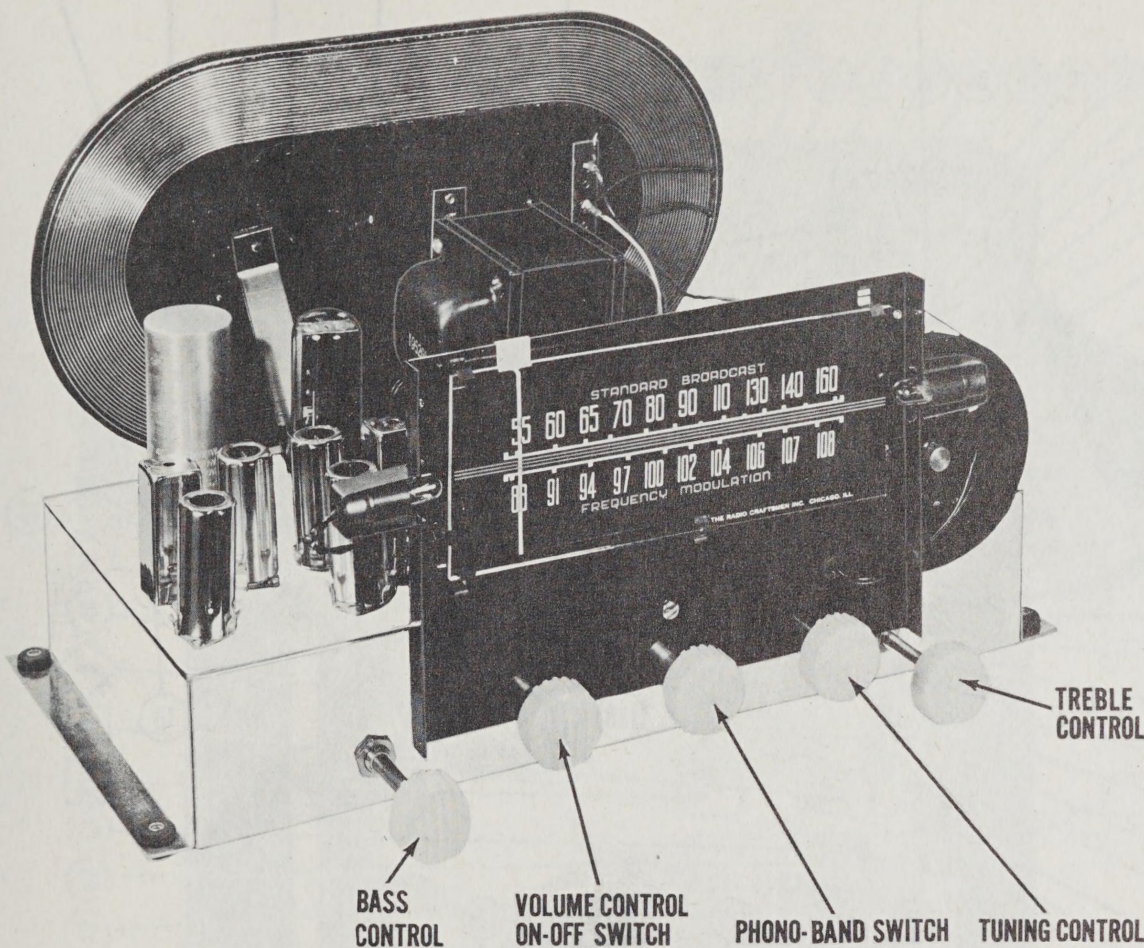


RADIO CRAFTSMEN MODELS
RC-1 (Tuner), RC-2 (Audio Amp.)



RADIO CRAFTSMEN MODELS
RC-1 (Tuner), RC-2 (Audio Amp.)

PAGE 1

TRADE NAME	Radio Craftsmen, Models RC-1 (Tuner), RC-2 (Audio Amp.)		
MANUFACTURER	The Radio Craftsmen, Inc., 1341 South Michigan Ave., Chicago 5, Ill.		
TYPE SET	AC Operated AM-FM Tuner and Audio Amplifier with Separate Power Supplies		
TUBES (FIFTEEN)	Types, 6BA6 RF Amp., 6J6 Osc.-AFC, 6BE6 Mixer, 6BA6 1st IF Amp., 6BA6 FM 2nd IF Amp.-AM Det.-AVC, 6AU6 1st Limiter, 6AU6 2nd Limiter, 6AL5 FM Det., 6C4 AF Amp., 5Y3GT Rectifier, 6J5 1st AF Amp., 6SN7GT 2nd AF-Phase Inv., (2) 6V6GT Power Output, 5Y3GT Rectifier.		
POWER SUPPLY	110-120 Volts AC	RATING	1.74 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1600KC	FREQ. MOD.	88-108MC

HOWARD W. SAMS & CO., INC.

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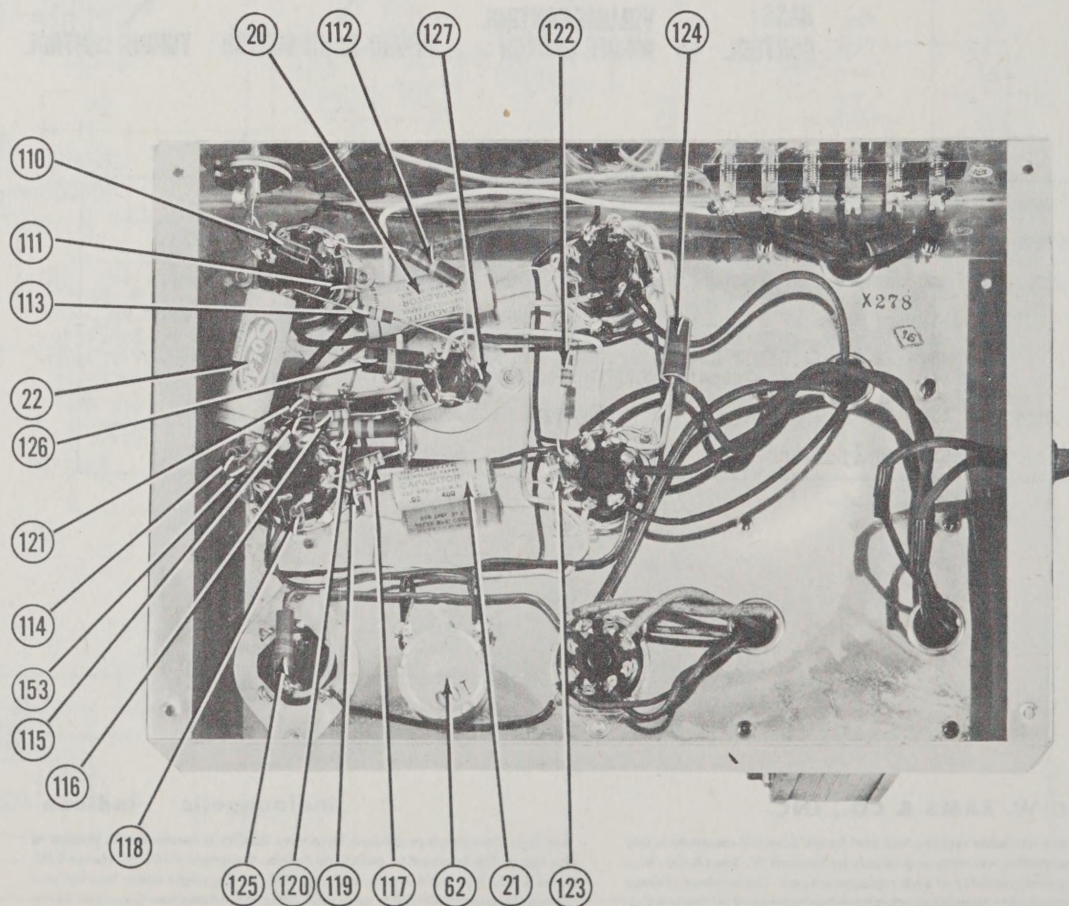
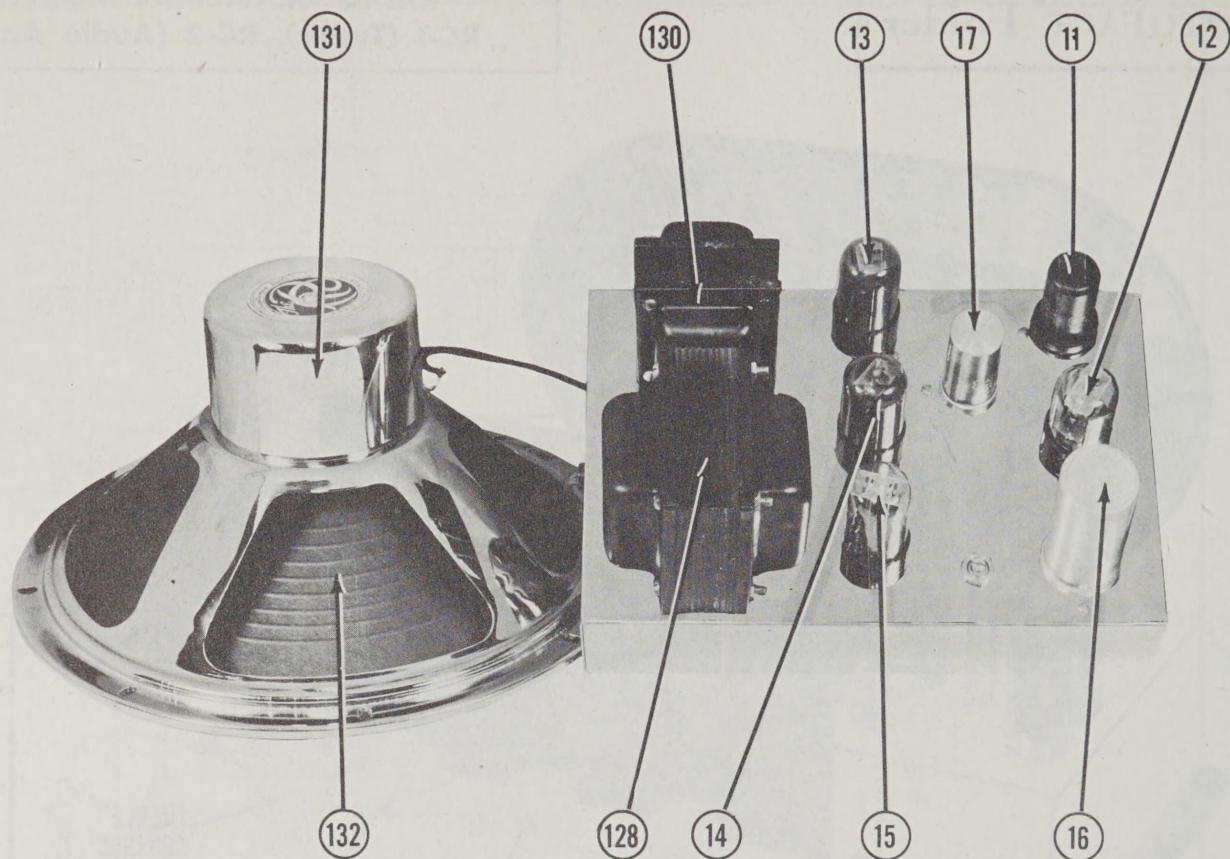
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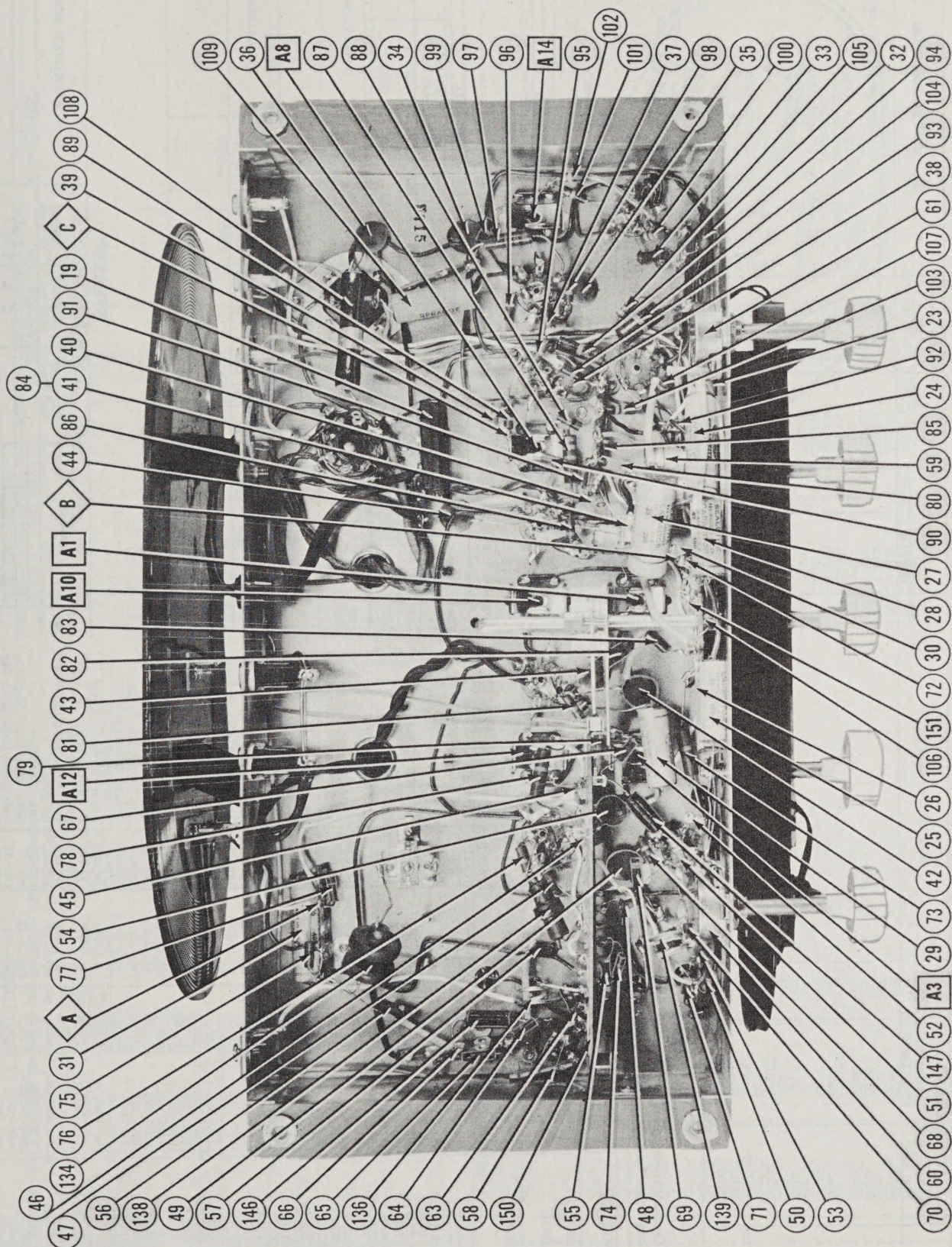
Indianapolis Indiana

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DATE 5/48-#489-19

SET #39-FOLDER #19





PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	USE	REPLACEMENT DATA		INSTALLATION NOTES
		RADIO CRAFTSMEN PART No.	RMA BASE TYPE	
1	RF Amp.	6BA6	7BK	
2	Occ. AFC	6J6	7BF	
3	Mixer	6BE6	7CH	
4	1st IF Amp.	6BA6	7BK	
5	2nd IF Amp.	6BA6	7BK	
6	1st Limiter	6AU6	7BK	
7	2nd Limiter	6AU6	7BK	
8	FM Det.	6AL5	6BT	
9	AF Amp.	6C4	6BG	
10	Rectifier	5Y3GT	5T	
11	1st AF Amp.	6J5	6Q	
12	2nd AF Amp.	6SN7GT	8BD	
13	Power Output	6V6GT	7AC	
14		6V6GT	7AC	
15	Rectifier	5Y3GT	5T	

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		IDENTIFICATION CODES AND INSTALLATION NOTES
		RADIO CRAFTSMEN PART No.	SOLAR PART No.	
16A	60	AF4444J*	DF-4x20-45*	▲ Filter
17A	20	AF64K4A	DF-309	▲ Output Screen Bypass
18A	20	AF58J	DF-406#	▲ Filter
19	20	FR350/24	FR2045	▲ AF Decoupling
20	1	684-01	DT6S1	▲ Cathode Bypass
21	1	484-01	DT4F1	▲ Filter
22	1	484-02	DT4S2	▲ Line Filter
23	1	484-01	DT4F1	▲ Audio Coupling
24	1	484-05	DT4S1	"
25	1	484-01	DT4S1	"
26	1	484-01	DT4S1	"
27	25	484-02	DT4S2	"
28	25	484-02	DT4S2	"
29	25	484-02	DT4S2	"
30	25	484-02	DT4S2	"
31	25	484-02	DT4S2	"
32	25	484-02	DT4S2	"
33	25	484-02	DT4S2	"
34	25	484-02	DT4S2	"
35	25	484-02	DT4S2	"
36	25	484-02	DT4S2	"
37	25	484-02	DT4S2	"
38	25	484-02	DT4S2	"
39	25	484-02	DT4S2	"
40A	5000	484-02	DT4S2	"
B	5000	484-02	DT4S2	"
C	5000	484-02	DT4S2	"
41A	150	484-02	DT4S2	"
B	150	484-02	DT4S2	"
42	5000	484-02	DT4S2	"
43	5000	484-02	DT4S2	"
44	5000	484-02	DT4S2	"
45	5000	484-02	DT4S2	"
46	5000	484-02	DT4S2	"
47	5000	484-02	DT4S2	"
48	5000	484-02	DT4S2	"
49	5000	484-02	DT4S2	"
50	5000	484-02	DT4S2	"
51	5000	484-02	DT4S2	"
52	5000	484-02	DT4S2	"
53	5000	484-02	DT4S2	"
54	5000	484-02	DT4S2	"

TRANSFORMER (POWER)

ITEM No.	RATING	REPLACEMENT DATA		THORDARN PART No.	MERIT PART No.
		RADIO CRAFTSMEN PART No.	STANCOR PART No.		
128	117V AC 650V CT 5.2V AC @ 75A @ .052A @ 2.0A	198202	P-4079\$	T22R31\$	P-3152\$
129	117V AC 650V CT 5.2V AC @ 75A @ .052A @ 2.0A	198201	P-4080\$	T22R32\$	P-3153\$

Items 84, 41A & 41B can be obtained as one unit under Part #18X609.

Note 1 - Later production uses 5000 in this application. IRC replacement AB-500.

TRANSFORMER (OUTPUT)

ITEM No.	RATING	REPLACEMENT DATA		THORDARN PART No.	MERIT PART No.
		RADIO CRAFTSMEN PART No.	STANCOR PART No.		
130	10K2 62 5000 CT 82 152 5000	198004	T22S64	A-3132	

SPEAKER

ITEM No.	RATINGS	REPLACEMENT DATA		INSTALLATION NOTES
		RADIO CRAFTSMEN PART No.	JENSEN PART No.	
131	FIELD VC IMP. 1" 11"	RC12M	ST-103	Use 82 tap.
132	FIELD VC DIA. 1" 11"	RC12M	Mod. P12-R	

PARTS LIST AND DESCRIPTIONS (Continued)

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	
			RADIO CRAFTSMEN PART No.	AEROVOX PART No.	CORNEIL DUBILIER PART No.	SOLAR PART No.	SPRAGUE PART No.
55	15	500	18X602	1468-0005	5WSQ2	MOS-5-42	MS-415
56	470	500	18X606		5WS25	MOS-5-35	IFM-35
57	15	500	18X602	1467-0005	5WSQ2	MOS-5-42	IFM-35
58A	5000	400	18X608		1DSB5	NM-5-25	RF Coupling
58B	5000	400	18X608		1DSB5	NM-5-25	RF Cathode Bypass
59	5000	400	18X608		1DSB5	NM-5-25	RF Screen Bypass
60	5000	400	18X608		1DSB5	NM-5-25	RF Decoupling
61	5000	400	18X608		1DSB5	NM-5-25	AF Plate Bypass
153	470	300	18X606	1468-0005	5WS25	MOS-5-35	IFM-35

*Items 41A, 41B and 84 can be obtained as one unit under Part #18X605.
†Parallel sections to obtain desired capacity.
‡Omit one section.

CONTROLS

ITEM No.	RATING RESIST-ANCE	WATTS	REPLACEMENT DATA			INSTALLATION NOTES
			RADIO CRAFTSMEN PART No.	IRC PART No.	CLAROSTAT PART No.	
56A	500KΩ	1	23S704	33-3333		Volume Control
B Shaft	Dual	1	Not Req.	C3# 21		Attach to 59A per instructions
C Switch	10KΩ	1	23S702	D11-1116	AM-27-S	Treble Control
60A	10KΩ	1	23S702	E	KSS-3	Attach to 60A per instructions
B Shaft	500KΩ	1	23S703	E	AM-58-S	Bass Control
61A	500KΩ	1	23S703	E	KSS-3	Attach to 61A per instructions
B Shaft	100Ω	1	23S801	W-100	43-100	Hum Balance Control

†Use part of original shaft and C3 coupler to obtain knurled shaft.

RESISTORS

ITEM No.	RATING RESISTANCE	WATTS	REPLACEMENT DATA			IDENTIFICATION CODES
			RADIO CRAFTSMEN PART No.	IRC PART No.		
63	68Ω	1	23X016	BTS-22K		Blue-Gray-Blk. RF Cathode
64	22KΩ	1	23X021	BTS-2200		Red-Red-Or. RF Screen Dropping
65	2200Ω	1	23X011	BTS-1000		Red-Red-Red RF Plate Load
66	100Ω	1	23X019	BTS-1000		Br.-Blk.-Red RF Decoupling
67	100Ω	1	23X019	BTS-1000		Br.-Blk.-Red Oscillator Plate Load
68	22KΩ	1	23X021	BTS-22K		Red-Red-Or. Oscillator Grid
69	220Ω	1	23X017	BTS-100K		Red-Red-Br. Oscillator Cathode
70	220Ω	1	23X017	BTS-100K		Red-Red-Br. Parasitic Suppressor
71	100KΩ	1	23X023	BTS-470K		Br.-Blk.-Yl. Reactance Modulator Grid Isolation
72	470KΩ	1	23X026	BTA-6500		Yl.-Vi.-Yl. AF Filter
73	6800Ω	1	23X201	BTS-47K		Blue-Gray-Red Reactance Plate Load
74	47KΩ	1	23X022	BTS-1 Meg.		Yl.-Vi.-Or. Converter Grid
75	1 Meg.	1	23X026	BTS-1 Meg.		Br.-Blk.-Grn. Converter Grid
76	22KΩ	1	23X021	BTS-22K		Red-Red-Or. Oscillator Grid
77	1 Meg.	1	23X026	BTS-1 Meg.		Br.-Blk.-Grn. AVC Network
78	10KΩ	1	23X203	BTA-10K		Br.-Blk.-Or. Converter Screen Dropping
79	100Ω	1	23X019	BTS-1000		Br.-Blk.-Red Converter Decoupling
80	47KΩ	1	23X022	BTS-47K		Yl.-Vi.-Or. AVC Network
81	68Ω	1	23X106	BTA-33K		Blue-Gray-Blk. 1st IF Cathode
82	33KΩ	1	23X206	BTS-1000		Or.-Or.-Or. 1st IF Screen Dropping
83	100Ω	1	23X019	BTS-1000		Br.-Blk.-Red 1st IF Decoupling
84	470KΩ	1	23X026	BTS-470K		Yl.-Vi.-Or. Diode B Filter
85	68Ω	1	23X026	BTA-33K		Yl.-Vi.-Yl. Diode Load
86	33KΩ	1	23X016	BTA-33K		Blue-Gray-Blk. 2nd IF Cathode
87	33KΩ	1	23X026	BTS-1000		Or.-Or.-Or. 2nd IF Screen Dropping
88	100Ω	1	23X019	BTS-1000		Br.-Blk.-Red 2nd IF Decoupling
89	100Ω	1	23X023	BTS-100K		Br.-Blk.-Yl. Limiter Grid
90	2.2 Meg.	1	23X027	BTS-2.2 Meg.		Red-Red-Grn. AVC Network
91	2.2 Meg.	1	23X027	BTS-2.2 Meg.		Yl.-Vi.-Yl. Tone Compensation
92	470KΩ	1	23X026	BTS-470K		Br.-Blk.-Or. 1st Limiter Plate Load
93	10KΩ	1	23S702	BTA-10K		Red-Red-Or. 1st Limiter Screen Dropping
94	22KΩ	1	23X021	BTS-22K		Red-Red-Or. Bleeder
95	150KΩ	1	23X024	BTA-150K		Br.-Grn.-Yl. 2nd Limiter Grid
96	22KΩ	1	23X021	BTS-22K		Red-Red-Or. 2nd Limiter Screen Dropping
97	22KΩ	1	23X021	BTS-22K		Red-Red-Or. Bleeder
98	22KΩ	1	23X019	BTS-1000		Br.-Blk.-Red 2nd Limiter Plate Decoupling

PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

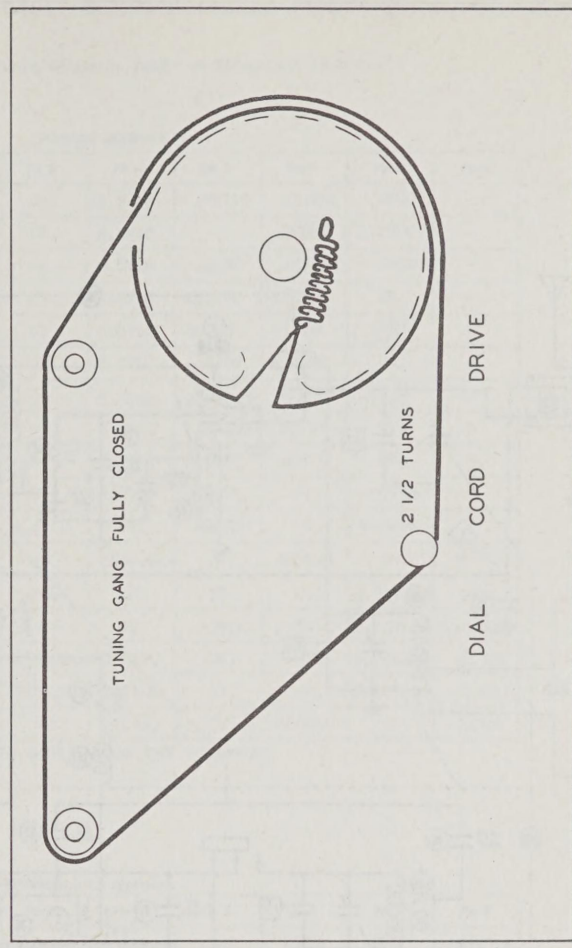
ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	RADIO CRAFTSMEN PART No.	WEISSNER PART No.
133	Loop Ant.	.1Ω	.3Ω	5B802	
134	Wave Trap		.3Ω	5B207	
135	FM Ant.		.3Ω	7X401	
136	FM Ant. Coil		.02	5A210	14-1060
137	FM RF Coil		.02	5A206	
138	AM Osc. Coil	.1Ω	.02	5A208	
139	FM Osc. Coil	.1Ω	.02	5X003	16-6678
140	1st FM IF	.4Ω	.15Ω	5X004	
141	1st FM IF	.4Ω	.15Ω	5X003	16-6678
142	2nd AM IF	.4Ω	.15Ω	5X004	
143	2nd FM IF	.4Ω	.15Ω	5X004	
144	3rd FM IF	.4Ω	.15Ω	5X004	
145	FM RF Plate	.4Ω	.15Ω	5X005	
146	FM RF Plate	.4Ω	.15Ω	5X005	
147	RF Choke	.1Ω	.15Ω	5S402	

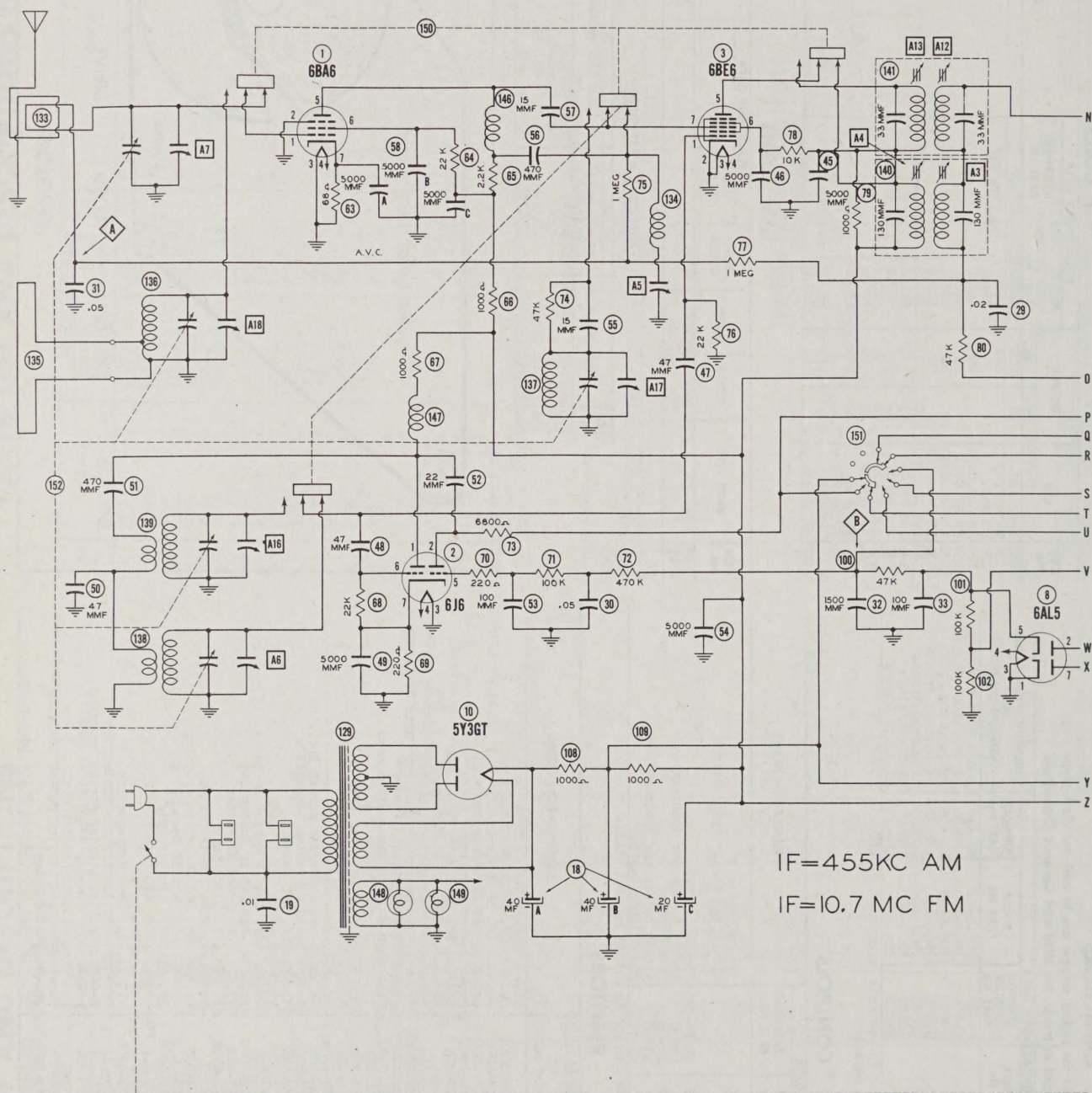
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	REPLACEMENT DATA		INSTALLATION NOTES
				BEAD COLOR	RADIO CRAFTSMEN PART No.	
148	Bayonet	6-8	0.25	Blue		Type 44
149	"	6-8	0.25	"		"

MISCELLANEOUS

ITEM No.	PART NAME	RADIO CRAFTSMEN PART No.	NOTES
150	Switch	4B002	Band (Slide)
151	"	4B003	Band-Phono-Tele. (Rotary)
152	Tuning Gang	17B004	AM (11-43) MF, 8-170 MF
A5	Padder	17X202	EC Osc. Adj.

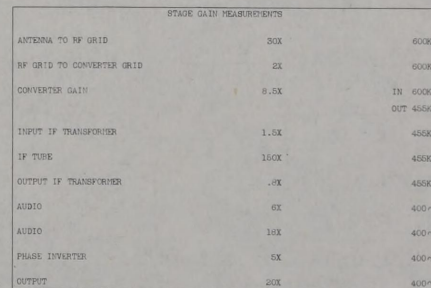




IF=455KC AM
IF=10.7 MC FM



489-19



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VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

VOLTAGE READINGS									
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6BA6	OV.	OV.	OV.	6.5VAC	175VDC	100VDC	.6VDC	-
2A	6J6	210VDC	-	OV.	6.5VAC	-	-9VDC	2.2VDC	-
2B	6J6	-	212VDC	OV.	6.5VAC	-3VDC	-3VDC	3VDC	-
3	6BE6	-7VDC	OV.	OV.	6.5VAC	215VDC	115VDC	OV.	-
4	6BA6	OV.	OV.	OV.	6.5VAC	250VDC	115VDC	1VDC	-
5A	6BA6	-7VDC	OV.	OV.	6.5VAC	-4VDC	-4VDC	OV.	-
5B	6BA6	OV.	OV.	OV.	6.5VAC	230VDC	100VDC	1VDC	-
6	6AU6	-6VDC	OV.	OV.	6.5VAC	217VDC	95VDC	OV.	-
7	6AU6	-8VDC	OV.	OV.	6.5VAC	240VDC	90VDC	OV.	-
8	6AL5	OV.	-1VDC	OV.	6.5VAC	-4VDC	OV.	-8VDC	-
9	6C4	95VDC	OV.	6.5VAC	OV.	95VDC	OV.	3.8VDC	-
10	5Y3GT	OV.	360VDC	OV.	325VAC	OV.	325VAC	OV.	360VDC
11	6J5	OV.	3.25VAC	40VDC	OV.	OV.	OV.	3.25VAC	2VDC
12	6SN7GT	OV.	90VDC	4VDC	OV.	45VDC	2.5VDC	3.25VAC	3.25VAC
13	6V6GT	OV.	3.25VAC	340VDC	345VDC	OV.	OV.	3.25VAC	20VDC
14	6V6GT	OV.	3.25VAC	340VDC	345VDC	OV.	OV.	3.25VAC	20VDC
15	5Y3GT	OV.	350VDC	OV.	350VAC	OV.	350VAC	OV.	350VAC

† TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS									
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6BA6	2.5 Meg.	0Ω	0Ω	.1Ω	15KΩ	35KΩ	68Ω	-
2A	6J6	13KΩ	-	0Ω	.1Ω	-	22KΩ	220Ω	-
2B	6J6	-	18KΩ	0Ω	.1Ω	820KΩ	22KΩ	220Ω	-
3	6BE6	22KΩ	0Ω	0Ω	.1Ω	12KΩ	23KΩ	3.5 Meg.	-
4	6BA6	1.5 Meg.	0Ω	0Ω	.1Ω	12KΩ	45KΩ	68Ω	-
5A	6BA6	450KΩ	0Ω	0Ω	.1Ω	INF.	INF.	68Ω	-
5B	6BA6	450KΩ	0Ω	0Ω	.1Ω	22KΩ	45KΩ	68Ω	-
6	6AU6	85KΩ	0Ω	0Ω	.1Ω	21KΩ	14KΩ	0Ω	-
7	6AU6	150KΩ	0Ω	0Ω	.1Ω	12KΩ	12KΩ	0Ω	-
8	6AL5	0Ω	100KΩ	0Ω	.1Ω	200KΩ	0Ω	100KΩ	-
9	6C4	59KΩ	INF.	.1Ω	0Ω	50KΩ	500KΩ	330Ω	-
10	5Y3GT	INF.	10KΩ	INF.	62Ω	INF.	60Ω	INF.	10KΩ
11	6J5	0Ω	11.5Ω	10KΩ	INF.	1 Meg.	INF.	11.5Ω	330Ω
12	6SN7GT	470KΩ	480KΩ	1KΩ	220KΩ	480KΩ	10KΩ	11.5Ω**	11.5Ω**
13	6V6GT	0Ω	11.5Ω**	25KΩ	27KΩ	550KΩ	INF.	11.5Ω**	220Ω
14	6V6GT	0Ω	11.5Ω**	25KΩ	27KΩ	690KΩ	220KΩ	11.5Ω**	220Ω
15	5Y3GT	INF.	25KΩ	INF.	80Ω	INF.	75Ω	INF.	25KΩ

† VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.

**READINGS TAKEN WITH HUM BALANCE CONTROL CENTERED.

RESISTANCE READINGS IN THE 8+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

- DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
- Socket connections are shown as bottom views.
- Measured values are from socket pin to common negative.
- Line voltage maintained at 117 volts for voltage readings.
- Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
- Volume control at maximum, no signal applied for voltage measurements.

RADIO CRAFTSMEN MODELS RC-1 (Tuner), RC-2 (Audio Amp.)

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CHASSIS—TOP VIEW

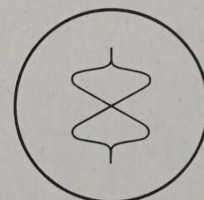
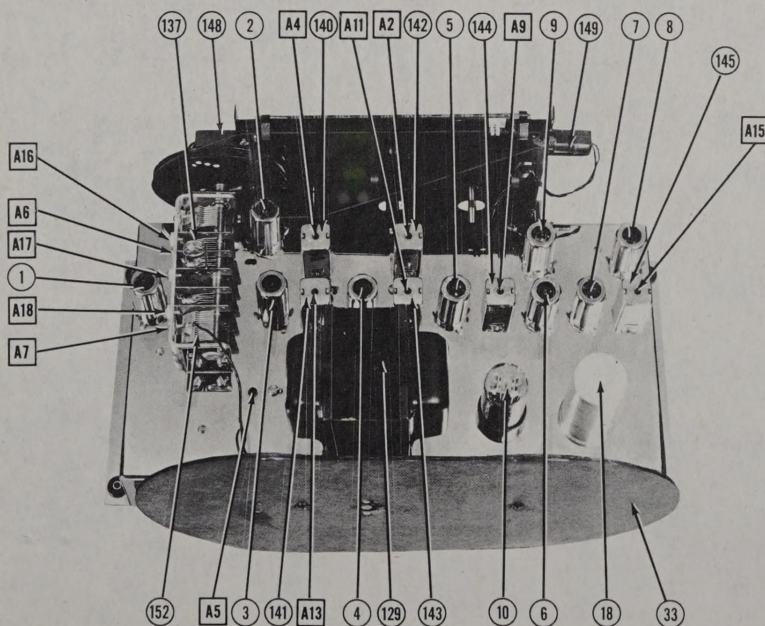


FIG. 2

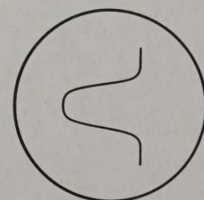


FIG. 1

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning cap. fully closed and set pointer to last reference mark at low end of scale. Use insulated alignment screwdriver with 1/16" thick blade for all adjustments.

AM ALIGNMENT

Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.01 MFD High side to Pin 7 (grid) of 6BE6. Low side to chassis.	455KC	BC (fully counter-wired)	Tuning cap. fully open.	"	A1, A2. Adjust for maximum output.	
2	.01 MFD High side to antenna terminal. Low side to chassis.	1500KC	"	"	"	A5. Adjust for minimum output.	
3	220MFD	"	"	"	"	A6. Adjust for maximum output.	
4	220MFD	"	"	"	"	A7. Adjust for maximum output.	
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT	ADJUST	REMARKS
5	.01 MFD High side to Pin 7 (grid) of 6BE6. Low side to chassis.	10.7MC (unmodulated)	FM (center position)	Tuning cap. fully open.	V7M	A8, A9. Adjust for maximum deflection.	
6	.01 MFD High side to ungrounded FM Ant. terminal. Low side to grounded modulation terminal.	10.7MC	"	"	"	A10. Adjust for zero deflection.	
7	300Ω carbon res.	10.7MC	"	"	"	A16. Disconnect resistor (72) to chassis. Adjust for maximum output.	
8	"	"	"	"	"	A17, A18. Rock tuning cap. and adjust for maximum output.	

FM ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use freq. modulated signal with 20% modulation and 450KC sweep. Use 120V, sawtooth voltage in scope for horizontal deflection.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
5	.01 MFD High side to Pin 7 (grid) of 6BE6. Low side to chassis.	10.7MC (unmodulated)	FM (center position)	Tuning cap. fully open.	Vertical In-A5, A9. Input to Point 10, A10, A11, A12. Ground to chassis.	A8, A9. Adjust for maximum amplitude, symmetry and coincidence of pattern per Fig. 1.	
6	.01 MFD High side to Pin 7 (grid) of 6BE6. Low side to chassis.	"	"	"	Vertical In-A10, A11, A12. Ground to chassis.	A10, A11, A12. Adjust for maximum amplitude, symmetry and coincidence of pattern per Fig. 1.	
7	.01 MFD High side to ungrounded FM Ant. terminal. Low side to grounded modulation terminal.	"	"	"	Vertical In-A10, A11, A12. Ground to chassis.	A10, A11, A12. Adjust for maximum amplitude, symmetry and coincidence of pattern per Fig. 1.	
8	300Ω carbon res.	10.7MC	FM	10.7MC	Vertical In-A10, A11, A12. Ground to chassis.	A10, A11, A12. Adjust for maximum amplitude, symmetry and coincidence of pattern per Fig. 1.	
9	"	"	"	"	Vertical In-A10, A11, A12. Ground to chassis.	A10, A11, A12. Adjust for maximum amplitude, symmetry and coincidence of pattern per Fig. 1.	