



VOLTAGE READINGS										VOLTAGE AND RESISTANCE MEASUREMENTS TAKEN IN AC-DC POSITION										RESISTANCE READINGS									
Run	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7		Run	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7											
1	1B8	1.4VDC	80VDC	63VDC	4.3VDC	1.3VDC	0V	2.4VDC		1	10B5	*	12.7K Ω	12.7K Ω	100K Ω	15K Ω	14 Meg.	*											
2	11A	2.8VDC	80VDC	80VDC	0V	2.8VDC	0V	4.4VDC		2	10A	*	12.7K Ω	12.7K Ω	15K Ω	*	100Meg	*											
3	11A	1.4VDC	7.1VDC	18VDC	•	3VDC	0V	•		3	11B	*	11 Meg.	14.7 Meg.	11 Meg.	10K Ω	110 Meg.	*											
4	3Y4	4.4VDC	80VDC	80VDC	0V	•	5.4VDC	•		4	3Y4	*	12.7K Ω	12.7K Ω	10K Ω	*	12.2Meg.	*											

1 TAKEN WITH VACUUM TUBE VOLTMETER

* NO READINGS OBTAINED TO MEASURE FILAMENT RESISTANCE.
* NO READINGS OBTAINED TO MEASURE CATHODE RESISTANCE.
* MEASURED FROM PIN 1 TO V3

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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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.



**VOLUME CONTROL
ON-OFF SWITCH**

TUNING CONTROL

**SPARTON MODELS 150, 151, 152, 155
(ch. 4E10) (BATTERY-LINE OPERATED)**

<p>TRADE NAME Sparton, Models 150, 151, 152, 155 (Ch. 4E10)</p> <p>MANUFACTURER Sparks-Withington Co., Jackson, Michigan</p> <p>TYPE SET Three Power Operated Portable Superheterodyne Receiver with Loop Antenna</p> <p>TUBES (FOUR) Types 1R5 Converter, 1U4 IF Amp., 1U5 DET-AVC-AF, 3V4 Power Output</p> <p>POWER SUPPLY 110-120 Volts AC-DC or 7.5 Volts "A" Supply and 90 Volts "B" Supply</p> <p>RATING .15 Amp. at 117 Volts AC or 50MA at 7.5 Volts DC and 14MA at 90 Volts DC</p> <p>TUNING RANGE—BROADCAST 540-1620KC</p>						
<p align="center">ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT</p> <p>To set dial turn tuning gang fully closed and set the stop line on the dial scale even with the indentation mark on the frame assembly.</p> <p>Use battery power when available. If AC power is used, use an isolation transformer when available. If not, connect a .01MFD capacitor in series with low side of the signal generator and B-.</p> <p>Loop should be maintained in same relative position to chassis as when receiver is in cabinet.</p> <p>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.</p>						
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.01MFD	High side to pin 6 (Grid) of 1R5 (V1). Low side to B-.	456KC (400 μ Mod.)	Tuning gang fully closed	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If AC power is used without an isolation transformer reduce dummy antenna to 200MMF to reduce hum modulation.
	Loop	1500KC	Set 1500KC calibration even with the indentation on the frame assembly	"	A5, A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

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TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		PMA BASE TYPE	INSTALLATION NOTES
		SPARTON PART No.	STANDARD REPLACEMENT		
V1	Converter	IR3	IR5	7AT	
V2	IF Amp.	1U4	1U4	6AR	
V3	DET.-AVC-AF	1U6	1U5	6BW	
V4	Power Output	3V4	3V4	6BX	

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
		SPARTON PART No.	AEROVOX PART No.	
C1A	30	PA4300-11	AF84D	EL-224
B	20			
C	20			
C2	100	PA4308-3	PR515/100	UHC-115
C3	1000		GP1000M	IFM-21
C4	10000	PA4334-2	BPD-10	36C1
C5A	100		GP100M	IFM-31
B	100		GP100M	IFM-31
C6	1000	HG35G-102	GP100M	IFM-21
C7A	1000		GP2000M	IFM-21
B	1000		GP2000M	IFM-21
C	2000		GP2000M	IFM-21
C8	.001	PC40GM-102	P688-001	IFM-25
C9	100000	PA4324-1	BPD-10	IFM-22
C10	.25		P488-25	IFM-22
C11	.1	PC40CK-104	P288-1	IFM-22
C12	.05	PC40HL-503	P488-05	IFM-22

* Items C3A and R3 are combined into one unit obtainable under MFGR'S Part No. PA4330-15.
† Items C5A, C5B and R4 are combined into one unit obtainable under MFGR'S Part No. PA4329-1.
‡ Item C7A, C7B C7C, R7A, R7B and R7C are combined into one unit, obtainable under MFGR'S Part No. PA4333-1.

CONTROLS

ITEM No.	RATING RESIST. RANGE	WATTS	REPLACEMENT DATA		INSTALLATION NOTES
			SPARTON PART No.	CLAROSTAR PART No.	
R1	1 Meg.	1/2	PA4423		Volume control and switch

RESISTORS

ITEM No.	RATING RESISTANCE	WATTS	REPLACEMENT DATA		IDENTIFICATION CODES
			SPARTON PART No.	IRC PART No.	
R2	100KΩ		BR12S-104		Osc. Grid
R3	10 Meg.		BTS-100K		IF Grid
R4	47KΩ		BTS-47K		Diode Filter
R5	3.3 Meg.		BTS-3.3 Meg.		AVC Network
R6	10 Meg.		BTS-10 Meg.		AF Amp. Grid
R7A	4.7 Meg.		BTS-4.7 Meg.		AF Amp. Screen
B	1 Meg.		BTS-1 Meg.		AF Amp. Plate
C	2.2 Meg.		BTS-2.2 Meg.		Output Grid
R8	1200 Ω		BR12G-121		Filament String
R9	1800 Ω		BR12G-181		Filament String
R10	3900 Ω		BR12G-391		Filament String
R11	22000 Ω		BR12G-222		Filament String
R12A	12000 Ω		PA4209		Filament String
B	12000 Ω		AB-1200		Filter-Wire Wound
R13	27000 Ω		BR12S-272		Filament Dropping Wire Wound
R14	HTD		BR12S-470		Filter

* Items C3 and R3 are combined into one unit, obtainable under MFGR'S Part No. PA4330-15.
† Items C5A, C5B and R4 are combined into one unit, obtainable under MFGR'S Part No. PA4329-1.
‡ Items C7A, C7B C7C, R7A, R7B and R7C are combined into one unit, obtainable under MFGR'S Part No. PA4333-1.

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE	DC RES.	REPLACEMENT DATA		INSTALLATION NOTES
			SPARTON PART No.	STANCOR PART No.	
T1	7.5Ω	3.1Ω	3000†	A-3870	A-2932 RO-13

SPEAKER

ITEM No.	RATINGS FIELD CORE DIA.	V. C. IMP.	REPLACEMENT DATA		INSTALLATION NOTES
			SPARTON PART No.	JENSEN PART No.	
SP1	3 7/16"	3.1Ω	PC63000-23	ST-113	QUAM PART No. 4A07
SP2	3 7/16"	9/16"		MOD. P4-X	

R F COILS

ITEM No.	USE	DC RES.	REPLACEMENT DATA		INSTALLATION NOTES
			SPARTON PART No.	MEISSNER PART No.	
L1	Loop Ant.	1.5Ω	PB42202		
L2	Osc. Coil	5Ω	AA6797-4	14-1074	
L3	1st IF	28Ω	PB42201-1	16-6678	
L4	2nd IF	27Ω	PB42201-2	16-6678	

SELENIUM RECTIFIER

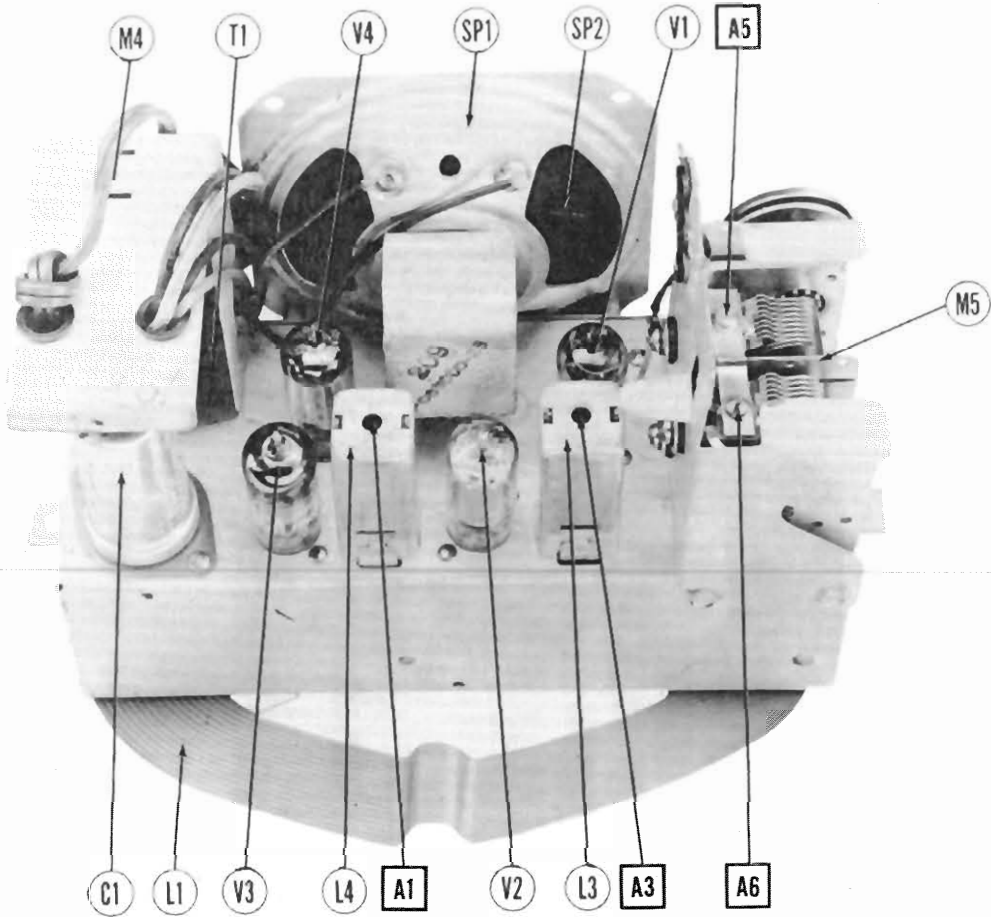
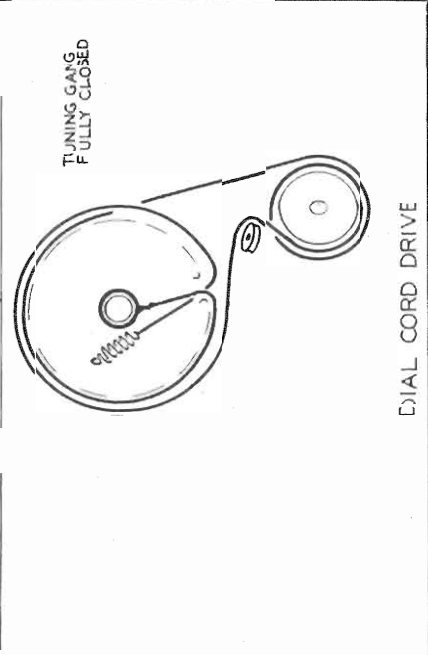
ITEM No.	RATING CURRENT	REPLACEMENT DATA		NOTES
		SPARTON PART No.	SYLVANIA PART No.	
M1	.085ADC	PA4208	NB-3	

BATTERIES

ITEM No.	VOLTAGE	SPARTON PART No.	REPLACEMENT DATA		INSTALLATION NOTES
			EVEREADY "A"	EVEREADY "B"	
M2	7.5V "A"		717	453	
M3	90V "B"				2 used in series

MISCELLANEOUS

ITEM No.	PART NAME	SPARTON PART No.	NOTES
M4	Switch	PB42012	AC/DC-Battery
M5	2 Gang Var. Cap.	PB40413-1	(30-485MMF, 36-217MMF)



CHASSIS—BOTTOM VIEW

