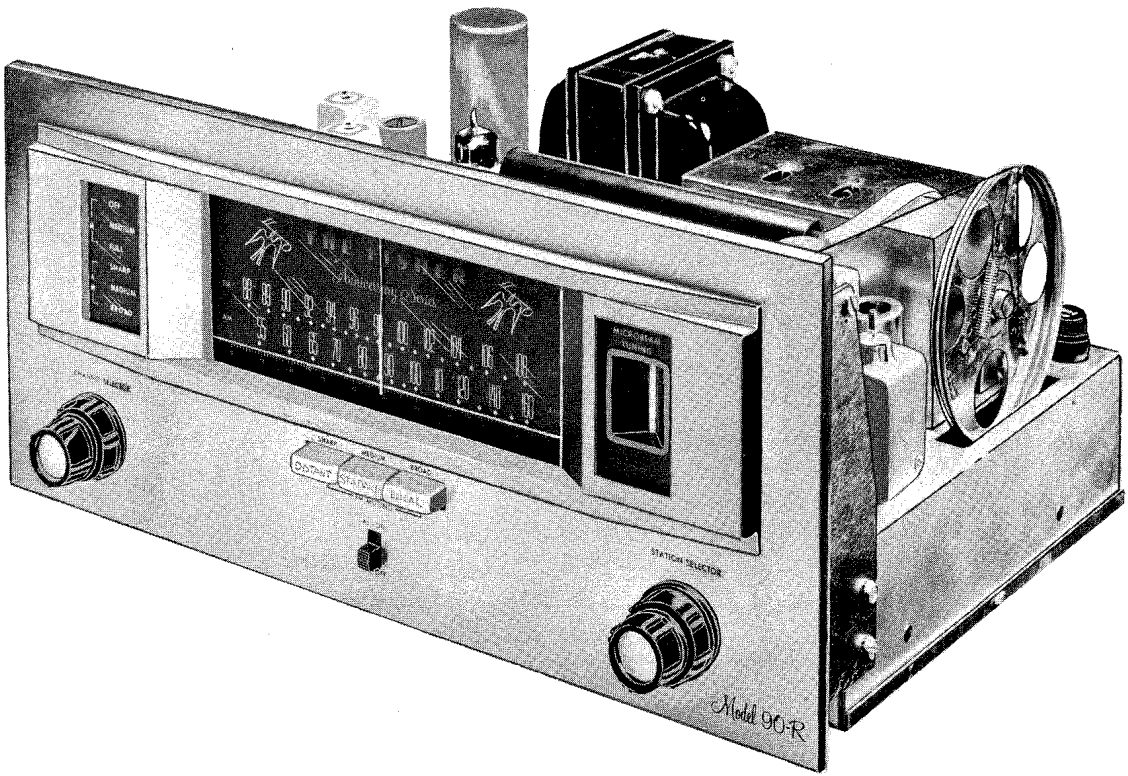


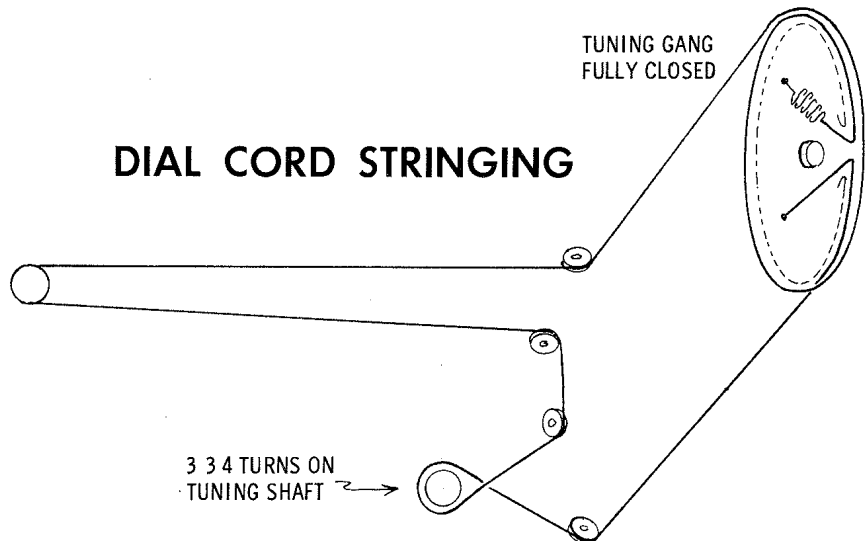


FISHER MODEL
90R



FISHER MODEL
90R

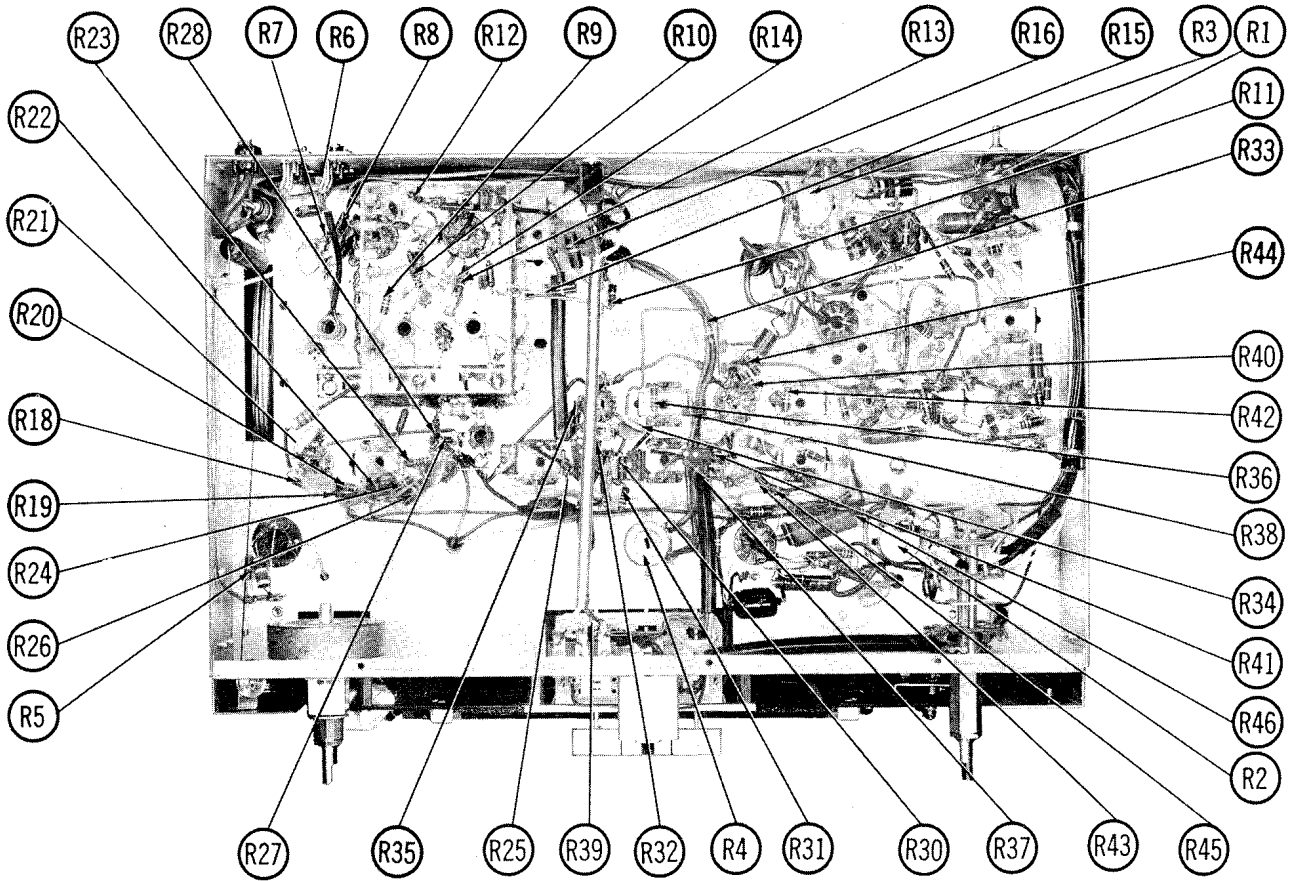
TRADE NAME	Fisher Model 90-R (Serial #19999 And Lower)		
MANUFACTURER	Fisher Radio Corp. , 21-21 44th Drive, Long Island City 1, N. Y.		
TYPE SET	AC Operated FM-AM Tuner		
TUBES	Twelve		
POWER SUPPLY	105-125 Volts AC-60 Cycles	RATING	.45 Amp. @ 117 Volts AC (45 Watts) FM
TUNING RANGE--BROADCAST	540 - 1700KC	FREQ. MOD.	88-108MC



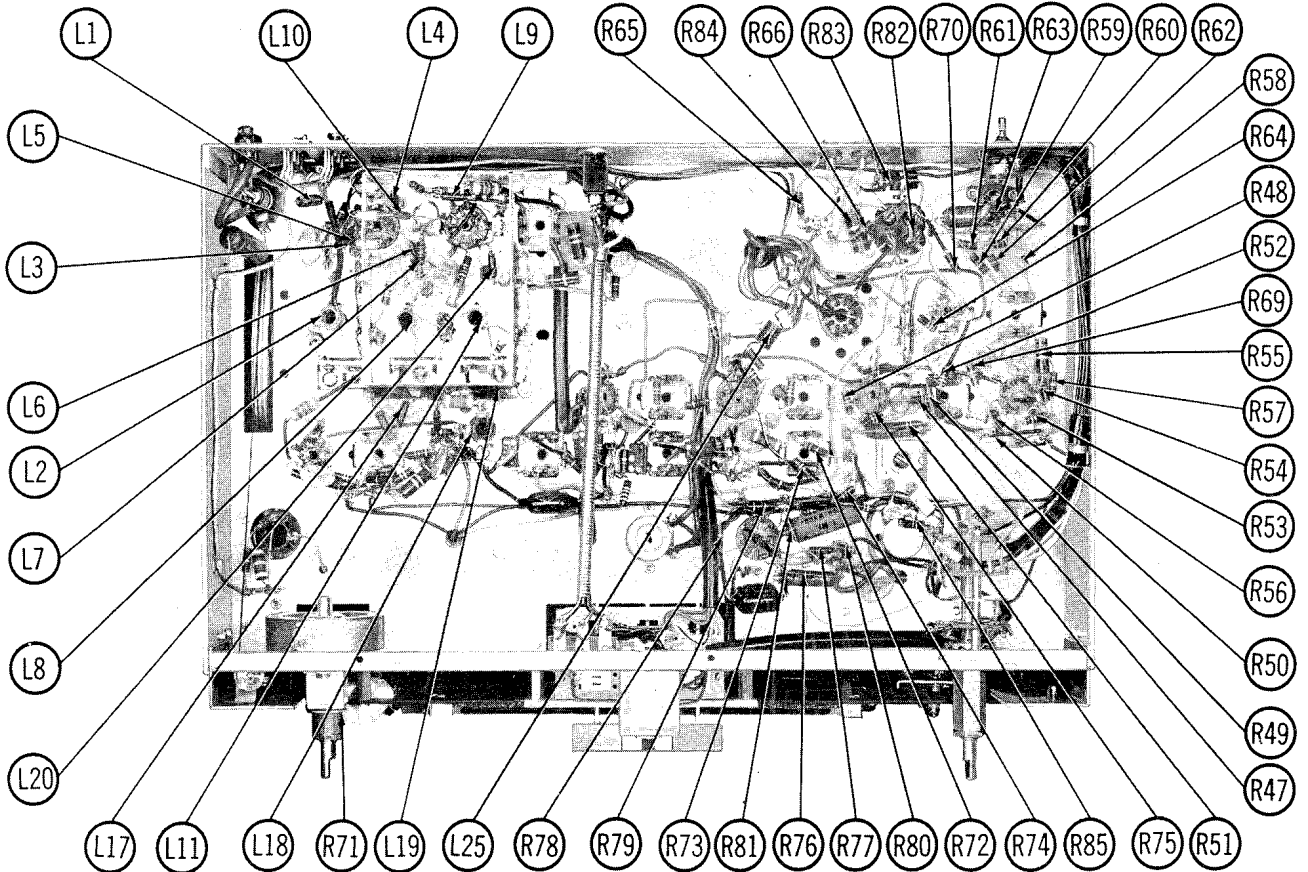
HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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 H752

the particular type of replacement part listed. 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. © 1959 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

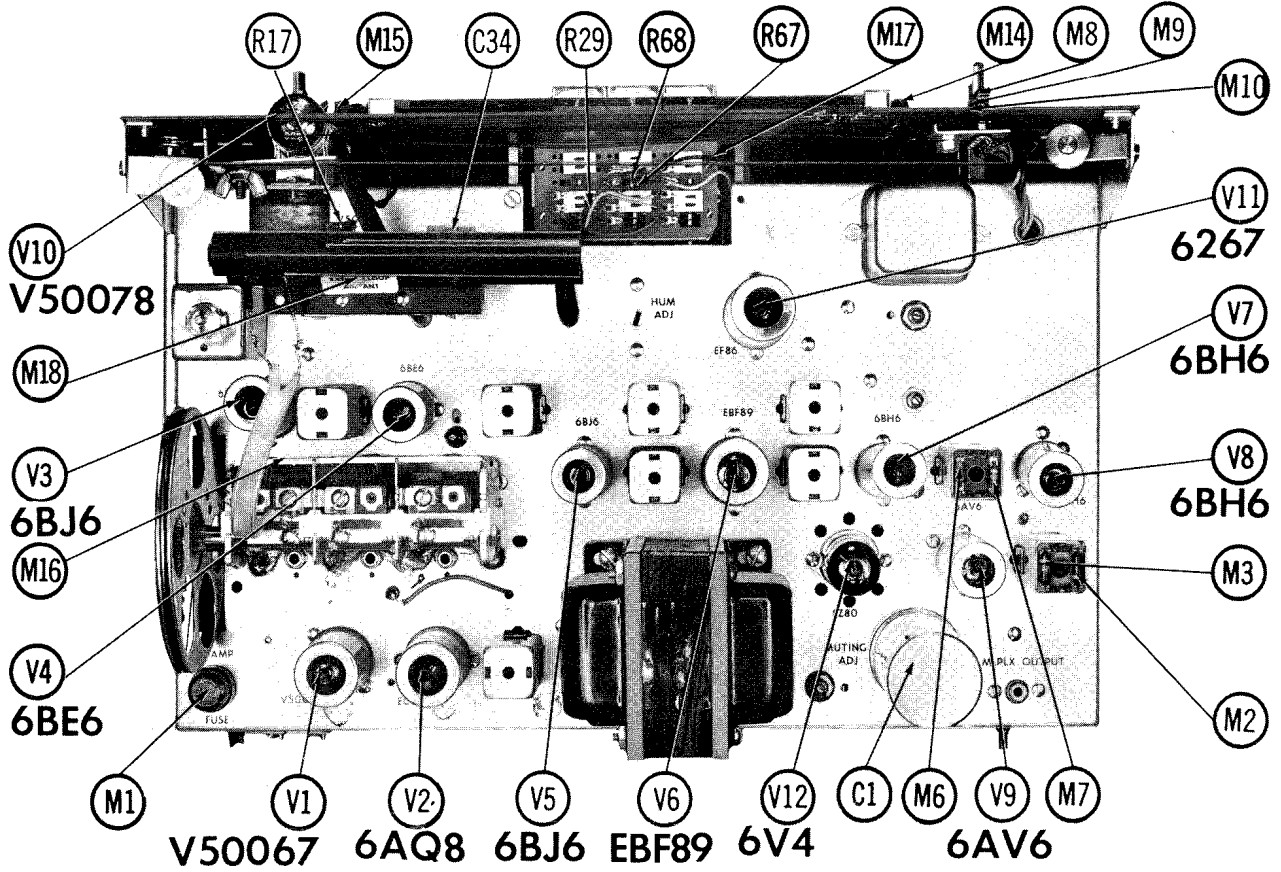


CHASSIS BOTTOM VIEW - RESISTOR IDENT. (R1-R46)



CHASSIS BOTTOM VIEW INDUCTOR & RESISTOR IDENT. (R47-R85)

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	FM RF Amp.	V50067/ PCC88	V7	3rd FM IF Amp.	6BH6
V2	FM Mixer-FM Osc.	6A08/ ECC85	V8	4th FM IF Amp.	6BH6
V3	AM RF Amp.	6BJ6	V9	FM RF AVC Clamper	6AV6
V4	AM Conv.	6BE6		FM-AM AVC Clamper	
V5	1st FM-AM IF Amp.	EBF89		Squelch	
V6	2nd FM-AM IF Amp.		V10	Tuning Indicator	V50078/ EMB40
	AM Det-AM AVC		V11	AF Amp	6267/ EFB6
			V12	Rect.	6V4/ EZ80

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	FISHER PART No.	AEROVOX PART No.	CORNELL DUBIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	40	300	C-829-126	A7H4-04-30	D0034	FP420-38	TMQ-120	Q-012	TVL-4635-3
C1B	40	300							
C1C	40	250							
C1D	40	250							
C2	4	50	C-629-175	PWE50005	NL5-50	TF50X5	ML4-50	MQ-1504	TE-1302-1
C3	8	50	C-629-138	PWE50008	NL10-50	TF10X50	ML8-50	MQ-1507	TE-1303-3
C4	1	250	C-546-126	PRK450V1	BR145	TF250X1	ML30-6	MMT-4301	RZ102 *
C5	25	6	C-639-114	XPP-6025	NL25-6	TF6X25		MQ-0225	TE-1091

* Not normally in distributors stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						NOTES	
	CAP.	VOLT.	FISHER PART No.	AEROVOX PART No.	CORNELL DUBIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.		
C6	24	1000	CC21GF240K5	NPO-S15	TCZ-24	CTA8Q24C	ZT-555			10%
C7	5	1000	CC20CH050P5	HVD-15-1000	DD-102	L10D1	DC3021	5GA-D1		NPO N1500 N1500
C8	100	1000	C-50070-5	EF-001	MFT-1000			503C-D1		
C9	100	1000	C-50071-2	EF-001	MFT-1000			503C-D1		
C10	1000	1000	C-50071-2	EF-001	MFT-1000			503C-D1		
C11	1000	1000	C-629-172	EF-001	MFT-1000	BYA6D1	DC521	5HK-D1		
C12	1000	1000	C-629-172	EF-001	MFT-1000			503C-D1		
C13	1000	1000	C-629-172	EF-001	MFT-1000			503C-D1		
C14	1000	1000	C-629-172	EF-001	MFT-1000			503C-D1		
C15	1000	1000	C-50071-4	BPD-005	DD-502	BYA10D5	DC525	5HK-D5		
C16	1000	1000	C-629-172	EF-001	MFT-1000			503C-D1		
C17	5000	1000	C-50071-4	HVD-15-1000	DD-102	L10D1	DC3021	5GA-D1		
C18	1000	1000	C-50071-2	BPD-005	DD-502	BYA10D5	DC525	5HK-D5		
C19	5000	1000	C-50071-4	BPD-005	DD-502	BYA10D5	DC525	5HK-D5		
C20	68		CC21GP680K5	NPO-S168	D6-680	CTA8Q68C		5TCC-Q68		
C21			C-643-153							
C22	5		CC20CH050P5	NPO-S15	TCZ-24	CTA8Q24C	ZT-555	5GA-T1		NPO NPO
C23	5		CC20CH050P5	NPO-S15	DD-101	L10T1	ZT-555	5GA-T1		NPO NPO
C24	24	100	CC21GF240K5	BPD-001	DD-101		UC-531			10%
C25	100	100	CC21GF240K5	BPD-001	DD-101		UC-531			10%
C26	15		CC20TJ150J6							N470 N470
C27	100	1000	C-577-121	BPD-0001	DD-101	L10T1	UC-531	5CA-T1		
C28	100	1000	C-577-121	EF-001	MFT-1000		UC-531	503C-D1		
C29	1000	1000	C-629-172	EF-001	MFT-1000		MCH255	MS-21		
C30	1000	1000	CC21GP102K5	NPO-DH20	DD-121	L10T1	DC521	5HK-D1		
C31	120	1000	CC21GP121K5	BPD-001	DD-102	BYA6D1	DC521	503C-D1		
C32	1000	1000	C-629-172	EF-001	MFT-1000					
C33	1000	1000	C-629-172	EF-001	MFT-1000					
C34	120	20000	CC21GP121K5	NPO-SH20	DD-121	L10T1	DC525	MS-312		
C35	20000	20000	C-50071-3	BPD-02	DD-203	BYB82	DC525	5HK-S2		
C36	20000	20000	C-50071-3	BPD-02	DD-203	BYB82	DC525	5HK-S2		
C37	20000	20000	C-50071-3	BPD-02	DD-203	BYB82	DC525	5HK-S2		
C38	5000	68	C-50071-4	BPD-005	DD-502	BYA10D5	DC525	5HK-D5		
C39	10	1000	C-50071-6N	NPO-SH10	TCZ-R68		ZT-541	5TCC-Q1		
C40	10	1000	CC20CH100G5		TCZ-10					NPO N1500 N1500
C41	47	1000	C-50070-4							
C42	100	1000	C-50070-4							

FISHER MODEL
90R

FOLDER 8

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (cont)

ITEM No.	RATING CAP.	VOLT	REPLACEMENT DATA					NOTES
			CENTRALAB PART No.	FISHER PART No.	AEROVOX PART No.	MALLORY PART No.	SPRAGUE PART No.	
C43	5000		DD-502	C-50071-4	BPD-005	DC525	5HK-D5	5%
C44	470		1464-00047	C-3334	1464-00047	5R5T47	MS-347	
C45	20000		DD-203	C-50071-3	BPD-02	DC525	5HK-S2	10%
C46	120		CC21C21K5	CC21C21K5	NPO-S1120		5TCC-T12	N1400
C47	10		CC20VK100G5	C-50071-4		DC525	5HK-D5	5%
C48	5000		BPD-005	C-50071-4	1464-00047		MS-347	10%
C49	470	250	C-50074-27	C-50074-27			MS-347	
C50	5000		BPD-005	C-50071-4	BPD-005	DC525	5HK-D5	5%
C51	5000		BPD-005	C-50071-4	BPD-005	DC525	5HK-D5	5%
C52	5000		BPD-005	C-50071-4	BPD-005	DC525	5HK-D5	5%
C53	5000		BPD-005	C-50071-4	BPD-005	DC525	5HK-D5	5%
C54	470		1464-00047	C-3334	1464-00047		MS-347	
C55	470		BPD-02	C-3334	BPD-02		5TCC-Q1	
C56	10	1000	CC20CH100G5	CC20CH100G5	NPO-S110	ZT-541		NPO
C57	1	1000	C-50070-1	C-50070-1		DC525	5HK-D5	P100
C58	5000		BPD-005	C-50071-4	BPD-005	DC525	5HK-D5	10%
C59	5000		BPD-005	C-50071-4	BPD-005	DC525	5HK-D5	10%
C60	30	1000	C-50070-3	C-50070-3		DC525	5HK-D5	10%
C61	61		C-629-151-1	C-629-151-1			5TCC-Q47	
C62	47		CC21G3470K5	CC21G3470K5	NPO-S147		5HK-D5	
C63	5000		BPD-005	C-50071-4	BPD-005	DC525	5HK-D5	10%
C64	5000		BPD-005	C-50071-4	BPD-005	DC525	5HK-D5	10%
C65	5		CC20H050F5	CC20H050F5	NPO-S15	ZT-555	5HK-D5	
C66	5		CC20H050F5	CC20H050F5	NPO-S15	ZT-555	5HK-D5	
C67	100	1000	C-50070-5	C-50070-5			5HK-D5	
C68	100	1000	C-50070-5	C-50070-5			5HK-D5	
C69	5000		BPD-005	C-50071-4	BPD-005	DC525	5HK-D5	
C70	5000		BPD-005	C-50071-4	BPD-005	DC525	5HK-D5	
C71	5000		BPD-005	C-50071-4	BPD-005	DC525	5HK-D5	
C72	330	1000	HVD-15-330	C-50072-1	HVD-15-330	DC3033	5GA-T33	
C73	330	1000	HVD-15-330	C-50072-1	HVD-15-330	DC3033	5GA-T33	
C74	330	1000	HVD-15-330	C-50072-1	HVD-15-330	DC3033	5GA-T33	
C75	1000	1000	HVD-15-1000	C-50071-2	HVD-15-1000	DC3021	5GA-D1	
C76	1000	1000	HVD-15-1000	C-50072-3	HVD-15-1000	DC525	5HK-D5	10%
C77	5000	1000	BPD-005	C-50071-4	BPD-005	DC525	5HK-D5	
C78	1000	1000	HVD-15-1000	C-50071-2	HVD-15-1000	DC3021	5GA-D1	
C79	1000	1000	HVD-15-1000	C-50071-2	HVD-15-1000	DC3021	5GA-D1	
C80	5000		BPD-005	C-50071-4	BPD-005	DC525	5HK-D5	
C81	1000	1000	HVD-15-1000	C-50071-2	HVD-15-1000	DC3021	5GA-D1	
C82	1000	1000	HVD-15-1000	C-50071-2	HVD-15-1000	DC3021	5GA-D1	
C83	20000		BPD-02	C-50071-3	BPD-02	DC3021	5HK-S2	
C84	2200		CC20G22K5	CC20G22K5		MS-322	MS-S2	
C85	2200		BPD-02	C-50071-3	BPD-02	DC3021	5HK-S2	
C86	.1	250	C-50074-28	C-50074-28			5HK-S5	
C87	50000		BPD-05	C-50071-3	BPD-05	GEM-611	6TM-S1	
C88	18	600	CC20S180J5	CC20S180J5				
C89	.01		C-2747	C-2747	P688N-01			

① Some versions use 5000mF in this application (Part #C-50071-4)
 ② Some versions use 3mmf NPO in this application (Part #CC20CH030D5)
 ③ Some versions use 18mmf N330 in this application (Part #CC20S180J5)

CONTROLS

ITEM No.	RATING RESIST-ANCE	WATTS	REPLACEMENT DATA					INSTALLATION NOTES
			CENTRALAB PART No.	FISHER PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	500K	1/2	JP-504	R-520-139	A47-500K-S†	QU-133 †	U50 †	Output Level
R2A	200K	1/2	JP-254	R-629-141-2	FKS-1/4	RQ	Not Req.	AM 10KC Filter Adj.
R3A	50K	1/2	JP-503	R-629-141-1	FKS-1/4	QU-123 †	U35 †	Muting Adj.
R4	500Ω	1 (WV)	Not Req.	R-516-128	FKS-1/4	RQ	Not Req.	Hum Adj.

† Enlarge mounting hole to 3/8" diameter.

RESISTORS

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

ITEM No.	RATING OHMS	WATT	FISHER PART No.	NOTES	FISHER PART No.	RATING		FISHER PART No.	NOTES
						OHMS	WATT		
R46	1000K		RC20BF102K		RC20BF102K	100K		RC20BF104K	
R47	56K		RC20BF563K		RC20BF563K	100K		RC20BF563K	
R48	100K		RC20BF100K		RC20BF100K	100K		RC20BF100K	
R49	22K		RC20BF22K		RC20BF22K	100K		RC20BF22K	
R50	1000K		RC20BF100K		RC20BF100K	100K		RC20BF100K	
R51	220K		RC20BF22K		RC20BF22K	100K		RC20BF22K	
R52	470K		RC20BF47K		RC20BF47K	100K		RC20BF47K	
R53	470K		RC20BF47K		RC20BF47K	100K		RC20BF47K	
R54	18K		RC20BF18K		RC20BF18K	100K		RC20BF18K	
R55	18K		RC20BF18K		RC20BF18K	100K		RC20BF18K	
R56	2700K		RC20BF27K		RC20BF27K	100K		RC20BF27K	
R57	1500K		RC20BF15K		RC20BF15K	100K		RC20BF15K	
R58	1500K		RC20BF15K		RC20BF15K	100K		RC20BF15K	
R59	1000K		RC20BF10K		RC20BF10K	100K		RC20BF10K	
R60	6800K		RC20BF68K		RC20BF68K	100K		RC20BF68K	Note 3
R61	6800K		RC20BF68K		RC20BF68K	100K		RC20BF68K	Note 3
R62	270K		RC20BF27K		RC20BF27K	100K		RC20BF27K	
R63	68K		RC20BF68K		RC20BF68K	100K		RC20BF68K	
R64	470K		RC20BF47K		RC20BF47K	100K		RC20BF47K	
R65	10K		RC20BF10K		RC20BF10K	100K		RC20BF10K	
R66	220K		RC20BF22K		RC20BF22K	100K		RC20BF22K	
R67	12K		RC20BF12K		RC20BF12K	100K		RC20BF12K	
R68	18K		RC20BF18K		RC20BF18K	100K		RC20BF18K	
R69	100K		RC20BF100K		RC20BF100K	100K		RC20BF100K	Note 1
R70	100K		RC20BF100K		RC20BF100K	100K		RC20BF100K	Note 1
R71	470K		RC20BF47K		RC20BF47K	100K		RC20BF47K	
R72	3.3meg		RC20BF33K		RC20BF33K	100K		RC20BF33K	
R73	56K		RC20BF56K		RC20BF56K	100K		RC20BF56K	
R74	22K		RC20BF22K		RC20BF22K	100K		RC20BF22K	
R75	22meg		RC20BF22K		RC20BF22K	100K		RC20BF22K	
R76	1meg		RC20BF10K		RC20BF10K	100K		RC20BF10K	Note 1
R77	560K		RC20BF56K		RC20BF56K	100K		RC20BF56K	
R78	150K		RC20BF15K		RC20BF15K	100K		RC20BF15K	
R79	47K		RC20BF47K		RC20BF47K	100K		RC20BF47K	
R80	300K		RC20BF30K		RC20BF30K	100K		RC20BF30K	
R81	2.2meg		RC20BF22K		RC20BF22K	100K		RC20BF22K	
R82	10K		RC20BF10K		RC20BF10K	100K		RC20BF10K	
R83	390K		RC20BF39K		RC20BF39K	100K		RC20BF39K	
R84	270K		RC20BF27K		RC20BF27K	100K		RC20BF27K	Note 2
R85	100K		RC20BF10K		RC20BF10K	100K		RC20BF10K	Note 2

Note 1. Not used in some versions.
 Note 2. Some versions use 82K in this application. (Part #RC20BF82K). Not used in other versions.
 Note 3. Some versions may use 68K in this application. (Part #RC20BF68K)

COILS (RF-IF)

ITEM No.	USE	FISHER PART No.	REPLACEMENT DATA		NOTES
			Meissner PART No.	Miller PART No.	
L1	Ant. Choke	L-50066-8			
L2	FM Ant. Coil	L-629-177			
L3	RF Choke	L-50066-3			
L4	FI. Choke	L-50066-19			
L5	RF Choke	L-50066-19			
L6	RF Choke	L-50066-19			
L7	RF Choke	L-629-178			
L8	RF Choke	L-629-178			
L9	RF Choke	L-50066-3			
L10	FI. Choke	L-50066-19			
L11	FM Osc. Coil	L-6-629-179			
L12	Loopstick	L-629-176			
L13	RF Choke	L-50066-3			
L14	RF Choke	L-50066-3			

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (cont)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		FISHER PART No.	Meissner PART No.	Meritt PART No.	Miller PART No.	Rom PART No.	
L15	AM Ant. Trans.	L-629-171					
L16	AM R.F. Coil	L-556-125					
L17	R.F. Choke	C-50066-3		BC-561	4602		1.2 Microhenries
L18	AM Osc. Coil	L-550-122					
L19	R.F. Choke	L-50066-3		BC-561	4602		1.2 Microhenries
L20	R.F. Choke	L-50066-3		BC-561	4602		1.2 Microhenries
L21	1st FM IF	ZZ-630-114					
L22	2nd FM IF	ZZ-629-135					
L23	2nd AM IF	ZZ-629-142					
L24	2nd AM IF	ZZ-629-135					
L25	FIL. Choke	L-520-156		BC-561	4602		1.2 Microhenries
L26	3rd FM IF	ZZ-629-142		BC-254	1463		
L27	3rd AM IF	ZZ-2984		BC-353	12-C2		RF-2
L28	FM Limiter	L-551-121					
L29	Ratio Detector	ZZ-592-170					
L30	10K Filter Choke	L-629-152					

TRANSFORMER (POWER)

ITEM No.	RATING	REPLACEMENT DATA					Triod PART No.
		FISHER PART No.	Halderson PART No.	Meritt PART No.	Rom PART No.	Stancor PART No.	
T1	PRI. SEC. 1 SEC. 2 400VCT TV Tap ③ .45A ④ .060A 6.3V ③ 3.6A	T-628-121					
	SEC. 3 SEC. 4 SEC. 5 6.3V ③ .2A						

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				
			FISHER PART No.	LITTELFUSE PART No.	BUSS PART No.	Holder	Holder
M1	3AG	1A 250V	F-3329	312001. (3AG 1A 250V)	342001	AGC 1	HKP

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		FISHER PART No.	CBS PART No.	SYLVANIA PART No.	Holder	
M2	IN541	V-IN542	IN636	IN295		Matched Pair
M3	IN541	V-IN542	IN636	IN295		
M4	IN295 †	V-IN541 *	IN60	IN295		
M5	IN295 †	V-IN541 *	IN60	IN295		
M6	IN295	V-IN295	IN60	IN295		
M7	IN295	V-IN295	IN60	IN295		

† Some versions may use IN66 in this application.
Alternate Part #V-IN66.

MISCELLANEOUS

ITEM No.	PART NAME	FISHER PART No.	NOTES
M8	Lamp	1-588-120	6.3 Volts, .150 Amp.
M9	Lamp	1-588-120	6.3 Volts, .150 Amp.
M10	Lamp	1-588-120	6.3 Volts, .150 Amp.
M11	Lamp	1-588-120	6.3 Volts, .150 Amp.
M12	Lamp	1-588-120	6.3 Volts, .150 Amp.
M13	Lamp	1-588-120	6.3 Volts, .150 Amp.
M14	Lamp	1-563-145	6 Volts, 2 Watts
M15	Lamp	1-563-145	6 Volts, 2 Watts
M16	Tuning Cap.	C-628-118	AM-FM, 6 Gang, Ant. 19-493mmf } AM RF 20-489mmf } Osc. 18-165mmf } Muting, Bandwidth (Pushbutton Type) AM Antenna (SPDT, Slide Type) On-Off (SPST, Slide Type) Channel Selector (Rotary, Wafer Type) Chassis with Serial Numbers Ending in "B" Channel Selector (Rotary, Wafer Type) Chassis with Serial Numbers Ending in "A"
M17	Switch	S-628-117	
M18	Switch	S-629-156	
M19	Switch	S-628-122	
M20	Switch	S-628-124	
	Switch	S-628-123	

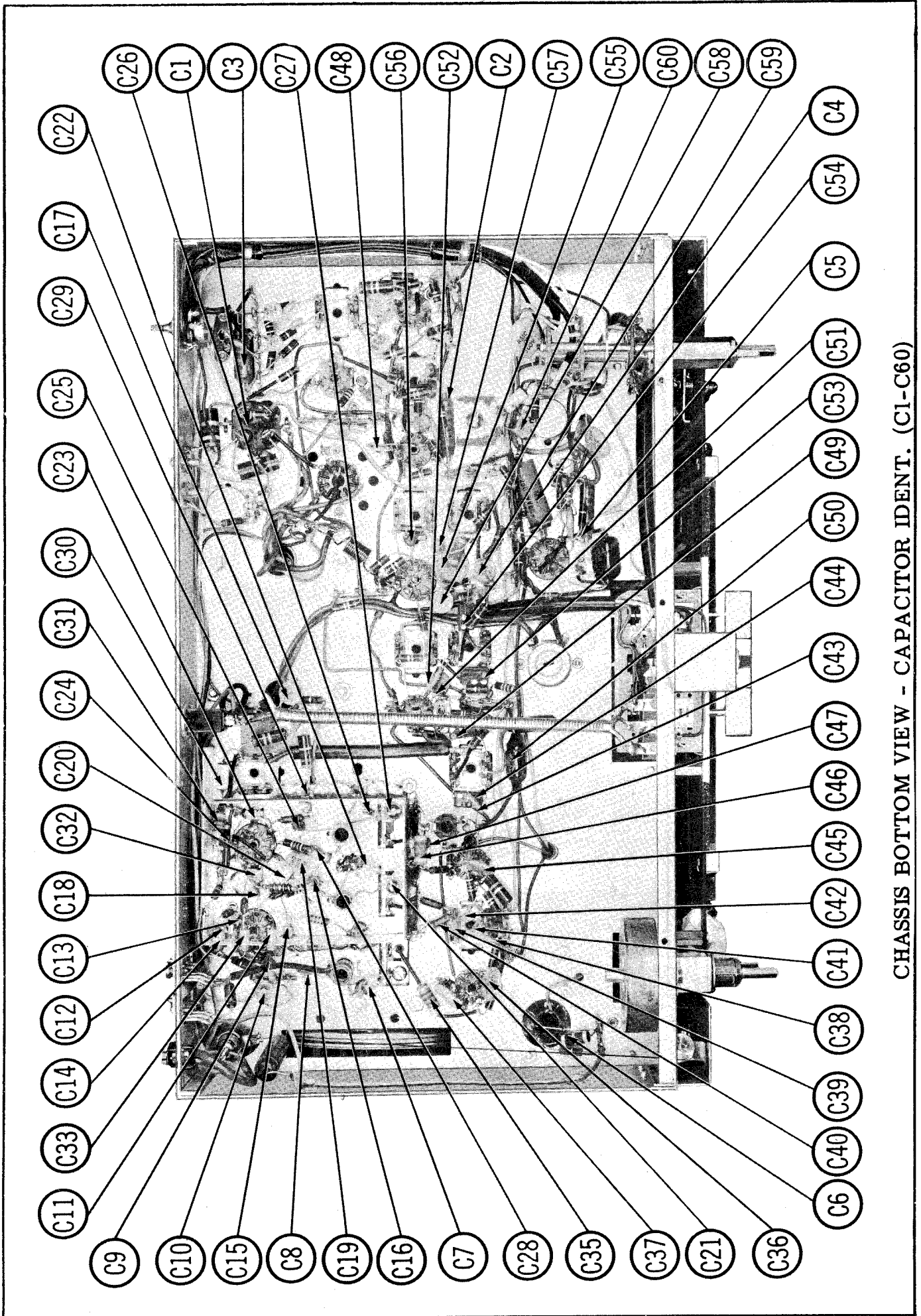
CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

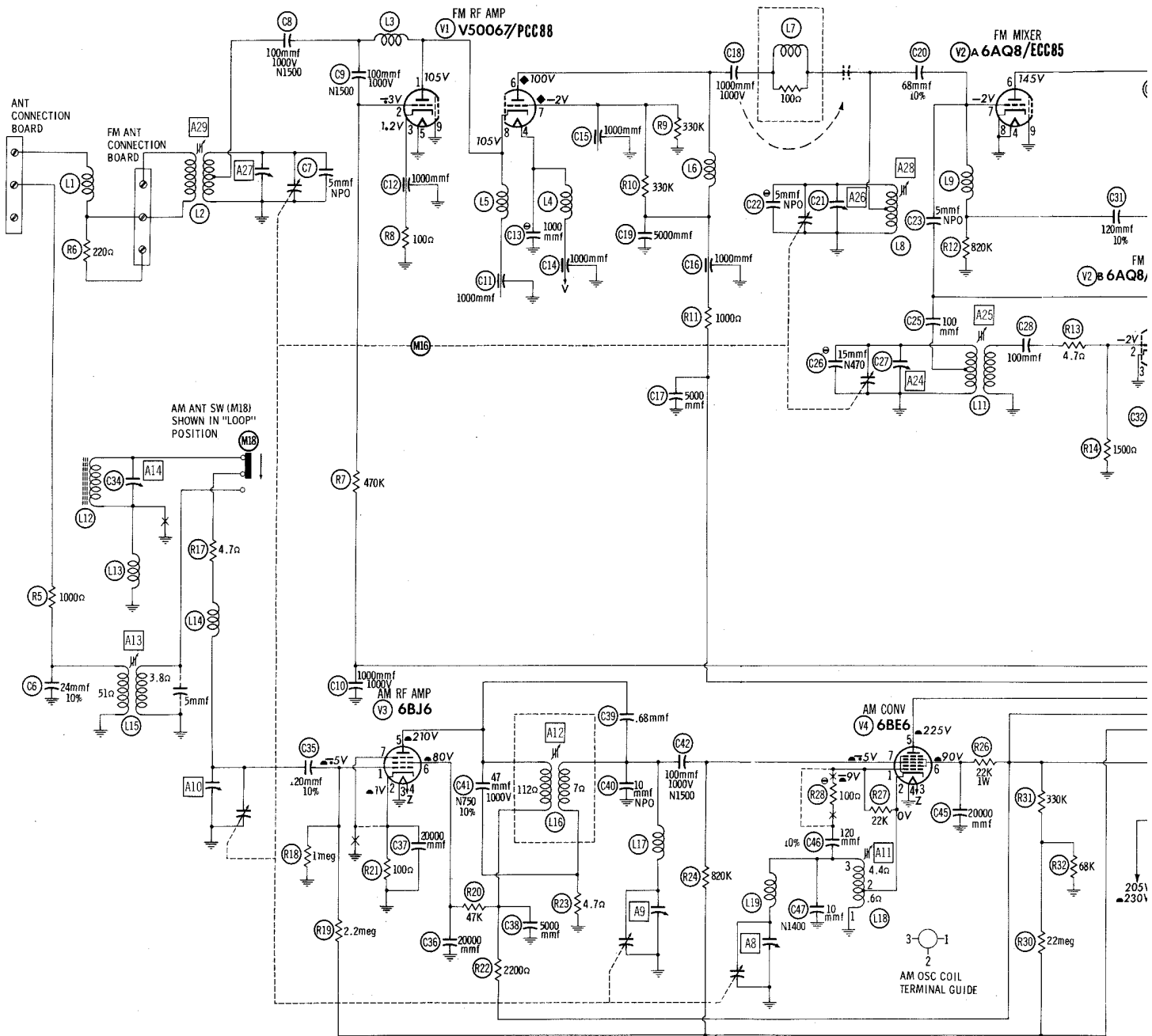
NAME	PART NO.	DESCRIPTION
Knob	E-50049-3	For Chassis Serial Numbers Ending in "B"
Knob	E-50049-1	Tuning for Chassis Serial Numbers Ending in "A"
Knob	E-50049-12	Selector for Chassis Serial Numbers Ending in "A"
Panel	AS-628-129	Dress, Assembled, Includes Escutcheon
Panel	AS-628-112	Dress, Without Escutcheon
Pointer	A-629-154	Dial
Dial Glass	N-629-133	

WIRING DATA

General-use Unshielded Hook-up Wire Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Power Cord Use BELDEN No. 1768-B (6 Ft. Length)
1728-K (7 1/2 Ft. Length)



CHASSIS BOTTOM VIEW - CAPACITOR IDENT. (C1-C60)



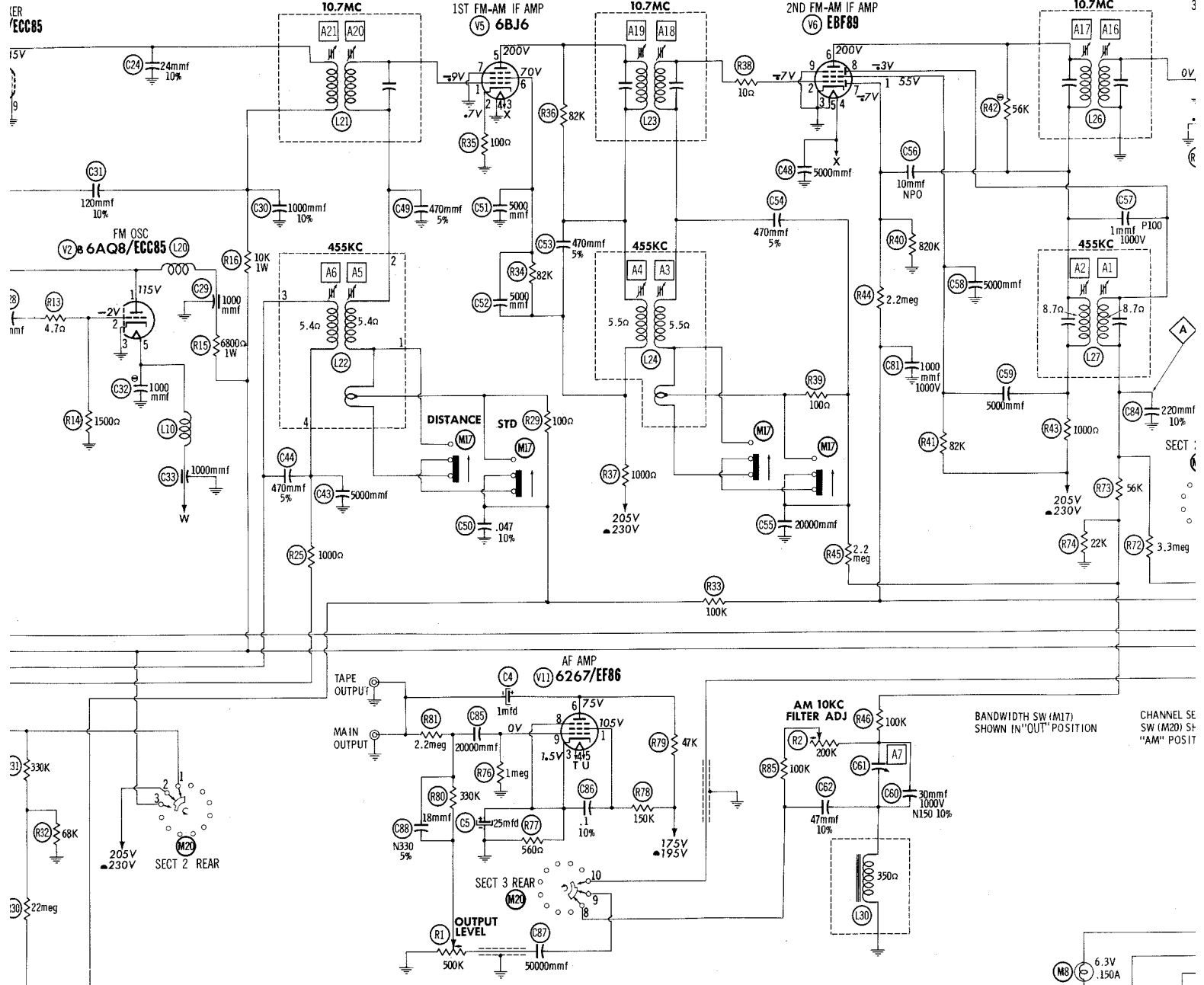
1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of $\pm 15\%$ in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

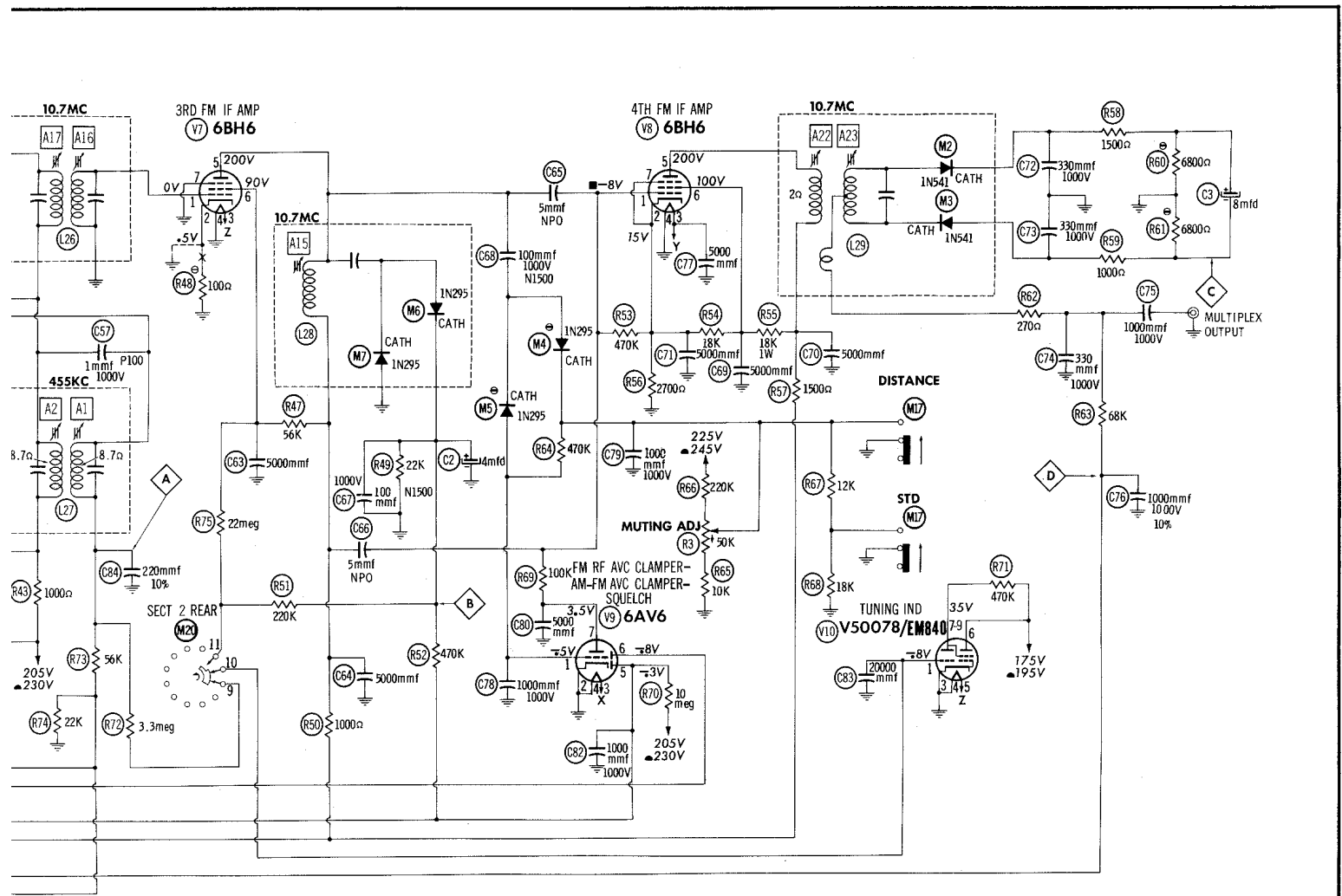
A PHOTOFAC STANDARD NOTATION SCHEMATIC
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RESISTANCE READINGS

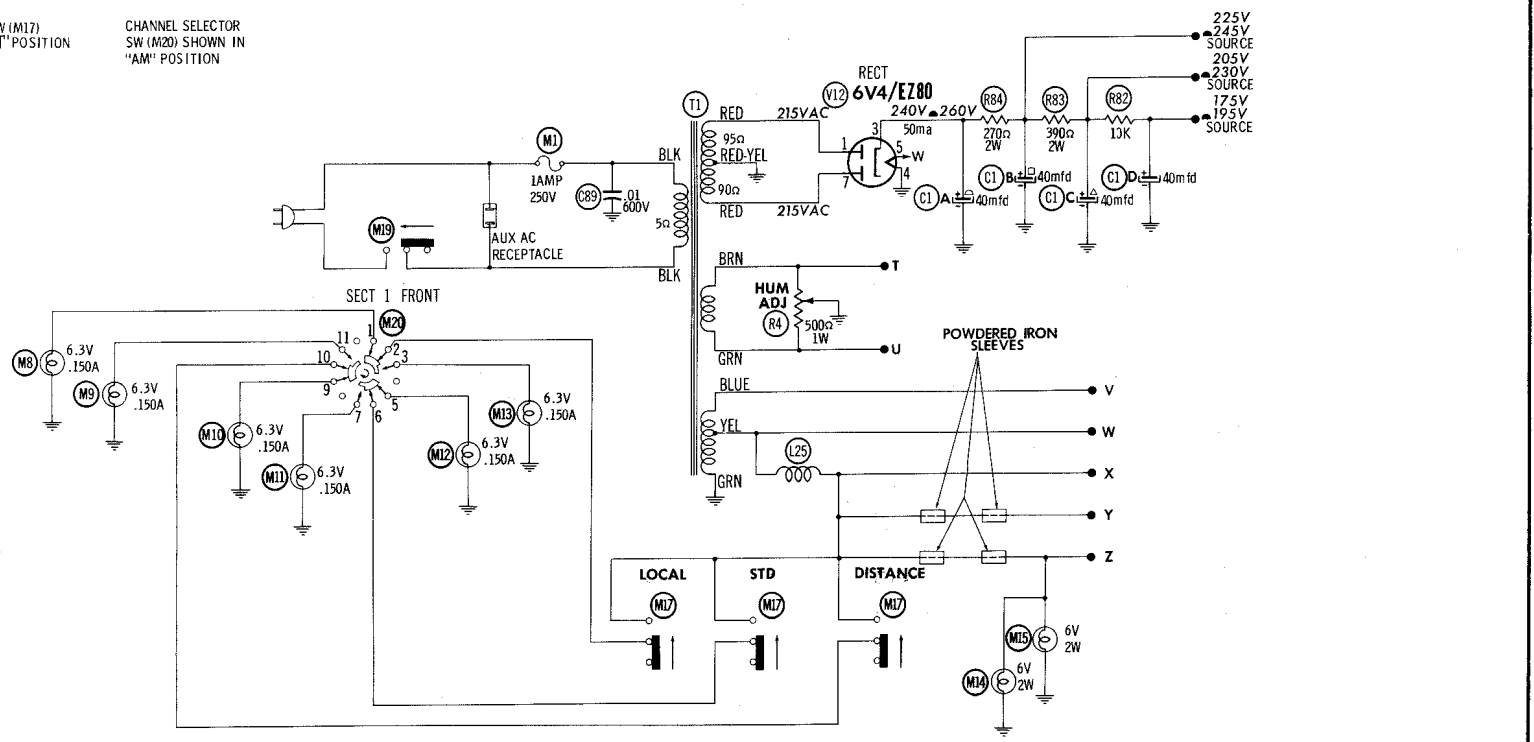
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	V50067 PCC88	∞	1meg	100Ω	.1Ω	0Ω	†1600Ω	160K	∞	0Ω
V2	6AQ8 ECC85	†7400Ω	1500Ω	0Ω	0Ω	.1Ω	†10K	820K	0Ω	0Ω
V3	6BJ6	≈ 850K	100Ω	0Ω	.1Ω	†= 2800Ω	†= 50K	0Ω		
V4	6BE6	≈ 22K	≈ .6Ω	.1Ω	0Ω	†=1600Ω	†= 22K	2.2meg		
V5	6BJ6	1.5meg	100Ω	.1Ω	0Ω	†1600Ω	†82K	0Ω		
V6	EBF89	†82K	2.2meg	0Ω	.1Ω	0Ω	†1600Ω	650K	78K	0Ω
V7	6BH6	.6Ω	100Ω	.1Ω	0Ω	†1600Ω	†65K	0Ω		
V8	6BH6	470K	2700Ω	.1Ω	0Ω	†2100Ω	†17K	2700Ω		
V9	6AV6	470K	0Ω	.1Ω	0Ω	490K	1.4meg	590K		
V10	V50078 EM840	230K	TP	0Ω	0Ω	.1Ω	†10K	†480K	TP	†480K
V11	6267 EF86	†160K	0Ω	560Ω	120Ω	120Ω	†57K	0Ω	560Ω	1meg
V12	6V4 E280	95Ω	NC	†	0Ω	.1Ω	NC	90Ω	NC	NC

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED.
 † THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.
 ‡ MEASURED FROM PIN 3 OF V12
 • MEASURED IN "AM" POSITION
 • MEASURED FROM PIN 8 OF V1
 ■ MEASURED FROM PIN 2 OF V8
 NC NO CONNECTION
 TP TIE POINT

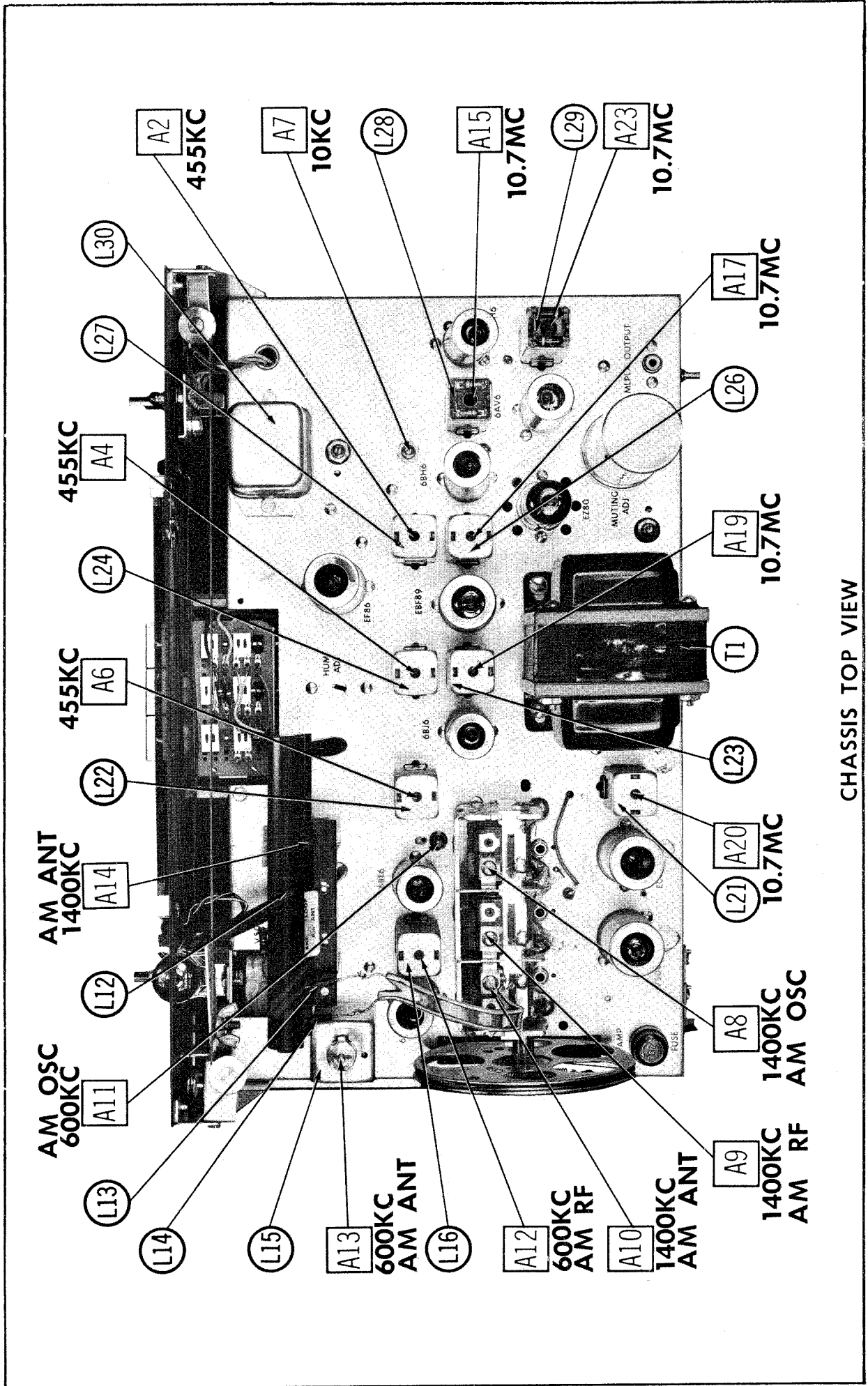


N (M17)
T¹ POSITION

CHANNEL SELECTOR
SW (M20) SHOWN IN
"AM" POSITION



FISHER MODEL 90R



CHASSIS TOP VIEW

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

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. Remove external antenna & antenna link between Terminals 1 & 2. Adjust pointer to coincide with zero index mark on logging scale with tuning gang fully closed.

AM ALIGNMENT

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS	
1. .01mf	High side to pin 7 (grid) of 6BE6 (V4). Low side to chassis	455KC (400% Mod.)	AM Sharp Distant	Tuning gang fully open	DC Probe to point \diamond Common to chassis	A1, A2 A3, A4 A5, A6	Adjust for maximum deflection.	
2.	High side to junction of R73, & R74. Low side to chassis	10KC	"	"	AC probe to main audio output jacks common to chassis	R2, A7	Adjust for MINIMUM deflection.	
3.	220mf	High side to AM antenna terminal. Low side to chassis	1400KC	"	1400KC	DC probe to point \diamond Common to chassis	A8, A9, A10	Adjust for maximum deflection.
4.	"	"	600KC	"	600KC	"	A11, A12 A13	Adjust for maximum deflection. Repeat Steps 3 & 4.
5.	Loop	1400KC	"	1400KC	"	A14	"	
6. .01mf	High side to pin 7 (grid) of 6BE6 (V4). Low side to chassis	455KC (30KC SWP)	AM Broad Local Ext.	Tuning gang fully open	(Use Scope) Vert. amp to main audio output jack. Low side to Chassis	A2	Adjust SLIGHTLY for symmetrical curve	

FM IF ALIGNMENT, USING AM SIGNAL GENERATOR & VTVM

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
7.	High side to ungrounded tube shield of 6AQ8/ ECC85 (V2). Low side to chassis.	10.7MC (Unmod)	FM Off Distant	Point of non-interference	DC probe to point \diamond Common to chassis.	A15, A16, A17, A18, A19, A20, A21	Adjust for maximum deflection.
8.	"	"	"	"	DC probe to point \diamond Common to chassis.	A22	"
9.	"	"	"	"	DC probe to point \diamond Common to point \diamond .	A23	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

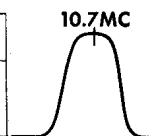


FIG. 1

FM IF ALIGNMENT, USING FM SIGNAL GENERATOR & OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
7.	High side to ungrounded tube shield of 6AQ8/ ECC85 (V2). Low side to chassis	10.7MC (450KC SWP)	FM Off Distant	Point of non-interference	Vert. Amp to point \diamond . Low side to chassis.	A15, A16, A17, A18, A19, A20, A21	Disconnect stabilizing capacitor C3. Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
8.	"	"	"	"	Vert. amp to point \diamond . Low side to chassis.	A22	Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
9.	"	"	"	"	Vert. amp to point \diamond . Low side to chassis.	A23	Reconnect syablizing capacitor C3. Adjust so that 10.7MC occurs at center of crossover lines similar to Fig. 2. SLIGHTLY retouch A22 for maximum amplitude and straightness of crossover lines.

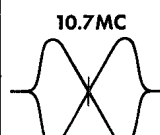
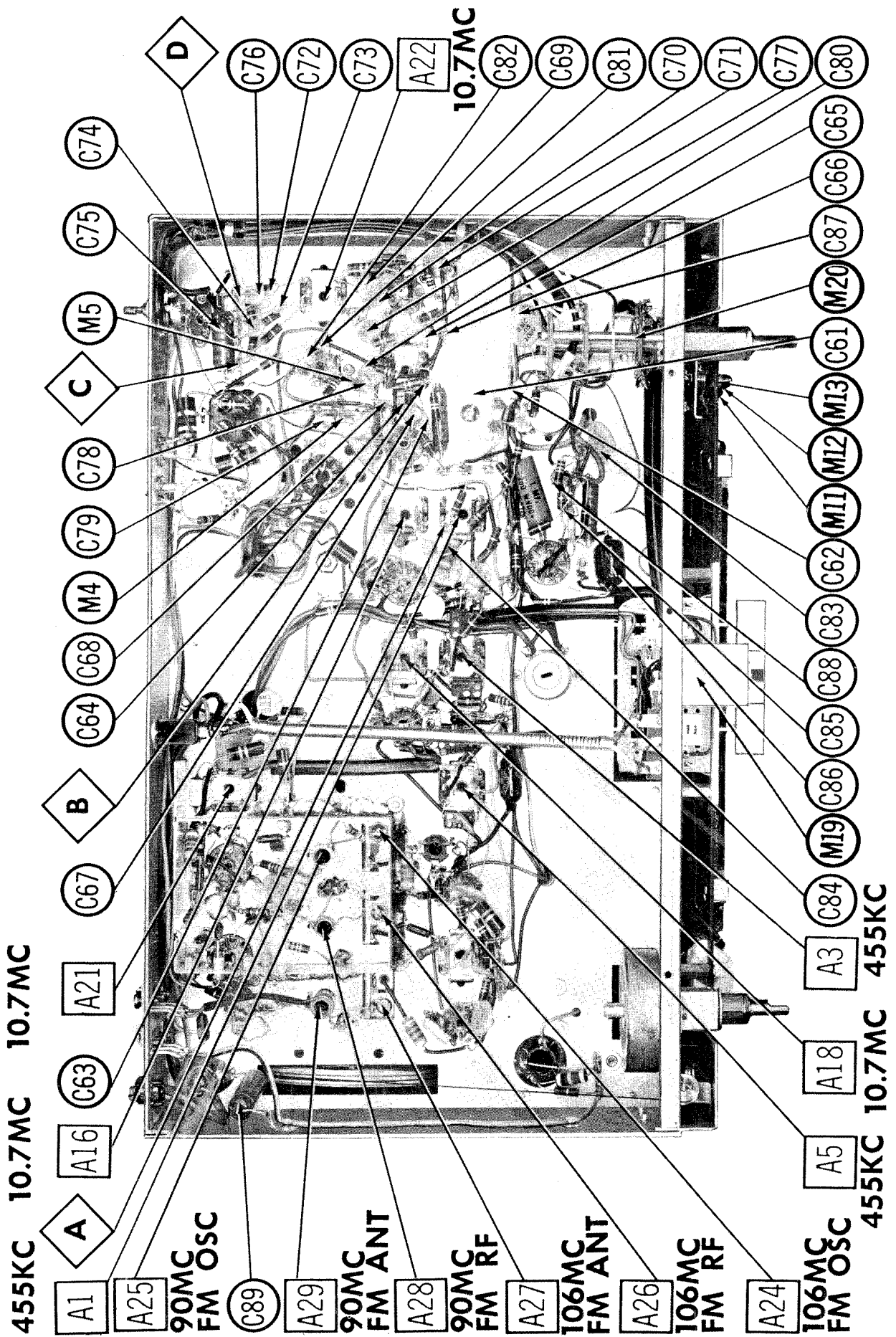


FIG. 2

FM RF ALIGNMENT

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
10. Two 120 Ω Carbon Resistors	Across FM antenna terminals with 120 Ω in each side.	106MC (Unmod.)	FM Off Distant	106MC	DC probe to point \diamond Common to chassis. Vert. amp of scope to main audio output jack. Low side to chassis	A24	Adjust for maximum deflection and for sine wave output.
11. "	"	90MC	"	90MC	"	A25	"
12. "	"	106MC	"	106MC	"	A26, A27	"
13. "	"	90MC	"	90MC	"	A28, A29	Adjust for maximum deflection and for sine wave output. Repeat Steps 4 thru 7.
14. "	"	98MC @ 100micro-volts	"	Tune for 90MC signal	(Use Scope) Vert. amp to main audio output jack. Low side to chassis.		Check for no overload and clipping of wave form.
15. "	"	"	"	"	VTVM AC probe to main audic output jack. Common to chassis.	R3	Observe deflection with "Distant" pushbutton depressed. Depress "Local" pushbutton and adjust R3 for reading of 2DE below reading with "Distant" pushbutton depressed.



CHASSIS BOTTOM VIEW - ALIGN., MISC. & CAPACITOR IDENT. (C61-C89)