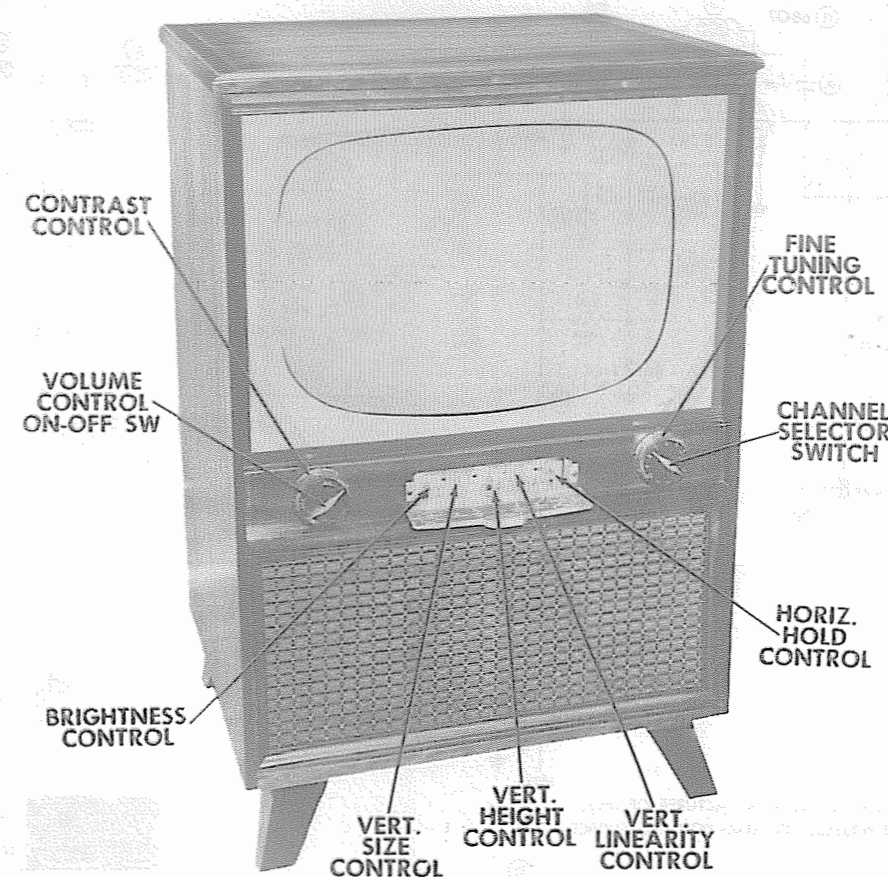


AND INDUCTOR IDENTIFICATION



DUMONT MODEL RA-165 (Beverly)

TRADE NAME	Dumont Models RA-164 (Clinton), RA-165 (Beverly, Milford, Ridgewood, Shelburne, Wakefield)		
MANUFACTURER	Allen B. Dumont Laboratories, Inc., 2 Main St., Passaic, N.J.		
TYPE SET	Television Receiver		
TUBES	Twenty-one		
POWER SUPPLY	110-120 Volts AC-60 Cycle	RATING	1.62 Amp. @ 117 Volts AC
TUNING RANGE—	Channels 2 thru 13		
Alignment Instructions	6	Photographs (Con't)	
AGC & Ion Trap Adjustments	10	RF Tuner	7
Disassembly Instructions	11	Resistor and Inductor Identification	15, 16
Horizontal Sweep Circuit Adjustments	11	Resistance Measurements	8
Parts List and Descriptions	12, 13, 14	Schematic	2
Photographs		Tube Failure Check Chart	5
Cabinet - Rear View	11	Tube Placement Chart (Bottom View)	8
Capacitor and Alignment Identification	4, 9	Tube Placement Chart (Top View)	5
Chassis - Top View	3		

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"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."

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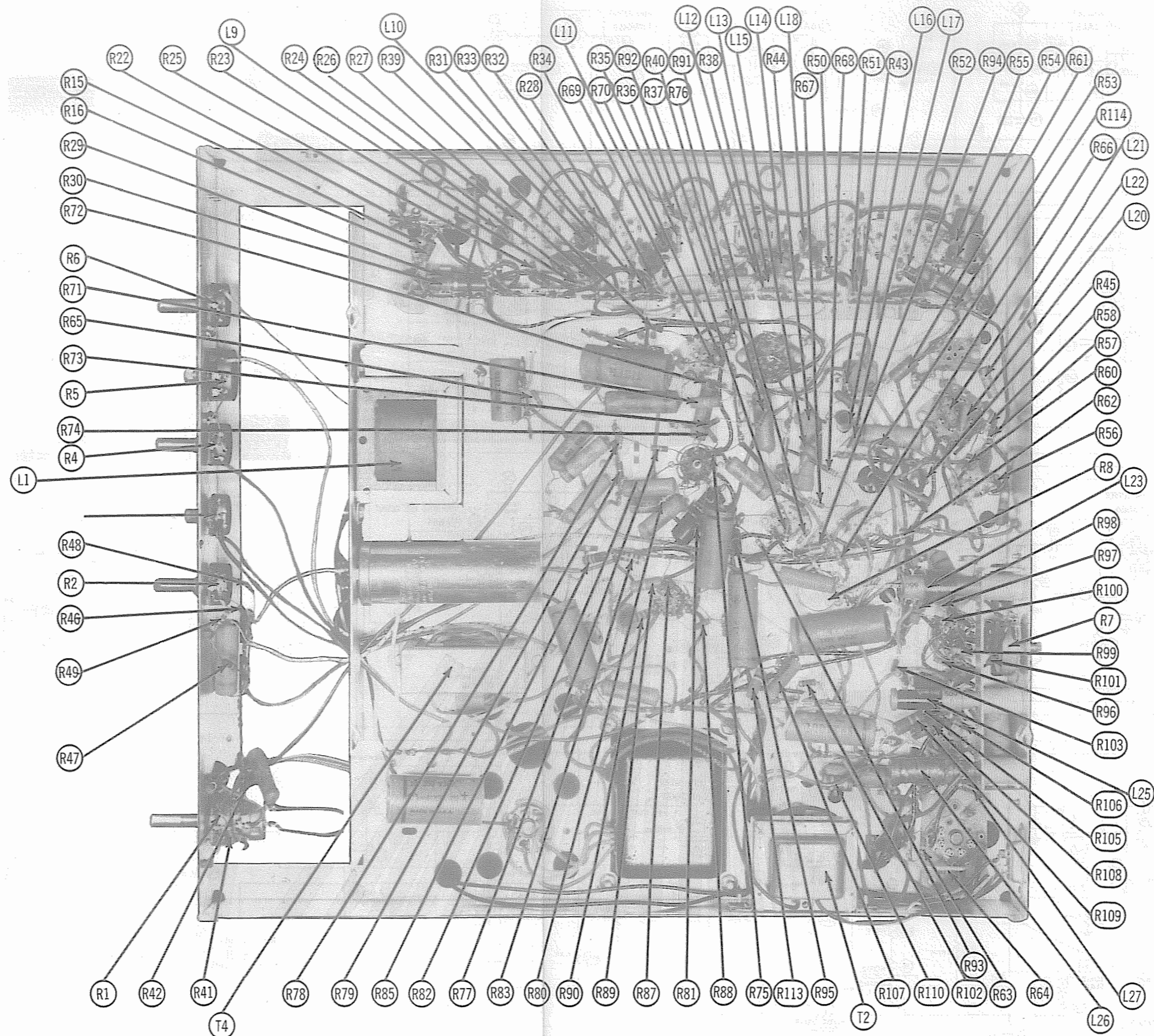
DATE 12-52

SET 189

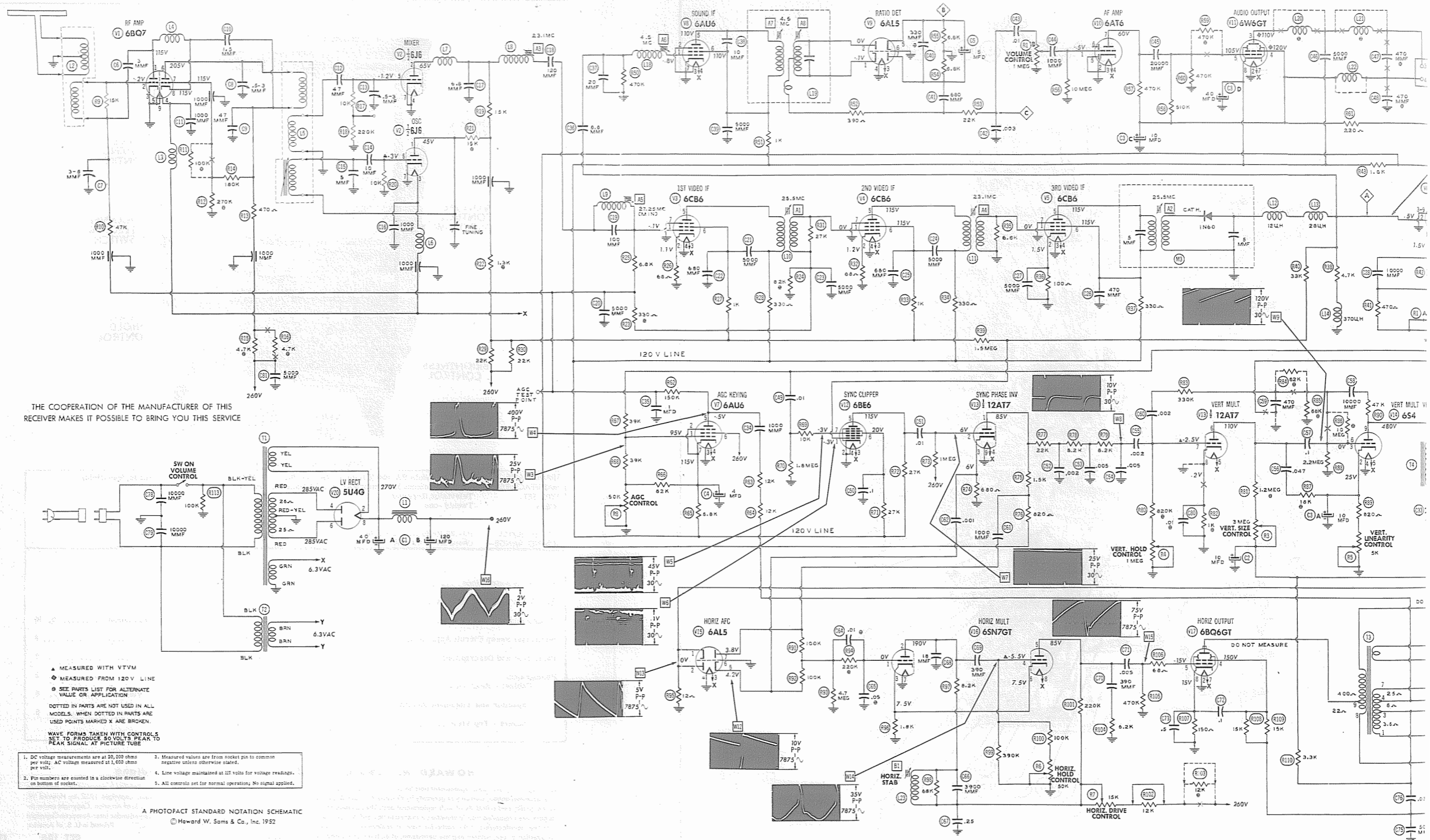
FOLDER 7

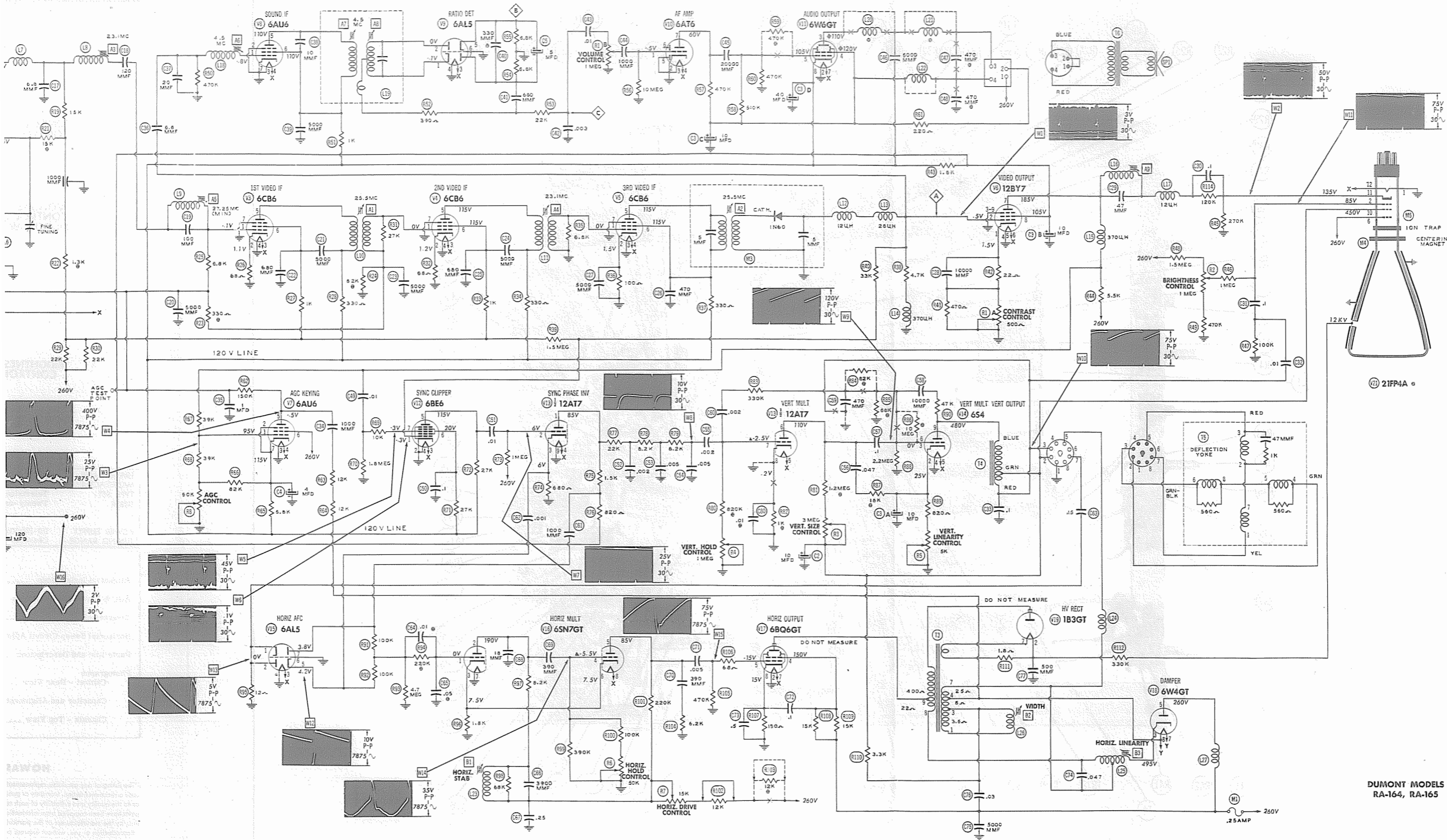
DUMONT MODELS
RA-164, RA-165

RV-104, RV-102
DURACONT MODEL



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION





DUMONT MODELS
RA-164, RA-165

DUMONT MODELS
RA-164, RA-165

AGC AND ION TRAP ADJUSTMENT

AGC ADJUSTMENT

The AGC control is properly adjusted at the factory and will not normally require readjustment except in the following cases:

- 1. Insufficient contrast.
- 2. Poor horizontal or vertical noise immunity.
- 3. Sync Buzz.
- 4. Picture distortion or loss of vertical sync due to overloading of Video IF.

Tune to channel affected and adjust AGC control to eliminate the difficulty

To adjust the AGC control to prevent overload on very strong signals the following procedure should be used:

- 1. Set horizontal hold for maximum straightness of vertical elements of test pattern near top of picture.
- 2. Adjust AGC control until overload is eliminated.
- 3. Switch momentarily to another channel and back again.
- 4. If overload reappears in step 3 readjust the AGC control to correct the condition. Repeat steps 3 and 4, if necessary.

ION TRAP MAGNET ADJUSTMENT

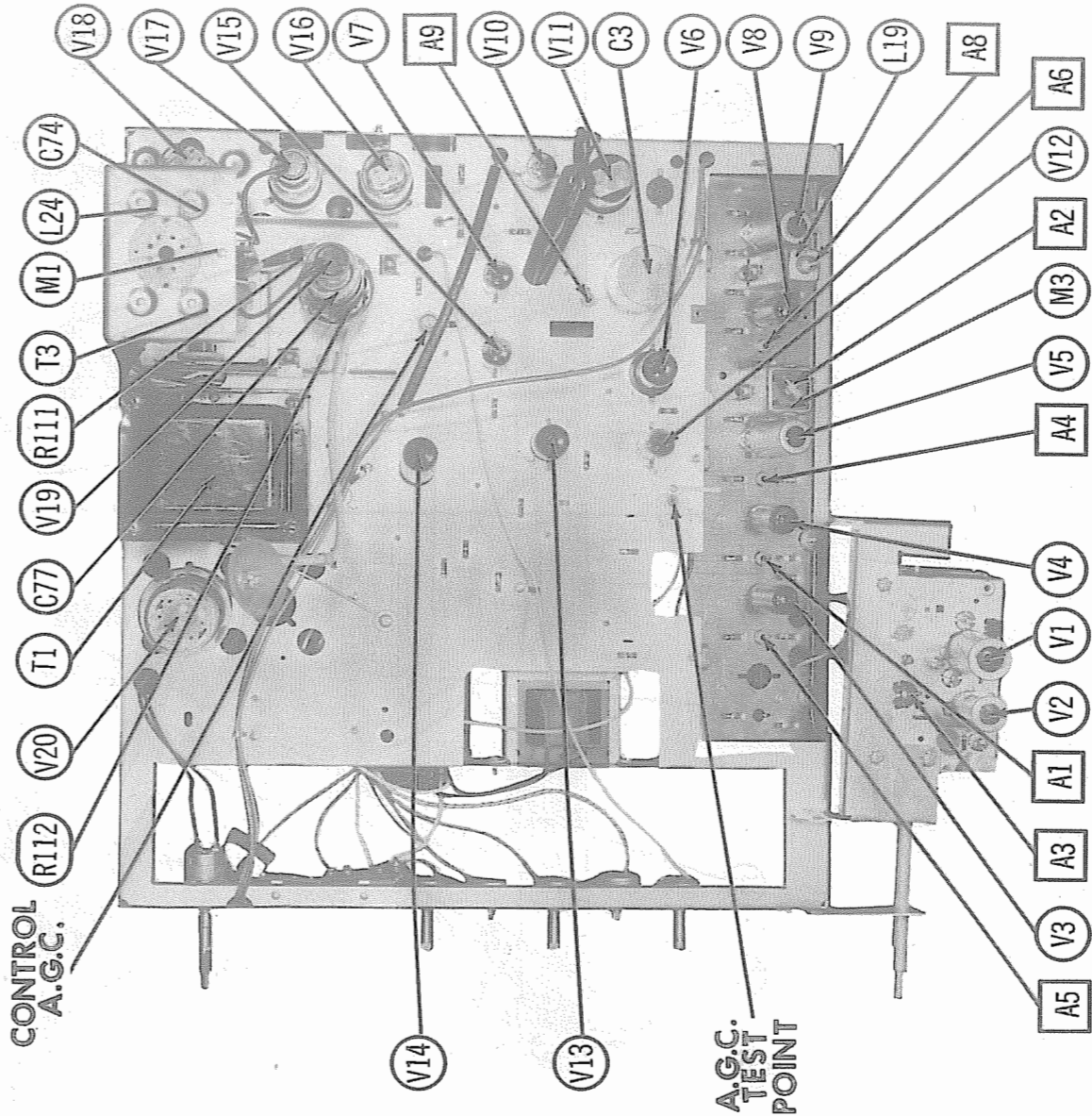
The small magnetic shunt which is clipped on to the Ion trap magnet should NOT be removed.

Place the magnet on the neck of the tube with the coil spring below the tube and the part number stamped on the magnet, to the left, as viewed from the rear of the tube.

Let set warm up for 30 seconds. Set contrast control at middle of range and brightness control so that raster is just visible on screen.

Slide the magnet back and forth on the tube neck while rotating it to the left and right. As raster gets brighter turn down brightness control until there is just enough brightness to allow adjustment to be made. Locate magnet position which gives maximum brightness and optimum focus. Turn up the brightness control until the raster begins to increase in size.

Adjust Ion trap again for maximum brightness and optimum focus.



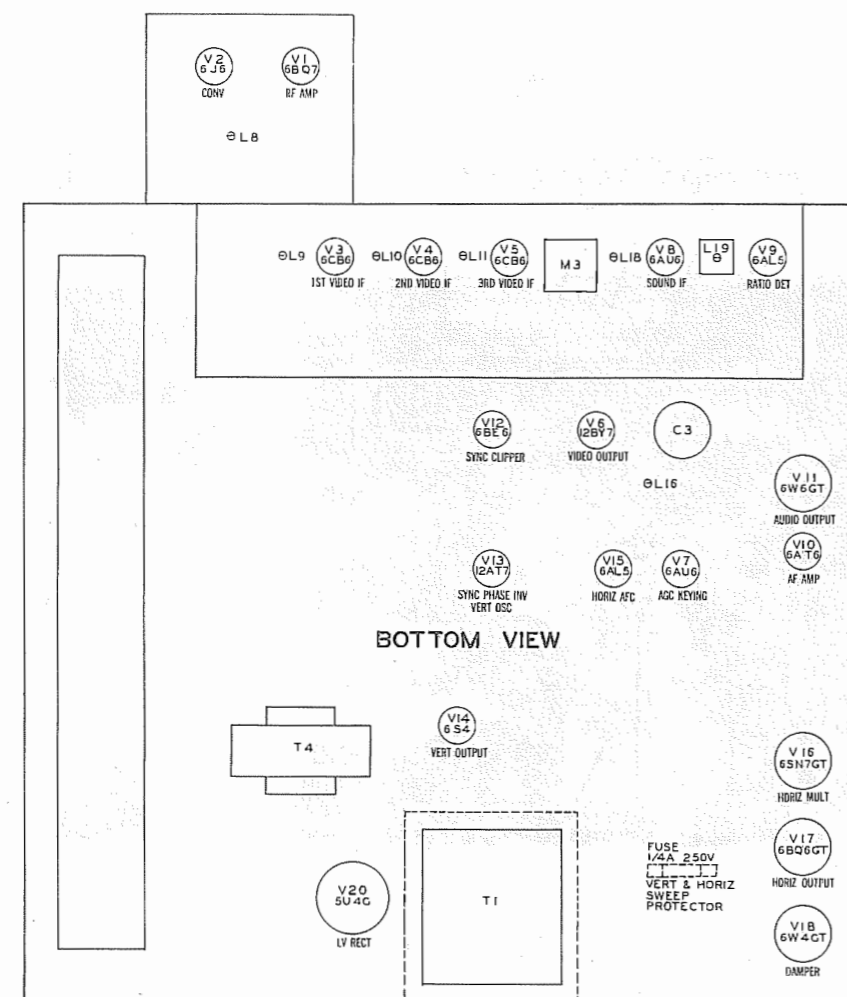
CHASSIS TOP VIEW

DUMONT MODELS
RA-164, RA-165

RESISTANCE MEASUREMENTS

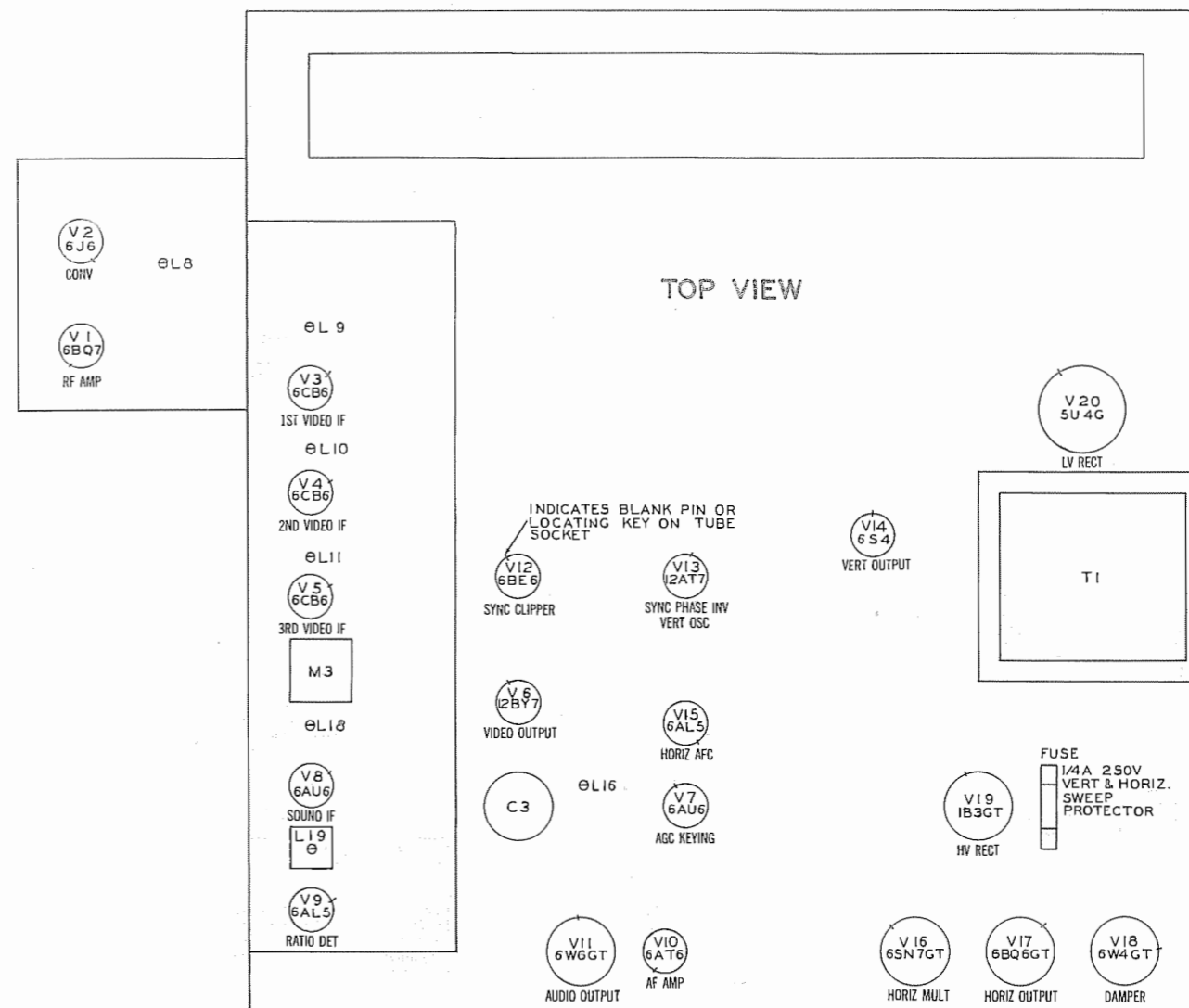
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BK7	INF	130KΩ	0Ω	.1Ω	0Ω	†2.8KΩ	†115KΩ	INF	0Ω
V 2	6J6	†27KΩ	†27KΩ	.1Ω	0Ω	230KΩ	10KΩ	0Ω		
V 3	6CB6	88KΩ	68Ω	.1Ω	0Ω	‡330Ω	†12KΩ	0Ω		
V 4	6CB6	82KΩ	68Ω	.1Ω	0Ω	‡330Ω	†12KΩ	0Ω		
V 5	6CB6	.5Ω	100Ω	0Ω	.1Ω	‡330Ω	‡330Ω	0Ω		
V 6	12BY7	100Ω	4.7KΩ	0Ω	0Ω	0Ω	1Ω	†5.5KΩ	‡1.8KΩ	0Ω
V 7	6AU6	†42KΩ	‡6.8KΩ	0Ω	.1Ω	320KΩ	†45Ω	‡6.8KΩ		
V 8	6AU6	470KΩ	0Ω	0Ω	.1Ω	‡1KΩ	‡1KΩ	0Ω		
V 9	6AL5	INF	INF	.1Ω	0Ω	‡.5KΩ	0Ω	6.8KΩ		
V 10	6AT6	10 Meg	0Ω	0Ω	.1Ω	0Ω	INF	†470Ω		
V 11	6W6GT	INF	0Ω	†565Ω	†265Ω	255KΩ	36KΩ	.1Ω	83KΩ	
V 12	6BE6	38KΩ	0Ω	.1Ω	0Ω	‡27KΩ	‡27KΩ	1.8Meg		
V 13	12AT7	‡4.1KΩ	†1 Meg	680Ω	.1Ω	.1Ω	‡2.7Meg	1.3Meg	1KΩ	0Ω
V 14	6S4	INF	1.8KΩ	2.2Meg	0Ω	.1Ω	2.2Meg	INF	INF	‡5KΩ
V 15	6AL5	12Ω	12Ω	.1Ω	0Ω	4.8Meg	0Ω	4.8Meg		
V 16	6SN7GT	5 Meg	†18KΩ	1.8KΩ	120KΩ	†230KΩ	1.8KΩ	0Ω	.1Ω	
V 17	6BQ6GT	INF	0Ω	470KΩ	†7.5KΩ	470KΩ	INF	.1Ω	150Ω	Top Cap ‡28Ω
V 18	6W4GT	INF	INF	700KΩ	INF	†45Ω	INF	‡27Ω	‡27Ω	Top Cap ‡427Ω
V 19	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								
V 20	5U4G	INF	45KΩ	INF	26Ω	INF	25Ω	INF	45KΩ	
V 21	21FP4A	0Ω	1.6Meg	Pin 6 †45Ω	Pin 10 ‡3.3KΩ	Pin 11 †100KΩ	Pin 12 .1Ω			

ALL CONTROLS SET FOR NORMAL OPERATION, NC SIGNAL APPLIED
† MEASURED FROM PIN 8 OF V20
‡ MEASURED FROM PIN 3 OF V18
‡ MEASURED FROM 120V LINE



TUBE PLACEMENT CHART

TUBE PLACEMENT CHART



DUMONT MODELS
RA-164, RA-165

TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE

No raster, no sound-V20

LOSS OF PICTURE OR SOUND

No pic, no sound, has raster-V2, V3, V4, V5, V11
No pic, no sound, has snow-V1, V2, V3
No pic, has sound, has raster-V6, V21
Has pic, no sound-V8, V9, V10, V11
Overloaded picture-V7

SYNC FAILURE

No vert. sync-V13
No horiz. sync- V13, V15, V16
No vert. or horiz. sync. -V12, V13

SWEEP FAILURE

No raster, has sound-V16, V17, V18, V19, V21 Fuse (M1)
No vertical deflection-V13, V14
Poor vert. linearity or foldover-V13, V14
Poor horiz. linearity or foldover-V16, V17, V18
Narrow picture-V16, V17, V18, V19, V20
Vert. off freq.-V13
Horiz. off freq.-V13, V15, V16

PARTS LIST AND DESCRIPTIONS (Continued)

RF-IF COILS (CONT.)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	DUMONT PART No.	MERIT PART No.	IRC PART No.	
L5	RF, Mixer Grid & Osc. Coil	0Ω		40013401			Channel 2
L6	Flt. Choke	0Ω		21010470			
L7	RF Choke	0Ω		21010450			
L8	1st. Video IF	.9Ω		2101180	TV-102*		
L9	27.25MC trap	0Ω		21011032			
L10	2nd. Video IF	.4Ω	.4Ω	20008041			
L11	3rd. Video IF	.4Ω	.4Ω	20008041			
L12	Series Peak-ing Coil	1.8Ω		21011081	TV-180		12 Microhenries
L13	Series Peak-ing Coil	2.8Ω		21006621	TV-180		28 Microhenries
L14	Shunt Peak-ing Coil	18Ω		21006627	TV-188		370 Microhenries
L15	Shunt Peak-ing Coil	18Ω		21006627	TV-188		370 Microhenries
L16	4.5MC Trap	2Ω		21010131	TV-151		
L17	Series Peak-ing Coil	1.8Ω		21011081	TV-180		12 Microhenries
L18	Sound IF	5.5Ω		21011021	TV-151		
L19	Ratio Det.	5Ω	.6Ω CT	20006141	TV-115		Tertiary Winding - .6Ω
L20	RF Choke	.1Ω				CLA	Not used in all Models.
L21	RF Choke	.59Ω				CLA	.82 Microhenry -Not used in all Models
L22	RF Choke	.59Ω				CLA	.82 Microhenry -Not used in all Models
L23	Horiz. Osc.	60Ω		21010991	TV-163		2.2 Microhenries
L24	RF Choke	1.8Ω		21006280			Tapped @ 4.2Ω
L25	Horiz. Lin.	5.7Ω		21011001			
L26	Width Coil	6Ω		21011011			
L27	RF Choke	2.8Ω		21006520		CL-1	4.7 Microhenries

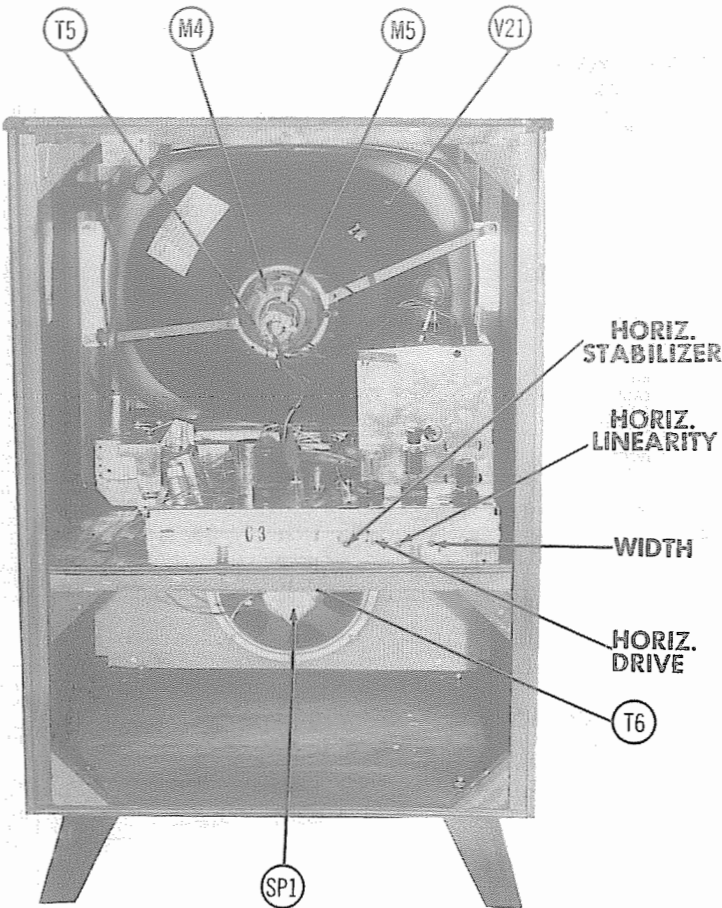
* Enlarge mounting hole.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			DUMONT PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	GJV	1/4A 250V.	11000720	11000600	312.250	357001	AGC-1/4	4405

MISCELLANEOUS

ITEM No.	PART NAME	DUMONT PART No.	NOTES
M2	RF Tuner	21010781	
M3	4th. Video IF Capacitor	26001081	Video Detector Assembly
M4	Crystal (1N60)		
M5	Centering Magnet	29000651	
	Ion Trap	29000661	
	Antenna Coils	40013462	Channel #3
	Antenna Coils	40013463	Channel #4
	Antenna Coils	40013464	Channel #5
	Antenna Coils	40013465	Channel #6
	Antenna Coils	40013466	Channel #7
	Antenna Coils	40013467	Channel #8
	Antenna Coils	40013468	Channel #9
	Antenna Coils	40013469	Channel #10
	Antenna Coils	40013471	Channel #11
	Antenna Coils	40013472	Channel #12
	Antenna Coils	40013473	Channel #13
	RF, Mixer Grid & Osc. Coil	40013482	Channel #3
	RF, Mixer Grid & Osc. Coil	40013483	Channel #4
	RF, Mixer Grid & Osc. Coil	40013484	Channel #5
	RF, Mixer Grid & Osc. Coil	40013485	Channel #6
	RF, Mixer Grid & Osc. Coil	40013486	Channel #7
	RF, Mixer Grid & Osc. Coil	40013487	Channel #8
	RF, Mixer Grid & Osc. Coil	40013488	Channel #9
	RF, Mixer Grid & Osc. Coil	40013489	Channel #10
	RF, Mixer Grid & Osc. Coil	40013491	Channel #11
	RF, Mixer Grid & Osc. Coil	40013492	Channel #12
	RF, Mixer Grid & Osc. Coil	40013493	Channel #13
	Knob	45004012	Fine Tuning (Ch. RA-165)
	Knob	45004022	Contrast (Ch. RA-165)
	Knob	45004031	Channel Selector (Mahogany)
	Knob	45004032	Channel Selector (Blonde) (Ch. RA-165)
	Knob	45004041	Off/on Volume (Mahogany)
	Knob	45004042	Off/on Volume (Blonde) (Ch. RA-165)
	Knob	45004011	Fine Tuning (Ch. RA-164)
	Knob	45004021	Contrast (Ch. RA-164)
	Back Cover	32002731	
	Safety Glass	45004001	Ch. RA-165
	Safety Glass	45004061	Ch. RA-164
	Control Door	42006661	



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

- Turn the set on and tune in a TV station, preferably a test pattern.
- Set the horizontal hold control to the center of its range.
- Short the AFC test point (pin 1 of V16) to chassis.
- Adjust the horizontal stabilizer slug (B1) until picture synchronizes momentarily. Remove the short from the AFC test point.
- The presence of a vertical white line in the center of the picture indicates improper adjustment of the horizontal drive control. Turn the control until the white line just disappears.
- If the range of the control is insufficient to eliminate the white line, remove the jumper across R102 and readjust the horizontal drive control.
- Adjust the width slug (B2) for a picture slightly wider than necessary to fill the picture mask horizontally.
- Adjust the horizontal linearity slug (B3) for a picture that is symmetrical from left to right.

DISASSEMBLY INSTRUCTIONS

1. Remove 4 push on type control knobs from front panel.
 2. Remove 5 wood screws. Remove rear cover.
 3. Disconnect built-in antenna. Remove 2 wood screws and remove antenna bracket.
 4. Disconnect speaker, yoke plug, HV lead, CRT socket, Electrostatic focus plug, and ground strap from CRT support.
 5. Remove 4 chassis bolts. Remove chassis.
 6. Remove 4 speaker nuts. Remove speaker.
- NOTE: FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE CHASSIS AS OUTLINED ABOVE.

DUMONT MODELS
RA-164, RA-165

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		DUMONT PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	6BQ7	6BQ7	9A1	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	Video Output	12BY7	12BY7	9BF	
V7	AGC Keying	6AU6	6AU6	7BK	
V8	Sound IF Amp.	6AU6	6AU6	7BK	
V9	Ratio Detector	6AU6	6AU6	7BK	
V10	AF Amplifier	6AT6	6AT6	7BT	
V11	Audio Output	6W6GT	6W6GT	7AC	
V12	Sync. Clipper	6BE6	6BE6	7CH	
V13	Vert. Phase Inv.	12AT7	12AT7	9A	
V14	Vert. Mult. - Vert. Output	6S4	6S4	9AC	
V15	Horiz. AFC	6AL5	6AL5	6BT	
V16	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V17	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V18	Damper	6W4GT	6W4GT	4CG	
V19	HV Rectifier	103GT	103GT	3C	
V20	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	DUMONT PART No.	REPLACEMENT DATA		RTMA BASE TYPE	NOTES
		SYLVANIA PART No.			
V21A	21FP4A	21FP4A 21FP4 ① 21EP4 ① 21EP4A ① 17HP4	12C 12C 12D 12D 12C		① Circuit changes necessary
B	17HP4				

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						NOTES
		DUMONT PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	
C1A	40 400	03121080	E4B315		UPT44445			TVA-1712
C2	10 350	03120930	PRS350/12		BR4045A			TVL-1716
C3A	10 50	03121070	AFH3-154		BR1045A			TVA-1604
B	10 200		PRS50/10		UP41145			TVL-4699
C4	4 200	03122480	PRS250/4		BR425			TVA-1501
C5	5 50	03120960	PRS150/4		BR550			TVA-1303
C6	3	03123020						
C7	3-8	03119160		829-10				
C8	5-3	03119150		829-3				
C9	47	03119170	SI47	D6-470	TM5Q5	GPIK-470	UC-5447	5GA-Q47
C10	1.5	03123030	SI1.5NP0	TCZ-1.5		NP0K-1R5	ZT-5515	5TCCB-V15
C11	1000	03100490	BPD-001	D6-102	TM5D1	801-001	DC-521	5HK-D1
C12	47	03119170	SI47	D6-470	TM5Q5	GPIK-470	UC-5447	5GA-Q47
C13	5-3	03119150		829-3				
C14	10	03119210	SI10N750	TCN-10		N750K-100	NT-541	5TCU-Q10
C15	5	03123010	SI5NP0	TCZ-4.7		NP0K-050	ZT-555	5TCC-Q5
C16	1000	03100490	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1
C17	6.8	03119190	SI6.8NP0	TCZ-6.8		NP0K-6R8	ZT-5568	5TCCB-V68
C18	120	03123040	SI120	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12
C19	100	03119640	SI100NP0	TCZ-100		NP0-333-101	ZT-531	5TCC-T1
C20	5000	03015610	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5
C21	5000	03015610	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5
C22	680	03121520	SI680	D6-681	TM5D5	GP2K-681	UC-5368	5GA-T68
C23	5000	03015610	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5
C24	5000	03015610	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5
C25	680	03121520	SI680	D6-681	TM5D5	GP2K-681	UC-5368	5GA-T68
C26	470	03016480	SI470	D6-471	TM5D5	GP2K-471	UC-5347	5GA-T47
C27	5000	03015610	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5
C28	10000	03019650	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1
C29	47	03015760	SI47NP0	TCZ-47		NP0K-470	ZT-5447	5TCC-Q47
C30	1	03119940	P488-1	DF-104	PTE4P1		PT401	4TM-P1
C31	1	03013910	P288-1	DF-104	PJ2P1		PT401	2TM-P1
C32	.01	03012560	P688-01	D6-103	PTE6S1		PT601	6TM-S1
C33	.1	03120740	P688-1	DF-104	PTE6P1		PT601	6TM-P1
C34	1000	03122420	441WL-HV-001					
C35	1.0	03122800	485-1.0		PJ2W1		PT41	2TM-M1
C36	6.8	03120900	SI6.8NP0	TCZ-6.8		NP0K-6R6	ZT-5468	5TCCB-V68
C37	20	03013800	SI20NP0	TCZ-20		NP0K-200	ZT-542	5TCC-Q2
C38	10	03015270	SI10NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1
C39	5000	03015610	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5
C40	330	03121520	SI330	D6-331		GP2K-331	UC-5333	5GA-T33
C41	680	03121520	SI680	D6-681		GP2K-681	UC-5368	5GA-T68
C42	.003	03120200	P688-003	D6-103	PTE6D3		GP2-333-302	6TM-D3
C43	.01	03014900	P488-01	D6-102	PTE4S1		GP2-333-103	4TM-S1
C44	1000	03100490	SI1000	DD-102	TM5D1		GP2L-102	5HK-D1
C45	20000	03122430	PTE6S2	DD-502	PTE6S2		811-005	5HK-D5
C46	5000	03015610	BPD-005	DD-502	TM5D5		GP2K-471	5GA-T47
C47	470	03016480	SI470	D6-471	TM5T5		GP2K-471	5GA-T47
C48	470	03016480	SI470	D6-471	TM5T5		GP2K-471	5GA-T47
C49	.01	03120780	P688-01	D6-103	PTE6S1		GP2-333-103	6TM-S1
C50	.1	03013910	P288-1	DF-104	PJ2P1		PT401	2TM-P1
C51	.01	03120580	P488-01	D6-103	PTE4S1		GP2-333-103	4TM-S1
C52	.002	03018650	P688-002	D6-202	PTE6D2		GP2-333-202	6TM-D2
C53	.005	03120190	P688-005	D6-502	PTE6D5		GP2-333-502	6TM-D5
C54	.005	03120190	P688-005	D6-502	PTE6D5		GP2-333-502	6TM-D5
C55	.002	03122000	P688-002	D6-202	PTE6D2		GP2-333-202	6TM-D2

CAPACITORS (CONT.)

ITEM No.	RATING CAP. VOLT	REPLACEMENT DATA						NOTES
		DUMONT PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	
C56	.047	03105100	P688-047		PTE6S47		PT6147	6TM-S47
C57	.1	03120740	P688-1	DF-104	PTE6P1		PT601	6TM-P1
C58	1000	03119630	1467L-HV-001				10CAB-D1	10CAB-D1
C59	470	03122440					60HKB-T47	60HKB-T47
C60	.002	03122000	P688-002	D6-202	PTE6D2		PT622	6TM-D2
C61	1000	03120820	1468-001	D6-102	PTE6D1		PT621	6TM-D1
C62	.001	03120820	P688-001	D6-102	PTE6D1		PT621	6TM-D1
C63	.15	600	03120730				TP417	
C64	.01	200		D6-103	PTE4S1		PT411	4TM-S1
C65	.05	200		D6-503	PTE6S5		PT415	2TM-S5
C66	3900	500	03030120		1464-004		MCB463	MS-24
C67	.25	600	03120120		684-25		PT6025	6TM-P25
C68	.18	500	03121530		5W502		UC-5415	
C69	390	500	03021510		1469-0004		MCB243	MS-34
C70	390	500	03021950		1469-0004		MCB243	MS-34
C71	.005	600	03120790		P688-005		PT625	6TM-D5
C72	.1	600	03019250		P688-1		PT601	6TM-P1
C73	.5	200	03002190		P288-5		PT405	2TM-P5
C74	.047	200	03019560		P288-047		PT4147	6TM-S47
C75	5000	03015610	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5
C76	.03	600	03121200		PTE6S3		PT613	6TM-S3
C77	500	20000	03121501		TV3-502		MM-C20T5	20DK-T5
C78	10000	1000	03119630					
C79	10000	1000	03119630					
C80	.01	400	03120580		P488-01		GP2-333-103	4TM-S1
C81	5000	03015610	BPD-005	DD-502	TM5D1	811-005	DC-525	5HK-D5

Note 1. Not used in all Models.

Note 2. Some Models use 300MMF in this application (Part #03014390).

Note 3. Some Models use .002MFD in this application (Part #03120210).

Note 4. Some Models use .01MFD in this application (Part #03119760).

CONTROLS

ITEM No.	RATING RESISTANCE WATTS	REPLACEMENT DATA					INSTALLATION NOTES
		DUMONT PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	500Ω	0105300	QJ-381 *			UF13L	Contrast-Panel
B	1 Meg					UR16A	Volume - Rear
C	Switch					U-26	Attach to R1B
R2A	1 Meg	0105100	Q11-137	AG-61-S	AB-69	U-54	Lightness
B	Shaft	Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R2A
R3A	3 Meg	0105100	Q11-140	AG-85-S	AB-84	SU-59	Vert. Size
B	Shaft	Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R3A
R4A	1 Meg	0105100	Q11-137	AG-61-S	AB-69	U-54	Vert. Hold
B	Shaft	Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R4A
R5A	5000Ω	01024740	W-5000	A43-5000	VR-135	R5000L	Vert. Linearity-Wire Wound
R6A	50KΩ	Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R5A
B	Shaft	Not Req.	Not Req.	Q11-123	AB-31	U-35	Horiz. Hold
R7A	15KΩ	01044441	Q11-119	AG-32-S	AB-22	U-26	Attach to R6A
B	Shaft	Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R7A
R8A	50KΩ	01051020	Q11-123	AG-44-S	AB-31	SU-35	AGC
B	Shaft	Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R8A

* CONCENTRIT EQUIVALENT-KIT K-2, BASE ELEMENTS AND SHAFTS B11-103 & P1-123 (Panel)

B13-137 & R1-202 (Rear) & SWITCH 76-1.

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	DUMONT PART No.	IRC PART No.	
R9	15KΩ		02032490		
R10	47KΩ		02032520		
R11	100KΩ		02032010		Note 1
R12	270KΩ		02032060		Note 2
R13	470Ω		02032400	BTS-470	
R14	180KΩ		02032040	BTS-180K	
R15	4700Ω		02031850	BTS-4700	Note 3
R16	4700Ω		02031850	BTS-4700	Note 1
R17	10KΩ		02032480		
R18	220KΩ		02032560		
R19	15KΩ		02032490		
R20	10KΩ		02032480		
R21	15KΩ		02032490		
R22	330Ω-5%			BTS-1300-5%	Note 4
R23	330Ω		02032390	BTS-330	Note 5
R24	82KΩ			BTS-82K	Note 6
R25	6800Ω				Note 7
R26	68Ω		02031870		
R27	1000Ω		02032420	BTS-1000	
R28	330Ω		02032390	BTS-330	
R29	22KΩ		02037930	BTB-22K	
R30	22KΩ		02037930	BTB-22K	
R31	27KΩ		02031940		
R32	68Ω		02032350		
R33	1000Ω		02032420	BTS-1000	
R34	330Ω		02032390	BTS-330	
R35	6800Ω		02031870		
R36	100Ω		02032360	BTS-100	
R37	330Ω		02032390	BTS-330	
R38	4700Ω		02031850	BTS-4700	
R39	1.5Meg		02032150	BTS-1.5Meg	
R40	33KΩ		02031950	BTS-33K	
R41	470Ω		02032400	BTS-470	
R42	22Ω		02032320		
R43	1800Ω		02031800	BTS-1800	
R44	5500Ω	10	02032320	1/3A-6000	
R45	270KΩ		02032060	BTS-270K	
R46	1 Meg		02032600	BTS-1 Meg	
R47	100KΩ		02032010	BTS-100K	
R48	1.5Meg		02032150	BTS-1.5Meg	
R49	470KΩ		02032090	BTS-470K	
R50	470KΩ		02032580	BTS-470K	
R51	1000Ω		02032420	BTS-1000	
R52	390Ω		02031720	BTS-390	
R53	22KΩ		02031920	BTS-22K	
R54	6800Ω		02031870	BTS-6800	
R55	6800Ω		02031870	BTS-6800	
R56	10 Meg		02032660	BTS-10 Meg	
R57	470KΩ		02032580	BTS-470K	
R58	51KΩ-5%		02031130	BTS-510K-5%	
R59	470KΩ		02032580	BTS-470K	Note 1
R60	470KΩ		02031120	BTS-470K	
R61	220Ω		02038380	BW-2-220	
R62	150KΩ-5%		02032030	BTS-150K-5%	
R63	12KΩ		02031900	BTS-12K	
R64	12KΩ		02031900	BTS-12K	
R65	6800Ω		02032470	BTS-6800	
R66	82KΩ		02032000	BTS-82K	
R67	39KΩ		02031980	BTS-39K	
R68	39KΩ		02031960	BTS-39K	
R69	10KΩ		02032480	BTS-10K	
R70	1.8Meg		02032160	BTS-1.8Meg	
R71	27KΩ		02034840	BTA-27K	
R72	27KΩ		02031940	BTS-27K	
R73	1 Meg		02032600	BTS-1 Meg	
R74	680Ω-5%		02030440	BTS-680-5%	
R75	1500Ω		02031790	BTS-1500	
R76	820Ω-5%		02030460	BTS-820-5%	
R77	22KΩ		02031930	BTS-22K	
R78	8200Ω		02031880	BTS-8200	
R79	8200Ω		02031880	BTS-8200	
R80	820KΩ			BTS-820K	Note 8
R81	1.2Meg			BTS-1.2Meg	Note 9
R82	1000Ω			BTS-1000	Note 1
R83	330KΩ	1	02035070	BTA-330K	
R84	82KΩ	1	02035000	BTA-82K	
R85	68KΩ	1		BTA-68K	Note 10
R86	10 Meg	1	02035250	BTA-10 Meg	Note 11
R87	18KΩ-5%			BTS-18K-5%	Note 11
R88	2.2Meg	1	02032620	BTS-2.2Meg	
R89	820Ω	1	02034760	BTA-820	
R90	47KΩ	1	02034970	BTA-47K	

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard can be eliminated by removing the horizontal multivibrator tube (V16).

VIDEO IF ALIGNMENT

Remove the converter tube (V2) from its socket and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications. Short the AGC test point to chassis.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1. Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	25.5MC (Unmod)	Any	DC probe to point A. Common to chassis.	A1, A2	Adjust for maximum deflection.
2. "	"	27.25MC	"	"	A5	Adjust for MINIMUM deflection.
3. "	"	23.1MC	"	"	A3, A4	Adjust for maximum deflection.

OVERALL VIDEO IF RESPONSE CHECK

Remove the short from the AGC test point. Connect the negative lead of a 3 volt battery, to the AGC test point. Connect the positive lead to chassis. 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
4. Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	24.MC (Unmod)	21.25MC 25.75MC 27.25MC	Any	Vert. amp to point A. Low side to chassis.		Check for response curve similar to fig. 1. If necessary retouch A1 thru A4 for desired response.

PHASING ADJUSTMENT

Remove the dummy converter tube and replace the original 6J6 in its socket. Remove the bias battery. Turn the set on and tune in a TV station, preferably a test pattern. Turn the fine tuning control fully counter-clockwise. If sound bars do not appear in picture adjust the oscillator slug to produce a slight amount of sound in the picture. Turn the fine tuning control clockwise until sound in picture is eliminated. Examine picture for evidence of smear or trailing whites. If either condition is present adjust A1 as follows:
Not more than 1/4 turn counter clockwise to reduce smear.
Not more than 1/4 turn clockwise to reduce trailing whites.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5. .001MFD	High side to point A. Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point B. Common to chassis.	A6, A7	Adjust for maximum deflection.
6. "	"	"	"	DC probe to point C. Common to chassis.	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5. .001MFD	High side to point A. Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to point B. Low side to chassis.	A6, A7	Disconnect stabilizer capacitor C5. Adjust for curve of maximum amplitude and symmetry as in fig. 2.
6. "	"	"	"	"	Vert. amp. to point C. Low side to chassis.	A8	Reconnect capacitor C5. Adjust so that 4.5MC occurs at center of crossover lines as in fig. 3. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ALIGNMENT

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7. .001MFD	High side to point A. Low side to chassis.	Not used	4.5MC (400%Mod)	Any	Vert. Amp. thru crystal detector (fig. 4) to junction of L16 and R114. Low side to chassis.	A9	Adjust for MINIMUM 400% indication.

RF ALIGNMENT

The tuner portion of this receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

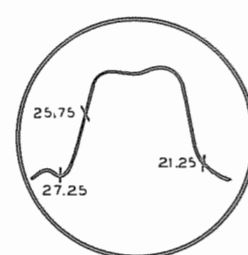


FIG. 1

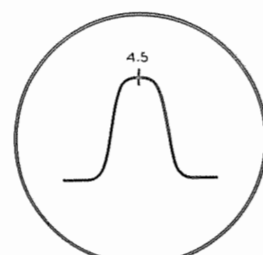


FIG. 2

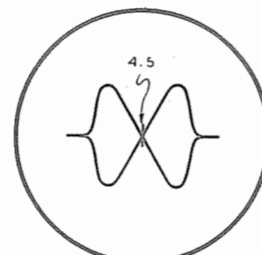


FIG. 3

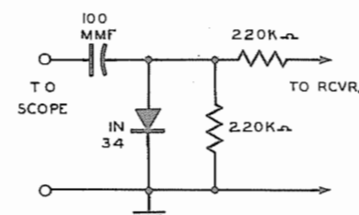
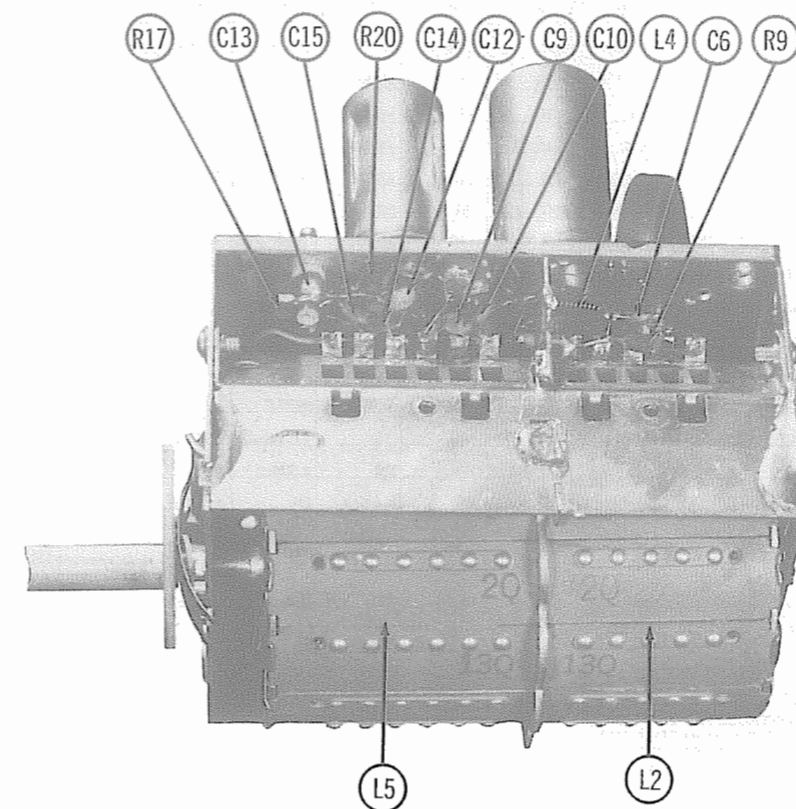
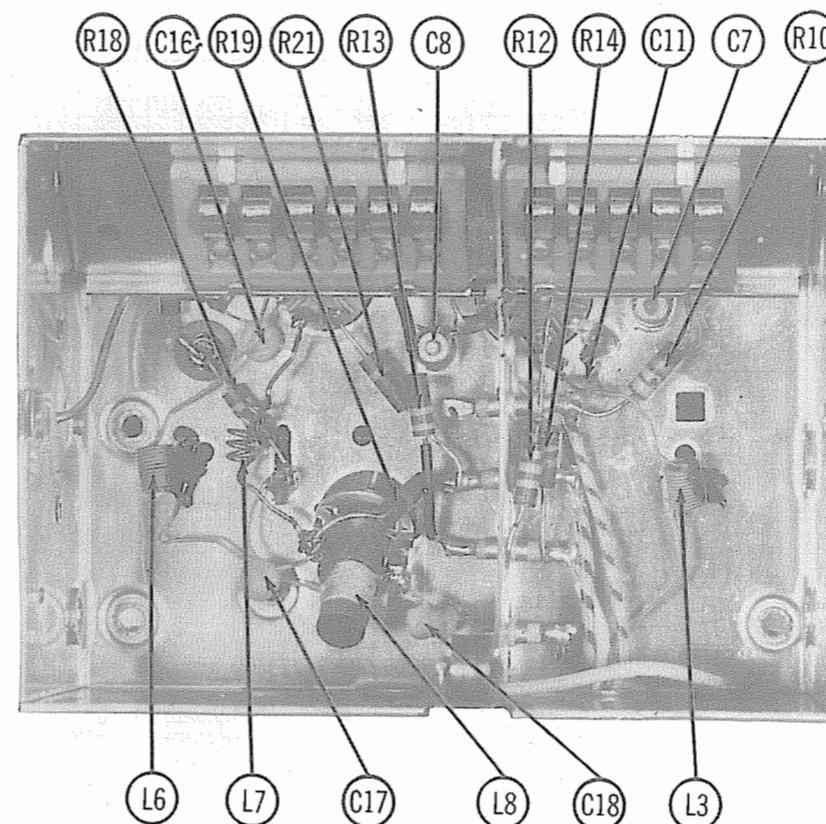


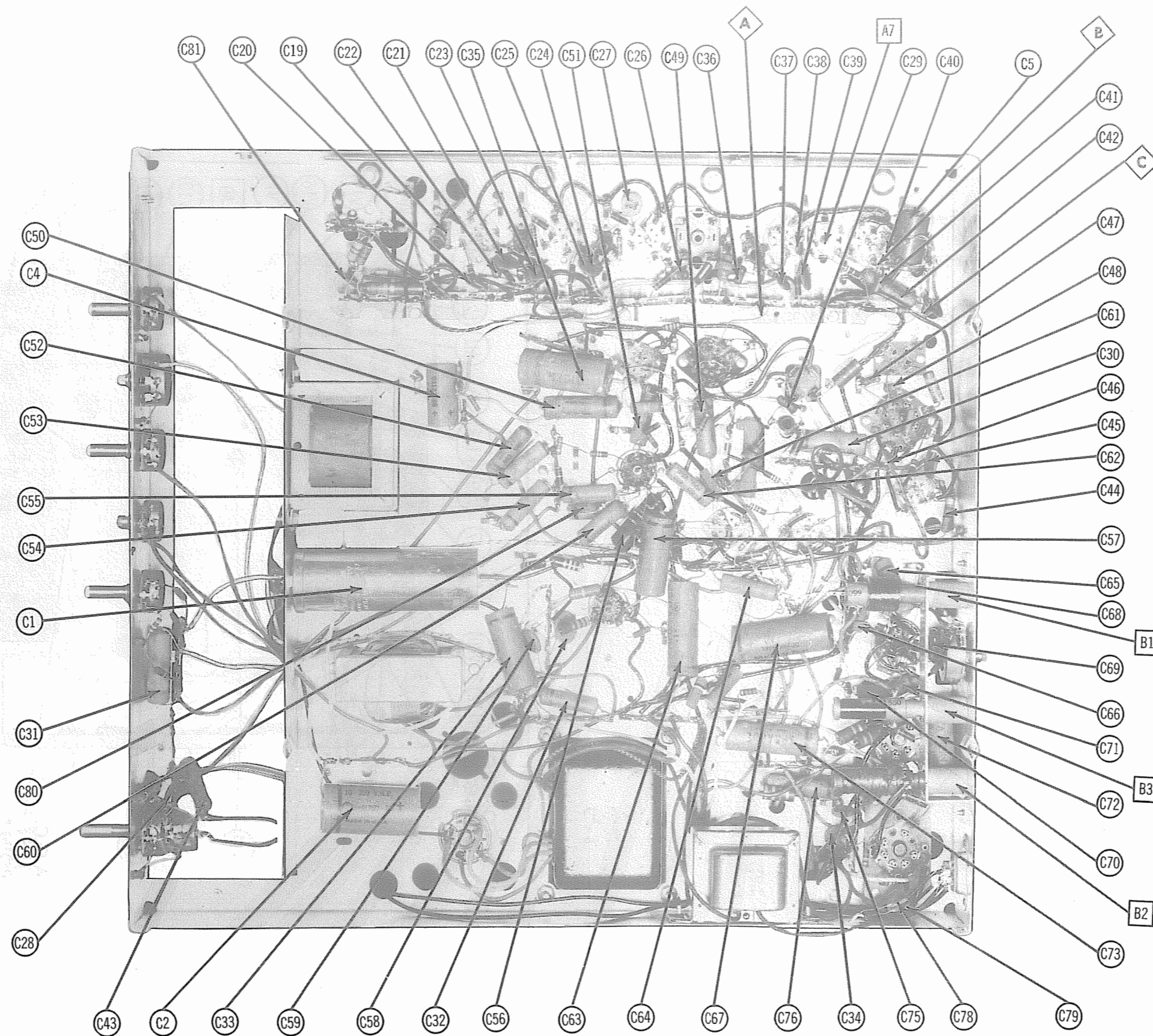
FIG. 4



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION