HIGH VOLTAGE WARNING

EXTREMELY HIGH VOLTAGES ARE USED IN THE OPERATION OF THIS RECEIVER. THEREFORE, THE OPERATION OF THIS RECEIVER OUTSIDE THE CABINET OR WITH THE SAFETY BACK REMOVED INVOLVES A SHOCK HAZARD. IT IS EXTREMELY IMPORTANT TO BE THOROUGHLY FAMILIAR WITH ALL PRECAUTIONARY SAFETY MEASURES BEFORE ATTEMPTING ANY SERVICE WORK ON THE CHASSIS.

GENERAL INFORMATION

The TS series Stromberg-Carlson Television receiver is composed of three (3) general subdivisions:

1. TS-125 using the 12" kinescope tube.
2. TS-15 using the 15" glass kinescope tube.
3. TS-16 using the 16" metal kinescope tube.

All models use a basic chassis assembly with modifications of the kinescope tube mount and the deflection and high voltage systems to accommodate the different size picture tubes.

The basic television chassis includes facilities fc standard broadcast and frequency modulation reception, and is the same for all models. The features of this series of television receivers include: standard broadcast reception, FM reception, two-band television reception covering all twelve television channels, automatic gain control (A.G.C.), automatic black level (A.B.L.), automatic frequency control of the horizontal sweep, and provisions for using separate high and low band TV antennas.

SPECIFICATIONS

Picture Presentation

TS-125 — 12" electromagnetic cathode ray tube. Picture size 11 1/4" x 9 1/2"
TS-15 — 15" electromagnetic cathode ray tube. Picture size 12 3/4" x 9 1/2"
TS-16 — 16" electromagnetic cathode ray tube. Picture size 12 3/4" x 9 1/2" (early models) 14 3/8" x 10 3/4" (late models)

Input Impedance

300 ohm balanced.

Tuning Range

AM — 540 to 1600 KC.
FM — 88 to 108 Mc.
TV-2-6 — 54 to 88 Mc.
TV-7-13 — 174 to 216 Mc.

Sensitivity

Video: 18 microvolts to give 25 volts peak to peak on kinescope grid.
Sound: 13 microvolts to give .5 watts output. 22 1/2 Kc deviation.
FM: 20 microvolts to give .5 watts output. 22 1/2 Kc deviation.
AM: 6 microvolts to give .5 watts output. 30% modulation.

Intermediate Frequencies

AM — 455 Kc.
FM — 21.9 Mc.
TV audio carrier — 21.9 Mc.
TV video carrier — 26.4 Mc (bandwidth 3.7 Mc).

Audio Power Output

TS-125 H-1 — 3 watts
TS-125 L-1 — 10 watts
TS-125 M5 — 10 watts
TS-15 — 10 watts
TS-16 — 10 watts

Speaker Voice Coil Impedance

6 — 8 ohms

Operating Voltage

117 volts 60 cycles.

Power Consumption

TS-125 H — 300 watts
TS-125 L & M5 — 305 watts
TS-15 — 325 watts
TS-16 — 325 watts
9 — 20 watts additional for phono depending upon type.

IDENTIFICATION TABLE

Model	Chassis	Cabinet	Speaker	Phono Mfg. No.	Phono S-C No.
TS-125-DL1	112060	108130	155075	—	—
TS-125-EL1	112059	108130	155075	—	—
TS-125-SL1	112058	108130	155075	—	—
TS-125-DM5M	112075	108139	155075	RCA-RP-168A	148043
				VM-405-Duo	148040
TS-125-EM5M	112076	108139	155075	RCA-RP-168A	148043
				VM-405-Duo	148040
TS-125-SM5M	112077	108139	155075	RCA-RP-168A	148043
				VM-405-Duo	148040
TS-125-EH1M	112074	108133	155085	—	—
TS-125-DH1M	112073	108133	155085	—	—
TS-125-SH1M	112072	108133	155085	—	—
TS-15-L1A	112049	108124	155075	—	—
TS-15-L1M	112049	108123	155075	—	—
TS-15-M1A	112049	108122	155074	VM-402-Duo	148025
TS-15-M1M	112049	108121	155074	VM-402-Duo	148025
TS-16-L1A	112047	108124	155075	—	—
TS-16-L1M	112047	108123	155075	—	—
TS-16-M1A	112047	108122	155074	VM-405-Duo	148040
TS-16-M1M	112047	108121	155074	VM-405-Duo	148040
TS-16-PM	112081	108138	155075	RCA-RP-168A	148043
				VM-405-Duo	148040

TELEVISION FREQUENCY RANGES

Channel	Channel Freq. Mc	Picture Carrier Freq. Mc	Sound Carrier Freq. Mc	Receiver RE Osc. Freq. Mc
2	54-60	55.25	59.75	81.65
3	60-66	61.25	65.75	87.65
4	66-72	67.25	71.75	73.65
5	76-82	77.25	81.75	103.65
6	82-88	83.25	87.75	109.65
7	174-180	175.25	179.75	201.65
8	180-186	181.25	185.75	207.65
9	186-192	187.25	191.75	213.65
10	192-198	193.25	197.75	219.65
11	198-204	199.25	203.75	225.65
12	204-210	205.25	209.75	231.65
13	210-216	211.25	215.75	237.65

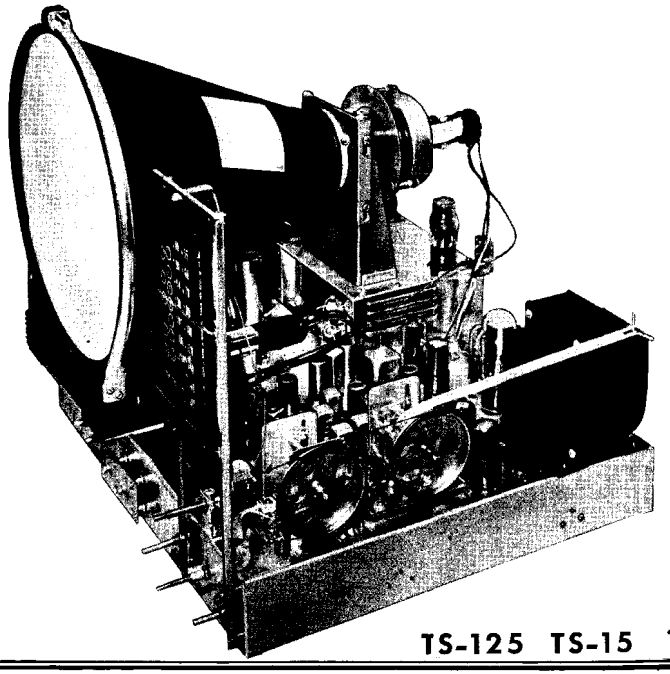
METAL KINESCOPE PRECAUTIONS

Be extremely careful when working around the new type metal kinescope. The entire metal cone and clamping ring are at 2nd anode potential (12,000 volts). These tubes have a protective coating on the bulbous portion of the neck where the glass is joined to the metal. This coating is a special material compounded to minimize the leakage of electricity across the glass surface. Care should be used in handling the tube to prevent finger prints and other foreign matter from contaminating this coating as its protective properties would be nullified by any forms of foreign matter. This is especially important inasmuch as this surface may not be cleaned, with solvents normally used to remove grease, without destroying the coating entirely.

PICTURE TUBE HANDLING

THE PICTURE TUBE BULB ENCLOSES A HIGH VACUUM, AND DUE TO ITS LARGE SURFACE AREA IS SUBJECTED TO CONSIDERABLE AIR PRESSURE. THEREFORE, HANDLE THE PICTURE TUBE WITH CARE SINCE A FRACTURE MAY RESULT IN AN IMPLOSION WITH THE POSSIBILITY OF FLYING GLASS. ALWAYS WEAR SHATTER-PROOF SAFETY GOGGLES AND HEAVY GLOVES WHEN HANDLING THE KINESCOPE TUBE IN THE SHOP OR IN A CUSTOMER'S HOME. KEEP UNPROTECTED ONLOOKERS AT A SAFE DISTANCE.

DO NOT SUBJECT THE LARGE END OF THE PICTURE TUBE TO MORE THAN A MODERATE PRESSURE AT ANY TIME. IF, WHEN INSTALLING THE TUBE IN THE RECEIVER, IT STICKS OR FAILS TO SLIP THROUGH THE DEFLECTION YOKE ASSEMBLY, DO NOT FORCE BUT INVESTIGATE AND REMOVE THE OBSTRUCTION.



TS-125 TS-15 TS-16

TUBE COMPLEMENT

Circuit Symbol	Function	Tube Type	Used On TS-125	TS-15	TS-16
V-1	FM RF Amplifier	6BA6	x	x	x
V-2	FM Converter & Oscillator	12AT7	x	x	x
V-3	AM RF Amplifier	6BA6	x	x	x
V-4	AM Converter & Oscillator	6BE6	x	x	x
V-5	TV RF Amplifier (high band)	6AG5	x	x	x
V-6A	TV Converter (high band)	6J6	x	x	x
V-6B	TV Oscillator (high band)	6J6	x	x	x
V-7	TV RF Amplifier (low band)	6BH6	x	x	x
V-8A	TV Converter (low band)	6J6	x	x	x
V-8B	TV Oscillator (low band)	6J6	x	x	x
V-9	1st Sound IF Amplifier	6BA6	x	x	x
V-10	2nd Sound IF Amplifier	6BA6	x	x	x
V-11	Sound Driver	6AU6	x	x	x
V-12	Ratio Detector	6AL5	x	x	x
V-13	Tuning Indicator	6U5	x	x	x
V-14	1st Audio Amplifier AM Det.	6AV6	x	x	x
V-15	Audio Inverter	6SC7	(x)	x	x
V-16	Audio Output	6V6GT/G	x	x	x
V-17	Audio Output	6V6GT/G	(x)	x	x
V-18	1st Picture IF Amplifier	6AG5	x	x	x
V-19	2nd Picture IF Amplifier	6AG5	x	x	x
V-20	3rd Picture IF Amplifier	6AU6	x	x	x
V-21	4th Picture IF Amplifier	6AG5	x	x	x
V-22	Picture Detector & AGC Diode	6AL5	x	x	x
V-23	AGC Amplifier	6AV6	x	x	x
V-24	1st Video Amplifier	6AU6	x	x	x
V-25	Video Output	6K6GT	x	x	x
V-26	Kinescope	12KP4	x		
		12LP4			
		12QP4			
		15AP4		x	
		16AP4			x
V-27	1st Sync. Amplifier	6AU6	x	x	x
V-28A	Sync Separator	6AL5	x	x	x
V-28B	ABL Diode	6AL5	x	x	x
V-29	2nd and 3rd Sync. Amplifier	6J6	x	x	x
V-30A	4th Sync. Amplifier	6SN7GT	x	x	x
V-30B	Horizontal Discharge	6SN7GT	x	x	x
V-31	Horizontal Sync Discriminator	6AL5	x	x	x
V-32	Horizontal Oscillator Control	6AC7	x	x	x
V-33	Horizontal Oscillator	6K6GT	x	x	x
V-34	Horizontal Sweep Output	6BG6G	x	x	x
V-35	High Voltage Rectifier	1B3GT/8016	x	x	x
V-36	High Voltage Multiplier	1B3GT/8016	x	x	x
V-37	Horizontal Sweep Damper	5V4G	x	x	x
V-38	Power Rectifier	5U4G	x	x	x
V-39	Power Rectifier	5U4G	x	x	x
V-40	Vertical Oscillator & Discharge	6J5	x	x	x
V-41	Vertical Sweep Output	6K6GT	x	x	x
V-42	Horizontal Sweep Output	6BG6G		x	x
V-43	AGC Delay	6AL5	x	x	x

(x) Not used on TS-125-H models, but used on TS-125-L models.

OPERATION

To place the television receiver in operation use the following sequence:

1. Turn the off-on-tone switch clockwise and wait about 1 minute for the receiver to warm up.
2. Choose the proper television band on the range control (first position, channels 2 to 6; second position, channels 7 to 13).
3. Use the tuning control to select the desired channel as indicated by the dial and pointer. Final tuning is made for maximum closure of the tuning eye.
4. Adjust the picture control for desired brightness.
5. Adjust the volume and tone control to the desired sound level.
6. Turn off dial light using dial light switch.

CONTROLS

Operating Controls

1. **5-Position Range Control** — This control has five positions and is used to select the type of service desired. In clockwise order the five positions are: Low band television (channels 2 to 6), high band television (channels 7 to 13), frequency modulation (FM), standard broadcast (AM), and phonograph.
2. **Off-On-Tone and Volume Control** — This control is a knob-with-a-knob. The inner knob turns on, and shuts off the receiver. Once turned on, the knob may be used as a tone control starting with maximum treble response, the bass response increasing as the knob is turned clockwise. The outer knob is used as a volume control to adjust the volume of the program.
3. **Tuning Control** — This control is used for selecting the desired station and is used on all bands (TV, FM and AM). It should be used in conjunction with the tuning eye located with the dial. Tune for maximum closing of the eye.
4. **Dial Light Switch and Picture Control** — This control is a knob-within-a-knob. The inner knob is used to select the desired brightness of the picture (most pleasing proportions of black and white). Note — An automatic background control is incorporated in the receiver which eliminates the necessity of adjusting the brightness control when tuning from station to station. The outer knob controls the dial light. When viewing a telecast the dial light may be extinguished, eliminating distraction from the picture.
5. **Vertical Hold Control**—This control is located behind the small removable panel just below the picture tube along with the focus control and 6 other non-operating controls. This control is used to prevent up and down movement of the picture and when properly adjusted will seldom require attention by the user.
6. **Focus Control** — This control is used to bring the picture into sharp focus and like the vertical hold control will seldom be used.

Non-Operating Controls

Six of these controls are located behind the small removable panel just below the picture tube, and three more on the rear flange of the chassis. These are for service adjustment only.

The six controls available on the front of the chassis are protected by a slide. To reach these controls, loosen the two (2) Phillips Head screws and slide the panel to the right until the controls are accessible with a screw driver. After adjustments are made, slide the panel back and tighten the screws so as to prevent tampering by unfamiliar persons. The six controls are:

1. **Brightness Control** — This control adjusts the operating level of the kinescope tube in conjunction with the automatic black level circuit. See installation instructions for correct procedure of adjusting this control.
2. **Vertical Centering Control** — This control allows the picture to be centered up and down electrically.
3. **Horizontal Centering Control** — This control adjusts the centering of the picture left and right.
4. **Vertical Size Control** — This control adjusts the vertical size of the picture.

TUBE COMPLEMENT

Circuit Symbol	Function	Tube Type	Used On TS-125	TS-15	TS-16
V-1	FM RF Amplifier	6BA6	x	x	x
V-2	FM Converter & Oscillator	12AT7	x	x	x
V-3	AM RF Amplifier	6BA6	x	x	x
V-4	AM Converter & Oscillator	6BE6	x	x	x
V-5	TV RF Amplifier (high band)	6AG5	x	x	x
V-6A	TV Converter (high band)	6J6	x	x	x
V-6B	TV Oscillator (high band)	6J6	x	x	x
V-7	TV RF Amplifier (low band)	6BH6	x	x	x
V-8A	TV Converter (low band)	6J6	x	x	x
V-8B	TV Oscillator (low band)	6J6	x	x	x
V-9	1st Sound IF Amplifier	6BA6	x	x	x
V-10	2nd Sound IF Amplifier	6BA6	x	x	x
V-11	Sound Driver	6AU6	x	x	x
V-12	Ratio Detector	6AL5	x	x	x
V-13	Tuning Indicator	6U5	x	x	x
V-14	1st Audio Amplifier AM Det.	6AV6	x	x	x
V-15	Audio Inverter	6SC7	(x)	x	x
V-16	Audio Output	6V6GT/G	x	x	x
V-17	Audio Output	6V6GT/G	(x)	x	x
V-18	1st Picture IF Amplifier	6AG5	x	x	x
V-19	2nd Picture IF Amplifier	6AG5	x	x	x
V-20	3rd Picture IF Amplifier	6AU6	x	x	x
V-21	4th Picture IF Amplifier	6AG5	x	x	x
V-22	Picture Detector & AGC Diode	6AL5	x	x	x
V-23	AGC Amplifier	6AV6	x	x	x
V-24	1st Video Amplifier	6AU6	x	x	x
V-25	Video Output	6K6GT	x	x	x
V-26	Kinescope	12KP4	x		
		12LP4			
		12QP4			
		15AP4		x	
		16AP4			x
V-27	1st Sync. Amplifier	6AU6	x	x	x
V-28A	Sync Separator	6AL5	x	x	x
V-28B	ABL Diode	6AL5	x	x	x
V-29	2nd and 3rd Sync. Amplifier	6J6	x	x	x
V-30A	4th Sync. Amplifier	6SN7GT	x	x	x
V-30B	Horizontal Discharge	6SN7GT	x	x	x
V-31	Horizontal Sync Discriminator	6AL5	x	x	x
V-32	Horizontal Oscillator Control	6AC7	x	x	x
V-33	Horizontal Oscillator	6K6GT	x	x	x
V-34	Horizontal Sweep Output	6BG6G	x	x	x
V-35	High Voltage Rectifier	1B3GT/8016	x	x	x
V-36	High Voltage Multiplier	1B3GT/8016	x	x	x
V-37	Horizontal Sweep Damper	5V4G	x	x	x
V-38	Power Rectifier	5U4G	x	x	x
V-39	Power Rectifier	5U4G	x	x	x
V-40	Vertical Oscillator & Discharge	6J5	x	x	x
V-41	Vertical Sweep Output	6K6GT	x	x	x
V-42	Horizontal Sweep Output	6BG6G		x	x
V-43	AGC Delay	6AL5	x	x	x

(x) Not used on TS-125-H models, but used on TS-125-L models.

OPERATION

To place the television receiver in operation use the following sequence:

1. Turn the off-on-tone switch clockwise and wait about 1 minute for the receiver to warm up.
2. Choose the proper television band on the range control (first position, channels 2 to 6; second position, channels 7 to 13).
3. Use the tuning control to select the desired channel as indicated by the dial and pointer. Final tuning is made for maximum closure of the tuning eye.
4. Adjust the picture control for desired brightness.
5. Adjust the volume and tone control to the desired sound level.
6. Turn off dial light using dial light switch.

CONTROLS

Operating Controls

1. **5-Position Range Control** — This control has five positions and is used to select the type of service desired. In clockwise order the five positions are: Low band television (channels 2 to 6), high band television (channels 7 to 13), frequency modulation (FM), standard broadcast (AM), and phonograph.
2. **Off-On-Tone and Volume Control** — This control is a knob-with-a-knob. The inner knob turns on, and shuts off the receiver. Once turned on, the knob may be used as a tone control starting with maximum treble response, the bass response increasing as the knob is turned clockwise. The outer knob is used as a volume control to adjust the volume of the program.
3. **Tuning Control** — This control is used for selecting the desired station and is used on all bands (TV, FM and AM). It should be used in conjunction with the tuning eye located with the dial. Tune for maximum closing of the eye.
4. **Dial Light Switch and Picture Control** — This control is a knob-within-a-knob. The inner knob is used to select the desired brightness of the picture (most pleasing proportions of black and white). Note — An automatic background control is incorporated in the receiver which eliminates the necessity of adjusting the brightness control when tuning from station to station. The outer knob controls the dial light. When viewing a telecast the dial light may be extinguished, eliminating distraction from the picture.
5. **Vertical Hold Control**—This control is located behind the small removable panel just below the picture tube along with the focus control and 6 other non-operating controls. This control is used to prevent up and down movement of the picture and when properly adjusted will seldom require attention by the user.
6. **Focus Control** — This control is used to bring the picture into sharp focus and like the vertical hold control will seldom be used.

Non-Operating Controls

Six of these controls are located behind the small removable panel just below the picture tube, and three more on the rear flange of the chassis. These are for service adjustment only.

The six controls available on the front of the chassis are protected by a slide. To reach these controls, loosen the two (2) Phillips Head screws and slide the panel to the right until the controls are accessible with a screw driver. After adjustments are made, slide the panel back and tighten the screws so as to prevent tampering by unfamiliar persons. The six controls are:

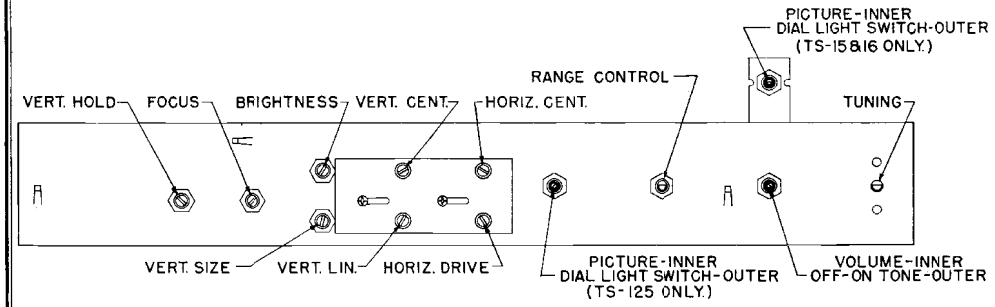
1. **Brightness Control** — This control adjusts the operating level of the kinescope tube in conjunction with the automatic black level circuit. See installation instructions for correct procedure of adjusting this control.
2. **Vertical Centering Control** — This control allows the picture to be centered up and down electrically.
3. **Horizontal Centering Control** — This control adjusts the centering of the picture left and right.
4. **Vertical Size Control** — This control adjusts the vertical size of the picture.

Horizontal Linearity and Drive Adjustments

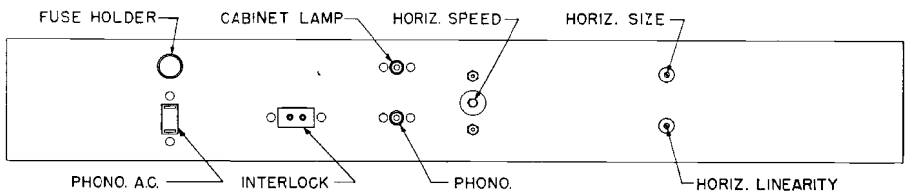
On the TS series, the horizontal drive control should be set slightly clockwise from the point of "folding" in order to remove the "fold" completely and yet not exceed the rating on the 6BG6 tubes. This adjustment must be made in conjunction with the linearity control.

On the inner end of the Horizontal Sync Discriminator transformer is a screw driver adjustment for phasing of the horizontal sync. To readjust this control, the horizontal hold should first be adjusted in the normal manner. (The Horizontal Hold Control should be in the middle of its hold range). Turn the brightness up until the raster background is seen around the edges of the picture. The Phasing control is then adjusted until the edges of the raster are equal on each side of the picture, using the Horizontal Centering Control to move the picture from side to side to see the complete raster.

The diagram shown below give the location and function of each of these controls.

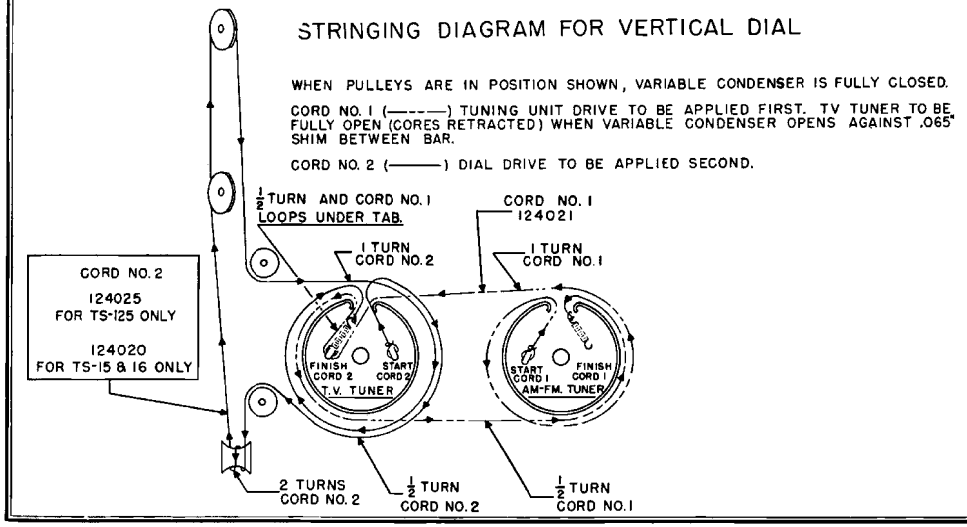


FRONT VIEW OF CHASSIS



REAR VIEW OF CHASSIS

STRINGING DIAGRAM FOR VERTICAL DIAL



ALIGNMENT

Refer to the tube location chart for the location of coils and trimmers.

AM Alignment

Before starting the alignment procedure, set the range switch to the Broadcast Band position. Use a non-metallic aligning tool and be careful to use light pressure on all slugs in order to prevent damage to the iron cores. Use a 30% modulated signal for all adjustments.

1 — AM IF Alignment

Connect the 455 KC signal through a .01 MFD capacitor to the grid of the converter tube (pin No. 7 of 6BE6, V-4). The vacuum tube voltmeter should be connected between the junction of C-147 and R-148 and ground. With the pointer at the low frequency end of the dial, adjust the top and bottom cores of the AM IF transformers (T-40 and T-101) for maximum AVC voltage.

2 — AM RF Alignment

With the tuning condenser fully meshed, align the pointer on the diamond at the low frequency end of the dial. Turn the tuning shaft until the pointer is on the 1400 KC point and align the RF section as follows: Couple a 1400 KC modulated signal through a .01 MFD capacitor into the grid of the AM RF amplifier (pin 1 of 6BA, V-3) keep the VTVM across the AVC line as above. Adjust the oscillator trimmer C-32D for maximum output. Keeping the input and output on the same points adjust the RF trimmer C-32E for maximum output.

FM Alignment

1 — IF Alignment

Set the range switch in the FM position and the pointer at the low frequency end of the dial. Couple an unmodulated 21.9 MC signal through a .01 MFD into the signal grid of the FM converter (pin 2 of 12AT7, V-2) taking care to keep the leads short to avoid the possibility of regeneration, connect a VTVM between the FM AVC line (junction of C-124 and R-124) and ground. Align all FM IF transformers (T-20, T-90, T-100) top and bottom and the primary (bottom) of the ratio detector for maximum AVC voltage.

> Note — Keep the AVC voltage below 3 volts by reducing the signal input as the circuits are brought into resonance.

2 — Ratio Detector Alignment

The ratio detector may be aligned with a 21.9 MC unmodulated signal and a VTVM. The signal is coupled to the grid of the driver tube (pin 1 of 6AU6-V11) through a .01 MFD capacitor. The VTVM is connected between the audio output (junction of R-121 and C-121) and the junction of R-122 and R-123 (the two 10,000 ohm resistors across the 5MFD electrolytic capacitor in the detector circuit). With an input of approximately .1 volt the secondary (top) slug of T-110 is adjusted for zero DC voltage. (The meter should swing through zero as the circuit is tuned through resonance).

3 — FM RF Alignment

Before attempting the FM RF alignment, AM alignment and the calibration of the dial should be checked. With the AM tuning condenser fully meshed and the pointer on the diamond on the low frequency end of the dial, the cores of the FM RF section must be positioned in their respective windings. This may be done visually since the coil forms are made of glass. The ends of the cores are brought flush with the bottom end of the metalizing. Couple a 108 MC signal, modulated or unmodulated, into the FM antennae terminals through a 270 ohm dummy load. Set the pointer on the 108 calibration on the dial. The VTVM is connected to measure the FM AVC voltage when the range switch is in the FM position. Adjust the signal input to give approximately 3 volts AVC. Adjust the oscillator (C-23), RF (C-17) and antennae (C-11) trimmer for maximum AVC voltage. It may be necessary to "rock" the dial or the generator while making the final adjustment on the RF (C-17) trimmer, since there is some interaction between the oscillator and RF circuits. Check the 88 MC dial calibration, adjust lead dress of the oscillator coil if needed, and then realign the trimmers at 108 MC.

VIDEO I.F. ALIGNMENT

This procedure is a duplicate of that used in the factory for the alignment of the receivers, and it is possible the exact wave forms will not be obtained due to differences between the equipment in the factory and the service shops. It is very important to keep the leads from the signal generator as short as possible since, at the frequencies used in television, a lead a few inches long may distort the band pass picture and give an incorrect alignment.

In aligning the video IF portion of the TS series television receivers, the vertical ceflection of the oscilloscope is always connected to the junction of L-220 and C-240 (a 100 K isotating resistor in the oscilloscope lead is recommended) and the gain of the scope adjusted to give 1-volt per inch. Throughout the alignment, the output from the television receiver should be kept at approximately 2 volts (2 inches deflection on the calibrated scope). A-3½-volt bias is connected between junction of R-434, R-433, and R-203 and ground. Set the range switch on the high band (7-13).

1. Connect the output of the sweep generator through a small capicitor (220 MMF) to the grid of V-21 4th picture IF) and adjust the primary (bottom) and secondary (top) of T-210 for a symetrical curve around 24.8 Mc as shown in Fig. 1. Note: the small notches in the picture are due to the action of the sound traps L-201 and L-210 can be eliminated by grounding the junction of G-210 and L-210 with a screw driver or short lead.

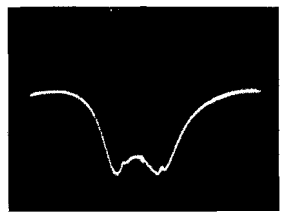


Figure 1

2. Remove the driver sweep from the grid of V-21 and connect a 21.9 Mc 30% modulated signal to the grid of V-20 (3rd picture IF) and adjust L-201 for minimum response on the oscilloscope.

3. Connect a 27.9 Mc 30% modulated signal to the grid V-20 (3rd picture IF) and adjust L-210 for minimum response on the oscilloscope.

4. Remove the fixed frequency signal from the grid of V-20 and connect the output of the sweep generator to the grid of V-20. Adjust L-200 and L-211 for a symetrical curve around 24.8 Mc as shown in Fig. 2.

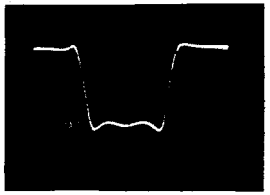


Figure 2

5. Connect the output of the 24.8 Mc 30% modulated signal to the top of the special converter shield (construction details shown below). Damp the first IF grid coil by placing a 680 ohm resistor across L-181 and adjust the converter plate coil (L-82) for maxi-

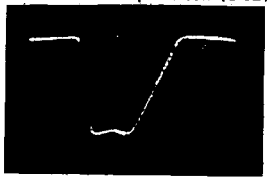


Figure 3

mum response on the scope. Remove the damping from L-181 and damp the converter plate coil by placing the 680 ohm resistor across L-82 and adjust the first IF grid coil L-181 for maximum response in the oscilloscope.

6. Connect the swept signal to the special converter shield and adjust the first and second IF plate coils for a response as shown in Fig. 3. The second IF plate coil L-190 will be used to place the 26.4 Mc point 50% down from the top of the pattern and the first IF plate coil L-180 will flatten the top of the response.

If it is not possible to obtain the response as shown in Fig. 3, adjust L-180 and L-190 to the best possible response and repeat step No. 5. This should make it possible to duplicate the picture as shown in Fig. 3. The final response should be essentially flat on top with 26.4 Mc and 22.7 Mc 50% down.

Fig. 4 shows the special converter shield used to fit over V-8 for injecting the signal into the converter stage. This special shield is constructed by cutting tube shield No. 151036 in two, ¾" from the base. Separate the two parts by ⅛" and secure by soldering 4-1 meg. ohm resistors to each part. Attach a lead for connecting to the generator to each part of the shield, the generator ground going to the base of the shield.

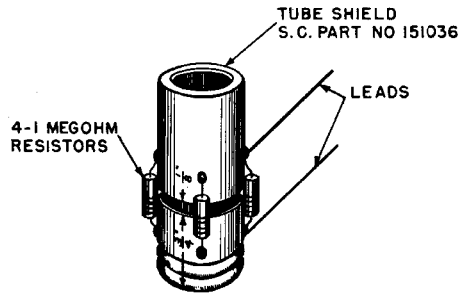
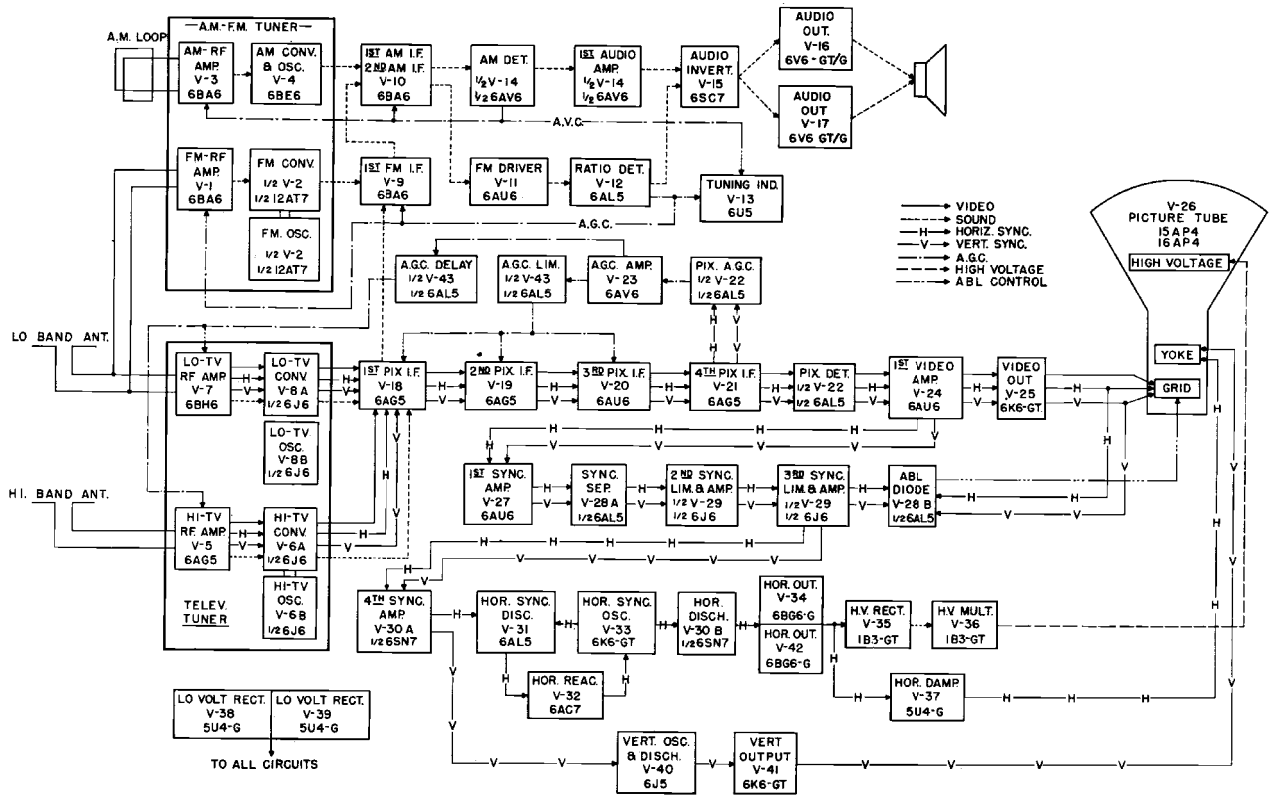
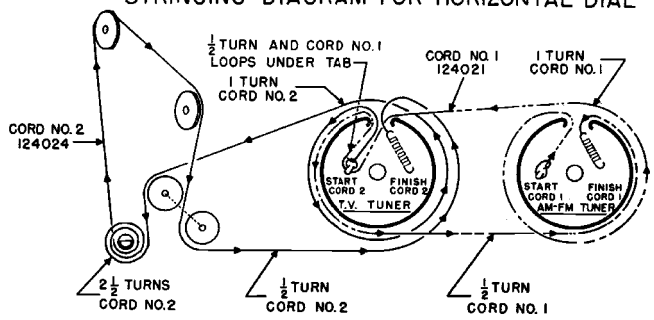


Figure 4



TS-16 BLOCK DIAGRAM

STRINGING DIAGRAM FOR HORIZONTAL DIAL



WHEN PULLEYS ARE IN POSITION SHOWN, VARIABLE CONDENSER IS FULLY CLOSED.

CORD NO. 1 (——) TUNING UNIT DRIVE TO BE APPLIED FIRST. TV TUNER TO BE FULLY OPEN (CORES RETRACTED) WHEN VARIABLE CONDENSER OPENS AGAINST .065" SHIM BETWEEN BAR.

CORD NO. 2 (———) DIAL DRIVE TO BE APPLIED SECOND.

CIRCUIT DESCRIPTION

Refer to Schematic and Block Diagrams.

Television Tuner

The television tuner covers the twelve television channels on two frequency bands; channels No. 2 and No. 6 from 54 Mc thru 88 Mc and channels No. 7 to No. 13 from 174 Mc thru 216 Mc. Both bands contain a tuned broad band antenna transformer, T-50 and T-70 for coupling the 300 ohm balanced input into the grids of each RF tube, V-5 (6AG5) and V-7 (6BH6). Each input transformer T-50 and T-70 is fixed tuned by the trimmer capacitors in the primary to be essentially flat over the entire band. The plate circuits are tuned by the variable inductance L-50 and L-70 and the associated tube capacity in parallel with the trimmer capacitors C-53 and C-73. In the "Hi Band" section of the tuner, the RF signal is coupled from the plate coil L-50 into the grid coil of the converter L-60 thru the inductive link L-51, while in the "Lo Band" section, the RF signal is coupled from the plate of the RF amplifier thru a T network into the grid of the converter tube V-8A (½6J6). The T network is designed to give proper band-pass as well as to provide added image rejection thru the use of the series resonant circuit C-76 and L-71. The grid circuits of the converter sections are tuned by coils L-60 and L-80. The local oscillators are a modified Colpits circuit. The voltage from the "Hi Band" local oscillator is inductively coupled into the grid circuit of the "Hi Band" converter by link L-64, while the voltage from the "Lo Band" local oscillator is injected thru C-83 into the grid of the "Lo Band" converter.

The rear half of section 2 of the range switch is used to disable the "Hi Band" converter when using the "Lo Band" section of the tuner by applying a negative —22 volts bias to the converter grid. When the "Hi Band" section of the tuner is operating, the "Lo Band" converter is disabled by applying a —22 volts bias to its grid.

The IF output from the converter plate is coupled into the grid of the 1st picture IF tube thru a double tuned circuit. Both L-82 and L-181 are damped and tuned to 24.8 Mc to give about a 6 Mc band pass.

Picture IF Amplifier.

The 1st and 2nd Picture IF stages are a stagger tuned system, followed by a M derived network employing a 21.9 Mc sound trap L-201 and a 27.9 Mc adjacent channel sound trap L-210. The 4th picture IF stage consists of an over coupled transformer T-210 to provide a saddle shaped response curve for the 4 Mc video IF band pass.

Picture Detector and Video Amplifier.

The intermediate frequency signal is detected by one half of V-22 (6AL5). The signal developed across R-223, the diode load is sync pulse negative. The signal is coupled into the grid of the 1st Video amplifier V-24 (6AU6) thru the peaking coil L-220 and capacitor C-240. The grid of the 1st video amplifier is maintained at approximately — 1½ volts thru the voltage divider action of R-244 and R-245. This establishes a point of bias for the grid of the tube so that any noise having an amplitude greater than the signal will drive the grid beyond cut-off and clip the noise. The composite video signal is coupled from the plate of the V-24 thru the peaking coil L-240 and the blocking capacitor C-250 into the grid of the video output tube V-25 (6K6GT) The grid of V-25 is maintained at a fixed negative bias to prevent crushing of the video signal for a normal picture. The video signal from the plate of V-25 is coupled into the grid of the kinescope tube thru the peaking coil L-250 and the blocking capacitor C-260. The DC component of the Video signal which was removed by the coupling capacitors is reinserted by the action of the Automatic Black Level tube.

Automatic Gain Control

A portion of the IF signal is rectified by ½ of V-22 (6AL5) and fed into the grid of the AGC amplifier V-23 (6AV6). The AGC diode is essentially a peak detector, the output after filtering, is proportional to the input signal strength by virtue of the fact that the tip of the sync pulse represents 100% modulation. In order to have sufficient AGC voltage to control the gain of the IF tubes, it is necessary to amplify the DC voltage from the AGC detector. The AGC amplifier is a typical D.C. amplifier having its cathode near —130 volts and its plate tied near ground. The AGC voltage after being amplified by V-23 is fed to the AGC delay tube V-43 (6AL5). The AGC delay tube has a dual function, one half acts as a AGC limiter and the other half serves as an AGC delay. The limiting diode section allows the AGC voltage to increase in a normal manner as the signal strength increases up to a predetermined level. After this amount of bias is applied to the grids of the IF stages any further increase in signal strength will not produce any further increase in AGC bias. The other diode section of V-43 delays the AGC bias applied to the grids of the RF tubes until the amount of bias from the AGC amplifier is such that the limiter comes into play. This limiting and delay action is necessary to provide a low signal to noise ratio in the RF amplifier on a medium and weak signal by allowing the tube to operate at full gain. The picture control, R-232, in the cathode of the AGC amplifier, varies the gain of the receiver by varying the conduction V-23 which in turn varies the plate voltage.

Sync Amplifiers

The sync circuit receives its signal from the plate of the 1st video amplifier. The signal coupled into the grid of the 1st sync amplifier V-27 (6AU6) thru C-270 has video information as well as sync pulses. A portion of the video is removed in the grid circuit by grid clipping while the sync is amplified. The sync separater V-28A (½6AL5) in conjunction with the time constant of C-280 and R-280 remove all of the remaining video so that only sync pulses are fed into the grid of the 2nd sync limiting amplifier. The 2nd and 3rd sync amplifier V-29 (6J6) amplifies and clips the sync pulse so that the output (pin 2) of V-29 is a well shaped sync pulse at the grid V-30A (½6SN7), the 4th sync amplifier. The sync pulses are substantially constant in amplitude over a wide range of input signal levels. V-30A further clips and amplifies the sync pulses.

Automatic Black Level Diode.

The ABL diode V-28B (½6AL5) is a peak detector which is used to reinsert the DC component of the video signal on the kinescope grid. Since the plate of V-28B is tied into the output of the 3rd sync limiting amplifier it detects on the top of the pedestal rather than the sync tips as in a normal DC restorer circuit and the voltage developed across R-263 is a function of pedestal height and not sync tips.

Horizontal Sync and Deflection.

The output of the 4th sync amplifier is fed into the center tap of the primary of the Horizontal Sync Discriminator T-301. It is combined with a 15750 cycle sine wave from the Horizontal Oscillator tube V-33 (6K6GT) which is impressed on the secondary of T-301. The voltages on each plate of V-31 (6AL5) Horizontal Sync Discriminator will be a sine wave 180° out of phase having a sync pulse superimposed on it. The sine wave with sync pulse will cause current to flow in each diode and the resultant voltage across R-311 and R-312 will be zero if the current are equal and opposite in polarity. If the frequency of the oscillator changes the sync pulse will ride at a different point on the sine wave, causing an increase of current in one diode and a decrease in current in the other, therefore, the resultant voltage across R-311 and R-312 will no longer be zero. This voltage is applied to the grid of the Horizontal Reactance tube V-32 (6AC7) thru a suitable filter network R-313, C-312, and C-322. The change in plate current changes the inductive reactance of the tube (which is connected across the tuned circuit of the oscillator) in such a way to change the frequency of the oscillator so as to bring it back into resonance. This automatically keeps the oscillator at the horizontal sync frequency rate. The time constant of the filter circuit R-313, C-312 and C-322 is such that a sudden change in voltage due to noise pulse will not be impressed on the grid of V-32 therefore, the frequency of the circuit can not change rapidly, hence the so called "Flywheel effect".

The output from the plate of the Horizontal Oscillator is fed thru a differentiating network consisting of C-332 and R-333. The tips of the differentiated pulses cause the Horizontal Discharge tube V-30-B (½6SW7GT) to act as a switch, discharges the sweep generating capacitor C-346. This in turn is fed to the grids of the Horizontal output tube V-34 and V-42 (6BG6G) these tubes in conjunction with the Horizontal output transformer, T-340 the Horizontal Damper tube V-37 (5V4B) and the horizontal deflection coil L-263A generates a saw tooth current wave form. The second anode voltage is developed by the auto-transformer action of T-340 when the high voltage pulse is formed thru the sudden collapse of the current in the horizontal deflection coil when the horizontal output tubes are cutoff. A voltage doubler type of rectifier is used to obtain the necessary secondary anode potential.

Vertical Deflection

The output of the 4th sync Amp is fed into an integrating network consisting of R-400, C-400, R-401, C-401, R-402 and C-402. The integrating network adds the 6 vertical pulses up into one pulse which triggers the vertical oscillator and discharge tube V-40 (6J5). The discharge of C-411 forms a saw tooth waveform which is fed into the grid of the vertical output tube V-41 (6K6GT). The amplified output is fed into the vertical deflection coil L-263-B thru the vertical output transformer T-410 as a current saw tooth. R-409 and R-393 control the amount of resident DC thru the yoke to allow the picture to be centered on the face of the Kinescope.

TROUBLE SHOOTING

1. No picture — Sound Normal, Raster Normal.
   - A Defective V-19, V-20, V-21, V-22, V-24 or V-25.
   - B. Check voltage on V-19, V-20, V-21, V-24, and V-25.
2. No raster — sound normal.
   - A. Incorrect adjustment of ion trap.
   - B. Defective kinescope.
   - C. No high voltage check high voltage by drawing arc between second anode connector and ground.
   - D. Defective V-42, V-34, V-35, or V-36.
   - E. Defective ¼ amp. fuse in high voltage supply.
   - F. Shorted C-350, C-351, or C-352.
   - G. Defective R-351.
   - H. Defective T-340.
3. No picture — no sound, raster normal.
   - A. Defective antenna.
   - B. Defective tubes V-5, V-6, V-7, V-8, or V-18.
   - C. Oscillator off frequency.
4. No sound — picture normal.
   - A. Defective tubes V-9, V-10, V-11, V-12, V-14, V-15, or V-16 and V-17.
   - B. Defective T-110.
   - C. Defective speaker.
5. No vertical deflection.
   - A. Defective V-40, or V-41.
   - B. Defective T-400, or T-410.
   - C. Defective vertical deflection yoke L-263B.
6. Small Raster.
   - A. Low B+ or low line voltage.
   - B. Weak V-34.
7. No sync — Signal on kinescope.
   - A. Defective V-27, V-28, or V-29.
   - B. Check voltages and wave forms on V-27 V-28, or V-29.
8. No vertical sync — Signal on kinescope.
   - A. Integrating network defective.
   - B. Defective R-404.
9. No horizontal sync — signal on kinescope.
   - A. Defective V-31, or V-32.
   - B. Defective T-310.
   - C. Check C-310.
10. Sound bars in picture.
    - A. Check alignment of 21.9 mc. trap.
    - B. Check alignment of IF stages.
11. Picture Smear.
    - A. R.F. or I.F. stages misaligned.
    - B. Open peaking coil.

PRODUCTION CHANGES

Since the start of production on the TS series the following changes have been made.

C-370 changed to SC No. 111071—4MF 450v. non polorized.

R-73 SC No. 149103—2200 ohms 20% ½ Watt added across L-71.

R-88 SC No. 149107—10,000 ohms 20% ½ Watt added across L-80.

R-274 and R-275 replaced by one resistor SC No. 149334 6,000 ohms 5% 5 Watt.

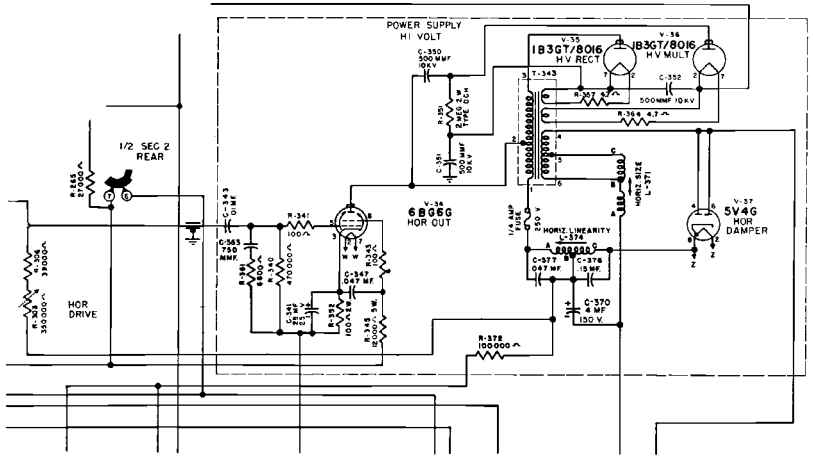
R-307 SC No.149151—150,000 ohmss 20% 1 Watt replaces R-306.

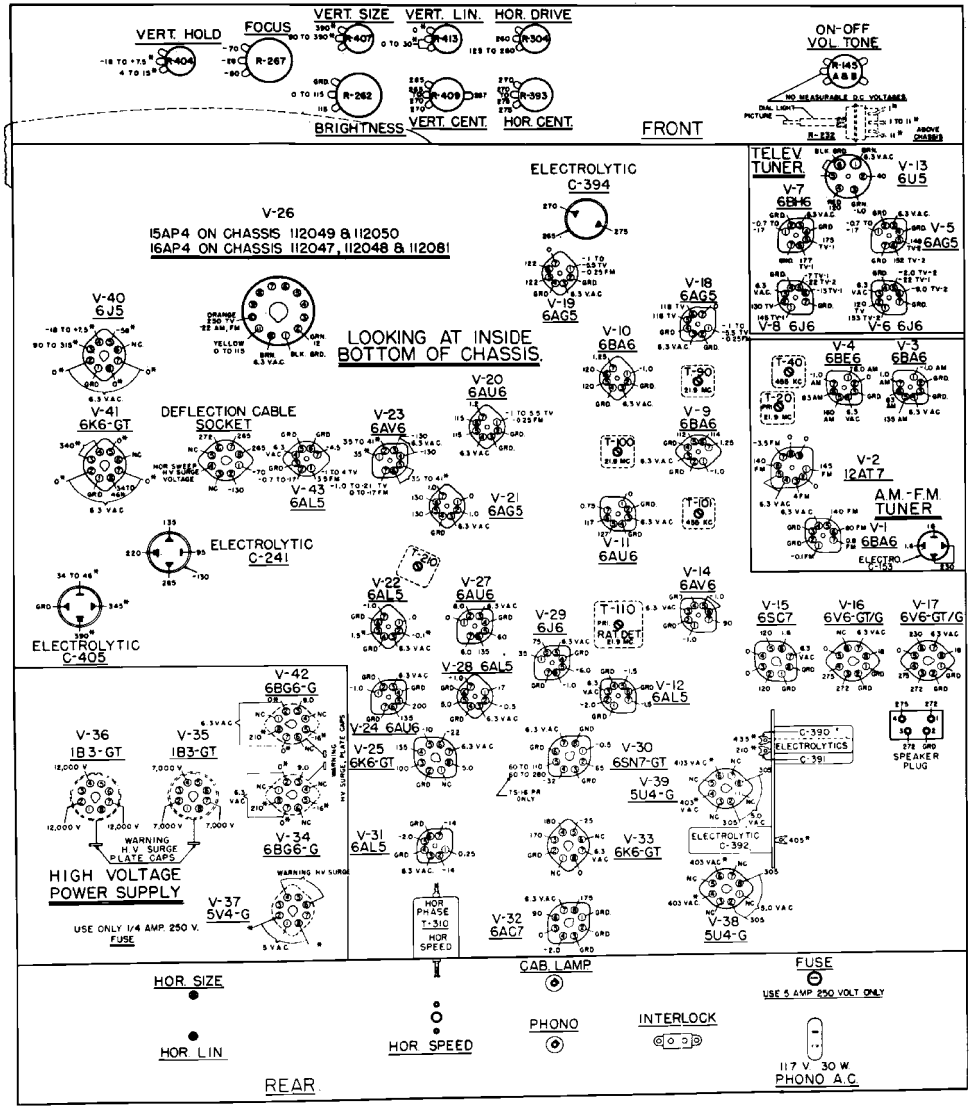
R-403 changed to SC No. 28194—1.8 meg ohm 20% ½ Watt.

On the TS-16 PM the horizontal drive control R-304 has been changed to SC No. 145091—500,000 ohms ½ Watt.

On the TS-125 H, TS-125 L, and TS-16 the horizontal drive control R-304 has been changed to R-303, SC No. 145090—350,000 ohms ½ Watt.

The original high voltage power supply as shown on the large schematic has been replaced by the one shown below. This can be cut out and pasted over the high voltage power supply shown on the large schematic, bringing it up to date.

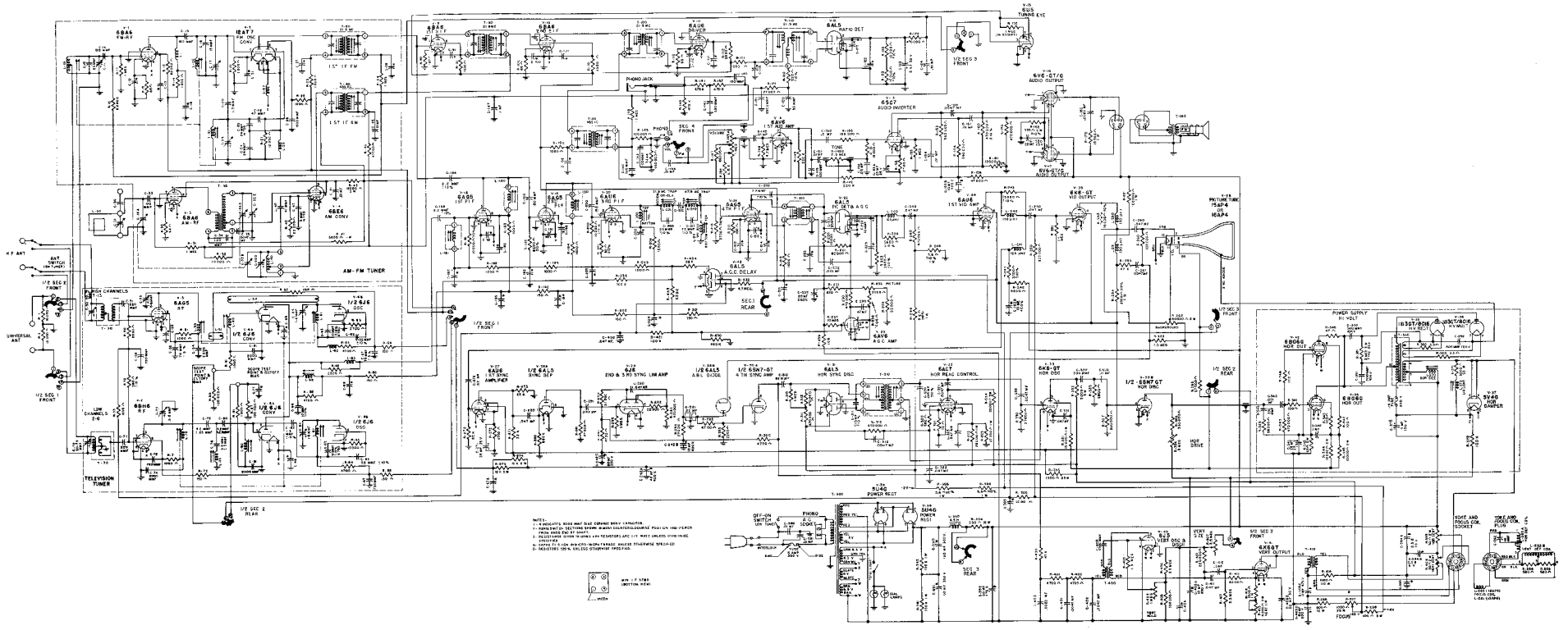




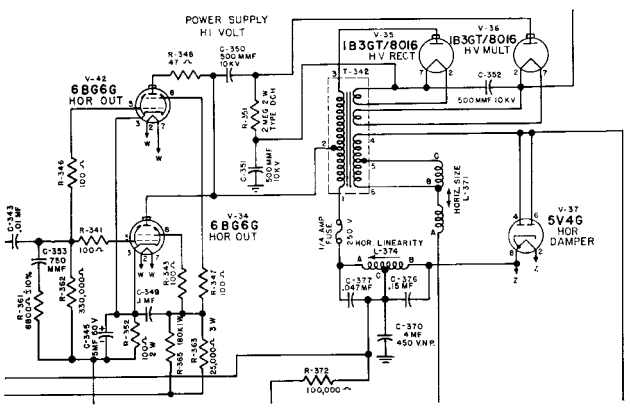
SYMBOL	RANGE SWITCH POSITION
TV	Either Position
TV-1	Channels 2-6
TV-2	Channels 7-13
FM	Frequency Modulation
AM	Amplitude Modulation

Measurements are made at 117 V line using 11megohm VTVM. All voltages are D.C. and are positive with respect to chassis ground except where noted. * indicates D.C. voltage to B— (—130V).

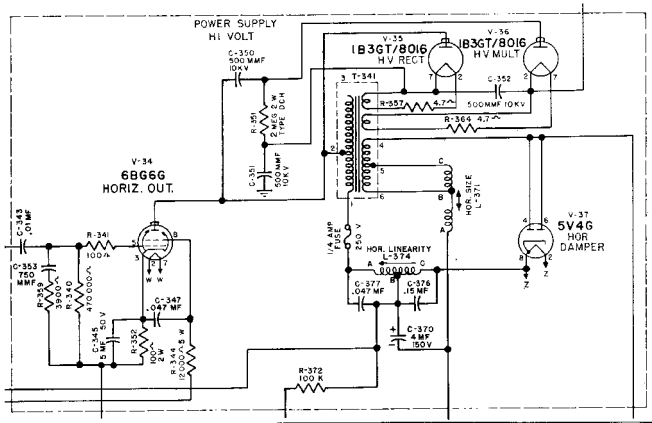
Unless noted as shown on the chart below, all voltages are the same in any position of range switch.



The schematic shown below is a high voltage power supply as used in the TS-16 PM (wide sweep) models only.



The schematic shown below is the high voltage power supply as used in the TS-125 H and TS-125 L models.



CAPACITORS

Circuit Symbol	S.C. Part No.	Description	TS-125H	TS-125L	TS-15-16	TS-16PM
C-10	110434	20 MMF 5% NPO ceramic	x	x	x	x
C-11	110015	1-12 MMF Trimmer	x	x	x	x
C-12	110516	5000 MMF 500V disc ceramic	x	x	x	x
C-13	110516	5000 MMF 500V disc ceramic	x	x	x	x
C-14	110411	100 MMF 20% GP* ceramic	x	x	x	x
C-15	110411	100 MMF 20% GP ceramic	x	x	x	x
C-16	110435	15 MMF 10% NPO ceramic	x	x	x	x
C-17	110015	1-12 MMF Trimmer	x	x	x	x
C-18	110516	5000 MMF 500V disc ceramic	x	x	x	x
C-20	110418	1.5 MMF 10% ceramic	x	x	x	x
C-21	110516	5000 MMF 500V disc ceramic	x	x	x	x
C-22	110432	47 MMF 10% GP ceramic	x	x	x	x
C-23	110025	1-12 MMF Trimmer	x	x	x	x
C-23	110403	24 MMF 5% NPO ceramic	x	x	x	x
C-25	110592	24 MMF 5% N 750 ceramic	x	x	x	x
C-26	110457	1500 MMF 20% GP	x	x	x	x
C-27	110516	5000 MMF 500V disc ceramic	x	x	x	x
C-28	110516	5000 MMF 500V disc ceramic	x	x	x	x
C-31	110031	1.5-15 MMF Trimmer	x	x	x	x
C-32	110029	variable	x	x	x	x
C-33	110451	100 MMF 20% GP ceramic	x	x	x	x
C-34	110453	220 MMF 20% GP	x	x	x	x
C-35	110518	.0047 MF 400V molded	x	x	x	x
C-40	110402	47 MMF 10% GP ceramic	x	x	x	x
C-41	110340	.01 MF 400V molded	x	x	x	x
C-42	110340	.01 MF 400V molded	x	x	x	x
C-43	110413	5 MMF 10% N 750 ceramic	x	x	x	x
C-50	27081	20-75 MMF Trimmer	x	x	x	x
C-51	110462	220 MMF 20% GP ceramic	x	x	x	x
C-52	110483	75 MMF 5% GP ceramic	x	x	x	x
C-53	110035	.5-5 MMF Trimmer	x	x	x	x
C-54	110652	2000 MMF 20% GP ceramic	x	x	x	x
C-55	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-56	110654	750 MMF 20% GP ceramic	x	x	x	x
C-61	110652	2000 MMF 20% GP ceramic	x	x	x	x
C-62	110653	22 MMF 10% GP ceramic	x	x	x	x
C-63	110656	10 MMF 10% N 750 ceramic	x	x	x	x
C-64	110034	1-8 MMF Trimmer	x	x	x	x
C-65	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-67	110483	75 MMF 5% GP ceramic	x	x	x	x
C-70	27081	20-75 MMF Trimmer	x	x	x	x
C-71	110462	220 MMF 20% GP ceramic	x	x	x	x
C-72	110654	750 MMF 20% GP ceramic	x	x	x	x
C-73	110035	.5-5 MMF Trimmer	x	x	x	x
C-74	110652	2000 MMF 20% GP ceramic	x	x	x	x
C-75	110673	4.2 MMF± .25 MMF ceramic	x	x	x	x
C-76	110655	5.5 MMF± .5 MMF ceramic	x	x	x	x
C-77	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-80	110673	4.2 MMF± .25 MMF ceramic	x	x	x	x
C-81	110652	2000 MMF 20% GP ceramic	x	x	x	x
C-82	110656	10 MMF 10% N 750 ceramic	x	x	x	x
C-83	110438	1.5 MMF 10% ceramic	x	x	x	x
C-84	110034	1-8 MMF Trimmer	x	x	x	x
C-85	110653	22 MMF 10% GP ceramic	x	x	x	x
C-86	110656	10 MMF 10% N 750 ceramic	x	x	x	x
C-87	110654	750 MMF 20% GP ceramic	x	x	x	x
C-88	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-89	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-91	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-100	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-101	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-102	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-110	110586	5000 MMF 500V disc ceramic	x	x	x	x

* GP—General Purpose.

Circuit Symbol	S.C. Part No.	Description	TS-125H	TS-125L	TS-15-16	TS-16PM
C-111	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-112	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-120	34889	30 MMF 20% 500V mica	x	x	x	x
C-121	29559	2500 MMF 10% 500V mica	x	x	x	x
C-122	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-123	111047	5 MF-50V electrolytic	x	x	x	x
C-124	110540	.01 MF 400V molded	x	x	x	x
C-125	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-140	110451	100 MMF 20% 500V ceramic	x	x	x	x
C-141	110216	390 MMF 20% 500V mica	x	x	x	x
C-142	110451	100 MMF 20% 500V ceramic	x	x	x	x
C-143	110451	100 MMF 20% 500V ceramic	x	x	x	x
C-144	110540	.01 MF 400V molded	x	x	x	x
C-145	110540	.01 MF 400V molded	x	x	x	x
C-146	110551	.0022 MF 600V molded	x			
C-147	110546	.1 MF 400V molded	x	x	x	x
C-148	110451	100 MMF 20% 500V ceramic	x	x	x	x
C-149	110557	.022 MF 600V molded	x			
C-150	110540	.01 MF 400V molded	x	x	x	x
C-151	110540	.01 MF 400V molded		x	x	x
C-152	110556	.015 MF 600V molded		x	x	x
C-153	111053	25 MF-25V, 10 MF-400V, 25 MF-25V, 10 MF-400V	x	x	x	x
C-154	110540	.01 M 400V molded		x	x	x
C-155	110557	.022 MF 600V molded	x			
C-160	110553	.0047 MF 600V molded		x	x	x
C-161	110540	.01 MF 400V molded		x	x	x
C-162	110551	.0022 MF 600V molded	x	x	x	x
C-180	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-181	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-182	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-184	110439	2.2 MMF 500V 10% ceramic	x	x	x	x
C-185	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-186	110439	2.2 MMF 500V 10% ceramic	x	x	x	x
C-190	110452	150 MMF 500V ceramic	x	x	x	x
C-191	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-192	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-193	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-194	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-200	110452	150 MMF 500V ceramic	x	x	x	x
C-202	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-203	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-204	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-205	110499	20 MMF 10% 500V ceramic	x	x	x	x
C-210	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-211	110499	20 MMF 10% 500V ceramic	x	x	x	x
C-212	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-213	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-214	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-215	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-220	110439	2.2 MMF 10% 500V ceramic	x	x	x	x
C-221	110440	3.3 MMF 10% 500V ceramic	x	x	x	x
C-222	110549	.001 MF 600V molded	x	x	x	x
C-223	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-224	110495	10 MMF 10% 400V ceramic	x	x	x	x
C-225	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-230	110533	.47 MF 200V molded	x	x	x	x
C-232	111031	20 MF-250V electrolytic	x	x	x	x
C-240	110544	.047 MF 400V molded	x	x	x	x
C-242	111066	40 MF-450V, 10 MF-400V, 80 MF-350V	x	x	x	x
C-250	110544	.047 MF 400V molded	x	x	x	x
C-260	110544	.047 MF 400V molded	x	x	x	x
C-261	110553	.0047 MF 600V molded	x	x	x	x
C-262	110224	68 MMF 800V 10% mica yoke assem.	x	x	x	x
C-270	110548	.22 MMF 400V molded	x	x	x	x
C-271	111026	25 MF-25V electrolytic	x	x	x	x
C-272	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-280	110548	.22 MF 400V molded	x	x	x	x
C-281	110668	.22 MF 400V shielded	x	x	x	x
C-290	110544	.047 MF 400V molded	x	x	x	x
C-291	110544	.047 MF 400V molded	x	x	x	x
C-300	110540	.01 MF 400V molded	x	x	x	x
C-305	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-310	110596	82 MMF 20% 500V ceramic	x	x	x	x

Circuit Symbol	S.C. Part No.	Description	TS-125H	TS-125L	TS-15-16	TS-16PM
C-311	110657	.015 MF 10% 600V molded	x	x	x	x
C-312	110553	.0047 MF 600V molded	x	x	x	x
C-320	110657	.015 MF 600V 10% molded	x	x	x	x
C-321	110553	.0047 MF 600V molded	x	x	x	x
C-322	110544	.047 MF 400V molded	x	x	x	x
C-323	110544	.047 MF 400V molded	x	x	x	x
C-330	110553	.0047 MF 600V molded	x	x	x	x
C-331	110544	.047 MF 400V molded	x	x	x	x
C-332	110216	390 MMF 20% 500V mica	x	x	x	x
C-340	110549	.001 MF 600V molded			x	
C-341	111026	25 MF-25V electrolytic			x	
C-342	110561	.1 MF 600V molded			x	
C-343	110555	.01 MF 600V molded	x	x	x	x
C-345	111047	5 MF-50V electrolytic	x	x		x
C-346	110234	330 MMF 20% 500V mica			x	
C-347	110559	.047 MF 600V molded	x	x	x	
C-349	110561	.1 MF 600V molded				x
C-350	110595	500 MMF 10KV ceramic	x	x	x	x
C-351	110595	500 MMF 10KV ceramic	x	x	x	x
C-352	110595	500 MMF 10KV ceramic	x	x	x	x
C-353	110280	750 MMF 10% 500V mica	x	x	x	x
C-370	111042	4 MF-150V electrolytic	x	x	x	x
C-376	114547	.15 MF 400V molded	x	x	x	x
C-377	110544	.047 MF 400V molded	x	x	x	x
C-380	110555	.01 MF 600V molded	x	x	x	x
C-381	110555	.01 MF 600V molded	x	x	x	x
C-390	111049	100 MF-300V electrolytic	x	x	x	x
C-391	111049	100 MF-300V electrolytic	x	x	x	x
C-392	111051	90 MF-475V electrolytic	x	x	x	x
C-393	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-394	111052	.05 ohm imped. & 2.5 ohm imped electrolytic	x	x	x	x
C-400	110551	.0022 MF 600V molded	x	x	x	x
C-401	110553	.0047 MF 600V molded	x	x	x	x
C-402	110553	.0047 MF 600V molded	x	x	x	x
C-403	110273	4700 MMF 10% 500V mica	x	x	x	x
C-404	110586	5000 MMF 500V disc ceramic	x	x	x	x
C-405	111050	10 MF-450V, 50 MF-50V, 10 MF-475V, 80 MF-200V	x	x	x	x
C-410	110561	.1 MF 600V molded	x	x	x	x
C-411	110559	.047 MF 600V molded	x	x	x	x
C-430	110544	.047 MF 400V molded	x	x	x	x

RESISTORS

Circuit Symbol	S.C. Part No.	Description	TS-125H	TS-125L	TS-15-16	TS-16PM
R-1	149107	10,000 ohms 20% ½W	x	x	x	x
R-2	149107	10,000 ohms 20% ½W	x	x	x	x
R-10	28195	2.2 meg ohms 10% ½W	x	x	x	x
R-11	149119	1 meg ohms 20% ½W	x	x	x	x
R-12	28144	68 ohms 10% ½W	x	x	x	x
R-13	149109	22,000 ohms 20% ½W	x	x	x	x
R-14	149101	1,000 ohms 20% ½W	x	x	x	x
R-20	28162	2,200 ohms 10% ½W	x	x	x	x
R-21	149107	10,000 ohms 20% ½W	x	x	x	x
R-22	149101	1,000 ohms 20% ½W	x	x	x	x
R-23	149101	1,000 ohms 20% ½W	x	x	x	x
R-24	149119	1 meg ohms 20% ½W	x	x	x	x
R-30	28144	68 ohms 10% ½W	x	x	x	x
R-31	149119	1 meg ohms 20% ½W	x	x	x	x
R-32	149107	10,000 ohms 20% ½W	x	x	x	x
R-40	149109	22,000 ohms 20% ½W	x	x	x	x
R-41	149184	5,600 ohms 10% 1W	x	x	x	x
R-42	149055	12,000 ohms 10% 2 W	x	x	x	x
R-43	149111	47,000 ohms 20% ½W	x	x	x	x
R-50	149103	2,200 ohms 20% ½W	x	x	x	x
R-51	149101	1,000 ohms 20% ½W	x	x	x	x
R-52	149096	150 ohms 20% ½W	x	x	x	x
R-53	149101	1,000 ohms 20% ½W	x	x	x	x
R-61	149101	1,000 ohms 20% ½W	x	x	x	x
R-62	149103	2,200 ohms, part of L63, 20% ½W	x	x	x	x
R-64	28163	2,700 ohms 10% ½W	x	x	x	x
R-64	149096	150 ohms 20% ½W	x	x	x	x
R-65	149105	4,700 ohms 20% ½W	x	x	x	x
R-70	28155	560 ohms 10% ½W	x	x	x	x

Circuit Symbol	S.C. Part No.	Description	TS-125H	TS-125L	TS-15-16	TS-16PM
R-71	149101	1,000 ohms 20% ½W	x	x	x	x
R-72	149096	150 ohms 20% ½W	x	x	x	x
R-80	149113	100,000 ohms 20% ½W	x	x	x	x
R-81	149101	1,000 ohms 20% ½W	x	x	x	x
R-82	149105	4,700 ohms 20% ½W	x	x	x	x
R-83	149107	10,000 ohms 20% ½W	x	x	x	x
R-84	149105	4,700 ohms 20% ½W	x	x	x	x
R-85	149096	150 ohms 20% ½W	x	x	x	x
R-86	149096	150 ohms 20% ½W	x	x	x	x
R-87	149113	100,000 ohms 20% ½W	x	x	x	x
R-90	28149	180 ohms 10% ½W	x	x	x	x
R-91	144101	1,000 ohms 20% ½W	x	x	x	x
R-100	149094	68 ohms 20% ½W	x	x	x	x
R-101	149104	330 ohms 20% ½W	x	x	x	x
R-102	149101	1,000 ohms 20% ½W	x	x	x	x
R-110	149094	68 ohms 20% ½W	x	x	x	x
R-111	149101	1,000 ohms 20% ½W	x	x	x	x
R-112	149106	6,800 ohms 20% ½W	x	x	x	x
R-120	28150	220 ohms 10% ½W	x	x	x	x
R-121	28174	27,000 ohms 10% ½W	x	x	x	x
R-122	28170	10,000 ohms 10% ½W	x	x	x	x
R-123	28170	10,000 ohms 10% ½W	x	x	x	x
R-124	149117	470,000 ohms 20% ½W	x	x	x	x
R-130	149119	1 meg ohms 20% ½W	x	x	x	x
R-140	149117	470,000 ohms 20% ½W	x	x	x	x
R-141	149117	470,000 ohms 20% ½W	x	x	x	x
R-142	149115	220,000 ohms 20% ½W	x	x	x	x
R-143	149113	100,000 ohms 20% ½W	x	x	x	x
R-144	28188	560,000 ohms 20% ½W	x	x	x	x
R-145A	145071	1 meg ohms volume control	x	x	x	x
R-145B	145071	2.5 meg ohms tone control	x	x	x	x
R-146	149123	4.7 meg ohms 20% ½W	x	x	x	x
R-147	149112	68,000 ohms 20% ½W		x	x	x
R-147	28178	56,000 ohms 10% ½W	x			
R-148	149119	1 meg ohms 20% ½W	x	x	x	x
R-149	149115	220,000 ohms 20% ½W		x	x	x
R-149	28186	390,000 ohms 10% ½W	x			
R-150	149113	100,000 ohms 20% ½W		x	x	x
R-151	149108	15,000 ohms 20% ½W		x	x	x
R-152	28163	2,700 ohms 10% ½W		x	x	x
R-153	28186	390,000 ohms 10% ½W		x	x	x
R-154	28186	390,000 ohms 10% ½W		x	x	x
R-155	149119	1 meg ohms 20% ½W		x	x	x
R-156	149111	47,000 ohms 20% ½W	x	x	x	x
R-157	149117	470,000 ohms 20% ½W	x	x	x	x
R-158	149106	6,800 ohms 20% ½W		x	x	x
R-159	149107	10,000 ohms 20% ½W	x			
R-160	28187	470,000 ohms 10% ½W	x	x	x	x
R-161	28171	12,000 ohms 10% ½W		x	x	x
R-162	149020	330 ohms 10% 2W		x	x	x
R-163	149170	270 ohms 10% 1W	x			
R-164	149101	1,000 ohms 20% ½W	x			
R-170	149117	470,000 ohms 20% ½W		x	x	x
R-172	149144	10,000 ohms 20% 1W		x	x	x
R-181	28170	10,000 ohms 10% ½W	x	x	x	x
R-182	149101	1,000 ohms 20% ½W	x	x	x	x
R-183	149101	1,000 ohms 20% ½W	x	x	x	x
R-190	28169	8,200 ohms 10% ½W	x	x	x	x
R-192	149096	150 ohms 20% ½W	x	x	x	x
R-193	149101	1,000 ohms 20% ½W	x	x	x	x
R-194	149101	1,000 ohms 20% ½W	x	x	x	x
R-200	28170	10,000 ohms 10% ½W	x	x	x	x
R-201	28145	82 ohms 10% ½W	x	x	x	x
R-202	149096	150 ohms 20% ½W	x	x	x	x
R-203	149101	1,000 ohms 20% ½W	x	x	x	x
R-204	149101	1,000 ohms 20% ½W	x	x	x	x
R-210	28163	2,700 ohms 10% ½W	x	x	x	x
R-211	149095	100 ohms 20% ½W	x	x	x	x
R-212	149096	150 ohms 20% ½W	x	x	x	x
R-213	149101	1,000 ohms 20% ½W	x	x	x	x
R-220	149107	10,000 ohms 20% ½W	x	x	x	x
R-221	28180	82,000 ohms 10% ½W	x	x	x	x
R-223	28165	3,900 ohms 10% ½W	x	x	x	x
R-224	28167	5,600 ohms 10% ½W Part of L-220	x	x	x	x

Circuit Symbol	S.C. Part No.	Description	TS-125H	TS-125L	TS-15-16	TS-16PM
R-230	149117	470,000 ohms 20% ½W	x	x	x	x
R-231	149097	220 ohms 20% ½W	x	x	x	x
R-232	145075	2,000 ohms picture control	x	x	x	x
R-233	149109	22,000 ohms 20% ½W	x	x	x	x
R-236	149101	1,000 ohms 20% ½W	x	x	x	x
R-237	149125	10 meg ohms 20% ½W	x	x	x	x
R-238	149113	100,000 ohms 20% ½W	x	x	x	x
R-239	149107	10,000 ohms 20% ½W	x	x	x	x
R-240	149121	2.2 meg ohms 20% ½W	x	x	x	x
R-241	28164	3,300 ohms 10% ½W	x	x	x	x
R-242	149106	6,800 ohms 20% ½W	x	x	x	x
R-243	28172	15,000 ohms 10% ½W Part of L-240	x	x	x	x
R-244	149271	5.6 ohms 10% 1W	x	x	x	x
R-245	149271	5.6 ohms 10% 1W	x	x	x	x
R-250	28190	820,000 ohms 10% ½W	x	x	x	x
R-251	28192	1.2 meg ohms 10% ½W	x	x	x	x
R-253	28173	18,000 ohms 10% ½W Part of L-250	x	x	x	x
R-254	149181	3,300 ohms 10% 1W	x	x	x	x
R-255	149111	47,000 ohms 20% ½W	x	x	x	x
R-260	149113	100,000 ohms 20% ½W	x	x	x	x
R-261	149150	100,000 ohms 20% 1W	x	x	x	x
R-262	145068	50,000 ohms 2W background control	x	x	x	x
R-263	149120	1.5 meg ohms 20% ½W	x	x	x	x
R-264	28155	560 ohms 10% ½W in yoke	x	x	x	x
R-265	28174	27,000 ohms 10% ½W	x	x	x	x
R-266	149218	500 ohms 10% 10W	x	x	x	x
R-267	145063	1,000 ohms 25W focus control	x	x	x	x
R-268	149274	100 ohms 5% 5W	x	x	x	x
R-269	28155	560 ohms 10% ½W in yoke	x	x	x	x
R-270	28180	82,000 ohms 10% ½W	x	x	x	x
R-271	149109	22,000 ohms 20% ½W	x	x	x	x
R-272	149105	4,700 ohms 20% ½W	x	x	x	x
R-273	149109	22,000 ohms 20% ½W	x	x	x	x
R-274	149055	12,000 ohms 10% 2W	x	x	x	x
R-275	149055	12,000 ohms 10% 2W	x	x	x	x
R-280	28188	560,000 ohms 10% ½W	x	x	x	x
R-281	28174	27,000 ohms 10% ½W	x	x	x	x
R-282	149105	4,700 ohms 20% ½W	x	x	x	x
R-283	149103	2,200 ohms 20% ½W	x	x	x	x
R-290	28174	27,000 ohms 10% ½W	x	x	x	x
R-291	149105	4,700 ohms 20% ½W	x	x	x	x
R-292	149109	22,000 ohms 20% ½W	x	x	x	x
R-293	149117	470,000 ohms 20% ½W	x	x	x	x
R-294	28174	27,000 ohms 10% ½W	x	x	x	x
R-295	149119	1 meg ohms 20% ½W	x	x	x	x
R-300	149105	4,700 ohms 20% ½W	x	x	x	x
R-301	149115	220,000 ohms 20% ½W	x	x	x	x
R-302	149116	330,000 ohms 20% ½W			x	
R-304	145069	500,000 ohms horizontal drive control	x	x	x	x
R-305	149101	1,000 ohms 20% ½W	x	x	x	x
R-306	28176	39,000 ohms 10% ½W	x	x		x
R-310	149119	1 meg ohms 20% ½W	x	x	x	x
R-311	149117	470,000 ohms 20% ½W	x	x	x	x
R-312	149117	470,000 ohms 20% ½W	x	x	x	x
R-313	149117	470,000 ohms 20% ½W	x	x	x	x
R-320	28155	560 ohms 10% ½W	x	x	x	x
R-321	149089	10 ohms 20% ½W	x	x	x	x
R-322	149189	39,000 ohms 10% 1W	x	x	x	x
R-323	34578	27,000 ohms 10% 1W	x	x	x	x
R-324	149084	22,000 ohms 20% 2W	x	x	x	x
R-330	28174	27,000 ohms 10% ½W	x	x	x	x
R-331	149144	10,000 ohms 20% 1W	x	x	x	x
R-332	149312	5,000 ohms 10% 5W	x	x	x	x
R-333	149106	6,800 ohms 20% ½W	x	x	x	x
R-340	149117	470,000 ohms 20% ½W	x	x	x	
R-341	149095	100 ohms 20% ½W	x	x	x	x

Circuit Symbol	S.C. Part No.	Description	TS-125H	TS-125L	TS-15-16	TS-16PM
R-342	149069	68 ohms 20% 2W			x	
R-343	149095	100 ohms 20% ½W			x	x
R-344	149340	10,000 ohms 5W	x	x		
R-345	149335	12,000 ohms 5W			x	
R-346	149095	100 ohms 20% ½W				x
R-347	149095	100 ohms 20% ½W				x
R-348	149093	47 ohms 20% ½W				x
R-349	28178	56,000 ohms 10% ½W			x	
R-350	149314	3.3 ohms 20% 1W			x	
R-351	149324	2 meg ohms 5% 2W Type DCH	x	x	x	x
R-352	149070	100 ohms 20% 2W	x	x	x	x
R-357	149282	4.7 ohms 10% 1W	x	x	x	
R-359	28165	3,900 ohms 10% ½W	x	x		
R-360	149314	3.3 ohms 20% 1W			x	
R-361	28168	6,800 ohms 10% ½W			x	x
R-362	149116	330,000 ohms 20% ½W				x
R-363	149339	27,000 ohms 10% 3W				x
R-364	149282	4.7 ohms 10% 1W	x	x	x	x
R-365	149195	180,000 ohms 10% 1W				x
R-371	149318	5,000 ohms 25W			x	
R-372	28006	100,000 ohms 10% ½W	x	x	x	x
R-390	149289	1,300 ohms 25W	x	x	x	x
R-391	149150	100,000 ohms 20% 1W	x	x	x	x
R-392	149150	100,000 ohms 20% 1W	x	x	x	x
R-393	145066	30 ohms 2W horizontal cent control	x	x	x	x
R-394	149288	200 ohms 15W	x	x	x	x
R-395	149271	5.6 ohms 10% 1W	x	x	x	x
R-396	149271	5.6 ohms 10% 1W	x	x	x	x
R-400	149111	47,000 ohms 20% ½W	x	x	x	x
R-401	149105	4,700 ohms 20% ½W	x	x	x	x
R-402	149105	4,700 ohms 20% ½W	x	x	x	x
R-403	149120	1.5 meg ohms 20% ½W	x	x	x	x
R-404	145062	1 meg ohms vert hold control	x	x	x	x
R-405	149113	100,000 ohms 20% ½W	x	x	x	x
R-406	149121	2.2 meg ohms 20% ½W	x	x	x	x
R-407	145067	2.5 meg ohms vert size control	x	x	x	x
R-409	145065	30 ohms 2W vert cent control	x	x	x	x
R-410	149115	220,000 ohms 20% ½W	x	x	x	x
R-411	28169	8,200 ohms 10% ½W	x	x	x	x
R-412	149179	1,800 ohms 10% 1W	x	x	x	x
R-413	145064	4,000 ohms 2W vert lin control	x	x	x	x
R-414	149101	1,000 ohms 20% ½W	x	x	x	x
R-417	149121	2.2 meg ohms 20% ½W	x	x	x	x
R-430	149113	100,000 ohms 20% ½W	x	x	x	x
R-431	149113	100,000 ohms 20% ½W	x	x	x	x
R-432	149123	4.7 meg ohms 20% ½W	x	x	x	x
R-433	149115	220,000 ohms 20% ½W	x	x	x	x
R-434	149109	22,000 ohms 20% ½W	x	x	x	x

COILS

Circuit Symbol	S.C. Part No.	Description	TS-125H	TS-125L	TS-15-16	TS-16PM
L-10	114053	FM Ant Coil	x	x	x	x
L-11	114633	RF plate choke coil	x	x	x	x
L-20	114054	FM RF coil	x	x	x	x
L-21	114059	FM Osc coil	x	x	x	x
L-22	114621	Heater choke coil	x	x	x	x
L-23	114620	Cathode choke coil	x	x	x	x
L-40	114051	AM osc coil	x	x	x	x
L-50	114066	Hi band RF plate coil	x	x	x	x
L-51	20608	Link (#24 polyethylene conductor)	x	x	x	x
L-60	114066	Hi band converter grid coil	x	x	x	x
L-61	114066	Hi band Osc coil	x	x	x	x
L-62	114060	Hi band Osc plate choke coil	x	x	x	x
L-63	114621	IF coupling coil	x	x	x	x
L-64	20608	Link (#24 polyethylene conductor)	x	x	x	x
L-70	114065	Lo band RF plate coil	x	x	x	x
L-71	114642	Lo band coupling coil	x	x	x	x
L-80	114065	Lo band converter grid coil	x	x	x	x
L-81	114065	Lo band oscillator coil	x	x	x	x
L-82	114061	1st IF primary coil	x	x	x	x
L-180	114372	2nd pix IF coil	x	x	x	x
L-181	114372	1st IF secondary coil	x	x	x	x
L-190	114368	3rd pix IF coil	x	x	x	x
L-200	114379	3rd pix IF plate coil	x	x	x	x
L-201	114351	21.9 Mc trap	x	x	x	x
L-210	114373	27.9 Mc trap	x	x	x	x
L-211	114344	4th pix IF grid coil	x	x	x	x
L-220	114637	Video peaking coil	x	x	x	x
L-240	114638	Video peaking coil	x	x	x	x
L-241	114639	Video peaking coil	x	x	x	x
L-250	114640	Video peaking coil	x	x	x	x
L-251	114641	Video peaking coil	x	x	x	x
L-260	114636	Focus coil	x	x	16	x
L-261	114648	Focus coil			15	
L-263	114644	Deflection yoke	x	x	x	x
L-371	114666	Horizontal size control	x	x	x	x
L-374	114667	Horizontal linearity control	x	x	x	x
L-390	161017	Filter choke	x	x	x	x

TRANSFORMERS

Circuit Symbol	S.C. Part No.	Description	TS-125H	TS-125L	TS-15-16	TS-16PM
T-20	114367	1st IF-FM transformer	x	x	x	x
T-30	114052	AM RF transformer	x	x	x	x
T-40	114364	1st IF AM transformer	x	x	x	x
T-50	114647	Hi band ant transformer pri	x	x	x	x
T-50	114646	Hi band ant transformer sec	x	x	x	x
T-70	114057	Lo band ant transformer	x	x	x	x
T-90	114367	2nd sound IF transformer	x	x	x	x
T-100	114367	3rd sound IF transformer	x	x	x	x
T-101	114337	AM detector transformer	x	x	x	x
T-110	114370	Ratio detector transformer	x	x	x	x
T-160	161013	Output transformer		x	x	x
T-161	161239	Output transformer	x			
T-210	114369	Pix detector transformer	x	x	x	x
T-310	114371	Horizontal Sync discriminator	x	x	x	x
T-341	161018	Horizontal output transformer	x	x		
T-342	161021	Horizontal output transformer				x
T-343	161023	Horizontal output transformer			x	
T-380	161417	Power transformer	x	x	x	x
T-400	161010	Vertical blocking Osc. trans.	x	x	x	x
T-410	161011	Vertical output transformer	x	x	x	x

MISCELLANEOUS

S-C Part No.	Description	TS 125 H	TS 125 L	TS 15 16	TS 16PM
114635	Beam bender for 16 AP4			16	x
114645	Beam bender for 12 QP4	x	x		
114635	Beam bender for 12 LP4	x	x		
27958	Fuse Holder	x	x	x	x
26819	Fuse 5A amp. 250V	x	x	x	x
128001	Fuse Clip	x	x	x	x
128003	Fuse ¼ amp. 250V	x	x	x	x
158033	Range Switch	x	x	x	x
29956	Dial Lamp	x	x	x	x
124020	Drive Cord (Pointer)			x	x
124021	Drive Cord (Tuner)	x	x	x	x
124024	Drive Cord (Pointer)	x			
124025	Drive Cord (Pointer)		x		
144019	Pointer		x	x	x
144021	Pointer	x			
122033	Dial Glass		x	x	x
122036	Dial Glass	x			
166030	Kinescope Mounting Block			16	x
166029	Kinescope Mounting Block			15	
166032	Kinescope Mounting Block	x	x		
113042	Kinescope Clamp			16	x
113041	Kinescope Clamp			15	
113064	Kinescope Clamp (Short)	x	x		
113063	Kinescope Clamp (Long)	x	x		
152061	Kinescope Socket Assem.	x	x	x	x
151001	Pilot Lamp Shield	x	x	x	x

For chassis, cabinet, speaker and phono parts number refer to Identification Table on page 2.

S. C. Part No.	Description	TS-125 L-1-M	TS-125 H-1-M	TS-125 M-5-M	TS-15 M-1-M	TS-15 M-1-A	TS-15 L-1-M	TS-15 L-1-A	TS-16 M-1-M	TS-16 M-1-A	TS-16 L-1-M	TS-16 L-1-A	TS-16 PM
121038	Decal				x	x	x	x	x	x	x	x	x
121043	Decal	x	x	x									
130077	Grille Cloth				x	x			x	x			
130078	Grille Cloth						x	x			x	x	
130082	Grille Cloth	x											
130089	Grille Cloth (Speaker)			x									
130090	Grille Cloth (Phono)			x									
130088	Grille Cloth												x
132084	Hinge (Left Hand Upper)			x	x	x			x	x			
132092	Hinge (Left Hand Lower)			x	x	x			x	x			
132083	Hinge (Right Hand Upper)			x									
132091	Hinge (Right Hand Lower)			x									
134052	Knob (Outside Door)			x									
134095	Knob (Inside Door)			x									
132118	Door Pull												x
132119	Door Pull												x
132117	Upper Album Door Hinge			x									x
132123	Slide Upper Phono Drawer			x									x
132116	Bullet Catch			x									x
148036	Phono Drawer			x	x	x			x	x			x
132056	Spring Catch				x	x			x	x			
132115	Bullet Catch Service Door	x	x	x	x	x	x	x	x	x	x	x	x
132114	Hinge Service Door				x	x	x	x	x	x	x	x	
113062	Hinge Service Door	x	x	x									x
132108	Pull Service Door						x	x			x	x	
134083	Knob Tuning		x										x
134081	Knob Concentric		x										x
134084	Knob Indicator		x										x
134072	Knob Tuning	x			x	x	x	x	x	x	x	x	
134073	Knob Concentric	x			x	x	x	x	x	x	x	x	
134076	Knob Indicator	x			x	x	x	x	x	x	x	x	
134096	Knob Tuning			x									
134094	Knob Concentric			x									
134093	Knob Indicator			x									
138025	Lens	x	x										
138021	Lens				x	x	x	x	x	x	x	x	
138027	Lens			x									
138026	Lens												x
174009	Mask	x	x										
154054	Mask				x	x	x	x					
154055	Mask								x	x	x	x	
174005	Mask			x									
174003	Mask												x
121042	Name Plate (Service Door)	x	x	x									x
101113	Back Panel Assem.		x										
101106	Back Panel Assem.	x											
101099	Back Panel Assem.				x	x	x	x	x	x	x	x	
101118	Back Panel Assem.			x									
101116	Back Panel Assem.												x
139031	Loop Assem. AM	x	x	x	x	x	x	x	x	x	x	x	x
148038	Phono Network			x									x
152009	Socket & Plug (Bulls Eye)			x									x
29956	Bulls Eye Cabinet Light			x									x
801401	Lamp Cap			x									x
125042	Dial Escutcheon			x									
125043	Dial Corner Mount			x									
117010	A C Cord			x									x
158038	Phono AC Switch			x									x
121044	Switch Plate			x									x
109039	Cable Assem.			x									x
117011	A C Cord Assem. (Right Angle Plug)			x									

The photographs reproduced below were taken from a DuMont 208-B oscilloscope and were taken on a standard receiver with a normal picture. Set oscilloscope oscillator to sync with 15,750 cps. for figures 1 thru 13. Set oscilloscope oscillator to sync with 60 cps. for figuress 14 thru 16.

FIG. 1
Grid (Pin 1) of 1st Sync Amp (V-27) 7v. peak to peak

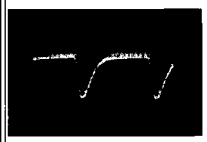


FIG. 2
Cathode (Pin 1) of Sync Sep. (V-28A) 42v. peak to peak

FIG. 3
Grid (Pin 6) of 2nd Sync Amp (V-29) 4.5v. peak to peak

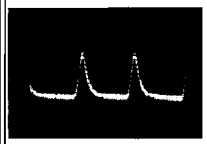


FIG. 4
Plate (Pin 1) of 2nd Sync Amp (V-29) 18v. peak eo peak

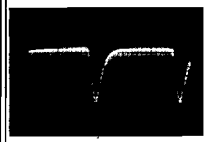


FIG. 5
Plate (Pin 2) of 3rd Sync Amp (V-29) 22v. peak eo peak

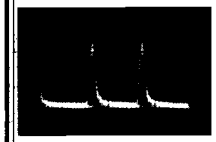


FIG. 6
Plate (Pin 2) of 4th Sync Amp (V-30A) 18v. peak to peak

FIG. 7
Pin 5 (E) of Hor. Sync Transformer (T-310) 5v. peak to peak

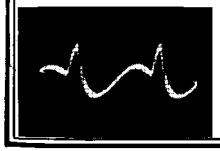


FIG. 8
Plate (Pin 7) of Hor. Sync Discr. (V-31) 4.5v. peak to peak

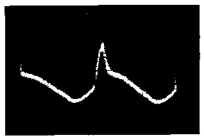


FIG. 9
Plate (Pin 2) of Hor. Sync Discr. (V-31) 4.5v. peak to peak

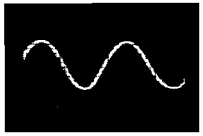


FIG. 10
Grid (Pin 5) of Hor. Osc. (V-33) 64v. peak to peak

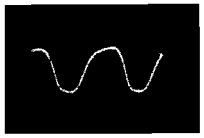


FIG. 11
Plate (Pin 3) of Hor. Osc. (V-33) 200v. peak to peak

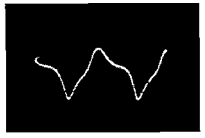


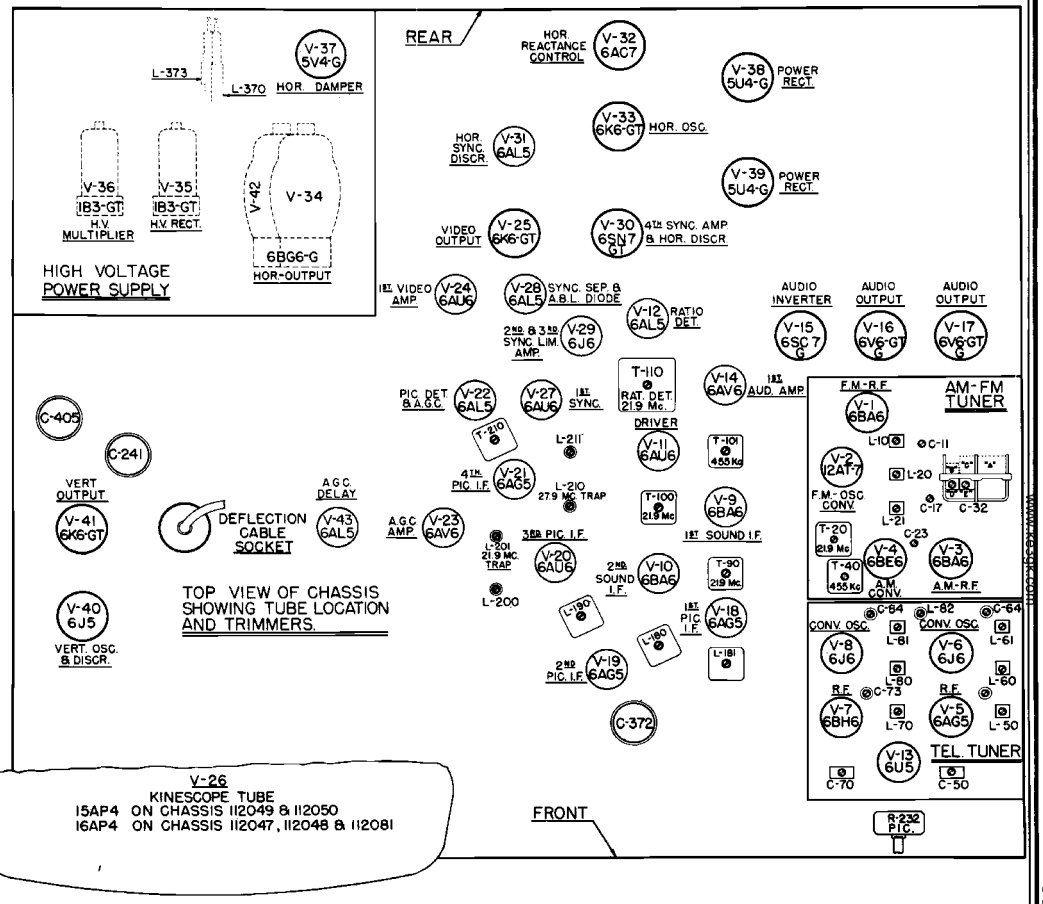
FIG. 12
Grid (Pin 4) of Hor. Discharge (V-30 B) 60v. peak to peak

FIG. 13
Plate (Pin 5) of Hor. Discharge (V-30 B) 60v. peak to peak

FIG. 14
Grid (Pin 5) of Vert. Osc. (V-40) 330v. peak to peak

FIG. 15
Grid (Pin 5) of Vert. Out (V-41) 165v. peak to peak

FIG. 16
Plate (Pin 3) of Vert. Out (V-41) 750v. peak to peak



The schematic shown below is the audio system used on the TS-125 H. The remainder of the circuit is the same as shown on the large schematic.