

CONTRAST
BRIGHTNESS

VERT.
HORIZ.
HOLD

VOLUME
CONTROL
OFF-ON SW.

CHANNEL
SELECTOR
FINE
TUNING

STARRETT
MODEL "NATHAN HALE"

TRADE NAME	Starrett, Model "Nathan Hale"		
SUPPLIER	Starrett Television Corp., 601 W. 25th St., New York, New York		
TYPE SET	Television Receiver		
TUBES	Twenty		
POWER SUPPLY	110-120 Volts AC-60 Cycle	RATING	1.92 Amp. at 117 Volts AC
TUNING RANGE—	Channels 2 thru 13		

INDEX

Alignment Instructions 6

Block Diagram 13

Horizontal Sweep Circuit Adjustments 7

Parts List and Description 14, 15, 16

Photographs

Capacitor Identification 11, 18

Chassis-Top View 3, 7

Photographs (continued)

RF Tuner 10

Resistor Identification 12, 17

Trans., Inductor and Alignment Identification ... 4, 9

Schematic ... 2

Tube Placement Chart 5

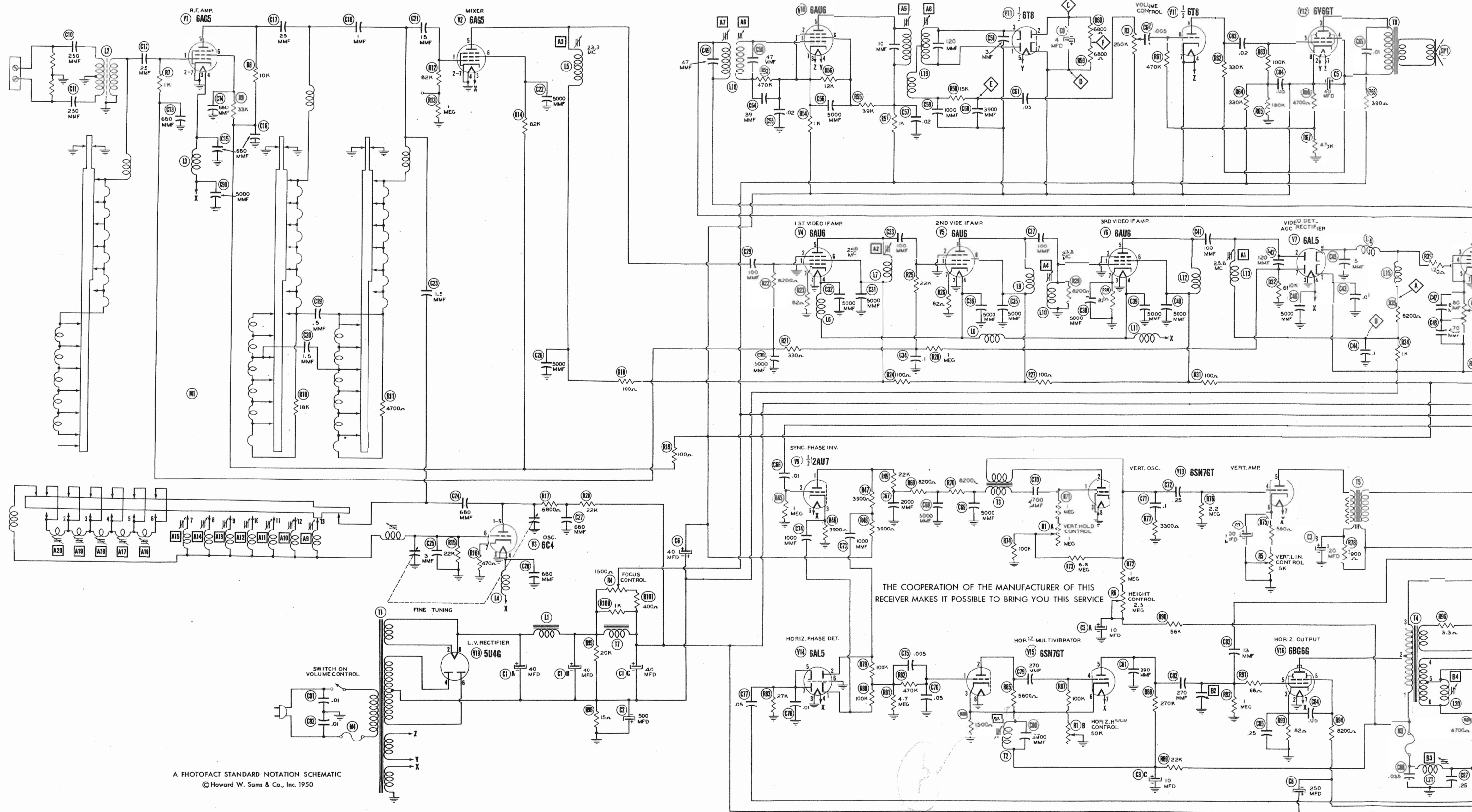
Voltage and Resistance Measurements 8

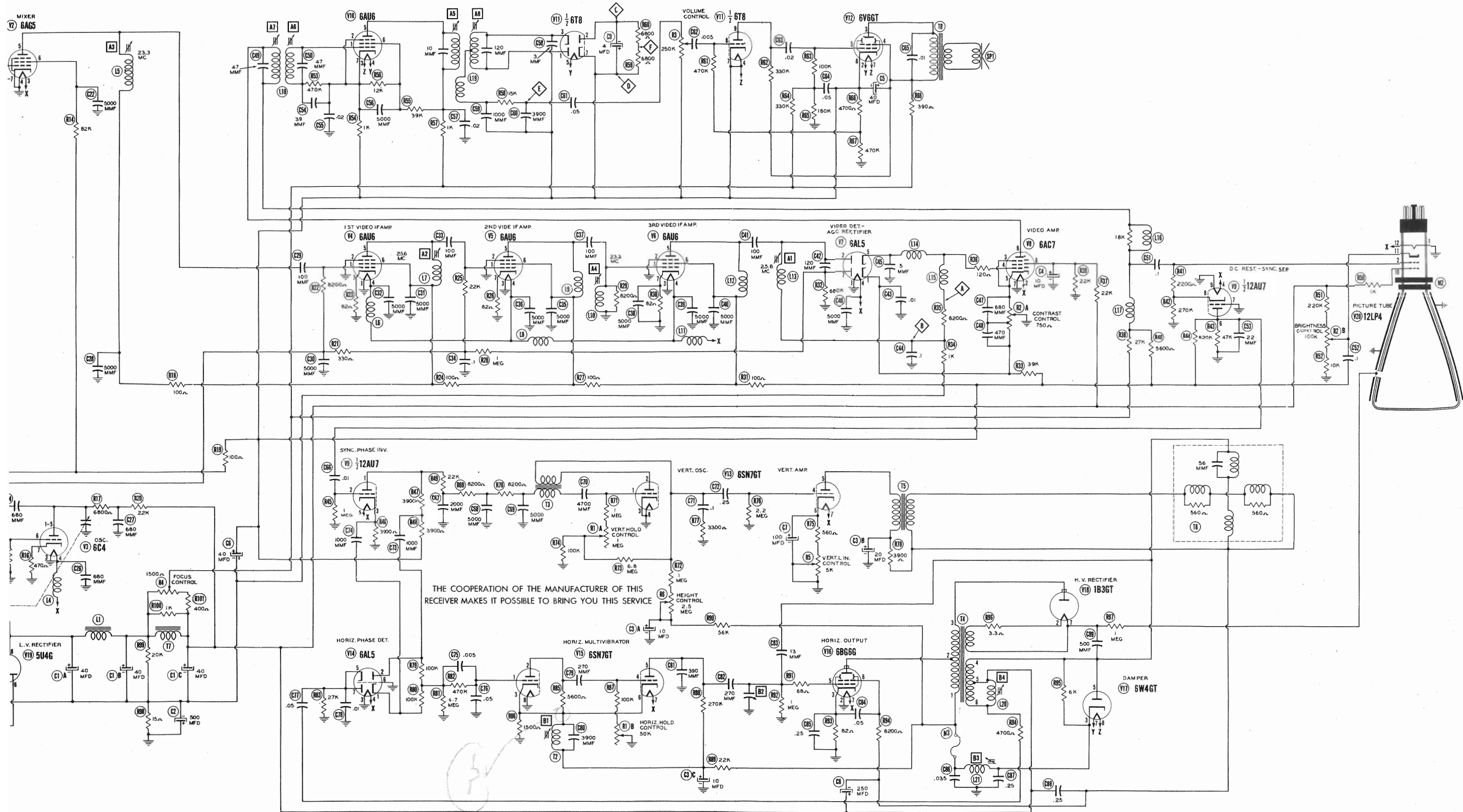
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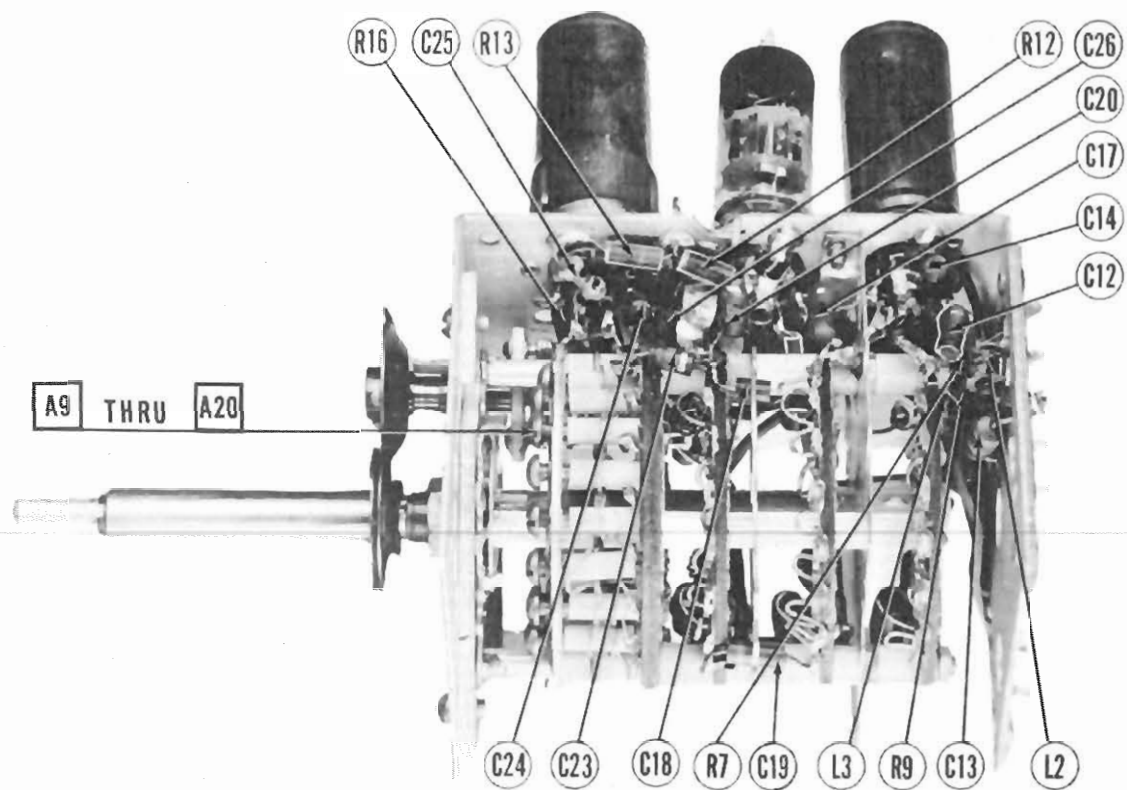
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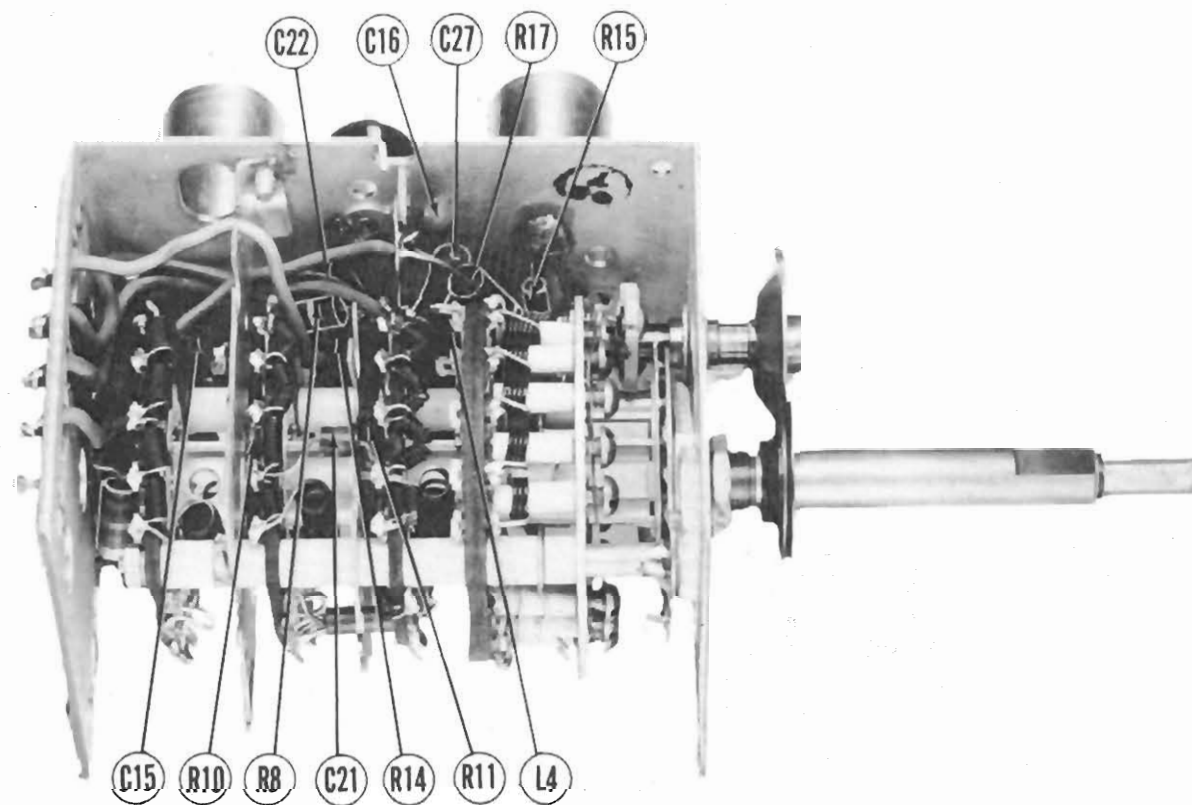
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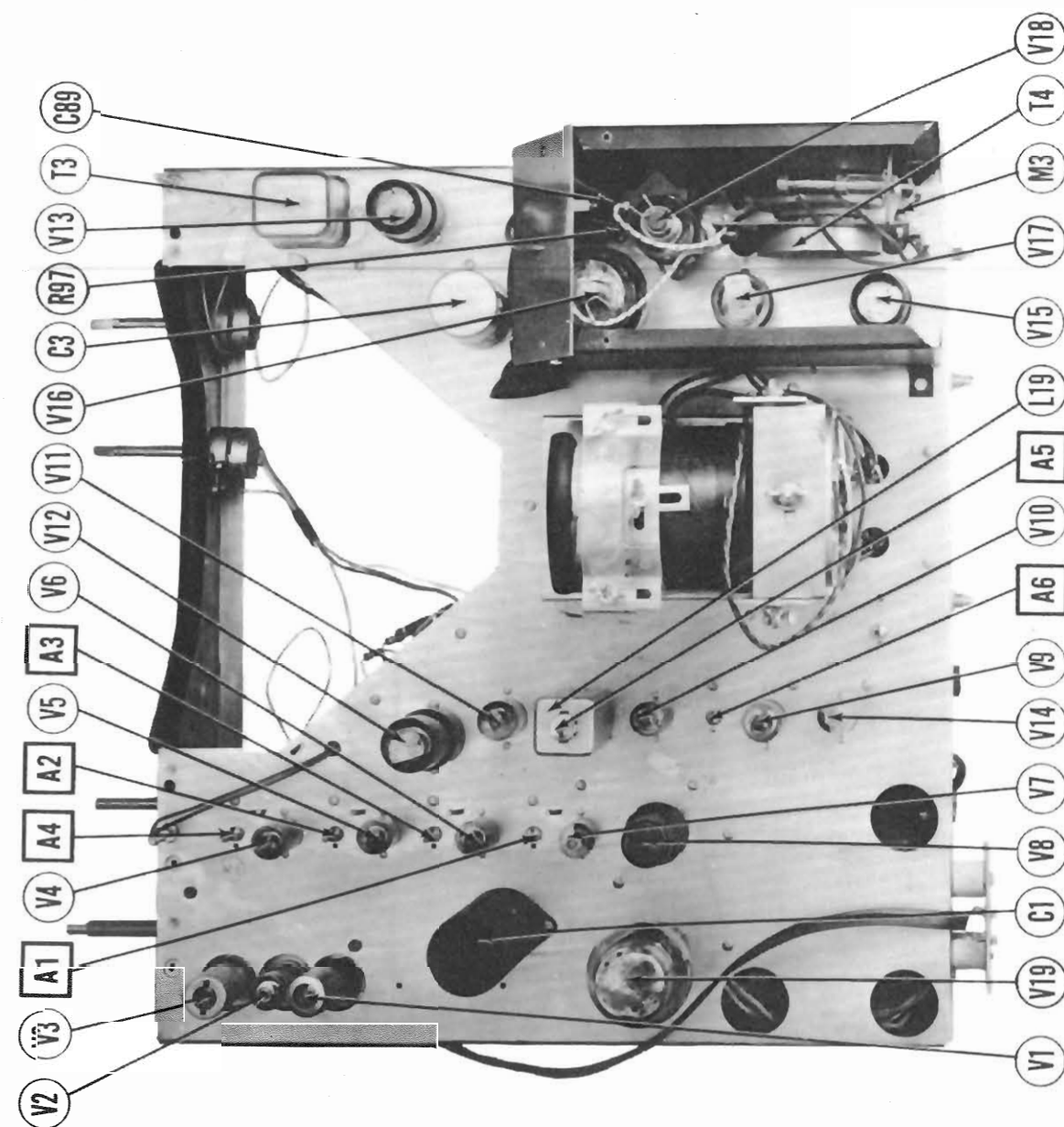




RF TUNER-RIGHT SIDE

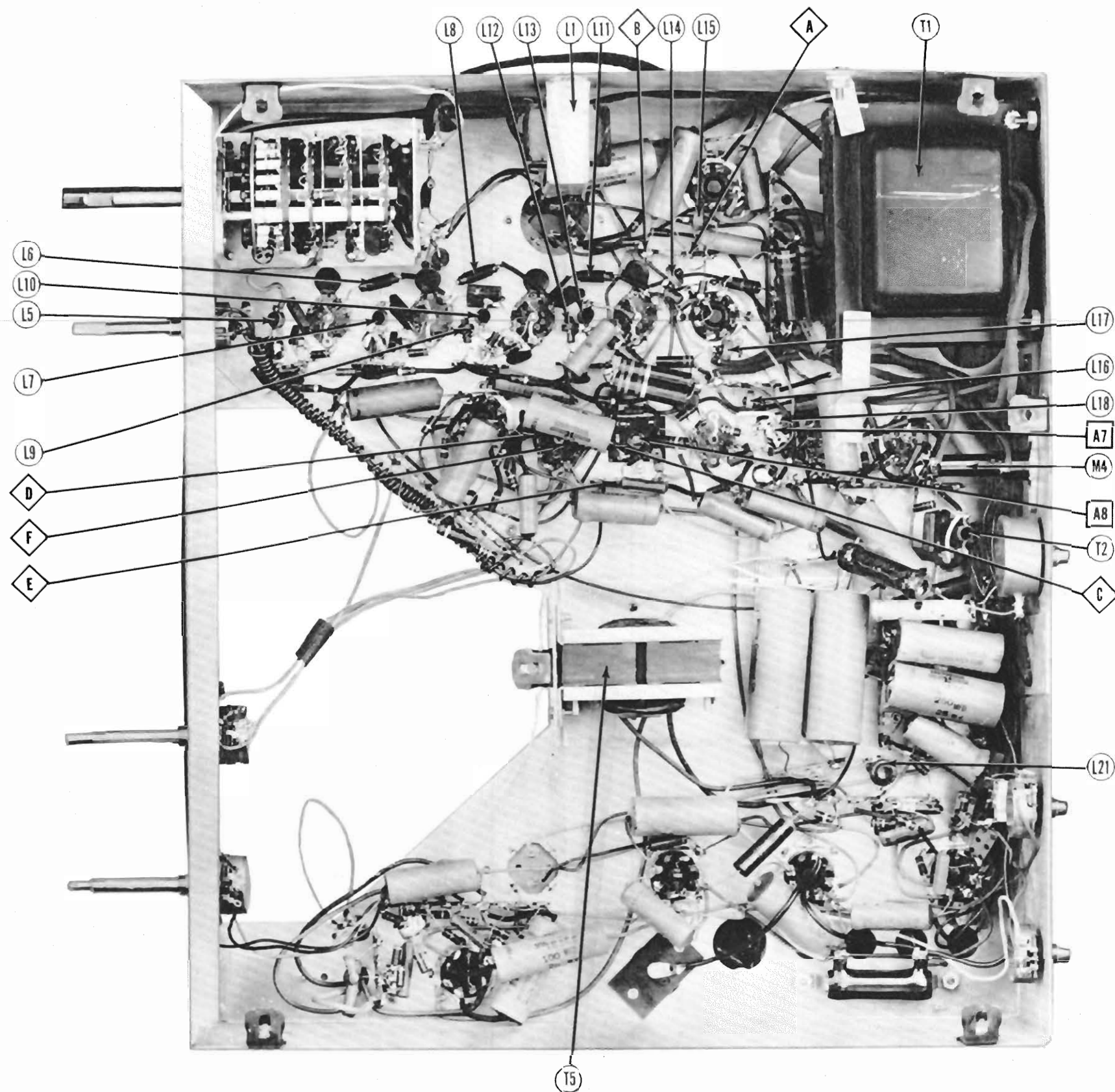


RF TUNER-LEFT SIDE



MAIN TOP VIEW CHASSIS

STARRETT
MODEL "NATHAN HALE"



CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

STARRETT
MODEL "NATHAN HALE"

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS											RESISTANCE READINGS										
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9	Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	-4VDC	0V.	0V.	6.3VAC	95VDC	85VDC	0V.			V 1	6AG5	1.0Meg.	0Ω	0Ω	.1Ω	110KΩ	133KΩ	0Ω		
V 2	6AG5	-1.2VDC	0V.	6.3VAC	0V.	135VDC	75VDC	0V.			V 2	6AG5	1 Meg.	0Ω	.1Ω	0Ω	1460Ω	182KΩ	0Ω		
V 3	6C4	150VDC	0V.	0V.	6.3VAC	1150VDC	1-2.5VDC	4.2VDC			V 3	6C4	430KΩ	Inf.	0Ω	.1Ω	430KΩ	22KΩ	470Ω		
V 4	6AU6	-4VDC	0V.	0V.	6.3VAC	135VDC	135VDC	.8VDC			V 4	6AU6	1.0Meg.	0Ω	0Ω	.1Ω	1300Ω	1300Ω	82Ω		
V 5	6AU6	-4VDC	0V.	0V.	6.3VAC	135VDC	135VDC	.8VDC			V 5	6AU6	1.0Meg.	0Ω	0Ω	.1Ω	1200Ω	1200Ω	82Ω		
V 6	6AU6	0V.	0V.	0V.	6.3VAC	135VDC	135VDC	1.2VDC			V 6	6AU6	.2Ω	0Ω	0Ω	.1Ω	1100Ω	1100Ω	82Ω		
V 7	6AL5	.3VDC	-2.6VDC	0V.	6.3VAC	0V.	0V.	-6VDC			V 7	6AL5	36Ω	1000Ω	0Ω	.1Ω	9KΩ	Inf.	0Ω	15.8KΩ	
V 8	6AC7	0V.	6.3VAC	2VDC	-2VDC	2VDC	165VDC	0V.	175VDC		V 8	6AC7	Inf.	.1Ω	700Ω	9KΩ	700Ω	415KΩ	0Ω	270KΩ	0Ω
V 9	12AU7	150VDC	0V.	6.8VDC	6.3VAC	6.3VAC	6.3VDC	0V.	1.3VDC	0V.	V 9	12AU7	17.8KΩ	1 Meg.	3.9KΩ	.1Ω	.1Ω	47KΩ	0Ω	1900Ω	
V 10	6AU6	1.2VDC	6.4VDC	10V	16.3VAC	230VDC	60VDC	6.4VDC			V 10	6AU6	1470KΩ	1900Ω	10Ω	1.1Ω	41.4KΩ	112KΩ	1900Ω	470KΩ	4330KΩ
V 11	6T8	1-3VDC	1-6VDC	10V.	16.3VAC	10V.	10V	10V	1-7VDC	190VDC	V 11	6T8	Inf.	113.5KΩ	Inf.	10Ω	10Ω	10Ω	10Ω	10Ω	
V 12	6V6GT	0V	16.3VAC	125VDC	1-11VDC	0V.	10V	10V			V 12	6V6GT	Inf.	1.1Ω	1100Ω	1800Ω	280KΩ	Inf.	10Ω	10Ω	
V 13	6SN7GT	-14VDC	100VDC	0V.	.1VDC	320VDC	20VDC	6.3VAC	0V.		V 13	6SN7GT	2 Meg.	42.5 Meg.	0Ω	2.3Meg.	44.5KΩ	560Ω	.1Ω	0Ω	
V 14	6AL5	2.3VDC	-1.4VDC	0V.	6.3VAC	0V.	0V.	0V.			V 14	6AL5	4.8Meg.	4.8Meg.	0Ω	.1Ω	27KΩ	0Ω	27KΩ	0Ω	
V 15	6SN7GT	.2VDC	300VDC	12VDC	-3.8VDC	130VDC	12VDC	6.3VAC	0V.		V 15	6SN7GT	5.1Meg.	427KΩ	1.5KΩ	150KΩ	4290KΩ	1.5KΩ	.1Ω	0Ω	
V 16	6B6G	-2.9VDC	0V.	7.4VDC	0V.	-2.9VDC	0V.	6.3VAC	280VDC	TOP CAP *	V 16	6B6G	1 Meg.	0Ω	82Ω	Inf.	1 Meg.	Inf.	.1Ω	49KΩ	TOP CAP 46KΩ
V 17	6W4GT	0V.	480VDC	0V.	400VDC	0V.	16.3VAC	10V.			V 17	6W4GT	Inf.	Inf.	46KΩ	Inf.	4200Ω	Inf.	1.1Ω	10Ω	TOP CAP 46KΩ
V 18	1B3GT										V 18	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	
V 19	5U4G	0V.	440VDC	0V.	420VAC	0V.	420VAC	0V.	440VDC		V 19	5U4G	Inf.	10KΩ	Inf.	65Ω	Inf.	70Ω	Inf.	10KΩ	
V 20	12LP4	0V.	1.2VDC	400VDC	115VDC	6.3VAC					V 20	12LP4	0Ω	300KΩ	100KΩ	10KΩ	Inf.	Inf.	Inf.	Inf.	

8 TAKEN WITH VACUUM TUBE VOLTMETER.

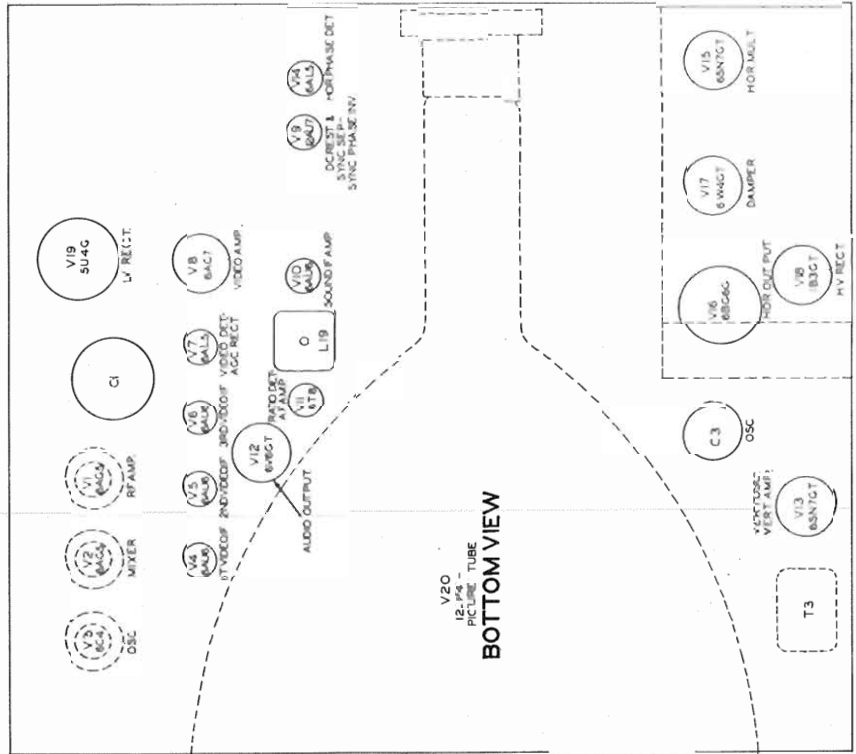
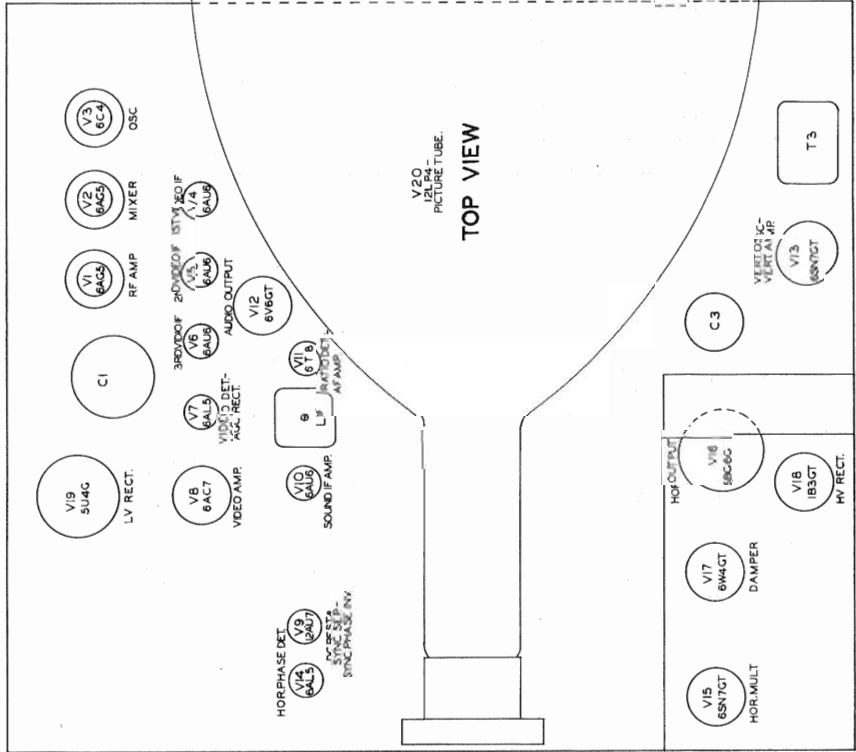
↑ MEASURED FROM PIN 8 OF V12.

↓ MEASURED FROM PIN 2 OF V19.

DO NOT MEASURE.









§ TAKEN WITH VACUUM TUBE VOLTMETER.
† MEASURED FROM PIN 8 OF V12.
* DO NOT MEASURE.

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



TUBE PLACEMENT CHART
STARRETT
MODEL "NATHAN HALE"

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT							
If set is to be aligned with picture tube removed, remove the horizontal oscillator tube (V15) to remove high voltage shock hazard.							
VIDEO IF ALIGNMENT							
Remove local oscillator tube V3 to prevent erroneous indications.							
Keep contrast control as low as possible to get an indication on VTVM (Approximately 2 volts).							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS	
1.	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	25.6MC (Unmod.)	Any	DC Probe to Point  Common to Point 	A1, A2	Adjust for maximum deflection.	
2.	"	23.3MC	"	"	A3, A4	"	
OVERALL VIDEO IF RESPONSE CHECK							
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.							
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	24MC (10MC SWP)	23.3MC 25.6MC	Any	Vert. Amp. to Point  Low side to chassis.		Check for response curve as per Fig 1 with markers as shown. If necessary slightly retouch A1, A2, A3, A4 for proper response.
SOUND IF ALIGNMENT							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS	
4.	.01MFD High side to pin 4 (Grid) of 6AC7 (V8). Low side to chassis.	4.5MC (Unmod.)	Any	DC Probe to Point  Common to Point 	A5, A6, A7	Adjust for maximum deflection.	
5.	.01MFD	"	"	DC Probe to Point  Common to Point 	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.	
OSCILLATOR ALIGNMENT							
RF and mixer lines are pre-set at the factory and should not require adjustment in the field.							
Replace local oscillator tube V3. Set the fine tuning control to mid-position.							
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Two 150Ω carbon res.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. Amp. to Point  Low side to chassis.	A9	Check for proper response as per Fig 2. Since the oscillator circuits for each channel are individually tuned, only those channels requiring alignment need be adjusted.
	Across antenna terminals with 150Ω in each lead.	207MC (10MC SWP)	205.25MC 209.75MC	12		A10	
		201MC (10MC SWP)	198.25MC 202.75MC	11		A11	
		195MC (10MC SWP)	193.25MC 197.75MC	10		A12	
		189MC (10MC SWP)	187.25MC 191.75MC	9		A13	
		183MC (10MC SWP)	181.25MC 185.75MC	8		A14	
		177MC (10MC SWP)	175.25MC 179.75MC	7		A15	
		85MC (10MC SWP)	83.25MC 87.75MC	6		A16	
		79MC (10MC SWP)	77.25MC 81.75MC	5		A17	
		69MC (10MC SWP)	67.25MC 71.75MC	4		A18	
		63MC (10MC SWP)	61.25MC 65.75MC	3		A19	
		57MC (10MC SWP)	55.25MC 59.75MC	2		A20	

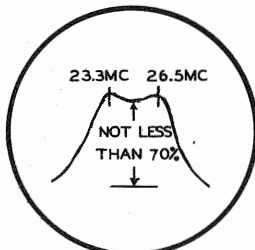


FIG. 1

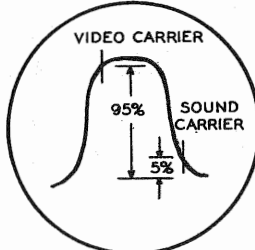
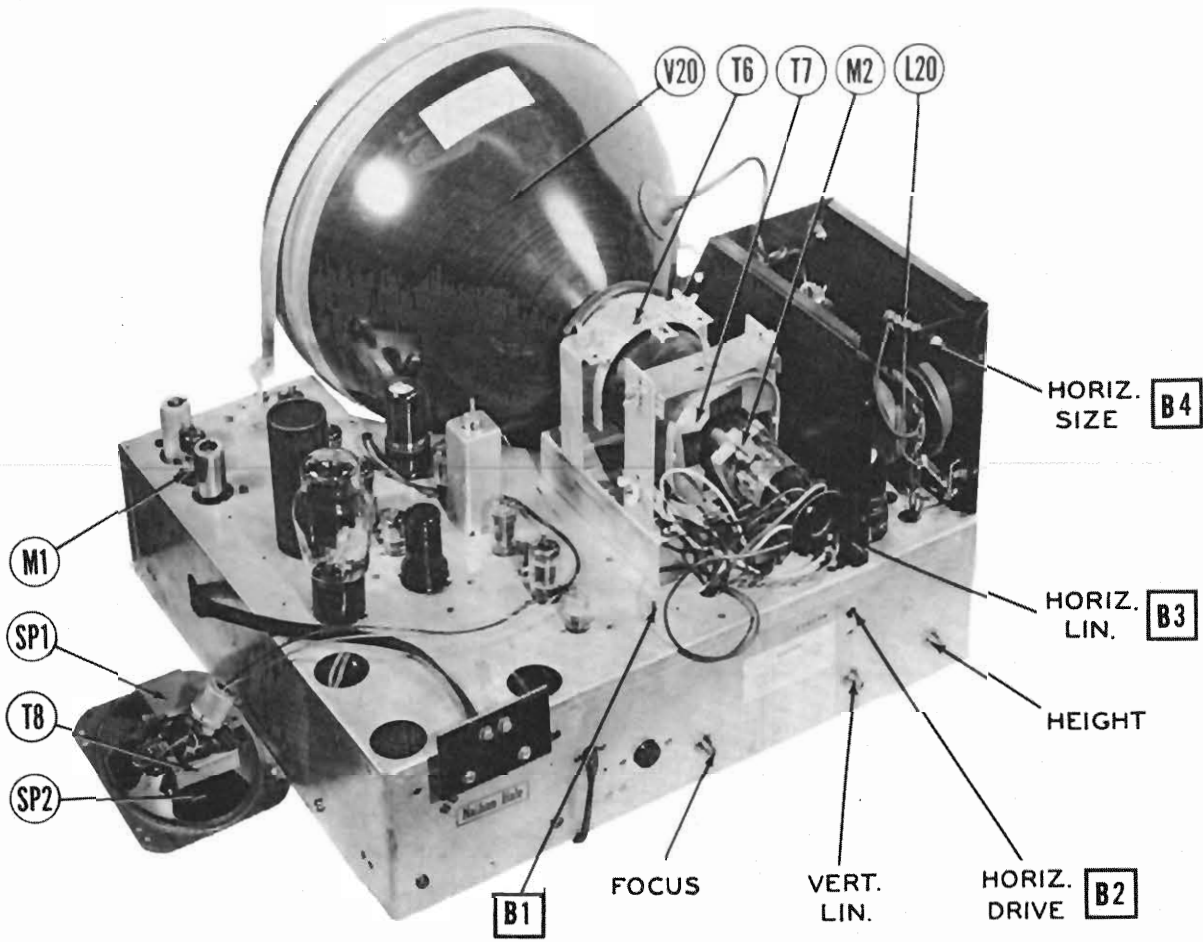


FIG. 2



CHASSIS—TOP VIEW

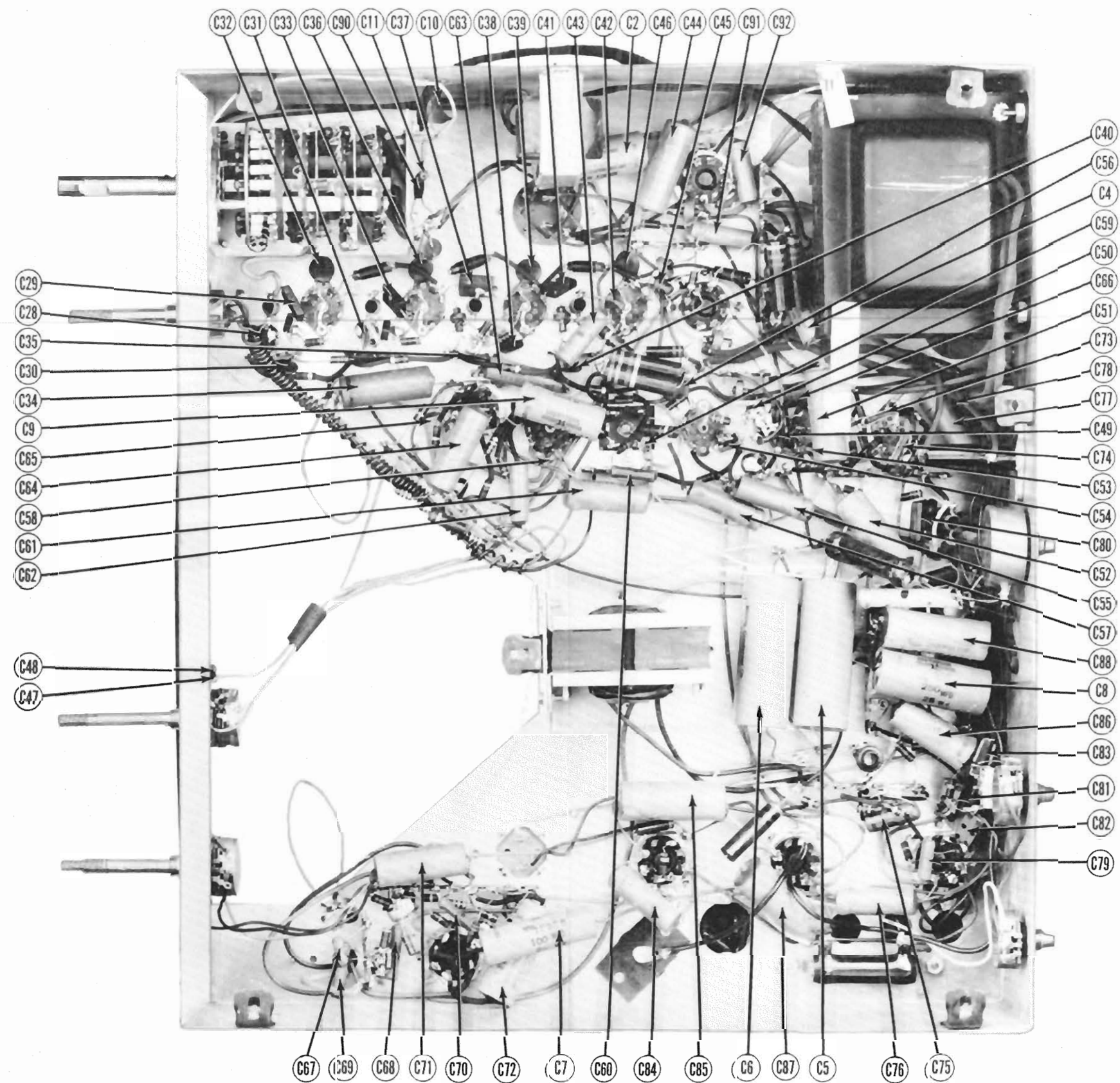
HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the horizontal hold control to mid-position and adjust B1 until picture syncs normally in horizontal plane.

Adjust B2 clockwise as far as possible without crowding the left hand side of the test pattern.

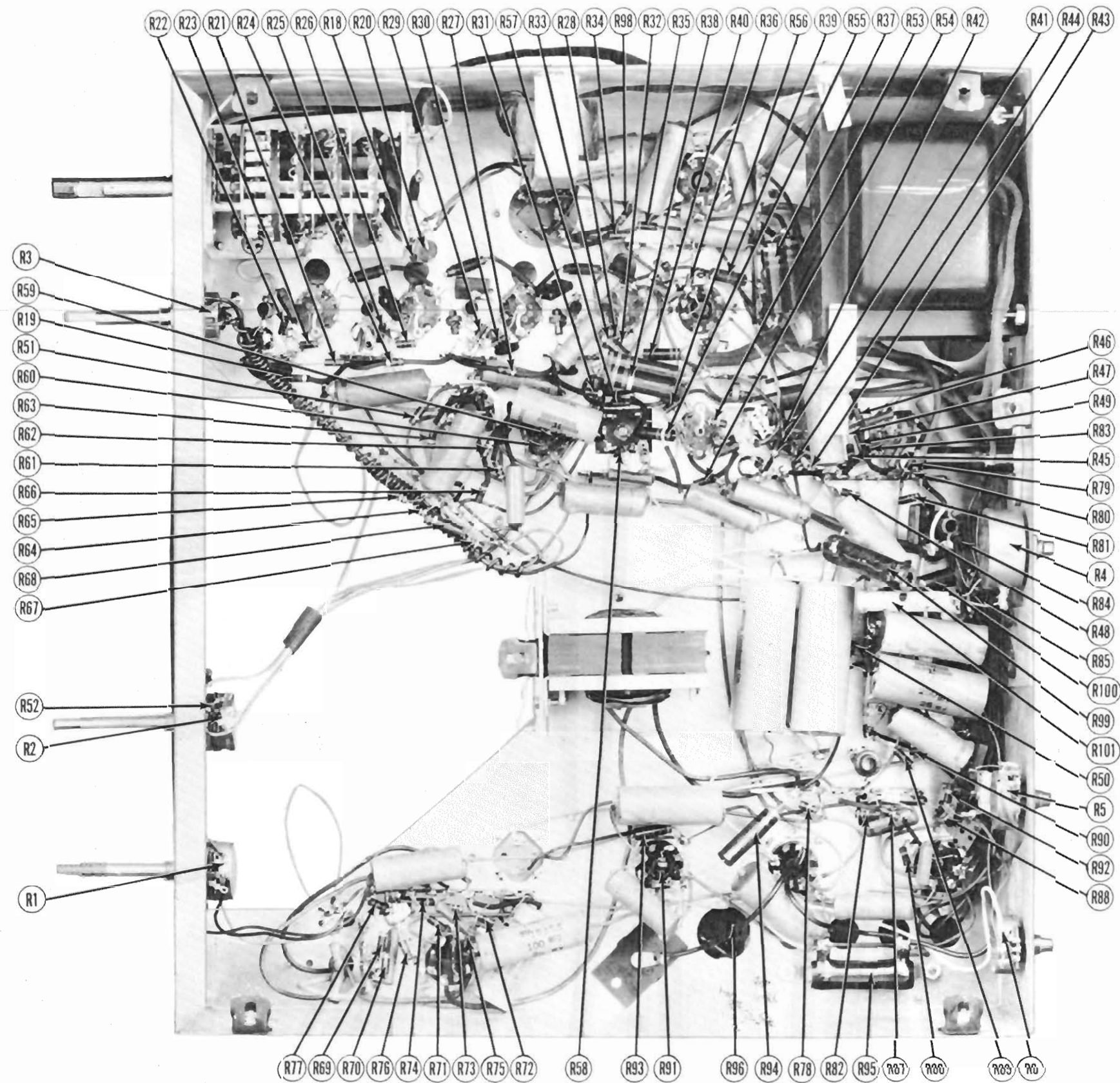
Adjust B3 and B4 for proper size and best linearity of test pattern horizontally. Slight readjustment of B2 may be necessary.

STARRETT
MODEL "NATHAN HALE"



CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

STARRETT
MODEL "NATHAN HALE"



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

STARRETT
MODEL "NATHAN HALE"

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		STARRETT PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T8	4.5KΩ	3.6Ω	365Ω	.5Ω		A-3877	A-2930	RO-9	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
			STARRETT	JENSEN	QUAM	
	FIELD RES.	V. C. IMP.	PART No.	PART No.	PART No.	
SP1	PM	3.6Ω			46A1①	①Remount output transformer
SP2	CONE DIA.	V. C. DIA.				
	3 7/8 x 5 7/8"	9/16"				

FILTER CHOKE

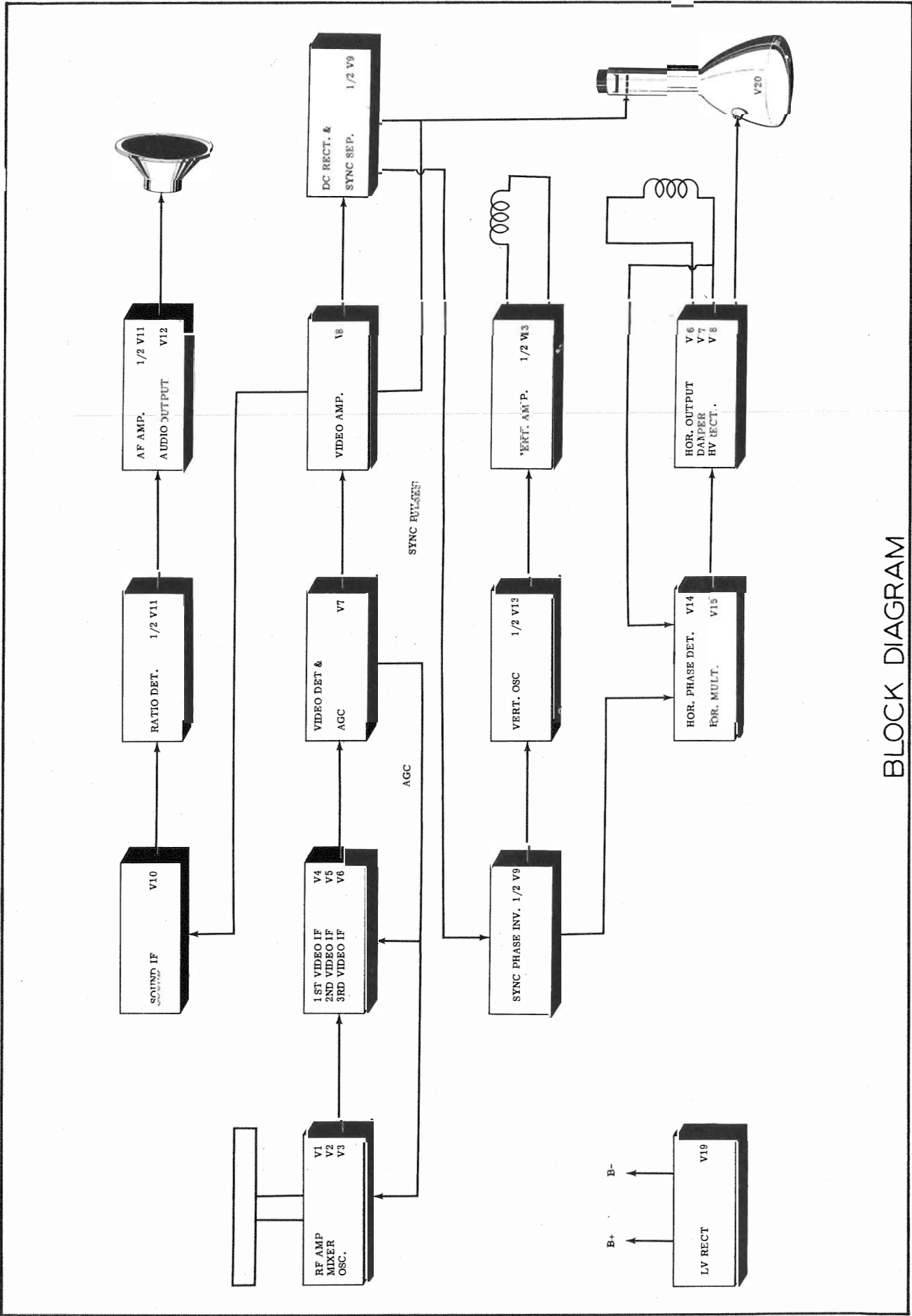
ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ω)	STARRETT PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
LI	.210A	32 Ω	1.5 Henries		C-2325 ②	C-2974	TR-4200②	②Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES	
		PRI.	SEC.	STARRETT	MEISSNER		
				PART No.	PART No.		
L2	Ant. Input Trans.	.2Ω	.2Ω CT			Inductance -120 microhenries Inductance -600 microhenries Wound on 18KΩ resistor	
L3	1st Fil. Choke	0Ω					
L4	2nd Fil. Choke	0Ω					
L5	1st Video IF	.2Ω					
L6	2nd Fil. Choke	.2Ω					
L7	2nd Video IF	.2Ω					
L8	3rd Fil. Choke	.2Ω					
L9	2nd Video IF Plate Choke	4.5Ω					
L10	3rd Video IF	.2Ω					
L11	4th Fil. Choke	.2Ω					
L12	3rd Video IF Plate Choke	4.5Ω					
L13	4th Video IF	.2Ω					
L14	Peaking	9Ω					
L15	Peaking	22Ω					
L16	Peaking	9Ω					
L17	Peaking	14Ω					
L18	Sound IF	2Ω		2Ω			
L19	Ratio Det. Trans.	4Ω		.3Ω			
L20	Width Cont.	.2Ω					
L21	Hor. Linearity	19Ω					

MISCELLANEOUS

ITEM No.	PART NAME	STARRETT PART No.	NOTES
M1	RF Tuner		
M2	Ion Trap		
M3	Fuse		.25A, 250V
M4	Fuse		5A, 250V



PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		STARRETT PART No.	STANDARD REPLACEMENT		
V1	RF Amp.	6AG5	6AG5	7BD	
V2	Mixer	6AG5	6AG5	7BD	
V3	Oscillator	6C4	6C4	6BG	
V4	1st Video IF	6AU6	6AU6	7BK	
V5	2nd Video IF	6AU6	6AU6	7BK	
V6	3rd Video IF	6AU6	6AU6	7BK	
V7	Video Det. -AGC	6AL5	6AL5	6BT	
V8	Rectifier	6AC7	6AC7	8N	
V9	DC Restorer-Sync.	12AU7	12AU7	9A	
V10	Sep. -Phase Inv.	6AU6	6AU6	7BK	
V11	Ratio Det. -AF Amp.	6T8	6T8	9E	
V12	Audio Output	6V6GT	6V6GT	7AC	
V13	Vert. Osc. -Vert. Amp.	6SN7GT	6SN7GT	8BD	
V14	Hor. Phase Det.	6AL5	6AL5	6BT	
V15	Hor. Multivibrator	6SN7GT	6SN7GT	8BD	
V16	Hor. Output	6BG6G	6BG6G	5BT	
V17	Damper	6W4GT	6W4GT	4CG	
V18	HV Rectifier	1B3GT	1B3GT	3C	
V19	L.V. Rectifier	504G	504G	5T	
V20	Picture Tube	12LP4	12LP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP. VOLT	REPLACEMENT DATA				IDENTIFICATION CODES AND INSTALLATION NOTES
		STARRETT PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	
CLA	40		AF888J	UP11CJ1098		TVL-304
B	450					
C	40					
C2	500		PRS6/500	BRH605		TVA-27
C3A	10		AF2222J †	UP7CJ1106		EL-410 †
B	20					
C	10					
C4	10		PRS150/12	BR1015		UT-121
C5	40		PRS450/40	BR4035		TVA-24
C6	40		PRS450/40	BR4035		TVA-24
C7	100		PRS25/100	BRH251A		TVA-8
C8	250		PRS25/100	BRH251A		TVA-9
C9	4		PRS150/4	BR550		TVA-13
C10	250					GP2K-250
C11	250					GP2K-250
C12	25					GP1K-25
C13	680					GP2K-680
C14	680					GP2K-680
C15	680					GP2K-680
C16	680					GP2K-680
C17	25					GP1K-25
C18	1					
C19	1.5					
C20	1.5					
C21	15					
C22	5000					
C23	1.5					
C24	680					
C25	3					
C26	680					
C27	680					
C28	5000					
C29	100					
C30	5000					
C31	5000					
C32	5000					
C33	100					
C34	1					
C35	5000					
C36	5000					
C37	100					
C38	5000					
C39	5000					
C40	5000					
C41	100					
C42	120					
C43	.01					
C44	.1					
C45	.5					
C46	5000					
C47	680					
C48	470					
C49	47					
C50	47					
C51	.1					
C52	.1					
C53	22					
C54	39					
C55	.02					
C56	5000					
C57	.02					
C58	3					
C59	1000					
C60	3900					
C61	.05					
C62	.005					

CAPACITORS (CONT.)

ITEM No.	RATING CAP. VOLT	REPLACEMENT DATA				IDENTIFICATION CODES AND INSTALLATION NOTES
		STARRETT PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	
C63	.02					
C64	.05					
C65	.01					
C66	.01					
C67	2000					
C68	5000					
C69	5000					
C70	4700					
C71	.1					
C72	.25					
C73	1000					
C74	1000					
C75	.005					
C76	.05					
C77	.05					
C78	.01					
C79	270					
C80	3900					
C81	390					
C82	270					
C83	.15					
C84	.05					
C85	.25					
C86	.035					
C87	.25					
C88	.25					
C89	500					
C90	5000					
C91	.01					
C92	.01					

* Not used in all models.
† Some models use 330MMF in this application.
‡ Parallel sections to obtain desired capacity.
§ Use two in parallel.

CONTROLS

ITEM No.	RATING RESISTANCE WATTS	REPLACEMENT DATA			INSTALLATION NOTES
		STARRETT PART No.	IRC PART No.	CLAROSTAT PART No.	
RIA	1 Meg.		B11-137 *		Vert. hold control, front
B	50KΩ		B11-123 *		Horiz. hold control, rear
C	Shaft End		E202 *		Attach per instructions in "Concentrikrit".
R2A	750Ω				Contrast control, tapped at 500KΩ
R3A	250KΩ		Q13-130	M-64-Z	Volume control
B	Switch		76-1	SW-A	Attach to R3A per instructions
R4	1500Ω			10-1500	Focus control-Wire Wound
R5	5000Ω		Q11-114	M-19-S	Vert. linearity control
R6	2.5Meg.		Q11-239	M-84-S	Height control

* Additional parts to be used with "Concentrikrit".

RESISTORS

ITEM No.	RATING RESISTANCE WATTS	REPLACEMENT DATA		IDENTIFICATION CODES
		STARRETT PART No.	IRC PART No.	
R7	1000Ω			RF Grid
R8	10KΩ 10%			RF Plate
R9	33KΩ			RF Screen
R10	18KΩ 10%			RF Plate Coil Shunt
R11	4700Ω 10%			Mixer Coil Shunt
R12	82KΩ			Mixer Grid
R13	1 Meg.			Mixer Grid
R14	82KΩ			Mixer Screen
R15	22KΩ			Osc. Grid
R16	470Ω			Osc. Cathode
R17	6800Ω			Osc. Plate
R18	100Ω 10%			Mixer Plate Decoupling
R19	100Ω 10%			Decoupling
R20	22KΩ			Voltage Dropping
R21	330Ω			AGC Network
R22	8200Ω			1st Video IF Grid
R23	82Ω			1st Video IF Cathode
R24	100Ω 10%			1st Video IF Decoupling
R25	22KΩ			2nd Video IF Grid
R26	82Ω			2nd Video IF Cathode
R27	100Ω 10%			2nd Video IF Decoupling
R28	1 Meg.			AGC Network
R29	8200Ω			3rd Video IF Grid Coil Shunt
R30	82Ω			3rd Video IF Cathode
R31	100Ω 10%			3rd Video IF Decoupling
R32	680KΩ			AGC Rect. Diode Load
R33	39KΩ			Voltage Divider
R34	1000Ω			Bias Network
R35	8200Ω			Video Det. Diode Load
R36	120Ω 10%			Parasitic Supp.
R37	22KΩ			Video Amp. Screen See Note 1
R38	27KΩ			Video Amp. Plate See Note 1
R39	22KΩ			Voltage Divider
R40	5600Ω			Voltage Divider
R41	2200Ω 10%			Picture Tube Grd
R42	270KΩ			DC Rest. Load
R43	47KΩ			DC Rest. Load
R44	820KΩ 10%			Voltage Divider

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE WATTS	REPLACEMENT DATA		IDENTIFICATION CODES
		STARRETT PART No.	IRC PART No.	
R45	1 Meg.			Sync. Phase Inv. Grid
R46	3900Ω			Sync. Phase Inv. Cathode
R47	3900Ω			Sync. Phase Inv. Plate
R48	3900Ω			Sync. Phase Inv. Plate
R49	22KΩ			Integrator
R50	1000Ω			Acc. Anode Decoupling
R51	220KΩ			Voltage Divider
R52	10KΩ 10%			Voltage Divider
R53	470KΩ			Sound IF Grid
R54	1000Ω			Sound IF Cathode
R55	39KΩ			Sound IF Screen
R56	12KΩ			Voltage Divider
R57	1000Ω			Sound IF Decoupling
R58	15KΩ			De-emphasis
R59	6800Ω			Ratio Det. Diode Load
R60	6800Ω			Ratio Det. Diode Load
R61	470KΩ			RF Grid
R62	330KΩ 5%			AF Plate
R63	100KΩ			Output Grid
R64	330KΩ 10%			Voltage Divider
R65	180KΩ 5%			Voltage Divider
R66	4700Ω			Voltage Divider
R67	470KΩ			Voltage Divider
R68	390Ω			Filter
R69	5200Ω			Integrator
R70	5200Ω			Integrator
R71	1 Meg.			Vert. Osc. Grid See Note 2
R72	1 Meg.			Vert. Osc. Plate See Note 3
R73	6.8 Meg.			Voltage Divider
R74	100KΩ			Voltage Divider
R75	560Ω			Vert. Amp. Cathode
R76	2.2 Meg.			Vert. Amp. Grid
R77	3300Ω			Vert. Peaking
R78	3900Ω			Vert. Amp. Plate Decoupling
R79	100KΩ			Horiz. Phase Det. Load
R80	100KΩ			Horiz. Phase Det. Load
R81	4.7 Meg.			Horiz. Phase Det. Load
R82	470KΩ			Horiz. AFC Filter Network
R83	27KΩ			Feedback Network
R84	4700Ω			Feedback Network
R85	5600Ω			Horiz. MV Plate
R86	1500Ω			Horiz. MV Cathode
R87	100KΩ			Horiz. MV Grid
R88	270KΩ			Horiz. MV Plate
R89	22KΩ			Filter
R90	56KΩ			Filter
R91	68Ω			Parasitic Supp.
R92	1 Meg.			Horiz. Output Grid
R93	82Ω			Horiz. Output Cathode
R94	8200Ω			Horiz. Output Screen
R95	6000Ω			Damper Filter-Wire Wound
R96	3.3Ω			HV Rect. Filament
R97	1 Meg.			HV Filter
R98	15Ω			Bias Network
R99	39KΩ			Bleeder-Wire Wound-See Note 4
R100	1000Ω			Focus Coil Shunt
R101	400Ω			Focus Coil Shunt-See Note 4

Note 1. Some models use two resistors in parallel to obtain required resistance and wattage.

Note 2. Some models use 680KΩ resistor in this application.

Note 3. Some models use 1.1 Meg. resistor in this application.

Note 4. Not used in all models.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	STARRETT PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC at 1.92A	830VCT .210ADC	5VAC at 3A	6.3VAC at 6A SEC. 4 6.3VAC at 2.7A				TP-392

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	DC RESISTANCE		STARRETT PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
T2	120Ω						
T3	230Ω	800Ω					
T4	363Ω	SEC. 1					
	Tap. at 125Ω	13.6Ω Tap at 8Ω					
		SEC. 2					
T5	560Ω	7Ω					
T6A	13.5Ω						
B	60Ω						
T7	250Ω						