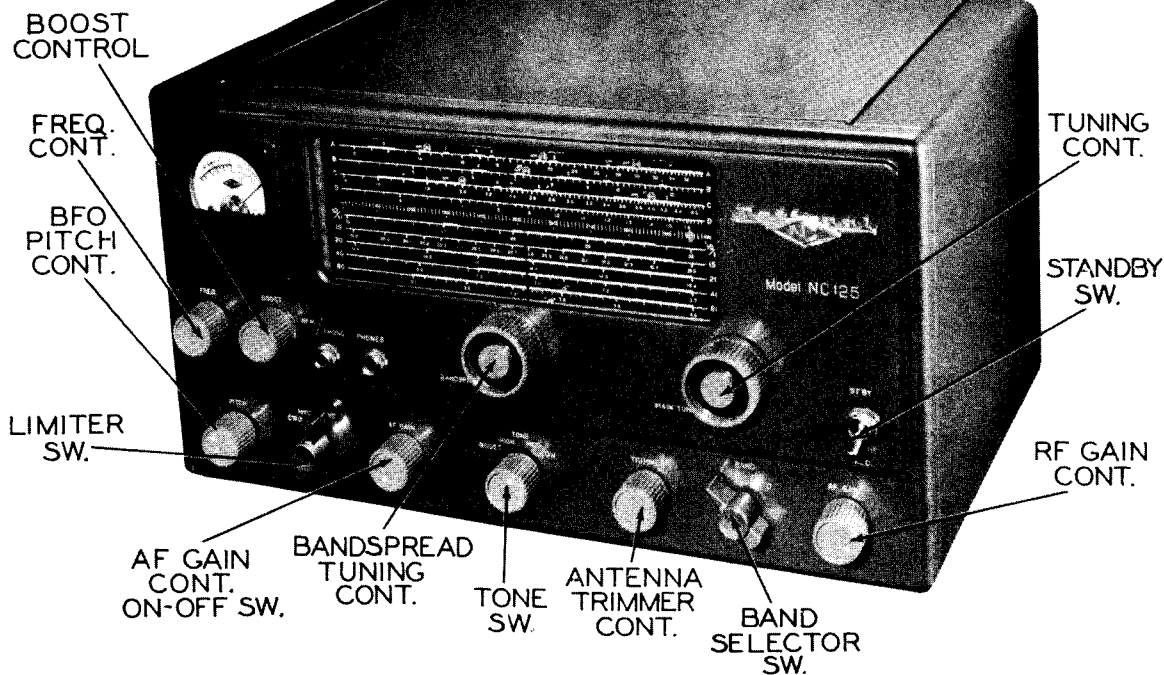




NATIONAL
MODEL NC-125

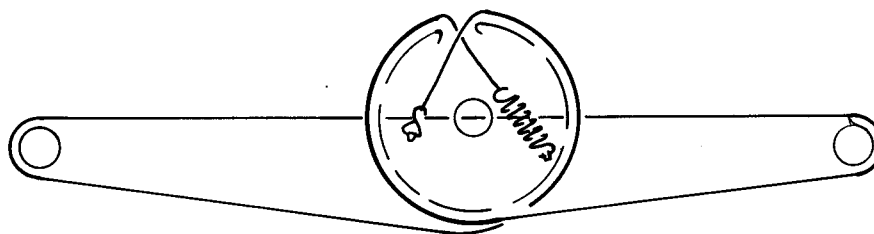


NATIONAL
MODEL NC-125

NATIONAL MODEL NC-125

TRADE NAME	National, Model NC-125
MANUFACTURER	National Co., Inc., Malden, Mass.
TYPE SET	AC Operated Multi-Band Communications Type Superheterodyne Receiver
TUBES (ELEVEN)	Types 6SG7 RF Amp., 6SB7-Y Converter, 6SG7 1st IF Amp., 6SG7 2nd IF Amp., 6H6 Det.-AVC-Noise Limiter, 6SL7GT Phase Inverter, 6SL7GT 1st AF Amp., 6SL7GT 2nd AF-CW Osc., 6V6GT Power Output, 0D3/VR-150 Voltage Regulator, 5Y3GT Rectifier
POWER SUPPLY	110-120 Volts AC
TUNING RANGE	Band A-12-35MC, Band B-4.4-12MC, Band C - 1.55-4.4MC, Band D -.56-1.55MC
RATING	.79 Amp. @ 117 Volts AC

TUNING GANG FULLY CLOSED



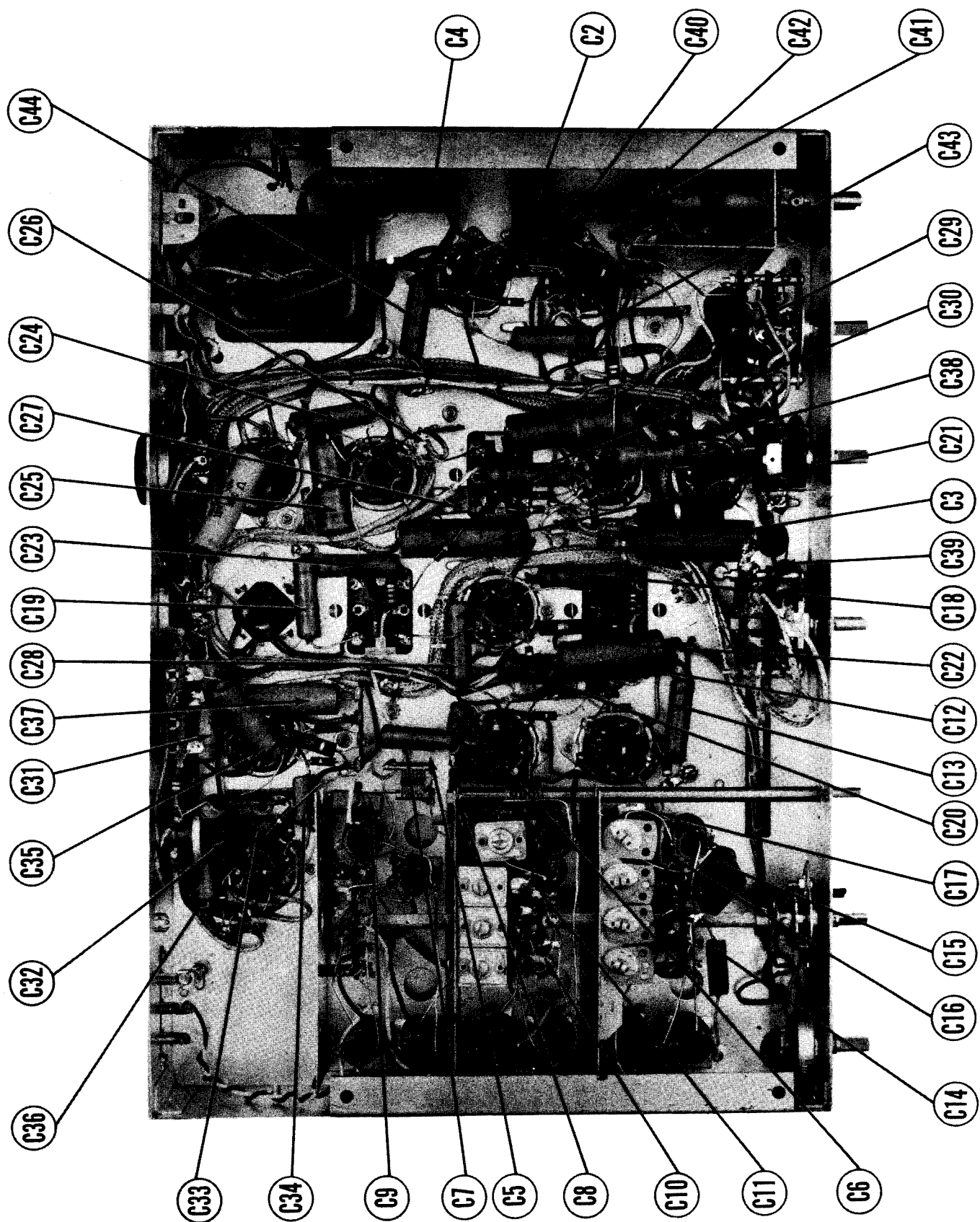
DIAL CORD DRIVE

MAIN TUNING -- FOR BANDSPREAD SEE PAGE SIX.

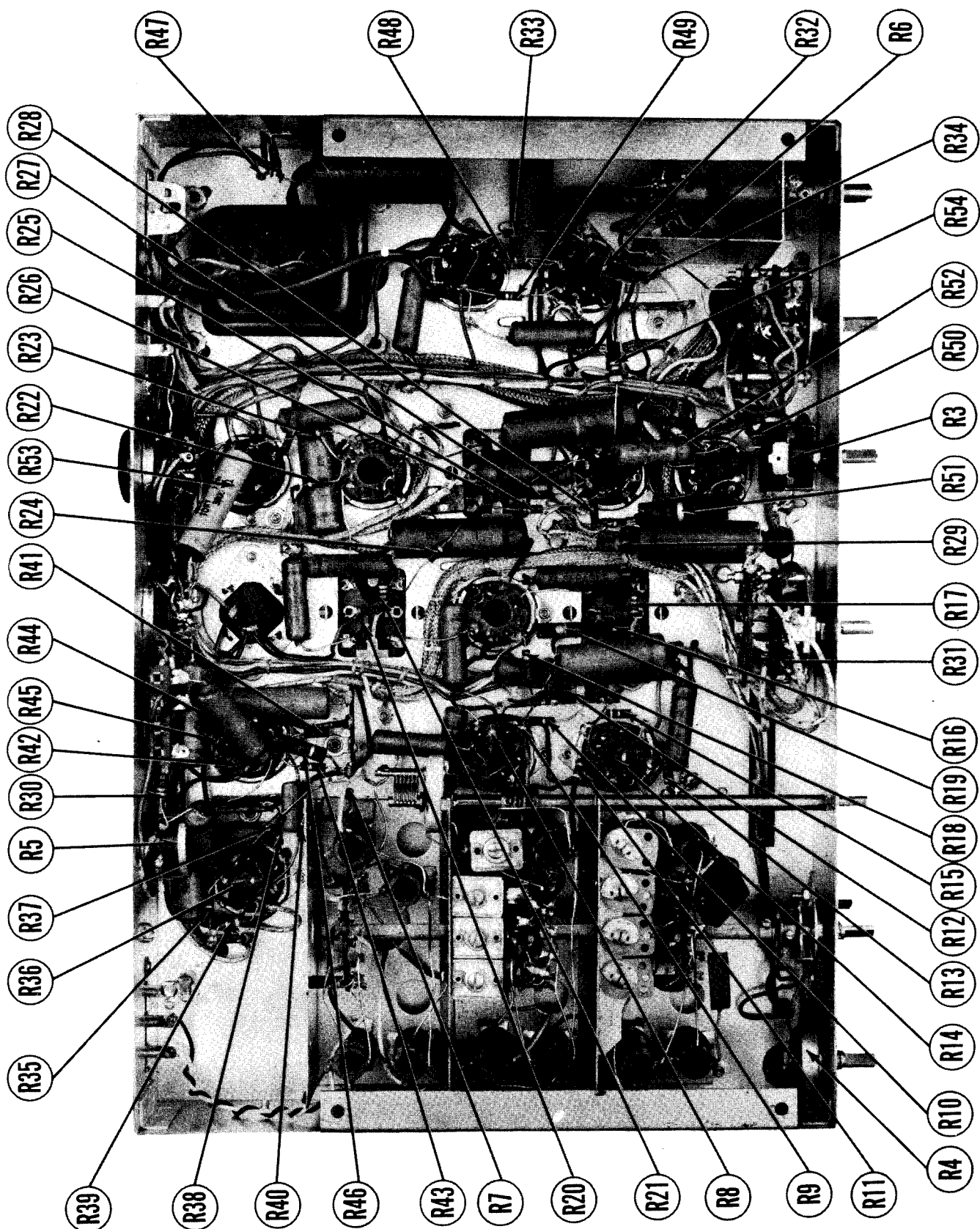
HOWARD W. SAMS & CO., INC. • Indianapolis 1, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial con-

tent, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1951 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

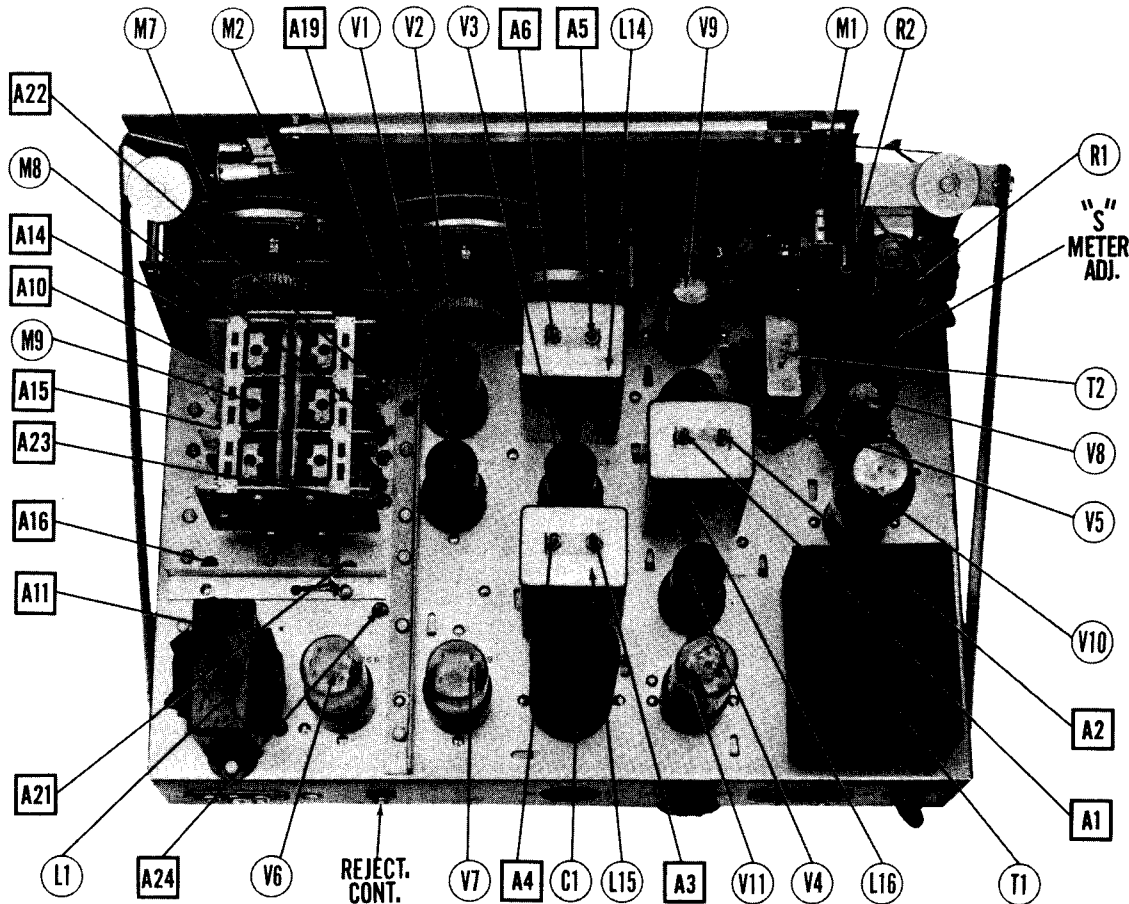


**NATIONAL
MODEL NC-125**



PARTS LIST AND DESCRIPTIONS TUBES (SYLVANIA or Equivalent)

CHASSIS—TOP VIEW



ITEM No.	USE	REPLACEMENT DATA		NOTES
		NATIONAL PART No.	STANDARD REPLACEMENT	
V1	RF Amplifier	6SG7	6SG7	
V2	Converter	6SB7	6SB7	
V3	1st. IF Amplifier	6SG7	6SG7	
V4	2nd. IF Amplifier	6SG7	6SG7	
V5	Detector-AVC-	6H6	6H6	
V6	Noise Limiter	6SL7GT	6SL7GT	
V7	Phase Inverter	6SL7GT	6SL7GT	
V8	2nd. AF Amplifier	6SL7GT	6SL7GT	
V9	-CW Oscillator	6V6GT	6V6GT	
V10	Audio Output	OD3/VR150	OD3/VR150	
V11	Voltage Regulator	5Y3GT	5Y3GT	

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
			NATIONAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNEILL DUBILIER PART No.	
C1A	40	450	K945-1	AF88J		UP4445	Filter
C2	10	450	E338-9	PR550/10		BR-105	AF Amp. Cathode
C3	25	50	E338-4	PR550/25		BR255A	Audio Output Cathode
C4	20	450	E338-3	PR5450/20		BR245A	Decoupling
C5	100		7665-32	S100		SW571	RF Coupling
C6	.01	400	D827-5	P488-01	D6-101	PTE4S1	RF Amp. Screen
C7	.01	400	D827-5	P488-01	D6-103	PTE4S1	RF Amp. Cathode
C8	1000	500	7665-71	I468-001	D6-102	1W5D1	RF Amp ¹ Plate
C9	10000	500		I467-01	D6-103	ID3S1	AVC Filter
C10	15		D82SD-405	S15NP0	TCZ-15		RF Coupling A Band
C11	5		D82SD-401	P488-01	D6-103	PTE4S1	RF Coupling B Band
C12	.01	400	D827-5	P488-01	D6-103	PTE4S1	Conv. Plate Dec.
C13	.01	400	D827-5	P488-01	D6-103	PTE4S1	Osc. Plate Dec.
C14	4300	500	7666-37				Fixed Padder
C15	1300	500	7666-18				Fixed Padder
C16	510	500	H500-5				Fixed Padder
C17	100	500	7665-32	I468-0001	D6-101	5W571	Osc. Grid Cap.
C18	.01	400	D827-5	P488-01	D6-103	PTE4S1	AVC Filter
C19	.01	400	D827-5	P488-01	D6-103	PTE4S1	1st. IF Plate Dec.
C20	.01	400	D827-5	P488-01	D6-103	PTE4S1	1st. IF Screen
C21	.1	600	D827-12	P488-1	DF-104	PTE4P1	1st. IF Cathode
C22	.1	600	D827-12	P488-1	DF-104	PTE4P1	Decoupling
C23	.01	400	D827-5	P488-01	D6-103	PTE4S1	AVC Filter
C24	.01	400	D827-5	P488-01	D6-103	PTE4S1	2nd. IF Screen
C25	.1	400	D827-12	P488-1	DF-104	PTE4P1	2nd. IF Cathode
C26	10	500	D82SD-402	SI0NT50	TCN-10		IF Coupling
C27	100	500	7665-32	I468-0001	D6-101	5W571	RF Bypass
C28	.01	400	D827-5	P488-01	D6-103	PTE4S1	AVC Filter
C29	.1	600	D827-12	P488-1	DF-104	PTE4P1	RF Bypass
C30	.01	400	D827-5	P488-01	D6-103	PTE4S1	Audio Coupling
C31	.05	400	D827-1	P488-05	DF-503	PTE4S5	Audio Coupling
C32	.05	400	D827-1	P488-05	DF-503	PTE4S5	Audio Coupling
C33	1000	500	7666-14	I468-001	D6-102	1W5D1	Audio Coupling
C34	1000	500	7666-14	I468-001	D6-102	1W5D1	Audio Coupling
C35	.05	400	D827-1	P488-05	DF-503	PTE4S5	Audio Coupling
C36	.05	400	D827-1	P488-05	DF-503	PTE4S5	Audio Coupling
C37	.05	400	D827-1	P488-05	DF-503	PTE4S5	Audio Coupling
C38	.001	800	D827-32	P688-001	D6-203	PTE6S1	Tone Comp.
C39	.02	800	D827-44	P688-02	D6-203	PTE6S2	CW Osc. Grid
C40	270	500	7665-47	SI270	D6-271	SR5725	CW Osc. Feedback
C41	.01	400	D827-5	P488-01	D6-103	PTE4S1	Fixed Trimmer
C42	220	500	H500-21	SI220	D6-221	SR572	Decoupling
C43	.01	400	D827-5	P488-01	D6-103	PTE4S1	Line Filter
C44	.01	400	D827-5	P688-01	D6-103	PTE6S1	Line Filter

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING			REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS		NATIONAL PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	2.5M Ω	2.5W		M879-2			Frequency Control - Dual
R1B	500K Ω	500W					
R2A	500K Ω	500W					Boost Control
R2B	500K Ω	500W					
R3A	300K Ω	300W					AF Gain Control
R3B	300K Ω	300W					
R4	10K Ω	10W					RF Gain Control - Wire Wound
R5A	500K Ω	500W					
R6	100K Ω	100W					Meter Adjustment Control - Wire Wound

ρ Fashion shaft to duplicate original.

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA		
	PRI.	SEC. 1	SEC. 2	NATIONAL PART No.	STANCOR PART No.	MERIT PART No.
T1	117 VAC	600VAC	5VAC	K316-2		P-2852
	79A	112ADC	2A			

ϕ Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING			REPLACEMENT DATA			INSTALLATION NOTES
	IMPEDANCE	DC RES.		NATIONAL PART No.	STANCOR PART No.	MERIT PART No.	
T2	5.5K Ω	3.2 Ω	610 Ω	K313-1	A-3849	A-3019	ϕ Drill one new mounting hole.

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	NATIONAL PART No.	IRC PART No.	
R7	1M Ω	1W	J569-61	BTS-1M Ω	AVC Network
R8	150K Ω	1W	J569-51	BTS-150K	RF Amp. Grid
R9	220 Ω	2W	J569-17	BTS-220	RF Amp. Cathode
R10	100K Ω	1W	J569-25	BTS-100K	RF Amp. Screen
R11	4700 Ω	1W	J569-33	BTS-4700	RF Amp. Plate Decoupling
R12	150K Ω	1W	J571-51	BTA-150K	Voltage Divider
R13	33 Ω	3W	J569-7	BTS-33 Ω	Parasitic Suppressor
R14	22K Ω	2W	J569-41	BTS-22K	Osc. Grid
R15	3900 Ω	3W	J569-32	BTS-3900	Osc. Anode
R16	100K Ω	1W	J569-25	BTS-100K	Conv. Plate Decoupling
R17	470K Ω	1W	J569-57	BTS-470K	AVC Network
R18	120K Ω	1W	J571-51	BTA-120K	1st. IF Amp. Cathode - See Note
R19	150K Ω	1W	J569-25	BTS-150K	1st. IF Amp. Screen
R20	100K Ω	1W	J569-57	BTS-100K	1st. IF Amp. Plate Decoupling
R21	470K Ω	1W	J569-33	BTS-470K	AVC Network
R22	220 Ω	2W	J569-17	BTS-220	2nd. IF Amp. Cathode
R23	2200 Ω	2W	J569-29	BTS-2200	2nd. IF Amp. Screen
R24	2.2M Ω	2W	J569-65	BTS-2.2M Ω	AVC Network
R25	100K Ω	1W	J569-49	BTS-100K	AVC Network
R26	1M Ω	1W	J569-61	BTS-1M Ω	Noise Limiter Network
R27	1M Ω	1W	J569-61	BTS-1M Ω	Noise Limiter Network
R28	33K Ω	3W	J569-52	BTS-33K	Noise Limiter Load
R29	180K Ω	1W	J569-52	BTS-180K	Noise Limiter Load
R30	330K Ω	1W	J569-55	BTS-330K	Tone Compensation
R31	33K Ω	3W	J569-43	BTS-33K	CW Osc. Grid
R32	22K Ω	2W	J569-41	BTS-22K	CW Osc. Plate
R33	10K Ω	1W	J569-37	BTS-10K	Series "S" Meter
R34	330 Ω	3W	J569-19	BTS-330	Phase Inv. Grid
R35	1M Ω	1W	J569-61	BTS-1M Ω	Phase Inv. Cathode
R36	1800 Ω	1W		BTS-1800	Phase Inv. Plate
R37	1800 Ω	1W		BTS-1800	Phase Inv. Grid
R38	10K Ω	1W		BTS-10K	Phase Inv. Cathode
R39	3900 Ω	3W		BTS-3900	Phase Inv. Plate
R40	3900 Ω	3W		BTS-3900	1st. AF Amp. Grid
R41	10K Ω	1W		BTS-10K	1st. AF Amp. Cathode
R42	5600 Ω	5W		BTS-5600	1st. AF Amp. Plate
R43	22K Ω	2W		BTS-22K	1st. AF Amp. Cathode
R44	1800 Ω	1W		BTS-1800	1st. AF Amp. Cathode
R45	3900 Ω	3W		BTS-3900	1st. AF Amp. Plate
R46	22K Ω	2W		BTS-22K	Decoupling
R47	22K Ω	2W		BTS-22K	2nd. AF Amp. Cathode
R48	2700 Ω	2W		BTS-2700	2nd. AF Amp. Plate
R49	100K Ω	1W		BTS-100K	Output Grid
R50	470K Ω	1W		BTS-470K	Output Transformer Shunt
R51	330 Ω	3W		BTS-330	Filter - Wire Wound
R52	47K Ω	4W		BTS-47K	Diode Filament - Wire Wound
R53	3900 Ω	3W		BTS-3900	
R54	4.3 Ω	4W		BW-4.3	

Note The value of this resistor may vary from 330 Ω to 2200 Ω .

* Must be paired within 2% of each other when replacing.

† Must be paired within 2% of each other when replacing.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA			INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (1000 μ H)	NATIONAL PART No.	STANCOR PART No.	MERIT PART No.	
L1	112A	260 Ω	8 Henries	K317-1	C-2303	C-2895	ϕ Drill one new mounting hole.

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	NATIONAL PART No.	MEISSNER PART No.
L2	Ant. Coil	.1 Ω	.1 Ω	SA-4883	Band "A"
L3	Ant. Coil	.9 Ω	.1 Ω	SA-4887	Band "B"
L4	Ant. Coil	1.2 Ω	1.6 Ω	SA-4665	Band "C"
L5	Ant. Coil	2.8 Ω	4.5 Ω	SA-4666	Band "D"
L6	RF Coil	.1 Ω	.1 Ω	SA-4870	Band "A"
L7	RF Coil	.5 Ω	.1 Ω	SA-4872	Band "B"
L8	RF Coil	.2 Ω	1.6 Ω	SA-4873	Band "C"
L9	RF Coil	.5 Ω	4.2 Ω	SA-4874	Band "D"
L10	Osc. Coil	.18 Ω		SA-4866	Band "A" Tapp @ .1 Ω
L11	Osc. Coil	.19 Ω		SA-4868	Band "B" Tapp @ .1 Ω
L12	Osc. Coil	.6 Ω		SA-4658	Band "C" Tapp @ .3 Ω
L13	Osc. Coil	2.3 Ω	1.3 Ω	SA-4871	Band "D" Tapp @ .1 Ω
L14	1st. IF	2.5 Ω	2.4 Ω	SA-4875	
L15	2nd. IF	2.2 Ω	2.4 Ω	SA-4533	
L16	3rd. IF	2.2 Ω	2.4 Ω	SA-4533	
L18	Pitch Coil	2 Ω			Tapped @ .1 Ω

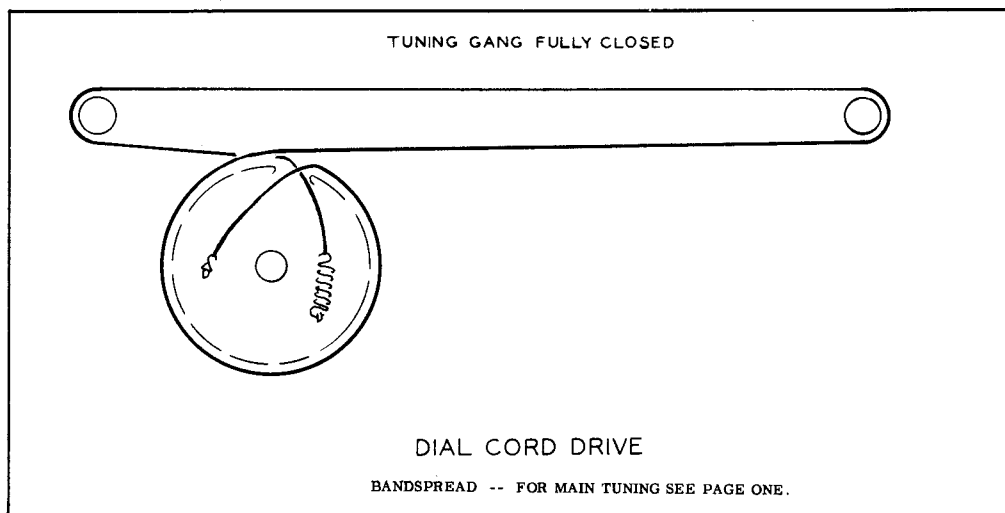
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	REPLACEMENT DATA		NOTES
				BEAD COLOR	NATIONAL PART No.	
M1	Bayonet	6-8	.15	Brown	F136-11	Type #47
M2	Bayonet	6-8	.15	Brown	F136-11	Type #47
M3	Bayonet	6-8	.15	Brown	F136-11	Type #47

MISCELLANEOUS

ITEM No.	PART NAME	NATIONAL PART No.	NOTES
M4	Switch	K752-1	Band Tone
M5	Switch	SA:7621	AVC-ANL
M6	Switch	SA:7622	Stand By
M7	Switch	E230-2	{Main
M8	3 Gang Var. Cap.	SA:8102	{Main
M9	3 Gang Var. Cap.		{Bandspread
M10	"S" Meter	J984-3	

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT							
To set dial pointer, turn both tuning gangs fully closed and set both pointers to zero on the bandspread logging scales. Turn the bandspread pointer to "set" (minimum cap.). 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. Direct	High side to stator on center section of tuning gang. Low side to chassis.	455KC (400 % Mod.)	A	Tuning gang fully open	Across voice coil	A1, A2, A3, A4, A5, A6	Adjust for maximum output.
2. "	"	455KC (Unmod.)	"	"	"	A7	Turn the limiter Sw. to CW. Remove CW pitch knob. Loosen set screw securing pitch control shaft to coil slug. Turn control shaft so flattened portion is straight up. Insert small screw driver in hollow shaft and adjust A7 for zero beat. Tighten set screw and replace pitch control knob.
3. 300Ω carbon resistor	Across A-A terminals with 300Ω in series with high side. (disconnect shorting link.)	34MC (400 % Mod.)	"	34MC	"	A8, A9	Adjust for maximum output.
4. "	"	12MC	"	12MC	"	A10, L6, A 11	Adjust A10 and A 11 for maximum output. Adjust coil turn inside L6 form for maximum output. Repeat steps 3 and 4 until no further improvement can be made.
5. "	"	12MC	B	12MC	"	A12, A13	Adjust for maximum output.
6. "	"	4.4MC	"	4.4MC	"	A14, A15, A16	Repeat steps 5 and 6 until no further improvement can be made.
7. "	"	4.4MC	C	4.4MC	"	A17, A18	Adjust for maximum output.
8. "	"	1.6MC	"	1.6MC	"	A19, A20, A21	Repeat steps 7 and 8 until no further improvement can be made.
9. "	"	.6MC	D	.62MC	"	A22, A23, A24	Turn bandspread pointer to zero. Adjust for maximum output.
10. "	"	1.5MC	"	1.5MC	"	A25, A26	Turn band spread pointer to "set". Adjust for maximum output. Check dial calibration at .6MC with bandspread dial at zero. If necessary repeat steps 9 and 10 until no further improvement can be made.



ALL MEASUREMENTS TAKEN IN "D" BAND POSITION, AND ALL CONTROLS IN COUNTER-CLOCKWISE POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SG7	0V	0V	23VDC	-.1VDC	23VDC	150VDC	6.3VAC	290VDC
V 2	65B7-Y	0V	0V	290VDC	105VDC	§-12VDC	0V	6.3VAC	0V
V 3	6SG7	0V	0V	24VDC	0V	24VDC	250VDC	6.3VAC	290VDC
V 4	6SG7	0V	0V	23VDC	0V	23VDC	150VDC	6.3VAC	290VDC
V 5	6H6	0V	0V	-.3VDC	-.3VDC	-.3VDC	105VDC	5.3VAC	0V
V 6	6SL7GT	0V	190VDC	2VDC	1.8VDC	185VDC	4VDC	6.3VAC	0V
V 7	6SL7GT	3.8VDC	170VDC	5.6VDC	3.8VDC	185VDC	5.8VDC	6.3VAC	0V
V 8	6SL7GT	0V	105VDC	1.2VDC	-2VDC	140VDC	0V	6.3VAC	0V
V 9	6V6GT	0V	6.3VAC	280VDC	290VDC	0V	0V	0V	16.5VDC
V 10	VR-150	150VDC	0V	0V	0V	150VDC	0V	0V	0V
V 11	5Y3GT	150VDC	310VDC	0V	350VAC	0V	350VAC	0V	310VDC

§ 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
V 1	6SG7	0Ω	0Ω	10KΩ	1Meg	10KΩ	†5.5KΩ	.1Ω	†5KΩ
V 2	65B7-Y	0Ω	0Ω	†1.4KΩ	†8.2KΩ	22KΩ	.2Ω	.1Ω	5Ω
V 3	6SG7	0Ω	0Ω	10KΩ	1.3Meg	10KΩ	150KΩ	.1Ω	†1.3KΩ
V 4	6SG7	0Ω	0Ω	10KΩ	1.3Meg	10KΩ	6.5KΩ	.1Ω	†250Ω
V 5	6H6	0Ω	0Ω	200KΩ	190KΩ	270KΩ	†100KΩ	2Ω	0Ω
V 6	6SL7GT	1Meg	†22KΩ	1.8KΩ	11KΩ	†28KΩ	3.9KΩ	.1Ω	0Ω
V 7	6SL7GT	4KΩ	†46KΩ	6KΩ	15KΩ	†46KΩ	5.5KΩ	.1Ω	0Ω
V 8	6SL7GT	0Ω	†100KΩ	2.7KΩ	22KΩ	†13KΩ	0Ω	.1Ω	0Ω
V 9	6V6GT	0Ω	.1Ω	†1KΩ	†280Ω	470KΩ	Inf.	0Ω	330Ω
V 10	VR-150	†4.3KΩ	0Ω	Inf.	Inf.	†4.3KΩ	Inf.	Inf.	Inf.
V 11	5Y3GT	35KΩ	35KΩ	Inf.	75Ω	Inf.	80Ω	Inf.	35KΩ

† MEASURED FROM PIN 8 OF V11

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
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 ±.15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

