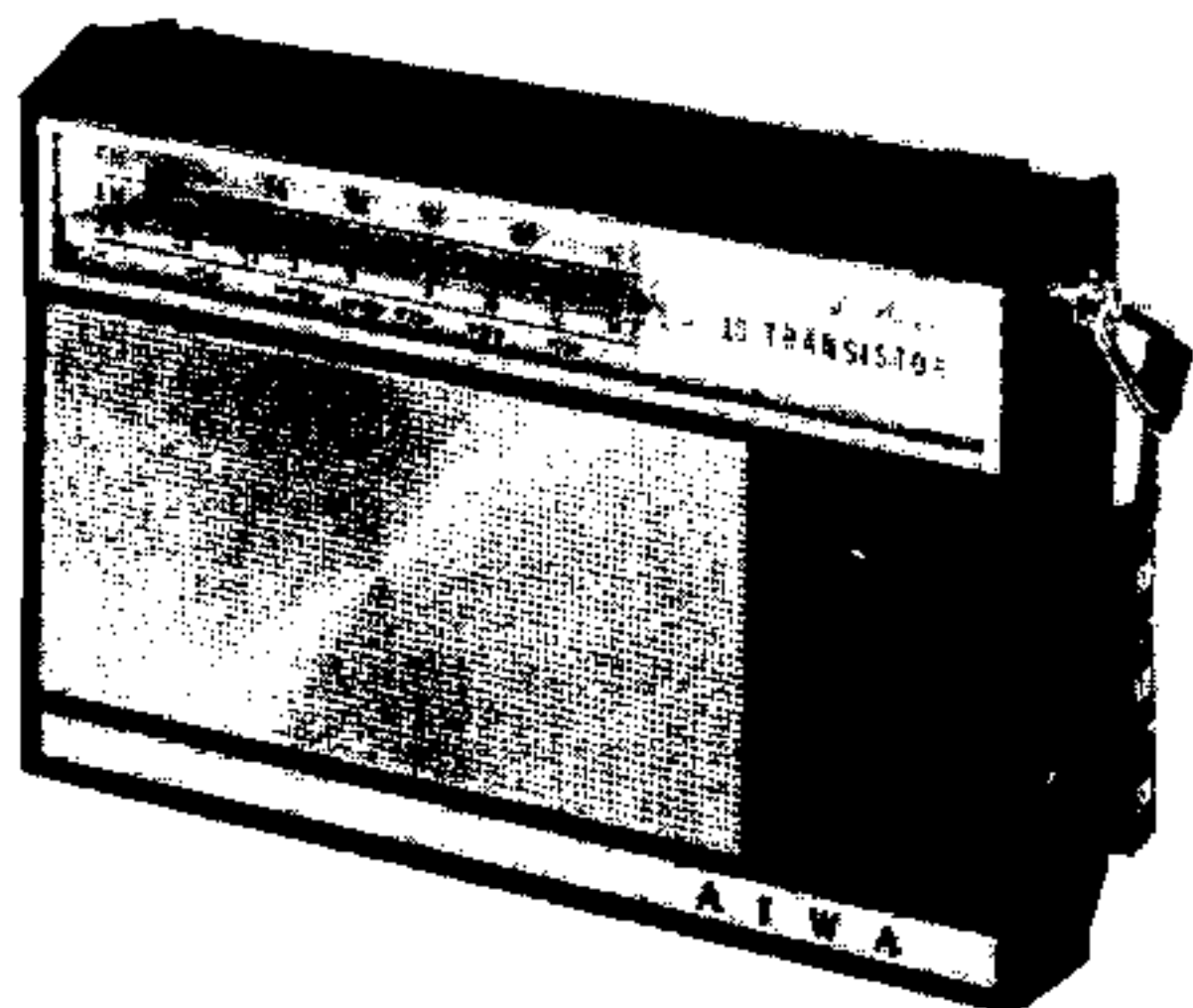




# PHOTOFACT<sup>®</sup> with

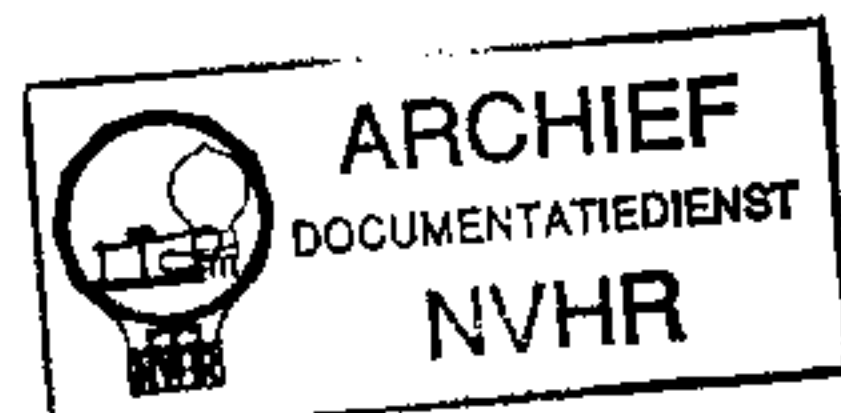
# CIRCUITRACE<sup>®</sup>



Met dank aan Jef Bos

TRADE NAME : Aiwa Model AR-123  
 SUPPLIER : For Current Address, see Master Index  
 TYPE SET : 10-Transistor AM-SW-FM Receiver  
 POWER SUPPLY : 6 Volts DC  
 RATING : (FM) 16MA @ 6VDC (No Signal, Min. Volume)  
 30MA @ 6VDC (Signal, Normal Volume)  
 TUNING RANGE : BROADCAST 525 -- 1650KC  
 SHORT WAVE 3.9 -- 12MC  
 FREQ. MOD. 88 -- 108MC

Ned. Ver. v. Historie v.



## ALIGNMENT INSTRUCTIONS

Check for specified source voltage. Set Volume control at maximum.  
 Fashion loop of several turns of wire and connect generator across loop.  
 Adjust output of generator to radiate only enough signal into receiver to obtain a suitable indication.  
 Suggested Alignment Tools: A1 thru A15, ... GENERAL CEMENT #8868, 9089. WALSCO #2541, 2587  
 A16, ... GENERAL CEMENT #8606L, 9440. WALSCO #2501, 2544

### SELECTOR IN AM

	GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	455KC (400% Mod.)	Tuning gang fully open.	Output Meter across Voice coll.	A1, A2, A3	Adjust for maximum. Repeat until no further improvement can be made.
2.	1650KC	"	"	A4	Adjust for maximum.
3.	1400KC	Tune to signal.	"	A5	Adjust for maximum.
4.	600KC	"	"	A6	Rock tuning gang and adjust for maximum. Repeat steps 2 thru 4 until no further improvement can be made.

### SELECTOR IN SW

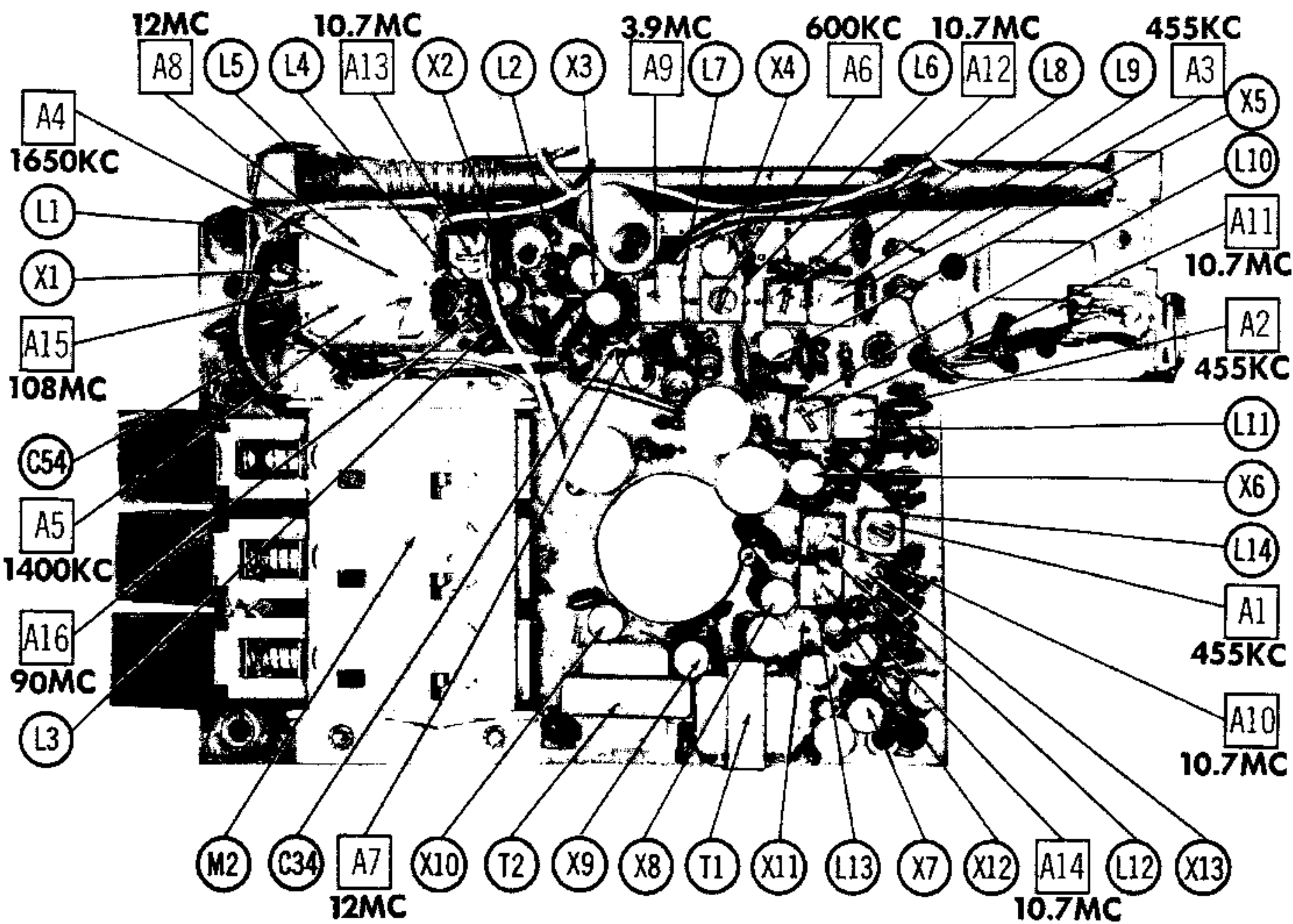
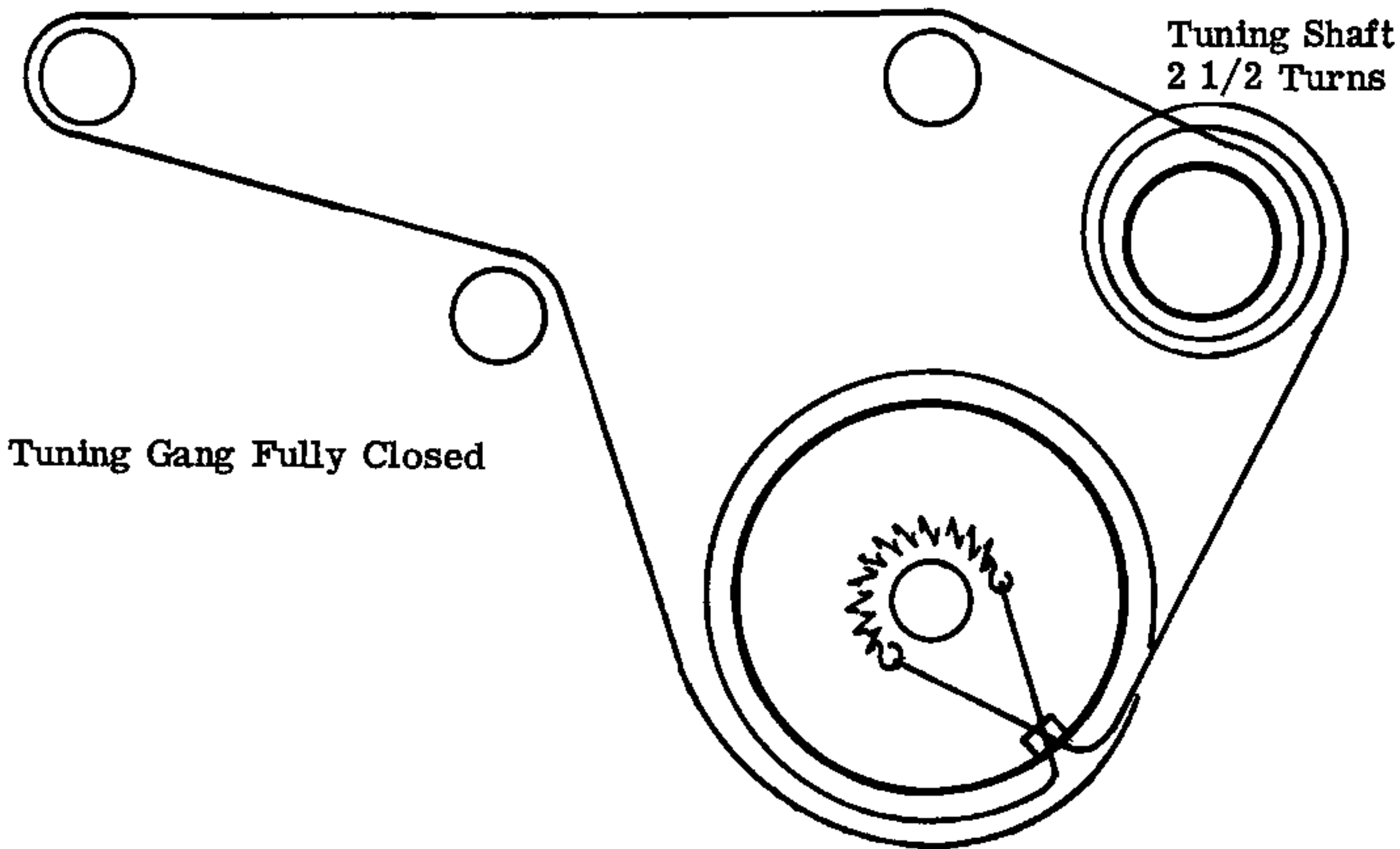
5.	12MC	Tuning gang fully open.	"	A7, A8	Adjust for maximum.
6.	3.9MC	Tuning gang fully closed.	"	A9	Adjust for maximum. Repeat steps 5 and 6.

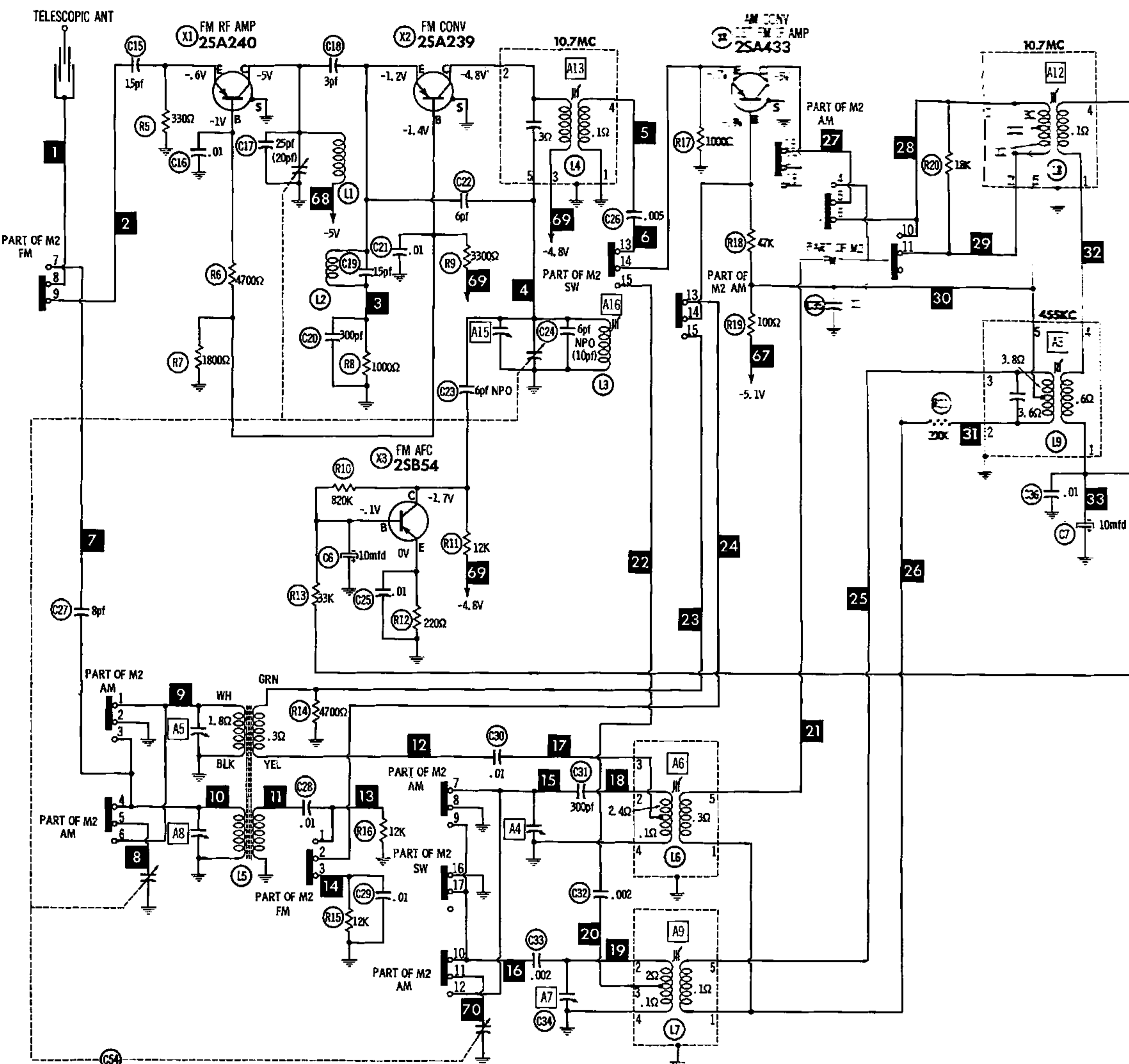
### SELECTOR IN FM

7.	10.7MC (Unmod.)	Point of non-interference.	DC probe of VTVM to point $\diamond A$ , common to ground.	A10 thru A13	Adjust for maximum.
8.	"	"	DC probe of VTVM to point $\diamond B$ , common to ground.	A14	Adjust for zero reading. A positive or negative reading will be obtained on either side of the correct setting.
9.	108MC	Set at High End	DC probe to point $\diamond A$ , common to ground.	A15	Adjust for maximum.
10.	90MC	Tune to Signal.	"	A16	Adjust for maximum. Repeat steps 9 and 10.

**HOWARD W. SAM'S & CO., INC.** Indianapolis 6, Indiana

# DIAL CORD





Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

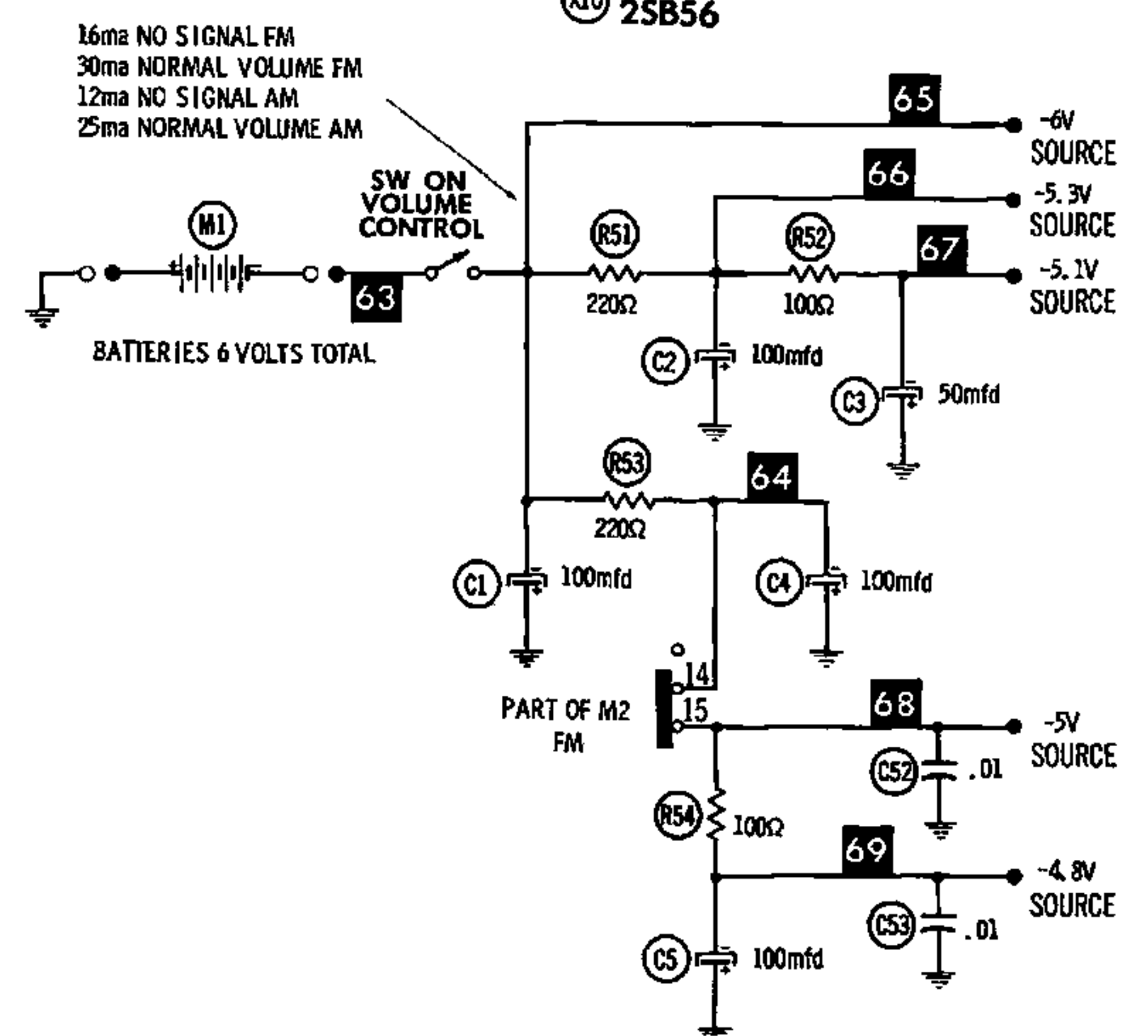
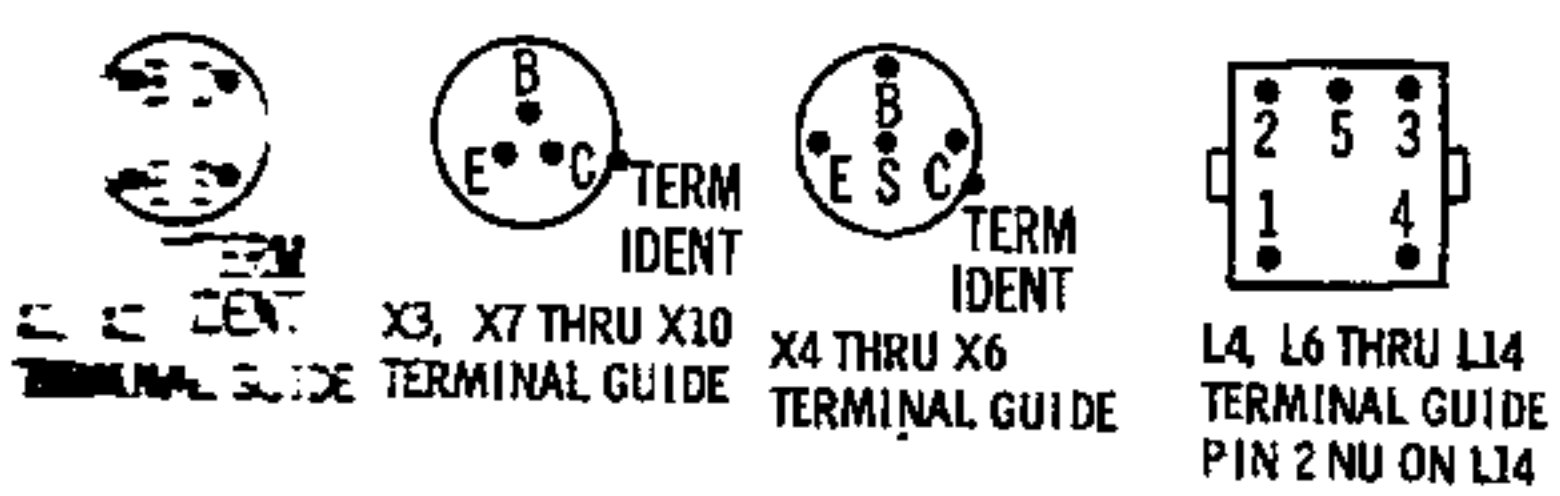
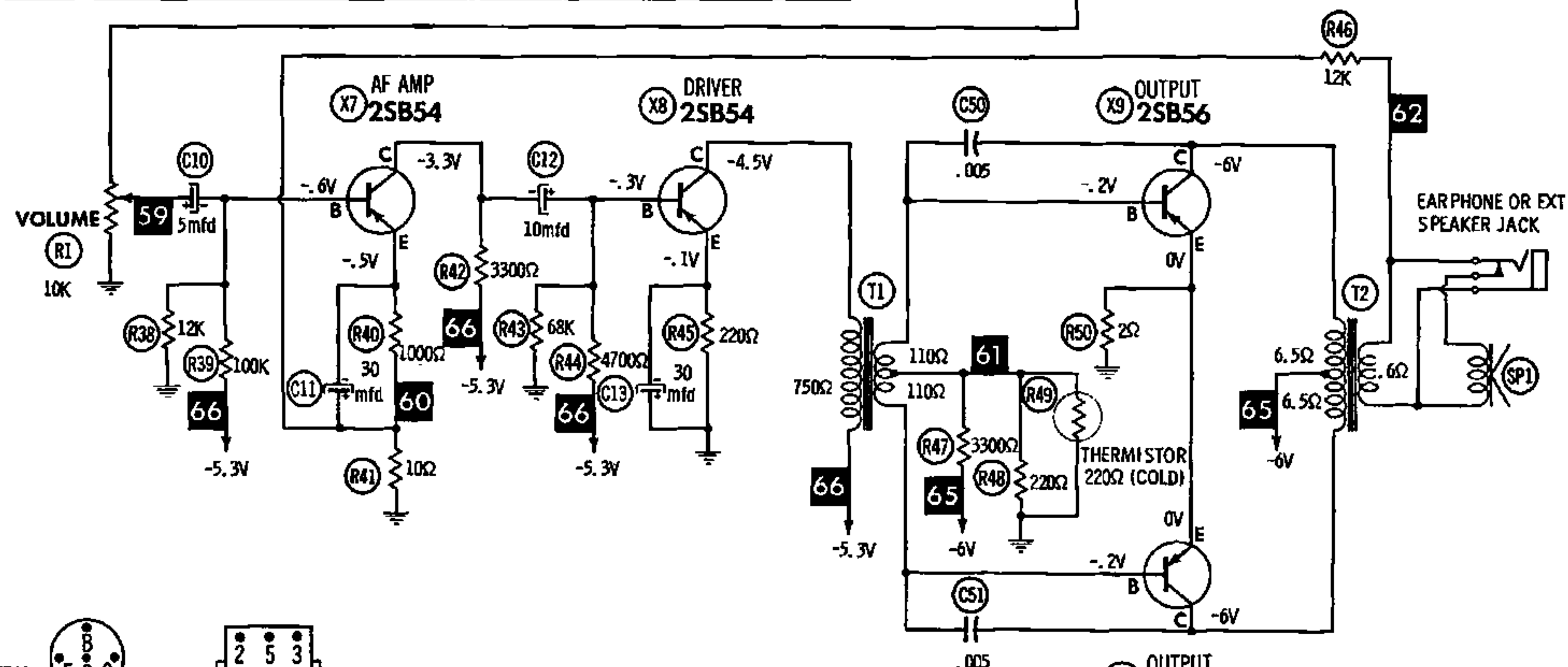
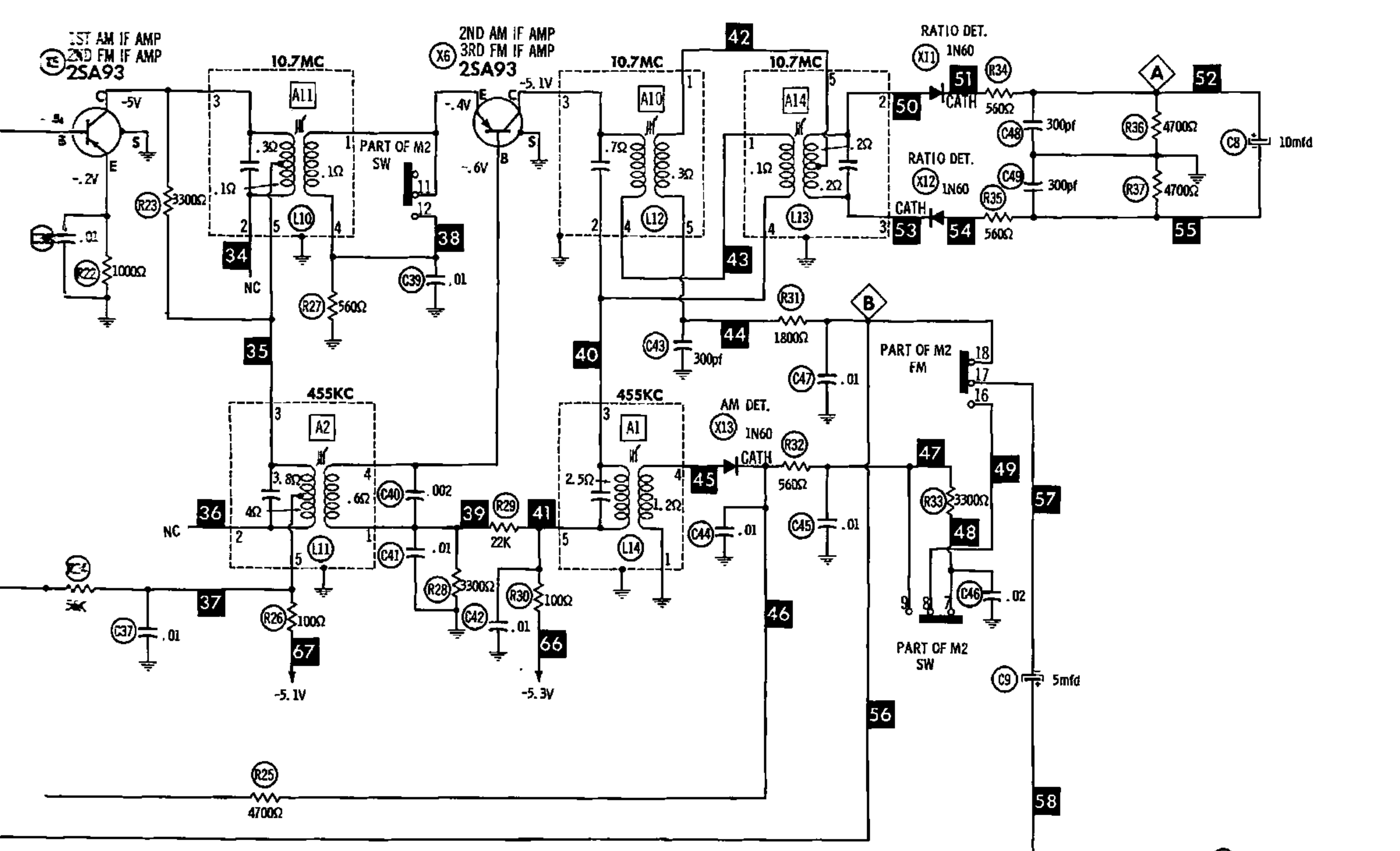
1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.
7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

FM			AM			SW		
113	17	11	113	17	11	113	17	
114	18	12	114	18	12	114	18	
115	19	13	115	19	13	115	19	
116	110	14	116	110	14	116	110	
117	111	15	117	111	15	117	111	
118	112	16	118	112	16	118	112	

A PHOTOFAC STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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M2 SELECTOR SW  
TERMINAL GUIDE  
SHOWN IN FM POSITION



AIWA MODEL AR-123

# PARTS LIST AND DESCRIPTION

## WIRING DATA

General-use Unshielded Hook-up Wire .....	Use BELDEN No. 8530 (Solid 22AWG)	Available in 12 Colors
	8524 (Stranded 22AWG)	
	8570 (Stranded 26AWG)	

## TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	2SA240	FM RF Amp.	DS-41		SK3006	PNP
X2	2SA239	FM Conv.	DS-41		SK3006	PNP
X3	2SB54	FM AFC	DS-26	GE-2	SK3004	PNP
X4	2SA433	AM Conv. -1st FM IF Amp.	DS-56	GE-9		PNP
X5	2SA93	1st AM IF-2nd FM IF Amp.	DS-56	GE-9		PNP
X6	2SA93	2nd AM IF-3rd FM IF Amp.	DS-56	GE-9		PNP
X7	2SB54	AF Amp.	DS-26	GE-2	SK3004	PNP
X8	2SB54	Driver	DS-26	GE-2	SK3004	PNP
X9	2SB56	Output	DS-26	GE-2	SK3004	PNP
X10	2SB56	Output	DS-26	GE-2	SK3004	PNP

## POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.
X11		1N60					1N60
X12		1N60					1N60
X13		1N60					1N60

## ELECTROLYTIC CAPACITORS

ITEM No.	RATING		AIWA PART No.	REPLACEMENT DATA				
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	100	6		CRE323A	NLW100-12	MT1-18	TT6X100	TE-1102
C2	100	6		CRE323A	NLW100-12	MT1-18	TT6X100	TE-1102
C3	50	6		CRE317A	NLW50-6	MT1-15	TT6X50	TE-1100
C4	100	6		CRE323A	NLW100-12	MT1-18	TT6X100	TE-1102
C5	100	6		CRE323A	NLW100-12	MT1-18	TT6X100	TE-1102
C6	10	3		CRE207A	NLW10-3	MT1-5	TT3X10	TE-1053
C7	10	3		CRE207A	NLW10-3	MT1-5	TT3X10	TE-1053
C8	10	6		CRE307A	NLW10-6	MT1-5	TT6X10	TE-1087
C9	5	3		CRE204A	NLW5-15			TE-1052.2
C10	5	3		CRE204A	NLW5-15	MT1-3	TT3X5	TE-1052.2
C11	30	3		CRE213A	NLW30-6	MT1-13	TT6X30	TE-1092
C12	10	6		CRE307A	NLW10-6	MT1-5	TT6X10	TE-1087
C13	30	3		CRE213A	NLW30-6	MT1-13	TT6X30	TE-1092

## FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA						
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.	
C15	15	(20) †	NPO-DI 15	DTZ-15	C10Q15C	CCTO-150	CNO415	10TCC-Q15	
C16	.01		TTD-01	CK-103	H2		TA110	TG-S10	
C17	25		DI-25	DD-250	LA10Q25-SL	CCD-250	GP425	10TS-Q25	
C18	3		NPO-DI 3.0	DTZ-3R3	C10V33C	CCTO-3R3	CNO533	10TCC-V30	
C19	15		NPO-DI 15	DTZ-15	C10Q15C	CCTO-150	CNO415	10TCC-Q15	
C20	300			DM-301					
C21	.01			TTD-01	CK-103	H2		TA110	TG-S10
C22	6								10TCC-V56
C23	6 NPO								10TCC-V56
C24	6 NPO		(10) †						10TCC-V56
C25	.01			TTD-01	CK-103	H2		TA110	TG-S10
C26	.005			TTD-005	CK-502	H1		TA250	TG-D50
C27	8			NPO-DI 8.2					10TCC-V82
C28	.01			TTD-01	CK-103	H2		TA110	TG-S10
C29	.01			TTD-01	CK-103	H2		TA110	TG-S10
C30	.01			TTD-01	CK-103	H2		TA110	TG-S10
C31	300				CPR-300J				
C32	.002				CPR-2000J				
C33	.002				CPR-2000J				
C34									
C35	.01		TTD-01	CK-103	H2		TA110	TG-S10	
C36	.01		TTD-01	CK-103	H2		TA110	TG-S10	
C37	.01		TTD-01	CK-103	H2		TA110	TG-S10	
C38	.01		TTD-01	CK-103	H2		TA110	TG-S10	
C39	.01		TTD-01	CK-103	H2		TA110	TG-S10	
C40	.002			DM-202					
C41	.01		TTD-01	CK-103	H2		TA110	TG-S10	
C42	.01		TTD-01	CK-103	H2		TA110	TG-S10	
C43	300			DM-301					
C44	.01		TTD-01	CK-103	H2		TA110	TG-S10	
C45	.01		TTD-01	CK-103	H2		TA110	TG-S10	
C46	.02		TTD-02	CK-203	H3		TA120	TG-S20	
C47	.01		TTD-01	CK-103	H2		TA110	TG-S10	
C48	300			DM-301					
C49	300			DM-301					
C50	.005			CK-502	H1		TA250	TG-D50	
C51	.005			CK-502	H1		TA250	TG-D50	
C52	.01		TTD-01	CK-103	H2		TA110	TG-S10	
C53	.01		TTD-01	CK-103	H2		TA110	TG-S10	
C54									

† Alternate Value.

# PARTS LIST AND DESCRIPTION (CONTINUED)

## CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA				
			AIWA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Switch	10K					

## RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R49	220Ω (Cold)		GM 220						

## COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					
		AIWA PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.
L1	FM RF						
L2	FM IF Trap						
L3	FM Osc.						
L4	1st FM IF						
L5	AM/SW Loopstick						
L6	AM Osc.						
L7	SW Osc.						
L8	2nd FM IF						
L9	1st AM IF		16-9033	BC-569	2061	RTC-9262	
L10	3rd FM IF						
L11	2nd AM IF		16-9034	BC-570	2062	RTC-9263	
L12	Ratio Det. Pri.						
L13	Ratio Det. Sec.						
L14	3rd AM IF						

## TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
			AIWA PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI.	SEC.						
T1	2	1						

## TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
			AIWA PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI.	SEC.						
T2	200Ω CT	8Ω						

## SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		AIWA PART No.	QUAM PART No.	
SP1	2 1/2" PM 6-8Ω			

## BATTERIES

ITEM No.	VOLTAGE	AIWA PART No.	REPLACEMENT DATA			NOTES
			BURGESS	EVEREADY	MALLORY	
M1	6V		930 or AL9 or Hg9	1015 or E91 or E9	M15R or Mn1500 or ZM9	4 Required

## MISCELLANEOUS

ITEM No.	PART NAME	AIWA PART No.	NOTES
M2	Switch, Selector		