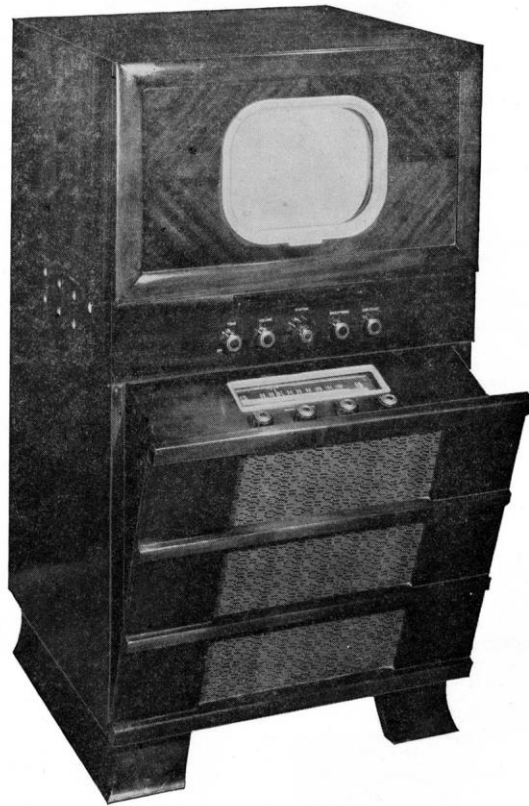


PHOTOFACT\* Folder

MOTOROLA MODELS  
VK101, VT101, VF102



MOTOROLA MODELS  
VK101, VT101, VF102

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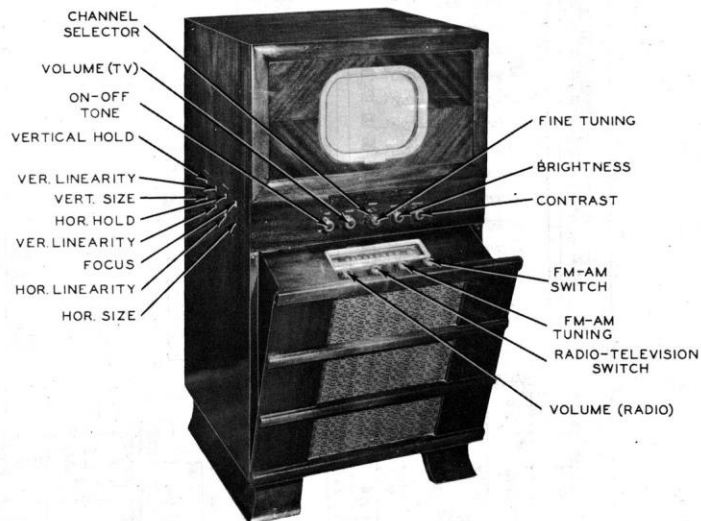
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Date 12/48—No. 4821-14 Set No. 51—Folder No. 14

PHOTOFACT\* Folder

MOTOROLA MODELS VK101,  
VF102



MOTOROLA MODELS VK101,  
VF102

MOTOROLA MODEL VK101

TRADE NAME	Motorola, Models VF101, VK101, VK101M, VF102, VF102A, VF102C (Chassis TS-3, TS-5, TS-7)
MANUFACTURER	Motorola Inc., 4545 Augusta Blvd., Chicago, Ill.
TYPE SET	AM-FM, TV Receiver. Phonograph on VF102.
TUBES	Thirty-four.
POWER SUPPLY	105-125 V., 60 Cycles AC RATING 1.34 Amps. on Radio, 2.76 Amps. on TV @ 117V.
TUNING RANGE	540-1620KC, 88-108MC & Complete Thirteen Television Channel Coverage

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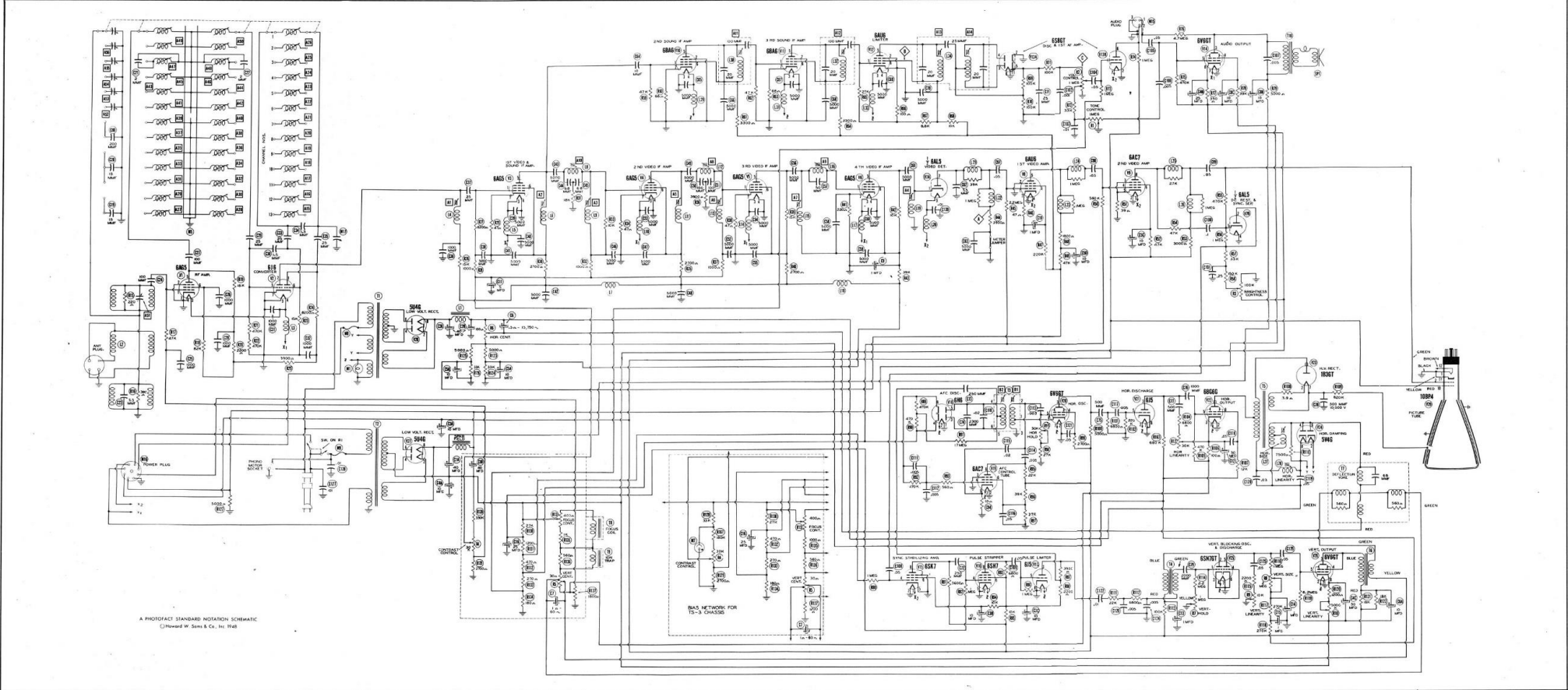
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DATE 12/48-#4821-14 SET #51-FOLDER #14



A PHOTOFACT STANDARD NOTATION SCHEMATIC  
 (Copyright © Radio Shack & Co., Inc. 1948)

BASS NETWORK FOR T-3 CHASSIS

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE10 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE11 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE12 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE13 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE14 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE15 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE16 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE17 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE18 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE19 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE20 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE21 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE22 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE23 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE24 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE25 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE26 TUBES

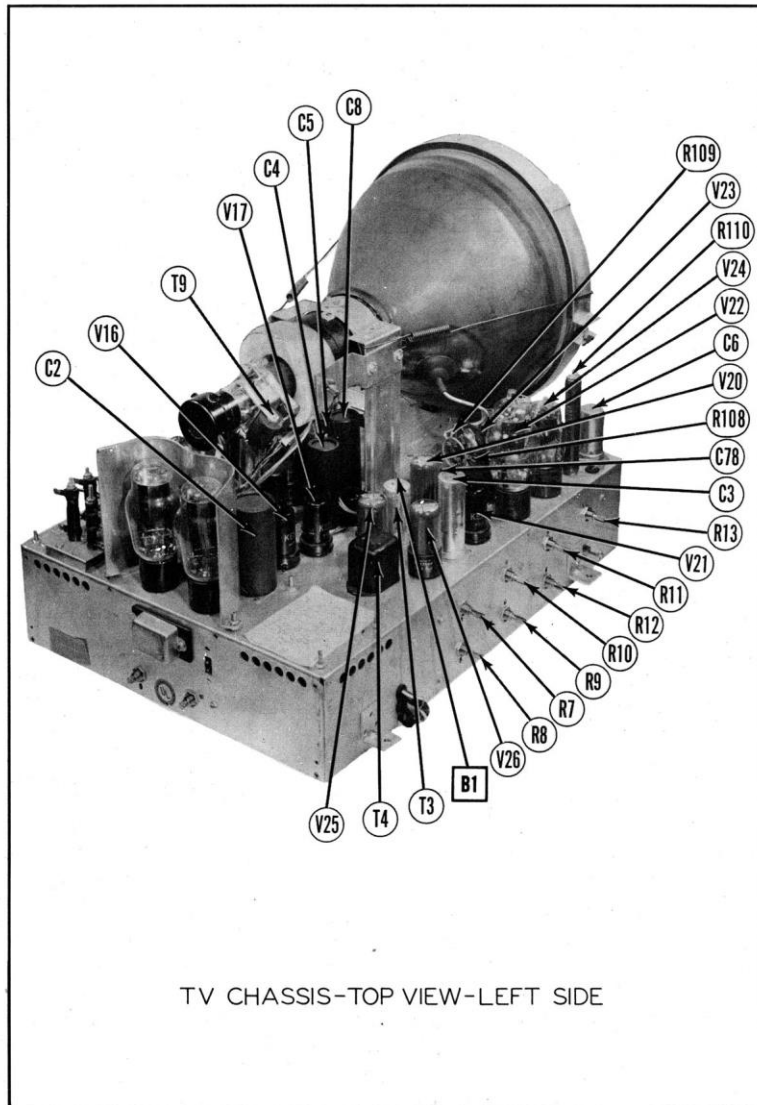
PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE27 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE28 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE29 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE30 TUBES

PUSH-PULL AUDIO AMPLIFIER SECTION WITH 6BE31 TUBES



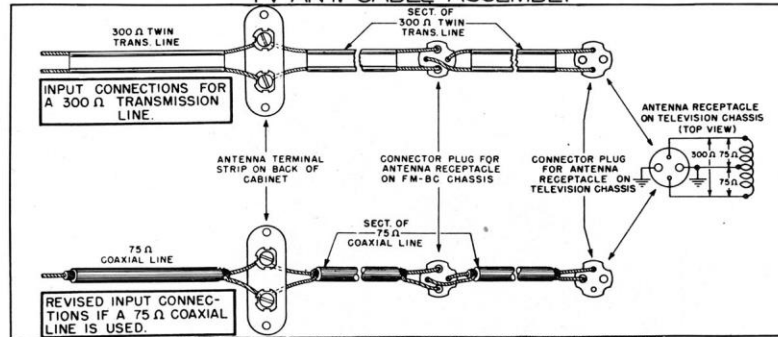
MOTOROLA MODELS VK101,  
VFO2

TV CHASSIS-TOP VIEW-LEFT SIDE

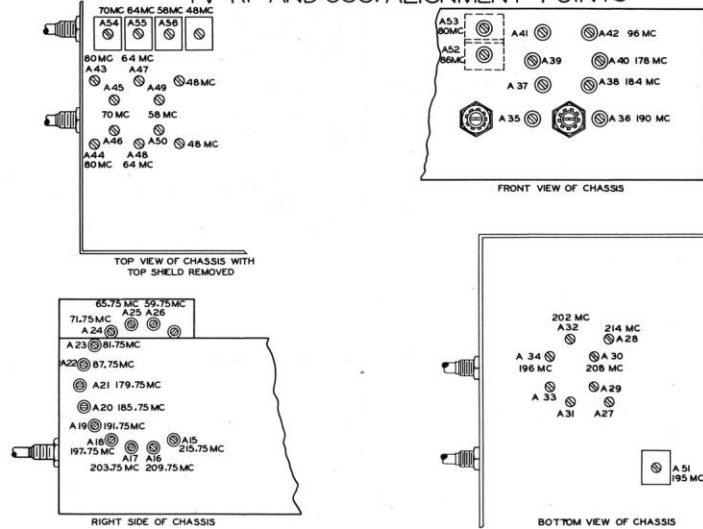
## DISSASSEMBLY INSTRUCTIONS

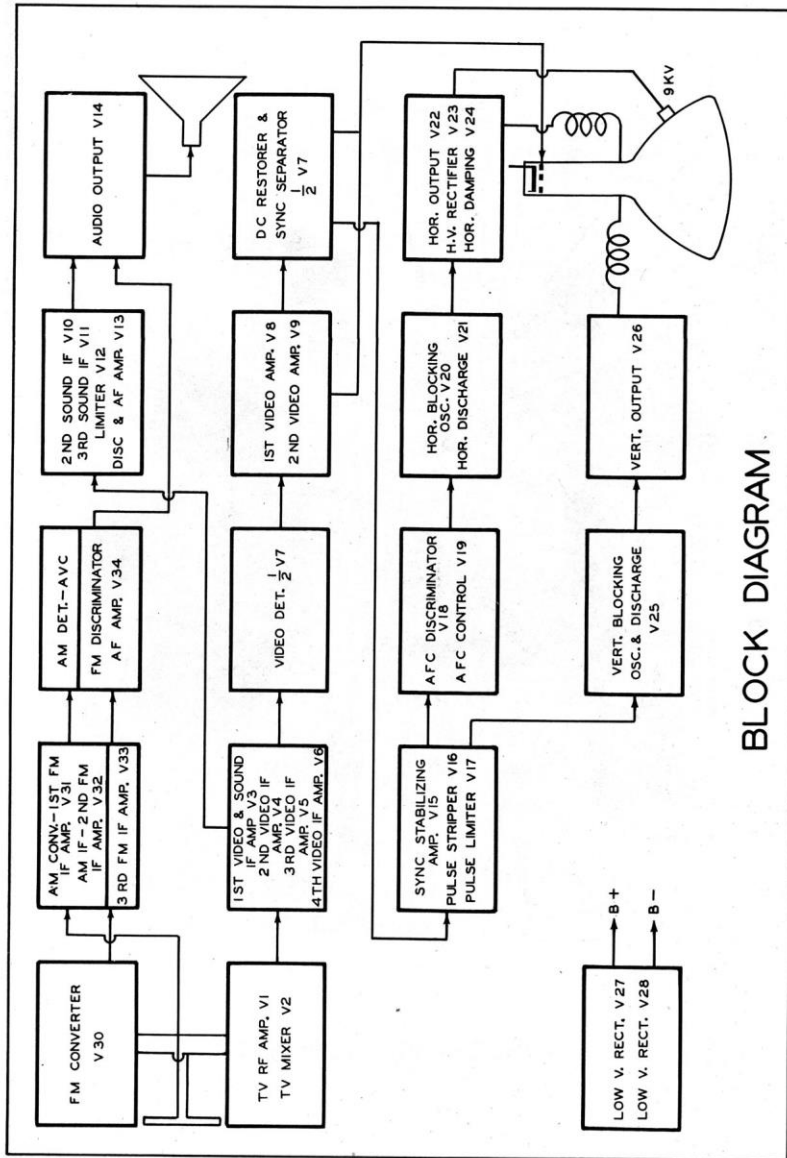
1. Remove 20 screws holding backplate.
2. Remove backplate and power plug.
3. Remove five push-on type knobs on TV set.
4. Loosen two set screws in channel selector knob and remove.
5. Remove four screws holding wooden bracket supporting picture tube.
6. Unplug antenna from socket near front of TV chassis.
7. Unplug two power cables and speaker cable in lower compartment.
8. Remove four bolts holding TV chassis.
9. Pull power and speaker cables up through hole near TV chassis.
10. Carefully slide TV chassis out of cabinet. Lift rear of chassis slightly to prevent picture tube from binding on top of cabinet.
11. Remove pilot light below speaker from bracket.
12. Remove four nuts and lock washers holding speaker and remove speaker.
13. Remove four knobs on radio chassis.
14. Unplug antenna lead-in from radio chassis. Also remove small piece of fiber that holds antenna lead-in.
15. Remove four screws holding radio chassis to cabinet and remove radio chassis.
16. Remove three screws that hold radio chassis to wooden platform.

### TV ANT. CABLE ASSEMBLY



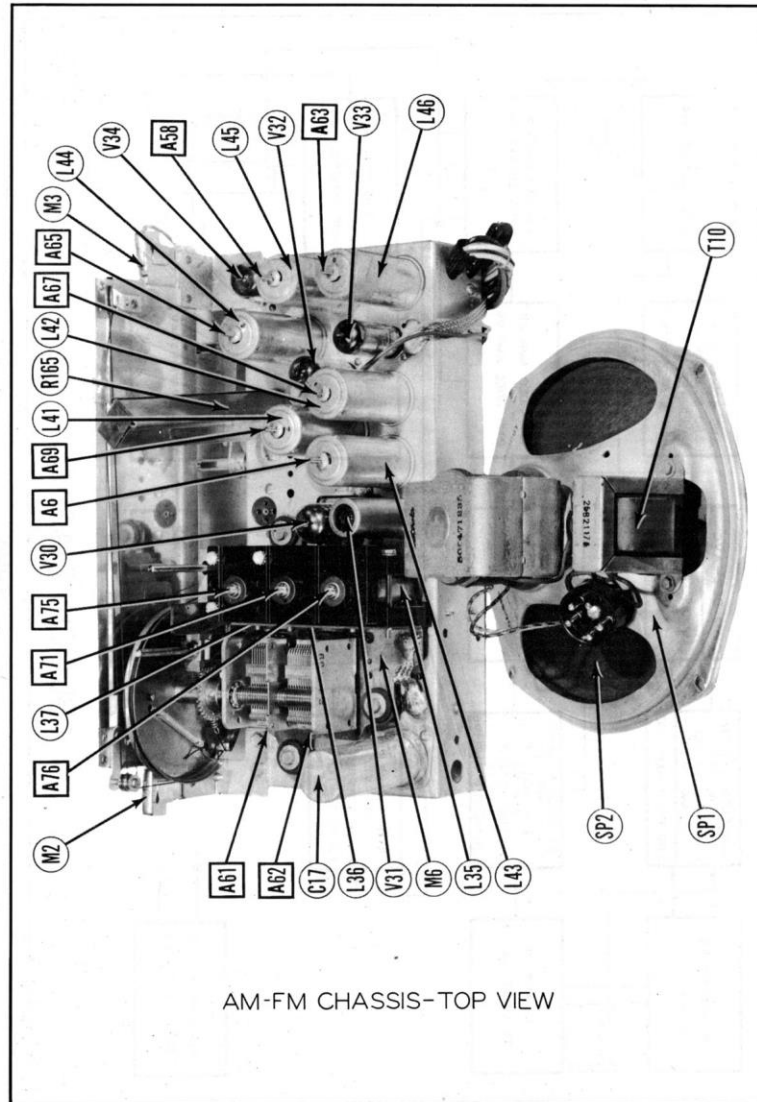
### TV RF AND OSC. ALIGNMENT POINTS

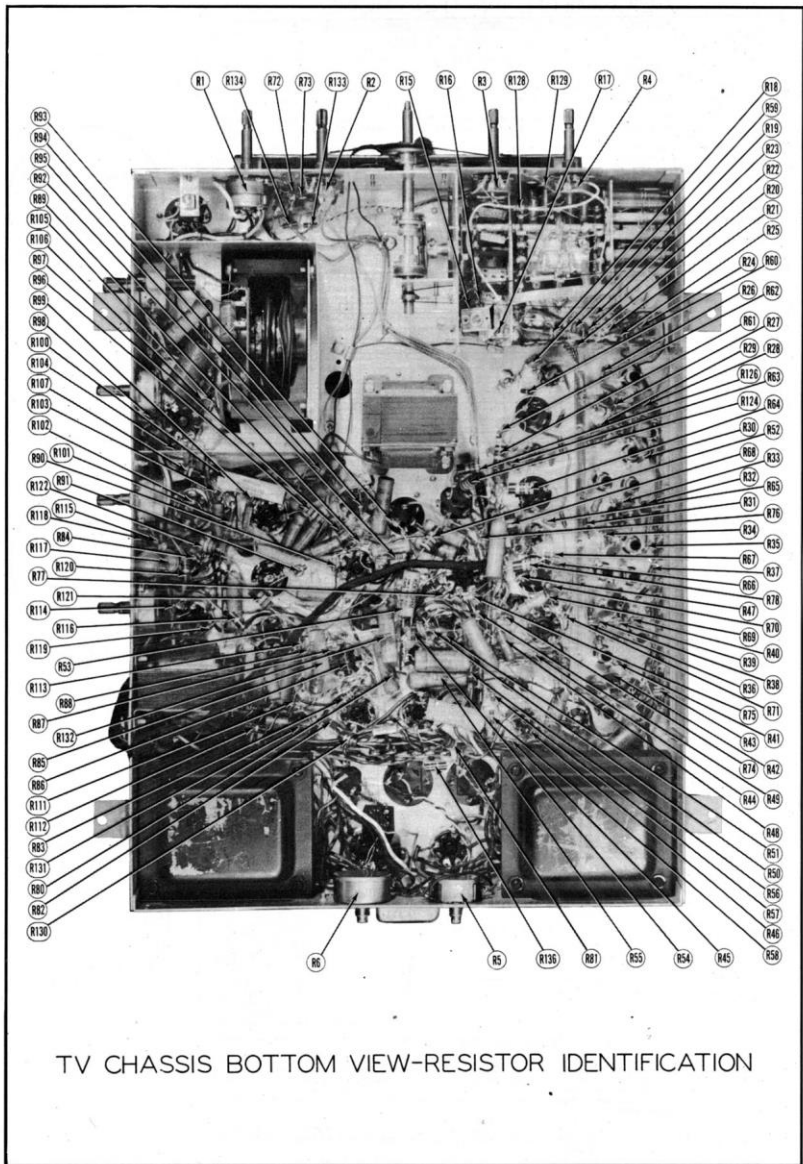




**BLOCK DIAGRAM**

**MOTOROLA MODELS VK101,  
VF102**





MOTOROLA MODELS VK101,  
VF102

TV CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



## ALIGNMENT INSTRUCTIONS

### ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Remove horizontal oscillator, 6V6GT (V20) to disable high voltage. Cathode ray tube must be removed for some adjustments and may be left out during the entire alignment procedure. Signal generator leads must be kept short as possible to avoid regeneration. Keep signal generator cable away from IF stages.

Open the jumper between the bottom end of R44 and ground and connect an 0-500 microampere meter across C63. If the microammeter is not available, leave the jumper connected and connect a vacuum tube voltmeter, with the high side to the junction of L21 and L22, and the low side to chassis.

Adjust the contrast control for four volts measured at the center terminal to reduce the gain of the IF amplifier and reduce the possibility of oscillation. Leave at this setting throughout alignment procedure.

With the signal generator at zero there should be a contact potential current of from 50 to 100 microamperes. A reading higher than this indicates oscillation and should be corrected before alignment is attempted.

Use insulated alignment screwdriver for alignment.

#### VIDEO IF ALIGNMENT USING VTVM

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1 .001MFD	Pin #5 (gr1d) of 6J6 (V2).	23.5MC	8	See prealignment instructions.	A1	Adjust for maximum. Be sure signal input is low enough to prevent overload.
2 .001MFD	"	22.75MC	"	"	A2 or A3	Adjust for maximum. Keep slugs approx. same position.
3 .001MFD	"	"	"	"	A4	Adjust for maximum.
4 .001MFD	"	24.75MC	"	"	A5 or A6	Adjust for maximum. Keep slugs approx. same position.
5 .001MFD	"	26MC	"	"	A7	Adjust for maximum.
6 .001MFD	"	21.9MC	"	"	A8	Adjust for minimum. Increase generator output for good reading.
7 .001MFD	"	20.5MC	"	"	A9	"
8 .001MFD	"	27.9MC	"	"	A10	"
9 .001MFD	"	22.75MC	"	"	A2 or A3	Recheck to compensate for effects of trap adjustments.
10 .001MFD	"	24.75MC	"	"	A5 or A6	"
11 .001MFD	"	26MC	"	"	A7	"

If sweep signal generator is available continue with Step 12, otherwise plot the IF response curve with VTVM and check against Figure 1.

#### VIDEO IF ALIGNMENT USING OSCILLOSCOPE

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12 .001MFD	Pin #5 (gr1d) of 6J6 (V2)	24MC	See Fig. 1	8	High side to Point $\odot$ . Low side to chassis.	A1, A2, A5, A6, A7	Replace meter jumper. Keep generator output low enough to prevent overloading. Pattern should be approximately as shown in Fig. 1. Make only slight adjustments.

#### SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
13 .001MFD	Pin #5 (gr1d) of 6J6 (V2)	21.9MC	21.9MC	8	High side to Point $\odot$ . Low side to chassis.	A11, A12	Adjust for maximum amplitude with marker at peak of curve, Fig. 2.
14 .001MFD	"	600KC sweep	"	"	High side to Point $\odot$ . Low side to chassis.	A13	Adjust for maximum amplitude and straightness of center line of "S" curve. See Fig. 3. Be sure gen. output is low enough to prevent limiter action.
15 .001MFD	"	21.9MC (400 $\gamma$ mod.)	"	"	"	A14	Adjust for minimum audio signal which appear at ends of pattern. See Fig. 3. Audio signal will appear on either side of correct setting of A14.

#### ALTERNATE SOUND IF ALIGNMENT USING VTVM

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
13 .001MFD	Pin #5 (gr1d) of 6J6 (V2).	21.9MC	8	High side to Point $\odot$ . Low side to chassis.	A11, A12, A13	Detune A14 by turning two turns counterclockwise. Adjust A11, A12 and A13 for maximum deflection. Keep signal generator output low to prevent limiting.
14 .001MFD	"	"	"	"	A14	Adjust for zero. Slight movement in opposite directions should result in voltages of opposite polarity. Continue with Step 16.

#### RF ALIGNMENT USING VTVM

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

It will be necessary to remove the cathode ray tube to reach the RF and antenna adjustments for the first five channels.

The contrast control should be set for four volt bias.

Connect a vacuum tube voltmeter across the volume control to indicate correct oscillator setting. Correct alignment may be indicated by a vacuum tube voltmeter across R44 or a microammeter in series with R44 (across C63).

Channel 1 has been omitted in many models and need not be aligned if included.

Leave the fine tuning control in half capacity position during oscillator and RF Alignment.

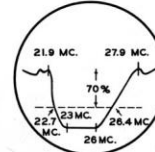


FIG. 1

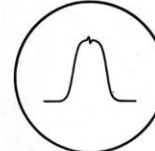


FIG. 2

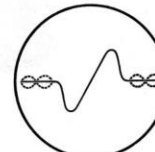


FIG. 3

(CONT.)

READ RF ALIGNMENT NOTES BEFORE CONTINUING WITH STEP 16

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT	ADJUST	REMARKS
16 Resistive terminals See above	across antenna terminals	215.75MC	13	See above	A15	Adjust for zero across volume control. Polarity will change as adjustment is moved slightly about this point.
17	"	209.753C	12	"	A16	"
19	"	203.753C	11	"	A17	"
20	"	197.753C	10	"	A18	"
21	"	191.753C	9	"	A19	"
22	"	185.753C	8	"	A20	"
23	"	179.753C	7	"	A21	"
24	"	173.753C	6	"	A22	"
25	"	167.753C	5	"	A23	"
26	"	161.753C	4	"	A24	"
27	"	155.753C	3	"	A25	"
28	"	149.753C	2	"	A26	"
29	"	143.753C	15	"	A27, A28	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 second slug.
30	"	209.753C	12	"	A29, A30	"
31	"	203.753C	11	"	A31, A32	"
32	"	197.753C	10	"	A33, A34	"
33	"	191.753C	9	"	A35, A36	"
34	"	185.753C	8	"	A37, A38	"
35	"	179.753C	7	"	A39, A40	"
36	"	173.753C	6	"	A41, A42	"
37	"	167.753C	5	"	A43, A44	"
38	"	161.753C	4	"	A45, A46	"
39	"	155.753C	3	"	A47, A48	"
40	"	149.753C	2	"	A49, A50	Adjust for maximum.
41	"	143.753C	10	"	A51	"
42	"	137.753C	9	"	A52	"
43	"	131.753C	8	"	A53	"
44	"	125.753C	4	"	A54	"
45	"	119.753C	3	"	A55	"
46	"	113.753C	2	"	A56	"

AM FM ALIGNMENT USING OUTPUT METER

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
46 .1 MFD. Pin #7 (grid) of 6B6 Converter	Modulated	455KC	BC	1620KC (Fully open)	Across voice coil	A57, A58, A59, A60	Adjust for maximum output
47 .1 MFD. To antenna terminals.	1620KC	"	"	"	"	A61	"
48 200PFD. Pin #7 (grid) of 12AT7 (V30).	4.2MC	FM	Fully open.	"	"	A62	"
49 .001MFD. Pin #1 (grid) of 6B6 (V31).	4.2MC	FM	Fully open.	"	"	A63, A64, A65, A66, A67, A68, A69	Detune discriminator by tuning A70 out as far as it will go. Adjust A63 through A69 for maximum output. Continue with Step 54.

ALTERNATE FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

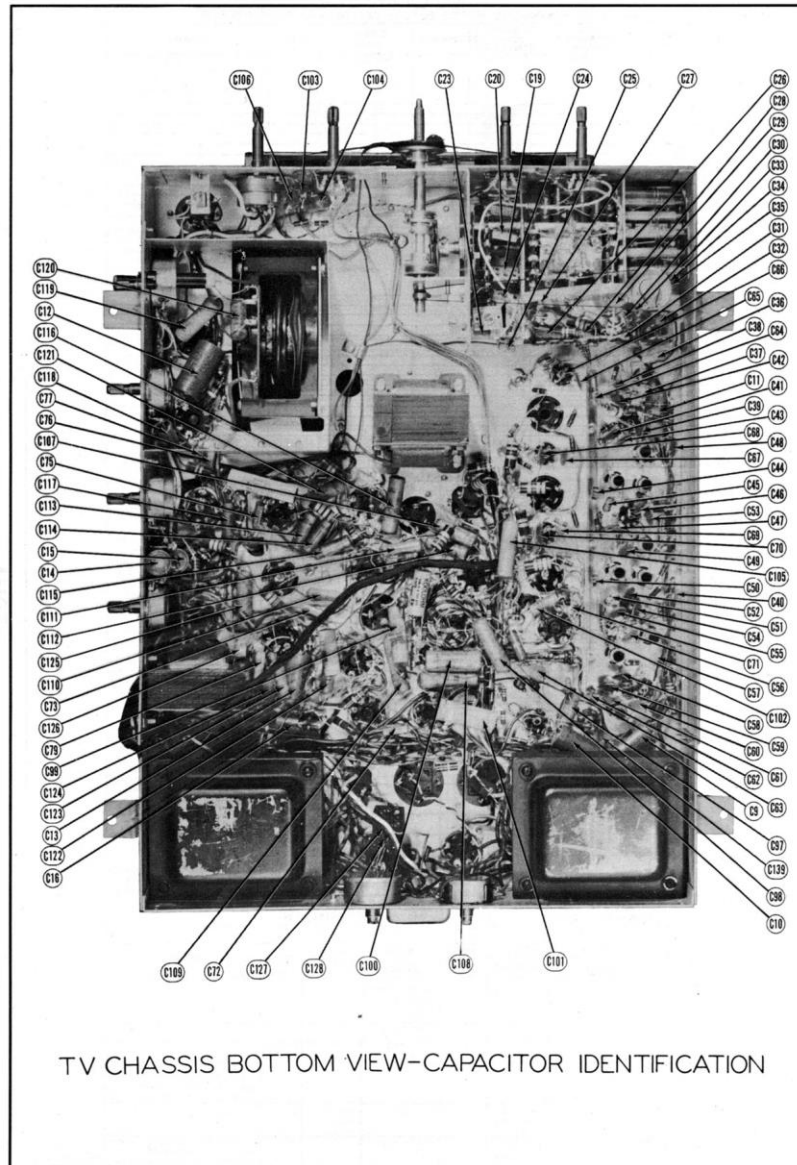
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
50 .001MFD. Pin #1 (grid) of 6B6 (V31).	4.2MC	FM	Fully open.	Across volume control	"	A63	Adjust for maximum amplitude.
51 .001MFD. Pin #1 (grid) of 6B6 (V32).	250KC sweep	FM	Fully open.	"	"	A70	Adjust for symmetrical pattern with peaks approximately 100KC above and below 4.2MC. Readjust A63 and A70 for maximum amplitude and linearity of response above and below center frequency.
52 .001MFD. Pin #1 (grid) of 6B6 (V33).	4.2MC	FM	Fully open.	"	"	A64, A65	Adjust for maximum amplitude and best symmetry of pattern.
53 Direct FM antenna terminal.	4.2MC	FM	Fully open.	"	"	A66, A67	Adjust for maximum amplitude and best symmetry of pattern. Before proceeding with RF alignment detune A70 so that an output meter may be used

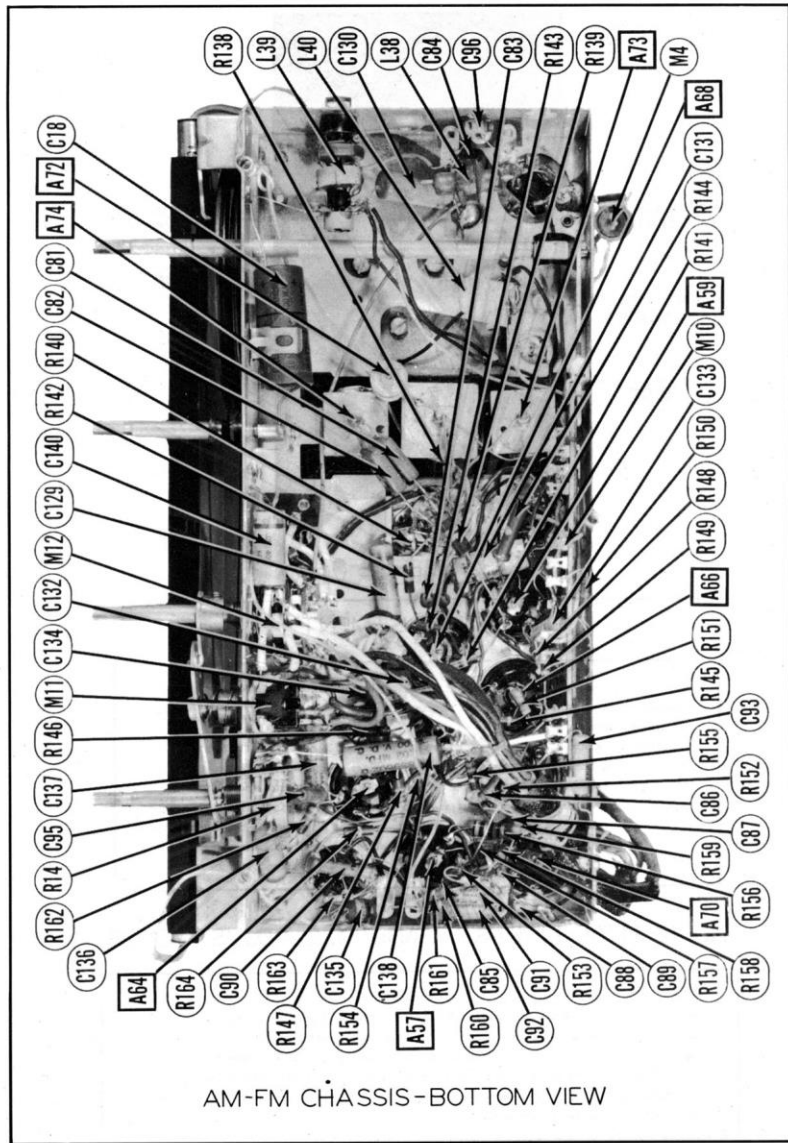
FM RF ALIGNMENT

With gang fully closed adjust pointer to end of line on dial scale. Check position of FM oscillator tuning core (A71). It should be two turns from tight against the bakelite plate.

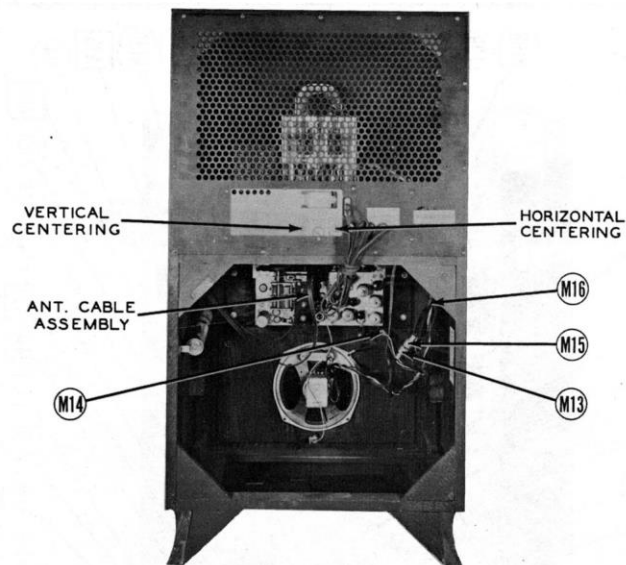
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
54 Direct To antenna terminals.	90MC (Modulated)	FM	90MC (Distance between bakelite pieces 1-5/32")	Across voice coil	"	A72	Adjust for maximum output
55	90MC (Modulated)	"	"	"	"	A73, A74	"
56	105MC (Modulated)	"	"	"	"	A75, A76	"
57	300C	FM	105MC	Across voice coil	"	A73	Repeat Steps 51 and 52 until no further improvement is noted. Make the final adjustment at 105MC. Adjust for maximum output.
58 .001MFD. Pin #7 (grid) of 12AT7 (V30).	4.2MC (Modulated)	FM	Fully open	"	"	A70	Adjust for minimum. Correct setting is sharply defined minimum between two maximums.

MOTOROLA MODELS VK101, VF102





MOTOROLA MODELS VK101,  
VH102



CABINET-REAR VIEW

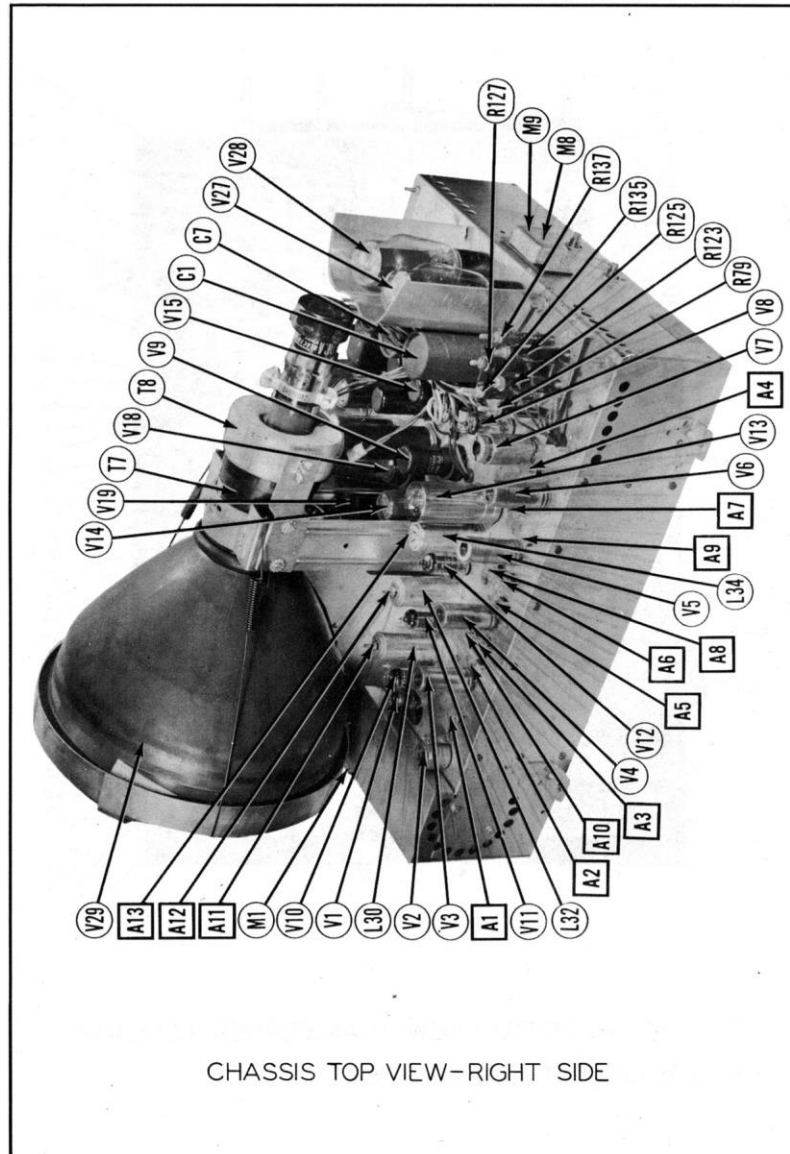
### AFC ADJUSTMENT

Rotation of the horizontal hold control to either extreme should not throw the horizontal oscillator out of synchronization. If it does fall out of synchronization, the AFC system should be aligned.

With a television signal tuned in, adjust the vertical hold control until the picture is stable vertically. Set the horizontal hold control in the center of its rotation. Ground the grid of V-17 which removes synchronizing pulses from both the horizontal and the vertical system, so the picture will drift vertically. Adjust B-1 until the picture lines are stable horizontally. Remove the short. The picture should lock, but will probably be folded on the left side. Adjust B-2 until the picture unfolds. Replace the short and again adjust B-1 for picture stability. After removing the short, again adjust B-2 for maximum picture width.

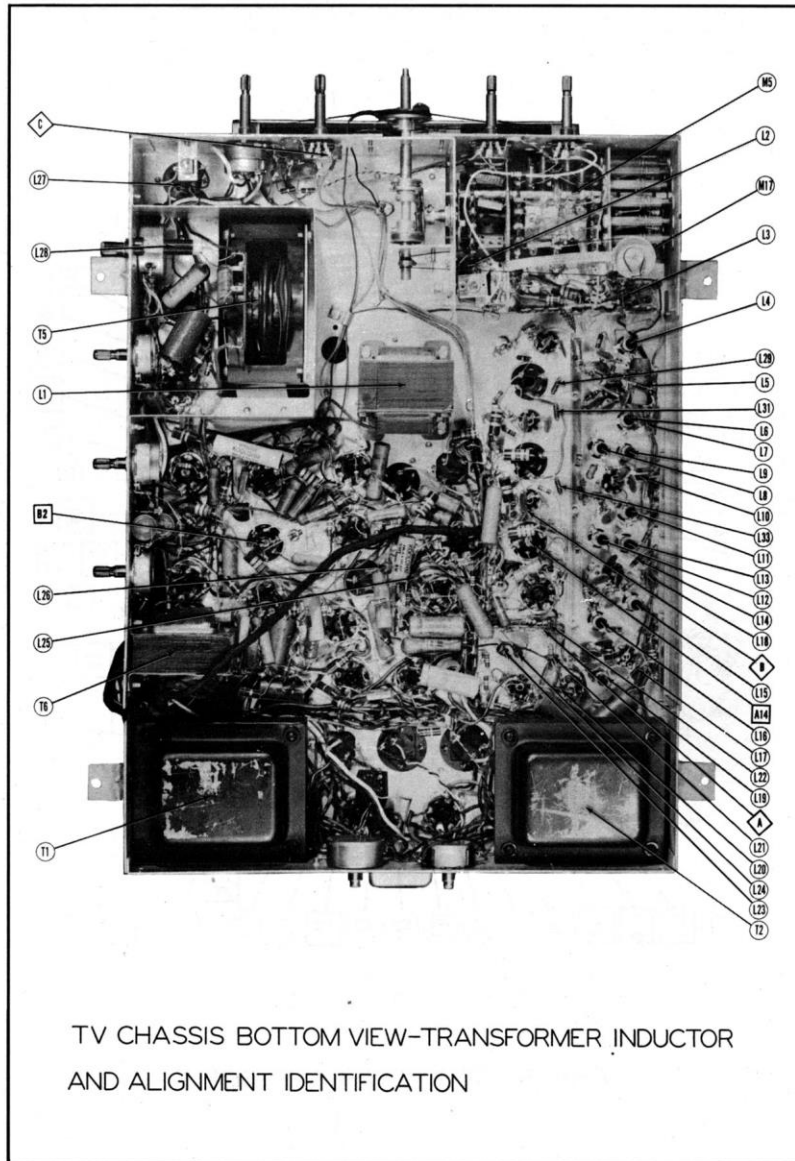
### HORIZONTAL LINEARITY AND SIZE ADJUSTMENTS

The horizontal size control L27 should be adjusted for a minimum picture width of 8 1/4 inches. Any change in the adjustment of the horizontal size control will probably necessitate readjustment of the horizontal linearity controls. The horizontal linearity control R12 affects primarily the left side of the picture, the horizontal linearity coil L28 will have its major effect near the center of the picture, while the horizontal size control operates mainly on the right half of the picture. The adjustments should be made while receiving a test pattern or while using a cross-hatch generator.



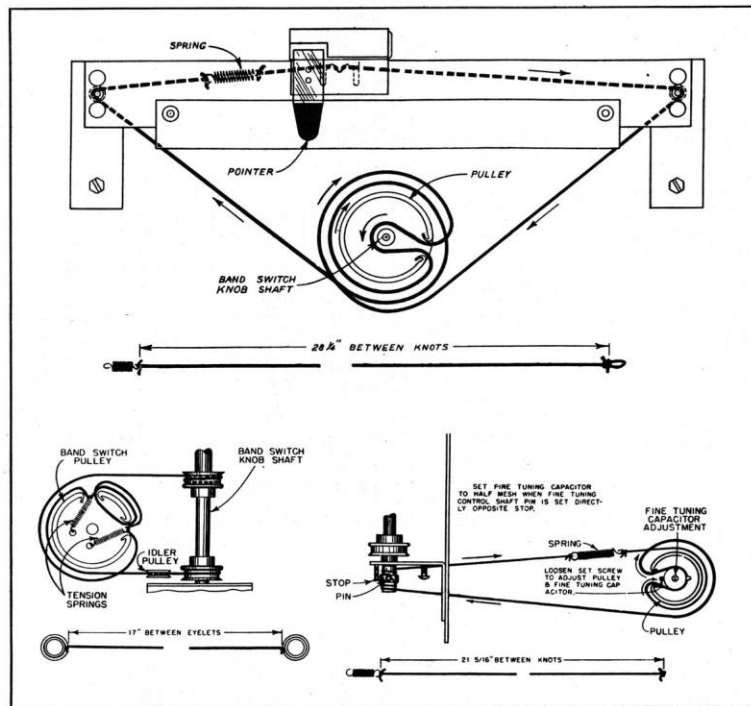
CHASSIS TOP VIEW-RIGHT SIDE

MOTOROLA MODELS VK101,  
VF102



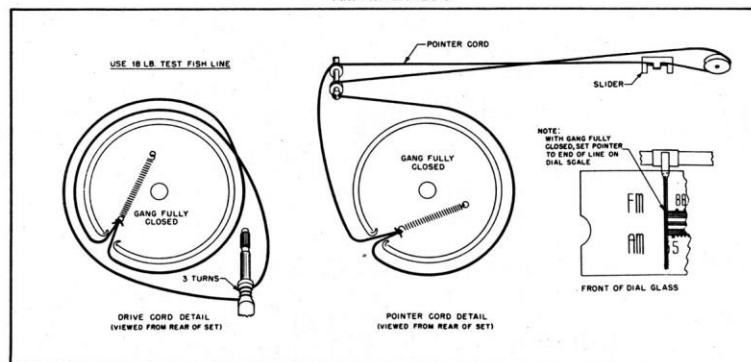
TV CHASSIS BOTTOM VIEW-TRANSFORMER INDUCTOR  
AND ALIGNMENT IDENTIFICATION

TV CHASSIS



MOTOROLA MODELS VK101,  
VF102

AM-FM CHASSIS



DIAL CORD STRINGING



VOLTAGE AND RESISTANCE MEASUREMENTS  
 MEASURED FROM POSITIVE TERMINAL OF CH  
 IN RADIO POSITION UNLESS OTHERWISE SPECIFIED

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
V 1	6A05	-110DC	OV.	6.2VAC	OV.	150VDC	110VDC	OV.	-	-
V 2	6A6	105VDC	105VDC	OV.	6.2VAC	-5VDC	-5VDC	OV.	-	-
V 3	6A05	-1.1VDC	5.7VAC	OV.	6.2VAC	OV.	135VDC	135VDC	5VDC	-
V 4	6A05	-1.1VDC	5.7VAC	OV.	6.2VAC	OV.	135VDC	135VDC	5VDC	-
V 5	6A05	-1.1VDC	5.7VAC	OV.	6.2VAC	OV.	135VDC	135VDC	5VDC	-
V 6	6A05	OV.	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 7	6A05	-1.1VDC	5.7VAC	OV.	6.2VAC	OV.	135VDC	135VDC	5VDC	-
V 8	6A05	-1.1VDC	5.7VAC	OV.	6.2VAC	OV.	135VDC	135VDC	5VDC	-
V 9	6A07	OV.	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 10	6A06	OV.	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 11	6A06	OV.	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 12	6A08	-5VDC	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 13	6A08	-5VDC	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 14	6A07	OV.	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 15	6A07	OV.	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 16	6A07	OV.	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 17	6A0	OV.	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 18	6A6	OV.	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 19	6A07	OV.	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 20	6A07	OV.	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 21	6A5	OV.	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 22	6B6E-G	-6VDC	OV.	-6VDC	OV.	-6VDC	-6VDC	-6VDC	-6VDC	*
V 23	180T	OV.	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 24	5V40	OV.	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 25	6A07	-1.0VDC	2.0VAC	OV.	-1.0VDC	5VDC	OV.	OV.	OV.	-
V 26	6A07	OV.	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 27	5V40	OV.	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 28	5V40	OV.	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 29	180P4	See below	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 30	12A7	145VDC	-1.7VDC	OV.	6.2VAC	65VDC	-5VDC	OV.	OV.	Pin 9
V 31	6B6E	OV.	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 32	6A6	-1.1VDC	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 33	6A6	OV.	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 34	6T8	-1.2VDC	-5VDC	-1.0VDC	6.2VAC	OV.	-5VDC	OV.	OV.	10. Meg. 50VDC

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Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
V 1	6A05	500Ω	0Ω	.1Ω	0Ω	200Ω	800Ω	0Ω	-	-
V 2	6A6	120Ω	100Ω	0Ω	.1Ω	1 Meg.	100Ω	0Ω	-	-
V 3	6A05	100Ω	47Ω	.1Ω	0Ω	700Ω	700Ω	47Ω	-	-
V 4	6A05	400Ω	47Ω	.1Ω	0Ω	220Ω	700Ω	47Ω	-	-
V 5	6A05	400Ω	47Ω	.1Ω	0Ω	220Ω	700Ω	47Ω	-	-
V 6	6A05	2Ω	20Ω	.1Ω	0Ω	800Ω	450Ω	200Ω	-	-
V 7	6A05	.1Ω	100Ω	.1Ω	0Ω	1.2 Meg.	0Ω	400Ω	-	-
V 8	6A06	2 Meg.	0Ω	0Ω	.1Ω	600Ω	200Ω	47Ω	-	-
V 9	6A07	0Ω	0Ω	0Ω	0Ω	500Ω	500Ω	.1Ω	300Ω	-
V 10	6A06	47Ω	0Ω	0Ω	.1Ω	800Ω	800Ω	60Ω	-	-
V 11	6A06	47Ω	0Ω	0Ω	.1Ω	800Ω	800Ω	60Ω	-	-
V 12	6A08	27Ω	0Ω	0Ω	.1Ω	100Ω	100Ω	0Ω	-	-
V 13	6A07	100Ω	0Ω	0Ω	100Ω	100Ω	1 Meg.	.1Ω	1 Meg.	-
V 14	6A07	0Ω	0Ω	0Ω	50Ω	400Ω	470Ω	0Ω	-	-
V 15	6A07	0Ω	0Ω	0Ω	0Ω	1 Meg.	0Ω	200Ω	.1Ω	300Ω
V 16	6A07	0Ω	0Ω	0Ω	1 Meg.	0Ω	100Ω	.1Ω	100Ω	-
V 17	6A5	0Ω	0Ω	100Ω	100Ω	1 Meg.	500Ω	.1Ω	0Ω	-
V 18	6B6	0Ω	.1Ω	1.4 Meg.	440Ω	1.4 Meg.	450Ω	0Ω	900Ω	-
V 19	6A07	0Ω	0Ω	0Ω	0Ω	1.3 Meg.	100Ω	100Ω	.1Ω	200Ω
V 20	6A07	0Ω	0Ω	0Ω	50Ω	2.700Ω	270Ω	100Ω	.1Ω	100Ω
V 21	6A5	0Ω	0Ω	0Ω	700Ω	100Ω	200Ω	100Ω	.1Ω	0Ω
V 22	6B6E-G	100Ω	0Ω	100Ω	100Ω	470Ω	200Ω	.1Ω	300Ω	2.500Ω
V 23	180T	100Ω	100Ω	100Ω	100Ω	100Ω	100Ω	100Ω	100Ω	7.500Ω
V 24	5V40	100Ω	7.500Ω	100Ω	500Ω	100Ω	500Ω	100Ω	7.500Ω	-
V 25	6A07	2.2 Meg.	100Ω	0Ω	2.2 Meg.	1.5 Meg.	0Ω	0Ω	0Ω	100Ω
V 26	6A07	0Ω	.1Ω	100Ω	100Ω	6.2 Meg.	6.2 Meg.	0Ω	0Ω	100Ω
V 27	5V40	100Ω	110Ω	100Ω	440Ω	100Ω	460Ω	100Ω	110Ω	-
V 28	5V40	100Ω	400Ω	100Ω	1500Ω	100Ω	1500Ω	100Ω	4500Ω	-
V 29	180P4	See below	OV.	OV.	OV.	OV.	OV.	OV.	OV.	-
V 30	12A7	100Ω	1.5 Meg.	0Ω	.1Ω	.1Ω	100Ω	1 Meg.	0Ω	Pin 9
V 31	6B6E	200Ω	150Ω	.1Ω	0Ω	50Ω	200Ω	200Ω	-	-
V 32	6A6	5.2 Meg.	0Ω	0Ω	.1Ω	170Ω	470Ω	100Ω	-	-
V 33	6A6	.2Ω	0Ω	0Ω	.1Ω	470Ω	200Ω	60Ω	-	-
V 34	6T8	100Ω	100Ω	100Ω	.1Ω	0Ω	1 Meg.	0Ω	100Ω	10. Meg. 500Ω

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1. DC voltage measurements are 100 ohm load per volt AC voltage measured at 1000 ohms.
2. Socket connections are shown as bottom view.
3. Measured values are from sockets after completion of the rear panel controls, both minimum and maximum readings are given.
4. All voltages maintained at 117 volts for measurement.
5. Front panel controls set at maximum.
6. Measured values are from sockets after setting of the rear panel controls, both minimum and maximum readings are given.

MOTOROLA MODELS VK101,  
VF102

TUBES

PARTS LIST AND DESCRIPTIONS

ITEM No.	USE	REPLACEMENT DATA		PART No.	REMARKS
		MOTOROLA PART No.	STANDARD PART No.		
V1	6X4 Beam Power Tube	6X4	6X4	6X4	
V2	6X4 Beam Power Tube	6X4	6X4	6X4	
V3	6X4 Beam Power Tube	6X4	6X4	6X4	
V4	6X4 Beam Power Tube	6X4	6X4	6X4	
V5	6X4 Beam Power Tube	6X4	6X4	6X4	
V6	6X4 Beam Power Tube	6X4	6X4	6X4	
V7	6X4 Beam Power Tube	6X4	6X4	6X4	
V8	6X4 Beam Power Tube	6X4	6X4	6X4	
V9	6X4 Beam Power Tube	6X4	6X4	6X4	
V10	6X4 Beam Power Tube	6X4	6X4	6X4	
V11	6X4 Beam Power Tube	6X4	6X4	6X4	
V12	6X4 Beam Power Tube	6X4	6X4	6X4	
V13	6X4 Beam Power Tube	6X4	6X4	6X4	

CAPACITORS

Capacity values given in the reeling column are in mfd. for electrolytic and Paper Capacitors, and in mfd. for mica and Ceramic Capacitors.

ITEM No.	RATING	MOTOROLA PART No.	STANDARD PART No.	REMARKS	REPLACEMENT DATA		REMARKS
					MOTOROLA PART No.	STANDARD PART No.	
C1	10	23A90028	23A90028		23A90028	23A90028	
C2	10	23A90029	23A90029		23A90029	23A90029	
C3	10	23A90030	23A90030		23A90030	23A90030	
C4	10	23A90048	23A90048		23A90048	23A90048	
C5	10	23A90049	23A90049		23A90049	23A90049	
C6	10	23A90050	23A90050		23A90050	23A90050	
C7	10	23A90051	23A90051		23A90051	23A90051	
C8	10	23A90052	23A90052		23A90052	23A90052	
C9	10	23A90053	23A90053		23A90053	23A90053	
C10	10	23A90054	23A90054		23A90054	23A90054	

CAPACITORS (CONT.)

ITEM No.	RATING	MOTOROLA PART No.	STANDARD PART No.	REMARKS	REPLACEMENT DATA	REMARKS	NOTES
C11	10	23A90055	23A90055		23A90055	23A90055	
C12	10	23A90056	23A90056		23A90056	23A90056	
C13	10	23A90057	23A90057		23A90057	23A90057	
C14	10	23A90058	23A90058		23A90058	23A90058	
C15	10	23A90059	23A90059		23A90059	23A90059	
C16	10	23A90060	23A90060		23A90060	23A90060	
C17	10	23A90061	23A90061		23A90061	23A90061	
C18	10	23A90062	23A90062		23A90062	23A90062	
C19	10	23A90063	23A90063		23A90063	23A90063	
C20	10	23A90064	23A90064		23A90064	23A90064	

CONTROLS

ITEM No.	RATING	MOTOROLA PART No.	STANDARD PART No.	REMARKS	REPLACEMENT DATA	REMARKS	NOTES
K1	10	23A90065	23A90065		23A90065	23A90065	
K2	10	23A90066	23A90066		23A90066	23A90066	
K3	10	23A90067	23A90067		23A90067	23A90067	
K4	10	23A90068	23A90068		23A90068	23A90068	
K5	10	23A90069	23A90069		23A90069	23A90069	







