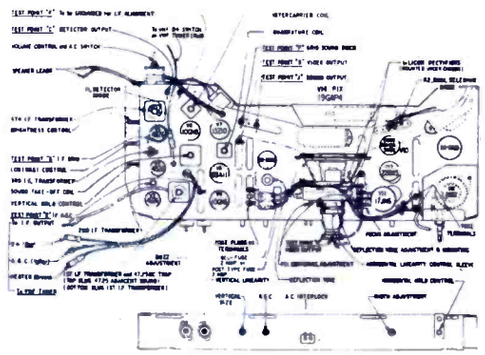
ELECTRONIC TECHNICIAN TEKFAX

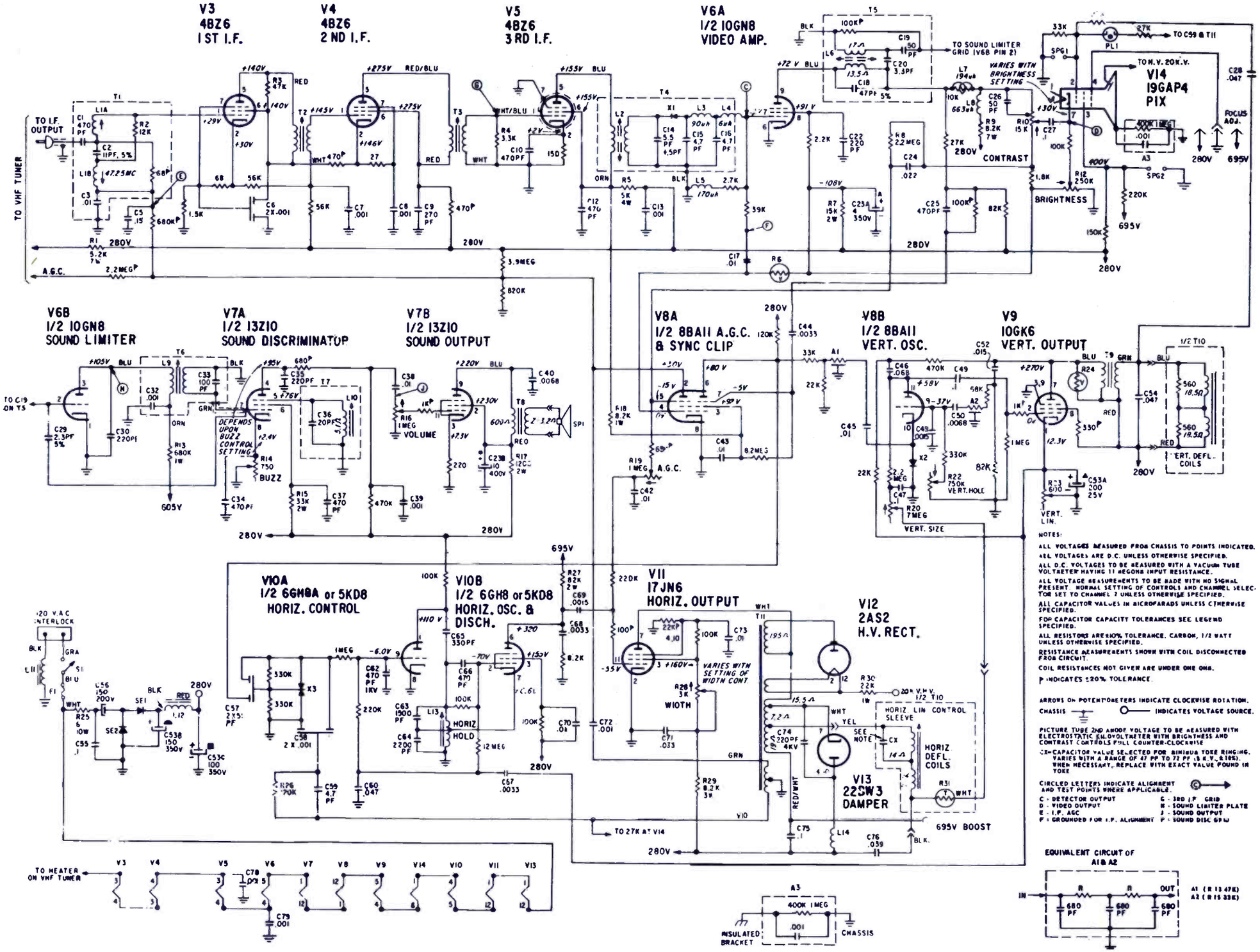


CAUTION: REPLACEMENT TUBES, TUNERS AND PARTS SHOULD HAVE SAME TYPE NUMBERS AS ORIGINALLY SUPPLIED.

SOUND CIRCUIT
COMPOSITE VIDEO
R.F. SIGNAL
VERTICAL CIRCUIT
HORIZONTAL CIRCUIT
INTERMEDIATE FREQUENCY

Signal Path Diagram and Parts Layout of 14N29Z Chassis.





NOTES:

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.

ALL CAPACITOR VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED.

FOR CAPACITOR CAPACITY TOLERANCES SEE LEGEND SPECIFIED.

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.

P INDICATES ±20% TOLERANCE.

ARROWS ON POTENTIOMETERS INDICATE CLOCKWISE ROTATION.

CHASSIS — INDICATES VOLTAGE SOURCE.

PICTURE TUBE 2ND ANODE VOLTAGE TO BE MEASURED WITH ELECTROSTATIC KILOVOLTMETER WITH BRIGHTNESS AND CONTRAST CONTROLS FULL COUNTER-CLOCKWISE

CX—CAPACITOR VALUE SELECTED FOR MINIMUM TUBE RINGING. VARIES WITH A RANGE OF 47 PF TO 72 PF (@ K.V., @ 105). WHEN NECESSARY, REPLACE WITH EXACT VALUE FOUND IN YOKE

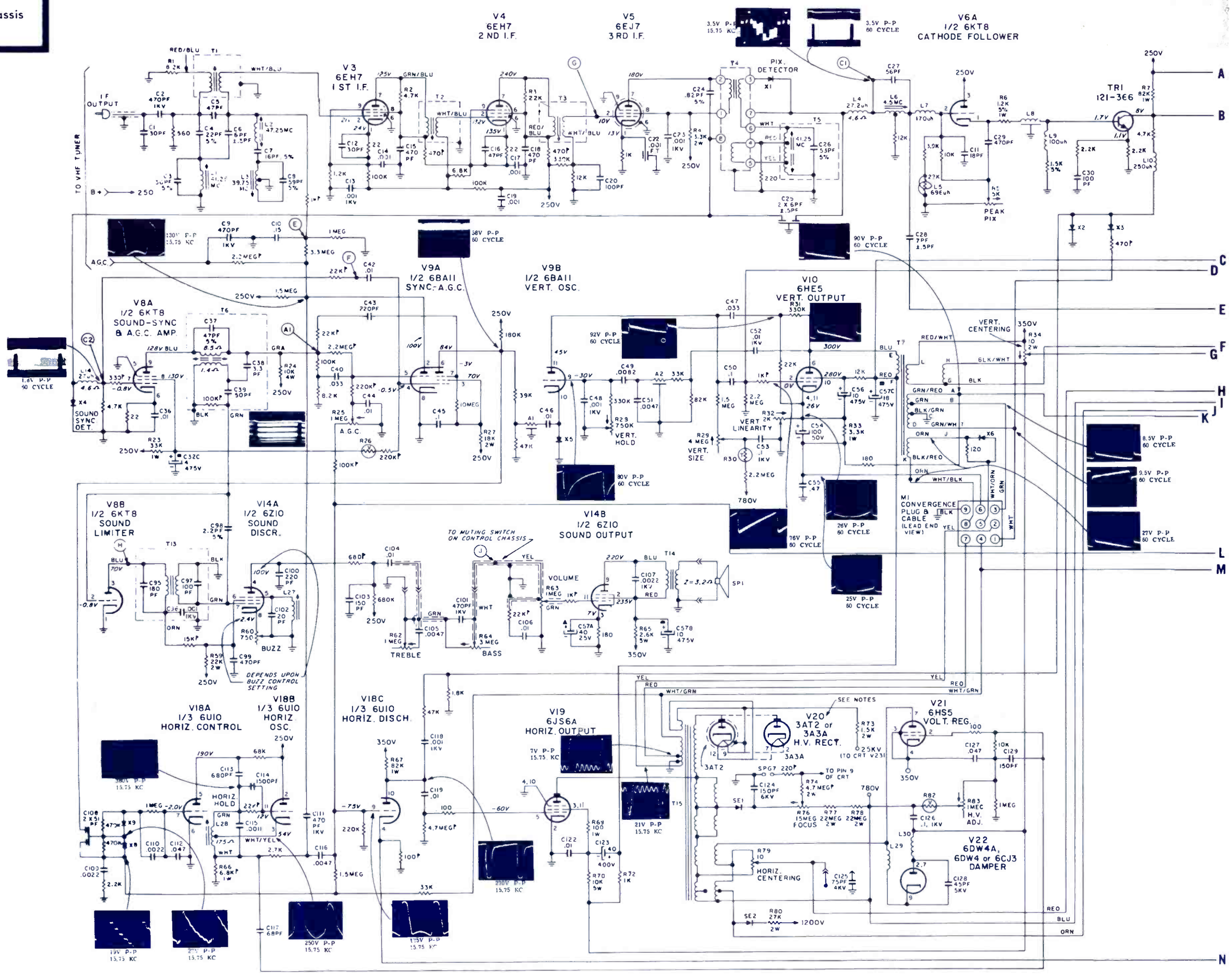
CIRCLED LETTERS INDICATE ALIGNMENT AND TEST POINTS WHERE APPLICABLE.

C - DETECTOR OUTPUT
D - VIDEO OUTPUT
E - I.F. AGC
F - GROUNDED FOR I.F. ALIGNMENT
G - 3RD I.F. GRID
H - SOUND LIMITER PLATE
J - SOUND OUTPUT
P - SOUND DISC GRID

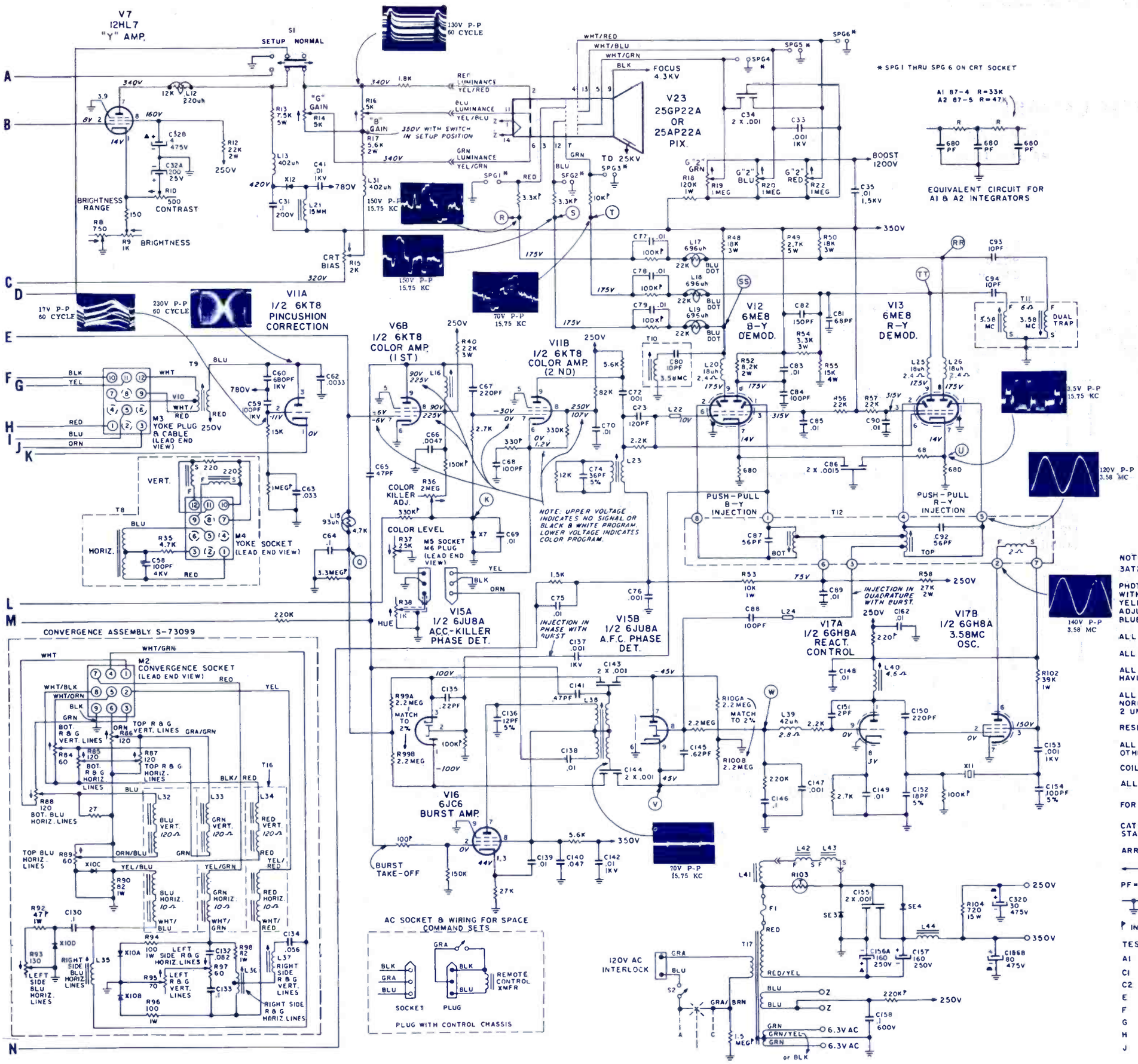
SYMBOL	DESCRIPTION	ZENITH PART NO.
C2	— 11pf disc cap 5% .5kv	22-3856
C7	— .01μf disc 10% 1kv	22-17
C13	— .001μf disc 10% 1kv	22-17
C18	— 47pf disc 5% .5kv	22-2467
C23A	— 4μf elect 350v	
C23B	— 10μf elect .4kv	22-5322
C29	— 2.3μf gimmick 5% .5kv	22-5283
C39	— .001μf disc 10% 1kv	22-17
C40	— .0068μf disc 20% 1kv	22-5021
C42	— .01μf disc .5kv	22-4617
C53A	— 200μf elect 25v	
C53B	— 150μf elect 350v	22-5268
C53C	— 100μf elect 350v	
C57	— 2 x 51pf disc 15% .5kv	22-25
C58	— 2 x .001μf disc 10% .5kv	22-21
C62	— 470pf disc 20% 1kv	22-6
C65	— 330pf mica 10% .5kv	22-2667
C74	— 220pf 10% 4kv	22-3214
R1	— 5.2K resistor 7w	63-4754
R2	— 12K resistor A B only 1/2w	63-2845
R3	— 47K resistor A B only 1/2w	63-2872
R4	— 3.3K resistor A B only 1/2w	63-5384
R5	— 5K resistor 4w	63-5038
R6	— voltage dependent resistor	63-5494
R7	— 15K resistor 2w	63-5719
R8	— 2.2M resistor A B only 1/2w	63-4077
R17	— 1.2K resistor 2w	63-5441
R24	— voltage dependent resistor	63-6445
R26	— 120K resistor IRC only	63-5375
R27	— 82K resistor 2w	63-5750
R29	— 8.2K resistor 3w	63-4098
R31	— thermal resistor supplied w/yoke	63-5187
R10	— 15K contrast control	63-6356
R12	— 250K bright control	63-5380
R14	— 750K buzz control	63-5318
R16	— 1M volume control & ac switch	63-6349
R20	— 7M vert size control	63-6433
R22	— 750K vert hold control	63-5379
R23	— .6K vert lin control	63-6803
R28	— 3K width control	63-5031
L1A, B	— 1st IF & trap coil winding assem	S-57621
L2	— 4th IF coil winding assem	S-55140
L3	— det series peaking coil	20-2013
L4	— choke coil	20-2004
L5	— det shunt peaking coil	20-2014
L6	— snd take-off coil winding assem	S-54785
L7	— video series peaking coil	20-2512
L8	— video shunt peaking coil	20-2017
L9	— intercarrier coil winding assem	S-66705
L10	— quad coil winding assem	S-66699
L11	— choke coil	20-1424
L12	— filter choke	95-1805
L13	— horiz osc coil	S-56876
L14	— spook choke coil	20-2005
T1	— 1st IF & trap coil assem	S-72053
T2	— 2nd IF xformer	S-65172
T3	— 3rd IF xformer	S-57624
T4	— 4th IF xformer	S-57625
T5	— snd take-off coil	S-65131
T6	— intercarrier coil	S-71145
T7	— quad coil	S-66788
T8	— snd output xformer	95-2185
T9	— vert output xformer	95-2333
T10	— yoke	95-2391
T11	— horiz sweep xformer	S-60760
A1	— integrator unit	87-4
A2	— integrator unit	87-5
A3	— R/C network	105-79
F1	— fuse 2a belfuse type	136-66
X1	— diode (crystal)	103-23
X2	— germanium diode	103-79
X3	— dual selenium diode	103-20
PL1	— neon bulb (NE2H)	100-251
SE1	— silicon rect	212-27
SPG1	— spark gap	52-957

ZENITH
Color TV Chassis
23XC36

More Data on Opposite Page



More Data on Opposite Page



NOTES:

3AT2 NOT MECHANICALLY INTERCHANGEABLE WITH 3A3A.

PHOTOGRAPHS TAKEN ON A 90% MODULATED STANDARD COLOR BAR SIGNAL WITH THE COLORS READING FROM LEFT TO RIGHT, OF BLUE, MAGENTA, RED, YELLOW, WHITE, CYAN, GREEN, BLACK AND WHITE. THE HUE SETTING WAS ADJUSTED FOR PROPER COLOR, THE WAVE SHAPES AT THE RED, GREEN AND BLUE GRIDS OF THE PICTURE TUBE DEPEND UPON THE HUE SETTING.

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.

RESISTANCE MEASUREMENTS SHOWN 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 CAPACITY TOLERANCE SEE LEGEND.

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

ARROWS ON POTENTIOMETERS INDICATE CLOCKWISE ROTATION.

(A) ALIGNMENT AND TEST POINTS.

PF = MICROMICROFARAD.

= CHASSIS GROUND.

INDICATES ±20% MAY BE USED.

TEST POINTS:

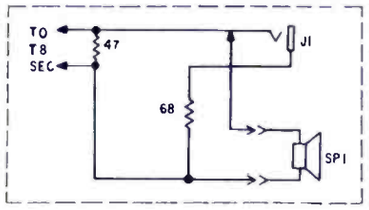
A1	SOUND-SYNC.-A.G.C. AMP. OUTPUT	K	KILLER VOLTAGE (GROUND TO OPEN COLOR CHANNEL)
C1	PICTURE DETECTOR OUTPUT	Q	A.C.C. VOLTAGE
C2	SYNC.-SOUND DETECTOR OUTPUT	R	R-Y GRID OF CRT
E	I.F.-A.G.C.	S	B-Y GRID OF CRT
F	GROUNDED FOR I.F. ALIGNMENT	T	G-Y GRID OF CRT
G	3RD I.F. GRID	U	R-Y DEMOD. CATHODE
H	SOUND LIMITER GRID	V	COLOR A.F.C. DETECTOR
J	SOUND OUTPUT	W	3.5MC COLOR A.F.C. DETECTOR

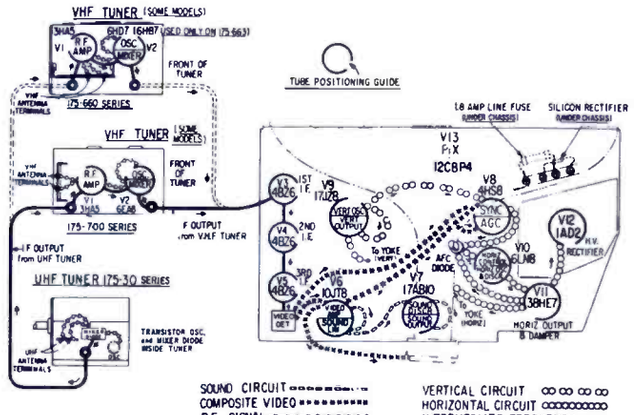
ZENITH
TV Chassis 13X18

SPECIFICATIONS

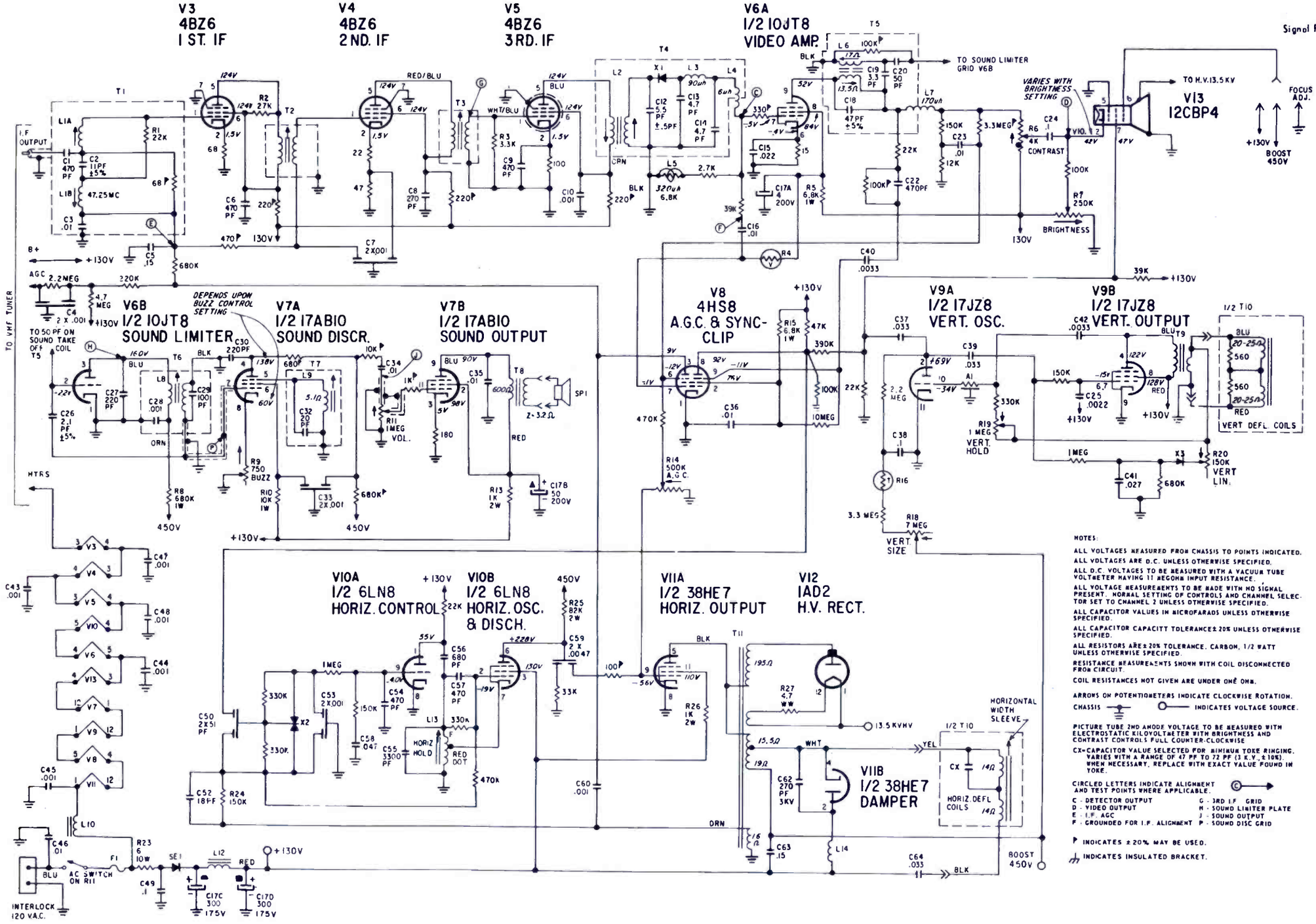
CHASSIS	POWER USED AT 120V 60CYCLES	OVERLOAD PROTECTION (ac Line)	SOUND POWER OUTPUT
13X18	125 Watts	Pigtail fuse (1.8A)	.8 Watts

EARPHONE JACK ASSEMBLY (MODEL X1326ONLY)

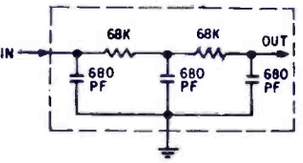




Signal Path Diagram and Parts Layout Of The 13X18 Chassis.



EQUIVALENT CIRCUIT OF INTEGNET A1



SYMBOL	DESCRIPTION	ZENITH PART NO.
C4	2 x .001µf 500v	22-21
C7	2 x .001µf disc ±10% 500v	22-21
C8	270pf disc ±10% 500v	22-3140
C10	.001µf disc ±10% 1kv	22-17
C13	4.7pf gimmick 500v	22-1516
C17A	4µf elect 175v	
C17B	50µf elect 175v	22-5349
C17C	300µf elect 175v	
C17D	300µf elect 175v	
C18	47pf disc ±5% 500v	22-2467
C19	3.3pf gimmick 500v	22-2343
C23	.01µf disc 500v	22-4617
C25	.0022µf 20% 1kv	22-8
C27	220pf mica ±10% 500v	22-2926
C29	100pf mica ±10% 500v	22-5106
C50	2 x 51pf disc 500v	22-25
C56	680pf mica ±10% 500v	22-2901
C59	2 x .0047µf 500v	22-24
C62	270pf ±10% 3kv	22-4602
R1	22K A.B. only ±10% ½w	63-2848
R2	27K A.B. only ±10% ½w	63-2849
R3	3.3K A.B. only ±10% ½w	63-5384
R4	voltage dependent resistor	63-5472
R5	6.8K ±10% 1w	63-6105
R6	4K contrast control	63-6463
R7	250K brightness control	63-5419
R9	750Ω buzz control	63-5318
R11	1M vol control	63-6916
R13	1K 2w	63-5442
R14	500K AGC	63-5470
R16	thermistor	63-6331
R18	7M vert size cont	63-6433
R19	1M vert hold cont	63-6915
R20	150K vert lin cont	63-6914
R23	6Ω 10w	63-4450
R24	150K IRC only ½w	63-4844
R27	4.7Ω WW ½w	63-1581
L3	det series peaking coil	20-2013
L4	choke coil	20-2004
L5	det shunt peaking coil	20-2520
L6	snd take-off coil	part of T5
L7	video series peaking coil	20-2014
L8	intercarrier coil	part of T6
L9	quad coil	part of T7
L10	choke coil	20-1260
L12	filter choke	95-2455
L13	horiz osc coil	S-56875
L14	spook coil	20-2005
T1	1st IF trap coil	S-66851
T2	2nd IF xformer	S-66852
T3	3rd IF xformer	S-66853
T4	4th IF xformer	S-66854
T5	snd take-off xformer	S-74598
T6	intercarrier xformer	S-74597
T7	quad coil assem	S-74652
T8	snd output xformer	95-2456
T9	vert output xformer	95-2471
T10	deflection yoke	95-2457
T11	horiz sweep xformer	S-66845
A1	integrator unit	87-7
F1	belfuse 1800-1 (18A)	136-65
X1	crystal diode	103-23
X2	dual selenium diode	103-101
X3	crystal diode	103-51

NOTES:

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.

ALL CAPACITOR VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED.

ALL CAPACITOR CAPACITY TOLERANCE ± 20% UNLESS OTHERWISE SPECIFIED.

ALL RESISTORS ARE ± 20% TOLERANCE. CARBON, 1/2 WATT UNLESS OTHERWISE SPECIFIED.

RESISTANCE MEASUREMENTS SHOWN WITH COIL DISCONNECTED FROM CIRCUIT.

COIL RESISTANCES NOT GIVEN ARE UNDER ONE OHM.

ARROWS ON POTENTIOMETERS INDICATE CLOCKWISE ROTATION.

CHASSIS ⏚ — ○ INDICATES VOLTAGE SOURCE.

PICTURE TUBE 2ND ANODE VOLTAGE TO BE MEASURED WITH ELECTROSTATIC KILOVOLTMETER WITH BRIGHTNESS AND CONTRAST CONTROLS FULL COUNTER-CLOCKWISE

CX=CAPACITOR VALUE SELECTED FOR MINIMUM YOKE RINGING. VARIES WITH A RANGE OF 47 PF TO 72 PF (3 K.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 - GROUNDED FOR I.F. ALIGNMENT
G - 3RD I.F. GRID
H - SOUND LIMITER PLATE
J - SOUND OUTPUT
P - SOUND DISC GRID

▶ INDICATES ± 20% MAY BE USED.

⏚ INDICATES INSULATED BRACKET.