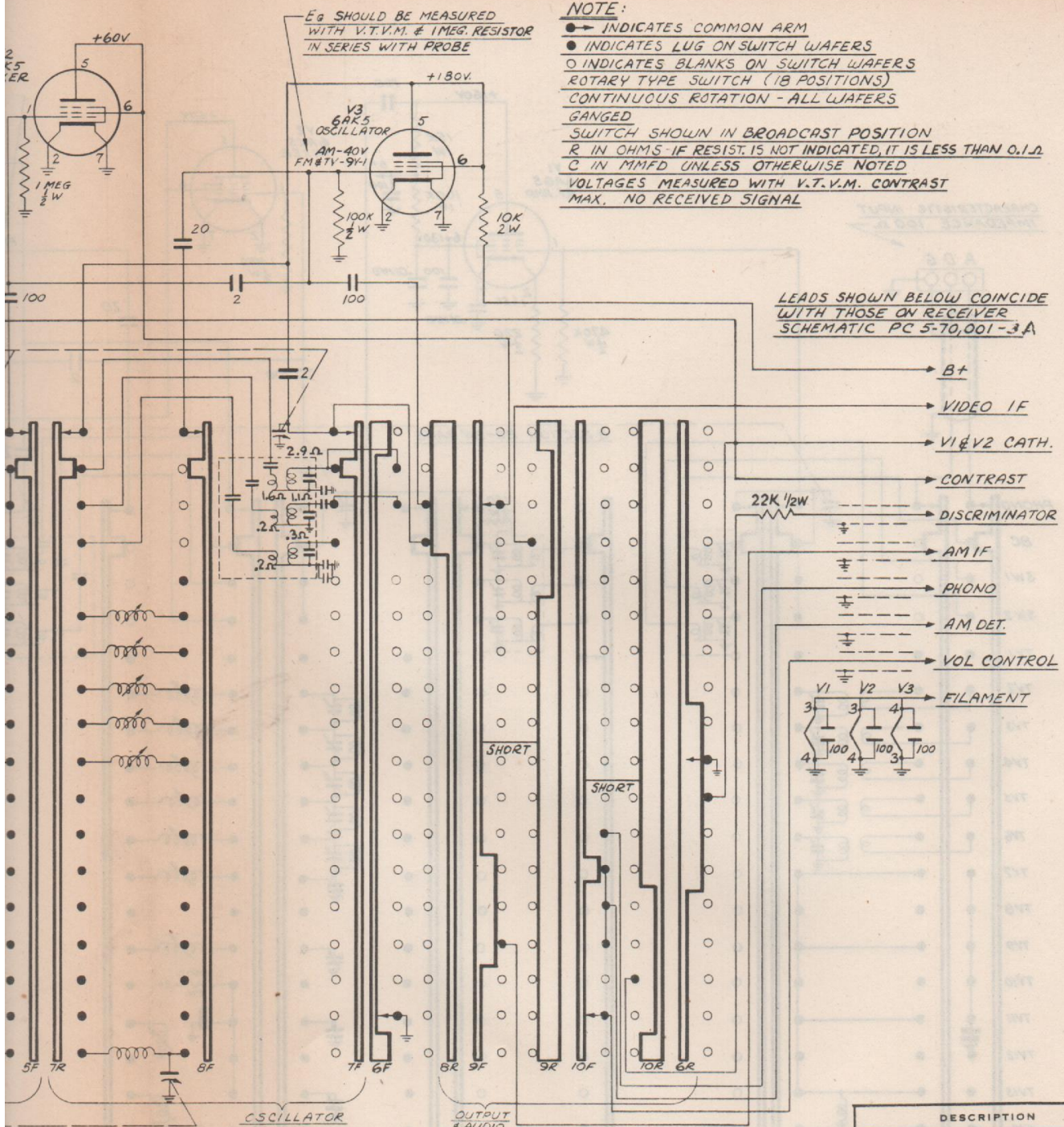
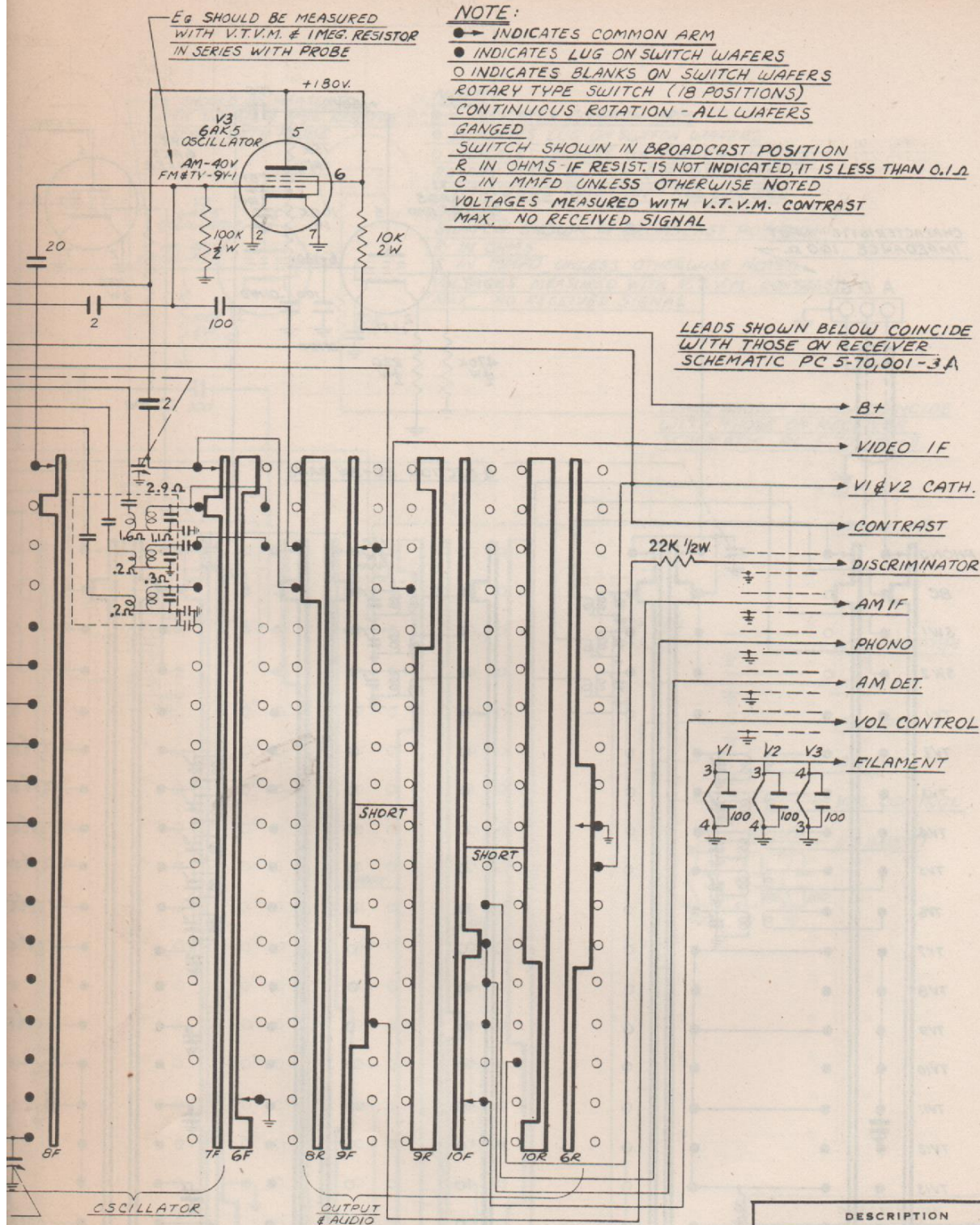


S. TELEVISION MFG. CORP.

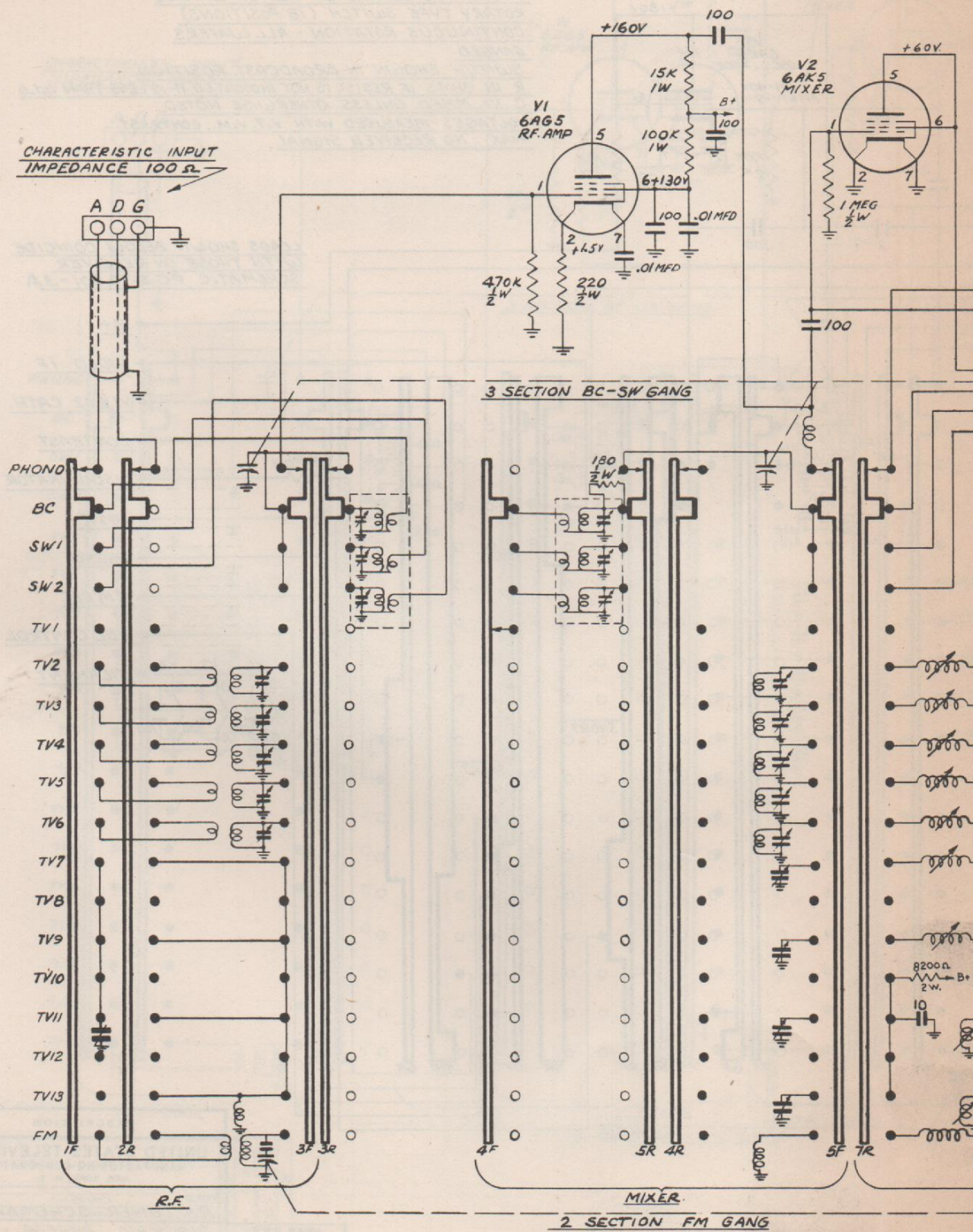


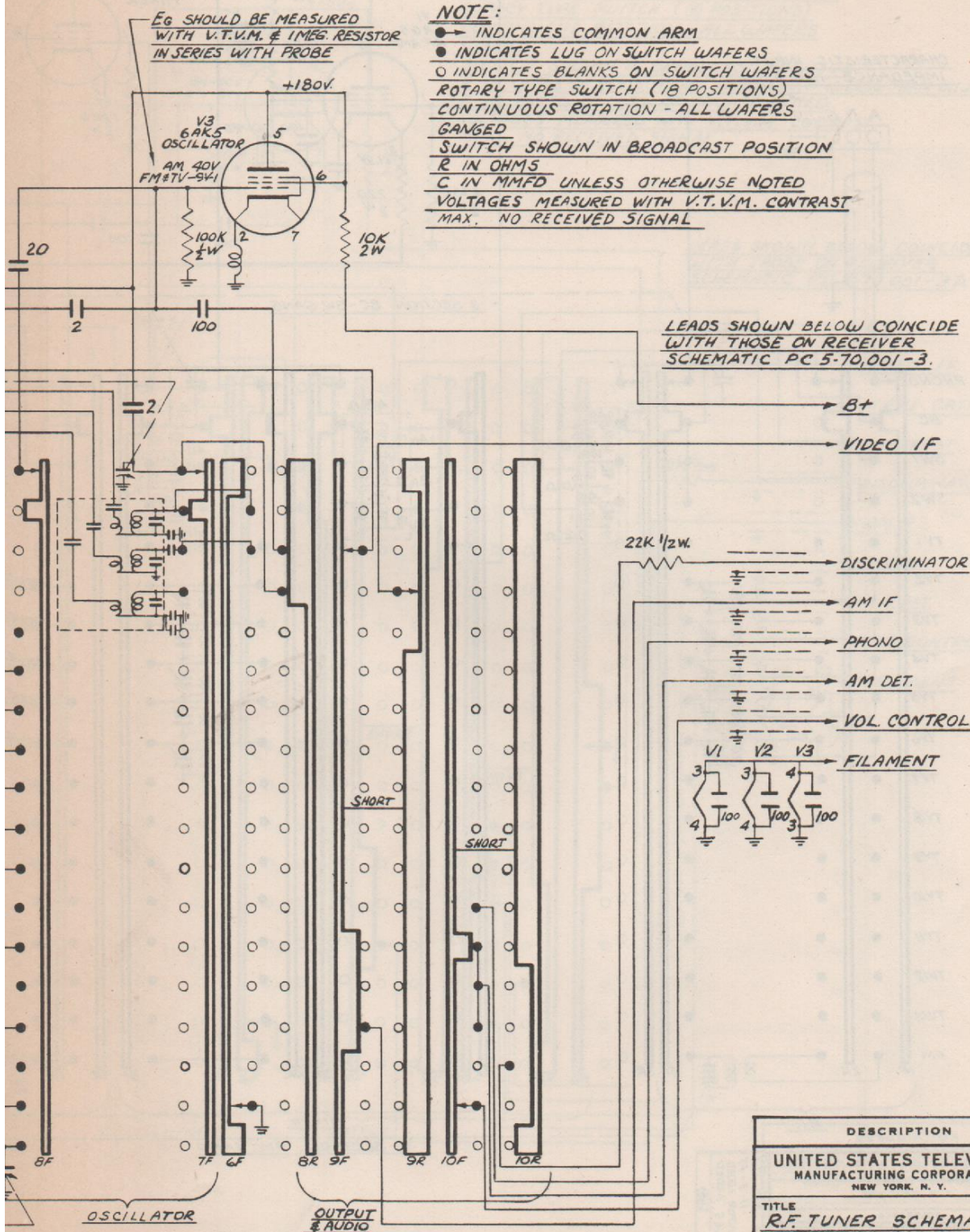
DESCRIPTION	
UNITED STATES TELEVISION MANUFACTURING CORPORATION NEW YORK, N. Y.	
TITLE R.F. TUNER SCHEMATIC DIAGRAM TYPE A	
ASSEM. D'WG. AC 70,001-3	DRAWING NO. PC 5-70,038A
SCALE:	DRAWN BY: [Signature] ENG. [Signature] APP'D. [Signature]



ASSEM. D'WG.
AC 70,001-3

DESCRIPTION		
UNITED STATES TELEVISION MANUFACTURING CORPORATION NEW YORK, N. Y.		
TITLE R.F. TUNER SCHEMATIC DIAGRAM TYPE A		
SCALE:	ENGINEER	APPROVED
DRAWN B. B. TOW	ENG. J. A. A.	DRAWING NO. PC 5-70,038A





DESCRIPTION	
UNITED STATES TELEVISION MANUFACTURING CORPORATION NEW YORK, N. Y.	
TITLE R.F. TUNER SCHEMATIC DIAGRAM TYPE B	
SCALE:	DRAWING NO.
DRAWN BY: [Signature]	PC 5-70038-2

U. S. TELEVISION MFG. CORP.

MODEL R.F. Tuner,
Type A

TRIMMER	R.F. TV CHANNEL NO.	PA-4384	C65	INSUL METAL TUB CAP	600V	PA-4392-503	R 1	CARBON RESISTOR	220 OHMS	1/2W	RIS-221
C1	"	"	C66	"	"	MC61F-103	R 2	"	470,000	"	RIS-474
C2	"	"	C67	"	"	MC61F-103	R 3	"	15,000	"	RIS-153
C3	"	"	C68	"	"	MC61F-103	R 4	"	100,000	"	RIS-104
C4	"	"	"	"	"	"	R 5*	"	470,000	1/2W	RIS-474
C5	"	"	"	"	"	PA-4397-2	R 6	"	500K	"	PA-4220
C6	"	"	"	"	"	PA-4385	R 7	"	BRILLIANCE CONTROL AND SWITCH	"	"
C7	"	"	"	"	"	"	R 8	"	CARBON RESISTOR	100 OHMS	RIS-101
C8	"	"	"	"	"	MC-61F-103	R 9	"	4,700	1/2W	RIS-474
C9	"	"	"	"	"	MC-61F-103	R 10	"	1,500	1W	RIS-153
C10	"	"	"	"	"	MC-61F-103	R 11	"	2,200	1/2	RIS-222
C11	"	"	"	"	"	MC-60F-101	R 12	"	2,000	1W	PA-4221
C12	"	"	"	"	"	PA-4397-1	R 13	"	CONTRAST CONTROL	2,000	"
C13	"	"	"	"	"	4392-104	R 14	"	CARBON RESIST.	470,000	RIS-474
C14	"	"	"	"	"	"	R 15	"	2,700	1/2W	RIS-221
C15	"	"	"	"	"	"	R 16	"	47	"	RIS-470
C16	"	"	"	"	"	"	R 17	"	100	"	RIS-101
C17	"	"	"	"	"	"	R 18	"	47	"	"
C18	"	"	"	"	"	"	R 19	"	150	"	RIS-151
C19	"	"	"	"	"	"	R 20	"	2,700	"	RIS-272
C20	"	"	"	"	"	"	R 21	"	15,000	2W	RIS-153
C21	"	"	"	"	"	"	R 22	"	CARB. RESIST.	100,000 OHMS	RIS-104
C22	"	"	"	"	"	"	R 23	"	"	1W	"
C23	"	"	"	"	"	"	R 24	"	15,000	2W	RIS-153
C24	"	"	"	"	"	"	R 25	"	"	"	"
C25	"	"	"	"	"	"	R 26	"	NOT USED	"	"
C26	"	"	"	"	"	"	R 27	"	CARB. RESIST.	6,800 OHMS	RIS-682
C27	"	"	"	"	"	"	R 28	"	2,200	"	RIS-222
C28	"	"	"	"	"	"	R 29	"	6,800 OHMS	1/2W	RIS-682
C29	"	"	"	"	"	"	R 30	"	2,200	"	"
C30	"	"	"	"	"	"	R 31	"	6,800 OHMS	1/2W	RIS-682
C31	"	"	"	"	"	"	R 32	"	NOT USED	"	"
C32	"	"	"	"	"	"	R 33	"	CARB. RESIST.	6,800 OHMS	RIS-682
C33	"	"	"	"	"	"	R 34	"	NOT USED	"	"
C34	"	"	"	"	"	"	R 35	"	220	"	RIS-221
C35	"	"	"	"	"	"	R 36	"	47,000	1W	RIS-473
C36	"	"	"	"	"	"	R 37	"	220	1/2W	RIS-221
C37	"	"	"	"	"	"	R 38	"	47,000	"	RIS-473
C38	"	"	"	"	"	"	R 39	"	NOT USED	"	"
C39	"	"	"	"	"	"	R 40	"	CARB. RESIST.	47,000 OHMS	RIS-473
C40	"	"	"	"	"	"	R 41	"	1 MEGOHM	1/2W	RIS-105
C41	"	"	"	"	"	"	R 42	"	22,000 OHMS	1W	RIS-223
C42	"	"	"	"	"	"	R 43	"	"	"	"
C43	"	"	"	"	"	"	R 44	"	100,000	1/2W	RIS-104
C44	"	"	"	"	"	"	R 45	"	1 MEGOHMS	"	RIS-105
C45	"	"	"	"	"	"	R 46	"	NOT USED	"	"
C46	"	"	"	"	"	"	R 47	"	NOT USED	"	"
C47	"	"	"	"	"	"	R 48	"	"	"	"
C48	"	"	"	"	"	"	R 49	"	"	"	"
C49	"	"	"	"	"	"	R 50	"	"	"	"
C50	"	"	"	"	"	"	R 51	"	"	"	"
C51	"	"	"	"	"	"	R 52	"	"	"	"
C52	"	"	"	"	"	"	R 53	"	"	"	"
C53	"	"	"	"	"	"	R 54	"	"	"	"
C54	"	"	"	"	"	"	R 55	"	"	"	"
C55	"	"	"	"	"	"	R 56	"	"	"	"
C56	"	"	"	"	"	"	R 57	"	"	"	"
C57	"	"	"	"	"	"	R 58	"	"	"	"
C58	"	"	"	"	"	"	R 59	"	"	"	"
C59	"	"	"	"	"	"	R 60	"	"	"	"
C60	"	"	"	"	"	"	R 61	"	"	"	"
C61	"	"	"	"	"	"	R 62	"	"	"	"
C62	"	"	"	"	"	"	R 63	"	"	"	"
C63	"	"	"	"	"	"	R 64	"	"	"	"
C64	"	"	"	"	"	"	R 65	"	"	"	"

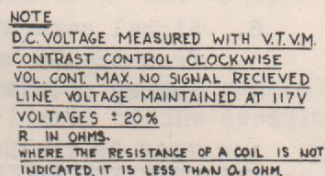
* Original R5 was 1 meg.
Should be changed to 1/2 meg.

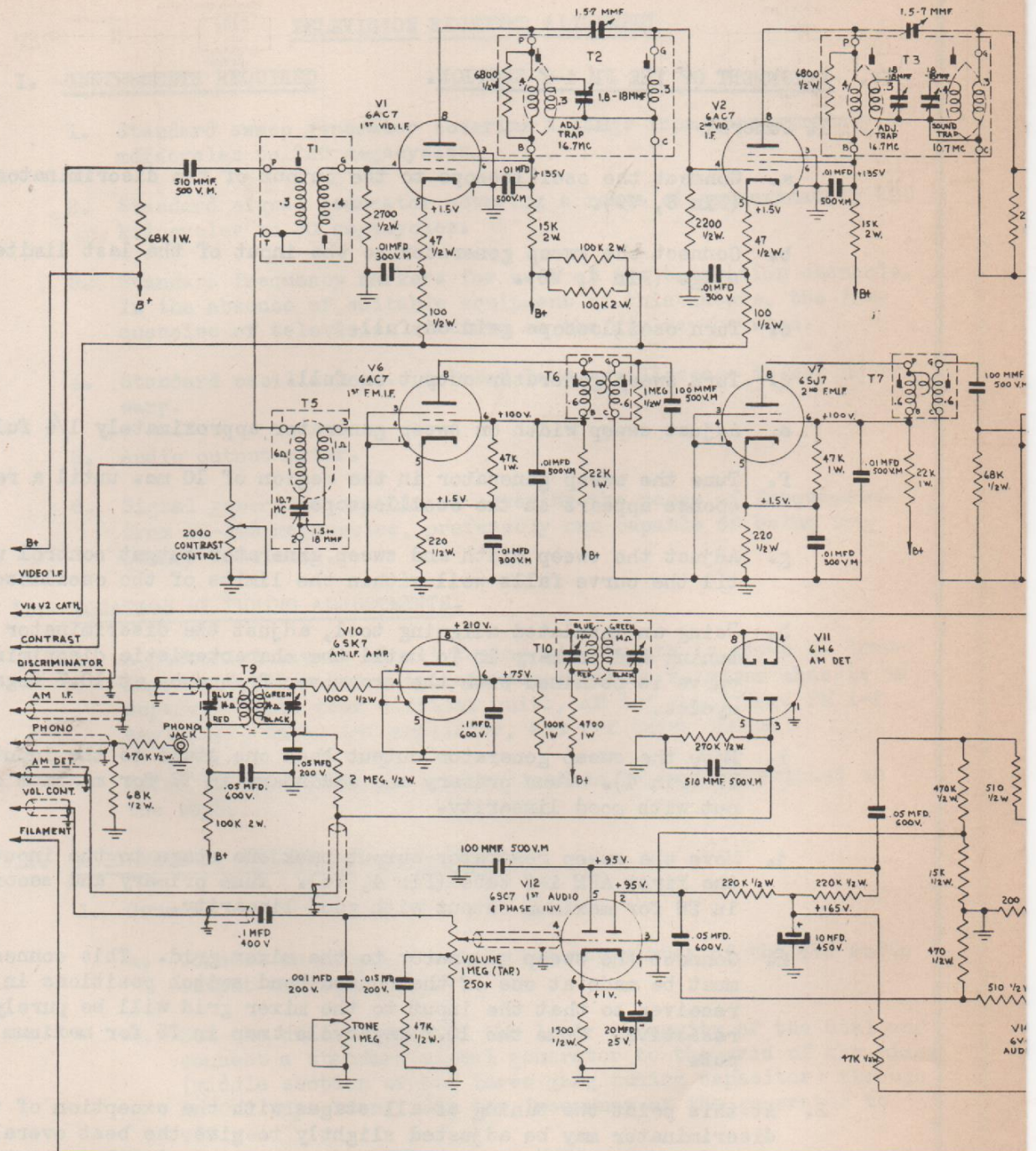
MODEL R.F. Tuner,
Type A

U. S. TELEVISION MFG. CORP.

R66	W.W. RESIST.	200 OHMS	5W	PA-4215	L35	MIKER COIL ASSEM	(CHAN 7	
R67	TONE CONTROL AND SWITCH	1 MEG		PA-4408	L36	"	" 8	
R68	CARB. RESIST.	270,000 OHMS	1/2W	RIS-274	L37	"	" 9	
R69	"	100,000 "	2W	RIS-104	L38	"	" 10	
R70	"	2.2 MEGOHMS	1/2W	RIS-225	L39	"	" 11	
R71 A	"	22,000 OHMS	5W	RIS-223	L40	"	" 12	
R72	"	4,700 "	1W	RIS-472	L41	"	" 13	
R73	470,000 OHMS	± 20%	1/2W	RIN-474	L42	FM MIXER COIL ASSEM		PB-42291
R74	NOT USED				L43	MIKER COIL WINDING		AB-42255
R75	CARB. RESIST.	68,000 OHMS	1/2W	RIS-683	L44	ANTENNA "		AB-42253
R76	"	33,000 "	"	RIS-333	L45	OSC	"	AB-42257
R77	"	1,000 "	"	RIS-102	L46	PLATE (1ST VIDEO I.F.)		PART OF
R78	"	10,000 "	1W	RIS-103	L47	GRID (" ")		AB-42307-1
R79	"	510 "	1/2W	RIS-511	L48	SEE L69		
R80	"	510 "	"	RIS-511	L49	1ST FM I.F.		AB-42242-1
R81	"	47,000 "	"	RIS-473	L50	NOT USED		
R82	"	.15,000 "	"	RIS-153	L51	PLATE (2ND VIDEO I.F.)		PART OF
L 1	R.F. ANTENNA	COIL (CHAN. 1)		PB-42305-1	L52	16.7 MC TRAP COIL (2ND VID. IF)		AB-42307-2
L 2	"	" 2		PB-42305-2	L53	GRID (2ND VIDEO I.F.)		PART OF
L 3	"	" 3		PB-42305-3	L54	PLATE (3rd " ")		AB-42307-3
L 4	"	" 4		PB-42305-4	L55	16.7 MC TRAP COIL (3RD VIDEO I.F.)		
L 5	"	" 5		PB-42305-5	L56	GRID (3RD VIDEO I.F.)		
L 6	"	" 6		PB-42305-6	L57	10.7 MC TRAP COIL (3RD VIDEO I.F.)		
L 7	ANTENNA	COIL ASSEM			L58	SEE L69		
L 8	"	" 7			L59	PEAKING COIL (BLACK DOT)		AB-42277-4
L 9	"	" 8			L60	" (BLUE DOT)		AB-42277-5
L10	"	" 9			L61	2nd FM I.F.		AB-42244-1
L11	"	" 10			L62	3rd " "		AB-42246-1
L12	"	" 11			L63	DISCRIMINATOR COIL		AB-42246-1
L13	"	" 12			L64	INPUT I.F. TRANSFORMER		AB-42202
L14	FM ANTENNA	COIL ASSEM		PB-42290	L65	OUTPUT " "		AB-42203
L15	OSC	COIL ASSEM (CHAN 1)		PB-42286-1	L66	PEAKING COIL (WHITE DOT)		AB-42277-6
L16	"	" 2		PB-42286-2	L67	" (GRAY ")		AB-42277-3
L17	"	" 3		PB-42286-3	L68	PLATE (4TH VIDEO I.F.)		PART OF
L18	"	" 4		PB-42286-4	L69	16.7 MC TRAP COIL (4TH VIDEO I.F.)		AB-42307-4
L19	"	" 5		PB-42286-5		10.7 " " "		
L20	"	" 6		PB-42286-6	B 1	ANTENNA BINDING POST		AB-44016
L21	"	" 7			J 1	PHONO-JACK		PA-4904
L22	"	" 8			J 2	BRILLIANCE		PA-4904
L23	"	" 9			J 3	VIDEO OUTPUT JACK		PA-4904
L24	"	" 10			S 1	SELECTOR SWITCH		PC-68001
L25	"	" 11			S 2	SWITCH ON BRILLIANCE CONTROL		PA-4220
L26	"	" 12			S 3	SWITCH ON TONE CONTROL		PA-4405
L27	"	" 13			P 1	FILAMENT PLUG		PA-4912
L28	FM OSC	COIL ASSEM (CHAN 1)		AB-42312	P 2	DEFLECT CHASSIS POWER PLUG		PA-4916
L29	MIKER COIL	ASSEM (CHAN 2)		PB-42306-1	P 3	A.C. CONTROL PLUG		PA-4911
L30	"	" 3)		PB-42306-2	P 4	SPEAKER PLUG		PC-63000-8
L31	"	" 4		PB-42306-3				
L32	"	" 5		PB-42306-4				
L33	"	" 6		PB-42306-5				
L34	"	"		PB-42306-6				

Type	Function	Sp	Seg	Sc	Sk
616	Video Amp.	225	200	-	13
637(A)	Synoh. Amp.	60 (Pin 8)	-	0	0
637(B)	Synoh. Amp.	120 (Pin 3)	-	0	0
637(A)	Synoh. Sep.	380 (Pin 6)	-	0	0
637(B)	Synoh. Sep.	370 (Pin 3)	-	0	0
637(A)	Horis. Geo.	310 (Pin 6)	-	0	0
637(B)	Horis. Geo.	288 (Pin 3)	-	0	0
630(B)	Horis. Output	465	338	-	44
64870	Horis. Receiver	-10	-	-	32
637(A)	Vert. Geo.	180 (Pin 5)	-	0	0
637(B)	Vert. Geo.	18 (Pin 5)	-	0	0
6280	Vert. Output	360	370	-	0 to 45° Varied with linearity control
6203	R.F. Power Soc.	330	120	-58	0
6700	Audio Output	285	525	-	14.5
6507	Phase Inverter	120	-	-	1.5 Values are for both sections
62K70	AM I.F. Amp.	308	82	-	0
6A77	FM I.F. Amp. #1	100	100	-	2
6A77	FM I.F. Amp. #2	100	100	-	2
6J77	FM I.F. Amp. #3	8	28	-	-
6A77	Fix. I.F. Amp. #1	288	288	-	11
6A77	Fix. I.F. Amp. #2	288	288	-	11
6A77	Fix. I.F. Amp. #3	110	110	-	1.6
6A77	Video Amp.	80	108	-	2.2
6A83	Rdy. Geo.	230	7	7.6	- Broadcast
		1.58	6.8	23.0	- Short Wave Television
6A35	Mixer	82	-	1.5	- Broadcast
		44	-	1.5	- Short Wave Television
		60	-	2.8	- Television





NOTE
THE ABOVE LEADS COINCIDE WITH
CORRESPONDING LEADS ON R.F.
TUNER SCHEMATIC PC-5-70,038

ISSUE	9-30-47
A: DC 696	11-3-47
MISSING VALUES ADDED	
RR	

U. S. TELEVISION MFG. CORP.

MODELS T502, T507,
T508, T521, T525,
T530, T621TELEVISION RECEIVER ALIGNMENTI. INSTRUMENTS REQUIRED

1. Standard sweep generator covering a range from approximately 5 megacycles to 230 megacycles.
2. Standard signal generator covering a range of approximately 200 kilocycles to 30 megacycles.
3. Standard frequency markers for each of the television channels. In the absence of suitable equipment of this nature, the frequencies of television stations on the air may be used.
4. Standard oscilloscope. A broad band oscilloscope is not necessary.
5. Audio output meter.
6. Signal generator capable of covering the range of frequencies from 88-108 megacycles, preferably one capable of being frequency modulated.

II. LOCATION OF TUNING ADJUSTMENTS.

1. A pictorial layout of all tuning adjustments is given by drawing PC-60,002. For alignment purposes the receiver chassis is separated into four distinct units, AM i-f amplifier, FM i-f amplifier, video i-f amplifier, and r-f tuner units.

Refer to this drawing for the location of parts mentioned in the text.

III. ALIGNMENT OF THE AM i-f AMPLIFIER.

1. General

- a. Connect an output meter across the plates of the 6V6 audio output tubes.
- b. Set the dial pointer to the lower extremity of the dial and connect a standard signal generator to the grid of the mixer (middle section of the three gang tuning capacitor) through an 0.1 capacitor. Set the frequency of the generator to 455 kc.
- c. Using a modulated signal, tune the primary and secondary of T9 and T10 for maximum output as shown on the output meter. Decrease the input when necessary so that the output does not exceed 45 volts.

2. Sensitivity - 110 microvolts input will yield 45 volts measured on the output meter.

MODELS T502, T507,
T508, T521, T525,
T530, T621

U. S. TELEVISION MFG. CORP.

IV. ALIGNMENT OF THE FM i-F SECTION.

1. General

- a. Connect the oscilloscope to the output of the discriminator (Pin 8, V9).
 - b. Connect the sweep generator to the input of the last limiter stage (Pin 4, V8).
 - c. Turn oscilloscope gain on full.
 - d. Turn sweep generator output on full.
 - e. Adjust sweep width on sweep generator approximately 1/4 full.
 - f. Tune the sweep generator in the region of 10 mc. until a response appears on the oscilloscope.
 - g. Adjust the sweep width and sweep generator output control until the curve falls well within the limits of the oscilloscope.
 - h. Using an insulated aligning tool, adjust the discriminator tuning and primary in T_o until the characteristic discriminator curve is obtained with the crossover frequency at 10.7 megacycles.
 - i. Move the sweep generator output back one stage to the input of V7 (Pin 4). Tune primary and secondary in T7 for maximum output with good linearity.
 - j. Move the sweep generator output back one stage to the input of the first AFM i-f tube (Pin 4, V6). Tune primary and secondary in T6 for maximum output with good linearity.
 - k. Connect the sweep generator to the mixer grid. This connection must be made at one of the unused band switch positions in the receiver so that the input to the mixer grid will be purely resistive. Tune the 10.7 megacycle trap in T5 for maximum output.
2. At this point the tuning of all stages with the exception of the discriminator may be adjusted slightly to give the best overall response. The best response is one that is absolutely symmetrical and the line connecting the two peaks is straight.
 3. Sensitivity - The sensitivity is such that 3500 microvolts input at the mixer grid will yield 1 volt D.C. at the grid of the last limiter stage.

U. S. TELEVISION MFG. CORP.

MODELS T502, T507,
T508, T521, T525,
T530, T621V. ALIGNMENT OF THE VIDEO i-f AMPLIFIER.

1. General

- a. The alignment of the video i-f amplifier involves the tuning of the several video i-f transformers plus the setting of the various sound traps which reject unwanted signals from the video output.
- b. There are four video i-f transformers each having two main tuning adjustments which are used to adjust the response to the desired shape. These are the slug tuners which project from the top and bottom of the i-f cans.
- c. In addition, all video i-f transformers except the first have trap circuits incorporated into them which are used to attenuate the unwanted sound i-f carriers to a value which will not cause interference with the picture.

There are two traps for the sound i-f carrier accompanying the picture and three for the sound i-f carrier of the adjacent channel.

- d. The primary of each transformer except T1 is coupled to the secondary by means of a variable-ceramic capacitor located outside the i-f can. These capacitors are pre-set at the factory and should not be adjusted thereafter.

2. Visual Response Curves.

- a. The alignment of the video i-f amplifier must be done visually with the aid of an oscilloscope and sweep generator.
- b. The alignment is carried out by matching the curve obtained on the oscilloscope to the proper curve as shown in drawing #PA-9302.

3. Setting the Tuning Adjustments.

- a. Connect the oscilloscope to the grid of the first video amplifier (Pin 4, V5).
- b. Connect the sweep generator to the grid of the last video i-f amplifier tube (Pin 4, V3).
- c. Tune the primary and secondary of T4 until the curve obtained matches that in the drawing.
- d. Move the sweep generator back one stage to the grid of the second video i-f amplifier (Pin 4, V2) and tune the primary and secondary of T3 to match the second curve given in the drawing.
- e. Move the sweep generator back one stage to the grid of the first i-f amplifier tube (Pin 4, V1) and tune primary and secondary of T2 to fit the third curve given in the drawing.

MODELS T502, T507, T508, U. S. TELEVISION MFG. CORP.
T521, T525, T530, T621

- f. Move the sweep generator back to the mixer grid. Connect to a blank terminal of the band switch so that a purely resistive input is obtained. Tune primary and secondary of T1 to fit the fourth curve given in the drawing.

4. Setting the Traps.

- a. Feed a 10.7 megacycle modulated signal into the mixer grid. Take the output from the video detector and adjust the 10.7 megacycle traps in T3 and T4 for minimum output.
 - b. Transformer T5 also serves as a sound rejection trap and its setting should be checked at this point. The normal setting of this trap gives maximum output from the discriminator when a minimum is obtained from the video detector.
 - c. Set the 16.7 megacycle traps in T2, T3 and T4, by feeding a 16.7 megacycle modulated signal into the mixer grid and setting the traps for minimum output from the video detector.
5. Sensitivity- A normal video - i-f amplifier will give 1 volt D.C. measured at the video detector when the input to the mixer grid is .001 volts RMS. This measurement is made with the oscillator tube out and no coil across the input to the mixer. The frequency is taken near the center of the pass band at 13 megacycles.

VI. ALIGNMENT OF THE r-f TUBES.

1. Broadcast Band

- a. Connect the signal generator to the antenna terminal through a 400 ohm resistor. Set the generator frequency and the receiver dial pointer to 1400 kc.
- b. Tune the broadcast osc. trimmer for maximum output.
- c. Tune the mixer and antenna trimmers, reducing the generator output to keep the meter reading at 45 volts maximum.
- d. Set the generator frequency at 600 kc the receiver dial at or near 600 kc and tune the oscillator padder for maximum output, at the same time moving the receiver dial slightly until the absolute maximum is reached. This is the so-called "Rocking" adjustment.
- e. Repeat steps (c) and (d) above.
- f. The sensitivity should range from 5 microvolts at 1400 kc to 20 microvolts at 600 kc for a standard output of 0.2 watt (45 volts on the output meter).

2. a. Leaving the generator connected to the antenna as before. turn the band switch to short wave #1 band.
- b. Follow the same general procedure as for the broadcast band, using the frequencies of 4.4 megacycles for the high end and 1.8 megacycles for the low end of the band.

U. S. TELEVISION MFG. CORP.

MODELS T502, T507,
T508, T521, T525,
T530, T621

- c. The sensitivity on short wave #1 band is 5 microvolts at 4.4 megacycles and 100 microvolts at 1.8 megacycles.
3. Short Wave #2 Band.
 - a. Using the same connections for the signal generator, turn the band switch to short wave #2 position.
 - b. Follow the same general procedure as for the broadcast band, using frequencies of 13.0 megacycles for the high end and 6.0 megacycles for the low end of the band.
 - c. The sensitivity on short wave #2 band is 5 microvolts at 13 megacycles and 100 microvolts at 6 megacycles.
4. FM Band.
 - a. Set the receiver band switch to the f-m band position.
 - b. Set the receiver dial at 95 megacycles.
 - c. Inject a 95 megacycle frequency modulated signal into the antenna terminals.
 - d. Tune the f-m oscillator and f-m trimmer for maximum audio output. The input during this adjustment must be kept below a value which produces limiting.
 - e. If a frequency modulated signal is not available, the set may be aligned to a station on the air, the frequency of which is known.
 - f. Sensitivity - 600 microvolts input to the antenna will yield 1 volt D.C. at the grid of the last limiter stage.
5. Television Bands.
 - a. Move the band switch to channel #2 position.
 - b. Set the dial pointer opposite the 103 megacycle marker.
 - c. Connect the sweep generator to the antenna terminal strip on the back of the receiver through the balanced output box.
 - d. Connect the oscilloscope to the output of the discriminator (Pin 8, V9).
 - e. Tune the sweep generator in the region of 55 mc. until the characteristic discriminator curve appears on the oscilloscope.
 - f. Inject a standard signal into the r-f section at the frequency of the sound carrier in channel #2. Adjust the oscillator tuning until the sound carrier produced by the signal generator falls exactly in the center of the discriminator curve.

MODELS T502, T507, T508, U. S. TELEVISION MFG. CORP.
T521, T525, T530, T621

- g. Repeat this procedure for each of the television channels.
 - h. The tuning of the several oscillators affect one another and therefore it is necessary to check them over and re-set any that are out.
 - i. Move the oscilloscope connection to the grid of the first video amplifier (Pin 4, V5). Tune the sweep generator until a response appears on the oscilloscope. By adjusting the antenna and mixer tuning, tune for a flat response with the carrier frequency marker at a point 50% down on the lower frequency side of the pass band. When properly aligned, the pass band will be 3.5 to 4.0 megacycles wide from the carrier to a point 10% down on the other side and flat within 10%. The carrier frequency marker may vary up or down the slope as much as 20%.
 - j. Adjust the rest of the television channels in a manner similar to the first, following the same general rules and precautions as to band width, shape and position of the video carrier.
 - k. After aligning the mixer and antenna stages, check the frequency of the local oscillator again.
 - l. Sensitivity - 250 microvolts at the antenna will yield 1 volt D.C. at the video detector.
6. It is possible to align the television channel r-f mixer and oscillator stages without any instruments to a test pattern with accompanying sound as transmitted from the station. To do this, first bring in the sound by adjusting the oscillator tuning. Then adjust the r-f and mixer tuning to bring in the pattern with best resolution and maximum brilliance.

STANDARD TELEVISION CHANNELS

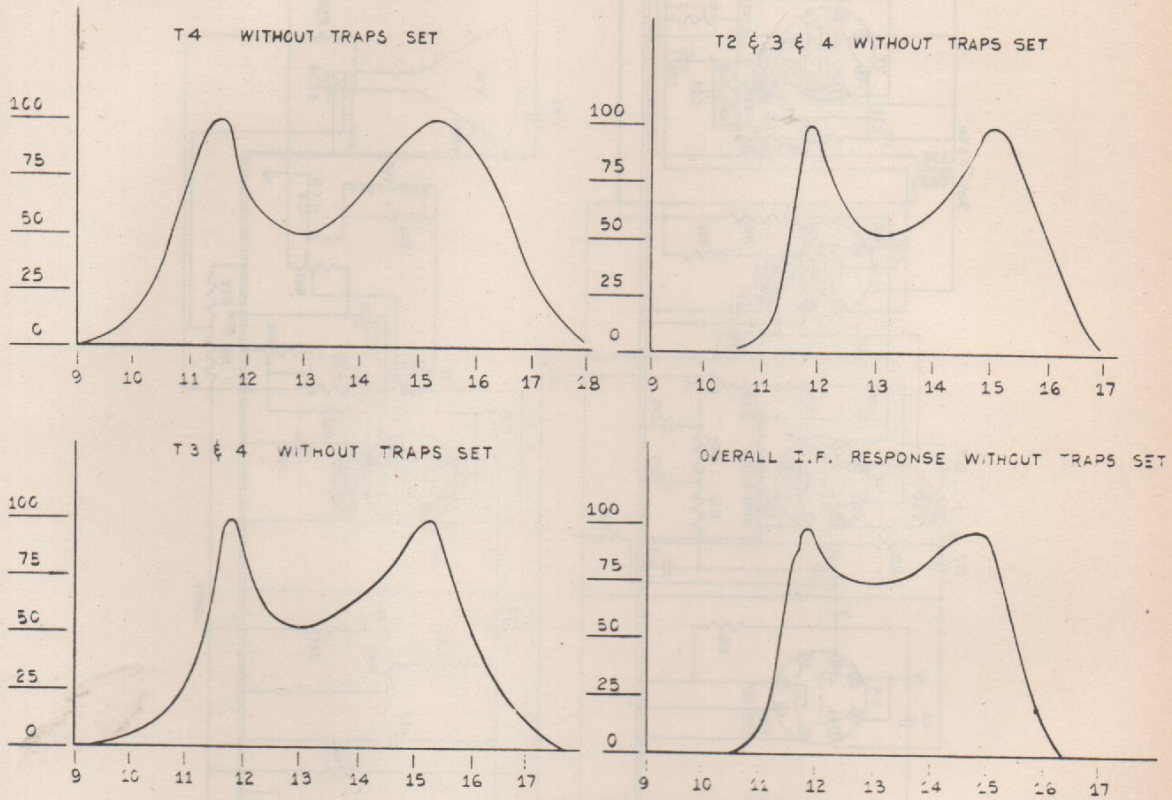
CHANNEL	MC	CARRIERS		8.25 MC	LOCAL OSC.	
		SOUND	VIDEO		10.7 MC	21.9 MC
1	44-50	49.75	45.25	58	60.45	71.65
2*	54-60	59.75	55.25	68	70.45	81.65
3	60-66	65.75	61.25	74	76.45	87.65
4*	66-72	71.75	67.25	80	82.45	93.65
5*	76-82	81.75	77.25	90	92.45	103.65
6	82-88	87.75	83.25	96	98.45	109.65
7*	174-180	179.75	175.25	188	190.45	201.65
8	180-186	185.75	181.25	194	196.45	207.65
9*	186-192	191.75	187.25	200	202.45	213.65
10	192-198	197.75	193.25	206	208.45	219.65
11*	198-204	203.75	199.25	212	214.45	225.65
12	204-210	209.75	205.25	218	220.45	231.65
13	210-216	215.75	211.25	224	226.45	237.65

* Denotes New York Area Assignment.

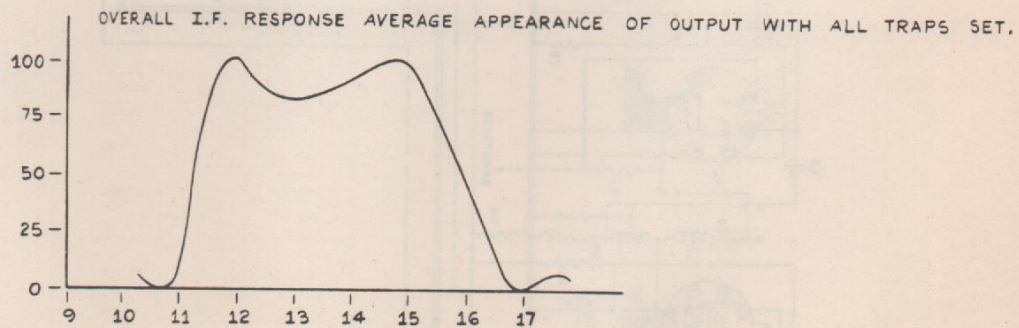
U. S. TELEVISION MFG. CORP.

MODELS T502, T507,
T508, T521, T525,
T530, T621

VIDEO I.F. RESPONSE CURVES

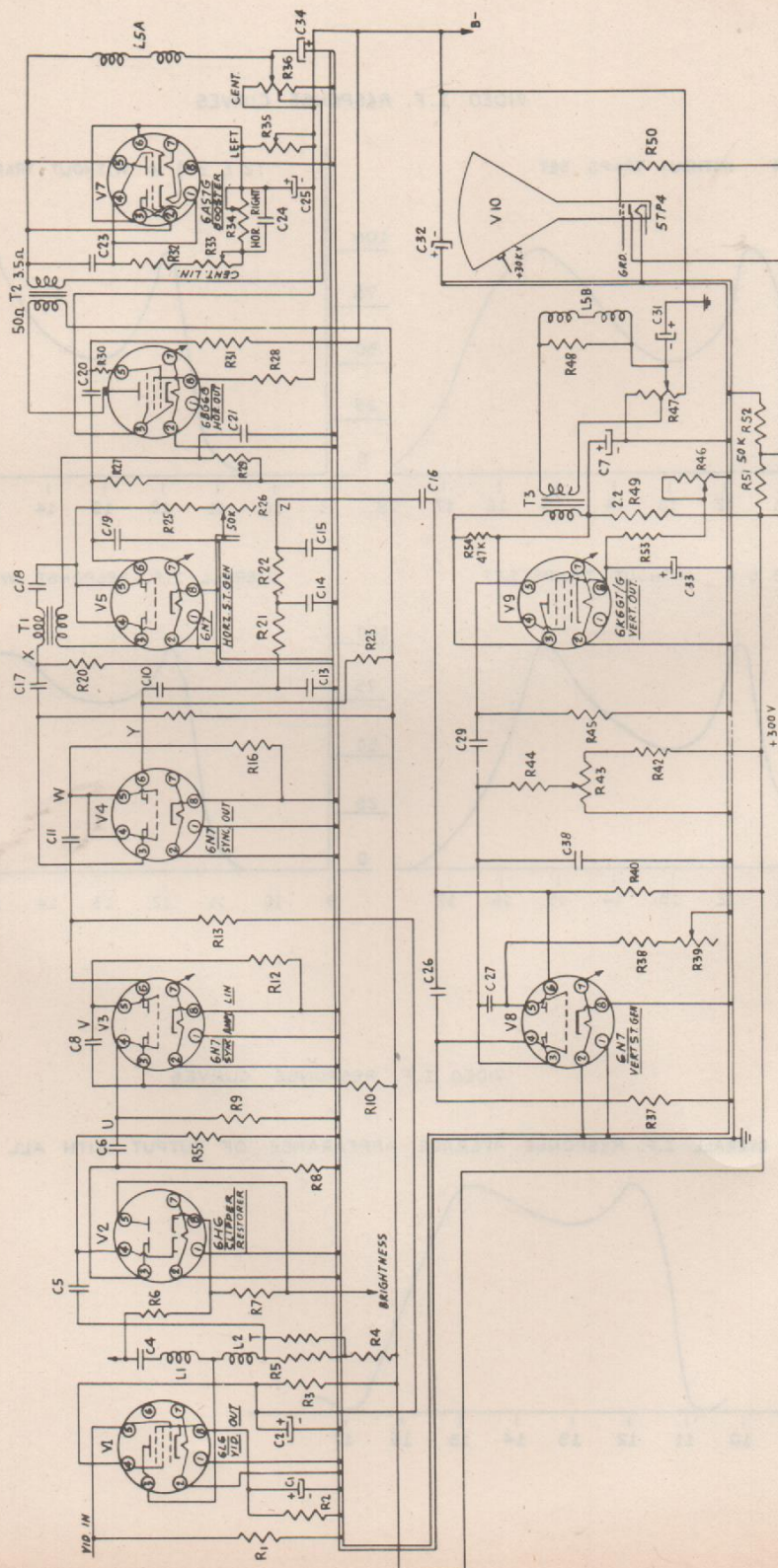


VIDEO I.F. RESPONSE CURVES



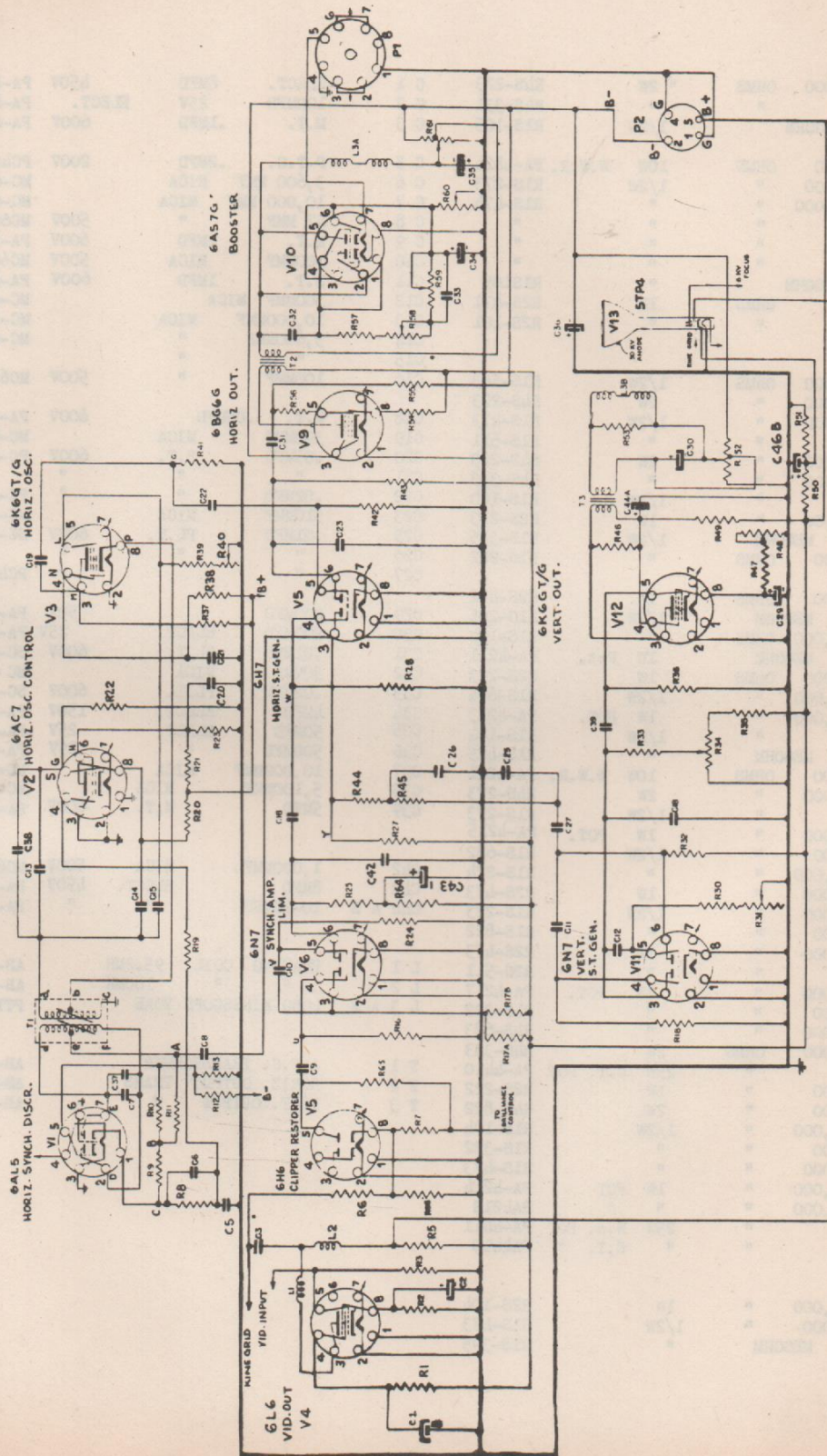
MODEL Projection
Chassis, Early

U. S. TELEVISION MFG. CORP.



U. S. TELEVISION MFG. CORP.

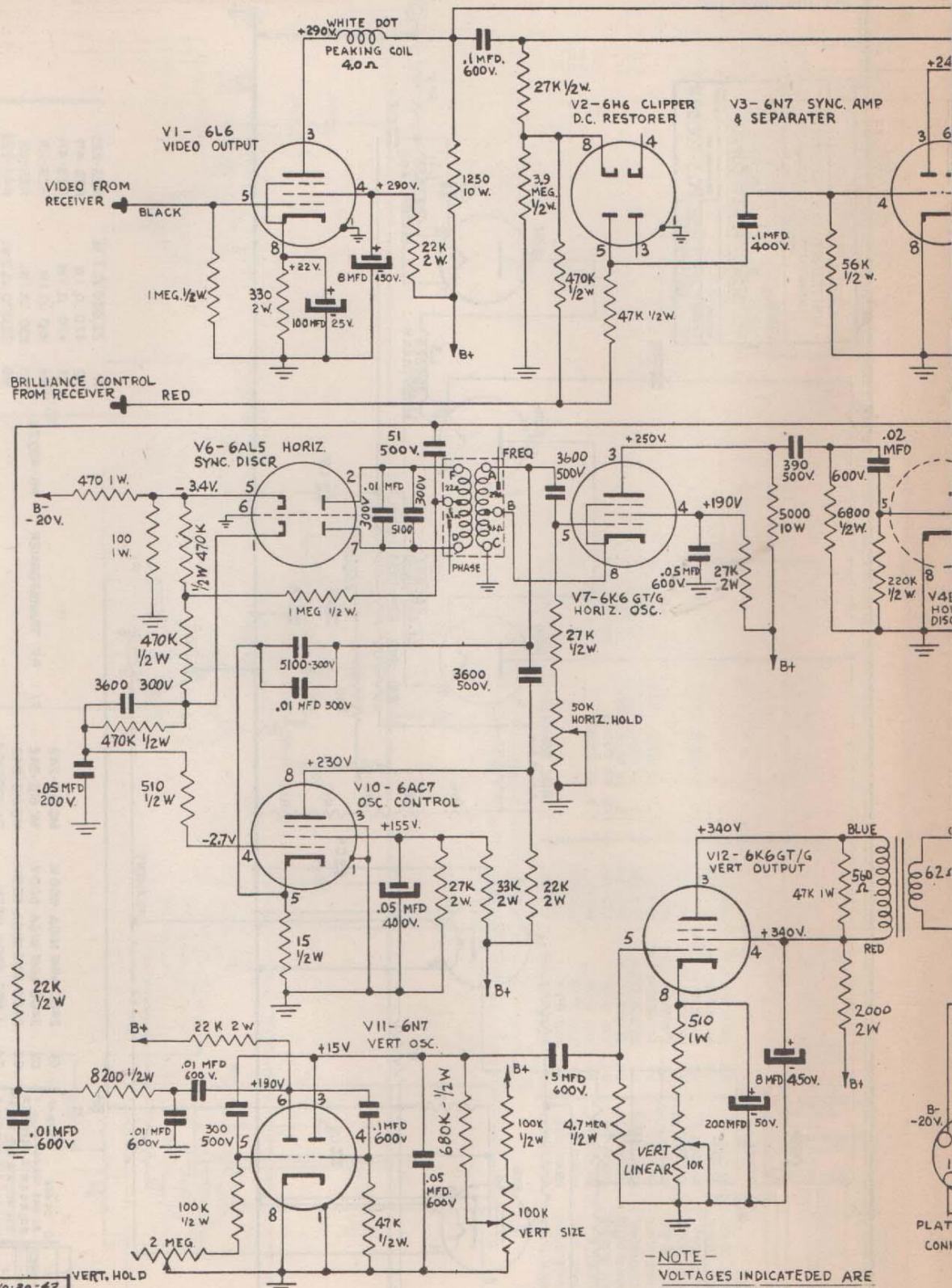
MODEL Projection
Chassis with AFC



MODEL Projection
Chassis with AFC

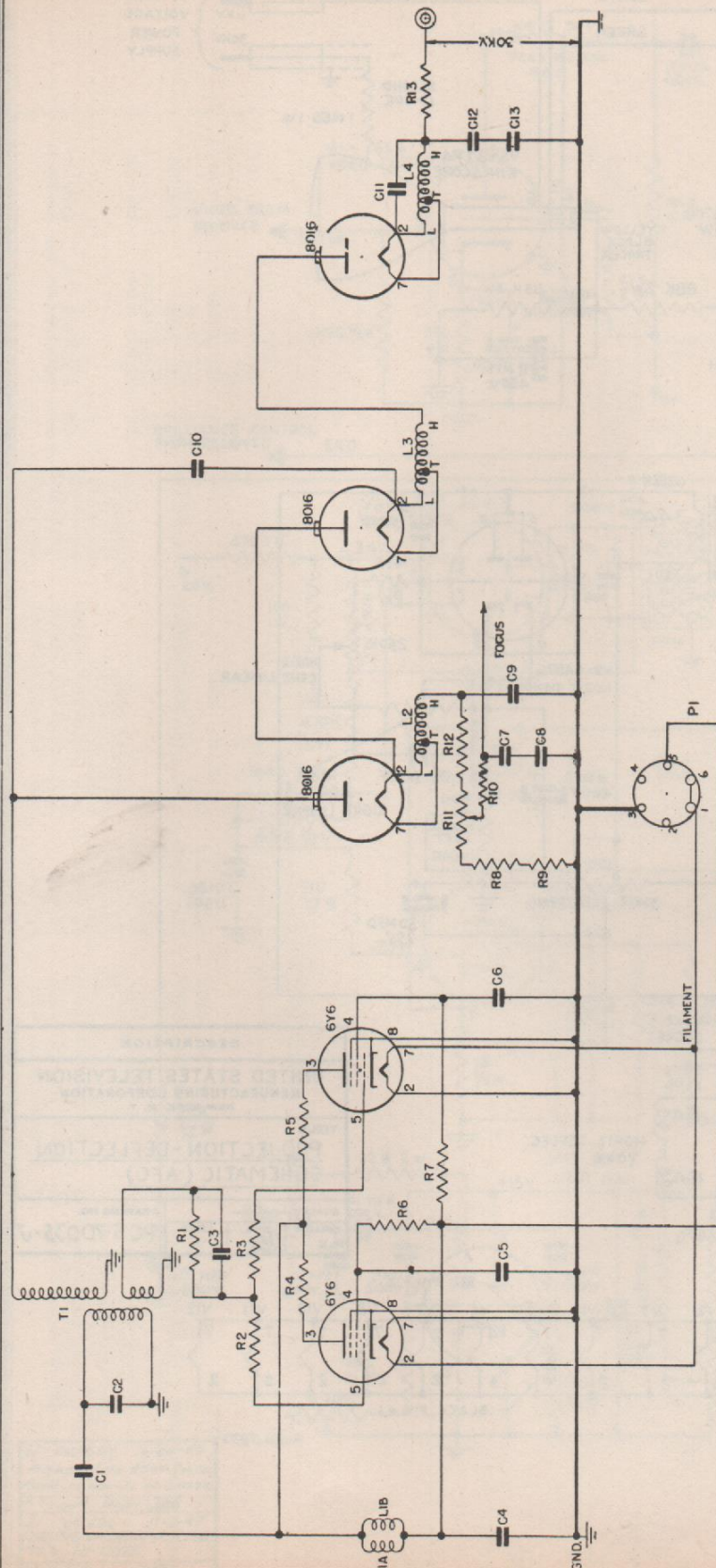
U. S. TELEVISION MFG. CORP.

R 1	22,000	OHMS	" 2W	R4S-223	C 1	ELECT.	8MFD	450V	PA-4320-1
R 2	330	"	"	R4S-331	C 2	100MFD	25V	ELECT.	PA-4394
R 3	1 MEGOHM	"	1/2W	R1S-105	C 3	M.T.	.1MFD	600V	PA-4392-104
R 5	1,250	OHMS	10W W.W.R.	PA-4424	C 5	P.T.C.	.2MFD	200V	PC4OGH-204
R 6	27,000	"	1/2W	R1S-273	C 6	3,600 MMF	MICA		MC-61F-362
R 7	470,000	"	"	R1S-474	C 7	10,000 MMF	MICA		MC-61F-103
R 8	"	"	"	"	C 8	47 MMF	"	500V	MC60G-470
R 9	"	"	"	"	C 9	M.T.	1MFD	600V	PA-4392-104
R10	"	"	"	"	C10	100MMF	MICA	500V	MC60G-101
R11	1 MEGOHM	"	"	R1S105	C11	M.T.	1MFD	600V	PA-4392-104
R12	470	OHMS	1W	R2S-471	C12	300MMF	MICA		MC-60E-301
R13	100	"	"	R2S-101	C13	10,000MMF	MICA		MC-61F-103
					C14	3,600MMF	"		MC-61F-362
					C15	"	"		"
R16	56,000	OHMS	1/2W	R1S-563	C16	100MMF	"	500V	MC60G-101
R17 A B	22,000	"	2W	R4S-223					
R18	47,000	"	1/2W	R1S-473	C18	M.T.	.05MFD	600V	PA-4392-503
R19	510	"	"	R1S-511	C19	390MMF	MICA		MC-60F-391
R20	22,000	"	2W	R4S-223	C20	.05MFD	P.T.	600V	PC-40GM-503
R21	33,000	"	"	R4S-333	C21	"	"	"	"
R22	10	"	1/2W	R1S-100	C22	.02MFD	"	"	PC-40GM-203
R23	27,000	"	1W	R2S-273	C23	510MMF	MICA		MC-60G-511
R24	3.3 MEGOHM	"	1/2W	R1S-335	C25	.01MFD	PL.T.	600V	SC-70W-103
R25	2,200	OHMS	"	R1S-222	C26	"	"	"	"
					C27	"	"	"	PC4OGM-103
R27	4,700	OHMS	1W	R2S-472					
R28	2 MEGOHM	"	1/2W	R1G-205	C29	200MFD		50V	PA-4395
R30	100,000	OHMS	"	R1S-104	C30	500MFD	ELECT.	25V	PA-4321
R31	2 MEGOHM	"	1W Pot.	PA-4211	C31	.01MFD	PL.T.	600V	SC-70M-103
R32	22,000	OHMS	1W	R2S-223	C32	30MMF	MICA		MC-60E-300
R33	680,000	"	1/2W	R1S-684	C33	.02MFD	PL.T.	600V	SC-70M-203
R34	100,000	"	1W POT.	PA-4213	C34	.4MFD	ELECT.	150V	PA-4320-3
R35	"	"	1/2W	R1S-104	C35	50MFD	ELECT.	25V	PA-4320-5
R36	4.7 MEGOHM	"	"	R1S-475	C36	500MFD	"	25V	PA-4321
R37	5,000	OHMS	10W W.W.R.	PA-4241	C37	10,000MMF	MICA		MC-61F-103
R38	27,000	"	2W	R4S-273	C38	5,100MMF	MICA		MC-61F-512
R39	"	"	1/2W	R1S-273	C39	5MFD	M.T.	600V	PA-4392-504
R40	50,000	"	1W POT.	PA-4215					
R41	6,800	"	1/2W	R1S-682					
R42	220,000	"	"	R1S-224	C42	1,000MMF	MICA	500V	MC61G-102
R43	47,000	"	1W	R2S-473	C43	8MFD	ELECT.	450V	PA-4320-1
R44	22,000	"	1/2W	R1S-223	C44 A E	10-10MFD	"	"	PA-4302
R45	8,200	"	"	R1S-822					
R46	47,000	"	1W	R2S-473					
R47	510	"	"	R2G-511	L 1	PEAKING COIL	95.2MH		AB-42277-6
R48	10,000	"	2W POT.	PA-4217	L 2	"	160MH		AB-42277-8
R49	2,200	"	"	R4S-222	L 3 A B	LONG KINESCOPE YOKE			PTY6A
R50	68,000	"	"	R4S-683					
R51	33,000	OHMS	2W	R4S-333					
R52	100	"	25W C.T. POT	PA-4410	T 1	A.F.C. TRANSFORMER			AB-45018
R53	2,200	"	1W	R2S-222	T 2	HORIZ. OUTPUT TRANS			AB-45015
R54	8,200	"	2W	R4S-822	T 3	VERT. OUTPUT	"		AB-45014
R55	100,000	"	1/2W	R1S-104					
R56	3,300	"	"	R1S-332					
R57	47,000	"	"	R1S-473					
R58	250,000	"	1W POT	PA-4214					
R59	100,000	"	"	PA4213					
R60	500	"	25W W.W. POT	PA-4411					
R61	100	"	" C.T. "	PA4410					
R62									
R64	100,000	"	1W	R2S-104					
R65	47,000	"	1/2W	R1S-473					
R66	3.9 MEGOHM	"	"	R1S-395					



H DC 687 10-20-47
 Added 450V. cap.
 Removed ground at C4579
 J DC 696 11-3-47
 MISSING VALUES SPECIFIED
 TO 'R' IN NOTE

-NOTE-
 VOLTAGES INDICATED ARE
 WITH RESPECT TO CHASSIS
 MEASURED WITH VTVM.
 R IN OHMS RESISTANCE VALUES
 LESS THAN 0.1Ω ARE NOT INDICATED
 C IN MMFD UNLESS OTHERWISE
 STATED



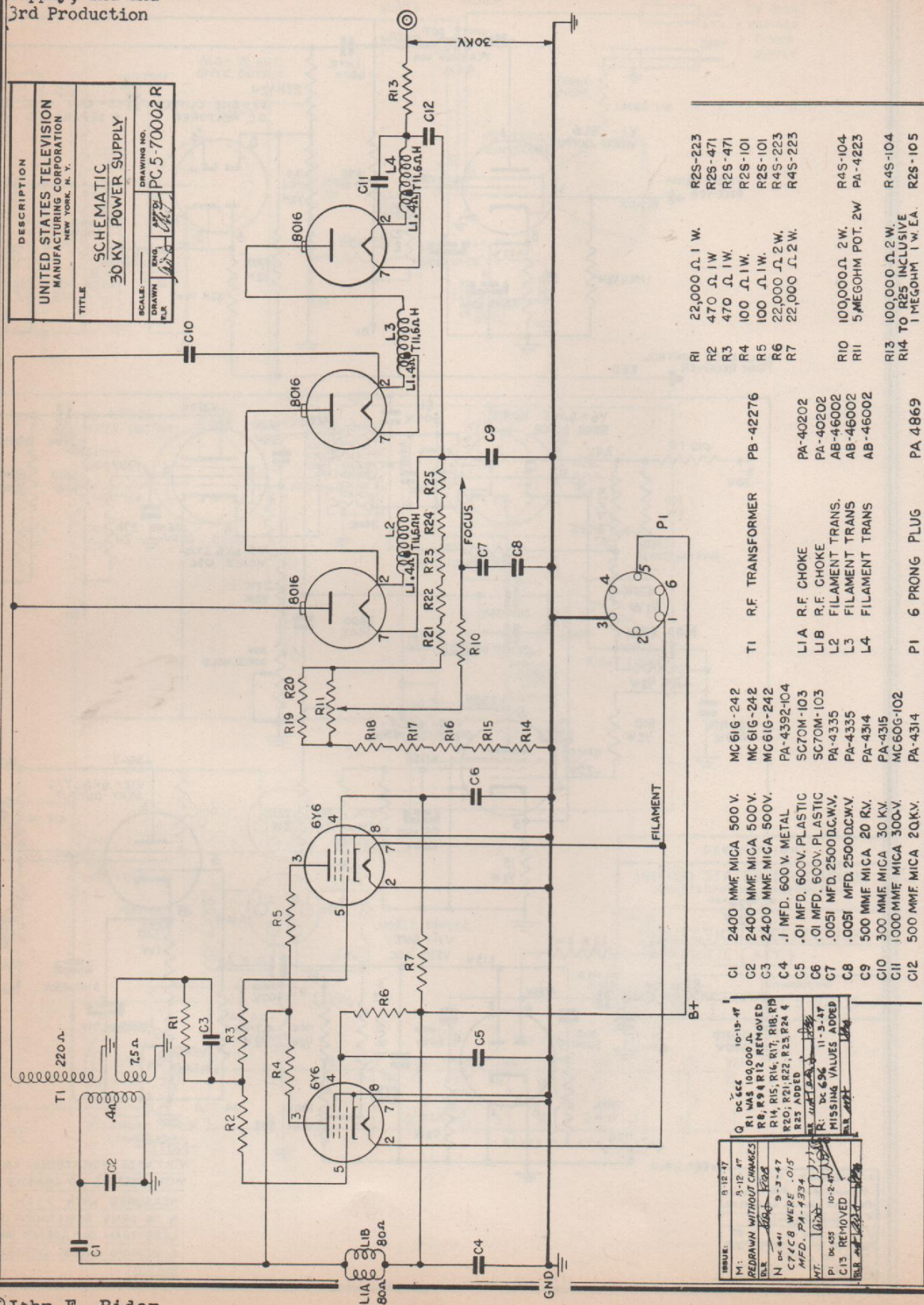
CI	RI	MC6IG-242	RI	100,000 Ω 1 W.	R2S-104	T1	R.F. TRANSFORMER	PB-462276
C2	R2	MC6IG-242	R2	470 Ω 1 W.	R2S-471			
C3	R3	MC6IG-242	R3	470 Ω 1 W.	R2S-471			
C4	R4	PA-4392-104	R4	100 Ω 1 W.	R2S-101	L1A	R.F. CHOKE	PA-40202
C5	R5	SC70M-103	R5	100 Ω 1 W.	R2S-101	L1B	R.F. CHOKE	PA-40202
C6	R6	SC70M-103	R6	22,000 Ω 2 W.	R4S-223	L2	FILAMENT TRANS.	AB-46002
C7	R7	PA-4335	R7	22,000 Ω 2 W.	R4S-223	L3	FILAMENT TRANS	AB-46002
C8	R8	PA-4335	R8	22 MEGOHM 2 W.	PA-4243	L4	FILAMENT TRANS	AB-46002
C9	R9	PA-4315	R9	51 MEGOHM 2 W.	R4G-515			
C10	R10	PA-4315	R10	100,000 Ω 2 W.	R4S-104			
C11	R11	MC66G-102	R11	5 MEGOHM POT. 2 W.	PA-4223	P1	6 PRONG PLUG	PA 4869
C12	R12	PA-4314	R12	22 MEGOHM 2 W.	PA-4243			
C13	R13	PA-4314	R13	100,000 Ω 2 W.	R4S-104			

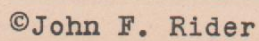
DATE OF CAT.	DESCRIPTION	UNITED STATES TELEVISION MANUFACTURING CORPORATION 1000 W. 10TH ST. N.E. MINNEAPOLIS, MINN.	DATE RECEIVED	PC 5-700000N
USED WITH	TITLE	SCHMATIC 30 KV POWER SUPPLY	SCALE	1/2" = 1"
ANALOG D.P.W.			DESIGN	100
			NO.	100

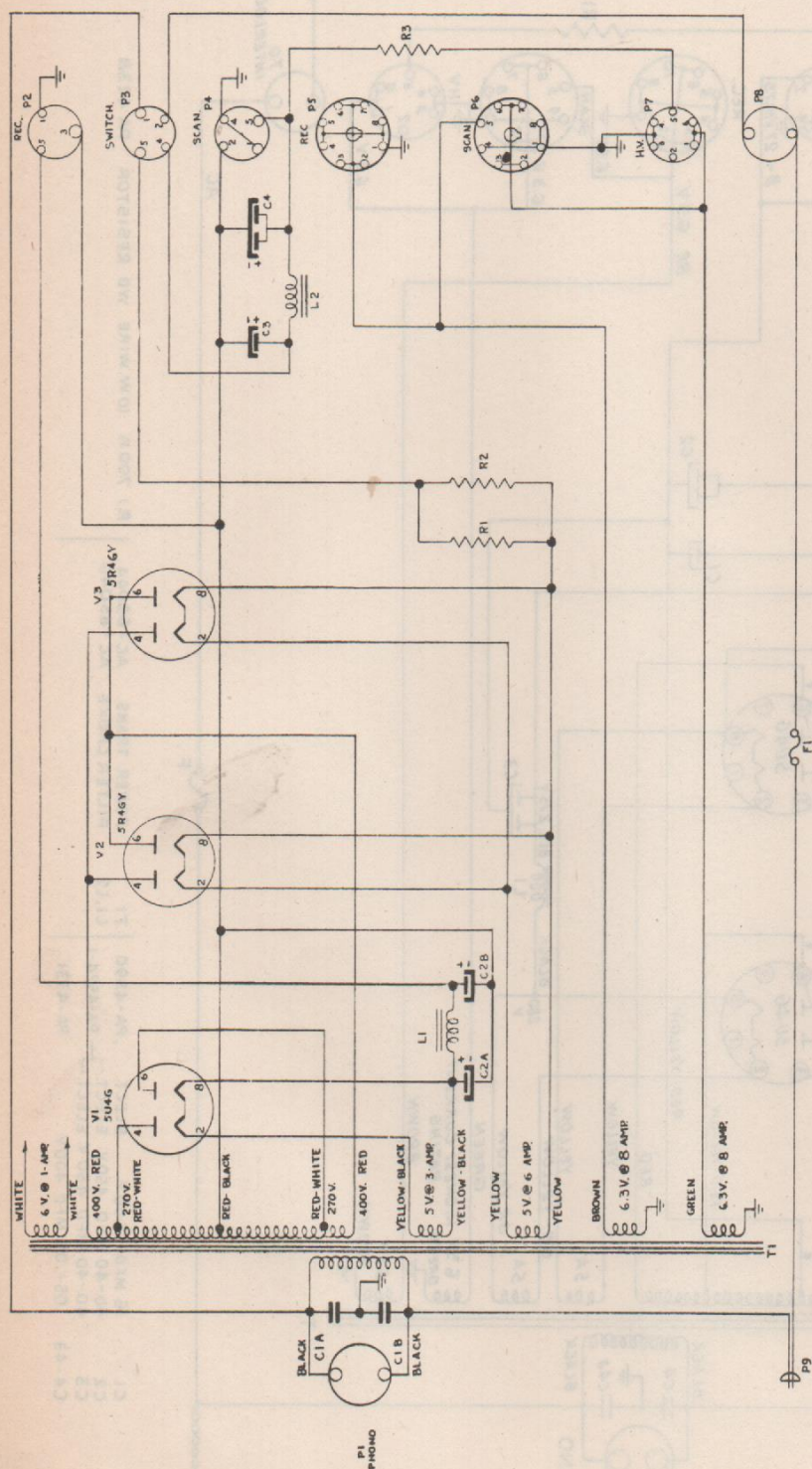
MATERIAL	FINISH	TO GRANCE		SAC. DIMENSIONS	SAC. DISPOSITION
		PREC. DIMENSIONS	PREC. DISPOSITION		
		1/2" TO 3/4"	1/2"	1/2"	2000
		3/4" TO 1"	3/4"	3/4"	2100
		1" TO 1 1/2"	1"	1"	2110
		1 1/2" TO 2"	1 1/2"	1 1/2"	2110
		2" TO 3"	2"	2"	2110
		3" TO 4"	3"	3"	2110
		4" TO 6"	4"	4"	2110
		6" TO 8"	6"	6"	2110
		8" TO 10"	8"	8"	2110
		10" TO 12"	10"	10"	2110
		12" TO 14"	12"	12"	2110
		14" TO 16"	14"	14"	2110
		16" TO 18"	16"	16"	2110
		18" TO 20"	18"	18"	2110
		20" TO 22"	20"	20"	2110
		22" TO 24"	22"	22"	2110
		24" TO 26"	24"	24"	2110
		26" TO 28"	26"	26"	2110
		28" TO 30"	28"	28"	2110
		30" TO 32"	30"	30"	2110
		32" TO 34"	32"	32"	2110
		34" TO 36"	34"	34"	2110
		36" TO 38"	36"	36"	2110
		38" TO 40"	38"	38"	2110
		40" TO 42"	40"	40"	2110
		42" TO 44"	42"	42"	2110
		44" TO 46"	44"	44"	2110
		46" TO 48"	46"	46"	2110
		48" TO 50"	48"	48"	2110
		50" TO 52"	50"	50"	2110
		52" TO 54"	52"	52"	2110
		54" TO 56"	54"	54"	2110
		56" TO 58"	56"	56"	2110
		58" TO 60"	58"	58"	2110
		60" TO 62"	60"	60"	2110
		62" TO 64"	62"	62"	2110
		64" TO 66"	64"	64"	2110
		66" TO 68"	66"	66"	2110
		68" TO 70"	68"	68"	2110
		70" TO 72"	70"	70"	2110
		72" TO 74"	72"	72"	2110
		74" TO 76"	74"	74"	2110
		76" TO 78"	76"	76"	2110
		78" TO 80"	78"	78"	2110
		80" TO 82"	80"	80"	2110
		82" TO 84"	82"	82"	2110
		84" TO 86"	84"	84"	2110
		86" TO 88"	86"	86"	2110
		88" TO 90"	88"	88"	2110
		90" TO 92"	90"	90"	2110
		92" TO 94"	92"	92"	2110
		94" TO 96"	94"	94"	2110
		96" TO 98"	96"	96"	2110
		98" TO 100"	98"	98"	2110
		100" TO 102"	100"	100"	2110
		102" TO 104"	102"	102"	2110
		104" TO 106"	104"	104"	2110
		106" TO 108"	106"	106"	2110
		108" TO 110"	108"	108"	2110
		110" TO 112"	110"	110"	2110
		112" TO 114"	112"	112"	2110
		114" TO 116"	114"	114"	2110
		116" TO 118"	116"	116"	2110
		118" TO 120"	118"	118"	2110
		120" TO 122"	120"	120"	2110
		122" TO 124"	122"	122"	2110
		124" TO 126"	124"	124"	2110
		126" TO 128"	126"	126"	2110
		128" TO 130"	128"	128"	2110
		130" TO 132"	130"	130"	2110

MODEL 30 KV Power
Supply, 2nd and
3rd Production

U. S. TELEVISION MFG. CORP.





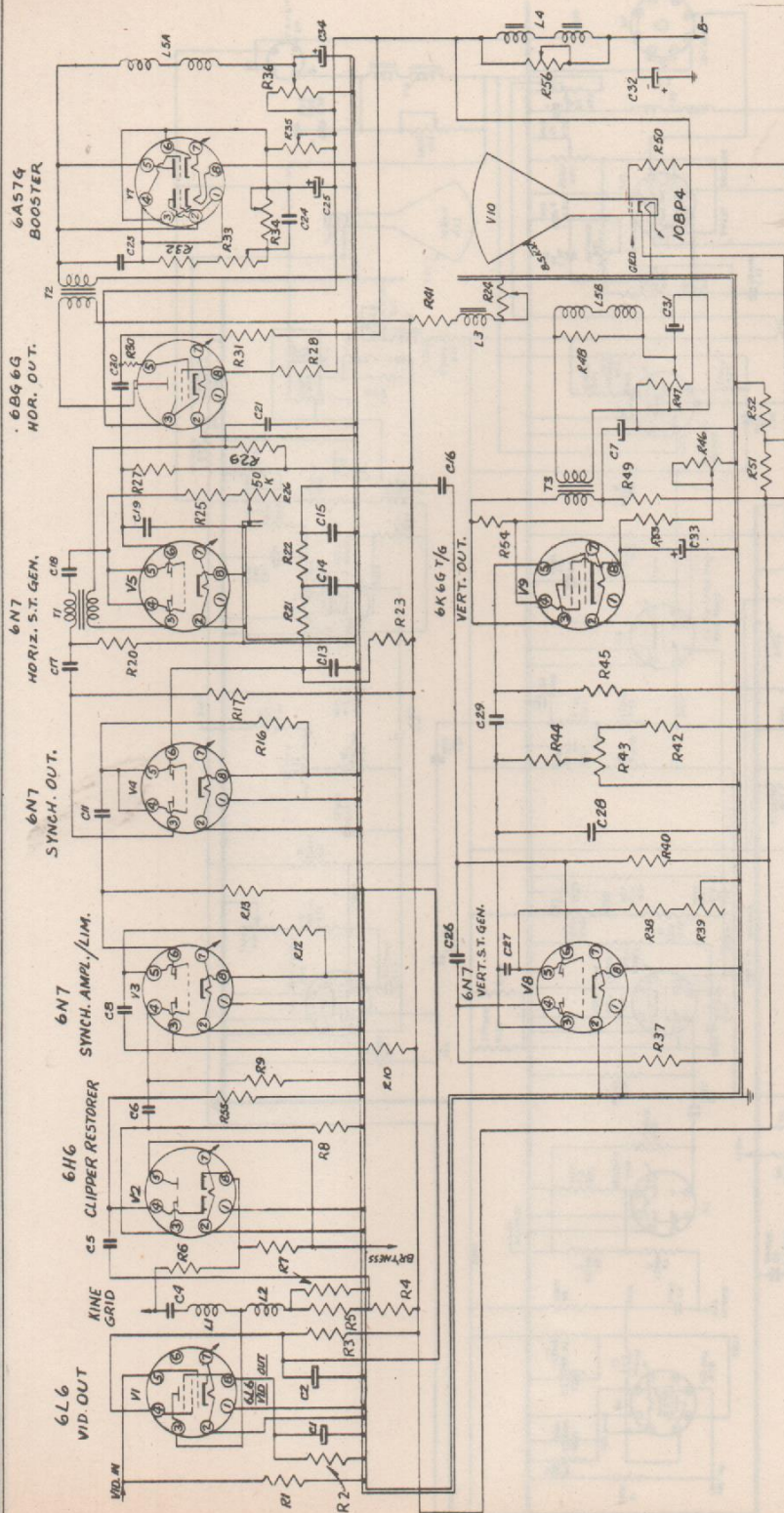


	TI	TRANSFORMER	AC-6504-3
05-05 MFD, 400V.	PA-4331	RI 10 Ω 2W. CARB-RESIS.	PI PHONO PLUG
C2A8B	PA-4324-1	R2 10 Ω 2W. CARB-RESIS.	P2 3 PRONG SOCKET
C3A8B	PA-4324-1	R3 700 Ω 10W. W.W.R.	P3 4 PRONG SOCKET
C4	PA-4324-2		P4 4 PRONG SOCKET
			P5 OCTAL SOCKET
			P6 OCTAL SOCKET
			P7 6 PRONG MOLD SOCKET
			P8 2 PRONG SOCKET
			P9 LINE CORDS PLUG
			PA-4000-1
L1 FILTER CHOKE	AC-65040	F1 5 AMP 250V FUSE	PA-8004
L2 FILTER CHOKE	AC-65040		

DESCRIPTION	UNITED STATES TELEVISION MANUFACTURING CORPORATION NEW YORK, N. Y.	TITLE LOW VOLTAGE POWER SUPPLY SCHEMATIC	SCALE: DRAWN BY R. S.	DATE/ISSUED NO. PC 5-70000
				FILE NO. F

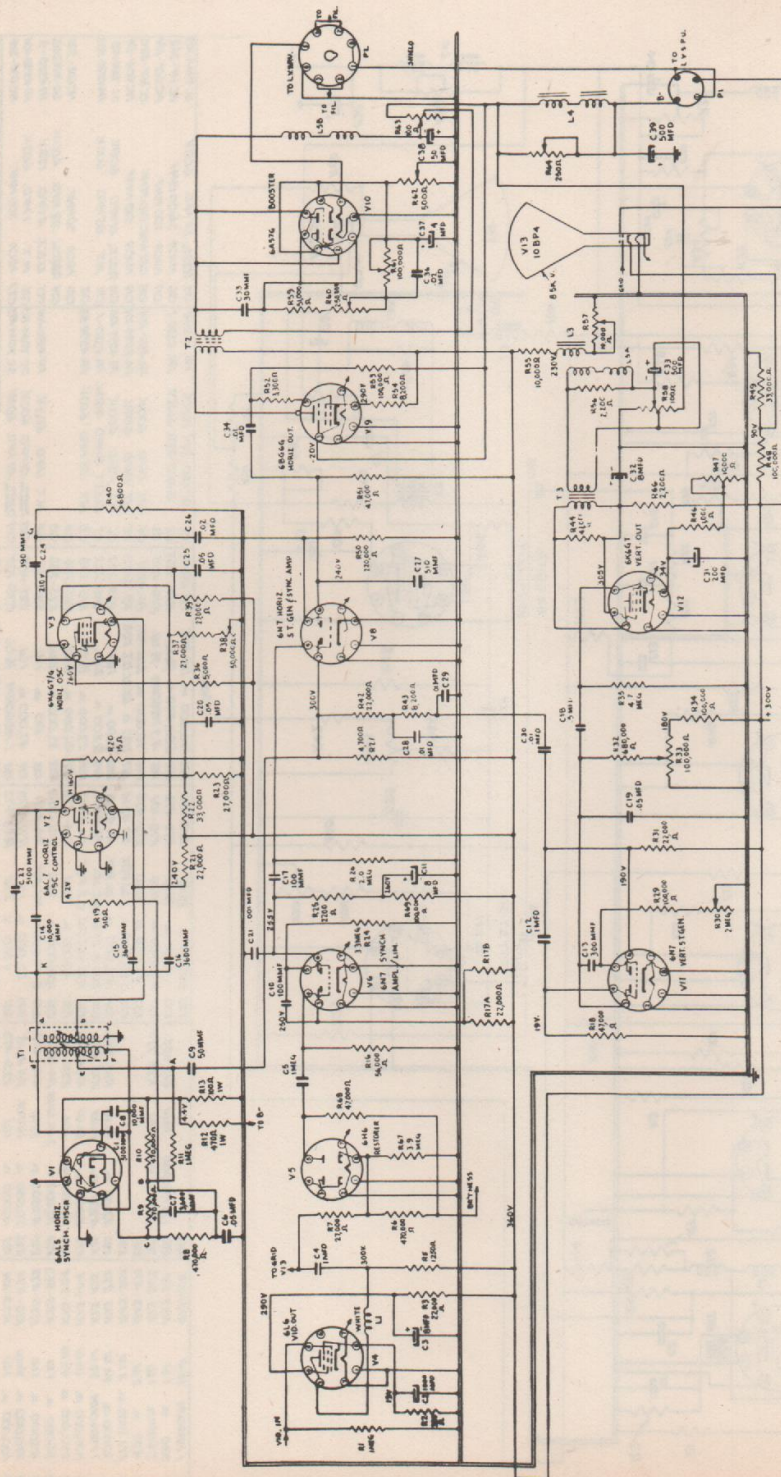
MATERIAL	POLYMER	TOLERANCE				UNLESS OTHERWISE SPECIFIED
		MINIMUM TOLERANCE	TYPICAL TOLERANCE	MAX. TOLERANCE	MIN. TOLERANCE	
		SEE TABLE	1/4"	3/16"	3/8"	
		SEE TABLE	1/4"	3/16"	3/8"	
		SEE TABLE	1/4"	3/16"	3/8"	

ISSUE DC 974-23 7-25-47
CHADAY WITH FOLLOWING
ADDRESS - 914 RT 47
TOWN OF 45044
474

[illegible]

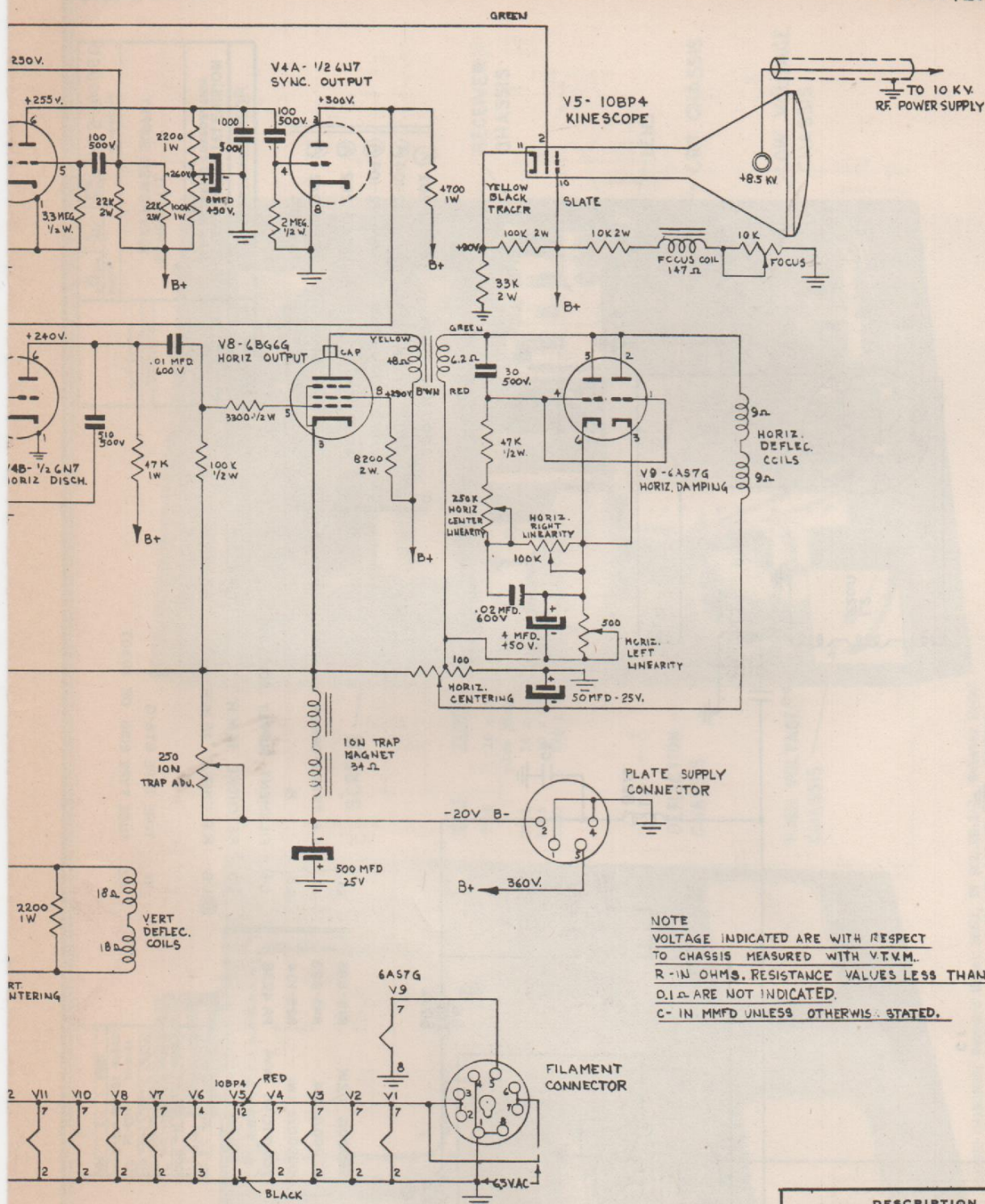
MODEL 10 Inch
Deflection, AFC,
2nd Production

U. S. TELEVISION MFG. CORP.



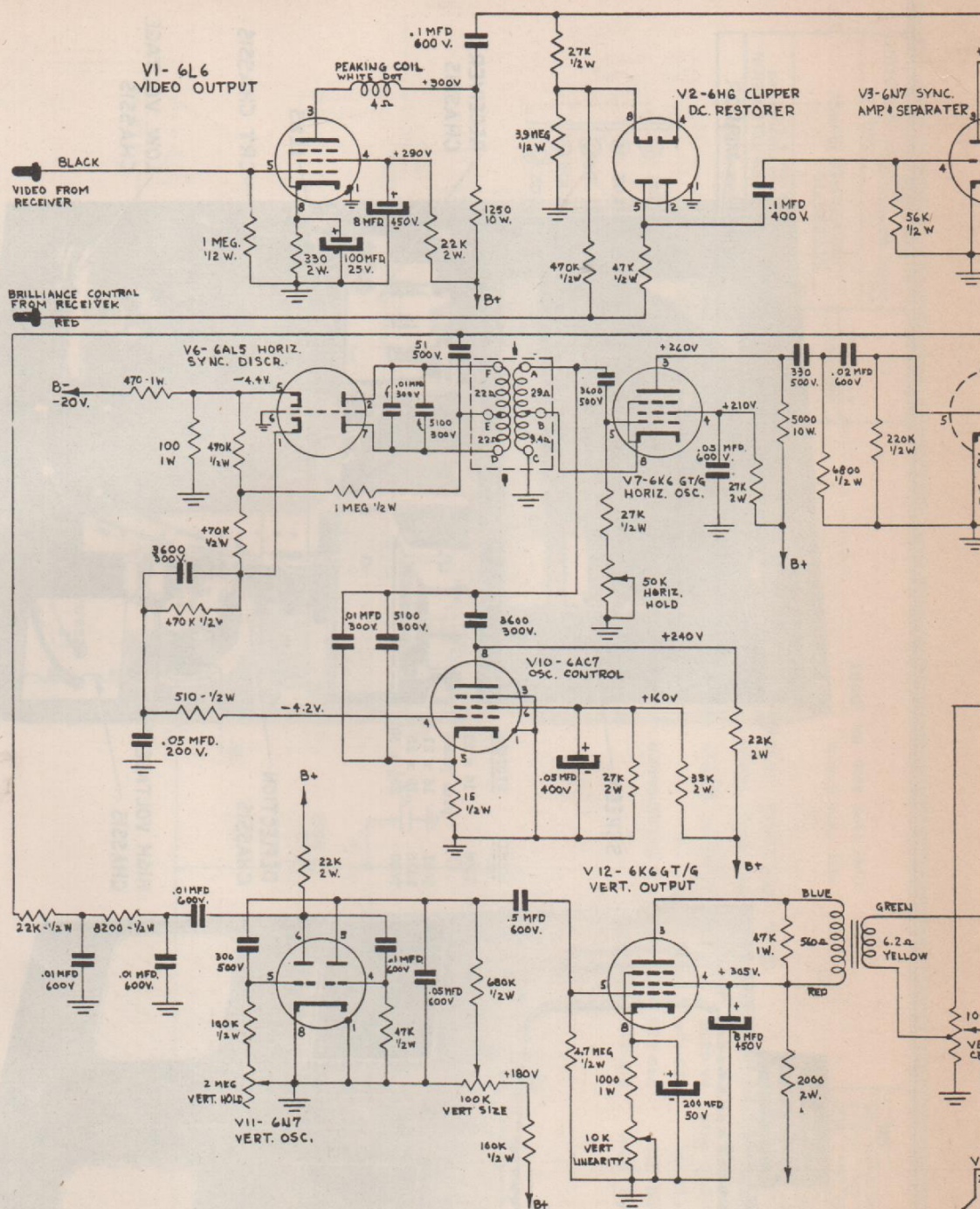
SION MFG. CORP.

MODEL 10 Inch
Deflection, Late

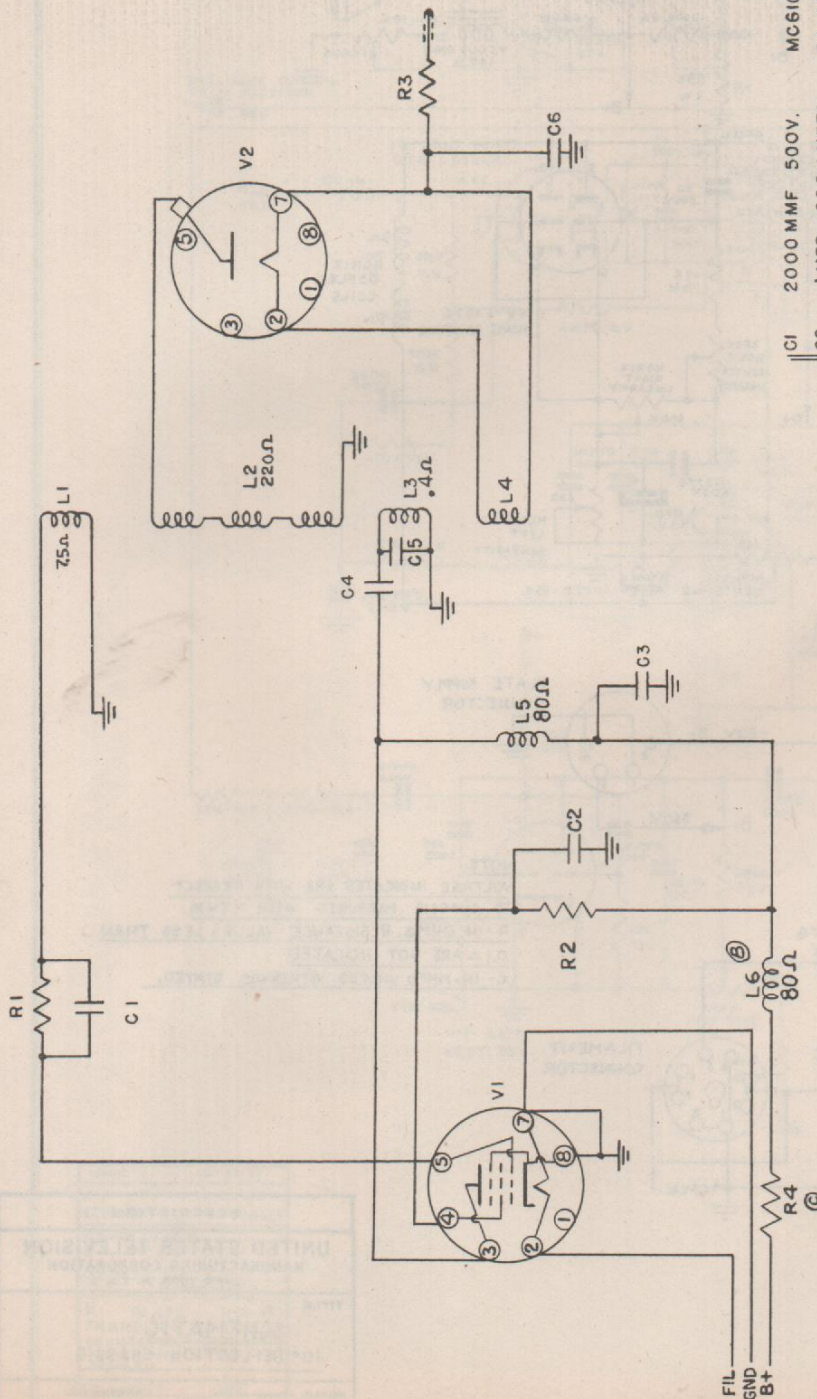


NOTE
VOLTAGE INDICATED ARE WITH RESPECT
TO CHASSIS MEASURED WITH V.T.V.M..
R-IN OHMS, RESISTANCE VALUES LESS THAN
0.1Ω ARE NOT INDICATED.
C- IN MMFD UNLESS OTHERWISE STATED.

DESCRIPTION		
UNITED STATES TELEVISION MANUFACTURING CORPORATION NEW YORK, N. Y.		
TITLE		
SCHEMATIC 10° DEFLECTION CHASSIS		
SCALE: _____		DRAWING NO.
DRAWN JENG. B.E. 10	APPR. JENG.	PC 5-70033 K



ISSUE:	10-21-47
M	10-21-47
REDRAWN WITHOUT CHANGES	
DIS. NO.	10-21-47
J	DC-687 10-30-47
REVISED WIRING AT V9	
K	10-30-47
K: DC 696 11-3-47	
FILAMENT & PLATE (PLUS)	
CONNECTORS INDICATED.	
RESISTANCE NOTE	
REVISED.	
DIS. NO.	10-30-47



- | | | | |
|----|----------|-------------|-----------------|
| C1 | 2000 MMF | 500V. | MC616-202 (A) |
| C2 | .1MFD | 600V. METAL | PA-4392-104 (A) |
| C3 | .1MFD | 600V. METAL | PA-4392-104 (A) |
| C4 | 2000 MMF | 500V. | MC616-202 (A) |
| C5 | 2400 MMF | 500V. | MC616-242 (A) |
| C6 | 500 MMF | 20KV. | PA-4314 |

- | | | | |
|-----|---------------------------|---|------------|
| L1) | R.F. TRANSFORMER | } | PB-42276-1 |
| L2 | 8 | | |
| L3 | FILAMENT SUPPLY 8016-83GT | | |
| L4) | | | |
| L5 | R.F. CHOKE 16 M.H. | | AB-40202 |
| Ⓛ6 | R.F. CHOKE 16 M.H. | | AB-40202 |

- | | | | |
|-----|---------|-------|---------|
| R1 | 68000Ω | 1/2W. | R1S-683 |
| ⒶR2 | 22000Ω | 2W. | R4S-223 |
| R3 | 100000Ω | 1W. | R2S-104 |
| ⒷR4 | 70010W. | WW. | PA 4238 |

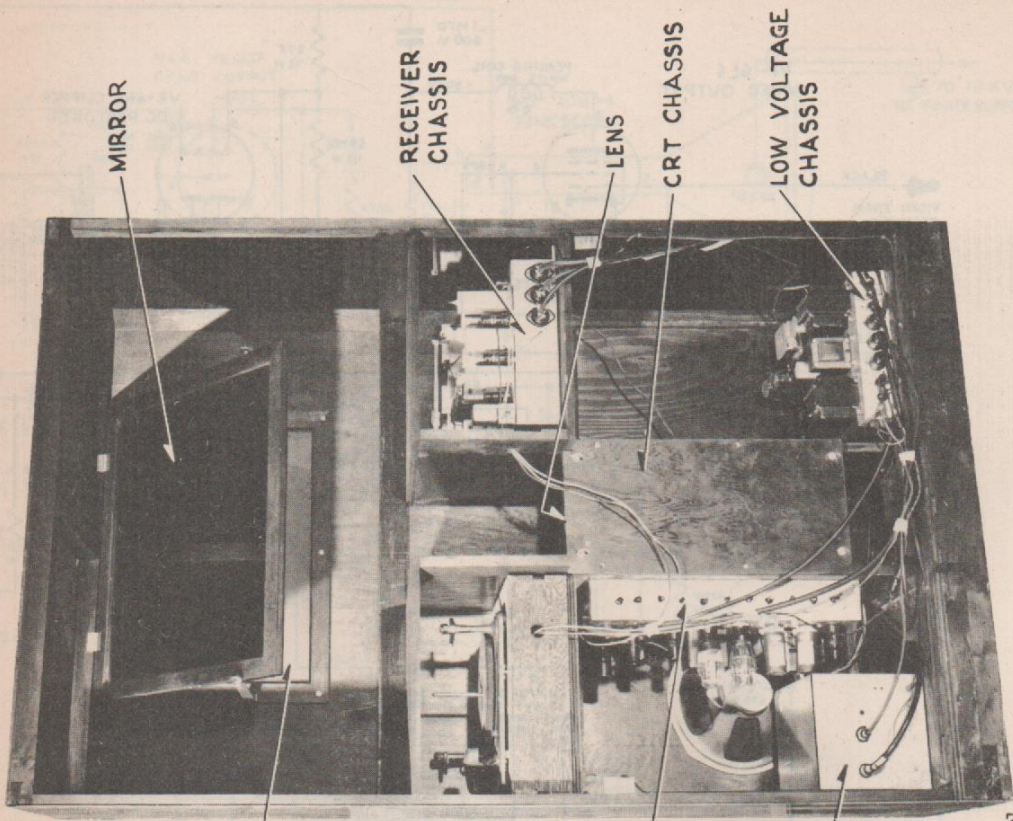
DWG OR CAT. NO.	ITEM NO.	DESCRIPTION
USED WITH 10 D - 16		UNITED STATES TELEVISION MANUFACTURING CORPORATION NEW YORK, N. Y.
		TITLE
ASSEMB. DW'G.		SCHÉMATIC 10KV POWER SUPPLY
A C 70006	SCALE:	DRAWING NO.
	DRAWN BY	APPROVED <i>[Signature]</i>
	CHECKED BY	PC-5-70006D

B	D.C. 414 (16)	4-9-47	ADDED R.F. CHOKE 16MM
C	D.C. 456	7-15-47	
D	D.C. 496	11-3-47	MISSING 6 VALUES ADDED
FLR			1684

ISSUE:	DC 72	11-11-76
A	D.C. 235	1-16-47
R2	was 10,000 R2S - 103	
MCEB	WAS MCEB	
C28C3	WAS PA-4392-103	
C5	WAS 5000 MF MCEB 302	
RECORDED	INDEXED	FILED
NOV 11 1976	FBI - NEW YORK	

MODELS T508, T521,
T525, T520

U. S. TELEVISION MFG. CORP.



SCREEN

MIRROR

RECEIVER
CHASSIS

LENS

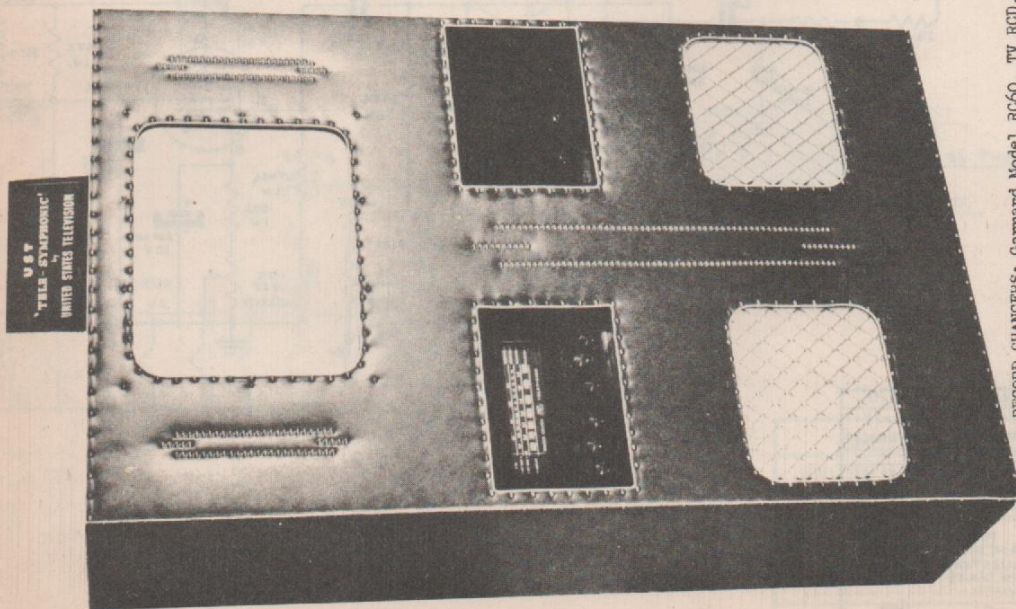
CRT CHASSIS

LOW VOLTAGE
CHASSIS

DEFLECTION
CHASSIS

HIGH VOLTAGE
CHASSIS

MODEL	PICTURE
T508	16 x 21
T521	plus phono
T525	16 x 21
T520	19 x 25
T530	22 $\frac{1}{2}$ x 30



RECORD CHANGERS: Garrard Model RC60, TV RCD.CH.1-1, Webster Model
56, TV RCD.CH. 1-1, Webster Model 70, TV RCD.CH.1-10, Seeburg
Model K, TV RCD.CH.1-23

U. S. TELEVISION MFG. CORP.

MODELS T502, T507,
T525 Pix, T621



MODEL T525 PIX



MODEL 621



MODEL T502



MODEL T507

MODELS ALL

U. S. TELEVISION MFG. CORP.

Automatic Cathode Ray Tube Protective Circuit

Commencing with Receiver Number 2700 and Deflection Chassis Serial Number 3200, there will be included an automatic protection circuit which will prevent scanning failure from burning or damaging the Cathode Ray Tube screen. The circuitry of this device is as follows:

Through the resistive network in the brilliance control circuit an unusually high positive bias is applied to the cathode of the Cathode Ray Tube. The magnetic shield of the yoke is connected to the input of a tuned resonant circuit of a mean frequency which is the third harmonic of scanning frequency cycles. The shield of the yoke acts as a capacitive pick off of the horizontal scanning current pulses which are applied to the resonant circuit. The resonant rise of voltage across the combination of inductance and capacitance is applied to one half of a 6H6 tube and the rectified DC component appears across the cathode load resistor. This DC potential is applied in series with the rectified voltage supplied from the DC resotrer which is the other half of the 6H6 tube. The value of the rectified bias which "bucks" the Cathode Ray Tube cut-off bias is approximately 100 volts DC, positive with respect to ground. The value of this voltage must be set to this amount for proper operation of the protective circuit. A test jack is provided for measurement of this voltage and it can be adjusted to the indicated value by varying the tuning of the resonant circuit.

Should the horizontal scanning generator fail for any reason, there will be no scanning current flowing in the yoke, hence no voltage will be picked off by the capacity of yoke shell, and hence there is no signal voltage applied to the resonant circuit. The failure of bucking bias across the load resistor of the 6H6 allows the cutoff bias to be fully effective on the cathode of the Cathode Ray Tube, which cuts off the beam current.

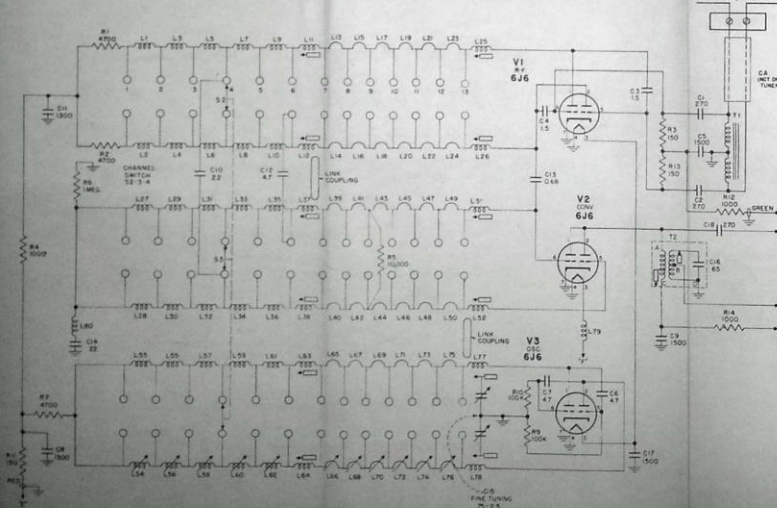
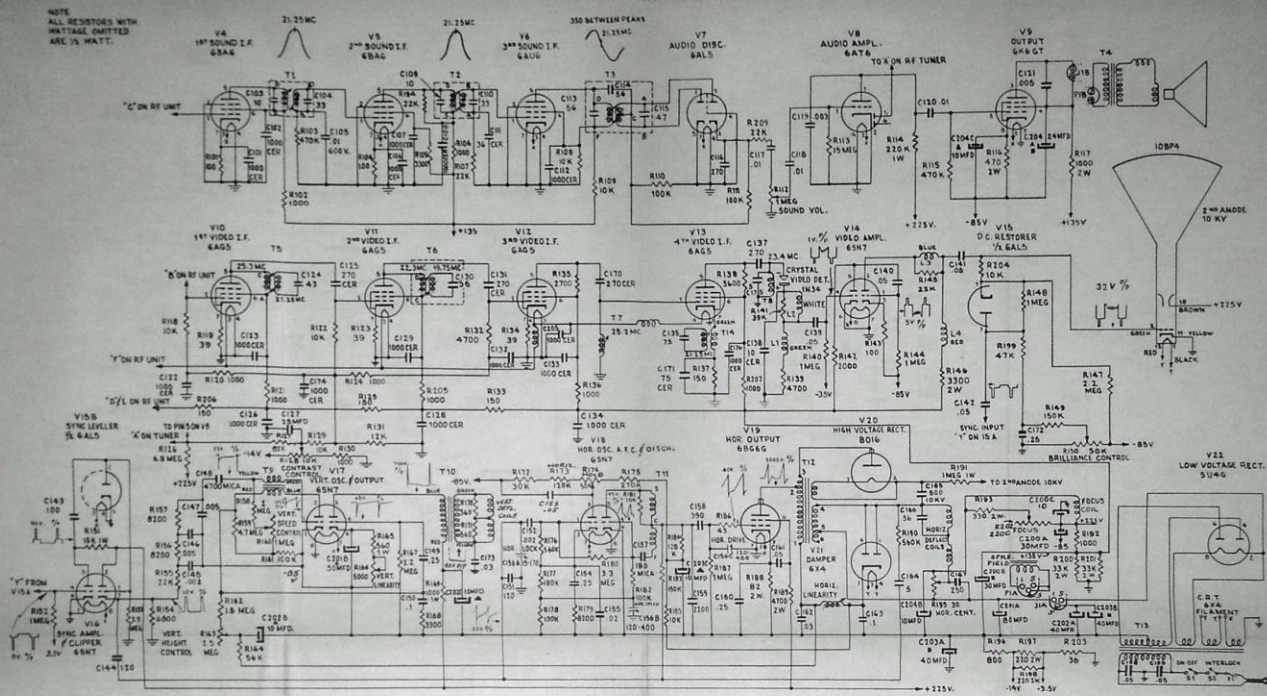
In some instances of abnormally high signal voltages the appearance of the scanning beam may be observed, due to the fact that exceptionally high voltages which will drive the grid of the Cathode Ray Tube sufficiently far beyond the cut off region to permit passage of current.

It is essential when adjusting this circuit that the bucking bias voltage measured at the test jack, be 100 volts with the contrast control at normal picture setting. After adjustment to this value by varying tuning capacitor "C", the contrast control should be turned to zero and the horizontal hold control should be adjusted so as to give the same bucking bias voltage.

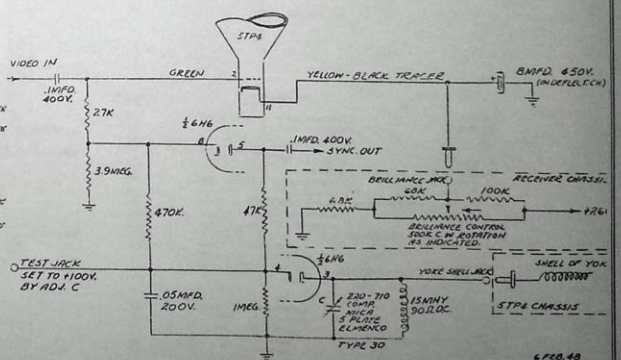
This assures that the application of the pulses of approximately the correct frequency will be applied to the protective circuit with or without presence of video and sync signals.

It is to be noted that Receivers and Deflection Chassis having this modification are not directly interchangeable with chassis of earlier serial numbers which are not so modified.

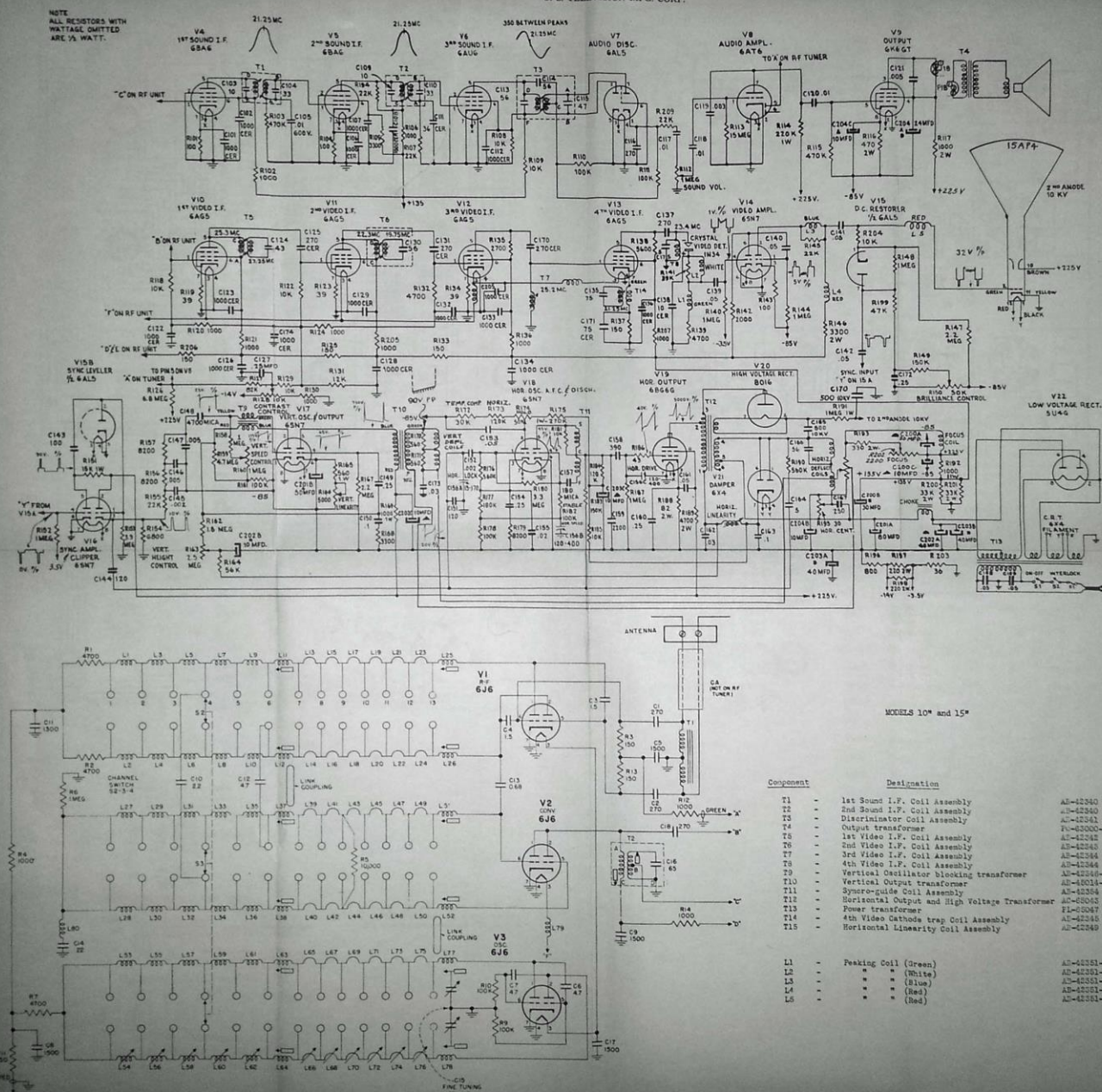
NOTE:
ALL RESISTORS WITH
WATTAGE SHOWN ARE 1/2 WATT.



ALL MODELS AUTOMATIC CATHODE RAY TUBE PROTECTION CIRCUIT



NOTE
ALL RESISTORS WITH
WATTAGE OMITTED
ARE 1/2 WATT.



For test patterns see back of Manual