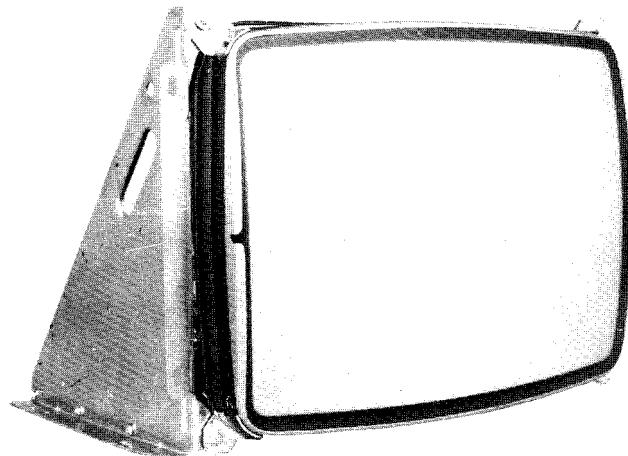


Service Manual

19" R.G.B. COLOR MONITOR



CHASSIS NO:CG-19A

MODELS:
KGR-1901H
KGR-1901V

CHASSIS NO:CG-19B

MODELS:
KGR-1902H
KGR-1902V
KGR-1902HA
KGR-1902VA

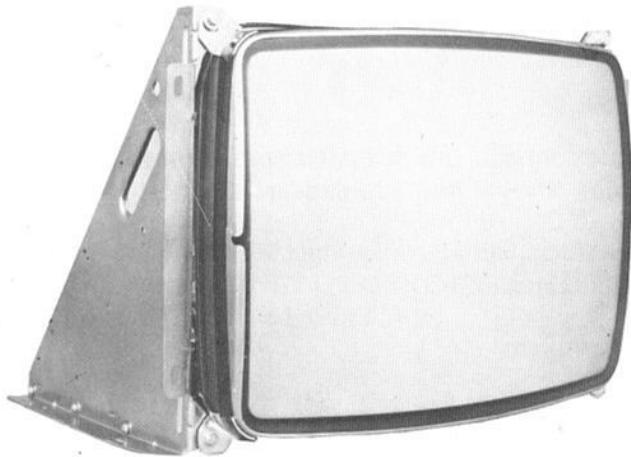
CHASSIS NO: CG-19C

MODELS:
KGR-1903H
KGR-1903V

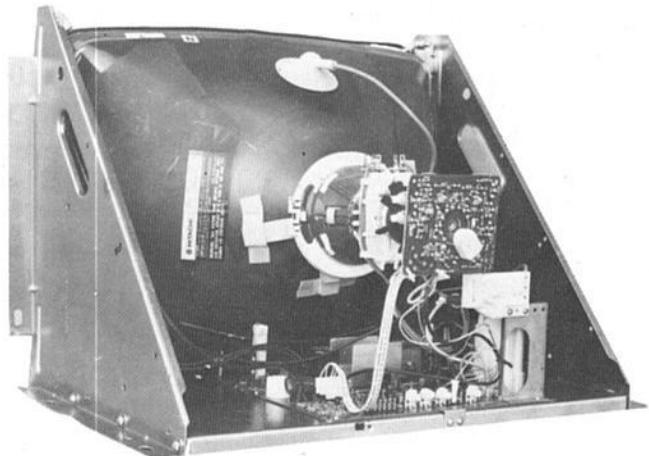
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H-TYPE DIMENSIONS



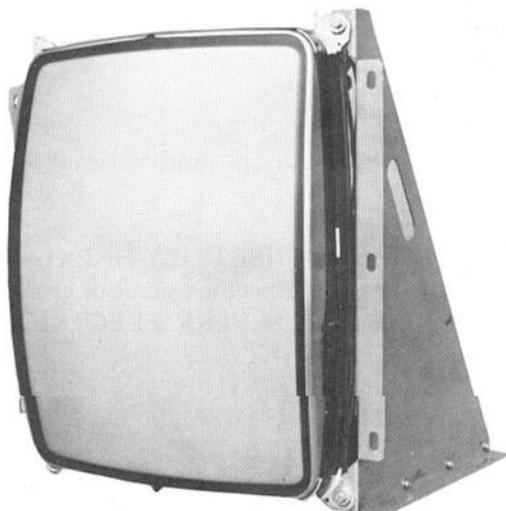
FRONT



REAR

20.406" (W) x 17.716" (D) x 14.281"(H) FOR KGR-H. TYPE

V-TYPE DIMENSIONS



FRONT



REAR

16.562" (W) x 17.716" (D) x 18.218" (H) FOR KGR-V. TYPE

WARNINGS AND CAUTIONS

A. BEFORE YOU START

You should never attempt to work on a monitor chassis if you are not familiar with servicing procedures and precautions necessary for high-voltage equipment. Any television or monitor has three sources of possible danger:

- * Strong electric shock due to high voltage or unisolated AC line voltages.
- * X-ray radiation, and
- * implosion.

Therefore, please read this chapter carefully.

You should NEVER ATTEMPT to modify any circuit in this monitor. You should do service work only after you are thoroughly familiar with all of the warnings and safety measures printed in this chapter.

WARNINGS

HIGH VOLTAGE

This monitor contains high voltages capable of delivering lethal quantities of energy. To avoid danger, do not attempt to service the chassis until you have observed all precautions necessary for working on high-voltage equipment.

X-RADIATION

This chassis has been designed for minimum X-radiation hazard. However, to avoid possible exposure to soft X-radiation, it is imperative that you NEVER modify the high-voltage circuitry.

IMPLOSION HAZARD

If you drop the monitor and the picture tube breaks, IT WILL IMPLODE! Shattered glass and the yoke can fly 6 feet or more from the implosion. Use care when replacing any monitor.

B. SAFETY MEASURES

Develop good safety habits, so when you're rushed with repair work, you'll still automatically take precautions.

A good practice when working on any monitor is to first ground the chassis and USE ONLY ONE HAND when testing circuitry. This will avoid the possibility of carelessly putting one hand on the chassis or ground, and the other on an electrical connection. DOING SO COULD CAUSE A SEVERE ELECTRICAL SHOCK.

To prevent fire or shock hazard, NEVER EXPOSE THIS MONITOR TO RAIN OR MOISTURE. Also check periodically for frayed insulation on wires.

If you need to service the monitor, observe the original lead dress (routing and length of harness wires). Use extra precaution in the high-voltage circuitry area of the monitor. Whenever a short circuit occurs, replace those components that indicate they have overheated.

C. PICTURE-TUBE HANDLING

Use extreme care when handling the picture tube since rough handling may cause it to implode, due to a vacuum inside. Do not nick or scratch the glass or subject it to any undue pressure when removing or installing it.

Wear safety goggles and heavy gloves for protection when handling the picture tube. Keep others without safety goggles away. Never lift the tube by its neck.

Discharge the high voltage in the picture tube by shorting the anode connection to chassis ground--NOT THE CABINET OR OTHER MOUNTING PARTS. When discharging, go from ground to anode, and use a well insulated piece of wire.

D. COMPONENT REPLACING

It is important for you to maintain the specified values of all components in the high-voltage circuits, and anywhere else in the monitor that could cause a rise in high voltage, or in operating supply voltages.

Refer to the parts lists in the back of this manual and use ONLY EXACT REPLACEMENT PARTS, especially for the picture tube, semiconductors, transformers, coils and fuses.

E. FINAL TESTING

Before installing the color monitor you must check the following:

1. Inspect all harness wiring on the monitor, and be sure none of it is pinched between the chassis and other metal parts in the monitor.
2. Replace all protective devices such as insulating fishpaper, compartment covers and shields.

SPECIFICATIONS

A. INPUTS

1. INPUT VOLTAGE
120 volts AC 60Hz (KGR-1901)
120 volts AC 47~63 Hz (KGR-1902)
2. INPUT VOLTAGE RANGE
102 VAC to 132 VAC
3. INPUT POWER AT 120V AC
55 watts typical
4. Input Pin Assignments for K PLUG

Pin No.	Description	Impedance	Signal Range
K1	Red input	5K nom	0 to 4V
K2	Green input	5K nom.	0 to 4V
K3	Blue input	5K nom.	0 to 4V
K4	Ground		
K5-Positive	Vertical sync pulse	35K nom.	+ 2V to + 4V
K6-Positive	Horizontal sync pulse	35K nom.	+ 2V to + 4V
I1	Ground		
I2-Negative	Vertical sync pulse	5K nom.	- 2V to - 4V
I3-Negative	Horizontal sync pulse	5K nom.	- 2V to - 4V

B.BANDWIDTH

5.5MHz at -3dB point

C.HIGH VOLTAGE

25.5KV typical at 120V AC and (0) zero beam.

D.CONTROLS

See "adjustable controls"

E.OPERATING TEMPERATURES AND HUMIDITY

Ambient temperature: 0 to 55°C. (32 to 131°F.).

ADJUSTABLE CONTROLS

Remember to observe the precautions regarding high voltages when you make adjustments on this monitor!

To make the following adjustments, keep the game in the attract or play mode. Note that before you adjust the brightness, the monitor should be turned on for at least 5 minutes.

A. FOCUS

This control changes the sharpness of the screen image. Turn this control until you get the optimum screen sharpness possible.

B. SET UP CONTROLS

- 1: Adjust R707 for B = 110V DC
- 2: Vertical Linearity, R522
- 3: Vertical hold control, R503
- 4: Horizontal Frequency control, R608
- 5: Vertical Height control, R515
- 6: Vertical centering tabs, 3 positions
- 7: Horizontal centering tabs, 3 positions
- 8: CRT bias controls (See fig. 3)
 - Red bias, R873
 - Green bias, R872
 - Blue bias R874
- 9: Video drive controls (See fig. 3)
 - Red drive, R867
 - Blue drive, R868
- 10: Horizontal width coil, L602
- 11: Focus control, F601
- 12: Screen Control (See P. 93.2)

C. HIGH VOLTAGE HOLD DOWN CIRCUIT ADJUSTMENT

"HIGH VOLTAGE HOLD DOWN CIRCUIT ADJUSTMENT WARNING"

The high voltage hold down circuit is used to malfunction the horizontal oscillation circuit and cut off high voltage, if the HV at 1100 uA beam current (including CRT beam current and focus current) reaches between 28.5 KV and 30.5 KV Serviceman should check if the hold down circuit acts in the specified voltage range as follows:

- 1: Connect the HV meter (HV range 40KV) to CRT anode.
- 2: Connect a voltmeter across R626, ie: between TP601 & TP602.
- 3: Parallel a 100K ohms variable resistor with R706.
- 4: Rotate screen control fully clockwise (ie: beam current is maximum).
- 5: Turn on the set with power input voltage 120V AC.
- 6: Adjust the external VR to slowly increase B+ with the voltage across R626 keeping at 1.1V (it means the beam current is 1100uA) by rotating screen control until the HV suddenly comes down to zero.
- 7: Check the hold down HV. If it is less than 28.5KV, turn off the set and remove R619 (330 ohms), then repeat steps 6 and 7 to make sure the hold down HV is in the specified range.
- 8: If the hold down HV is higher than 30.5KV, turn off the set and replace R619 with a higher resistance (large than 330).

REPLACEMENT OF MAJOR ASSEMBLIES

Tools required to replace all assemblies Covered in This Chapter: 7/16 inch hex socket wrenches and a Phillips-head torque wrench.

A. PICTURE-TUBE REPLACEMENT

- 1: Discharge the high voltage from the tube. Remove the large high-voltage connector (anode wire) near the top of the picture tube. Unplug the neck board at the rear of picture tube.
- 2: Unplug the 5-pin connector on the Deflection Coil.
- 3: Using a 7/16 inch phillips-head torque wrench, remove the four screws that hold the picture tube in the steel frame. Carefully remove the tube by pulling it out toward the front.
- 4: **IMPORTANT:** Note that after replacing a picture tube you will have to re-converge the picture and readjust the grey-level tracking. These adjustment procedures are covered in service set-up procedure of this manual.

B. YOKE REPLACEMENT

- 1: Discharge the high voltage from the tube. Unplug the neck board at rear of picture tube.
- 2: With a 1/4 inch phillips-head torque wrench and your fingers, loosen the screws that tighten the two neck clamps around the picture-tube neck.
- 3: Now slide the magnet assembly, then the yoke assembly off the end of the picture tube.
- 4: **IMPORTANT:** Note that after replacing a yoke, you will have to re-converge the picture. This adjustment procedure is covered in service set-up procedure.

C. POWER TRANSISTOR REPLACEMENT

When replacing any of the power transistors, observe the following precautions:

- 1: Hold the insulated transistor socket in its proper location. It is not "captive" or mounted onto the metal chassis; instead, the transistor's mounting screws secure the socket.
- 2: Apply silicone grease evenly to both sides of the mica insulator when replacing an output transistor.
- 3: Make sure that the transistor mounting screws are tight before applying power to the monitor. This insures proper cooling and electrical connections. Use a Phillips torque wrench and torque the mounting screws 7 to 10 inch-lbs. NO MORE. Excessive pressure will strip the threads, causing a poor electrical and mechanical connection.

SERVICE SET-UP PROCEDURE

NOTE: All monitors are equipped with automatic degaussing coils which effectively demagnetize the picture tube each time the monitor is turned on. The degaussing coils will operate any time the set is turned on after having been off for at least five minutes.

The degaussing effect is confined to the picture tube since the coils are mounted on the ferrous tube shield. Should any part of the chassis or cabinet become magnetized, it will be necessary to degauss the affected area by means of a manual degaussing coil. Move the coil slowly around the CRT face area, then slowly withdraw for a distance of six feet before disconnecting the coil from the AC power supply.

Normally little, if any adjustment should be necessary. However, when a picture tube, yoke or similar component is replaced, preliminary static convergence should be done before attempting purity adjustment, and so on.

Set up should be done in a north/south direction. Horizontal and vertical centering taps should be set to the centre position if a major component has been changed.

1.0 Purity

- 1.1 Loosen yoke retaining clamp SCREW (Fig. 2), remove adhesive material fixing wedges to CRT. Remove wedges completely and clean off dried adhesive from picture tube and wedges.
- 1.2 Loosen looking ring and remove wedges.
- 1.3 Connect appropriate signal source, eg: LEADER LCG-396 generator producing a raster field.
- 1.4 Turn off the green field and adjust setup controls to produce a magenta field. (See Fig. 3).
- 1.5 Pull the deflection yoke back so that a magenta band appears in the centre of the screen.
- 1.6 Spread the tabs apart as little as necessary and rotate both rings together to center the magenta band horizontally on the face of the CRT (approximate) (See Fig. 4).
- 1.7 Slide the yoke towards the bell of the picture tube slowly to obtain a uniform magenta field (pure in Fig. 5 color) across the entire tube face. Jiggle back and forth slightly as necessary. Lightly tighten yoke retaining clamp.
- 1.8 Momentarily switch on a cross-hatch signal and rotate yoke to level the pattern on the face of CRT.
- 1.9 Return generator to regain magenta..
- 1.10 Turn off red and blue fields and check for pure field for the green and blue field. Reposition yoke if necessary to obtain optimum purity on all fields.
- 1.11 Tighten yoke retaining clamp to prevent yoke shift or rotation. (Do not install wedges at this time.)

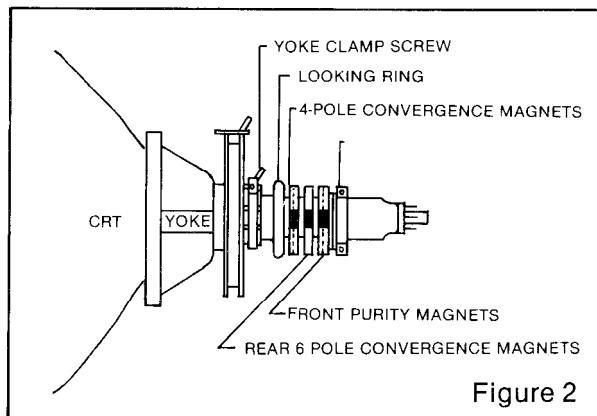


Figure 2

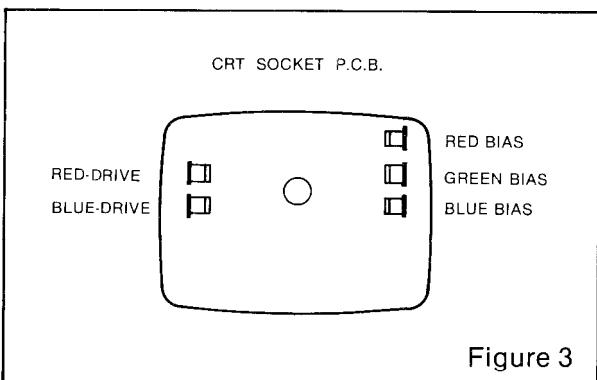
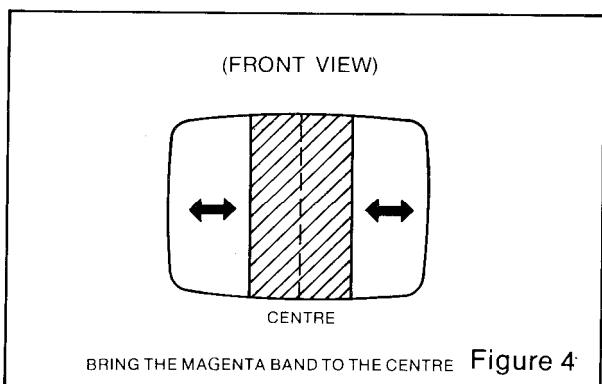


Figure 3



BRING THE MAGENTA BAND TO THE CENTRE Figure 4

2.0 Static and Dynamic Convergence

NOTE: Static convergence is achieved by four magnets located on the neck, nearest the base of the picture tube, Fig 2. The front pair of magnetic rings are adjusted to converge the blue and red crosshatch lines. The middle pair of convergence rings (closest to the base of the picture tube) are adjusted to converge the magenta to the green crosshatch lines. Dynamic convergence is achieved by tilting the deflection yoke up-down and left-right.

- 2.1 Ensure that the controls misadjusted during purity setup (screen, cut-off, etc.) are set to give white balance. See 3.0 below.
- 2.2 Assume half position of the RED-DRIVE AND BLUE -DRIVE controls.
- 2.3 Switch generator to the crosshatch pattern.
- 2.4 Turn off green input and turn on the red and blue input.
- 2.5 Rotate the 4-pole (front) pair of magnets as a unit to minimize separation of the red and blue crosshatch lines around the center of the screen (Fig. 6) Variation of the angle between the tabs adjusts convergence of red and blue.
- 2.6 Rotate the 6-pole (middle) pair of magnets as a unit to minimize separation of the magenta and green lines (Fig 7). Vary angle between the two tabs and further rotate as a unit to finalize.
- 2.7 Adjust convergence around the edges of the picture tube by tilting the yoke up-down and left-right to converge RED, GREEN, BLUE Lines (In Fig. 8)
- 2.8 When convergence of 3 colors is optimized apply stripe of paint to convergence magnet rings to prevent movement. If applicable, tighten locking ring carefully.
- 2.9 Tilt yoke in up-down and left-right direction for best circumference convergence and install 3 wedges (3.7.11) clock direction. Simply pull off tape, slide wedge in place and press outer flap down firmly. For more permanency apply small quantity of silastic or similar material at junction of wedges and picture tube. Do not disturb while material is setting.
- 3.0 White Balance (Grey Scale Tracking)**
Refer to figure 3. Do the following in subdued light:
- 3.1 Note this adjustment can be accomplished with no signal connected; eg: input connector open or if a signal generator is connected, switch off all inputs at signal of the generator.
- 3.2 Set red and blue drive controls to their mechanical center and turn the common screen control and 3 Bias controls to minimum (fully counterclockwise). then rotate screen control clockwise until a dim raster of one pronounced color. (RED, GREEN, BLUE) is obtained.
- 3.3 Slowly turn up the other two color Bias controls in turn to white color.
- 3.4 Slowly turn screen (counterclockwise) until appear the faintest grey (screen cut-off point).
- 3.5 Turn on the signal generator with all inputs on. (a crosshatch pattern would be appropriate).
- 3.6 Adjust the red and blue drive controls for "neutral white" on high white picture areas. Generally these controls will be left at mech. centre.

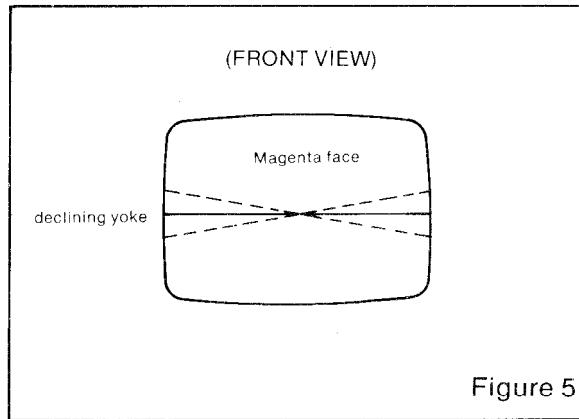


Figure 5

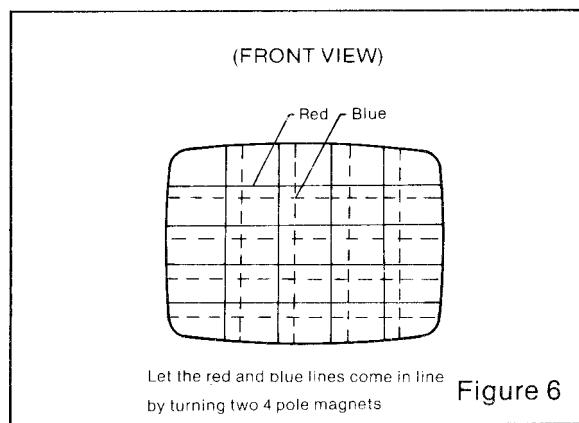


Figure 6

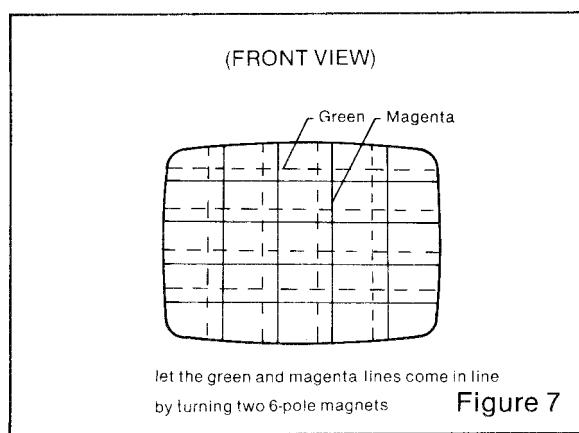


Figure 7

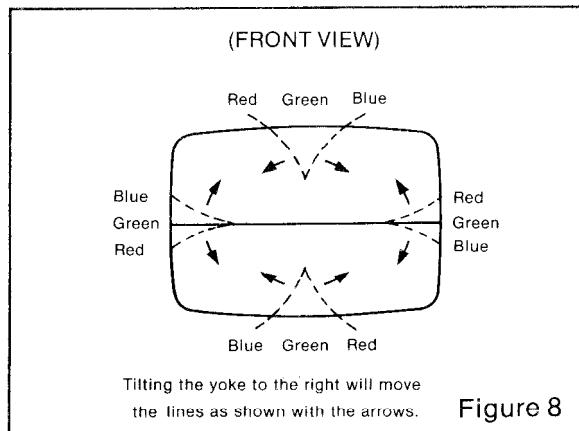


Figure 8

- 3.7 Note: When monitor is re-connected with the game the screen control may require a slight adjustment to obtain proper black level. (the black portion of picture just extinguished).

4.0 Power Supply

The regulated +B control (R707) has been factory adjusted and normally requires no adjustment. However, if any repairs have been made to the chassis it is recommended that this adjustment should be made.

- Allow 5 minutes to warm up.
- No signal applied.
- Connect an accurate D.C. voltmeter to R612.
- Adjust R707 and test point for 110V, and ensure R513-89.2V.

Note:

Should +B1 control be set too high, it may cause possible component damage. Use an accurate D.C. Voltmeter to set B1 (B+).

5.0 Focus

Adjust focus control for best overall definition and picture detail an average signal applied. (Highlights should be favoured.)

6.0 Circuit diagram and Description of High Voltage Hold Down or Safety Circuit

- Circuit Diagram in Fig 9.
 - The high voltage hold down circuit is used to malfunction the horizontal oscillation circuit and cut off high voltage, If the HV at 1100 μ A beam current (including CRT beam current and focus current) reaches between 28.5KV and 30.5KV, serviceman should check if the hold down circuit acts in the specified voltage range as follows.
- Receive cross hatch pattern.
 - Connect the HV meter (HV Range 40KV) to CRT Anode.
 - Connect a voltmeter across R626, i.e between TP601 and TP602.
 - Parallel a 20K ohms variable resistor with TP701 (R707).
 - Rotate SCREEN VR fully clockwise (i.e beam current is maximum).
 - Turn on the set with power input voltage 120V AC.
 - Adjust 20K ohms variable slowly increase B+ with the voltage across R626 keeping at 1.1V (1100 μ A) by rotating SCREEN control until the HV suddenly comes down to zero record this hold down HV.
 - Check the hold down H.V. if it is between 28.5KV and 30.5KV.

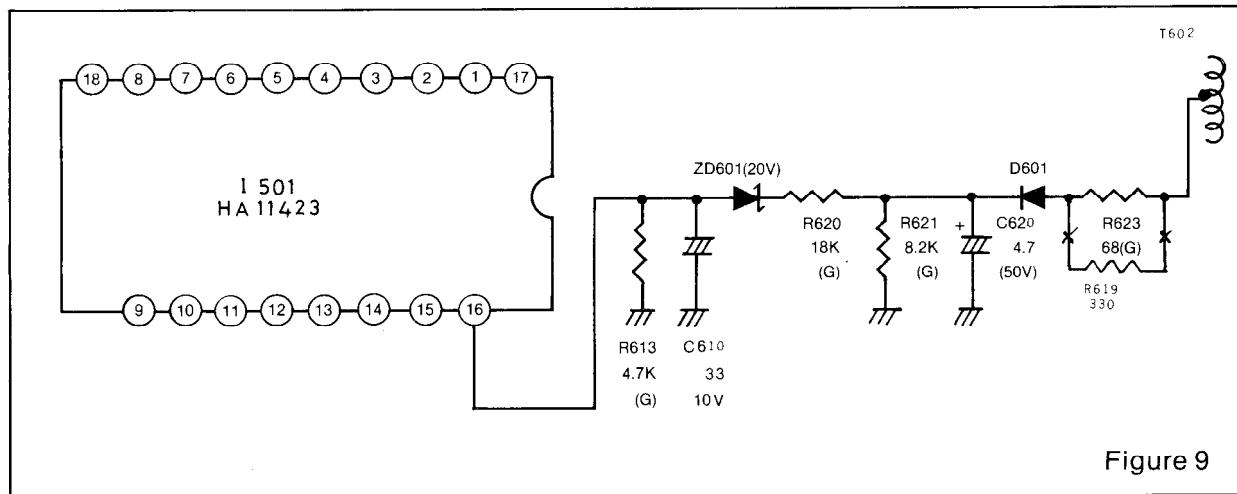
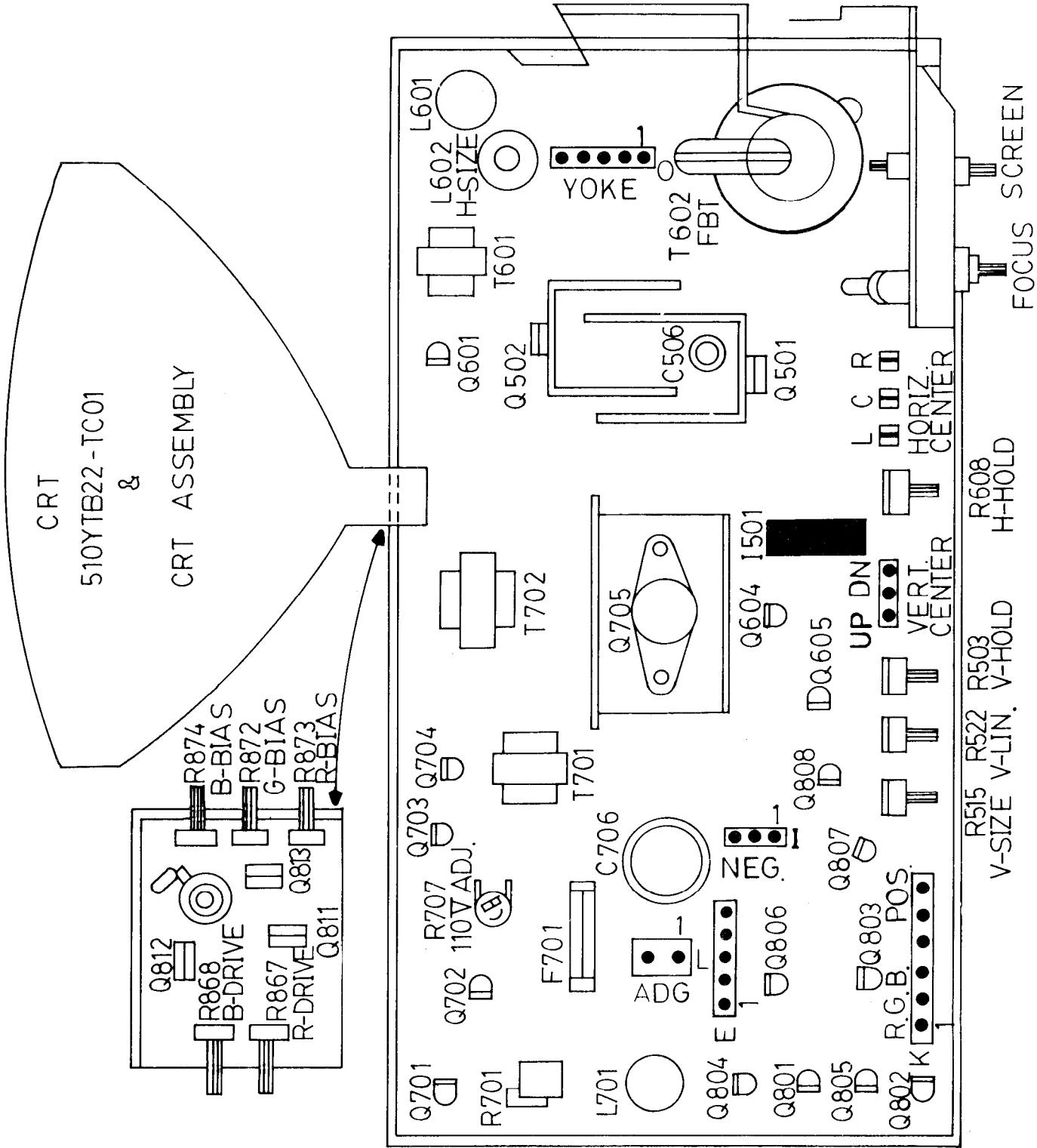
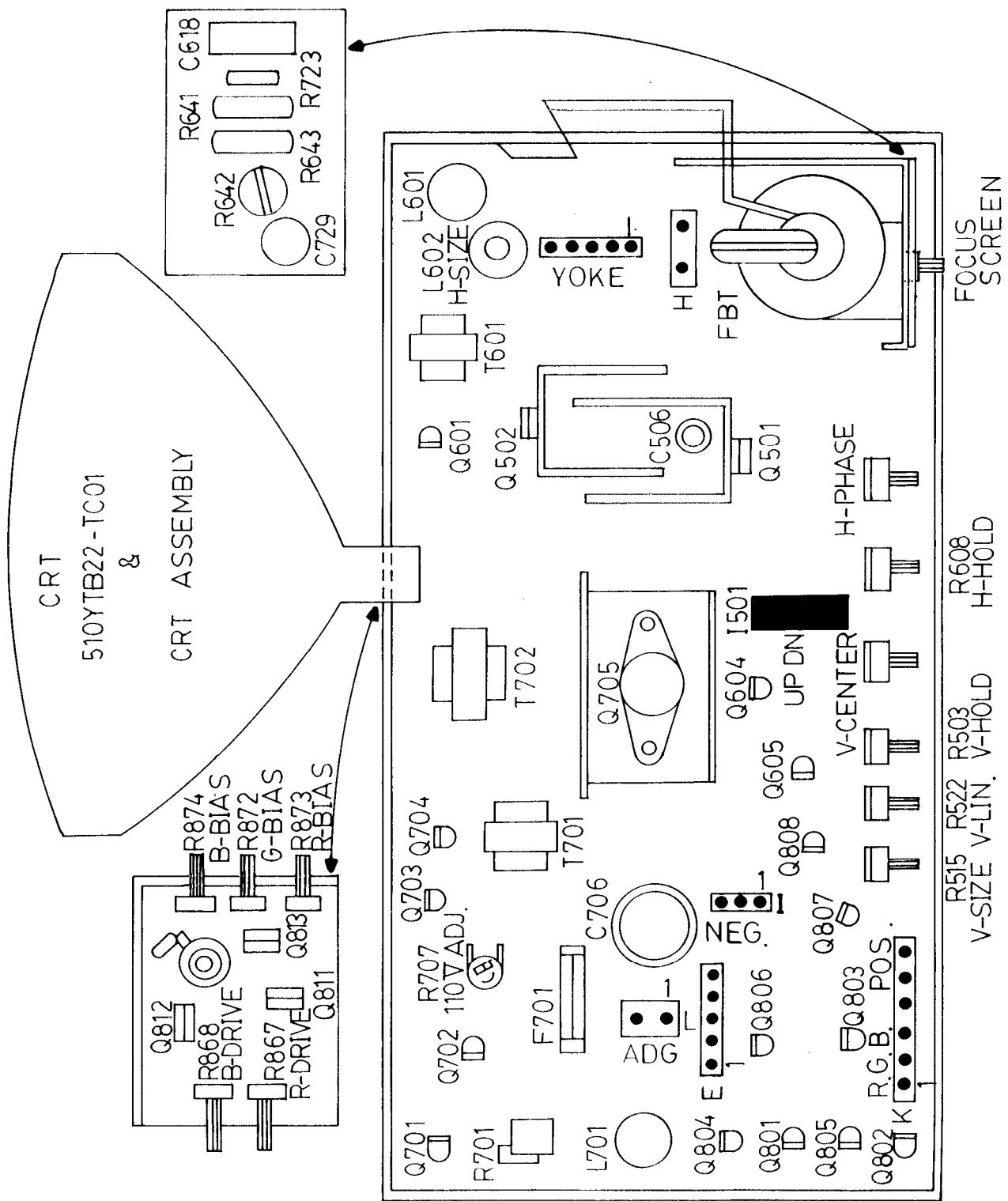


Figure 9

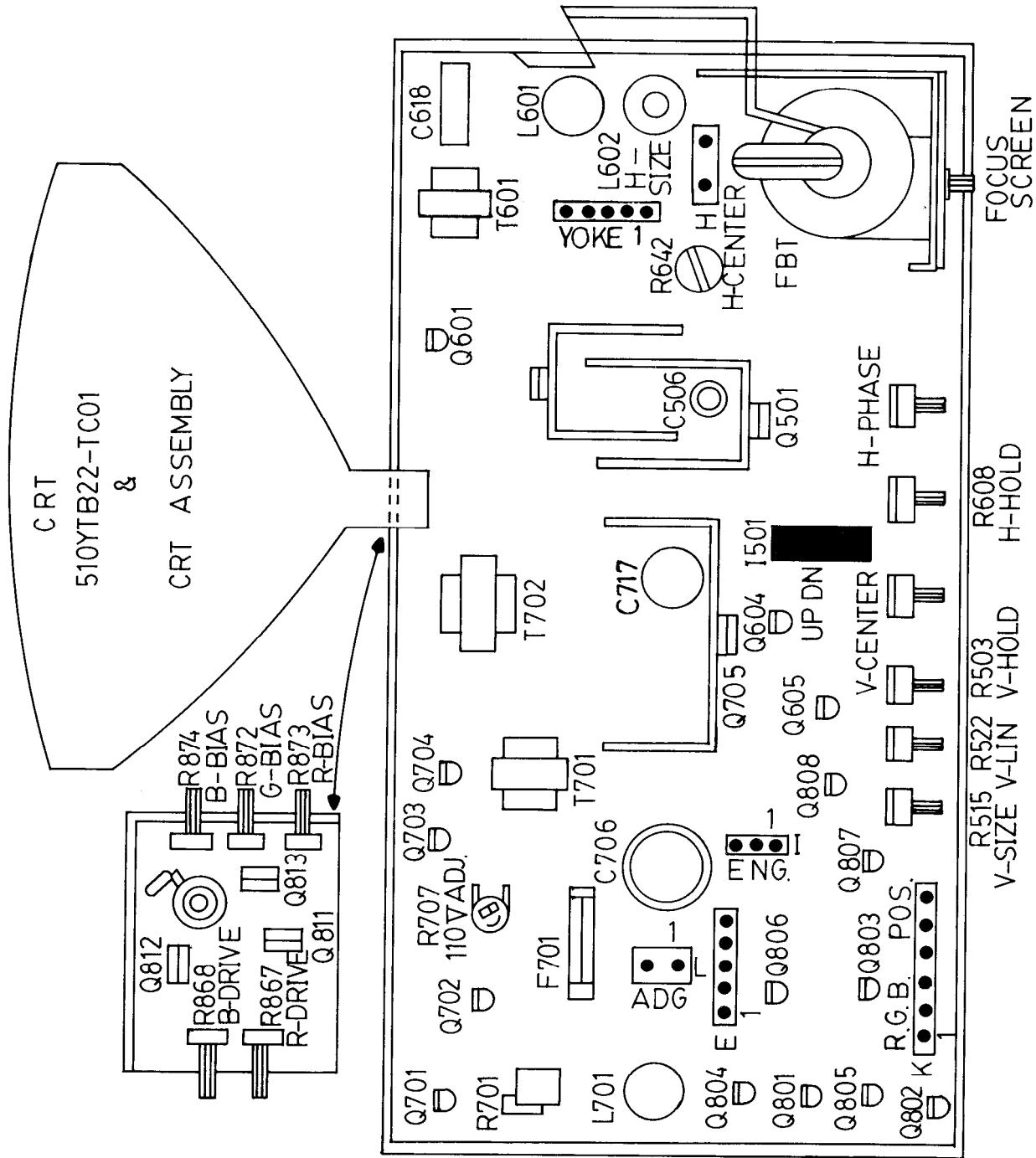
LAYOUT FOR KGR-1901.



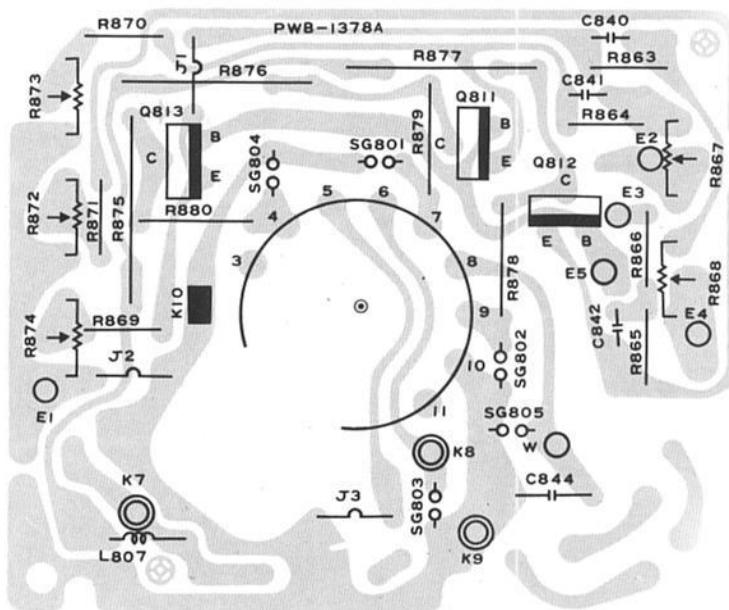
LAYOUT FOR KGR-1902.



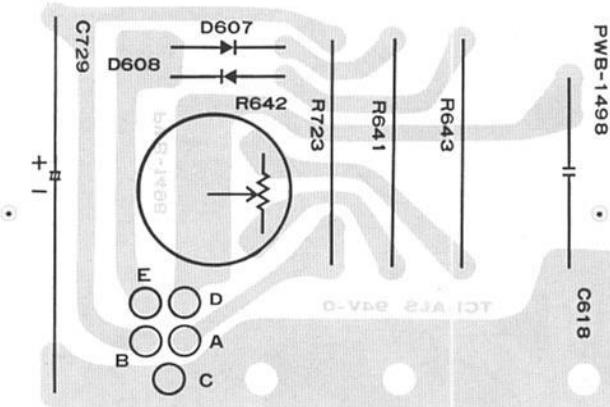
LAYOUT FOR KGR-1903



CRT PCB COMPONENT LAYOUT



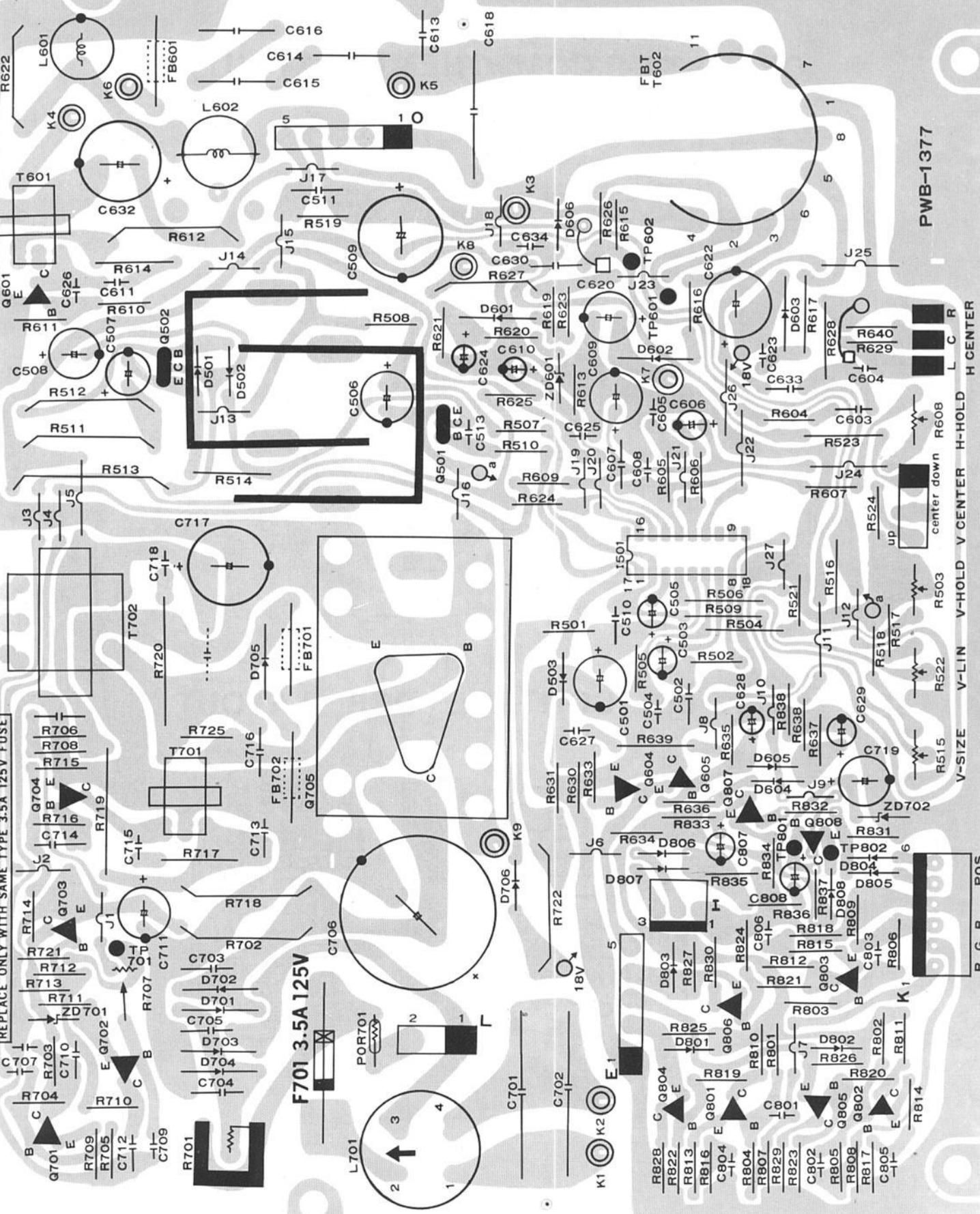
H-CENTER CONTROL PCB LAYOUT



MAIN P.C.B. COMPONENT LAYOUT

CAUTION FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH SAME TYPE 3.5A 125V FUSE

CAUTION FOR CONTINUED PROTECTION AGAIN
REPLACE ONLY WITH SAME TYPE 3.5A 125V FUSE



PWB-1377

PWB-1377

center down R608

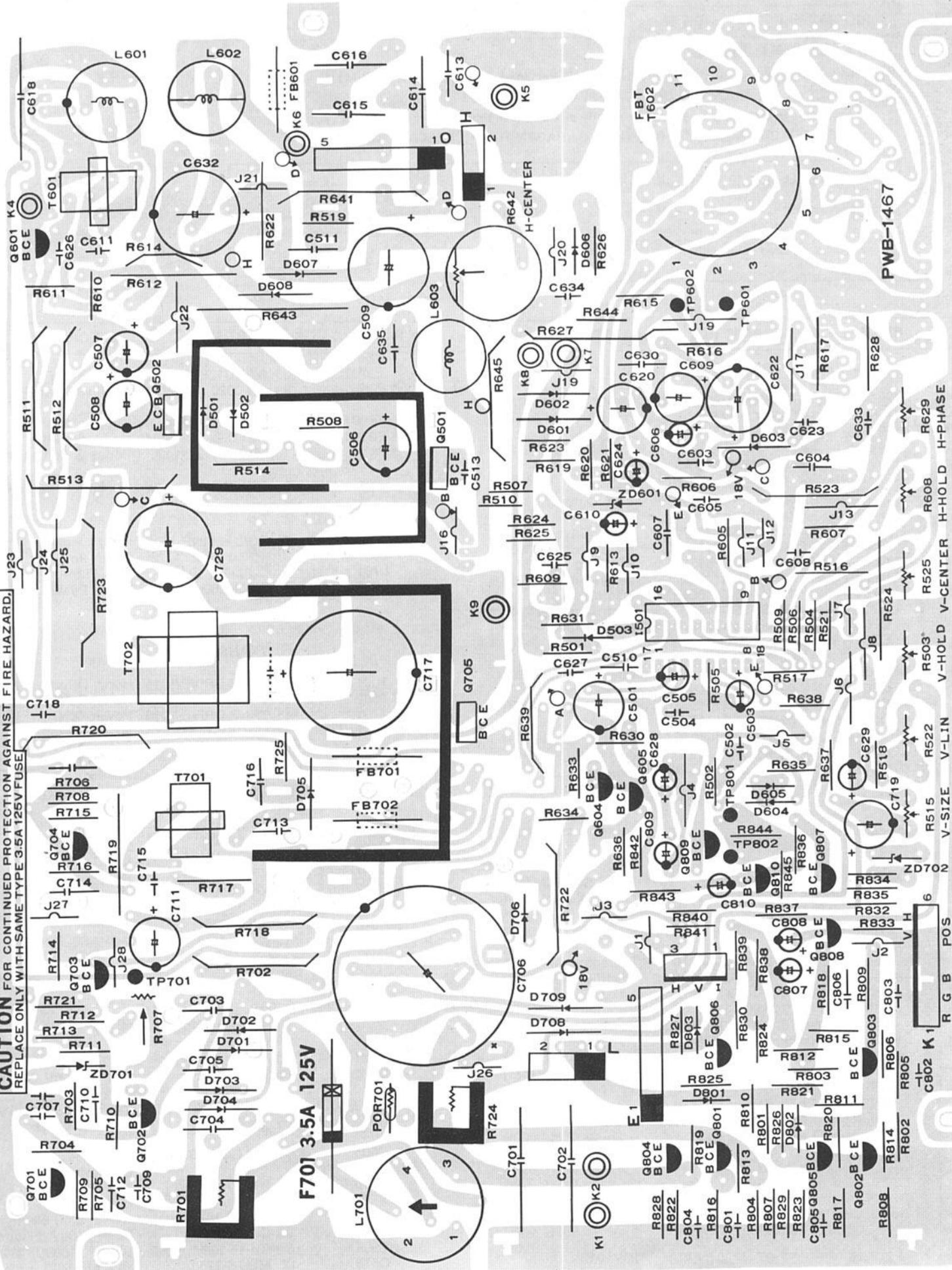
L_C_R

V-LIN V-HOLD V CENTER H-HOLD H CENTER

R515 R522 R503

MAIN P.C.B. COMPONENT LAYOUT

CAUTION FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH SAME TYPE 3.5A 125V FUSE.



PARTS LIST

(CG-19A, CG-19B, CG-19C)

REPLACEMENT PARTS LIST

It is recommended to use genuine factory SAMPO replacement parts to assure fine performance

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly please furnish the following informations

1. MODEL NUMBER
2. REF NO.
3. PART NO.
4. DESCRIPTION

"CRITICAL COMPONENT WARNING":

These critical components that are shaded on the schematic diagram and lettered in the parts list are used to prevent shock, fire hazard and excessive X radiation. All these special components must be replaced only with the same type identical to those in the schematic diagram and parts list.

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
PICTURE TUBE					
★ CRT	10 CRT-510YTB22 -TC01 (P)	Includ Deflection Yoke & Static Conv. Assembly	ZD702 ★ POR701 FB601 ★ FB701,FB702 ★ F601	03 SZ-RD12EB(AU) 43 SQ-0020 28 BEAD-CORE-1004 28 BEAD-CORE-1004 14 VRB-R-1137	12V, 400mw Positive Coef, Thermistor (ADG) Harmonic Filter Harmonic Filter Focus & Screen
TRANSISTORS					
Q501,Q502	55 ST-2SD401AK / 13 ST-2SC2073 SO	Vert. Output	L601	23 COIL-H-LINE-1006	Horiz Linearity
Q601	05 ST-2SC2482	Horiz. Driver	L602	30 COIL-H-SIZE-1012	Width Size
Q602	72 ST-2SD900B	Horiz. Output	L701	14 COIL-FIL-1019	Line Filter
Q604	02 ST-2SC1815Y	Blanking	L807	75 PLKA-680K	Shunt Peaking 68/ μ H
Q605	22 ST-2SA1015O	Beam Limiter			
Q701	16 ST-2SC945Q/R	Invertor			
Q702	70 ST-2SC945Q	Error Amplifier			
Q703	31 ST-2SA733Q/R	Pulse Shaper			
Q704	05 ST-2SC2482 66 ST-2SC1514BK	Power Driver			
★ Q705	68 ST-2SD819	Power Output	T601	48 TRNS-DRIVE-1016	Horiz. Driver
Q801-Q803	02 ST-2SC1815Y	Video Amplifier	★ T602	73 TRNS-FB-3008	Horiz. Output
Q804-Q806	22 ST-2SA1015O	Video Amplifier	★ T701	48 TRNS-DRIVE-1016	Power Driver
Q807-Q808	02 ST-2SC1815Y/ 22 ST-2SC1015 O	Invertor	T702	67 CHOKE-RF-1013	HF Choker
Q811	76 ST-2SC1514-15	Red Output			
Q812	76 ST-2SC1514-15	Green Output			
Q813	76 ST-2SC1514-15	Blue Output			
INTEGRATED CIRCUIT					
★ I501	57 SI-HA11423	Vert OSC & Drive, Horiz. OSC & X-RAY Limiter	R503 ★ R707 R867-R868 R872-R874 R525 R642 R629	86 VR-SF-1019 36 VR-SF-1049A 85 VR-SF-453 14 VR-SF-452 86 VR-SF-1019 23 VR-R-1012 86 VR-SF-1019	V-HOLD 10KB V-SIZE 100 Ω V-Linear 100 Ω H-HOLD 5KB 1KB 300 Ω B 5K Ω B V-center, 10K H-center, 300 ohm H-PHASE, 10K
DIODES					
D501-D503	76 SD-IN4148(AU)	Protector			
★ D601-D603	57 RECT-SI-1021(AU)	Rectifier + 20V			
D604-D605	76 SD-IN4148(AU)				
D606	07 RECT-SI-1058	Rectifier			
D607	76 SD-IN4148(AU)				
★ D701-D704	07 SD-IS1887(AU)	Power Rectifier			
★ D705	57 RECT-SI-1021(AU)	Damper	C501	13 CU-1.6-471Y	4 70 μ F, 16V, Electrolytic
D706	64 RECT-SI-1001(AU)	Protector	C502	02 ML-5-225K	.022 μ F, 50V, \pm 10%, Polyester
D801-D807	76 SD-IN4148(AU)		C503,C606	29 CU-5-103H(AU)	1 μ F, 50V, Electrolytic
D503	76 SD-IN4148(AU)		C504	85 ML-5-105K	.01 μ F, 50V, \pm 10%, Polyester
D708, D709	59 SD-1S1887	positive coef thermister	C505	09 DTLL-3.5-103K	1 μ F, 35V, \pm 10%, Electrolytic
D607, 608	49 RECT-SI-154	H-center	C506	47 KU-5-102K	10 μ F, 50V, \pm 10%, Electrolytic
ZENER DIODES AND OTHER PARTS					
★ ZD601	32 SZ-HZ20-04(AU)	20V, 0.5W	C507	77 CU-6.3-102Y	10 μ F, 63V, Electrolytic
★ ZD701	58 SZ-RD6.2EB3	6.2V, 0.5W	C508	32 CU-10-222Y	22 μ F, 100V, Electrolytic
			C509	65 CU-16-101Y	100 μ F, 160V, Electrolytic
			C510	05 MLO-5-225J	.022 μ F, 50V, \pm 5%, Polyester

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
C511	06 PFA-20-155K	.015 μ F, 200V, \pm 10%, Polypro	C804-C806	83 DSL-5-688J(AU)	68PF, 50V, \pm 5%, Discap
C513	75 DSL-5-227J(AU)	220PF, 50V, \pm 5%, Discap	C807	79 CU-5-102Y	1.0PF, 50V, Electrolytic
C601	81 CU-5-103H	1 μ F, 50V, Electrolytic	C840-C842	31 DX-5-156K	1500PF, 50V, \pm 10%, Discap
C602	52 D-5-477K(AU)	470PF, 50V, \pm 10%, Discap	C844	55 D-1.4K-105P	.01 μ F, 1.4KV, 0— + 100%, Discap
C603	30 ML-5-104J	.1 μ F, 50V, \pm 5%, Polyester	C809, C810	81 CU-5-103H	1 μ F, 50V, Electrolytic
C604	62 DSL-5-828J(AU)	82PF, 50V, \pm 5%, Discap	C712	85 ML-5-105J	.01 μ F, 50V, Electrolytic
C605	02 O-5-686M(AU)	6800PF, 50V, \pm 20%, Discap	RESISTORS		
C606	33 CU-5-103H(AU)	1 μ F, 50V, Electrolytic	R511, R512	88 2PHU-152J-H	1.5K ohm, 2W, 5%, Oxide Film
C607	52 PFA-63-476J	.0047 μ F, 630V, \pm 5%, Polypro	R513	62 3PHU-271J-H	270 ohm, 3W, 5%, Oxide Film
C608	87 ML-5-106J	.001 μ F, 50V, \pm 5%, Polyester	R612	48 2PHU-182J-H	1.8K ohm, 2W, 5%, Oxide Film
C609	43 CU-5-472J	47 μ F, 50V, Electrolytic	R622	44 1PHU-561J-H	560 ohm, 1W, 5%, Oxide Film
★ C610	54 CU-1-332Y	33 μ F, 10V, Electrolytic	★ R627	82 2PLU-1R5J-H	1.5 ohm, 2W, 5%, Oxide Film
C611	17 D-50-687K(AU)	680PF, 500V, \pm 10%, Discap	★ R613	44 $\frac{1}{4}$ P-472G	Carbon Dilm 4.7K ohm, $\frac{1}{4}$ W, 2%, Carbon Film
★ C613	65 DK-2K-337K	330PF, 2KV, \pm 10%, Discap	★ R619	50 $\frac{1}{4}$ P-121G	120 ohm $\frac{1}{4}$ W, 2%, Carbon Film
★ C614, C615	10 PFB-63-225J	.022 μ F, 630V, \pm 5%, Polypro	★ R619	38 $\frac{1}{4}$ P-331J	330 ohm, $\frac{1}{4}$ W, 5%, Carbon Film
★ C616	09 PFB-63-275J	.027 μ F, 630V, \pm 5%, Polypro	★ R620	50 $\frac{1}{4}$ P-183G	18K ohm, $\frac{1}{4}$ W, 2%, Carbon Film
C618	01 PFC-40-394J	.39 μ F, 400V, \pm 5%, Polypro	★ R621	66 $\frac{1}{4}$ P-822G	8.2K ohm, $\frac{1}{4}$ W, 2%, Carbon Film
C620	83 CU-25-473H	4.7 μ F, 250V, Electrolytic	★ R623	61 $\frac{1}{4}$ P-680G(AU)	68 ohm, $\frac{1}{4}$ W, 2%, Carbon Film
C622	17 CU-2.5-471Y	470 μ F, 25V, Electrolytic	★ R701	53 10LCU-5ROK-W	5 ohm, 10W, 10%, Cement
C623	76 D-50-226K(AU)	2200PF, 500V, \pm 10%, Discap	R702	32 2PHU-273J-H	27K ohm, 2W, 5%, Oxide Film
★ C624	82 CU-5-473H	4.7 μ F, 50V, Electrolytic	R718	76 2PHU-333J-H	33K ohm, 2W, 5%, Oxide Film
C625	55 D-50-477K(AU)	470PF, 500V, \pm 10%, Discap	R719	75 2PHU-682J-H	6.8K ohm, 2W, 5%, Oxide, Film
C626	02 DSL-50-108D(AU)	10PF, 500V, \pm 0.5PF, Discap	★ R720	03 2PHU-332J-H	3.3K ohm, 2W, 5%, Oxide Film
C627	48 DSL-50-398K(AU)	3900 μ F, 500V, \pm 10%, Polyester	R722	81 1PHU-560J-H	56 ohm, 1W, 5%, Oxide Film
C628, C808	79 CU-5-102Y(AU)	10 μ F, 50V, Electrolytic	R875-R877	07 2PHU-103J-H	10K ohm, 2W, 5%, Oxide Film
C629	61 CU-5-333H	3.3 μ F, 50V, Electrolytic	★ R617	05 $\frac{1}{2}$ FRNL-1ROJ	1 ohm, $\frac{1}{2}$ W, 5%
C630	33 PFA-20-475J	.047 μ F, 200V, \pm 5%, Polypro	★ R706, R708	29 $\frac{1}{4}$ P-124G	120K ohm, $\frac{1}{4}$ W, 2%, Carbon Film
C632	48 CU-16-472Y	47 μ F, 100V, Electrolytic	★ R721	44 $\frac{1}{4}$ P-472G	4.7K ohm, $\frac{1}{4}$ W, 2%, 2.2K ohm, 1/4W, 5%, Cabron Film
C633	66 ML-5-685J	.068 μ F, 50V, \pm 5%, Polyester	R509, R711	85 1/4P-222J(AU)	
C634	76 D-50-226K	2200PF, 500V, \pm 10%, Discap	R714, R716		
★ C702	73 MPFK-12.5-104K-U/C	.1 μ F, UL Specy AC 125V Nonpolar	R822- R824		
★ C703-C705	09 MPF-12.5-104M-UL		R832, R833		
	62 DX-50-105M	.01 μ F, 500V, \pm 20%, Discap	R630	13 1/4P-182J(AU)	
C707	35 DX-5-106Z	1000PF, 50V, -20%— + 80% Discap	R504	15 1/4P-272J(AU)	1.8K ohm, 1/4W, 5%, Carbon Film
C709	20 D-5-687K(AU)	680PF, 50V, \pm 10%, Discap	R721	44 $\frac{1}{4}$ P-472G	2.7K ohm, 1/4W, 5%, Carbon Film
C710	66 D-5-476K(AU)	4700PF, 50V, \pm 10%, Discap	R510, R711	85 1/4P-222J(AU)	3.3K ohm, 1/4W, 5%, Carbon Film
C711, C719	16 CU-2.5-101Y	100 μ F, 25V, Electrolytic	R844	59 1/4P-332J(AU)	4.7K ohm, 1/4W, 2%, Carbon Film
C713	06 D-50-276K(AU)	2700PF, 500V, \pm 10%, Discap	R845	44 1/4P-472G(AU)	4.7K ohm, 1/4W, 5%, Carbon Film
C714	05 MLO-5-225J	.022 μ F, 50V, \pm 5%, Polyester	R613, R721	80 1/4P-472J(AU)	4.7K ohm, 1/4W, 5%, Carbon Film
C706	23 20L-470Y	470 μ F, 200V, Electrolytic	R624, R804	82 1/4P-562J(AU)	4.7K ohm, 1/4W, 5%, Carbon Film
C715	86 DX-50-227K	220PF, 500V, \pm 10%, Discap	R805, R806	82 1/4P-682J(AU)	4.7K ohm, 1/4W, 5%, Carbon Film
★ C716	29 PFA-63-106K	.001 μ F, 630V, \pm 10%, Polypro	R807-R809	83 1/4P-822J(AU)	5.6K ohm, 1/4W, 5%, Carbon Film
★ C717	04 16L-330Y-A	330 μ F, 160V, Electrolytic tang 5%	R838, R839	84 1/4P-103J(AU)	6.8K ohm, 1/4W, 5%, Carbon Film
★ C718	70 D-50-106K(AU)	1000PF, 500V, \pm 10%, Discap	R606, R710	85 1/4P-222J(AU)	8.2K ohm, 1/4W, 5%, Carbon Film
C729	69 CT-16-101 Y	100 μ F, 160V, decouple	R502, R505	86 1/4P-822J(AU)	
C801-C803	38 DSL-5-478J(AU)	47PF, 50V, \pm 5%, Discap	R507, R508		
			R521		

REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
R611	58 1/4P-681J(AU)	680 ohm, 1/4W, 5%, Carbon Film	R723	39 3PHU-101J-H	100 ohm, 3W, 5%, Oxide Film
R819-R821	29 1/4P-821J(AU)	820ohm, 1/4W, 5%, Carbon Film	R724	49 5Lcu-180J-W	18 ohm, 5W, 5%, Cement
R715	08 1/4P-122J(AU)	1.2K ohm, 1/4W, 5%, Carbon Film	R724	81 5LC-180J-W	18 ohm, 2W, 5%, Cement
R519	78 1/4P-102J(AU)	1.0K ohm, 1/4W, 5%, Carbon Film	R842, R843	39 1/4P-153J(AU)	15K ohm, 1/4W, 5%, Carbon Film
R840-R841	71 1/2P-332J(AU)	3.3K ohm, 1/2W, 5%, Carbon Film	R607, R635	63 1/4P-103J(AU)	10K ohm, 1/4W, 5%, Carbon Film
R626, R638	68 1/4P-820J(AU)	820 ohm, 1/4W, 5%, Carbon Film	R636, R703	R620	
R709,R834	71 1/4P-151J(AU)	150 ohm, 1/4W, 5 %, Carbon Film	R506, R637	69 1/4P-223J(AU)	22K ohm, 1/4W, 5%, Carbon Film
R816-R818	79 1/4P-102J(AU)	1.0K ohm, 1/4W, 5%, Carbon Film	R629	43 1/4P-333J(AU)	33K ohm, 1/4W, 5%, Carbon Film
R835	74 1PHU-153J-H	15K ohm, 1W, 5%, Oxide Film	R631	48 1/4P-393J(AU)	39K ohm, 1/4W, 5%, Carbon Film
R878-R880	14 1/4M-100K	10 ohm, 1/4W, 10%, Carbon Comp	R605	26 1/4P-683J(AU)	68K ohm, 1/4W, 5%, Carbon Film
R616	48 1PHU-822J-H	8.2K ohm, 1W, 5%, Oxide Film	R615	47 1/4p-104J(AU)	100 K ohm, 1/4W, 5%, Carbon Film
R523	07 2PHU-103J-H.	10K ohm, 2W, 5%, Oxide Film	★ R706, R708	29 1/4P-124G(AU)	120K ohm, 1/4W, 2%, Carbon Film
R875-R877	87 1/4PSF-102J	1.2K ohm, 1/4W, 5%, Carbon Film	R640, R713	65, 1/4P-124J(AU)	120K ohm, 1/4W, 5%, Carbon Film
R514	51 1/2P-546J(AU)	5.6 ohm, 1/2W, 5%, Carbon Film	R801-R803		
R516	07 1/2P-6R8J(AU)	6.8 ohm, 1/2W, 5%, Carbon Film			
R628	51 1/2P-153J(AU)	15K ohm, 1/2W, 5%, Carbon Film			
R717	71 1/2P-332J(AU)	3.3K ohm, 1/2W, 5%, Carbon Film			
R614, R524	54 1/2P-682J(AU)	6.8K ohm, 1/2W, 5%, Carbon Film	77 PWB-1377		Complete Circuit Except R, G, B Output
R725	68 1/4P-180J(AU)	18 ohm, 1/4W, 5%, Carbon Film	81 PWB-1378A		R.G.B. Output
R828-R830	21 1/4P-150J(AU)	15 ohm, 1/4W, 5%, Carbon Film	21 PWB-1498		Complete circuit Except R.G.B output
R501	08 1/4P-680J(AU)	68 ohm, 1/4W, 5%, Carbon Film	79 PWB-1467		Complete circuit Except R.G.B output
R813-R815	06 1/4P-101J(AU)	100 ohm, 1/4W, 5%, Carbon Film			
R510, R518	24 1/4P-121J(AU)	120 ohm, 1/4W, 5%, Carbon Film			
R604	75 1/4P-331J(AU)	330 ohm, 1/4W, 5%, Carbon Film			
R517	80 1/4P-391J(AU)	390 ohm, 1/4W, 5%, Carbon Film			
R609, R633	09 1/4P-561J(AU)	560 ohm, 1/4W, 5%, Carbon Film	80 LUG-1071		AUTOMATIC DEGAUSSING COIL FOR KGR 1901 H/V
R836-R837	48 1PHU-822J-H	8.2K ohm, 1W, 5% Oxide Film	08 COIL-ADG-1017A		AUTOMATIC DEGAUSSING COIL FOR KGR-1902 H/V
R825-R827	07 1/4P-571J(AU)	470 ohm, 1/4W, 5%, Carbon Film	69 COIL-ADG-1017B		
R610	29 2PHU-222J-H	2.2K ohm, 2W, 5% Oxide Film	★ F701	62 FUSE-052	FUSE, 3.5A
R634	43 3PHU-221J-H	1.8K ohm, 1W, 5% Oxide Film	SG-80-	74 SPARK-AG-20MKT	SPARK GAP
R523	37 3PHU-101J-H	220 ohm, 3W, 5% Oxide Film	SG805	87 SPARK-1006	SPARK GAP
R641	82 2PLU-1R5J-H	100 ohm, 3W, 5%, Oxide Film	SG806	09 LABEL-1830	CRT LABEL
R643	150K ohm, 1/4W, 5%, Carbon Film			16 LABEL-1894	WARNING LABEL
R627	31 1/4P-154J(AU)	1.5 ohm, 2W, 5%, Oxide Film		73 LABEL-1661	DHHS LABEL
R705, R712	1000K ohm, 1/4W, 5%, Carbon Film			65 LABEL-1896	WARNING LABEL
R704	31 1/4P-105J(AU)			35 LABEL-1915	CSA CERTIFIED LABEL
				01 LABEL-1944	CSA CERTIFIED LABEL
				77 EARTH-P-1022	FBT EARTH
				41 ISL-P-1076	PWB-1378 INSULATION BOARD
				71 STOP-CORD-016	CORD FIX SOCKET
				79 STAND-PRO-1005	
				61 TIP-002	H-CENTER
					CRT EARTH IMRE
					0602 ACCESSORY
					WITH Q602

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
MISCELLANEOUS					
★ F701	28 COIL-ADG-1017	Automatic Degaussing	82 SO-1190-001	AC CORD SOCKET	
	62 FUSE-052	Fuse, 3.5A-ST6	16 SO-098A-065	V-CENTER	
	82 SO-1190-001	AC Cord Socket	07 SO-078A-106	E MARK	
	79 STAND-PRO-1005	FBT Cap.	48 PLUG-025A	SMALL TYPE 3 PIN	
	38 SO-1029	20 Pin Socket	32 PLUG-026A	SMALL TYPE 5 PIN	
	22 SO-1085	CRT Socket	35 PLUG-1147	MICRO TYPE 6 PIN	
SG801-SG805	74 SPARK-AG-20MKT	Spark Gap.	53 PLUG-1146	MICRO TYPE 3 PIN	
SG806	87 SPARK-1006	Spark Gap.	89 PLUG-028A	LARGE TYPE 2 PIN	
	89 RAD-P-1112	RADIATIVE PLATE	88 TIP-021-134	K7	
	27 RAD-P-1067	RADIATIVE PLATE	66 TIP-021-135	K8	
	78 RAD-P-1117	RADIATIVE PLATE	44 TIP-021-136	K9	
	07 RAD-P-1068	RADIATIVE PLATE	65 TIP-021-131	K3	
	50 RAD-P-1105	Q 602 HEAT SINK	43 TIP-021-132	K4	
	61 TB ₃ P+8S	RAD-P-1105	87 TIP-021-106	K5	
	22 TB ₃ P+12S	FIXQ705	21 TIP-021-133	K6	
	43 3P+5S	Q501, Q502	79 STAND-PRO-1005	FBT CAP	
	55 HOLD-FS-021	F701 FUSE HOLDER Q705	61 HOLD-WIRE-1006	RAD-P-1105	
	10 LUG-032A	H-CENTER	31 CHK-SHT-1008		
	04 LUG-992	TP802, TP801, TP601, TP602, TP701	82 BAG-DATA-1006		
	10 LUG-032A	CRT NET WIRE	42 HOLD-WIRE-1030	DATA BAG	

CHASSIS NO: CG-19A

A. KGR-1901H PARTS DIFFER FROM KGR-1901V PARTS

REF No.	KGR-1901H PARTS No.	KGR-1901V PARTS No.	DESCRIPTION
	32 CHAS-TV-1026	49 CHAS-TV-1029	
	32 ANG-HOLD-1076-R	36 ANG-HOLD-1094-R	
	34 ANG-HOLD-1076-L	38 ANG-HOLD-1094-L	
	62 LABEL-1828	41 LABEL-1861	MODEDL LABEL
	50 PACK-CASE-1689	55 PACK-CASE-1724	

CHASSIS NO: CG-19B

B. KGR-1902H PARTS DIFFER FROM KGR-1902V PARTS

REF No.	KGR-1902H PARTS No.	KGR-190V PARTS No.	DESCRIPTION
	50 RAD-P-1105	05 RAD-P-1105-A	Q 602 heat sink
	32 CHAS-TV-1026	49 CHAS-TV-1029	
	16 LABEL-1975	85 LABEL-1976	MODEL LABEL
	32 ANG-HOLD-1076-R	36 ANG-HOLD-1094-R	
	34 ANG-HOLD-1076-L	38 ANG-HOLD-1094-L	
	47 PACK-CASE-1776	19 PACK-CASE-1777	

CHASSIS NO: CG-19C

C. KGR-1903H PARTS DIFFER FROM KGR-1903V PARTS

REF No.	KGR-1903H PARTS No.	KGR-1903V PARTS No.	DESCRIPTION
	40 CHAS-TV-1026-A	57 CHAS-TV-1029-A	
	65 LABEL-1977	45 LABEL-1978	MODEL LABEL
	32 ANG-HOLD-1076-R	36 ANG-HOLD-1094-R	
	34 ANG-HOLD-1076-L	38 ANG-HOLD-1094-L	
	16 PACK-CASE-1783	77 PACK-CASE-1784	

D KGR-1901H PARTS DIFFER FROM KGR-1092H PARTS

REF No.	KGR-1901H PARTS No.	KGR-1902H PARTS No.	DESCRIPTION
★ F601	NONE	PWB-1498-001	
	61 TB3P+8S	NONE	RAD-P-1105
	14 VRB-R-1137	NONE	Focus & Screen
	NONE	80 LUG-1071	
	NONE	59 SD-IS1887	Power Rectifier
	NONE	81 5LC-180J-W	18 ohm, 5W, 10% cement
	NONE	04 COV-SOC-1002	So-1085
	79 STAND-PRO-1005	NONE	F B T Cap
	42 LABEL-1829	32 LABEL-2023	CHASSIS LABEL

REF No.	KGR-1901H PARTS No.	KGR-1902H PARTS No.	DESCRIPTION
R722	81 2PHU-560J-H	12 2PHU-820J-H	
R612	46 2PHU-182J-H	48 2PHU-272J-H	
R719	75 2PHU-682J-H	73 3PHU-682J-H	
R619	38 1/4P-331J	43 1/4P-391J	
R524	48 1PHU-822J-H	29 2PHU-222J-H	
	10 LUG-032A	24 2PHU-472J-H	
★ R617	NONE	05 1/2 FRNL-1R0J	1 ohm, 1/2 W, 5%, .1uF, 50V, ± 5%, polyester
C603	30 ML-5-104 J	NONE	.01uF, 50V, ± 5%, polyester
	NONE	15 ML-5-475J	Small Type 3 Pin
	48 PLUG-025A	NONE	
	47 LAY-OUT-1046	23 LAY-OUT-1047	width size
L602	50 PACK-CASE-1689	47 PACK-CASE-1776	
C706	30 COIL-H-SIZE-1012	18 COIL-H-SIZE-1008	
R622	23 20L-470Y	43 20L-820Y	
L601	44 1PHU-561J-H	48 1PHU-182J-H	
	23 COIL-H-LINE-1006	23 COIL-H-LINE-1025	Horiz Linearity
	04 COV-SOC-1002	NONE	SO-1085 cover
R628	42 HOLD-WIRE-1030	NONE	
	51 1/2P-153J(AU)	NONE	15K ohm, 1/2W, 5%, Carbon Film
	NONE	09 1/2P-183J (AU)	18K ohm, 1/2W, 5%, Carbon Film
R604	24 1/4P-121J (AU)	NONE	120 ohm, 1/4W, 5%, Cabron Film
R519	08 1/4P-122J (AU)	23 1/4P-332G (AU) R721	
R629	43 1/4P-333J (AU)	NONE	33K ohm, 1/4W, 5%, Carbon Film
★ R706, R708	29 1/4P-124G (AU)	11 1/4P-104G (AU)	
C633	NONE	72 D-5-827K (AU)	820PF, 50V, ± 10%, Discap
C604	62 DSL-5-828J (AU)	NONE	82PF, 50V, ± 5%, Discap
	NONE	42 HOLD-WIRE-1030	MODEL LABEL
	62 LABEL-1828	16 LABEL-1975	
	10 SCHEME-DIA-1287	65 SCHEME-DIA-1321	
	08 COIL-ADG-1017A	69 COIL-ADG-1017B	Automatic Degaussing

E. KGR-1901V PARTS DIFFER FROM KGR-1902V PARTS

REF No.	KGR-1901V PARTS No.	KGR-1902V PARTS No.	DESCRIPTION
	NONE	PWB-1498-001	H-CENTER
	50 RAD-P-1105	05 RAD-P-1105-A	Q 602 heat sink
	61 TB3P+8S	NONE	RAD-P-1105
	14 VRB-R-1137	NONE	Focus & Screen
★ D701-D704	NONE	80 LUG-1071	
	NONE	59 SD-IS1887	Power Rectifier
	NONE	81 5LC-180J-W	18 ohm, 5W, 10%, Cement
	NONE	04 COV-SOC-1002	So-1085 cover
	79 STAND-PRO-1005	NONE	
	82 SO-1190-001	42 HOLD-WIRE-1030	MODEL LABEL
	41 LABEL-1861	85 LABEL-1976	
	10 SCHEME-DIA-1287	65 SCHEME-DIA-1321	Automatic Degaussing
	08 COIL-ADG-1017A	69 COIL-ADG-1017B	LUG-301UL
	NONE	64 TB3.5V+8S	
	47 LAY-OUT-1046	23 LAY-OUT-1047	
★ T602	55 PACK-CASE-1724	19 PACK-CASE-1777	Horiz output
L602	73 TRNS-FB-3008	71 TRNS-FB-3015	width size
C706	30 COIL-H-SIZE-1012	18 COIL-H-SIZE-1008	
R622	23 20L-470Y	43 20L-820Y	
R722	44 1PHU-561J-H	48 1PH-182J-H	
R612	81 2PHU-560J-H	12 2PHU-820J-H	
R719	46 2PHU-182J-H	48 2PHU-272J-H	
R619	75 2PHU-682J-H	73 3PHU-682J-H	
R523, R524	38 1/4P-331J	43 1/4P-391J	
	48 1PHU-822J-H	29 2PHU-222J-H	
	10 LUG-032A	24 2PHU-472J-H	
★ R617	NONE	05 1/2FRNL-1R0J	1 ohm, 1/2W, 5%, Fusable
C618	01 PFC-40-394J	NONE	.39μF, 400V, ± 5%, polypro
C603	30 ML-5-104J	NONE	.1μF, 50V, ± 5%, polypro
C633	15 ML-5-475J	NONE	.047μF, 50V, ± 5%, polyester
C604	62 DSL-5-828J (AU)	72 D-5-827K (AU)	820PF, 50V, ± 10%, Discap
D607 D608	NONE	49 RECT-SI-154	82PF, 50V, ± 5%, Discap
R643 R723	NONE	37 3PHU-101J-H	Rectifier
R641	NONE	43 3PHU-221J-H	100 ohm, 3W, 5%, Oxide Film
R642	NONE	23 VR-R-1012	220 ohm, 3W, 5%, Oxide Film
C618	NONE	01 PFC-40-394J	300Ω, H-Center
C729	NONE	69 CT-16-101Y	.39μF, 400V, ± 5%, Polypro
	NONE	61 TB3P+8S	100μF, 160V, Decouple
R640 R713 R801~803	29 1/4P-124G (AU)	11 1/4P-104G	PWB-1498
	48 PLUG-025A	NONE	
	51 1/2P-153J (AU)	NONE	Small 3 PIN
R628	NONE	09 1/2P-183J(AU)	15K ohm, 1/2W, 5%, Carbon Film
R628	24 1/2P-121J (AU)	NONE	18K ohm, 1/2W, 5%, Carbon Film
R604	08 1/4P-122J(AU)	23 1/4P-332G (AU)	120 ohm, 1/4W, 5%, Carbon Film
R519, R721	43 1/4P-333J (AU)	NONE	
R729, R627	42 LABEL-1829	32 LABEL-2023	33K ohm, 1/4W, 5%, Carbon Film
R706 R708			CHASSIS LABEL

F. KGR-1902H PARTS DIFFER FROM KGR-1902HA PARTS.

REF No.	KGR-1902H PARTS No.	KGR-1902HA PARTS No.	DESCRIPTION
	32 CHAS-TV-1026	NONE	CORD FIX socket
	71 STOP-CORD-016	NONE	Fix angle
	03 ANG-FIX 1222	NONE	CHAS-TV-1026
	61 TB3P + 8S	NONE	CHAS-TV-1026
	45 TB3.5V + 12S	NONE	ANG-FIX-1222
	64 TB3.5V + 8S	NONE	MODEL LABEL
	16 LABEL-1975	11 LABEL-2006	
	32 ANG-HOLD-1076-R	NONE	
	34 ANG-HOLD-1076-L	NONE	ANG-HOLD-1076
	25 6SW	NONE	ANG-HOLD-1076
	62 6.5W 18-1.6S	NONE	ANG-HOLD-1076
	41 6R + 20S	NONE	ANG-HOLD-1076
	48 6NA-S	NONE	
	31 CHK-SHT-1008	07 CHK-SHT-1009	
	47 PACK-CASE-1776	NONE	
	NONE	71STOP-CORD-016	CORD Fix socket
	73 CRT-510YTB22-TC01 (P)	NONE	
	69 COIL-ADG-1017B	NONE	Automatic Degaussing
	61 SPRING-002	NONE	Spring
	42 HOLD-WIRE-1030	NONE	Wire holder
	22 HOLD-WIRE-1031	NONE	Wire holder
	64 TB3.5V + 8S	NONE	LUG-1071
	55 TB4T + 12S	NONE	CHAS-TV-1026
	29 4SW	NONE	CHAS-TV-1026
	81 4.2W12-1.0S	NONE	CHAS-TV-1026
	NONE	61 TB3P + 8S	PWB-1498
	NONE	64 TB3.5V + 8S	Fix LUG-1071
	NONE	42 HOLD-WIRE-1030	Wire holder
	NONE	51 PACK-CASE-1794	MAIN CHAS
	NONE	58 PACK-AD-1381	MAIN CHAS
	NONE	34 PACK-AD-1382	MAIN CHAS
	NONE	75 PACK-AD-1384	MAIN CHAS
	NONE	10 PACK-AD-1383	MAIN CHAS
	NONE	09 SPONGE-1027	CRT-PCB
	NONE	58 TPE-PP-75-KAK-914M	
L602	18 COIL-H-SIZE-1008	87 COIL-H-SIZE-1013	width size
★ R627	82 2PLU-1R5J-H	34 2PLU-IR8J-H	
R722	12 2PHU-820J-H	39 2PHU-101J-H	
R524, R523	29 2PHU-222J-H	08 2PHU-392J-H	
	24 2PHU-472-H	NONE	47 ohm, 2W, Oxide Film
★ C614, C615	10 PFB-63-225J	65 PFB-63-335J	
★ C616, C614	09 PFB-63-275	09 PFB-63-275	180 ohm, 3W, Oxide Film
	NONE	60 3PHU-181J-H	PWB-1498
	61 TB3P + 8S	NONE	CHASSIS LABEL
	32 LABEL-2023	32 LABEL-2023	

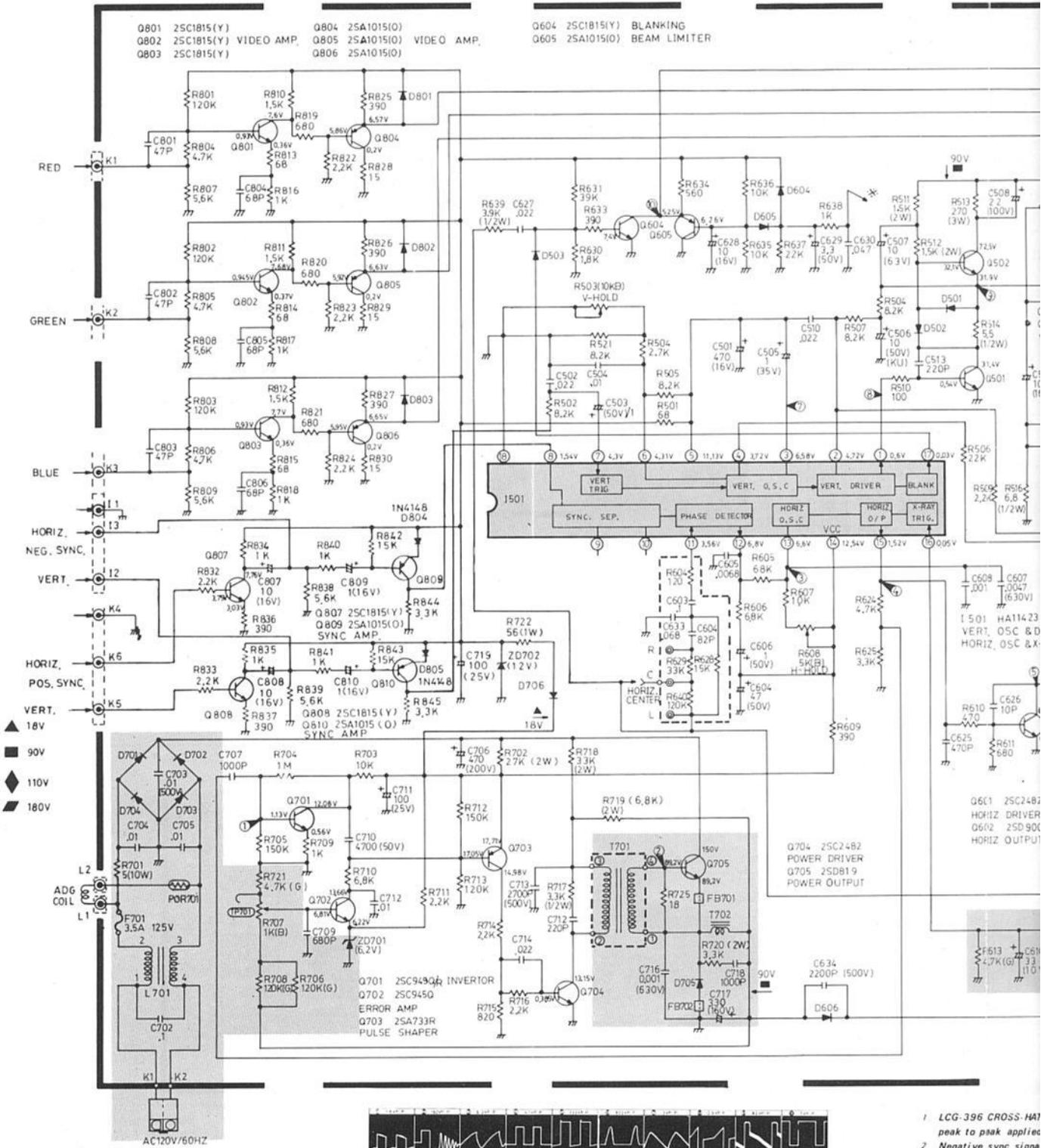
G. KGR-1902H PARTS DIFFER FROM KGR-1903H PARTS.

REF No.	KGR-1902H PARTS No.	KGR-1903H PARTS No.	DESCRIPTION
	PWB-1377	PWB-1467	Complete circuit Except R.G.B output
★ D708, D709	PWB-1377	PWB-1467	R.G.B output
	PWB-1498-001	NONE	H-center
	80 LUG-1071	NONE	
	59 SD-IS1887	NONE	Power Rectifier
	81 5LC-180J-W	NONE	Degaussing
	32 CHASS-TV-1026	40 CHAS-TV-1026-A	SO-1085 cover
	04 COV-SOC-1002	NONE	Wire holder
	42 HOLD-WIRE-1030	NONE	MODEL LABEL
	16 LABEL-1975	65 LABEL-1977	
	65 SCHEME-DIA-1321	35 SCHEME-DIA-1322	
	69 COIL-ADG-1017B	08 COIL-ADG-1017A	Automatic Degaussing
	64 TB3.5V + 8S	NONE	LUG-1071
	23 LAY-OUT-1047	88 LAY-OUT-1048	
	47 PACK-CASE-1776	16 PACK-CASE-1783	
★ Q705	68 ST-2SD819	70 ST-2SC2979	Power output
	27 RAD-P-1067	78 RAD-P-1117	Radiative plate
	22 TB3P + 12S	NONE	FIX Q 705
	07 RAD-P-1068	NONE	Radiative plate
Q701	16 ST-2SC 945 Q/R	NONE	Invertor
Q701	NONE	08 ST-2SC945 Q/R (AU)E	Invertor
Q702	NONE	04 ST-2SC945Q (AU)E	Error Amplifier
Q703	NONE	23 ST-2SA733 Q/R (AU)E	Pulse shaper
D701-D709	NONE	07 SD-IS1887 (AU)	Power Rectifier
C503	29 CU-5-103H (AU)	NONE	1 μF, 50V, Electrolytic
C628, C807, C808	79 CU-5-102Y (AU)	NONE	10 μF, 50V, Electrolytic
C503	NONE	29 CU-5-103H (AU)	1 μF, 50V, Electrolytic
C628, C807, C808	NONE	79 CU-5-102Y (AU)	10 μF, 50V, Electrolytic

REF No.	KGR-1902H PARTS No.	KGR-1903H PARTS No.	DESCRIPTION
Q702	70 ST-2SC 945Q	NONE	Error Amplifier
Q703	31 ST-2SA733 Q/R	NONE	Pulse Shaper
Q604	02 ST-2SC1815Y	NONE	Blanking
Q801, Q802, Q803	02 ST-2SC1815Y	NONE	Video Amplifier
Q807-807	02 ST-2SC1815Y	NONE	Invertor
Q605	22 ST-2SA1015O	NONE	Beam Limiter
Q804-Q806, Q809-Q810	22 ST-2SA1015O	NONE	Video Amplifier
★ T602	71 TRNS-FB-3015	47 TRNS-FB-3016	Horiz output
R719	73 3PHU-682J-H	07 2PHU-103Y-H	
R718	76 2PHU-333J-H	81 2PHU-393J-H	.39μF, 400V, ±5%, Polypro
C618	NONE	01 PFC-40-394J	300Ω, H-center
R642	NONE	23 VR-R-1012	18 ohm, 5W, 10%, Cement
R724	NONE	49 5LCU-180J-W	220 ohm, 3W, 5%, Oxide Film
R641	NONE	43 3PHU-221J-H	100 ohm, 3W, 5%, Oxide Film
R643, R723	NONE	37 3PHU-101J-H	
D607, D608	07 SD-IS1887 (AU)	87 RECT-SI-154 (AU)	Rectifier
D607, D608	49 RECT-SI-154	NONE	100 ohm, 3W, 5%, Oxide Film
R643, R723	37 3PHU-101J-H	NONE	220 ohm, 3W, 5%, Oxide Film
R641	43 3PHU-221J-H	NONE	300Ω, H-center
R642	23 VR-R-1012	NONE	.39μF, 400V, ±5%, Polypro
C618	01 PFC-40-394J	NONE	100 μF, 160V, Decouple
C729	69 CT-16-101Y	NONE	PWB-1498
	61 TB3P + 8S	NONE	
	32 LABEL-2023	12 LABEL-2024	CHASSIS LABEL
H. KGR-1902V PARTS DIFFER FROM KGR-1903V PARTS			
REF No.	KGR-1902V PARTS No.	KGR-1903V PARTS No.	DESCRIPTION
	PWB-1377	PWB-1467	Complete Circuit Except R.G.B. output
	PWB-1377	PWB-1467	R.G.B. output
★ D708, D709	21 PWB-1498-001	NONE	H-center
R724	80 LUG-1071	NONE	
	59 SD-IS1887	NONE	Power Rectifier
	81 5LC-180J-W	NONE	Degaussing
	49 SHAS-TV-1029	57 CHAS-TV-1029-A	SO-1085 Cover
	04 COV-SOC-1002	NONE	Wire holder
	42 HOLD-WIRE-1030	NONE	MODEL LABEL
	85 LABEL-1976	45 LABEL-1978	Automatic Degaussing
	69 COIL-ADG-1017B	08 COIL-ADG-1017A	ANG-FIX-1222, FIX-LUG-1071
	64 TB3.5V + 8S	NONE	
	23 LAY-OUT-1047	88 LAY-OUT-1048	
	19 PACK-CASE-1777	77 PACK-CASE-1784	
★ Q705	68 ST-2SD819	70 ST-2SC2979	Power output
Q705	27 RAD-P-1067	78 RAP-P-1117	Radiative plate
Q705	22 TB3P + 12S	61 TB3P + 8S	Radiative plate
Q701	07 RAD-P-1068	NONE	Inverter
Q702	16 ST-2SC945 Q/R	NONE	Error Amplifier
Q703	70 ST-2SC945Q	NONE	Pulse Shaper
Q604	31 ST-2SA733 Q/R	NONE	Blanking
Q801-Q803	02 ST-2SC1875Y	NONE	Video Amplifier
Q807-Q808	02 ST-2SC1815Y	NONE	Invertor
Q605	22 ST-2SA1015O	NONE	Beam Limiter
Q809-Q810, Q804-Q806	22 ST-2SA1015O	NONE	Video Amplifier
★ T602	71 TRNS-FB-3015	47 TRNS-FB-3016	Horiz output
R719	73 3PHU-682J-H	07 2PHU-103J-H	
R718	76 2PHU-333J-H	81 2PHU-393J-H	.39 μF, 400V, ±5%, Polypro
C618	NONE	01 PFC-40-394J	300Ω, H-center
R642	NONE	23 VR-R-1012	18 ohm, 5W, 10%, Cement
R724	NONE	49 5LCU-180J-W	220 ohm, 3W, 5%, Oxide Film
R641	NONE	43 3PHU-221J-H	100 ohm, 3W, 5%, Oxide Film
R643, R723	NONE	37 3PHU-101J-H	
★ D701-D704, D607, D608	07 SD-IS1887 (AU)	87 RECT-SI-154 (AU)	Power Rectifier
★ D701-D704, D708-D709	NONE	07 SD-IS1887 (AU)	1 μF, 50V, Electrolytic
C606, C628	29 CU-5-103H (AU)	NONE	10 μF, 50V, Electrolytic
C628, C807-C808	79 CU-5-102Y (AU)	NONE	1 μF, 50V, Electrolytic
C503	NONE	29 CU-5-103H (AU)	10 μF, 50V, Electrolytic
C628, C807-C808	NONE	79 CU-5-102Y (AU)	Inverter
Q701	NONE	08 ST-2SC945 Q/R (AU)E	Error Amplifier
Q702	NONE	04 ST-2SC945Q (AU)E	Pluse shaper
Q703	NONE	23 ST-2SA 733 Q/R (AU)E	Blanking
Q604,	NONE	54 ST-2SC1815Y (AU)E	Video Amplifier
Q801-Q803,	NONE	54 ST-2SC1815Y (AU)E	Invertor
Q807-Q808	NONE	54 ST-2SC1815Y (AU)E	Beam Limiter
Q605	NONE	74 ST-2SA1015O (AU)E	Video Amplifier
Q804-Q806, Q809, Q810	NONE	74ST-2SA1015O (AU)E	Rectifier
D607, D608	49 RECT-SI-154	NONE	100 ohm, 3W, 5%, Oxide Film
R643, R723	37 3PHU-101J-H	NONE	220 ohm, 3W, 5%, Oxide Film
R641	43 3PHU-221J-H	NONE	300Ω, H-center
R642	23 VR-R-1012	NONE	.39 μF, 400V, ±5%, Polypro
C618	01 PFC-40-394J	NONE	100 μF, 160V, Decouple
C729	69 CT-16-101J	NONE	PWB-1498
	61 TB3P + 8S	NONE	
	32 LABEL-2023	12 LABEL-2024	CHASSIS LABEL

SCHEMATIC DIAGRAM

CHASSIS NO. CG-19



SCHEMATIC DIAGRAM

CHASSIS NO. CG-19A

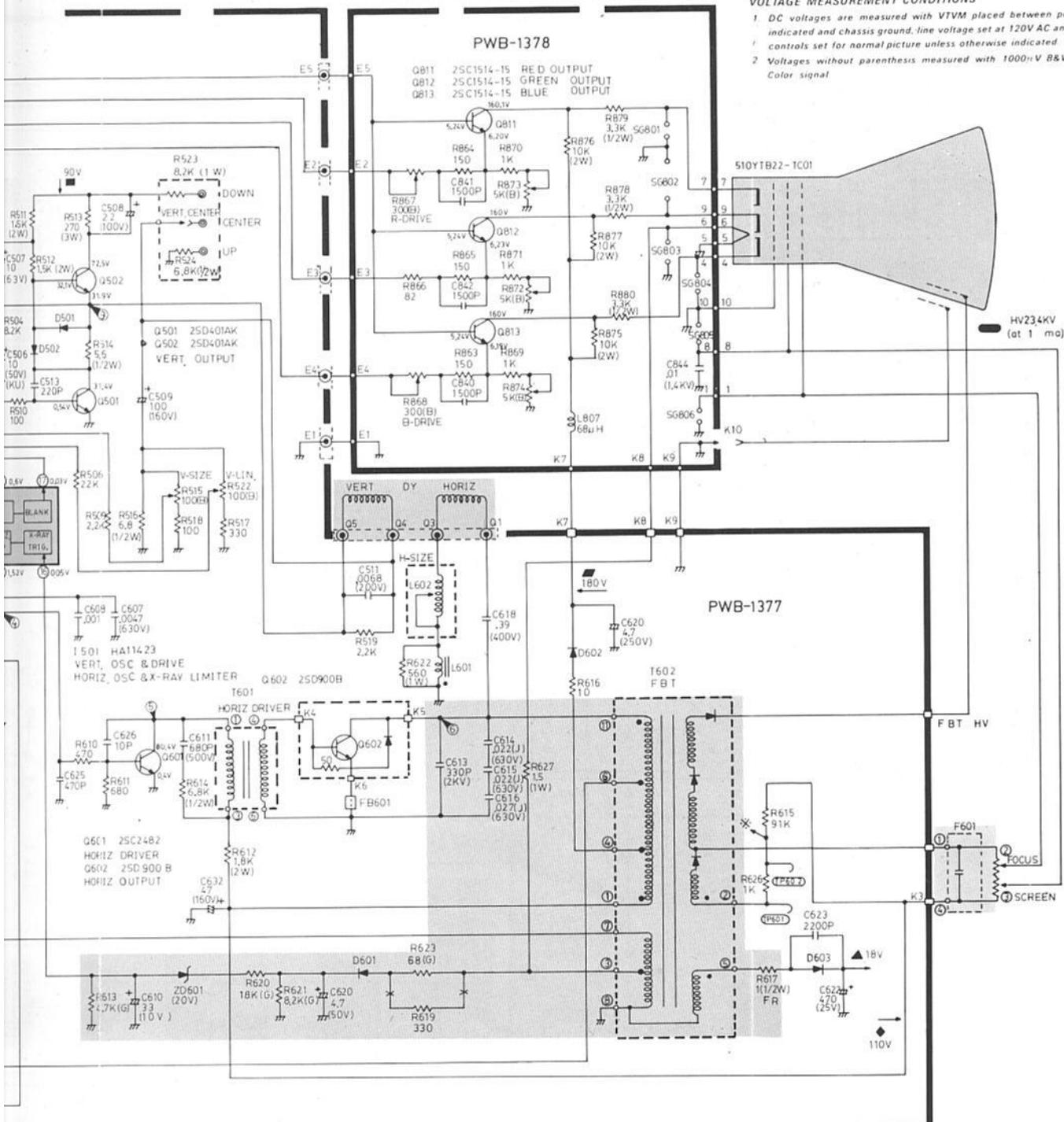
"CRITICAL COMPONENT WARNING"
THESE CRITICAL COMPONENTS THAT ARE SHADED ON THE SCHEMATIC DIAGRAM AND ASTERISKED ON THE PARTS LIST ARE USED TO PREVENT SHOCK, FIRE HAZARD AND EXCESSIVE X-RADIATION. ALL THESE SPECIAL COMPONENTS MUST BE REPLACED ONLY WITH THE SAME TYPE IDENTICAL TO THOSE IN THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE

- The unit of resistance "ohm" is omitted (K=1000 ohms M=1 Megohm).
- All resistors are 1/4 watt, unless otherwise noted.
- All capacitors MFD, unless otherwise noted P-MMFD.
- This is a standard schematic diagram, some sets may be modified slightly for better performance.

VOLTAGE MEASUREMENT CONDITIONS

- DC voltages are measured with VTVM placed between points indicated and chassis ground, line voltage set at 120V AC and all controls set for normal picture unless otherwise indicated.
- Voltages without parenthesis measured with 1000:1 V B&W or Color signal.

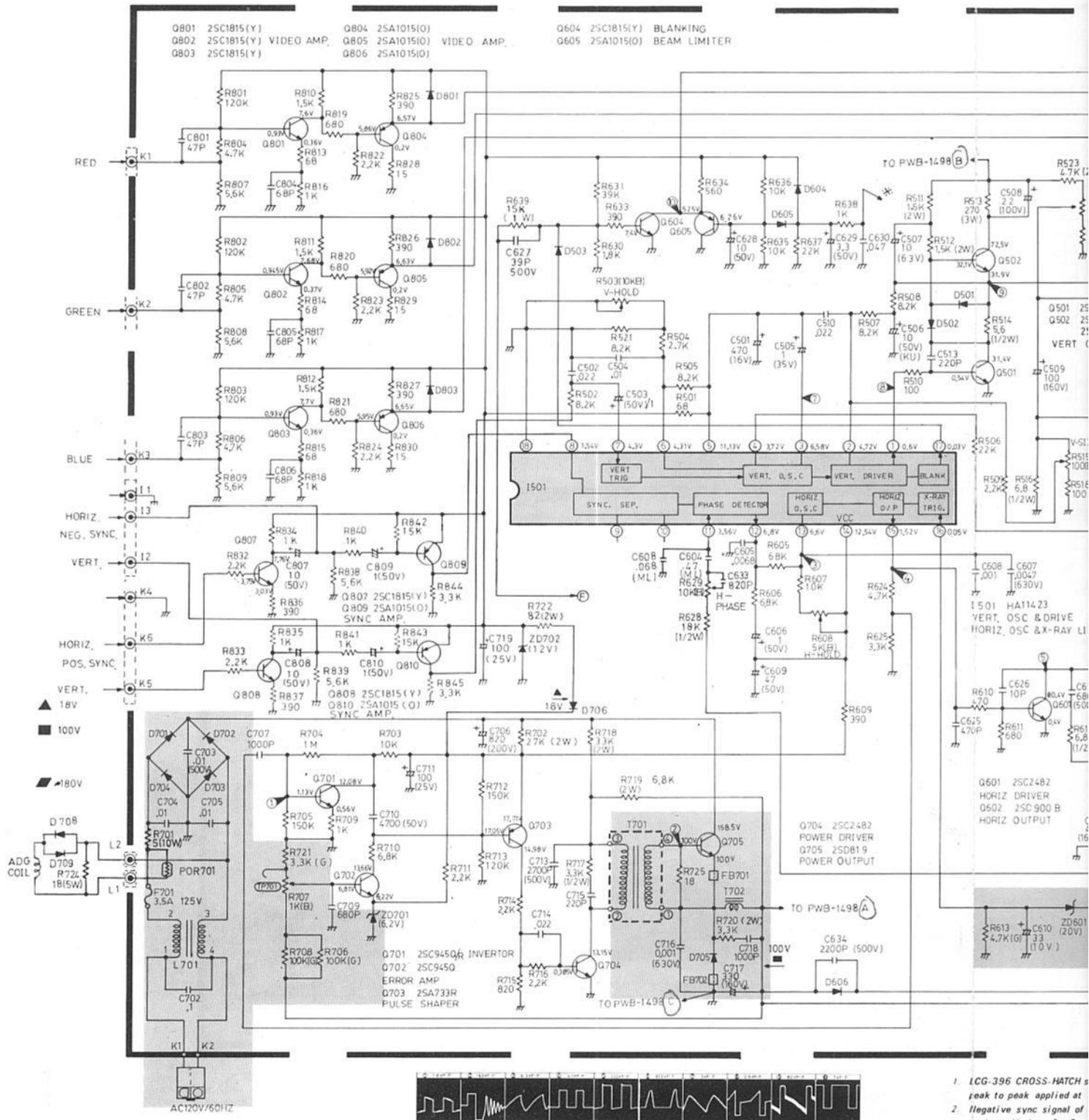


- LCG-396 CROSS-HATCH signal of 2V peak to peak applied at K1, K2, K3.
- Negative sync signal of 4V peak to peak applied at J2, J3.

CAUTION: Resistors R619 R623 are factory selected components. Refer to service manual, "HIGH VOLTAGE HOLD DOWN CIRCUIT ADJUSTMENT WARNING" for proper replacements.

SCHEMATIC DIAGRAM

CHASSIS NO. CG-19B



STATIC DIAGRAM

ASSIS NO. CG-19B

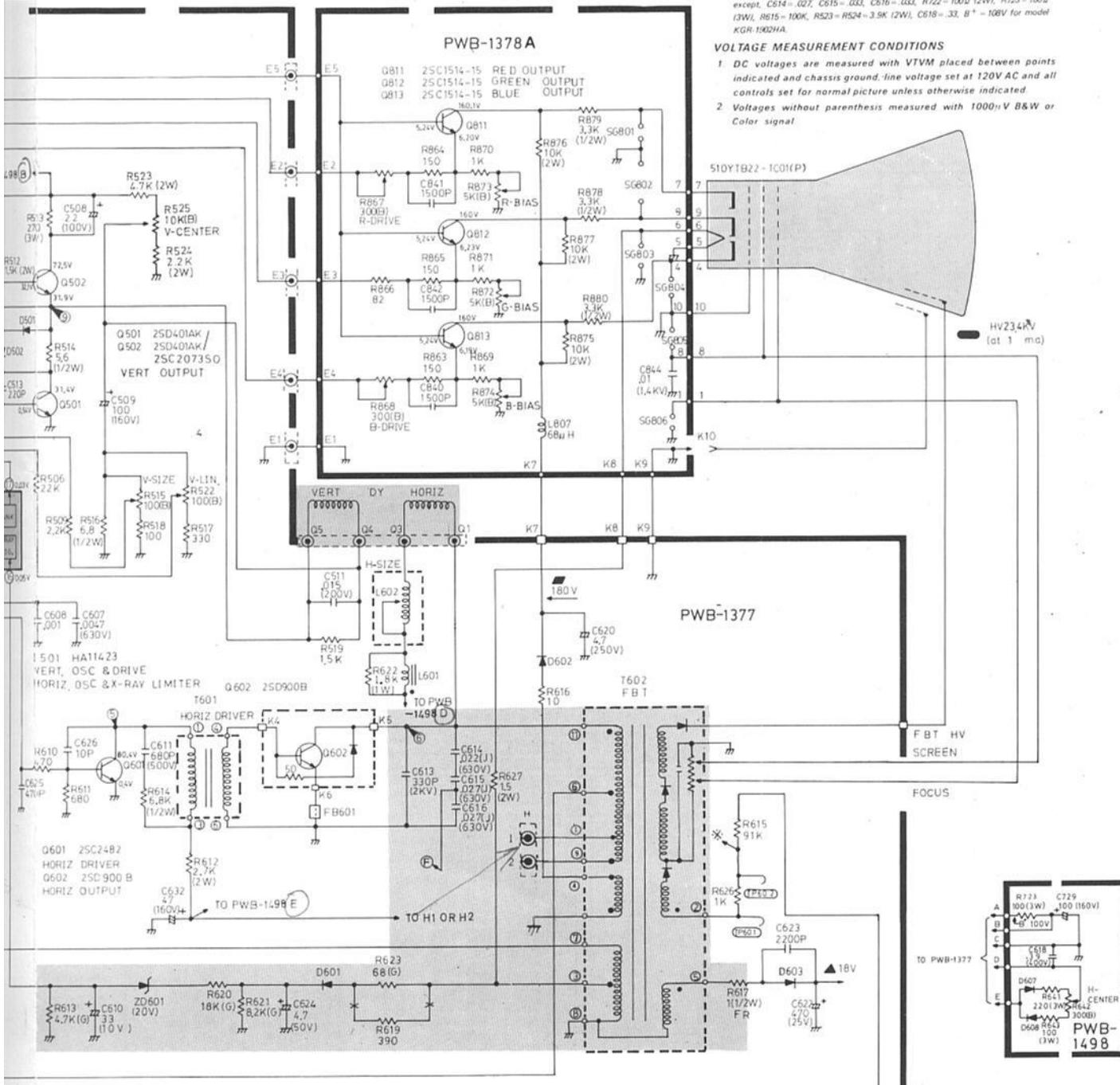
"CRITICAL COMPONENT WARNING"
THESE CRITICAL COMPONENTS THAT ARE SHADED ON THE SCHEMATIC DIAGRAM AND ASTERISKED ON THE PARTS LIST ARE USED TO PREVENT SHOCK, FIRE HAZARD AND EXCESSIVE X-RADIATION. ALL THESE SPECIAL COMPONENTS MUST BE REPLACED ONLY WITH THE SAME TYPE IDENTICAL TO THOSE IN THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE

- The unit of resistance "ohm" is omitted (K = 1000 ohms M = 1 Megohm).
- All resistors are 1/4 watt, unless otherwise noted.
- All capacitors MFD, unless otherwise noted P.MMF.
- This is a standard schematic diagram, some sets may be modified slightly for better performance.
- All values of components shown in diagram are valid for both model except, C614 = .027, C615 = .033, C616 = .033, R722 = 100Ω (2W), R723 = 180Ω (3W), R615 = 100K, R523 = R524 = 3.9K (2W), C618 = .33, B+ = 100V for model KGR-1902HA.

VOLTAGE MEASUREMENT CONDITIONS

- DC voltages are measured with VTVM placed between points indicated and chassis ground; line voltage set at 120V AC and all controls set for normal picture unless otherwise indicated.
- Voltages without parenthesis measured with 1000:1 V B&W or Color signal.



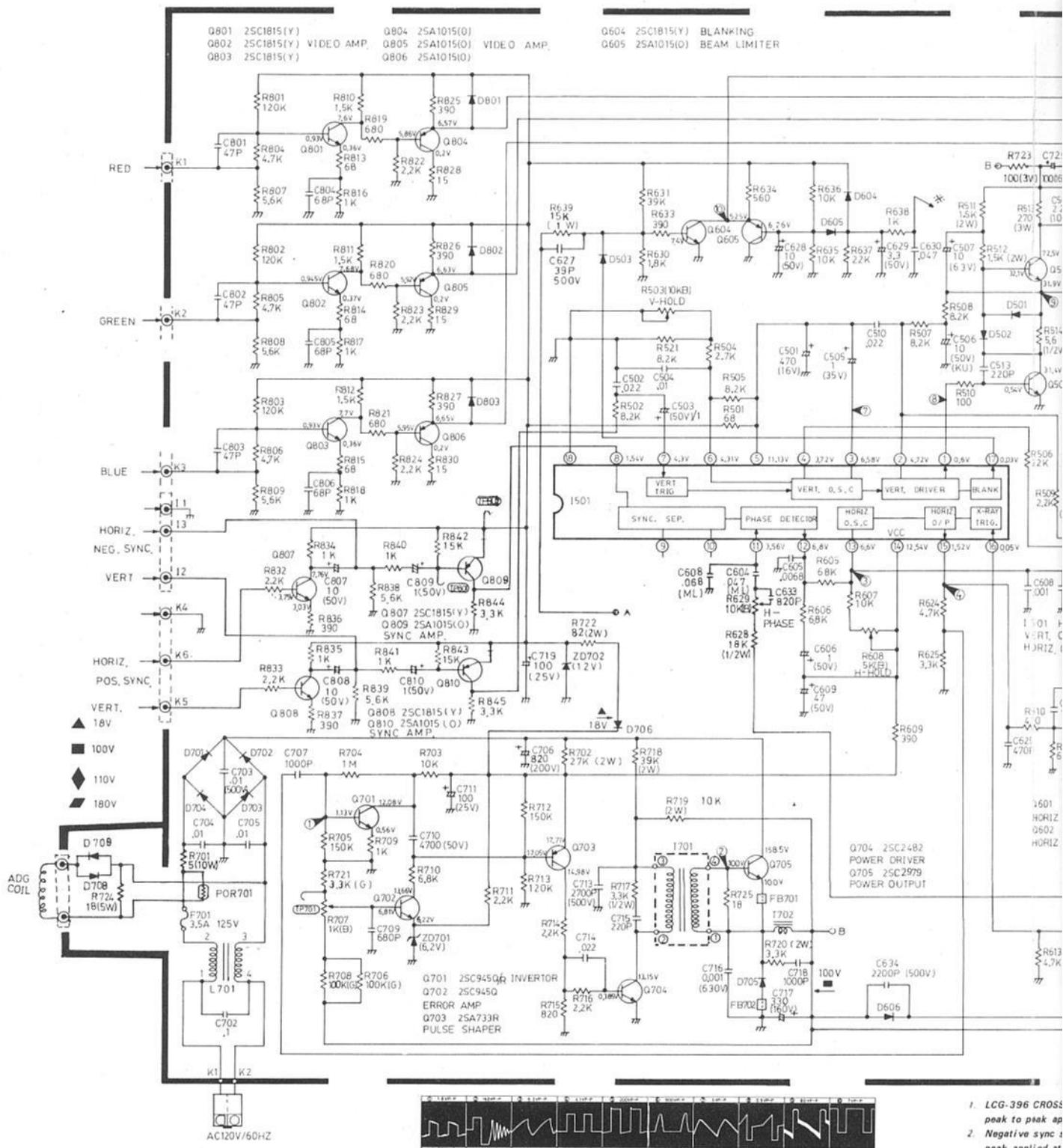
CAUTION: Resistors R619 R623 are factory selected components Refer to service manual, "HIGH VOLTAGE HOLD DOWN CIRCUIT ADJUSTMENT WARNING" for proper replacements.

1. LCG-396 CROSS-HATCH signal of 2V peak to peak applied at K1, K2, K3.

2. Negative sync signal of 4V peak to peak applied at J2, J3.

SCHEMATIC DI

CHASSIS NO. CG-1



SCHEMATIC DIAGRAM

CHASSIS NO. CG-19C

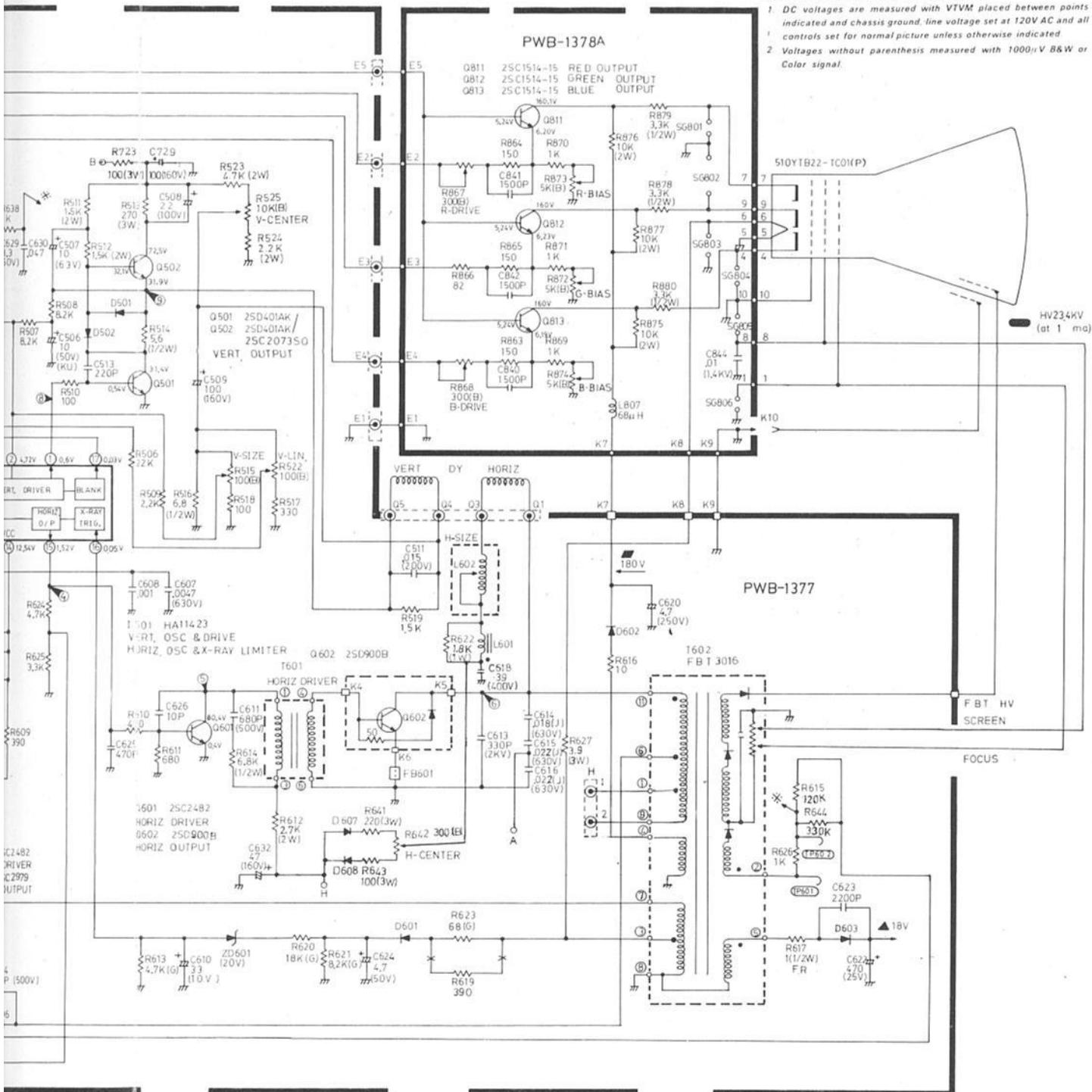
"CRITICAL COMPONENT WARNING"
THESE CRITICAL COMPONENTS THAT ARE SHADED ON THE SCHEMATIC DIAGRAM AND ASTERISKED ON THE PARTS LIST ARE USED TO PREVENT SHOCK, FIRE HAZARD AND EXCESSIVE X-RADIATION. ALL THESE SPECIAL COMPONENTS MUST BE REPLACED ONLY WITH THE SAME TYPE IDENTICAL TO THOSE IN THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE

1. The unit of resistance "ohm" is omitted (K -1000 ohms M , 1 Megohm).
2. All resistors are 1/4 watt, unless otherwise noted.
3. All capacitors MFD, unless otherwise noted P-MMFD.
4. This is a standard schematic diagram, some sets may be modified slightly for better performance.

VOLTAGE MEASUREMENT CONDITIONS

1. DC voltages are measured with VTVM placed between points indicated and chassis ground, line voltage set at 120V AC and all controls set for normal picture unless otherwise indicated.
2. Voltages without parenthesis measured with $1000\mu V$ B&W or Color signal.



1. LCG-396 CROSS-HATCH signal of 2V peak to peak applied at K1, K2, K3.
2. Negative sync signal of 4V peak to peak applied at I2, I3.

CAUTION: Resistors R619, R623 are factory selected components. Refer to service manual, "HIGH VOLTAGE HOLD DOWN CIRCUIT ADJUSTMENT WARNING" for proper replacements.

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