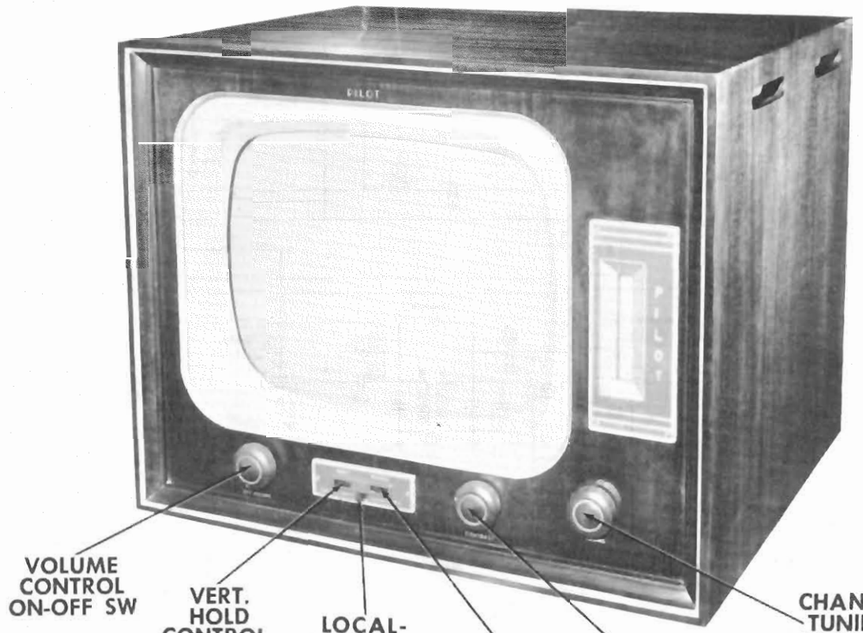
PHOTOFACT* Folder

PILOT MODELS TV-270, TV-271, U, TV-273, U, TV-290, TV-293U



PILOT MODEL TV-271-U

TRADE NAME	Pilot, Models TV-270, TV-271, TV-271-U, TV-273, TV-273-U, TV-290, TV-293-U
MANUFACTURER	Pilot Radio Corp., 37-06 36th. Street, Long Island City, N. Y.
TYPE SET	Television Receiver
TUBES	Twenty five
POWER SUPPLY	110-120 Volts AC-60 Cycle — RATING 1.0 Amp. at 117 Volts AC
TUNING RANGE—CHANNELS	2 thru 13

INDEX

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

DATE 12-51 SET 153 FOLDER 13

PILOT MODELS TV-270, TV-271, U, TV-273, U, TV-290, TV-293U

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	PILOT PART No.	VIKING PART No.	QUAM PART No.	
SP1A	PM	3.4Ω	41-35	8J9	8A21	Used in Models TV-271 and TV-271U
B	PM	3.4Ω	41-36	12J12	12A4A	Used in Models TV-273, TV-273U and TV-293U
	CONE DIA.	V. C. DIA.				
SP2A	7½"	9/16"				
B	11¾"	1"				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE @ CURRENT 1000 ~/s	PILOT PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.230A	65Ω	.8 Henry	57-13	C-2326 ①	C-2991 ①	TR-3300 ①	① Drill mounting holes

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	PILOT PART No.	IRC PART No.	
L2	Ant. Coil	.2Ω	.1Ω	270-45		Low-Band
L3	RF Choke	1Ω		75-33		
L4	Fil. Choke	3Ω		75-43		
L5A	RF Coil	6Ω		71-35		Low-Band (Pri.)
B	RF Coil		0Ω			Low-Band (Sec.)
L6	RF Choke	.3Ω		75-47		
L7	RF Choke	1.8Ω		75-44		
L8	RF Choke	1.1Ω		75-33		
L9	Osc. Coil	0Ω	0Ω	272-54		Low-Band
L10	RF Choke	1.1Ω		75-33		
L11	Ant. Coil	0Ω	0Ω	270-49		High-Band
L12	RF Choke	1.1Ω		75-33		
L13	Fil. Choke	0Ω		75-43		
L14	RF Choke	1.1Ω		75-33		
L15A	RF Coil	0Ω		271-29		High Band (Pri.)
B	RF Coil		0Ω			High Band (Sec.)
L16	RF Choke	1.1Ω		75-33		
L17	Osc. Coil	0Ω	0Ω	272-55		High Band
L18	RF Choke	1.1Ω		75-33		
L19	1st. Video IF	.2Ω		273-142		Includes Trap 0Ω
L20	RF Choke	1.1Ω		75-33		
L12	Fil. Choke	0Ω		75-43		
L22	2nd. Video IF	.1Ω		273-143		
L23	RF Choke	1.1Ω		75-33		
L24	RF Choke	1.1Ω		75-33		
L25	3rd. Video IF	.1Ω		273-144		Includes Trap 0Ω
L26	RF Choke	1.1Ω		75-33		
L27	Fil. Choke	0Ω		75-43		
L28	RF Choke	1.1Ω		75-33		
L29	4th. Video IF	.1Ω		273-145		Includes Trap 0Ω
L30	Fil. Choke	0Ω		75-43		
L31	Fil. Choke	0Ω		75-43		
L32	Sound IF	1.8Ω		273-147		Includes 100MMF, 30MMF. Cap. and 100K resistor
L33	Ratio Det. Trans.	9Ω	1.2Ω	279-39		Includes 100MMF. Cap. 1.5Ω
L34	Horiz. Osc.	130Ω		72-66		
L35	Horiz. Size	3.7Ω	28Ω	79-98		
L36	Horiz. Lin.	8Ω	2.2Ω	79-97		
L37	Cath. Choke	2Ω		75-28		

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			PILOT PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M1	3AG Slo Blo	1/4A	111-9		318.250		

DIAL LIGHTS

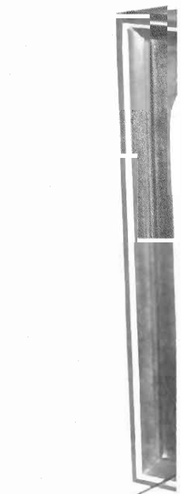
ITEM No.	BASE TYPE	VOLTS	AMPS	BEAD COLOR	REPLACEMENT DATA		NOTES
					PILOT PART No.		
M2	Bayonet	6-8	.15	Brown			Type # 47

MISCELLANEOUS

ITEM No.	PART NAME	PILOT PART No.	NOTES
M3	RF Tuner	75-33	
	RF Choke		
	Capacitor		50 MMF.
	Capacitor		100 MMF
	5th. Video IF		Includes Trap
M4	Crystal	110-384	1N60
	Sound Take-off		
	Resistor		5.6KΩ
	Peaking	75-39	650 Microhenries
	Peaking	75-31	93 Microhenries
	4.5MC Trap	79-85	
	Peaking	75-45	213 Microhenries
	Resistor		22KΩ
	Resistor		27KΩ
M5	Resistor		5.1KΩ
	Resistor		33KΩ
	Resistor		27KΩ
	Peaking	75-46	330 Microhenries
	Capacitor		330 MMF.
M6	Switch	101-29	Local and Distance
M7	Switch	101-26	TV-Phono
M8	Focus Magnet		
M9	Ion Trap		
M10	Switch	100-72	High-Low Band

Video Det. Assembly Complete - Part # 279-65

Video Plate Load Assembly Complete - Part # 279-69



C

TRADE NAME	Pilot, Mo
MANUFACTURER	Pilot Radi
TYPE SET	Television
TUBES	Twenty fiv
POWER SUPPLY	110-120 Vo
TUNING RANGE—CHANNELS	

Alignment Instructions . .

Disassembly Instructions

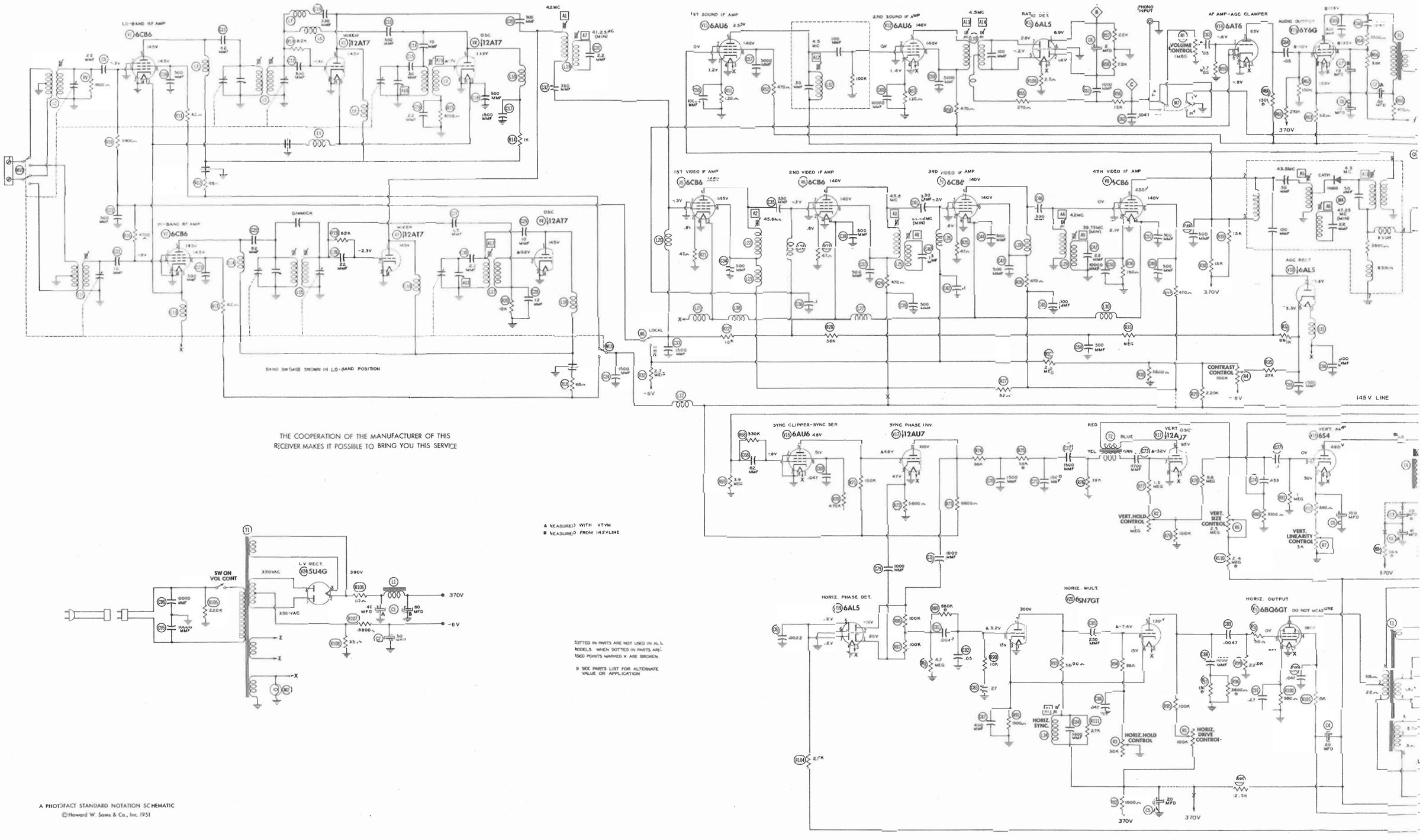
Horizontal Sweep Circuit

Parts List and Descriptic

Photographs

Cabinet - Rear View

Capacitor and Alignn



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A MEASURED WITH VTVM
■ MEASURED FROM 145VLINE

DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN.

B SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

A PHOTOFACT STANDARD NOTATION SCHEMATIC

PILOT MODELS TV-270, TV-271, U, TV-273, U, TV-290, TV-293U

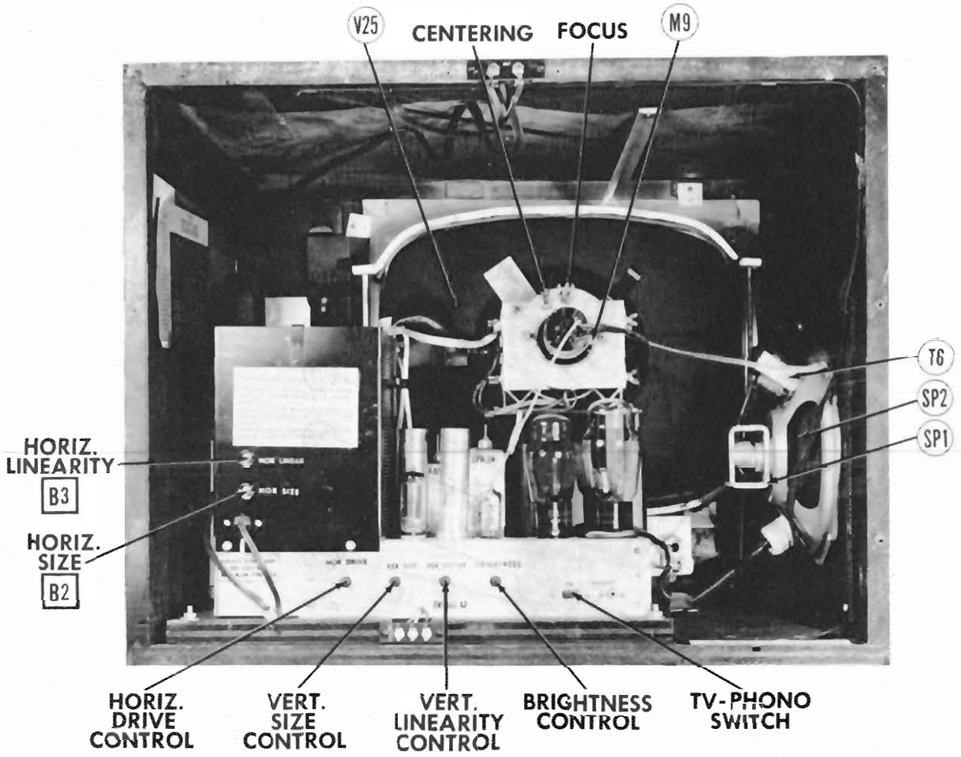
1ST SOUND IF AMP V11 6AU6 2.50V
2ND SOUND IF AMP V12 6AU6
RATIO DET. V13 6AL5
PHONO INPUT
AF AMP-AGC CLAMPER V14 6AT6
AUDIO OUTPUT V15 6Y6G
VOLUME CONTROL 1MEG R1
1ST VIDEO IF AMP V5 6CB6
2ND VIDEO IF AMP V6 6CB6
3RD VIDEO IF AMP V7 6CB6
4TH VIDEO IF AMP V8 6CB6
AGC RECT V10 6AL5
VIDEO AMP V9 6CB6
BRIGHTNESS CONTROL 10K R6
CONTRAST CONTROL 100K R4
145V LINE
370V
OSC V4 12AT7
LOCAL M6
DIST C12
SYNC CLIPPER-SYNC SEP V16 6AU6
SYNC PHASE INV. V17 12AU7
VERT OSC. V17 12AU7
VERT. AMP V18 6S4
VERT. HOLD CONTROL R2
VERT. SIZE CONTROL 2.5 MEG R85
VERT. LINEARITY CONTROL 5K R7
DEFLECTION YOKE T5
HORIZ. PHASE DET. V19 6AL5
HORIZ. MULT. V20 6SN7GT
HORIZ. OUTPUT V21 6BQ6GT DO NOT MEASURE
HV RECT. 1B3GT V23
HORIZ. SYNC L36
HORIZ. HOLD CONTROL R3 50K
HORIZ. DRIVE CONTROL R5 100K
HORIZ. SIZE L39
HORIZ. LINEARITY L38
DAMPER 5W4GT V22
ION TRAP MAGNET
FOCUS MAGNET
PICTURE TUBE V25 17BP4A
M1 .25AMP

▲ MEASURED WITH VTVM
■ MEASURED FROM 145V LINE

DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN.

⊘ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

PILOT MODELS TV-270, TV-271, U, TV-273, U, TV-290, TV-293U



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

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

Turn the horizontal hold control to the mid-position of its range.

Adjust the horizontal synchronization slug, (B1), to the center of the range over which the picture synchronizes horizontally.

Adjust the horizontal drive control clockwise as far as possible without crowding or bright vertical lines appearing in the picture.

Adjust the horizontal size slug, (B2), until the picture is slightly wider than necessary to fill the mask.

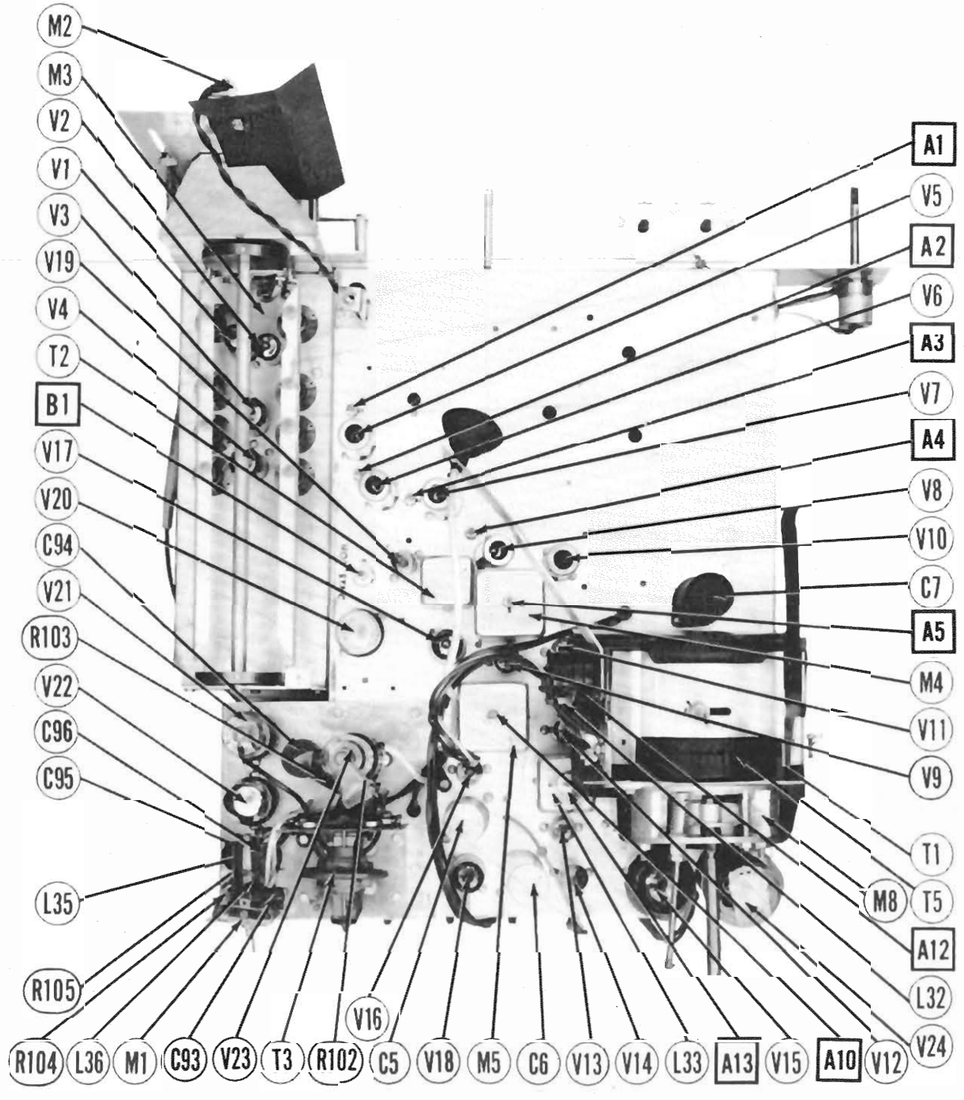
Adjust the horizontal linearity slug, (B3), until the picture is symmetrical from left to right.

Since both width and horizontal linearity are effected by the drive control, it may be necessary to adjust them alternately for optimum results.

DISASSEMBLY INSTRUCTIONS

1. Remove three push-on type control knobs.
2. Remove eight wood screws from rear cover. Remove rear cover.
3. Remove four wood screws from speaker. Remove speaker.
4. Disconnect built-in antenna.
5. Remove antenna terminal strip.
6. Remove three metal bolts from chassis and one wood screw from picture tube guard. Remove chassis.

NOTE: FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.



CHASSIS TOP VIEW

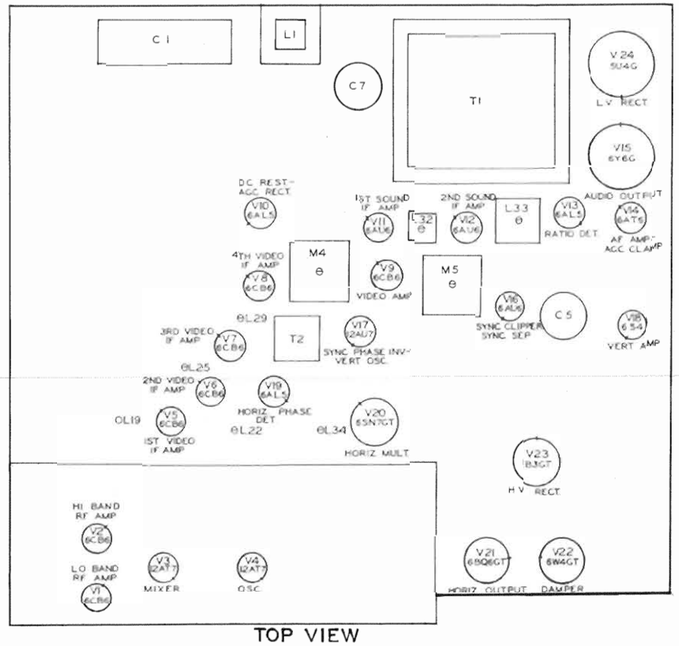
CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

RESISTANCE MEASUREMENTS

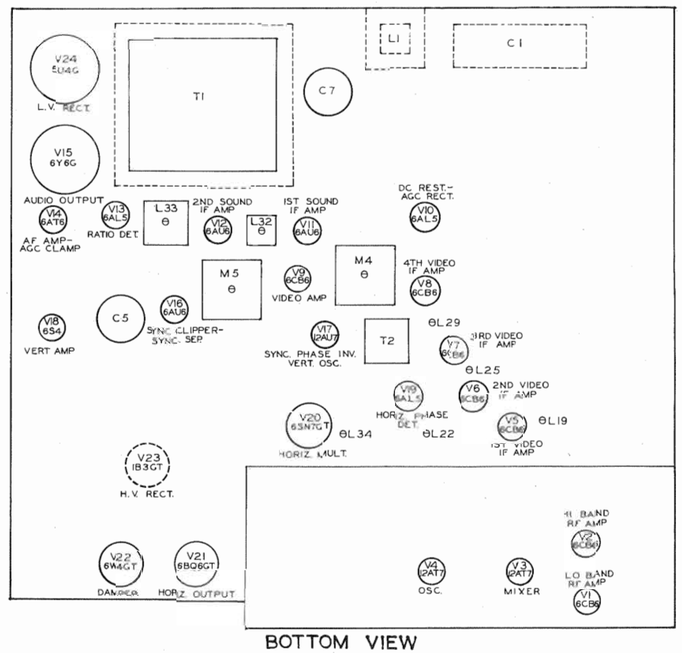
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	1.9Meg	0Ω	.1Ω	0Ω	■68Ω	■82Ω	0Ω		
V 2	6CB6	1.9Meg	0Ω	.1Ω	0Ω	▲■68Ω	▲■82Ω	0Ω		
V 3	12AT7	▲■68Ω	82KΩ	0Ω	0Ω	0Ω	■68Ω	82KΩ	0Ω	.1Ω
V 4	12AT7	▲■68Ω	10KΩ	0Ω	0Ω	0Ω	■1.1KΩ	4.7KΩ	0Ω	.1Ω
V 5	6CB6	1.9Meg	47Ω	.1Ω	0Ω	■1Ω	■1Ω	0Ω		
V 6	6CB6	1.9Meg	47Ω	.1Ω	0Ω	■470Ω	■470Ω	0Ω		
V 7	6CB6	1.3Meg	47Ω	.1Ω	0Ω	■550Ω	■550Ω	0Ω		
V 8	6CB6	.1Ω	180Ω	.1Ω	0Ω	†7.5KΩ	■550Ω	0Ω		
V 9	6CB6	1.2Meg	0Ω	.1Ω	0Ω	†11KΩ	■0Ω	0Ω		
V 10	6AL5	4.8Meg	725KΩ	.1Ω	0Ω	45KΩ	0Ω	3.9Meg		
V 11	6AU6	2.4Ω	0Ω	.1Ω	0Ω	†7.5KΩ	■470Ω	120Ω		
V 12	6AU6	100KΩ	0Ω	.1Ω	0Ω	■470Ω	■470Ω	120Ω		
V 13	6AL5	22KΩ	22KΩ	.1Ω	1.8Ω	1Meg	0Ω	1Meg		
V 14	6AT6	4.7Meg	0Ω	.1Ω	0Ω	1.9Meg	1.9Meg	■150KΩ		
V 15	6Y6G	†44Ω	.1Ω	†715Ω	†40KΩ	110KΩ	†0Ω	0Ω	27KΩ	
V 16	6AU6	4.2Meg	0Ω	.1Ω	0Ω	■100KΩ	■470KΩ	0Ω		
V 17	12AU7	■6.8KΩ	■100KΩ	5.6KΩ	.1Ω	.1Ω	#2.7Meg	1.8Meg	0Ω	0Ω
V 18	6S4	Inf.	1.2KΩ	1Meg	0Ω	.1Ω	1Meg	Inf.	Inf.	#5.8KΩ
V 19	6AL5	4.8Meg	4.8Meg	.1Ω	0Ω	27KΩ	0Ω	27KΩ		
V 20	6SN7GT	5.1Meg	†7.4KΩ	1.5KΩ	100KΩ	†160KΩ	1.5KΩ	0Ω	.1Ω	
V 21	6BQ6GT	3.4KΩ	.1Ω	160KΩ	†15KΩ	220KΩ	220KΩ	0Ω	300Ω	TOP CAP #300
V 22	6W4GT	Inf.	Inf.	40KΩ	Inf.	†90Ω	Inf.	#3Ω	#2.8Ω	
V 23	1B3GT	PINS 1-8 HAVE INF. RESISTANCE								TOP CAP #5.0Ω
V 24	5U4G	30KΩ	30KΩ	Inf.	70Ω	Inf.	71Ω	Inf.	30KΩ	
V 25	17BP4A	0Ω	3.8Meg.	PIN 10 †75Ω	PIN 11 ■2.05KΩ	PIN 12 .1Ω				

ALL CONTROLS SET FOR NORMAL OPERATION
ALL MEASUREMENTS TAKEN IN LOW BAND POSITION UNLESS NOTED
LOCAL - DISTANCE SWITCH IN "LOCAL" POSITION
† MEASURED FROM PIN 2 OF V24
■ MEASURED FROM 145VDC LINE
MEASURED FROM PIN 3 OF V22
▲ MEASURED IN HIGH BAND POSITION



TOP VIEW



BOTTOM VIEW

TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube, (V20), from its socket.

VIDEO IF ALIGNMENT

Remove the local oscillator tube, (V4), from its socket to prevent the possibility of erroneous indications.
Turn the contrast control to maximum.

1.	Direct	High side to an ungrounded tube shield floating over mixer tube, (V3). Low side to chassis.	42MC	Any	DC Probe to Point (A). Common to chassis.	A1	Adjust for maximum deflection.
2.	"	"	45.6MC	"	"	A2	"
3.	"	"	45.8MC	"	"	A3	"
4.	"	"	42MC	"	"	A4	"
5.	"	"	43.5MC	"	"	A5	"
6.	"	"	47.25MC	"	"	A6	Adjust for MINIMUM deflection.
7.	"		41.25MC	"	"	A7	"
8.	"	"	39.75MC	"	"	A8, A9	"

OVERALL VIDEO IF RESPONSE CHECK

Turn the contrast control to the mid-position of its range.
Keep the sweep generator as low as possible to prevent overloading the IF stages.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

9.	Direct	High side to an ungrounded tube shield floating over mixer tube, (V3), Low side to chassis.	44MC (10MC SWP)	41.25MC 42.3MC 45.75MC	Any	Vert. Amp. to Point (A). Low side to chassis.		Check for response curve similar to Fig. 1. If necessary retouch A1 thru A5 for proper response.

4.5 MC TRAP ADJUSTMENT

10.	.01MFD	High side to Pin 1, (Grid), of 6CB6, (V9). Low side to chassis.	Not used	4.5MC (400% Mod.)	Any channel not used locally.	Vert. Amp. to Pin 11 of picture tube. Low side to chassis.	A10	Adjust for MINIMUM 400% indication on scope.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

11.	.01MFD	High side to Point A. Low side to chassis.	4.5 MC (Unmod.)	Any channel not used locally	DC probe to Point (B). Common to chassis	All, A12 A13	Adjust for maximum deflection.
12.	"	"	"	"	DC probe to Point (C). Common to chassis.	A14	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.

11.	.01MFD	High side to Point A. Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any channel not used locally.	Vert. Amp. to Point (B). Low side to chassis.	All, A12 A13	Disconnect stabilizor capacitor C8. Adjust for maximum amplitude and symmetry as per Fig. 2.
12.	"	"	"	"	"	Vert. Amp. to Point (C). Low side to chassis.	A14	Adjust A14 so 4.5MC occurs at center of crossover lines as per Fig. 3. SLIGHTLY retouch A13 for maximum amplitude and straightness of crossover lines.

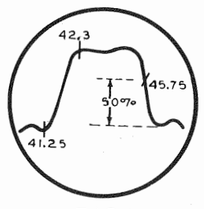


FIG. 1

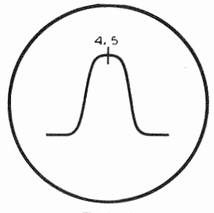


FIG. 2

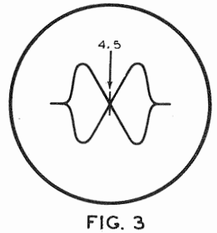


FIG. 3

ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT

Replace the oscillator tube in its socket.

LOW BAND OSCILLATOR ALIGNMENT

During low band alignment keep the tuner on the channel 2-6 scale.

13.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	Not used	100MC	Tuning gang fully closed. (low band)	Vert. Amp. thru detector, (fig. 4), to pin 1, (Grid), of first video IF Amp. (V5). Low side to chassis.	A15	Adjust for zero beat indication on scope. This will be indicated by a narrow trace between two wide traces.
14.	"	"	"	120MC	Tuning gang fully open. (low band)	"	A16	Adjust for zero beat indication on scope. This will be indicated by a narrow trace between two wide traces. Repeat steps 13 & 14 until oscillator frequency is correct at both ends of low band range.

HIGH BAND OSCILLATOR ALIGNMENT

During high band alignment keep the tuner on the channel 2-13 scale.

15.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	Not used	220MC	Tuning gang fully closed. (high band)	Vert. Amp. thru detector (fig. 4), to pin 1, (grid) of first video IF Amp. (V5). Low side to chassis.	A17	Adjust for zero beat indication, as in step 14.
16.	"	"	"	259MC	Tuning gang fully open (high band)		A18	Adjust for zero-beat indication as in step 14. Repeat steps 15 & 16 until oscillator frequency is correct at both ends of high band range.

THE RF PORTION OF THIS TUNER HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE. ALIGNMENT OF THIS PORTION SHOULD NOT BE REQUIRED IN THE FIELD.

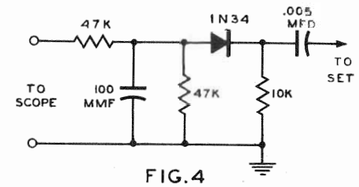
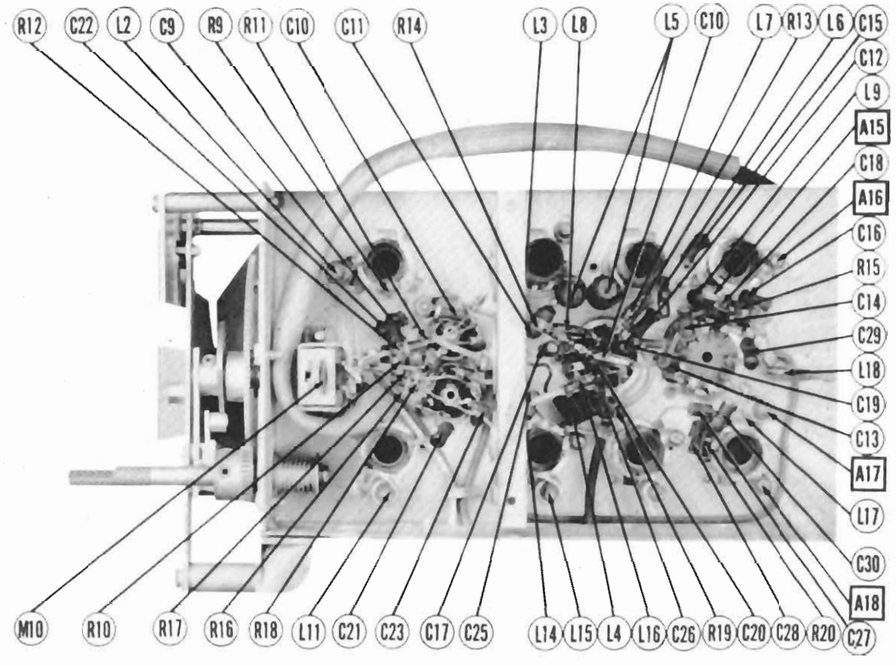


FIG. 4



RF TUNER

CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: PILOT PART No.	REPLACEMENT DATA: STANDARD-REPLACEMENT	RMA BASE TYPE	NOTES
V1	Low Band RF Amp.	6CB6	6CB6	7CM	
V2	High Band RF Amp.	6CB6	6CB6	7CM	
V3	Mixer	12AT7	12AT7	9A	
V4	Oscillator	12AT7	12AT7	9A	
V5	1st. Video IF Amp.	6CB6	6CB6	7CM	
V6	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V7	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V8	4th. Video IF Amp.	6CB6	6CB6	7CM	
V9	Video Amplifier	6CB6	6CB6	7CM	
V10	DC Restorer-AGC Rectifier	6AL5	6AL5	6BT	
V11	1st. Sound IF Amp.	6AU6	6AU6	7BK	
V12	2nd. Sound IF Amp.	6AU6	6AU6	7BK	
V13	Ratio Detector	6AL5	6AL5	6BT	
V14	AF Amplifier-AGC Clamp	6AT6	6AT6	7BT	
V15	Audio Output	6Y6G	6Y6G	7AC	
V16	Sync. Clipper-Sync. Separator	6AU6	6AU6	7BK	
V17	Sync. Phase Inv. - Vert. Oscillator	12AU7	12AU7	9A	
V18	Vert. Amplifier	6S4	6S4	9AC	
V19	Horiz. Phase Det.	6AL5	6AL5	6BT	
V20	Horizontal Mult.	6SN7GT	6SN7GT	8BD	
V21	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V22	Damper	6W4GT	6W4GT	4CG	
V23	HV Rectifier	1B3GT	1B3GT	3C	
V24	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: PILOT PART No.	REPLACEMENT DATA: SYLVANIA PART No.	REPLACEMENT DATA: THOMAS PART No.	RTMA BASE TYPE	NOTES
V25	17BP4A	17BP4A	17BP4	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.	RATING: VOLT	REPLACEMENT DATA: PILOT PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	475	24-107	AFH2-73		UP8445		TVL-2850	▲ Filter
B	80	475							▲ Filter
C2	50	25	24-30	PRS25/50		BR502A		TVA-1206	Bias Filter
C3	20	250	24-96	PRS250/20		BR2025		TVA-1508	Vert. Amp. Dec. †
C4	20	250	24-96	PRS250/20		BR2025		TVA-1508	Decoupling
C5A	20	475	24-103	AFH2-157		UPT2150-V10		TVL-3835 TVA-1207	■ Horiz. MV Decoup. ▲ Video Amp. Dec.
B	10	475							Vert. Output Cathode
C	100	25							■ Decoupling
C6A	10	475	24-108	AFH2-19		UPT150-8115		TVL-4806	▲ Decoupling
B	80	150		PRS500/10					Audio Output Cathode
C	10	150							■ Audio Output Plate
C7A	20	350	24-109	AFH3-50		UP2145		TVL-3634	▲ Audio Output Screen
B	10	350							
C8	2	150	24-104	PRS150/4		BR245		TVA-1402	Stabilizing Cap.
C9	22				TCZ-22		NP0K-220	5TCC-Q22	RF Coupling (Lo-band)
C10	560			SI500	D6-501		GP2K-501	5GA-T5	RF Amp. Screen (Lo-band)
C11	82			SI82			GP1K-820		RF Coupling (Lo-band)
C12	330			SI330	D6-331		GP2K-331	5GA-T33	RF Coupling (Lo-band)
C13	500			SI500	D6-501		GP2K-501	5GA-T5	Osc. Coupling (Lo-band)
C14	10								Osc. Feedback (Lo-band)
C15	30						N470K-300		Fixed Padder (Lo-band)
C16	22				TCZ-22		NP0K-220	5TCC-Q22	Osc. Grid Cap. (Lo-band)
C17	1500			SI1500	D6-152		GP2L-152	5HK-D15	Osc. Plate Dec. (Lo-band)
C18	500			SI500	D6-501		GP2K-501	5GA-T5	Fil. Bypass (Lo-band)
C19	330			SI330	D6-331		GP2K-331	5GA-T33	RF Coupling (Lo-band)
C20	500			SI500	D6-501		GP2K-501	5GA-T5	IF Coupling (Lo-band)
C21	12				TCZ-12		NP0K-120		RF Coupling (Hi-band)
C22	500			SI500	D6-501		GP2K-501	5GA-T5	AGC Filter
C23	500			SI500	D6-501		CP2K-501	5GA-T5	RF Amp. Screen (Hi-band)
C24	1500			SI1500	D6-152		CP2L-152	5HK-D15	RF Bypass
C25	82			SI82			CP1K-820		RF Coupling (Hi-band)
C26	22				TCZ-22		NP0K-220	5TCC-Q22	RF Coupling (Hi-band)
C27	1.5			SIL5NP0	TCZ-1.5		NP0K-1R5		Osc. Coupling (Hi-band)
C28	12				TCZ-12		NP0K-120		Osc. Grid Cap. (Hi-band)
C29	10								Osc. Feedback (Hi-band)
C30	22						P220K-220		Fixed Padder (Hi-band)
C31	22				TCZ-22		PP0K-220	5TCC-Q22	Fixed Trimmer
C32	330			SI330	D6-331		CP2K-331	5GA-T33	IF Coupling
C33	1500			SI1500	D6-152	1W5D15	CP2L-152	5HK-D15	AGC Filter
C34	1500			SI1500	D6-152	1W5D15	CP2L-152	5HK-D15	1st. Video IF Decoupling
C35	330			SI330	D6-331		GP2K-331	5GA-T33	IF Coupling
C36	.1	200		P288-1	DF-104	PTE4P1		2TM-P1	AGC Filter
C37	500			SI500	D6-501	5W5T5	GP2K-501	5GA-T5	2nd. Video IF Dec.
C38	500			SI500	D6-501	5W5T5	GP2K-501	5GA-T5	2nd. Video IF Fil.
C39	500			SI500	D6-501	5W5T5	GP2K-501	5GA-T5	RF Bypass
C40	15				TCZ-15		NP0K-150	5TCC-Q15	Fixed Trimmer
C41	330			SI330	D6-331		GP2K-331	5GA-T33	IF Coupling
C42	.1	200		P288-1	DF-104	PTE4P1		2TM-P1	AGC Filter
C43	500			SI500	D6-501	5W5T5	GP2K-501	5GA-T5	3rd. Video IF Dec.
C44	500			SI500	D6-501	5W5T5	GP2K-501	5GA-T5	3rd. Video IF Fil.
C45	500			SI500	D6-501	5W5T5	GP2K-501	5GA-T5	RF Bypass
C46	330			SI330	D6-331		GP2K-331	5GA-T33	IF Coupling
C47	22				TCZ-22		NP0K-220	5TCC-Q22	Fixed Trimmer
C48	500			SI500	D6-501	5W5T5	GP2K-501	5GA-T5	4th. Video IF Plate
C49	500			SI500	D6-501	5W5T5	GP2K-501	5GA-T5	4th. Video IF Screen
C50	10000			BPD-01	DD-103	1D3S1	821-01	5HK-S1	4th. Video IF Cathode
C51	500			SI500	D6-501	5W5T5	GP2K-501	5GA-T5	4th. Video IF Fil.
C52	.05	200		P288-05	DF-503	PTE4S5		2TM-S5	Video Coupling
C53	.047	600		P688-047	DF-503	PTE4S5		6TM-S47	Video Coupling
C54	500			SI500	D6-501	5W5T5	GP2K-501	5GA-T5	AGC Filter
C55	1500			SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	AGC Filter
C56	500			SI500	D6-501	5W5T15	GP2K-501	5GA-T5	AGC Rectifier Fil.
C57	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	1st. Sound IF Screen

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PILOT PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C58	10000			BPD-01	DD-103	1D3S1	821-01	5HK-S1	1st. Sound IF Cathode
C59	5000			BPD-005	DD-502	1D5D5	811-005	5HK-D5	2nd. Sound IF Dec.
C60	10000			BPD-01	DD-103	1D3S1	821-01	5HK-S1	2nd. Sound IF Cathode
C61	1000			SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	RF Bypass
C62	.0047	400		P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	De-emphasis
C63	.05	200		P288-05	DF-503	PTE4S5		2TM-S5	Audio Coupling
C64	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	Audio Coupling
C65	300	1000							Audio Output Plate
C66	.047	600		P688-047	DF-503	PTE6S5		6TM-S47	Audio Output Plate
C67	10000	500		1464-001	DF-104	1D3S1	821-01	1FM-11	Sync. Coupling
C68	82			SI82			GP1K-820		Sync. Coupling
C69	.047	200		P288-047	DF-503	PTE4S5		2TM-S47	Sync. Sep. Screen
C70	1500			SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	Vert. Integrator Net.
C71	1500			SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	Vert. Integrator Net.
C72	1500			SI1500	D6-152	1W5D15		5HK-D15	Vert. Sync. Coupling
C73	4700	500		1464-005		1DR5D5		MS-25	Vert. Osc. Grid Cap.
C74	.033	600		P688-033		PTE6S3		6TM-S3	Vert. Discharge
C75	1500			SI1500	D6-152	1W5D15	GP2L-152	5HK-D15	Integrator Net.
C76	.033	600		P688-033		PTE6S3		6TM-S3	Vert. Sweep Coupling
C77	.1	600		P688-1	DF-104	PTE6P1		6TM-P1	Vert. Sweep Coupling
C78	1000			SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	Horiz. Sync. Coupling
C79	1000			SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	Horiz. Sync. Coupling
C80	.0022	400		P688-0022	D6-222	PTE6D2	GP2-333-222	6TM-D22	Voltage Divider
C81	.0047	400		P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	AFC Filter
C82	.05	200		P288-05	DF-503	PTE4S5		2TM-S5	Horiz. MV Grid
C83	.22	200		P488-22		GT2P25		2TM-P22	Horiz. MV Grid
C84	3600	500							Fixed Trimmer
C85	250	500		1469-00625		5R5T25			Horiz. MV Feedback
C86	.047	200		P288-047	DF-503	PTE4S5		2TM-S47	Horiz. MV Grid
C87	400	500		1469-0004		5R5T4		MS-34	Horiz. MV Cathode
C88	1000	500		1464-001		1R5D1		MS-21	Horiz. Discharge
C89	.0047	600		P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Horiz. Sweep Coupling
C90	.047	600		P688-047	DF-503	PTE6S5		6TM-S47	Horiz. Output Screen
C91	.22	200		P488-22		GT2P25		2TM-P22	Horiz. Output Cathode
C92	.22	200		P488-22		GT2P25		2TM-P22	Horiz. Sweep Coupling
C93	.1	200		P288-1	DF-104	PTE4P1		2TM-P1	Fixed Trimmer
C94	500	20000		HV20A	TV1-502				HV Filter
C95	10000			BPD-01	DD-103	1D3S1	821-01	5HK-S1	Line Filter
C96	10000			BPD-01	DD-103	1D3S1	821-01	5HK-S1	Line Filter

† Not used in models TV-271 and TV-273.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PILOT PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	1Meg			Q13-137	AG-63-Z	B-70-S	Volume Control
B	Shaft			Not req.	FS-3	Not req.	Attach to R1A per instructions
C	Switch			76-1	SWB	Not req.	Attach to R1A per instructions
R2	1Meg						Vertiacal Hold Control
R3	50KΩ						Horiz. Hold Control
R4A	100KΩ			Q11-128	AG-49-8	B-40	Contrast Control
B	Shaft			Not req.	FS-3	Not req.	Attach to R4A per instructions
R5	100KΩ						Horiz. Drive Control
R6	2.5Meg						Height Control
R7	5000Ω						Vertical Linearity Control
R8	100KΩ						Brightness Control

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PILOT PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R9	1800Ω			BTS-1800	Low-Band Ant. Coil Shunt
R10	3900Ω 5%			BTS-3900 5%	Low Band RF Amp. Grid
R11	82Ω			BTS-82	Low Band RF Amp. Screen
R12	68Ω 2.0%				Low Band RF Amp. Plate Decoupling
R13	82KΩ			BTS-82K	Low Band Mixer Grid
R14	1000Ω			BTS-1000	Low Band Oscillator Decoupling
R15	4700Ω			BTS-4700	Low Band Oscillator Grid
R16	4700Ω			BTS-4700	High Band RF Amp. Grid
R17	82Ω			BTS-82	High Band RF Amp. Screen
R18	68Ω 2.0%				High Band RF Amp. Plate Decoupling
R19	82KΩ			BTS-82K	High Band Mixer Grid
R20	10KΩ			BTS-10K	High Band Oscillator Grid
R21	47Ω				1st. Video IF Cathode
R22	10KΩ			BTS-10K	AGC Network
R23	47Ω				2nd. Video IF Cathode
R24	470Ω			BTS-470	2nd. Video IF Decoupling
R25	47Ω				3rd. Video IF Cathode
R26	470Ω			BTS-470	3rd. Video IF Decoupling
R27	82Ω			BTS-82	Decoupling
R28	56KΩ			BTS-56K	AGC Network
R29	220KΩ			BTS-220K	Voltage Divider
R30	5600Ω			BTS-5600	Voltage Divider
R31	2.2Meg			BTS-2.2Meg	Voltage Divider
R32	2.7Meg			BTS-2.7Meg	Voltage Divider
R33	1Meg			BTS-1Meg	AGC Network
R34	680KΩ			BTS-680K	AGC Network
R35	27KΩ			BTS-27K	AGC Network
R36	180Ω			BTS-180	4th. Video IF Cathodle
R37	470Ω			BTS-470	4th. Video IF Screen
R38	15KΩ	2		BTB-15K	Decoupling
R39	15KΩ	2		BTB-15K	Decoupling
R40	3.3Meg			BTS-3.3Meg	Bias Network
R41	1.8Meg			BTS-1.8Meg	Video Amp. Grid
R42	15KΩ	2		BTB-15K	Voltage Dropping
R43	[illegible]	2		BTB-15K	Voltage Dropping
R44	3.9Meg			BTS-3.9Meg	DC Restorer Load
R45	4.7Meg			BTS-4.7Meg	Picture Tube Grid
R46	47KΩ			BTS-47K	Voltage Divider
R47	2200Ω			BTS-2200	Voltage Divider
R48	[illegible]			BTS-180K	Picture Tube Cathodle
R49	10KΩ			BTS-10K	Voltage Divider
R50	68KΩ			BTS-68K	Integrator Network
R51	[illegible]			BTS-120	1st. Sound IF Cathodle
R52	470Ω			BTS-470	1st. Sound IF Screen
R53	120Ω			BTS-120	2nd. Sound IF Cathodle

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PILOT PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R54	470Ω			BTS-470	2nd. Sound IF Decoupling
R55	270Ω			BTS-270	Balancing
R56	15K			BTS-15K	De-emphasis
R57	22KΩ 5%			BTS-22K-5%	Ratio Det. Diode Load
R58	22KΩ 5%			BTS-22K-5%	Ratio Det. Diode Load
R59	4.7Meg			BTS-4.7Meg	AF Amp. Grid
R60	150KΩ 5%			BTS-150K	AF Amp. Plate Load - See Note 1
R61	270KΩ 5%			BTA-270K-5%	Bias Network
R62	150KΩ 5%			BTS-150K	Audio Output Grid
R63	82Ω			BTS-82	Audio Output Cathode
R64	3300Ω			BTS-3300	Tone Compensation
R65	47Ω	4		1 3/4A-300	Audio Output Plate Decoupling
R66	39KΩ	1		BTA-39K	Audio Output Screem Dropping
R67	27KΩ			BTS-27K	Isolation
R68	330KΩ			BTS-330K	Sync. Clipper Grid
R69	3.9Meg			BTS-3.9Meg	Sync. Clipper Grid
R70	470KΩ			BTS-470K	Sync. Clipper Screen
R71	100KΩ			BTS-100K	Sync. Clipper Plate Load
R72	5600Ω			BTS-5600	Sync. Inv. Cathode
R73	6800Ω			BTS-6800	Sync. Inv. Plate Load
R74	68KΩ			BTS-68K	Integrator Network
R75	56KΩ			BTS-56K	Integrator Network - See Note 2
R76	39KΩ			BTS-39K	Integrator Network
R77	1.5Meg			BTS-1.5Meg	Vertical Oscillator Grid
R78	6.8Meg			BTS-6.8Meg	Voltage Divider
R79	100KΩ			BTS-100K	Voltage Divider
R80	3300Ω			BTS-3300	Vertical Peaking
R81	1Meg			BTS-1Meg	Vertical Amp. Grid
R82	680Ω			BTS-680	Vertical Amp. Cathode
R83	4700Ω	2		BTB-4700	Vertical Amp. Decoupling
R84	56KΩ			BTS-56K	Voltage Divider - See Note 3
R85	12, 500Ω	10		1 3/4A-12, 500	Voltage Divider
R86	100KΩ			BTS-100K	Horizontal Detector Diode Load
R87	100KΩ			BTS-100K	Horizontal Detector Diode Load
R88	4.7Meg			BTS-4.7Meg	Horizontal Detector Diode Load
R89	680KΩ			BTS-680K	Isolation - See Note 4
R90	10KΩ			BTS-10K	AFC Filter
R91	15000Ω			BTS-1500	Horizontal MV Cathode
R92	18000Ω			BTS-1800	Horizontal MV Decoupling
R93	5600Ω			BTS-5600	Horizontal MV Plate Load
R94	68KΩ			BTS-68K	Horizontal MV Grid
R95	100KΩ			BTS-100K	Horizontal MV Plate Load
R96	36000Ω 5%			BTS-3600-5%	Horizontal Peaking - See Note 5
R97	15KΩ			BTS-15K	Horizontal Peaking - See Note 3
R98	150Ω				Parasitic Suppressor
R99	220KΩ			BTS-220K	Horizontal Output Grid
R100	300Ω	4		1 3/4A-300	Horizontal Output Cathode
R101	15KΩ	10		1 3/4A-15K	Horizontal Output Screen
R102	4.7Ω	1			HV Rectifier Filament
R103	68KΩ	2			HV Filter
R104	27KΩ	1		BTA-27K	AFC Filter
R105	220KΩ	1		BTS-220K	Line Isolation
R106	10Ω	1		BTS-220K	Surge Limiter
R107	6800Ω	1		BTS-6800	Bias Network
R108	33Ω	4		1 3/4A-35	Bias Network
R109	2.7Ω	1		BW-1-2.7	Filament Dropping
R110	2.4Meg	1		BTA-2.4Meg	Voltage Dropping - See Note 6
R112	27KΩ			BTS-27K	Horizontal Oscillator Coil Shunt

Note 1 Some models may use a 100KΩ resistor in this application.
Note 2 Some models may use a 68KΩ resistor in this application.
Note 3 Not used in all models.
Note 4 Some models may use a 470KΩ resistor in this application.
Note 5 Some models may use a 3KΩ resistor in this application.
Note 6 Some models may use 22.7MegΩ resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: PILOT PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC @ 1.0A	760VCT @ .230A	5VAC @ 3.0A	6.3VAC @ 1.2A SEC 4 6.3VAC @ 10A	55-25		P-3067	

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: PILOT PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	NOTES
T2	180Ω	1000Ω	56-32	A-8122	A-4000 ①	TBO-2	Vert. Blocking Osc.
T3	540Ω Tapped @ 22Ω	7.3Ω Tapped @ 6.7Ω	56-33		W70-7		Horiz. Output Trans.
	SEC. 2 1.8Ω	SEC. 3 0Ω					
T4	1300Ω Tapped @ 12Ω		56-34	A-8112	A-3037	TSO-5 ①	Vert. Output Trans.
T5A	13Ω		279-6	DY-8	MDF-70		Horiz. Deflection Coils
B	480Ω						Vert. Deflection Coils

① Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: PILOT PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	INSTALLATION NOTES
T6	3.5KΩ	3.4Ω	170Ω	.9Ω	Part of 41-35	A-3876 ①	A-3018	RO-2	① Drill new mounting holes.

PARTS LIST CONTINUED ON PAGE 15