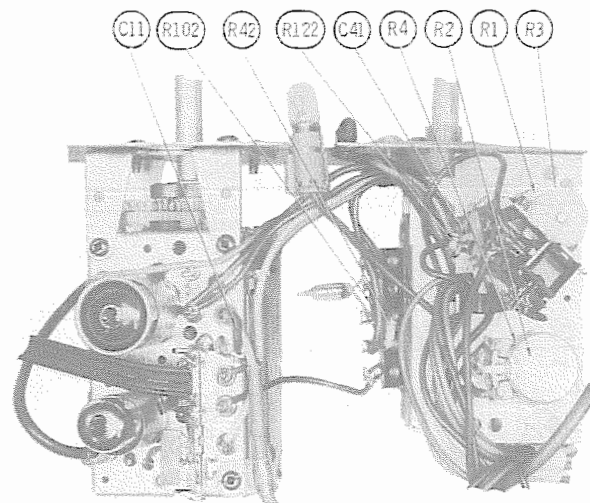


CABINET-REAR VIEW



TUNER ASSEMBLY

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Tune in a TV station and adjust all controls for normal operation. Connect a clip lead from pin 1 of V4, Sync Separator, to ground, and a clip lead across the Horizontal Stabilizer coil, L18.

Adjust the horizontal hold control until the picture floats across the screen. Remove the jumper across the horizontal stabilizer coil and adjust B1 until the picture floats across the screen. Remove clip lead from pin 1 of V4.

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

Remove eleven screws holding rear cover. Disconnect antenna lead wires and remove all knobs from the cabinet.

Note: The set may be serviced by removing two screws, one on either side of chassis, and tilting chassis down.

Disconnect picture-tube socket, high-voltage anode lead, speaker wires, deflection yoke and ground wires.

Remove four screws holding chassis to cabinet and

remove chassis from the cabinet.

Remove four screws holding tuner assembly and two screws holding control assembly to cabinet front. Remove tuner and control assembly from the cabinet.

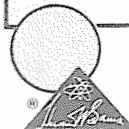
PICTURE TUBE REMOVAL

Follow "Chassis Removal" procedure. Lay set face down on a soft protective surface.

Remove eight screws holding picture-tube and hinge brackets. Remove picture tube without lifting picture tube by the neck.

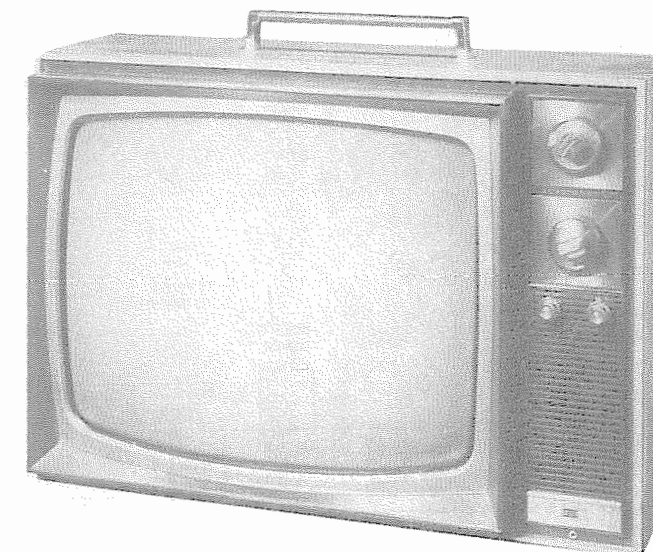
SET 1176 FOLDER 1

PHOTOFACT® Folder



For Supplier Address See PHOTOFACT Index

ELECTROHOME
CHASSIS M4-XU, M4-Y



Jupiter M4-114

SAFETY PRECAUTIONS

Make sure line voltage does not exceed rating of set. Check high-voltage regulation and adjust to correct value.

Be sure shields and rear cover are in place and secure.

Beware of shock from high voltage or AC line. Discharge high voltage to HV cage only.

Use extreme care when handling picture tube. Do not bump, scratch, or exert undue strain.

SERVICING IN THE FIELD

CRT IMPLOSION PROTECTION AND CLEANING

Implosion protection is an integral part of the picture tube, cleaning accomplished without CRT removal.

FUSE OR FUSE DEVICE

A circuit breaker is used for low-voltage power-supply protection and may be reset by depressing the reset button. (See "Cabinet-Rear View" photo for location.)

VHF TUNER

To touch up VHF oscillator, adjust oscillator slug (one for each channel). It may be necessary to adjust overall oscillator trimmer for best results.

AGC

The AGC may be varied by means of an

AGC control. (See "Cabinet-Rear View" photo for location.)

HORIZONTAL OSCILLATOR

Coarse adjustment of the horizontal hold is accomplished by the proper setting of the horizontal stabilizer coil. (See "Cabinet-Rear View" photo for location.)

FOCUS

The focus may be varied by connecting the lead from Pin 4 of the picture-tube to various voltage points. (See "Cabinet-Rear View" photo for location.)

CENTERING

Centering is accomplished by proper adjustment of two magnetic rings located on the yoke rear cover.

REMEMBER TO ASK— "What else needs fixing?"

HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206



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 part listed.

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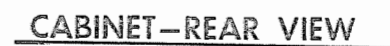
SET 1176 FOLDER 1

1PA133 10 9 8 7 6 5 4 3 2 1 0

[illegible]

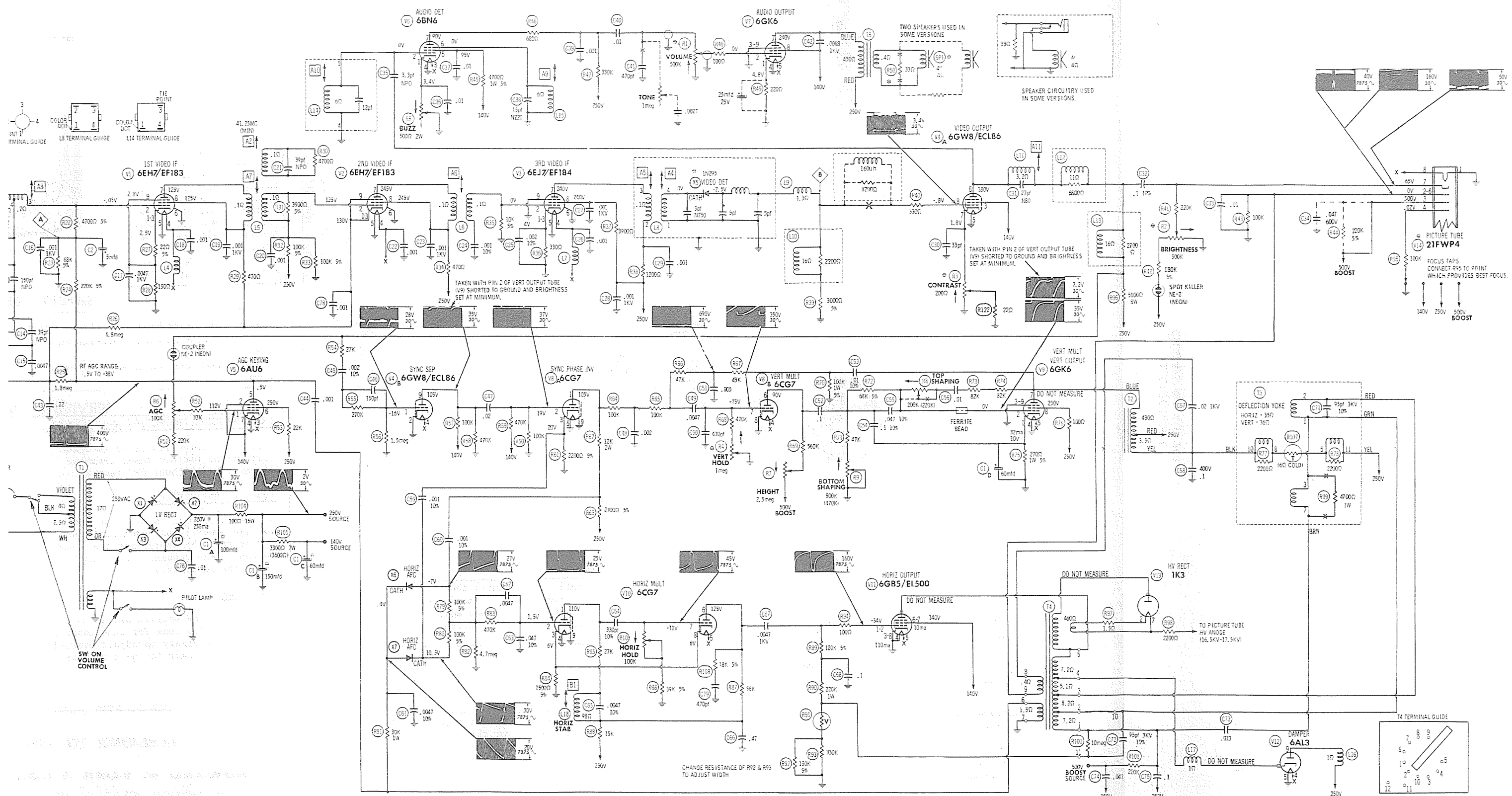
A PHOTOFACT STANDARD NOTATION SCHEMATIC

19



Adjust the horizontal picture floats across the screen across the horizontal scale B1 until the picture floats. Remove clip lead from picture.

Remove eight screws holding hinge brackets. Remove picture lifting picture tube by the



**ELECTROHOME
CHASSIS M4-XU, M4-Y**

VHF TUNER PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

TUBE PLACEMENT CHART

TUBES

AMPEREX			GENERAL ELECTRIC		RCA		SYLVANIA	
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V201	RF Amp	6HQ5	V202	Mixer - Oscillator	6GJ7			

CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201a b c d	27pf 27pf 27pf 27pf							
C202	12pf	10	NPO-DI 6.8	DTZ-6R8	NPO6P8		CN0568	10TCC-V68
C203	12pf	10	NPO-DI 6.8	DTZ-6R8	NPO6P8		CN0568	10TCC-V68
C204	.5-4.5pf							
C205	30pf							
C207	.75pf							
C208	18pf							
C209	.75pf	1033					*	
C211	.001							
C212	.001							
C213	.5-3.7pf							
C214	1.8pf	N150 +.25				*	*	10TCP-Q10
C215	10pf	N150 -2%				*	*	
C216	.001							
C217	.001							
C218	.001							
C219	.001							
C220	.001							
C221	3pf							

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

UHF TUNER PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

TRANSISTORS

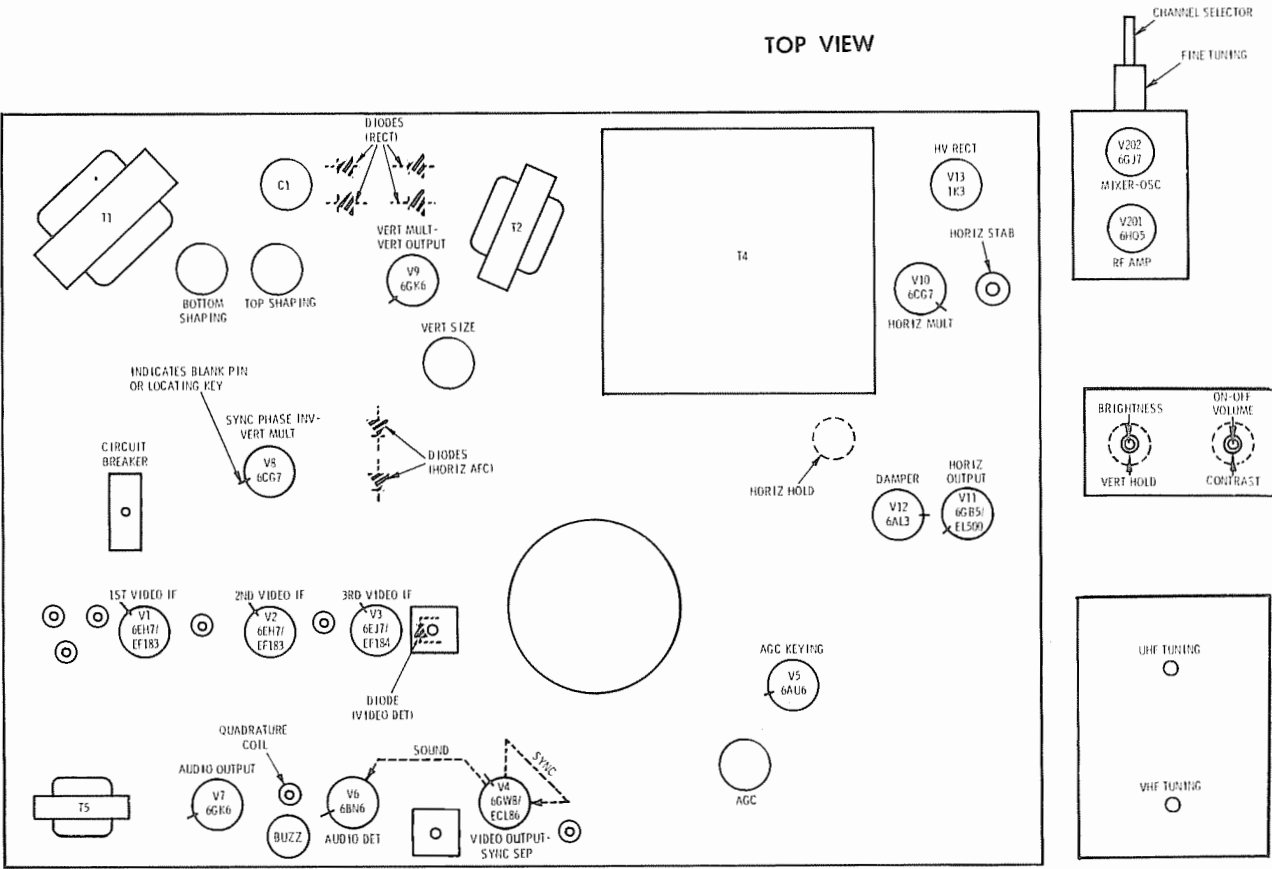
ITEM No.	TYPE No.	FUNCTION	REPLACEMENT DATA					
			MFGR. PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MOTOROLA PART No.	RCA PART No.	SYLVANIA PART No.
Q301	2N2616 S1019	UHF Oscillator		GE-11 GE-11	TR-22 TR-22	HEP719 HEP719	SK3019 SK3019	ECG 108 ECG 108

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFGR. PART OR TYPE No.	REPLACEMENT DATA				NOTES
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.	SYLVANIA PART No.	
X301	1N82AG	1N82A	1N82AG	1N82A	ECG 112	

CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C301 C302 C303 C304 C305	.5pf N470 1% .001		EF-001	MFT-1000		CCF-102	CT280A	



ELECTROHOME
CHASSIS M4-XU, M4-Y

TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound F1 Circuit Breaker, X1 thru X4 Rectifiers

SWEEP FAILURE
No raster, has sound V10, V11, V12, V13
No vertical deflection V8, V9
Poor vert. linearity or foldover V8, V9
Poor horiz. linearity or foldover V10, V11, V12
Narrow picture X1 thru X4, V10, V11, V12
Vert. off freq. V8, V9
Horiz. off freq. X6, X7 (Horiz. AFC Diodes), V10

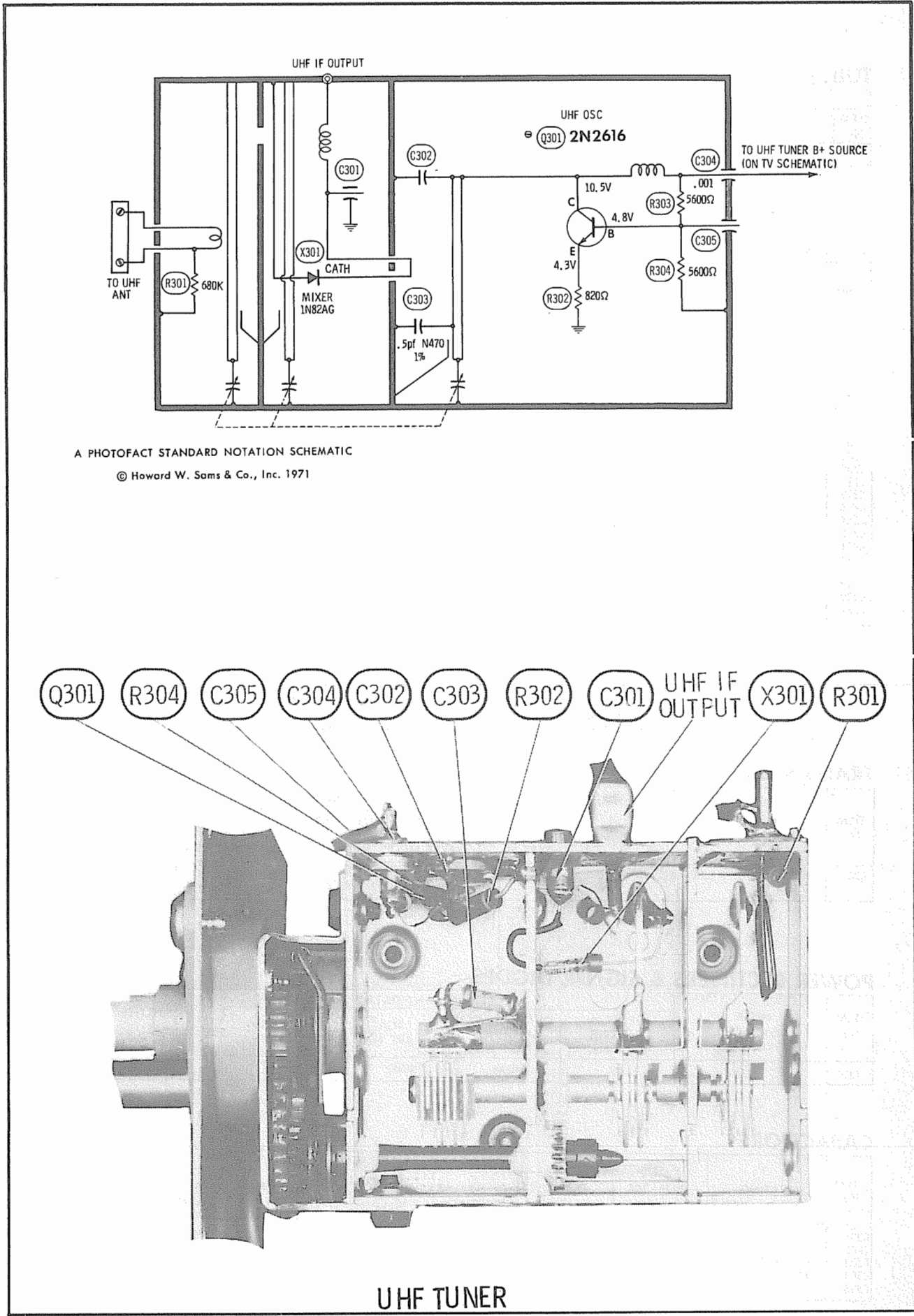
LOSS OF PICTURE OR SOUND
No pic, no sound, has raster V1, V2, V3, X5 (Video Detector Diode)
No pic, no sound, has snow V201, V202, V1
No pic, has sound, has raster V4, V14
Has pic, no sound V6, V7
Overloaded picture V5

SYNC FAILURE
No vert. sync V4, V8
No horiz. sync V4, V8
No vert. or horiz. sync V4, V8

FOLDER 1

CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

ITEM	PART No.	ITEM	PART No.
Model APOLLO M04-018		Model MERCURY M04-014	
Handle	53-1036-02	Case Assembly	12-100069-16
Mask Assembly	03-600124-01	Cabinet Back	52-307-18
VHF Indicator Disc	53-100251-02	Mask Assembly	03-600115-01
UHF Indicator Disc	53-100252-03	VHF Indicator Disc	53-100254-01
Knob: VHF Channel Selector	53-1127-02	UHF Indicator Disc	53-100252-02
UHF	53-1145-04	Knob: VHF Channel Selector	53-1127-02
Fine Tuning	53-1145-04	UHF	53-1145-02
UHF Channel Selector	53-1127-03	Fine Tuning	53-1145-02
Vertical, Contrast	53-248-08	UHF Channel Selector	53-1127-02
On, Volume, Brightness	53-971-16	Vertical, Contrast	53-248-08
		On, Volume, Brightness	53-971-18
		Tone	53-1137-02
Model BEDFORD M04-010			
Cabinet Back	52-484-01	Model METEOR M04-016	
Mask Assembly	03-600130-01	Case Assembly	12-100069-17
Knob: VHF Channel Selector	53-1127-02	Cabinet Back	52-307-17
UHF	53-1145-03	Mask Assembly	03-600121-01
Fine Tuning	53-1145-03	VHF Indicator Disc	53-100254-01
UHF Channel Selector	53-53-1127-03	UHF Indicator Disc	53-100252-03
Vertical, Contrast	53-248-08	Knob: VHF Channel Selector	53-1127-02
On, Volume, Brightness	53-971-6	UHF Channel Selector	53-1127-03
VHF Indicator Disc	53-100251-02	Fine Tuning	53-1145-02
UHF Indicator Disc	53-100252-03	Vertical, Contrast	53-248-08
		On, Volume, Brightness	53-971-16
		Tone	53-1137-03
Model BRUNSWICK M04-011			
Cabinet Back	52-484-02	Model METEOR M04-112	
Mask Assembly	03-600128-01	Case Assembly	03-600225-01
VHF Indicator Disc	53-100254-01	Cabinet Back	52-307-21
UHF Indicator Disc	53-100252-03	Handle	53-1281-01
Knob: VHF Channel Selector	53-1127-02	VHF Indicator Disc	53-100254-01
UHF	53-1145-03	UHF Indicator Disc	53-798-03
Fine Tuning	53-1145-03	Knob: VHF Channel Selector	53-1127-05
UHF Channel Selector	53-1127-03	UHF Channel Selector	53-1040-13
Vertical, Contrast	53-248-08	Vertical, Contrast	53-248-08
On, Volume, Brightness	53-971-6	Fine Tuning	53-1145-05
		On, Volume, Brightness	53-1040-08
Model FRASER M04-115			
Case Assembly	12-100069-25	Model POLARIS M04-113	
Handle	53-1038-01	Case Assembly	12-100069-23
Cabinet Back	52-307-20	Cabinet Back	52-307-21
Mask Assembly	03-600233-01	Handle	53-1036-02
VHF Indicator Disc	53-100254-01	VHF Indicator Disc	53-100254-01
UHF Indicator Disc	53-100252-03	UHF Indicator Disc	53-100252-02
Knob: VHF Channel Selector	53-1127-05/-06	Knob: VHF Channel Selector	53-1127-05/-06
UHF Channel Selector	53-1127-03	UHF Channel Selector	53-1127-03
Vertical, Contrast	53-148-15	Vertical, Contrast	53-248-20
Fine Tuning (2 used)	53-1145-03	Fine Tuning (2 used)	53-1194-02
On, Volume, Brightness	53-1040-08	Brightness, On, Volume	53-971-06
Model JUPITER M04-015		Model VENUS M04-017	
Case Assembly	12-100002-09	Case Assembly	12-100069-02
Cabinet Back	52-307-17	Cabinet Back	52-307-18
Handle	53-1067-02	Handle	53-1038-01
Mask Assembly	03-600119-01	Mask Assembly	03-600127-01
VHF Indicator Disc	53-100254-01	VHF Indicator Disc	53-100254-01
UHF Indicator Disc	53-100252-03	UHF Indicator Disc	53-100252-02
Knob: VHF Channel Selector	53-1127-02	Knob: VHF Channel Selector	53-1127-02
UHF	53-1145-03	UHF Channel Selector	53-1127-03
Fine Tuning	53-1145-03	Fine Tuning	53-1145-05
UHF Channel Selector	53-1127-03	Vertical, Contrast	53-248-08
Vertical, Contrast	53-248-08	On, Volume, Brightness	53-971-04
On, Volume, Brightness	53-971-16		
		Model VERDUN M04-013	
Model JUPITER M04-114		Cabinet Back	52-484-03
Case Assembly	12-100002-11	Mask Assembly	03-600129-01
Cabinet Back	52-307-20	VHF Indicator Disc	53-100254-01
Handle	53-1067-02	UHF Indicator Disc	53-100252-03
VHF Indicator Disc	53-100252-03	Knob: VHF Channel Selector	53-1127-02
VHF Indicator Disc	53-100254-01	UHF Channel Selector	53-1127-03
Knob: VHF Channel Selector	53-1127-05/-06	Fine Tuning	53-1145-03
UHF Channel Selector	53-1127-03	Vertical, Contrast	53-248-08
UHF Channel Selector	53-1145-03	On, Volume, Brightness	53-971-16
Fine Tuning (2 used)	53-248-08	Tone	53-1137-03
Vertical, Contrast	53-248-08		
On, Volume, Brightness	53-971-16	Model VERDUN M04-110	
		Cabinet Back	52-484-03
Model KENWOOD M04-012		Mask Assembly	03-600221-01
Cabinet Back	52-484-04	VHF Indicator Disc	53-100254-01
Mask Assembly	03-600143-01	UHF Indicator Disc	53-100252-03
VHF Indicator Disc	53-100254-02	Knob: VHF Channel Selector	53-1127-05/-06
UHF Indicator Disc	53-100252-03	UHF Channel Selector	53-1127-03
Knob: VHF Channel Selector	53-1127-02	Fine Tuning (2 used)	53-1145-03
UHF	53-1145-03	Vertical, Contrast	53-248-08
Fine Tuning	53-1145-03	On, Volume, Brightness	53-1040-08
UHF Channel Selector	53-1127-03	Tone	53-1137-05
Vertical, Contrast	53-248-08		
On, Volume, Brightness	53-971-6	Model KENWOOD M04-101	
Tone	53-1137-3	Continued - Model KENWOOD M04-101	
		Knob: VHF Channel Selector	53-1127-05/-06
Model KENWOOD M04-101		UHF Channel Selector	53-1127-03
Cabinet Back	52-484-05	Vertical, Contrast	53-248-08
Mask Assembly	03-600221-01	On, Volume, Brightness	53-1040-08
VHF Indicator Disc	53-100254-01	Fine Tuning (2 used)	53-1145-03
UHF Indicator Disc	53-100252-03		
Knob: Tone	53-1137-05		

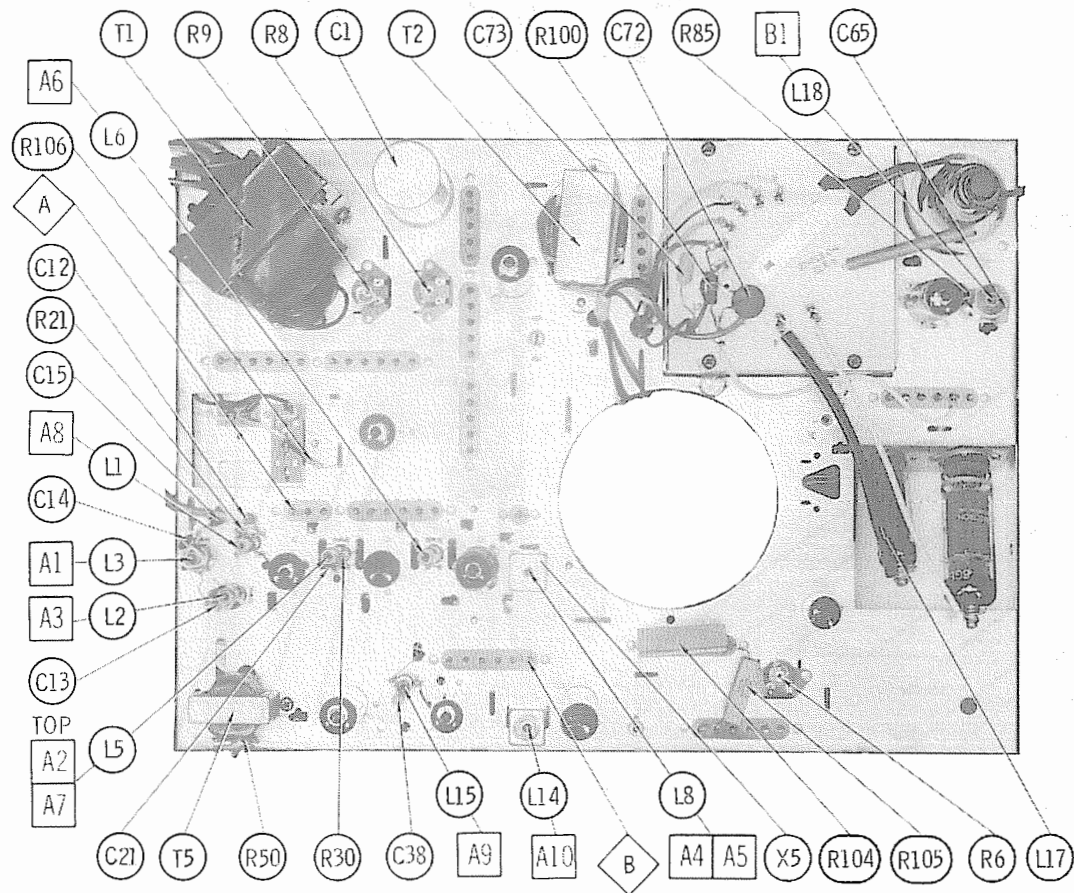


RESISTANCE MEASUREMENTS

ITEM	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 12	PIN 13	TOP CAP
V1	172Ω	70K	172Ω	FIL	FIL	0Ω	470Ω Δ	470Ω Δ	150Ω					
V2	8meg	60K	8meg	FIL	FIL	0Ω	570Ω †	570Ω †	8meg					
V3	330Ω	10K	330Ω	FIL	FIL	0Ω	1300Ω †	4000Ω †	0Ω					
V4	1.5meg	0Ω	3700Ω †	FIL	FIL	5000Ω †	120Ω *	600Ω *	80K †					
V5	330K †	3700Ω †	FIL	FIL	300K	23K †	3700Ω †							
V6	310Ω	6Ω	FIL	FIL	8400Ω †	6Ω	330K †							
V7	220Ω	150K	NC	FIL	FIL	TP	520Ω †	3700Ω †	0Ω					
V8	15K †	85K	2200Ω	FIL	FIL	1.1meg †	750K	0Ω	0Ω					
V9	270Ω	300K	0Ω	FIL	FIL	TP	520Ω †	200Ω †	0Ω					
V10	42K †	850K	1500Ω	FIL	FIL	70K †	80K	1500Ω	0Ω					
V11	INFINITE	INFINITE	0Ω	FIL	FIL	3700Ω †	3700Ω †	0Ω	TP					9.7Ω †
V12	NC	NC	NC	FIL	FIL	NC	NC	NC	100Ω †					INFINITE
V13	NC	INFINITE	NC	INFINITE	NC	TP	INFINITE	NC						544.7Ω †
V14	FIL	100K	220K †	100K	TP	NC	400K	FIL						
V201 VHF	2.2meg	0Ω	FIL	FIL	9400Ω †	0Ω	0Ω							
V202 VHF	0Ω	220K	0Ω	FIL	FIL	4400Ω †	8000Ω †	15K †	47K					

* READING DEPENDS UPON POLARITY OF METER CONNECTIONS.
† MEASURED FROM TOP CAP OF V12.
NC NO CONNECTION

Δ MEASURED FROM PIN 1 OF V2.
† MEASURED FROM OUTPUT OF X2 AND X4.
TP TIE POINT



CHASSIS—FRONT VIEW

TV ALIGNMENT INSTRUCTIONS

Use an isolation transformer, or observe polarity, and maintain line voltage at 117VAC. Allow a 20-minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools: GENERAL CEMENT
A1 thru A11 8606, 8606L, 8869
Mixer Plate Coil 9296, 9297, 9300

VIDEO IF ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. Use only enough generator output to provide a usable indication. Note: Response may vary slightly from that shown. Connect a variable bias supply to the IF AGC line (Point A) and adjust to obtain a response curve which shows no indication of overload. Disable oscillator section of mixer-oscillator. Set the channel selector to any non-interfering channel.

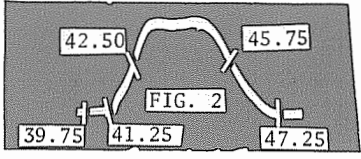
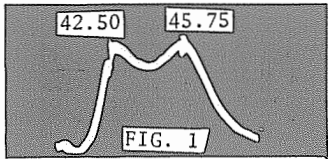
INDICATOR	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	ADJUST	REMARKS
DC probe of VTVM thru 47K to Point B, common to ground.	High side to ungrounded tube shield over Mixer-Osc., low side to ground.		39.75MC 41.25MC 47.25MC	A1 A2 A3	Adjust for MINIMUM.
Vertical input of scope to Point B, low side to ground.	High side thru .002mfd cap to pin 2 (grid) of V3, low side to ground.	44MC (10MC Sweep)	42.5MC 45.75MC	A4,A5	Adjust for maximum amplitude and MINIMUM tilt with markers as shown in Figure 1.
Vertical input of scope to Point B, low side to ground.	High side to ungrounded tube shield over Mixer-Osc., low side to ground.	44MC (10MC Sweep)	39.75MC 41.25MC 42.5MC 45.75MC 47.25MC	A6,A7, A8 and Mixer Plate Coil	Adjust for maximum gain and symmetry of response with markers as shown in Figure 2. To obtain a proper response, it may be necessary to slightly retouch A4 and A5.

SOUND IF ALIGNMENT

Tune in a station and reduce the signal strength at the antenna terminals until a hiss is heard in the sound. Align for maximum undistorted sound with MINIMUM buzz by adjusting the buzz control and A9, A10, and R5. If the hiss disappears during alignment, further reduce the signal strength.

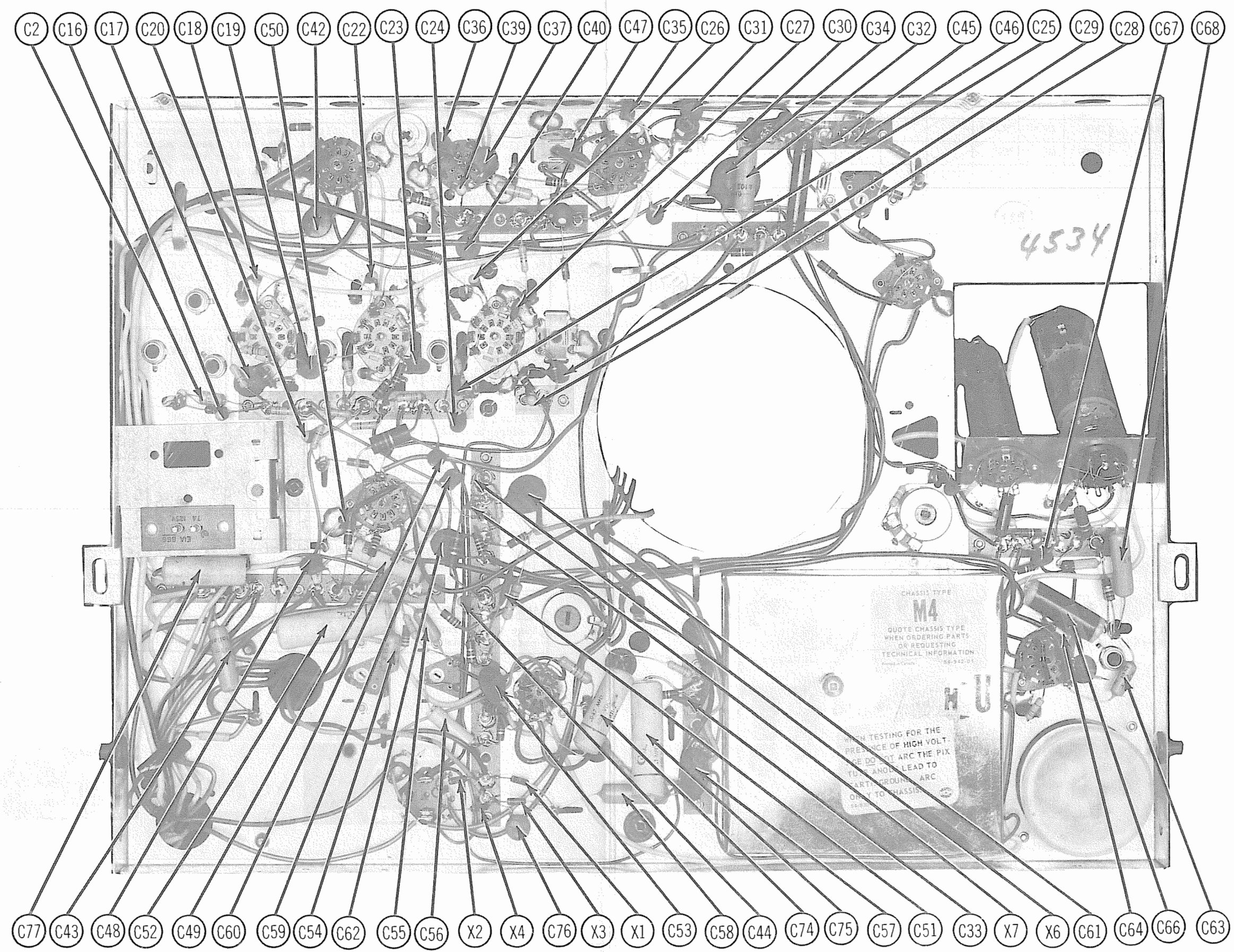
4.5MC TRAP ALIGNMENT

Tune in a strong TV signal and set the contrast at maximum. Adjust the fine tuning until a beat pattern is visible on the screen. Adjust A11 for MINIMUM beat interference.

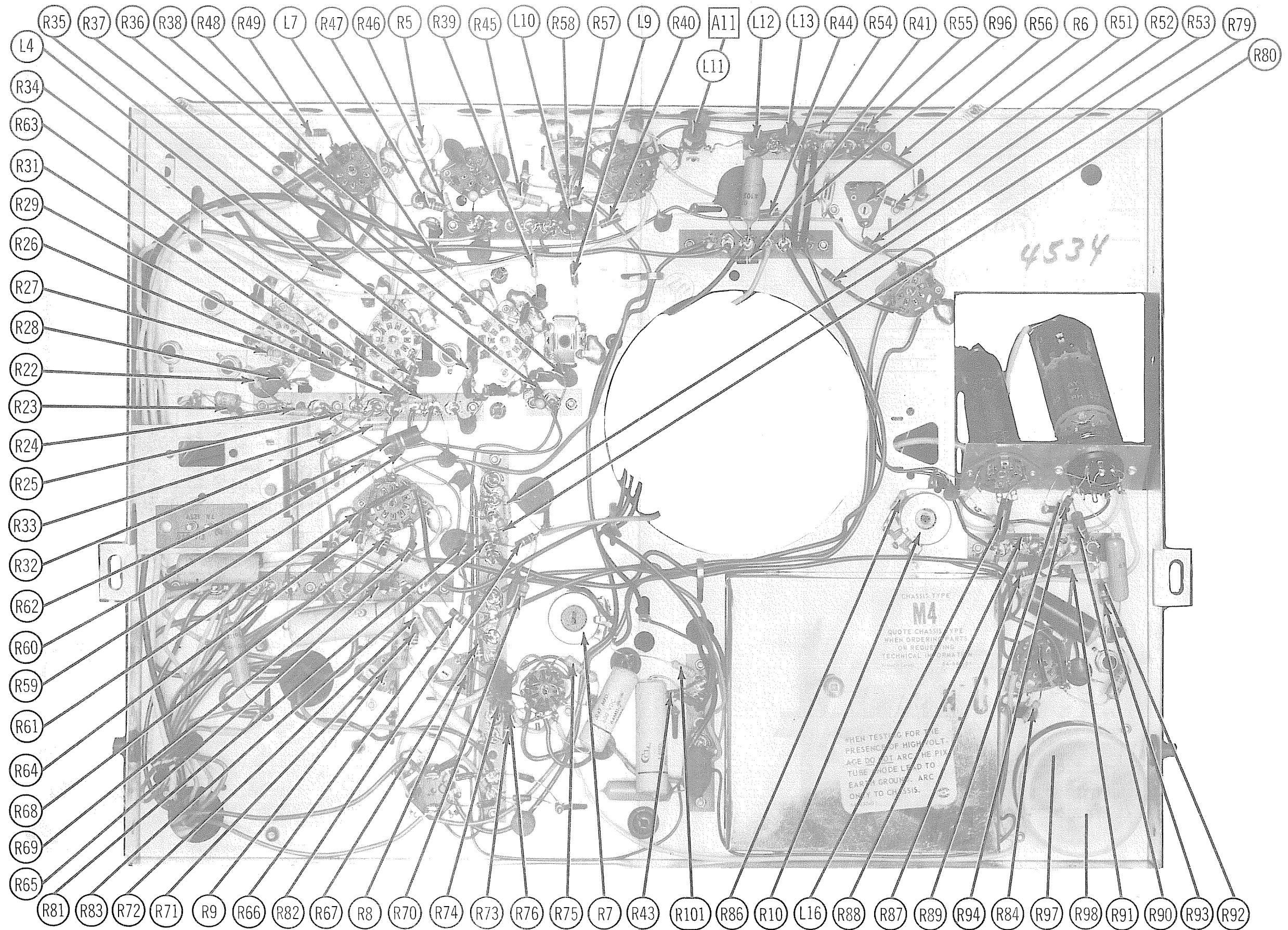


ELECTROHOME
CHASSIS M4-XU, M4-Y

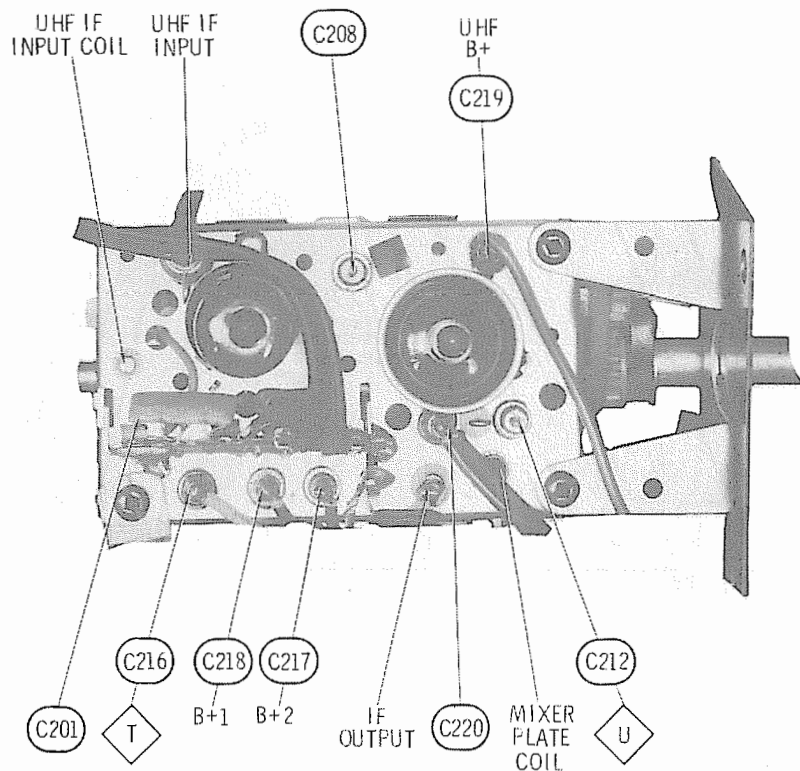
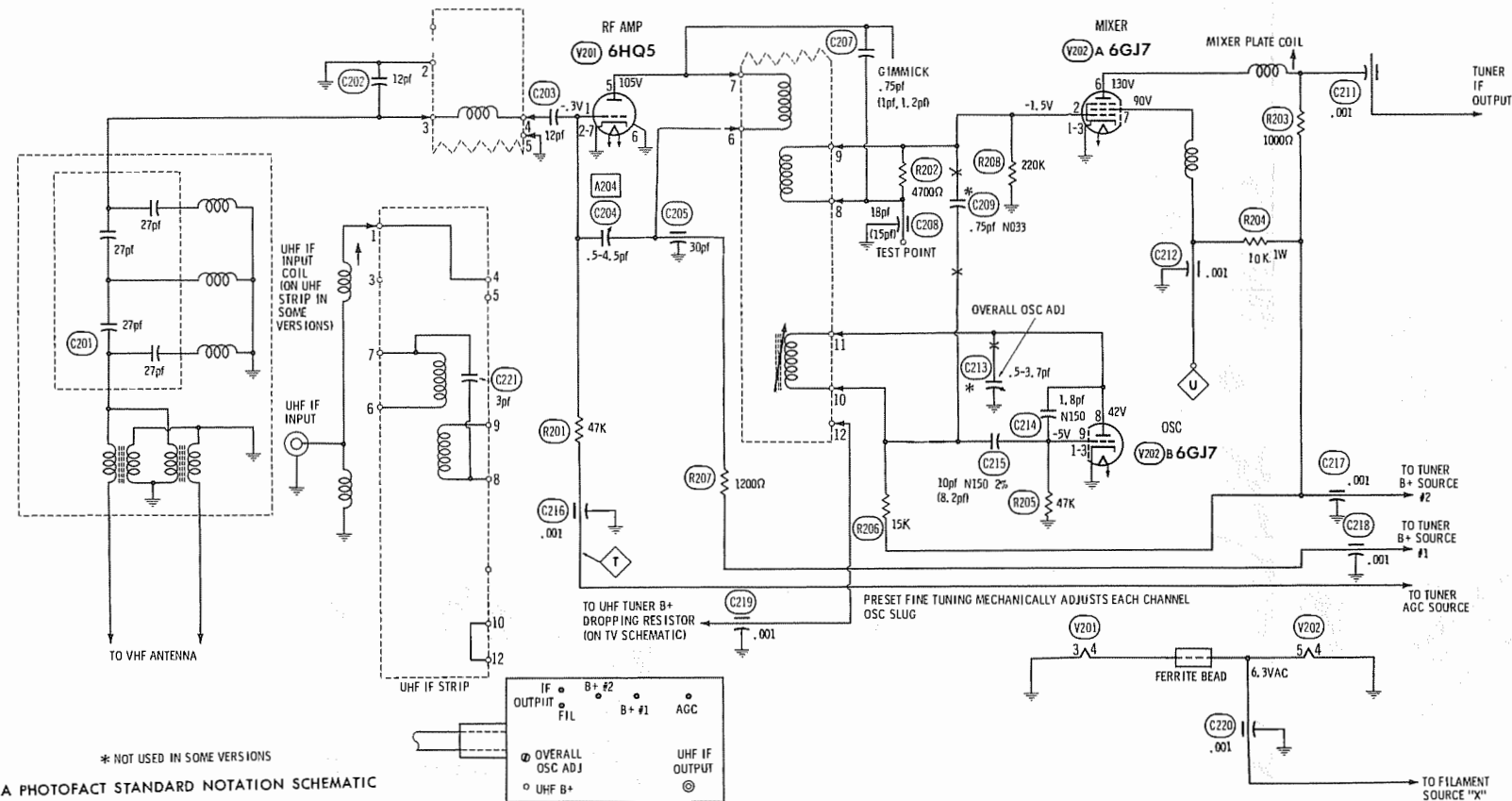
FOLDER 1



CHASSIS-REAR VIEW



CHASSIS-REAR VIEW



VHF TUNER

VHF TUNER ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools: GENERAL CEMENT
A204 8606, 8606L, 8869

OSCILLATOR ADJUSTMENTS

The oscillator slug for each channel is preset with the fine tuning control. Adjust the fine tuning for best picture and sound. If necessary, adjust the overall oscillator adjustment. Recheck.

RF AND MIXER ADJUSTMENTS

Connect the sweep generator across antenna terminals with 120-ohm carbon resistor in each lead. Refer to chart below for generator frequencies. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the scope for horizontal deflection. Use 10MC sweep unless otherwise noted. Connect a variable bias to the RF AGC line at Point T. Adjust bias to obtain response curve showing no overload.

CHANNEL	CONNECT SCOPE	REMARKS
13	Vertical input to Point U, low side to ground.	
10	Across video detector load resistor.	Increase bias to -15 volts and adjust A204 for MINIMUM amplitude of response.
12 thru 2	Vertical input to Point U, low side to ground.	Decrease bias. Check all channels and make compromise adjustments by expanding or compressing appropriate coils if necessary.

GENERATOR FREQUENCY					
Numbers in () indicate channel number					
SWEEP	MARKER	SWEEP	MARKER	SWEEP	MARKER
(2) 57MC	55.25MC	(6) 85MC	83.25MC	(10) 195MC	193.25MC
	59.75MC		87.75MC		197.75MC
(3) 63MC	61.25MC	(7) 177MC	175.25MC	(11) 201MC	199.25MC
	65.75MC		179.75MC		203.75MC
(4) 69MC	67.25MC	(8) 183MC	181.25MC	(12) 207MC	205.25MC
	71.75MC		185.75MC		209.75MC
(5) 79MC	77.25MC	(9) 189MC	187.25MC	(13) 213MC	211.25MC
	81.75MC		191.75MC		215.75MC

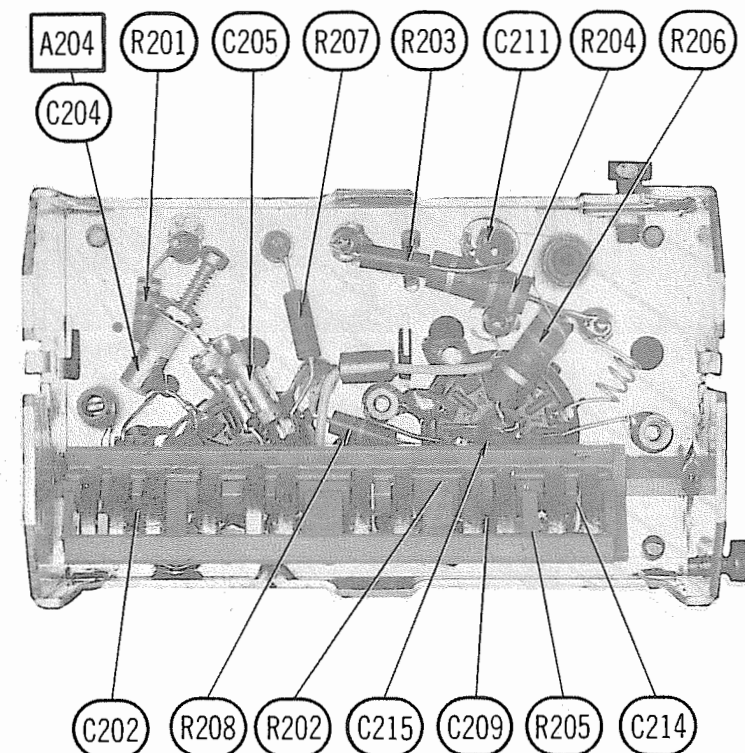
FIG. 201

SOUND VIDEO



UHF TUNER ALIGNMENT INSTRUCTIONS

Select a UHF station. Adjust UHF IF input coil for best picture and sound.



PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

TRANSFORMER (Power)

ITEM No.	RATING			REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	SEC. 2	MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ 1.55A AC	215VAC @ .25A DC	6.3VAC @ 7A AC	24-10124-02 (1)				(1) Transformer Part No. 21-10124-01 can be use used only on non-INST-ON sets. Part No. 21-10124-2 can be used on all M4 Chassis.

TRANSFORMERS (Sweep Circuits)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		MFGR. PART No.	STANCOR P/RT No.	THORDARSON PART No.	TRIAD PART No.	
T2	Vertical Output	24-100013-03 * (24-100013-01/-02)	V0-115 (3)	26S07 (3)	A-140X (3)	(1) Use original vertical and horizontal networks.
T3	Yoke (Horiz 20mh) 114° (Vert 95mh)	21-107-03 * (21-107-01)	DY-82AT (1)(3)	Y-105 (1)(3)	YT-103-1 (1)(2)(3)	(2) Remove Orange lead.
T4	Horiz. Output	21-213-04 * (21-213-03)				(3) See hook-up data sheet. * Alternate used in some versions.

SWEEP COMPONENT CONNECTION DATA

ORIGINAL →	YOKE										VERTICAL OUTPUT									
REPLACEMENT ↓	Original Connections										Original Connections									
	2	1 & 3	10	6	4						Blu	Red	Ye1							
STANCOR	2	1 & 3	7	6	4						Grn	Red	Ye1							
THORDARSON	2	1 & 3	7	6	4						Grn	Red	Ye1							
TRIAD	2	1 & 3	7	6	4						Blu	Red	Ye1							

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA				NOTES
	PRI.	SEC.	MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T5	7000	3-4	24-80008-11	A-3878	22S33	S-49X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
				MFGR. PART No.	QUAM PART No.	
SP1	4"	PM	4 ohms	19-40020-01		Used in Models: M04-018/015/014/016/017/101, M04-115/114/113/112.
	6" x 4"	PM		19-70019-29		Used in Models: M04-010/011/012/013/101/110.
	6" x 4"	PM		19-70019-01		Used in Models: M04-011/012/013/101/110.

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA						
		PART No.		BUSS PART No.		LITTELFUSE PART No.		WORKMAN PART No.
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER	DEVICE
F1	Circuit Breaker Break Current 2.75 Amp	26-65-03				8152.75		FA 3

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
	VHF Antenna	51-46-01	(2 used) Used in Models: M04-018/017/016/015/014, M04-112/113/114/115.
	UHF Antenna		
	VHF Tuner	23-256-01	
	VHF Tuner	23-259-01	
	UHF Tuner	23-247-17	
	UHF Tuner	23-258-01	

PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements.
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WIRING DATA

High Voltage Lead	Use BELDEN No. 8869 (17KV)
Shielded Hook-up Wire	Use BELDEN No. 8885 (Single Conductor) 8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
300-Ohm Tuner Input Lead	Use BELDEN No. 8225
300-Ohm Antenna Lead-in	Use BELDEN No. 8230 or 8275
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor 8485 (Round) - 5 Conductor 8488 (Round) - 8 Conductor

TUBES

AMPEREX			GENERAL ELECTRIC		RCA		SYLVANIA	
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	1st Video IF	6EH7/EF183	V8	Sync Phase Inverter - Vert Mult				6CG7
V2	2nd Video IF	6EH7/EF183	V9	Vert Mult - Vert Output				6GK6
V3	3rd Video IF	6EJ7/EF184	V10	Horiz Mult				6CG7
V4	Video Output - Sync Separator	6GM8/ECL86	V11	Horiz Output				6GB5/EL500
V5	AGC Keying	6AU6A	V12	Damper				6AL3
V6	Audio Detector	6BN6	V13	HV Rectifier				1K3
V7	Audio Output	6GK6						

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	MFGR. PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SYLVANIA PART No.	
V14	21FWP4		21FVP4	21FWP4 (1)	M04-015 and M04-114
	20XP4 or 20ACP4 or 20VP4			20XP4 (1)	M04-115, M04-014, M04-016, M04-112, M04-113, M04-017.
	23GXP4 or 23GQP4 or 23JEP4		23GSP4 23JEP4	23HLP4 (1) 23JEP4 (1)	M04-018, M04-010, M04-012, M04-101, M04-013, M04-110. (1) Silver Screen "85"

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFGR. PART OR TYPE No.	REPLACEMENT DATA				NOTES
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.	SYLVANIA PART No.	
X1	28-22-01 (1S315)	GE-504A or GEBR-600 (1)	8D4 or 18DB4A (1)	SK3031 or SK3017A	ECG 168 (1) or ECG 116	(1) A single unit replaces X1 thru X4.
X2	28-22-01 (1S315)	GE-504A or GEBR-600 (1)	8D4 or 18DB4A (1)	SK3031 or SK3017A	ECG 168 (1) or ECG 116	
X3	28-22-01 (1S315)	GE-504A or GEBR-600 (1)	8D4 or 18DB4A (1)	SK3031 or SK3017A	ECG 168 (1) or ECG 116	
X4	28-22-01 (1S315)	GE-504A or GEBR-600 (1)	8D4 or 18DB4A (1)	SK3031 or SK3017A	ECG 168 (1) or ECG 116	
X5	1N295A (1N87A)	1N60	1N60	1N60	ECG 109	
X6	14-514-12 (FD17-08)	1N34AS	1N34A	1N34A	ECG 178MP	
X7	14-514-12 (FD17-08)	1N34AS	1N34A	1N34A		

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA						
		PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1a	100 300V	44-204-07	AFH4-46-10		CC0734.3 & BR60-350	XC4-70.1 & QT1-14	WP419.554 & TC39	TVL-4570.5
b	150 300V							
c	60 300V							
d	60 25V							
C2	5 64V	(1)	CRE954A		WBR5-150	MT1-4	MTA5D75	TE-1404

(1) Some versions may use 5mfd @ 50V, Part #44-205-40.

ELECTRONOME
CHASSIS M4-XU, M4-Y

FOLDER 1

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

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CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C11	56 NPO			TCZ-56		CCT0-560	CN0456	10TCC-Q56
C12	14 NPO	±.5						
C13	150 NPO							
C14	39 NPO		NPO DI 150	DTZ-150		CCT0-151	CN0315	10TCC-T15
C15	.0047		GPD X5R502K	DD-502	GP5000	CCT0-390	CN0439	10TCC-Q39
C16	.001 1KV		GPD X5F102K	DD-102	GP1000	CCD-502	JF250	10TS-D50
C17	.0047 1KV		GPD X5R502K	DD-502	GP5000	CCD-102	GP210	10TS-D10
C18	.001		GPD X5F102K	DD-102	GP1000	CCD-102	JF250	10TS-D50
C19	.001 1KV		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C20	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C21	39 NPO		NPO-DI 39	TCZ-39		CCT0-390	CN0439	10TCC-Q39
C22	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C23	.001 1KV		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C24	.001	10%	GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C25	.002	10%	GPD X5F202K	DD-202	GP2000	CCD-202	GP220	10TS-D20
C26	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C27	.001 1KV		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C28	.001 1KV		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C29	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C30	33		NPO-DI 33	DTZ-33	NP033	CCT0-330	CN0433	10TCC-Q33
C31	27 N80							10TCN-B27
C32	.1 400V	10%	DBE4P1		DPMS4P1	4DP-3-104	PVC401	4PS-P10
C33	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C34	.047 600V		DBE6S5		DPMS6S5	6DP-3-503	PVC615	6PS-S50
C35	3.3 NPO	±.25						
C36	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C37	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C38	15 N220							
C39	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C40	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C41	470		GPD X5F471K	DD-471	GP470	CCD-471	GP347	10TS-T47
C42	.0068 1KV		GPD X5R682K	DD-682		CCD-682	JF268	10TS-D68
C43	.22 200V		V1612P22			2DP-4-224	PVC2022	2PS-P22
C44	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C45	.002	10%	GPD X5F202K	DD-202	GP2000	CCD-202	GP220	10TS-D20
C46	150		GPD X5F151K	DD-151	GP150	CCD-151	GP315	10TS-T15
C47	.02		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C48	.002		GPD X5F202K	DD-202	GP2000	CCD-202	GP220	10TS-D20
C49	.0047 600V	15%	DBE6047		DPMS6D47	6DP-1-472	PVC6247	6PS-D47
C50	470		GPD X5F471K	DD-471	GP470	CCD-471	GP347	10TS-T47
C51	.005		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C52	.1 600V		DBE6P1		DPMS6P1	6DP-4-104	PVC601	6PS-P10
C53	.01	10%	GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C54	.1 200V	10%	DBE2P1		DPMS2P1	2DP-3-104	PVC201	2PS-P10
C55	.047 200V	10%	DBE6S47		DPMS6S47	4DP-3-473	PVC4147	4PS-S47
C56	.01 600V		DBE6S1		DPMS6S1	6DP-1-103	PVC611	6PS-S10
C57	.02 1KV		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C58	.1 400V	10%	DBE4P1		DPMS4P1	4DP-3-104	PVC401	4PS-P10
C59	.001	10%	GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C60	.001	10%	GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C61	.0047	10%	GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C62	.0047		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C63	.047 200V	10%	DBE6S47		DPMS6S47	4DP-3-473	PVC4147	4PS-S47
C64	330 500V	10%			CD15F331J500	DM-15-331J	SX333	MS-333
C65	.0047 400V	10%	V1615D47	CPR-330J	DPMS6P47	6DP-1-472	PVC6247	PS-D47
C66	.47 300V		V1614P47	CPR-4700J	DPMS4P47	4DP-6-474	PVC4047	
C67	.0047 1KV		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C68	.1 400V	10%	DBE4P1		DPMS4P1	4DP-3-104	PVC401	4PS-P10
C71	95 3KV	10%	HVD-30-82	DD30-82D	HVY302XP101M	3CCD-101	3DY310	30GA-T10
C72	95 3KV	10%	HVD-30-82	DD30-82D	HVY302XP101M	3CCD-101	3DY310	30GA-T10
C73	.033 600V		DBE6S33		DPMS6S33	6DP-2-333	PVC6133	6PS-S33
C74	.047 600V		DBE6S5		DPMS6S5	6DP-3-503	PVC615	6PS-S50
C75	.1 600V		DBE6P1		DPMS6P1	6DP-4-104	PVC601	6PS-P10
C76	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C77	.047 600V		DBE6S5		DPMS6S5	6DP-3-503	PVC615	6PS-S50
C78	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C79	470		GPD X5F471K	DD-471	GP470	CCD-471	GP347	10TS-T47

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

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

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CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFGR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume/Switch (Rear)	500K	41-246-08(2)				
R3	Contrast (Front)	200					
R2	Brightness (Rear)	500K	41-221-95(3)	F1-1meg, R1-500K, FFS108, RFS200	NP-1meg-S, NR-500K-S, UPC-B-108, UR-D-200 U39-500	(5) QJ-2720	P16L, 3038, RU55L, OX1500, IS2000
R4	Vert Hold (Front)	1meg					
R5	Buzz	500	41-228-05	V-500 or WF-500 (1)		112-500 or 117R501A (1)	MR500F (1)
R6	AGC	100K	41-192-08	TT-40 or [F1-100K, SNK010, AK-38]	B47-100K-S or [NP-100K-S, NML-A-300, TT-2]	B11-128, TM4 or [BU11, CF13, SS6]*	PTA15L or [RU15L, SL37, SN281] or TA15L
R7	Height	2.5meg	41-146-06	F1-2.5meg, SNK010	B47-2.5meg-S or [NP-2.5meg-S, NML-A-300, TT-2]	HLC2	RU255L, SL37, SN281 or [UA255L, SN281] or SU565
R8	Top Shaping	200K	41-192-09	TT-46 or [F1-200K, SNK010, AK-38]	B47-200K-S or [NP-200K-S, NML-A-300, TT-2]	B11-129, TM4 or [BU11, CF14, SS6]*	RU25L, SL37, SN281 or TA254L
R9	Bottom Shaping	500K	41-192-10	TT-59 or [F1-500K, SNK010, AK-38]	B47-500K-S or [NP-500K-S, NML-A-300, TT-2]	B11-133, TM4 or [BU11, CF16, SS6]*	PTA55L or [RU55L, SL37, SN281] or TA55L
R10	Horiz Hold	100K	41-189-03	TT-40 or [F1-100K, SNK010, AK-38]	B47-100K-S or [NP-100K-S, NML-A-300, TT-2]	B11-128, TM4 or [BU11, CF13, SS6]*	PTA15L or [RU15L, SL37, SN281] or TA15L
	Tone	1meg	41-237-79(4)				

(1) Ground Center (arm) Terminal to chassis.

(2) Includes R1 and R3.

(3) Includes R2 and R4.

(4) Used in Models Kenwood M04-012, Kenwood M04-101, Mercury M04-014, Meteor M04-016, Verdun M04-013 and Verdun M04-110.

(5) "CONCENTRIKIT" Equivalent: K-6 Kit with base elements and shafts:

B11-137, P22-115 (Panel); B11-133, R1-130 (Rear).

"SNAPTROL" Equivalent: BUS, CF17, CR11, SF11, SR12, DC1.

* "SNAPTROL"

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
R91	V.O.R. *		42-23-01
R96	5100 8W	10W-SQ-5K	42-8-08
R102	8200 4W	5G-8.2K	42-8-07
R103	6800 3W	3G-6.8K	
R104	100 15W	20W-SQ-100	42-21-10

* Voltage Dependent Resistor

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
R105	3300 7W	7G-3.3K	42-41-34
R107	3600 7W Thermistor (6 Cold)	10W-SQ-3.5K FR10	42-21-53

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L1	1st Video IF	21-393-01	17-4523	6224	T231
L2	47.25MC Trap	21-394-01	17-4538 (7)		TM244 (7)
L3	39.75MC Trap	21-338-03			
L4	Filament Choke (21 Turns)	21-300-01			
L5	2nd Video IF/41.25MC Trap	21-391-01	17-4535 (8)	6221 (8)	T224 (8)
L6	3rd Video IF	21-392-01	17-4523	6224	T231
L7	Filament Choke (21 Turns)	21-300-01			
L8	4th Video IF/Detector	21-390-01			
L9	RF Choke (17 uh)	21-1400-05		72F185AP	
L10	Peaking (450uh)	21-314-47 (1)		6138 (4)	T323 (4)
L11	4.5MC Trap	21-347-01	17-3402 (7)		T250 (7)
L12	Peaking (190uh)	21-314-40 (2)	19-3180 (5)	6180 (5)	T310 (5)
L13	Peaking (340uh)	21-314-28 (3)	19-3330 (6)	6132 (6)	T319 (6)
L14	Sound Takeoff	21-355-02		1481	
L15	Quadrature	21-360-01	20-1005	1480	T251
L16	RF Choke (10 uh)	21-1400-04	19-2016	72F105AP	T823
L17	RF Choke (10 uh)	21-1400-04	19-2016	72F105AP	T823

(1) Wound on 2200-ohm resistor.

(2) Wound on 6800-ohm resistor.

(3) Wound on 2700-ohm resistor.

(4) Shunt with 2200-ohm resistor.

(5) Shunt with 6800-ohm resistor.

(6) Shunt with 2700-ohm resistor.

(7) Disregard tap.

(8) It may be necessary to shunt trap with 4700-ohm resistor.

COILS (Sweep Circuits)

ITEM No.	FUNCTION	REPLACEMENT DATA					
		MFGR. PART No.	MILLER PART No.	STANCOR PART No.	THORDARSON MEISSNER PART No.	TRIAD PART No.	WORKMAN PART No.
L18	Horizontal Stabilizer	21-334-03	6210	RTC-8629	HS-5	WLC-25 (1)	T103

(1) Disregard tap.