

# PHOTOFACT® Folder

with CIRCUITRACE®

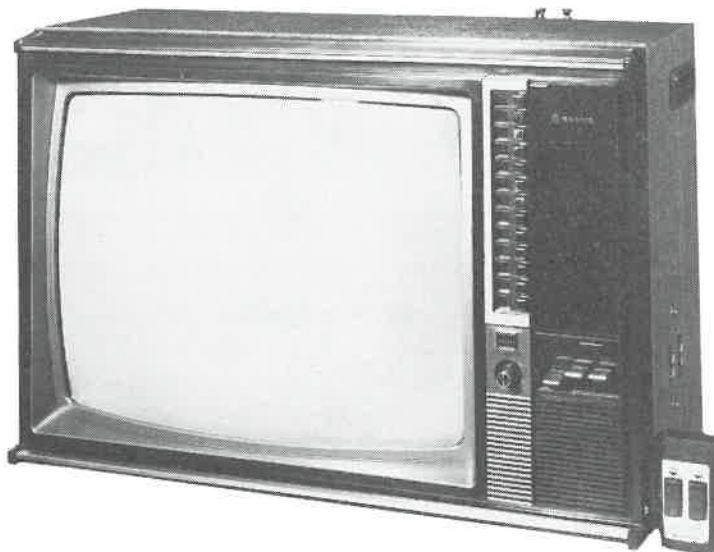
SANYO CHASSIS SA-53000, SA-54000,  
SA-63000, TB-75000, TB-75001

COLOR TV

For Supplier Address See PHOTOFACT Index

MODEL	CHASSIS
91C53	SA-53000
91C54 (1)	SA-54000
91C63	SA-63000
91C75 (1)	TB-75000,1

(1) Use Remote Control  
Receiver 1110905003800



MODEL 91C75

## SAFETY PRECAUTIONS

Make sure line voltage does not exceed rating of set.  
Check high-voltage regulation and adjust to correct value.  
Be sure shields and rear cover are in place and secure.

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

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

**CAUTION:** One side of AC line connected to chassis. Use isolation transformer for servicing.  
Make certain isolation networks are in place and exposed metal is safe to touch before returning set to customer.

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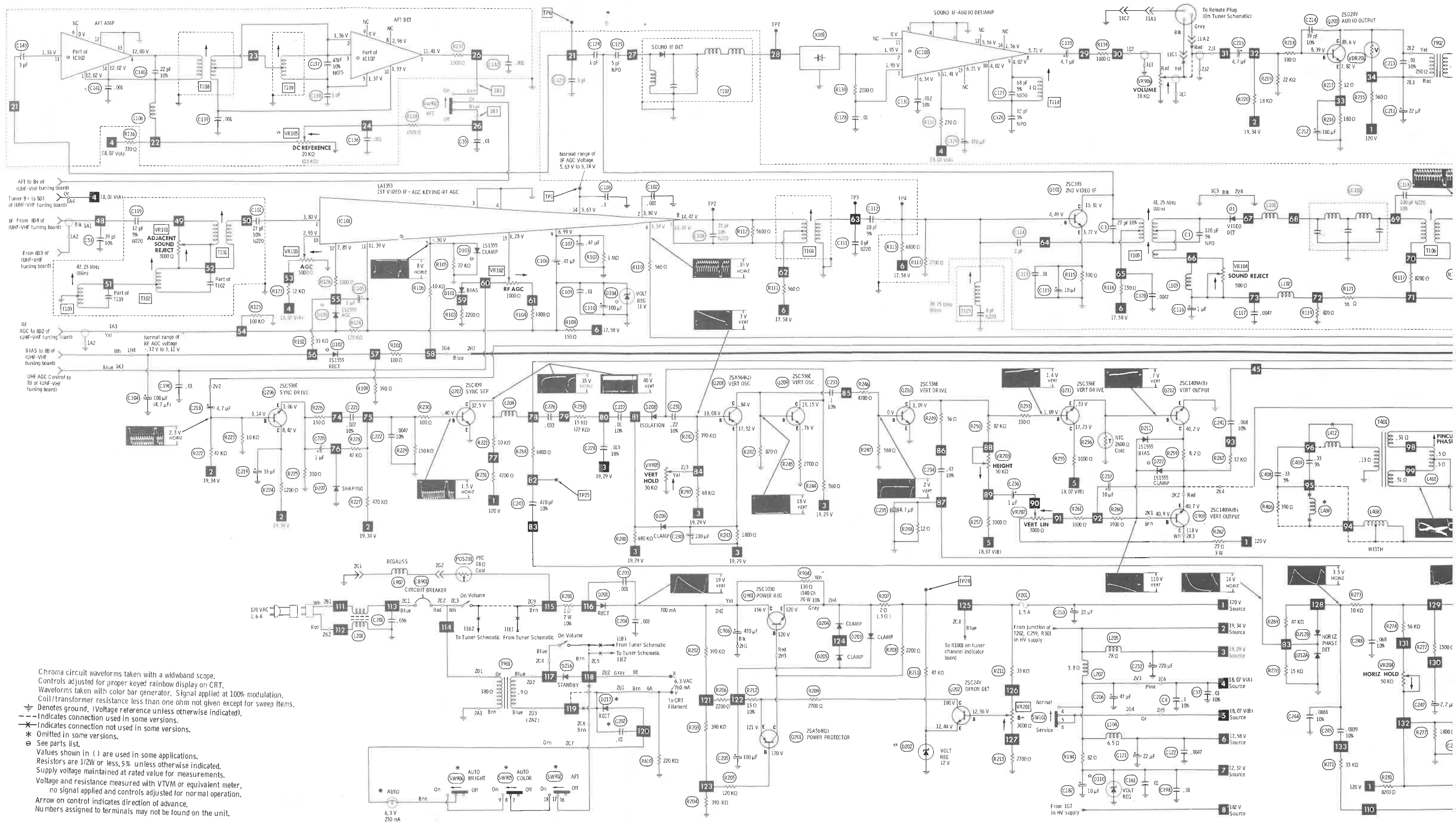
HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. 5PD1339 10 9 8

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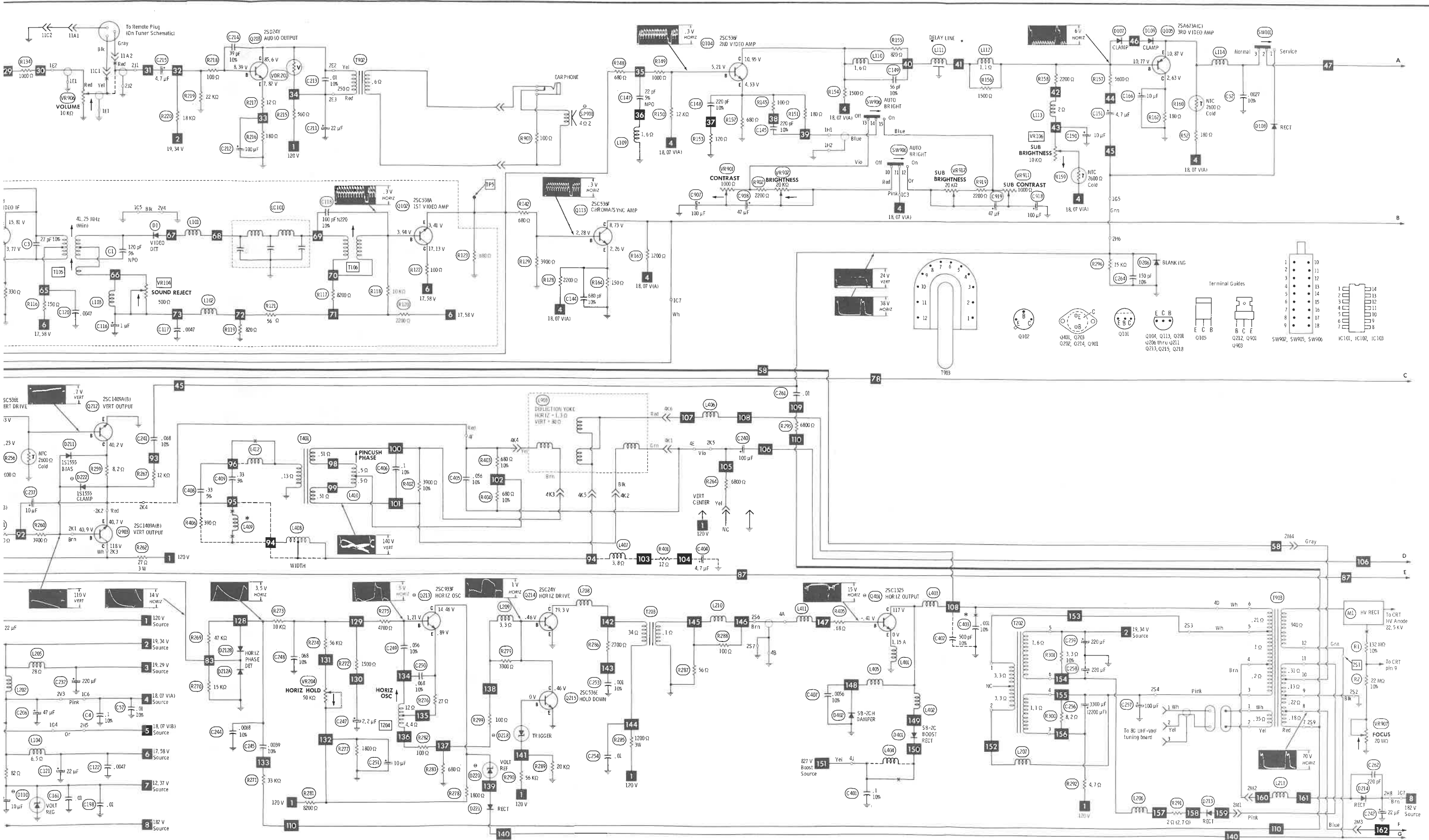
DATE 9-75

SET 1510 FOLDER 1



A PHOTOFAC STANDARD NOTATION SCHEMATIC  
WITH CIRCUITRACE

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**SANYO CHASSIS SA-53000, SA-54000,  
SA-63000, TB-75000, TB-75001**

## RESISTANCE MEASUREMENTS

**MEASUREMENTS BELOW TAKEN WITH METER HAVING .08V MAX BETWEEN PROBE TIPS**

ITEM	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 12	PIN 13	PIN 14
V1	FIL	INF #	90 K	800 K	750 K	INF #	90 K	NC	35 M	NC	INF #	90 K	800 K	FIL
IC101	9500	9500	0	0	5200	1100	1000	1000	1 M	2300	560	2.5 M #	3000	INF
IC102	700	INF	INF	700	INF	INF	7500	8200	INF	INF	INF	0	0	700
IC103	INF	INF	0	0	700	0	7500	9000	4700	4700	INF	9000	4700	140 K
IC104	INF	480	10 K	9000	INF	INF	0	8500	44 K	3800	6200	INF	7000	7000
IC105	INF	INF	INF	480	16 K	INF	22 K	0	INF	11 K	11 K	10 K	10 K	480
													PIN 15 5000	PIN 16 480
IC106	470	5600	5600	5600	8000	INF	0	INF	4200	4200	8000	8000	INF	INF
ITEM	E	B	C		ITEM	E	B	C		ITEM	E	B	C	
Q101	330	2000	580		Q201	8500 #	330 K	7500 #		Q210	0	560	110 K	
Q102	580	4000	520		Q202	50 K	3800	11 K #		Q211	2600	110 K	1500	
Q104	680	2000	1700		Q203	190	10 K	6000 #		Q212	0	2600	INF #	
Q105	1500	1700	180		Q204	400	6000	2100		Q213	800	30 K	3400	
Q109	1600	5600	INF #		Q206	330	8500	1600		Q214	0	780	6200 #	
Q110	1600	5600	INF #		Q207	0	110 K	5000		Q215	0	INF #	780	
Q111	1600	5600	INF #		Q208	2200	400 K	820		Q401	0	.9	5000 #	
Q113	150	1000	1600		Q209	2700	820	1000		Q901	5000 #	7500 #	5200 #	

† THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.  
 ‡ READING DEPENDS UPON POLARITY OF METER CONNECTIONS.

## TROUBLESHOOTING CHECK CHART

The following chart lists component failures most likely to produce the indicated symptoms.

**PICTURE or SOUND**

No pic, no sound, no raster: Circuit Breaker, LV Rect

No pic, no sound, has raster: Video IFs, Tuner Mixer

No pic, no sound, has snow: Tuner RF/Mixer/Osc

No pic, has sound, no raster: CRT

No pic, has sound, has raster: Video Amps

Has pic, no sound: Sound IF/Det, Audio Det/Amp/Output

Overloaded picture: AGC, Video Det

Low or excessive brightness: Blanking

**SWEEP**

No raster, no sound: Horiz Osc/Drive/Hold Down/Output,  
Damper, HV Rect, CRT

No vert deflection: Vert Osc/Drive/Output

Poor vert lin or foldover: Vert Osc/Drive/Output

Poor horiz lin or foldover: Horiz Output, Damper

Narrow picture: LV Rect, Horiz Osc/Drive/Output, Damper

Vert off frequency: Vert Osc

Horiz off frequency: Horiz Phase Det/Osc

**SYNC**

No vert sync: Vert Osc

No horiz sync: Horiz Phase Det/Osc

No vert/horiz sync: Sync Drive/Sep

## RASTER

Yellow (no blue): Blue Output, CRT

Cyan (no red): Red Output, CRT

Magenta (no green): Green Output, CRT

**COLOR (B/W operating normally)**

No color:Chroma/Sync Amp, Bandpass,  
Pulse Shaper, Burst Amp

Weak color: Bandpass

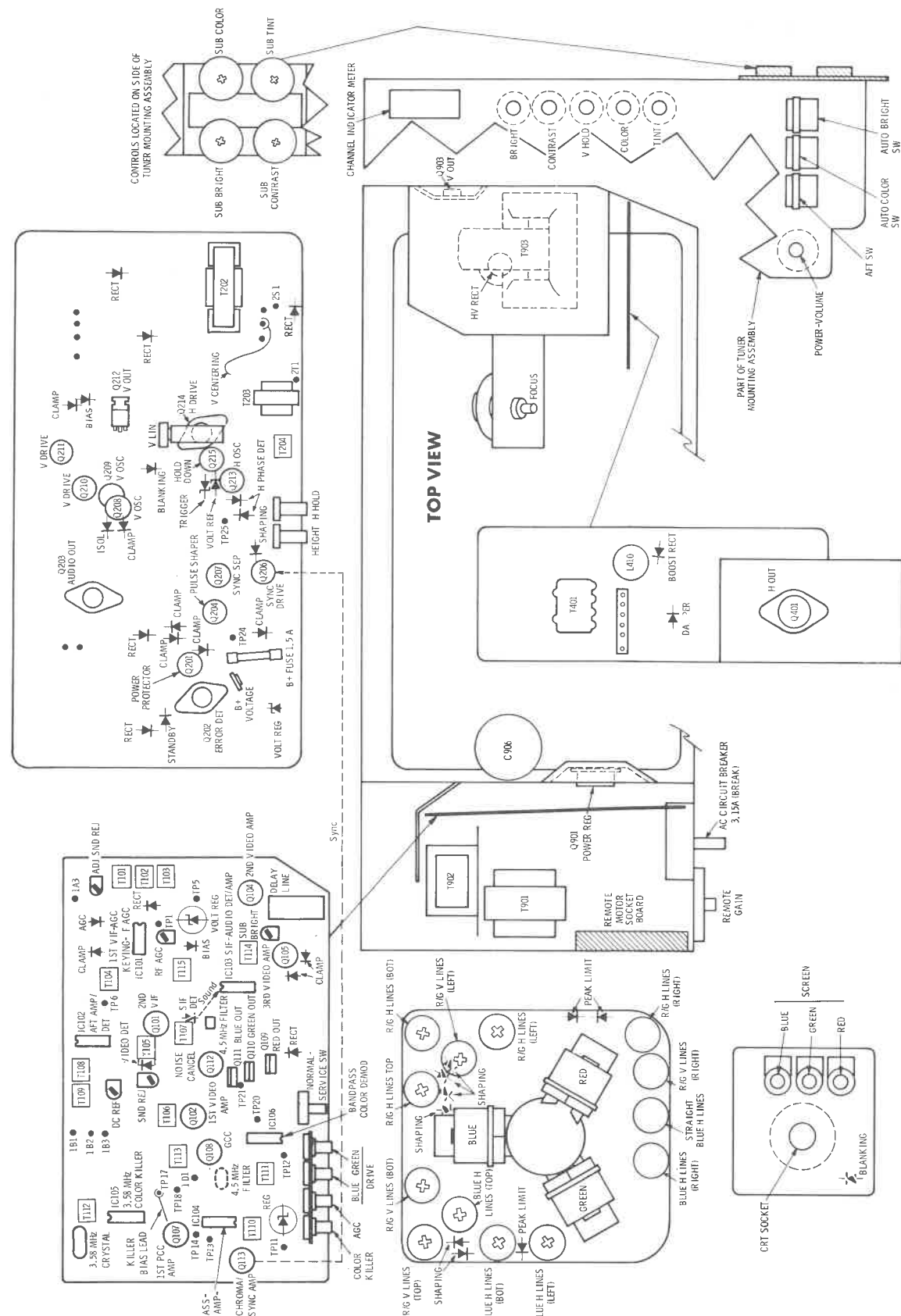
No color sync: Burst Amp. 3.58MHz

No green: Color Demod. Green Output

No blue: Color Demod, Blue Output

No red: Color Demod, Red Output

Incorrect hue (tint): Burst Amp, Color Demod



## PLACEMENT CHART

**SANYO CHASSIS SA-53000, SA-54000,  
SA-63000, TB-75000, TB-75001**

**FOLDER 1**



TV ALIGNMENT INSTRUCTIONS

Use an isolation transformer, or observe polarity, and maintain line voltage at 120VAC. Allow a 20-minute warm-up period for receiver and test equipment.  
Suggested Alignment Tools: GC ELECTRONICS  
T101 thru T106, T108, T109, T110, T111, T114, T115,  
VHF IF Output.....9296, 9297, 9300  
T114.....9440

PRELIMINARY INSTRUCTIONS

Set the channel selector to the highest unused channel. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. Use only enough generator output to provide a usable indication.  
Note: Response may vary slightly from that shown.  
Set "Normal - Service" switch (SW101) to "Service" position. Connect a + 5.5 volt bias to TP1. Connect a + 4 volt bias to TU on UHF - VHF tuning board.

VIDEO IF ALIGNMENT

CONNECT SCOPE	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
Vertical input to TP5 low side to ground.	Thru .001uF to TP  on VHF tuner, low side to ground.	44MHz (10MHz Sweep)	39.75MHz	Adjust T115 for MINIMUM. See Figure 1.
			41.25MHz	Adjust T102, T105 (Top) and VR104 for MINIMUM. See Figure 1.
			47.25MHz	Adjust T103 and VR101 for MINIMUM. See Figure 1.
			39.75MHz 41.25MHz 42.17MHz 44.00MHz 45.75MHz 47.25MHz	Adjust T101, T104 (Top & Bottom), T105 (Bottom), and VHF IF OUTPUT for MAXIMUM gain and symmetry of response. See Figure 2. Adjust T105 (Bottom) for placement of 44.00MHz and 45.75MHz markers. Adjust VHF IF output for placement of 42.17MHz and 44.00MHz markers. Adjust T101 for tilt at 44.00MHz. Adjust T104 (Top) for placement of 42.17MHz and 45.75MHz markers. Adjust T104 (Bottom) for overall response. See Figure 2.

4.5MHz 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 T106 for MINIMUM beat interference.

AFT ALIGNMENT

Connect as explained in Preliminary Instructions.  
AFT switch to off position.  
Connect VTVM between 1B1 and 1B3. Adjust VR105 for zero.

CONNECT	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
Vertical input of scope to 1B1, low side to ground.	Thru .001uF to TP6, low side to ground.	44MHz (10MHz Sweep)	45.75MHz	Adjust T108 for maximum gain and symmetry of response. See Figure 3.
"	"	"	"	Adjust T109 for crossover at 45.75MHz. See Figure 3.

MISCELLANEOUS ADJUSTMENTS

Suggested Alignment Tools: GC ELECTRONICS  
T204, T401.....8606, 8606L, 8869  
T112, T113.....9296, 9297, 9300

B+ ADJUSTMENT

With 120V AC line voltage, connect VTVM to TP24, low side to ground. Adjust B+ Control (VR201), for +120 volts at maximum brightness.

HIGH VOLTAGE ADJUSTMENT

Turn brightness and contrast controls to maximum. Connect a high voltage probe to the picture tube anode. High voltage should measure between 21.3KV and 22.7KV. If voltage is not within this range it may be necessary to cut out C402 and C403 for proper high voltage.

HORIZONTAL OSCILLATOR ADJUSTMENT

Connect a .1uF capacitor from TP25 to ground. Turn horizontal hold control to center mechanical position. Adjust horizontal oscillator coil (T204), until picture stops or floats on screen. Remove capacitor from TP25.

AGC ADJUSTMENT

Tune in a strong TV station and adjust AGC control (VR103), for best picture and contrast. Tune in a weak TV station and adjust RF AGC Control (VR102), for MINIMUM snow, maximum contrast.

UHF AGC ADJUSTMENT

Tune in a medium strength UHF TV station and adjust UHF AGC Control (VR800), for MINIMUM snow.

SUB BRIGHTNESS ADJUSTMENT

High voltage and AGC adjustments should be adjusted before starting this adjustment. Turn brightness and contrast controls to maximum. Connect VTVM to 2T1, low side to 2S1. Adjust Sub Brightness control (VR106), for +1.20  $\pm$ .02 volts.

PINCUSHION ADJUSTMENT

Connect a crosshatch generator to the antenna terminals and adjust the set for a normal crosshatch pattern. Adjust pincushion phase coil (L410) for straight horizontal lines.

COLOR AFC ALIGNMENT

Set Auto Color Switch to the OFF position. Connect a color bar generator to antenna terminals. Set tint control (VR903), to center mechanical position, color control (VR904), to maximum. Turn color killer control (VR108), fully counterclockwise. Remove jumper on TP17 and reconnect it to TP18. Connect a +5 volt bias to TP14, low side to ground. Adjust 3.58MHz oscillator coil (T112), until color stops or drifts slowly on screen. Remove 5 volt bias and reconnect jumper to TP17.

Connect vertical input of scope to TP20, low side to ground. Adjust CW output coil (T113), for 3rd and 9th bar crossover.

Check R-Y and G-Y outputs (Base of Q109 and Q110) for proper waveform.

Tune in a weak signal, or reduce the signal at the antenna terminals to obtain a snowy picture. Adjust the killer control (VR108), to eliminate the color in the snow.

PURITY ADJUSTMENTS

Perform center dot convergence using convergence magnets. If the picture tube appears to be magnetized, use a degaussing coil to demagnetize tube and mounting brackets. Turn the blue and green screen controls to MINIMUM and red screen to maximum. Loosen the deflection yoke and move it rearward until it is against the convergence yoke assembly. Rotate the tabs on the purity magnet to obtain a red spot at the center of the picture tube. Slide the yoke forward to obtain a uniform red over entire picture tube face.

GRAY SCALE ADJUSTMENT

Set brightness and contrast to mid-range. Set green drive control and blue drive control to mid-range. Set red, blue and green screen controls to MINIMUM. Set Normal-Service switch to Service position. Advance the screen controls, one at a time, until each produces a barely visible line on the screen.

Place Normal-Service switch to Normal position. Adjust green and blue drive controls to produce a normal black and white picture. Check for proper gray scale tracking at all brightness levels.

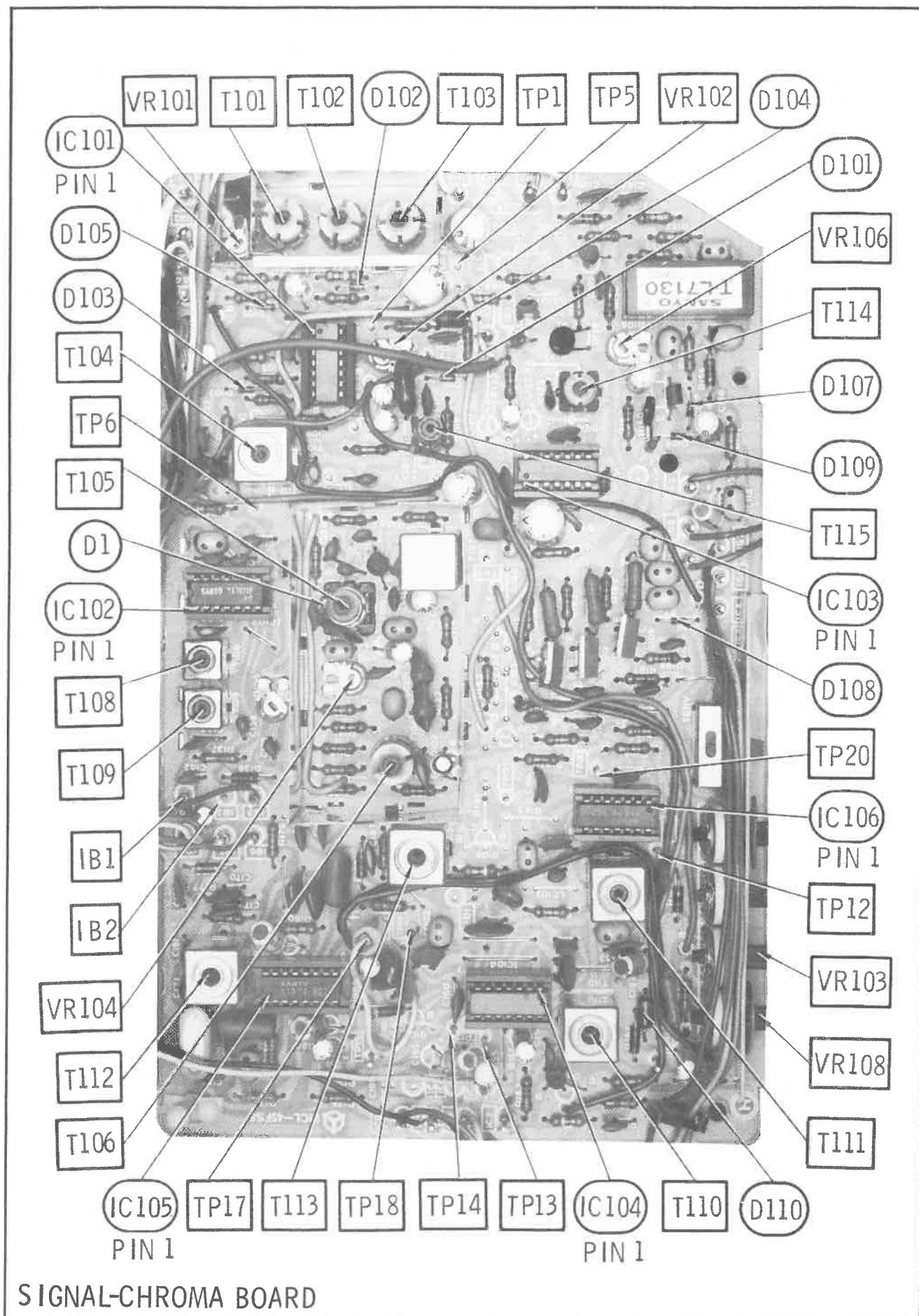
VHF/UHF TUNER

Push desired channel pushbutton. Set corresponding bandswitch to desired band (U for UHF channels 14-83, VH for channels 7-13 and VL for channels 2-6). Adjust inner knob (Tuning Control) until the desired channel is indicated on tuning meter. The meter reading will indicate approximate reading only. Fine tune the Tuning Control Knob for best picture and sound. Repeat the procedure for all desired channels.

Open tuning door, press two tabs holding escutcheon and remove escutcheon and change Channel Indicator Tabs to match tuning controls.

TUNING METER ADJUSTMENT

Turn Meter Adjustment Control (VR801) on UHF-VHF tuning board fully counterclockwise. Connect DC meter between tuning connection on UHF tuner and UHF-VHF tuning board and ground. Push any channel selector and turn fine tuning control for 30 volts. Turn meter adjustment control clockwise until pointer of tuning meter swings upward.



SIGNAL-CHROMA BOARD

# TV ALIGNMENT INSTRUCTIONS (Continued)

## CHROMA BANDPASS ALIGNMENT

Connect as explained in preliminary instructions. Set color control to maximum, tint control to mid-range, and color killer fully counterclockwise. Connect a +7 volt bias to TP13. Connect a +5 volt bias to TP14, low side to ground.

CONNECT SCOPE	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
Vertical input thru detector probe to TP12, low side to ground.	Thru .001uF to TP on VHF tuner, low side to ground.	44MHz (10MHz Sweep)	3.08MHz 3.58MHz 4.08MHz	Adjust T110 for maximum at 3.58MHz. See Figure 4. Adjust T111 (Top and Bottom) for placement of 3.08MHz and 4.08MHz markers. See Figure 4.
			(4.5MHz Trap)	Inability to obtain proper bandpass alignment may be due to misadjustment of the 4.5MHz trap. Adjust T106 for MINIMUM at 4.5MHz.

After completing Chroma Bandpass Alignment, reset color killer. (Refer to Miscellaneous Adjustments.)

## SOUND IF ALIGNMENT

Tune in a station and adjust T114 for maximum sound. Reduce signal strength at the antenna terminals until distortion appears. Continue to reduce the signal while aligning for undistorted output by adjusting T114.

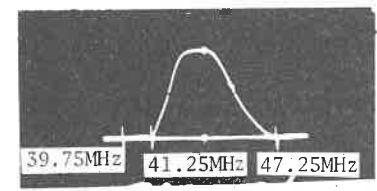


FIG. 1

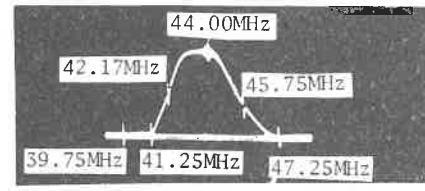


FIG. 2

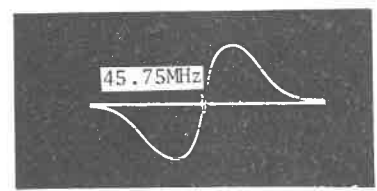


FIG. 3

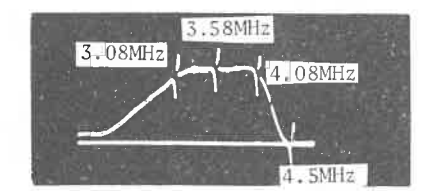
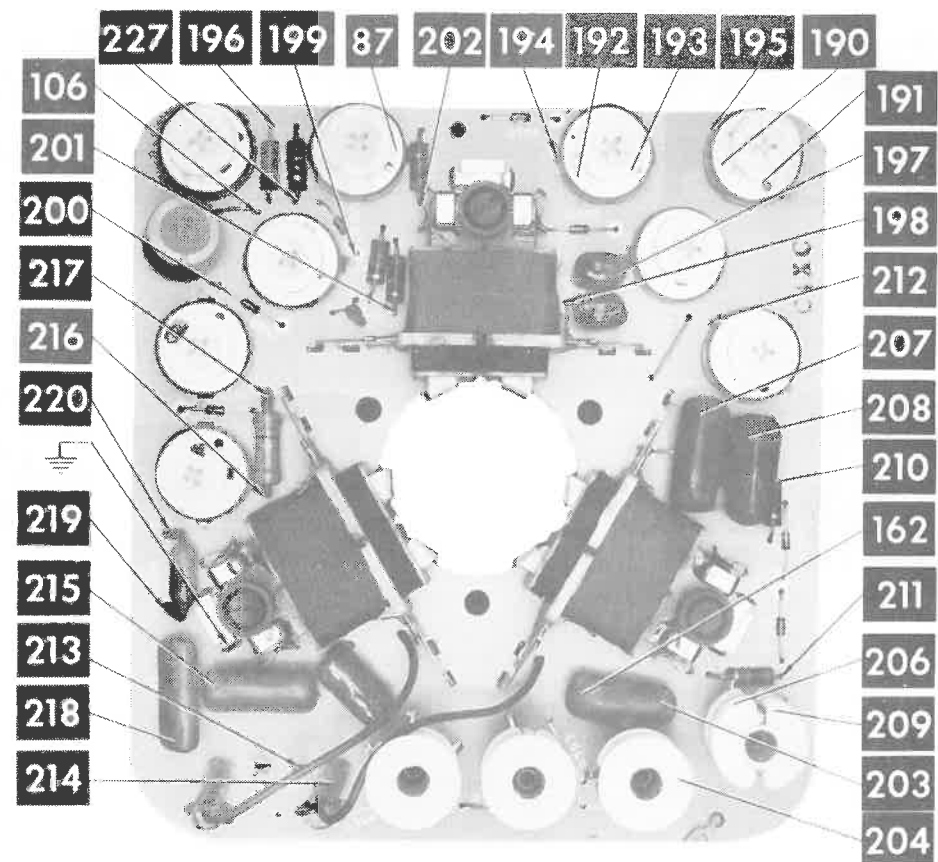
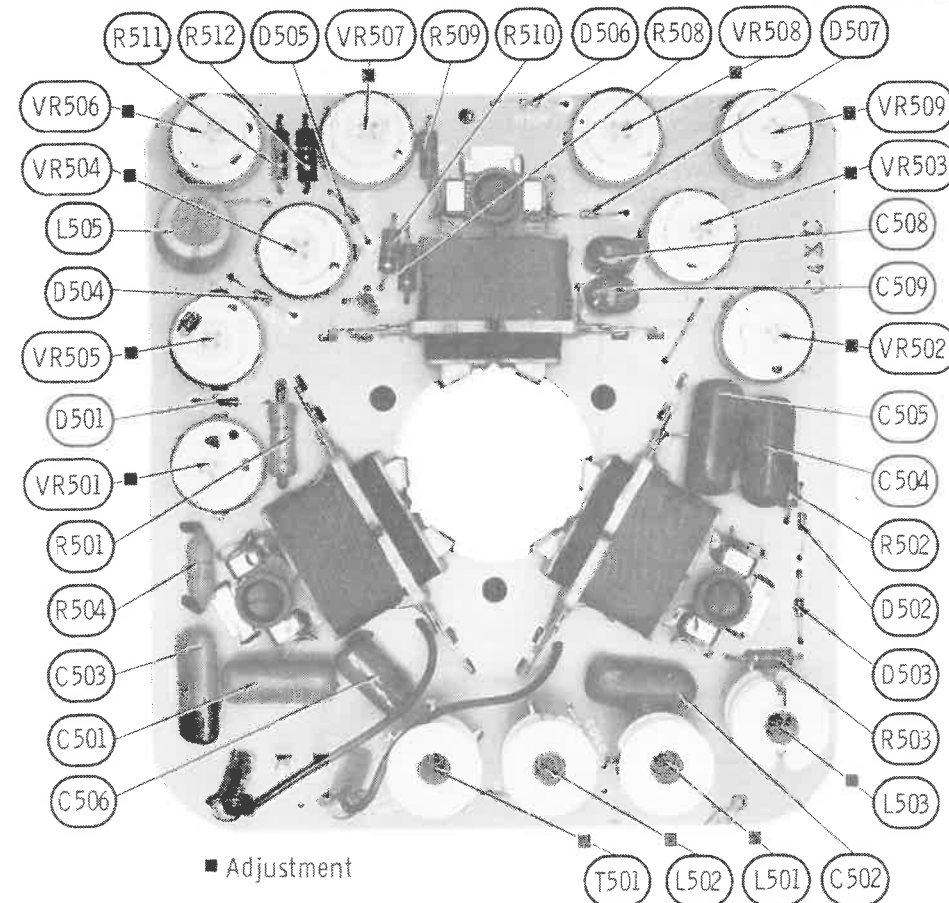


FIG. 4

SANYO CHASSIS SA-53000, SA-54000, SA-63000, TB-75000, TB-75001

FOLDER 1



CONVERGENCE BOARD A Howard W. Sams CIRCUITRACE® Photo

## CONVERGENCE ADJUSTMENTS

Miscellaneous Adjustments should be made before proceeding to Convergence Adjustments. Connect dot/crosshatch generator to antenna terminals. Use dot pattern for center dot convergence. Use crosshatch pattern for all other adjustments. View pattern as displayed on TV screen.  
NOTE: Maintain center convergence throughout setup procedure.

Perform center dot convergence using convergence magnets.

Adjust VR506 and VR507 to converge red and green vertical center line from top to bottom of screen.

Adjust VR508 and VR509 to converge red and green horizontal lines along vertical center line from top to bottom of screen.

Adjust VR503 and VR502 to converge red and green vertical and horizontal lines, left side of screen.

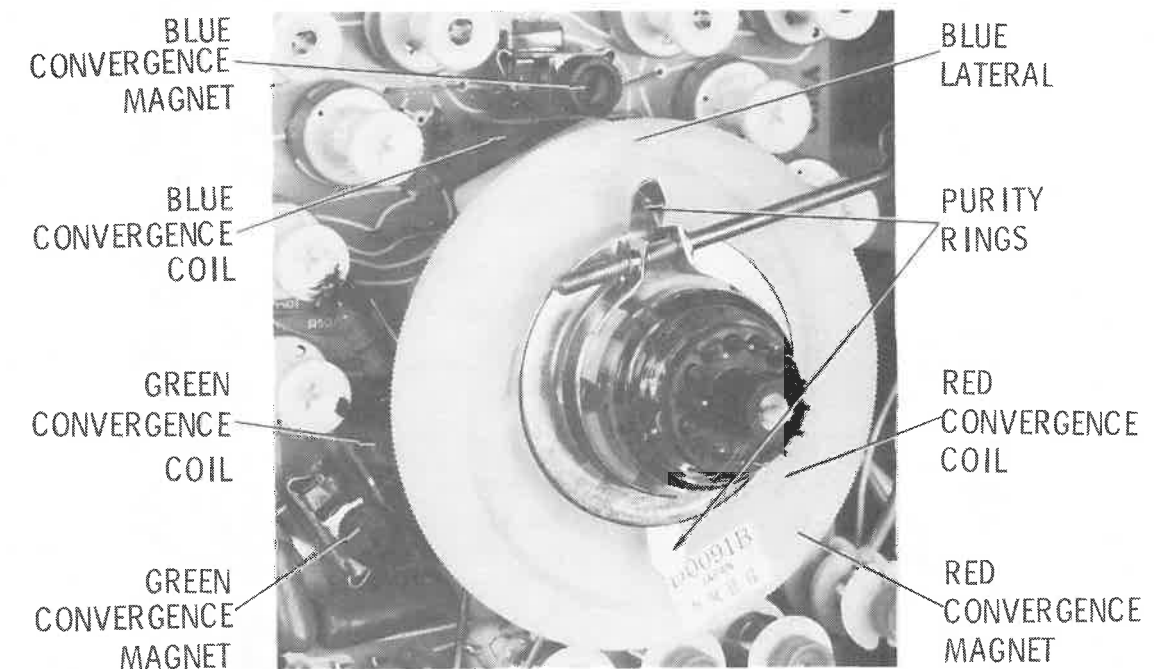
Adjust L501 and L503 to converge red and green vertical and horizontal lines, right side of screen.

Adjust VR504 and VR505 to converge blue horizontal lines along vertical center line from top to bottom of screen.

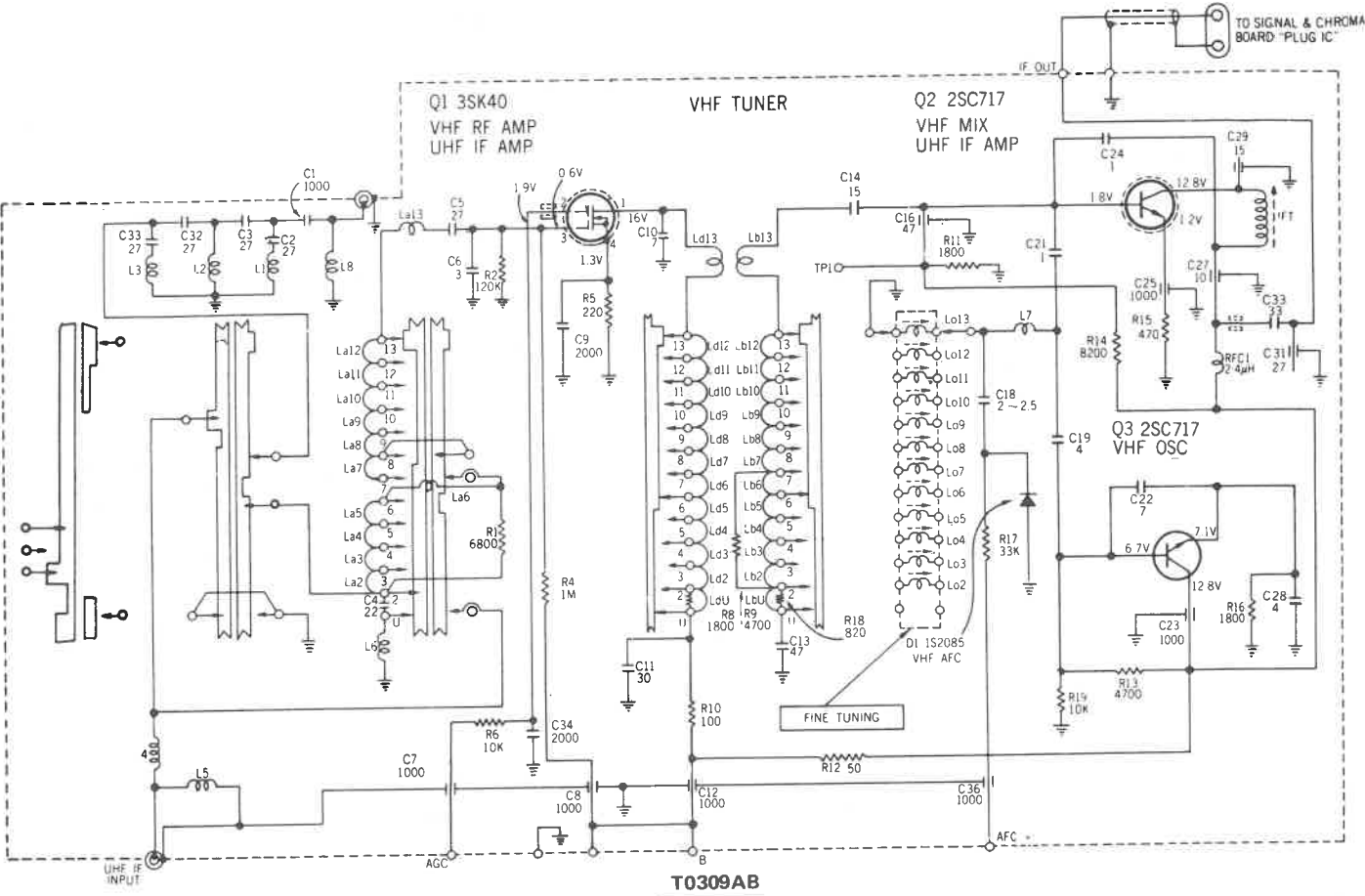
Adjust VR501 and T501 to converge blue horizontal lines, left and right sides of screen.

Touch up appropriate controls if necessary.

Adjust L502 for straight blue horizontal lines at center of screen.

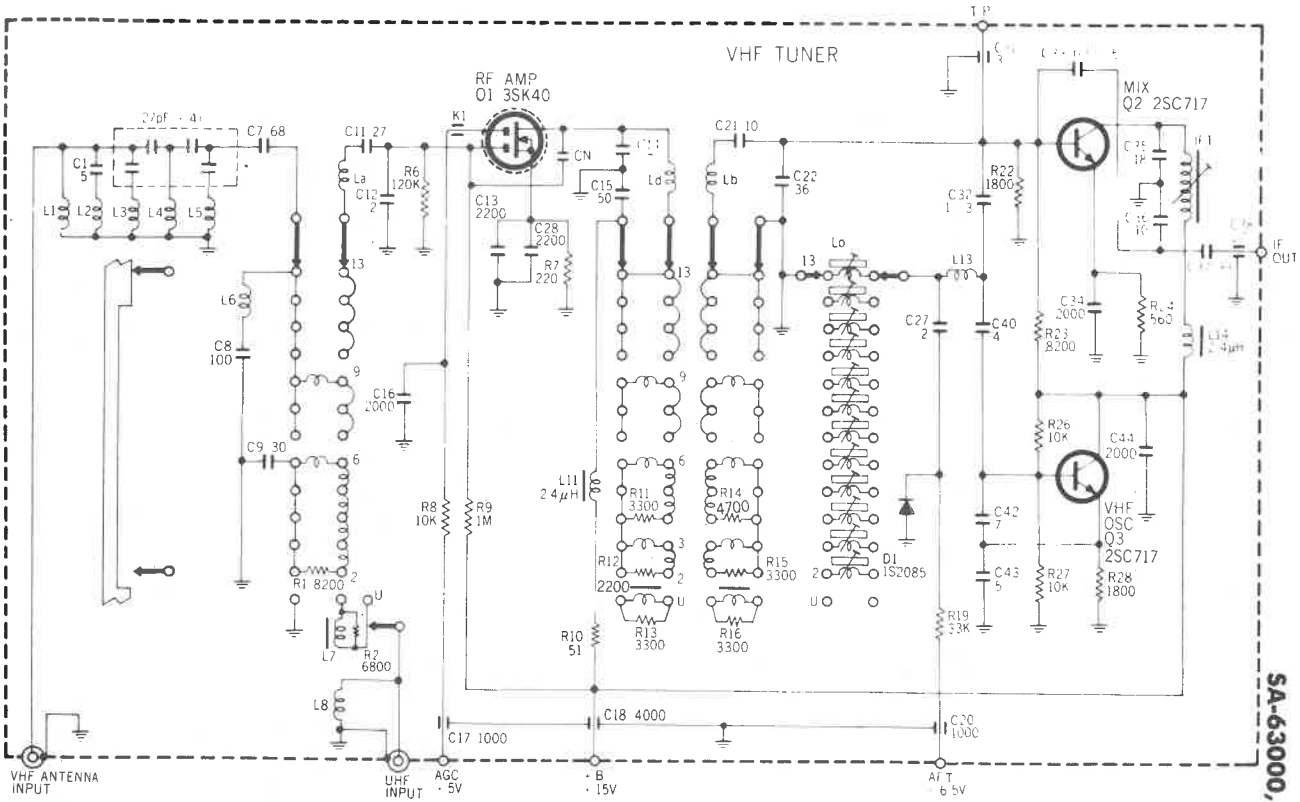


UHF/VHF TUNER SCHEMATIC DIAGRAMS



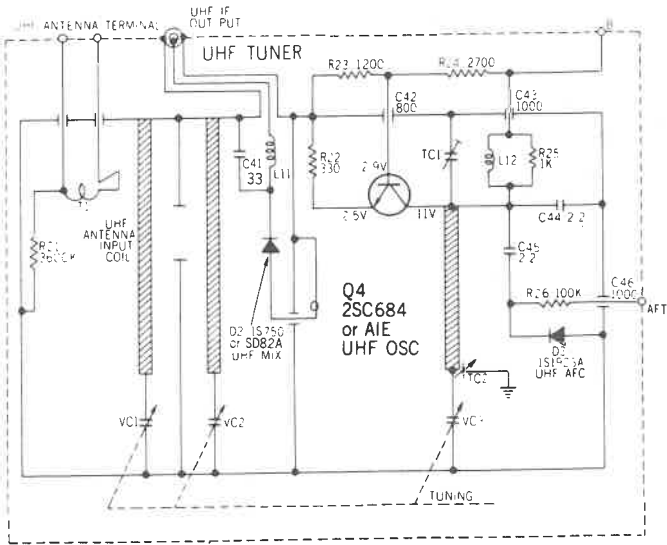
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VHF TUNER SCHEMATIC DIAGRAMS

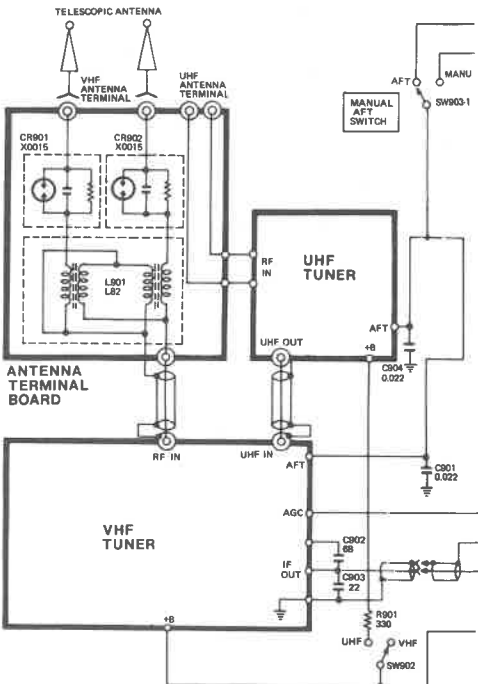


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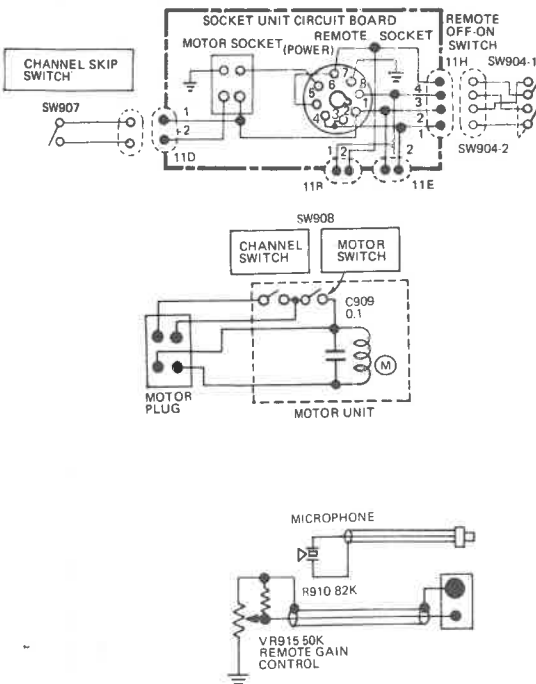
SANYO CHASSIS SA-53000, SA-54000, SA-63000, TB-75000, TB-75001



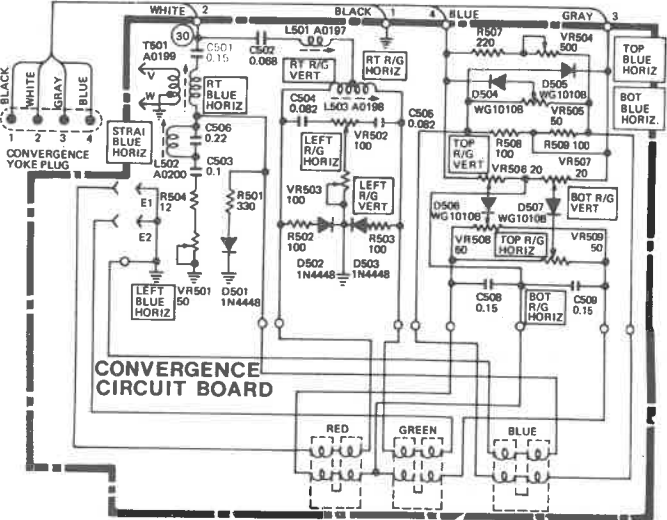
T1043AC



Tuner Connections Models 91C53, 54, 63.



Remote Circuit used in Model 91C54.



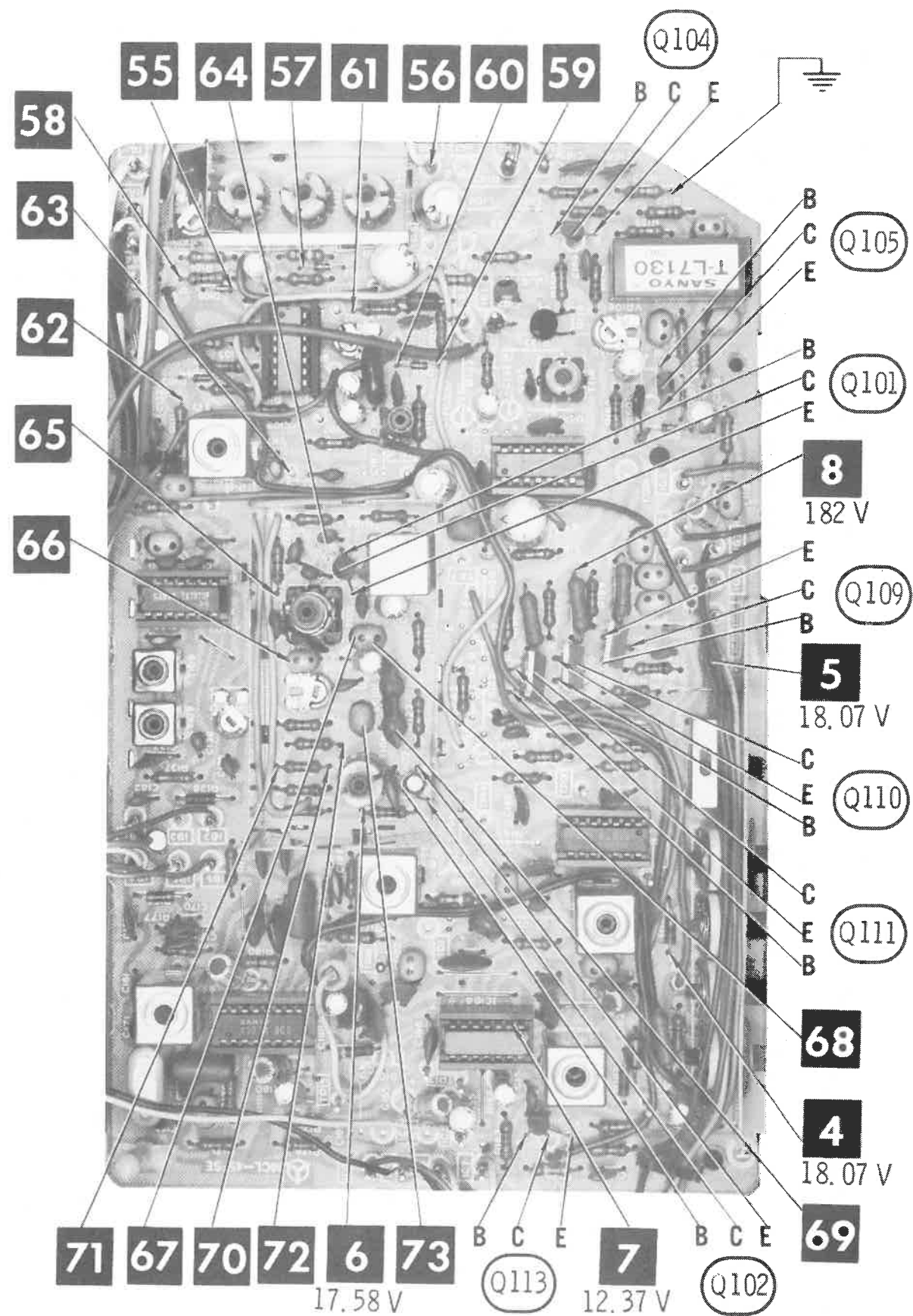
Courtesy of the Manufacturer  
Convergence Board used in Models 91C53, 54, 63.

Courtesy of the Manufacturer

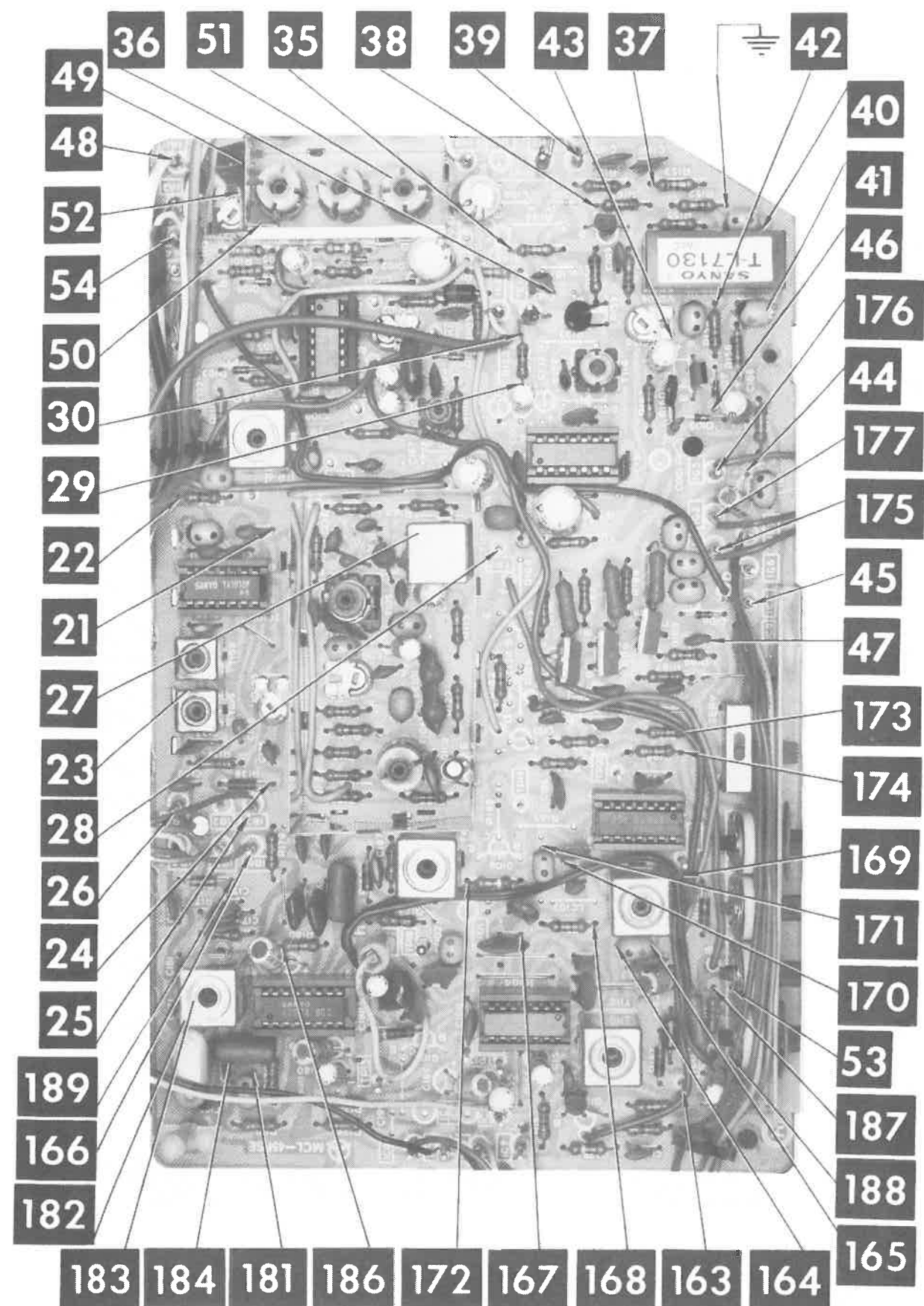
FOLDER 1







SIGNAL-CHROMA BOARD

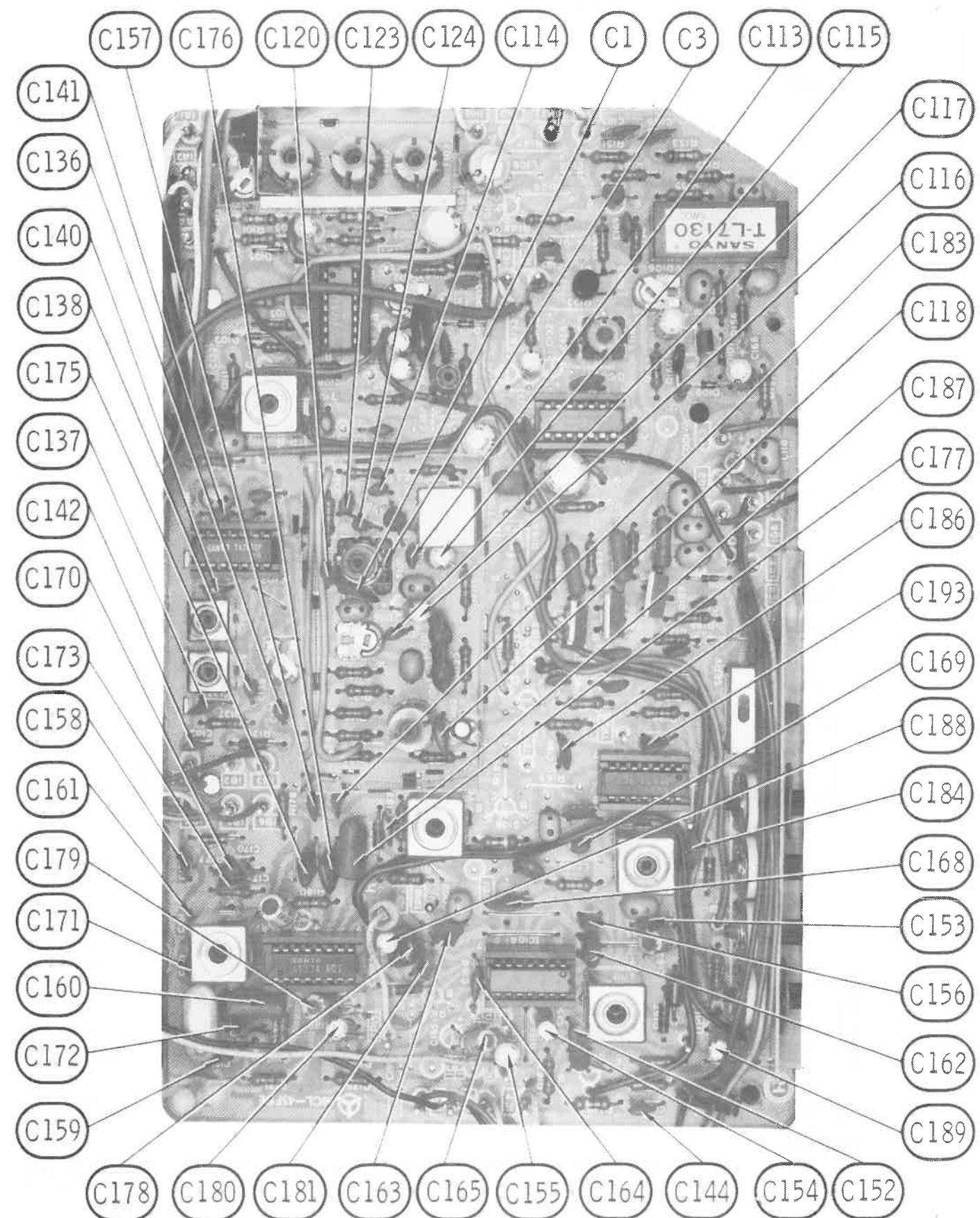


SIGNAL-CHROMA BOARD

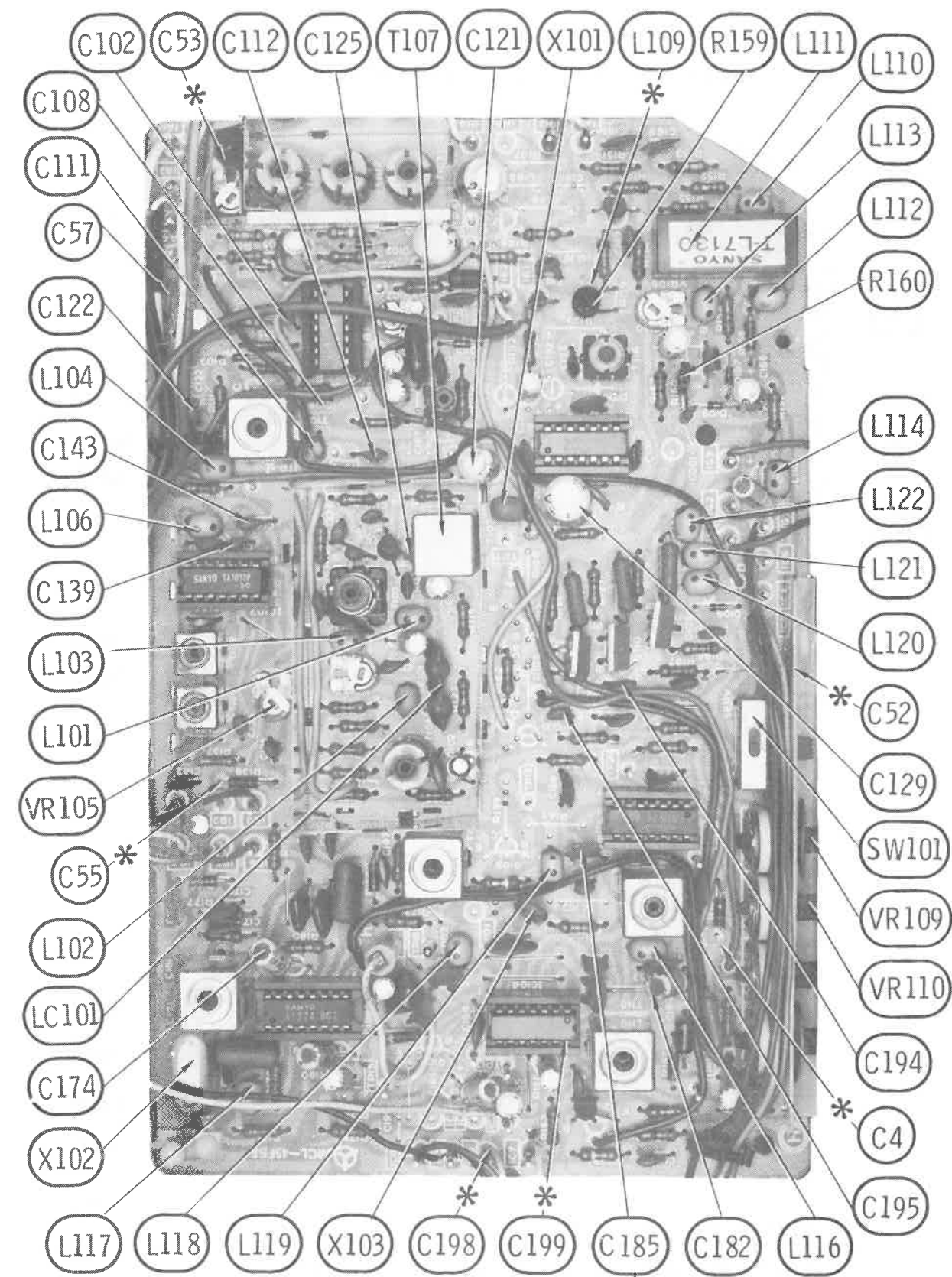
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SA-63000, TB-75000, TB-75001

FOLDER 1





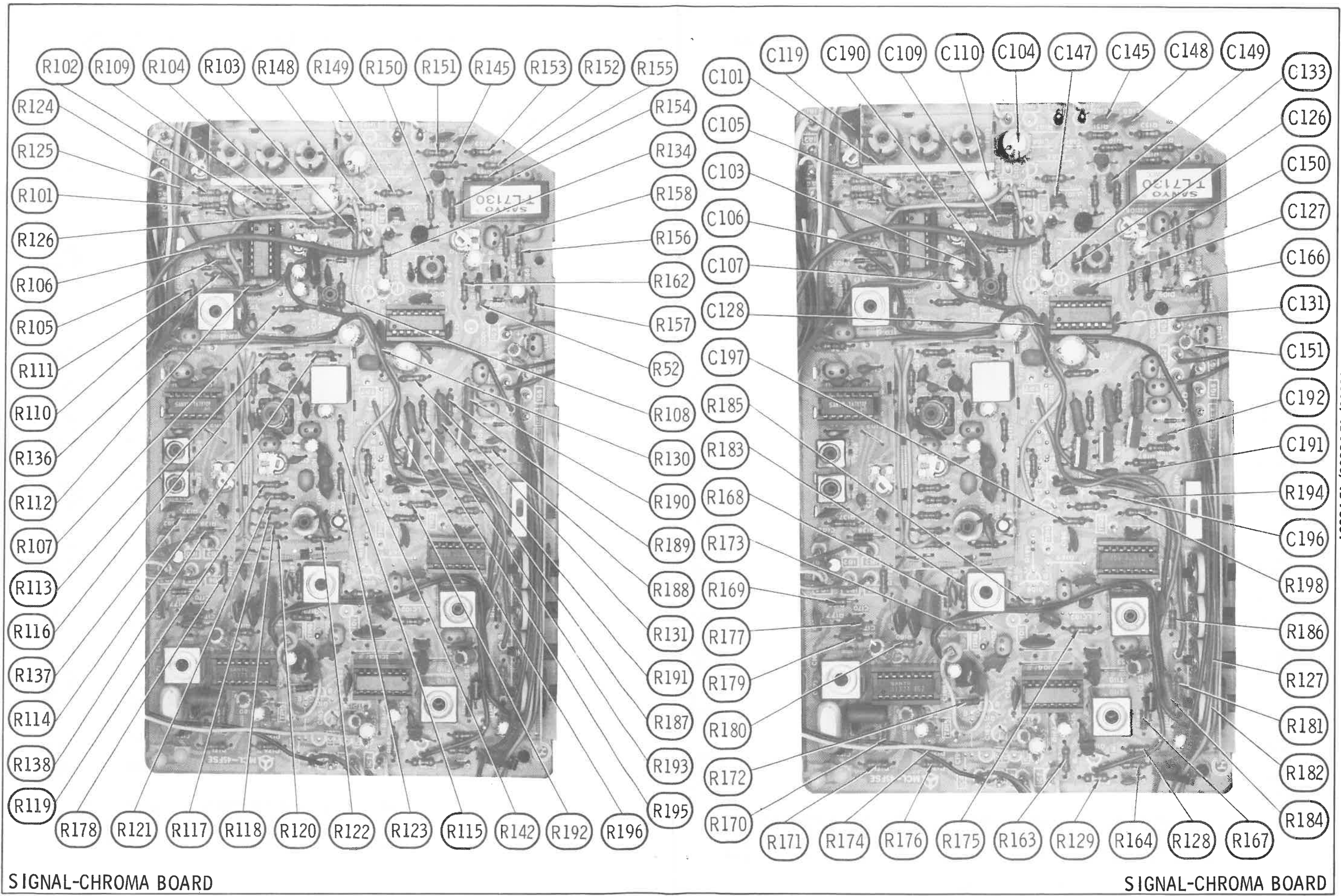
SIGNAL-CHROMA BOARD



\*LOCATED ON BOTTOM OF BOARD

SIGNAL CHROMA BOARD





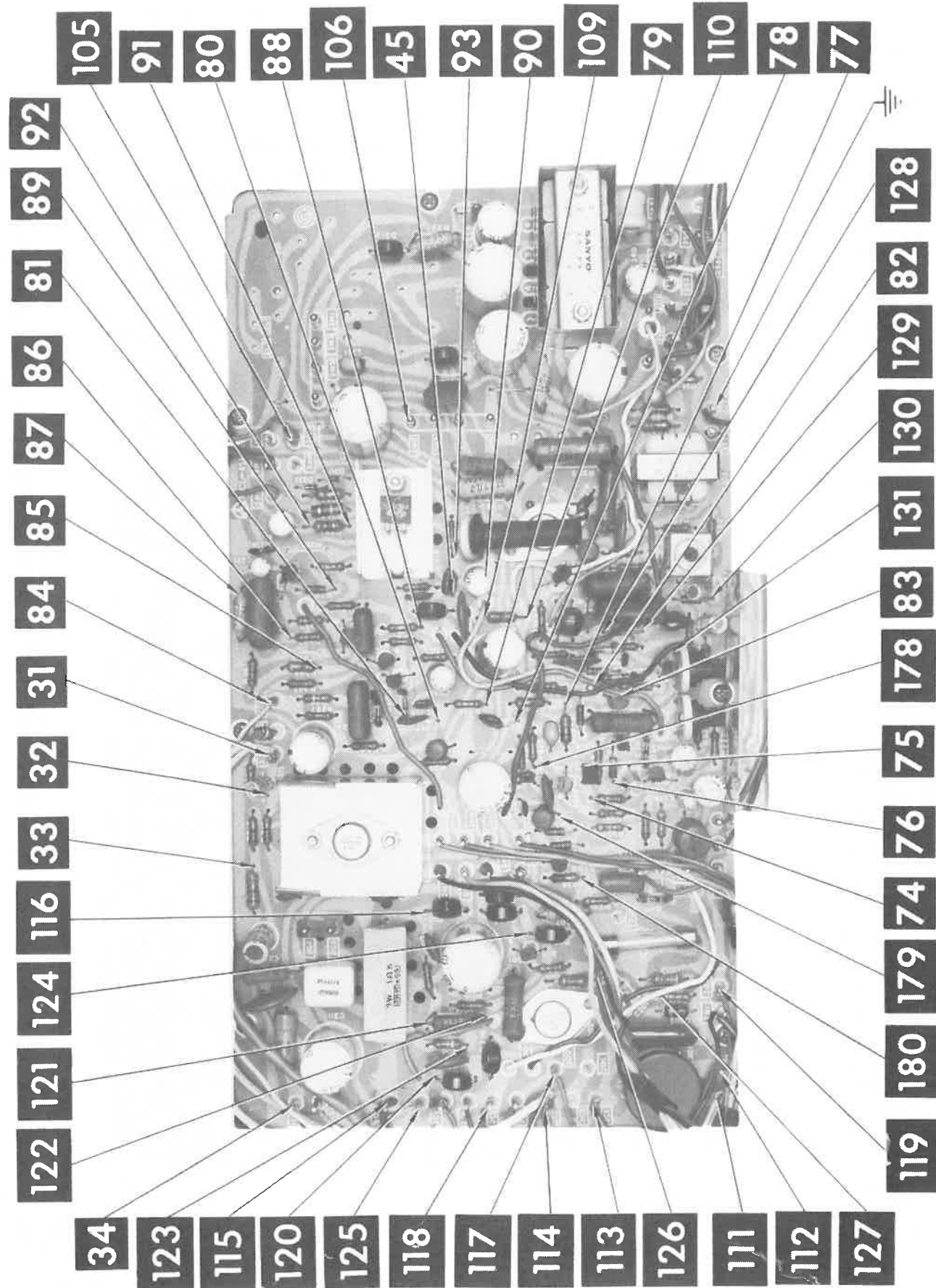
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SA-63000, TB-75000, TB-75001

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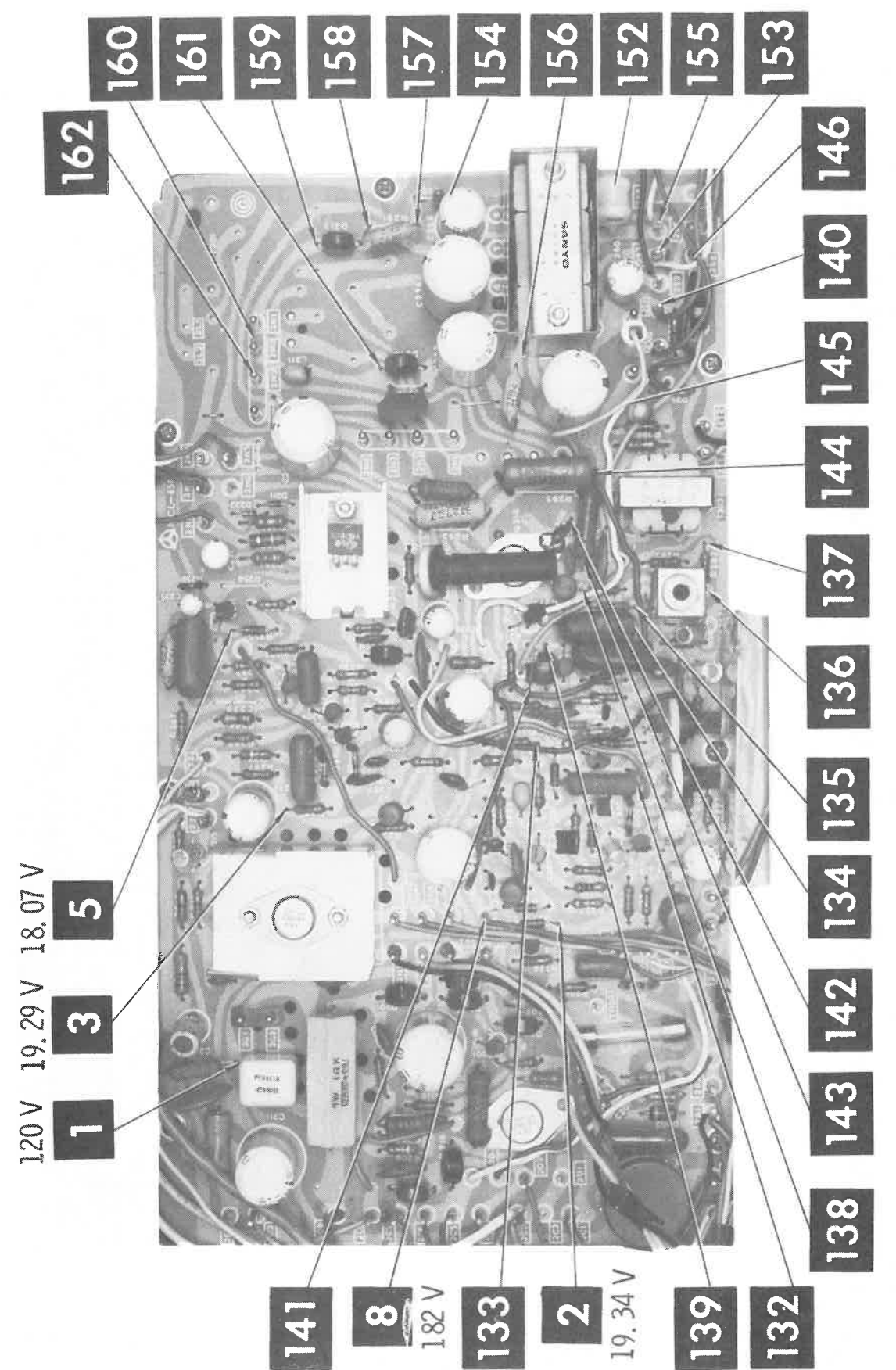


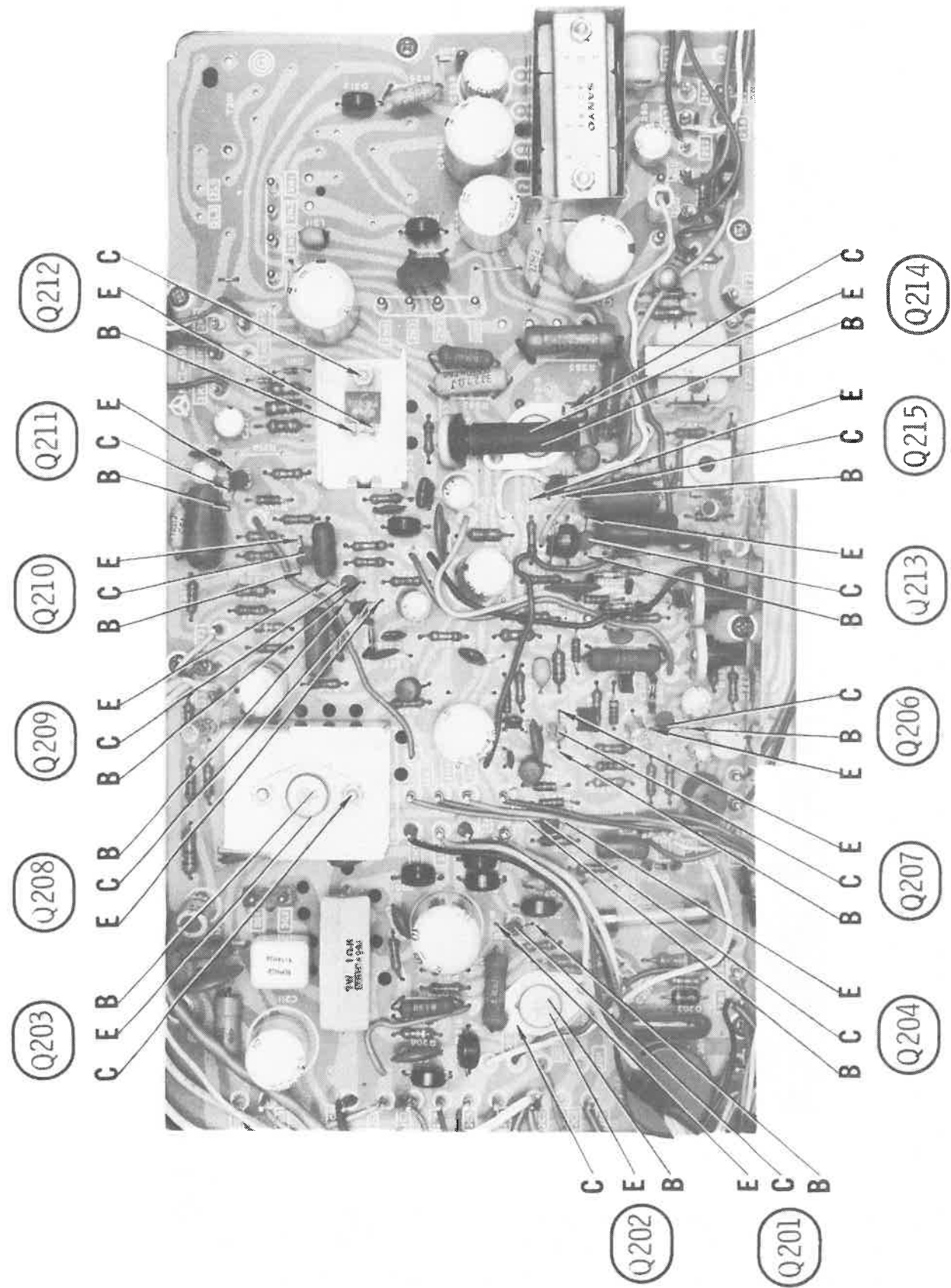
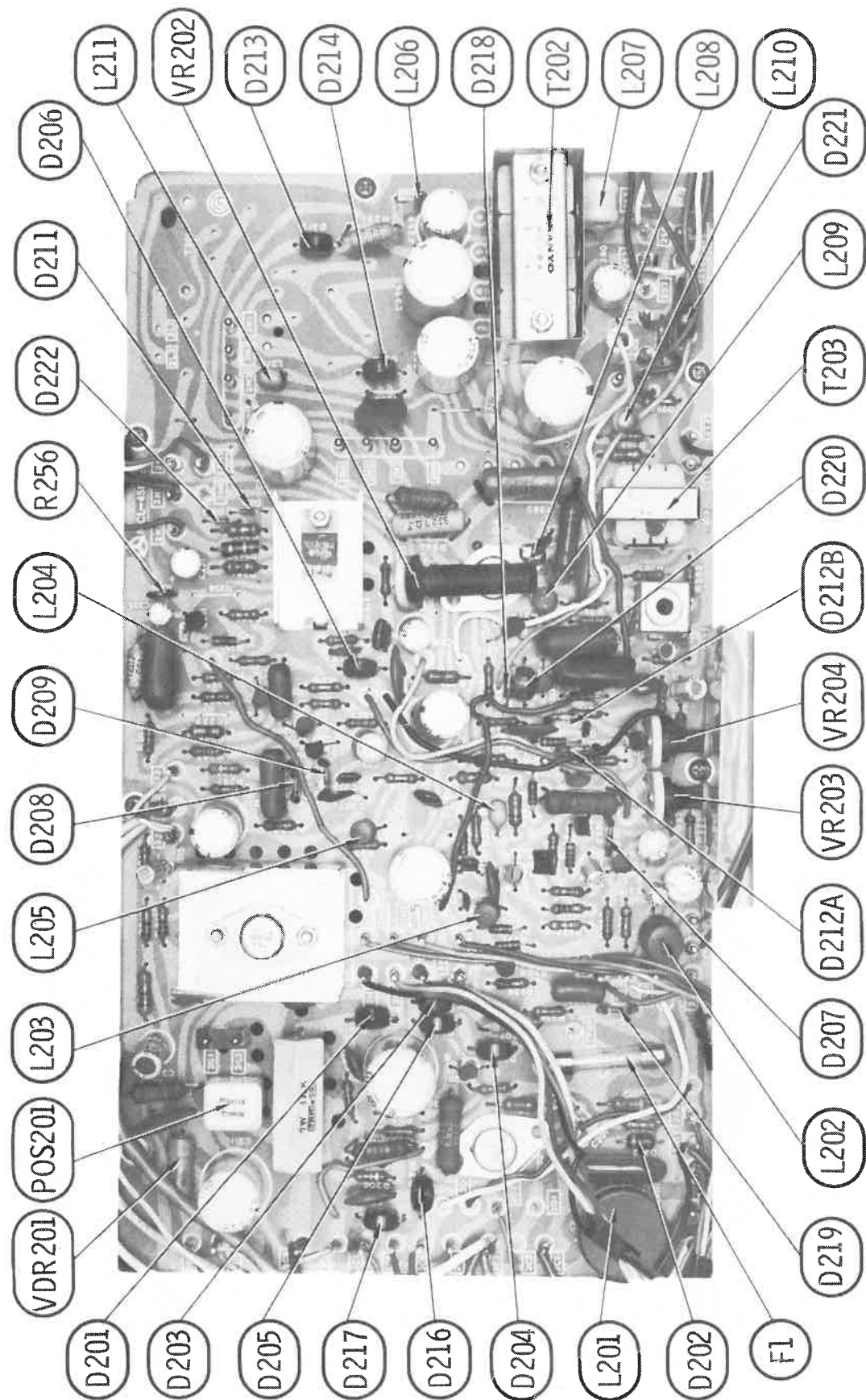
DEFLECTION-POWER BOARD

A Howard W. Sams CIRCUITRACE® Photo



DEFLECTION-POWER BOARD



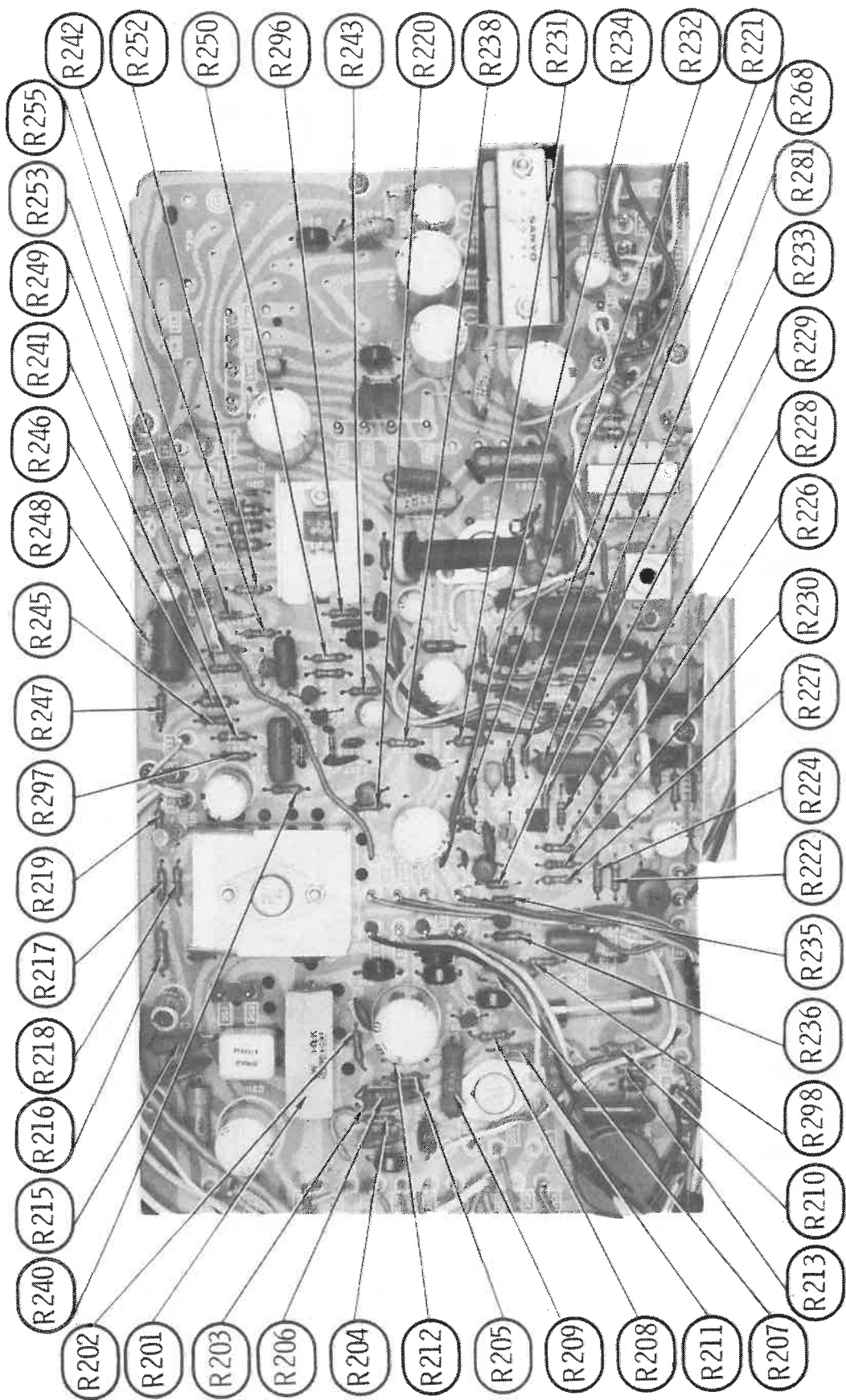


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SA-63000, TB-75000, TB-75001**

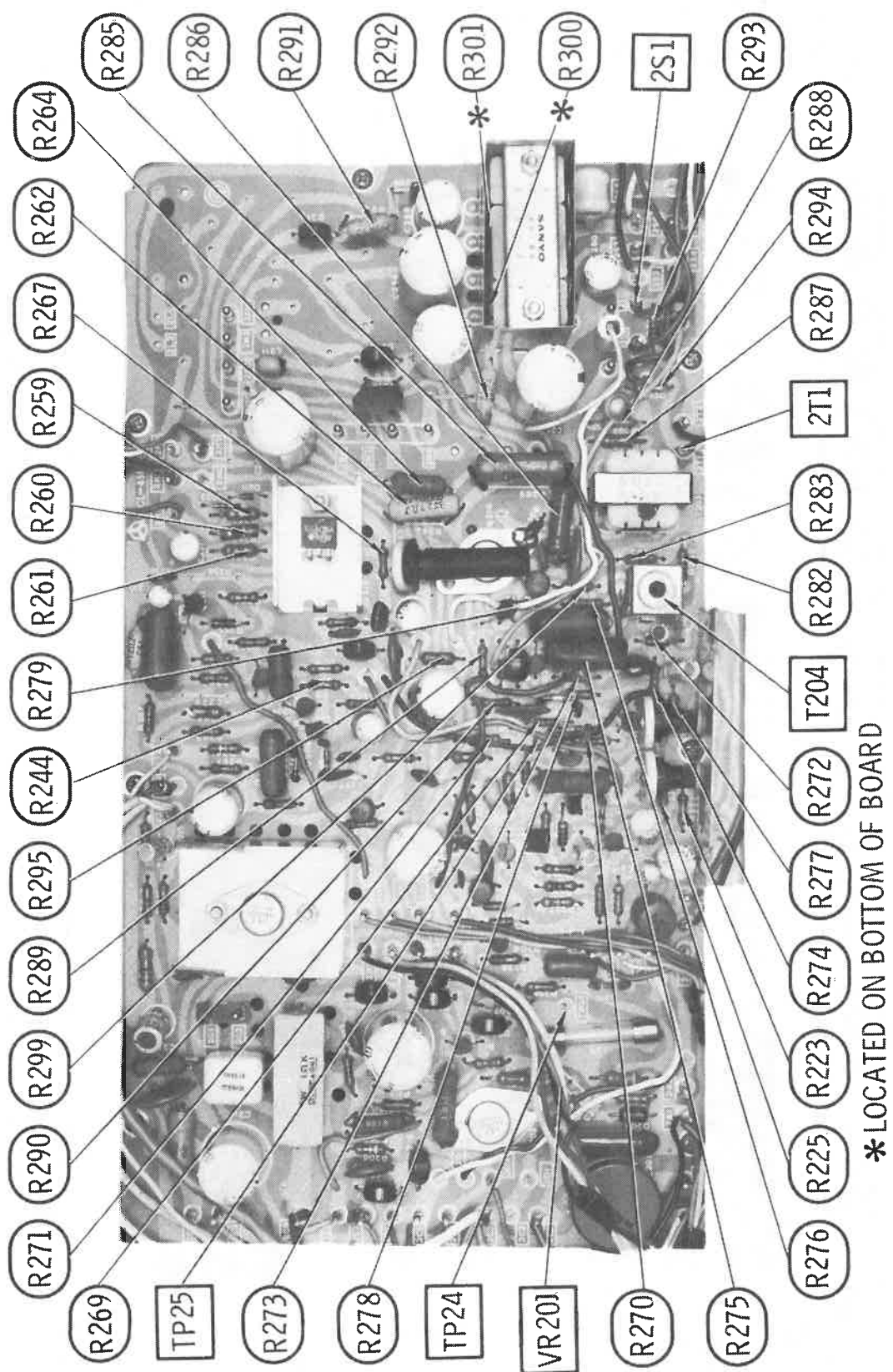
**FOLDER 1**



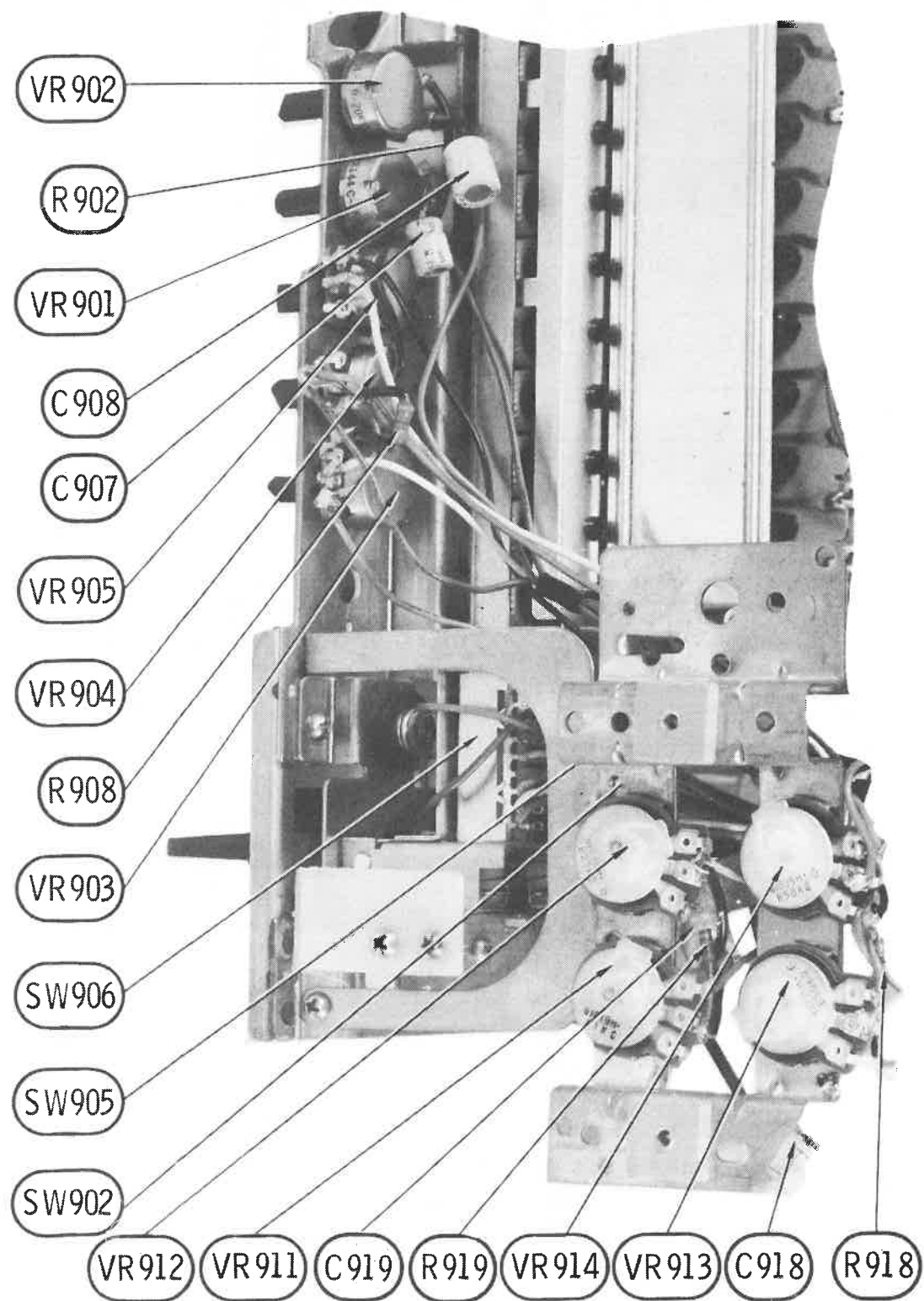
DEFLECTION-POWER BOARD



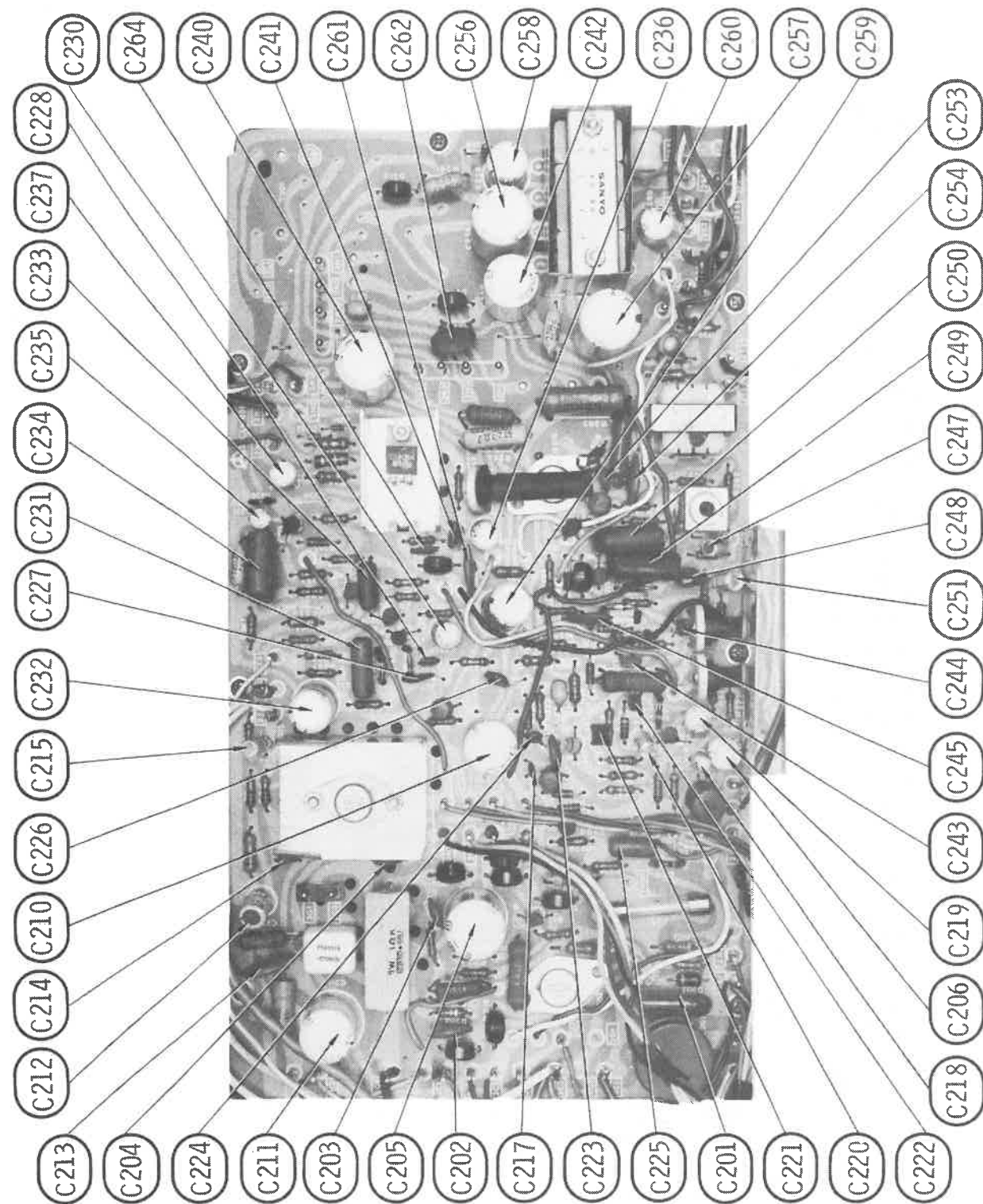
DEFLECTION-POWER BOARD



\* LOCATED ON BOTTOM OF BOARD

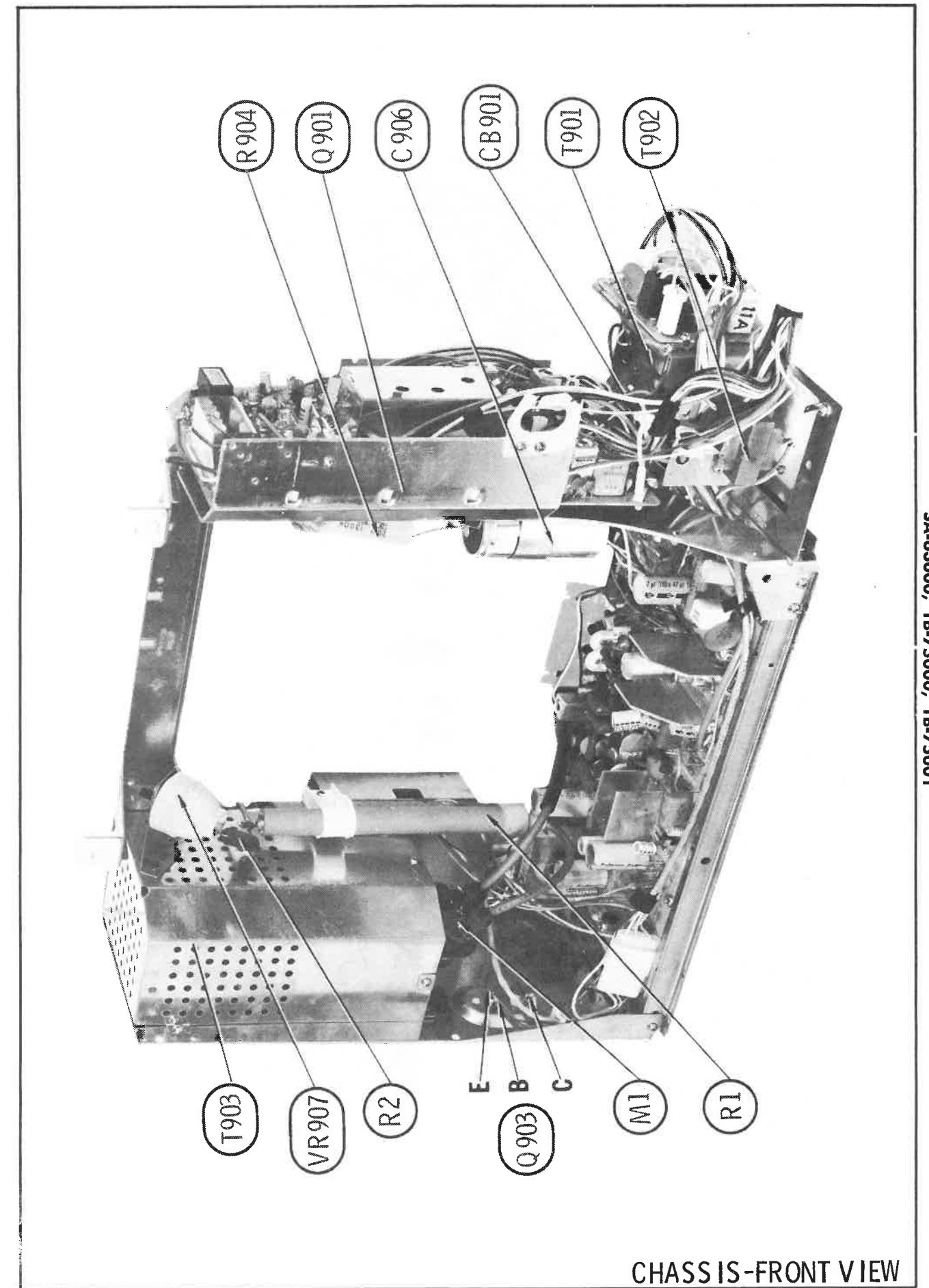
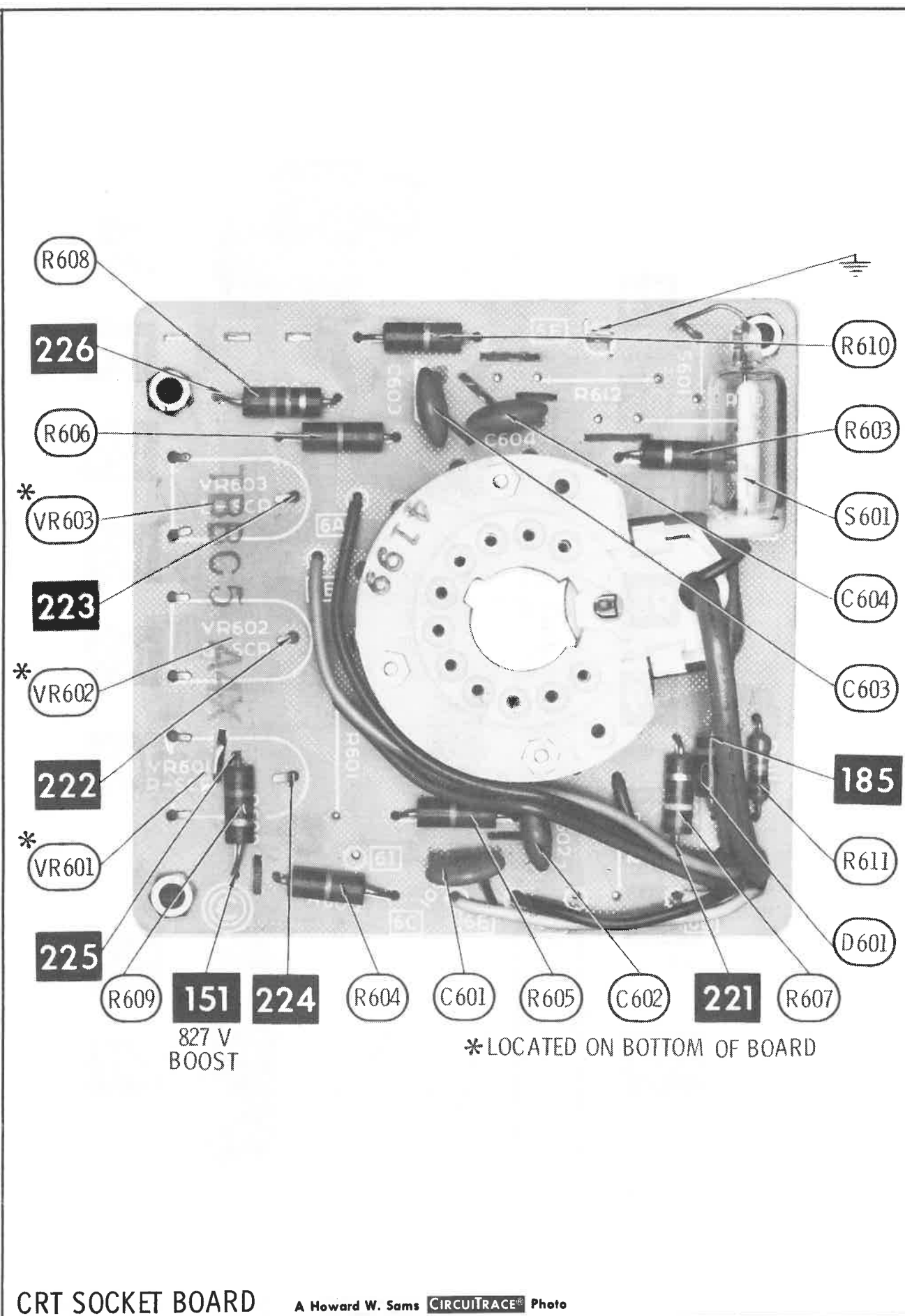


TUNER ASSEMBLY



DEFLECTION-POWER BOARD





PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA					
		PART No.		BUSS PART No.		LITTELFUSE PART No.	
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	WORKMAN PART No.
F901	Circuit Breaker Break: 3.15A Hold: 2.7A	4-234003300				815003	FA3.25
F201	1.5A @ 250V Quick-Acting Pigtail					31801.5	GJV1-1/2

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
L111 L902 S601 SW101 SW902 SW905 SW906 X101 X102 X103	VHF Antenna	4244000301	2 used
	VHF Antenna	4244000303	2 used
	UHF Antenna	110903011000	
	VHF Tuner	4115008611	Used in Models 91C54
	VHF Tuner	4115046500	Varactor Used in Model 91C75
	VHF Tuner	4115009010	Used in Models 91C53, 63
	UHF Tuner	4115045112	Used in Models 91C53, 54, 63
	UHF Tuner	4115046400	Varactor used in Model 91C75
	Delay Line	4279012300	
	Degaussing Coil	4279014202	
	Spark Gap	4234004000	
	Switch	4231006100	
	Switch		Normal-Service
	Switch		AFT On/Off (Includes SW902, SW905, SW906)
	Switch		Auto On/Off Color
	Switch		Auto On/Off Bright
	Ceramic Filter	4253004600	4.5MHz
	Crystal	4225000100	3.58MHz
	Ceramic Filter	4253006100	4.5MHz
	Meter	4511000600	Tuning (Used in Model 91C75)
	Magnet	4281003600	Blue Lateral and Purity Assembly (Used in Models 91C53, 63, 75)
	Magnet	4261003600	Blue Lateral and Purity used in Model 91C54
	Motor	1110907002200	Channel Select (Used in Models 91C54, 75)
	Power Cord	1110913011901	AC
	Printed Circuit Board	1110906041202	Signal - Color Assembly (Used in Model 91C75)
	Printed Circuit Board	1110906041200	Signal - Color Assembly (Used in Models 91C53,54,63)
	Printed Circuit Board	1110906041303	Deflection Assembly (Used in Model 91C75)
	Printed Circuit Board	1110906041305	Deflection Assembly (Used in Models 91C53,63)
	Printed Circuit Board	1110906041308	Deflection Assembly (Used in Model 91C54)
	Printed Circuit Board	1110906041400	Pincushion Assembly
	Printed Circuit Board	1110906041501	CRT Assembly (Used in Model 91C75)
	Printed Circuit Board	1110906041500	CRT Assembly (Used in Models 91C53,54,63)
	Printed Circuit Board	1110906042400	Convergence Assembly (Used in Model 91C75)
	Printed Circuit Board	1110906053400	Convergence Assembly (Used in Models 91C53,54,63)
	Printed Circuit Board	1110905003800	Remote Receiver (Used in Model 91C54,75)
	Printed Circuit Board	1110906044201	Tuner Unit (Used in Model 91C75)
	Socket	4235007200	CRT

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

ITEM	PART No.	ITEM	PART No.
MODELS 91C53, 91C63		MODEL 91C54	
Cabinet Assembly	1110111002200	Cabinet Assembly	1110111002200
Front Panel Assembly, 91C53	1110122020200	Escutcheon Assembly	1110121016301
Escutcheon Assembly	1110121016300	Front Panel Assembly	1110122020201
Cabinet Back, 91C53	1110116014300	Speaker Grille Assembly	1110136011700
Speaker Grille Assembly	1110136011700	Cabinet, Back Assembly	1110116014400
Cabinet Back, 91C63	1110116014301	Knob-Small	1110164014000
Front Panel Assembly, 91C63	1110122020202	Knob-VHF Tuning	1110163011000
Knob-Small (1 Used)	1110164014000	Knob-UHF (Outer)	1110162011001
Knob-VHF Fine Tuning	1110163011000	Knob-UHF (Inner)	1110162011100
Knob-UHF (Outer)	1110162011001	Knob-Color	1110164017800
Knob-UHF (Inner)	1110162011100	Knob-Tint	1110164017900
Knob-Color	1110164017800	Knob-AFT	1110164018200
Knob-Tint	1110164017900	Knob-Push Button (2 Used)	1110166001500
Knob-AFT	1110161016300	Knob-VHF Channel	1110161016401
Knob-Push Button (2 Used)	1110166001500	Knob-Small (4 Used)	1112164019600
Knob-Small (4 Used)	1112164019600		
		MODEL 91C75	
		Cabinet Assembly	1110111002600
		Escutcheon	1110121015600
		Front Panel	1110122020600
		Cabinet Back	1110116014600
		Knob-Push Button (3 Used)	1110166000901
		Knob-ON-OFF-Volume	1110164018501
		Knob-Brightness, Contrast, Vert. Hold, Tint, Color	1112164016902
		Knob-Button (13 Used)	1112166013400

ACCESSORIES

ITEM	MFGR. PART No.	REMARKS
Earphone	4152000500	

PARTS LIST AND DESCRIPTION

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

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

WIRING DATA

High Voltage Lead .....	Use BELDEN No. 8868 (25 KV)
Shielded Hook-up Wire .....	Use BELDEN No. 8401 or 8421 (Single-Conductor)
	8208 (Two-Conductor)
General-use Unshielded Hook-up Wire .....	Use BELDEN No. 8528 (Solid) Available in 12 Colors
	8522 (Stranded) Available in 12 Colors
300-Ohm Tuner Input Lead .....	Use BELDEN No. 8225
75-Ohm Tuner Input Lead .....	Use BELDEN No. 8241
300-Ohm Antenna Lead-in .....	Use BELDEN No. 8275 (Foam Core) or 8285 (Foam Jacketed)
Antenna Rotor Cable .....	Use BELDEN No. 8464 (Flat) or 8484 (Round) 4-Conductor
	8485 (Round) - 5 Conductor
	8488 (Round) - 8 Conductor

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	MFGR. PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SYLVANIA PART No.	
V1	510CEB22				Used in Model: 91C75
	510AHB22A				Used in Models: 91C53,91C54,91C63

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFGR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
D1			1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D101	WG1010B	4-2020-10100	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D102	1S1555		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	WG1010B	4-2020-10100 (1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D103	1S1555		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	WG1010B	4-2020-10100 (1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D104	EQ801-11Z	4-2020-12300	GEZD-11	Z1212	ZB11	HEPZ0414	RE 116	SK3092	RT-242	ECG5074
D105	11V Zener									
	1S1555		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	WG1010B	4-2020-10100 (1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D107	WG1010B	4-2020-10100	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D108	WG1010B	4-2020-10100	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D109	WG1010B	4-2020-10100	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D110	EQ801-12Z	4-2020-12400	GEZD-12	Z1212	PTC507	HEPZ0415	RE 118	SK3062	RT-243	ECG142
D201	FR2-06	4-2020-07300	GE-504A	8D4	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D202	EQ801-12Z	4-2020-12400	GEZD-12	Z1212	PTC507	HEPZ0415	RE 118	SK3062	RT-243	ECG142
	12V Zener									
D203	FR2-02	4-2020-06700	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D204	FR2-02	4-2020-06700	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D205	FR2-02	4-2020-06700	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D206	FU-1N	4-2020-07600	GE-511	D172	PTC216	HEPR3012	RE 55	SK3130	RT-203	ECG506
D207	WG1010B	4-2020-10100	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D208	WG1010B	4-2020-10100	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D209	WG1010B	4-2020-10100	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D211	1S1555	4-2020-06200	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D212a	1N34A	4-2020-05600	1N34AS(7)	1N34A(7)	PTC207(7)	HEPR9134(7)	RE 86(6)	SK3087(7)	RT-200(7)	ECG110(6)
D212b	1N34A	4-2020-05600								
D213	FU-1M	4-2020-08000	GE-504A	8D4	PTC201	HEPR0053	RE 49	SK3016	RT-214	ECG116
D214	FU-1N	4-2020-07600	GE-511	D172	PTC216	HEPR3012	RE 55	SK3130	RT-203	ECG506
D216	FR2-02	4-2020-06700	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D217	FR2-02	4-2020-06700	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D218	EQA01-35	4-2020-13300	GEZD-39	Z1124	ZB36	HEPZ0428			RT-251	ECG5085
	35V Zener									
D219	WG1010B	4-2020-10100	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D220	ZB1-100	4-2020-14100		Z1134	ZB100	HEPZ0438	RE 133	SK3099	RT-256	ECG5096
	100V Zener									
	ZB1-110	4-2020-14000	GEZD-120	Z1136	PTC516	HEPZ0439		SK3099	RT-256	ECG151
	110V Zener									
D221	FR2-02	4-2020-06700	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D222	1S1555	4-2020-06200	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	WG1010B	4-2020-10100	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D401	SB-2C	4-2020-07800	GE-509	8D8	PTC203	HEPR0055	RE 51	SK3032	RT-210	ECG125
D402	SB-2CH	4-2020-07801				HEPR0096		SK3130	RT-201	
D501	1N4448	4-2020-06100	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D502	1N4448	4-2020-06100	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D503	1N4448	4-2020-06100	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D504	WG1010B	4-2020-10100	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D505	WG1010B	4-2020-10100	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D506	WG1010B	4-2020-10100	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D507	WG1010B	4-2020-10100	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D508	WG1010B	4-2020-10100	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D509	WG1010B	4-2020-10100	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D601	FR2-02	4-2020-06700	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
IC101	TA7075P	4-2060-02600								ECG1080
	LA1353	4-2060-03900								ECG1080
IC102	TA7070P	4-2060-02400			PTC754			SK3102		ECG1004
	LA1364	4-2060-02300			PTC754					ECG1004

SANTO CHASSIS SA-53000, SA-54000, SA-63000, TB-75000, TB-75001

FOLDER 1

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

SEMICONDUCTORS (Select replacement transistor for best results)(cont)

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA						
			GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.
IC103	LA1365 HA1125	4-2060-04000 4-2060-04600 (1)			PTC726 PTC726			SK3072 SK3072	TVCN-11 TVCN-11
IC104	HA1118 LA1373	4-2060-07200 4-2060-04200 (1)							ECG1094 ECG1094
IC105	HA1119 LA1374	4-2060-07300 4-2060-04300 (1)							ECG1121 ECG1121
IC106	HA1157 LA1376	4-2060-04800 4-2060-04900							ECG1122 ECG1122
M1 Q101	HVT30-E(*) 25C383		GE-61	TR-70	PTC132	HEPS0015	RE 28	SK3132	RT-112
Q102	25C538A		GE-61	(IR)25C538A	PTC121	HEPS0030	RE 13	SK3124	RT-172
Q104	25C536E,F		GE-20	TR-24	PTC123	HEPS0016	RE 13	SK3124	RT-107A
Q105	25A673A,B		GE-67	TR-30	PTC142	HEPS0013	RE 26	SK3114	RT-115
Q109	25C1507		GE-32	TR-75	PTC117	HEPS0015		SK3104	RT-159
Q110	25C1507		GE-32	TR-75	PTC117	HEPS0015		SK3104	RT-159
Q111	25C1507		GE-32	TR-75	PTC117	HEPS0015		SK3104	RT-159
Q113	25C536E,F		GE-20	TR-24	PTC123	HEPS0016	RE 13	SK3124	RT-107A
Q201	25A5640, P,R		GE-21	TR-52	PTC127	HEPS0032		SK3025	RT-115
Q202	25D24Y,D, E		GE-12	TR-23	PTC104	HEPS0013	RE 14	SK3021	RT-128
Q203	25D24Y,D		GE-12	TR-23	PTC104	HEPS0013	RE 14	SK3021	RT-128
Q204	25A5640, P,R		GE-21	TR-52	PTC127	HEPS0032		SK3025	RT-115
Q206	25C536E, C,D		GE-20	TR-24	PTC123	HEPS0016	RE 13	SK3124	RT-107A
Q207	25C839E,F		GE-20	TR-24	PTC121	HEPS0015	RE 13	SK3018	RT-107A
Q208	25S64Q,P, R		GE-21	TR-52	PTC127	HEPS0032		SK3025	RT-115
Q209	25C536E, C,D		GE-20	TR-24	PTC123	HEPS0016	RE 13	SK3124	RT-107A
Q210	25C536E, C,D		GE-20	TR-24	PTC123	HEPS0016	RE 13	SK3124	RT-107A
Q211	25C536E, C,D		GE-20	TR-24	PTC123	HEPS0016	RE 13	SK3124	RT-107A
Q212	25C1409A, B		GE-27	TR-75	PTC124	HEPS0019	RE 77		RT-135
	25C1025CTV (1)		GE-12	TR-81	PTC148	HEPS0012		SK3131	RT-128
Q213	25C536E 25C1175		GE-20 GE-63	TR-24 TR-25	PTC136 PTC123	HEPS0016 HEPS0025	RE 17	SK3124 SK3024	RT-107A RT-114
	25C933(1) 25C1318		GE-20 GE-18	TR-21 TR-25	PTC144	HEPS0013 HEPS0014	RE 13 RE 13	SK3122 SK3024	RT-102 RT114
Q214	25D24YM, L,C,D,E		GE-12	TR-23	PTC104	HEPS0011	RE 14	SK3021	RT-128
	25C1235AM, AL		GE-12	TR-23	PTC104	HEPS0011	RE 14	SK3021	RT-128
	25C515AM (1)		GE-12	TR-23	PTC104	HEPS0011	RE 14	SK3021	RT-128
Q215	25C536E, C,D		GE-20	TR-24	PTC123	HEPS0016	RE 13	SK3124	RT-107A
Q401	25C130BK 25C1325		GE-38 GE-38	TR-67 TR-93	PTC129 PTC129	HEPS0021 HEPS0021	RE 32 RE 32	SK3115 SK3115	
Q901	25D198 25C1030, B,C(1)		GE-14 GE-14	TR-68 TR-61	PTC118 PTC119	HEPS0020 HEPS7002	RE 29 RE 19	SK3079	RT-131 RT-131
Q903	25C1409A, AC		GE-27	TR-75	PTC124	HEPS0019			RT-135
	25C1025CTV (1)		GE-12	TR-81	PTC148	HEPS0012	RE 34	SK3131	RT-128

- (1) Used in some versions.  
(6) Matched pair.  
(7) Two required - select matched pair.  
\* Number on unit.  
(10) Not used in models 91C53/91C63.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA					
		MFR. PART No.	ARCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C104	100 16V	CEDEA101	RME-E-E-100	EP15-100	PC100-16	VTT100F16	EV-1230
C105	1 25V	CEFEA1R0	RME-A-G-001	EP30-1	PC1-50	MTV1CB50	EV-1315
C106	.47 25V	CEFEAR47			PC1-50	TDC474M050EL	EV-1310
C107	.47 25V	CEFEAR47			PC1-50	TDC474M050EL	EV-1310
C110	100 16V	CEDEA101	RME-E-E-100	EP15-100	PC100-16	VTT100F16	EV-1230
C115	10 16V	CEDEA100	RME-B-E-010	EP15-10	PC10-25	VTT10A25	EV-1222
C116	1 25V	CEFEA1R0	RME-A-G-001	EP30-1	PC1-50	MTV1CB50	EV-1315
C121	22 25V	CEFEA220	RME-D-G-025	EP30-25	PC25-25	MTV25CB35	EV-1325
C129	470 16V		RME-L-E-500	EP15-500	PC500-16	VTT470J16	EV-1250

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

COILS (RF-IF)(cont)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L403	RF Choke	4253004000	L3001		
L404	RF Choke		Z2003		
L405	RF Choke	4253004000	L3001		
L406	RF Choke	4253004900	L7133		
L407	RF Choke		A146		
L408	RF Choke (Width)	4274005400	A151		
L409	RF Choke (Linearity)	4274005300	A141		
L411	RF Choke	4253004900	L7133		
L412	RF Choke (Width)	4274005100	A162		
L504	RF Choke		A128		
L505	RF Choke		A0196		
LC101	Video Detector	4227003500	X0014		
T101	Video Input IF	4271005100	S8808		
T102	41.25MHz Trap	4271064900	S8540		
T103	47.25MHz Trap	4271075000	S8539		
T104	1st Video IF	4271027000	S8072		
T105	2nd Video IF	4271046000	S8065		
T106	4.5MHz Trap	4256053301	S2028A		
T107	Sound IF/Detector Assy.	4256034700	S2049		
T108	AFT Detector (Pri)	2271045500	S8054		
T109	AFT Detector (Sec)	2271045600	S8055		
T110	Chroma Take-off	4279009100	S3507		
T111	Chroma Output	4279016600	S3046		
T112	3.58MHz Oscillator	4279016700	S3513		
T113	CW Output		S3506Z		
T114	Quadrature	4256034800	S9017		
T115	39.75MHz Trap		S8531		

(1) Part Number 4272016600 used in some versions.

COILS & TRANSFORMERS (Sweep Circuits)

ITEM No.	FUNCTION	REPLACEMENT DATA				NOTES
		MFR. PART No.	OTHER IDENTIFICATION	THORDARSON PART No.	TRIAD PART No.	
L410	Pincushion Phase	4279020500	A0214			
L501	R-G Vert.Lines Right	1114279017800	A0197			
L502	Straight Blue Horiz. Lines	4279018100	A0200			
L503	R-G Horiz. Lines Right	1114279017900	A0198			
L510B	Convergence Yoke					
L510G	Blue Section	4277002603	D3006B			
L510R	Green Section	4277002602	D3006G			
L903	Red Section	4277002601	D3006R			
	Yoke 90° Horiz 1.36mH	4276026204	D0137XMM			
	Vert 122mH					
T202	Yoke	4276026203 (1)				
T203	HV Regulator	4274006200	A0184			
T204	Horiz. Driver	4273006800	A0227			
T401	Horiz. Osc.	4273006200	A0213			
T501	Pincushion (DPC)	4279020400	A0211			
T903	Blue Horiz. Lines Right	1114279018000	A0199			
	Horiz. Output	2752141002300	F0178			

(1) Used in Models 91C53, 91C54, 91C63.

TRANSFORMER (Power)

ITEM No.	RATING		REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	MFR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T901	120V AC @ .075A AC	6.3V AC @ .76A AC	4251036800 P136U (1)			(1) Number on unit

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T902	1900	4	4254003400 V123 (1)	24S53	S-20X.	(1) Number on unit

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFR. PART No.	QUAM PART No.	
SP901	4" PM 4 ohms 3" X 5" PM 4 ohms	4151000400 4151004900	4C25 35A05	Used in Model 91C75 Used in Models 91C53, 91C54, 91C63

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

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

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFGR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
VR911	Sub Contrast	1000	4222003700 G1019H (5)	F2-1000,SNK012,AK-38			BU11,CF80,SS6A
VR912	Sub Brightness	20K	4222044400 G1036H (5)	TT-26 or [F1-25K,SNK012,AK-38]	A47-20K-S, RN-3,TT-2 or [NP-20K-S, NML-A-300,TT-2]	RU24T14,SL37,SN1000	BU11, CF62, SS6A
VR913	Sub Tint	50K	4222045200 G1035H (5)	TT-31 or [F1-50K,SNK012,AK-38]	B47-50K-S or [NP-50K-S, NML-A-300, TT-2]	PTA54L or [RU54L,SL37,SN1000]	BU11,CF12,SS6A
VR914	Sub Color	50K	4222045200 G1035H (5)	TT-31 or [F1-50K,SNK012,AK-38]	B47-50K-S or [NP-50K-S, NML-A-300, TT-2]	PTA54L or [RU54L,SL37,SN1000]	BU11,CF12,SS6A

- (1) Enlarge mounting hole.  
(2) Used in Model 91C75 only.  
(5) Number on unit.  
(6) Alternate part, may be used in some versions.  
(7) To establish section identification of side-by-side controls, view controls with shaft ends facing you, terminals down.  
On 3-section controls, left-hand section is "A", middle section is "B", right-hand section is "C".  
On 2-section controls, left-hand section is "A", right-hand section is "B".  
(9) Switch must be CTS type 080.  
(18) Use jumper wires to "PC" Board.  
(19) Disregard Tap.  
(20) Includes R103, R108, R109 and R110.  
(21) May be 50 ohm in some versions.  
(22) May be 10 ohm in some versions.  
(23) May be 500 ohm in some versions.  
(24) Used in Models 91C53, 91C54 and 91C63.  
(25) Used in Model 91C54.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.			WORKMAN PART No.	MFGR. PART No.
POS201	18 CoId PTC		4204003900	R256	2600 CoId NTC		4204003800 (STD-250)
R1	132 Meg Focus		(2)	R262	27 5% 3W Film		
R2	22 Meg Focus		(2)	R285	1200 5% 3W Film		RR3PK122
R201	1 10% 7W WW		RY7BK1R0	R904	130 10% 20W WW	3G-1.2K	RYEBK131
R159	2600 CoId NTC		4204003800 (STD-250)	VDR201	VDR (1)		4205003500 (E1139)
R160	2600 CoId NTC		4204003800 (STD-250)				

- (1) Voltage Dependent Resistor  
(2) Part of M1 HV Rectifier Assembly.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L101	RF Choke (1.5uH)	4272014500		70F156A1	(1) Used in Some Versions.
L102	RF Choke	4253004400		74F226AP	
L103	RF Choke (15uH)	4272018600	L7100		
L104	Peaking (680uH)	4272014700			
L106	RF Choke (1.5uH)	4272014500		70F156A1	
L109	Peaking (82uH)	4272014300		73F824AF	
L110	Peaking (82uH)	4272014300		73F824AF	
L112	Peaking (47uH)	4272013500			
L113	Peaking (120uH)	4272019200			
L114	RF Choke (1uH)	4272016700			
L116	RF Choke (5.6uH)	4272018100			
L117	Peaking (100uH)	4272021000			
L118	Peaking (68uH)	4272012500 (1)			
L119	RF Choke (15uH)	4272018600			
L120	Peaking (220uH)	4272012200			
L121	Peaking (220uH)	4272012200			4604
L122	Peaking (220uH)	4272012200			
L123	Peaking (68uH)	4272016600			
L201	Line Choke	4259003700	L019		
L202	RF Choke		A146	73F394AF	
L203	Peaking (2.2mH)	4272014800	L4001		
L204	RF Choke	4253004500	L7096		
L205	RF Choke	4273005200	A136	73F823AF	
L206	RF Choke	4253005700	L7153		
L207	RF Choke		A164		
L208	RF Choke	4253004800	L7128		
L209	Peaking (1.0mH)	4272019600			
L210	RF Choke (8uH)	4253005200	L7141		
L211	RF Choke	4253004500	L7096		
L401	RF Choke	4253004000	L3001		
L402	RF Choke	4253004000	L3001		

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

ELECTROLYTIC CAPACITORS (cont)

ITEM No.	RATING	REPLACEMENT DATA					
		MFGR. PART No.	ARCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C133	4.7 25V	CEFEA4R7	RME-A-G-005	EP30-5	PC5-50	VTT4R7A50	EV-1319
C150	10 25V	CEFEA100	RME-B-G-010	EP30-10	PC10-25	VTT10A25	EV-1322
C151	4.7 25V	CEFEA4R7	RME-A-G-005	EP30-5	PC5-50	VTT4R7A50	EV-1319
C154	1 25V	CEFEA1R0	RME-A-G-001	EP30-1	PC1-50	MTVICB50	EV-1315
C155	22 16V	CEDEA220	RME-D-E-025	EP15-25	PC25-25	VTT22A16	EV-1325
C165	1 25V	CEFEA1R0	RME-A-G-001	EP30-1	PC1-50	MTVICB50	EV-1315
C166	10 16V	CEDEA100	RME-B-E-010	EP15-10	PC10-25	VTT10A25	EV-1222
C174	10 25V	CEFEA100	RME-B-G-010	EP30-10	PC10-25	VTT10A25	EV-1322
C179	10 25V	CEFEA100	RME-B-G-010	EP30-10	PC10-25	VTT10A25	EV-1322
C180	1 25V	CEFEA1R0	RME-A-G-001	EP30-1	PC1-50	MTVICB50	EV-1315
C182	10 25V	CEFEA100	RME-B-G-010	EP30-10	PC10-25	VTT10A25	EV-1322
C188	1 25V	CEFEA1R0	RME-A-G-001	EP30-1	PC1-50	MTVICB50	EV-1315
C189	1 25V	CEFEA1R0	RME-A-G-001	EP30-1	PC1-50	MTVICB50	EV-1315
C205	47 160V		CTA-1340		WBR50-250	TC59B	TVA-1443
C206	47 25V	CEFEA470	RME-F-G-050	EP30-50	PC50-25	VTT47E25	EV-1326
C210	22 160V	CEKEA220	CTA-1325		WBR20-250	TC57B	TVA-1442.3
C211	22 160V	CEKEA220	CTA-1325		WBR20-250	TC57B	TVA-1442.3
C212	100 10V	CEBEA101	RME-E-D-100	EP15-100	PC100-10	MTV100CB10	EV-1130
C215	4.7 25V	CEFEA4R7	RME-A-G-005	EP30-5	PC5-50	VTT4R7A50	EV-1319
C218	4.7 25V	CEFEA4R7	RME-A-G-005	EP30-5	PC5-50	VTT4R7A50	EV-1319
C219	33 16V	CEDEA330	ME-3-E-035	EP13-25	PC30-25	MTV30CB25	EV-1325
C220	1 25V	CEFEA1R0	RME-A-G-001	EP30-1	PC1-50	MTVICB50	EV-1315
C230	100 6.3V	CEAEA101	RME-E-D-100	EP15-100	PC100-10	MTV100CB10	EV-1130
C232	220 25V	CEFEA221	RME-K-G-250	EP30-250	PC250-25	VTT220H25	EV-1345
C235	4.7 25V NP		CTA-7550	EN25-505	WNP5-50	TCN505A	TVAN-1203.1
C236	1 160V	CEKEA1R0	ME-3-R-001		WBR1-450	TC56A	TVA-1434
C237	10 50V	CEMEA100	RME-D-J-010	EP50-10	PC10-50	MTV10CB50	EV-1622
C240	100 160V	CEKEA101	CTA-1350		WBR100-250	TC1265B	TVA-1445
C242	22 250V	CEMEA220	CTA-1325		WBR20-250	TC57B	TVA-1509
C247	2.2 25V	CEFEA2R2	RME-A-G-002	EP30-2	PC2-100	VTT2R2A50	EV-1317
C251	10 25V	CEFEA100	RME-B-G-010	EP30-10	PC10-25	VTT10A25	EV-1322
C256	3300 6.3V	CEAEA332	ME-D4000		WBR4000-12	TC1540A	TVA-1129.4
C257	100 160V	CEKEA101	CTA-1350		WBR100-250	TC1265B	TVA-1445
C258	220 25V	CEFEA221	RME-K-G-250	EP30-250	PC250-25	VTT220H25	EV-1345
C259	220 25V	CEFEA221	RME-K-G-250	EP30-250	PC250-25	VTT220H25	EV-1345
C260	1 160V NP	CEKAN1R0	CTA-7425				TVAN-1560
C404	4.7 160V	CEKEA4R7 (1)	ME-6-R-005		WBR5-450	TC50xB	TVA-1438
C906	470 180	CB185VD	CTM-1491		BB0190A (2)	WP123A	TVL-1490
C907	100 6.3V	CEAEA101	RME-E-D-100	EP15-100	PC100-10	MTV100CB10	EV-1130
C908	47 25V	CEFEA470	RME-F-G-050	EP30-50	PC50-25	MTV50CD25	EV-1326
C918	100 6.3V	CEAEA101	RME-E-D-100	EP15-100	PC100-10	MTV100CB10	EV-1130
C919	47 25V	CEFEA470	RME-F-G-050	EP30-50	PC50-25	MTV50CD25	EV-1326

- (1) Used in some versions.  
(2) Parallel both sections.

CAPACITORS

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA				
			ARCO/ELMENCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	120 NPO 5%		CCT0-270	DTZ-120		CN0312	10TCC-T12
C3	27 10%		1MDF-3-104		DPMS2P1	CN0427	10TCC-Q27
C4	.1 100V 10%		CCD-272			EWF1A010	1PB-P10
C52	.0027 10%		CCT0-390			GP227	10TS-D27
C53	39 10%		CCD-103	DD-1032	GP10000	CN0439	10TCC-Q39
C55	.01		CCD-103			GP110	10TS-S10
C57	.01 10%		* CCD-103			*	10TS-S10
C101	27 N220 10%		* CCD-102	DD-102		GP210	10TCR-Q27
C102	.001		1MDF-3-104		DPMS2P1	EWF1A010	10TS-D10
C109	.1 50V		* CCD-103			*	1PB-P10
C108	27 N220 10%		* CCD-103	DD-1032	GP10000	GP110	10TCR-Q27
C109	.01		* CCD-103			*	10TS-S10
C111	8 N220		* CCD-103	DTZ-20	NP020	CN0420	10TCR-V82
C112	20 5%		CCD-103	DD-1032	GP10000	GP110	10TCC-Q20
C113	.01		CCT0-2R2	DTZ-2R2	NP02P2	CN0522	10TS-S10
C114	2		CCD-472			CN0522	10TCC-V22
C117	.0047		* CCD-472			*	10TS-D47
C118	100 N220 10%		* CCD-472			*	10TCR-T10
C119	12 N220 5%		* CCD-472			*	10TCR-Q12
C120	.0047		CCD-472				10TS-D47
C122	.0047		CCT0-3R3	DTZ-3R3	NP03P3	CN0533	10TCC-V33
C123	3					CN0510	10TCC-V10
C124	1 PF		CCT0-050			CN0412	10TCC-V50
C125	5 NPO					*	10TCC-Q12
C126	12 NPO 5%					*	10TCP-Q68
C127	68 N150 5%					*	10TS-S10
C128	.01		CCD-103	DD-1032	GP10000	GP110	10TS-S12
C131	.012 50V 10%		1MDF-1-123	DD-102	DPMS6S12	EWF1A112	10TS-D10
C136	.001		CCD-102			GP210	*
C137	47 N075 10%		* CCD-102	DD-102		CN0510	10TCN-Q47
C138	1 PF					GP210	10TCC-V10
C139	.001		CCD-102	DD-102		GP210	10TS-D10
C140	22 10%		CCT0-220	DTZ-22	NP022	CN0422	10TCC-Q22
C141	.001		CCD-102	DD-102		GP210	10TS-D10
C142	.001		CCD-102	DD-102		GP210	10TS-D10
C143	3		CCT0-3R3	DTZ-3R3	NP03P3	CN0533	10TCC-V33
C144	680 10%		CCD-681	DD-681	GP680	GP368	10TS-T68
C145	220 10%		CCD-221	DD-221		GP322	10TS-T22
C147	22 NPO 5%			DTZ-22	NP022	CN0422	10TCC-Q22



PARTS LIST AND DESCRIPTION (CONTINUED)

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

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CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA					
			ARCO/ELMENCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C148	220 10%	CFMCM563	CCD-221	DD-221		GP322	10TS-T22	
C149	56 10%		CCD-560	DD-560		GP456	10TS-Q56	
C152	47		CCD-470	DTZ-47	NP047	CN0447	10TCC-Q47	
C153	.01		CCD-103	DD-1032	GP10000	GP110	10TS-S10	
C156	330 10%		CCD-331	DD-331	GP330	GP333	10TS-T33	
C157	.01		CCD-103	DD-1032	GP10000	GP110	10TS-S10	
C158	.01		CCD-103	DD-1032	GP10000	GP110	10TS-S10	
C159	18 NPO 5%		1MDF-3-104		DPMS2P1	CN0418	10TCC-Q18	
C160	.1 50V 10%		CCD-103	DD-1032	GP10000	GP110	10TS-S10	
C161	.01		CCD-103	DD-1032	GP10000	GP110	10TS-S10	
C162	.01		CCD-103	DD-1032	GP10000	GP110	10TS-S10	
C163	.01		CCD-103	DTZ-100	NP0100	CN0310	10TCC-T10	
C164	100 5%			DTZ-270			10TCC-T27	
C168	270 5%		CCD-391	DD-391	GP390	GP339	10TS-T39	
C169	390		CCD-103	DD-1032	GP10000	GP110	10TS-S10	
C170	.01			DTZ-22	NP022	CN0422	10TCC-Q22	
C171	22 NPO 5%						10TCC-V50	
C172	5 NPO		CCD-050				10TCU-T15	
C173	150 N750 10%		CCD-151	DTN-150	N150	CN7315	1PB-S47	
C175	.047 50V 10%		1MDF-2-473		DPMS2S47	EWFA1A147	1PB-S47	
C176	.047 50V 10%		1MDF-2-473		DPMS2S47	EWFA1A147	1PB-P10	
C177	.1 50V 10%		1MDF-3-104		DPMS2P1	EWFA1A010	1PB-P10	
C178	.1 50V 10%		1MDF-3-104		DPMS2P1	EWFA1A010	10TS-S10	
C181	.01		CCD-103	DD-1032	GP10000	GP110	10TS-S10	
C183	.01		CCD-103	DD-1032	GP10000	GP110	10TS-S10	
C184	.01		CCD-103	DD-1032	GP10000	GP110	10TS-S10	
C185	.01		CCD-103	DD-1032	GP10000	GP110	10TS-S10	
C186	.01		CCD-103	DD-1032	GP10000	GP110	10TS-S10	
C187	68 N220 10%		*			*	10TCR-Q68	
C190	.01		CCD-103	DD-1032	GP10000	GP110	10TS-S10	
C191	330 10%		CCD-331	DD-331	GP330	GP333	10TS-T33	
C192	.001 10%		CCD-102	DD-102	GP210	GP210	10TS-D10	
C193	330 10%		CCD-331	DD-331	GP330	GP333	10TS-T33	
C194	.001 10%		CCD-102	DD-102	GP210	GP210	10TS-D10	
C195	330 10%		CCD-331	DD-331	GP330	GP333	10TS-T33	
C196	.001 10%		CCD-102	DD-102	GP210	GP210	10TS-D10	
C198	.01		CCD-103	DD-1032	GP10000	GP110	10TS-S10	
C199	150 10%		CCD-151	DD-151		CN0315	10TCC-T15	
C201	.056 250VAC		CCD-103	DD-1032	GP10000	GP110	10TS-S10	
C202	.01		CCD-102	DD-102	GP210	GP210	10TS-D10	
C203	.001		CCD-102	DD-102	GP210	GP210	10TS-D10	
C204	.001 1KV		CCD-103	DD-1032	GP10000	GP110	10TS-S10	
C213	.01 10%		CCD-390			CN0439	10TCC-Q39	
C214	39 10%		CCD-390				6PS-D22	
C217	.0022 10%		1MDF-1-223	CPR-2200J	DPMS6D22	EWFA1A122	1PB-S22	
C221	.022 50V 10%		1MDF-1-223	CPJ-223	DPMS2S22	EWFA1A122	1PB-D47	
C222	.0047 50V 10%		1MDF-1-472	CPJ-472	DPMS6D47	EWFA1A247	10TS-T27	
C223	270 10%		CCD-271	DD-271	GP270	GP327	6PS-D22	
C224	.0022 50V 10%		6DP-1-222	CPR-2200J	DPMS6D22	EWFA1A010	1PB-P10	
C225	.1 50V 10%		1MDF-3-104		DPMS2P1	EWFA1A010	6PS-S33	
C226	.033 100V		6DP-3-333		DPMS6S33	EWFA1A110	1PB-S10	
C227	.01 50V 10%		1MDF-1-103	CPJ-103	DPMS4S1	EWFA1A110	1PB-S15	
C228	.015 50V 10%		1MDF-1-153	CPJ-153	DPMS4S15	EWFA1A115	1PB-P22	
C231	.22 50V 10%		1MDF-4-224		DPMS2P22	EWFA1A022	1PB-P10	
C233	.1 50V 10%		1MDF-3-104		DPMS2P1	EWFA1A010	1PB-P47	
C234	.47 50V 10%		1MDF-4-474		DPMS2P47	EWFA1A047	1PB-S68	
C241	.068 100V 10%		1MDF-2-683		DPMS4S68	EWFA1A168	10TS-T47	
C243	470 10%		CCD-471	DD-471	GP470	GP347	1PB-D68	
C244	.0068 50V 10%		1MDF-1-682	CPJ-682	DPMS6D68	EWFA1A268	10TS-D39	
C245	.0039 10%		CCD-392				1PB-S68	
C248	.068 50V 10%		1MDF-2-683		DPMS4S68	EWFA1A168	6PS-S56	
C249	.056 200V 10%		6DP-3-563		DPMS6S56	PVC6156	6PS-S68	
C250	.068 200V 10%		6DP-4-683		DPMS6S68	EWFA1A168	10TS-D10	
C253	.001 10%		CCD-102	DD-102	GP10000	GP110	10TS-S10	
C254	.01		CCD-103	DD-1032	GP10000	GP110	10TS-S10	
C261	.01		CCD-103	DD-1032	GP10000	GP110	10TS-S10	
C262	220	(1)	CCD-221	DD-221		GP322	10TS-T22	
C264	150 10%		CCD-151	DD-151		CN0315	10TCC-T15	
C401	.1 1KV 10%					PVC10010	10PS-P10	
C402	500 1.5KV 10%							
C403	.001 1.5KV 10%							
C405	.056 200V 10%		6DP-3-563		DPMS6S56	PVC6156	6PS-S56	
C406	.1 200V 10%		2DP-3-104		DPMS2P1	PVC16256	2PB-P10	
C407	.0056 1.5KV 10%				DPMS20D56			
C408	.33 200V 5%							
C409	.33 200V 5%							
C501	.15 200V 10%		2DP-3-154		DPMS2P15	EWFA1A15	2PB-P15	
C502	.047 200V 10%		4DP-3-473		DPMS4S47	EWFA1A147	4PB-S47	
C503	.1 200V 10%		2DP-3-104		DPMS2P1	EWFA1A010	2PB-P10	
C504	.082 400V 10%		6DP-4-823		DPMS6S82	PVC6182	6PS-S82	
C505	.082 400V 10%		6DP-4-823		DPMS6S82	PVC6182	6PS-S82	
C506	.22 50V 10%		1MDF-4-224		DPMS2P22	EWFA1A022	1PB-P22	
C507	.1 200V 10%		2DP-3-104		DPMS2P1	EWFA1A010	2PB-P10	
C508	.15 50V 10%		1MDF-3-154		DPMS2P15	EWFA1A015	1PB-P15	
C509	.15 50V 10%		1MDF-3-154		DPMS2P15	EWFA1A015	1PB-P15	
C601	.001 1KV		CCD-102	DD-102	GP210	GP210	10TS-D10	
C602	.001 1KV		CCD-102	DD-102	GP210	GP210	10TS-D10	
C603	.001 1KV		CCD-102	DD-102	GP210	GP210	10TS-D10	
C604	.001 1KV		CCD-102	DD-102	GP210	GP210	10TS-D10	
C920	.0068		CCD-682	DD-682	GP6800	GP268	10TS-D68	

\* Not normally in distributor's stock. Available thru distributor on order to manufacturer.  
(1) Used in some versions.

PARTS LIST AND DESCRIPTION (CONTINUED)

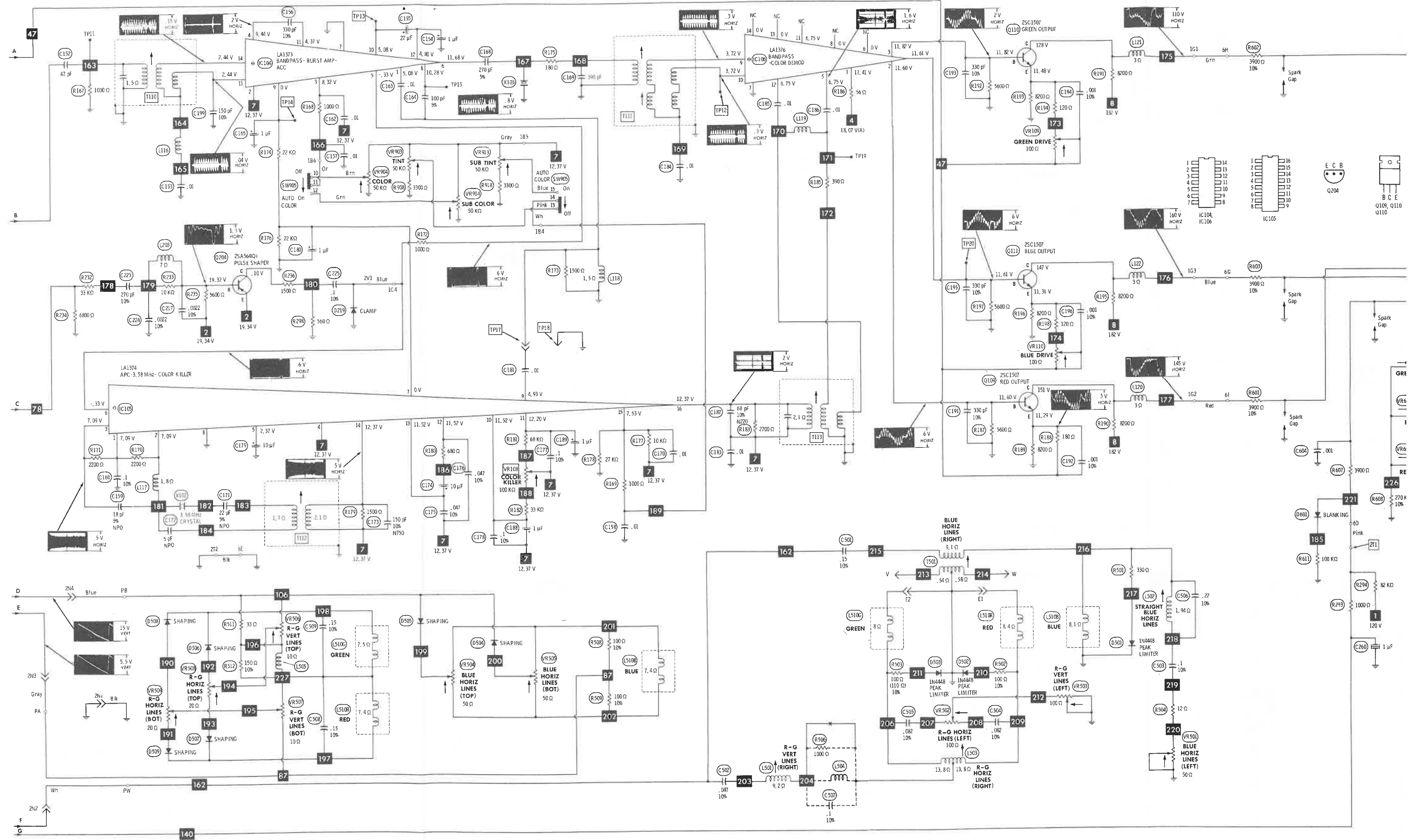
(When ordering parts, state Model, Part Number, and Description.)

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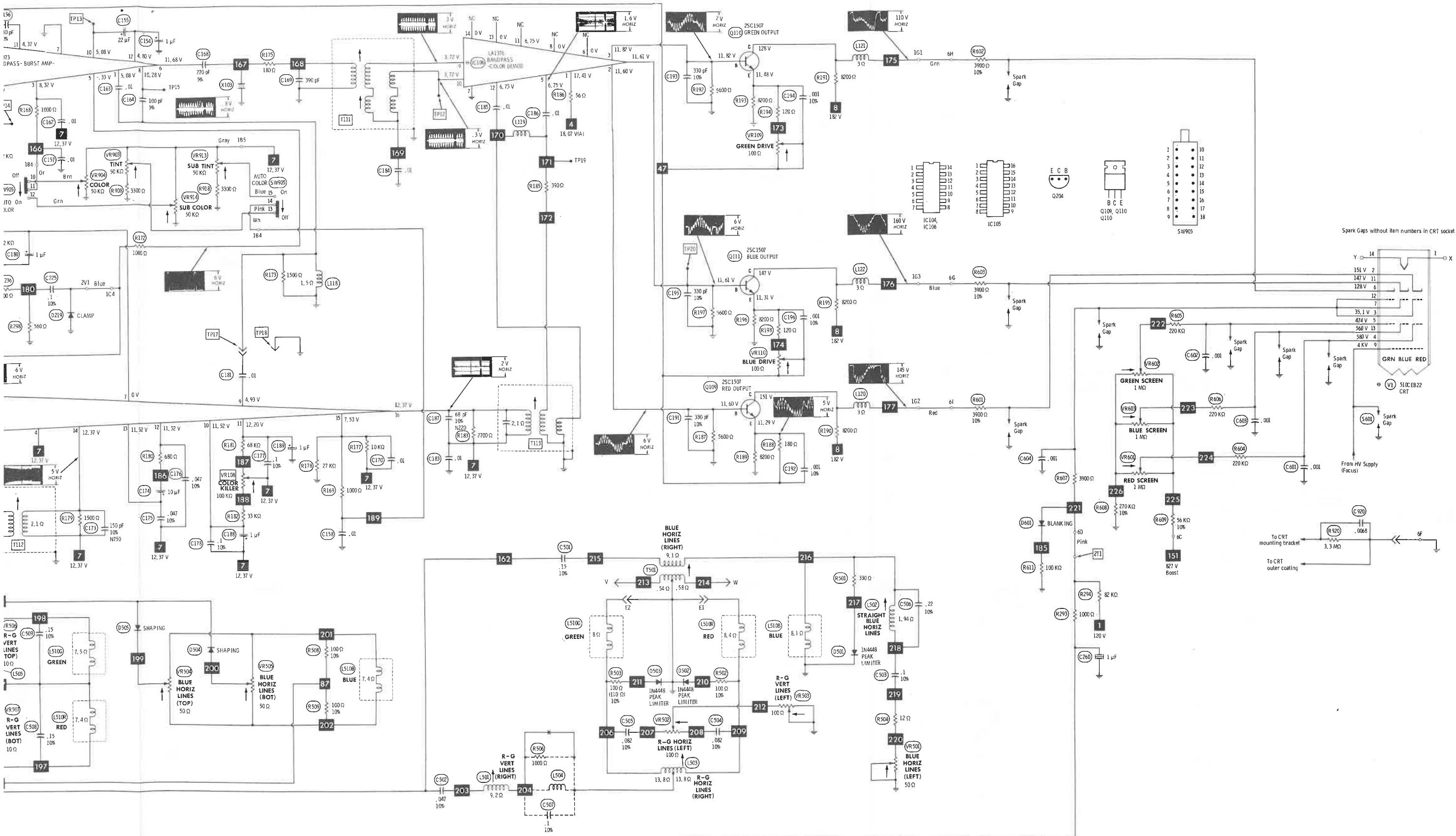
CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
VR101	Adjacent Sound Reject	3000	4222040900				
VR102	RF AGC	1000	4222047800				
VR103	AGC	5000 "b"	1110909001600 J5529 (5) (7) (20)				
VR108	Color Killer	100K "a"					
VR109	Green Drive	100 "c"					
VR110	Blue Drive	100 "d"					
VR104	Sound Reject	500	4222040800				
VR105	DC Reference	10K	4222042900				
VR106	Sub Brightness	10K	4222042900				
VR201	B+ Voltage	3000	4222055600	TSV-2.5K (18) or T-2500 (18) TSV-2.5K or T-2500	C-252 (18) C-252	MTC33L1 (18) MTC33L1	X201R302B (18) X201R302B
VR202	Vert Linearity	3000	4222050900				
VR203	Height	50K	4222050700				
VR204	Horiz Hold	50K	4222050700				
	Horiz Hold	50K	4222050300 G2106 (5) (24)	F1-50K (1), SN100	A47-50K-S (1), RN-3 or [NP-50K-S (1), NML-A-300]	RU54L,SL36,SL1500 or [UA54L (1), SN875]	BU1 (1), CF12, SS6A
VR501	Blue Horiz Lines (Left)	50	4222041500	WP-100,WSK104		MR100P,MRS1250	
	Blue Horiz Lines (Left)	50	4222040100	WP-100,WSK104		MR100P,MRS1250	
VR502	R/G Horiz Lines (Left)	100	4222033600	WCP-100 or V-100	U39-100	MRC100P	110C120
	R/G Horiz Lines (Left)	100	4222033100	WCP-100 or V-100	U39-100	MRC100P	110C120
VR503	R/G Vert Lines (Left)	100	4222033600	WCP-100 or V-100	U39-100	MRC100P	110C120
	R/G Vert Lines (Left)	100	4222033100	WCP-100 or V-100	U39-100	MRC100P	110C120
VR504	Blue Horiz Lines (Top)	50	4222033500	WCP-60 or V-60	U39-75	MRC60P	110C60
	Blue Horiz Lines (Top)	50	4222011200				
VR505	Blue Horiz Lines (Bottom)	50	4222033500	WCP-60 or V-60	U39-75	MRC60P	110C60
	Blue Horiz Lines (Bottom)	50	4222011200				
VR506	R/G Vert Lines (Top)	20	4222047100				
VR507	R/G Vert Lines (Bottom)	20	4222047100				
VR508	R/G Horiz Lines (Top)	20	4222047100				
VR509	R/G Horiz Lines (Bottom)	20	4222047100				
VR601	Red Screen	1meg	4222038701	TSV-1M (3) or T-1Meg (3)	C-105 (3)	MTC16L1 (3)	X201R105B (3)
VR602	Green Screen	1meg	4222038701	TSV-1M (3) or T-1Meg (3)	C-105 (3)	MTC16L1 (3)	X201R105B (3)
VR603	Blue Screen	1meg	4222038701	TSV-1M (3) or T-1Meg (3)	C-105 (3)	MTC16L1 (3)	X201R105B (3)
VR800	UHF AGC	10K	4222045800	TSV-10K (18) or T-10K (18)	C-103 (18)	MTC14L1 (18)	X201R103B (18)
VR801	Meter	30K	4222053200	TSV-25K (18) or T-25K (18)	C-253 (18)	MTC253L1 (18)	X201R253K (18)
VR901	Contrast	1000	4222051700				
	Contrast	1000	G2144C (5) 4222038300 G2076 (5)(24)	F5-1000 (1), SN100	NP-1000-V (1), NML-A-300	RU13R,SL36,SL1500 or [UA13R (1), SN875]	BU1 (1), CF37, SS6A
VR902	Brightness	20K	4222047300				
	Brightness	20K	G2133B (5) 4222044300 G2017 (5)(24)	F1-25K (1), SN100	A47-20K-S (1), RN-3 or [NP-20K-S (1), NML-A-300]	RU24T14 (19), SL36,SL1500 or [UA24L,SN875]	BU1 (1),CF62, SS6A
VR903	Tint	50K	4222049800				
	Tint	50K	G2136B (5) 4222050300 G2106 (5)(24)	F1-50K (1), SN100	A47-50K-S (1), RN-3 or [NP-50K-S (1), NML-A-300]	RU54L,SL36,SL1500 or [UA54L (1), SN875]	BU1 (1),CF12, SS6A
VR904	Color	50K	4222049800				
	Color	50K	G2136B (5) 4222050300 G2106 (5)(24)	F1-50K (1), SN100	A47-50K-S (1), RN-3 or [NP-50K-S (1), NML-A-300]	RU54L,SL36,SL1500 or [UA54L (1), SN875]	BU1 (1),CF12, SS6A
VR905	Vert Hold	30K	4222043300				
	Vert Hold	30K	G2103B (5) 4222049500				
VR906	Volume/Switch	10K	4222041802				
	Focus	20meg	G2096UB (5) 4222049200				
			G1523 (5)				

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