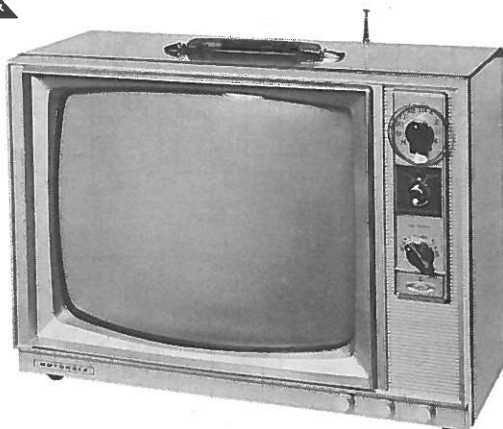


PHOTOFACT® Folder



MODEL 19TR29CH

TRADE NAME Motorola
 MANUFACTURER Motorola Inc., 9401 W. Grand Avenue, Franklin Park, Illinois
 TYPE SET Television Receiver (Some Models with Remote Control, AM Radio)
 TUBES VHF - Seventeen, UHF - Eighteen
 POWER SUPPLY 110-120 Volts AC 60 Cycle
 TUNING RANGE Channel 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

TV Chassis Code B-00B

MOTOROLA	Models	Chassis	Remote Chassis	VHF Tuner	UHF Tuner	AM Radio Chassis
A19T24AWA, EA, GA, A19T25AWA, GRA, WGA ...		ADTS-584	TRR-1	RTT-323		
A27K13CW, M, W, A27K14M, W		AHTS-584	TRR-2	HASPT-334		
Y19T20GA, EA, Y19T21JA, BEA		CDTS-584Y		WTT-320Y	ZTT-601	
Y19T22AWA, GRA, WGA		DTS-584Y		TT-320Y	ZTT-601	
Y23K105W, Y23K106MD, Y23K107W, WH		FTS-584Y		SPTT-322Y	KTT-601	
Y27K13CW, M, W, Y27K14M, W		HTS-584Y		PTT-322Y	KTT-601	
19T20GA, EA		CDTS-584		WTT-319, WTT-319B		
19T20GLA, ELA		KDTS-584		STT-311 or STT-329		
19T21JA, BEA		PCDTS-584		CPTT-329		
19T22AWA, GRA, WGA		DTS-584		CPTT-330		
19TR29AW, CH, G		RCDTS-584		WTT-319		THS-4101
23K105W, 23K106MB, 23K107W, WH		FTS-584		SPTT-333		
27K13CW, M, W, 27K14M, W		HTS-584		HSPTT-333		

SERVICING IN THE FIELD

SAFETY GLASS REMOVAL

For safety glass cleaning it is necessary to remove the chassis and picture tube.

FUSE OR FUSE DEVICE

A Circuit Breaker is used for low voltage power supply protection, and may be reset by depressing the reset button. (For location, see "Tube Placement Chart".)

TUNER OSCILLATOR ADJUSTMENT

To touch up the VHF Oscillator, remove Channel Selector and Fine Tuning knobs.

SYNC STABILITY

Sync stability may be varied by means of a Noise Gate control. (For location, see "Tube Placement Chart".)

FOCUS

The focus may be varied by connecting the lead from pin 6 of the picture tube to various voltage points. (For location, see photo "Cabinet - Rear View".)

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

The Horizontal Osc. Coil Slug is used for the Horizontal Hold. (For location, see "Tube Placement Chart".)

HORIZONTAL SIZE

The width may be varied by a Horizontal Size control. (See "Tube Placement Chart" for location.)

CENTERING

Centering is accomplished by 2 magnetic rings, located behind the yoke, on the neck of the picture tube.

MOTOROLA CHASSIS
584, 584Y Series

IMPORTANT FILING NOTICE

Some models covered by this PHOTOFACT Folder employ chassis in addition to the TV chassis. PHOTOFACT Folders covering these additional chassis are packaged immediately behind this Folder and should be filed with this Folder in the yellow filing jacket provided. For specific coverage see index below.

INDEX

Remote Control Receivers TRR-1, -2;
 Transmitter TRT-1 SET 627, FOLDER 3-A
 AM Ch. THS-4101 SET 627, FOLDER 3-B

MOTOROLA CHASSIS
584, 584Y Series

SET 627 FOLDER 3

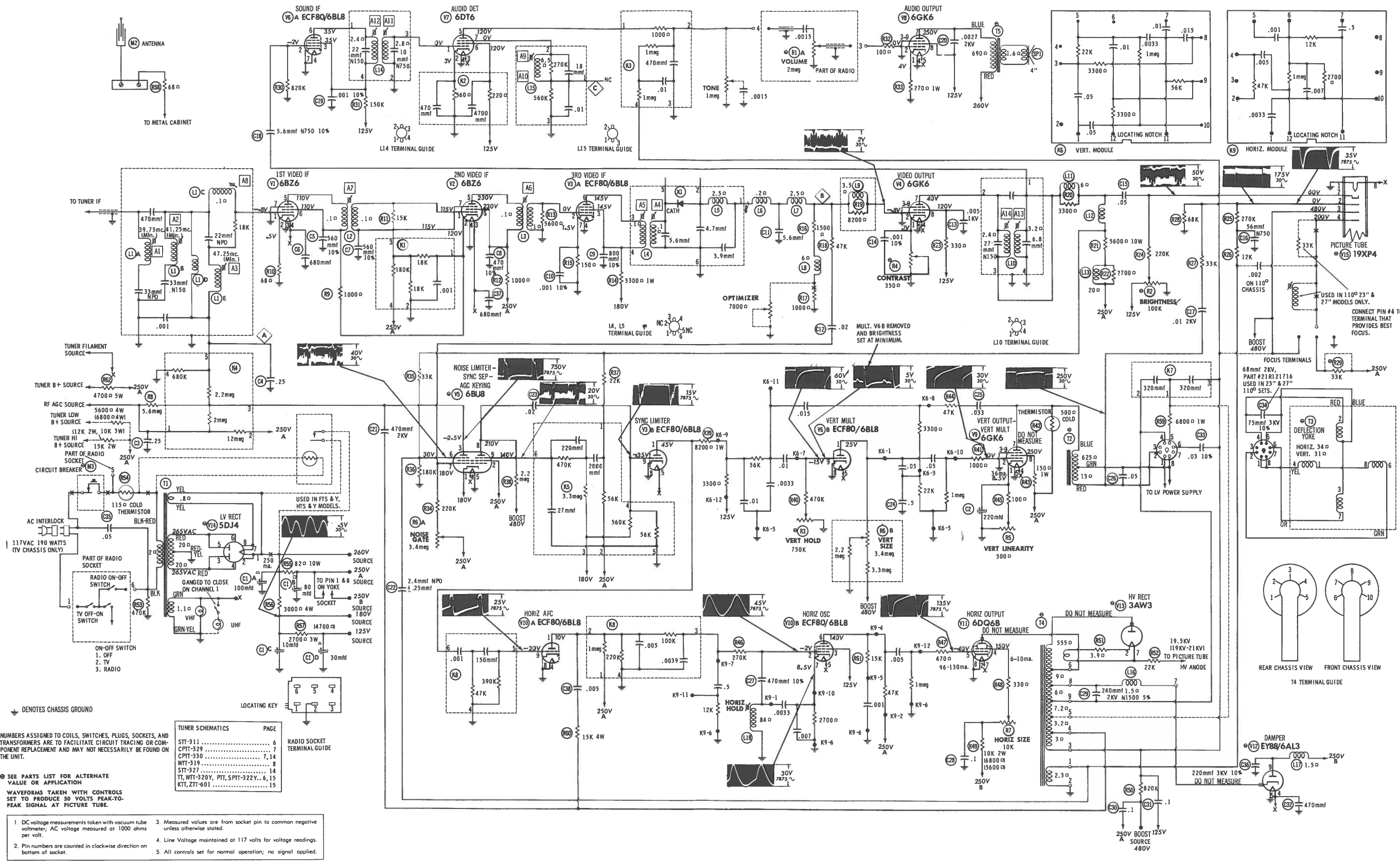
HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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
 LA968



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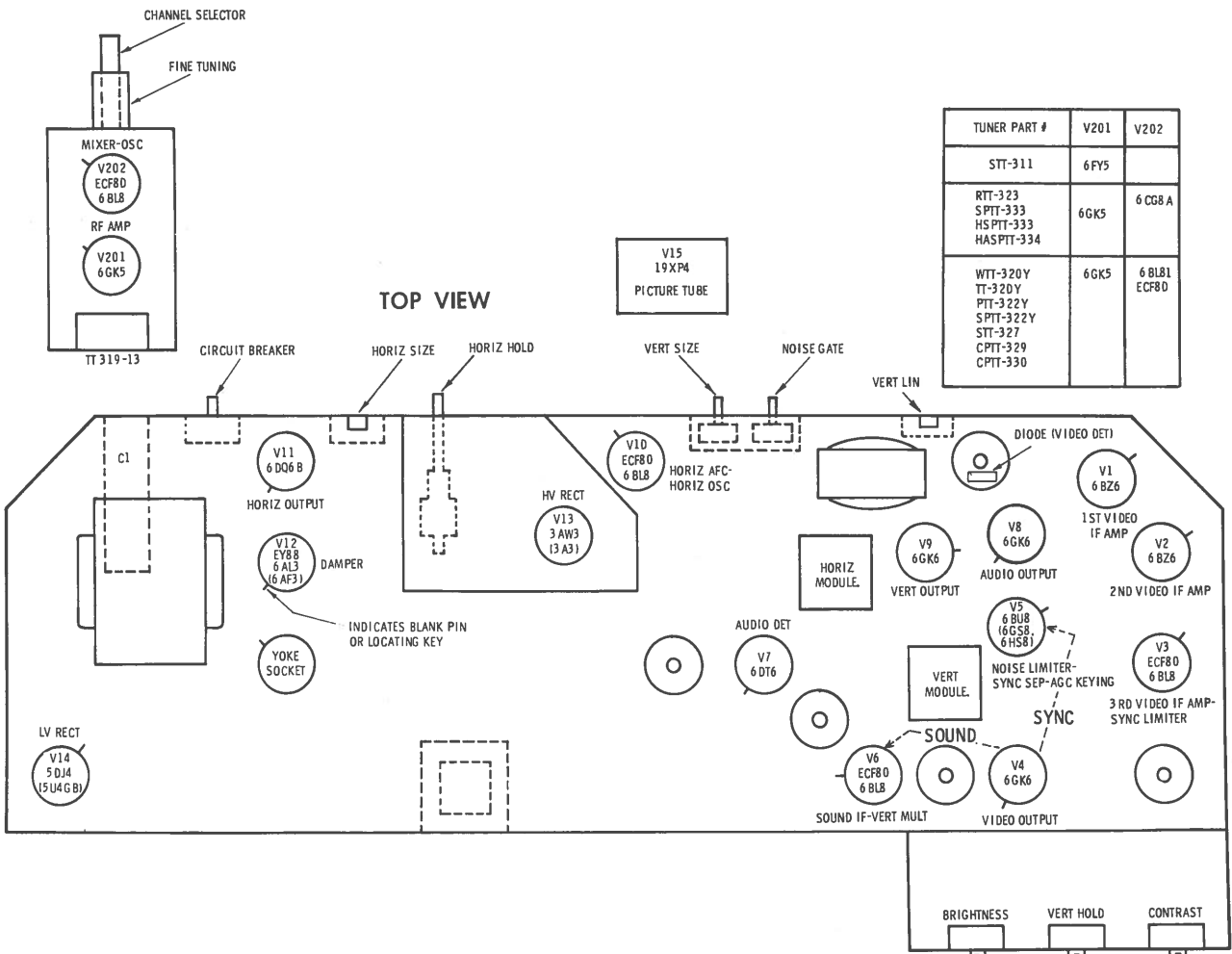
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BZ6	680K	68Ω	FIL	FIL	♦1000Ω	♦1000Ω	0Ω		
V2	6BZ6	♦18K	30K	FIL	FIL	†1082Ω	†1082Ω	♦18K		
V3	6BL8 ECF80	†16K	.1Ω	†6300Ω	FIL	FIL	†6300Ω	150Ω	0Ω	56K
V4	6GK6	80Ω	2500Ω	NC	FIL	FIL	TP	†5600Ω	†6000Ω	0Ω
V5	6BU8	†3000Ω	†82Ω	2.6meg	FIL	FIL	†38K	†240K	†3meg	†3.7meg
V6	6BL8 ECF80	†5meg	820K	†155K	FIL	FIL	†155K	0Ω	0Ω	700K
V7	6DT6	2.8Ω	560Ω	FIL	FIL	†2meg	†5900Ω	560K		
V8	6GK6	270Ω	120Ω	NC	FIL	FIL	NC	†690Ω	†5700Ω	0Ω
V9	6GK6	220Ω	1meg	0Ω	FIL	FIL	NC	†600Ω	†232Ω	0Ω
V10	6BL8 ECF80	†200K	590K	†5700Ω	FIL	FIL	†47K	2700Ω	0Ω	390K
V11	6DQ6B	TP	FIL	NC	†10K	1meg	TP	FIL	0Ω	TOP CAP †10Ω
V12	6AL3 EY88	NC	NC	NC	FIL	FIL	NC	NC	NC	†83Ω
V13	3AW3	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP †565Ω
V14	5DJ4	†600K	TP	20Ω	NC	20Ω	NC	†600K	TP	
V15	19XP4	FIL	60K	†820K	†33K	NC	NC	250K	FIL	
V201	6GK5	0Ω	3.2meg	FIL	FIL	†8000Ω	0Ω	0Ω		
V202	ECF80 6BL8	†11K	150K	†51K	FIL	FIL	†4800Ω	0Ω	0Ω	10K

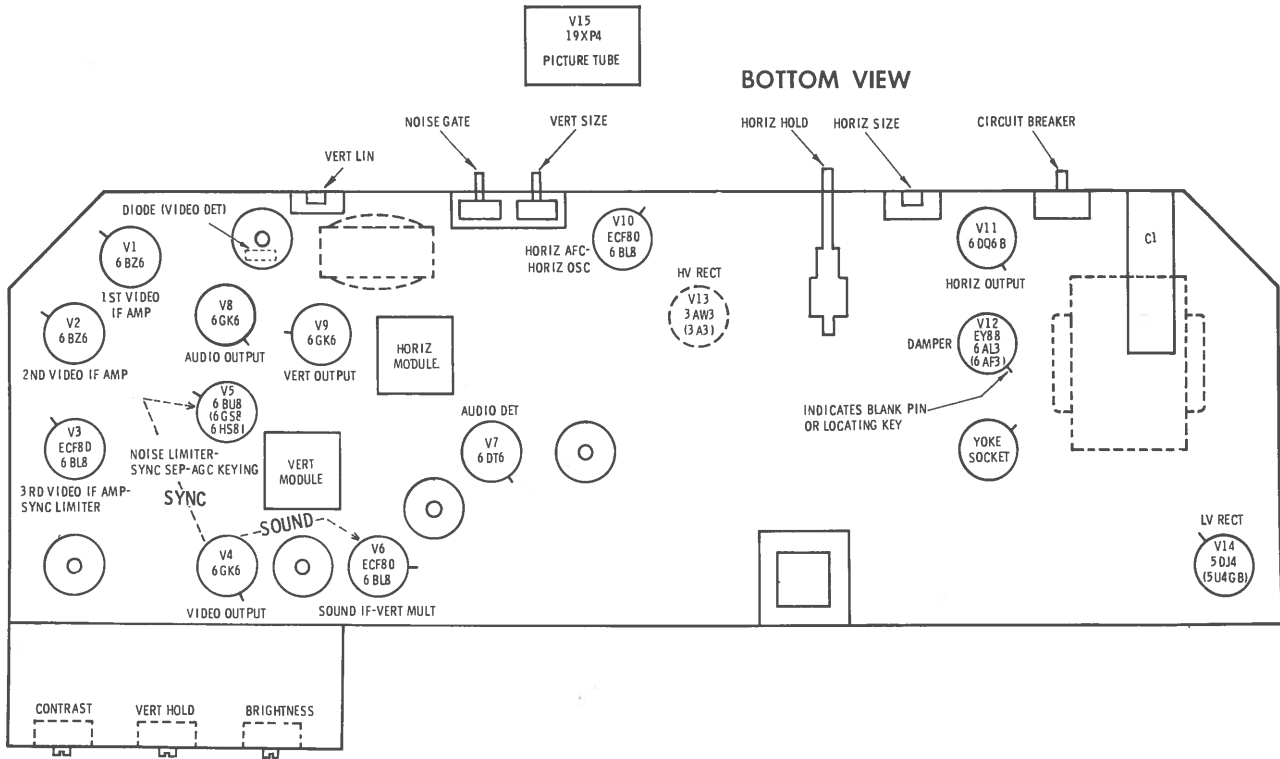
† THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
♦ MEASURED FROM PIN 7-8 OF V14.
† MEASURED FROM TOP CAP OF V12.
• VHF TUNER WTT-319 B.

♦ MEASURED FROM PIN 2 OF V2.
NC NO CONNECTION
TP TIE POINT

TUBE PLACEMENT CHART



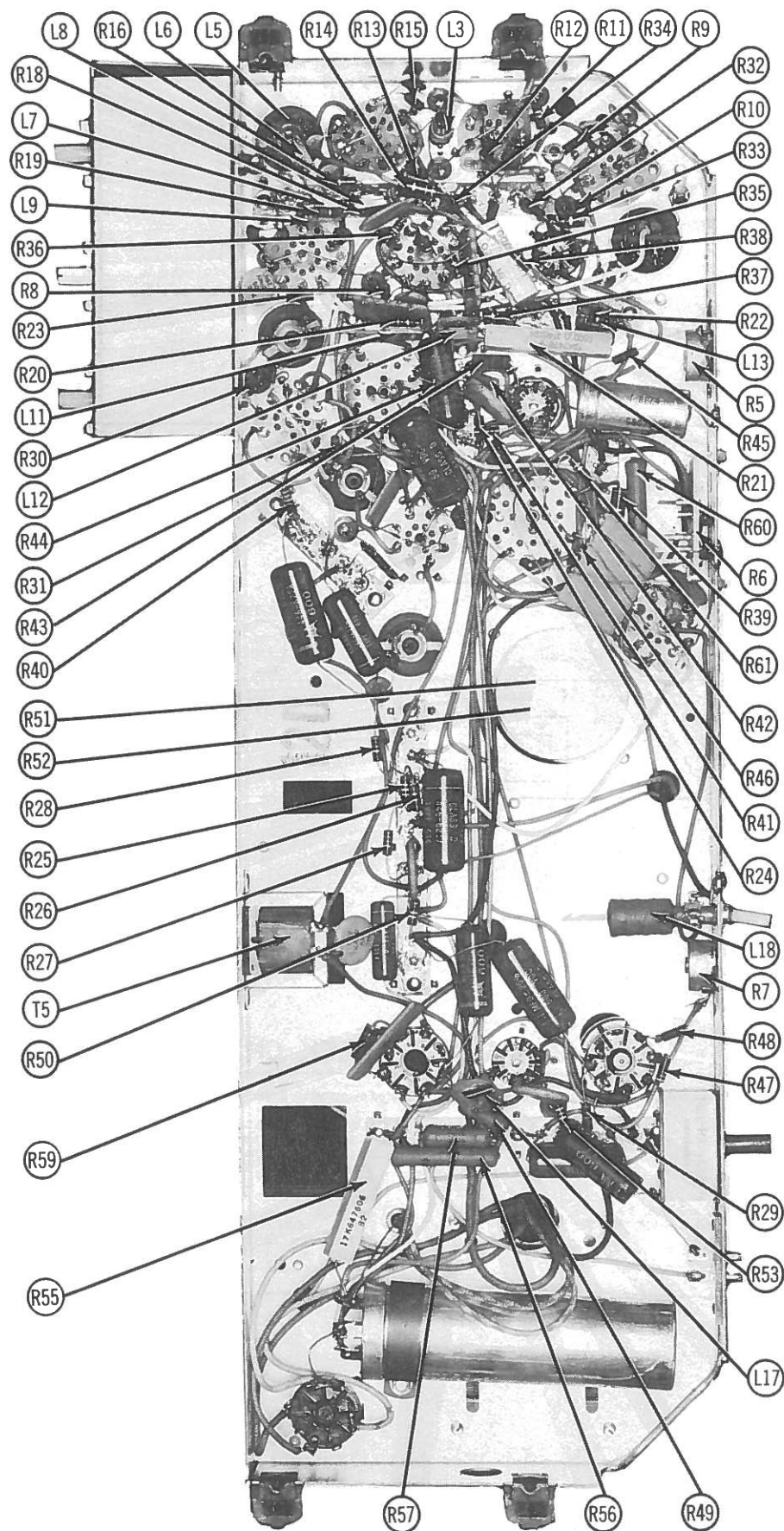
MOTOROLA CHASSIS
584, 584Y Series



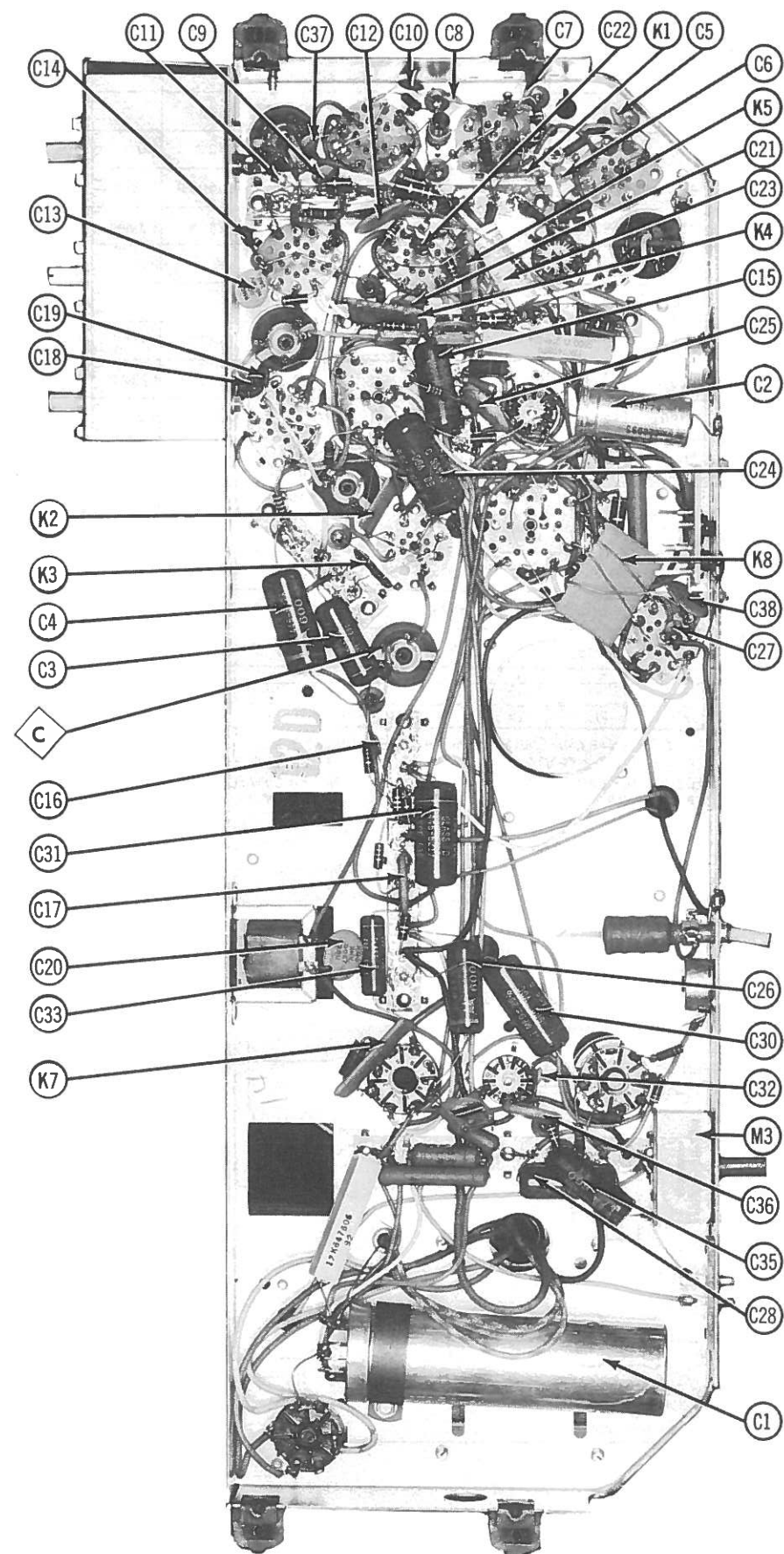
TUBE PLACEMENT CHART

TUBE FAILURE CHECK CHART

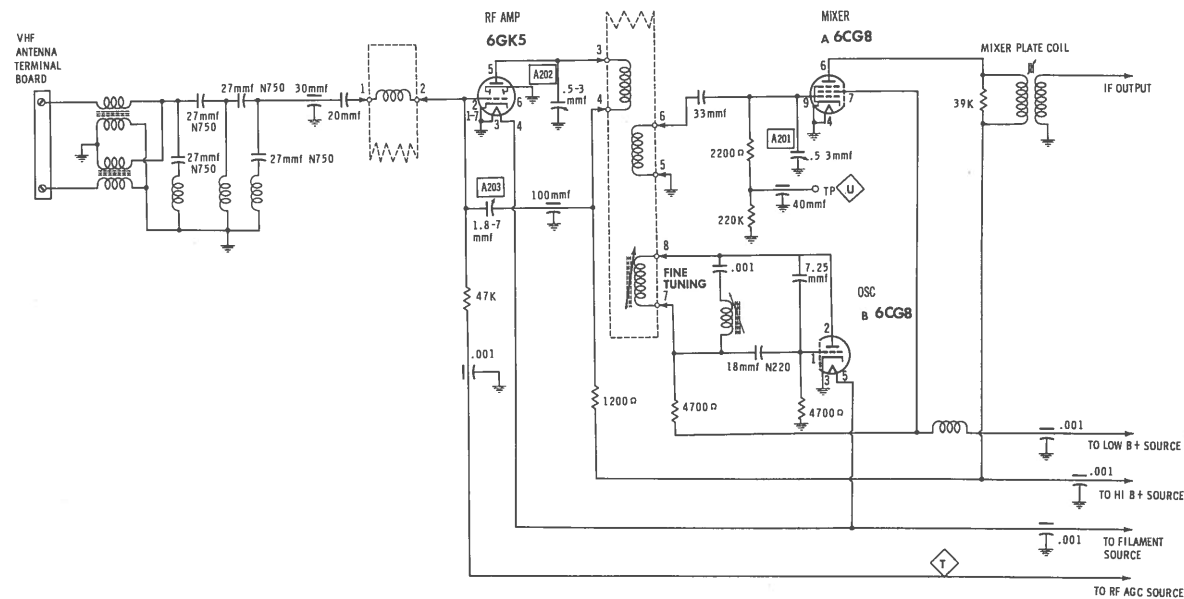
The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.	
POWER SUPPLY FAILURE No raster, no sound V14, M3	LOSS OF PICTURE OR SOUND No pic, no sound, has raster V1, V2, V3, V4, X1 No pic, no sound, has snow V201, V202, V1 No pic, has sound, has raster V4, V15 Has pic, no sound V8, V7, V8 Overloaded picture V5
SWEEP FAILURE No raster, has sound V10, V11, V12, V13, V15 No vertical deflection V8, V9 Poor vert. linearity or foldover V8, V9 Poor horiz. linearity or foldover V10, V11, V12 Narrow picture V9, V13, V14 Vert. off freq. V8, V9 Horiz. off freq. V10	SYNC FAILURE No vert. sync V5, V8, V9 No horiz. sync V3, V5 No vert. or horiz. sync V3, V5



CHASSIS BOTTOM VIEW — RESISTOR, INDUCTOR, TRANSFORMER IDENT.

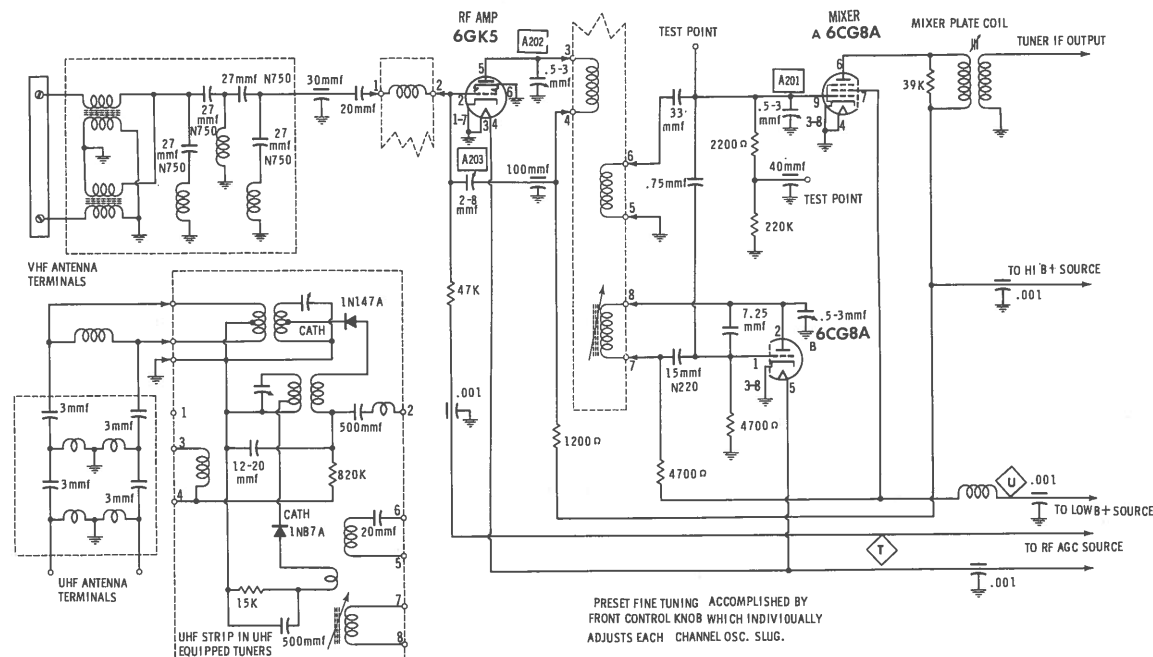


CHASSIS BOTTOM VIEW — ALIGN., CAPACITOR, MISC. IDENT.



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13 POSITION TURRET-TYPE VHF TUNER RTT-323



A PHOTOFACT STANDARD NOTATION SCHEMATIC
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13 POSITION TURRET-TYPE VHF TUNER HS PTT/S PTT-333, HAS PTT-334

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

Maintain voltage at 117 volts AC using an isolation transformer. Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools: A1 thru A14 GENERAL CEMENT #8282, 8606, 8606L, 9295, 9440 .. WALSCO #2526, 2543, 2544, 2545
Mixer Plate Coil .. GENERAL CEMENT #9296, 9297 WALSCO #2546, 2547

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. Connect a variable bias to the IF AGC line at point (A), and adjust to obtain a response curve which shows no indication of overload. Replace Mixer-Osc. with a dummy tube (Osc. grid pin removed).

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	INDICATOR	ADJUST	REMARKS
1.	High side to ungrounded tube shield over Mixer-Osc. Low side to chassis.		39.75MC	Any non-interfering channel	Connect DC probe of a VTVM thru a 47K resistor to point (B). Common to ground.	A1	Adjust for MINIMUM.
2.	"		41.25MC	"	"	A2	"
3.	"		47.25MC	"	"	A3	"
4.	Connect high side to pin 2 (grid) of V3. Low side to ground.	44MC (10MC Sweep)	41.25MC 43.25MC 45.75MC	"	Connect Vert. Input of Scope to point (B). Low side to ground.	A4, A5	Adjust for maximum amplitude and MINIMUM tilt with markers as shown in Figure 1.
5.	High side to ungrounded tube shield over Mixer-Osc. Low side to chassis.	"	39.75MC 41.25MC 42.25MC 43.1MC 45.15MC 45.75MC 47.25MC	"	"	A6, A7, A8 & Mixer Plate Coil	Adjust for maximum gain and symmetry of response with markers as shown in Figure 2. In order to obtain a proper response, it may be necessary to retouch slightly A4 & A5.

SOUND IF ALIGNMENT

Tune in a strong TV signal and adjust controls for normal operation. Connect DC probe of a VTVM to point (C). Common to ground. Adjust A9 for two possible voltage readings using the one showing the largest amount of deflection. Reduce the signal strength at the antenna terminals until a hiss (similar to super-regeneration) is heard in the sound. For maximum undistorted sound with MINIMUM buzz, adjust A10, A11, A12, and A13.

4.5 MC 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 A14 for MINIMUM beat interference.

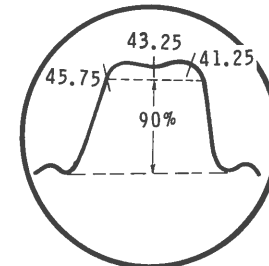


FIG. 1

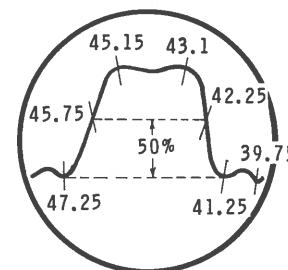
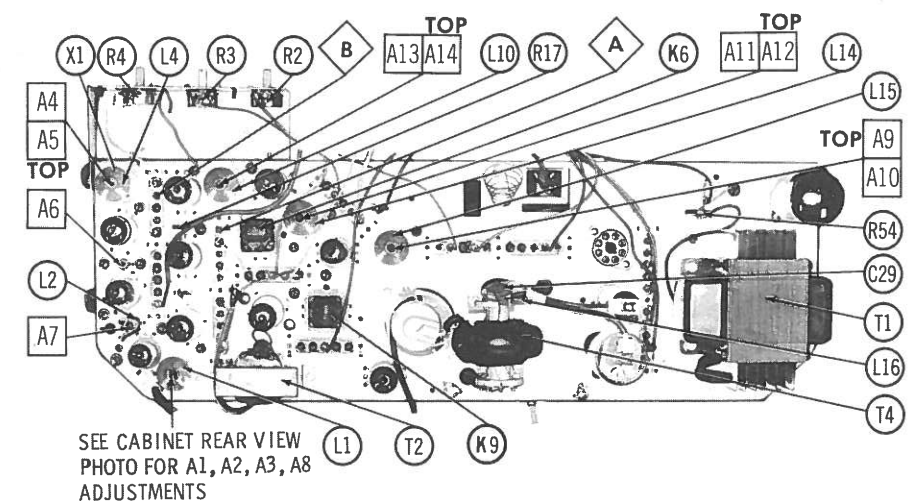
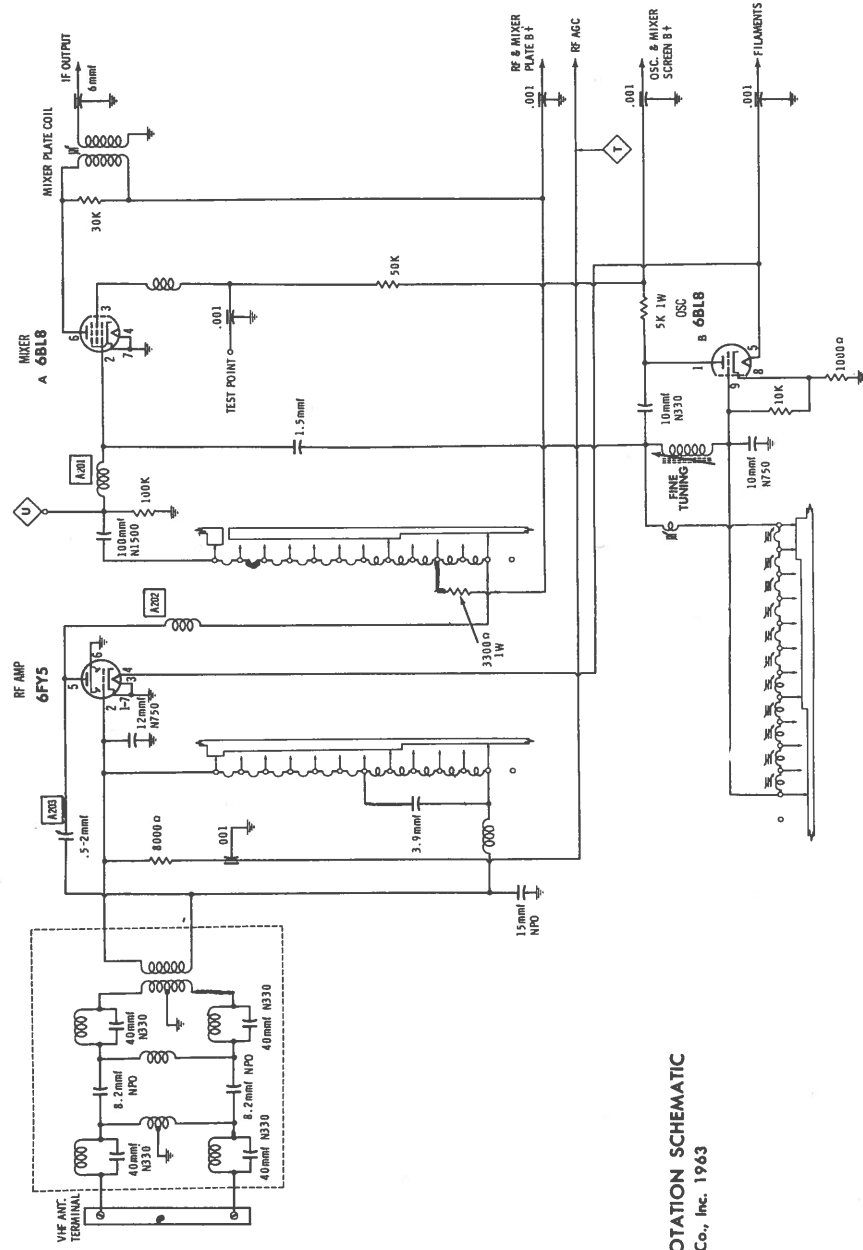


FIG. 2



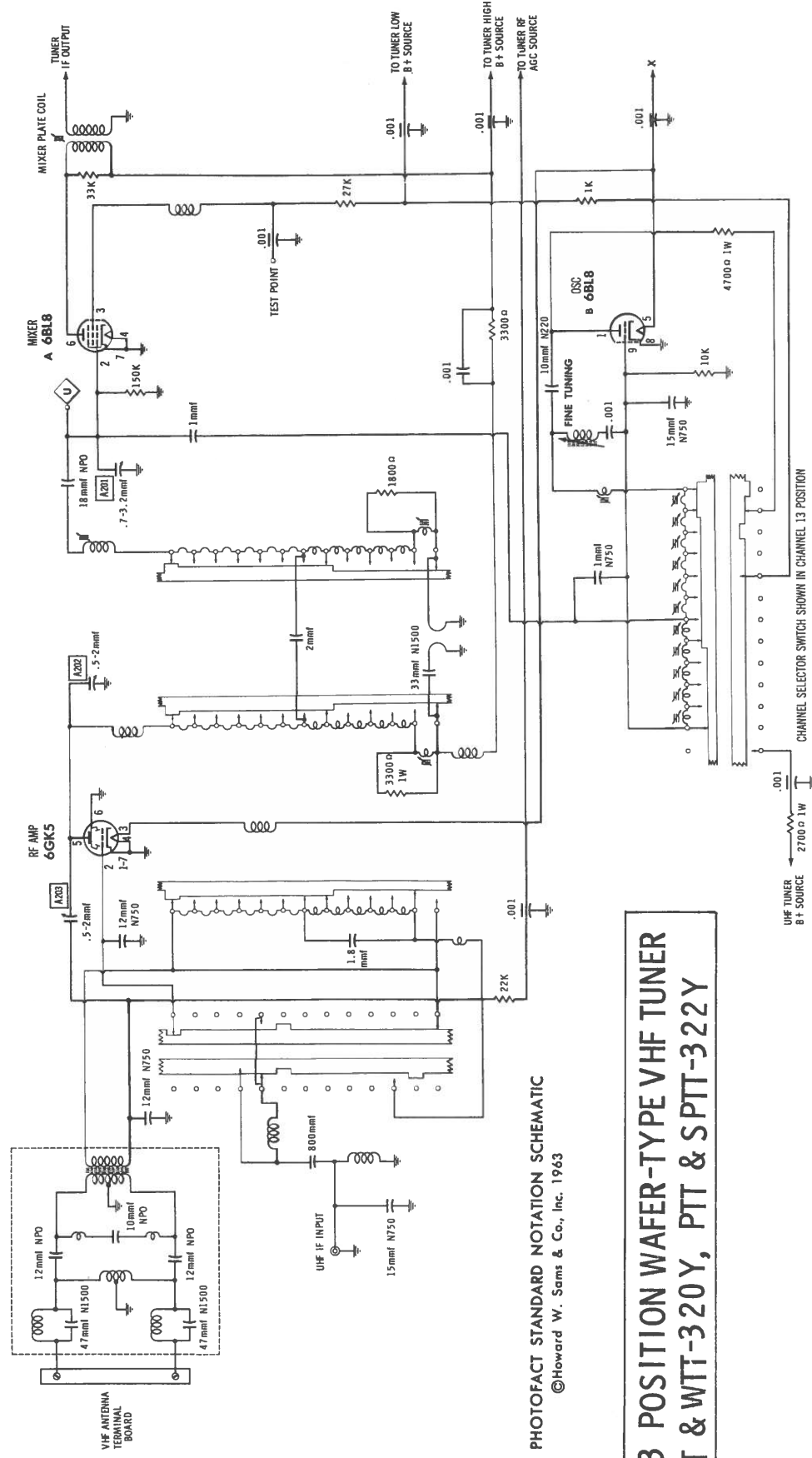
CHASSIS—TOP VIEW

SET 627 FOLDER 3



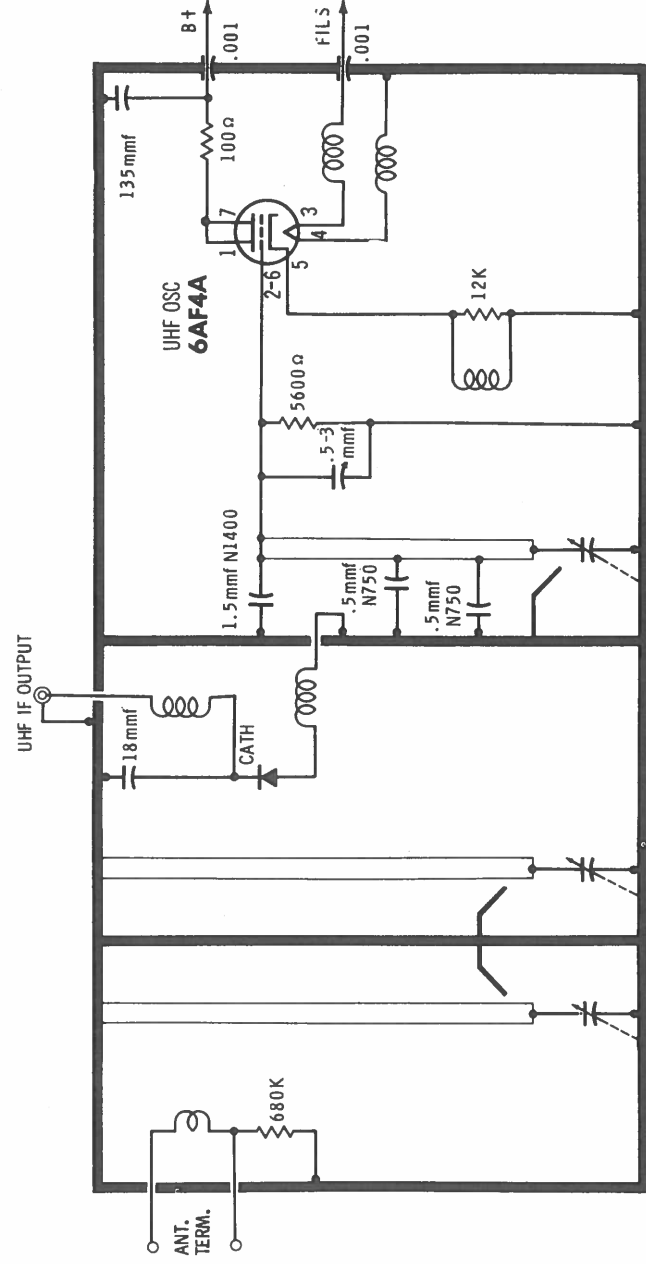
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13 POSITION WAFER-TYPE VHF TUNER STT-311



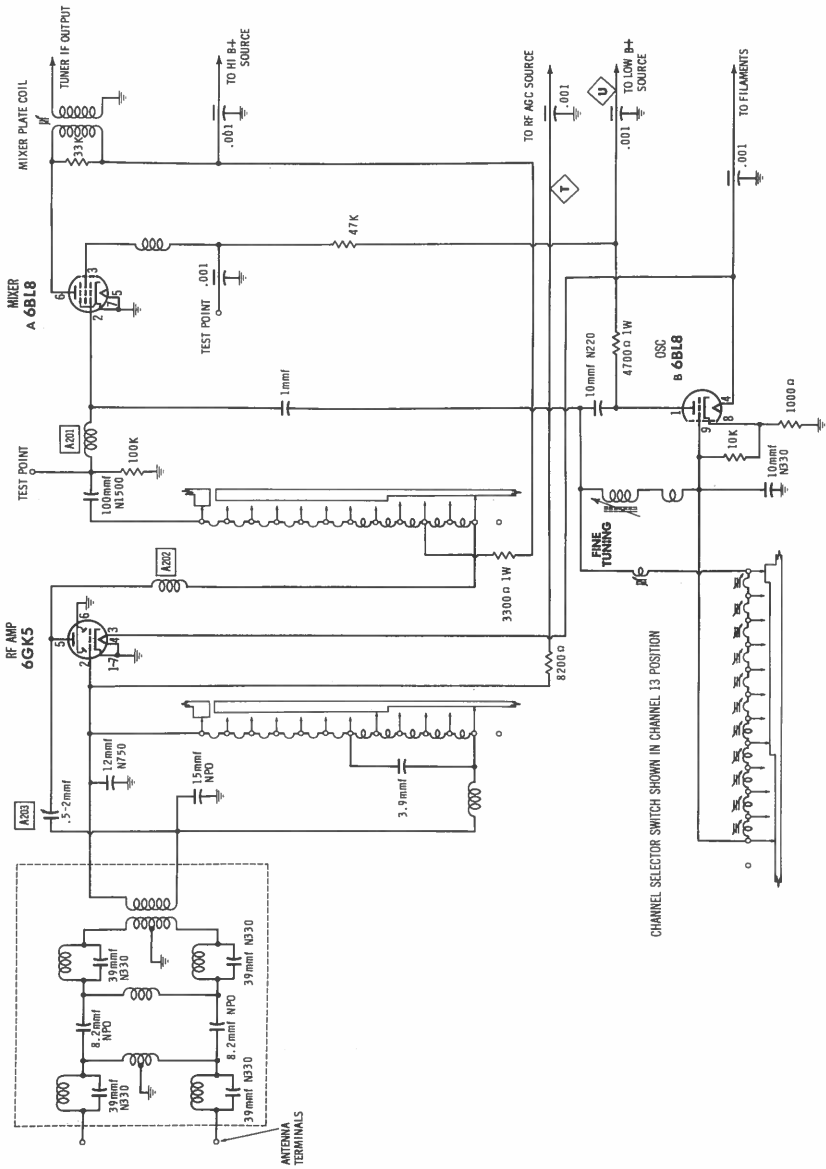
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13 POSITION WAFER-TYPE VHF TUNER TT & WTT-320Y, PTT & SPTT-322Y



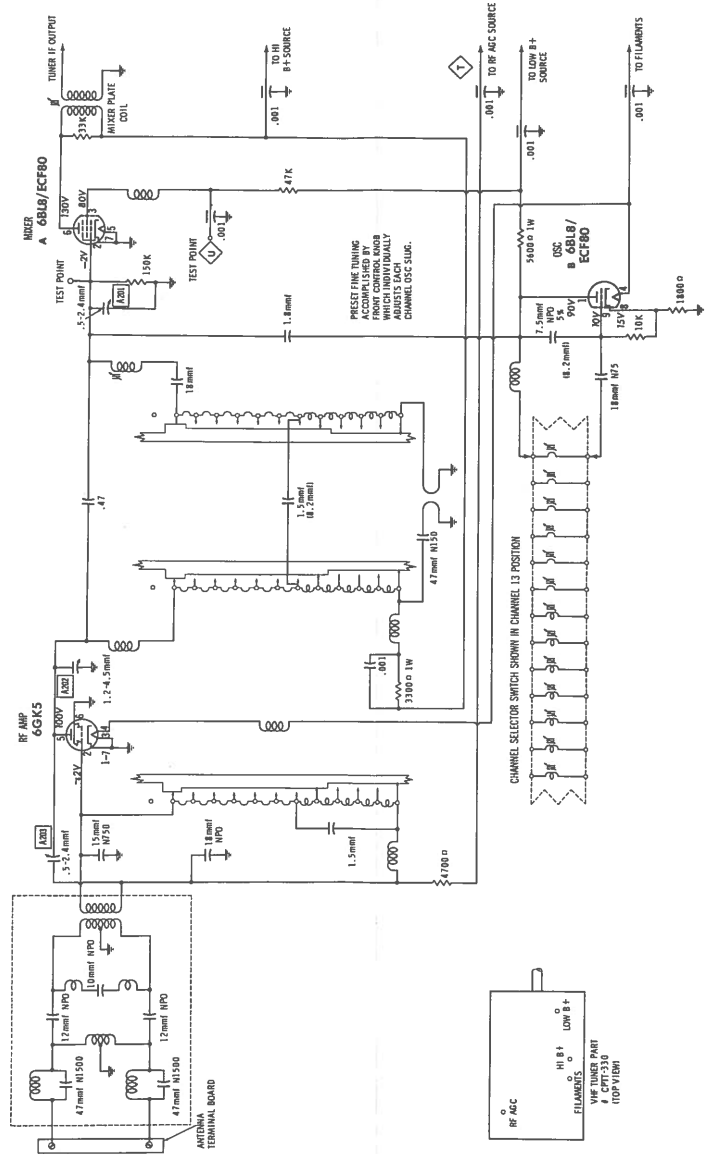
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UHF TUNER KTT/ZTT-601



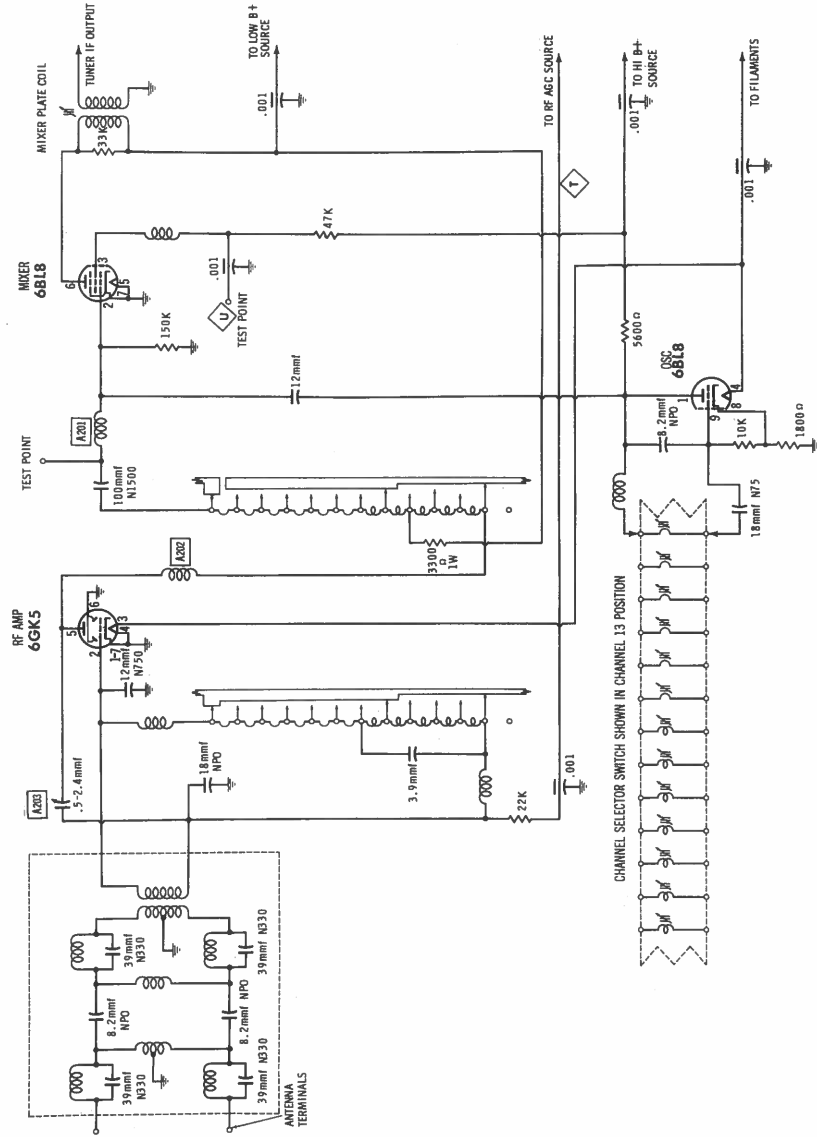
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13 POSITION WAFER-TYPE VHF TUNER STT-327



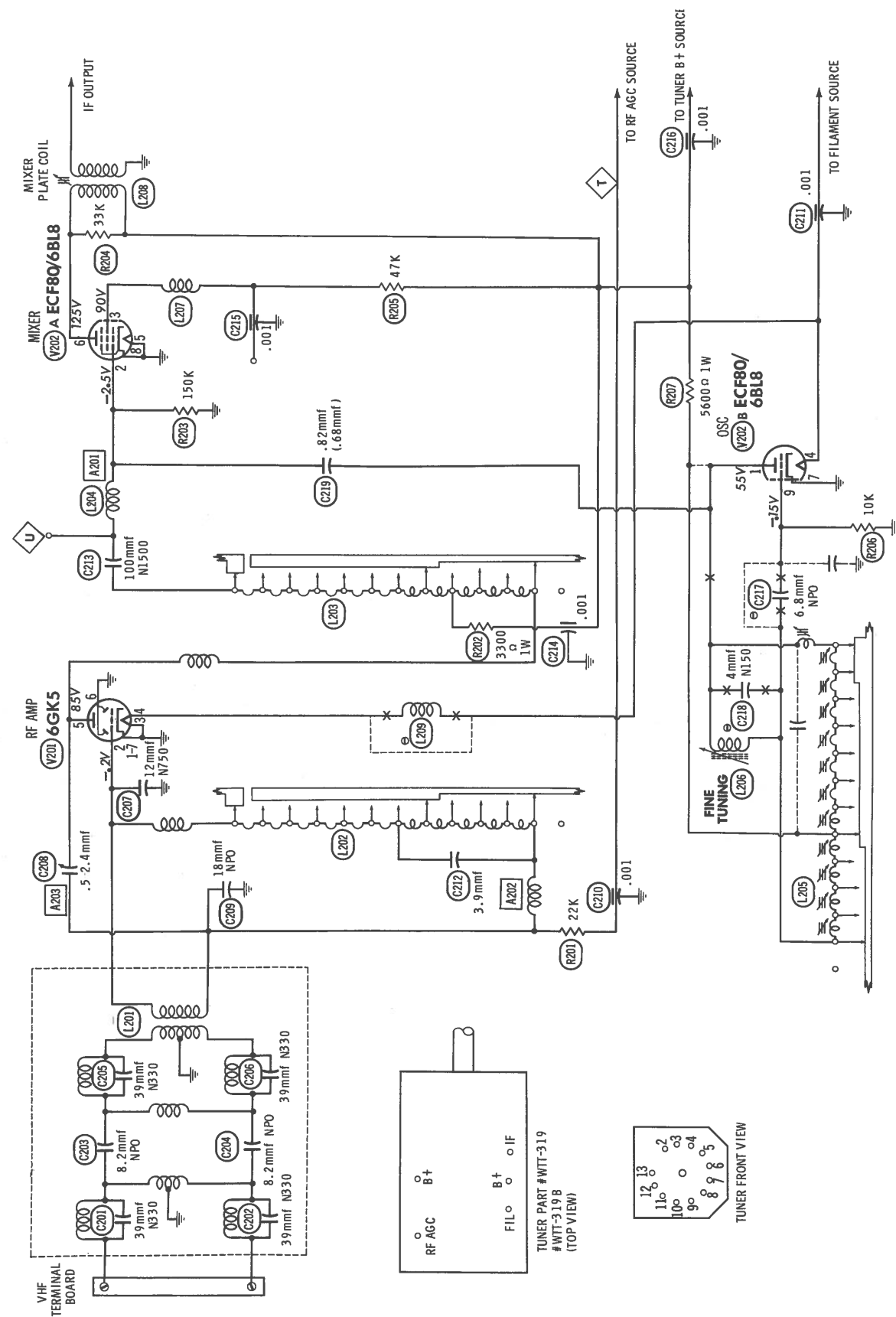
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13 POSITION WAFER-TYPE VHF TUNER CPT-330



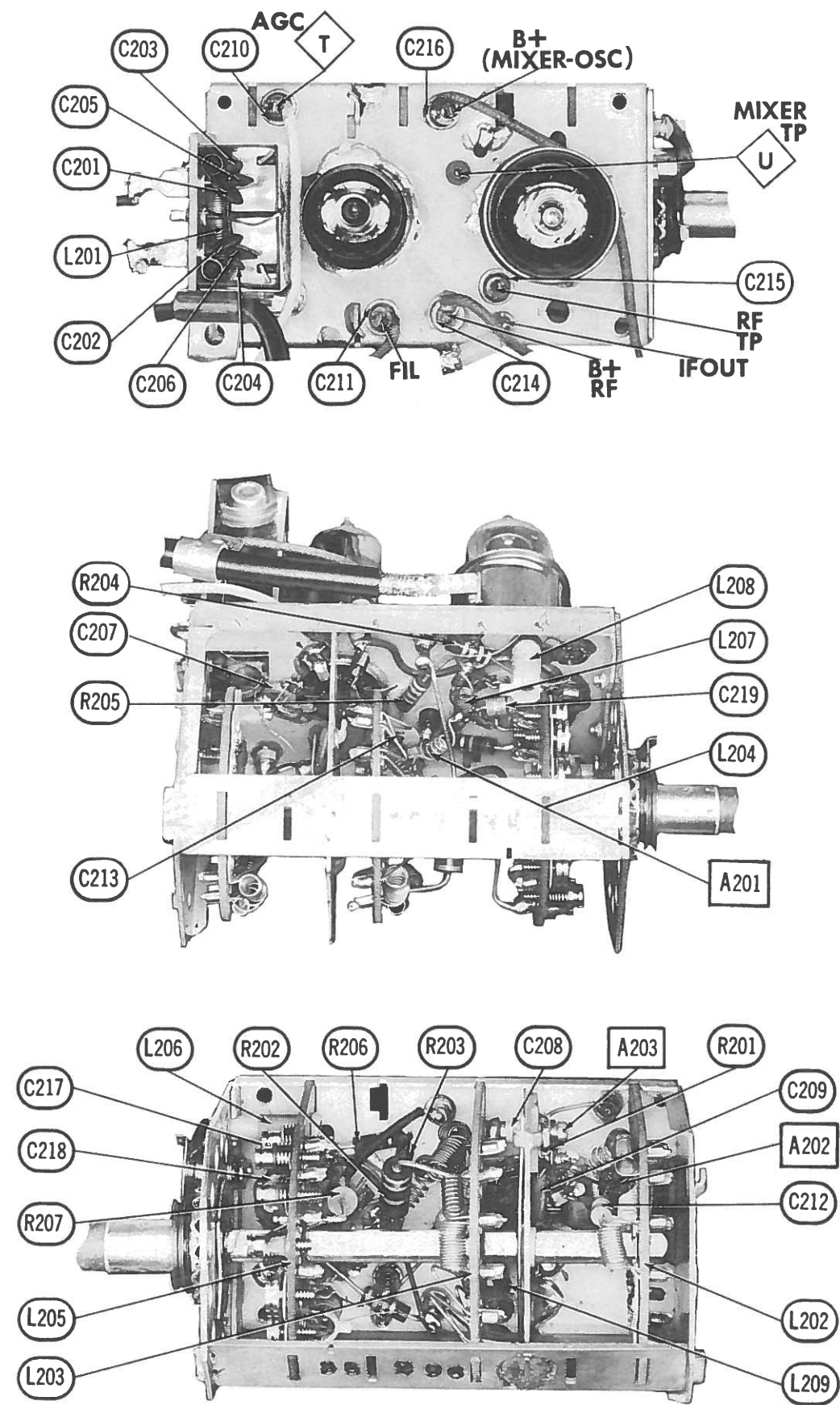
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13 POSITION WAFER-TYPE VHF TUNER CPT-329



13 POSITION WAFER-TYPE VHF TUNER WTT-319

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**MOTOROLA CHASSIS
584, 584Y Series**

FOLDER 3

PARTS LIST AND DESCRIPTION (CONTINUED)

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 (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
			MOTOROLA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.		
	PRI.	SEC.							
T5	10. 2K 10. 5K	6-8Ω 6-8Ω	25D65984A10 ②	A-2900 ①	A-3856 ①	24S04 ①	S-52X ①	① Drill new mounting hole(s). ② Ch. RCDTS-584B & 00B. ③ Ch. ADCTS, AHTS, CETS, DADETS, DETS, ETS, FTS, GTS, HTS, KETS, LDETS, DCETS, 584 & Y. ④ ADTS, CDTS, DTS, KDTS, LADTS, PCDTs, RCDTS, 584 & Y.	
			25D65984A06 ③	A-2900 ③	A-3823 ③	24S04 ③	S-53X ③		
			25D65984A04 ④						

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
				MOTOROLA PART No.	QUAM PART No.	
	SIZE	FIELD	V. C. IMP.			
SP1	4"	PM	6-8Ω	50D66232A06	4A07Z8	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	MOTOROLA PART No.	REPLACEMENT DATA
K1	IF Network	.001mfd, 180K, 18K	51D65239A17	
K2	Audio Detector Network	470mmf, 4700mmf, 220Ω, 560Ω	51D65239A24	
K3	Audio Decoupling	470mmf, .01mfd, 1meg, 1000Ω	51D65239A12	Centralab PC-431
K4	AGC Network	12meg, 2meg, 2.2meg, 680K	51D65239A04	Centralab PC-427
K5	Sync Network	2000mmf, 220mmf, 27mmf, 56K, 470K, 3.3meg, 560K, 56K	51B747693	Centralab PC-358 Sprague HN-5
K6	Vertical Modular	.015mfd, .01mfd, .0033mfd, .01mfd, .05mfd, .05mfd, 3300Ω, 56K, 3300Ω, 1meg, 22K	51D66334A04	
K7	Yoke Balance Network	320mmf, 320mmf	51D65239A18	
K8	AFC Couplate	.005mfd, .0039mfd, 150mmf, .001mfd, 220K, 47K, 1meg, 100K, 390K	51D65239A03	Centralab PC-432
K9	Horiz. Modular	.0033mfd, .005mfd, .001mfd, .007mfd, .5mfd, 47K, 1meg, 12K, 2700Ω	51D66326A03	

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M1	VHF Tuner	WTT-319B	Used in Models 19RT28AW, CH, G
	VHF Tuner	WTT-319	Used in Models 19T20GA, EA, 19RT29AW, CH, G
	VHF Tuner	WTT-320Y	Used in Models 19T20GA, EA, Y19T21JA, BEA
	VHF Tuner	STT-311	Used in Models 19T20GLA, ELA
	VHF Tuner	STT-327	Used in Models 19T20GLA, ELA
	VHF Tuner	CPTT-329	Used in Models 19T21JA, BEA
	VHF Tuner	TT-320Y	Used in Models 19T22AWA, GRA, WGA
	VHF Tuner	RTT-323	Used in Models 19T24AWA, EA, GA, A19T25AWA, GRA, WGA
	VHF Tuner	SPTT-322Y	Used in Models 23K105W, 23K106MB, 23K107W, WH
	VHF Tuner	HSPTT-333	Used in Models 27K13CW, M, W, 27K14M, W
	VHF Tuner	HASPTT-334	Used in Models A27K13CW, M, W, Y27K14M, W
	VHF Tuner	PTT-322Y	Used in Models Y27K13CW, M, W, Y27K14M, W
	UHF Tuner	ZTT-601	Used in Models Y19T20GA, EA, Y19T21JA, BEA, Y19T22AWA, GRA, WGA
	UHF Tuner	KTT-601	Used in Models Y23K105W, Y23K106MD, Y23K107W, WH, Y23K13CW, M, W, Y27K14M, W
M2	Antenna	1C86120A01	JFD REPLACEMENT #TA-415
M3	Circuit Breaker	80C86390A01	
	Switch	40D86084A04	Off-On Switch used in Chassis FTS-584
	Switch	40D86084A01	Off-On Switch used in Chassis HTS-584

WIRING DATA

High Voltage Lead	Use BELDEN No. 8869 (17KV) or 8868 (25KV)
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
Power Cord (Interlock Type)	Use BELDEN No. 8874 (Rubber) or 8895 (Plastic)
300Ω Tuner Input Lead	Use BELDEN No. 8225
300Ω 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

CABINETS & CABINET PARTS

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

NAME	PART NO.	MODELS
Safety Glass	61C68250A01	19T20 Series, 19T21 Series, 19T22 Series, A19T24 Series, A19T25 Series, 23K105 Series, 23K106 Series, 23K107 Series, 19RT29 Series
Safety Glass	61D65855A02	
Bezel, Gold	13F68430A05	A19T25 Series
Bezel, Silver	13F68430A20	19RT29 Series
Bezel, Copperstone Bronze	13E68652A04	23K105 Series, 23K106 Series, 23K107 Series
Bezel, Copperstone Bronze	13E68457A01	A27K13 Series, 27K13 Series, A27K14 Series, 27K14 Series
Knob, VHF Chan. Sel.	38D66450A01	19T20 Series, 19RT29 Series
Knob, VHF Chan. Sel.	38D66450A03	19T21 Series
Knob, VHF Chan. Sel.	38D66478A01	19T22 Series
Knob, VHF Chan. Sel.	38D66882A01	23K105 Series, 23K106 Series, 23K107 Series
Knob, VHF Chan. Sel.	38C68072A03	A27K13 Series
Knob, VHF Chan. Sel.	38D68072A03	27K13 Series, A27K14 Series, 27K14 Series
Knob, Fine Tuning	38D66449A01	19T20 Series, 19RT29 Series
Knob, Fine Tuning	38D66449A03	19T21 Series
Knob, Fine Tuning	38C85871A01	19T22 Series
Knob, Fine Tuning	38C86347A01	A19T24 Series, A19T25 Series
Knob, UHF Chan. Sel.	38D86437A01	19T20 Series
Knob, UHF Chan. Sel.	38D86437A02	19T21 Series, 19T22 Series
Knob, UHF Chan. Sel.	38D86682A03	Y23K105, Y23K106, Y23K107
Knob, UHF Chan. Sel.	38D86072A01	Y27K13, Y27K14
Knob, Volume	38D86444A01	19T20 Series
Knob, Volume	38D86444A02	19T21 Series
Knob, Volume	38C86444A01	19T22 Series
Knob, Volume	38C86444A02	A19T24 Series
Knob, Volume	38B86444A01	A19T25 Series
Knob, Volume	38D66882A03	19RT29 Series
Knob, Volume	38D66885A01	23K105, 23K106, 23K107
Knob, Vol. & Optimizer	38C68073A01	Y23K107, Y23K105, Y23K106
Knob, Volume	38D68072A01	A27K13 Series, A27K14 Series
Knob, Brightness		27K13, 27K14
Contrast, Vert. Hold	38D86448A01	19T20 Series
Knob, "	38D86448A02	19T21 Series, 19T22 Series
Knob, "	38C86448A01	A19T24 Series, 19RT29 Series
Knob, "	38C86448A02	A19T25 Series
Knob, Brightness, V. Hold	38K754480	A27K13 Series, 27K13 Series, A27K14 Series, 27K14 Series
Knob, Optimizer	38D85565A01	19T20 Series, 19T21 Series
Knob, Optimizer	38C85565A01	19T22 Series, A19T24 Series, A19T25 Series
Knob, Contrast, Tone	38C88073A01	A27K13 Series
Knob, Contrast	38D88073A01	27K13
Knob, Vol., Optimizer	38D88073A01	Y27K13
Knob, Contrast, Tone	38C88073A01	A27K14 Series
Knob, Contrast	38C88073A01	27K14
Knob, Vol., Optimizer	38C88073A01	Y27K14
Knob, Function	38C8897A01	19RT29 Series
Knob, Radio Tuning	38D68450A07	19RT29 Series
Knob, Optimizer	38C88073A03	27K13 Series, 27K14 Series
Knob, Tone	38C88075A01	27K13 Series, 27K14 Series
Knob, Tone	38C88075A02	27K13 Series, 27K14 Series
Cabinet, Antique White	16F66328A37	19RT28AW
Cabinet, Charcoal	16F66328A48	19RT28CH
Cabinet, Warm Grey	16F66328A47	19RT29G
Cabinet, Antique White	16F66328A42	A19T25AWA
Cabinet, Bronze Green	16F66328A46	A19T25GRA
Cabinet, Grained Wal.	16F66328A44	A19T25WGA
Cabinet, Walnut	16E66826A01	23K105W, Y23K105W
Cabinet, Bleached Mah	16E66833A01	23K106MB
Cabinet, Walnut	16E66887A01	23K107W
Cabinet, Antique White	16E66887A02	23K107WH, Y23K107WH
Cabinet, Cherrywood	16E66904A03	A27K13CW
Cabinet, Mahogany	16E66904A05	A27K13M
Cabinet, Walnut	16E66904A06	A27K13W
Cabinet, Cherrywood	16E66904A01	27K13CW, Y27K13CW
Cabinet, Mahogany	16E66903A01	27K13M, Y27K13M
Cabinet, Walnut	16E66903A02	27K13W, Y27K13W
Cabinet, Mahogany	16E66906A02	A27K14M
Cabinet, Walnut	16E66906A04	A27K14W
Cabinet, Mahogany	16E66906A01	27K14M, Y27K14M
Cabinet, Walnut	16E6696A03	27K14W, Y27K14W
Leg, Walnut	16E66228A04	23K105W, Y23K105W
Leg, Bleached Mah.	16E66198A04	23K106MB, Y23K106MB
Leg, Cherrywood	16E66904A02	A27K13CW, 27K13CW, Y27K13CW
Leg, Mahogany	16E66903A03	A27K14M, 27K13M, Y27K13M
Leg, Walnut	16E66903A04	A27K13W, 27K13W, Y27K13W
Leg, Mahogany, L. Front	16E66906A05	A27K14M, 27K14M, Y27K14M
Leg, Walnut, L. Front	16E66906A08	A27K14W, 27K14W, Y27K14W
Leg, Mahogany, R. Front	16E66906A06	A27K14M, 27K14M, Y27K14M
Leg, Walnut, R. Front	16E66906A09	A27K14W, 27K14W, Y27K14W
Leg, Mahogany, Rear	16E66906A07	A27K14M, 27K14M, Y27K14M
Leg, Walnut, Rear	16E66906A10	A27K14W, 27K14W, Y27K14W

VHF TUNER ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

Maintain voltage at 117 volts AC using an isolation transformer. Allow a 20 minute warm-up period for the receiver and test equipment.

VHF OSCILLATOR ADJUSTMENT FOR TUNERS: CPTT-329, STT-327, WTT-319B, STT311, WTT-320Y, TT320Y, PTT-322Y, SPTT-322Y, CPTT-330

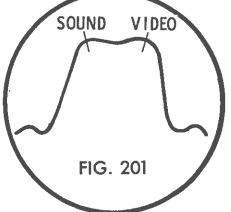
Set Fine Tuning to the center of its range. Adjust individual oscillator screws for each channel.
If desired results are unobtainable, it may be necessary to compress or expand coils or bend tabs to compensate.

VHF OSCILLATOR ADJUSTMENT FOR TUNERS: RTT-323, HSPTT-333, HASPTT-334, SPTT-333

Set Fine Tuning to center of its range. Starting with highest channel in area, adjust the appropriate oscillator screw for best picture and sound.

VHF RF AND MIXER 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. Use 10MC sweep unless otherwise noted.
Connect variable bias to RF AGC line at point ①. Adjust bias to obtain response curve which shows no indication of overloading.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Across antenna terminal with 120Ω resistor in each lead.	213MC	211. 25MC 215. 75MC	13	Vert. Amp. thru demodulator probe to point ①. Low side to chassis.	A201, A202	Adjust for maximum gain and symmetry of response similar to Fig. 201 with markers as shown. Coils not containing adjustable cores are adjusted by expanding or compressing coil turns.
2.	"	177MC	175. 25MC 179. 75MC	7	"	A203	Ajdust for MINIMUM response on scope.
		207MC	205. 25MC 209. 75MC	12			Spread or compress coils for maximum gain and symmetry of response similar to Fig. 201 with markers as shown. 
		201MC	199. 25MC 203. 75MC	11			
		195MC	193. 25MC 197. 75MC	10			
		189MC	187. 25MC 191. 75MC	9			
		183MC	181. 25MC 185. 75MC	8			
		85MC	83. 25MC 87. 75MC	6			
		79MC	77. 25MC 81. 75MC	5			
		69MC	67. 25MC 71. 75MC	4			
		63MC	61. 25MC 65. 75MC	3			
		57MC	55. 25MC 59. 75MC	2			

PARTS LIST AND DESCRIPTION
VHF TUNER WTT-319

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V201	RF Amp.	6GK5	V202	Mixer - Osc.	ECF80/6BL8

FIXED 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.
C201	39 N330					*		10TCS-Q39
C202	39 N330					*		10TCS-Q39
C203	8.2 NPO		NPO-DI 8.2		C10V82C			10TCC-V82
C204	8.2 NPO		NPO-DI 8.2		C10V82C			10TCC-V82
C205	39 N330					*		10TCS-Q39
C206	39 N330					*		10TCS-Q39
C207	12 N750			TCN-12	C10Q12U		CN7-412	10TCU-Q12
C208	.5-2.4			829-3			CT565	
C209	18 NPO			TCN-18	C10Q18C		CNO-418	10TCC-Q18
C210	.001		EF-001	MFT-1000			CT280A	
C211	.001		EF-001	MFT-1000			CT280A	
C212	3.9	#21R115953			C10V4C			10TCC-V39
C213	100 NI500	#21P65114A05						
C214	.001		EF-001	MFT-1000			CT280A	
C215	.001		EF-001	MFT-1000			CT280A	
C216	.001		EF-001	MFT-1000			CT280A	
C217	6.8 NPO	†	NPO-DI 6.8	DTZ-6R8	C10V68C		CNO-568	10TCC-V68
C218	4 NI50	#21P65120A07						
C219	.82	(.68)† #21R115967						

† Alternate Value # Motorola Part Number ‡ Not used in some versions.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

COILS (RF-IF)

ITEM No.	USE	MOTOROLA PART No.	NOTES	ITEM No.	USE	MOTOROLA PART No.	NOTES
L201	Ant. Input Assy	1P65114A60		L206	Fine Tuning	24P65114A65	
L202	Ant. Wafer	1P65114A09	Channel 2-13	L207	RF Choke	24P65117A22	
L203	RF Wafer	1P65114A10	Channel 2-13	L208	Mixer Plate	24P65120A30	
L204	RF Choke	24P65114A27		L209	Fil. Choke	24P65120A35	
L205	Osc. Wafer	1P65114A61	Channel 2-13				

PARTS LIST 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.

TUBES

* AMPEREX *		GENERAL ELECTRIC		RCA		RAYTHEON		SYLVANIA	
ITEM No.	USE	TYPE		ITEM No.	USE	TYPE			
V1	1st Video IF Amp.	6BZ6		V7	Audio Detector	6DT6			
V2	2nd Video IF Amp.	6BZ6		V8	Audio Output	6GK6			
V3	3rd Video IF Amp. - Sync Limiter	ECF80/6BL8		V9	Vert. Mult. - Vert. Output	6GK6			
V4	Video Output	ECF80/6BL8		V10	Horiz. AFC - Horiz. Osc.	6DQ6B			
V5	Noise Limiter - Sync Sep. - AGC Keying	6B8 (6GS8, 6HS8) *		V11	Horiz. Output	6DQ6B			
V6	Sound IF - Vert. Mult.	ECF80/6BL8		V12	Damper	6DQ6B			
				V13	V Rectifier	3AW3 (3A3) *			
				V14	V Rectifier	5DJ4 (5U4GB) *			

* Alternate

PICTURE TUBE

		REPLACEMENT DATA				NOTES
ITEM No.		MOTOROLA PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	
V15	19XP4 23MP4 23AP4 27YP4 27AP4	19AVP4/XP4 ① 23MP4/MP4A/WP4 ① 23AP4 ①	19ZVP4 ① 23MP4 ① 23AP4 ①		19XP4 ② 23MP4 ② 23AP4 ②	① Aluminized ② Silver Screen "85"

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		48C6583TA02				Video Detector

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA					
	CAP.	VOLT.	MOTOROLA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	100	400	23C65807A04	AFR4-94-88	C0370 BR100-450	XC4-42	TP378 TC805	TVL6-4683.8*
C1B	80	400						
C1C	10	400						
C1D	30	400						
C2	220	20	23C65808A06	PRSL280	BR2502	QT1-28	TC50025	TD-250-25 TVA-1208

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

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENDO PART No.	MALLORY PART No.	SPRAGUE PART No.
C3	.25 50V		P288N-25		CUB2P25	2CP-P-254	GEM-2025	2TM-P25
C4	.25 600V		P688N-25		CUB2P25	6CP-P-254	GEM-6025	6TM-P25
C5	560 10%		DI-560	DD-561	5R5T56	CCD-561	GP356	10TS-T56
C6	680		BPD-00068	DD-681	L10T68	CCD-681	B-368	10TS-T68
C7	560 10%		DI-560	DD-561	5R5T56	CCD-561	GP356	10TS-T66
C8	470 10%		DI-470	DD-471	5R5T47	CCD-471	GP347	10TS-T47
C9	800 10%		DI-800	DD-801	5R5T8	CCD-801	MCB251	10TS-T80
C10	.001 10%		DI-1000	DD-102	5R5D1	CCD-102	GP210	10TS-D10
C11	5.6							
C12	.02		BPD-02	DD-203	BYB682	CCD-203	B-120	5HK-S20
C13	.005 1KV		BPD-005	DD-502	BYA1051	CCD-502	B-250	5HK-D50
C14	.001 10%		DI-1000	DD-102	5R5D1	CCD-102	GP210	10TS-D10
C15	.05 600V		P688N-05	DD-503	CUB685	8CP-4-503	GEM-615	6TM-S60
C16	56 N750			TCN-56	C10Q56U	CCTN-560	CN7-456	10TCU-Q56
C17	.01 2KV						2HV-110	20HKB-S1
C18	5.6 N750 10%							
C19	.001 10%							
C20	.0027 2KV		DI-1000	DD-102	5R5D1	CCD-102	GP210	10TS-D10
C21	470 2KV		HVD-30-470	DD30-471	HVB20T47	3CCD-471	GEM-3023	30GA-D27
C22	2.4 NPO ±.25mmf	#21R132322					2HV-347	30GA-T47
C23	.02 600V		P688N-02	DD-203	CUB682	8CP-3-203	GEM-612	6TM-S20
C24	.5 50V		P288N-5		CUB2P5	2CP-6-504	GEM-205	2TM-S50
C25	.033		BPD-03	DD-303	BYB683	CCD-303	GEM-6133	5HK-S30
C26	.05 200V		P288N-02	DD-503	CUB285	2CP-3-503	GEM-415	2TM-S60
C27	470 10%		DI-470	DD-471	5R5T47	CCD-471	GP347	10TS-T47
C28	.1 400V		P488N-1	DF-104	CUB4P1	4CP-4-104	GEM-401	4TM-P10
C29	240 2KV M500 5%	#21R131987						
C30	.1 600V		P688N-1	DF-104	CUB6P1	8CP-5-104	GEM-601	6TM-P10
C31	.1 600V		P688N-1	DF-104	CUB6P1	8CP-5-104	GEM-601	6TM-P10
C32	470		DI-470	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C33	.03 400V 10%		BE483	DD-303	PM683	4DP-2-303	PVC-613	4PS-S30
C34	.75 3KV 10%	#21R131865 †						
C35	.05 600V		P688N-05	DD-503	CUB685	8CP-4-503	GEM-615	6TM-S60
C36	220 3KV 10%							
C37	680		BPD-00068	DD-681	L10T68	CCD-681	B-368	10TS-T68
C38	.005		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50

Motorola Part Number

† 68mmf 2KV, Part #21R121716 used in 23" & 27" 110° sets.

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

CONTROLS

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

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA				
			MOTOROLA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1A	Volume, TV	2meg	18D65083A28	B-76, or F2-2meg, SU204	A47-2meg-Z, FS-3	Q13-139, or (BU2, CF27, S81, DC1) *	U55, or (UA26A, SL3500)
B	Volume, Radio	1meg	18D65083A16	B-76, or F2-2meg, SU204	A47-2meg-Z, FS-3	Q13-139, or (BU2, CF27, S81, DC1) *	U55, or (UA26A, SL3500)
	Volume	2meg	18D65083A27	B-76, KR-1, or F2-2meg, SU204	A47-2meg-Z, FS-3, SWE-12	Q13-139, 76-1, or (BU2, CF27, S81, GC) *	U55, US-26, or (UA26A, SL3500, US-41)
	Volume, Power On-Off Switch	2meg	18D65082A23	F1-7500, FFS108, R2-2meg, RFS202, KR-1	RTV-757	(15) QJ-1452	(21) UE4364-S
	Optimizer, Volume, Power On-Off Switch	7000Ω	18D65082A24	F1-7500, FFS102, R2-2meg, RFS111, KR-1	RTV-756	(16) QJ-1474	(22) UE4363-S
	Optimizer, Volume, Power On-Off Switch	7000Ω	18D65082A24	F1-7500, FFS102, R2-2meg, RFS111, KR-1	RTV-756	(16) QJ-1474	(22) UE4363-S
	Volume, Power On-Off Switch	2meg	18D65082A09	F2-1meg, FFS101, R2-2meg, RF202, KR-8	RTV-740	(17) QJ-1475	(23) UE4362-S
	Tone, Volume, Power On-Off Switch	1meg	18D65082A22	F2-1meg, FFS101, RF202, KR-8	RTV-740	(18) QJ-1451	(24) UE4280
	Volume, Power On-Off Switch	2meg	18D65082A22	F2-1meg, FFS101, RF202, KR-8	RTV-740	(18) QJ-1451	(24) UE4280
R2	Brightness	100K	18D65216A10	B-40, or (F1-100K, SN010, AK-38)	B47-100K-S	BU1-128, TM4, or (BU11, CF13, S86) *	TA15L, or (RU15L, SL-37, SN1000)
	Brightness	100K	18D65216A40	B-40, or (F1-100K, SN010, AK-38)	B47-100K-S	BU1-128, TM5, or (BU11, CF13, S81, DC1) *	TA15L, or (U41)
R3	Vertical Hold	750K	18D65216A52	TT-66, or (F1-750K, SN010, AK-38) (14)	A47-750K-S, RN-3	BU1-136, TM4, or (BU11, CF17, S86) *	PTA754L, or (RU754L, SL-37, SN1000)
	Vertical Hold	750K	1865216A41	TT-66, or (F1-750K, SN010, AK-38) (14)	A47-750K-S, RN-3	BU1-136, TM5, or (BU11, CF17, S81, DC1) *	RU754L, SL-38, SL3500
	Vertical Hold	750K	18D65216A54	TT-66, or (F1-750K, SN010, AK-38) (14)	A47-750K-S, RN-3	BU1-136, TM5, or (BU11, CF17, S81, DC1) *	FA351L, SF3000
R4	Contrast	350Ω	18D65216A30	TT-4, or (F1-300, SN010, AK-38) (14)	A47-7500-S, FS-3	BU1-103, TM4, or (BU11, CF4, S86) *	
	Contrast	350Ω	18D65083A39	TT-4, or (F1-300, SN010, AK-38) (14)	A47-7500-S, FS-3	BU1-103, TM4, or (BU11, CF4, S86) *	
	Tone, Contrast	1meg	18D65082A10	F2-1meg, FFS100, R1-500, RFS112	RTV-758	(19) QJ-1476	(25) UE4361
	Contrast	350Ω	18D65082A21	F1-300, FFS101, R1-500, RFS112	RTV-759	(20) QJ-1477	(26) UE4284
	Optimizer	7000Ω	18D65216A38	TT-14, or (F1-7500, SN010, AK-38) (14)	A47-7500-S, FS-3	BU1-116, TM4, or (BU11, CF35, S86) *	RU73A, SL-37, SL-3500
	Optimizer	7000Ω	18D65083A23	B-13, or (F1-7500, SU204)	A47-7500-S, FS-3	Q17-116, or (BU2, CF35, S81, DC1) *	U20, or (UA14L, SL3500) *
	Tone	1meg	18D65216A37	TT-70, or (F2-1meg, SN104, AK-38) (14)	B47-1meg-Z	B13-137, TM4, or (BU11, CF28, S86) *	PTA1254L, or (RU16L, SL-37, SN1000)
R5	Vertical Linearity	500Ω (2WV)	17D65820A08		39-500	112-500	FL-500
R6A	Noise Gate	3.4meg	18D66401A02				
R7	Vertical Size	3.4meg	17D65820A07				
	Horizontal Size	10K (2WV)					

- (1) Used in Chassis FTS-584.
(2) Used in Chassis HTS-584.
(3) Used in Chassis FTS-584Y.
(4) Used in Chassis ADTS-584.
(5) Used in Chassis CDTs, DTS, PCDTs-584 & Y, KDTs-584.
(6) Used in Chassis HTS-584Y.
(7) Used in Chassis ADTS-584.
(8) Used in Chassis ADTS, CDTs, DTS, KDTs, PCDTs, RCDTS-584 & Y.
(9) Used in Chassis FTS-584 & Y.
(10) Used in Chassis ADTS-584, HTS-584 & Y.
(11) Used in Chassis ADTS, KDTs, PCDTs, RCDTS-584, CDTs, DTS-584 & Y.
(12) Used in Chassis PCDTs, RCDTS-584, ADTS, CDTs, DTS, KDTs-584 & Y.
(13) Used in Chassis ADTS-584, HTS-584Y.
(14) Use Poly-Tube and Part of Original Shaft.
(15) "CONCENTRIKIT" Equivalent: K-6 Kit with Base Elements and Shafts: B17-116, P22-115 (Panel), B-13-139, R9-202, 76-1 (Rear).
(16) "SNAPTROL" Equivalent: BU5, CF35, CR22, SF12, SR14, GC.
(17) "CONCENTRIKIT" Equivalent: K-6 Kit with Base Elements and Shafts: B17-116, P22-103 (Panel), B13-139, R16-116, 76-1 (Rear).
(18) "SNAPTROL" Equivalent: BU5, CF35, CR22, SF7, SR8, GC.
(19) "CONCENTRIKIT" Equivalent: K-6 Kit with Base Elements and Shafts: B13-137, P23-103 (Panel), B13-139, R23-202, (Rear).
(20) "SNAPTROL" Equivalent: BU5, CF28, CR22, SF65, SR8, K. (K = File flat.)
(21) "CONCENTRIKIT" Equivalent: K-6 Kit with Base Elements and Shafts: B13-137, P23-103 (Panel), B13-139, R9-121, 76-1 (Rear).
(22) "SNAPTROL" Equivalent: BU5, CF4, CR26, SF65, SR9, DC1.
(23) "STA-LOC" Equivalent: FA63L, OS1500A, RU26A, IS125, US41.
(24) "STA-LOC" Equivalent: FA63L, OS125, RU26A, IS167, US41.
(25) "STA-LOC" Equivalent: FA16A, OS1062, RUP26A.
(26) "STA-LOC" Equivalent: FA16A, OS1062, RU26A, IS1750, US41.
(27) "STA-LOC" Equivalent: FA16A, OS1000A, RU52L, IS1750.
(28) "STA-LOC" Equivalent: FA351L, OS1062, RU73A, IS1750.

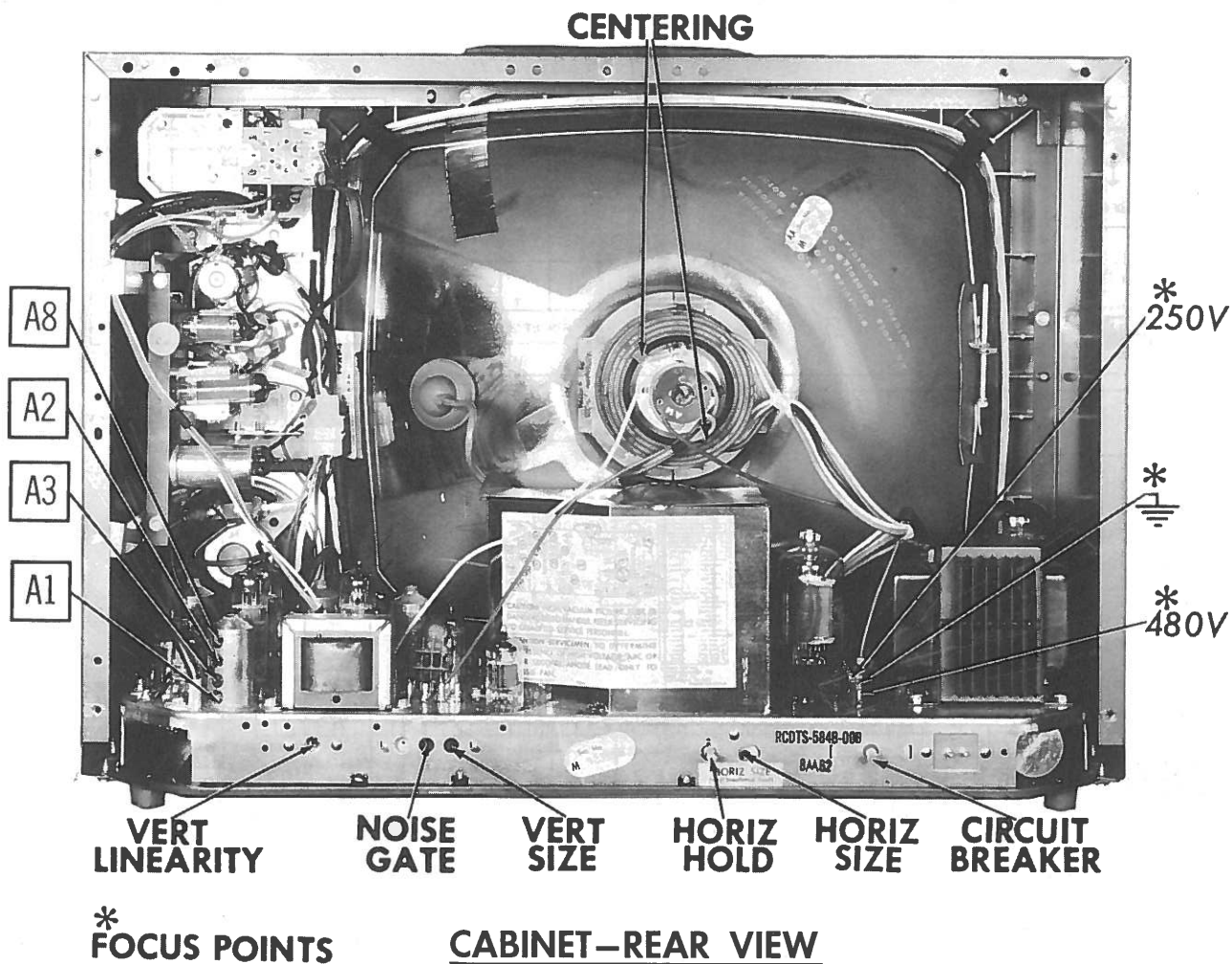
RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R21	5600Ω 10W	PW10-5600	10W-SQ-5600		R56	3000Ω 4W	4G-3000		
R42	500Ω Cold			#6C68263A01	R57	2700Ω 3W	3G-2700		
R54	115Ω Cold			#6C6884A04	R60	15K 4W			
R55	82Ω 10W	PW10-82	10W-SQ-82		R62	4700Ω 5W			

Motorola Part Number

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		MOTOROLA PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman PART No.	
L1A B C D E	39.75MC Trap 41.25MC Trap 1st Video IF RF Choke 47.25MC Trap	1V86505A49 ①					① Includes complete Assembly.
L2	2nd Video IF	24K747587	TV-130	622A	RTC-8555	TL227	
L3	3rd Video IF	24K751248	TV-130	622A	RTC-8555	TL224	
L4	4th Video IF	24C65939A03					
L5	RF Choke (8.8uh)	24C65828A09	BC-566	4611	RTC-8521	T960	
L6	RF Choke (5uh)	24C65828A16	SW-631	4609	RTC-8519	T977	▲Shunt with 8200Ω resistor ②Includes 8200Ω resistor.
L7	RF Choke (8.8uh)	24C65828A09	BC-566	4611	RTC-8521	T960	
L8	Peaking (200uh)	24C65828A12	BC-673	6154	RTC-8586	T345	
L9	Peaking (100uh)	24K754220 ②	BC-679 ▲	6112 ▲	RTC-8574	T341 ▲	
L10A	4.5MC Trap	1V86504A14 ①					
B	Sound Takeoff						
L11	Peaking (200uh)	24C65828A15 ③	BC-673 *	6154 *	RTC-8586 *	T345 *	③ Includes 3300Ω resistor. *Shunt with 3300Ω resistor
L12	Peaking (240uh)	24C65828A14	BC-673	6181	RTC-8598	T346	
L13	Peaking (900uh)	24C65828A11 ④	BC-681 ▲	6157 ▲	RTC-8589 ▲	T358 ▲	④ Includes 2700Ω resistor. ▲Shunt with 2700Ω resistor
L14	Sound IF	1V86504A15					
L15	Quadrature	1V86504A16 ①					
L16	RF Choke (6.8uh)	24C65828A17	BC-565	4610	RTC-8520	T859	
L17	RF Choke (6.8uh)	24C65828A17	BC-565	4610	RTC-8520	T859	



HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Tune in a TV signal, preferably with a test pattern. Set all controls for normal operation.

Rotate the Horizontal Hold (Osc. Coil Slug) clockwise until the picture loses horizontal sync. It may be necessary to switch off channel and

back again for the picture to lose sync.

Rotate the Horizontal Hold slowly counterclockwise until the picture just falls into sync.

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

SERVICE NOTE: When servicing 19" and 23" table models, remove rear cover and bottom plate for access to components.

1. Remove all knobs and the rear cover.
2. Disconnect antenna lead, picture tube socket, yoke plug, HV anode plug, speaker leads, plug to radio and control panel assembly.

3. Remove 4 chassis screws.

4. Remove 3 screws securing the tuner assembly and 6 screws securing radio chassis assembly.

5. Remove chassis.

PICTURE TUBE REMOVAL

Follow "Chassis Removal" to remove picture tube.

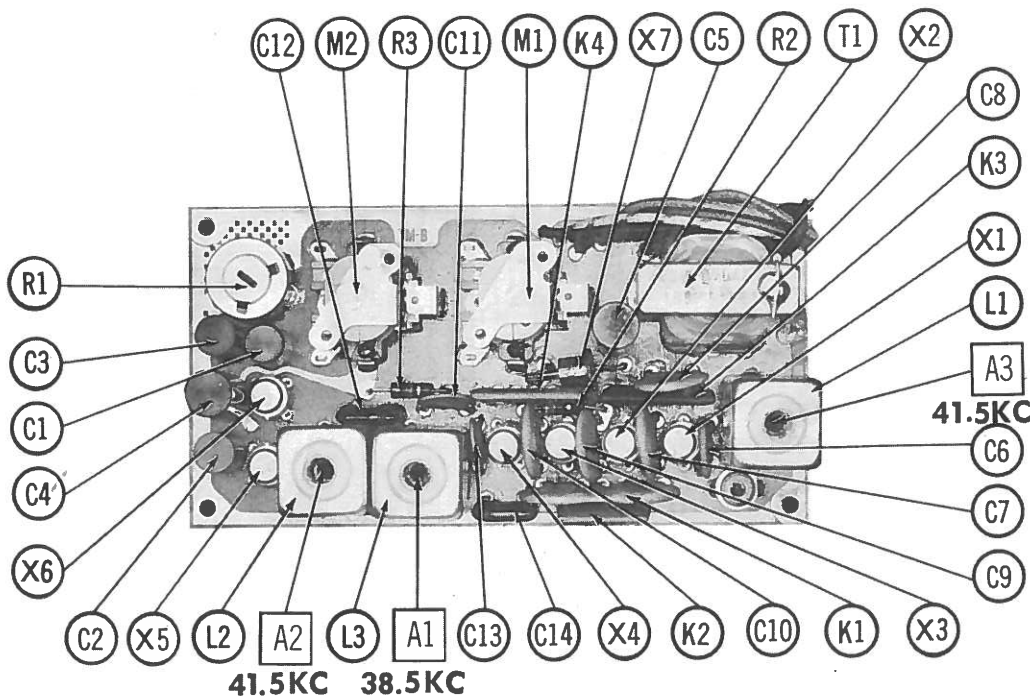
PHOTOFACT® Folder

with CIRCUITRACE™

MOTOROLA REMOTE CONTROL
RECEIVERS TRR-1/-2, TRANSMITTER TRT-1

IMPORTANT FILING NOTICE

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MOTOROLA REMOTE CONTROL
RECEIVERS TRR-1/-2, TRANSMITTER TRT-1

RECEIVER —TOP VIEW

TYPE SET
TRANSISTORS
POWER SUPPLY

Remote Control Receiver with Mechanical Transmitter
Six
110-120 Volts AC, 60 Cycle

MOTOROLA REMOTE CONTROL
RECEIVERS TRR-1/-2, TRANSMITTER TRT-1

ALIGNMENT INSTRUCTIONS

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CONNECT VTVM	ADJUST	REMARKS
1.	Across Microphone Input with 100K in high side.	38.5KC (Unmod.)	DC probe to point Δ . Common to chassis.	A1	Set Range control to center of rotation. Adjust A1 for maximum dip on VTVM. Use only enough generator output to provide a sharp indication.
2.	"	41.5KC	DC probe to point Δ . Common to chassis.	A2	Adjust for maximum dip in VTVM reading.
3.	"	"	"	A3	Adjust generator output to produce -11 volts on VTVM. Adjust for maximum dip in VTVM reading.

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



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DATE 4-63

SET 627 FOLDER 3-A

PARTS LIST & DESCRIPTION

RECEIVER TRR-1

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	4565	1st 40KC Amp.	D825	GE1	2N410	PNP
X2	4565	2nd 40KC Amp.	D825	GE1	2N410	PNP
X3	4567	3rd 40KC Amp.	D825	GE1	2N410	PNP
X4	4567	Limiter	D825	GE1	2N410	PNP
X5	4563	Channel Selector Relay Control Amp.		GE2	2N408	PNP
X6	4562 *	"				PNP
	4564 *	"				PNP
	4563	Volume Step Relay Control Amp.		GE2	2N408	PNP
	4562 *	"				PNP
	4564 *	"				PNP

* Alternate

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	CURRENT RATING (Measured)	ORIGINAL Part or Type No.	RECTIFIERS		DIODES		NOTES
			RCA PART No.	SARKES TARZIAN PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	
X7		48C65581A02 (1N128)	1N1763	10H			Silicon Rectifier

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA					
	CAP.	VOLT.	MOTOROLA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	100	3	23C66135A01	BCD3100	ECPB17	MT1-18	TT8X100	VLJ051
C2	25	18	23C66135A03	BCD25025	ECPB611	MT1-11	TT25X25	TE-1207
C3	25	18	23C66135A03	BCD25025	ECPB611	MT1-11	TT25X25	TE-1207
C4	100	18	23C66135A02	BCD18100	ECPB617	MT1-20		TE-1211
C5	100	18	23C66135A02	BCD18100	ECPB617	MT1-20		TE-1211

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCOR PART No.	MALLORY PART No.	SPRAGUE PART No.
C6	1mfd 3V		BPD-05	UK-105	H-05S5		BT-150	HY-135
C7	.05		BPD-05	DD-503	H-05S5		BT-150	5HK-S50
C8	.05		BPD-05	DD-503	H-05S5		BT-150	5HK-S50
C9	.05		BPD-05	DD-503	H-05S5		BT-150	5HK-S50
C10	.05		BPD-05	DD-503	H-05S5		BT-150	5HK-S50
C11	56 N150 5%	#21R131917	CM-20D-821		5R5T82	* CM-19B-821J		10TCP-Q66
C12	820 5%							MS-382
C13	56 N150 5%	#21R131917	CM-20D-821		5R5T82	* CM-19B-821J		10TCP-Q66
C14	820 5%							MS-382

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

Motorola Part Number

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			MOTOROLA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Range	210Ω 30Ω Stop	18A540698				

RECEIVER TRR-1 (cont'd)

RESISTORS

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

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R2	4700Ω				R3	10K			

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		MOTOROLA PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	
L1	Input	24D66131A01					
L2	41.5 KC	24D66131A02					
L3	38.5 KC	24D66131A02					

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI	SEC. 1	SFC. 2	MOTOROLA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	117V @ .010A	11V @ .008A		25D66078A01					

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	MOTOROLA PART No.	REPLACEMENT DATA
K1	Amp. - Limiter	.05mfd, .05mfd, .05mfd,	51D66176A01	
K2	Emitter Bypass	.05mfd		
K3	Amp. - Limiter	2700Ω, 3300Ω, 4700Ω, 4700Ω	51D66095A01	
K4	Emitter Bias	1500Ω, 3300Ω, 18K, 27K, 27K,	51D66095A02	
	Base Network	47K		
	3rd Amp. & Limiter	470Ω, 4700Ω, 8200Ω, 18K, 47K,	51D66095A03	
	Base Network	82K		

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M1	Relay	80D66087A01	Channel Change
M2	Relay	80D66087A01	Volume
	Microphone	50C66208A01	Includes Cable and Plug
	Printed Board	84C66201A02	Less Components

TRANSMITTER

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
	Transmitter	1V65816A99	Complete
	Tuning Rod	47K748546	Transducer, 41.5 KC (Channel Selector)
	Tuning Rod	47B748542	Transducer, 38.5 KC (On, Volume, Mute, Off)
	Pushbutton	38C66151A01	On, Volume, Mute, Off
	Pushbutton	38C66151A02	Channel Selector

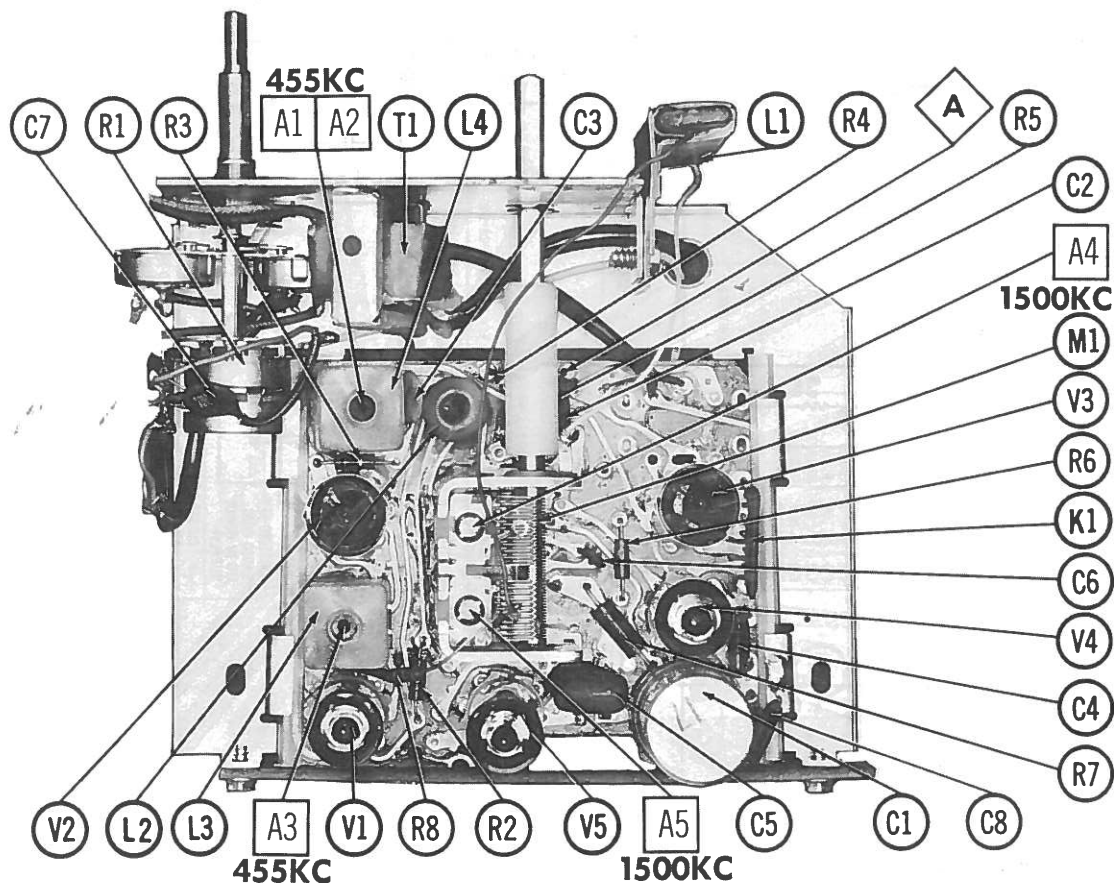
PHOTOFACT® Folder

with CIRCUITRACE®

MOTOROLA AM
CHASSIS THS-4101

IMPORTANT FILING NOTICE

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MOTOROLA AM
CHASSIS THS-4101MOTOROLA AM
CHASSIS THS-4101

TRADE NAME	Motorola Chassis THS-4101	
MANUFACTURER	Motorola Inc., 9401 W. Grand Avenue, Franklin Park, Illinois	
TYPE SET	AM Radio	
TUBES	Five	
POWER SUPPLY	110-120 Volts AC, 60 Cycle	RATING 32 Watts, .32 Amp. @ 117 Volts AC
TUNING RANGE	540-1620 KC (IF 455KC)	

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

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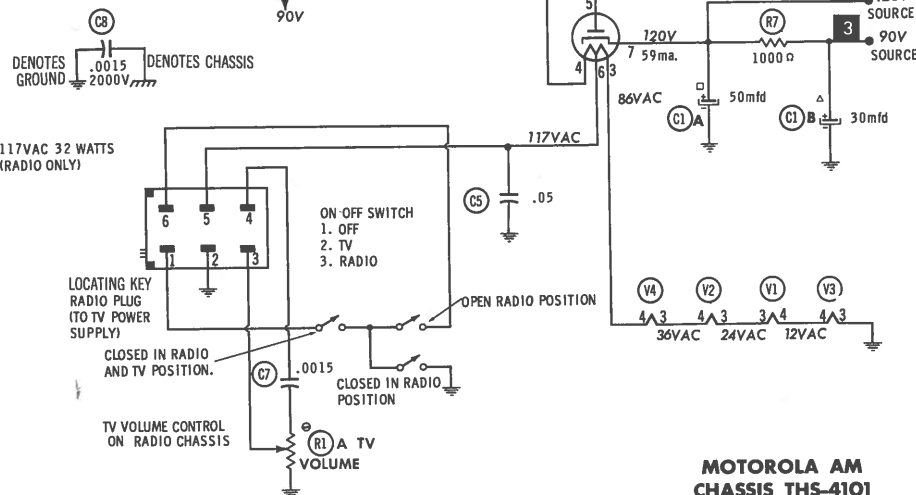
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LA968

DATE 4-63

SET 627 FOLDER 3-B



† MEASURED FROM PIN 7 OF V5. NC NO CONNECTION TP TIE POINT

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 $\pm 15\%$ in voltage and resistance readings.

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**MOTOROLA AM
CHASSIS THS-4101**

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.

TUBES

AMPEREX			GENERAL ELECTRIC		RCA	RAYTHEON		SYLVANIA	
ITEM No.	USE	TYPE		ITEM No.	USE	TYPE			
V1 V2 V3	Converter IF Amp. Det. - AVC - AF Amp.	12BE6 12BA6 12AV6		V4 V5	Audio Output Rectifier	50C5 35W4			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	MOTOROLA PART No.	AEROVOX PART No.	CORNELL- DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.
CLA B	■ 50 ▲ 30	150 150	23B632015	PWE2-15-05	B0150 †	XC2-21 ‡	FPF213.1	TMD2105 †	PCL-2432

† Use PC Adapter 55277 and 55278.

† Use PC Adapter PMA1.

♦ Use PC Adapter TMA.

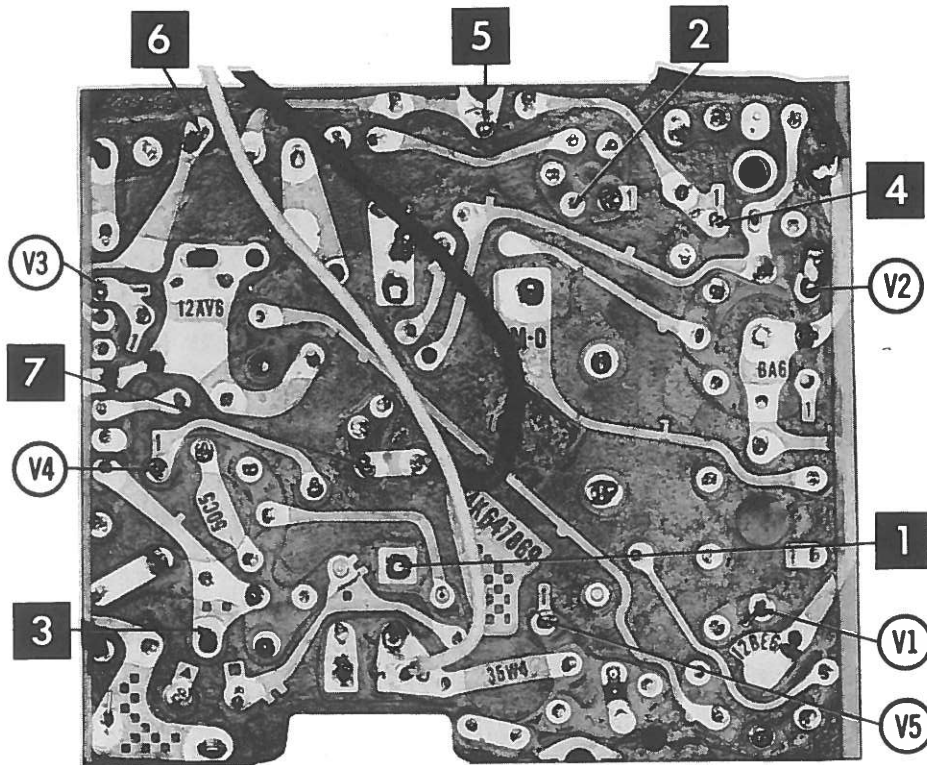
FIXED CAPACITORS

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.
C2	.05 200V		P288N-05	DD-503	C2B2S5	2CP-3-503	GEM-415	2TM-S50
C3	100 N750		N750-DI 100	DTZ-100	C10T1U	CCTN-100	CN7-310	10TCU-T10
C4	.02 400V		P488N-02	DD-203	C4B4S2	4CP-2-203	GEM-412	4TM-S2
C5	.05 400V		P488N-05	DD-503	C4B4S5	4CP-4-503	GEM-415	4TM-S5
C6	4. 7 N1500 ±5%				*			
C7	.0015		BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C8	.0015 2KV		HVD30-30-1500	DD30-152	HVB20D15		BV-215	30GA-D15

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

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		MOTOROLA PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman PART No.	
L1	Loopstick		BC-418	2004	RTC-8915	T528	
L2	Osc.						
L3	Input IF		BC-356	13-PC9	RTC-8683	T646	
L4	Output IF		BC-357	13-PC10	RTC-8684	T647	



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

FOLDER 3-B

MOTOROLA AM
CHASSIS THS-4101

PARTS LIST AND DESCRIPTION (CONTINUED)

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 (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	MOTOROLA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2200Ω	8-8Ω	25B61832A01A	A-2902 ①	A-3849 ①	22S86 ①	S-54X ①	① Drill new mounting hole(s).

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	MOTOROLA PART No.	REPLACEMENT DATA
K1	Audio Couplate	5000mmf, 220mmf, 250mmf, 5000mmf, 6.8meg, 470K, 470K	51B643849	Aerovox PA-512-3 Centralab PC-158 Mallory MS-107 Sprague DT-5

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M1	Tuning Gang	19K647846	2 Gang

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Power Cord	Use BELDEN No. 17106 (Plastic) or 17126 (Rubber) - 6 Ft. 17109 (Plastic) or 17129 (Rubber) - 9 Ft.
Power Cord (Interlock Type)	Use BELDEN No. 8874 (Rubber) or 8895 (Plastic)

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

Use only enough generator output to provide a usable indication.
Allow a 20 minute warm-up period for the receiver and test equipment.
USE AN ISOLATION TRANSFORMER TO PROTECT THE TEST EQUIPMENT.
Suggested Alignment Tools: A1, A2, A3 .. GENERAL CEMENT #8606, 8606L, 8869 WALSCO #2543, 2544, 2588
A4, A5 GENERAL CEMENT #9087, 8290, 8868 WALSCO #2525, 2528, 2587

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	High side to stator lug of Mixer section of Tuning Gang. Low side to ground.	455KC (30% 400v Mod.)	Tuning gang fully closed	VTVM of DC probe to point ④. Common to ground	A1, A2, A3	Adjust for maximum deflection.
2.	Fashion loop of several turns of wire and radiate signal into loop of receiver	1500KC	1500KC	"	A4, A5	"