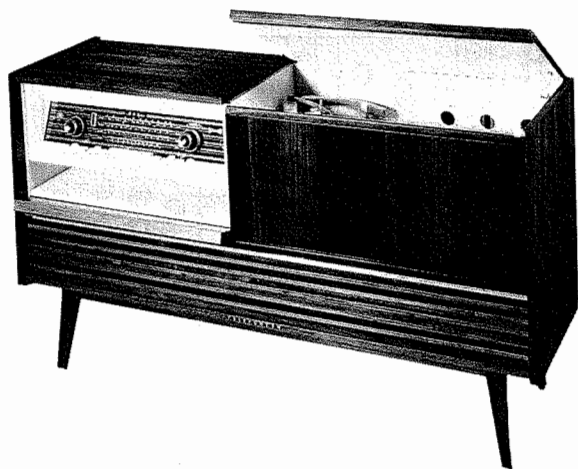


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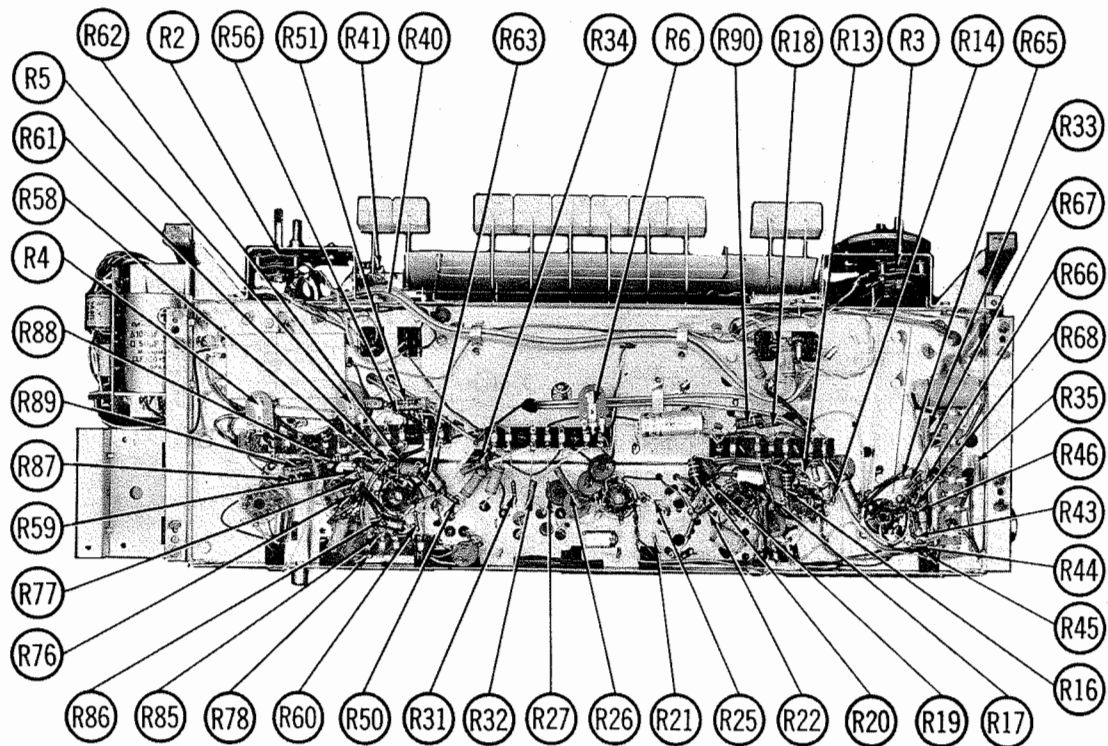


TELEFUNKEN MODEL
CONCERTO 5296WK



TELEFUNKEN MODEL
CONCERTO 5296WK

TRADE NAME	Telefunken Model Concerto 5296WK		
SUPPLIER	American Elite, Inc., 48-50 34th Street, Long Island City 1, New York		
TYPE SET	AC Operated 9 Tube BC-SW-FM Receiver with Stereo Amplifier and 4 Speed Automatic Record Changer		
POWER SUPPLY	115-230 Volts AC 60 Cycles	RATING	76 Watts, .7 Amp. @117 Volts AC
TUNING RANGE - BROADCAST	515-1630KC	SHORT WAVE 1	6.8MC - 22.5MC
FREQ. MOD.	88 - 108MC	SHORT WAVE 2	2.2MC - 6.9MC

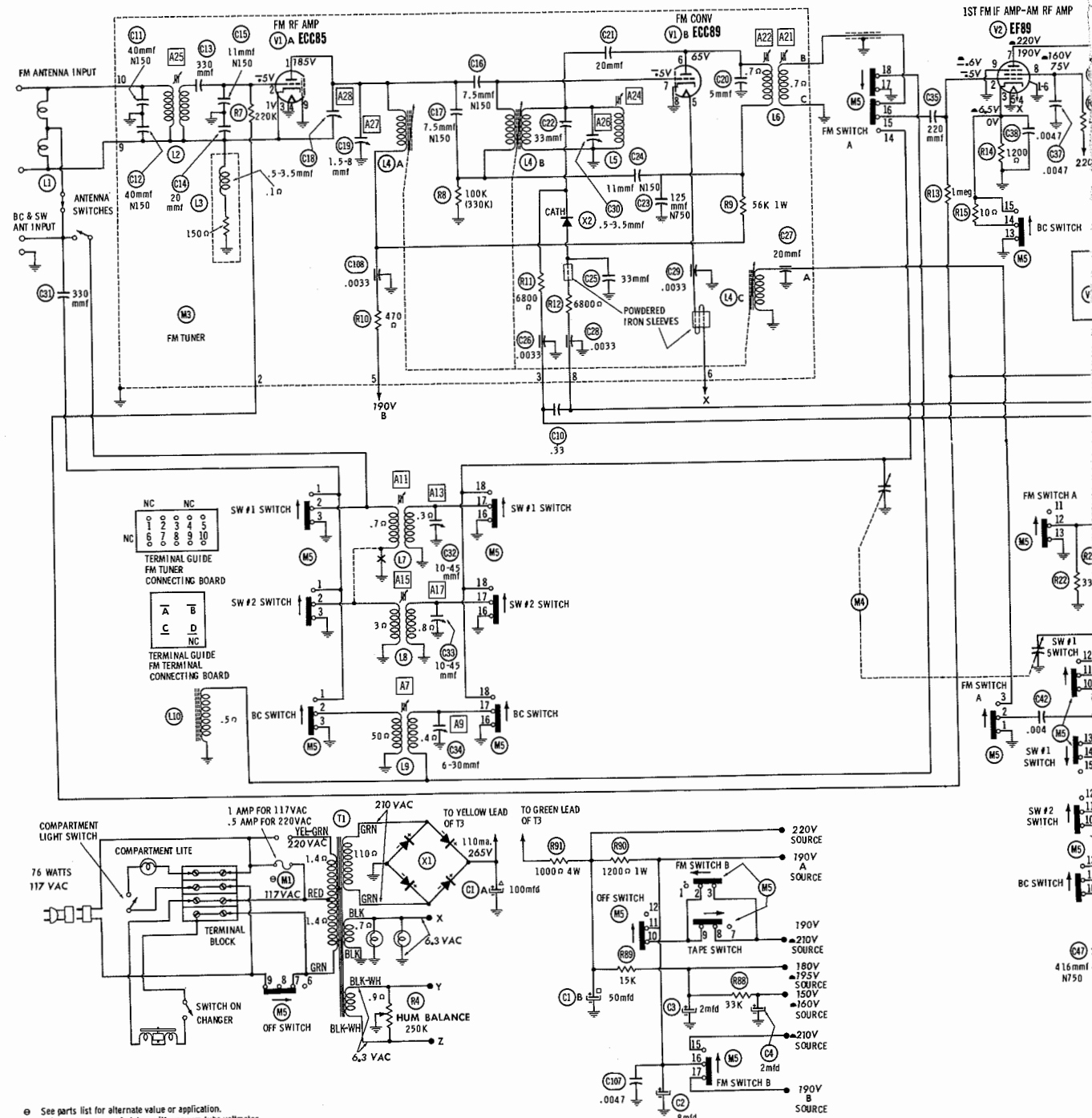


HOWARD W. SAMs & CO., INC. Indianapolis 6, Indiana

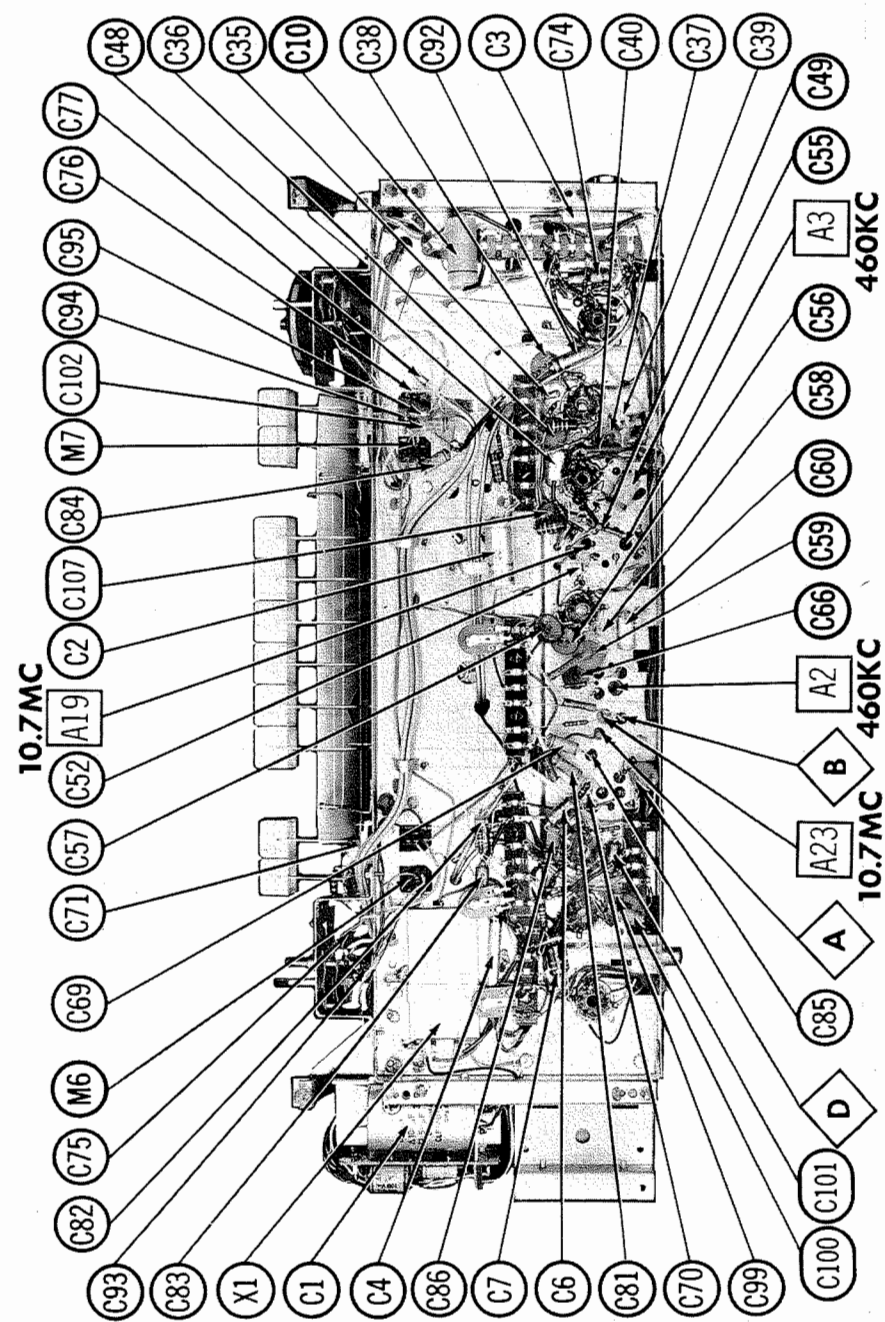
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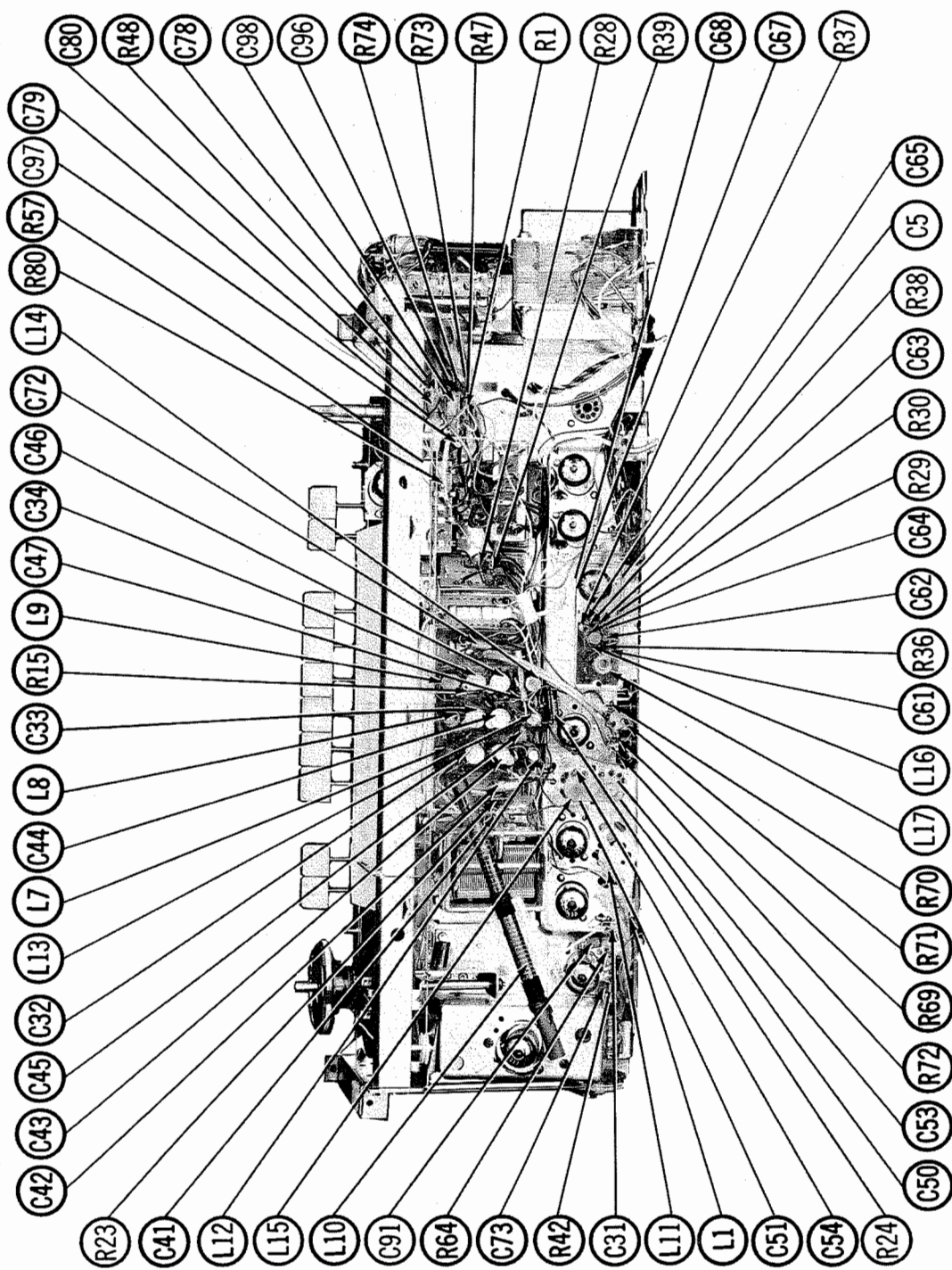
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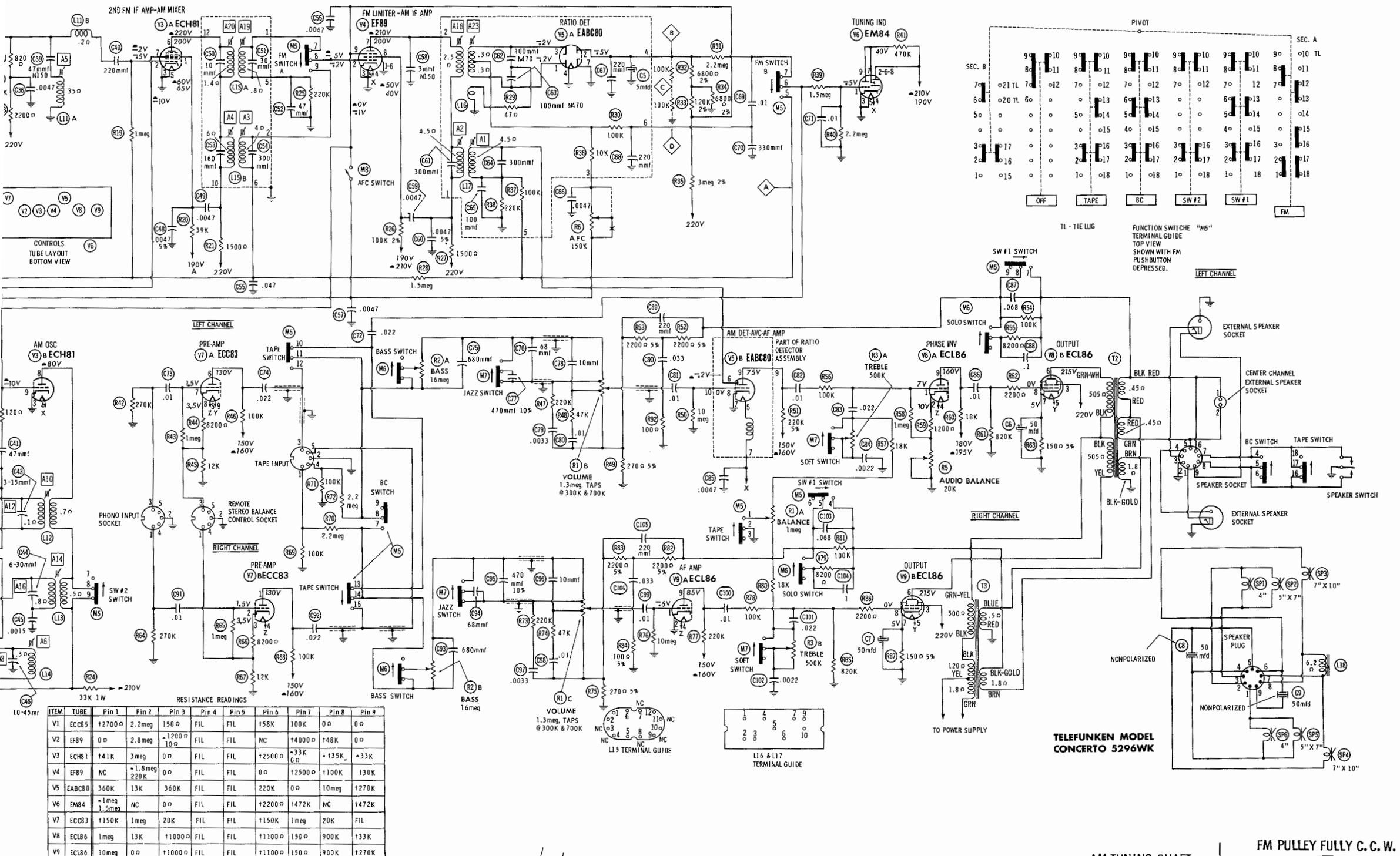
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CHASSIS BOTTOM VIEW CAPACITOR, ALIGN. AND MISC. IDENT.

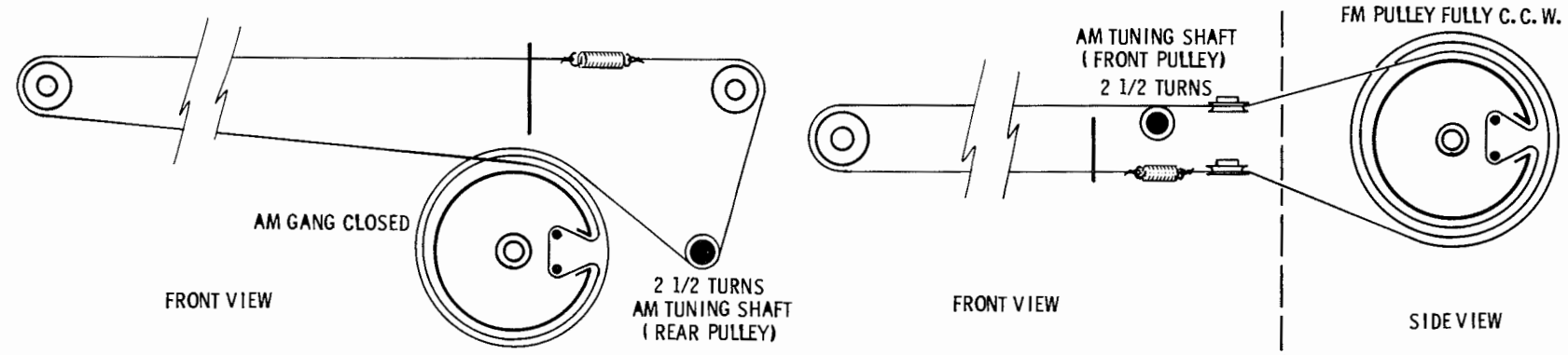


CHASSIS TOP VIEW - CAPACITOR, RESISTOR AND INDUCTOR IDENT.



ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	ECC85	127000	2.2meg	1500	FIL	FIL	158K	100K	00	00
V2	EF89	00	2.8meg	12000	FIL	FIL	NC	14000	148K	00
V3	ECH81	141K	3meg	00	FIL	FIL	125000	33K	135K	33K
V4	EF89	NC	1.8meg	00	FIL	FIL	00	125000	1100K	130K
V5	EABC80	360K	13K	360K	FIL	FIL	220K	00	10meg	1270K
V6	EM84	1meg	NC	00	FIL	FIL	122000	1472K	NC	1472K
V7	ECC83	1150K	1meg	20K	FIL	FIL	1150K	1meg	20K	FIL
V8	ECL86	1meg	13K	110000	FIL	FIL	111000	1500	900K	133K
V9	ECL86	10meg	00	110000	FIL	FIL	111000	1500	900K	1270K

ALL MEASUREMENTS MADE IN "FM" POSITION UNLESS OTHERWISE DESIGNATED. NC NO CONNECTION
 † MEASURED FROM OUTPUT OF "X1" MEASURED IN "AM" POSITION.



ALIGNMENT INSTRUCTIONS

Use only enough generator output to provide a usable indication.
Suggested alignment tools.....GENERAL CEMENT #282, 8606, 9302
WALSCO #2543, 2544, 2588

ALIGNMENT INSTRUCTIONS

BC-SW ALIGNMENT - SELECTOR AS INDICATED					
SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
High side thru. Imd to pin 2 grid of AM mixer.	460KC (Unmod.)	(BC) Tuning gang fully open.	DC probe of VTVM A1, A2 to point ϕ , com-A3, A4 mon to chassis.	A2	Adjust for maximum.
Fashion loop of several turns of wire and radiate signal into loop of receiver.	"	"	"	A5	Adjust for MINIMUM.
"	600KC	800KC	"	A6, A7	Adjust for maximum.
"	1400KC	1400 KC	"	A8, A9	"
"	6.9MC	(SW 1) 6.9MC	"	A10, A11	"
"	2L 5MC	2L 5MC	"	A12, A13	"
"	2.5MC	(SW 2) 2.5MC	"	A14, A15	"
"	6.8MC	6.8MC	"	A16, A17	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM - SELECTOR IN FM POSITION

SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
High side to ungrounded tube shield over V1, low side to chassis.	10.7 MC (Unmod.)	(FM) Point of non-interference.	DC probe of VTVM A18, A19 to point Φ , common to chassis.	A18, A19 Adjust for maximum. A20, A21 A22	
"	"	"	DC probe of VTVM A23 to point Φ , common to point C.	A23	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM FREQUENCY ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE - SELECTOR IN FM POSITION

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

100.1200MHz RECALCULATIONS					
SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
High side to ungrounded tube shield over V1, low side to chassis.	10.7MC (450KC Swp.)	(FM) Point of non-interference.	Vert. Amp. of scope to point \diamond , low side to chassis.	A18, A19, A20, A21, A22	Disconnect stabilizing Cap C5. Adjust for maximum gain and symmetry of response similar to Fig. 1 with marker as shown. Reconnect C5.
"	"	"	Vert. Amp. of scope to point \diamond , low side to chassis.	A23	Adjust to place marker at center of crossover lines similar to Fig. 2. SLIGHTLY retouch A18 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT - SELECTOR IN FM POSITION

* SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
Across FM Antenna Terminals thru 150Ω.	90MC (Unmod.)	(FM) 90MC	DC probe of VTVM to point ③, common to chassis.	A34, A25	Adjust for maximum.
"	108MC	108MC	"	A26, A27 A28	"



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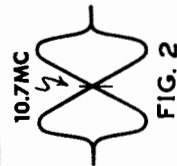
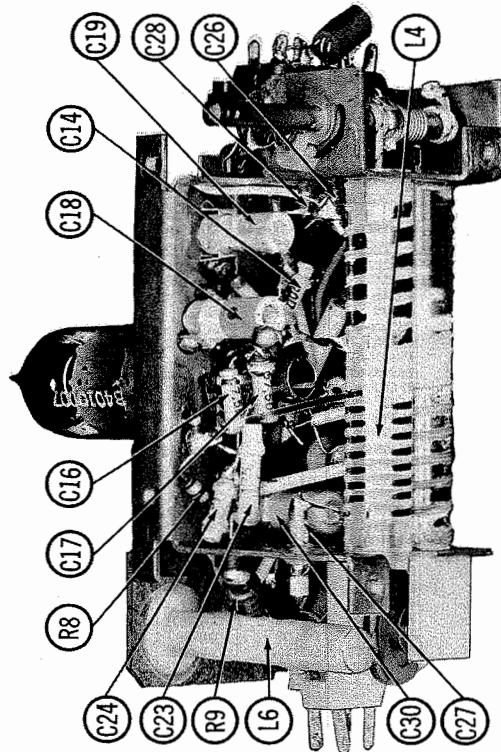
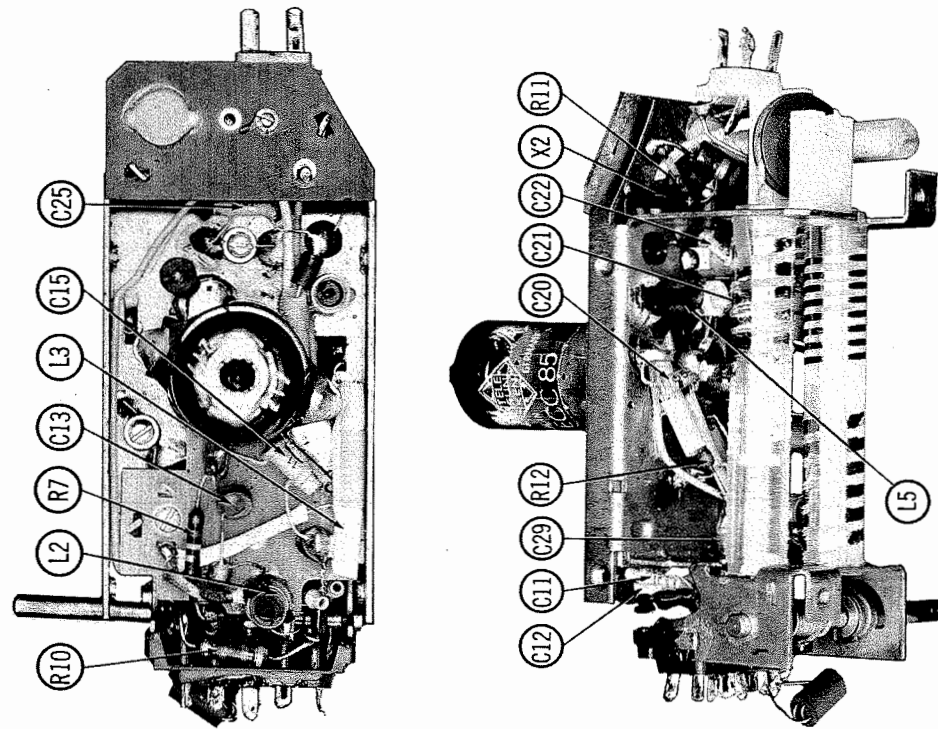


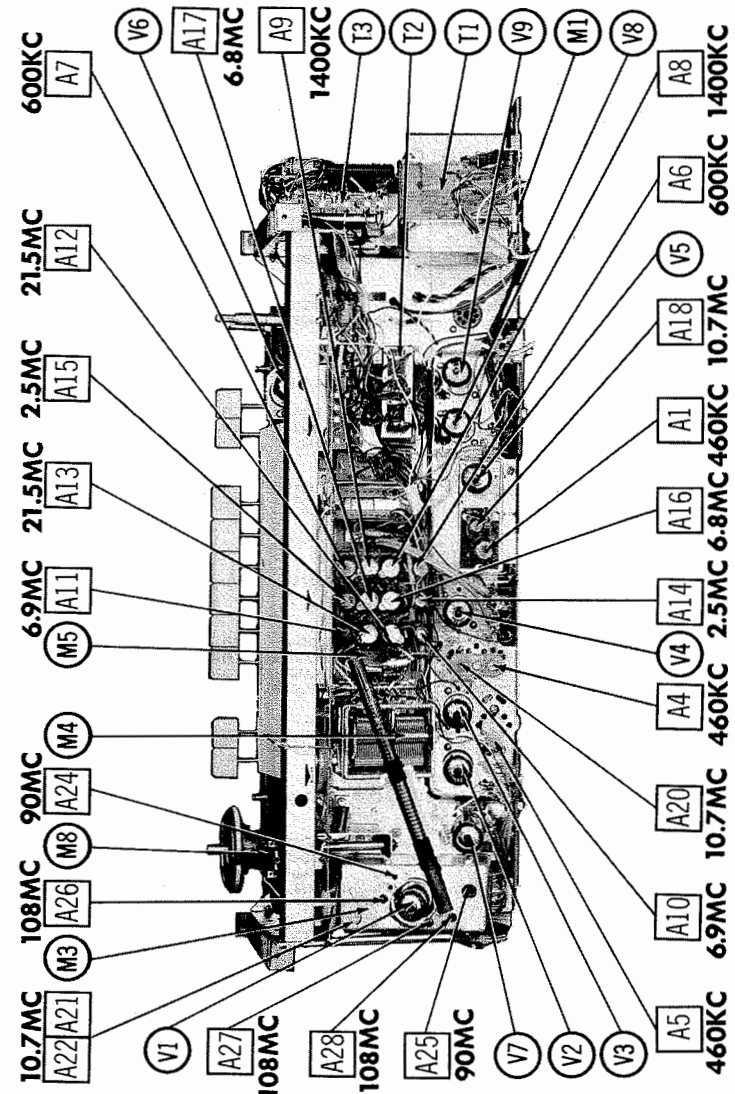
FIG. 2

ALIGNMENT INSTRUCTIONS



FM RF SUBCHASSIS

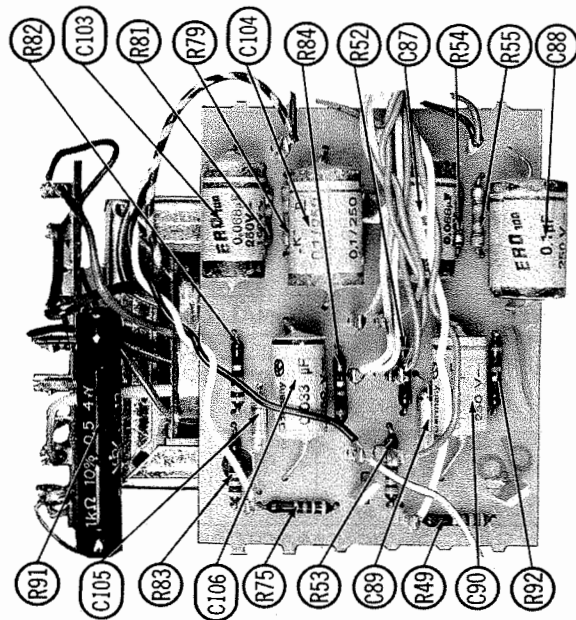
ALIGNMENT INSTRUCTIONS



CHASSIS TOP VIEW - ALIGN AND MISC. IDENT

**TELEFUNKEN MODEL
CONCERTO 5296WK**

FOLDER 13



CONTROL PANEL BOTTOM VIEW

TUBES					
AMPEREX		GENERAL ELECTRIC		RAYTHEON	
ITEM No.	USE	TYPE		ITEM No.	USE
V1	FM RF Amp. -FM Conv.	ECC85		V5	Ratio Det. -AM Det. -
V2	1st FM IF -AM RF Amp.	EF89		V6	AVC-AF Amp.
V3	2nd FM IF Amp. -AM Mixer	ECC85		V7	Tuning Indicator
V4	AM Osc.	ECC85		V8	Phono Preamp.
	FM Limiter-AM IF Amp.	ECC85		V9	Phase Inv. -Output
		ECC85			Audio Amp. -Output

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS			NOTES
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	
X1	110MA	9248015	FW600	1N3194 *	300H or F4*	* 4 Required When replacing selenium rectifier with silicon type, add series resistance to obtain original output voltage. FM AFC
X2						

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA					
	CAP.	VOLT.	Telefunken PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	100	350	9234134	AFH2-41-10	XC3-5	FP330.9A		TVAS-2755*
B	50	350						
C2	8	350	9234082	PRSI610	BR8-350	QTI-4	TC-61	TD-6-350
C3	2	350	9234069	PRSI705	BR2-450	QTI-1	TC-695	TD-2-450
C4	2	350	9234069	PRSI705	BR2-450	QTI-1	TC-695	TD-2-450
C5	5	70		CRE904	NLW5-150	MTI-4	TT15X50	MLV5-100
C6	50	12	9234171	PTT59	NLW50-15	MTI-16	TT15X50	MLV50-12
C7	50	12	9234171	PTT59	NLW50-15	MTI-16	TT15X50	MLV50-12
C8	50	6NP	9272721	PRST220	BR50-150	TCN-1551	TVANS-1100.1*	TVANS-1100.1*
C9	50	6NP	9272721	PRST220	BR50-150	TCN-1551	TVANS-1100.1*	TVANS-1100.1*

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CORNELL-DUBILIER PART No.	ELMENCOPART No.	MALLORY PART No.	SPRAGUE PART No.	
C10	.33 250V		P488N-33		CUB4S33	4CP-2-335	GEM-4033	4TM-S33
C11	40 N150							
C12	40 N150							
C13	330		DI-330	DD-331	L10T33	CCD-331	B-333	10TS-T33
C14	20		SI 20	D6-200	L10Q2	CCD-200	GP420	10TS-Q20
C15	11 N150							
C16	7.5 N150							
C17	7.5 N150							
C18	.5-3.5							
C19	1.5-8							
C20	5		SI 5	D6-050	L10V5	CCD-050	CP550	10TS-V50
C21	20		SI 20	D6-200	L10Q2	CCD-200	GP420	10TS-Q20
C22	33		SI 33	D6-330	L10Q33	CCD-330	GP433	10TS-Q33
C23	125 N750							
C24	11 N150							
C25	33		SI 33	D6-330	L10Q33	CCD-330	GP433	10TS-Q33
C26	.0033							
C27	20							
C28	.0033							
C29	.0033							
C30	.5-3.5							
C31	330		SI 330	D6-331	L10T33	CCD-331	B-333	10TS-T33
C32	10-45							
C33	10-45							
C34	6-30							
C35	220		SI 220	D6-221	L10T22	CCD-221	B-322	10TS-T22
C36	.0047		BPD-0047	DD-472	BYA10D47	CCD-472	B-247	5HK-D47
C37	.0047		BPD-0047	DD-472	BYA10D47	CCD-472	B-247	5HK-D47
C38	.0047		BPD-0047	DD-472	BYA10D47	CCD-472	B-247	5HK-D47
C39	47 N150							
C40	220 N750		N750-SI 220	TCN-220	C10T22U	CC TN-221	CN7-322	10TC U-T22
C41	47		SI 47	D6-470	L10Q47	CCD-470	GP447	10TS-Q47
C42	.004		SI 4000	DD-402	L10D4	CCD-470	B-240	10TS-D40
C43	3-15							
C44	6-30							
C45	.0015		SI 1500	D6-152	L10D15	CCD-152	B-215	10TS-D15
C46	10-45							
C47	418 N750							
C48	.0047 500V 5%							
C49	.0047		SI 4700	CPR-4700J	IR5D47	CM-20B-472J	B-247	MS-247
C50	10		SI 10	D6-100	L10Q10	CCD-100	GP410	10TS-Q10
C51	30		SI 30	DD-300	L10Q33	CCD-300	GP430	10TS-Q30
C52	47		SI 47	D6-470	L10Q47	CCD-470	GP447	10TS-Q47
C53	160							
C54	300		SI 300	D6-301	L10T3	CCD-301	GP330	10TS-T30
C55	.047 250V		P488N-047	DD-503	CUB4S47	4CP-4-473	GEM-4147	4TM-S47
C56	.0047		BPD-0047	DD-472	BYA10D47	CCD-472	B-247	5HK-D47
C57	.0047		BPD-0047	DD-472	BYA10D47	CCD-472	B-247	5HK-D47
C58	3 N150							
C59	.0047		BPD-0047	DD-472	BYA10D47	CCD-472	B-247	5HK-D47
C60	.0047 500V 5%							
C61	300		SI 300	CPR-4700J	IR5D47	CM-20B-472J	B-247	MS-247
C62	100 N470		SI 100	DD-301	L10T3	CCD-301	GP333	10TS-T30
C63	100 N470							
C64	300		SI 300	D6-301	L10T3	CCD-301	GP333	10TS-T30
C65	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C66	.0047		BPD-0047	DD-472	BYA10D47	CCD-472	B-247	5HK-D47

PARTS LIST AND DESCRIPTION

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CORNELL-DUBILIER PART No.	ELMENCOPART No.	MALLORY PART No.	SPRAGUE PART No.	
C67	220		DI-220	DD-221	L10T22	CCD-221	GP322	10TS-T22
C68	220		SI 220	D6-221	L10T22	CCD-221	GP322	10TS-T22
C69	.01 250V		P488N-01	D6-103	CUB4S1	4CP-1-103	GEM-411	4TM-S10
C70	330		SI 330	D6-331	L10T33	CCD-331	GP333	10TS-T33
C71	.01 250V		P488N-01	D6-103	CUB4S1	4CP-1-103	GEM-411	4TM-S10
C72	.022 250V		P488N-022	DD-203	CUB4S2	4CP-2-223	GEM-4122	4TM-S22
C73	.01 250V		P488N-01	D6-103	CUB4S1	4CP-1-103	GEM-411	4TM-S10
C74	.022 500V		P688N-022	DD-203	CUB6S22	4CP-2-223	GEM-6122	6TM-S22
C75	680		SI 680	D6-681	L10T68	CCD-681	B-368	10TS-T68
C76	68		SI 68	D6-680	L10Q68	CCD-680	GP468	10TS-Q68
C77	470 10%		SI 470	D6-471	5R5T47	CCD-471	GP347	10TS-T47
C78	10		SI 10	D6-100	L10Q1	CCD-100	GP410	10TS-Q10
C79	.0033 500V		P688N-0033	D6-332	CUB6D33	6CP-1-332	GEM-6233	6TM-D33
C80	.01 250V		P488N-01	D6-103	CUB4S1	4CP-1-103	GEM-411	4TM-S10
C81	.01 250V		P488N-01	D6-103	CUB4S1	4CP-1-103	GEM-411	4TM-S10
C82	.01 500V		P688N-022	DD-203	CUB4S22	4CP-2-223	GEM-4122	4TM-S22
C83	.022 250V		P688N-022	DD-203	CUB4S22	4CP-2-223	GEM-4122	4TM-S22
C84	.0022 500V		BPD-0047	DD-472	BYA10D47	CCD-472	B-247	5HK-D47
C85	.0047		P688N-01	D6-103	CUB4S1	4CP-1-103	GEM-411	4TM-S10
C86	.01 500V		P488N-068	D6-103	CUB4S68	6CP-2-103	GEM-611	6TM-S10
C87	.068 250V		P488N-068	D6-103	CUB4S68	6CP-2-103	GEM-611	6TM-S10
C88	.1 250V		P488N-1	DF-104	CUB4P1	4CP-4-104	GEM-401	4TM-P10
C89	220		SI 220	D6-221	L10T22	CCD-221	GP322	10TS-T22
C90	.033 250V		P488N-033	D6-303	CUB4S33	4CP-3-333	GEM-4133	4TM-S33
C91	.01 250V		P488N-01	D6-103	CUB4S1	4CP-1-103	GEM-411	4TM-S10
C92	.022 500V		P688N-022	DD-203	CUB6S22	6CP-2-223	GEM-6122	6TM-S22
C93	680		SI 680	D6-681	L10T68	CCD-681	B-368	10TS-T68
C94	68		SI 68	D6-680	L10Q68	CCD-680	GP468	10TS-Q68
C95	470 10%		SI 470	D6-471	5R5T47	CCD-471	GP347	10TS-T47
C96	10		SI 10	D6-100	L10Q1	CCD-100	GP410	10TS-Q10
C97	.0033 500V		P688N-0033	D6-332	CUB6D33	6CP-1-332	GEM-6233	6TM-D33
C98	.01 250V		P488N-01	D6-103	CUB4S1	4CP-1-103	GEM-411	4TM-S10
C99	.01 250V		P488N-01	D6-103	CUB4S1	4CP-1-103	GEM-411	4TM-S10
C100	.01 500V		P688N-01	D6-103	CUB4S1	4CP-2-103	GEM-611	6TM-S10
C101	.022 250V		P488N-022	DD-203	CUB4S22	4CP-2-223	GEM-4122	4TM-S22
C102	.0022 500V		P688N-0022	DD-222	CUB6S22	6CP-2-223	GEM-6122	6TM-D22
C103	.068 250V		P488N-068	D6-103	CUB4S68	4CP-4-683	GEM-4168	4TM-S68
C104	.1 250V		P488N-022	DD-203	CUB4S22	4CP-2-223	GEM-4122	4TM-S22
C105	220		SI 220	D6-221	L10T22	CCD-221	GP322	10TS-T22
C106	.033 250V		P488N-033	D6-303	CUB4S33	4CP-3-333	GEM-4133	4TM-S33
C107	.0047		BPD-0047	DD-472	BYA10D47	CCD-472	B-247	5HK-D47
C108	.0033		BPD-0033	DD-332	BYA10D33	CCD-332	B-233	5HK-D33

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			Telefunken PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
RIA	Balance	1meg	9635092				
B	Volume, Left	1.3meg, 300K, 700K Taps					
C	Volume, Right	1.3meg, 300K, 700K Taps					
RA2	Bass, Left	18meg	9635091				
B	Bass, Right	18meg					
RA3	Treble, Left	500K	9635090				
B	Treble, Right	500K					
R4	Hum Balance	250K	9635093				
R5	Audio Balance	20K	96350918				
R6	AFC	150K	9635095				

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
R91	1000Ω 4W	FW5-1000	5W-SQ-1000						

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Telefunken PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	Ant. Matching						① Wound on 150Ω Res.
L2	FM Ant.						② Part of Demodulation Stage 9047