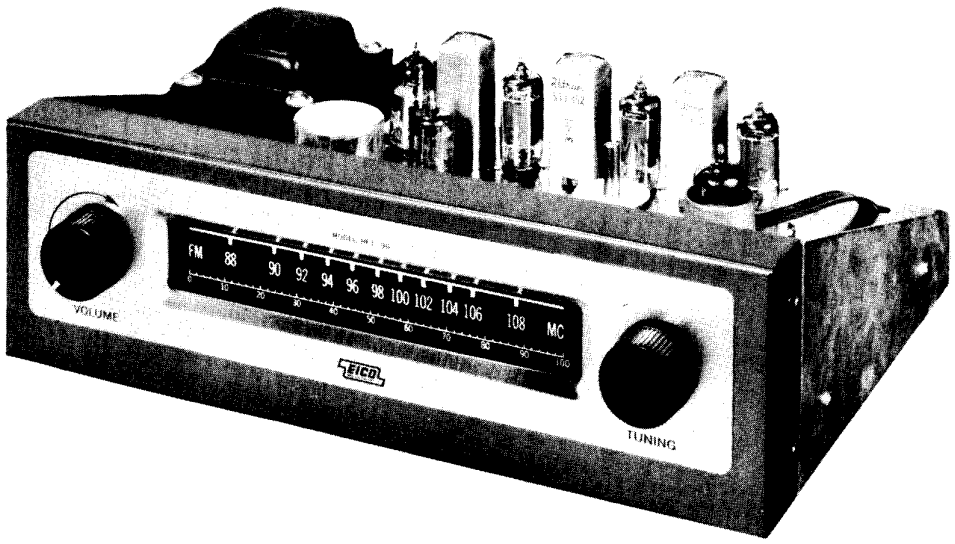
PHOTOFACT® Folder

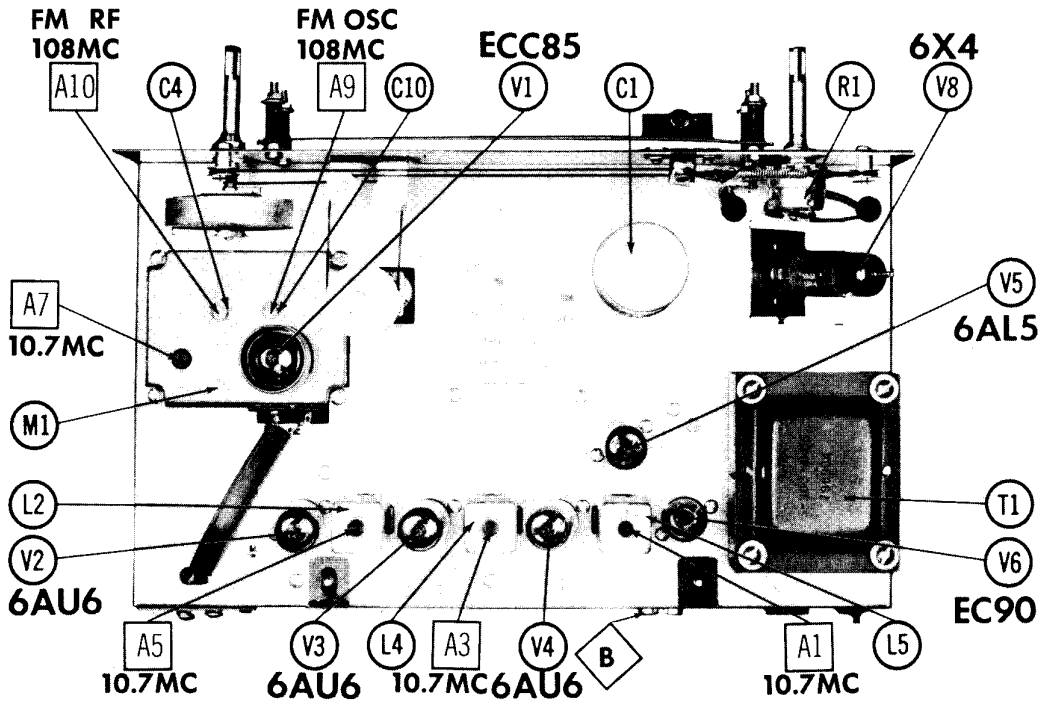
EICO MODEL HFT-90

EICO MODEL HFT-90



TRADE NAME	Eico Model HFT-90
MANUFACTURER	Electronic Instrument Co., Inc., 33-00 Northern Blvd., Long Island City 1, N. Y.
TYPE SET	AC Operated 8 Tube FM Tuner
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles
TUNING RANGE—FREQ. MOD.	88 — 108MC RATING 32 Watts, .3 Amp. @117 Volts AC

EICO MODEL HFT-90



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

JJ625

SET 480 FOLDER 5

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	RF Amp.-Conv.	ECC85	V5	Ratio Detector	6AL5
V2	1st IF Amplifier	6AU6	V6	Cathode Follower	EC90/6C4
V3	2nd IF Amplifier	6AU6	V7	Tuning Indicator	DM70
V4	3rd IF Amplifier	6AU6	V8	Rectifier	6X4

◆ CBS ◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	EICO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▬40	350	24010	AFH4-04	D0032			TVLS-3639.16*	
B	■20	350							
C	▲20	250							
C2	10	25	23001	XPP-25010	NLW10-25	TT50X10	ML10-25	TE-1204	

* Not normally in distributor's 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	REMARKS	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C3	10 N750 ±1mmf		N750-SI 10	TCN-10	C10Q1U	CCTN-100	CN7-410	10TCU-Q10
C4	2-20							
C5	1000		SI 1000	DD-102	BYA10D1	CCD-102	GP210	5HK-D10
C6	20 NPO		NPO-SI 20	TCZ-20	C10Q2C	CCTO-200	CNO-422	10TCC-Q20
C7	20 NPO		NPO-SI 20	TCZ-20	C10Q2C	CCTO-200	CNO-422	10TCC-Q20
C8	8.2 P100 ±1mmf							
C9	68 N750 5%		N750-SI 68	TCN-68	C10Q68U	CCTN-680	CN7-468	10TCU-Q68
C10	2-6			829-6		VC-3	CT552	
C11	10 N470 ±1mmf					*		
C12	15 NPO 10%		NPO-SI 15	TCZ-15	C10Q15C	CCTO-150	CNO-415	10TCC-Q15
C13	10000 10%		DI-10000		PM6SI	CCD-103		10TS-S10
C14	1000		SI 1000	DD-102	BYA10D1	CCD-102	GP210	5HK-D10
C15	25 10%		NPO-DI 25	DD-250	L10Q25	CCD-250	GP425	10TS-Q25
C16	5000 10%		DI-5000		PM6D5	CCD-502	JL-250	10TS-D50
C17	10000 10%		DI-10000		PM6SI	CCD-103		10TS-S10
C18	5000 10%		DI-5000		PM6D5	CCD-502	JL-250	10TS-D50
C19	5000 10%		DI-5000		PM6D5	CCD-502	JL-250	10TS-D50
C20	10000 10%		DI-10000		PM6SI	CCD-103		10TS-S10
C21	47 10%		DI-47	DD-47	L10Q47	CCD-470	GP447	10TS-Q47
C22	5000 10%		DI-5000		PM6D5	CCD-502	JL-250	10TS-D50
C23	5000 10%		DI-5000		PM6D5	CCD-502	JL-250	10TS-D50
C24	10000 10%		DI-10000		PM6SI	CCD-103		10TS-S10
C25	330 10%		DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33
C26	330 10%		DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33
C27	330 10%		DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33
C28	1000 10%		DI-1000	DD-102	PM6D1	CCD-102	GP210	10TS-D10
C29	.05 400V 10%		V84C4S5-10%		PM4S5	4DP-3-503	GEM-1615	4TM-S5
C30	10000 10%		DI-10000		PM6SI	CCD-103		10TS-S10
C31	25000				ST6S25	6DP-3-253	GEM-6125	5HK-S25
C32	10000 10%		DI-10000		PM6SI	CCD-103		10TS-S10

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

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	EICO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	250K	½	18044	B-51	A47-250K-Z	Q13-130	U44	Volume
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
C	Switch			KR-1	SWE-12	76-1	US-26	Power Off-On

RESISTORS

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

ITEM No.	RATING	REMARKS
R2	1meg	
R3	10K 1W	
R4	10K 1W	
R5	470K	
R6	470K	
R7	1200Ω 1W	
R8	100Ω	
R9	1200Ω 1W	
R10	100Ω	

ITEM No.	RATING	REMARKS
R11	470K	
R12	100K	
R13	15K 1W	
R14	15K 1W	
R15	68Ω	
R16	1000Ω	
R17	6800Ω	
R18	1500Ω	
R19	6800Ω	

ITEM No.	RATING	REMARKS
R20	68K	
R21	1meg	
R22	4700Ω	
R23	47K 1W	
R24	1800Ω 5W	
R25	500Ω 5W	
R26	220Ω 5% 1W	

COILS (RF-IF)

ITEM No.	USE	EICO PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L1	Fil. Choke	35024						1. 2uh
L2	2nd IF Trans.	34600	16-3487	16-3487	FM-254	1463		
L3	RF Choke	35025	19-1002	19-1002	BC-563	4606		2. 2uh
L4	3rd IF Trans.	34601	16-3487	16-3487	FM-254	1463		
L5	Ratio Detector	34602	17-3498	17-3498	FM-255	1465		
L6	Fil. Choke	35024			BC-561			1. 2uh

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	EICO PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V@ .3A	420 VCT @.040A	6.3V@ 2.6A	30024	24R11			PM8418	24R11	

MISCELLANEOUS

ITEM No.	PART NAME	EICO PART No.	NOTES
M1	FM Tuner	37001	

CABINETS & CABINET PARTS

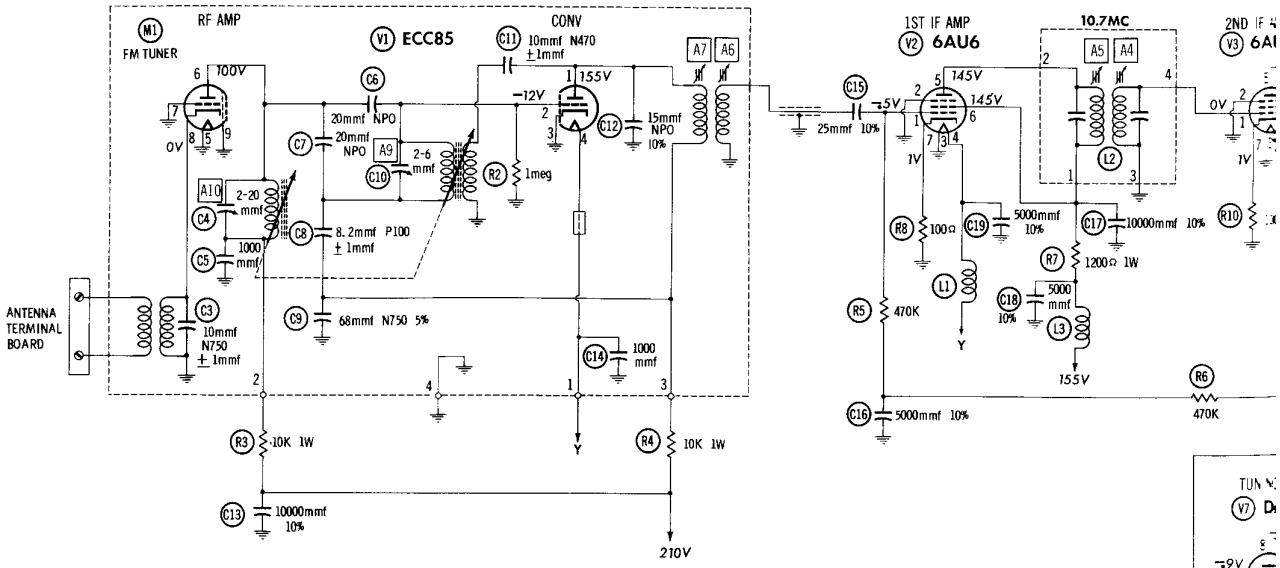
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

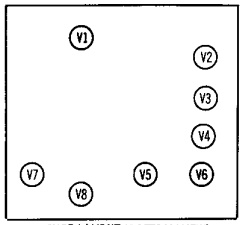
NAME	PART NO.	DESCRIPTION
Knob	53007	(With dot) Off-On Volume
Knob	53019	Tuning

WIRING DATA

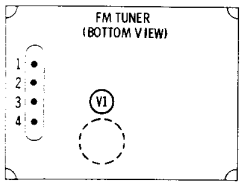
General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)





TUBE LAYOUT (BOTTOM VIEW)

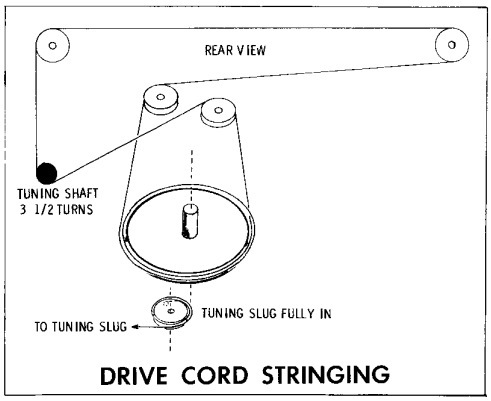


RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	P -
V1	ECC85	†10K	1meg	0Ω	.1Ω	0Ω	†10K	0Ω	.1Ω
V2	6AU6	1.5meg	0Ω	0Ω	.1Ω	†3500Ω	†3500Ω	100Ω	
V3	6AU6	.8Ω	0Ω	0Ω	.1Ω	†3500Ω	†3500Ω	100Ω	
V4	6AU6	100K	0Ω	0Ω	.1Ω	†17K	†17K	0Ω	
V5	6AL5	7800Ω	8300Ω	0Ω	.1Ω	INF	0Ω	INF	
V6	EC90	†2300Ω	NC	0Ω	.1Ω	†2300Ω	1meg	52K	
V7	DM70	6800Ω	NC	NC	.1Ω	0Ω	NC	NC	†350
V8	6X4	310Ω	NC	0Ω	.1Ω	NC	300Ω	¶	

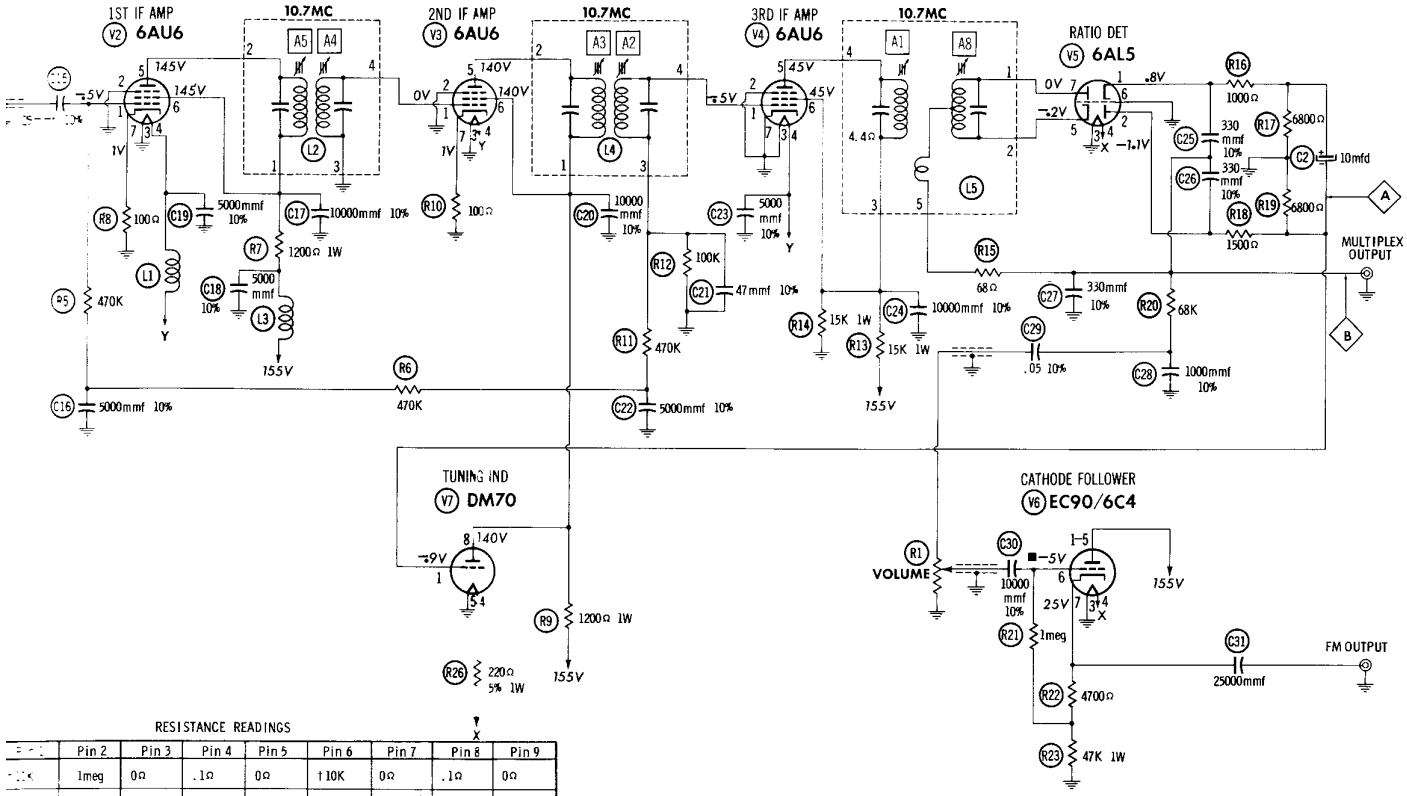
¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE
† MEASURED FROM PIN 7 OF V8.
■ MEASURED FROM PIN 7 OF V6.
NC NO CONNECTION

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 ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



DRIVE CORD STRINGING

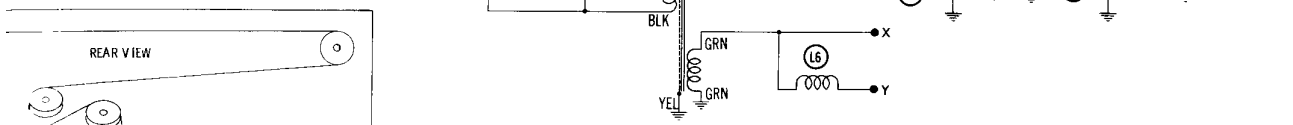
A PHOTOFACT STANDARD NOTATION SCHEMATIC

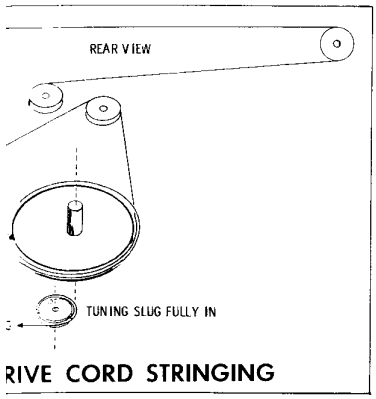


RESISTANCE READINGS

	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
	1meg	0Ω	.1Ω	0Ω	†10K	0Ω	.1Ω	0Ω
	0Ω	0Ω	.1Ω	†3500Ω	†3500Ω	100Ω		
	0Ω	0Ω	.1Ω	†3500Ω	†3500Ω	100Ω		
	0Ω	0Ω	.1Ω	†17K	†17K	0Ω		
	8300Ω	0Ω	.1Ω	INF	0Ω	INF		
	NC	0Ω	.1Ω	†2300Ω	1meg	52K		
	NC	NC	.1Ω	0Ω	NC	NC	†3500Ω	
	NC	0Ω	.1Ω	NC	300Ω	¶		

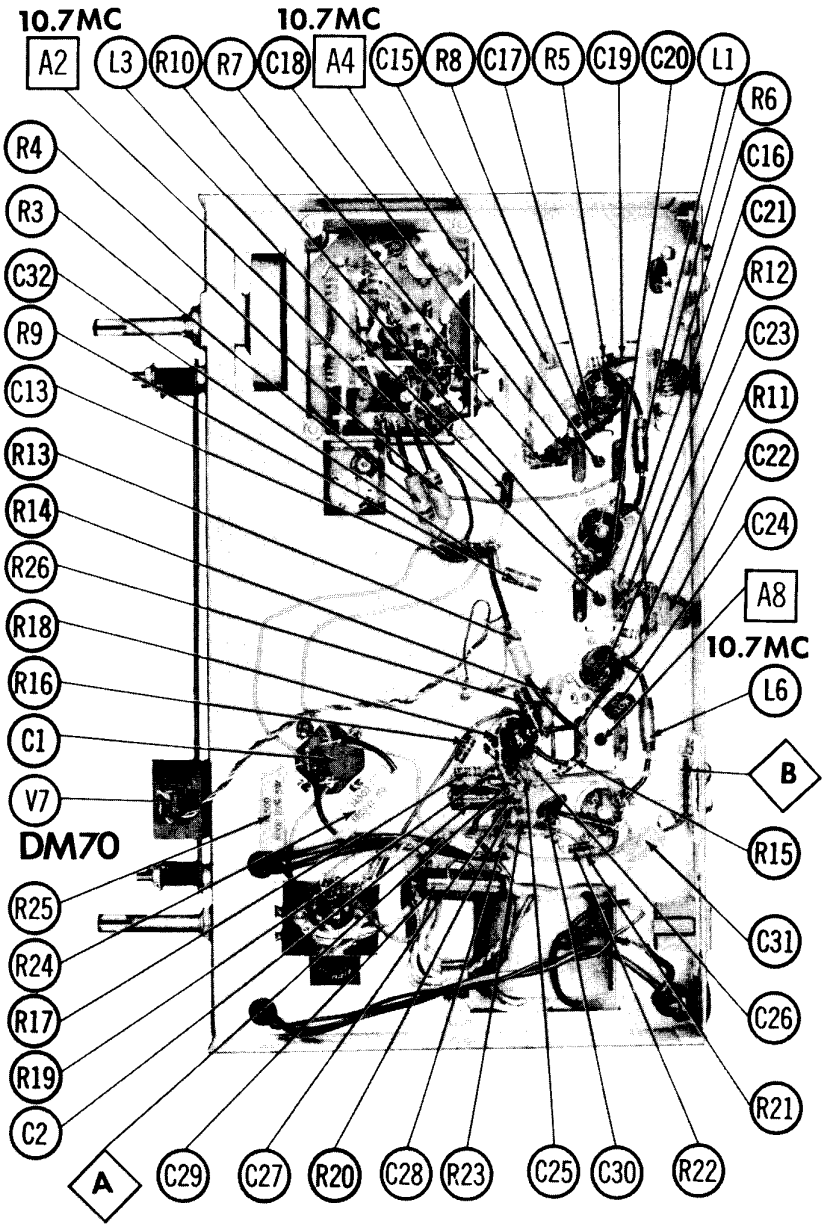
VG WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
EPOM PIN 7 OF V8.
EPOM PIN 7 OF V6.





RIVE CORD STRINGING

EICO MODEL HFT-90



CHASSIS BOTTOM 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.

Suggested alignment tools:

A1 thru A5, A8.....	GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8987 WALSCO #2531
A6, A7.....	GENERAL CEMENT #8282, 8606, 8606L, 9091 WALSCO #2526, 2541, 2543, 2544
A9, A10.....	GENERAL CEMENT #5000, 5003, 5014, 5015, 5016, 8276, 8290 WALSCO #2512, 2515, 2522, 2523, 2525, 2537

IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	High side thru 5mmf to pin 2 (grid) of Converter. Low side to chassis.	10.7MC (Unmod.)	Point of non-interference.	DC probe to point (A). Common to chassis.	A1, A2, A3, A4, A5, A6, A7	Adjust for maximum deflection.
2.	"	"	"	DC probe to point (B). Common to chassis.	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

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

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
1.	High side thru 5mmf to pin 2 (grid) of Converter. Low side to chassis.	10.7MC (450KC Swp)	Point of non-interference.	Vert. amp. to point (A). Low side to chassis.	A1, A2, A3, A4, A5, A6, A7	Disconnect stabilizing capacitor C2. Adjust for maximum gain and symmetry of response similar to Fig. 1. Reconnect C2.
2.	"	"	"	Vert. amp. to point (B). Low side to chassis.	A8	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A1 for maximum amplitude and straightness of crossover lines.

RF ALIGNMENT

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
3.	Across antenna terminals with 120Ω in each lead.	108MC (Unmod.)	108MC	DC probe to point (A). Common to chassis.	A9, A10	Adjust for maximum deflection.

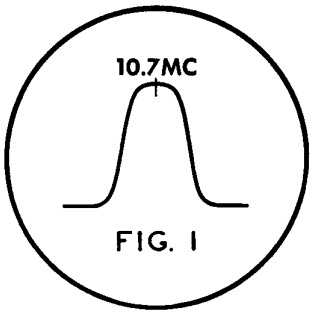


FIG. 1

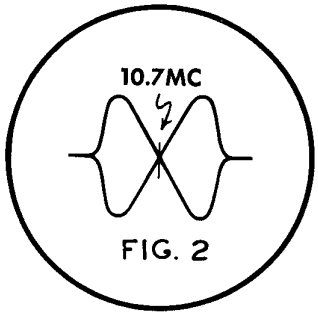
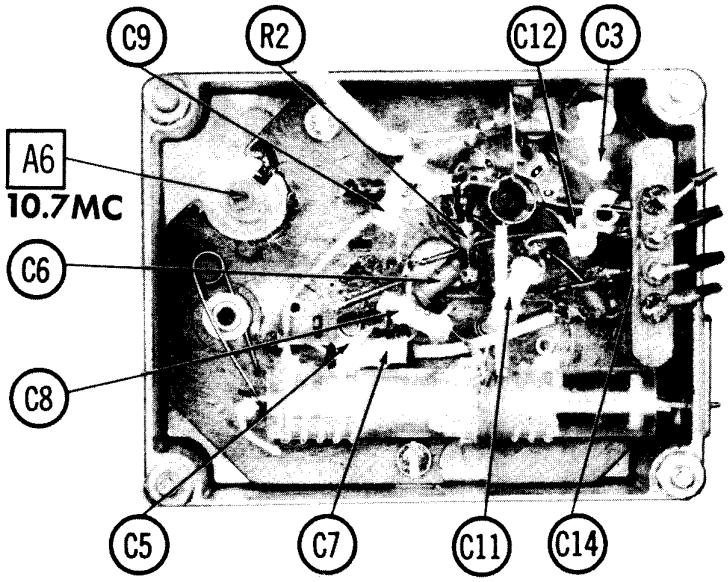


FIG. 2



FM RF SUB CHASSIS