

MOTOROLA MODELS VT105, VT105M, VK106, VK106B, VK106M, VT107, VT107M

MOTOROLA MODEL VK-106

TRADE NAME	Motorola Models VT-105, VT-105M, VK-106, VK-106B, VK-106M, VT-107, VT-107M, (Ch. TS-9, TS-9A, TS-9B, TS-9C)	
MANUFACTURER	Motorola Inc., 4545 Augusta Blvd., Chicago, Illinois	
TYPE SET	Television Receiver	
TUBES	Twenty-Three (Ch. TS-9, TS-9B), Twenty-One (Ch. TS-9A), Twenty-Two (Ch. TS-9C)	
POWER SUPPLY	105-125 Volts, 60 Cycles AC	RATING: 2.1 Amps. @ 117 Volts
TUNING RANGE	Channels 2 thru 13.	

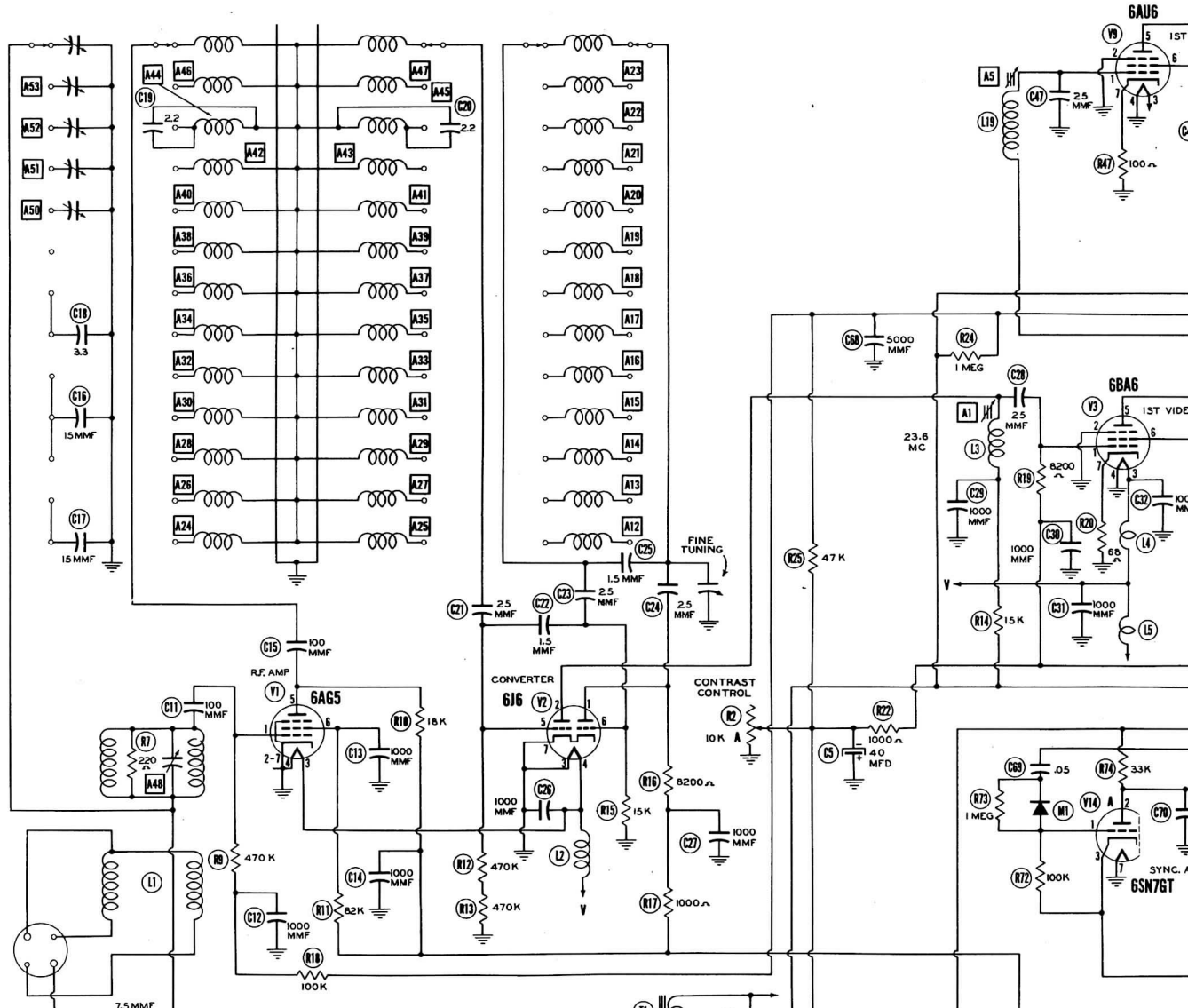
INDEX

	Page		Page
Alignment Instructions	6,7	Photographs (continued)	
Block Diagram	14	Oscillator Alignment Points	7
Chassis Variations	15	RF Alignment Points	10
Disassembly Instructions	15	Resistor Identification	13,20
Horizontal Sweep Adjustments	15	Trans., Inductor and Alignment Identification	4,9
Parts List and Description	16,17,18,19	Schematic	2
Photographs		Schematic (Chassis Variations)	22
Cabinet-Rear View	19	Tube Placement Chart	5
Capacitor Identification	12,21	Voltage and Resistance Measurements	8
Chassis-Top View	3,11		

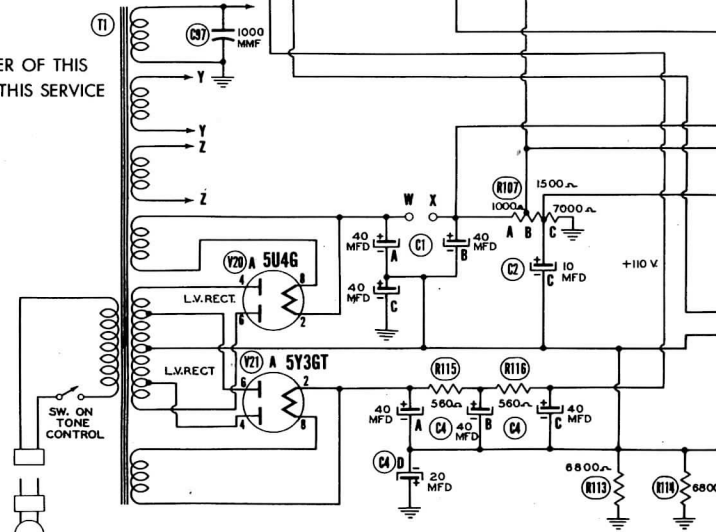
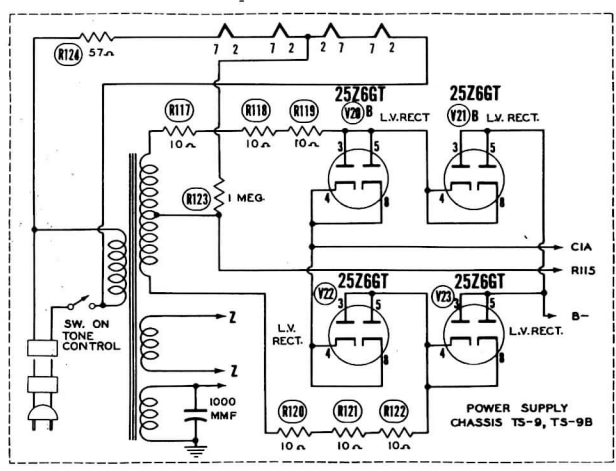
HOWARD W. SAMS & CO., INC. • Indianapolis 7, Indiana

"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 part listed."
 "Reproduction or use, without express permission, of editorial or pictorial con-

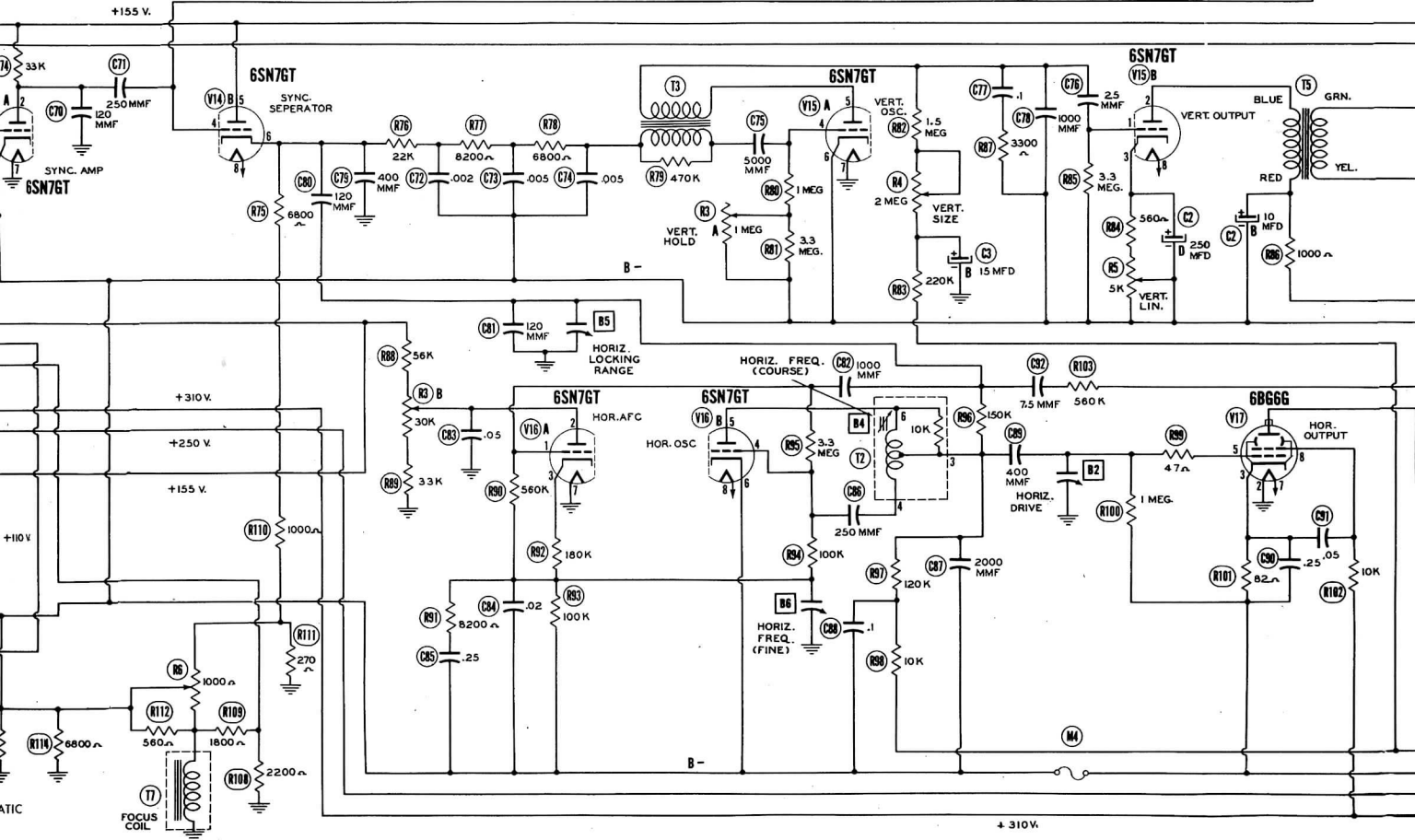
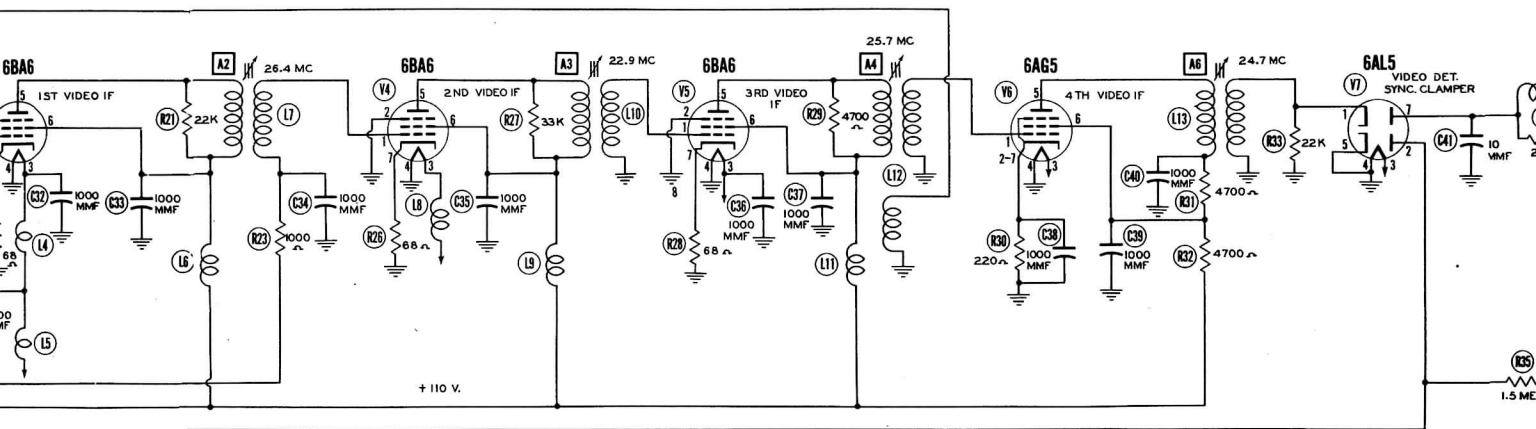
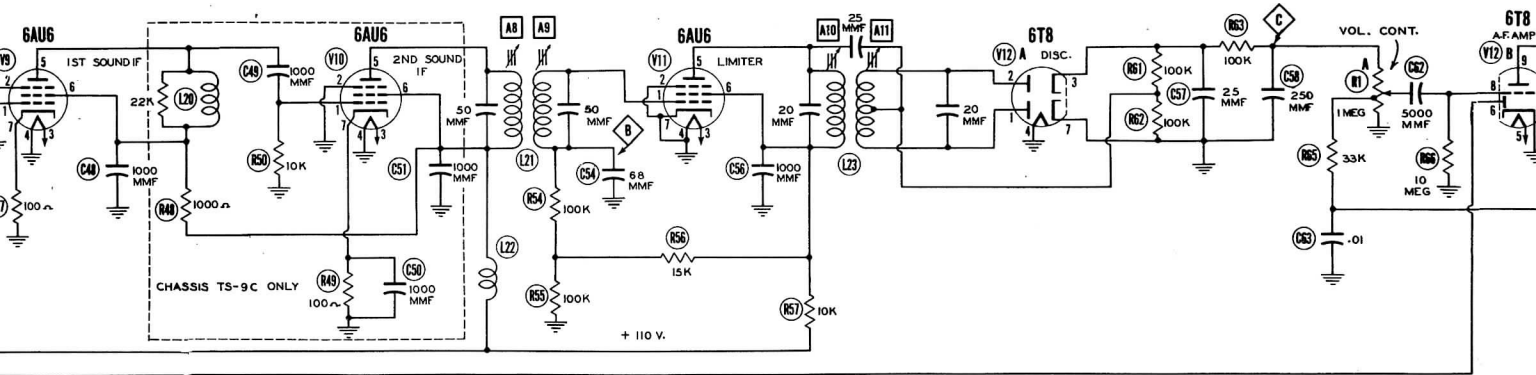
tent, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis 7, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

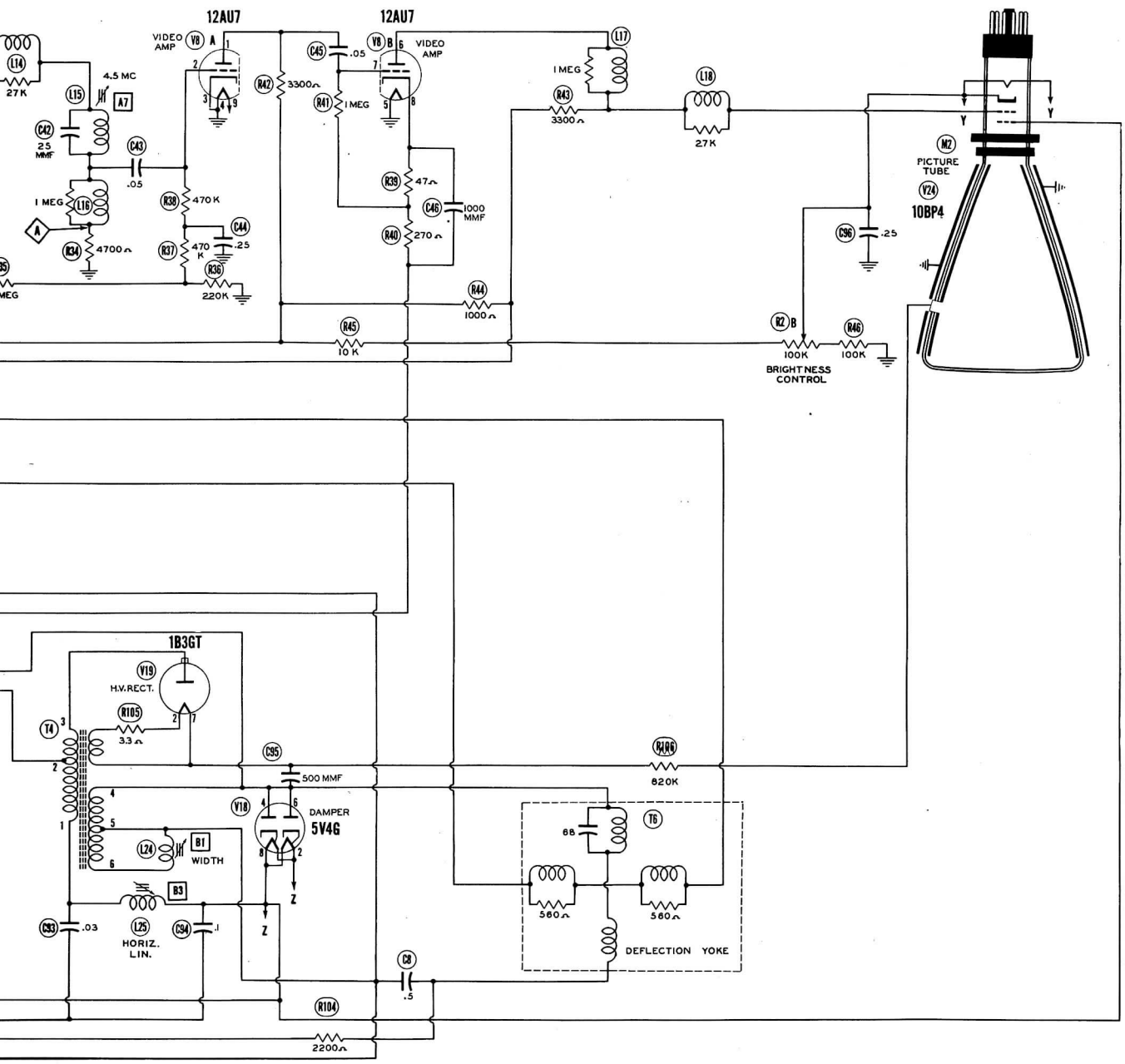
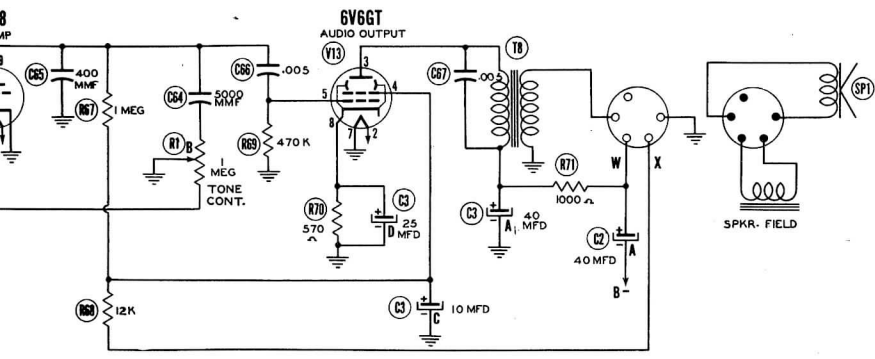


THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

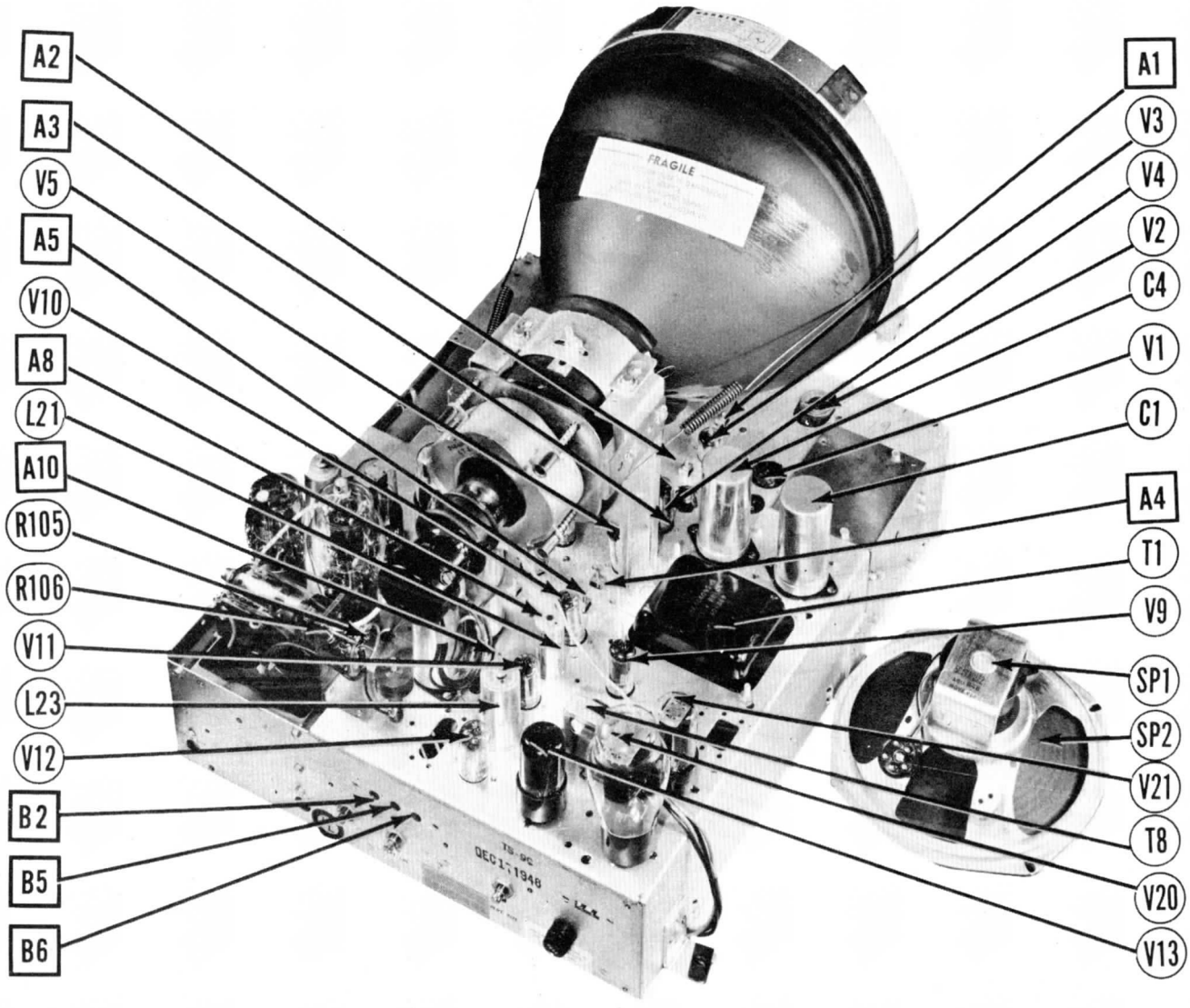


A PHOTOFAC STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1949



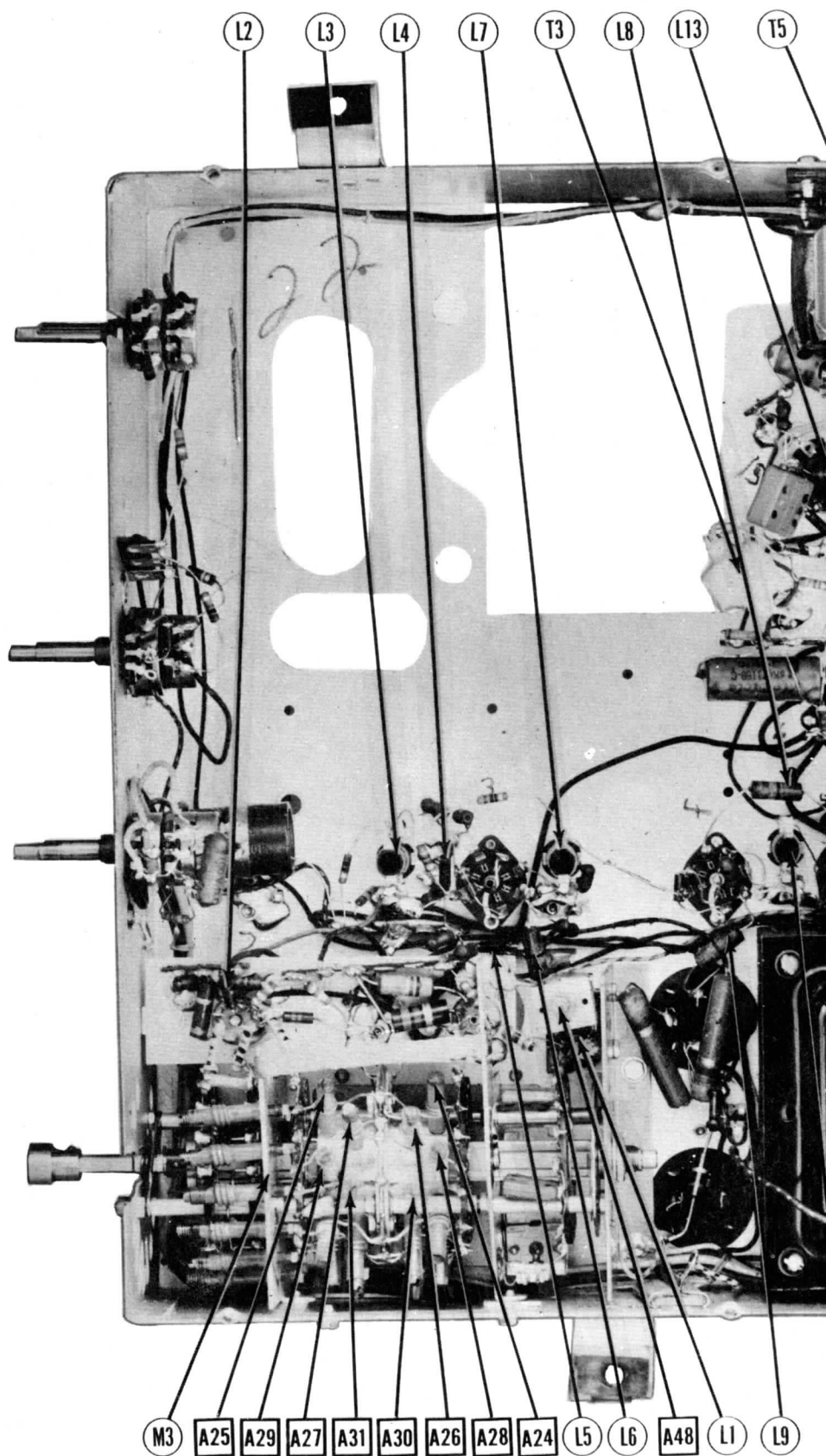


MOTOROLA MODELS VT105, VT105M,
VK106, VK106B, VK106M, VT107, VT107M



CHASSIS TOP VIEW

MOTOROLA MODELS VT105, VT105M,
VK106, VK106B, VK106M, VT107, VT107M

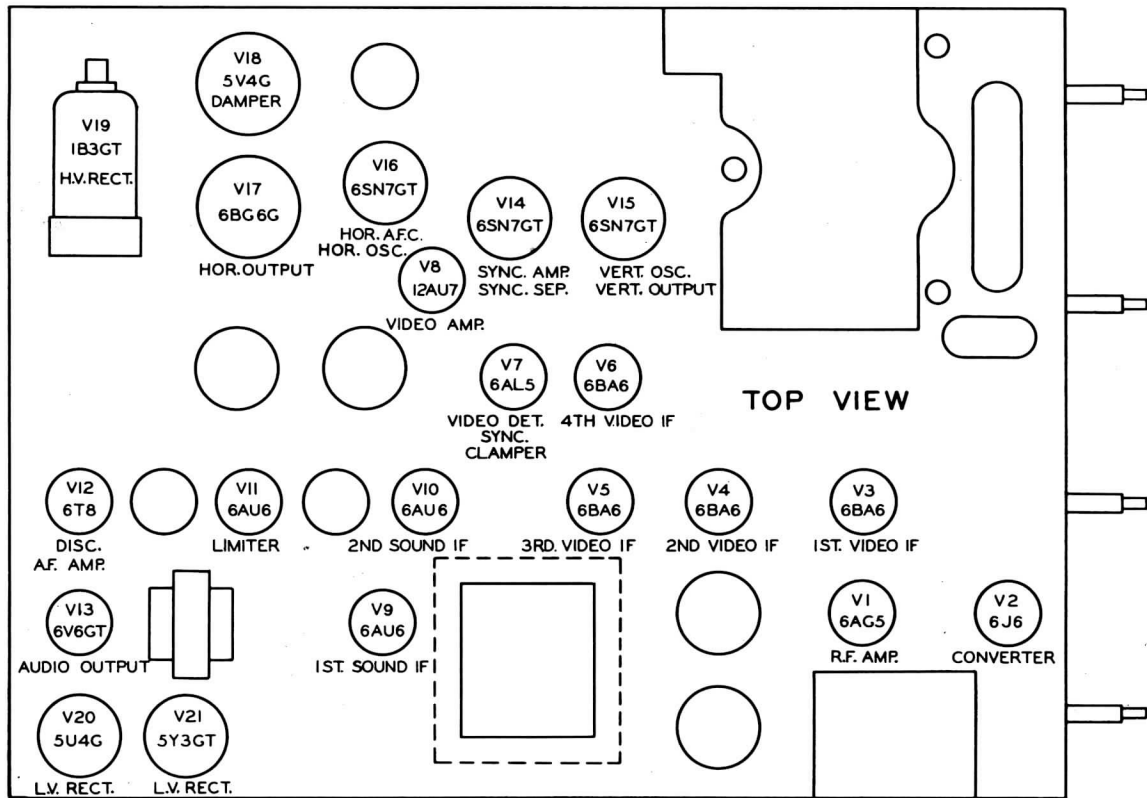
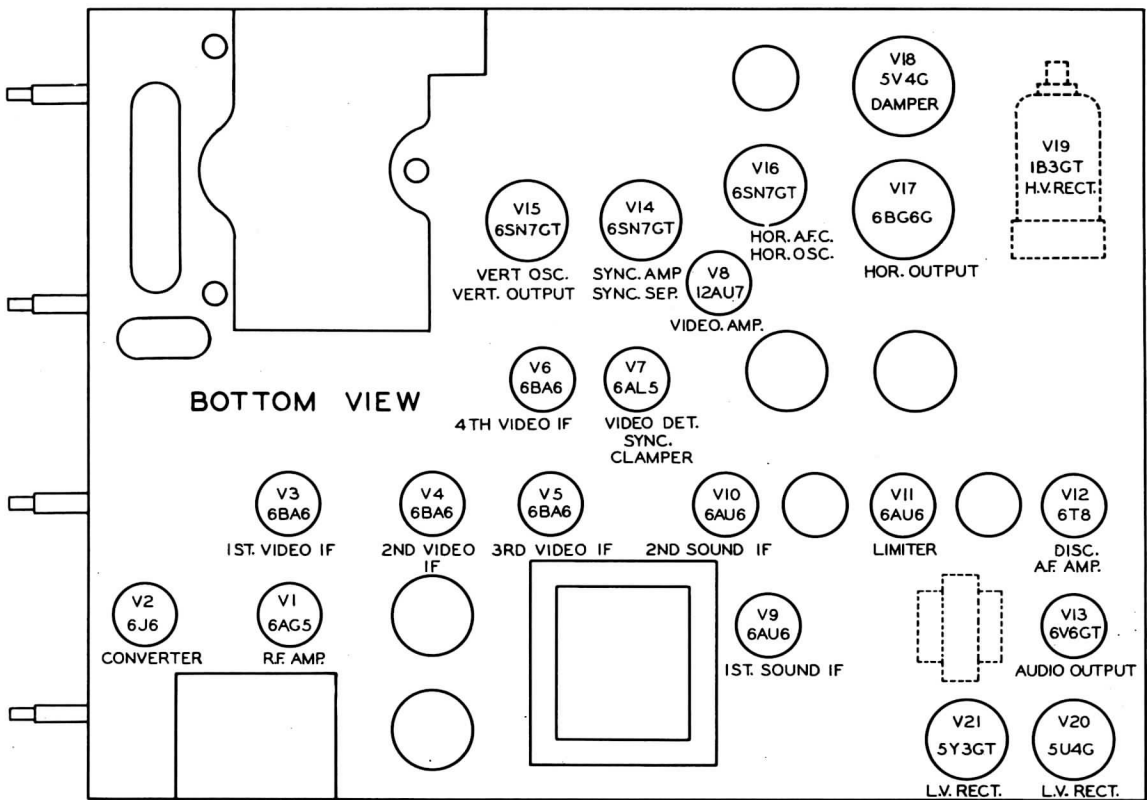


CHASSIS BOTTOM VIEW-TRANS.,INDUC



MOTOROLA MODELS VT105, VT105M,
VK106, VK106B, VK106M, VT107, VT107M

DUCTOR AND ALIGNMENT IDENTIFICATION



TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

VIDEO IF ALIGNMENT

Connect the negative terminal of a -3 volt battery to the mixer grid at the junction of R12 and R13. Connect the positive terminal to chassis ground.
Set the contrast control to give -5 volt bias. (Measure from center terminal to chassis.)

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1. .01MFD	High side to pin 5 (Grid) of 6J6 (V2). Low side to chassis.	23.6MC	Any	DC Probe to Point A Common to chassis.	A1	Adjust for maximum deflection.
2. .01MFD	"	26.4MC	"	"	A2	" " " "
3. .01MFD	"	22.9MC	"	"	A3	" " " "
4. .01MFD	"	25.7MC	"	"	A4	" " " "
5. .01MFD	"	21.9MC	"	"	A5	Adjust for minimum deflection. Repeat step 4.
6. .01MFD	"	24.7MC	"	"	A6	Adjust for maximum deflection.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal amplifier of the oscilloscope to give horizontal deflection.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7. .01MFD	High side to pin 5 (Grid) of 6J6 (V2). Low side to chassis	24MC (10MC Sweep)	21.9MC 26.4MC	Any	Vert. Amp. to Point A Low side to chassis.		Check to see that response curve is similar to that of Fig 1.

4.5MC TRAP ADJUSTMENT

There are three possible methods of adjusting this trap.
One method is done by tuning in a normal picture and adjusting trap A7 so the stippled or half-tone effect in the picture is eliminated or minimized. The fine tuning control should be set on the center audio peak while this adjustment is being made.

Another method is by feeding a 4.5MC unmodulated signal to pin 7 of 6AL5 (V7) video detector and connecting an RF type electronic voltmeter across R41 (2nd video amp. grid circuit). Adjust A7 for minimum.

The third method of using an oscilloscope with a detector probe may be accomplished as follows:

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8. .01MFD	High side to pin 7 of 6AL5 (V7). Low side to chassis.	Off	4.5MC (400V Mod.)	Any	Vert. Amp. thru detector probe to pin 6 (plate) of 12AU7 (V8). Low side to chassis.	A7	Adjust for minimum amplitude.

SOUND IF ALIGNMENT

Chassis TS-9C contains an additional sound IF stage but the transformer added is fixed tuned and does not necessitate a change in alignment procedure.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
9. .01MFD	High side to pin 5 (Grid) of 6J6 (V2). Low side to chassis.	21.9MC	Any	DC Probe to Point B Common to chassis.	A8,A9	Adjust for maximum deflection.
10.	Detune the discriminator transformer secondary by turning All out approximately 2 full turns.					
11. .01MFD	High side to pin 5 (Grid) of 6J6 (V2). Low side to chassis.	21.9MC	Any	DC Probe to Point C Common to chassis.	A10	Adjust for maximum deflection.
12. .01MFD	"	"	"	"	All	Adjust for zero reading. A positive and negative peak is obtained on either side of the correct setting.

RF ALIGNMENT

Connect the signal generator to the antenna terminals of the receiver through two resistors. The low side of the generator should be connected through 150Ω. The high side should be connected through a resistor of 150Ω minus the signal generator impedance. For instance, if the generator impedance is 50Ω, the resistor should be 100Ω.

Leave the fine tuning control set at the midpoint of its electrical range during the oscillator and RF alignment.

Set the contrast control for -3 volts bias. (Measured from arm of control to chassis).

The antenna adjustments on the high band is made at 195MC for channels 7,8,9,10,11,12 and 13. This adjustment has enough bandwidth to work effectively over all these channels. The low band channels have individual antenna adjustments.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
13. See Instructions above	Across antenna terminals.	215.75MC	13	DC Probe to Point D Common to chassis.	A12	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
14.	"	209.75MC	12	"	A13	"
		203.75MC	11		A14	
		197.75MC	10		A15	
		191.75MC	9		A16	
		185.75MC	8		A17	
		179.75MC	7		A18	
		87.75MC	6		A19	
		81.75MC	5		A20	
		71.75MC	4		A21	
		65.75MC	3		A22	
		59.75MC	2		A23	

ALIGNMENT INSTRUCTIONS (CONT.)

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS	
15.	"	214MC	13	"	A24, A25	Unscrew one adjustment until the circuit is appreciably detuned. Adjust the second slug for maximum deflection. Then adjust the first slug for maximum. Do not retune the other slug.	
16.	"	208MC	12	"	A26, A27	"	
		202MC	11	"	A28, A29		
		196MC	10	"	A30, A31		
		190MC	9	"	A32, A33		
		184MC	8	"	A34, A35		
		178MC	7	"	A36, A37		
		86MC	6	"	A38, A39		
		80MC	5	"	A40, A41		
		70MC	4	"	A42, A43		
		64MC	3	"	A44, A45		
17.	"	58MC	2	"	A46, A47	"	
		195MC	10	"	A48		Adjust for maximum deflection.
		86MC	6	"	A49		Adjust for maximum deflection. A49 is omitted on TS-9C.
		80MC	5	"	A50		Adjust for maximum deflection.
		70MC	4	"	A51		"
		64MC	3	"	A52		"
		58MC	2	"	A53		

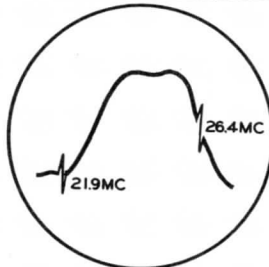
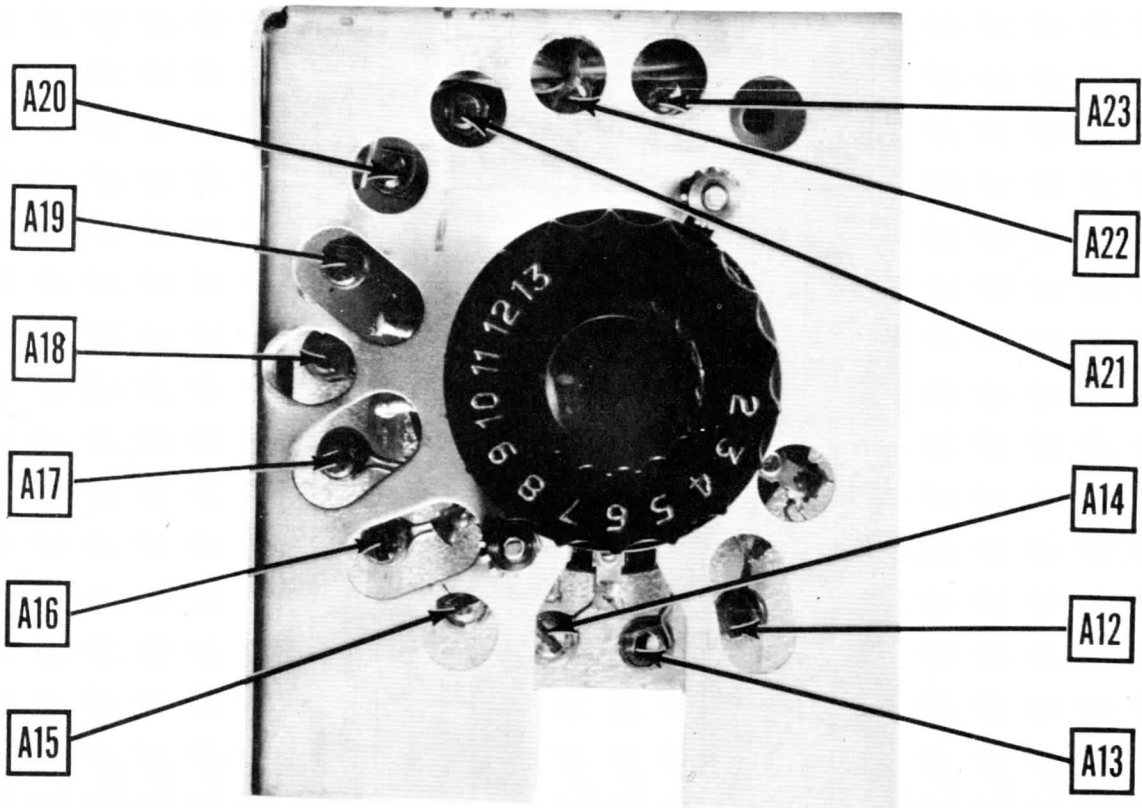


FIG. I

MOTOROLA MODELS VT105, VT105M, VK106, VK106B, VK106M, VT107, VT107M



OSCILLATOR ALIGNMENT POINTS

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	-3.4VDC	OV	6.3VAC	OV	245VDC	245VDC	OV		
V 2	6J6	150VDC	87VDC	OV	6.3VAC	-3.4VDC	§-1VDC	OV		
V 3	6BA6	-20VDC	OV	6.3VAC	OV	118VDC	118VDC	.1VDC		
V 4	6BA6	-20VDC	OV	6.3VAC	OV	118VDC	118VDC	.1VDC		
V 5	6BA6	OV	OV	6.3VAC	OV	118VDC	118VDC	1VDC		
V 6	6AG5	OV	1VDC	6.3VAC	OV	60VDC	80VDC	1VDC		
V 7	6AL5	OV	-1.2VDC	6.3VAC	OV	OV	60VDC	-.1VDC		
V 8	12AU7	125VDC	-.5VDC	OV	OV	OV	▲155VDC	▲.5VDC	▲5VDC	6.3VAC
V 9	6AU6	OV	OV	6.3VAC	OV	110VDC	110VDC	5VDC		
V 10	6AU6	OV	OV	6.3VAC	OV	120VDC	120VDC	1VDC		
V 11	6AU6	-.5VDC	OV	6.3VAC	OV	50VDC	50VDC	OV		
V 12	6T8	-.7VDC	-.8VDC	-9.3VDC	OV	6.3VAC	-13VDC	OV	-.1VDC	50VDC
V 13	6V6GT	OV	6.3VAC	270VDC	270VDC	OV	300VDC	OV		
V 14	6SN7GT	▲OV	▲60VDC	▲OV	▲50VDC	▲225VDC	▲68VDC	OV	6.3VAC	
V 15	6SN7GT	▲OV	▲360VDC	▲19.5VDC	▲-28VDC	▲80VDC	▲OV	OV	6.3VAC	
V 16	6SN7GT	▲-.7VDC	▲133VDC	▲17VDC	▲-41VDC	▲140VDC	▲OV	OV	6.3VAC	
V 17	6BG6G	▲3VDC	OV	▲11VDC	▲320VDC	▲.5VDC	▲370VDC	6.3VAC	▲270VDC	* TOP CAP
V 18	5V4G	OV	390VDC	▲3VDC	310VDC	▲3VDC	310VDC		390VDC	
V 19	1B3GT	* DO NOT MEASURE								
V20A	5U4G	OV	325VDC	325VDC	380VAC	280VDC	380VAC	57VAC	325VDC	
V21A	5Y3GT	OV	175VDC	OV	240VAC	OV	240VAC	OV	187VDC	
V24	10BP4	160VDC	93VDC	PIN 10 390VDC	PIN 11 160VDC	PIN 12 160VDC				

▲ Measured from pin 6 of V15.
§ Taken with vacuum tube voltmeter.
* Do not measure.

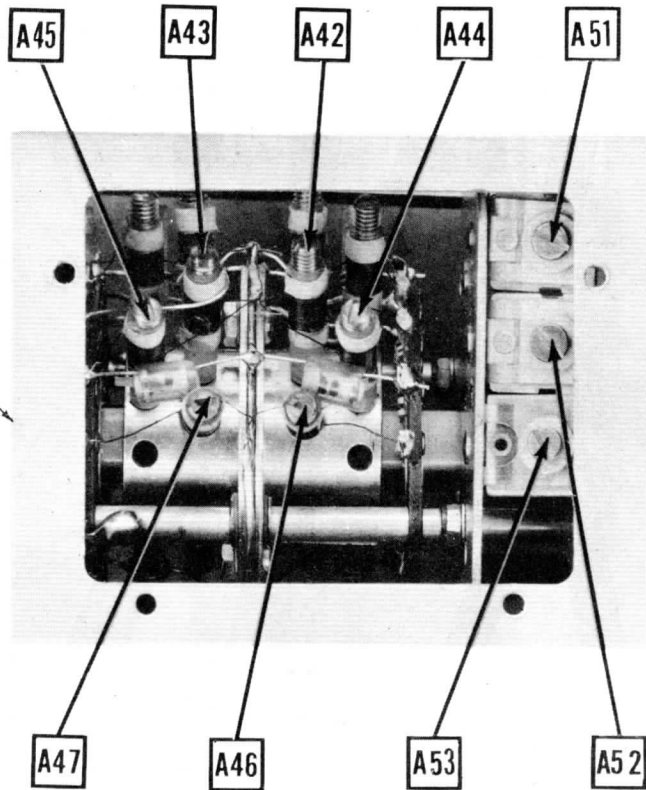
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	630KΩ	0Ω	.1Ω	0Ω	†20KΩ	†80KΩ	0Ω		
V 2	6J6	†10KΩ	†18KΩ	0Ω	.1Ω	1 Meg.	13KΩ	0Ω		
V 3	6BA6	10KΩ	0Ω	.1Ω	0Ω	+1.2KΩ	+1.2KΩ	68Ω		
V 4	6BA6	3KΩ	0Ω	.1Ω	0Ω	+1.2KΩ	+1.2KΩ	68Ω		
V 5	6BA6	.1Ω	0Ω	.1Ω	0Ω	+1.2KΩ	+1.2KΩ	68Ω		
V 6	6AG5	.2Ω	200Ω	.1Ω	0Ω	+11KΩ	+6KΩ	200Ω		
V 7	6AL5	0Ω	2 Meg.	.1Ω	0Ω	0Ω	+11KΩ	5KΩ		
V 8	12AU7	†5.2KΩ	1.2 Meg.	0Ω	0Ω	0Ω	†6.2KΩ	1.2 Meg.	315Ω	.1Ω
V 9	6AU6	.1Ω	0Ω	.1Ω	0Ω	+2KΩ	+2KΩ	100Ω		
V 10	6AU6	10KΩ	0Ω	.1Ω	0Ω	+1000Ω	+1000Ω	100Ω		
V 11	6AU6	100KΩ	0Ω	.1Ω	0Ω	+10KΩ	+10KΩ	0Ω		
V 12	6T8	100KΩ	100KΩ	160KΩ	0Ω	.1Ω	47KΩ	0Ω	10 Meg.	† 1 Meg.
V 13	6V6GT	0Ω	.1Ω	†1.2KΩ	†12KΩ	470KΩ	†850Ω	0Ω	500Ω	
V 14	6SN7GT	▲100KΩ	†35KΩ	▲0Ω	2 Meg.	†2KΩ	▲7.5KΩ	0Ω	.1Ω	
V 15	6SN7GT	▲3.3Meg.	†1.5KΩ	▲5.5KΩ	▲1 Meg.	†3.8Meg.	▲0Ω	0Ω	.1Ω	
V 16	6SN7GT	▲750KΩ	†35KΩ	▲280KΩ	▲200KΩ	†140KΩ	▲0Ω	0Ω	.1Ω	
V 17	6BG6G	▲15Ω	0Ω	▲100Ω	†800Ω	▲1 Meg.	†110Ω	.1Ω	†10KΩ	* TOP CAP †200Ω
V 18	5V4G	Inf.	†0Ω	▲15Ω	†95Ω	▲15Ω	†95Ω	▲1 Meg.	†0Ω	
V 19	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	* TOP CAP †360Ω
V20A	5U4G	Inf.	10KΩ	10KΩ	480Ω	10KΩ	470Ω	440Ω	10KΩ	
V21A	5Y3GT	Inf.	24KΩ	Inf.	480Ω	Inf.	460Ω	Inf.	24KΩ	
V24	10BP4	†15KΩ	†6.2KΩ	PIN 10 †0Ω	PIN 11 †15KΩ	PIN 12 †15KΩ				

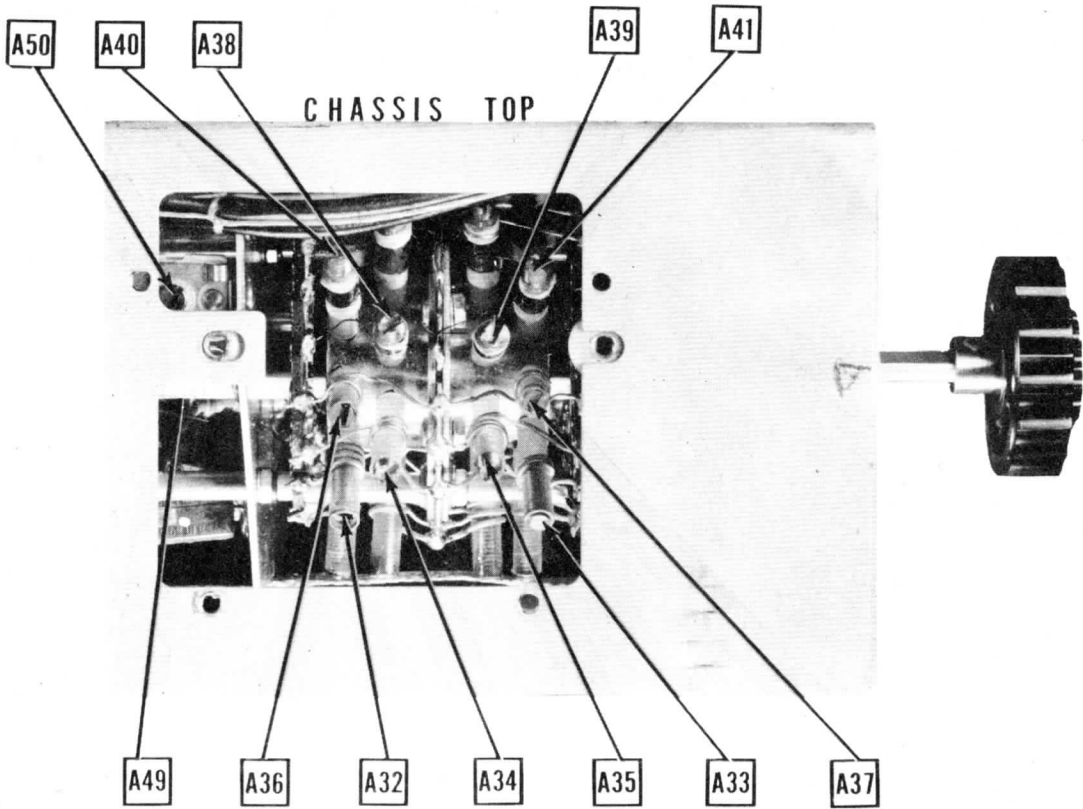
† Measured from pin 2 of V20
‡ Measured from pin 2 of V21
Measured from pin 8 of V18
▲ Measured from pin 6 of V15

- DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
- Pin numbers are counted in a clockwise direction on bottom of socket.
- Measured values are from socket pin to common negative unless otherwise stated.
- Line voltage maintained at 117 volts for voltage readings.
- Front panels controls set at minimum.
- Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.

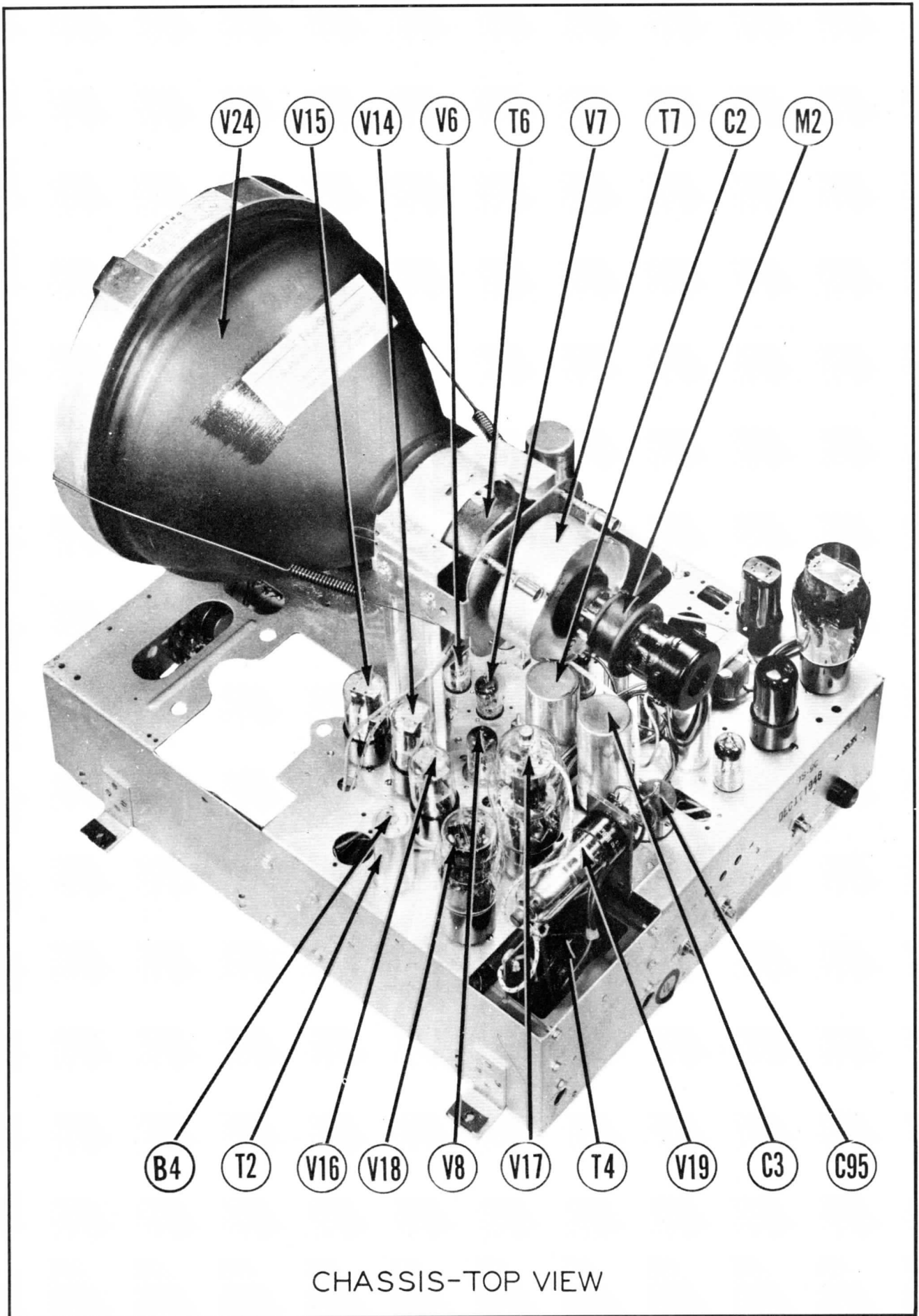
CHASSIS FRONT



CHASSIS TOP

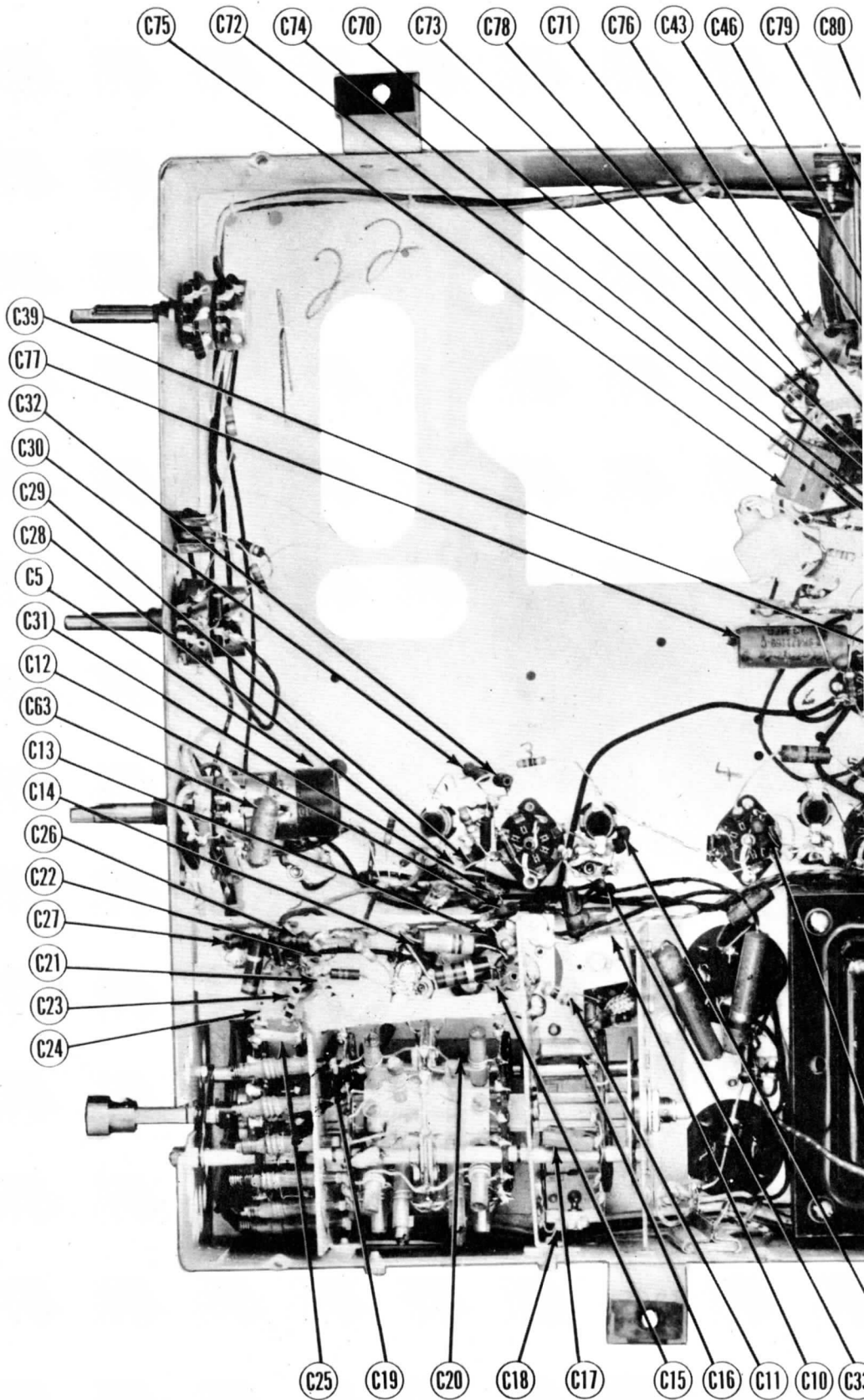


RF ALIGNMENT POINTS

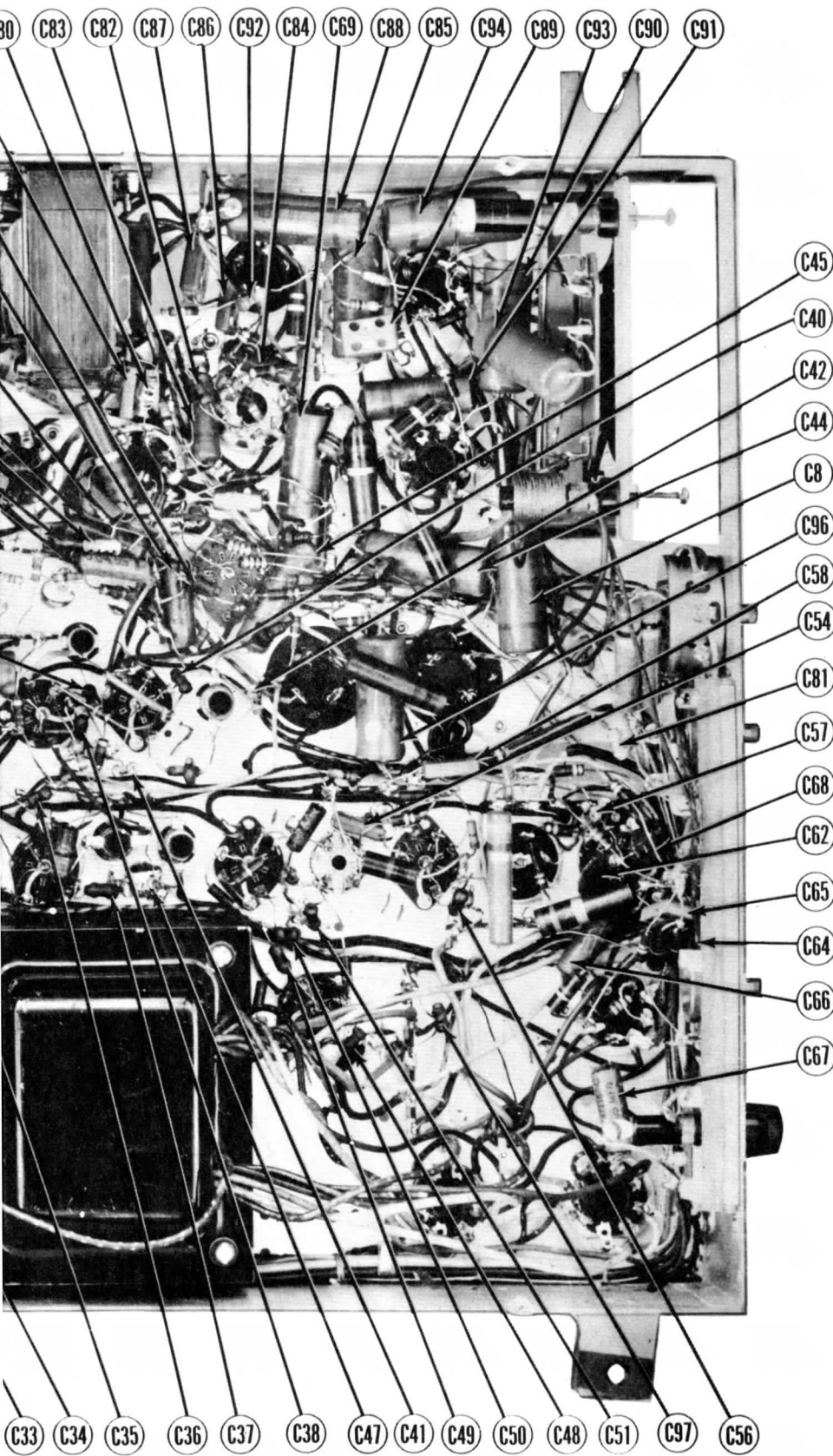


MOTOROLA MODELS VT105, VT105M,
VK106, VK106B, VK106M, VT107, VT107M

CHASSIS-TOP VIEW

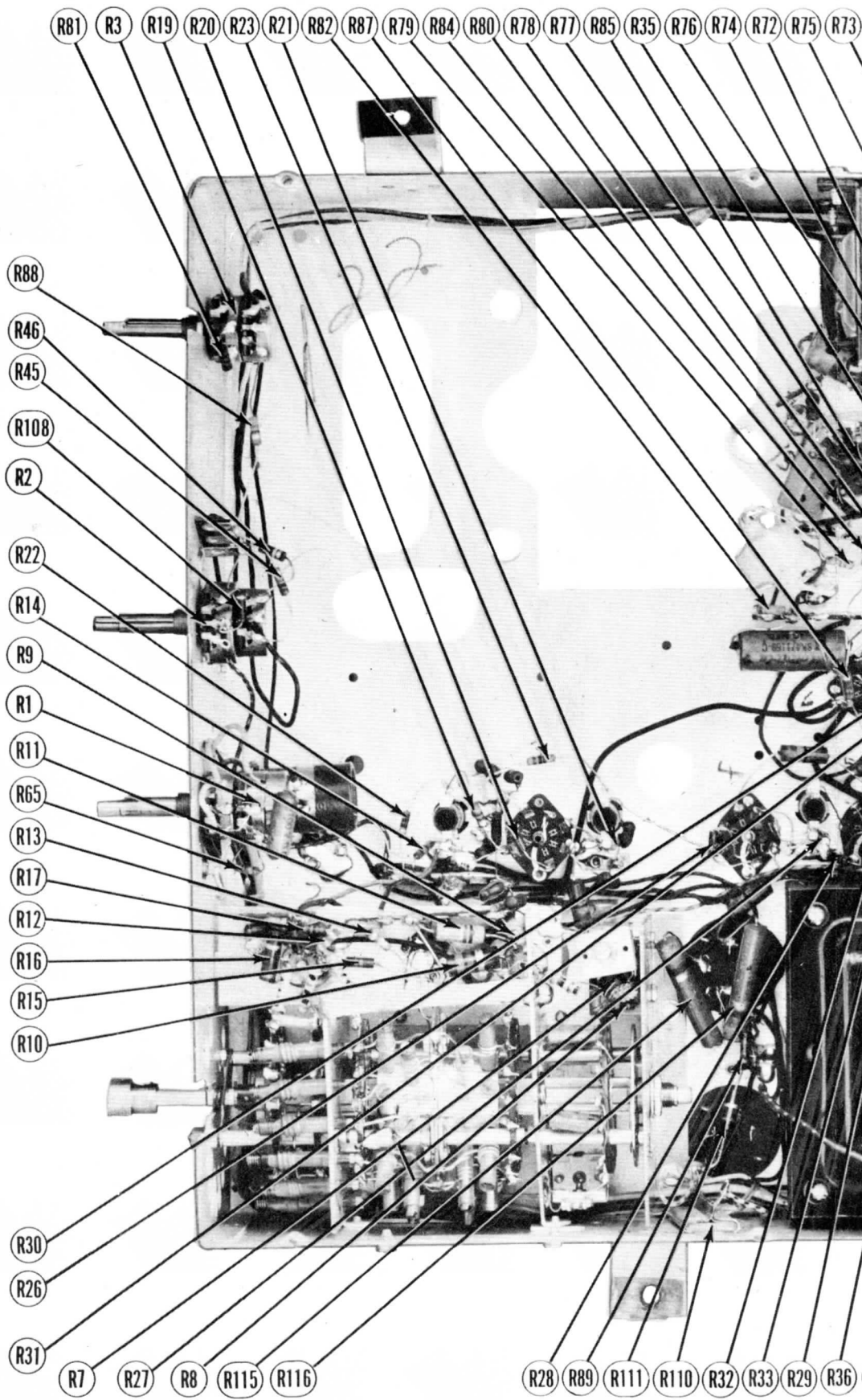


CHASSIS BOTTOM VIEW-CA



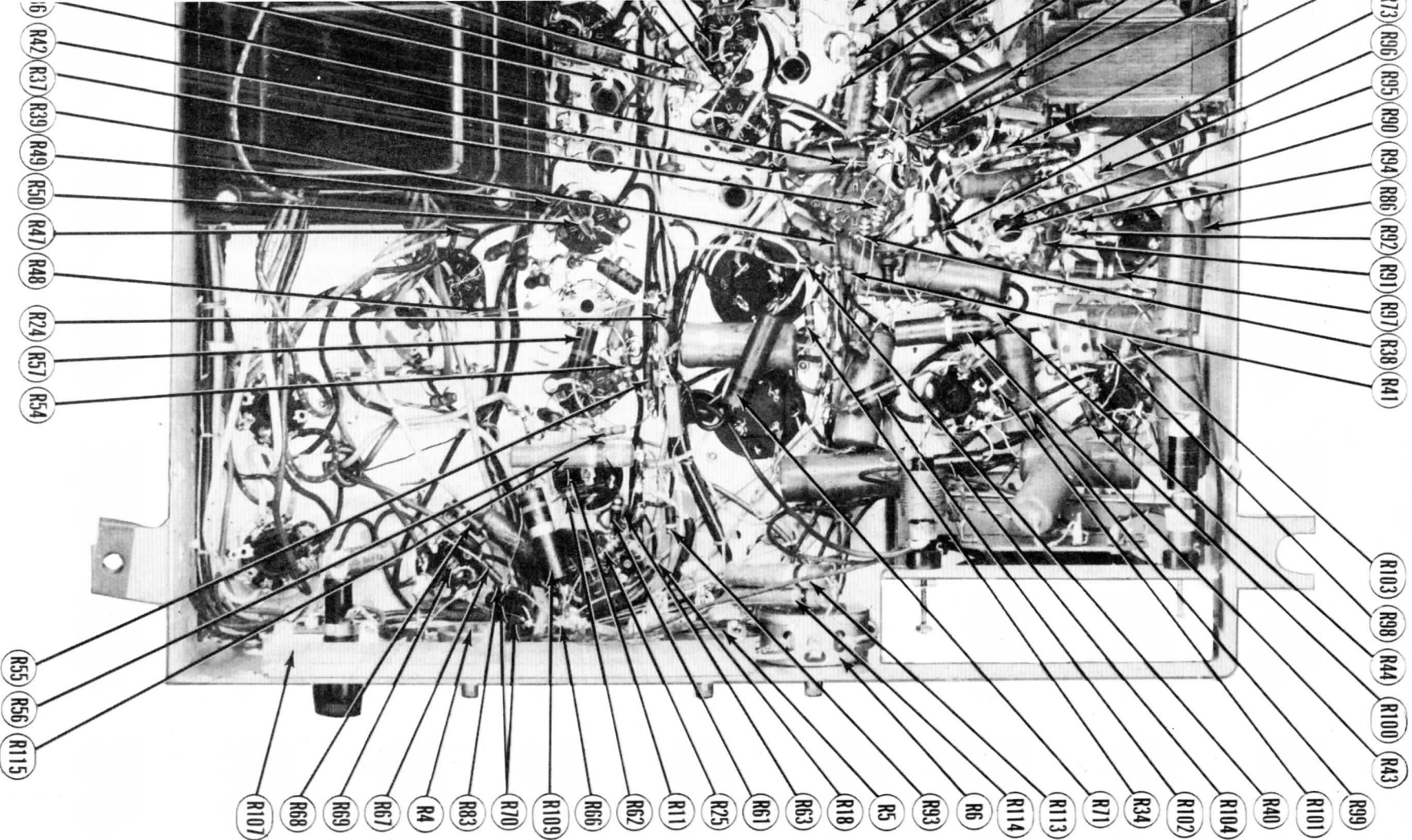
MOTOROLA MODELS VT105, VT105M,
VK106, VK106B, VK106M, VT107, VT107M

CAPACITOR IDENTIFICATION

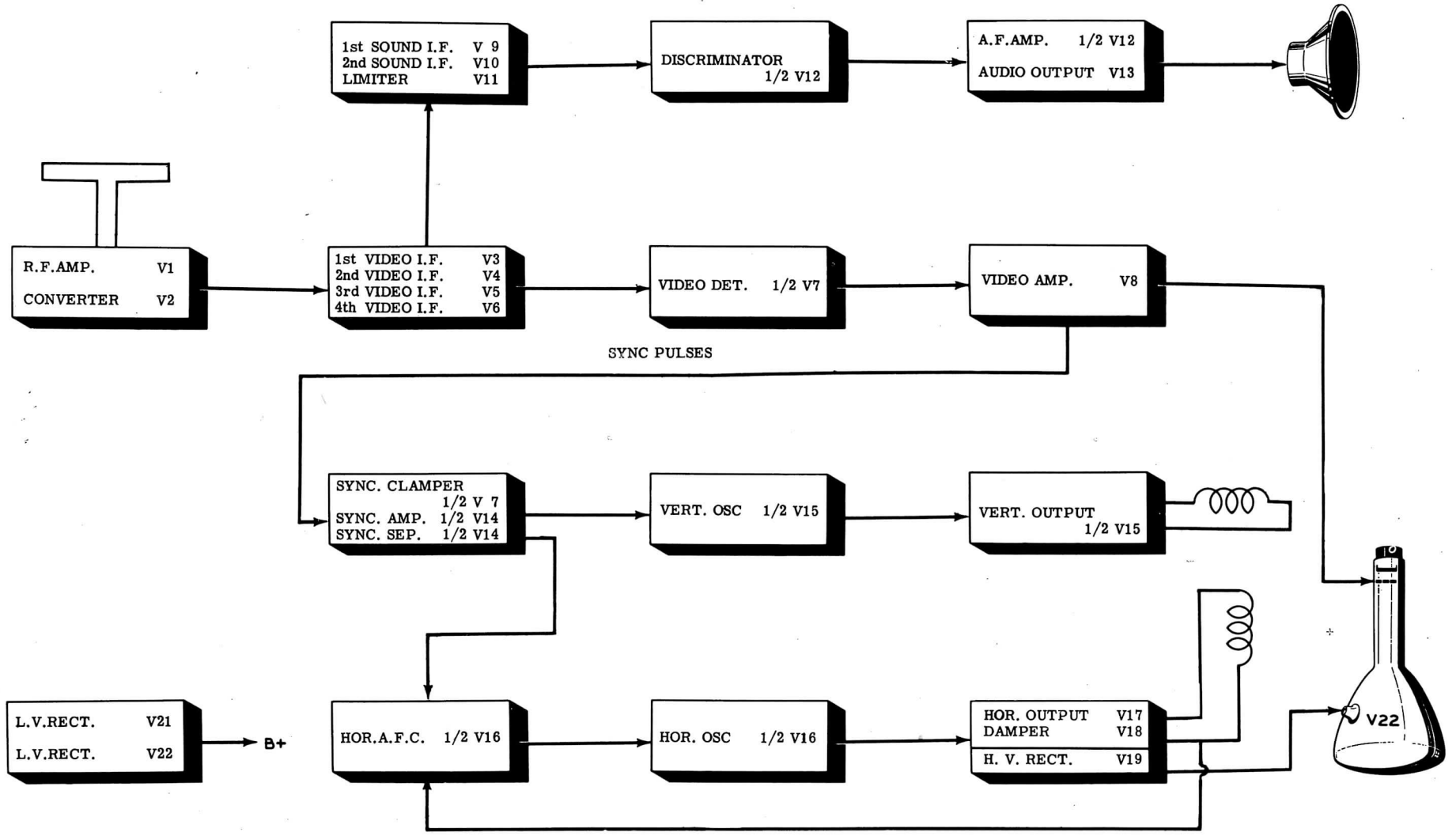


CHASSIS BOTTOM VIEW-R

MOTOROLA MODELS VT105, VT105M,
VK106, VK106B, VK106M, VT107, VT107M



RESISTOR IDENTIFICATION



BLOCK DIAGRAM

BRIEF DESCRIPTION OF CHASSIS VARIATIONS

- CHASSIS TS-9. Twenty-two tubes plus 10" picture tube employing four type 25Z6GT tubes operating in a bridge circuit to supply "B" power.
- CHASSIS TS-9A. Same as TS-9 except a conventional power supply circuit is used having 5Y3GT and 5U4G tubes. The power transformer also differs from the one used in chassis TS-9. Twenty tubes plus 10" picture tube.
- CHASSIS TS-9B. Same as TS-9 except that the 1st Sound IF Amplifier is also used as a reflex amplifier for audio to obtain greater audio amplification. Twenty two tubes plus 10" picture tube.
- CHASSIS TS-9C. Similar to TS-9A except that an additional Sound IF stage was added to reduce variations in sound level with setting of contrast control. Twenty-one tubes plus 10" picture tube.

HORIZONTAL OSCILLATOR ADJUSTMENT

Adjust the horizontal oscillator coil slug (B4) so the picture will "lock-in" over the whole range of the horizontal hold control. If this cannot be done, back off the horizontal locking trimmer (B5) 2 1/2 to 3 turns from tight or until it is possible to sync the picture over the whole range of the horizontal hold control. (If this is not possible, the receiver is defective and will require tube and circuit component checks.)

When this has been done, turn the horizontal hold control to the extreme counter-clockwise position.

Back off trimmer B6 (Horizontal frequency trimmer) until the picture tends to slip to the right; then turn the horizontal hold control clockwise until picture "syncs" in.

Under these conditions, it should be possible to switch channels without losing synchronization.

HORIZONTAL LINEARITY AND SIZE ADJUSTMENT

Turn the horizontal size control (B1) fully clockwise. Vary the horizontal drive trimmer (B2) for best compromise between brightness and horizontal linearity. Adjust the horizontal size control (B1) until the picture fills the mask horizontally (8 1/2" minimum). Adjust the horizontal linearity control (B3) for the best horizontal linearity on the right half of the picture.

Due to interaction between B1 and B2, adjustment of one will require readjustment of the other.

DISASSEMBLY INSTRUCTIONS

MODEL VK106

1. Remove seven push-on type and one set screw type control knobs.
2. Remove screws holding back cover. Remove back cover.
3. Remove antenna plug at chassis.
4. Remove speaker plug from speaker.
5. Remove four 7/16" hex head bolts holding chassis. Remove chassis.
6. Remove four 5/16" hex nuts holding speaker. Remove speaker.

**MOTOROLA MODELS VT105, VT105M,
VK106, VK106B, VK106M, VT107, VT107M**

DESCRIPTIONS

(CONT.)

RESISTORS (CONT.)

SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES	ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
				RESISTANCE	WATTS	MOTOROLA PART No.	IRC PART No.	
MW.5-21	LFM-21	S. IF Screen Bypass	R38	470KΩ	1	6R6377	BTS-470K	Video Amp. Grid
MW.5-25	LFM-25	Audio Coupling	R39	47Ω	1	6R2108		Video Amp. Cathode
MOS.5-47	LFM-47	Limiter IF Grid #	R40	270Ω	1			" "
MO.5-425	MS-425	Sound IF Decoupling	R41	1 Meg.	1	6R6004	BTS-1 Meg.	Video Amp. Grid
MW.5-21	LFM-21	Limiter Decoupling	R42	3300Ω	1	6R5581	BTS-3300	Video Amp. Plate
MO.5-425	MS-425	RF Bypass	R43	3300Ω	1	6R2029	BT-2-3300	" "
MO.5-325	LFM-325	De-emphasis	R44	1000Ω	1	6R6327	BTA-1000	" "
MW.5-25	LFM-25	Audio Coupling	R45	10KΩ	1	6R6320	BTS-10K	Voltage Divider See Note 3
MO.5-325	LFM-325	RF Bypass	R46	100KΩ	1	6R6031	BTS-100K	Voltage Divider See Note 4
ST-4-1	TM-1	Bias Filter	R47	100Ω	1	6R6018		1st Sound IF Cathode See Note 5
MW.5-25	LFM-21	Audio Coupling	R48	100Ω	1	6R6301	BTS-1000	1st Sound IF Decoupling See Note 5
ST-4-01	TM-11	Tone Comp.	R49	100Ω	1	6R6018		2nd Sound IF Cathode
MW.5-25	LFM-25	"	R50	10KΩ	1	6R6320		2nd Sound IF Grid See Note 5
MO.5-34	LFM-34	AF Plate Bypass	R51	3900Ω	1		BTS-3900	Sound IF Screen See Note 6
ST-6-002	TM-22	"	R52	100KΩ	1	6R6031	BTS-100K	Filter See Note 6
ST-6-005	TM-25	Audio Coupling	R53	5600Ω	1		BTS-5600	Tone Compensation See Note 6
ST-6-005	TM-25	Output Plate Bypass	R54	100KΩ	1	6R6031		Limiter Grid See Note 7
MW.5-25	LFM-25	Bias Filter	R55	100Ω	1	6R6018		Voltage Divider
ST-6-005	TM-15	Sync. Coupling	R56	15KΩ	1	6R2119	BTS-15K	" " See Note 8
MO.5-31	LFM-31	Sync. Amp. Plate Bypass	R57	10KΩ	1	6R476060	BTA-10K	" "
MW.5-325	LFM-325	Sync. Coupling	R58	470KΩ	1	6R6377	BTS-470K	Sound IF Grid See Note 6
ST-6-002	TM-22	Integrator Net. #	R59	10 Meg.	1		BTS-10 Meg.	Voltage Divider See Note 6
ST-6-005	TM-25	"	R60	150KΩ	1	6R6398	BTS-150K	" "
ST-6-005	TM-25	"	R61	100KΩ	1	6R6031	BTS-100K	Disc. Load
MW.5-25	LFM-25	Vert. Osc. Grid Cap.	R62	100KΩ	1	6R6031	BTS-100K	" "
ST-4-25	TC-2	Vert. Coupling	R63	100KΩ	1	6R6031	BTS-100K	De-emphasis
ST-4-1	TM-1	Vert. Discharge	R64	47KΩ	1		BTS-47K	Tone Compensation See Note 6
MW.5-21	LFM-21	"	R65	33KΩ	1	6R6410	BTS-33K	Tone Compensation
MO.5-34	LFM-34	Sync. Sep. Cath. Byp.	R66	10 Meg.	1	6R2109	BTS-10 Meg.	AF Grid
		Voltage Divider	R67	1 Meg.	1	6R6004	BTS-1 Meg.	AF Plate
		"	R68	12KΩ	1	6R6430	BTA-12K	Filter
MW.5-21	LFM-21	Hor. Sync. Coupling	R69	470KΩ	1	6R6377	BTS-470K	Output Grid See Note 9
ST-4-05	TM-15	Hor. AFC Plate Bypass	R70	270Ω	1	6R488036	2-BT-2-560	Output Cathode See Note 18
ST-4-02	TM-12	AFC Filter	R71	1000Ω	2	6R476004	BT-2-1000	Filter See Note 10
ST-2-25	TC-2	"	R72	100KΩ	2	6R6031	BTS-100K	Sync. Amp. Grid
MO.5-325	LFM-325	Hor. Osc. Grid Cap.	R73	1 Meg.	2	6R6004	BTS-1 Meg.	Limiter Diode Load
MW.5-22	LFM-22	Hor. Discharge	R74	33KΩ	2	6R6400	BT-2-33K	Sync. Amp. Plate
ST-6-1	TM-1	Hor. Osc. Plate Decoupl.	R75	6800Ω	2	6R6428	BTS-6800	Sync. Sep. Cathode
MO.5-34	LFM-34	Hor. Coupling	R76	22KΩ	2	6R6397	BTS-22K	Integrator
ST-2-25	TC-2	Hor. Output Cath. Byp.	R77	8200Ω	2	6R2004	BTS-8200	" "
ST-6-05	TM-15	Hor. Output Screen Byp.	R78	6800Ω	2	6R6428	BTS-6800	" "
		AFC Feedback	R79	470KΩ	2	6R6377	BTS-470K	Vert. Osc. Transformer Shunt
STM-16-03	TR-13	Damper Filter	R80	1 Meg.	2	6R6004	BTS-1 Meg.	Vert. Osc. Grid
ST-6-1	TM-1	Damper Filter	R81	3.3 Meg.	2	6R2118	BTS-3.3 Meg.	Voltage Divider
		HV Filter	R82	1.5 Meg.	2	6R3966	BTS-1.5 Meg.	Vert. Osc. Plate See Note 11
ST-2-25	TC-2	Pic. Tube Cath. Dec.	R83	220KΩ	2	6R6407	BTS-220K	Vert. Osc. Decoupling
MW.5-21	LFM-21	Filament Bypass	R84	560Ω	2	6R6291	BTS-560	Vert. Output Cathode
		"	R85	3.3 Meg.	2	6R2118	BTS-3.3 Meg.	Vert. Output Grid
		"	R86	1000Ω	2	6R476004	BTA-1000	Filter
		"	R87	3300Ω	2	6R5581	BTS-3300	Vert. Peaking
		"	R88	56KΩ	2	6R6378	BTS-56K	Voltage Divider
		"	R89	33KΩ	2	6A489166		Voltage Divider Temp. Comp.
		"	R90	560KΩ	2	6R5697	BTS-560K	Horiz. AFC Grid
		"	R91	8200Ω	2	6R2004	BTS-8200	Horiz. AFC Filter
		"	R92	180KΩ	2	6R6444	BTS-180K	Horiz. AFC Cathode
		"	R93	100KΩ	2	6R6031	BTS-100K	Voltage Divider
		"	R94	100KΩ	2	6R6031	BTS-100K	Horiz. Osc. Grid
		"	R95	3.3 Meg.	2	6R2118	BTS-3.3 Meg.	Voltage Divider
		"	R96	150KΩ	2	6R6398	BTS-150K	Feedback
		"	R97	120KΩ	2	6R5698	BTA-120K	Horiz. Osc. Plate
		"	R98	10KΩ	2	6R6320	BTS-10K	Horiz. Osc. Decoupling
		"	R99	47Ω	2	6R2108		Parasitic Suppressor
		"	R100	1 Meg.	2	6R6004	BTS-1 Meg.	Horiz. Output Grid
		"	R101	82Ω	2	6R488113		Horiz. Output Cathode
		"	R102	10KΩ	2	6R476060	BT-2-10K	Horiz. Output Screen
		"	R103	560KΩ	2	6R5697	BTS-560K	Feedback
		"	R104	2200Ω	2		BTS-2200	Series Deflection Coil
		"	R105	3.3Ω	2	17K485412	BW-2-3.3	HV Filaments
		"	R106	820KΩ	2	6R2053		HV Filter
		"	R107A	1000Ω	2		AB-1000	Voltage Divider
		"	R107B	1500Ω	2		AB-1500	" "
		"	R108	2200Ω	2		AB-2200	" "
		"	R109	1800Ω	2	6R3964	BT-2-1800	Voltage Divider See Note 14
		"	R110	1000Ω	10		AB-1000	Voltage Divider See Note 12
		"	R111	270Ω	2			Voltage Divider See Note 1
		"	R112	560Ω	2	6R488036	BT-2-560	" "
		"	R113	6800Ω	2		BT-2-6800	Voltage Divider See Note 15
		"	R114	6800Ω	2		BT-2-6800	" "
		"	R115	560Ω	2	6R488036	BT-2-560	Filter See Note 16
		"	R116	560Ω	2	6R488036	BT-2-560	" "
		"	R117	10Ω	2	6R488144	BW-2-10	Surge Limiter See Note 17
		"	R118	10Ω	2	6R488144	BW-2-10	" "
		"	R119	10Ω	2	6R488144	BW-2-10	" "
		"	R120	10Ω	2	6R488144	BW-2-10	" "
		"	R121	10Ω	2	6R488144	BW-2-10	" "
		"	R122	10Ω	2	6R488144	BW-2-10	" "
		"	R123	1 Meg.	2	6R6004	BTA-1 Meg.	Isolation See Note 17
		"	R124	57Ω	10	17A484810		Line Dropping See Note 17

MOTOROLA MODELS VT05, VT05M, VK106, VK106B, VK106M, VT107, VT107M

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	MOTOROLA	STANCOR	CHICAGO	MERIT
					PART No.	PART No.	PART No.	PART No.
T1A	117VAC ② 2.1A	730VCT ② 2.23 ADC 460VCT ② .058 ADC	5VAC ② 3A	5VAC ② 2A	††	P-8157	TP-450	
T1B	117VAC	SEC. 4 5VAC ② 2A	SEC. 5 6.3VAC ② 7.0A	SEC. 6 6.3VAC ② .6A	25C90052##			

†† Used in chassis TS-9A and TS-9C.

Used in chassis TS-9 and TS-9B.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	DC RESISTANCE		MOTOROLA PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.					
T2	136Ω Tap. ② 97Ω		24B484078				Hor. Osc. Trans.
T3	56Ω	160Ω	24B485416	A-8117	TFB-1		Vert. Blocking Osc. Hor. Output Trans.
T4	430Ω Tap. ② 185Ω	SEC. 1 10.6Ω Tap ② .6Ω SEC. 2 0Ω	25C90052				
T5	540Ω	11Ω	24B4854416	A-8115	TS0-4	A-3035	Vert. Output Trans.
T6A	14Ω		24K485474	DY-1			Hor. Deflection Yoke
T6B	64Ω						Vert. Deflection Yoke
T7	540Ω		24B84159				Focus coil.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MOTOROLA PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T8	5300Ω	3.5Ω	310Ω	.4Ω	25B489030	A-3849##	R0-9##	A-2930##	## Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	PART No.	MEISSNER PART No.	
L1	Ant. Coil	0Ω		1X470353		Includes High Freq. and Low Freq. Shunt, Trimmers and antenna receptacle. Used in chassis TS-9C only. Used in chassis TS-9, TS-9A and TS-9B Used in chassis TS-9C only. Sound Take-off is zero resistance. Wound on 27KΩ resistor. Wound on 1 Meg. resistor. Wound on 1 Meg. resistor. Wound on 27KΩ resistor. Wound on 22KΩ resistor. Used in chassis TS-9C only.
L2	Fil. Choke	.1Ω		24A90064		
L3A	1st Video IF	.1Ω				
B	1st Video IF Trans.			24B489071		
L4	Fil. Choke	.1Ω		24A90064		
L5	Fil. Choke	.1Ω		24A90064		
L6	RF Choke	.1Ω		24A90064		
L7	2nd Video IF Trans.	.2Ω	.2Ω	24B489071		
L8	Fil. Choke	.1Ω		24A90064		
L9	RF Choke	.1Ω		24A90064		
L10	3rd Video IF Trans.	.2Ω	.2Ω	24B489071		
L11	RF Choke	.1Ω		24A90064		
L12	4th Video IF Trans. & Sound Take-Off	.2Ω	.2Ω			
L13	5th Video IF Trans.	.2Ω	0Ω	24B489075		
L14	Peaking	4.5Ω		24K484137		
L15	Sound Trap	2Ω		24B484077		
L16	Peaking	2.2Ω		24K484136		
L17	Peaking	2.2Ω		24K484136		
L18	Peaking	4.5Ω		24K484137		
L19	1st Sound IF Coil	.1Ω		24K484082		
L20	2nd Sound IF Coil	.5Ω				
L21	3rd Sound IF Trans.	.1Ω	.1Ω	24B484086		
L22	RF Choke	.1Ω		24A90064		
L23	Disc. Trans	.1Ω	.1Ω	24B471340		
L24	Horiz. size Control	.1Ω		24B90119		
L25	Horiz. Linearity Control	38Ω		24B470796		

PARTS LIST AND DESCRIPTIONS (Continued)

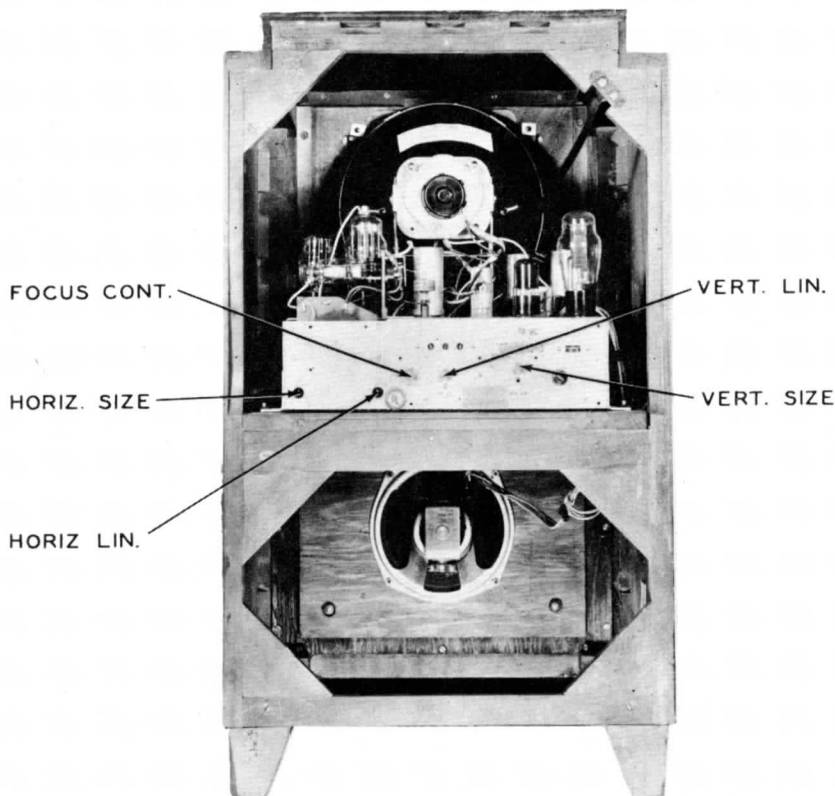
SPEAKER

ITEM No.	RATING		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	MOTOROLA	JENSEN	QUAM	
			PART No.	PART No.	PART No.	
SP1	100Ω	3.5Ω	50B489002		#	# Supplied on request. Specify field resistance and current.
SP2	CONE DIA. 7 1/4"	V. C. DIA. 3/4"				

MISCELLANEOUS

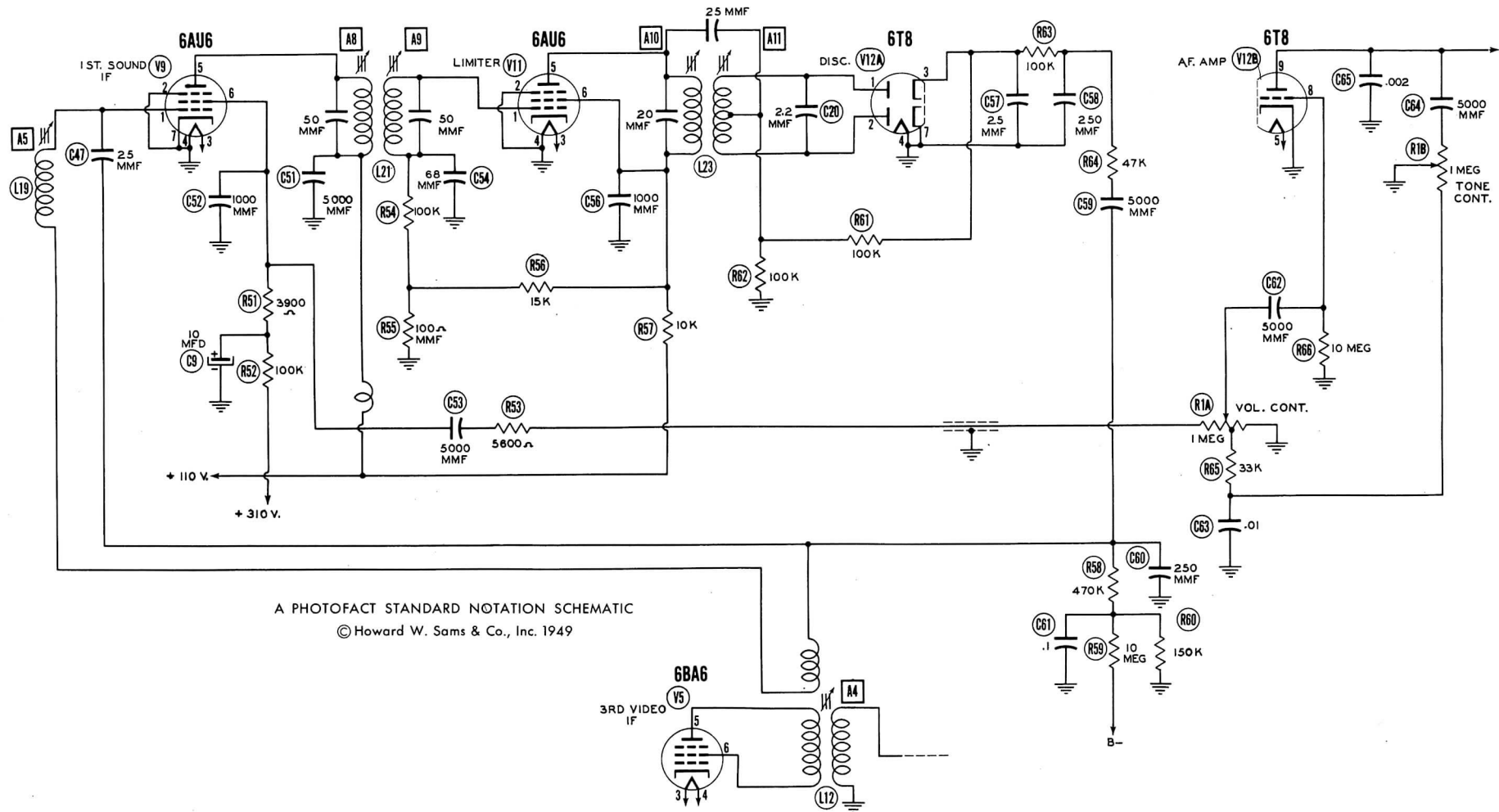
ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M1	Crystal Rect.	48A90173	1N34
M2	Ion Trap	24B484822	Permanent Magnet Type
M3	Tuner	1X484850	TT-3 Complete
M4	Fuse		Type-SAG, 1/8 Amp.
	Iron Core	46K471143	Includes screw for L25 and T-2
	Iron Core	46K471434	Includes screw for L24
	Iron Core	46A70023	Includes screws for L3B, L7, L10, L12, L13, L15, L19.
	Iron Core	46K471337	Includes screws for L23, Pri. and Sec.
	Iron Core	46A484198	Threaded for L21 Pri. and Sec. tuning
	Line Cord Plug	23K471323	Interlock on chassis.
	Socket	9B90116	Picture Tube 12 pin with leads.
	Cabinet	16E484880	VT-105, Table Model Brown Mahogany
	Cabinet	16K484881	VT-105M Table Model Red Mahogany
	Knob	36K485478	Walnut Plastic: Brightness, Horiz. Hold and Off-Tone Control for VT-105, and VT-106.
	Knob	36A485477	Mahogany Plastic: Brightness and Horiz. Hold and Off-Tone Controls for VT-105M.
	Knob	36K485481	Walnut Plastic: Fine Tuning for VT-105 and VT-106.
	Knob	36A485480	Mahogany Plastic: Fine Tuning for VT-105M.
	Knob	36K485490	Walnut Plastic: Contrast and Volume for VT-105 and VT-106.
	Knob	36B485498	Mahogany Plastic: Contrast and Volume for VT-105M.
	Knob	36K485493	Walnut Plastic: Vertical Hold for VT-105 and VT-106.
	Knob	36K485492	Mahogany Plastic: Vertical Hold for VT-105M.
	Knob	36K485487	Walnut Plastic: Channel Selector for VT-105 and VT-106.
	Knob	36B485486	Mahogany Plastic: Channel Selector for VT-105M.
	Plug	28A470122	4 Pin for Antenna Receptacle.
	Window & Gasket Assy.	1X471310	Safety Glass Window with Felt Gasket.

MOTOROLA MODELS VT105, VT105M, VK106, VK106B, VK106M, VT107, VT107M



CABINET-REAR VIEW

ALTERNATE SOUND IF CIRCUIT-CHASSIS TS-9B



A PHOTOFAC STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1949