ELECTRONIC TECHNICIAN

105

VOLUME 5

TV-RADIO SCHEMATICS ■ OVER 30 MANUFACTURERS

COVERS HUNDREDS OF CHASSIS & MODEL NUMBERS

ELECTRONIC TECHNICIAN Trademark

105

TV-RADIO-HI FI SCHEMATICS

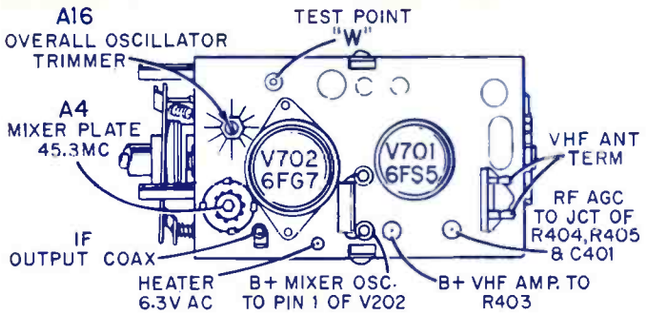
VOLUME 5

TELEVISION

TV CONTINUED

RADIO

HI FI & MISCELLANEOUS



Top View of VHF Tuner 94E203-2.

More Data on Reverse Side

VHF TUNER 94E203-2

ETCHED CIRCUIT BOARD 14E305-1

6FS5 VHF AMP. V701 · 1/2 6FG7 VHF MIXER V702A · 1/2 6FG7 VHF OSC. V702B · 1/2 6AW8A SOUND IF AMP. V304B · 6DT6 SOUND DET. V201 · 6AS5 SOUND OUTPUT V202 · 6BZ6 1ST IF V301 · 6BZ6 2ND IF V302 · 6CB6A 3RD IF V303 · 1/2 6AW8A VIDEO AMP. V304A · 23AUP4 · 21CBP4A V305 · 6K11 OR 6Q11 V401 · 93B5-6 HORIZ PHASE DET. CR401 · 6CG7 HORIZ. OSC. V403 · 6DQ6A HORIZ. OUTPUT V404 · 1G3GT OR 1K3 H.V. RECTIFIER V406 · 6AX4GTB OR 6DE4 DAMPER V405 · 5U4GB RECTIFIER V501

ETCHED CIRCUIT BOARD 14E 257-8

△□ 1/2 6EW7 · □ 1/2 6DE7 VERT. OSC. V402A · △□ 1/2 6EW7 · □ 1/2 6DE7 VERT. OUTPUT V402B

VOLUME · BRIGHTNESS · CONTRAST · VERT LIN · VERT HOLD · HEIGHT · RESET

AGC · GATED AGC · SYNC SER · NOISE INV. · PICTURE GUARD CONTROL · HORIZ LOCK · HORIZ RANGE

SCHEMATIC NOTES:
- CHASSIS GROUND
- PART NOT MOUNTED ON ETCHED CIRCUIT BOARD.
- VOLTAGE WILL VARY WITH SETTING OF CONTROLS.
- △ VALUE FOR 25" SETS. □ VALUE FOR 21" SETS. } ODD'S NOT APPLY TO ELECTROLYTIC CAPACITORS.

RUN CHANGES

(10) Start of production.

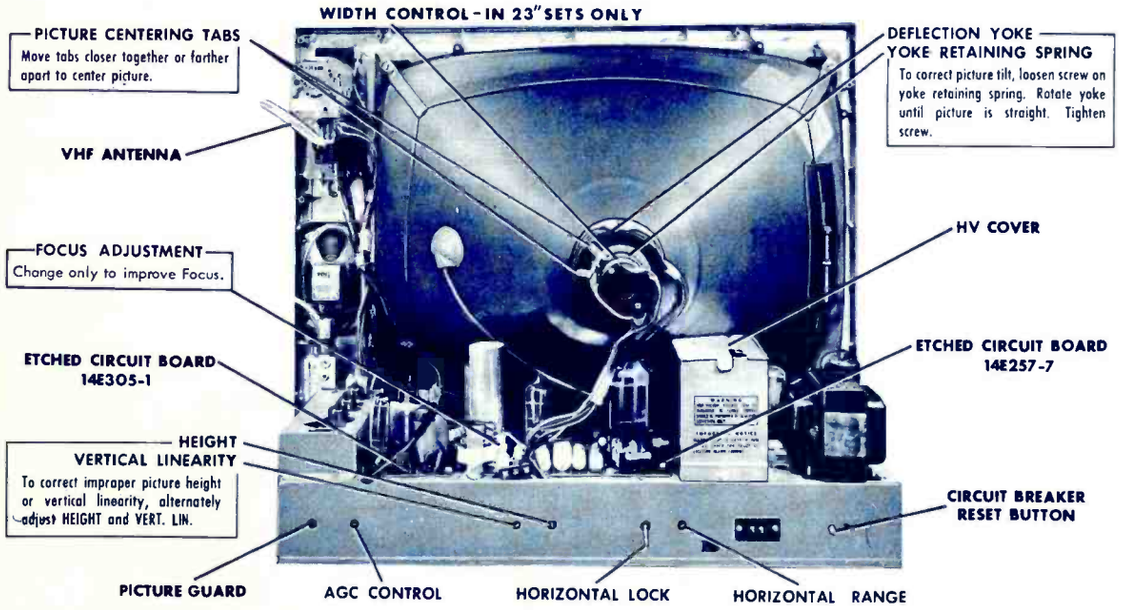
(11) For improved UHF reception (minimum snow), R404 changed from 12 megohms to 7.5 megohms.

ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

ADMIRAL

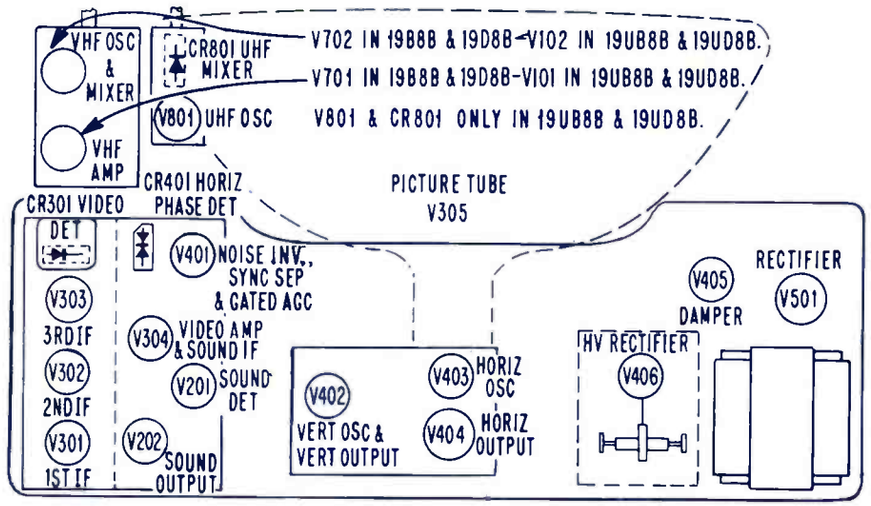
TV Chassis
19B8B, 19UB8B,
18D8B & 19UD8B

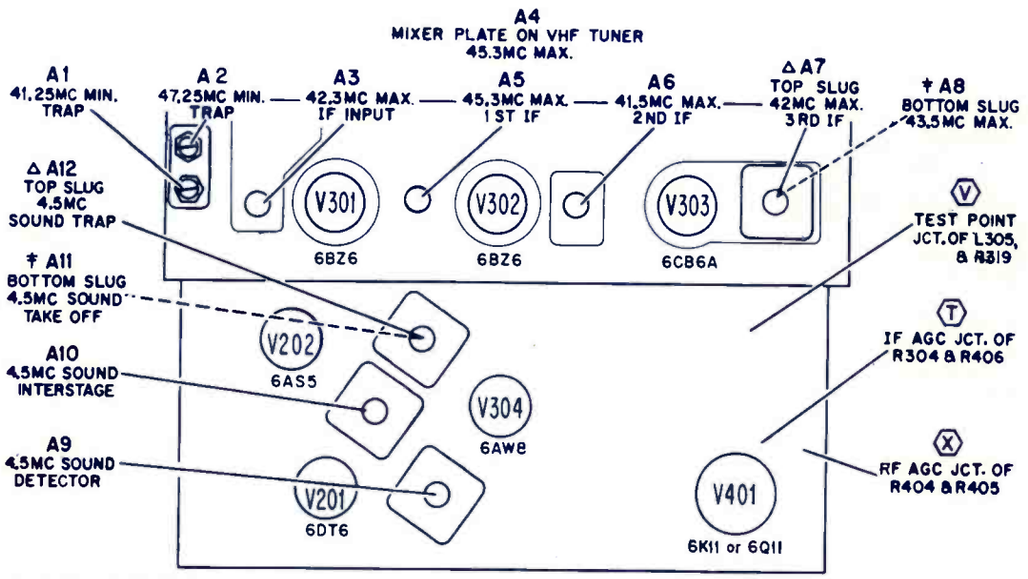
More Data on Reverse Side



Rear View of Chassis Showing Adjustment Locations (UHF Tuner in 19UB8B Chassis).

TUBE LOCATIONS





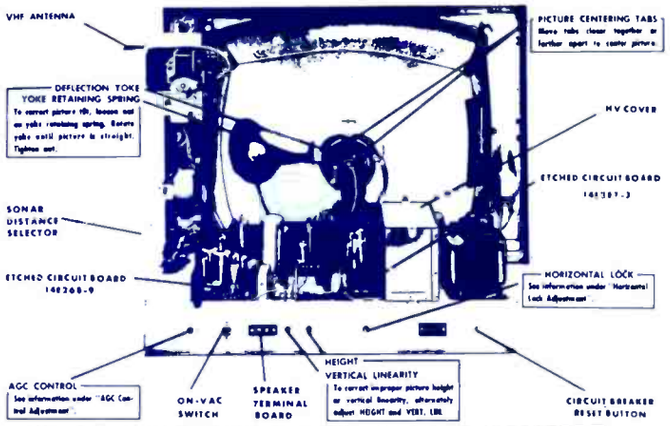
† SLUG NEAREST TO ETCHED CIRCUIT BOARD
△ SLUG FARTHEST FROM ETCHED CIRCUIT BOARD

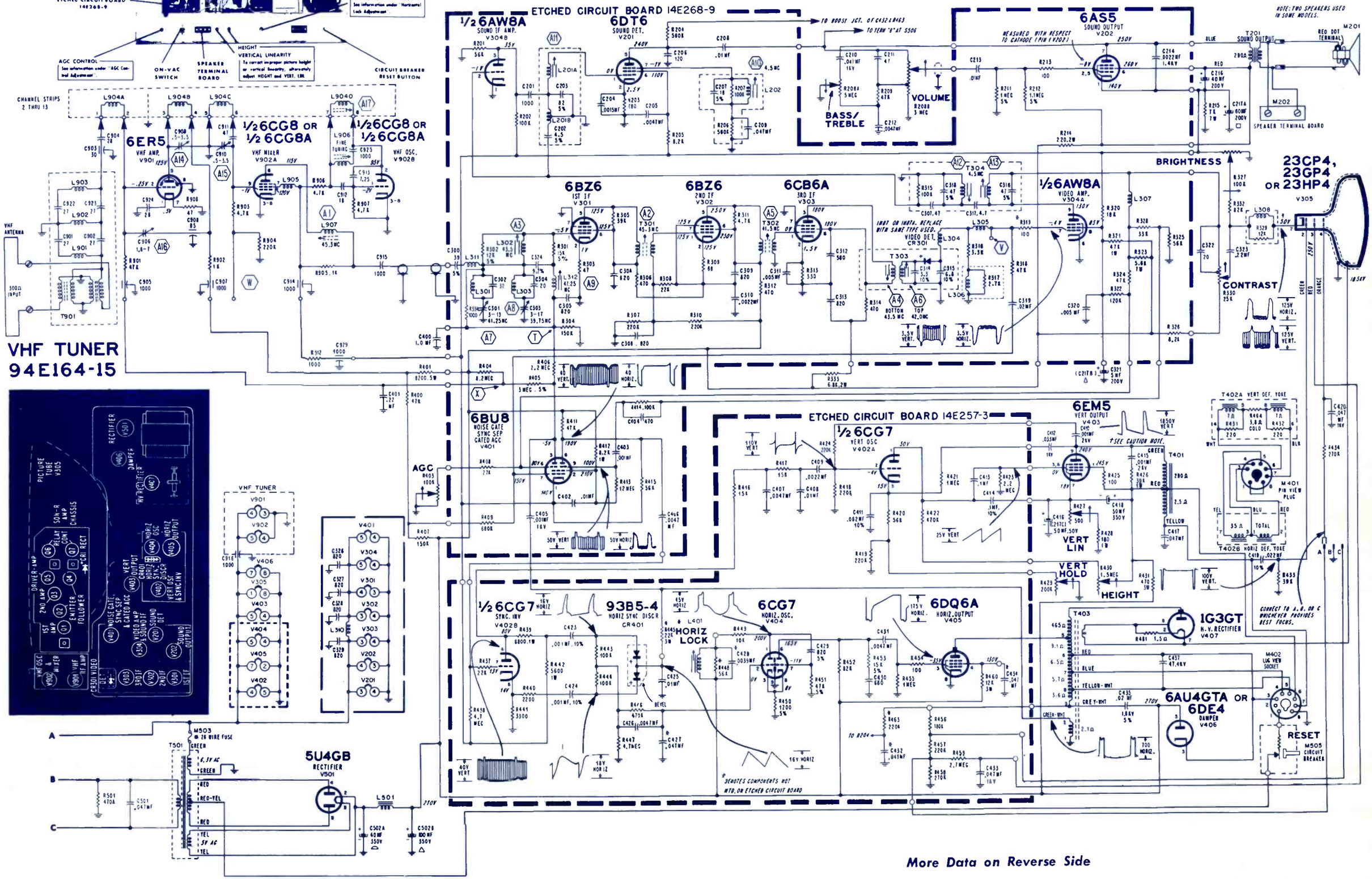
View of Etched Circuit Board Showing Test Point Locations and IF Alignment Data.

Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota

ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

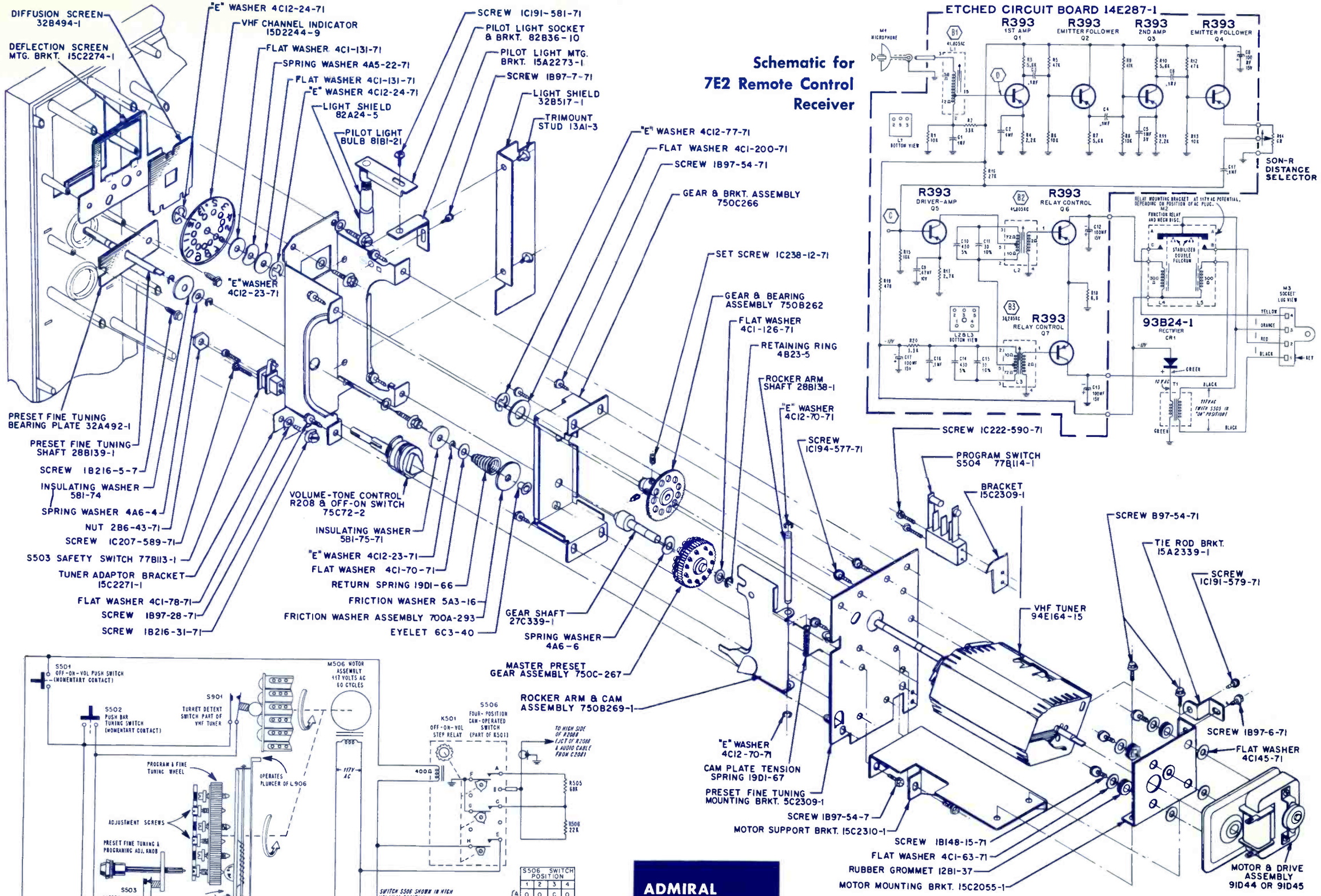
ADMIRAL
TV Chassis 20B7

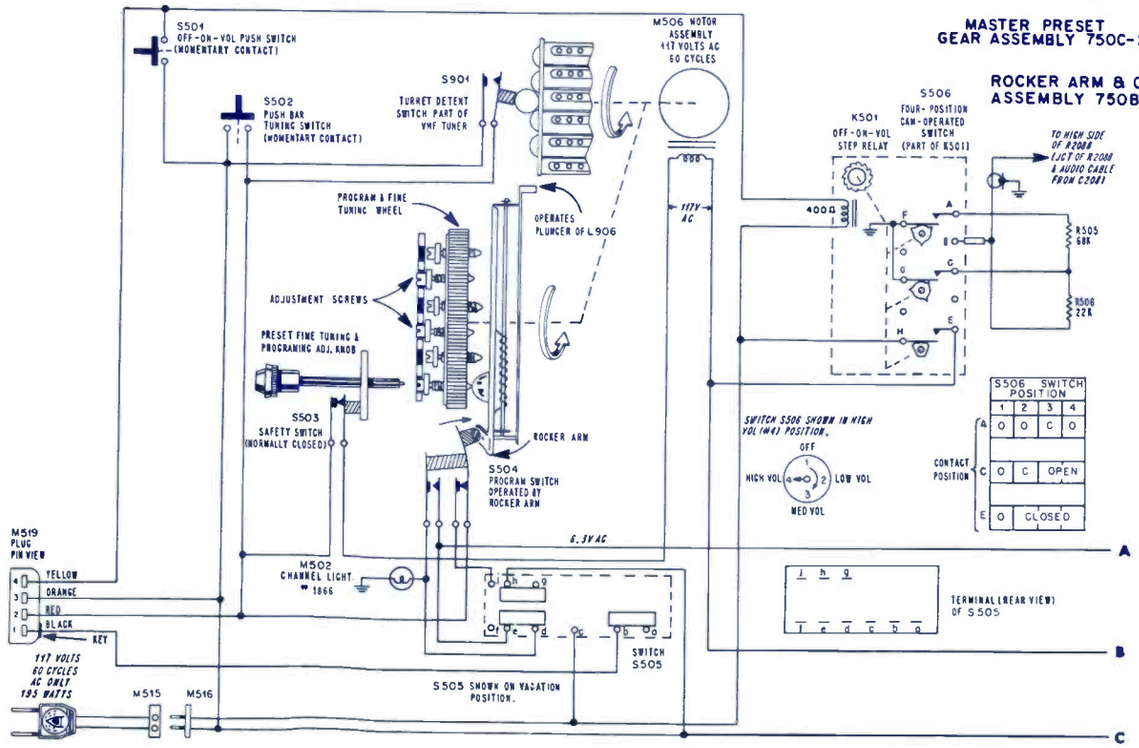




More Data on Reverse Side

Schematic for 7E2 Remote Control Receiver





Exploded View of Power Tuning Assembly

ADMIRAL
TV Chassis 20B7

Electronic Technician
CIRCUIT DIGEST

More Data on Reverse Side

Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota

VT-119 D.C. RESISTANCE OF PARTS

1. **A52-3128** 60 Cycle Power Transformer

Primary	Black-Black	1 Ohm
H.V. Sec.	Red-R/Y-Red	44 Ohms Center Tapped
12.8V	Green-G/Y-Green	Less than .1 Ohm
5.0V	Yellow-Yellow	Less than .1 Ohm

2. **A51-0428** Hor. Osc. & A.F.C. Transformer

A to C	20 Ohms
A to D	69 Ohms
A to F	72 Ohms

3. **A52-3104** Audio Output Transformer

Primary	360 Ohms
Secondary	0.5 Ohms

4. **A52-3129** Filter Reactor — 42 Ohms

5. **A51-0418** Hor. Width Coil — 6.5 Ohms

6. **A52-3106** Vertical Output Transformer

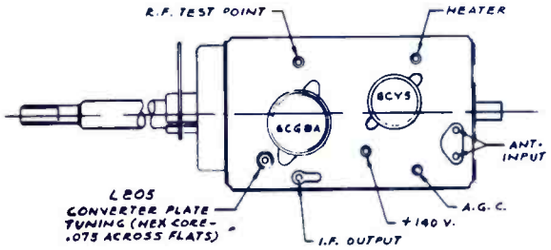
Primary	460 Ohms
Secondary	4.05 Ohms

7. **A52-3096** Deflection Yoke At 25° C

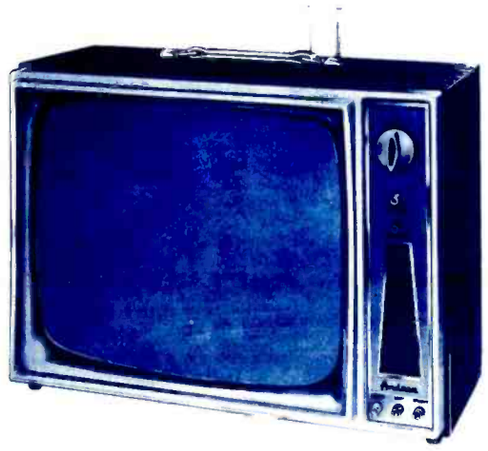
Horizontal Coils 2 to 7	35 Ohms
Vertical Coils 4 to 6	
(With temperature compensating resistor)	17.6 Ohms
(Without thermistor)	13.8 Ohms

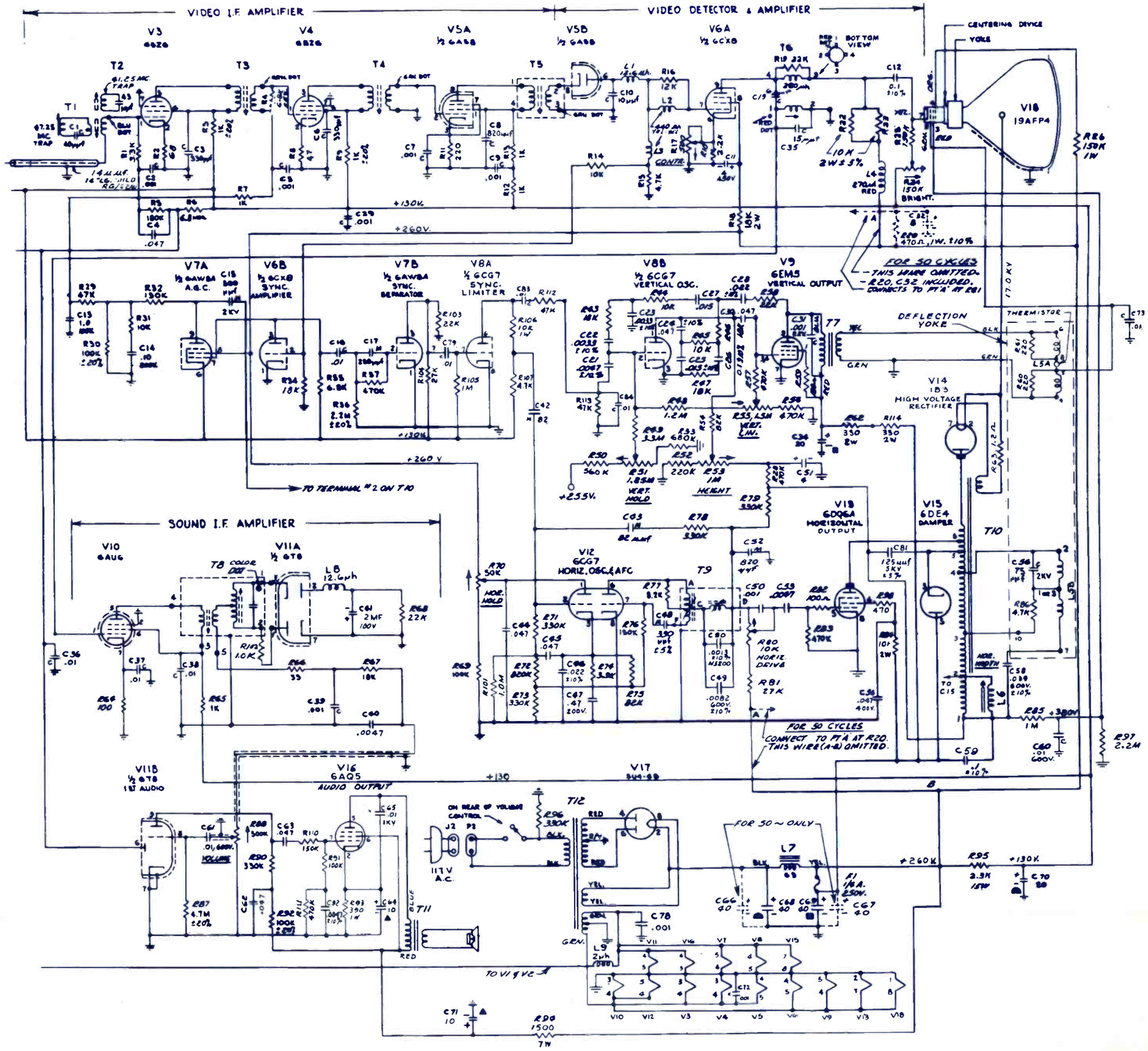
8. **A52-3120** Horizontal Output Transformer

Terminals 1-2	1.94 Ohms
2-3	6.0 Ohms
3-4	9.0 Ohms
4-5	1.8 Ohms
5-6	11.5 Ohms
6-H.V.	338 Ohms



TUNER - TERMINAL LOCATIONS





NOTES:

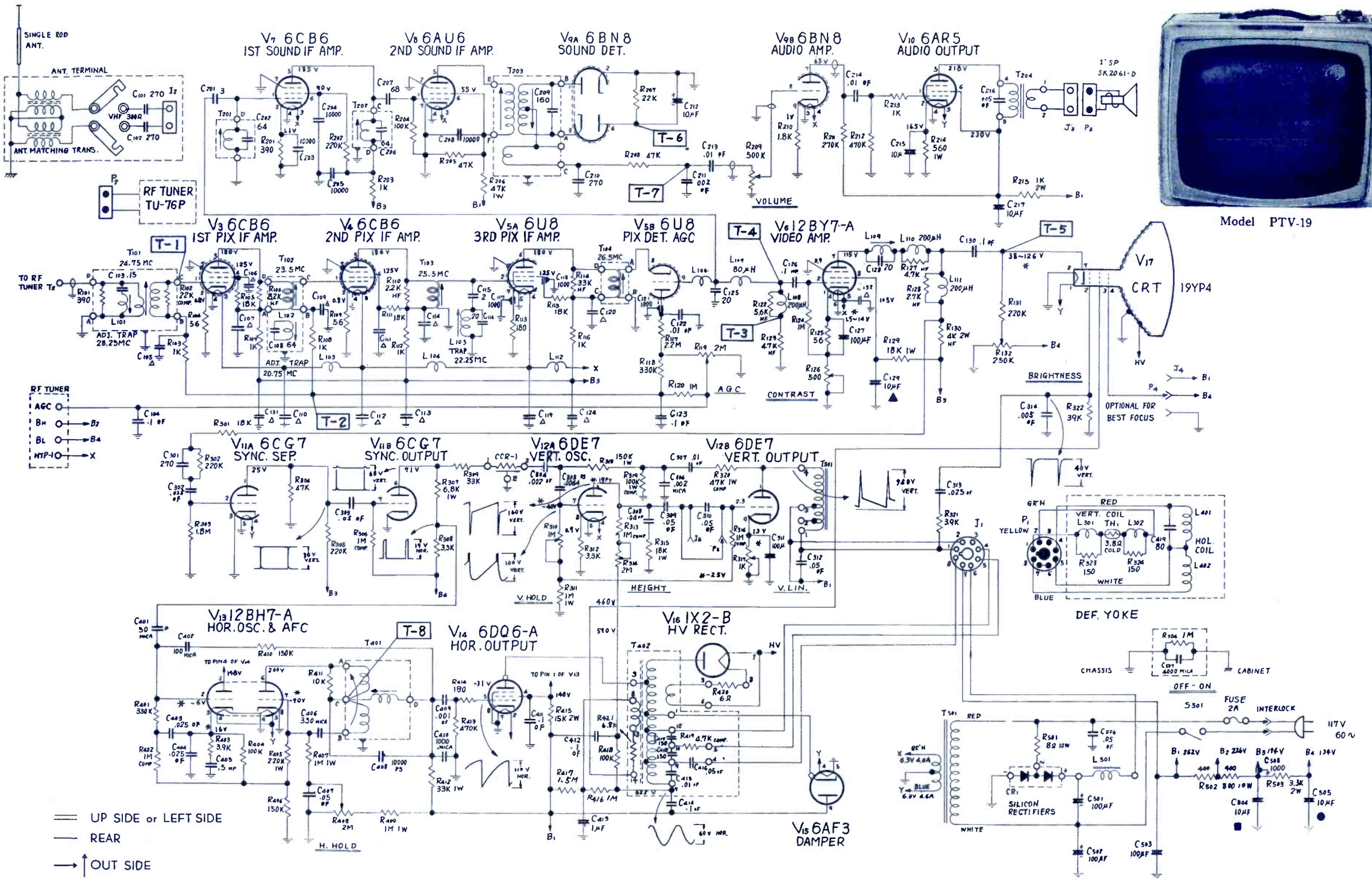
COMP: composition resistor
PR: porcelain resistor
Unspecified capacitors are ceramic capacitor.
△: 1600 MMF ceramic capacitor

MP: metallized capacitor
OF: oilfilled capacitor
PA: paper capacitor
PS: polystyroll capacitor

ELECTRONIC TECHNICIAN CIRCUIT DIGEST

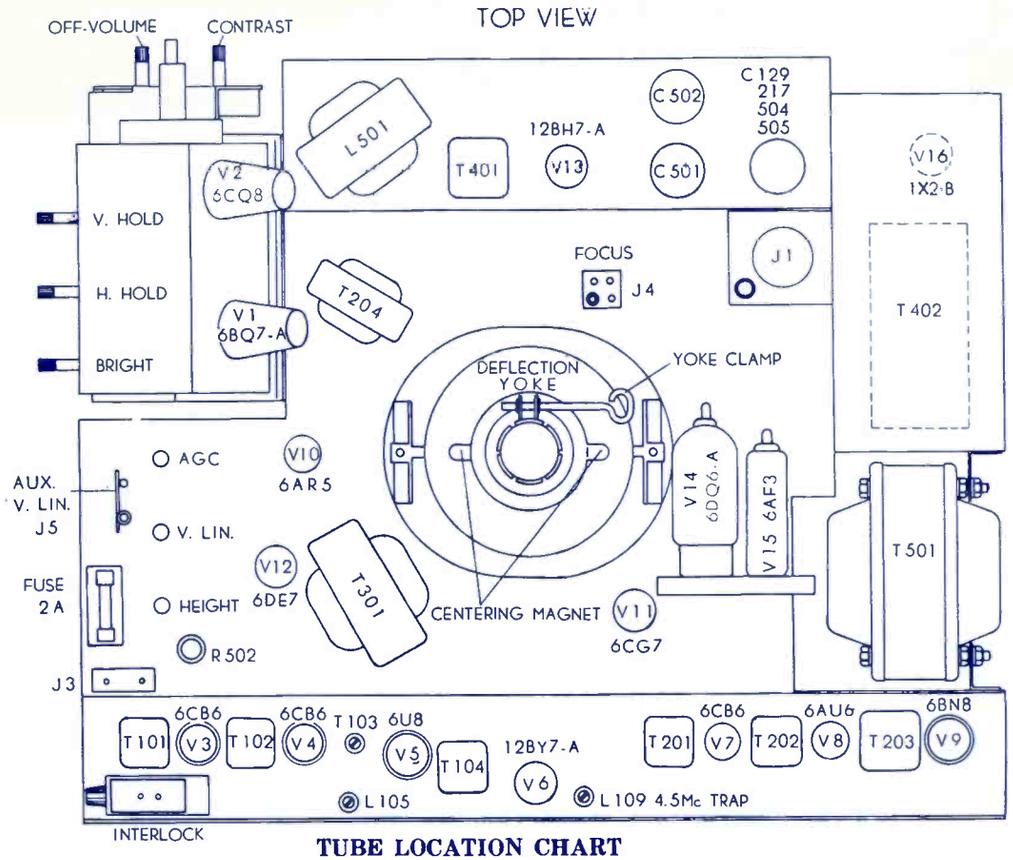
DELMONICO
TV Portable
Model PTV-19

Model PTV-19

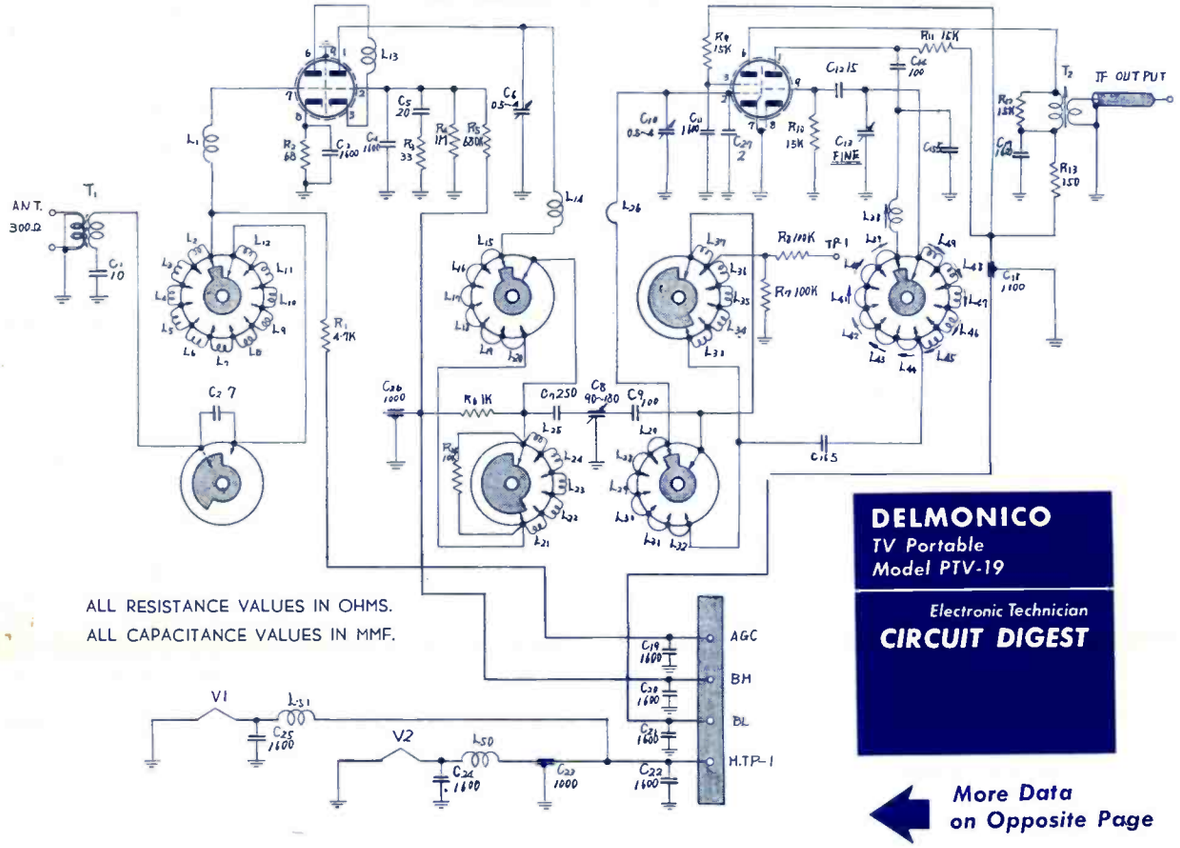


═══ UP SIDE or LEFT SIDE
——— REAR
⟶↑ OUT SIDE
⟵↓ IN SIDE

※ Voltage readings will vary with setting of controls.

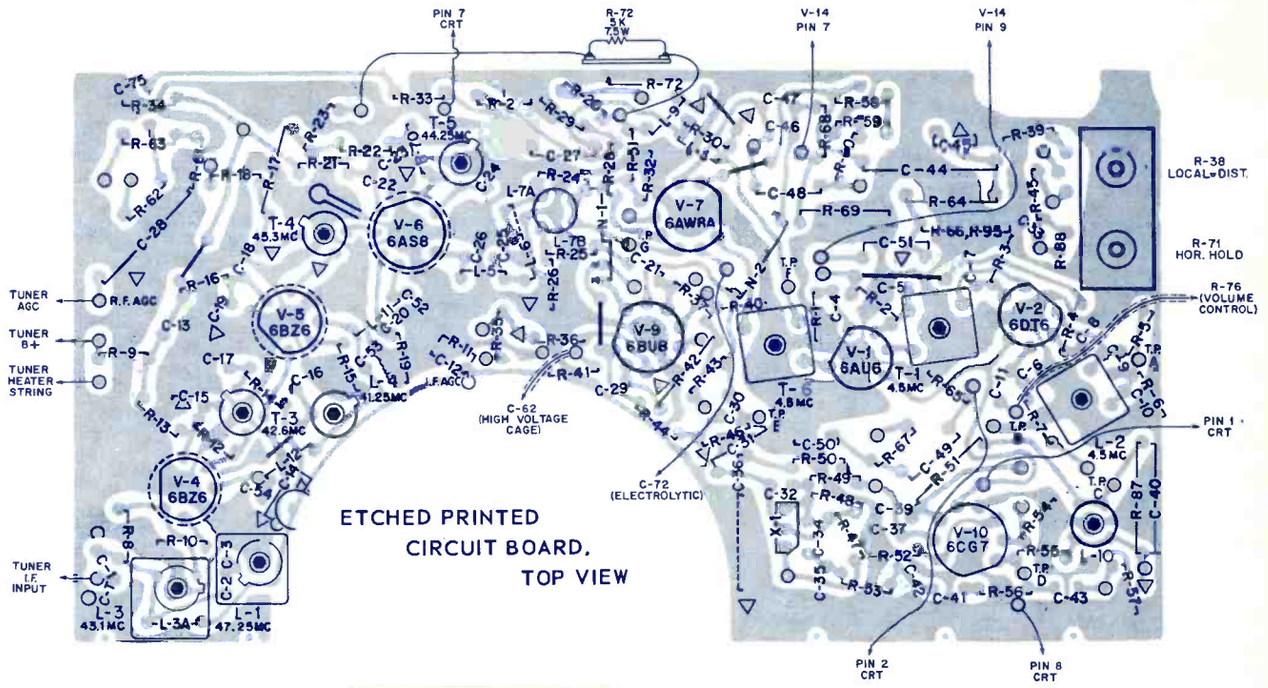


TUBE LOCATION CHART



DELMONICO
TV Portable
Model PTV-19
Electronic Technician
CIRCUIT DIGEST

More Data on Opposite Page



DUMONT
TV Chassis 120530-C, 531-D
Models 600B-48, 600B-49
Electronic Technician
CIRCUIT DIGEST

More Data on Reverse Side

RESISTANCE READINGS

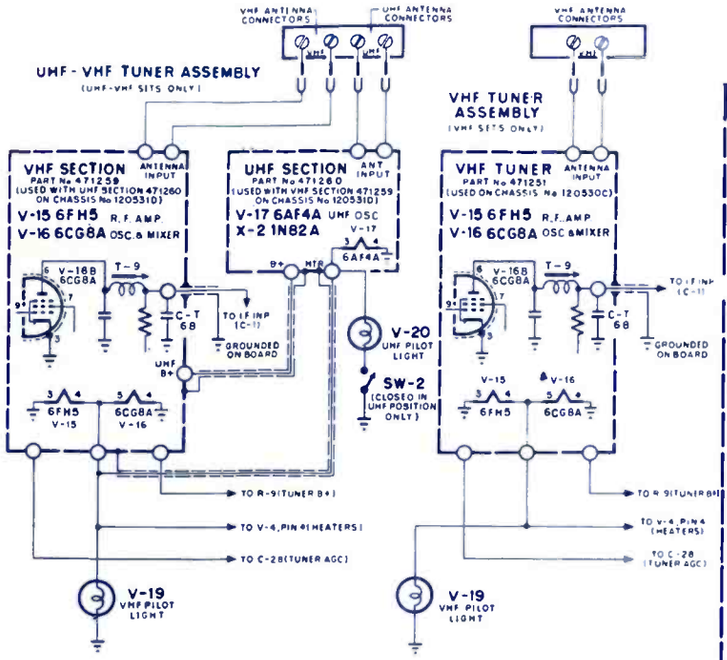
SYM	TUBE TYPE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V- 1	6AU6	1.5	0	0	.1	*50K	* 50K	220	–	–
V- 2	6DT6	5	390	0	.1	* 300K	* 50K	560K	–	–
V- 3	6CU5	* 50K	1.2 M	.1	0	N.C.	* 50K	* 50 K	–	–
V- 4	6BZ6	68K	56	0	.1	* 55K	* 55K	0	–	–
V- 5	6BZ6	69K	47	.1	0	* 50K	* 52K	0	–	–
V- 6	6AS8	* 48K	0	180	.1	0	4.5 K	0	0	* 44K
V- 7	6AW8	0	500K to 2 M	5.9M to 8.4 M	0	.1	20 to 300	4.5K	*48K	* 34K
V- 8	CRT	.1	22K	* 3.5M	0 to 3.5M	–	–	100K to 240K	0	–
V- 9	6BU8	* 50K	* 50K	270 K	.1	0	* 46K	250 K	* 70K	3M
V-10	6CG7	* 82K	100 K	1.2K	0	.1	* 50K	3M	1.2K	0
V-11	6DQ6	T.P.	0	N.C.	* 44K	680 K	T.P.	.1	0 to 30	–
V-12	1G3-GT	I	N	F	I	N	I	T	E	–
V-13	6DA4 / 6DE4	N.C.	N.C.	3.5M	N.C.	* 42K	N.C.	.1	0	–
V-14	6EM5	*40K	T.P.	N.C.	.1	0	2.3M-2.8M	270	N.C.	* 44K
V-18	5U4-GB	N.C.	* 40K	N.C.	20	N.C.	20	N.C.	* 40K	–

NOTES: All resistance readings given are in ohms, "K" is Kilohms, "M" is Megohms.
* Indicates varying resistance: allow 30 seconds for meter to settle.
N.C. Denotes no connection at terminal indicated.
T.P. Denotes connection used as terminal post.

ELECTRONIC TECHNICIAN CIRCUIT DIGEST

DUMONT

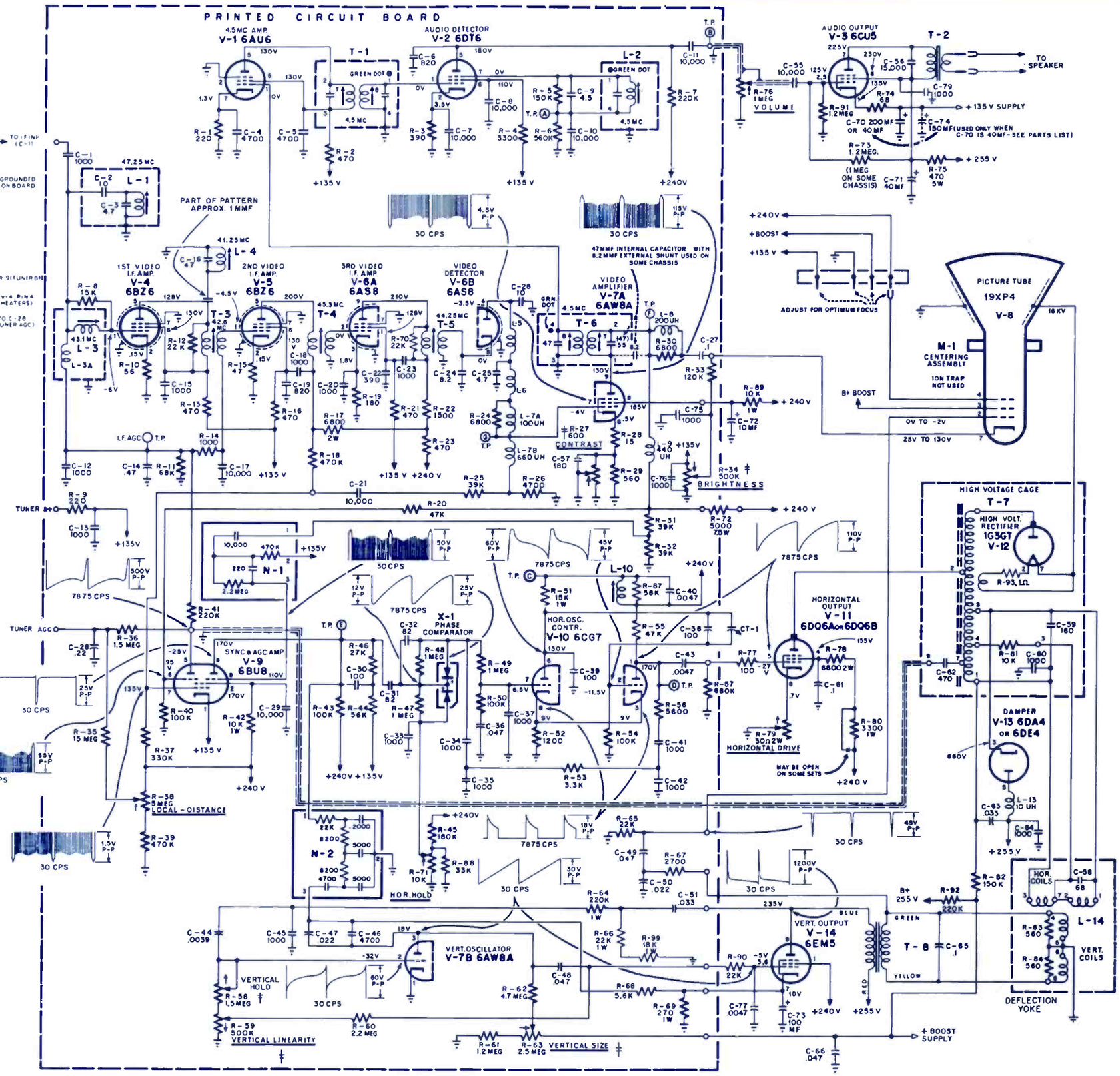
TV Chassis 120530-C, 531-D
Models 600B-48, 600B-49



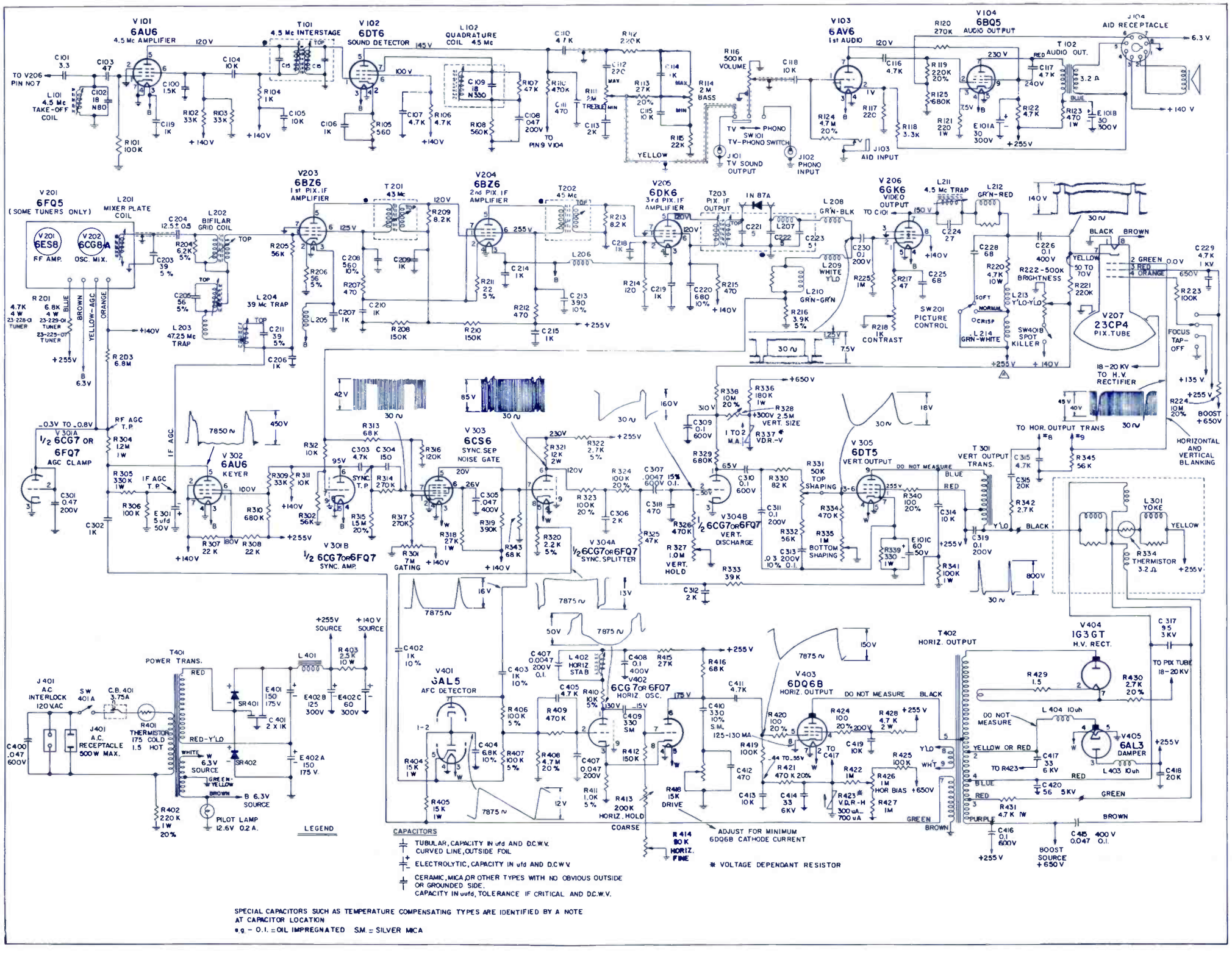
≒ CERAMIC OR MICA CAPACITORS, CAPACITY IN MICRO-MICROFARADS
≒ TUBULAR CAPACITORS, CAPACITY IN MICROFARADS
RESISTORS IN OHMS (K = 1000 OHMS) AND 1/2 WATT, UNLESS NOTED

FOCUS ADJUSTMENT

Any one of four different voltages (available at the quadruple terminal strip mounted directly below the 6CG7 tube) may be utilized as a focus potential. Remove the insulated clip-lead connector (attached to one of the terminals on this strip) and alternately try connecting it to each possible terminal, leaving it connected to the one which gives the best overall focus.



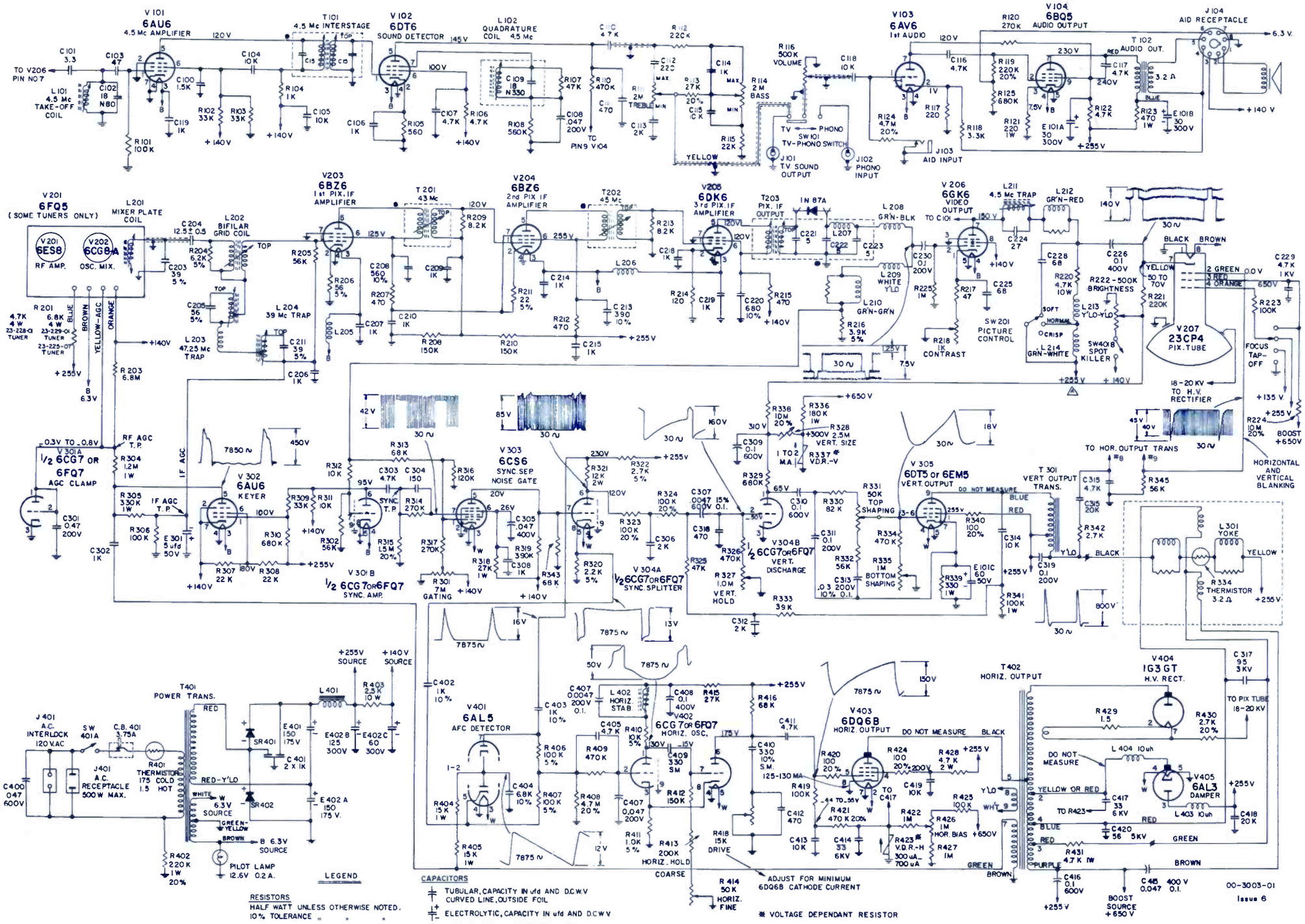
Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota


V101 6AU6 4.5 Mc AMPLIFIER
T101 4.5 Mc INTERSTAGE
V102 6DT6 SOUND DETECTOR
L102 QUADRATURE COIL 4.5 Mc
V103 6AV6 1st AUDIO
V104 6BQ5 AUDIO OUTPUT
T102 AUDIO OUT.
J104 AID RECEPTACLE
R116 500K VOLUME
R114 2M BASS
R113 27K TREBLE
SW101 TV-PHONO SWITCH
J101 TV SOUND OUTPUT
J102 PHONO INPUT
J103 AID INPUT
V201 6FQ5 (SOME TUNERS ONLY)
V201 6ES8 RF AMP.
V202 6CG8-A OSC. MIX.
L201 MIXER PLATE COIL
L202 BIFILAR GRID COIL
L203 47.25 Mc TRAP
L204 39 Mc TRAP
V203 6BZ6 1st PIX. IF AMPLIFIER
V204 6BZ6 2nd PIX. IF AMPLIFIER
T201 43 Mc
T202 45 Mc
V205 6DK6 3rd PIX. IF AMPLIFIER
T203 PIX. IF OUTPUT
IN 87A
L205
L206
L207
L208 GRN-BLK
L209 WHITE-YLO
L210 GRN-GRN
L211 4.5 Mc TRAP
L212 GRN-RED
L213 Y-LO-Y-LO
L214 GRN-WHITE
V206 6GK6 VIDEO OUTPUT
SW201 PICTURE CONTROL
SW401B SPOT KILLER
V207 23CP4 PIX. TUBE
FOCUS TAP-OFF
18-20 KV TO H.V. RECTIFIER
R222-500K BRIGHTNESS
BOOST +650V
HORIZONTAL AND VERTICAL BLANKING
V301A 1/2 6CG7 OR 6FQ7 AGC CLAMP
V301B 1/2 6CG7 OR 6FQ7 SYNC. AMP.
V302 6AU6 KEYER
V303 6CS6 SYNC. SEP NOISE GATE
V304A 1/2 6CG7 OR 6FQ7 SYNC. SPLITTER
V304B 1/2 6CG7 OR 6FQ7 VERT. DISCHARGE
V305 6DT5 VERT. OUTPUT
T301 VERT OUTPUT TRANS.
L301 YOKE
R334 THERMISTOR 3.2 Ω
V401 3AL5 AFC DETECTOR
V402 6CG7 OR 6FQ7 HORIZ. OSC.
R413 200K HORIZ. HOLD COARSE
R414 80K HORIZ. FINE
ADJUST FOR MINIMUM 6DQ6B CATHODE CURRENT
V403 6DQ6B HORIZ. OUTPUT
T402 HORIZ. OUTPUT
V404 1G3GT H.V. RECT.
V405 6AL3 DAMPER
L401
L402 HORIZ STAB
T401 POWER TRANS.
J401 A.C. INTERLOCK 120 V.AC
J401 A.C. RECEPTACLE 500 W MAX.
SW 401A
C.B. 401 3.75A
R401 THERMISTOR 175 COLD 1.5 HOT
SR401
SR402
E401 150 175 V
E402B 125 300 V
E402C 60 300 V
E402A 150 175 V.
R402 220 K 1W 20%
R403 2.5 K 10 W
PILOT LAMP 12.6V 0.2 A.
+255V SOURCE
+140 V SOURCE
B 6.3V SOURCE
RED-Y'LO
GREEN-YELLOW
BROWN
WHITE
LEGEND
CAPACITORS
TUBULAR, CAPACITY IN ufd AND D.C.W.V.
CURVED LINE, OUTSIDE FOIL
ELECTROLYTIC, CAPACITY IN ufd AND D.C.W.V.
CERAMIC, MICA, OR OTHER TYPES WITH NO OBVIOUS OUTSIDE OR GROUNDED SIDE.
CAPACITY IN uufd, TOLERANCE IF CRITICAL AND D.C.W.V.
* VOLTAGE DEPENDANT RESISTOR
SPECIAL CAPACITORS SUCH AS TEMPERATURE COMPENSATING TYPES ARE IDENTIFIED BY A NOTE AT CAPACITOR LOCATION
e.g. - O.I. = OIL IMPREGNATED S.M. = SILVER MICA

ELECTROHOME

TV Chassis

Models Kimberly and Kalmar



RESISTORS
HALF WATT UNLESS OTHERWISE NOTED.
10% TOLERANCE " " "

K = 1000
M = 1000,000

CAPACITORS
TUBULAR, CAPACITY IN ufd AND D.C.W.V
CURVED LINE, OUTSIDE FOIL
ELECTROLYTIC, CAPACITY IN ufd AND D.C.W.V
CERAMIC, MICA, OR OTHER TYPES WITH NO OBVIOUS OUTSIDE OR GROUNDED SIDE. CAPACITY IN uufd, TOLERANCE IF CRITICAL AND D.C.W.V.

SPECIAL CAPACITORS SUCH AS TEMPERATURE COMPENSATING TYPES ARE IDENTIFIED BY A NOTE AT CAPACITOR LOCATION
e.g. - O.I. = OIL IMPREGNATED S.M. = SILVER MICA

* VOLTAGE DEPENDANT RESISTOR

NOTE: DC VOLTAGES ARE SHOWN FOR A NORMAL SIGNAL, VOLUME CONTROL ZERO, BRIGHTNESS FULL, CONTRAST FULL, OTHERS NORMAL, MEASURED WITH A V.T.V.M. HAVING 10 M RESISTANCE.

WAVE FORMS MEASURED BY AN OSCILLOSCOPE WITH GOOD FREQUENCY RESPONSE, 10 M Ω INPUT RESISTANCE

EMERSON
TV Chassis 120587A, 588B, 589C, 593A

UHF - VHF TUNER ASSEMBLY

VHF ANTENNA CONNECTORS — UHF ANTENNA CONNECTORS

VHF TUNER
#471341 (19" SETS)
#471333 (23" SETS)
V-18 6GK5 R.F. AMP.
V-16 6CG8A OSC. & MIXER

UHF TUNER
PART #471260
X-2 1N82A XTAL MIXER
V-17 6AF4A UHF OSC

V-20 UHF PILOT LIGHT
SW-2 (CLOSED IN UHF POSITION ONLY)
(19" SETS ONLY)
GROUNDED ON BOARD
TO I.F. INP. (C-1)
TO R-B (TUNER B+)
TO V-4, PIN 4 (HEATERS)
TO C-28 (TUNER AGC)
L-16 & L-17 USED ON 19" SETS ONLY
V-19 VHF PILOT LIGHT

VHF TUNER
#471338 (19" SETS)
#471332 (23" SETS)
V-18 6GK5 R.F. AMP.
V-16 6CG8A OSC. & MIXER
TO I.F. INP. C-1
GROUNDED ON BOARD
(19" SETS ONLY)
TO R-B (TUNER B+)
TO V-4, PIN 4 (HEATERS)
TO C-28 (TUNER AGC)
V-19 VHF PILOT LIGHT

* COMPONENTS USED ON 23 INCH MODELS ONLY.

PRINTED CIRCUIT BOARD

45MC AMP V-1 6AU6
AUDIO DETECTOR V-2 6DT6
AUDIO OUTPUT V-3 6CU5
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
SYNC & AGC AMP V-9 6BU8
HOR. OSCILLATOR & CONTROL V-10 6CG7 OR 6FQ7
HORIZONTAL OUTPUT V-11 6DQ5B OR 6GW6
VERT OSCILLATOR V-7B 6AW8A
VERT OUTPUT V-14 6EM5
DAMPER V-13 6DA4, 6DE4 OR 6CQ4
HIGH VOLT RECTIFIER 1G50T OR 1K3 V-12
PICTURE TUBE (19" SETS) 19XP4 (23" SETS) 23CP4 V-8
V-18 5U4GB LOW VOLT. RECTIFIER
T-1 T-2 T-3 T-4 T-5 T-6 T-7 T-8 T-9 T-10
L-1 L-2 L-3 L-4 L-5 L-6 L-7A L-7B L-9 L-10 L-14 L-15
X-1 PHASE COMPARATOR
N-1 N-2
M-1 CENTERING ASSEMBLY (ION TRAP NOT USED)
F-1 .7A-SLOW BLOW (19" SETS) CHEMFUSE #808232 (23" SETS)
SW-1 ON-OFF SWITCH
P-1 S-1 SAFETY INTERLOCK
FUSIBLE LINK No. 20 WIRE
115 VOLTS AC ONLY 60 CPS

HEATERS

HEATERS ON PRINTED CIRCUIT BOARD

TO HEATERS ON TUNER

SPEAKER WIRING, 23" CONSOLE AND LO-BOY MODELS
SP-1 SP-2
TO T-2 SEC.
NOTE: PROPER PHASING OF SPEAKERS MUST BE OBSERVED

SPEAKER WIRING, 23" TABLE MODELS
SP-1
TO T-2 SEC.

SPEAKER WIRING COMB. MODELS
TO T-2 SEC.
TO R-23 100 OHM, 1/2 W. ON STEREO AMPLIFIER

SPEAKER WIRING, 19" PORTABLE STYLE MODELS
SP-1
TO T-2 SEC.
J-1 LISTEN ATTACH JACK

ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

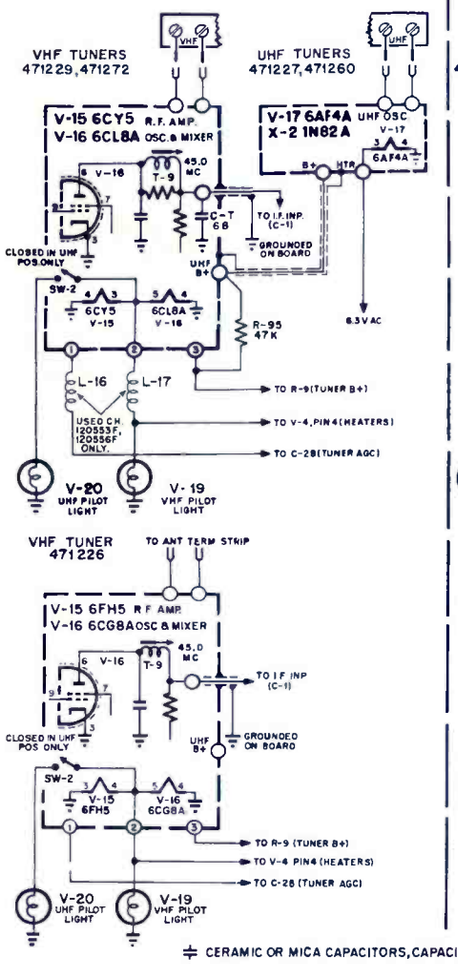
EMERSON
TV Chassis 120530C, 120549C, 550D, 551C, 120552E, 553F, 554E, 120555E, 556F, 557E

NOTES: ‡ CONTROLS R-27, R-58, R-59, R-63 AND R-34 NOT MOUNTED ON ETCHED CIRCUIT BOARD ON ALL CHASSIS.

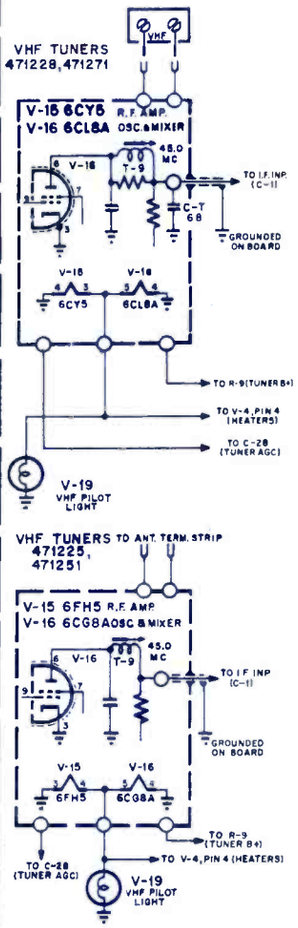
* C-57, C-75, C-76 AND C-79 NOT USED ON CHASSIS 120555E, 556F AND 557E.

** R-96 AND C-80 NOT USED WHEN R-7 IS CONNECTED TO B+ 240V.

UHF-VHF TUNER ASSEMBLIES

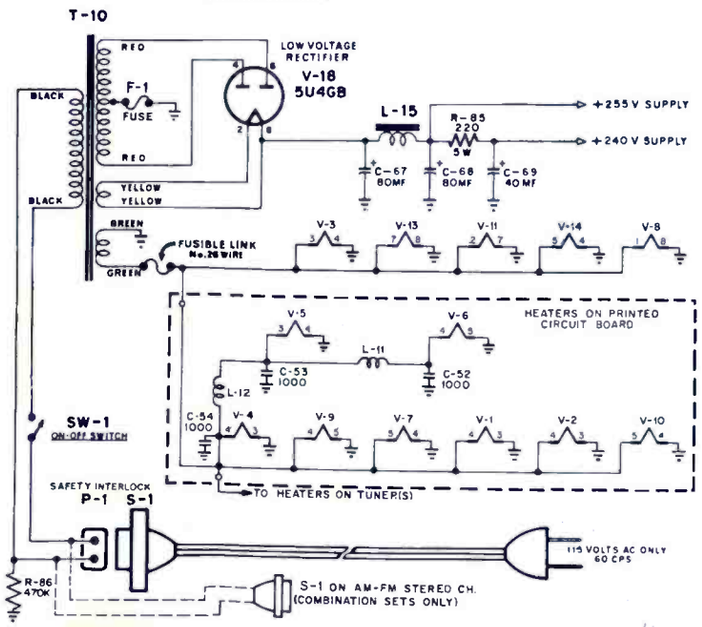


VHF TUNERS

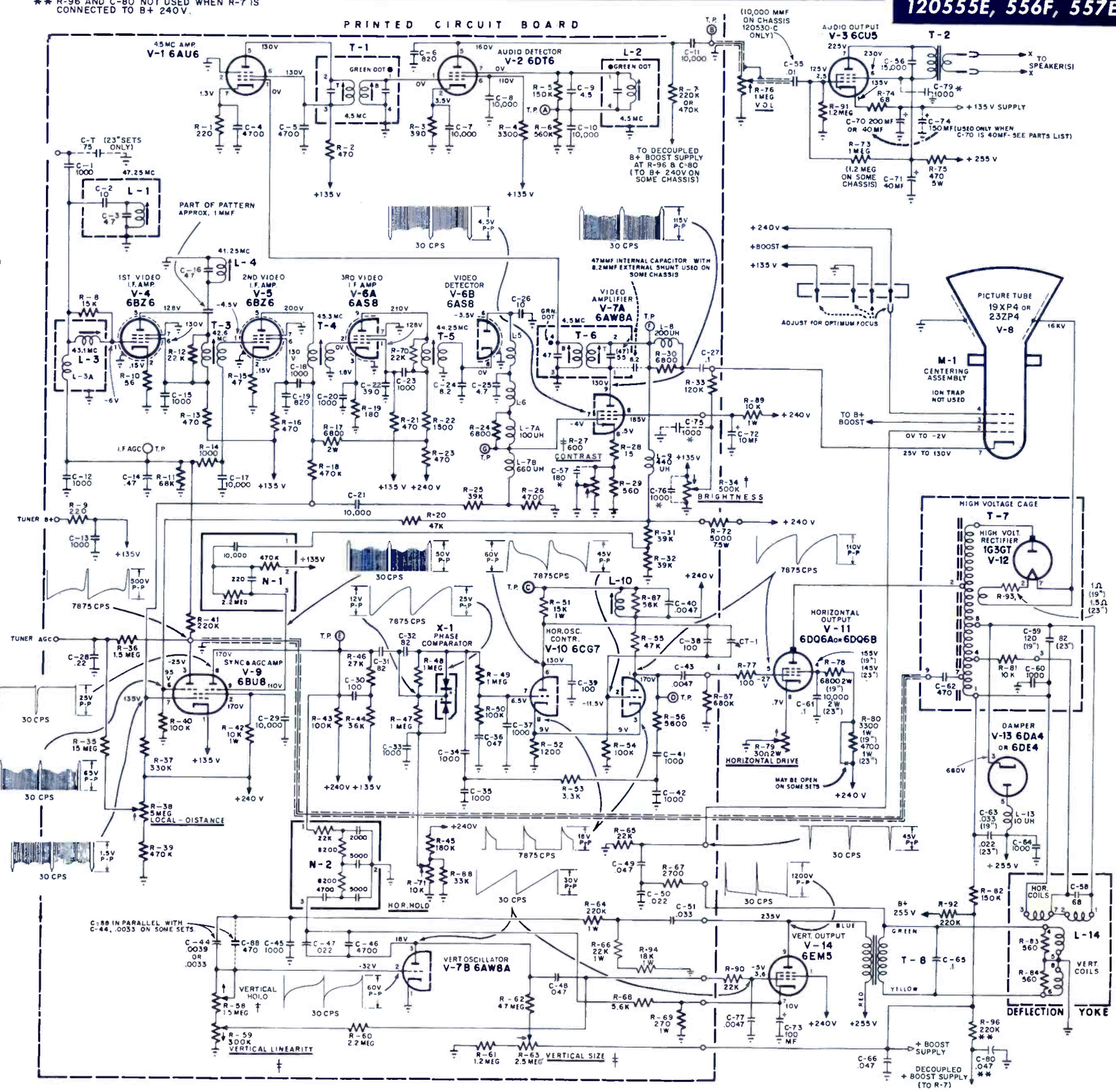


‡ CERAMIC OR MICA CAPACITORS, CAPACITY IN MICRO-MICROFARADS.

‡ TUBULAR CAPACITORS, CAPACITY IN MICROFARADS. RESISTORS IN OHMS (K = 1000 OHMS) AND 1/2 WATT, UNLESS NOTED. ARROWS AT CONTROLS INDICATE CLOCKWISE ROTATION. T INDICATES TOP CORE, B INDICATES BOTTOM CORE IN DOUBLE TUNED TRANSFORMERS.



PRINTED CIRCUIT BOARD



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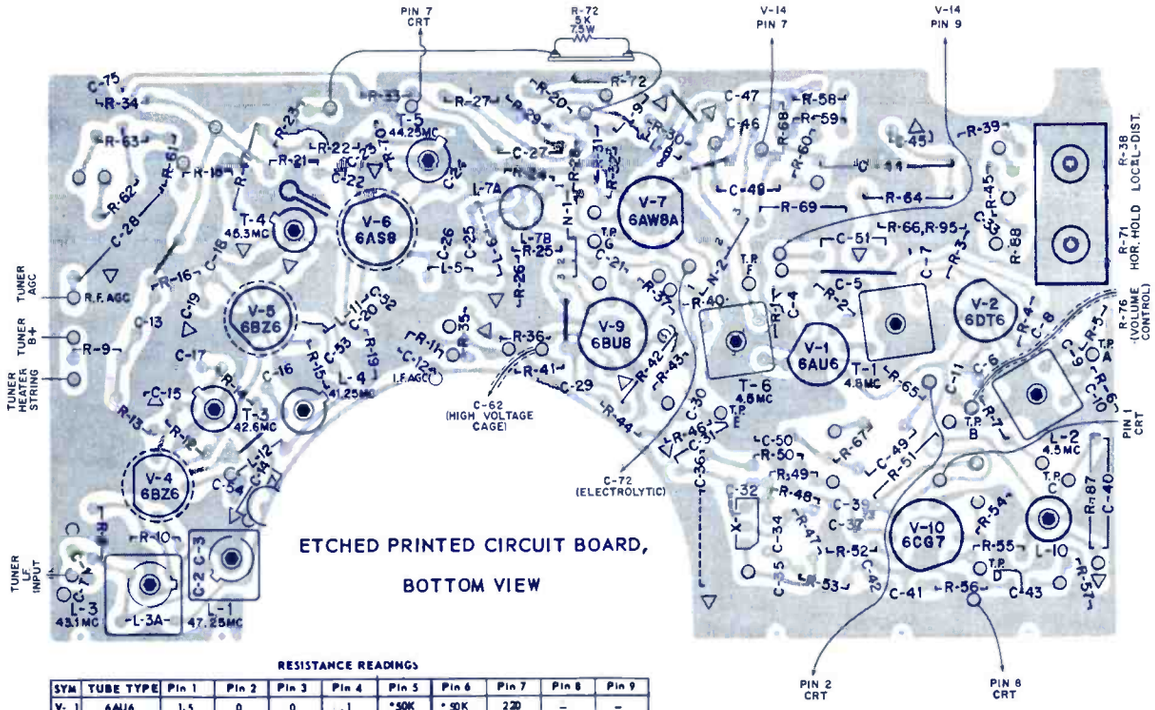


ETCHED PRINTED CIRCUIT BOARD,

BOTTOM VIEW

RESISTANCE READINGS

SYM	TUBE TYPE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V- 1	6AU6	1.5	0	0	.1	*50K	* 50K	220	–	–
V- 2	6DT6	5	390	0	.1	* 300K	* 50K	560K	–	–
V- 3	6CU5	* 50K	1.2 M	.1	0	N.C.	* 50K	* 50K	–	–
V- 4	6BZ6	68K	56	0	.1	* 55K	* 55K	0	–	–
V- 5	6BZ6	69K	47	.1	0	* 50K	* 52K	0	–	–
V- 6	6AS8	* 48K	0	180	.1	0	4.5 K	0	0	* 44K
V- 7	6AW8	0	500K to 2 M	5.9M to 8.4 M	0	.1	20 to 300	4.5K	* 48K	* 34K
V- 8	CRT	.1	22K	* 3.5M	0 to 3.5M	–	–	100K to 240K	0	–
V- 9	6BU8	* 50K	* 50K	270 K	.1	0	* 46K	250 K	* 70K	3M
V- 10	6CG7	* 82K	100 K	1.2K	0	.1	* 50K	3M	1.2K	0
V- 11	6DQ6	T.P.	0	N.C.	* 44K	680 K	T.P.	.1	0 to 30	–
V- 12	1G3-GT	1	N	F	1	N	1	T	E	–
V- 13	6DA4 6DE4	N.C.	N.C.	3.5M	N.C.	* 42K	N.C.	.1	0	–
V- 14	6EM5	* 40K	T.P.	N.C.	.1	0	2.3M-2.8M	270	N.C.	* 44K
V- 18	5U4-GB	N.C.	* 40K	N.C.	20	N.C.	20	N.C.	* 40K	–

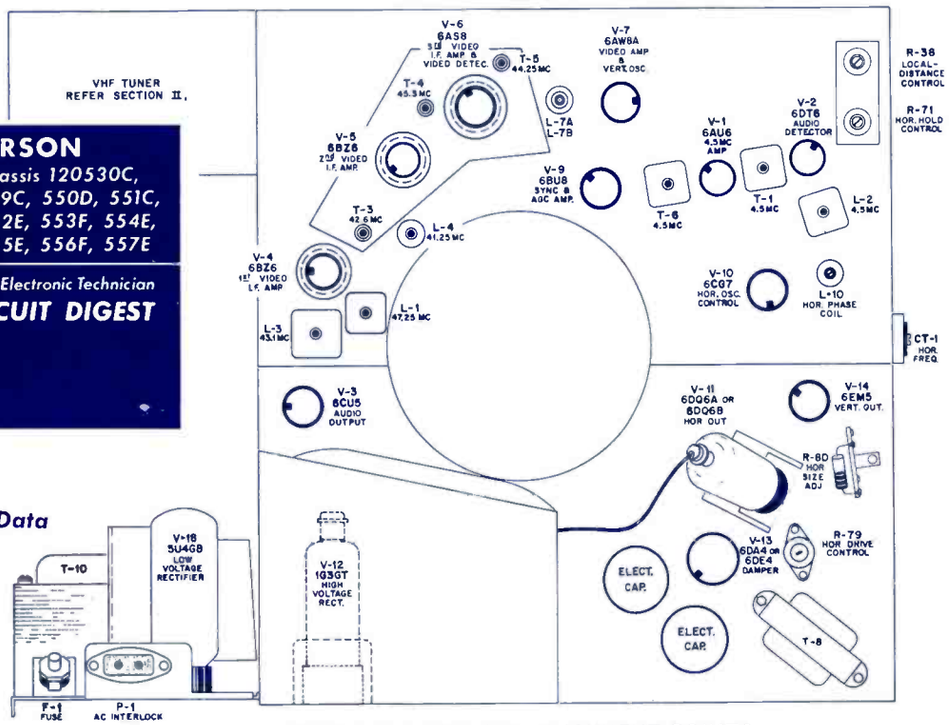
NOTES: All resistance readings given are in ohms, "K" is Kilohms, "M" is Megohms.
* Indicates varying resistance: allow 30 seconds for meter to settle.
N.C. Denotes no connection at terminal indicated.
T.P. Denotes connection used as terminal post.

CONDITIONS FOR CHASSIS READINGS

VOLTAGES AND WAVESHAPES were taken under actual operating conditions (normal picture and sound). AGC voltage developed at junction of C-12, C-14 and R-11 was minus six volts. Voltage and waveshape readings obtained may vary 20% in value due to component tolerances and strength of input signal to chassis under test.

RESISTANCE READINGS were taken with no power applied. Where readings are effected by control settings, both maximum and minimum values are given. All resistance readings may vary 10% due to normal component tolerances.

ALL MEASUREMENTS were taken between points indicated and chassis (unless otherwise noted), with line voltage maintained at 115 volts AC. A VTVM was used for all voltage and resistance measurements and a low capacity probe was used for all waveshapes shown.

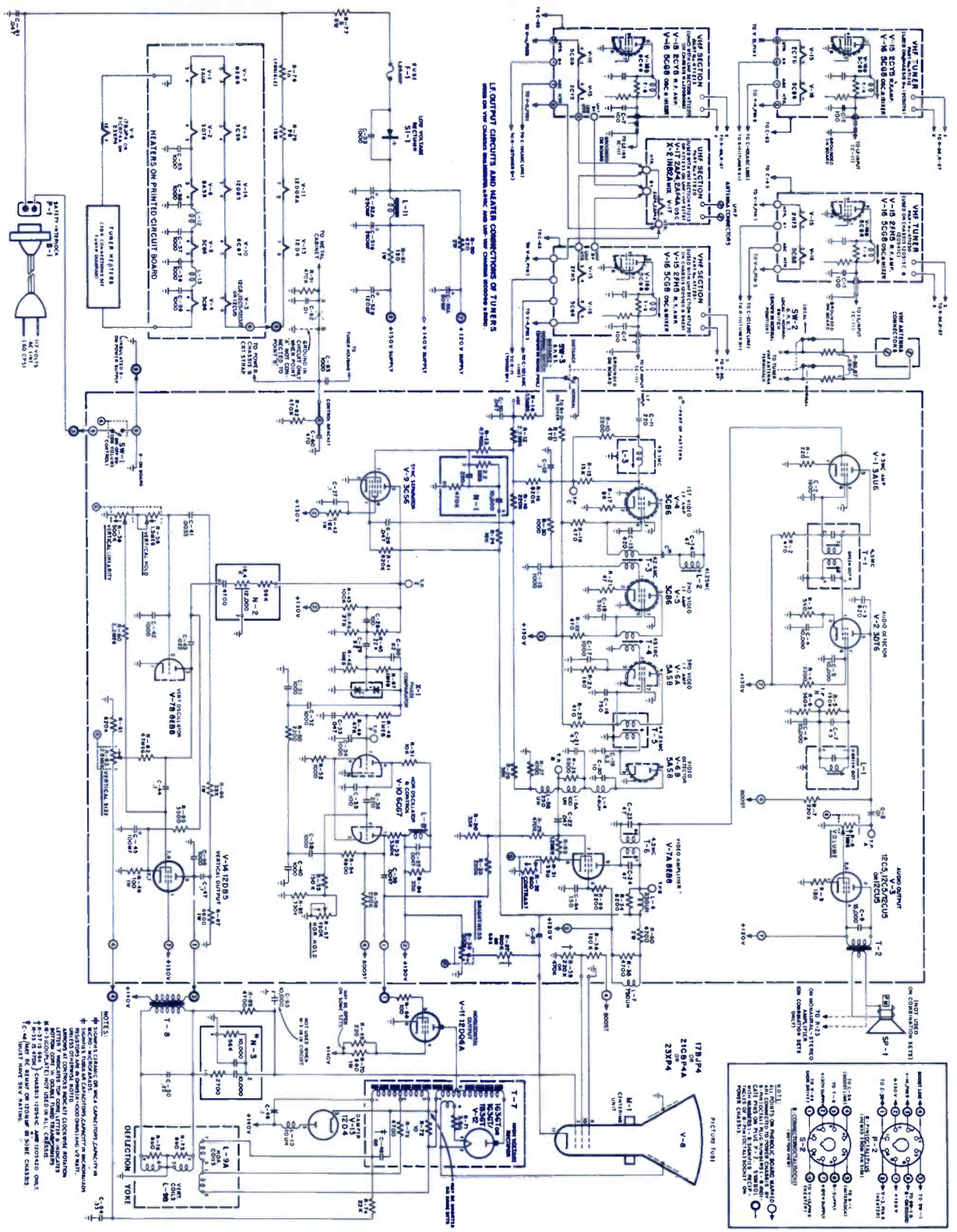


TUBE LOCATION AND ALIGNMENT POINTS

More Data

EMERSON
TV Chassis 120530C, 120549C, 550D, 551C, 120552E, 553F, 554E, 120555E, 556F, 557E

Electronic Technician
CIRCUIT DIGEST

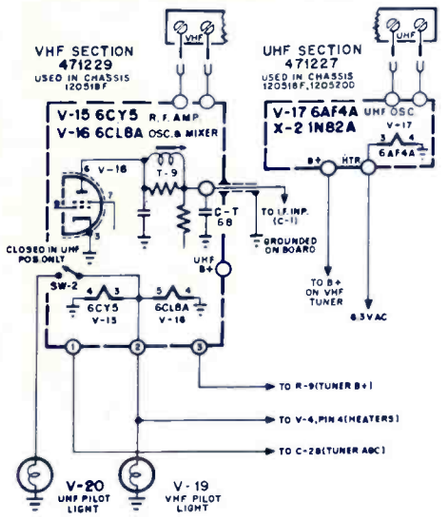


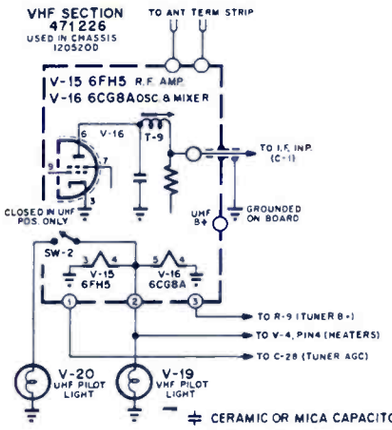
ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

EMERSON
TV Chassis 120517E, 120518F, 120519C, 120520D, 120525E, 120526C

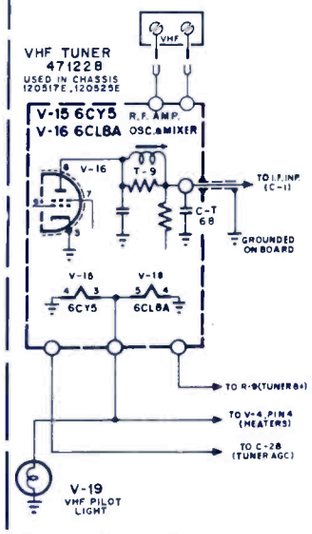
TYPE	MODEL	CHASSIS	REMOTE	STYLE	CRT	TUNER
VHF	1600	120517E		PORT TM	17DTP4	471228
	1602	120525E	471235			
	1604	120517E		TABLE MODEL	21DAP4	471225
	1608	120519C				
	1610	120526C	471235			
	1612	120519C		LO BOY CONSOLE		
	1614	120526C	471235			
UHF VHF	1601	120518F		PORT TM	17DTP4	471229 VHF, 471227 UHF
	1605			TABLE MODEL		
	1609	120520D			21DAP4	471226 VHF, 471227 UHF
	1613			LO BOY CONSOLE		

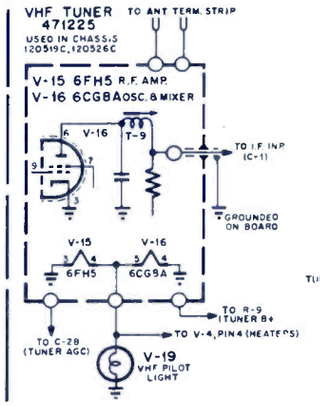
UHF-VHF TUNER ASSEMBLIES



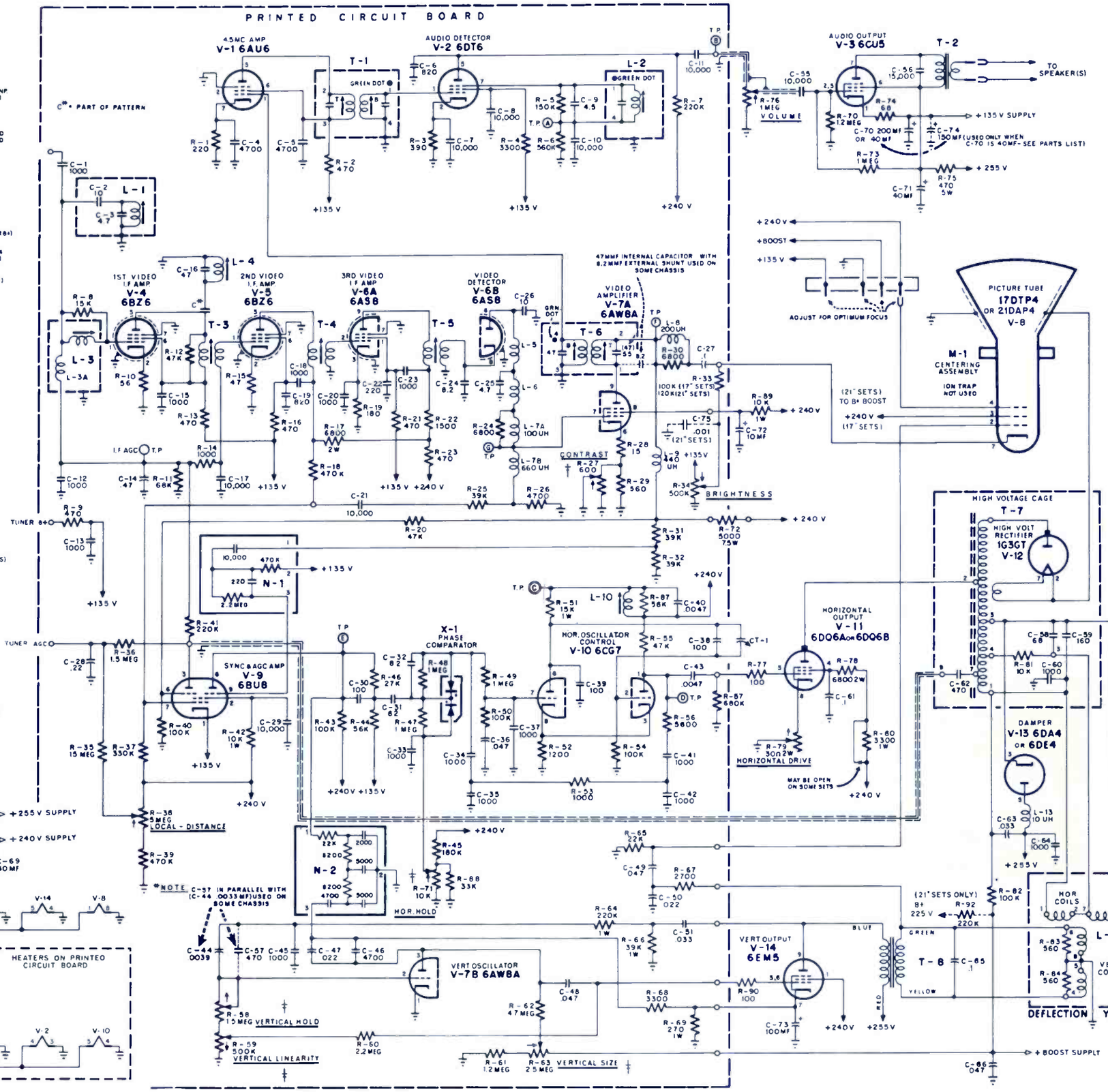


VHF TUNERS





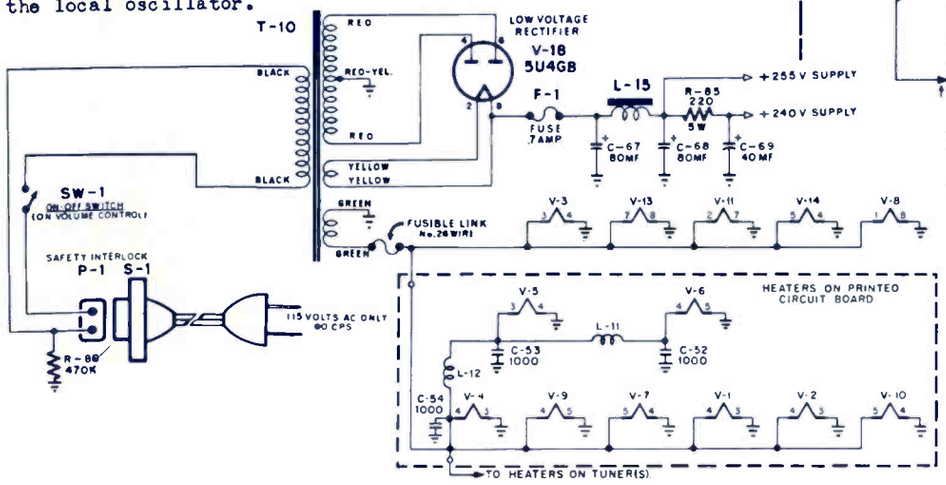
PRINTED CIRCUIT BOARD



C* PART OF PATTERN

* NOTE C-37 IN PARALLEL WITH (C-44 .0033 MF) USED ON SOME CHASSIS

47MMF INTERNAL CAPACITOR WITH 8.2MMF EXTERNAL SHUNT USED ON SOME CHASSIS



TUNER ADJUSTMENT

VHF tuners 471225 and 471226 used in chassis 120519C, 520D and 526C are new MINI-TURRET tuners which require the use of an alignment tool with a tip no wider than 1/8" for adjustment of the local oscillator.

‡ CERAMIC OR MICA CAPACITORS, CAPACITY IN MICRO-MICROFARADS.

‡ TUBULAR CAPACITORS, CAPACITY IN MICROFARADS

RESISTORS IN OHMS (K = 1000 OHMS) AND 1/2 WATT, UNLESS NOTED. ARROWS AT CONTROLS INDICATE CLOCKWISE ROTATION. T INDICATES TOP CORE, B INDICATES BOTTOM CORE IN DOUBLE TUNED TRANSFORMERS.

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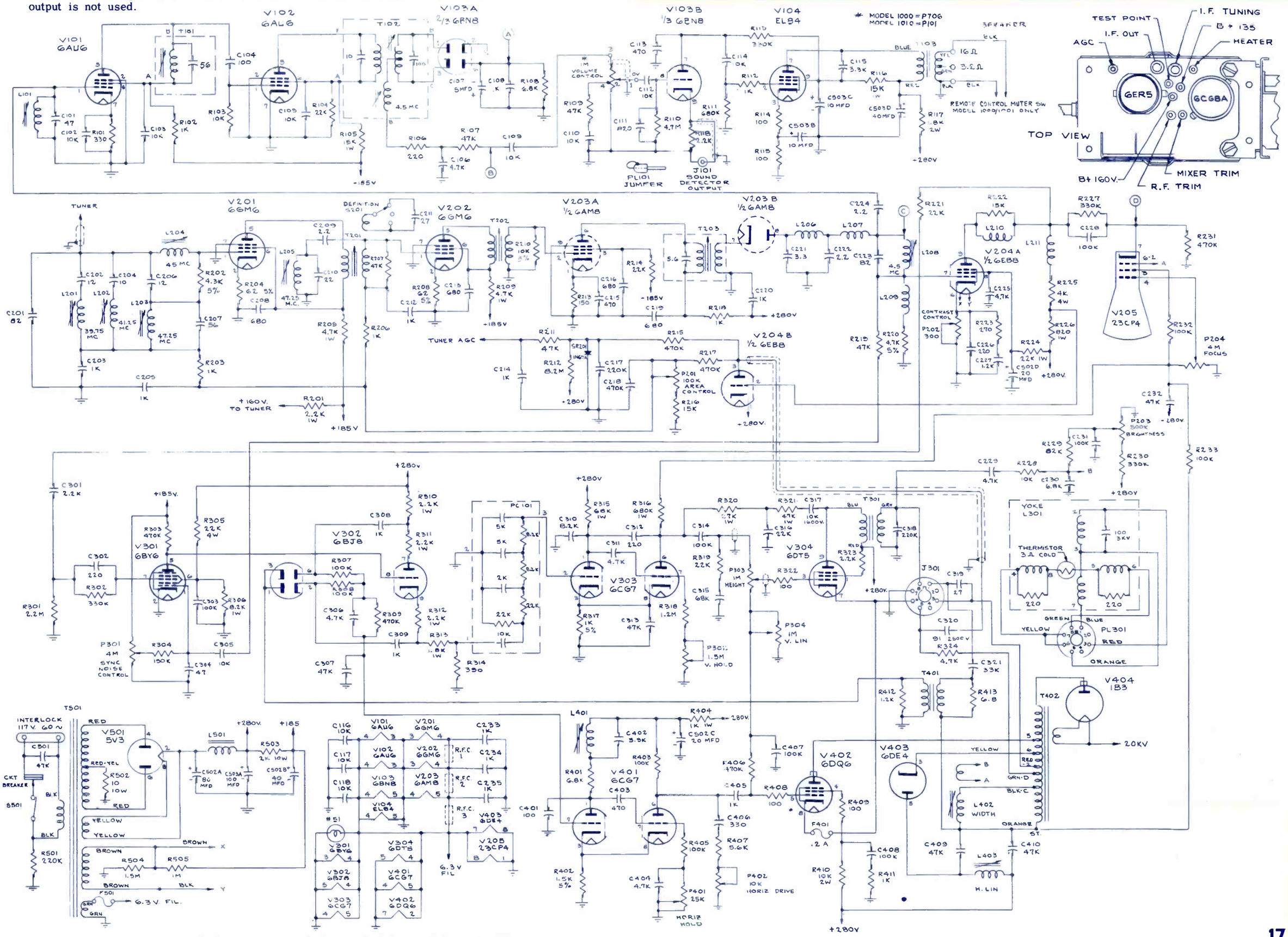
FLEETWOOD
TV Chassis 1000 & 1010
Models 1001 & 1011

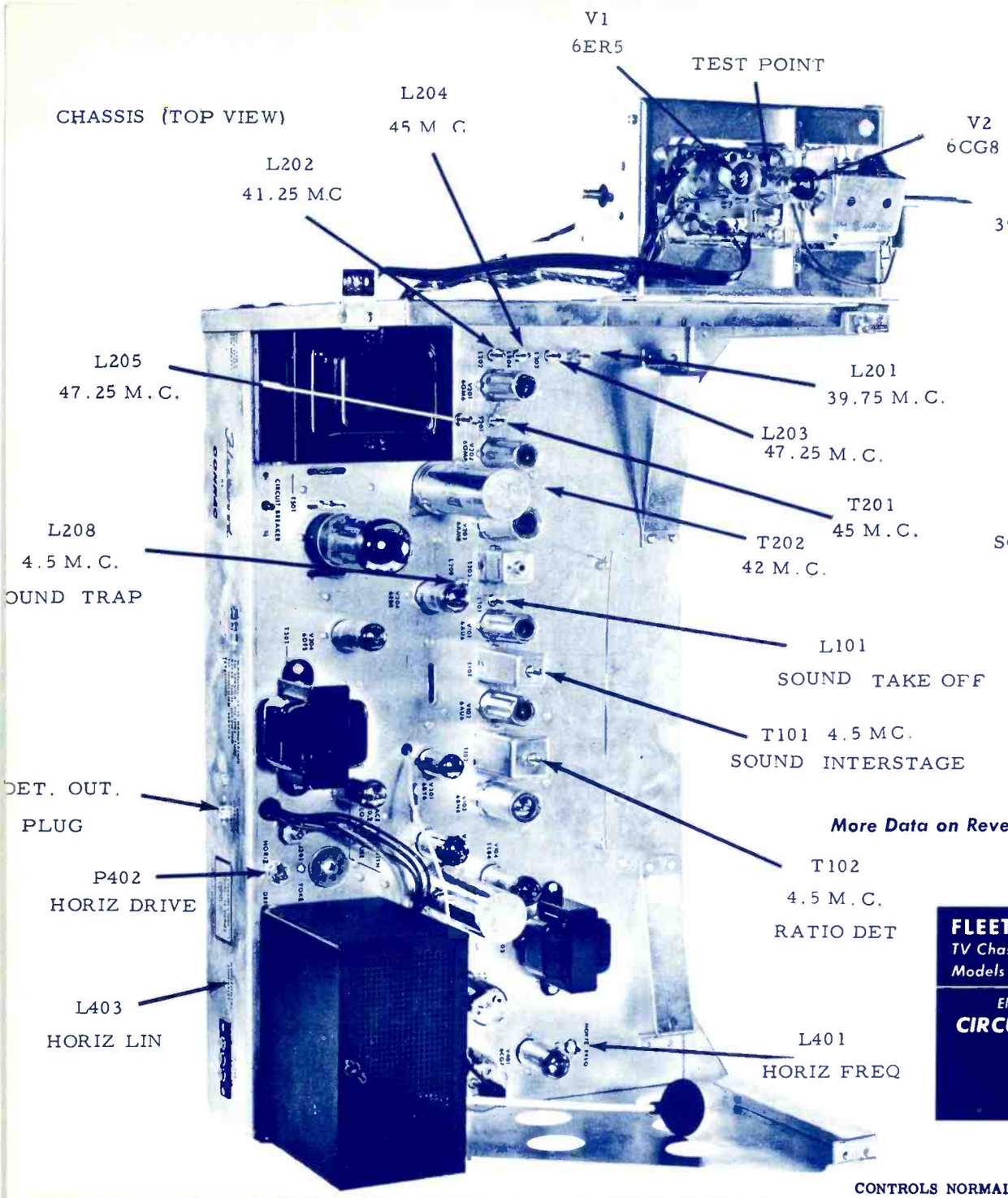
VIDEO BANDPASS: 3.75 MC

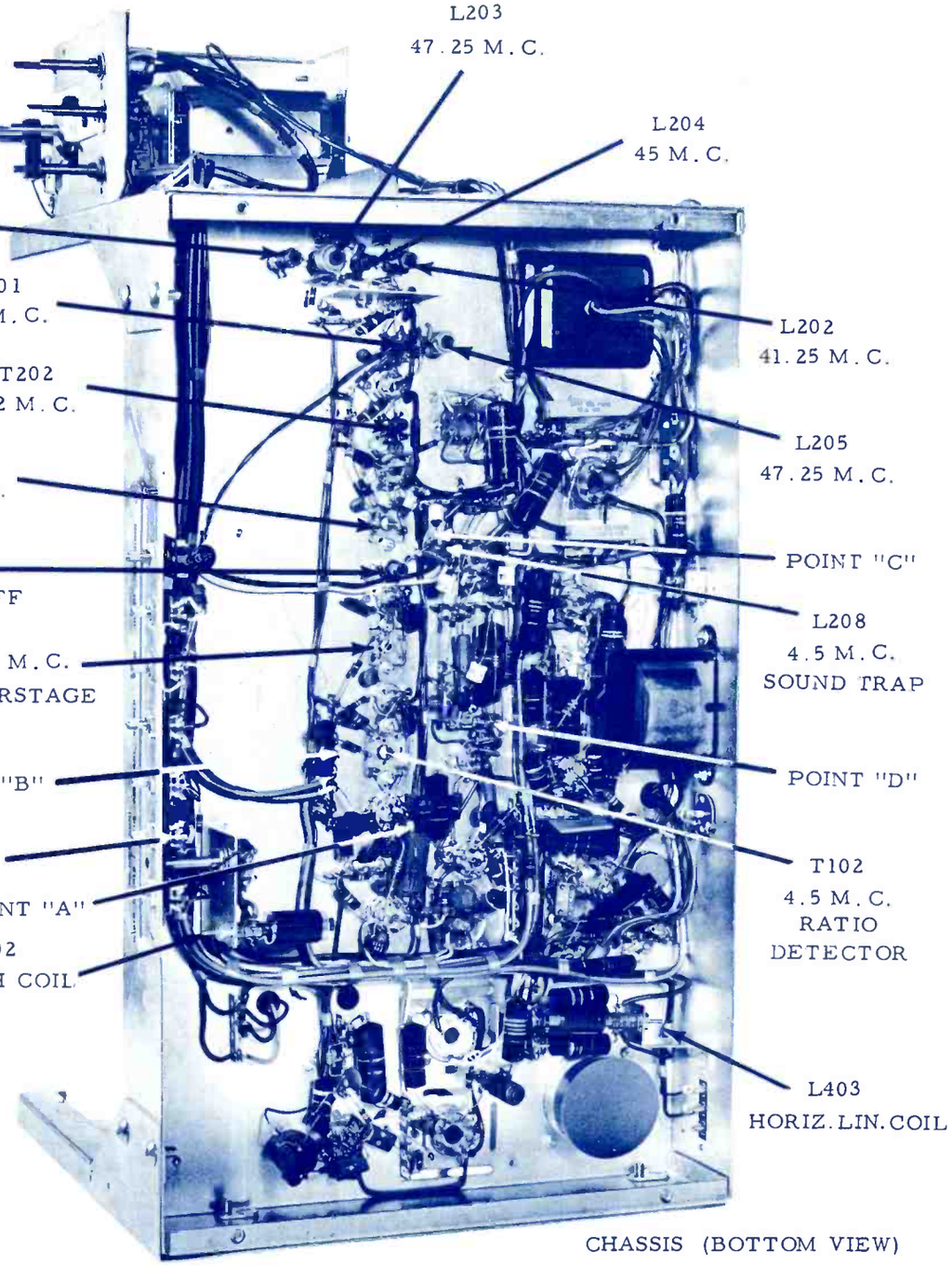
ANODE VOLTAGE: 20,000 V.

HIGH FIDELITY AUDIO CONNECTION: A Cathode Follower Jack is located in the rear apron of the chassis to permit quick, easy connection to a high fidelity system. A short-circuiting plug should be inserted in the jack if the cathode follower output is not used.



CHASSIS (TOP VIEW)



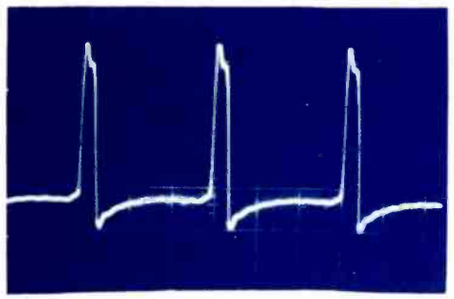


CHASSIS (BOTTOM VIEW)

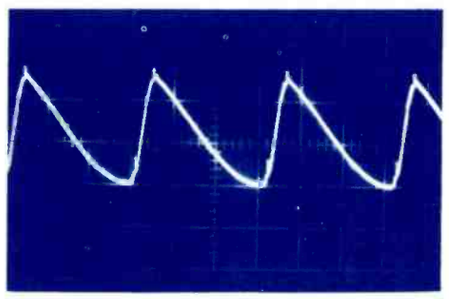
More Data on Reverse Side

FLEETWOOD
TV Chassis 1000 & 1010
Models 1001 & 1011

Electronic Technician
CIRCUIT DIGEST



V204B/6EB8, Pin 3, 900 V p-p
Horizontal Sweep Rate



V302/6BJ8, Pins 1 and 3, 15 V p-p
Horizontal Sweep Rate

VOLTAGE TABLE

CONTROLS NORMAL 117 VAC — VOLTAGE MEASURED TO GROUND — VOLTAGE MEASURED with VTVM									
PIN	1	2	3	4	5	6	7	8	9
V101/6AU6	0	G	G	F	184	184	2.7		
V102/6AU6	-19.5	G	G	F	67	73	G		
V103/6BN8	-5.9	G	-6	F	G	-13	46	-.78	G
V104/EL84	NC	0	5.4	F	G	NC	225	NC	180
V201/6GM6	-3.4	.32	G	F	165	168	G		
V202/6GM6	-3.4	.36	G	F	159	160	G		
V203/6AM8	1.70	0	135	G	F	270	0	-4.7	G
V204/6EB8	285	274	-24	F	F	0 to 3.6	-5	230	243
V205/23CP4 or 23AVP4	F	0-155	600	0-600			125-190	F	

VOLTAGE TABLE

CONTROLS NORMAL 117 VAC — VOLTAGE MEASURED TO GROUND — VOLTAGE MEASURED with VTVM									
PIN	1	2	3	4	5	6	7	8	9
V301/6BY6	66	G	G	F	80	27	-25		
V302/6BJ8	0	25.5	0	F	G	-28	203	81	82
V303/6CG7	100	0	3.4	G	F	195	-38	3.4	G
V304/6DT5	280	NC	-27	F	G	NC	0	NC	275
V401/6CG7	240	.96	9.3	G	F	160	-15	9.3	G
V402/6DQ6A	NC	F	NC	170	-45	-24	G	1.45	
V403/6DE4	NC	NC	Do Not Measure	NC	270	NC	F	G	
V404/1B3	- DO NOT MEASURE -								
V501/5V3	NC	290	NC	-5.4	NC	-5.4	NC	290	

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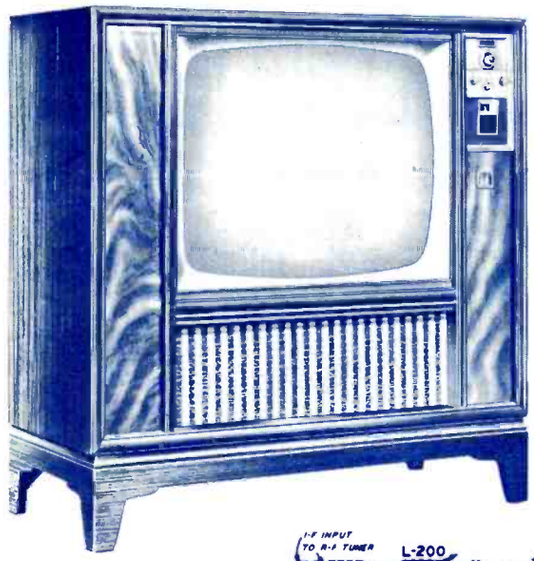
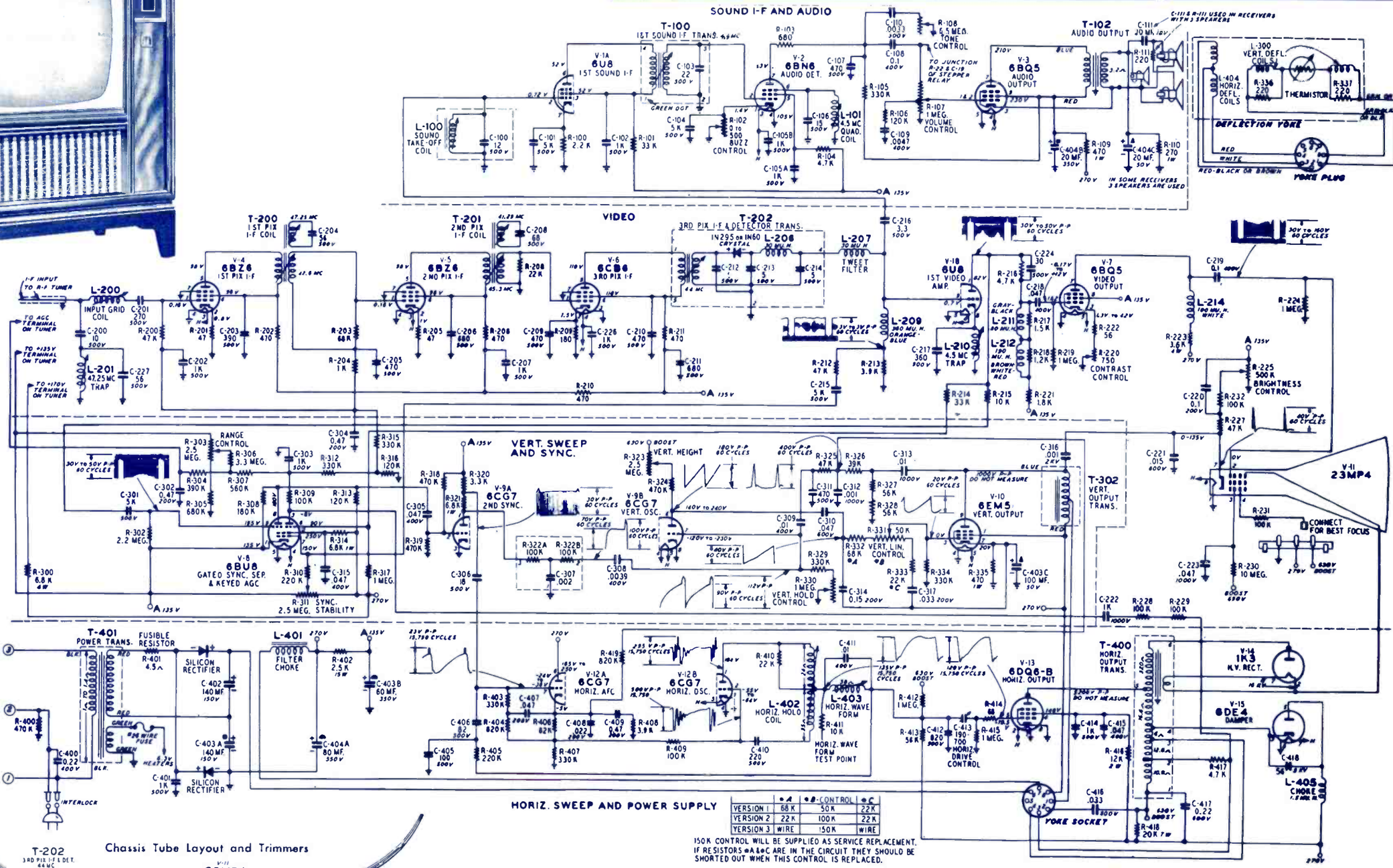
ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

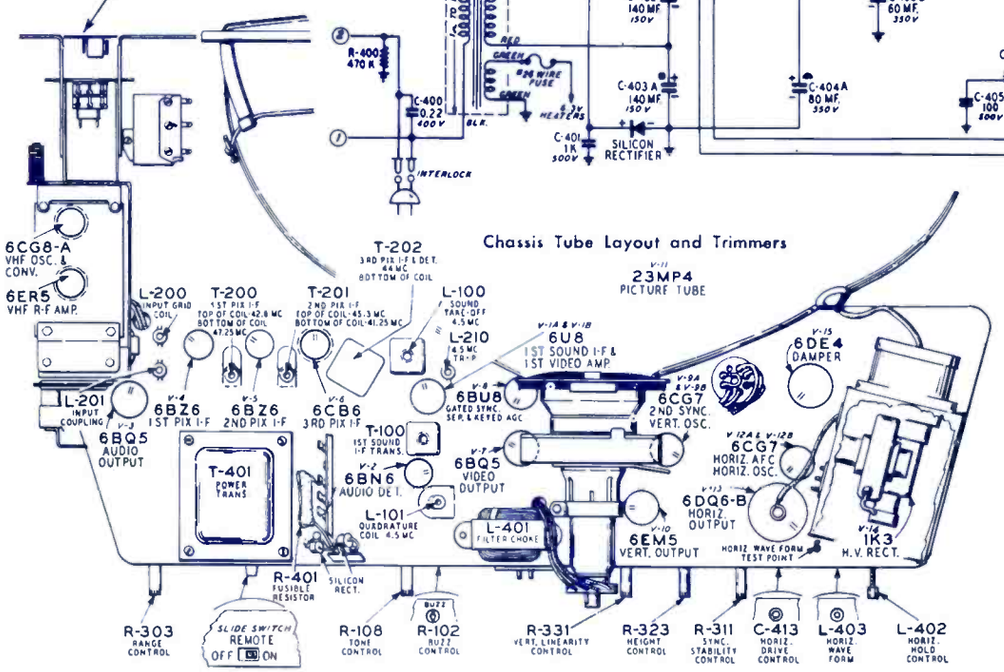
GAMBLE-SKOGMO
TV Chassis 1V2-9620A

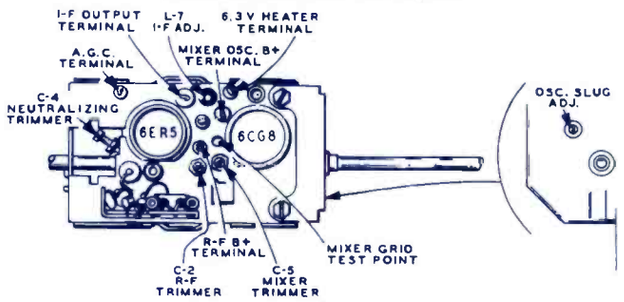




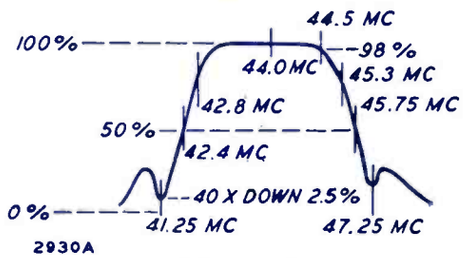
	A	B-CONTROL	C
VERSION 1	68 K	50 K	22 K
VERSION 2	22 K	100 K	22 K
VERSION 3	WIRE	150 K	WIRE

150 K CONTROL WILL BE SUPPLIED AS SERVICE REPLACEMENT. IF RESISTORS ⊕A & ⊕C ARE IN THE CIRCUIT THEY SHOULD BE SHORTED OUT WHEN THIS CONTROL IS REPLACED.





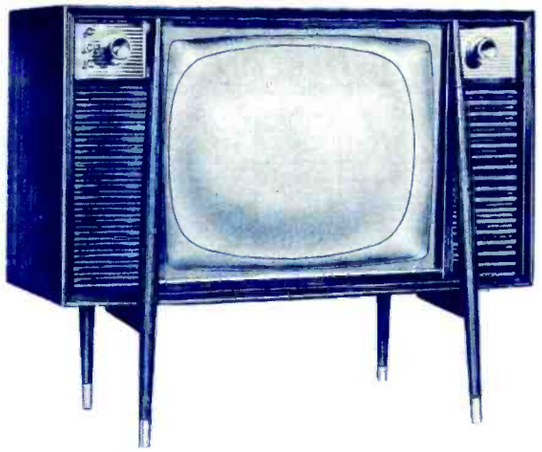
Top Tuner Adjustments

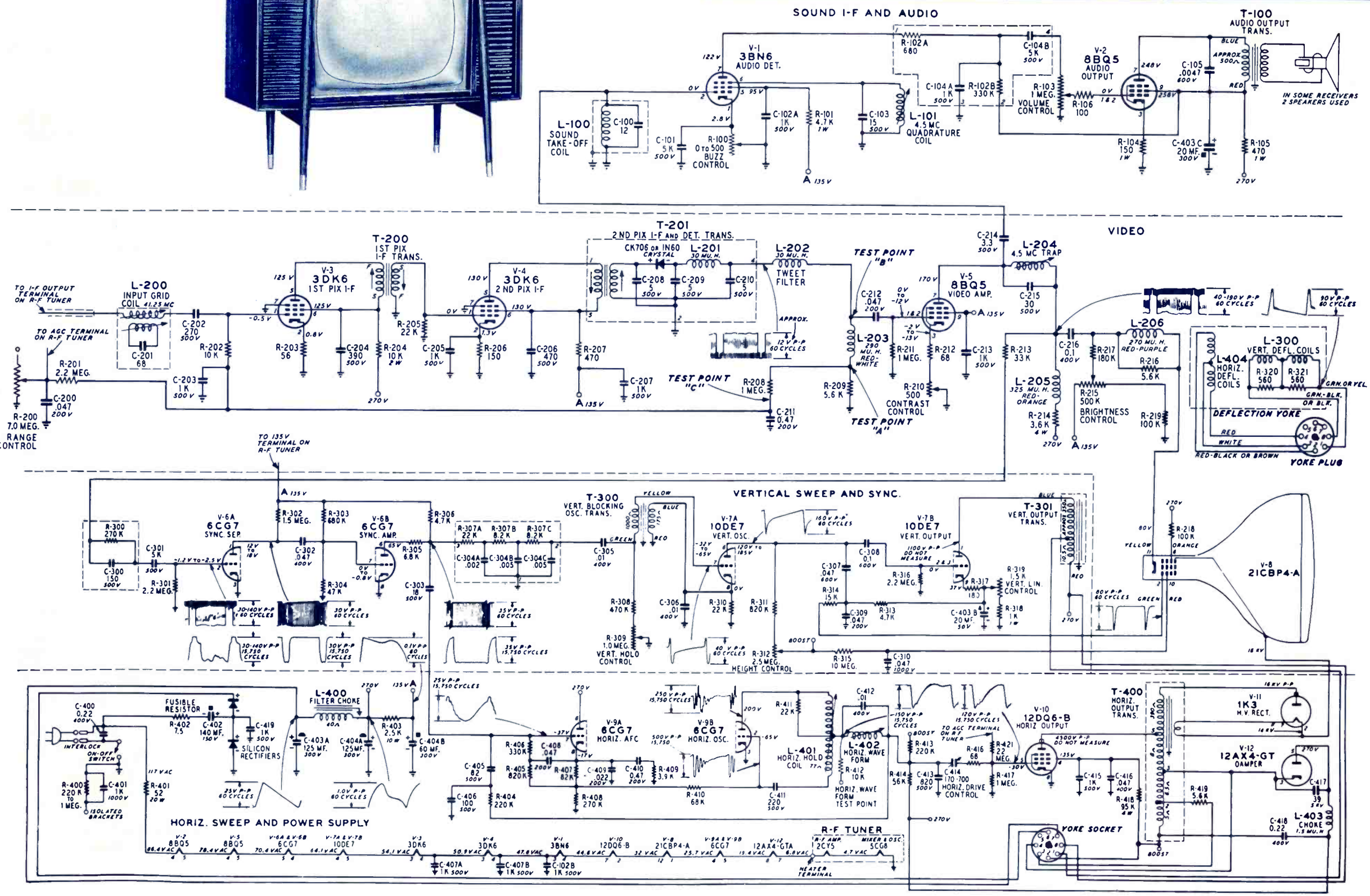


Overall Response Curve

ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

GAMBLE-SKOGMO
TV Models 9590A, 9591A, 9592A





NOTE—In UHF receivers the filament voltages in the tuner and above the tuner in the heater string will be slightly greater because of the filament voltages of the tuner tubes.

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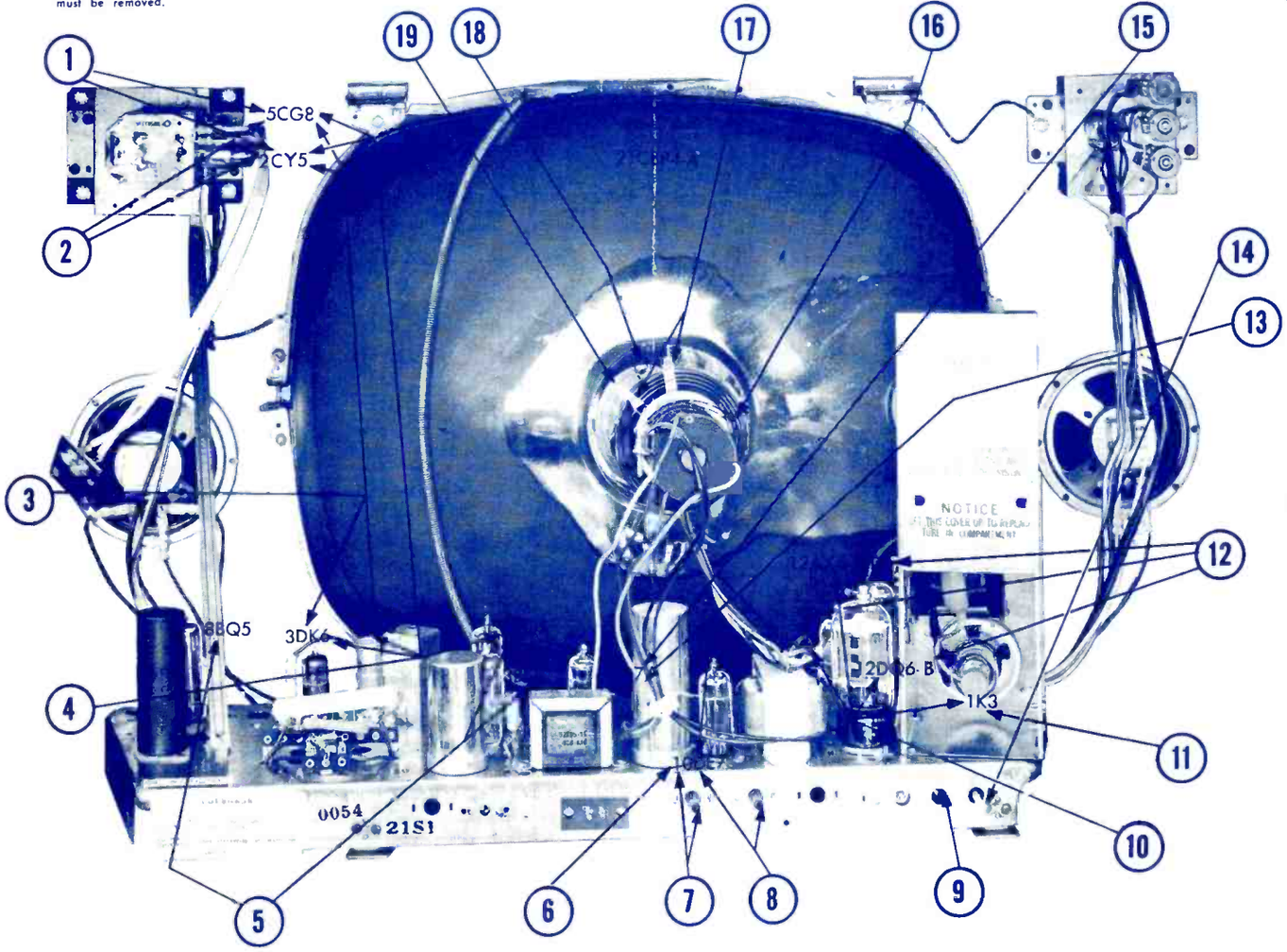
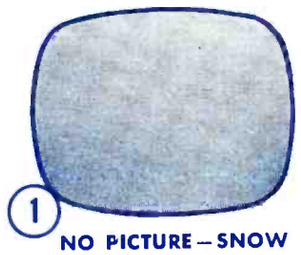
SERVICE HINTS

To provide a simple "Service Saver" procedure, the controls associated with a service condition that can be adjusted without removing the cabinet back are listed adjacent to each picture. To accomplish other control adjustments or to substitute tubes, the cabinet back must be removed.

SERVICE SAVER PROCEDURE

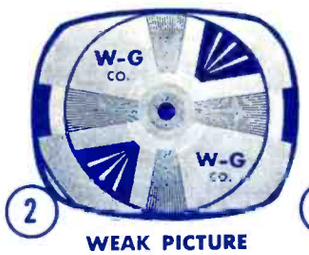
1. Carefully study face of picture tube.
2. Select one of the pictures on chart that is closest to the picture portrayed by the TV set.
3. Adjust controls indicated adjacent to picture.





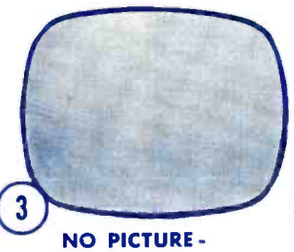
1 NO PICTURE — SNOW

Check — Station Selector Position and Antenna Connections.

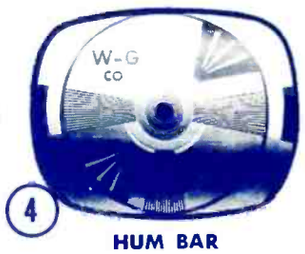


2 WEAK PICTURE

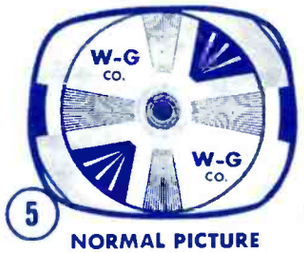
Check—Antenna Connections and Adjustment of Range Control at Front of Receiver.



3 NO PICTURE - NO SNOW

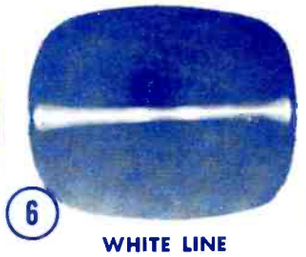


4 HUM BAR

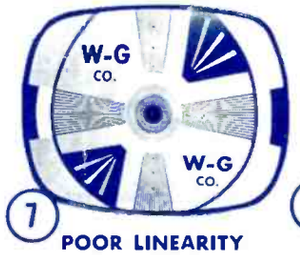


5 NORMAL PICTURE

With Weak or Distorted Sound or No Sound.

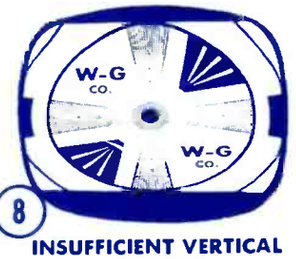


6 WHITE LINE



7 POOR LINEARITY

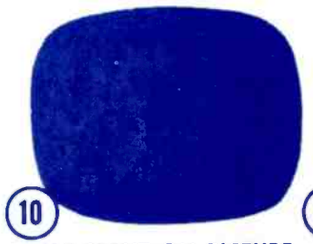
Check—Vertical Linearity Adjustment.



8 INSUFFICIENT VERTICAL HEIGHT

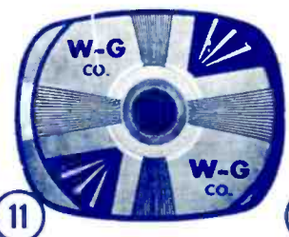
Check—Height Adjustment.

9 WAVE FORM "FACTORY ADJUSTMENT ONLY"

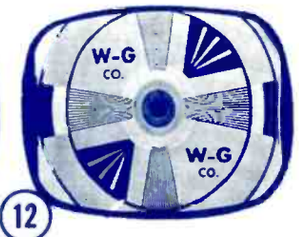


10 NO LIGHT ON PICTURE TUBE

Check—Brightness Control, A.C. Line Cord Power Connections and Fusible Resistor.



11 PICTURE BLOOMING



12 INSUFFICIENT HORIZONTAL SIZE

13 UNSTABLE PICTURE (ROLLING)

Check—Vertical Hold Control Adjustment.

14 DIAGONAL BARS

Check—Horizontal Hold Control Adjustment.

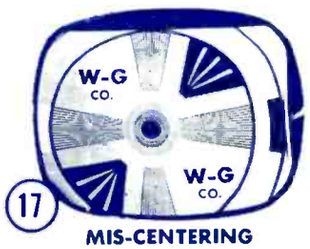
15

16 BEAM ALIGNER (If Used)

Rotate and Slide Backward or Forward Until Best Overall Focus Is Obtained.
In Some Receivers, Position of Aligner Will Be on Tube Base.

18 TILTED PICTURE

Loosen Locking Screw, Rotate Yoke Until Picture is Level and Push Yoke Forward as Far as it Will Go. Re-Tighten Locking Screw.



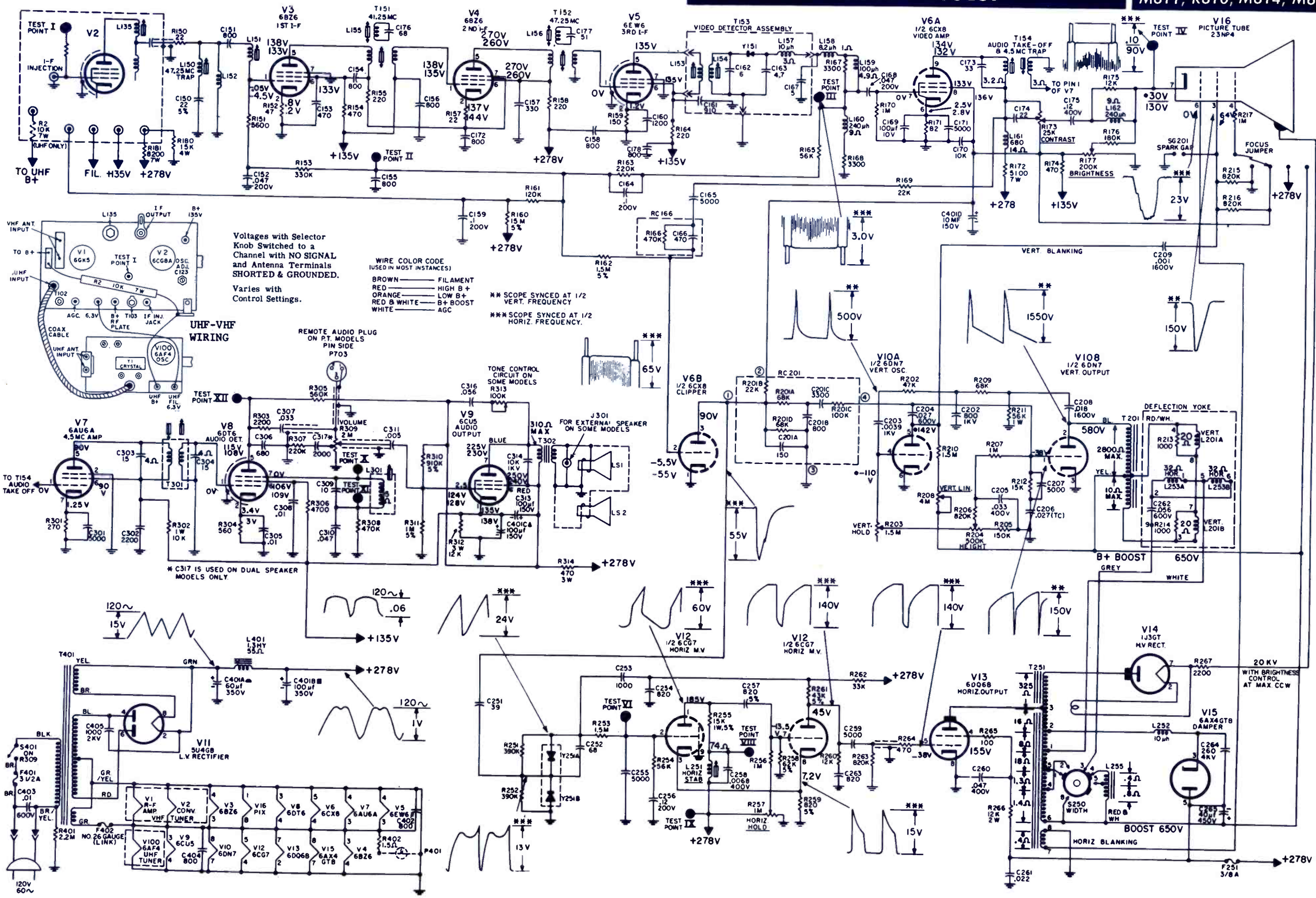
17 MIS-CENTERING

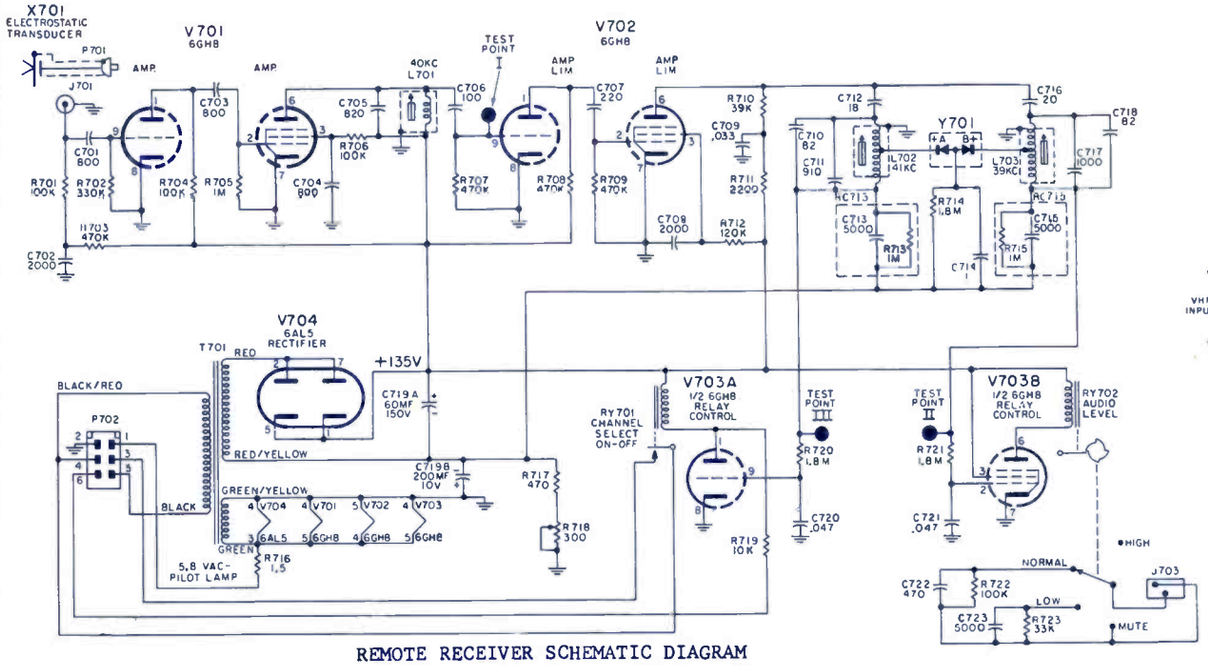
Rotate Tabs Individually or Together Until Picture Is Centered.

19 SHADOW

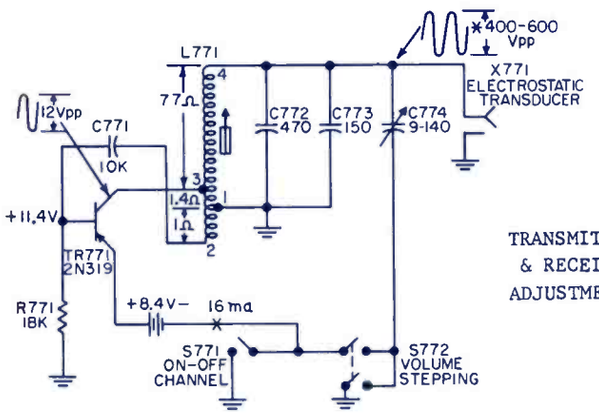
GENERAL ELECTRIC

TV Chassis MW
Models M604, M605, M610
M611, R610, M614, M615



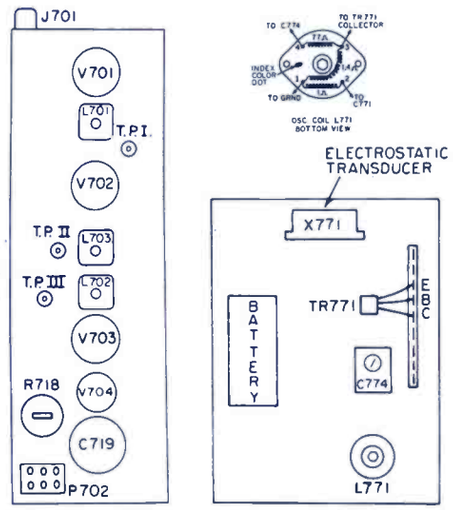


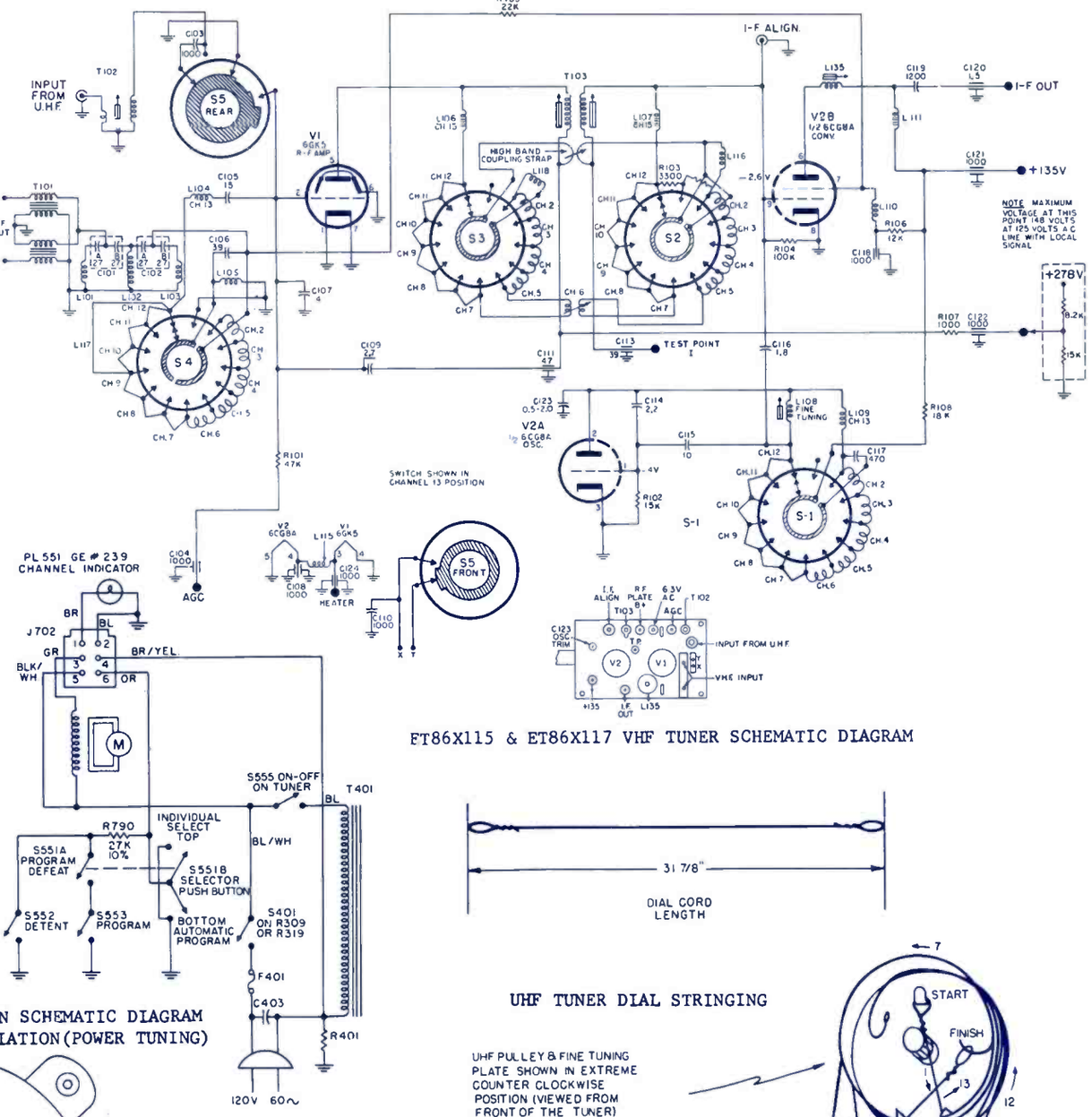
REMOTE RECEIVER SCHEMATIC DIAGRAM



TRANSMITTER SCHEMATIC DIAGRAM

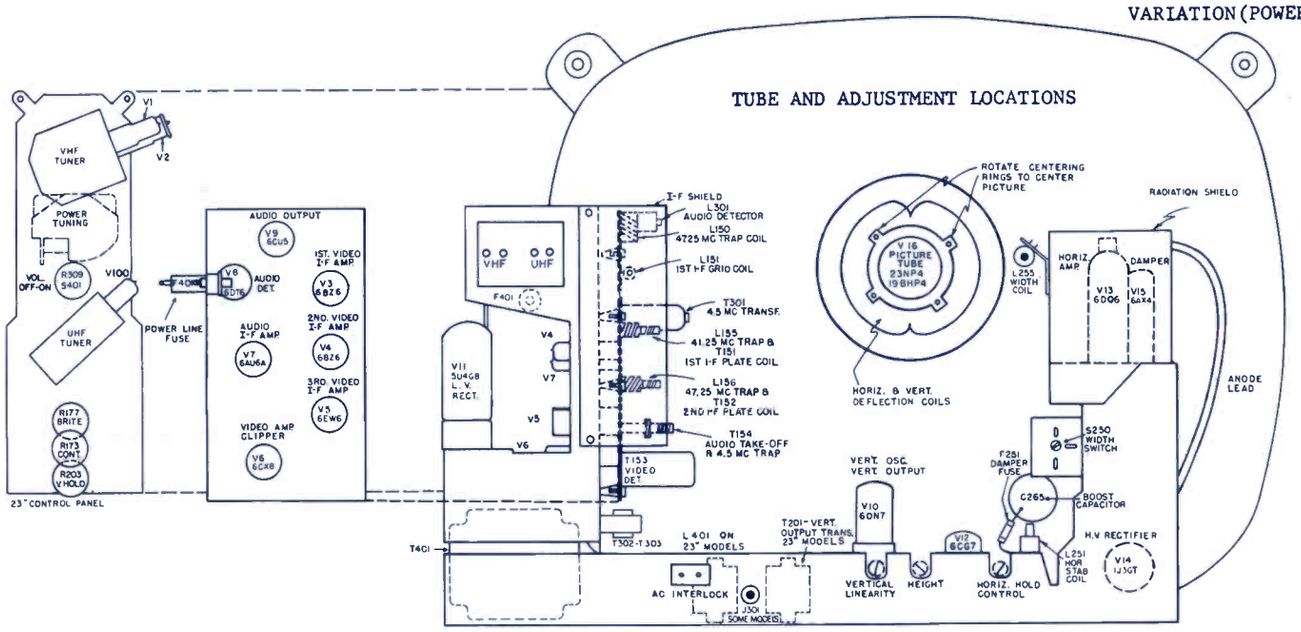
TRANSMITTER & RECEIVER ADJUSTMENTS





FT86X115 & ET86X117 VHF TUNER SCHEMATIC DIAGRAM

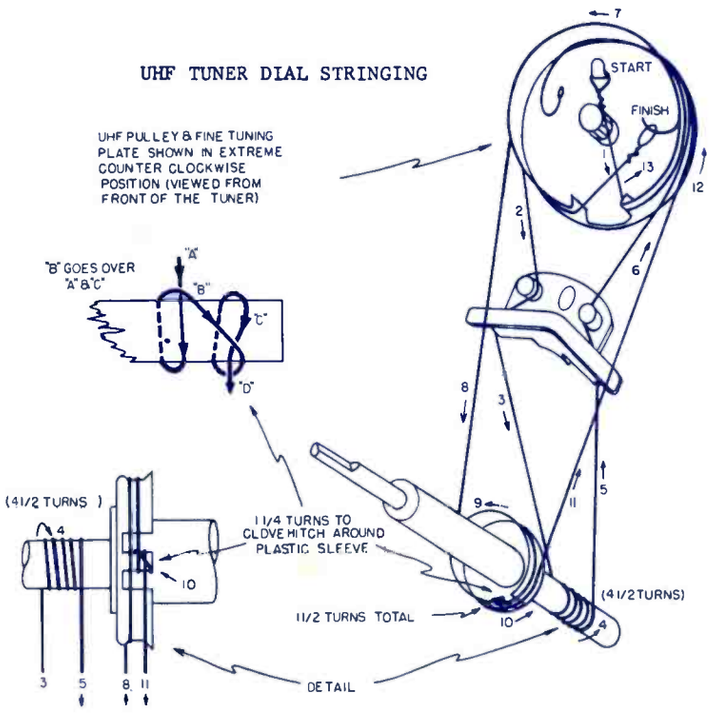
MAIN SCHEMATIC DIAGRAM VARIATION (POWER TUNING)



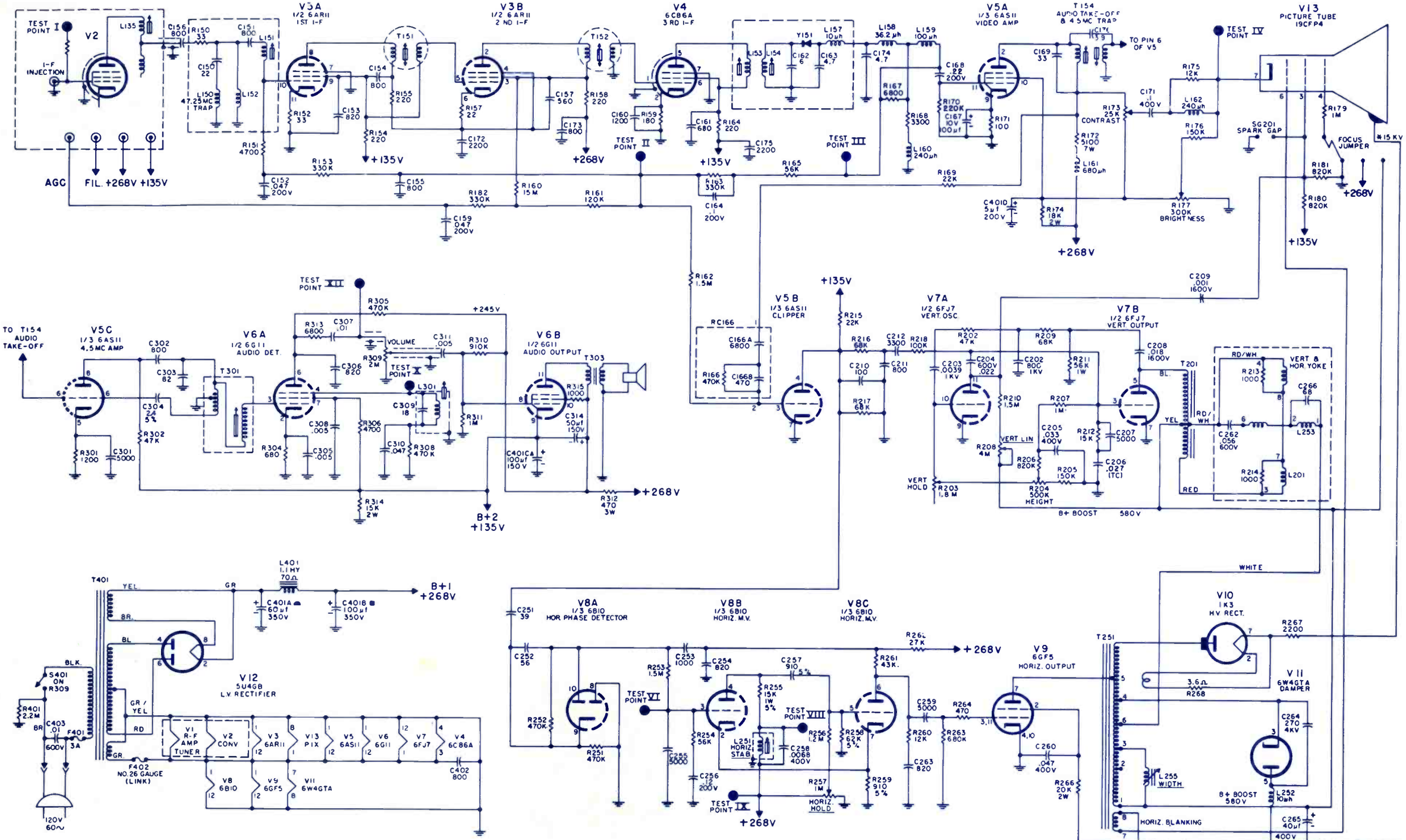
GENERAL ELECTRIC
TV Chassis MW
Models M604, M605, M610, M611, R610, M614, M615

Electronic Technician
CIRCUIT DIGEST

UHF TUNER DIAL STRINGING



GENERAL ELECTRIC
TV Chassis LX



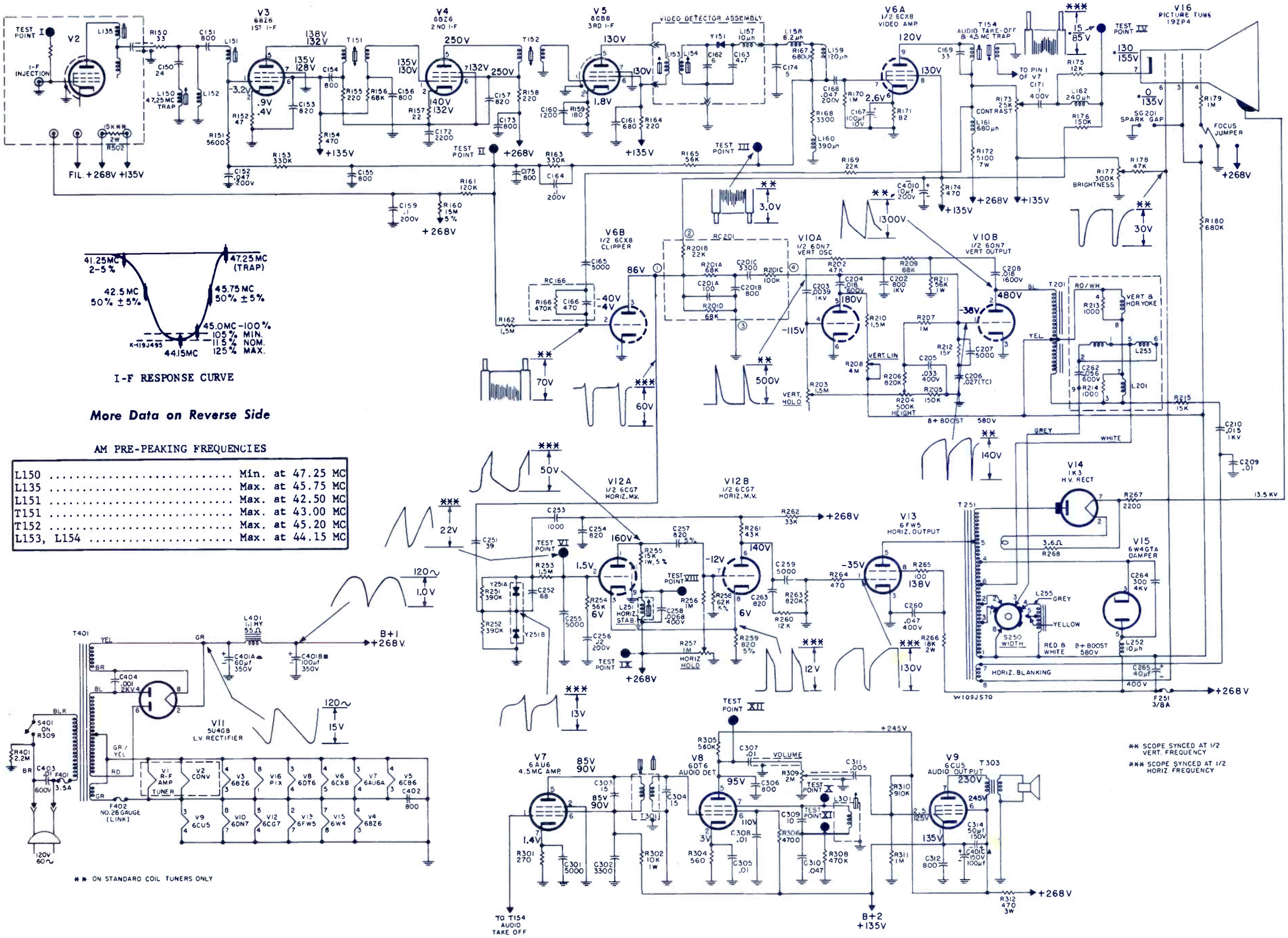
PRODUCTION CHANGE IDENTIFICATION

On chassis with code numbers below 149LX, C168 was .047μf and R170 was 1 Meg. When changing either component, both components should be checked to agree with production code.

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

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

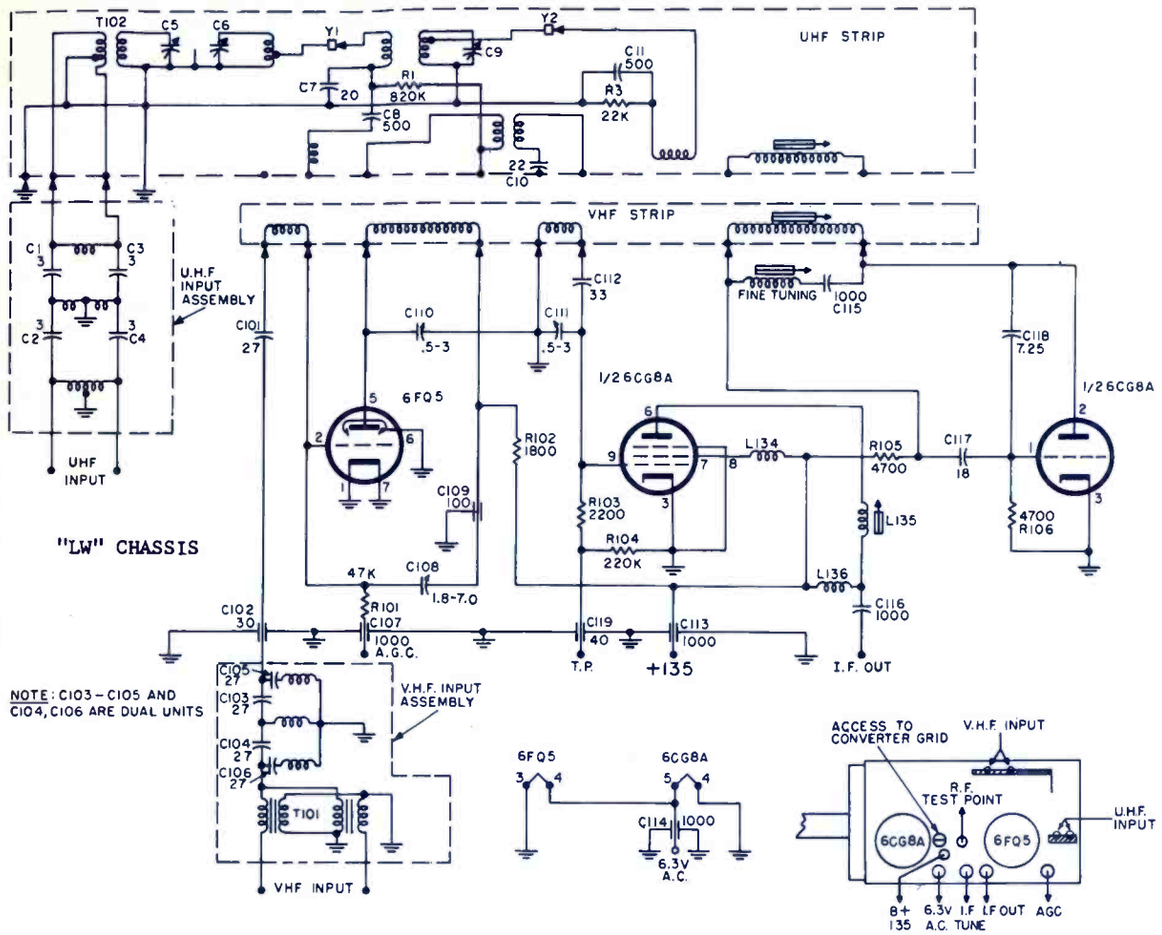
GENERAL ELECTRIC
TV Chassis "LW"
Models M202 through 205



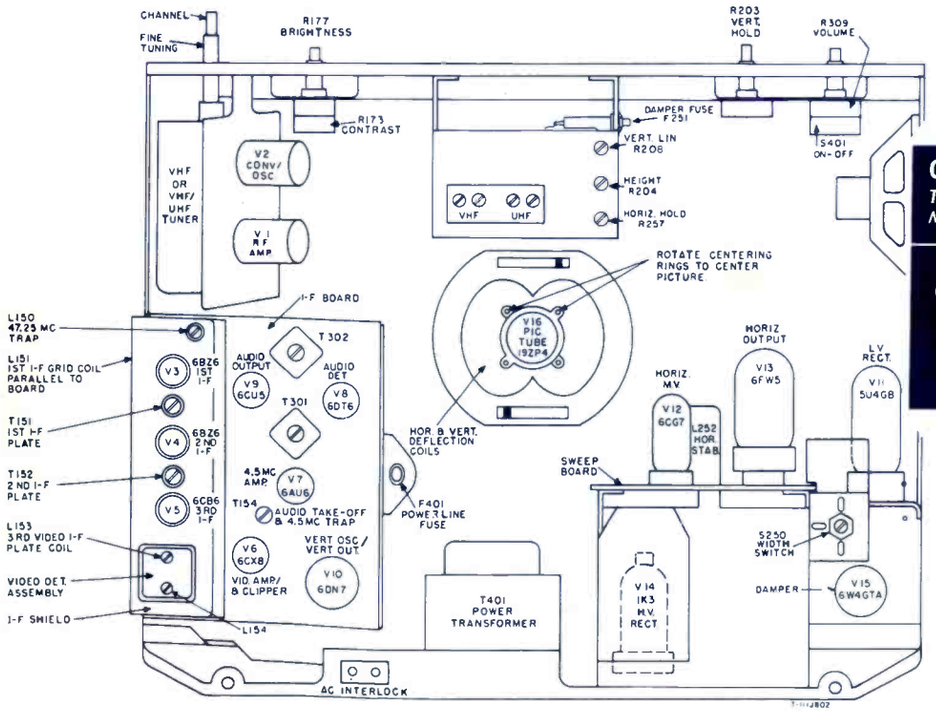
More Data on Reverse Side

AM PRE-PEAKING FREQUENCIES

L150	Min. at 47.25 MC
L135	Max. at 45.75 MC
L151	Max. at 42.50 MC
T151	Max. at 43.00 MC
T152	Max. at 45.20 MC
L153, L154	Max. at 44.15 MC



WT86X103 VHF/UHF TUNER



TUBE AND ADJUSTMENT LOCATIONS

GENERAL ELECTRIC
TV Chassis "LW"
Models M202 through 205

Electronic Technician
CIRCUIT DIGEST

More Data on Reverse Side

ROMAN VIII NUMERALS

REPRESENT TEST POINTS

CIRCLED (A) LETTERS

REPRESENT INTERCONNECTING WIRES SOLDERED INTO BOARD

- (A) TO I-F BOARD (PIN 36CX8)
- (B) TO FIL FUSE & (PIN 46CX8) I-F BOARD
- (C) TO TERMINAL 8 ON T251
- (D) TO F251

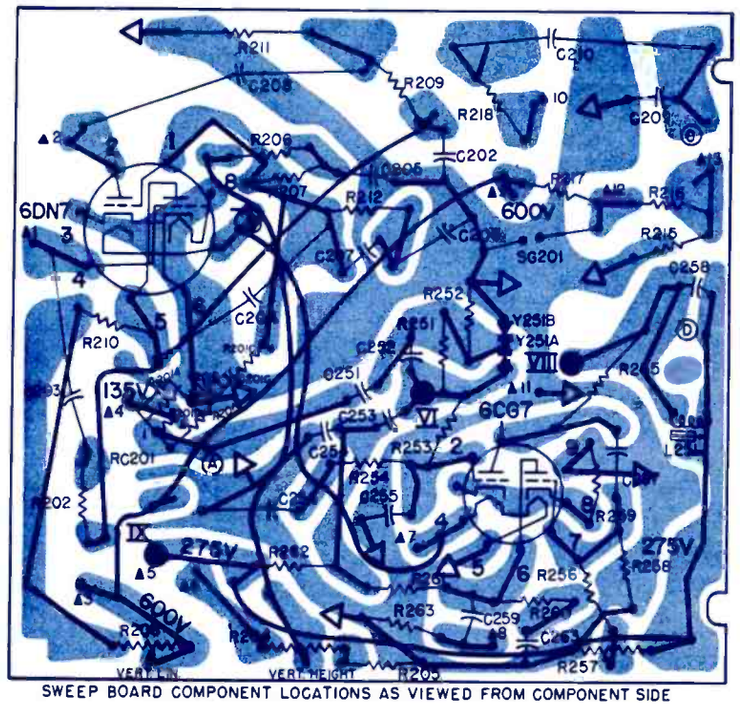
TRIANGLE (▲) NUMBERS

DENOTE WIREWRAP TERMINALS MOUNTED ON COMPONENT BOARD TO CONNECT WIRES FROM OTHER COMPONENTS

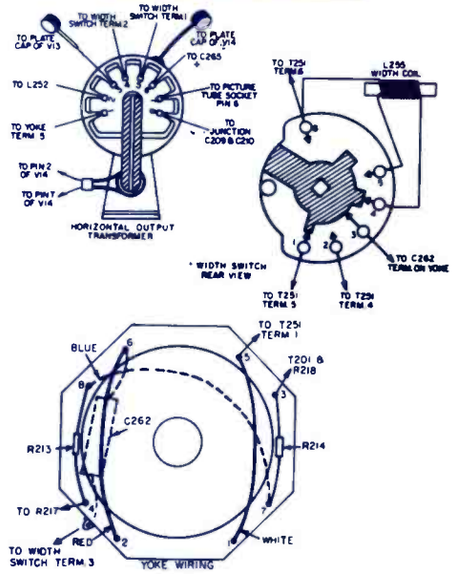
- ▲1 TO R203-R219 VERT HOLD CONTROL
- ▲2 TO T201 (BLUE LEAD)
- ▲3 TO T201 (YELLOW LEAD)
- ▲4 TO C401C (+135V B+1)
- ▲5 TO C401B (+275V B+3)
- ▲6 TO R203, VERT HOLD CONTROL
- ▲7 TO V16, PIN 1 TO V13, PIN 7
- ▲8 TO R264
- ▲9 TO TERM 4 OF YOKE, TO C265 +
- ▲10 TO T201 (RED LEAD), TO TERM 3 OF YOKE
- ▲11 GROUND TERM FOR FOCUS JUMPER
- ▲12 TO V16, PIN 3
- ▲13 TO TERM 7 ON T251 TO V16, PIN 6

GENERAL ELECTRIC
TV Chassis M575
Models CS733, CS734, CS901, CS902

Electronic Technician
CIRCUIT DIGEST



SWEEP BOARD COMPONENT LOCATIONS AS VIEWED FROM COMPONENT SIDE



CIRCLED (A) LETTERS

REPRESENT INTERCONNECTING WIRES SOLDERED INTO BOARD

- (A) TUNER I F LINK CABLE
- (B) TO C401B

ROMAN II NUMERALS

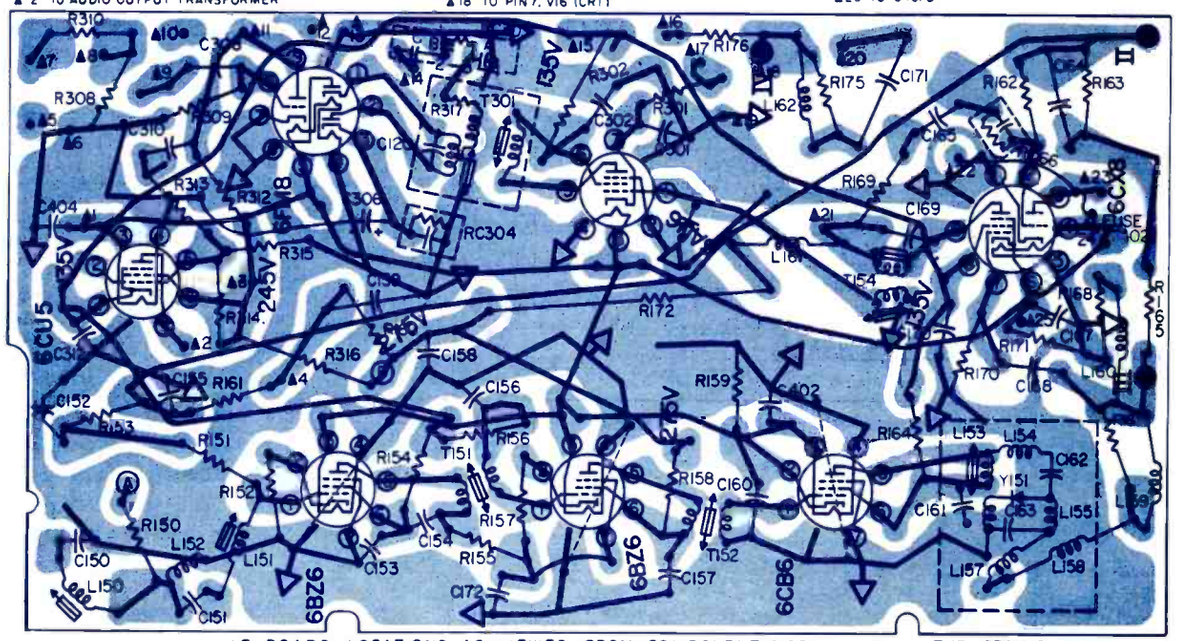
REPRESENTS TEST POINTS

- ▲20 TO CONTRAST CONTROL ARM
- ▲21 TO CONTRAST CONTROL
- ▲22 TO POWER TRANSFORMER T401
- ▲23 TO (A) ON SWEEP BOARD
- ▲24 TO (B) ON SWEEP BOARD
- ▲25 TO C401D

TRIANGLE (▲7) NUMBERS

DENOTE WIREWRAP TERMINALS MOUNTED ON COMPONENT BOARD TO CONNECT WIRES FROM OTHER COMPONENTS

- ▲1 TO TUNER FILAMENT CONNECTION
- ▲2 TO AUDIO OUTPUT TRANSFORMER
- ▲3 TO C313+
- ▲4 TO TUNER AGC TERMINAL
- ▲5 THRU ▲14, ▲17 & ▲19, SEE AUDIO CABLE AND CONNECTION DRAWING VARIATIONS
- ▲15 TO C401C+ & C313-
- ▲16 TO BRIGHTNESS CONTROL ARM
- ▲18 TO PIN 7, V16 (CRT)

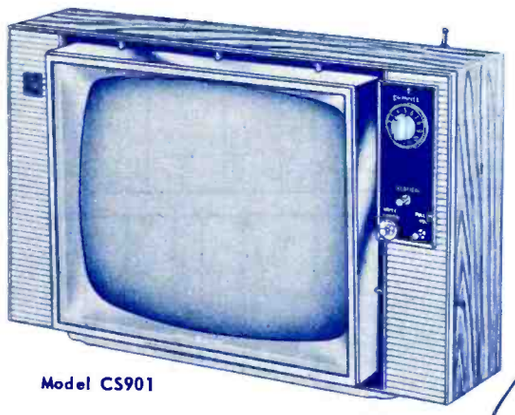


IF BOARD LOCATIONS AS VIEWED FROM COMPONENT SIDE

THE GROUND PLANE IS INDICATED BY ⟶

Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota

GENERAL ELECTRIC
TV Chassis M575
Models CS733, CS734, CS901, CS902



Model CS901

R401 MUST NOT EXCEED 1.0 MEG. AND MAY BE 560K AND 2.2 M IN PARALLEL AS IN SCHEMATIC

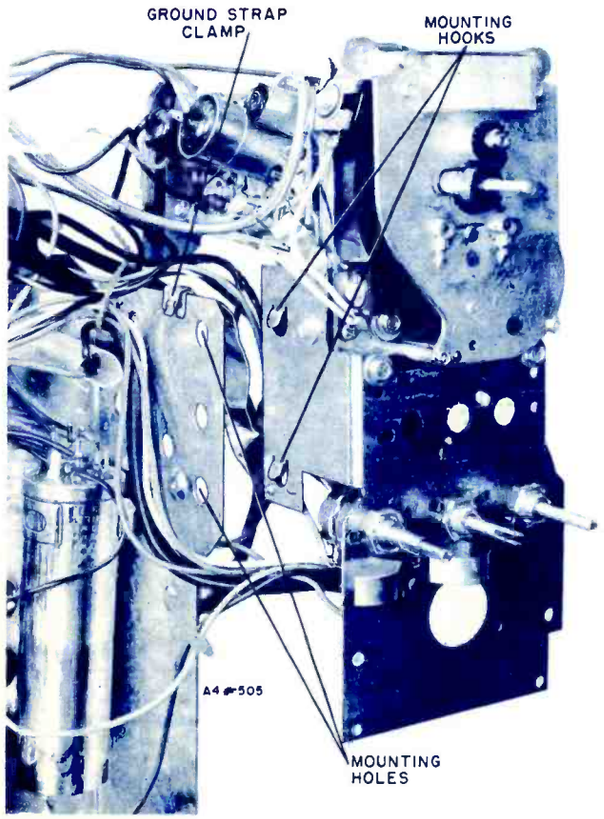
BOXED RESISTOR (R314 & R315) DENOTES MATCHED RESISTOR UNIT

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

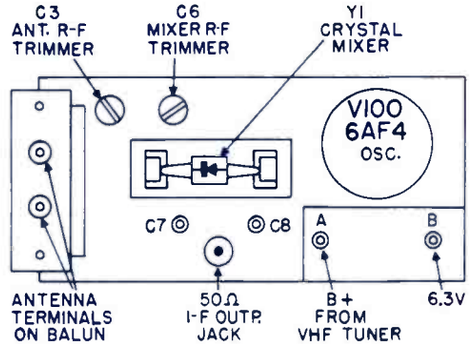
WT86X97 WIRING CONNECTIONS

GENERAL ELECTRIC

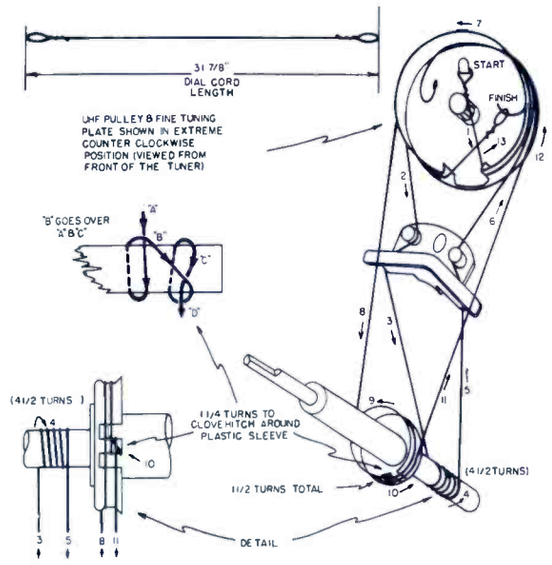
TV Chassis U5 Models
M870VWD, M871VWD,
R870VML, R870VWD



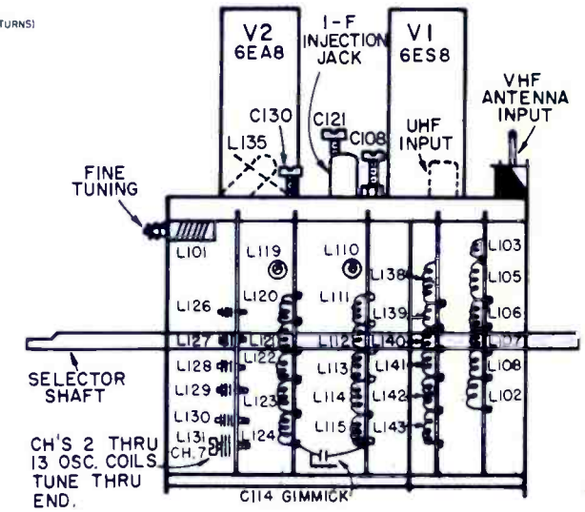
Tuner assembly hooks on chassis



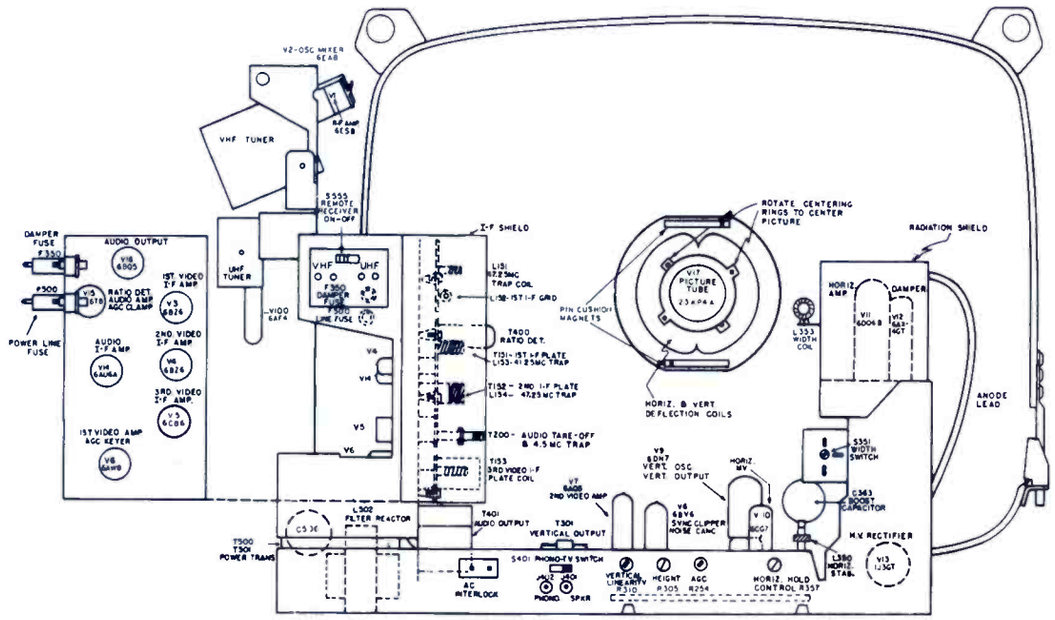
Top view UHF Tuner WT85X25



UHF tuner dial stringing diagram



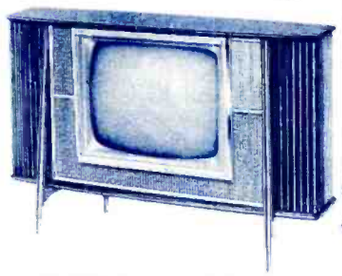
VHF Tuner adjustment locations



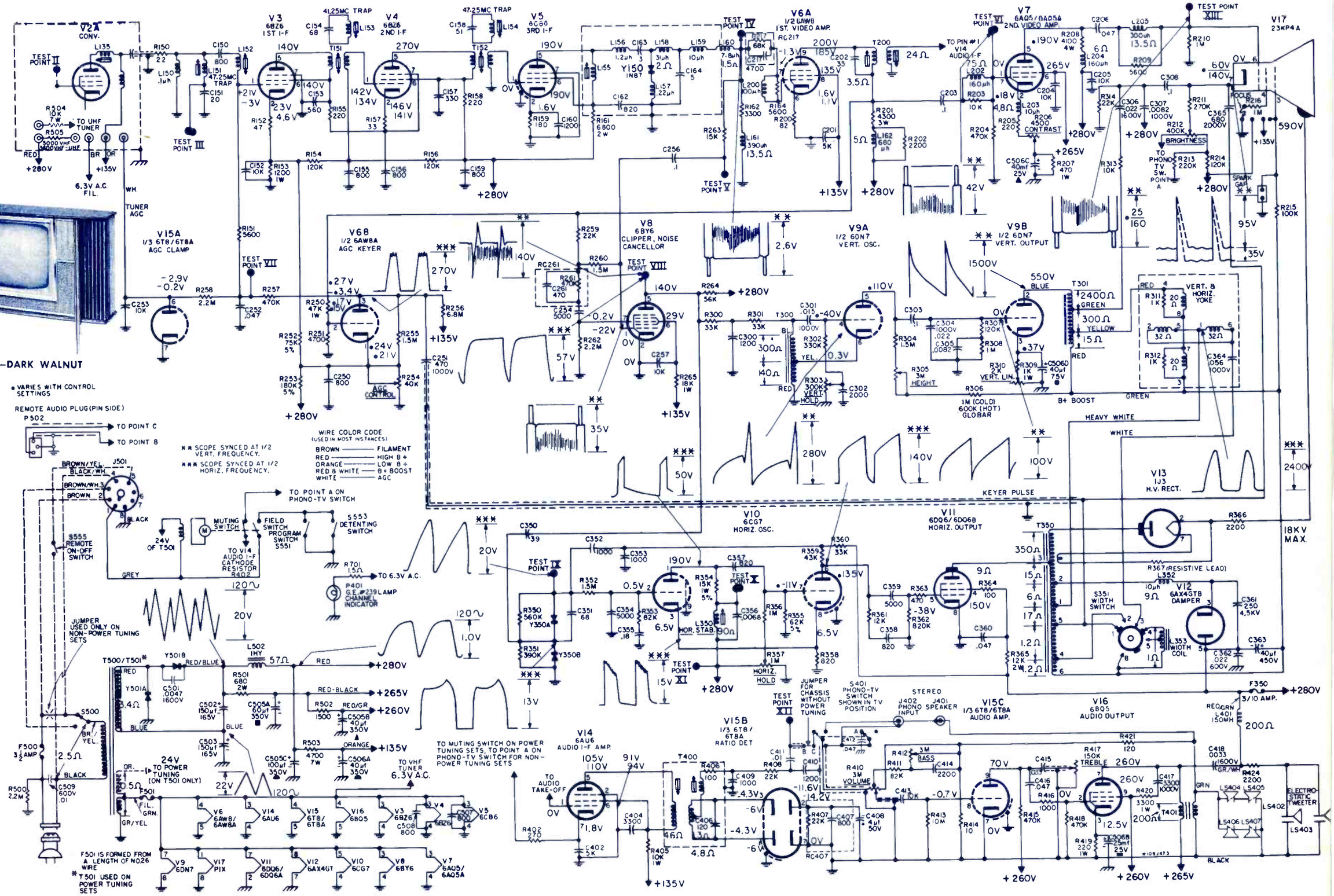
Tube and adjustment locations

GENERAL ELECTRIC

TV Chassis U5
Models M870VWD, M871VWD
R870VML, R870VWD



M870VWD—DARK WALNUT

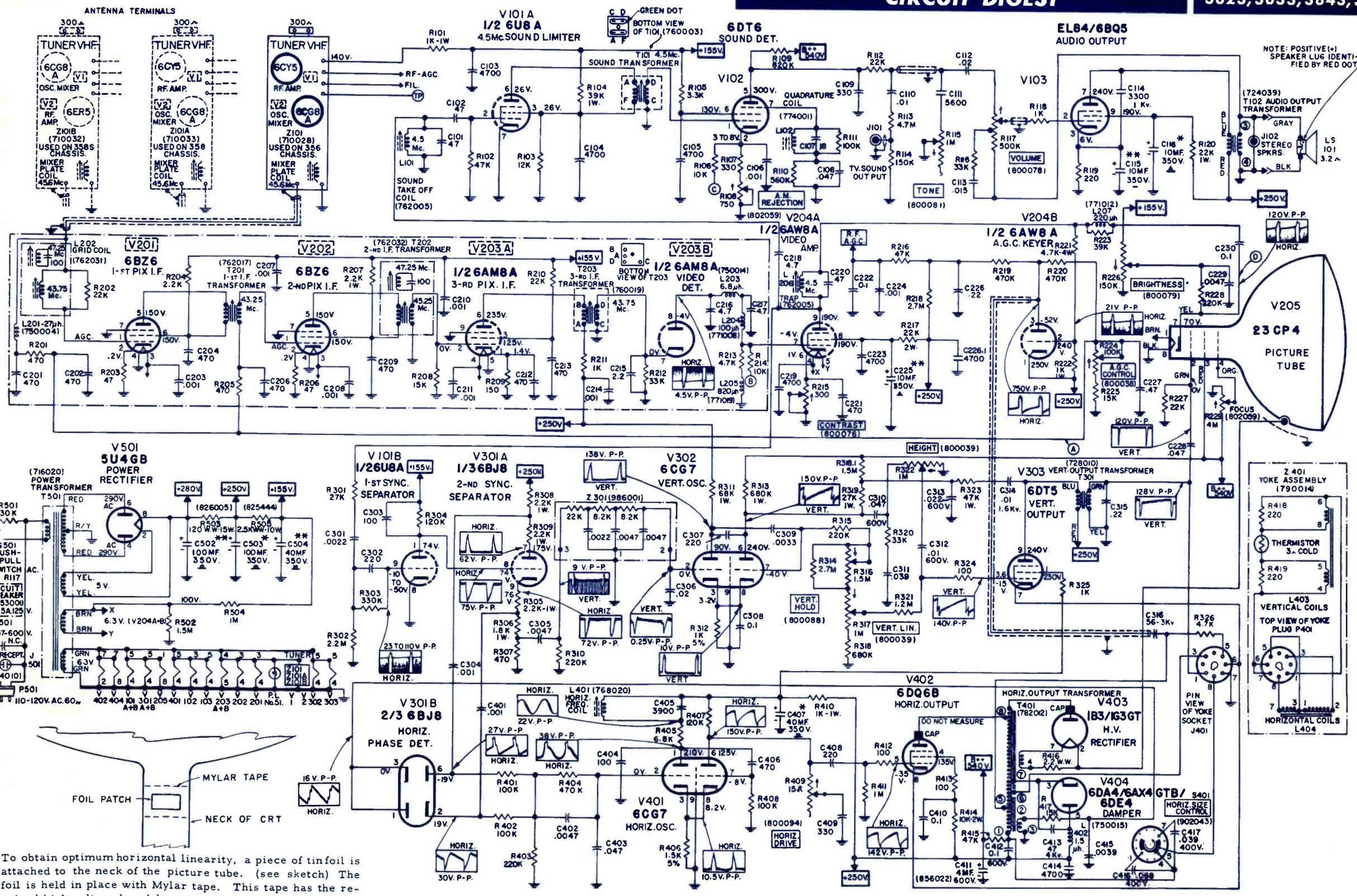


INTERMEDIATE FREQUENCIES:	
Picture I-F Carrier	45.75 mc
Adjacent Channel Audio Trap	47.25 mc
Sound I-F Carrier	41.25 mc

FUSES:	
Type "C," Fast Blo	3.5 amp.
Type "N," Slo Blo	3/10 amp.

HOFFMAN

TV Chassis 356, 358
Models 3803, 3813, 3823, 3833, 3843, 3853



To obtain optimum horizontal linearity, a piece of tinfoil is attached to the neck of the picture tube. (see sketch) The foil is held in place with Mylar tape. This tape has the required high voltage breakdown potential.

The foil should be removed from the old picture tube and placed on the neck of the new replacement picture tube, before the replacement tube is installed.

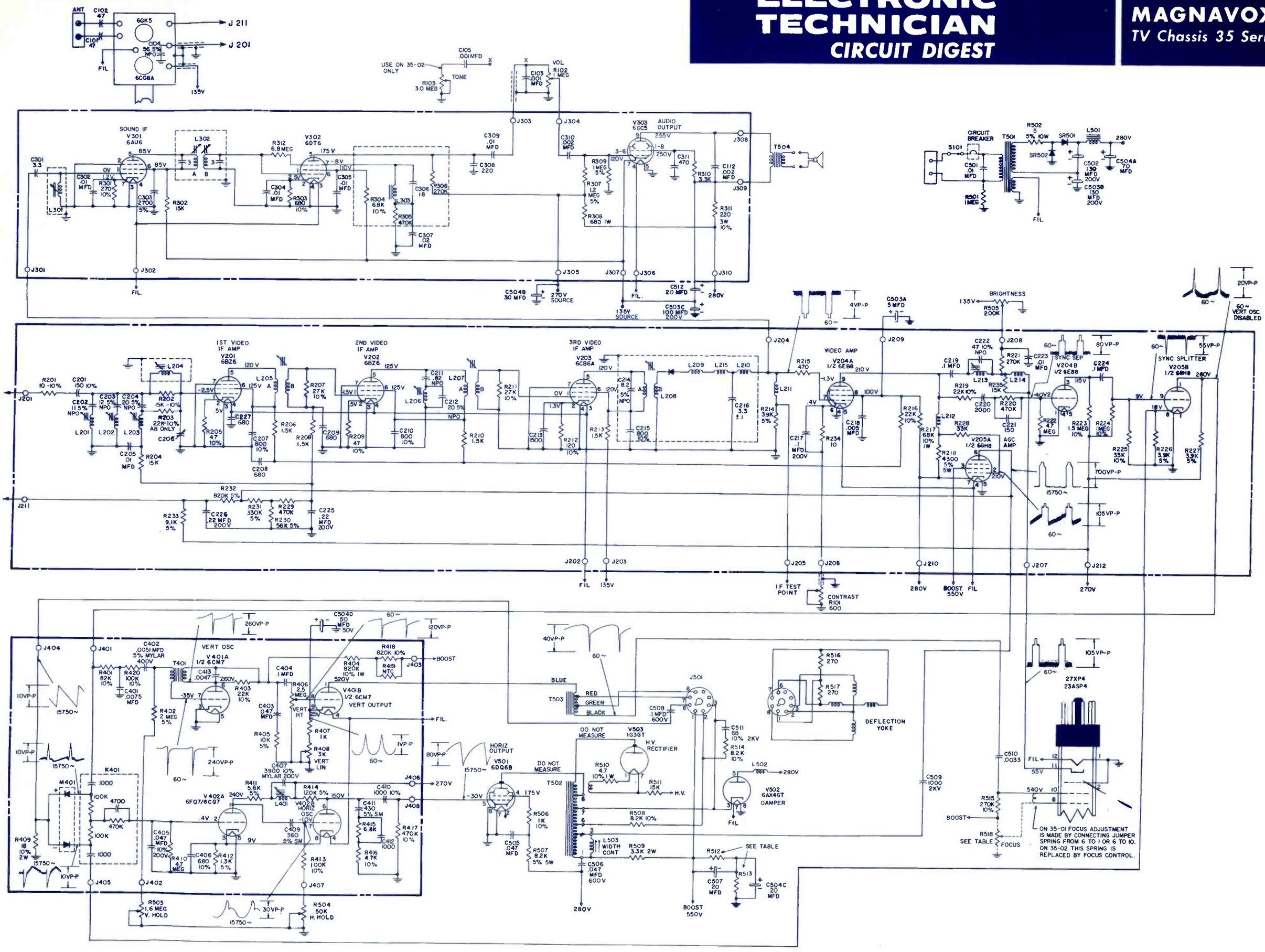
Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota

AUDIO COMPENSATION NETWORK

CHASSIS LAYOUT

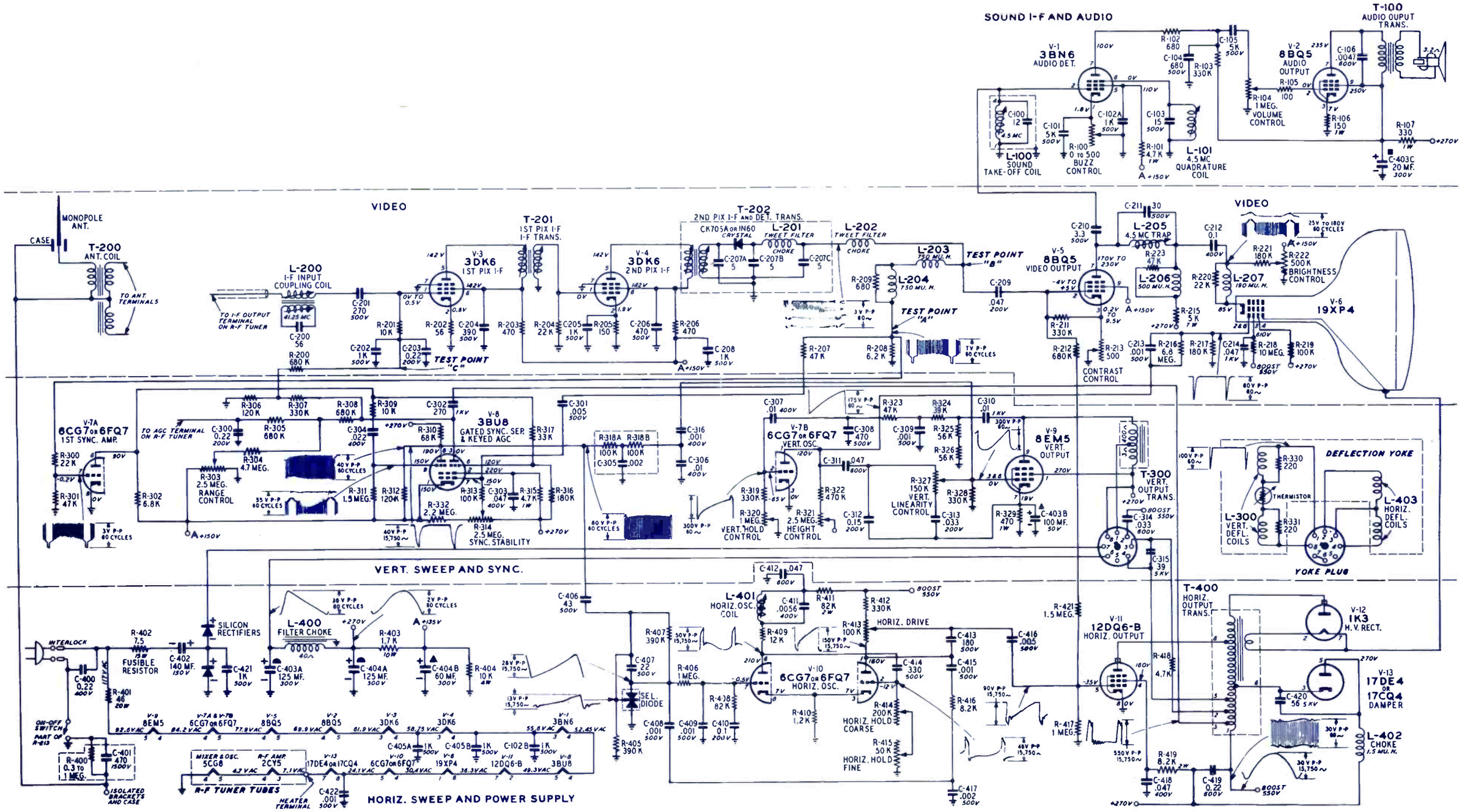
PRINTED SCHEMATIC TUBE PIN CODING FOR DUAL-PURPOSE TUBES

1P	PLATE	(SECTION A)
2P	PLATE	(SECTION B)
1K	CATHODE	(SECTION A)
2K	CATHODE	(SECTION B)
1G	CONTROL GRID	(SECTION A)
2G	CONTROL GRID	(SECTION B)
1G2	SCREEN GRID	(SECTION A)
2G2	SCREEN GRID	(SECTION B)
H	FILAMENT	


ANT
C102 47
C101 47
6GK5
C104 56 5% NPO
6CG8A
FIL
135V
J 211
J 201
USE ON 35-02 ONLY
C105 .001MFD
TONE
R103 3.0 MEG
VOL R102 MEG
C103 .001 MFD
SOUND IF V301 6AU6
L302
R312 6.8MEG
V302 6DT6
C309 .01 MFD
C310 .002 MFD
V303 6GC5 AUDIO OUTPUT
T504
J303
J304
J308
J309
J310
C301 3.3
C302 .01 MFD
R301 270 10%
C303 2700 5%
R302 15K
L301
C304 .01 MFD
R303 680 10%
C305 .01 MFD
R304 6.8K 10%
L303
R305 470K
C306 18
R306 270K
C307 .02 MFD
R309 1MEG 5%
R307 1.2 MEG 5%
R308 680 1W
C311 470
R310 3.3K
C112 .002 MFD
R311 220 3W 10%
J301
J302
J305
J307
J306
FIL.
C5048 30 MFD
270V SOURCE
135V SOURCE
C512 20 MFD
280V
C503C 100 MFD 200V
CIRCUIT BREAKER
S101
T501
R502 5 5% 10W
SR501
SR502
L501
280V
C502 130 MFD 200V
C504A 70 MFD
C5038 130 MFD 200V
C501 .01 MFD
R501 1MEG
FIL
C503A 5 MFD
4VP-P
60~
BRIGHTNESS
135V
R505 200K
20VP-P
60~ VERT OSC DISABLED
1ST VIDEO IF AMP V201 6BZ6
2ND VIDEO IF AMP V202 6BZ6
3RD VIDEO IF AMP V203 6CB6A
VIDEO AMP V204A 1/2 6EB8
SYNC SEP V204B 1/2 6EB8
SYNC SPLITTER V205B 1/2 6BH8
V205A 1/2 6BH8 AGC AMP
J201
J211
J204
J209
J208
R201 10 10%
C201 150 10%
L204
R202 15K 10%
R203 22K 10% AB ONLY
C206
L201
L202
L203
C202 11.5% NPO
C203 12.5% NPO
C204 20.5% NPO
C205 .01 MFD
R204 15K
L205
C227 680
C207 800 10%
C208 680
R205 47 10%
R206 1.5K
R207 27K 10%
R208 1.5K
C209 680
R209 47 10%
C210 800 10%
C211 .82 NPO
L206
C212 20.5% NPO
R210 1.5K
L207
R211 27K 10%
C213 1500
R212 120 10%
R213 1.5K
C214 8.2 1.5% NPO
L208
L209
L215
L210
C215 800 10%
C216 3.3 ±.1
R215 470
R214 3.9K 5%
L211
C217 .1 MFD 200V
R234 10
C218 .005 MFD
R216 22K 10%
R217 68K 10% 1W
R218 4300 5% 5W
R219 22K 10%
C219 .1 MFD
L212
R228 33K
L213
L214
R235 15K
C220 2000
R220 470K
C221 150
C222 47 10% NPO
R221 270K
C223 .01 MFD
C224 .1 MFD
R222 47 MEG
R223 1.5 MEG 10%
R224 MEG 10%
R225 33K 10%
R226 3.9K 5%
R227 3.3K 5%
80VP-P
55VP-P
700VP-P
15750~
105VP-P
R232 820K 5%
R231 330K 5%
R229 470K
R230 56K 5%
C226 22 MFD 200V
C225 .22 MFD 200V
R233 9.1K 5%
J202
J203
J205
J206
J210
J207
J212
FIL
135V
I.F. TEST POINT
CONTRAST R101 600
280V
BOOST 550V
270V
VERT OSC V401A 1/2 6CM7
V401B 1/2 6CM7 VERT OUTPUT
C5040 50 MFD 50V
260VP-P
120VP-P
40VP-P
J404
J401
J403
J405
J402
J407
J406
J408
C402 .0051 MFD 5% MYLAR 400V
R401 82K 10%
R420 100K 10%
C401 .0075 MFD
T401
C413 .0047
R403 22K 10%
R402 2 MEG 5%
C403 .047 MFD
R405 10K 5%
R406 2.5 MEG
VERT HT
R407 1K
R408 3K VERT LIN
C404 .1 MFD
R404 820K 10% 1W
R418 820K 10%
R419 NTC
BOOST
FIL.
10VP-P
15750~
240VP-P
60~
1VP-P
80VP-P
270V
K401
M401
100K
4700
470K
1000
R409 18 10% 2W
C405 .047 MFD 10% 200V
R410 .47 MEG
C406 680 10%
R412 1.3K 5%
C407 3900 10% MYLAR 200V
R411 5.6K 5%
L401
R414 120K 5%
150V
V402A 6FQ7/6CG7
V402B HORIZ OSC
-10V
.4V
9V
C410 1000 10%
C411 430 5% SM
C409 360 5% SM
R415 6.8K
R416 4.7K 10%
R417 470K 10%
C412 1000
R413 100K 10%
R503 1.6 MEG V. HOLD
R504 50K H. HOLD
30VP-P
-30V
HORIZ OUTPUT V501 6DQ6B
175V
DO NOT MEASURE
T502
R506 1K 10%
R507 8.2K 5% 5W
C505 .047 MFD
R508 8.2K 10%
R509 3.3K 2W
L503 WIDTH CONT
C506 .047 MFD 600V
280V
BOOST 550V
V503 1G3GT H.V. RECTIFIER
R510 4.7 10% 1W
R511 15K
H.V.
L502
V502 6AX4GT DAMPER
C508 .1 MFD 600V
C509 .1000 2KV
C511 .68 10% 2KV
R514 8.2K 10%
T503
BLUE
RED
GREEN
BLACK
J501
R516 270
R517 270
DEFLECTION YOKE
R512
SEE TABLE
R513
C507 20 MFD
C504C 20 MFD
105VP-P
27XP4
23ASP4
C510 .0033
55V
540V
R515 270K 10%
R518 SEE TABLE
FOCUS
BOOST
ON 35-01 FOCUS ADJUSTMENT IS MADE BY CONNECTING JUMPER SPRING FROM 6 TO 1 OR 6 TO 10. ON 35-02 THIS SPRING IS REPLACED BY FOCUS CONTROL.

MONTGOMERY WARD

TV Models
WG-4234A, WG-4334A



NOTE—In UHF receivers the filament voltages in the tuner and above the tuner in the heater string will be slightly greater because of the filament voltages of the tuner tubes.

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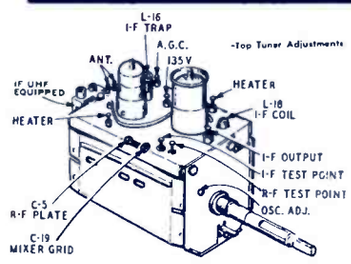
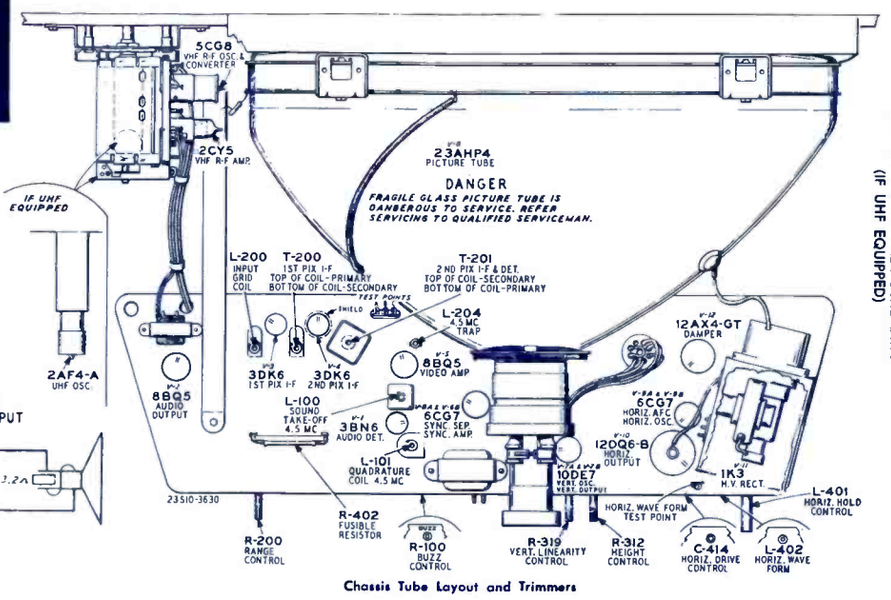
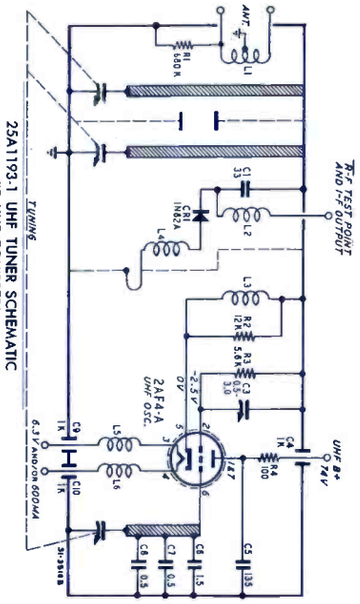
MONTGOMERY WARD (Airline) TV Models
WG-5220A, WG-5226A, WG-5230A, WG-5320A, WG-5326A, WG-5330A

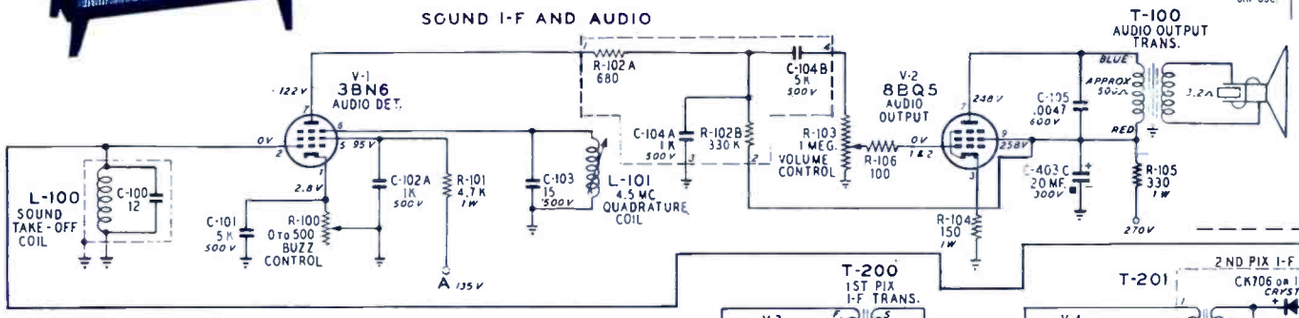




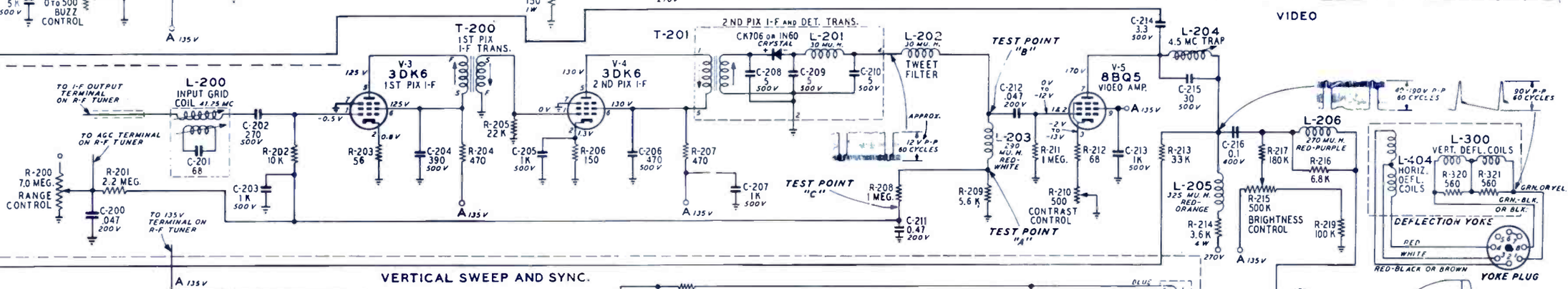
Chassis Tube Layout and Trimmers



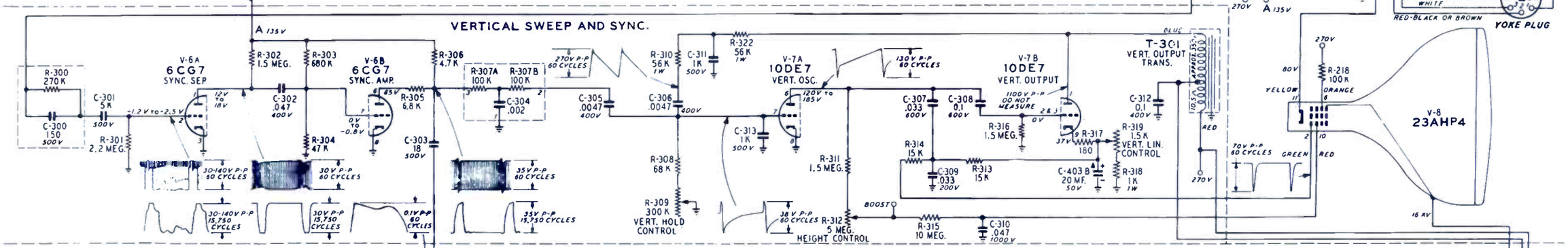
SOUND I-F AND AUDIO

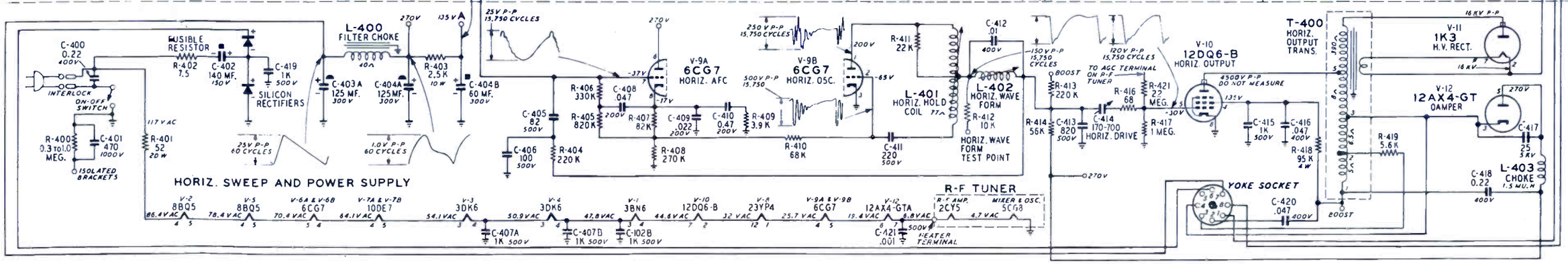


VIDEO



VERTICAL SWEEP AND SYNC.

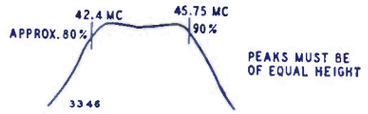




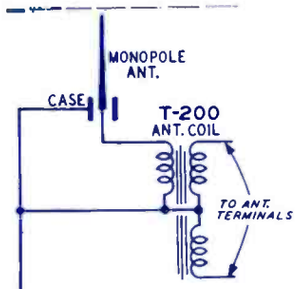
NOTE—In UHF receivers the filament voltages in the tuner and above the tuner in the heater string will be slightly greater because of the filament voltages of the tuner tubes.

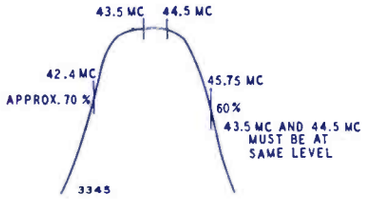
Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota

MONTGOMERY WARD
TV Models
WG-4225A, WG4325A

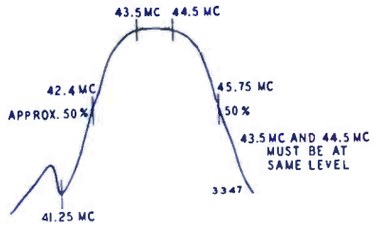


2nd Pix I-F Response

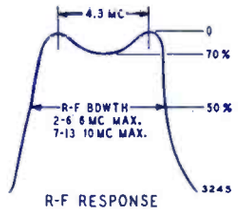




Pix I-F Response From 1st Pix I-F Grid

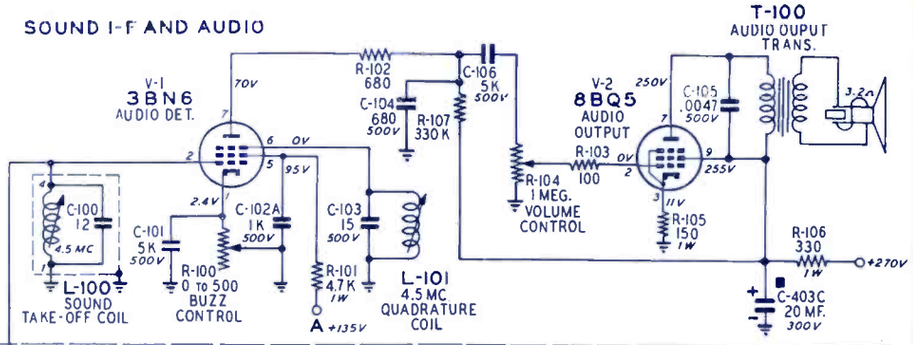


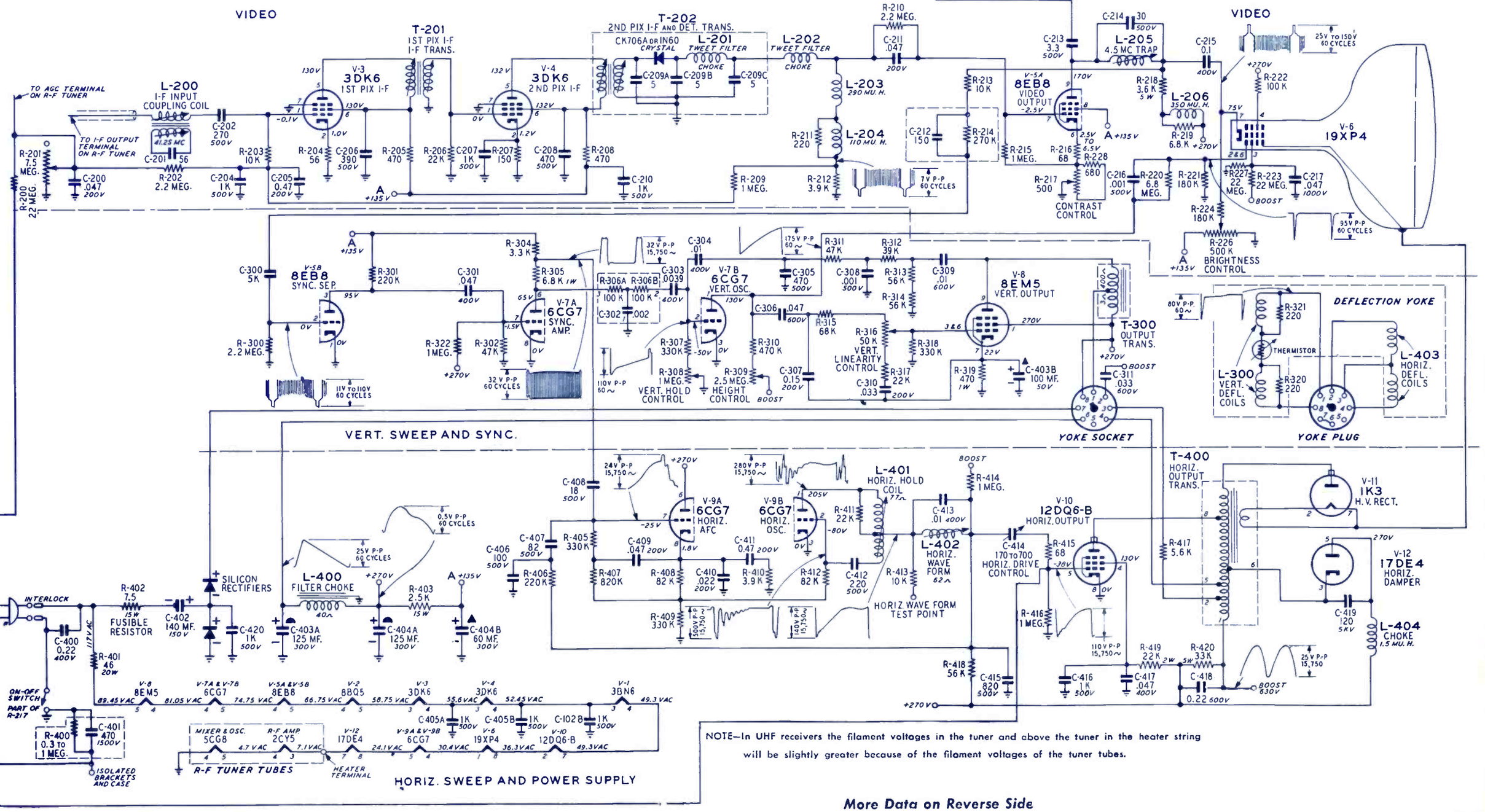
Overall Pix I-F Response



R-F RESPONSE

Pix & Audio Markers



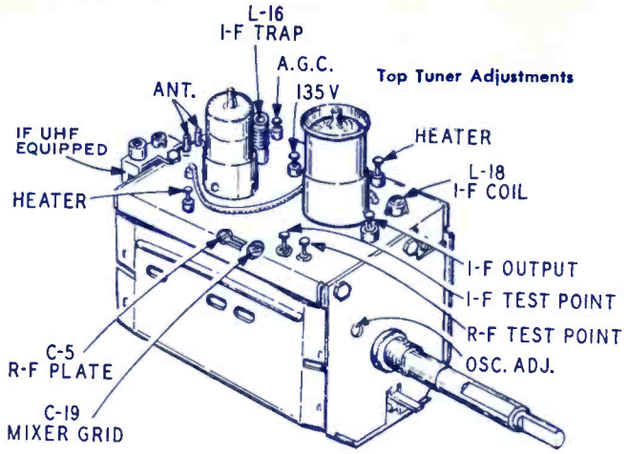


NOTE—In UHF receivers the filament voltages in the tuner and above the tuner in the heater string will be slightly greater because of the filament voltages of the tuner tubes.

More Data on Reverse Side

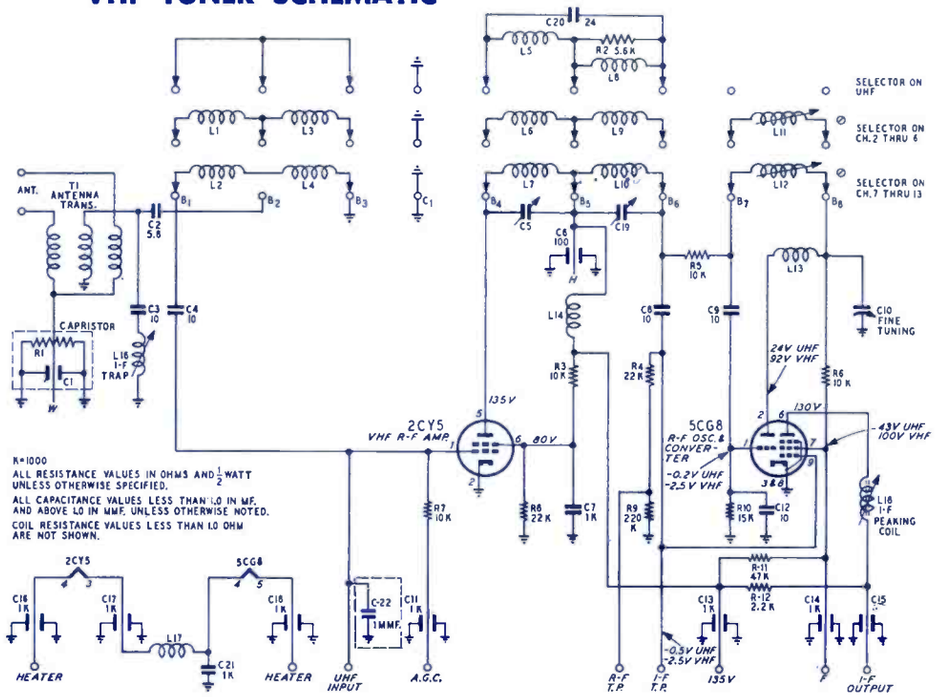
MONTGOMERY WARD
TV Models
WG-4225A, WG4325A

Electronic Technician
CIRCUIT DIGEST

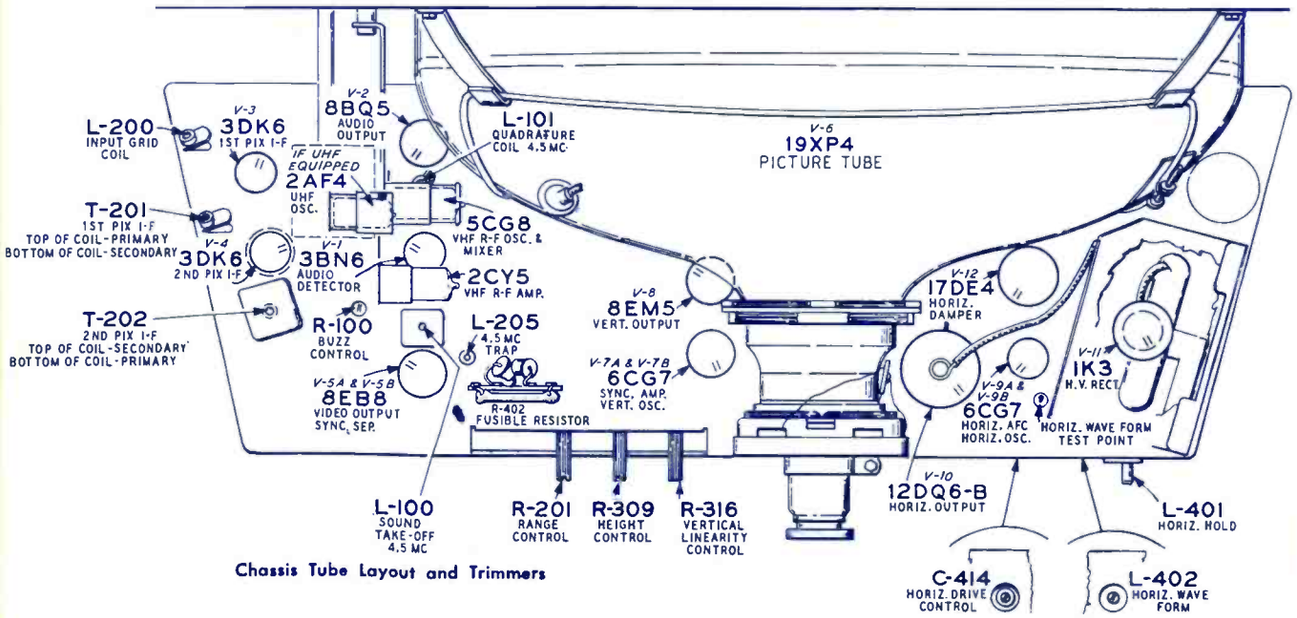


Top Tuner Adjustments

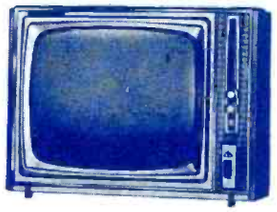
VHF TUNER SCHEMATIC



R=1000
ALL RESISTANCE VALUES IN OHMS AND ½ WATT UNLESS OTHERWISE SPECIFIED.
ALL CAPACITANCE VALUES LESS THAN 1.0 IN MF. AND ABOVE 1.0 IN MMF. UNLESS OTHERWISE NOTED.
COIL RESISTANCE VALUES LESS THAN 1.0 OHM ARE NOT SHOWN.



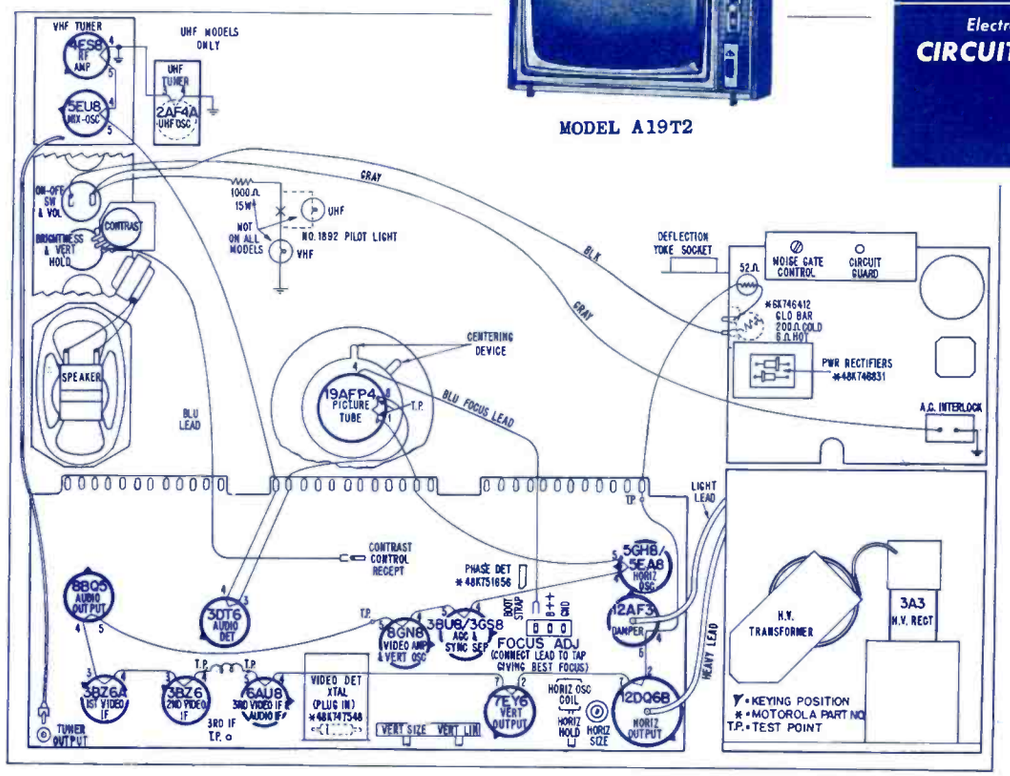
Chassis Tube Layout and Trimmers



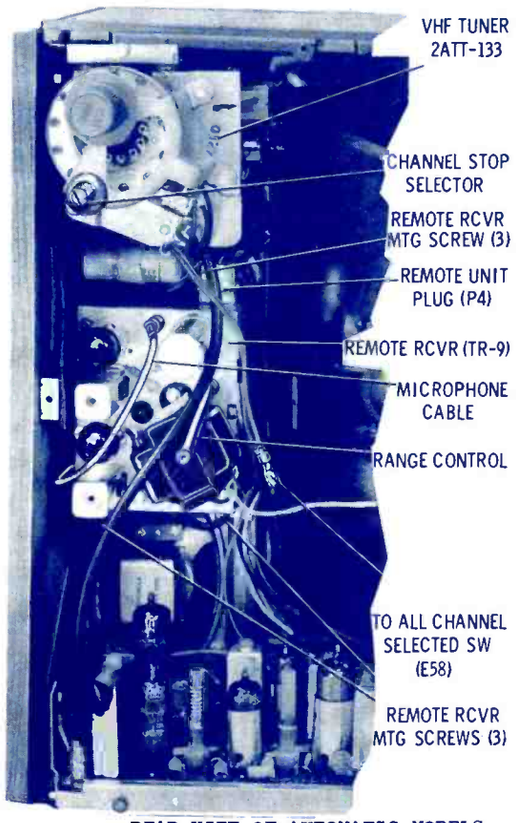
MODEL A19T2

MOTOROLA
TV Chassis
TS-STS & WTS-435

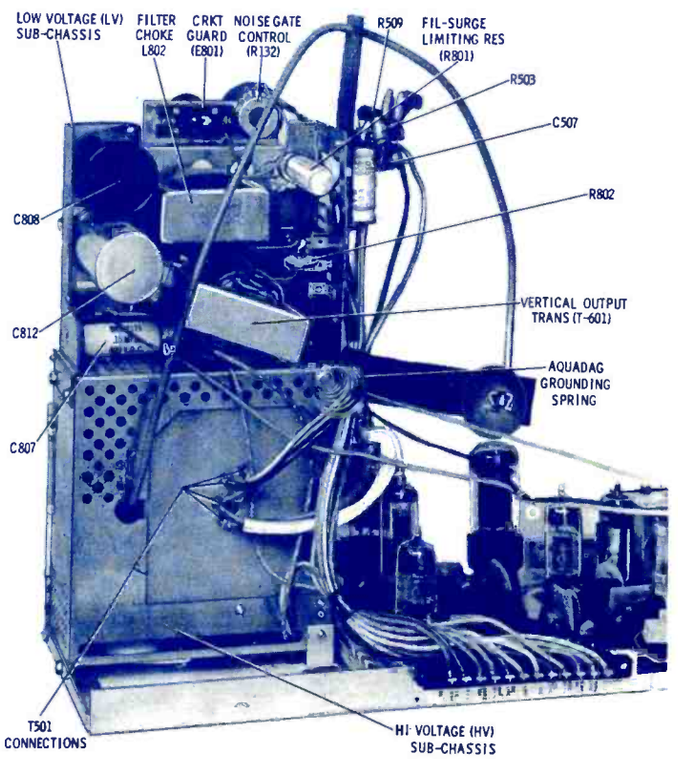
Electronic Technician
CIRCUIT DIGEST



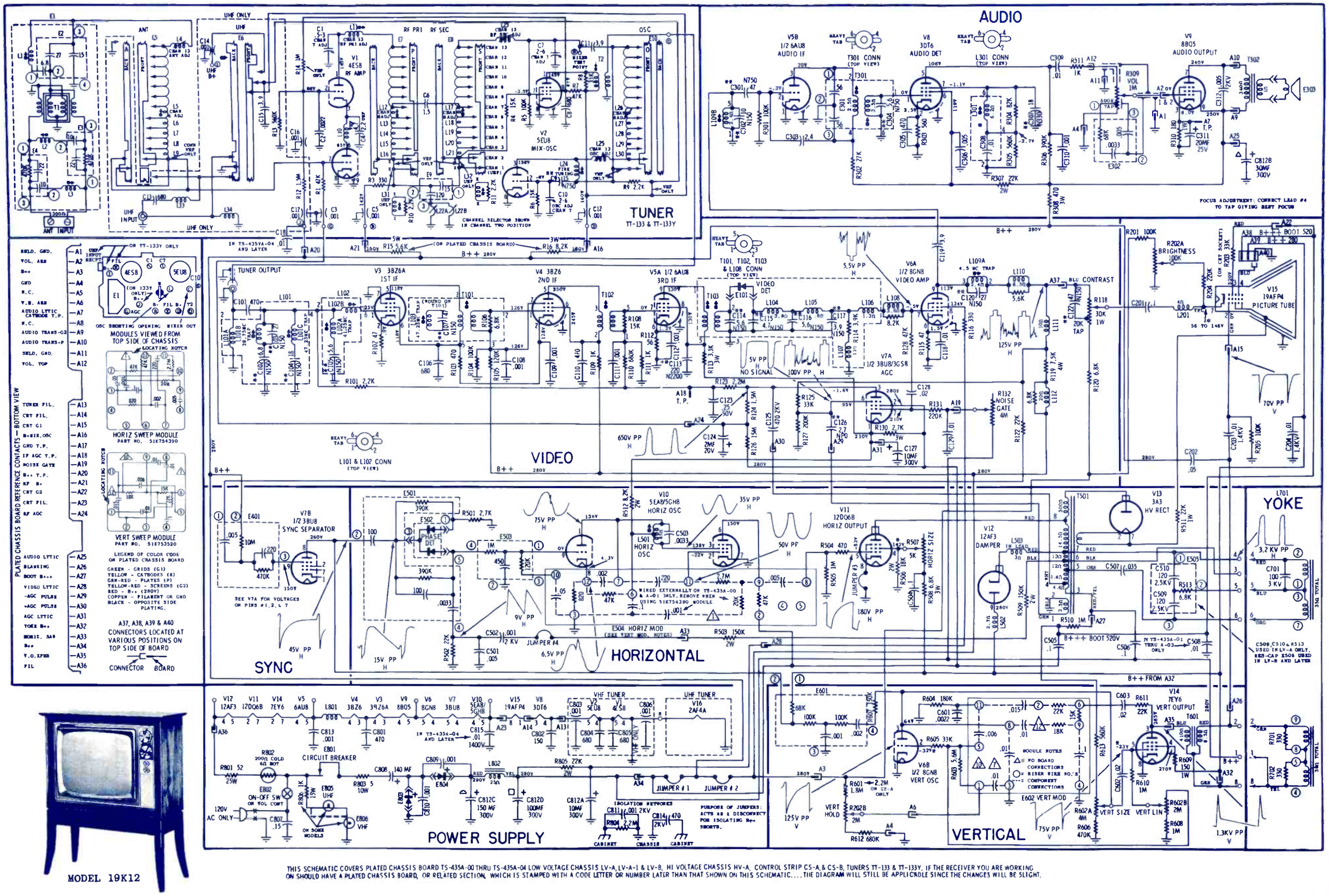
TUBE LOCATION, FILAMENT GUIDE AND FOCUS INFORMATION



REAR VIEW OF AUTOMATIC MODELS



LOW VOLTAGE (LV) & HI VOLTAGE (HV) SUB-CHASSIS COMPONENT LOCATIONS


TUNER
TT-133 & TT-133Y
AUDIO
VIDEO
SYNC
HORIZONTAL
POWER SUPPLY
VERTICAL
YOKE
V1 4ES8 RF AMP
V2 5EU8 MIX-OSC
V3 3BZ6A 1ST IF
V4 3BZ6 2ND IF
V5A 1/2 6AU8 3RD IF
V5B 1/2 6AU8 AUDIO IF
V6A 1/2 8GN8 VIDEO AMP
V7A 1/2 3BU8/3GS8 AGC
V7B 1/2 3BU8 SYNC SEPARATOR
V8 3DT6 AUDIO DET
V9 8BQ5 AUDIO OUTPUT
V10 5EA8/5GH8 HORIZ OSC
V11 12DQ6B HORIZ OUTPUT
V12 12AF3 DAMPER
V13 3A3 HV RECT
V14 7EY6 VERT OUTPUT
V15 19AFP4 PICTURE TUBE
V16 2AF4A
V68 1/2 8GN8 VERT OSC
T301 CONN (TOP VIEW)
L301 CONN (TOP VIEW)
T101, T102, T103 & L108 CONN (TOP VIEW)
L101 & L102 CONN (TOP VIEW)
L109A 4.5 MC TRAP
E501 390K
E502 PHASE DET
E503 1M
E504 HORIZ MOD (SEE TEXT MOD. NOTES)
E601
E602 VERT MOD
R201 100K
R202A BRIGHTNESS 100K
R203 33K
R204 220K
R205 100K
R206 1.5K
R207 100K
R208 1.5K
C201 .1
C202 .05
C203 .01 1.4KV
C204 .01 1.4KV
L201
L202
L203
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L205
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T737
T738
T739
T740

MOTOROLA

TV Chassis TS 440

Models 19P7-1,-2,-3

VOLTAGE MEASUREMENTS
1. Taken from point indicated to chassis with a VTVM, ±10%.
2. Line voltage maintained at 120V AC.
3. Voltages indicated by an asterisk will vary with associated control settings.
4. Taken with contrast control at minimum and all other controls in normal operating position with no signal input.
5. Tuner on Channel 13 or channel of least noise with antenna terminals shorted.

CAPACITORS: Unless otherwise specified, values less than one in MF; all others in MMF.

** Indicates special capacitor. See Replacement Parts List for proper replacement part number.

BOARD / CONNECTOR

△ = NO BOARD CONNECTION

VERT SWEEP MOD E602 PART NO. 51D753320 (TOP VIEW)

HORIZ SWEEP MOD E504 PART NO. 51D753301 (TOP VIEW)

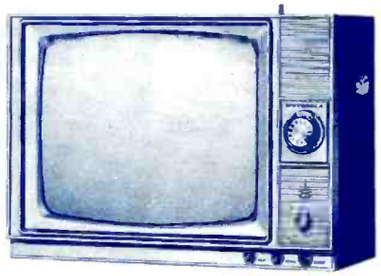
PLATED CHASSIS BOARD REFERENCE CONTACTS - TOP VIEW

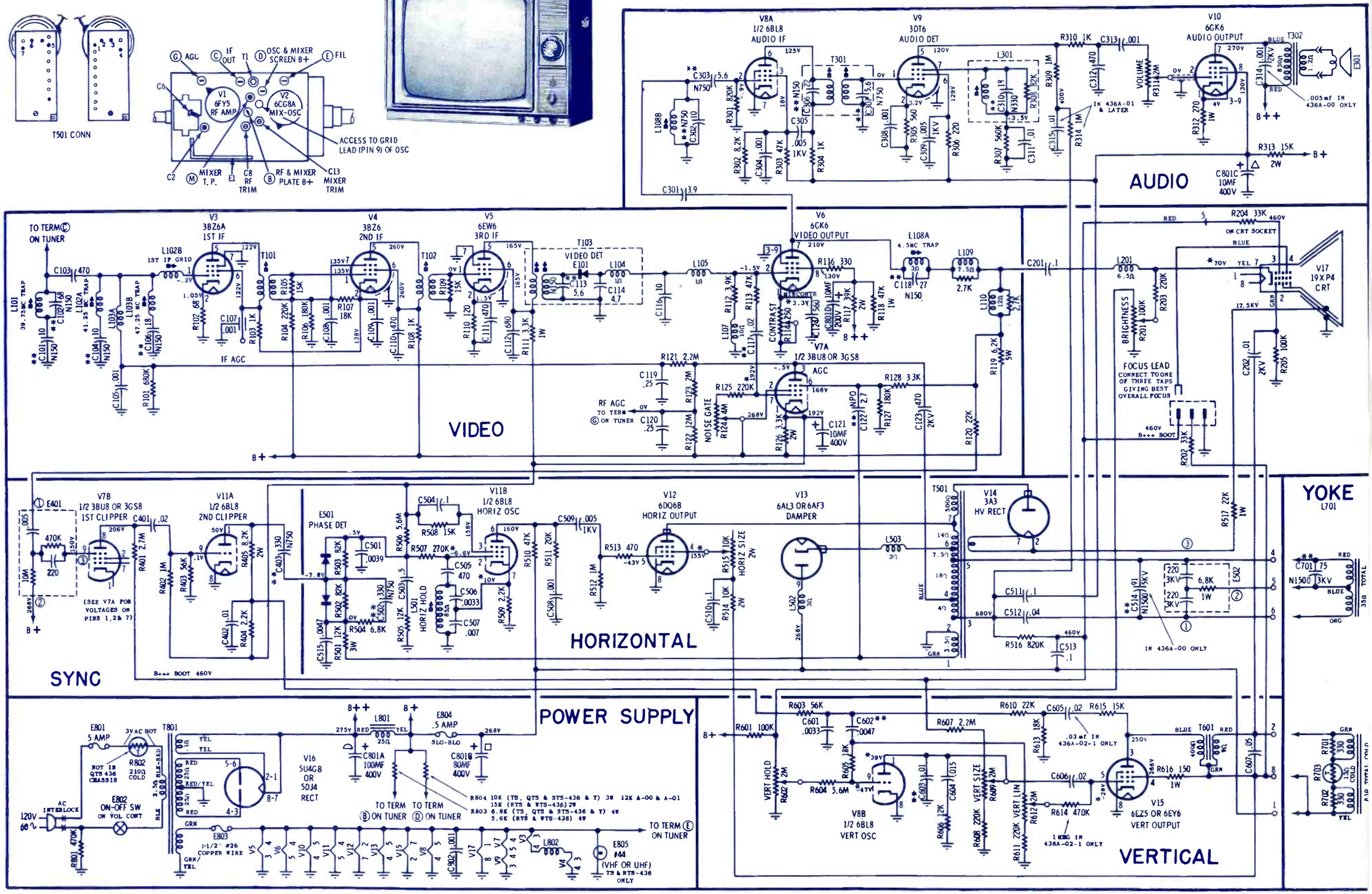
A37, A38, A39 & A40 CONNECTORS LOCATED AT VARIOUS POSITIONS ON THE BOARD

L101, L102, L301, & T301 CONN TOP VIEW

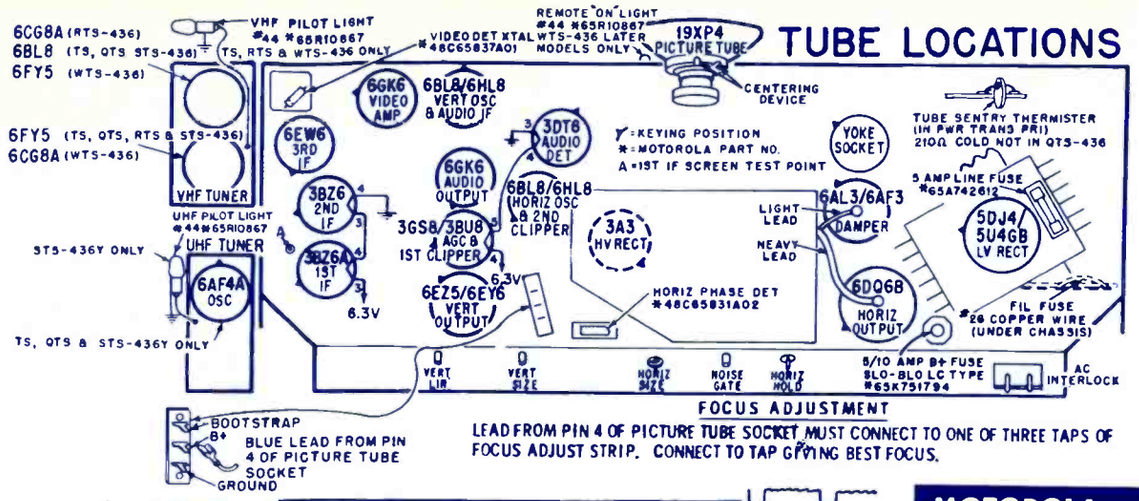
T101, T102, T103, & L108 CONN TOP VIEW

More Data on Reverse Side



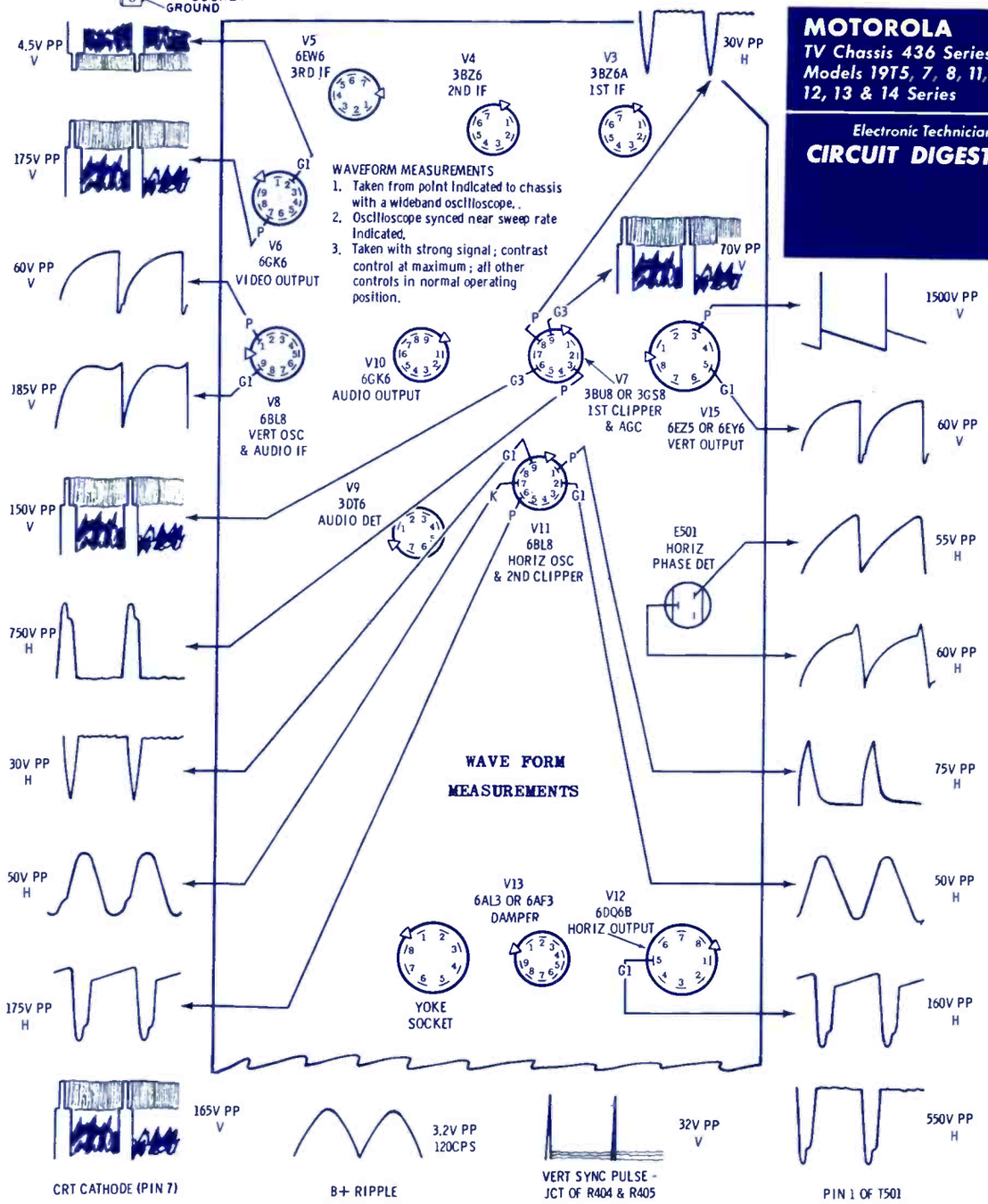


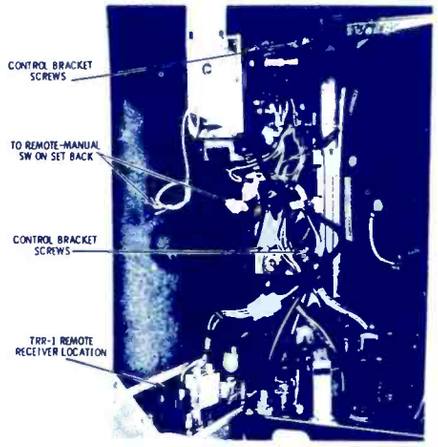
TUBE LOCATIONS



MOTOROLA
TV Chassis 436 Series
Models 19T5, 7, 8, 11, 12, 13 & 14 Series

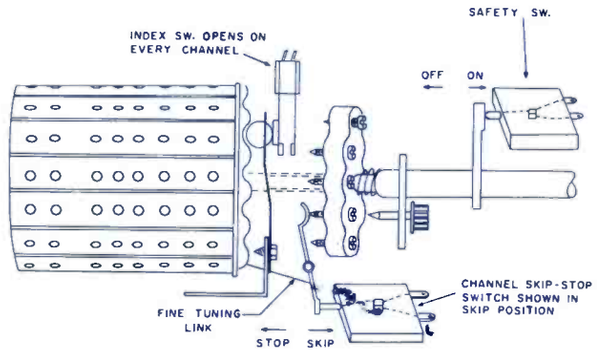
Electronic Technician
CIRCUIT DIGEST



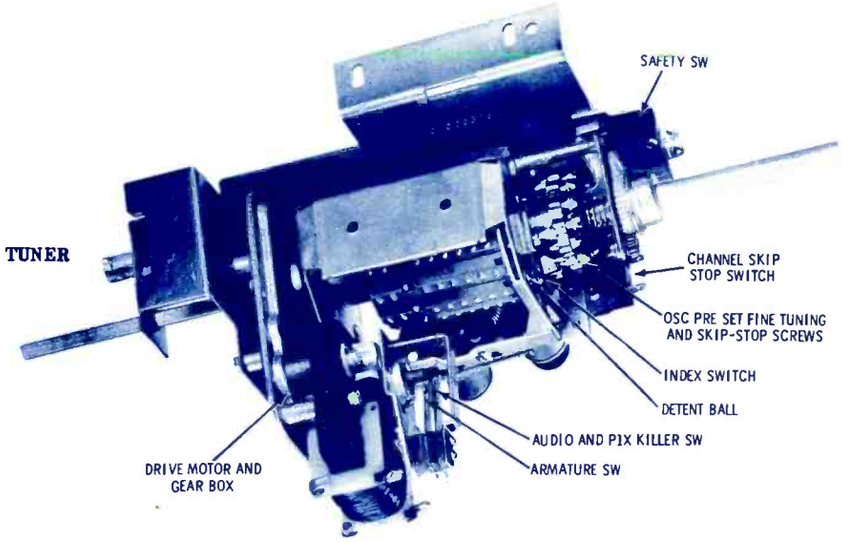


MOTOROLA
TV Chassis TS-576

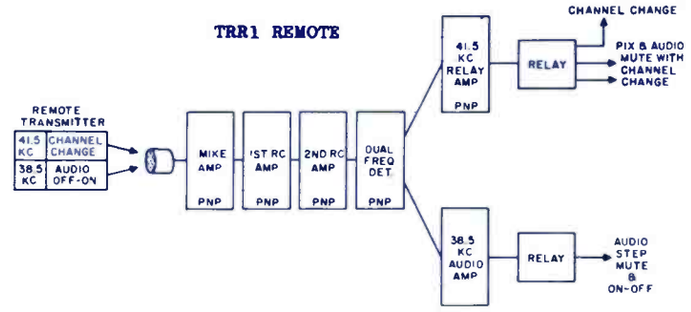
Electronic Technician
CIRCUIT DIGEST



APTT310 TUNER



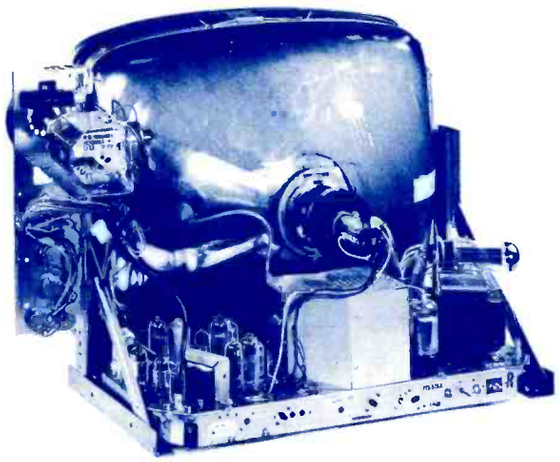
TRR1 REMOTE

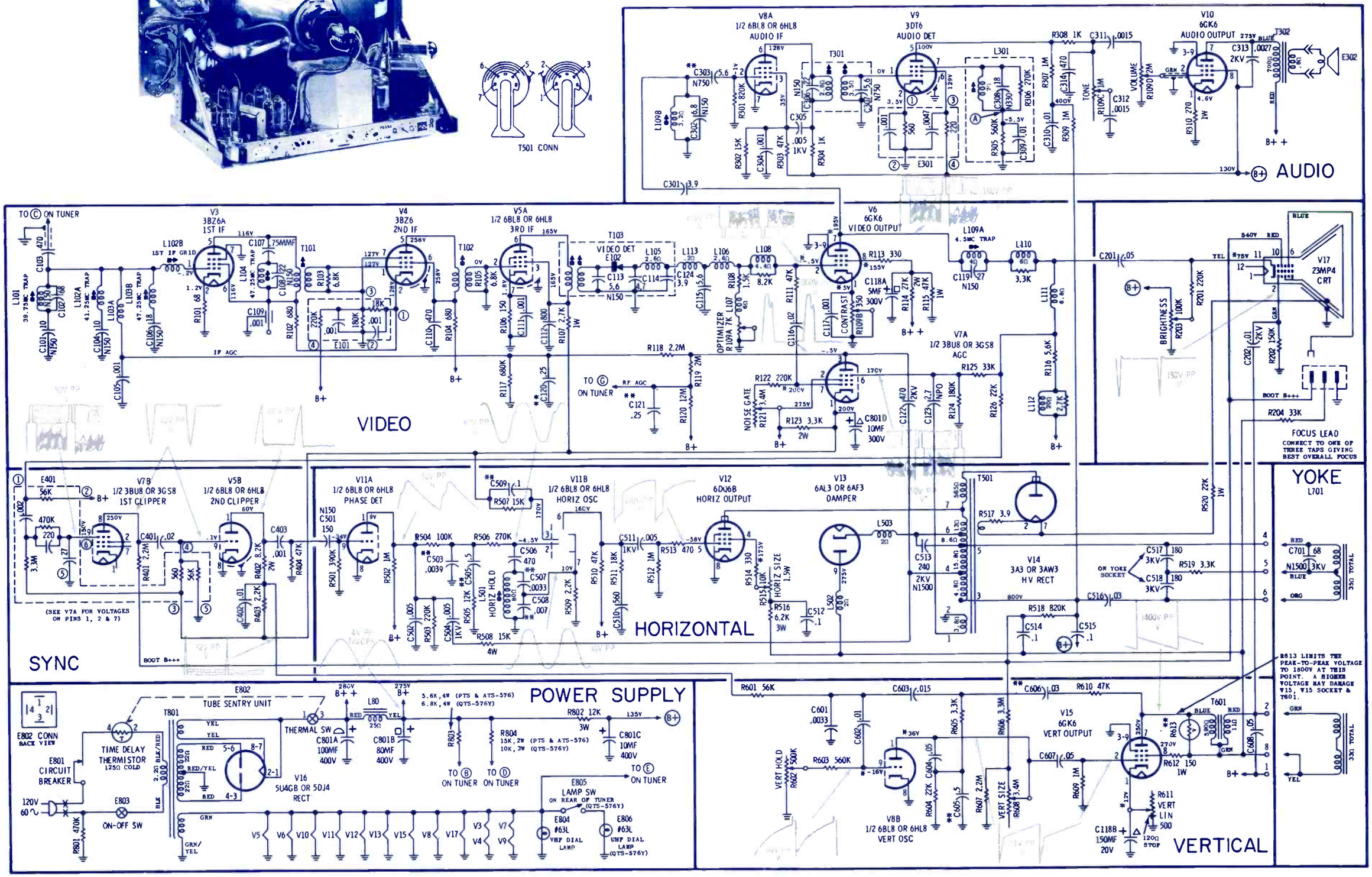


Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota

ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

MOTOROLA
TV Chassis TS-576

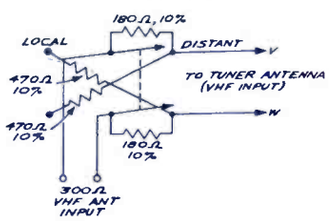


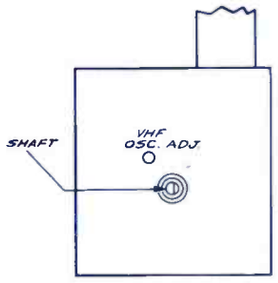


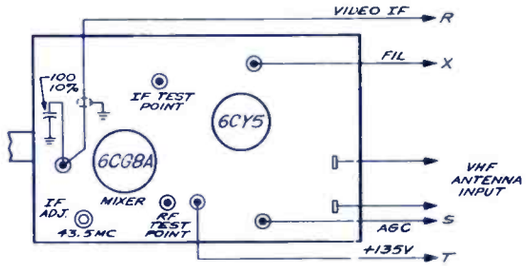
**INDICATES SPECIAL COMPONENTS.

OLYMPIC
TV Chassis JWR

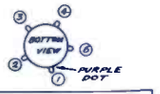
LOCAL DISTANCE SWITCH

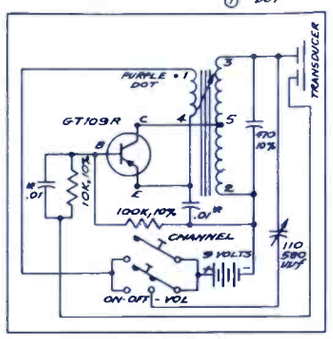




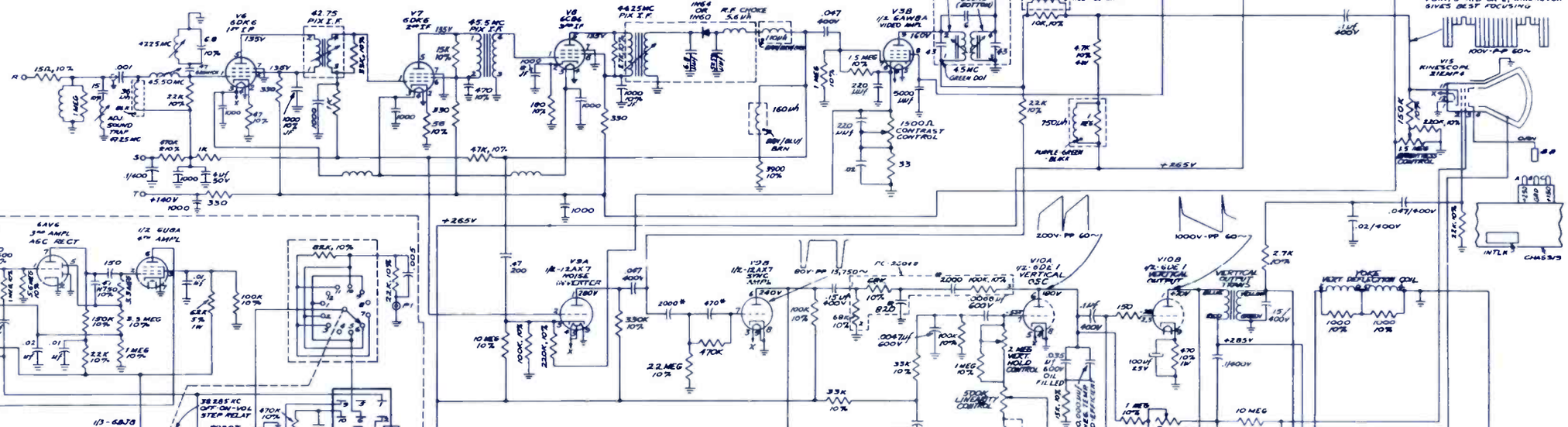


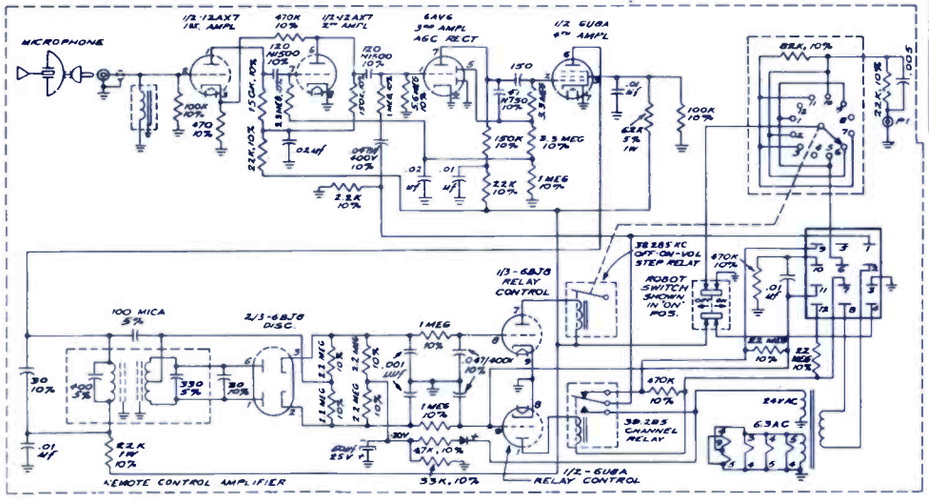
ITR ROBOT TRANSMITTER

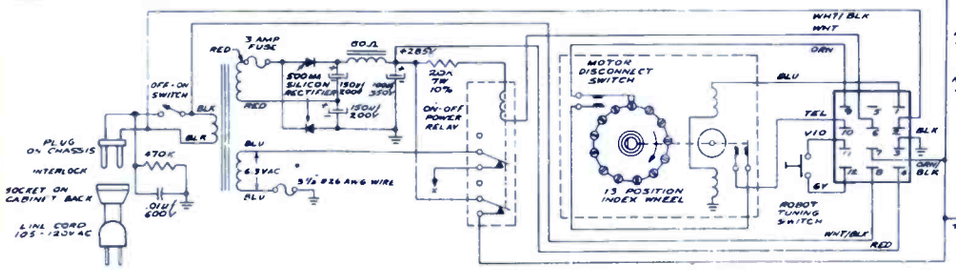




OLYMPIC TUNER (VHF) PART NO. CL 26707

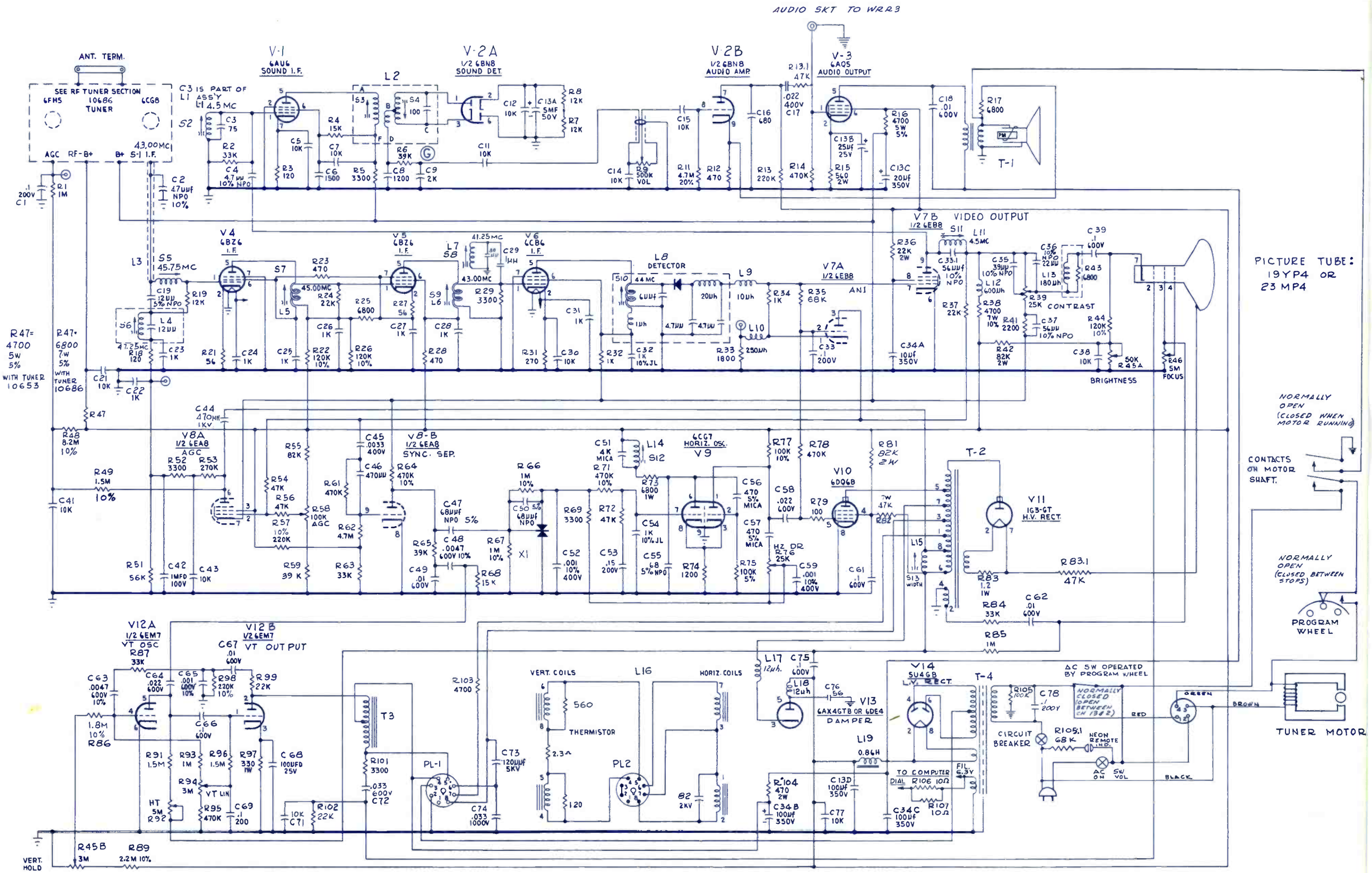






Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota

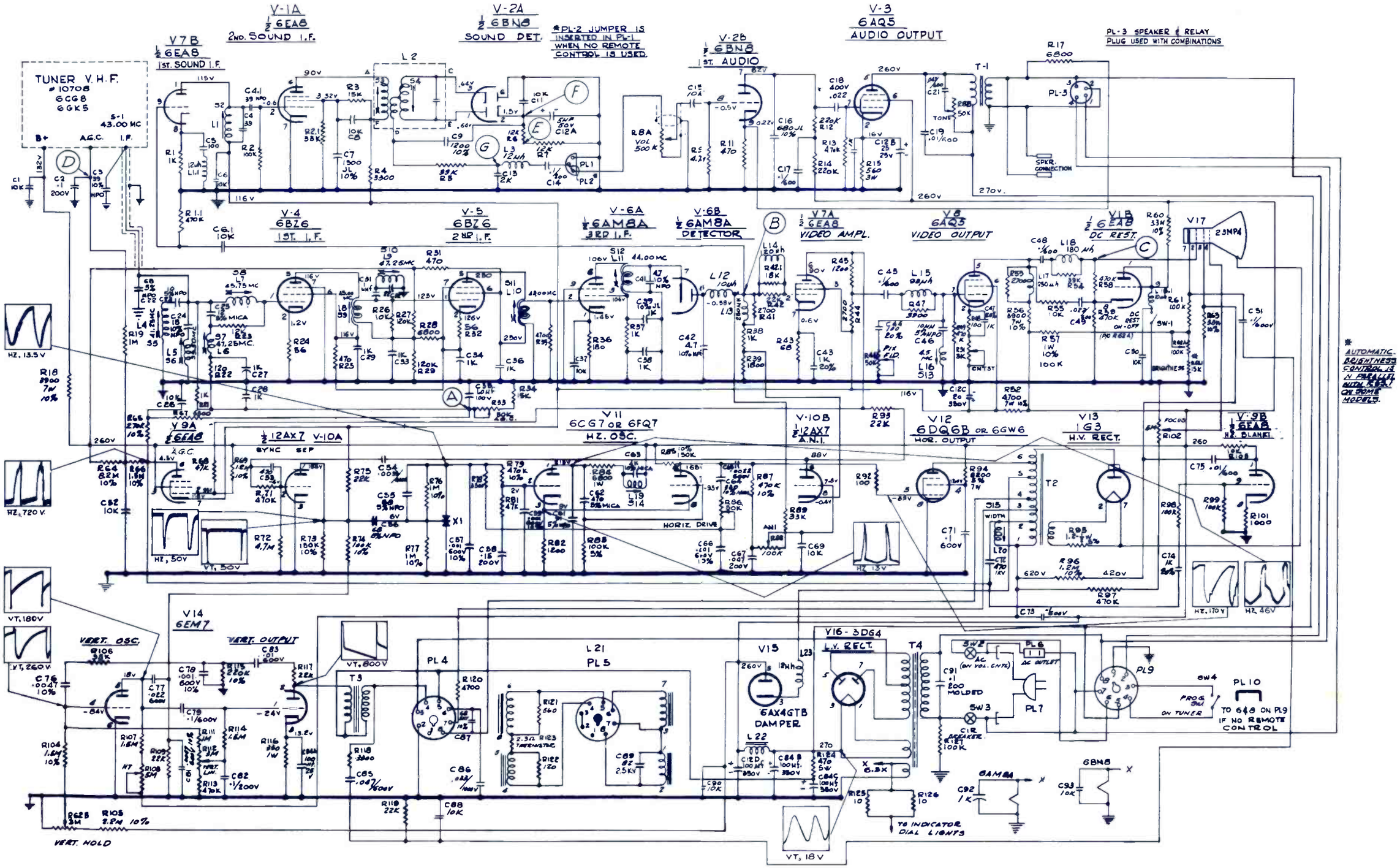
PACKARD BELL
TV Chassis 88-9
Models 19T3 & 23T3



PACKARD BELL

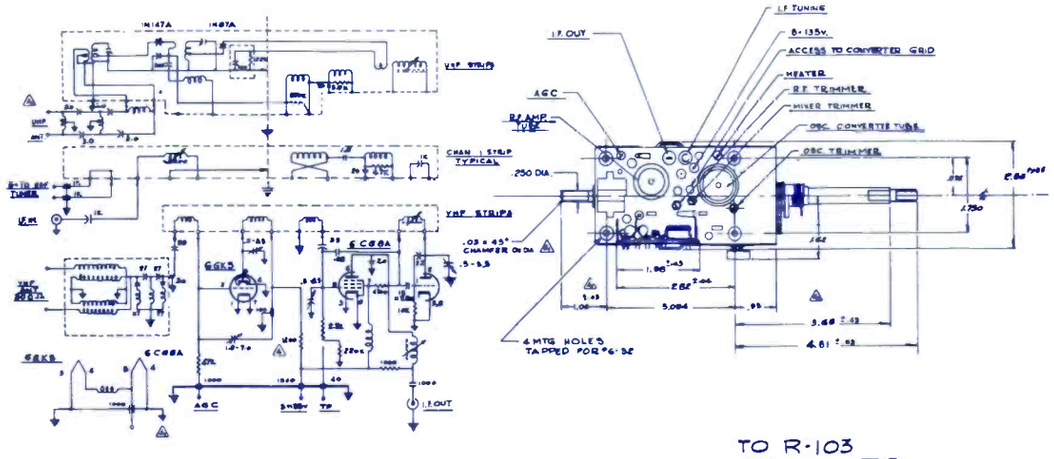
TV Chassis

98D14, 98D14C

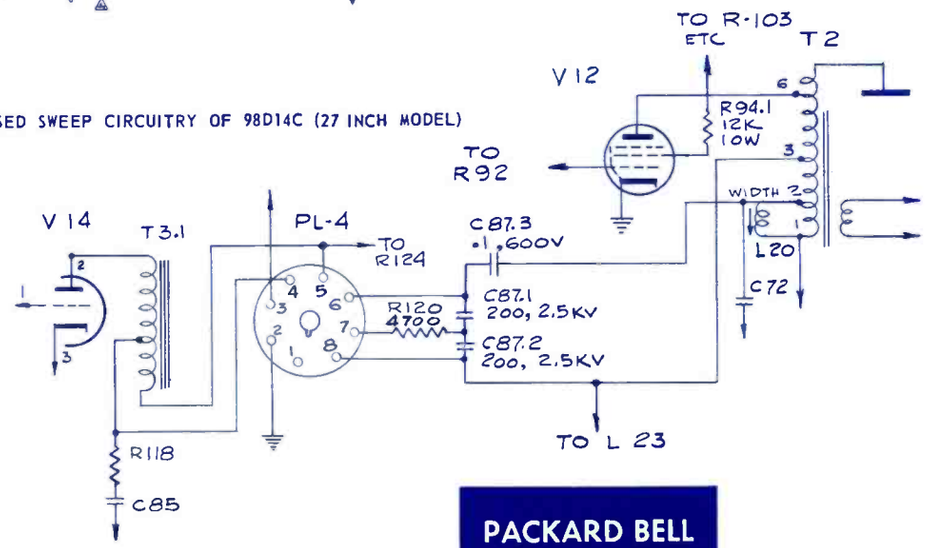


* AUTOMATIC BRIGHTNESS CONTROL IS INCLUDED IN BREAKER WITH KEY ON SOME MODELS.

TUNER 1078



REVISED SWEEP CIRCUITRY OF 98D14C (27 INCH MODEL)



PACKARD BELL
TV Chassis
98D14, 98D14C

Electronic Technician
CIRCUIT DIGEST

LAST MINUTE CHANGES, ADDITIONS, ETC:

1. In chassis 98D15, the cord remote control model, resistor R-57 was changed from 100,000 ohms, one watt, to 82,000 ohms, two watts (PB-73448).

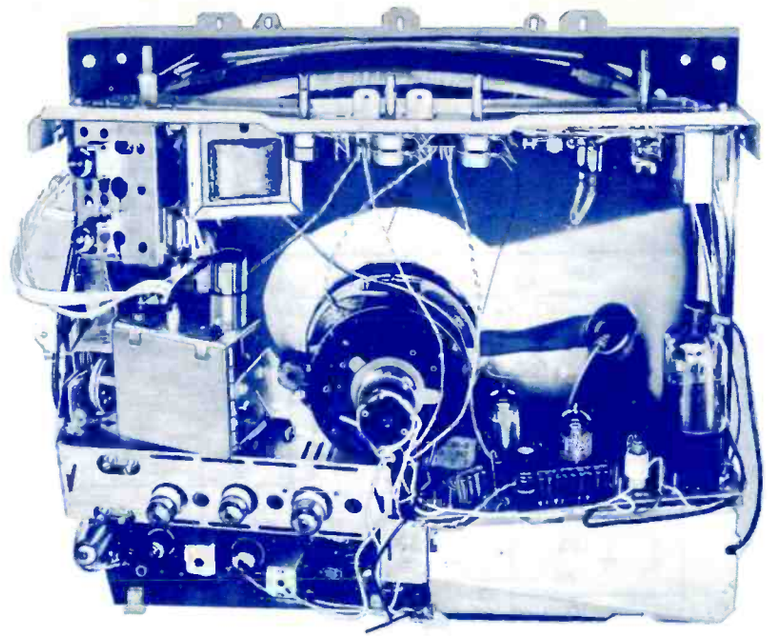
2. Horizontal sweep circuitry of chassis 98D14C (27-inch model) was changed from that in the 23-inch sets.

   DELETED ARE:
   C-87, 68 mmf, 5 kv.

   CHANGED ARE:
   R-94, from 8200 ohms, 7 w, to 12,000 ohms, 10 w (73705), R-94.1.
   T-3, the VERTICAL output transformer, from part 89543 to part 89529, T-3.1.

   ADDED ARE:
   C-87.1 & C-87.2, both 200 mmf, 2500 v (23958)
   C-87.3, .1 mfd/600 v (24739, alt: 23145 or 23745)

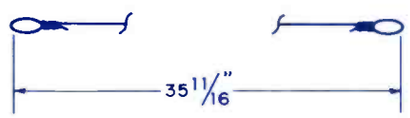
3. Capacitor, 1000 mmf, added across R-15 in both 98D14 & 98D15 Also R-104 changes from 20% to 10% tolerance. In 98D15 only, R-5 changes to 10,000 ohms.



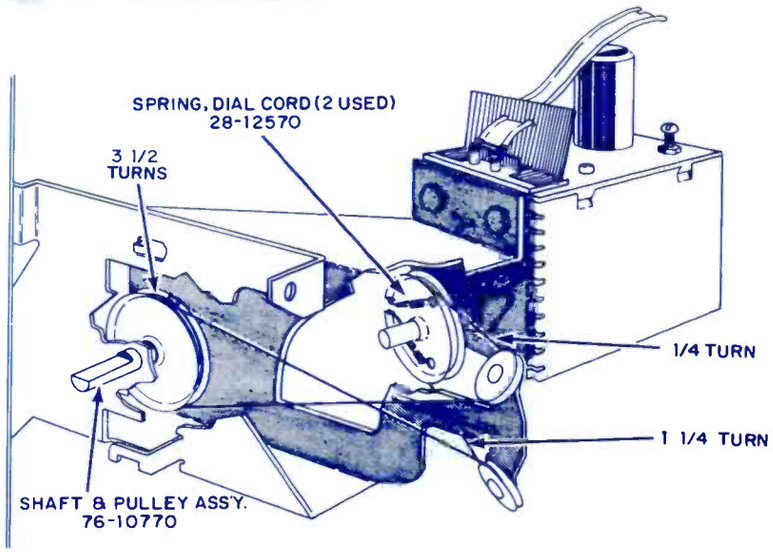
More Data on Reverse Side

PHILCO
TV Chassis 11H25 & 11J27

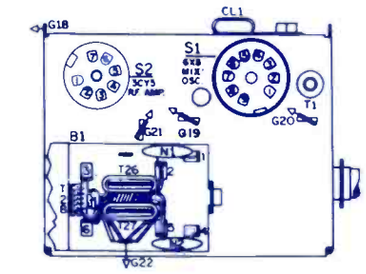
Electronic Technician
CIRCUIT DIGEST

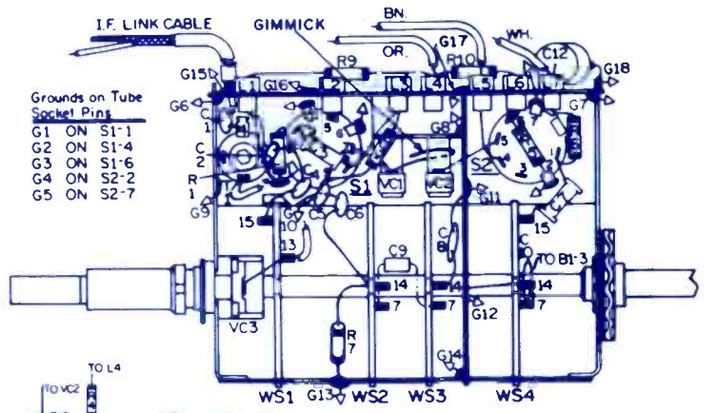


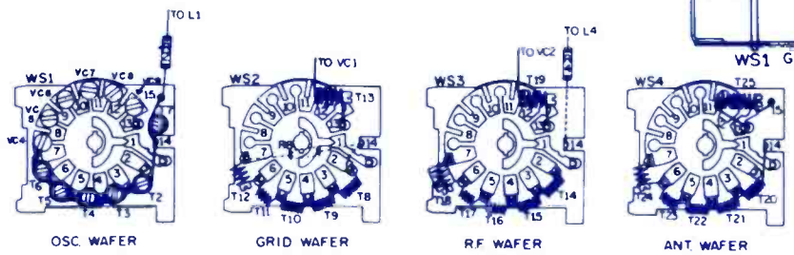
UHF DIAL CORD STRINGING



COMPONENT PLACEMENT, TUNER T-102

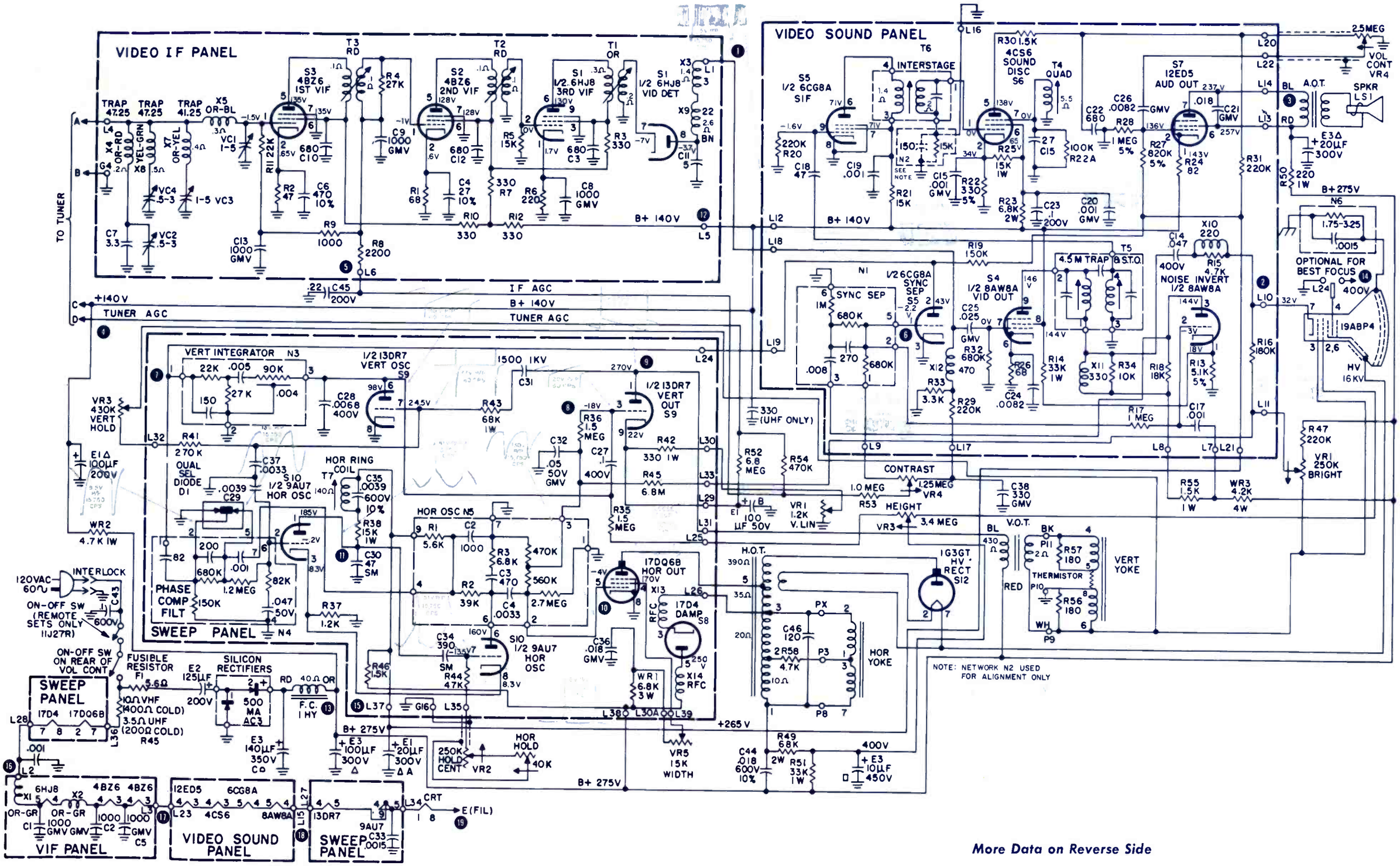






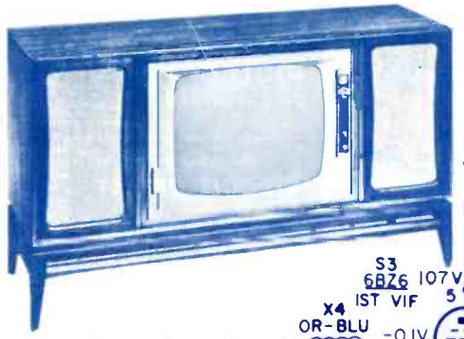
PHILCO

TV Chassis 11H25 & 11J27



More Data on Reverse Side

PHILCO
TV Chassis 11N56



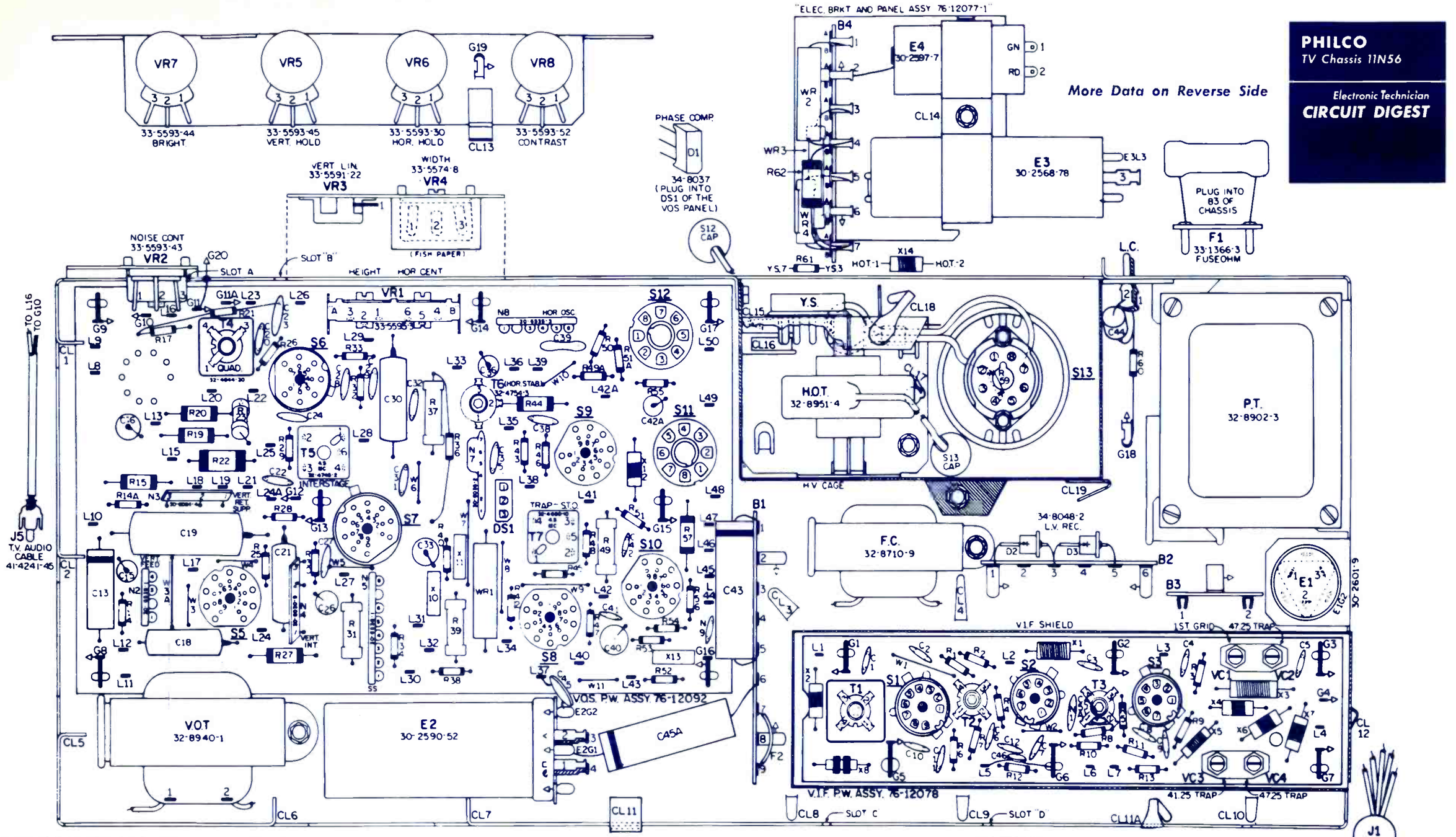
VIDEO IF PANEL

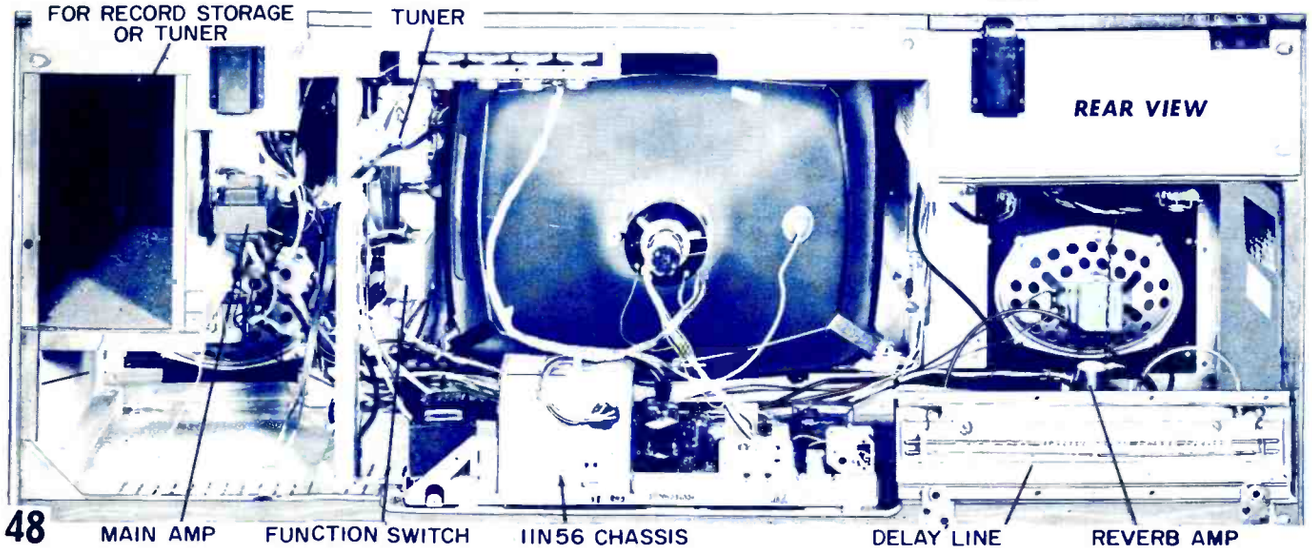
VOS PANEL

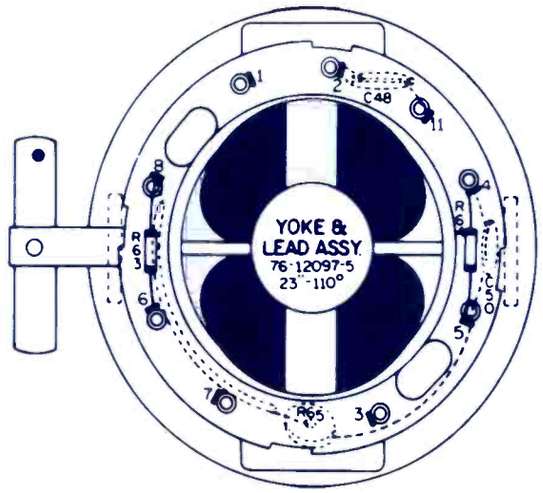
IF PANEL

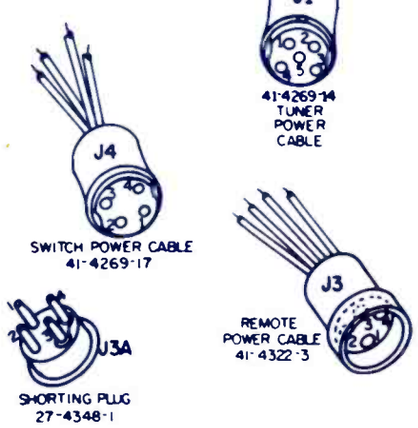
More Data on Reverse Side

More Data on Reverse Side









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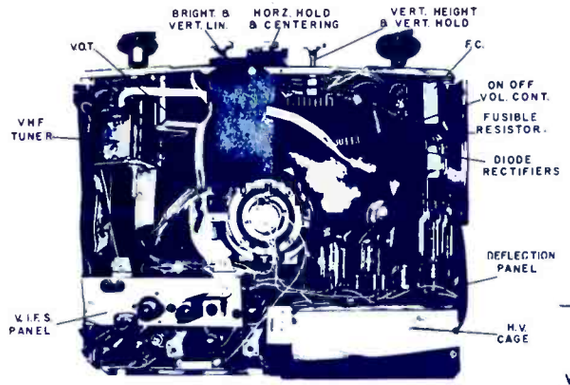
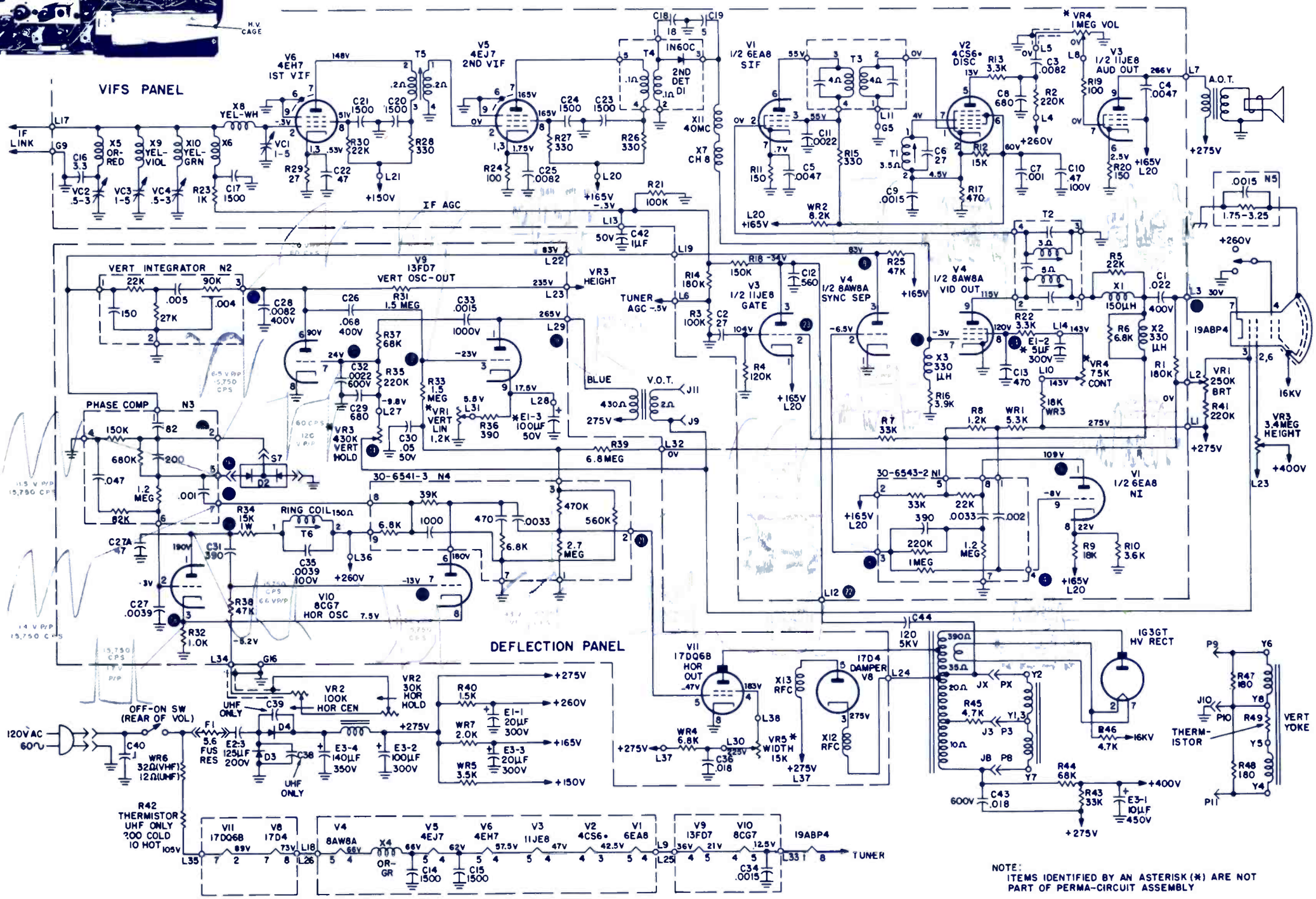
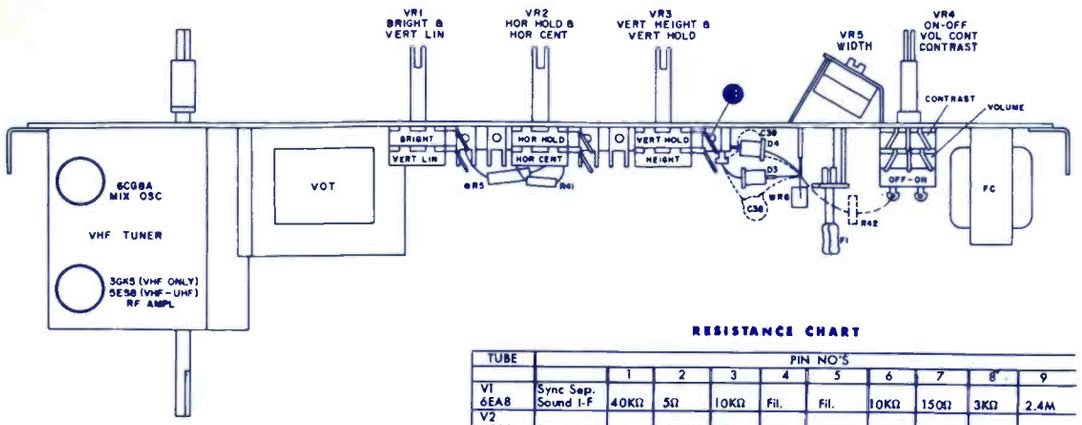
PHILCO
TV Chassis 12J27



More Data on Reverse Side



NOTE:
ITEMS IDENTIFIED BY AN ASTERISK (*) ARE NOT PART OF PERMA-CIRCUIT ASSEMBLY

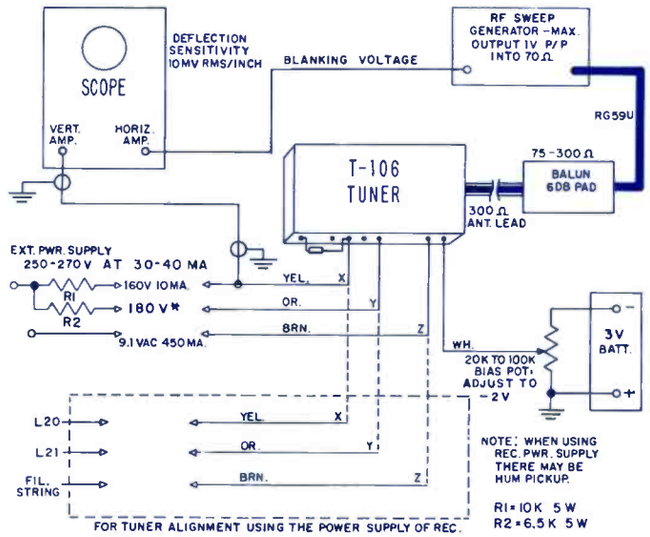


RESISTANCE CHART

TUBE		PIN NO'S								
		1	2	3	4	5	6	7	8	9
V1 6EA8	Sync Sep. Sound 1-F	40KΩ	5Ω	10KΩ	Fil.	Fil.	10KΩ	150Ω	3KΩ	2.4M
V2 4CS6	Sound Det.	5Ω	470Ω	Fil.	Fil.	400K	20KΩ	470Ω		
V3 11JE8	Audio Out. and Gate	14KΩ	35Ω	220K	Fil.	Fil.	150Ω	100Ω	15KΩ	15KΩ
V4 8AW8A	Video and Noise Inv.		1.4MΩ	45KΩ	Fil.	Fil.		3.9K	50KΩ	20KΩ
V5 4EJ7	2nd V.I.F.	100Ω	.2Ω	100Ω	Fil.	Fil.		14KΩ	14KΩ	
V6 4EH7	1st. V.I.F.	27Ω	75KΩ	27Ω	Fil.	Fil.		14KΩ	30KΩ	
V8 17D4	Damper			14KΩ		110KΩ		Fil.	Fil.	
V9 13FD7	Vert. Osc. Vert. Out.	14KΩ		1.3MΩ	Fil.	Fil.	2.8MΩ	400KΩ		550Ω
V10 6CG7	Hor. Osc.	25KΩ	1.3MΩ	1KΩ	Fil.	Fil.	50KΩ	70KΩ	1KΩ	
V11 17DQ6B	Hor. Out.		Fil.		25KΩ	700KΩ		Fil.		

PHILCO
TV Chassis 12J27

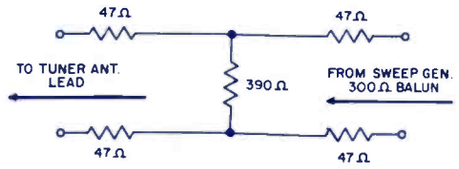
Electronic Technician
CIRCUIT DIGEST



* THIS VOLTAGE & CURRENT VARIES WITH TUNER BIAS. WITH -0.5 V ON WHITE LEAD, VOLTAGE WILL BE APPROXIMATELY + 135 VOLTS.

More Data on Reverse Side

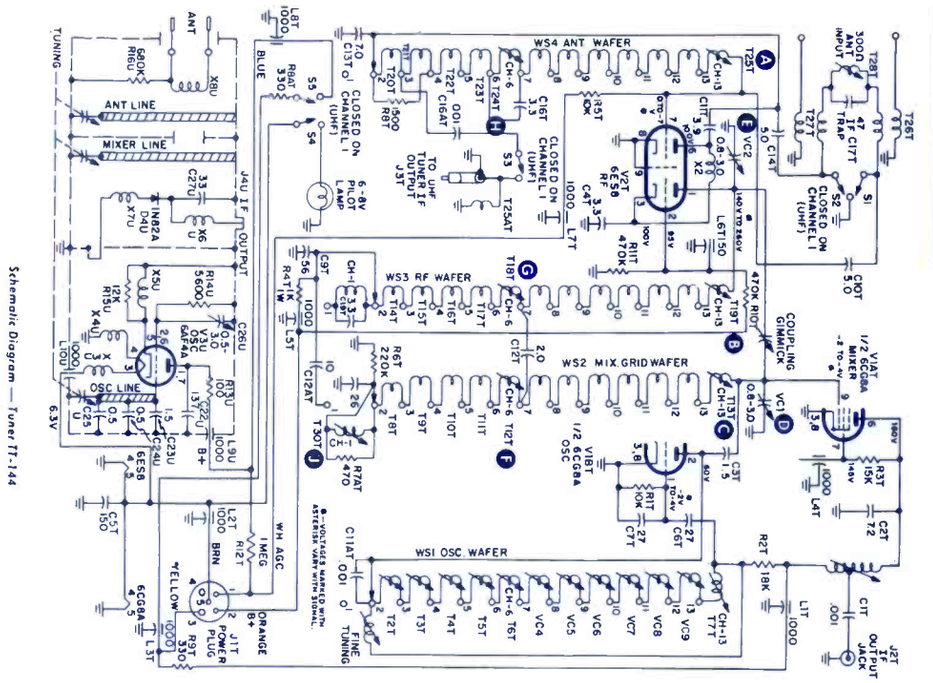
TUNER ALIGNMENT SETUP FOR T106 VHF TUNER



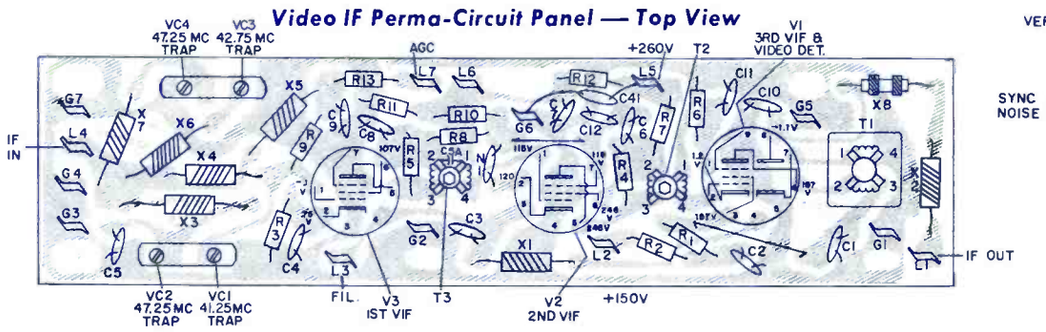
"H" PADDING

An H pad connected between the tuner antenna lead and the 300Ω generator balun is desirable, if a resistance pad of some type is not already incorporated in the generator cable. The "H" pad should be connected as shown

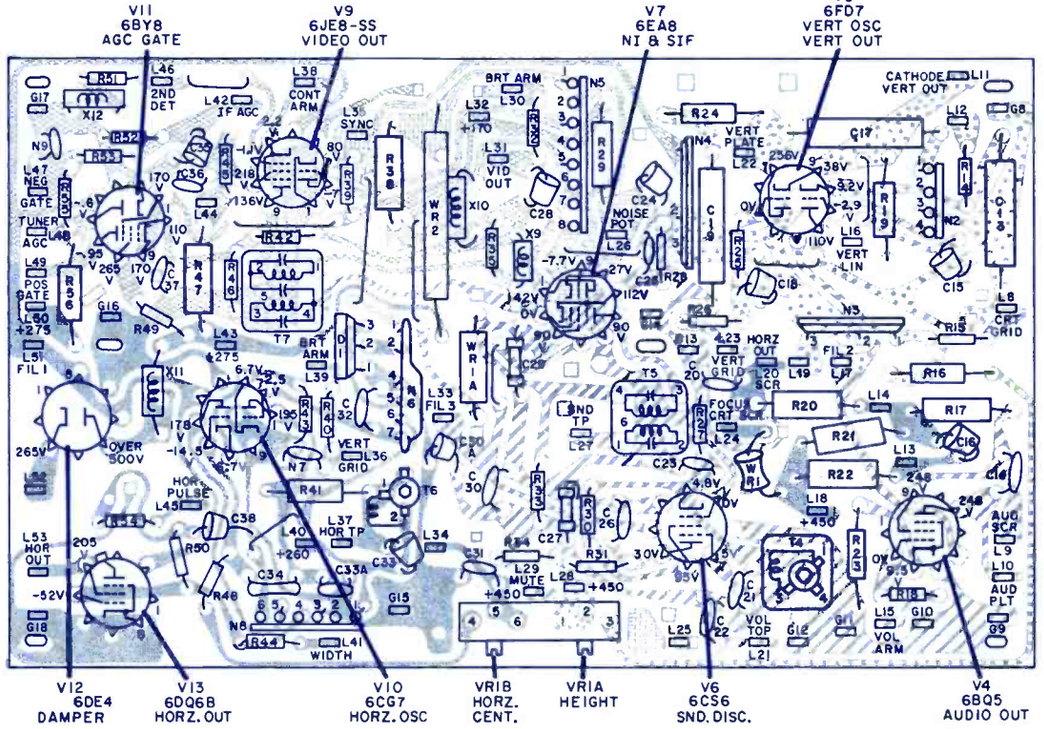
The cover must be in place on the tuner when R-F or oscillator alignment is being made.



Video IF Perma-Circuit Panel — Top View



Video-Oscillator-Sound Perma-Circuit Panel — Top View



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PHILCO
TV Chassis 12N50 Series

Electronic Technician
CIRCUIT DIGEST
662

LEGEND FOR PERMA-CIRCUIT PANELS

HORIZONTAL CIRCUITS

SOUND IF DETECTOR AND AUDIO CIRCUITS

VIDEO AND AGC CIRCUITS

VERTICAL CIRCUITS

SYNC SEPARATOR AND NOISE INVERTER CIRCUITS

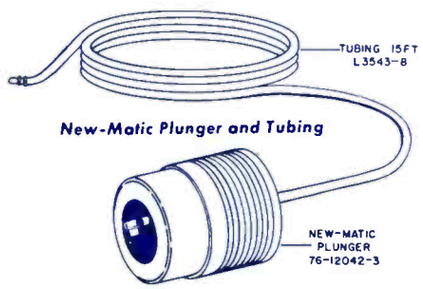
CRITICAL LEAD DRESS

To Prevent Corona:

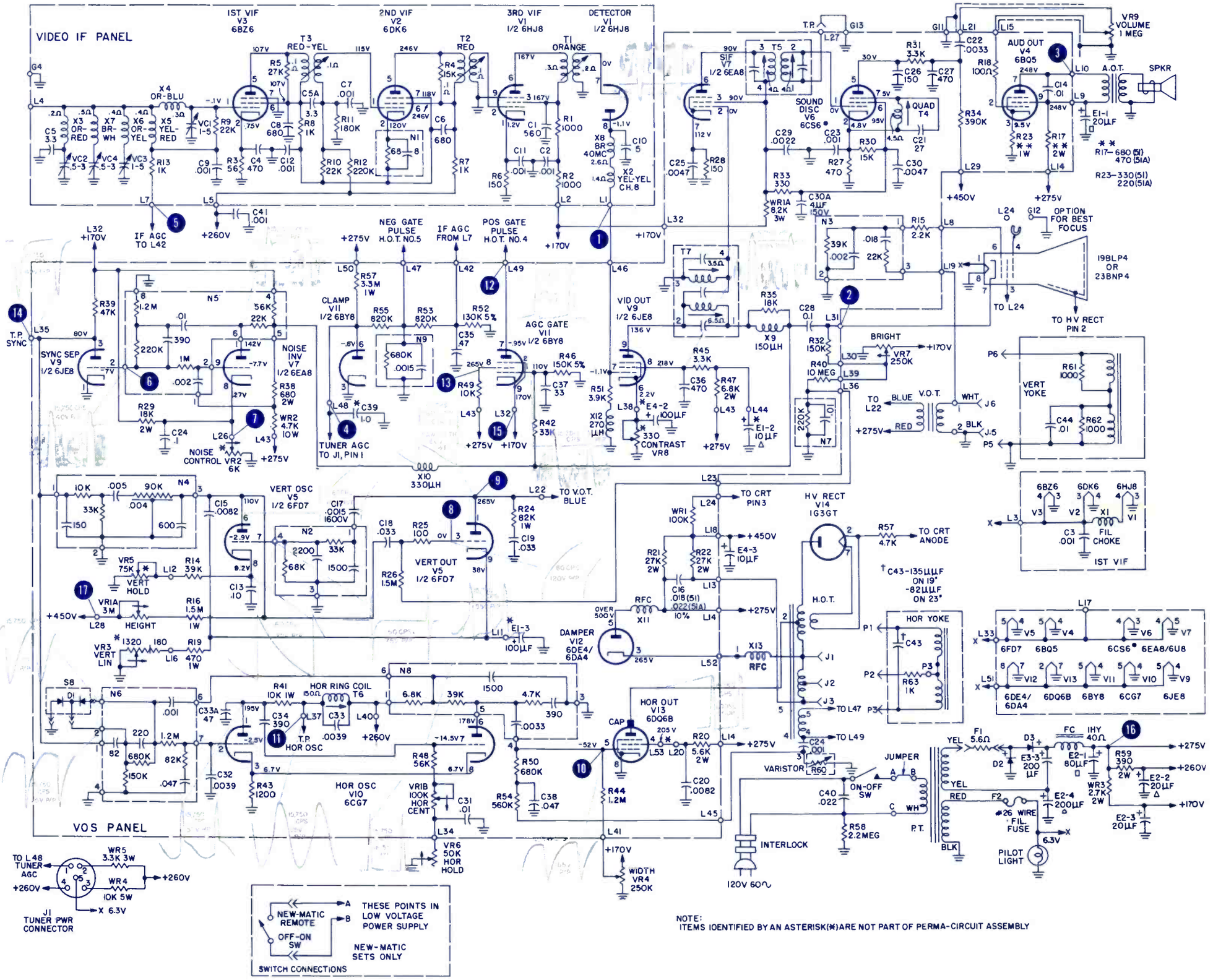
1. V-14 socket must be free of solder points and sharp wire ends.
2. Lead from V-14 cap must be at least ¾" from any metal of H.V. Cage.
3. Filament leads from H.O.T. to V-14 must have slack (if any) dress down toward base away from glass bulb of 1G3 tube.
4. All leads from H.O.T. coil to Y.S. must be free of each other and dress away from any metal parts.
5. Lead from V-13 cap must be dressed at least ¾" away from H.O.T. winding.
6. Leads from Y.S. 3 and 6 and brown damper lead must be dressed under lugs CL17, CL18 and CL20 away from winding of H.O.T.
7. Leads from lugs 3, 4, and 5 on H.O.T. panel must dress under CL19 and away from winding of H.O.T.
8. All leads must be dressed clear of L52 and V12-3.
9. Leads from V-13 and V-14 caps must be at least ½" apart.

To Prevent Pickup:

1. Tuner power cable must dress under CL8, CL9 and CL10.
2. Bare portion of I-F link to tuner must be clamped under dress lug CL13 provided at end of I-F shield.
3. Green C.W. from L1 to L46 should be free from all other leads and away from subbase.
4. Leads from VR9-4 and 5 must be twisted together for approximately 8 twists in length from VR9-4 and 5, to CL12.
5. Yellow CRTS lead should be free from all other leads.



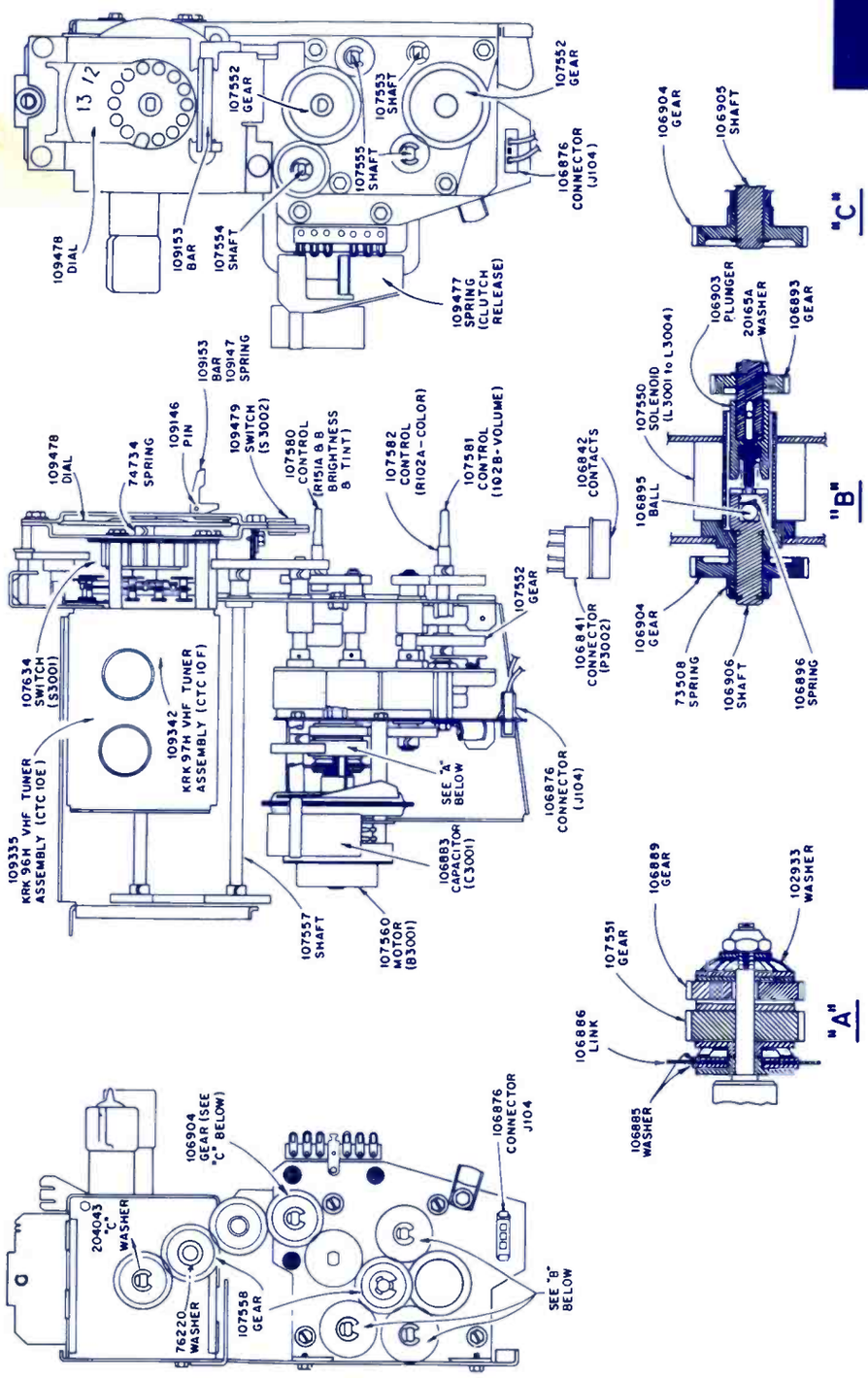
New-Matic Plunger and Tubing



NOTE:
ITEMS IDENTIFIED BY AN ASTERISK(*) ARE NOT PART OF PERMA-CIRCUIT ASSEMBLY

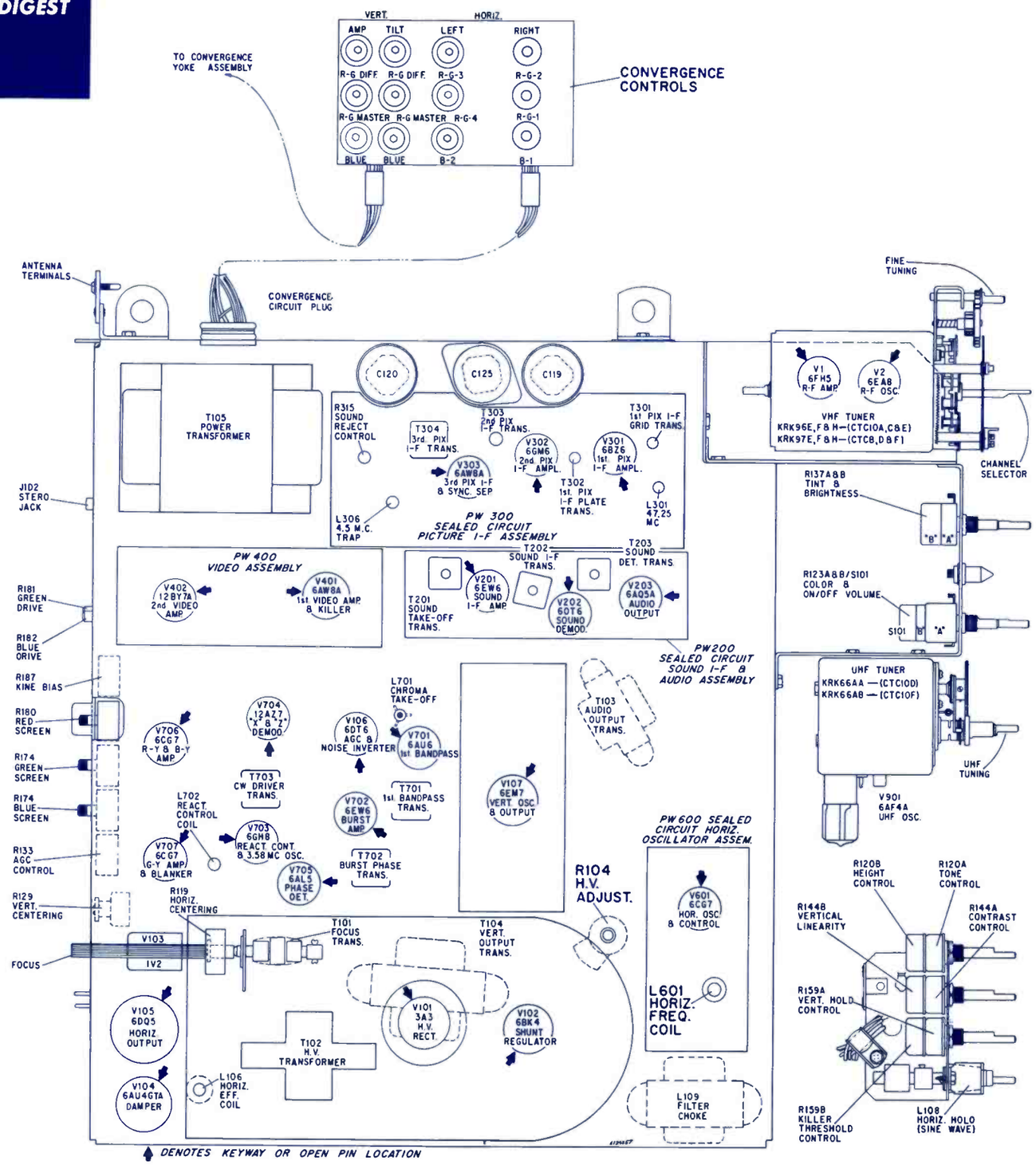
RESISTANCE CHART

TUBE		PIN NUMBERS								
		1	2	3	4	5	6	7	8	9
V1 6HJ8	Det. 3rd IF	120Ω	.1Ω	10KΩ	Fil.	Fil.	10KΩ	.1Ω	3.9Ω	Gnd.
V2 6DK6	2nd VIF	95KΩ	115KΩ	Fil.	Fil.	15KΩ	15KΩ	120K		
V3 6BZ6	1st VIF	68KΩ	47Ω	Fil.	Fil.	110KΩ	110KΩ	Gnd.		14KΩ
V4 6BQ5	Audio Out.		140Ω	330Ω	Fil.	Fil.		14KΩ		
V5 6FD7	Vert. Osc. Vert. Out.	15KΩ		1.2MΩ	Fil.	Fil.	2.2MΩ	38KΩ	59KΩ	1.1KΩ
V6 6CS6	Sound Disc	3Ω	470Ω	Fil.	Fil.	400KΩ	7KΩ	470KΩ		
V7 6EA8	Snd. IF Noise Inv.	33KΩ	2Ω	10KΩ	Fil.	Fil.	10KΩ	150KΩ	3KΩ	2.2MΩ
V9 6JE8	Video Out. Sync Sep.	Gnd.	1.3MΩ	24KΩ	Fil.	Fil.	65Ω	39KΩ	14KΩ	14KΩ
V10 6CG7	Horz. Osc.	14KΩ	1.2MΩ	1KΩ	Fil.	Fil.	50KΩ	11KΩ	1KΩ	Gnd.
V11 6BT8	AGC Gate & Clamp	32KΩ	7KΩ	Fil.	Fil.	1Ω	80KΩ	320KΩ	20KΩ	7KΩ
V12 6DE4	Damper			14KΩ		60KΩ		Fil.	Fil.	
V13 6DQ6B	Horz. Out.		Fil.		14KΩ	26KΩ		Fil.	Gnd.	



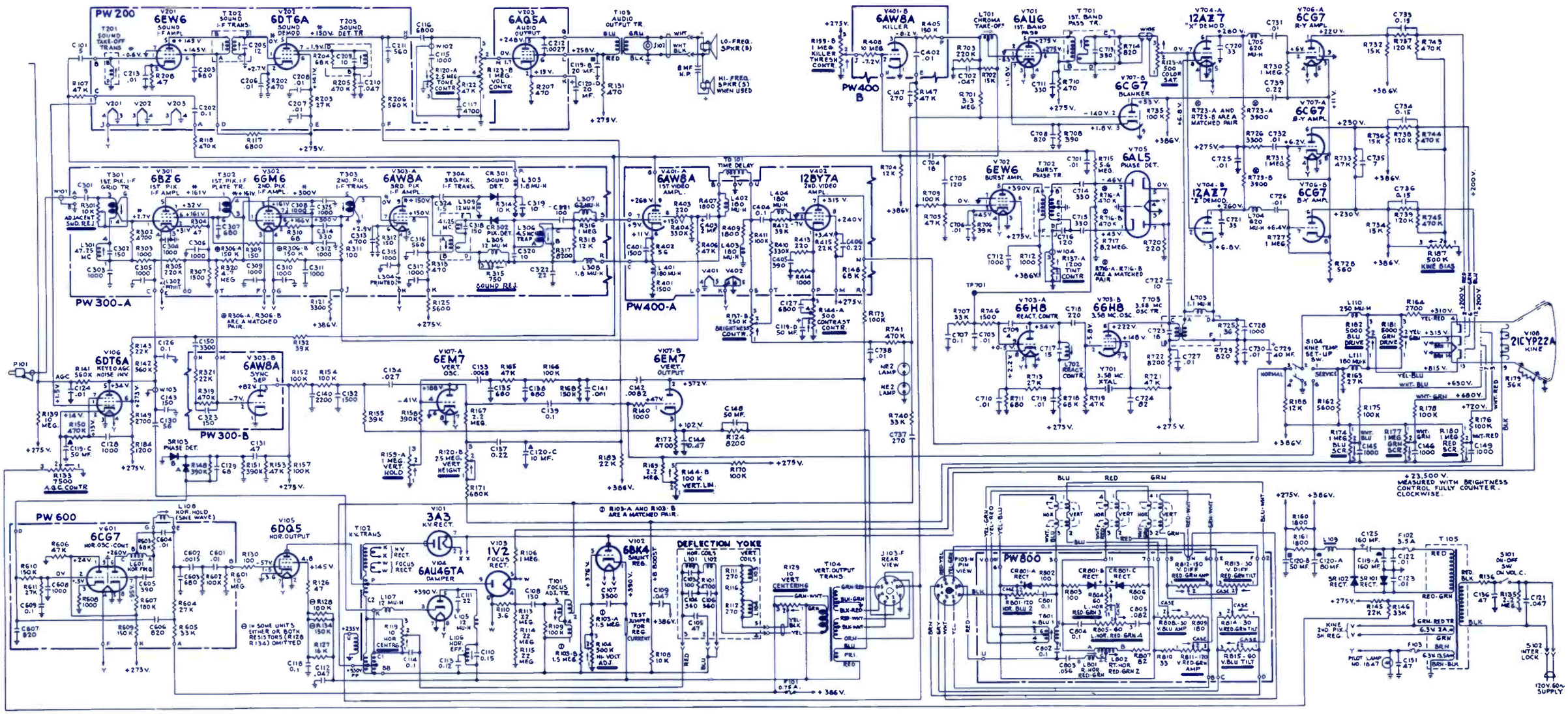
REMOTE CONTROL TUNER ASSEMBLY

-Remote Control Tuner and Clutch Assembly Parts Identification



Chassis Top View

More Data on Opposite Page

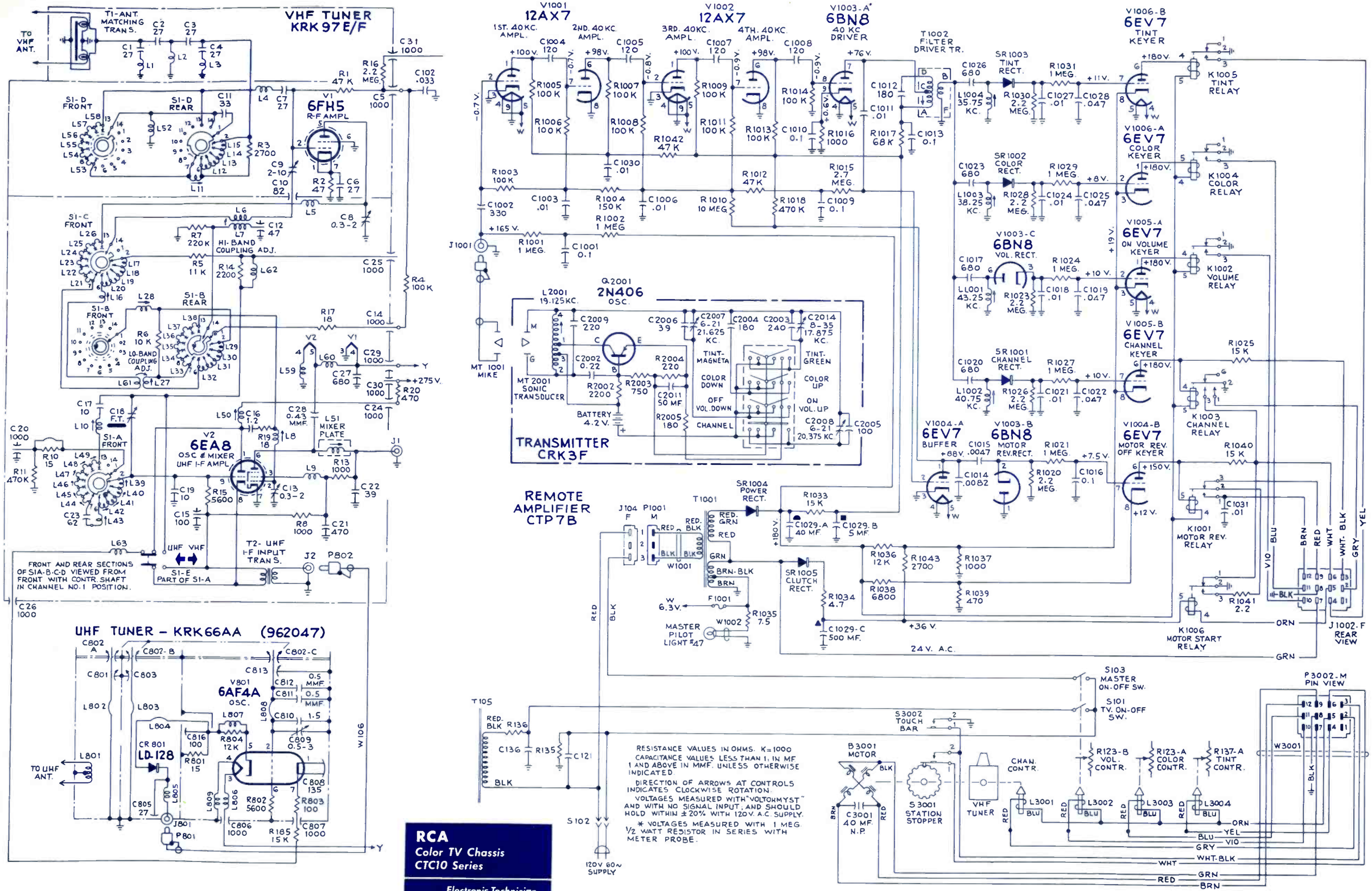


Convergence Controls

Location of Convergence and Lateral Beam Magnets

Kinescope Adjustments and Components

More Data on Reverse Side



RCA
Color TV Chassis
CTC10 Series

Electronic Technician
CIRCUIT DIGEST

More Data on Reverse Side

RCA
TV Chassis
KCS130F, H, K, M

"The ENTERTAINER"

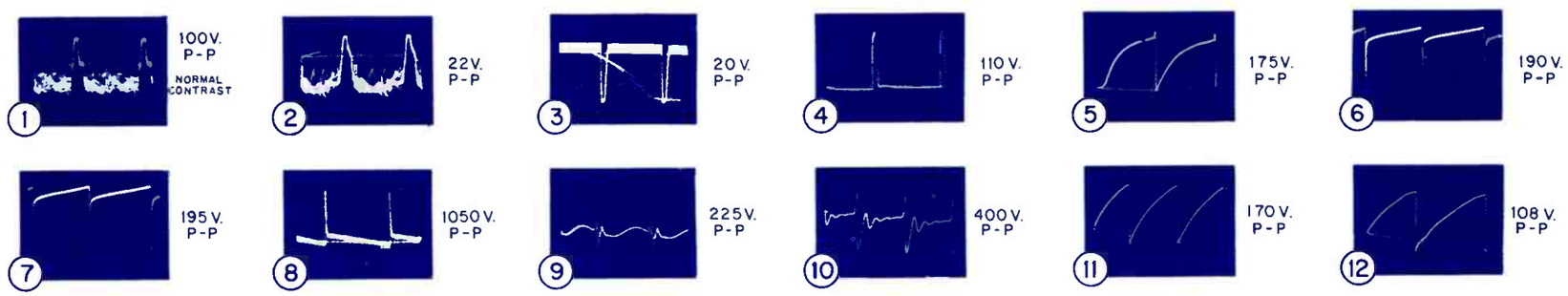
VHF TUNER KRK 71N/P/W

UHF TUNER- KRK66U/W/AE (962047)

PW 200-A

PW 200-B

PW 500

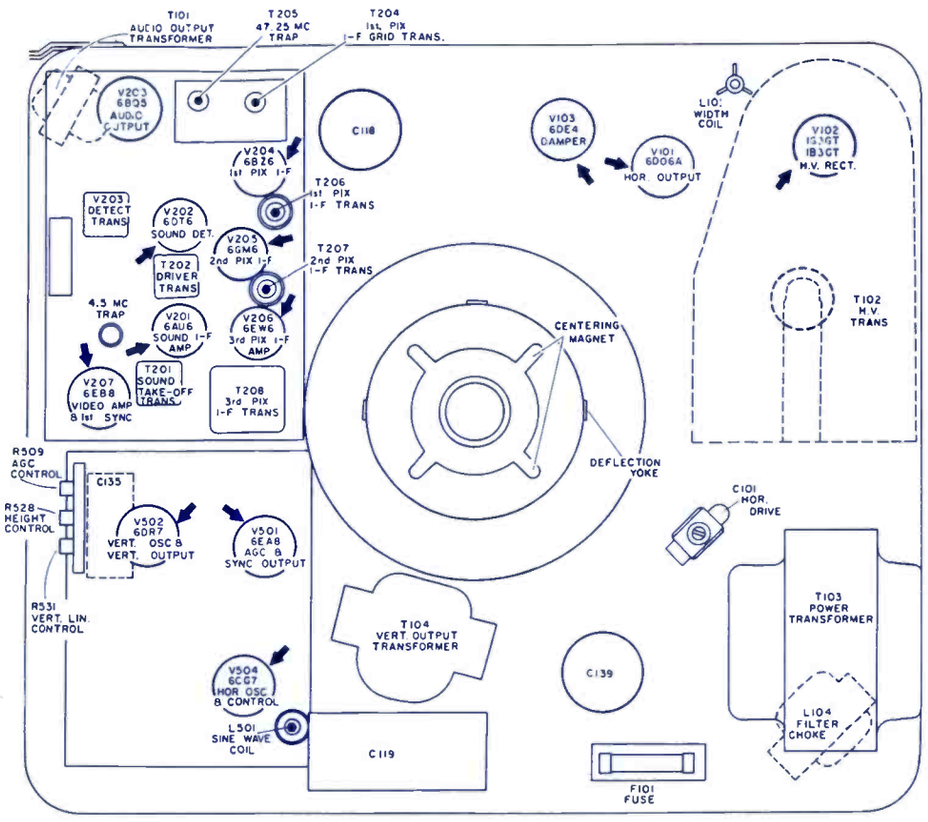


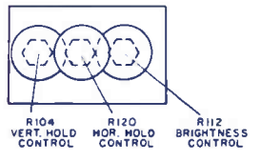
Direction of arrows at controls indicates clockwise rotation.

*Measured with 1 megohm, ½ watt resistor in series with meter probe.

Balloons ① ② etc., shown on schematic indicate points of observation of the waveforms shown

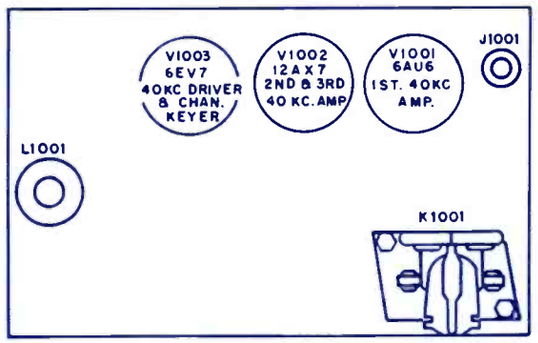
CHASSIS REAR VIEW



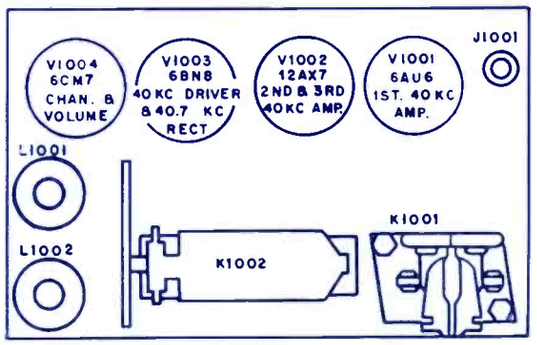


RCA
TV Chassis
KCS130F, H, K, M

Electronic Technician
CIRCUIT DIGEST

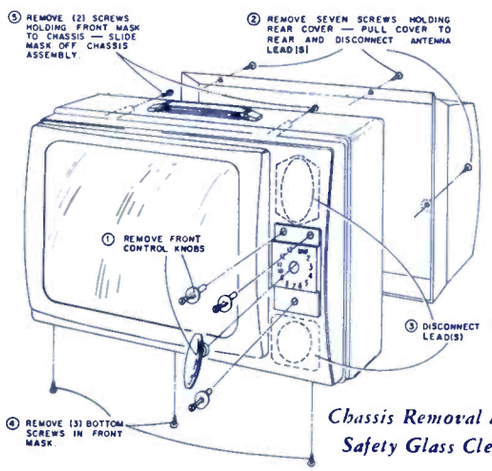


KRS24A Remote Control Amplifier Chassis (1 Button)



KRS24B Remote Control Amplifier Chassis (2 Button)

More Data on Reverse Side



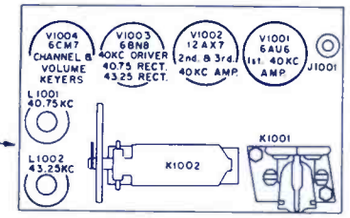
Chassis Removal and Safety Glass Cleaning

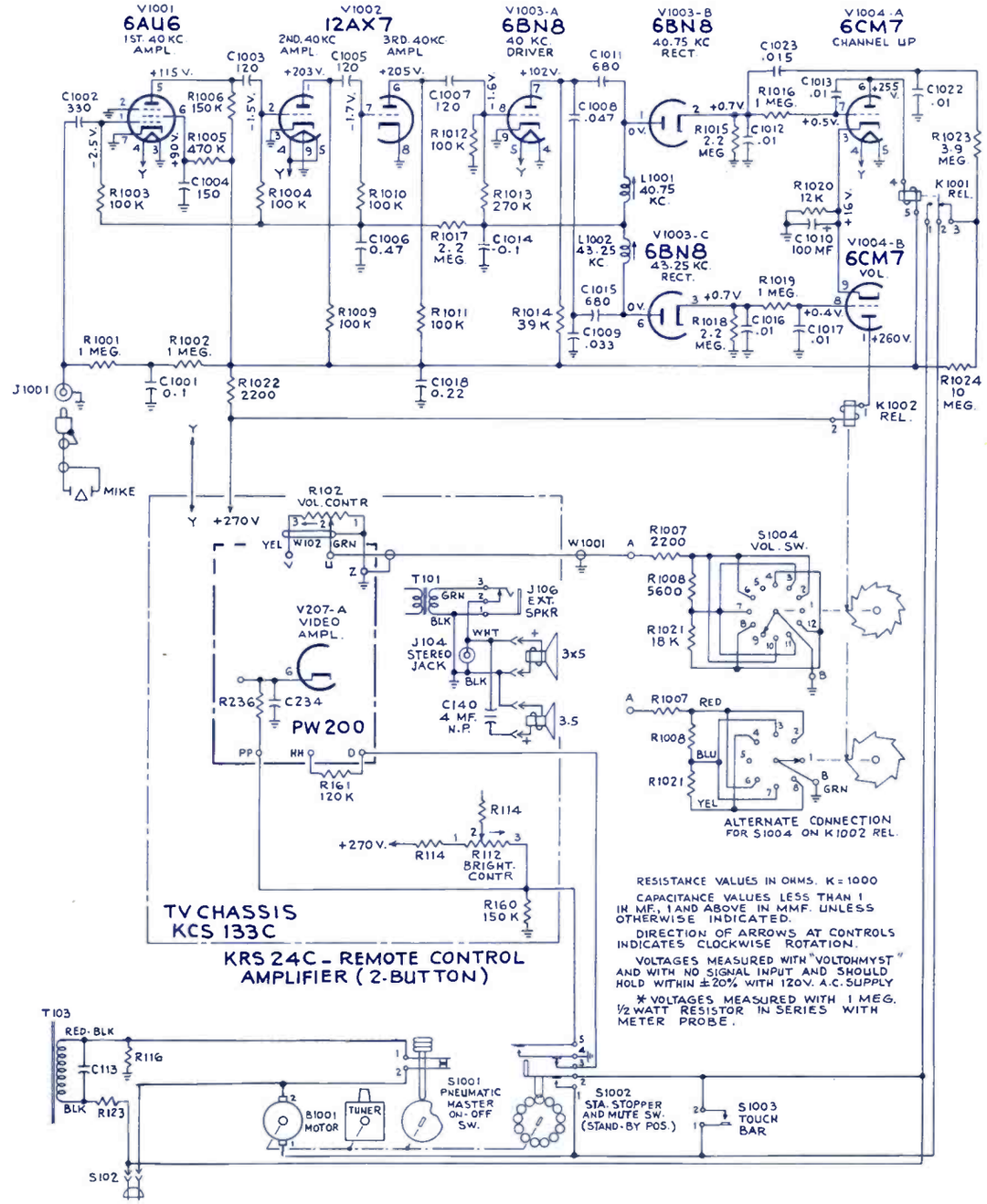
RCA
TV Chassis KCS 133 Series

Electronic Technician
CIRCUIT DIGEST

More Data on Opposite Page

KRS24C REMOTE AMPLIFIER (USED WITH KCS133C CHASSIS ONLY)





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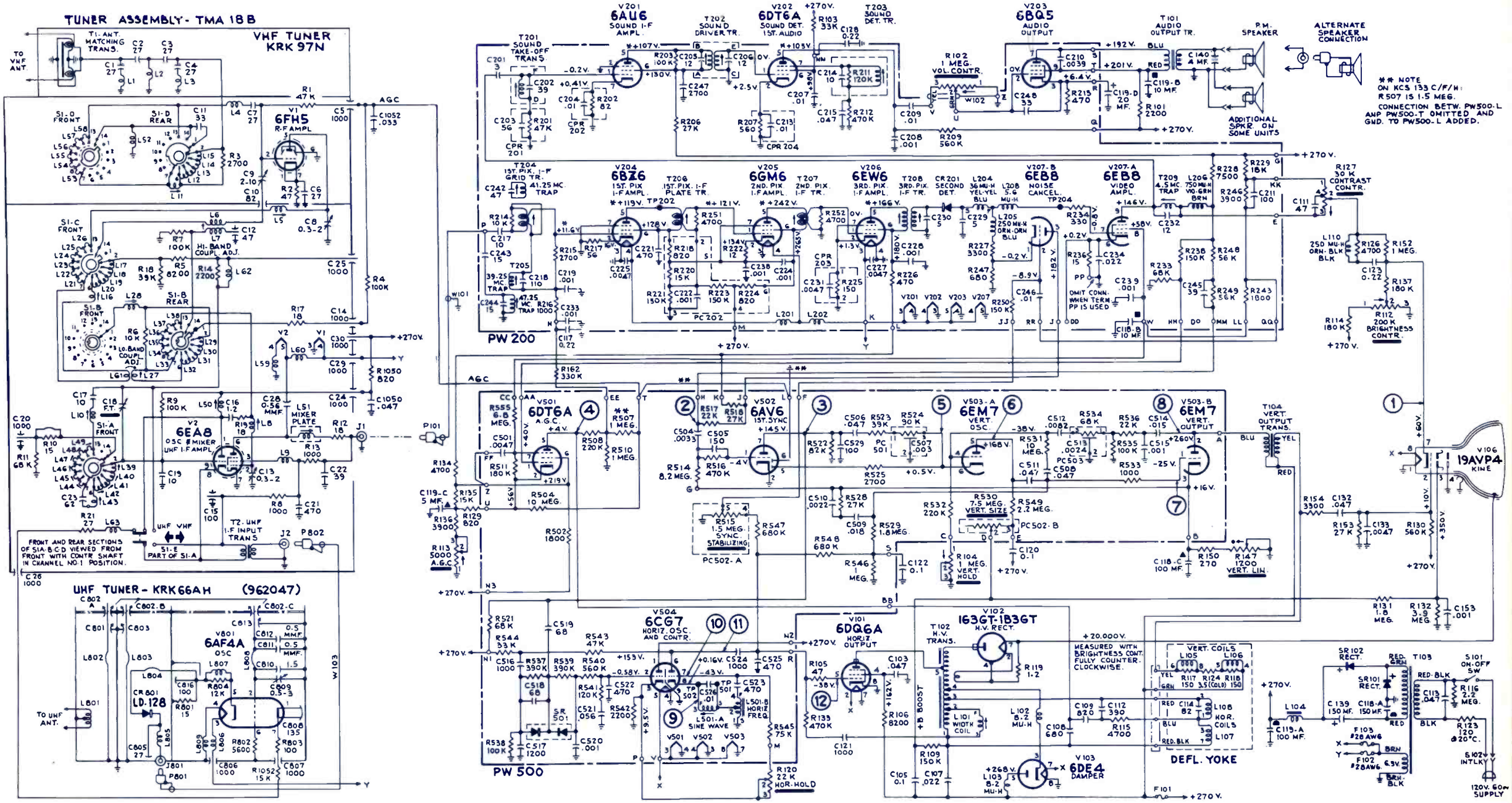
TUNER ASSEMBLY - TMA 18 B
VHF TUNER KRK 97N
UHF TUNER - KRK66AH (962047)
PW 200
PW 500
6AU6 SOUND I-F AMPL.
6DT6A SOUND DET. 1ST. AUDIO
6BQ5 AUDIO OUTPUT
6FH5 R-F AMPL
6EA8 OSC & MIXER UHF I-F AMPL.
6BZ6 1ST PIX I-F AMPL.
6GM6 2ND. PIX I-F AMPL.
6EW6 3RD. PIX I-F AMPL.
6EB8 NOISE CANCEL.
6EB8 VIDEO AMPL.
6DT6A A.G.C.
6AV6 1ST SYNC
6EM7 VERT. OSC
6EM7 VERT. OUTPUT
6CG7 HORIZ. OSC. AND CONTR.
6DQ6A HORIZ. OUTPUT
163GT-1B3GT H.V. RECT.
6DE4 DAMPER
6AF4A OSC
19AVP4 KINE
R102 1 MEG. VOL. CONTR.
R127 30 K CONTRAST CONTR.
R112 200 K BRIGHTNESS CONTR.
R104 1 MEG. VERT. HOLD
R530 7.5 MEG. VERT. SIZE
R147 1200 VERT. LIN.
R120 22 K HOR. HOLD
R515 1.5 MEG. SYNC. STABILIZING
R113 5000 A.G.C.
R504 10 MEG.
R507 1 MEG.
R510 1 MEG.
R514 8.2 MEG.
R547 680 K
R548 680 K
R546 1 MEG.
R549 2.2 MEG.
R131 1.8 MEG.
R132 3.9 MEG.
R116 2.2 MEG.
R119 1-2
R109 150 K
R105 47
R106 8200
R133 470 K
R121 1000
R545 75 K
R538 100 K
R517 22 K
R518 27 K
R516 470 K
R522 82 K
R523 39 K
R524 90 K
R525 2700
R531 10 MEG.
R534 68 K
R535 100 K
R536 22 K
R533 1000
R528 27 K
R529 1.8 MEG.
R532 220 K
R509 .018
R510 .0022
R511 .047
R512 .0082
R513 .0024
R514 .015
R515 .001
R508 220 K
R502 1800
R503 100 K
R504 10 MEG.
R505 .47
R506 .047
R507 .003
R508 .0033
R509 .018
R510 .0022
R511 .047
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R513 .0024
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R515 .001
R516 470 K
R517 22 K
R518 27 K
R519 68 K
R520 .0047
R521 68 K
R522 82 K
R523 39 K
R524 90 K
R525 2700
R526 470
R527 3300
R528 27 K
R529 1.8 MEG.
R530 7.5 MEG. VERT. SIZE
R531 10 MEG.
R532 220 K
R533 1000
R534 68 K
R535 100 K
R536 22 K
R537 390 K
R538 100 K
R539 390 K
R540 560 K
R541 120 K
R542 2200
R543 47 K
R544 33 K
R545 75 K
R546 1 MEG.
R547 680 K
R548 680 K
R549 2.2 MEG.
R550 .0047
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R553 .0033
R554 .0047
R555 6.8 MEG.
R556 .0047
R557 .0033
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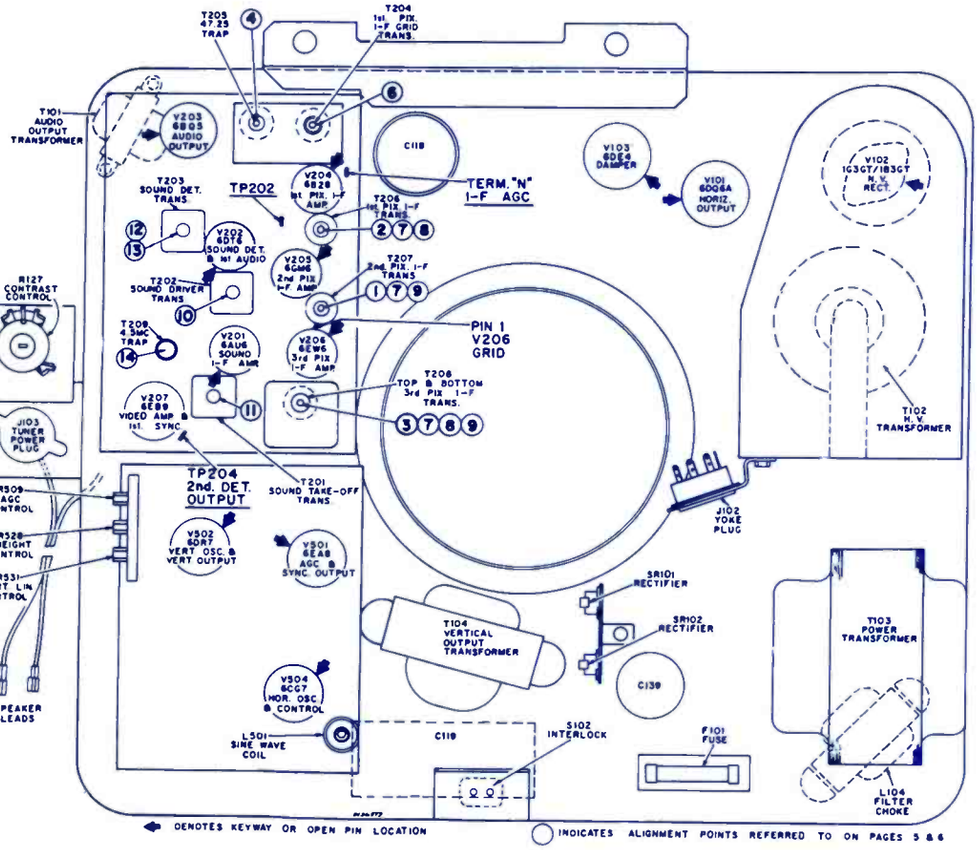
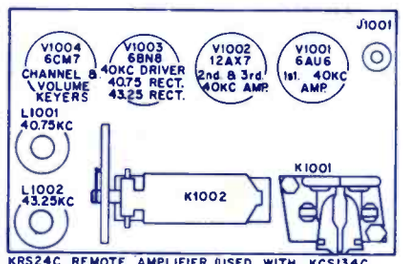
R575 .0033

RCA
TV Chassis
KCS 134 Series

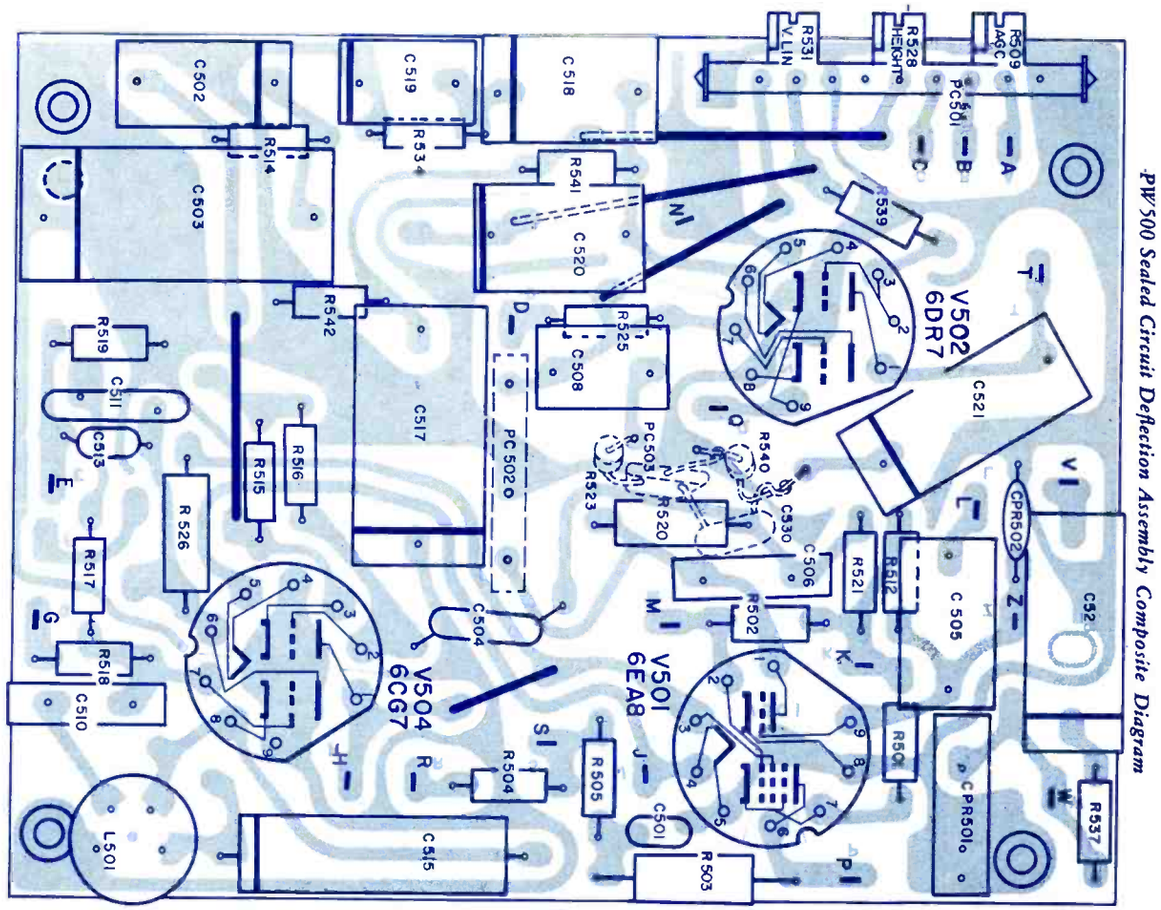
Electronic Technician
CIRCUIT DIGEST



CHASSIS REAR VIEW

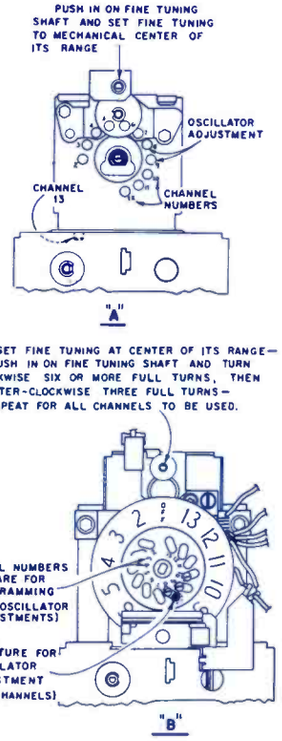


KRS24C REMOTE AMPLIFIER (USED WITH KCS134C CHASSIS ONLY)

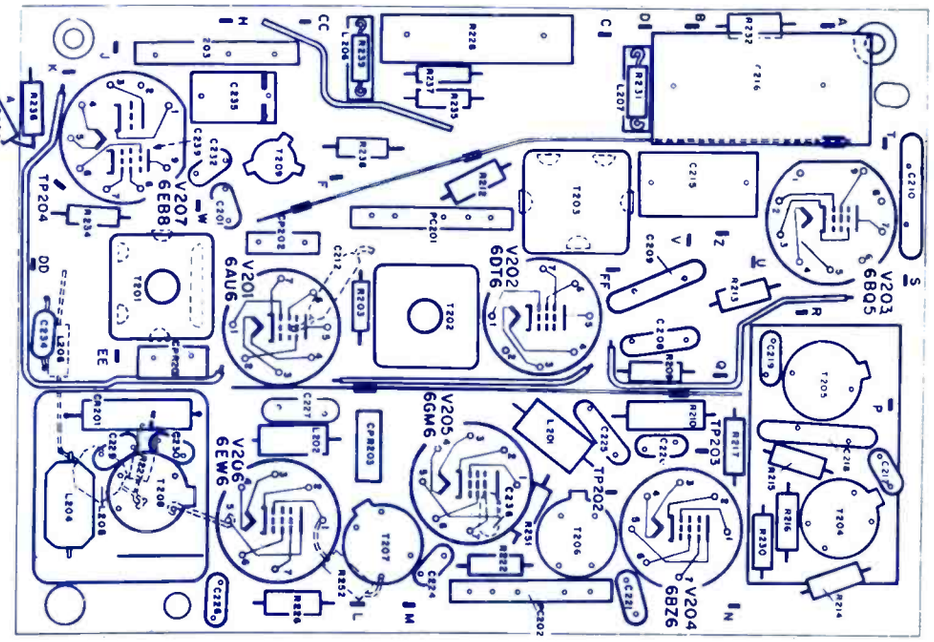


PW500 Sealed Circuit Deflection Assembly Composite Diagram

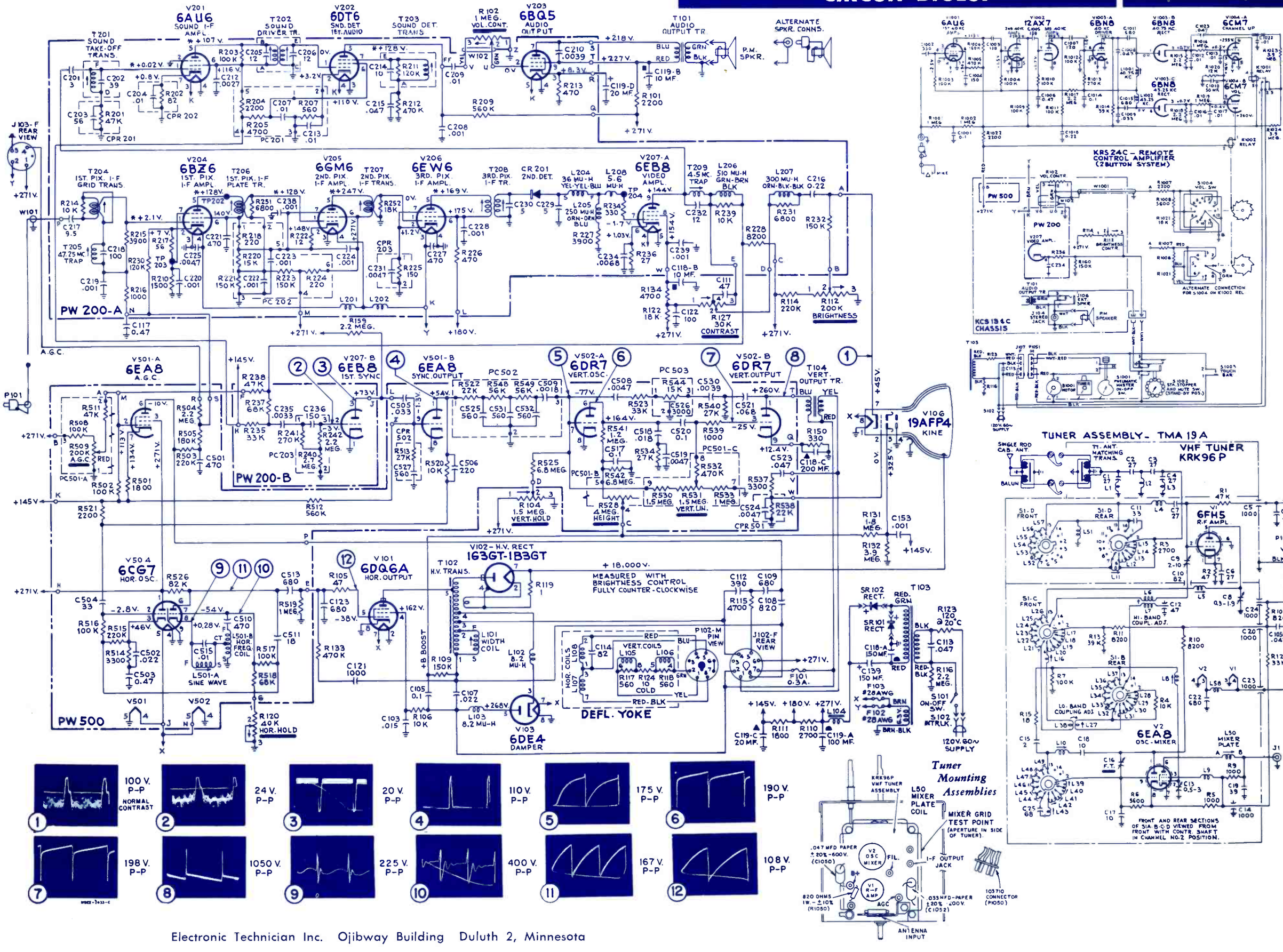
VHF Oscillator Adjustments

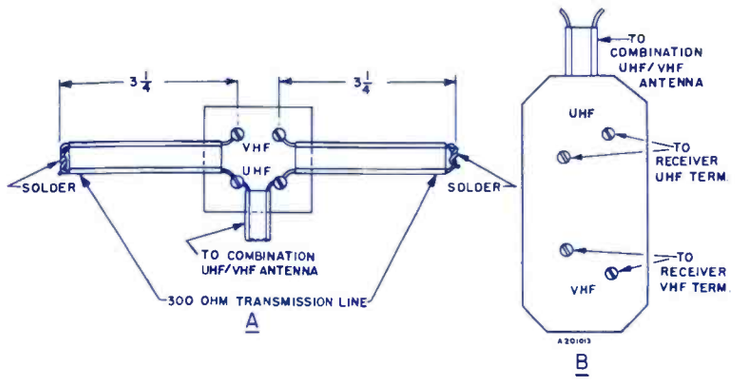


PW200 Sealed Circuit I-F and Video Assembly Composite Diagram

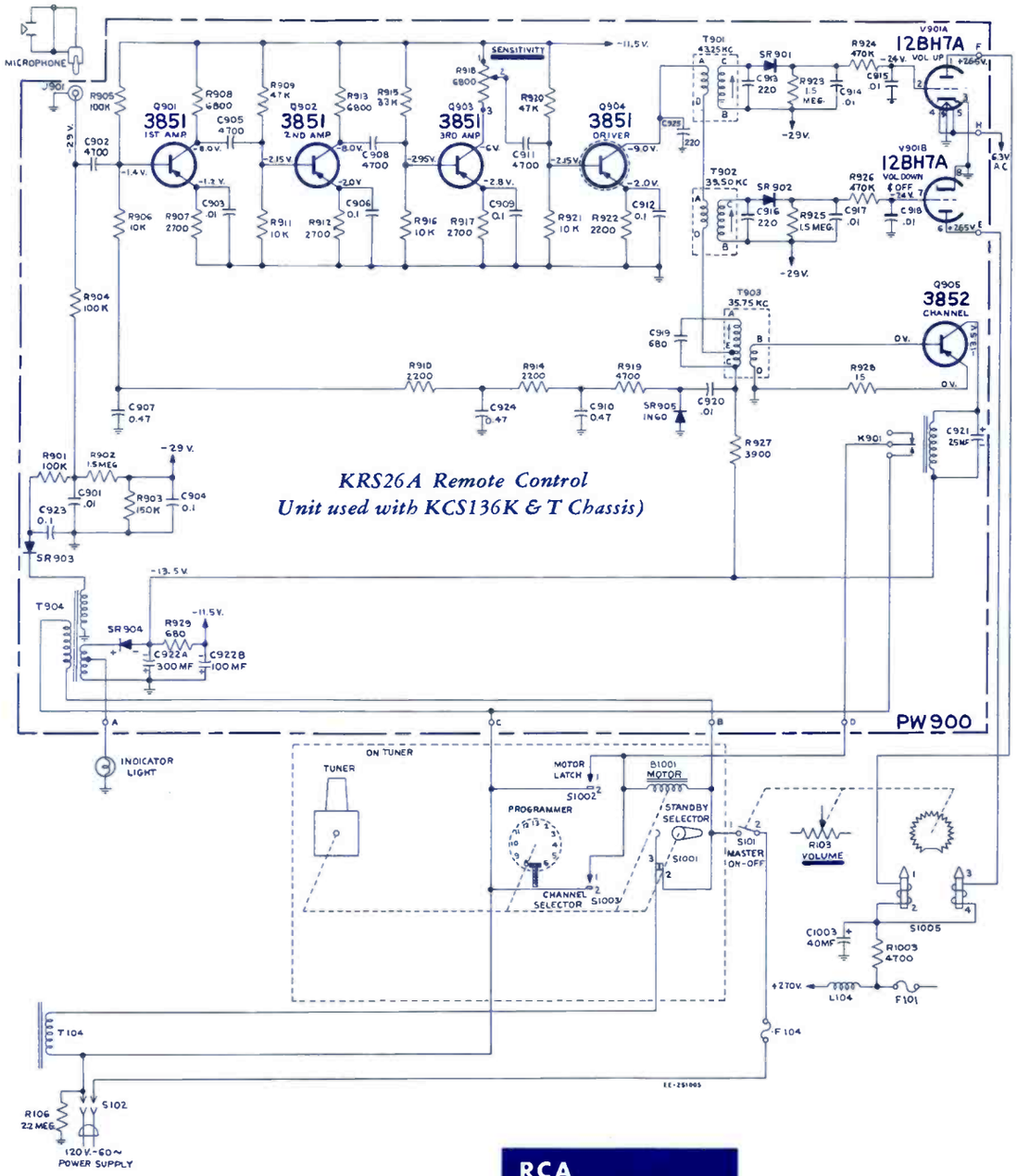


RCA
TV Chassis
KCS 134 Series

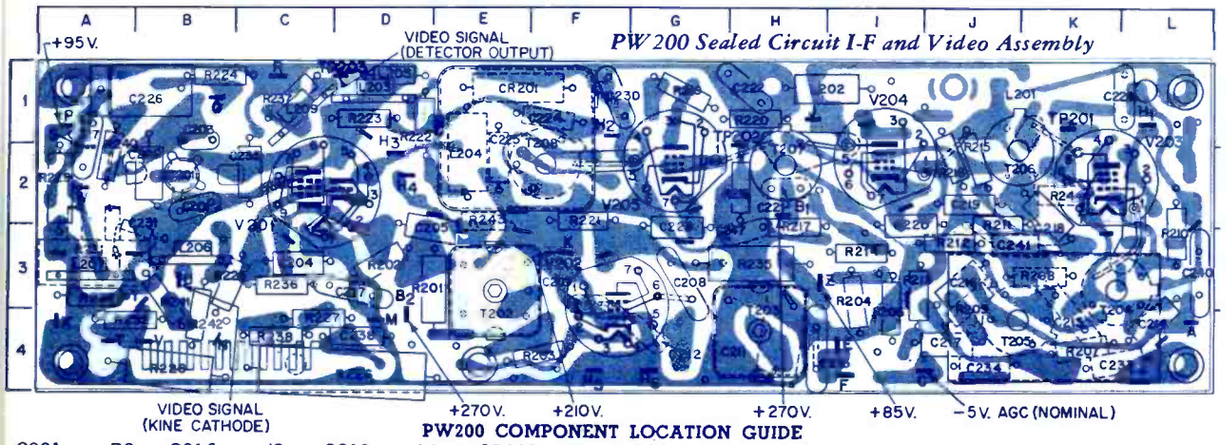




Combination UHF/VHF Antenna Matching



KRS26A Remote Control
Unit used with KCS136K & T Chassis)

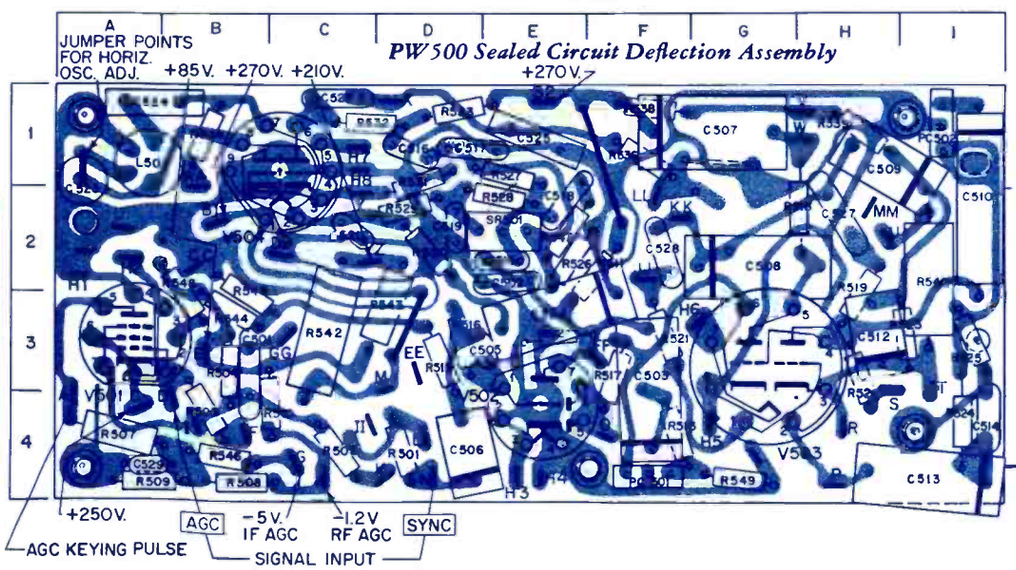


PW200 Sealed Circuit I-F and Video Assembly

PW200 COMPONENT LOCATION GUIDE

C201 B2	C216 J3	C228 L1	CR201 E1	R202 D3	R215 J2	R227 C4	R242 B4
C202 B2	C217 J4	C230 F1		R203 F4	R216 J2	R228 B4	R243 E2
C203 B1	C218 K2	C231 B3	L201 J1	†R204 I3	R217 H3	R229 A2	R244 K2
C204 C3	C219 J2	C233 L4	L202 I1	R206 I3	R218 H2	R230 A3	
C205 D2	C220 I2	C234 J4	L203 D1	R207 K4	R219 G1	R231 A3	T201 B2
C208 G3	C221 H2	C235 C2	L204 E2	R208 K3	R220 H1	‡R232 A4	T202 E3
C209 F3	C222 H1	C237 D3	L205 D1	R209 J3	R221 F2	R235 H3	T203 H4
C211 H4	C223 G2	C238 D4	L206 B3	R210 L3	R222 D1	R236 C3	T204 K3
C212 G4	C224 F1	C240 L3	L207 A3	R211 J2	R223 D1	R237 C1	T205 K4
*C213 H4	C225 E2	C241 J3	L209 C1	R212 J3	R224 B1	R238 C4	T206 K2
C214 L4	C226 B1	C247 H3		R213 I3	R225 B3	⊙R240 A2	T207 H2
C215 K4	C227 A1		R201 E3	R214 I3	R226 D4	▲R241 B3	T208 F2

*In TV-only models; jumpered in combination models. †In TV-only models; omitted in combination models. ‡In chassis **without** auto-brite; omitted in chassis **with** auto-brite.
⊙In chassis **with** auto-brite; jumpered in chassis **without** auto-brite. ▲In chassis **with** auto-brite; omitted in chassis **without** auto-brite.



PW500 Sealed Circuit Deflection Assembly

PW500 COMPONENT LOCATION GUIDE

C501 B3	C513 I4	C523 A1	PC502 I1	R511 F2	R523 I3	R533 D1	R546 B4
C502 E2	C514 I4	C524 A1		R512 E3	R524 I4	R534 B1	R547 E2
C503 F3	C515 E2	C525 E1	R501 D4	R513 F4	R525 I3	R536 F1	R548 B2
C505 D3	C516 D1	C527 H2	R504 B3	R515 D3	R526 E2	‡R538 F1	R549 G4
C506 D4	C517 D1	C528 F2	R505 C4	R516 D3	R527 E1	R539 H1	
C507 G1	C518 E2	C529 A4	R506 B4	R517 F3	R528 E2	R540 I2	SR501 E2
C508 G2	C519 D2		R507 A4	R518 H2	R529 D2	R542 C3	
C509 H1	C520 E3	L501 A1	R508 B4	R519 H2	R530 D2	R543 D3	
C510 I2	C521 C2		R509 A4	R520 H3	R531 D1	R544 B3	
C512 H3	C522 C1	PC501 F4	R510 C4	R521 F3	R532 C1	R545 B2	

‡In chassis **without** auto-brite; omitted in chassis **with** auto-brite.

RCA
TV Chassis
KCS 136 Series

Electronic Technician
CIRCUIT DIGEST

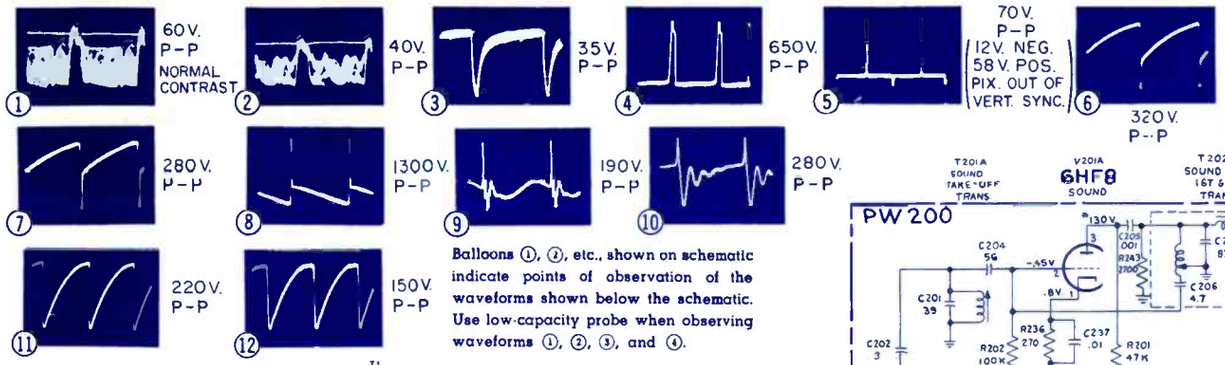
RCA
TV Chassis
KCS 136 Series

Electronic Technician
CIRCUIT DIGEST

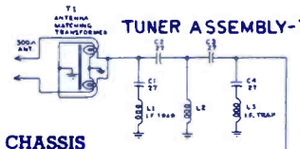
Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota

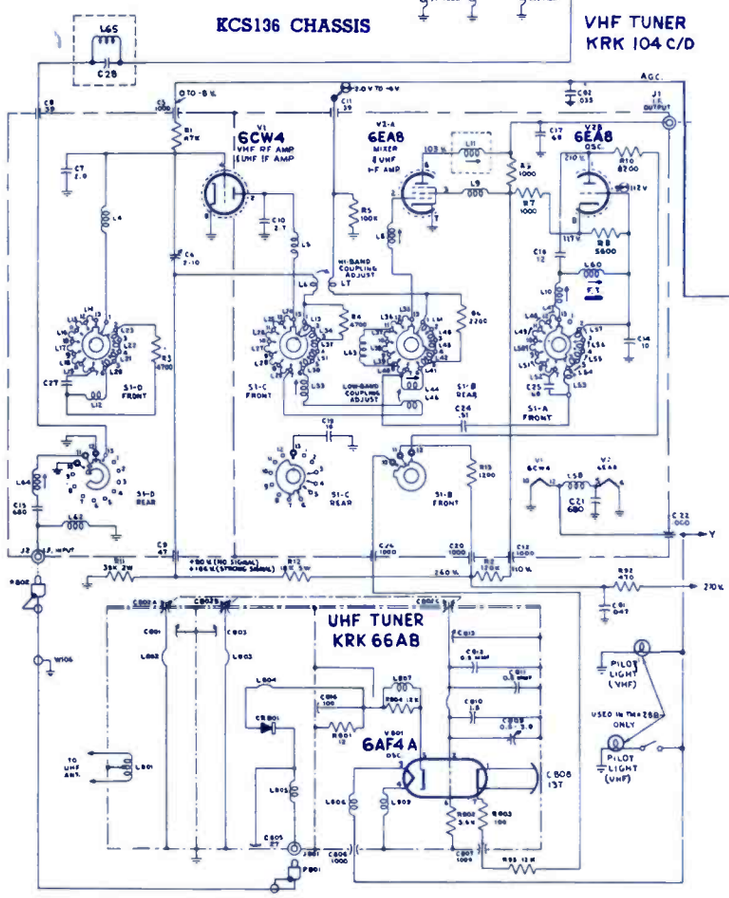
ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

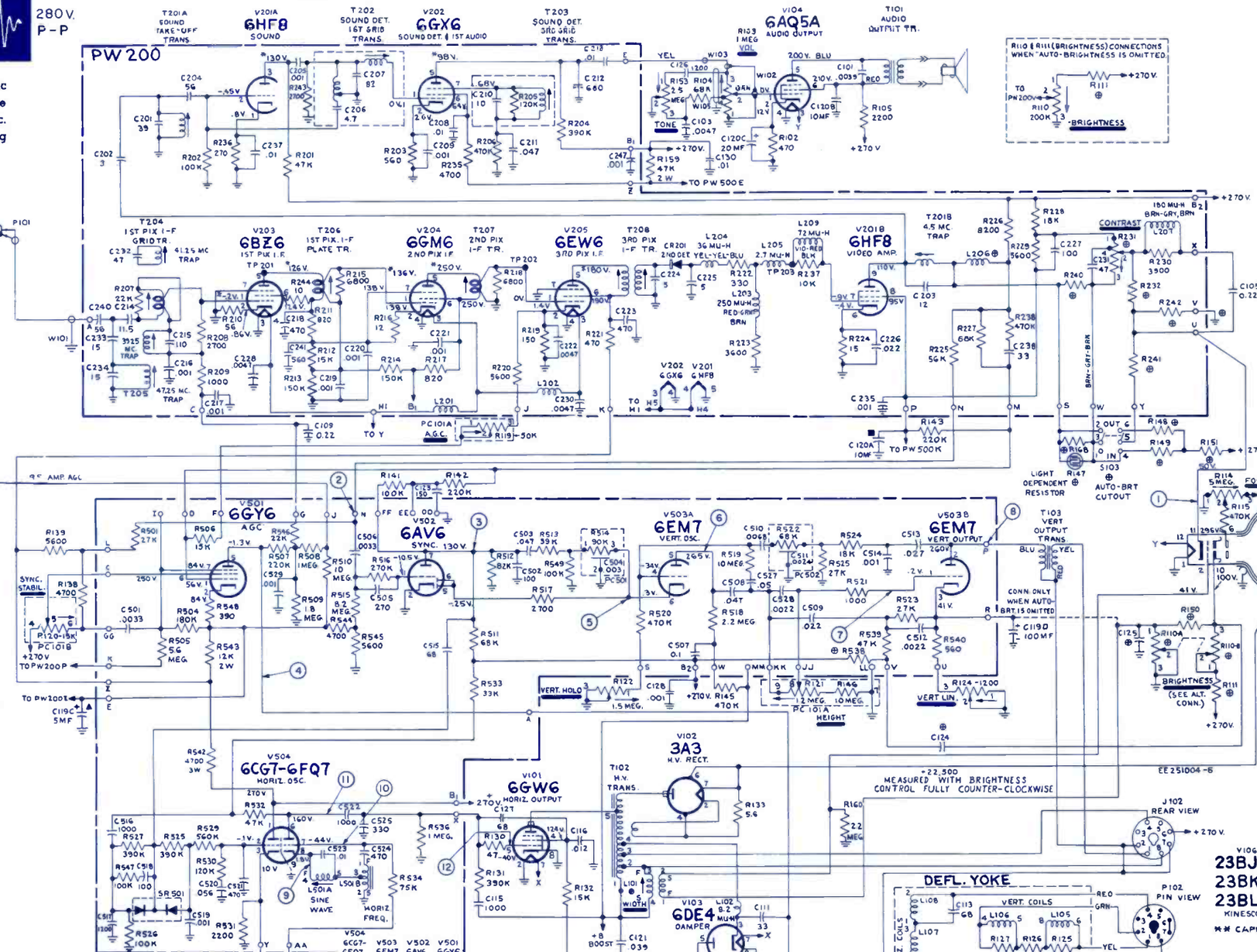
RCA
TV Chassis
KCS 136 Series

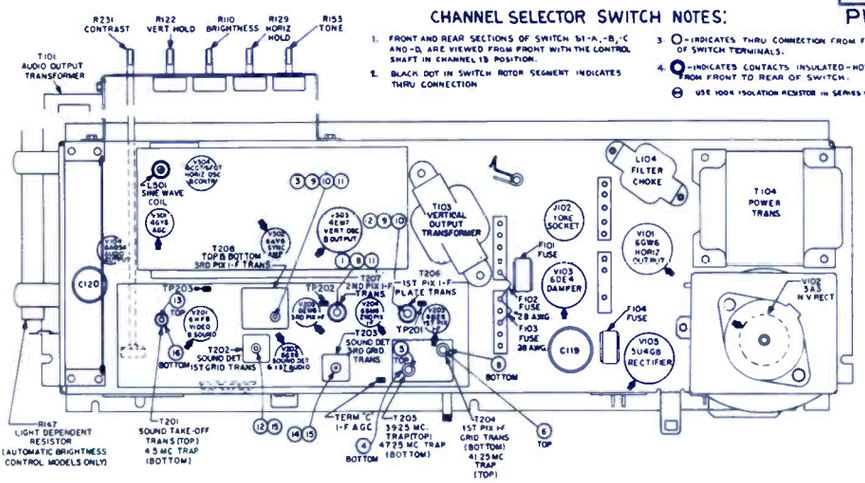


Balloons ①, ②, etc., shown on schematic indicate points of observation of the waveforms shown below the schematic. Use low-capacity probe when observing waveforms ①, ②, ③, and ④.





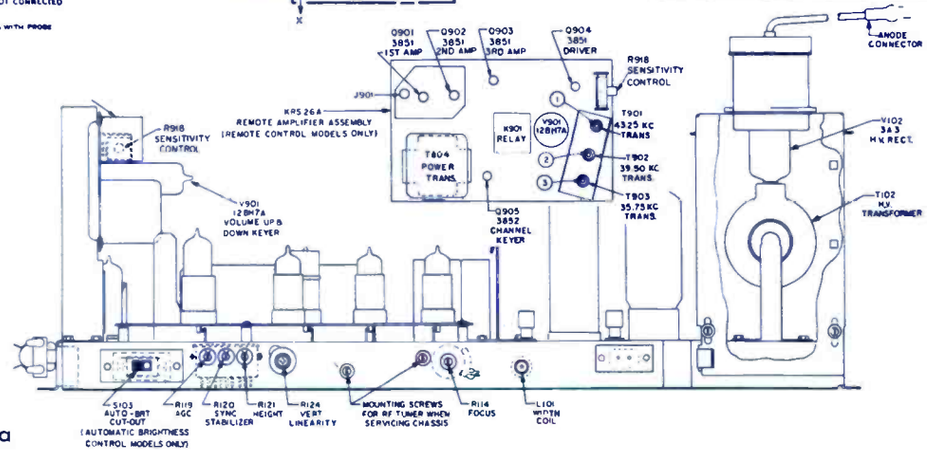




CHANNEL SELECTOR SWITCH NOTES:

1. FRONT AND REAR SECTIONS OF SWITCH S1-A, -B, -C AND -D, ARE VIEWED FROM FRONT WITH THE CONTROL SHAFT IN CHANNEL 13 POSITION.
2. BLACK DOT IN SWITCH ROTOR SEGMENT INDICATES THRU CONNECTION
3. ○ - INDICATES THRU CONNECTION FROM FRONT TO REAR OF SWITCH TERMINALS.
4. ● - INDICATES CONTACTS INSULATED - NOT CONNECTED FROM FRONT TO REAR OF SWITCH.

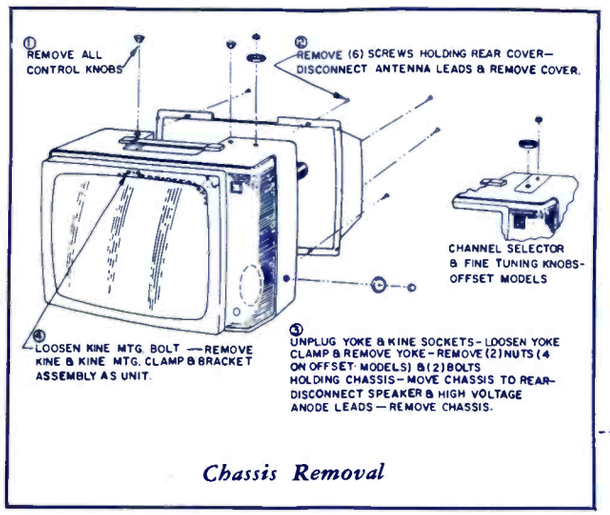
⊖ USE 100K ISOLATION RESISTOR IN SERIES WITH PROBE



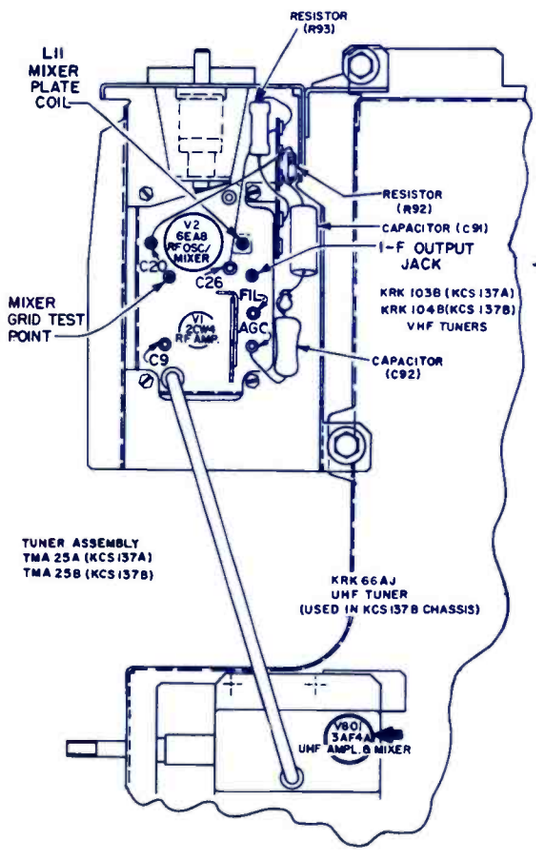
⊕ - DENOTES CIRCUIT & COMPONENT VARIATIONS BETWEEN CHASSIS WITH & WITHOUT AUTO-BRIGHTNESS.

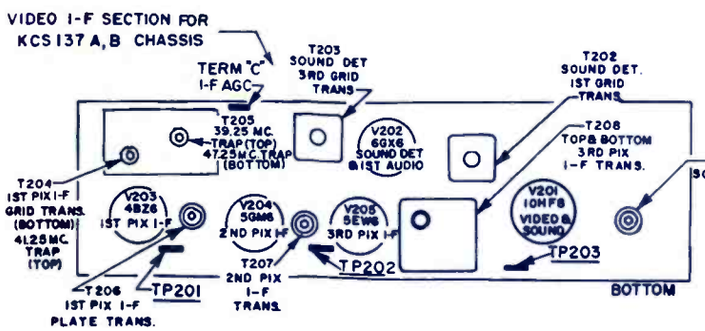
P1 - CHASSIS WITHOUT AUTO-BRT.
P2 - CHASSIS WITH AUTO-BRT.

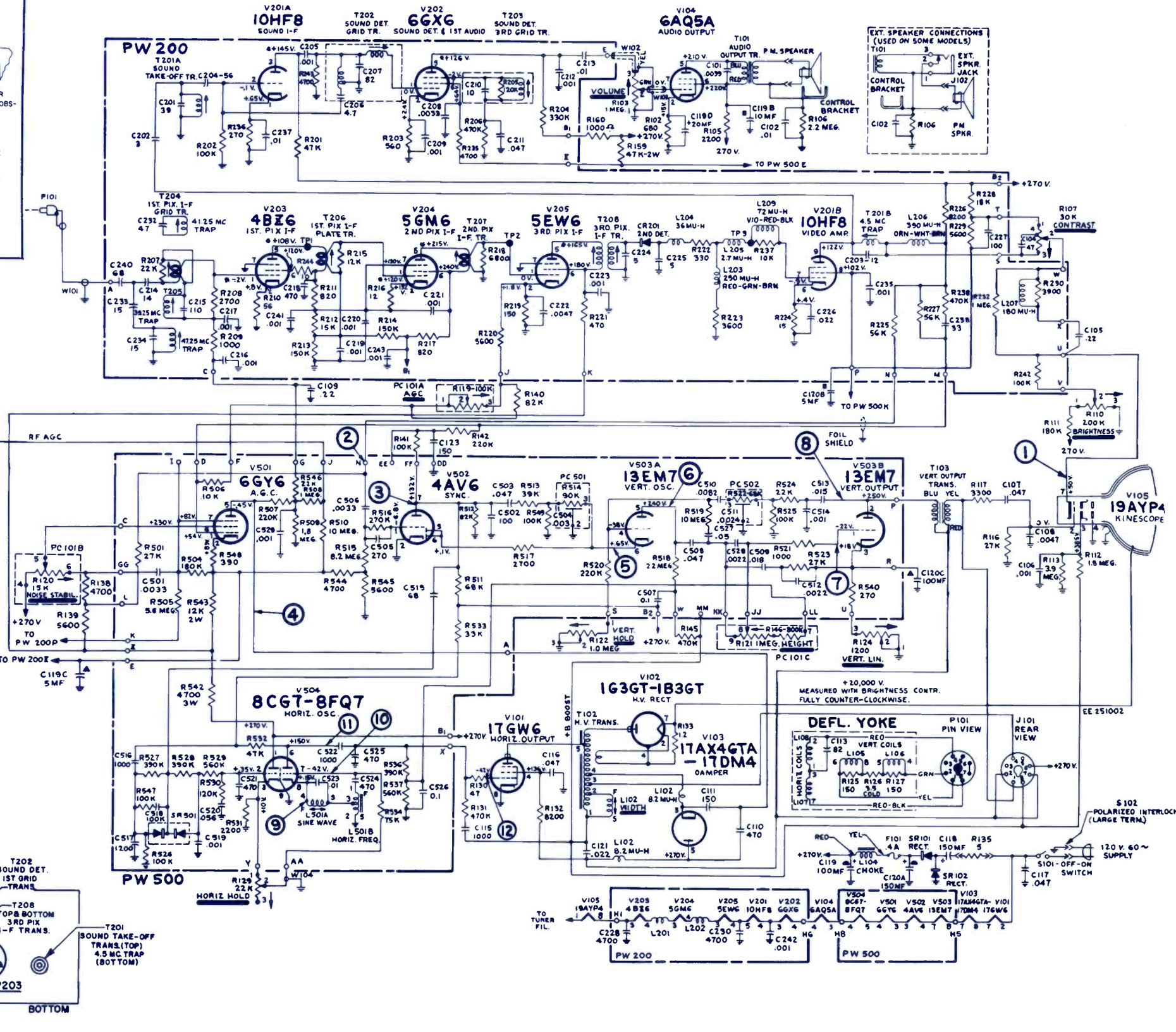
⊕ SYMBOL	P1	P2
R110	200K	75K
R240	JUMPER	150K
R241	OMIT	50K
R242	180K	120K
R538	220K	OMIT
S103	OMIT	YES
R147	OMIT	YES
R148	OMIT	270K
R149	OMIT	56K
R150	OMIT	75K
R151	OMIT	27K
PW200-V	R110-2	GND.
C124	JUMPER	.01
C125	OMIT	0.1
L101-1	PW 500-A	R150, ETC.
R231	50K	35K
R232	1 MEG	OMIT
L206	390 MU-H	750 MU-H
R111	180K	220K
R168	OMIT	68K

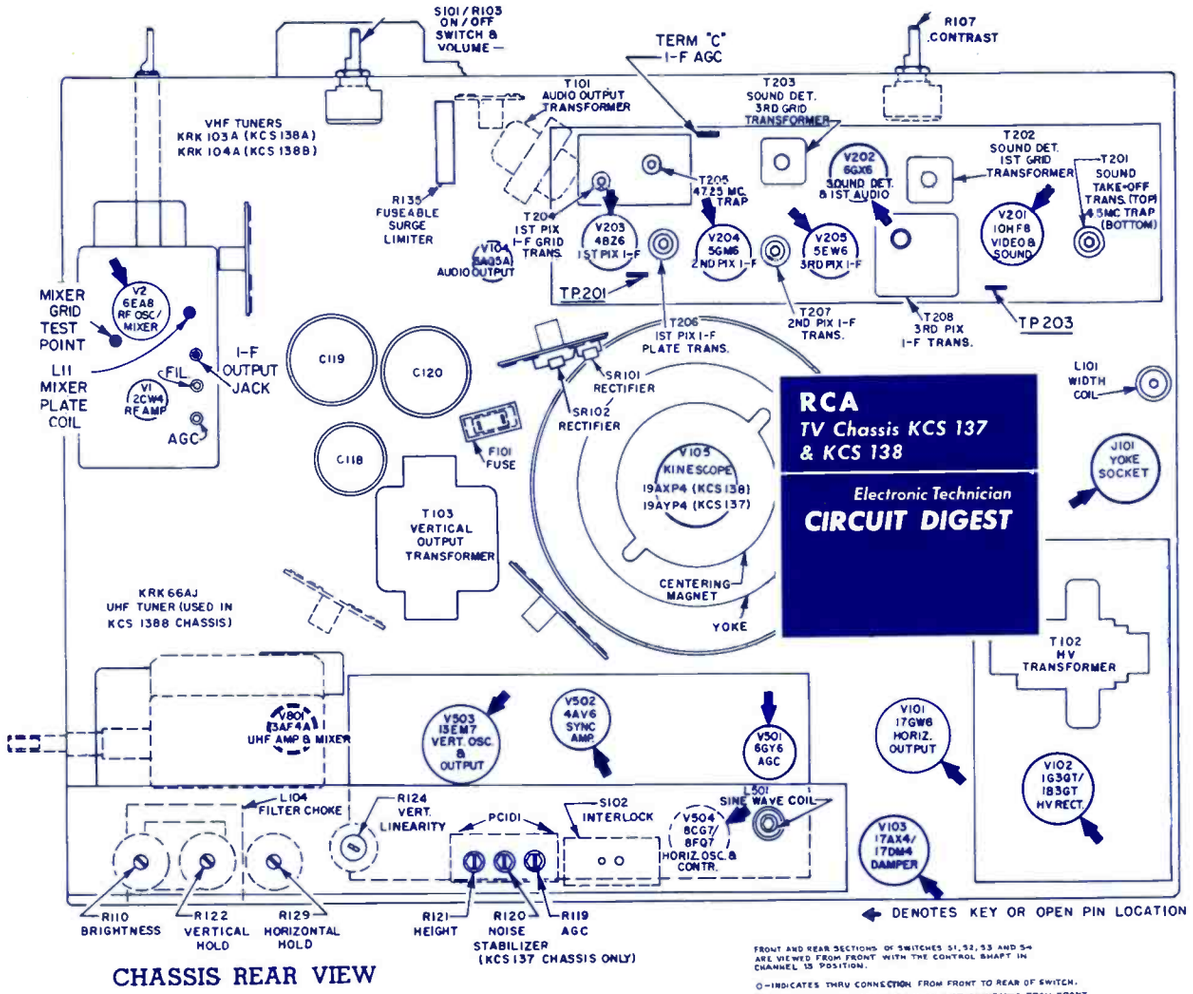


Chassis Removal









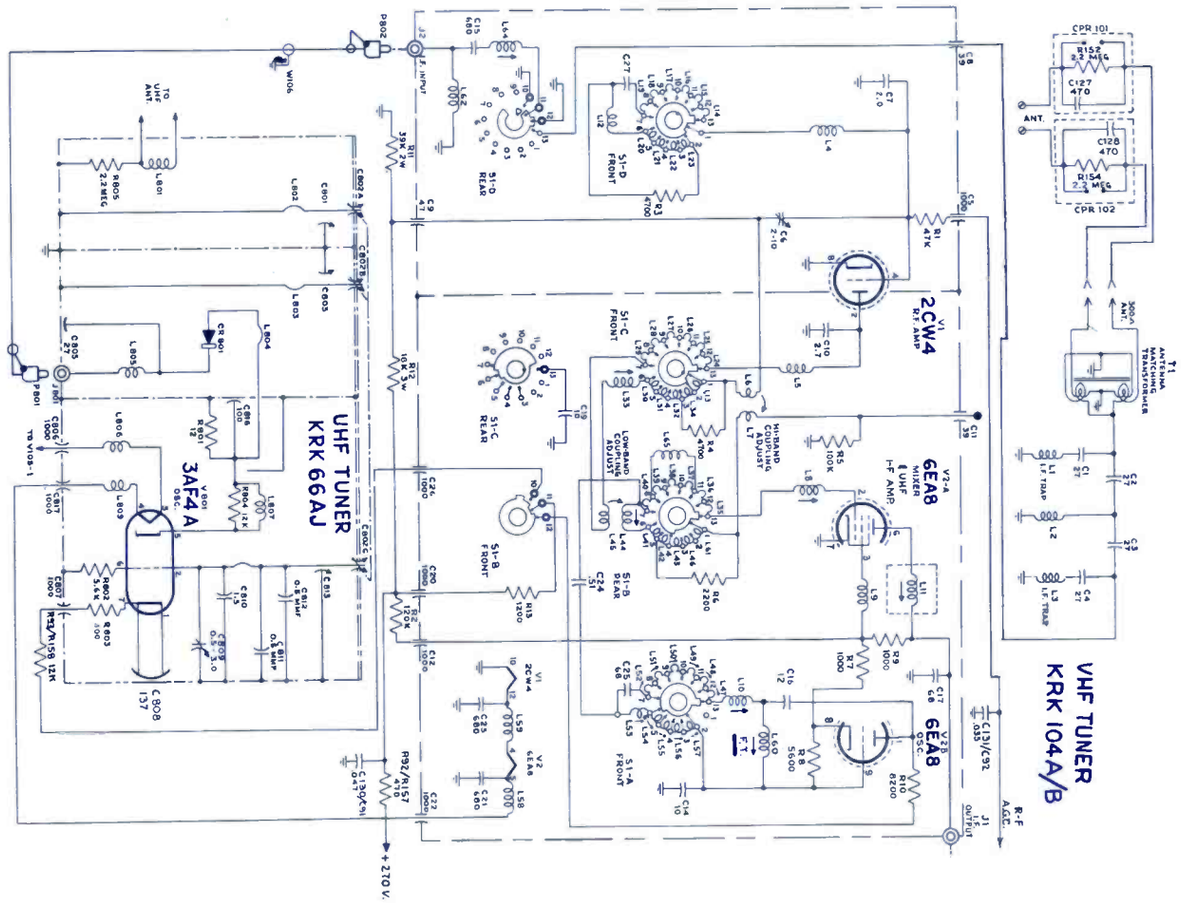
RCA
TV Chassis KCS 137 & KCS 138
Electronic Technician
CIRCUIT DIGEST

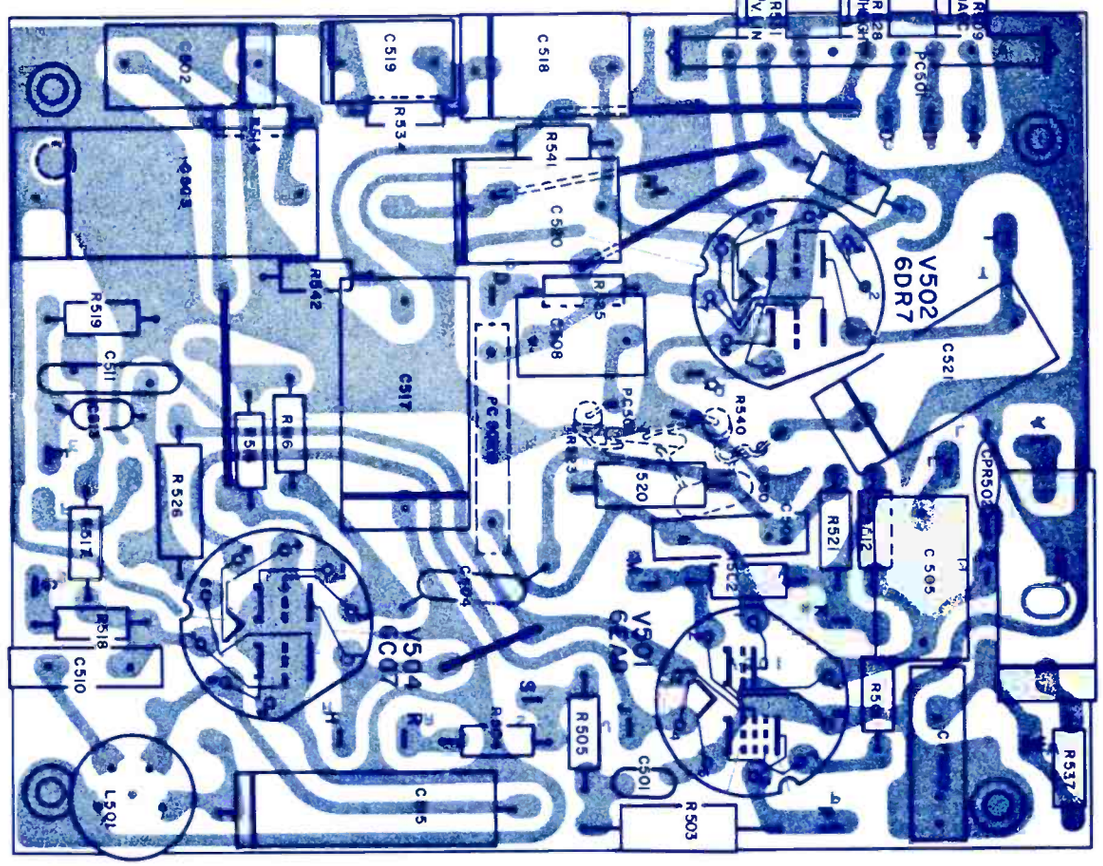
CHASSIS REAR VIEW

FRONT AND REAR SECTIONS OF SWITCHES S1, S2, S3 AND S4 ARE VIEWED FROM FRONT WITH THE CONTROL SHAFT IN CHANNEL 13 POSITION.

O—INDICATES THRU CONNECTION FROM FRONT TO REAR OF SWITCH.

⊙—INDICATES CONTACTS INSULATED—NOT CONNECTED FROM FRONT TO REAR OF SWITCH.

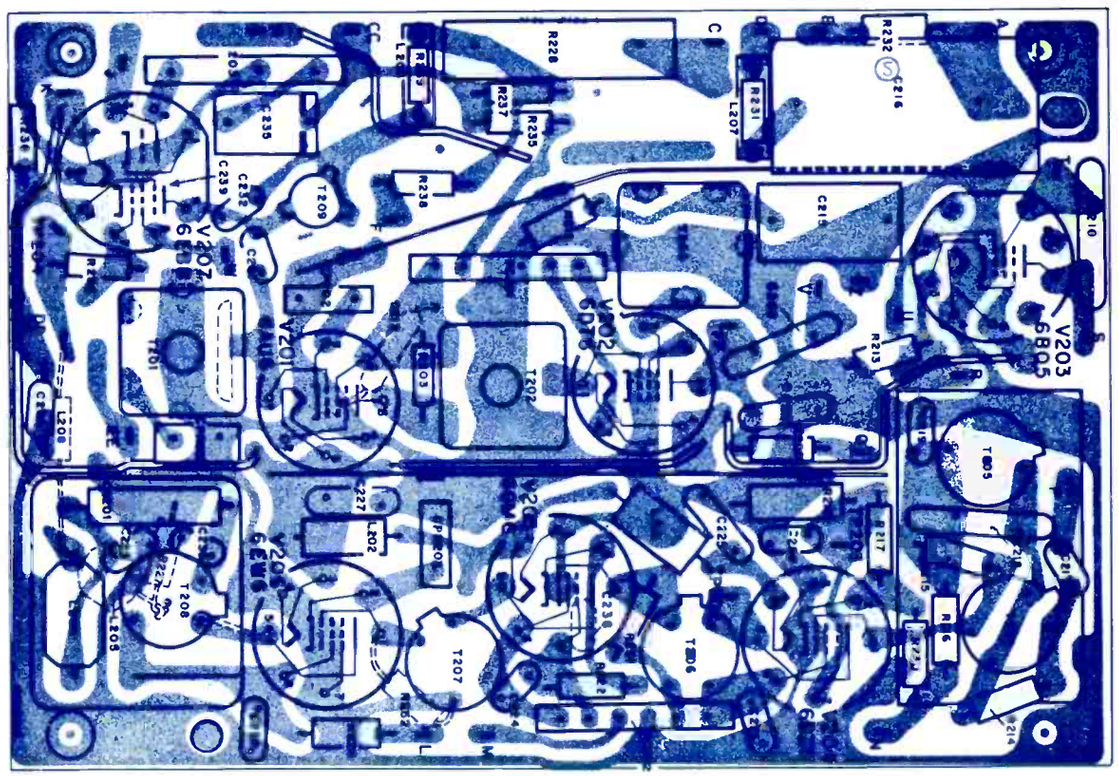




PW500 Sealed Circuit Deflection Assembly
Composite Diagram

RCA
TV Chassis KCS130YAB-YAC

More Data on Reverse Side



PW200 Sealed Circuit I-F and Video Assembly
Composite Diagram

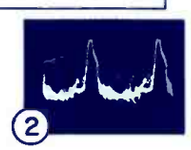
VHF TUNER KRK 99N

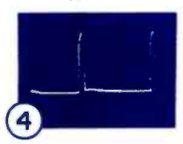
UHF TUNER – KRK 66AE

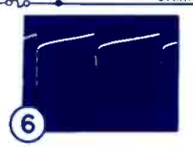
PW 200-A

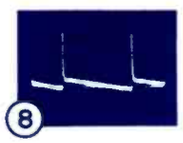
PW 200-B

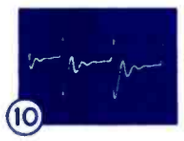
PW 500





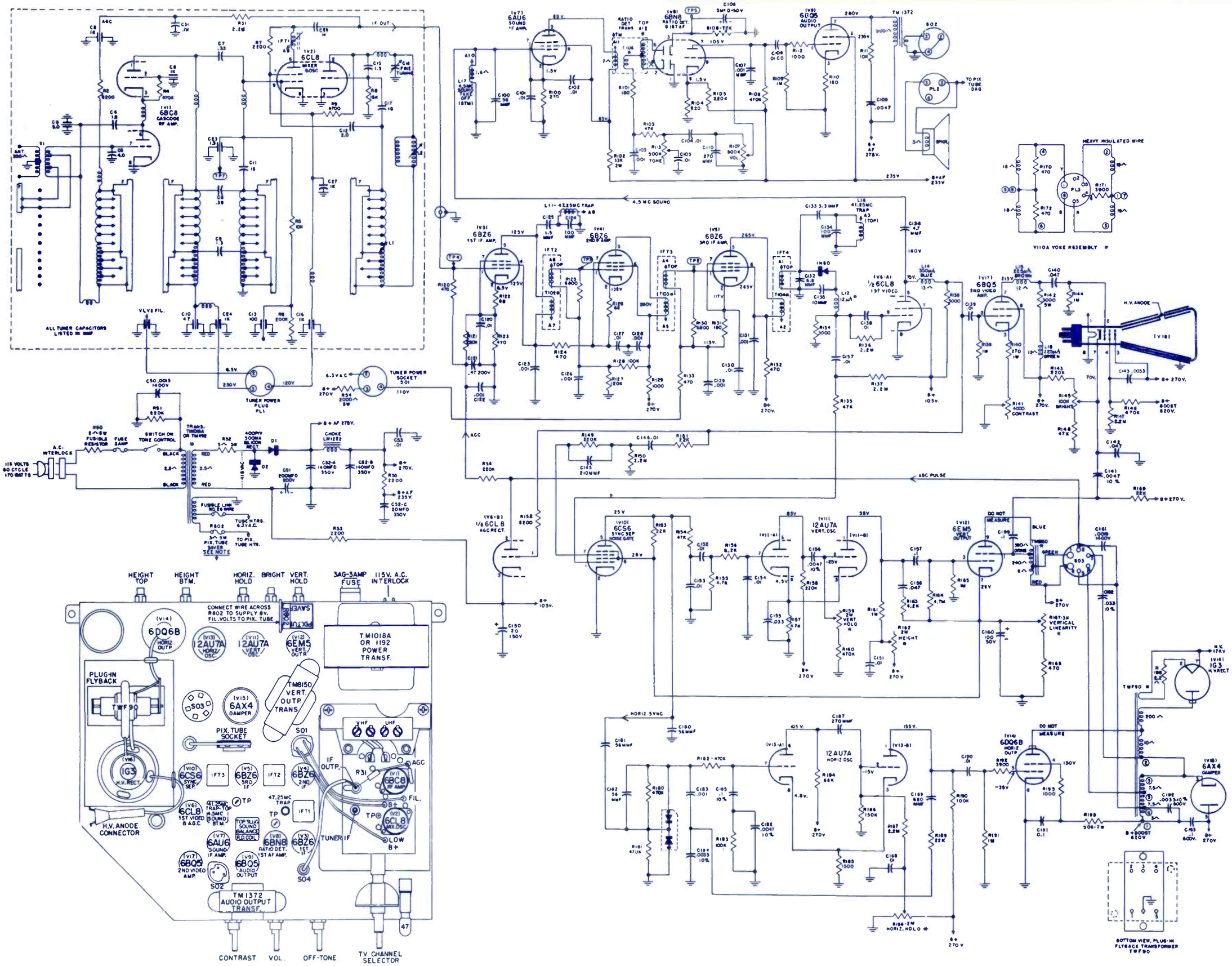




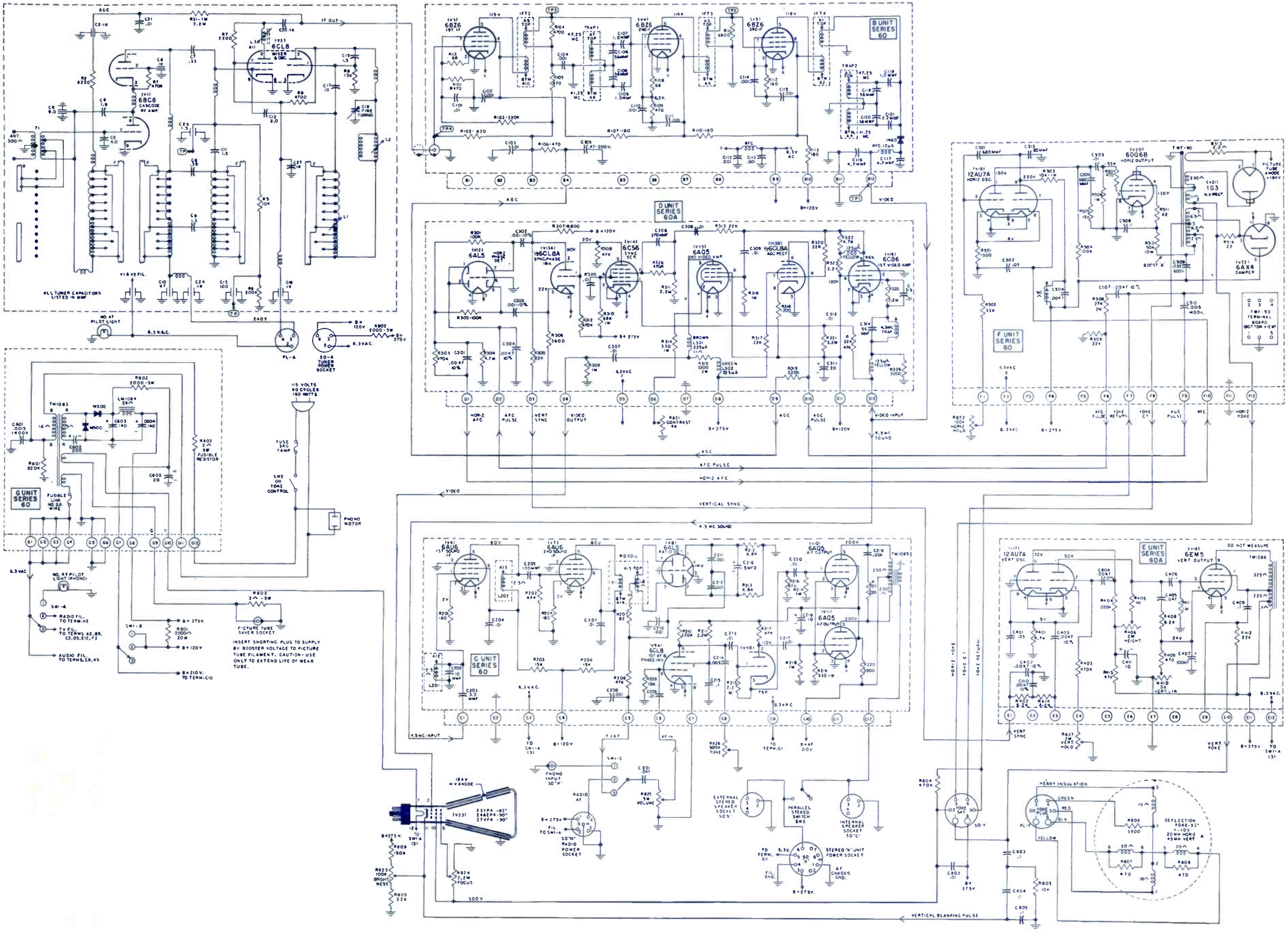


More Data on Reverse Side

SETCHELL-CARLSON
TV Chassis 361A
Models 19T61, 19C61, TL61 & 61C



SETCHELL-CARLSON
TV Chassis, Model 159



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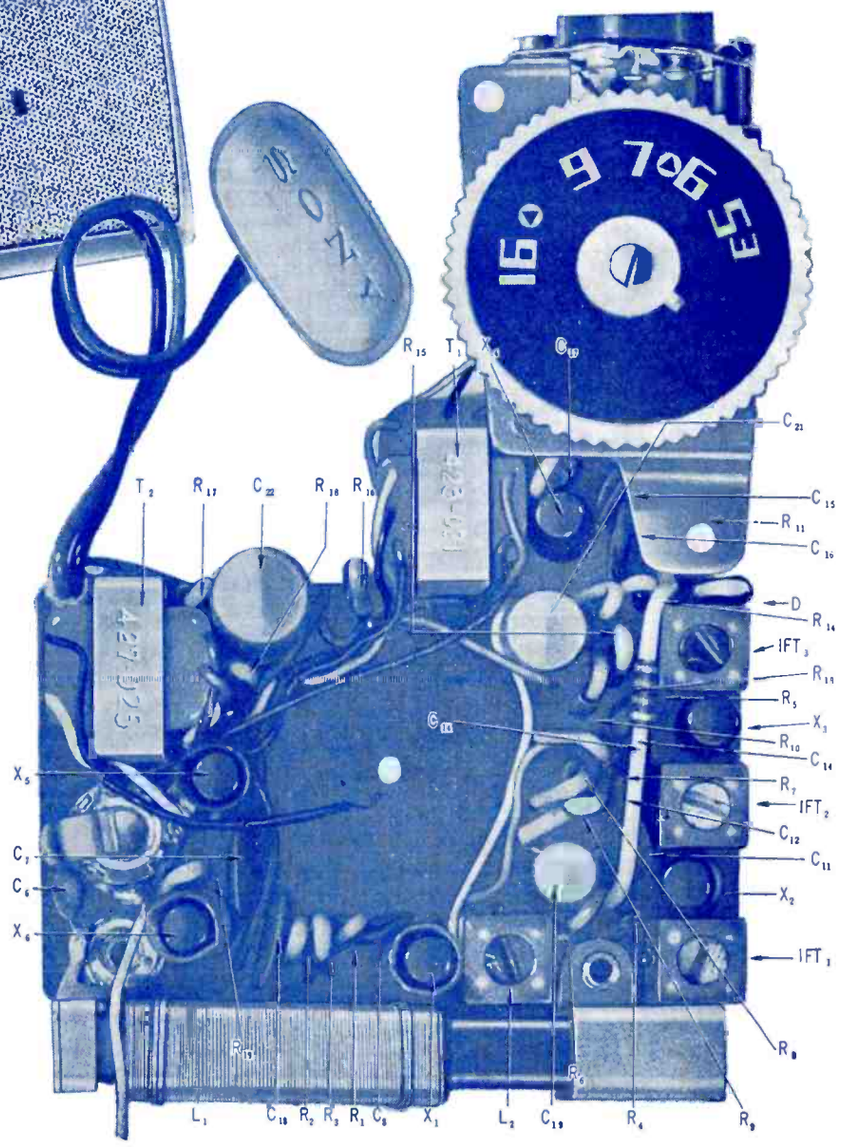
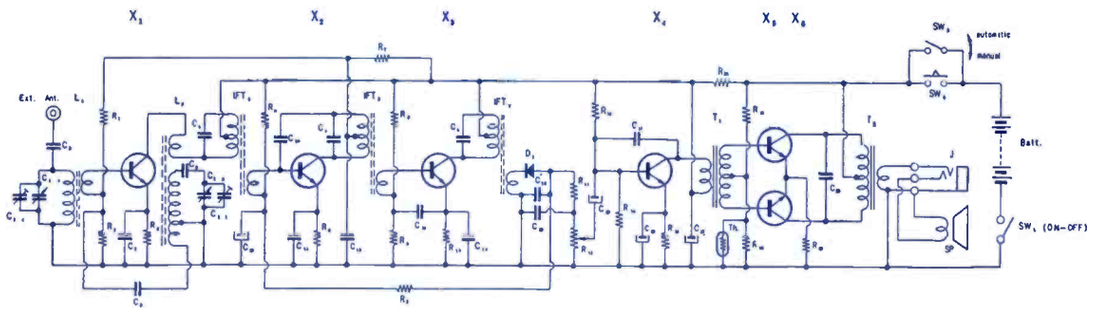
ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

SONY
Transistor Portable Radio
Model TRW-621

Speaker : 2½" PM dynamic, 8 Ω
Battery : Eveready 216 or BL-006P or equivalent (9 volts)
Current drain : 6 mA at zero signal, 30 mA at 120 mW output

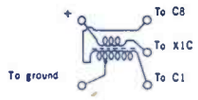




Electronic parts list

L_1	Ferrite bar antenna coil	R_1	10 kΩ	C_1	Tuning condenser
L_2	Oscillator coil	R_2	100 kΩ	C_2	Trimmers
IFT_1	IFT	R_3	15 kΩ	C_3	150 PF built in IFT
IFT_2	〃	R_4	150 kΩ	C_4	150 PF 〃 〃 〃
IFT_3	〃	R_5	5.6 kΩ	C_5	150 PF 〃 〃 〃
T_1	Interstage transformer	R_6	470 Ω	C_6	5 PF
T_2	Output transformer	R_7	10 kΩ	C_7	0.005 μF ceramic
J	Earphone jack	R_8	39 kΩ	C_8	0.005 μF 〃
SP	Speaker, 8 Ω	R_9	3.3 kΩ	C_9	130 PF styrol
SW_1	Power switch	R_{10}	470 Ω	C_{10}	1 PF ceramic
SW_2	Automatic/manual switch	R_{11}	220 Ω	C_{11}	0.02 μF 〃
SW_3	Time switch (built in the watch)	R_{12}	Potentiometer 5 kΩ	C_{12}	0.01 μF 〃
		R_{13}	27 kΩ	C_{13}	0.01 μF 〃
X_1	2SC-73	R_{14}	10 kΩ	C_{14}	0.01 μF 〃
X_2	2SC-76	R_{15}	1.5 kΩ	C_{15}	0.01 μF 〃
X_3	2SC-76	R_{16}	220 Ω	C_{16}	0.02 μF 〃
X_4	2SD-64	R_{17}	7.5 kΩ	C_{17}	100 PF styrol
X_5, X_6	2SD-65	R_{18}	220 Ω	C_{18}	0.04 μF ceramic
D_1	1T23G	R_{19}	10 Ω	C_{19}	10 μF 3 V electrolytic
Th	S 250			C_{20}	0.3 μF
				C_{21}	30 μF 3 V electrolytic
				C_{22}	30 μF 10 V electrolytic

Oscillator coil (L_2)



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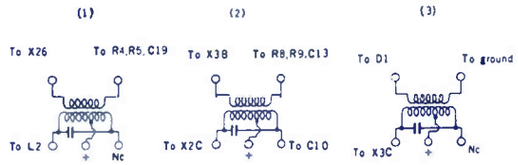
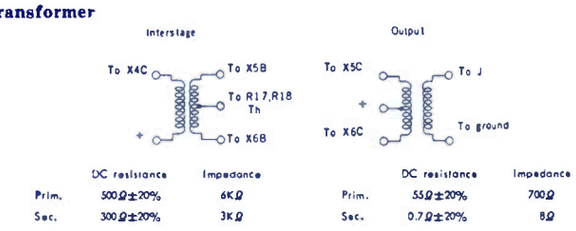
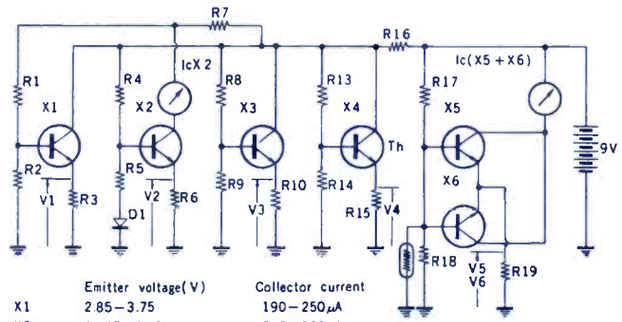


Audio transformer



	DC resistance	Impedance		DC resistance	Impedance
Prim.	500 Ω±20%	6K Ω	Prim.	55 Ω±20%	700 Ω
Sec.	300 Ω±20%	3K Ω	Sec.	0.7 Ω±20%	8 Ω

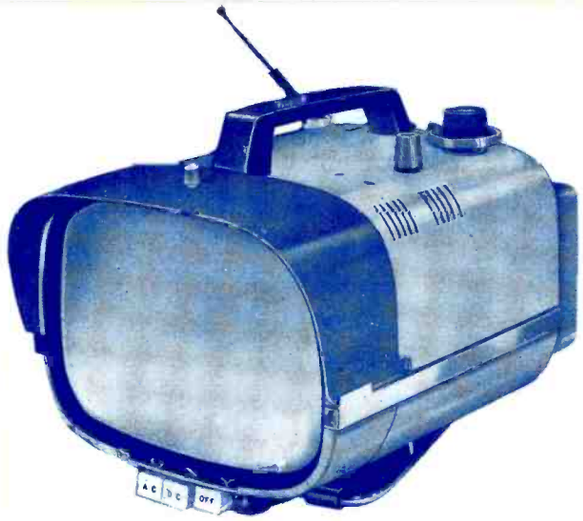
Voltage and current distribution at zero signal

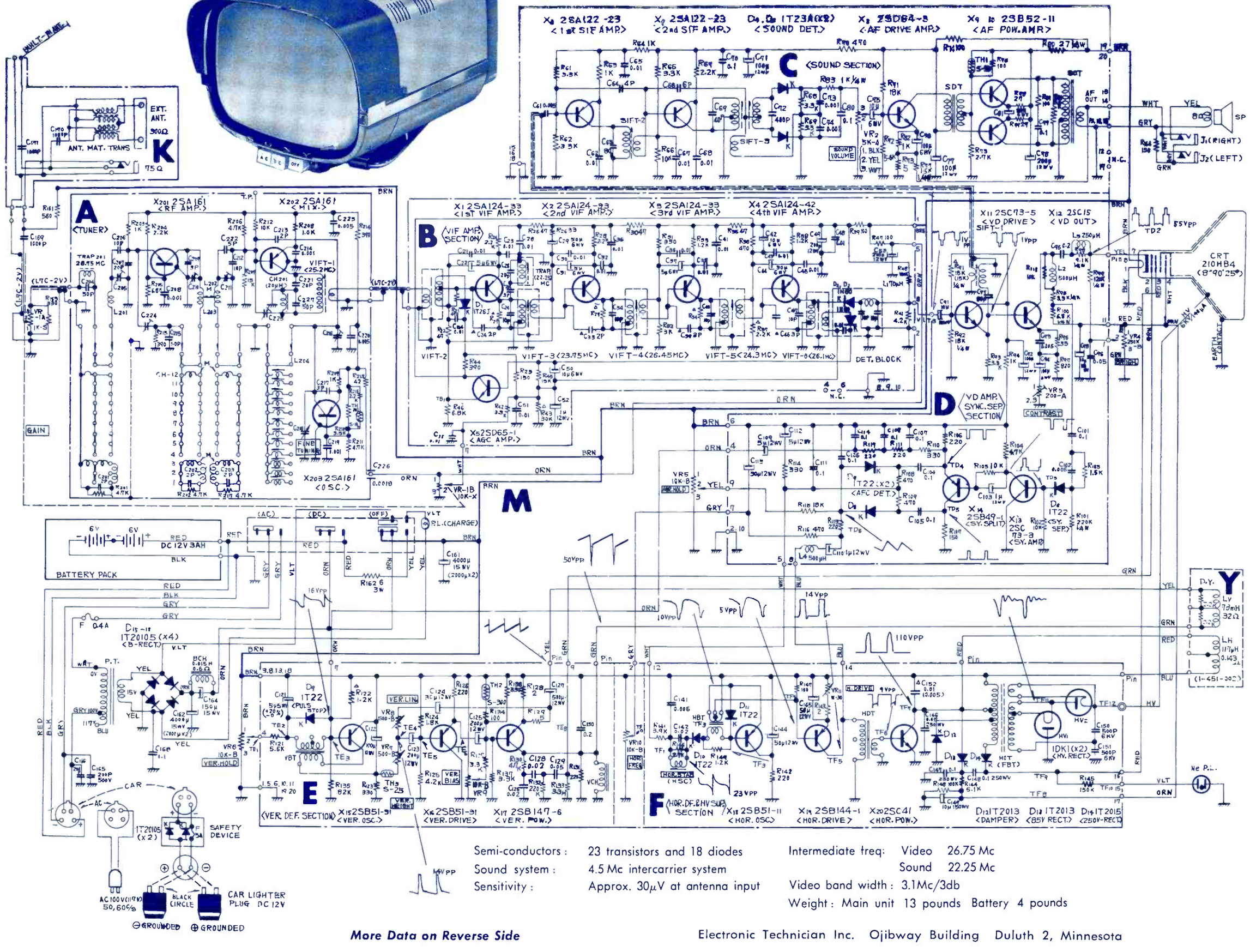


	Emitter voltage(V)	Collector current
X1	2.85–3.75	190–250 μA
X2	0.145–0.18	310–390 μA
X3	0.26–0.32	550–680 μA
X4	1.65–2.1	1.1–1.4 mA
X5,X6	0.008–0.015	0.8–1.5 mA

ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

SONY
Transistor TV
Model 8-301

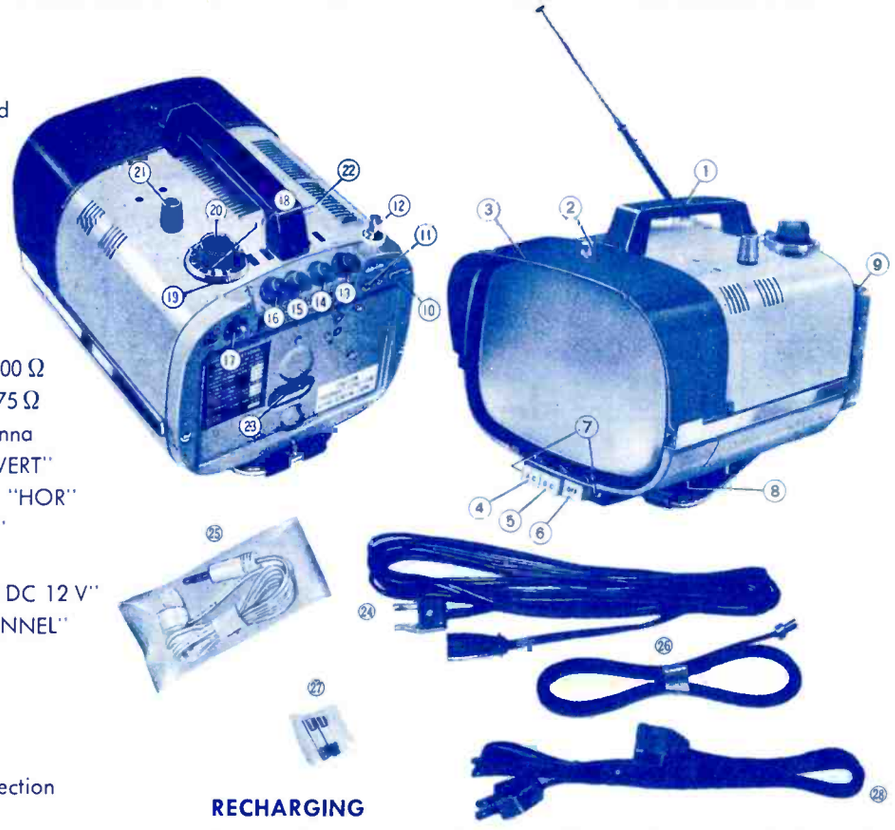




More Data on Reverse Side

Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota

1. Carrying handle
2. Securing screw for hood
3. Hood
4. AC button "AC"
5. DC button "DC"
6. Off button "OFF"
7. Earphone jacks
8. Speaker
9. Battery case
10. External antenna jack 300 Ω
11. External antenna jack 75 Ω
12. Built-in telescopic antenna
13. Vertical hold control "VERT"
14. Horizontal hold control "HOR"
15. Brightness control, "BRT"
16. Gain control, "GAIN"
17. Connector prongs, "AC DC 12 V"
18. Channel selector, "CHANNEL"
19. Fine tuning control
20. Pilot lamp
21. Volume control, "VOL"
22. Charge lamp
23. Prongs for battery connection
24. AC cord
25. Earphone, cord, and plug
26. Feeder with plug for external antenna
27. Fuse (0.4 A)
28. Extention cord for AC line



RECHARGING

Connect the battery to the set and insert the plug with four holes of the AC cord into the connector prongs (17) of the set and the other plug into the AC outlet.

Press the buttons "AC" (4) and "OFF" (6) simultaneously as shown in the figure.

The set can not be operated for TV reception in this condition.

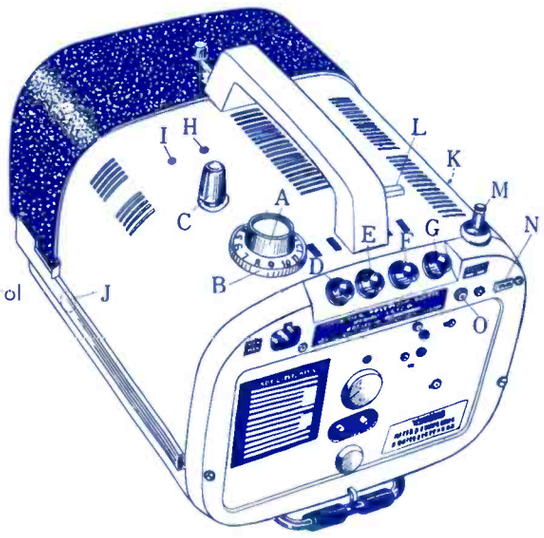
Required time to accomplish recharge is as follows :

If the battery is used	Recharge time
1 hour	3.5 hours
2 hous	7 hous
3 hours	10 hous

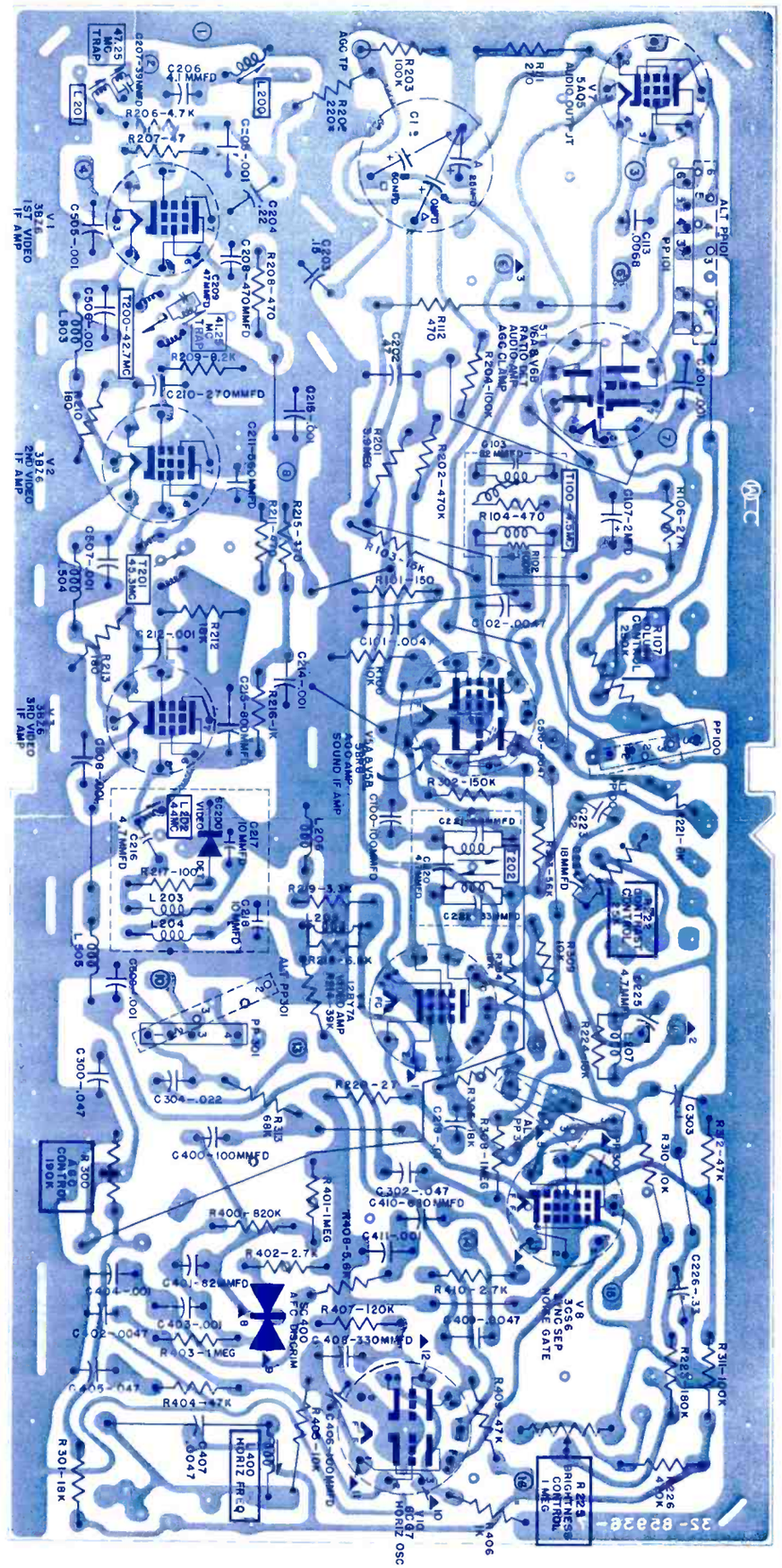
To stop recharge, press the button "OFF" (6).

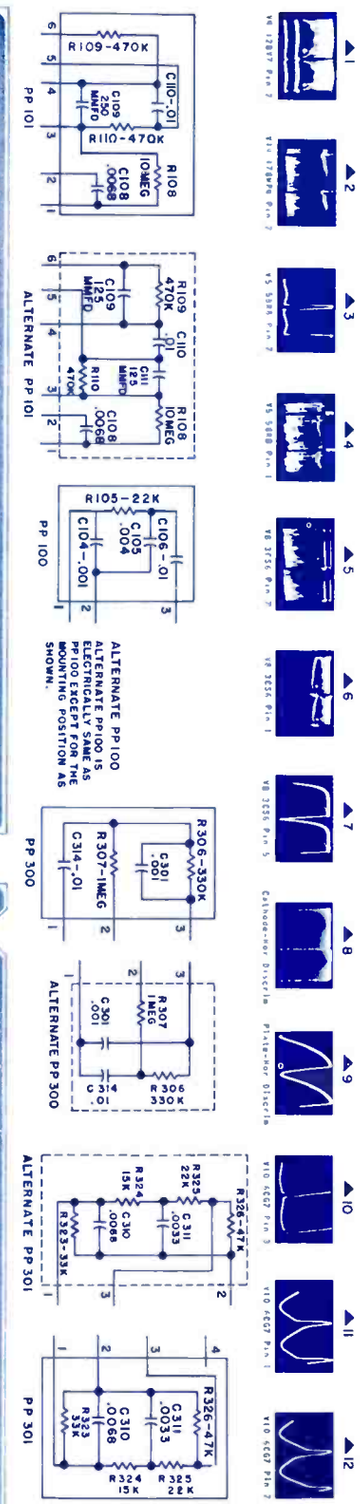
SONY
Transistor TV
Model 8-301
Electronic Technician
CIRCUIT DIGEST

A	" CHANNEL "	Chennel selector
B		Fine tuning control
C	" VOL "	Volume control
D	" GAIN "	Gain control
E	" BRT "	Brightness control
F	" HOR "	Horizontal hold control
G	" VER "	Vertical hold control
H		Vertical linearity control
I		Height control
J		Horizontal sweep frequency control
K		Horizontal drive control
L		Charge lamp
M		Built-in telescopic antenna
N		External antenna jack 300 Ω
O		External antenna jack 75 Ω



TOP DECK — PRINTED BOARD ASSEMBLY

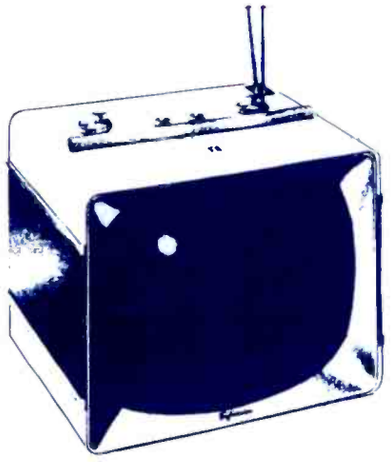




SYLVANIA
TV Chassis 1-537-5, -6
Models 17P Series
Electronic Technician
CIRCUIT DIGEST

SYLVANIA

TV Chassis 1-537-5, -6
Models 17P Series



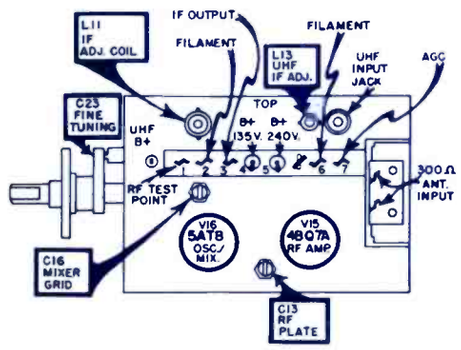
Voltage readings in brackets taken with no signal input;

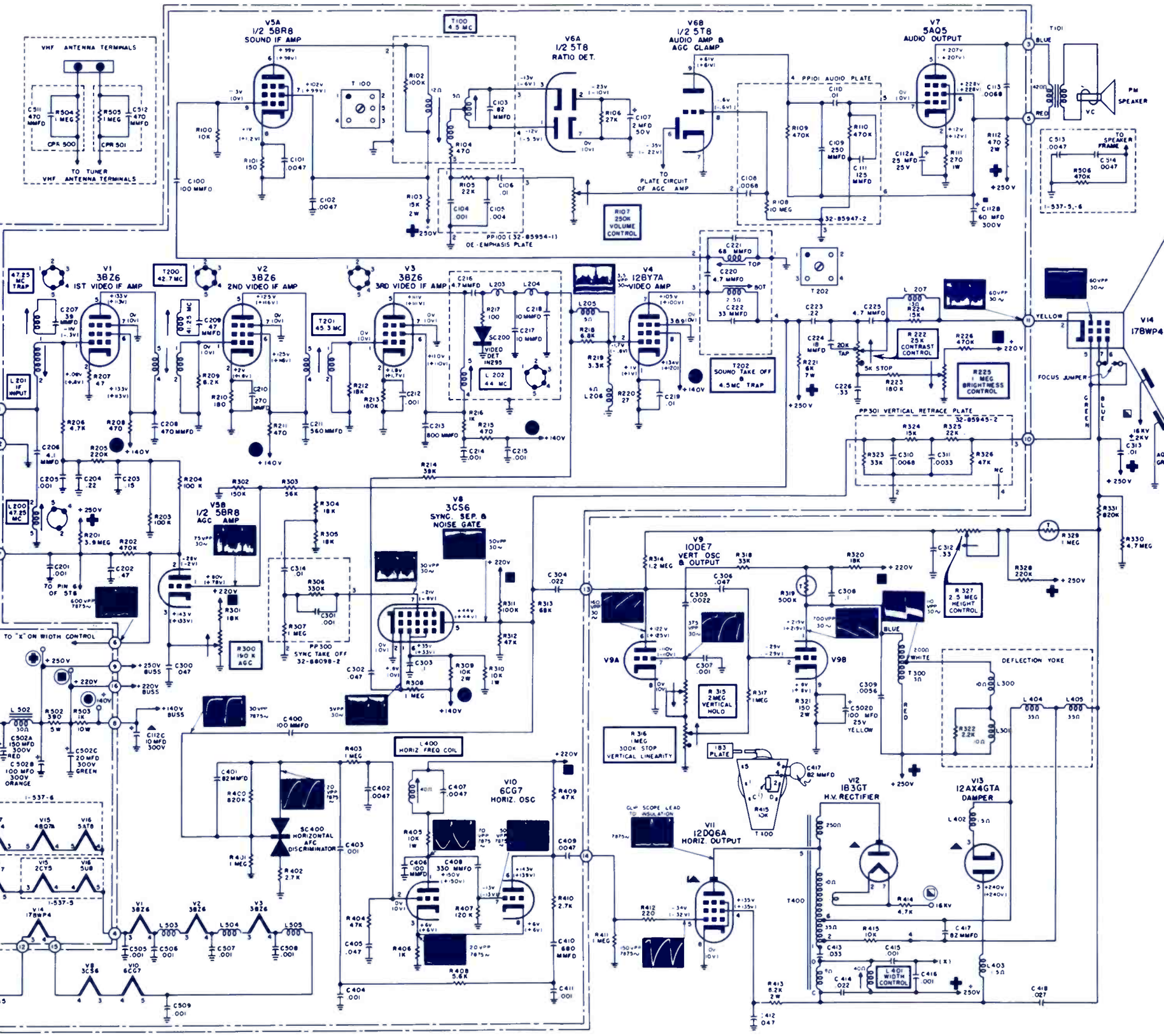
Voltage readings not in brackets taken with a strong signal input;

SPECIAL VOLTAGE MEASUREMENT CONDITIONS:

Ⓟ Picture tube anode voltage measured with VTVM high voltage probe at line voltage of 117V. under conditions of normal signal. No brightness and correct scan size.

▲ High peak voltage of short duration may damage meter used for this measurement.





More Data on Reverse Side

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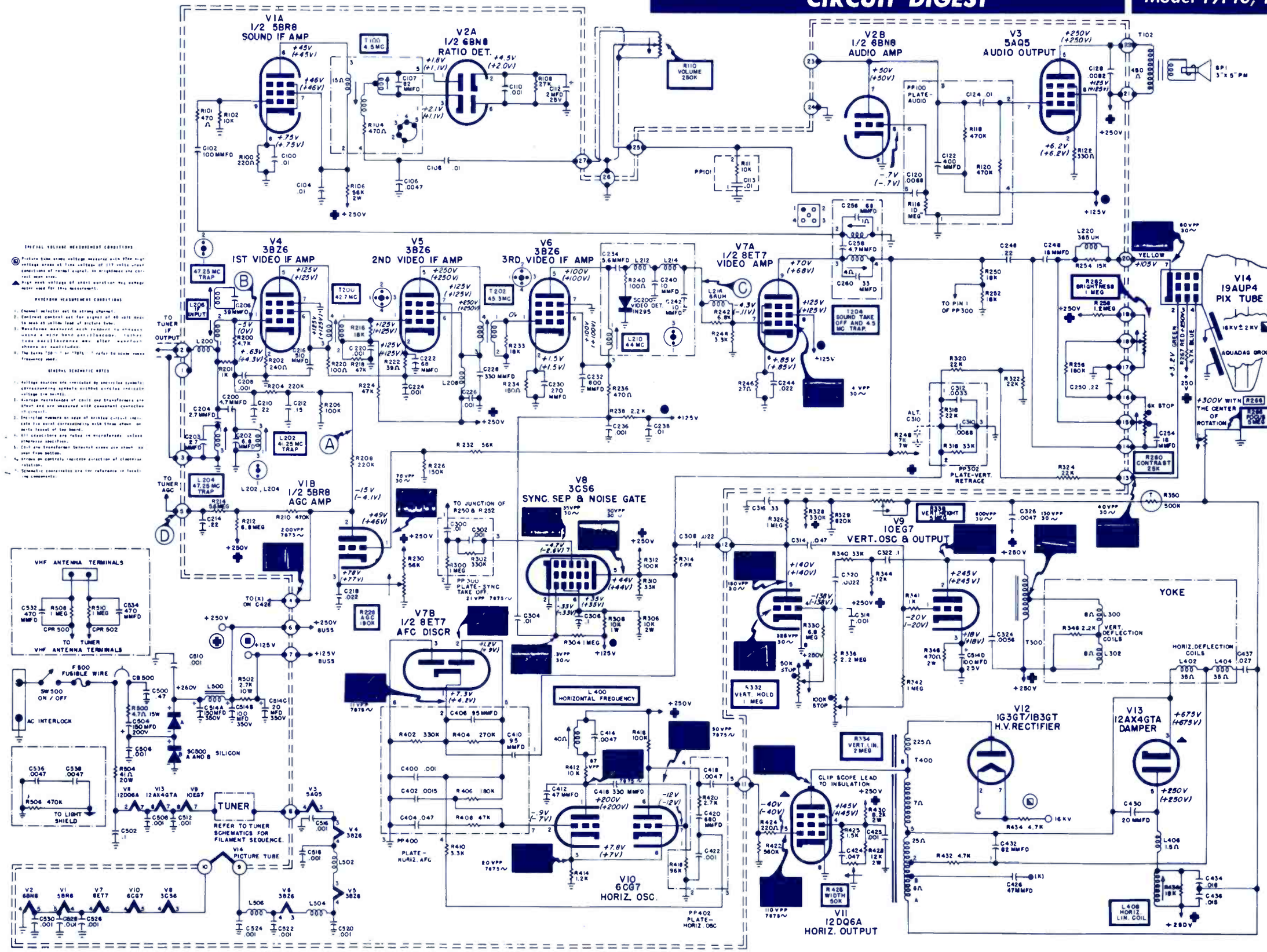
SYLVANIA
TV Chassis 546-1, 2
Model 19P10, 19P11



SPECIAL VOLTAGE MEASUREMENT CONDITIONS

Picture tube grid-to-cathode voltage measured with 60v negative pulses at line voltage of 117 volts under conditions of normal signal, no brightness pedestal control, scope.

High peak voltage of short duration may damage meter used for this measurement.

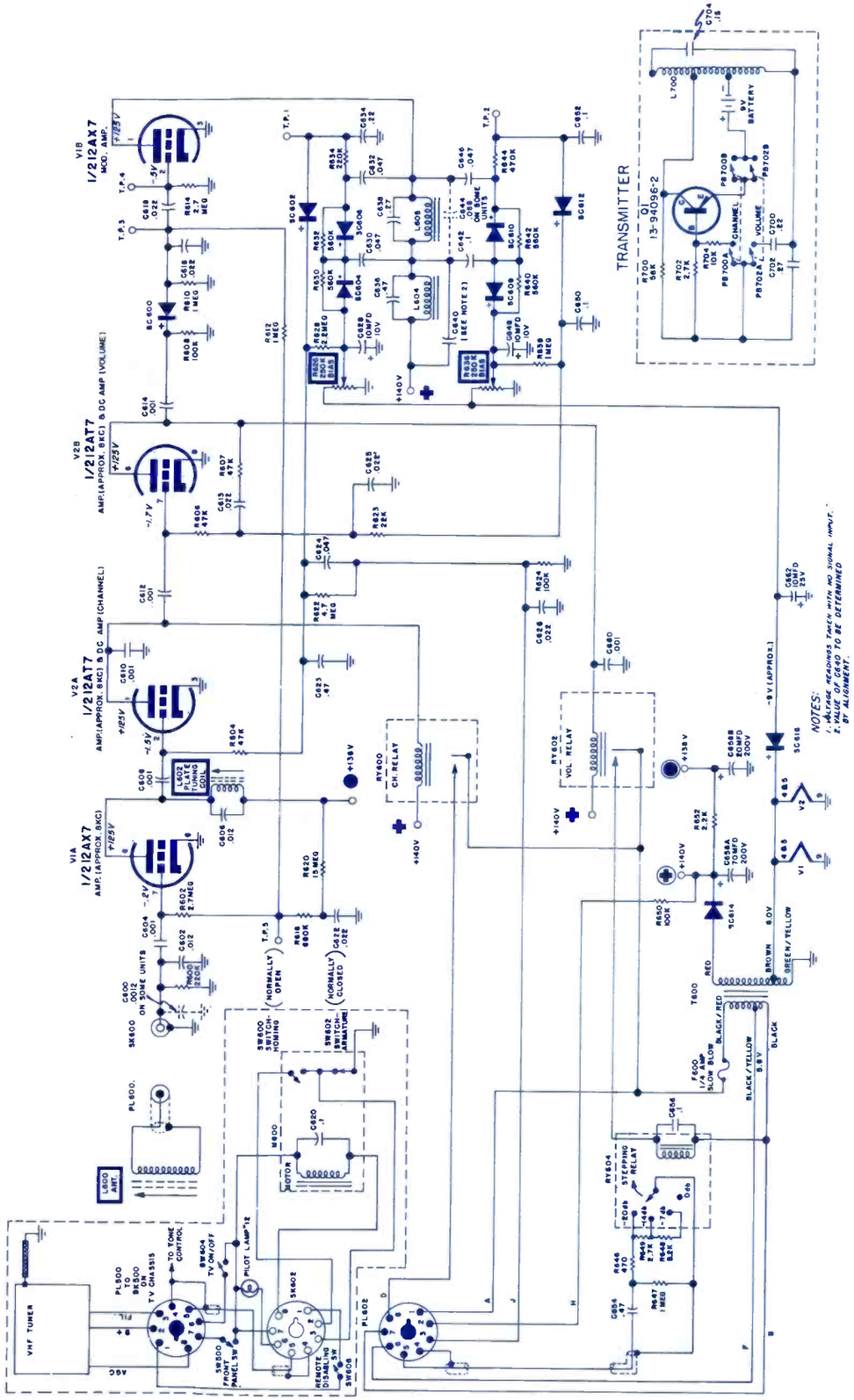
WAVEFORM MEASUREMENT CONDITIONS

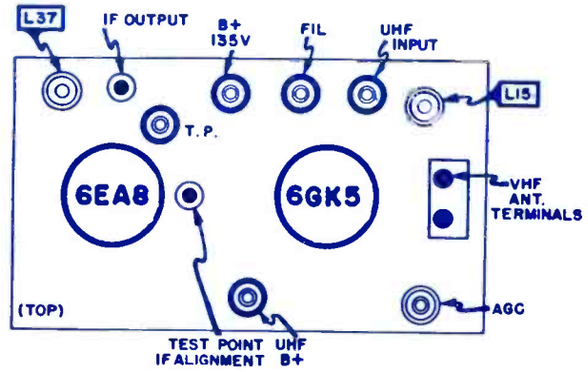
1. Channel selector set to strong channel.
2. Contrast control set for signal of 40 volts peak-to-peak at yellow lead of picture tube.
3. Waveforms measured with respect to chassis using a wide band oscilloscope. Voltages from oscillograms may differ somewhat from those on models.
4. The terms "30 ~" or "30V ~" refer to some 30KC frequency used.

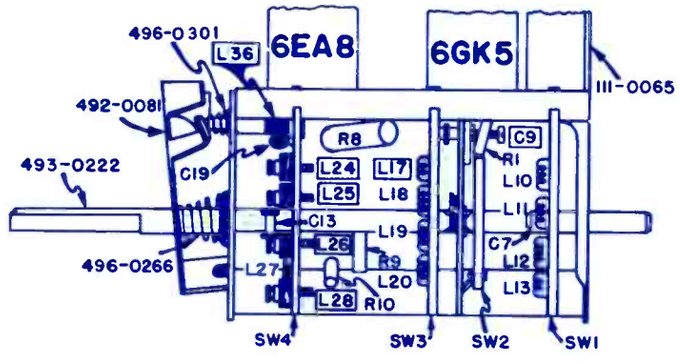
SCHEMATIC NOTES

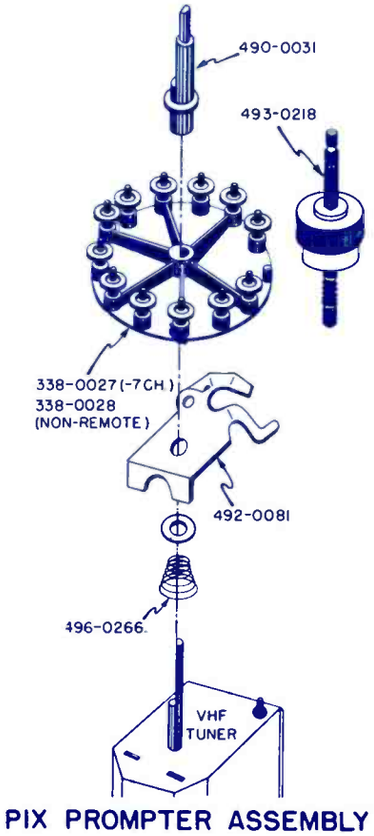
1. Voltage sources are represented by encircled symbols; corresponding symbols without circles indicate voltage tie points.
2. Voltage resistances of coils and transformers are shown and are measured with convenient connection in circuit.
3. Encircled numbers on edge of printed circuit indicate the point corresponding with those shown on parts layout of the board.
4. All capacitors are values in microfarads, unless otherwise specified.
5. Coil and transformer terminal views are shown as seen from bottom.
6. Arrows on controls indicate direction of clockwise rotation.
7. Schematic connections are for reference in locating components.

REMOTE RECEIVER AND TRANSMITTER





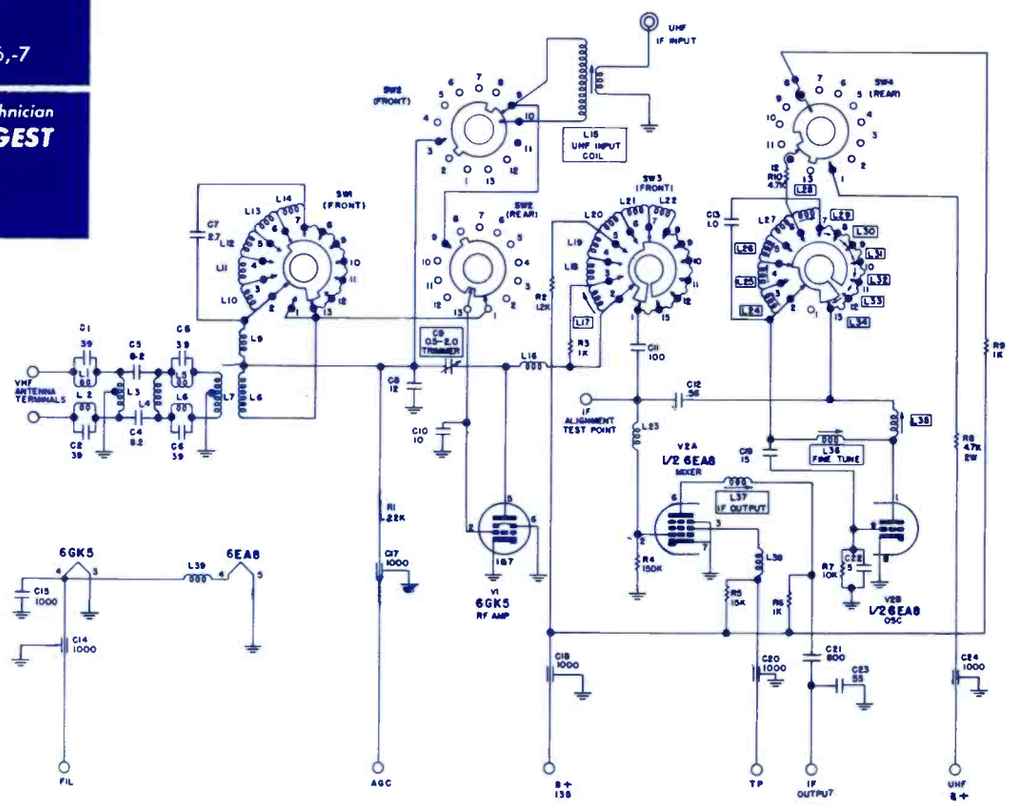




PIX PROMPTER ASSEMBLY

SYLVANIA
TV Chassis
551-1,-2,-3,-5,-6,-7

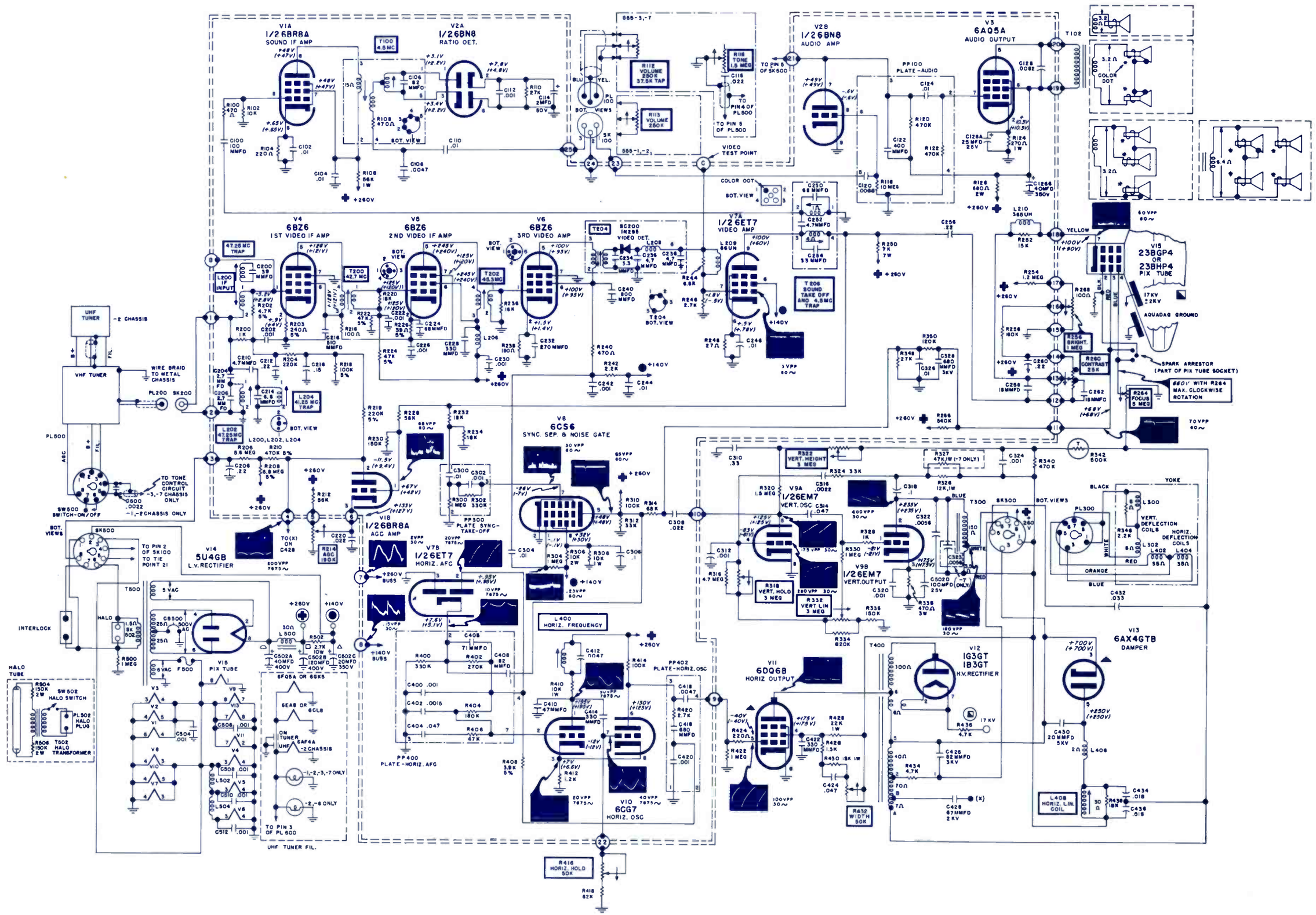
Electronic Technician
CIRCUIT DIGEST

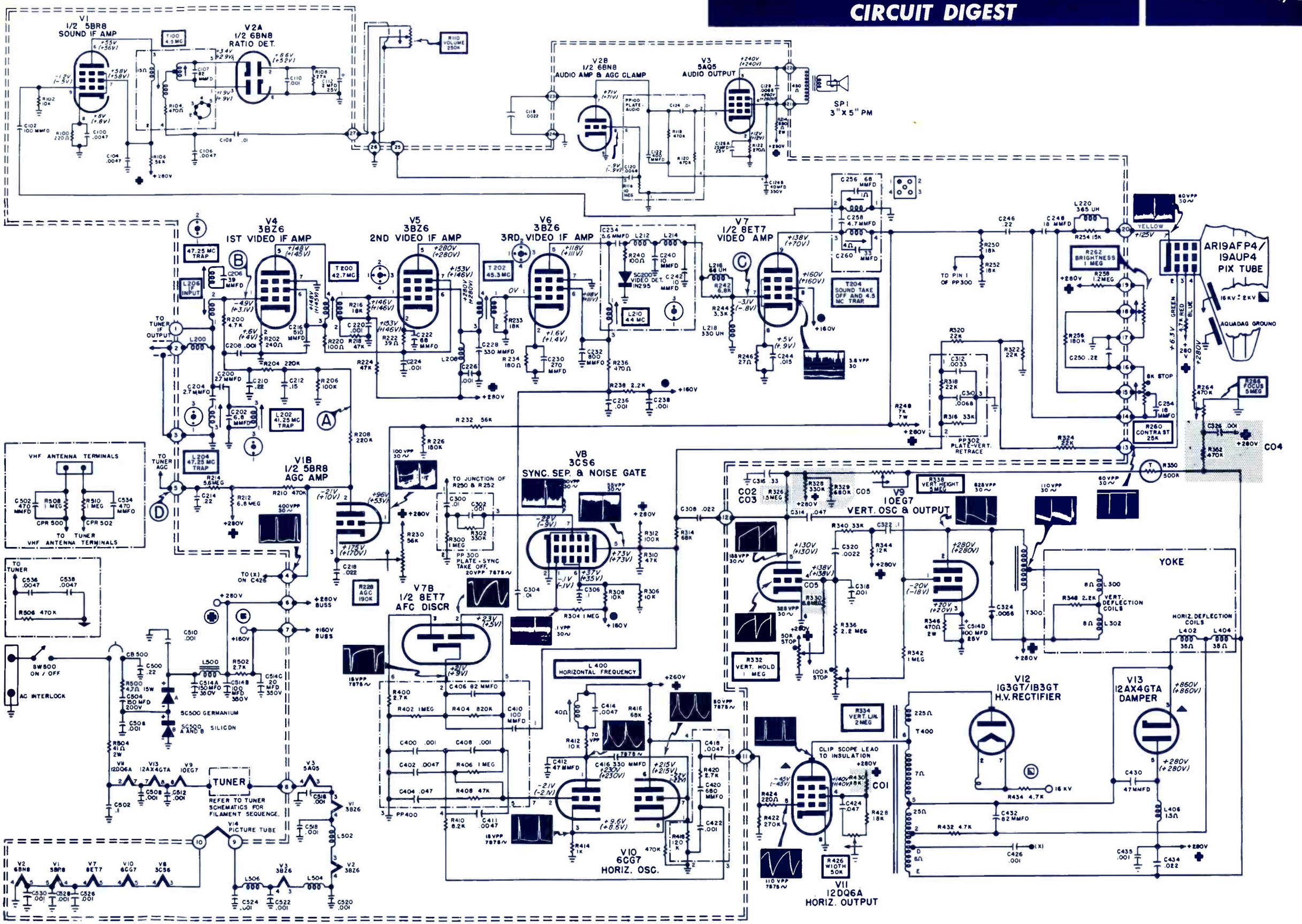


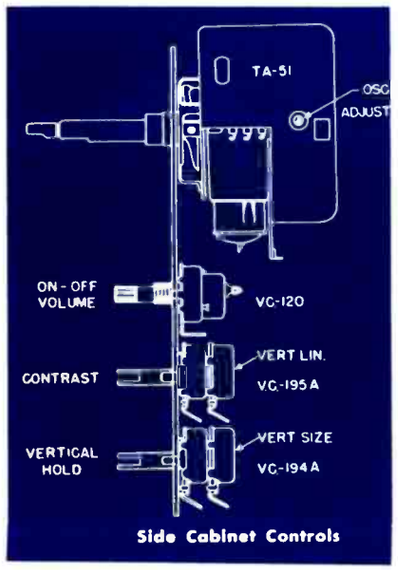
SPECIAL VOLTAGE MEASUREMENT CONDITIONS

(N) 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.

▲ High peak voltage of short duration may damage meter used for this measurement.




V1 1/2 5BR8 SOUND IF AMP
V2A 1/2 6BN8 RATIO DET.
V2B 1/2 6BN8 AUDIO AMP & AGC CLAMP
V3 5AQ5 AUDIO OUTPUT
SP1 3"X5" PM
V4 3BZ6 1ST VIDEO IF AMP
V5 3BZ6 2ND VIDEO IF AMP
V6 3BZ6 3RD VIDEO IF AMP
V7 1/2 8ET7 VIDEO AMP
V1B 1/2 5BR8 AGC AMP
V8 3CS6 SYNC. SEP. & NOISE GATE
V7B 1/2 8ET7 AFC DISCR
V10 6CG7 HORIZ. OSC.
V11 12DQ6A HORIZ. OUTPUT
V9 10EG7 VERT. OSC & OUTPUT
V12 1G3GT/1B3GT H.V. RECTIFIER
V13 12AX4GTA DAMPER
V14 PICTURE TUBE
AR19AFP4/19AUP4 PIX TUBE
TUNER
YOKE
VHF ANTENNA TERMINALS
47.25 MC TRAP
42.7MC
45.3MC
4.5MC
SOUND TAKE OFF AND 4.5 MC TRAP
R262 BRIGHTNESS 1 MEG
R260 CONTRAST 25K
R334 VERT. LIN. 2 MEG
R332 VERT. HOLD 1 MEG
R338 VERT. HEIGHT 5 MEG
R336 2.2 MEG
R426 WIDTH 50K
R362 470K
R350 500K
R342 1 MEG
R346 470Ω 2W
R348 2.2K VERT. DEFLECTION COILS
L300
L302
L400 HORIZONTAL FREQUENCY
L402
L404
L406 1.5Ω
T300
T400
T202
T204
T200
L200
L202
L204
L206 IF INPUT
L210 44 MC
L218 330 UH
L220 365 UH
L500
L502
L504
L506
SC500 GERMANIUM
SC500 A AND B SILICON
SW500 ON / OFF
AC INTERLOCK
PP300 PLATE-VERT. RETRACE
PP302 PLATE-VERT. RETRACE
PP 300 PLATE - SYNC TAKE OFF. 20VPP 7875~
PP100 PLATE AUDIO
PP400
R506 470K
R508 1 MEG
R510 1 MEG
R512 100K
R514 68K
R516 330K
R518 470K
R520 2.7K
R522 680 MMFD
R524 22K
R526 7K 7W
R528 18K
R530 330K
R532 680K
R534 33K
R536 22K
R538 22K
R540 22K
R542 12K
R544 470Ω 2W
R546 1.2K 2W
R548 2.2K
R550 1 MEG
R552 470K
R554 470K
R556 470K
R558 1.2MEG
R560 180K
R562 22K
R564 470K
R566 470K
R568 470K
R570 470K
R572 470K
R574 470K
R576 470K
R578 470K
R580 470K
R582 470K
R584 470K
R586 470K
R588 470K
R590 470K
R592 470K
R594 470K
R596 470K
R598 470K
R600 470K
R602 470K

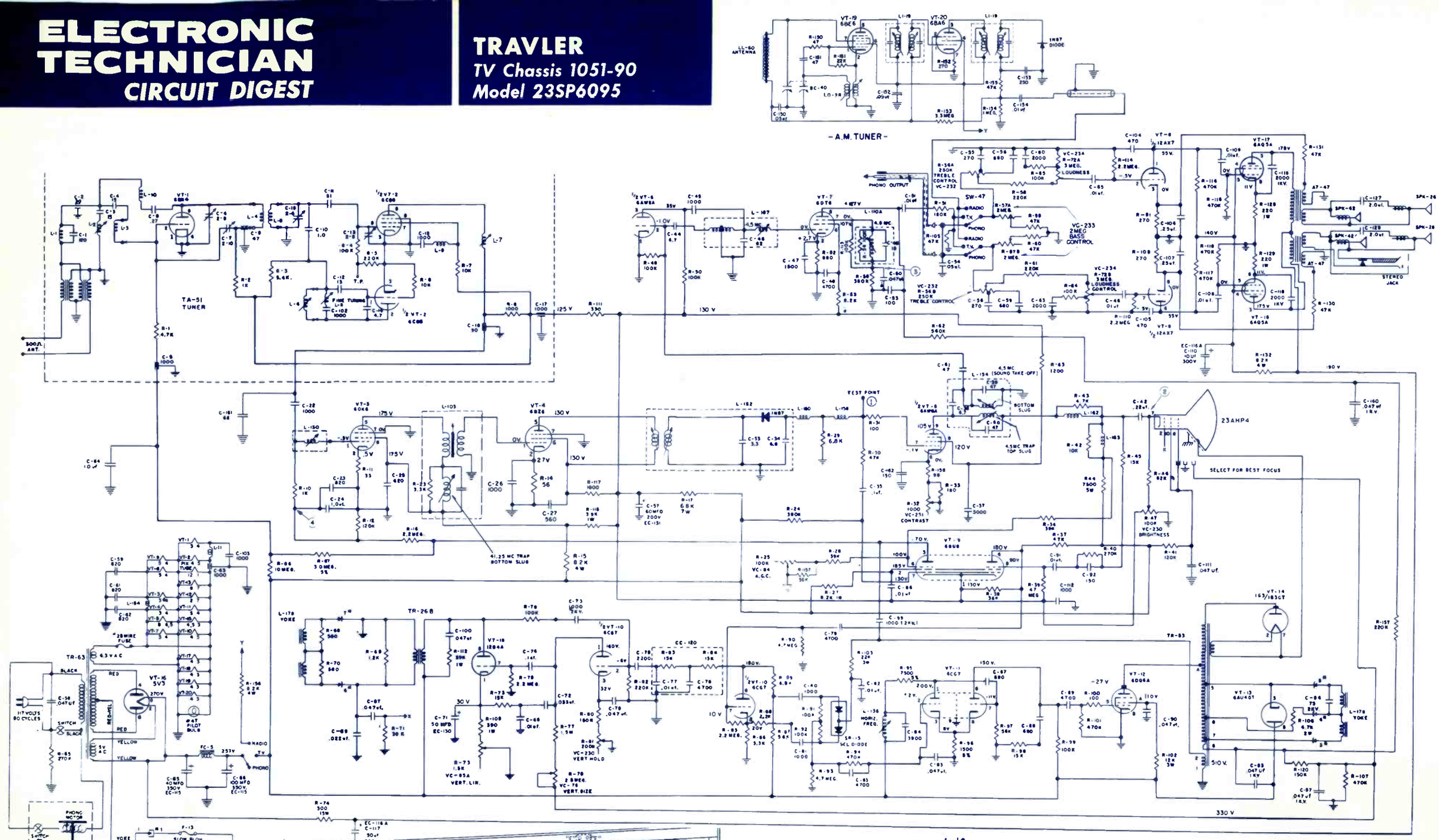


Side Cabinet Controls

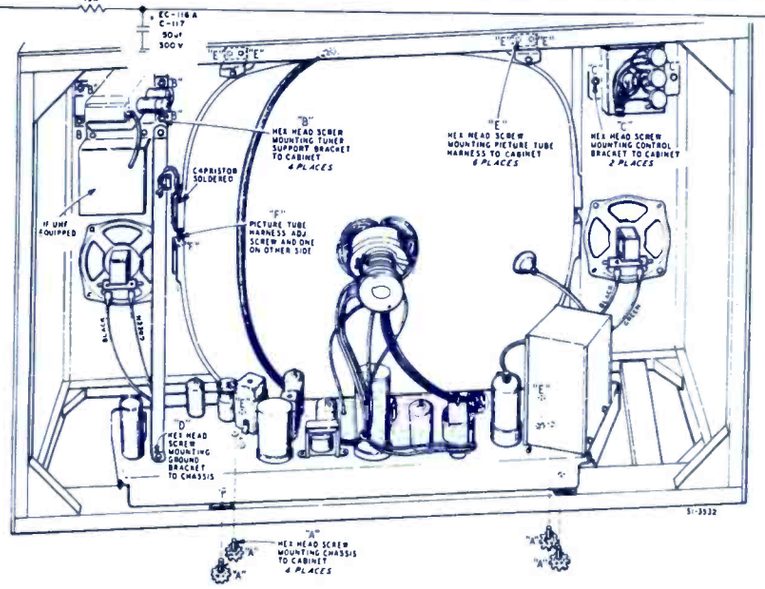
NOTE
R - REFERS TO YOKE PLUG AND SOCKET NUMBERS

ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

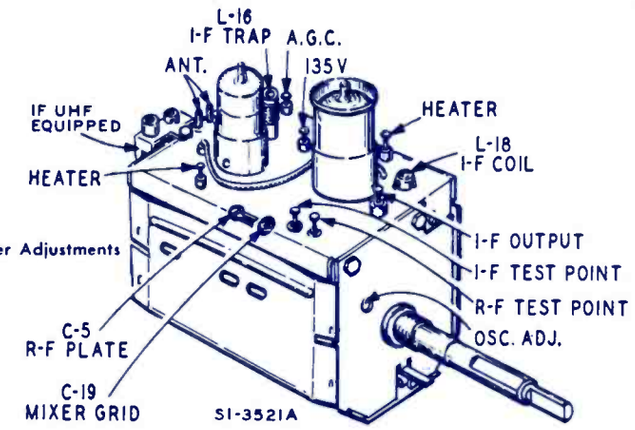
TRAVLER
TV Chassis 1051-90
Model 23SP6095



·Picture Tube Removal



·Top Tuner Adjustments



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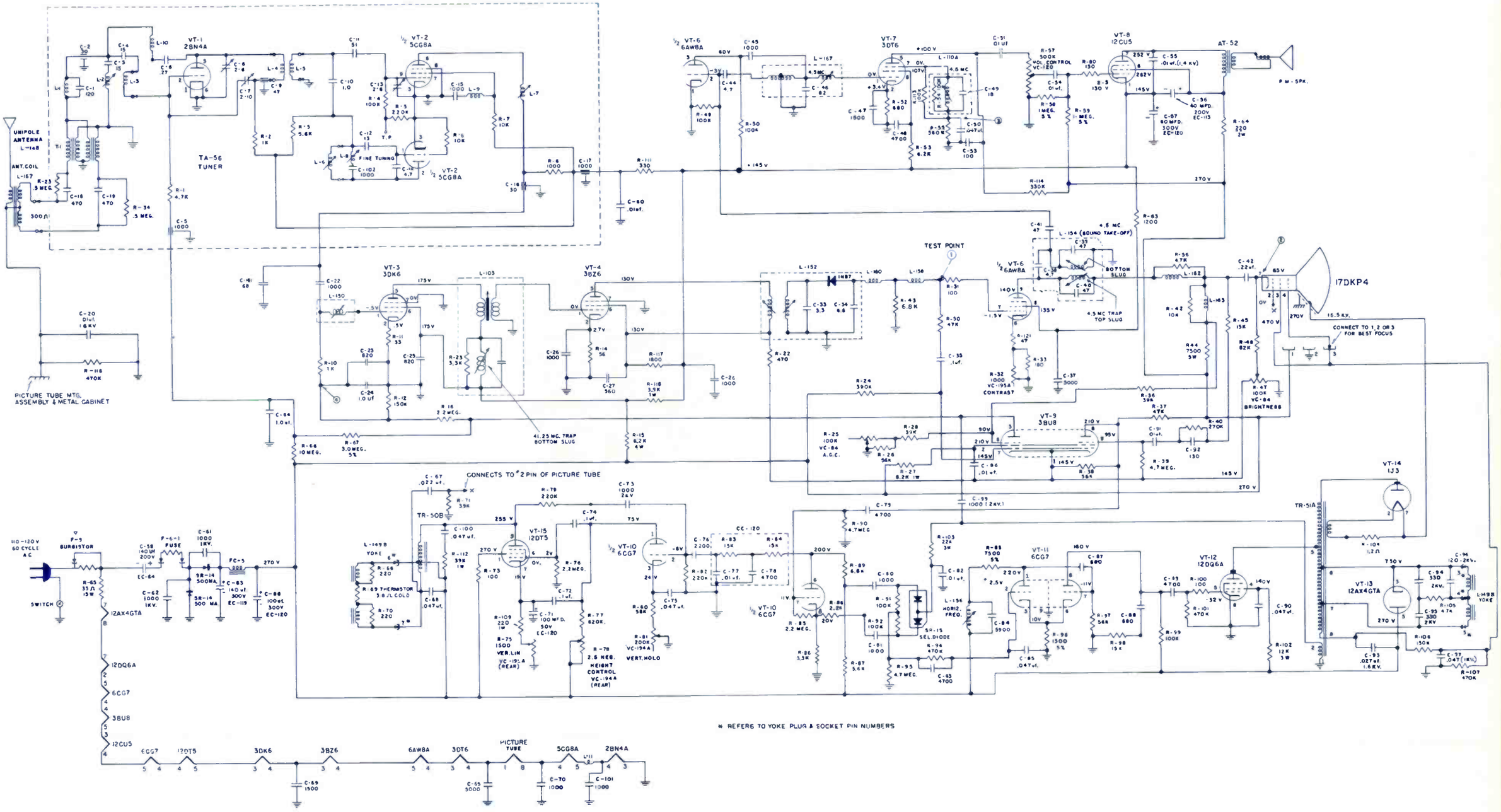
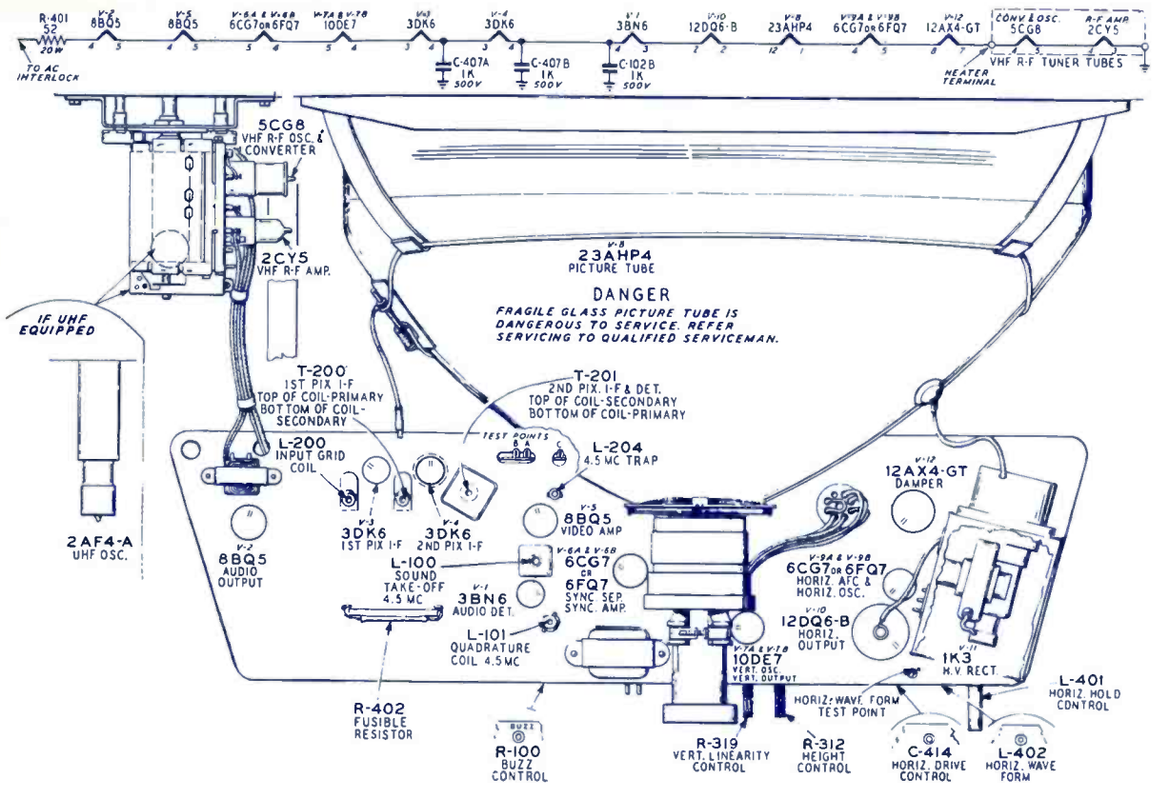
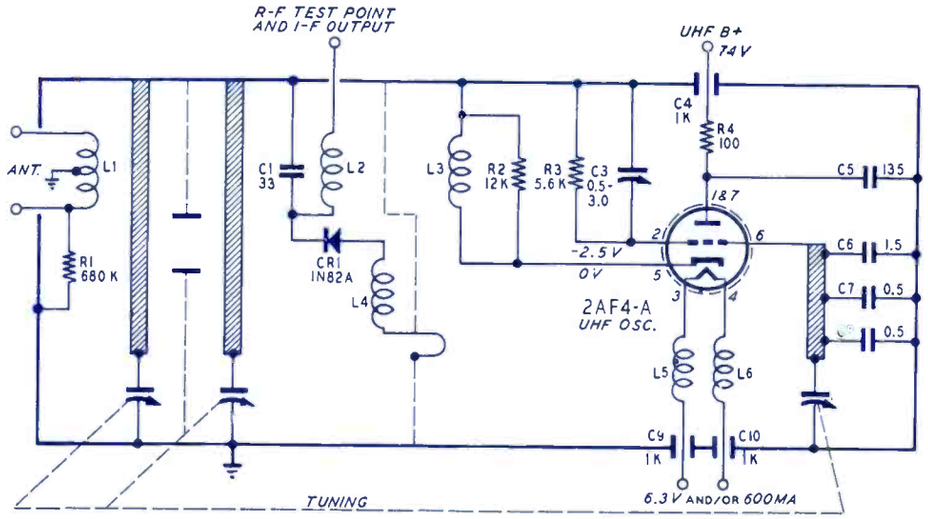

TA-56 TUNER
UNIPOLE ANTENNA L-148
ANT. COIL L-167
300Ω
VT-1 2BN4A
VT-2 5CG8A
FINE TUNING
VT-2 5CG8A
VT-6 6AW8A
VT-7 3DT6
VT-8 12CU5
AT-52
P.M. - 5PK.
VOL. CONTROL VC-120
CONTRAST
BRIGHTNESS
4.5 MC TRAP TOP SLUG
4.5 MC TRAP BOTTOM SLUG
4.5 MC (SOUND TAKE-OFF)
807 TOP SLUG
VT-6 6AW8A
VT-3 3DK6
VT-4 3BZ6
L-152
INB7
TEST POINT
17DKP4
CONNECT TO 1, 2 OR 3 FOR BEST FOCUS
PICTURE TUBE MTG. ASSEMBLY & METAL CABINET
CONNECTS TO "2 PIN OF PICTURE TUBE
TR-50B
VT-15 12DT5
VT-10 6CG7
VT-10 6CG7
SR-15 SEL. DIODE
HORIZ. FREQ.
VT-11 6CG7
VT-12 12AQ6A
VT-9 3BU8
VT-14 1J3
TR-51A
VT-13 12AX4GTA
HEIGHT CONTROL VC-194A (REAR)
VERT. HOLD
VERT. LIN VC-192A (REAR)
YOKE
110-120 V 60 CYCLE AC
SWITCH
F-3 BURGISTOR
F-6-1 FUSE
FC-5
12AX4GTA
12AQ6A
6CG7
3BU8
12CU5
6CG7
12DT5
3DK6
3BZ6
6AW8A
3DT6
PICTURE TUBE
5CG8A
2BN4A
* REFERS TO YOKE PLUG & SOCKET PIN NUMBERS

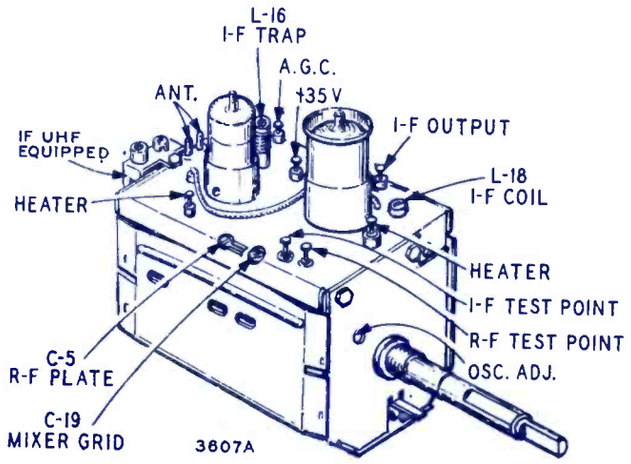




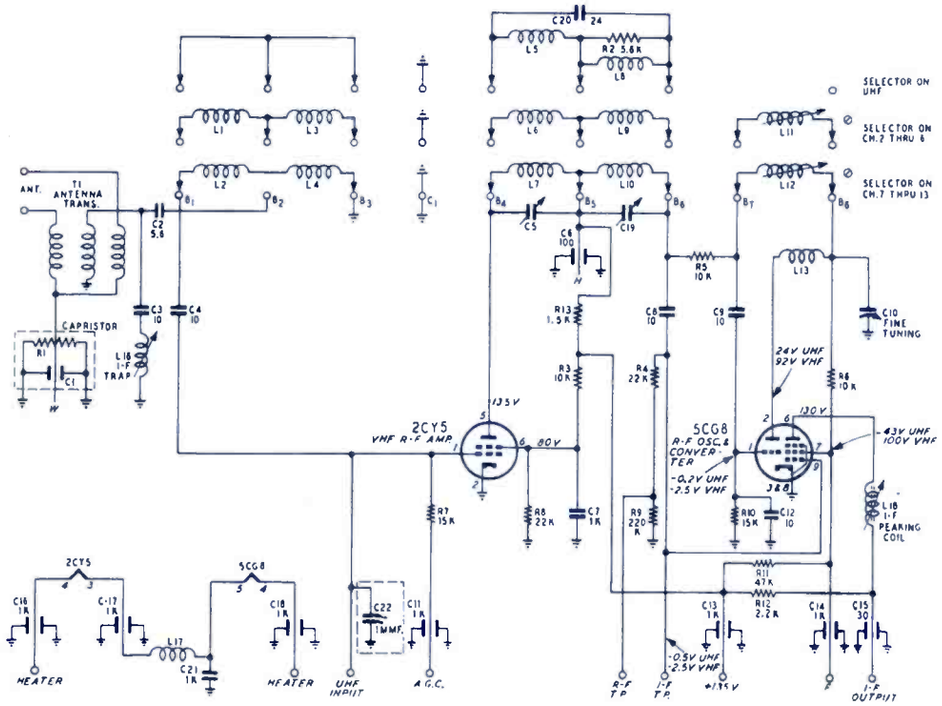
25A1221-2 UHF TUNER SCHEMATIC (IF UHF EQUIPPED)

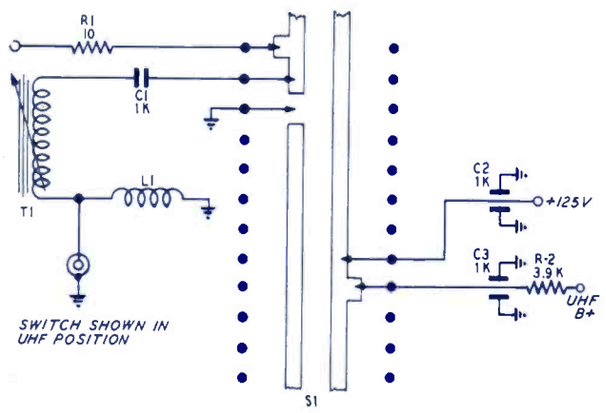
TRUETONE
TV Models 2DC1270A, -2A, -4A

Electronic Technician
CIRCUIT DIGEST



Top Tuner Adjustments

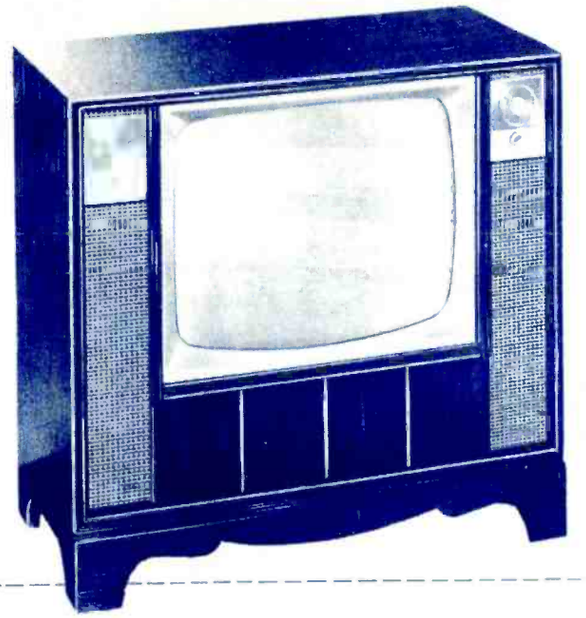


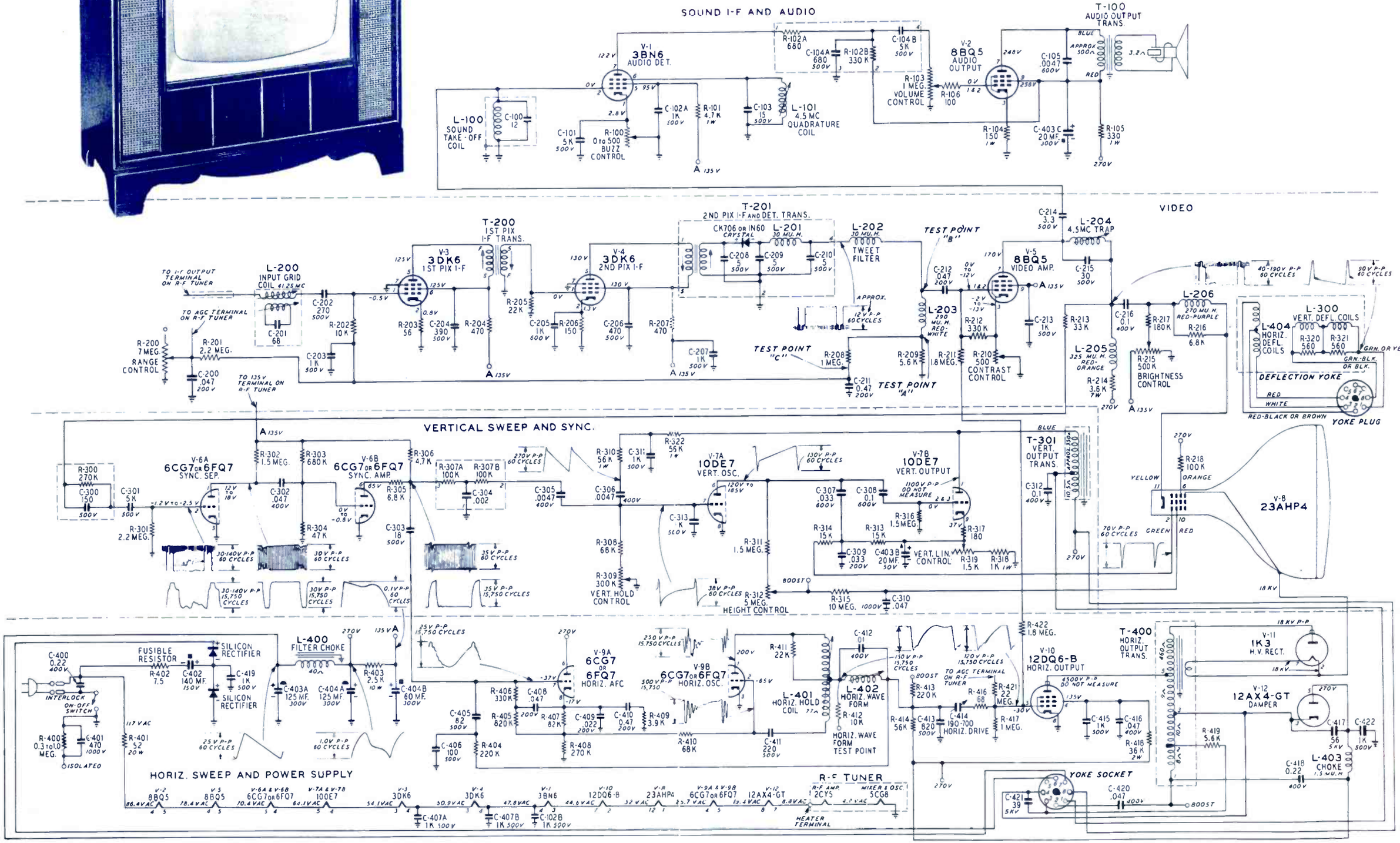


2A523 UHF IF INPUT (IF UHF EQUIPPED)

ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

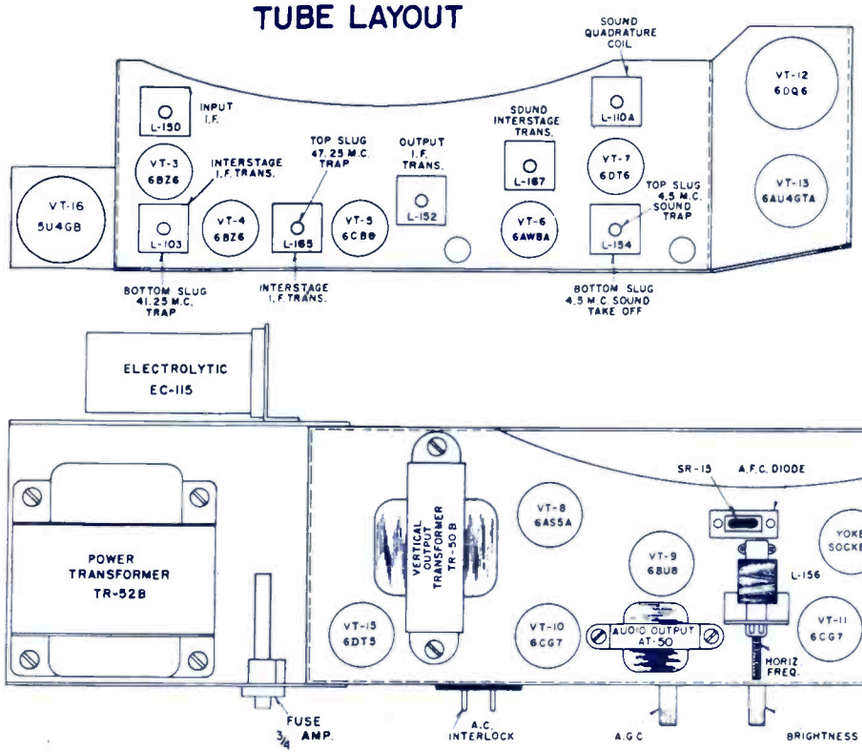
TRUETONE
TV Models 2DC127OA, -2A, -4A

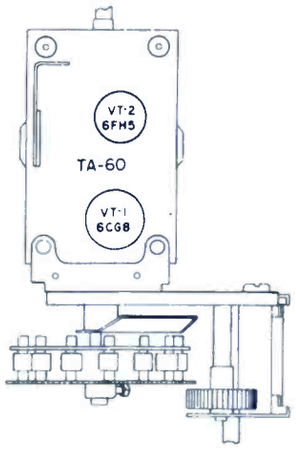


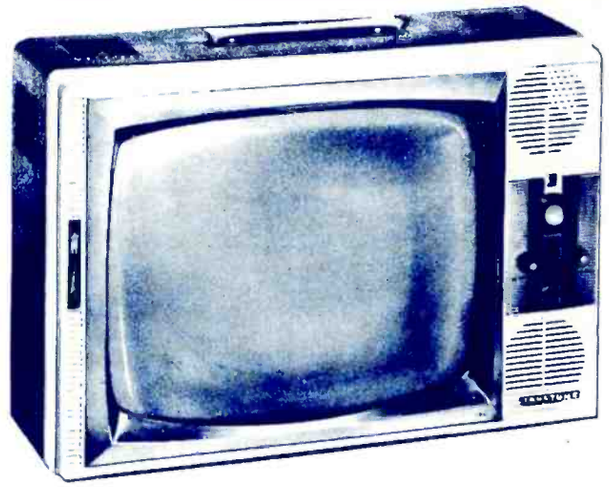


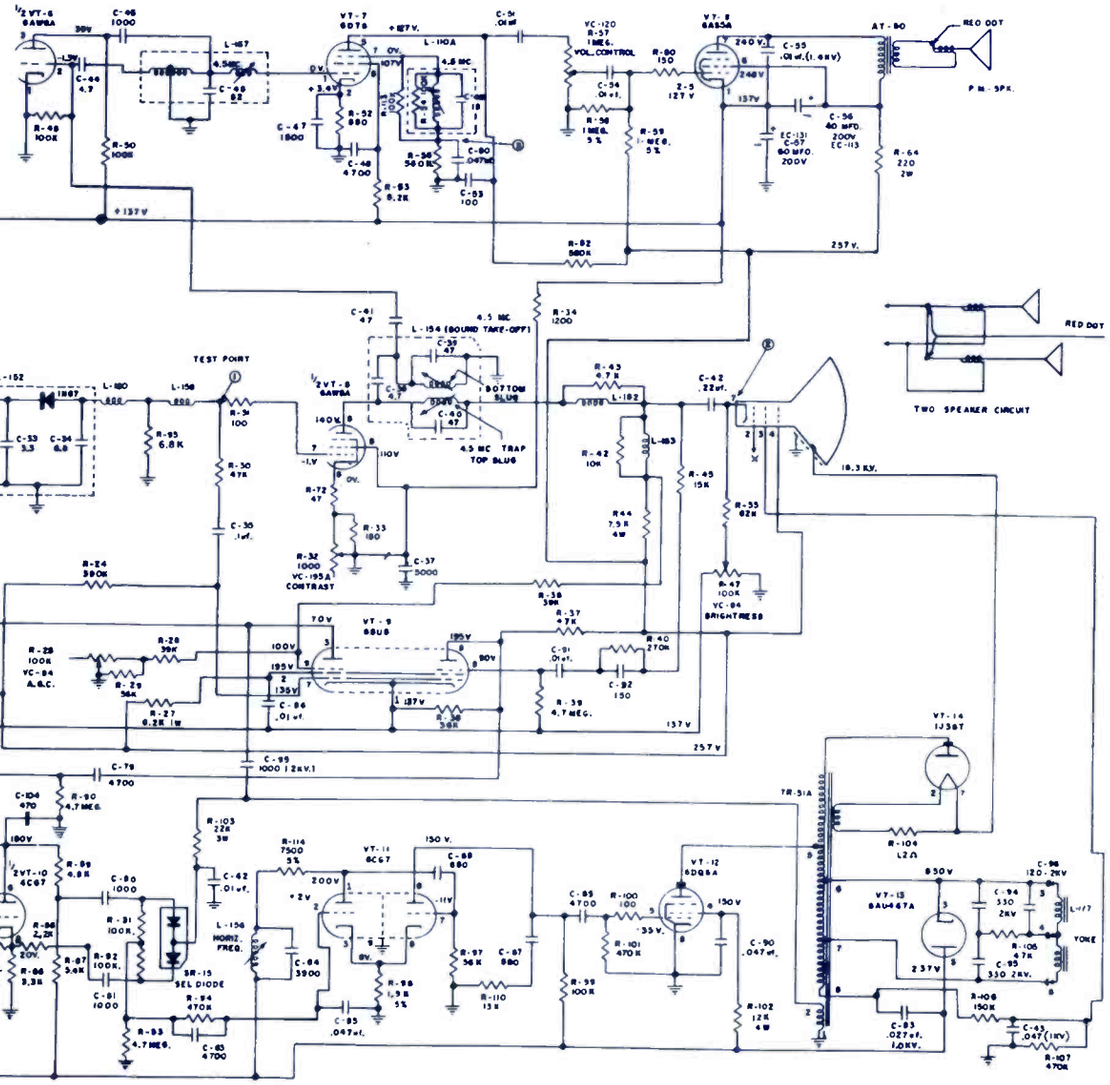
TRUETONE
TV Model 2D3246

CHASSIS NO. 1160-140
TUBE LAYOUT








TUNER A.G.C.
TUNER OUTPUT
TUNER B+ 135 V.
41.25 MC TRAP BOTTOM SLUG
47.25 MC TRAP TOP SLUG
L-103
L-165
L-152
L-180
L-156
TEST POINT
L-154 (SOUND TAKE-OFF)
4.5 MC TRAP TOP SLUG
BOTTOM SLUG
L-182
L-183
RED DOT
TWO SPEAKER CIRCUIT
10.3 KV.
VT-1 6BZ6
VT-2 6FH5
VT-3 6BZ6
VT-4 6BZ6
VT-5 6CB6
VT-6 6AW8A
VT-7 6DT6
VT-8 6CG8A
VT-9 6BU8
VT-10 6CG7
VT-11 6CG7
VT-12 6DQ6A
VT-13 6AU4GTA
VT-14 1J3BT
VT-15 6DT5
VT-16 5U4GB
TR-52B
TR-51A
117 VOLTS 60 CYCLES A.C.
NO. 28 WIRE FUSE
6.3 V. AC.
#47 PILOT LIGHT
270 V.
257 V.
137 V.
F-13 SLOW BLOW 3/4 AMP. FUSE "M" TYPE
FC-15A 40 MFD. 350V EC-115
FC-15B 100 MFD. 350V EC-115
L-177 YOKE
R-84 220 R-89 THERMISTOR 3.0 Ω COLD R-70 220
R-71 39K
R-112 39K 1W
R-73 100
R-109 390 1W
R-75 1800 VC-195A (REAR)
R-76 2.5 MEG. HEIGHT CONTROL VC-194A (REAR)
R-77 820K
R-78 2.2 MEG.
R-79 220K
R-80 .68K
R-81 200K VERT. HOLD VC-194A (FRONT)
R-82 220K
R-83 15K
R-94 15K
CC-120
R-85 2.2 MEG.
R-86 2.2K
R-87 3.9K
R-88 3.3K
R-89 6.8K
R-90 4.7 MEG.
R-91 100K
R-92 100K
R-93 4.7 MEG.
R-95 6.8K
R-96 22K
R-97 56K
R-98 5.9K 5%
R-99 100K
R-100 100
R-101 470K
R-102 12K 4W
R-103 22K 3W
R-104 L2Ω
R-105 4.7K
R-106 150K
R-107 470K
R-108 150K
R-110 15K
R-111 330
R-114 7500 5%
R-116 1000 VC-195A CONTRAST
R-117 100K VC-84 BRIGHTNESS
R-118 100K VC-84 A.G.C.
C-66 .047 MFD.
C-67 1800
C-68 4700
C-69 .047 MFD.
C-70 .047 MFD.
C-71 50 MF 50 V. EC-130
C-72 .1 MFD.
C-73 1000 2KV
C-74 .1 MFD.
C-76 2200
C-77 .01 MFD.
C-78 4700
C-79 4700
C-80 1000
C-81 1000
C-83 100
C-84 4700
C-85 4700
C-86 .01 MFD.
C-87 680
C-88 680
C-89 680
C-90 .047 MFD.
C-91 .01 MFD.
C-92 150
C-93 .027 MFD. 1.0 KV.
C-94 330 2KV
C-95 330 2KV.
C-96 120-2KV
C-97 .047 (1KV)
C-98 .047 MFD. 1.0 KV.
C-99 1000 12KV.
C-100 .047 MFD.
C-101 470K
C-102 12K 4W
C-103 1000
C-104 470
C-105 .047 MFD.
C-106 .047 MFD.
C-107 .022 MFD.
C-108 .047 MFD.
C-109 820
C-110 820
C-111 820
C-112 820
C-113 820
L-106
L-107
L-108
L-109
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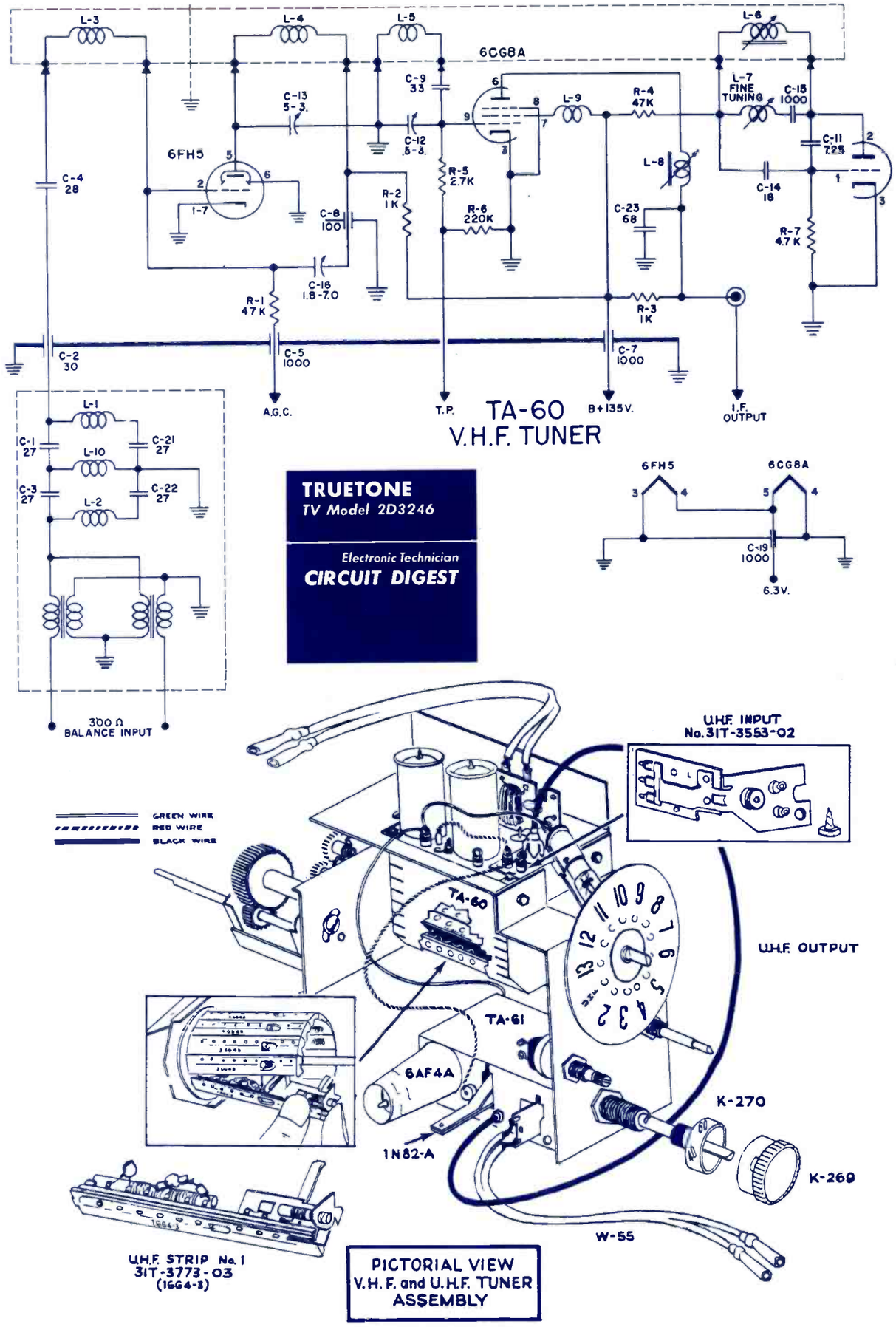
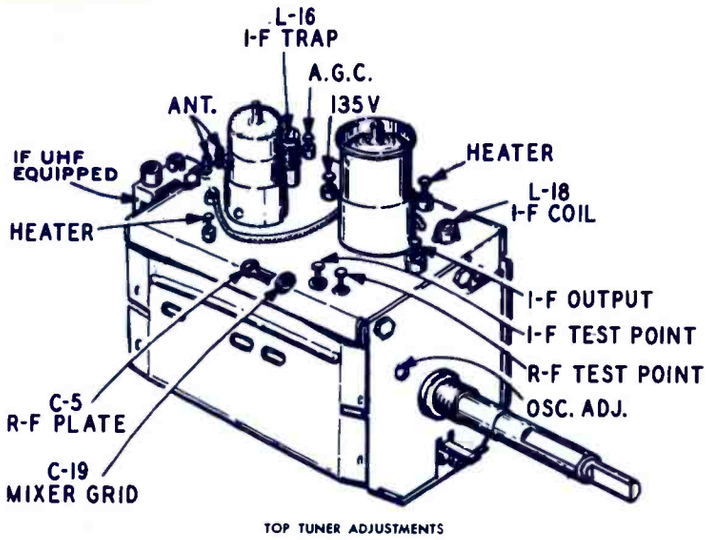
L-144
L-145

ELECTRONIC TECHNICIAN
CIRCUIT DIGEST



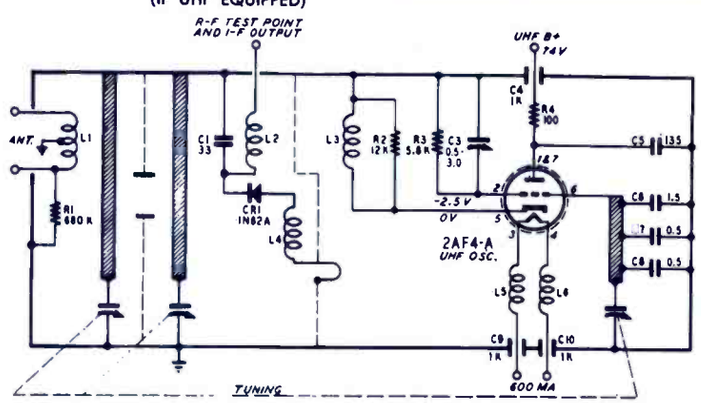
WELLS-GARDNER

TV Models WG4224, WG4324, S2, S2U, TV2-9491, 2DC3144

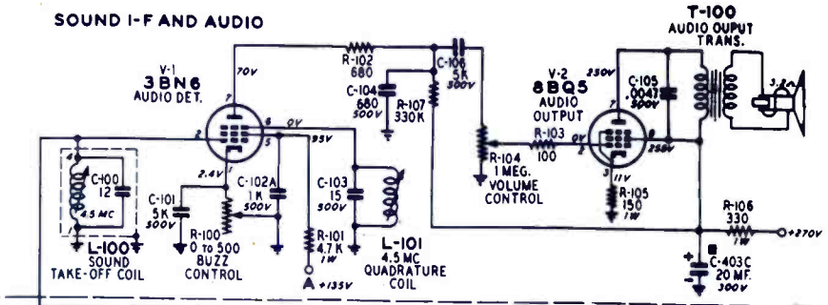


TOP TUNER ADJUSTMENTS

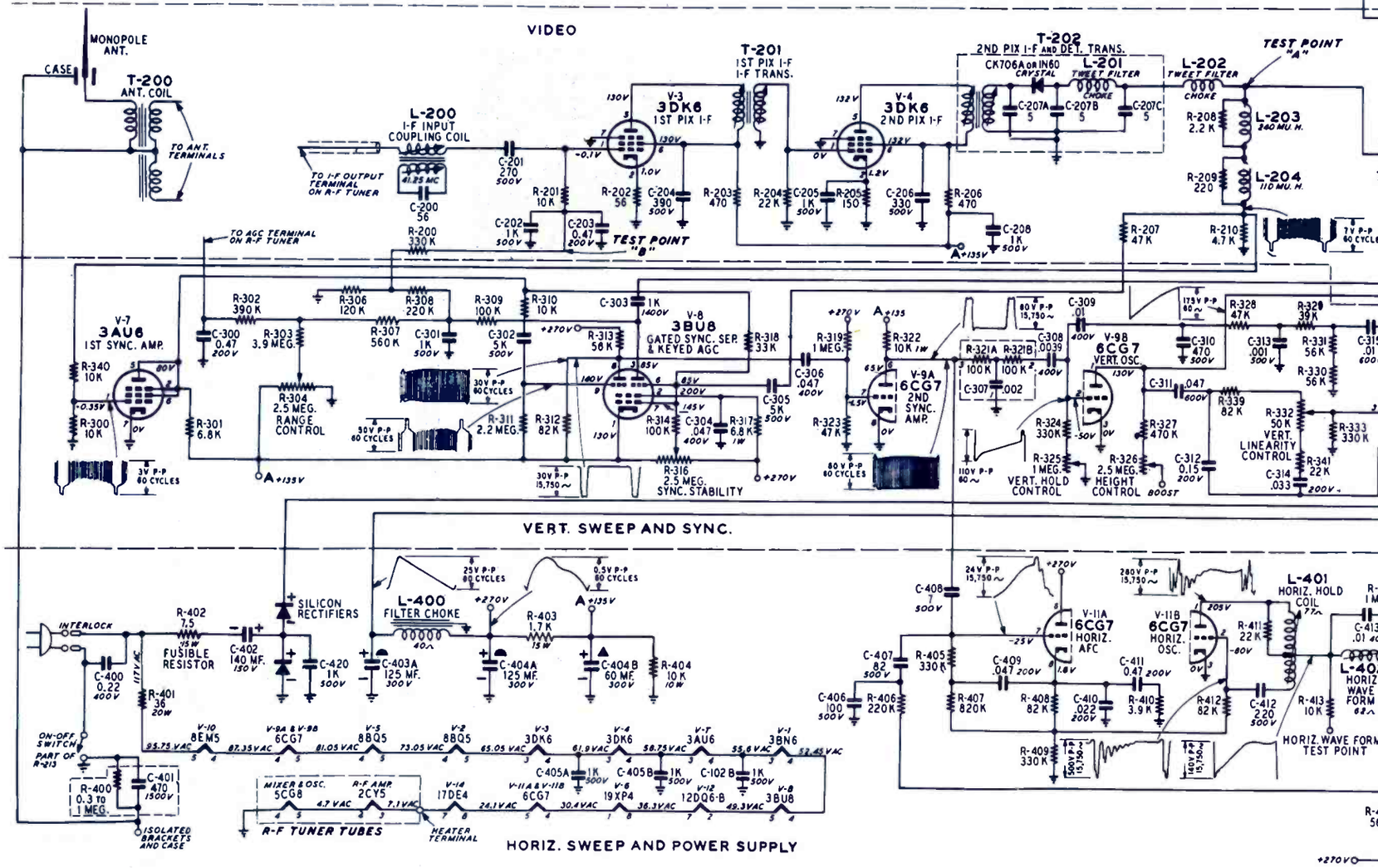
UHF TUNER SCHEMATIC
(IF UHF EQUIPPED)



SOUND I-F AND AUDIO

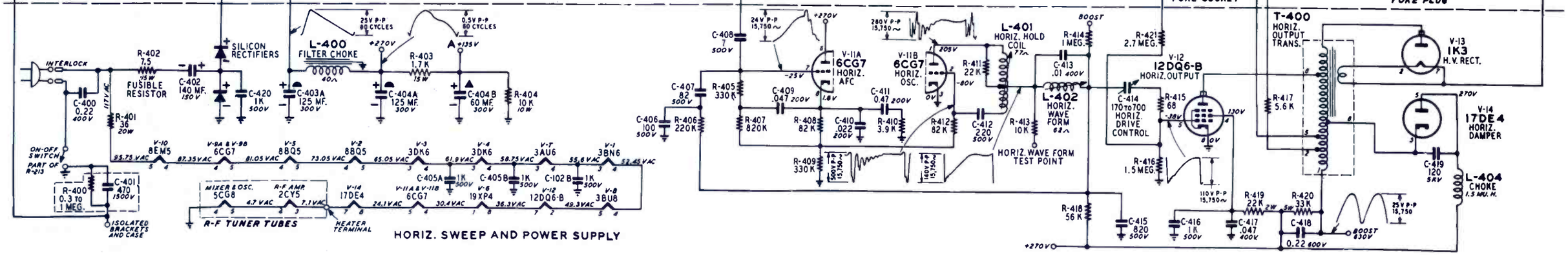


VIDEO



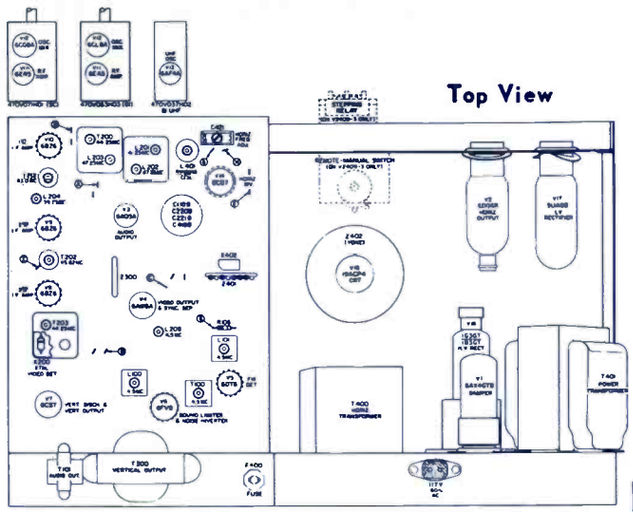
VERT. SWEEP AND SYNC.

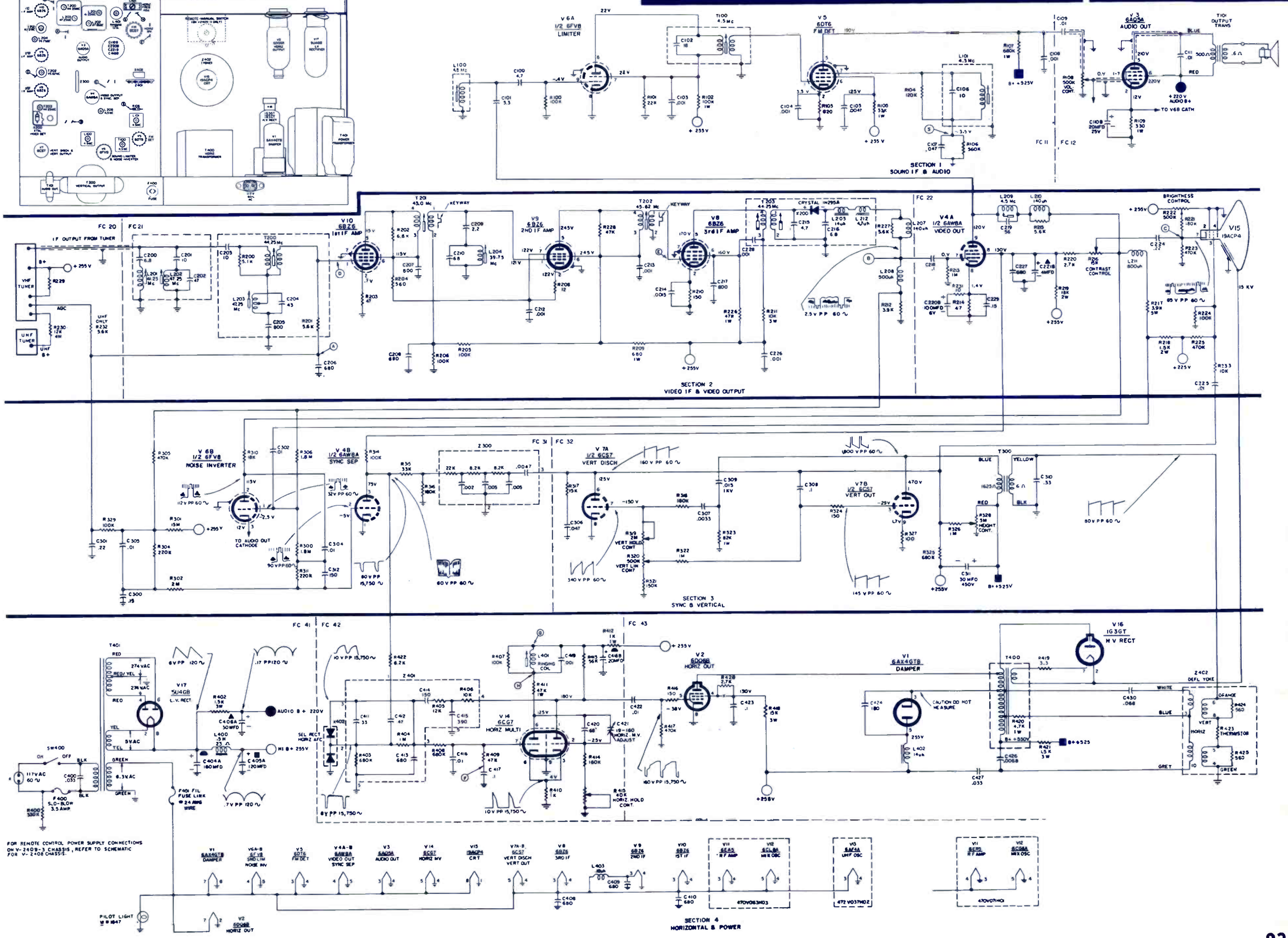
HORIZ. SWEEP AND POWER SUPPLY



NOTE—In UHF receivers the filament voltages in the tuner and above the tuner in the heater string will be slightly greater because of the filament voltages of the tuner tubes.

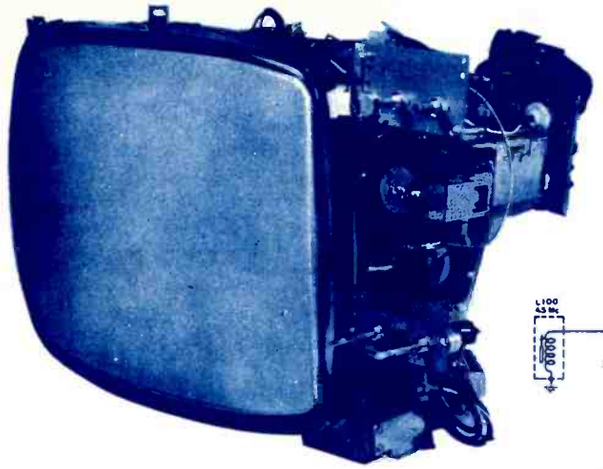
WESTINGHOUSE
TV Chassis V-2409-1, -2, -3

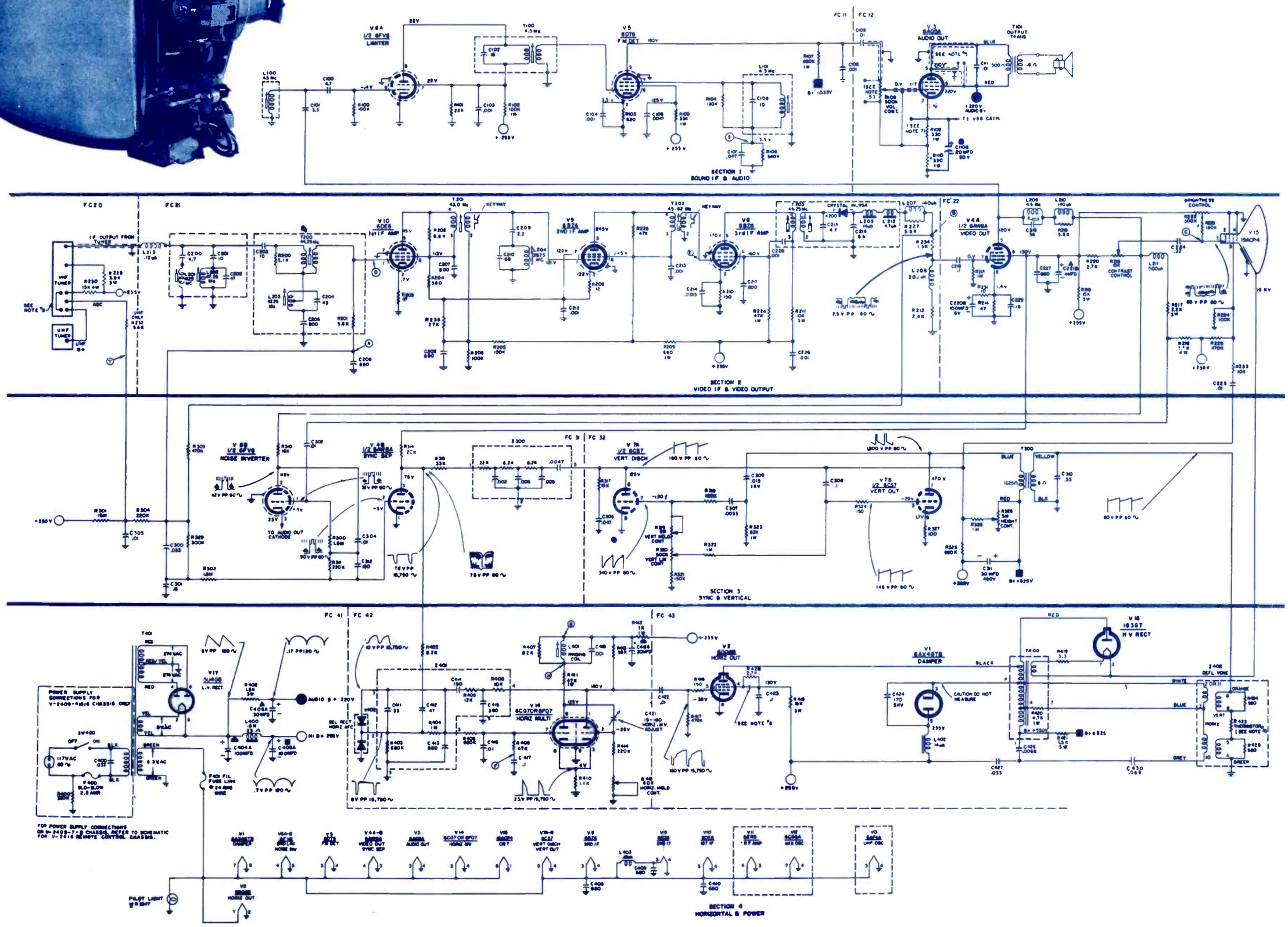


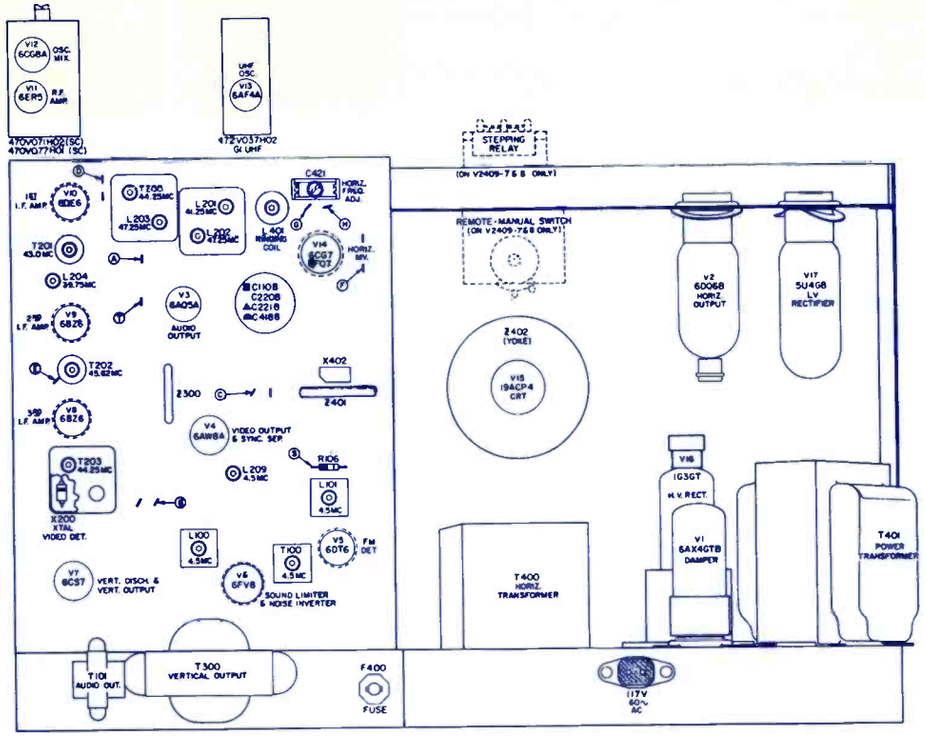


ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

WESTINGHOUSE
TV Chassis
V-2409-4, -5, -6, -7, -8



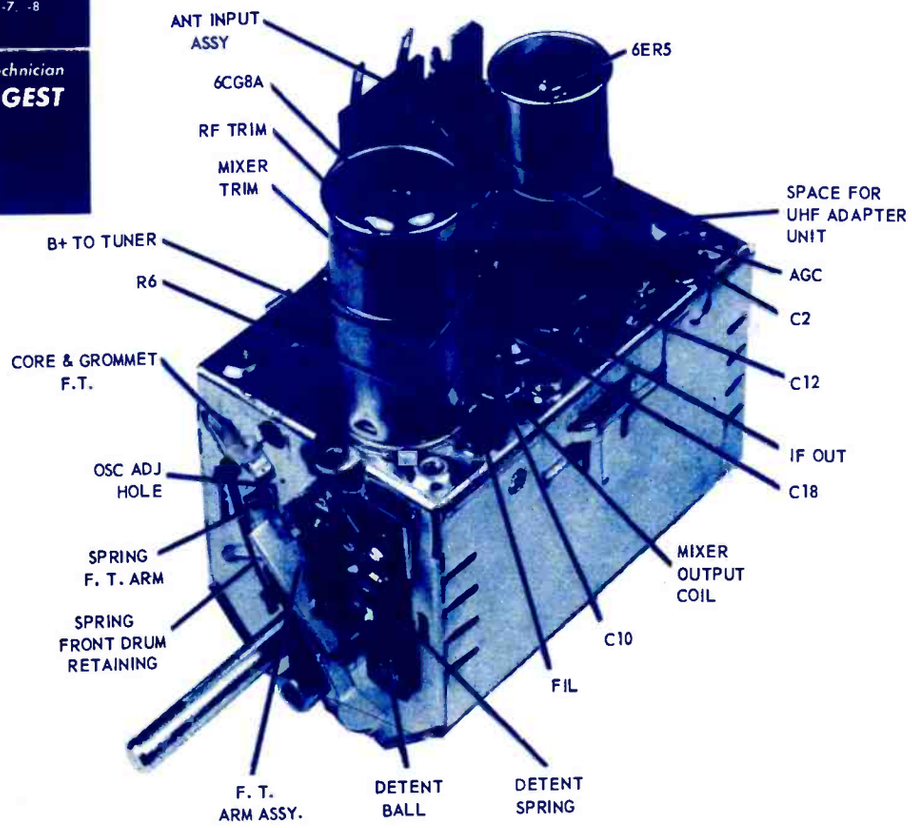




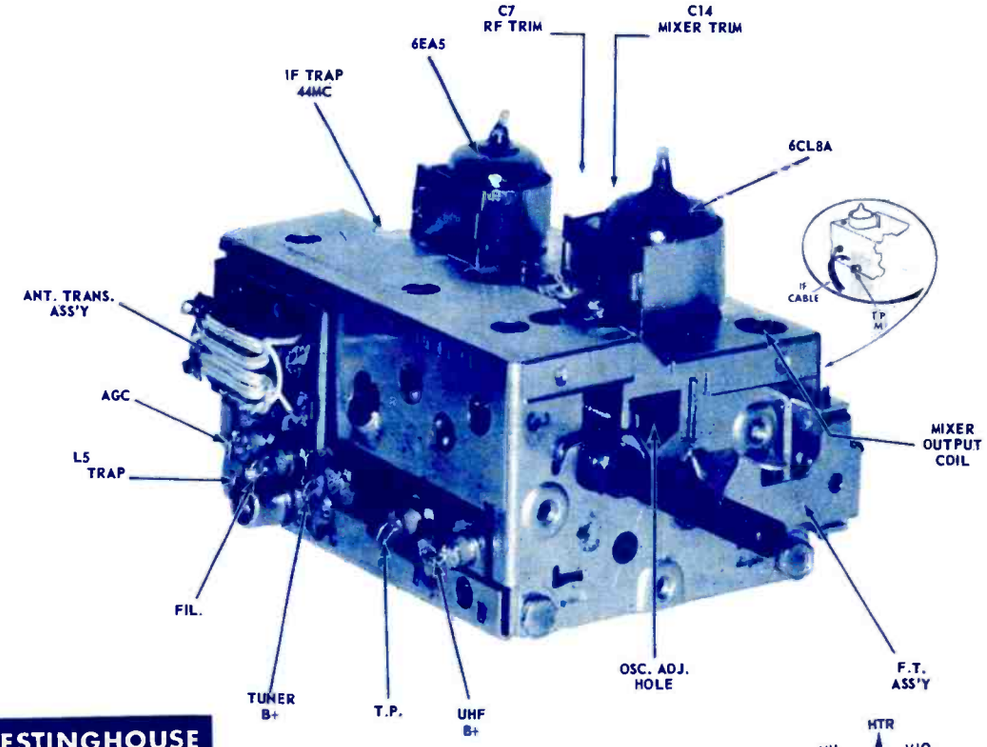
Top View Of Chassis.

WESTINGHOUSE
TV Chassis
V-2409-4 -5, -6, -7, -8

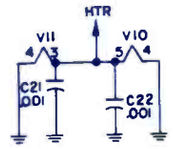
Electronic Technician
CIRCUIT DIGEST



VHF Tuner 470V071H02.



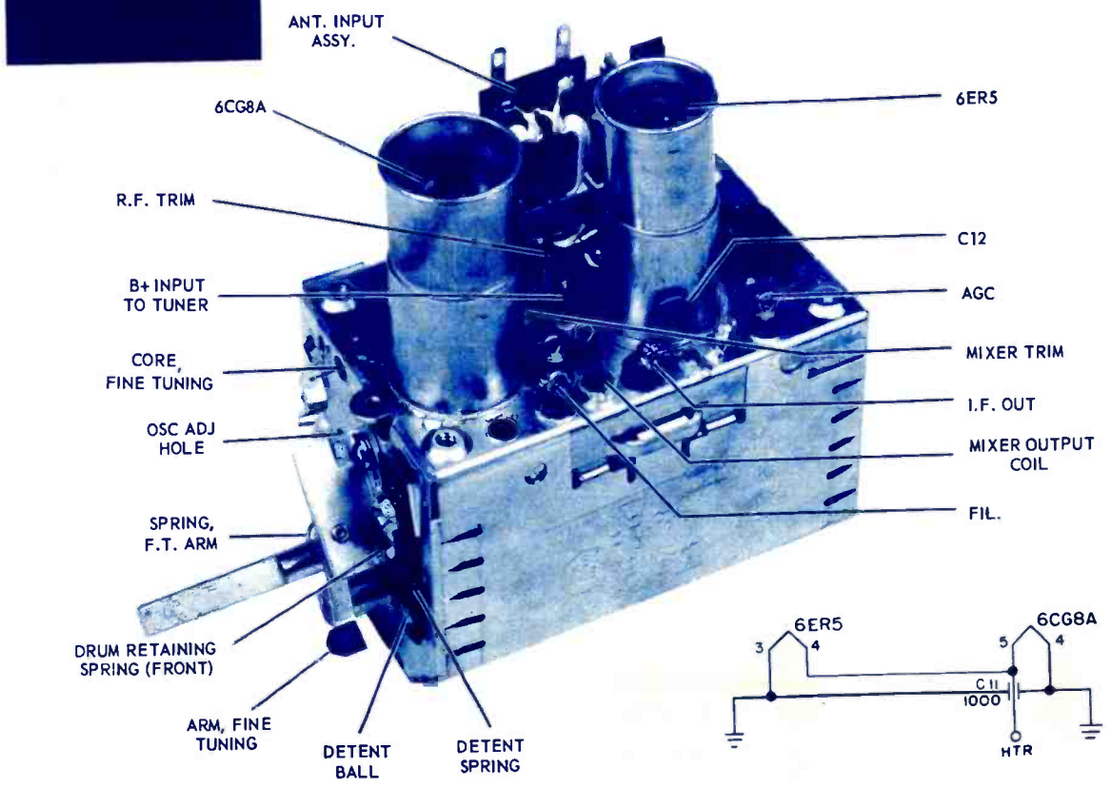
VHF Tuner 470V063H02.



WESTINGHOUSE
TV Chassis
V-2411-1, V-2411-3

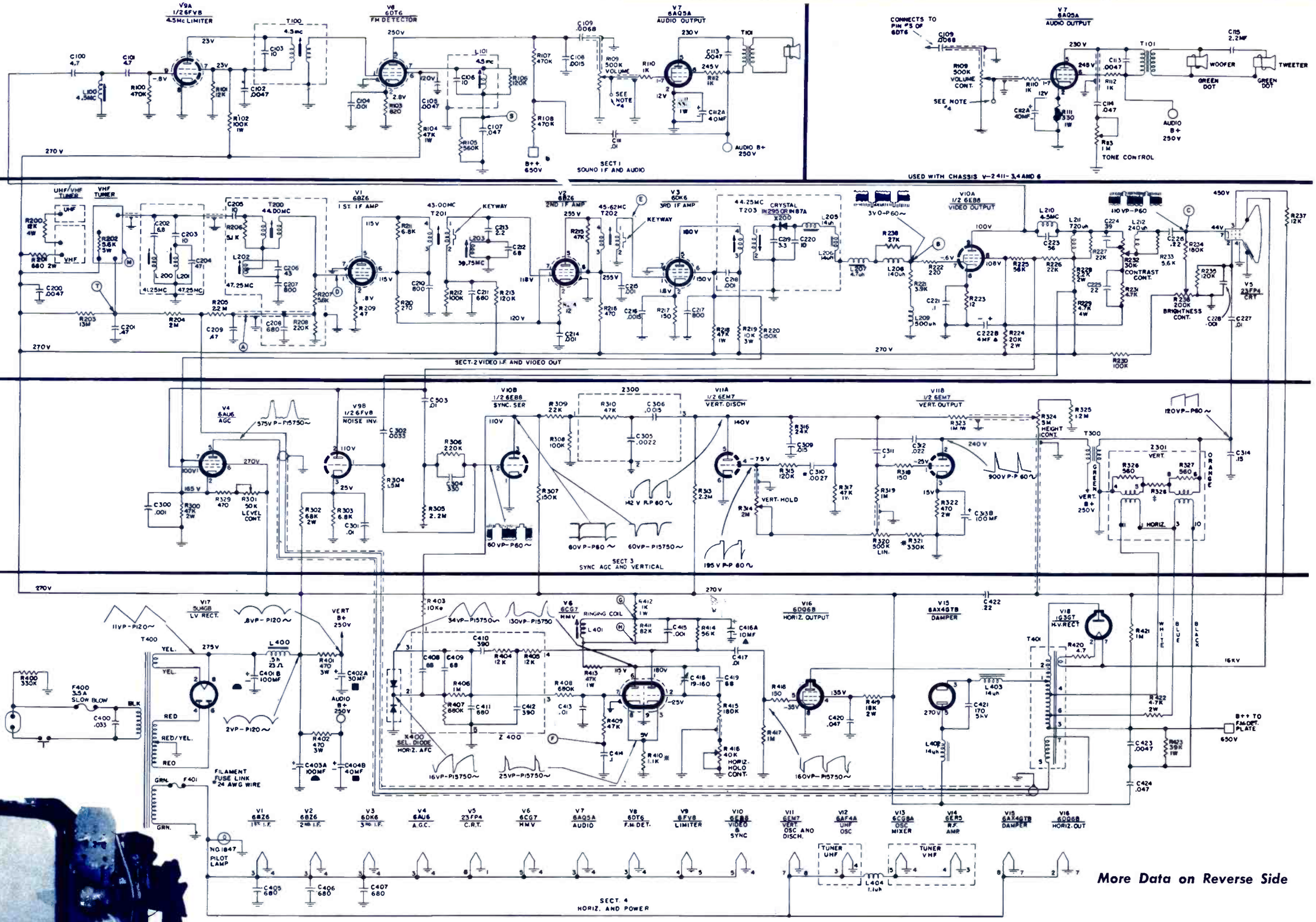
Electronic Technician
CIRCUIT DIGEST

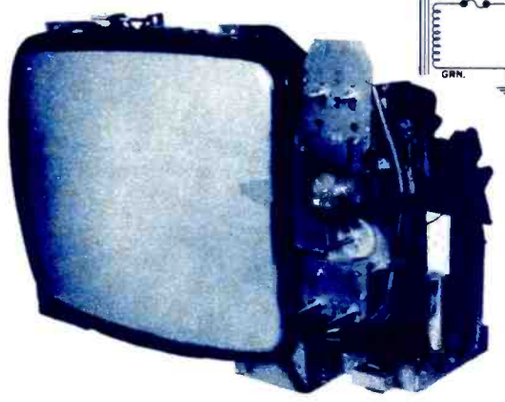
More Data on Reverse Side



VHF Tuner 470V071H01.

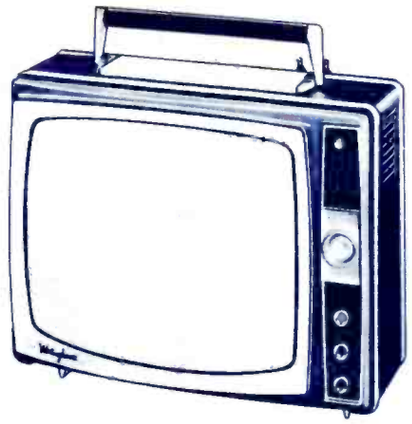
WESTINGHOUSE
TV Chassis
V-2411-1, V-2411-3

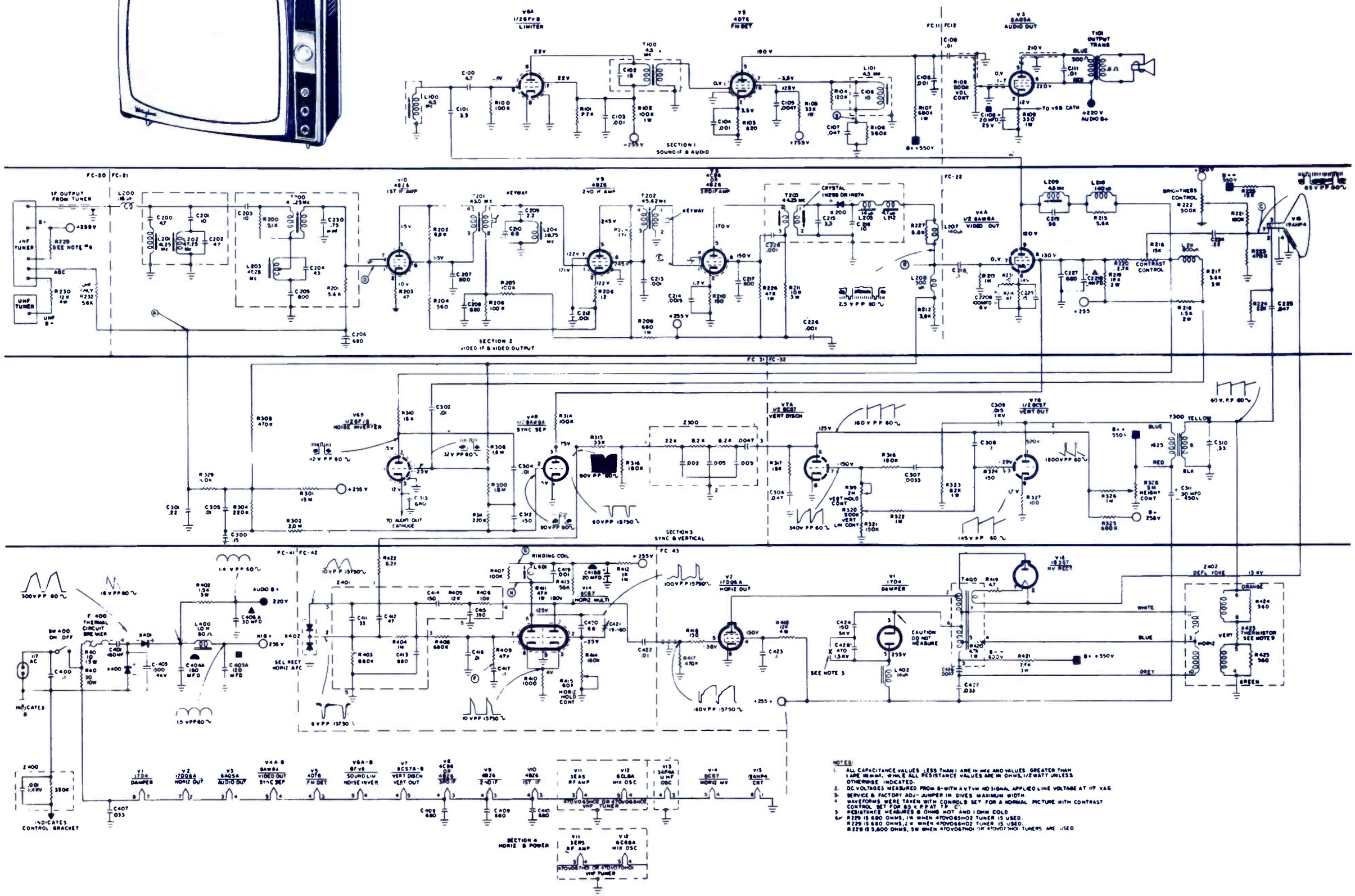




More Data on Reverse Side

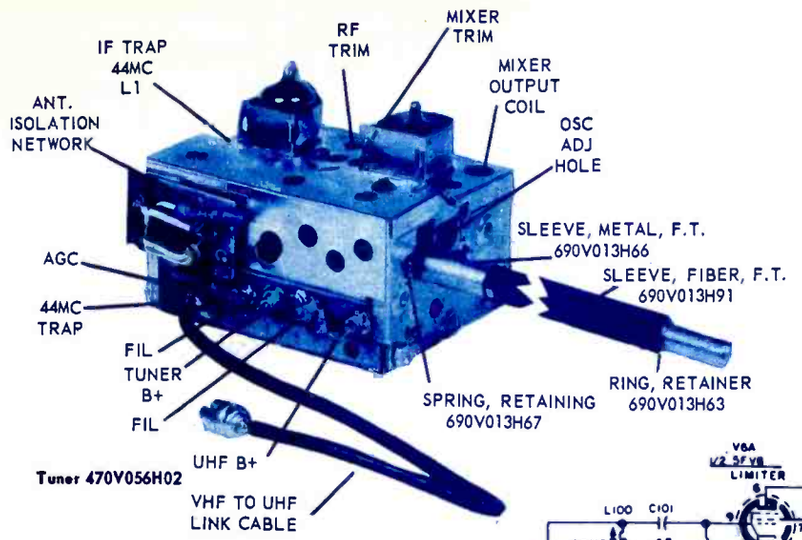
WESTINGHOUSE
TV Chassis V-2412-1,-2
Model H-P3310, 11, 12



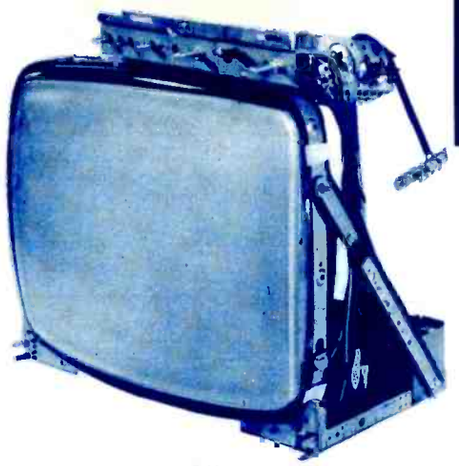


ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

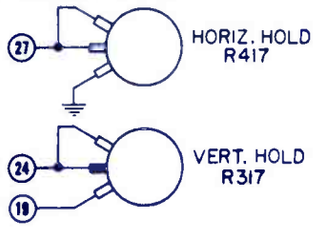
WESTINGHOUSE
TV Chassis V2414-1, V2414-2



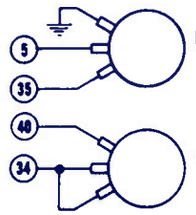
Tuner 470V056H02



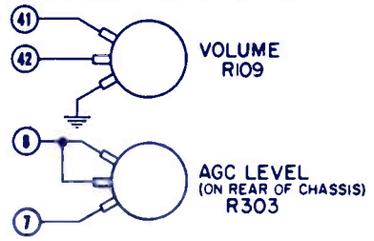
KEY TO PC BOARD LAYOUT



CONTROL WIRING DIAGRAM

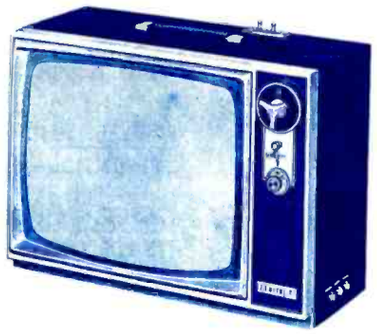


All views seen from rear.

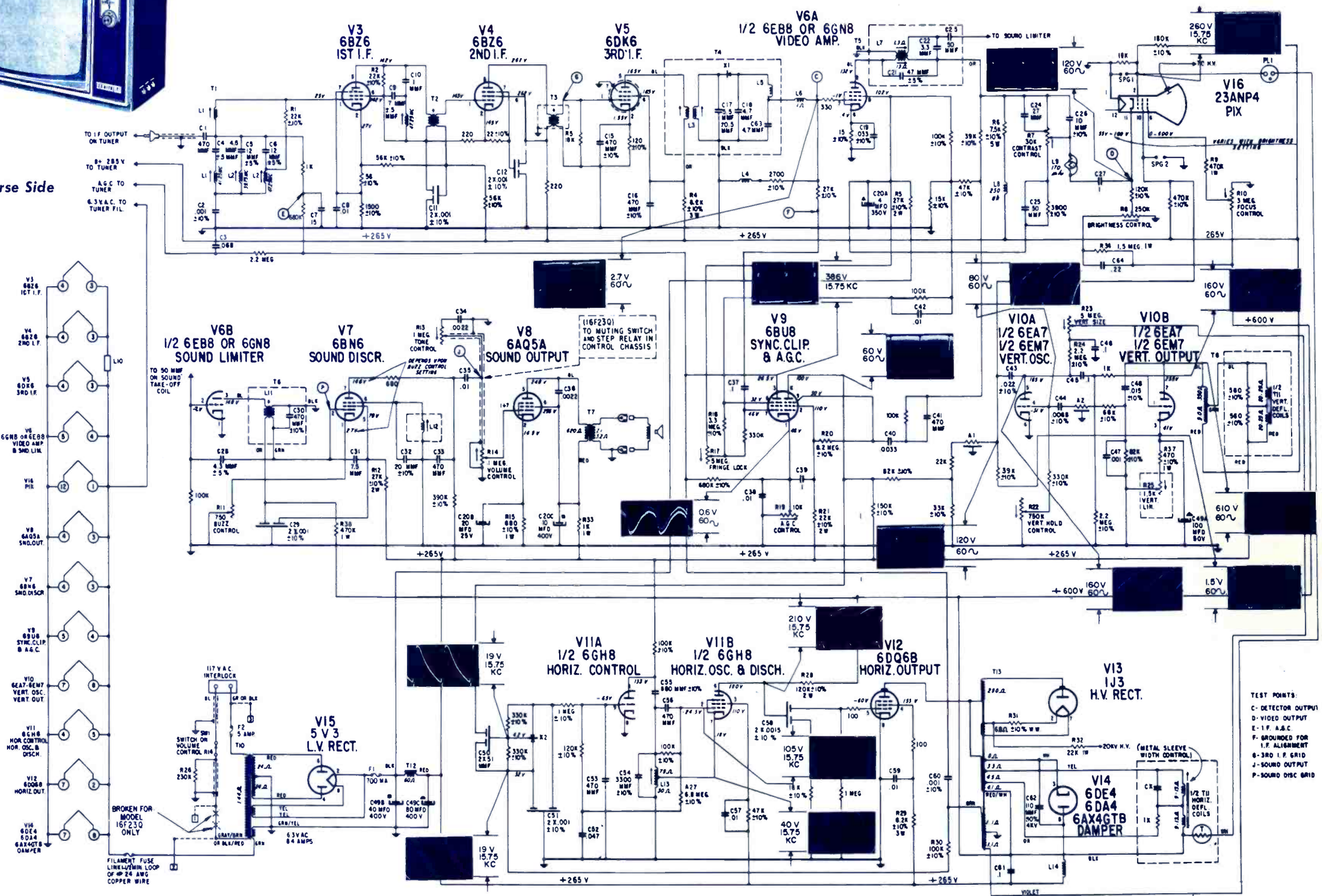


Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota

ZENITH
TV Chassis 16F23, 16F23Q



More Data on Reverse Side

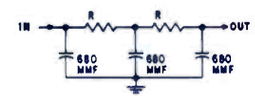


CIRCUIT FUNCTION
SPG 1 AND SPG 2 SPARK GAPS

SPG 1 slips over pins 1 and 2 of the picture tube. The gap prevents heater burnout, should an arc occur in the gun. If the picture tube is replaced, install the gap as on the original tube. SPG 2 similarly protects integrator A1.

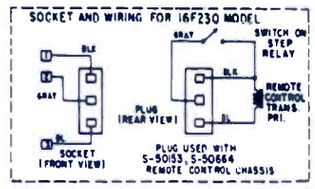
HORIZONTAL BLANKING CIRCUIT

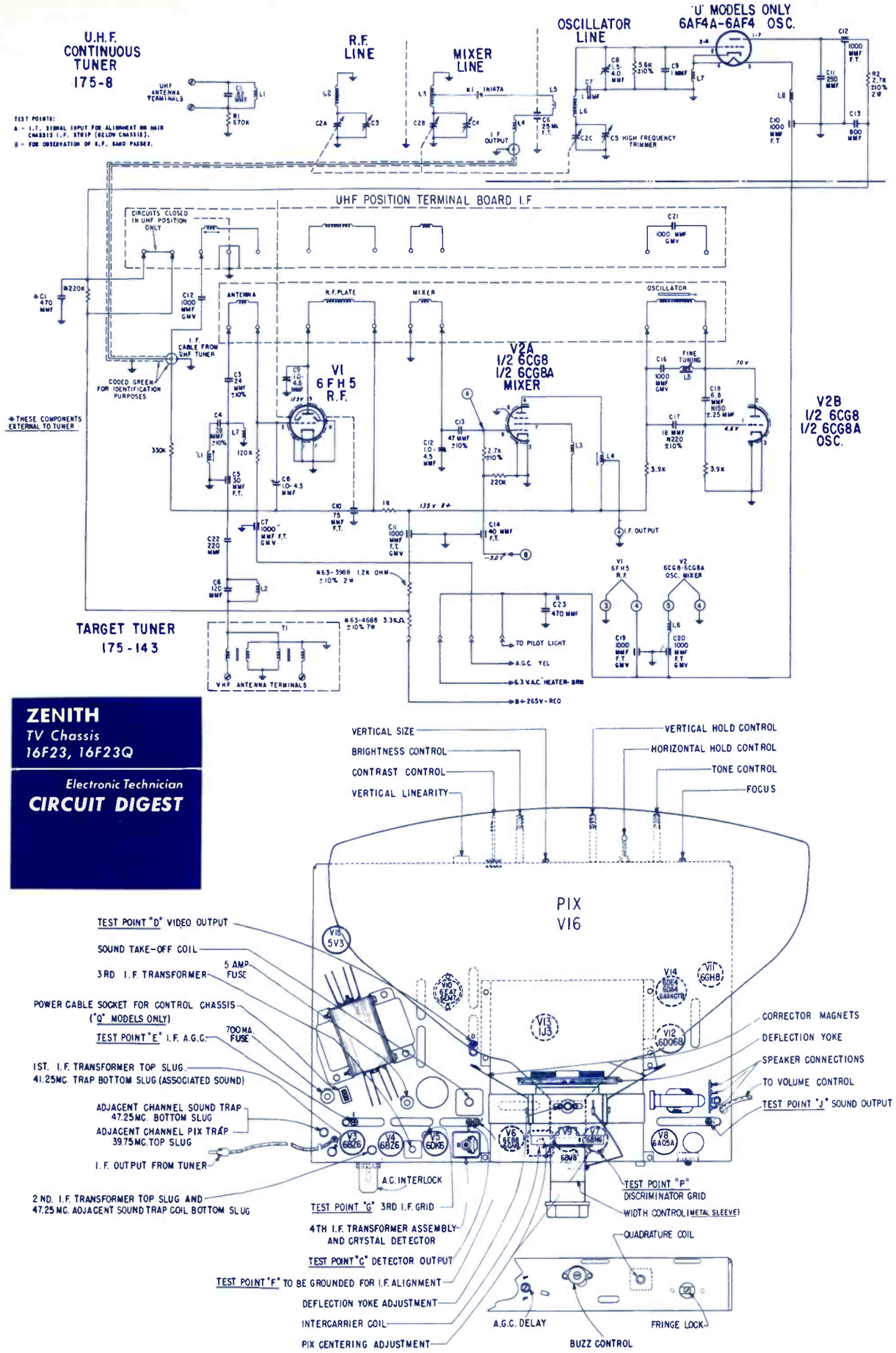
A negative pulse from the horizontal sweep transformer (violet lead) is applied to grid 1 (pin 2) of the picture tube which cuts off the beam during the horizontal retrace period. The neon bulb acts as a switch which allows the pulse to pass through, but blocks off any transients that may reach the grid during the trace period.



EQUIVALENT CIRCUIT
A-1 and A-2 INTEGRATORS

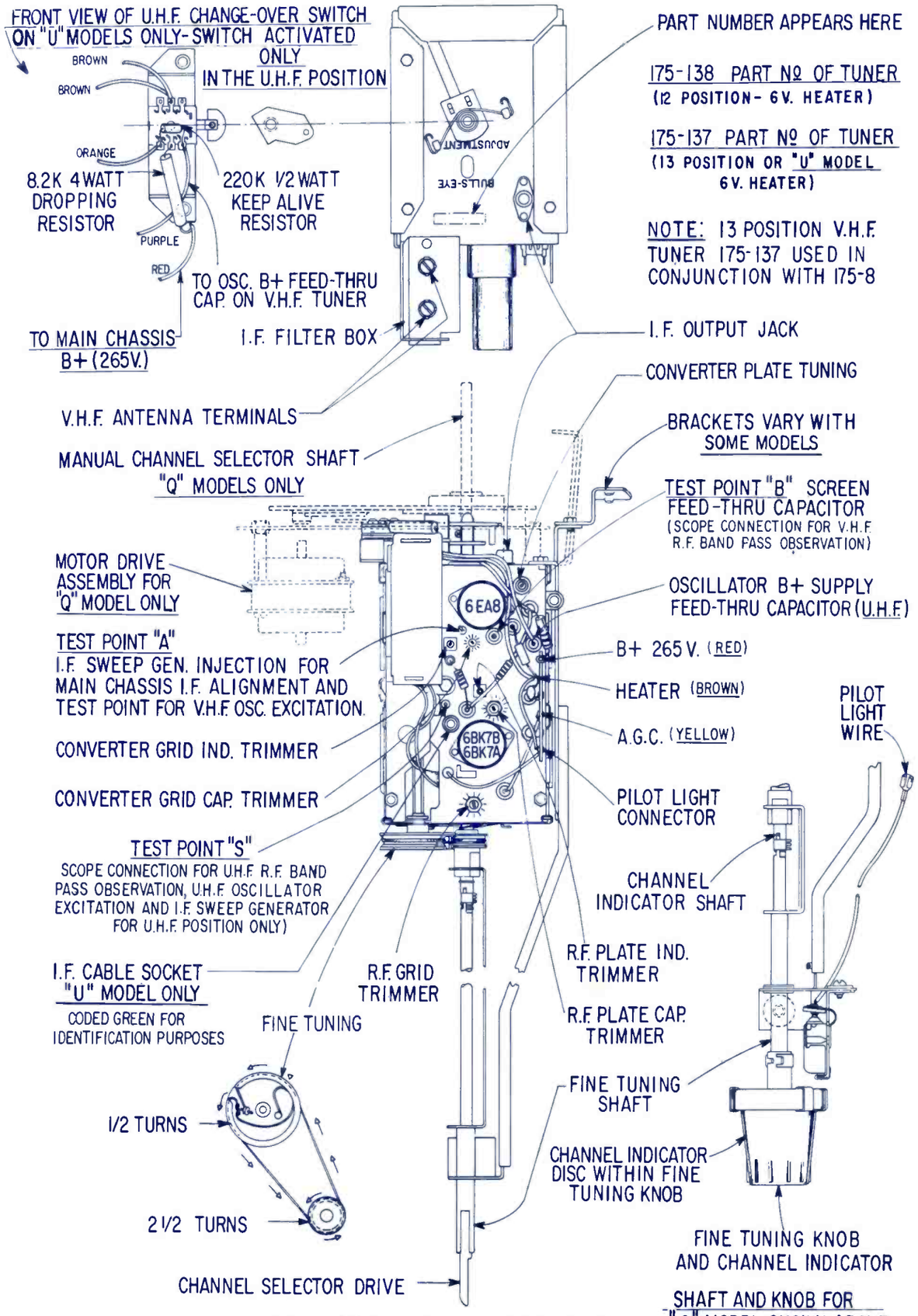
87-4 R is 47K
87-5 R is 33K
87-7 R is 68K
87-8 R is 82K





ZENITH
TV Chassis
16F23, 16F23Q

Electronic Technician
CIRCUIT DIGEST

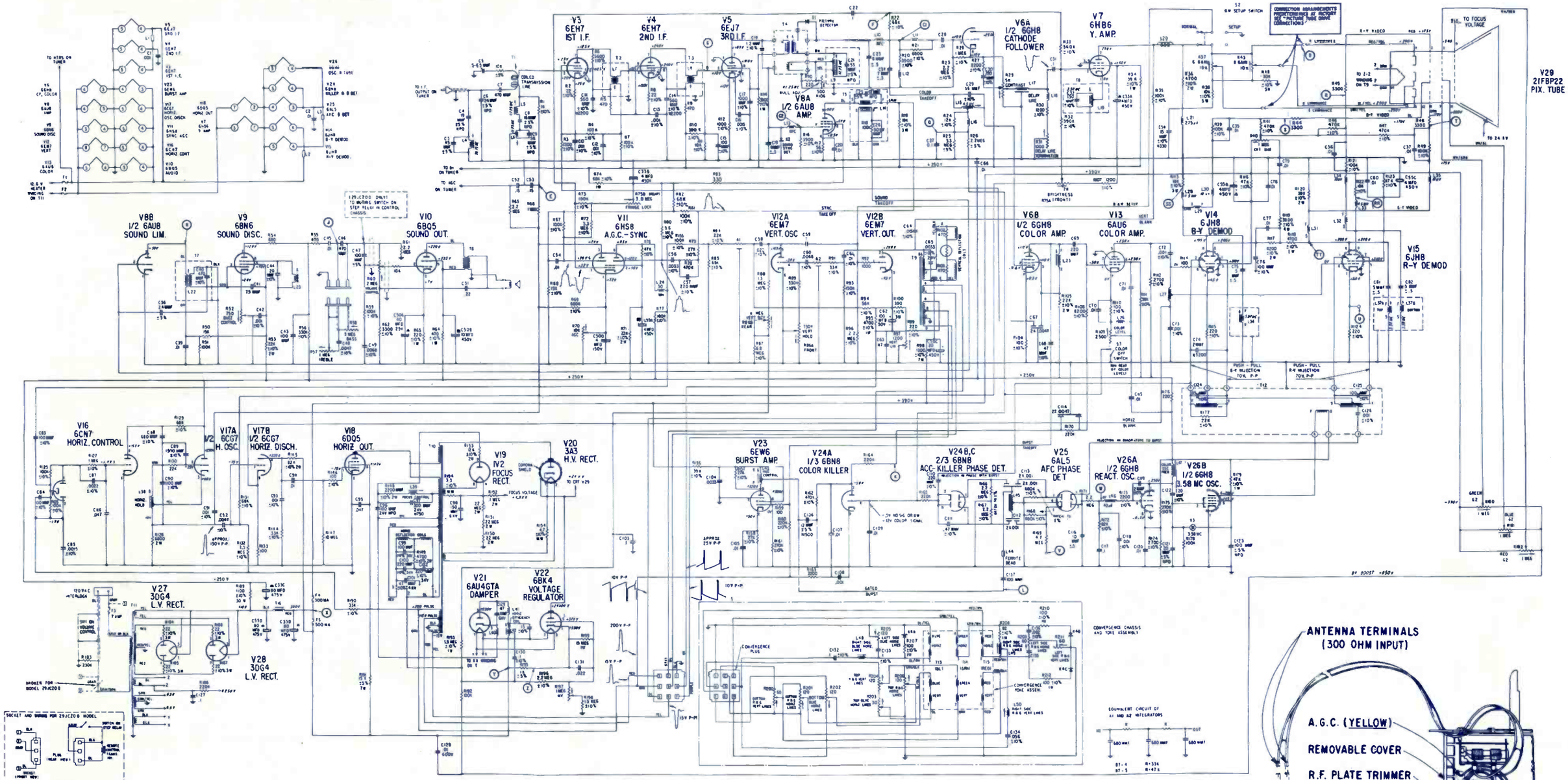


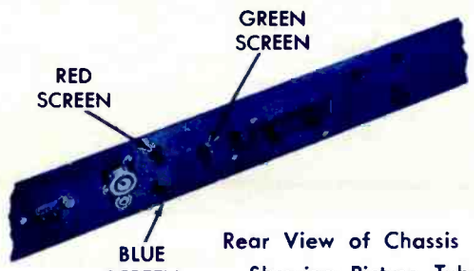
Tube and Trimmer Layout, Bull's Eye Tuner

Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota

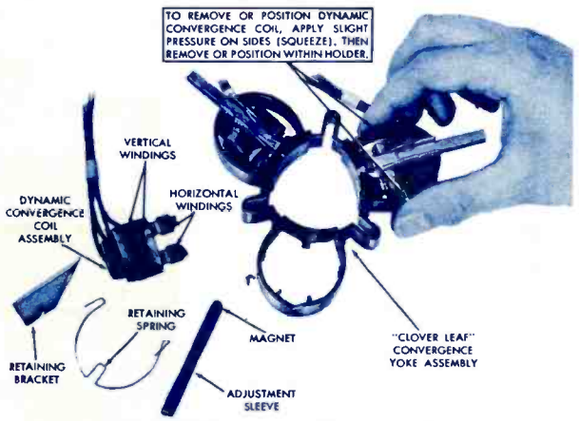
ZENITH
TV Color Chassis
29JC20

More Data on Reverse Side

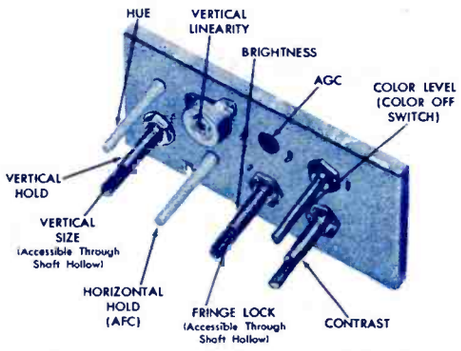




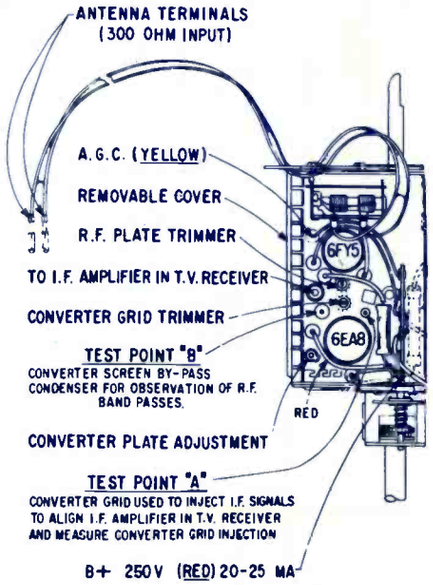
Rear View of Chassis Showing Picture Tube Screen Adjustments.



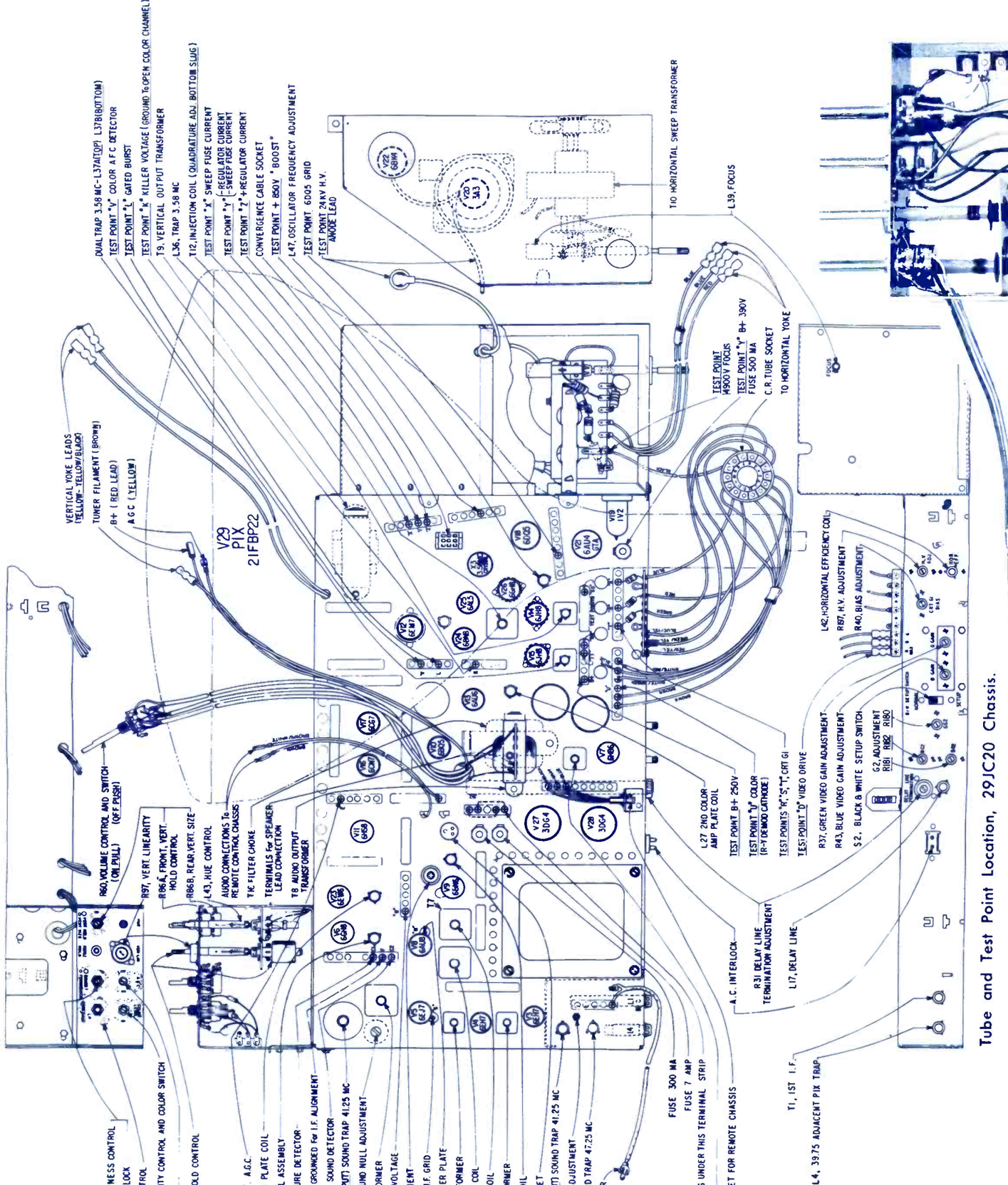
Convergence "Clover Leaf" Assembly.



Controls and Adjustments Behind Lower Panel Door.



Tube and Test Point Location, Gold Video Guard Tuner.



Tube and Test Point Location, 29JC20 Chassis.

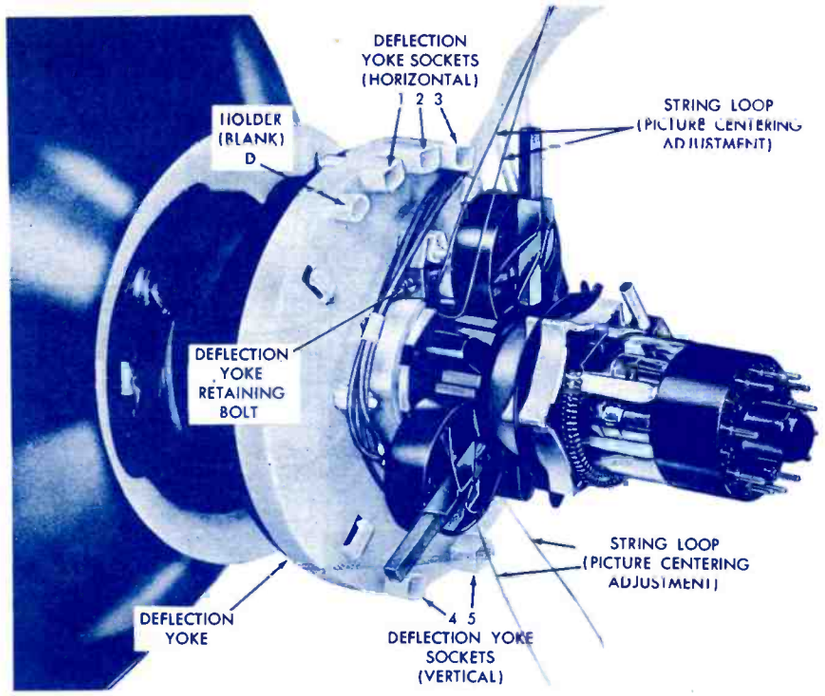
ZENITH
TV Color Chassis
29JC20

Electronic Technician
CIRCUIT DIGEST

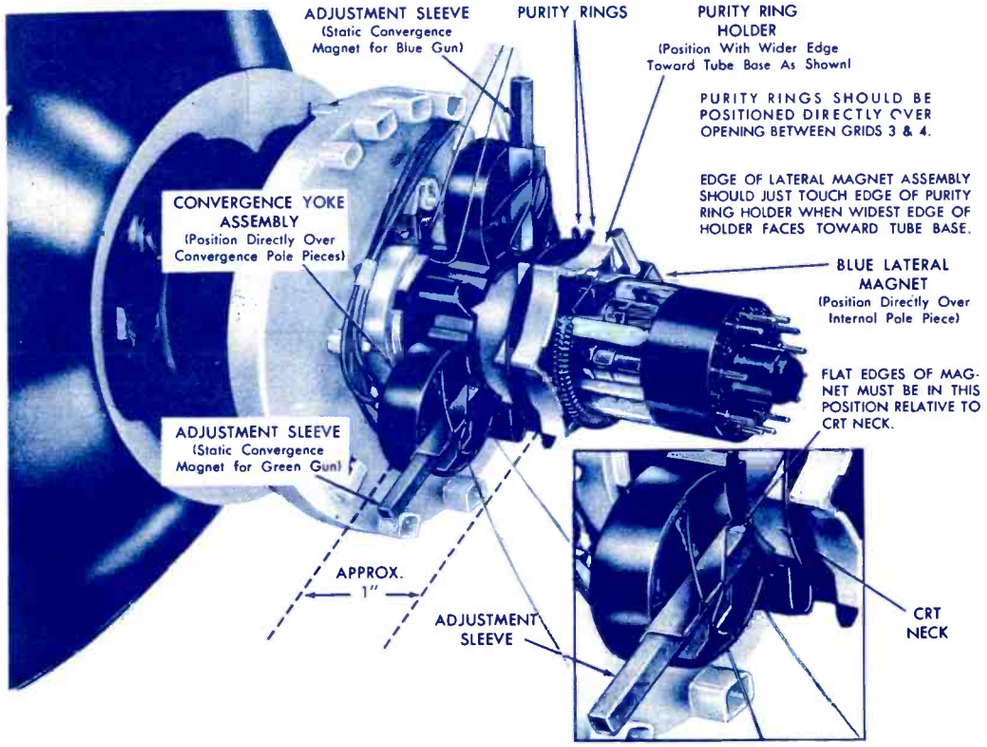
Bottom View of 29JC20 Chassis, Identifying Areas of the Receiver.

More Data on Reverse Side

Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota



Location of Components on Neck of Picture Tube.

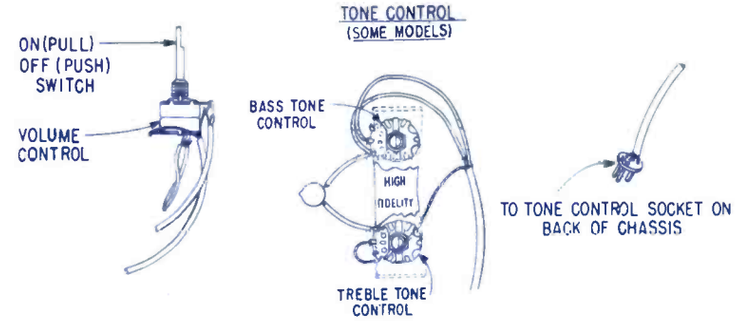


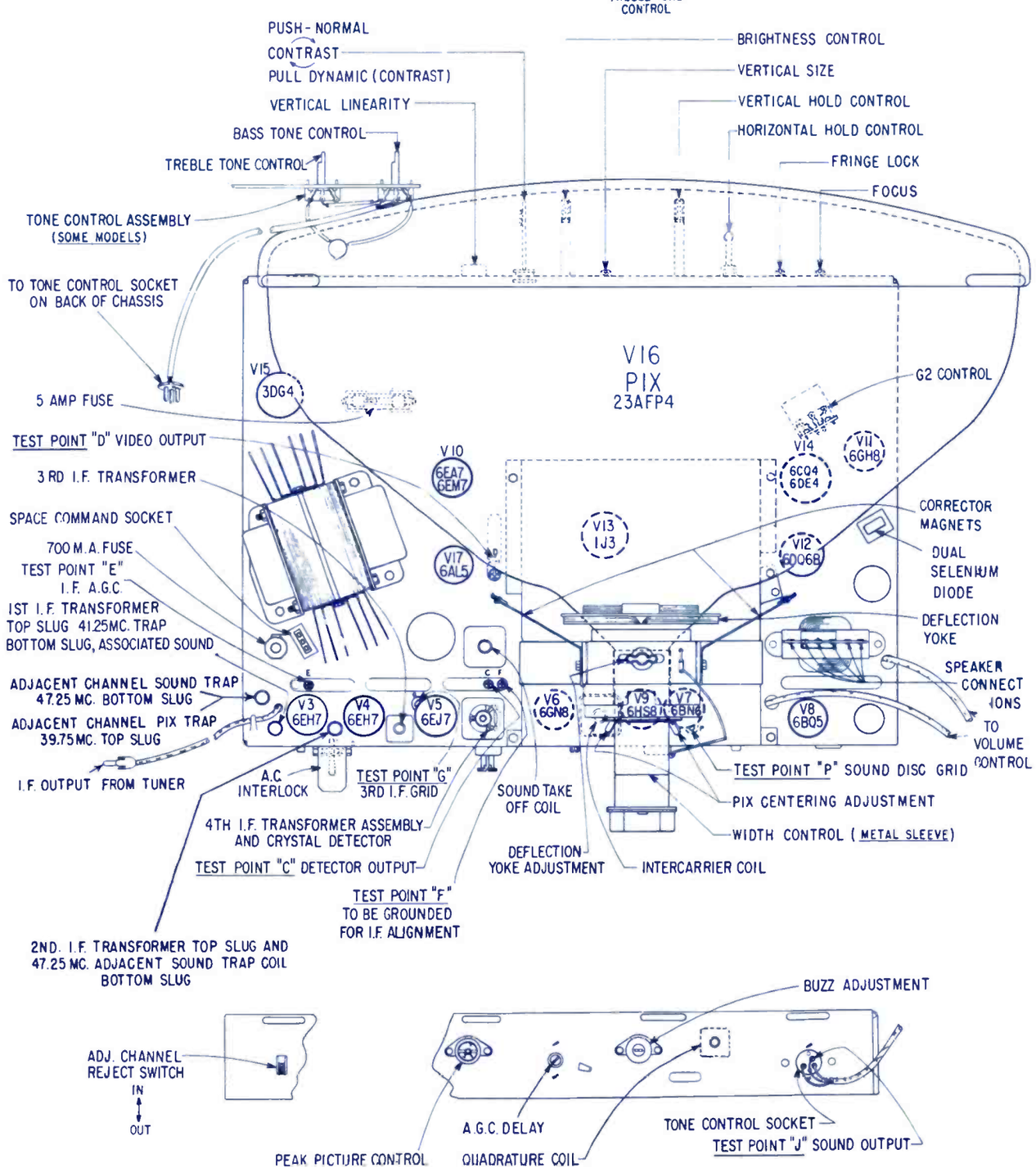
Rear View of Picture Tube, Showing Correct Positioning of Neck Components.

ZENITH
TV Color Chassis 29JC20
Electronic Technician
CIRCUIT DIGEST

ZENITH
TV Chassis 17G28 & 17G28Q
Electronic Technician
CIRCUIT DIGEST

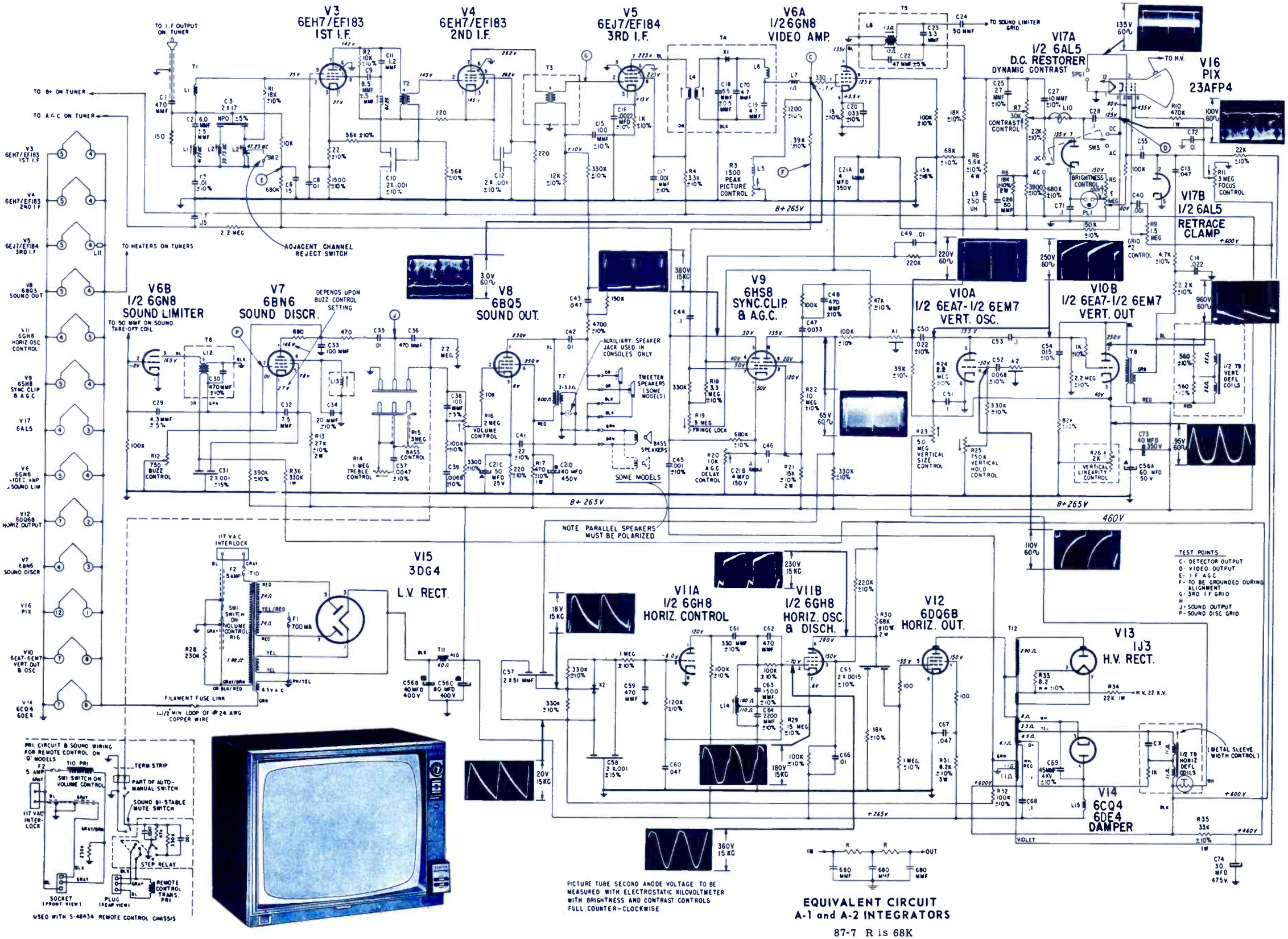
More Data on Reverse Side





ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

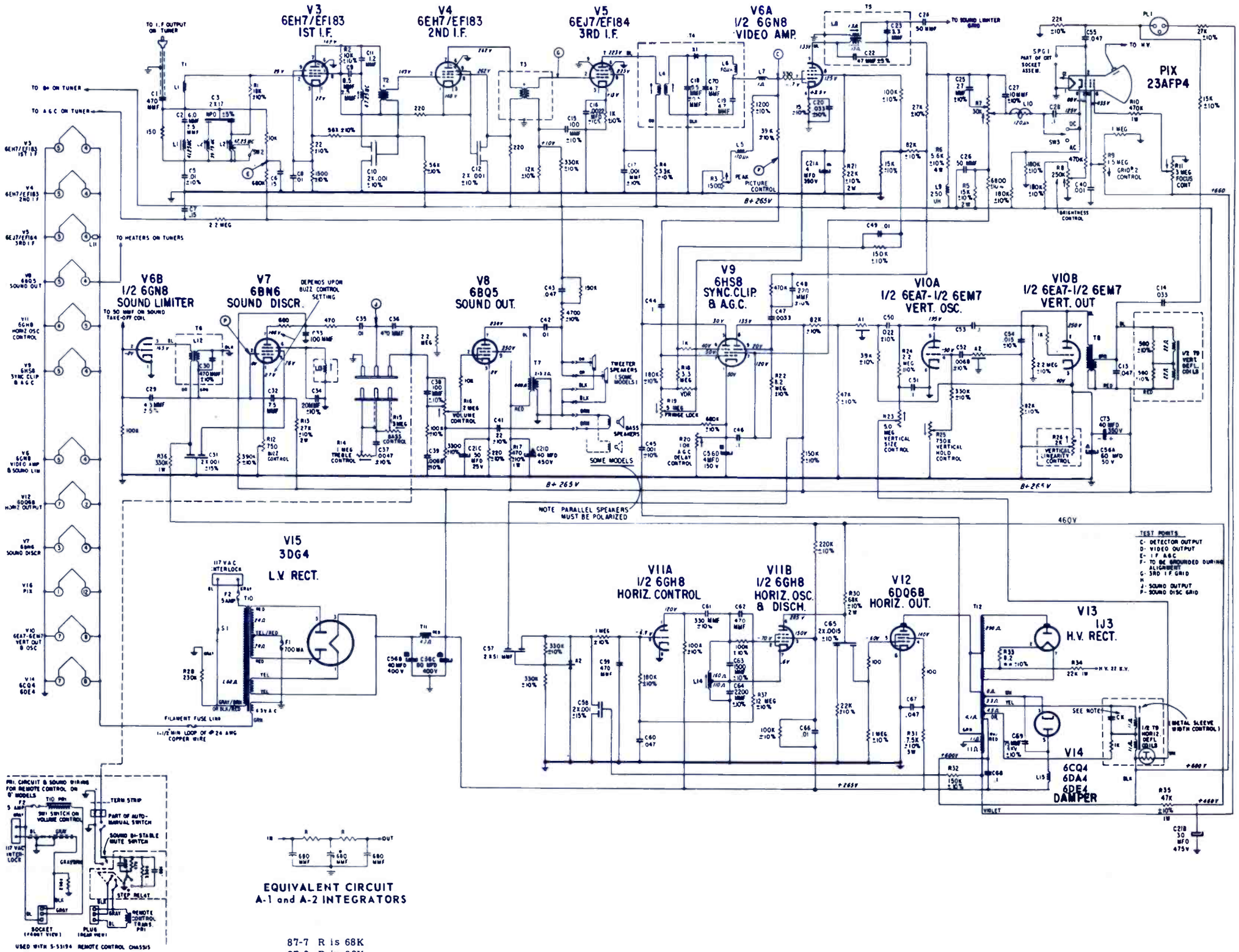
ZENITH
TV Chassis 17G28 & 17G28Q



Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota

ZENITH

TV Chassis 16J28QS



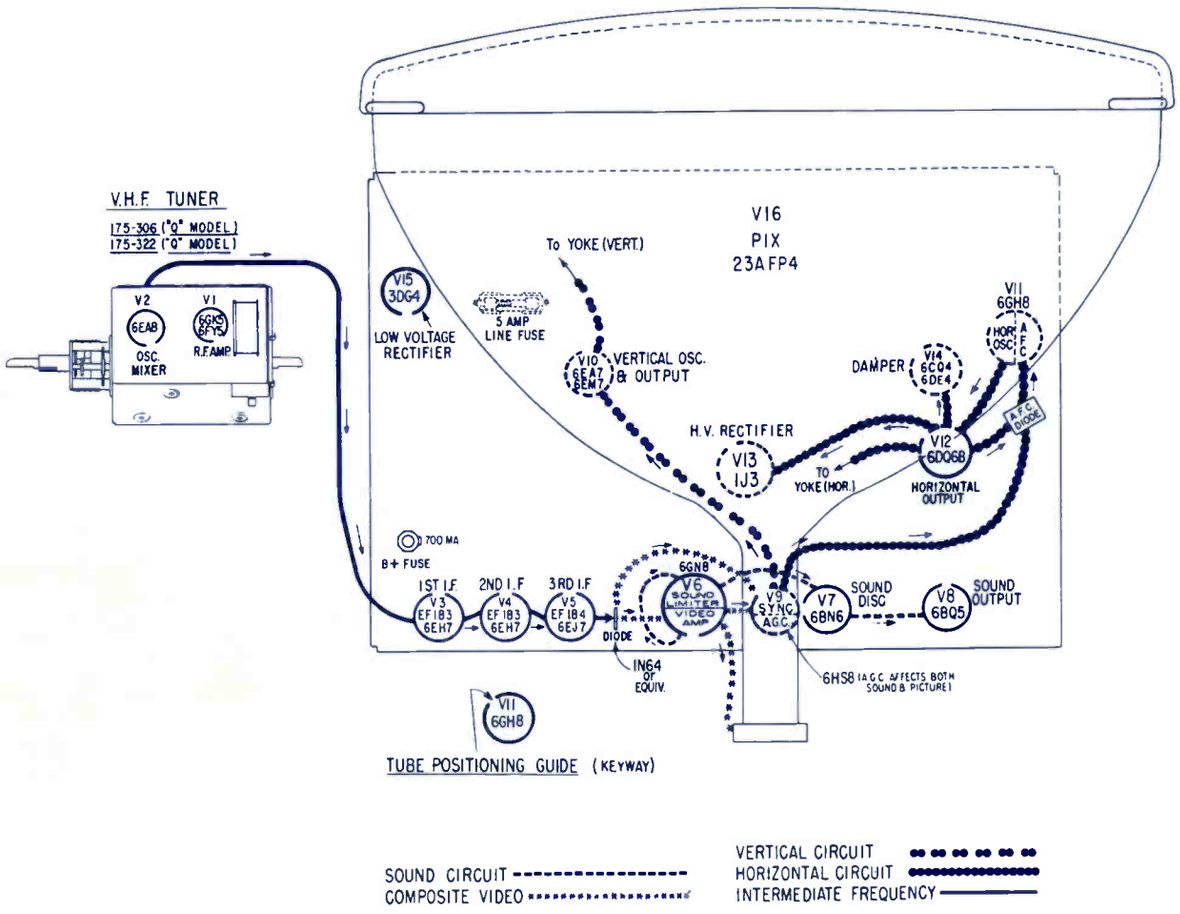
More Data on Reverse Side

ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

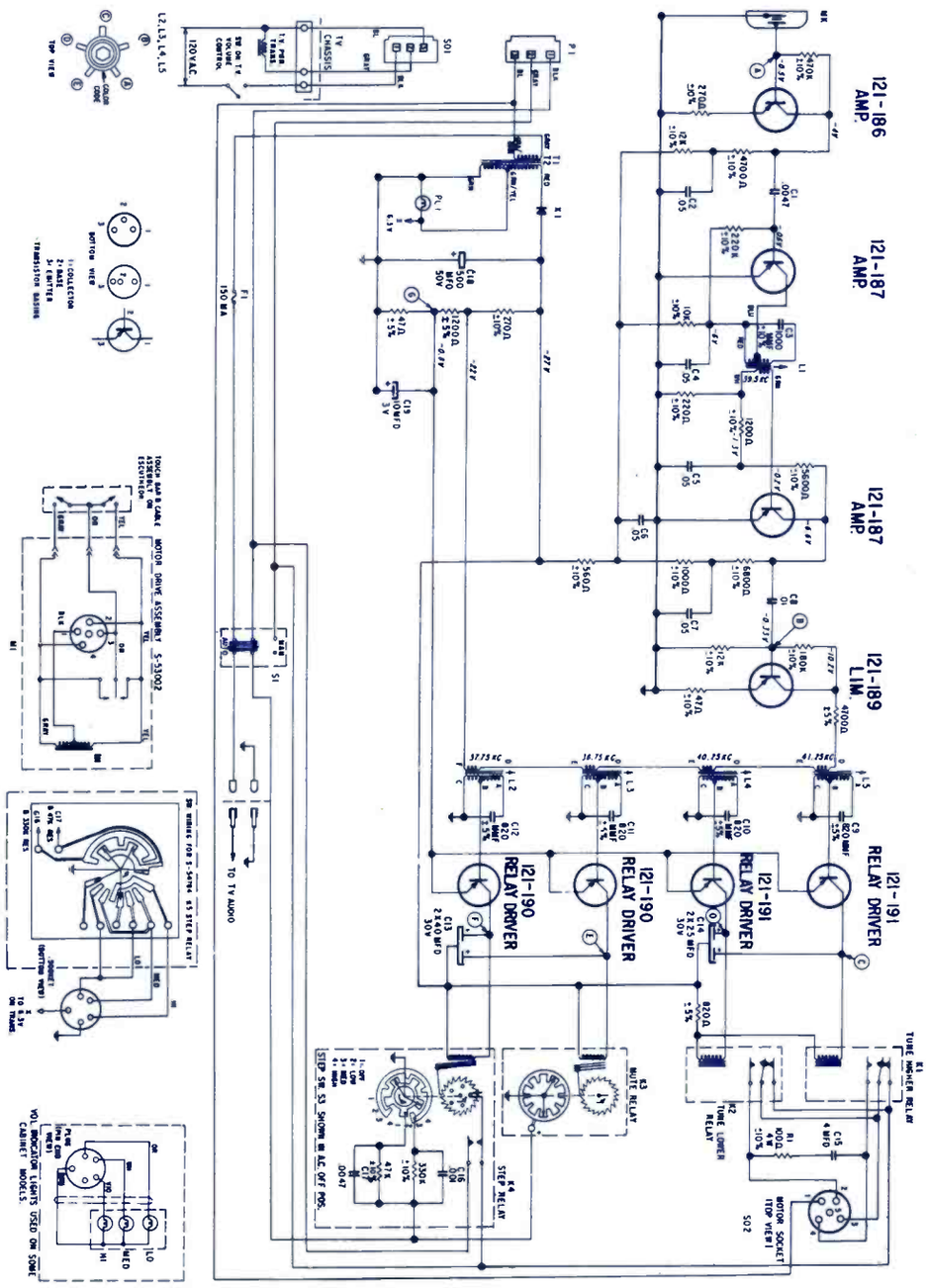
ZENITH

TV Chassis 16J28QS

ZENITH Space Command "400"



ITEM NO.	PART NO.	DESCRIPTION	
C1	22-14	.0047 MFD Disc Capacitor	500V
C2	22-3034	.05 MFD Disc Capacitor	25V
C3	22-3645	1000 MMFD Mica Capacitor ±10%	
C4	22-3034	.05 MFD Disc Capacitor	100V
C5	22-3034	.05 MFD Disc Capacitor	25V
C6	22-3661	.05 MFD Disc Capacitor	25V
C7	22-3034	.05 MFD Disc Capacitor	100V
C8	22-3	.01 MFD Disc Capacitor	25V
C9	22-3644	820 MMFD Mica Capacitor ±5%	500V
C10	22-3644	820 MMFD Mica Capacitor ±5%	100V
C11	22-3644	820 MMFD Mica Capacitor ±5%	100V
C12	22-3644	820 MMFD Mica Capacitor ±5%	100V
C13	22-3643	2 x 40 MFD Electrolytic Capacitor	30V
C14	22-3642	2 x 25 MFD Electrolytic Capacitor	30V
C15	22-2893	4 MFD Electrolytic 60 Cycle Non Polarized	200V
C16	22-17	.001 MFD Disc Capacitor	1000V
C17	22-14	.0047 MFD Disc Capacitor	500V
C18	22-3640	500 MFD Electrolytic Capacitor	50V
C19	22-2984	10 MFD Electrolytic Capacitor	3V
R1	63-3210	100 Ohm ±10%	4W
L1	S-54580	Interstage Coil Winding Assembly	
L2	S-54575	Detector Coil Assembly (37.75KC)	
L3	S-54576	Detector Coil Assembly (38.75KC)	
L4	S-54577	Detector Coil Assembly (40.25KC)	
L5	S-54578	Detector Coil Assembly (41.25KC)	
K1	195-11	Relay	
K2	S-54536	Sound B1-Stable Relay Assembly	
K3	S-54538	Step Volume Relay Assembly (on S-52494)	
K4	S-54784	Step Volume Relay Assembly (on S-55014)	
K5	85-645	Auto-Manual Switch	
S1	S-52948	Housing, Wire, & Terminal Assy.	
P1	100-249	Pilot Light Bulb	
PL1	S-52356	Socket Assembly on TV Set	
SO1	78-1036	Motor Socket	
SO2	212-35	Selenium Rectifier	
X1	95-1927	Power Transformer (on S-52494)	
T1	95-1950	Power Transformer (on S-55014)	
T2	S-54591	Microphone	
MK	136-52	150 MA Slo-Blo Type 3AG	
F1	S-53002	Drive Motor	
M1			



More Data on Reverse Side

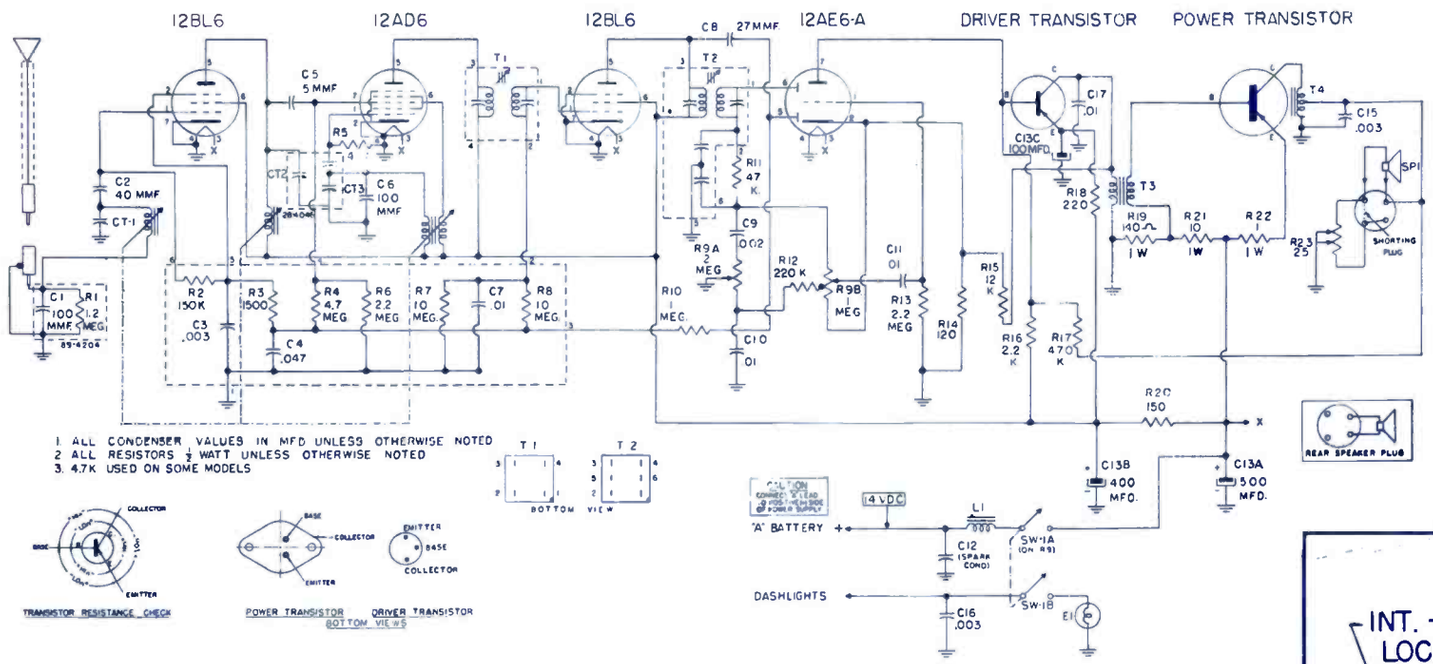
Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota

AUTOMATIC RADIO

Auto Radio
1959, 1960 Chevrolet

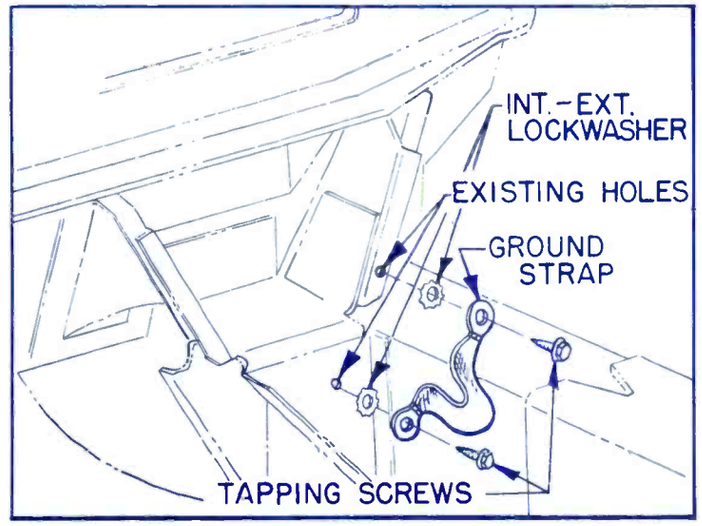
Pin	12BL6 RF Res	V	12AD6 Conv. Res	V	12BL6 Res	V	12AE6 Res	V
1	5 MEG	-.35	50K ohms	-.5	8 MEG	-.4	2.2 MEG	-.6
2	5 MEG	-.6	1 ohm	0	0	0	120 ohms	0
5	80 ohms	11.8	110 ohms	11.8	140 ohms	11.8	6 MEG	-.2
6	70 ohms	11.8	70 ohms	11.8	70 ohms	11.8	500 K	-.6
7	300 ohms	.0	MEG	-.25	0	0	150	10

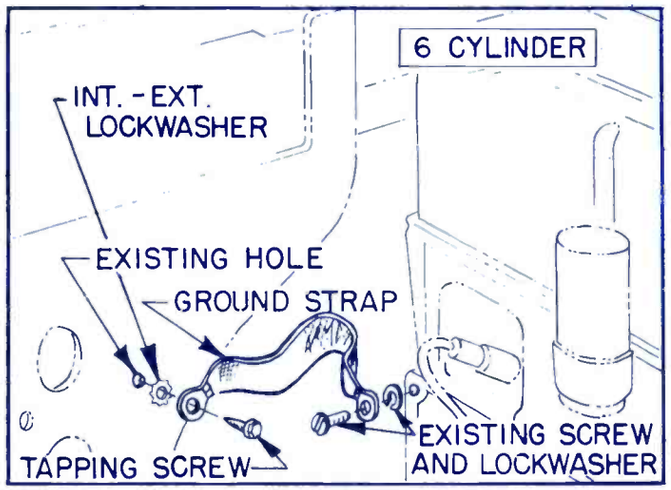
TRANSISTOR Power Res	V	Pin	Driver Res	V
30	11.5	BASE	150	10
3.8 ohm	11	EMMITTER	330	11
0	0	COLLECTOR	170	1



MOTOR NOISE ELIMINATION

On all vehicles except those equipped with the 348 engine, install one strap from the body mounting bracket to the dash-frame brace on the right side only.

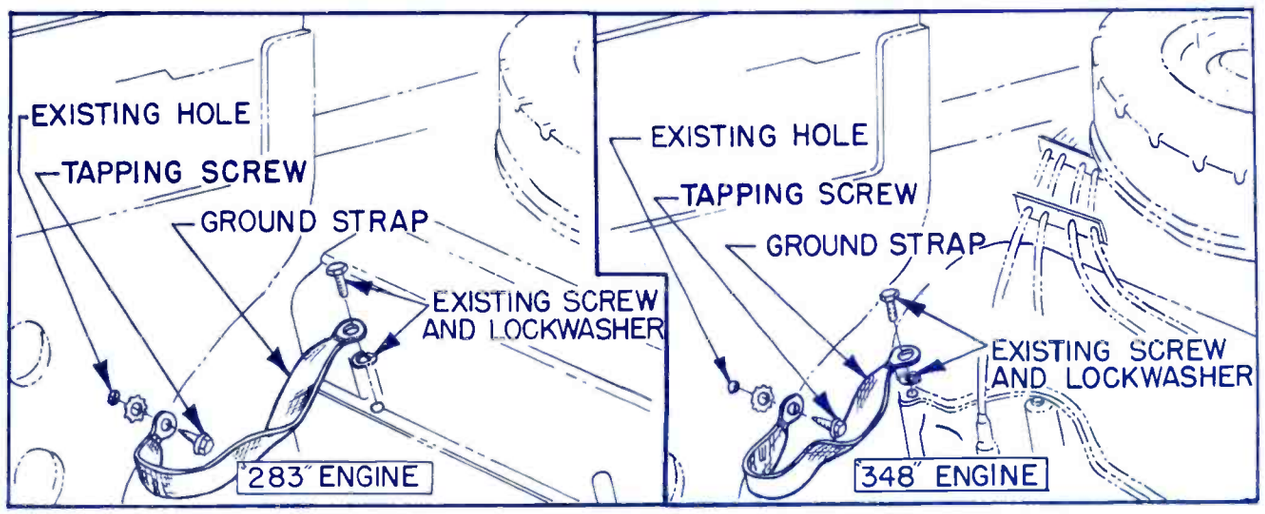


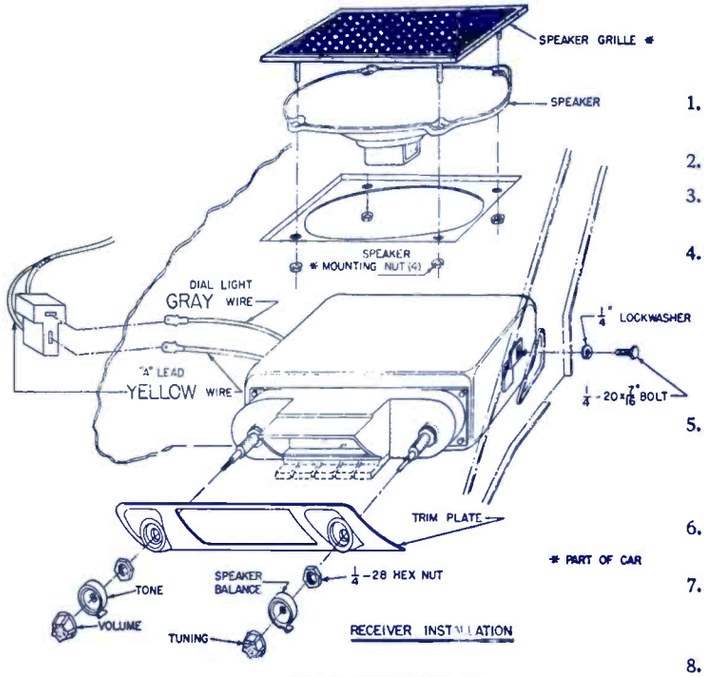


INSTALLATION OF GROUND STRAPS

On vehicles equipped with a six cylinder engine, install one strap to the existing screw and lockwasher. Attach the other end of strap to the dash with a tapping screw and an internal-external tooth lock-washer.

On vehicles equipped with a 283 engine (left) or a 348 engine (right) install one strap to the rocker panel cover, using the existing screw and lockwasher. Attach the other end of the strap to the dash with a self-tapping screw and internal-external lockwasher.





RADIO INSTALLATION
PUSH-BUTTON MODEL ILLUSTRATED

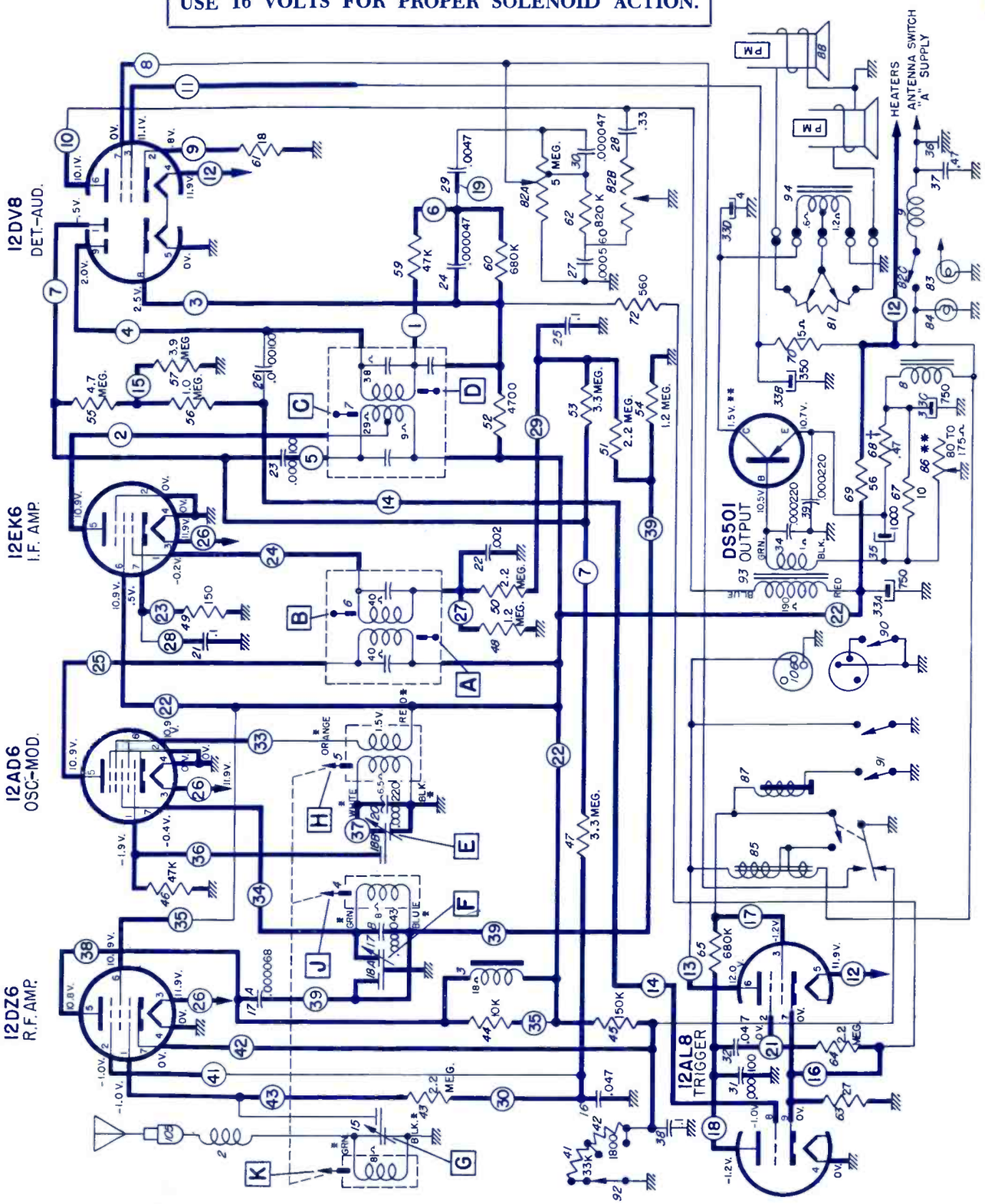
INSTALLATION

1. Remove dummy cover plate and speaker grille.
2. Install speaker as illustrated.
3. Remove knobs, nuts and trim plate from radio.
4. Position radio behind instrument panel with mounting bushings protruding through control holes in panel. Place trim plate over mounting bushings and attach radio to instrument panel by replacing mounting nuts. Retain radio in mounted position by tightening nuts finger tight.
5. Slip lockwasher over mounting bolt. Insert bolt through re-inforcement brace and into captive floating nut on rear bracket. Secure radio by tightening bolt.
6. Tighten mounting nuts securely and replace knobs.
7. Connect "A" leads as illustrated. Install fuse in Junction block terminals designated "Radio."
8. Turn on radio and allow it to warm up for a few minutes. Raise antenna to maximum height and tune in a weak station near 1400KC (14 on dial scale). Adjust antenna compensator for maximum volume.

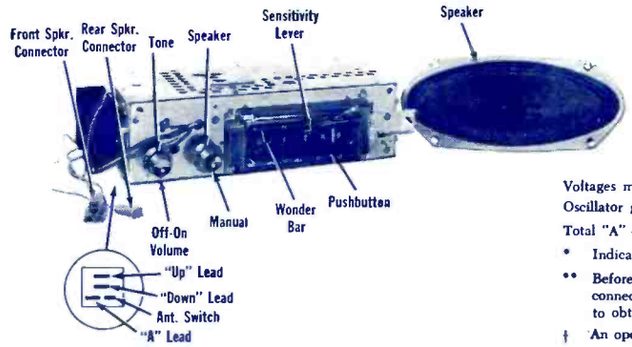
ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

DELCO
Model 7276605
Auto Radio 1961 Cadillac

IF RADIO IS POWERED BY BATTERY ELIMINATOR, USE 16 VOLTS FOR PROPER SOLENOID ACTION.



PRINTED CIRCUIT SHOWN IN HEAVY LINES



SCHEMATIC DATA

Voltages measured terminal to chassis with a VTVM—No signal—12.0 volts
Oscillator grid voltage taken tuned to 1000 kc.

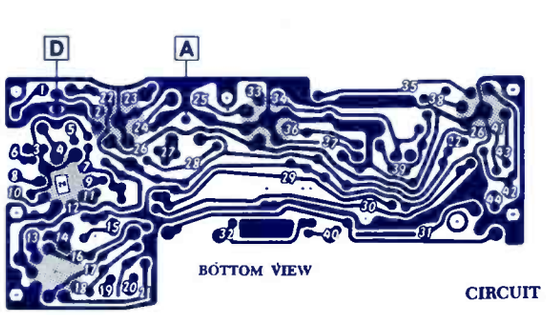
Total "A" drain 2.5 amperes.

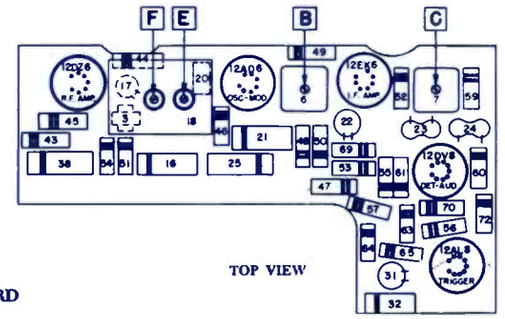
* Indicates lead from tuning coil assembly.

** Before measuring transistor voltages be sure speaker and transformer are connected to radio. If transistor is replaced adjust bias potentiometer to obtain the proper collector voltage.

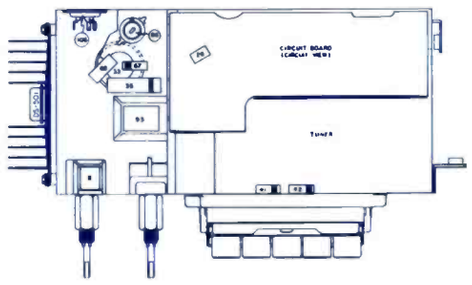
† An open fuse resistor will give 0 volts collector voltage.

NUMBERS ON PRINTED CIRCUIT BOARD CORRESPOND WITH NUMBERS IN CIRCLES ON SCHEMATIC DIAGRAM.

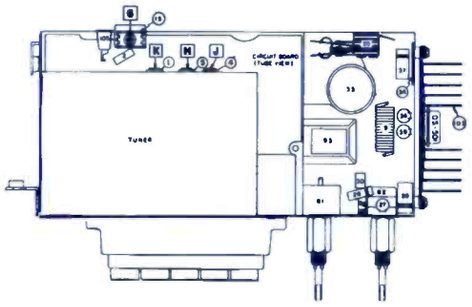




CIRCUIT BOARD



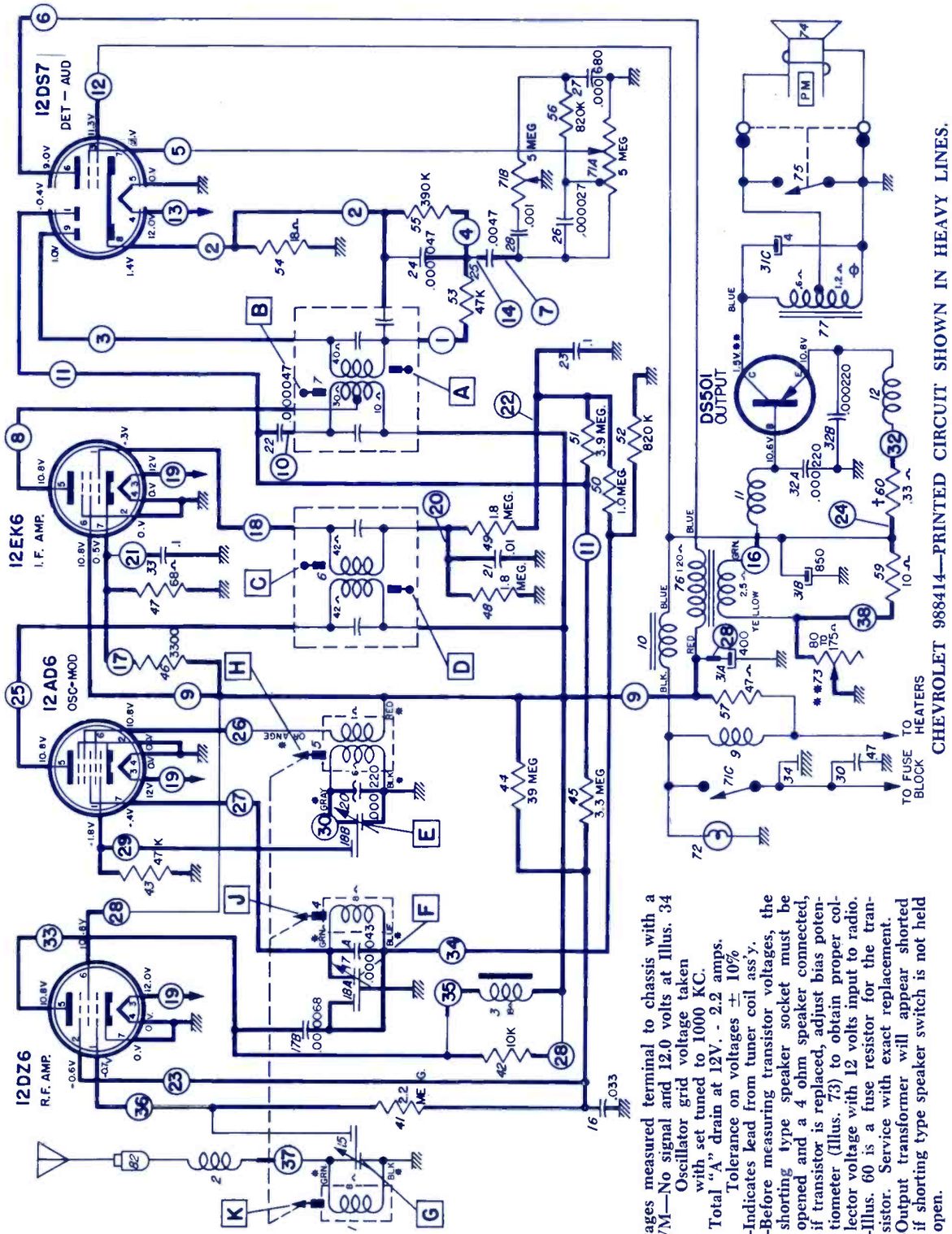
CIRCUIT VIEW



TUBE VIEW

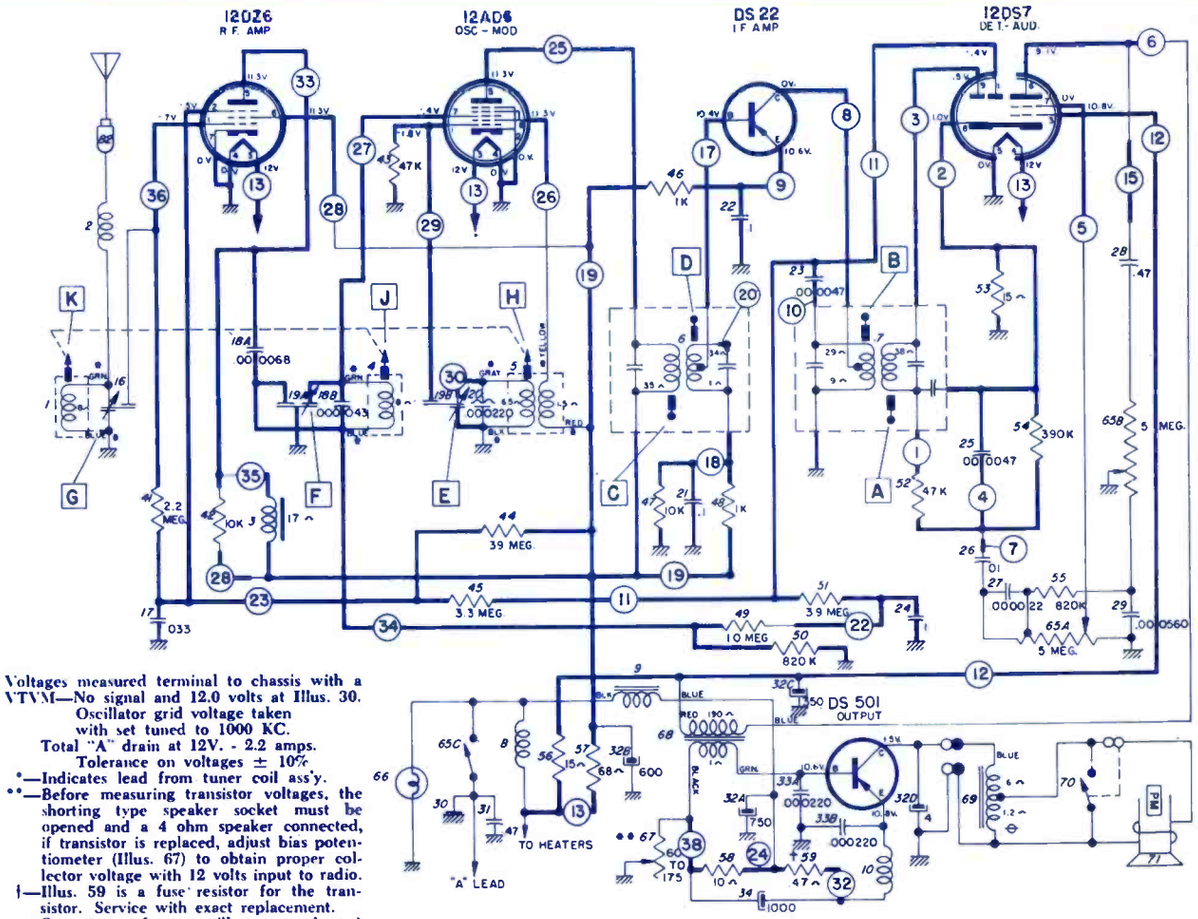
Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota

DELCO
Auto Radio 1961
Chevrolet Model 988414

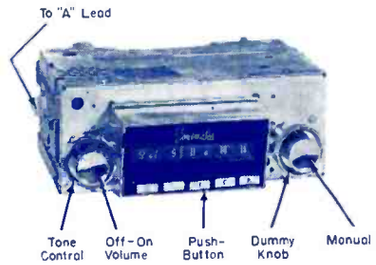


Voltages measured terminal to chassis with a VTVM—No signal and 12.0 volts at Illus. 34
Oscillator grid voltage taken with set tuned to 1000 KC.
Total "A" drain at 12V. - 2.2 amps.
Tolerance on voltages ± 10%
•—Indicates lead from tuner coil ass'y.
••—Before measuring transistor voltages, the shorting type speaker socket must be opened and a 4 ohm speaker connected, if transistor is replaced, adjust bias potentiometer (Illus. 73) to obtain proper collector voltage with 12 volts input to radio.
†—Illus. 60 is a fuse resistor for the transistor. Service with exact replacement.
ϕ—Output transformer will appear shorted if shorting type speaker switch is not held open.

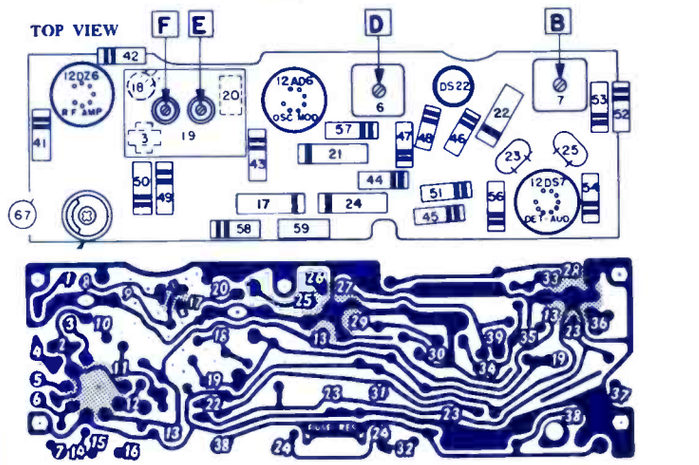
DELCO
Auto Radio 1961 Buick
Model 980134

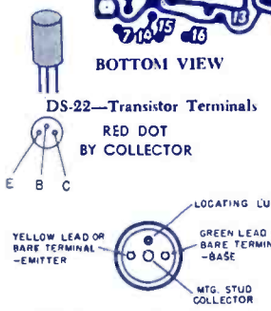


Voltages measured terminal to chassis with a VTVM—No signal and 12.0 volts at Illus. 30.
Oscillator grid voltage taken with set tuned to 1000 KC.
Total "A" drain at 12V. - 2.2 amps.
Tolerance on voltages ± 10%
•—Indicates lead from tuner coil ass'y.
••—Before measuring transistor voltages, the shorting type speaker socket must be opened and a 4 ohm speaker connected, if transistor is replaced, adjust bias potentiometer (Illus. 67) to obtain proper collector voltage with 12 volts input to radio.
†—Illus. 59 is a fuse resistor for the transistor. Service with exact replacement.
ϕ—Output transformer will appear shorted if shorting type speaker switch is not held open.



Output transformer is mounted on speaker. Do not connect leads from radio directly to a speaker only.



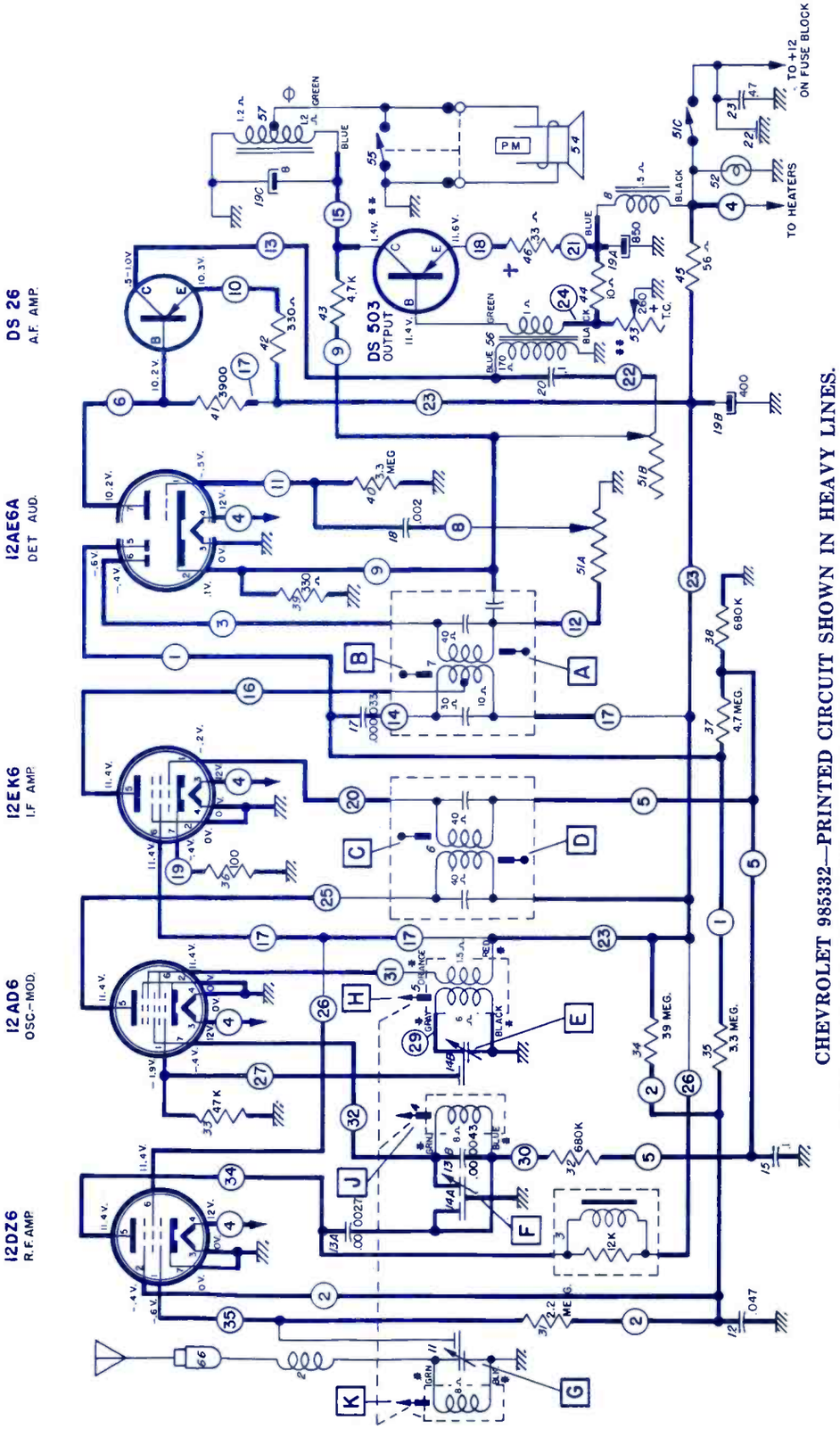


Resistance Readings on DS22 Transistor (mounted in circuit)

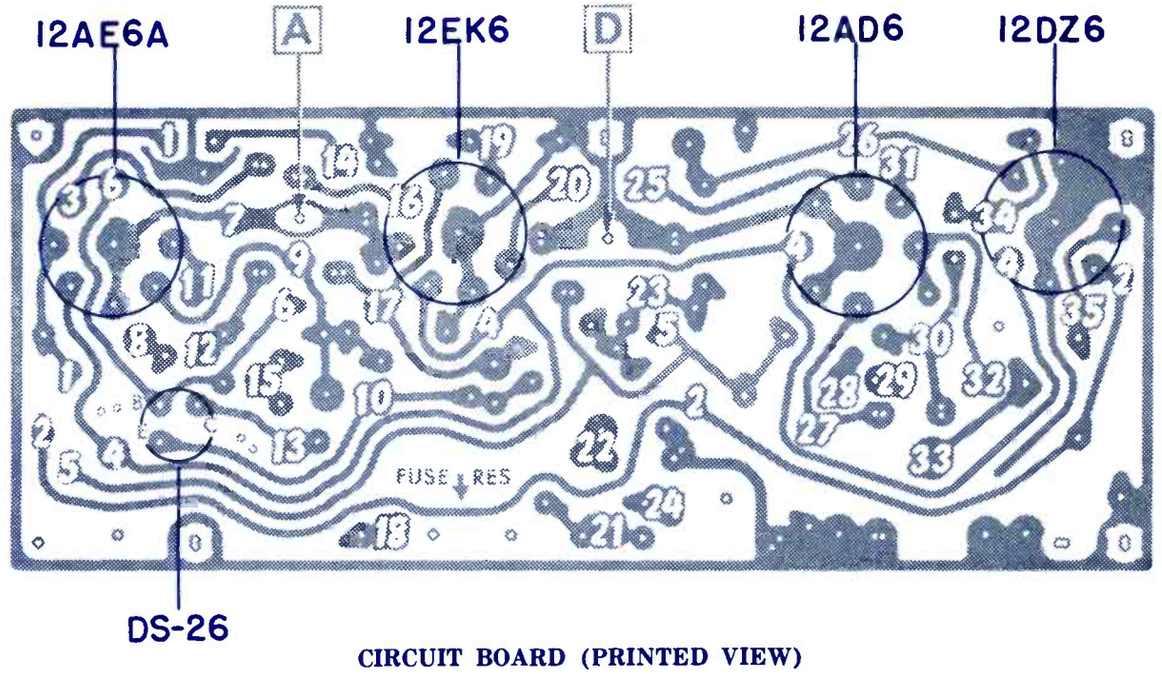
Measured Between	R X 10 Range		R X 100 Range	
	Forward	Reverse	Forward	Reverse
Base (B) & Collector (C)	20 Ω	1000 Ω	200 Ω	1000 Ω
Base (B) & Emitter (E)	20 Ω	2000 Ω	200 Ω	2000 Ω
Emitter (E) & Collector (C)	35 Ω	1000 Ω	200 Ω	1000 Ω

NOTE: Transistor defects will affect transistor voltages or resistance. (See bulletin 6D-206.)

CAUTION: COLLECTOR VOLTAGE OF DS-503 TRANSISTOR MUST BE MEASURED AT TRANSISTOR CASE (NOT HEAT RADIATOR).



CHEVROLET 985332—PRINTED CIRCUIT SHOWN IN HEAVY LINES.
VOLTAGES MEASURED TERMINAL TO CHASSIS WITH A VTVM—NO SIGNAL AND 12.0 VOLTS AT ILLUS. 22.
OSCILLATOR GRID VOLTAGE TAKEN WITH SET TUNED TO 1000 KC.
TOTAL "A" DRAIN AT 12V.—1.4 AMPS.
TOLERANCE ON VOLTAGES ± 10%
*—INDICATES LEAD FROM TUNER COIL ASS'Y.
**—BEFORE MEASURING TRANSISTOR VOLTAGES, THE SHORTING TYPE SPEAKER SOCKET MUST BE OPENED AND A 4 OHM SPEAKER CONNECTED. IF TRANSISTOR IS REPLACED, ADJUST BIAS POTENTIOMETER (ILLUS. 53) TO OBTAIN PROPER COLLECTOR VOLTAGE WITH 12 VOLTS INPUT TO RADIO.
+—ILLUS. 46 IS A FUSE RESISTOR FOR THE TRANSISTOR.



CIRCUIT BOARD (PRINTED VIEW)

SUPPLEMENT TO BULLETIN 6D-884 CHEVROLET RADIO MODEL 985332

There has been a circuit design change in subject model radio which reduces the minimum volume output. To effect this change, the values of two resistors were reduced. Should you elect to make this change on early production sets, BOTH resistors must be changed as follows:

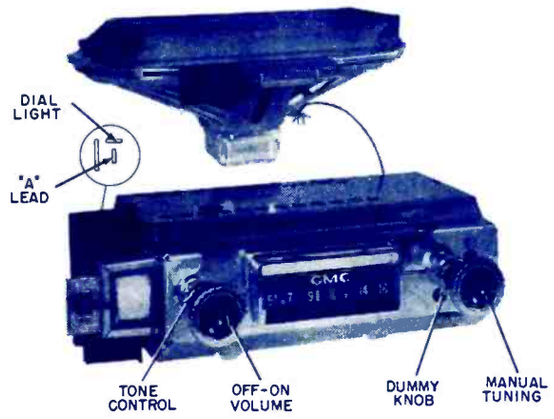
Early Production:

ILLUS. NO.	SERVICE PART NO.	DESCRIPTION
39	1213224	Res., 330 ohm, ½ watt
43	7280230	Res., 4700 ohm, ½ watt

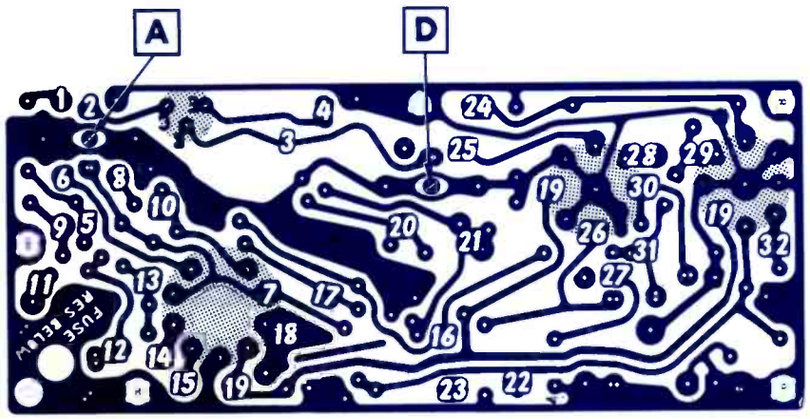
Late Production Change:

39	1214538	Res., 33 ohm, ½ watt
43	1213486	Res., 470 ohm, ½ watt

DELCO
GMC Truck Radio
Model 2233850

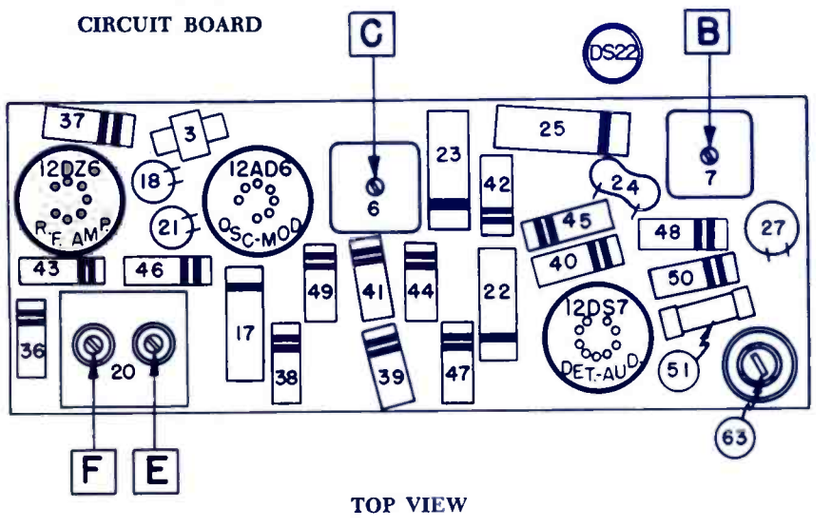


I.F. TRANSISTOR TERMINALS MARKED E, B, C ON CIRCUIT BOARD

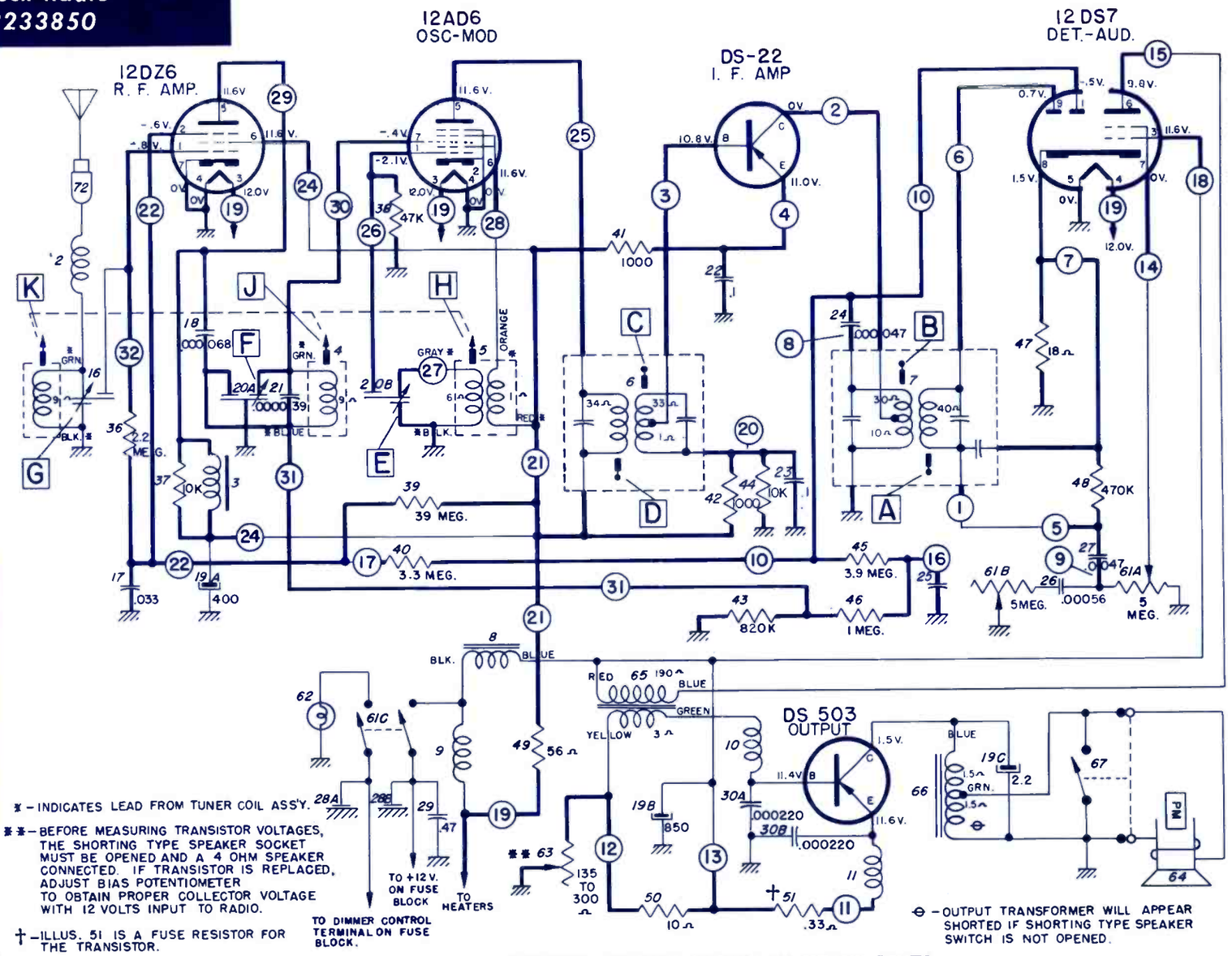


BOTTOM VIEW

CIRCUIT BOARD



TOP VIEW



* – INDICATES LEAD FROM TUNER COIL ASS'Y.

** – BEFORE MEASURING TRANSISTOR VOLTAGES, THE SHORTING TYPE SPEAKER SOCKET MUST BE OPENED AND A 4 OHM SPEAKER CONNECTED. IF TRANSISTOR IS REPLACED, ADJUST BIAS POTENTIOMETER TO OBTAIN PROPER COLLECTOR VOLTAGE WITH 12 VOLTS INPUT TO RADIO.

† – ILLUS. 51 IS A FUSE RESISTOR FOR THE TRANSISTOR.

⊖ – OUTPUT TRANSFORMER WILL APPEAR SHORTED IF SHORTING TYPE SPEAKER SWITCH IS NOT OPENED.

PRINTED CIRCUIT SHOWN IN HEAVY LINES.

Steps	Series Capacitor or Dummy Antenna	Connect Signal Generator To	Signal Generator Frequency	Tune Receiver To	Adjust In Sequence For Max. Output
1	0.1 Mfd.	12AD6 Grid (Pin #7)	262 KC	High Frequency Stop	A, B, C, D,
2	0.000082 Mfd.	Antenna Connector	1615 KC	High Frequency Stop	*E, F, G,
3	0.000082 Mfd.	Antenna Connector	600 KC	Signal Generator Signal	J, K
4	0.000082 Mfd.	Antenna Connector	1615 KC	High Frequency Stop	F, G

*Before making this adjustment check mechanical setting of oscillator core "H." The rear of the core should be 1⅝" from the mounting end of the coil form. (This measurement is readily made by inserting a suitable plug in the mounting end of the coil form.) Core adjustment should be made with a non-metallic screw driver.

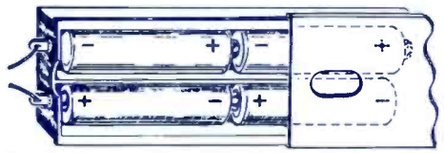
With the radio installed and the car antenna plugged in adjust the antenna trimmer "G" for maximum volume with the radio tuned to a weak station between 600 and 1000 KC (see sticker on case.)

ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

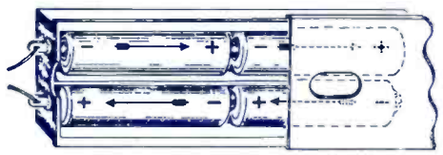
EMERSON
Portable Transistor Radio
Chassis 120528

MODEL 977 "FALCON"

BATTERY POLARITY

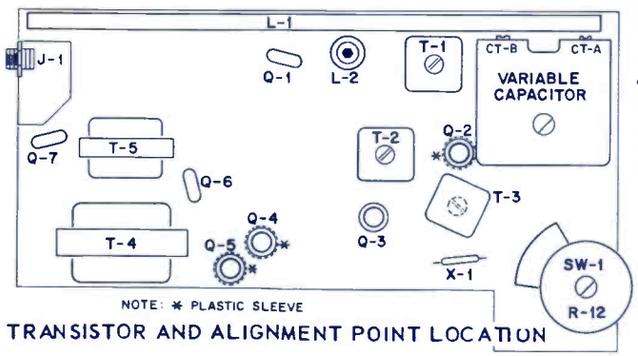


ARRANGEMENT OF LEAKPROOF PENLIGHT BATTERIES, SIZE "A-A"

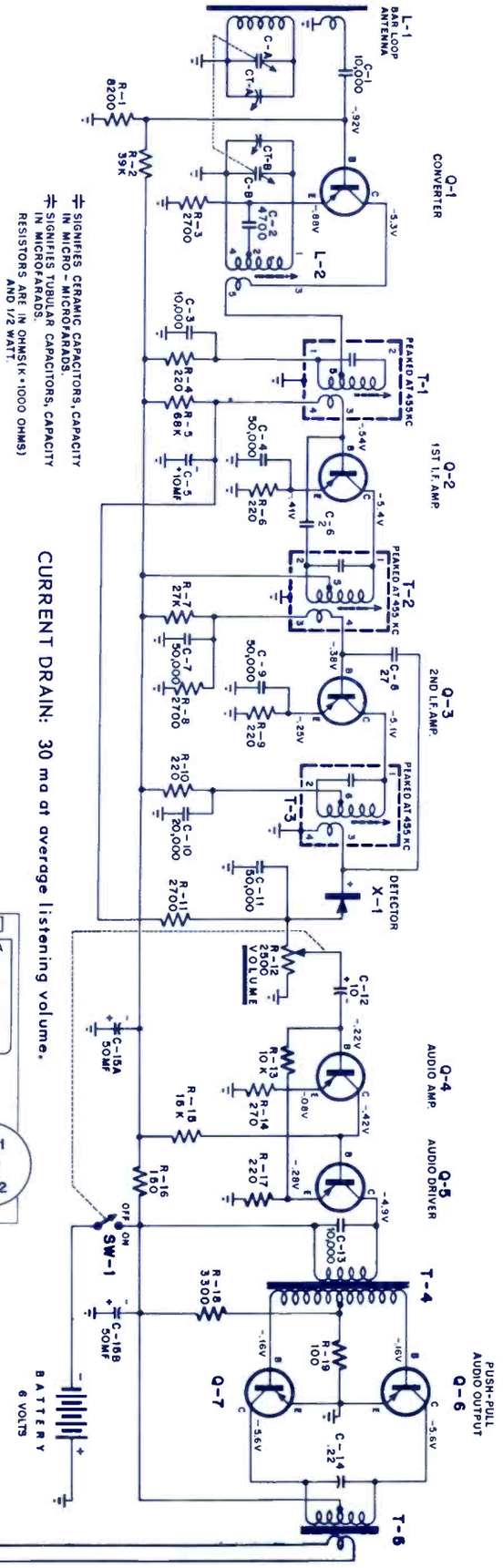


ARRANGEMENT OF MERCURY BATTERIES, EVEREADY E-9 OR MALLORY ZM-9.

WARNING: IF BATTERIES ARE REVERSED, RADIO MAY BE DAMAGED.



TRANSISTOR AND ALIGNMENT POINT LOCATION

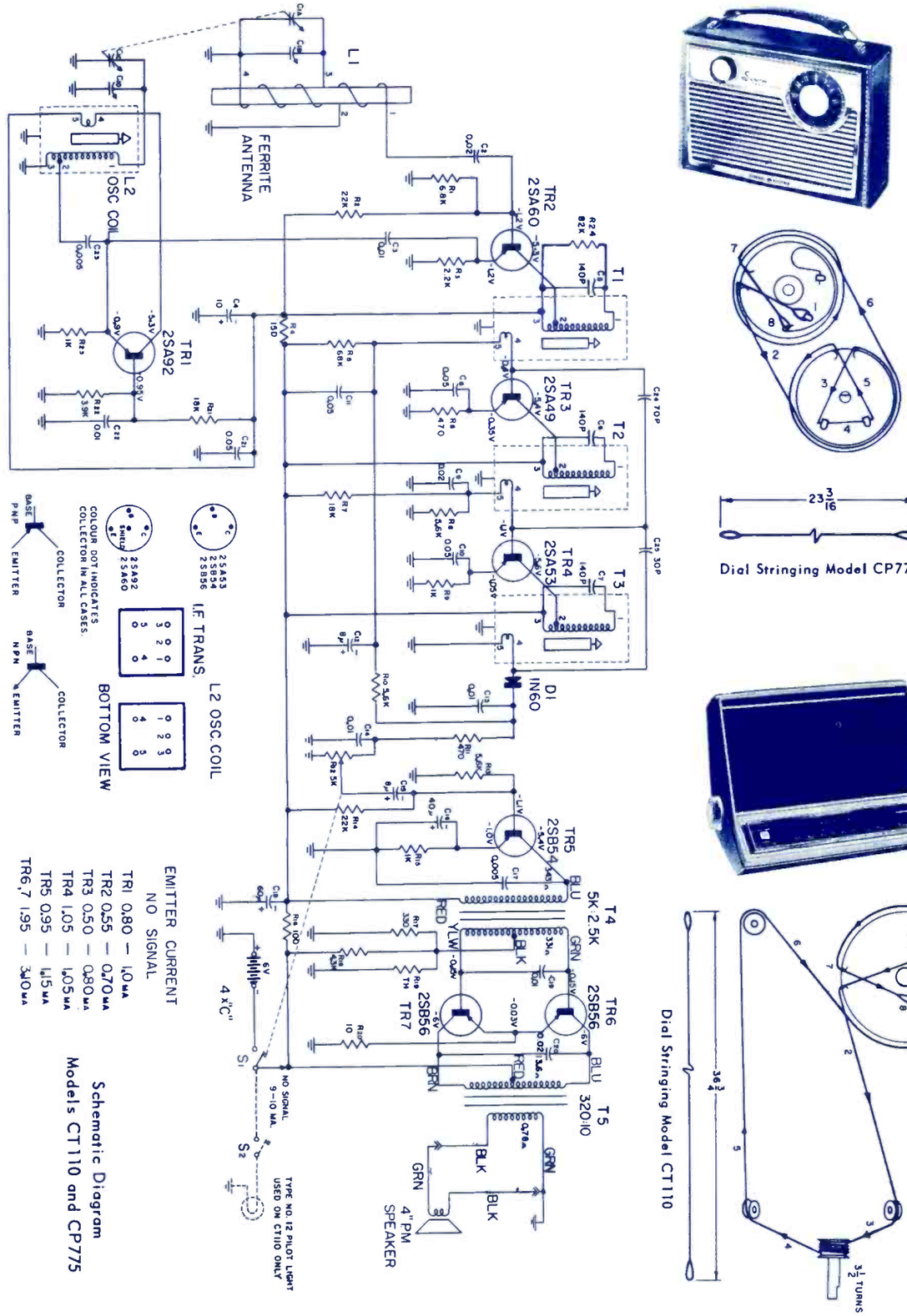


‡ SIGNIFIES CERAMIC CAPACITORS, CAPACITY IN MICRO-MICROFARADS.
‡ SIGNIFIES TUBULAR CAPACITORS, CAPACITY IN MICROFARADS.
RESISTORS ARE IN OHMS(K=1000 OHMS) AND 1/2 WATT.

CURRENT DRAIN: 30 ma at average listening volume.

ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

GENERAL ELECTRIC
Transistor Radio
Models CT110, CP775

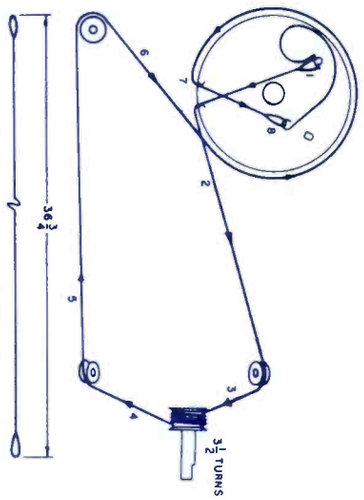


EMITTER CURRENT
NO SIGNAL

TR1 0.80 — 1.0 MA
TR2 0.55 — 0.70 MA
TR3 0.50 — 0.80 MA
TR4 1.05 — 1.05 MA
TR5 0.95 — 1.15 MA
TR6,7 1.95 — 3.0 MA

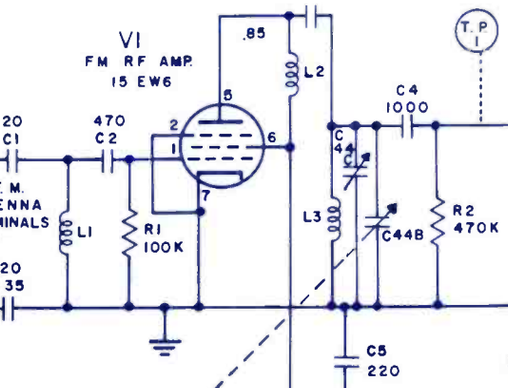
Schematic Diagram
Models CT110 and CP775

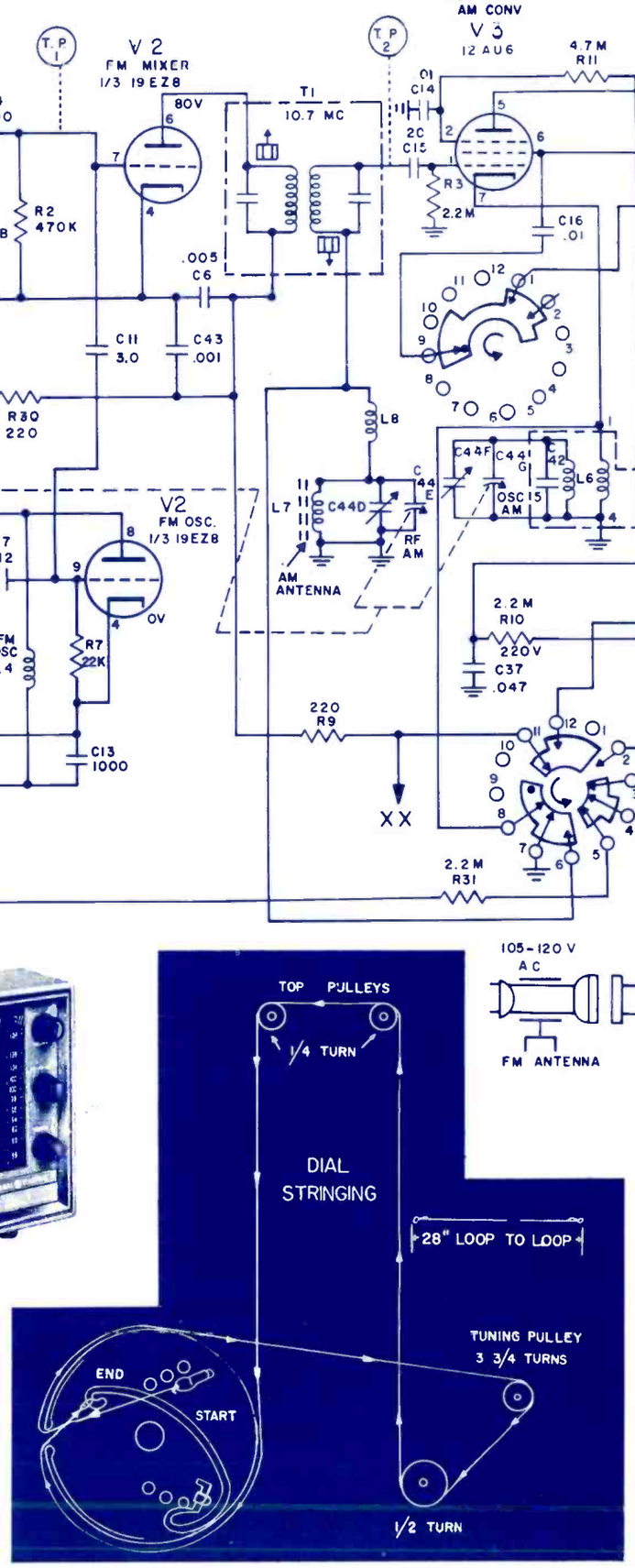
Dial Stringing Model CP775



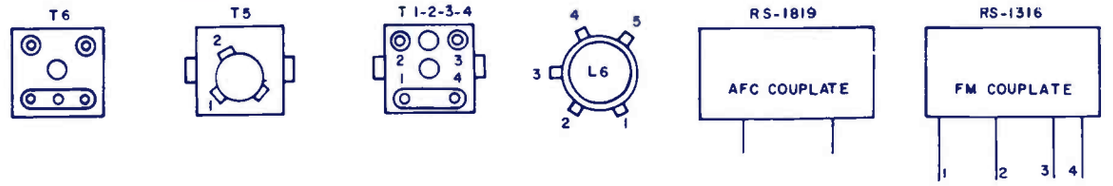
Dial Stringing Model CT110

GENERAL ELECTRIC
AM-FM Radio
Model C510A





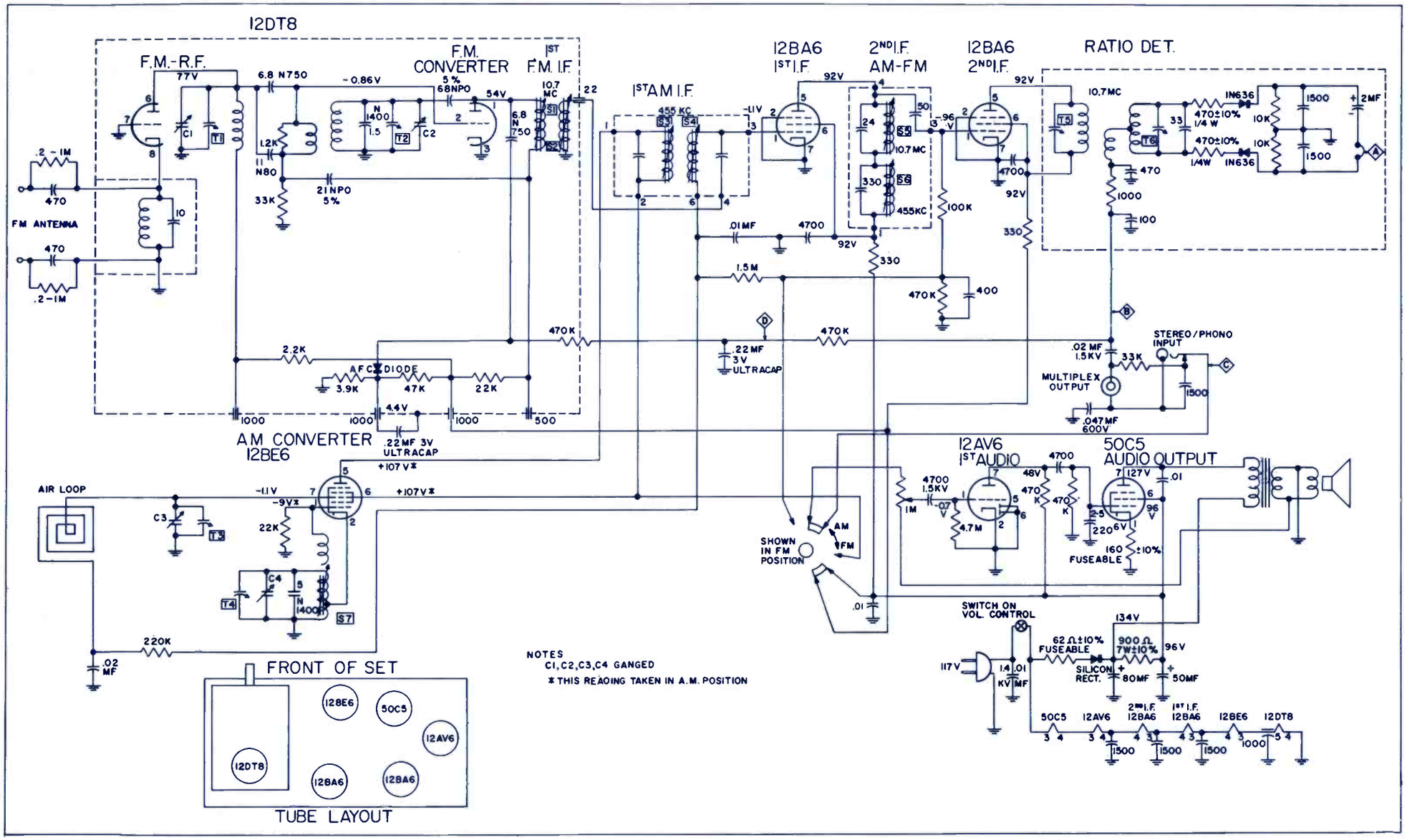
BOTTOM VIEWS

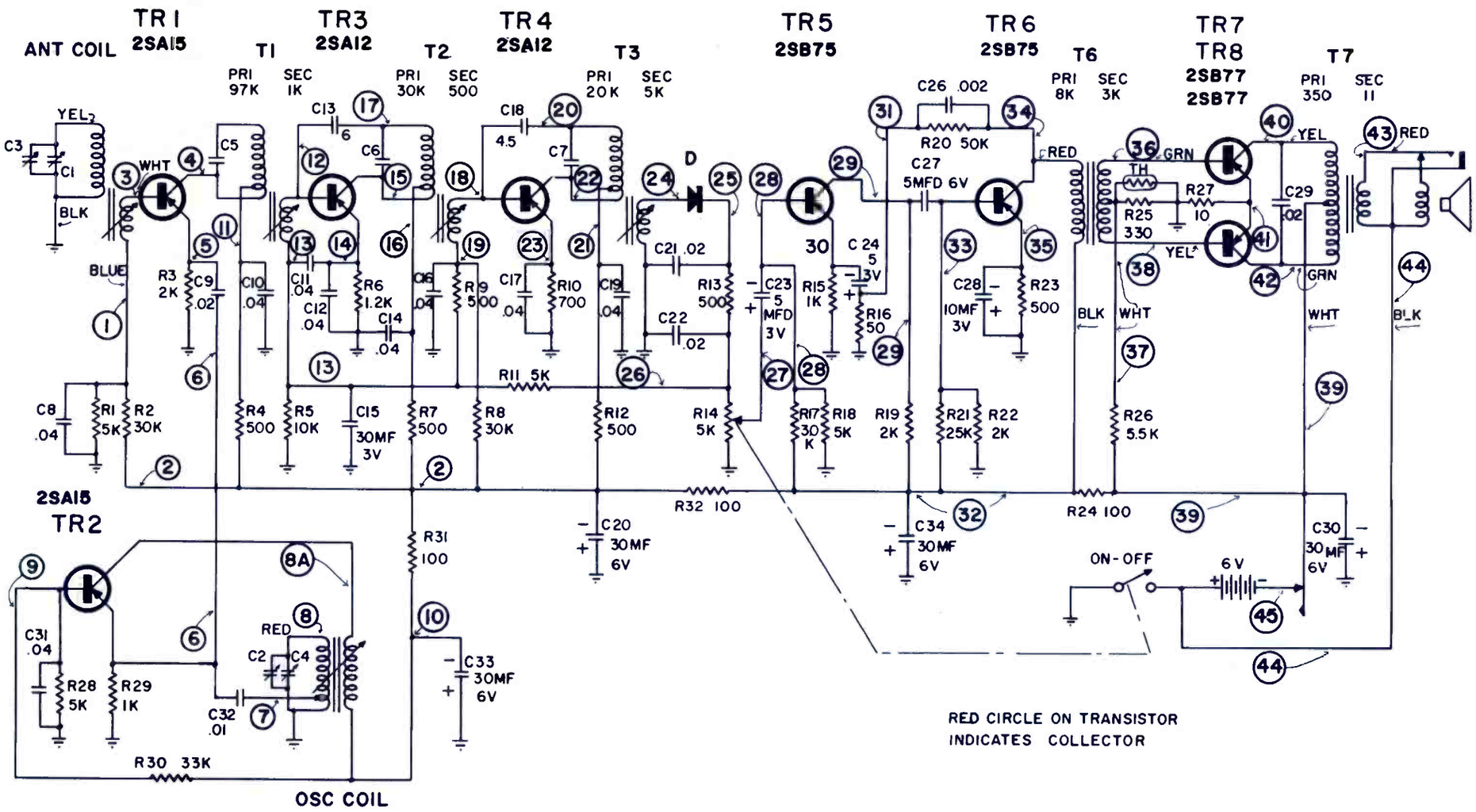


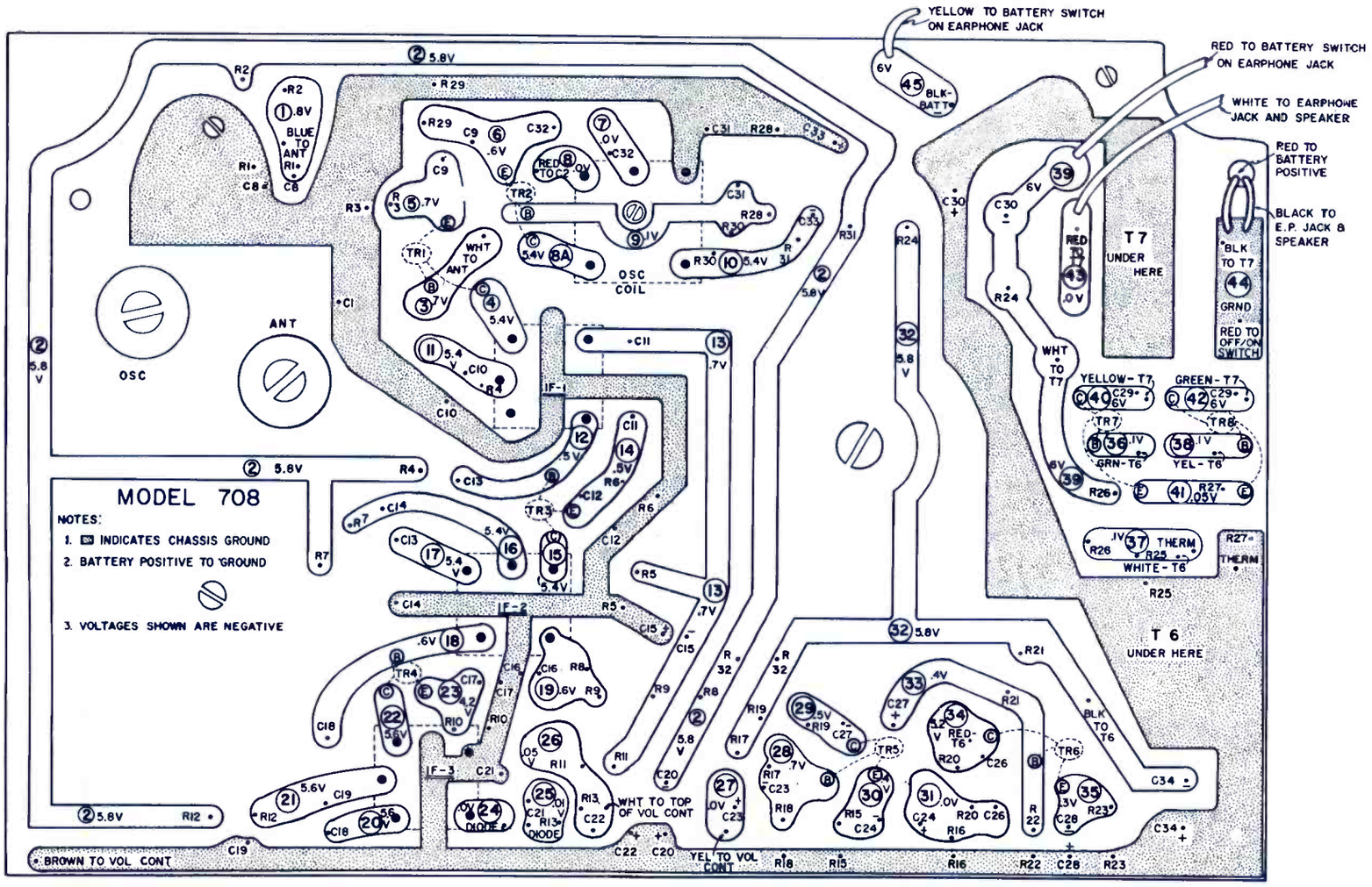
NOTE: BAND SWITCH IN AFC POSITION.

GRANCO

AM/FM Radio Model 704



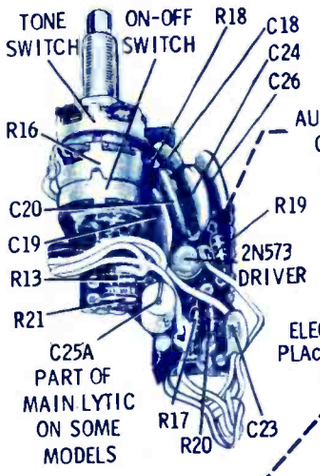


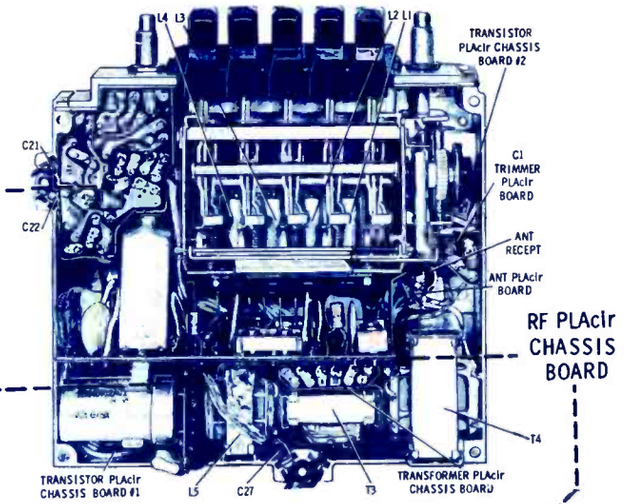


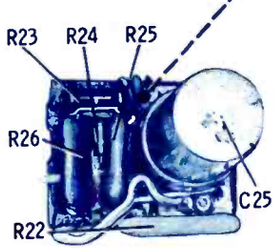
Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota

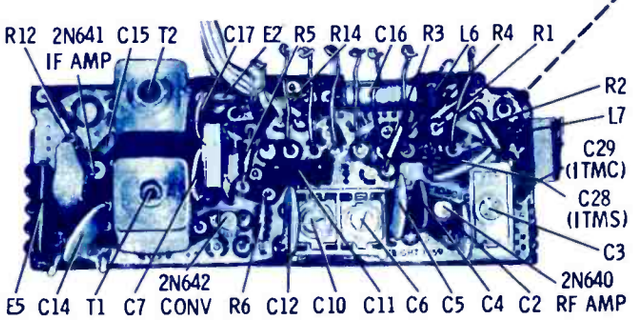
ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

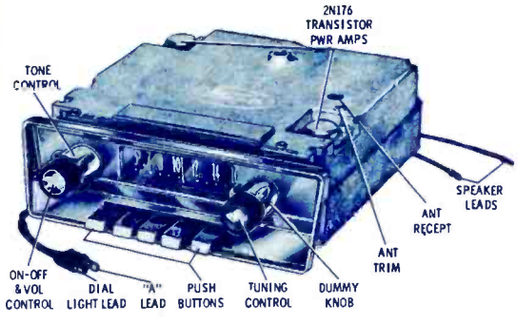
MOTOROLA
Auto Radio
1961 Continental
Model 1TMC











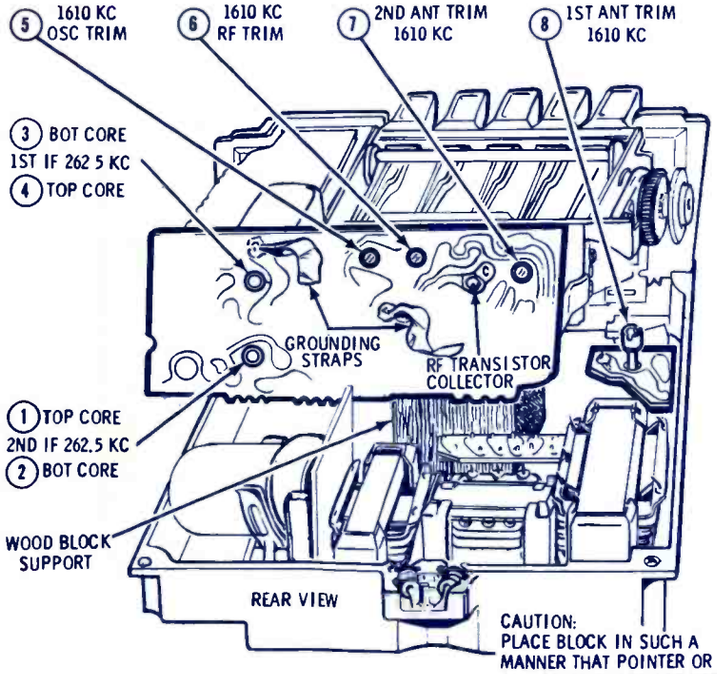
TONE SWITCH POSITIONS

POSITION	1	2	3	4
LO RSE PULL CCT	X		X	X
BASS		X	X	
HI FI			X	
NORMAL PULL CW			X	X

ROTATION WITH REFERENCE TO FRONT VIEW

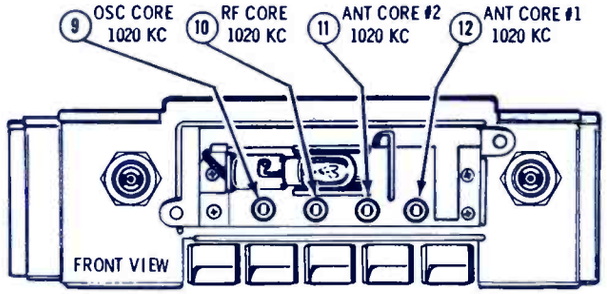
TRANSISTOR & DIODE COMPLEMENT

TYPE	FUNCTION
2N640	RF Amp
2N642	Converter
2N641	IF Amp
2N573	Driver
2N176	Push-pull Power Amp
2N176	Push-pull Power Amp
1N139	Detector Diode
1N139	AVC Diode



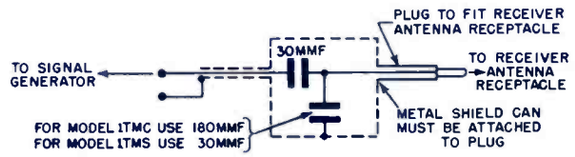
CAUTION:
PLACE BLOCK IN SUCH A MANNER THAT POINTER OR ANY OTHER PARTS ARE NOT DAMAGED.

RF-IF ALIGNMENT

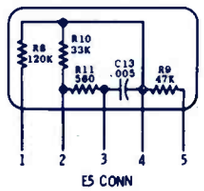


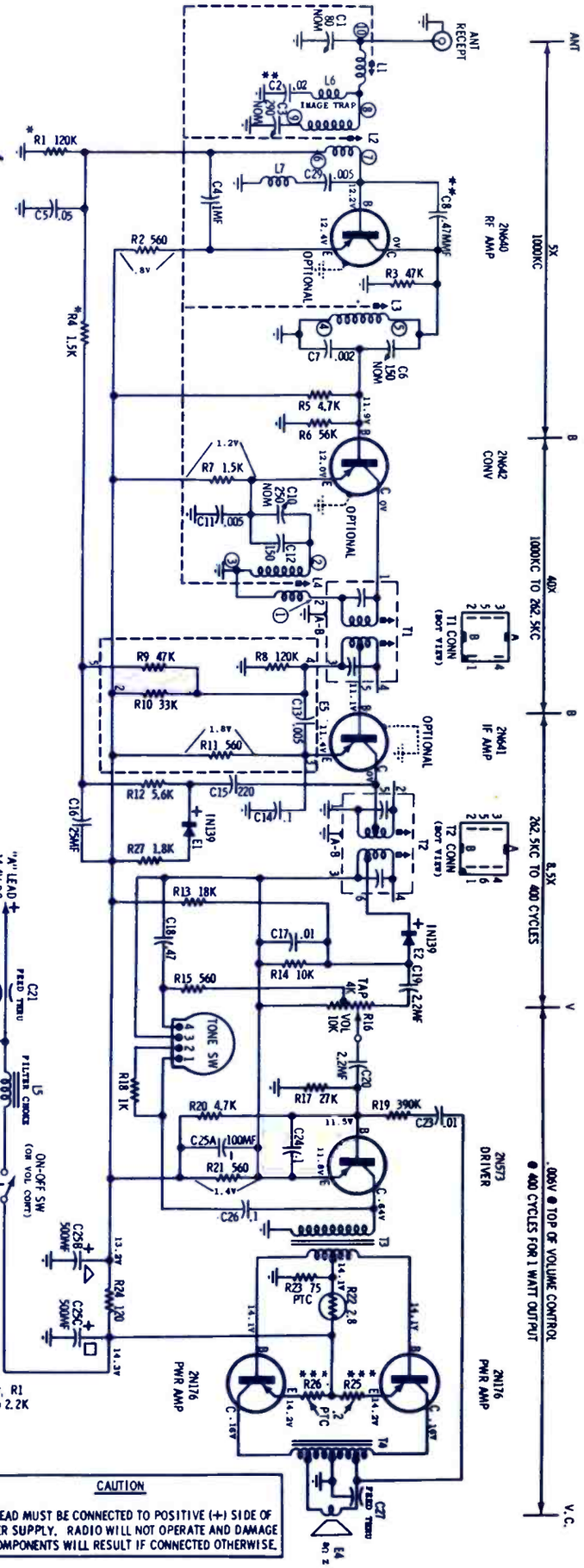
CAUTION: AFTER ALIGNMENT OF IF CORES, TUNER SHOULD BE SEATED INTO HOUSING AND GROUNDING STRAPS SHOULD BE SOLDERED INTO POSITION BEFORE ANY TUNER TRIMMER OR CORE ALIGNMENT IS ATTEMPTED.

TUNER ALIGNMENT



DUMMY ANTENNA





* The values shown for R1 and R4 are nominal. However, R1 may vary from 82K to 180K and R4 may vary from 1K to 2.2K to meet sensitivity specifications in production.

** The values shown for C2 and C8 are nominal. However, C2 may vary from .01 MF to .025 MF and C8 may vary from .2 MMF to 1.0MMF.

*** The values shown for R25 and R26 are nominal however, both values may vary up to 0.3 ohms in production.

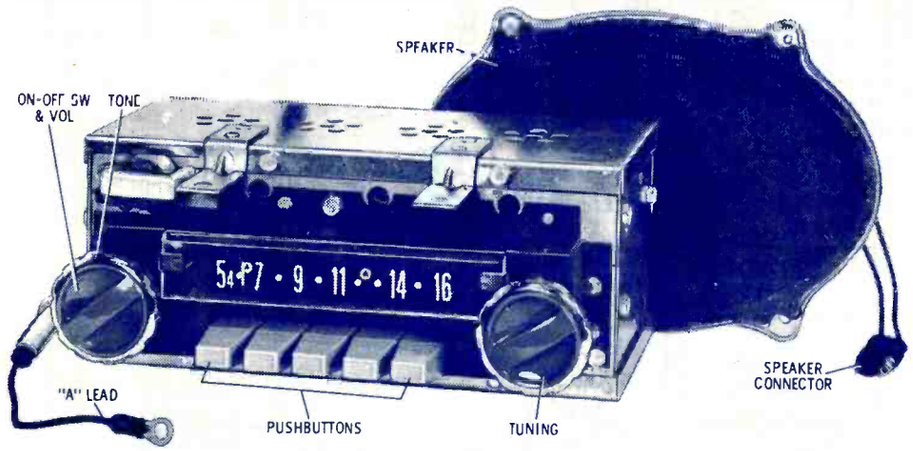
CAUTION

"A" LEAD MUST BE CONNECTED TO POSITIVE (+) SIDE OF POWER SUPPLY. RADIO WILL NOT OPERATE AND DAMAGE TO COMPONENTS WILL RESULT IF CONNECTED OTHERWISE.

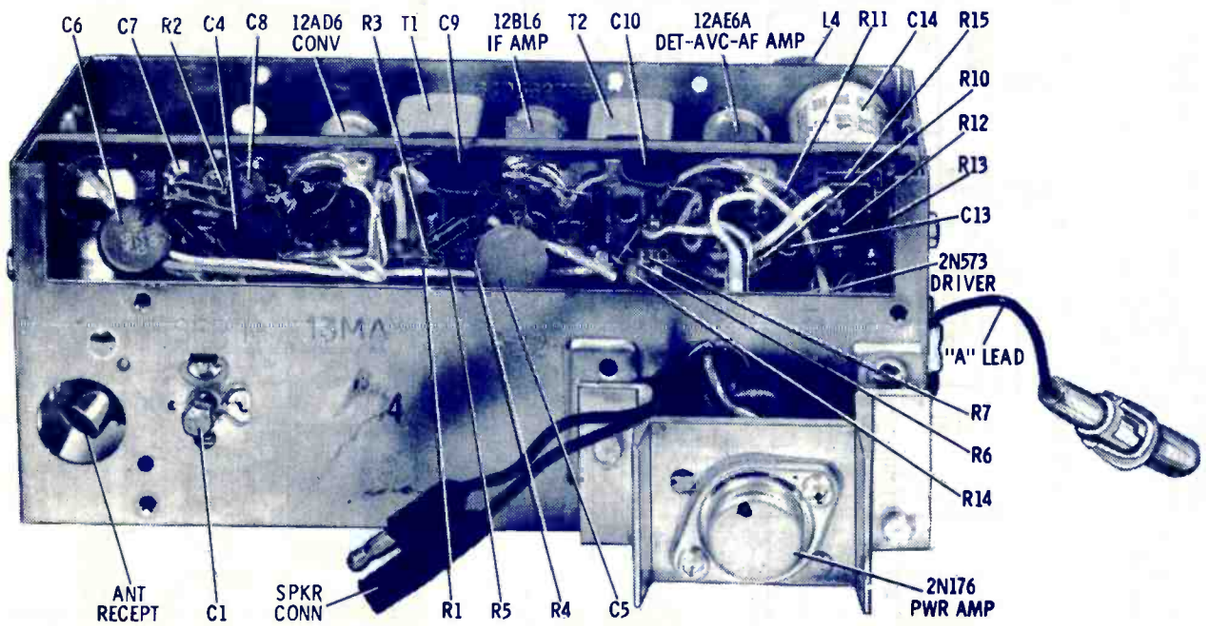
Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota

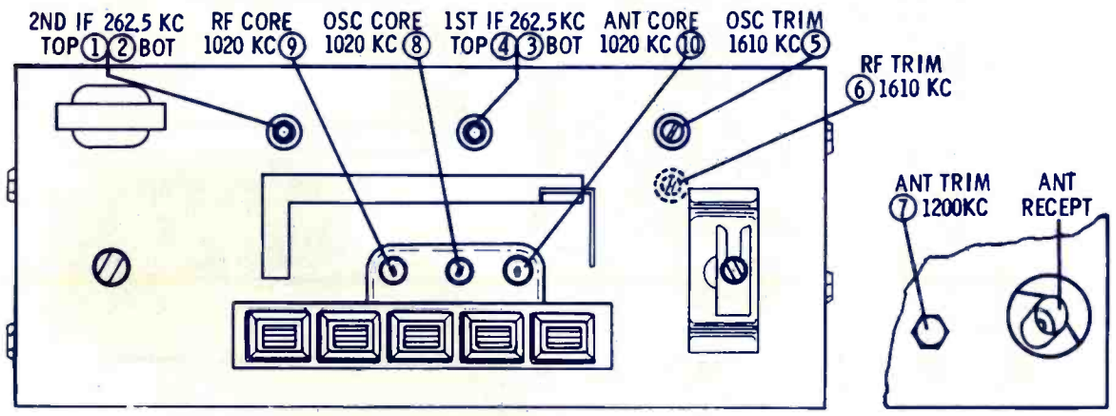
ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

MOTOROLA
Auto Radio 1961
Rambler American
Model 13MAM



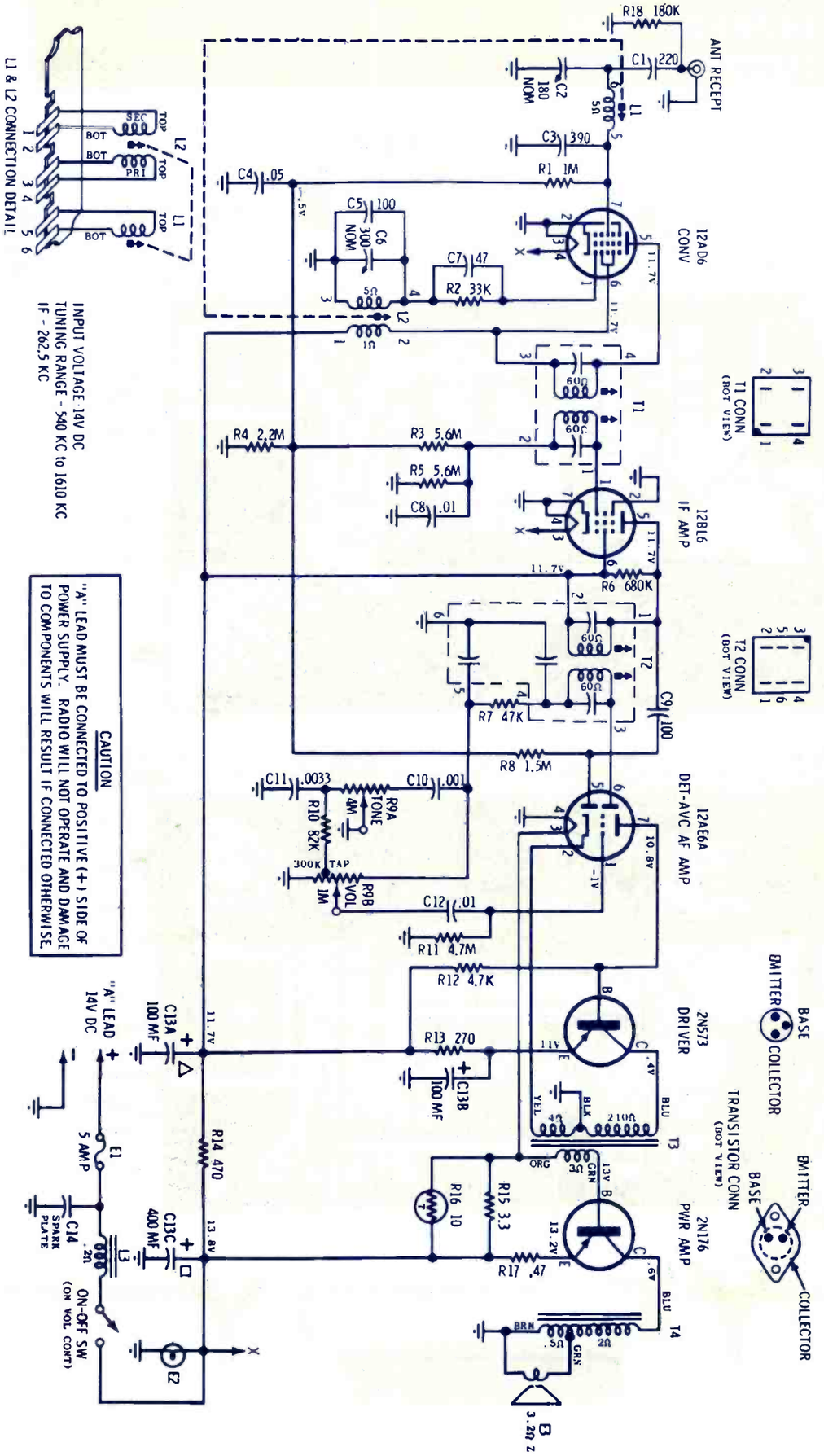
PARTS LOCATION





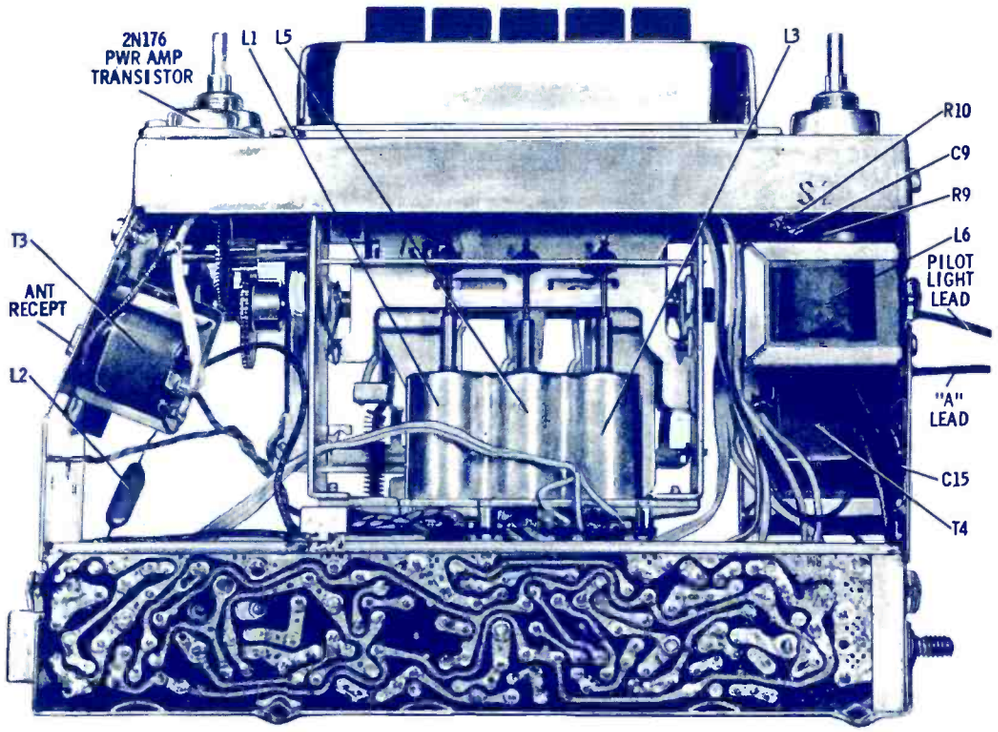
FRONT VIEW (WITH DIAL SCALE & BACKGROUND REMOVED) BACK VIEW

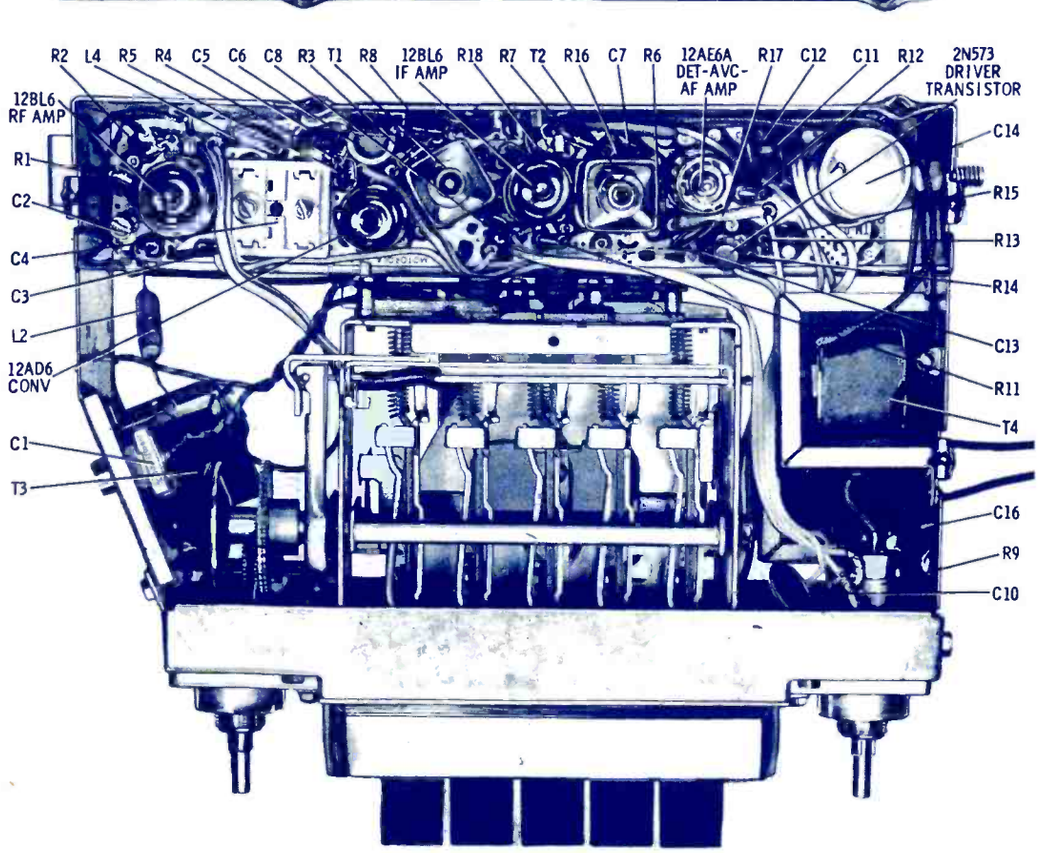
ALIGNMENT POINTS LOCATION DETAIL

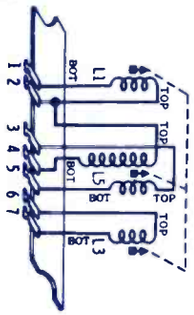


ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

MOTOROLA
Auto Radio 1961 Ford & Falcon Model 14MF





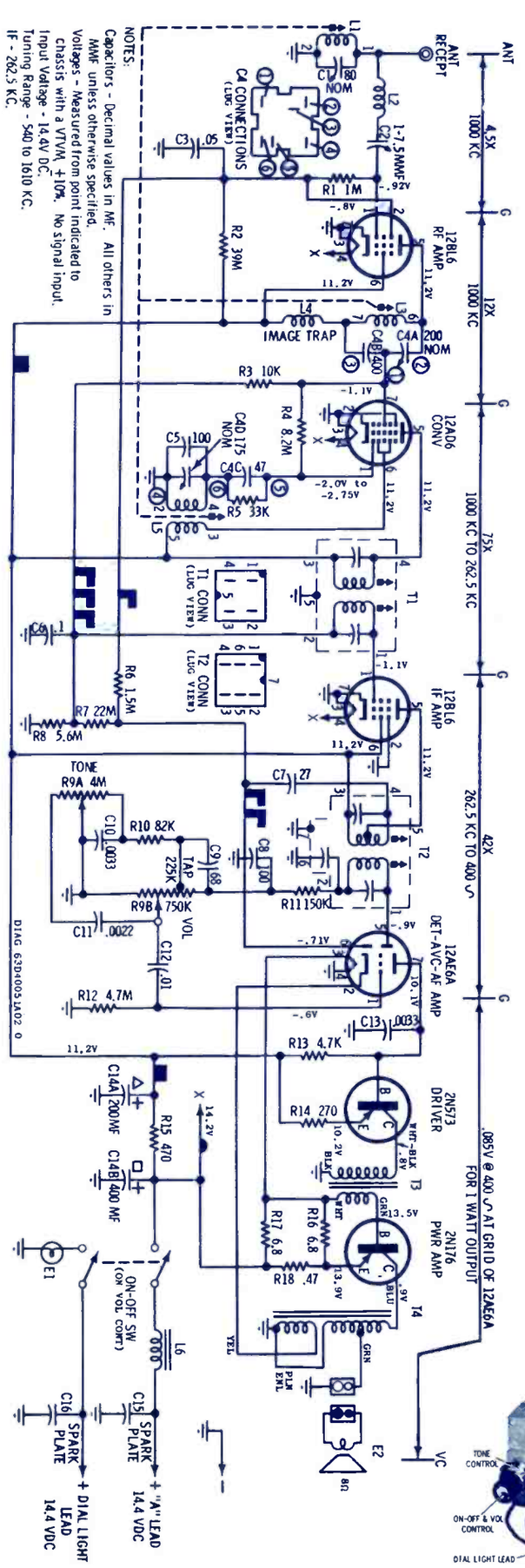


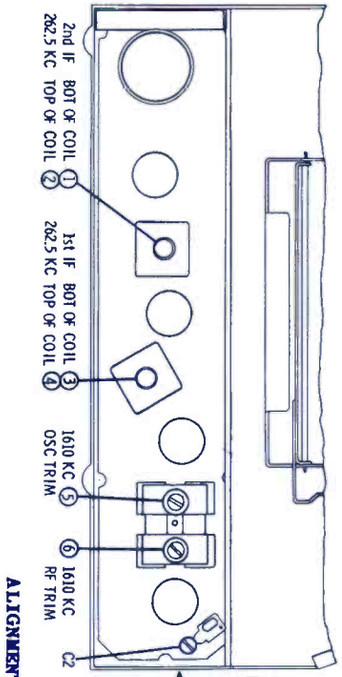
NOTES:
Capacitors - Decimal values in MF. All others in MMF unless otherwise specified.
Voltages - Measured from point indicated to chassis with a VTVM, ±10%. No signal input.
Input Voltage - 14.4V DC.
Tuning Range - 540 to 1610 KC.
IF - 262.5 KC.

■ = B+
● = FILAMENT
= RF AVC
= AVC INPUT
= IF, CONV AVC
PLATED PANEL WIRING LEGEND

CAUTION

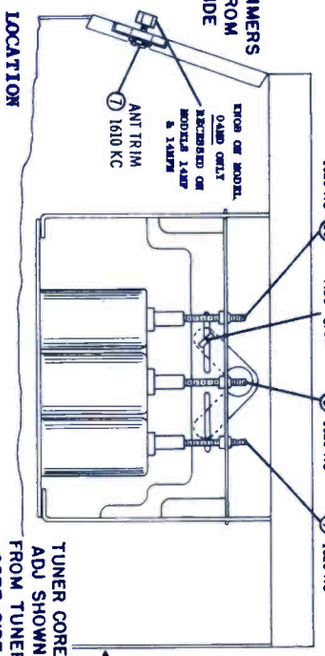
"A" LEAD MUST BE CONNECTED TO POSITIVE (+) SIDE OF POWER SUPPLY. RADIO WILL NOT OPERATE AND DAMAGE TO COMPONENTS WILL RESULT IF CONNECTED OTHERWISE.

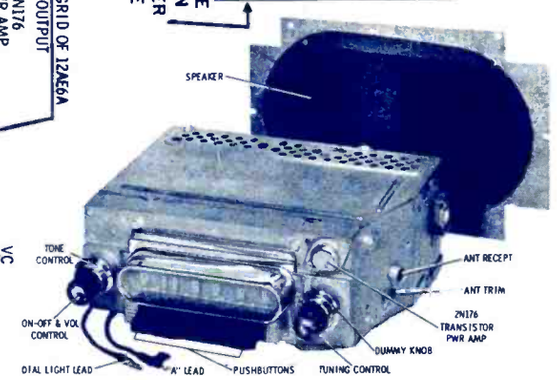




IF'S & TRIMMERS SHOWN FROM TUBE SIDE

ALIGNMENT POINTS LOCATION





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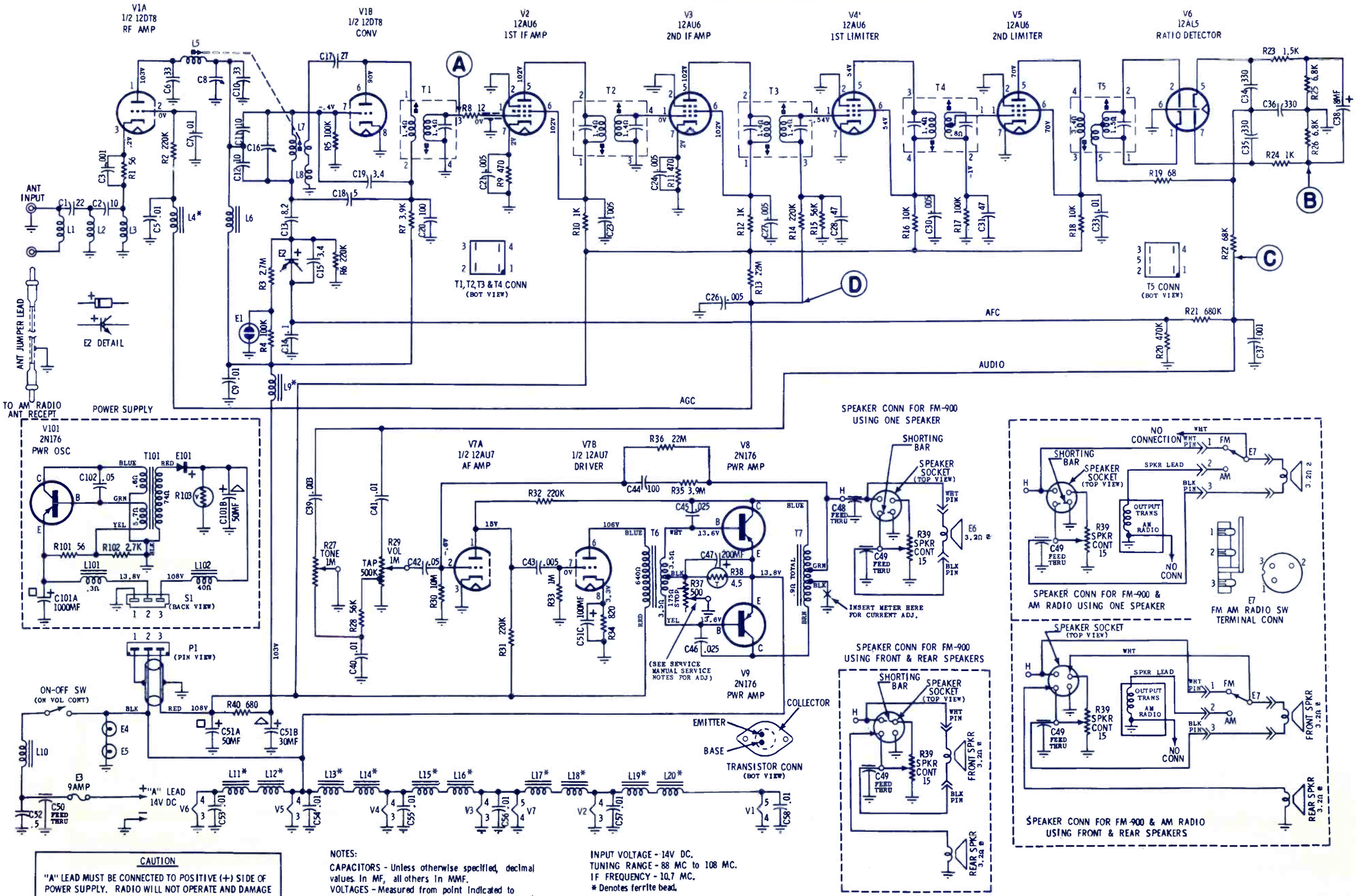
MOTOROLA
Auto Radio, FM
Model FM-900



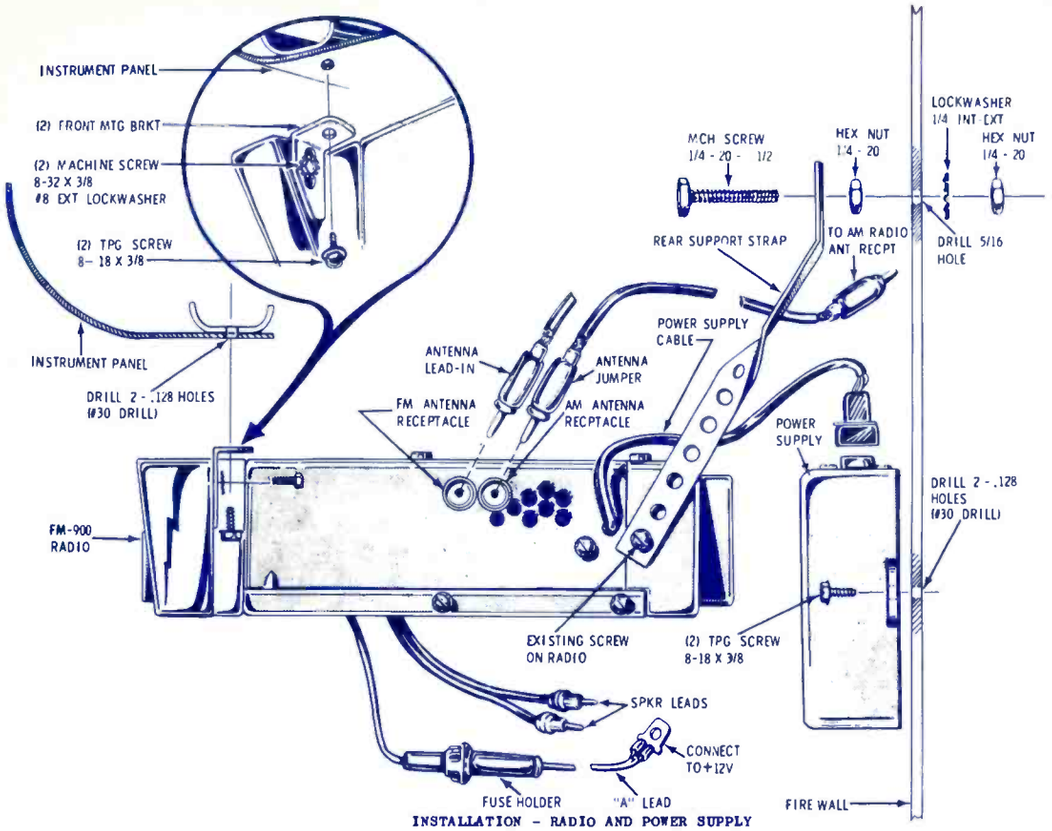
CAUTION

"A" LEAD MUST BE CONNECTED TO POSITIVE (+) SIDE OF POWER SUPPLY. RADIO WILL NOT OPERATE AND DAMAGE TO COMPONENTS WILL RESULT IF CONNECTED OTHERWISE.

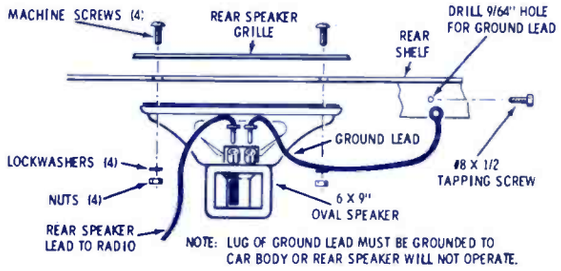
NOTES:
CAPACITORS - Unless otherwise specified, decimal values in MF, all others in MMF.
VOLTAGES - Measured from point indicated to chassis with a VTVM. No signal in. Tolerance ± 10%.

INPUT VOLTAGE - 14V DC.
TUNING RANGE - 88 MC to 108 MC.
IF FREQUENCY - 10.7 MC.
* Denotes ferrite bead.

More Data on Reverse Side

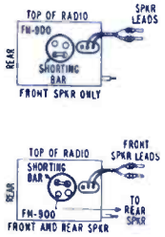


INSTALLATION - RADIO AND POWER SUPPLY

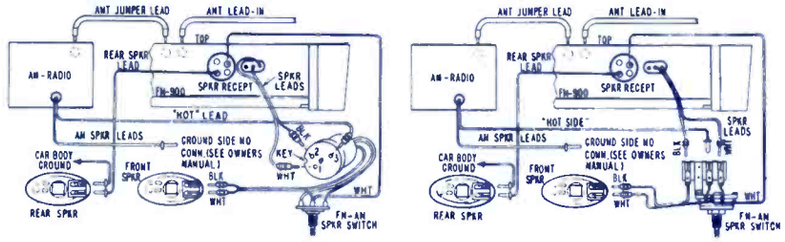


NOTE: LUG OF GROUND LEAD MUST BE GROUNDED TO CAR BODY OR REAR SPEAKER WILL NOT OPERATE.

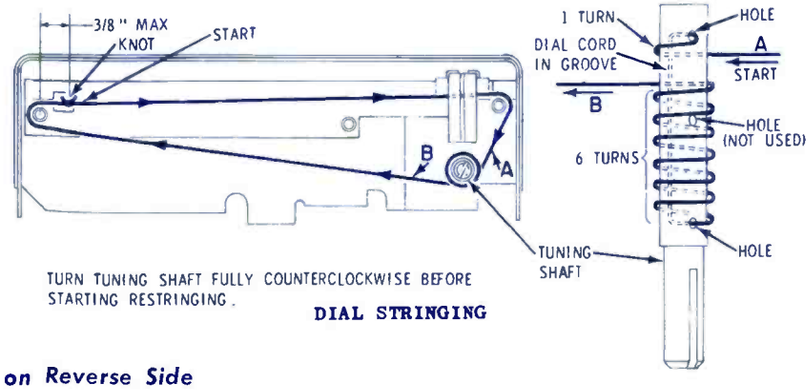
REAR SEAT SPEAKER CONNECTIONS



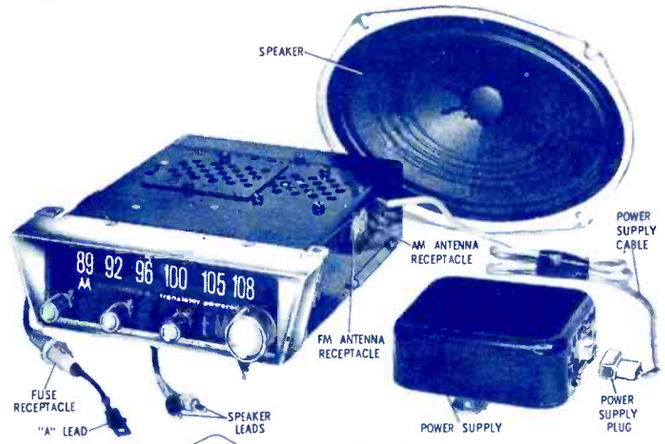
POSITION OF SHORTING BAR WHEN USING FM-900 ALONE

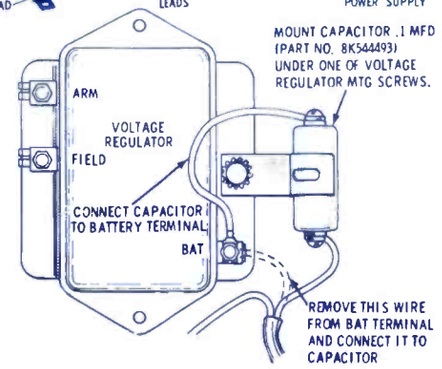


SPEAKER CONNECTIONS FOR FM-900 WITH AM RADIO AND TWO SPEAKERS

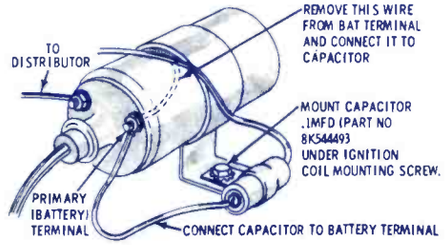


DIAL STRINGING

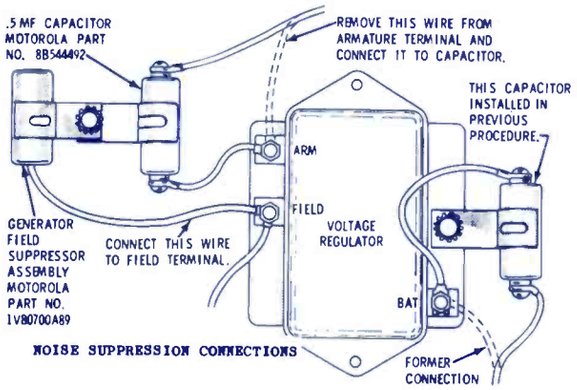




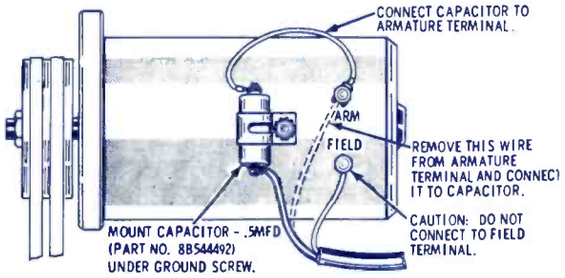
VOLTAGE REGULATOR CAPACITOR CONNECTIONS



IGNITION COIL CAPACITOR CONNECTIONS



NOISE SUPPRESSION CONNECTIONS



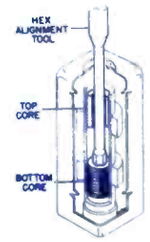
GENERATOR CAPACITOR CONNECTIONS

INTERFERENCE ELIMINATION

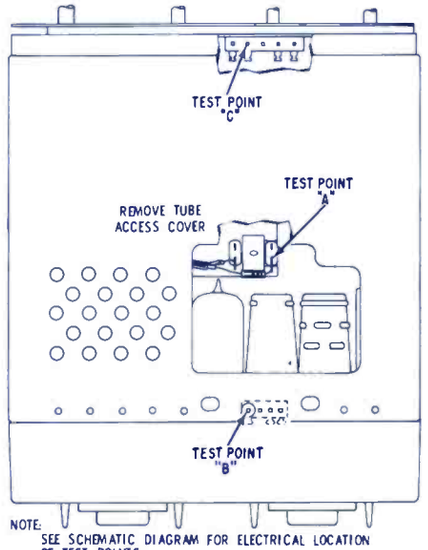
The ignition noise suppression capacitors supplied with the FM-900 must be installed, even though the car may have existing suppression equipment for an AM radio.

POWER SUPPLY REQUIREMENTS - It is preferable to use a storage battery (without a battery charger) in place of a battery eliminator. If a battery eliminator is used, it must be well regulated and filtered.

TRANSISTOR REPLACEMENT - When replacing a transistor, be sure transistor insulator is in place and well greased and that the mounting screws are securely and evenly tightened.



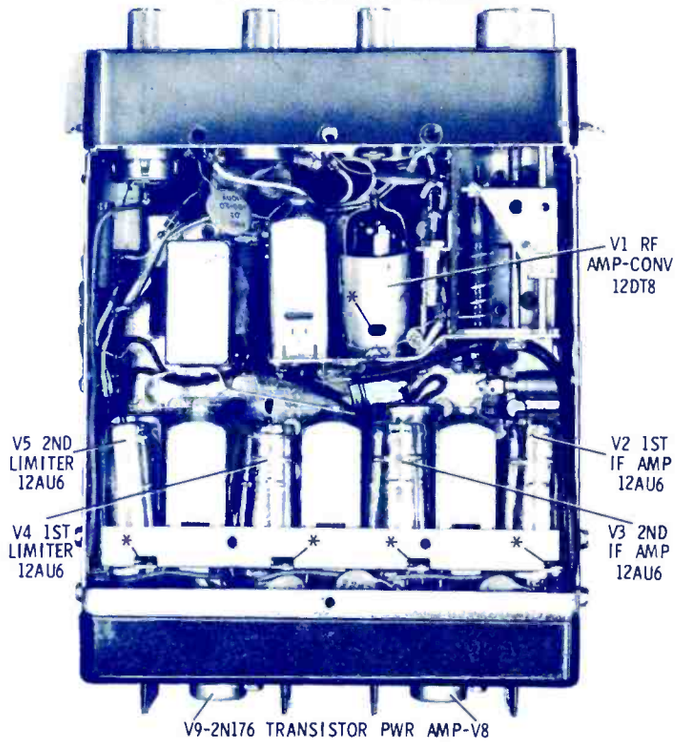
IF ALIGNMENT DETAIL



NOTE: SEE SCHEMATIC DIAGRAM FOR ELECTRICAL LOCATION OF TEST POINTS.

TEST POINT LOCATIONS

* TO REMOVE TUBES AND SHIELDS INSERT SCREWDRIVER IN SLOT & PRY UP.



TUBE LOCATION AND TUBE REMOVAL

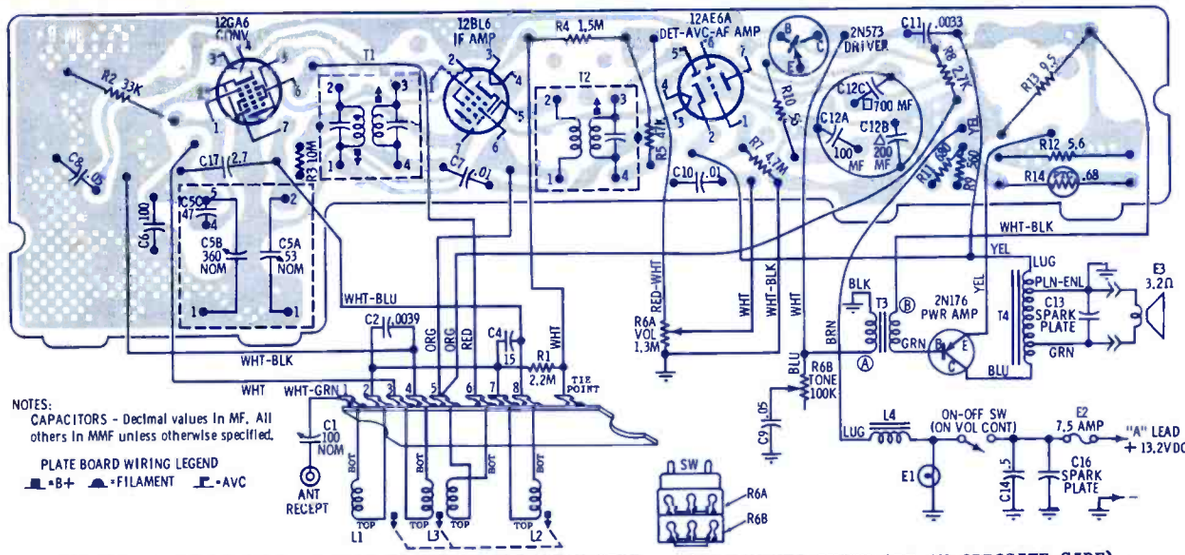
MOTOROLA
Auto Radio, FM
Model FM-900

Electronic Technician
CIRCUIT DIGEST

More Data on Reverse Side

Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota

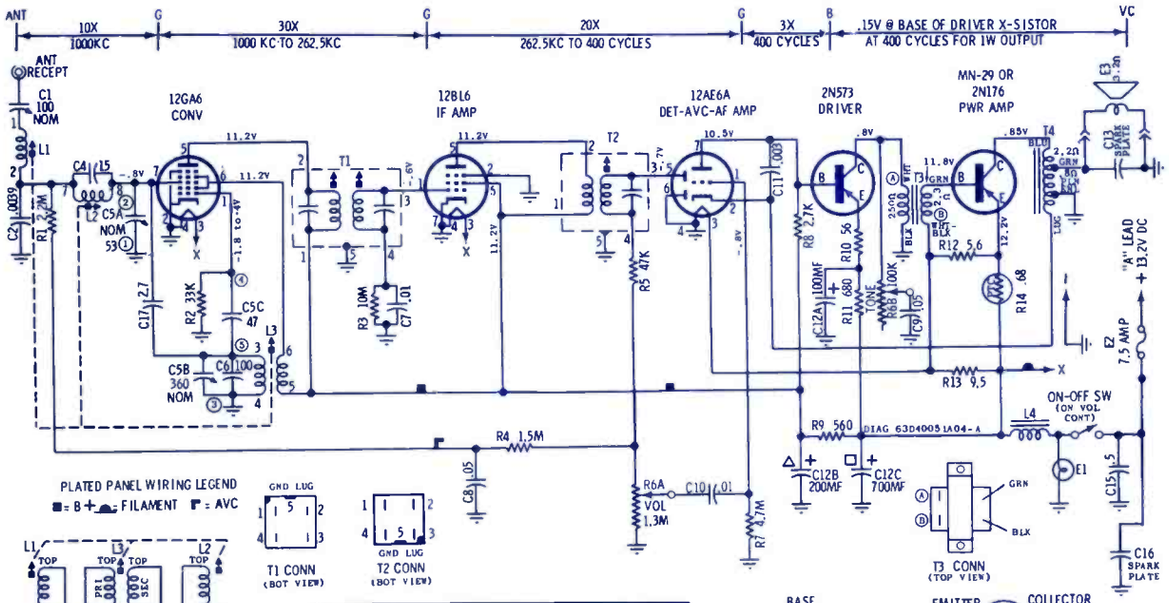
MOTOROLA
Auto Radio
1961 Plymouth
Model MoPar 109

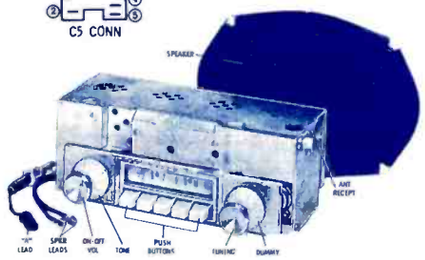


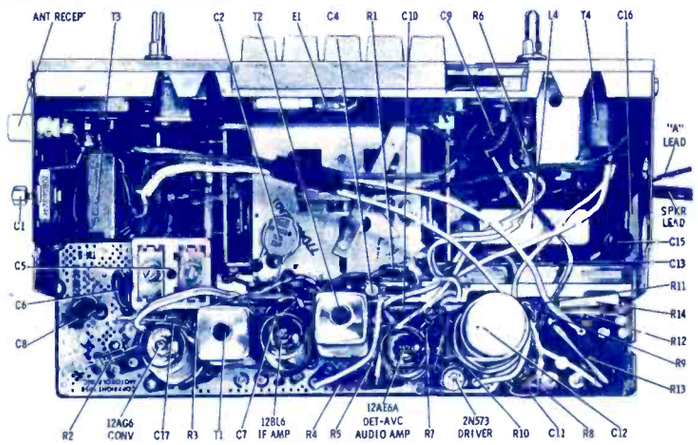
NOTES:
CAPACITORS - Decimal values in MF. All others in MMF unless otherwise specified.

PLATE BOARD WIRING LEGEND
■-B+ ■-FILAMENT ■-AVC

PLATED CHASSIS BOARD WIRING AS VIEWED FROM BOTTOM SIDE (COMPONENTS SHOWN ARE ON OPPOSITE SIDE).

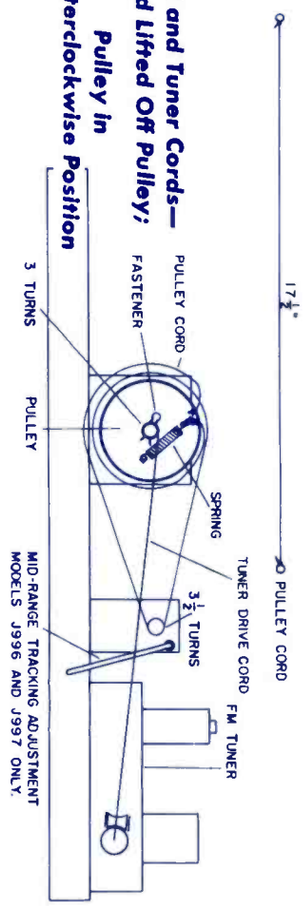


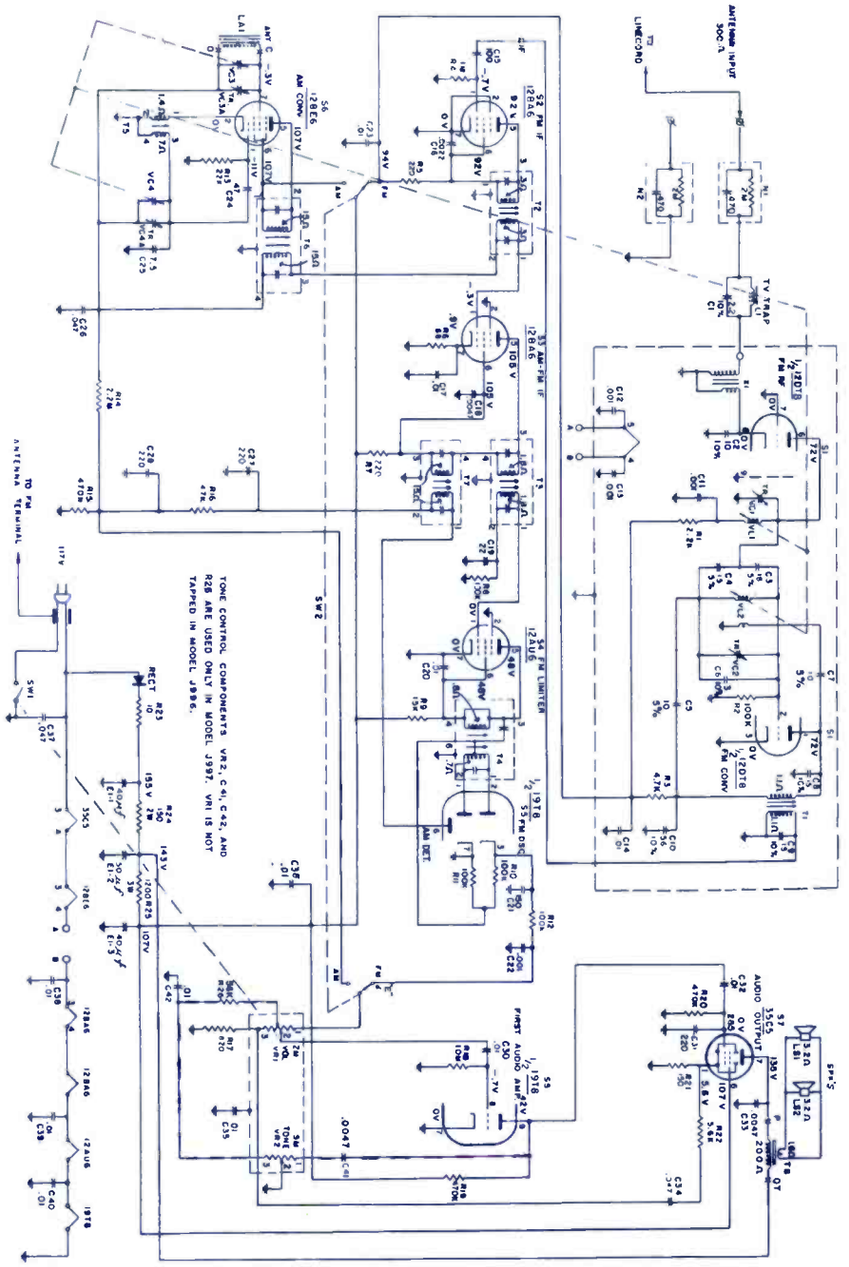


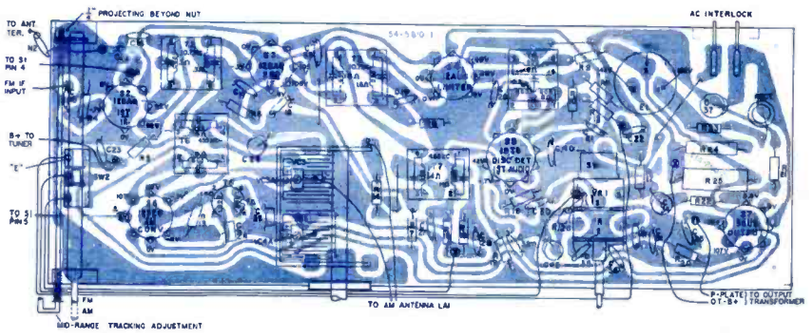


PHILCO
AM-FM Radio
Models J-996, J-997

Dial and Tuner Cords—
Cord Lifted Off Pulley;
Pulley in
Counterclockwise Position



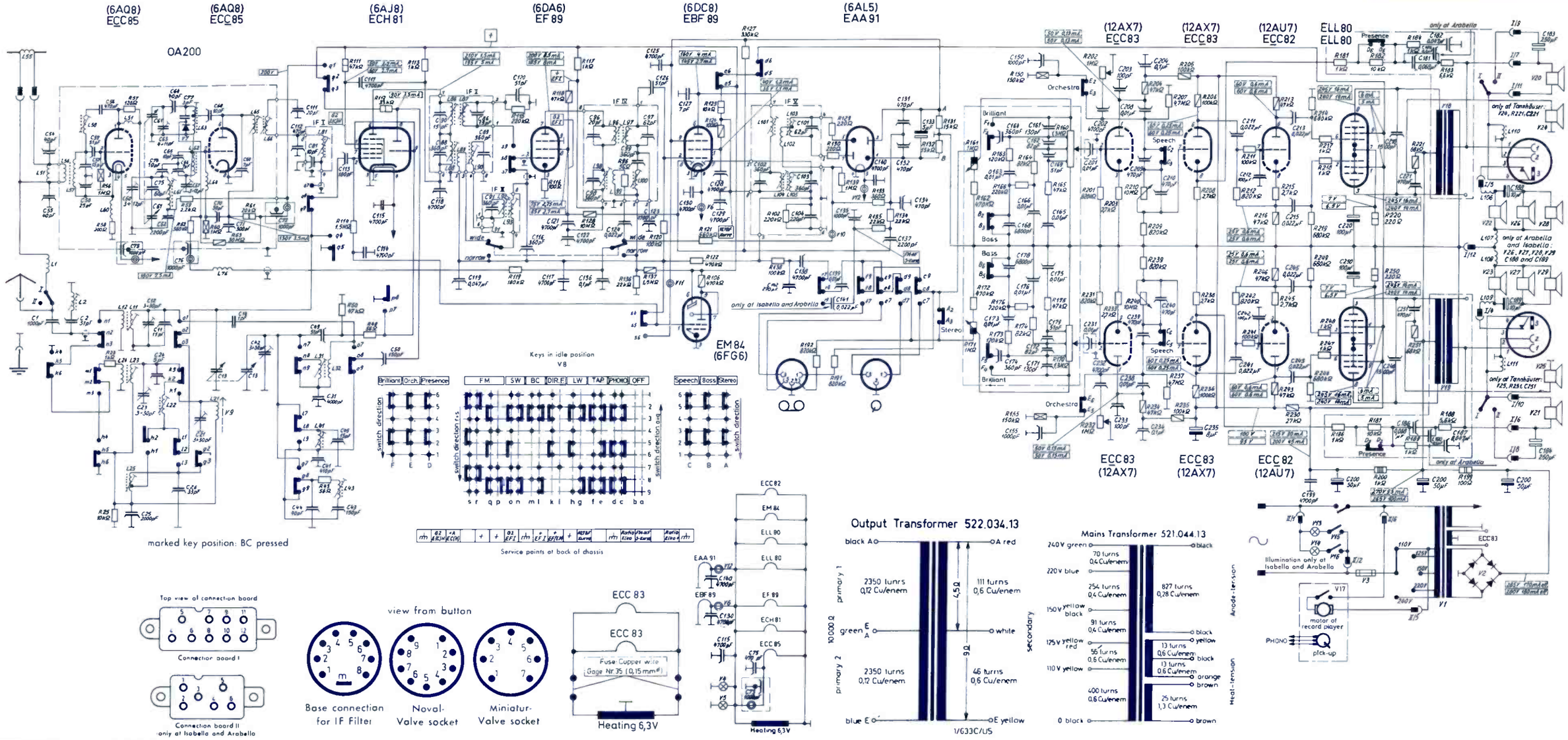




Composite View, Foil Side, Main Panel

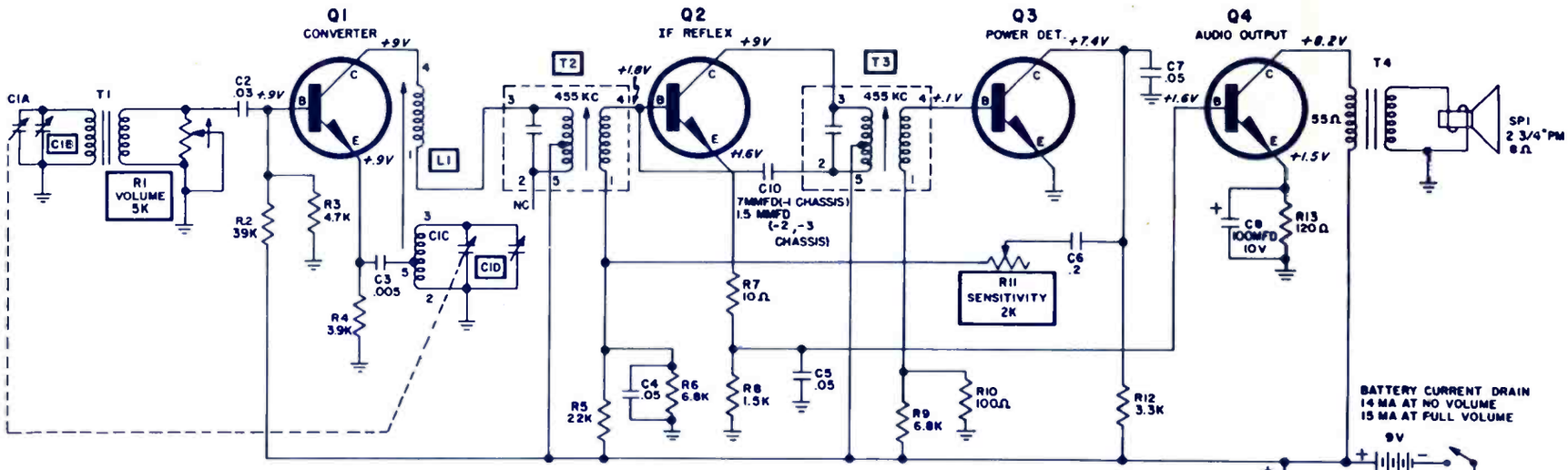
STERLING

AM/FM/SW Radio, Phono Chassis 1/633 US-Stereo Models Tannhauser US, Isabella US, Arabella US



| | AM-INPUT | | | | | COIL-ASSEMBLY | | | | |

SYLVANIA
Transistor Radio
Chassis 682-1, -2, -3
Model 4P19 Series

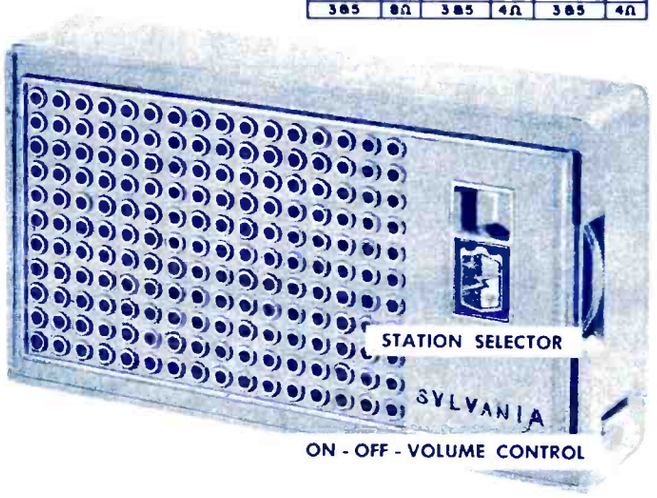


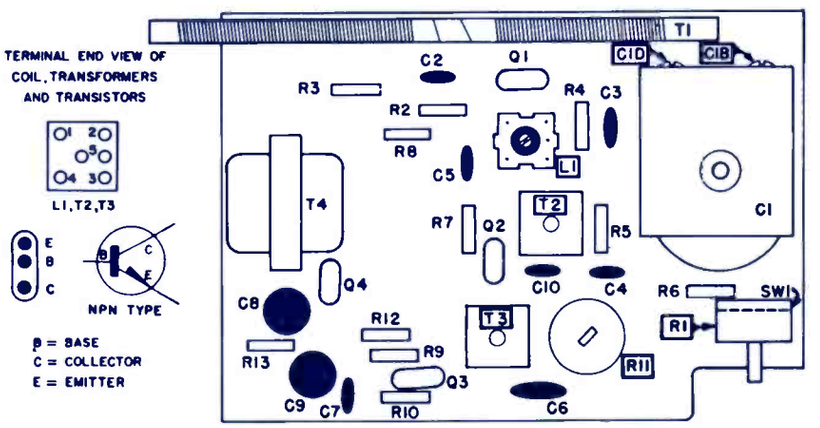
RESISTANCE CHART					
L1		T2		T3	
BETWEEN	RES.	BETWEEN	RES.	BETWEEN	RES.
1&4	1.5Ω	1&4	1.5Ω	1&4	1.5Ω
2&3	8.5Ω	2&3	6.5Ω	2&3	6.5Ω
2&5	.5Ω	2&5	2.5Ω	2&5	2.5Ω
3&5	8Ω	3&5	4Ω	3&5	4Ω

IMPORTANT: Groups of matched transistors are used in this receiver. If replacement is necessary same grouping must be maintained.

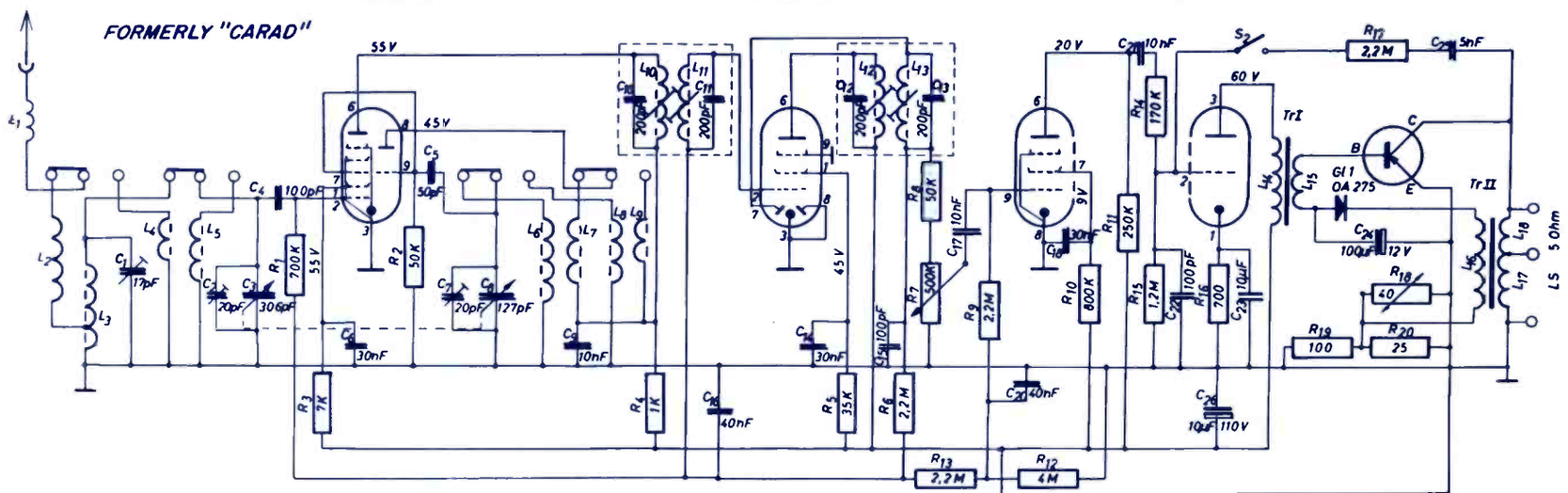
TRANSISTOR COMPLEMENT

GROUP	CONVERTER	IF REFLEX	DETECTOR	OUTPUT
I	2N212 (SYL2133)	SYL2132	SYL2130	SYL2136
II	2N212 (SYL2133)	SYL2132	SYL2131	SYL2134
III	2N212 (SYL2133)	SYL2131	SYL2131	SYL2135





STRIBEL
Auto Radio

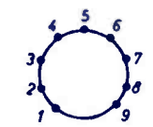


WAVEBANDS:
STANDARD 510-1620 KC
SHORTWAVE 30-50 MC
INTERMEDIATE FREQ. 460 KC

CAPACITY 10 WATTS

POSITION OF WAVEBAND SWITCH MW

VOLTAGE MEASURED WITH A 10K TUBE VOLTMETER



ECH 81
EBF 89
ECF 83

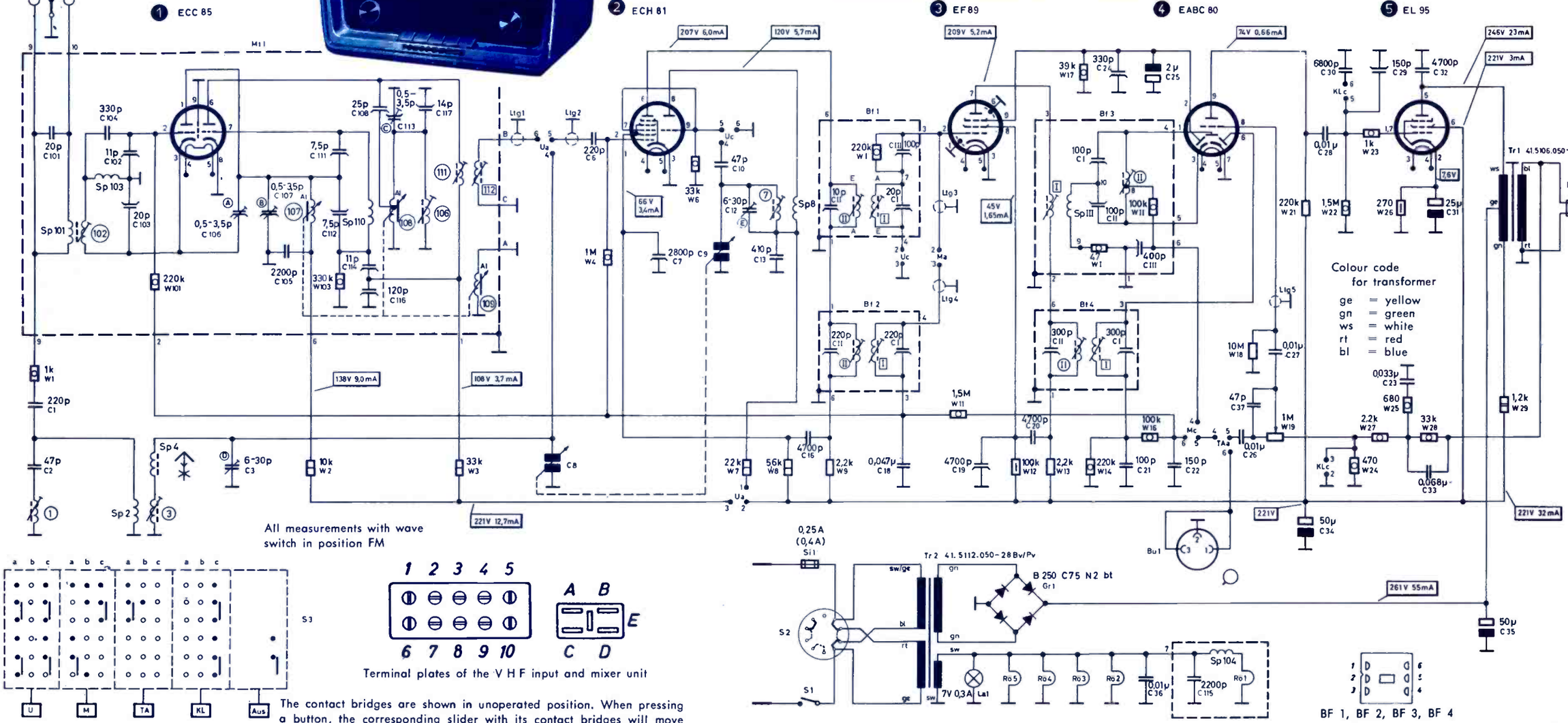
TF 80/30
TF 77/30 Z

Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota

ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

TELEFUNKEN
AM-FM-SW Radio
Caprice 5051W

○ Filter coil on top
□ Filter coil on bottom

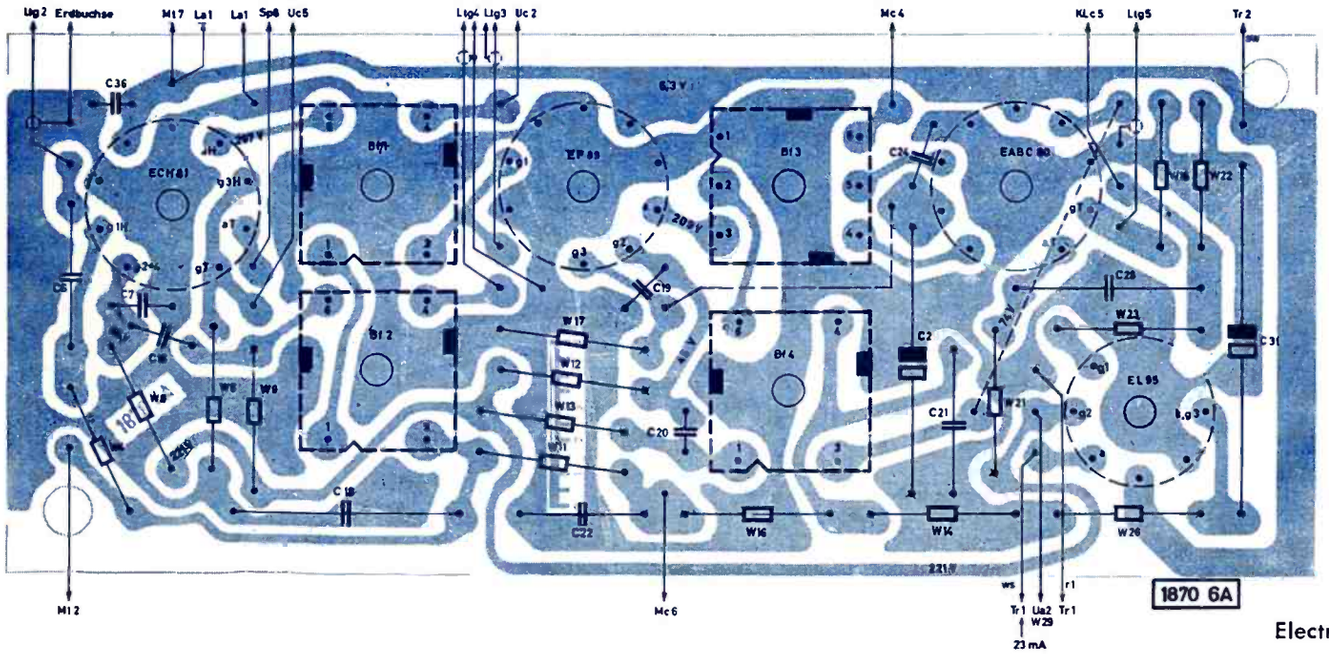


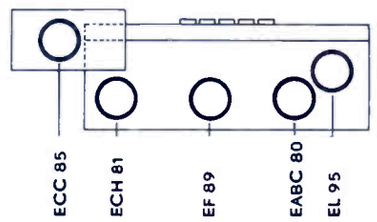
All measurements with wave switch in position FM

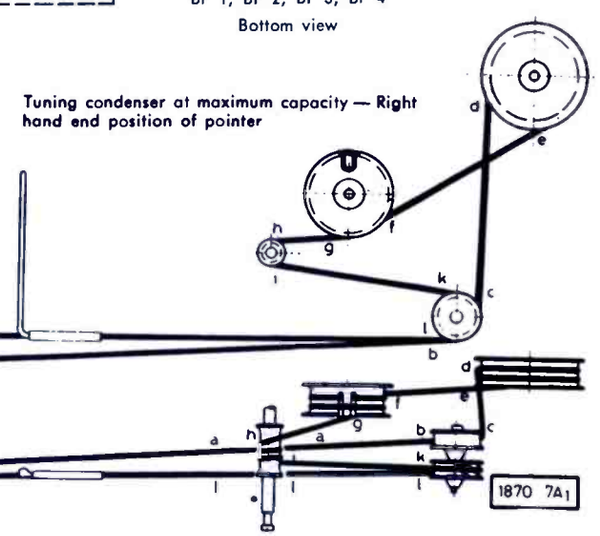
Terminal plates of the V H F input and mixer unit

The contact bridges are shown in unoperated position. When pressing a button, the corresponding slider with its contact bridges will move in the direction of the arrow.

BF 1, BF 2, BF 3, BF 4
Bottom view







F. M.	88 — 108 Mc
A. M.	515 — 1610 kc

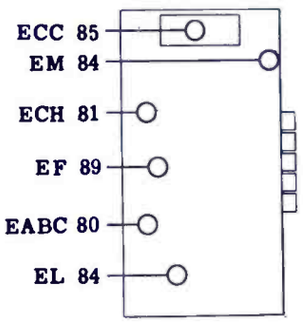
A M = 460 kc F M = 10,7 Mc

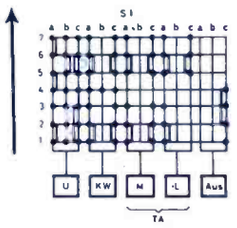
Electronic Technician Inc. Ojibway Building Duluth 2, Minnesota

TELEFUNKEN
AM-FM-SW Radio
Model Jubilate 5061W

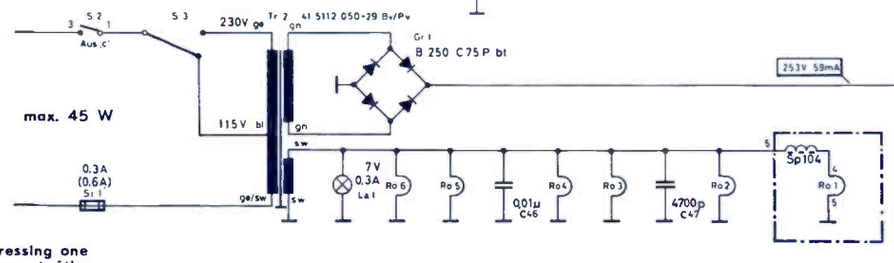
	Wavebands / Gammes d'ondes / Bandas de ondas
UKW	87,5 – 100 MC / Mc/s
KW	5,95 – 18,2 MC / Mc/s
MW	515 – 1620 kc / kc/s
LW	145 – 345 kc / kc/s

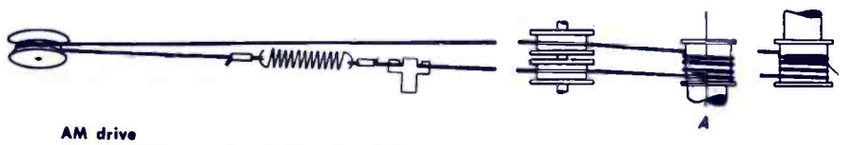
IF/MF/FI: AM = 460 kc / kc/s
FM = 10,7 MC / Mc/s



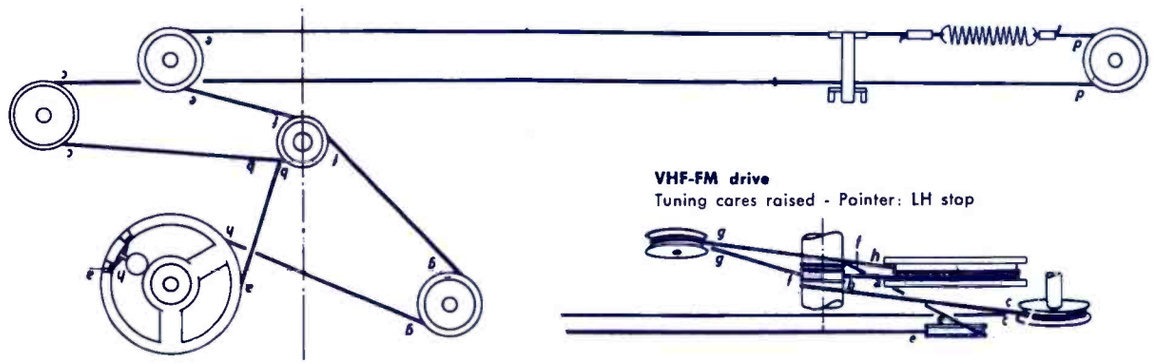


Pushbutton bank is shown in neutral position. On pressing one of the waveband buttons, the contact strip moves in the direction shown by the arrow.





AM drive
Tuning capacitor at maximum capacity – pointer at LH stop



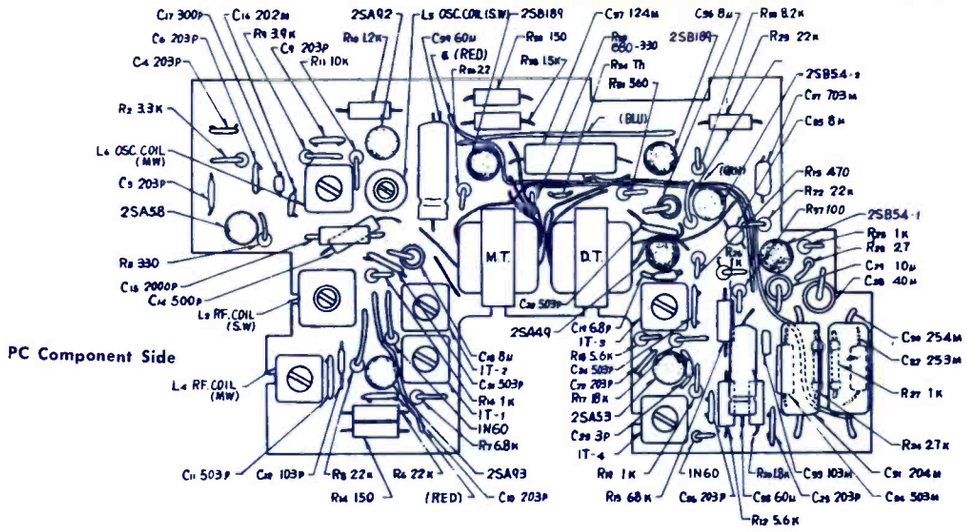
VHF-FM drive
Tuning cares raised - Pointer: LH stop

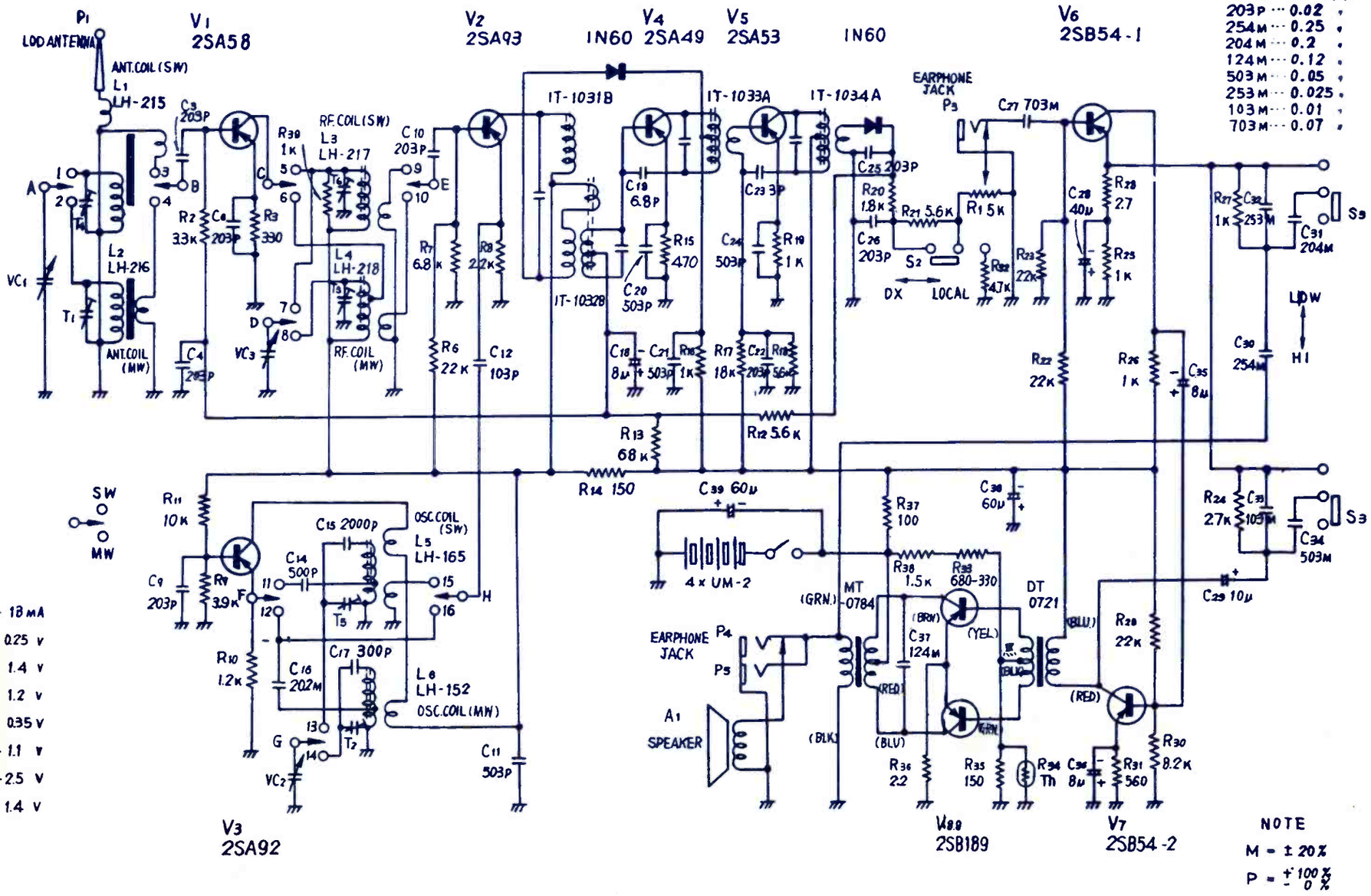
Color Code for Transformers

ws = White
ge = Yellow
gn = Green
rt = Red
bl = Blue
br = Brown
sw = Black

ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

TOSHIBA
Transistor Radio
Model 9TL-365S





202M ··· 0.002 µF
203P ··· 0.02 "
254M ··· 0.25 "
204M ··· 0.2 "
124M ··· 0.12 "
503M ··· 0.05 "
253M ··· 0.025 "
103M ··· 0.01 "
703M ··· 0.07 "

I TOTAL	14 ~ 18 mA
Ve 2SA58	0.15 ~ 0.25 V
Ve 2SA93	0.1 ~ 1.4 V
Ve 2SA92	0.8 ~ 1.2 V
Ve 2SA49	0.25 ~ 0.35 V
Ve 2SA53	0.8 ~ 1.1 V
Ve 2SB54-1	2.0 ~ 2.5 V
Ve 2SB54-2	1.0 ~ 1.4 V

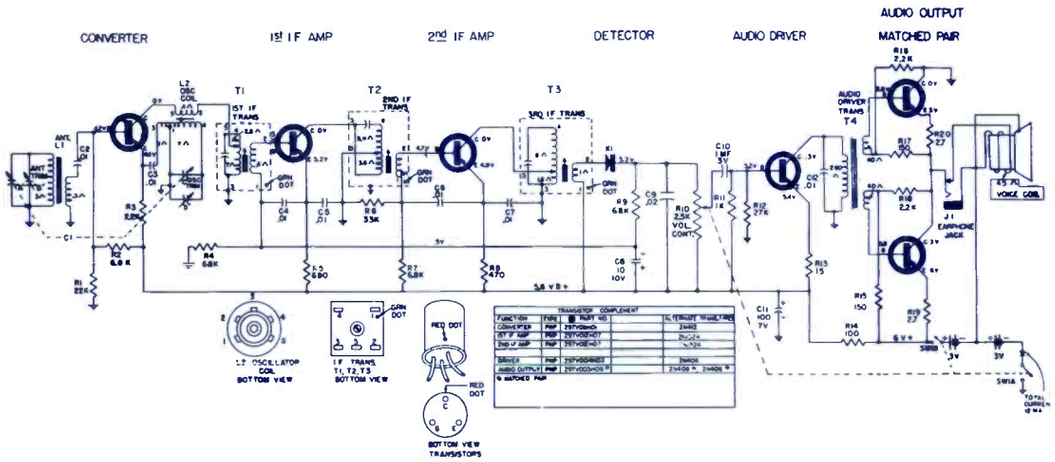
NOTE
M = ± 20%
P = +100% 0%

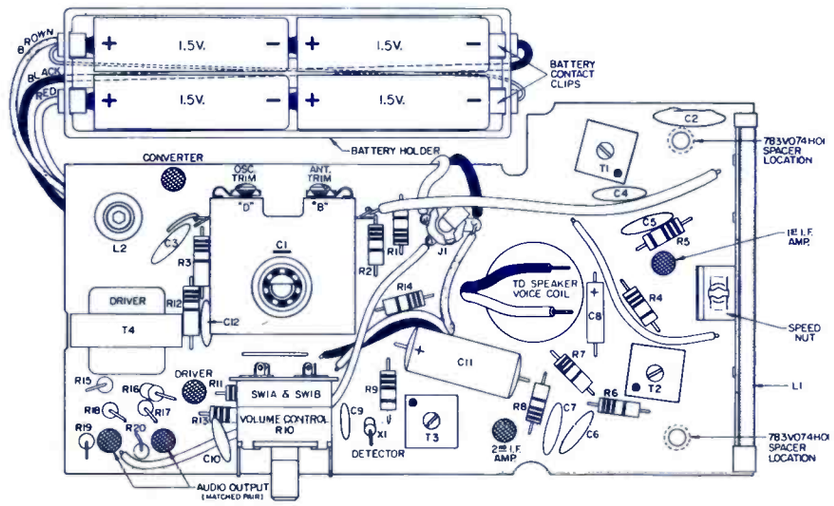
ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

WESTINGHOUSE
Transistor Portable Radio
Chassis V-2393-4
Models H-790P6, H-791P6

Power Supply:	Flashlight Batteries	Mercury Batteries
	Eveready 915 or 1015	Mallory ZM-9
	Ray-O-Vac 7LP or 7R	Eveready E9
	Burgess	
	Mallory M15	

No Signal Current Drain . . . . . 12 MA

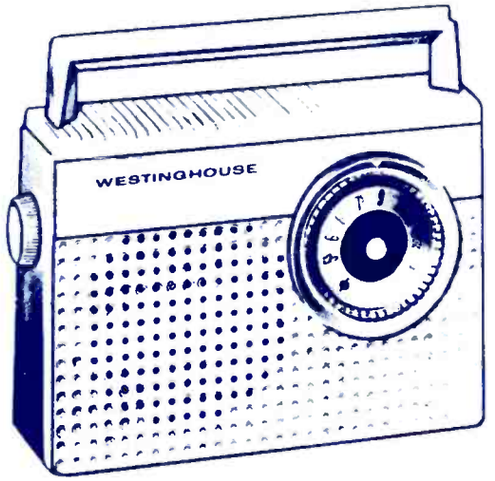


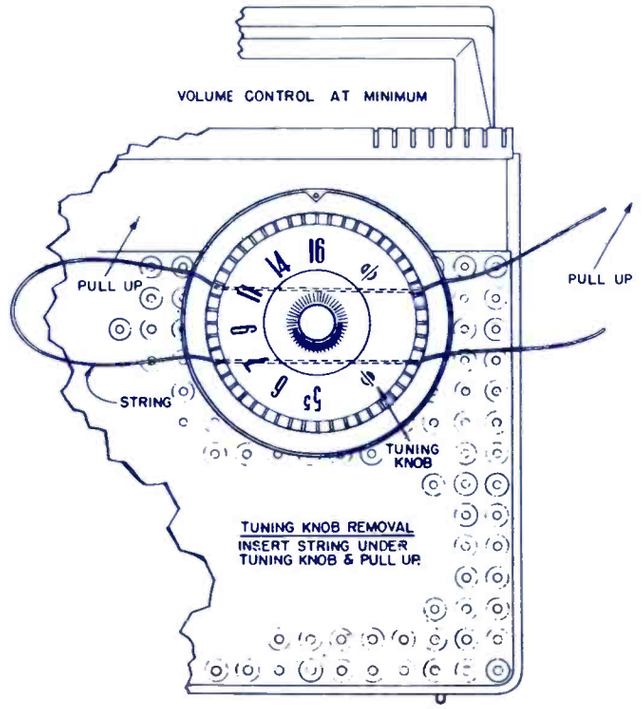


WESTINGHOUSE
Transistor Portable Radio
Chassis V2397-4
Models
H-771P6, H-771P6GP
H-772P6, H-772P6GP
H-773P6, H-773P6GP

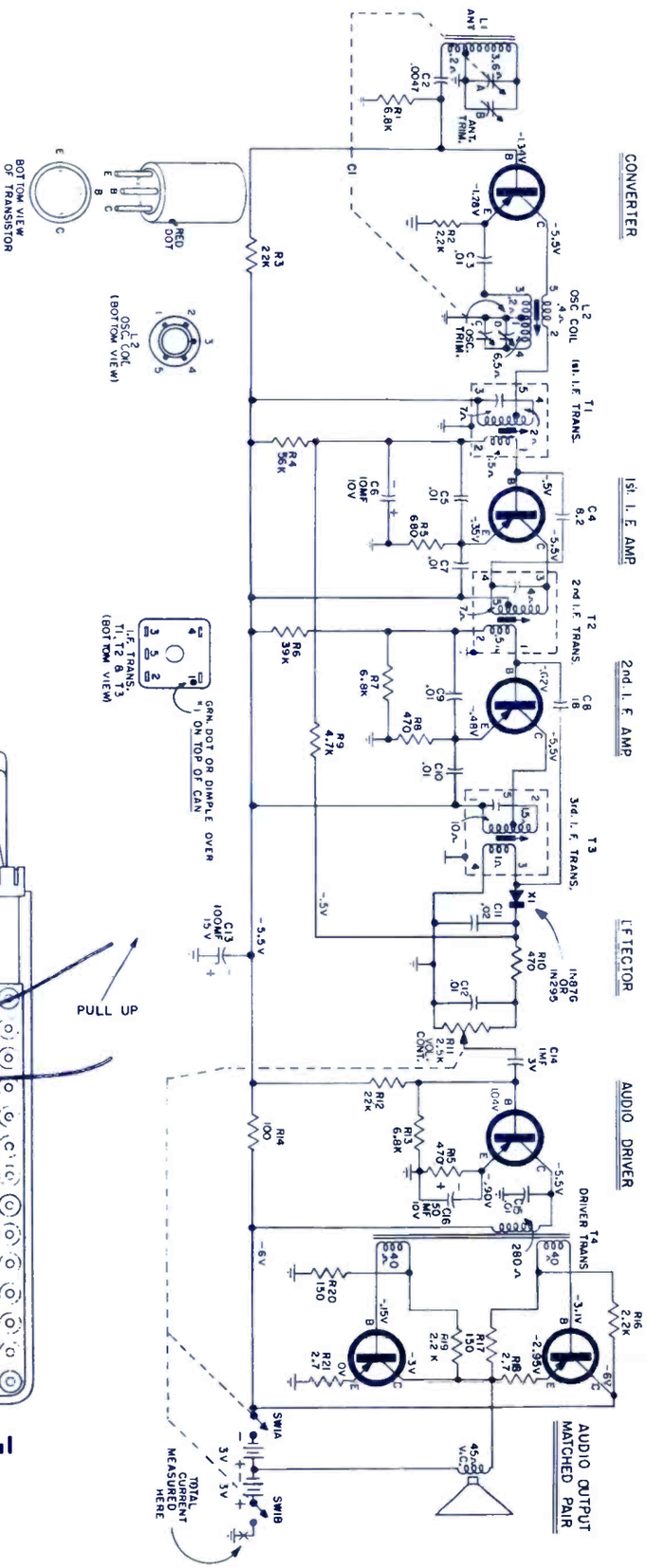
ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

TRANSISTOR COMPLEMENT				
FUNCTION	TYPE	(W) PART NO.	ALTERNATES	(W) PART NO.
CONVERTER	PNP	297V011H01	2N412	
1st. I.F. AMP.	PNP	297V012H03	2N410	297V012H01, 04, 05, 06
2nd I.F. AMP.	PNP	297V012H06	2N410	297V012H01, 04, 05, 06
AUDIO DRIVER	PNP	297V004H03	2N406	
AUDIO OUTPUT	PNP	297V003H06*	*2N109, 2N406	



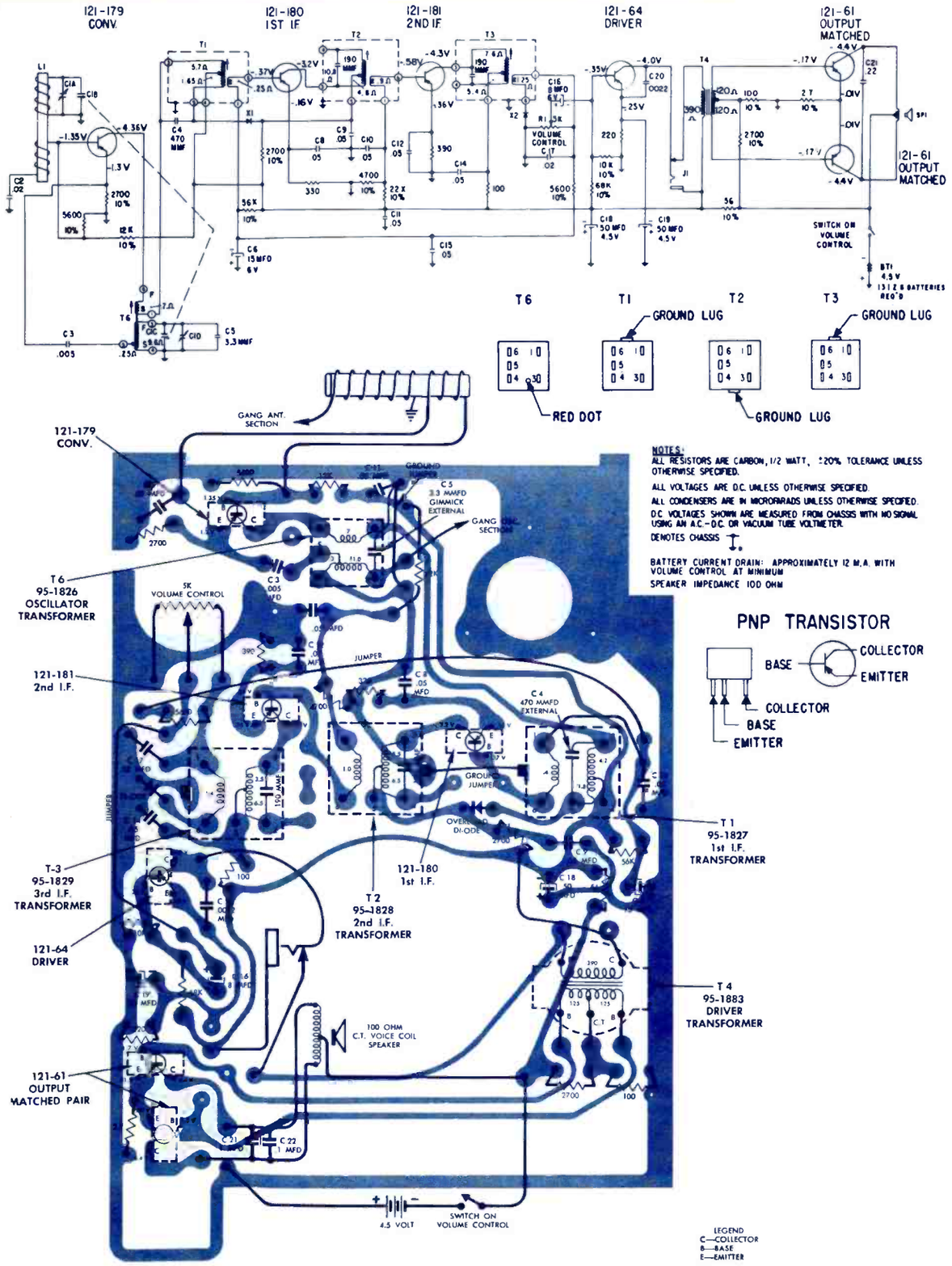


Tuning knob removal



ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

ZENITH
Transistor Portable Radio
Model Royal 150
Chassis 6GT42Z2



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

ALL VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED.

ALL CONDENSERS ARE IN MICROFARADS UNLESS OTHERWISE SPECIFIED.

D.C. VOLTAGES SHOWN ARE MEASURED FROM CHASSIS WITH NO SIGNAL USING AN A.C.–D.C. OR VACUUM TUBE VOLTMETER.

DENOTES CHASSIS

BATTERY CURRENT DRAIN: APPROXIMATELY 12 M.A. WITH VOLUME CONTROL AT MINIMUM

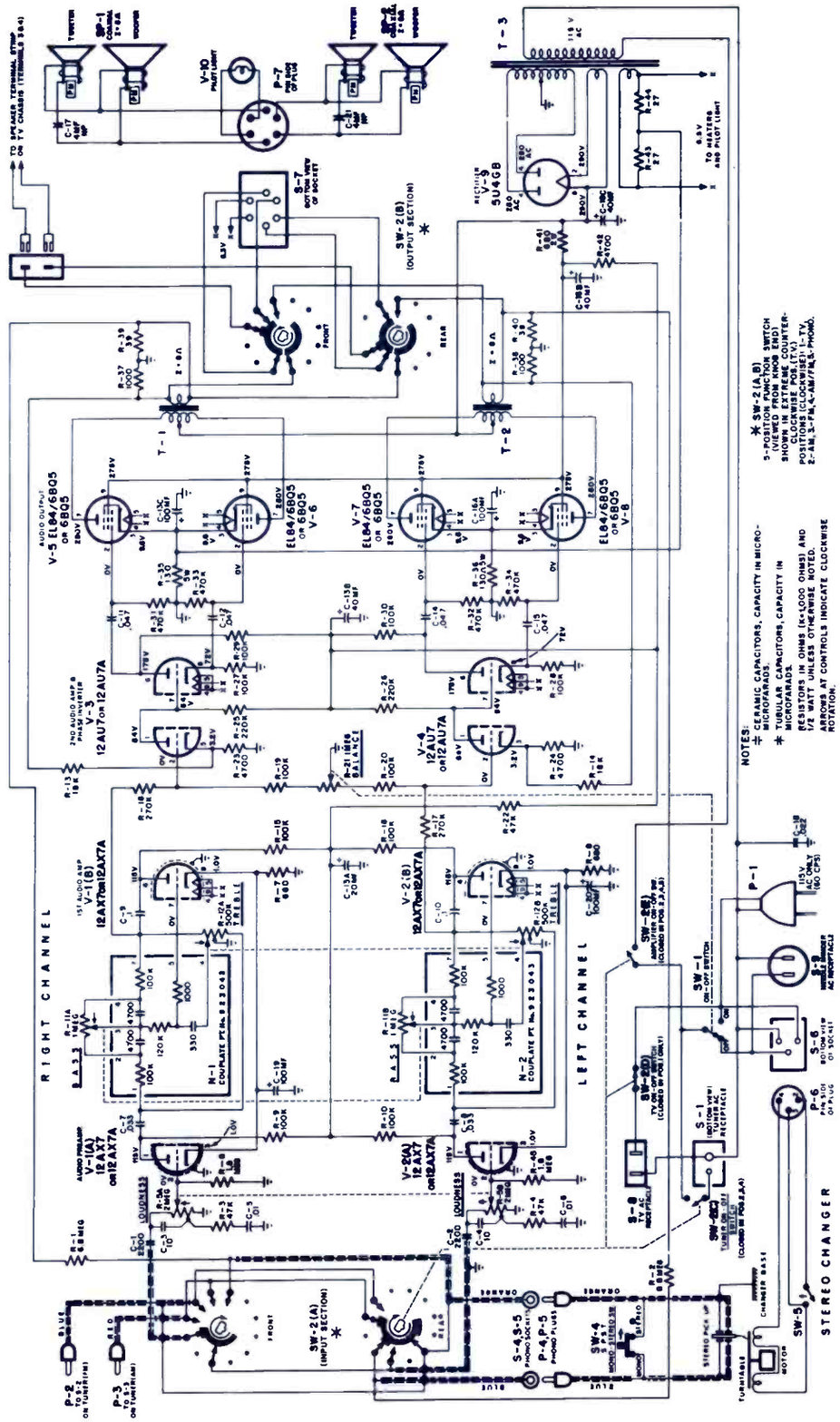
SPEAKER IMPEDANCE 100 OHM

PNP TRANSISTOR

CHASSIS, WIRING AND COMPONENTS VIEWED FROM WIRING SIDE

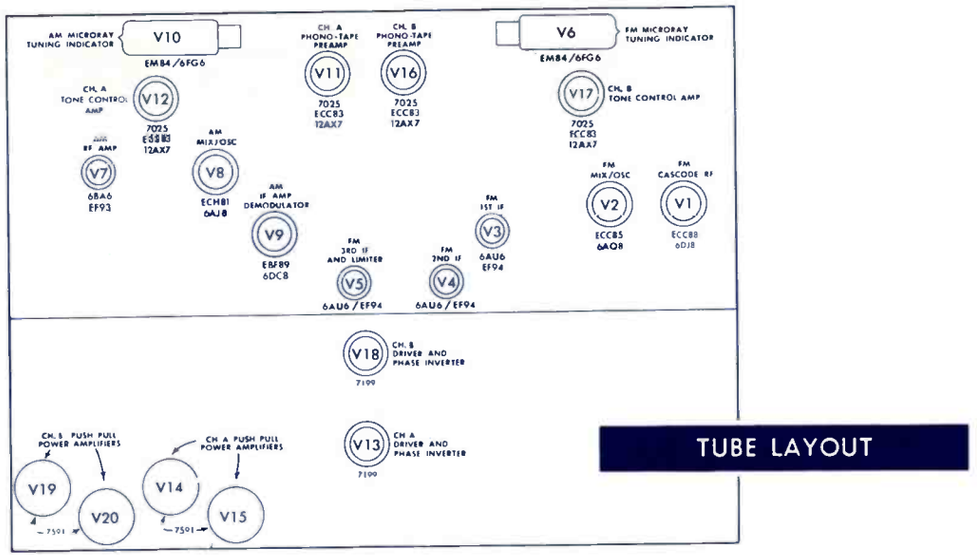
ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

DUMONT
Stereo Amplifier
Chassis 120509-B

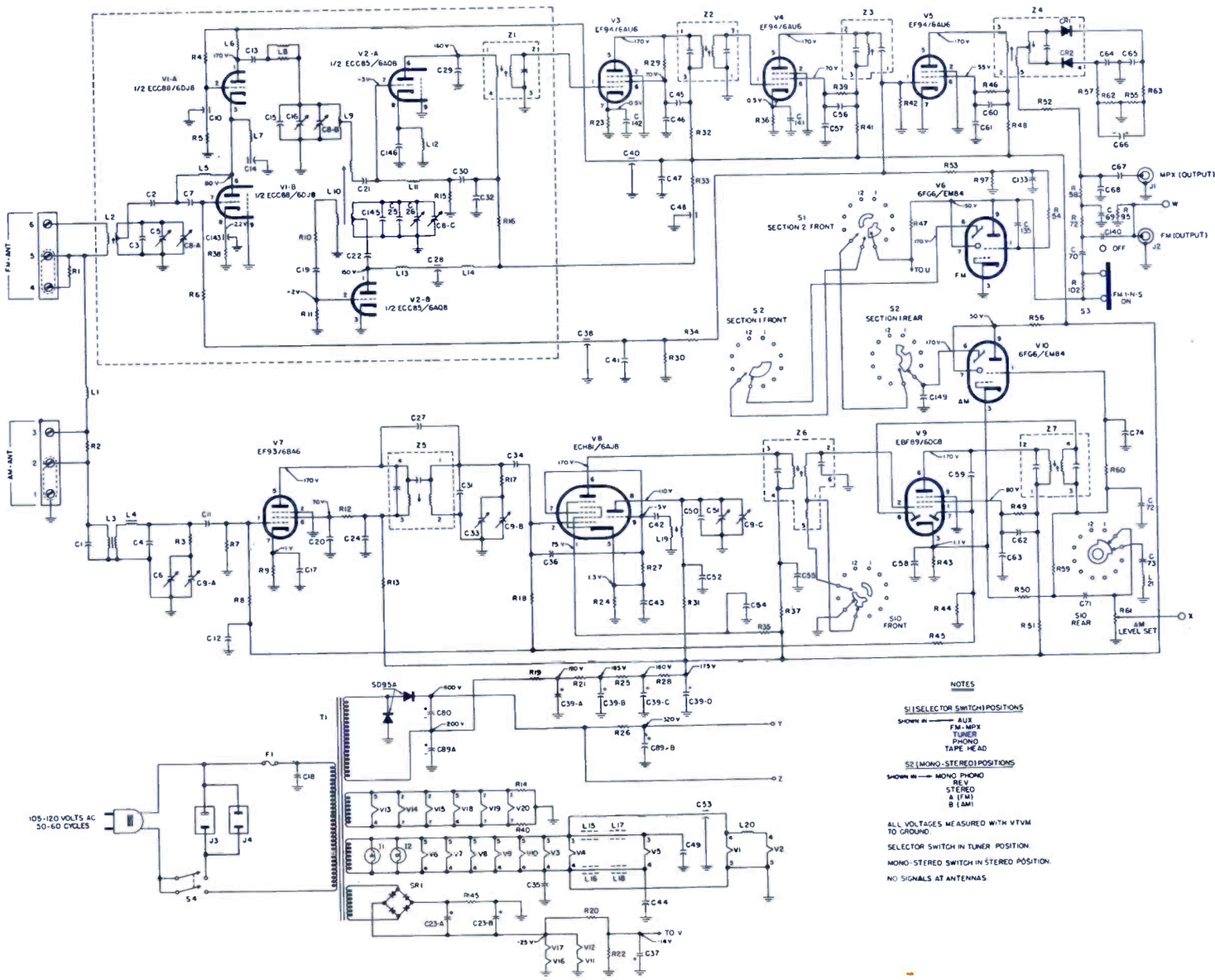


FISHER

FM Stereo Tuner
Model 800



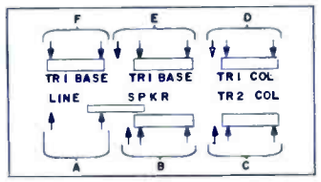
TUBE LAYOUT



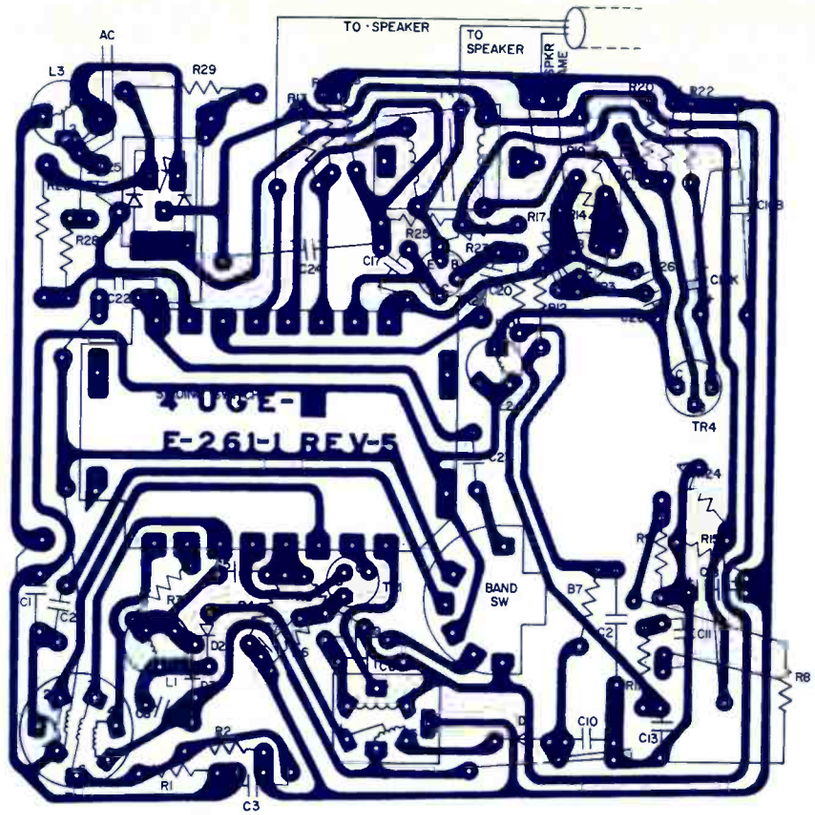
TUNER SECTION

ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

GENERAL ELECTRIC
Transistorized Intercom
Model W 300 A

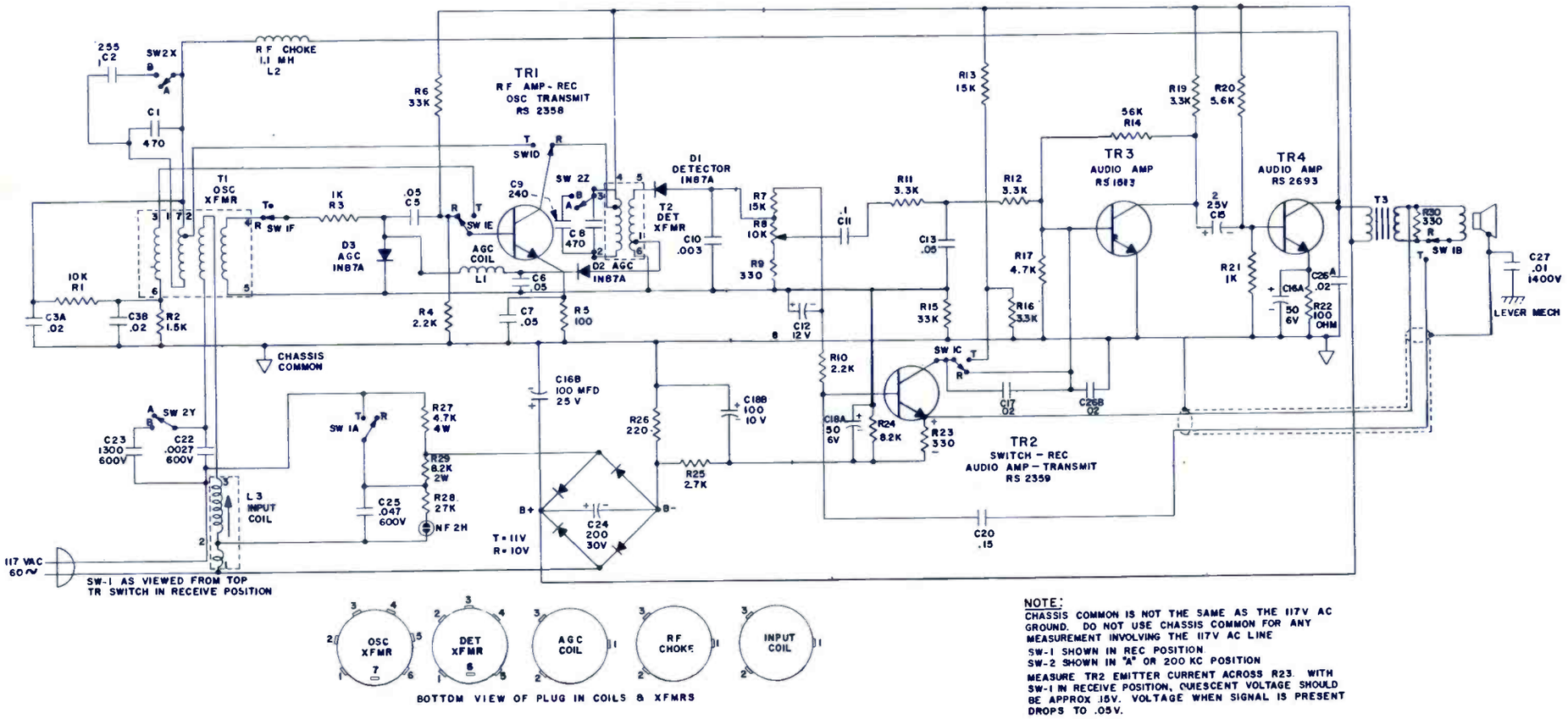


COMPONENT WIRING



AVERAGE QUIESCENT VOLTAGES AT TRANSISTORS READ WITH 20K OHM/VOLT METER				
		TR-1	TR-3	TR-4
RECEIVER TO CHASSIS COMMON	E	.27	0	1.3
	B	.42	-.44	1.5
	C	9.6	8.9	9.1
	B+	9.8	9.8	9.8
GROUND	B-	-4.05	-4.05	-4.05
TRANS TO CHASSIS COMMON GROUND	E	.94	0	1.77
	B	-.91	.15	1.32
	C	10.8	3.5	10.8
	B+	11.7	11.7	11.7
	B-	-6.35	-6.35	-6.35

BASE OF TR-2 TO B-	TRANS	REC	OTHER VOLTAGES ON TR-2 MUST BE READ WITH VTVM.
	~.475	~1.1	



NOTE:
CHASSIS COMMON IS NOT THE SAME AS THE 117V AC GROUND. DO NOT USE CHASSIS COMMON FOR ANY MEASUREMENT INVOLVING THE 117V AC LINE
SW-1 SHOWN IN REC POSITION
SW-2 SHOWN IN "A" OR 200 KC POSITION
MEASURE TR2 EMITTER CURRENT ACROSS R23. WITH SW-1 IN RECEIVE POSITION, QUIESCENT VOLTAGE SHOULD BE APPROX .15V. VOLTAGE WHEN SIGNAL IS PRESENT DROPS TO .05V.

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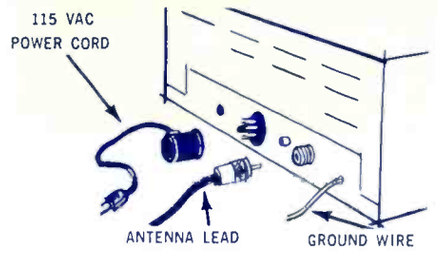
ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

LAFAYETTE RADIO
Citizens Band Radio
Model HE-20A

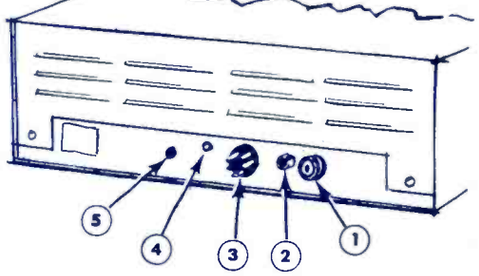


RECEIVER

Sensitivity—1μ volt
Image Rejection—45db
Selectivity ± 3 kc a 6 db
IF Frequency 1650 KC
Noise Limiter—Series Gate
Audio Output—3 watts

TRANSMITTER

Oscillator using 3rd Overtone crystal control.
Input Power—5 watts,
Amplitude Modulation
Pi-Network Output



REAR APRON

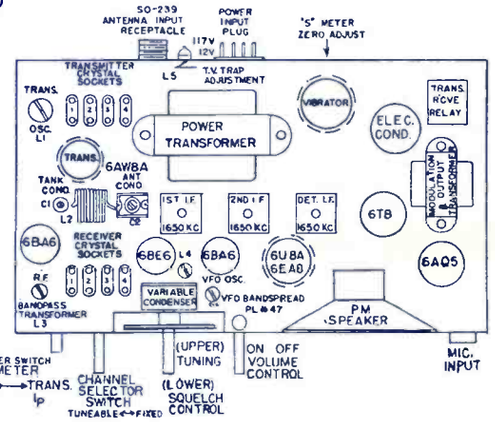
① **ANTENNA CONNECTOR**—For insertion of antenna cable terminated in a PL-259 connector as described in the section on antennas.

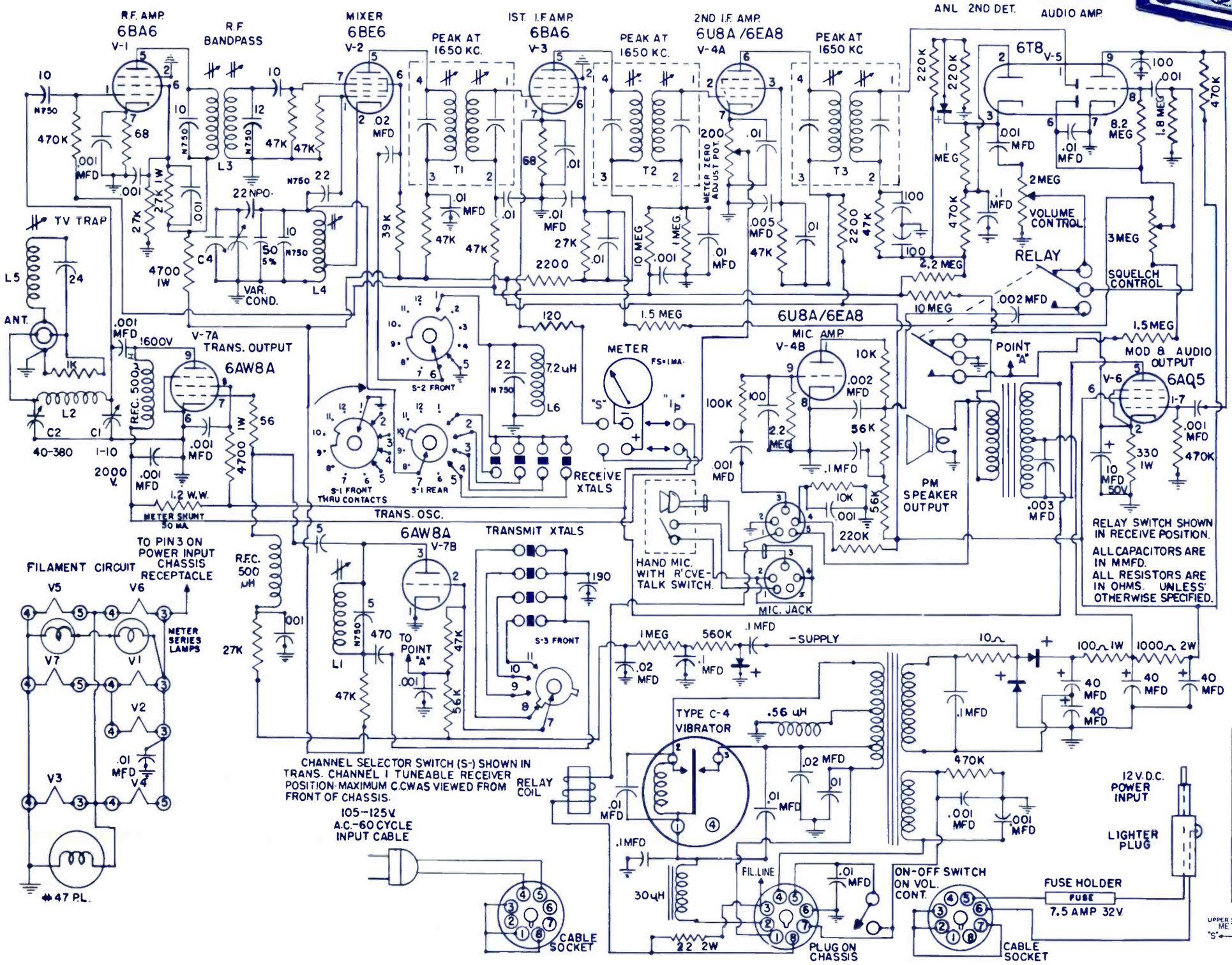
② **T. V. INTERFERENCE TRAP**—For suppression of Television Interference. If this trouble occurs, see the section on TV Interference.

③ **POWER JACK**—An Octal Jack to mate with the octal plugs on the ends of the power cables.

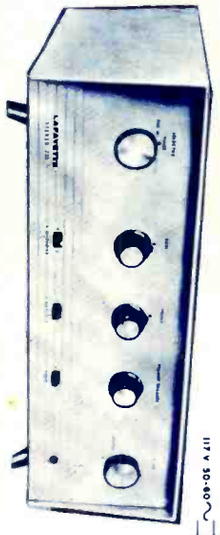
④ **SELF-TAPPING SCREW**—For attaching a metal strap to obtain additional support in mobile operation.

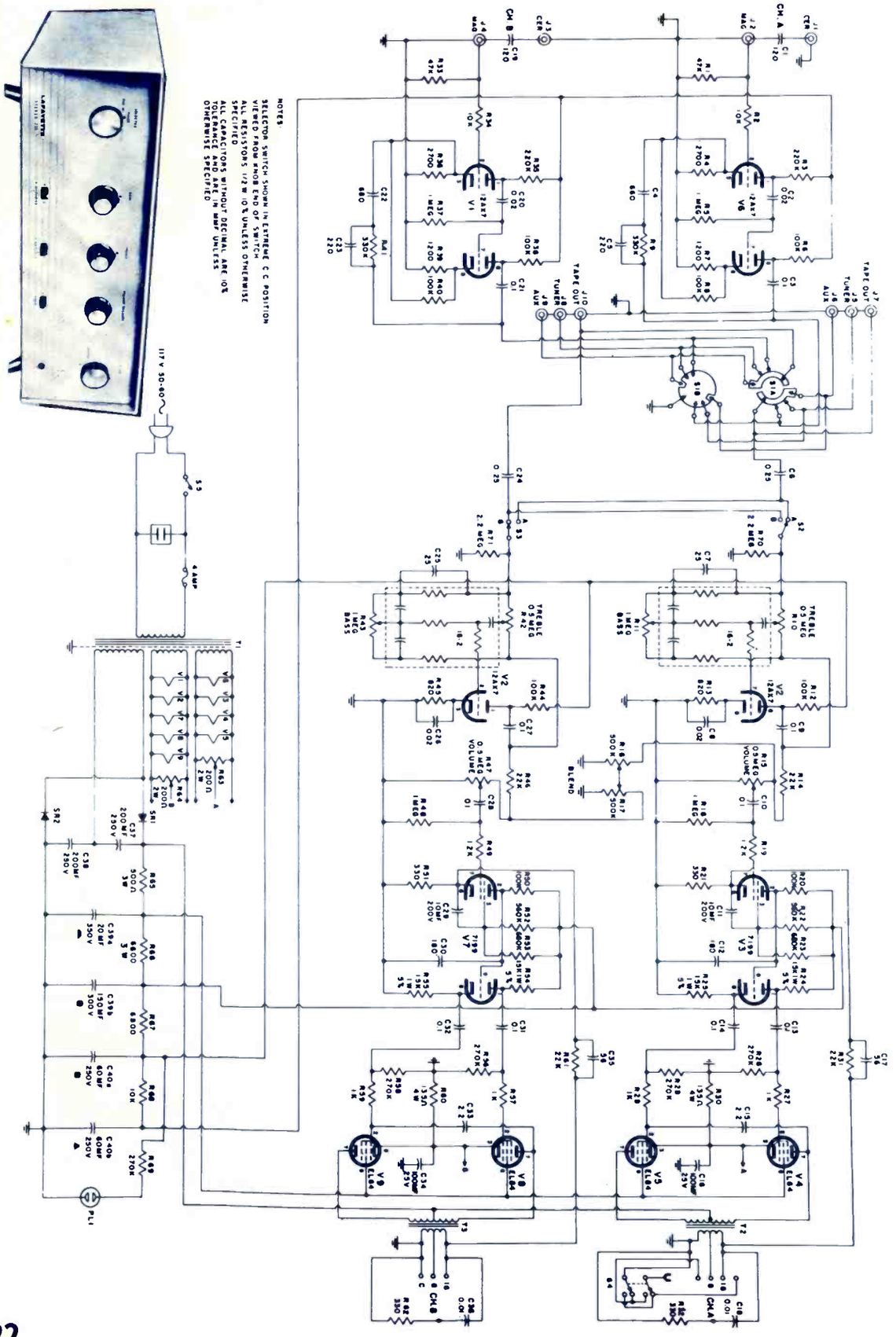
⑤ **"S" METER ADJUST**—To adjust the "S" Meter for 0 reading with the meter switch in "S" position and no antenna connected.



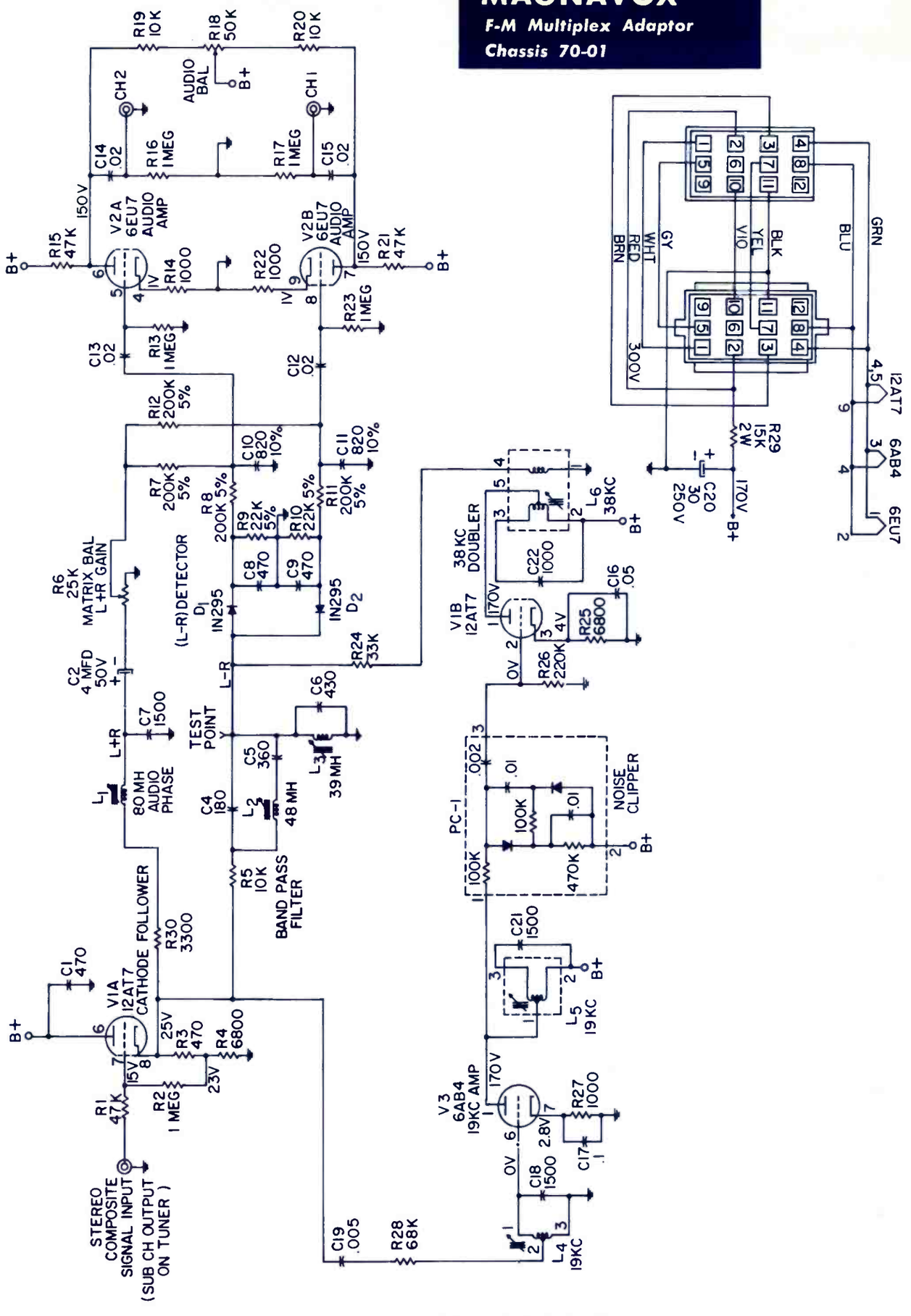


LAFAYETTE
Stereo Amplifier
Model KT-236



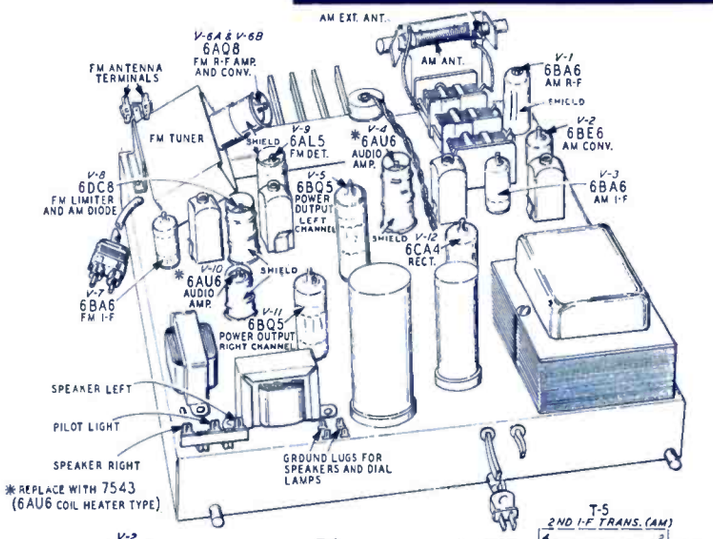


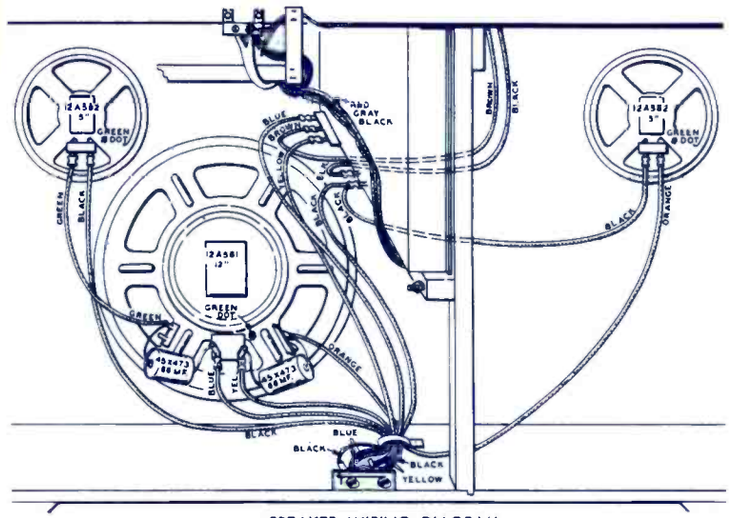
MAGNAVOX
F-M Multiplex Adaptor
Chassis 70-01



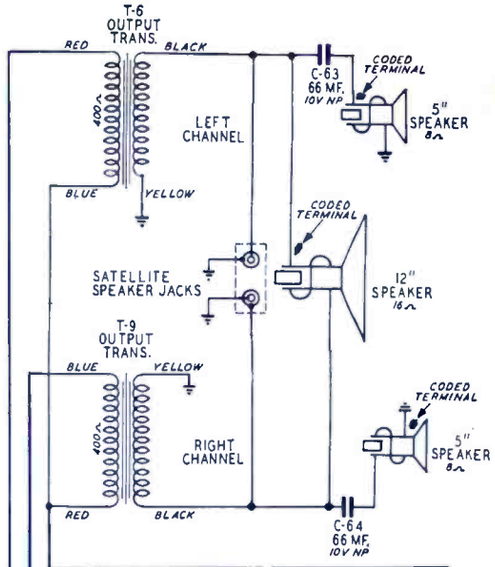
ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

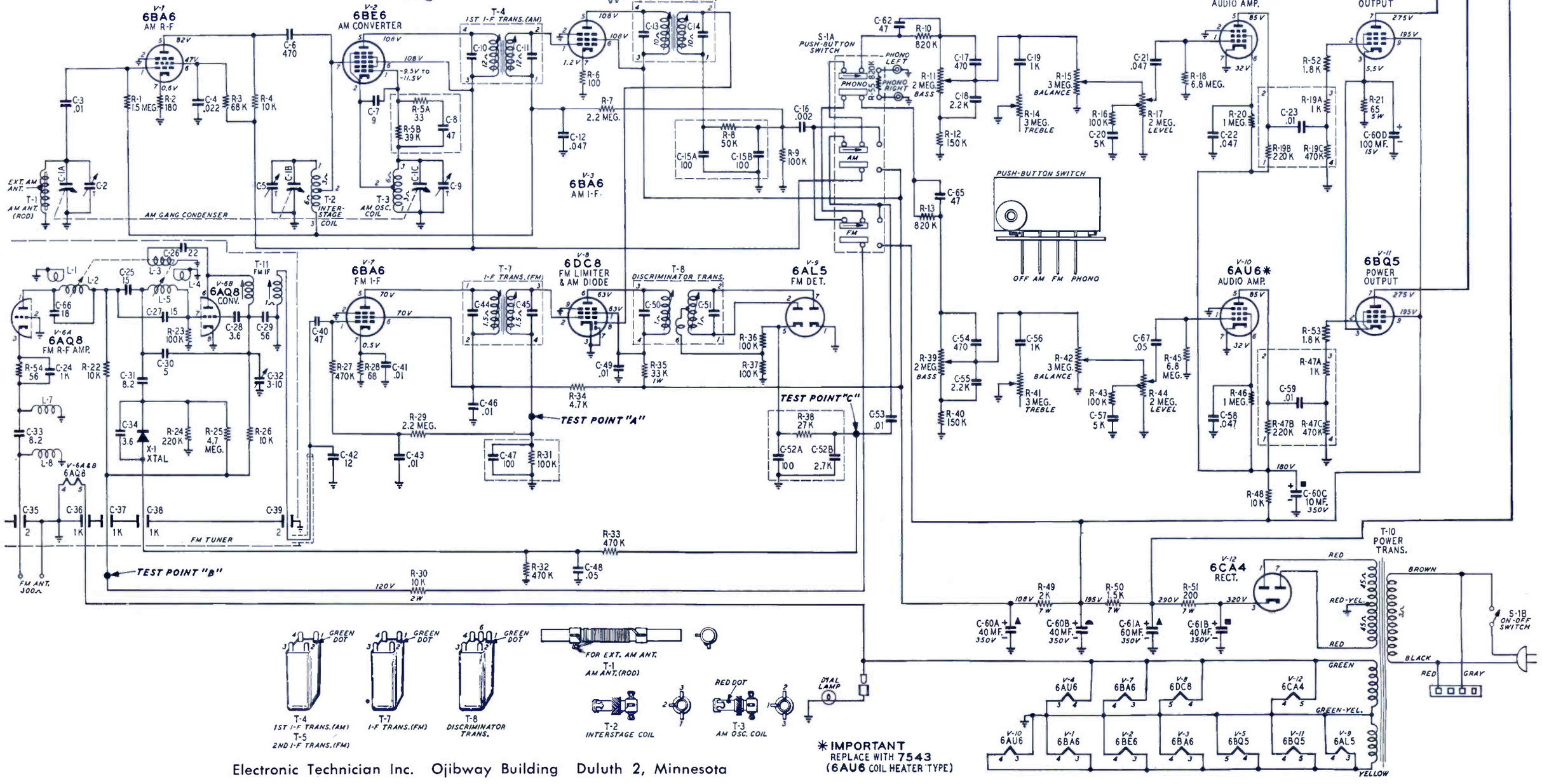
MONTGOMERY WARD (Airline)
Stereo Console, AM-FM-Phono Models WG-2805A, WG-2806A, WG-2807-A





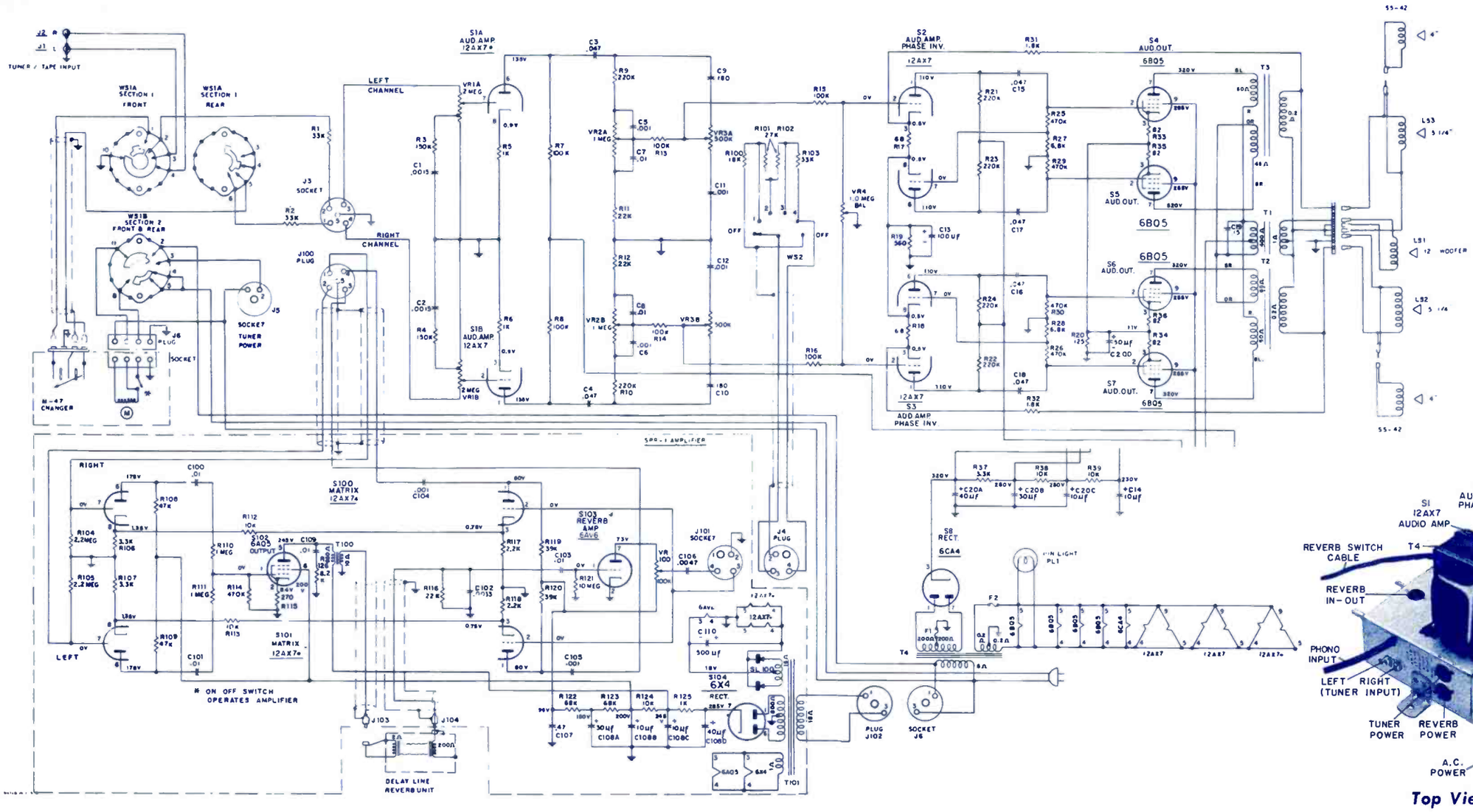
SPEAKER WIRING DIAGRAM.

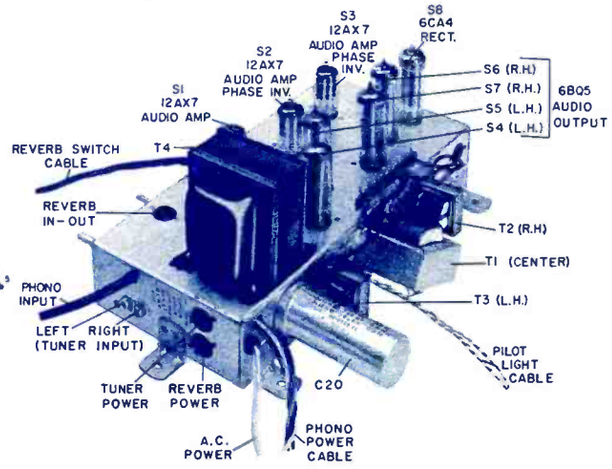




*IMPORTANT
REPLACE WITH 7543
(6AU6 COIL HEATER TYPE)

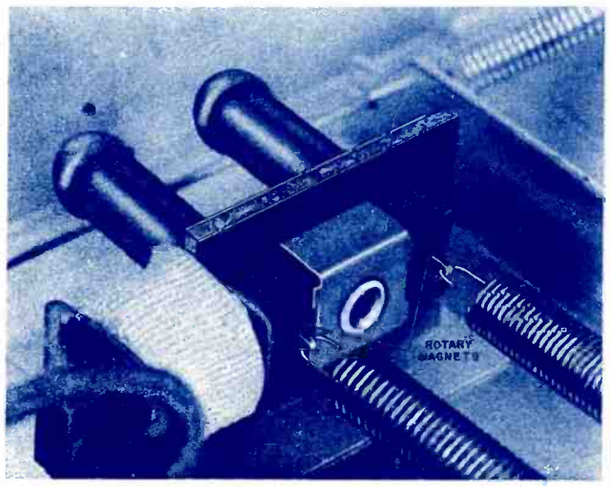
PHILCO
Stereo Console W/Reverberation Model J-1720R



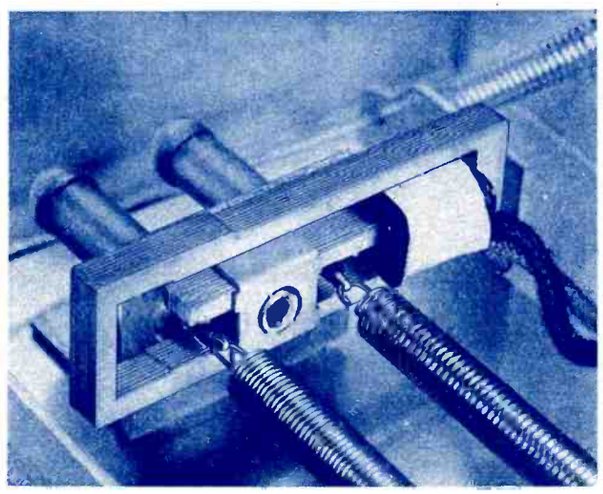


Top View of Amplifier

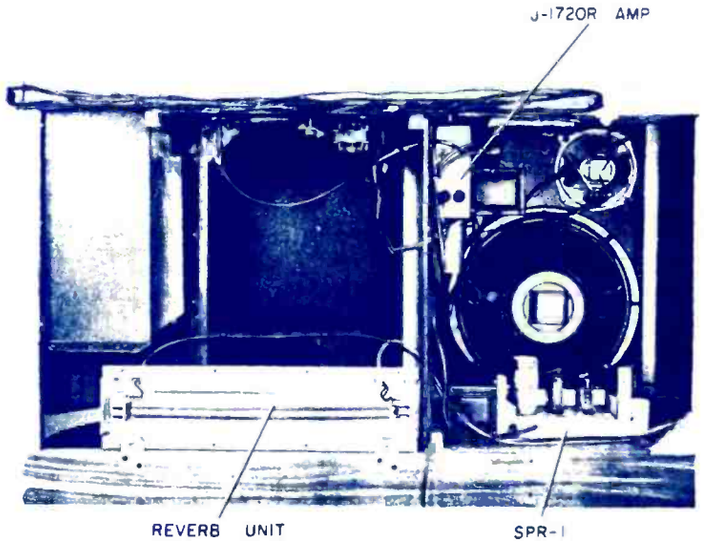
Model J-1720R



Reverb Motor



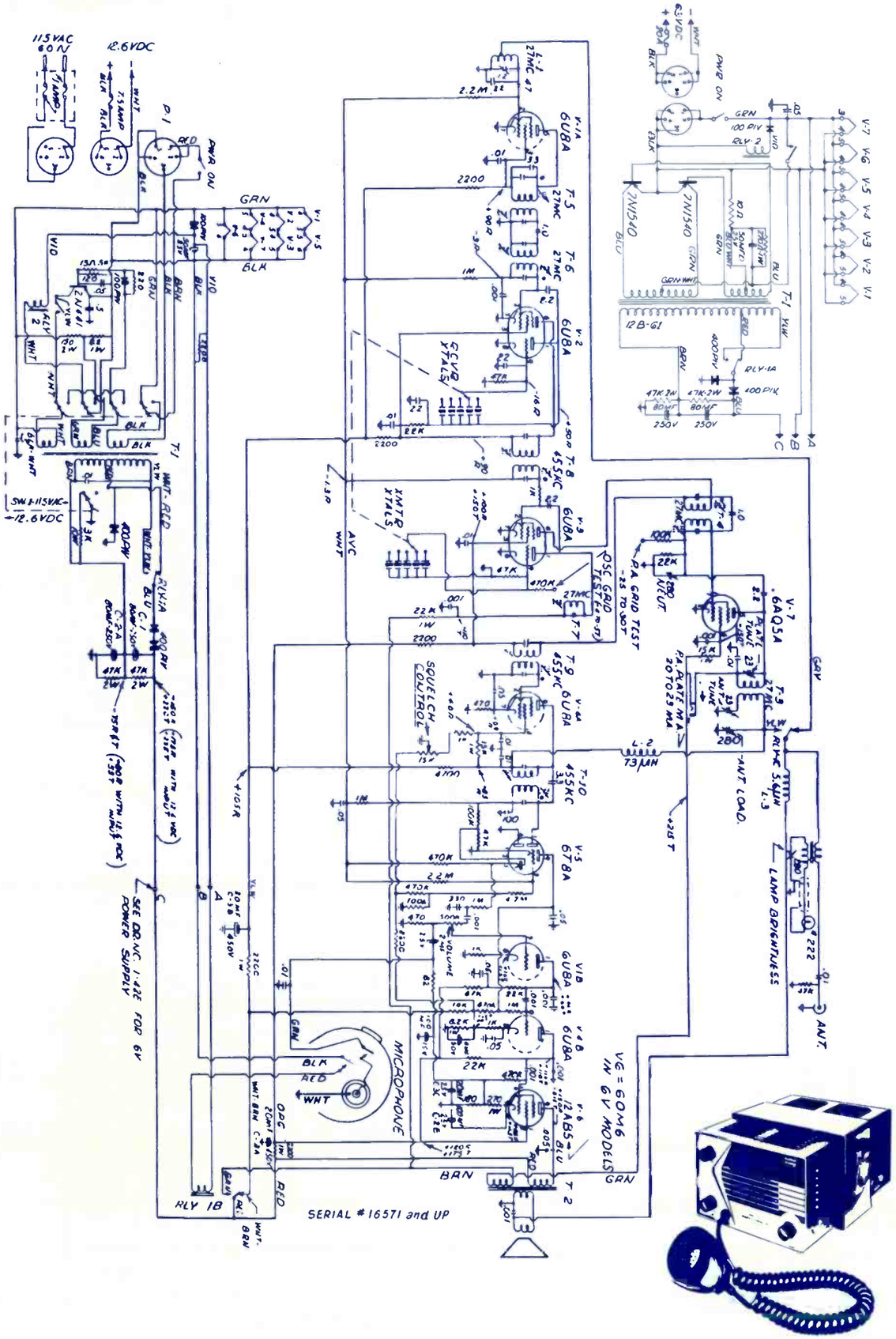
Reverb Generator



Location of Reverbaphonic Unit

ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

PEARCE-SIMPSON
Citizens Band Radio
Model CBD-5



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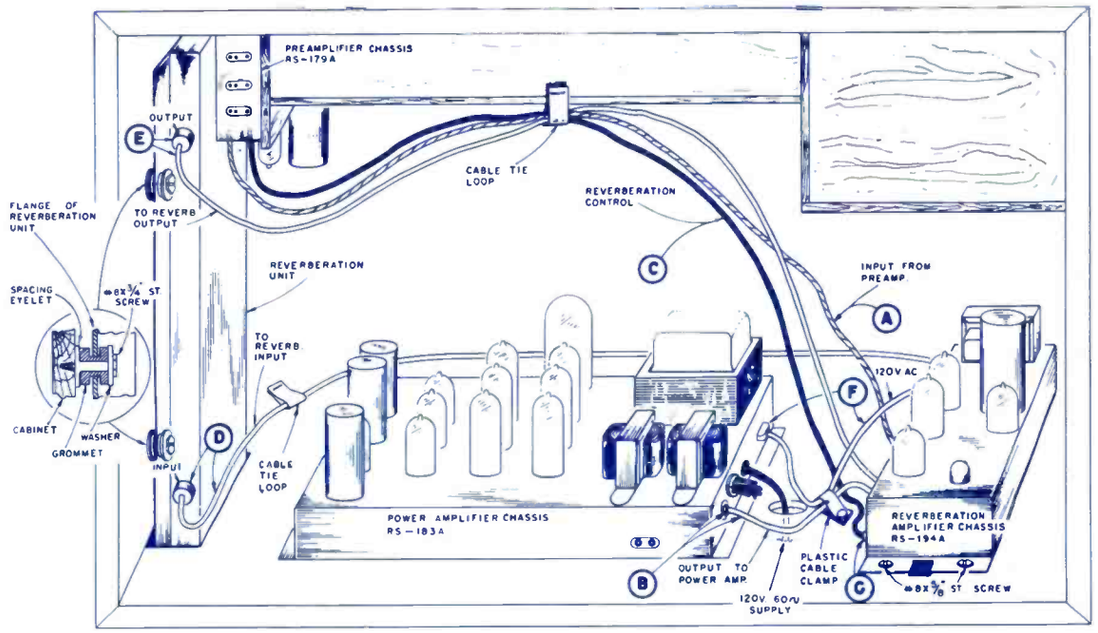
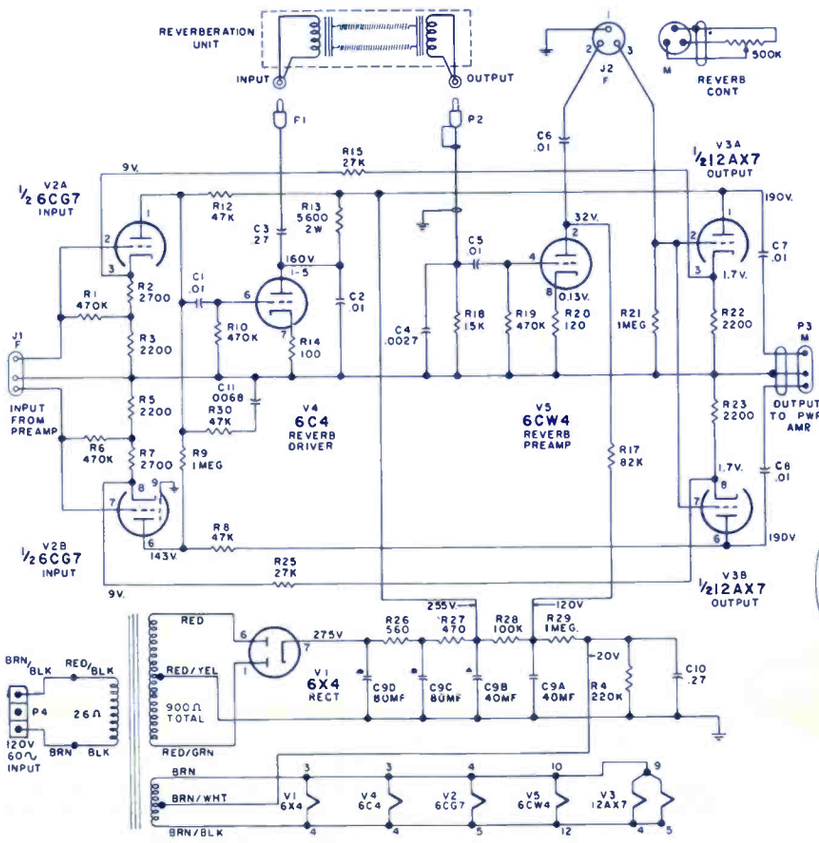
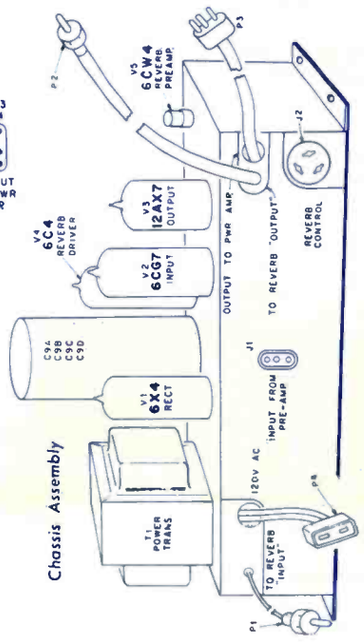
ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

RCA
Reverberation Amplifier
Chassis RS-194A



Placement and Connection of Reverberation Unit and Amplifier in Models RVCR-45, RVCR-46, and RVCR-84



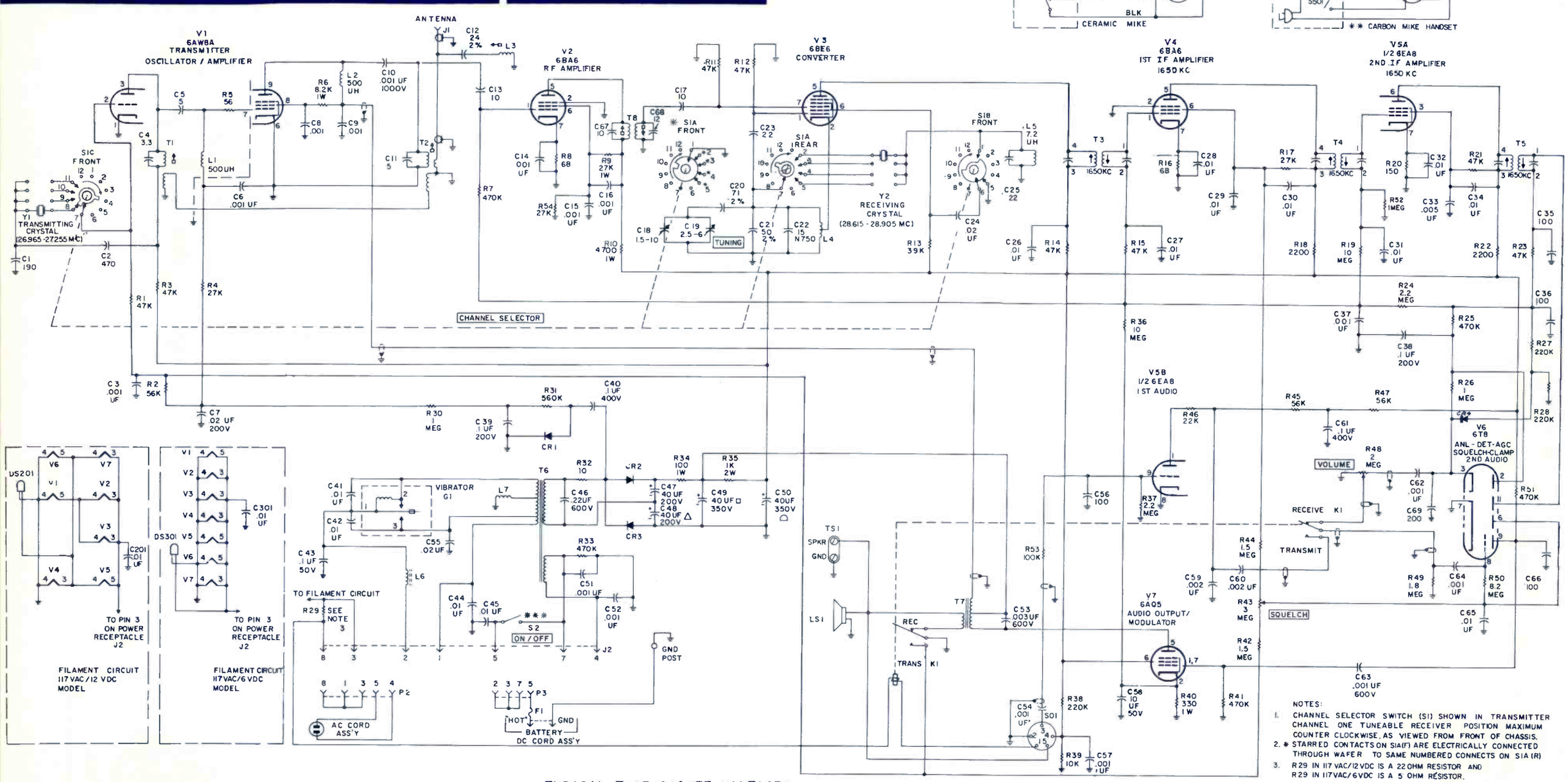


Reverberation Amplifier Chassis RS-194A

ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

RCA
Citizens Band Radio
Model MARK VII
"Radio Phone"

July • 1961



NOTES:
1. CHANNEL SELECTOR SWITCH (S1) SHOWN IN TRANSMITTER CHANNEL ONE TUNEABLE RECEIVER POSITION MAXIMUM COUNTER CLOCKWISE, AS VIEWED FROM FRONT OF CHASSIS.
2. * STARRED CONTACTS ON S1A(F) ARE ELECTRICALLY CONNECTED THROUGH WAFER TO SAME NUMBERED CONNECTS ON S1A (R)
3. R29 IN 117 VAC/12 VDC IS A 22 OHM RESISTOR AND R29 IN 117 VAC/6 VDC IS A 5 OHM RESISTOR.

TYPICAL TUBE SOCKET VOLTAGES

Symbol, Type, Function	Operation	Pin 1	2	3	4	5	6	7	8	9
V1 - 6AW8A	Receive	0	-77	220	H	H	0	-80	265	265
Crystal Oscillator/ R.F. Power Amplifier	Transmit	0	-6.6	105	H	H	0	-7.2	190	245
V2 - 6BA6	Receive	0	0	H	H	163	82	0.8	-	-
R.F. Amplifier	Transmit	-82	0	H	H	211	166	0.4	-	-
V3 - 6BE6	Receive	-3.2	0	H	H	158	66	0	-	-
Mixer - Oscillator	Transmit	-3.7	0	H	H	202	74	-6.1	-	-

Symbol, Type, Function	Operation	Pin 1	2	3	4	5	6	7	8	9
V4 - 6BA6	Receive	0	0	H	H	187	90	1.0	-	-
First I.F. Amplifier	Transmit	-70	0	H	H	232	225	0	-	-
V5 - 6EA8 Second I.F. Amplifier/ Microphone Amplifier	Receive	14	0	105	H	H	200	1.3	0	-0.9
	Transmit	14	-6.3	210	H	H	230	0.3	0	-0.9
V6 - 6T8	Receive	-1.0	-0.6	0.2	H	H	*-0.3 **-28	0	*-1.0 **-26	*60 **215
Noise Limiter - Detector- Squelch Clamp	Transmit	-11.0	-8.0	-5.2	H	H	*-0.2 **-0.3	0	-1.0	60
V7 - 6AQ5	Receive	0	11	H	H	250	218	0	-	-
Audio Output-Modulator	Transmit	0	11	H	H	250	235	0	-	-

* Squelch control maximum clockwise.

** Squelch control maximum counterclockwise.

Voltages measured to chassis with VTVM (RCA VoltOhmyst or equivalent) and are positive except where noted.

Transmitter tuned and loaded, with no signal input to receiver.

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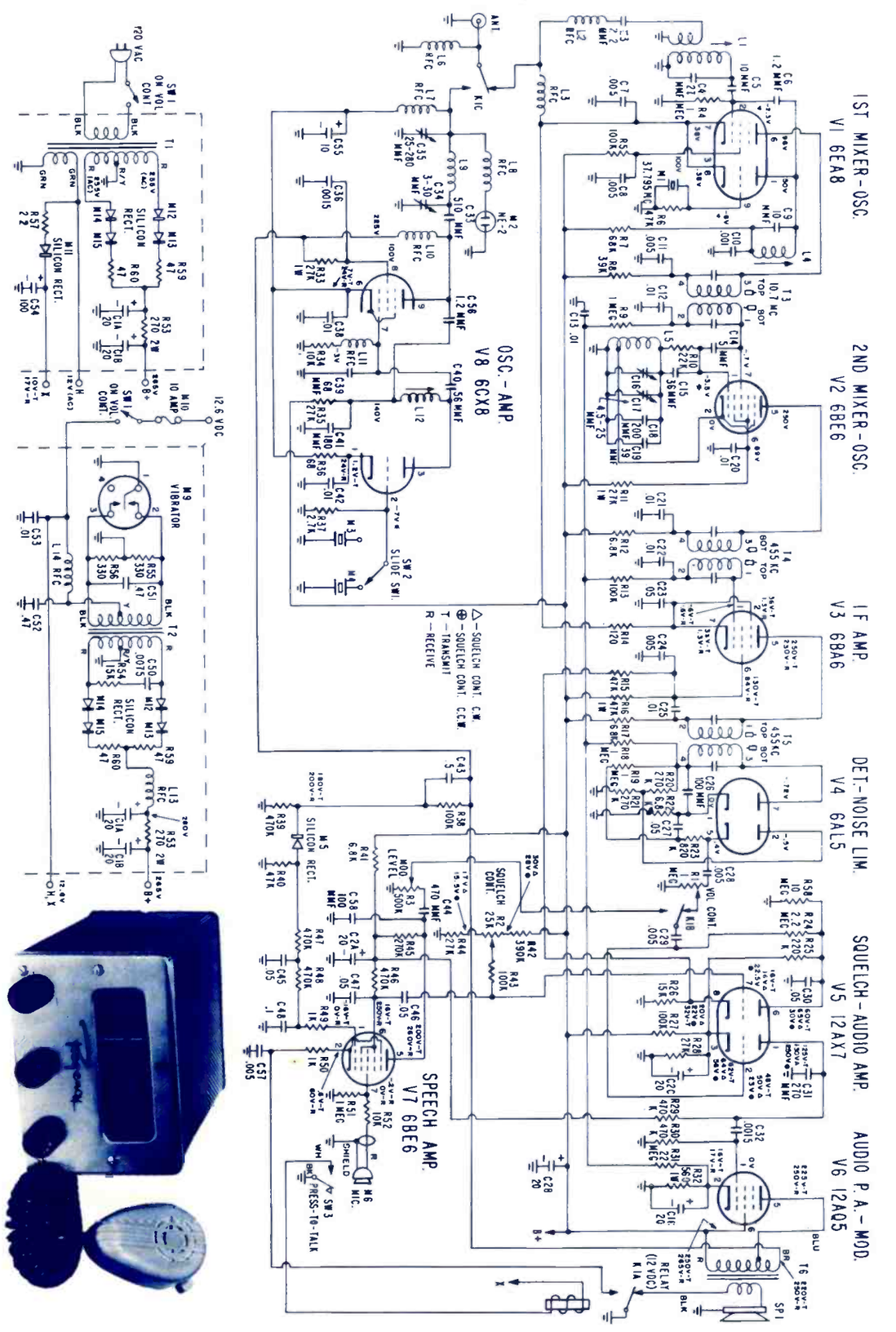
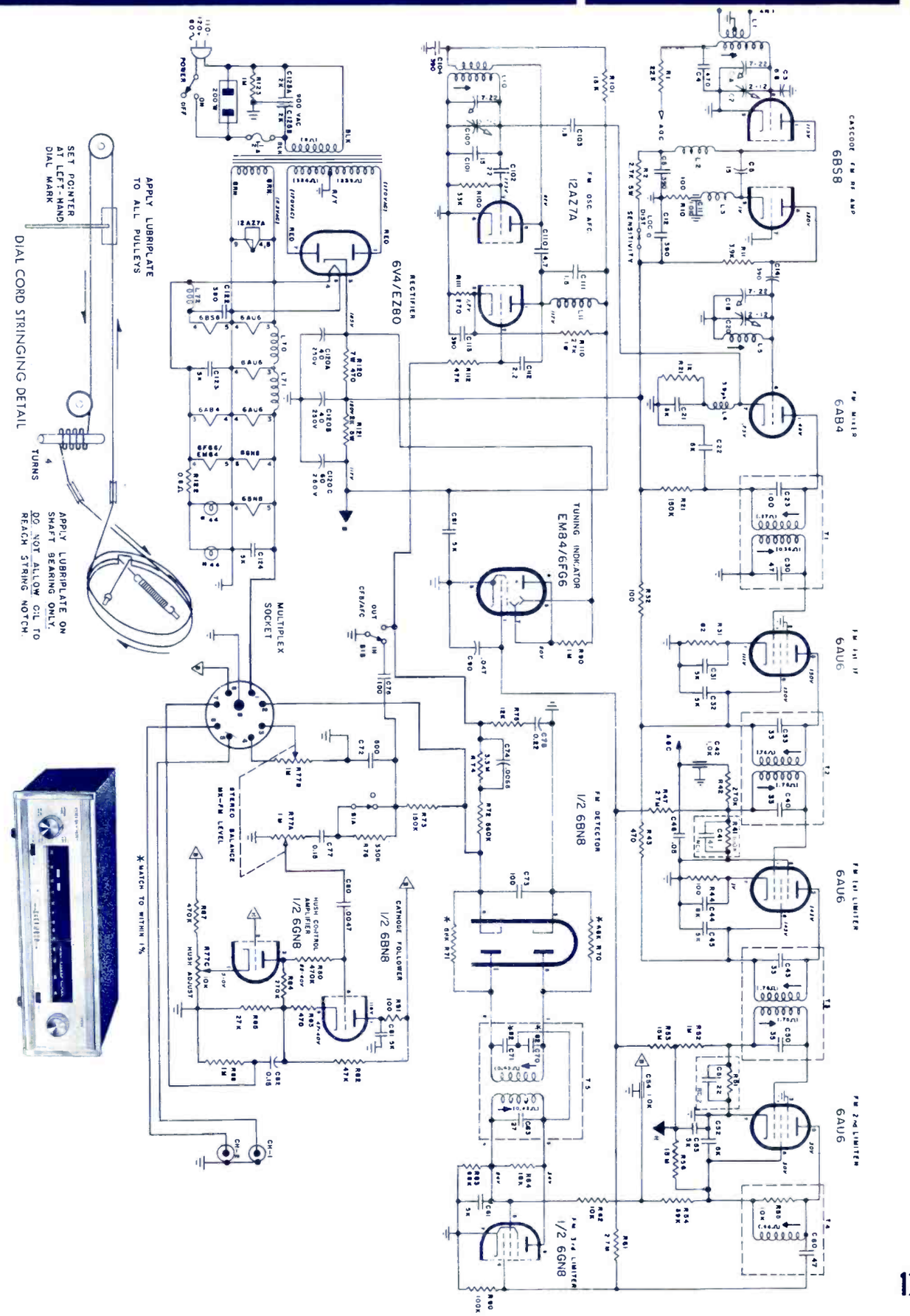
REGENCY
Citizens Band Radio
Model CB-27 & CBM-27



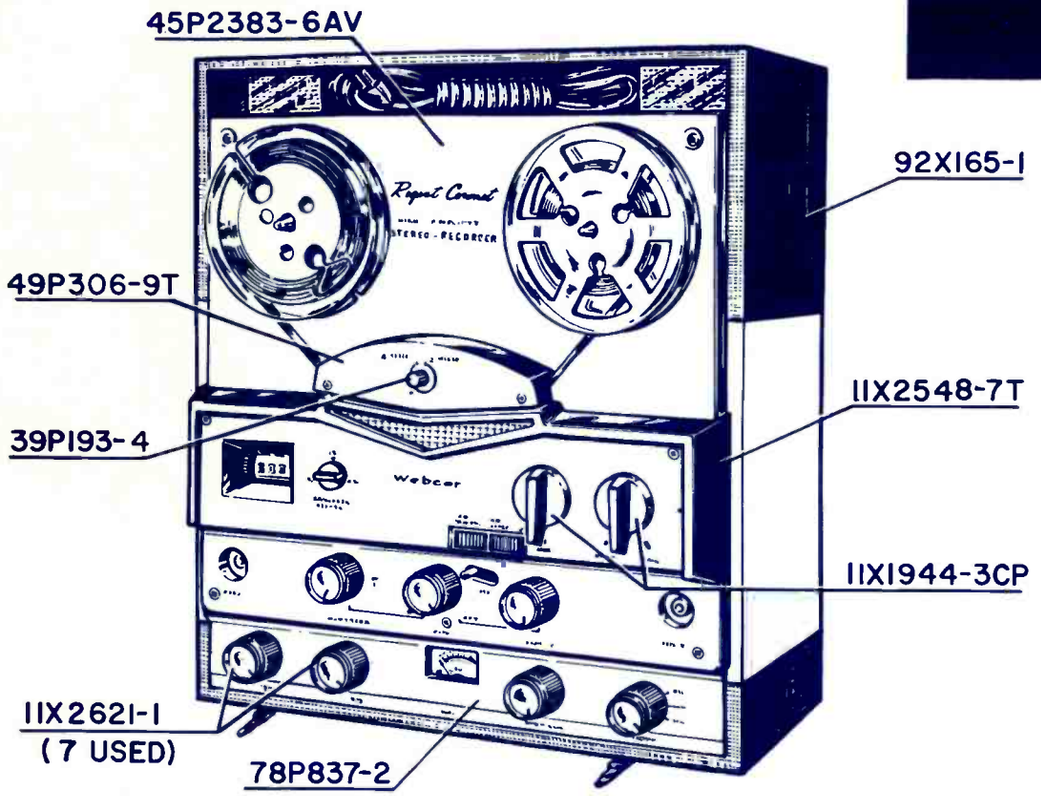
RED AND WHITE LEADS OF MICROPHONE REVERSED ON EARLY MODELS.

ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

SHERWOOD
FM Stereo Tuner
Model S-3000 III



WEBCOR
Tape Recorder
Model 2207

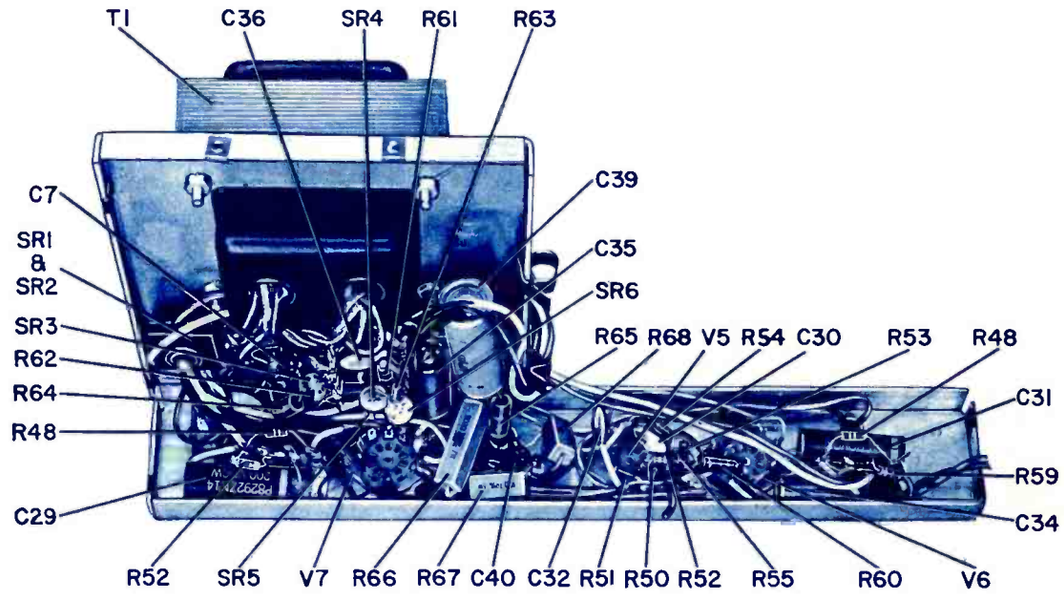


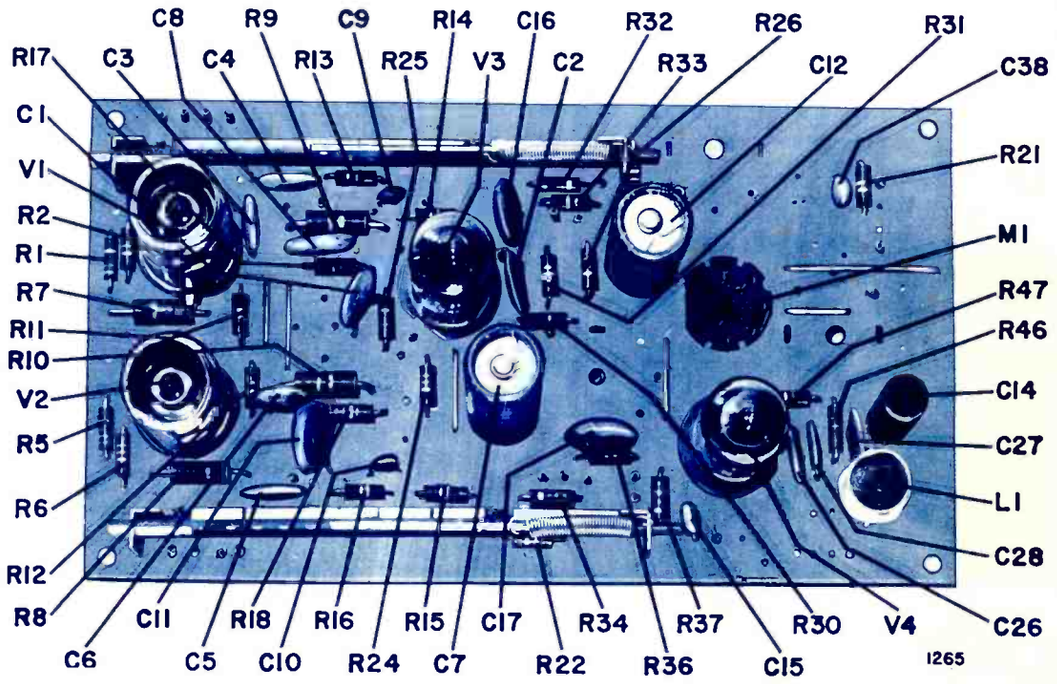
VU METER ADJUSTMENT

Proceed to adjust the VU meter in the following manner:

1. Remove control knobs and control escutcheon assembly.
2. Connect audio signal generator to "Mic Input Ch. 1" jack (J1).
3. Turn Tape Recorder "ON" and adjust "VOL. 1" control to 3/4 of full volume or greater.
4. Depress "RIGHT RECORD SAFETY LOCK" and move slightly to right to lock in place.
5. Rotate "MONITOR" control fully clockwise.
6. Connect AC VTVM of at least 11 megohms input resistance to "EXT. AMP. CH. 1" jack (J4).
7. Turn "METER SELECTOR" control to "CH. 1".
8. Adjust signal generator for approximately 2 volts at 1000 cps on the VTVM.
9. Adjust "METER LEVEL" control (R57), on mechanism chassis, until the VU meter reads 100% (0 db).
10. Replace control escutcheon assembly and control knobs.

BOTTOM VIEW OF MODEL 2207 POWER KMP

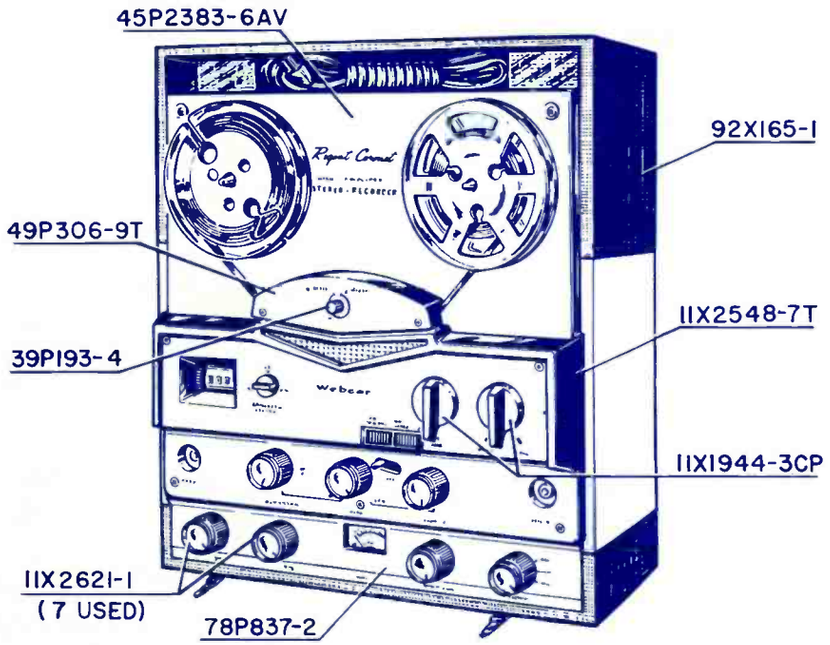




TOP VIEW OF MODEL 2207 PRE-AMP

WEBCOR
Tape Recorder
Model 2207

CABINET PARTS

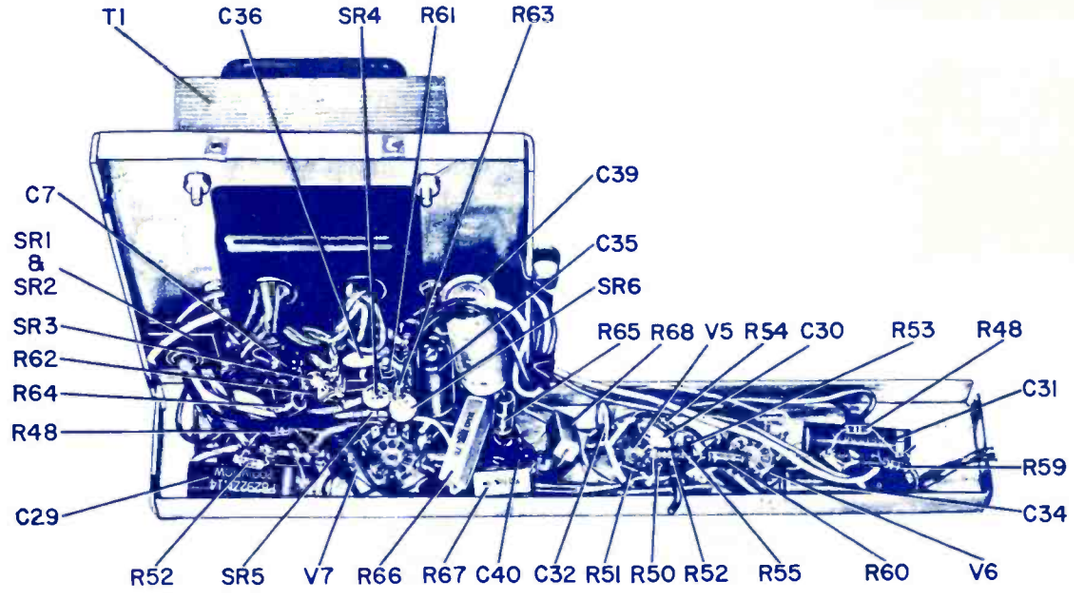


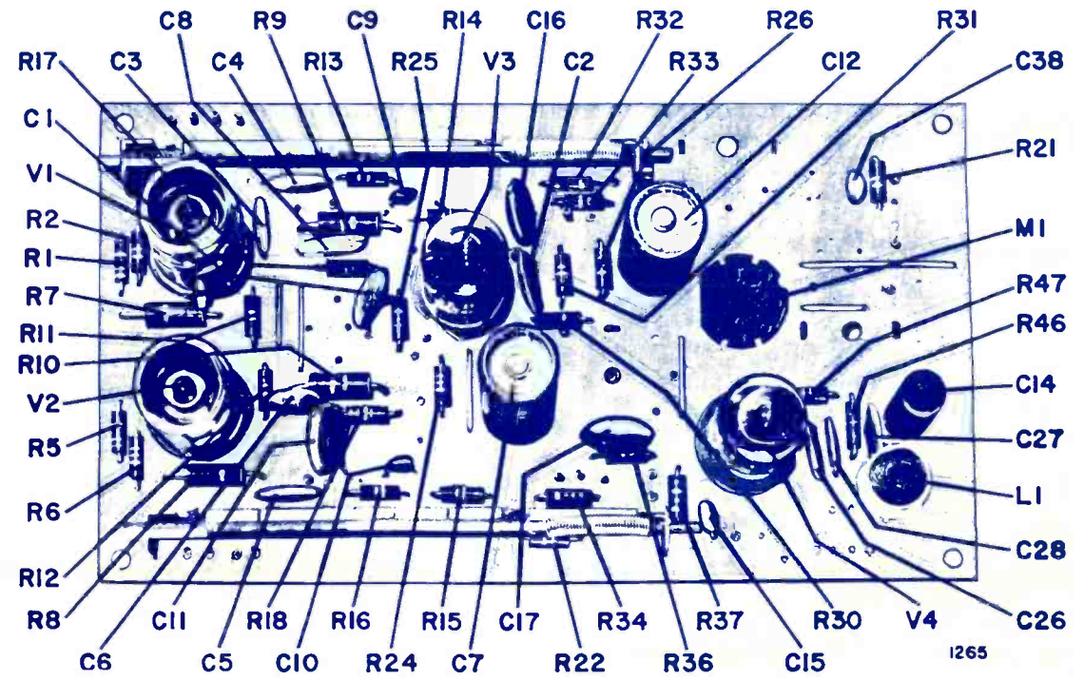
VU METER ADJUSTMENT

Proceed to adjust the VU meter in the following manner:

1. Remove control knobs and control escutcheon assembly.
2. Connect audio signal generator to "Mic Input Ch. 1" jack (J1).
3. Turn Tape Recorder "ON" and adjust "VOL. 1" control to 3/4 of full volume or greater.
4. Depress "RIGHT RECORD SAFETY LOCK" and move slightly to right to lock in place.
5. Rotate "MONITOR" control fully clockwise.
6. Connect AC VTVM of at least 11 megohms input resistance to "EXT. AMP. CH. 1" jack (J4).
7. Turn "METER SELECTOR" control to "CH. 1".
8. Adjust signal generator for approximately 2 volts at 1000 cps on the VTVM.
9. Adjust "METER LEVEL" control (R57), on mechanism chassis, until the VU meter reads 100% (0 db).
10. Replace control escutcheon assembly and control knobs.

BOTTOM VIEW OF MODEL 2207 POWER KMP



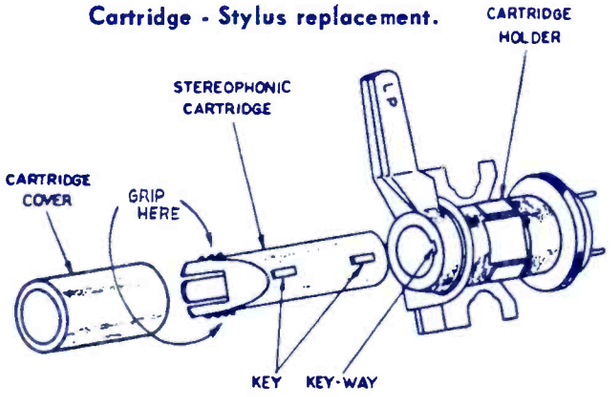


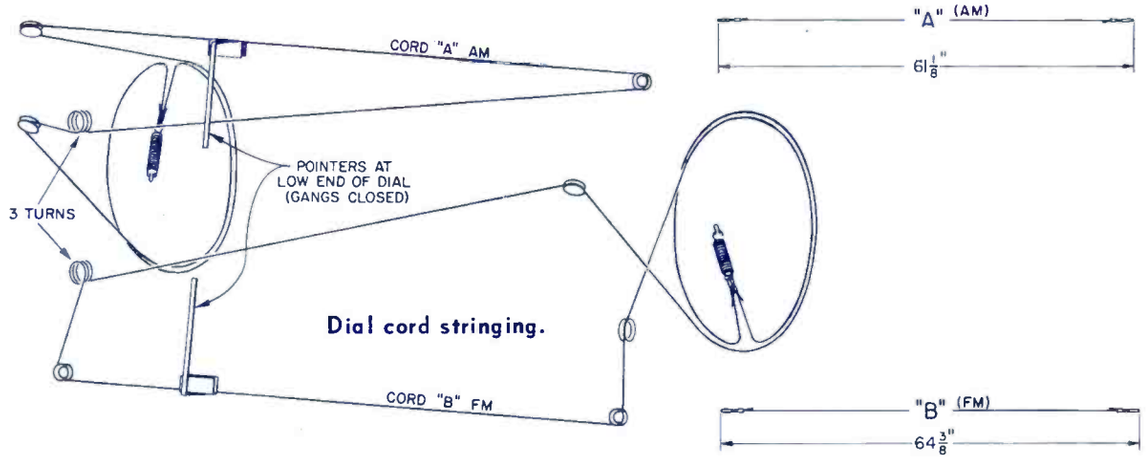
TOP VIEW OF MODEL 2207 PRE-AMP

WESTINGHOUSE
Hi-Fi Tuner Pre-Amp V-2511-1 Amp & Power Supply V-2510-1 Model H-M 1300, 1301, 1302, 1303.

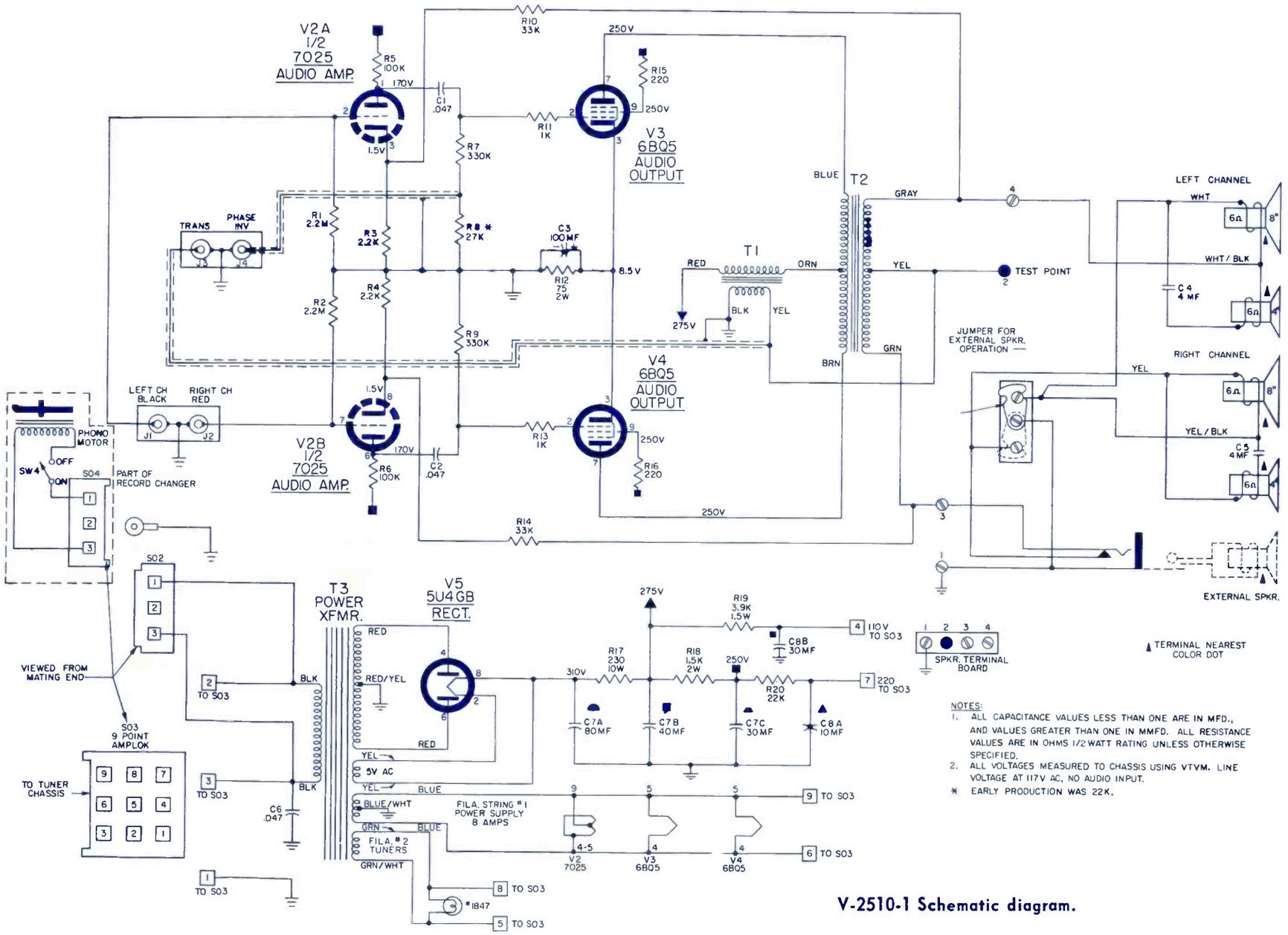
Electronic Technician
CIRCUIT DIGEST

Cartridge - Stylus replacement.





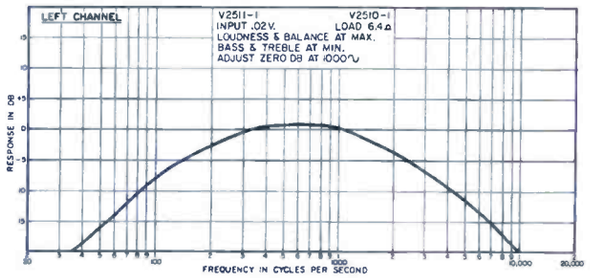
Dial cord stringing.



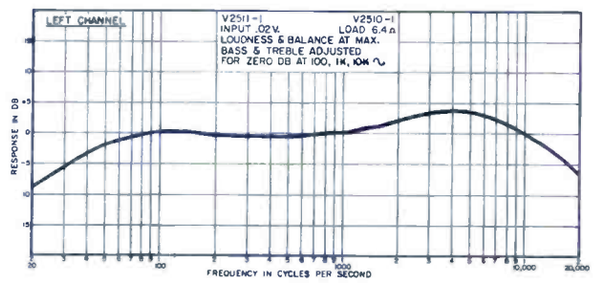
NOTES:
1. ALL CAPACITANCE VALUES LESS THAN ONE ARE IN MFD., AND VALUES GREATER THAN ONE IN MMFD. ALL RESISTANCE VALUES ARE IN OHMS 1/2 WATT RATING UNLESS OTHERWISE SPECIFIED.
2. ALL VOLTAGES MEASURED TO CHASSIS USING VTVM. LINE VOLTAGE AT 117V AC, NO AUDIO INPUT.

* EARLY PRODUCTION WAS 22K.

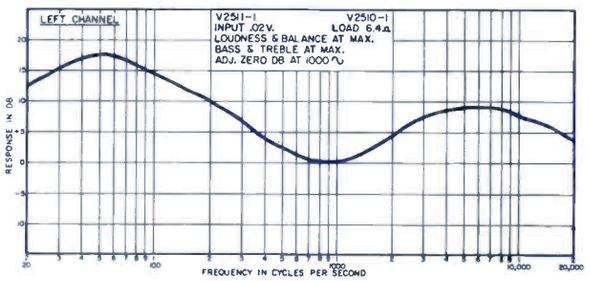
V-2510-1 Schematic diagram.



Frequency response curve.



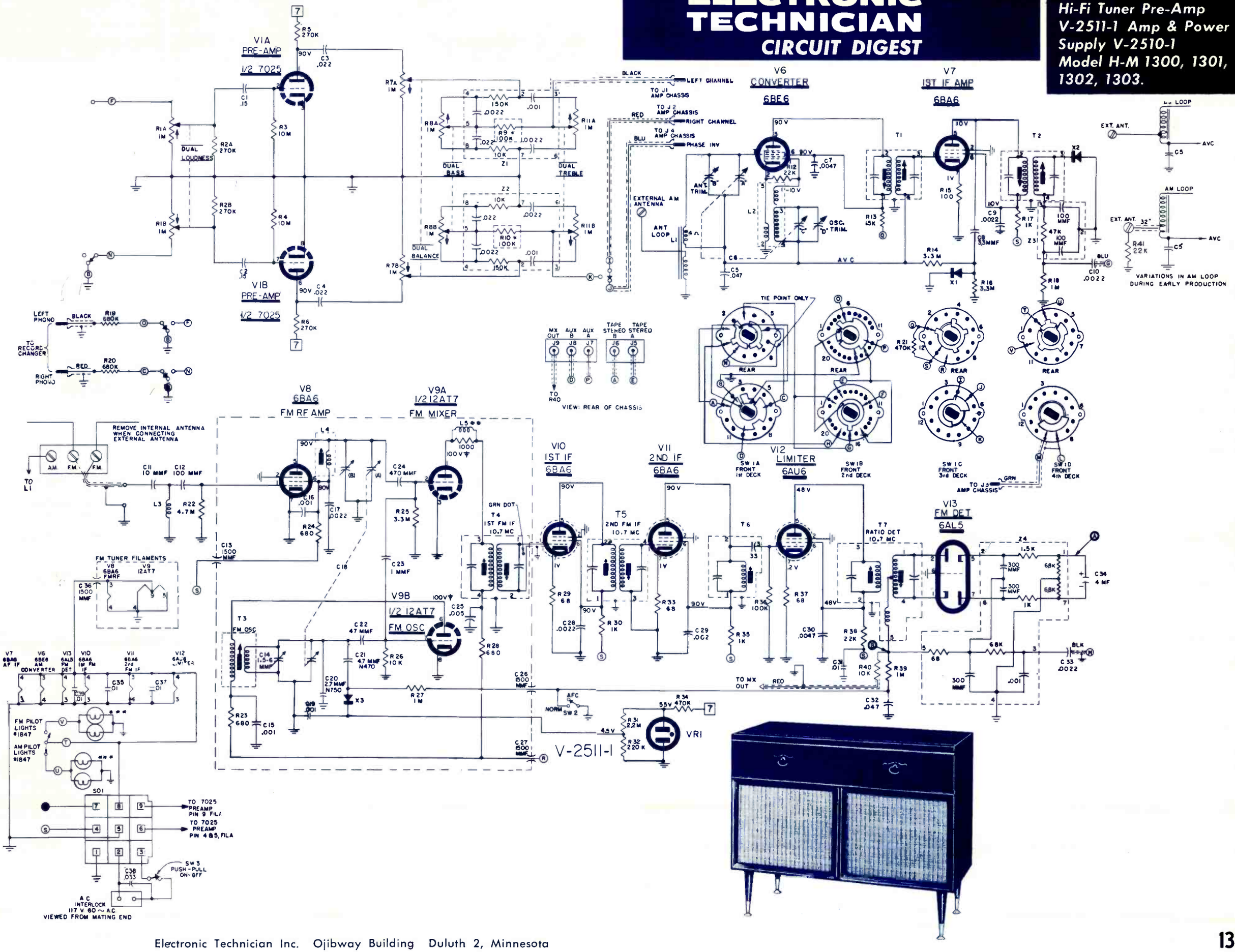
Frequency response curve.



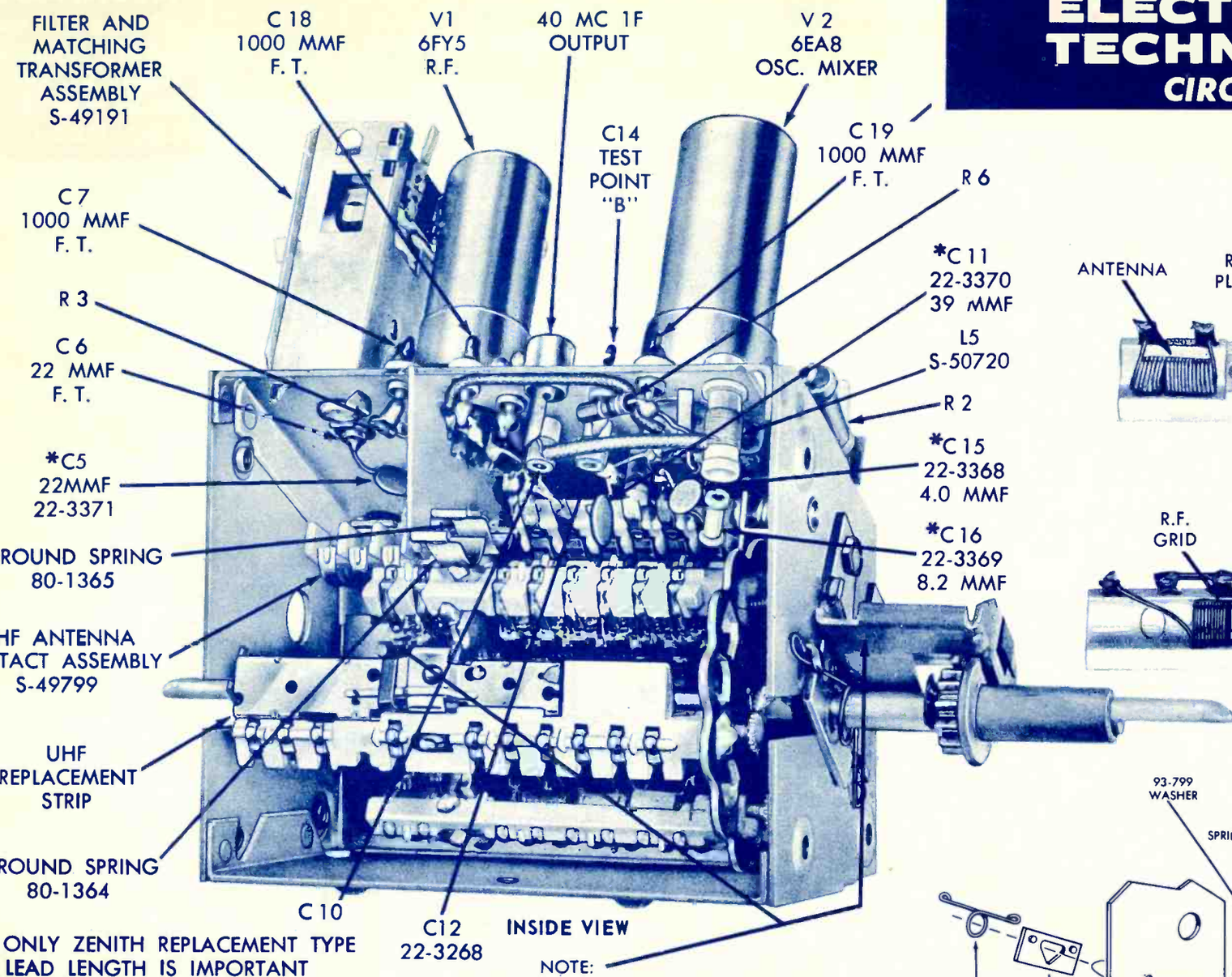
Frequency response curve.

ELECTRONIC TECHNICIAN
CIRCUIT DIGEST

WESTINGHOUSE
Hi-Fi Tuner Pre-Amp V-2511-1 Amp & Power Supply V-2510-1 Model H-M 1300, 1301, 1302, 1303.



ZENITH
"Gold Video Guard" Tuner



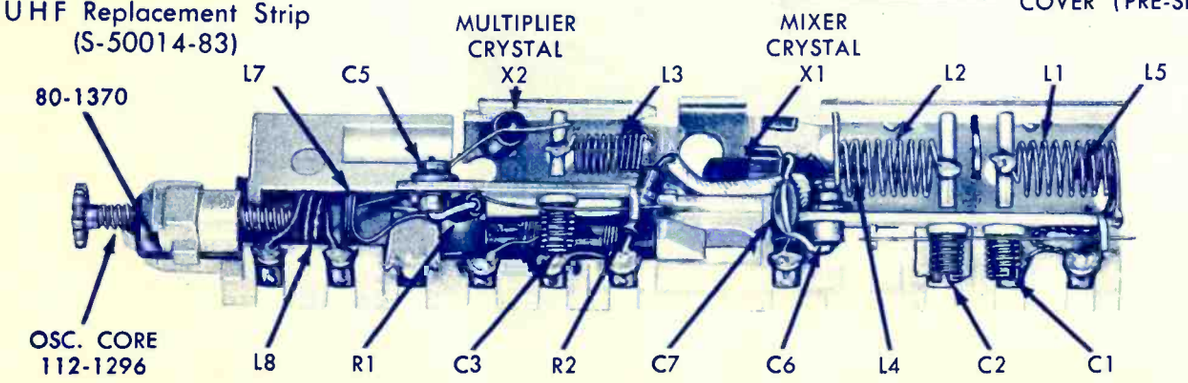
INSIDE VIEW

*USE ONLY ZENITH REPLACEMENT TYPE LEAD LENGTH IS IMPORTANT FOR PROPER INDUCTANCE

**NOTE: LATER PRODUCTION UNITS USE ONE GROUND SPRING 80-1469

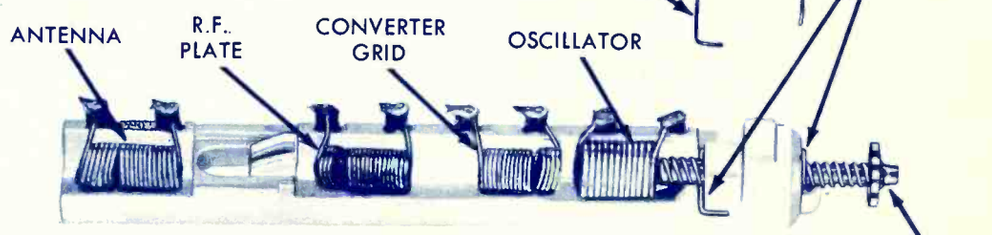
NOTE: DO NOT LOOSEN RED-DABBED STATOR STRIP MOUNTING SCREWS (NOT SHOWN) UNLESS REPLACING STATOR STRIP ASSEMBLY.

UHF Replacement Strip (S-50014-83)



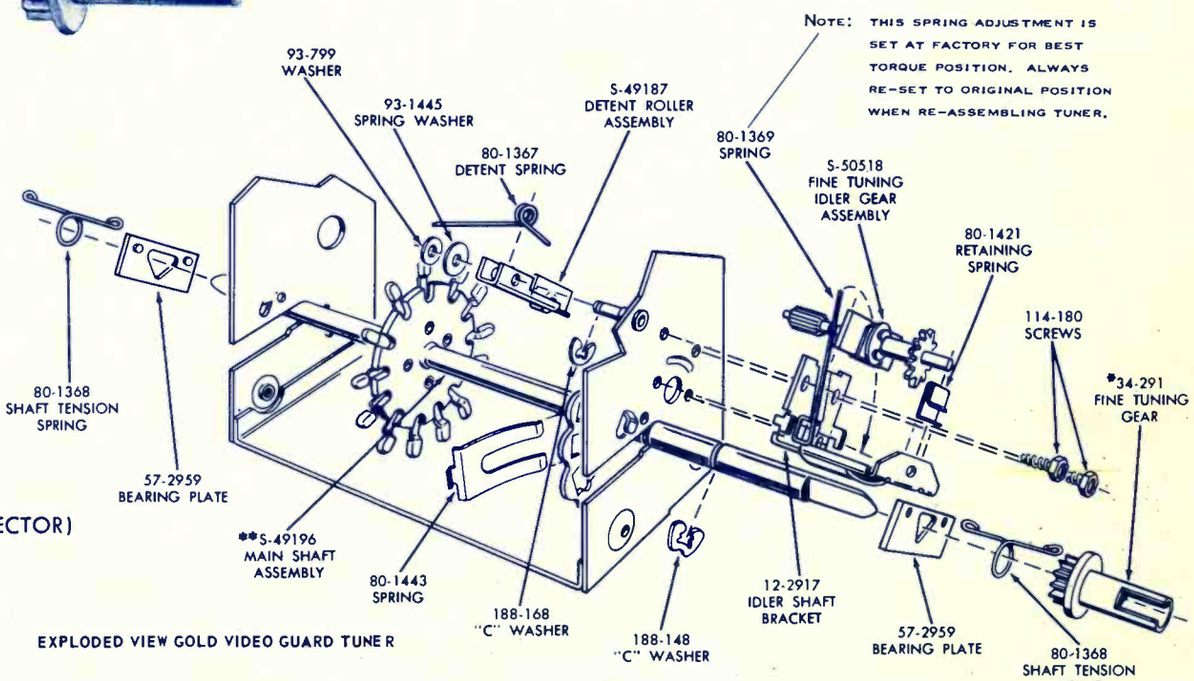
NOTE: Spring is under Osc. Screw at Coil side and over screw at Strip end.

TUNER STRIPS



VHF Strip (S-49202-13)

40 Mc. I.F. Strip (S-49201)



EXPLODED VIEW GOLD VIDEO GUARD TUNER

*TUNER	FINE TUNING GEAR ASSEMBLY
175-166	S-51242
175-171 / 175-172	S-51283

**TUNER	MAIN SHAFT ASSEMBLY
175-166	S-51244
175-171 / 175-172	S-51282
175-304	S-52638
175-306	S-52639

NOTE: 175-141, 175-142, 175-301, 175-302, 175-171, 175-172, 175-166, 175-304, AND 175-306 TUNERS ARE SIMILAR EXCEPT FOR MINOR MECHANICAL AND ELECTRICAL VARIATIONS