

MODEL 4920

Putting Set in Operation

Place all tubes in sockets except picture tube and 5U4G tube. Turn set on. See that all tubes light up. (B1B3GT will not light up)

Turn set off- insert 5U4G tube in socket. Turn set on. See that there are no arcs and that none of the resistors are smoking. (Keep high voltage lead away from chassis, and KEEP AWAY FROM HIGH VOLTAGE LEAD.) Turn set off.

Place picture tube in proper position. Fasten front of picture tube to chassis with piece of 300 ohm line as shown in instruction sheet for tube strap assembly. Place Focus Coil, Deflection Yoke and Ion Trap in proper position as shown in Top View Photo.

Turn set on. Volume control at maximum position. Turn Brightness control about 3/4 maximum position (clockwise).

**ION TRAP ADJUSTMENT.** Improper adjustment of the ion trap will result in poor brilliancy or shadowing of the corners. Place ion trap on neck of picture tube with magnet slug facing upwards and part number TV-2A on magnet slug facing front of picture tube. While observing the raster on the screen, move the ion trap slightly backward or forward, simultaneously turning it slightly in both directions until the brightest raster is obtained. Continue adjustment so that none of the corners are cut off or shadowed.

**FOCUS COIL ADJUSTMENT.** Improper adjustment of the focus coil will result in the corners of the picture being cut off or shadowed or it will be impossible to focus the beam properly with the focus control. Loosen wing nuts which hold the focus coil in place. Adjust for vertical and horizontal centering as per assembly instruction sheet.

**DEFLECTION YOKE ADJUSTMENT.** Improper adjustment of the deflection yoke will cause the picture to be tilted at an angle. Loosen wing screw on top of yoke and rotate until picture is straight.

**Height Control.** Adjust height control to fill screen with raster. **Width Control.** Adjust width control and horizontal drive for proper width of raster.

**Linearity adjustments.** Linearity adjustments should be made while receiver is tuned to station which is transmitting a test pattern. Adjust for vertical linearity by adjusting vertical height and vertical linearity controls until the proper height of picture is obtained with the length of the top and bottom arms of test pattern equal. Adjust for horizontal linearity by setting horizontal linearity control (L9) and horizontal drive control until the horizontal arms of the test pattern are of equal length.

**Focus Adjustment.** Adjust focus control for sharpest detail across picture.

**HORIZONTAL HOLD ADJUSTMENT.** Set horizontal hold control to about center of rotation. Adjust L7 (Hor. AFC Coil) until picture locks in. This adjustment should be made with contrast control in minimum position.

**Vertical Hold Adjustment.** Rotate vertical hold control until picture locks in.

Alignment InstructionsAlignment without Instruments

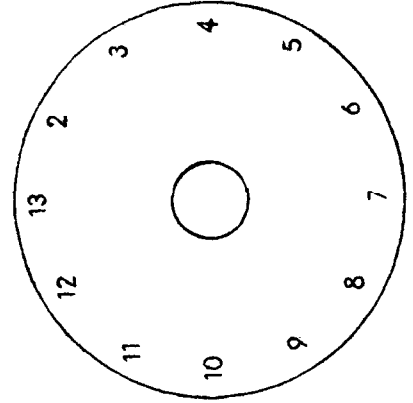
Turn channel selector to station which is operating. Turn fine tuning control to about center position. Turn channel selector to channel of the strongest local station. If a picture is received, turn to a channel which is transmitting a test pattern. Alignment should be made only while receiving a test pattern. The channel selector is tuned to channel 13 when the flat portion of the shaft faces upwards. By looking at the template on this page you can locate the various channels. If you have trouble in getting a picture, pre-set the I.F. coils as per instructions listed below.

Video Alignment.

Turn set off and remove picture tube. Stand chassis on end. Turn screw of fourth I.F. coil until iron core is in the center of the winding. Turn screw of third I.F. coil until iron core is just out of the winding. Turn screw of second I.F. coil until iron core is completely in the winding. Turn screw of first I.F. coil until iron core is just out of the winding. Lay chassis down and replace picture tube. Turn set on and touch up all I.F. coils including the mixer I.F. coil which is in the can on the front end, for maximum detail on the pattern.

Sound Alignment

Turn set off and remove picture tube. Remove connection from cap of 1B3GT. Stand chassis on end and turn set on. Peak slugs on top and bottom of sound take-off transformer T1, for maximum sound. Peak bottom slug on ratio detector transformer T7 for maximum sound. Peak top slug of ratio detector transformer for maximum sound and minimum buzz or noise. Repeat this operation with a weak signal. It may be necessary to disconnect the antenna in order to produce a weak signal.



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Television Chassis Model 4920

Voltage Analysis Chart

All voltage measurements are made between designated socket prongs and ground. All readings are taken with electronic voltmeter. All controls in full clockwise position. Antenna disconnected. All voltages D.C. except where specified.

Tube	1	2	3	4	5	6	7	8
V1-6AU6	-0.6	0	6.3 AC	0	120	120	0.9	---
V2-6AU6	-0.6	0	0	6.3 AC	85	120	0.6	---
V3-6AU6	0	0	0	6.3 AC	52	122	1.2	---
V4-6AU6	0	0	0	6.3 AC	52	128	1.2	---
V5-6AL5	2.9	-3	6.3 AC	0	-2.8	0	-0.3	---
V6-6AC7	0	6.3 AC	0	-2.7	0	142	0	158
V7-6SN7	0	120	6.8	0	7.5	1.2	6.3 AC	0
V8-6AL5	0	0	6.3 AC	0	3.5	0	-1.9	---
V9-6AU6	132	140	140	140	360	170	150	---
V10-7X7	140	220	135	140	140	140	140	140
V11-6V6	0	140	330	365	130	0	140	140
V12-1B3	DANGER	HIGH	VOLTAGE	-- DO	NOT	MEASURE		
V13-5V4G	0	440	0	360	0	360	0	440
V14-6BG6G	0	6.3 AC	8.2	0	-13	-13	0	255
V15-6SN7	1	240	12	-1.8	110	12	6.3 AC	0
V16-6SN7	-33	90	0	.25	330	12	6.3 AC	0
V17-5U4G	0	425	0	355 AC	0	355 AC	0	425

NOTE: - V9-6AU6 6.3 AC between pins #3 & #4  
 V10-7X7 " " " " #1 & #8  
 V11-6V6 " " " " #2 & #7  
 V13-5V4G 5 AC " " " " #2 & #8  
 V17-5U4G " " " " " " " "

Scope Socket: - Orange-360, Blue-1, Yellow-12, Brown-0, Other Brown -6.3 AC. All voltage readings may vary plus or minus 20%.

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Resistance Analysis Chart

All resistance measurements are made between ground and designated socket prongs. All controls in full clockwise position. All readings may vary plus or minus 20%.

Tube	1	2	3	4	5	6	7	8
V1-6AU6	2 meg	0	.1	0	26K	26K	100	---
V2-6AU6	2 meg	0	0	.1	35K	25K	100	---
V3-6AU6	.1	0	0	.1	35K	25K	100	---
V4-6AU6	.1	0	0	.1	35K	25K	100	---
V5-6AL5	850	1800	0	0	12K	0	820K	---
V6-6AC7	0	0	3	11.5K	3	17K	0	28K
V7-6SN7	1 meg	33K	4.8K	0	50K	300K	0	0
V8-6AL5	27K	27K	0	0	5 meg	0	5 meg	---
V9-6AU6	500K	25K	25K	25K	25K	38K	25K	---
V10-7X7	25K	500K	500K	25K	Inf.	70K	Inf.	25K
V11-6V6	Inf.	25K	25K	25K	280K	Inf.	25K	25K
V12-1B3	Plate	Cap-	30K ohms,	all other	prongs-	Infinity		
V13-5V4G	Inf.	30K	Inf.	25K	Inf.	25K	Inf.	30K
V14-6BG6G	Inf.	0	82	Inf.	1 meg	1 meg	0	33K
V15-6SN7	5.5 meg	60K	1500	100K	45K	1500	0	0
V16-6SN7	1 meg	2 meg	0	2 meg	30K	600	0	0
V17-5U4G	Inf.	25K	Inf.	75	Inf.	75	Inf.	25K

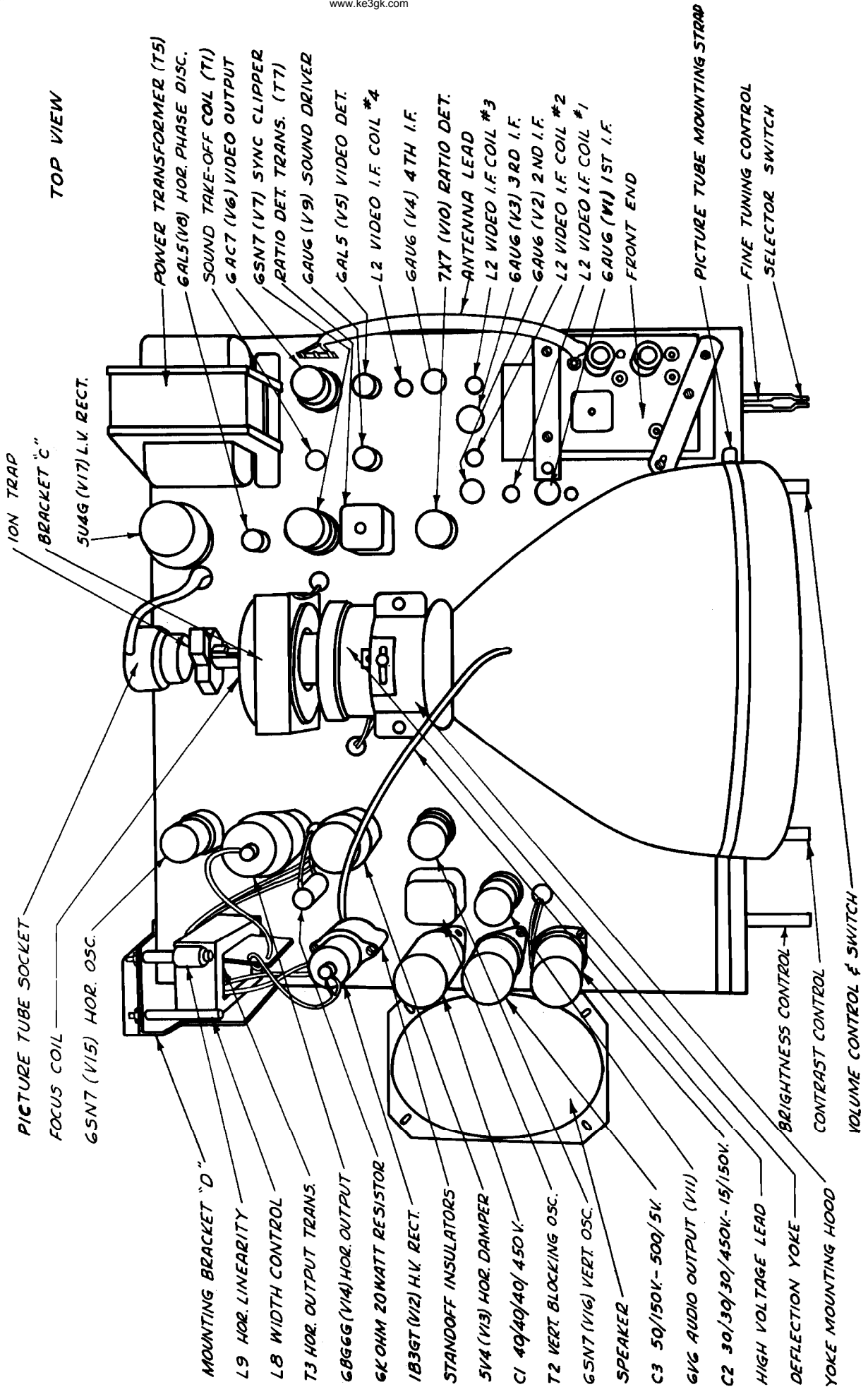
Plate Cap of 6BG6G 30K ohms.

Scope Socket: - Brown - 0 ohms  
 Orange - 26K ohms  
 Blue - 300K ohms  
 Yellow - 8K ohms

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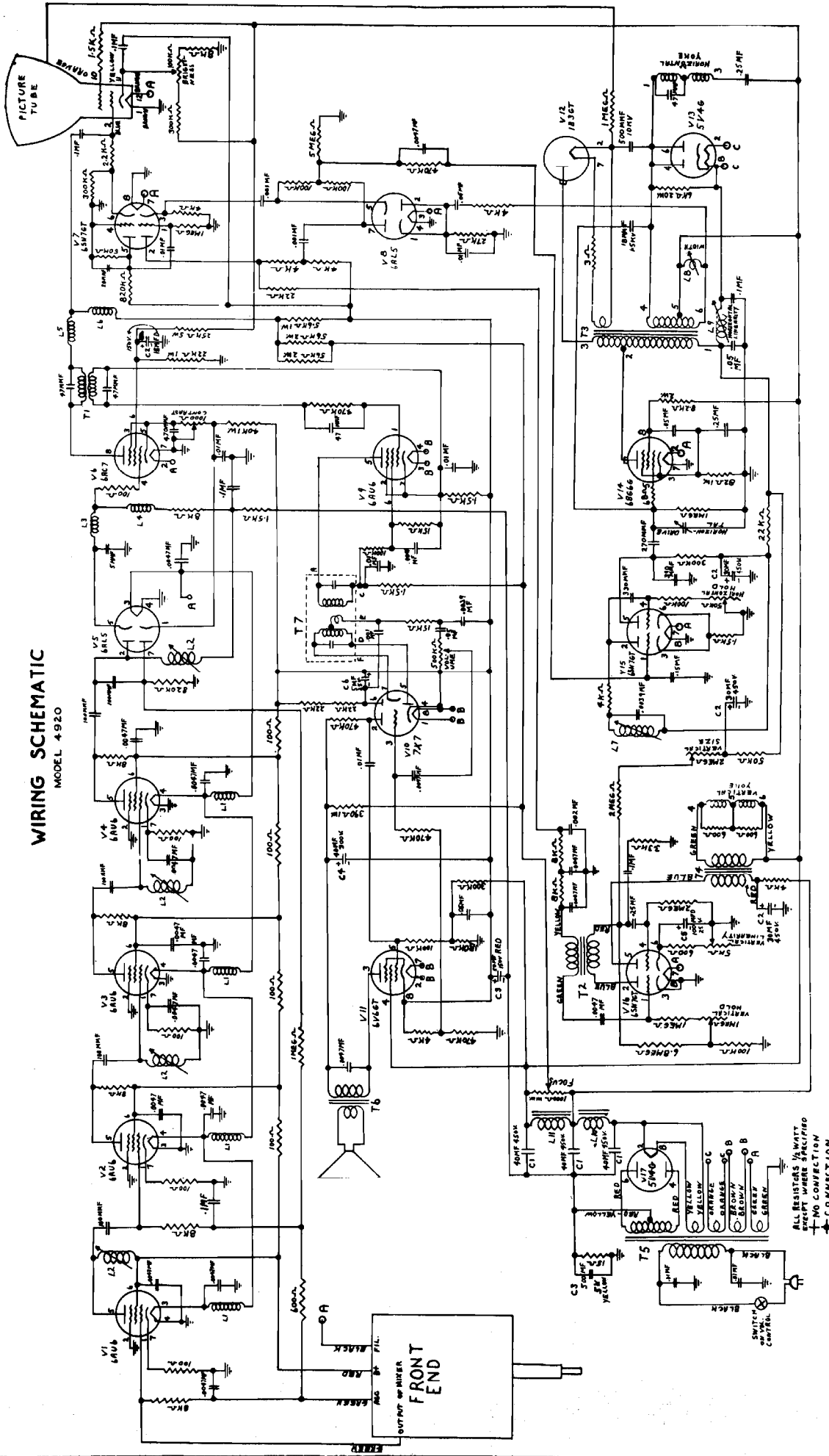
TOP VIEW



- ION TRAP BRACKET "C"
- 5U4G (V17) L.V. RECT.
- POWER TRANSFORMER (T5)
- 6AL5 (V8) HOR. PHASE DISC.
- SOUND TAKE-OFF COIL (T1)
- 6AC7 (V6) VIDEO OUTPUT
- 6SN7 (V7) SYNC CLIPPER
- RATIO DET. TRANS. (T7)
- 6AU6 (V9) SOUND DRIVER
- 6AL5 (V5) VIDEO DET.
- L2 VIDEO I.F. COIL #4
- 6AU6 (V4) 4TH I.F.
- 7X7 (V10) RATIO DET.
- ANTENNA LEAD
- L2 VIDEO I.F. COIL #3
- 6AU6 (V3) 3RD I.F.
- 6AU6 (V2) 2ND I.F.
- L2 VIDEO I.F. COIL #2
- L2 VIDEO I.F. COIL #1
- 6AU6 (V1) 1ST I.F.
- FRONT END
- PICTURE TUBE MOUNTING STRAP
- FINE TUNING CONTROL
- SELECTOR SWITCH
- PICTURE TUBE SOCKET
- FOCUS COIL
- 6SN7 (V15) HOR. OSC.
- MOUNTING BRACKET "D"
- L9 HOR. LINEARITY
- L8 WIDTH CONTROL
- T3 HOR. OUTPUT TRANS.
- 6BG6G (V14) HOR. OUTPUT
- 6K OHM 20WATT RESISTOR
- 1B3GT (V12) H.V. RECT.
- STANDOFF INSULATORS
- 5V4 (V13) HOR. DAMPER
- C1 40/40/40/450V.
- T2 VERT. BLOCKING OSC.
- 6SN7 (V16) VERT. OSC.
- SPEAKER
- C3 50/150V.-500/5V.
- 6V6 AUDIO OUTPUT (V11)
- C2 30/30/30/450V.-15/150V.
- HIGH VOLTAGE LEAD
- DEFLECTION YOKE
- YOKE MOUNTING HOOD
- BRIGHTNESS CONTROL
- CONTRAST CONTROL
- VOLUME CONTROL & SWITCH

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WIRING SCHEMATIC  
MODEL 4920



ALL RESISTORS 1/2 WATT  
EXCEPT WHERE SPECIFIED  
NO CONNECTION  
CONNECTION