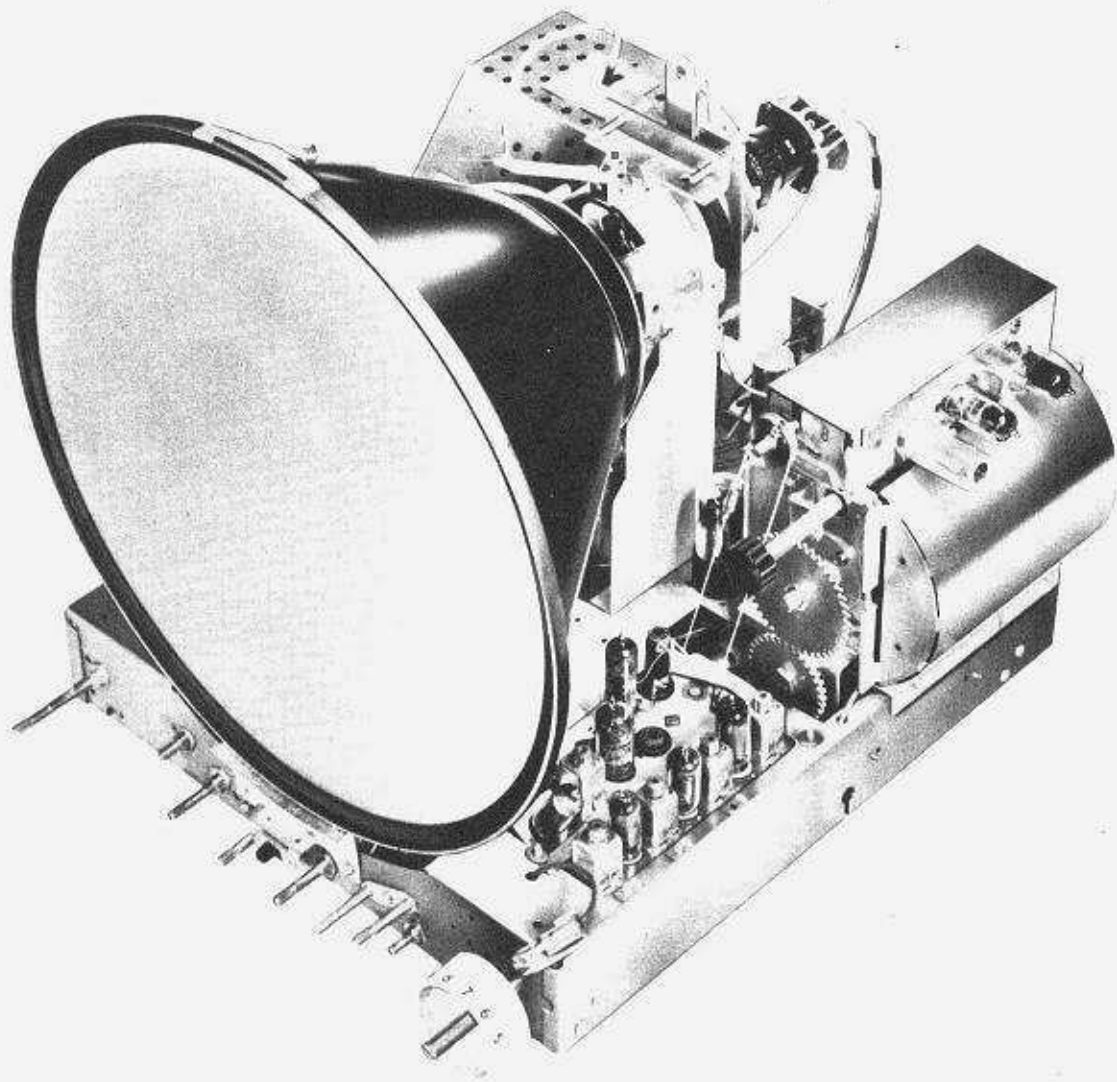


SERVICE MANUAL



1951 TELEVISION RECEIVERS

CHASSIS 22H20 - 23H22 - 23H22Z - 24H20 - 24H21
22H21 - 22H22

ZENITH RADIO CORPORATION
6001 DICKENS AVENUE • CHICAGO 39, ILLINOIS
TV-7B PRICE 25 cents

ZENITH TELEVISION RECEIVERS

<u>MODEL</u>	<u>SCREEN</u>	<u>TV CHASSIS</u>	<u>RADIO CHASSIS</u>
H2226R	12 1/2" Circular	22H20	None
H2226RZ	12 1/2" Circular	22H20Z	None
H2227E	12 1/2" Circular	22H20	None
H2227R	12 1/2" Circular	22H20	None
H2227RZ	12 1/2" Circular	22H20Z	None
H2229R	17" Rectangular	22H21	None
H2230E	17" Rectangular	22H21	None
H2230R	17" Rectangular	22H21	None
H2241R	17" Rectangular	22H21	None
H2242E	20" Rectangular	22H22	None
H2242R	20" Rectangular	22H22	None
H2250R	12 1/2" Circular	22H20	None
H2252R	17" Rectangular	22H21	None
H2253E	17" Rectangular	22H21	None
H2254R	20" Rectangular	22H22	None
H2255E	12 1/2" Circular	22H20	None
H2328R	17" Rectangular	23H22	None
H2328RZ	16" Rectangular	23H22Z	None
H2329R	17" Rectangular	23H22	None
H2329RZ	16" Rectangular	23H22Z	None
H2330E	17" Rectangular	23H22	None
H2330R	17" Rectangular	23H22	None
H2341R	17" Rectangular	23H22	None
H2352R	17" Rectangular	23H22	None
H2352RZ	16" Rectangular	23H22Z	None
H2353E	17" Rectangular	23H22	None
H2353EZ	16" Rectangular	23H22Z	None
H2437E	16" Circular	24H20	None
H2437R	16" Circular	24H20	None
H2438R	16" Circular	24H20	None
H2439R	16" Circular	24H20	None
H2443R	16" Circular	24H20	None
H2445R	19" Circular	24H21	None
H2447R	19" Circular	24H21	None
H2449E	16" Circular	24H20	None
H3068R	17" Rectangular	22H21	8H20Z
H3168R	17" Rectangular	23H22	8H20 or 8H20Z
H3267R	16" Circular	24H20	8H20
H3273E	17" Rectangular	22H21	10H20Z
H3274R	17" Rectangular	22H21	10H20Z
H3284R	20" Rectangular	22H22	10H20Z
H3373E	17" Rectangular	23H22	10H20Z
H3374R	17" Rectangular	23H22	10H20Z
H3469E	16" Circular	24H20	10H20
H3475R	16" Circular	24H20	10H20
H3477R	19" Circular	24H21	10H20
H3478E	19" Circular	24H21	10H20

If the letter "Q" follows a model number it indicates that the receiver is equipped with the S-17268 Remote Control Unit.

POWER SUPPLY

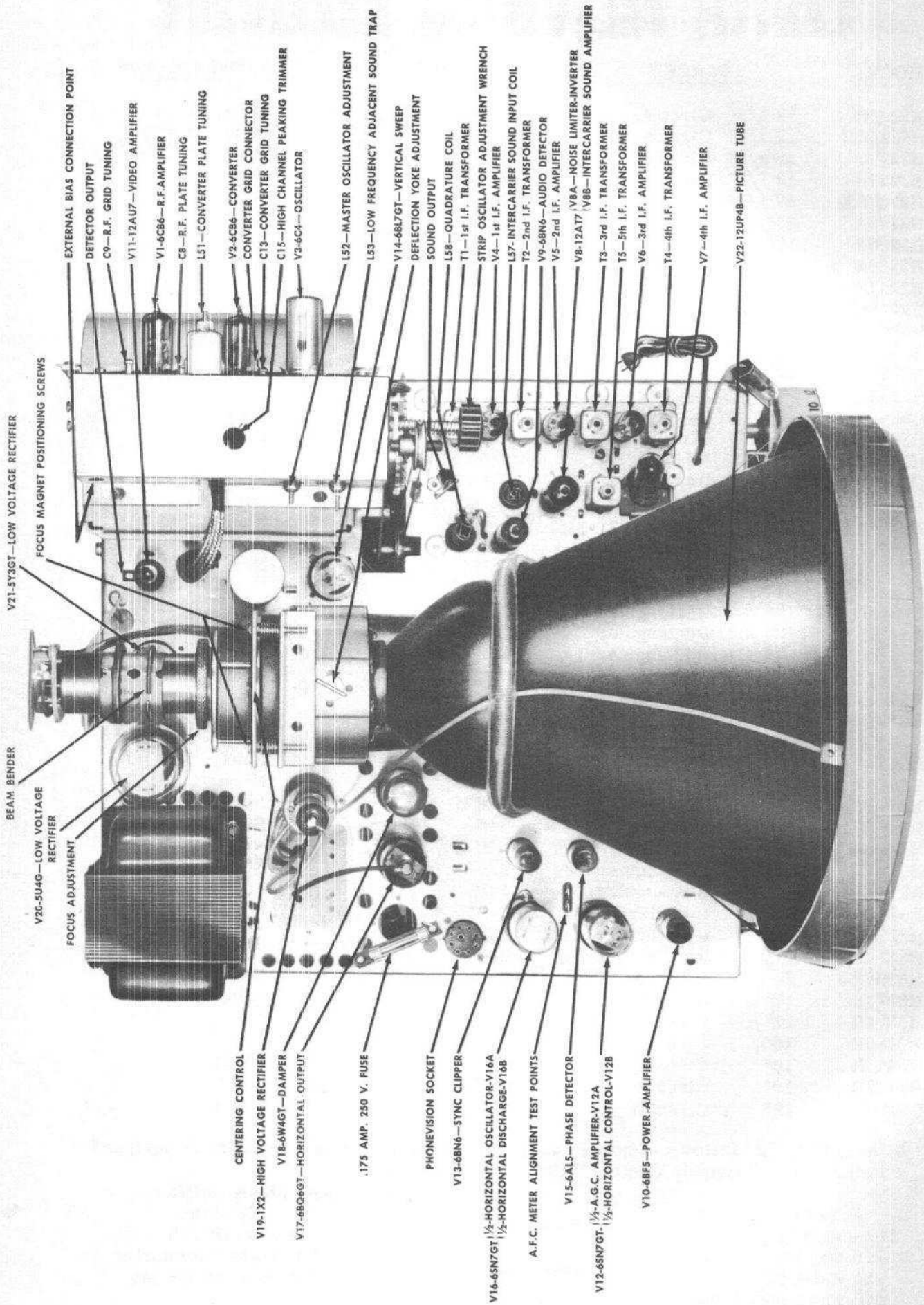
110 Volts; 60 Cycles AC
 225 Watts 22H Series
 250 Watts 23H Series
 275 Watts 24H Series

ANTENNA IMPEDANCE

300 Ohms

AUDIO OUTPUT TV

1.8 Watts Undistorted
 3.2 Watts Maximum



V21-5Y3GT—LOW VOLTAGE RECTIFIER

BEAM BENDER

V2C-5U4G—LOW VOLTAGE RECTIFIER

FOCUS ADJUSTMENT

FOCUS MAGNET POSITIONING SCREWS

EXTERNAL BIAS CONNECTION POINT

DETECTOR OUTPUT

C9—R.F. GRID TUNING

V11-12AU7—VIDEO AMPLIFIER

V1-6CB6—R.F. AMPLIFIER

C8—R.F. PLATE TUNING

L51—CONVERTER PLATE TUNING

V2-6CB6—CONVERTER

CONVERTER GRID CONNECTOR

C13—CONVERTER GRID TUNING

C15—HIGH CHANNEL PEAKING TRIMMER

V3-6C4—OSCILLATOR

L52—MASTER OSCILLATOR ADJUSTMENT

L53—LOW FREQUENCY ADJACENT SOUND TRAP

V14-6BL7GT—VERTICAL SWEEP

DEFLECTION YOKE ADJUSTMENT

SOUND OUTPUT

L58—QUADRATURE COIL

T1—1st I.F. TRANSFORMER

STRIP OSCILLATOR ADJUSTMENT WRENCH

V4—1st I.F. AMPLIFIER

L57—INTERCARRIER SOUND INPUT COIL

V9-68N6—AUDIO DETECTOR

V5—2nd I.F. AMPLIFIER

V8-12AT7—NOISE LIMITER-INVERTER

V8B—INTERCARRIER SOUND AMPLIFIER

T3—3rd I.F. TRANSFORMER

T5—5th I.F. TRANSFORMER

V6—3rd I.F. AMPLIFIER

T4—4th I.F. TRANSFORMER

V7—4th I.F. AMPLIFIER

V22-12UP4B—PICTURE TUBE

CENTERING CONTROL

V19-1X2—HIGH VOLTAGE RECTIFIER

V18-6W4GT—DAMPER

V17-6BQ6GT—HORIZONTAL OUTPUT

.175 AMP. 250 V. FUSE

PHONEVISION SOCKET

V13-68N6—SYNC CLIPPER

V16-6SN7GT— $\frac{1}{2}$ -HORIZONTAL OSCILLATOR-V16A

$\frac{1}{2}$ -HORIZONTAL DISCHARGE-V16B

A.F.C. METER ALIGNMENT TEST POINTS

V15-6AL5—PHASE DETECTOR

V12-6SN7GT— $\frac{1}{2}$ -A.G.C. AMPLIFIER-V12A

$\frac{1}{2}$ -HORIZONTAL CONTROL-V12B

V10-6BF5—POWER AMPLIFIER

Fig. 1 Top View 22H20 Chassis.

CONTROLS AND FUNCTIONS

Location of the various receiver controls is shown in Fig. 2. After the receiver has been properly adjusted, the serviceman should remove the Horizontal Hold, Brightness, Fine Tuning, Vertical Hold, and Contrast Control knobs and re-position them so that the white dot stamped on the outer edge of each knob faces upward. (As in Fig. 2). The positioning of the knobs will aid the customer in resetting the controls should they be accidentally moved. A brief description of each control follows:

CHANNEL SELECTOR SWITCH: Switches into operating position the pre-tuned RF strip for reception of the particular channel desired.

FINE TUNING CONTROL: Provides a means of varying the frequency of the local oscillator to compensate for any frequency deviation which may result from tube and circuit variations. In operating this control it will be found that the range of sound is quite broad. Proper setting is the point where the best picture is obtained within the range of best sound.

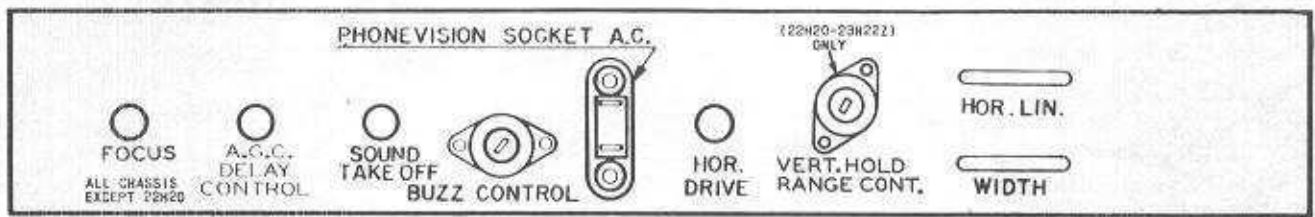
VERTICAL HOLD CONTROL

VERTICAL HOLD RANGE CONTROL: The combination of these controls provide a means of changing the cathode resistance of the vertical oscillator to effect synchronization of the vertical sweep with the transmitted sync pulses. Adjustment is made by setting the vertical hold control in the center of its range and adjusting the vertical hold range control for proper sync. Improper adjustment will cause the picture to "roll" vertically.

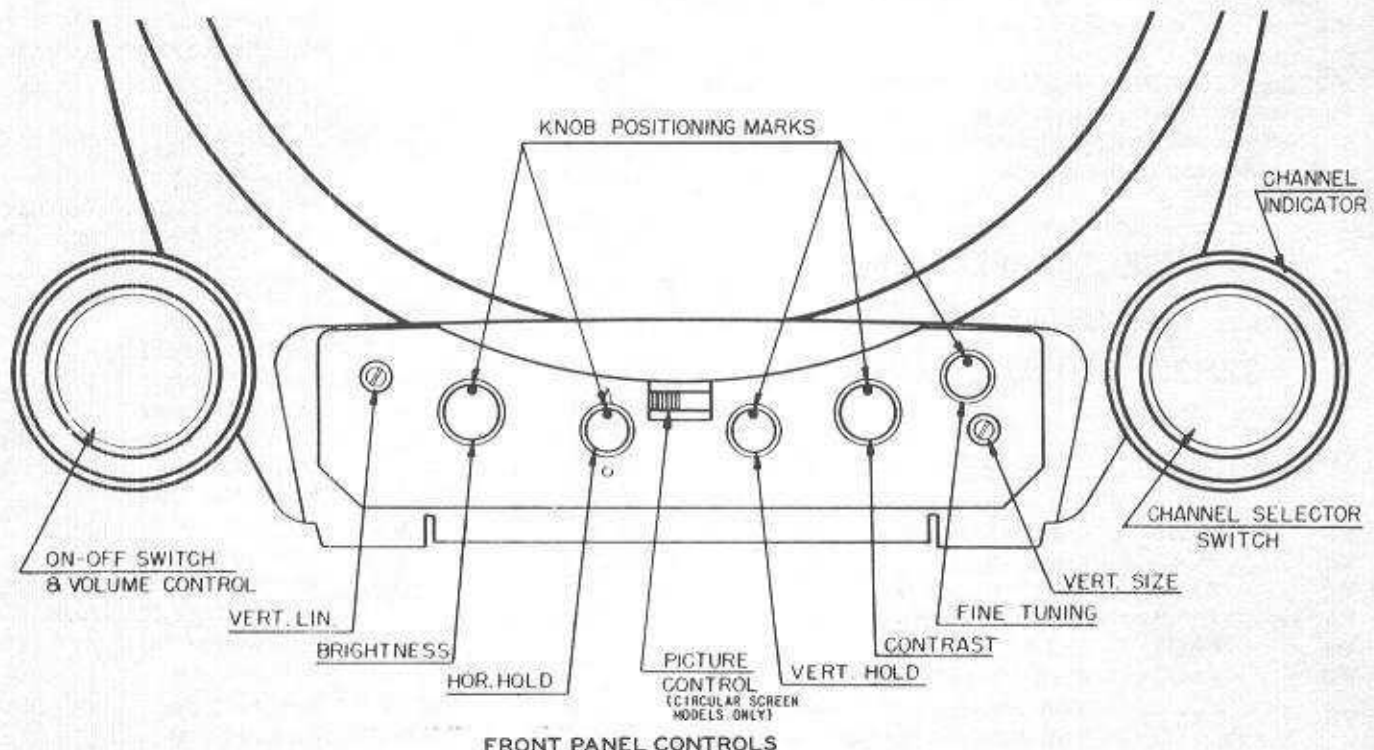
BRIGHTNESS CONTROL: Controls the cathode voltage of the picture tube to afford control of picture brilliance. Must be operated in conjunction with the Contrast Control for maximum picture clarity.

CONTRAST CONTROL: Control is in the plate circuit of the 12AU7 second video amplifier. It regulates the magnitude of video signal applied to the picture tube.

PICTURE CONTROL SWITCH: The Picture Control Switch changes the magnitude of the sweep voltage into the vertical deflection coils thereby allowing the choice of either a Giant Circle or "conventional" picture.



CONTROLS AT REAR OF CHASSIS



FRONT PANEL CONTROLS

Fig. 2 Controls

HORIZONTAL HOLD CONTROL: The Horizontal Hold Control is used to tune the horizontal oscillator to the frequency of the transmitted sync pulses.

VERTICAL SIZE CONTROL: The Vertical Size Control is part of the vertical oscillator plate load. It is used in conjunction with the vertical linearity control to adjust the size of the picture vertically.

VERTICAL LINEARITY CONTROL: The Vertical Linearity Control is in the cathode circuit of the vertical output tube and is used to shift the operating point of the tube so that the sweep is amplified along that portion of the plate current curve which results in a linear output.

HORIZONTAL DRIVE CONTROL: Regulates the magnitude of the horizontal sweep voltage applied to the grid of the horizontal output tube. Care must be exercised not to advance this control to a point where the right side of picture begins to fold.

HORIZONTAL LINEARITY CONTROL: The Horizontal Linearity Control should be adjusted for best horizontal symmetry while observing a test pattern on the screen. The position of the horizontal drive and width controls also affect linearity and possible interaction of these controls must be taken into consideration when making linearity adjustments.

WIDTH CONTROL: A variable inductance L75 shunted across a portion of the secondary winding of the horizontal output transformer T14. Varying this shunt inductance changes the magnitude of the sweep voltage across the horizontal deflection coils thus causing the picture to widen or narrow accordingly.

FOCUS CONTROL: (22H20) A mechanical shunt which regulates the flux density of the ring type permanent magnet to effect proper focus.

FOCUS CONTROL: (23H & 24H series) A combination electro-permanent magnet is used. Focus is accomplished electrically by adjustment of the Focus Control at the rear of the chassis.

TUBE COMPLEMENT CHASSIS

22H20 - 23H22* - 23H22Z*

SYMBOL	TUBE	FUNCTION
V1	6CB6	RF Amplifier
V2	6CB6	Converter
V3	6C4	Oscillator
V4	6AU6	1st IF Amplifier
V5	6AU6	2nd IF Amplifier
V6	6AU6	3rd IF Amplifier
V7	6AU6	4th IF Amplifier
V8	12AT7	V8A Noise Limiter Inverter V8B Intercarrier Sound Amp.
V9	6BN6	Sound Detector and Limiter
V10	6BF5	Audio Output

V11	12AU7	V11A 1st Video Amplifier V11B 2nd Video Amplifier
V12	6SN7GT	V12A AGC Amplifier V12B Horizontal Control
V13	6BN6	Sync Clipper
V14	6BL7GT	V14A Vertical Oscillator V14B Vertical Output
V15	6AL5	Phase Detector
V16	6SN7GT	V16A Horizontal Oscillator V16B Horizontal Discharge
V17	6BQ6GT	Horizontal Output
V18	6W4GT	Damper
V19	1X2	High Voltage Rectifier
V20	5U4G	Low Voltage Rectifier
V21	5Y3GT	Low Voltage Rectifier
V22	12UP4B	Picture Tube

*Tube complement same as for 22H20 chassis except that V22 is a 17BP4 and two 6BQ6GT tubes are used in the horizontal output circuit. Chassis 23H22Z is the same as 23H22 except that V22 is a 16TP4. V19 on 23H22 and 23H22Z chassis can be 1X2 or 1B3GT.

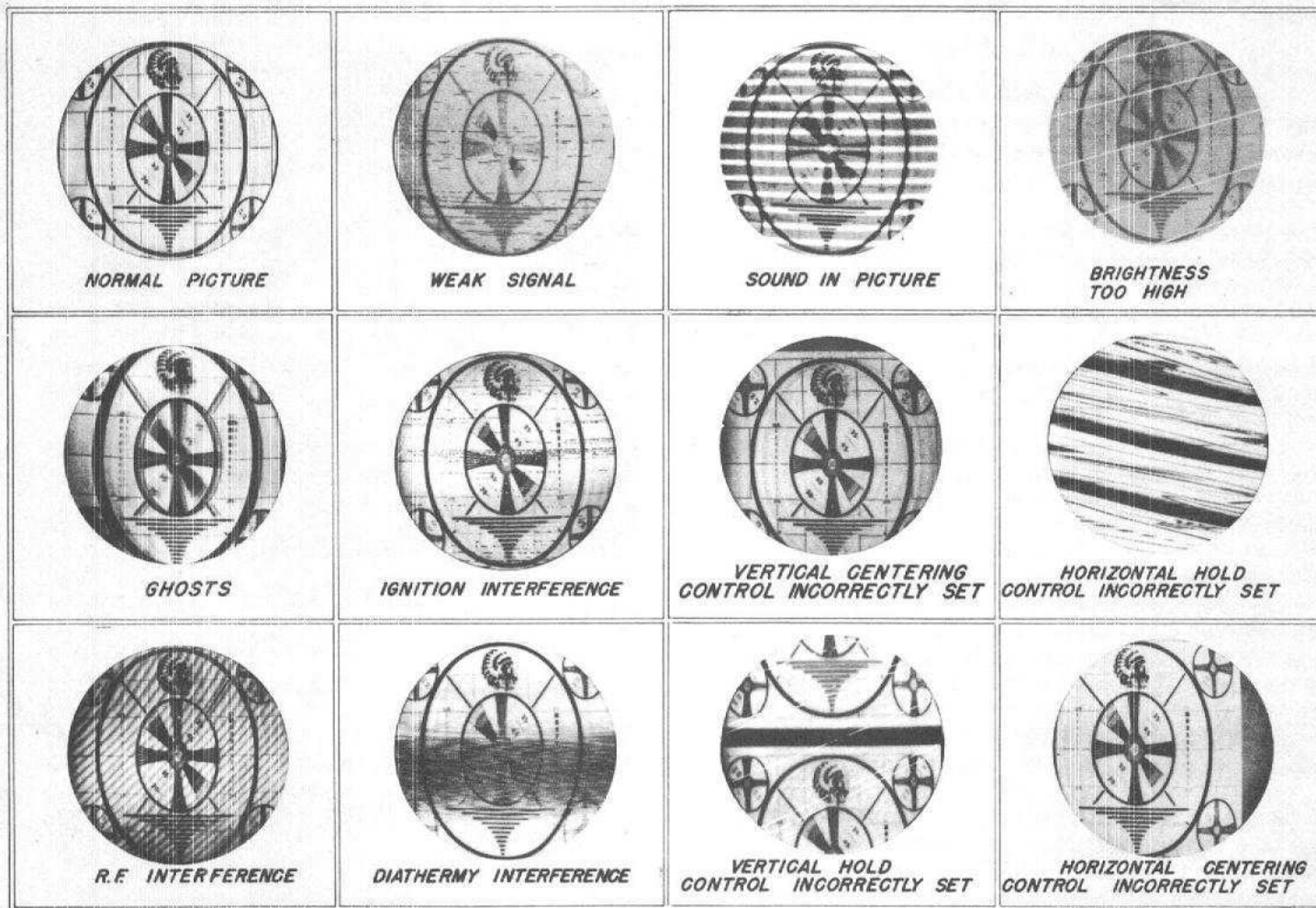
TUBE COMPLEMENT CHASSIS

24H20 - 24H21*

SYMBOL	TUBE	FUNCTION
V1	6CB6	RF Amplifier
V2	6CB6	Converter
V3	6C4	Oscillator
V4	6AU6	1st IF Amplifier
V5	6AU6	2nd IF Amplifier
V6	6AU6	3rd IF Amplifier
V7	6AU6	4th IF Amplifier
V8	12AT7	V8A Noise Limiter Inverter V8B Intercarrier Sound Amp.
V9	6BN6	Sound Limiter Detector
V10	6BF5	Audio Output
V11	12AU7	V11A 1st Video Amplifier V11B 2nd Video Amplifier
V12	6SN7GT	V12A AGC Amplifier V12B Horizontal Control
V13	6BN6	Sync Clipper
V14	6SN7GT	Vertical Oscillator
V15	6SN7GTA	Vertical Output
V16	6AL5	Phase Detector
V17	6SN7GT	V17A Horizontal Oscillator V17B Horizontal Discharge
V18	6BQ6GT	Horizontal Output
V19	6W4GT	Damper
V20	1B3/8016	High Voltage Rectifier
V21	5U4G	Low Voltage Rectifier
V22	5Y3GT	Low Voltage Rectifier
V23	16GP4	Picture Tube
V24	6BQ6GT	Horizontal Output

*Same as 24H20 except V23 is 19AP4A

TEST PATTERNS ON CIRCULAR SCREEN
MODELS



CHANNEL	FREQ BAND	PICTURE CARRIER	SOUND CARRIER	RECEIVER LOCAL OSCILLATOR
1				
2	54-60-MC	55.25 MC	59.75 MC	101 MC
3	60-66	61.25	65.75	107
4	66-72	67.25	71.75	113
5	76-82	77.25	81.75	123
6	82-88	83.25	87.75	129
7	174-180	175.25	179.75	132.5
8	180-186	181.25	185.75	138.5
9	186-192	187.25	191.75	144.5
10	192-198	193.25	197.75	150.5
11	198-204	199.25	203.75	156.5
12	204-210	205.25	209.75	162.5
13	210-216	211.25	215.75	168.5

Fig. 3 Television Channels and Corresponding Receiver Oscillator Frequencies.

ADJUSTMENTS AND ALIGNMENT

FOCUS AND

CENTERING ADJUSTMENTS

The 22H series receivers incorporate mechanical means of centering and focusing while the 24H series utilize mechanical centering and electrical focus.

The centering control lever is used for centering the picture both vertically and horizontally. An up-down movement of the lever moves the picture horizontally while a left-right movement shifts it vertically.

Complete focus, centering and beam bender adjustments are made as follows:

1. Loosen the deflection yoke adjustment locknut (See Fig. 4) and move the yoke as far as possible toward the front of the picture tube. Check for picture tilt and tighten locknut.
2. Adjust the magnet positioning screws until the assembly is approximately 1/8" from the yoke. Be certain that the focus coil sleeve is inserted inside the magnet assembly for proper mechanical centering of the picture tube.
3. Set the centering lever to a position where the locking screw is centered inside its slot.
4. Rotate and slide the beam bender along the neck of the tube for a raster of maximum brilliance. (The beam bender has an identifying arrow which must point towards the front of the picture tube when installed. On double ring type beam benders, the air gaps should be 180° removed with the heavier ring nearest the picture tube socket.)
5. Adjust the focus shunt ring (22H series only), or the focus control for sharpest picture definition.
6. With the centering lever, center the picture vertically and horizontally. A slight readjustment of the beam bender may be necessary to obtain a full raster of maximum brilliance.

After adjustments are made, tighten the centering lever locknut.

BULLS EYE TUNER ADJUSTMENTS

With an intercarrier receiver of this type, a VTVM cannot be effectively used as a resonance indicator when oscillator adjustments are made with the built-in wrench.

Satisfactory adjustments can be made by setting the fine tuning control in the center of its range, observing a test pattern and adjusting the oscillator for best sound and picture. It will be noted that tuning to one side of resonance results in a faded, washed-out picture with the spacings between the wedge lines fogged and tuning in the opposite direction causes the spaces

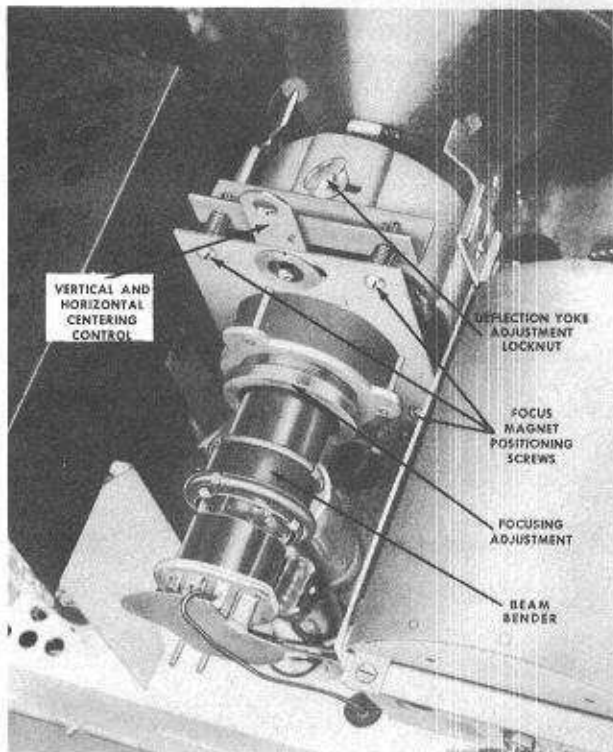


Fig. 4 Adjustments on Neck of Picture Tube.

between the lines to clear up. However, going beyond this point causes the picture to take on a "wormy" appearance from sound getting into the picture. Correct adjustment is obtained by tuning to the "wormy" picture and then backing the control off slightly until the picture clears up.

AFC ADJUSTMENTS

The AFC adjustment can effectively be made by setting the horizontal hold control (L74) to a position where it is virtually impossible to "throw" the receiver out of horizontal sync when switching from channel to channel.

AGC ADJUSTMENTS

Connect the calibrated oscilloscope through a 10K isolation resistor to the grid (Pin 7) of the 12AT7 limiter-inverter. Select the strongest TV signal and observe the deflection on the scope screen. Adjust the AGC delay control R50 for 2.5V peak output.

Satisfactory adjustment can also be made by observing the picture and backing off the AGC control from its maximum clockwise position to a point comfortably below the level of intercarrier buzz, picture distortion, improper sync or excessive contrast at maximum contrast setting.

CAUTION: Misadjustment of the AGC delay control can result in a washed-out picture, distorted picture, buzz in sound OR COMPLETE LOSS OF PICTURE AND SOUND.

SOUND ALIGNMENT

Proper alignment of the 4.5 Mc intercarrier sound channel can only be obtained if the signal to the receiver antenna terminals is reduced to a level below the limiting point of the 6BN6 Gated Beam Detector. This level can be easily identified by the "hiss" which then accompanies the sound.

Various methods may be used to reduce the signal level, however, it is recommended that a S17203 step attenuator be used for most satisfactory results. To prevent leakage, certain precautions must be taken when connections are made. Use as short a lead as possible between the attenuator and receiver antenna terminals and approximately 6 feet of 300 ohm shielded line between the antenna transmission line and the attenuator. The shield from the transmission line should be connected to the attenuator and the attenuator itself grounded to the TV chassis under test.

After the connections are made, proceed as follows:

1. Tune in a tone modulated TV signal and adjust the step attenuator until the signal is reduced to a level where "hiss" is heard with the sound.
2. Adjust the sound take-off coil L60, input coil L57, quadrature coil L58 and buzz control R19 for the cleanest sound and minimum buzz. It must be remembered that any of these adjustments may cause the "hiss" to disappear and further reduction of the signal is necessary so that the "hiss" never disappears during alignment.

In weak signal areas, where the signal amplitude is not sufficient to cause limiting, the adjustments may be made without the use of an attenuator.

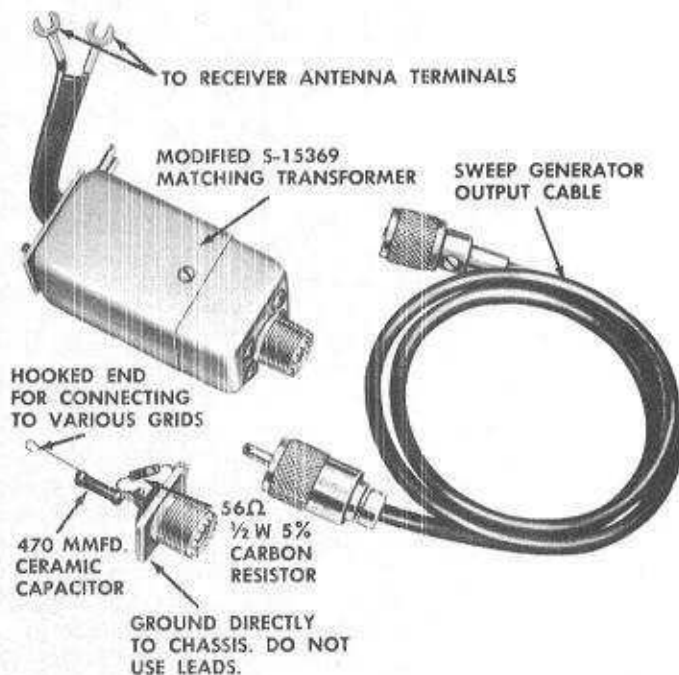


Fig. 5 IF - RF Alignment Fixtures.

If intercarrier buzz is in evidence, after all normal sound adjustments have been made, the cause may be attributed to one or more of the following.

1. Improper adjustment of the AGC delay control.
2. Defective 12AT7 inverter-limiter tube.
3. Extremely high signal levels which require attenuation in the antenna circuit.
4. Transmitter overmodulation.

CALIBRATING THE OSCILLOSCOPE

When aligning RF-IF stages and when making AGC adjustments, it is necessary to measure detector peak output voltage. This may be done with an oscilloscope which has been calibrated with a known DC voltage. To calibrate any oscilloscope proceed as follows:

Connect the ground lead of the scope vertical input cable to the negative side of a 3 volt battery supply. Turn the horizontal gain control fully counter-clockwise. With the "hot" lead, make a momentary contact to the positive connection on the battery and observe the instantaneous spot deflection on the screen. Discharge the scope input capacitor by shorting out the leads and then repeat the procedure, each time readjusting the scope vertical gain until the spot deflects 3 large divisions on the screen. Each division will then represent 1 volt peak. The position of the vertical gain control must be noted for future reference.

IF ALIGNMENT

When aligning the 40 Mc IF, it is of utmost importance to keep the sweep generator connections as short as possible. (See Fig. 5). Clip the negative lead of a 4.5V battery to test point "A" and the positive lead to chassis. Through a 10K isolation resistor connect the oscilloscope to the terminal "C" (See schematic). During alignment keep the output from the sweep generator at a level which develops approximately 3V peak output at the detector as viewed on the calibrated oscilloscope. It is important that the voltage be maintained at this 3V level.

After the bias and scope connections have been made and the receiver allowed a 15 minutes warm-up period, proceed as follows:

1. Feed the output from the sweep generator through a connector, as shown in Fig. 5, into the converter grid (terminal "F"). This terminal is immediately adjacent to the 6CB6 converter tube.
2. Remove oscillator tube V3 and switch channel selector to channel 12.
3. Adjust the IF transformers to obtain an overall pattern of maximum amplitude with linearity, similar to the illustration in Fig. 6. It will be noted that adjustment of L51, T1 and T3 will have maximum effect on the low frequency portion of the pattern (42.75 - 43.5 Mc) whereas adjustment of T2 and T4 will have

maximum effect on the high frequency side (45.75 and 45 Mc.) T5 tilts the top and is adjusted to obtain best symmetry.

After the correct overall pattern is obtained, turn the channel selector to channel 2 and inject a 47.25 Mc marker into the sweep. Adjust the low channel adjacent sound trap L53 for minimum indication on

the scope or on a VTVM connected to the video detector.

4. Feed a 4.5 Mc crystal calibrated signal to terminal "C" Fig. 20 and connect the RF probe of a VTVM to the cathode (Pin 11) of the picture tube. Advance the contrast control for approximately 1 volt indication on the meter and adjust trap L63 for minimum indication.

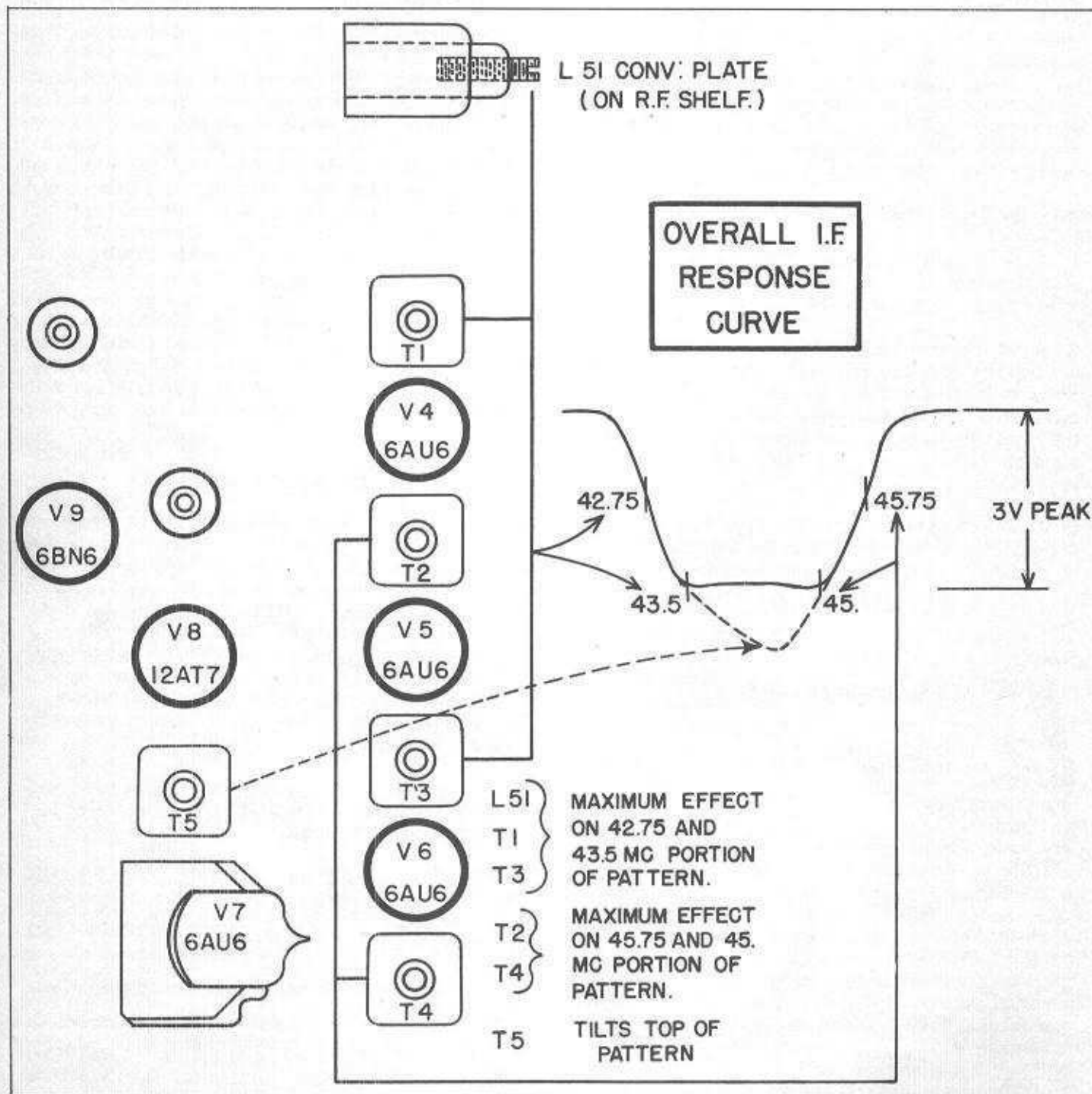


Fig. 6 IF Alignment Guide

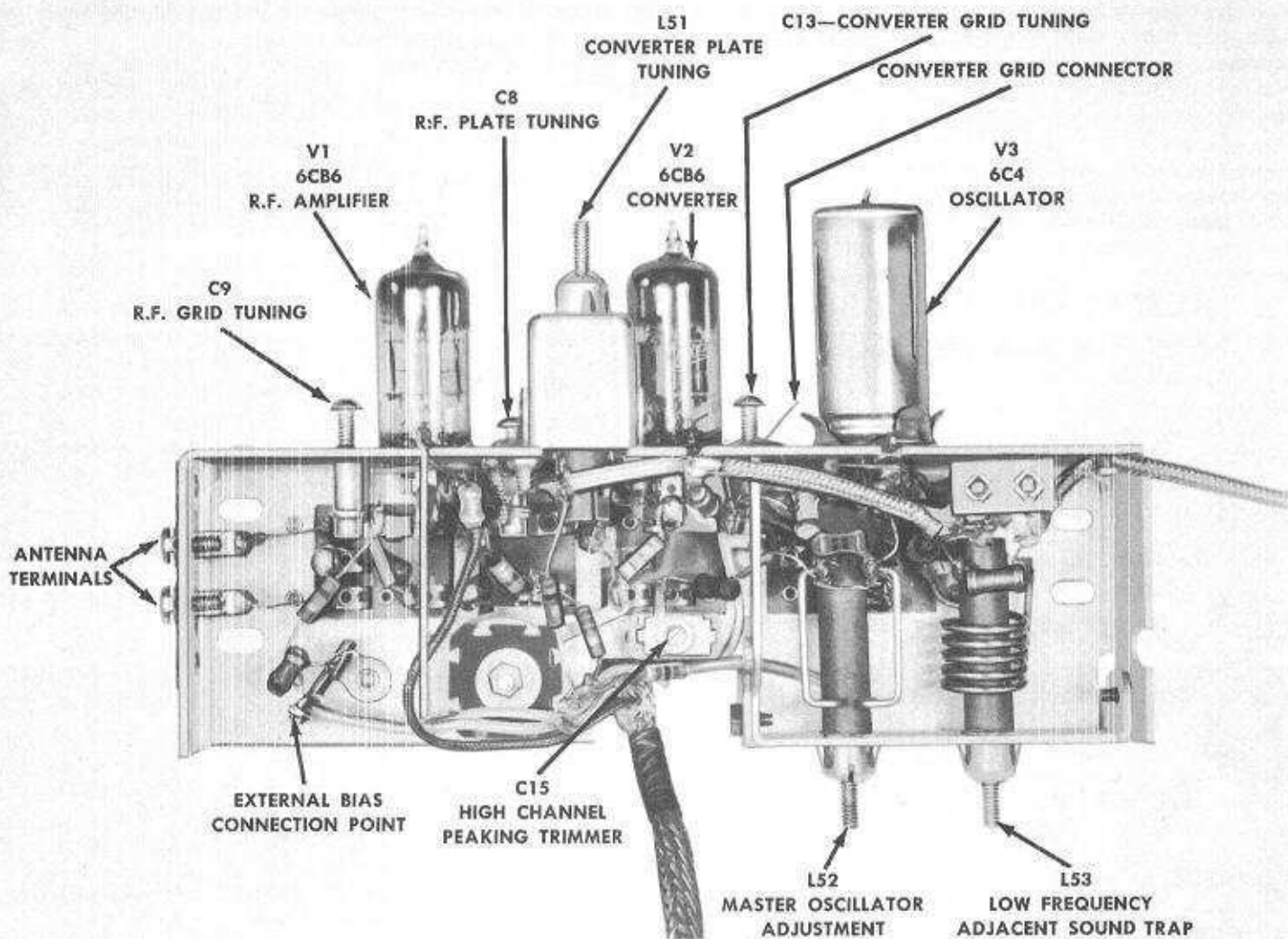


Fig. 7 RF Shelf

MASTER OSCILLATOR ALIGNMENT

The 6C4 master oscillator operates above the incoming frequency on the low channels (2-6) and below on the high channels (7-13). Slug L52 is used to pre-set the master oscillator on channel 7 since the channel 7 strip itself does not have an oscillator adjustment.

The master oscillator adjustment is to be made only if resonance cannot be obtained with the strip oscillator adjustment wrench when the fine tuning control is in its center position (open end of pulley on the RF shelf facing up) and after it has been determined that the channel strip itself is not at fault.

Although it is possible to set the master oscillator L52 by tuning in a station and alternating the master and strip oscillator adjustments until proper tuning results, the use of the Mega-Sweep and Mega-Marker Sr. is preferred. The Mega-Marker Sr. is provided

with crystals for the sound carrier frequencies of all 12 existing channels. The sound carrier frequencies can be used in adjusting the master oscillators, however, it is recommended that the Mega-Marker Sr. be equipped with a crystal for the picture carrier frequency for channel 7 (175.25 Mc). This crystal may be inserted into one of the extra positions and adjustments made as follows:

1. Connect the negative lead of a 4.5V battery to point "A" (See Fig. 20) and the positive lead to chassis.
2. Feed the signal generator through a S-15369 matching transformer to the antenna terminals of the receiver. Fig. 5.
3. Set the channel selector to channel 7 and turn the fine tuning control until the open end of the RF shelf pulley faces upward.

4. Adjust the sweep generator for an RF response curve (similar to Fig. 6). Set the Mega-Marker Sr. on channel 7 and observe the video marker on the response curve. Adjust L52 until this marker falls at approximately 50% on the response curve.

In adjusting the master oscillator on the sound carrier frequency for channel 7, the above procedure is followed, with the exception that the sound marker is placed at approximately 20 times down on the response curve.

TURRET TUNER AND RF SHELF ALIGNMENT

The RF shelf adjustments are made at the factory and normally do not require readjustment unless the unit has been tampered with. If adjustments become necessary, they are made as follows:

1. Connect the negative lead of a 4.5V bias supply to point "A" (See Fig.20) and the positive lead to chassis.

Connect the oscilloscope through a 10K isolation resistor to terminal "C" and chassis.

2. Feed the output of the Mega-Sweep through a S-15369 matching transformer to the antenna terminals of the receiver.

3. Adjust the Mega-Sweep and check the RF response curve (See Fig. 6) on each channel. If all the response curves are tilted approximately the same amount, first check the IF response to see that it has a reasonably flat top (See Fig. 6) before an attempt is made to adjust the RF trimmers. If the IF response is correct, set the channel selector switch to channel 4 and adjust the RF grid (C9), RF plate (C8), converter grid (C13) for symmetry and amplitude of the response curve.

4. If the receiver sensitivity is satisfactory on the low channels (2 to 6) and is down on the high channels, adjust the high channel peaking trimmer (C15) for maximum sensitivity with band pass.

SERVICE HINTS

FRINGE RECEPTION - Vertical synchronization in weak signal areas may be improved by lowering the value of the resistor in the grid circuit of the sync clipper from its normal 1 Meg. value. Values as low as 10,000 ohms may be used, however, care must be exercised as too great a reduction of this resistance may introduce horizontal distortion into the picture on some signals.

POOR VERTICAL LINEARITY - (22H20 - 23H22Z) If this condition cannot be corrected by adjustment of the vertical linearity and height adjustments, the fault will probably lie in a defective 6BL7GT vertical sweep tube.

S-17268 REMOTE CONTROL UNIT - Locking of the manual control can be caused by failure of the worm drive gear to disengage. This condition can be the result of a weak solenoid armature actuating spring or misalignment of the magnet mounting bracket. It

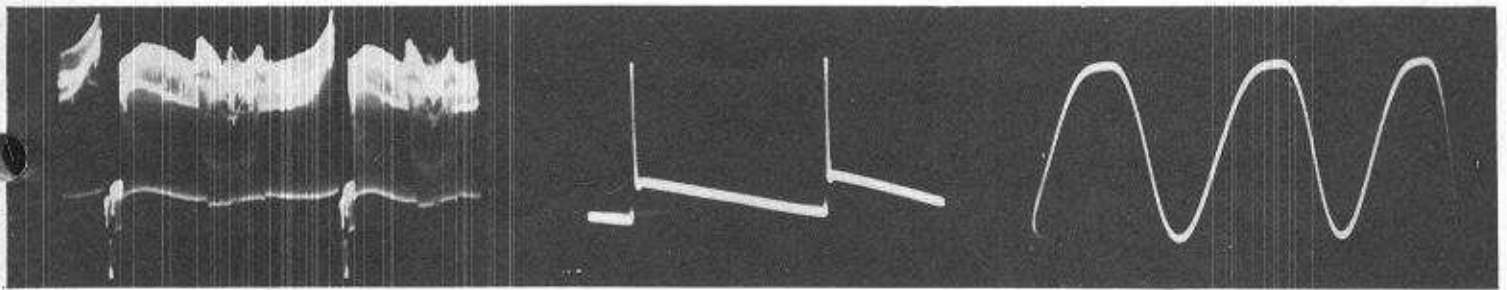
will be noted that the solenoid mounting bracket has slotted mounting holes which allows for horizontal as well as vertical alignment. Improper seating of the solenoid clapper plate on the magnet core will cause excessive buzz.

IMPORTANT: Any receiver equipped with the remote control unit must be perfectly "bulls eyed" to insure its most satisfactory operation with the remote control unit.

TESTING GERMANIUM CRYSTALS - If, after all normal adjustments have been made, the picture appears washed out, the cause may be low detector output due to a defective germanium crystal. The crystal may be disconnected and tested with an ohmmeter for front-to-back ratio. The resistance in one direction should be lower than 400 ohms and at least 25 times this resistance (10,000 ohms) or higher in the other direction. Any ratio less than 25 to 1 would indicate a below standard crystal.



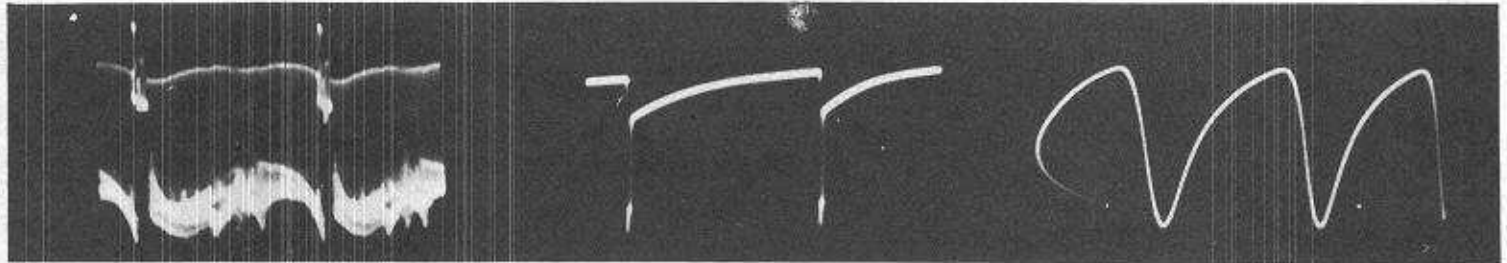
Rectangular Screen Models properly adjusted on Test Pattern.



Pins 7&8 V8A-Pin 6 V12A Pin 1 V11A (60 cps)

Pin 2 V14B (60 cps)

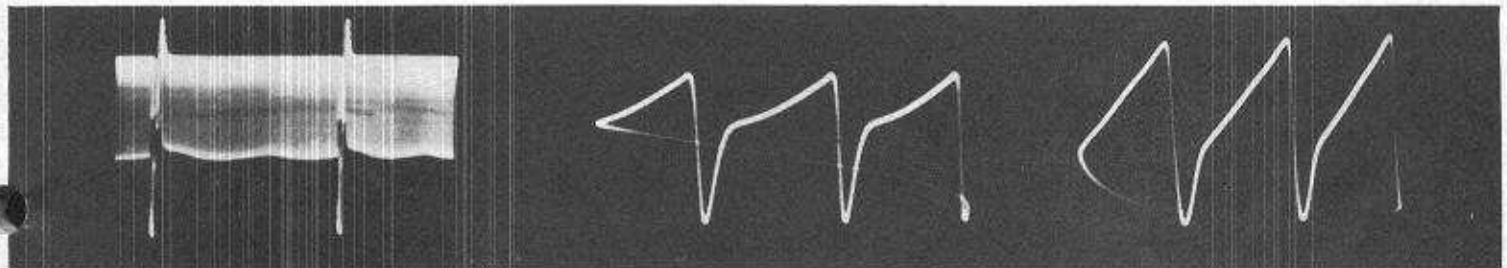
Pin 2 V12B (15.75 Kc)



Pin 6 V8A Pin 2 V11A Pin 6 V11B Pin 2 V13 Pin 11 V22

Pin 1 V14B (60 cps)

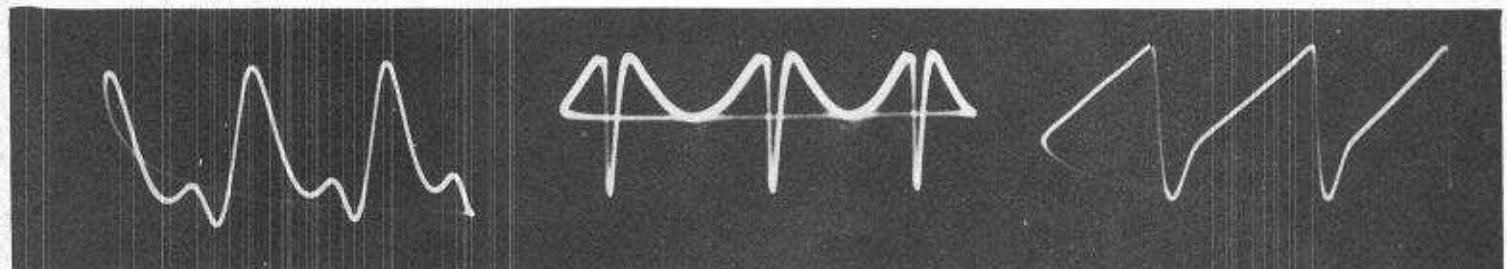
Pin 5 V16A (15.75 Kc)



Pin 7 V13 (60 cps)

Pin 1&5 V15 (15.75 Kc)

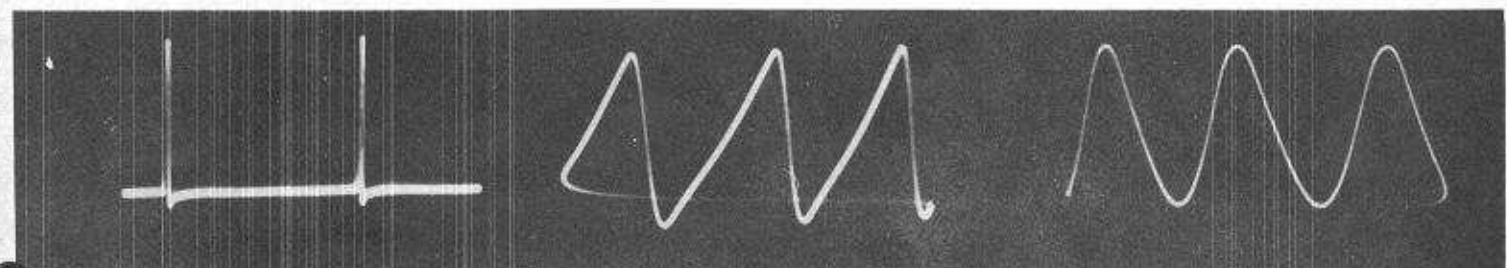
Pin 2 V16B (15.75 Kc)



Pin 5 V12A (15.75 Kc)

Pin 2 V15 (15.75 Kc)

Pin 5 V17 (15.75 Kc)



Pin 4 V14A (60 cps)

Pin 7 V15 (15.75 Kc)

Pin 8 V17 (15.75 Kc)

Fig. 8 Wave Forms 22H20 Chassis. Also representative for 23H22Z and 24H20-21 Chassis.

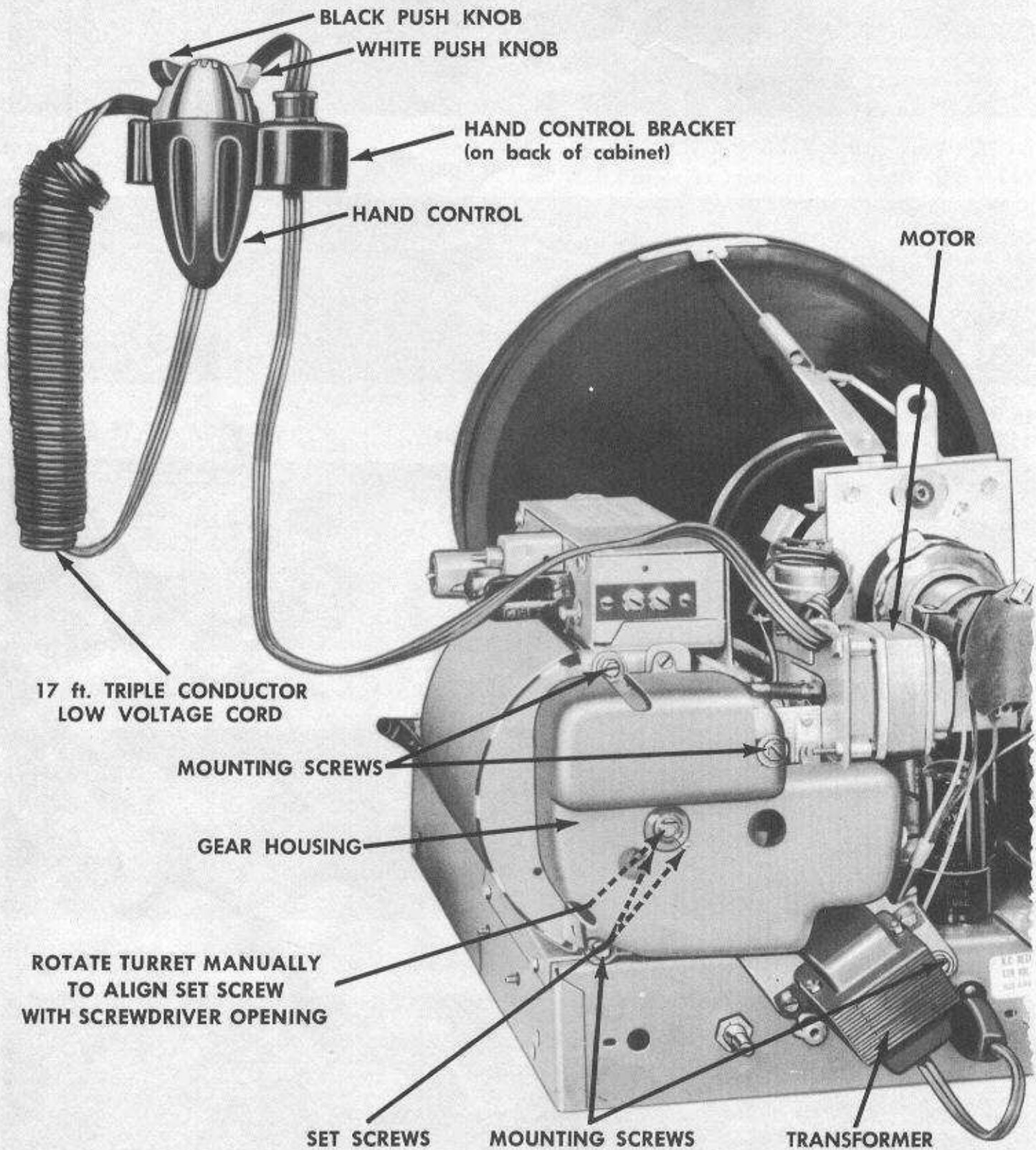
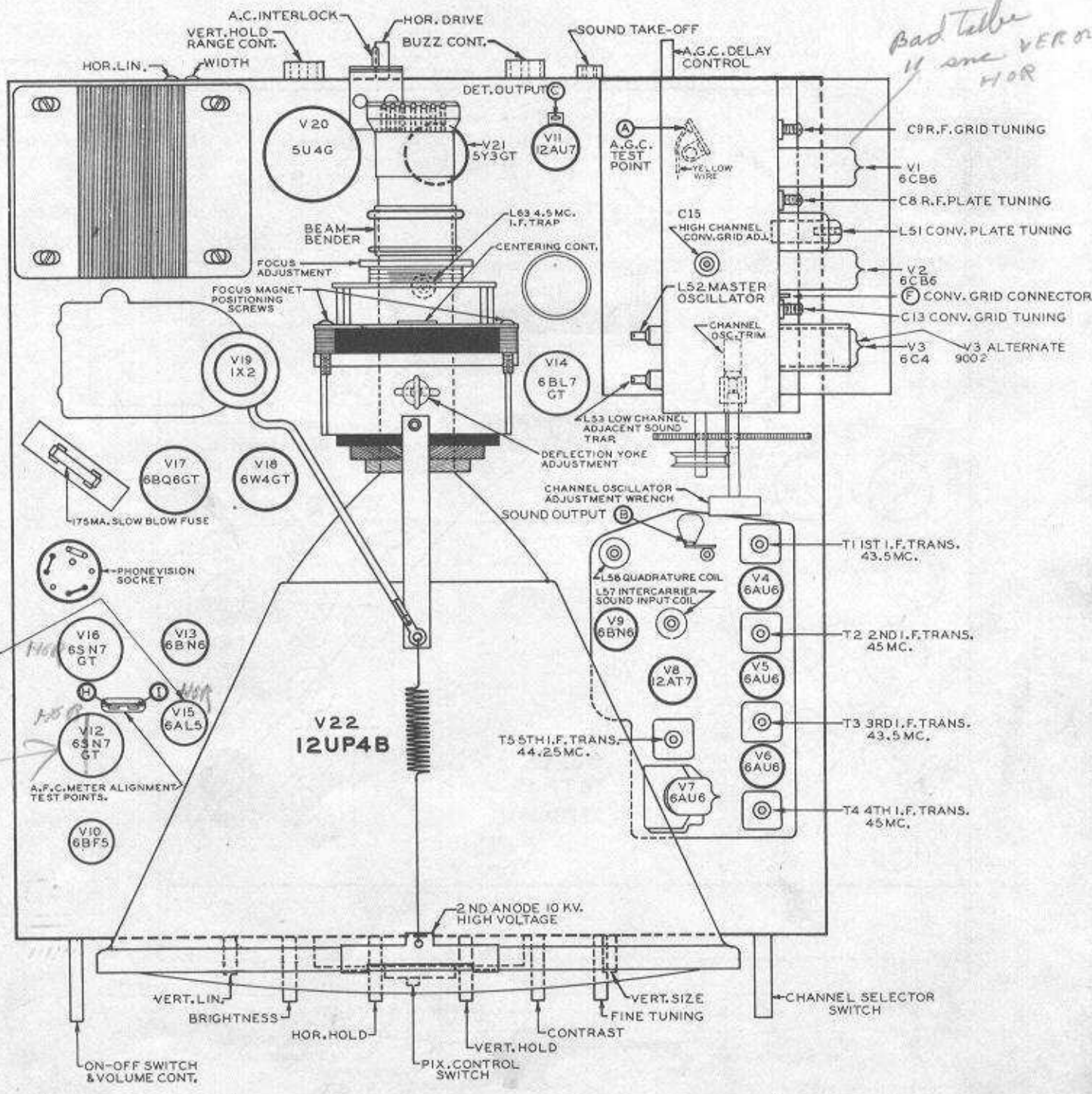
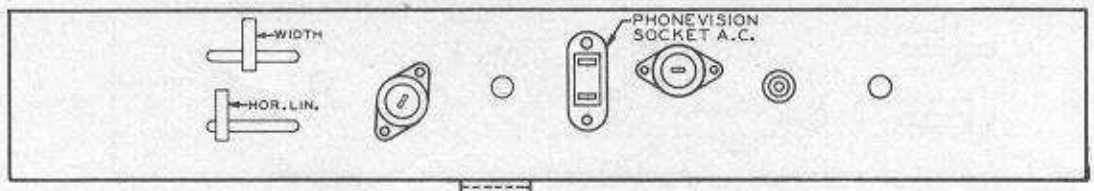


Fig. 9 Remote Control Unit.



VIS ALTERNATE 6H6

To RC

Fig. 10 Tube and Trimmer Layout 22H20 Chassis.

22420 chassis

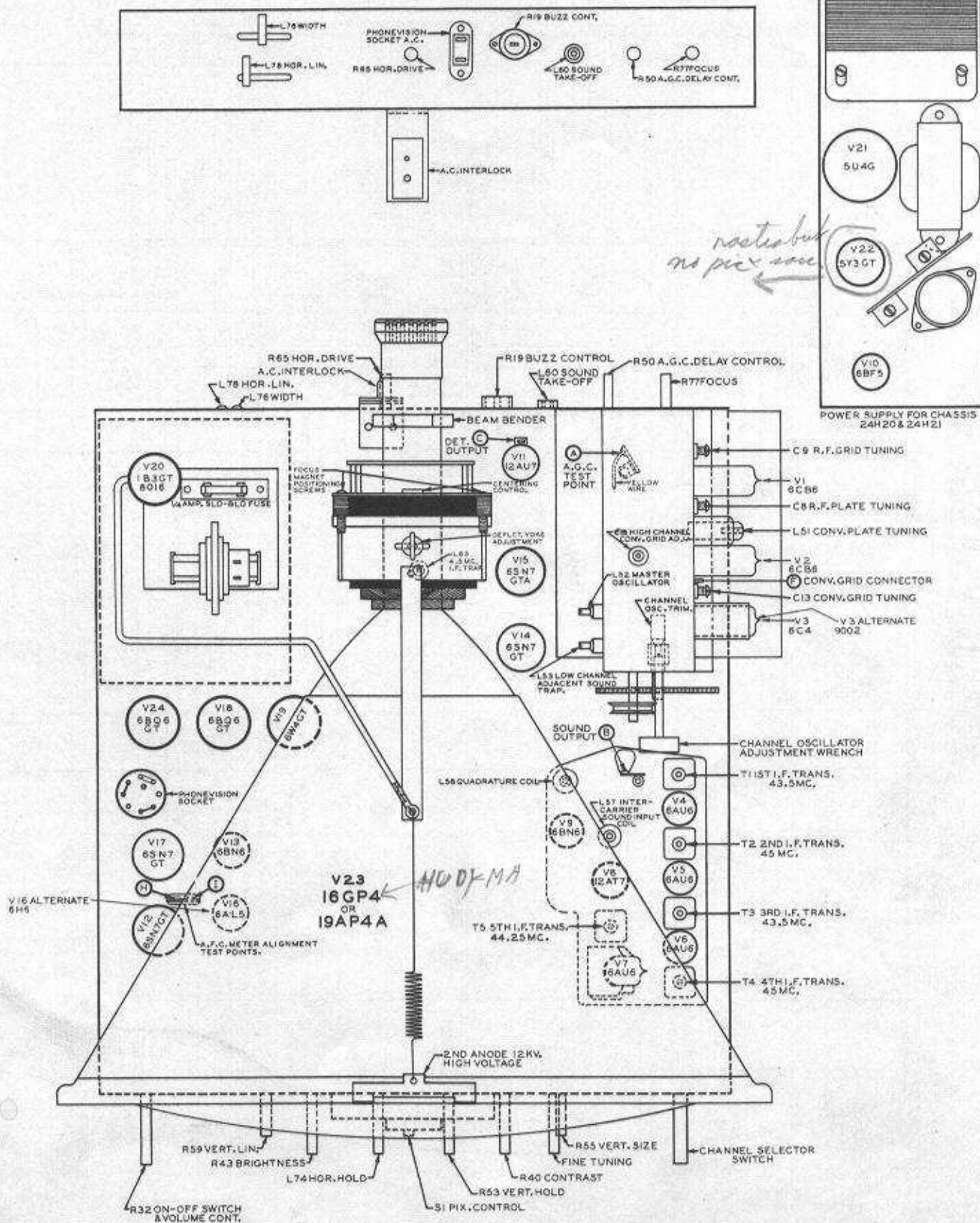


Fig. 12 Tube and Trimmer Layout 24H20-21 Chassis.

CIRCUIT LEGEND

DIAG. NO.	PART NO.	DESCRIPTION	CHASSIS	MAIN	POWER SUPPLY	ROW X	PART NO.	DESCRIPTION	CHASSIS	MAIN	POWER SUPPLY	DIAG. NO.	PART NO.	DESCRIPTION	CHASSIS	MAIN	POWER SUPPLY	DIAG. NO.	PART NO.	DESCRIPTION	CHASSIS	MAIN	POWER SUPPLY	
C1	22-1894	8 MMF., 500 V.				R1	63-1750	150 Ohm	10%	1/2W.	ABC	L1	S-16842	R.F. Antenna coil										
C2	22-1819	1-7.5 MMF., Slug Tuned Cap.				R2	63-1827	10K Ohm	10%	1/2W.	ABC	L2		R.F. Grid coil										
C3	22-1951	4.5 MMF., 500 V.				R3	63-1967	1500 Ohm	10%	1W.	ABC	L3	S-16857	R.F. Plate coil										
C4	22-2139	2 MMF., 500 V.				R4	63-1933	3.3 Megohm	20%	1/2W.	ABC	L4		Converter Grid coil										
C5	22-2295	21 MMF., 500 V.				R5	63-1955	47K Ohm	10%	1/2W.	ABC	L5	S-16843	R.F. Antenna coil										
C6	22-1892	7 MMF., 500 V.				R6	63-1785	1000 Ohm	10%	1/2W.	ABC	L6		R.F. Grid coil										
C7	22-2206	24 MMF., 500 V.				R7	63-1835	15K Ohm	20%	1/2W.	ABC	L7	S-16858	R.F. Plate coil										
C8	22-2093	1-3.5 MMF., Trim. Capacitor				R8	63-1736	66 Ohm	10%	1/2W.	ABC	L8		Converter grid coil										
C9	22-2093	1-3.5 MMF., Trim. Capacitor				R9	63-1736	66 Ohm	10%	1/2W.	ABC	L9	S-16844	R.F. Antenna coil										
C10	22-2050	5 MMF., Cer., 500 V.				R10	63-1849	33K Ohm	20%	1/2W.	ABC	L10		R.F. Grid coil										
C11	22-2219	470 MMF., Cer., 500 V.				R11	63-1814	15K Ohm	10%	1/2W.	ABC	L11	S-16859	R.F. Plate coil										
C12	27-82	600 MMF., Sparkplate				R12	63-1743	100 Ohm	10%	1/2W.	ABC	L12		Converter grid coil										
C13	22-2093	1-3.5 MMF., Trim. Capacitor				R13	63-1772	470 Ohm	20%	1/2W.	ABC	L13	S-16845	R.F. Antenna coil										
C14	27-69	475 MMF., Sparkplate									ABC	L14		R.F. Grid coil										
C15	22-2220	14-24 MMF., Trim. Capacitor									ABC	L15	S-16860	Converter grid coil										
C16	22-1891	2.5 MMF., Cer., 500 V.									ABC	L16		R.F. Antenna coil										
C17	22-2207	4.5 MMF., Cer., 500 V.				R17	63-1926	2.2 Meg.	20%	1/2W.	ABC	L17	S-16846	R.F. Grid coil										
C18	22-2209	80 MMF., Cer., 500 V.				R18	63-1912	1.0 Meg.	20%	1/2W.	ABC	L18		R.F. Plate coil										
C19	22-1876	47 MMF., Cer., 500 V.				R19	63-2050	500 Ohm	Beam Control		ABC	L19	S-16861	R.F. Plate coil										
C20	22-2051	5 MMF., Cer., 500 V.				R20	63-1982	100K Ohm	10%	1W.	ABC	L20		Converter grid coil										
C21	22-2155	36 MMF., Cer., 500 V.				R21	63-1771	170 Ohm	10%	1/2W.	ABC	L21	S-16304	Oscillator coil assembly										
C22	22-2210	500 MMF., Cer., 500 V.				R22	63-1890	300K Ohm	10%	1/2W.	ABC	L22	20-310	R.F. Antenna coil										
C23	22-2210	500 MMF., Cer., 500 V.				R23	63-1799	2200 Ohm	10%	1/2W.	ABC	L23	S-16847	R.F. Grid coil										
C24	22-2194	10 MFD., Electro 500 V.				R24	63-1764	330 Ohm	10%	1/2W.	ABC	L24	20-312	R.F. Plate coil										
C25	22-2217	470 MMF., Cer., 500 V.				R25	63-1870	100K Ohm	20%	1/2W.	ABC	L25	20-319	Converter grid coil										
C26	22-2243	470 MMF., Cer., 500 V.				R26	63-2023	3500 Ohm	10%	10W.	ABC	L26	S-16848	R.F. Grid coil										
C27	22-4	0.04 MFD., Cer., 500 V.				R27	63-2022	10K Ohm	10%	5 W.	ABC	L27	20-311	R.F. Plate coil										
C28	22-1814	7 MMF., Cer., 500 V.				R28	63-1971	8000 Ohm	10%	2 W.	ABC	L28	20-320	Converter Grid coil										
C29	22-1761	0.1 MFD., Cer., 500 V.				R29	63-1761	270 Ohm	10%	1/2W.	ABC	L29	S-16305	Oscillator coil assembly										
C30	22-1761	50 MMF., Cer., 500 V.				R30	63-2077	400 Ohm	10%	5W.	ABC	L30	S-16849	R.F. Grid coil										
C31	22-2106	10 MMF., Cer., 500 V.				R31	63-1744	100 Ohm	20%	1/2W.	ABC	L31	20-314	R.F. Plate coil										
C32	22-2218	0.01 MFD., 500 V.				R32	63-2125	500K Volume control			ABC	L32	20-321	Converter Grid coil										
C33	22-1842	4700 MMF., 10% 200 V.				R33	63-1782	820 Ohm	10%	1/2W.	ABC	L33	S-16306	Oscillator coil assembly										
C34	22-1842	4700 MMF., 10% 200 V.				R34	63-1838	18K Ohm	10%	1/2W.	ABC	L34	S-16850	R.F. Grid coil										
C35	22-1782	0.047 MFD., 600 V.				R35	63-1806	3300 Ohm	10%	1/2W.	ABC	L35	20-315	R.F. Plate coil										
C36AD		15 MFD., Electro 475 V.				R36	63-1768	990 Ohm	10%	1/2W.	ABC	L36	20-322	Converter Grid coil										
C36CD	22-2122	40 MFD., Electro 300 V.				R37	63-1841	22K Ohm	10%	1/2W.	ABC	L37	S-16307	Oscillator coil assembly										
C37CD		40 MFD., Electro 50 V.				R38	63-2043	4700 Ohm	10%	1W.	ABC	L38	S-16861	R.F. Grid coil										
C37AD		15 MFD., Electro 475 V.				R39	63-1845	27K Ohm	10%	1/2W.	ABC	L39	20-316	R.F. Plate coil										
C37AO		40 MFD., Electro 300 V.				R40	63-2123	150K Contrast Control			ABC	L40	20-323	Converter Grid coil										
C37BO	22-2223	80 MFD., Electro 25 V.				R41	63-2172	2K Vertical linearity control			ABC	L41	S-16308	Oscillator coil assembly										
C37CD		100 MFD., Electro 50 V.				R42	63-1883	2200 Ohm	10%	1/2W.	ABC	L42	S-16862	R.F. Grid coil										
C37AD		20 MFD., Electro 875 V.				R43	63-2126	100K Brightness Control			ABC	L43	20-317	R.F. Plate coil										
C38AD		20 MFD., Electro 450 V.				R45	63-1911	1.0 Meg.	10%	1/2W.	ABC	L45	20-324	Converter Grid coil										
C38BD	22-2224	20 MFD., Electro 200 V.				R46	63-1869	500K Ohm	10%	1/2W.	ABC	L46	S-16309	Oscillator coil assembly										
C38CD		20 MFD., Electro 25 V.				R47	63-1862	68K Ohm	10%	1/2W.	ABC	L47	20-311	R.F. Antenna coil										
C38CD		40 MFD., Electro 450 V.				R48	63-1898	470K Ohm	20%	1/2W.	ABC	L48	S-16863	R.F. Grid coil										
C39	22-1864	0.47 MFD., 600 V.				R49	63-1884	20K Ohm	20%	1/2W.	ABC	L49	20-325	Converter Grid coil										
C40	22-2233	20 MMF., Cer., 10% 500 V.				R50	63-2153	25K A.G.C. Delay Control			ABC	L50	S-16310	Oscillator coil assembly										
C41	22-2234	100 MMF., 5% 500 V.				R51	63-1820	6800 Ohm	10%	1/2W.	ABC	L51	S-17104	Trap coil assembly										
C42	22-2264	0.15 MFD., 10% 600 V.				R52	63-2127	200K Vertical Hold Control			ABC	L52	S-16315	Oscillator coil assembly										
C43	22-2248	0.035 MFD., 10% 600 V.				R53	63-2173	700K Vertical Hold Control			ABC	L53	S-16591	Trap coil assembly										
C44	22-2248	0.1 MFD., 10% 600 V.				R54	63-1449	470 Ohm	20%	1W.	ABC	L54	S-17501	Section detector peaking coil										
C45	22-2	110 MMF., 500 V.				R55	63-2110	7.5 Meg. Vertical scan Cont.			ABC	L55	S-15128	B - Choice coil assembly										
C46	22-1775	0.47 MFD., 400 V.				R56	63-1863	68K Ohm	20%	1/2W.	ABC	L56	S-16011	Shunt peaking coil										
C47	22-2156	0.15 MFD., 10% 200 V.				R57	63-1925	12K Ohm	10%	1W.	ABC	L57	S-16738	Intercoiler sound I.F. coil										
C49	22-2128	0.01 MFD., 10% 600 V.				R58	63-2159	4K Vertical hold range cont.			ABC	L58	S-16013	Chokeplate coil assembly										
C50	22-1880	1200 MMF., 10% 600 V.				R59	63-1674	5K Vertical Linearity cont.			ABC	L59	95-1170	Filter choke										

NUMERICAL PARTS LIST

MODELS. H2226E - H2226R & RQ - H2227E & EQ
H2227R & RQ - H2250R & RQ - H2255E & EQ
CHASSIS 22H20

MAIN CHASSIS

Diag. No.	Part No.	Description	Suggested List Price
	12-1756	Pilot Light Bkt.	
	19-166	Coil Mtg. Clip (used on S-1714)	.06
	19-175	Coil Mtg. Clip (1 ea. used on S-17176-S-17112 S-16855 S-17116)	.06
	19-206	Coil Mtg. Clip (used on S-17132)	
	19-207	C.R. Tube Mtg. Clip	
C29	22-3	.01 Mfd. Ceramic (Disc) (2 used) 500V	.26
C27	22-4	.004 Mfd. Ceramic (Disc) (2 used) (or 22-1706) 500V	.26
C45	22-5	110 Mmf. 500V	
C52	22-365	100 Mmfd. Mica (molded) 500V	.20
C61	22-470	150 Mmfd. Mica (molded) 500V	.20
C22	22-2216	500 MMF Cer. 500V	.20
C57	22-1138	470 Mmfd Mica (molded) 500V	.20
	22-1645	330 Mmfd. Mica (molded) 500V	
C46	22-1775	.047 Mfd. Mica (molded) (2 used) 400V	.26
C72	22-1777	0.1 Mfd. 200V	.26
C35	22-1782	.0047 Mfd. (molded) (2 used) 600V	.26
C73	22-1810	0.1 Mfd. 200V	.26
C64	22-1814	.0022 Mfd. (molded) (2 used) 600V	.26
C51	22-1841	.1 Mfd. (molded) 600V	.45
C82	22-1832	500 Mmfd. 20KV	
C34	22-1842	4700 Mmf. 10% 200V	
C44	22-1843	.01 Mfd. 10% 600V	
C39	22-1844	.047 Mfd. (Molded) (5 used) 600V	.35
C58	22-1845	.0022 Mfd. 600V	.26
C62	22-1846	.01 Mfd. (molded) 400V	.20
C60	22-1849	.0047 Mfd. 10% 600V	
C65	22-1851	.001 Mfd. (molded) 1000V	.26
C19	22-1876	47 Mmfd. Ceramic 500V	.35
C50	22-1880	.0012 Mfd. (molded) 600V	.26
C63	22-2034	680 Mmfd (molded) 500V	.35
C67	22-2061	.1 Mfd. (molded) 400V	.35
C54	22-2071	.022 Mfd. (molded) 200V	.26
Diag. No.	Part No.	Description	Suggested List Price
C55	22-2078	.047 Mfd. 10% 600V	
C68	22-2098	.47 Mfd. (molded) 200V	.65
C71	22-2112	.001 Mfd. Ceramic 500V	.30
C70	22-2120	500 Mmfd (molded) 10,000 (Special)	1.75
C36AD		Elect. 15 Mfd. 475V 15 Mfd	
BD-CD	22-2122	475V - 40 Mfd 50V 80 Mfd	
DD		300V	4.00
C49	22-2128	.001 Mfd. (molded) (2 used) 600V	.26
C56	22-2133	500 Mmf 10% 500V	
C4	22-2139	2 Mmf. 500V	
C66	22-2146	.47 Mfd. 200V	
C24AA	22-2154	Elect. 10 Mfd. 250V	1.25
C79	22-2159	.33 Mfd. 200V	
C53	22-2162	130 Mmfd - Mica 500V	.26
C59	22-2163	1000 Mmfd - Mica 500V	.45
C47	22-2166	.15 Mfd. 200V	.45
C74	22-2168	33 Mmfd Ceramic 500V	.20
C37AD		Elect. 20 Mfd. 475V - 40 Mfd.	
BD-CD	22-2223	300V - 80 Mfd. 25V - 100 Mfd	
DD		50V	
C38AD		Elect. 20 Mfd. 200V - 20 Mfd.	
BD-CD	22-2224	450V - 40 Mfd. 450V - 20 Mfd	
DD		25V	
C78AA	22-2225	20 Mfd. Electro 300V	
C75AB	22-2232	20 Mfd. Electro 300V	
C75BB		15 Mfd. Electro 475V	
C40	22-2233	20 Mmfd Ceramic 500V (2 used)	
C41	22-2234	100 Mmfd - Ceramic 500V	
C81	22-2244	.47 Mfd. 200V	
C80	22-2245	.062 Mfd. 10% 600V	
C43	22-2248	.0033 Mfd. 10% 600V	
C69	22-2261	.15 Mfd. 400V	
C42	22-2264	.015 Mfd 600V	
	34-183	Turret Drive Gear	.25
	52-591	Insulated Shielded Lead	
	54-139	3/8-32x9/16" Hex Pal-nut (7 used on controls)	.01
	57-1675	Shaft Retaining Plate	
	58-188	Two Prong Plug	.08
	58-191	Nine Prong Adapter Plug	
R38	63-943	4700 Ohm 1W 10% Ins. Res. (2 used)	.24
R63	63-957	33K ohm 1W 10% Ins. Res.	.24
R79	63-1065	15K Ohm 1W 10% Ins. Res.	.24
R66	63-1160	56K Ohm 1W 10% Ins. Res. (2 used)	.24
R54	63-1449	470 Ohm 20% 1W	
R28	63-1571	6800 Ohm 2W 10% Ins. Res.	.33
R68	63-1578	150 Ohm 2W 20% Ins. Res.	.33
R85	63-1620	1800 Ohm 10% 2W	
R59	63-1674	Vertical Linearity Control	1.20

Diag. No.	Part No.	Description	Suggested List Price	Diag. No.	Part No.	Description	Suggested List Price
R65	63-1675	25K Horiz. Dr. Control		R19	63-2050	Bias Control	
R31	63-1744	100 Ohm 1/2W 20% Ins. Res.	.21	R77	63-2099	20K Focus Control	
R67	63-1751	150 Ohm 1/2W 20% Ins. Res.	.21	R30	63-2077	400 Ohm W.W. 5W 10% Ins. Res.	.43
R91	63-1754	180 Ohm 1/2W 10% Ins. Res.	.21	R76AB	63-2103	200 Ohm 10% 3W	
R90	63-1758	220 Ohm 1/2W 20% Ins. Res.	.21	R76BB		200 Ohm 10% 3W	
R29	63-1761	270 Ohm 1/2W 10% Ins. Res.	.21	R55	63-2110	Vertical Size Control	1.20
R24	63-1764	330 Ohm 1/2W 10% Ins. Res.	.21	R84	63-2114	2.2 Ohm 1/2W 10% Ins. Res.	
R36	63-1768	390 Ohm 1/2V 10% Ins. Res.	.21	R40	63-2123	Contrast Control	
R21	63-1771	470 Ohm 1/2W 10% Ins. Res.	.21	R32	63-2125	Vol. Control & Switch	1.81
R60	63-1775	560 Ohm 1/2W 10% Ins. Res. (used on 95-1241 - 2 used)	.21	R43	63-2126	Intensity Control	1.20
R94	63-1778	680 Ohm 10% 1/2		R52	63-2127	Vertical Hold Control	1.20
R33	63-1782	820 Ohm 1/2 W 10% Ins. Res.	.21	R69	63-2128	15K Ohm W.W. 7W 10% Ins. Res.	
R35	63-1806	3300 Ohm 1/2W 10% Ins. Res.	.21	R70	63-2129	1.2 Ohm W.W. 1/2W 10% Ins. Res.	
R80	63-1807	3300 Ohm 1/2W 20% Ins. Res.	.21	R81	63-2134	150 Ohm 5W 20% Ins. Res.	
R61	63-1813	4700 Ohm 1/2V 10% Ins. Res. (2 used)	.21	R83	63-2135	15K Ohm 10W 10% Ins. Res.	
R62	63-1826	10K Ohm 1/2W 5% Ins. Res.		R75	63-2137	100K Ohm 1W 10% Ins. Res.	
R34	63-1838	18K Ohm 1/2W 10% Ins. Res.	.21	R53	63-2140	500K Vertical Hold Control	
R37	63-1841	22K Ohm 1/2W 10% Ins. Res. (2 used)	.21	R73	63-2145	10K Ohm 2W 20% Ins. Res.	
R92	63-1844	27K Ohm 1/2W 5% Ins. Res.		R71	63-2150	4700 Ohm W.W. 4W 10%	
R39	63-1845	27K Ohm 1/2W 10% Ins. Res.	.21	R50	63-2153	AGC Delay Control	
R89	63-1848	33K Ohm 1/2W 10% Ins. Res.	.21	R51	63-2151	150K Ohm 2W 20% Ins. Res.	
R5	63-1855	47K Ohm 1/2W 10% Ins. Res. (3 used)	.21	R58	63-2159	Vert. Hold Range Cont.	
R47	63-1862	68K Ohm 1/2W 10% Ins. Res.	.21	73-114		8-32x5/16" Slab Hd. Set.	
R56	63-1863	68K Ohm 1/2W 20% Ins. Res.	.21	76-605		Horiz. Hold Control Shatt.	
R46	63-1869	100K Ohm 1/2W 10% Ins. Res. (4 used)	.21	78-580		Nine Contact Socket	.22
R25	63-1870	100K Ohm 1/2W 20% Ins. Res. (2 used)	.21	78-640		Elect. Cond. Socket	.05
R74	63-1876	150K Ohm 1/2W 10% Ins. Res.	.21	78-709		Octal Tube Socket	.20
R42	63-1883	220K Ohm 1/2W 10% Ins. Res. (2 used)	.21	78-755		Octal Tube Socket (5 used)	.18
R49	63-1884	220K Ohm 1/2W 20% Ins. Res. (2 used)	.21	78-807		Miniature Tube Socket	.15
R22	63-1890	330K Ohm 1/2W 10% Ins. Res. (3 used)	.21	78-834		Octal Tube Socket	.25
R44	63-1894	390K Ohm 1/2W 10%		78-840		Two Contact Socket	.30
R48	63-1898	470K Ohm 1/2W 20% Ins. Res. (2 used)	.21	78-875		C.R. Tube Socket	.40
R84	63-1901	560K Ohm 1/2W 10% Ins. Res.	.21	78-876		Noval Miniature Tube Socket	.25
R95	63-1904	680K Ohm 1/2W 10%		78-900		Pilot Light Socket & Wire	
R45	63-1911	1 Megohm 1/2W 10% Ins. Res. (4 used)	.21	78-908		Miniature Tube Socket	
R18	63-1912	1 Megohm 1/2W 20% Ins. Res. (2 used)	.21	80-744		PM Focus Mtg. Spring (4 used)	.02
R72	63-1919	1.5 Megohm 1/2W 20% Ins. Res.	.21	80-802		Retaining Spring (1 ea. used on 149-100 - 149-101)	.06
R17	63-1926	2.2 Megohm 1/2W 20% Ins. Res. (2 used)	.21	80-822		Dial Cord Tension Spring	.10
R57	63-1975	12K Ohm 1W 10% Ins. Res.	.24	80-823		Shaft Guide Spring (used on S-17114)	
R20	63-1982	100K Ohm 2W 10% Ins. Res.		80-824		Tube Plate Connector Spring (2 used)	
R82	63-1983	47 Ohm 2W 20% Ins. Res.		80-838		C.R. Tube Retaining Sprg.	
R78	63-2017	4000 Ohm 5W 10%		83-1837		Anode Lead Support Strip	
R27	63-2022	10K Ohm W. W. 5W 10%		S1	85-488	Picture Control Switch	
R26	63-2023	Ins. Res. 3500 Ohm W. W. 10W 10% Ins. Res.	.80	A1	87-1	Integrator Unit	.26
					93-2	Brass Washer (used on 22-2154)	
					93-525	Fibre Washer (2 used on 78-709)	.65C
					93-961	Insulating Washer (Contrast control)	.03
					93-971	Shell Support Washer (horizontal Sweep)	.02

Diag. No.	Part No.	Description	Suggested List Price
	93-1057	Insulating Washer (Contrast Control)	
L59	95-1170	Filter Choke	2.00
T6	95-1238	Audio Output Trans.	
T10	95-1239	Vertical Output Trans.	
T12	95-1241	Deflection Coil	
T8	95-1242	Power Trans.	
PL1	100-67	Pilot Light	.11
	112-88	Thumb Screw #8-32	.06
	112-758	#4-40x1/4 RHST (used on 85-488)	.02
	114-45	#8x3/8" Hex.Hd. S.T. Screw (2 used on S-17076)	1.10C
	114-201	#8x5/16" Hex. Hd. S.T. Screw (22 used)	.75C
	114-310	#8x5/16" Hex Washer Hd. S.T. (4 used)	.04
	114-336	#10x5/16" Hex.Hd. S.T. (4 used on 95-1242)	
	125-26	Rubber Grommet (2 used on 78-709)	.03
	126-643	Fire Shield	
	136-21	Fuse 1/4 Amp.	
	149-89	Iron Core (2 used on S-16855 & S-17116)	.10
	149-98	Iron Core & Screw (used on S-17132)	.40
	149-100	Iron Core & Spring (used on S-17113)	.20
	149-101	Iron Core & Spring (used on S-17113)	.35
	149-102	Iron Core & Screw (Used on S-17114)	
	188-131	Retaining Ring (used on S-17097)	.07
	188-137	Retaining Ring (used on S-17362)	.08
	196-145	Plastic Gasket	
	196-152	C.R. Tube Support Gasket	
	199-124	Focus Coil Sleeve	.02
	S-16020	PM Focus & Centering Assy.	5.50
	S-17461	Beam Bender unit all 16" including rectangular tubes.	
	S-16207	Deflection Yoke Mtg. Brkt. Assy.	.85
	S-16209	Wire and Eyelet Assy.	
L60	S-16855	Sound Trap Coil Assy.	.85
L64	S-17052	2nd Video Series Peaking Coil Assy.	
L62	S-17053	2nd Video Shunt Peaking Coil Assy.	
	S-17064	Video IF Strip Assy. (Complete)	
	S-17076	Gasket Reinforcing Brkt Assy.	
	S-17081	C.R. Tube Socket & Wire Assy.	
	S-17084	Shaft-Gear & Coupling Assy.	

Diag. No.	Part No.	Description	Suggested List Price
	S-17096	Dial Cord & Eyelet Assy. (Fine Tuning)	
	S17097	Brkt. Pulley & Gear Assy.	
	S-17100	RF Shelf & Turret Assy.	
L75	S-17112	Horiz. Size Control Coil Assy.	
	S-17113	Horiz. Linearity & Size Control & Brkt. Assy. (Includes L75, L77)	
L74	S-17114	Horiz. Osc. Coil Assy.	
L63	S-17116	4.5 Mc Video Trap Coil Assy.	
	S-17121	Rectifier Mtg. Plate Assy.	
	S-17127	Plug & Brkt Assy.	
T14	S-17130	Horiz. Sweep Trans. Assy. (or S-17265)	
L65	S-17132	Picture Control Coil Assy.	
L77	S-17176	Horiz. Linearity Control Coil Assy.	
	S-17362	Indicator Drum & Shaft Assy.	
	S-17377	Contrast Control Shaft & Bushing Assy.	
	S-17409	Insulator Strip & Terminal Assy.	
	S-17425	Fine Tuning Ext. Shaft & Coupling Bushing.	
	S-17428	Anode Lead & Wire Assy.	
	S-17164	Beam Bender unit all 12" and 19" tubes.	

TUBES

1 - 1X2	1 - 6BQ6GT
1 - 5U4G	2 - 6SN7GT
1 - 5Y3GT	1 - 6W4GT
1 - 6AL5	1 - 12AU7
1 - 6BF5	1 - 6BL7GT
1 - 6BN6	1 - 12UP4B

TURRET TUNER ASSEMBLY

	6-65	Ball Bearing	
C2	22-1879	Slug Tuned Trimmer Cond. (4 used)	.45
C6	22-1892	7 Mmfd. Ceramic 500V	.26
C1	22-1894	8 Mmfd Ceramic 500V	.35
C3	22-1951	4.5 Mmfd Ceramic 500V	.35
	22-2139	2.0 Mmfd Ceramic 500V	.35
C5	22-2205	21 Mmfd Ceramic 500V	.35
C7	22-2206	24 Mmfd Ceramic 500V	.35
	46-779	Adjusting Wrench Knob and Set Screw	.20
	56-263	Groove Pin 1/8" dia. x 1/4" lg.	.02
	57-1428	Bearing Plate	.10
	57-1676	Bearing Plate	
	68-12	Adjusting Wrench	.15
	73-114	8-32x5/16 Slab Hd. Set Screw (2 used on S15024)	.01
	80-697	Adjusting Wrench Return Spring	.02
	94-734	Bearing Retaining Bushing	

Diag. No.	Part No.	Description	Suggested List Price	Diag. No.	Part No.	Description	Suggested List Price
TURRET TUNER ASSEMBLY (CONT'D)							
	114-201	#8x5/16" Hex.Hd S.T. Screw (4 used on S15022)	.75C		69-11	6-32x 3/4" RHMS Steel (1 used on ea. 22-2093)	.70C
	184-14	Steel Ball 1/8" Dia. (9 used)	.01		78-885	Miniature Tube Socket (molded)	.20
	S-15022	Turret Cover Assy.	1.75		78-886	Miniature Tube Socket	.20
	S-15024	Gear & Bushing Assy.	.60		78-888	Miniature Tube Socket	.30
ST2	S-16862	Channel Strip Assy. #2	3.25		80-736	Shaft Tension Spring	.08
ST3	S-16863	Channel Strip Assy. #3	3.25		83-1570	Antenna Terminal Strip	.15
ST4	S-16864	Channel Strip Assy. #4	3.25		93-1053	Bakelite Washer	.02
ST5	S-16865	Channel Strip Assy. #5	3.25		112-768	Spark Plate Mtg. Screw	.02
ST6	S-16866	Channel Strip Assy. #6	3.25		126-622	Tube Shield	.15
ST7	S-16867	Channel Strip Assy. #7	3.25		126-638	RF Shelf Shield	.25
ST8	S-16868	Channel Strip Assy. #8	3.25		149-74	Iron Core (used on S-17173)	.10
ST9	S-16869	Channel Strip Assy. #9	3.25		149-75	Iron Core & Screw (used on S-16265)	.20
ST10	S-16870	Channel Strip Assy. #10	3.25		149-92	Iron Core (used on S-17104)	.15
ST11	S-16871	Channel Strip Assy. #11	3.25		149-97	Iron Core & Screw (used on S-16501)	.10
ST12	S-16872	Channel Strip Assy. #12	3.25	L52	S-16265	Oscillator Coil Assy.	.40
ST13	S-16873	Channel Strip Assy. #13	3.25	L53	S-16501	Trap Coil Assy.	.45
	S-17092	Turret Housing Assy.			S-16651	Tuning Shaft & Cam Assy.	.80
	S-17098	Turret Tuner Assy. (Mechanical)			S-17099	RF Shelf Assy. (Complete)	.60
	S-17445	Bearing and Brkt. Assy.		L51	S-17104	Converter Plate Coil Assy.	.60
	S-17446	Turret Detent Spring Assy.		L82	S-17173	Antenna Coil Assy.	.40
					S-17191	Shielded Cable Assy.	
					S-17194	Tuning Shaft & Pulley Assy.	

RF SHELF ASSEMBLY

	19-166	Coil Mtg. Clip (1 ea. used on S-16265 & S-16501)	.06
	19-179	Coil Mtg. Clip (used on S-17104)	.06
C19	22-1876	47 Mmfd Ceramic 500V	.35
C16	22-1891	2.5 Mmfd Ceramic 500V	.35
C10	22-2050	5 Mmfd Ceramic 500V	.30
C20	22-2051	6 Mmfd Ceramic 500V	.35
C8-9-13	22-2093	Trimmer Cond. (3 used)	.20
C21	22-2155	26 Mmfd 500V	.30
C18	22-2204	20 Mmfd Ceramic 500V	.35
C17	22-2207	4.5 Mmfd Ceramic 500V	.30
C22	22-2216	500 Mmfd Ceramic 500V	.35
C11	22-2219	470 Mmfd Ceramic (4 used) 500V	.30
C15	22-2220	Trimmer Cond.	.30
C14	27-69	Silver Mica Disc.	.10
C12	27-82	Silver Mica Disc.	.10
	54-293	Locknut (1 used on ea. 22-2093)	.03
	57-1689	Insulating Plate (Spark Plate) (2 used)	
R7	63-1702	10 Ohm 1/2W 10% Ins.Res.	.21
	63-1785	1000 Ohm 1/2W 10% Ins.Res.	.21
R2	63-1827	10K Ohm 1/2W 10% Ins.Res.	.21
R8	63-1835	15K Ohm 1/2W 20% Ins.Res.	.21
	63-1855	47K Ohm 1/2W 10% Ins.Res.	.21
	63-1869	100K Ohm 1/2W 10% Ins.Res.	.21
R4	63-1933	3.3 Megohm 1/2W 20% Ins. Res.	.21
R3	63-1967	1500 Ohm 1W 10% Ins.Res.	.24

TUBES

2 - 6CB6 1 - 6C4

S-17064 VIDEO LF. ASSEMBLY

(Also refer to S-17635 Parts List, Page 33)

	19-209	Coil Mtg. Clips (5 used)	
C29	22-3	.01 Mfd. Ceramic (Disc) (4 used) 500V	.26
C27	22-4	.004 Mfd. Ceramic (Disc) (2 used) (or 22-1706) 500V	.26
C30	22-1761	50 Mmfd Ceramic 500V	.20
C72	22-1777	0.1 Mfd. 200V	.26
C28	22-1874	7 Mmfd. Ceramic 500V	.26
C31	22-2106	10 Mmfd Ceramic 500V	.30
C26	22-2143	470 Mmfd Ceramic (4 used) 500V	.26
C22	22-2216	500 Mmfd Ceramic (4 used) 500V	.35
C25	22-2217	470 Mmfd Ceramic 500V	.25
C32	22-2218	.001 Mfd Ceramic 500V	.35
	54-271	#6-32x1/4" Hex. Pal- nut Inverted Type (2 used on ea. IF)	.01
	63-1571	6800 Ohm 2W 10% Ins.Res.	.33
R12	63-1743	100 Ohm 1/2W 10% Ins.Res. (3 used)	.21
R91	63-1754	180 Ohm 1/2W 10% Ins.Res.	.21
R21	63-1771	470 Ohm 1/2W 10% Ins.Res.	.21
R13	63-1772	470 Ohm 1/2W 20% Ins.Res. (6 used)	.21
R33	63-1782	820 Ohm 1/2W 10% Ins.Res.	.21
R6	63-1785	1000 Ohm 1/2W 10% Ins.Res.	.21

Diag. No.	Part No.	Description	Suggested List Price
VIDEO IF STRIP ASSEMBLY (CONT'D)			
R23	63-1799	2200 Ohm 1/2W 10% Ins.Res.	.21
R35	63-1806	3300 Ohm 1/2W 10% Ins.Res.	.21
R61	63-1813	4700 Ohm 1/2W 10% Ins.Res.	.21
R11	63-1834	15K Ohm 1/2W 10% Ins.Res. (4 used)	.21
R5	63-1855	47K Ohm 1/2W 10% Ins.Res.	.21
R16	63-1859	56K Ohm 1/2W 10% Ins.Res.	.21
R47	63-1862	68K Ohm 1/2W 10% Ins.Res.	.21
R49	63-1884	220K Ohm 1/2W 20% Ins.Res.	.21
R22	63-1890	330K Ohm 1/2W 10% Ins.Res.	.21
R18	63-1912	1 Megohm 1/2W 20% Ins.Res.	.21
	78-905	Miniature Tube Socket (5 used)	
	78-906	Miniature Tube Socket (9 Contact)	
	94-538	Tuning Slug Insert (1 ea. used on S-16013 & S-16738)	.07
	94-706	Tuning Slug Insert (1 ea. used on S-16275 - S-16604 S-16605)	.10
	94-742	Tuning Slug Insert (1 ea. used on S-16274 - S-17472)	
	103-1	Crystal Diode (1N64)	.70
	125-69	Rubber Grommet (2 used)	.07
	149-71	Iron Core (used on S-16984)	.10
	149-89	Iron Core (used on S-16738 & S-16013)	.10
	149-96	Iron Core (used on S-16275 - S-16604-05 - S-16274 - S-17062)	.10
L55	S-15128	Grid Coil Assy.	.25
L56	S-16011	Shunt Peaking Coil Assy.	.35
L58	S-16013	Quadrature Coil Assy.	.45
T1	S-16274	1st Video IF Trans. Assy.	.75
T2	S-16275	2nd Video IF Trans. Assy.	.75
T3	S-16604	3rd Video IF Trans. Assy.	.75
T4	S-16605	4th Video IF Trans. Assy.	.75
L57	S-16738	Intercarrier Sound IF Coil Assy.	.75
L84	S-16984	Filament Choke Coil Assy.	.30
	S-17064	Video IF Strip Assy. (Comp)	
L54	S-17504	Detector Peaking Coil Assy.	
T5	S-17472	5th Video IF Trans. Assy.	
	S-17505	Inverter Plate Peaking Coil Assy.	

TUBES

4 - 6AU6
1 - 6BN6
1 - 12AT7

Diag. No.	Part No.	Description	Suggested List Price
MODELS: H2449E & EQ - H2437E & EQ - H2437R & RQ - H2438R & RQ - H2439R & RQ			
CHASSIS 24H20			
MAIN CHASSIS			
	12-1736	Pilot Light Brkt.	
	15-98	Socket Cap (used on S-17140)	
	19-166	Coil Mtg. Clip (used on S-17114)	
	19-175	Coil Mtg. Clip (4 used)	
	19-206	Coil Mtg. Clip (used on S-17400)	
	19-207	C.R. Tube Mtg. Clip	
C29	22-3	.01 Mfd. Ceramic (Disc) (2 used)	500V
C27	22-4	.004 Mfd. Ceramic (Disc) (2 used)	500V
	(or 22-1706)		500V
C52	22-365	100 Mmfd. Mica (molded)	500V
C61	22-470	150 Mmfd. Mica (molded)	500V
	22-1137	150 Mmfd Mica	500V
C57	22-1138	470 Mmfd Mica (molded)	500V
	22-1645	330 Mmfd Mica	500V
C72	22-1777	.1 Mfd. (2 used)	200V
C35	22-1782	.0047 Mfd. (molded)	600V
C73	22-1810	.1 Mfd.	200V
C64	22-1814	.0022 Mfd.	600V
C82	22-1832	500 Mmfd (molded) (Special)	20,000V
C51	22-1841	.1 Mfd. (molded)	600V
C44	22-1843	.01 Mfd. (molded)	600V
C39	22-1844	.047 Mfd. (molded) (5 used)	600V
C58	22-1845	.0022 Mfd.	600V
C62	22-1846	.01 Mfd. (molded)	400V
C60	22-1849	.0047 Mfd. (molded)	600V
C65	22-1851	.001 Mfd. (molded)	1000V
C19	22-1876	47 Mmfd Ceramic	500V
C63	22-2034	680 Mmfd (molded)	500V
C67	22-2061	.1 Mfd. (molded)	400V
C54	22-2071	.022 Mfd. (molded)	200V
C55	22-2078	.047 Mfd	600V
C71	22-2112	.001 Mfd Ceramic	500V
C36AD	22-2122	Elect. 15 Mfd. 475V	
BD-CD		15 Mfd 475V 40 Mfd	
DD		50V 80 Mfd 300V	
C49	22-2128	.001 Mfd (molded)	600V
C24AA	22-2154	Elect. 10 Mfd	250V
C79	22-2159	.33 Mfd. (molded)	200V
C53	22-2162	130 Mmfd Mica	500V
C59	22-2163	1000 Mmfd Mica	500V
C74	22-2168	33 Mmfd Ceramic	500V
C22	22-2216	500 Mmfd Ceramic	500V
C37AD		Elect. 20 Mfd. 475V 40 Mfd	
BD-CD- DD	22-2223	300V 80 Mfd. 25V 100 Mfd. 50V	

Diag. No.	Part No.	Description	Suggested List Price	Diag. No.	Part No.	Description	Suggested List Price
C78AA	22-2225	Elect. 20 Mfd 300V		R44	63-1894	390K Ohm 1/2W 10% Ins.Res.	
C75AB	22-2232	Elect. 20 Mfd 300V		R48	63-1898	470K Ohm 1/2W 20% Ins.Res. (2 used)	
C75BB		15 Mfd. 475V		R64	63-1901	560K Ohm 1/2W 10% Ins.Res.	
C40	22-2233	20 Mmfd Ceramic (2 used)	500V	R103	63-1906	750K ohm 1/2W 5% Ins. Res.	
C41	22-2234	100 Mmfd Ceramic	500V	R45	63-1911	1 Megohm 1/2W 10% Ins.Res.	
C81	22-2244	.47 Mfd	200V	R18	63-1912	1 Megohm 1/2W 20% Ins.Res.	
C43	22-2248	.0033 Mfd	600V	R72	63-1919	1.5 Megohm 1/2W 20% Ins.Res.	
C69	22-2261	.15 Mfd	400V	R17	63-1926	2.2 Megohm 1/2W 20% Ins.Res.	
	24-554	Fire Shield Rear Cover		R4	63-1933	3.3 Megohm 1/2W 20% Ins.Res.	
	52-591	Insulated Shielded Lead		R20	63-1982	100K Ohm 2W 10% Ins.Res. (2 used)	
	52-592	Insulated Shielded Lead		R82	63-1983	47 Ohm 2W 20% Ins.Res.	
	54-139	3/8-32x9/16" Hex Pal- nut (8 used to mt. controls)		R78	63-2017	4000 Ohm W.W. 5W 10% Ins. Res. (2 used)	
	57-1675	Shaft Retaining Plate (used on 76-604)		R19	63-2050	Bias Control	
	58-191	Nine Prong Adapter Plug		R77	63-2099	Focus Control	
R63	63-957	33K Ohm 1W 10% Ins.Res.		R76AB	63-2103	400 Ohm W.W. (Center Tapped)	
R79	63-1065	15K Ohm 1W 10% Ins.Res.		R76BB			
	63-1201	1800 Ohm W.W. 3W 10% Ins.Res.		R55	63-2110	Vertical Size Control	
R54	63-1449	470 Ohm W.W. 1W 20% Ins. Res.		R98	63-1581	4.7 ohm 1/2W 10% Ins.	
	63-1565	4700 Ohm 1W 20% Ins.Res. (2 used)		R40	63-2123	Contrast Control	
R59	63-1674	Vertical Linearity Control		R32	63-2125	Vol. Control & Switch	
R50	63-1675	Horiz. Drive Control		R43	63-2126	Intensity Control	
R12	63-1743	100 Ohm 1/2W 10% Ins.Res. (3 used)			63-2130	150K Ohm 1W 10% Ins.Res.	
R31	63-1744	100 Ohm 1/2W 20% Ins.Res.		R81	63-2134	150K Ohm 5W 20% Ins.Res.	
R67	63-1751	150 Ohm 1/2W 20% Ins.Res. (2 used)		R83	63-2135	15K Ohm 10W Candelohm	
R36	63-1768	390 Ohm 1/2W 10% Ins.Res.		R75	63-2137	100K Ohm 1W 10% Ins.Res.	
R21	63-1771	470 Ohm 1/2W 10% Ins.Res. (2 used)		R53	63-2140	Vertical Hold Control	
					63-2153	AGC Control	
R60	63-1775	560 Ohm 1/2W 10% Ins.Res. (used on 95-1246)(2 used)			73-112	#8-32x1/2" Slab Hd. Set Screw (2 used on S-17093) #8-32x5/16" Slab Hd. Set, Screw (2 used S-17083 and 4 used S-16529)	
R33	63-1782	820 Ohm 1/2W 10% Ins.Res.			73-114		
R6	63-1785	1000 Ohm 1/2W 10% Ins.Res.			76-604	Fine Tuning Extension Shaft	
R35	63-1806	3300 Ohm 1/2W 10% Ins. Res.			76-605	Horiz. Hold Control Shaft	
R80	63-1807	3300 Ohm 1/2W 20% Ins.Res.			78-250	Elect. Cond. Socket	
R61	63-1813	4700 Ohm 1/2W 10% Ins.Res. (3 used)			78-580	Nine Contact Socket	
R62	63-1826	10K 1/2W 5% Ins.Res.			78-706	Octal Socket	
R11	63-1834	15K Ohm 1/2W 10% Ins.Res.			78-709	Octal Tube Socket	
R34	63-1838	18K Ohm 1/2W 10% Ins.Res.			78-755	Octal Tube Socket (5 used)	
R37	63-1841	22K Ohm 1/2W 10% Ins.Res.			78-807	Miniature Tube Socket(2 used)	
R39	63-1845	27K Ohm 1/2W 10% Ins.Res.			78-834	Octal Tube Socket	
R89	63-1848	33K Ohm 1/2W 10% Ins.Res.			78-840	AC Socket	
R5	63-1855	47K Ohm 1/2W 10% Ins.Res. (2 used)			78-875	CR Tube Socket	
R47	63-1862	68K Ohm 1/2W 10% Ins.Res.			78-876	Noval Miniature Tube Socket	
R56	63-1863	68K Ohm 1/2W 20% Ins. Res.			78-883	Nine Contact Socket	
R46	63-1869	100K Ohm 1/2W 10% Ins. Res. (3 used)			78-900	Pilot Light Socket & Wire	
R25	63-1870	100K Ohm 1/2W 20% Ins.Res. (3 used)			80-744	Focus Mtg. Spring (4 used)	
R42	63-1883	220K Ohm 1/2W 10% Ins.Res. (3 used)			80-802	Retaining Spring (1 ea. used on 149-100 & 149-101)	
R49	63-1884	220K Ohm 1/2W 20% Ins.Res. (2 used)			80-822	Dial Cord Tension Spring	
R22	63-1890	330K Ohm 1/2W 10% Ins.Res.			80-823	Shaft Guide Spring	
					80-824	Tube Plate Connector Spring (2 used)	
					80-825	C.R. Tube Retaining Spring	
					83-1802	Fuse Mtg. Strip	
					85-488	Picture Control Switch	
					87-1	Integrator Unit	

Diag. No.	Part No.	Description	Suggested List Price	Diag. No.	Part No.	Description	Suggested List Price
93-2		Brass Washer (used on 22-2154)		S-17127		Plug & Bracket Assy.	
93-525		Fibre Washer (2 used on 78-709)		S-17138		Gasket Reinforcing Brkt. Assy.	
93-961		Insulating Washer (used on Contrast Control)		S-17140		Horizontal Sweep Transformer Assy.	
93-971		Shell Support Washer (used on Horiz. Sweep)		S-17174		Deflection Yoke Mtg. Brkt Assy.	
93-1057		Insulating Washer (used on Contrast Control)		S-17175		Horizontal Size Control Assy.	
95-1240		Vertical Output Trans.		S-17176		Horiz. Linearity Control Coil Assy.	
95-1246		Deflection Coil				Horiz. Size Control & Horiz. Linearity Control & Brkt. Assy.	
100-67		Pilot Light		S-17177			
112-88		Thumb Screw #8-32 (Deflection Coil)		S-17178		Fire Shield Assy.	
112-758		#4-40x1/4" RHST (used on 85-488)		S-17179		Horiz. Sweep Trans. Mtg. Plate Assy.	
114-45		#8x3/8" Hex Hd. S.T. Screw (2 used on S-17138)		S-17185		C.R. Tube & Socket Assy.	
114-268		#6x1/4" Hex. Hd. S.T. (2 used on 24-554)		S-17187		Insulator Strip & Terminal Assy.	
				S-17230		Mechanical Centering & Focus Assy.	
114-310		#8x5/16" Hex. Washer Hd.S.T.		S-17362		Indicator Drum & Shaft Assy.	
114-310		#8x5/16" Hex Washer Hd. S.T. (4 used on Turret and 2 used Deft. Coil)		S-17377		Contrast Control shaft & Bushing Assy.	
125-26		Rubber Grommet (2 used on 78-709)		S-17400		Picture Control Coil Assy.	
136-22		Fuse 1/4 Amp.		S-17425		Fine Tuning Shaft & Bushing Assy.	
149-89		Iron Core (1 ea. used on S-16855 & S-17116)		S-17429		Anode Lead & Eyelet Assy.	
149-98		Iron Core & Screw (used on S-17400)		S-17461		Beam Bender Unit	
149-100		Iron Core & Spring (used on S-17177)		TUBES			
149-101		Iron Core & Spring (used on S-17177)		1 - 16GP4B		3 - 6SN7GT	
				1 - 1B3GT		1 - 6SN7GTA	
				1 - 6AL5		1 - 6W4GT	
				1 - 6BN6		1 - 12AU7	
				2 - 6BQ6GT			
149-102		Iron Core & Screw (used on S-17114)		S-17189 POWER SUPPLY			
188-131		Retaining Ring (used on S-17097)		22-2127		.001 Mfd. (Molded) 600V Elect. 20 Mfd. 200V - 20 Mfd	
188-137		Retaining Ring (used on S-17362)		22-2224		450V 40 Mfd. 450V 20 Mfd 25V	
196-146		Plastic Gasket		54-42		10-32x5/16x3/32 Hex. Nut Steel N.P. (4 used 95-1245)	.01
196-152		C.R. Tube Support Gasket		58-172		Nine Prong Plug	.30
199-124		Focus Coil Sleeve		63-1764		330 Ohm 1/2W 10% Ins. Res.	.21
S-16855		Sound Trap Coil		63-1814		4700 Ohm 1/2W 20% Ins. Res.	.21
S-17052		2nd Video Series Peaking Coil Assy.		63-1997		6800 Ohm W.W. 2W 10% Ins. Res.	.33
S-17053		2nd Video Shunt Peaking Coil Assy.		63-2022		10K Ohm W.W. 5W 10% Ins. Res.	.50
S-17064		Video IF Strip Assy.(Complete)		63-2136		Candohm	.03
S-17083		Gear Bushing & Set Screw Assy.		78-274		Elect. Cond. Socket	.18
S-17084		Shaft Gear & Coupling Assy.		78-755		Octal Tube Socket (2 used)	.15
S-17096		Dial Cord & Eyelet Assy.		78-810		Miniature Tube Socket	.15
S-17097		Brkt., Pulley & Gear Assy.					
S-17100		RF Shelf & Turret Assy. (Complete)					
S-17114		Horiz. Osc. Coil Assy.					
S-17116		4.5 Mc Video Trap Coil Assy.					

Diag. No.	Part No.	Description	Suggested List Price
	S-17267	Hand Control & Cable Assy. (Complete)	
	S-17268	Remote Control & Hand Control & Cable Assy. (Comp.)	
	S-17211	Planetary Gear & Yoke Assy.	
	S-17312	Housing & Bearing Bushing Assy.	
	S-17317	Drive Gear Assy.	
	S-17324	Cable, Socket & Brkt Assy.	
	S-17378	Output Gear & Set Screw Assy.	
	S-17392	Magnet & Brkt. Assy.	

ALL MODELS WITH SUFFIX LETTER "Q" ARE EQUIPPED WITH THE S-17268 REMOTE CONTROL ASSEMBLY AND UTILIZE THE FOLLOWING ADDITIONAL PARTS:

72-3	#5x5/8" Flat Hd W.S. Steel N.P. (2 used)	
94-295	Mounting Bushing (4 used)	
114-358	#6x1/2" Hex. Hd. Sl. S.T. (4 used)	
202-849	Instruction Book (Remote Control)	
S-17266	Remote Control Assy.	
S-17267	Hand Control & Cable Assy.	

CABINET PARTS H2226E

11-106	Line Cord & Plug 9' lg.	.80
12-1797	Clamping Guide Brkt. (Esc. Mtg.)	
14-1264E	Cabinet for H2226E Table Model	
16-649	Packing Carton	
24-446	AC Line Cord Plug Cover	.15
24-555	Control Cover (use S-17497)	
46-833	Volume Control Knob	.30
46-885	Contrast Control Knob	
46-887	Horiz. Hold Knob	
46-889	Channel Selector Knob	
46-893	Brightness Control Knob	
46-895	Fine Tuning Knob	
46-896	Vertical Hold Knob	

SPI	49-679	Speaker 5-1/4" PM ZC 5093 Cone	8.00 1.73
	56-286	Cover Hinge Pin	
	57-1481	Esc. Clamping Plate (3 used)	.02
	57-1670	Glass Retaining Plate (2 used)	
	57-1672	Nameplate (use S-17497)	
	57-1673	Escutcheon	
	57-1678	Escutcheon (Vol. Control)	
	57-1679	Escutcheon (Channel Selector)	

Diag. No.	Part No.	Description	Suggested List Price
	70-3	#5x1/2" RHWS Steel N.P. (2 used to mt. S-17306)	.85C
	70-86	#6x5/8" Washer Hd Wood Screw St.Br. (5 used to mt. S-17333)	.60C
	72-81	#8x3/4" Phill. Flt. Hd. Wood Screw St. Br. (4 used to mt. S-17307)	.02
	74-58	Ventilating Screen	1.30
	78-787	Two Contact Socket (used with 11-106)	.10
	80-826	Grounding Spring	
	80-828	Door Return Spring	
	112-758	4-40x1/4" RHST Cad (8 used on Esc. mt.)	.02
	114-80	1/4-20x1-3/8" Hex Washer Hd. M.S. (4 used chassis mtg.)	.05
	114-341	#6x3/8" Hex. Hd S.T. (used on 80-826)	.02
	114-353	#6x1/4" Hex. Hd S.T. Cad. (4 used on Esc. Mtg.)	
	192-136	Protective Glass	
	196-148	Glass Gasket	
	196-160	Rubber Gasket	
	202-829	Instruction Book	
	S-17306	Antenna Terminal & Wire Assy.	
	S-17307	Cabinet Antenna Assy. (Complete)	
	S-17333	Cabinet Back Assy. (Complete)	
	S-17497	Cover and Nameplate Assy.	

CABINET PARTS H2226R & RQ

Model H2226R is the same as H2226E except for the following:

OMIT:

14-1264E	Cabinet for H2226E Table Model
46-833	Vol. Control Knob
46-889	Channel Selector Knob

ADD:

14-1264R	Cabinet for H2226R Table Model
46-888	Channel Selector Knob
46-890	Vol. Control Knob.

CABINET PARTS H2227E & EQ

11-106	Line Cord & Plug 9' lg.	.80
12-1797	Clamping Guide Brkt.	
14-1266E	Cabinet for H2227E Table Model	
16-651	Packing Carton	
24-446	AC Line Cord Plug Cover	.15

Diag. No.	Part No.	Description	Suggested List Price
	24-555	Control Cover (use S-17497)	
	46-833	Vol. Control Knob	.30
	46-885	Contrast Control Knob	
	46-887	Horiz. Hold Knob	
	46-889	Channel Selector Knob	
	46-893	Brightness Control Knob	
	46-895	Fine Tuning Knob	
	46-896	Vertical Hold Knob	
	49-679	5-1/4" PM Speaker	6.00
		ZC5093 Cone	1.73
	56-286	Cover Hinge Pin	
	57-1481	Esc. Clamping Plate (3 used)	.02
	57-1670	Glass Retaining Plate	
	57-1672	Nameplate (use S-17497)	
	57-1673	Escutcheon	
	57-1678	Esc. (Vol. Control)	
	57-1679	Esc. (Channel Selector)	
	70-3	#5x1/2" RHWS Steel N.P. (2 used to mt. S-17306)	.85C
	70-86	#6x5/8" Washer Hd. Wood Screw St.Br. (5 used to mt. S-17347)	.60C
		#8x3/4" Phill. Flt. Hd. Wood Screw St. Br. (4 used to mt. S-17307)	.02
	74-58	Ventilating Screen	1.30
	78-787	Two Contact Socket	.10
	80-826	Grounding Spring	
	80-828	Door Return Spring	
	112-758	4-40x1/4" RHST Cad. (8 used on Esc. mtg)	.02
		1/4-20x1-3/8" Hex. Washer	
	114-80	Hd. M. S. (4 used chassis Mtg.)	.05
	114-341	#6x3/8" Hex. Hd. S.T. Cad. (used on 80-826)	.02
	114-353	#6x1/4" Hex.Hd. S.T. Cad. (used 4 on Esc. Mtg.)	
	192-136	Protective Glass	
	196-148	Glass Gasket	
	196-160	Rubber Gasket	
	202-829	Instruction Book	
	S-17306	Antenna Terminal & Wire Assy.	
	S-17307	Cabinet Antenna Assy.	
	S-17347	Cabinet Back Assy. (Complete)	
	S-17497	Cover & Nameplate Assy.	

CABINET PARTS H2227R & RQ

Model H2227R is the same as H2227E except for the following:

OMIT:

14-1266E	Cabinet for H2227E Table Model
46-833	Volume Control Knob
46-889	Channel Selector Knob

Diag. No.	Part No.	Description	Suggested List Price
		ADD:	
	14-1266R	Cabinet for H2227R Table Model	
	46-888	Channel Selector Knob	
	46-890	Vol. Control Knob	
		CABINET PARTS H2250R & RQ	
	11-106	Line Cord & Plug 9' lg.	.80
	12-1797	Clamping Guide Brkt. (2 used)	
	14-1260R	Cabinet for H2250R	
	16-640	Packing Carton	
	24-446	AC Line Cord Plug Cover	.15
	24-555	Control Cover (use S-17497)	
	46-885	Contrast Control Knob	
	46-887	Horizontal Hold Knob	
	46-888	Channel Selector Knob	
	46-890	Volume Control Knob	
	46-893	Brightness Control Knob	
	46-895	Fine Tuning Knob	
	46-896	Vertical Hold Knob	
	49-649	10" PM Speaker	11.75
		ZC10161 Cone	3.41
	56-286	Cover Hinge Pin	
	57-1481	Esc. Clamping Plate (3 used)	.02
	57-1670	Glass Retaining Plate	
	57-1672	Nameplate (use S-17497)	
	57-1673	Escutcheon	
	57-1678	Escutcheon (Vol. Control)	
	57-1679	Escutcheon (Channel Selector)	
	70-3	#5x1/2" RHWS Steel N.P. (2 used to mt. S-17306)	.85C
		#6x5/8" Washer Hd. Wood Screw St.Br. (5 used on Esc. Mtg.)	.60C
		#8x3/4" Phill. Flt. Hd. Wood Screw St. Br. (5 used on Esc. mtg.)	.02
	72-81	Wood Screw St. Br. (5 used on Esc. mtg.)	.02
	74-58	Ventilating Screen	1.30
	78-787	Two Contact Socket	.10
	80-826	Grounding Spring	
	80-828	Door Return Spring	
	112-758	4-40x1/4" RHST Cad. (8 used Esc. mtg.)	.02
	114-80	1/4-20x1-3/8" Hex. Washer Hd. M.S. (4 used chassis mtg)	.05
	114-341	#6x3/8" Hex. Hd. S.T. (used on 80-826)	.02
	114-353	#6x1/4" Hex. Hd. S.T. (4 used on Esc. Mtg.)	
	165-9	Metal Glide (4 used)	.03
	192-136	Protective Glass	
	196-148	Glass Gasket	
	196-160	Rubber Gasket	
	202-829	Instruction Book	
	S-17198	Cabinet Back Assy. (Comp.)	

Diag. No.	Part No.	Description	Suggested List Price
S-17305		Antenna Terminal & Wire Assy.	
S-17444		Cabinet Antenna Assy. (Complete)	
S-17497		Cover & Nameplate Assy.	

CABINET PARTS H2255E & EQ

Model H2255E is the same as H2250R except for the following:

OMIT:

14-1260R	Cabinet for H2250R Console Model	
18-640	Packing Carton	
46-888	Channel Selector Knob	
46-890	Vol. Control Knob	
165-9	Metal Glide (4 used)	

ADD:

14-1256E	Cabinet for H2255E Console Model	
18-635	Packing Carton	
46-833	Vol. Control Knob	.30
46-889	Channel Selector Knob	
165-13	Metal Glide (4 used)	.02

CABINET PARTS H2437E

11-106	Line Cord & Plug - 9' lg.	
14-1258E	Cabinet for H2437E Console Model.	
16-637	Packing Carton	
24-446	AC Line Cord Plug Cover	
40-89	Cabinet Door Hinge (2 used)	
46-833	Volume Control Knob	
46-885	Contrast Control Knob	
46-887	Horizontal Hold Knob	
46-889	Channel Selector Knob	
46-893	Brightness Control Knob	
46-895	Fine Tuning Knob	
49-649	10" PM Speaker ZC10161 Cone	
56-286	Cover Hinge Pin	
57-1270	Strike Plate	
57-1481	Esc. Clamping Plate (3 used)	
57-1670	Glass Retaining Plate (4 used)	
57-1671	Escutcheon	
57-1678	Esc. (Vol. Control)	
57-1679	Esc. (Channel Selector)	
70-3	#5x1/2" RHWS Steel (2 used to mt. S-17305)	
70-86	#6x5/8" Washer Hd. Wood Screw Stat. Br. (4 used to mt. S-17192)	
74-58	Ventilating Screen	

Diag. No.	Part No.	Description	Suggested List Price
78-787		Two Contact Socket	
80-826		Grounding Spring	
80-828		Door Return Spring	
112-813		4-40x5/16" RHST (8 used on Esc. mtg.)	
114-80		1/4-20x1-3/8" Hex. Washer Hd. M.S. (4 used to mt. chassis & 2 used to mt. power supply.)	
114-201		#8x5/16" Hex. Hd. Sl. S.T. (used on power supply)	
114-313		#8x1/2" Hex. Hd. S.T. (3 used on Esc. Mtg.)	
114-341		#6x3/8" Hex. Hd. S.T. (used on 80-826)	
156-33		Bullet Catch	
165-13		Metal Glide (4 used)	
166-57		Tack Bumper (2 used)	
192-137		Protective Glass	
196-149		Glass Gasket	
202-829		Instruction Book	
S-17189		Power Supply (Complete)	
S-17192		Cabinet Back Assy.	
S-17305		Antenna Terminal & Wire Assy.	
S-17444		Cabinet Antenna Assy. (Complete)	
S-17497		Cover & Nameplate Assy.	

CABINET PARTS H2437R

Model H2437R is the same as H2437E except for the following:

OMIT:

14-1258E	Cabinet for H2437E Console Model	
40-89	Cabinet Door Hinge (2 used)	
46-833	Volume Control Knob	
46-889	Channel Selector Knob	
57-1270	Strike Plate	
156-33	Bullet Catch	
166-57	Tack Bumper	

ADD:

14-1258R	Cabinet for H2437R Console Model	
40-90	Cabinet Door Hinge (2 used)	
46-888	Channel Selector Knob	
46-890	Volume Control Knob	
57-1284	Strike Plate	
156-35	Bullet Catch	
166-55	Tack Bumper	

CABINET PARTS H2438R

11-106	Line Cord & Plug - 9' lg.	
14-1259R	Cabinet for H2438R Console Model	
16-638	Packing Carton	

Diag. No.	Part No.	Description	Suggested List Price	Diag. No.	Part No.	Description	Suggested List Price
24-446		AC Line Cord Plug Cover		24-446		AC Line Cord Plug Cover	
46-885		Contrast Control Knob		46-885		Contrast Control Knob	
46-887		Horizontal Hold Knob		46-887		Horizontal Hold Knob	
46-888		Channel Selector Knob		46-888		Channel Selector Knob	
46-890		Volume Control Knob		46-890		Volume Control Knob	
46-893		Brightness Control Knob		46-893		Brightness Control Knob	
46-895		Fine Tuning Knob		46-895		Fine Tuning Knob	
46-896		Vertical Hold Knob		46-896		Vertical Hold Knob	
49-649		10" PM Speaker		49-687		12" PM Speaker	
		ZC10161 Cone				ZC12161 Cone	
56-286		Cover Hinge Pin		56-286		Cover Hinge Pin	
57-1481		Esc. Clamping Plate (3 used)		57-1284		Strike Plate (2 used)	
57-1670		Glass Retaining Plate (4 used)		57-1481		Esc. Clamping Plate (3 used)	
57-1671		Escutcheon		57-1670		Glass Retaining Plate (4 used)	
57-1678		Escutcheon (Vol. Control)		57-1671		Escutcheon	
57-1679		Escutcheon (Channel Selector)		57-1678		Esc. (Volume Control)	
70-3		#5x1/2" RHWS Steel N.P. (2 used S-17305)		57-1679		Esc. (Channel Selector)	
		#6x5/8" Washer Hd. Wood		70-3		#5x1/2" RHWS Steel N.P. (2 used on S-17305)	
70-86		Screw Stat. Br. (4 used on S-17192)				#6x5/8" Washer Hd. Wood	
		#8x3/4 Phillips Flt. Hd.		70-86		Screw St. Br. (4 used on S-17192)	
72-81		Wood Screw Stat. Br. (4 used on S-17444)		72-81		#8x3/4 Phil. Flt Hd Wood Screw (St.Br.) (4 used on S-17444)	
78-787		Two Contact Socket					
80-826		Grounding Spring		74-58		Ventilating Screen	
80-828		Door Return Spring		78-787		Two Contact Socket	
112-813		4-40x5/16" RHST Cad. (8 used on Esc. Mtg.)		80-826		Grounding Spring	
114-80		1/4-20x1-3/8" Hex Washer Hd. M.S. (4 used chassis mtg. (3 used pwr supply mtg.)		80-828		Door Return Spring	
114-201		#8x5/16" Hex. Hd. Sl. S.T. (used on Power Supply)				4-40x5/16" RHST Cad (8 used on Esc. Mtg)	
114-313		#8x1/2" Hex.Hd. S.T. (3 used on Esc. Mtg.)		112-813		1/4-20x1-3/8" Hex. Washer Hd. M.S. (4 used chassis mtg. & 3 used pwr supply mtg.)	
114-341		#6x3/8" Hex. Hd. S.T. (used on 80-826)		114-80			
165-13		Metal Glide (4 used)					
192-137		Protective Glass		114-201		#8x5/16" Hex. Hd. Sl. S.T. (used on Pwr. Supply)	
196-149		Glass Gasket		114-313		#8x1/2" Hex.Hd. S.T. Cad. (3 used on esc. mtg.)	
202-829		Instruction Book		114-341		#6x3/8" Hex. Hd. S.T. Cad. (used on 80-826)	
S-17189		Power Supply (Complete)		156-35		Bullet Catch (2 used)	
S-17192		Cabinet Back Assy. (Com- plete)		165-13		Metal Glide (4 used)	
S-17305		Antenna Terminal & Wire Assy.		166-55		Tack Bumper (2 used)	
S-17444		Cabinet Antenna Assy.		192-137		Protective Glass	
S-17497		Cover & Nameplate Assy.		196-149		Glass Gasket	
				202-829		Instruction Book	
				S-17189		Power Supply Assy. (Complete)	
				S-17192		Cabinet Back Assy. (Complete)	
				S-17305		Antenna Terminal & Wire Assy.	
				S-17444		Cabinet Antenna Assy. (complete)	
				S-17497		Cover & Nameplate Assy.	

CABINET PARTS H2439R

11-106	Line Cord & Plug - 9' Ig.
14-1257R	Cabinet for H2439R console model
16-634	Packing Carton

Diag. No.	Part No.	Description	Suggested List Price	Diag. No.	Part No.	Description	Suggested List Price
CABINET PARTS H2449E				72-81		Wood Screw St. Br. (4 used on S-17444)	
11-106		Line Cord & Plug - 9' lg.		74-58		Ventilating Screen	
14-1255E		Cabinet for H2449E Console Cabinet.		78-787		Two Contact Socket	
16-633		Packing Carton		80-826		Grounding Spring	
24-446		AC Line Cord Plug Cover		80-828		Door Return Spring	
46-833		Volume Control Knob		112-813		4-40x5/16" RHST Cad. (8 used on Esc. Mtg.)	
46-885		Contrast Control Knob				1/4-20x1-3/8" Hex. Washer	
46-887		Horizontal Hold Knob		114-80		Hd. M.S. (4 used on chassis mtg. & 3 used pwr. supply)	
46-889		Channel Selector Knob		114-201		#8x5/16" Hex Hd Sl. S.T. (used on pwr supply)	
46-893		Brightness Control Knob		114-341		#6x3/8" Hex Hd. S.T. Cad. (used on 80-826)	
46-895		Fine Tuning Knob		125-79		Rubber Grommet (4 used on 138-39)	
46-896		Vertical Hold Knob		138-39		Cabinet Grille	
49-887		12" PM Speaker		165-13		Metal Glide (4 used)	
		ZC12161 Cone		192-137		Protective Glass	
56-286		Cover Hinge Pin		196-149		Glass Gasket	
57-1481		Esc. Clamp. Plate (3 used)		202-829		Instruction Book	
57-1670		Glass Retaining Plate (4 used)		S-17189		Power Supply Assy. (complete)	
57-1671		Escutcheon		S-17192		Cabinet Back Assy. (complete)	
57-1678		Esc. (Vol. Control)		S-17305		Antenna Terminal & Wire Assy-	
57-1679		Esc. (Channel Selector)		S-17444		Cabinet Antenna Assy. (complete)	
70-3		#5x1/2" RHWS Steel N.P. (2 used on S-17305)		S-17497		Cover & Nameplate Assy.	
		#6x5/8" Washer Hd. Wood					
70-86		Screw St. Br. (4 used on S-17192)					
70-160		#8x1" Phill. RHWS (4 used on 138-39)					
		#8x3/4" Phill. Flt. Hd.					

SPECIAL TEST EQUIPMENT FOR TV

68-7	Alignment Wrench	.30
68-13	Alignment Tool	.75
68-14	Tuning Wand	1.00
68-17	Adjustment Wrench for Master Oscillator and Sound Trap Adjustments	
	Trap Adjustments on RF Shelf	
68-18	18" Insulated Screwdriver for Hum and AGC adjustments	
68-19	Nylon Alignment Wrench	
95-1234	250 Watt Isolation Transformer	
S-15369	Generator Test Unit	5.50
S-15371	Coupling Ring	.55
S-15521	AC Test Cord for TV Chassis	1.50
S-15627	Balance Transformer (Ant)	5.50
S-15729	Balance Transformer (Receiver)	5.50
S-17203	Step Attenuator	

Prices shown are suggested list prices and are subject to change without notice.

PARTS LIST SUPPLEMENT

S-17635 VIDEO I.F. ASSEMBLY

(Also refer to Parts List for S-17064 I.F. Assembly)

The S-17635 Video I.F. Assembly is interchangeable with the S-17064 units used in early production "H" series receivers. The new I.F. can be identified by the oblong shaped can which houses the 5th IF transformer.

Diag. No.	Part No.	Description	Suggested List Price
	19-209	Coil Mtg. Clip	.06
C29	22-3	.01 Mfd. Ceramic (Disc) (4 used)	500V .26
C27	22-4	.004 Mfd. Ceramic (Disc) (or 22-1706)(2 used)	500V .26
C57	22-1136	470 Mfd. Mica (molded)	500V .20
C30	22-1761	50 Mmfd. Ceramic	500V .20
C72	22-1777	0.1 Mfd.	200V .26
C28	22-1874	7 Mmfd. Ceramic	500V .26
C31	22-2106	10 Mmfd. Ceramic	500V .30
C26	22-2143	470 Mmfd. Ceramic (4 used)	500V .26
C22	22-2216	500 Mmfd. Ceramic (4 used)	500V .35
C32	22-2218	.001 Mfd. Ceramic	500V .35
	54-271	#6-32x1/4' Hex Nut Inverted Type (2 used on each I.F.)	.01
	56-292	Coil Insert Ret. Pin	.01
R99	63-1101	8200 ohm 2W 10% Ins.	.36
R9	63-1736	68 ohm 1/2W 10% Ins.	.21
R12	63-1743	100 ohm 1/2W 10% Ins.	.21
R1	63-1750	150 ohm 1/2W 10% Ins.	.21
R91	63-1754	180 ohm 1/2W 10% Ins.	.21
R21	63-1771	470 ohm 1/2W 10% Ins.	.21
R13	63-1772	470 ohm 1/2W 20% (6 used)	Ins. .21
R33	63-1782	820 ohm 1/2W 10% Ins.	.21
R6	63-1785	1000 ohm 1/2W 10% Ins.	.21
R23	63-1799	2200 ohm 1/2W 10% Ins.	.21
R61	63-1813	4700 ohm 1/2W 10% Ins.	.21
R51	63-1820	6800 ohm 1/2W 10% Ins.	.21
R89	63-1848	33K ohm 1/2W 10% Ins.	.21
R10	63-1849	33K ohm 1/2W 20% Ins.	.21
R47	63-1862	68K ohm 1/2W 10% Ins.	.21
R49	63-1884	220K ohm 1/2W 20% Ins.	.21
R22	63-1890	330K ohm 1/2W 10% Ins.	.21
R18	63-1912	1 Megohm 1/2W 20% Ins.	.21
R93	63-1979	68K ohm 1W 10% Ins.	.24
	78-876	Miniature Tube Socket (Nine Contact)	.25
	78-905	Miniature Tube Socket (5 used)	.25

Diag. No.	Part No.	Description	Suggested List Price
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S-17635 Video I.F. Strip Assembly (cont'd.)

	94-538	Tuning Slug Insert (1 ea. used on S-16013 & S-16738)	.07
	94-706	Tuning Slug Insert (1 ea. used on S-16275 - S-16604 & S-16605)	.10
	94-742	Tuning Slug Insert (used on S-16274)	.09
	94-750	Tuning Slug Insert (used on S-17613)	.10
A2	103-1	Crystal Diode (1N64)	.70
	125-69	Rubber Grommet (2 used)	.07
	126-661	Tube Shield	.10
	149-71	Iron Core (used on S-16984)	.10
	149-89	Iron Core (1 ea. used on S-16738 & S-16013)	.10
	149-96	Iron Core (1 ea. used on S-16274-75 - S-16604-05 & S-17614)	.10
L55	S-15128	B+ Choke Coil Assembly	.25
L56	S-16011	Shunt Peaking Coil Assy.	.35
L58	S-16013	Quadrature Coil Assy.	.45
T1	S-16274	1st. Video I.F. Trans. Assy.	.75
T2	S-16275	2nd. Video I.F. Trans. Assy.	.75
T3	S-16604	3rd. Video I.F. Trans. Assy.	.75
T4	S-16605	4th. Video I.F. Trans. Assy.	.75
L57	S-16738	Intercarrier Sound I.F. Coil Assembly	.75
L84	S-16984	Filament Choke Coil Assy.	.30
L85	S-17505	Inverter Plate Peaking Coil Assembly	.50
T5	S-17614	5th Video I.F. Trans. Assy.	
	S-17635	Video I.F. Strip Assy. (Complete)	42.00

MODEL H3469E & EQ - H3475R & RQ - H3267R & RQ
(24H20 & 10H20) (24H20 & 10H20) (24H20 & 8H20)

MODEL H3469E CABINET PARTS

Diag. No.	Part No.	Description	Suggested List Price
	2-199	Cabinet Back (Phono Section)	1.05
	11-106	Line Cord & Plug - 9 ft. lg.	.80
	12-1797	Clamping Guide Brkt. (2 used on Esc. Mtg.)	.04
	14-1263E	Cabinet for H3469E Console Combination Model	
	16-644	Packing Carton - Inner Pack	
	16-645	Packing Carton - Outer Pack	
	19-9	Cable Clip	.03
	19-169	Record Changer Mtg. Clip (2 used)	.07

Diag. No.	Part No.	Description	Suggested List Price
MODEL H3469E CABINET PARTS (cont'd.)			
19-210		Loop Connector Clip (2 used)	.03
24-535		Line Cord Plug Cover	.10
46-833		Volume Control Knob	.30
46-876		Tuning Control Knob	.15
46-885		Contrast Control Knob	.15
46-887		Horizontal Hold Knob	.10
46-889		Channel Selector Knob	.35
46-893		Brightness Control Knob	.15
46-895		Fine Tuning Knob	.15
46-896		Vertical Hold Knob	.10
46-899		Band Switch Knob	.15
49-694		12" P.M. Speaker	17.50
		ZC12161 Cone & Voice Coil	4.60
56-286		Cover Hinge Pin	.05
57-1284		Strike Plate (2 used)	.05
57-1481		Escutcheon Clamping Plate (7 used)	.02
57-1666		Radio Dial Esc.	4.50
57-1670		Glass Retaining Plate (2 used)	.02
57-1671		Television Esc.	10.00
57-1678		Esc. (Vol. Control)	1.00
57-1679		Esc. (Channel Selector)	1.00
70-86		#6 x 5/8 Washer Hd. Wood Screw - St. Br. (11 used to mt. backs)	.60C
72-81		#8 x 3/4" Phillips Flt. Hd. Wood Screw St. Br. (4 used to mt. S-16890)	.02
74-58		Ventilating Screen	1.30
74-71		Ventilating Screen	.40
78-787		Two Contact Socket	.10
80-604		Hinge Spring (2 used)	.15
80-826		Grounding Spring	.08
80-828		Door Return Spring	.07
80-830		Record Changer Mtg. Spring	.03
93-168		Rubber Shoulder Washer (4 used)	.07
112-808		#6 x 5/16 Phill. Rd. Hd. S.T. (4 used Mtg. Radio Esc.)	.02
112-809		Record Changer Mtg. Screw (3 used)	.08
112-813		4-40 x 5/16 R.H.S.T. (8 used to mt. TV esc.)	.02
114-201		#8 x 5/16 Hex Hd. S. T. (used on pwr. supply) Chassis & 3 used mtg. pwr. supply)	.75C
114-341		#6 x 3/8 Hex Hd. S.T. (used on 80-826)	.02
114-350		#8 x 7/16" Hex Hd. Sl. S. T. (4 used on Radio esc. mtg.)	.02
126-650		Heat Shield	.55
156-35		Bullet Catch (2 used)	.05
159-50		Plug Button (2 used)	.01
165-9		Metal Glide (2 used)	.03

Diag. No.	Part No.	Description	Suggested List Price
MODEL H3469E CABINET PARTS (cont'd.)			
	165-14	Metal Glide (2 used)	.03
	166-57	Tack Bumper (2 used)	.03
	188-54	Knob Clamping Ring (46-876)	.02
	192-137	Protective Glass (TV)	6.25
	192-138	Dial Glass (Radio)	.50
	196-149	Glass Gasket (TV)	.45
	202-829	TV Instruction Book	.20
	202-851	Radio-Phono Instruction Book	.15
	S-14029	Variable Speed Record Changer	
	S-15528	Low Impedance Loop Assy.	.35
	S-15536	Record Changer Compt. Hinge Brkt. & Link Assy. (2 used)	.50
	S-15780	Cobra Tone Arm Cartridge	3.50
	S-15419	Record Adapter Plug & Envelope Assembly	.60
	S-16890	Cabinet Antenna Assy. (Complete)	1.75
	S-17005	Record Changer Mtg. Frame Assembly	3.00
	S-17167	Vol. Control Knob Assy.	.25
	S-17189	Power Supply Assy. (Complete)	8.00
	S-17255	Radiorgan Cable Assy.	2.60
	S-17264	Cabinet Back Assy. (Complete) (TV)	10.00
	S-17328	Loop Loading Coil Assy.	.65
	S-17497	Cover & Nameplate Assy.	2.50
	S-17556	Antenna Terminal & Wire Assembly	.25

RADIORGAN ESCUTCHEON PARTS

76-444		Radiorgan Knob Shaft	.04
114-297		#6 x 1/4 Hex Hd. Sl. S.T. (2 ea. used on S-17252 & S-17253)	.01
S-14255		Radiorgan Mtg. Brkt. Assy. (2 used)	.15
S-17246		Radiorgan Knob & Eyelet Assy. (Treble)	.20
S-17247		Radiorgan Knob & Eyelet Assy. (Voice)	.20
S-17248		Radiorgan Knob & Eyelet Assy. (Alto)	.20
S-17249		Radiorgan Knob & Eyelet Assy. (Bass)	.20
S-17250		Radiorgan Knob & Eyelet Assy. (Lo-Bass)	.20
S-17251		Radiorgan Knob & Eyelet Assy. (Normal)	.20
S-17252		Radiorgan Esc. & Knob Assy. (R.H.)	1.55
S-17253		Radiorgan Esc. & Knob Assy. (L.H.)	1.55

Diag. No.	Part No.	Description	Suggested List Price	Diag. No.	Part No.	Description	Suggested List Price
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MODEL H3475R CABINET PARTS

Model H3475R is the same as Model H3469E except the following:

OMIT:

2-199	Cabinet Back (Phono Section)	
14-1263E	Cabinet for H3469E Console Combination Model	
16-644	Packing Carton - Inner Pack	
16-645	Packing Carton - Outer Pack	
46-833	Vol. Control Knob	
46-889	Channel Selector Knob	
126-650	Heat Shield	
166-57	Tack Bumper (2 used)	

ADD:

2-197	Cabinet Back (Phono Section)	1.05
14-1261R	Cabinet for H3475R Console Combination	
16-642	Packing Carton - Inner Pack	
16-643	Packing Carton - Outer Pack	
46-888	Channel Selector Knob	.35
46-890	Vol. Control Knob	.30
126-649	Heat Shield	.55
166-55	Tack Bumper	.03

MODELS H3267 & H3267R CABINET PARTS

2-209	Cabinet Back (Phono Section)	1.25
11-106	Line Cord & Plug - 9 ft. lg. (TV Back)	.80
11-109	Line Cord & Plug - 3 ft. lg. (Radio Back)	.45
12-1797	Clamping Guide Brkt. (2 used on TV Esc. Mtg.)	.04
14-1271	Cabinet for H3267 Console Combination	
14-1271R	Cabinet for H3267R Console Combination	
16-654	Packing Carton - Inner Pack	
16-655	Packing Carton - Outer Pack	
19-169	Record Changer Mtg. Clip (2 used)	.07
24-535	Line Cord Plug Cover	.10
46-873	Tone Control Knob	.10
46-876	Tuning Control Knob	.15
46-885	Contrast Control Knob	.15
46-887	Horizontal Hold Knob	.10
46-888	Channel Selector Knob	.35
46-890	Vol. Control Knob	.30
46-893	Brightness Control Knob	.15
46-895	Fine Tuning Knob	.15
46-896	Vertical Hold Knob	.10
46-899	Band Switch Knob	.15
49-694	12" P.M. Speaker	17.50

	ZC12161 Cone & Voice Coil	4.60
56-286	Cover Hinge Pin	.05
57-1284	Strike Plate (2 Used)	.05
57-1481	Esc. Clamping Plate	.02
57-1658	Radio Dial Esc.	4.00
57-1670	Glass Retaining Plate (TV)	.02
57-1871	Television Esc.	10.00
57-1678	Esc. (Vol. Control)	1.00
57-1679	Esc. (Channel Selector)	1.00
70-86	#6 x 5/8 Washer Hd. Wood Screw St. Br. (15 used to mt. backs)	.60C
72-81	#8 x 3/4" Phill. Flt. Hd. Wood Screw St. Br. (4 used to mt. S-16890)	.02
74-58	Ventilating Screen	1.30
74-75	Ventilating Screen	.30
78-787	Two Contact Socket (TV Back)	.10
78-847	Two Contact Socket (Radio Back)	.10
80-604	Hinge Spring (2 used)	.15
80-826	Grounding Spring	.03
80-828	Door Return Spring	.07
80-830	Record Changer Mtg. Spring (4 used)	.03
93-1059	Felt Washer (used on 46-873)	.01
97-293	Chassis Mtg. Insulating Stud (3 used)	.18
100-97	Pilot Light Bulb	.25
112-809	Record Changer Mtg. Screw (3 used)	.08
112-813	4-40 x 5/16" R.H.S.T. (8 used on TV Esc. Mtg.)	.02
114-80	1/4-20 x 1-3/8" Hex Hd. (4 used to mt. TV Chassis) (3 used to mt. Pwr. Supply)	.05
114-128	#10 x 1-1/16" Hex Washer Hd. S.T. (3 used to mt. radio chassis)	1.81C
114-201	#8 x 5/16 Hex Hd. S. T. (used on pwr. supply)	.75C
114-341	#6 x 3/8 Hex Hd. S. T. (used on 80-826)	.02
114-350	#8 x 7/16" Hex Hd. Sl. S. T. (4 used on Radio Esc. Mtg.)	.02
126-648	Heat Shield	.65
156-35	Bullet Catch (2 used)	.05
159-50	Plug Button (2 used)	.01
165-9	Metal Glide (2 used)	.03
165-14	Metal Glide (2 used)	.03
166-55	Tack Bumper (2 used)	.03
188-54	Knob Clamping Ring (46-876)	.02
192-137	Protective Glass (TV)	6.25
192-138	Dial Glass (Radio)	.50
196-149	Glass Gasket (TV)	.45
202-829	Television Instruction Book	.20

Diag. No.	Part No.	Description	Suggested List Price	Diag. No.	Part No.	Description	Suggested List Price
MODELS H2287 & H3287R				C51	22-1841	.1 Mfd. (Molded)	600V .45
CABINET PARTS (cont'd.)				C34	22-1842	.0047 Mfd.	200V .26
202-850		Radio-Phono Instruction Book	.20	C39	22-1844	.047 Mfd. (Molded) (5 used)	600V .35
S-14029		Variable Speed Record Changer		C58	22-1845	.0022 Mfd.	600V .26
S-15536		Record Changer Compt. Hinge Brkt. & Link Assy. (2 used)	.50	C62	22-1846	.01 Mfd. (Molded)	400V .20
S-15737		Socket Cap & Brkt.	.50	C65	22-1851	.001 Mfd. (Molded)	1000V .26
S-15780		Cobra Cartridge	3.50	C19	22-1876	47 Mmfd. Ceramic	500V .35
S-16419		Record Adapter Plug & Envelope Assembly	.60	C63	22-2034	680 Mmfd. (Molded)	500V .35
S-16890		Cabinet Antenna Assy.	1.75	C67	22-2061	.1 mfd. (Molded)	400V .35
S-17005		Record Changer Mtg. Frame Assembly	3.00	C54	22-2071	.032 Mfd. (Molded)	200V .26
S-17167		Vol. Control Knob	.25	C55	22-2078	.047 Mfd.	600V .40
S-17189		Power Supply Assembly (Complete)	48.00	C71	22-2112	.001 Mfd. Ceramic	500V .30
S-17218		Low Impedance Loop Assy.	.80	C36AD		15Mfd. Electro	475V
S-17264		Cabinet Back Assy. (TV)	10.00	C36BD	22-2122	80 Mfd. Electro	300V
S-17328		Loop Loading Coil Assy.	.65	C36CD		40 Mfd. Electro	50V
S-17399		Cabinet Back Assy. (Radio)	2.50	C36DD		15 Mfd. Electro	475V
S-17497		Cover & Nameplate Assy.	2.50	C49	22-2128	.001 Mfd. (Molded)	600V .26
S-17556		Antenna Terminal & Wire Assembly	.25	C24	22-2154	Elect. 10 Mfd.	250V 1.25
MODELS H2447R & RQ - H3477R & RQ H3478E & EQ - H2445R & RQ				C79	22-2159	.33 Mfd. (Molded)	200V .60
24H21 Main Chassis				C53	22-2162	130 Mmfd. Mica	500V .26
12-1756		Pilot Light Brkt.	.02	C59	22-2163	1000 Mmfd. Mica	500V .45
15-98		Socket Cap (used on S-17140)	.45	C74	22-2168	33 Mmfd. Ceramic	500V .20
19-166		Coil Mtg. Clip (used on S-17114)	.06	C37AD		40 Mfd. Electro	300V
19-175		Coil Mtg. Clip (4 used)	.06	C37BD		80 Mfd. Electro	25V
19-206		Coil Mtg. Clip (used on S-17400)	.06	C37CD	22-2223	100 Mfd. Electro	50V
19-207		C.R. Tube Mtg. Clip	.12	C37DD		20 Mfd. Electro	475V
C29	22-3	.01 Mfd. Ceramic (Disc) (2 used)	500V .26	C78	22-2225	20 Mfd.	300V 1.60
C27	22-4	.004 Mfd. Ceramic (Disc) (2 used)(or 22-1706)	500V .26	C75AB	22-2232	20 Mfd. Electro	300V
C52	22-365	100 Mmfd. Mica (Molded)	500V .20	C75BB		15 Mfd. Electro	475V
C61	22-470	150 Mmfd. Mica (Molded)	500V .20	C40	22-2233	20 Mmfd. Ceramic	500V .25
C85	22-1137	150 Mmfd. Mica	500V .20	C41	22-2234	100 Mmfd. Ceramic	500V .35
C57	22-1138	470 Mmfd. Mica (Molded) (2 used)	500V .20	C81	22-2244	.47 Mfd.	200V .60
C84	22-1845	330 Mmfd. Mica	500V .20	C69	22-2261	.15 Mfd.	400V .40
C72	22-1777	0.1 Mfd. (2 used)	200V .26	C42	22-2264	.015 Mfd.	600V .35
C35	22-1782	.0047 Mfd. (Molded)	600V .26	24-554		Fire Shield Rear Cover	.20
C73	22-1810	.1 Mfd.	200V .26	52-591		Insulated Shielded Lead	.35
C64	22-1814	.0022 Mfd.	600V .26	52-592		Insulated Shielded Lead	.35
C82	22-1832	500 Mmfd. (Molded) (Special)	20,000V 2.25	54-139		3/8-32x9/16 Hex Nut (8 used to mount controls)	.01
				57-1675		Shaft Retaining Plate (used on 76-604)	.02
				58-188		Two Prong A-C Plug	.06
				58-191		Nine Prong Adapter Plug	.25
				R38	63-943	4700 ohm 1W 10% (2 used)	Ins. .24
				R63	63-957	33K ohm 1W 10% Ins.	.24
				R79	63-1065	15K Ohm 1W 10% Ins.	.24
				R54	63-1449	470 ohm 1W 20% Ins. WW	.24
				R65	63-1675	Horizontal Drive Control	1.20
				R12	63-1743	100 ohm 1/2W 10% Ins.	.21
				R31	63-1744	100 ohm 1/2W 20% (3 used) Ins.	.21
				R67	63-1751	150 ohm 1/2W 20% (2 used) Ins.	.21
				R36	63-1788	390 ohm 1/2W 10% Ins.	.21

Diag. No.	Part No.	Description	Suggested List Price	Diag. No.	Part No.	Description	Suggested List Price
24H21 Main Chassis (cont'd.)				R41	63-2172	2K Vertical Linearity Control	
R21	63-1771	470 ohm 1/2W 10% Ins. (3 used)	.21	R53	63-2173	750K Vertical Hold Control	
R60	63-1775	560 ohm 1/2W 10% Ins. (2 used on 95-1246)	.21	R83	63-2425	15K ohm 7W Candohm (or 63-2135)	1.20
R94	63-1778	680 ohm 1/2W 10% Ins.	.21	73-114	8-32x5/16 Slab Hd. Set Screw (2 used S-17083 & 4 used S-16529)	.02	
R33	63-1782	620 ohm 1/2W 10% Ins.	.21	76-604	Fine Tuning Ext. Shaft	.30	
R6	63-1785	1000 ohm 1/2W 10% Ins. (2 used)	.21	76-605	Horiz. Hold Control Shaft	.20	
R35	63-1806	3300 ohm 1/2W 10% Ins.	.21	78-250	Elect. Cond. Socket	.07	
R80	63-1807	3300 ohm 1/2W 20% Ins.	.21	78-580	Nine Contact Socket	.22	
R61	63-1813	4700 ohm 1/2W 10% Ins. (2 used)	.21	78-706	Octal Socket	.20	
R62	63-1826	10K ohm 1/2W 5% Ins.	.21	78-709	Octal Tube Socket	.20	
R34	63-1838	18K ohm 1/2W 10% Ins.	.21	78-755	Octal Tube Socket (5 used)	.18	
R37	63-1841	22K ohm 1/2W 10% Ins.	.21	78-807	Miniature Tube Socket (2 used)	.15	
R39	63-1845	27K ohm 1/2W 10% Ins.	.21	78-834	Octal Tube Socket	.25	
R89	63-1848	33K ohm 1/2W 10% Ins.	.21	78-840	A.C. Socket	.30	
R5	63-1855	47K ohm 1/2W 10% Ins. (2 used)	.21	78-875	C.R. Tube Socket	.40	
R47	63-1862	68K ohm 1/2W 10% Ins.	.21	78-876	Noval Miniature Tube Socket	.25	
R56	63-1863	68K ohm 1/2W 20% Ins.	.21	78-883	Nine Contact Socket	.20	
R46	63-1869	100K ohm 1/2W 10% Ins. (4 used)	.21	78-900	Pilot Light Socket & Wire	.25	
R25	63-1870	100K ohm 1/2W 20% Ins. (3 used)	.21	80-744	Focus Mtg. Spring (4 used)	.02	
R74	63-1876	150K ohm 1/2W 10% Ins.	.21	80-802	Retaining Spring (1 ea. used on 149-100 & 149-101)	.06	
R42	63-1883	220K ohm 1/2W 10% Ins. (3 used)	.21	80-822	Dial Cord Tension Spring	.10	
R49	63-1884	220K ohm 1/2W 20% Ins. (2 used)	.21	80-823	Shaft Guide Spring	.10	
R22	63-1890	330K ohm 1/2W 10% Ins.	.21	80-824	Tube Plate Connector Spring (2 used)	.08	
R48	63-1898	470K ohm 1/2W 20% Ins. (2 used)	.21	80-825	C. R. Tube Retaining Spring	.20	
R95	63-1904	680K ohm 1/2W 10% Ins.	.21	80-843	Tension Spring	.10	
R103	63-1906	750K ohm 1/2W 5% Ins. Res.	.21	80-846	Fine Tuning Limiting Spring	.10	
R45	63-1911	1 Megohm 1/2W 10% Ins.	.21	83-1802	Fuse Mounting Strip	.20	
R18	63-1912	1 Megohm 1/2W 20% Ins.	.21	85-488	Picture Control Switch	.30	
R72	63-1919	1.5 Megohm 1/2W 20% Ins.	.21	93-2	Brass Washer (used on 22-2154)	.01	
R17	63-1926	2.2 Megohm 1/2W 20% Ins.	.21	93-525	Fibre Washer (2 used on 78-709)	.65C	
R4	63-1933	3.3 Megohm 1/2W 20% Ins.	.21	93-961	Insulating Washer (used on Contrast Control)	.03	
R20	63-1982	100K ohm 2W 10% Ins. (2 used)	.33	93-971	Shell Support Washer (used on Horiz. Sweep)	.02	
R62	63-1983	47 ohm 2W 20% (or 63-2161)	Ins. .33	93-1057	Insulating Washer (used on Contrast Control)	.03	
R78	63-2017	4000 ohm 5W 10% Ins. (2 used) WW	.43	95-1240	Vertical Output Trans.	6.00	
R19	63-2050	Bias Control	.50	95-1267	Deflection Coil	12.00	
R77	63-2099	Focus Control	2.00	100-67	Pilot Light	.11	
R76	63-2103	400 ohm WW Resistor (Center Tapped)	.40	103-1	Crystal Diode	1.60	
R55	63-2110	Vertical Size Control	1.20	112-88	Thumb Screw #8-32 (Deflection Coil)	.06	
R84	63-2076	3.3 ohm 1/2W 20% Ins.	.21	112-758	#4-40x1/4" R.H.S.T. (used on 85-488)	.02	
R40	63-2123	Contrast Control	1.20	114-45	#8x3/8 Hex. Hd. S. T. (2 used on S-17289)(or 114-313)	1.10C	
R32	63-2125	Volume Control & Switch	1.81	114-268	#6x1/4 Hex Hd. S. T. (2 used on 24-554)	1.10C	
R43	63-2126	Intensity Control	1.20	114-310	#8x5/16 Hex. Washer Hd. S. T. (4 used S-17100 & 2 used on Defl. Coil Mtg.)	.04	
R81	63-2134	150 ohm WW 5W 20% Ins.	.43				
R75	63-2137	100K ohm 1W 10% Ins.	.24				
R50	63-2153	A.G.C. Control	1.20				
R85	63-2171	1800 ohm 4W 10% Ins.					

Diag. No.	Part No.	Description	Suggested List Price
		24H21 Main Chassis (cont'd.)	
	125-26	Rubber Grommet (2 used on 78-709)	.03
	126-652	Pilot Light Shield	.05
	136-22	Fuse 1/4 amp	.25
	149-89	Iron Core (1 ea. used on S-16855 & S-17116)	.10
	149-98	Iron Core & Screw (used on S-17400)	.40
	149-100	Iron Core & Spring (used on S-17177)	.20
	149-101	Iron Core & Spring (used on S-17177)	.35
	149-102	Iron Core & Screw (use S-17114)	
	188-131	Retaining Ring (used on S-17097)	.07
	188-137	Retaining Ring (used on S-17362)	.08
	196-147	Plastic Gasket	6.00
	196-164	C.R. Tube Support Gasket	.40
	199-124	Focus Coil Sleeve	.02
	S-16855	Sound Trap Coil Assy.	.65
	S-17052	2nd. Video Series	.35
	S-17053	2nd Video Shunt Peaking Coil Assembly	.40
	S-17064	Video I.F. Strip Assembly	36.50
	S-17083	Gear, Bushing & Set Screw Assembly	.25
	S-17084	Shaft Gear & Coupling Assy.	2.00
	S-17096	Dial Cord & Eyelet Assy. (Fine Tuning)	.10
	S-17097	Brkt. Pulley & Gear Assy.	1.20
	S-17100	R.F. Shelf & Turret Assy. (Complete)	67.50
L74	S-17114	Horiz. Oscillator Coil Assy.	1.20
	S-17116	4.5 MC Video Trap Coil Assembly	.80
	S-17140	Horiz. Sweep Trans. Assy.	17.50
L76	S-17175	Horiz. Size Control Coil Assembly	1.00
L78	S-17176	Horiz. Linearity Control Coil Assembly	.55
	S-17177	Horiz. Size & Linearity Control Coil & Brkt. Assy.	2.30
	S-17178	Fire Shield Assembly	.80
	S-17179	Horiz. Sweep Trans. Mtg. Plate Assembly	.20
	S-17185	C. R. Tube Socket Assy.	.85
	S-17221	Defl. Yoke Mtg. Brkt. Assy.	1.00
	S-17286	Insulator Strip & Terminal Assy.	.15
	S-17289	Gasket Support Plate & Switch Brkt. Assy.	.10
	S-17290	Mechanical Centering & Focus Assembly	6.00
	S-17291	A.C. Plug & Brkt. Assy.	.25

Diag. No.	Part No.	Description	Suggested List Price
	S-17362	Indicator Drum & Shaft Assembly	.90
	S-17377	Contrast Control Shaft & Bushing Assembly	.60
L79	S-17400	Picture Control Coil Assy.	1.75
	S-17425	Fine Tuning Shaft & Bushing Assembly	.35
	S-17429	Anode Lead & Eyelet Assy.	.20
	S-17164	Beam Bender Unit	1.50

TUBES

1 - 19AP4B	3 - 6SN7GT
1 - 1B3GT	1 - 6SN7GTA
2 - 6BQ6GT	1 - 6W4GT
1 - 6AL5	1 - 12AU7
1 - 6BN6	

For parts on S-17100 R.F. Shelf & Turret Tuner refer to 22H20 Chassis.

Parts for the Video I.F. Assembly are listed under Part Numbers S-17064 or S-17635.

S-17290 MECHANICAL CENTERING & FOCUS ASSEMBLY

57-1548	Centering Plate	.20
57-1549	Focusing Coil Mtg. Plate	.25
57-1684	Magnet End Plate	.06
93-951	Spring Washer - Shakeproof Blued	.02
93-1006	.0359x.156 LD.x1/2" O.D. Steel	.01
93-1007	.0359x.156 LD.x1" O.D. Steel	.03
93-1009	Spring Washer - Shakeproof Blued	.02
114-48	#6-32x1/4" Hex. Hd. Sl. M.S. (2 used)	.43C
S-17290	Mechanical Centering & Focus Assy. (Complete)	6.00
S-17332	Focusing Coil Assembly	2.50

CABINET PARTS FOR H2447R & RQ

11-106	Line Cord & Plug 9 ft. lg.	.80
14-1262R	Cabinet For H2447R & RQ Console Model	
16-646	Packing Carton	
24-446	A.C. Line Cord Plug Cover	.15
46-885	Contrast Control Knob	.15
46-887	Horizontal Hold Knob	.10
46-888	Channel Selector Knob	.35
46-890	Volume Control Knob	.30
46-893	Brightness Control Knob	.15
46-895	Fine Tuning Knob	.15
46-896	Vertical Hold Knob	.10
49-649	10" PM Speaker	6.00
	ZC-10161 Cone	3.41

Diag. No.	Part No.	Description	Suggested List Price
CABINET PARTS FOR H2447R & RQ (cont'd.)			
	56-286	Cover Hinge Pin	.05
	57-1481	Esc. Clamping Plate (3 used)	.02
	57-1670	Glass Retaining Plate (4 used)	.02
	57-1674	Escutcheon	12.00
	57-1678	Esc. (Vol. Control)	1.00
	57-1679	Esc. (Channel Selector)	1.00
	70-3	#5x1/2 R.H.W.S. Steel N.P. (2 used on S-17305)	.85C
	70-86	#6x5/8" Washer Hd. Wood Screw-St. Br. (5 used to mt. S-17303)	.60C
	72-3	#5x5/8" Flt. Hd. W. S. Steel (2 used on RQ Model)	.02
	72-81	#8x3/4 Phill. Flt. Hd. Wood Screw - St. Br. (4 used to Mt. S-17293)	.02
	74-58	Ventilating Screen	1.30
	78-787	Two Contact Socket	.10
	80-826	Grounding Spring	.08
	80-828	Door Return Spring	.07
	94-295	Mounting Bushing (4 used on RQ Model)	.04
	118-813	4-40x5/16" R.H.S.T. Cad. (8 used on Esc. Mtg.)	.02
	114-80	1/4-20x1-3/8" Hex Washer Hd. M.S. (4 used Chassis Mtg.) (3 used Pwr. Supply)	.05
	114-201	#8x5/16" Hex Hd. Sl. S.T. (used on Pwr. Supply)	.75C
	114-313	#8x1/2" Hex Hd. S. T. Cad. (3 used on Esc. Mtg.)	.02
	114-341	#6x3/8 Hex Hd. S. T. Cad. (used on 80-826)	.02
	114-358	#6x1/2" Hex Hd. Sl. S. T. (4 used on RQ Models)	.02
	165-13	Metal Glide (4 used)	.02
	192-139	Protective Glass	12.00
	196-150	Glass Gasket	.50
	202-829	Instruction Book	.20
	202-849	Instruction Book (RQ Model)	.30
	S-17189	Power Supply Assy. (Comp.)	8.00
	S-17266	Remote Control Assembly	
	S-17267	Hand Control & Cable Assy.	
	S-17293	Cabinet Antenna Assy.	3.25
	S-17303	Cabinet Back Assembly	10.00
	S-17305	Antenna Terminal & Wire Assembly	.20
	S-17497	Cover & Nameplate Assy.	2.50

CABINET PARTS FOR H2445R & RQ

Model H2445R & RQ is the same as H2447R & RQ except the following:

OMIT:

14-1262R Cabinet for H2447R & RQ Console Model
16-646 Packing Carton

ADD:

14-1269H Cabinet for H2445R & RQ Console Model
16-650 Packing Carton
57-1284 Strike Plate (2 used) .05
74-76 Ventilating Screen .30
156-35 Bullet Catch .05
168-55 Tack Bumper (2 used) .03

CABINET PARTS FOR H3478E & EQ

2-207 Cabinet Back (Phono Sect.) 1.25
11-106 Line Cord & Plug 9 ft. lg. .80
14-1270E Cabinet for H3478E & EQ Console Combination Model
16-652 Packing Carton - Inner Pack
16-653 Packing Carton - Outer Pack
19-9 Cable Clip .03
19-169 Record Changer Mtg. Clip (2 used) .07
19-210 Loop Connector Clip (2 used) .03
24-535 Line Cord Plug Cover .10
46-833 Volume Control Knob .30
46-876 Tuning Control Knob .15
46-885 Contrast Control Knob .15
46-887 Horiz. Control Knob .10
46-889 Channel Selector Knob .35
46-893 Brightness Control Knob .15
46-895 Fine Tuning Knob .15
46-896 Vertical Hold Knob .10
46-899 Band Switch Knob .15
49-694 12" PM Speaker 17.50
ZC12161 Cone & Voice Coil 4.60
56-286 Cover Hinge Pin .05
57-1270 Strike Plate (2 used) .05
57-1481 Esc. Clamping Plate (7 used) .02
57-1666 Radio Dial Esc. 4.50
57-1670 Glass Retaining Plate (4 used) .02
57-1674 TV Escutcheon 12.00
57-1678 Esc. (Vol. Control) 1.00
57-1679 Esc. (Channel Selector) 1.00
70-3 #5x1/2" R.H.W.S. Steel N.P. (2 used S-17305 & 1 used 19-9) .85C
70-86 #6x5/8 Washer Hd. Wood Screw - St. Br. (11 used to mt. Backs) .60C
72-3 #5x5/8" Flt. Hd. W. Steel N.P. (2 used on EQ Models) .02

Diag. No.	Part No.	Description	Suggested List Price
CABINET PARTS FOR H3478E & EQ (cont'd.)			
72-81		#8x3/4" Phill. Flt. Hd. Wood Screw - Sl. Br. (4 used on S-17293)	.02
74-58		Ventilating Screen	1.30
74-71		Ventilating Screen	.40
78-787		Two Contact Socket	.10
80-804		Hinge Spring (2 used)	.15
80-826		Grounding Spring	.08
80-828		Door Return Spring	.07
80-830		Record Changer Mtg. Spring (4 used)	.03
93-168		Rubber Shoulder Washer (4 used)	.07
94-295		Mtg. Bushing (4 used on EQ Models)	.04
112-809		Record Changer Mtg. Screw (3 used)	.08
112-813		4-40x5/16" R.H.S.T. (8 used on TV Esc. Mtg.)	.02
114-80		1/4-20x1-3/8" Hex. Hd. M.S. (4 used Mtg. TV Chassis & 3 used Mtg. Pwr. Supply)	.05
114-201		#8x5/16 Hex. Hd. S. T. (used on Pwr. Supply)	.75C
114-341		#6x3/8 Hex Hd. S. T. (used on 80-826)	.02
114-350		#8x7/16" Hex. Hd. Sl. S. T. (used on Radio Esc. Mtg.)	.02
114-354		Radio Chassis Mtg. Screw (4 used)	.07
114-358		#6x1/2" Hex Hd. Sl. S. T. (4 used on EQ Models)	.02
126-653		Heat Shield	.80
156-33		Bullet Catch (2 used)	.05
159-50		Plug Button - Black Oxide (2 used)	.01
165-14		Metal Glide (2 used)	.03
166-57		Tack Bumper (2 used)	.03
188-54		Knob Clamping Ring (46-876)	.02
192-138		Dial Glass (Radio)	.50
192-139		Protective Glass (TV)	12.00
196-150		Glass Gasket (TV)	.50
202-829		Instruction Book (TV)	.20
202-849		Instruction Book (EQ Model)	.30
202-851		Instruction Book (Radio-Phono)	.15
S-14029		Variable Speed Record Changer	
S-15536		Record Changer Compt. Hinge Brkt. & Link Assy. (2 used)	.50
S-15780		Cobra Tone Arm Cartridge	3.50
S-16419		Record Adapter Plug & Envelope Assembly	.60
S-17005		Record Changer Mtg. Frame Assembly	3.00
S-17167		Volume Control Knob Assy.	.25

Diag. No.	Part No.	Description	Suggested List Price
S-17189		Power Supply Assy. (Complete)	48.00
S-17255		Radiorgan Cable Assy.	2.60
S-17266		Remote Control Assy. (used on EQ Models)	
S-17267		Hand Control & Cable Assy. (used on EQ Models)	
S-17293		Cabinet Antenna Assy.	3.25
S-17305		Antenna Terminal & Wire Assembly	.20
S-17325		Low Impedance Loop Assembly	.30
S-17328		Loop Loading Coil Assy.	.65
S-17351		Cabinet Back (TV)	10.50
S-17497		Cover & Nameplate Assy.	2.50

RADIORGAN ESCUTCHEON PARTS

76-444		Radiorgan Knob Shaft	.04
114-297		#6x1/4 Hex. Hd. Sl. S. T. (2 ea. used on S-17252 & S-17253)	.01
S-14255		Radiorgan Mtg. Brkt. Assy. (2 used)	.15
S-17246		Radiorgan Knob & Eyelet Assembly (Treble)	.20
S-17247		Radiorgan Knob & Eyelet Assembly (Voice)	.20
S-17248		Radiorgan Knob & Eyelet Assembly (Alto)	.20
S-17249		Radiorgan Knob & Eyelet Assembly (Bass)	.20
S-17250		Radiorgan Knob & Eyelet Assembly (Lo-Bass)	.20
S-17251		Radiorgan Knob & Eyelet Assembly (Normal)	.20
S-17252		Radiorgan Esc. & Knob Assembly (R.H.)	1.55
S-17253		Radiorgan Esc. & Knob Assembly (L.H.)	1.55

CABINET PARTS FOR H3477R & RQ

Model H3477R & RQ is the same as H3478E & EQ except the following:

OMIT:

2-207		Cabinet Back (Phono Section)
14-1270E		Cabinet for H3478E & EQ Console Combination Model
16-652		Packing Carton - Inner Pack
16-653		Packing Carton - Outer Pack
46-833		Volume Control Knob
46-889		Channel Selector Knob
57-1270		Strike Plate (2 used)
156-33		Bullet Catch (2 used)
166-57		Tack Bumper (2 used)
S-17351		Cabinet Back Assy. (TV)

Diag. No.	Part No.	Description	Suggested List Price	Diag. No.	Part No.	Description	Suggested List Price
CABINET PARTS H3477R & RQ (cont'd.)				C68	22-2098	.47 Mfd. (Molded)	200V .65
				C71	22-2112	.001 Ceramic	500V .30
				C70	22-2120	500 Mmfd. Special (Molded)	10,000V 1.70
<u>ADD:</u>				C36AD		15 Mfd.	475V
	2-201	Cabinet Back (Phono Section)	1.25	C36BD		80 Mfd.	300V
	14-1267R	Cabinet for H3477R & RQ Console Combination Model		C38CD	22-2122	40 Mfd.	50V 4.00
	16-647	Packing Carton - Inner Pack		C36DD		15 Mfd.	475V
	16-648	Packing Carton - Outer Pack		C49	22-2128	.001 Mfd. (Molded) (2 used)	600V .26
	46-888	Channel Selector Knob	.35	C66	22-2146	.47 Mfd.	200V .60
	46-890	Volume Control Knob	.30	C24AA	22-2154	Elect. 10 Mfd.	250V 1.25
	57-1284	Strike Plate	.05	C53	22-2162	130 Mmfd. Mica	500V .26
	156-35	Bullet Catch (2used)	.05	C59	22-2163	1000 Mmfd. Mica	500V .45
	166-55	Tack Bumper (2 used)	.03	C47	22-2166	.15 Mfd.	200V .45
	S-17308	Cabinet Back Assy. (TV)	11.00	C74	22-2168	33 Mmfd. Ceramic	500V .20
MODELS H2328RZ & RQZ - H2329RZ H2352RZ & RQZ - H2353EZ & EQZ - H2328EZ				C37AD		40 Mfd.	300V
23H22Z Main Chassis				C37BD		80 Mfd.	25V
	12-1756	Pilot Light Brkt.	.02	C37CD	22-2223	100 Mfd.	50V 4.25
	15-99	Corona Cap	.20	C37DD		20 Mfd.	475V
	19-166	Coil Mtg. Clip (used on S-17114)	.06	C38AD		20 Mfd.	450V
	19-175	Coil Mtg. Clip (1 ea. used on S-17176 - S-16855 - S-17116 S-17175)	.06	C38BD	22-2224	20 Mfd.	200V 4.15
C29	22-3	.01 Mfd. Ceramic (Disc) (2 used)	500V .26	C33CD		20 Mfd.	25V
C27	22-4	.004 Mfd. Ceramic (Disc) (2 used)	500V .26	C38DD		40 Mfd.	450V
C52	22-365	100 Mmfd. Mica (Molded)	500V .20	C40	22-2233	20 Mmfd. Ceramic (2 used)	500V .25
C61	22-470	150 Mmfd. Mica (Molded)	500V .20	C41	22-2234	100 Mmfd. Ceramic	500V .35
C85	22-1137	150 Mmfd. Mica	500V .20	C69	22-2261	.15 Mfd.	400V .40
C57	22-1138	470 Mmfd. Mica (Molded)	500V .20	C42	22-2264	.015 Mfd.	600V .35
C84	22-1645	330 Mmfd. Mica	500V .20	34-183		Turret Drive Gear	.25
C46	22-1775	.047 Mfd. (Molded)	400V .26	52-591		Insulated Shielded Lead	.35
C72	22-1777	0.1 Mfd.	200V .26	54-139		3/8-32x9/16 Hex Nut (8 used on control)	.01
C35	22-1782	.0047 Mfd. (Molded) (2 used)	600V .26	57-1675		Shaft Retaining Plate	.02
C73	22-1810	0.1 Mfd.	200V .26	58-188		Two Prong Plug (Part of S-17127)	.08
C64	22-1814	.0022 Mfd. (2 used)	600V .26	58-191		Nine Prong Adapter Plug	.25
C51	22-1841	.1 Mfd. (Molded)	600V .45	R38	63-943	4700 ohm 1W 10% Ins. (2 used)	.24
C39	22-1844	.047 Mfd. (Molded) (5 used)	600V .35	R63	63-957	33K ohm 1W 10% Ins.	.24
C58	22-1845	.0022 Mfd.	600V .26	R96	63-970	47 ohm 1W 10% Ins. (or 63-2093)	.24
C62	22-1846	.01 Mfd. (Molded)	400V .20	R79	63-1065	15K ohm 1W 10% Ins.	.24
C65	22-1851	.001 Mfd. (Molded)	1000V .26	R28	63-1571	6800 ohm 2W 10% Ins.	.33
C19	22-1876	47 Mmfd. Ceramic	500V .35	R98	63-1581	4.7 ohm 1/2W 10% Ins.	
C50	22-1880	.0012 Mfd. (Molded)	600V .26	R97	63-1620	1800 ohm 2W 10% Ins. (or 63-1691)	.36
C63	22-2034	880 Mmfd.	500V .35	R59	63-1674	Vertical Linearity Control	1.20
C67	22-2061	.1 Mfd. (Molded)	400V .35	R65	63-1675	Horiz. Drive Control	1.20
C54	22-2071	.022 Mfd. (Molded)	200V .26	R31	63-1744	100 ohm 1/2W 20% Ins. (3 used)	.21
				R1	63-1750	150 ohm 1/2W 10% Ins.	
				R67	63-1751	150 ohm 1/2W 20% Ins. (2 used)	.21
				R90	63-1758	220 ohm 1/2W 20% Ins.	.21
				R24	63-1764	330 ohm 1/2W 10% Ins.	.21
				R36	63-1768	390 ohm 1/2W 10% Ins.	.21
				R21	63-1771	470 ohm 1/2W 10% Ins. (3 used)	.21

Diag. No.	Part No.	Description	Suggested List Price
23H22Z Main Chassis (cont'd.)			
R60	63-1775	560 ohm 1/2W 10% Ins. (2 used on 95-1263)	.21
R33	63-1782	820 ohm 1/2W 10% Ins.	.21
R35	63-1806	3300 ohm 1/2W 10% Ins.	.21
R61	63-1813	4700 ohm 1/2W 10% Ins. (2 used)	.21
R34	63-1838	18K ohm 1/2W 10% Ins.	.21
R37	63-1841	22K ohm 1/2W 10% Ins. (2 used)	.21
R39	63-1845	27K ohm 1/2W Ins. 10%	.21
R89	63-1846	33K ohm 1/2W 10% Ins.	.21
R5	63-1855	47K ohm 1/2W 10% Ins. (3 used)	.21
R47	63-1862	68K ohm 1/2W 10% Ins.	.21
R56	63-1863	68K ohm 1/2W 20% Ins.	.21
R46	63-1869	100K ohm 1/2W 10% Ins. (4 used)	.21
R25	63-1870	100K ohm 1/2W 20% Ins. (2 used)	.21
R74	63-1876	150K ohm 1/2W 10% Ins.	.21
R42	63-1883	220K ohm 1/2W 10% Ins.	.21
R49	63-1884	220K ohm 1/2W 20% Ins. (2 used)	.21
R22	63-1890	330K ohm 1/2W 10% Ins. (2 used)	.21
R48	63-1898	470K ohm 1/2W 20% Ins. (2 used)	.21
R95	63-1904	680K ohm 1/2W 10% Ins.	.21
R45	63-1911	1 Megohm 1/2W 10% Ins. (4 used)	.21
R18	63-1912	1 Megohm 1/2W 20% Ins.	.21
R72	63-1919	1.5 Megohm 1/2W 20% Ins.	.21
R17	63-1926	2.2 Megohm 1/2W 20% Ins. (3 used)	.21
R93	63-1979	68K ohm 1W 10% Ins. (2 used)	.24
R20	63-1982	100K ohm 2W 10% Ins.	.33
R78	63-2017	4000 ohm WW 5W 10% Ins. (2 used)	.43
R27	63-2022	10K ohm WW 5W 10% Ins.	.60
R26	63-2023	3500 ohm WW 10W 10% Ins.	.80
R19	63-2050	Bias Control	.50
R30	63-2077	400 ohm WW 5W 10% Ins.	.43
R77	63-2099	Focus Control	2.00
R55	63-2110	Vertical Size Control	1.20
R40	63-2123	Contrast Control	1.20
R32	63-2125	Vol. Control & Switch	1.81
R43	63-2126	Intensity Control	1.20
R52	63-2127	Vertical Hold Control	1.20
R81	63-2134	150 ohm WW 5W 20% Ins.	.43
R75	63-2137	100K ohm 1W 10% Ins.	.24
R73	63-2145	10K ohm 2W 20% Ins.	.33
R50	63-2153	A.G.C. Control	1.20
R58	63-2159	Vertical Hold Range Control	1.20
R83	63-2425	15K ohm 7W 10% Ins.	
	73-114	8-32x5/16 Slab Hd. Set Screw (6 used S-17084)	.02

Diag. No.	Part No.	Description	Suggested List Price
	76-605	Horiz. Hold Control Shaft	.20
	78-580	Nine Contact Socket (Phonevision)	.22
	78-640	Elect. Cond. Socket	.05
	78-709	Octal Tube Socket (2 used)	.20
	78-755	Octal Tube Socket (5 used)	.18
	78-807	Miniature Tube Socket (3 used)	.15
	78-834	Octal Tube Socket	.25
	78-840	Two Contact Socket (AC)	.30
	78-875	C.R. Tube Socket	.40
	78-876	Noval Miniature Tube Socket	.25
	78-900	Pilot Light Socket & Wire	.25
	78-908	Miniature Tube Socket	.30
	80-744	PM Focus Mtg. Spring (4 used)	.02
	80-802	Retaining Spring (1ea. Used on 149-100 & 149-131)	.06
	80-822	Dial Cord Tension Spring	.10
	80-823	Shaft Guide Spring (used on S-17114)	.10
	80-824	Tube Plate Connector Spring (3 used)	.08
	80-841	C.R. Tube Grounding Spring	.10
	80-843	Tension Spring	.10
	80-846	Fine Tuning Limiting Spring	.10
	82-25	C.R. Tube Retaining Strap	.75
	83-1802	Fuse Mtg. Strip	.20
	83-1860	Light Shield Strip	.10
	87-1	Integrator Unit	.26
	93-2	Brass Washer (used on 22-2154)	.01
	93-525	Fibre Washer (2 used on ea. 78-709)	.65C
	93-961	Insulating Washer (Contrast Control)	.03
	93-971	Shell Support Washer (Horiz. Sweep)	.02
	93-1057	Insulating Washer (Contrast Control)	.03
	94-746	C.R. Tube Support Bushing (2 used)	.10
	95-1170	Filter Choke	2.00
	95-1238	Audio Output Trans.	1.75
	95-1239	Vertical Output Trans.	4.25
	95-1260	Power Trans.	25.00
	95-1263	Deflection Coil	11.00
	100-67	Pilot Light	.11
	112-88	Thumb Screw #8-32 (Deflection Coil Adj.)	.06
	114-65	#8-32x1-1/2" Hex Hd. Sl. M.S. (used on S.17531)	.04
	114-201	#8x5/16 Hex Hd. S. T. (24 used)	.75C
	114-310	#8x5/16 Hex Washer Hd. S.T. (4 used on Turret Tuner & 2 used on 83-1802)	.04

Diag. No.	Part No.	Description	Suggested List Price
	23H22Z Main Chassis (cont'd.)		
	114-331	8-32x5/16 Hex Hd. S. T. (2 used to mt. S-17097)	.03
	125-26	Rubber Grommet (2 used on ea. 78-709)	.03
	126-643	Fire Shield	.20
	126-652	Pilot Light Shield	.05
	136-20	Fuse	.25
	149-89	Iron Core (1 ea. used on S-16855 & S-17116)	.10
	149-100	Iron Core & Spring (used on S-17175)	.20
	149-101	Iron Core & Spring (used on S-17176)	.35
	149-102	Iron Core & Screw (use S-17114)	
	188-131	Retaining Ring (used on S-17087)	.07
	188-137	Retaining Ring (used on S-17362)	.08
	196-164	C.R. Tube Support Gasket	.40
	199-124	Focus Coil Sleeve	.02
	199-145	Rubber Sleeve (used on S-17521)	.05
	199-146	Rubber Sleeve (used on S-17521)	.03
	S-16209	Wire & Eyelet Assembly	.30
	S-16855	Sound Trap Coil	.65
	S-17052	2nd Video Series Peaking Coil Assembly	.35
	S-17053	2nd Vido Shunt Peaking Coil Assembly	.40
	S-17064	Video I.F. Strip Assy.	36.50
	S-17084	Shaft-Gear & Coupling Assy.	2.00
	S-17096	Dial Cord & Eyelet Assy. (Fine Tuning)	.10
	S-17097	Brkt. Pulley & Gear Assy.	1.20
	S-17100	R.F. Shelf & Turret Assy.	67.50
	S-17114	Horiz. Osc. Coil Assy.	1.20
	S-17116	4.5 McVideo Trap Coil Assy.	.80
	S-17121	Rectifier Mtg. Plate Assy.	.65
	S-17127	A.C. Plug & Brkt. Assy.	.15
	S-17175	Horiz. Size Control Coil Assembly	1.00
	S-17176	Horiz. Linearity Control Coil Assy.	.55
L81	S-17861	Mechanical Centering & Focus Assy.	6.00
	S-17362	Indicator Drum & Shaft Assy.	.90
	S-17377	Contrast Control Shaft & Bushing Assy.	.60
	S-17425	Fine Tuning Ext. Shaft & Bushing Assembly	.35
	S-17433	Deflection Yoke Mtg. Brkt. Assembly	1.00
	S-17435	Horiz. Sweep Trans. Assy.	6.50
	S-17447	Anode Clip & Wire Assy.	.30
	S-17461	Beam Bender Unit	1.50

Diag. No.	Part No.	Description	Suggested List Price
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S-17521		C.R. Tube Support & Alignment Brkt. Assy.	1.75
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TUBES

1 - 16TP4	1 - 6BN6
1 - 1X2	2 - 6BQ6GT
1 - 5U4G	2 - 6SN7GT
1 - 5Y3GT	1 - 6W4GT
1 - 6AL5	1 - 12AU7
1 - 6BF5	1 - 6BL7GT

For parts on S-17100 R.F. Shelf & Turret Tuner refer to 22H20 Chassis

Parts for the Video I.F. Assembly are listed under Part Numbers S-17064 or S-17635.

For parts on S-17230 Mechanical Centering & Focus Assembly, refer to parts list for 24H20 Chassis.

CABINET PARTS H2328RZ & RQZ

11-106	Line Cord & Plug 9 ft. lg.	.80
12-1798	Support Brkt. (4 used to mt. 192-140)	.01
14-1278R	Cabinet for H2328RZ & RQZ Table Model	
16-665	Packing Carton	
19-196	Clip (2 used on 188-134)	.03
24-446	AC Line Cord Plug Cover	.15
43-196	Control Housing	.75
46-885	Contrast Control Knob	.15
46-887	Horiz. Hold Knob	.10
46-888	Channel Selector Knob	.35
46-890	Volume Control Knob	.30
46-893	Brightness Control Knob	.15
46-895	Fine Tuning Knob	.15
46-896	Vertical Hold Knob	.10
49-696	5-1/4" PM Speaker	6.00
	ZC5093 Cone & Voice Coil	1.73
54-129	Speed Nut (3 used on 188-133)	.60C
54-269	#8-32x11/32 (1 used on ea. S-17422)	.01
56-286	Cover Hinge Pin	.05
57-1481	Clamping Plate (4 used to mt. S-17422)	.02
57-1620	Retaining Plate (used on 188-134)	.03
70-3	#5x1/2" R.H.W.S. Steel N.P. (2 used on S-17306)	.85C
70-86	#6x5/8" Washer Hd. Wood Screw St. Br. (5 used to mt. back)	.60C
70-153	#5x1/4" R. H. W. S. Steel (2 used on 57-1620)	.01
72-3	#5x5/8" Flt. Hd. W.S. (2 used on QZ Models Only)	.02

Diag. No.	Part No.	Description	Suggested List Price
CABINET PARTS H2328RZ & RQZ (cont'd.)			
72-81	#8x3/4 Phill. Flt. Hd. Wood Screw St. Br. (4 used on S-17307)	.02	
72-90	#4x3/4 Phill. Flt. Hd. Wood Screw St. Br. (4 used to mt. 43-196)	.02	
74-58	Ventillating Screen	1.30	
78-787	Two Contact Socket (Cabt. Backs)	.10	
80-828	Cover Return Spring	.07	
94-295	Mtg. Bushing (4 used on RQZ Models only)	.04	
114-80	1/4-20x1-3/8 Hex Washer Hd. M.S. (4 used Chassis Mtg.)	.05	
114-358	#6x1/2" Hex Hd. Sl. S. T. (4 used on RQZ Models only)	.02	
188-133	Trim Ring	.35	
188-134	Trim Ring	.40	
192-140	Protective Glass	6.00	
196-163	Rectangular Gasket	4.80	
202-844	Instruction Book	.25	
202-849	Instruction Book (RQZ Models only)	.30	
S-17286	Remote Control Assy. (used on RQZ Models only)		
S-17267	Hand Control & Cable Assy. (used on RQZ Models only)		
S-17306	Antenna Terminal & Wire Assembly	.20	
S-17307	Cabinet Antenna Assy.	1.35	
S-17422	Brkt. & Screw Assy. (4 used to mt. 192-140)	.20	
S-17443	Cabinet Back Assembly	9.50	
S-17497	Cover & Nameplate Assy.	2.50	

CABINET PARTS H2329RZ

11-106	Line Cord & Plug 9 ft. lg.	.80
14-1285R	Cabinet for H2329RZ Table Model	
16-773	Packing Carton	
19-196	Clip (2 used on 188-134)	.03
24-446	AC Line Cord Plug Cover	.15
43-196	Control Housing	.75
46-885	Contrast Control Knob	.15
46-887	Horiz. Hold Knob	.10
46-888	Channel Selector Knob	.35
46-890	Volume Control Knob	.30
46-893	Brightness Control Knob	.15
46-895	Fine Tuning Knob	.15
46-896	Vertical Hold Knob	.10
49-696	5-1/4" PM Speaker ZC5093 Cone & Voice Coil	1.73
54-129	Speed Nut (3 used on 188-133)	.60C

Diag. No.	Part No.	Description	Suggested List Price
54-269	#8-32x11/32" Nut (4 used on dial glass mtg.)	.01	
56-286	Cover Hinge Pin	.05	
57-1620	Retaining Plate (used on 188-134)	.03	
70-3	#5x1/2" R.H.W.S. Steel N.P. (2 used on S-17306)	.85C	
70-86	#6x5/8" Washer Hd. Wood Screw St. Br. (5 used to mt. back)	.60C	
70-153	#5x1/4" R.H.W.S. Steel (2 used on 57-1620)	.01	
72-81	#8x3/4 Phillips Flt. Hd. Wood Screw St. Br. (4 used on S-17307)	.02	
72-90	#4x3/4 Phill. Flt. Hd. Wood Screw St. Br. (4 used to mt. 43-196)	.02	
74-58	Ventilating Screen	1.30	
78-787	Two Contact Socket	.10	
80-828	Cover Return Spring	.07	
83-1844	Trim Strip	.20	
112-818	#4-40x1/4" Rd. Hd. S.T. Screw (2 used on S-17510)	.03	
114-80	1/4-20x1-3/8" Hex Washer Hd. M.S. (4 used chassis mtg.)	.05	
188-133	Trim Ring	.35	
188-134	Trim Ring	.40	
192-142	Protective Glass	6.00	
196-166	Rectangular Gasket	4.80	
202-844	Instruction Book	.25	
S-17306	Antenna Terminal & Wire Assembly	.20	
S-17307	Cabinet Antenna Assembly	1.35	
S-17497	Control Cover Assembly	2.50	
S-17510	Frame & Stud Assembly	5.00	
S-17616	Cabinet Back Assy. (Compl.)	9.50	

CABINET PARTS H2352RZ & RQZ

11-106	Line Cord & Plug - 9 ft. lg.	.80
14-1282R	Cabinet for H2352RZ & RQZ Console Model	
16-771	Packing Carton	
19-196	Clip (2 used on 188-134)	.03
24-446	AC Line Cord Plug Cover	.15
43-196	Control Housing	.75
46-885	Contrast Control Knob	.15
46-887	Horiz. Hold Knob	.10
46-888	Channel Selector Knob	.35
46-890	Volume Control Knob	.30
46-893	Brightness Control Knob	.15
46-895	Fine Tuning Knob	.15
46-896	Vertical Hold Knob	.10
49-649	10" PM Speaker ZC10161 Cone & Voice Coil	11.75
54-129	Speed Nut (3 used on 188-133)	.60C

Diag. No.	Part No.	Description	Suggested List Price	Diag. No.	Part No.	Description	Suggested List Price
CABINET PARTS H2352RZ & RQZ (cont'd.)				CABINET PARTS H2353EZ & EQZ			
	54-269	#8-32x11/32" Palnut (4 used on dial glass mtg.)	.01	11-106	Line Cord & Plug 9 ft. lg.	.80	
	56-286	Cover Hinge Pin	.05	14-1284E	Cabinet for H2353EZ & EQZ Console Model		
	57-1481	Clamping Plate (4 used on glass mtg.)	.02	16-772	Packing Carton		
	57-1620	Retaining Plate (used on 188-134)	.03	19-196	Clip (2 used on 188-134)	.03	
	70-3	#5x1/2" R.H.W.S. Steel N.P. (2 used to mt. S-17556)	.85C	24-446	AC Line Cord Plug Cover	.15	
	70-86	#6x5/8" Washer Hd. Wood Screw St. Br. (7 used to mt. S-17511)	.60C	43-195	Control Housing	1.10	
	70-153	#5x1/4" R. H.W.S. Steel (2 used on 57-1620)	.01	46-833	Volume Control Knob	.30	
	72-3	#5x5/8" Flt. Hd. W. S. (2 used on RQZ Models only)	.02	46-885	Contrast Control Knob	.15	
	72-81	#8x3/4 Phill. Flt. Hd. Wood Screw St. Br. (4 used to mt. S-16890)	.02	46-887	Horiz. Hold Knob	.10	
	72-90	#4x3/4 Phill. Flt. Hd. Wood Screw St. Br. (4 used on 43-196)	.02	46-889	Channel Selector Knob	.35	
	74-58	Ventilating Screen	1.30	46-893	Brightness Control Knob	.15	
	78-787	Two Contact Socket	1.30	46-895	Fine Tuning Knob	.15	
	80-828	Cover Return Spring	.07	46-896	Vertical Hold Knob	.10	
	83-1844	Trim Strip	.20	49-649	10" PM Speaker	11.75	
	94-295	Mtg. Bushing (4 used on RQZ Model only)	.04		ZC10161 Cone & Voice Coil	3.41	
	112-818	#4-40x1/4" Rd. Hd. S. T. Screw (2 used on glass & gasket mtg.)	.03	54-129	Speed Nut (3 used on 188-134)	.60C	
	114-80	1/4-20x1-3/8" Hex Washer Hd. M.S. (4 used chassis mtg.)	.05	54-269	#8-32x11/32" Palnut (4 used on glass mtg.)	.01	
	114-358	#6x1/2" Hex. Hd. Sl. S. T. (4 used on RQZ Models only)	.02	56-286	Cover Hinge Pin	.05	
	165-9	Metal Glide (4 used)	.03	57-1481	Clamping Plate (4 used on glass mtg.)	.02	
	188-133	Trim Ring	.35	57-1620	Retaining Plate (used on 188-134)	.03	
	188-134	Trim Ring	.40	70-3	#5x1/2" R.H.W.S. Steel N.P. (2 used on S-17556)	.85C	
	192-142	Protective Glass	6.00	70-86	#6x5/8" Washer Hd. Wood Screw St. Br. (7 used to mt. back)	.60C	
	196-166	Rectangular Gasket	4.80	70-153	#5x1/4" R.H.W.S. Steel Cad. (2 used on 57-1620)	.01	
	202-844	Instruction Book	.25	72-3	#5x5/8" Flt. Hd. W. S. Steel (2 used on EQZ Model only)	.02	
	202-849	Instruction Book (used on RQZ Models only)	.30	72-81	#8x3/4 Phillips Flt. Hd. Wood Screw St. Br. (4 used on S-16890)	.02	
	S-16890	Cabinet Antenna Assy.	1.75	72-90	#4x3/4 Phill. Flt. Hd. Wood Screw St. Br. (4 used on 43-195)	.02	
	S-17266	Remote Control Assy. (used on RQZ Models only)		74-58	Ventilating Screen	1.30	
	S-17267	Hand Control & Cable Assy. (used on RQZ Models only)		78-787	Two Contact Socket	.10	
	S-17497	Control Cover Assy.	2.50	80-828	Cover Return Spring	.07	
	S-17510	Frame & Stud Assy.	5.00	83-1844	Trim Strip	.20	
	S-17511	Cabinet Back Assy. (Complete)	9.50	94-295	Mtg. Bushing (4 used on EQZ Models only)	.04	
	S-17556	Antenna Terminal & Wire Assembly	.25	112-818	#4-40x1/4" Rd. Hd. (2 used on glass & gasket mtg.)	.03	
				114-80	1/4-20x1-3/8" Hex Hd. M.S. (4 used chassis mtg.)	.05	
				114-358	#6x1/2" Hex Hd. Sl. S. T. (4 used on EQZ model only)	.02	
				165-13	Glides (4 used)	.02	
				188-133	Trim Ring	.35	
				188-134	Trim Ring	.40	
				192-142	Protective Glass	6.00	
				196-166	Rectangular Gasket	4.80	

Diag. No.	Part No.	Description	Suggested List Price
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CABINET PARTS H2353EZ & EQZ (cont'd.)

202-844	Instruction Book	.25
202-849	Instruction Book (used on EQZ models)	.30
S-16890	Cabinet Antenna Assembly	1.75
S-17266	Remote Control Assy. (used on EQZ Models only)	
S-17267	Hand Control & Cable Assy. (used on EQZ Models only)	
S-17497	Control Cover Assy.	2.50
S-17510	Frame & Stud Assy.	5.00
S-17511	Cabinet Back Assy. (Complete)	9.50
S-17556	Antenna Terminal & Wire Assembly	.25

CABINET PARTS H2328EZ

11-106	Line Cord & Plug 9 ft. lg.	.80
14-1278E	Cabinet for H2328EZ Table Model	
16-665	Packing Carton	
19-196	Clip (2 used on 188-134)	.03
24-446	AC Line Cord Plug Cover	.15
43-195	Control Housing	1.10
46-833	Volume Control Knob	.30
46-885	Contrast Control Knob	.15
46-887	Horiz. Hold Knob	.10
46-889	Channel Selector Knob	.35
46-893	Brightness Control Knob	.15
46-895	Fine Tuning Knob	.15
46-896	Vertical Hold Knob	.10
49-696	5-1/4" PM Speaker	6.00
	ZC5093 Cone & Voice Coil	1.73
54-129	Speed Nut (3 used on 188-134)	.60C
54-269	#8-32x11/32" Palnut (4 used on S-17422)	.01
56-286	Cover Hinge Pin	.05
57-1481	Clamping Plate (4 used on S-17422)	.02
57-1620	Retaining Plate (used on 188-134)	.03
70-3	#5x1/2" R.H.W.S. Steel N.P. (2 used on S-17306)	.85C
70-86	#6x5/8" Washer Hd. Wood Screw St. Br. (5 used to Mt. back)	.60C
70-153	#5x1/4" R.H.W.S. Steel Cad. (2 used on 57-1620)	.01
72-81	#8x3/4 Phill. Flt. Hd. Wood Screw St. Br. (4 used to mt. S-17307)	.02
72-90	#4x3/4 Phill. Flt. Hd. Wood Screw St. Br. (4 used on 43-195)	.02
74-58	Ventilating Screen	1.30
78-787	Two Contact Socket	.10

Diag. No.	Part No.	Description	Suggested List Price
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80-828	Cover Return Spring	.07
114-80	1/4-20x1-3/8" Hex Washer Hd. M.S. (4 used chassis mtg.)	.05
188-133	Trim Ring	.35
188-134	Trim Ring	.40
192-140	Protective Glass	6.00
196-163	Rectangular Gasket	4.80
202-844	Instruction Book	.25
S-17306	Antenna Terminal & Wire Assembly	.20
S-17307	Cabinet Antenna Assy.	1.35
S-17422	Brkt. & Screw Assembly	.20
S-17443	Cabinet Back Assembly (Complete)	9.50
S-17497	Cover & Nameplate Assy.	2.50

H2328R & RQ - H2328E - H2329R & RQ - H2352R & RQ - H2353E & EQ

CHASSIS 23H22

MAIN CHASSIS

Chassis 23H22 is the same as 23H22Z except for the following:

OMIT:

94-746	C.R. Tube Support Bushing (2 used)
S-17064	Video I.F. Strip Assy. (Complete)
S-17521	C.R. Tube Support & Alignment Brkt. Assembly

TUBES

1 - 16TP4

ADD:

94-745	C.R. Tube Support Bushing (2 used)
S-17531	C.R. Tube Support & Alignment Brkt. Assembly
S-17635	Video I.F. Strip Assy. (Compl.)

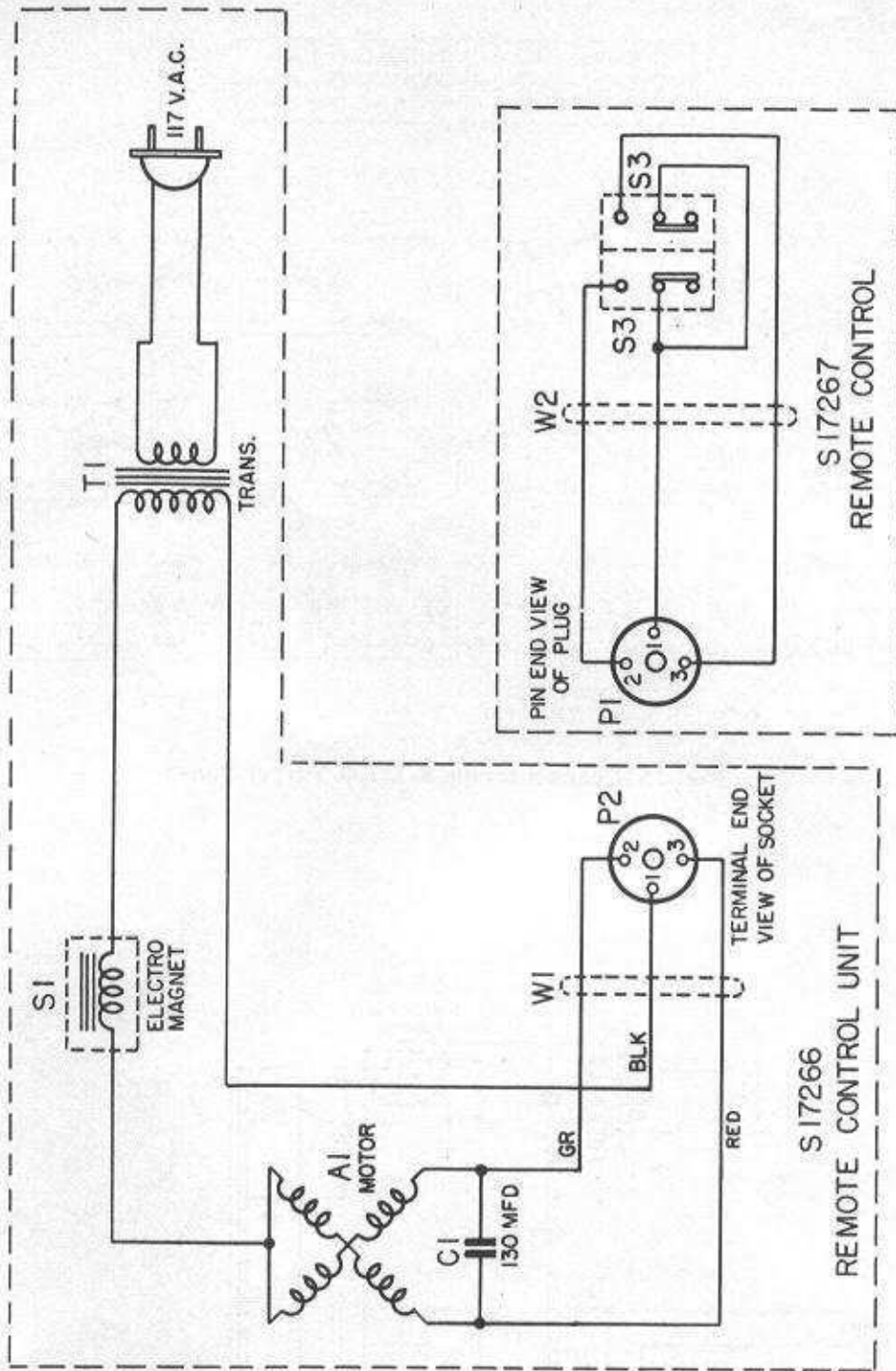
TUBES

1 - 17BP4

For parts on S-17635 refer to page 33.

<u>Diag. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Suggested List Price</u>	<u>Diag. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Suggested List Price</u>
CABINET PARTS H2328R & RQ							
Model H2328R & RQ is the same as H2328RZ & RQZ except for the following:							
<u>OMIT:</u>							
196-163 Rectangular Gasket							
<u>ADD:</u>							
196-157 Rectangular Gasket							
CABINET PARTS H2329R & RQ							
Model H2329R & RQ is the same as H2329RZ & RQZ except for the following:							
<u>OMIT:</u>							
196-166 Rectangular Gasket							
<u>ADD:</u>							
196-165 Rectangular Gasket							
CABINET PARTS H2352R & RQ							
Model H2352R & RQ is the same as H2352RZ & RQZ except for the following:							
<u>OMIT:</u>							
196-166 Rectangular Gasket							
<u>ADD:</u>							
196-165 Rectangular Gasket							
CABINET PARTS H2328E & EQ							
Model H2328E & EQ is the same as H2328EZ & EQZ except for the following:							
<u>OMIT:</u>							
196-166 Rectangular Gasket							
<u>ADD:</u>							
196-165 Rectangular Gasket							
CABINET PARTS H2328E							
Model H2328E is the same as H2328EZ except for the following:							
<u>OMIT:</u>							
196-163 Rectangular Gasket							
<u>ADD:</u>							
196-157 Rectangular Gasket							

Prices shown are suggested list prices, and are subject to change without notice.



ITEM PART NO.	DESCRIPTION
A1 141-130	27 V.A.C. MOTOR
C1 22-2252	130 MFD ELECTRO.40 V.A.C.
S1 20-332	ELECTRO-MAGNET
S3 85-492	CONTROL SWITCH
T1 95-1255	TRANSFORMER
W1 S-17324	CABLE ASSEMBLY
W2 52-596	CABLE & PLUG ASSEM.
P1 58-194	MINIATURE PLUG
P2 78-901	MINIATURE SOCKET

Fig. 14 Schematic Diagram Remote Control Tuner.

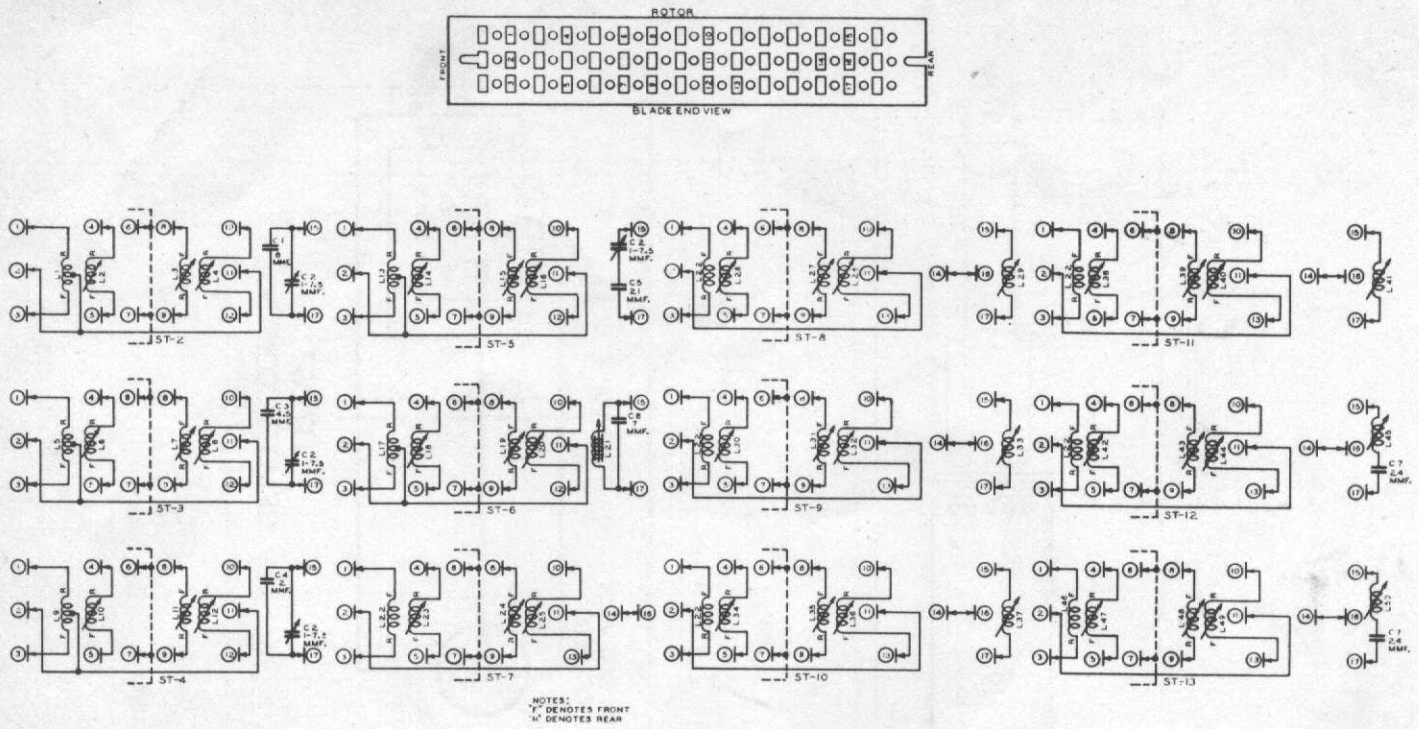
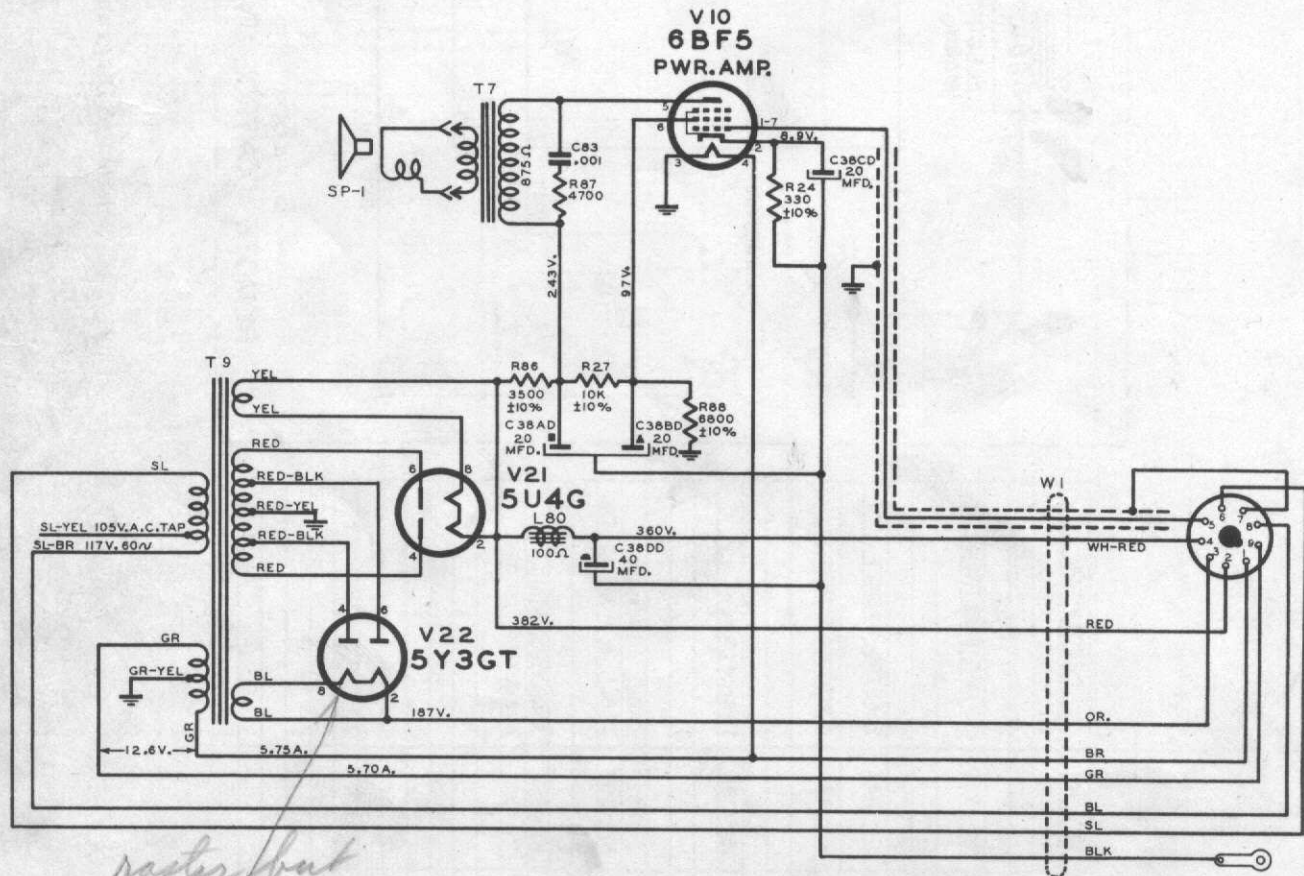
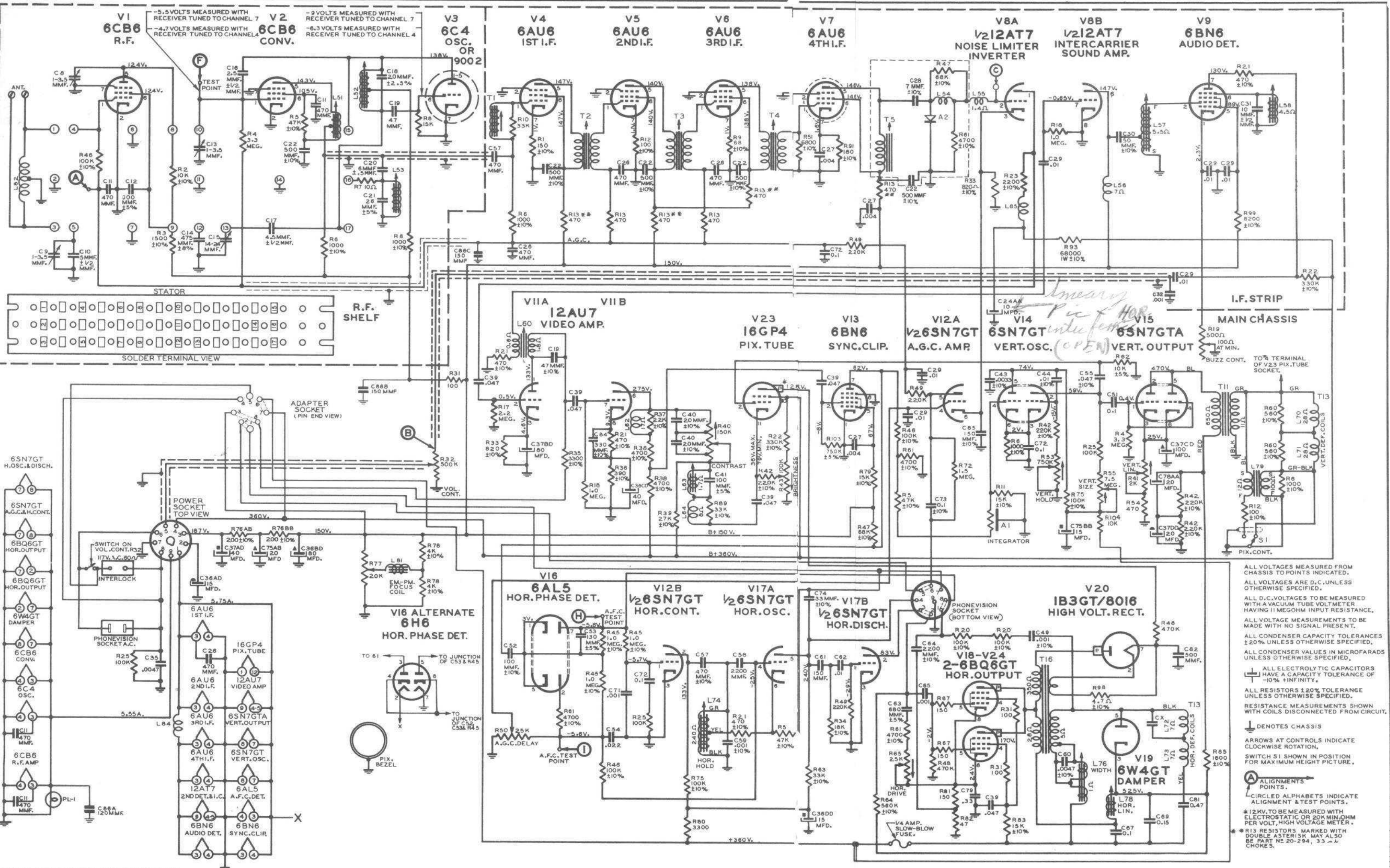


Fig. 15 Channel Strips S-17100 Turret Tuner.



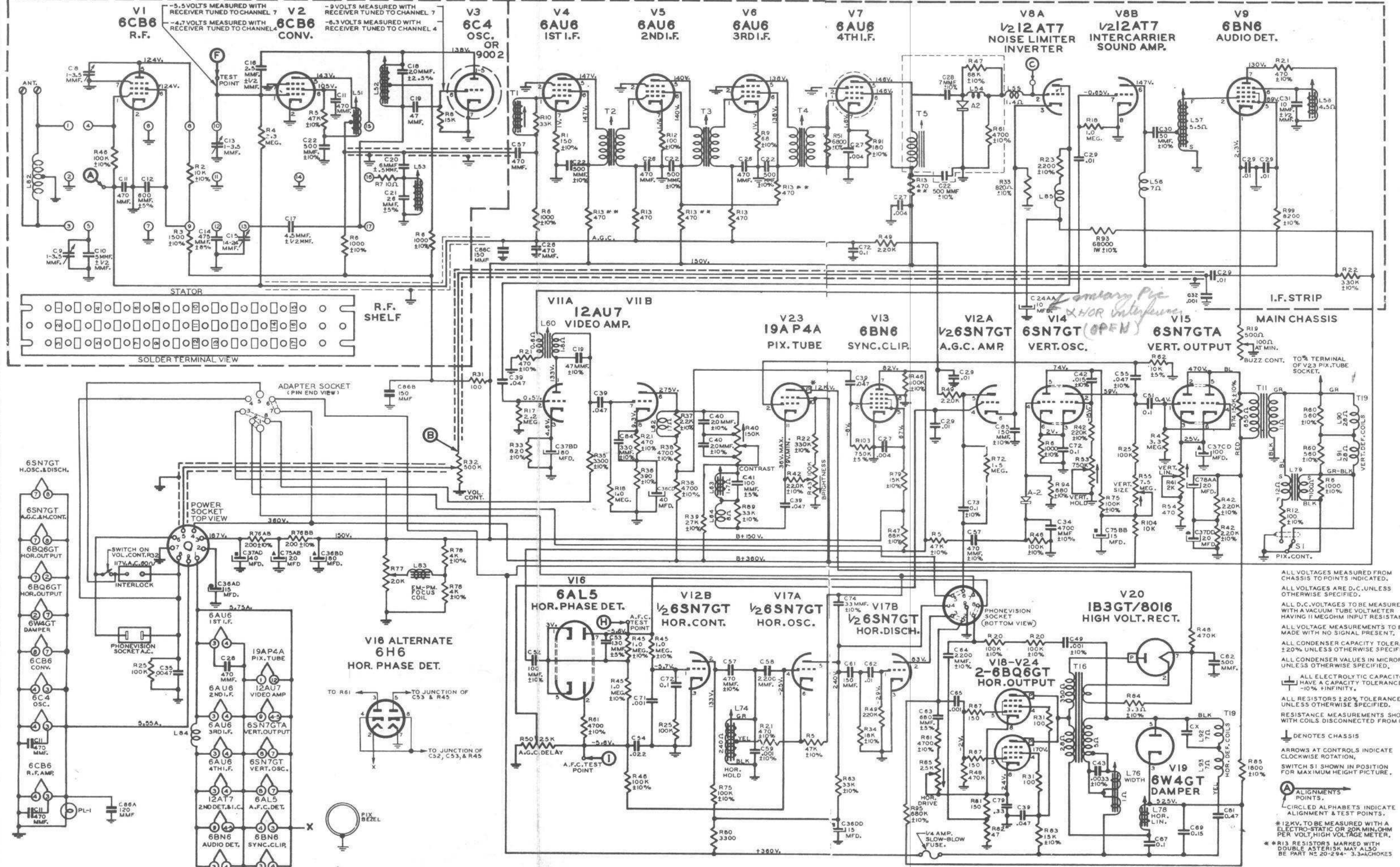
*rectifier but
no pic or sound*

Fig. 16 Power Supply For 24H20-21 Chassis.



ALL VOLTAGES MEASURED FROM CHASSIS TO POINTS INDICATED.
 ALL VOLTAGES ARE D.C., UNLESS OTHERWISE SPECIFIED.
 ALL D.C. VOLTAGES TO BE MEASURED WITH A VACUUM TUBE VOLTMETER HAVING 11 MEGOHM INPUT RESISTANCE.
 ALL VOLTAGE MEASUREMENTS TO BE MADE WITH NO SIGNAL PRESENT.
 ALL CONDENSER CAPACITY TOLERANCES ±20% UNLESS OTHERWISE SPECIFIED.
 ALL CONDENSER VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
 ALL ELECTROLYTIC CAPACITORS HAVE A CAPACITY TOLERANCE OF -10% +INFINITY.
 ALL RESISTORS ±20% TOLERANCE UNLESS OTHERWISE SPECIFIED.
 RESISTANCE MEASUREMENTS SHOWN WITH COILS DISCONNECTED FROM CIRCUIT.
 ⏏ DENOTES CHASSIS
 ARROWS AT CONTROLS INDICATE CLOCKWISE ROTATION.
 SWITCH S1 SHOWN IN POSITION FOR MAXIMUM HEIGHT PICTURE.
 A ALIGNMENTS POINTS.
 CIRCLED ALPHABETS INDICATE ALIGNMENT & TEST POINTS.
 *12KV. TO BE MEASURED WITH ELECTROSTATIC OR 20K MIN. OHM PER VOLT, HIGH VOLTAGE METER.
 *R13 RESISTORS MARKED WITH DOUBLE ASTERISK MAY ALSO BE PART #2 20-294, 33-1-1 CHOKES.

Fig. 17 Schematic Diagram 24H20 Chassis.



ALL VOLTAGES MEASURED FROM CHASSIS TO POINTS INDICATED.
 ALL VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED.
 ALL D.C. VOLTAGES TO BE MEASURED WITH A VACUUM TUBE VOLTMETER HAVING 11 MEGOHM INPUT RESISTANCE.
 ALL VOLTAGE MEASUREMENTS TO BE MADE WITH NO SIGNAL PRESENT.
 ALL CONDENSER CAPACITY TOLERANCE $\pm 20\%$ UNLESS OTHERWISE SPECIFIED.
 ALL CONDENSER VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
 ALL ELECTROLYTIC CAPACITORS HAVE A CAPACITY TOLERANCE OF $\pm 10\%$ INFINITY.
 ALL RESISTORS $\pm 20\%$ TOLERANCE UNLESS OTHERWISE SPECIFIED.
 RESISTANCE MEASUREMENTS SHOWN WITH COILS DISCONNECTED FROM CIRCUIT.
 DENOTES CHASSIS
 ARROWS AT CONTROLS INDICATE CLOCKWISE ROTATION.
 SWITCH S1 SHOWN IN POSITION FOR MAXIMUM HEIGHT PICTURE.
 ALIGNMENTS POINTS.
 CIRCLED ALPHABETS INDICATE ALIGNMENT & TEST POINTS.
 * 12KV. TO BE MEASURED WITH A ELECTRO-STATIC OR 20K MIN. OHM PER VOL. HIGH VOLTAGE METER.
 ** R13 RESISTORS MARKED WITH DOUBLE ASTERISK MAY ALSO BE PART NO. 20-294-3. 3ACHOKES

Fig. 18 Schematic Diagram 24H21 Chassis.

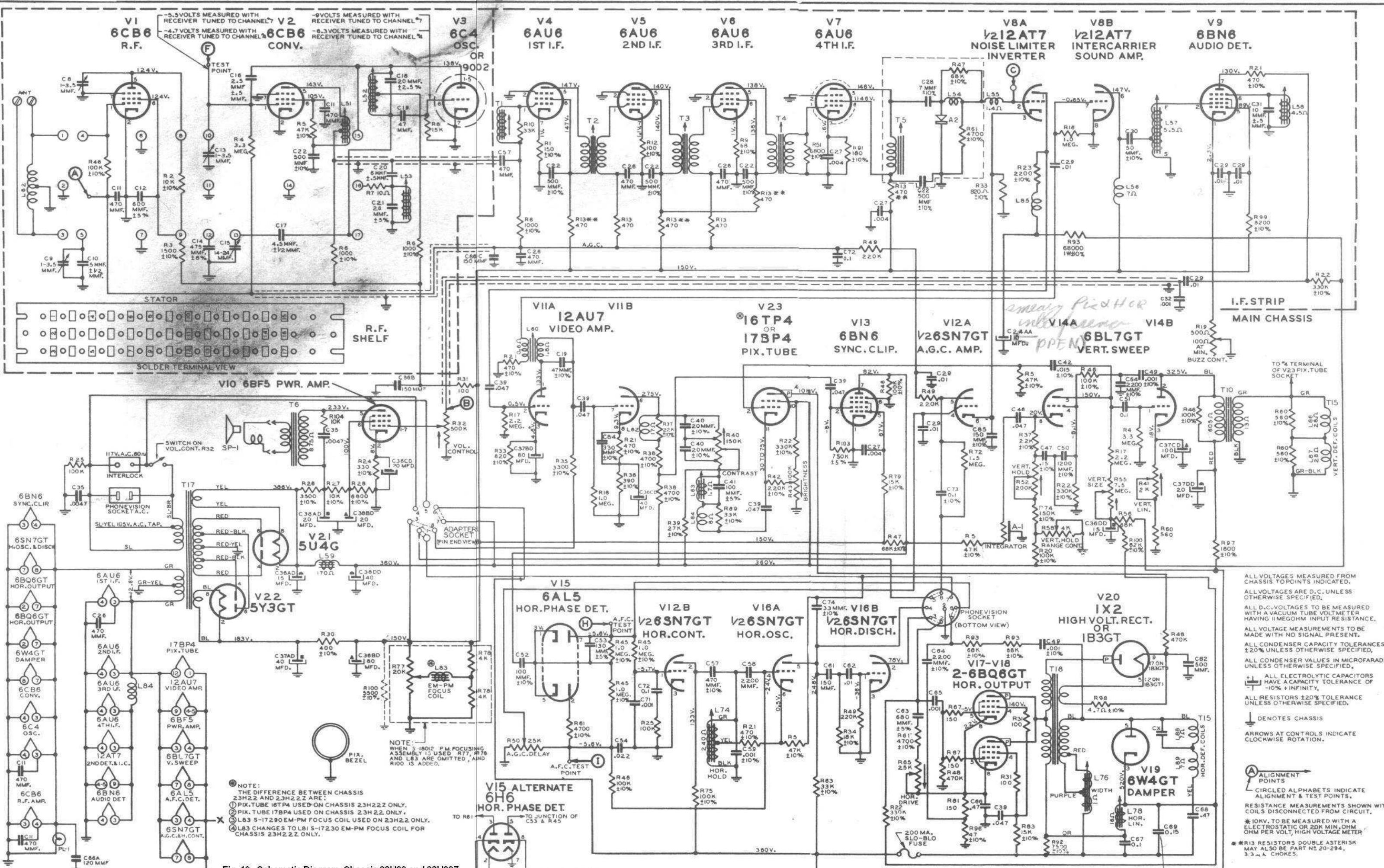


Fig. 19. Schematic Diagram, Chassis 23H22 and 23H2Z. Chassis 23H2Z same as 23H22 except for picture tube.

ALL VOLTAGES MEASURED FROM CHASSIS TO POINTS INDICATED.
 ALL VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED.
 ALL D.C. VOLTAGES TO BE MEASURED WITH A VACUUM TUBE VOLTMETER HAVING 11 MEGOHM INPUT RESISTANCE.
 ALL VOLTAGE MEASUREMENTS TO BE MADE WITH NO SIGNAL PRESENT.
 ALL CONDENSER CAPACITY TOLERANCES ±20% UNLESS OTHERWISE SPECIFIED.
 ALL CONDENSER VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
 ALL ELECTROLYTIC CAPACITORS HAVE A CAPACITY TOLERANCE OF ±10% ± INFINITY.
 ALL RESISTORS ±20% TOLERANCE UNLESS OTHERWISE SPECIFIED.
 ⊥ DENOTES CHASSIS
 ARROWS AT CONTROLS INDICATE CLOCKWISE ROTATION.
 A ALIGNMENT POINTS
 CIRCLED ALPHABETS INDICATE ALIGNMENT & TEST POINTS.
 RESISTANCE MEASUREMENTS SHOWN WITH COILS DISCONNECTED FROM CIRCUIT.
 * 10KΩ TO BE MEASURED WITH AN ELECTROSTATIC OR 20K MIN. OHM OHM PER VOLT, HIGH VOLTAGE METER
 ** R13 RESISTORS 320Ω TOLERANCE MAY ALSO BE PART NO. 20-294, 3.3kΩ CHOKES.

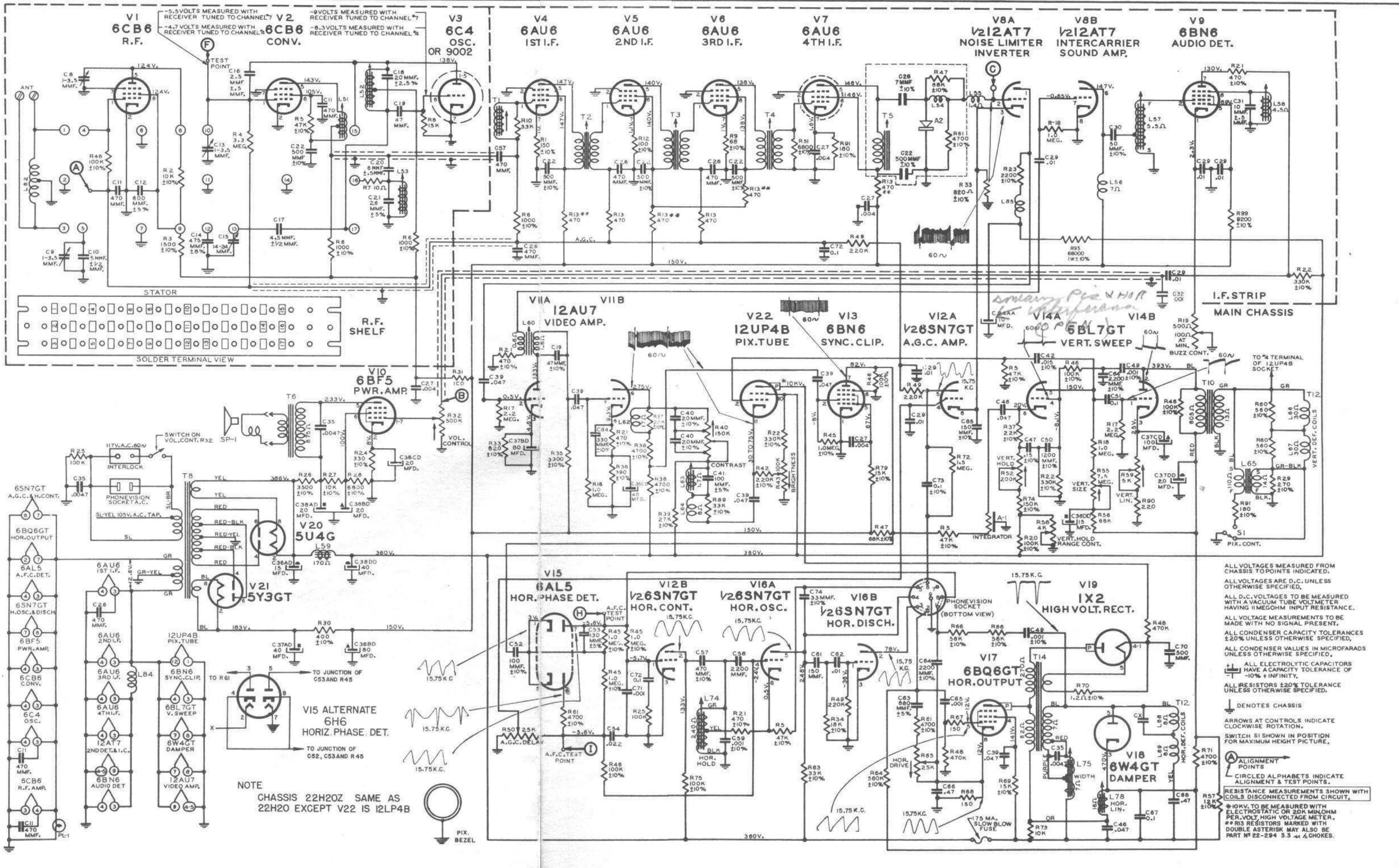
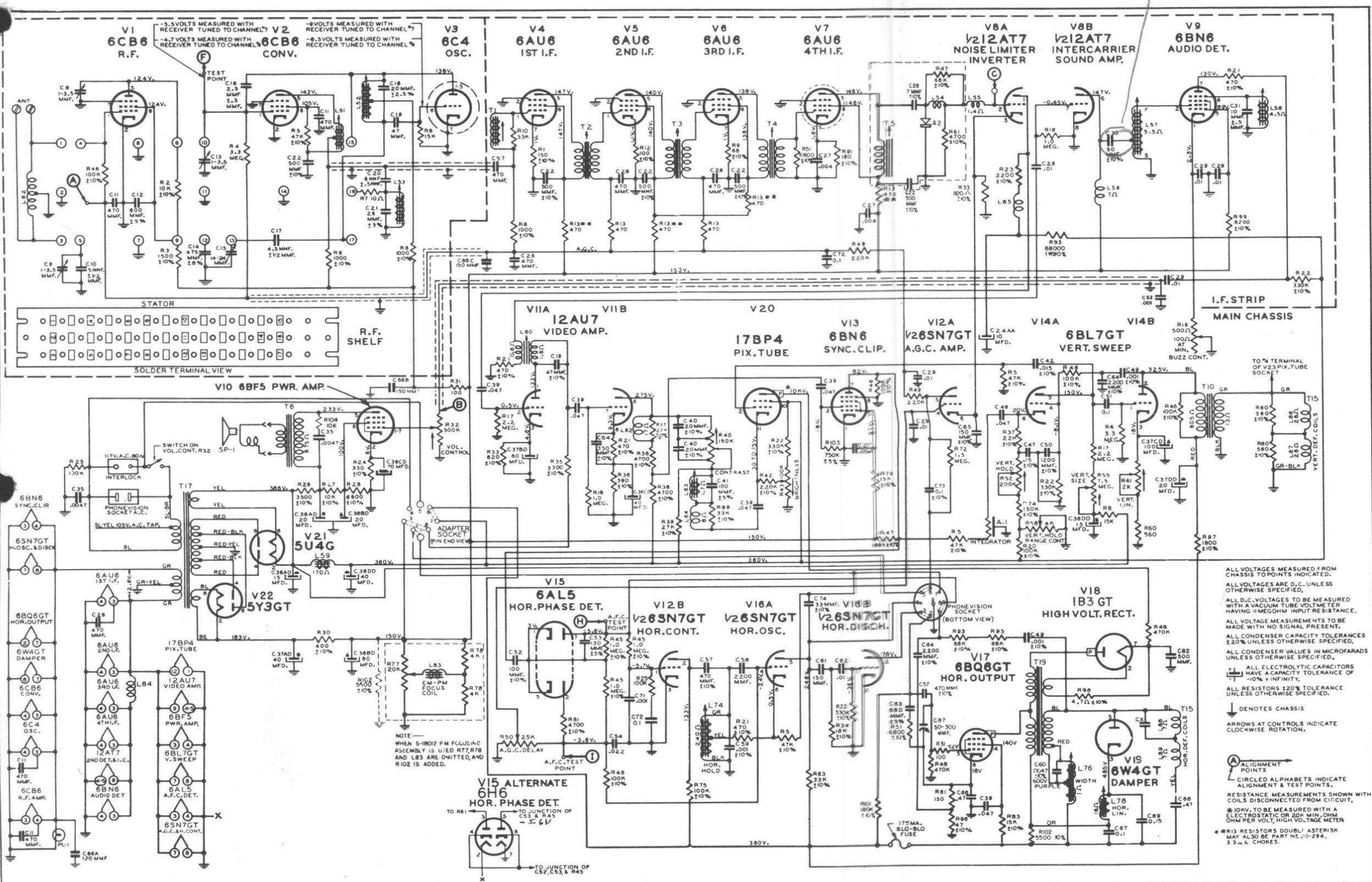


Fig. 20 Schematic Diagram 22H20 Chassis (Wave Forms Shown Also Representative For 23H22Z, 24H20 and 24H21.

ALL VOLTAGES MEASURED FROM CHASSIS TOPPOINTS INDICATED.
 ALL VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED.
 ALL D.C. VOLTAGES TO BE MEASURED WITH A VACUUM TUBE VOLTMETER HAVING 11MEG OHM INPUT RESISTANCE.
 ALL VOLTAGE MEASUREMENTS TO BE MADE WITH NO SIGNAL PRESENT.
 ALL CONDENSER CAPACITANCES 120% UNLESS OTHERWISE SPECIFIED.
 ALL CONDENSER VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
 ALL ELECTROLYTIC CAPACITORS HAVE A CAPACITY TOLERANCE OF -10% + INFINITY.
 ALL RESISTORS 220% TOLERANCE UNLESS OTHERWISE SPECIFIED.
 ↓ DENOTES CHASSIS
 ARROWS AT CONTROLS INDICATE CLOCKWISE ROTATION.
 SWITCH S1 SHOWN IN POSITION FOR MAXIMUM HEIGHT PICTURE.
 ○ ALIGNMENT POINTS
 ○ CIRCLED ALPHABETS INDICATE ALIGNMENT & TEST POINTS.
 * RESISTANCE MEASUREMENTS SHOWN WITH COILS DISCONNECTED FROM CIRCUIT.
 * 10KV. TO BE MEASURED WITH ELECTROSTATIC OR 20K MIN. OHM PER. VOLT. HIGH VOLTAGE METER.
 * R13 RESISTORS MARKED WITH DOUBLE ASTERISK MAY ALSO BE PART #22-294 3.3 & 4 CHOKES.



22H21 CHASSIS

MODELS

H2229R	H2241R	H3068R
H2230R	H2252R	H3273E
H2230E	H2253E	H3274R

The 22H21 chassis is similar to the 23H22 chassis described in Service Manual TV-7A except for the use of a single 6BQ6GT in the horizontal sweep output circuit and the addition of a new PM focus and centering assembly. This assembly is quite similar and operates on the same principle as the unit originally used in the 22H20 chassis.

Component parts used in the 22H21 chassis are the same as for the 23H22 chassis with the following exceptions:

OMIT:

22-1851	.001 Mfd. (Molded)	1000V
54-139	3/8-32x9/16 Hex Nut	(used on 63-1875)
63-1675	Horizontal Drive Control	
63-1744	100 ohm 1/2W 20%	Ins. Res.
63-1751	150 ohm 1/2W 20%	(2 used) "
63-1813	4700 ohm 1/2W 10%	" "
63-1883	220K ohm 1/2W 10%	" "
63-2017	4000 ohm 5W 10%	WW "
	(or 63-2333 or 3065)	
63-2099	Focus Control	
63-2343	7500 ohm 10W 10%	WW "
	(Replaced 63-2145 or 2022 or 3066)	
78-755	Octal Tube Socket	
80-824	Tube Plate Connector Spring	
136-20	Fuse	
S-17435	Horizontal Sweep Trans. Assembly	
S-17861	Mechanical Centering & Focus Assem. (or alt. S-17230)	

ADD:

C57	22-1138	470 Mmfd. (Molded) Mica	500V	.20
C60	22-1849	.0047 Mfd. (Molded)	600V	.26
C87	22-2291	Single Section Trimmer (or 22-2312)		
R51	63-1820	6800 ohm 1/2W 10%	Ins. Res.	.21
R101	63-1880	180K ohm 1/2W 10%	" "	.21
R102	63-3136	5500 ohm WW 10W 10%	" "	
		(or 63-2358)		
	80-744	Focus Mtg. Spring (used with S-17290)		.02
	80-869	Focus Mtg. Spring (used with S-18012)		
	136-21	Fuse		.25
	S-17290	Mechanical Centering & Focus Assy. (or alt. S-18012)		6.00
T19	S-17927	Horiz. Sweep Trans. Assem.		

Cabinet Parts

H2229R is the same as H2329R
H2230R is the same as H2330R
H2230E is the same as H2330E
H2241R is the same as H2341R
H2252R is the same as H2352R
H2253E is the same as H2353E
H3068R is the same as H3168R
H3273E is the same as H3373E
H3274R is the same as H3374R

ALL VOLTAGES MEASURED FROM CHASSIS TO POINTS INDICATED. OTHERWISE SPECIFIED.
ALL VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED.
ALL D.C. VOLTAGES TO BE MEASURED WITH A VACUUM TUBE VOLTMETER HAVING 11 MEGOHM INPUT RESISTANCE.
ALL VOLTAGE MEASUREMENTS TO BE MADE WITH NO SIGNAL PRESENT.
ALL CONDENSER CAPACITY TOLERANCES 120% UNLESS OTHERWISE SPECIFIED.
ALL CONDENSER VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
ALL ELECTROLYTIC CAPACITORS HAVE A CAPACITY TOLERANCE OF -10% + INFINITY.
ALL RESISTORS 120% TOLERANCE UNLESS OTHERWISE SPECIFIED.
↓ DENOTES CHASSIS
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION.
ALIGNMENT POINTS
CIRCLED ALPHABETS INDICATE ALIGNMENT & TEST POINTS.
RESISTANCE MEASUREMENTS SHOWN WITH COILS DISCONNECTED FROM CIRCUIT.
* 10KV. TO BE MEASURED WITH AN ELECTROSTATIC OR 20K MIN. OHM OHM PER VOLT, HIGH VOLTAGE METER
* R113 RESISTORS DOUBLE ASTERISK MAY ALSO BE PART NO. 0-294, 33-4 CHOKES.

Schematic Diagram 22H21 Chassis. 22H22 Chassis Same as 22H21 Except for 20CP4 or 20DP4 Picture Tube and Mounting

SERVICE DATA "H" SERIES TV RECEIVERS

CHASSIS 22H20Z

The 22H20Z chassis is identical in all respects to the 22H20 with the exception that a 12LP4B glass picture tube is used in place of the 12UP4B metal tube, resulting in the small differences in mounting outlined below.

Part No.	Description	Price
OMIT:		
19-207	C.R. Tube Mtg. Clip	
80-838	C.R. Tube Retaining Spring	
S-17409	Insulator Strip & Terminal	
S-17428	Anode Lead & Eyelet Assembly	
12UP4B	Picture Tube	
ADD:		
19-177	Anode Clip	.15
22-4	.004 Mfd. Ceramic Disc. (or 22-1706) 500V	.26
57-1692	Strap Clamping Plate (2 used)	.02
80-841	Ground Spring	.10
82-27	C.R. Tube Retaining Strap	.50
83-1879	Rubber Strip (C.R.T.)	.60
114-201	#8 x 5/16 Hex Hd. S.T. (2 used on ea. 57-1692)	.75C
S-17447	Anode Clip & Wire Assembly	.30
S-17773	Strip & Gasket Assembly	2.50
12LP4B	Picture Tube	

DEFLECTION YOKE REPLACEMENT

All deflection yoke replacements can be affected on "H" series receivers with 95-1241 and 95-1246 yokes. The 95-1241 is to be used on the 22H20 and 22H20Z chassis; the 95-1246 on the 22H21, 23H22, 23H22Z, 24H20 and 24H21 chassis.

VERTICAL INSTABILITY

Vertical instability may be caused by one or more of the following:

1. Poor grounds caused by loosely riveted tube socket saddles and terminal strips. This difficulty may be corrected by soldering these returns to chassis.
2. Leakage between heater and grid of 6CB6 or 6AU6 tube. When this occurs, the composite video signal as viewed on an oscilloscope screen, shows presence of hum.
3. Intermittent or open electrolytic capacitors which introduce hum in the detector output.
4. Breakdown in deflection yoke.
5. Defective integrating network.
6. Intermittent or noisy vertical linearity or vertical size control or other components in the vertical multi-vibrator circuit, particularly C47.
7. AGC advanced too high causing sync pulse compression.

In noisy areas, replace the 1 megohm 6BN6 sync clipper grid resistor with a 63-1906 750K ohm 1/2W 5%.

For improvement of vertical synchronization in fringe areas, see page 12 of Service Manual TV-7A.

REPLACING HORIZONTAL SWEEP TRANSFORMERS

When replacing horizontal sweep transformers, it cannot be over emphasized that great care must be exercised in dressing the leads to avoid arcing and consequent repeat failure. It is recommended that note be made of original factory installation and lead dressing be patterned accordingly.

When adjusting picture width on the receiver, after the transformer replacement has been made, the horizontal drive control setting is not to be advanced any more than absolutely necessary to affect proper width and focus.

Prices shown are suggested list prices and are subject to change without notice.

ZENITH RADIO CORPORATION
Service Division
6001 Dickens Avenue
Chicago 39, Illinois, U.S.A.



Form TV-7B
2½M 3/10/52

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