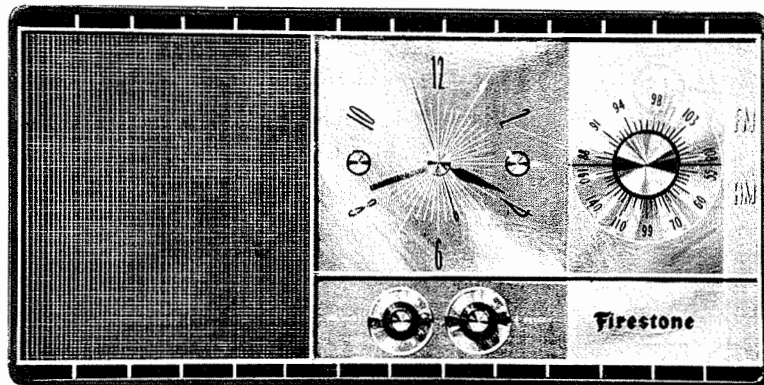


PHOTOFACT® Folder

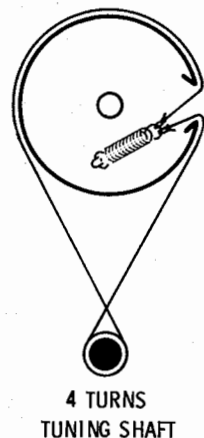
with CIRCUITRACE®

FIRESTONE MODEL
4-A-240 (Code 382-2-42N20)

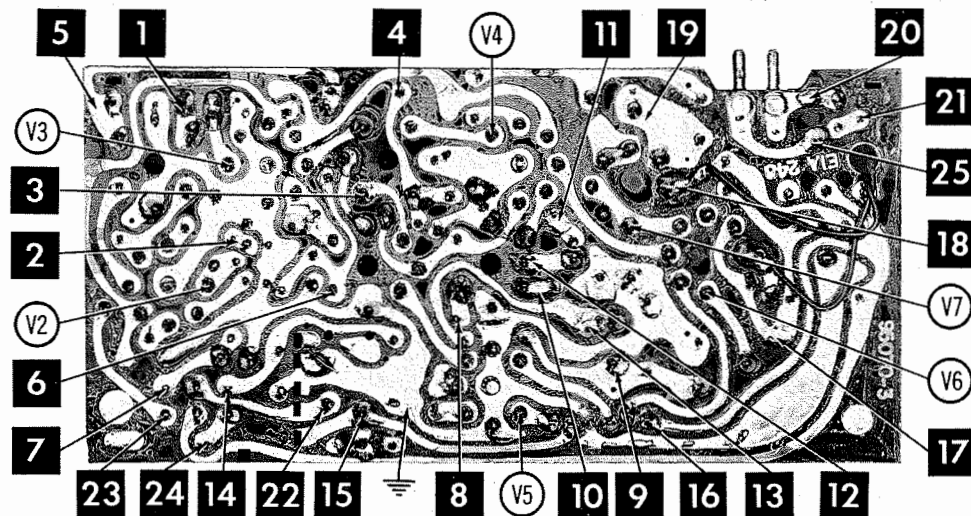
DIAL CORD STRINGING



FRONT VIEW
TUNING GANG CLOSED



TRADE NAME	Firestone Model 4-A-240 (Code 382-2-42N20)		
SUPPLIER	Firestone Tire & Rubber Co., 1200 Firestone Parkway, Akron 17, Ohio		
TYPE SET	AC-DC Operated 7 Tube AM-FM Receiver		
POWER SUPPLY	110-120 Volts AC-DC	RATING	30 Watts, .3Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1620KC	FREQ. MOD.	88-108MC



ARROWS INDICATING TUBE LOCATIONS ARE
POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

A Howard W. Sams CIRCUITRACE® Photo

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 the particular type of replacement LK926R

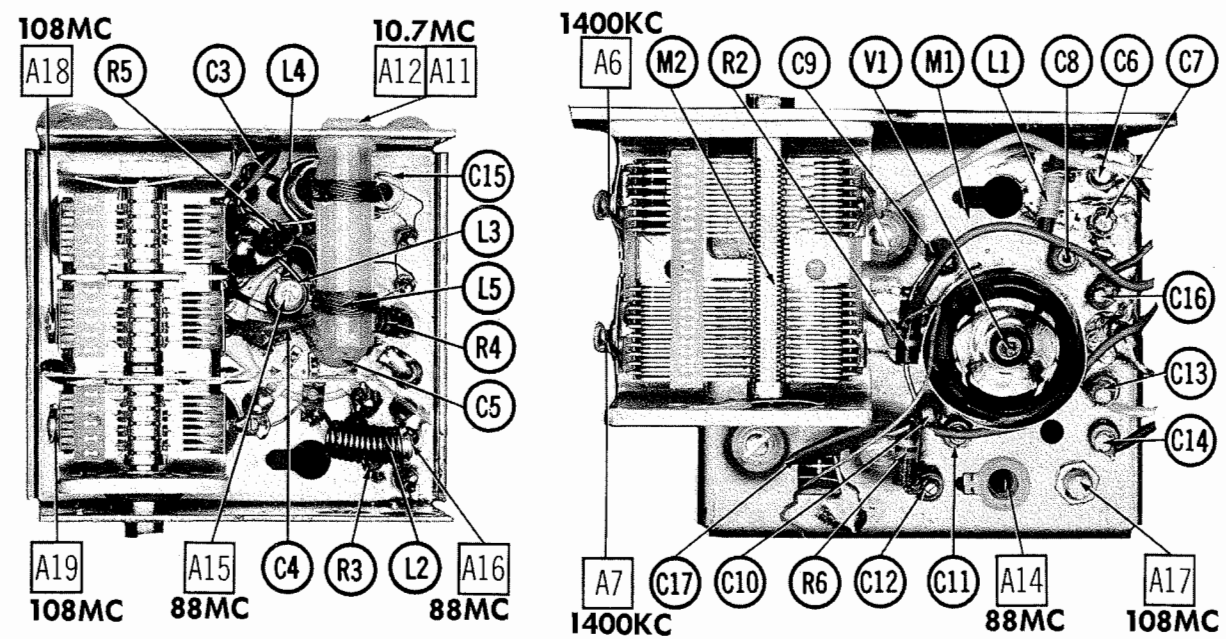
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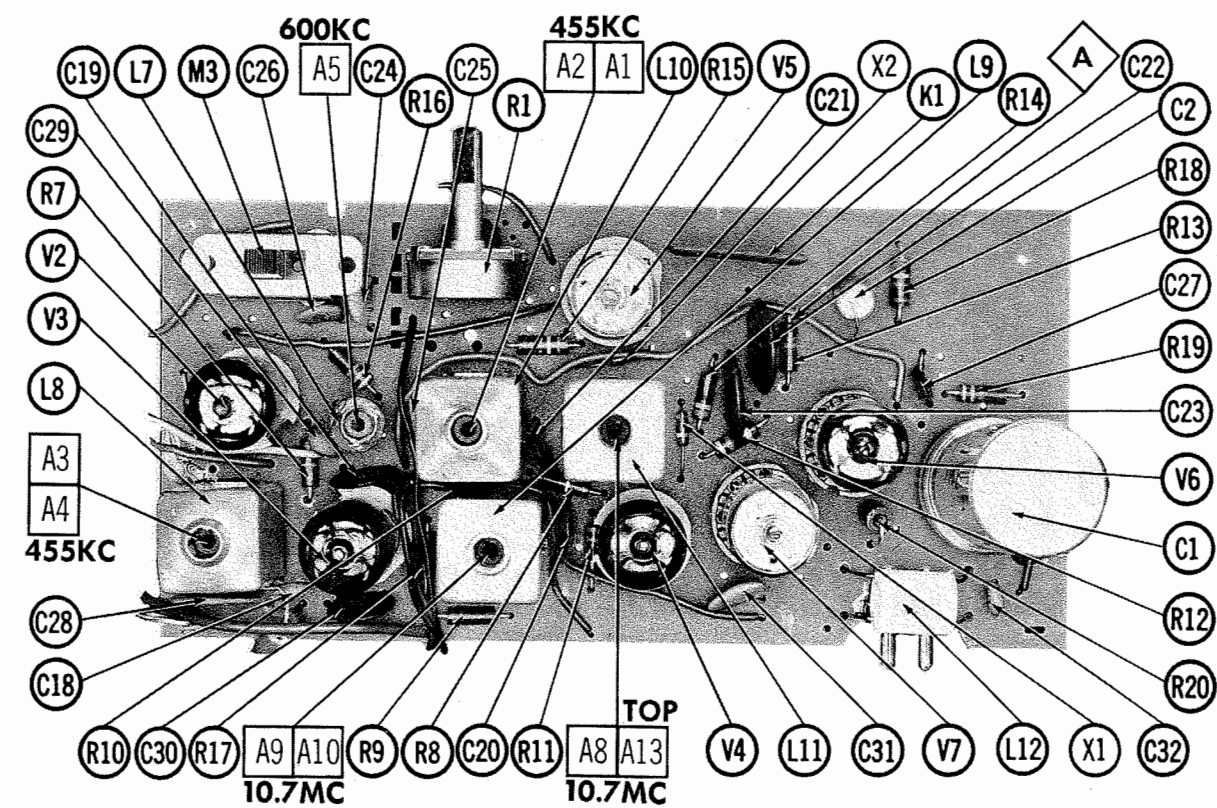
DATE 7-63

SET 645 FOLDER 8

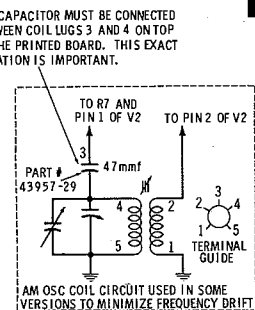
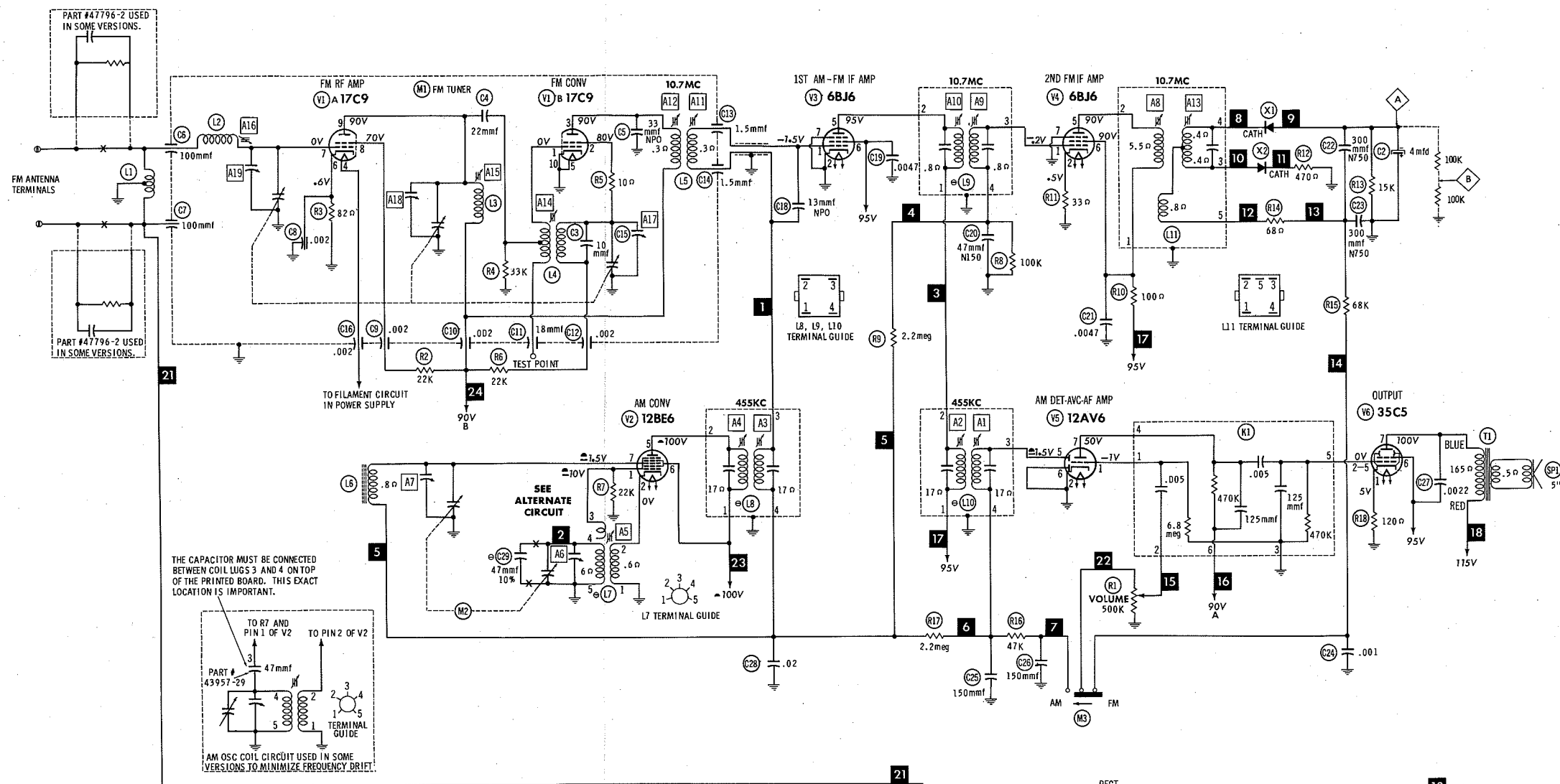
FIRESTONE MODEL
4-A-240 (Code 382-2-42N20)



FM RF SUBCHASSIS



CHASSIS - TOP VIEW



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9	Pin 10
V1	17C9	33K	†23K	†660Ω	0Ω	17Ω	82Ω	0Ω	†23K	†660Ω	0Ω
V2	12BE6	22K	.5Ω	29Ω	40Ω	†660Ω	†660Ω	~2.3meg			
V3	6BJ6	1.2meg	0Ω	40Ω	50Ω	†330Ω	†330Ω	0Ω			
V4	6BJ6	100K	33Ω	50Ω	55Ω	†430Ω	†430Ω	0Ω			
V5	12AV6	6.8meg	0Ω	17Ω	29Ω	~550K	0Ω	†470K			
V6	35C5	120Ω	470K	55Ω	90Ω	NC	†330Ω	†165Ω			
V7	35W4	TP	NC	90Ω	120Ω	120Ω	115Ω	†500K			

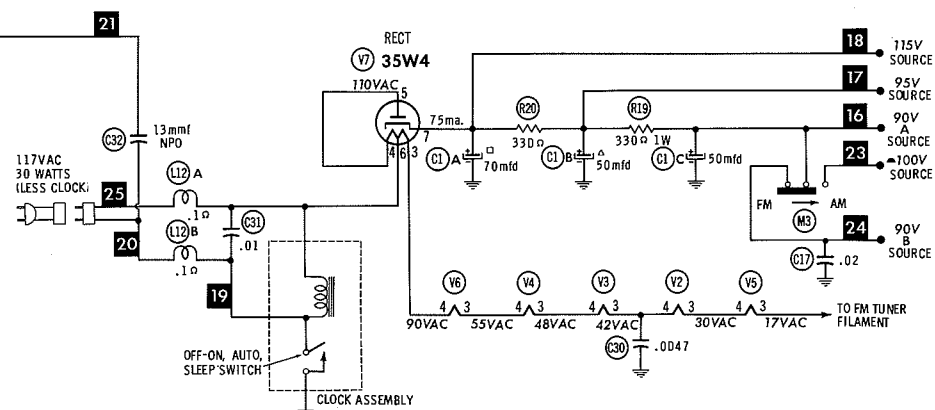
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.

A PHOTOFACIT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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ALIGNMENT INSTRUCTIONS

Use only enough generator output to provide a usable indication.

Suggested Alignment Tools:

GENERAL CEMENT #8282, 8606, 9302.....WALSCO #2543, 2544, 2588

AM ALIGNMENT — SELECTOR IN AM POSITION

SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
High side thru .1mfd to pin 7 (grid) of AM Converter, low side to chassis.	455KC (Unmod.)	(AM) Tuning gang fully open.	DC VTVM across volume control.	A1, A2, A3, A4	Adjust for maximum.
Fashion loop of several turns of wire and radiate signal into loop of receiver.	600KC	600KC	"	A5	"
"	1400KC	1400KC	"	A6, A7	"

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

Connect two matched 100K ($\frac{1}{2}$ W) resistors in series from point ④ to chassis. The junction of these two resistors is alignment point ⑤ as shown on the schematic.

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 (Unmod.)	(FM) Point of non-interference.	DC probe of VTVM to point ④, common to chassis.	A8, A9, A10, A11, A12	Adjust for maximum.
"	"	"	DC probe to point ⑤, common to high side of volume control.	A13	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE — SELECTOR IN FM POSITION

Use frequency modulated signal with 80% modulation and 450KC sweep. Use 120V sawtooth voltage in scope for horizontal deflection.

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 ④, low side to chassis.	A8, A9, A10, A11, A12	Disconnect stabilizing capacitor C2. Adjust for maximum gain and symmetry of response similar to Fig. 1 with marker as shown. Reconnect C2.
"	"	"	Vert. amp. of scope across volume control.	A13	Adjust to place marker at center of crossover lines similar to Fig. 2. SLIGHTLY retouch A7 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 with 150 Ω in each lead.	88MC (Unmod.)	(FM) 88MC	DC probe of VTVM to point ④, common to chassis.	A14, A15, A16	Adjust for maximum.
"	108MC	108MC	"	A17, A18, A19	"

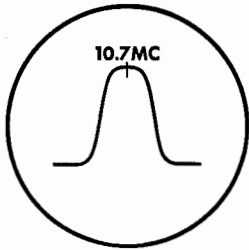


FIG. 1

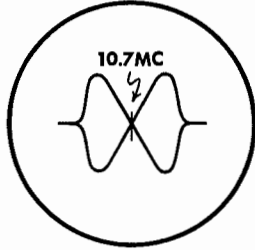


FIG. 2

PARTS LIST AND DESCRIPTION

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA		
			FIRESTONE PART No.	CENTRALAB PART No.	CTS-IRC PART No.
R1	Volume	500K	95100-3		

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			NOTES
		FIRESTONE PART No.	MERIT PART No.	STANCOR PART No.	
L1	FM Ant. TV Trap				
L2	FM RF				
L3	FM RF				
L4	FM IF				
L5	1st FM IF				
L6	Loopstick				
L7	1st FM IF				
L8	2nd FM IF				
L9	2nd FM IF				
L10	2nd FM IF				
L11	2nd FM IF				
L12	2nd FM IF				
L13	2nd FM IF				
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L96	2nd FM IF				
L97	2nd FM IF				
L98	2nd FM IF				
L99	2nd FM IF				
L100	2nd FM IF				

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	USE	REPLACEMENT DATA			NOTES
		FIRESTONE PART No.	MERIT PART No.	STANCOR PART No.	
T1	IMPEDANCE	42700-7	A-3025	A-3332	24548
	PRI.	3-4 Ω			
	SEC.				

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA			NOTES
		FIRESTONE PART No.	QUAM PART No.		
SP1	5" PM 3-4 Ω	45589-11	5A05		

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	FIRESTONE PART No.	REPLACEMENT DATA
K1	Audio Coupling	(2) 470K, 8.8meg, (2) .005mfd, 250mmf	43743-7	

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM No.	PART NAME	FIRESTONE PART No.	REPLACEMENT DATA	
			NAME	DESCRIPTION
M1	FM Tuner	95088-16	Knob	Volume & Selector
M2	AM Tuning Cap.	95087-1	Knob	Tuning Clock
M3	Switch, FM-AM	95084-1	Dial Pointer	
	Printed Board	95070-3	Cabinet Front	Off-White; Charcoal
	Printed Board Complete	95071-1	Cabinet Back	

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors
Power Cord	8524 (Stranded) Available in 12 Colors
Power Cord (Interlock Type)	Use BELDEN No. 17106 (Plastic) or 17126 (Rubber) - 9 Ft.
	Use BELDEN No. 8874 (Rubber) or 8885 (Plastic)

TUBES

ITEM No.	USE	TYPE	REPLACEMENT DATA		
			ITEM No.	USE	TYPE
V1	FM RF Amp.-Conv.	17C9	V5	AM Det.-AVC-AF Amp.	12AV6
V2	AM Converter	12BE6	V6	Output Rectifier	35C5
V3	1st FM-AM IF Amp.	6BJ6	V7		35W4
V4	2nd FM IF Amp.	6BJ6			

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	REPLACEMENT DATA			NOTES
			MALLORY PART No.	RCA PART No.	SARKIS PART No.	
X1		43287-1				
X2		43287-2				

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	CAP.	VOLT.	REPLACEMENT DATA			SPRAGUE PART No.
				AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	
C1A	70	150	150	PR3-027	LADK8	KC3-45.1	TM7-3142
C1B	50	150	150				
C1C	50	150	150				
C2	4	50	50	CR753	NLW4-50	MTL-3	MLY5-50

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA			MALLORY PART No.	SPRAGUE PART No.
			AEROVOX PART No.	CORNELL-DUBILIER PART No.	ELMA-ICO PART No.		
C3	10		D1-10	L10Q1	CCD-100	GP410	10TCC-Q12
C4	22		D1-22	L10Q2	CCD-220	GP422	10TCC-Q22
C5	33	NPO	NFO-D1 33	C10Q33C	CC70-330	CNO-433	10TCC-Q33
C6	100						
C7	100						
C8	100						
C9	100						
C10	100						
C11	100						
C12	100						
C13	100						
C14	100						
C15	100						
C16	100						
C17	100						
C18	100						
C19	100						
C20	100						
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C25	100						
C26	100						
C27	100						
C28	100						
C29	100						
C30	100						
C31	100						
C32	100						

Note 1. Not used in some versions.