Model 9TW390—Walnut, Mahogany or Toasted Mahogany

RCA VICTOR

TELEVISION, AM-FM RADIO PHONOGRAPH COMBINATION MODEL 9TW390

Chassis Nos. KCS31-1 and RC617A
Mfr. No. 274

SERVICE DATA

— 1949 No. T7 —

RADIO CORPORATION OF AMERICA
RCA VICTOR DIVISION
CAMDEN, N. J., U. S. A.

GENERAL DESCRIPTION

Model 9TW390 is a deluxe 16 inch television and AM-FM radio receiver. Two record changers are provided to play 78 RPM and 45 RPM records. The "MAGIC MONITOR," an automatic scratch suppressor, is provided to permit improved reproduction from old or worn records. The instrument employs 34 tubes plus 4 rectifiers and a 16AP4 kinescope.

Features of the television unit are full twelve channel coverage; FM sound system; improved picture brilliance; picture A-G-C; A-F-C horizontal hold; stabilized vertical hold; two stages of video amplification; noise saturation circuits; improved sync separator and clipper; four mc band width for picture channel and reduced hazard high voltage supply.

ELECTRICAL AND MECHANICAL SPECIFICATIONS

PICTURE SIZE.....146 square inches on a 16 inch kinescope

TELEVISION R-F FREQUENCY RANGE

All 12 television channels, 54 mc. to 88 mc., 174 mc. to 216 mc.
Fine Tuning Range ....±250 kc on chan. 2, ±650 kc on chan. 13
Picture Carrier Frequency..... 25.75 mc.
Sound Carrier Frequency..... 21.25 mc.

VIDEO RESPONSE..... To 4 Mc.

SWEEP DEFLECTION..... Magnetic

FOCUS..... Magnetic

RADIO TUNING RANGE

Broadcast..... 540-1,600 kc
Short Wave..... 9.2-16 mc.
Frequency Modulation.....88-108 mc.
Intermediate Frequency—AM..... 455 kc
Intermediate Frequency—FM..... 10.7 mc.

POWER SUPPLY RATING..... 115 volts, 60 cycles, 310 watts

AUDIO POWER OUTPUT RATING..... 11 watts max.

CHASSIS DESIGNATIONS

Television Chassis..... KCS31-1
Radio Chassis..... RC617A
78 RPM Record Changer..... RP177B
45 RPM Record Changer..... RP168A-1

Refer to Service Data RP177 or RP168 for information on the record changers.

Some receivers have been field modified to replace the RP177 changer with type 960285.

LOUDSPEAKER 92569-6..... 12 inch PM Dynamic
Voice Coil Impedance..... 3.2 ohms at 400 cycles

DIMENSIONS (inches)	**Width**	**Height**	**Depth**
Cabinet (outside).....	39½	43½	24¾

WEIGHT

Chassis with Tubes in Cabinet..... 228 lbs.
Shipping Weight..... 305 lbs.

RECEIVER ANTENNA INPUT IMPEDANCE....300 ohms balanced
If desired, television chassis may be fed from 72 ohm co-ax.

RCA TUBE COMPLEMENT

	Tube Used	**(Television Chassis)**	**Function**
(1)	RCA 6AG5		R-F Amplifier
(2)	RCA 6J6		R-F Oscillator
(3)	RCA 6AG5		Converter
(4)	RCA 6AU6		1st Sound I-F Amplifier
(5)	RCA 6AU6		2nd Sound I-F Amplifier
(6)	RCA 6AL5		Sound Discriminator
(7)	RCA 6AV6		Bias Clamp
(8)	RCA 6AG5		1st Picture I-F Amplifier
(9)	RCA 6AG5		2nd Picture I-F Amplifier
(10)	RCA 6AG5		3rd Picture I-F Amplifier
(11)	RCA 6AG5		4th Picture I-F Amplifier
(12)	RCA 6AL5		Picture 2nd Detector and Sync Limiter
(13)	RCA 6AU6		1st Video Amplifier
(14)	RCA 6K6GT		2nd Video Amplifier
(15)	RCA 6SN7GT		AGC Amplifier and Vert. Sweep Osc.
(16)	RCA 6SN7GT		AGC Rectifier and 1st Sync Separator
(17)	RCA 6SN7GT		Sync Amplifier and 2nd Sync Separator
(18)	RCA 6K6GT		Vertical Sweep Output
(19)	RCA 6SN7GT		Horizontal Sweep Oscillator and Control
(20)	RCA 6BG6G		Horizontal Sweep Output
(21)	RCA 5V4G		Damper
(22)	RCA 1B3-GT/8016		H. V. Rectifier (2 tubes)
(23)	RCA 5U4G		Power Supply Rectifier (2 tubes)
(24)	RCA 16AP4		Kinescope

(Radio Tuner Chassis)

(1)	RCA 6BA6	R-F Amplifier
(2)	RCA 6BA6	Mixer
(3)	RCA 6BE6	Oscillator
(4)	RCA 6BA6	I-F Amplifier
(5)	RCA 6AU6	F-M Driver
(6)	RCA 6AL5	Ratio Detector
(7)	RCA 6AV6	AM Detector, AVC, AF Amplifier
(8)	RCA 6C4	Phase Invertor
(9)	RCA 6V6GT	Audio Output (2 tubes)
(10)	RCA 6BA6	MM Band Pass Amplifier
(11)	RCA 6BF6	MM Amplifier and Rectifier
(12)	RCA 6BA6	MM Reactance Tube

REFER TO PAGES 242 TO 255 FOR TELEVISION ALIGNMENT PROCEDURE, SERVICE HINTS AND WAVEFORM PHOTOGRAPHS.

TELEVISION OPERATION

The following adjustments are necessary when tuning the receiver on for the first time.

1. Turn the radio FUNCTION switch to Tel.

2. Turn the receiver "ON" and advance the SOUND VOLUME control to approximately mid-position.

3. Set the STATION SELECTOR to the desired channel.

4. Adjust the FINE TUNING control for best sound fidelity and SOUND VOLUME for suitable volume.

5. Turn the PICTURE control to mid-position.

6. Turn the BRIGHTNESS control fully counterclockwise then clockwise until a light pattern appears on the screen.

7. Adjust the VERTICAL hold control until the pattern stops vertical movement.

8. Adjust the HORIZONTAL hold control until a picture is obtained and centered.

9. Turn the BRIGHTNESS control counterclockwise until the retrace lines just disappear.

10. Adjust the PICTURE control for suitable picture contrast.

11. After the receiver has been on for some time it may be necessary to readjust FINE TUNING control for improved sound fidelity.

12. In switching from one station to another, it may be necessary to repeat steps numbers 4 and 10.

13. When the set is turned on again after an idle period, it should not be necessary to repeat the adjustments if the positions of the controls have not been changed. If any adjustment is necessary, step number 4 is generally sufficient.

14. If the position of the controls has been changed, it may be necessary to repeat steps numbers 2 through 10.

RADIO OPERATION

1. Turn the radio FUNCTION switch to the desired band.

2. Tune in the desired station with the TUNING control.

PUSH BUTTON OPERATION

1. Turn the radio FUNCTION switch to PB

2. Push the appropriate button to receive the desired station.

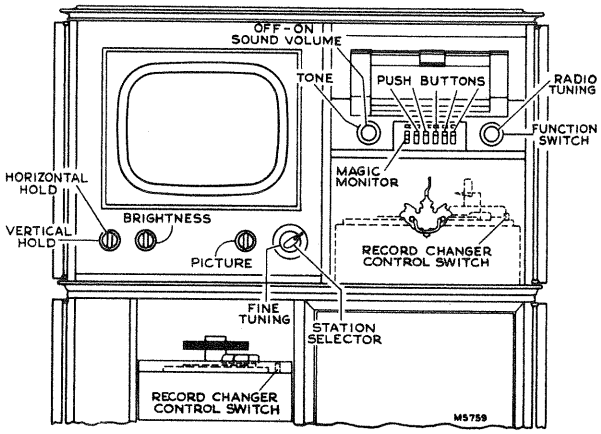


Figure 1—Receiver Operating Controls

PHONOGRAPH OPERATION

1. Turn the radio FUNCTION switch to Ph for operation of the 78 RPM changer or to XPh. for operation of the 45 RPM changer.

2. Place a record on the appropriate changer and slip the changer power switch to "ON".

"MAGIC MONITOR"

The MAGIC MONITOR operates only when the function switch is in the phono position.

1. Push the gold push button to turn MM on.

2. Push the gold push button a second time to turn MM off.

HIGH VOLTAGE WARNING

OPERATION OF THIS RECEIVER OUTSIDE THE CABINET OR WITH THE COVERS REMOVED, INVOLVES A SHOCK HAZARD FROM THE RECEIVER POWER SUPPLIES. WORK ON THE RECEIVER SHOULD NOT BE ATTEMPTED BY ANYONE WHO IS NOT THOROUGHLY FAMILIAR WITH THE PRECAUTIONS NECESSARY WHEN WORKING ON HIGH VOLTAGE EQUIPMENT. DO NOT OPERATE THE RECEIVER WITH THE HIGH VOLTAGE COMPARTMENT SHIELD REMOVED.

KINESCOPE HANDLING PRECAUTIONS

DO NOT OPEN THE KINESCOPE SHIPPING CARTON, INSTALL, REMOVE OR HANDLE THE KINESCOPE IN ANY MANNER UNLESS SHATTERPROOF GOGGLES, AND HEAVY GLOVES ARE WORN. PEOPLE NOT SO EQUIPPED SHOULD BE KEPT AWAY WHILE HANDLING KINESCOPES. KEEP THE KINESCOPE AWAY FROM THE BODY WHILE HANDLING.

The kinescope bulb encloses a high vacuum and, due to its large surface area, is subjected to considerable air pressure. For these reasons, kinescopes must be handled with more care than ordinary receiving tubes.

The large end of the kinescope bulb—particularly that part at the rim of the viewing surface—must not be struck, scratched or subjected to more than moderate pressure at any time. In installation, if the tube sticks or fails to slip smoothly into its socket, or deflecting yoke, investigate and remove the cause of the trouble. Do not force the tube. Refer to the Receiver Installation section for detailed instructions on kinescope installation. All RCA kinescopes are shipped in special cartons and should be left in the cartons until ready for installation in the receiver. Keep the carton for possible future use.

The model 9TW390 is shipped in a plywood box put together with nails. Open the box by removal of the side as designated on the carton. If the side is removed by prying, do not permit the prying tool to enter the box, as the cabinet may become scratched. Slip the cabinet out of the carton.

A flat skid is attached to the bottom of the receiver cabinet which will permit the cabinet to be moved about without stressing the cabinet joints. To remove the skid, take off the cabinet back and remove the nuts from the two bolts that hold the cabinet on the skid. With a man at each end of the cabinet, lift the cabinet off the skid.

From the rear of the cabinet remove the single wood screw which holds the RP168A record changer drawer in the closed position. Slide the drawer out. From the top of the changer, remove the three filler plugs from over the motorboard mounting screws. Loosen these three screws just enough to permit removal of two wooden shipping strips under the edge of the motorboard. Tighten the screws just enough to keep the motorboard springs from rattling and replace the filler plugs.

Remove the two red brackets which hold the RP177B changer drawer in the closed position. Open the drawer and from the front of the cabinet, pull out two cardboard strips from under the changer motorboard. The motorboard should then be free floating. In the event that it is ever necessary to remove the RP177B, disconnect the changer cables, pull the carriage all the way out then lift up on the front edge. Replace it by a reversal of this procedure.

Remove the two red angle brackets which hold the radio chassis to the cabinet.

Remove the envelope containing the control knobs, ion trap magnet and station call letter tabs.

Remove all miscellaneous shipping material.

Remove the television front panel by loosening the two wingnuts inside the cabinet and by turning the two locking plates as shown in Figure 2. Hinge the panel at the bottom and tilt it out at the top.

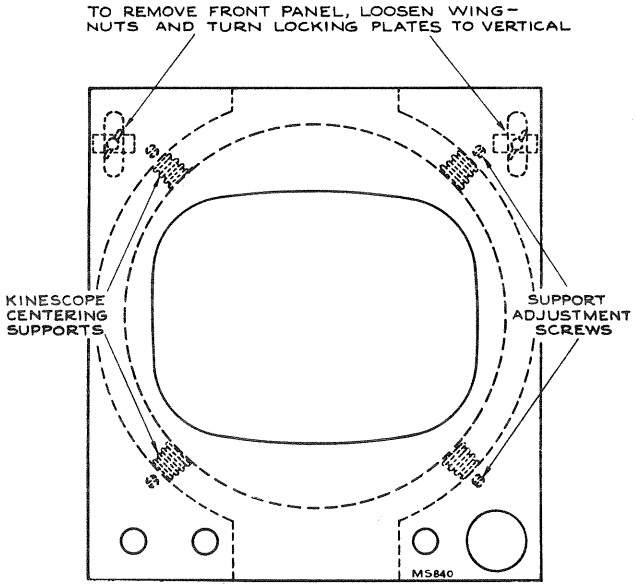


Figure 2—Television Panel, Front View

Remove the two self-tapping screws from the kinescope-cushion slide as shown in Figure 3.

Loosen the two kinescope cushion adjustment wing screws and slide the cushion toward the rear of the chassis. Loosen the deflection yoke adjustment, slide the yoke toward the rear of the chassis and tighten.

From the front of the cabinet, look through the deflection yoke and check the alignment of the focus coil with the yoke. If the focus coil is not in line, loosen the two focus coil mounting

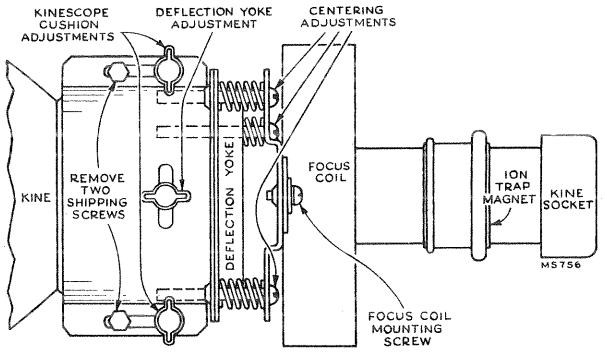


Figure 3—Yoke and Focus Coil Adjustments

screws and move the coil until alignment is obtained. Tighten the mounting screws with the coil in this position.

Loosen the two lower kinescope face centering supports, and set them at approximately mid-position. See Figure 2 for location of the supports and their adjustment screws. Loosen the two upper supports (from inside the cabinet), slip them up as far as possible and tighten.

Check the centering supports. There should be a small wire clip on the inner surface of each. The clip in the lower left corner should be connected to the high voltage lead.

KINESCOPE HANDLING PRECAUTION.—Do not open the kinescope shipping carton, install, remove, or handle the kinescope in any manner, unless shatter-proof goggles and heavy gloves are worn. Persons not so equipped should be kept away while handling the kinescope. Keep the kinescope away from the body while handling. The shipping carton should be kept for use in case of future moves.

Handle this tube by the metal rim at the edge of the screen. Do not cover the glass bell of the tube with fingermarks as it will produce leakage paths which may interfere with reception. If this portion of the tube has inadvertently been handled, wipe it clean with a soft cloth moistened with "dry" carbon tetrachloride.

KINESCOPE INSTALLATION.—Slip the Vinylite boot over the metal cone of the kinescope, turn the tube so that the key on the base of the tube will be down and insert the neck of the kinescope through the deflection and focus coils as shown in Figure 4. If the tube sticks, or fails to slip into place smoothly, investigate and remove the cause of the trouble. Do not force the tube.

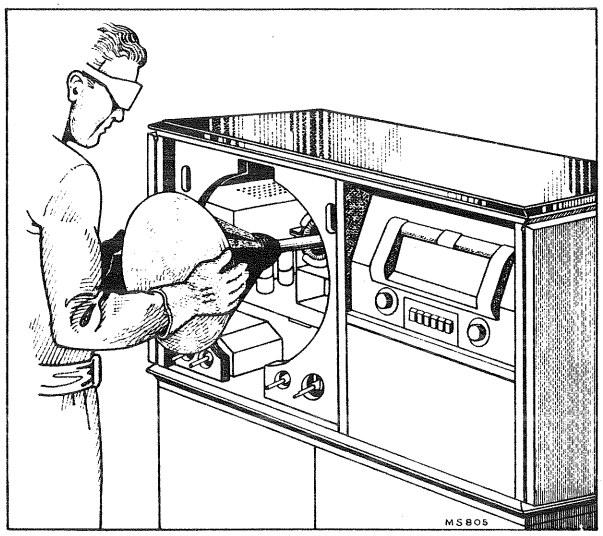


Figure 4—Kinescope Insertion

Slip the ion trap magnet assembly over the neck of the kinescope with the large magnet towards the base of the tube.

Connect the kinescope socket to the tube base.

Adjust the four centering supports until the face of the kinescope is in the center of the cabinet opening. Tighten the four supports securely.

Wipe the kinescope screen surface and front panel safety glass clean of all dust and finger marks with a soft cloth moistened with the Drackett Co.'s "Windex" or similar cleaning agent.

Install the cabinet front panel by reversal of the procedure indicated in Figure 2. Fasten the two bars in back of the panel and tighten the wingnuts.

Slip the kinescope as far forward as possible. Slide the kinescope cushion firmly up against the flare of the tube and tighten the adjustment wing screws. Slide the deflection yoke as far forward as possible. If this is not done, difficulty will be encountered in adjusting the ion trap magnet and focus coil because of shadows on the corner of the raster.

The antenna and power connections should now be made. Install the front panel control knobs.

Make sure that all tubes are firmly seated in their sockets and all cable plugs are in the proper sockets as shown in Figure 5.

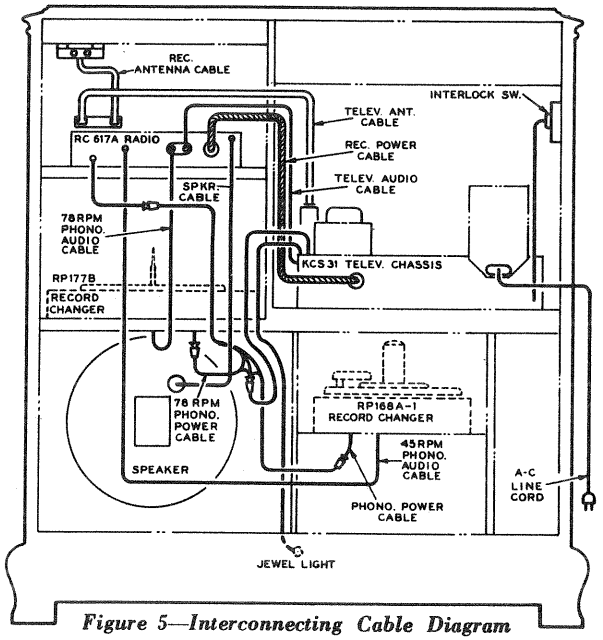


Figure 5—Interconnecting Cable Diagram

WARNING.—The high voltage supply in this receiver delivers 12,000 volts! If it is necessary to remove the kinescope after the receiver has been operating, short the kinescope cone to the chassis before attempting removal of or adjustments to the kinescope. A.C. interlocks are provided at the back of the set so that when the back is removed—so is the power.

Turn the power switch to the "on" position, the brightness control fully clockwise, and picture control counterclockwise.

ION TRAP MAGNET ADJUSTMENT.—Looking at the kinescope gun structure, it will be observed that the second cylinder from the base inside the glass neck is provided with two small metal flags. The ion trap rear magnet poles should be approximately over these flags. Starting from this position adjust the magnet by moving it forward or backward at the same time rotating it slightly around the neck of the kinescope for the brightest raster on the screen. Reduce the brightness control setting until the raster is slightly above average brilliance. Adjust the focus control (R201 on the chassis rear apron) until the line structure of the raster is clearly visible. Readjust the ion trap magnet for maximum raster brilliance. The final touches on this adjustment should be made with the brightness control at the maximum position with which good line focus can be maintained.

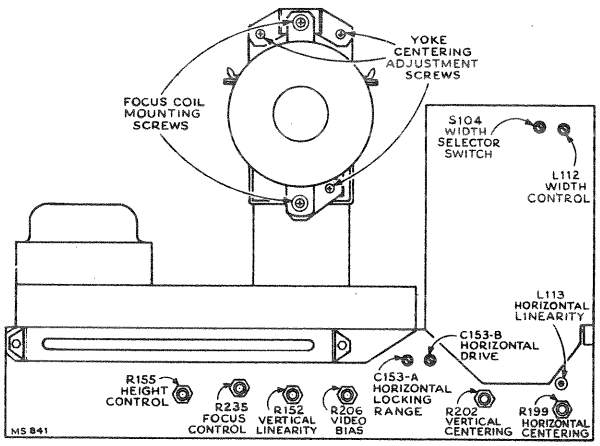


Figure 6—Rear Chassis Adjustments

DEFLECTION YOKE ADJUSTMENT.—If the lines of the raster are not horizontal or squared with the picture mask, rotate the deflection yoke until this condition is obtained. Tighten the yoke adjustment wing screw.

PICTURE ADJUSTMENTS.—It will now be necessary to obtain a test pattern picture in order to make further adjustments. See steps 2 through 10 of the television receiver operating instructions on page 2.

If the Horizontal Oscillator is operating properly, it should be possible to sync the picture at this point.

CHECK OF HORIZONTAL OSCILLATOR ALIGNMENT.—Turn the horizontal hold control to the extreme counterclockwise position. The picture should remain in horizontal sync. Momentarily remove the signal by switching off channel then back. Normally the picture will be out of sync. Turn the control clockwise slowly. The number of diagonal black bars will be gradually reduced and when only 3 bars sloping downward to the left are obtained, the picture will pull into sync upon slight additional clockwise rotation of the control. Pull in should occur when the control is approximately 90 degrees from the extreme counterclockwise position. The picture should remain in sync for approximately 90 degrees of additional clockwise rotation of the control. At the extreme clockwise position, the picture should be out of sync and should show 1 vertical or diagonal black bar in the raster.

If the receiver passes the above checks and the picture is normal and stable, the horizontal oscillator is properly aligned. Skip "Alignment of Horizontal Oscillator" and proceed with "Centering Adjustment."

ALIGNMENT OF HOLIZONTAL OSCILLATOR.—If in the above check the receiver failed to hold sync with the hold control at the extreme counterclockwise position or failed to hold sync over 90 degrees of clockwise rotation of the control from the pull in point, it will be necessary to make the following adjustments.

Horizontal Frequency Adjustment.—Turn the horizontal hold control to the extreme clockwise position. Tune in a television station and adjust the T109 horizontal frequency adjustment (under the chassis) until the picture is just out of sync and the horizontal blanking appears as a vertical or diagonal black bar in the raster.

Horizontal Lock in Range Adjustment.—Set the horizontal hold control to the full counterclockwise position. Momentarily remove the signal by switching off channel then back. Slowly turn the horizontal hold control clockwise and note the least number of diagonal bars obtained just before the picture pulls into sync.

If more than 3 bars are present just before the picture pulls into sync, adjust the horizontal locking range trimmer C153A slightly clockwise. If less than 3 bars are present, adjust C153A slightly counterclockwise. Turn the picture control counterclockwise, momentarily remove the signal and recheck the number

of bars present at the pull in point. Repeat this procedure until 3 bars are present.

Repeat the adjustments under "Horizontal Frequency Adjustment" and "Horizontal Locking Range Adjustment" until the conditions specified under each are fulfilled. When the horizontal hold operates as outlined under "Check of Horizontal Oscillator Alignment" the oscillator is properly adjusted.

If it is impossible to sync the picture at this point and the AGC system is operating properly it will be necessary to adjust the Horizontal Oscillator by the method outlined in the alignment procedure. For field purposes paragraph "A" under Oscillator Waveform Adjustment may be omitted.

CENTERING ADJUSTMENTS.—Centering is obtained by adjustment of the centering controls and by mechanically orienting the focus coil with three adjustment screws shown in Figure 3. The focus coil should be concentric around the neck of the kinescope to prevent curvature of the raster.

Adjust the focus coil until it is at right angles to the neck of the kinescope. Center the picture with the electrical centering controls. If a shadow appears on a corner of the picture, adjust the focus coil centering screws to eliminate the shadow and re-center the picture with the electrical centering controls.

FOCUS COIL ADJUSTMENTS.—If, after making the centering adjustments in the above paragraph, a corner of the picture is shadowed, it will be necessary to loosen the focus coil mounting screws (shown in Figure 3) and change the position of the coil to eliminate the shadow. Re-center the picture by adjustment of the electrical centering controls and the focus coil centering adjustments.

Recheck the position of the ion trap magnet to insure that maximum brilliance is obtained.

HEIGHT AND VERTICAL LINEARITY ADJUSTMENTS.—Adjust the height control (R155 on chassis rear apron) until the picture fills the mask vertically. Adjust vertical linearity (R162 on rear apron) until the test pattern is symmetrical from top to bottom. Adjustment of either control will require a readjustment of the other. Adjust vertical centering to align the picture with the mask.

WIDTH, DRIVE AND HORIZONTAL LINEARITY ADJUSTMENTS.—Adjust the horizontal drive control C153B to give a picture of maximum width within the limits of good linearity. Adjust the horizontal linearity control L113 to provide best linearity.

A width control coil and a width selector switch are provided. With the switch in position 1 (fully counterclockwise), adjust the width coil until the picture fills the mask. On low line voltages it may not be possible to get sufficient width by adjustment of the width coil. In this case turn the width selector switch clockwise to position 2. In this position the width coil is disconnected, and adjustment of the width coil will have no effect. For still greater width, turn the width selector switch fully clockwise to position 3. In this position, the 6BG6G screen voltage is increased as well as disconnecting the width control coil.

Adjustments of the horizontal drive control affect horizontal oscillator hold and locking range. If the drive control was adjusted, recheck the oscillator alignment.

FOCUS.—Adjust the focus control (R235) on chassis rear apron) for maximum definition in the test pattern vertical "wedge" and best focus in the white areas of the pattern.

CHECK to see that the cushion and yoke thumbscrews and the focus coil mounting screws are tight.

VIDEO BIAS CONTROL.—Normally the video bias control (R206) should be in the fully clockwise position. To check to see if this is the correct position, turn the picture control clockwise and adjust the brightness control until the retrace lines just disappear. If the whites are compressed as indicated by a "washed out" appearance in light areas, turn the video bias control counterclockwise until the picture appears normal.

CHECK OF R-F OSCILLATOR ADJUSTMENTS.—Tune in all available stations to see if the receiver r-f oscillator is adjusted to the proper frequency on all channels. If adjustments are required, these should be made by the method outlined in the alignment procedure. The adjustments for channels 2 through 5 and 7 through 12 are available from the front of the cabinet by removing the station selector escutcheon as shown in Figure 7. Adjustment for channel 13 is on top of the chassis and channel 6 adjustment is in the kinescope well.

In the event that it becomes necessary to adjust the channel 6 oscillator, the core may be reached through a hole through the cabinet partition in back of the RP177B record changer.

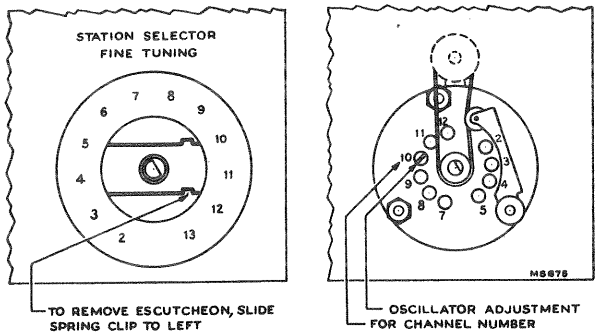


Figure 7—R-F Oscillator Adjustments

RADIO OPERATION—Turn the receiver function switch to AM and FM positions and check the radio for proper operation. In switching from radio to television or from television to radio, approximately 30 seconds warm-up time is required.

PUSH-BUTTON ADJUSTMENT—To adjust the radio push buttons, set the function switch to the broadcast band position, tune the receiver to the desired station and identify the program. Turn the function switch to the push button position and push the appropriate push button. Adjust the corresponding oscillator core until the desired station is heard. Adjust the corresponding antenna trimmer for maximum output. Proceed in the same manner to adjust the remaining push buttons. Figure 10 shows the location of the push-button adjustments and the range which the adjustments will cover.

Select the proper station call letter marker, moisten the back of the marker and insert in the appropriate recess in the push button bezel. Place marker celluloid cover in the recess over the marker.

RECORD CHANGER OPERATION—Turn the receiver function switch to each phono position and check each record player for proper operation.

Replace the cabinet back and make sure that the screws holding it are up tight, otherwise it may rattle or buzz when the receiver is operated at high volume.

WEAK SIGNAL AREA OPERATION—Since the vast majority of receivers are sold in strong signal areas, the chassis are aligned to produce the cleanest pictures in those areas. However, if the receiver is to be operated in a weak signal area, better performance can be obtained by "peaking" the r-f unit.

To peak the r-f unit in these receivers, disconnect the 390 ohm resistor which is on top of the r-f unit chassis. Adjust L66 to obtain the best possible picture on the weakest low channel station received. By this action, the r-f gain, is increased 50% at the expense of r-f bandwidth and an improvement in the weak signal picture results.

On early production receivers R11 was 1000 ohms and R14 was omitted. In order to "peak" these units it will be necessary to remove the unit from the receiver and change R11 to 10,000 ohms. Once the unit is removed from the chassis R11 is easily accessible on the unit rear wafer. When making this change, if the channel number 2 r-f coil L62 consists of 5¾ turns, the outside turn should be "knifed" one wire diameter away from the rest of the coil in order to provide peak response on channel 2. The unit should then be replaced and L66 peaked as described above.

If the peaked receiver is subsequently taken to a strong signal area, the resistor R14 should be connected in place and L66 adjusted for "flat" response on the low channels.

9TW390 **TELEVISION CHASSIS TOP VIEW**

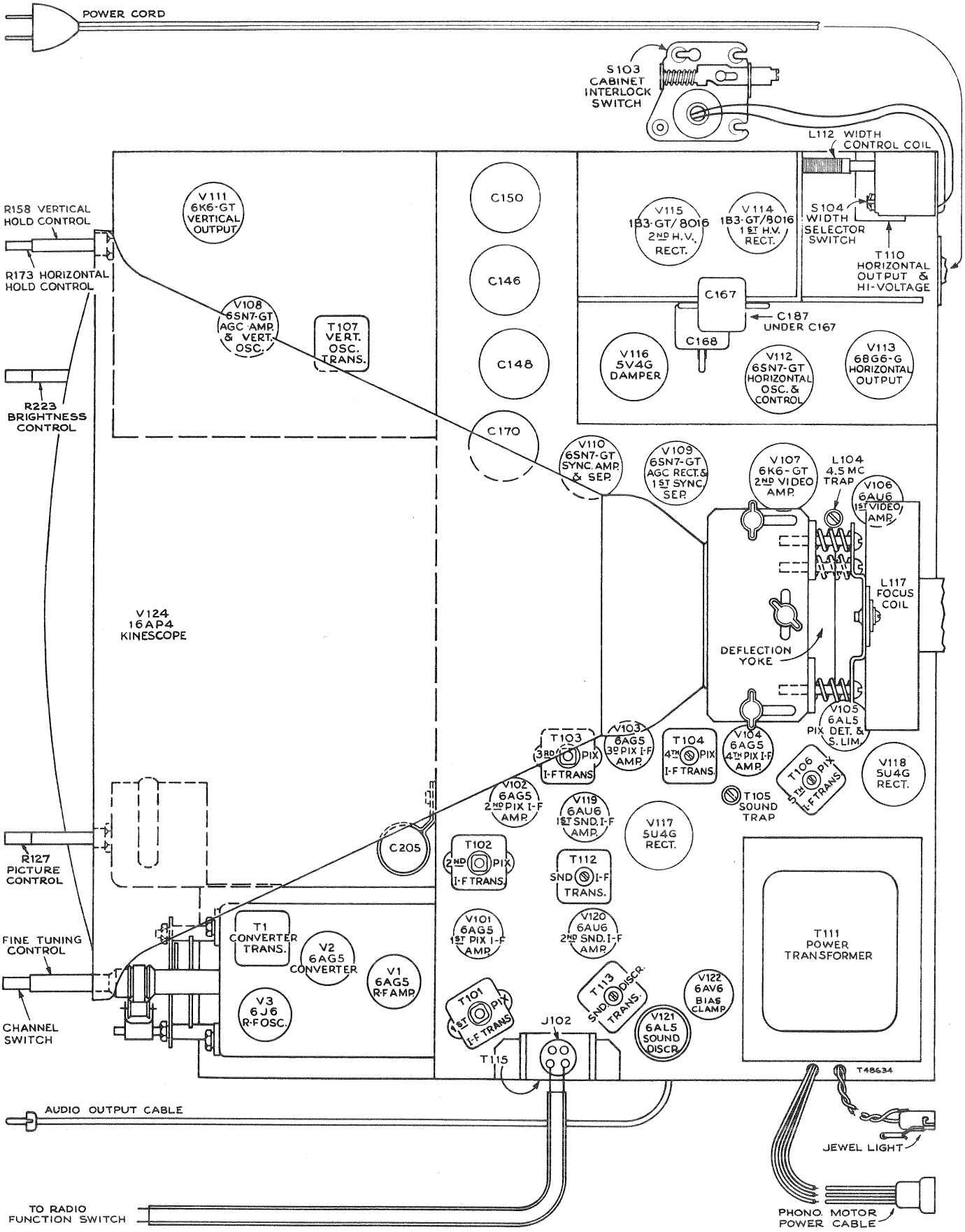


Figure 8—Chassis Top View

TELEVISION CHASSIS BOTTOM VIEW 9TW390

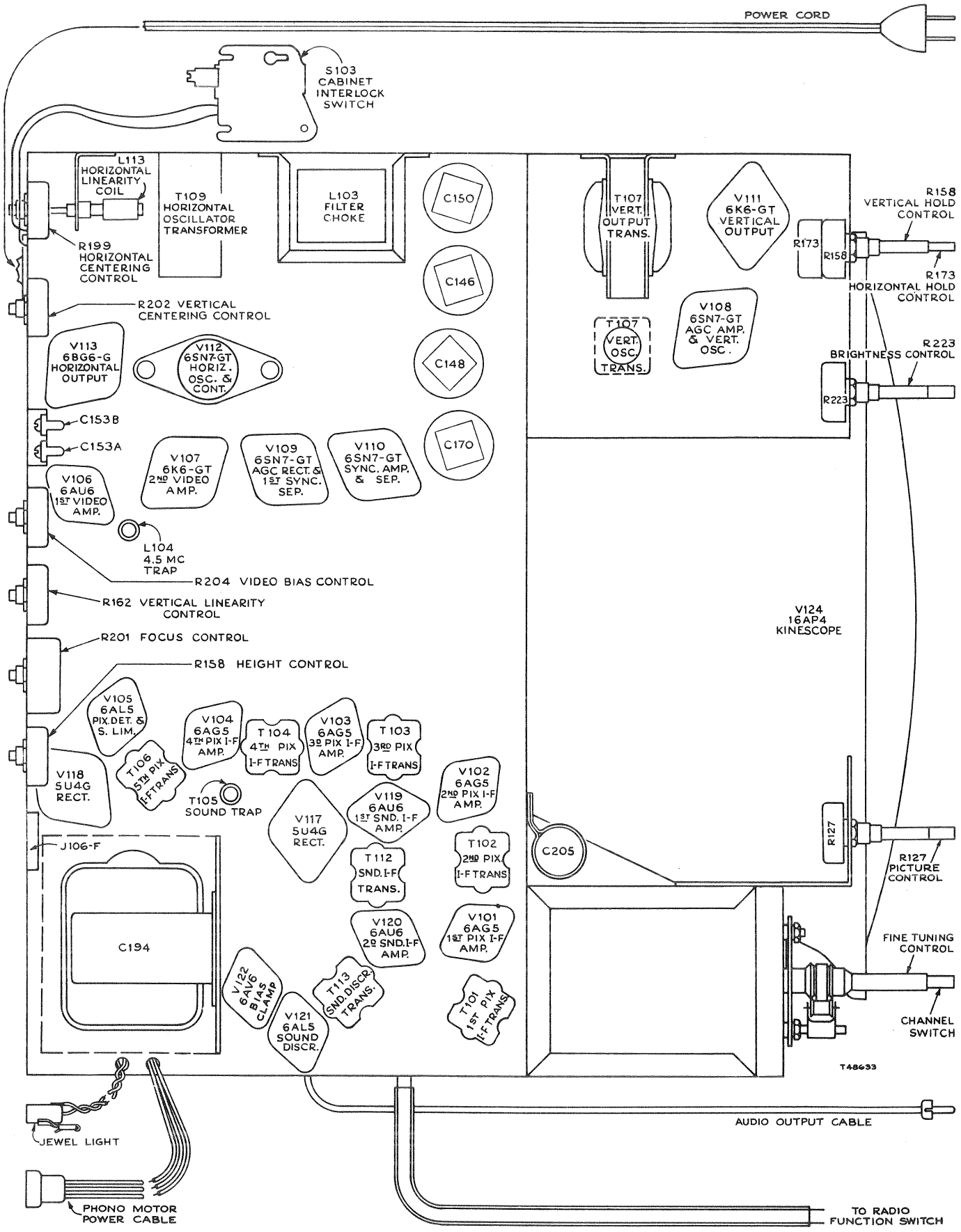


Figure 9—Chassis Bottom View

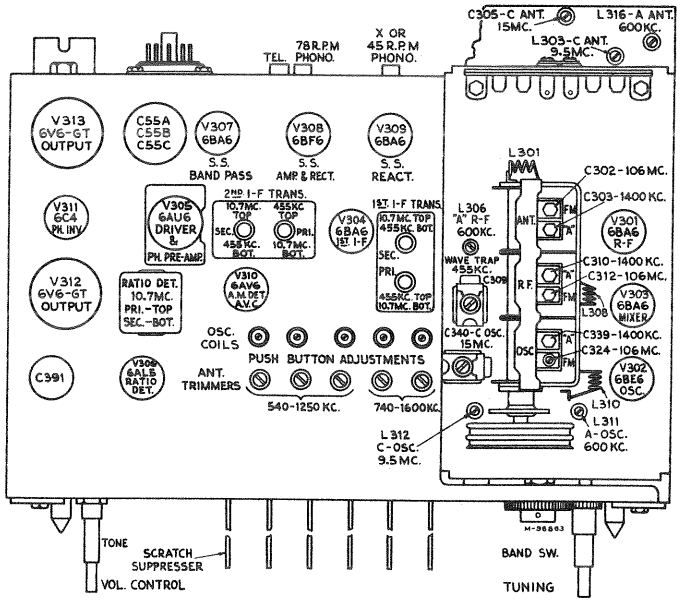


Figure 10—Chassis, Top View, Showing Adjustments

CRITICAL LEAD DRESS

The lead from terminal 5, switch S304, front, to terminal on switch S307, must be dressed between the main base and r-f shelf.

Dress all other leads away from the lead between T301 and S303 front.

Dress lead from pin 1 V305 to T302 down along chassis base.

Keep R327 dressed down along chassis base.

Keep the leads of C329 as short as possible.

The lead from pin 2 V304 must be dressed close to be dressed close to base. This lead provides degeneration for the i-f stage and neither its length or the point at which it is grounded to the chassis should be changed.

All the r-f and i-f wiring in the receiver is critical as to length and placement and should not be changed unless necessary.

PUSH BUTTON ADJUSTMENT

Make a list of the desired stations, arranged in order from low to high frequencies.

Turn the range switch to the broadcast position and manually tune in the first station on the list.

Turn range switch to push-button position and press in the second from the left-hand button.

Adjust the oscillator core rod to receive the first station.

Adjust the antenna trimmer screw for peak output on the first station.

Proceed in the same manner to adjust for the remaining stations.

Repeat adjustments for best results.

RADIO VOLTAGE CHART

Voltages measured in respect to ground, using a "VoltOhmyst."

Tube	Type	Element	Pin	Tel.	Phono.	FM
V301	6BA6	Plate	5	—	175	168
		Scg.	6	—	86	87
V302	6BE6	Plate	5	—	—	130
		G 2, 3, 4	6 & 7	—	—	120
		G.	1	—	—	−7.8
V303	6BA6	Plate	5	—	—	250
		Scg.	6	—	30	52
		Grid	1	—	−.52	−.45
		Cath.	7	—	.42	1.1
V304	6BA6	Plate	5	—	228	215
		Scg.	6	—	1.0	110
		Cath.	7	—	1.15	1.0
V305	6AU6	Plate	5	—	0	250
		Scg.	6	—	145	184
V306	6AL5	—	—	—	—	—
V307	6BA6	Plate	5	—	211	197
		Scg.	6	—	72	68
		Grid	1	—	0	0
		Cath.	7	—	8.3	7.5
V308	6BF6	Plate	7	—	127	118
		Cath.	2	—	6.6	6.2
V309	6BA6	Plate	5	—	62	60
		Scg.	6	—	22	123
V310	6AV6	Plate	7	88	95	84
		Grid	1	−.8	−.8	−.8
V311	6C4	Plate	1 & 5	170	145	182
		Grid	6	+39	+47	+25.5
		Cath.	7	48	57.5	5.2
V312 V313	6V6GT	Plate	3	240	290	270
		Scg.	4	90	195	175
		Grid	5	−122	−79	−91.5
		Cath.	8	−109	−61	−75

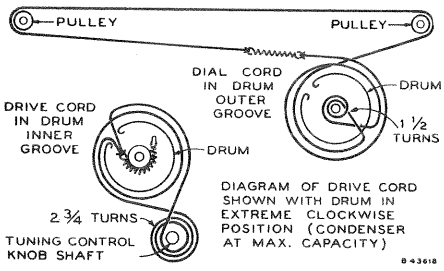
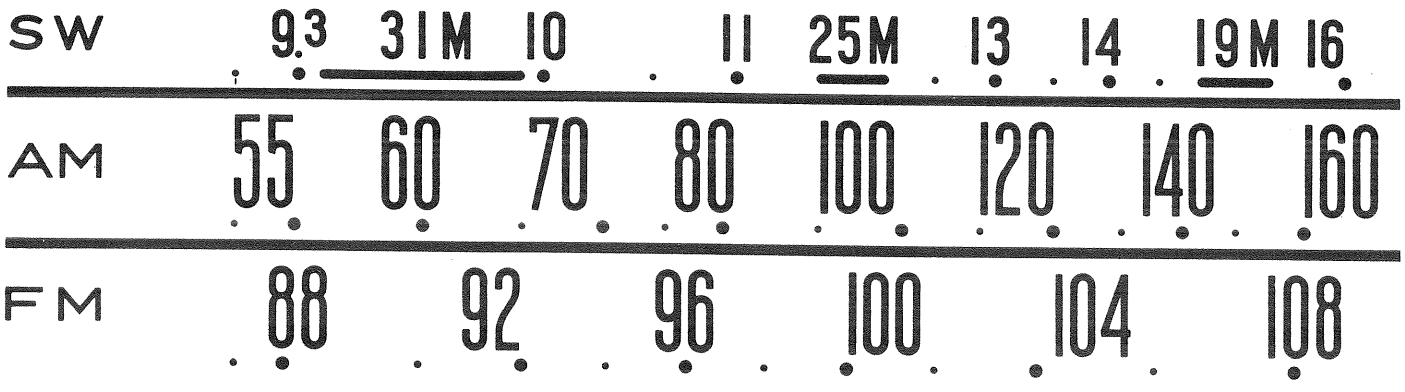


Figure 11—Dial and Drive Cord Assembly

Figure 12—Partial Dial Scale (Exact Size, May Be Used During Alignment).



RADIO ALIGNMENT PROCEDURE

If any lead dressing is necessary, it should be done before aligning the receiver. See Critical Lead Dress on page 8. Before aligning set, completely mesh the gang and set the dial pointer to the mechanical max. calibration point at extreme left end of dial. When making a complete alignment follow the tabulated form below in sequence. If only a portion of the circuit is to be aligned select the portion required and follow the remaining steps in the chart. Any adjustments made on the FM 10.7 mc. I-F's make it necessary to adjust the AM 455 kc. I-F's.

FM ALIGNMENT

Steps	Connect High Side of Osc. to—	Tune Osc. to—	Radio Dial Tuned to—	Adjust
1	Set the receiver function switch to the FM position. Connect d-c probe of a "VoltOhmyst" to the negative lead of the 5 mfd electrolytic capacitor C372. Connect the common lead of the meter to chassis.			
2	Driver grid, pin 1, of V5 in series with .01 mfd	10.7 mc., .1 volts output	——	Ratio Detector transformer T303 top for maximum d-c voltage across C372. (Approx. 2.5 v.)
3	Remove meter leads. Connect 68,000-ohm resistors (within 1% of each other) in series, across the 10,000-ohm ratio detector load resistor R365. Connect the common lead of the "VoltOhmyst" to junction of the 68,000-ohm resistors and the d-c probe to the junction of R335 and R361.			
4	Same as step 2	Same as step 2	——	With "VoltOhmyst" connected as in step 3, adjust T303 bottom core for zero d-c balance on the meter.
5	Repeat steps 2 and 4 until no change occurs with further core adjustments.			
6	Remove the 68,000 ohm resistors. Connect "VoltOhymst" d-c probe to C372 negative lead and the meter common lead to chassis.			
7	Mixer grid pin #1 of 6BA6 in series with a .01 mfd capacitor. Keep leads to grid and ground very short.	10.7 mc. Keep the osc. output adjusted to provide 2 to 3 volts across C372.	——	** T302 top and bottom FM cores alternately loading pri. and sec. with 680 ohms while the opposite side of the transformer is being adjusted for maximum voltage across C372. T301 top and bottom FM cores same as above.
8	To tap of antenna coil L301 in series with 270 ohms.	106 mc.	106 mc.	OSC. C324 for maximum voltage across C372.
9		90 mc.	90 mc.	OSC. L310 for maximum voltage across C372.
10	Repeat steps 8 and 9 for exact calibration. Check a 95 mc. signal against dial calibration to insure against alignment to image.			
11	Same as step 8	106 mc.	106 mc.	R-F C312 for maximum voltage across C372.
12		90 mc.	90 mc.	R-F L308 for maximum voltage across C372.
13	Repeat steps 11 and 12 for maximum output. Repeat steps 8 and 9 then 11 and 12 if necessary.			
14	Same as step 8	106 mc.	106 mc.	ANT. C302 for maximum voltage across C372.
15		90 mc.	90 mc.	ANT. L301 for maximum voltage across C372.
16	Repeat steps 14 and 15 for maximum output.			

* Near the correct core position the zero point is approached rapidly and continued adjustment causes the indicated polarity to reverse. A slow approach to the zero point is an indication of severe detuning, and the bottom core should be turned in the opposite direction.

** This method, which is known as alternate loading, involves the use of a 680-ohm resistor to load the plate winding while the grid winding of the same transformer is being peaked. Then the grid winding is loaded with 680-ohm resistor while the plate winding is being peaked. When windings are loaded, it is necessary to increase the 10.7 mc. input, since gain will decrease and voltage across C372 will be less.

AM ALIGNMENT

Connect the low side of the test-oscillator to the receiver chassis, and keep the oscillator output low to avoid a-v-c action. Connect an output meter across the speaker voice coil, and turn the receiver volume control to maximum. "A" band must be aligned before "C" band.

Steps	Connect the High Side of the Test Osc. to—	Tune Test Osc. to—	Range Switch	Turn Radio Dial to—	Adjust the following
1	Pin #1 of 6BA6 (V303) in series with a 5.6 mmfd capacitor	455 kc. 30% 400 cy. mod.	"A" Band	Low Freq. end of Dial	* Top and bottom AM cores of T301 and T302. (For max. voltage across voice coil.)
2	"A" band ant. coil pri. through dummy ant. comprised of 200 mmf	455 kc. 30% mod.	Push Button	"	Adj. I-F Trap C309 for minimum voltage across voice coil.
3	"	1400 kc. 30% mod.	"A" Band	1400 kc.	OSC., C339—R-F, C310—ANT., C303 (For max. voltage across voice coil.)
4	"	600 kc. 30% mod.	"A" Band	600 kc.	OSC., L311—R-F, L306—ANT., L316 (For max. voltage across voice coil.)
5	Repeat steps 3 and 4 for maximum output and until further adjustment does not improve response.				
6	"A" band ant. coil pri. through dummy ant. of 25 mmfs in series with 150 ohms	15.2 mc.	"C" Band	15.2 mc.	**OSC., C340—ANT., C305 for max.
7		9.5 mc.	"C" Band	9.5 mc.	OSC., L312—ANT., L303 for max.
8	Repeat steps 6 and 7 for maximum output and until further adjustment does not improve response.***				

* It is necessary to alternately load the primary and secondary of each 455-kc. i-f transformer with 22,000 ohms while the opposite side of the same transformer is being adjusted.

** To guard against the possibility of alignment to image frequencies increase the test oscillator output at 15.2 mc. and tune the receiver to approx. 14.3 mc. on the dial. The oscillator signal should be heard, though perhaps only faintly. Tune the oscillator to 9.5 mc. and the receiver to 10.6 mc. In this case, the oscillator signal should not be heard. If these conditions are not satisfied, the receiver is incorrectly aligned.

RADIO SCHEMATIC DIAGRAM

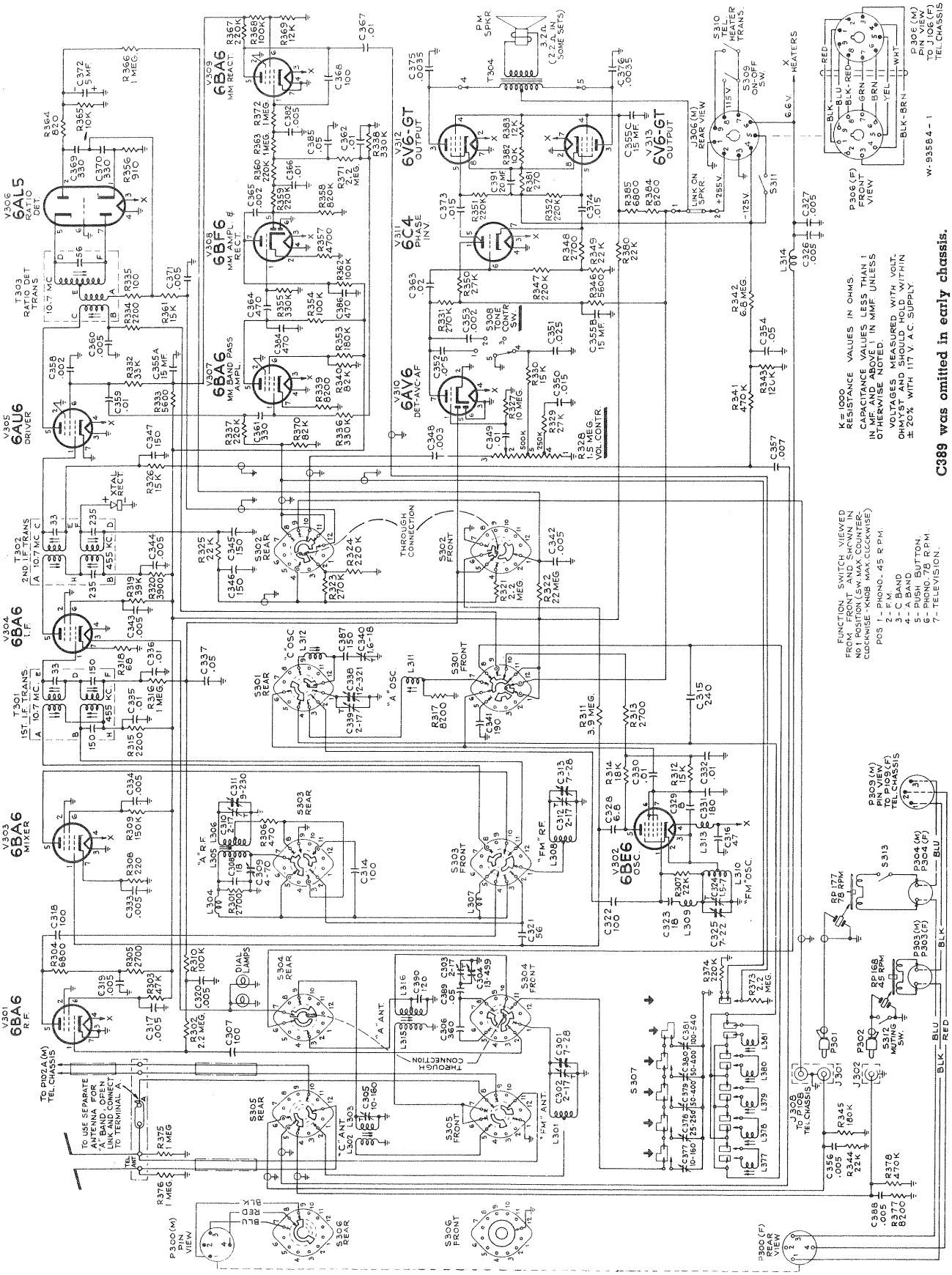


Figure 13 —Radio Schematic Diagram

RADIO CIRCUIT DESCRIPTION

The function switch (S301, S302, S303, S304, S305, S306) controls the following:

S306	AC power input to phono motors
S305F	Ant. selections
S305R	Ant. selection and record changer audio input to T302
S304R	Ant. tuning and 6.3 V. to dial lamps and V304 heater
S304F	Ant. tuning
S303R	R.F. tuning
S303F	R.F. tuning and 1st I.F. trans. primary
S301R	Osc. tuning
S301F	Osc. tuning and "B" plus input to V305 plate
S302F	AVC selection and distribution
S302R	TV sound input from J308
	AM sound input from T302
	FM sound input from ratio detector
	Phono sound input from V305 screen grid

Switch S310 controls A.C. input to the television heater transformer (on TV Chassis) and S311 changes grid bias on the Hor. Sweep Output tube (V113 on TV chassis). Both switches are actuated by the function switch.

The RF stage is untuned on "Push Button" and "C" positions and is tuned on "A" and "FM" positions.

The audio input from the record changers is applied to the secondary of T302 and is amplified by V305. This amplified audio signal appears at the screen grid of V305 and is applied to S302 rear and to the "Magic Monitor". The "Magic Monitor" is made operative (phono input only) or inoperative by a push button (S307A) on the front panel.

OPERATION OF THE "MAGIC MONITOR"

This section has three tubes and is located at the rear of the chassis and it operates to control the high frequency components of the audio signal during phono operation.

The audio signal is amplified by V307 and V308 and is rectified by a diode of V308. This rectified voltage is applied to the grid circuit of the reactance tube V309.

The audio signal is also applied to the plate of the reactance tube V309 thru S307A and C367.

When the control voltage on V309 is below a predetermined level the tube will act as a shunt capacity between the audio signal and the chassis thereby attenuating the high frequencies.

Any serious defects in Magic Monitor operation will be made evident by the following tests. An audio oscillator and an a-c voltmeter flat to 3,000 cycles are needed for the tests.

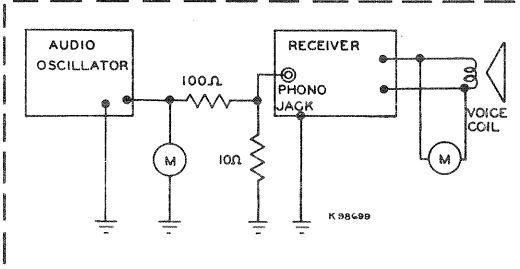
1. Set up the equipment as shown in the illustration below. Although two voltmeters are shown, one meter can be used for both positions.

2. Turn the receiver function switch to PH. Set the audio oscillator to 400 cycles and adjust its output to 0.2 volt (measured across the oscillator output terminals). Adjust the receiver volume control for reading of 1 volt (measured at the voice coil). There should be little or no change in receiver output when the MM push button is actuated.

3. Repeat Step 2 except using oscillator output of 1 volt, 400 cycles. There should be little or no change in receiver output when the MM push button is actuated.

4. Repeat Step 2 except using oscillator output of 1 volt, 3000 cycles. There should be little or no change in receiver output when the MM push button is actuated.

5. Repeat Step 2 except using oscillator output of 0.2 volt, 3000 cycles. With MM push button in the ON position, the output should decrease to approximately 1/5 of that obtained with MM push button in the OFF position.



Magic Monitor Test Set-up.

Resistors of different values may be used but should be selected to give the same ratio and approximate the output impedance of the audio oscillator. The two resistors in series should not exceed 500 ohms.

9TW390

TELEVISION VOLTAGE CHART

The following measurements represent two sets of conditions. In the first condition a 2200 mircovolt test pattern signal was fed into the receiver, the picture synced. The second condition was obtained by removing the antenna leads and short circuiting the receiver antenna terminals. Voltages shown are as read with "Jr. VoltOhmyst" between the indicated terminal and chassis ground and with the receiver operating on 117 volts 60 cycles a-c.

Tube No.	Tube Type	Function	Operating Condition	E. Plate		E. Screen		E. Cathode		E. Grid		I Plate (ma.)	I Screen (ma.)	Notes on Measurements
				Pin No.	Volts	Pin No.	Volts	Pin No.	Volts	Pin No.	Volts			
V1	6AG5	R-F Amplifier	2200 Mu. V. Signal	5	140	6	142	2 & 7	0	1	−4.9	7	3	
			No Signal	5	67	6	111	2 & 7	0	1	−0.3	14.0	5.0	
V2	6AG5	Converter	2200 Mu. V. Signal	5	137	6	137	2 & 7	0	1	*−5.4	—	—	*Depending upon channel
			No Signal	5	108	6	108	2 & 7	0	1	*−2.0 to −7.0	*6.0 to 10	*1.5 to 3.0	
V3	6J6	R-F Oscillator	2200 Mu. V. Signal	1 & 2	90.5	—	—	7	.19	5 & 6	*−7.0	—	—	*Depending upon channel
			No Signal	1 & 2	*68 to 81	—	—	7	.16	5 & 6	*−4.5 to −6.6	*1.8 to 2.1	—	
V101	6AG5	1st Pix. I-F Amplifier	2200 Mu. V. Signal	5	136	6	136	2 & 7	<0.1	1	−4.2	0.5	0.1	
			No Signal	5	110	6	103	2 & 7	0.17	1	−1.5	3.8	0.6	
V102	6AG5	2d Pix. I-F Amplifier	2200 Mu. V. Signal	5	122	6	122	2 & 7	0.9	1	0	10.3	2.9	
			No Signal	5	96	6	100	2 & 7	0.6	1	0	6.8	2.0	
V103	6AG5	3d Pix. I-F Amplifier	2200 Mu. V. Signal	5	130	6	137	2 & 7	<0.1	1	−4.2	1.0	3	
			No Signal	5	95	6	106	2 & 7	0.17	1	−1.5	3.6	8	
V104	6AG5	4th Pix. I-F Amplifier	2200 Mu. V. Signal	5	194	6	137	2 & 7	1.6	1	0	8.3	2.7	
			No Signal	5	200	6	113	2 & 7	1.2	1	0	7.1	1.4	
V105 A	6AL5	Picture 2d Det.	2200 Mu. V. Signal	7	−117	—	—	1	−115	—	—	0.2	—	
			No Signal	7	−130	—	—	1	−125	—	—	0.3	—	
V105 B	6AL5	Sync Limiter	2200 Mu. V. Signal	2	−131	—	—	5	−46	—	—	<0.1	—	
			No Signal	2	−100	—	—	5	−52	—	—	<0.1	—	
V106	6AU6	1st Video Amplifier	2200 Mu. V. Signal	5	−68	6	27	7	−114.5	1	−117	3.9	1.8	
			No Signal	5	−72	6	25	7	−124	1	−130	3.7	1.6	
V107	6K6 GT	2d Video Amplifier	2200 Mu. V. Signal	3	*68	4	140	8	−47	5	−68	10.0	2.5	Maximum contrast
			No Signal	3	*34	4	120	8	−52	5	−72	11.0	2.3	
V108 A	6SN7 GT	AGC Amplifier	2200 Mu. V. Signal	5	−24	—	—	6	−50	4	−51	0.4	—	
			No Signal	5	−7	—	—	6	−56	4	−60	<0.1	—	
V108 B	6SN7 GT	Vertical Oscillator	2200 Mu. V. Signal	2	54	—	—	3	−110	1	−157	0.32	—	
			No Signal	2	39	—	—	3	−125	1	−171	0.32	—	
V109	6SN7 GT	AGC Rectifier	2200 Mu. V. Signal	5	27	—	—	6	−51	4	−68	0.25	—	
			No Signal	5	19	—	—	6	−59	4	−70	0.25	—	
V109	6SN7 GT	1st Sync Separator	2200 Mu. V. Signal	2	23	—	—	3	−52	1	−68	0.13	—	
			No Signal	2	18	—	—	3	−63	1	−70	0.18	—	

TELEVISION VOLTAGE CHART

Tube No.	Tube Type	Function	Operating Condition	E. Plate		E. Screen		E. Cathode		E. Grid		I Plate (ma.)	I Screen (ma.)	Notes on Measurements
				Pin No.	Volts	Pin No.	Volts	Pin No.	Volts	Pin No.	Volts			
V110	6SN7 GT	Sync Amplifier	2200 Mu. V. Signal	2	81	—	—	3	−46	1	−48	10.8	—	
			No Signal	2	71	—	—	3	−50	1	−54	10.8	—	
V110	6SN7 GT	Sync Separator	2200 Mu. V. Signal	5	210	—	—	6	−44	4	−131	0.34	—	
			No Signal	5	200	—	—	6	−51	4	−100	0.15	—	
V111	6K6-GT	Vertical Output	2200 Mu. V. Signal	3	197	4	*197	8	−76	5	−96	7.7	1.3	*Screen connected to plate
			No Signal	3	185	4	*185	8	−93	5	−110	7.6	1.3	
V112	6SN7 GT	Horizontal Osc. Control	2200 Mu. V. Signal	2	25	—	—	3	−120	1	−110	0.24	—	Horizontal hold control completely clockwise
			No Signal	2	−8	—	—	3	−146	1	−128	0.1	—	
			No Signal	2	+60	—	—	3	−130	1	−114	0.13	—	Hold control counterclockwise
V112	6SN7 GT	Horizontal Oscillator	2200 Mu. V. Signal	5	75	—	—	6	−115	4	−190	2.3	—	
			No Signal	5	60	—	—	6	−125	4	−204	1.5	—	
V113	6BG6G	Horizontal Output	2200 Mu. V. Signal	Cap	*	8	180	3	−100	5	−120	90.0	10.0	*5200 volt pulse present
			No Signal	Cap	Do Not Meas.	8	160	3	−112	5	−126	92.6	10.4	
V114	1B3GT /8016	H. V. Rectifier	Brightness Min.	Cap	*	—	—	2 & 7	6400	—	—	—	—	*6000 volt pulse present
			Brightness Max.	Cap	Do Not Meas.	—	—	2 & 7	6100	—	—	—	—	
V115	1B3GT /8016	H. V. Rectifier	Brightness Min.	Cap	*	—	—	2 & 7	11700	—	—	—	—	*6000 volt pulse present
			Brightness Max.	Cap	Do Not Meas.	—	—	2 & 7	11600	—	—	—	—	
V116	5V4G	Damper	2200 Mu. V. Signal	4 & 6	*	—	—	2 & 8	350	—	—	93.0	—	*1200 volt pulse present
			No Signal	4 & 6	Do Not Meas.	—	—	2 & 8	340	—	—	92.0	—	
V117 V118	5U4G	Rectifier	2200 Mu. V. Signal	4 & 6	*365	—	—	2 & 8	277	—	—	†125	—	†Per tube *A-C measured from plate to trans. center tap
			No Signal	4 & 6	*365	—	—	2 & 8	264	—	—	†130	—	
V119	6AU6	1st Sound I-F Amplifier	2200 Mu. V. Signal	5	131	6	131	7	0.65	1	0	6.0		
			No Signal	5	106	6	106	7	0.55	1	0	4.9		
V120	6AU6	2d Sound I-F Amplifier	2200 Mu. V. Signal	5	136	6	80	7	0	1	−0.6	3.5		
			No Signal	5	111	6	62	7	0	1	−0.7	3.0		
V121	6AL5	Sound Discrim.	2200 Mu. V. Signal	2	−1.4	—	—	5	0	—	—	—	—	
			No Signal	2	−0.7	—	—	5	0	—	—	—	—	
V122	6AV6	Bias Clamp	2200 Mu. V. Signal	7	—	—	—	2	0	1	—	—	—	
			No Signal	7	—	—	—	2	0	1	—	—	—	
V124	16AP4	Kinescope	2200 Mu. V. Signal	Cap	11700	10	320	11	26	2	−29	0.08	—	Average Brightness
			No Signal	Cap	11600	10	305	11	11	2	−47	0.08	—	Average Brightness

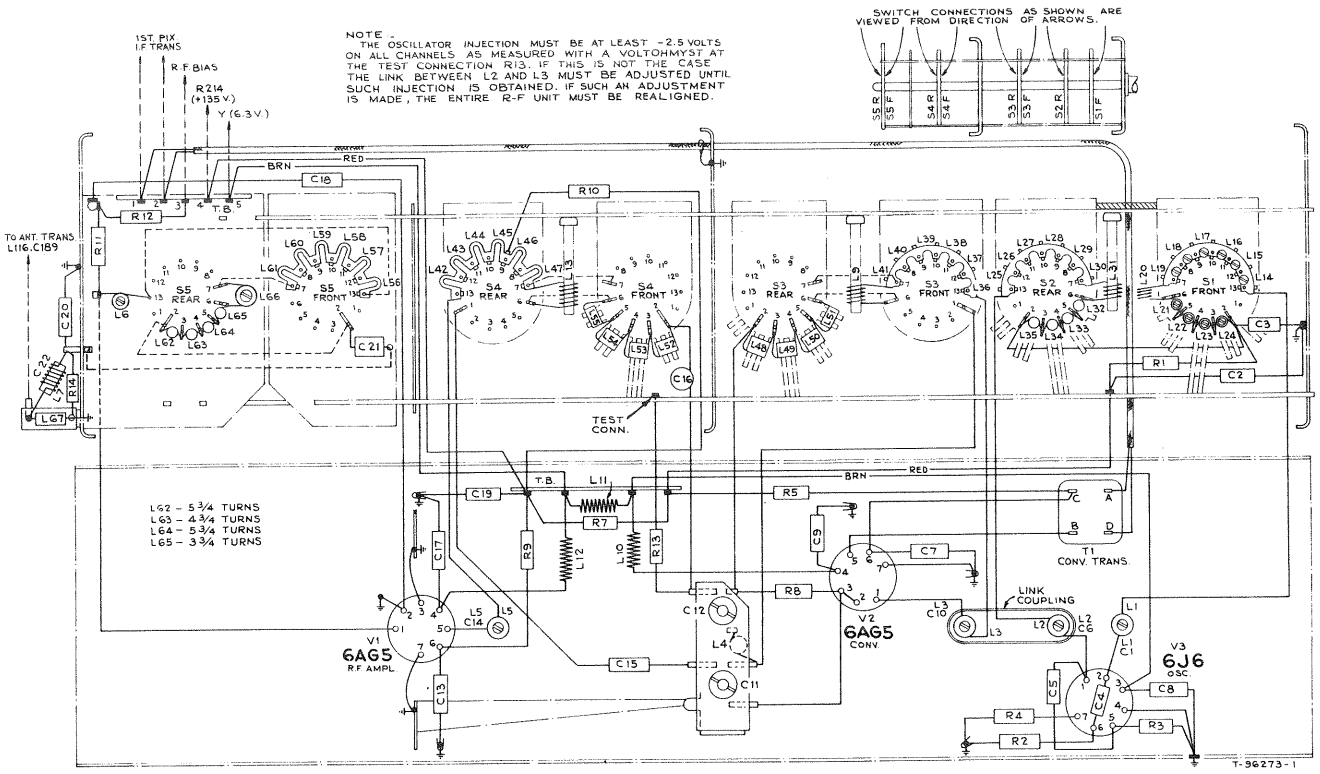
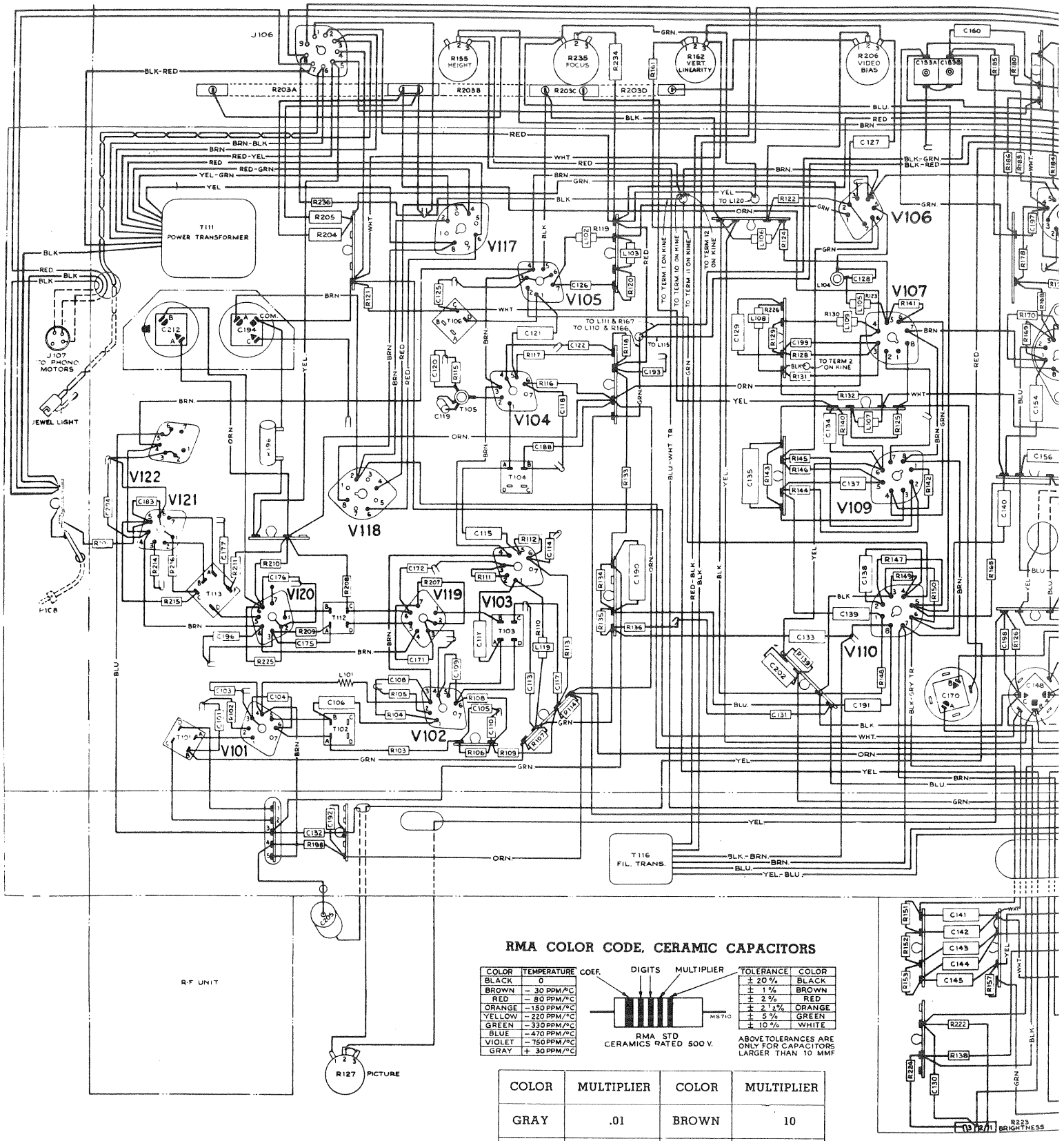


Figure 14 –R-F Unit Wiring Diagram

TELEVISION CRITICAL LEAD DRESS:

1. The ground bus from pin 2 and the center shield of V120 socket should not be shortened or rerouted.
2. Dress the body of R195 as close to tube pin as possible.
3. Do not change the dress of the filament leads or the by-pass capacitors in the picture or sound i-f circuits. The filament leads between V120, V121 and V122 should be down against the chassis and away from grid or plate leads.
4. Dress all leads crossing the i-f circuits close to the chassis and held so they cannot move and change alignment.
5. If it is necessary to replace any of the 1500 mmf capacitors in the picture i-f circuit, the lead length must be kept as short as possible.
6. Picture i-f coupling capacitors C106, C111, C115 and C121 should be up and away from the chassis and should be clear of the pix i-f transformer adjustments by at least ¼ inch. If the dress of any of these capacitors is changed, the i-f alignment should be rechecked.
7. Leads to L102 and L103 must be as short as possible.
8. Dress peaking coils L105, L106, L107, L108 and L109 up and away from the chassis.
9. Dress R129 away from L109.
10. Dress C183 across V121 tube pins 5 and 6 with leads not exceeding ⅜ inch.
11. Dress the blue lead from pin 5 of V122 down against the chassis and under two shielded leads.
12. Dress C129 and C199 up and away from the chassis.
13. Dress the yellow lead from the picture control away from the chassis. Dress the yellow lead from pin 8 of V106 away from the chassis.
14. Dress the green lead from pin 8 of V107 away from the chassis.
15. Dress R168, R169, R170, R176 and R178 up and away from the chassis.
16. The leads to the volume control should be dressed down against the chassis and away from V119 and V120.
17. Dress the yoke red horizontal deflection lead under the clips of the fixed H. V. shield.
18. Dress the green lead from C166 close to the chassis and away from the red lead connected to T110-4.
19. Insert the red lead into T110-4 from the top of the terminal.
20. All soldered connections in the high voltage compartment should be free of sharp points.
21. Contact between the r-f oscillator frequency adjustment screws and the oscillator coils or channel switch eyelets must be avoided.



RMA COLOR CODE, CERAMIC CAPACITORS

COLOR	TEMPERATURE COEF.
BLACK	0
BROWN	− 30 PPM/°C
RED	− 80 PPM/°C
ORANGE	−150 PPM/°C
YELLOW	− 220 PPM/°C
GREEN	−330 PPM/°C
BLUE	−470 PPM/°C
VIOLET	−750 PPM/°C
GRAY	+ 30 PPM/°C

RMA STD CERAMICS RATED 500 V.

TOLERANCE	COLOR
± 20 %	BLACK
± 1 %	BROWN
± 2 %	RED
± 2½%	ORANGE
± 5 %	GREEN
± 10 %	WHITE

ABOVE TOLERANCES ARE ONLY FOR CAPACITORS LARGER THAN 10 MMF

COLOR	MULTIPLIER	COLOR	MULTIPLIER
GRAY	.01	BROWN	10
WHITE	.1	RED	100
BLACK	1.	ORANGE	1,000

For digits, use digit column, page 16

In some receivers, a four color ceramic capacitor color code is employed. It reads the same as the RMA color code except that the tolerance stripe is omitted. If the coefficient stripe is silver, it indicates that the capacitor has a very large temperature coefficient and is to be employed for bypass or other usages where a wide variation of capacity is unimportant. Silver striped capacitors are rated at 350 volts unless otherwise marked.

NG DIAGRAM

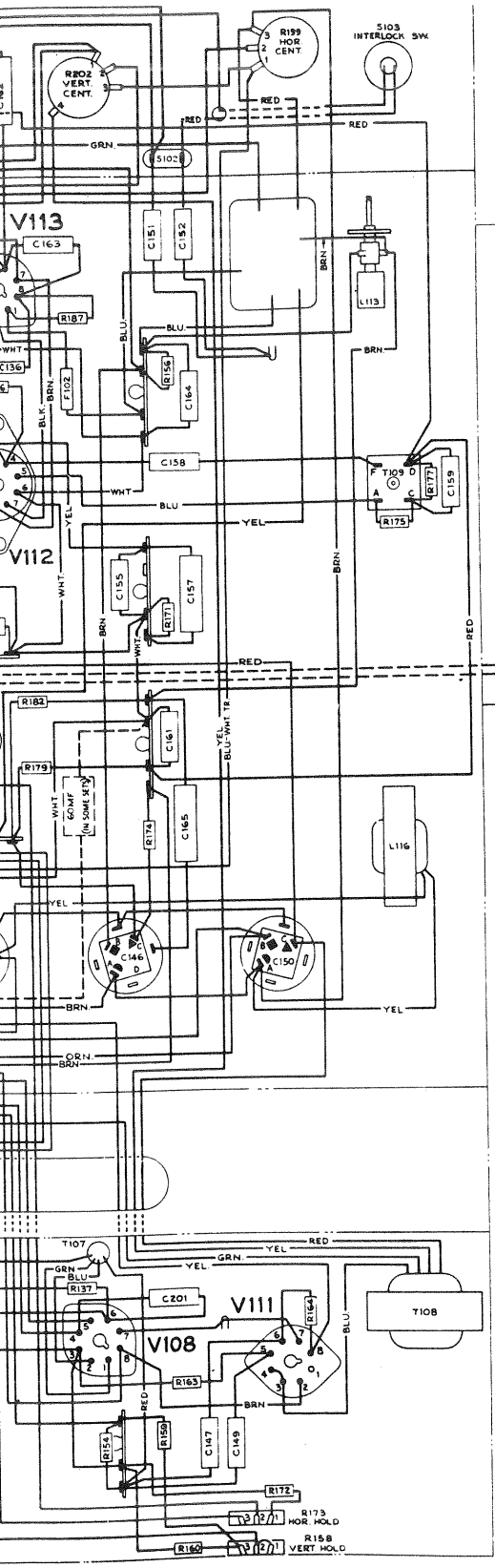
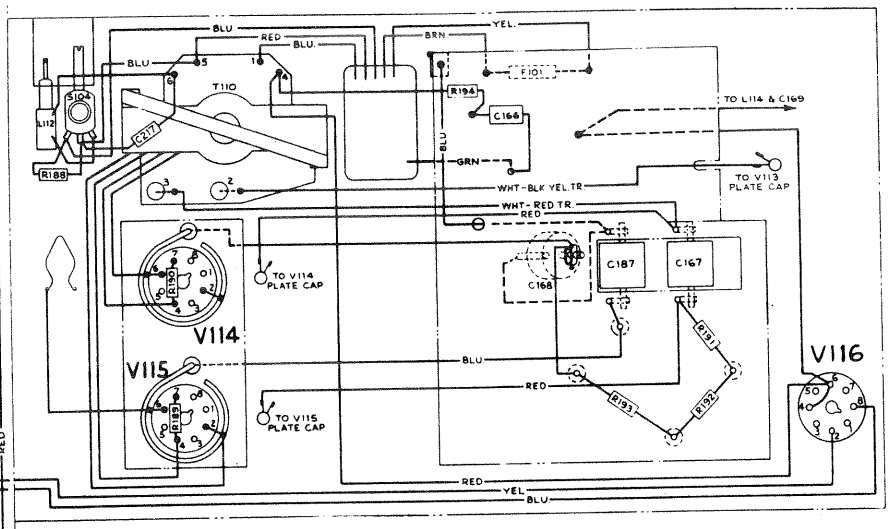
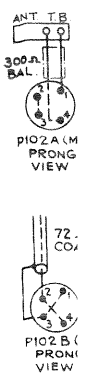


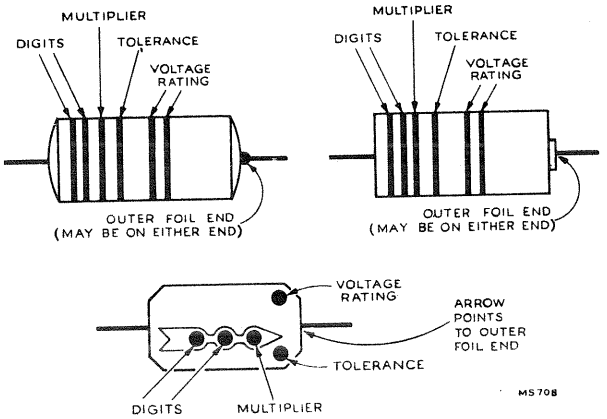
Figure 15 —Television Chassis Wiring Diagram





COLOR CODES, MOULDED PAPER CAPACITORS

WW93598



CAPACITY VALUE IN MMF

COLOR	DIGITS	MULTIPLIER
BLACK	0	1
BROWN	1	10
RED	2	100
ORANGE	3	1,000
YELLOW	4	10,000
GREEN	5	
BLUE	6	
VIOLET	7	
GRAY	8	
WHITE	9	

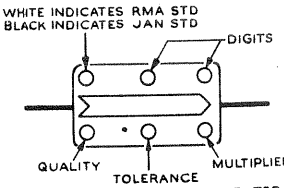
TOLERANCE

COLOR	TOLERANCE
BLACK BAND OR NONE	±20%
WHITE OR SILVER	±10%
YELLOW OR GOLD	±5%

The Voltage Rating is given in hundreds of volts. Only one band is employed for ratings under 1,000 volts. Two bands are employed for ratings over 1,000 volts. Use digit column to read voltage rating.

REFER
SERVI

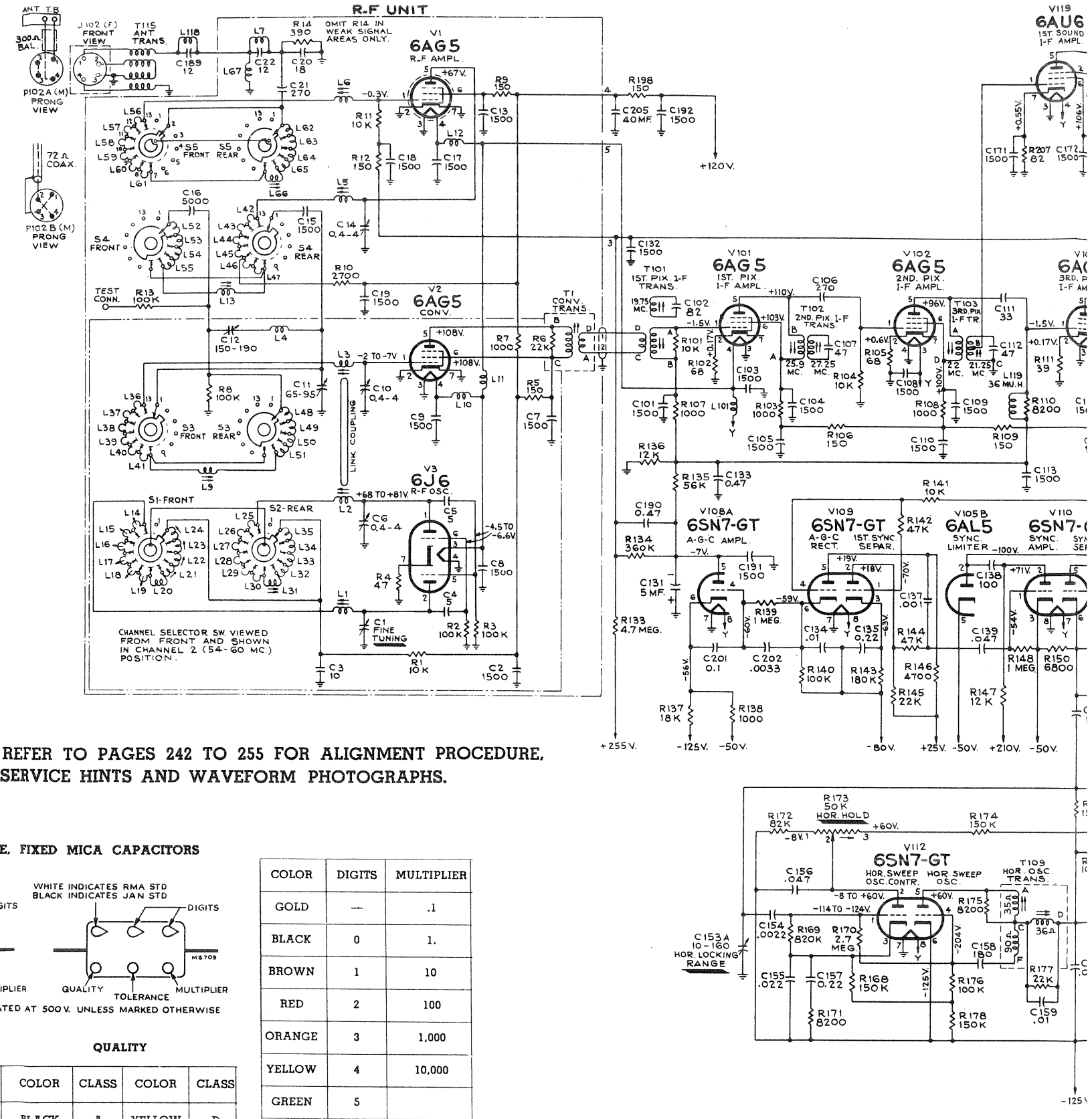
RMA COLOR CODE, FIXE



RMA FIXED MICA CAPACITORS RATED AT

TOLERANCE

COLOR	TOLERANCE	COL
RED	±2%	BLA
GREEN	±5%	BRO
SILVER	±10%	RE
BLACK	±20%	ORA



REFER TO PAGES 242 TO 255 FOR ALIGNMENT PROCEDURE, SERVICE HINTS AND WAVEFORM PHOTOGRAPHS.

E. FIXED MICA CAPACITORS

ATED AT 500 V. UNLESS MARKED OTHERWISE

QUALITY

COLOR	CLASS	COLOR	CLASS
BLACK	A	YELLOW	D
BROWN	B	GRAY	I
RED	C	WHITE	J
ORANGE	D		

COLOR	DIGITS	MULTIPLIER
GOLD	—	.1
BLACK	0	1.
BROWN	1	10
RED	2	100
ORANGE	3	1,000
YELLOW	4	10,000
GREEN	5	
BLUE	6	
VIOLET	7	
GRAY	8	
WHITE	9	

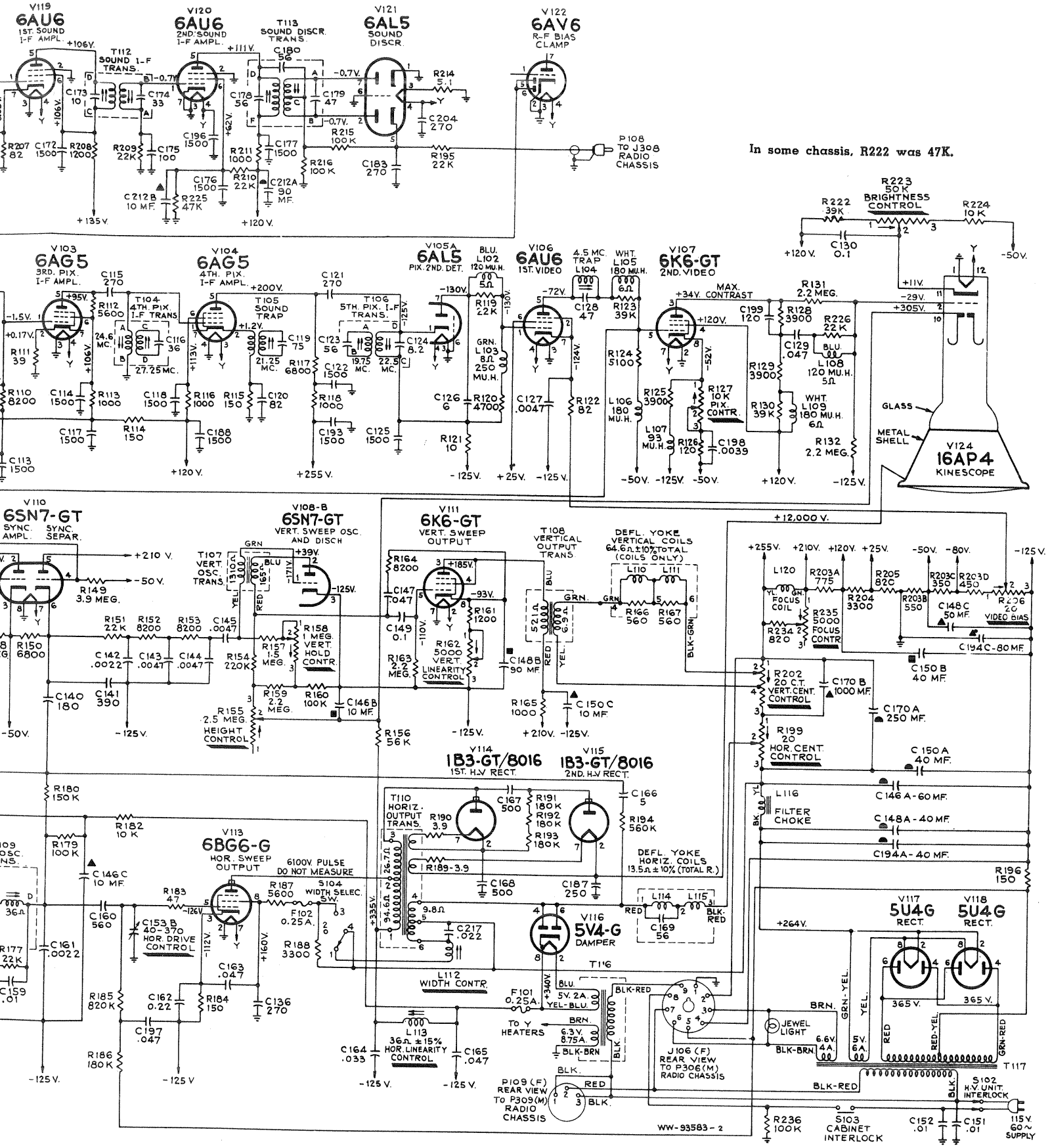
All resistance values in ohms. K = 1000.
All capacitance values less than 1 in MF and above 1 in MMF unless otherwise noted.

Coil resistance values less than 1 ohm are not shown.

Direction of arrows at co clockwise rotation.

In some receivers, subs caused changes in compon codes, in electrolytic capaci their lug identification mar

MATIC DIAGRAM



ws at controls indicates

ers, substitutions have
n component lead color
ic capacitor values and
tion markings.

All voltages measured with "VoltOhmyst" and with no signal input. Voltages should hold within ±20% with 117 v. a-c supply.

In some receivers C148B was 10 MF and a 60 MF tubular condenser was connected in parallel with it.

In some receivers, R11 is 1000 ohms and R14 is omitted.

In weak signal areas, R14 may be disconnected and L66 peaked for best picture on the weakest low channel station.

Figure 16—Television Circuit Schematic Diagram

STOCK No.	DESCRIPTION
74483	Socket—Tube socket
31418	Spring—Tuning drive cord spring or Indicator drive cord spring
73671	Support—Dial back plate support bracket complete with drive cord pulley and lamp bracket—L.H.
73672	Support—Dial back plate support bracket complete with drive cord pulley and lamp bracket—R.H.
74535	Switch—Selector switch including filaments switch (S301, S302, S303, S304, S305, S306, S310, S311)
73683	Switch—P.B. switch complete less coils and trimmer (S307, S307A)
72889	Transformer—Ratio detector transformer (T303)
73376	Transformer—First i-f transformer—dual (T301)
74019	Transformer—Second i-f transformer—dual (T302)
	SPEAKER ASSEMBLY 92569-6W RL103B6
13867	Cap—Dust cap
73934	Cone—Cone and voice coil assembly
5039	Connector—4 contact male connector for speaker
74753	Speaker—12" P.M. (6.8 oz.) speaker complete with cone and voice coil (3.2 ohm) less output transformer and plug
71145	Suspension—Metal cone suspension
73636	Transformer—Output transformer NOTE: If stamping in instruments does not agree with above speaker number, order replacement parts by referring to model number of instrument, number stamped on speaker and full description of part required.
	MISCELLANEOUS
74158	Back—Television chassis back cover
74540	Back—Radio chassis back cover
74541	Back—Cabinet bottom back cover
72146	Bezel—P.B. bezel—black—for mahogany or walnut instruments
74544	Bezel—Radio dial scale bezel less dial
72857	Board—"Antenna" terminal board
71599	Bracket—Pilot lamp bracket
72151	Button—Station selector push button—black
73696	Button—"Magic Monitor" push button—gold
72583	Cable—Shielded pickup cable complete with pin plug for RP177B record changer
74525	Cable—Shielded pickup cable complete with pin plug for RP168A record changer
13103	Cap—Pilot lamp jewel
74614	Carriage—RP177B record changer carriage less slides
71892	Catch—Bullet catch and strike (4 req'd)
72157	Clip—P.B. bezel spring clip (2 req'd)
74160	Connector—Anode connector (3 req'd)
72850	Connector—2 contact male connector for television to radio chassis cable or antenna cable
39153	Connector—4 contact male connector for television to radio chassis cable
75063	Connector—9 contact male connector for power cable
75064	Connector—9 contact female connector for power cable
31567	Connector—3 contact male plug for motor cable
30868	Connector—2 contact female plug motor cables (3 req'd)
35352	Connector—4 contact female plug for motor cable
30870	Connector—2 contact male plug for interconnecting motor cable for RP168A record changer
74539	Cover—Bottom cover for standard record changer
74209	Cover—Mounting screw cover for RP168A record changer (3 req'd)
36765	Cover—Celluloid cover for station call letter markers and "Magic Monitor" marker
74619	Cover—Bottom cover for RP168A record changer
71984	Decal—Trade mark decal (RCA Victor)
74612	Decal—Television control panel decal for mahogany or walnut instruments
72695	Decal—Function decal for radio control panel (L.H.) for mahogany or walnut instruments. (Tone control, volume control and power switch)
74613	Decal—Function decal for radio control panel (R.H.) for mahogany or walnut instruments. (Selector switch and tuning control)
74273	Decal—Trade mark decal (Victrola)
73705	Dial—Radio glass dial scale
73180	Emblem—"RCA Victor" emblem
73642	Escutcheon—Television channel marker escutcheon for mahogany or walnut instruments
74609	Glass—Safety glass
37396	Grommet—Rubber grommet for mounting speaker (4 req'd)
73699	Grommet—Rubber grommet for mounting RP177B record changer (4 req'd)
11889	Grommet—Rubber grommet for mounting radio chassis (2 req'd)
74308	Hinge—Cabinet door hinges (1 set) (4 req'd)
72036	Indicator—Station selector indicator
73222	Knob—Television fine tuning knob—dark—for mahogany or walnut instruments (outer)
72147	Knob—Radio selector switch knob—dark—for mahogany or walnut instruments (outer)
73224	Knob—Television channel selector knob—dark—for mahogany or walnut instruments (inner)
73226	Knob—Television picture control, vertical hold control or brightness control knob—dark—for mahogany or walnut instruments (outer)
73230	Knob—Television picture control or brightness control knob—dark—for mahogany or walnut instruments (inner)
72148	Knob—Radio tune control knob—dark—for mahogany or walnut instruments (outer)
73228	Knob—Television horizontal hold control knob—dark—for mahogany or walnut instruments (inner)
72150	Knob—Radio volume control and power switch knob—dark—for mahogany or walnut instruments (inner)
72149	Knob—Radio tuning knob—dark—for mahogany or walnut instruments (inner)
11765	Lamp—Dial or pilot lamp—Mazda 51
74543	Marker—"Magic Monitor" marker tab
72563	Markers—Station call letter markers
74605	Mask—Kinescope mask
74542	Nut—Tee nut for mounting RP177B record changer (2 req'd)
74208	Nut—Tee nut for mounting RP168A record changer (3 req'd)
74162	Plate—Mounting plate for interlock switch
74124	Plate—Stud plate and wing nut for control panel (2 req'd)
73771	Pull—Door pull for upper doors (2 req'd)
73760	Pull—Door pull for lower doors (4 req'd) or for RP117B record changer compartment drawer
74271	Runner—RP168A record changer runner—R.H.
74272	Runner—RP168A record changer runner—L.H.
74424	Screw—#8-32 x 1¾" special screw for mounting RP168A changer (3 req'd)
74279	Screw—#8-32 x ⅞" trimit head screw for upper doors door pull
74269	Screw—#8-32 x ¾" trimit head screw for lower doors door pull (2 req'd for each pull)
74615	Slide—RP177B record changer carriage slide R.H. (assembled to carriage)
74616	Slide—RP177B record changer carriage slide L.H. (assembled to carriage)
74617	Slide—RP177B record changer carriage slide and bracket assembly—R.H. (assembled to cabinet)
74618	Slide—RP177B record changer carriage slide and bracket assembly—R.H. (assembled to cabinet)
34053	Spring—Retaining spring for push buttons
72845	Spring—Retaining spring for knobs #72147, 72917, 73222 and 73223
14270	Spring—Retaining spring for knobs #72148, 72918, 73224, 73225, 73226, 73227, 73230 and 73231
30330	Spring—Retaining spring for knobs #72150, 72920, 73228 and 73229
30900	Spring—Retaining spring for knobs 72149 and 72919
73643	Spring—Spring clip for channel marker escutcheon
72156	Spring—Push button bezel spring
73697	Spring—Conical spring for mounting RP117B record changer (4 req'd)
74421	Spring—Conical mounting spring (upper-tone arm slide) for RP168A changer (1 req'd)
74422	Spring—Conical mounting spring (upper—L.H. side) for RP168A changer (2 req'd)
74423	Spring—Conical mounting spring (lower) for RP168A changer (3 req'd)
72936	Stop—Door stop (3 req'd)
73185	Stop—Metal stop for RP168A record changer runners (2 req'd)
74161	Stud—Locating stud for cabinet back (2 req'd)
74159	Support—Moulded support for kinescope (4 req'd)
73182	Track—RP168A record changer compartment track (2 req'd)

To obtain resistors for which no stock number is given, order by stating type, value of resistance, tolerance and wattage.

APPLY TO YOUR RCA DISTRIBUTOR FOR PRICES OF REPLACEMENT PARTS

DESCRIPTION
esistor—Fixed, composition, 560,000 ohms, ±10%, ½ watt (R194)
esistor—Fixed, composition, 820,000 ohms, ±5%, ½ watt (R169)
esistor—Fixed, composition, 820,000 ohms, ±10%, ½ watt (185)
esistor—Fixed, composition, 1 megohm, ±20%, ½ watt (R139, R148)
esistor—Fixed, composition, 1.5 megohm, ±5%, ½ watt (R157)
esistor—Fixed, composition, 2.2 megohm, ±10%, ½ watt (R131, R132, R159, R163)
esistor—Fixed, composition, 2.7 megohm, ±5%, 1 watt (R170)
esistor—Fixed, composition, 3.9 megohm, ±10%, ½ watt (R149)
Resistor—Fixed, composition, 4.7 megohm, ±5%, 1 watt (R133)
crew—#8-32 wing screw to mount hood and yoke (3 req'd)
hield—Tube shield for V120 and V121
ocket—Tube socket, octal, wafer
ocket—Tube socket, 7 pin, miniature
ocket—Tube socket, ceramic, octal, plate mounted
ocket—Tube socket, moulded, octal, saddle mounted
ocket—Tube socket for 8016
ocket—9 pin socket—moulded
ocket—Pilot lamp socket
ocket—Kinescope socket
pacer—Bakelite spacer to mount moulded tube socket
pring—Spring for kinescope socket leads
pring—Hood and yoke pressure spring (3 req'd)
pring—Anode spring
upport—Vertical plate support (bakelite)
upport—Bakelite support for 2nd anode lead
witch—Width control coil switch (S104)
witch—Interlock switch (S103)
Transformer—Power transformer 115 volt, 60 cycle (T117)
Transformer—Vertical output transformer (T108)
Transformer—Vertical oscillator transformer (T107)
Transformer—Horizintal output and hi-voltage (T110)
Transformer—First pix i-f transformer (T101, C102, R101)
Transformer—Second pix i-f transformer (T102, C107)
Transformer—Third pix i-f transformer (T103, C112)
Transformer—Fourth pix i-f transformer (T104, C116)
Transformer—Fifth pix i-f transformer (T106, C123, C124)
Transformer—Sound i-f transformer (T112, C173, C174)
Transformer—Sound discriminator transformer (T113, C178, C179, C180)
Transformer—Horizontal oscillator transformer (T109)
Transformer—Filament transformer 117 volt, 60 cycle (T116)
Yoke—Deflection yoke (L110, L111, L114, L115, C169, R166, R167)

RADIO CHASSIS ASSEMBLY RC 617A

	Board—"Tel-"A"Ant." terminal board with link
	Capacitor—Variable tuning capacitor (C301, C302, C303, C304, C310, C311, C312, C313, C325, C338, C339)
	Capacitor—Trimmer 1.5-7 mmf. (C324)
	Capacitor—Adjustable trimmer—1.6-18 mmf. (C340)
	Capacitor—Adjustable trimmer—4.70 mmf. (C309)
	Capacitor—Ceramic, 6.8 mmf. (C328)
	Capacitor—Ceramic, 8 mmf. (C329)
	Capacitor—Adjustable trimmer—10-160 mmf. (C305)
	Capacitor—Ceramic, 18 mmf. (C308)
	Capacitor—Ceramic, 47 mmf. (C316)
	Capacitor—Mica, 56 mmf. (C321)
	Capacitor—Ceramic, 100 mmf. (C307, C314, C322, C368)
	Capacitor—Mica, 100 mmf. (C318)
	Capacitor—Mica trimmer consisting of 1 section of 100-540 mmf., 2 sections of 50-400 mmf., 1 section of 25-250 mmf., and 1 section of 10-160 mmf. (C377, C378, C379, C380, C381)
	Capacitor—Ceramic, 120 mmf. (C390)
	Capacitor—Ceramic, 150 mmf. (C345, C346, C347, C387)
	Capacitor—Mica, 180 mmf. (C331)
	Capacitor—Ceramic, 190 mmf. (C341)
	Capacitor—Mica, 240 mmf. (C315)
	Capacitor—Mica, 330 mmf. (C361, C369, C370)
	Capacitor—Mica, 360 mmf. (C306)

STOCK No.	DESCRIPTION
39644	Capacitor—Mica, 470 mmf. (C364, C384, C386)
72121	Capacitor—Electrolytic 5 mfd, 50 volts (C372)
74532	Capacitor—Electrolytic, triple, 15 mfd, 450 volts (C355 A, C355 B, C355 C)
74533	Capacitor—Electrolytic, 20 mfd, 25 volts (C391)
71927	Capacitor—Tubular .002 mfd, 400 volts (C353, C358, C365)
71921	Capacitor—Tubular .003 mfd, 200 volts (C348)
70646	Capacitor—Tubular 0035 mfd, 1000 volts (C375, C376)
71926	Capacitor—Tubular .005 mfd, 200 volts (C320, C326, C327, C333, C342, C356, C371, C382, C388, C389)
72791	Capacitor—Tubular, .005 mfd, 400 volts (C317, C319 C334, C343, C344, C352, C360)
70608	Capacitor—Tubular, .007 mfd, 400 volts (C357)
71923	Capacitor—Tubular, .01 mfd, 200 volts (C336, C349, C366)
72827	Capacitor—Tubular, .01 mfd, 400 volts (C330, C332, C335, C359, C367)
72120	Capacitor—Tubular, .015 mfd, 200 volts (C350)
73797	Capacitor—Tubular, .015 mfd, 400 volts (C373, C374)
73638	Capacitor—Tubular, .02 mfd, 400 volts (C363)
73554	Capacitor—Tubular, .025 mfd, 400 volts (C351)
71551	Capacitor—Tubular, .05 mfd, 200 volts (C337, C354, C362, C385, C389)
73676	Coil—Oscillator coil complete with core and stud—"C" band (L312)
73677	Coil—R-F coil complete with core and stud—"A" band (L305, L306)
73383	Coil—Oscillator coil complete with core and stud—"A" band (L311)
73661	Coil—Antenna coil complete with core and stud—"A" band (L315, L316)
73678	Coil—Antenna coil complete with core and stud—"C" band (L302, L303)
73679	Coil—Low pass filter coil (L307)
72050	Coil—P.B. oscillator coil complete with core and stud—H.F. (L377, L378)
72051	Coil—P.B. oscillator coil complete with core and stud—L.F. (L379, L380, L381)
74536	Coil—Antenna coil—F.M. #16 buss tinned, 8 turns per inch 3¼ (L301)
74537	Coil—R.F. coil—F.M. #16 buss tinned, 8 turns per inch 4 turns R.H. (L308)
74538	Coil—Oscillator coil F.M. #16 buss tinned, 8 turns per inch 3½ turns R.R. (L310)
72574	Coil—Choke coil (L313)
71942	Coil—Choke coil (L314)
73688	Coil—Peaking coil (L304)
75062	Connector—9 prong male connector for interconnecting power supply cable (between television and radio chassis) (J406)
5040	Connector—4 contact female plug for speaker cable
35384	Connector—5 contact male plug for phono cable
72145	Control—Volume control, tone control and power switch (R328, S308, S309)
72953	Cord—Tuning drive cord (approx. 22" overall)
72953	Cord—Indicator drive cord (approx. 40" overall)
71941	Coupling—F.M. coupling unit (L309, R307, C323)
72043	Drum—Drive drum
73758	Gear—Selector switch drive gear
72042	Gear—Sleeve gear
73767	Gear—Scissor gear for tuning capacitor
72069	Grommet—Rubber grommet for rear mounting feet (2 req'd)
70930	Grommet—Rubber grommet for mounting R-F shelf (4 req'd)
70429	Grommet—Rubber grommet for mounting tube socket (4 req'd)
33514	Jack—Phono-television input jack
35787	Jack—Phono input jack for RP168A changer
73766	Pinion—Pinion and shaft for tuning capacitor
72035	Plate—Dial back plate
19820	Plate—Mounting plate for electrolytic #74533
72602	Pulley—Drive cord pulley
54374	Rectifier—Crystal rectifier
	Resistor—Fixed, composition, 68 ohms, ±10%, ½ watt (R318)
	Resistor—Fixed, composition, 100 ohms, ±10%, ½ watt (R335)
	Resistor—Fixed, composition, 220 ohms, ±10%, ½ watt (R308)
	Resistor—Fixed, composition, 270 ohms, ±10%, 2 watt (R381)
	Resistor—Fixed, composition, 470 ohms, ±10%, ½ watt (R306)
	Resistor—Fixed, composition, 820 ohms, ±10%, ½ watt (R364)
	Resistor—Fixed, composition, 910 ohms, ±5%, ½ watt (R356)

STOCK No.	DESCRIPTION
	Resistor—Fixed, composition, 2200 ohms, watt (R315, R334)
	Resistor—Fixed, composition, 2700 ohms, watt (R301, R305, R348)
	Resistor—Fixed, composition, 2700 ohms watt (R313)
	Resistor—Fixed, composition, 3900 ohms watt (R320)
	Resistor—Fixed, composition, 4700 ohms, watt (R357)
	Resistor—Fixed, composition, 5600 ohms, watt (R333, R346)
	Resistor—Fixed, composition, 6800 ohms watt (R304)
	Resistor—Fixed, composition, 6800 ohms watt (R385)
	Resistor—Fixed, composition, 8200 ohms, watt (R317, R339, R377)
	Resistor—Fixed, composition, 8200 ohms watt (R384)
	Resistor—Fixed, composition, 10,000 oh ½ watt (R365)
	Resistor—Fixed, composition, 10,000 oh 2 watt (R382)
	Resistor—Fixed, composition, 12,000 oh ½ watt (R369)
	Resistor—Fixed, composition, 12,000 oh 2 watt (R383)
	Resistor—Fixed, composition, 15,000 oh ½ watt (R326, R330, R361)
	Resistor—Fixed, composition, 18,000 oh 1 watt (R314)
	Resistor—Fixed, composition, 22,000 oh ½ watt (R325, R344, R349)
	Resistor—Fixed, composition, 22,000 oh 1 watt (R380)
	Resistor—Fixed, composition, 27,000 oh ½ watt (R329, R350)
	Resistor—Fixed, composition, 33,000 oh ½ watt (R332)
	Resistor—Fixed, composition, 39,000 oh 1 watt (R319)
	Resistor—Fixed, composition, 47,000 oh 1 watt (R303)
	Resistor—Fixed, composition, 82,000 oh ½ watt (R340, R370)
	Resistor—Fixed, composition, 100,000 oh ½ watt (R354, R362)
	Resistor—Fixed, composition, 100,000 oh ½ watt (R310)
	Resistor—Fixed, composition, 100,000 oh 1 watt (R368)
	Resistor—Fixed, composition, 120,000 oh ½ watt (R343)
	Resistor—Fixed, composition, 150,000 oh 1 watt (R309)
	Resistor—Fixed, composition, 180,000 ½ watt (R345, R353)
	Resistor—Fixed, composition, 220,000 ½ watt (R324, R337, R347, R351, R35 R367, R374)
	Resistor—Fixed, composition, 270,000 ½ watt (R323, R331)
	Resistor—Fixed, composition, 330,000 ½ watt (R336, R338, R355)
	Resistor—Fixed, composition, 470,000 ½ watt (R341, R378)
	Resistor—Fixed, composition, 820,000 ½ watt (R358)
	Resistor—Fixed, composition, 1 megoh watt (R316, R363, R366, R372, R375,
	Resistor—Fixed, composition, 2.2 me ½ watt (R302, R321, R371, R373)
	Resistor—Fixed, composition, 3.9 me ½ watt (R311)
	Resistor—Fixed, composition, 6.8 me ½ watt (R342)
	Resistor—Fixed, composition, 10 me ½ watt (R327)
	Resistor—Fixed, composition, 22 me ½ watt (R322)
14343	Retainer—Retainer ring for tuning kn
31611	Screw—#8-32 x ¼" set screw for dri
73675	Shaft—Tuning knob shaft
72951	Shield—Tube shield
71850	Socket—Tube socket complete with b
73117	Socket—Tube socket, 7 pin, miniature
31251	Socket—Tube socket wafer
31364	Socket—Dial lamp socket

DESCRIPTION
—Tubular, moulded paper, 0.22 mfd, 400 157, C162)
—Tubular, moulded paper, 0.47 mfd, 200 133, C190)
—Electrolytic 5 mfd, 50 volts (C131)
—Electrolytic comprising 2 sections of 40 0 volts and 1 section of 10 mfd, 450 volts , C150 B, C150 C)
—Electrolytic comprising 1 section of 40 0 volts, 1 section of 10 mfd, 450 volts and n of 80 mfd, 200 volts (B section not used) , C194 B, C194 C)
—Electrolytic comprising 1 section of 40 0 volts, 1 section of 90 mfd, 450 volts and n of 50 mfd, 150 volts (C148 A, C148 B,
—Electrolytic 40 mfd, 400 volts (C205)
—Electrolytic comprising 1 section of 60 0 volts, 2 sections of 10 mfd, 450 volts and n of 20 mfd, 150 volts (D section not used) , C146 B, C146 C, C146 D)
—Electrolytic comprising 1 section of 90 0 volts and 1 section of 10 mfd, 350 volts A, C212 B)
—Electrolytic comprising 1 section of 250 volts and 1 section of 1000 mfd, 6 volts , C170 B)
enna matching coils complete with socket
acket (T115, J102)
eo trap (L104, C128)
izontal linearity control coil (L113)
lth control coil (L112)
nd trap (T105, C119)
us coil (L120)
trap (L118, C189)
king coil (120 mh) (L102, L108, R119, R226)
king coil (180 mh) (L105, L109, R123, R130)
oke coil (L101)
king coil (250 mh) (L103)
king coil (180 mh) (L106)
king coil (93 mh) (L107)
king coil (36 mh) (L119, R110)
—Anode connector
Hi-voltage capacitor contact
Horizontal and vertical hold control (R158,
Brightness control (R223)
Picture control (R127)
Vertical linearity control (R162)
Height control (R155)
Vertical centering control (R202).
Horizontal centering or video bias control R206)
Focus control (R235)
wer cord and plug
nsulating cover for electrolytics #71432, and 73583
nsulating cover for electrolytic 71436
-Deflection yoke hook cushion (2 req'd)
5 amperes, 250 volts (F101, F102)
—Rubber grommet for 2nd anode lead
—Rubber grommet to mount ceramic tube (2 req'd)
-Ion trap magnet (P.M. type)
akelite mounting plate for electrolytics
ale plug for power cable
contact female plug for motor cable
n plug for shield audio cable
-Filter choke
-Wire wound, 3.9 ohms, 1/3 watt (R189, R190)
-Wire wound, 5.1 ohms, 1/2 watt (R214)
-Fixed, compostiion, 10 ohms, ±20%, 1/2 R121)
-Fixed, composition, 39 ohms, ±10%, 1/2 R111)
-Fixed, composition, 47 ohms, ±20%, 1/2 R183)
-Fixed, composition, 68 ohms, ±10%, 1/2 R105, R102)
-Fixed, composition, 82 ohms, ±5%, 1/2 R122)
-Fixed, composition, 82 ohms, ±10%, 1/2 R207)
-Fixed, composition, 120 ohms, ±10%, 1/2 R126)
-Fixed, composition, 150 ohms, ±10%, 1/2 R115)

STOCK No.	DESCRIPTION
	Resistor—Fixed, composition, 150 ohms, ±20%, 1/2 watt (R106, R109, R114, R199)
	Resistor—Fixed, composition, 150 ohms, ±10%, 2 watt (R184)
74375	Resistor—Wire wound, 150 ohms, 20 watt (R196)
74155	Resistor—Voltage divider comprising 1 section of 775 ohms, 9.5 watts, 1 section of 550 ohms, 5 watts, 1 section of 350 ohms, 3 watts and 1 section of 450 ohms, 5 watts (R203 A, R203 B, R203 C, R203 D)
74213	Resistor—Wire wound, 820 ohms, 4 watt (R205, R234)
	Resistor—Fixed, composition, 1000 ohms, ±10%, 1/2 watt (R138)
	Resistor—Fixed, composition, 1000 ohms, ±20%, 1/2 watt (R103, R107, R108, R113, R116, R118, R165, R211)
	Resistor—Fixed, composition, 1200 ohms, ±10%, 1/2 watt (R161, R208)
	Resistor—Fixed, composition, 3300 ohms, ±10%, 1/2 watt (R188)
48207	Resistor—Wire wound, 3300 ohms, 10 watt (R204)
	Resistor—Fixed, composition, 3900 ohms, ±5%, 2 watt (R125, R129, R128)
	Resistor—Fixed, composition, 4700 ohms, ±5%, 1/2 watt (R120)
	Resistor—Fixed, composition, 4700 ohms, ±10% 1/2 watt (R146)
	Resistor—Fixed, composition, 5100 ohms, ±5%, 1/2 watt (R124)
	Resistor—Fixed, composition, 5600 ohms, ±5%, 1/2 watt (R112)
	Resistor—Fixed, composition, 5600 ohms, ±10%, 1 watt (R187)
	Resistor—Fixed, composition, 6800 ohms, ±10%, 1/2 Watt (R150)
	Resistor—Fixed, composition, 6800 ohms, ±5%, 1 watt (R117)
	Resistor—Fixed, composition, 8200 ohms, ±5%, 1/2 watt (R164, R175)
	Resistor—Fixed, composition, 8200 ohms, ±10%, 1/2 watt (R152, R153, R171)
	Resistor—Fixed, composition, 10,000 ohms, ±5%, 1/2 watt (R104)
	Resistor—Fixed, composition, 10,000 ohms, ±10%, 1/2 watt (R141, R182, R224)
	Resistor—Fixed, composition, 12,000 ohms, ±5%, 1/2 watt (R136)
	Resistor—Fixed, composition, 12,000 ohms, ±10%, 2 watt (R147)
	Resistor—Fixed, composition, 18,000 ohms, ±10%, 1/2 watt (R137)
	Resistor—Fixed, composition, 22,000 ohms, ±10%, 1/2 watt (R145, R151, R177)
	Resistor—Fixed, composition, 22,000 ohms, ±20%, 1/2 watt (R195, R209, R210)
	Resistor—Fixed, composition, 39,000 ohms, ±10%, 1/2 watt (R222)
	Resistor—Fixed, composition, 47,000 ohms, ±10%, 1/2 watt (R142, R144)
	Resistor—Fixed, composition, 47,000 ohms, ±20%, 1/2 watt (R225)
	Resistor—Fixed, composition, 56,000 ohms, ±5%, 1/2 watt (R135)
	Resistor—Fixed, composition, 56,000 ohms, ±10%, 1/2 watt (R156)
	Resistor—Fixed, composition, 82,000 ohms, ±10%, 1/2 watt (R172)
	Resistor—Fixed, composition, 100,000 ohms, ±5%, 1/2 watt (R215, R216)
	Resistor—Fixed, composition, 100,000 ohms, ±10%, 1/2 watt (R140, R160)
	Resistor—Fixed, composition, 100,000 ohms, ±10%, 1 watt (R176, R179)
	Resistor—Fixed, composition, 100,000 ohms, ±20%, 2 watt (R236)
	Resistor—Fixed, composition, 150,000 ohms, ±10%, 1/2 watt (R168, R180)
	Resistor—Fixed, composition, 150,000 ohms, ±5%, 1 watt (R178)
	Resistor—Fixed, composition, 150,000 ohms, ±10%, 1 watt (R174)
	Resistor—Fixed, composition, 180,000 ohms, ±10%, 1/2 watt (R143, R186)
	Resistor—Fixed, composition, 180,000 ohms, ±10%, 2 watt (R191, R192, R193)
	Resistor—Fixed, composition, 220,000 ohms, ±10%, 1/2 watt (R154)
	Resistor—Fixed, composition, 360,000 ohms, ±5%, 1/2 watt (R134)

STOCK No.	DESCRIPTION
	Resistor—Fixed, composition, 560,000 ohms, ±10 1/2 watt (R194)
	Resistor—Fixed, composition, 820,000 ohms, ±5 1/2 watt (R169)
	Resistor—Fixed, composition, 820,000 ohms, ±10 1/2 watt (185)
	Resistor—Fixed, composition, 1 megohm, ±20%, watt (R139, R148)
	Resistor—Fixed, composition, 1.5 megohm, ±5%, watt (R157)
	Resistor—Fixed, composition, 2.2 megohm, ±10 1/2 watt (R131, R132, R159, R163)
	Resistor—Fixed, composition, 2.7 megohm, ±5%, watt (R170)
	Resistor—Fixed, composition, 3.9 megohm, ±10%, watt (R149)
	Resistor—Fixed, composition, 4.7 megohm, ±5% watt (R133)
71456	Screw—#8-32 wing screw to mount hood and y (3 req'd)
73584	Shield—Tube shield for V120 and V121
31251	Socket—Tube socket, octal, wafer
73117	Socket—Tube socket, 7 pin, miniature
73249	Socket—Tube socket, ceramic, octal, plate moun
31319	Socket—Tube socket, moulded, octal, saddle moun
71508	Socket—Tube socket for 8016
70561	Socket—9 pin socket—moulded
31364	Socket—Pilot lamp socket
74251	Socket—Kinescope socket
74151	Spacer—Bakelite spacer to mount moulded t socket
74936	Spring—Spring for kinescope socket leads
72190	Spring—Hood and yoke pressure spring (3 req'd)
74152	Spring—Anode spring
74150	Support—Vertical plate support (bakelite)
74425	Support—Bakelite support for 2nd anode lead
74147	Switch—Width control coil switch (S104)
74157	Switch—Interlock switch (S103)
74194	Transformer—Power transformer 115 volt, 60 c (T117)
73568	Transformer—Vertical output transformer (T108)
74144	Transformer—Vertical oscillator transformer (T107
74145	Transformer—Horizintal output and hi-voltage (T
73571	Transformer—First pix i-f transformer (T101, C R101)
73572	Transformer—Second pix i-f transformer (T102, C
73573	Transformer—Third pix i-f transformer (T103, C11
73574	Transformer—Fourth pix i-f transformer (T104, C
73575	Transformer—Fifth pix i-f transformer (T106, C C124)
71424	Transformer—Sound i-f transformer (T112, C173, C
71427	Transformer—Sound discriminator transformer (T C178, C179, C180)
73576	Transformer—Horizontal oscillator transformer (T
74195	Transformer—Filament transformer 117 volt, 60 c (T116)
74141	Yoke—Deflection yoke (L110, L111, L114, L115, C R166, R167)
	RADIO CHASSIS ASSEMBLY RC 617A
74534	Board—"Tel-"A"Ant." terminal board with link
73673	Capacitor—Variable tuning capacitor (C301, C C303, C304, C310, C311, C312, C313, C325, C C339)
73685	Capacitor—Trimmer 1.5-7 mmf. (C324)
71809	Capacitor—Adjustable trimmer—1.6-18 mmf. (C34
72334	Capacitor—Adjustable trimmer—4.70 mmf. (C309)
39043	Capacitor—Ceramic, 6.8 mmf. (C328)
73686	Capacitor—Ceramic, 8 mmf. (C329)
71807	Capacitor—Adjustable trimmer—10-160 mmf. (C3
36463	Capacitor—Ceramic, 18 mmf. (C308)
39042	Capacitor—Ceramic, 47 mmf. (C316)
39622	Capacitor—Mica, 56 mmf. (C321)
39396	Capacitor—Ceramic, 100 mmf. (C307, C314, C C368)
39628	Capacitor—Mica, 100 mmf. (C318)
73682	Capacitor—Mica trimmer consisting of 1 section 100-540 mmf., 2 sections of 50-400 mmf., 1 sec of 25-250 mmf., and 1 section of 10-160 mmf. (C C378, C379, C380, C381)
71614	Capacitor—Ceramic, 120 mmf. (C390)
48125	Capacitor—Ceramic, 150 mmf. (C345, C346, C C387)
71933	Capacitor—Mica, 180 mmf. (C331)
73687	Capacitor—Ceramic, 190 mmf. (C341)
72789	Capacitor—Mica, 240 mmf. (C315)
39640	Capacitor—Mica, 330 mmf. (C361, C369, C370)
64641	Capacitor—Mica, 360 mmf. (C306)

STOCK No.	DESCRIPTION
	R. F. UNIT ASSEMBLIES KRK5 A
73465	Belt—Drive belt
75069	Board—R-F unit power connection terminal board (5 contact)
75067	Bracket—Vertical bracket for holding r-f oscillator tube shield
73478	Cable—I-F transmission (4 7/8") (W1)
73441	Cam—Fine tuning adjustment cam
74035	Capacitor—Ceramic, 5 mmf. (C4, C5)
53511	Capacitor—Ceramic, 10 mmf. (C3)
54207	Capacitor—Ceramic, 18 mmf. (C20)
73449	Capacitor—Ceramic trimmer, comprising 1 section of 150-190 mmf. and 1 section of 65-95 mmf. (C11, C12)
73091	Capacitor—Ceramic, 270 mmf. (C21)
71501	Capacitor—Ceramic, 1500 mmf. (C2, C7, C8, C9, C13, C15, C17, C18, C19)
73473	Capacitor—Ceramic, 5,000 mmf. (C16)
X3033	Cloth—Grille cloth for mahogany instruments
73475	Coil—Antenna filter shunt coil (L67)
73477	Coil—Choke coil (L10, L11, L12)
73874	Coil—Convertor grid coil for channel #6 (L9, L31)
73462	Coil—Coupling inductance coil (L4)
74108	Coil—Fine tuning coil (1 1/2 turns) with adjustable inductance core and capacitor stud (threaded bushing type with plunger adjustment) (L1, C1)
73476	Coil—I-F trap (L7, C22)
73461	Coil—Oscillator plate coil (4 turns) for channel #6 (L20)
73460	Coil—R-F plate coil for channel #6 (L13)
74109	Coil—Trimmer coil (1 1/2 turns) with adj. inductance core and capacitor stud (threaded bushing type with screw adjustment) for oscillator section or convertor section (L2, C6, L3, C10)
74110	Coil—Trimmer coil (3 turns) with adjustable inductance core and capacitor stud (threaded bushing type with screw adjustment) for r-f amplifier section (L5, C14)
71493	Connector—Oscillator segment connector
74187	Core—Adjustable core for L31
73455	Core—Sliding core for fine tuning control trimmer
73440	Detent—R-F unit detent mechanism and fibre shaft
73453	Form—Coil form assembly for L9, L13
71487	Form—Coil form for oscillator plate coil L31
73442	Link—Link assembly for fine tuning
71462	Loop—Oscillator to convertor trimmer loop connector
73634	Nut—Speed nut for drive belt shield
73467	Nut—Speed nut to mount trimmer coils 73443, 73444 and 73446
74166	Plate—Front plate and bushing
73464	Pulley—Idler pulley
	Resistor—Fixed, composition, 47 ohms ±20%, 1/2 watt (R4)
	Resistor—Fixed, composition, 150 ohms ±20%, 1/2 watt (R5, R9, R12)
	Resistor—Fixed, composition, 1,000 ohms ±20%, 1/2 watt (R7)
	Resistor—Fixed, composition, 1,000 ohms ±10%, 1/2 watt (R11)
	Resistor—Fixed, composition, 2,700 ohms ±10%, 1/2 watt (R10)
	Resistor—Fixed, composition, 10,000 ohms ±20%, 1/2 watt (R1)
	Resistor—Fixed, composition, 100,000 ohms ±20%, 1/2 watt (R2, R3, R8, R13)
14343	Retainer—Channel selector shaft retaining ring
30340	Retainer—Retainer for fine tuning link stud
71476	Screw—#4-40 x 1/4" binder head screw for adjusting coils L14, L15, L16, L17, L18, L19
71475	Screw—#4-40 x .296 adjusting screw for coils L6, L21, L22, L23, L24
73640	Screw—#4-40 x 3/8" adjusting screw for L66
74167	Shaft—Actuating shaft for fine tuning control
74168	Shaft—Channel selector shaft complete with pawl and stud
73438	Shaft—Fine tuning control shaft and pulley
72951	Shield—Metal tube shield for V3
73454	Shield—Metal shield for drive belt
73632	Shield—Metal tube shield for V1
75443	Shield—"U" shape shield for bottom of R-F Unit
71494	Socket—Tube socket
73450	Socket—Tube socket, ceramic, 7 prong bottom mounted
75068	Spring—Retaining spring for oscillator tube shield
74188	Spring—Retaining spring for adjustable core #74187
73457	Spring—Return spring for fine tuning control core
73456	Spring—Tension spring for drive belt shield

STOCK No.	DESCRIPTION
73633	Stator—Antenna stator complete with rotor and coils (S5, L6, L56, L57, L58, L59, L60, L61, L62, L63, L64, L65, L66, C21)
73470	Stator—Convertor stator complete with rotor and coils (S3, L36, L37, L38, L39, L40, L41, L48, L49, L50, L51)
73468	Stator—Front oscillator section stator complete with rotor, segment, coils and adjusting screws (S1, L14, L15, L16, L17, L18, L19, L21, L22, L23, L24)
73469	Stator—Rear oscillator section stator complete with rotor, segment and coils (S2, L25, L26, L27, L28, L29, L30, L32, L33, L34, L35)
73471	Stator—R-F amplifier stator complete with rotor and coils (S4, L42, L43, L44, L45, L46, L47, L52, L53, L54, L55)
75446	Stud—Capacitor stud—brass #4-40 x 13/16" with 3/64" screw driver slot for trimmer coils 74109 and 74110 uncoded or coded "ER"
75447	Stud—Capacitor stud—brass #4-40 x 13/16" with 3/64" screw driver slot for trimmer coils 74109 and 74110 coded numerically or "Hi Q"
2917	Washer—"C" washer for channel selector shaft
73466	Washer—Insulating washers for front shield (1 set)
73448	Transformer—Convertor transformer (T1 (R6))
	TELEVISION CHASSIS ASSEMBLIES KCS31
72437	Cable—Shielded audio cable complete with pin plug
73414	Cap—Hi-voltage rectifier and horizontal output plate cap
72809	Capacitor—Mica, 5 mmf. (C166)
74182	Capacitor—Ceramic, 6 mmf. (C126)
73580	Capacitor—Mica trimmer, comprising 1 section of 10-160 mmf. and 1 section of 40-370 mmf. (C153A, C153B)
74105	Capacitor—Mica, 33 mmf. (C111)
64062	Capacitor—Ceramic, 82 mmf. (C120)
75060	Capacitor—Mica, 100 mmf. 1000 v. (C138)
39396	Capacitor—Ceramic, 100 mmf. (C175)
73921	Capacitor—Ceramic, 120 mmf. (C199)
51416	Capacitor—Mica, 180 mmf. (C140)
73102	Capacitor—Mica, 180 mmf. (C158)
74154	Capacitor—Ceramic, 250 mmf., 20,000 volts (C187)
73091	Capacitor—Mica, 270 mmf. (C106, C115, C121, C136)
73922	Capacitor—Ceramic, 270 mmf. (C183, C204)
39642	Capacitor—Mica, 390 mmf. (C141)
74153	Capacitor—Ceramic, 500 mmf. 15,000 volts (C167, C168)
74250	Capacitor—Mica, 560 mmf. (C160)
71501	Capacitor—Ceramic, 1500 mmf. (C101, C103, C104, C105, C108, C109, C110, C113, C114, C117, C118, C122, C125, C132, C171, C172, C176, C177, C188, C191, C192, C193, C196)
73801	Capacitor—Tubular, moulded paper, .001 mfd, 600 volts (C137)
73803	Capacitor—Tubular, moulded paper, .0022 mfd, 600 volts (C142, C154)
73595	Capacitor—Tubular, moulded paper, oil filled, .0022 mfd, 600 volts (C161)
73795	Capacitor—Tubular, moulded paper, .0033 mfd, 600 volts (C202)
73796	Capactor—Tubular, moulded paper, .0039 mfd, 600 volts (C198)
73550	Capacitor—Tubular, moulded paper, .0047 mfd, 600 volts (C127, C143, C144)
73920	Capacitor—Tubular, moulded paper, oil filled, .0047 mfd, 600 volts (C145)
73561	Capacitor—Tubular, moulded paper, .01 mfd, 400 volts (C134, C151, C152)
73594	Capacitor—Tubular, moulded paper, oil filled, .01 mfd, 600 volts (C159)
73562	Capacitor—Tubular, moulded paper, .022 mfd, 400 volts (C155, C217)
73596	Capactor—Tubular, moulded paper, oil filled, .033 mfd, 1000 volts (C164)
73553	Capacitor—Tubular, moulded paper, .047 mfd, 400 volts (C129, C139, C197)
73592	Capacitor—Tubular, moulded paper, oil filled, .047 mfd, 600 volts (C147, C156)
73564	Capacitor—Tubular, moulded paper, .047 mfd, 1000 volts (C163)
73597	Capacitor—Tubular, moulded paper, oil filled, .047 mfd, 1000 volts (C165)
73784	Capacitor—Tubular, moulded paper, 0.1 mfd, 200 volts (C201)
73551	Capacior—Tubular, moulded paper, 0.1 mfd, 400 volts (C130, C149)
73560	Capacitor—Tubular, moulded paper, 0.22 mfd, 200 volts (C135)

STOCK No.	
73794	Capacitor—Tu volts (C157,
73787	Capacitor—Tu volts (C133,
74106	Capacitor—El
71432	Capacitor—El mfd, 450 v (C150 A, C
73582	Capacitor—El mfd, 450 v 1 section o (C194 A, C
73583	Capacitor—El mfd, 450 v 1 section o C148 C)
74266	Capacitor—El
73581	Capacitor—El mfd, 450 v 1 section o (C146 A, C
74433	Capacitor—E mfd, 350 v (C212 A, C
71436	Capacitor—E mfd, 10 vo (C170 A, C
73578	Coil—Antenn and bracke
73577	Coil—Video
71449	Coil—Horizor
71429	Coil—Width
71778	Coil—Sound
74570	Coil—Focus
73476	Coil—I-F tra
71529	Coil—Peakin
71528	Coil—Peakin
73477	Coil—Choke
71526	Coil—Peakin
74214	Coil—Peakin
71527	Coil—Peakin
74170	Coil—Peakin
74160	Connector—I
71521	Contact—Hi-
72734	Control—Hor R173)
73156	Control—Bric
73663	Control—Pict
71441	Control—Ver
71440	Control—Hei
71443	Control—Ver
74146	Control—Hor (R199, R20
74442	Control—Foc
71457	Cord—Powe
71437	Cover—Insul 73581 and
72772	Cover—Insul
73590	Cushion—De
73600	Fuse—0.25 a
71799	Grommet—R
37396	Grommet—R socket (2
74148	Magnet—Ion
18469	Plate—Bakel
71448	Plug—Male
31572	Plug—3 con
31048	Plug—Pin pl
73154	Reactor—Fil
74156	Resistor—W
72067	Resistor—W
	Resistor—Fi watt (R12
	Resistor—Fi watt (R11
	Resistor—Fi watt (R18
	Resistor—Fi watt (R10
	Resistor—Fi watt (R12
	Resistor—Fi watt (R20
	Resistor—Fi watt (R12
	Resistor—Fi watt (R11