

Set 20

AIRCASTLE
MODELS 5003, 5004, 5005, 5006



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AIRCASTLE MODEL 5003

TRADE NAME	Aircastle, Models 5003, 5004, 5005, 5006		
SUPPLIER	Spiegel, Inc., 1061 W. 35th St., Chicago, Ill.		
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna		
TUBES (FIVE)	Types, 12K7GT RF Amp., 12SA7 Converter, 12SK7GT IF Amp., 12SQ7GT Det.-AVC-AF, 50L6GT Power Output.		
POWER SUPPLY	110-120 Volts AC-DC		
TUNING RANGE—BROADCAST	530-1720KC	RATING	.240 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

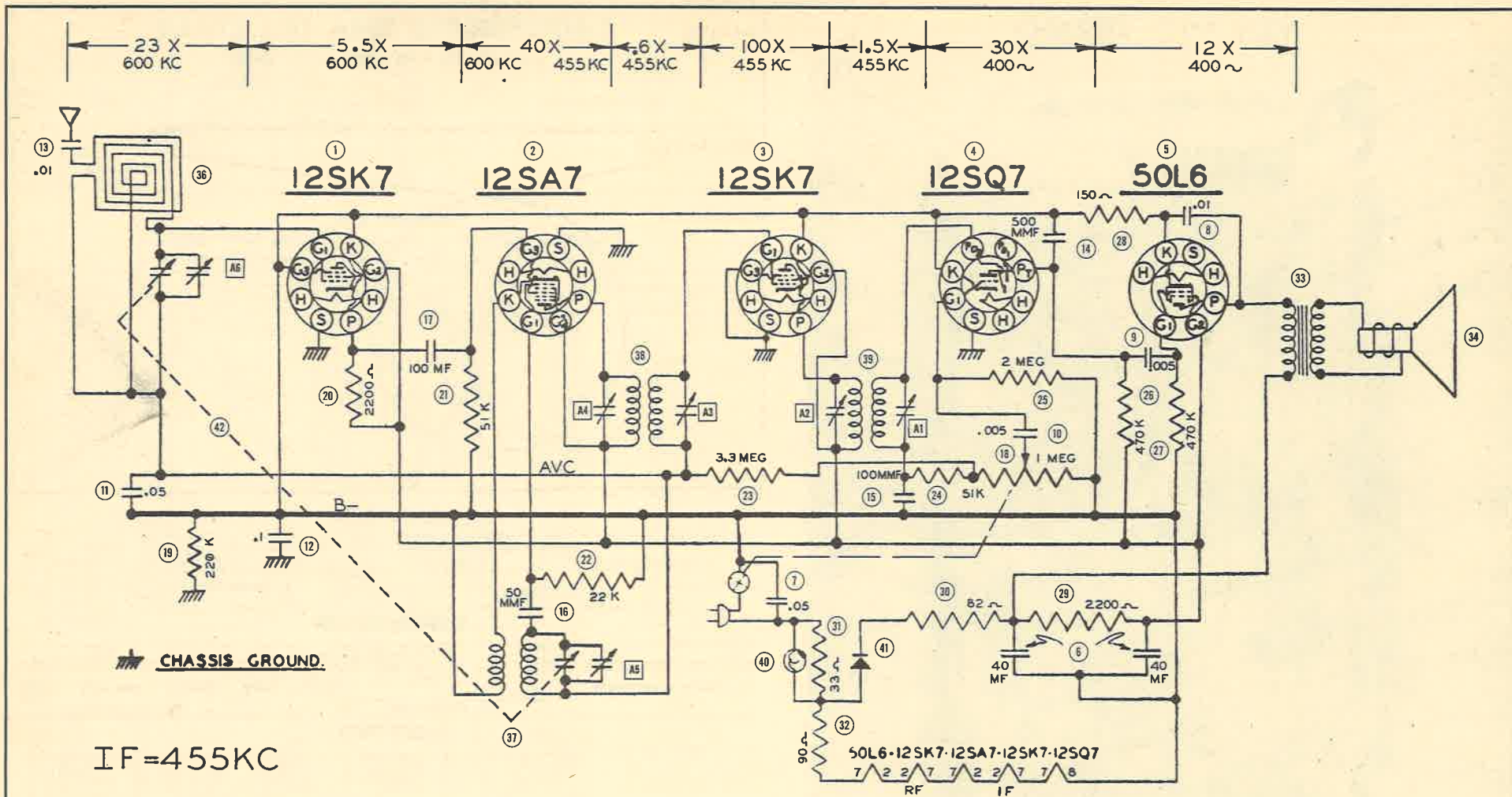
Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to stator of large section of tuning cap. Low side to B-.	455KC	Tuning cap. fully open.	Across voice coil	A1, A2, A3, A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD. to reduce hum modulation.
2	.1 MFD.	"	1720KC	"	"	A5	Adjust for maximum output.
3	200MMFD	High side to ext ant. lug. Low side to B-.	1400KC	Tune for maximum output.	"	A6	" " " "

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VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7 GT	0 V.	48V. AC	0 V.	-1V. DC	0 V.	66V. DC	36V. AC	50V. DC
2	12SA7	0 V.	24V. AC	66V. DC	66V. DC	-4.2VDC	0 V.	36V. AC	-16V. DC
3	12SK7GT	0 V.	24V. AC	0 V.	-15V. DC	0 V.	66V. DC	12V. AC	66V. DC
4	12SQ7 GT	0 V.	-55V. DC	0 V.	-22V. DC	0 V.	28V. DC	12V. AC	0 V.
5	50L6 GT	0 V.	48V. AC	117V. DC	66V. DC	0 V.	0 V.	100V. AC	4.2V. DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7 GT	225K Ω	48 Ω	0 Ω	4.5 MEG.	0 Ω	25K Ω	36 Ω	30K Ω
2	12SA7	225K Ω	24 Ω	25K Ω	25K Ω	22K Ω	.5 Ω	36 Ω	50K Ω
3	12SK7GT	225K Ω	24 Ω	225K Ω	4.5 MEG.	0 Ω	25K Ω	12 Ω	25K Ω
4	12SQ7 GT	225K Ω	1.3MEG.	0 Ω	1 MEG.	1NF.	420K Ω	12 Ω	0 Ω
5	50L6 GT	INF.	48 Ω	25K Ω	25K Ω	440K Ω	INF.	90 Ω	150 Ω

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

4710-1

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

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA		INSTALLATION NOTES
			AIRCASTLE PART No.	JENSEN PART No.	
34	FIELD	VC IMP.	SPK-5	ST-105†	†Drill and tap magnet frame.
	PM	3.1W		Mod. P5-X	
35	CORE DIA.	VC DIA.	NOT READILY REPLACEABLE—USE COMPLETE SPEAKER UNIT.		
	4-3/4"	1/2"			

R F COILS

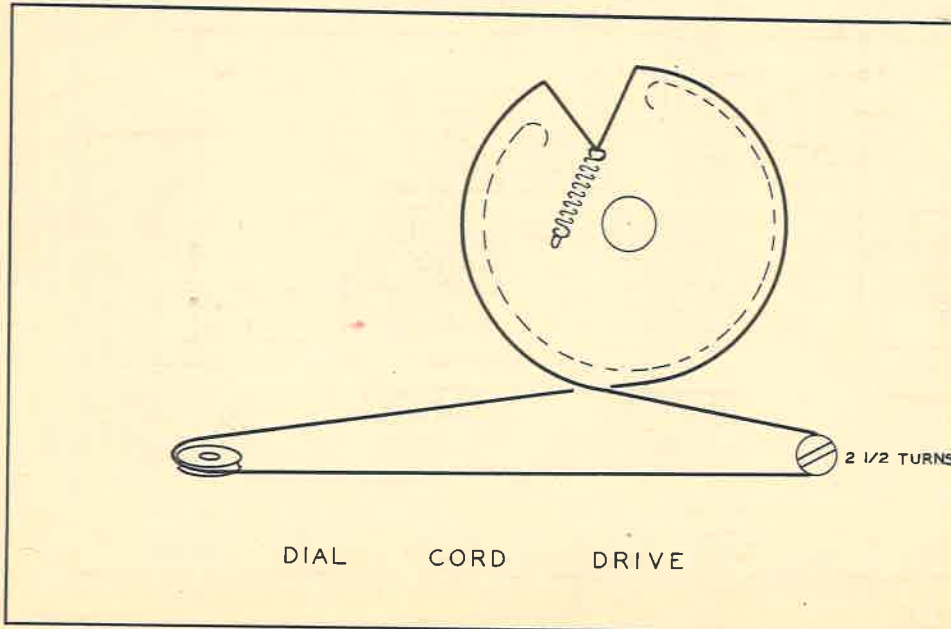
ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	AIRCASTLE	MEISSNER
				PART No.	PART No.
36	Loop Ant.	.1Ω	1.5Ω	LL-1	
37	Osc. Coil	.7Ω	7Ω	LO-9	14-1040
38	Input IF	19Ω	19Ω	LI-1	16-6658
39	Output IF	20Ω	19Ω	LI-2	16-6660

DIAL LIGHT

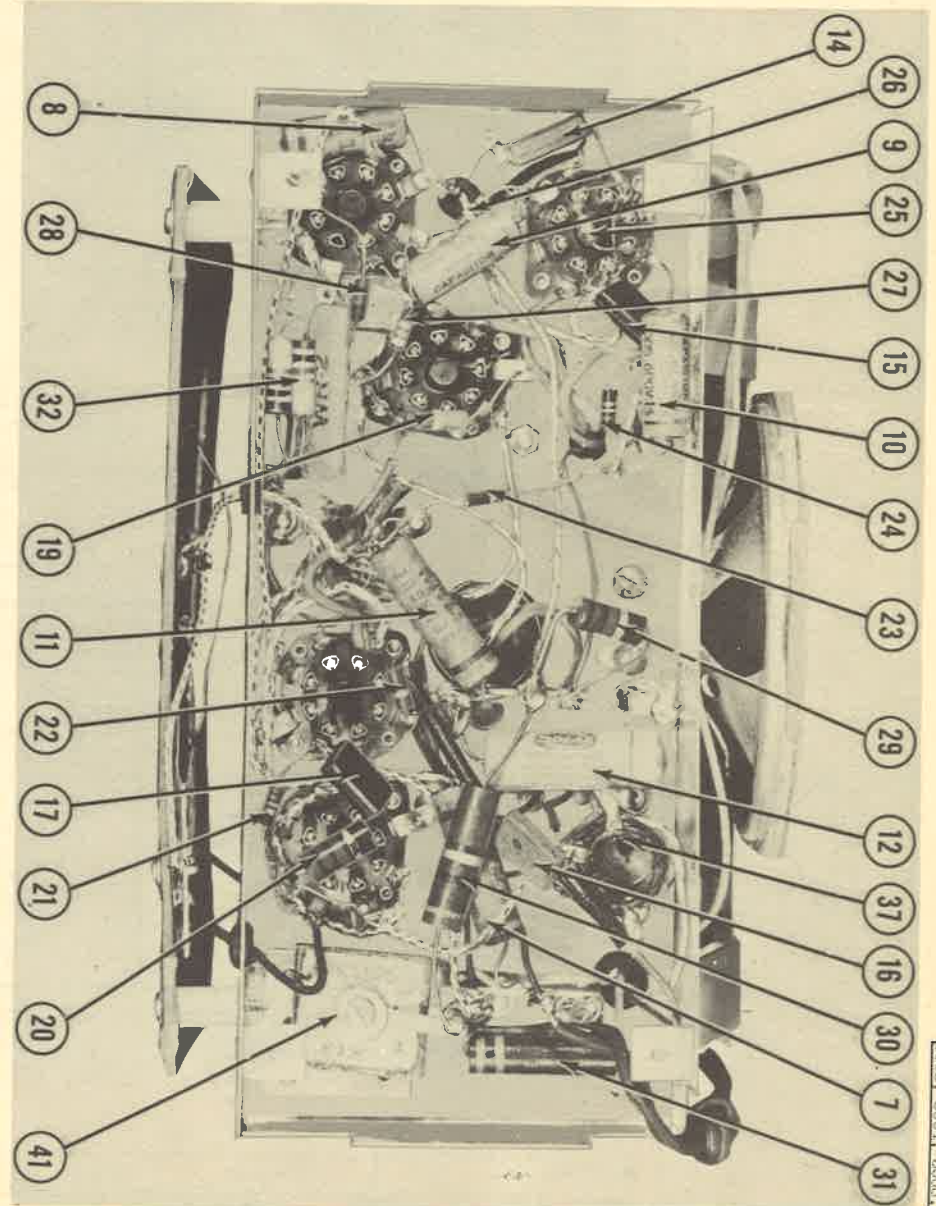
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA	INSTALLATION NOTES
					AIRCASTLE PART No.	
40	Bayonet	6-3	0.15	Brown	FB-1	Type 47

MISCELLANEOUS

ITEM No.	PART NAME	AIRCASTLE PART No.	NOTES
41	Rectifier	SR-1	Selenium
42	2 Gang Var. Cap	GC-2	8-368 MF, 29-194 MF
AS	Trimmer	TC-6	Osc. Trimmer
AS	"	TC-7	Ant. Trimmer



CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

AIRCATTLE MODEL
5003, 5004, 5005, 5006

CHASSIS—TOP VIEW

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		AIRCATTLE PART No.	STANDARD REPLACEMENT		
1	RF Amp.	12SK7GT	12SK7GT	8N	
2	Converter	12SA7	12SA7	8R	
3	IF Amp.	12SK7GT	12SK7GT	8N	
4	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
5	Power Output	50L6GT	50L6GT	7AC	

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	AIRCATTLE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.		SPRAGUE PART No.
6A	40	150	EC-10	PRSA150-40-	BRD4415	2N511	M-2x40-150	TA-440	Filter - Red
B	40	150			40				
7	.05	400	PC-5	484-05	DT4S5	TP426	S-4-05	TC-15	Line Filter
8	.01	400	PC-7	484-01	DT4S1	TP421	S-4-01	TC-11	Output Plate Bypass
9	.005	400	PC-10	484-005	DT6D5	TP408	S-6-005	TC-25	Audio Coupling
10	.005	400	PC-10	484-005	DT6D5	TP408	S-6-005	TC-25	
11	.05	400	PC-5	484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
12	.1	400	PC-8	484-.1	DT4P1	TP428	S-4-1	TC-1	Line Isolation
13	.01	400	PC-7	484-01	DT4S1	TP421	S-4-01	TC-11	Ext. Ant. Coupling
14	500	500	MC-5	1468-0005	5W5T5	MC245	MO.5-35	1FM-35	Audio Plate Bypass
15	100	500	MC-2	1468-0001	5W5T1	MC235	MO.5-31	1FM-31	Diode Filter
16	50	500	MC-4	1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	Osc. Grid Capacitor
17	100	500	MC-2	1468-0001	5W5T1	MC235	MO.5-31	1FM-31	RF Coupling

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	AIRCATTLE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
18A	1 Meg.	1		MA402	D13-137	AM-65-Z	Volume Control
B	Shaft			Not Req.	E	KSS-3	
C	Switch			M26	41	SW-A	Attach to 18A per instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	AIRCATTLE PART No.	IRC PART No.	
19	220K Ω	1/2	1R-20	BTS-220K	Red-Red-Y1. Line Isolation
20	2200 Ω	1/2	1R-22	BT-2-2200	Red-Red-Red RF Plate Load-See Note 1
21	51K Ω	1/2	1R-10	BTS-47K	Grn.-Br.-Or. Converter Grid
22	22K Ω	1/2	1R-9	BTS-22K	Red-Red-Or.-Oscillator Grid
23	3.3 Meg.	1/2	1R-23	BTS-3.3 Meg.	Dr.-Or.-Grn. AVC Network
24	51K Ω	1/2	1R-10	BTS-47K	Grn.-Br.-Or. Diode RF Filter
25	2 Meg.	1/2	1R-13	BTS-2.2 Meg.	Red-Blk.-Grn. AF Grid
26	470K Ω	1/2	1R-11	BTS-470K	Y1.-V1.-Y1. AF Plate Load
27	470K Ω	1/2	1R-11	BTS-470K	Y1.-V1.-Y1. Output Grid
28	150 Ω	1/2	1R-14	BW-1-150	Br.-Grn.-Br. Output Cathode
29	2200 Ω	1/2	1R-25	BTA-2200	Red-Red-Red Filter
30	82 Ω	1/2	1R-35	BW-2-82	Gray-Red-Blk. Surge Limiter
31	33 Ω	1/2		BW-2-33	Dr.-Or.-Blk. Pilot Light Shunt
32	90 Ω	1/2		ABA-100	Line Dropping-See Note 2

Note 1—Some models use 3900 Ω in this application. IRC replacement BT-2-3900.

Note 2—On IRC replacement set slider at 90 Ω from one end.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA			INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRCATTLE PART No.	STANCOR PART No.	THORDAR'N PART No.	
	PRI.	SEC.	PRI.	SEC.				
33	6400 Ω	3.1 Ω	250 Ω	.4 Ω	Part of SPK-5	A-3878*	T22546*	*Bend mounting tabs down, file out slots and mount on original bracket.

