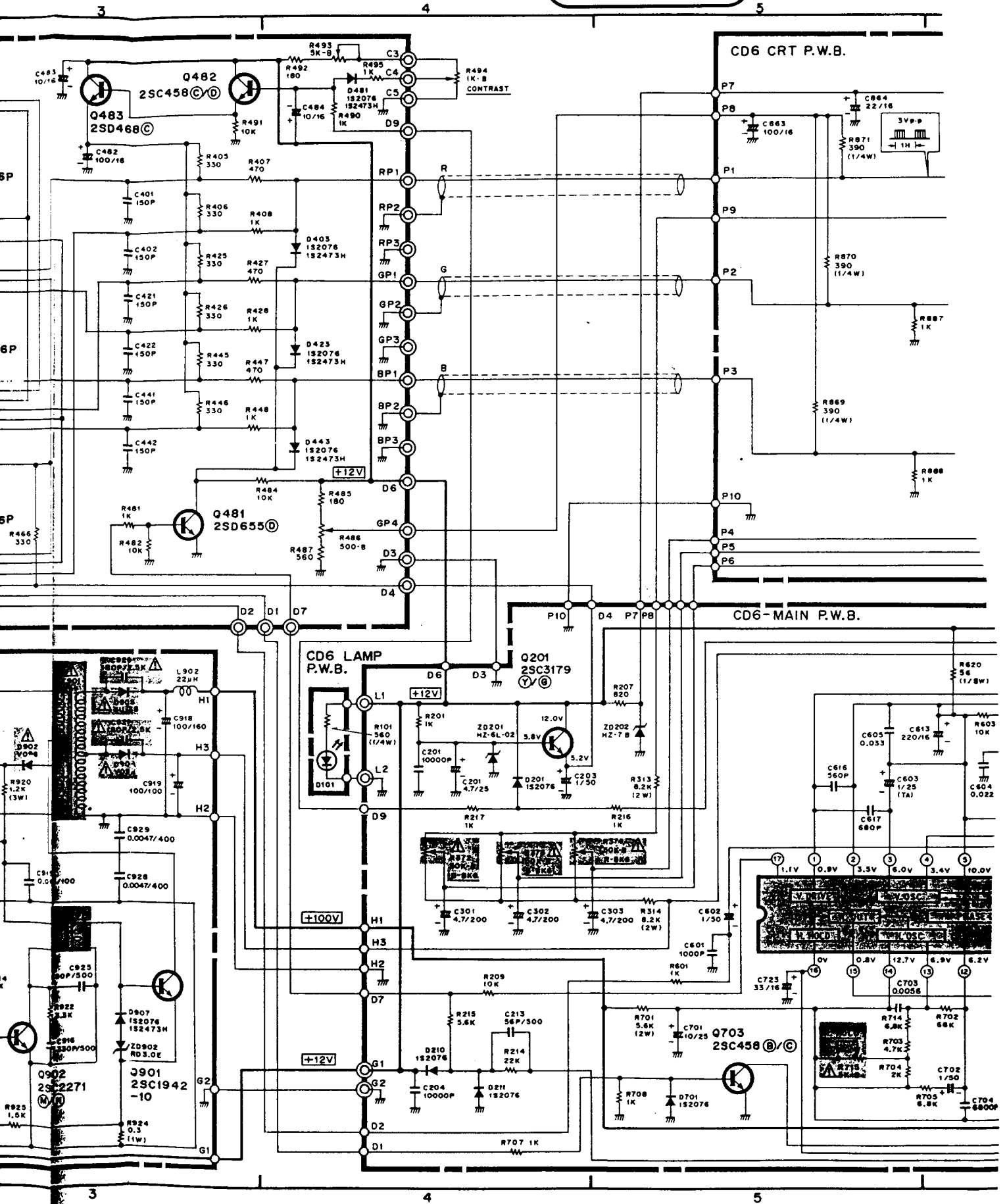


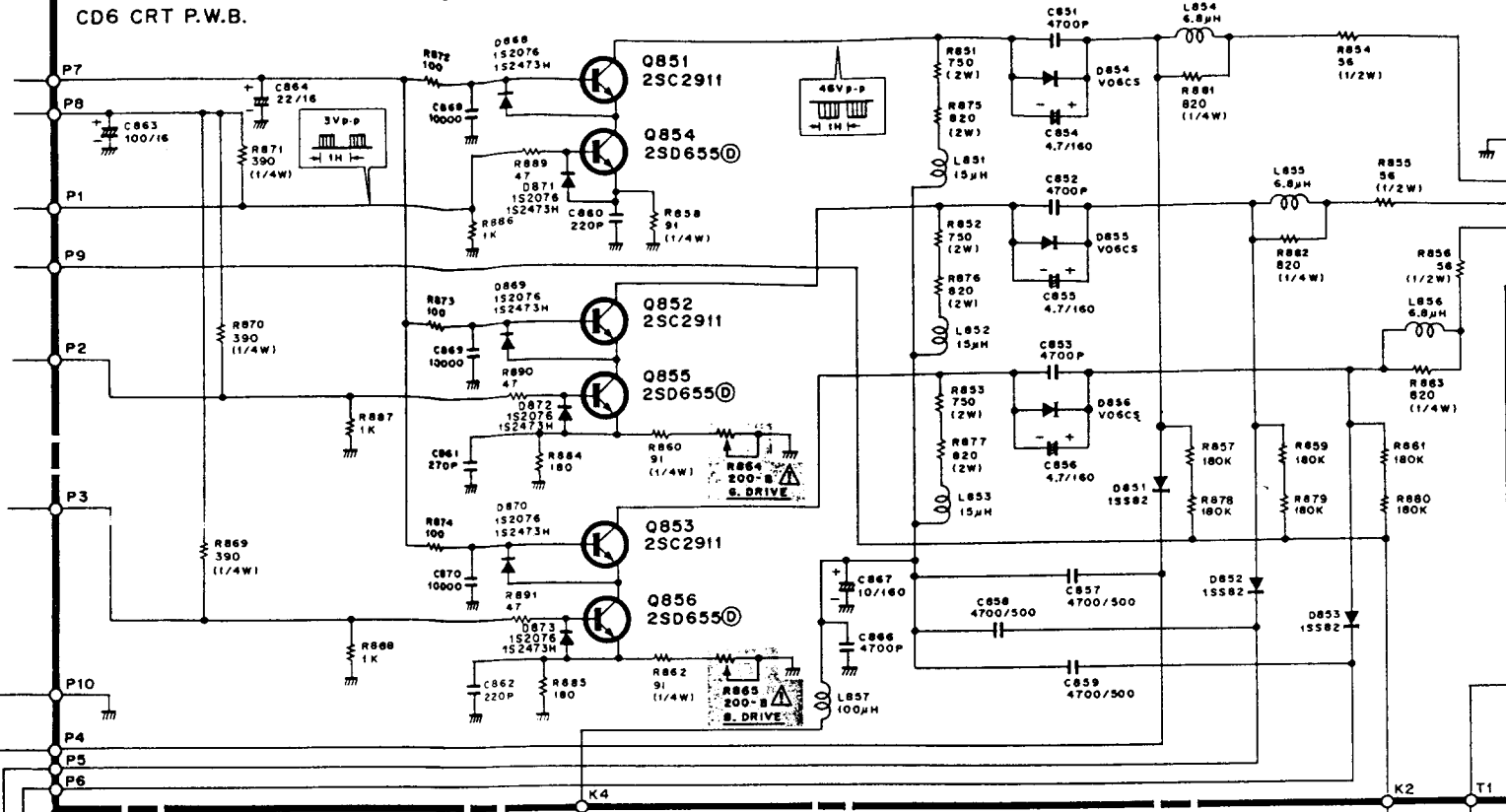
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HITACHI

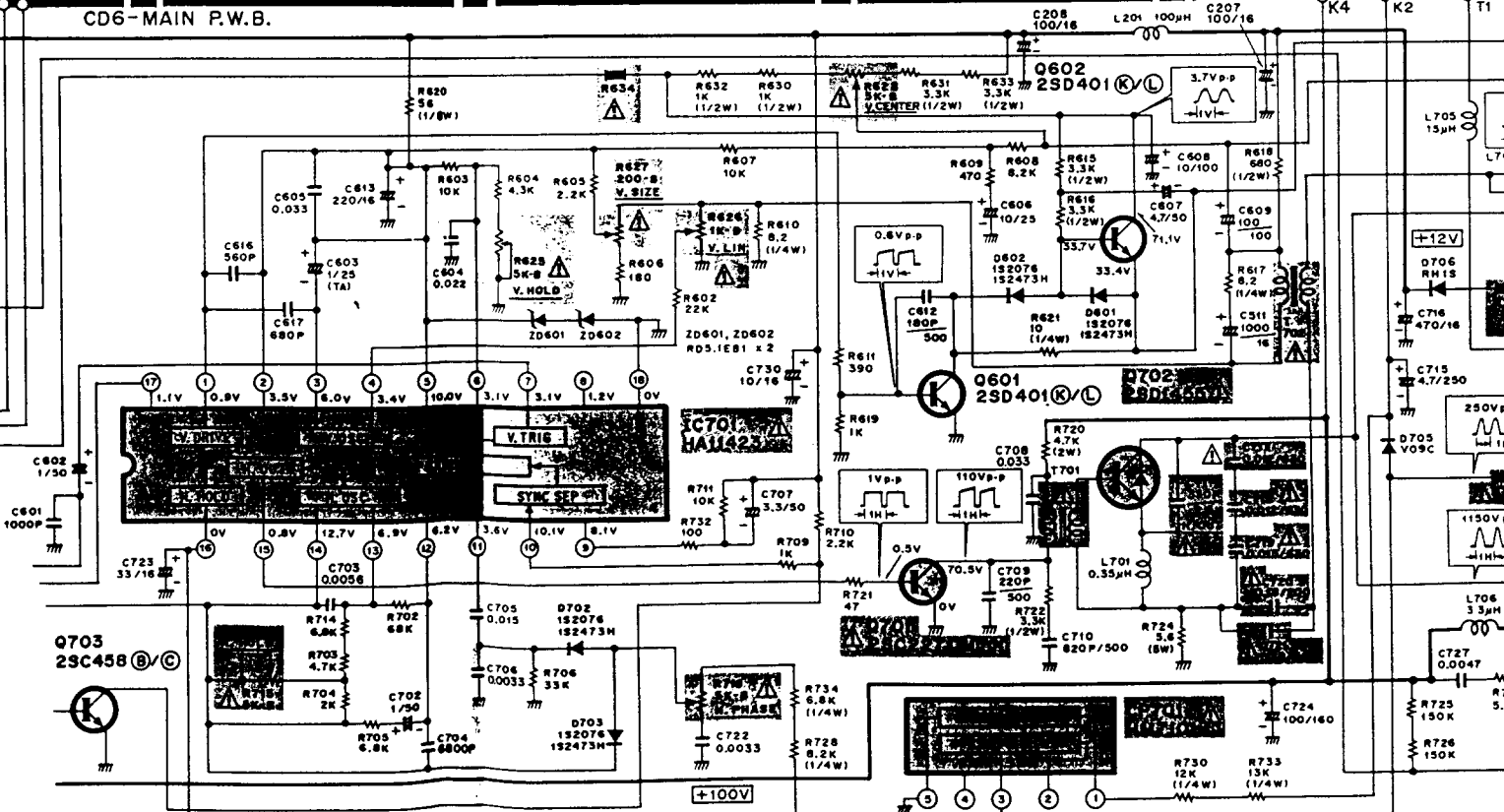
CM-1216DS
CM-1216DS-301
YK No.1002E



CD6 CRT P.W.B.



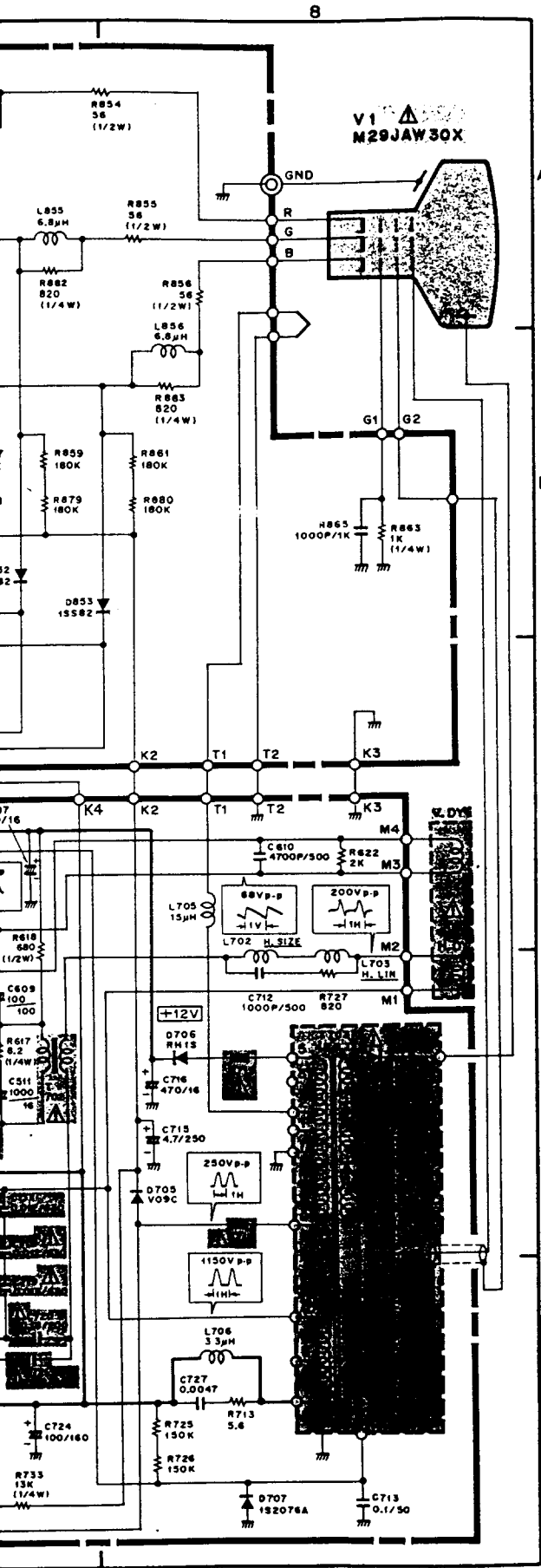
CD6-MAIN P.W.B.



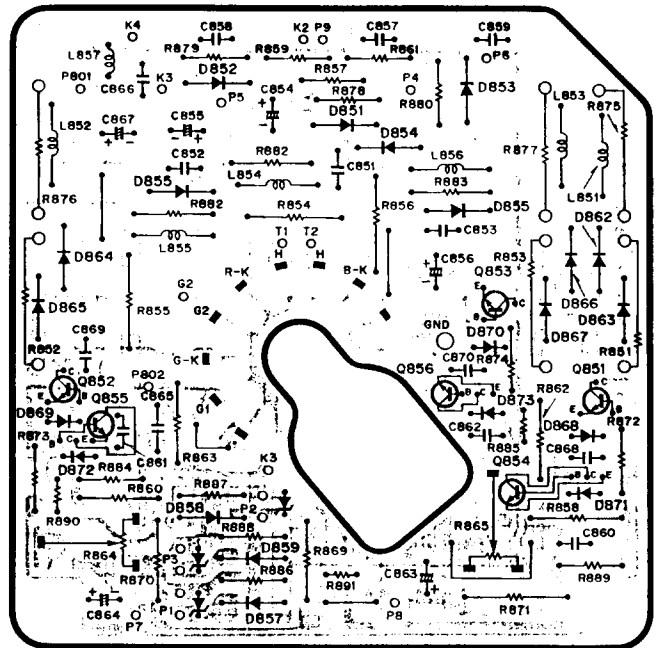


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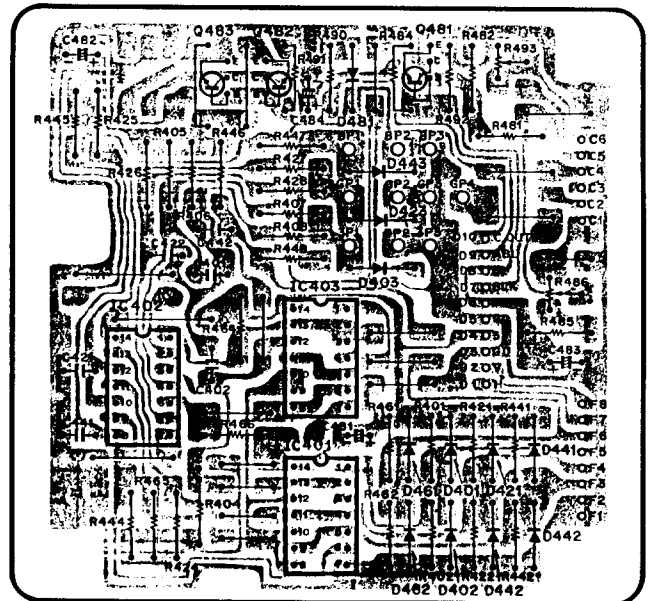
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OUTLINE OF COLOR DISPLAY



Use the person adjustment.

1. HORIZONTAL

- (1) Short-circuit R715 so that
- (2) Release short-circuit completed.

2. PICTURE POSITION

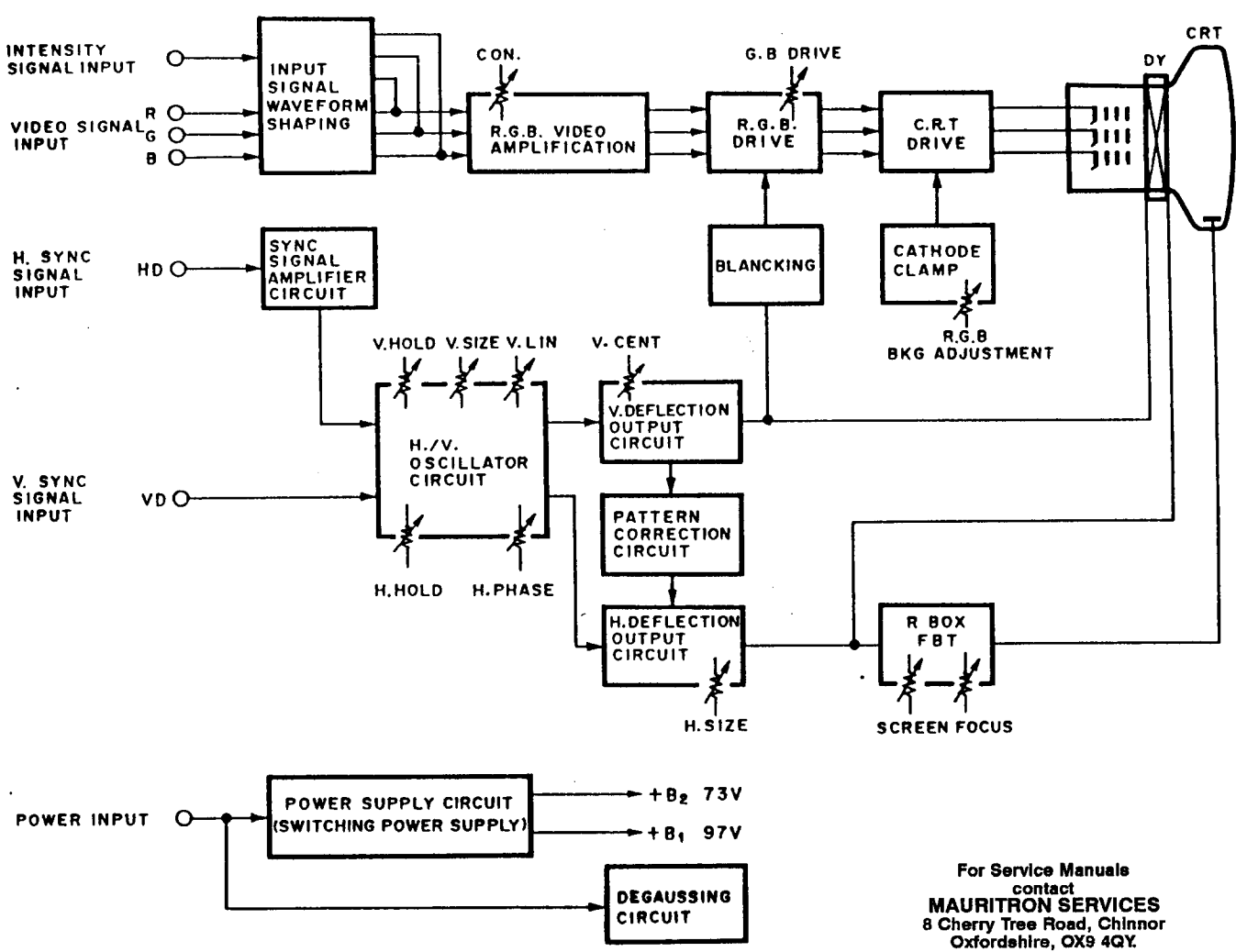
- Perform this adjustment.
- Picture position
 - (1) Operate the H appears
 - (2) Adjust H. P of the picture
 - (3) Adjust V. C of the picture

- (10) Turn the R.B.C them to the green, blue star present, use the color at low brightness
- (11) Remove the cap
- (12) Remove the jig
- (13) Turn the CO adjust so that signal is 60 lux
- (14) Receive the wh

- (15) Adjust high brightness DRIVE control
- (16) Turn the CO brightness which When it is not and then return

This color display is a high performance/high reliability TV scanning color display designed for use as the color terminal unit of a business or personal computer. This is the color terminal indicator unit which indicates the video signal output from the computer, etc. as characters and graphics on the CRT; the circuit configuration is same as TV a receiver with the high frequency circuit, audio circuit and chroma circuit such as the tuner, etc. removed but the video amplifier circuit is designed so that the original color video signals (red, green, blue) are directly amplified to drive the CRT, to obtain high resolution. Fig. 1 shows the block diagram. The color display is to display characters and graphics, so compared with an ordinary color TV receiver, it is designed to improve the performance as follows.

- Improvement of resolution and picture quality.
 - (1) High resolution CRT used.
 - (2) Original color drive system used in the video amplifier circuit.
 - (3) Improvement of focusing characteristics (Employment of B-U electron gun).
 - (4) High precision convergence by use of the high precision deflection yoke.
- Improvement of picture fidelity.
 - (1) Low distortion deflection yoke.
 - (2) Stabilization of picture size fluctuation by employment of a new highly stable FBT.
 - (3) Improved deflection linearity.
 - (4) Picture position adjustment is highly precise.



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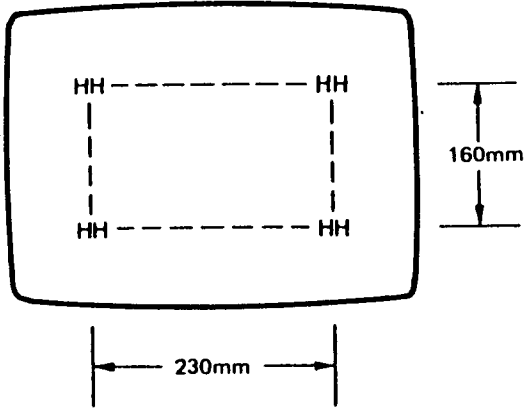


Fig. 5

ADJUSTMENT

Use the personal computer as the signal source in this adjustment.

1. HORIZONTAL SYNC ADJUSTMENT

- (1) Short-circuit R708, and adjust H. HOLD volume R715 so that picture flow almost stops.
- (2) Release short-circuit of R708 after adjustment is completed.

2. PICTURE POSITION/SIZE ADJUSTMENT

Perform this adjustment after purity adjustment.

• Picture position adjustment

- (1) Operate the personal computer so that character H appears all over the screen as shown in Fig. 5.
 - (2) Adjust H. PHASE volume R716 so that left and right of the picture are balanced.
 - (3) Adjust V. CENT volume R628 so that top and bottom of the picture are balanced.
- (10) Turn the R.B.G BKG VRs gradually clockwise and set them to the points where thin bright lines of red, green, blue start appearing evenly. (When VR-A is not present, use the BKG-VR corresponding to the thinnest color at low brightness.)
 - (11) Remove the connecting wire between P60 and P61.
 - (12) Remove the jig connected to P801 and P802.
 - (13) Turn the CONTRAST control fully clockwise to adjust so that brightness of the green "H" character signal is 60 lux at the center of the screen.
 - (14) Receive the white pattern signal.

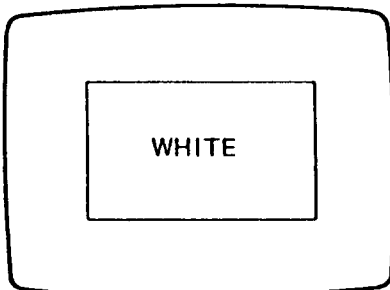


Fig. 7

- (15) Adjust high brightness white balance using the G.B. DRIVE controls.
- (16) Turn the CONTRAST control to check that low brightness white balance is obtained. When it is not, adjust other BKG controls than VR-A and then return to Item (14)

3. PICTURE SIZE ADJUSTMENT

- (1) Adjust H. SIZE coil L702 so that the horizontal size of the picture is 230 mm.
- (2) Adjust V. SIZE volume R627 so that the vertical size of the picture is 160 mm.

4. VERTICAL LINEARITY ADJUSTMENT

Adjust vertical linearity control VR R626 so that vertical linearity is optimum.

5. PURITY/CONVERGENCE ADJUSTMENT

Refer to the purity/convergence/white balance adjustment method of the Hitachi color TV.

As color signal connectors are not provided, use the BKG VR to erase the color.

6. WHITE BALANCE ADJUSTMENT

Perform this adjustment after purity is adjusted.

- (1) Receive the black signal.
- (2) Turn the G.B DRIVE VRs (R864, R865) to their mechanical centers.
- (3) Set the R.G.B BKG VRs (R374, R373, R372) fully counterclockwise.
- (4) Turn the SCREEN control fully counterclockwise.
- (5) Turn SUB CONTRAST (R493) fully counterclockwise.
- (6) Turn the CONTRAST control fully counterclockwise.
- (7) Connect P60 and P61. (Picture becomes a single horizontal line.)
- (8) Connect the jig shown in Fig. 6 to P801 and P802.

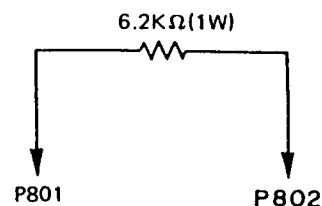
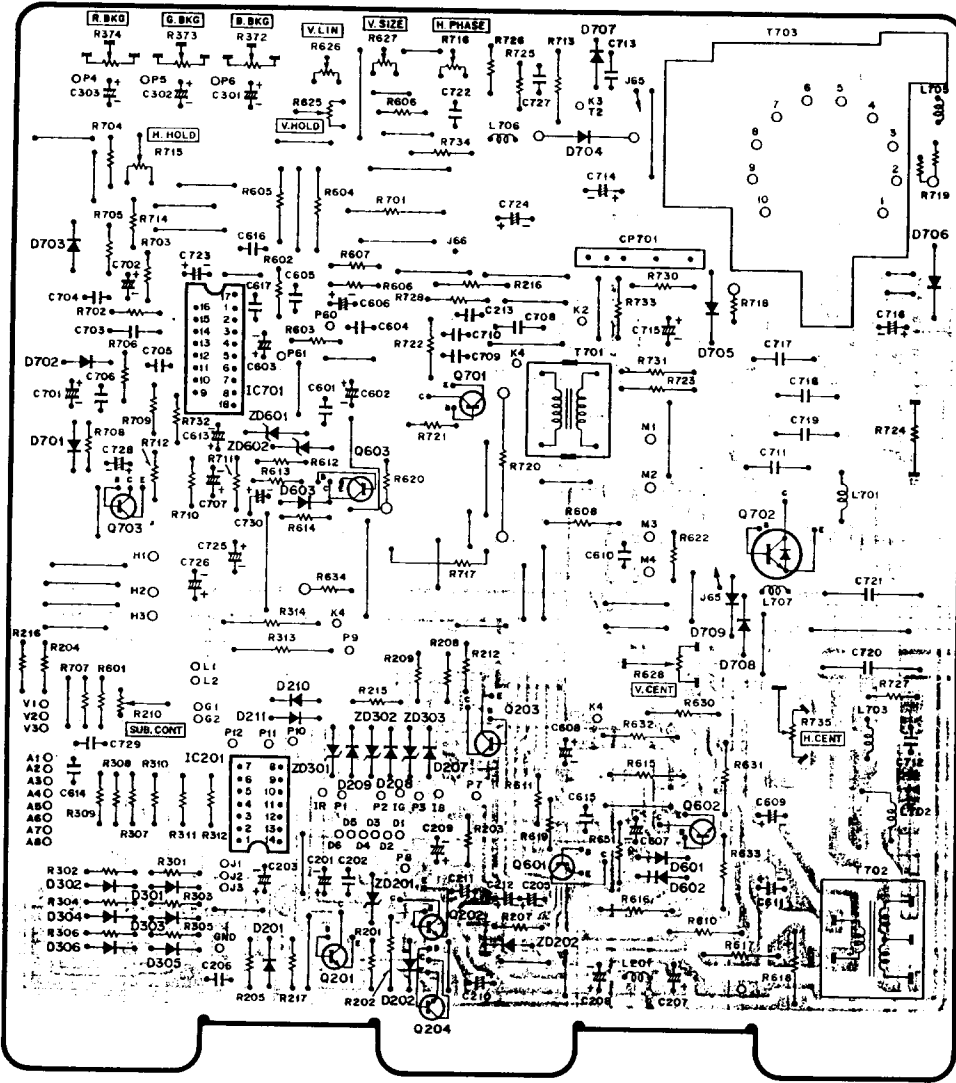


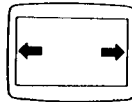
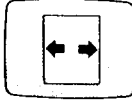
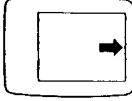
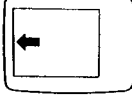
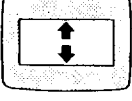
Fig. 6

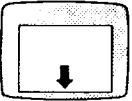


- (9) Turn the SCREEN control gradually clockwise and set it to the point where a thin bright line starts appearing. Do not turn the BKG VR (called VR-A hereafter) corresponding to the color appearing at this time thereafter. When the line does not appear, set the SCREEN control to its mechanical center. Do not turn the SCREEN control beyond its mechanical center.

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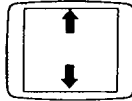
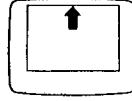
CD6 MAIN P.W. BOARD



Phenomenon	Cause
Picture too wide. 	Data indication period is larger than 46.6µS. Adjust H size L702.
Picture too narrow. 	Data indication period is smaller than 46.6µS. Adjust H size L702.
Picture is deviated to the right. 	Value reduction of front porch from back porch is 1.5µS or more. Adjust H phase R716.
Picture is deviated to left. 	Value reduction of front porch from back porch is 1.5µS or less. Adjust H phase R716.
Top/bottom of picture shrunk too much. 	Vertical flyback period is larger than 62H. Adjust V size R627.

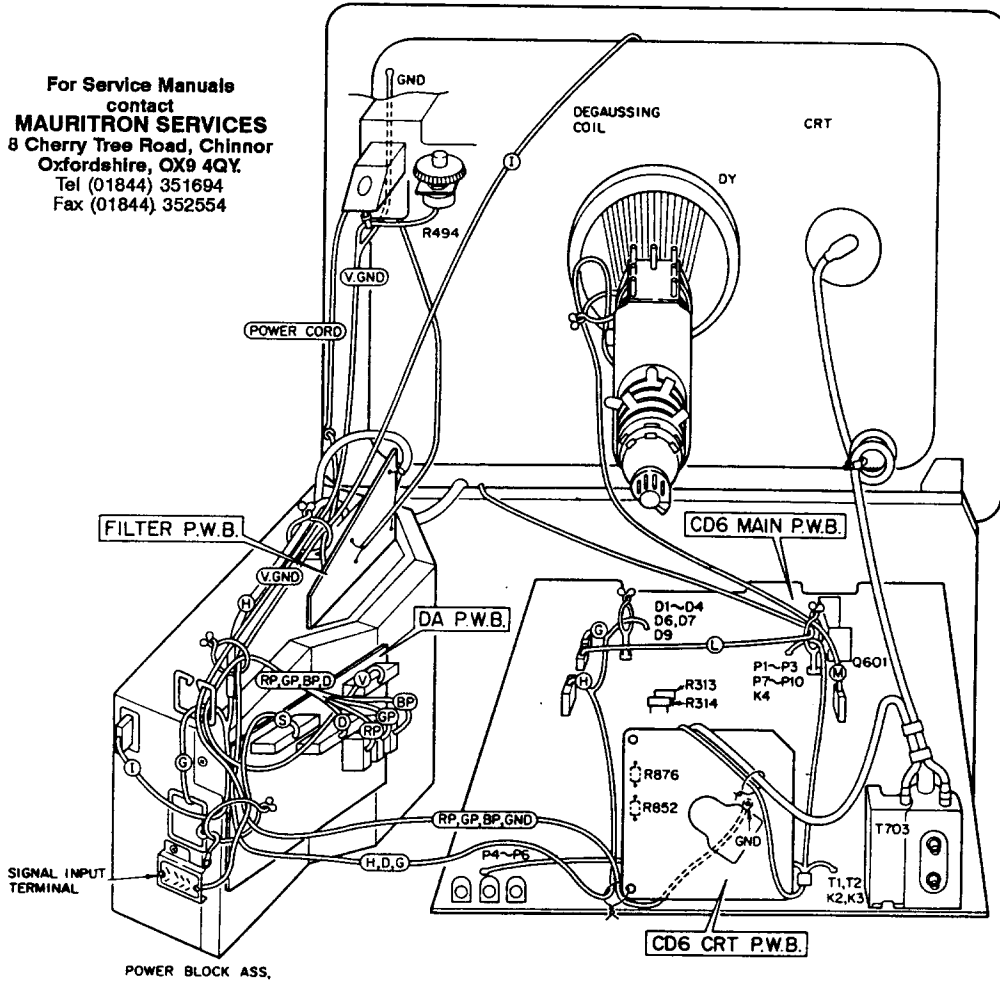
Picture is deviated. 	Value reduction of front porch from back porch is 11H or more. Adjust V center position R628.
Picture has horizontal stripes. 	Horizontal sync frequency is not set to 15.75kHz. Adjust H hold R715.
Picture flows up and down. 	Vertical sync frequency is not set to 60Hz. Adjust V hold R625.

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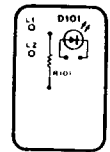
Phenomenon	Cause
Top/bottom of picture extended too much. 	Vertical flyback period is smaller than 62H. Adjust V size R627.
Picture is deviated upward. 	Value reduction of front porch from back porch is 11H or less. Adjust V center position R628.

WIRING DIAGRAM

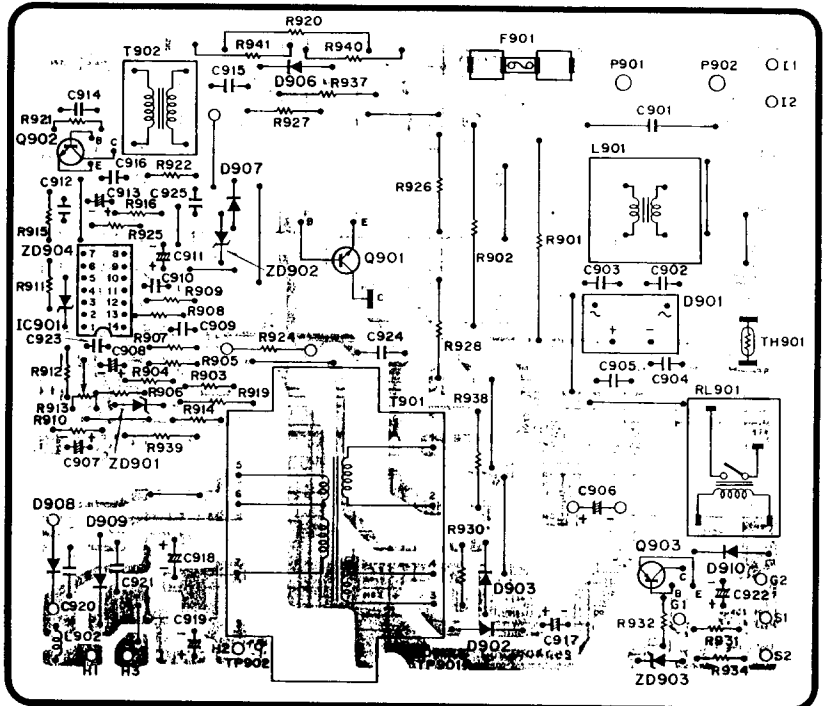
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Phenomenon	Cause
	Data indication period is larger than 46.6μS. Adjust H size L702.
	Data indication period is smaller than 46.6μS. Adjust H size L702.
	Value reduction of front porch from back porch is 1.5μS or more. Adjust H phase R716.
	Value reduction of front porch from back porch is 1.5μS or less. Adjust H phase R716.
	Vertical flyback period is larger than 62H. Adjust V size R627.

Phenomenon	Cause
	Vertical flyback period is smaller than 62H. Adjust V size R627.
	Value reduction of front porch from back porch is 11H or less. Adjust V center position R628.

MITSUBISHI

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 CM-1686A1EX.
 CM-1686A3EW.
 No. 0019E.

