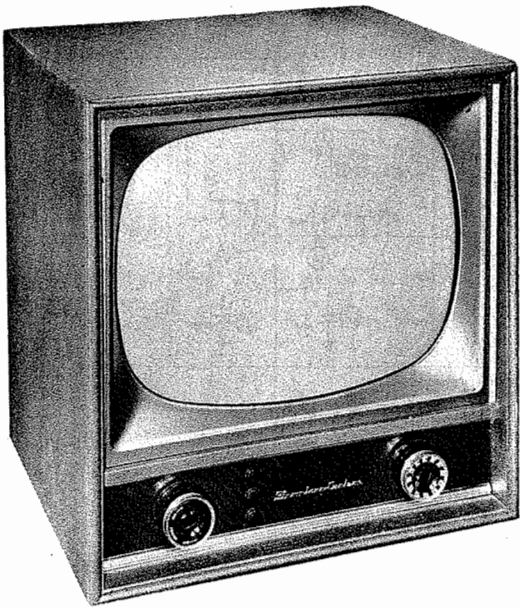




DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

- 1. Remove 7 push-on type control knobs from front panel of cabinet.
- 2. Remove 6 wood screws. Remove rear cover.
- 3. Remove 4 chassis bolts. Remove chassis.



MODELS	CHASSIS
K21AHB, K21AHCB, K21AHCE, K21AHCM, K21AHE, K21AHM, K21ATB, K21A TM, K21A TQ	KH-21A, KV-21A
K22AHB, K22AHCB, K22AHCE, K22AHCM, K22AHE, K22AHM, K22ATB, K22A TM, K22A TQ	KH-22A, KV-22A

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the VHF tuner oscillator circuit may be accomplished by removal of the channel selector and fine tuning knobs. The adjustments are accessible, one at a time, thru the small hole in the cabinet to the right of the channel selector shaft.

PICTURE TUBE SAFETY GLASS CLEANING

Remove 4 wood screws holding wooden molding at the top edge of the safety glass. Remove wooden molding and safety glass. Use extreme caution when removing safety glass.

PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions).

SERVICE ADJUSTMENT LOCATION

See tube placement chart on page 5.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the horizontal oscillator circuit may be made from the rear panel of the chassis. Set the horizontal hold control at the mid-position of its range and adjust the horizontal frequency slug (L24) until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the ratio detector secondary (L22) located on top of the chassis.

FUSES

One fuse is used for horizontal sweep circuit protection. (For location see tube placement chart).

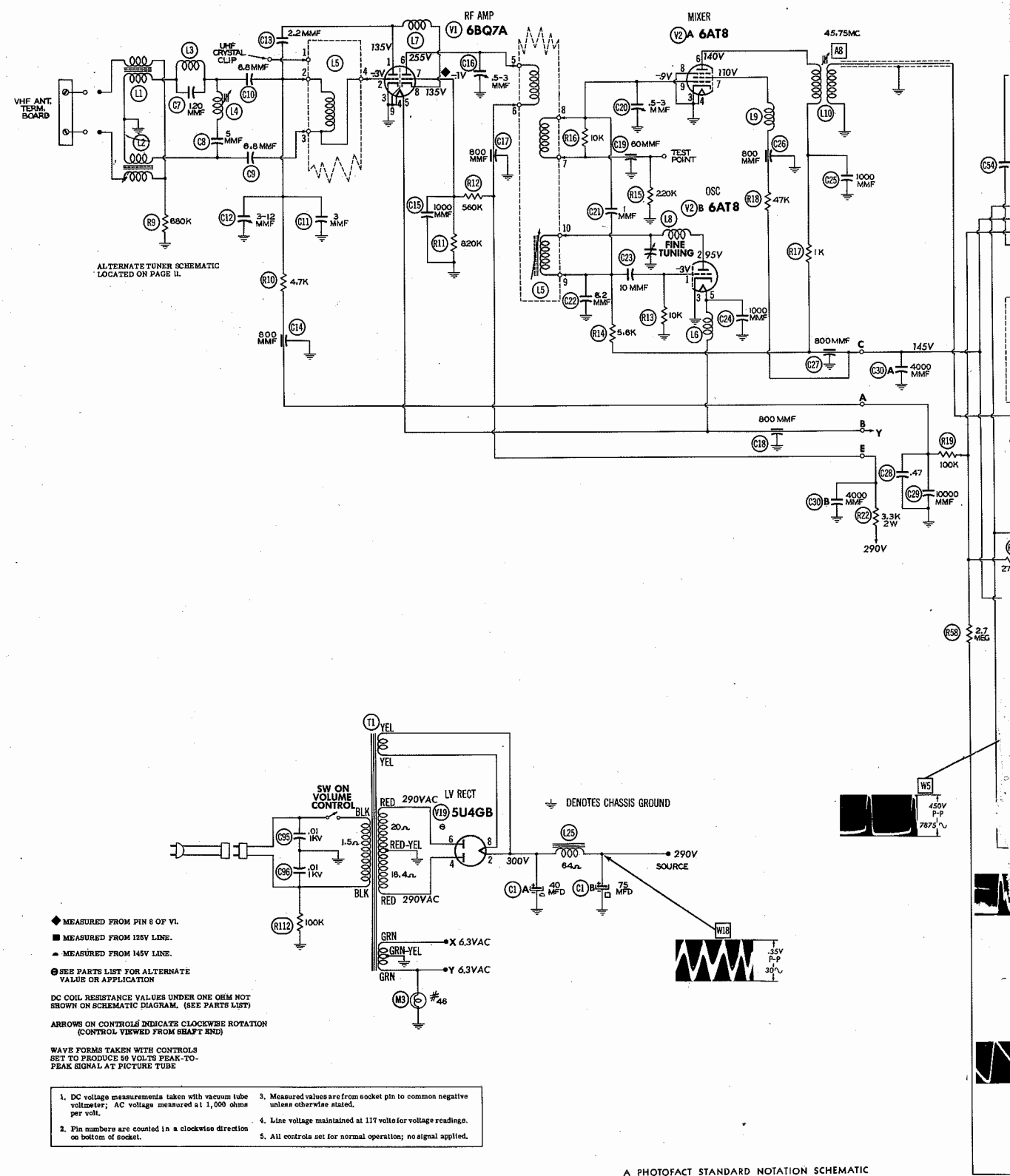
CENTERING

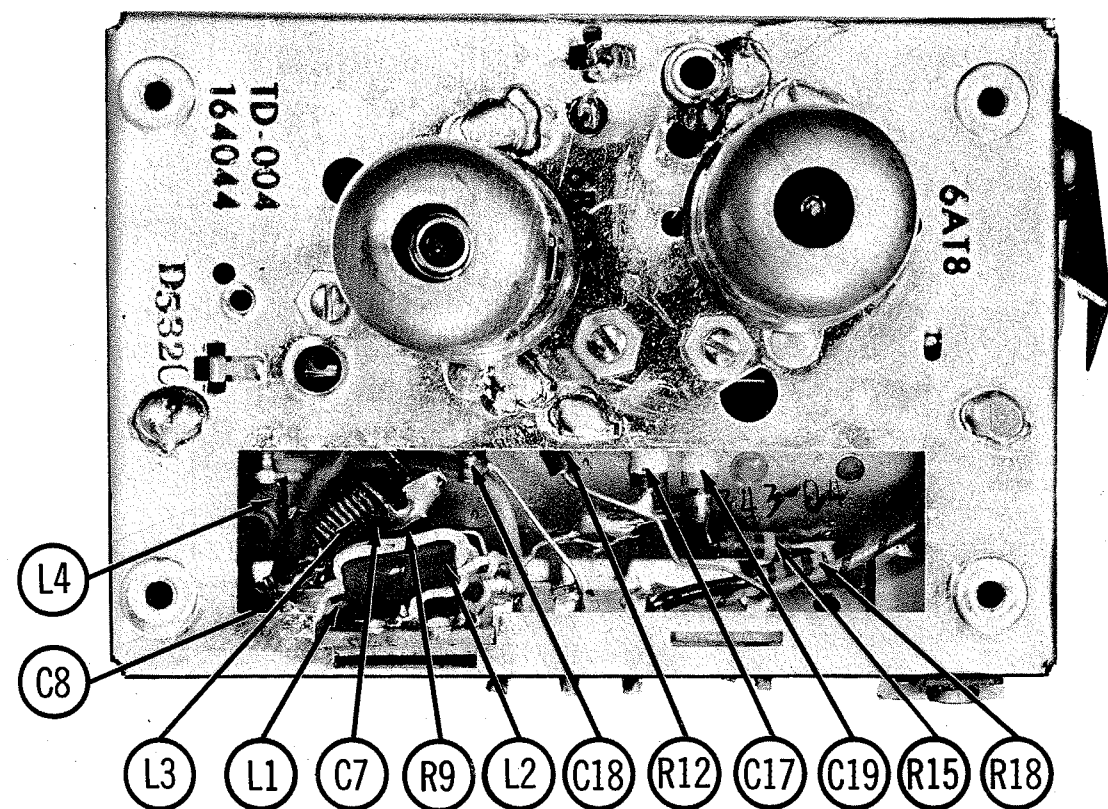
Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube, located flush against the deflection yoke. Rotate the two rings around the neck of the tube until the picture is properly centered.

STROMBERG-CARLSON MODELS K21AHB, AHCB, AHCE, AHCM, AHE, AHM, ATB, ATM, ATQ (Ch. KH-21A, KV-21A), K22AHB, AHCB, AHCE, AHCM, AHE, AHM, ATB, ATM, ATO (Ch. KH-22A, KV-22A)

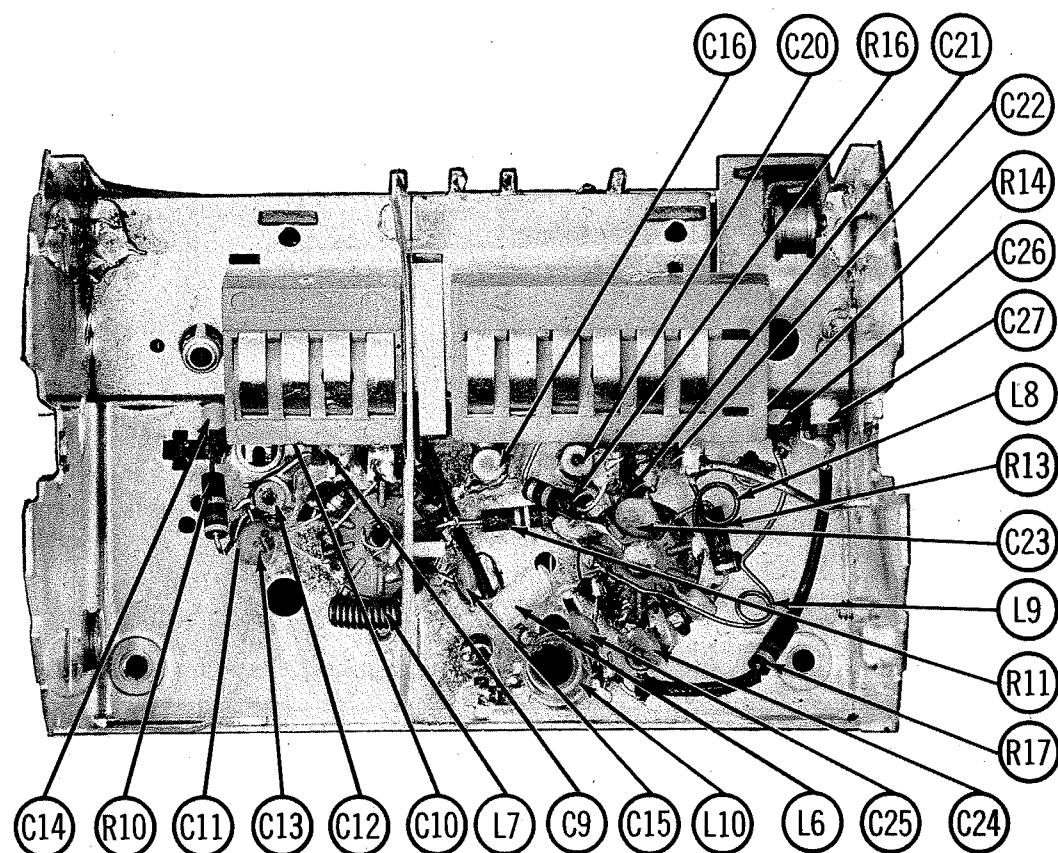
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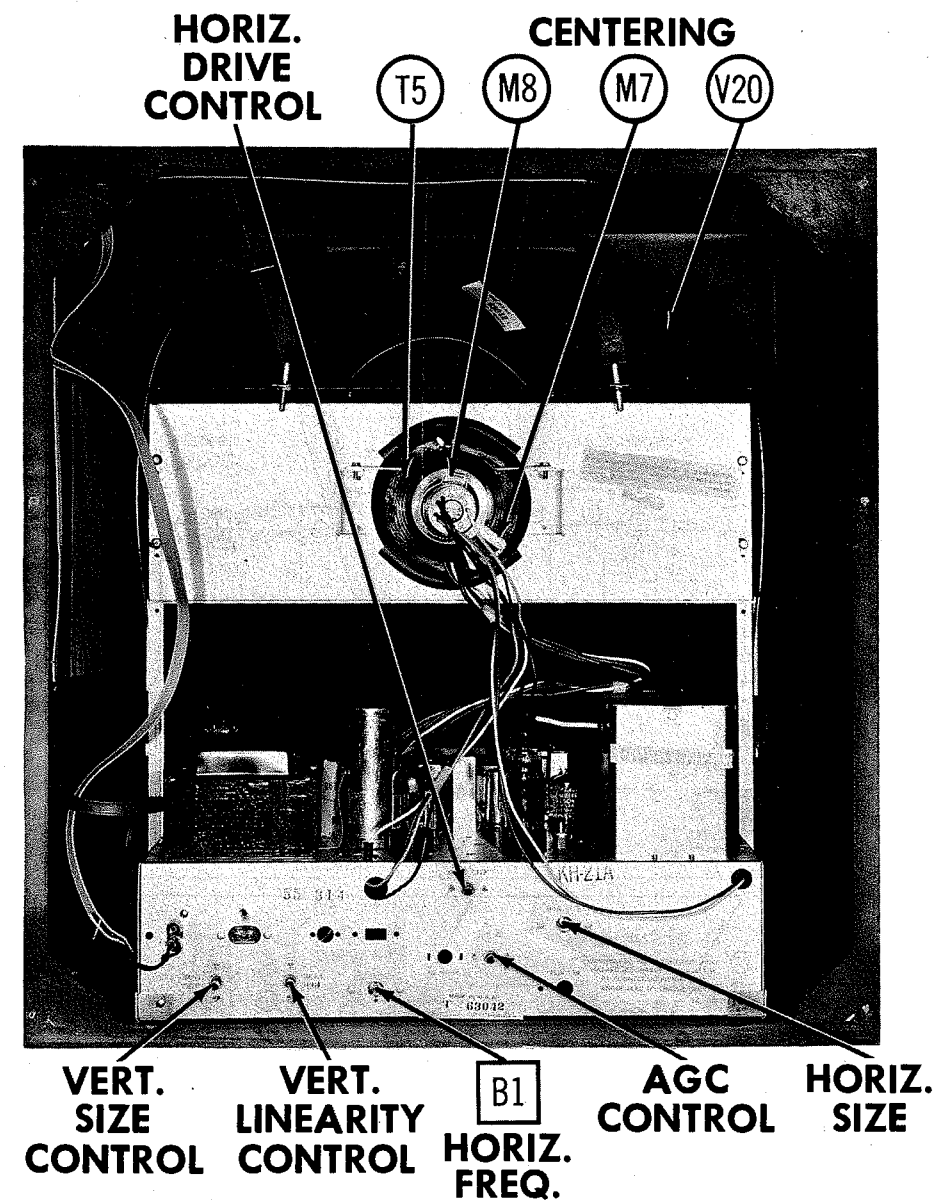




RF TUNER-TOP VIEW



RF TUNER-BOTTOM VIEW



CABINET-REAR VIEW

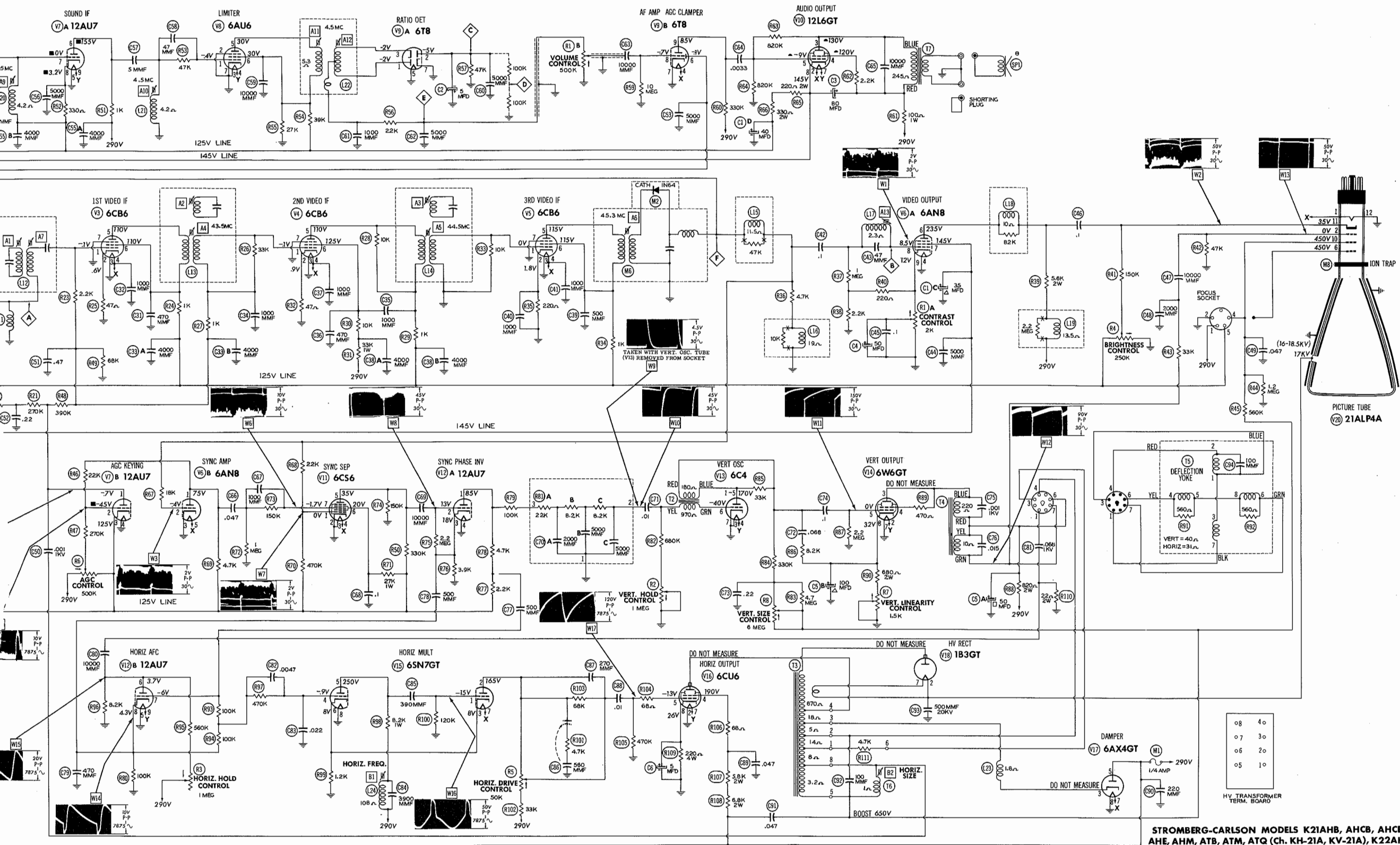
### HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably with a test pattern.

Set the horizontal hold control to its mid-range position and adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

Adjust the horizontal drive control for best compromise between brightness and horizontal linearity.

Adjust the horizontal size (B2) for a picture slightly wider than necessary to fill the picture mask horizontally.



STROMBERG-CARLSON MODELS K21AHB, AHCB, AHCE, AHCM, AHE, AHM, ATB, ATM, ATQ (Ch. KH-21A, KV-21A), K22AHB, AHCB, AHCE, AHCM, AHE, AHM, ATB, ATM, ATO (Ch. KH-22A, KV-22A)

# PARTS LIST AND DESCRIPTIONS (Continued) COILS (cont)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	Stromberg-Carlson PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
G	Ant., RF, Mixer Grid, Osc. Coils	0Ω		172208				Channel 8
H	Ant., RF, Mixer Grid, Osc. Coils	0Ω		172209				Channel 9
I	Ant., RF, Mixer Grid, Osc. Coils	0Ω		172210				Channel 10
J	Ant., RF, Mixer Grid, Osc. Coils	0Ω		172211				Channel 11
K	Ant., RF, Mixer Grid, Osc. Coils	0Ω		172212				Channel 12
L	Ant., RF, Mixer Grid, Osc. Coils	0Ω		172213				Channel 13
L6	Flt. Choke	0Ω						
L7	Neut. Coil	0Ω						
L8	RF Coil	0Ω						
L9	RF Coil	0Ω						
L10	Conv. Plate	.2Ω						
L11	RF Choke	.4Ω		114793	19-1000		4602	1 Microhenry; IRC Part No. CL-1 Includes 39.75MC Trap Includes 41.25MC Trap Includes 47.25MC Trap
L12	1st Video IF	.2Ω	.2Ω	114455	17-5002	TV-127	6232	
L13	2nd Video IF	.2Ω	.2Ω	114456	17-5003	TV-128	6233	
L14	3rd Video IF	.2Ω	.2Ω	114457				
L15	Series Peak-ing Coil	11.5Ω		114790	19-3250 *	TV-185 *	6130 *	266 Microhenries; Wound on 47KΩ resistor
L16	Shunt Peak-ing Coil	19Ω		114798	19-3660		6148	670 Microhenries; Wound on 10KΩ resistor
L17	4.5MC Trap	2.3Ω		114417	20-1004	TV-151	1469	
L18	Series Peak-ing Coil	10Ω		114792	19-3201		6154	200 Microhenries; Wound on 82KΩ resistor
L19	Shunt Peak-ing Coil	13.5Ω		114794	19-4400		6134	395 Microhenries; Wound on 2.2Meg
L20	1st Sound IF	4.2Ω		114419			1470	
L21	2nd Sound IF	4.2Ω		114419			1470	
L22	Ratio Det.	5.3Ω	.8ΩCT	114418	17-3497	TV-115	6205	Tertiary Winding- 8Ω
L23	RF Choke	1.8Ω		114693	19-1002		4606	2.2Microhenries; IRC Part No. CLA

- \* Parallel with 47KΩ resistor.
- Parallel with 10KΩ resistor.
- ▲ Parallel with 62KΩ resistor.
- ▲ Parallel with 2.2Meg resistor.

## TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES.		REPLACEMENT DATA							NOTES
	PRI.	SEC.	Stromberg-Carlson PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	RCA TYPE No.	Ram PART No.	Thordarson PART No.	
L24	108Ω		114132	19-1576	TV-163	6210			HS-5	

## FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 CY)	Stromberg-Carlson PART No.	Hallidorsen PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triod PART No.
L25	.220A	64Ω	1.5HY	161051	C5040	C2894	C2327	26C41	C-21X

## FUSES

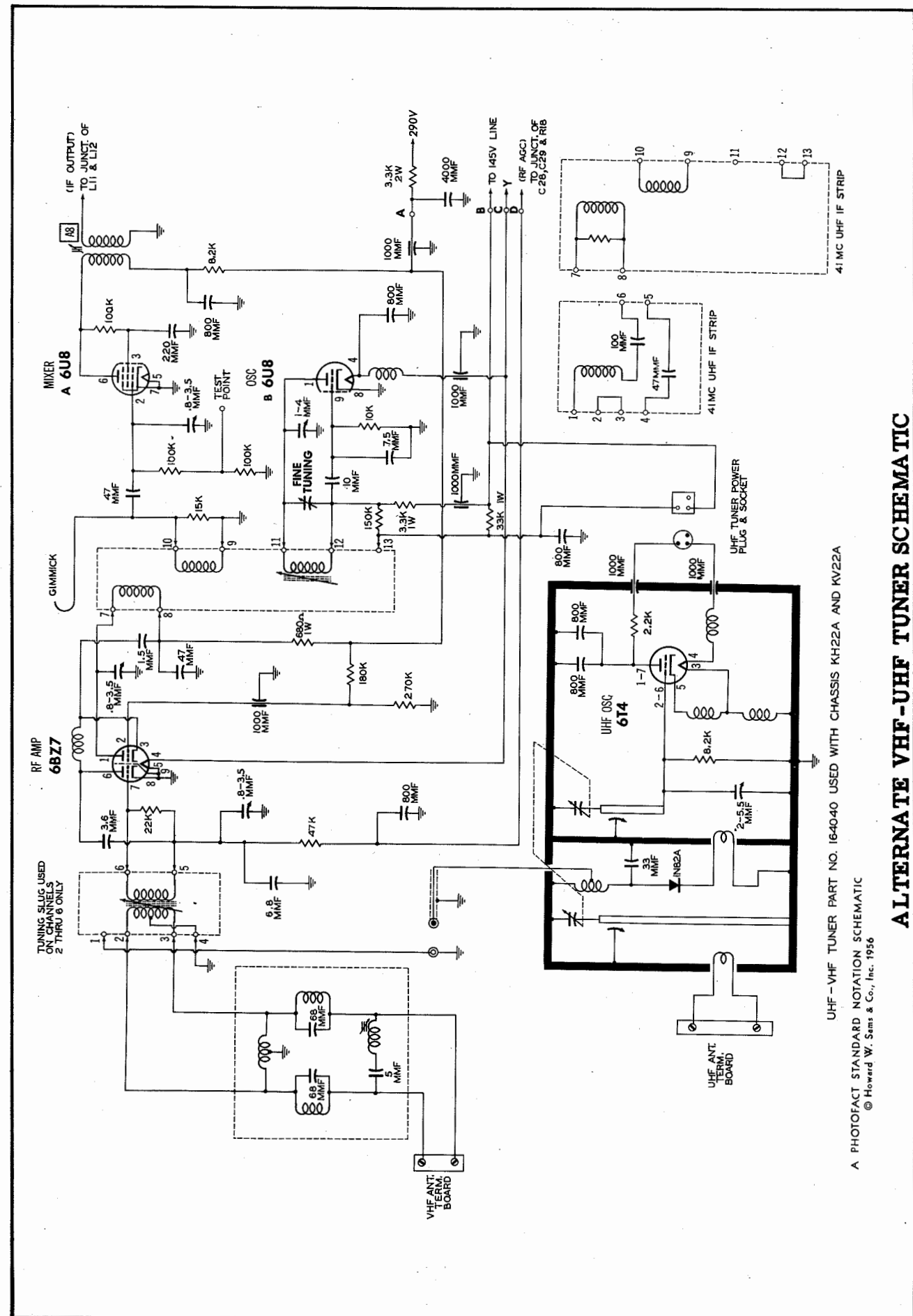
ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Stromberg-Carlson PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	N	1/4A 125V	128042	128072			N 1/4	HO to 3/10

## CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA		NOTES
		Stromberg-Carlson PART No.	SYLVANIA PART No.	
M2	1N64	162219	1N60	Video Det. (Clp In)

## MISCELLANEOUS

ITEM No.	PART NAME	Stromberg-Carlson PART No.	NOTES
M3	Dial Light	137010	#46
M4	Tuner	164044	VHF-Chassis KH-21A, KV-21A
M5	Tuner	164040	VHF-UHF Combination-Chassis KH-22A, KV-22A
M6	Video Det. Assy.	114458	Includes M2, Coils, and Capacitor
M7	Centering Device		Part of Deflection Yoke (T5) Rear Cover
M8	Ion Trap	114778	
	Cabinet	108517	TQ Models
	Cabinet	108518	TM Models
	Cabinet	108522	TB Models
	Cabinet	108514	HM and HE models
	Cabinet	108515	HB Models
	Cabinet	108526	HCM Models
	Cabinet	108527	HCB Models
	Cabinet	108565	HCE Models -Marlite
	Cabinet	108534	HM Models-Marlite
	Cabinet	108535	HB Models-Marlite
	Cabinet	108507	HCM Models-Marlite
	Cabinet	108508	HCB Models-Marlite



UHF-VHF TUNER PART NO. 164040 USED WITH CHASSIS KH-22A AND KV-22A

A PHOTOFAC STANDARD NOTATION SCHEMATIC  
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STROMBERG-CARLSON MODELS K21AHB, AHCB, AHCE, AHCM, AHE, AHM, ATB, ATM, ATQ (Ch. KH-21A, KV-21A), K22AHB, AHCB, AHCE, AHCM, AHE, AHM, ATB, ATM, ATQ (Ch. KH-22A, KV-22A)

CLIPWHEELS REMAIN FIRM-FIRM ETHERNET



## TUBES ( GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	REPLACEMENT DATA		NOTES
		Stromberg-Carlson PART No.	STANDARD REPLACEMENT	
V1	RF Amplifier	6BQ7A	6BQ7A	
V2	Mixer-Oscillator	6AT8	6AT8	
V3	1st. Video IF Amplifier	6CB6	6CB6	
V4	2nd. Video IF Amplifier	6CB6	6CB6	
V5	3rd. Video IF Amplifier	6CB6	6CB6	
V6	Video Output-Sync Amplifier	6AN8	6AN8	
V7	Sound IF-AGC Keying	12AU7	12AU7	
V8	Limiter	6AU6	6AU6	
V9	Ratio Detector-AF Amplifier-AGC Clamper	6T8	6T8	
V10	Audio Output	12L6GT	12L6GT	
V11	Sync Separator	6CS6	6CS6	
V12	Sync Phase Inverter-Horiz. AFC	12AU7	12AU7	
V13	Vert. Oscillator	6C4	6C4	
V14	Vert. Output	8W6GT	8W6GT	
V15	Horiz. Mult.	6SN7GT	6SN7GT	
V16	Horiz. Output	6C06	6C06	
V17	Deamper	6AX4GT	6AX4GT	
V18	HV Rectifier	1B3GT	1B3GT	
V19	LV Rectifier	5U4GB	5U4GB	A 5U4GA may be used as an alternate

## CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	Stromberg-Carlson PART No.	CBS PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	
V20	21ALP4A ①	21ALP4A ①	21ALP4A ① 21ALP4A/B ①	21ALP4A/B ②	① Aluminized ② Silver screen "85"

## ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Stromberg-Carlson PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	40	400	111131	RE1033	FP377	TC90		Q-325	R2206
C1B	75	400			TC90			MT-4540	
C1C	35	200							
C1D	40	200							
C2	5	50	111093	PRS150V4	BR550	TC30	TD-5-50	MMT-0505	TVA-1303
C3	80	250	111130	PRS450V80	BR8045	TC80	TD-80-450	S-155	TVA-1716
C4	50	50	111012	PRS50V50	BR505	TC39	TD-50-50	FM-0550	TVA-1308
C5A	50	400	111133	AFB2-90-50	C104	FP229.6	TM-3056		TVA-1308
C5B	100	50							
C5C	5	50	111093	PRS150V4	BR550	TC30	TD-5-50	MMT-0505	TVA-1303

## FIXED CAPACITORS

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

ITEM No.	RATING		Stromberg-Carlson PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	REPLACEMENT DATA			NOTES
	CAP.	VOLT					ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C7	120	200			D6-121		81L-121			
C8	5			NP0-D15	TCZ-5	Z011	NP0A-050	ZT-555	5TCCB-V47	
C9	6.8			NP0-D18.8	TCZ-6R8	Z013	NP0A-6R8	ZT-5568	5TCCB-V88	
C10	6.8			NP0-D16.8	TCZ-6R8	Z013	NP0A-6R8	ZT-5568	5TCCB-V88	
C11	3			NP0-D13	TCZ-3R3	Z007	NP0A-030	ZT-553	5TCCB-V33	
C12	3-12									
C13	2.2									
C14	800				NP0-S12.2	TCZ-2R2	Z006	NP0A-2R2		5TCCB-V22
C15	1000									
C16	5-3				BPD-001	DD-102	K069	81L-102	DC-521	5HK-D1
C17	800					829-3		3115-01-0R5	CT565A	
C18	800									
C19	80									
C20	5-3									
C21	1				NP0-S11	829-3		3115-01-0R5	CT565A	5TCCB-V1
C22	8.2					TCZ-1		NP0A-010		
C23	10									
C24	1000				BPD-001	DD-102	K069	81L-102	DC-521	5HK-D1
C25	1000				BPD-001	DD-102	K069	81L-102	DC-521	5HK-D1
C26	800									
C27	800									
C28	.47		110709	P288N-47		CUB2P47		PT4047	2TM-P47	
C29	10000		110672	BPD-01	DD-103	K082	81L-01	DC-511	5HK-S1	
C30A	4000		110685	BPD-2X004		DK078	822-004	DCD-524	5HK-2D4	
C31	470		110464	1464-00047	D6-471	5R5T47			MS-347	
C32	1000		110624	BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C33A	4000		110685	BPD-2X004		DK078	822-004	DCD-524	5HK-2D4	
C33B	4000									
C34	1000		110824	BPD-001	DD-102	K089	801-001	DC-521	5HK-D1	
C35	1000		110824	BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C36	470		110464	1464-00047	D6-471	5R5T47			MS-347	
C37	1000		110824	BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C38A	4000		110685	BPD-2X004		DK078	822-004	DCD-524	5HK-2D4	
C38B	4000									
C39	500		110464	1464-00047	D6-501	5R5T5		MCB245	MS-35	
C40	1000		110824	BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C41	1000		110624	BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C42	.1	200	110705	P288N-1	DF-104	CUB2P1		PT401	2TM-P1	
C43	47			NP0-S147	TCZ-47	T222	NP0-338-470	ZT-5447	STCCB-V47	
C44	5000		110586	BPD-005	DD-502	K080	81L-005	DC-525	5HK-D5	
C45	.1	200	110705	P288N-1	DF-104	CUB2P1		PT401	2TM-P1	
C46	.1	400	110724	P468N-1	DF-104	CUB4P1		PT401	4TM-P1	
C47	10000		110672	BPD-01	DD-103	K082	81L-01	DC-511	5HK-S1	
C48	2000		110840	BPD-02	DD-202	K072	801-002	DC-522	5HK-D2	
C49	.047	400	110741	BPD-05	DF-503	CUB4S47		PT4147	4TM-S47	
C50	.001	1000	110562	HVD-15-1000	DD16-103	CUB16D1		PT1621	MB-S1	
C51	.47	200	110709	P288N-47		CUB2P47		PT4047	2TM-P47	
C52	.22	400	110726	P468N-22		CUB4P22		PT4022	4TM-P22	
C53	5000		110586	BPD-005	DD-502	K080	81L-005	DC-525	5HK-D5	
C54	5		110598	NP0-S15	D6-050	T207	NP0A-050	ZT-555	5TCCB-V47	
C55A	4000		110685	BPD-2X004		DK078	822-004	DCD-524	5HK-2D4	
C55B	4000									
C56	5000		110586	BPD-005	DD-502	K080	81L-005	DC-525	5HK-D5	
C57	5		110598	NP0-S15	D6-050	T207	NP0A-050	ZT-555	5TCCB-V47	
C58	47		110402	NP0-S147	D6-470	T222	NP0-338-470	ZT-5447	5TCC-V47	
C59	10000		110672	BPD-01	DD-103	K082	81L-01	DC-511	5HK-S1	

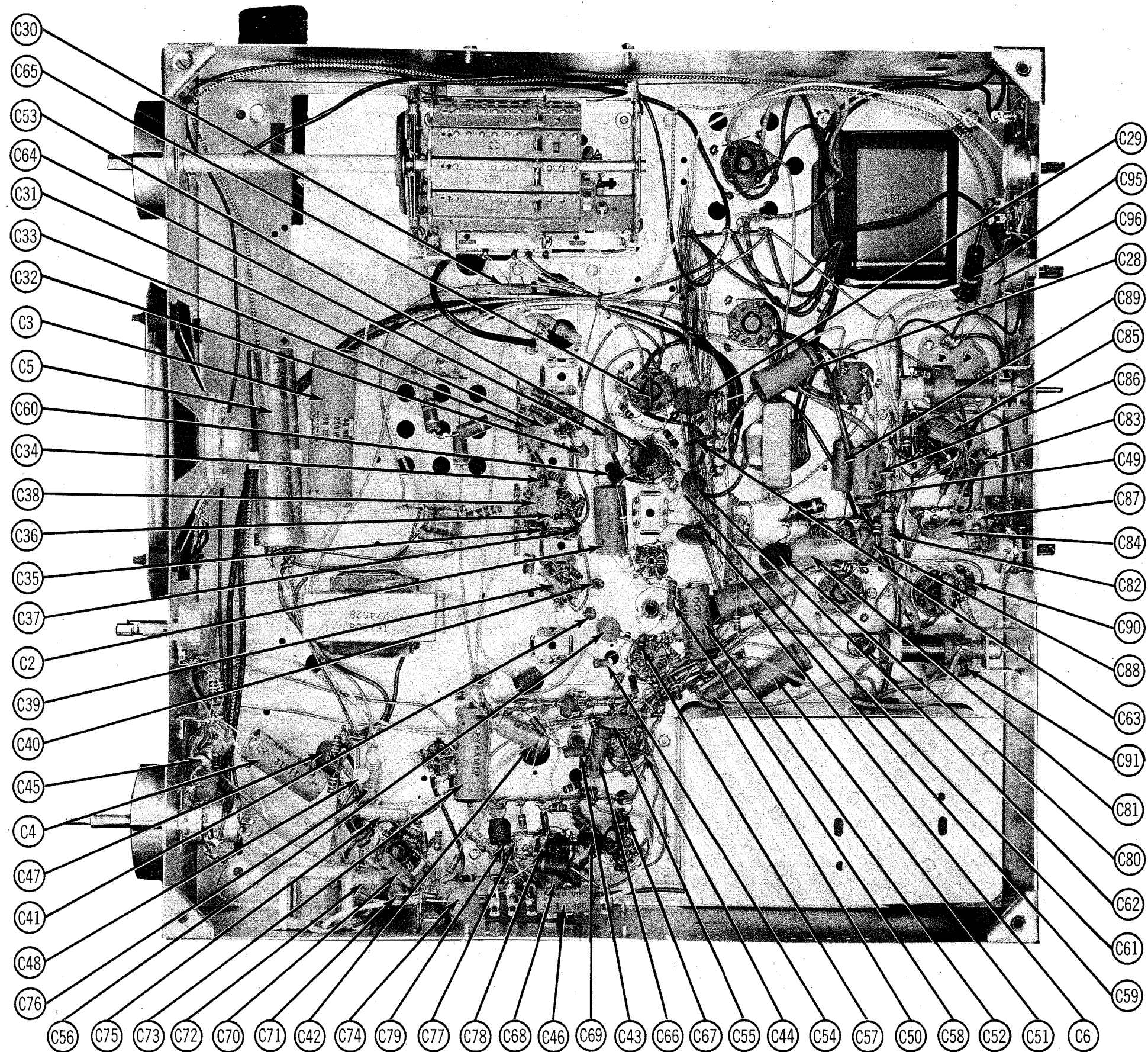
PARTS LIST AND DESCRIPTIONS  
CAPACITORS (cont)

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	Stromberg-Carlson Part No.	AEROVOX Part No.	CENTRALAB Part No.	CORNELL-DUBILIER Part No.	ERIE Part No.	MALLORY Part No.	SPRAGUE Part No.	
C60	5000		110586	BPD-005	DD-502	K080	81L-005	DC-525	5HK-D5	
C61	1000		110824	BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C62	5000		110586	BPD-005	DD-502	K080	81L-005	DC-525	5HK-D5	
C63	10000		110672	BPD-01	DD-103	K082	81L-01	DC-511	5HK-S1	
C64	.0033	400	110715	BPD-0033	D6-332	CUB6D33	GP2-333-332	PT6233	6TM-D33	
C65	10000		110672	BPD-01	DD-103	K082	81L-01	DC-511	5HK-S1	
C66	.047	400	110722	BPD-05	DF-503	CUB4S47	PT4147	4TM-S47		
C67	1000		110824	BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C68	.1	400	110724	P468N-1	DF-104	CUB4P1	PT401	4TM-P1		
C69	10000		110672	BPD-01	DD-103	K082	81L-01	DC-511	5HK-S1	
C70A	2000		†128200							
B	5000			†PA-110	†PC-100	†15TM1	†145-01	DC-522	†V-1	
C	5000							DC-525		
C71	.01	400	110718	BPD-01	D6-103	CUB4P1	GP2-333-103	PT411	4TM-S1	
C72	.088	800	110742	P888N-068		CUB6S68		PT8022	6TM-P22	
C73	.22	800	110745	P888N-22		CUB6P22		PT8021	6TM-P21	
C74	.1	800	110743	P888N-1	DF-104	CUB6D1	PT1621	4TM-D1		
C75	.001	1000	110682	HVD-15-1000	DD16-103	CUB16D1	PT1621	4TM-D1		
C76	.015	400	110719	BPD-015	DD16-153	CUB4S15	PT6115	4TM-S15		
C77	500		110464	1464-00047	D6-501	5R5T5	MCB245	MS-35		
C78	500		110464	1464-00047	D6-501	5R5T5	MCB245	MS-35		
C79	460		110464	1464-00047	D6-471	5R5T47	MCB245	MS-347		
C80	10000		110672	BPD-01	DD-103	K082	81L-01	DC-511	5HK-S1	
C81	.068	1000	110573	P1088N-068		CUB6D47	GP2-333-472	PT6247	6TM-D47	
C82	.0047	400	110716	BPD-0047	DF-203	CUB4S22	PT4122	4TM-S22		
C83	.022	400	110701	BPD-02	DF-203	CUB4S22	PT4122	4TM-S22		
C84	3900	500	110309	1467-0039		IR5D39		MS-239		
C85	390	500	110262			IR5T39		MS-339		
C86	560	500	110264	1464-00058		IR5T56		MS-356		
C87	270	500	110268	1469-00027	TCZ-270	5R5T27	GP2K-271	UC-5327	MS-327	
C88	.01	400	110718	BPD-01	D6-103	CUB4S1	GP3-333-103	PT411	4TM-S1	
C89	.047	400	110722	BPD-05	DF-503	CUB4S47	PT4147	4TM-S47		
C90	220		110453	1488-00222	D6-221	22R5T22	GP2K-221	UC-5322		
C91	.047	400	110722	BPD-05	DF-503	CUB4S47	PT4147	4TM-S47		
C92	100		110647	HVD-30-100	DD30-101	V3T1	3KV-101	DC3031		
C93	500	20000	110830	UV-502	HVD-30-100	MU20T5	HY-20035A	20DK-T5		
C94	100				DD30-101	V3T1	3KV-101	DC3031		
C95	.01	1000	110843	HVD-15-1000	DD16-103	CUB16S1	PT1611	4TM-S1		
C96	.01	1000	110843	HVD-15-1000	DD16-103	CUB16S1	PT1611	4TM-S1		

† Items C70A, C70B, C70C, R81A, R81B and R81C are combined in one unit.

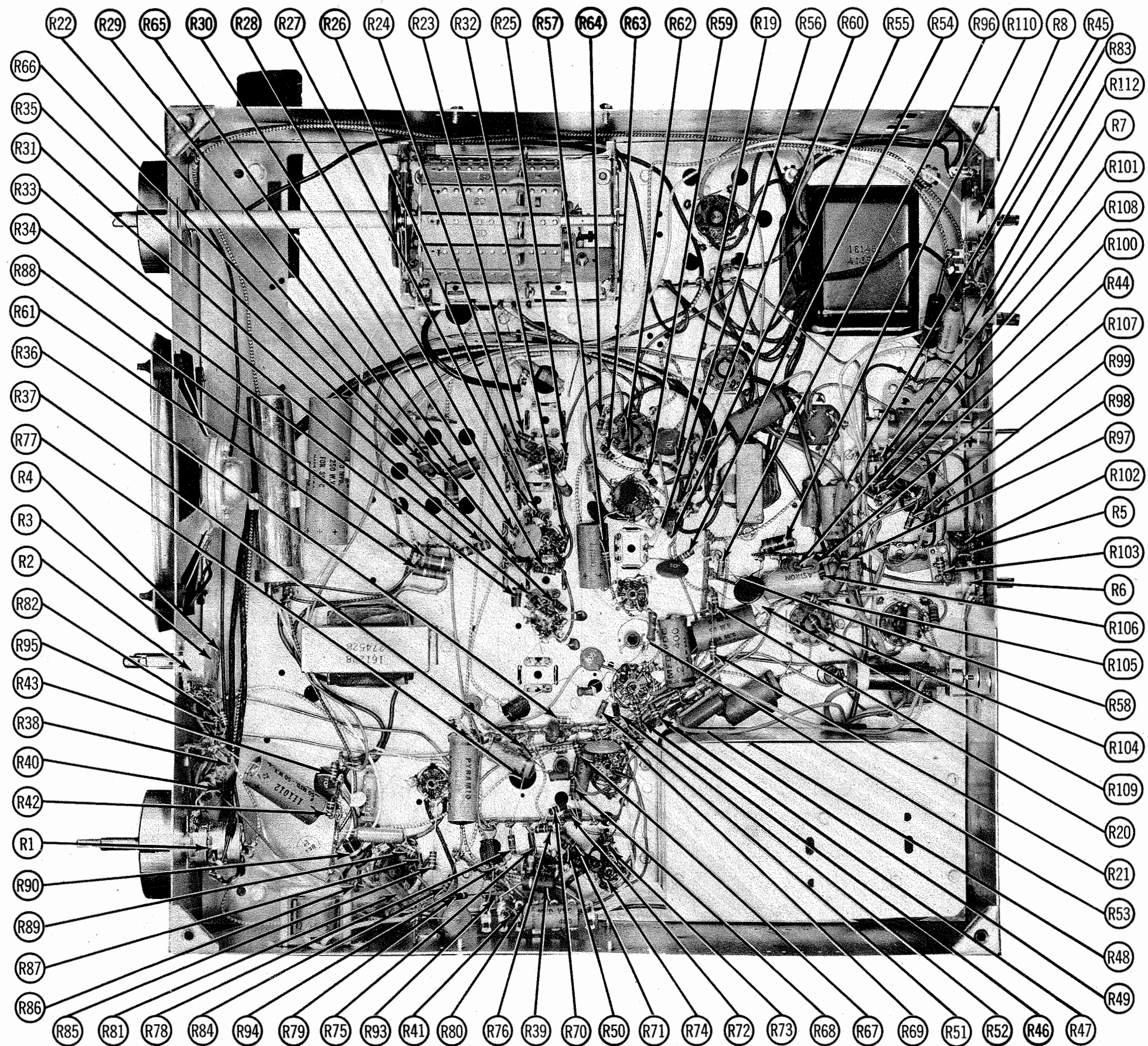
## CONTROLS

ITEM NO.	RATING		REPLACEMENT DATA						INSTALLATION NOTES
	RESISTANCE	WATTS	Stromberg-Carlson Part No.	CENTRALAB Part No.	CLAROSTAT Part No.	IRC Part No.	MALLORY Part No.		
R1A	2000K	$\frac{1}{2}$ W	146164	F1-10	RTV-474	* QJ-20	UF23R	Contrast (Panel) Volume (Rear) Attach to R1B.	
R1B	500K	$\frac{1}{2}$ W		R2-41			UR55A		
R1C	Switch			KB-1			US-26		
R2A	1Meg	$\frac{1}{2}$ W	146180	AB-89	A47-1Meg-S	QJL-137	TA16L	Vert. Hold	
R2B	Shaft		Not Req.	AK-4	KSS-3	Not Req.	Not Req.	Attach to R2A.	
R3A	1Meg	$\frac{1}{2}$ W	146180	AB-69	A47-1Meg-S	QJL-137	TA16L	Horiz. Hold	
R3B	Shaft		Not Req.	AK-4	KSS-3	Not Req.	Not Req.	Attach to R3A.	
R4A	250K	$\frac{1}{2}$ W	146157	AB-50	A47-250K-S	QJL-130	TA254L	Brightness	
R4B	Shaft		Not Req.	AK-4	KSS-3	Not Req.	Not Req.	Attach to R4A.	
R5A	50K	$\frac{1}{2}$ W	146196	AB-31	A47-50K-S	QJL-123	PTA54L	Horiz. Drive	
R5B	Shaft		Not Req.	AK-1	FKS-1	SQ	Not Req.	Attach to R5A.	
R6A	500K	$\frac{1}{2}$ W	146183	BX-58	A47-500K-S	QJL-133	TA55L	AGC	
R6B	Shaft		Not Req.	Not Req.	Not Req.	Not Req.	Not Req.	Attach to R6A.	
R7A	1500K	$\frac{1}{2}$ W	146195	AB-6	A47-1500-S	QJL-109	PTA-152L	Vert. Linearity	
R7B	Shaft		Not Req.	AK-1	FKS-3	SQ	Not Req.	Attach to R7A.	
R8A	6Meg	$\frac{1}{2}$ W	146159	AB-87	A47-7.5Meg-S	QJL-142	U-82	Vert. Size	
R8B	Shaft		Not Req.	AK-4	FKS-3	SQ	Not Req.	Attach to R8A.	



CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION





CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

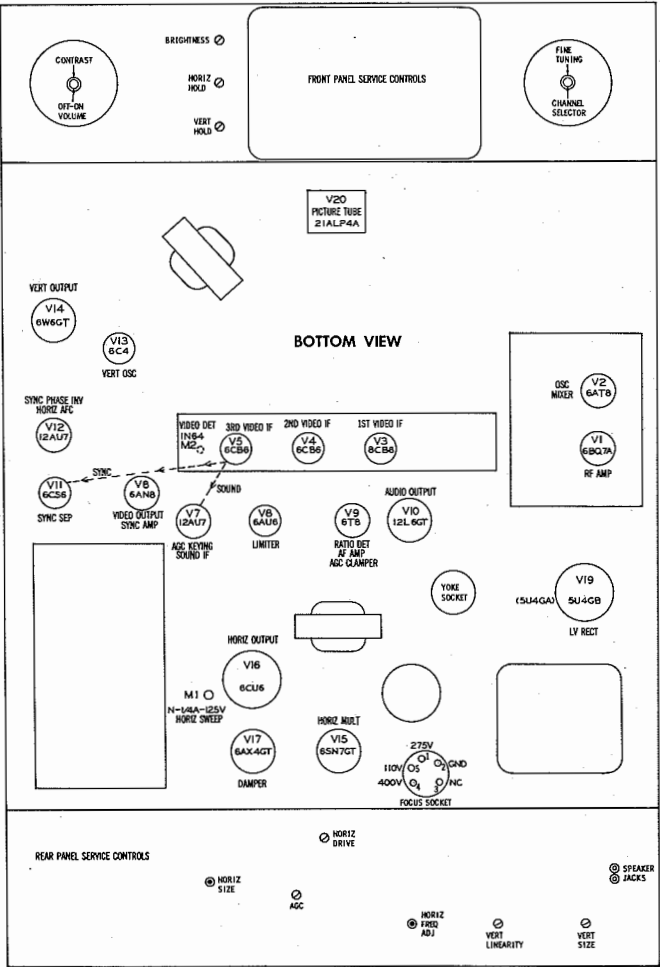
STROMBERG-CARLSON MODELS K21AHB, AHCB, AHCE, AHCM, AHE, AHM, ATB, ATM, ATQ (Ch. KH-21A, KV-21A),  
K22AHB, AHCB, AHCE, AHCM, AHE, AHM, ATB, ATM, ATO (Ch. KH-22A, KV-22A)



RESISTANCE MEASUREMENTS

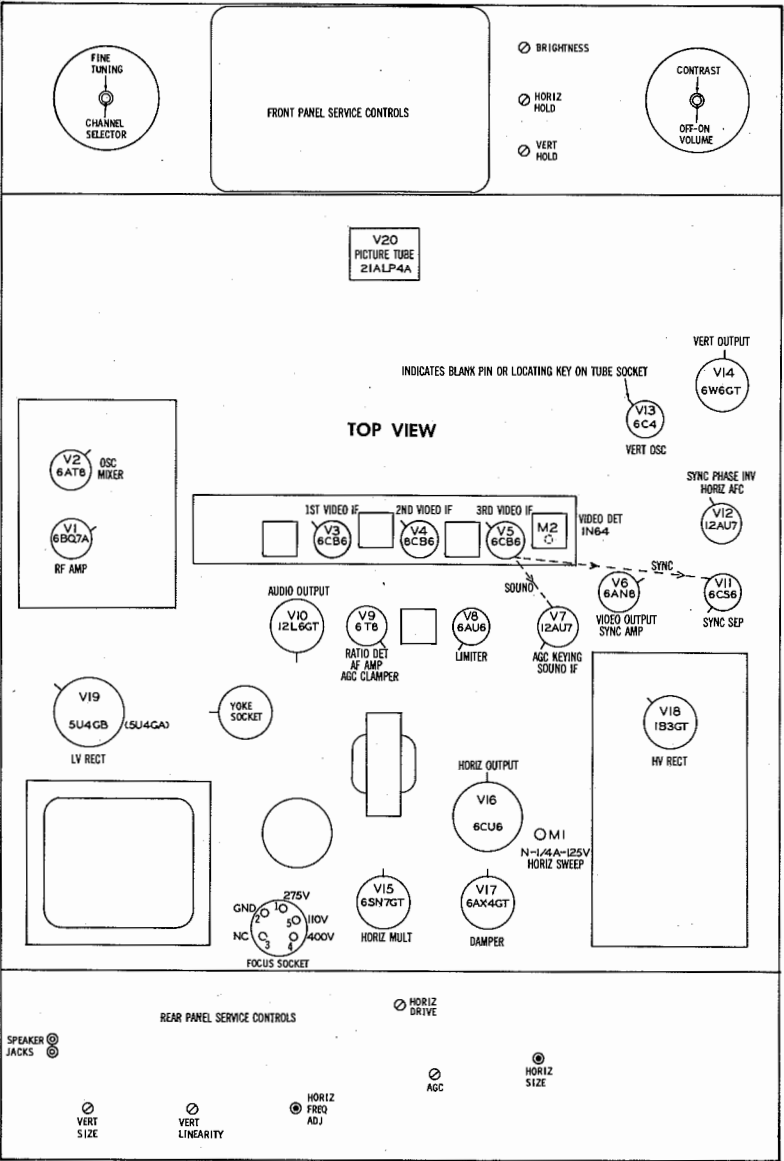
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BQ7A	INF	700KΩ	0Ω	0Ω	.1Ω	↑ 3.3KΩ	320KΩ	INF	0Ω
V 2	6AT8	10KΩ	■ 5.6KΩ	0Ω	0Ω	.1Ω	■ 1KΩ	■ 47KΩ	0Ω	220KΩ
V 3	6CB6	70KΩ	47Ω	0Ω	.1Ω	■ 1.5KΩ	■ 1.5KΩ	0Ω		
V 4	6CB6	70KΩ	47Ω	0Ω	.1Ω	■ 1.5KΩ	↑ 45KΩ	0Ω		
V 5	6CB6	.2Ω	220Ω	0Ω	.1Ω	■ 1.5KΩ	■ 1.5KΩ	0Ω		
V 6	6AN8	■ 5.2KΩ	22KΩ	0Ω	0Ω	.1Ω	↑ 5.6KΩ	40KΩ	1Meg	1KΩ
V 7	12AU7	450KΩ	■ 27KΩ	40KΩ	0Ω	0Ω	↑ 1KΩ	■ 550Ω	■ 880Ω	.1Ω
V 8	6AU6	47KΩ	0Ω	0Ω	.1Ω	■ 30KΩ	■ 30KΩ	0Ω		
V 9	6T8	300KΩ	47KΩ	300KΩ	.1Ω	0Ω	600KΩ	0Ω	10Meg	↑ 330KΩ
V 10	12L6GT	NC	.1Ω	↑ 400Ω	↑ 2.3KΩ	400KΩ	TP	.1Ω	40KΩ	
V 11	6CS6	27KΩ	0Ω	0Ω	.1Ω	■ 130KΩ	■ 27KΩ	1Meg		
V 12	12AU7	■ 7.5KΩ	2.2Meg	3.9KΩ	0Ω	0Ω	8.2KΩ	300KΩ	100KΩ	.1Ω
V 13	6C4	.2Meg	NC	0Ω	.1Ω	.2Meg	1Meg	0Ω		
V 14	6W6GT	NC	.1Ω	↑ 1.1KΩ	↑ 1.5KΩ	2.2Meg	NC	0Ω	1.2KΩ	
V 15	6SN7GT	120KΩ	↑ 70KΩ	1.2KΩ	700KΩ	↑ 8.3KΩ	1.2KΩ	.1Ω	0Ω	
V 16	6CU6	NC	0Ω	TP	↑ 13KΩ	470KΩ	NC	.1Ω	220Ω	TOP CAP ■ 20Ω
V 17	6AX4GT	NC	NC	1.7Meg	NC	↑ 64Ω	TP	.1Ω	0Ω	
V 18	1B3GT		PINS	1-8	HAVE	INF	RESISTANCE			TOP CAP ■ 690Ω
V 19	5U4GB	NC	100KΩ	NC	18Ω	NC	20Ω	NC	100KΩ	
V 20	21ALP4A	.1Ω	47KΩ	■ 560KΩ	■ 560KΩ	■ 200K	PIN 12 0Ω			

↑ MEASURED FROM PIN 2 OF V19.  
■ MEASURED FROM 145V LINE.  
● MEASURED FROM PIN 3 OF V17.  
NC-NO CONNECTION.  
TP-TIE POINT.



TUBE PLACEMENT CHART

TUBE PLACEMENT CHART



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 - V19

LOSS OF PICTURE OR SOUND

No pic, no sound, has raster - V2, V3, V4, V5, V10

No pic, no sound, has snow - V1, V2, V3

No pic, has sound, has raster - V6, V7, V20

Has pic, no sound - V7, V8, V9, V10

Overloaded picture - V7, V9

SYNC FAILURE

No vert. sync - V12, V13

No horiz. sync - V12, V15

No vert. or horiz. sync - V6, V11, V12

SWEEP FAILURE

No raster, has sound - V15, V16, V17, V18, V20, Fuse (M1)

No vertical deflection - V13, V14

Poor vert. linearity or foldover - V13, V14

Poor horiz. linearity or foldover - V15, V16, V17

Narrow picture - V15, V16, V17, V18, V19

Vert. off freq. - V12, V13

Horiz. off freq. - V12, V15

STROMBERG-CARLSON MODELS K21AHB, AHCB, AHCE, AHCM, AHE, AHM, ATB, ATM, ATQ (Ch. KH-21A, KV-21A), K22AHB, AHCB, AHCE, AHCM, AHE, AHM, ATB, ATM, ATO (Ch. KH-22A, KV-22A)

# ALIGNMENT INSTRUCTIONS

## ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped away from the chassis. Do not remove the horizontal multivibrator tube (V15) to disable the high voltage.

### VIDEO IF ALIGNMENT

Connect the negative lead of a 3 volt battery to the ungrounded side of C28. Connect the positive lead to chassis. Attenuate the sweep generator output to maintain 2 volts peak to peak on the scope. Connect the synchronized sweep voltage from the sweep 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
1. 100MMF	High side to point $\diamond$ . Low side to chassis.	44.0MC (10MC Swp.)	39.75MC	Any non-interfering channel	Vert. amp. thru 47K $\Omega$ to point $\diamond$ . Low side to chassis.	A1	Adjust to place marker in 39.75MC trap notch as in Fig. 1.
2. "	"	"	41.25MC	"	"	A2	Adjust to place marker in 41.25MC trap notch as in Fig. 1.
3. "	"	"	47.25MC	"	"	A3	Adjust to place marker in 47.25MC trap notch as in Fig. 1.
4. "	"	Not used	43.5MC	"	Use VTVM DC probe thru 1Meg to point $\diamond$ . Common to chassis.	A4	Attenuate generator to maintain not more than 1.5 volts on VTVM. Adjust for maximum deflection.
5. "	"	"	44.5MC	"	"	A5	"
6. "	"	"	45.3MC	"	"	A6	"
7. "	"	44.0MC (10MC Swp.)	39.75MC 41.25MC 42.75MC 43.5MC 44.5MC 45.3MC	"	Vert. amp. thru 47K $\Omega$ to point $\diamond$ . Low side to chassis.		Adjust for response curve similar to Fig. 1. If necessary, retouch A4 through A6 to obtain desired response. Use high scope gain and sweep generator output to observe trap regions. If necessary retouch A1 thru A3 for MINIMUM marker amplitude at 39.75MC, 41.25MC and 47.25MC.
8. Direct	High side to ungrounded tube shield floating over converter tube. Low side to chassis.	"	42.75MC 45.75MC	"	"	A7, A8	Adjust for response similar to Fig. 2.

### SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100K $\Omega$  ( $\pm 1\%$ ) resistors in series from pin 2 (plate) of 6T8 (V9) to chassis. The junction of these two resistors is alignment point  $\diamond$  as shown on the schematic.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
9. .01MFD	High side to point $\diamond$ . Low side to chassis.	4.5MC (Unmod.)	Any non-interfering channel	DC probe to point $\diamond$ . Common to chassis.	A9, A10, A11	Attenuate generator output to maintain 1.5 volts at VTVM. Adjust for maximum deflection.
10. "	"	"	"	DC probe to point $\diamond$ . Common to point $\diamond$ .	A12	Adjust for zero reading. A positive and negative reading will be obtained on either side of correct setting. Remove resistors.

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

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

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9. .01MFD	High side to point $\diamond$ . Low side to chassis.	4.5MC (450KC Swp.)	4.5MC	Any non-interfering channel	Vert. amp. to point $\diamond$ . Low side to chassis.	A9, A10, A11	Disconnect stabilizing capacitor (C2). Adjust for curve of maximum amplitude and symmetry similar to Fig. 3.
10. "	"	"	"	"	Vert. amp. to point $\diamond$ . Low side to chassis.	A12	Reconnect C2. Adjust so that 4.5MC marker occurs at the center of crossover lines as in Fig. 4. SLIGHTLY retouch A11 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
11. .01MFD	High side to point $\diamond$ . Low side to chassis.	Not used	4.5MC (400V Mod.)	Any non-interfering channel	Vert. amp. thru detector (Fig. 5) to pin 11 (cathode) of picture tube. Low side to chassis.	A13	Adjust for MINIMUM 400% indication on scope.

### TUNER ALIGNMENT

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

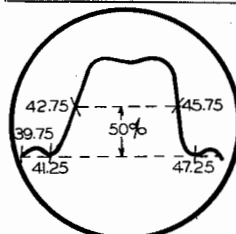


FIG. 1

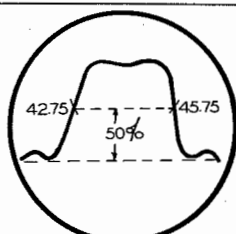


FIG. 2

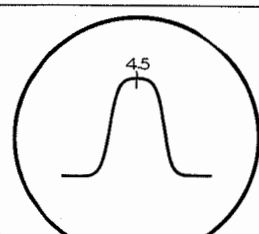


FIG. 3

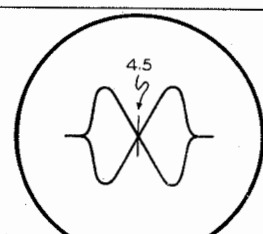


FIG. 4

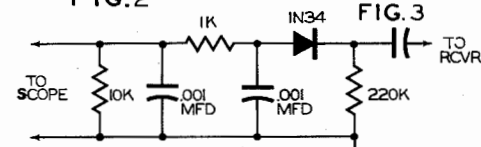
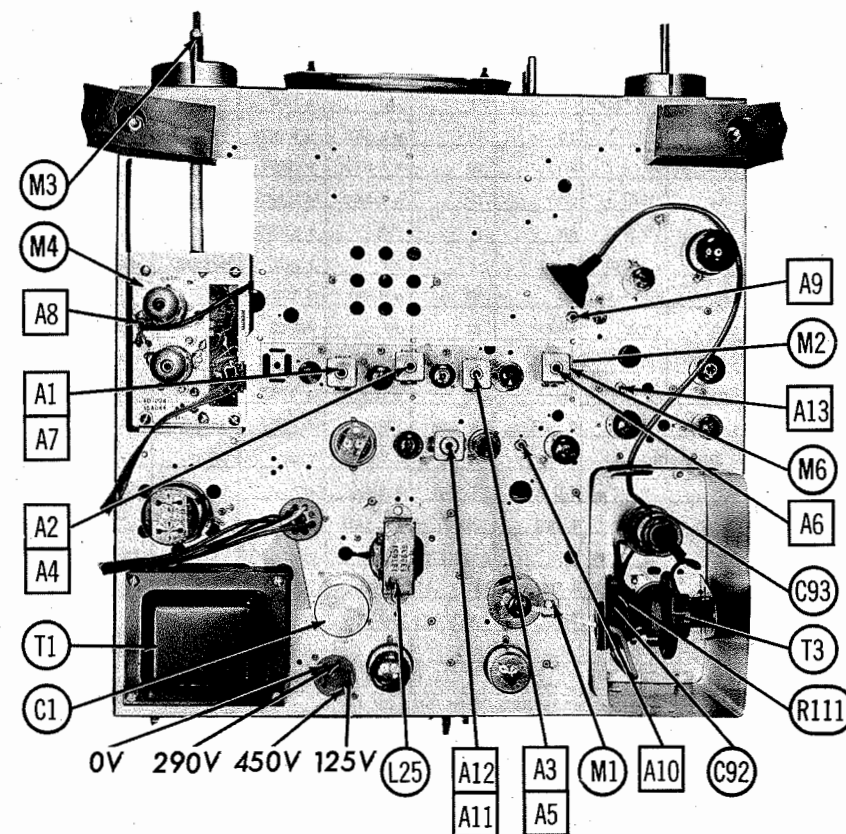
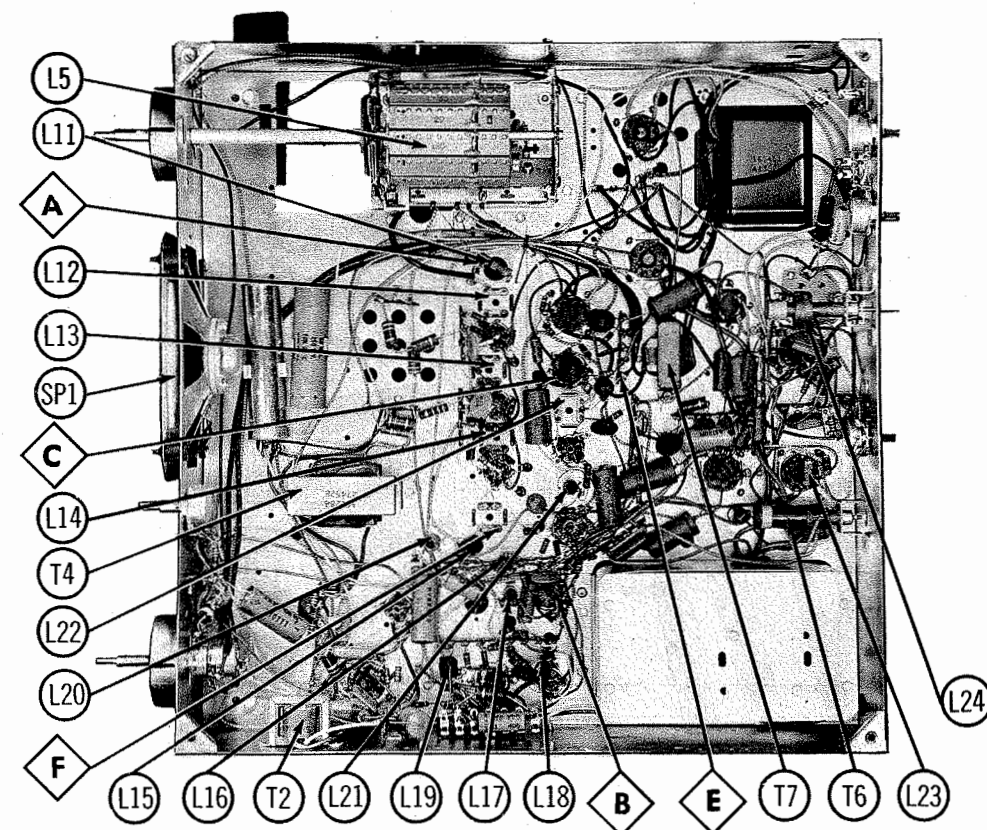


FIG. 5



CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

STROMBERG-CARLSON MODELS K21AHB, AHCB, AHCE, AHCM, AHE, AHM, ATB, ATM, ATQ (Ch. KH-21A, KV-21A), K22AHB, AHCB, AHCE, AHCM, AHE, AHM, ATB, ATM, ATO (Ch. KH-22A, KV-22A)