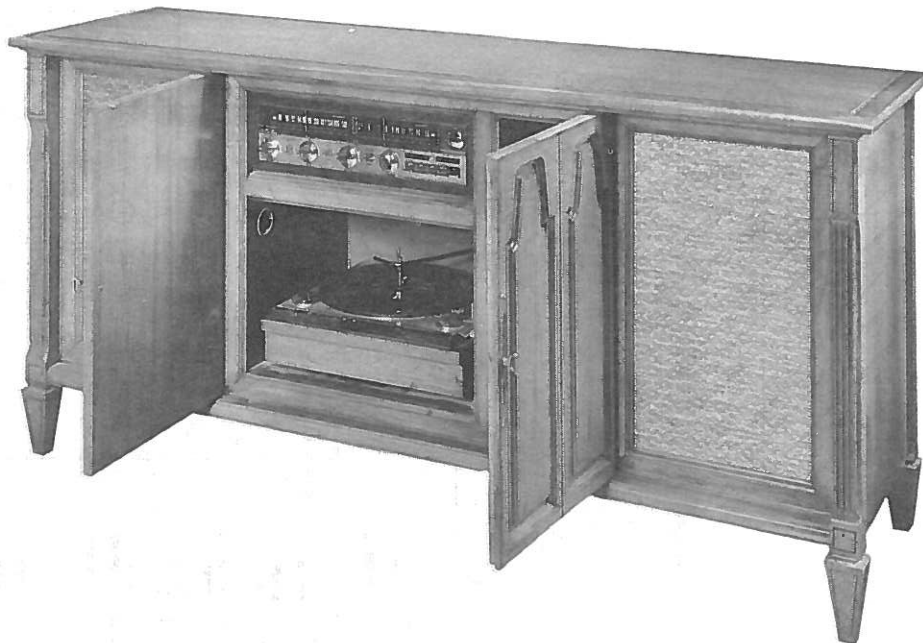


PHOTOFACT® Folder

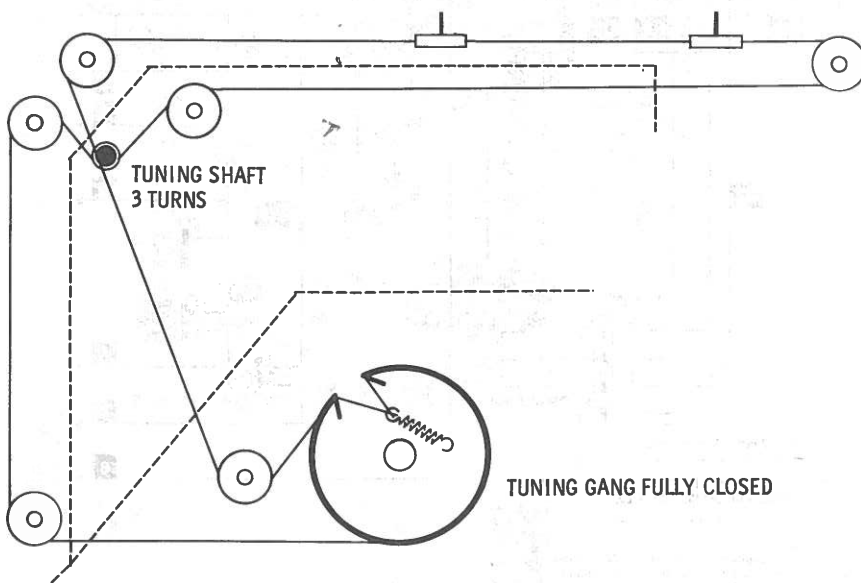
with CIRCUITRACE™

PHILCO CHASSIS
PD100STA, PD100STBPHILCO CHASSIS
PD100STA, PD100STB

TRADE NAME: Philco Models P1744CH, MA, PC, WA (Ch. PD100STA), P1890MB, P1891WA, P1892PC, P1893DCH, P1894LCH (Ch. PD100STB)
 SUPPLIER: For Current Address, See Annual Index.
 TYPE SET: 21 Transistor AM-FM-FM Stereo Receiver W/4 Speed Automatic Record Changer
 POWER SUPPLY: 110-120 Volts AC, 60 Cycles RATING: 15 Watts, .125 Amp. @ 117 Volts AC (Less Changer)

FOR SERVICE INFORMATION ON RECORD CHANGER VM-1297—SEE PHOTOFACT SET 797, FOLDER 7.

DIAL CORD STRINGING



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

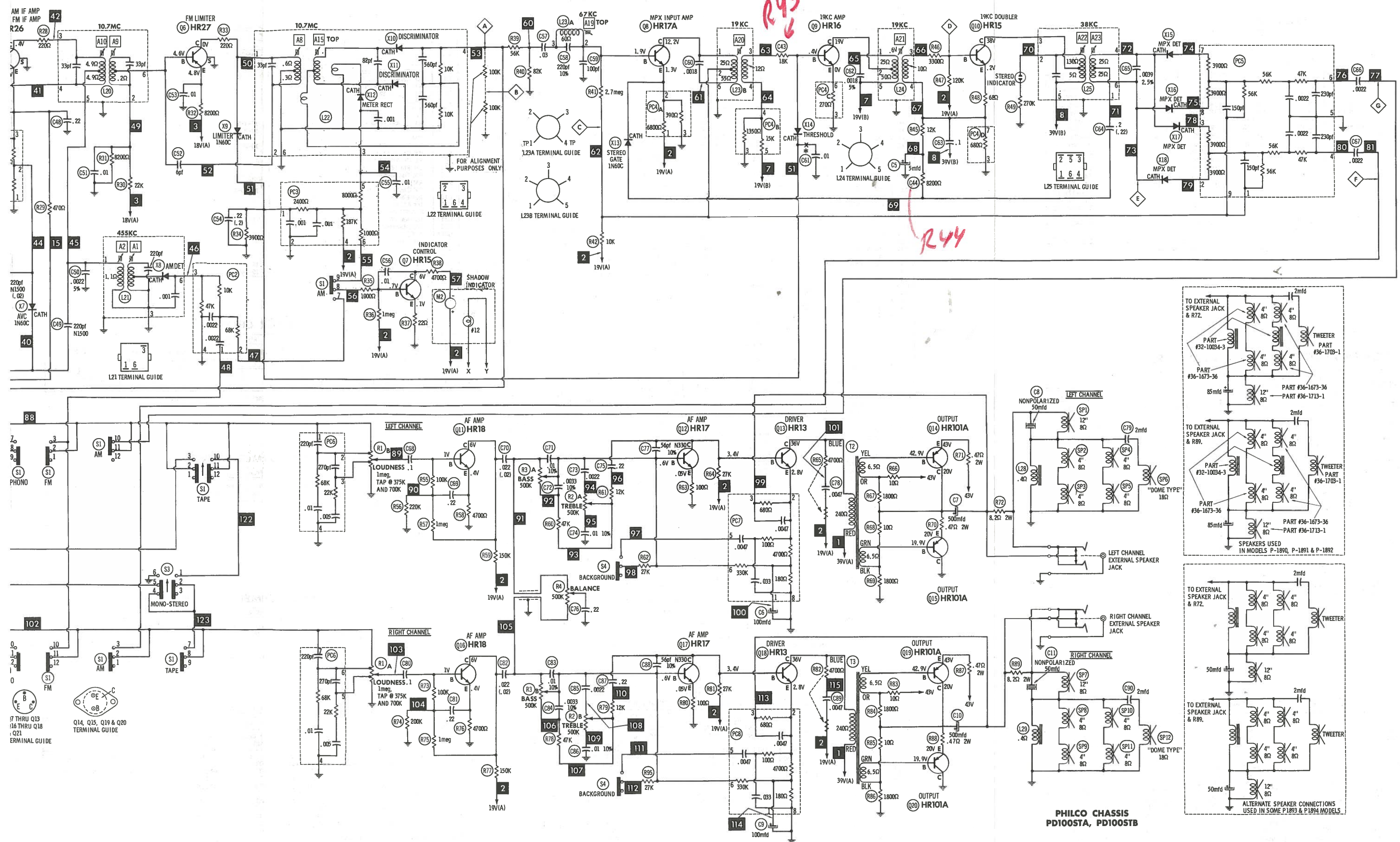
The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. SN009

Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1967 Howard W. Sams & Co., Inc., Indianapolis, Indiana 46206. Printed in U. S. of America

DATE 3 -67

SET 871 FOLDER 7

PHILCO CHASSIS
PD100STA, PD100STB



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 A4, A7 thru A15, A18 thru A23. GENERAL CEMENT: 8606, 8606L, 8869 WALSCO: 2543, 2544, 2588
A5, A6, A16, A17. GENERAL CEMENT: 8868, 8987, 9089 WALSCO: 2531-X, 2541, 2587

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, A4.	Adjust for maximum. Repeat until no further improvement can be made.
2. 1620KC	"	"	A5.	Adjust for maximum.
3. 1400KC	Tune to signal.	"	A6.	"
4. 600KC	"	"	A7.	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

Connect generator across antenna terminals with 120Ω carbon resistors in series with each lead.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
5. 10.7MC (Unmod.)	Point of non-interference.	DC probe of VTVM to point Δ ; common to ground.	A8, A9, A10, A11, A12, A13, A14.	Adjust for maximum.
6. "	"	DC probe to point Δ ; common to ground.	A15.	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

Connect generator across antenna terminals with 120Ω carbon resistors in series with each lead. 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 Δ ; low side to ground.	A8, A9, A10, A11, A12, A13, A14.	Disconnect stabilizing capacitor C. Adjust for maximum gain and symmetry of response similar to Fig. 1 with marker as shown. Reconnect C.
6. "	"	Vert. amp. to point Δ ; low side to ground.	A15.	Adjust A15 (Secondary) to place marker at center of crossover lines similar to Fig. 2. Adjust A 8 (Primary) for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

Connect generator across antenna terminals with 120Ω carbon resistors in series with each lead.

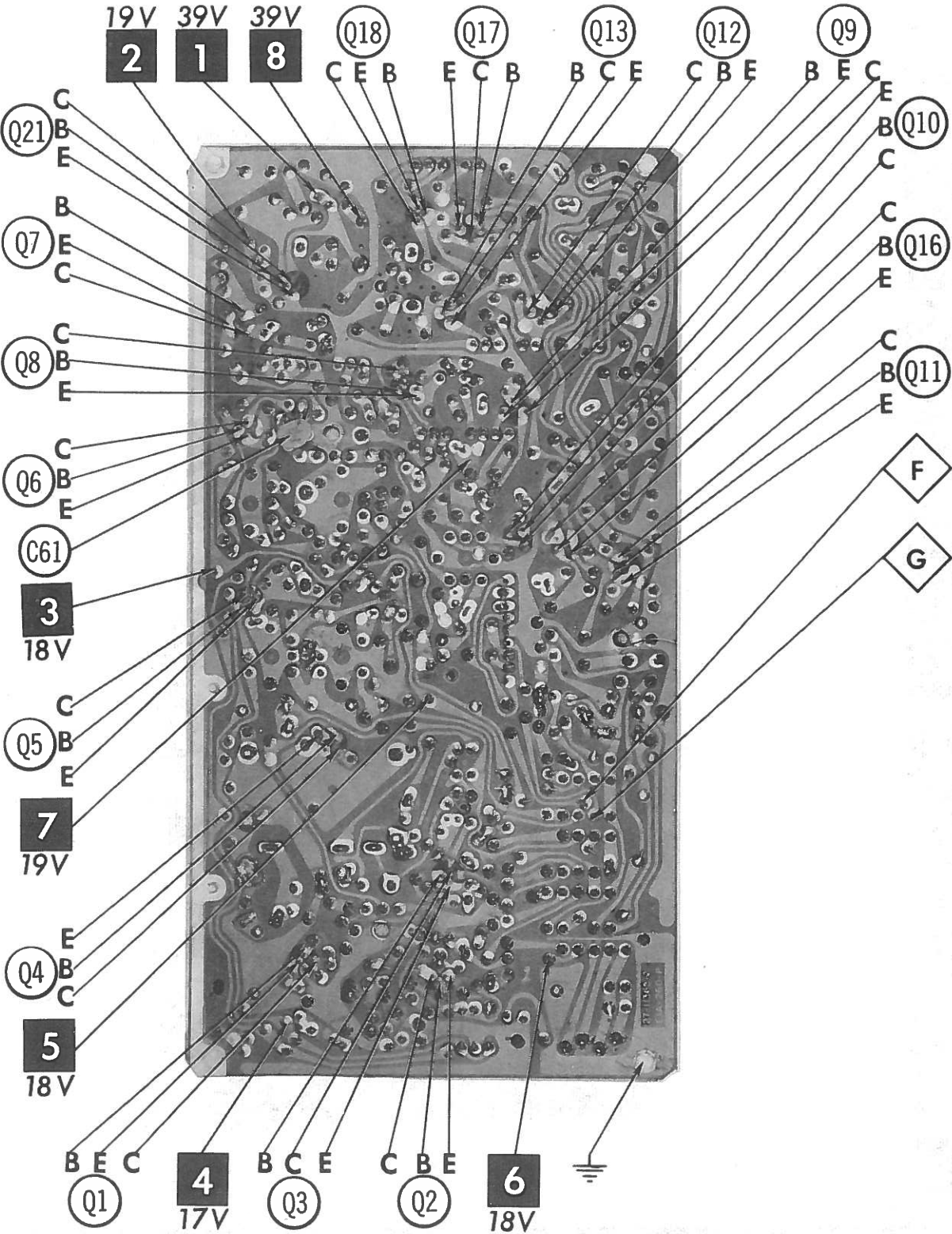
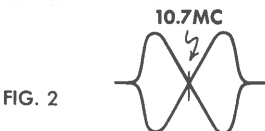
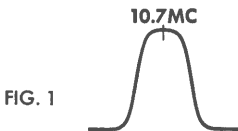
GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
7. 108MC	Set at high end.	DC probe of VTVM to point Δ ; common to ground.	A16, A17.	Adjust for maximum.
8. 90MC	Tune to signal.	"	A18.	Rock tuning and adjust for maximum. Repeat steps 7 and 8 until no further improvement can be made.

FM STEREO MULTIPLEX ALIGNMENT USING FM STEREO SIGNAL GENERATOR (± .0001%) ACCURACY

Connect high side of generator to point Δ , low side to ground.

GENERATOR FREQUENCY	INDICATOR	ADJUST	REMARKS
9. 67KC	Vert. amp. of Scope thru a 1 meg to point Δ ; low side to ground.	A19.	Adjust for MINIMUM.
10. 19KC	Vert. amp. thru 47K to point Δ ; low side to ground.	A20, A21.	Adjust for maximum.
11. "	Vert. amp. thru 47K to point Δ ; low side to ground.	A22, A23.	Adjust maximum for 38KC response.
12. Modulated Left Channel	Vert. amp. to point Δ ; low side to ground.	A20, A21, A22, A23.	Adjust for MINIMUM. This should require only slight adjustment.
13. Modulated Right Channel	Vert. amp. to point Δ ; low side to ground.		Check for MINIMUM. Make compromise adjustments of A20, A21, A22, A23 if necessary.

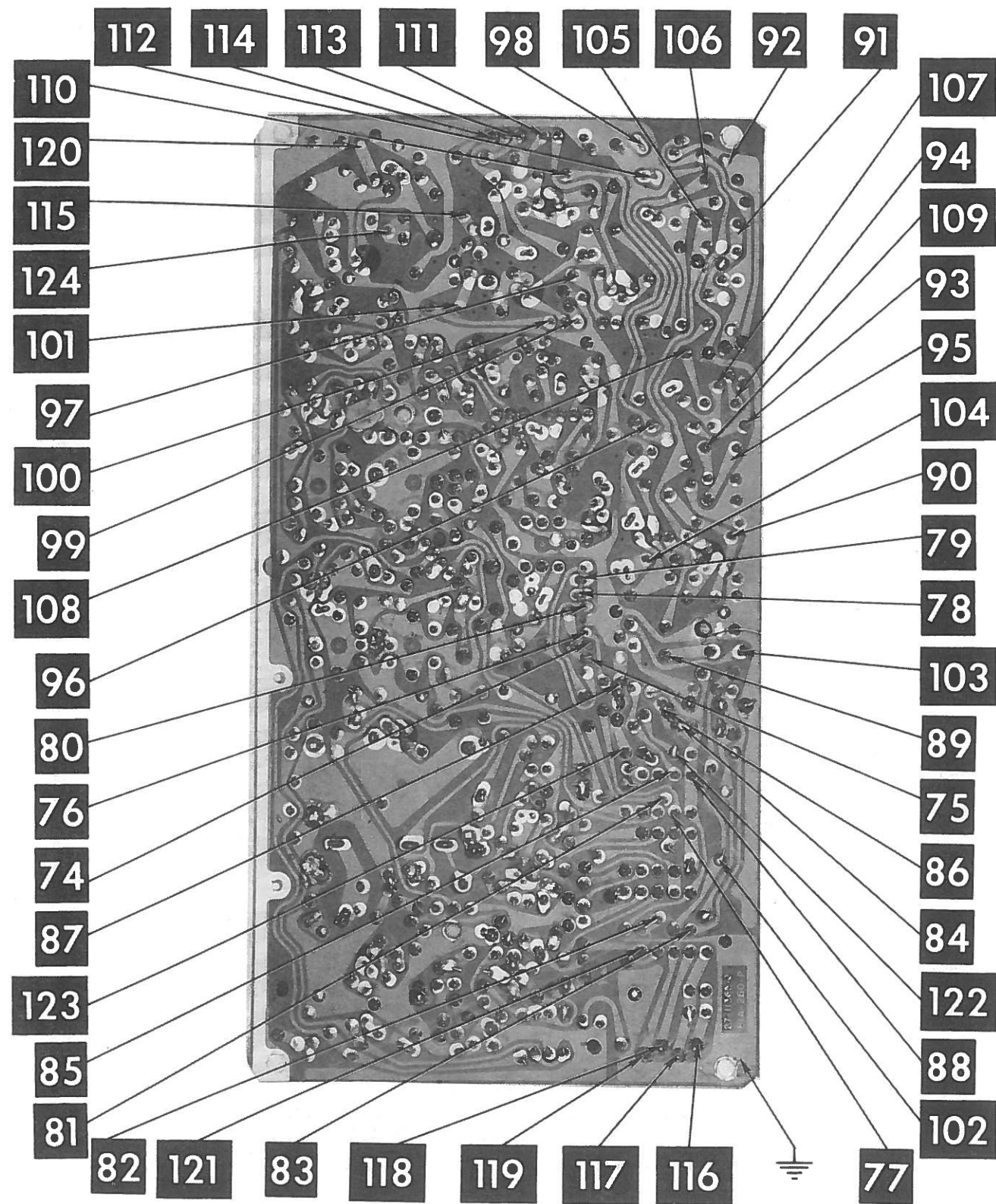
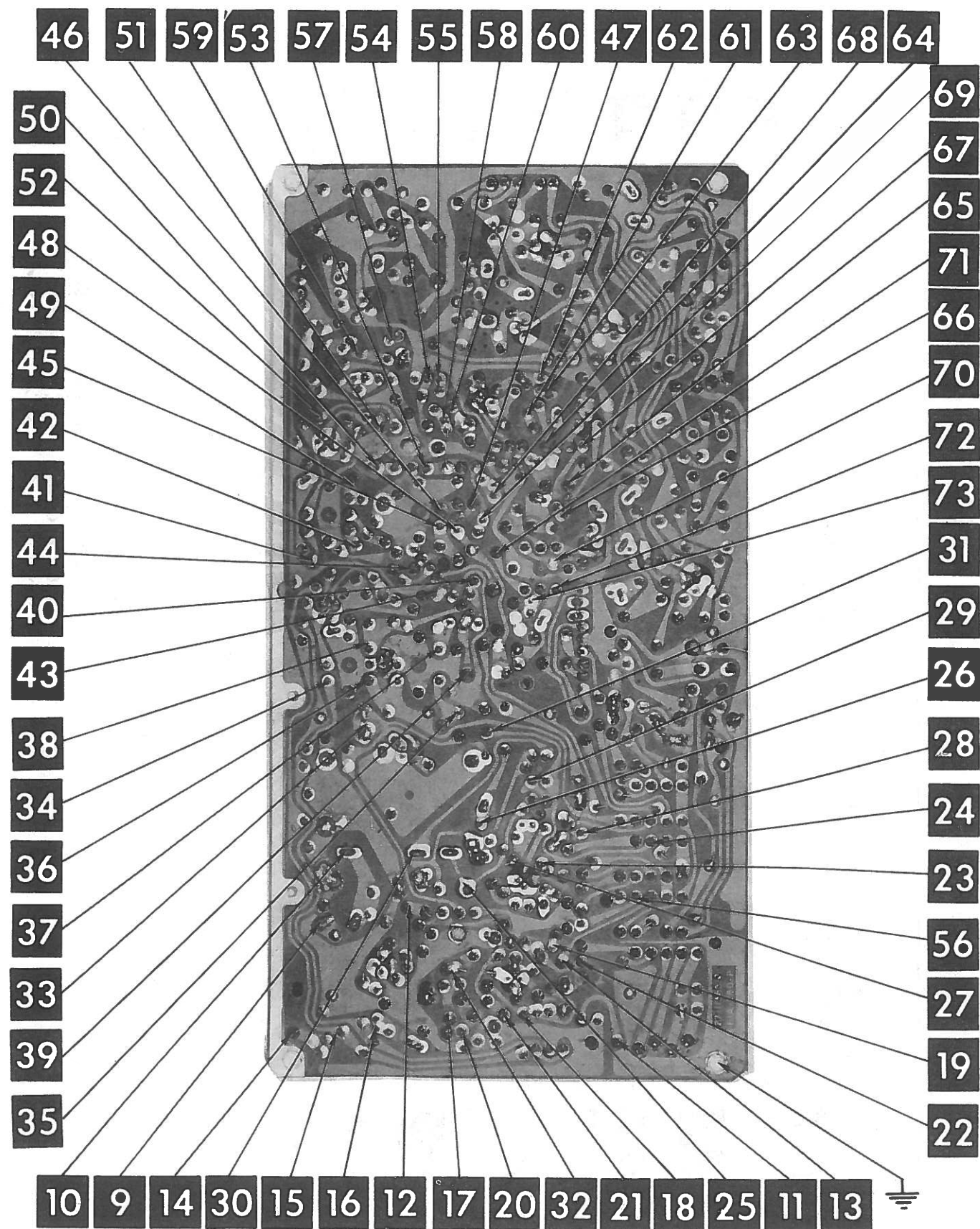
To align multiplex section using an air signal, first make sure FM section is properly aligned. Tune in a strong FM stereo signal. Follow steps 9 thru 13 above except in step 9 adjust to eliminate whistle or interference.

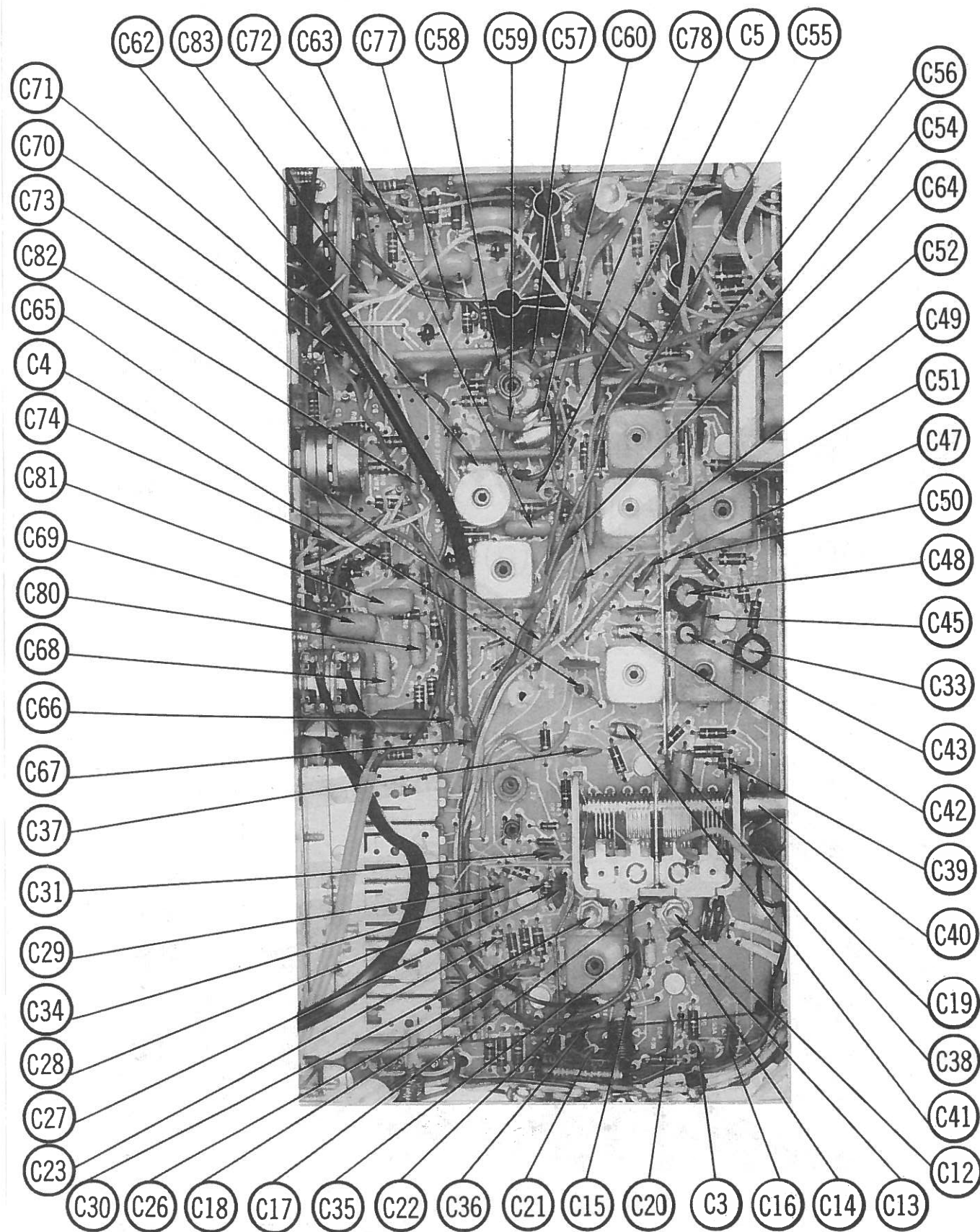
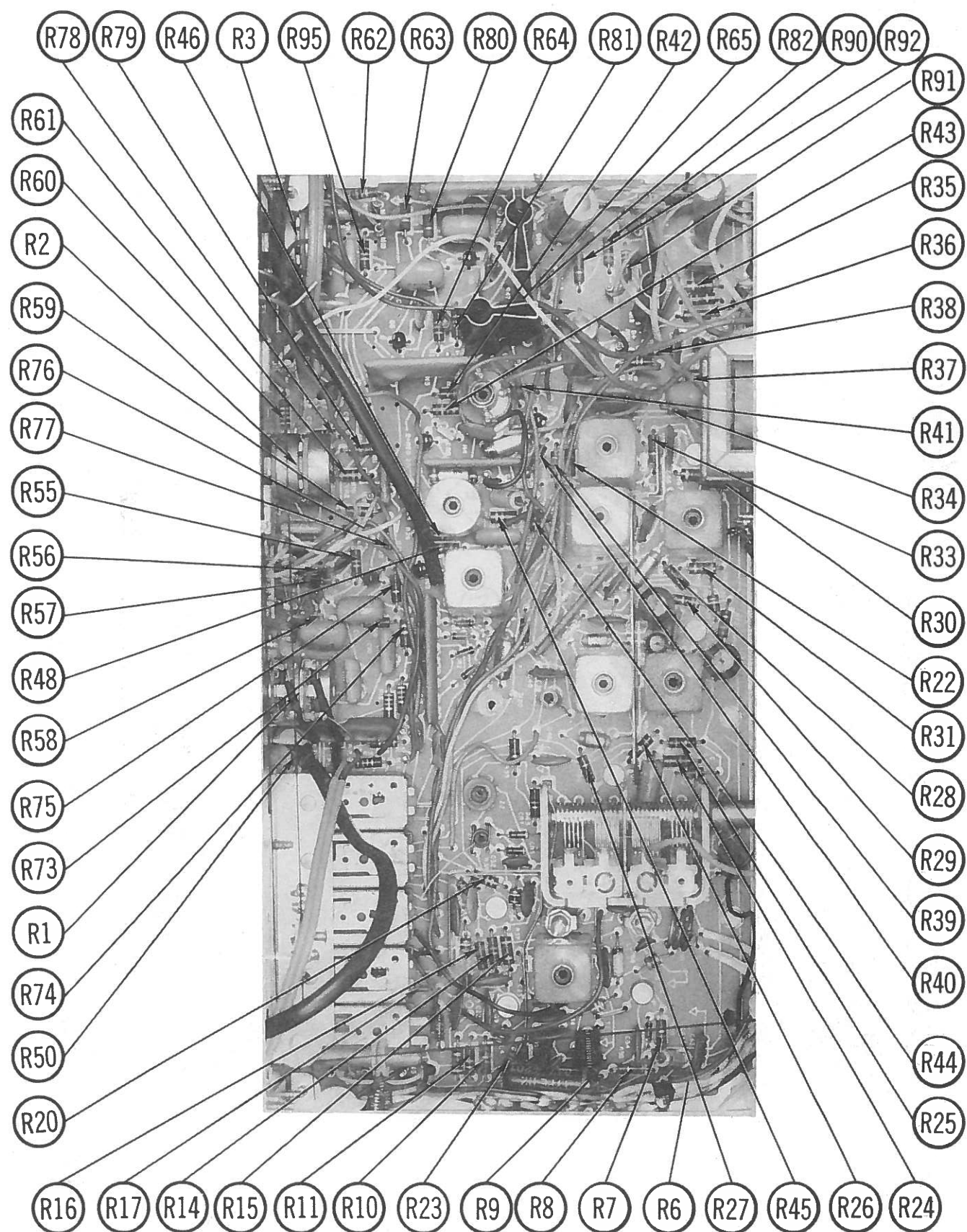


PHILCO CHASSIS
PD100STA, PD100STB

FOLDER 7

A Howard W. Sams CIRCUITRACE® Photo





PARTS LIST AND DESCRIPTION

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

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES	PHILCO PART No.
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.		
Q1	HR20	AM-FM RF Amp.	DS-41		SK-3008	PNP	34-8000-61
Q2	HR24	FM Mixer	DS-41		SK-3008	PNP	34-8000-65
Q3	HR25	AM-FM Oscillator	DS-41		SK-3008	PNP	34-8000-66
Q4	HR26	AM Mixer-1st FM IF Amp.	DS-56	GE-9	SK-3008	PNP	34-8000-67
Q5	HR26	1st AM-2nd FM IF Amp.	DS-56	GE-9	SK-3006	PNP	34-8000-68
Q6	HR27	FM Limiter	DS-56	GE-9	SK-3006	PNP	34-8000-68
Q7	HR15	Indicator Control Amp.	DS-66	GE-10	SK-3020	NPN	34-8001-54
Q8	HR17A	MPX Input Amp.	DS-66	GE-10	SK-3020	NPN	34-8001-60
Q9	HR16	19KC Amp.		GE-10	SK-3020	NPN	34-8001-55
Q10	HR15	19KC Amp.			SK-3020	NPN	34-8001-54
Q11	HR18	AF Amp.	DS-66	GE-10	SK-3020	NPN	34-8001-57
Q12	HR17	AF Amp.	DS-66	GE-10	SK-3020	NPN	34-8001-56
Q13	HR13	Driver			SK-3020	NPN	34-8001-52
Q14	HR101A	Output	DS-520	GE-3	SK-3009	PNP ①	34-8002-18
Q15	HR101A	Output	DS-520	GE-3	SK-3009	PNP ①	34-8002-18
Q16	HR18	AF Amp.	DS-66	GE-10	SK-3020	NPN	34-8001-57
Q17	HR17	AF Amp.	DS-66	GE-10	SK-3020	NPN	34-8001-56
Q18	HR13	Driver			SK-3020	NPN	34-8001-52
Q19	HR101A	Output	DS-520	GE-3	SK-3009	PNP ①	34-8002-18
Q20	HR101A	Output	DS-520	GE-3	SK-3009	PNP ①	34-8002-18
Q21	HR19	Regulator		GE-10	SK-3020	NPN	34-8001-58

① When replacing, apply silicone grease to both sides of insulator. Tighten mounting screws securely. Check bias adjustment.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT (Max.)	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	.200A	34-8054-10	GE-504A or GE-505	8D4 or 5A4-D	A100 or CTP100①	SK-3016 or SK-3017	40C or S-5981①
X2	.200A	34-8054-10	GE-504A or GE-505	8D4 or 5A4-D	A100 or CTP100①	SK-3016 or SK-3017	40C or S-5981①
X3		34-8057-3	1N60	1N60			
X4		34-8057-1②					
X5		34-8057-1②					
X6		1N60C	1N60	1N60			
X7		1N60C	1N60	1N60			
X8		⑤	1N60	1N60			
X9		1N60C	1N60	1N60			
X10		⑤	1N60	1N60			
X11		⑤	1N60	1N60			
X12		⑤	1N60	1N60			
X13		1N60C	1N60	1N60			
X14		1N60C	1N60	1N60			
X15		34-8057-3	1N60	1N60			
X16		34-8057-3	1N60	1N60			
X17		34-8057-3	1N60	1N60			
X18		34-8057-3	1N60	1N60			
X19	.005A	34-8057-4④					

① A single unit replacement for X1 and X2.

② Part of L21.

④ 19 Volt Zener Diode.

② Variable capacitor Diode.

⑤ Part of L22.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA					
	CAP.	VOLT.	PHILCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	1000	50	30-2601-42	AFH1-14	AA0174	XC1-27	FP068.5	TVL-1338
C2	150	25	30-2611-14	PRS1370	BR150-50	QT1-28	TC25015	TVA-1207.5
C3	5	15	30-2610-1	CRE454A	NLW5-15	MT1-3	TT15X5	TE-1152
C4	5	15	30-2610-1	CRE454A	NLW5-15	MT1-3	TT15X5	TE-1152
C5	5	25	30-2610-2	CRE604A	NLW5-50	MT1-3	TT25X5	TE-1202
C6	100	3	30-2611-9	CRE223	NLW100-3	MT1-18	TT3X100	TE-1059.5
C7	500	50	30-2596-19	PRS1390	BR500-50	QT1-31	TC50050	TVA-1315
C8	50	25NP	30-2593-9	NP-PRS7330	BRNP20-30 & BRNP20-30	NPQT-5.1	TCN1551	TVAN-1206.1
C9	100	3	30-2611-9	CRE223	NLW100-3	MT1-18	TT3X100	TE-1059.5
C10	500	50	30-2596-19	PRS1390	BR500-50	QT1-31	TC50050	TVA-1315
C11	50	25NP	30-2593-9	NP-PRS7330	BRNP20-30 & BRNP20-30	NPQT-5.1	TCN1551	TVAN-1206.1

PARTS LIST AND DESCRIPTION (CONTINUED)

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

CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELWENCO PART No.	MALLOY PART No.	SPRAGUE PART No.
C12	1-5	#31-6520-36						
C13	7.5	NPO						
C14	4.7	10%						
C15	3.9	10%						
C16	.1	16V						
C17	100	N1500						
C18	.1	16V						
C19	.01							
C20	.01							
C21	120	N1500						
C22	.0015							
C23	7.5	10%						
C24	.01							
C25	.01							
C26	.01							
C27	.0047							
C28	7.5	10%						
C29	.0047							
C30	3-12							
C31	.001							
C32	.01							
C33	.22	100V						
C34	100							
C35	150	N750						
C36	.01							
C37	.0082							
C38	.015	200V						
C39	1.5							
C40	.01							
C41	.0015	180V 10%						
C42	.820	5%						
C43	.01	100V 10%						
C44	1.5	10%						
C45	.01							
C46	.01							
C47	220	N1500						
C48	.22	100V						
C49	220	N1500						
C50	.0022	5%						
C51	.01							
C52	.01							
C53	.01							
C54	.22	75V						
C55	.01							
C56	.01							
C57	.03	50V						
C58	220	10%						
C59	100	10%						
C60	.0018							
C61	.01							
C62	.0018	500V 5%						
C63	.1	100V						
C64	.2	16V						
C65	.0039	2.5%						
C66	.0022							
C67	.0022							
C68	.1	100V						
C69	.22	75V						
C70	.022	100V						
C71	.01	100V 10%						
C72	.0033	100V 10%						
C73	.0022							
C74	.01	100V 10%						
C75	.22	75V						
C76	.22	100V						
C77	56	N330 10%						
C78	.0047							
C79	.2	100V						
C80	.1	100V						
C81	.22	75V						
C82	.022	100V						
C83	.01	100V 10%						
C84	.0033	100V 10%						
C85	.0022							
C86	.01	100V 10%						
C87	.22	75V						
C88	56	N330 10%						
C89	.0047							
C90	.2	100V						
C91	.047	400V						
C92	.01							
C93								

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
Philco Part Number. † Alternate Value.

CONTROLS

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

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA					
			PHILCO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLOY PART No.	
R1A	Loudness/Right	1meg	33-5616-1	F55-1meg, R55-1meg, SF014		B18-137XX, SK1, QCM	FA16DT55, CS3500	
B	Loudness/Left	1meg						
R2A	Treble/Left	500K	33-5616-3	F3-500K, R3-500K, SF014, CPL-2		B17-133, B17-133, SK1, QCM or (BUL, CF16, CR11, SS1, SS7A, DC1)*	FA55R, RU55R, CS3500	
B	Treble/Right	500K						
R3A	Bass/Left	500K	33-5616-2	F1-500K, R1-500K, SF014, CPL-2		NP-500K-S, NR-500K-S, UP-B-400, DC-2	FA55L, RU55L, CS3500	
B	Bass/Right	500K						
R4	Balance	500K	33-5587-51					

* "SNAPTROL"

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					
		PHILCO PART No.	MEISSNER Part No.	MERIT PART No.	MILLER PART No.	WORKMAN PART No.	
L1	RF Choke (12 turns)	32-4652-98					
L2	RF Choke (12 turns)	32-4652-98					
L3	RF Choke (12 turns)	32-4652-98					
L4	RF Choke (12 turns)	32-4652-98					
L5	Balun	32-4799-5					
L6	FM RF	32-4864-1					
L7	Loopstick	32-4668-20					
L8	RF Choke (1.3uh)	32-4645-66	19-1000	BC-561	74F126AP	TB259	
L9	RF Choke (6.1uh)	32-4645-69	19-2014	BC-565	4610	T992	
L10	FM RF	32-4683-2					
L11	RF Choke (230uh)	32-4762-8					
L12	RF Choke (3 turns)	32-4864-2	19-2027	BC-673	72F224AP	T315	
L13	RF Choke (10 turns)	32-4652-99					
L14	1st FM IF	32-4861-7					
L15	FM Oscillator	32-4865-2					
L16	AM Oscillator	32-4669-10					
L17	RF Choke (1.2uh)	32-4645-67	19-1000	BC-561	74F126AP	T805	
L18	2nd FM IF	32-4861-8					
L19	1st AM IF	32-4858-1					
L20	3rd FM IF	32-4861-8					
L21	2nd AM IF	32-4858-2					
L22	FM Discriminator	32-4866-3					
L23A	67KC Trap	32-4859-2					
B	19KC Input						
L24	19KC	32-4859-1					
L25	38KC Output	32-4860-1					
L26	RF Choke (1.2uh)	32-4645-67	19-1000	BC-561	74F126AP	T805	
L27	RF Choke (1.3uh)	32-4645-66	19-1000	BC-561	74F126AP	TB269	

CROSSOVER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	PHILCO PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L28	.40	2.2M	2.2MH	32-10034-1					① Used in Models: P1893DCH & P1894LCH.
L29	.40	2.2M	2.2MH	32-10034-1					

Models P1890MB, P1891WA, P1892PC uses (4 Chokes), Part #32-10034-3, 32-10034-2.

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	PHILCO PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117V AC @ 125A AC	64V AC CT @ .142A DC	6V AC @ .45A AC	32-10038-2					

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	PHILCO PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	7.5	1	1	32-10026-1					
T3	7.5	1	1	32-10026-1					

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA			NOTES
	PHILCO PART No.	JENSEN PART No.	QUAM PART No.				
SP1	12"	PM	6-8Ω	36-1678-12	W12R8	12C12L	① Used in Models P1744CH, MA, PC, WA. ② Used in Models P1890MB, P1891WA, P1892PC.
SP2	4"	PM	6-8Ω	36-1673-36	C4T8	4A128	
SP3	4"	PM	6-8Ω	36-1673-36	C4T8	4A128	
SP4	4"	PM	6-8Ω	36-1673-36	C4T8	4A128	
SP5	4"	PM	6-8Ω	36-1673-36	C4T8	4A128	
SP6	Dome		14-18Ω	36-1703-1			
SP7	12"	PM	6-8Ω	36-1678-12	W12R8	12C12L	
SP8	4"	PM	6-8Ω	36-1673-36	C4T8	4A128	
SP9	4"	PM	6-8Ω	36-1673-36	C4T8	4A128	
SP10	4"	PM	6-8Ω	36-1673-36	C4T8	4A128	
SP11	4"	PM	6-8Ω	36-1673-36	C4T8	4A128	
SP12	Dome		14-18Ω	36-1703-1			
	12"	PM	6-8Ω	36-1713-1	W12R8	12C12L	
	4"	PM	28-32Ω	36-1673-36		4A05Z32	
	2 3/4"	PM	60-65Ω	36-1714-2			

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	PHILCO PART No.	REPLACEMENT DATA
PC1	AVC Bias Network	2700Ω, 3900Ω, 4700Ω, 5600Ω, 18K, 22K, 27K, 120K	30-6048-3	
PC2	AM Det. Network	10K, 47K, 68K, .0022, .0022	30-6060-1	
PC3	Voltage Divider	1000Ω, 2400Ω, 8000Ω, 187K, .001, .001	30-6053-5	
PC4	Bias Network	270Ω, 390Ω, 680Ω, 135Ω, 6800Ω, 15K	30-6048-4	
PC5	MPX Det. Network	3900Ω, 3900Ω, 3900Ω, 3900Ω, 47K, 47K, 56K, 56K, 56K, 56K, 150pf, 150pf, 230pf, 230pf, .0022, .0022	30-6047-5	
PC6	Loudness Comp. Network	22K, 22K, 68K, 68K, 220pf, 220pf, 270pf, 270pf, .005, .005, .01, .01	30-6050-3	
PC7	Bias Network	100Ω, 180Ω, 680Ω, 4700Ω, 330K, .033, .0047, .0047	30-6062-1	
PC8	Bias Network	100Ω, 180Ω, 680Ω, 4700Ω, 330K, .033, .0047, .0047	30-6062-1	

PHONO CARTRIDGE & NEEDLES

*NEEDLE LISTINGS SHOWN ARE FOR RESPECTIVE REPLACEMENT CARTRIDGES ONLY.

ITEM No.	REPLACEMENT DATA						NOTES		
	PHILCO PART No.		ASTATIC PART No.		ELECTRO-VOICE PART No.			SONOTONE PART No.	
	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*		CARTRIDGE	NEEDLE*
M1	35-2877-1	VM-35918*	375D	N81SD*	5115D	3310DS*			
				N730SD		3310DS			Needle replacement for Original Cartridge.

MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
M2	Meter	76-13478-1	Tuning Indicator (Ch. 9D100STB)
M3	Motor	76-13478-2	Tuning Indicator (Ch. 9D100STA)
S1	Switch	42-2152-1	Phono Function
S2	Switch	42-2075-19	AFC
S3	Switch	42-2075-18	Mono/Stereo
S4	Switch	42-2075-2	Tone
	Printed Circuit Board	27-11365-2	

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Knob-Balance	28-14804-2	Knob-Tuning	28-14804-1
Knob-Bass & Treble	28-14804-3	Overlay	28-14857-7
Knob-Loudness	28-14804-4	Pointer	28-14251-4
Knob-Pushbutton	28-14807-1	Scale-Dial	27-10956-2

WIRING DATA

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