

# THE FISHER

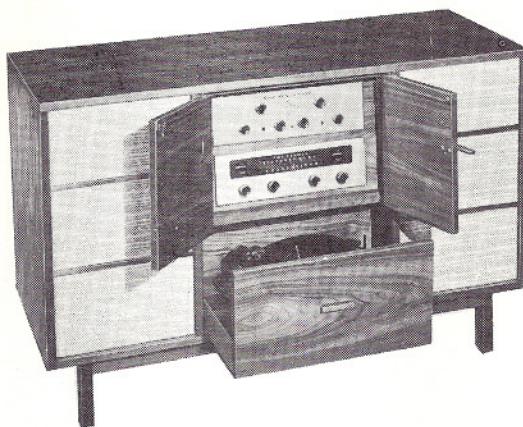


## FUTURA II

# SCHEMATIC and PARTS LIST

*Comprising Chassis X-1000 and 4000-R*

MODEL F-210



**CHASSIS SERIAL NUMBERS  
10001-19999 INCLUSIVE**

PRICE: \$1.00

**FISHER RADIO CORPORATION • NEW YORK**

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CHASSIS SERIAL NUMBERS  
10001 - 19999 INCLUSIVE

**THE FISHER F-210**





**CAPACITORS**

20% tolerance for all fixed capacitors, unless otherwise noted or marked GMV [guaranteed minimum value.] Cer = Ceramic

Symbol	Description	Part No.
C1	Ceramic, 820uuf 10%, 1000V	C50072-7
C2, 3	Ceramic, 390uuf 10%, 1000V	C50072-6
C4	Ceramic, 1800uuf 10%, 1000V	C50072-8
C5	Ceramic, 82uuf 10% N1500, 1000V	C50070-7
C6	Ceramic, 1800uuf 10%, 1000V	C50072-8
C7, 8	Ceramic, 560uuf 10%, 1000V	C50072-14
C9, 10	Molded, .022uf 10%, 250V	C50074-26
C11, 12	Molded, .01uf 10%, 250V	C50074-25
C13, 14	Ceramic, .005uf, 500V	C50089-1
C15, 16	Molded, .022uf 10%, 250V	C50074-26
C17	Ceramic, 12uuf 10% NPO, 1000V	C50070-2
C18	Ceramic, 10uuf 10% NPO, 1000V	C50070-11
C19, 20	Ceramic, 68uuf 10%, 500V	CC21GP680K5
C21, 22	Electrolytic, 25uf, 6V	C639-114
C23, 24	Molded, .01uf 10%, 250V	C50074-25
C25	Ceramic, 1000uuf 10%, 1000V	C50072-3
C26	Molded, .022uf 10%, 250V	C50074-26
C27	Ceramic, 1000uuf 10%, 1000V	C50072-3
C28	Molded, .022uf 10%, 250V	C50074-26
C29	Electrolytic, 100uf, 100V	C663-143
C30	Ceramic, 150uuf 10%, 500V	CC21GP151K5
C31	Molded, .0027uf 10%, 200V	C68P272K2
C32	Ceramic, 150uuf 10%, 500V	CC21GP151K5
C33	Molded, .0027uf 10%, 200V	C68P272K2
C34	Electrolytic, three section: 40uf, 450V 40uf, 450V 20uf, 450V	C563-127
C35, 36	Molded, .01uf 10%, 250V	C50074-25
C37	Electrolytic, two section: 60uf, 450V 40uf, 450V	C663-136
C38, 39, 40, 41, 42, 43	Molded, .01uf 10%, 250V	C50074-25
C44, 45	Ceramic, 68uuf 10%, 500V	CC21GP680K5
C46, 47	Ceramic, 47uuf 10%, 500V	CC21GP470K5
C48	Ceramic, 33uuf 10%, 500V	CC21GP330K5
C49	Molded, .0047uf 10%, 400V	C68P472K4
C50	Ceramic, 33uuf 10%, 500V	CC21GP330K5
C51, 52, 53	Molded, .0047uf 10%, 400V	C68P472K4
C54	Molded, .01uf, 600V	C2747

**RESISTORS AND POTENTIOMETERS**

In ohms, 10% tolerance, 1/2 watt, unless otherwise noted. K = kilohm, M = megohm.

Symbol	Description	Part No.
R1, 2	Potentiometer, 250K 20%	R657-134
R3	Composition, 10K	RC20BF103K
R4	Composition, 150K	RC20BF154K
R5	Composition, 10K	RC20BF103K
R6	Composition, 150K	RC20BF154K
R7, 8	Composition, 2.7K, 1W	RC30BF272K
R9	Composition, 3.3M	RC20BF335K
R10	Composition, 2.2M	RC20BF225K
R11	Composition, 1.2M	RC20BF125K
R12	Composition, 270K	RC20BF274K
R13	Composition, 10M	RC20BF106K
R14	Composition, 270K	RC20BF274K
R15	Composition, 10M	RC20BF106K
R16, 17	Composition, 120K	RC20BF124K
R18, 19	Potentiometer, 250K 20%	R657-134
R20, 21	Composition, 330K, 1W	RC30BF334K
R22, 23	Composition, 220K	RC20BF224K

R24, 25	Composition, 10M	RC20BF106K
R26, 27	Composition, 3.3M	RC20BF335K
R28, 29	Composition, 2.2M	RC20BF225K
R30, 31	Composition, 3.3M	RC20BF335K
R32	Composition, 100K	RC20BF104K
R33	Composition, 1.2K	RC20BF122K
R34	Composition, 100K	RC20BF104K
R35	Composition, 1.2K	RC20BF122K
R36, 37	Composition, 15M	RC20BF156K
R38, 39	Composition, 180K	RC20BF184K
R40	Composition, 220K	RC20BF224K
R41	Potentiometer, Dual, 1M	R663-134
R42	Composition, 15K	RC20BF153K
R43	Composition, 220K	RC20BF224K
R44	Composition, 15K	RC20BF153K
R45, 46	Composition, 47K	RC20BF473K
R47	Potentiometer, Dual, 1M	R663-134
R48	Wirewound, 920, 5%, 5W	R592-167
R49	Composition, 100K	RC20BF104K
R50	Composition, 1.2K	RC20BF122K
R51	Composition, 100K	RC20BF104K
R52	Composition, 1.2K	RC20BF122K
R53	Composition, 47K	RC20BF473K
R54	Potentiometer, Dual, 500K	R663-138
R55	Composition, 10K, 1W	RC30BF103K
R56, 57	Composition, 120K	RC20BF124K
R58, 59	Composition, 47K	RC20BF473K
R60	Composition, 4.7K, 1W	RC30BF472K
R61, 62	Composition, 270K	RC20BF274K
R63	Wirewound, 2.2K, 7W	R563-148
R64	Composition, 68K	RC20BF683K
R65	Potentiometer, 500K, 20%	R663-131
R66	Composition, 68K	RC20BF683K
R67	Wirewound, 115, 7W	R563-205
R68	Composition, 390K	RC20BF394K
R69	Composition, 1.5K	RC20BF152K
R70	Composition, 390K	RC20BF394K
R71	Composition, 1.5K	RC20BF152K
R72	Composition, 100K	RC20BF104K
R73	Composition, 82K	RC20BF823K
R74	Potentiometer, 50K, 20%	R50103-3
R75	Composition, 100K	RC20BF104K
R76	Composition, 82K	RC20BF823K
R77	Potentiometer, 50K, 20%	R50103-3
R78, 79	Composition, 47K	RC20BF473K
R80, 81, 82, 83	Composition, 390K	RC20BF394K
R84	Composition, 2.2K	RC20BF222K
R85	Composition, 33K	RC20BF333K
R86	Composition, 2.2K	RC20BF222K
R87	Composition, 33K	RC20BF333K

**TRANSFORMERS**

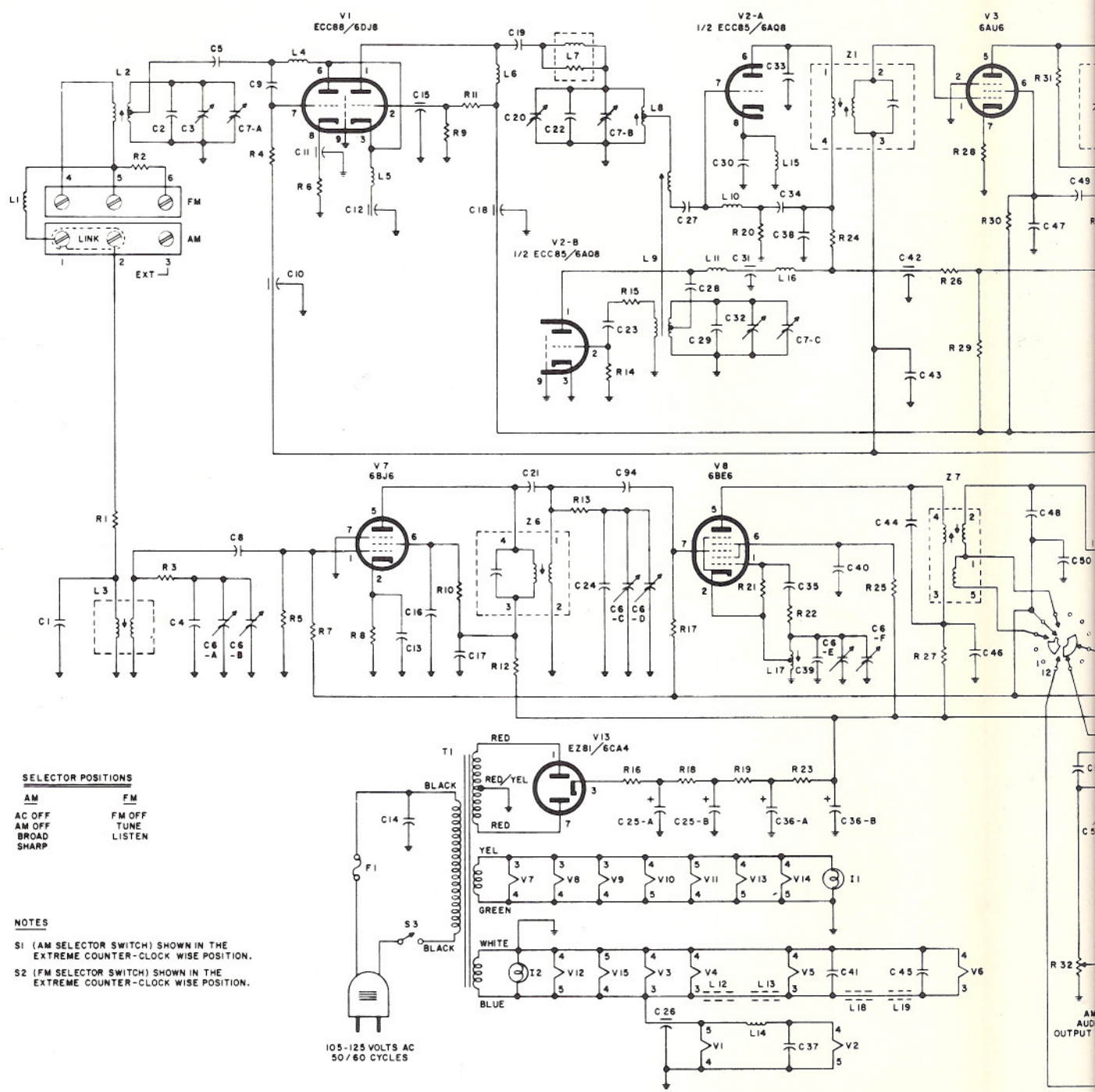
Symbol	Description	Part No.
T1	Transformer, Output	T663-135
T2	Transformer, Output	T663-114
T3	Transformer, Power	T663-115

**MISCELLANEOUS**

Symbol	Description	Part No.
F1	Fuse, 3.2 Ampere, Slo-Blo	F3319
11	Lamp Panel (Early Units)	I588-120
	Lamp Panel (Later Units)	A50118
S1	Switch, Input Selector	S663-132
S2	Switch, Output Selector	S663-130
S3, 4	Switch, Slide	S663-133
S5	Switch, AC Power	Part of R54



SCHEMATIC DIAGRAM • CHASSIS 4000-R



**SELECTOR POSITIONS**

AM	FM
AC OFF	FM OFF
AM OFF	TUNE
BROAD	LISTEN
SHARP	

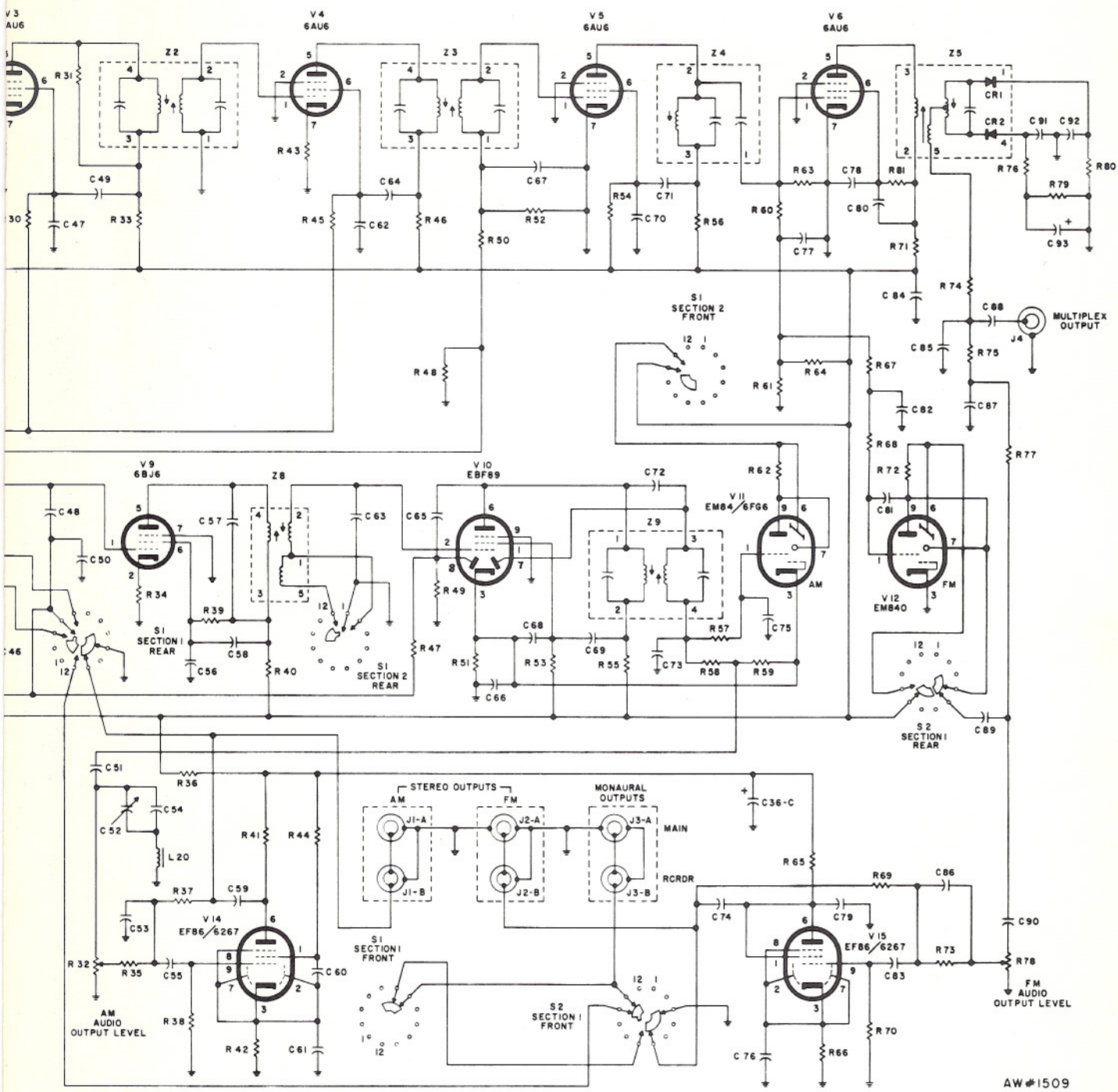
**NOTES**

S1 (AM SELECTOR SWITCH) SHOWN IN THE EXTREME COUNTER-CLOCK WISE POSITION.

S2 (FM SELECTOR SWITCH) SHOWN IN THE EXTREME COUNTER-CLOCK WISE POSITION.

105-125 VOLTS AC  
50/60 CYCLES

RESISTORS	R1	R2	R3	R4 R5	R6 R7	R8	R9 R10	R11	R12	R13	R14	R15 R16	R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32																							
CAPACITORS	C1	C2	C3	C4	C5	C6-A C6-B	C7-A C7-B C7-C	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24	C25-A C25-B C25-C C25-D C25-E C25-F	C26	C27	C28	C29	C30	C31	C32	C33	C34	C35	C36-A C36-B	C37	C38	C39	C40	C41	C42	C43	C44	C45	C46	C47	C48	C49	C50	C51

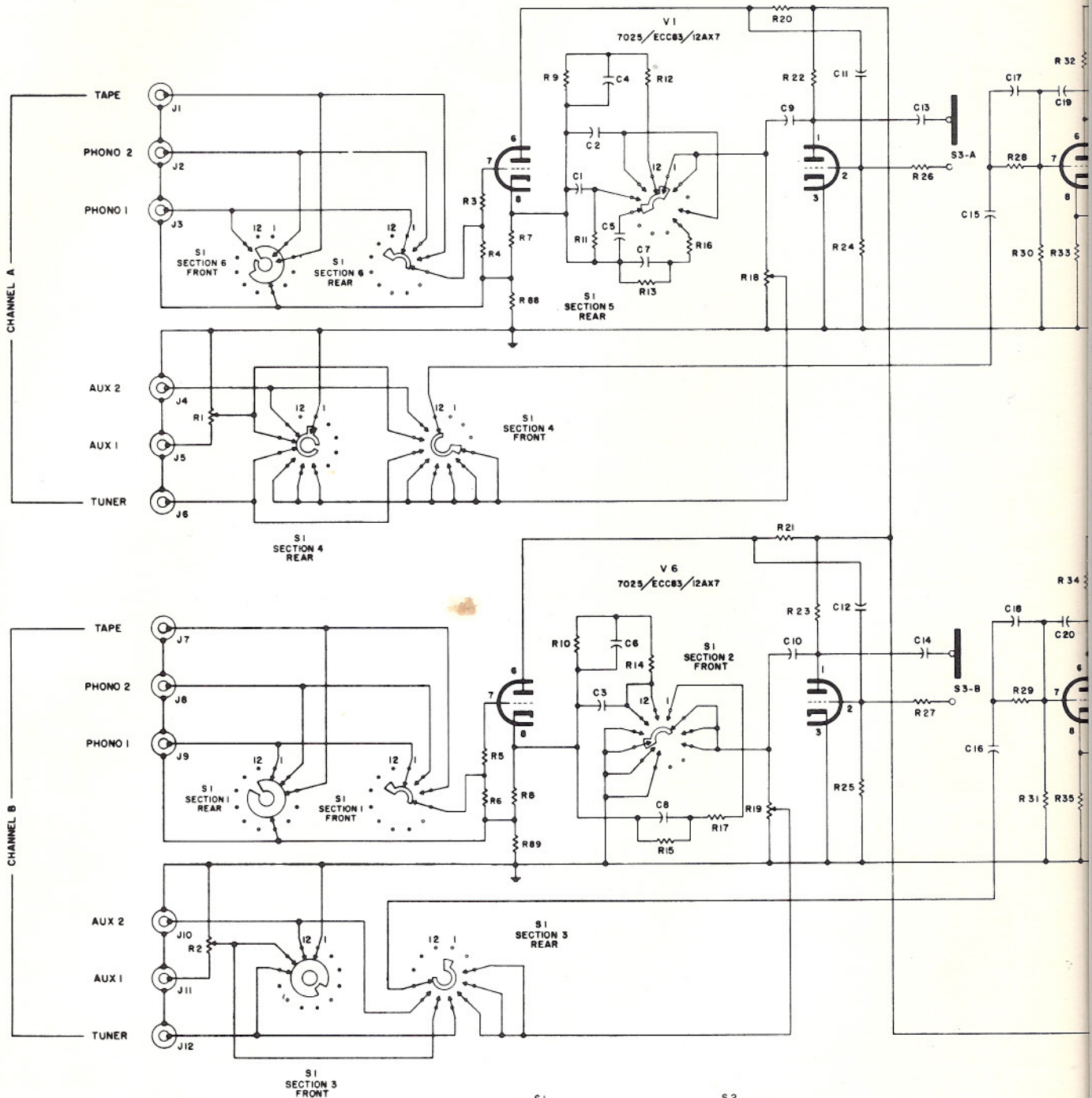


AW#1509

R30	R31	R33	R36	R39	R40	R43	R45	R46	R48	R50	R52	R53	R54	R56	R59	R60	R63	R67	R81	R73	R74	R76	R79	R80
	R32	R34	R37	R38	R41	R44	R47	R49	R51	R55	R57	R58	R61	R62	R66	R70	R71	R72	R75	R77	R78	R82	R83	R84
C47	C49	C52	C54	C56	C57	C60	C62	C64	C65	C66	C67	C69	C70	C74	C75	C77	C78	C80	C82	C85	C87	C88	C90	C92
C48	C50	C53	C55	C58	C59	C61	C63	C68	C72	C73	C76	C79	C81	C83	C84	C86	C89	C91	C93					



# SCHEMATIC DIAGRAM • CHASSIS X-1000



**S1**  
INPUT SELECTOR  
POSITIONS

- 78 (MONAURAL)
- LP (MONAURAL)
- RIAA 1 (STEREO)
- RIAA 2 (STEREO)
- TAPE (STEREO)
- TUNER (STEREO)
- AUX 1 (STEREO)
- AUX 2 (STEREO)

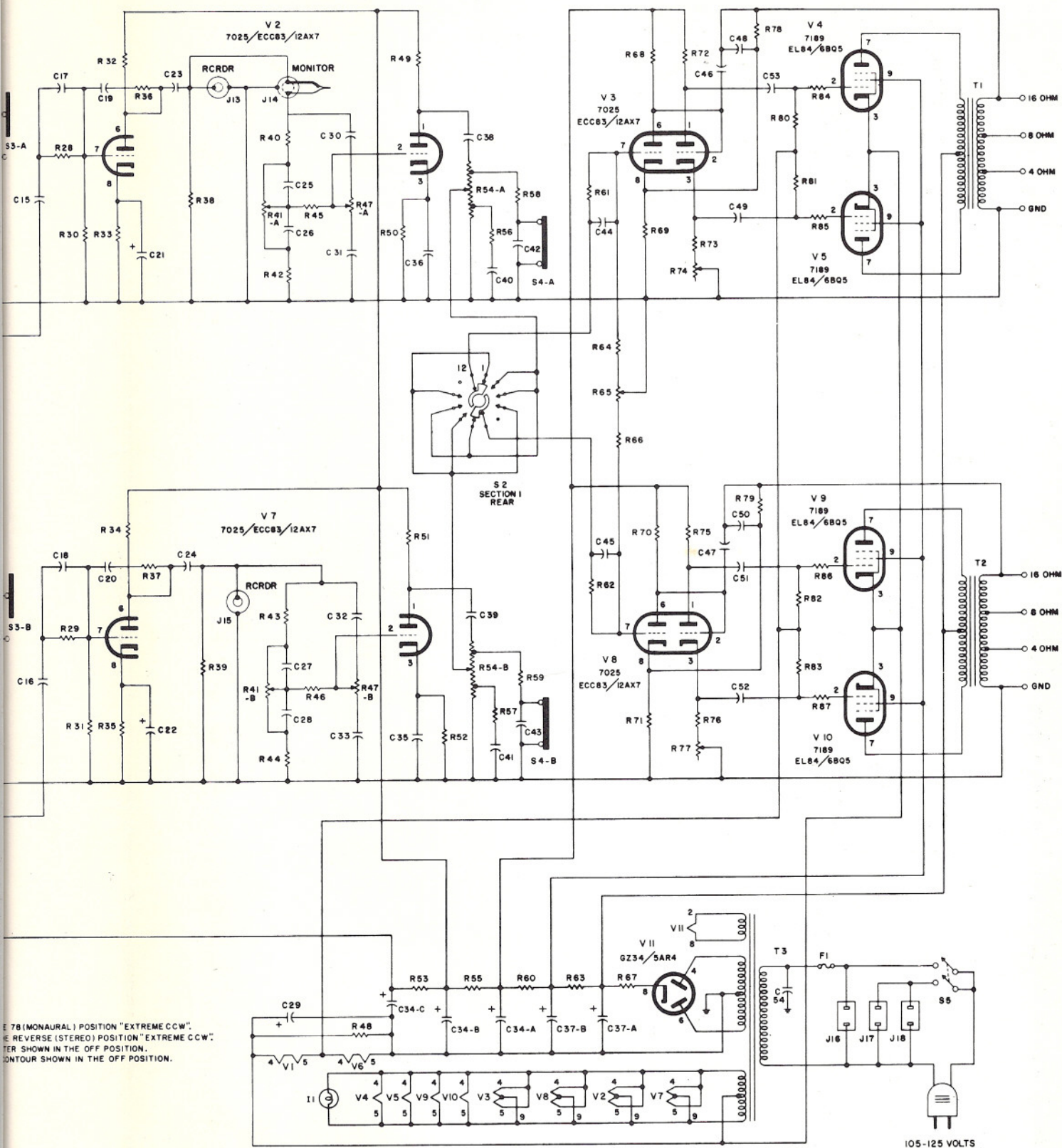
**S2**  
OUTPUT SELECTOR  
POSITIONS

- REVERSE (STEREO)
- STANDARD (STEREO)
- CHANNEL A+B (MONAURAL)
- CHANNEL B+A (MONAURAL)

**NOTES**

- S1 SHOWN IN THE 78 (MONAURAL) POSITION
- S2 SHOWN IN THE REVERSE (STEREO) POSITION
- S3 RUMBLE FILTER SHOWN IN THE OFF POSITION
- S4 LOUDNESS CONTOUR SHOWN IN THE OFF POSITION

RESISTORS	R1 R2	R3 TO R6	R7 R8	R88 R89	R9 R10	R11	R12 TO R15	R16 R17	R18 R19	R20 R21	R22 R23	R24 R25	R26 R27	R28 R29	R30 R31	R32 TO R35
CAPACITORS						C1 C2 C3 C4 C6	C7 C8			C9 C10	C11 C12		C13 C14	C15 C16	C17 C18	C19 C20



E 78 (MONAURAL) POSITION "EXTREME CCW".  
 REVERSE (STEREO) POSITION "EXTREME CCW".  
 AFTER SHOWN IN THE OFF POSITION.  
 SNTOUR SHOWN IN THE OFF POSITION.

105-125 VOLTS  
 50/60 CYCLES AC

R28	R30	R32	R36	R38	R41-A	R40	R45	R47-A	R50	R52	R54-A	R56	R58	R63	R61	R64	R68	R72	R78	R80	R84
R29	R31	R35	R37	R39	R41-B	R44	R46	R47-B	R51	R53	R54-B	R57	R60	R62	R67	R71	R75	R77	R79	R83	R87
C15	C17	C19	C21	C23	C25	C30	C34-C	C35	C34-B	C38	C40	C42	C37-B	C44	C46	C48	C53	C46	C48	C53	
C16	C18	C20	C22	C24	C29	C33	C36	C39	C39	C41	C43	C45	C37-A	C44	C47	C52	C54	C47	C52	C54	



**CAPACITORS**

20% tolerance for all fixed capacitors, unless otherwise noted or marked GMV (guaranteed minimum value.) Cer = Ceramic

Symbol	Description	Part No.
C1	Ceramic, 24uuf 5% N150, 1000V	C50070-8
C2	Ceramic, 8uuf ± .5uuf NPO, 500V	CC20CJ080D5
C3	Ceramic Trimmer	C662-123
C4	Ceramic, 10uuf NPO, 500V	CC20CH100G5
C5	Ceramic, 100uuf 10% N1500, 1000V	C50070-6
C6	Variable, AM	C684-127
C7	Variable, FM	C662-113
C8	Ceramic, 100uuf GMV N1500, 1000V	C50070-5
C9	Ceramic, 100uuf 10% N1500, 1000V	C50070-6
C10, 11,		
12	Ceramic, Feedthru, 1000uuf GMV	C592-187
C13	Ceramic, .02uf +80—20%, 500V	C50089-4
C14	Molded, .01uf, 600V	C2747
C15	Ceramic, Feedthru, 1000uuf GMV	C592-187
C16	Ceramic, .02uf +80—20%, 500V	C50089-4
C17	Ceramic, .005uf, 500V	C50089-1
C18	Ceramic, Feedthru, 1000uuf GMV	C592-187
C19	Ceramic, .005uf, 500V	C50089-1
C20	Ceramic Trimmer	C662-123
C21	Ceramic, .68uf, 500V	C50077-6N
C22	Ceramic, 5uuf ± .5uuf NPO, 500V	CC20CJ050D5
C23	Ceramic, 100uuf 10% N1500, 1000V	C50070-6
C24	Ceramic, 10uuf NPO, 500V	CC20CH100G5
C25	Electrolytic, two section: 40uf, 350V 40uf, 300V	C684-122
C26	Ceramic Feedthru, 1000uuf GMV	C592-187
C27	Ceramic, 68uuf 10% N750, 500V	CC20UJ680K5
C28	Ceramic, 100uuf 10% N1500, 1000V	C50070-6
C29	Ceramic, 10uuf ± .5uuf N220, 500V	CC20RH100D5
C30	Ceramic, 47uuf 10% N750, 1000V	C50070-4
C31	Ceramic, Feedthru, 1000uuf GMV	C592-187
C32	Ceramic Trimmer	C662-123
C33	Ceramic, 24uuf 5% N150, 1000V	C50070-8
C34	Ceramic, 120uuf 10% N1500, 1000V	C50070-9
C35	Ceramic, 100uuf GMV N1500, 1000V	C50070-5
C36	Electrolytic, three section: 40uf, 300V 40uf, 300V 20uf, 250V	C684-119
C37	Ceramic, .005uf, 500V	C50089-1
C38	Ceramic, 1000uuf 10%, 1000V	C50072-3
C39	Ceramic, 10uuf ± .5uuf N1400, 500V	CC20YK100D5
C40	Ceramic, .02uf +80—20%, 500V	C50089-4
C41	Ceramic, .005uf, 500V	C50089-1
C42	Ceramic, Feedthru, 1000uuf GMV	C592-187
C43	Ceramic, .02uf +80—20%, 500V	C50089-4
C44	Mica, 470uuf 5%, 300V	C3334
C45, 46	Ceramic, .005uf, 500V	C50089-1
C47	Ceramic, .0027uf, 1000V	C50071-5
C48	Mica, 470uuf 5%, 300V	C3334
C49	Ceramic, .005uf, 500V	C50089-1
C50, 51	Molded, .047uf 10%, 250V	C50074-27
C52	Mica, Trimmer, 160uuf-500uuf	C629-151-5
C53	Ceramic, 47uuf 10% N750, 1000V	C50070-4
C54	Ceramic, 560uuf 10%, 1000V	C50072-14
C55	Ceramic, .02uf +80—20%, 500V	C50089-4
C56	Ceramic, .005uf, 500V	C50089-1
C57	Mica, 470uuf 5%, 300V	C3334
C58	Ceramic, .005uf, 500V	C50089-1
C59	Molded, .1uf 10%, 250V	C50074-28
C61	Electrolytic, 25uf, 6V	C639-114
C62	Ceramic, .0027uf, 1000V	C50071-5
C63	Mica, 470uuf 5%, 300V	C3334
C64	Ceramic, .005uf, 500V	C50089-1
C65	Ceramic, 10uuf NPO, 500V	CC20CH100G5
C66	Ceramic, .02uf +80—20%, 500V	C50089-4
C67	Ceramic, 47uuf 10% N750, 1000V	C50070-4
C68, 69	Ceramic, .005uf, 500V	C50089-1
C70	Ceramic, .0027uf, 1000V	C50071-5
C71	Ceramic, .005uf, 500V	C50089-1
C72	Ceramic, 1uuf P100, 1000V	C50070-1
C73	Ceramic, 220uuf 10%, 500V	CC21GP221K5
C74	Molded, .1uf 10%, 250V	C50074-28
C75	Molded, .047uf 10%, 250V	C50074-27
C76	Electrolytic, 25uf, 6V	C639-114
C77	Ceramic, .005uf, 500V	C50089-1
C78	Ceramic, .0027uf, 1000V	C50071-5
C79	Ceramic, 100uuf GMV N1500, 1000V	C50070-5
C80	Ceramic, .005uf, 500V	C50089-1
C81	Ceramic, 330uuf 10%, 1000V	C50072-1
C82	Molded, .047uf 10%, 250V	C50074-27
C83	Ceramic, .02uf +80—20%, 500V	C50089-4
C84	Ceramic, .005uf, 500V	C50089-1
C85	Ceramic, 330uuf 10%, 1000V	C50072-1
C86	Ceramic, 24uuf 5% N150, 1000V	C50070-8
C87	Ceramic, .0022uf 10%, 1000V	C50072-5
C88	Ceramic, .02uf +80—20%, 500V	C50089-4
C89	Molded, .01uf 10%, 250V	C50074-25
C90	Molded, .047uf 10%, 250V	C50074-27
C91, 92	Ceramic, 330uuf 10%, 1000V	C50072-1
C93	Electrolytic, Buf, 50V	C629-138
C94	Ceramic, 100uuf GMV N1500, 1000V	C50070-5

**RESISTORS AND POTENTIOMETERS**

Symbol	Description	Part No.
R1	Composition, 1K	RC20BF102K
R2	Composition, 270	RC20BF271K
R3	Composition, 4.7	RC20BF4R7K
R4	Composition, 100K	RC20BF104K
R5	Composition, 1.8M	RC20BF185K
R6	Composition, 1.2K	RC20BF122K
R7	Composition, 4.7M	RC20BF475K
R8	Composition, 100	RC20BF101K

R9	Composition, 330K	RC20BF334K
R10	Composition, 47K	RC20BF473K
R11	Composition, 330K	RC20BF334K
R12	Composition, 1K	RC20BF102K
R13	Composition, 4.7	RC20BF4R7K
R14	Composition, 2.2K	RC20BF222K
R15	Composition, 22	RC20BF220K
R16	Wirewound, 75, 5W	R684-140
R17	Composition, 820K	RC20BF824K
R18, 19	Wirewound, 270, 5W	R684-141
R20	Composition, 470K	RC20BF474K
R21	Composition, 33K	RC20BF333K
R22	Composition, 100	RC20BF101K
R23	Wirewound, 270, 5W	R684-141
R24	Composition, 1K	RC20BF102K
R25	Composition, 22K, 1W	RC30BF223K
R26	Composition, 2.2K, 1W	RC30BF222K
R27	Composition, 1K	RC20BF102K
R28	Composition, 100	RC20BF101K
R29	Composition, 1K	RC20BF102K
R30	Composition, 82K	RC20BF823K
R31	Composition, 47K	RC20BF473K
R32	Potentiometer, 500K 20%	R520-139
R33	Composition, 1K	RC20BF102K
R34	Composition, 100	RC20BF101K
R35	Composition, 330K	RC20BF334K
R36	Composition, 5.6K	RC20BF562K
R37	Composition, 2.2M	RC20BF225K
R38	Composition, 1M	RC20BF105K
R39	Composition, 82K	RC20BF823K
R40	Composition, 1K	RC20BF102K
R41	Composition, 47K	RC20BF473K
R42	Composition, 560	RC20BF561K
R43	Composition, 100	RC20BF101K
R44	Composition, 150K	RC20BF154K
R45	Composition, 82K	RC20BF823K
R46	Composition, 1K	RC20BF102K
R47	Composition, 2.2M	RC20BF225K
R48	Composition, 1.8M	RC20BF185K
R49	Composition, 820K	RC20BF824K
R50	Composition, 1.8M	RC20BF185K
R51	Composition, 180	RC20BF181K
R52	Composition, 120K	RC20BF124K
R53	Composition, 47K	RC20BF473K
R54	Composition, 82K	RC20BF823K
R55, 56	Composition, 1K	RC20BF102K
R57	Composition, 3.3M	RC20BF335K
R58	Composition, 56K	RC20BF563K
C59, 60	Molded, .1uf 10%, 250V	C50074-28
R60, 61	Composition, 330K	RC20BF334K
R62	Composition, 470K	RC20BF474K
R63	Composition, 22K	RC20BF223K
R64	Composition, 10M	RC20BF106K
R65	Composition, 39K	RC20BF393K
R66	Composition, 560	RC20BF561K
R67	Composition, 2.2M	RC20BF225K
R68	Composition, 330K	RC20BF334K
R69	Composition, 1.8M	RC20BF185K
R70	Composition, 1M	RC20BF105K
R71	Composition, 1K	RC20BF102K
R72	Composition, 470K	RC20BF474K
R73	Composition, 330K	RC20BF334K
R74	Composition, 270	RC20BF271K
R75	Composition, 33K	RC20BF333K
R76	Composition, 1K	RC20BF102K
R77	Composition, 22K	RC20BF223K
R78	Potentiometer, 500K 20%	R520-139
R79	Composition, 15K	RC20BF153K
R80	Composition, 1.5K	RC20BF152K

**COILS, TRANSFORMERS, CHOKES**

Symbol	Description	Part No.
L1	Choke, RF 3.3 Micro Henries	L50066-8
L2	Coil, Tuned, FM Antenna	L662-124
L3	Coil, Tuned, AM Antenna	L629-171
L4	Choke, RF 1.2 Micro Henries	L50066-3
L5, 6	Choke, RF .56 Micro Henries	L50066-19
L7	Choke, RF	L629-180
L8	Coil, Tuned, FM-RF	L662-125
L9	Coil, Tuned, FM Oscillator	L662-126
L10, 11	Choke, RF 1.2 Micro Henries	L50066-3
L12, 13	Choke, Ferrite Bead, Filament	L592-189
L14	Choke, RF 1.2 Micro Henries	L50066-3
L15	Choke, RF .56 Micro Henries	L50066-19
L16	Choke, RF 1.2 Micro Henries	L50066-3
L17	Coil, AM Oscillator	L550-122
L18, 19	Choke, Ferrite Bead, Filament	L592-189
L20	Coil, 10kc Filter	L644-120
T1	Transformer, Power	T684-124
Z1	Transformer, FM-IF	ZZ662-117
Z2, 3	Transformer, FM-IF	ZZ629-142
Z4	Coil, FM Limiter	L670-145
Z5	Transformer, FM Detector	ZZ592-170
Z6	Transformer, AM-RF Used in Some Units with a 47uuf Capacitor connected across primary.	L670-151 L556-125
Z7, 8	Transformer, AM-IF	ZZ509-132
Z9	Transformer, AM-IF	ZZ2984

**MISCELLANEOUS**

Symbol	Description	Part No.
CR1, 2	Crystal Diode, Matched Pair, FM Detector	V-1N542
F1	Fuse, 1 1/2 Ampere, Slo-Blo	F684-143
11, 2	Lamp, Dial Edge Lighting	L50082
S1	Switch, AM Selector	S684-123
S2	Switch, FM Selector	S684-120
S3	Switch, AC Power	Part of 51



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P689

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