

SPARTON MODEL 10BW76PA

TRADE NAME	Sparton, Model 10BW76PA (Ch. 10-76PA)		
MANUFACTURER	Sparks-Withington Co., Jackson, Michigan.		
TYPE SET	AC Operated FM-AM Automatic Phono-Radio Combination Superheterodyne-Loop Ant.		
TUBES (TEN)	Types, 6SG7 RF Amp., 7Q7 Converter, 6SK7GT IF Amp. (FM-AM), 6SK7GT 2nd IF Amp. (FM), 6E5 Tuning Eye, 6SJ7GT 1st Limiter, 6SJ7GT 2nd Limiter, 6S8GT Det.-AVC-AF (FM-AM), 6V6GT/G Power Output, 5Y3GT Rectifier.		
POWER SUPPLY	110-117 Volts AC	RATING	.900 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1650KC	SHORT WAVE	5.5-18.3MC FM 88-108MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn variable fully closed and set pointer to end of calibration scale at left end of dial. Set volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading.
When aligning FM oscillator and RF sections connect two 150Ω carbon resistors in series with the signal generator output leads and the FM dipole terminals. Use insulated alignment screwdriver for making adjustment.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin 6 (grid) 7Q7. Low side to chassis.	456KC	BC	Tuning cap. open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output
200MMFD.	High side to ext. ant. lead. Low side to chassis.	1500KC	"	1500KC	"	A5	" " " "
200MMFD.	"	"	"	Tune for maximum output.	"	A6,A7.	" " " "
200MMFD.	"	600KC	"	"	"	A8	Rock variable and adjust for maximum output. Repeat last three steps until no further increase in output is obtained.
400Ω	"	15MC	SW	15MC	"	A9	Adjust for maximum output
400Ω	"	"	"	Tune for maximum output.	"	A10,A11	Rock variable and adjust for maximum output.
400Ω	"	6MC	"	"	"	A12	Repeat last three steps until no further increase in output is obtained.

Do not attempt alignment of the FM Band unless a vacuum tube voltmeter is available for use as an output indicator.

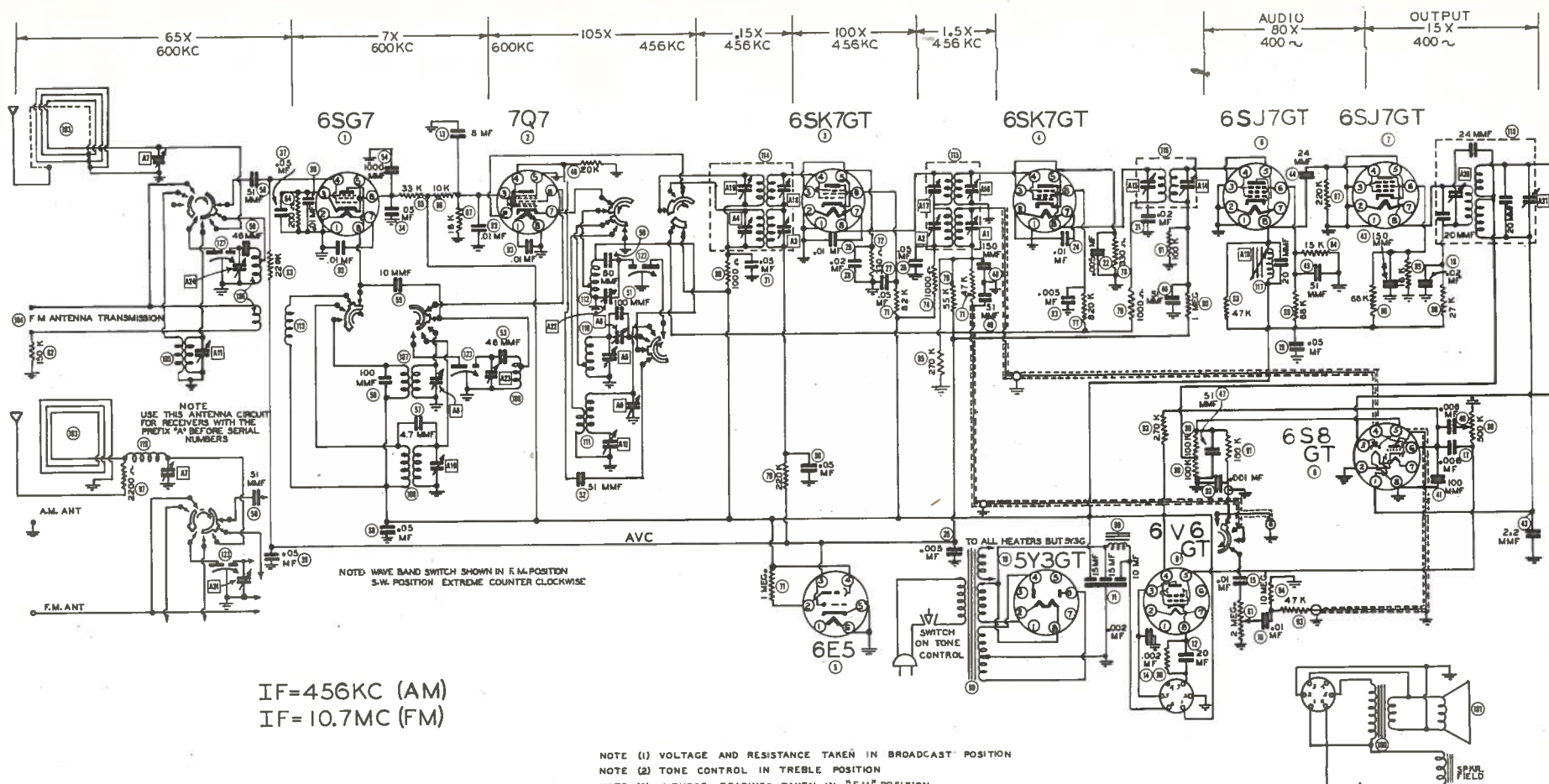
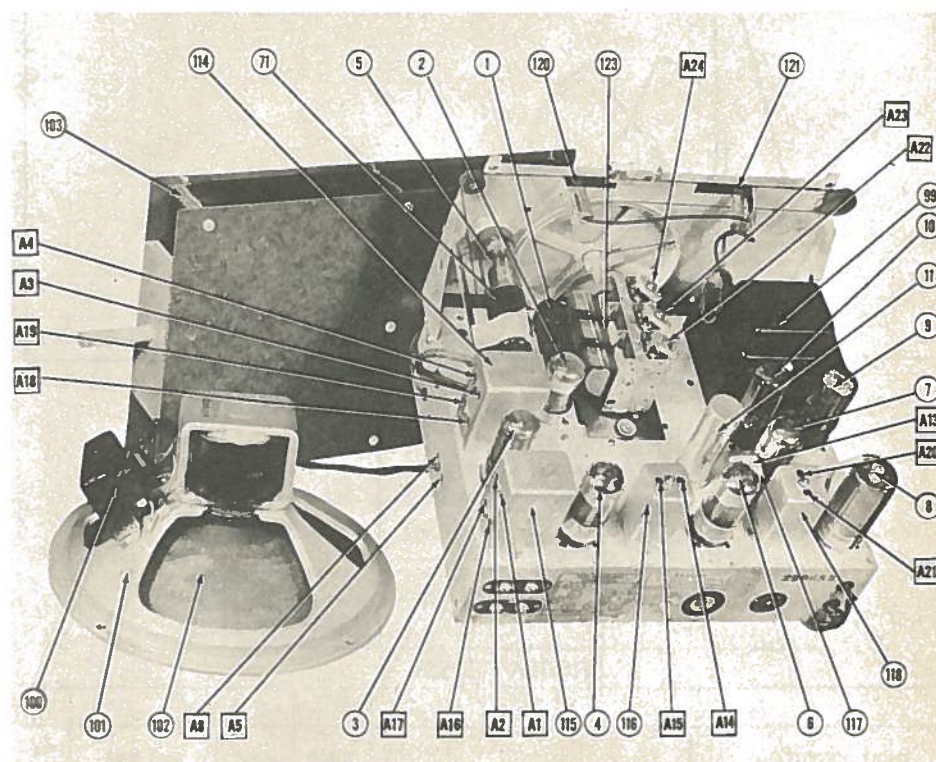
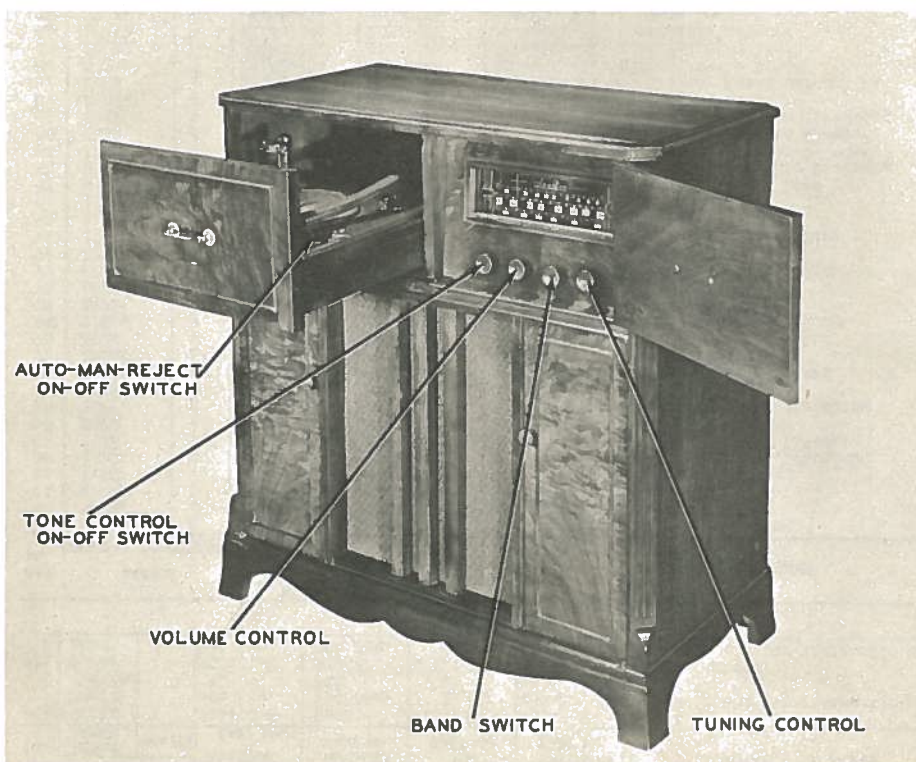
.1 MFD.	High side to pin 6 (grid) of 7Q7. Low side to chassis.	10.7MC (Modulation off.)	FM	300	VTVM connected to pin #4 of 2nd limiter (7) and chassis	A13,A14 A15,A16 A17,A18 A19.	Adjust for maximum output with minimum input from signal generator.
.1 MFD.	High side to pin 4 (grid) of 6SJ7 (6) 1st limiter. Low side to chassis.	"	"	"	VTVM across disc. diode load resistor (90)	A20	Adjust for maximum output
"	"	"	"	"	VTVM connected to pin #5 of 6S8 and chassis.	A21	Adjust for zero output. Swing signal generator 75KC above and 75KC below IF frequency and record both readings. If not equal in magnitude, repeat last two steps and check again. It may be necessary to adjust A20 slightly to get these readings equal. Recheck A21 for zero output. This adjustment is very critical as misadjustment will cause distortion.
300Ω See pre-alignment instructions.	FM dipole terminals.	99.9MC (Mod. off.)	FM	260	VTVM connected across 1st limiter grid filter (81).	A22, A23,A24	Adjust for maximum output in order given.

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SPARTON
MODEL 10BW76PA



IF=456KC (AM)
IF=10.7MC (FM)

VOLTAGE READINGS

ITEM	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	CAP
1	6SG7	0v _a	0v _a	3.2v _a DC	-2v _a DC	170v _a DC	8.3v _a AC	295 v _a DC		
2	7Q7	8.3v _a AC	295 v _a DC	120 v _a DC	-8.5v _a DC	0v _a	0v _a	0v _a		
3	6SK7GT	0v _a	0v _a	3.9v _a DC	-2v _a DC	3.9v _a DC	120 v _a DC	8.3v _a AC	295 v _a DC	
4	6SK7GT	0v _a	0v _a	*3.8v _a DC	0v _a	*3.9v _a DC	*100v _a DC	8.3v _a AC	*280v _a DC	
5	6SJ7GT	0v _a	0v _a	0v _a	*-1v _a DC	0v _a	*4.4v _a DC	8.3v _a AC	*240v _a DC	
6	6SJ7GT	0v _a	0v _a	0v _a	*-1v _a DC	0v _a	*4.4v _a DC	8.3v _a AC	*240v _a DC	
7	6S8GT	-1v _a DC	0v _a	-1v _a DC	-1v _a DC	115 v _a DC	8.3v _a AC	0v _a	-1v _a DC	
8	6V6GT	0v _a	0v _a	280v _a DC	295 v _a DC	0v _a	0v _a	8.3v _a AC	18v _a DC	
10	5Y3GT	0v _a	400 v _a DC	0v _a	370 v _a AC	0v _a	370 v _a AC	380v _a DC	400 v _a DC	

RESISTANCE READINGS

ITEM	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	CAP
1	6SG7	0Ω	0Ω	180 Ω	410 KΩ	46 KΩ	17 KΩ			
2	7Q7	18 KΩ	13 KΩ	18.5 KΩ	0Ω	8 Ω	0Ω			
3	6SK7GT	0Ω	0Ω	300 Ω	410 KΩ	300 Ω	100 KΩ	17 KΩ		
4	6SK7GT	0Ω	0Ω	300 Ω	410 KΩ	300 Ω	*100 KΩ	*18 KΩ		
5	6SJ7GT	0Ω	0Ω	0Ω	88 KΩ	0Ω	*12 KΩ	*17 KΩ		
6	6SJ7GT	0Ω	0Ω	0Ω	210 KΩ	0Ω	*12 KΩ	*44 KΩ		
7	6S8GT	80 KΩ	0Ω	90 KΩ	210 KΩ	100 KΩ	285 KΩ	0Ω	8 MEGΩ	
8	6V6GT	1NΩ	0Ω	17 KΩ	17 KΩ	500 KΩ	500 KΩ	220 Ω		
10	5Y3GT	1NΩ	17 KΩ	1NΩ	44 Ω	1NΩ	50 Ω	17 KΩ	17 KΩ	

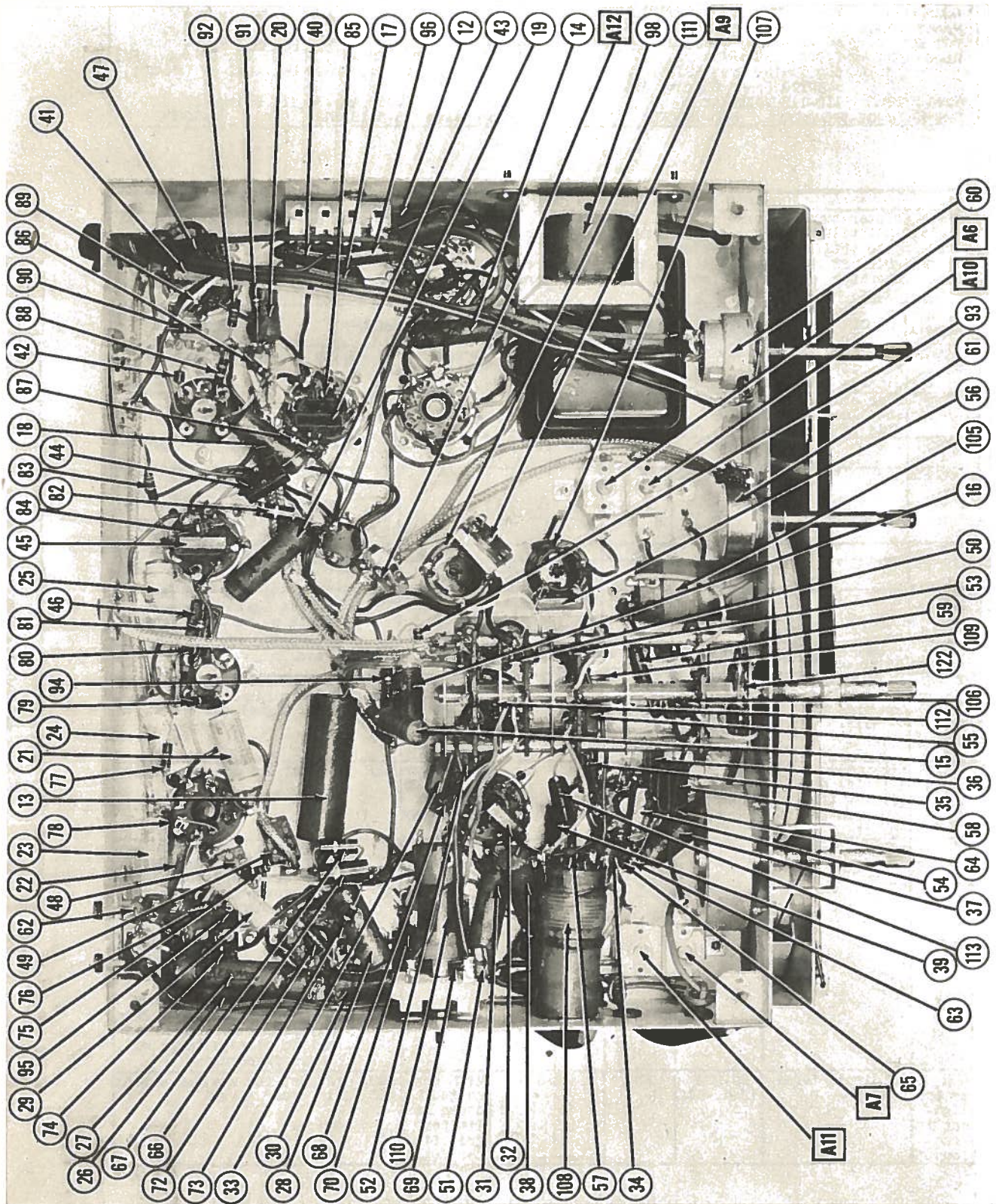
THE COOPERATION OF THE MANUFACTURER OF THIS
RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

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

475-34

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

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 +10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		SPARTON PART No.	STANDARD REPLACEMENT		
1	RF Amp. Converter	6SG7	6SG7	8BK	
3	1st IF Amp. (FM-AM)	7Q7	7Q7	8AL	
4	2nd IF Amp. (FM)	6SK7GT	6SK7GT	8N	
5	Tuning Eye	6SK7GT	6SK7GT	8N	
6	1st Limiter (FM)	6E5	6E5	8R	
7	2nd Limiter (FM)	6SJ7GT	6SJ7GT	8N	
8	Det.-AVC-AF (FM)	6SJ7GT	6SJ7GT	8N	
9	Power Output Rectifier	6SBGT	6SBGT	8CB	
10		6V6GT/G	6V6GT/G	7AC	
		5Y3GT	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
	CAP.	VOLT	SPARTON PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
11A	15	450	PA4300-1	EL-344	AF222J	UP6CJ47	Filter
B	15	450					
C	10	450					
12	20	25	PA4303-2	TA-25	FRS25-20	BR202A	Output Cath. Bypass
13	8	400	PA4303-4	UT-8	FRS450-8	BR845	Conv. Screen Bypass
14	.002	600	PC40QM-202	TC-22	684-002	DT6D2	Output Plate Bypass
15	.01	400	PC40FL-103	TC-11	484-01	DT4S1	Audio Coupling
16	.01	400	PC40FL-103	TC-11	484-01	DT4S1	"
17	.006	600	PC40QM-602	TC-26	684-006	DT6D6	Tone Compensation
18	.02	400	PC40GL-203	TC-12	484-02	DT4S2	2nd Lim. Plate Decoup.
19	.05	400	PC40GL-503	TC-15	484-05	DT4S5	RF Bypass Pwr. Supp.
20	.001	200	PC40GK-102	TC-21	484-001	DT6D1	De-emphasis
21	.02	400	PC40GL-203	TC-12	484-02	DT4S2	2nd IF Plate Decoup.
22	.005	200	PC40FK-502	TC-25	484-005	DT6D5	2nd IF Cath. Bypass
23	.005	400	PC40FL-502	TC-25	484-005	DT6D5	2nd IF Screen Bypass
24	.01	200	PC40FK-103	TC-11	484-01	DT4S1	2nd IF Fil. Bypass
25	.005	200	PC40FK-502	TC-25	484-005	DT6D5	AVC Filter
26	.05	400	PC40GL-503	TC-15	484-05	DT4S5	1st IF Plate Decoup.
27	.05	400	PC40GL-503	TC-15	484-05	DT4S5	1st IF Screen Bypass
28	.02	400	PC40GL-203	TC-12	484-02	DT4S2	1st IF Cath. Bypass
29	.01	200	PC40FK-103	TC-11	484-01	DT4S1	1st IF Fil. Bypass
30	.05	200	PC40FK-503	TC-15	484-05	DT4S5	AVC Filter
31	.05	400	PC40GL-503	TC-15	484-05	DT4S5	Conv. Plate Decoup.
32	.01	200	PA4325-1	TC-11	484-01	DT4S1	Conv. Fil. Bypass
33	.01	400	MC61GL-103	TC-11	484-01	DT4S1	Conv. Screen Bypass
34	.05	400	PC40GL-503	TC-15	484-05	DT4S5	RF Screen Bypass
35	.01	200	PA4325-1	TC-11	484-01	DT4S1	RF Fil. Bypass
36	.01	200	PA4325-1	TC-11	484-01	DT4S1	RF Cath. Bypass
37	.05	200	PC40GK-503	TC-15	484-05	DT4S5	"
38	.05	400	PC40GL-503	TC-15	484-05	DT4S5	RF Bypass Pwr. Supp.
39	.05	200	PC40GK-503	TC-15	484-05	DT4S5	AVC Filter
40	.006	600	PC40QM-602	TC-26	684-006	DT6D6	Tone Compensation
41	100	500	MC60F-101	1FM-31	1468-0001	5W5T1	"
42	2.2		PA4326-1				Balancing Cap. Cer.
43	150	500	MC60F-151	1FM-315	1468-00015	5W5T15	2nd Lim. Screen Bypass
44	24	500	MC60F-240	MS-425	1468-00025	5W5Q25	Limiter Coupling
45	51	500	MC60F-510	1FM-45	1468-00005	5W5Q5	1st Lim. Screen Bypass
46	51	500	MC60F-510	1FM-45	1468-00005	5W5Q5	AVC Filter
47	51	500	MC60F-510	1FM-45	1468-00005	5W5Q5	RF Filter
48	150	500	MC60F-151	1FM-315	1468-00015	5W5T15	Diode Filter
49	51	500	MC60F-510	1FM-45	1468-00005	5W5Q5	"
50	80		PA4328-3				Fixed Padder Cer.
51	100	500	MC60F-101	1FM-31	1468-0001	5W5T15	"
52	51	500	MC62F-510	1FM-45	1468-00005	5W5Q5	Osc. Grid Capacitor
53	46	500	PA4328-2				Fixed Padder
54	1000	500	MC60G-102	1FM-21	1468-001	1W5D1	RF Screen Bypass
55	10	500	MC60F-100	MS-41	1468-00001	5W5Q1	RF Coupling
56	100	500	MC60F-101	1FM-31	1468-0001	5W5T1	Fixed Trimmer
57	4.7		PA4326-2				RF Coupling Cer.
58	51	500	MC60G-510	1FM-45	1468-00005	5W5Q1	"
59	46		PA4328-2				Fixed Padder Cer.

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	SPARTON PART No.	MALLOY PART No.	IRC PART No.	CLAROSTAT PART No.	
60A	500K Ω	1	PA4400-6	MK401	D13-133	AM-60-Z	Tone Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 60A per instructions
C	Switch			M26	41	SW-A	"
61A	2 Meg.	1	PA4401-2	MK403	D13-139	AM-66-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 61A per instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	SPARTON PART No.	IRC PART No.	
62	150K Ω	1/2	BR12S-154	BTS-150K	Br.-Grn.-Yl. FM Antenna Loading
63	220K Ω	1/2	BR12G-224	BTS-220K	Red-Red-Yl. RF Grid
64	220K Ω	1/2	BR12G-201	BW-2-220	Red-Blk.-Br. RF Cathode
65	33K Ω	1/2	BR12S-333	BTS-33K	Or.-Or.-Or. RF Screen Dropping
66	10K Ω	2	DR12S-103	BT-2-10K	Br.-Blk.-Or. Converter Screen Dropping
67	18K Ω	1	CR12S-183	BTA-18K	Br.-Gray-Or. Converter Screen Bleeder
68	20K Ω	1/2	BR12G-203	BTS-20K	Red-Blk.-Or. Oscillator Grid
69	1000 Ω	1/2	BR12S-102	BTS-1000	Br.-Blk.-Red Converter Plate Decoupling
70	220K Ω	1/2	BR12G-224	BTS-220K	Red-Red-Yl. AVC Network
71	1 Meg.	1/2	BR12S-105	BTS-1 Meg.	Br.-Blk.-Grn. Tuning Eye Plate Load
72	330K Ω	1/2	BR12G-331	BW-2-330	Or.-Or.-Br. 1st IF Cathode
73	82K Ω	1/2	BR12S-823	BTS-82K	Gray-Red-Br. 1st IF Screen Dropping
74	1000 Ω	1/2	BR12S-102	BTS-1000	Br.-Blk.-Red 1st IF Plate Decoupling
75	47K Ω	1/2	BR12S-473	BTS-47K	Yl.-Vl.-Or. Diode RF Filter
76	56K Ω	1/2	BR12S-563	BTS-56K	Grn.-Blue-Or. AVC Network
77	82K Ω	1/2	BR12S-823	BTS-82K	Gray-Red-Or. 2nd IF Screen Dropping
78	330K Ω	1/2	BR12G-331	BW-2-330	Or.-Or.-Br. 2nd IF Cathode
79	1000 Ω	1/2	BR12S-102	BTS-1000	Br.-Blk.-Red 2nd IF Plate Decoupling
80	1 Meg.	1/2	BR12S-105	BTS-1 Meg.	Br.-Blk.-Grn. 1st Limiter Grid
81	100K Ω	1/2	BR12S-104	BTS-100K	Br.-Blk.-Yl. 1st Limiter Grid
82	4700 Ω	1	BR12S-473	BTA-4700	Yl.-Vl.-Red 1st Limiter Plate Load
83	68K Ω	1/2	BR12S-683	BTS-68K	Blue-Gray-Or. 1st Limiter Screen Dropping
84	15K Ω	1/2	BR12S-153	BTS-15K	Br.-Grn.-Or. 1st Limiter Screen Bleeder
85	15K Ω	1/2	BR12S-153	BTS-15K	Br.-Grn.-Or. 2nd Limiter Screen Bleeder
86	68K Ω	1/2	BR12S-683	BTS-68K	Blue-Gray-Or. 2nd Limiter Screen Dropping
87	220K Ω	1/2	BR12G-224	BTS-220K	Red-Red-Yl. 2nd Limiter Grid
88	27K Ω	1/2	BR12S-273	BTS-27K	Red-Vl.-Or. 2nd Limiter Plate Decoupling
89	100K Ω	1/2	BR12S-104	BTS-100K	Br.-Blk.-Yl. Discriminator Load
90	100K Ω	1/2	BR12S-104	BTS-100K	Br.-Blk.-Yl. Discriminator Load
91	100K Ω	1/2	BR12S-104	BTS-100K	Br.-Blk.-Yl. Deemphasis Network
92	270K Ω	1/2	BR12S-274	BTS-270K	Red-Vl.-Yl. AF Plate Load
93	47K Ω	1/2	BR12S-473	BTS-47K	Yl.-Vl.-Or. AF Grid
94	10 Meg.	1/2	BR12S-106	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
95	270K Ω	1/2	BR12S-274	BTS-270K	Red-Vl.-Yl. Diode Load
96	240 Ω	2	DR12G-241	BW-2-220	Red-Yl.-Br. Output Cathode
97	2200 Ω	1/2	BR12S-222	BTS-2200	Red-Red-Red Loop Antenna Loading-See Note 1

Note 1 - Used only on models having prefix "A" before serial numbers.

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM NO.	RATINGS			REPLACEMENT DATA			INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE 10 CURRENT 1000 μ	SPARTON PART NO.	STANCOR PART NO.	THORDARSON PART NO.	
98	.122A	130 Ω	5 Henries	AB47000-1		T20C54	

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			INSTALLATION NOTES
	PRI.	SEC. 1	SEC. 2	SEC. 3	SPARTON PART No.	STANCOR PART No.	THORDARSON PART No.	
99	117V AC @ .9A	740V CT @ .122A	5.2V AC @ 1.8A	6.4V AC @ 3.3A	AB44006-1	P-60131	T22R061	Drill new mounting holes.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA			INSTALLATION NOTES
	IMPEDANCE	DC RES.	PRI.	SEC.	SPARTON PART No.	STANCOR PART No.	THORDARSON PART No.	
100	4800 Ω	7 Ω	270 Ω	1.2 Ω	Part of PC36000-11	A-2203	T22S58	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA		INSTALLATION NOTES
	FIELD RES.	VC IMP.	SPARTON PART No.	JENSEN PART No.	
101	700 Ω	7 Ω	PC63000-11		
102	CONE DIA. 9-3/8"	VC DIA. 1"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.		

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	SPARTON PART No.	MEISSNER PART No.	
103A	Loop Ant.	.2 Ω	1.2 Ω	AB43011-3		103B, 105B, 107B, 108B, 110B, 111B and 119 used in receivers with prefix "A" before the serial number.
B	"			AB43011-6		
C	"			AB43011-7		
104	FM Dipole					
105A	SW Ant. Coil	.7 Ω	0 Ω	AA6758-5	14-1044	
B	SW Ant. Coil			AA6758-6		
106A	FM " "		0 Ω	AA6767-3		
B	FM Ant. Sec. Pri.		0 Ω	AA6786-1		
107A	BC RF Coil	64 Ω	7 Ω	AA6756-2	14-1027	
B	"			AA6756-3		
108A	SW " "	7 Ω	0 Ω	AA6760-4	14-1045	
B	"			AA6760-5		
109	FM " "		0 Ω	AA6767-2		
110A	BC Osc. Coil		6.5 Ω	AA6752-2		
B	BC " "			AA6752-5		
111A	SW " "	.4 Ω	0 Ω	AA6770-1	14-1046	
B	SW " "			AA6770-2		
112	FM Osc. Coil		0 Ω	AA6767-1		
113	HF Choke		2 Ω	AA6769-1		
114	Input IF	.3 Ω -1.4 Ω	15 Ω *	AA6803-1		*Includes both secondaries.
115	Inter IF	15.5 Ω *	15 Ω -3 Ω	AA6803-1		*Includes both primaries.
116	Output IF	.3 Ω	.3 Ω	AA6804-1		
117	Limiter Plate					
118	Reactor Coil		1 Ω	AA6785-1		
119	Disc. Coil	1 Ω	.7 Ω -7 Ω	AA6805-1		
	Ant. Loading Coil			AA6780-1		

PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					SPARTON PART No.		
120	Bayonet	6-8	0.25	Blue	PA4100-3		Type 44
121	"	6-8	0.25	"	PA4100-3		"