

Model TA169  
Walnut, Mahogany or Oak



# RCA VICTOR

## TELEVISION, AM-FM RADIO PHONOGRAPH COMBINATION

### MODEL TA169

Chassis Nos. KCS43, RK135D

## SERVICE DATA

— 1950 No. T9 —

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

### GENERAL DESCRIPTION

Model TA169 is a "16 inch" television, AM-FM radio phonograph combination. The receiver employs thirty tubes plus three rectifiers and a 16GP4 kinescope. Two record changers are provided to play 33 $\frac{1}{4}$ , 45 and 78 RPM records.

Features of the television unit are full twelve channel cov-

erage; 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 16GP4 kinescope

#### TELEVISION R-F FREQUENCY RANGE

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

#### RADIO TUNING RANGE

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

**RECEIVER ANTENNA INPUT IMPEDANCE.** 300 ohms balanced

If necessary, the television chassis may be fed separately from either a 300 ohm balanced line or a 72 ohm co-ax.

**POWER SUPPLY RATING**.....115 volts, 60 cycles, 270 watts

**AUDIO POWER OUTPUT RATING**.....10 watts max.

#### CHASSIS DESIGNATIONS

Television Chassis .....KCS43  
Radio Chassis .....RK135D  
33 $\frac{1}{4}$ /78 RPM Record Changer.....960285  
45 RPM Record Changer.....RP168C  
Refer to Service Data 960285 or RP168 for information on the record changers.

**LOUDSPEAKER 92569-5**.....12 inch PM Dynamic  
Voice Coil Impedance.....3.2 ohms at 400 cycles

#### WEIGHT

Chassis with Tubes in Cabinet.....190 lbs.  
Shipping Weight.....230 lbs.

#### DIMENSIONS (inches)

	Width	Height	Depth
Cabinet (outside).....	37 $\frac{3}{4}$	39	23 $\frac{1}{2}$
Chassis (overall).....	19 $\frac{1}{4}$	11	18 $\frac{1}{2}$

#### RCA TUBE COMPLEMENT

Tube Used	(Television Chassis)	Function
(1) RCA 6AG5		R-F Amplifier
(2) RCA 6AG5		Converter
(3) RCA 6J6		R-F Oscillator
(4) RCA 6AU6		1st Sound I-F Amplifier
(5) RCA 6AU6		2nd Sound I-F Amplifier
(6) RCA 6AL5		Sound Discriminator
(7) RCA 12AX7		Audio Amplifier and Phase Inverter
(8) RCA 6V6GT		Audio Output (2 tubes)
(9) RCA 6BA6		1st Picture I-F Amplifier
(10) RCA 6AG5		2nd Picture I-F Amplifier
(11) RCA 6BA6		3rd Picture I-F Amplifier
(12) RCA 6AG5		4th Picture I-F Amplifier
(13) RCA 6AL5		Picture 2nd Detector & Sync Limiter
(14) RCA 12AU7		1st and 2nd Video Amplifier
(15) RCA 6SN7GT		AGC Amplifier & Vertical Sweep Osc.
(16) RCA 6SN7GT		AGC Rectifier & 1st Sync Separator
(17) RCA 6SN7GT		Sync Amplifier & 2nd Sync Separator
(18) RCA 6K6GT		Vertical Sweep Output
(19) RCA 6SN7GT		Horizontal Sweep Oscillator and Control
(20) RCA 6BG6C		Horizontal Sweep Output
(21) RCA 6W4GT		Damper
(22) RCA 1B3-GT/8016		High Voltage Rectifier
(23) RCA 5U4G		Power Supply Rectifier (2 tubes)
(24) RCA 16GP4		Kinescope

#### (Radio Tuner Chassis)

(1) RCA 6J6	Mixer and Oscillator
(2) RCA 6BA6	I-F Amplifier
(3) RCA 6AU6	F-M Driver
(4) RCA 6AL5	Ratio Detector
(5) RCA 6BF6	AM Detector AVC and Phone Preamp.

**VIDEO RESPONSE**.....To 4 mc.

**FOCUS**.....Magnetic

**SWEEP DEFLECTION**.....Magnetic

**SCANNING**.....Interlaced, 525 line

# ELECTRICAL AND MECHANICAL SPECIFICATIONS (Continued)

HORIZONTAL SCANNING FREQUENCY.....	15,750 cps
VERTICAL SCANNING FREQUENCY.....	60 cps
FRAME FREQUENCY (Picture Repetition Rate).....	30 cps
<b>SOUND I-F FREQUENCIES</b>	
Sound Carrier Frequency.....	21.25 mc.
Sound Discriminator Band Width between peaks.....	350 kc.

## PICTURE I-F FREQUENCIES

Picture Carrier Frequency.....	25.75 mc.
Adjacent Channel Sound Trap.....	27.25 mc.
Accompanying Sound Traps.....	21.25 mc.
Adjacent Channel Picture Carrier Trap.....	19.75 mc.

## OPERATING INSTRUCTIONS

The following adjustments are necessary when turning 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 BRIGHTNESS control fully counter-clockwise, then clockwise until a light pattern appears on the screen.

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

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

8. Turn the BRIGHTNESS control counter-clockwise until the retrace lines just disappear.

9. Adjust the PICTURE control for suitable picture contrast.

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

11. In switching from one station to another, it may be necessary to repeat steps numbers 4 and 9.

12. 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.

13. If the positions of the controls have been changed, it may be necessary to repeat steps numbers 1 through 9.

14. For radio operation turn the FUNCTION switch to AM or FM and tune in station with the radio TUNING control.

15. For phono operation, turn the FUNCTION switch to PH for operation of the 33 $\frac{1}{3}$ /78 rpm record changer, or to XPH for operation of the 45 rpm record changer.

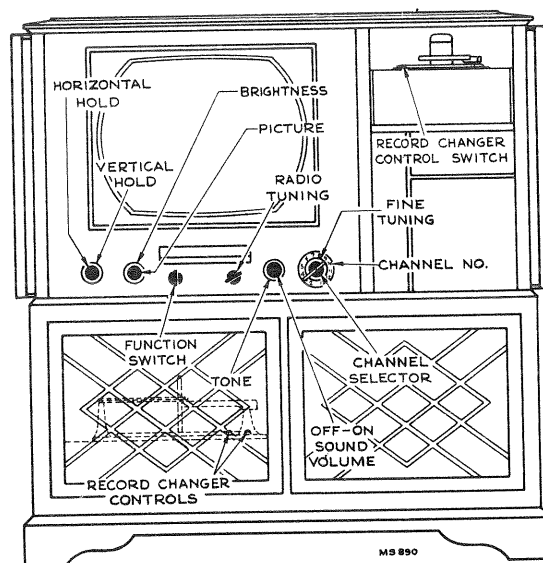


Figure 1—Receiver Operating Controls

## INSTALLATION INSTRUCTIONS

**WARNING.**—The high voltage supply in this receiver delivers 12,000 volts! A.C. interlocks are provided at the back of the set so that when the back is removed so is the power.

**ANTENNA AND POWER CONNECTIONS.**—Connect the leads from the antenna to the receiver antenna terminals.

Make sure that the receiver power switch is in the off position. Plug the receiver power cord into a 115 volt, 60 cycle a-c outlet.

Turn the power switch to the "on" position, the brightness control three-quarters clockwise, and picture control fully counter-clockwise.

**ION TRAP MAGNET ADJUSTMENT.**—Set the ion trap magnet approximately in the position shown in Figure 2. 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 (R191 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.

**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.

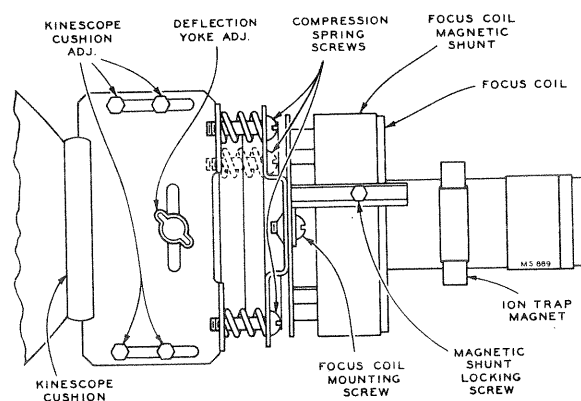


Figure 2—Yoke and Focus Coil Adjustments

**PICTURE ADJUSTMENTS.**—It will now be necessary to obtain a test pattern picture in order to make further adjustments. See steps 3 through 9 of the receiver operating instructions.

If the Horizontal Oscillator and AGC System are operating properly, it should be possible to sync the picture at this point. However, if the AGC threshold control is misadjusted, and the receiver is overloading, it may be impossible to sync the picture.

If the receiver is overloading, turn R138 on the rear apron (see Figure 3) clockwise until the set operates normally and the picture can be synced.

## INSTALLATION INSTRUCTIONS

TA169

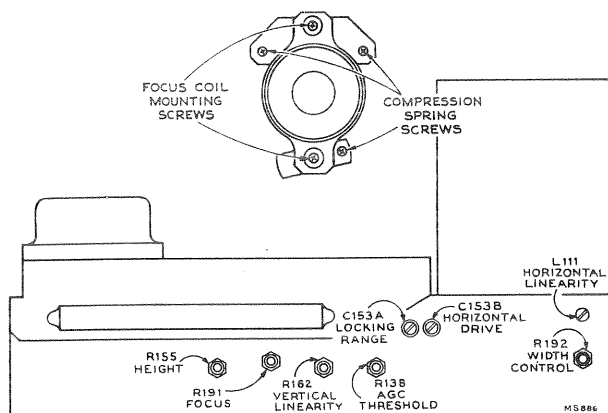


Figure 3—Rear Chassis Adjustments

**CHECK OF HORIZONTAL OSCILLATOR ALIGNMENT.**—Turn the horizontal hold control to the extreme counter-clockwise position. The picture should remain in horizontal sync. Momentarily remove the signal by switching off channel then back. Usually the picture will remain in sync. Turn the control clockwise slowly. If the picture did fall out of sync upon removal of the signal, the number of diagonal black bars will be gradually reduced and when only 2 bars sloping downward to the left are obtained, the picture will pull into sync upon slight additional clockwise rotation of the control. The picture should remain in sync for approximately 180 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 foregoing checks and the picture is normal and stable, the horizontal oscillator is properly aligned. Skip "Alignment of Horizontal Oscillator" and proceed with "Focus Coil Adjustments."

**ALIGNMENT OF HORIZONTAL OSCILLATOR.**—If in the above check the receiver failed to hold sync with the hold control at the extreme counter-clockwise position or failed to hold sync over 180 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 T109 sine wave core (on the outside of the apron) all the way out of the coil.

Set the locking range trimmer C153A one-half turn out from maximum capacity.

Turn the horizontal hold control to the extreme clockwise position. Tune in a television station and turn the frequency wave core of T109 under the chassis until the picture syncs and the sync bar just begins to move into the picture.

**NOTE.**—Occasionally, a tube may be found which does not respond to this alignment procedure since it may not be possible to sync the picture by means of the frequency core when the sine wave core is all the way out of the coil. Yet, the tube may work perfectly well when the circuit is properly aligned. In such a case, it may be necessary to turn the sine wave core in slightly, and readjust the frequency core to obtain sync.

Turn the sine wave core of T109 in until the blanking bar begins to move off to the left of the picture. Alternately turn the sine wave core in and the frequency out, keeping the picture in sync and the blanking bar showing in the picture.

Continue alternate adjustments until the picture falls from sync into a parasitic oscillation as indicated by a non-synchronized pattern which flickers in width and centering with possibly a light ragged vertical bar through the center of the screen.

Turn the sine wave core out  $\frac{1}{2}$  turn. Adjust the frequency core in until the picture is in sync and horizontal blanking appears as a vertical bar in the picture.

**Check of Pull-in Range.**—Turn the horizontal hold control fully counter-clockwise. Connect a 270K ohm resistor across C156. Momentarily switch off channel and back; the picture will then be out of sync. Turn the hold control clockwise slowly and observe the minimum number of bars obtained just before the picture pulls into sync.

The picture should snap in from two complete blanking bars. If two bars are not obtained, turn the locking range trimmer C153A in to obtain less bars or out to obtain more bars.

If C153A was adjusted, remove the 270K resistor, turn the horizontal hold control fully clockwise and adjust the T109 frequency core until horizontal blanking appears as a vertical bar in the synced picture. Then repeat the entire check of pull-in range to this point.

Repeat the adjustments under "Check of Pull-in Range" until the conditions specified are fulfilled. When the horizontal hold operates as outlined under "Check of Horizontal Oscillator Alignment" the oscillator is properly adjusted.

If the oscillator does not hold sync properly at this point and the AGC system is in proper adjustment it will be necessary to adjust the Horizontal Oscillator by the method outlined in the alignment procedure.

**\* FOCUS COIL ADJUSTMENTS.**—The focus coil should be adjusted so that there is approximately one-quarter inch of space between the rear cardboard shell of the yoke and the flat of the front face of the focus coil. This spacing gives best average focus over the face of the tube. The axis of the hole through the focus coil should be parallel with the axis of the kinescope neck. The focus coil is provided with a magnetic shunt in the form of a metal sleeve. If the receiver focuses with the focus control at or near the end of its range, loosen the shunt locking screw and slide the shunt forward or backward until focus is obtained with the focus control in the middle of its range.

**CENTERING ADJUSTMENT.**—No electrical centering controls are provided. Centering is obtained by loosening the two focus coil mounting screws and sliding the coil up or down or from side to side. If the focus coil was appreciably changed in position or if a corner of the raster is shadowed, check the position of the ion trap magnet. Reposition the magnet within the range of maximum raster brightness to eliminate the shadow and recenter the picture by sliding the coil. In no case should the magnet be adjusted to cause any loss of brightness since such operation may cause immediate or eventual damage to the tube. In extreme cases it may be necessary to adjust one or more of the three focus coil compression spring screws to eliminate a corner shadow.

**WIDTH, DRIVE AND HORIZONTAL LINEARITY ADJUSTMENTS.**—Adjustment of the horizontal drive control affects the high voltage applied to the kinescope. In order to obtain the highest possible voltage hence the brightest and best focused picture, adjust horizontal drive counter-clockwise as far as possible without losing tension on trimmer.

Set the width control to minimum picture width.

Turn the horizontal linearity coil out until appreciable loss in width occurs, then in until nearly maximum width and the best linearity is obtained. Do not run the core in beyond the point of maximum linearity change, as the current drawn by the 6BG6G then becomes excessive.

Adjust the width control for the proper picture width.

Readjust linearity, but again not beyond the point of maximum linearity change. If necessary adjust the drive control for best linearity.

If at very high line voltage, the picture width is excessive even with the width control set at minimum, turn the linearity coil out to obtain the proper width. On high line voltage, excessive width generally will be accompanied by good linearity, without retouching the drive.

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 (R191 on chassis rear apron) for maximum definition in the test pattern vertical "wedge" and best focus in the white areas of the pattern.

**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 the focus coil to align the picture with the mask.

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

**AGC THRESHOLD CONTROL.**—The AGC threshold control R138 is adjusted at the factory and normally should not require readjustment in the field.

To check the adjustment of the AGC threshold control, tune

## INSTALLATION INSTRUCTIONS

in a strong signal, sync the picture and turn the picture control to the maximum clockwise position. Turn the brightness control counter-clockwise until the vertical retrace lines are just invisible. Momentarily remove the signal by switching off channel and then back. If the picture reappears immediately, the receiver is not overloading due to improper setting of R138. If the picture requires an appreciable portion of a second to reappear, R138 should be readjusted.

Set the picture control at the maximum clockwise position. Turn R138 fully clockwise. The top one-half inch of the picture may be bent slightly. This should be disregarded. Turn R138 counter-clockwise until there is a very, very slight bend or change of bend in the top one-half inch of the picture. Then turn R138 clockwise just sufficiently to remove this bend or change of bend.

If the signal is very weak, the above method may not work as it may be impossible to get the picture to bend. In this case, turn R138 counter-clockwise until the snow in the picture becomes more pronounced, then clockwise until the best signal to noise ratio is obtained.

The AGC control adjustment should be made on a strong signal if possible. If the control is set too far counter-clockwise on a weak signal, then the receiver may overload when a strong signal is received.

**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 4. Adjustment for channel 13 is on top of the chassis and channel 6 adjustment is in the kinescope well.

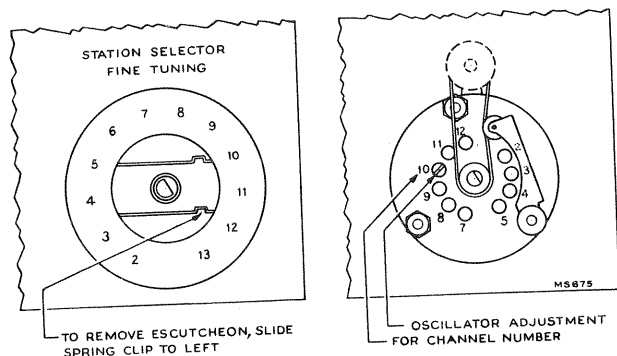


Figure 4—R-F Oscillator Adjustments

**RADIO OPERATION.**—Turn the receiver function switch to AM and FM positions and check the radio for proper operation. Tune in a station of known frequency. If the dial pointer does not point to the correct spot on the dial, slip the dial pointer on the dial cord until the proper indication is obtained.

**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 are tight in order to prevent rattling 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 R14 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.

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.

**CHASSIS REMOVAL.**—To remove the chassis from the cabinet for repair or installation of a new kinescope, remove the control knobs, the cabinet back, unplug the speaker cable,

the kinescope socket, the antenna cable, the pilot light cable, the yoke and focus coil cable. Remove the yoke frame grounding strap and the interlock switch. Take out the six chassis bolts under the cabinet. Withdraw the chassis from the back of the cabinet.

**KINESCOPE HANDLING PRECAUTION.**—Do not install, remove, or handle the kinescope in any manner, unless shatter-proof goggles and heavy gloves are worn. People not so equipped should be kept away while handling the kinescope. Keep the kinescope away from the body while handling.

To remove the kinescope from the cabinet, take out the four screws and one wing screw which hold the yoke frame to the cabinet. Remove the kinescope, the yoke frame with yoke and focus coil as an assembly.

**INSTALLATION OF KINESCOPE.**—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.

Wipe the kinescope screen surface and front panel safety glass clean of all dust and fingermarks with a soft cloth moistened with "Windex" or similar cleaning agent.

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. If the tube sticks, or fails to slip into place smoothly, investigate and remove the cause of the trouble. Do not force the tube.

Replace the kinescope and yoke frame assembly in the cabinet. Insert the four screws and wing screw and tighten.

Slip the kinescope as far forward as possible. Slide the kinescope cushion firmly up against the flare of the tube and tighten the adjustment locking screws. Slide the deflection yoke as far forward as possible and tighten. 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.

Slide the chassis into the cabinet, then insert and tighten the six chassis bolts.

Slip the ion trap magnet over the neck of the kinescope.

Connect the kinescope socket to the tube base and slip the high voltage lead clip between the rim of the kinescope and the mask.

Reconnect all other cables. Do not forget to replace the yoke frame grounding strap.

As may be seen by inspection, the radio dial lights and dial pointer are attached to the cabinet front panel. The dial cord is attached to the receiver chassis. The method of attachment may be seen in Figure 5.

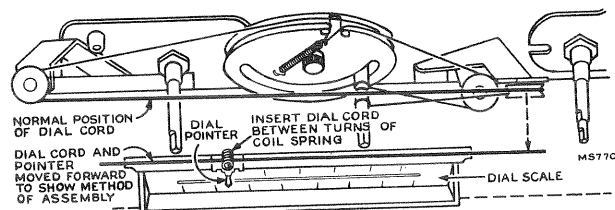


Figure 5—Dial Cord and Pointer Assembly

Reach over the television chassis to the radio and slip the radio pilot lights on the cabinet pilot light brackets.

To hook up the dial pointer, turn the tuning shaft until the gang is fully meshed. Slip the dial pointer to the low frequency end of the dial and press the dial cord well into the coil spring.

Turn the set on and to radio position to see that the dial lighting is correct. If it is not, adjust the dial lights and shields. Tune in a station of known calibration and check the dial calibration.

Perform the entire television set-up procedure beginning with Ion Trap Magnet Adjustment.

**CABINET ANTENNA.**—A cabinet antenna is provided for use in strong signal areas in which no reflections are experienced. The leads from the antenna are brought out near the receiver antenna terminal board. To connect the cabinet antenna, attach the leads to the terminal board. If reception is satisfactory, no other antenna is necessary. However, if reception is unsatisfactory, it will be necessary to employ an outdoor antenna or an indoor antenna which can be oriented.

# RADIO ALIGNMENT PROCEDURE

TA169

If any lead dressing is necessary, it should be done before aligning the receiver. When making a complete alignment follow the table below in sequence. If only a portion of the circuit is to be aligned select the portion required and follow with the remaining steps in the section. Any adjustments made on the 455 kc. I-F's make it necessary to adjust the 10.7 mc. I-F's.

## "AM" R-F—I-F ALIGNMENT

**Test-Oscillator.**—For all alignment operations, connect low side of the test-osc. to the receiver chassis, and keep the osc. output as low as possible to avoid a-v-c action. **Output Meter.**—Connect the meter across the speaker voice coil, and turn the receiver volume control to max.

Steps	Connect the High Side of the Test Osc. to—	Tune Test Osc. to—	Function Switch	Turn Radio Dial to—	Adjust the following
1	Antenna terminal in series with .01 mfd.	455 kc. Modulated	AM	Low Freq. end of Dial	†Top and bot. cores of T301 and T302. (For max. voltage across voice coil.)
2	Ant. terminal through dummy ant. of 200 mmfs.	1,620 kc.	AM	Min. capacity	Osc. C308 for maximum output.
3		1,400 kc.	AM	Tune to signal	Ant. C304 for maximum output.
4		600 kc.	AM	600 kc.	Osc. L306 and Ant. L303.
5	Repeat steps 2, 3 and 4 for maximum output.				

† Use alternate loading. Connect an 18,000-ohm resistor across the primary to load the plate winding while the grid winding of the same transformer is being peaked. Then load the grid winding with the 18,000-ohm resistor while the plate winding is being peaked.

## RATIO DETECTOR ALIGNMENT

Connect probe of "VoltOhmyst" to negative side of C328 and low side to chassis. Connect output meter across speaker voice coil.

Steps	Connect the High Side of the Test Osc. to—	Tune Test Osc. to—	Function Switch	Radio Dial Tuned to—	Adjust
6	Pin No. 1 of 6AU6 (V303) in series with .01 mfd.	10.7 mc. 30% AM Modulated	FM	_____	Top of T303 for maximum DC on "VoltOhmyst."
7	Pin No. 1 of 6AU6 (V303) in series with .01 mfd.		FM	_____	Bottom of T303 for minimum audio output on meter.
8	Repeat steps 6 and 7 as necessary making final adjustment with r-f input level set to give approximately -3.0 volts d-c on "VoltOhmyst."				

## "FM" R-F—I-F ALIGNMENT

Steps	Connect the High Side of the Test Osc. to—	Tune Test Osc. to—	Function Switch	Radio Dial Tuned to—	Adjust
9	Terminal 3 of S301-2 rear through 270 ohms.	10.7 mc.	FM	88 mc.	*T301 and T302 for max. with r-f input set to give -3 volts on "VoltOhmyst."
10	Terminal 3 of S301-2 rear through 270 ohms.	106 mc.	FM	106 mc.	Set C302 to max. capacity. Squeeze L307 and adjust C302 for maximum.
11	Terminal 3 of S301-2 rear through 270 ohms.	90 mc.	FM	Tune to signal	Squeeze L301 and rock gang for maximum output.
12	Repeat steps 10 and 11 as required.				

\* Use 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.

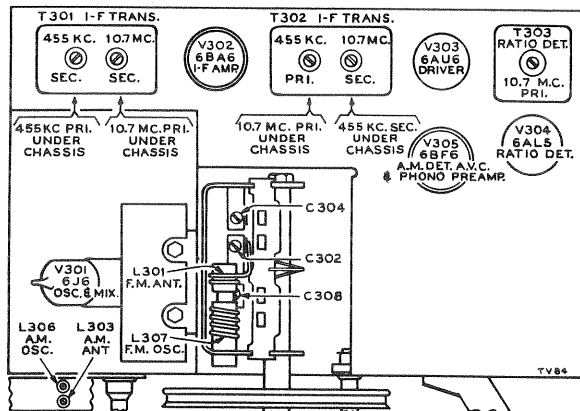


Figure 6—Chassis, Top View, Showing Adjustments

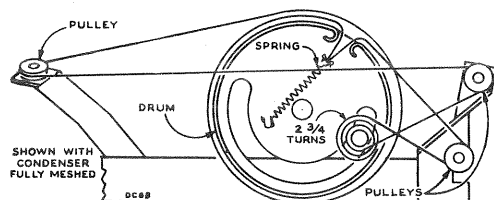


Figure 7—Dial and Drive Cord Assembly

## CRITICAL LEAD DRESS:

- Ground lead on pin 2 of V302 and V303 should be dressed down flat on chassis.
- Dual .005 mfd. capacitors and diode filter should be dressed to clear the bottom of the cabinet.
- Dress C329 across V302 sockets with short and direct leads.
- Dress V302 plate lead from pin 5 down to the chassis.
- Dress AVC lead from R321 to switch down to chassis and against back of gang mounting plate.
- Dress lead from pin 6 of V305 down to chassis and against back of gang mounting plate.
- Dress AVC lead from 1st I-F to switch against chassis and against gang mounting plate.
- Dress lead from switch to pin 1 of V301 against plate supporting gang.
- Dress all insulated F-M leads down to chassis.
- Connect C309 with short lead to pin 6 of V301 keeping body of cap away from plate lead and switch terminals.
- The coupling between L301 and L307 should be adjusted to give proper injection voltage to the mixer grid. This has been found to be correct when the distance between adjacent end turns is  $\frac{3}{8}$ " to  $\frac{7}{16}$ " measured at top of the form.
- Dress cabled leads away from antenna transmission lines.
- Dress all uninsulated bus wire so as to avoid short circuits.

## CHASSIS TOP VIEW

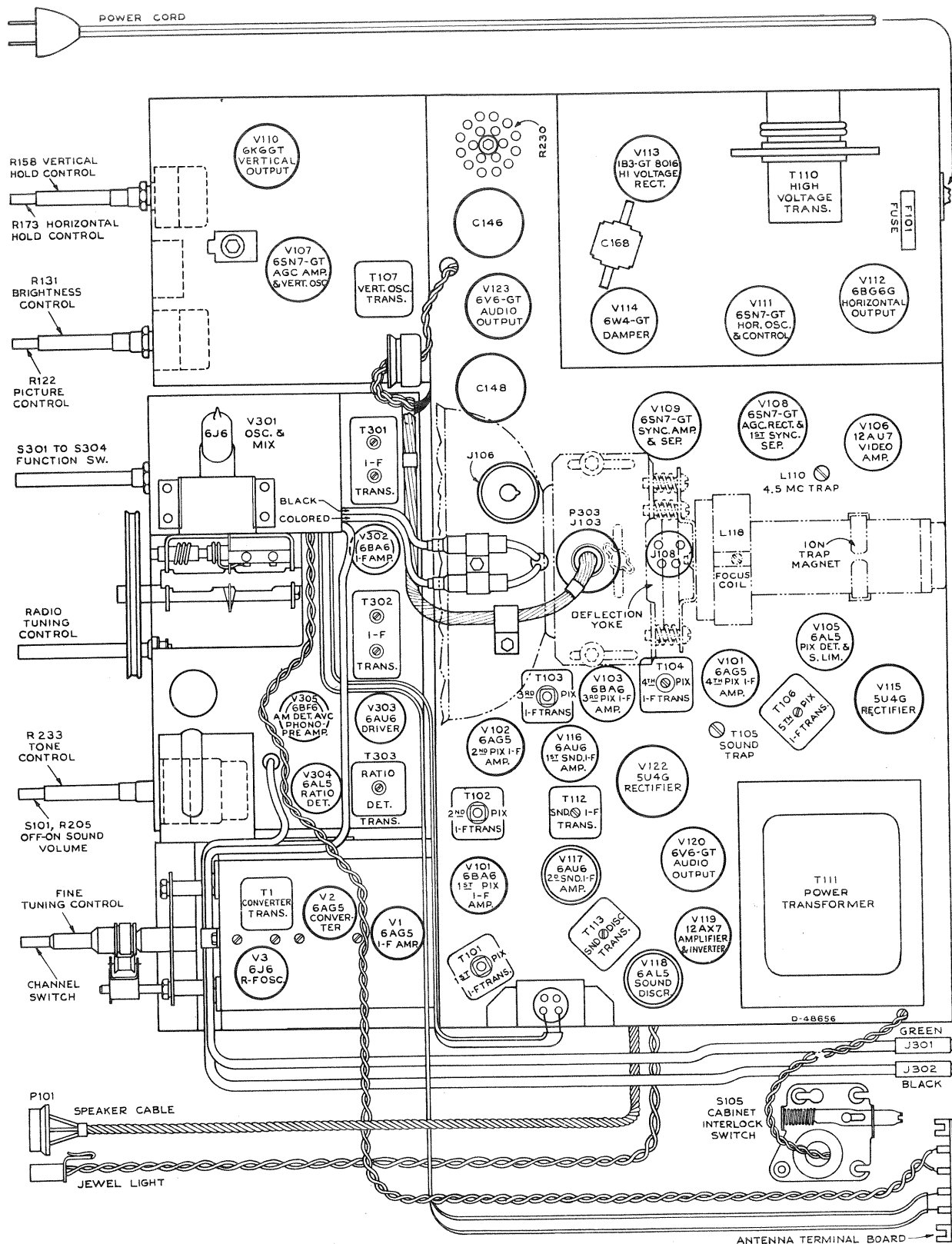


Figure 8—Chassis Top View



## CHASSIS BOTTOM VIEW

TA169

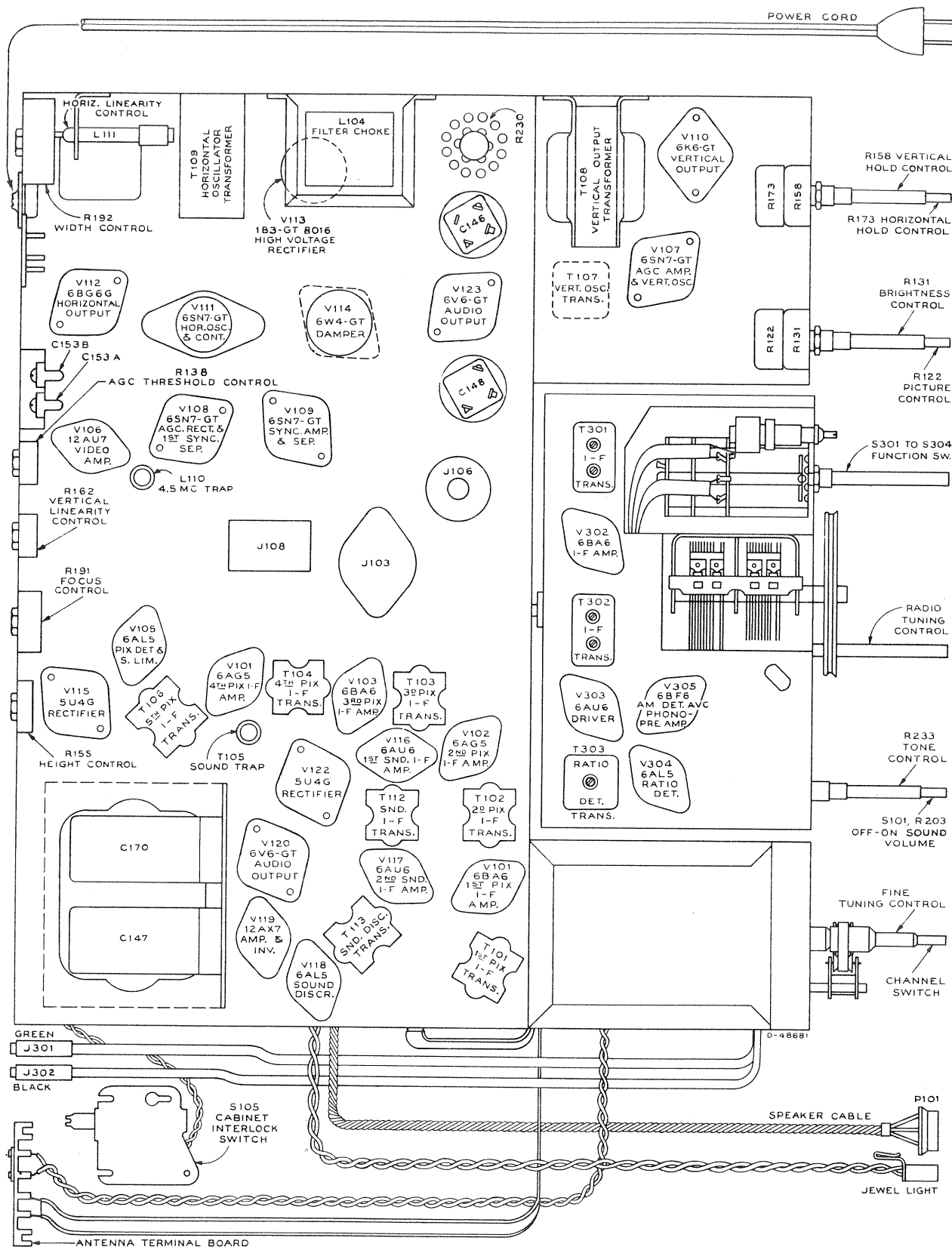


Figure 9 — Chassis Bottom View

## VOLTAGE CHART

The following measurements represent two sets of conditions. In the first condition a 2200 microvolt test pattern signal was fed into the receiver, the picture was synced and the AGC threshold control was properly adjusted. 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. Symbol < means less than.

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	130	6	132	2 & 7	0	1	-2.2	5	2	
			No Signal	5	67	6	111	2 & 7	0	1	0.0	14.0	5.0	
V2	6AG5	Converter	2200 Mu. V. Signal	5	*130 to 140	6	*130 to 140	2 & 7	0	1	*-3.0 to -7.0	*7.1 to 7.7	*2.3 to 2.7	*Depending upon channel
			No Signal	5	*107 to 109	6	*107 to 109	2 & 7	0	1	*-2.0 to -6.0	*5.3 to 5.9	*.8 to 1.0	
V3	6J6	R-F Oscillator	2200 Mu. V. Signal	1 & 2	*88 to 95	—	—	7	.19	5 & 6	*-5.1 to -7.3	*1.9 to 2.7	—	*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	6BA6	1st Pix. I-F Amplifier	2200 Mu. V. Signal	5	128	6	128	7	.4	1	-11.0	1.9	.8	
			No Signal	5	95	6	95	7	1.73	1	+2	8.1	3.4	
V102	6AG5	2nd Pix. I-F Amplifier	2200 Mu. V. Signal	5	119	6	119	2 & 7	.78	1	0	8.8	2.4	
			No Signal	5	100	6	100	2 & 7	.62	1	0	7.4	1.6	
V103	6BA6	3d Pix. I-F Amplifier	2200 Mu. V. Signal	5	81	6	119	7	.52	1	-2.2	11.1	.3	
			No Signal	5	55	6	96	2 & 7	.62	1	+2	13.2	.3	
V104	6AG5	4th Pix. I-F Amplifier	2200 Mu. V. Signal	5	159	6	135	2 & 7	1.5	1	0	7.2	2.2	
			No Signal	5	165	6	118	2 & 7	1.35	1	0	6.8	2.4	
V105 A	6AL5	Picture 2d Det.	2200 Mu. V. Signal	7	-116	—	—	1	-127	—	—	.3	—	
			No Signal	7	-131	—	—	1	-135	—	—	<0.1	—	
V105 B	6AL5	Sync Limiter	2200 Mu. V. Signal	2	-117	—	—	5	-58	—	—	—	—	
			No Signal	2	-83	—	—	5	-60	—	—	—	—	
V106	12AU7	1st Video Amplifier	2200 Mu. V. Signal	1	-18.7	—	—	3	-125	2	-129	2.6	—	
			No Signal	1	-28.0	—	—	3	-133	2	-135	6.6	—	
V106	12AU7	2d Video Amplifier	2200 Mu. V. Signal	6	*120	—	—	8	*-11.0	7	*-13.2	9.2	—	*At minimum contrast
			No Signal	6	*127	—	—	8	*-17.0	7	*-21.0	8.5	—	
V107 A	6SN7 GT	AGC Amplifier	2200 Mu. V. Signal	5	-11.0	—	—	6	-58	4	-61	.12	—	
			No Signal	5	+0.2	—	—	6	-60	4	-66	0	—	
V107 B	6SN7 GT	Vertical Oscillator	2200 Mu. V. Signal	2	.125	—	—	3	-127	1	-170	.31	—	
			No Signal	2	120	—	—	3	-135	1	-175	.30	—	
V108	6SN7 GT	AGC Rectifier	2200 Mu. V. Signal	5	87	—	—	6	-2	4	-19.5	.3	—	
			No Signal	5	75	—	—	6	-22	4	-28.0	<.1	—	
V108	6SN7 GT	1st Sync Separator	2200 Mu. V. Signal	2	87	—	—	3	-3	1	-18.5	<.1	—	
			No Signal	2	73	—	—	3	-22	1	-28.0	<.1	—	
V109	6SN7 GT	Sync Amplifier	2200 Mu. V. Signal	2	153	—	—	3	0	1	-5.7	5.8	—	
			No Signal	2	160	—	—	3	0	1	-5.6	5.4	—	



## VOLTAGE CHART

TA169

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			
V109	6SN7 GT	Sync Separator	2200 Mu. V. Signal	5	241	—	—	6	—58	4	—117	.22	—	
			No Signal	5	240	—	—	6	—57	4	—65	.71	—	
V110	6K6-GT	Vertical Output	2200 Mu. V. Signal	3	240	4	*240	8	—78	5	—107	10	2.0	*Screen connected to plate
			No Signal	3	235	4	*235	8	—83	5	—111	10	1.9	
V111	6SN7 GT	Horizontal Osc. Control	2200 Mu. V. Signal	2	*48	—	—	3	—136	1	—127	.11	—	*Variation of hold gives — 21.9 to +56 volts on plate
			No Signal	2	*33	—	—	3	—140	1	—140	.10	—	
V111	6SN7 GT	Horizontal Oscillator	2200 Mu. V. Signal	5	86	—	—	6	—127	4	—193	2.0	—	
			No Signal	5	80	—	—	6	—135	4	—205	1.7	—	
V112	6BG6G	Horizontal Output	2200 Mu. V. Signal	Cap	Do Not Meas.	8	152	3	—117	5	—145	67.9	8.1	
			No Signal	Cap	Do Not Meas.	8	150	3	—126	5	—157	66.0	8.0	
V113	1B3GT /8016	H. V. Rectifier	Brightness Min.	Cap	Do Not Meas.	—	—	2 & 7	12,300	—	—	0	—	
			Brightness Average	Cap	Do Not Meas.	—	—	2 & 7	11,700	—	—	.1	—	
V114	6W4GT	Damper	2200 Mu. V. Signal	5	Do Not Meas.	—	—	3	498	—	—	86	—	
			No Signal	5	Do Not Meas.	—	—	3	496	—	—	70	—	
V115	5U4G	Rectifier	2200 Mu. V. Signal	4 & 6	385	—	—	2 & 8	267	—	—	225	—	*A-C measured from plate to trans. center tap
			No Signal	4 & 6	385	—	—	2 & 8	260	—	—	226	—	
V116	6AU6	1st Sound I-F Amplifier	2200 Mu. V. Signal	5	124	6	124	7	.87	1	—0.1	7.0	3.0	
			No Signal	5	107	6	107	7	.75	1	—0.15	6.4	2.3	
V117	6AU6	2nd Sound I-F Amplifier	2200 Mu. V. Signal	5	130	6	67	7	0	1	—9	4.3	1.5	
			No Signal	5	120	6	60	7	0	1	—0.37	3.7	1.6	
V118	6AL5	Sound Discrim.	2200 Mu. V. Signal	2	—8.4	—	—	5	5.8	—	—	—	—	
			No Signal	2	—3.7	—	—	1	0	—	—	—	—	
			No Signal	7	—0.4	—	—	5	0	—	—	—	—	
			No Signal	7	—0.4	—	—	1	0	—	—	—	—	
V119	12AX7	1st Audio Amplifier	2200 Mu. V. Signal	1	100	—	—	3	0	2	—9	—	—	
			No Signal	1	100	—	—	3	0	2	—9	—	—	
		Phase Inverter	2200 Mu. V. Signal	6	130	—	—	8	0	7	—9	—	—	
			No Signal	6	130	—	—	8	0	7	—9	—	—	
V120	6V6-GT	Audio Output	2200 Mu. V. Signal	3	230	4	85	8	—113	5	—127	22	5	*Per tube
V123			No Signal	3	230	4	85	8	—120	5	—135	22	5	*Per tube
V121	16GP4	Kinescope	2200 Mu. V. Signal	Cap	12,300	10	250	11	77	2	35	.06	—	*Average Brightness
			No Signal	Cap	11,700	10	250	11	73	2	48	.18	—	Average Brightness
V301	6J6	Mixer and Oscillator	No Signal	1	110	—	—	7	0	6	—2.0	—	—	Function switch in F-M position
			No Signal	2	95	—	—	7	0	5	—5.0	—	—	
V302	6BA6	Radio I-F Amplifier	No Signal	5	210	6	105	7	.8	1	—0.2	—	—	
V303	6AV6	Radio F-M Driver	No Signal	5	205	6	135	7	1.5	1	0	—	—	
V304	6AL5	Radio Ratio Det.	No Signal	2	—0.2	—	—	5	—0.2	—	—	—	—	
			No Signal	7	—0.2	—	—	1	—0.1	—	—	—	—	
V305	6BF6	A-M Det. and Phono Preamp	No Signal	7	—0.2	—	—	2	0	—	—	—	—	

## RADIO CHASSIS WIRING DIAGRAM

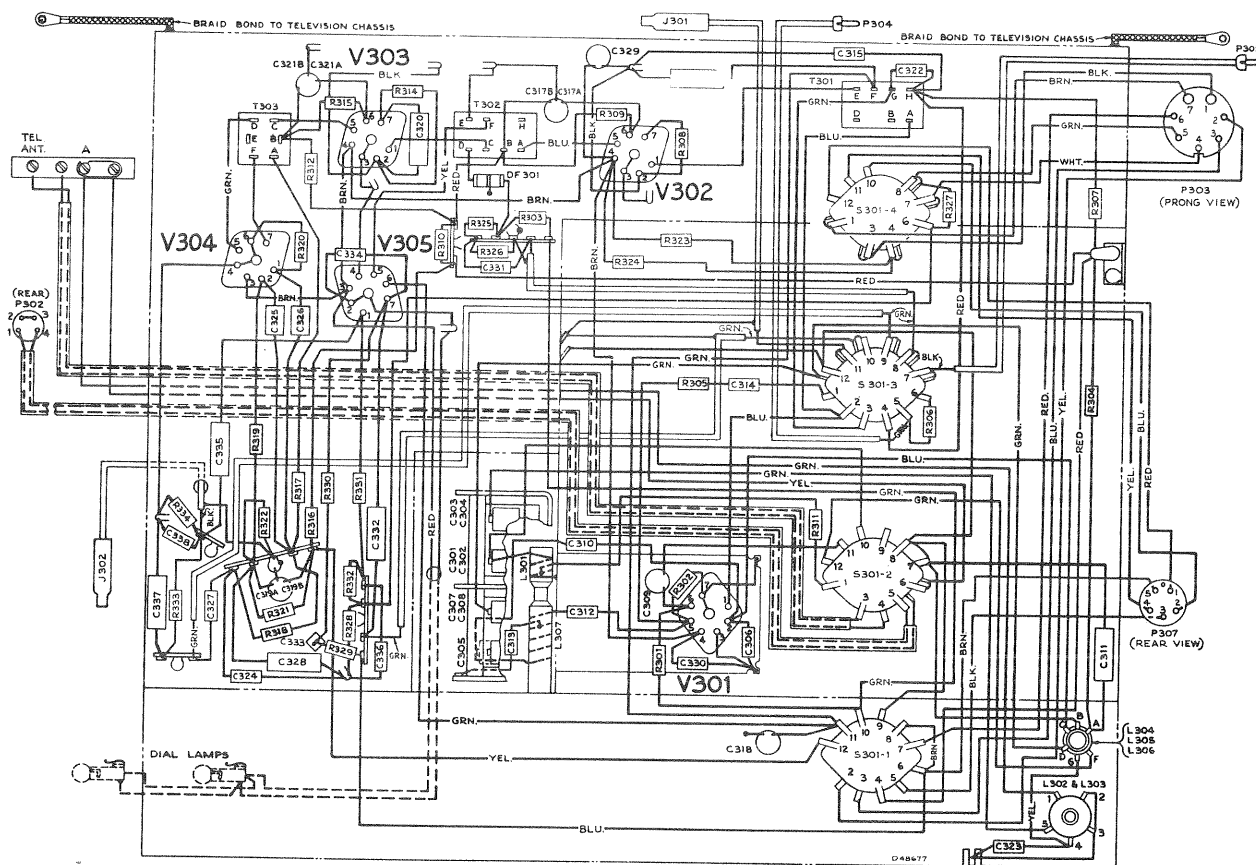
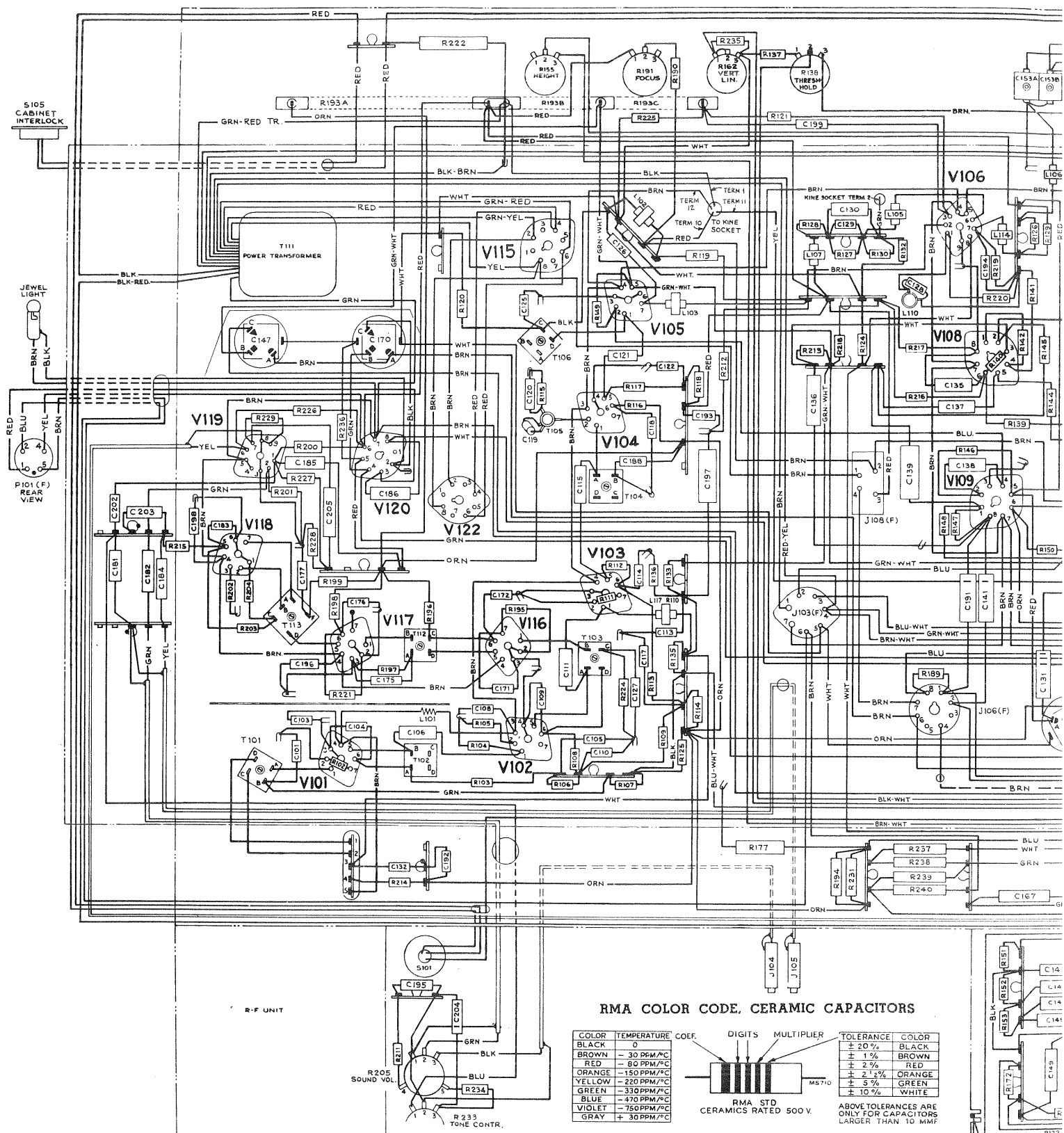


Figure 10—Radio Chassis Wiring Diagram (RK135D)

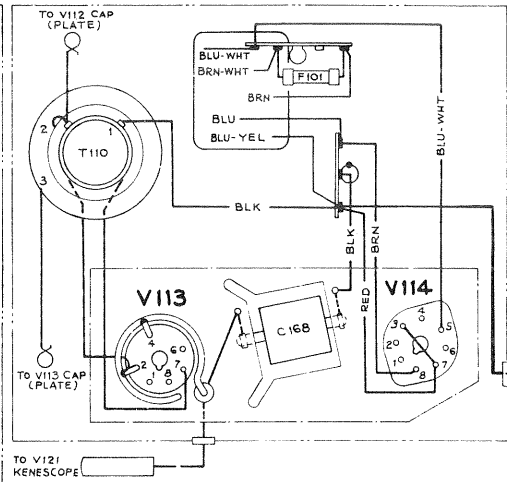
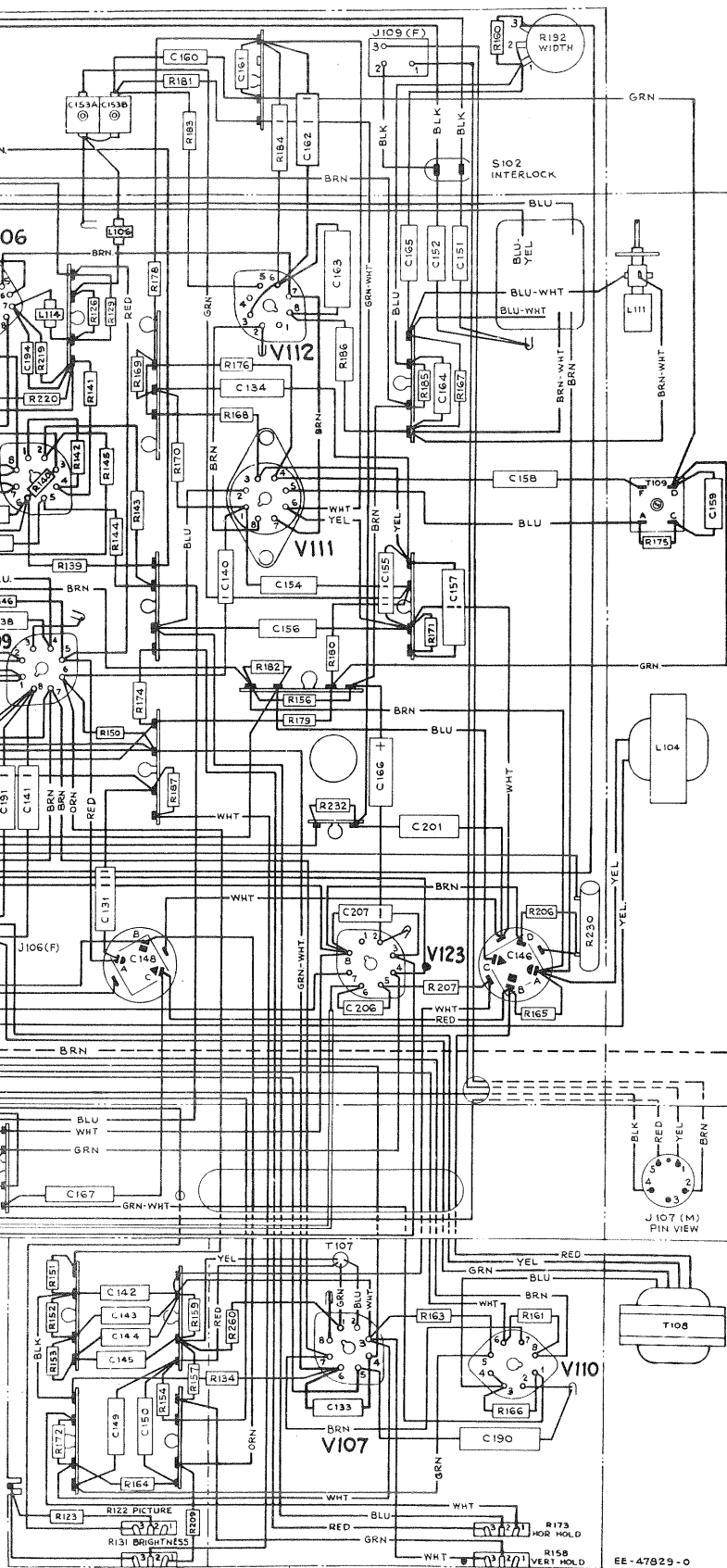
## TELEVISION CRITICAL LEAD DRESS

1. The ground bus from pin 2 and the center shield of V117 socket should not be shortened or rerouted.
2. Do not change the dress of the filament leads or the bypass capacitors in the picture or sound i-f circuits. The filament leads between V117, V118 and V119 should be down against the chassis and away from grid or plate leads.
3. 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.
4. 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 1/4 inch. If the dress of any of these capacitors is changed, the i-f alignment should be rechecked.
5. Dress black lead from terminal C of T106 down next to chassis.
6. Leads to L102 and L103 must be as short as possible.
7. Dress peaking coils L105, L106 and L107 up and away from the chassis.
8. Dress C183 across tube pins 5 and 6 with leads not exceeding 3/8 inch.
9. Dress body of R215 as close to tube pin as possible.
10. Dress C129 and C130 up and away from the chassis.
11. Dress the yellow lead from the picture control away from the chassis and away from the volume-control leads. Dress the yellow lead from pin 8 of V106 away from the chassis.
12. Dress the green lead from pin 2 of V106 away from the chassis.
13. Dress R168, R169, R170, R176 and R178 up and away from the chassis.
14. The leads to the volume control should be dressed down against the chassis and away from V117 and V118.
15. Contact between the r-f oscillator frequency adjustment screws and the oscillator coils or channel switch eyelets must be avoided.
16. Dress three a-c leads to S101 under clamp and away from R211.
17. Dress black lead from power transformer and red lead from S102 to terminal board, on top of four potentiometers.
18. Dress all leads from V115 to V122 on power transformer side of terminal board.
19. Dress all leads away from R230.
20. Dress brown and yellow leads of phono motor cable under R165 and under C201.
21. All solder joints in the high voltage section should be free of sharp edges.
22. The lead side of the V113 plate cap should be turned away from the fixed high voltage shield.
23. All leads under the horizontal plate in the high voltage section should be kept reasonably short and dressed away from the V113 corona ring.

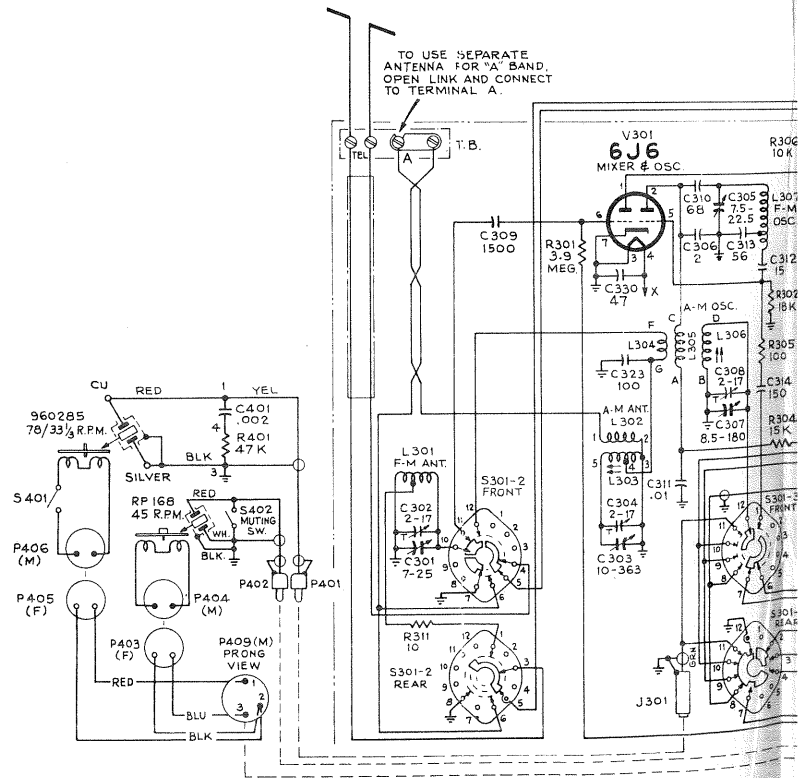


In some receivers, a four color ceramic capacitor color code is employed. It reads the same as the RMA color code except that the tolerance stripe is omitted.

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.



THE TELEVISION SECTION OF MODEL TA169 IS VERY SIMILAR TO THE CHASSIS USED IN MODEL T164. REFER TO PAGES 267 TO 277 FOR ALIGNMENT PROCEDURE AND WAVEFORM PHOTOGRAPHS. R-F UNIT WIRING ON PAGE 280.

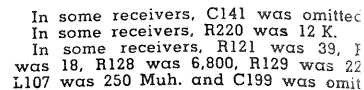


Function switch S301 viewed from front and shown in Number 1 (maximum counterclockwise position).  
Switch position 1—Television.

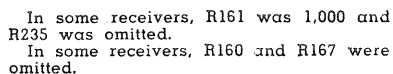
Switch position 2—AM.  
Switch position 3—FM.  
Switch position 4—Phono 45 RPM.  
Switch position 5—Phono 78 RPM.

All resistance values 1,000.  
All capacitance values MF and above 1 in M.

Figure 11—Chassis Wiring Diagram



141 was omitted.  
220 was 12 K.  
R121 was 39, R225  
00, R129 was 220 K.  
1 C199 was omitted.



In some receivers, R187 was 150 K and R188 470 K was connected from V121-11 to +125 V and V121-10 was connected to the junction of R156 and C166.

In some receivers, R260 was omitted.

In some chassis, C151 and C152 were .01 mfd.

**Figure 12 —Circuit Schematic Diagram**



STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
	15,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R304)	74273	Decal—Trade mark decal (Victrola)
	15,000 ohms, $\pm 20\%$ , $\frac{1}{2}$ watt (R315, R318)	74898	Decal—Control panel function decal for mahogany or walnut instruments
	18,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R302)	74899	Decal—Control panel function decal for oak instruments
	27,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R307, R309)	74052	Dial—Dial scale and bezel assembly
	39,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R322)	74809	Emblem—"RCA Victor" emblem
	68,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R328)	73642	Escutcheon—Channel marker escutcheon for mahogany or walnut instruments
	100,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R334)	73740	Escutcheon—Channel marker escutcheon for oak instruments
	150,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R325, R326, R329)	74606	Glass—Safety glass
	270,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R330)	37396	Grommet—Rubber grommet to mount speaker (4 required)
	470,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R331)	74308	Hinge—Cabinet door hinges (1 set) for RH or LH door
	470,000 ohms, $\pm 20\%$ , $\frac{1}{2}$ watt (R321)	70166	Hinge—Cabinet door hinge for center door—upper
	1 megohm, $\pm 10\%$ , $\frac{1}{2}$ watt (R327, R332)	73200	Hinge—Cabinet door hinge for center door—lower
	2.2 megohm, $\pm 20\%$ , $\frac{1}{2}$ watt (R303)	74051	Indicator—Station selector indicator
	3.9 megohm, $\pm 10\%$ , $\frac{1}{2}$ watt (R301)	74959	Knob—Fine tuning knob—maroon—for mahogany or walnut instruments (outer)
	22 megohm, $\pm 20\%$ , $\frac{1}{2}$ watt (R316)	73995	Knob—Fine tuning knob—tan—for oak instruments (outer)
74028	Shaft—Tuning knob shaft	74960	Knob—Channel selector knob—maroon—for mahogany or walnut instruments (inner)
73632	Shield—Tube shield	74961	Knob—Channel selector knob—tan—for oak instruments (inner)
73117	Socket—Tube socket, 7 pin, miniature for V301, V304, V305	74962	Knob—Vertical hold control, brightness control or tone control knob—maroon—for mahogany or walnut instruments (outer)
74179	Socket—Tube socket, 7 pin, miniature for V302, V303	73999	Knob—Vertical hold control, brightness control or tone control knob—tan—for oak instruments (outer)
31364	Socket—Dial lamp socket	74978	Knob—Tuning or selector switch knob—maroon—for mahogany or walnut instruments
74038	Spring—Drive cord spring	74979	Knob—Tuning or selector switch knob—tan—for oak instruments
74894	Switch—Selector switch (S301)	74963	Knob—Horizontal hold control, picture control or volume control and power switch knob—maroon—for mahogany or walnut instruments
73745	Transformer—First i-f transformer, dual (T301)	74001	Knob—Horizontal hold control, picture control or volume control and power switch knob—tan—for oak instruments (inner)
74019	Transformer—Second i-f transformer, dual (T302)	11765	Lamp—Dial or pilot lamp—Mazda 51
73743	Transformer—Ratio detector transformer (T303)	74208	Nut—Tee nut to mount 45 RPM changer (3 required)
33726	Washer—"C" washer for tuning shaft	74162	Plate—Mounting plate for cabinet interlock switch
34457	Washer—Spring washer for tuning shaft (front)	75037	Pull—Door pull
74172	Washer—Fibre washer to prevent drive cord slippage		Resistor—Fixed, composition, 47,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R401)
	<b>SPEAKER ASSEMBLIES</b>	74582	Screw—No. 8-32 x $1\frac{3}{4}$ " special screw to mount 45 RPM changer (3 required)
	92569-5 W RL 111-8 RMA 274 or 92569-5 K RMA 252	74156	Screw—No. 8-32 x $7\frac{1}{16}$ " wing screw for deflection yoke and focus coil support and bracket
13867	Cap—Dust cap	75038	Screw—No. 8-32 x $\frac{1}{2}$ " trimit head screw for door pull
74901	Cone—Cone and voice coil assembly for 92569-5 W	74050	Slide—Station indicator slide
75642	Cone—Cone and voice coil assembly for 92569-5 K	74736	Slide—Slide mechanism for changer carriages
5039	Connector—4 contact male connector (J101)	74055	Spring—Spring clip for dial and bezel assembly (2 required)
73636	Transformer—Output transformer (T114)	72845	Spring—Retaining spring for knobs No. 73995 and No. 74959
73635	Speaker—12" P.M. speaker complete with cone and voice coil less output transformer and plug	14270	Spring—Retaining spring for knobs 73999, 74960, 74961 and 74962
	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.	30330	Spring—Retaining spring for knobs 74001 and 74963
	<b>MISCELLANEOUS</b>	73643	Spring—Spring clip for channel marker escutcheon
75102	Back—Cabinet back	74421	Spring—Conical spring to mount 45 RPM changer—upper—R.H. (1 required)
74054	Bracket—Dial lamp bracket (2 required)	74422	Spring—Conical spring to mount 45 RPM changer—upper—L.H. (2 required)
71599	Bracket—Pilot lamp bracket	74423	Spring—Conical spring to mount 45 RPM changer—lower—(3 required)
74296	Cable—Shielded pickup cable complete with pin plug for 45 RPM changer	74966	Spring—Formed spring for kinescope masking panel (8 required)
72437	Cable—Shielded pickup cable complete with pin plug for 33/78 RPM changer	72936	Stop—Door stop
13103	Cap—Pilot lamp cap	74161	Stud—Locating stud for back cover (2 required)
73803	Capacitor—Tubular, paper, .002 mfd., 400 volts (C401)	75146	Washer—"C" washer for mounting 33/78 RPM changer (2 required)
71892	Catch—Bullet catch and strike for doors (3 required)		
X3092	Cloth—Grille cloth for mahogany or walnut cabinets		
X3090	Cloth—Grille cloth for oak cabinets		
30868	Connector—2 contact female connector for 45 RPM motor extension cable		
30870	Connector—2 contact male connector for 45 RPM motor extension cable		
14782	Connector—3 contact male connector for record changer power cable		
74581	Cover—Mounting screw cover for 45 RPM changer		

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



## REPLACEMENT PARTS (Continued)

TA169

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
	82,000 ohms, $\pm 5\%$ , 1 watt (R179)	73576	Transformer—Horizontal oscillator transformer (T109)
	82,000 ohms, $\pm 10\%$ , 1 watt (R168)	73578	Transformer—Antenna transformer complete with socket (T115, J102)
	100,000 ohms, $\pm 5\%$ , $\frac{1}{2}$ watt (R203, R204)	73577	Trap—4.5 mc trap (L110, C128)
	100,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R187, R216, R226)	71778	Trap—Sound trap (T105, C119)
	100,000 ohms, $\pm 10\%$ , 1 watt (R174)	73476	Trap—I-F trap (L116, C189)
	100,000 ohms, $\pm 20\%$ , 2 watts (R222)	74952	Yoke—Deflection yoke (L108, L109, L112, L113, C169, C187, P106)
	120,000 ohms, $\pm 10\%$ , 1 watt (R172)		RADIO CHASSIS ASSEMBLIES RK 135 D
	150,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R129, R180, R185)	74039	Board—"Telv-Ant" terminal board (TB301)
	150,000 ohms, $\pm 20\%$ , $\frac{1}{2}$ watt (R142)	74026	Bracket—Drive cord bracket complete with two pulleys—R.H.
	150,000 ohms, $\pm 5\%$ , 1 watt (R176)	74027	Bracket—Drive cord bracket complete with pulley—L.H.
	180,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R232)	74911	Cable—Shielded cable complete with female connector (W307, W311)
	220,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R156, R166)	71105	Cable—Shielded cable complete with pin plug (W301, W302)
	270,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R154)	74017	Capacitor—Variable tuning capacitor (C301, C302, C303, C304, C305, C307, C308)
	330,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R140, R170, R200)	73866	Capacitor—Ceramic, 2 mmf. (C306)
	330,000 ohms, $\pm 5\%$ , 1 watt (R178)	39044	Capacitor—Ceramic, 15 mmf. (C312)
	470,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R137, R139, R224)	39042	Capacitor—Ceramic, 47 mmf. (C330)
	560,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R207, R236)	73867	Capacitor—Ceramic, 56 mmf. (C313)
	680,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R133, R212)	33379	Capacitor—Ceramic, 68 mmf. (C310)
	820,000 ohms, $\pm 10\%$ , $\frac{1}{2}$ watt (R169, R181)	39396	Capacitor—Ceramic, 100 mmf. (C322, C323)
	1 megohm, $\pm 10\%$ , $\frac{1}{2}$ watt (R147)	48125	Capacitor—Ceramic, 150 mmf. (C314)
	1 megohm, $\pm 20\%$ , $\frac{1}{2}$ watt (R189, R260)	71922	Capacitor—Ceramic, 180 mmf. (C334, C338)
	1.2 megohm, $\pm 5\%$ , $\frac{1}{2}$ watt (R157, R213)	39640	Capacitor—Mica, 330 mmf. (C325, C326)
	2.2 megohm, $\pm 10\%$ , $\frac{1}{2}$ watt (R130, R132, R163)	73748	Capacitor—Ceramic, 1,500 mmf. (C309)
	2.7 megohm, $\pm 5\%$ , 1 watt (R227)	74009	Capacitor—Ceramic, dual, 4,000 mmf. (C317, C319, C321)
	3.3 megohm, $\pm 5\%$ , $\frac{1}{2}$ watt (R159)	73473	Capacitor—Ceramic, 5,000 mmf. (C318, C329)
	3.9 megohm, $\pm 10\%$ , $\frac{1}{2}$ watt (R149)	73747	Capacitor—Electrolytic, 2 mfd., 50 volts (C328)
	6.8 megohm, $\pm 10\%$ , $\frac{1}{2}$ watt (R125)	32223	Capacitor—Electrolytic, 15 mfd., 300 volts (C333)
	10 megohm, $\pm 10\%$ , $\frac{1}{2}$ watt (R148)	70502	Capacitor—Tubular, paper, .0025 mfd., 400 volts (C332)
	10 megohm, $\pm 20\%$ , $\frac{1}{2}$ watt (R201, R229)	73961	Capacitor—Tubular, paper, .003 mfd., 200 volts (C327, C331)
74602	Screw—No. 10-32 x $\frac{1}{4}$ " cross recessed round head screw for focus coil adjustments (3 required)	71553	Capacitor—Tubular, paper, .005 mfd., 400 volts (C315, C320, C324)
*75083	Screw—No. 8-32 x $\frac{1}{4}$ " wing screw for deflection yoke mounting	71923	Capacitor—Tubular, paper, .01 mfd., 200 volts (C335)
74601	Screw—No. 8-32 x $\frac{3}{8}$ " cross recessed pan head screw for focus coil mounting (2 required)	71925	Capacitor—Tubular, paper, .01 mfd., 400 volts (C311)
73584	Shield—Tube shield	71928	Capacitor—Tubular, paper, .02 mfd., 200 volts (C337)
74937	Sleeve—Rubber sleeve for focus coil	72596	Capacitor—Tubular, paper, .05 mfd., 200 volts (C336)
73117	Socket—Tube socket, 7 pin, miniature	74455	Capacitor—Tubular, paper, .05 mfd., 400 volts (C316)
72927	Socket—Tube socket, 9 pin, miniature	74020	Coil—A-M antenna coil (L302, L303)
31251	Socket—Tube socket, octal	73744	Coil—A-M oscillator coil (L304, L305, L306)
73249	Socket—Tube socket, octal, ceramic, plate mounted	74024	Coil—F-M antenna coil (L301)
71508	Socket—Tube socket, 8 contact for 1B3 GT/8016	74025	Coil—F-M oscillator coil (L307)
74834	Socket—Kinescope socket	36395	Connector—7 contact male connector (P103)
31364	Socket—Pilot lamp socket	12493	Connector—5 contact female connector (P107B)
74954	Spring—Compression spring used under centering control screws (3 required)	39153	Connector—4 prong male connector (P102)
74936	Spring—Suspension spring (coil type) for kinescope socket leads	72953	Cord—Drive cord (approx. 42" overall)
74944	Support—Rubber support for 2nd anode lead	74011	Filter—Diode filter, dual, 200 mmf. and 47,000 ohms (DF 301)
74948	Support—Bakelite support (1 set) for mounting hi-voltage plate	74023	Resistor—Wire wound, 0.51 ohms, 1 watt (R323, R324)
74157	Switch—Cabinet interlock switch (S105)		Resistor—Fixed, composition:
*75084	Transformer—Power transformer, 115 volts, 60 cycles (T111)		10 ohms, $\pm 20\%$ , $\frac{1}{2}$ watt (R311)
74950	Transformer—Vertical output transformer (T108)		68 ohms, $\pm 20\%$ , $\frac{1}{2}$ watt (R308)
73569	Transformer—Vertical oscillator transformer (T107)		100 ohms, $\pm 20\%$ , $\frac{1}{2}$ watt (R305, R317)
74951	Transformer—Hi-voltage transformer (T110)		120 ohms, $\pm 10\%$ , $\frac{1}{$

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
73803	Capacitor—Tubular, paper, oil impregnated, .0022 mfd., 1,000 volts (C186, C207)	74030	Grommet—Rubber grommet for mounting radio chassis
73795	Capacitor—Tubular, paper, oil impregnated, .0033 mfd., 600 volts (C184)	75445	Hood—Deflection yoke hood less rubber cushions
73920	Capacitor—Tubular, paper, oil impregnated, .0047 mfd., 600 volts (C143, C144, C202)	74953	Magnet—Ion trap magnet (PM type)
73561	Capacitor—Tubular, paper, oil impregnated, .01 mfd., 400 volts (C135, C182, C204)	18469	Plate—Bakelite mounting plate for electrolytics
73594	Capacitor—Tubular, paper, oil impregnated, .01 mfd., 600 volts (C145, C159, C205)	75444	Plate—Bakelite plate complete with tube sockets for high voltage rectifier
73565	Capacitor—Tubular, paper, oil impregnated, .01 mfd., 1,000 volts (C185, C206)	72067	Resistor—Wire wound, 5.1 ohms, 1/2 watt (R202)
73797	Capacitor—Tubular, paper, oil impregnated, .015 mfd., 600 volts (C195)	18471	Resistor—Wire wound, 10 ohms, 1/2 watt (R190)
74727	Capacitor—Tubular, paper, oil impregnated, .018 mfd., 1,000 volts (C165)	*75085	Resistor—Wire wound, 270 ohms, 20 watts (R230)
73562	Capacitor—Tubular, paper, oil impregnated, .022 mfd., 1,000 volts (C155, C164, C167)	74955	Resistor—Voltage divider, comprising 1 section of 1,200 ohms, 16 watts and 2 sections of 700 ohms, 5 1/2 watts (C193A, C193B, C193C)
75071	Capacitor—Tubular, molded paper, .047 mfd., 400 volts (C151, C152)	48207	Resistor—Wire wound, 3,300 ohms, 10 watts (R177)
73553	Capacitor—Tubular, paper, oil impregnated, .047 mfd., 400 volts (C130, C134, C201)		Resistor—Fixed, composition:
73592	Capacitor—Tubular, paper, oil impregnated, .047 mfd., 600 volts (C139, C156)		10 ohms, $\pm 20\%$ , 1/2 watt (R120)
73597	Capacitor—Tubular, paper, oil impregnated, .047 mfd., 1,000 volts (C141, C150, C163, C191)		10 ohms, $\pm 10\%$ , 1/2 watt (R225)
73557	Capacitor—Tubular, paper, oil impregnated, 0.1 mfd., 600 volts (C131)		47 ohms, $\pm 5\%$ , 1/2 watt (R111)
73794	Capacitor—Tubular, paper, oil impregnated, 0.22 mfd., 200 volts (C136, C162)		47 ohms, $\pm 20\%$ , 1/2 watt (R183)
74957	Capacitor—Tubular, paper, oil impregnated, 0.22 mfd., 600 volts (C149)		68 ohms, $\pm 10\%$ , 1/2 watt (R105)
73787	Capacitor—Tubular, paper, oil impregnated, 0.47 mfd., 200 volts (C133, C157, C190, C197)		68 ohms, $\pm 20\%$ , 1/2 watt (R123)
73154	Choke—Filter choke (L104)		82 ohms, $\pm 10\%$ , 1/2 watt (R195)
74983	Coil—Focus coil (L118, P108)		100 ohms, $\pm 10\%$ , 2 watts (R184)
71449	Coil—Horizontal linearity control coil (L111)		150 ohms, $\pm 5\%$ , 1/2 watt (R102)
73477	Coil—Filament choke coil (L101)		150 ohms, $\pm 10\%$ , 1/2 watt (R115)
74170	Coil—Peaking coil (36 muh) (L117, R110)		150 ohms, $\pm 20\%$ , 1/2 watt (R106, R109, R114, R214)
71527	Coil—Peaking coil (93 muh) (L102)		220 ohms, $\pm 10\%$ , 1/2 watt (R121)
74214	Coil—Peaking coil (180 muh) (L103, L105)		330 ohms, $\pm 10\%$ , 2 watts (R206)
71526	Coil—Peaking coil (250 muh) (L106, L114)		1,000 ohms, $\pm 20\%$ , 1/2 watt (R103, R107, R108, R113, R116, R118, R165, R199)
75252	Coil—Peaking coil (500 muh) (L107)		1,200 ohms, $\pm 10\%$ , 1 watt (R160)
72172	Connector—3 contact female connector (J107A)		1,200 ohms, $\pm 10\%$ , 1/2 watt (R196)
31027	Connector—4 contact female connector for focus coil leads (J108)		1,500 ohms, $\pm 10\%$ , 1/2 watt (R161)
72108	Connector—7 contact female connector (J103)		2,200 ohms, $\pm 10\%$ , 1/2 watt (R219)
74594	Connector—Male connector for power cable		2,700 ohms, $\pm 10\%$ , 1/2 watt (R217)
60942	Connector—8 contact female connector for deflection yoke leads (J106)		3,300 ohms, $\pm 10\%$ , 2 watts (R231)
30568	Connector—4 contact male connector—part of focus coil (P108)		3,900 ohms, $\pm 5\%$ , 1/2 watt (R112)
35383	Connector—8 contact male connector—part of deflection yoke (P106)		3,900 ohms, $\pm 10\%$ , 1/2 watt (R171)
*74967	Connector—Anode connector		3,900 ohms, $\pm 10\%$ , 2 watts (R194)
5040	Connector—4 contact female connector for speaker cable (P101)		4,700 ohms, $\pm 10\%$ , 1/2 watt (R144)
14786	Connector—5 contact male connector for motor switching cable (J107B)		4,700 ohms, $\pm 10\%$ , 2 watts (R239)
72734	Control—Horizontal and vertical hold control (R158, R173)		5,100 ohms, $\pm 5\%$ , 1/2 watt (R126)
74047	Control—Picture and brightness control (R122, R131)		5,600 ohms, $\pm 5\%$ , 1/2 watt (R119)
74359	Control—Tone control, volume control and power switch (R205, R233, S101)		5,600 ohms, $\pm 10\%$ , 1/2 watt (R218)
71441	Control—Vertical linearity control (R162)		5,600 ohms, $\pm 10\%$ , 1 watt (R127, R167)
71440	Control—Height control (R155)		6,800 ohms, $\pm 5\%$ , 1/2 watt (R136)
74597	Control—Focus control (R191)		6,800 ohms, $\pm 10\%$ , 1/2 watt (R150)
74475	Control—AGC threshold control (R138)		8,200 ohms, $\pm 5\%$ , 1/2 watt (R175)
74945	Control—Width control (R192)		8,200 ohms, $\pm 10\%$ , 1/2 watt (R152, R153)
71457	Cord—Power cord and plug		8,200 ohms, $\pm 5\%$ , 1 watt (R117, R128)
71437	Cover—Insulating cover for electrolytics No. 71432 and No. 73581		10,000 ohms, $\pm 5\%$ , 1/2 watt (R104)
74956	Cushion—Rubber cushion for yoke hood (2 required)		10,000 ohms, $\pm 10\%$ , 1/2 watt (R141, R182, R220)
73600	Fuse—0.25 amp., 250 volts (F101)		10,000 ohms, $\pm 10\%$ , 2 watts (R237, R240)
71799	Grommet—Rubber grommet for yoke horizontal lead exit		12,000 ohms, $\pm 5\%$ , 1/2 watt (R164)
37396	Grommet—Rubber grommet for mounting ceramic tube socket (2 required)		12,000 ohms, $\pm 10\%$ , 1/2 watt (R209)
			12,000 ohms, $\pm 10\%$ , 1 watt (R186)
			12,000 ohms, $\pm 10\%$ , 2 watts (R124, R238)
			15,000 ohms, $\pm 10\%$ , 1 watt (R146)
			15,000 ohms, $\pm 10\%$ , 1/2 watt (R235)
			18,000 ohms, $\pm 10\%$ , 1/2 watt (R234)
			22,000 ohms, $\pm 10\%$ , 1/2 watt (R134, R197)
			22,000 ohms, $\pm 20\%$ , 1/2 watt (R198, R215)
			27,000 ohms, $\pm 10\%$ , 1/2 watt (R143, R151, R211)
			39,000 ohms, $\pm 5\%$ , 1/2 watt (R135)
			47,000 ohms, $\pm 5\%$ , 1/2 watt (R228)
			47,000 ohms, $\pm 10\%$ , 1/2 watt (R145)
			47,000 ohms, $\pm 20\%$ , 1/2 watt (R221)

## REPLACEMENT PARTS

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
	<b>R-F UNIT ASSEMBLIES</b> <b>KRK 5B</b>		
73465	Belt—Drive belt	73632	Shield—Metal tube shield for V1
75069	Board—R-F unit power connection terminal board (5 contact)	71494	Socket—Tube socket, moulded, 7 prong, saddle mounted
75067	Bracket—Vertical bracket for holding r-f oscillator tube shield	73450	Socket—Tube socket, ceramic, 7 prong, bottom mounted
73478	Cable—I-F transmission cable (W1)	74576	Spacer—Insulating spacer for front plate (4 required)
73441	Cam—Fine tuning adjustment	73457	Spring—Return spring for fine tuning control core
74035	Capacitor—Ceramic, 5 mmf. (C4, C5)	74188	Spring—Retaining spring for adjustable core RCA 74187
53511	Capacitor—Ceramic, 10 mmf. (C3)	74578	Spring—Retaining spring for adjusting screws RCA 73640 and RCA 74575
54207	Capacitor—Ceramic, 18 mmf. (C20)	75068	Spring—Retaining spring for R-F oscillator tube shield
73449	Capacitor—Ceramic trimmer, comprising 1 section of 150-190 mmf. and 1 section of 65-95 mmf. (C11, C12)	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)
73091	Capacitor—Ceramic, 270 mmf. (C21)	73469	Stator—Rear oscillator section stator complete with rotor, segment and coils (S2, L25, L26, L27, L28, L29, L30, L32, L33, L34, L35)
71501	Capacitor—Ceramic, 1,500 mmf. (C2, C7, C8, C9, C13, C15, C17, C18, C19)	73633	Stator—Antenna stator complete with rotor and coils (S5, L6, L56, L57, L58, L59, L60, L61, L62, L63, L64, L65, L66, C21)
73473	Capacitor—Ceramic, 5,000 mmf. (C16)	73470	Stator—Converter stator complete with rotor and coils (S3, L9, L36, L37, L38, L39, L40, L41, L48, L49, L50, L51)
73460	Coil—R-F plate coil for channel 6 (L13)	73471	Stator—R-F amplifier stator complete with rotor and coils (S4, L13, L42, L43, L44, L45, L46, L47, L52, L53, L54, L55, C15, C16, R10)
73461	Coil—Rear section—Oscillator plate coil for channel 6 (L20)	75446	Stud—Capacitor stud—brass, No. 4-40 x 13 16" with 3 64" screwdriver slot for trimmer coils 74109 and 74110, uncoded or coded "ER"
73462	Coil—Coupling inductance coil (L4)	75447	Stud—Capacitor stud—brass, No. 4-40 x 13 16" with 3 64" screwdriver slot for trimmer coils 74109 and 74110, coded numerically or "Hi Q"
73475	Coil—Antenna filter shunt coil (C67)	73448	Transformer—Converter transformer (T1, R6)
73476	Coil—I-F trap (L7, C22)	73466	Washer—Insulating washer for front shield (1 set)
73477	Coil—Choke coil (L10, L11, L12)	2917	Washer—"C" washer for channel selector shaft or fine tuning shaft and cam
73874	Coil—Front section—Oscillator plate coil for channel 6 (L31)		<b>TELEVISION CHASSIS ASSEMBLIES</b> <b>KCS 43</b>
74108	Coil—Fine tuning coil (1½ turns) with adjustable inductance core and capacitor stud (plunger adjustment) (L1, C1)	*75086	Bracket—Mounting bracket (upper) for focus coil
74109	Coil—Trimmer coil (1½ turns) with adjustable inductance core and capacitor stud (screw adjustment for oscillator section or converter section) (L2, L3, C6, C10)	*75087	Bracket—Mounting bracket (lower) for focus coil
74110	Coil—Trimmer coil (3 turns) with adjustable inductance core and capacitor stud (screw adjustment) for r-f amplifier section (L5, C14)	74911	Cable—Shielded cable complete with female connector (W101, W103, J104, J105)
71493	Connector—Oscillator segment connector	74946	Capacitor—Mica trimmer, comprising 1 section of 4-70 mmf. and 1 section of 10-160 mmf. (C153A, C153B)
73455	Core—Sliding core for fine tuning control trimmer	39604	Capacitor—Mica, 10 mmf. (C126)
74187	Core—Adjustable core for coil L9	74105	Capacitor—Mica, 33 mmf. (C111)
73440	Detent—R-F unit detent mechanism and fibre shaft	64062	Capacitor—Ceramic, 82 mmf. (C120)
71487	Form—Coil form for coil L31	73090	Capacitor—Mica, 82 mmf. (C140, C154)
73453	Form—Coil form assembly for L9, L13	39396	Capacitor—Ceramic, 100 mmf. (C175)
73442	Link—Link assembly for fine tuning	75060	Capacitor—Mica, 100 mmf. (C138)
71462	Loop—Oscillator to converter trimmer loop connector	73921	Capacitor—Ceramic, 120 mmf. (C129)
73634	Nut—Speed nut for drive belt shield	39630	Capacitor—Mica, 120 mmf. (C181)
73436	Plate—Front plate and bushing	73102	Capacitor—Mica, 180 mmf. (C158)
73464	Pulley—Idler pulley	73091	Capacitor—Mica, 270 mmf. (C106, C115, C121)
	Resistor—Fixed, composition:	73922	Capacitor—Ceramic, 270 mmf. (C183, C194, C198)
	47 ohms, ±20%, ½ watt (R4)	74947	Capacitor—Ceramic, 500 mmf., 20,000 volts (C168)
	150 ohms, ±20%, ½ watt (R5, R9, R12)	74250	Capacitor—Mica, 560 mmf. (C160)
	390 ohms, ±10%, ½ watt (R14)	71501	Capacitor—Ceramic, 1,500 mmf. (C101, C103, C104, C105, C108, C109, C110, C113, C114, C117, C118, C122, C125, C127, C132, C171, C172, C176, C177, C188, C192, C193, C196)
	1,000 ohms, ±20%, ½ watt (R7)	28417	Capacitor—Electrolytic, 5 mfd., 450 volts (C166)
	2,700 ohms, ±10%, ½ watt (R10)	73582	Capacitor—Electrolytic, comprising 1 section of 40 mfd., 450 volts, and 1 section of 10 mfd., 450 volts, and 1 section of 80 mfd., 200 volts (C170A, C170B, C170C)
	10,000 ohms, ±20%, ½ watt (R1, R11)	73583	Capacitor—Electrolytic, comprising 1 section of 40 mfd., 450 volts, 1 section of 90 mfd., 150 volts, and 1 section of 50 mfd., 150 volts (C147A, C147B, C147C)
	100,000 ohms, ±20%, ½ watt (R2, R3, R8, R13)	71432	Capacitor—Electrolytic, comprising 2 sections of 40 mfd., 450 volts, and 1 section of 10 mfd., 450 volts (C148A, C148B, C148C)
14343	Retainer—Channel selector shaft retaining ring	73581	Capacitor—Electrolytic, comprising 1 section of 60 mfd., 450 volts, 2 sections of 10 mfd., 450 volts, and 1 section of 20 mfd., 150 volts (C146A, C146B, C146C, C146D)
30340	Retainer—Retainer ring for fine tuning stud	73801	Capacitor—Tubular, moulded paper, oil impregnated, .001 mfd., 1,000 volts (C137, C161, C203)
70881	Screw—No. 4-40 x ¼" binder head screw for adjusting coils L14, L15, L16, L17, L18, L19	73802	Capacitor—Tubular, paper, oil impregnated, .0015 mfd., 600 volts (C199)
73640	Screw—No. 4-40 x ⅝" adjusting screw for L66	73595	Capacitor—Tubular, paper, oil impregnated, .0022 mfd., 600 volts (C142)
71475	Screw—No. 4-40 x 15/32" adjusting screw for coils L21, L22, L23, L24		
74575	Screw—No. 4-40 x 17/32" adjusting screw for L6		
73437	Shaft—Channel selector shaft complete with pawl and stud		
73438	Shaft—Fine tuning control shaft and pulley		
73439	Shaft—Actuating shaft for fine tuning control		
75443	Shield—"U" shape shield for bottom of r-f unit		
72951	Shield—Metal tube shield for V3		
73454	Shield—Metal shield for drive belt		