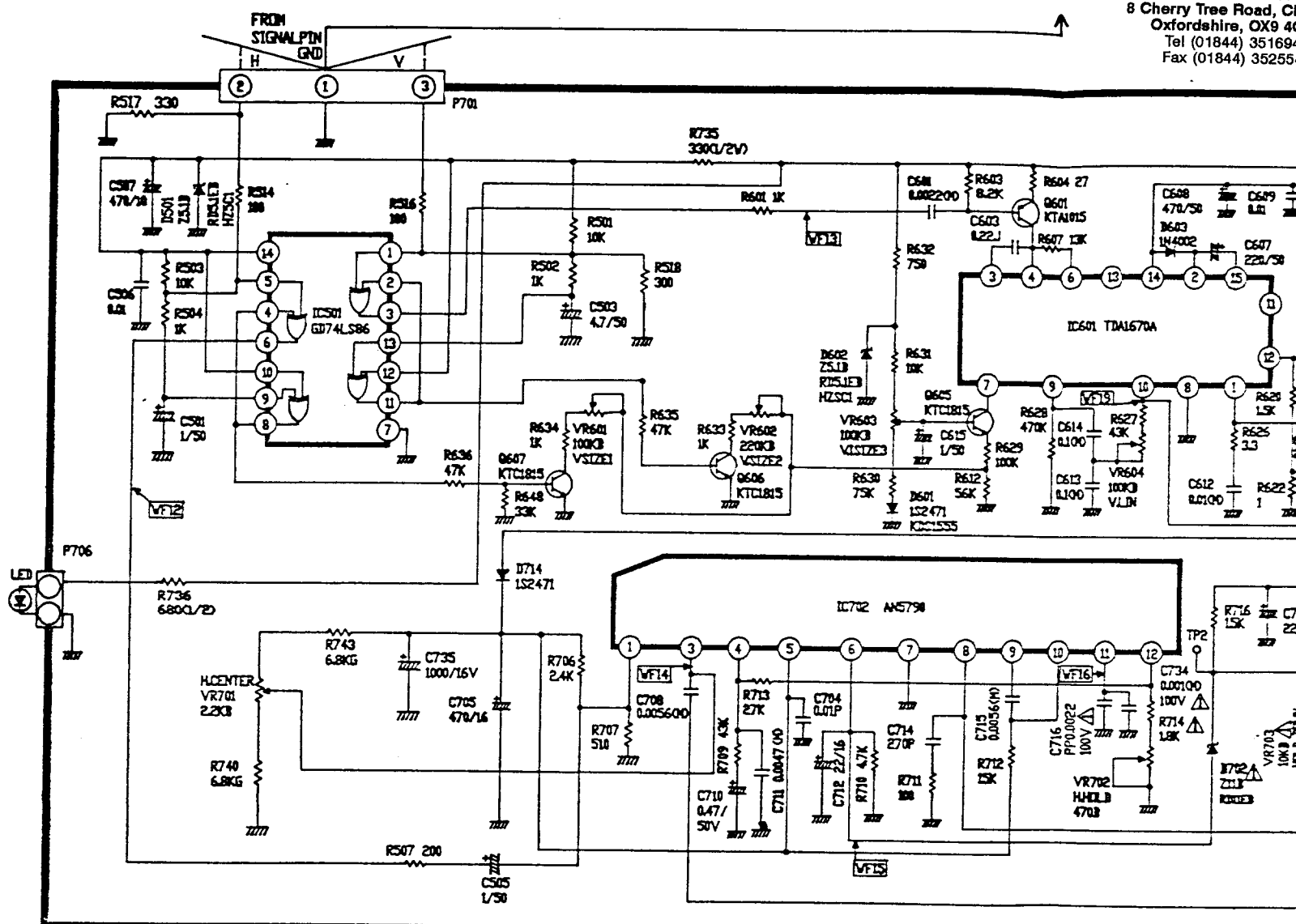




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NOTES : UNLESS OTHERWISE SPECIFIED

1. ALL RESISTORS ARE 1/8W  
K = 1000 M = 1,000,000
2. ALL CAPACITORS ARE SHOWN  
IN uF  $P=10^{-12}F$

**IMPORTANT SAFETY NOTICE**

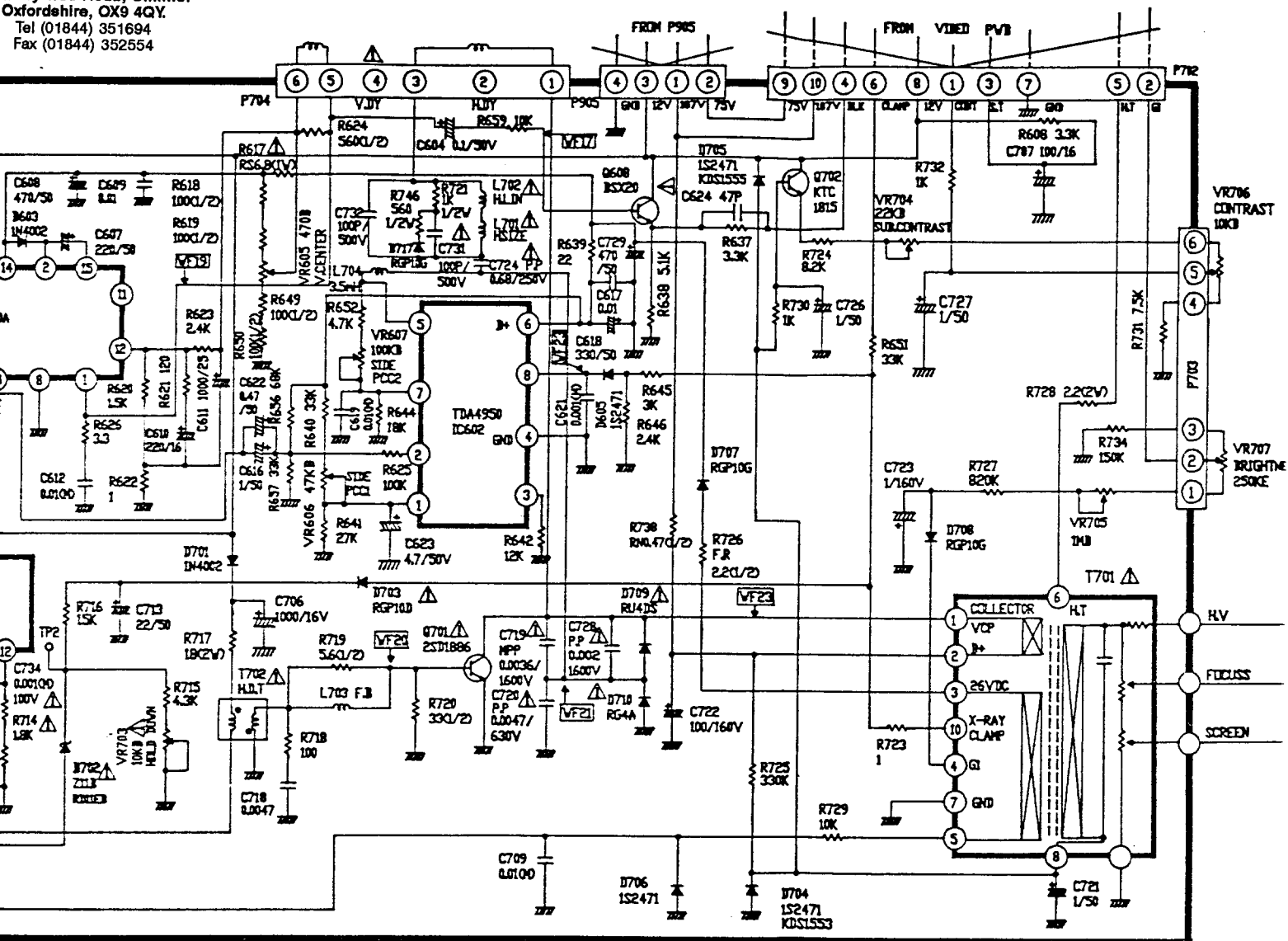
THE  SYMBOL MARK ON THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE  SYMBOL MARK OF THE SCHEMATIC.

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

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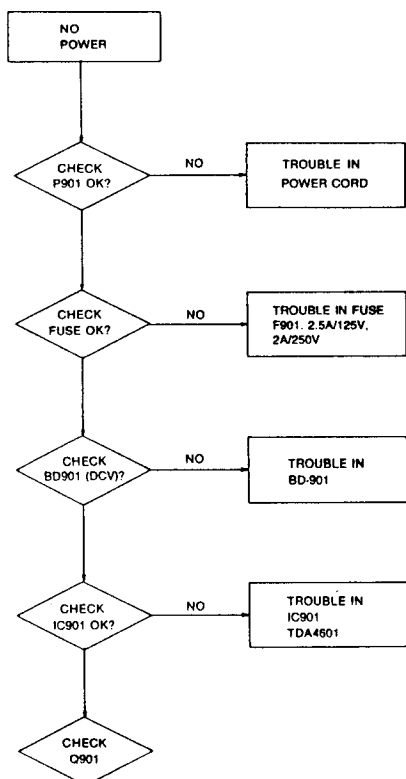
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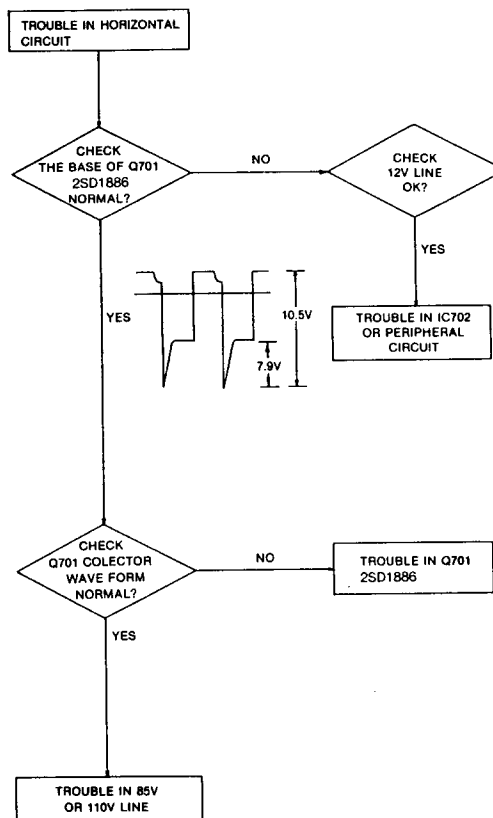
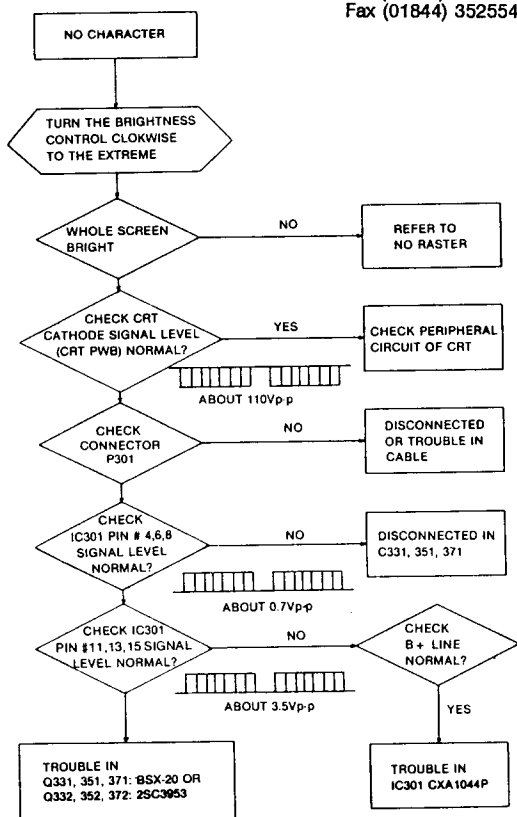
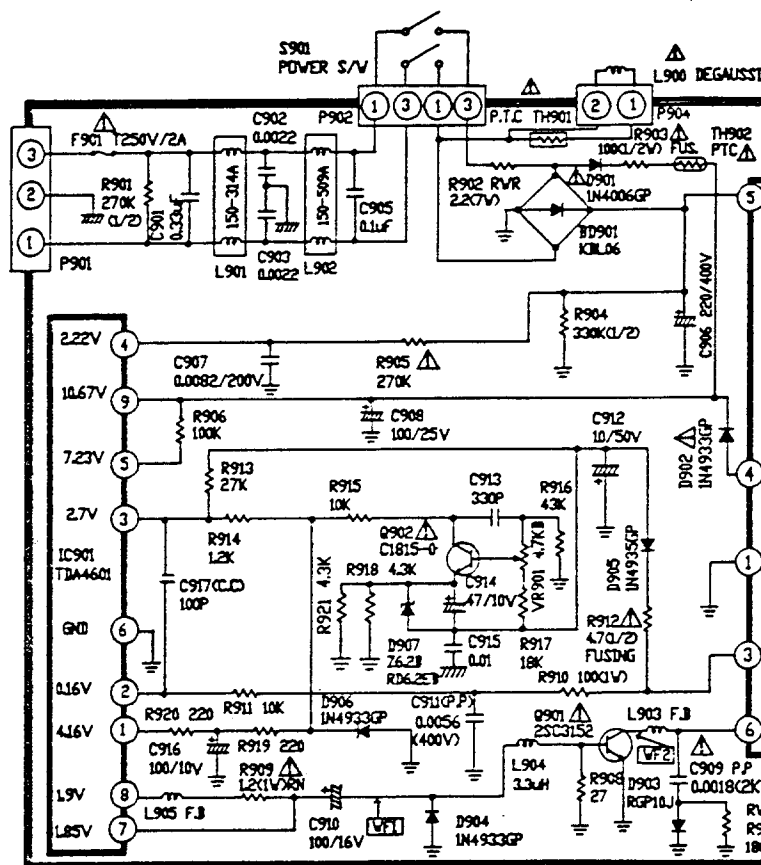
OPERATES SPECIAL  
FIRE AND  
INITIAL THAT  
CRITICAL

LA  SYMBOLE MARQUE DE CE DIAGRAMME SCHEMATIQUE COMPREND D'IMPORTANTES  
CARACTERISTIQUES SPECIALES CONÇUES POUR PROTÉGER DES RAYONS X ET  
DES DANGERS D'INCENDIE ET DE SECOURS ÉLECTRIQUES. EN CAS DE BESOIN  
SI DES PIÈCES DE CETTE  SYMBOLE MARQUE DOIVENT ÊTRE REMPLACÉES  
N'UTILISEZ QUE DES PIÈCES SPÉCIFIÉES PAS LE MANUFACTURIER.

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**NO RASTER**

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```

graph TD
    A[NO RASTER] --> B{CRT HEATER  
RED-HOT?}
    B -- NO --> C{CHECK PIN #5  
OF P702 6.3V?}
    C -- NO --> D[TROUBLE IN FBT]
    B --> E[TURN THE  
BRIGHTNESS CONTROL  
CLOCKWISE TO THE  
EXTREME]
    E --> F{WHOLE  
SCREEN BRIGHT}
    F -- NO --> G{CHECK G2  
VOLTAGE  
ABOUT 450V}
    G -- NO --> D
    G --> H{CHECK FBT #2  
VOLTAGE 110V?}
    H -- NO --> I[CHECK THE 110V LINE]
    H --> J{IF TURN THE  
SUB-BRIT. (VR707)  
CLOCKWISE SCREEN  
BRIGHT?}
    J -- NO --> K[NO HIGH VOLTAGE  
TROUBLE IN FBT]
  
```



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## ADJUSTMENT

### GENERAL INFORMATION

All adjustments are thoroughly checked and corrected when the monitor leaves the factory. Therefore the monitor should operate normally and produce proper color and pictures upon installation. However, several minor adjustments may be required depending on the particular location in which the monitor is to operate. This monitor is shipped completely in carton. Carefully draw out the monitor from the carton and remove all packing materials. Check and adjust all the customer controls such as Brightness, and Contrast to obtain a normal picture.

### B + ADJUSTMENT

1. Connect TP1 and GND with DIGITAL MULTIMETER.
2. Display the Reverse Pattern.
3. Turn slowly VR901 and set the B + Voltage to  $+ 107V \pm 0.2V$ .

### HORIZONTAL HOLD ADJUSTMENT

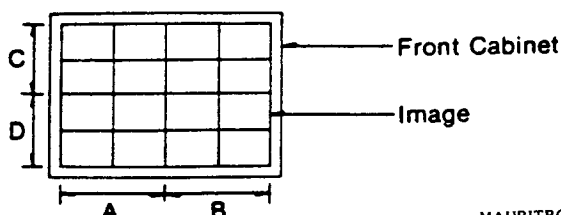
1. Display the Reverse Pattern on the monitor.
2. Disconnect H-Sync signal.
3. Turn the VR702 (H-Hold) for the screen to stand straight.

### VERTICAL LINEARITY ADJUSTMENT

1. Display the Cross Hatch Pattern on the monitor.
2. Turn to the VR604, so that the vertical linearity should be best condition.
3. Then the non-linearity should be within  $\pm 5\%$ .
4. When the Cross Hatch Pattern is displayed on the monitor, the difference of A - B should be within 2.5mm and the difference of C - D should be within 2mm. Refer to Fig. 1

### VERTICAL SIZE ADJUSTMENT

1. VERTICAL SIZE ADJUSTMENT IN MODE 3.
  - Display the Cross Hatch Pattern on the monitor.
  - Adjust the VR603, and then the vertical size should be within  $155 \pm 2\text{mm}$ .
  - It should be done by observing the Adjustment procedure.



(Fig. 1)

### 2. VERTICAL SIZE ADJUSTMENT IN MODE 1.

- Display the Cross Hatch Pattern on the monitor.
- Adjust the VR601, and then the vertical size should be within  $155 \pm 2\text{mm}$ .

### 3. VERTICAL SIZE ADJUSTMENT IN MODE 2.

- Display the Cross Hatch Pattern on the monitor.
- Adjust the VR602, and then the vertical size should be within  $155 \pm 2\text{mm}$ .

### VERTICAL CENTER ADJUSTMENT

1. Display the Reverse Pattern on the monitor.
2. Adjust the VR605, and then set the geometric vertical center in the screen, and then the geometric vertical center should be within 2mm tolerance.

### SIDE PINCUSHION ADJUSTMENT

1. Display the Reverse Pattern.
2. Adjust the VR606, and then the upper horizontal size and lower horizontal size should be same.
3. Adjust the VR607 so as to minimize the pincushion distortion.
4. Adjust alternately the VR606 and VR607 so as to be best condition in the screen.
5. Then the pincushion and/or the Barrel distortion should be within 1%.

### HORIZONTAL WIDTH ADJUSTMENT

1. Display the Cross Hatch Pattern on the monitor.
2. Adjust the L701 for the Horizontal Width so as to be within  $210 \pm 2\text{mm}$ .
3. Then the Bright control should be set at the center, and the Contrast control should be set at the MAX.

### WHITE-BALANCE ADJUSTMENT

1. THE USED INSTRUMENT
  - WHITE-BALANCE METER
  - DEGAUSSING COIL (Degauss the monitor before adjustment).
  - PHOTOMETER.
2. PREPARING ADJUSTMENT (1)
  - Connect the signal cable with PC, and display the Color 0.0 Full Pattern on the monitor.
  - Minimize the screen control of FBT.
  - Set the Sub-Bright (VR705) and the Sub-Contrast (VR704) to mechanical center.
  - Set the Contrast VR to the MAX. and the Bright VR to the center.



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- Set the G and the B drive to mechanical center.
  - Minimize R,G,B Cut Off VR and turn clockwise R Cut Off VR (R338) as much as 1/3 (about 45°).
3. ADJUSTMENT (1)
- Turn the screen control (G2) to clockwise slowly until the brightness of R raster is 3.5 FL  $\pm$  1 FL.
  - Let the R Cut Off VR (R338) be the reference, and adjust the G and the B Cut Off VR (R358, R378) so as to get  $X = 0.282$ ,  $Y = 0.304$ .
  - Adjust slowly counter-clockwise the Screen VR for Raster so as to disappear.
4. ADJUSTMENT (2)
- 1) Set external Brightness VR to center and external Contrast VR to Maximum.
  - 2) Display full white pattern (color 15.0) on the screen.
  - 3) Turn the B drive VR (R372) so that  $X = 0.282$  and the G drive VR (R352) so that  $Y = 0.304$ .
  - 4) Repeat 3) until  $X = 0.282 \pm 0.02$ ,  $Y = 0.304 \pm 0.022$ .
  - 5) Set external Brightness VR to min. and adjust external Contrast VR until brightness is 5 FL at full white pattern (color 15.0).
  - 6) Confirm  $X = 0.282 \pm 0.02$ ,  $Y = 0.304 \pm 0.022$  unless the color co-ordinate is not in spec, re-adjust G, B cut off VR (R358, R378) so that the pattern is white.
  - 7) Repeat the number 3), 4), 5), 6) so that the screen should be white.

#### BRIGHTNESS ADJUSTMENT

1. Maximize the Contrast VR.
2. Display the Cut-Off Level (Color 0.0)
3. Adjust the Sub-Bright VR (VR705) until the back raster disappears when the Bright VR is at center.
4. Confirm that whether back raster appears or not when the Bright VR is at MAX.

#### CONTRAST ADJUSTMENT

1. Set the external Bright VR at center and the external Contrast VR at Max.
2. Display White Pattern (Color 7.0), of which the size is  $50 \times 50$ , on the monitor.
3. At the center of the screen, adjust the Sub-Contrast VR (VR704), so that the brightness should be  $25 \pm 2FL$ .

#### FOCUS ADJUSTMENT

1. Set the Bright VR and the Contrast VR to MAX.
2. Display the "H" character in full screen (Color 7.0)
3. Adjust Focus VR, so that the focus should be best condition at the row that is 20~20th from left and at the line that is 7~9th from upper.

#### CONFIRMING SELF-TEST

1. Set the Bright VR at center and the Contrast at MAX.
2. Remove the signal connector from the PC.
3. Confirm that the brightness of Raster is more than 1FL.

#### FAIL SAFTY ADJUSTMENT

USED INSTRUMENT; DC VOLTMETER 8010 or as such.

#### PREPARING ADJUSTMENT

1. Display the reverse pattern on the monitor.
2. Confirm that  $B^+$  voltage of TP1 is 107VDC ( $\pm 0.2$  VDC).

#### ADJUSTMENT

1. Minimize the Contrast and the Bright VR. so that the screen should be Cut-Off.
2. Adjust Hold Down VR (VR703), so that the voltage should be  $10.5 \pm 0.05V$ .
3. Fasten the VR703 with glue or as such so as not to be changed after adjustment is done.

#### CONFIRMING

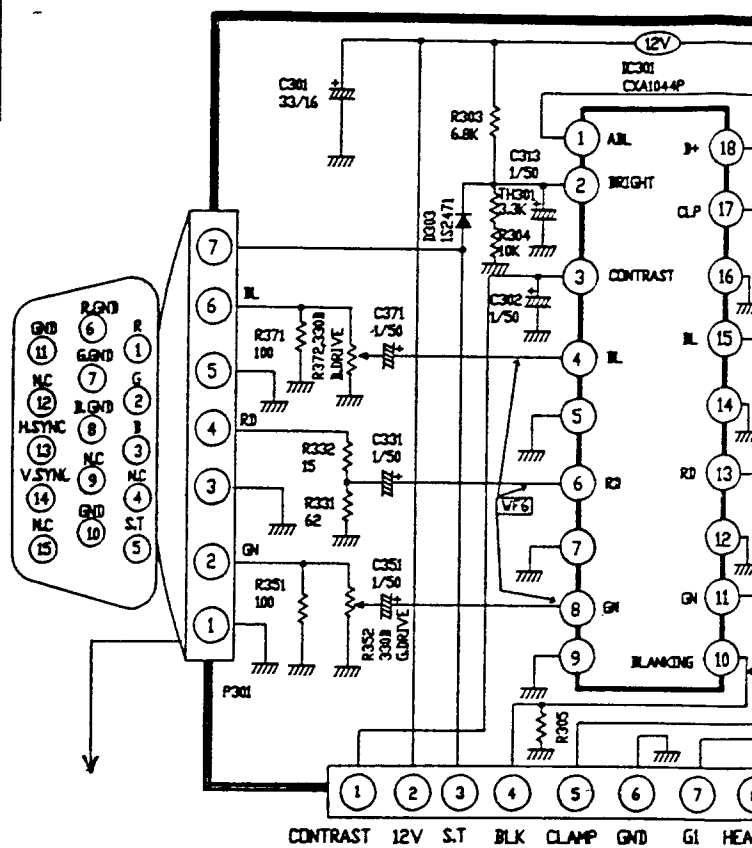
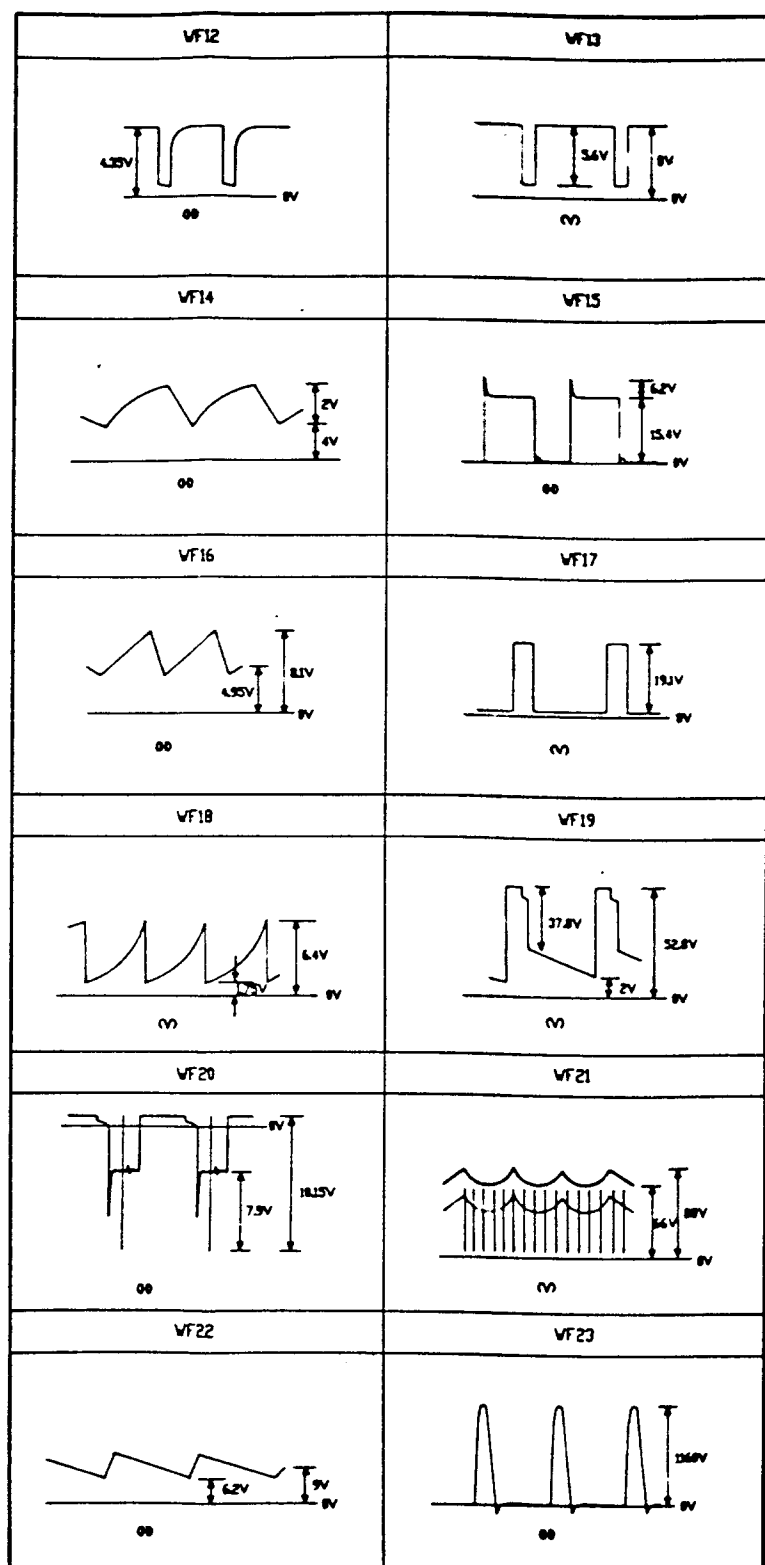
1. Supply the cathode of D702 (TP2) with DC  $12.0 \pm 0.5/-0V$ , and then confirm that the monitor should be Hold Down.

(CAUTION): ALL PROCEDURE MUST BE DONE AFTER THE MONITOR IS FULLY HEAT-RUN.

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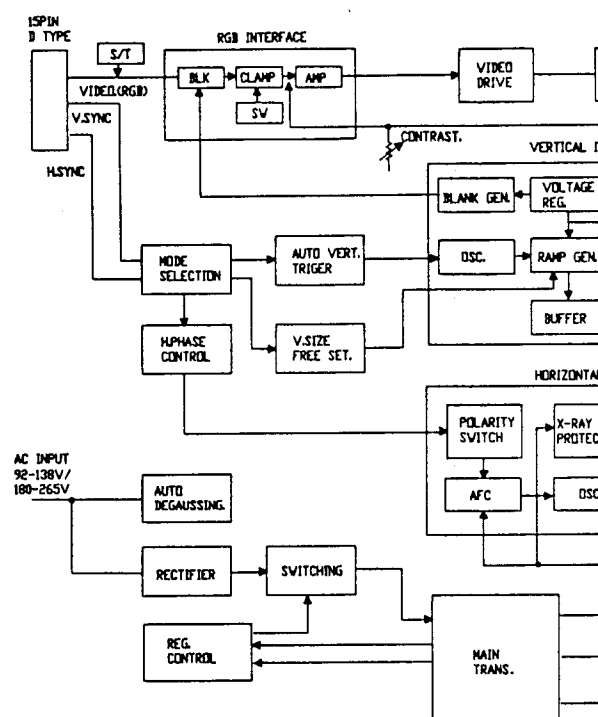
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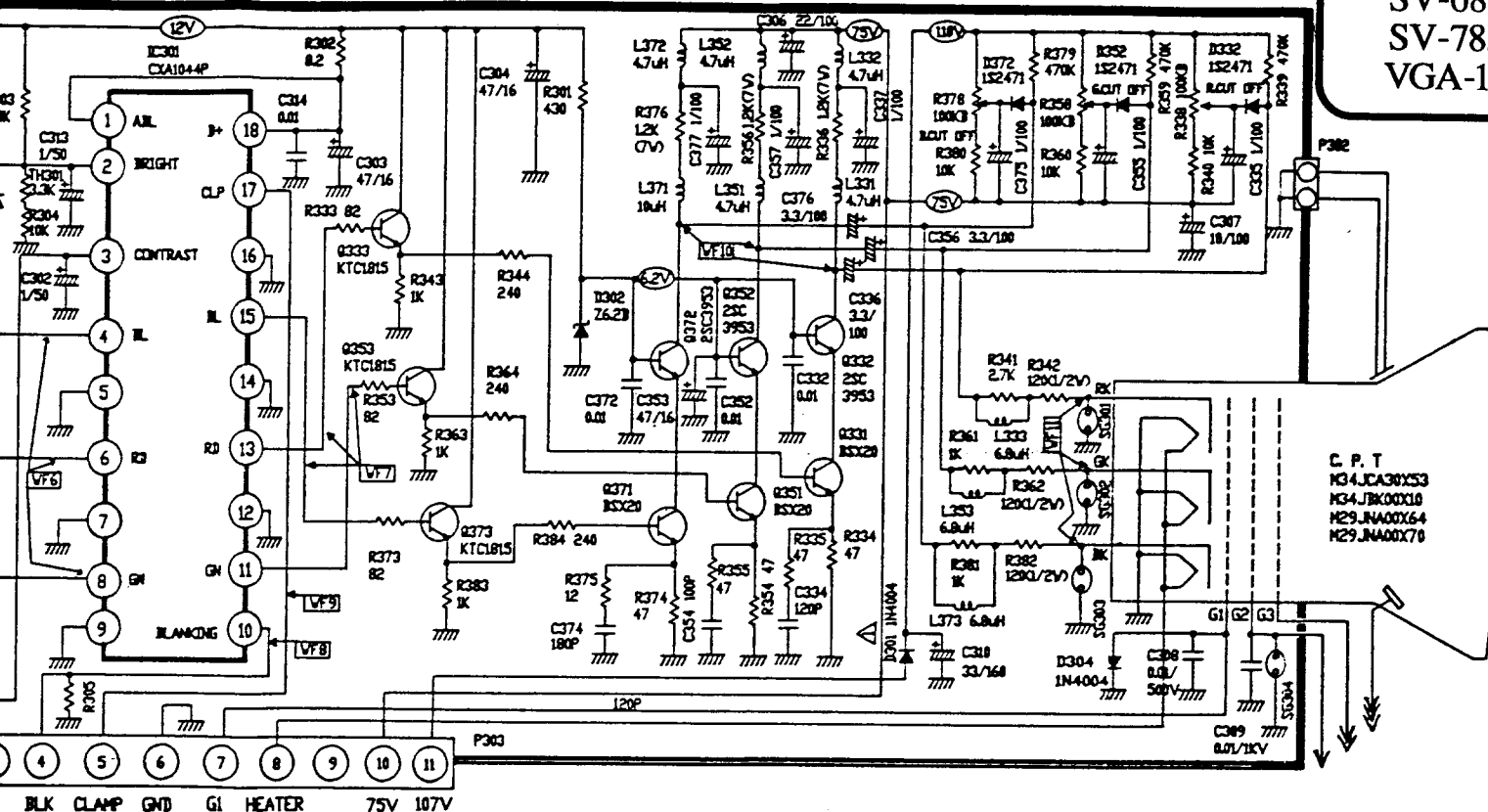
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### BLOCK DIAGRAM



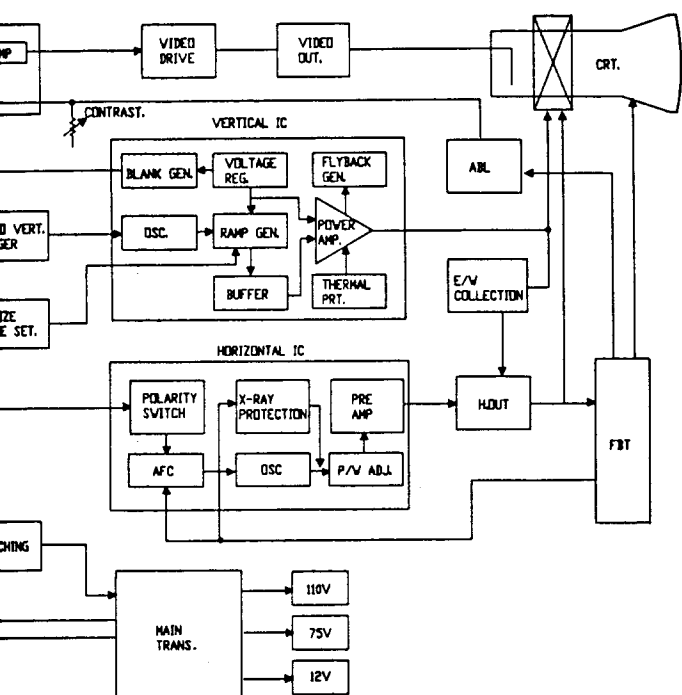
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## BLOCK DIAGRAM



## TROUBLE IN H.V SYNC

