

MOTOROLA MODELS
19K2, B, 19K3, 19K4, B, 20FI, B

MOTOROLA MODEL 20FI

TRADE NAME	Motorola Models 19K2, B, 19K3, 19K4, B (Ch. TS-101) 20FI, B (Ch. TS-119 And Radio Ch. HS-330)
MANUFACTURER	Motorola Inc., 4545 Augusta Blvd., Chicago 51, Illinois
TYPE SET	TV-AM-FM-Phono Combination Receiver (Some Models "TV Only")
TUBES	Thirty (Models 20FI, B) Twenty One (Models 19K2, B, 19K3, 19K4, B)
POWER SUPPLY	110-120 Volts AC - 60 Cycle
RATING	1.85 Amp. @ 117 Volts AC (TV)
TUNING RANGE	(TV) - Channels 2 thru 13, (FM) - 88-108MC, (AM) - 540-1620KC

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FOR SERVICE INFORMATION ON RADIO CHASSIS HS-330 - SEE PHOTOFAC SET #III - FOLDER #9. RECORD CHANGER UNIT - MOTOROLA RC-38A.

HOWARD W. SAMS & CO., INC. • Indianapolis 1, Indiana

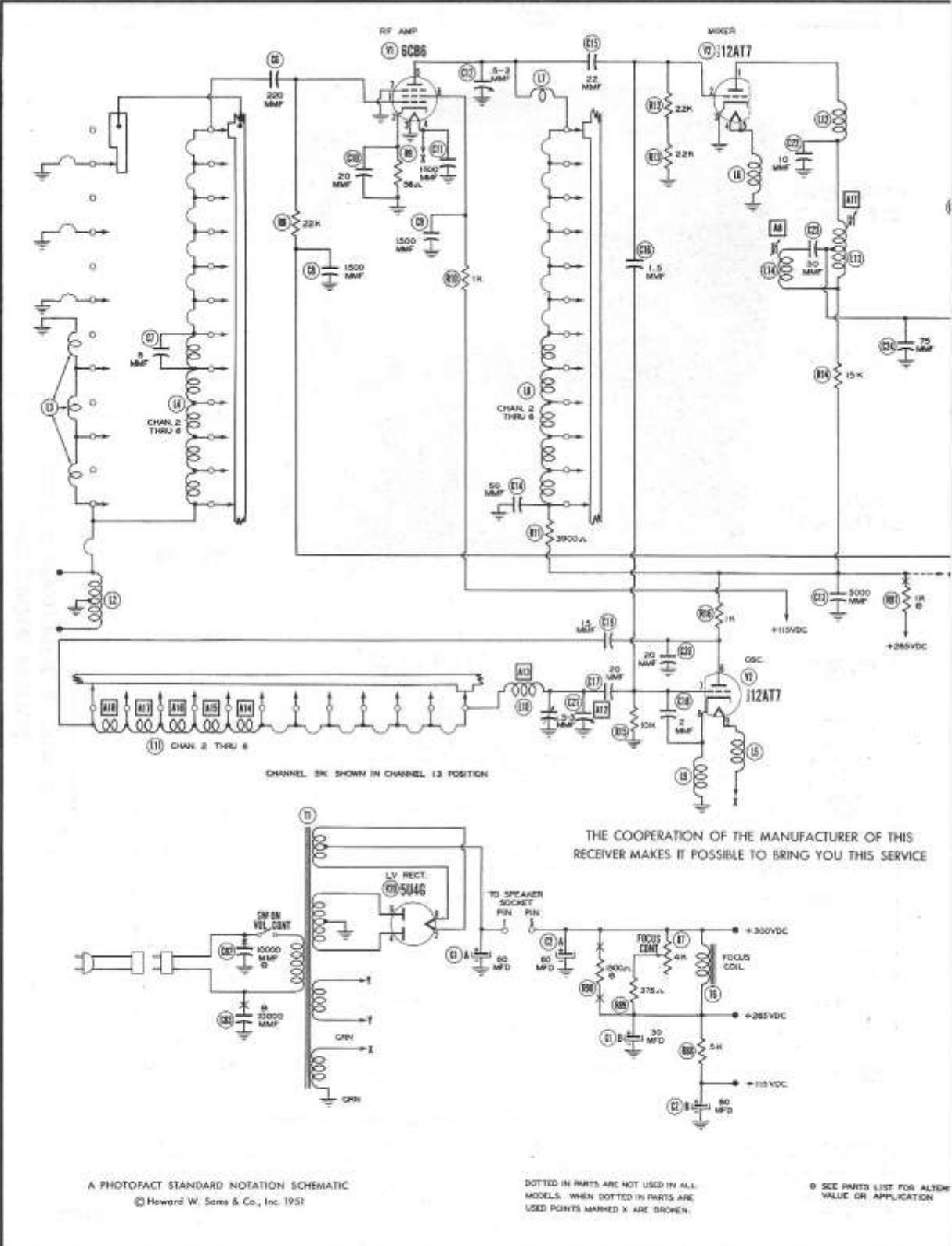
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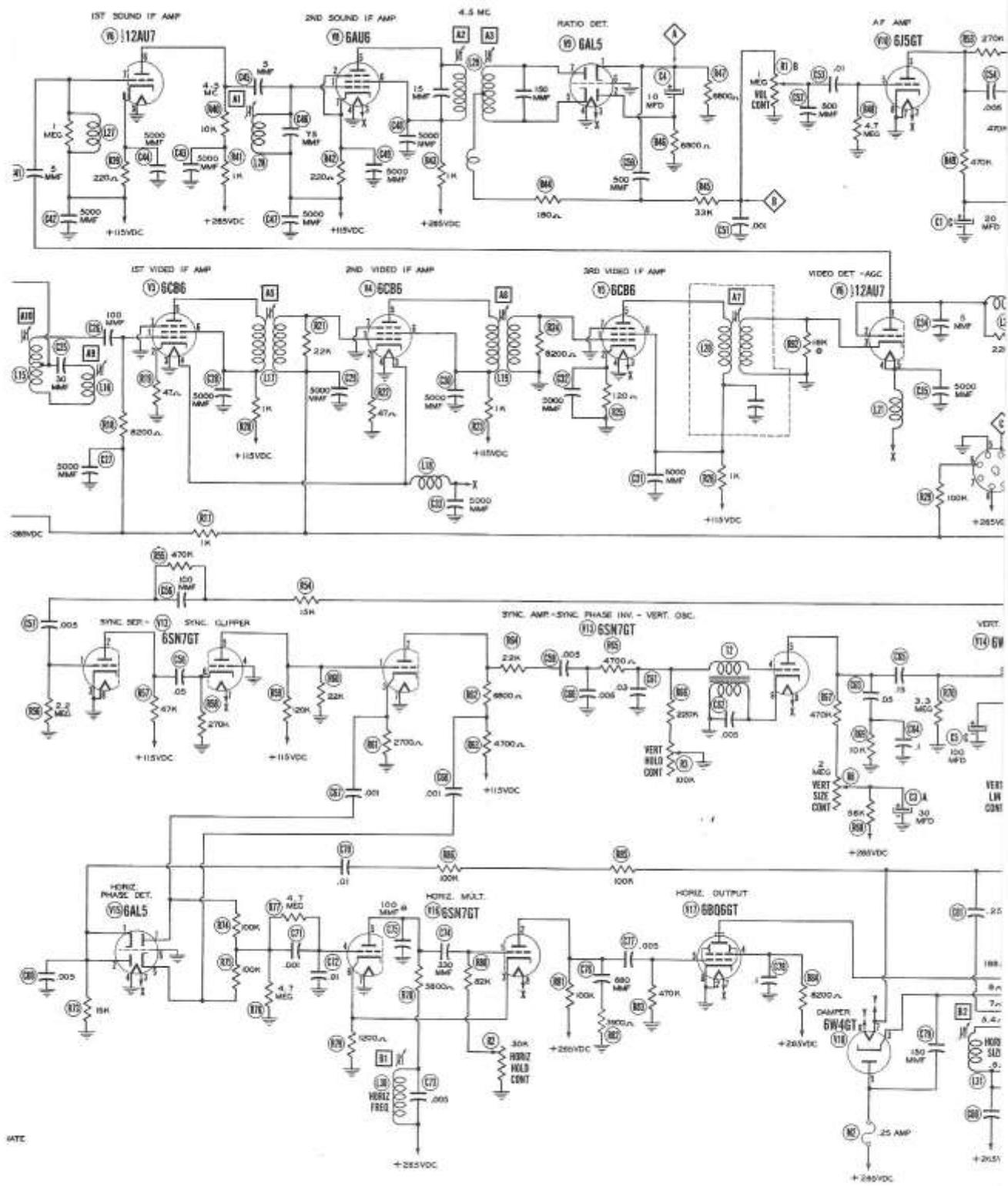
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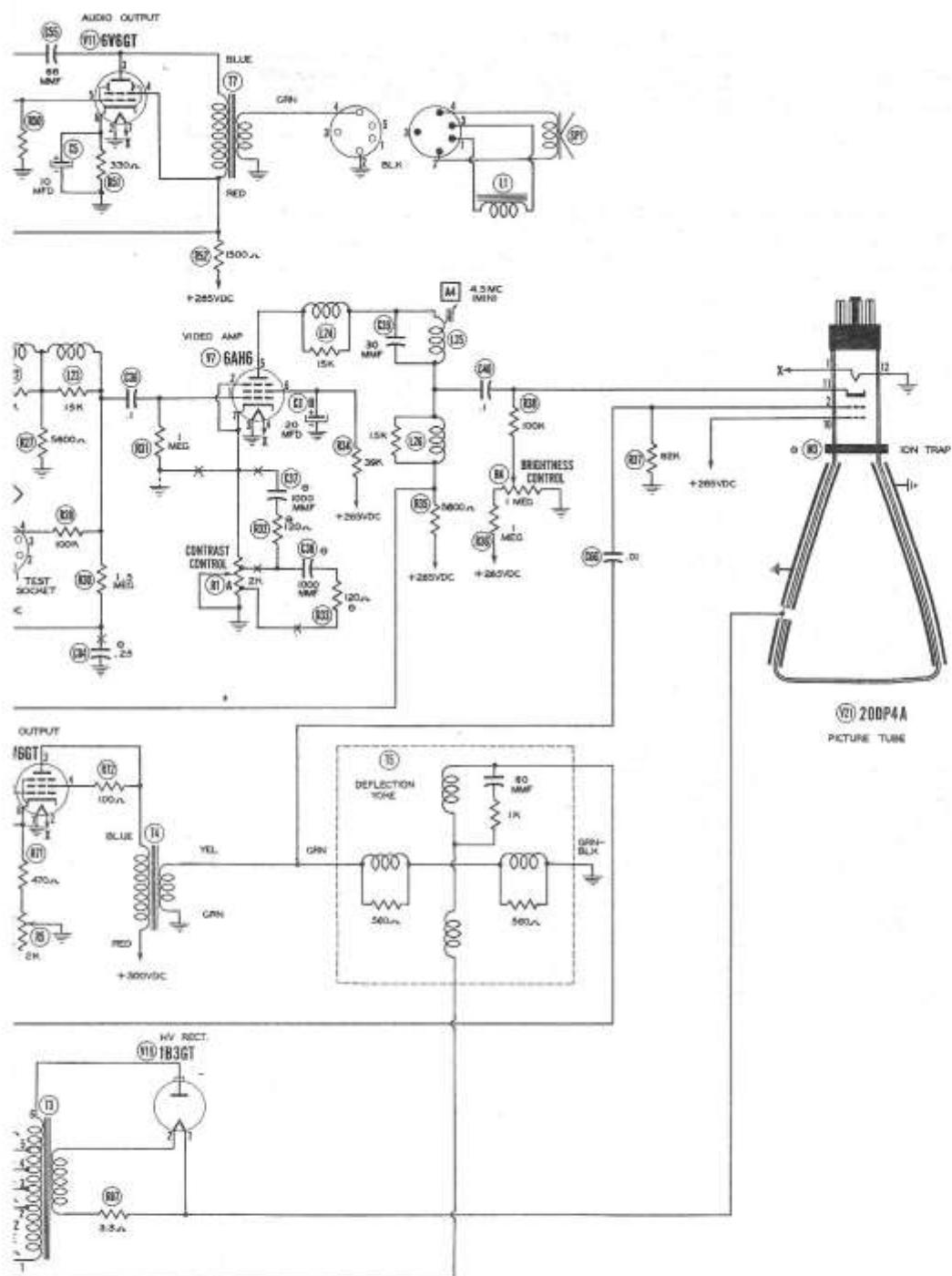
SET 122

FOLDER 5



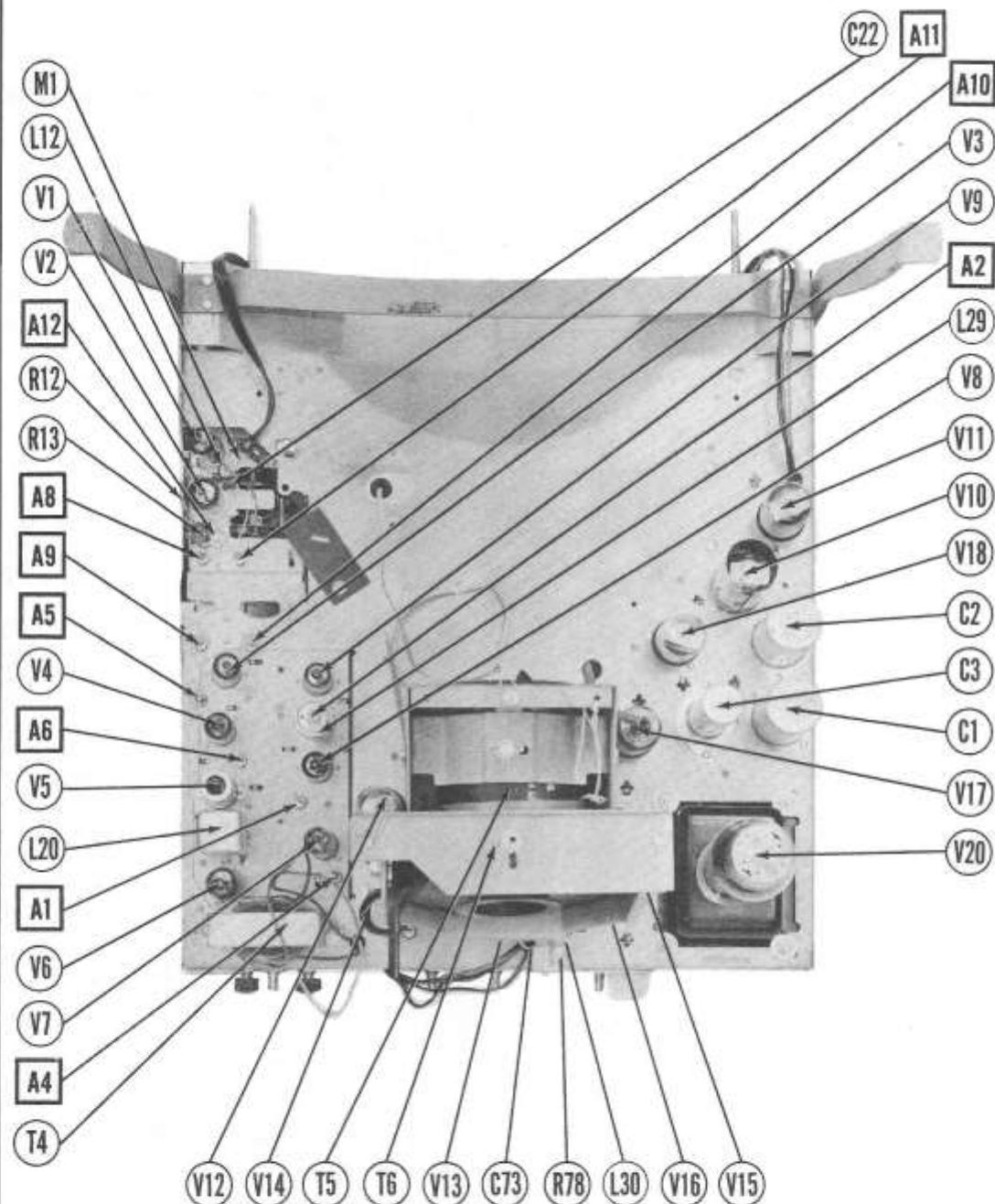


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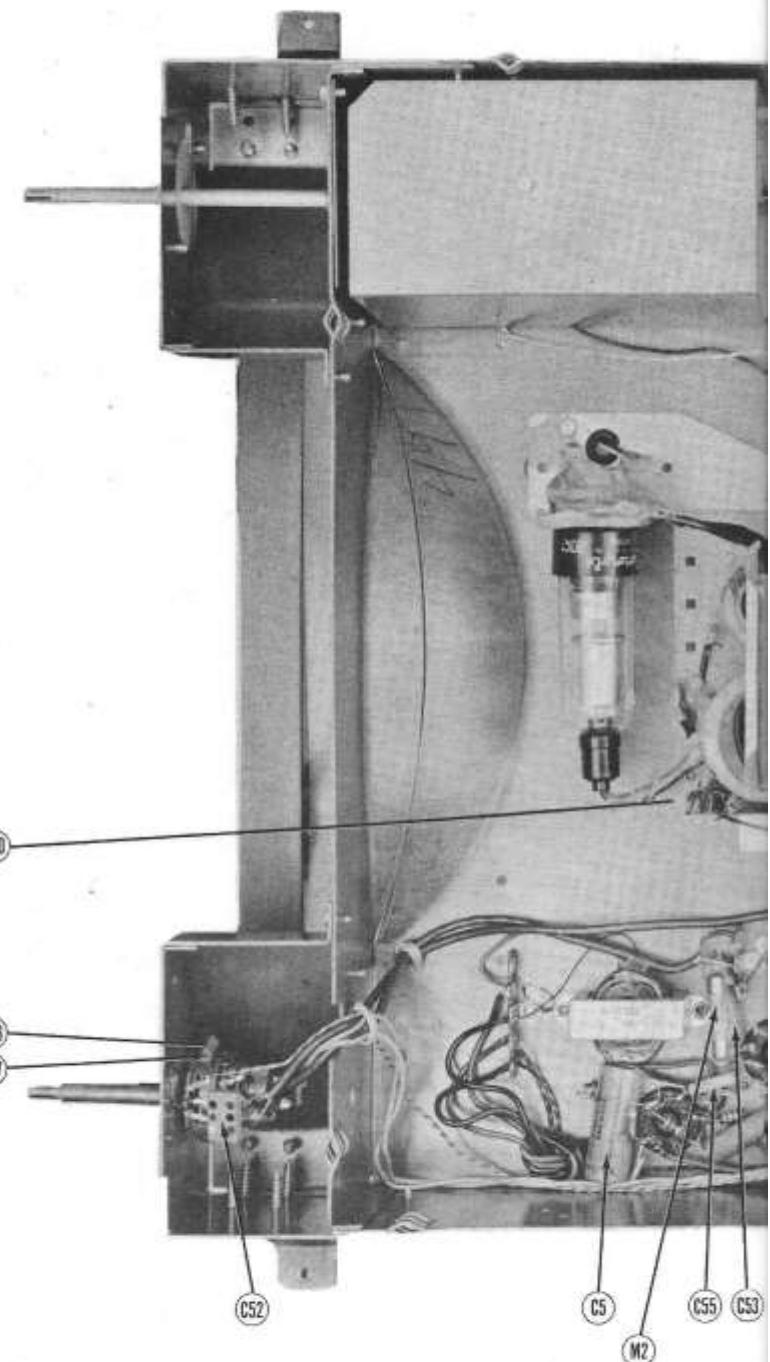


MOTOROLA MODELS
19K2, B, 19K3, 19K4, B, 20FI, B

MOTOROLA MODELS
19K2, B, 19K3, 19K4, B, 20F1, B

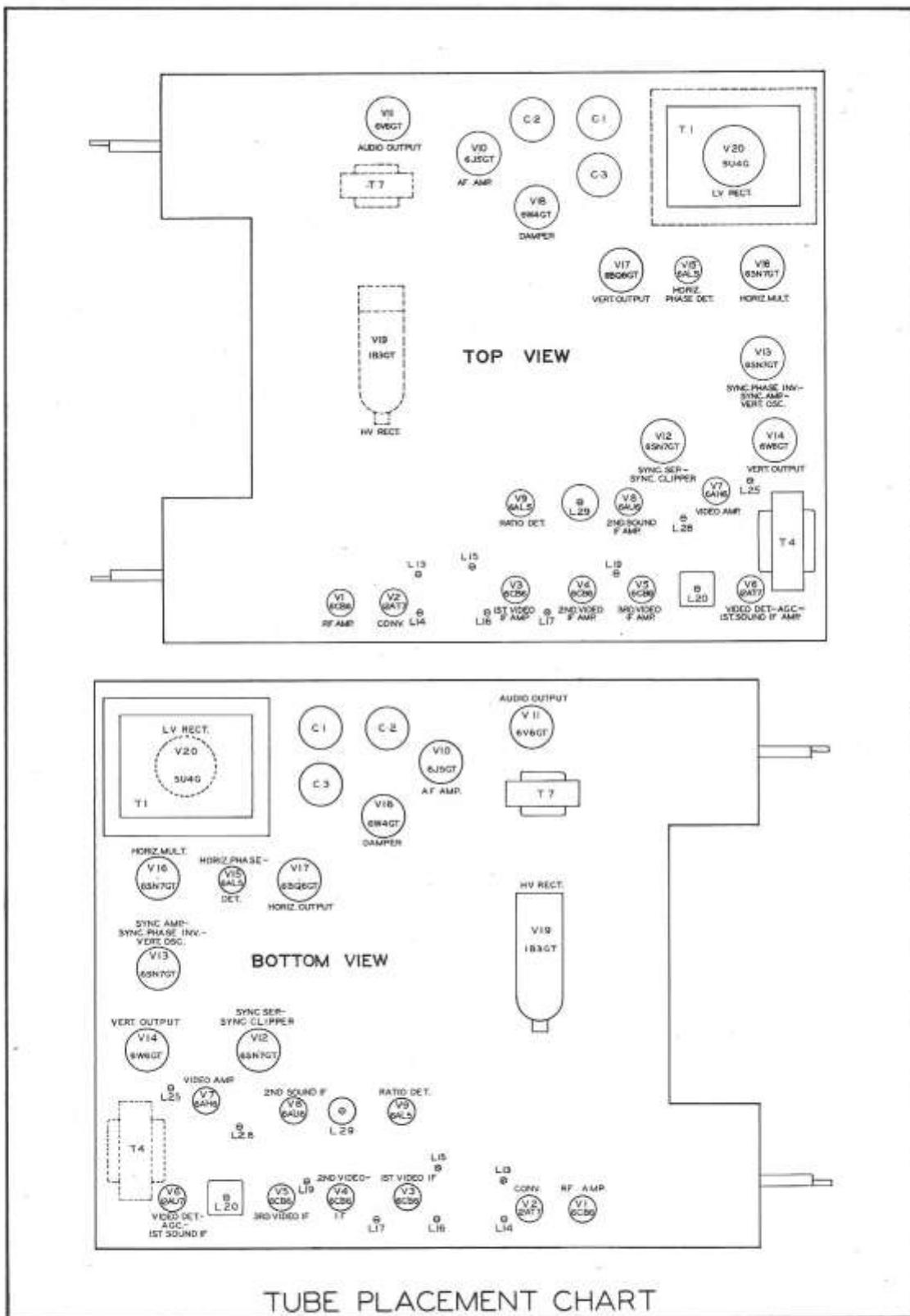


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR

MOTOROLA MODELS



ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT									
To eliminate the high voltage shock hazard and prevent spurious signal interference, remove the horizontal output tube (V17) from its socket and connect a 250Ω 25 watt resistor between pin 8 of the test socket and chassis.									
SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM									
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS			
1. .001MFD	High side to pin 7 (Grid) of 12AU7 (V6). Low side to chassis.	4.5MC (Unmod.)	Any	DC Probe to Point A Common to chassis.	A1, A2	Adjust for maximum deflection.			
2. .001MFD	"	"	"	DC Probe to Point B Common to chassis.	A3	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 120% sawtooth voltage in scope for horizontal deflection. If A2 shows two points of resonance, use the one with the steeper tangent out.									
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS		
1. .001MFD	High side to pin 7 (Grid) of 12AU7 (V6). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. Amp. to Point C Low side to chassis.	A1, A2	Disconnect stabilizer capacitor C4. Adjust for maximum amplitude and symmetry as per figure 1.		
2. .001MFD	"	"	"	"	Vert. Amp. to Point D Low side to chassis.	A3	Reconnect capacitor C4. Adjust A3 so 4.5MC occurs at center of crossover lines as per figure 2. SLIGHTLY retouch A2 for maximum amplitude and straightness of crossover lines.		
4. EMC TRAP ADJUSTMENT									
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS			
3. .001MFD	High side to pin 1 (Grid) of 6AB6 (V7). Low side to chassis.	4.5MC	Any	DC Probe thru detector (fig. 6) to pin 11 of picture tube. Common to chassis.	A4	Adjust for minimum deflection.			
VIDEO IF ALIGNMENT									
Unsolder the 100Ω resistor connected to pin 8 of V2, this will disable the local oscillator and prevent erroneous indications. Turn the contrast control to minimum. Connect the negative lead of a 3 volt battery to the junction of R30 and C84, connect the positive lead to chassis.									
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS		
4. .001MFD	High side to pin 1 (Grid) of 6CB6 (V3). Low side to chassis.	24MC (12MC SWP)	26.4MC	Any	Vert. Amp. to Point E Low side to chassis.	A5	Adjust to place 26.4MC marker as shown in figure 3.		
5. .001MFD	"	"	22.8MC	"	"	A6	Adjust to place 22.8MC marker as shown in figure 3.		
6. .001MFD	"	"	22.8MC 26.4MC	"	"	A7	Adjust for flat topped symmetrical response as per figure 3.		
7. .001MFD	High side to pin 2 (Grid) of 12AU7 (V3). Low side to chassis.	"	21.3MC	"	"	A8	Adjust for MINIMUM marker indication at the 21.3MC point on response curve.		
8. .001MFD	"	"	20.4MC	"	"	A9	Adjust for MINIMUM marker indication at the 20.4MC point on response curve.		
9. .001MFD	"	"	22.8MC 26.4MC	"	"	A10, A11	Adjust A10 and A-11 simultaneously to place markers as shown in figure 4. The 26.4MC marker must be at 10%. A slight variation of the 22.8MC marker is permissible.		
OSCILLATOR ALIGNMENT									
Resolder the 100Ω resistor connected to pin 8 of V2. To compensate for removal of the bottom shield, turn the fine tuning control 15° to the low capacity side of mid-position. 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		
10. Direct	High side to either antenna terminal. Low side to chassis.	195MC (12MC SWP)	193.25MC 197.75MC	10	Vert. Amp. to Point F Low side to chassis.	A12	Adjust to place sound marker in "notch" as shown in figure 5.		
11. Direct	"	215MC (12MC SWP)	211.25MC 215.75MC	13	"	A13	Adjust to place sound marker in "notch" as shown in figure 5. Repeat steps 10 and 11 until no further improvement can be made.		
12. Direct	"	45MC (12MC SWP) 198MC 212MC (12MC SWP) 69MC 71MC (12MC SWP) 63MC 65MC (12MC SWP) 57MC (12MC SWP)	50.25MC 52.75MC 57.25MC 58.75MC 61.25MC 63.75MC 65.25MC 67.75MC 71.25MC 73.75MC 75.25MC 77.75MC 80.25MC 82.75MC 85.25MC 87.75MC 90.25MC 92.75MC 95.25MC 97.75MC 100.25MC 102.75MC 105.25MC 107.75MC 110.25MC 112.75MC 115.25MC 117.75MC 120.25MC 122.75MC 125.25MC 127.75MC 130.25MC 132.75MC 135.25MC 137.75MC 140.25MC 142.75MC 145.25MC 147.75MC 150.25MC 152.75MC 155.25MC 157.75MC 160.25MC 162.75MC 165.25MC 167.75MC 170.25MC 172.75MC 175.25MC 177.75MC 180.25MC 182.75MC 185.25MC 187.75MC 190.25MC 192.75MC 195.25MC 197.75MC 200.25MC 202.75MC 205.25MC 207.75MC 210.25MC 212.75MC 215.25MC 217.75MC 220.25MC 222.75MC 225.25MC 227.75MC 230.25MC 232.75MC 235.25MC 237.75MC 240.25MC 242.75MC 245.25MC 247.75MC 250.25MC 252.75MC 255.25MC 257.75MC 260.25MC 262.75MC 265.25MC 267.75MC 270.25MC 272.75MC 275.25MC 277.75MC 280.25MC 282.75MC 285.25MC 287.75MC 290.25MC 292.75MC 295.25MC 297.75MC 300.25MC 302.75MC 305.25MC 307.75MC 310.25MC 312.75MC 315.25MC 317.75MC 320.25MC 322.75MC 325.25MC 327.75MC 330.25MC 332.75MC 335.25MC 337.75MC 340.25MC 342.75MC 345.25MC 347.75MC 350.25MC 352.75MC 355.25MC 357.75MC 360.25MC 362.75MC 365.25MC 367.75MC 370.25MC 372.75MC 375.25MC 377.75MC 380.25MC 382.75MC 385.25MC 387.75MC 390.25MC 392.75MC 395.25MC 397.75MC 400.25MC 402.75MC 405.25MC 407.75MC 410.25MC 412.75MC 415.25MC 417.75MC 420.25MC 422.75MC 425.25MC 427.75MC 430.25MC 432.75MC 435.25MC 437.75MC 440.25MC 442.75MC 445.25MC 447.75MC 450.25MC 452.75MC 455.25MC 457.75MC 460.25MC 462.75MC 465.25MC 467.75MC 470.25MC 472.75MC 475.25MC 477.75MC 480.25MC 482.75MC 485.25MC 487.75MC 490.25MC 492.75MC 495.25MC 497.75MC 500.25MC 502.75MC 505.25MC 507.75MC 510.25MC 512.75MC 515.25MC 517.75MC 520.25MC 522.75MC 525.25MC 527.75MC 530.25MC 532.75MC 535.25MC 537.75MC 540.25MC 542.75MC 545.25MC 547.75MC 550.25MC 552.75MC 555.25MC 557.75MC 560.25MC 562.75MC 565.25MC 567.75MC 570.25MC 572.75MC 575.25MC 577.75MC 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ALIGNMENT INSTRUCTIONS (CONT.)

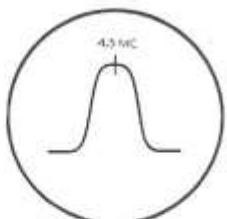


FIG. 1

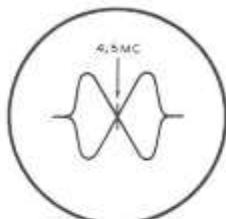


FIG. 2

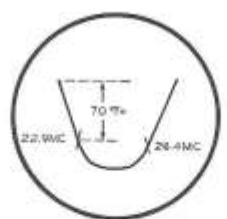


FIG. 3

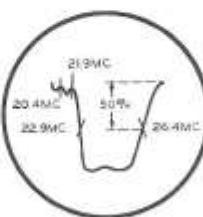


FIG. 4

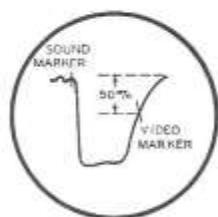


FIG. 5

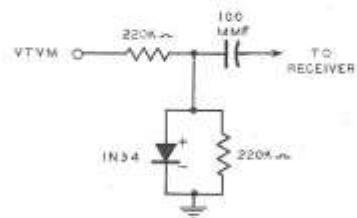
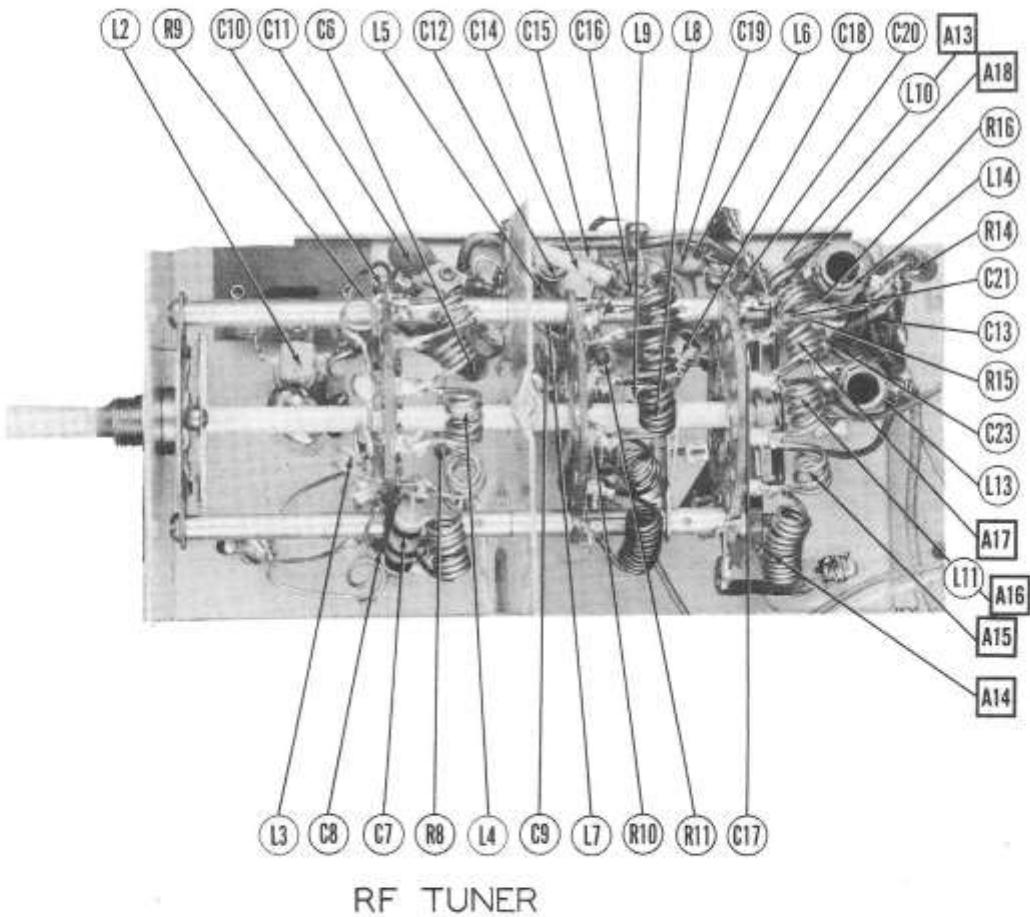


FIG. 6



MOTOROLA MODELS
19K2, B, 19K3, 19K4, B, 20FI, B

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	VOLTAGE READINGS					RESISTANCE READINGS													
		Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8		
V 1	6CB16	-3.2VDC	5VDC	.0V	6.3VAC	2.5VDC	165VDC	.0V			V 1	6CB16	1.5MΩ	560	.00	11Ω	115KΩ	16.1KΩ	.00	
V 2	12AT7	145VDC	-2.3VDC	.0V	.0V	51VDC	1.3-3.8VDC	.0V	4.3VAC	V 2	12AT7	118KΩ	4480	.00	.00	12.2KΩ	1080	.00	.40	
V 3	6CB16	-1.9VDC	.69VDC	.0V	6.3VAC	1.05VDC	160VDC	.0V			V 3	6CB16	1.5MΩ	470	.00	.00	41KΩ	41KΩ	.00	
V 4	6CB16	-3.3VDC	6VDC	.0V	6.3VAC	1.05VDC	160VDC	.0V			V 4	6CB16	1.5MΩ	470	.00	.00	41KΩ	41KΩ	.00	
V 5	6CB16	.0V	1.4VDC	6.3VAC	.0V	105VDC	150VDC	.0V			V 5	6CB16	.7Ω	3750	.1Ω	.00	#1KΩ	.00		
V 6	12AU7	-1.1VDC	-1.1VDC	.0V	6.3VAC	#10VDC	.0V	6.4VDC	.0V	V 6	12AU7	5.0KΩ	.00	.00	11Ω	115KΩ	.00	.00		
V 7	6AH6	1VDC	18VDC	.0V	6.3VAC	175VDC	145VDC	.0V			V 7	6AH6	1.5MΩ	280	.00	.00	16.2KΩ	128KΩ	.00	
V 8	6AH6	.0V	#4VDC	6.3VAC	.0V	105VDC	#15VDC	.0V			V 8	6AH6	#1.2Ω	#2300	.1Ω	.00	11.1KΩ	11.1KΩ	#125Ω	
V 9	6AH6	.5VDC	-5VDC	6.3VAC	.0V	-1.3VDC	.0V				V 9	6AH6	6.3KΩ	4.8KΩ	.1Ω	.00	1.1MΩ	.00		
V 10	6B6GT	.9V	6.3VAC	25VDC	30VDC	.0V	0V				V 10	6B6GT	.00	.00	.1Ω	147KΩ	148KΩ	.00	.00	
V 11	6W6GT	.0V	165VDC	200VDC	.0V	6.3VAC	115VDC				V 11	6W6GT	Inf.	Inf.	.00	11.2KΩ	47.2KΩ	.00	.20	
V 12	6B6GT	-3.3VDC	41VDC	.0V	.0V	187VDC	3.3VDC	6.3VAC	.0V		V 12	6B6GT	2.2MΩ	.00	.00	12.2KΩ	270KΩ	.00	.00	
V 13	6B6GT	1.5VDC	8VDC	15VDC	-17VDC	20VDC	.0V	6.3VAC	.0V		V 13	6B6GT	1.0Ω	220KΩ	220KΩ	12.2KΩ	12.2KΩ	.00		
V 14	6W6GT	.0V	6.3VAC	29VDC	30VDC	.0V	0V				V 14	6W6GT	Inf.	Inf.	.00	1.1MΩ	1.1MΩ	.00	.00	
V 15	6AH6	.0V	6.3VAC	.0V	3.6VAC	0V	-3VDC				V 15	6AH6	1.5KΩ	1.5KΩ	.00	3.3MΩ	3.3MΩ	.00		
V 16	6B6GT	-5VDC	115VDC	.0V	6.3VDC	.0V	335VDC	6.3VAC	.0V			V 16	6B6GT	10KΩ	1.0KΩ	.00	4.8MΩ	4.8MΩ	.00	
V 17	6B6GT	.0V	265VDC	165VDC	-25VDC	135VDC	6.3VAC	.0V				V 17	6B6GT	Inf.	.00	115KΩ	115KΩ	.00	.00	
V 18	6W6GT	.0V	0V	165VDC	.0V	365VDC	.0V	650VDC	.0V			V 18	6W6GT	Inf.	Inf.	Inf.	145Ω	145Ω	.00	.20
V 19	1B50T	* DO NOT MEASURE	.0V									V 19	1B50T	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP
V 20	1G44Z	.0V	350VDC	0V	350VDC	0V	220VAC	.0V				V 20	1G44Z	Inf.	Inf.	Inf.	20Ω	20Ω	Inf.	1.9Ω
V 21	2B60A	6.3VAC	.0V	265VDC	165VDC	10VDC	PIN 10	315VAC	.0V			V 21	2B60A	.0Ω	PIN 10	PIN 10	1.1Ω	500Ω	PIN 10	.00

FOCUS CONTROL COUNTER CLOCKWISE
 1 TAKEN WITH VACUUM TUBE VOLTMETER
 * MEASURED FROM 115VDC POINT
 # DO NOT MEASURE

FOCUS CONTROL COUNTER CLOCKWISE
 # MEASURED FROM 115VDC POINT
 * MEASURED FROM 130VDC POINT
 * MEASURED FROM PIN 3 OF V18

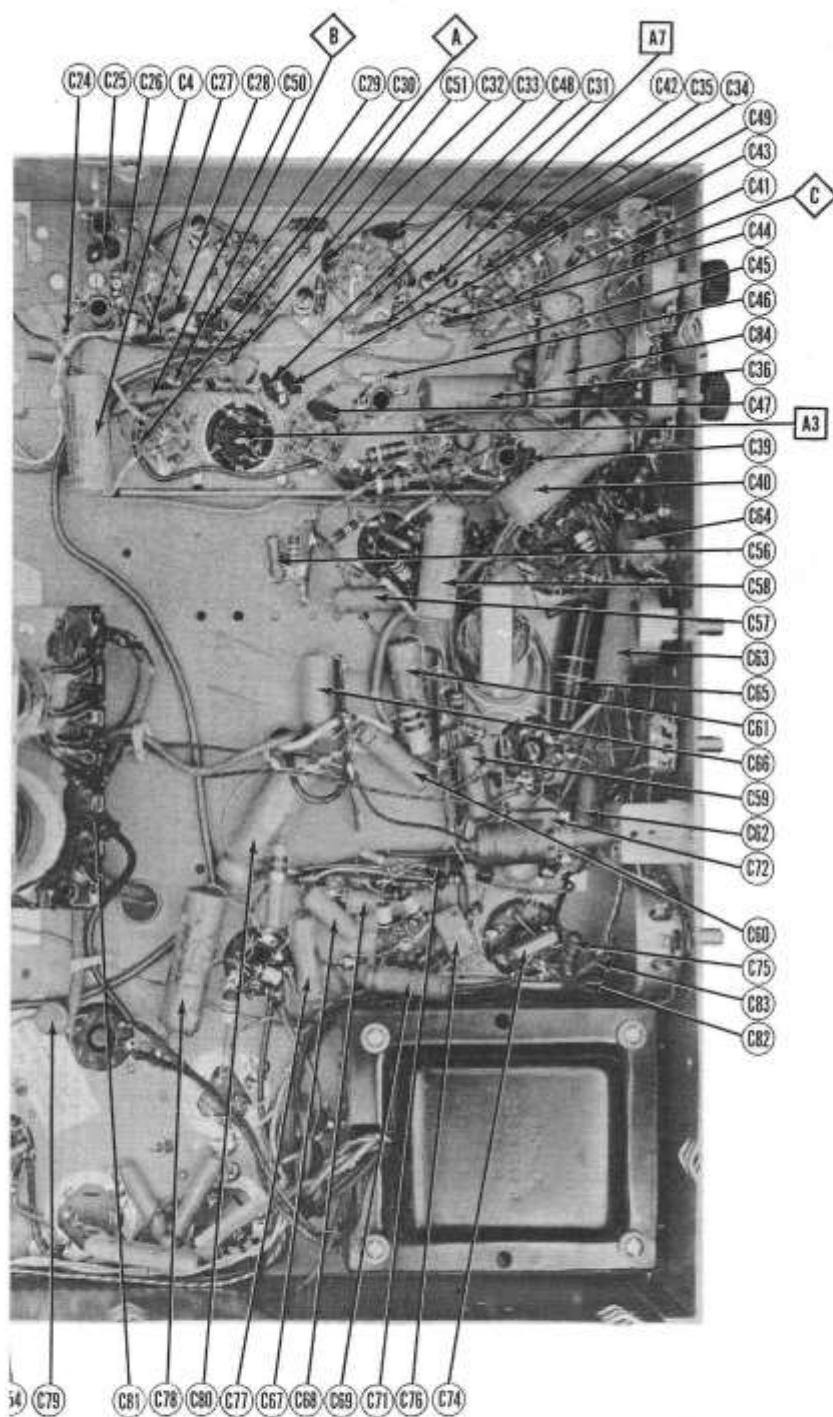
- DC Voltage measurements are off scale per volt; AC Voltage measured at 1,000 ohms per volt.
- Pin numbers are quoted in a clockwise direction from bottom left of socket.
- Measured values are from broken pins to common negative unless otherwise stated.
- Line voltage measured at 117 volts for voltage readings.

MEASURED FROM 115VDC POINT

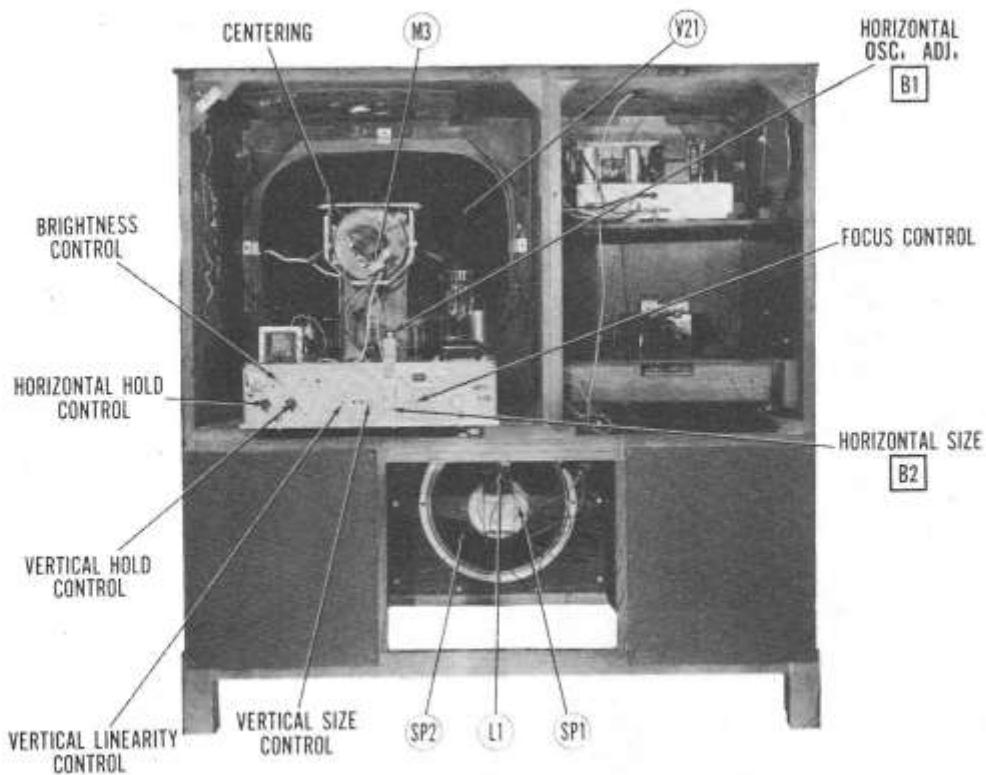
* MEASURED FROM 130VDC POINT

* MEASURED FROM PIN 3 OF V18

a. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



R AND ALIGNMENT IDENTIFICATION



CABINET-REAR VIEW HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.
 Turn the horizontal hold control to the mid-position of its range.
 Adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.
 Adjust the horizontal size slug (B2) until the picture fills the mask horizontally.

DISASSEMBLY INSTRUCTIONS (MODEL 20F1)

TV CHASSIS REMOVAL

1. Remove four push-on type control knobs from front of cabinet.
2. Remove eight 1/4" hex head screws holding rear cover in place. Remove rear cover.
3. Disconnect built-in antenna.
4. Disconnect speaker leads.
5. Remove six 5/16" hex head screws from bottom of chassis. Remove chassis.
6. Remove four 5/16" hex nuts holding speaker. Remove speaker.

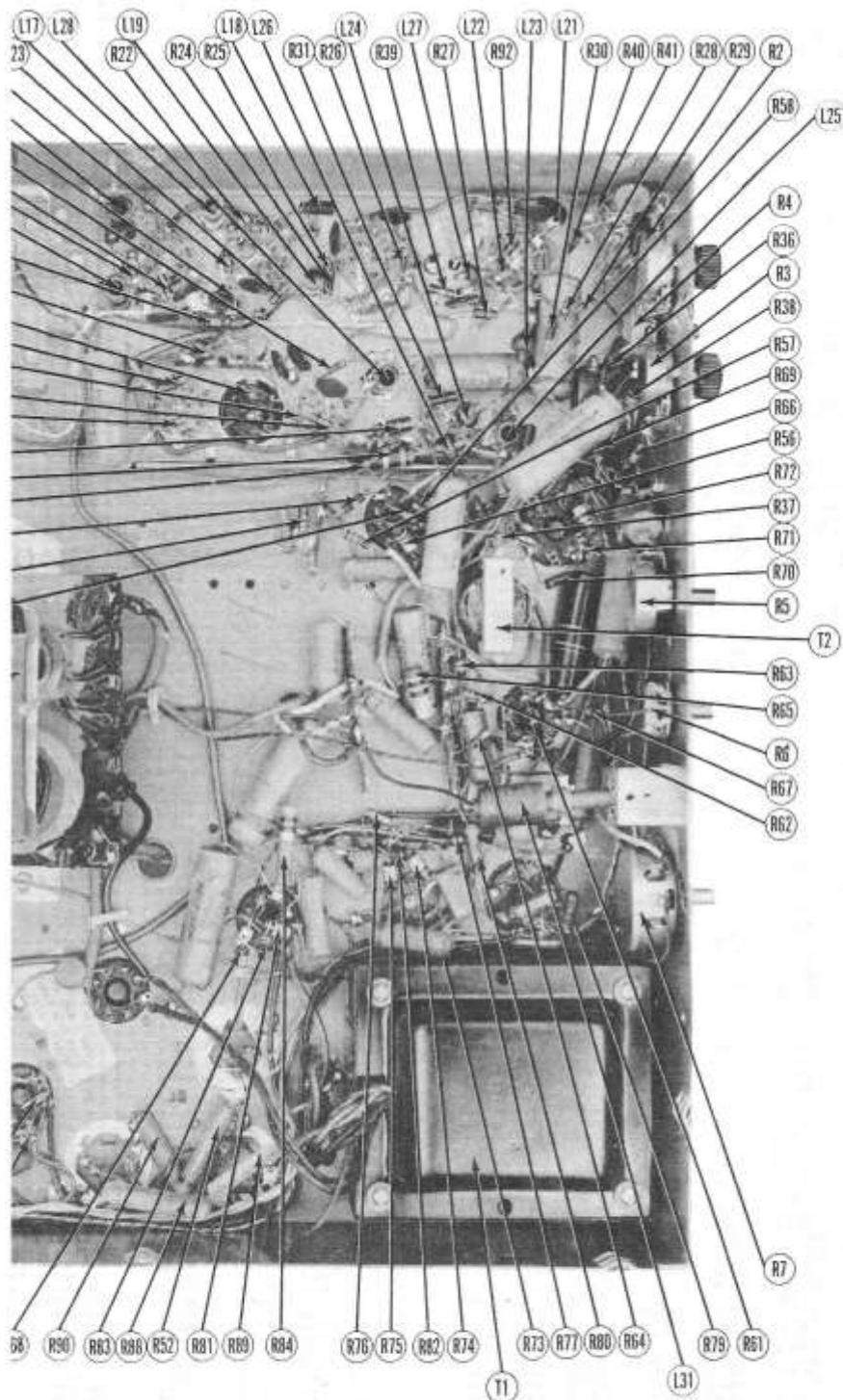
RADIO REMOVAL

1. Remove four push-on type control knobs.
2. Remove nine 1/4" hex head screws holding rear cover in place.
3. Disconnect antenna leads.
4. Disconnect phonograph power leads.
5. Remove three 1/4" hex head screws from bottom of chassis. Remove chassis.

PHONOGRAPH UNIT REMOVAL

1. Remove two 1/4" bolts from top of phonograph.
2. Remove all power leads.
3. Remove phonograph.

NOTE: FOR PICTURE TUBE REMOVAL, IT IS NECESSARY TO REMOVE THE TV CHASSIS AS OUTLINED ABOVE.



R AND INDUCTOR IDENTIFICATION

PARTS LIST AND CAPACITORS

ITEM No.	USE	REPLACEMENT DATA			NOTES
		MOTOROLA PART No.	STANDARD REPLACEMENT	RCA BASE TYPE	
V1	RF Amp.	6CB6	6CB6	6CK	
V2	Converter	12ATT	12AT7	6A	
V3	1st Video IF Amp.	6CB6	6CB6	6CK	
V4	2nd Video IF Amp.	6CB6	6CB6	6CK	
V5	3rd Video IF Amp.	6CB6	6CB6	6CK	
V6	Yokes Det. - AGC				
V7	1st Sound IF Amp.	12AU7	12AU7	9A	
V8	Video Amp.	6AL5	6AL5	72K	
V9	2nd Sound IF Amp.	6AU6	6AU6	72K	
V10	Ratio Det.	6ALS	6ALS	6ST	
V11	AF Amp.	6SGOT	6SGOT	6Q	
V12	Audio Output	6V6GT	6V6GT	TAQ	
V13	Sync. Sep. Sync. Clipper	6SN7GT	6SN7GT	6BD	
V14	Sync. Amp. - Sync. Phase Inv. - Vert.	6SN7GT	6SN7GT	3BD	
V15	Vert. Output	6W6GT	6W6GT	3BD	
V16	Horiz. Phase Det.	6AL5	6AL5	8BT	
V17	Horiz. Mod. 6SN7GT	6SN7GT	6SN7GT	8BD	
V18	Horiz. Output	6HQ4GT	6HQ4GT	6AM	
V19	Dumper	6W6GT	6W6GT	4CG	
V20	HV Rectifier	16M0T	16M0T	9C	
V21	LV Rectifier	5U6G	5U6G	5T	
V22	Picture Tube	21DP4	21DP4	1SD	

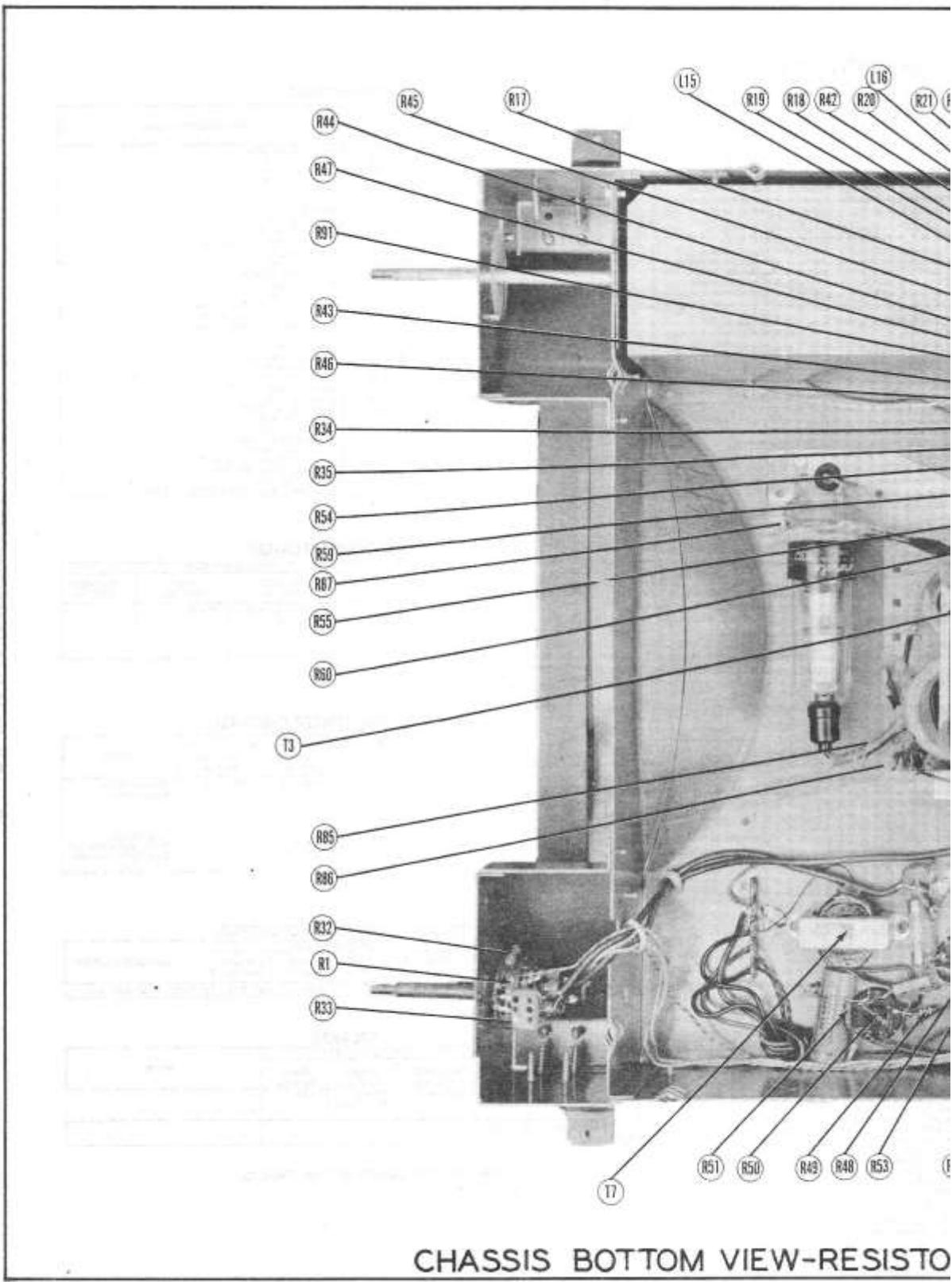
ITEM No.	RATING CAP.	VOLT	REPLACEMENT DATA			NOTES
			MOTOROLA PART No.	AEROVox PART No.	CENTRIF PART	
C63	.03	600	12AU7	12AU7		P688-05
C64	.1	200	12AU7	12AU7		P259-1
C65	.15	400	12AU7	12AU7		P488-15
C66	.00	600	12AU7	12AU7		P688-31
C67	.001	600	12AU7	12AU7		P688-38
C68	.008	600	12AU7	12AU7		P688-48
C69	.009	800	12AU7	12AU7		P688-49
C70	.009	800	12AU7	12AU7		P688-50
C71	.008	600	12AU7	12AU7		P688-52
C72	.01	600	12AU7	12AU7		P688-53
C73	.006	600	12AU7	12AU7		P688-55
C74	.330	100	12AU7	12AU7		P688-56
C75	.100	300	12AU7	12AU7		P688-58
C76	.630	300	12AU7	12AU7		P688-60
C77	.508	600	12AU7	12AU7		P688-65
C78	.1	600	12AU7	12AU7		P688-67
C79	.100	3000	12AU7	12AU7		P688-68
C80	.1	400	12AU7	12AU7		P688-71
C81	.25	900	12AU7	12AU7		P688-78
C82	10000		12AU7	12AU7		P688-81
C83	10000		12AU7	12AU7		P688-82
C84	.25	200	12AU7	12AU7		P688-25

* Not Used in All Models.

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 CAP. VOLT	REPLACEMENT DATA			IDENTIFICATION CODES AND INSTALLATION NOTES
		MOTOROLA PART No.	AEROVox PART No.	CENTRAL-FIL PART No.	
C1A	.01	400	23B71002	AFH1204H	UP702245
B	.05	400			TVA-1504
C	.20	350			
C1A	.03	400	23B710084	AFH1100GF	UP784345
B	.05	310			TVL-1680
C1A	.03	350	23B710085	ESC136	UP72335
B	.05	250			TVA-1260
C	.03	50			
C14	.10	.90	23A02025	PR650/10	BR105
C15	.10	.90	23A02016	PR650/10	BR105
C16	.20	.90	23A02025	PR650/10	BR105
C17	.10	.90	23A02025	PR650/10	BR105
C18	.10	.90	23A02025	PR650/10	BR105
C19	.10	.90	23A02025	PR650/10	BR105
C20	.10	.90	23A02025	PR650/10	BR105
C21	.10	.90	23A02025	PR650/10	BR105
C22	.10	.90	23A02025	PR650/10	BR105
C23	.10	.90	23A02025	PR650/10	BR105
C24	.10	.90	23A02025	PR650/10	BR105
C25	.10	.90	23A02025	PR650/10	BR105
C26	.10	.90	23A02025	PR650/10	BR105
C27	.10	.90	23A02025	PR650/10	BR105
C28	.10	.90	23A02025	PR650/10	BR105
C29	.10	.90	23A02025	PR650/10	BR105
C30	.10	.90	23A02025	PR650/10	BR105
C31	.10	.90	23A02025	PR650/10	BR105
C32	.10	.90	23A02025	PR650/10	BR105
C33	.10	.90	23A02025	PR650/10	BR105
C34	.10	.90	23A02025	PR650/10	BR105
C35	.10	.90	23A02025	PR650/10	BR105
C36	.10	.90	23A02025	PR650/10	BR105
C37	.10	.90	23A02025	PR650/10	BR105
C38	.10	.90	23A02025	PR650/10	BR105
C39	.10	.90	23A02025	PR650/10	BR105
C40	.10	.90	23A02025	PR650/10	BR105
C41	.10	.90	23A02025	PR650/10	BR105
C42	.10	.90	23A02025	PR650/10	BR105
C43	.10	.90	23A02025	PR650/10	BR105
C44	.10	.90	23A02025	PR650/10	BR105
C45	.10	.90	23A02025	PR650/10	BR105
C46	.10	.90	23A02025	PR650/10	BR105
C47	.10	.90	23A02025	PR650/10	BR105
C48	.10	.90	23A02025	PR650/10	BR105
C49	.10	.90	23A02025	PR650/10	BR105
C50	.00	.90	23A02025	PR650/10	BR105
C51	.00	.90	23A02025	PR650/10	BR105
C52	.00	.90	23A02025	PR650/10	BR105
C53	.00	.90	23A02025	PR650/10	BR105
C54	.00	.90	23A02025	PR650/10	BR105
C55	.00	.90	23A02025	PR650/10	BR105
C56	.00	.90	23A02025	PR650/10	BR105
C57	.00	.90	23A02025	PR650/10	BR105
C58	.00	.90	23A02025	PR650/10	BR105
C59	.00	.90	23A02025	PR650/10	BR105
C60	.00	.90	23A02025	PR650/10	BR105
C61	.00	.90	23A02025	PR650/10	BR105
C62	.00	.90	23A02025	PR650/10	BR105
C63	.00	.90	23A02025	PR650/10	BR105
C64	.00	.90	23A02025	PR650/10	BR105
C65	.00	.90	23A02025	PR650/10	BR105
C66	.00	.90	23A02025	PR650/10	BR105
C67	.00	.90	23A02025	PR650/10	BR105
C68	.00	.90	23A02025	PR650/10	BR105
C69	.00	.90	23A02025	PR650/10	BR105
C70	.00	.90	23A02025	PR650/10	BR105
C71	.00	.90	23A02025	PR650/10	BR105
C72	.00	.90	23A02025	PR650/10	BR105
C73	.00	.90	23A02025	PR650/10	BR105
C74	.00	.90	23A02025	PR650/10	BR105
C75	.00	.90	23A02025	PR650/10	BR105
C76	.00	.90	23A02025	PR650/10	BR105
C77	.00	.90	23A02025	PR650/10	BR105
C78	.00	.90	23A02025	PR650/10	BR105
C79	.00	.90	23A02025	PR650/10	BR105
C80	.00	.90	23A02025	PR650/10	BR105
C81	.00	.90	23A02025	PR650/10	BR105
C82	.00	.90	23A02025	PR650/10	BR105
C83	.00	.90	23A02025	PR650/10	BR105
C84	.00	.90	23A02025	PR650/10	BR105
C85	.00	.90	23A02025	PR650/10	BR105
C86	.00	.90	23A02025	PR650/10	BR105
C87	.00	.90	23A02025	PR650/10	BR105
C88	.00	.90	23A02025	PR650/10	BR105
C89	.00	.90	23A02025	PR650/10	BR105
C90	.00	.90	23A02025	PR650/10	BR105
C91	.00	.90	23A02025	PR650/10	BR105
C92	.00	.90	23A02025	PR650/10	BR105
C93	.00	.90	23A02025	PR650/10	BR105
C94	.00	.90	23A02025	PR650/10	BR105
C95	.00	.90	23A02025	PR650/10	BR105
C96	.00	.90	23A02025	PR650/10	BR105
C97	.00	.90	23A02025	PR650/10	BR105
C98	.00	.90	23A02025	PR650/10	BR105
C99	.00	.90	23A02025	PR650/10	BR105
C100	.00	.90	23A02025	PR650/10	BR105
C101	.00	.90	23A02025	PR650/10	BR105
C102	.00	.90	23A02025	PR650/10	BR105
C103	.00	.90	23A02025	PR650/10	BR105
C104	.00	.90	23A02025	PR650/10	BR105
C105	.00	.90	23A02025	PR650/10	BR105
C106	.00	.90	23A02025	PR650/10	BR105
C107	.00	.90	23A02025	PR650/10	BR105
C108	.00	.90	23A02025	PR650/10	BR105
C109	.00	.90	23A02025	PR650/10	BR105
C110	.00	.90	23A02025	PR650/10	BR105
C111	.00	.90	23A02025	PR650/10	BR105
C112	.00	.90	23A02025	PR650/10	BR105
C113	.00	.90	23A02025	PR650/10	BR105
C114	.00	.90	23A02025	PR650/10	BR105
C115	.00	.90	23A02025	PR650/10	BR105
C116	.00	.90	23A02025	PR650/10	BR105
C117	.00	.90	23A02025	PR650/10	BR105
C118	.00	.90	23A02025	PR650/10	BR105
C119	.00	.90	23A02025	PR650/10	BR105
C120	.00	.90	23A02025	PR650/10	BR105
C121	.00	.90	23A02025	PR650/10	BR105
C122	.00	.90	23A02025	PR650/10	BR105
C123	.00	.90	23A02025	PR650/10	BR105
C124	.00	.90	23A02025	PR650/10	BR105
C125	.00	.90	23A02025	PR650/10	BR105
C126	.00	.90	23A02025	PR650/10	BR105
C127	.00	.90	23A02025	PR650/10	BR105
C128	.00	.90	23A02025	PR650/10	BR105
C129	.00	.90	23A02025	PR650/10	BR105
C130	.00	.90	23A02025	PR650/10	BR105
C131	.00	.90	23A02025	PR650/10	BR105
C132	.00	.90	23A02025	PR650/10	BR105



CHASSIS BOTTOM VIEW-RESISTO

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (D. C. CURRENT 1000 μ A)	MOTOROLA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1 .270A	.860	1, 2 Ohmies	258701075	C-2326 (1)	C-2998 (1)	TR3309 (1)	(1) Drill one new mtg. hole.	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		FRI.	SEC.	MOTOROLA PART No.	MEISSNER PART No.	IRC PART No.	
L12 Ant. Matching coil	10			24A7901033			
L13 Ant. Coil	10			24K701132			
L4 Ant. Coils	10			24C101131			
L5 Fil. Choke	10			24K701145			
L6 Fil. Coiles	10			24K701129			
L7 RF Coil	10			24K701104			
L8 RF Coile	10			24C701102			
L9 Cathode Choke	80			24K701106			
L10 Osc. Coil	10			24K701103			
L11 Osc. Coiles	10			24C701128			
L22 HF Choke	10			24K701130			
L23 HF Choke Plate							
Coil	.20			24K701015			
L14 IF Trap	10			24B701598			
L15 2nd Video IF	.20			24K701015			
L16 IF Trap	10			24B701592			
L17 3rd Video IF	.20	.10		24K701016			
L18 Fil. Choke	10			24K701081			
L19 3rd Video IF	.20	.10		24K701016			
L20 4th Video IF	.20	.10		24K701054			
L21 Fil. Choke	10			24A790104			
L22 Peaking	10			24K701017			
L23 Peaking	10			24K701018			
L24 Peaking	110			24K701019			
L25 4. SMC Trap	1-.10			24B701235			
L26 Peaking	110			24K701010			
L27 1st Sound IF	10			24K701049			
L28 2nd Sound IF	1, 20			24A470559			
L29 Ratio Det.							
Trans.	1, 10	.40		24B701025			
L30 Hor. Osc. Coil	420			24K701559			
L31 Horiz. Sync	10			24K701566			

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M1	RF Tuner	1K701180	Complete With Tubes
M3	Fuse	65A700851	.25A 250V Type 3AG
M3A	Ion Trap	24A790831	
B	Ion Trap	24A790857	
	Safety Glass	81C701329	Models 20P5, 20F1B
	Safety Glass	81C701069	Models 19K2, 19K2B, 19K3, 19K4, 19K4B
	Knob	36K701068	Channel Selector Models 20F1, 20F1B, 19K2, 19K2B
	Knob	36C700888	Channel Selector Model 19K3
	Knob	36C700889	Channel Selector Models 19K4, 19K4B
	Knob	36C700894	Fine Tuning - Volume Models 20F1, 20F1B, 19K3
	Knob	36C700888	Fine Tuning - Volume Model 19K3
	Knob	36C700898	Fine Tuning - Volume Models 19K4, 19K4B
	Knob	36K701087	Contrast Models 20F1, 20F1B, 19K3
	Knob	26K700887	Contrast Model 19K3
	Knob	26K700890	Contrast Models 19K4, 19K4B