

PHOTOFACT® Folder

with CIRCUITRACE™

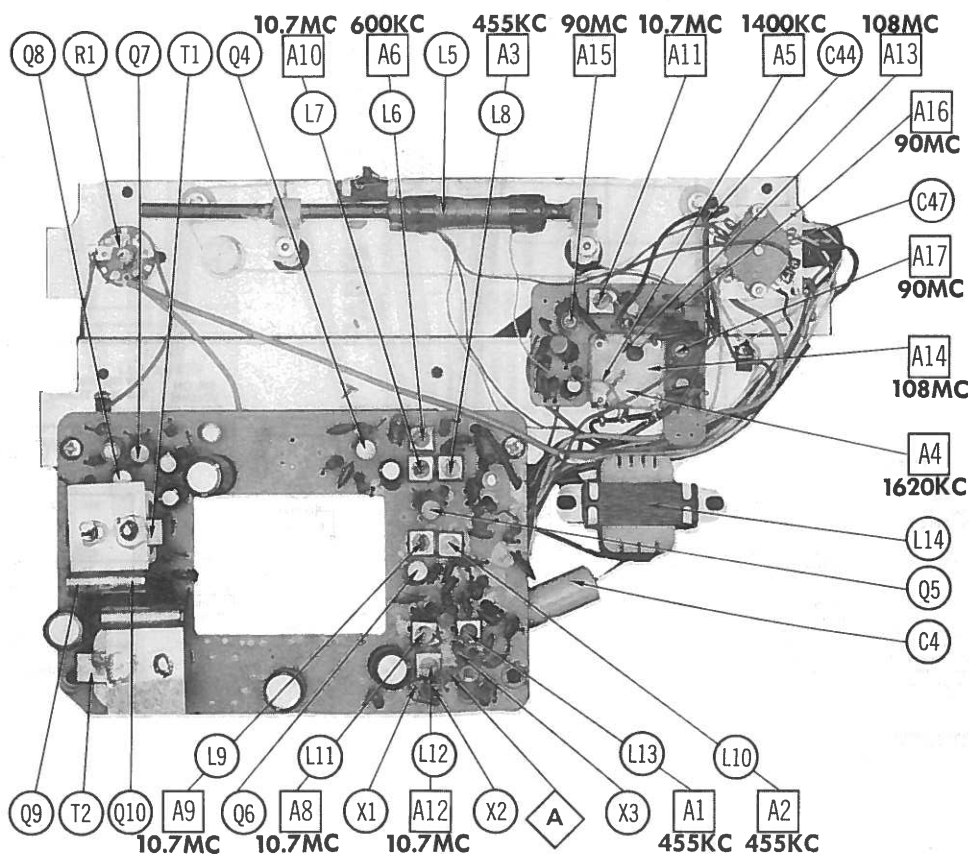
AIWA
MODEL P-172AIWA
MODEL P-172

TRADE NAME: Aiwa Model P-172

SUPPLIER: For Current Address, See Annual Index.

TYPE SET: 10 Transistor AM-FM Receiver W/3 Speed Manual Record Player

POWER SUPPLY: 6 Volts DC

RATING: 20ma @ 6 Volts DC (No Signal, Min. Volume)
30ma @ 6 Volts DC (Signal, Normal Volume)AIWA
MODEL P-172

SET 877 FOLDER 6

HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206

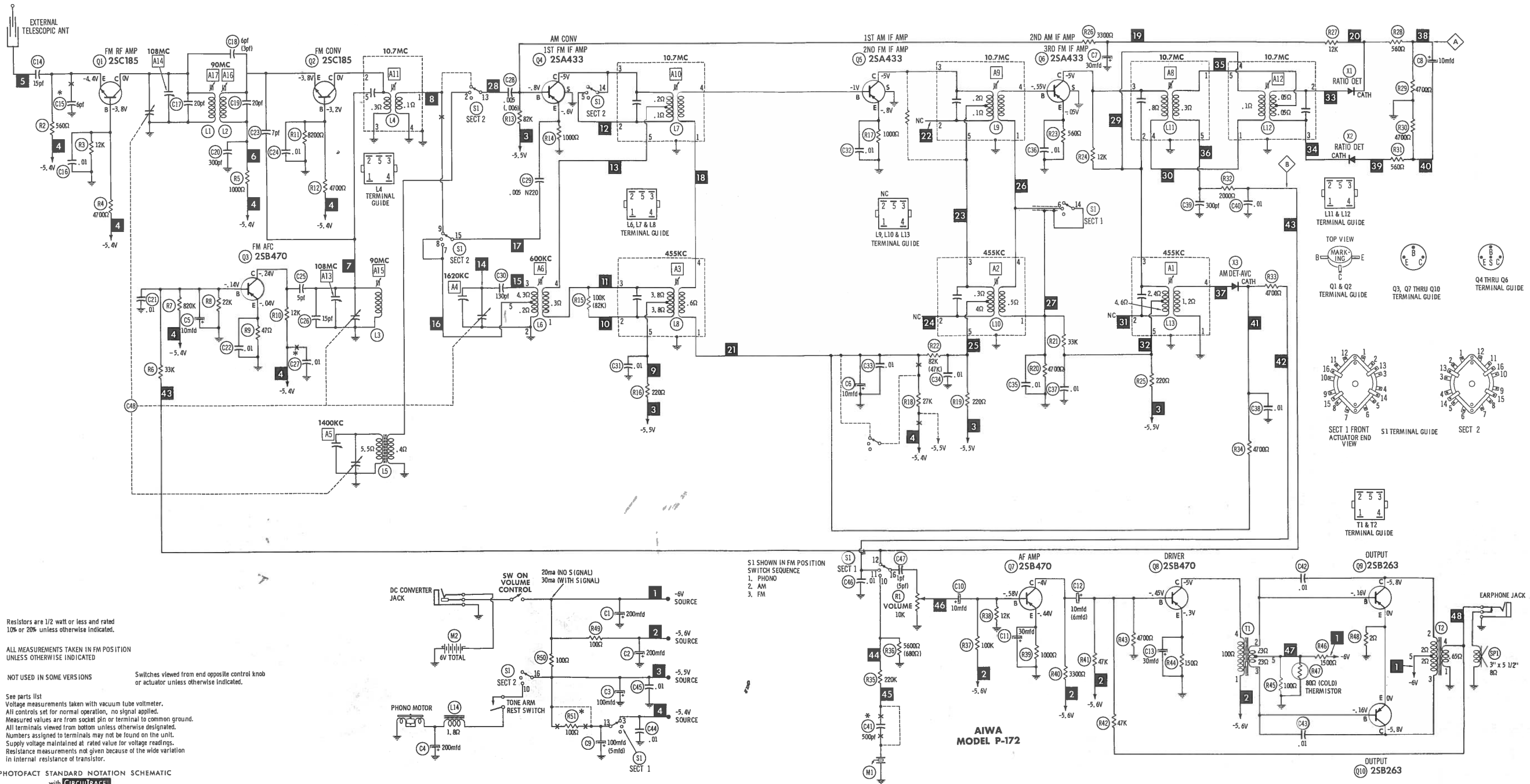
The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. NN998

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DATE 4 -67

SET 877 FOLDER 6





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

ALL MEASUREMENTS TAKEN IN FM POSITION UNLESS OTHERWISE INDICATED

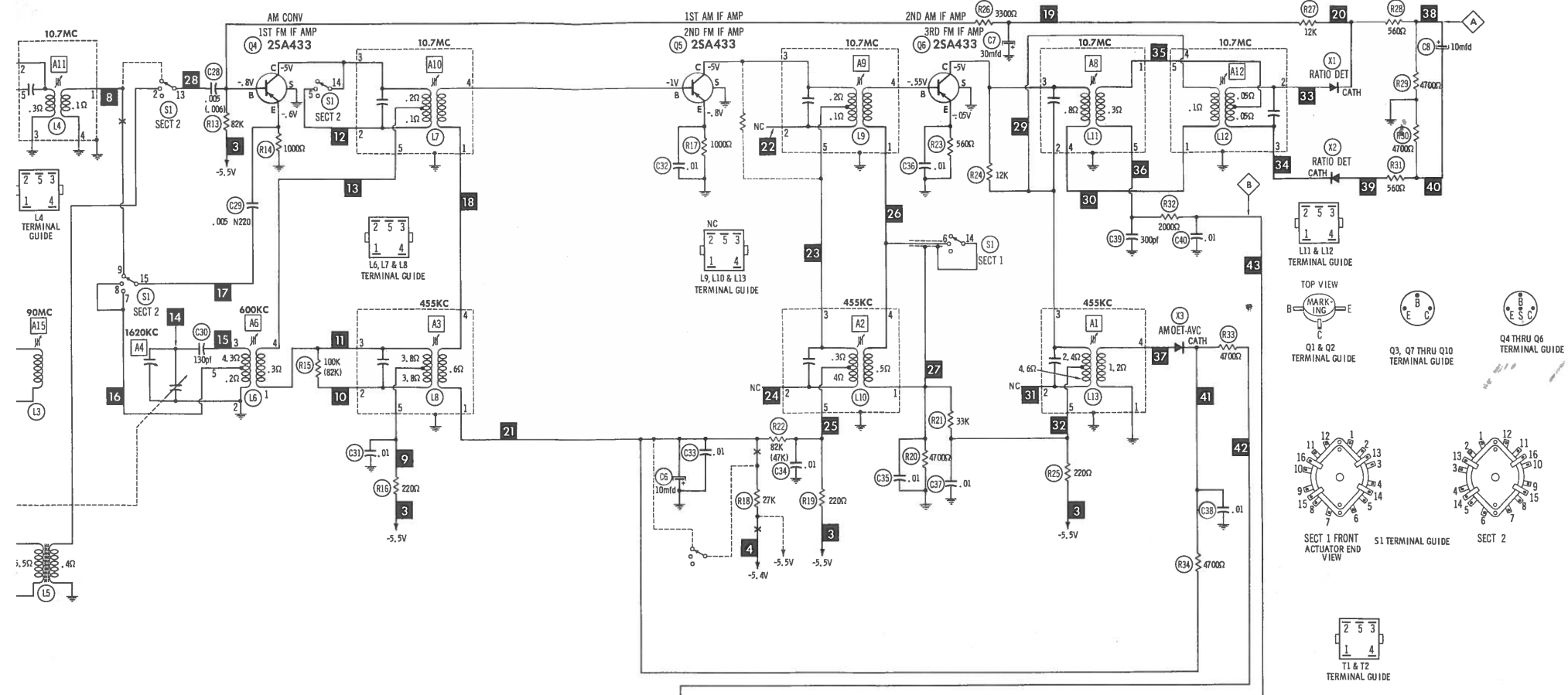
* NOT USED IN SOME VERSIONS

Switches viewed from end opposite control knob or actuator unless otherwise indicated.

- See parts list
- 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.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITTRACE

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ALIGNMENT INSTRUCTIONS

Maintain line voltage at 117 volts. Use only enough generator output to obtain a suitable indication. Allow a 15 minute warmup for receiver and equipment. CAUTION: Use isolation transformer, if available. If not, observe polarity when connecting test equipment. Suggested Alignment Tools:
A1 thru A14. GENERAL CEMENT: 8868, 8887, 9089 WALSCO: 2531-X, 2541, 2587
A15 thru A17. GENERAL CEMENT: 8606, 8606L, 8869 WALSCO: 2543, 2544, 2588

AM ALIGNMENT — SELECTOR IN AM POSITION

Fashion loop of several turns of wire and connect generator across loop. Set volume control at maximum.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
1. 455KC (400v Mod.)	Tuning gang fully open.	Output Meter across Voice coil.	A1, A2, A3.	Adjust for maximum. Repeat until no further improvement can be made.
2. 1620KC	"	"	A4.	Adjust for maximum.
3. 1400KC	Tune to signal.	"	A5.	"
4. 600KC	"	"	A6.	Rock tuning gang and adjust for maximum. Repeat steps 2 thru 4 until no further improvement can be made.

FM ALIGNMENT USING AM SIGNAL GENERATOR — SELECTOR IN FM POSITION

High side to antenna terminal, low side to ground.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
5. 10.7MC (Unmod.)	Point of non-interference.	DC probe of VTVM to point A; common to ground.	A8, A9, A10, A11.	Adjust for maximum.
6. "	"	DC probe to point B; common to ground.	A12.	Adjust for zero reading. A positive or negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR — SELECTOR IN FM POSITION

High side to antenna terminal, low side to ground. Use only enough marker signal to obtain indication. Use 60v frequency modulated signal with 450KC sweep. Use 120v sawtooth voltage in scope for horizontal deflection.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
5. 10.7MC (450KC Swp.)	Point of non-interference	Vert. amp. of Scope to point A; low side to ground.	A8, A9, A10, A11.	Disconnect stabilizing capacitor C8. Adjust for maximum gain and symmetry of response similar to Fig. 1 with marker as shown. Reconnect C8.
6. "	"	Vert. amp. to point B; low side to ground.	A12.	Adjust A12 (Secondary) to place marker at center of crossover lines similar to Fig. 2. Adjust A8 (Primary) for maximum amplitude and straightness of crossover lines.

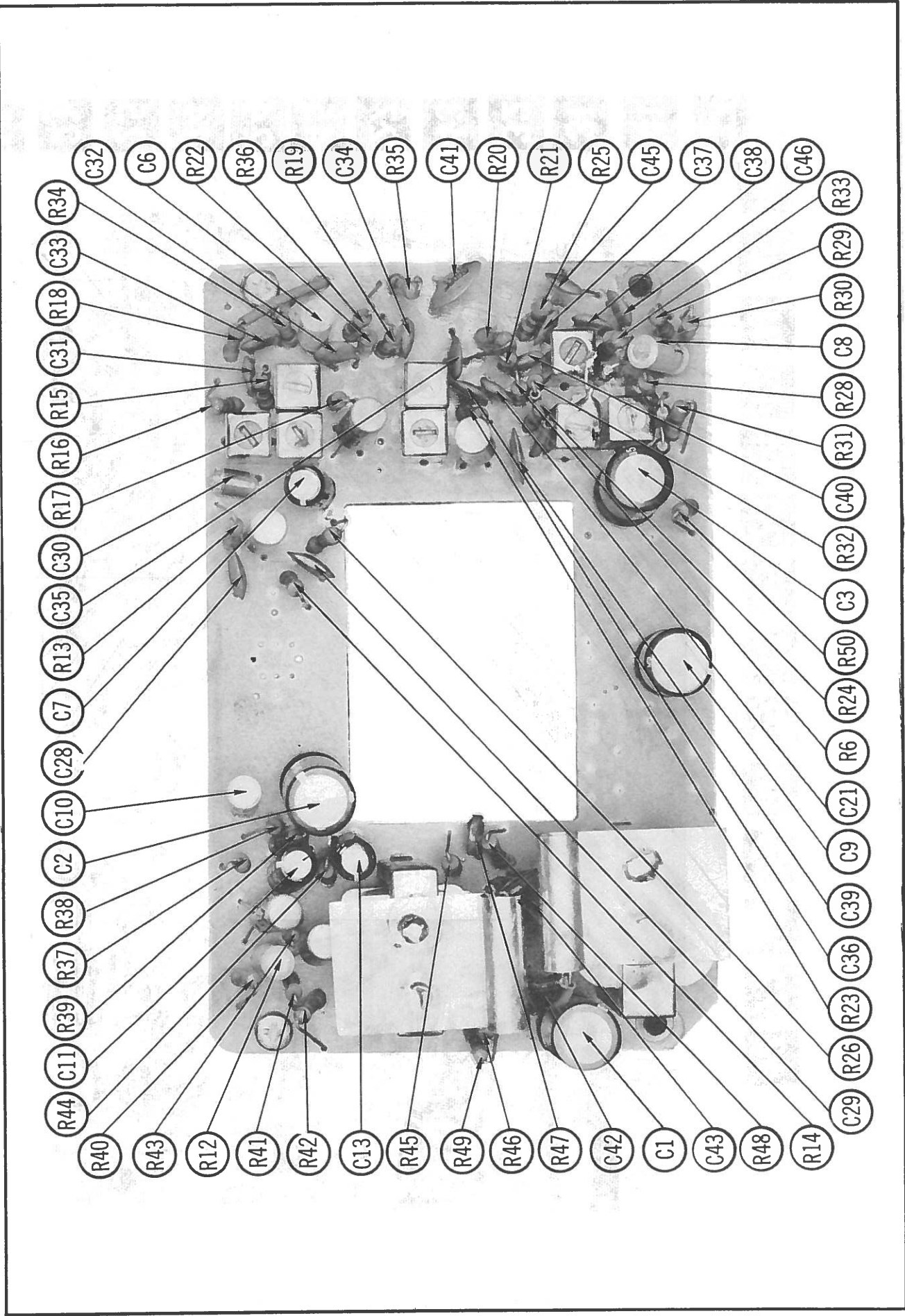
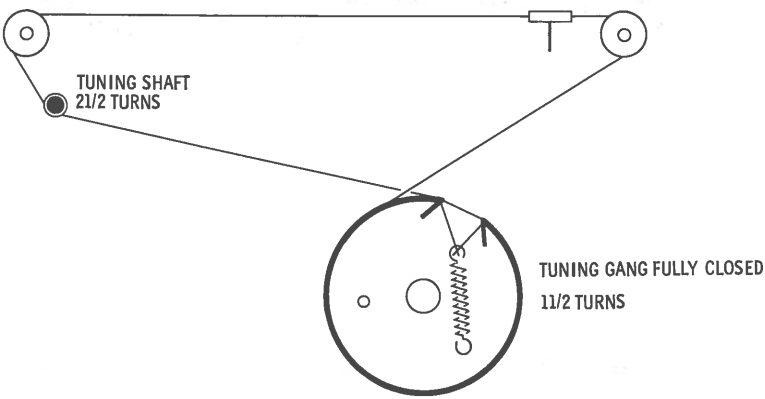
FM RF ALIGNMENT

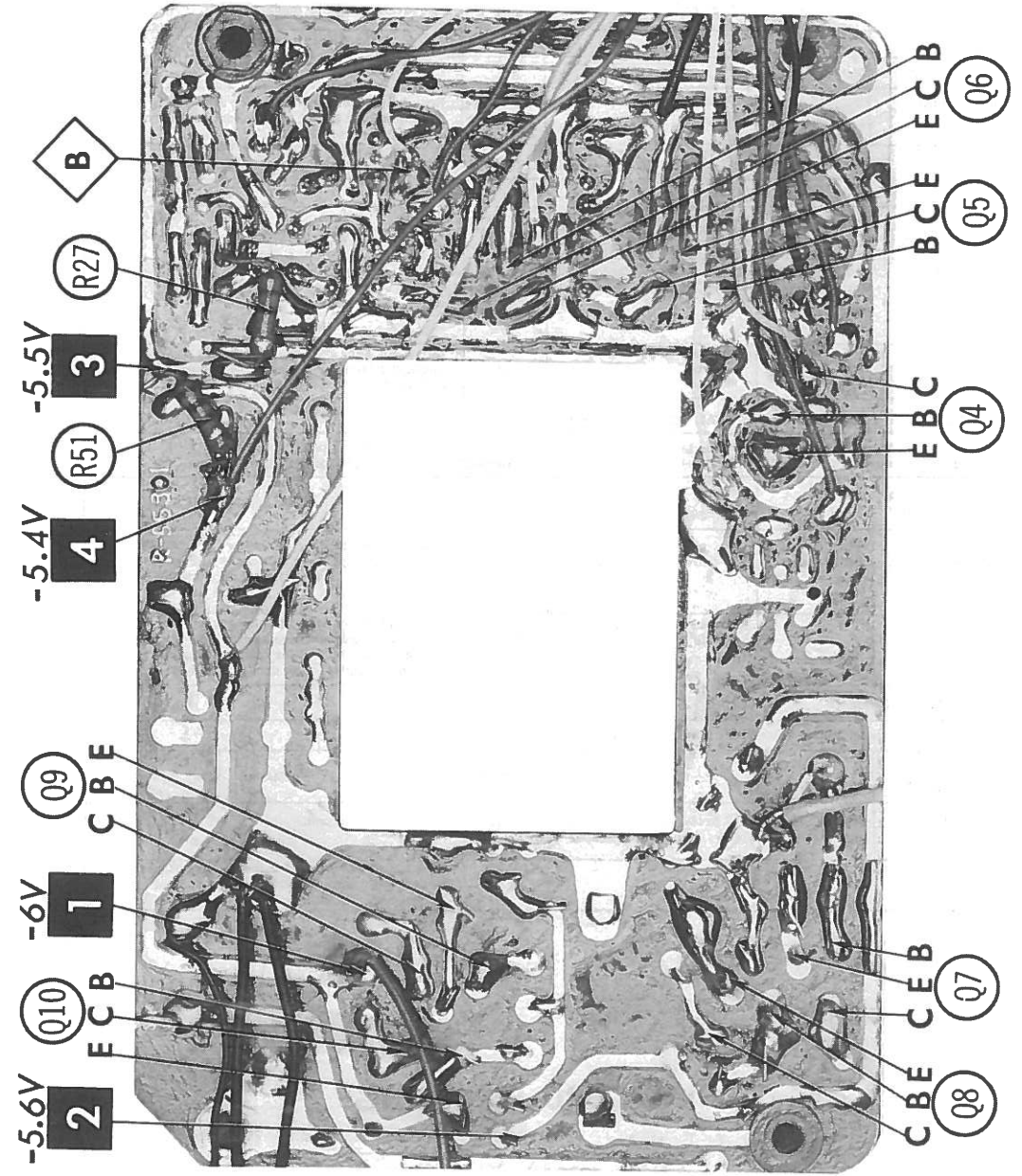
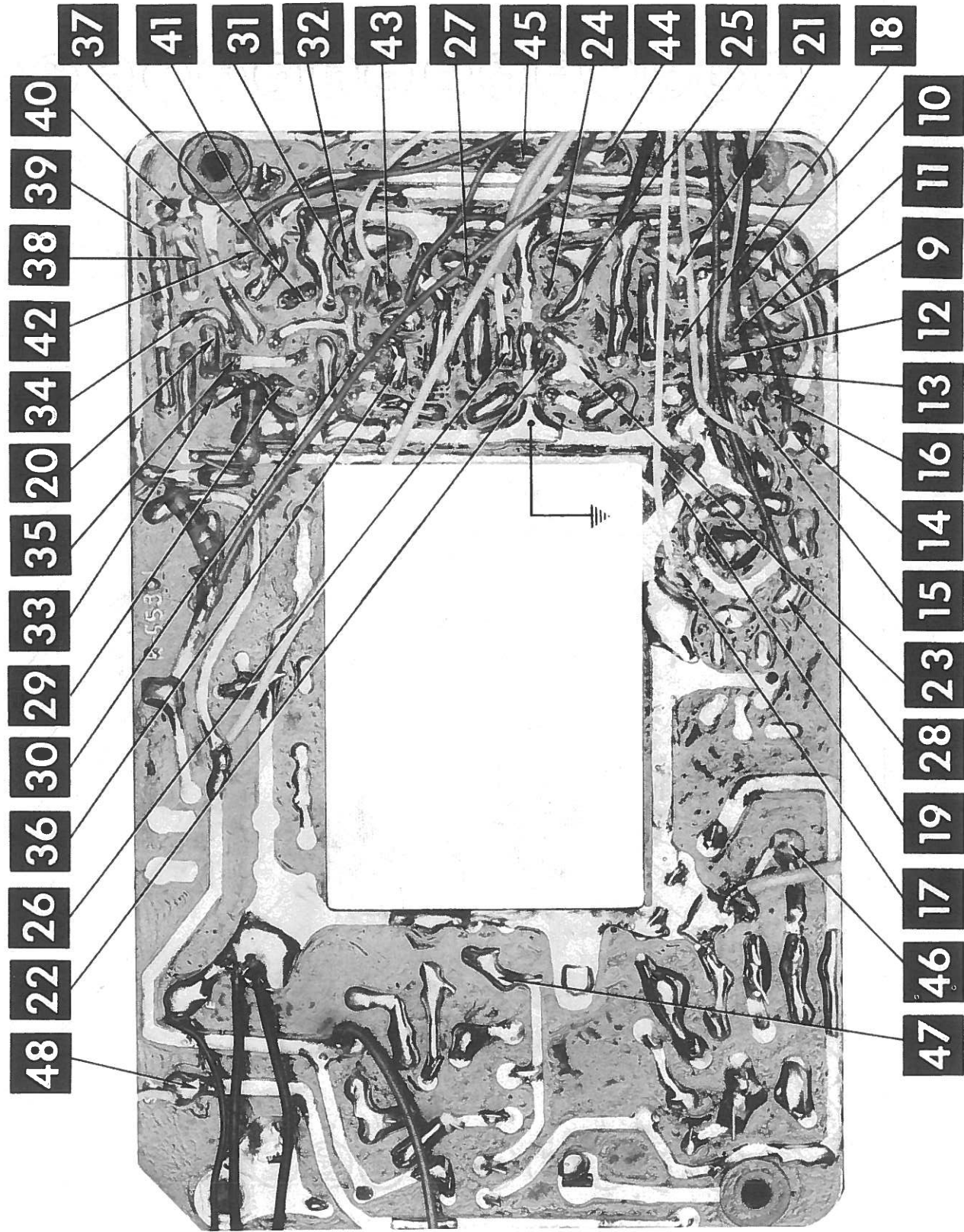
High side of generator to antenna terminal, low side to ground.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
7. 108MC	Set at high end.	DC probe of VTVM to point A; common to ground.	A13, A14.	Adjust for maximum.
8. 90MC	Tune to signal.	"	A15, A16, A17.	Rock tuning and adjust for maximum. Repeat steps 7 and 8 until no further improvement can be made.



DIAL CORD STRINGING





PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors
Power Cord	Use BELDEN No. 8524 (Stranded) Available in 12 Colors
Power Cord (Interlock Type)	Use BELDEN No. 17106 (Plastic) or 17126 (Rubber) - 6 Ft.
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 17109 (Plastic) or 17129 (Rubber) - 9 Ft.
Phono Pick-up Arm Cable	Use BELDEN No. 8874 (Rubber) or 8895 (Plastic)
	8401 or 8421
	8430 (Two Conductor-Unshielded)
	8429 (Two Conductor-Shielded)
	8419 (Three Conductor-Shielded)

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.	
Q1	2SC185	FM RF Amp.	DS-81	GE-11	TR-22	SK-3018	NPN
Q2	2SC185	FM Converter	DS-81	GE-11	TR-22	SK-3018	NPN
Q3	2SB470	FM AFC	DS-26	GE-2	TR-05	SK-3004	PNP
Q4	2SA433	AM Converter-1st FM IF	DS-56	GE-9	TR-11	SK-3006	PNP
Q5	2SA433	1st AM-2nd FM IF	DS-56	GE-9	TR-11	SK-3006	PNP
Q6	2SA433	2nd AM-3rd FM IF	DS-56	GE-9	TR-11	SK-3006	PNP
Q7	2SB470	AF Amp.	DS-26	GE-2	TR-05	SK-3004	PNP
Q8	2SB470	Driver	DS-26	GE-2	TR-05	SK-3004	PNP
Q9	2SB263	Output	DS-26	GE-2	TR-05	SK-3004	PNP
Q10	2SB263	Output	DS-26	GE-2	TR-05	SK-3004	PNP

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS & DIODES		RECTIFIERS		
			GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1			1N60	1N60			
X2			1N60	1N60			
X3			1N60	1N60			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA				
	CAP.	VOLT.	AIWA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.
C1	200	6		BCD6200	NLW200-12	MT1-24	TT6X200
C2	200	6		BCD6200	NLW200-12	MT1-24	TT6X200
C3	100	6		BCD6100	NLW100-12	MT1-18	PET1400
C4	200	6		CRE331A	NLW200-12	MT1-24	TT6X200
C5	10	3		BCD3010	NLW10-3	MT1-5	PET1340
C6	10	3		BCD3010	NLW10-3	MT1-5	PET1340
C7	30	3		CRE213A	NLW30-6	MT1-13	PET1340
C8	10	6		BCD6010	NLW10-6	MT1-5	PET1400
C9	100	6	(5mfd)†	BCD6100	NLW100-12	MT1-18	PET1340
C10	10	3		BCD3010	NLW10-3	MT1-5	PET1340
C11	30	3		CRE213A	NLW30-6	MT1-13	PET1340
C12	10	6	(6mfd)†	BCD6010	NLW10-6	MT1-5	PET1340
C13	30	3		CRE213A	NLW30-6	MT1-13	PET1340

† Value used in some versions.

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.
C14	15	①	DI-15	DD-150		CCD-150	GP415	10TS-Q15
C15	6			DD-060		CCD-103	TA110	10TS-V60
C16	.01		TTD-01	CK-103	HOY101ZV103P	CCD-200	GP420	TG-S10
C17	20		DI-20	DD-200				10TS-Q20
C18	6			DD-060		CCD-200	GP420	10TS-V60
C19	20		DI-20	DD-200		CCD-301	GP330	10TS-Q20
C20	300		DI-300	DD-301		CCD-103	TA110	10TS-T30
C21	.01		TTD-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C22	.01		TTD-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C23	7		DI-6.8	DD-6R8		CCD-6R8	GP568	10TS-V68
C24	.01	①	TTD-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C25	5		DI-5	DD-050		CCD-050	GP550	10TS-V50
C26	.01		DI-15	DD-150		CCD-150	GP415	10TS-Q15
C27	.01		TTD-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C28	.005		DI-5000	DD-502	JBT601YP502K	CCD-502	GP250	10TS-D50
C29	.005		DI-5000	DD-502	JBT601YP502K	CCD-502	GP250	10TS-D50
C30	130		DI-131	DD-131		CCD-103	GP313	10TS-T13
C31	.01		TTD-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C32	.01		TTD-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C33	.01		TTD-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C34	.01	①	TTD-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C35	.01		TTD-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C36	.01		TTD-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C37	.01		TTD-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C38	.01		TTD-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C39	300		DI-300	DD-301		CCD-301	GP330	10TS-T30
C40	.01		TTD-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C41	500		DI-500	DD-501	JBT601YP501K	CCD-501	GP350	10TS-T50
C42	.01		TTD-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C43	.01		TTD-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C44	.01	(5)†	TTD-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C45	.01		TTD-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C46	.01		TTD-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C47	1		TTD-01	CK-103	WMTFW1	1MB-5-105K	PVC11	225P1059R75

① Not used in some versions.

† Alternate Value.

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.	AIWA PART No.			IRC PART No.	WORKMAN PART No.	PART No.
R47	80Ω (Cold) Thermistor								

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				
		AIWA PART No.	MEISSNER Part No.	MERIT PART No.	MILLER PART No.	WORKMAN PART No.
L1	FM RF (Pri.)					
L2	FM RF (Sec.)					
L3	FM Oscillator					
L4	1st FM IF				7790	
L5	Loopstick					
L6	AM Oscillator					
L7	2nd FM IF	45307				
L8	1st AM IF	45310	16-9033	BC-561	8810	
L9	3rd FM IF	45307				
L10	2nd AM IF	45311	16-9034	BC-570	8811	
L11	Ratio Detector (Pri.)	45308				
L12	Ratio Detector (Sec.)					
L13	3rd AM IF	45312	16-9035	BC-571	8812	

FILTER CHOKE

ITEM No.	RATINGS		REPLACEMENT DATA						NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	AIWA PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L14	.15A DC	1.8Ω	45MH	R55608					

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	3	1						

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	AIWA PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	60Ω CT	6-8Ω						

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA			NOTES
		AIWA PART No.	JENSEN PART No.	QUAM PART No.	
SP1	3" x 5 1/2" PM	6-8Ω		P3X5X8	

PHONO CARTRIDGE & NEEDLES

*NEEDLE LISTINGS SHOWN ARE FOR RESPECTIVE REPLACEMENT CARTRIDGES ONLY.

ITEM No.	REPLACEMENT DATA								NOTES
	AIWA PART No.		ASTATIC PART No.		ELECTRO-VOICE PART No.		SONOTONE PART No.		
	CARTIDGE	NEEDLE*	CARTIDGE	NEEDLE*	CARTIDGE	NEEDLE*	CARTIDGE	NEEDLE*	
M1									

BATTERIES

ITEM No.	VOLTAGE	AIWA PART No.	REPLACEMENT DATA			NOTES
			BURGESS	EVEREADY	MALLORY	
M2	6V (Total)	UM-1	230 or AL 2	1050 or E 95	M13R or MN 1300	4 Required.

MISCELLANEOUS

ITEM No.	PART NAME	AIWA PART No.	NOTES
S1	Switch		Selector (AM-FM-Phono)