RCC TELEVISION RADIO HI-FI SERVICE MANUAL

1972 NUMBER 134

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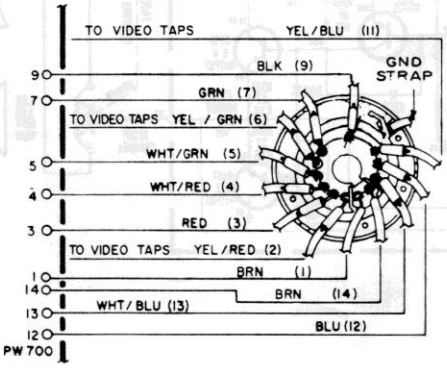
INDEX

COILS

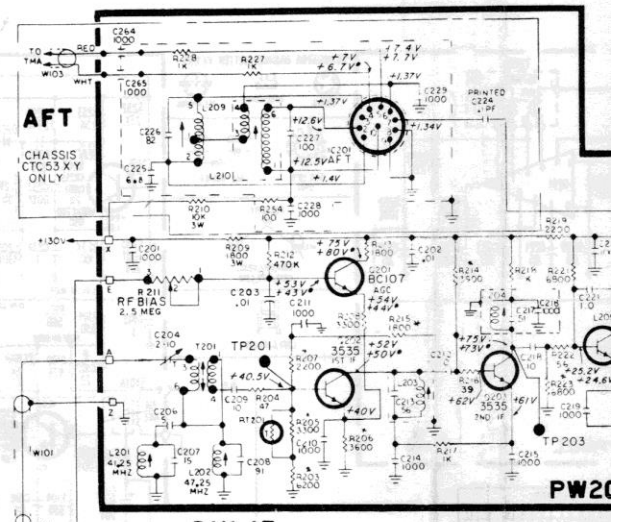
L1,L2	*62-133139	620 *uh.*
L3	*62-133179	6.8 *uh.*
L4	*62-131229	8.2 *uh.*
L105A,B	62-20570	A/C line filter
L109	62-124807	choke
L110	62-22294	degaussing
L201	62-18947	41.25 MHz.
L202	62-20226	47.25 MHz.
L203	62-21159	1st pix IF output
L204	62-20228	2nd pix IF output
L205	62-20229	3rd pix IF output
L206	62-22462	41.25 MHz.
L207	62-20230	12 *uh.*
L209	62-122203	AFT secondary, CTC53XY
L210	62-21684	AFT primary, CTC53XY
L211	62-109248	1.8 *uh.*
L214	62-109248	1.8 *uh.*
L216	62-21685	100 *uh.*
L217	62-20232	4.5 MHz.
L218	62-116056	36 *uh.*
L220	62-109248	1.8 *uh.*
L299	62-21603	sound discriminator
L401	62-20438	horizontal efficiency
L402	62-109171	5.6 *uh.*
L403	62-109171	5.6 *uh.*
L501A,B	62-14061	horizontal sinewave
L601	62-130578	pin phase
L701	62-22812	peaker
L702	62-19031	oscillator strength
L703	62-17739	27 *uh.*
L709	62-115438	220 *uh.*
L801	62-21313	straighten blue horizontal lines
L802	62-21313	right red/green vertical lines
L803	62-130719	right red/green horizontal lines
L804A,B	62-21548	blue convergence exciter assembly (1463682-2)
L804A,B	*62-133106	blue convergence exciter assembly (1463682-6)
L805A,B	62-21548	green convergence exciter assembly (1463682-2)
L805A,B	*62-133106	green convergence exciter assembly (1463682-6)
L806A,B	62-21548	red convergence exciter assembly (1463682-2)
L806A,B	*62-133106	red convergence exciter assembly (1463682-6)

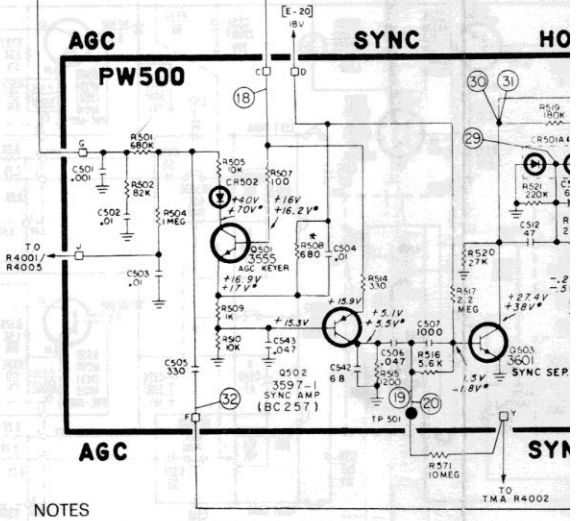
TRANSFORMERS

T102	*62-22583	horizontal output
T103	*62-22820	audio output
T104	62-21665	vertical output
T105	*62-22821	filament
T201	62-127244	first pix IF input
T202	62-20268	third pix IF output
T299	62-21604	sound IF input
T601	62-22535	pin cushion
T701	62-21605	burst amplifier
T702	62-21544	1st chroma amplifier
T703	62-121559	3.58 MHz oscillator
T704	62-21602	second chroma amplifier



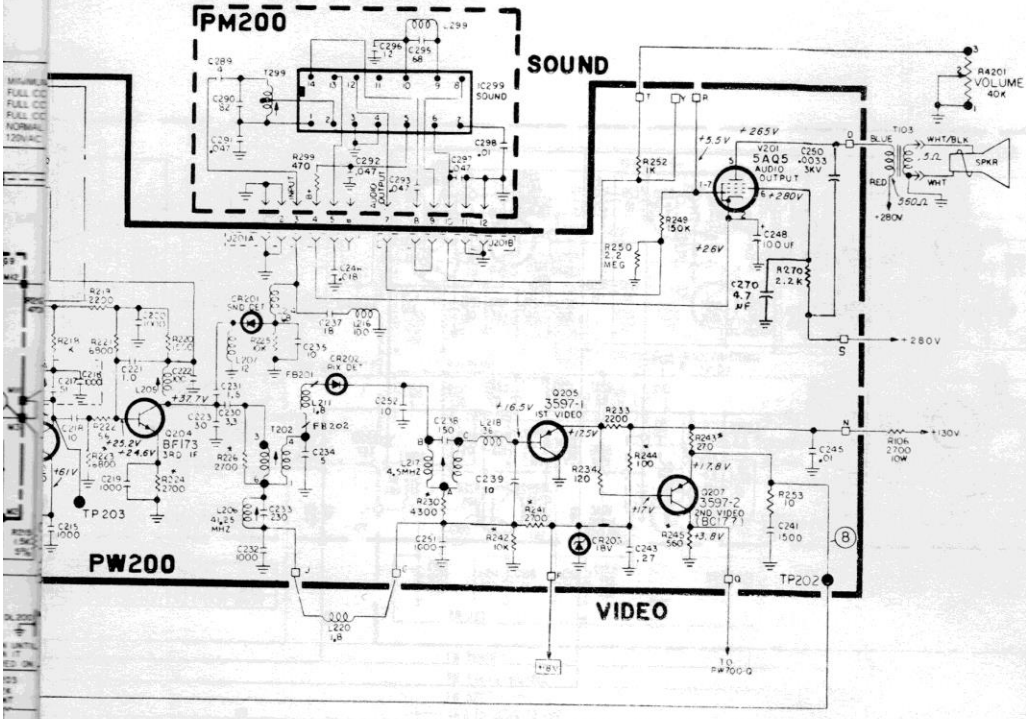
Socket Assembly

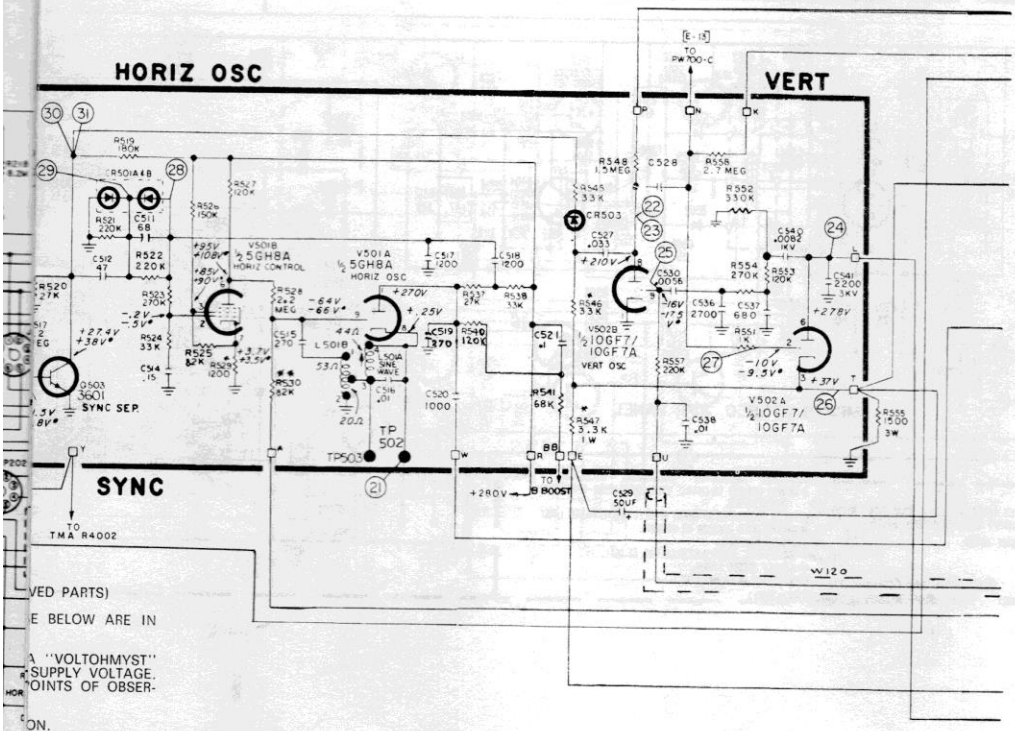




NOTES

1. RESISTANCE VALUE IN OHMS. K = 1000.
2. RESISTORS ARE ½ WATT EXCEPT AS NOTED.
3. * INDICATES 5% TOLERANCE (REPLACE ONLY WITH APPROVED PARTS)
4. ° INDICATES 2% TOLERANCE.
5. CAPACITANCE VALUES 1.0 AND ABOVE ARE IN PF, THOSE BELOW ARE μF EXCEPT AS INDICATED.
6. INDUCTOR VALUES IN μH EXCEPT AS INDICATED.
7. VOLTAGES ARE MEASURED TO CHASSIS GROUND WITH A "VOLTOHMYS (NO SIGNAL) AND SHOULD HOLD WITHIN 20% AT RATED SUPPLY VOLTA
8. BALLOONS ① ② ETC., SHOWN ON SCHEMATIC INDICATE POINTS OF OBS VATION OF WAVEFORMS.
9. V* INDICATES VOLTAGES MEASURED WITH SIGNAL.
10. ALL TUNER SWITCHES ARE SHOWN IN CHANNEL 13 POSITION.
11. FOR CONTINUED X-RADIATION PROTECTION REPLACE TUBE WITH ORIGIN TYPE, INCLUDING SUFFIX LETTER, OR RCA APPROVED TYPE ONLY



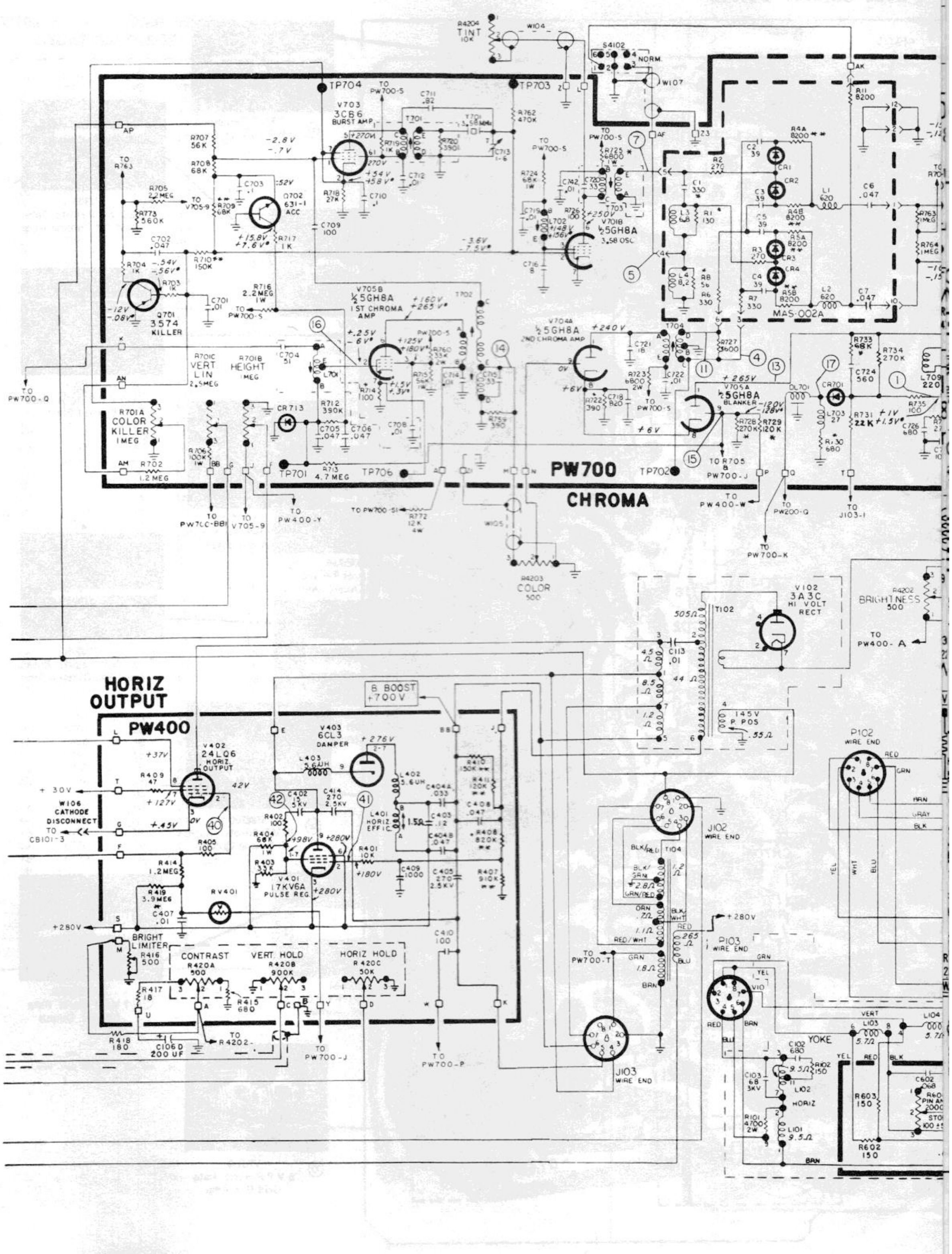


VED PARTS)

E BELOW ARE IN

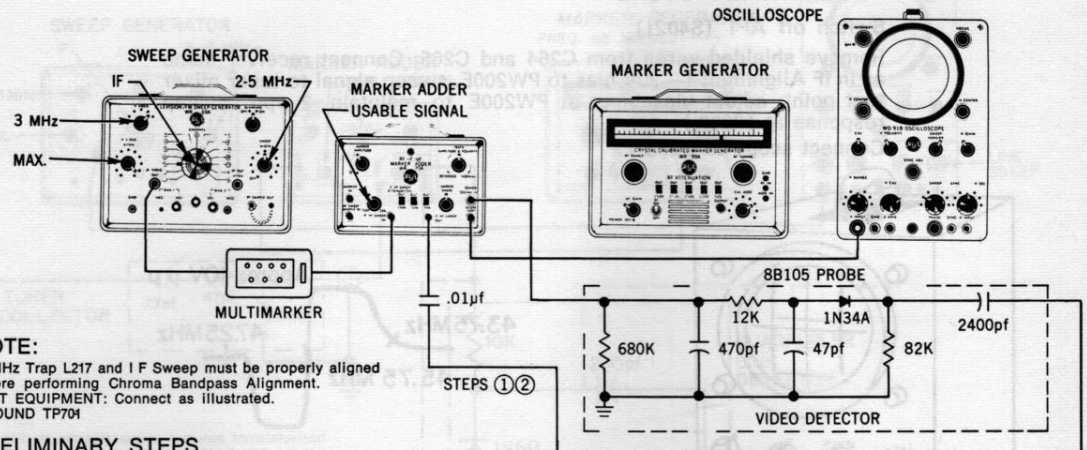
A "VOLTOHMYST"
SUPPLY VOLTAGE.
OINTS OF OBSER-

ON.
E WITH ORIGINAL
TYPE ONLY


PW700
CHROMA
HORIZ OUTPUT
PW400

The picture can't be displayed.	The picture can't be displayed.	The picture can't be displayed.	The picture can't be displayed.	The picture can't be displayed.	The picture can't be displayed.	The picture can't be displayed.

CHROMA BANDPASS ALIGNMENT



NOTE:

4.5MHz Trap L217 and I F Sweep must be properly aligned before performing Chroma Bandpass Alignment.
TEST EQUIPMENT: Connect as illustrated.
GROUND TP701

PRELIMINARY STEPS.

Do not change I F Bias Voltage as determined in I F Sweep Alignment –20V DC to PW200E. Approx. +45V DC at base of Q201, AGC Transistor.)
Set Color Killer Control maximum CCW, Color Saturation Control and Tint Control to midrange.
Video Det. Probe to PW700-N.
Connect I F/Video (3.0MHz) Sweep to first Bandpass Cathode (TP706)
Calibrate scope on 1.5V P-P range.
Adjust Sweep input to produce 1.0V P-P response on scope.

STEP ①

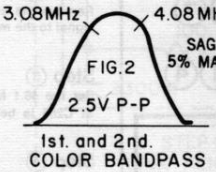
1ST BANDPASS ALIGNMENT
Adjust T702, top and bottom cores for response as illustrated in Fig. 1. (Outside peaks)
Top core determines marker position (equal markers) bottom core sets Tilt (equal amplitude).

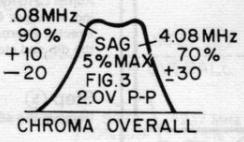
STEP ②

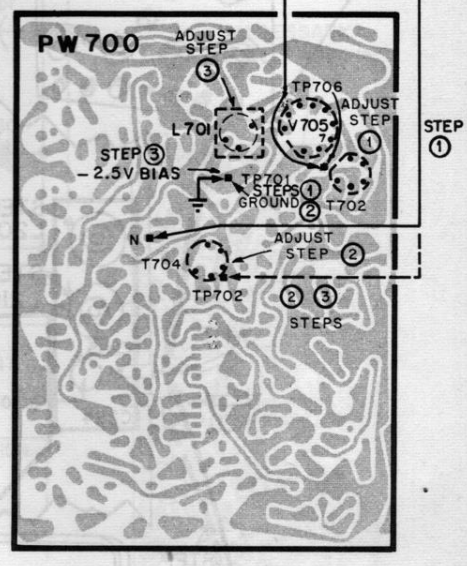
2ND BANDPASS ALIGNMENT
Remove Video Det. probe from PW700-N and connect to TP702.
Calibrate scope on 5.0V P-P range.
Attenuate sweep to produce 2.5V P-P response on scope. DO NOT EXCEED 2.5V P-P
Adjust T704 for response as illustrated in Fig. 2, with core adjusted to outer peak and markers equal.

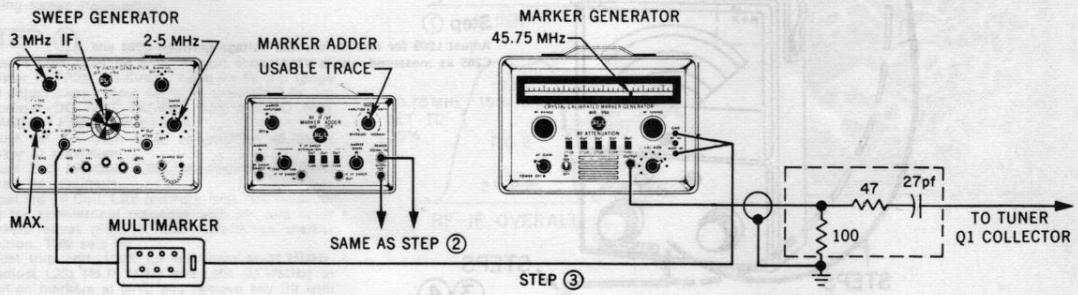
STEP ③

Modify test equipment hook-up as illustrated below. Connect a VTVM to TP202 on PW200 (0-50V scale). Remove ground from TP701. Connect a –2.5V DC bias to TP701. Adjust R F attenuation to obtain a DC voltage change of 1V DC at TP202 (video detector) between the presence and absence of signal (switch generator on and off as needed to meet "change" conditions).
Adjust peaker coil, L701, (bottom peak) for response illustrated (Fig. 3). There should be no peak between the 3.08 MHz and 4.08 MHz markers.





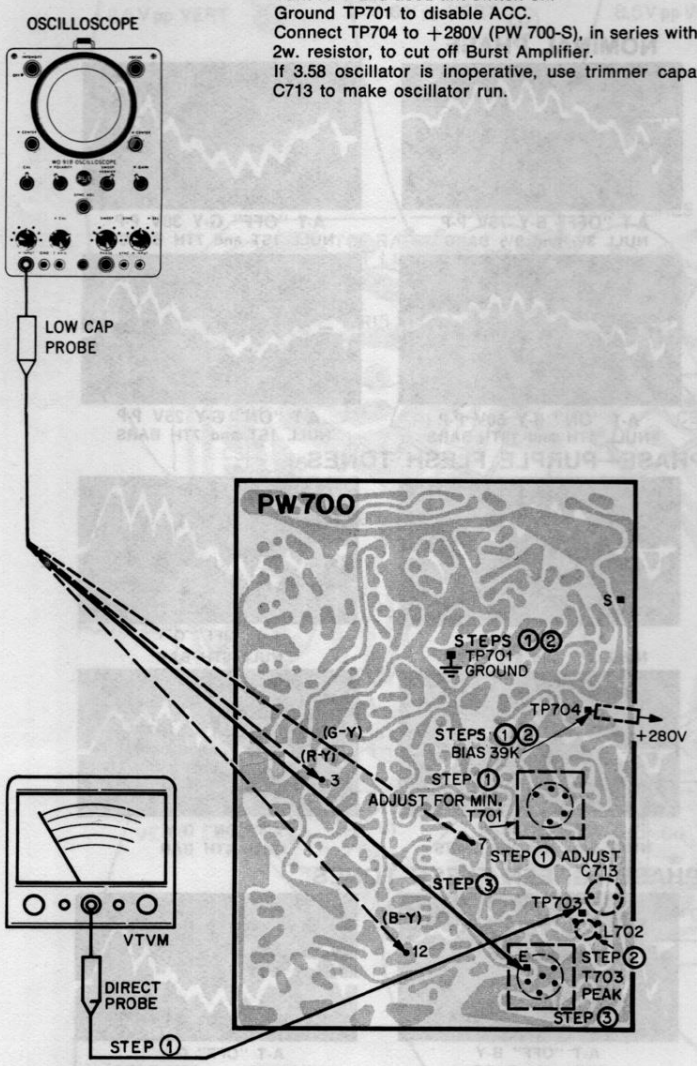




AFPC ALIGNMENT

PRELIMINARY STEPS:

Return receiver to normal operating condition.
Adjust receiver for normal viewing.
Connect color bar generator to Antenna Terminals.
Center Tint control to 50% of its mechanical range.
Turn killer control full CCW.
Turn AFT and accu-tint switch off.
Ground TP701 to disable ACC.
Connect TP704 to +280V (PW 700-S), in series with 39K 2w. resistor, to cut off Burst Amplifier.
If 3.58 oscillator is inoperative, use trimmer capacitor C713 to make oscillator run.



STEP ①

Connect VTVM to TP703.
Adjust C713 for zero beat.
Adjust T701 for minimum DC voltage. If coil adjusts to two (2) dips, use dip away from mounting end of coil. Readjust C713 for zero beat.

STEP ②

Adjust L702 for —3.5V DC. If coil adjusts to two (2) peaks, use peak at mounting end of coil. Readjust C713 for zero beat.

STEP ③

Remove short at TP701 and bias at TP704. Adjust color control to approximately midrange (color must not be in saturation). Connect VTVM to CR2 anode on Demodulator Board. Connect scope to T703-E. Adjust T703 for maximum DC Voltage on VTVM. Observe scope at same time for symmetrical deviation while rocking Tint control. Signal @ TP703E should be equal with tint control fully CW or fully CCW. If coil adjusts to two (2) peaks, use peak at mounting end of coil.

STEP ④

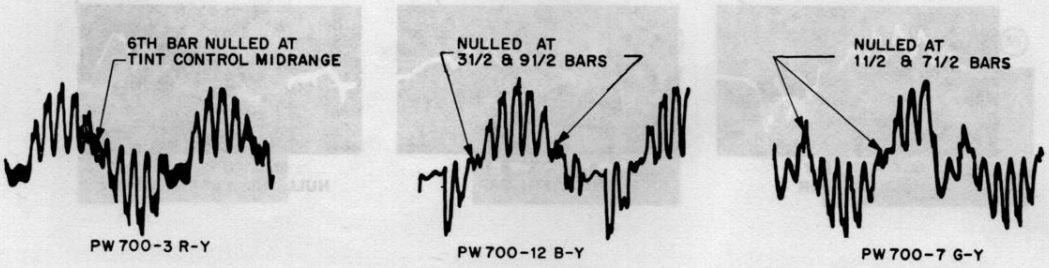
Place scope on R-Y output (PW700-3). Check to see that turning the tint control through its range moves null from 5 bars or less to 7 bars or more. If not, readjust transformer T703.

STEP ⑤

Set the tint control so that the 6th bar is cancelled. Place scope on B-Y output (PW700-12) and check to see that the bars null within ±1/2 bar at 3 1/2 and 9 1/2 bars on the scope. Check that G-Y output (PW700-7) nulls at 1 1/2 and 7 1/2 bars.

STEP ⑥

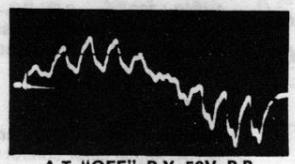
Turn the channel selector to a vacant channel (Snow) and adjust the color killer pot (R701A) until color snow just disappears. Check for optimum performance on all available channels.



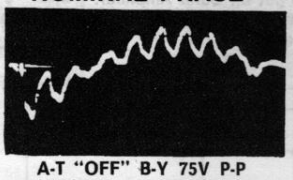
PICTURE TUBE GRID WAVEFORMS

The series of 18 waveforms below illustrate the demodulator gain and phase-angle changes resulting from the ACCU-TINT circuits. These were taken with a color bar pattern furnished by a WR-64B color-bar generator Conditions of nominal phase, +30° and −30° are represented with the color circuits operating first with A-T "OFF" and second with A-T "ON"

NOMINAL PHASE



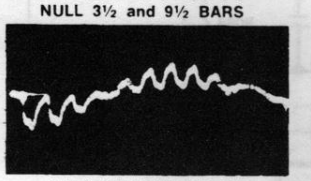
A-T "OFF" R-Y 50V P-P-
NULL 6TH BAR



A-T "OFF" B-Y 75V P-P
NULL 3½ and 9½ BARS

A-T "OFF" G-Y 30V P-P
NULL 1ST and 7TH BARS

A-T "ON" R-Y 55V P-P
NULL 6TH BAR

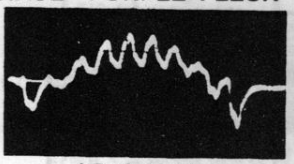


A-T "ON" B-Y 50V P-P
NULL 4TH and 10TH BARS

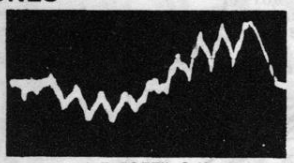
A-T "ON" G-Y 25V P-P
NULL 1ST and 7TH BARS

+30° PHASE—PURPLE FLESH TONES

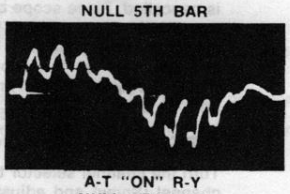
A-T "OFF" R-Y
NULL 5TH BAR



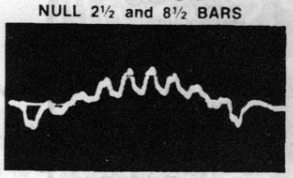
A-T "OFF" B-Y
NULL 2½ and 8½ BARS



A-T "OFF" G-Y
NULL 6TH BAR



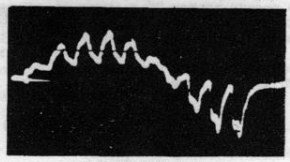
A-T "ON" R-Y
NULL 5TH BAR



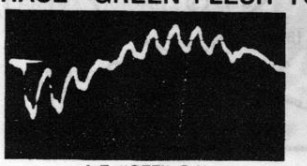
A-T "ON" B-Y
NULL 3RD and 9TH BARS

A-T "ON" G-Y
NULL 6TH BAR

−30° PHASE—GREEN FLESH TONES

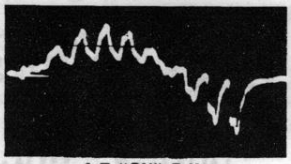


A-T "OFF" R-Y
NULL 7TH BAR

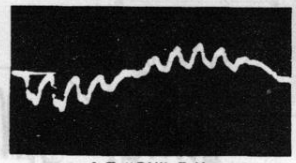


A-T "OFF" B-Y
NULL 4½ BARS

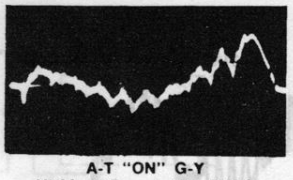
A-T "OFF" G-Y
NULL 2ND and 8TH BARS



A-T "ON" R-Y
NULL 7TH BAR

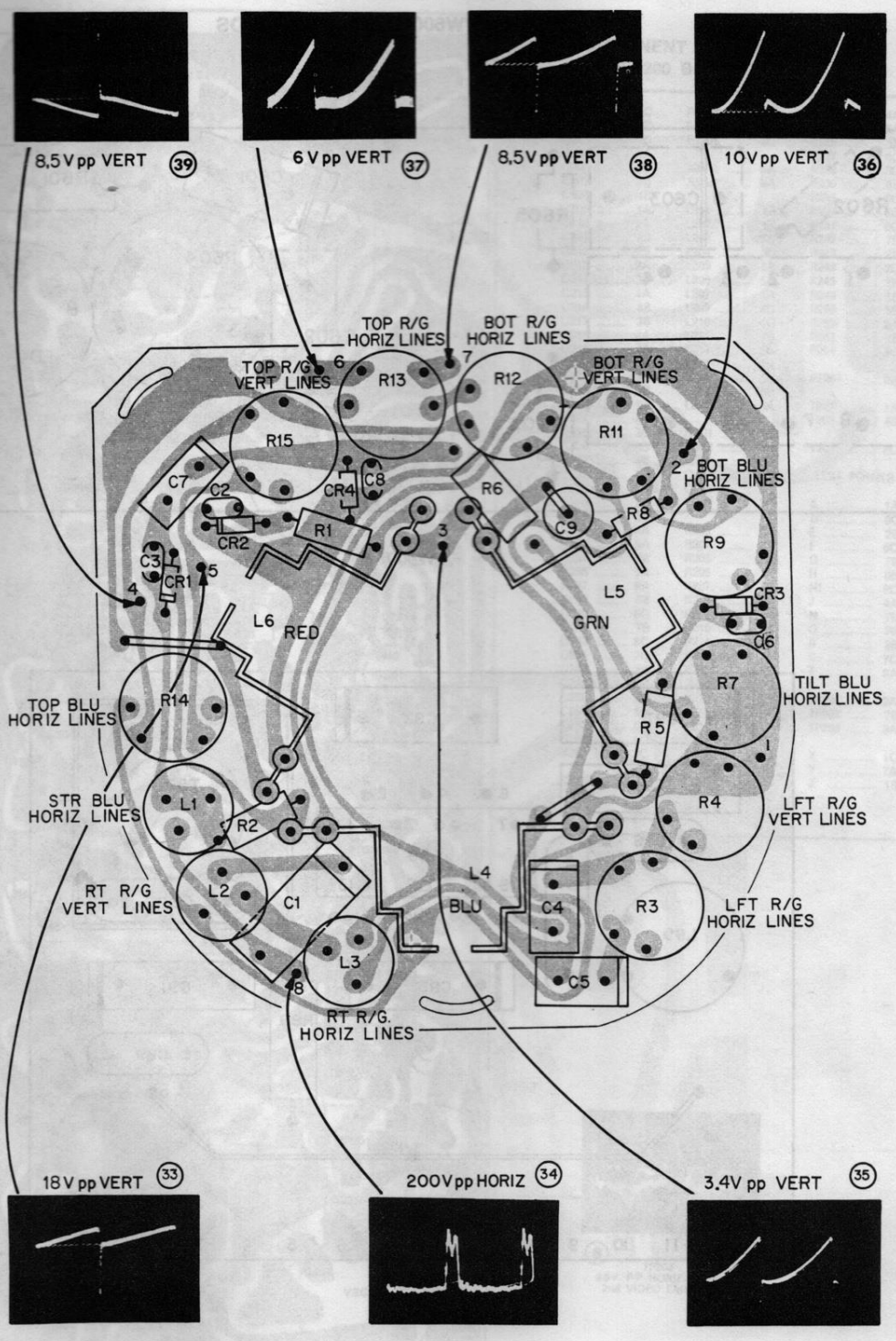


A-T "ON" B-Y
NULL 5TH BAR

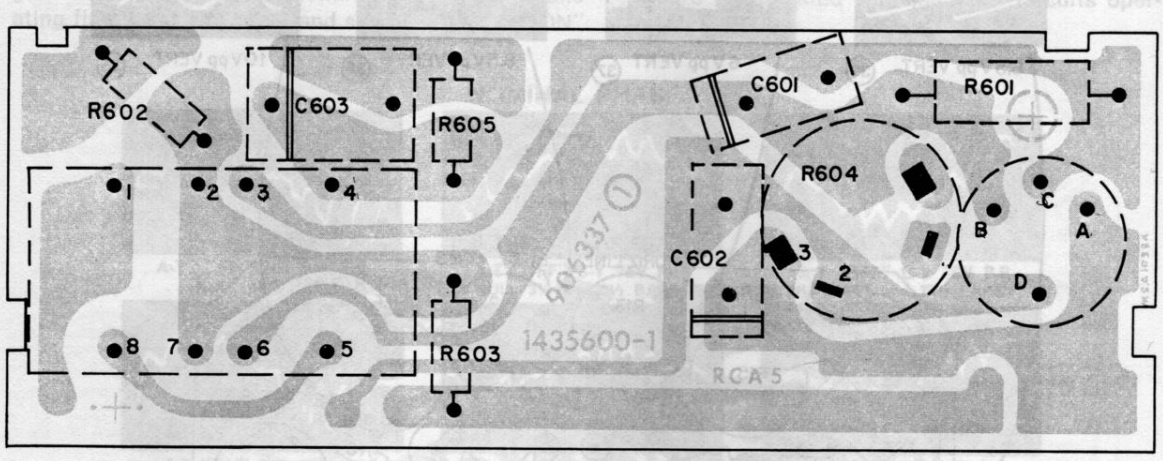


A-T "ON" G-Y
NULL 2ND and 8TH BARS

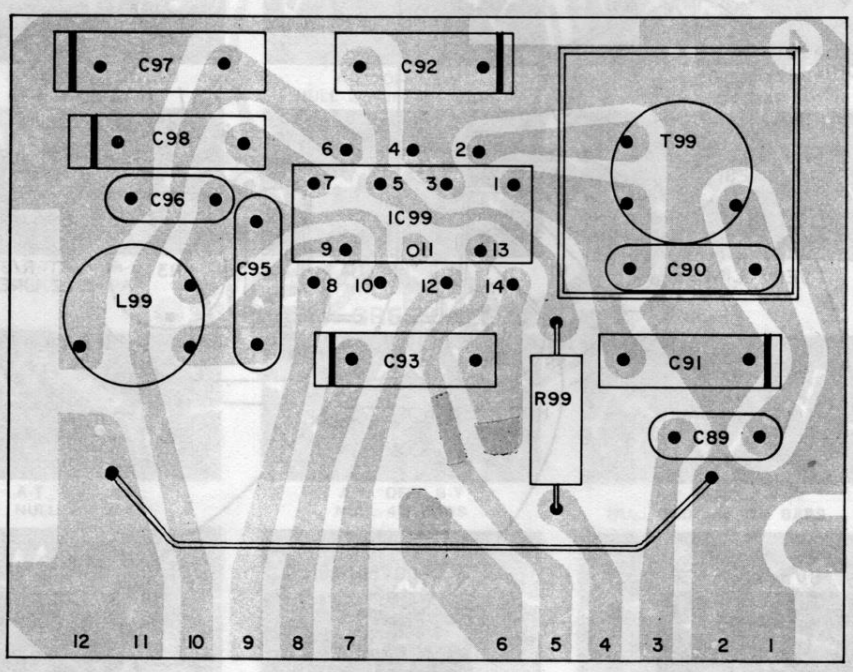
PW800 CONVERGENCE CIRCUIT BOARD



PM200 AND PW600 CIRCUIT BOARDS

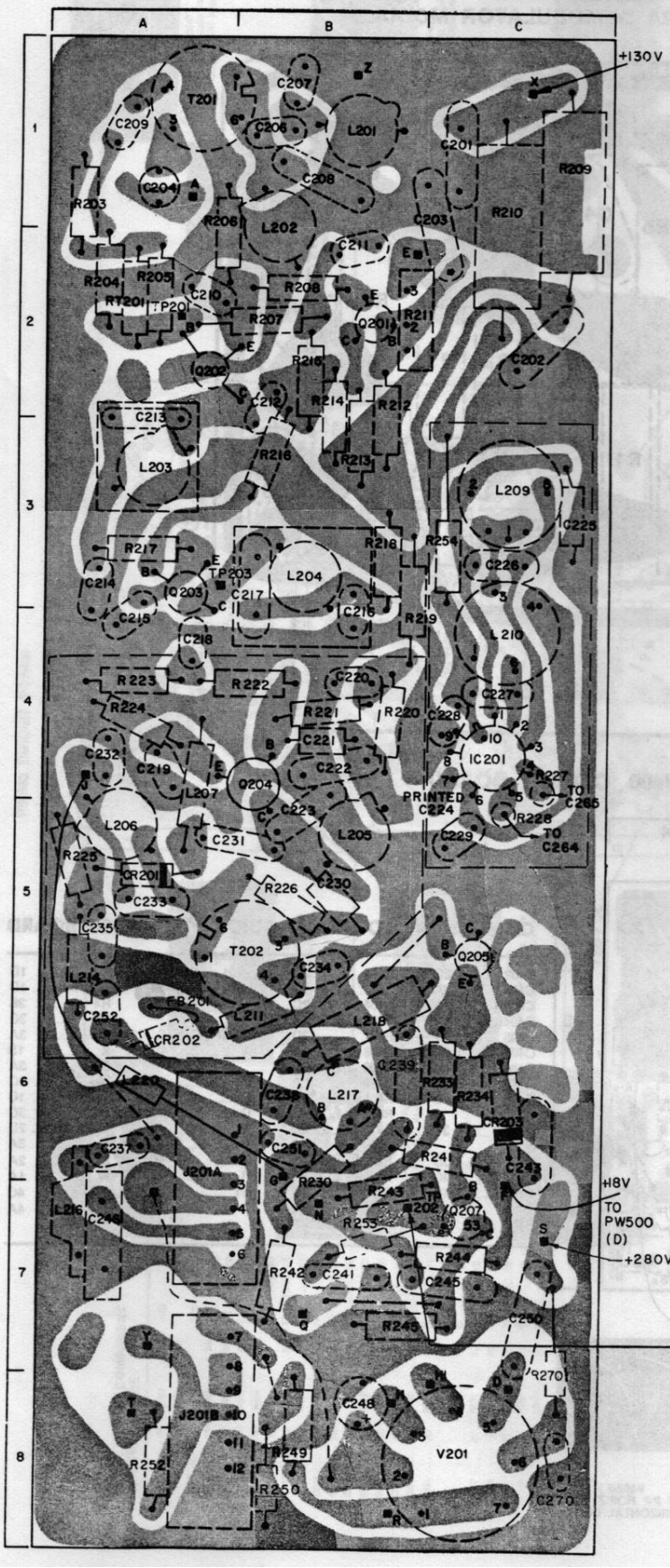


PW600



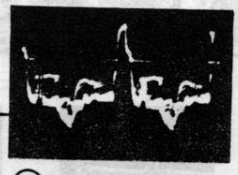
PM200

PW200 CIRCUIT BOARD



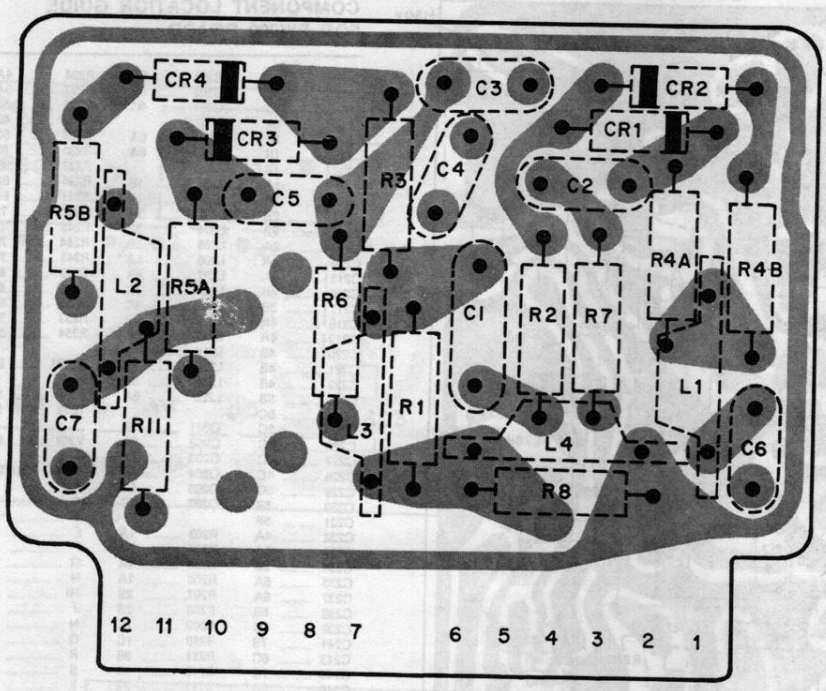
COMPONENT LOCATION GUIDE FOR PW200 BOARD

C201	1C	FB201	6A	R224	4A
C202	2C	FB202	6B	R225	5A
C203	1C	IC201	4C	R226	5B
C204	1A			R227	4C
C206	1B	J201A	6A	R228	5C
C207	1B	J201B	8A	R230	6B
C208	1B			R233	6C
C209	1A	L201	1B	R234	6C
C210	2A	L202	1B	R241	6C
C211	2B	L203	3A	R242	7B
C212	2B	L204	3B	R243	7B
C213	2A	L205	5B	R244	7C
C214	3A	L206	5A	R245	7B
C215	4A	L207	4A	R249	8B
C216	4B	L209	3C	R250	8B
C217	3B	L210	4C	R252	8A
C218	4A	L211	6B	R253	7B
C219	4A	L214	5A	R254	3C
C220	4B	L216	7A		
C221	4B	L217	6B	RT201	2A
C222	4B	L218	6B		
C223	5B	L220	6A	T201	1A
C224	5C			T202	5B
C225	3C	Q201	2B		
C226	3C	Q202	2A	V201	8C
C227	4C	Q203	3A		
C228	4C	Q204	4B	TEST POINTS	
C229	5C	Q205	5C		
C230	5B	Q207	7C	A	1A
C231	5B			D	8C
C232	4A	R203	1A	E	2B
C233	5A	R204	2A	F	6C
C234	5B	R205	2A	G	7B
C235	5A	R206	1A	H	8B
C237	6A	R207	2B	HI	8C
C238	6B	R208	2B	J	4A
C239	6C	R209	1C	N	7B
C241	7B	R210	1C	O	7B
C243	6C	R211	2B	R	8B
C245	7C	R212	2B	S	7C
C246	7A	R213	3B	T	8A
C248	8B	R214	2B		
C250	7C	R215	2B	TP201	2A
C251	6B	R216	3B	TP202	7B
C252	6A	R217	3A	TP203	3A
C264	5C	R218	3B		
C265	4C	R219	4B	X	1C
		R220	4B	Y	7A
CR201	5A	R221	4B	Z	1B
CR202	5A	R222	4B		
CR203	6C	R223	4A		

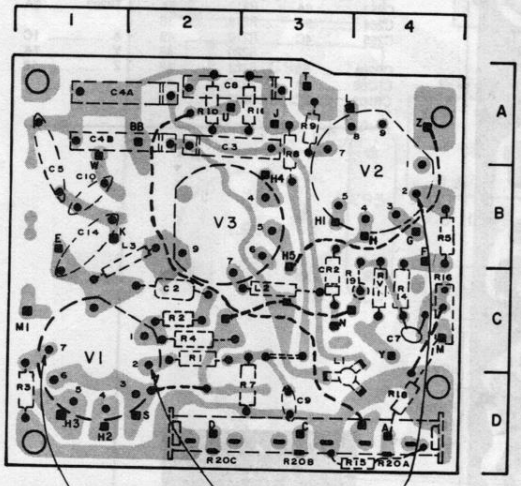


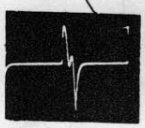
⑧ TP202
2.5V P-P HORIZ. RATE
2nd VIDEO EMITTER

MAS002A DEMODULATOR MODULE

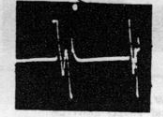


PW400 CIRCUIT BOARD





(42) V401-7
900V P-P HORIZ. RATE
PULSE REG. SCREEN



(41) V401-2
100V P-P HORIZ. RATE
PULSE REG. GRID

(40) V402-2
250V P-P HORIZ. RATE
HORIZONTAL DRIVE

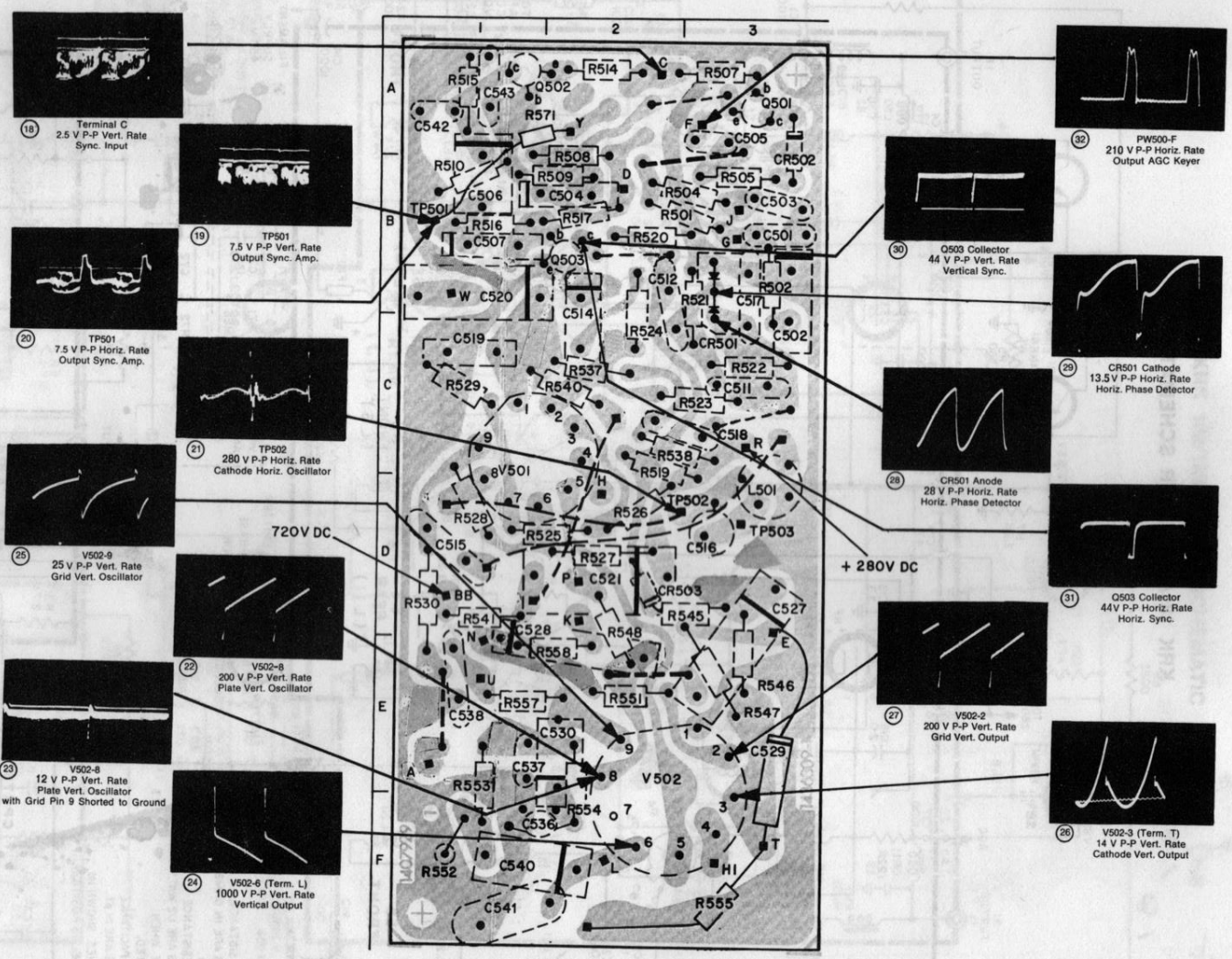
COMPONENT LOCATION GUIDE FOR PW400 BOARD

C402	2C	R402	2C	V401	1D	H2	1D
C403	2A	R403	1D	V402	4B	H3	1D
C404A	1A	R404	2C	V403	2B	H4	3B
C404B	1A	R405	4B			H5	3C
C405	1A	R407	3D	TEST POINTS		J	3A
C407	4C	R408	3A	A	4D	K	1B
C408	2A	R409	3A			L	3A
C410	1B	R410	2A	BB	2A	M	4C
C414	1B	R411	3A	C	2D	M1	1C
		R414	4C	D	2D	N	3C
CR402	3C	R415	4D	E	1B	S	2D
		R419	4C	F	4B	T	3A
L401	3D	R420A	4D	G	4B	U	2A
L402	3C	R420B	3D	H	4B	W	1A
L403	1C	R420C	2D	H1	3B	Y	4C
						Z	4A
R401	2C	RV401	4C				

PW500 BOARD COMPONENT LOCATION GUIDE

C501	3B	R504	2B	V502	2E
C502	3C	R505	3B		
C503	3B			TEST POINTS	
C504	2B	R507	3A	A	1E
C505	3A	R508	2A	BB	1D
C506	1B	R509	2B	C	2A
C507	1B	R510	1B	D	2B
C511	3C			E	3D
C512	2B	R514	2A	F	3A
		R515	1A	G	3B
C514	2B	R516	1B	H	2D
C515	1D	R517	2B	H1	3F
C516	3D			J	3B
C517	3B	R519	2C	K	2D
C518	2C	R520	2B	L	2F
C519	1C	R521	3B	N	1E
C520	1B	R522	3C	P	2D
C521	2D	R523	3C	R	3C
		R524	2C	T	3F
		R525	2D	U	1E
C527	3D	R526	2D	W	1B
C528	1E	R527	2D	Y	2A
C529	3E	R528	1D	TP501	1B
C530	2E	R529	1C	TP502	3D
C536	1F	R530	1D	TP503	3D
C537	1E				
C538	1E				
C540	1F				
C541	1F	R537	2C		
C542	1A	R538	2C		
C543	1A	R540	2C		
		R541	1D		
		R545	3D		
CR501	3C	R546	3E		
CR502	3B	R547	3E		
CR503	2D	R548	2D		
L501	3D	R551	2E		
		R553	1E		
Q501	3A	R554	2F		
Q502	1A	R555	3F		
Q503	2B	R557	1E		
		R558	2E		
R501	2B	R571	2A		
R502	3B	V501	1C		

PW500 CIRCUIT BOARD



(18) Terminal C
2.5 V P-P Vert. Rate
Sync. Input

(19) TP501
7.5 V P-P Vert. Rate
Output Sync. Amp.

(20) TP501
7.5 V P-P Horiz. Rate
Output Sync. Amp.

(21) TP502
280 V P-P Horiz. Rate
Cathode Horiz. Oscillator

(25) V502-9
25 V P-P Vert. Rate
Grid Vert. Oscillator

(22) V502-8
200 V P-P Vert. Rate
Plate Vert. Oscillator

(23) V502-8
12 V P-P Vert. Rate
Plate Vert. Oscillator
with Grid Pin 9 Shorted to Ground

(24) V502-6 (Term. L)
1000 V P-P Vert. Rate
Vertical Output

(32) PW500-F
210 V P-P Horiz. Rate
Output AGC Keyer

(30) Q503 Collector
44 V P-P Vert. Rate
Vertical Sync.

(29) CR501 Cathode
13.5 V P-P Horiz. Rate
Horiz. Phase Detector

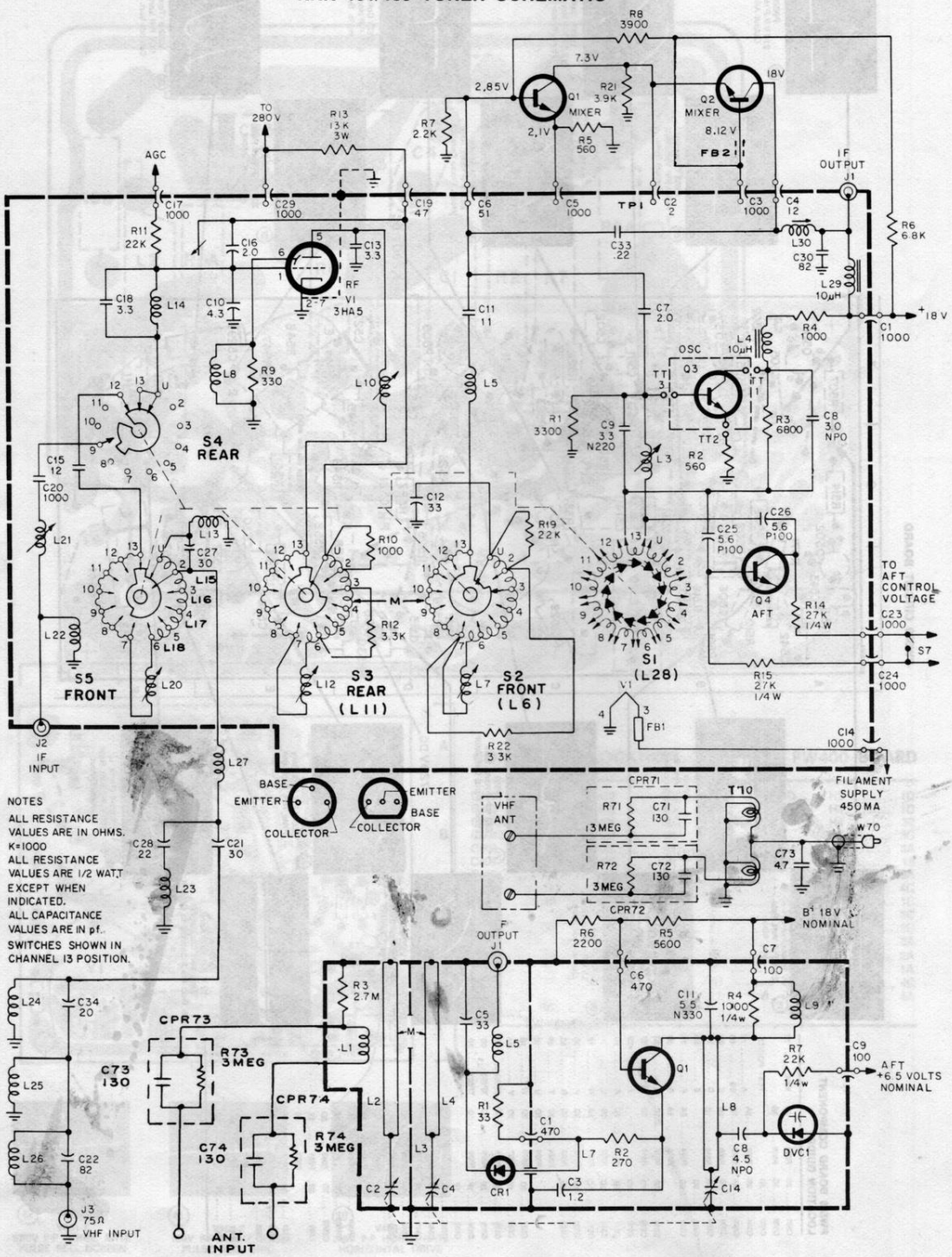
(28) CR501 Anode
28 V P-P Horiz. Rate
Horiz. Phase Detector

(31) Q503 Collector
44 V P-P Horiz. Rate
Horiz. Sync.

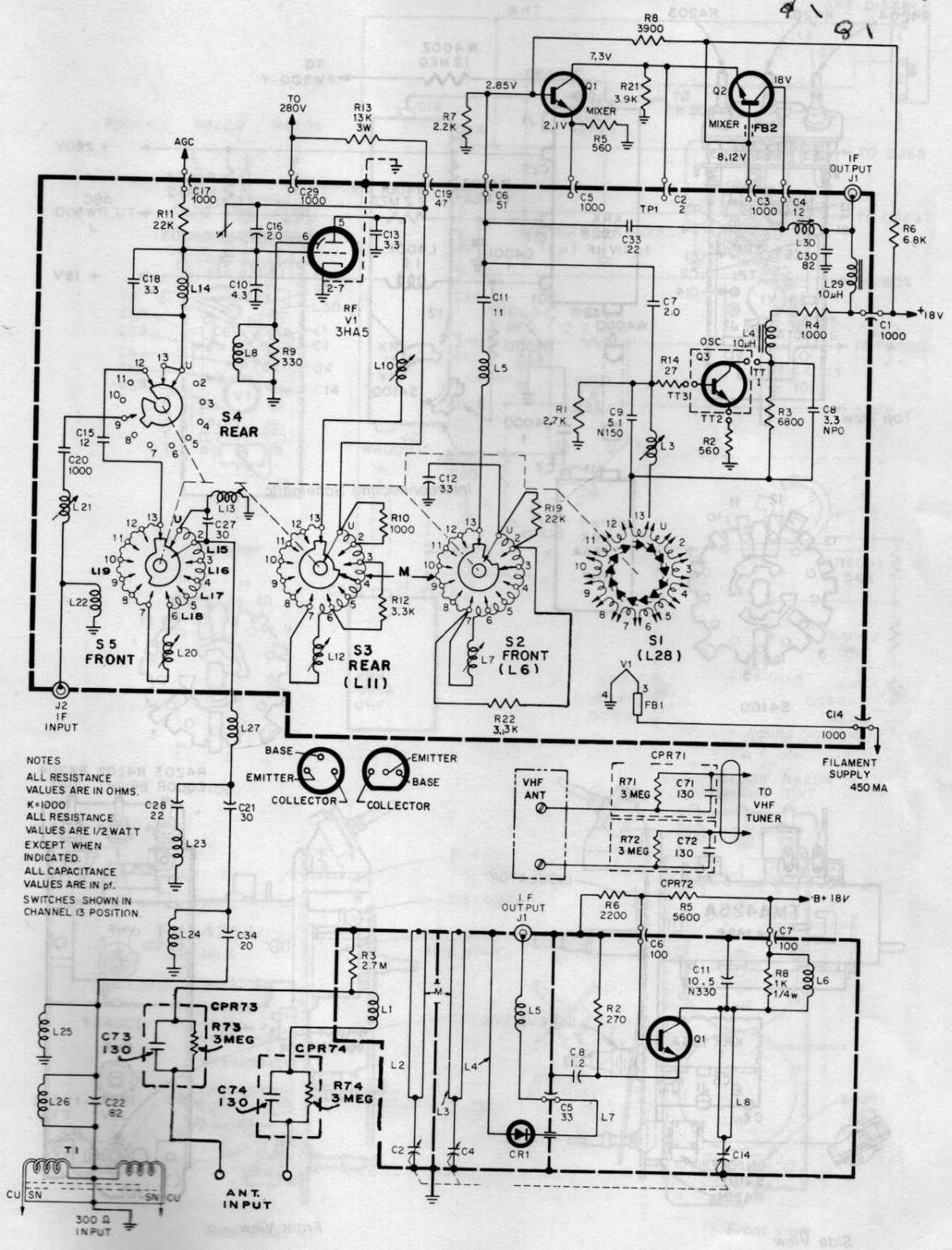
(27) V502-2
200 V P-P Vert. Rate
Grid Vert. Output

(26) V502-3 (Term. T)
14 V P-P Vert. Rate
Cathode Vert. Output

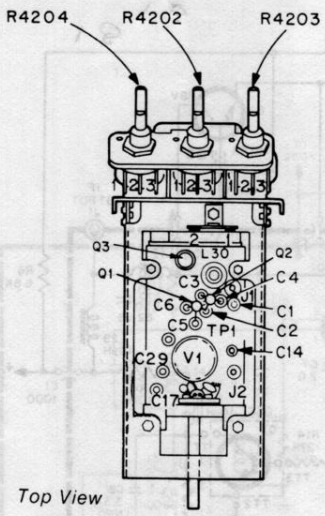
KRK 181/185 TUNER SCHEMATIC



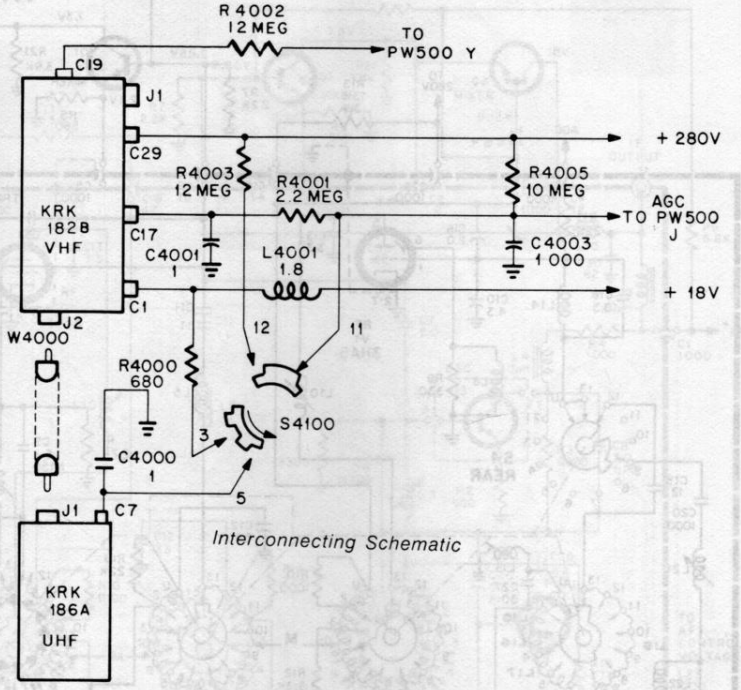
KRK 182/186 TUNER SCHEMATIC



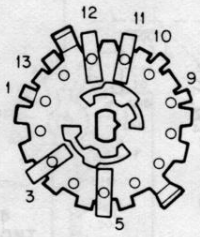
TUNER MOUNTING ASSEMBLY 425A



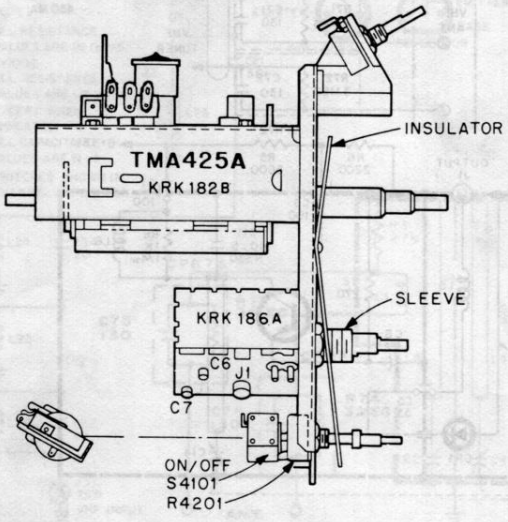
Top View



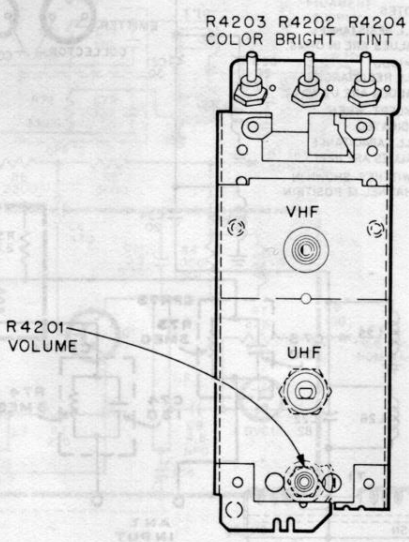
Interconnecting Schematic



S4100



Side View



Front View

TUNER MOUNTING ASSEMBLY 425B