

RME
MODEL 45

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R.M.E. MODEL 45

TRADE NAME	RME Model 45
MANUFACTURER	Radio Manufacturing Engineers, Inc., Peoria (6), Ill.
TYPE SET	AC Operated Multiband Communications Superheterodyne Receiver
TUBES (NINE)	Types, 7B7 RF Amp., 7J7 Converter, (2) 7B7 1st & 2nd IF Amp., 7B6 Det.-BFO, 7C7 AF Amp., 7A6 Noise Limiter, 7C5 Power Output, 80 Rectifier.
POWER SUPPLY	110-120 Volts AC
RATING	1.53 Amp. @ 117 Volts AC
TUNING RANGES - BROADCAST	Band 1 - .540-1.6 MC, Band 2 - 1.6-2.9 MC, Band 3 - 2.9-5.4 MC, Band 4 - 5.4-9.8 MC, Band 5 - 9.8-18 MC, Band 6 - 18-33 MC.

HOWARD W. SAMS & CO., INC. • 2924 East Washington Street • Indianapolis 6, Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA			INSTALLATION NOTES
		RME PART No.	STANDARD REPLACEMENT	RMA BASE TYPE	
1	RF Amp.	7B7	7B7	8AR	
2	Converter	7J7	7J7	8AK	
3	1st IF Amp.	7B7	7B7	8V	
4	2nd IF Amp.	7B7	7B7	8V	
5	Det.-Beat Osc.	7B6	7B6	8W	
6	1st AF Amp.	7C7	7C7	8V	
7	Noise Limiter	7A6	7A6	7AJ	
8	Power Output	7C5	7C5	6AA	
9	Rectifier	80	80	4C	

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING	REPLACEMENT DATA			INSTALLATION NOTES
		RESISTANCE	WATTS	MALLORY PART No.	
50A	1 Meg.	1	MP53	M-83-Z	Tone Control
B	Shaft		Not Req.	Not Req.	Attach to 50A per instructions
C	Switch	1	M26	SW-A	"
51A	30KΩ	1			RF Gain Control & AVC Switch
H	Shaft				"
O	Switch				"
52A	250KΩ	1	UM149	M-55-S	Audio Gain Control
H	Shaft		Not Req.	Not Req.	Attach to 52A per instructions
53	200Ω	1	C200P	43-200	Meter Adj. Control

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	
		RME PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.		
10A	15 CAP.	EL-344	EL-344	AF44J	UP6C47	FP390	DY-3x15-450	Filter
B	10			PRS450-10		TC26	M-25-25	Output Cath. Bypass
C	450			PRS25-25		TC26	M-25-25	1st AF Cath. Bypass
11	20	TA-25	TA-25	PRS25-25		TP422	S-4-1M	AVC Diode Filter
12	25	TA-25	TA-25	PRS25-25		TP422	S-4-1M	RF Bypass Pwr. Supp.
13	1	TC-10	TC-10	484-1		TP410	S-6-01	Tone Compensation
14	1	TC-10	TC-10	484-1		TP410	S-6-01	Audio Coupling
15	.01	TC-11	TC-11	684-01		TP418	S-6-01	1st AF Screen Bypass
16	.1	TC-11	TC-11	684-01		TP418	S-6-01	Audio Coupling
17	.01	TC-11	TC-11	684-01		TP410	S-6-01	AVC Filter
18	.1	TC-11	TC-11	684-01		TP410	S-6-01	BFO Plate Decoupling
19	.01	TC-11	TC-11	684-01		TP410	S-6-01	2nd IF Plate Decoupling
20	.01	TC-11	TC-11	684-01		TP410	S-6-01	2nd IF Screen Bypass
21	.01	TC-11	TC-11	684-01		TP410	S-6-01	2nd IF Cath. Bypass
22	.01	TC-11	TC-11	684-01		TP410	S-6-01	AVC Filter
23	.01	TC-11	TC-11	684-01		TP410	S-6-01	1st IF Plate Decoupling
24	.01	TC-11	TC-11	684-01		TP410	S-6-01	1st IF Screen Bypass
25	.01	TC-11	TC-11	684-01		TP410	S-6-01	1st IF Cath. Bypass *
26	.01	TC-11	TC-11	684-01		TP410	S-6-01	AVC Filter
27	.01	TC-11	TC-11	684-01		TP410	S-6-01	Conv. Plate Decoupling
28	.01	TC-11	TC-11	684-01		TP410	S-6-01	Conv. Cath. Bypass
29	.01	TC-11	TC-11	684-01		TP410	S-6-01	Conv. Screen Bypass
30	.01	TC-11	TC-11	684-01		TP410	S-6-01	RF Plate Decoupling
31	.01	TC-11	TC-11	684-01		TP410	S-6-01	RF Screen Bypass
32	.01	TC-11	TC-11	684-01		TP410	S-6-01	AVC Filter
33	.01	TC-11	TC-11	684-01		TP410	S-6-01	Osc. Bypass
34	.1	TC-11	TC-11	684-01		TP410	S-6-01	RF Cath. Bypass
35	.01	TC-11	TC-11	684-01		TP410	S-6-01	IF Filter *
36	.01	TC-11	TC-11	684-01		TP410	S-6-01	IF Bypass Vol. Cont.
37	.01	TC-11	TC-11	684-01		TP410	S-6-01	IF Bypass Diode
38	250	1FM-325	1FM-325	1468-00025	5W5T25	MC240	MO.5-325	BFO Coupling
39	100	1FM-31	1FM-31	1468-0001	5W5T1	MC235	MO.5-31	"
40	100	1FM-31	1FM-31	1468-0001	5W5T1	MC235	MO.5-31	Fixed Trimmer
41	100	1FM-31	1FM-31	1468-0001	5W5T1	MC235	MO.5-31	Fixed Trimmer
42	50	MS-45	MS-45	1469-00005	5R5Q5	MC225	MOS.5-45	Osc. Grid Capacitor
43	50	MS-45	MS-45	1469-00005	5R5Q5	MC225	MOS.5-45	Fixed Padder
44	100	1FM-31	1FM-31	1468-0001	5W5T1	MC235	MO.5-31	"
45	500							"
46	500							"
47	1300							"
48	1700							"
49	3900							"
127	250	1FM-325	1FM-325	1468-00025	5W5T25	MC240	MO.5-325	Tone Compensation *

*Not used in all models.

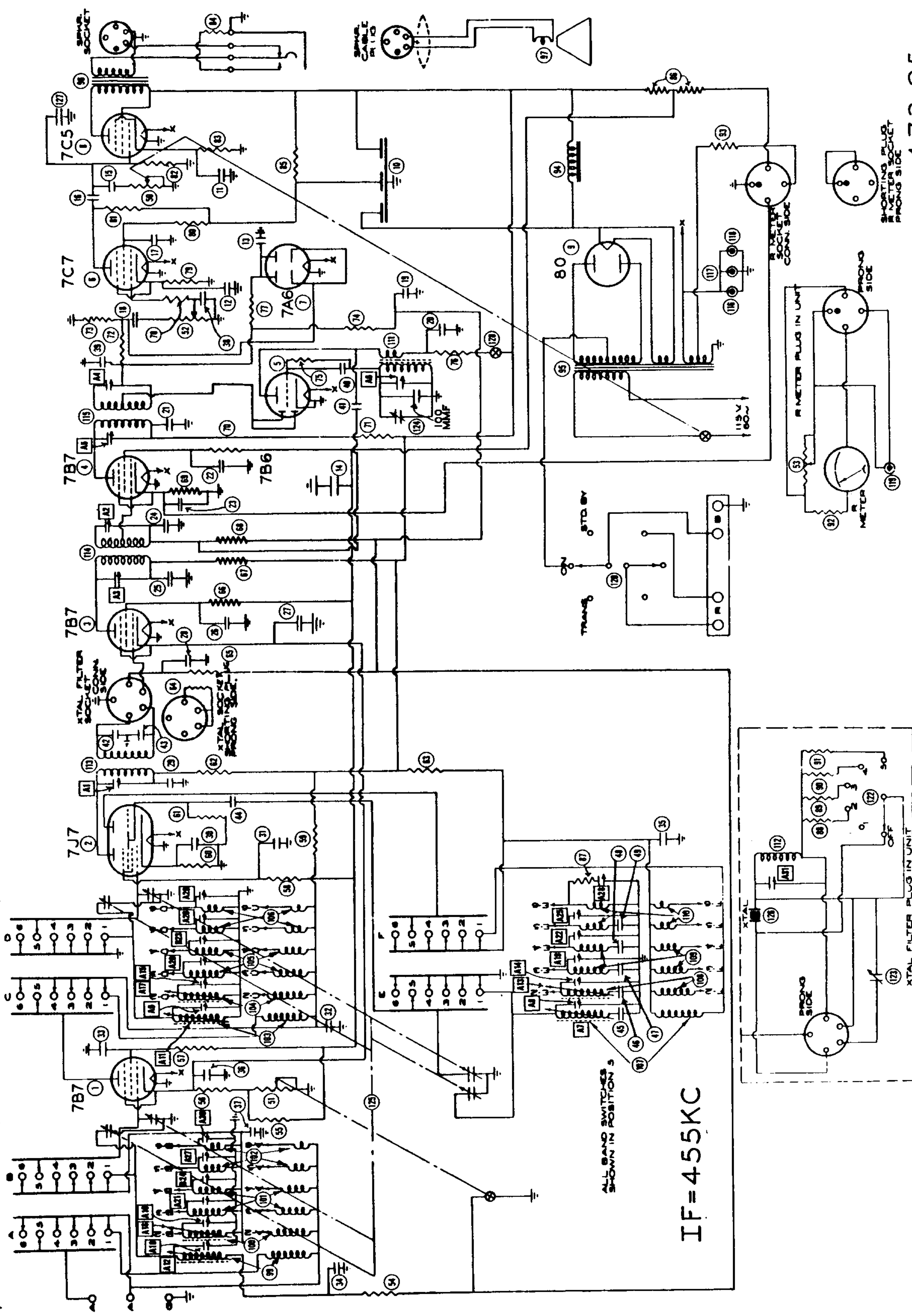
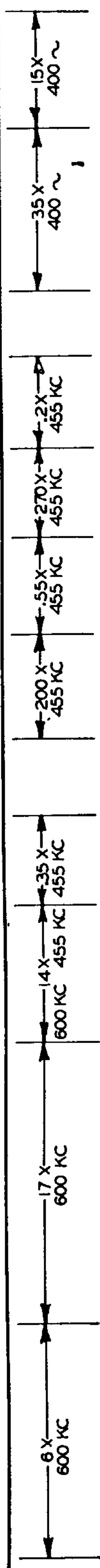
RESISTORS

ITEM No.	RATING	REPLACEMENT DATA			IDENTIFICATION CODES
		RESISTANCE	WATTS	RME PART No.	
54	100KΩ	1/3		BTS-100K	Br.-Blk.-Blue AVC Network
55	50KΩ	1		BTA-47K	Grn.-Blk.-Or. Bleeder
56	150Ω	1/3		BM-2-150	Br.-Grn.-Br. RF Cathode
57	2200Ω	1/3		BTS-2200	Red-Red-Red RF Screen Dropping
58	2000Ω	1/3		BTS-2200	Red-Blk.-Red Mixer Screen Dropping
59	2200Ω	1/3		BTS-2200	Red-Red-Red RF Plate Decoupling
60	300Ω	1/3		BM-2-270	Or.-Blk.-Br. Converter Cathode
61	50KΩ	1/3		BTS-47K	Grn.-Blk.-Or. Oscillator Grid
62	2000Ω	1/3		BTS-2200	Red-Blk.-Red Mixer Plate Decoupling
63	2000Ω	1/3		BTS-2200	Red-Blk.-Red Oscillator Plate Decoupling-See Note 1
64	100KΩ	1/3		BTS-100K	Br.-Blk.-Yl. 1st IF Grid -See Note 2
65	100KΩ	1/3		BTS-100K	Br.-Blk.-Yl. AVC Network
66	2200Ω	1/3		BTS-2200	Red-Red-Red 1st IF Screen Dropping
67	2200Ω	1/3		BTS-2200	Red-Red-Red 1st IF Plate Decoupling
68	100KΩ	1/3		BTS-100K	Br.-Blk.-Yl. AVC Network
69	300Ω	1/3		BM-2-270	Or.-Blk.-Br. 2nd IF Cathode
70	2200Ω	1/3		BTS-2200	Red-Red-Red 2nd IF Screen Dropping
71	2200Ω	1/3		BTS-2200	Red-Red-Red 2nd IF Plate Decoupling
72	50KΩ	1/3		BTS-47K	Grn.-Blk.-Or. Diode Load
73	50KΩ	1/3		BTS-47K	Grn.-Blk.-Or. Diode Load
74	1 Meg.	1/3		BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
75	100KΩ	1/3		BTS-100K	Br.-Blk.-Yl. BFO Grid
76	250KΩ	1/3		BTS-270K	Red-Grn.-Yl. BFO Plate Decoupling
77	250KΩ	1/3		BTS-270K	Red-Grn.-Yl. Noise Limiter Network
78	50KΩ	1/3		BTS-47K	Grn.-Blk.-Or. Tone Compensation
79	1000Ω	1/3		BTS-1000	Br.-Blk.-Red AF Cathode
80	1 Meg.	1/3		BTS-1 Meg.	Br.-Blk.-Grn. AF Screen Dropping
81	100KΩ	1/3		BTS-100K	Br.-Blk.-Yl. AF Plate Load
82	250KΩ	1/3		BTS-270K	Red-Grn.-Yl. Output Grid
83	240Ω	1		BM-1-220	Red-Yl.-Br. Output Cathode
84	35Ω	1/3		BM-1-33	Or.-Grn.-Blk. Headphone Shunt
85	20KΩ	1/3		BTS-22K	Red-Blk.-Or. Decoupling
86A	5500Ω	10		ABA-10,000	Voltage Dropping-See Note 3
B	4500Ω				Bleeder
87	18Ω	1/3		BM-2-18	Br.-Gray-Blk. Parasitic Suppressor-See Note 1
88	250KΩ	1/3		BTS-270K	Red-Grn.-Yl. Crystal Filter Network
89	100KΩ	1/3		BTS-100K	Br.-Blk.-Yl. Crystal Filter Network
90	50KΩ	1/3		BTS-47K	Grn.-Blk.-Or. Crystal Filter Network
91	20KΩ	1/3		BTS-22K	Red-Blk.-Or. Crystal Filter Network
92	1500Ω	1/3		BTS-1500	Br.-Grn.-Red Series "S" Meter
93	18Ω	1/3		BM-2-18	Br.-Gray-Blk. Series Meter Pilot Light-See Note 1

Note 1 - Not used in all models.

Note 2 - Not used in models having crystal filter unit.

Note 3 - On IRC replacement set slider 4500Ω from one end.

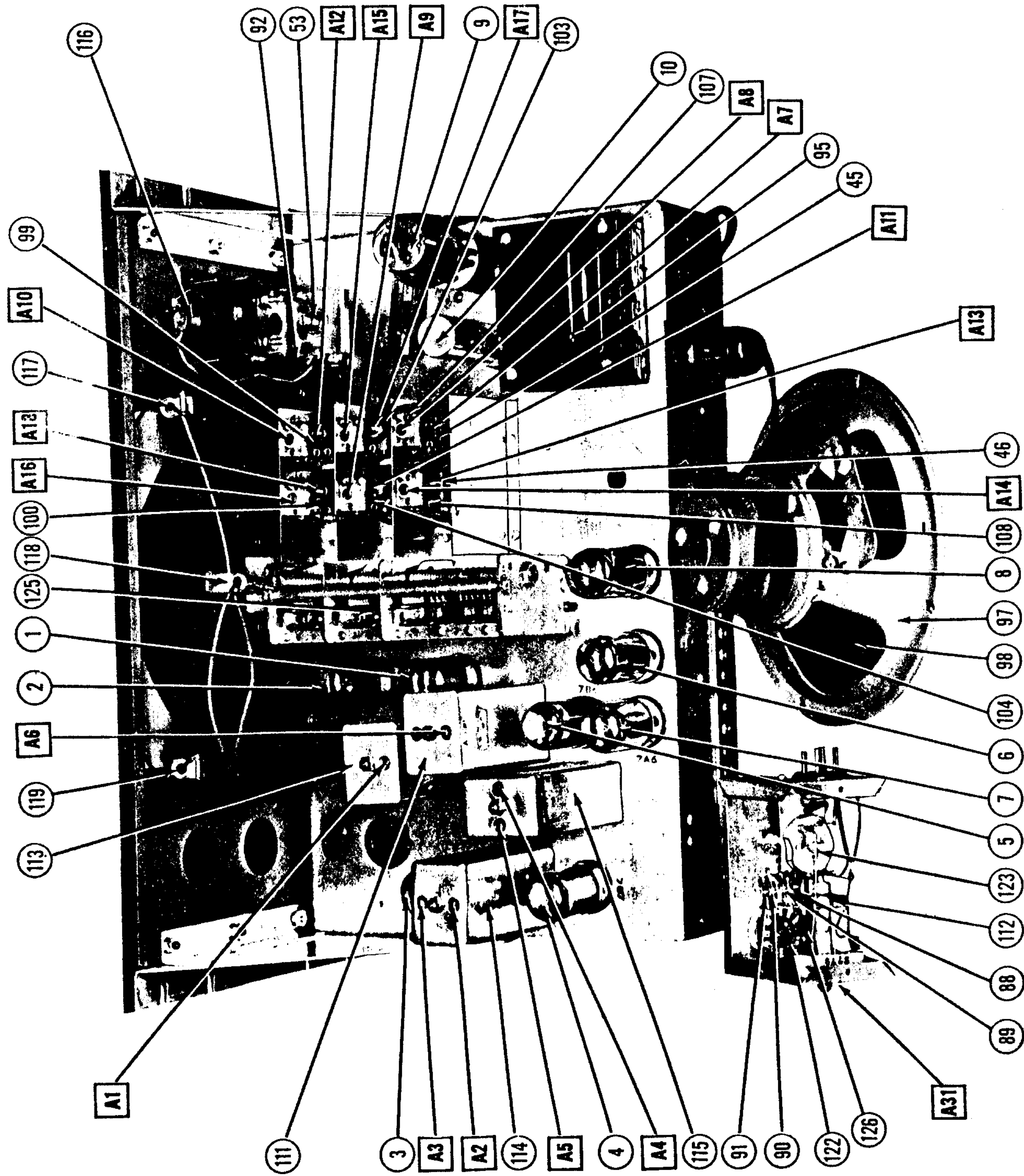


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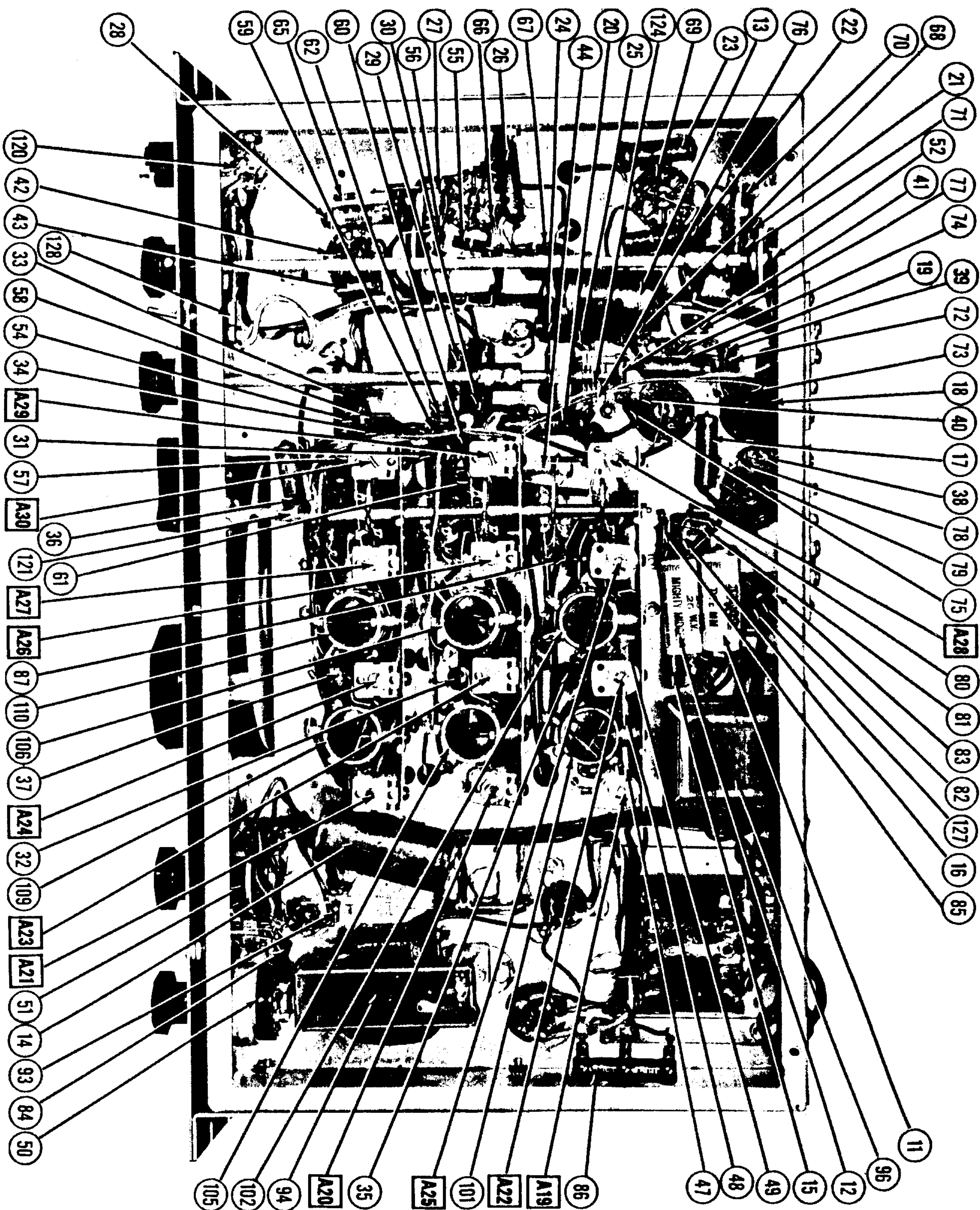
ALL BAND SWITCHES SHOWN IN POSITION 5

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE 473-25

CHASSIS—TOP VIEW



CHASSIS—BOTTOM VIEW



CONTROLS SET AS FOLLOWS:
 LINE-TONE CONTROL MAXIMUM CLOCKWISE
 RF GAIN ON AVC
 BAND SELECTOR AT #1
 BFO OFF EXCEPT FOR 7B6 READINGS
 AUDIO GAIN AT MAXIMUM

VOLTAGE READINGS

ITEM	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8
1	7B7	0V.	290V.DC	115V.DC	3V.DC	0V.	-1V.DC	3V.DC	6.5V.AC
2	7J7	0V.	308V.DC	195V.DC	-3V.DC	115V.DC	0V.	3.1V.DC	6.5V.AC
3	7B7	0V.	290V.DC	115V.DC	3V.DC	0V.	-1V.DC	3V.DC	6.5V.AC
4	7B7	0V.	295V.DC	115V.DC	2.5V.DC	0V.	-1V.DC	2.5V.DC	6.5V.AC
5	7B6	0V.	140V.DC	-4.5V.DC	0V.	-7.5V.DC	-7.5V.DC	0V.	6.5V.AC
6	7C7	0V.	180V.DC	60V.DC	1.5V.DC	0V.	0V.	1.5V.DC	6.5V.AC
7	7A6	0V.	-7.2V.DC	-55V.DC	0V.	0V.	-7.55V.DC	-7.2V.DC	6.5V.AC
8	7C5	0V.	300V.DC	308V.DC	0V.	0V.	0V.	15V.DC	6.5V.AC
9	80	338V.DC	335V.AC	335V.AC	338V.DC				

RESISTANCE READINGS

ITEM	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8
1	7B7	0 Ω	11.5K Ω	6.4K Ω	140 Ω	0 Ω	1MEG.	140 Ω	.2 Ω
2	7J7	0 Ω	11.5K Ω	27K Ω	51K Ω	5.5K Ω	2.8 Ω	250 Ω	.2 Ω
3	7B7	0 Ω	11.5K Ω	6.4K Ω	140 Ω	0 Ω	1MEG.	140 Ω	.2 Ω
4	7B7	0 Ω	11.5K Ω	6.4K Ω	210 Ω	0 Ω	1MEG.	210 Ω	.2 Ω
5	7B6	0 Ω	225K Ω	90K Ω	0 Ω	103K Ω	103K Ω	0 Ω	.2 Ω
6	7C7	0 Ω	103K Ω	850K Ω	900 Ω	0 Ω	280K Ω	900 Ω	.2 Ω
7	7A6	0 Ω	53K Ω	350K Ω	INF.	0 Ω	350K Ω	53K Ω	.2 Ω
8	7C5	0 Ω	9.5K Ω	9.1K Ω	INF.	0 Ω	240K Ω	225 Ω	.2 Ω
9	80	9.5K Ω	103 Ω	95 Ω	9.5K Ω				

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

1. DC VOLTAGE MEASUREMENTS ARE AT 20,000 OHMS PER VOLT; AC VOLTAGES MEASURED AT 1,000 OHMS PER VOLT.
2. SOCKET CONNECTIONS ARE SHOWN AS BOTTOM VIEWS.
3. MEASURED VALUES ARE FROM SOCKET PIN TO COMMON NEGATIVE.
4. LINE VOLTAGE MAINTAINED AT 117 VOLTS FOR VOLTAGE READINGS.
5. NOMINAL TOLERANCE ON COMPONENT VALUES MAKES POSSIBLE A VARIATION OF $\pm 10\%$ IN VOLTAGE AND RESISTANCE READINGS.
6. VOLUME CONTROL AT MAXIMUM, NO SIGNAL APPLIED FOR VOLTAGE MEASUREMENTS.

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS		REPLACEMENT DATA		INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (10 CURRENT 1000V)	THORDARSON PART No.	
94	.116A	220Ω	12 Henr-100	C-1710	‡ Drill one new mounting hole.

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA		INSTALLATION NOTES
	PRI.	SEC. 1	SEC. 2	RME PART No.	THORDARSON PART No.	
95	117V AC @ 1.53A	670V CT @ 1.16A	5.3V AC @ 1.8A 6.5V AC @ 2.2A	P-6013	T22R06	

TRANSFORMER (OUTPUT)

ITEM No.	RATING		REPLACEMENT DATA		INSTALLATION NOTES
	IMPEDANCE	DC RES.	RME PART No.	THORDARSON PART No.	
96	3400Ω 4Ω	170Ω .4Ω	A-3825 ‡	T22S60 ‡	‡ Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS	REPLACEMENT DATA		INSTALLATION NOTES
		RME PART No.	JENSEN PART No.	
97	VC IMP. 4Ω		ST-117 Mod. P8-T	
98	CONE DIA. VC DIA. 7-3/4" 7/8"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT		

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	RME PART No.	MEISSNER PART No.
99	Ant. Coil #1	1.5Ω	3.2Ω		
100	" #2	.5Ω	1.5Ω		
101A	" #3	0Ω	.2Ω		
102A	" #4	0Ω	0Ω		
102A	" #5	0Ω	0Ω		
102A	" #6	0Ω	0Ω		
103	RF Coil #1	1.5Ω	3.5Ω		
104	" #2	.5Ω	1.5Ω		
105A	" #3	.2Ω	.2Ω		
106A	" #4	0Ω	0Ω		
106A	" #5	0Ω	0Ω		
106A	" #6	0Ω	0Ω		
107	Osc. Coil #1	.5Ω	2.3Ω		
108	" #2	.5Ω	1.5Ω		
109A	" #3	0Ω	.2Ω		
109A	" #4	0Ω	.1Ω		
110A	" #5	0Ω	0Ω		
110A	" #6	0Ω	0Ω		
111	BFO	1Ω	3Ω		
112	XTAL Filter				
113	Input IF	3Ω	6Ω		
114	Inter. IF	7.8Ω	3Ω		
115	Output IF	3Ω	7.8Ω		

PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					RME PART No.		
116	Screw	6-8	0.25	Blue			Type 46
117	Bayonet	6-8	0.15	Brown			Type 47
118	Bayonet	6-8	0.15	Brown			Type 47
119	Bayonet	6-8	0.15	Brown			Type 47

MISCELLANEOUS

ITEM No.	PART NAME	RME PART No.	NOTES
120	Switch		Stand-by, 3 Position, 2 Pole
121	Bandswitch		
122	Switch		
123	Var. Capacitor		XTAL Selectivity, 5 Pos., 1 Pole
124	Var. Capacitor		XTAL Phasing
125	4 Gang Var. Cap		
126	Crystal		
128	Switch		BFO, SPST

DISASSEMBLY INSTRUCTIONS

FOR ALIGNMENT ONLY

1. For alignment remove six Phillips head screws from bottom of cabinet and remove bottom plate.

COMPLETE DISASSEMBLY

2. Remove two self-tapping screws from bottom of cabinet.
3. Remove eight machine screws and panel strips from front of cabinet and two Phillips head screws.
4. Slide chassis from cabinet.
5. Remove five hex nuts from bottom of chassis.
6. Remove bottom chassis cover.
7. Remove two nuts and two self-tapping screws from coil shield on top of chassis, remove shield.

REMOVAL OF CRYSTAL COMPARTMENT

8. Remove XTAL knobs from front of chassis. Remove four Phillips head screws from XTAL name plate and remove plate.
9. Remove two self-tapping screws from XTAL compartment on top of chassis. Unplug XTAL compartment from socket on chassis.
10. Remove eight self-tapping screws from shield on XTAL compartment.

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT							
Use "R" meter on receiver for output indication when aligning. B.O. switch, crystal selectivity switch should be off, trans.-std. by-on switch should be on, and RF gain fully clockwise. Output of signal generator no higher than necessary to obtain output reading. Audio gain should be sufficiently clockwise to enable monitoring of signal. Use insulated alignment screw-driver for adjusting.							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to stator of center section of variable. Low side to chassis.	455KC	1	Variable fully closed	See pre-alignment instructions.	A1, A2, A3, A4, A5.	Adjust for maximum reading.
Turn crystal selectivity switch to position 5. Tune signal generator for peak on "R" meter. This will be approximately 455KC. The signal generator is now accurately tuned to the crystal frequency. Turn the crystal selectivity switch to "off" and repeat last step making certain that the setting of the signal generator remains unchanged.							
.1 MFD.	High side to stator of center section of variable. Low side to chassis.	455KC	1	Variable fully closed	See pre-alignment instructions.	A6	Turn B.O. switch on and set pitch control vertical. Adjust A6 for zero beat.
200Ω	High side to antenna terminal. Low side to chassis.	600KC	"	600KC	"	A7	Adjust for maximum reading.
200Ω	"	1400KC	"	1400KC	"	A8	Adjust for maximum reading. Repeat last two steps until no further improvement can be made.
200Ω	"	"	"	"	"	A9, A10	Adjust for maximum reading.
200Ω	"	600KC	"	600KC	"	A11, A12	Adjust for maximum reading. Repeat last two steps until no further improvement can be made.
200Ω	"	1800KC	2	1800KC	"	A13	Adjust for maximum reading.
200Ω	"	2800KC	"	2800KC	"	A14	Adjust for maximum reading. Repeat last two steps until no further improvement can be made.
200Ω	"	"	"	"	"	A15, A16	Adjust for maximum reading.
200Ω	"	1800KC	"	1800KC	"	A17, A18	Adjust for maximum reading. Repeat last two steps until no further improvement can be made.
200Ω	"	5MC	3	5MC	"	A19	Adjust for maximum reading.
200Ω	"	5MC	"	5MC	"	A20, A21	"
200Ω	"	9MC	4	9MC	"	A22	"
200Ω	"	"	"	"	"	A23, A24	"
200Ω	"	16MC	5	16MC	"	A25	"
200Ω	"	"	"	"	"	A26, A27	"
200Ω	"	30MC	6	30MC	"	A28	"
200Ω	"	"	"	"	"	A29, A30	"
Tune in a broadcast station playing music. Turn crystal selectivity switch to position 5 and tune in station accurately. Adjust crystal phasing control for minimum background noise. Turn selectivity control to position "1". Adjust A31 for most natural reproduction of music.							

ANTENNA

The terminals on the rear apron marked "A-A-G" are for the antenna connection. When the receiver leaves the factory there is a jumper between one of the "A" posts and the "G" post. Good results may be obtained by connecting a wire 50 to 75 feet long to the other "A" post. If a 2 wire feeder system is used the jumper is removed and the two feeders are connected to "A" and "A". A ground may be connected to the "G" post if it improves reception.

RELAY AND BREAK-IN TERMINALS

On the rear apron are two sets of contacts marked "R" and "B". The pair marked "B" are in series with the plate supply. This pair must always be shorted when the receiver is being used, either by a relay or by a jumper if a remote control feature is not used. This jumper is in place when the set leaves the factory.

The pair marked "R" are relay control terminals. This pair is shorted when the receiver stand-by switch is turned to "Trans". It may be used to control an external relay in conjunction with a suitable external voltage.