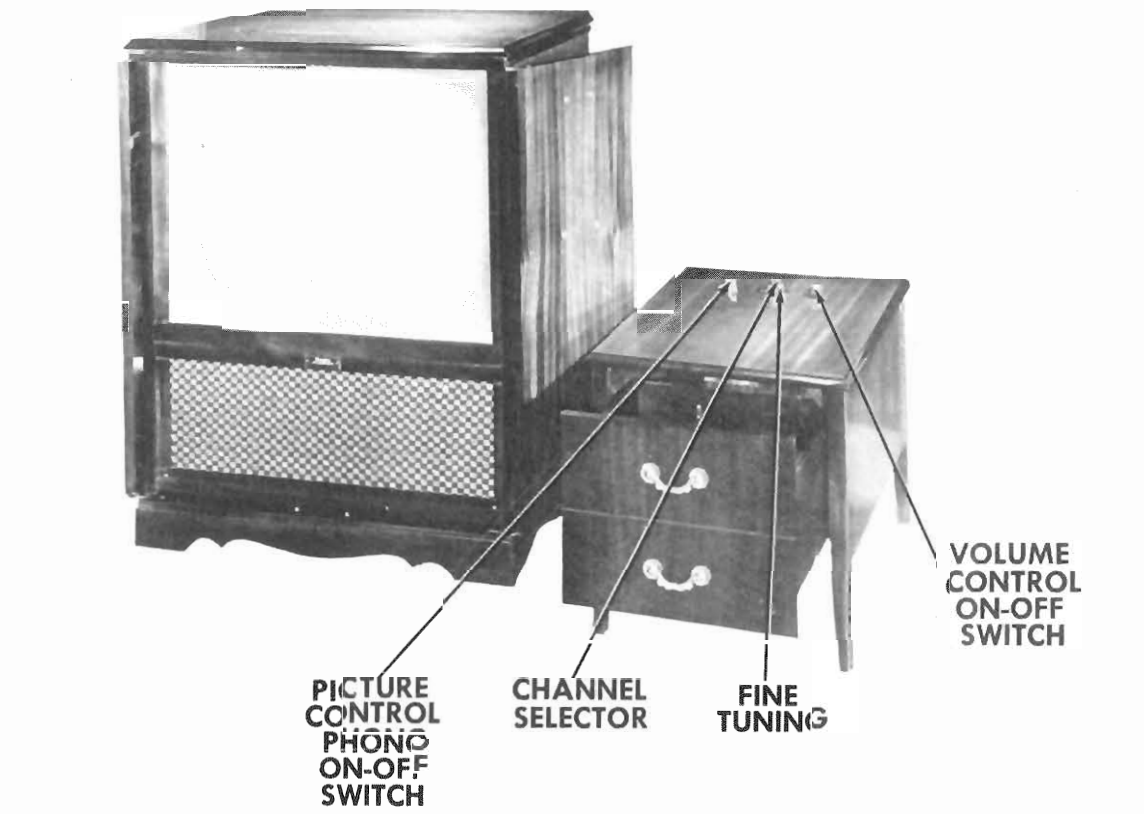


SWEEP CHASSIS-BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



TRADE NAME	Douglas Model 327 (Tuner Ch. T-103, Sweep Ch. S-103)		
MANUFACTURER	Douglas Electronics, Inc., 2220 S. Figueroa St.; <u>Los Angeles 7, Calif.</u>		
TYPE SET	Television-Phono Combination		
TUBES	Twenty-nine		
POWER SUPPLY	110-120 Volts AC-60 Cycles	RATING 2.84 Amp. @ 117 Volts AC	
TUNING RANGE-	Channels 2 thru 13, Video IF 26.1 MC, Sound IF 41.1 MC (Inter-carrier)	(1) 6 MC (Intermediate)	

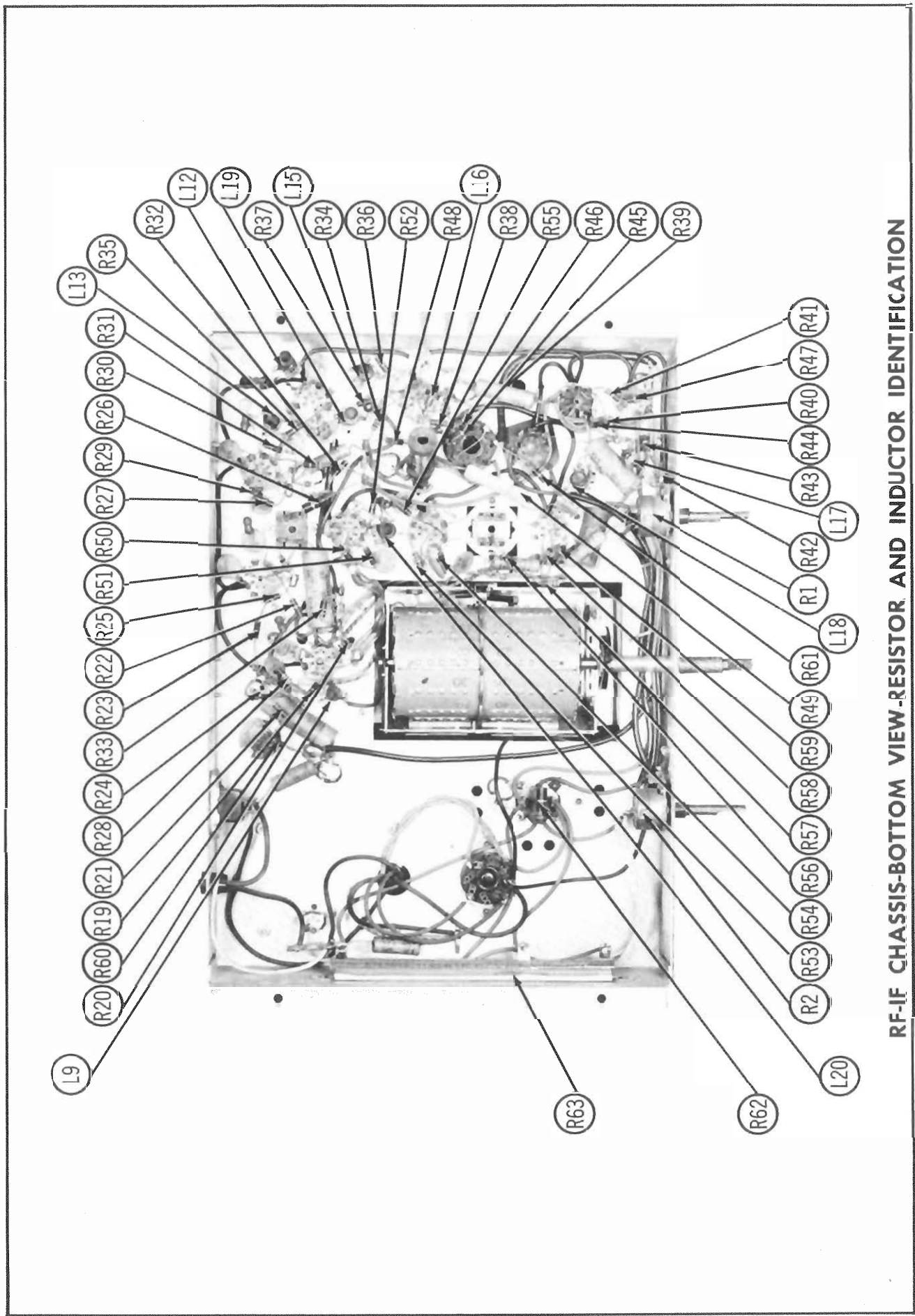
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FOR SERVICE INFORMATION ON RECORD CHANGER, SEE V-M MODEL 950, PHOTOFACT SET 107, FOLDER 13, ALSO, SUPPLEMENT SET 131, FOLDER 17, OR RECORD CHANGER MANUAL CM-3.

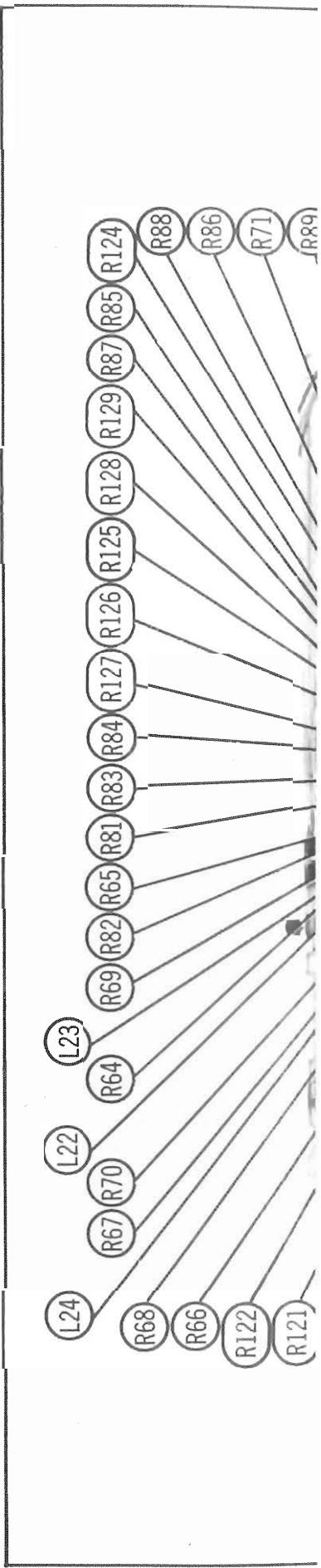
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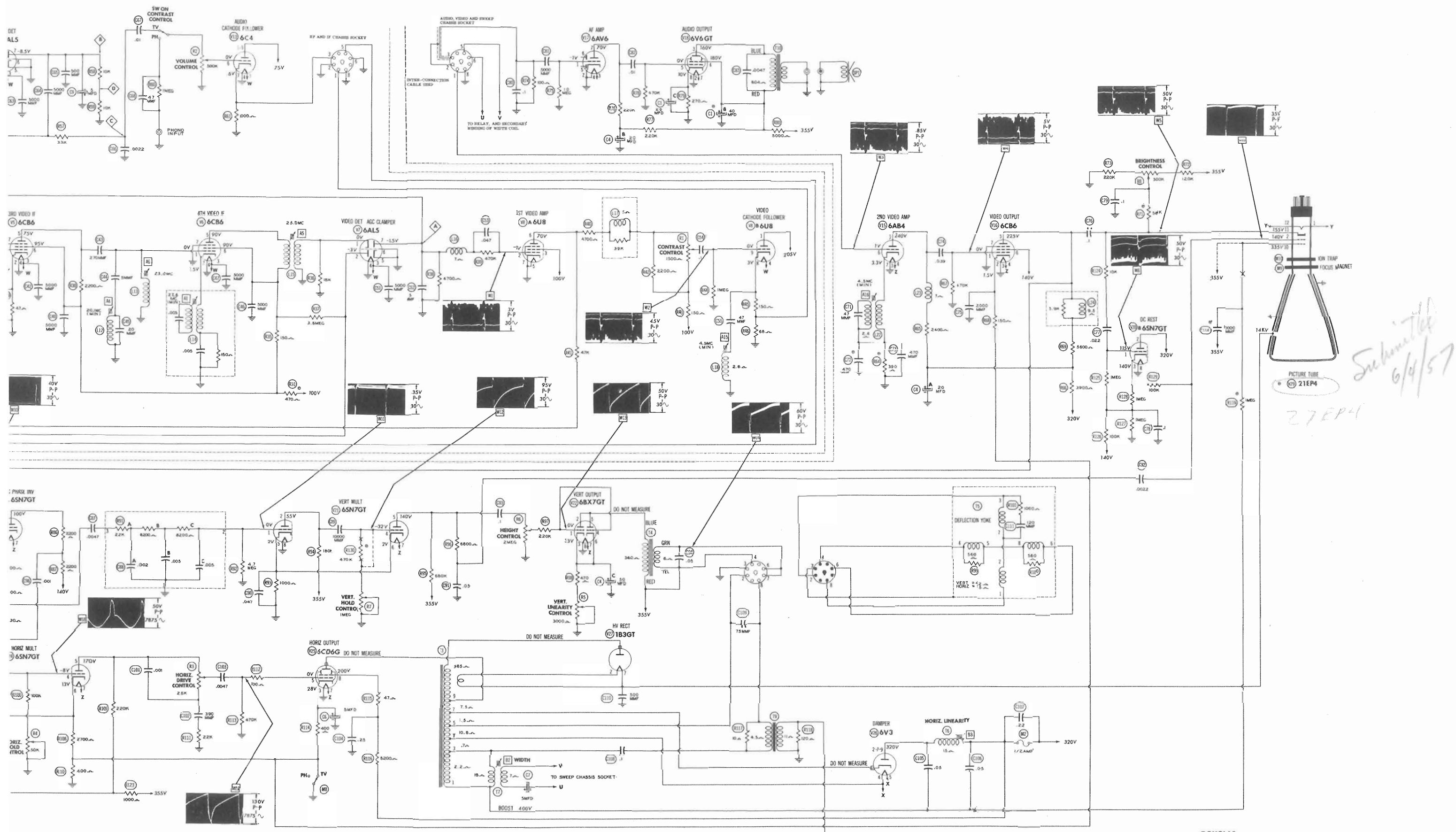
"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc. as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."

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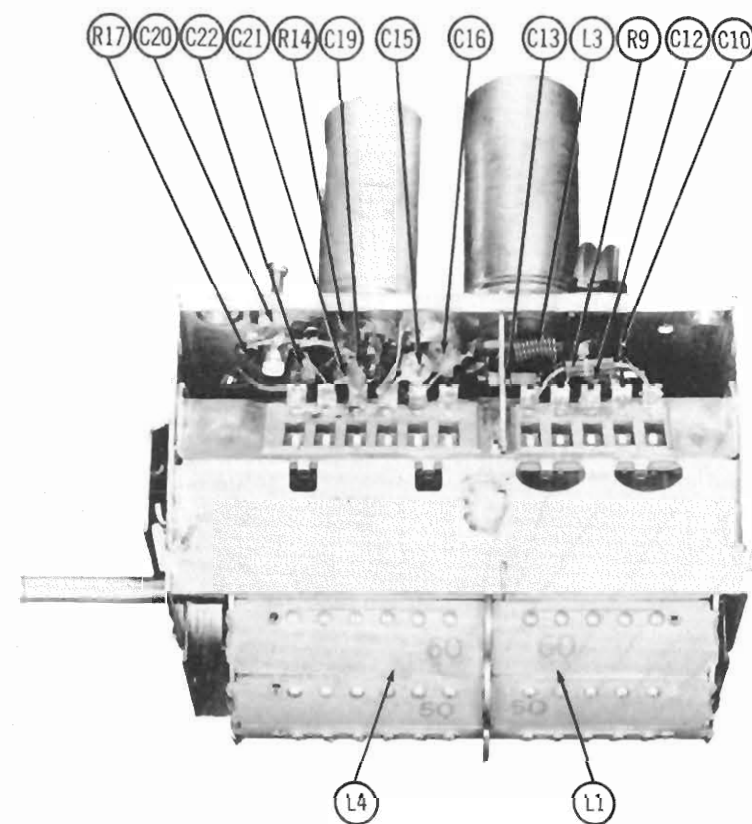


RF-IF CHASSIS-BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

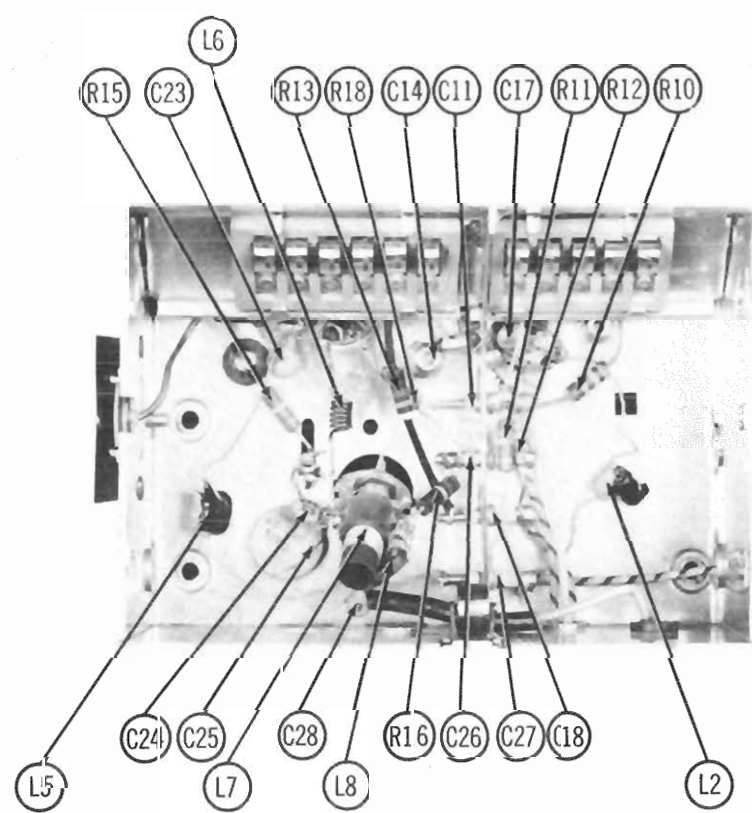




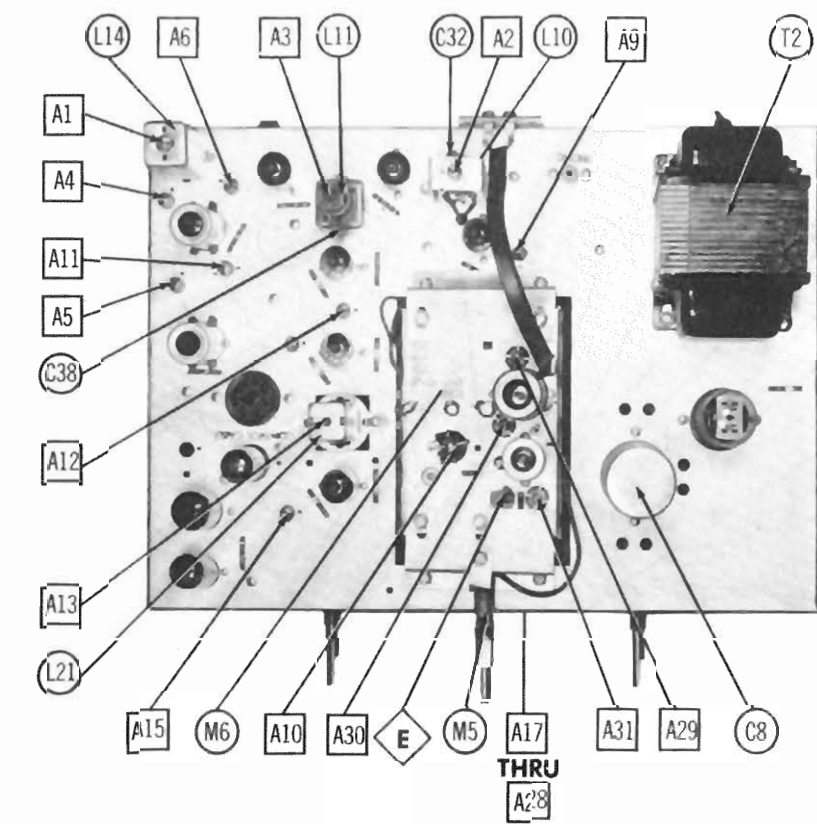
DOUGLAS
MODEL 327 (Ch. 5-103, T-103)



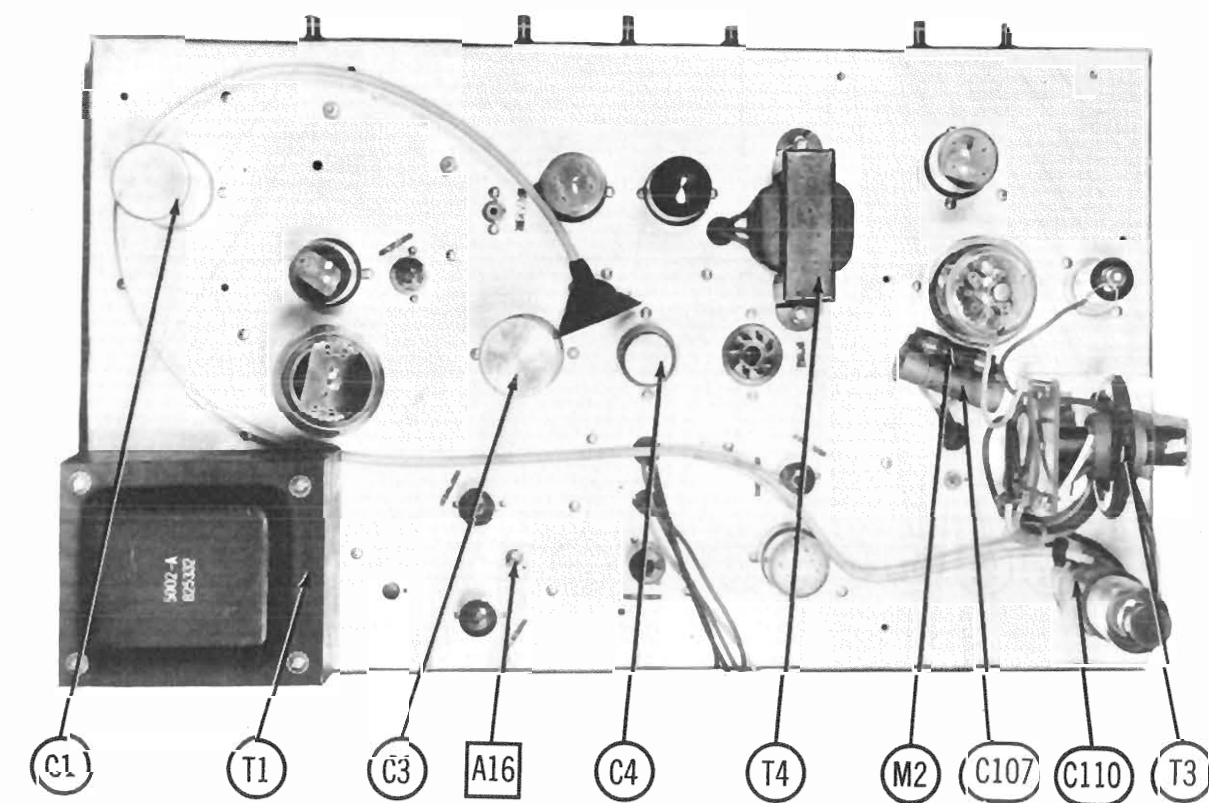
RF TUNER-RIGHT SIDE



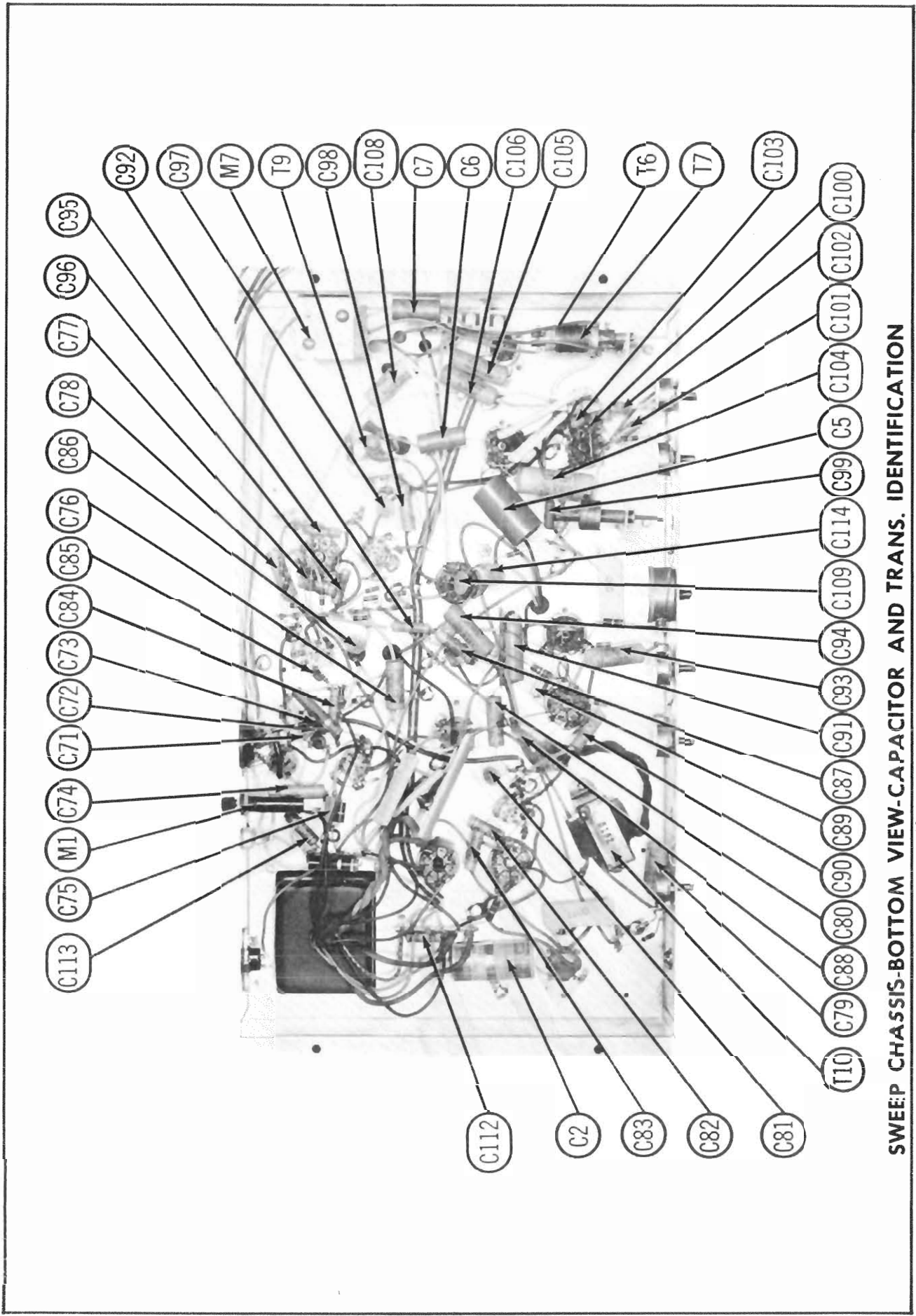
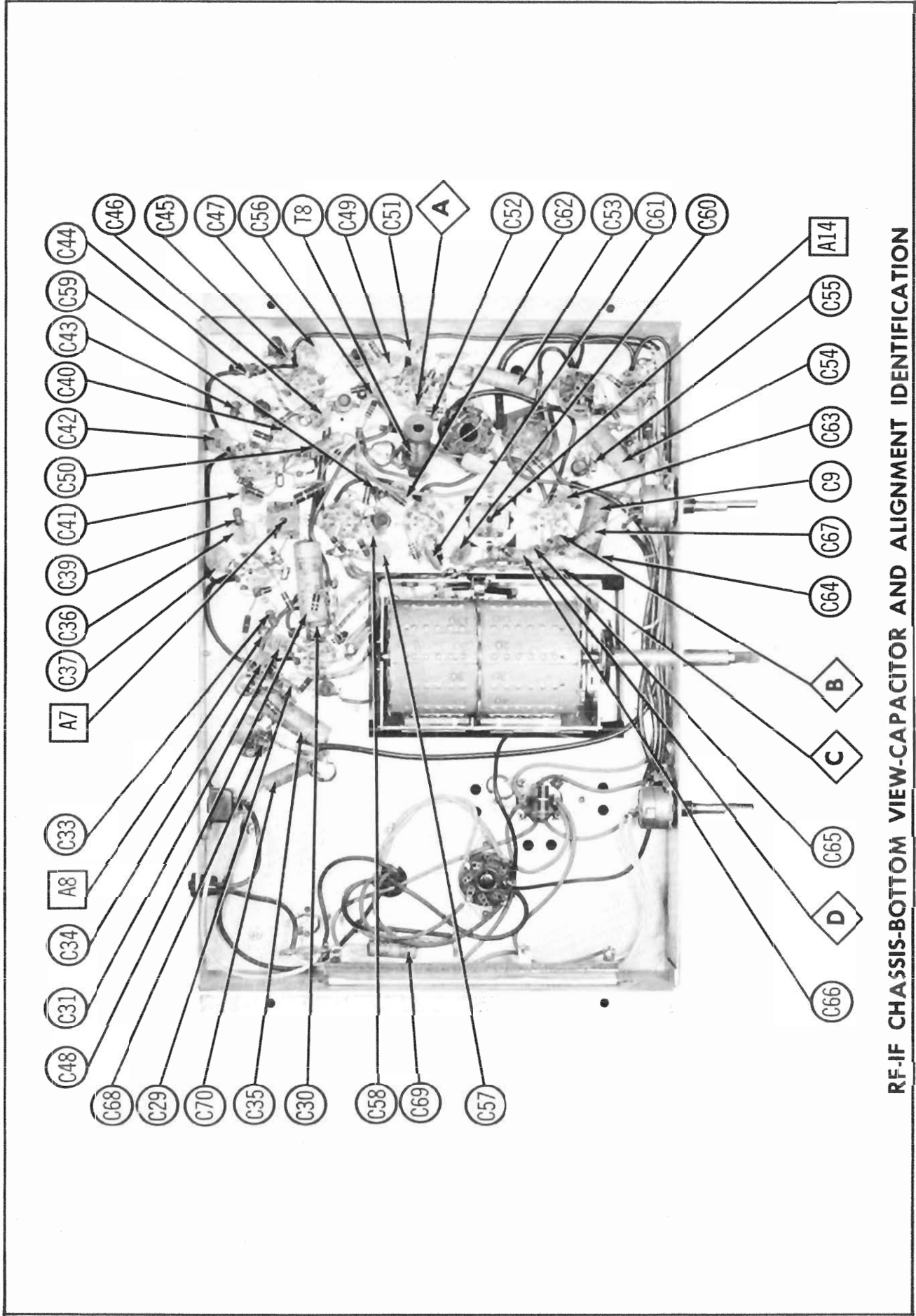
RF TUNER-BOTTOM VIEW



RF-IF CHASSIS-TOP VIEW



SWEEP CHASSIS-TOP VIEW

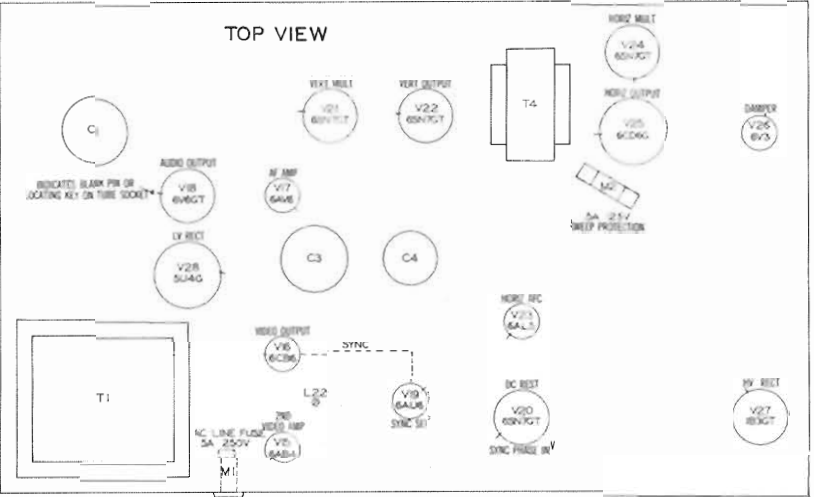
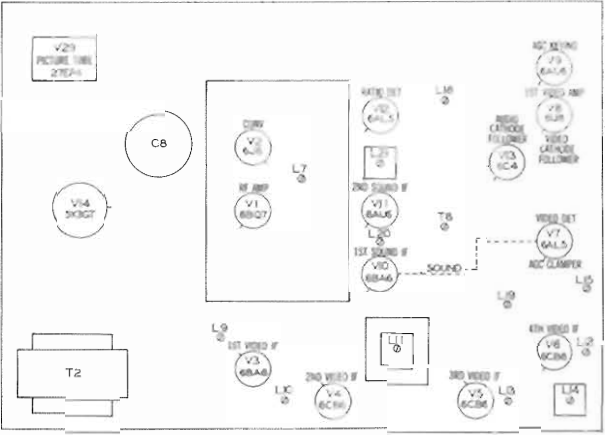


RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BQ7A	INF	1Meg	0Ω	0Ω	.1Ω	†1KΩ	130KΩ	INF	0Ω
V 2	6J6	†17KΩ	†17KΩ	0Ω	.1Ω	230KΩ	10KΩ	0Ω		
V 3	6BA6	42.5KΩ	0Ω	.1Ω	0Ω	†2KΩ	†2KΩ	47Ω		
V 4	6CB6	47.5KΩ	100Ω	.1Ω	0Ω	†1.9KΩ	†1.9KΩ	0Ω		
V 5	6CB6	8.2KΩ	47Ω	.1Ω	0Ω	†4.1KΩ	†1.9KΩ	0Ω		
V 6	6CB6	.5Ω	150Ω	.1Ω	0Ω	†2KΩ	†2KΩ	0Ω		
V 7	6AL5	.3Ω	500KΩ	.1Ω	0Ω	0Ω	0Ω	4.7KΩ		
V 8	6U8	†500Ω	475KΩ	†1.7KΩ	.1Ω	0Ω	†7.5KΩ	0Ω	220Ω	1Meg
V 9	6AU6	†50KΩ	†1.7KΩ	.1Ω	0Ω	140KΩ	†500Ω	†1.7KΩ		
V 10	6BA6	100KΩ	0Ω	.1Ω	0Ω	†2.7KΩ	†2.7KΩ	68Ω		
V 11	6AU6	33KΩ	0Ω	.1Ω	0Ω	†2.7KΩ	†2.7KΩ	82Ω		
V 12	6AL5	INF	INF	.1Ω	0Ω	0Ω	0Ω	20KΩ		
V 13	6C4	†5KΩ	INF	.1Ω	0Ω	†5KΩ	500KΩ	1KΩ		
V 14	5Y3GT	INF	150KΩ	.1Ω	65Ω	INF	62Ω	INF	150KΩ	
V 15	6AB4	▲6.6KΩ	INF	0Ω	.1Ω	INF	68Ω	390Ω		
V 16	6CB6	470KΩ	150Ω	0Ω	.1Ω	▲8.8KΩ	▲15KΩ	0Ω		
V 17	6AV6	10Meg	0Ω	.1Ω	0Ω	0Ω	▲445KΩ			
V 18	6V6GT	INF	0Ω	▲5.7KΩ	▲5.1KΩ	470KΩ	INF	.1Ω	270Ω	
V 19	6AU6	5.2Meg	0Ω	0Ω	.1Ω	▲700KΩ	▲60KΩ	0Ω		
V 20	6SN7GT	▲1.1Meg	▲350Ω	▲1.1Meg	▲700KΩ	▲20KΩ	4KΩ	.1Ω	0Ω	
V 21	6SN7GT	4.7Meg	▲180KΩ	1KΩ	900KΩ	▲680KΩ	1KΩ	.1Ω	0Ω	
V 22	6BX7GT	1.3Meg	▲510Ω	1.3KΩ	1.3Meg	▲510Ω	1.3KΩ	.1Ω	0Ω	
V 23	6AL5	2.1Meg	2.1Meg	.1Ω	0Ω	11Ω	0Ω	11Ω		
V 24	6SN7GT	1.5Meg	▲9.5Ω	2.7KΩ	140KΩ	▲220KΩ	2.7KΩ	.1Ω	0Ω	
V 25	6CD6G	▲8.5KΩ	0Ω	400Ω	INF	470KΩ	470KΩ	.1Ω	▲8.6KΩ	TOP CAP ▲7.5Ω
V 26	6V3	INF	▲370Ω	INF	▲12.5Ω	▲12.5Ω	INF	▲370Ω	INF	▲370Ω TOP CAP INF
V 27	1B3GT		PINS	1 - 8	HAVE	INF	RESISTANCE			TOP CAP ▲392Ω
V 28	5U4G	INF	75KΩ	INF	20Ω	INF	19Ω	INF	75KΩ	
V 29	21EP4	▲350Ω	▲1.2Meg	PIN 10 ▲1Meg	PIN 11 ▲150KΩ	PIN 12 ▲350Ω				

† MEASURED FROM PIN 8 OF V14
▲ MEASURED FROM PIN 8 OF V28
▲ MEASURED FROM TOP CAP OF V26

TUBE PLACEMENT CHART



DOUGLAS
MODEL 327 (Ch. 5-1103, T-103)

TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

- POWER SUPPLY FAILURE**
No raster, no sound - V14, V28, Fuse (M1)
- LOSS OF PICTURE OR SOUND**
No pic, no sound, has raster - V2, V3, V4, V5, V6, V7
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster - V8, V15, V16, V29
Has pic, no sound - V10, V11, V12, V13, V17, V18
Overloaded picture - V7, V9
- SYNC FAILURE**
No vert. sync - V20, V21
No horiz. sync - V20, V23, V24
No vert. or horiz. sync - V19, V20
- SWEEP FAILURE**
No raster, has sound - V24, V25, V26, V27, V29, Fuse (M2)
No vertical deflection - V21, V22
Poor vert. linearity or foldover - V24, V25, V26
Poor horiz. linearity or foldover - V24, V25, V26
Narrow picture - V24, V25, V26, V27, V28
Vert. off freq. - V20, V21
Horiz. off freq. - V20, V23, V24

TUBE FAILURE CHECK CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by switching M6 (on high voltage chassis) to "phono" position.

VIDEO IF ALIGNMENT

Remove the converter tube (V2) from its socket and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications. Connect the negative lead of a 3 volt battery to the ungrounded side of C35. Connect the positive lead to chassis.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1. Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	27.8MC (Unmod)	Any	DC probe to point \diamond . Common to chassis.	A1, A2	Detune A2 one turn counter clockwise. Adjust A1 for MINIMUM deflection. Adjust A2 for MINIMUM deflection. Use maximum generator output.
2. "	"	21.6MC	"	"	A3	Adjust for MINIMUM deflection.
3. "	"	20.1MC	"	"	A4	"
4. "	"	25.0MC	"	"	A5	Attenuate signal generator to maintain -1.5 volts at VTVM. Adjust for maximum deflection.
5. "	"	23.0MC	"	"	A6	"
6. "	"	22.4MC	"	"	A7	"
7. "	"	26.0MC	"	"	A8	"
8. "	"	23.0MC	"	"	A9	"
9. "	"	23.2MC	"	"	A10	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10. Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	24MC (10MC Swp)	21.6MC 26.1MC 27.6MC	Any	Vert. Amp. thru 10K Ω to point \diamond . Low side to chassis.		Check for response similar to Fig. 1. If necessary, retouch A5 thru A10 to obtain desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
11. .01MFD	High side to point \diamond . Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point \diamond . Common to chassis.	A11, A2, A13	Adjust for maximum deflection.
12. "	"	"	"	DC probe to point \diamond . Common to point \diamond .	A14	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120v sawtooth voltage in scope for horizontal deflection.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11. .01MFD	High side to point \diamond . Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	High side to point \diamond . Low side to chassis.	A11, A12, A13	Disconnect stabilizing capacitor C9. Adjust for curve of maximum amplitude and symmetry similar to Fig. 2.
12. "	"	"	"	"	Vert. Amp. to point \diamond . Low side to chassis.	A14	Reconnect stabilizing capacitor C9. Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 3. SLIGHTLY retouch A13 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ALIGNMENT

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
13. .01MFD	High side to point \diamond . Low side to chassis.	4.5MC (Unmod)	Any	DC probe thru detector (Fig. 4) to pin 11 of picture tube. Common to chassis.	A15, A16	Detune A15 one full turn counter clockwise and adjust A16 for MINIMUM deflection. Adjust A15 for MINIMUM deflection.

ALTERNATE 4.5MC TRAP ALIGNMENT

Tune in a strong TV signal and adjust A15 and A16 for minimum 4.5MC beat interference in the picture.

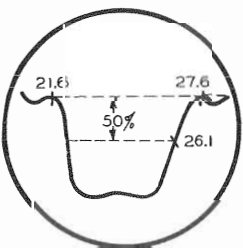


FIG. 1

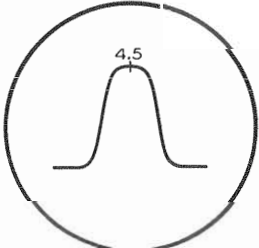


FIG. 2

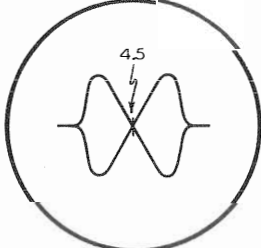


FIG. 3

ALIGNMENT INSTRUCTIONS (cont)

OSCILLATOR ALIGNMENT

Disconnect the sweep chassis from the RF-IF chassis.

Leave bias connected as under video IF alignment.

Remove the dummy converter tube and replace the original 6J6 in its socket.

The channel oscillator adjustment screws are reached thru a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible thru this hole as the channel switch is turned to each channel.

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

Set the fine tuning control to the mid-position of its range.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
14. Two 120 Ω Carbon Resistors	Across antenna terminals with 120 Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. thru 10K Ω to point \diamond . Low side to chassis.	A17	Adjust to place sound marker in trap notch as in Fig. 5. Video marker should be at 50%.
		207MC (10MC Swp)	205.25MC 209.75MC	12		A18	
		201MC (10MC Swp)	199.25MC 203.75MC	11		A19	
		195MC (10MC Swp)	183.25MC 197.75MC	10		A20	
		189MC (10MC Swp)	187.25MC 191.75MC	9		A21	
		183MC (10MC Swp)	181.25MC 185.75MC	8		A22	
		177MC (10MC Swp)	175.25MC 179.75MC	7		A23	
		171MC (10MC Swp)	169.25MC 173.75MC	6		A24	
		165MC (10MC Swp)	163.25MC 167.75MC	5		A25	
		159MC (10MC Swp)	157.25MC 161.75MC	4		A26	
		153MC (10MC Swp)	151.25MC 155.75MC	3		A27	
		147MC (10MC Swp)	145.25MC 149.75MC	2		A28	
		141MC (10MC Swp)	139.25MC 143.75MC				
		135MC (10MC Swp)	133.25MC 137.75MC				

RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
15. Two 120 Ω Carbon Resistors	Across antenna terminals with 120 Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. thru 10K Ω to point \diamond . Low side to chassis.	A29, A30 A31	Adjust for response curve similar to Fig. 6 with markers above 80%.
16. "	"	207MC (10MC Swp)	205.25MC 209.75MC	12	"		If markers fall below 70% on any channel make compromise adjustment of A29, A30 and A31 with channel switch set to that channel then check all other channels to see they have not been seriously affected.

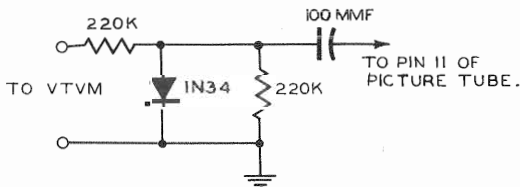


FIG. 4

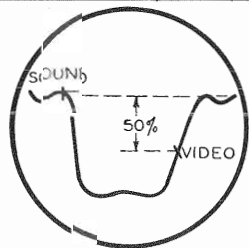


FIG. 5

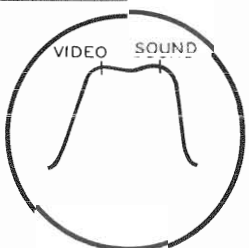


FIG. 6

DOUGLAS
MODEL 327 (Ch. S-103, T-103)

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the VHF tuner oscillator circuit may be accomplished by removal of the channel selector and fine tuning knobs. The adjustments are accessible, one at a time, thru the small hole in the cabinet to the right of the channel selector shaft.

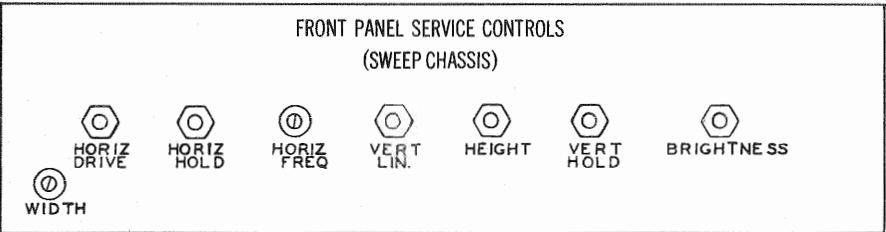
PICTURE TUBE SAFETY GLASS CLEANING

For picture tube safety glass cleaning, it is necessary to remove chassis. (See disassembly instructions).

PICTURE TUBE REMOVAL

To remove picture tube from cabinet disconnect TV-phono plug, yoke plug, CRT socket and HV plug. Remove 4 mounting bolts. Slide picture tube out of cabinet. Use extreme caution when removing picture tube.

SERVICE ADJUSTMENT LOCATION



HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the horizontal oscillator circuit may be made from the rear panel of the chassis. Set the horizontal hold control at the mid-position of its range and adjust the horizontal frequency slug (L25) until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the ratio detector secondary (L21) located on the bottom of the chassis. Removal of chassis is necessary to adjust (See disassembly instructions).

FUSES

Two fuses are used. One for horizontal sweep circuit protection and one for LV power supply protection. (For location, see tube placement chart).

CENTERING

Centering is accomplished mechanically by means of a centering lever on the PM focusing assembly. Adjust the centering lever from side to side, and up and down until the picture is properly centered.

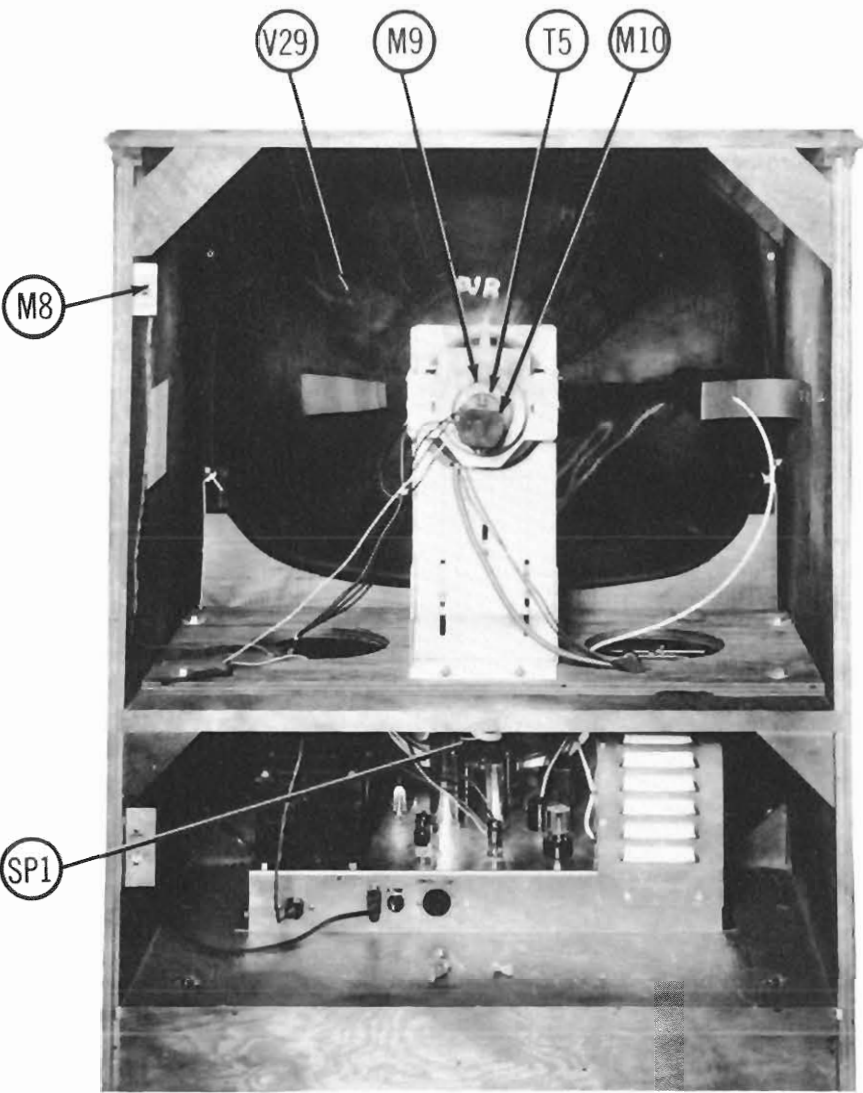
DISASSEMBLY INSTRUCTIONS

REMOTE CABINET

1. Remove 4 push-on type control knobs from top of remote tuner cabinet.
2. Remove 2 metal screws. Remove tuner mounting board.
3. Remove 4 chassis bolts. Remove tuner chassis from mounting board.

MAIN CABINET

1. Remove 7 wood screws. Remove rear cover.
2. Disconnect speaker plug yoke plug, CRT socket, AC line phono switch plug and HV plug.
3. Remove 4 chassis bolts. Remove sweep chassis.
4. Remove 4 wood screws. Remove speaker.



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Set the horizontal hold control to its mid-range position and adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

Adjust the horizontal drive control in a clockwise direction as far as possible without the presence of vertical white lines or compression near the center of the picture.

Adjust the horizontal width slug (B2) for a picture slightly wider than necessary to fill the picture mask horizontally.

Adjust the horizontal linearity slug (B3) for a picture that is symmetrical from left to right.

DOUGLAS
MODEL 327 (Ch. S-103, T-103)

TROUBLE SHOOTING AIDS

SWEEP

HORIZONTAL	VERTICAL								
<p><u>LOSS OF SWEEP</u></p> <p>Follow procedure outlined under "Loss of High Voltage".</p> <p><u>INSUFFICIENT SWEEP</u></p> <p>Check by substitution V24, V25, V26 and V28. Check adjustment of the horizontal drive control, B2 and B3. Check waveform W19.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check T3, T5A, C105, C106, C104, C108, R116, C6, T6 and T7.</td><td>Check R113, T109, R107, C103, C101, C102, and other associated circuit components.</td></tr> </table> <p><u>DRIVE LINES</u></p> <p>Check by substitution V24, V25 and V26. Check adjustment of the horizontal drive control. Check T3, T5A, C111, C109, C105, C106, R101 and other associated components.</p> <p><u>COMPRESSED AT LEFT SIDE</u></p> <p>Check adjustment of horizontal drive control, B2 and B3. Check by substitution V25 and V26. Check components associated with the horizontal output and damper stages especially T3 and T5A.</p> <p><u>FOLDS</u></p> <p>Follow procedure outlined under "Drive Lines".</p> <p><u>XMAS TREE EFFECT</u></p> <p>Check by substitution V24. Check C99, C100, L25 and other associated components.</p> <p><u>PIE CRUST EFFECT</u></p> <p>Check V25 and V26 for internal arcing. Check C98 for open. Check T3 and T5A for internal arcing between windings.</p>	If Satisfactory	If Unsatisfactory	Check T3, T5A, C105, C106, C104, C108, R116, C6, T6 and T7.	Check R113, T109, R107, C103, C101, C102, and other associated circuit components.	<p><u>LOSS OF SWEEP</u></p> <p>Check by substitution V21 and V22. Check waveform W13.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check T4, T5B, R5, R98 and other associated circuit components.</td><td>Check R6, R97, R94, R95, R93, C89, C93 and other associated components.</td></tr> </table> <p><u>INSUFFICIENT SWEEP</u></p> <p>Check adjustment of height and vertical linearity controls. Proceed as outlined under "Loss of Sweep".</p> <p><u>COMPRESSED AT BOTTOM</u></p> <p>Check by substitution V21 and V22. Check T4, T5B, C4C and other associated components.</p> <p><u>COMPRESSED AT TOP</u></p> <p>Check by substitution V21 and V22. Check C89, C90, C91 and C93. Check other associated components.</p> <p><u>FOLDS</u></p> <p>Check by substitution V21 and V22. Check associated components, especially T4 and T5B, for failure or change of value.</p>	If Satisfactory	If Unsatisfactory	Check T4, T5B, R5, R98 and other associated circuit components.	Check R6, R97, R94, R95, R93, C89, C93 and other associated components.
If Satisfactory	If Unsatisfactory								
Check T3, T5A, C105, C106, C104, C108, R116, C6, T6 and T7.	Check R113, T109, R107, C103, C101, C102, and other associated circuit components.								
If Satisfactory	If Unsatisfactory								
Check T4, T5B, R5, R98 and other associated circuit components.	Check R6, R97, R94, R95, R93, C89, C93 and other associated components.								

SYNC

<p><u>LOSS OF VERTICAL AND HORIZONTAL SYNC</u></p> <p>Check by substitution V19 and V20. Check C84, C86, R82, R84, R85 and other associated components.</p> <p><u>LOSS OF VERTICAL SYNC-HORIZONTAL SYNC SATISFACTORY</u></p> <p>Check by substitution V19, V20 and V21. Check waveform W11.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check components associated with V21 especially R94, R95 and C89.</td><td>Check vertical integrator and other associated components.</td></tr> </table>	If Satisfactory	If Unsatisfactory	Check components associated with V21 especially R94, R95 and C89.	Check vertical integrator and other associated components.	<p><u>LOSS OF HORIZONTAL SYNC-VERTICAL SYNC SATISFACTORY</u></p> <p>Check by substitution V23 and V24. Check waveform W16.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check components associated with V24 especially C97, C100, and L25.</td><td>Check C95, C96, R102, and R103.</td></tr> </table> <p><u>HORIZONTAL BENDING</u></p> <p>Check by substitution V23, V24 and V25. Check the horizontal AFC filter network for component failure or change of value.</p>	If Satisfactory	If Unsatisfactory	Check components associated with V24 especially C97, C100, and L25.	Check C95, C96, R102, and R103.
If Satisfactory	If Unsatisfactory								
Check components associated with V21 especially R94, R95 and C89.	Check vertical integrator and other associated components.								
If Satisfactory	If Unsatisfactory								
Check components associated with V24 especially C97, C100, and L25.	Check C95, C96, R102, and R103.								

VIDEO

<p><u>LOSS OF VIDEO</u></p> <p>Check by substitution V15, V16, V20 and V8. Check control cable and connections at both ends. Check components associated with V8, V15, V16 and V20B for failure or change of value.</p> <p><u>SOUND BARS (4.5MC BEAT)</u></p> <p>Adjust tuner fine tuning for best picture and sound. Check adjustments A15 and A16. Check video IF alignment.</p> <p><u>POOR CONTRAST</u></p> <p>Check by substitution V7, V8, V15, V16 and V20. Check contrast control, picture tube and other associated circuit components.</p>	<p><u>NEGATIVE PICTURE</u></p> <p>Check by substitution V7, V8, V9, V15, V16 and V20. Check AGC network. Check picture tube and other associated components.</p> <p><u>IMEAR</u></p> <p>Check by substitution V7, V8, V15, V16 and V20. Check L17, L23, L24, L16, R1, R40, R42, R44, R45, R46, R65, R67, R69, R124, R125, R126, R127, C54, C74, C76, C77, C78, picture tube and other associated components.</p> <p><u>WIDE BLACK BAR ACROSS PICTURE</u></p> <p>Check V1, V3, V4, V5, V6, V8, V15, V16 and V20 for heater to cathode leakage.</p>
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AUDIO

<p><u>WEAK OR NO SOUND</u></p> <p>Check by substitution V10, V11, V12, V13, V17 and V18. Check stages V13, V17 and V18 using audio signal generator. Apply audio signal across R2.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check audio IF and detector alignment and components.</td><td>Check components associated with V13, V17 and V18 especially control cable and sockets.</td></tr> </table>	If Satisfactory	If Unsatisfactory	Check audio IF and detector alignment and components.	Check components associated with V13, V17 and V18 especially control cable and sockets.	<p><u>BUZZ</u></p> <p>Adjust tuner fine tuning for best picture and sound. Adjust A17 for minimum buzz. If still unsatisfactory substitute V12 and realign audio IF and detector stages. Check C19 and C64.</p> <p><u>DISTORTED</u></p> <p>Follow procedure outlined under "Weak or No Sound".</p>
If Satisfactory	If Unsatisfactory				
Check audio IF and detector alignment and components.	Check components associated with V13, V17 and V18 especially control cable and sockets.				

TROUBLE SHOOTING AIDS (cont)

POWER

<p><u>DEAD SET</u></p> <p>If filament on sweep chassis fail to light, check AC interlock assembly, fuse M1, relay M7, and T1. If tuner chassis and sweep chassis filaments fail to light, check tuner chassis AC cord, switch on volume control and T2. If filaments light, check V28 and sweep chassis B+ filter and decoupling network components.</p>	<p><u>SMALL AND/OR DIM PICTURE</u></p> <p>Substitute V28. Check B+ filter and decoupling network components.</p>
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HIGH VOLTAGE

<p><u>LOSS OF HIGH VOLTAGE</u></p> <p>Check fuse M2. Check by substitution V24, V25, V26 and V27. Check waveform W19.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check C110, T3, T5A, C6, R114, M8 and other associated circuit components.</td><td>Check C100, C102, C101, C102, R3, R106, R107, R109, R113 and other associated components.</td></tr> </table>	If Satisfactory	If Unsatisfactory	Check C110, T3, T5A, C6, R114, M8 and other associated circuit components.	Check C100, C102, C101, C102, R3, R106, R107, R109, R113 and other associated components.	<p><u>INSUFFICIENT HIGH VOLTAGE</u></p> <p>Check by substitution V24, V25, V26, V27 and V28. Check picture tube. Proceed as outlined under "Loss of High Voltage".</p> <p><u>BLOOMING</u></p> <p>Check by substitution V24, V25, V26, V27 and V28. Check C110, T3, T5A, R116, C104, picture tube and other associated circuit components for failure or change of value.</p>
If Satisfactory	If Unsatisfactory				
Check C110, T3, T5A, C6, R114, M8 and other associated circuit components.	Check C100, C102, C101, C102, R3, R106, R107, R109, R113 and other associated components.				

GENERAL

<p><u>RASTER - SOUND - NO PICTURE</u></p> <p>Follow procedure outlined under "Loss of Video".</p> <p><u>RASTER - PICTURE - NO SOUND</u></p> <p>Follow procedure outlined under "Weak or No Sound".</p> <p><u>RASTER - NO SOUND - NO PICTURE</u></p> <p>Check by substitution V14, V1, V2, V3, V4, V5, V6 and V7. Check associated circuit components especially components associated with V14.</p>	<p><u>NO RASTER - NO SOUND</u></p> <p>Follow procedure outlined under "Dead Set".</p> <p><u>KEYSTONE EFFECT</u></p> <p>Check T5, R99, R100, R101, C109 and C111.</p> <p><u>INTERMITTENT STREAKS</u></p> <p>Check high voltage section for corona discharge and arcing.</p>
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Symptoms shown are assumed and are not indicative of the quality and workmanship of this equipment.

DOUGLAS
MODEL 327 (Ch. S-103, T-103)

PARTS LIST AND DESCRIPTIONS (Continued)

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			DOUGLAS PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	5A 250V	9528		312005 (3AG-5A)	342001	MTH5	HKP
M2	3AG S/B	1A 125V	9526		313,500 (3AG S/B - 1A)	357001	MDL	4405

PHONO CARTRIDGE

ITEM No.	DOUGLAS PART No.	REPLACEMENT DATA						REMARKS
		ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M3		ACD-J	A-1 or A-3	W22AB	A62A A65MG	96	0-1 or S-1 & 0-3 or S-3	

ASTATIC, SHURE AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA				REMARKS
	DOUGLAS PART No.	JENSEN PART No.	PERMO PART No.	WALCO PART No.	
M4		*JP-30LP or † JPS-30LP and * JP-30 or † JPS-30	* A-322 or † A-300 or ♦ A-300D and * C-320 or † C-318 or ♦ C-318D	* W-30MGA or † W-30MGS and * W-30A or † W-30S	* Metal † Jewel ♦ Diamond

MISCELLANEOUS

ITEM No.	PART NAME	DOUGLAS PART No.	NOTES
M5	Dial light	9516	# 51
M6	Tuner	9512	
M7	Relay		Power
M8	Switch		Slide (TV-phonos)
M9	Focus magnet		Includes centering device
M10	Ion trap		

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA, GENERAL ELECTRIC, WESTINGHOUSE)

ITEM No.	USE	REPLACEMENT DATA		RETMA BASE TYPE	NOTES
		DOUGLAS PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	6BQ7	6BQ7	9AJ	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6BA6	6BA6	7CM	
V4	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	4th. Video IF Amp.	6CB6	6CB6	7CM	
V7	Video Detector-AGC Clamper	6AL5	6AL5	6BT	
V8A	1st. Video Amp. - Video Cathode Follower	6U8	6U8	9AE	
V9	AGC Keying	6AU6	6AU6	7BK	
V10	1st. Sound IF Amp.	6BA6	6BA6	7BK	
V11	2nd. Sound IF Amp.	6AU6	6AU6	7BK	
V12	Ratio Detector	6AL5	6AL5	6BT	
V13	Audio Cathode Follower	6C4	6C4	6BG	
V14	LV Rectifier	5Y3GT	5Y3GT	5T	
V15	2nd. Video Amp.	6AB4	6AB4	5CE	
V16	Video Output	6CB6	6CB6	7CM	
V17	AF Amplifier	6AV6	6AV6	7BT	
V18	Audio Output	6V6GT	6V6GT	7S	
V19	Sync Separator	6AU6	6AU6	7BK	
V20	Sync Phase Inv. - DC Restorer	6SN7GT	6SN7GT	8BD	
V21	Vert. Malt.	6SN7GT	6SN7GT	8BD	
V22	Vert. Output	6BX7GT	6BX7GT	8BD	
V23	Horiz. AFC	6AL5	6AL5	8BD	
V24	Horiz. Malt.	6SN7GT	6SN7GT	8BD	
V25	Horiz. Output	6CD6G	6CD6G	8BT	
V26	Damper	6V3	6V3	8BD	
V27	HV Rectifier	1B3GT	1B3GT	8C	
V28	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA					RETMA BASE TYPE	NOTES
	DOUGLAS PART No.	CBS-HYTRON PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	WESTINGHOUSE PART No.		
V28A	27EP4	27EP4	27EP4	27EP4 27GP4 27NP4 27RP4		12D 12M 12N	
	27RP4	27RP4	27RP4	27RP4			

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES	
	CAP.	VOLT	DOUGLAS PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.		
C1A	.40	400	4205	AFH4-79		B045		FP447	TVL-3786	Note 1	
B	.40	400					BR2045				Note 2
C	.20	400									
C2	.40	450	4201	PRS450/40		BR4045		TC78	TVA-1712	Note 3	
C3A	.40	450		AFH3-46		C037		FP378	TVL-3792		
B	.40	450							TVA-1708		
C	.20	450									
C4A	.20	450	4209	AFH2-51		B040		FP234	TVL-2755		
B	.20	450		PRS50/50		BR505		TC39	TVA-1308		
C	.50	50									
C5	.20	450	4204	PRS450/20		BR2045		TC75	TVA-1709		
C6	.5	50	4206	PRS150/4		BR550		TC30	TVA-1303		
C7	.5	50	4206	PRS150/4		BR550		TC30	TVA-1303		
C8A	.40	400	4210	AFH3-42		B045		FP447	TVL-4774		
B	.20	400		PRS450/40		BBRD2245					
C	.40	400									
D	.20	400									
C9	.5	50	4206	PRS150/4		BR350		TC30	TVA-1303		
C10	3-9					829-10		3139-01-IR5			
C11	800			EF-001	MFT-1000					503C-D1	
C12	.5		SI5NP0	TCZ-4.7	Z011	NP0K-050	ZT-555	5TCCB-V47			
C13	800		EF-001	MFT-1000				503C-D1			
C14	.5-3				829-3		3115-01-OR5	CT565A			
C15	.51		SI50	D6-500	G035	GP1K-510	UC-545	5GA-Q5			
C16	1.5		SI1.5NP0	TCZ-1.5	Z004	NP0K-IR5	ZT-5515	5TCCB-V15			
C17	1500		BPD-0015	DD-152	K071	801-0015	DC-5215	5HK-D15			
C18	800		EF-001	MFT-1000				503C-D1			
C19	.51		SI50	D6-500	G035	GP1K-510	UC-545	5GA-Q5			
C20	.5-3				829-3		3115-01-OR5	CT565A			
C21	.10		SI0NP0	TCZ-10	Z016	NP0K-100	ZT-541	5TCC-Q1			
C22	.5		SI5N750	TCN-5	N011	N750K-050	NT-555	5TCUB-V5			
C23	1500		BPD-0015	DD-152	K071	811-0015	DC-5215	5HK-D15			
C24	6.8		SI6.8NP0	TCZ-6.8	Z013	NP0K-0R8	ZT-5668	5TCCB-V08			
C25	.73						N750L-730				
C26	800		EF-001	MFT-1000					503C-D1		
C27	800		EF-001	MFT-1000					503C-D1		
C28	300		SI300	D6-301	TP42	GP2K-301	UC-533	5GA-T3			
C29	5000		4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5		
C30	5000		4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5		
C31	5000		4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5		
C32	.75			SI75NP0	TCZ-75	TZ27	NP0L-750	ZT-5475	5TCC-Q75		
C33	.270			SI270	D6-271	TP41	GP2K-271	UC-5327	5GA-T27		
C34	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5		
C35	.22	200		4101-2224M	P488-22	CUB4P22		PT4025	4TM-P22		
C36	5000		4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5		
C37	5000		4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5		
C38	.27										
C39	.270			CC25SL271M	SI270	D6-271	TP41	GP2K-271	UC-5327	5GA-T27	
C40	5000		4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5		

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING	DOUGLAS PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
		CAP.	VOLT	REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA	
C41	5000	4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C42	5000	4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C43	270	CC258L271M	S1270	D6-271	TP41	GP2K-271	UC-5327	5GA-T27	
C44	5	CC205LSR0K	S15NP0	TCZ-4.7	T207	NP0K-050	ZT-555	5TCCB-V47	
C45	20			TCN-20	TN05	N750K-200	NT-542	5TCU-Q2	
C46	5000	4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C47	5000	4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C48	.22	4101-2224M	P488-22	DD-502	CUB4F22	811-005	PT4025	4TM-P22	
C49	5000	4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C50	.001	4104-4102K	P688-001	D6-102	CUB6D1	GP2L-102	PT621	6TM-D1	
C51	5000	4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C52	5	CC205LSR0K	S15NP0	TCZ-4.7	T207	NP0K-050	ZT-555	5TCCB-V47	
C53	.047	4101-2473K	P288-047	DF-503	CUB2S47	PT401	4TM-P1	2TM-S47	
C54	.1	4101-4104M	P488-1	DF-104	CUB4P1	PT401	4TM-P1	2TM-S47	
C55	4.7	CC205L470M	S147NP0	TCZ-4.7	T222	NP0K-470	ZT-5447	5TCC-Q47	
C56	2.2	CC20A12R2K	S12.2NP0	TCZ-2.2	T205	NP0K-2R2	ZT-555	5TCCB-V22	
C57	5000	4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C58	47	CC205L470M	S147NP0	TCZ-4.7	T222	NP0K-470	ZT-5447	5TCC-Q47	
C59	270	CC258L271M	S1270	D6-271	TP41	GP2K-271	UC-5327	5GA-T27	
C60	5000	4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C61	5000	4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C62	5000	4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C63	5000	4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C64	5000	4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C65	500	CC258L501K	S1500	D6-501	TP47	GP2K-501	UC-535	5GA-T5	
C66	.0022	4101-4222K	P688-0022	D6-222	CUB6D22	GP2-333-222	PT6222	6TM-D22	
C67	.01	4101-2103M	P488-01	D6-103	CUB4S1	GP2-333-103	PT401	4TM-P1	
C68	47	CC205L470M	S147	D6-470	TP29	GP1K-470	UC-5447	5GA-Q47	
C69	.01	4104-6103M	6892X-01	D6-103	CUB6S1	GP2-333-103	PT601	6TM-S1	
C70	.01	4104-6103M	6892X-01	D6-103	CUB6S1	GP2-333-103	PT601	6TM-S1	
C71	47			TCZ-4.7	T222	NP0K-470	ZT-5447	5TCC-Q47	
C72	470			D6-471	TP46	GP2K-471	UC-5347	5GA-T47	
C73	470			D6-471	TP46	GP2K-471	UC-5347	5GA-T47	
C74	.005	4101-5353K	P488-005	DF-104	CUB4P1	PT401	4TM-P1	2TM-S47	
C75	2000	500	4101-4104M	P488-022	DF-203	CUB4S22	PT401	4TM-P1	
C76	.1	400	4101-2104M	P288-1	DF-104	CUB2P1	PT401	2TM-P1	
C77	.022	400	4101-4104M	P488-1	DF-104	CUB4P1	PT401	4TM-P1	
C78	.1	200	4101-2104M	P288-1	DF-104	CUB2P1	PT401	2TM-P1	
C79	.1	400	4101-4104M	P488-1	DF-104	CUB4P1	PT401	4TM-P1	
C80	.1	200	4101-2104M	P288-1	DF-104	CUB2P1	PT401	2TM-P1	
C81	5000	4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C82	.01	600	4101-6103M	P688-01	D6-103	CUB6S1	GP2-333-103	PT601	
C83	.0047	400	4101-6472M	P688-0047	D6-472	CUB6D47	GP2-333-472	PT6247	
C84	.0022	400	4101-4222K	P688-0022	D6-222	CUB6D22	GP2-333-222	PT6222	
C85	.0022	400	4101-4222K	P688-0022	D6-222	CUB6D22	GP2-333-222	PT6222	
C86	5000	4001	CC258L221M	BPD-005	DD-502	K080	811-005	DC-525	
C87	.0047	600	4101-6472M	P688-0047	D6-472	CUB6D47	GP2-333-472	PT6247	
C88A	.002			PA-110	PC-100	115TMI	1405-01	101C1	
C88B	.005			PA-110	PC-100	115TMI	1405-01	101C1	
C88C	.005			PA-110	PC-100	115TMI	1405-01	101C1	
C89	10000	500	4101-2473K	P288-047	DF-503	CUB2S47	PT401	4TM-P1	
C90	.047	300	4101-6473M	P688-05	DF-503	CUB6S5	GP2-333-222	PT6222	
C91	.05	600	4101-6473M	P688-05	DF-503	CUB6S5	GP2-333-222	PT6222	
C92	.0022	400	4101-4222K	P688-0022	D6-222	CUB6D22	GP2-333-222	PT6222	
C93	.1	600	4101-6104M	P688-1	DF-104	CUB6P1	PT601	6TM-P1	
C94	.05	600	4101-6473M	P688-05	DF-503	CUB6S5	GP2-333-222	PT6222	
C95	.001	600	4101-6102K	P688-001	D6-102	CUB6D1	GP2L-102	PT621	
C96	.001	600	4101-6102K	P688-001	D6-102	CUB6D1	GP2L-102	PT621	
C97	5000	4001	BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C98	.047	200	4101-2473K	P288-047	DF-503	CUB2S47	PT401	4TM-P1	
C99	3900	500	4004	1464-004	IR5D4	MCB403	MS-24		
C100	390	500	4007	1469-0004	5R5T39	MCB243	MS-34		
C101	.001	600	4101-6102K	P688-001	D6-102	CUB6D1	GP2L-102	PT621	
C102	390	500	4007	1469-0004	5R5T39	MCB243	MS-34		
C103	.0047	600	4101-6472K	P688-0047	D6-472	CUB6D47	GP2-333-472	PT6247	
C104	.25	600	4101-6254M	684-25	DF-503	CUB6P25	PT6025	6TM-D25	
C105	.05	600	4101-6473M	P688-05	DF-503	CUB6S5	GP2-333-222	PT6222	
C106	.05	600	4101-6473M	P688-05	DF-503	CUB6S5	GP2-333-222	PT6222	
C107	.22	400	4101-4224M	P488-22	DF-104	CUB4P22	PT4025	4TM-P22	
C108	.1	600	4101-6104M	P688-1	DF-104	CUB6P1	PT601	6TM-P1	
C109	75	4000							
C110	500	20000	4002	HV20C	TV3-502	MMU20T5	413	HV20035A	
C111	120	2000	4012					20GA-T12	
C112	.01	600	4101-6103M	6892X-01	D6-103	CUB6S1	GP2-333-103	PT601	
C113	.01	600	4101-6103M	6892X-01	D6-103	CUB6S1	GP2-333-103	PT601	
C114	10000	4103	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	

Note 1. Some Models use 80MFD in this application.
Note 2. Some models use 20MFD in this application.
Note 3. Not used when CIA is 80MFD.
Note 4. When C72 is 1000MMF (part #4102-0102K), C73 is not used.
Note 5. Some models use .1MFD in this application.
Note 6. Not used in all Models.
* Items C88A, C88B, C88C, R91A, R91B and R91C are combined in one unit.

CONTROLS

ITEM No.	RATING	DOUGLAS PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
		RESISTANCE	WATTS	REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA	
R1A	15000			4806-1	AB-5	U-5	Contrast
B	Shaft			Not Req.	AK-3	Not Req.	Attach to R1A
C	Switch			Not Req.	KB-3	U-28	Attach to R1A
R2A	500KΩ			Q13-133	B-60-S	U-48	Volume
B	Shaft			Not Req.	Not Req.	Not Req.	Attach to R2A
C	Switch			Not Req.	Not Req.	Not Req.	Attach to R2A
R3A	25KΩ			Q11-120	A47-25K-S	U-29	Horiz. Drive
B	Shaft			Not Req.	FKS-1/4	Not Req.	Attach to R3A
R4A	50KΩ			Q11-123	A43-50K-S	U-35	Horiz. Hold
B	Shaft			Not Req.	FKS-1/4	Not Req.	Attach to R4A
R5A	3000Ω			25B708	A10-2500	M2MPK	Vert. Linearity-wire wound
B	Shaft			Not Req.	FKS-1/4	Not Req.	Attach to R5A
R6A	2 Meg			4803-4	A47-2Meg-S	U-56	Height
B	Shaft			Not Req.	FKS-1/4	Not Req.	Attach to R6A
R7A	1 Meg			4803-7	A47-1Meg-S	U-54	Vert. Hold
B	Shaft			Not Req.	FKS-1/4	Not Req.	Attach to R7A
R8A	500KΩ			4803-5	A47-500K-S	U-50	Brightness
B	Shaft			Not Req.	FKS-1/4	Not Req.	Attach to R8A

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	DOUGLAS PART No.	Stancor PART No.	Merit PART No.	Triad PART No.	RCA TYPE No.	Hallardson PART No.	Thordarson PART No.
		REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA
T3	Horiz. Output Trans.	5105						
T4	Vert. Output Trans.	5107						
T5A	Yoke (90° Horiz. (22MHz) Vert. (41MHz))	5231	A-8142 ①	A-3038 MDF-90 ②	D-50 * A-106K Y-50-1	23571 *	219D1 ③	21802
T6	Horiz. Lim. Coil (1.5-8.5MHz)	5229	WC-8	MWC-6 ③	WC-12 ④	213R1		
T7	Width Coil (8-30MHz) with AGC winding (1.8-2.4MHz)	5230						WC-13
T8	AGC Keyer Pulse Trans. (Pri. - .37MHz) (Sec. - 9MHz)	5222						
T9	Horiz. AFC Trans. (Pri. - .75MHz) (Sec. - .29MHz)	5106						

- ① Drill new mounting holes.
② Use original yoke network.
③ Enlarge mounting hole.
④ Connect to coded blue and green terminals.

* HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type is Listed

ITEM No.	USE	DOUGLAS PART No.	Stancor PART No.	Merit PART No.	Triad PART No.	RCA TYPE No.	Hallardson PART No.	Thordarson PART No.
		REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA
	ORIGINAL TERMINAL CONNECTIONS	Stancor Replacement Connections	Merit Replacement Connections	Triad Replacement Connections	RCA Replacement Connections	Hallardson Replacement Connections	Thordarson Replacement Connections	
	9			9	9			
	7			7	7			
	5			5	5			
	T			T	T			
	3			3	3			
	1			1	1			
	Connect Width Coil Across	3 & 1		3 & 1	3 & 1			

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE	DOUGLAS PART No.	Stancor PART No.	Merit PART No.	Triad PART No.	Hallardson PART No.	Thordarson PART No.	NOTES
		REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA	
T10	5.2KΩ 3.2Ω	5102	A-3877 ①	A-3019	S-5Z	Z1002	TS-24551	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS	DOUGLAS PART No.	JENSEN PART No.	OUAM PART No.	NOTES
	SIZE FIELD V. C. IMP.	REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA	
SPI	6 1/2" x 10 5/8" PM 3.2Ω	9001			

COILS (RF-IF)

ITEM No.	USE	DOUGLAS PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
		DC RES.	REPLACEMENT DATA	REPLACEMENT DATA	REPLACEMENT DATA	
L1	Ant. Coils	0ΩCT				
L2	Fl. Choke	0Ω				
L3	Neutr. Coil	0Ω				
L4	RF Mixer grid & Osc. coils	0Ω				
L5	Fl. Choke	0Ω				
L6	RF Choke	0Ω				
L7	Conv. Plate	.7Ω				
L8	RF Choke	.5Ω				
L9	1st Video IF	.4Ω	5201	17-1004 †	TV-101 †	6189 †
L10	2nd Video IF	.1Ω	5203			6245
L11	3rd Video IF	.2Ω	5202	17-1002	TV-101	6185</