

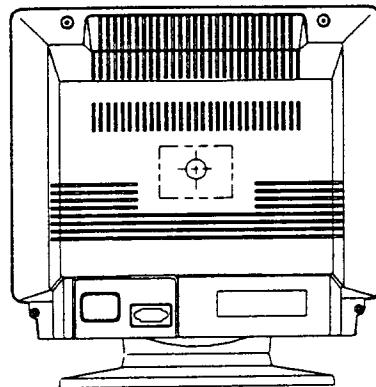
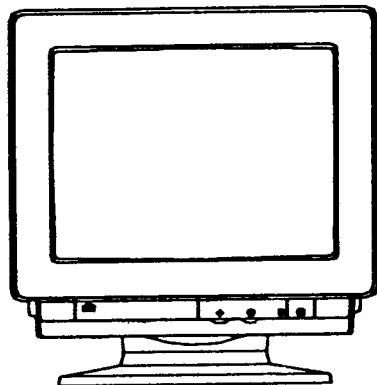
# SAMSUNG

# SERVICE MANUAL

## COLOR MONITOR

MODEL NO : CVM496\*T, CVM496\*T/LR  
CVM478\*T, CVM478\*T/LR

SYNCMaster 3



## SPECIFICATIONS

- Picture Tube  
14" 90° Deflection.  
0.28 / 0.31 / 0.39 / 0.41mm Dot Pitch.  
Non-glare or Glare.
- Scanning Frequency (Horizontal / Vertical)  
31.47KHz / 70Hz, 31.47KHz / 60Hz, 35.5KHz / 87Hz,  
37.86KHz / 72.8Hz, 35.15KHz / 56Hz, 37.88KHz /  
60.3Hz.
- Display Colors  
Analog Input : Unlimited Colors.
- Maximum Resolution  
Horizontal : 1024 Dots.  
Vertical : 768 Lines.
- Input Video Signal  
Analog 0.7vp-p Positive at 75Ω Terminated.
- Input Sync Signal  
Separate Sync. : TTL level Positive / Negative.  
Video Signal : Analog (0.7Vp-p) Positive.
- Video Band Width : Max. 45 MHz.
- Active Display  
Horizontal : 240mm ± 5mm.  
Vertical : 180mm ± 5mm.  
\*Active Display Area is Changed by Signal timing
- Input Voltage  
AC 100 - 240Volt, 60Hz/50Hz ± 3Hz.
- Power Consumption : 80Watt. (Max.)
- Dimension  
Unit (HxWxD) : 14.3 X 14 X 15 Inches  
(362.5 X 356 X 380 mm)  
Carton (HxWxD) : 18.2 X 18 X 15.7 Inches  
(462 x 457 x 398 mm)
- Weight  
NET : 25Lbs 5.6Oz (11.5Kg)  
GROSS : 28Lbs 10.6.Oz (13Kg)

DESIGNS and SPECIFICATIONS are subjected to  
change without prior NOTICE.

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## **SAFETY PRECAUTIONS**

Service work should be performed only by qualified service technicians who are thoroughly familiar with all of the following safety checks and servicing guidelines:

### **WARNING**

1. For continued safety, do not attempt to modify the circuit.
2. Disconnect the AC power before servicing.
3. Semiconductor heat sinks are potential shock hazards when the chassis is operating.

### **SERVICING THE HIGH VOLTAGE SYSTEM AND PICTURE TUBE**

When servicing the high voltage system, remove the static charge by connecting a 10kohm resistor in series with an insulated wire(such as a test probe) between the chassis and the anode lead. (The AC line cord should be disconnected from the AC outlet.)

1. The picture tube in this display monitor employs integral implosion protection.
2. Replace with a tube of the same type and number for continued safety.
3. Do not lift the picture tube by the neck.
4. Handle the picture tube only when wearing shatter proof goggles and after discharging the high voltage anode completely.

### **X-RADIATION AND HIGH VOLTAGE LIMITS**

1. Be sure all service personnel are aware of the procedures and instructions covering X-radiation. The only potential source of X-ray in a current solid state display monitor is the tube. However, the picture tube does not emit measurable X-ray radiation if the high voltage is as specified in the "high voltage check" instruction.

It is only when high voltage is excessive that X-radiation is capable of penetrating the shell of the picture tube, including the lead in glass material. The important precaution is to keep the high voltage below the maximum level specified.

2. It is essential that serviceman have available at all times an accurate high voltage meter. The calibration of this meter should be checked periodically.

3. High voltage should always be kept at the rated value - no higher. Operation at high voltages may cause a failure of the picture tube or high voltage circuitry and, also under certain conditions, may produce radiation in excess of desirable levels.

4. When the high voltage regulator is operating properly there is no possibility of an X-radiation problem.

Every time a color chassis is serviced, the brightness should be tested while monitoring the high voltage with a meter to be certain that the high voltage does not exceed the specified, value and that it is regulating correctly.

5. Do not use a picture tube other than that specified, or make unrecommended circuit modifications to the high voltage circuitry.
6. When troubleshooting taking test measurements on a display monitor with excessively high voltage, avoid being unnecessarily close to the display monitor. Do not operate the display monitor longer than is necessary to locate the cause of excessive voltage.

### **FIRE AND SHOCK HAZARD**

Before returning the display monitor to the user, perform the following safety checks:

1. Inspect all lead dress to make certain that the leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the display monitor.
2. Inspect all protective devices such as non-metallic control knobs, insulating materials, cabinet backs, adjustment and compartment

cover or shields, isolation resistor-capacitor networks, mechanical insulators, etc.

3. To be sure that no shock hazard exists, checks for leakage current in the following manner:

- Plug the AC line cord directly into a 120volt AC outlet. (Do not use an isolation transformer for this test)
- Using two clips leads, connect 1.5 kohm, 10 watt resistor paralleled by a 0.15uF capacitor in series with all exposed metal cabinet parts and a known earth ground, such as electrical conduct or electrical ground connected to earth ground.
- Use a SSVM or VOM with 1000 ohms per-volt or higher sensitivity to measure the AC voltage drop across the resistor. (See Figure 1.)
- Connect the resistor to all exposed metal parts having a return path to the chassis (metal cabinet, screw heads, knobs and shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor.
- Any reading of 5.25volt RMS (this corresponds to 3.5milliamp.AC) or more is excessive and indicates a potential shock hazard which must be corrected before returning the display monitor to the user.

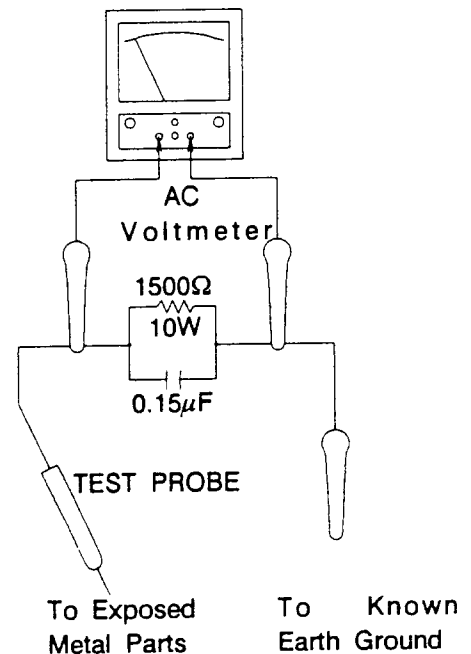


Figure 1. Leakage Current Test Circuit

## SAFETY NOTICE

Many electrical and mechanical parts which have special characteristics in this chassis often pass unnoticed and the protection afforded by them can not necessarily be obtained by using replacement components rated for higher voltage, wattage, etc.

Replacement parts that have these special safety characteristics are identified in this manual, and its supplement electrical components having such features are identified by a in the Parts List and Schematic Diagrams.

Before replacing any of these components, read the Parts List in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the Parts List may create shock, fire, or other hazards.

## GENERAL INFORMATION

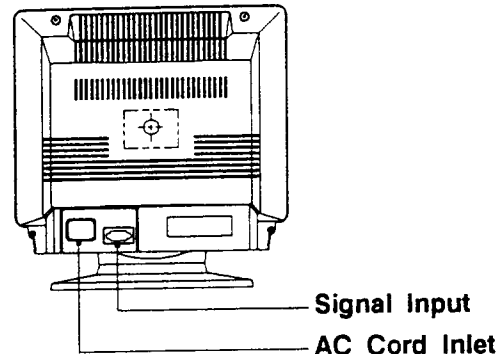
### 1. FEATURES

- 14 inch (13.5 inch visual) high performance CRT.
  - Available in 0.28/ 0.31/ 0.39/ 0.41 dot pitch
- Automatically scans frequencies from 31.47KHz / 70Hz, 31.47KHz / 60Hz, 35.5KHz / 87Hz, 37.86KHz / 72.8Hz, 35.15KHz / 56Hz, 37.88KHz / 60.3Hz.
- Compatible with a wide variety of video standards including VGA, IBM 8514/A(XGA), and Super- VGA. Supports VESA flicker-free modes.
- Size and position controls are located up front for easy and accurate adjustment.
- The optional tilt and swivel stand may be attached to provide a variety of viewing angles, or not attached if limited work space is a consideration.
- Power supply operates on AC 100 - 240 Volt 60 / 50Hz for use all over the world.

**Note :** This manual covers the following models

CRT SCREEN	CRT DOT PITCH	1485 cabinet	
NON-GLARE	0.28mm	CVM4967T	CVM4967T/LR
	0.31mm	CVM4961T	CVM4961T/LR
	0.39mm	CVM4963T	CVM4963T/LR
	0.41mm	CVM4965T	CVM4965T/LR
GLARE	0.41mm	CVM4964T	CVM4964T/LR
Remark		-	MPR II
CRT SCREEN	CRT DOT PITCH	1486 cabinet	
NON-GLARE	0.28mm	CVM4787T	CVM4787T/LR
	0.31mm	CVM4781T	CVM4781T/LR
	0.39mm	CVM4783T	CVM4783T/LR
	0.41mm	CVM4785T	CVM4785T/LR
GLARE	0.41mm	CVM4784T	CVM4784T/LR
Remark		-	MPR II

### 2. INSTALLATION



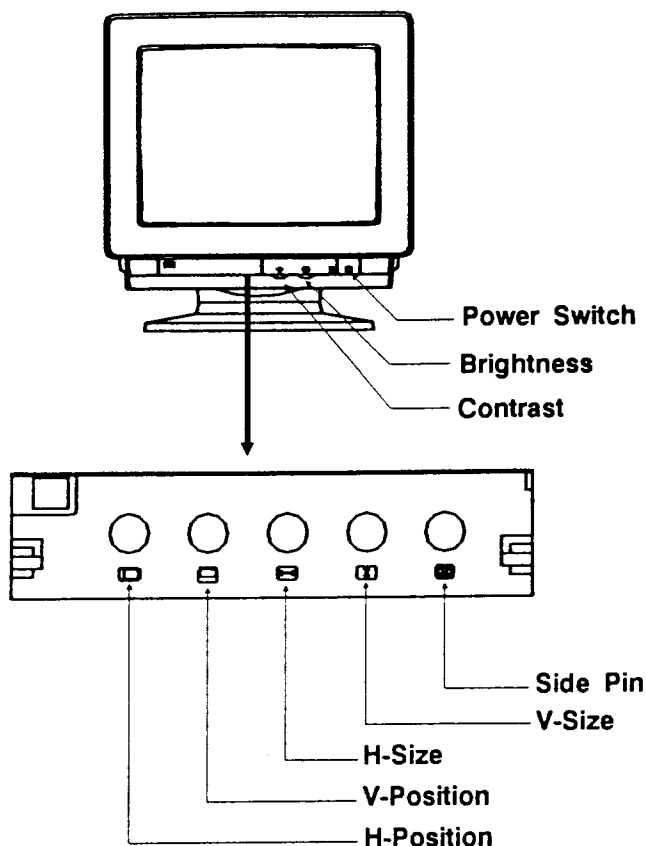
This monitor can be connected to any IBM compatible analog display adapter. Such adapters include VGA, 8514/A, XGA, and the built-in video system of IBM PS/2 computers and compatibles. To attach the monitor to your system, use the following instructions :

1. Turn off the power to the computer.
2. Insert AC power cord into monitor and then into an AC power outlet.
3. Connect the 9 pin side of the signal cable to the 9 pin D-SUB connector on the rear side of the monitor.
4. Connect the 15 pin side of the signal cable to the video output port of your video controller.
 

**Note:** Please see the connector pin assignment chart for the video controller (video controller manual) and the connector pin assignment chart for the monitor (Page 6 this manual) if the video controller does not have a standard 15 pin D-SUB connector.
5. Before turning on the power to the monitor and computer, check your computer's owner's manual for instructions about turning on equipment connected to the computer. Also, check for any instructions for your video system when using a multi-sync monitor. In some cases, jumper or switch settings may be required for the video board to output extended resolution modes.
6. To turn on the monitor, push the power switch. The power indicator LED will light. To turn the monitor off, push the power switch once again. The power indicator LED will also turn off.

### 3. CONTROL LOCATION & FUNCTIONS

#### 3-1. FRONT VIEW



- **Brightness Control**

Use to adjust the overall brightness of the displayed image.

- **H-Position**

Adjust this control for the proper horizontal position(centering) of the display.

- **V-Position**

Adjust this control for the proper vertical position (centering) of the display.

- **H-Size**

Adjust this control for the desired horizontal size (width) of the display.

- **V-Size**

Adjust this control for the desired vertical size of the display.

- **Side Pin**

Adjust this control, to correct the vertical sides of the display from bowing out (barrel distortion) or bowing in (pincushion distortion).

#### 3-2. BASIC CONTROLS & FUNCTIONS

- **Power Switch**

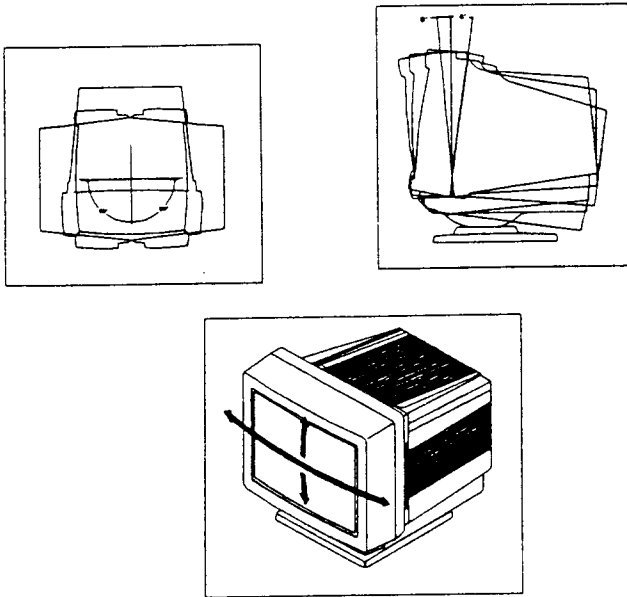
Use to turn monitor power on and off. Push switch once to turn monitor power on. LED power on indicator will also turn on. Push switch once again to turn monitor power off.

- **Contrast Control**

Use to adjust the contrast level of the displayed image. Contrast controls the difference between dark and light areas of the displayed image

#### 4. USE OF THE TILT-SWIVEL

With the tilt-swivel, this unit can be adjusted to be viewed at your desired angle within 90° horizontally and 13° vertically.

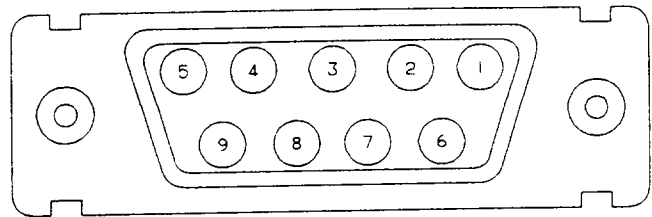


To turn the unit horizontally, hold it at its bottom with you both hands as illustrated below.

#### 5. PIN ASSIGNMENTS

TABLE1. D-SUB SIGNAL INPUT

PIN ASSI- GNMENT	SIGNALS
1	RED
2	GREEN
3	BLUE
4	H-SYNC
5	V-SYNC
6	GND-R
7	GND-G
8	GND-B
9	GND-SYNC



Figure

# DISPLAY PERFORMANCE

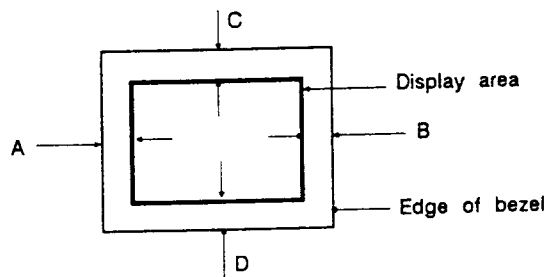
## 1. DISPLAY AREA

- WIDTH :  $240 \pm 5\text{mm}$
- HEIGHT :  $180 \pm 5\text{mm}$

## 2. CENTERING

$$|A - B| \leq 3\text{mm}$$

$$|C - D| \leq 2.5\text{mm}$$



## 3. DISTORTION

### a) Trapezoid

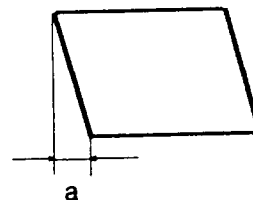
$$\frac{|AC - BD|}{|AC + BD|} \times 100 \leq 1\%$$

$$\frac{|AB - CD|}{|AB + CD|} \times 100 \leq 1\%$$



### b) Parallelogram

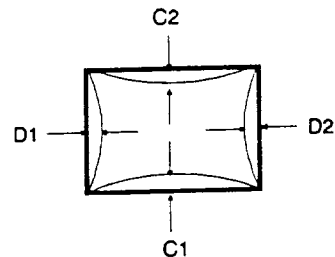
$$|a| \leq 2.5\text{mm}$$



### c) Pincushion

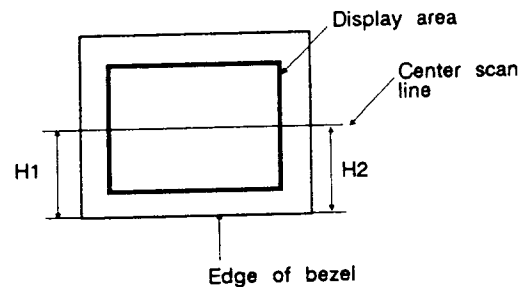
$$|C1|, |C2| \leq 2.5\text{mm}$$

$$|D1|, |D2| \leq 3.0\text{mm}$$



### (d) Rotation

$$|H1 - H2| \leq 2.0\text{mm} (\pm 0.5^\circ)$$





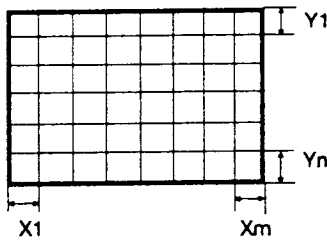
#### 4. LINEARITY

- Horizontal linearity

$$HL = \frac{X_{\max} - X_{\min}}{\bar{X}} \times 100\% \times 0.5 \leq 7\%$$

- Vertical linearity

$$VL = \frac{Y_{\max} - Y_{\min}}{\bar{Y}} \times 100\% \times 0.5 \leq 5\%$$



- Conditions

Display image : Crosshatch pattern  
Maximum and minimum values should not be adjacent to each other.

X max is maximum value among X1 ~ Xm

X min is minimum value among X1 ~ Xm

$$\bar{X} = \frac{X_1 + X_2 \dots X_m}{m} \quad (m \geq 11)$$

Y max is maximum value among Y1 ~ Yn

Y min is minimum value among Y1 ~ Yn

$$\bar{Y} = \frac{Y_1 + Y_2 \dots Y_n}{n} \quad (n \geq 10)$$

#### 5. BRIGHTNESS UNIFORMITY

Value	65% (Min) Variation = $\frac{C}{A} \times 100$
Conditions	Display image : White flat field Luminance : F/L at the center of display area A : Luminance at position of the highest C : Luminance at position of lowest brightness

#### 6. COLOR POINT

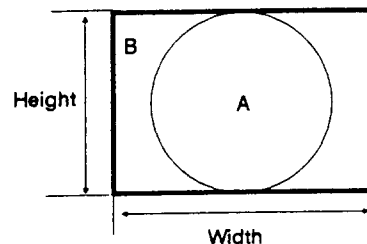
Value	9300°K + 27MPCD X = 0.281 ±0.03, Y = 0.311 ±0.03
Conditions	Display image : White flat field at the center of display area. Luminance : min : 3 F/L max : 20 F/L

#### 7. MISCONVERGENCE

Center area of display

("A" circle is 180mm) (A) : 0.3mm

Peripheral area of display (B) : 0.45mm



- Conditions

Display image : Crosshatch pattern mixed with R, G and B colors.

#### 8. PURITY

Conspicuous mislanding shall not be visible within display area at distance of 50Cm (23.6") from CRT surface.

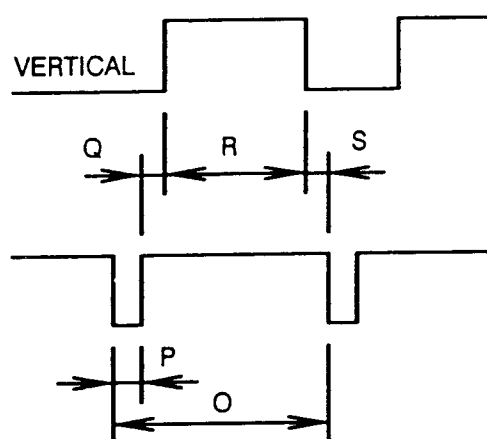
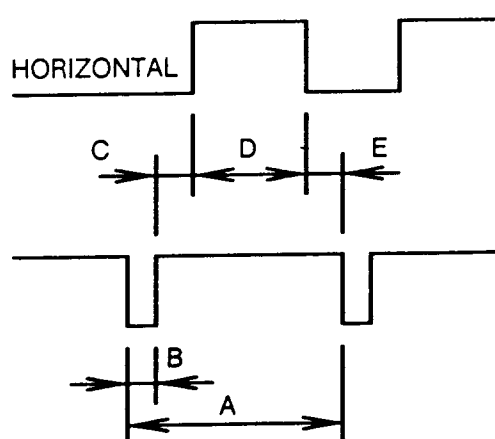
- Conditions

Display image : White flat field

Luminance : 15 F/L at the center of display area.

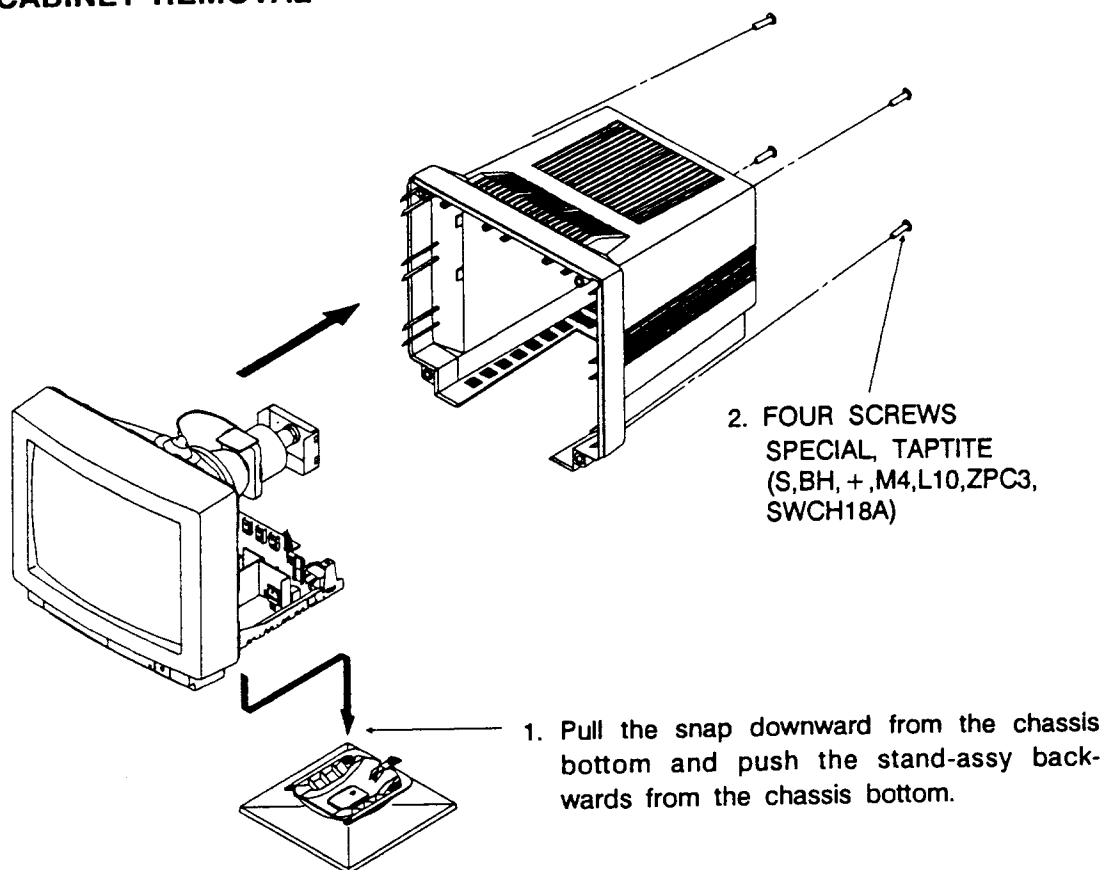
# FACTORY PRESET SIGNAL TIMING CHART

Mode  Timing	VGA & MCGA Compatible			8514A &	VESA		SVGA
	VGA1	VGA2	VGA3	XGA	VGA	SVGA	
	640x350	640x400	640x480	1024x768	640x480	800x600	
fH (KHz)	31.468	31.468	31.468	35.520	37.860	37.879	35.156
A msec	31.778	31.778	31.778	28.150	26.413	26.400	28.444
B msec	3.813	3.813	3.813	3.920	1.270	3.200	2.000
C msec	1.589	1.589	1.589	1.250	4.603	2.200	3.556
D msec	26.058	26.058	26.058	22.800	20.317	20.000	22.222
E msec	0.318	0.318	0.318	0.180	0.762	1.000	0.667
fV (Hz)	70.080	70.080	59.940	86.960	72.809	60.317	56.250
O msec	14.268	14.268	16.683	11.500	13.735	16.579	17.778
P msec	0.064	0.064	0.064	0.113	0.079	0.106	0.057
Q msec	1.716	0.890	0.794	0.563	0.740	0.607	0.626
R msec	11.504	13.156	15.762	10.810	12.678	15.840	17.067
S msec	0.985	0.159	0.064	0.014	0.238	0.026	0.028
Clock Fre. (MHz)	25.175	28.322	25.175	44.912	31.500	40.000	36.000
Polarity							
H. Sync	Positive	Negative	Negative	Positive	Negative	Positive	Posit./Nega.
V. Sync	Negative	Positive	Negative	Positive	Negative	Positive	Posit./Nega.
Remark	-	-	-	Interlaced	-	-	-

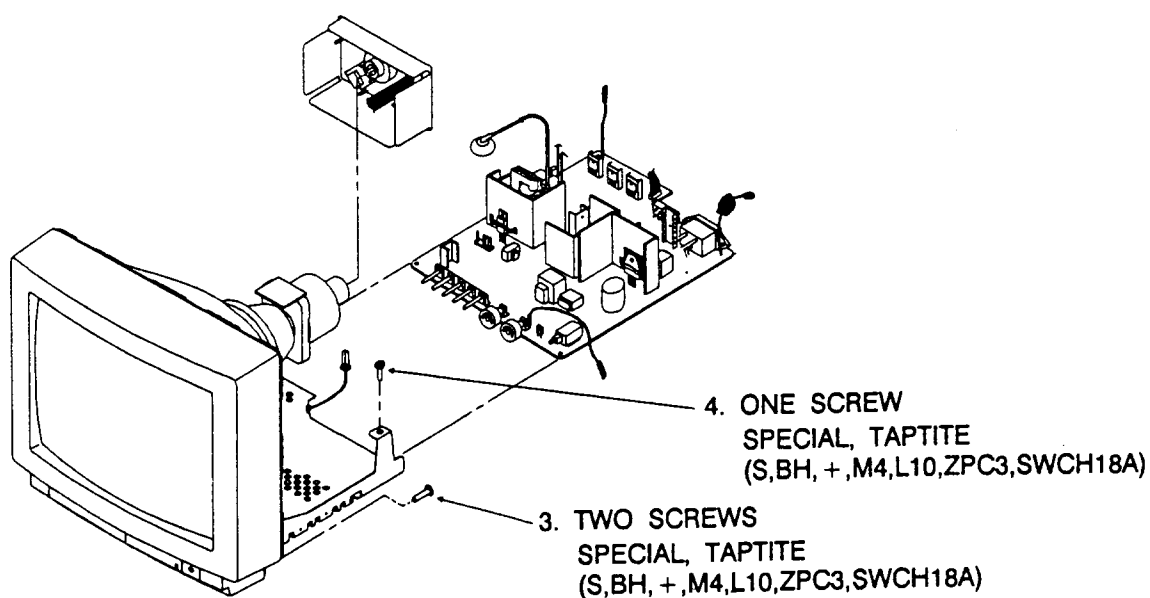


## DISASSEMBLY

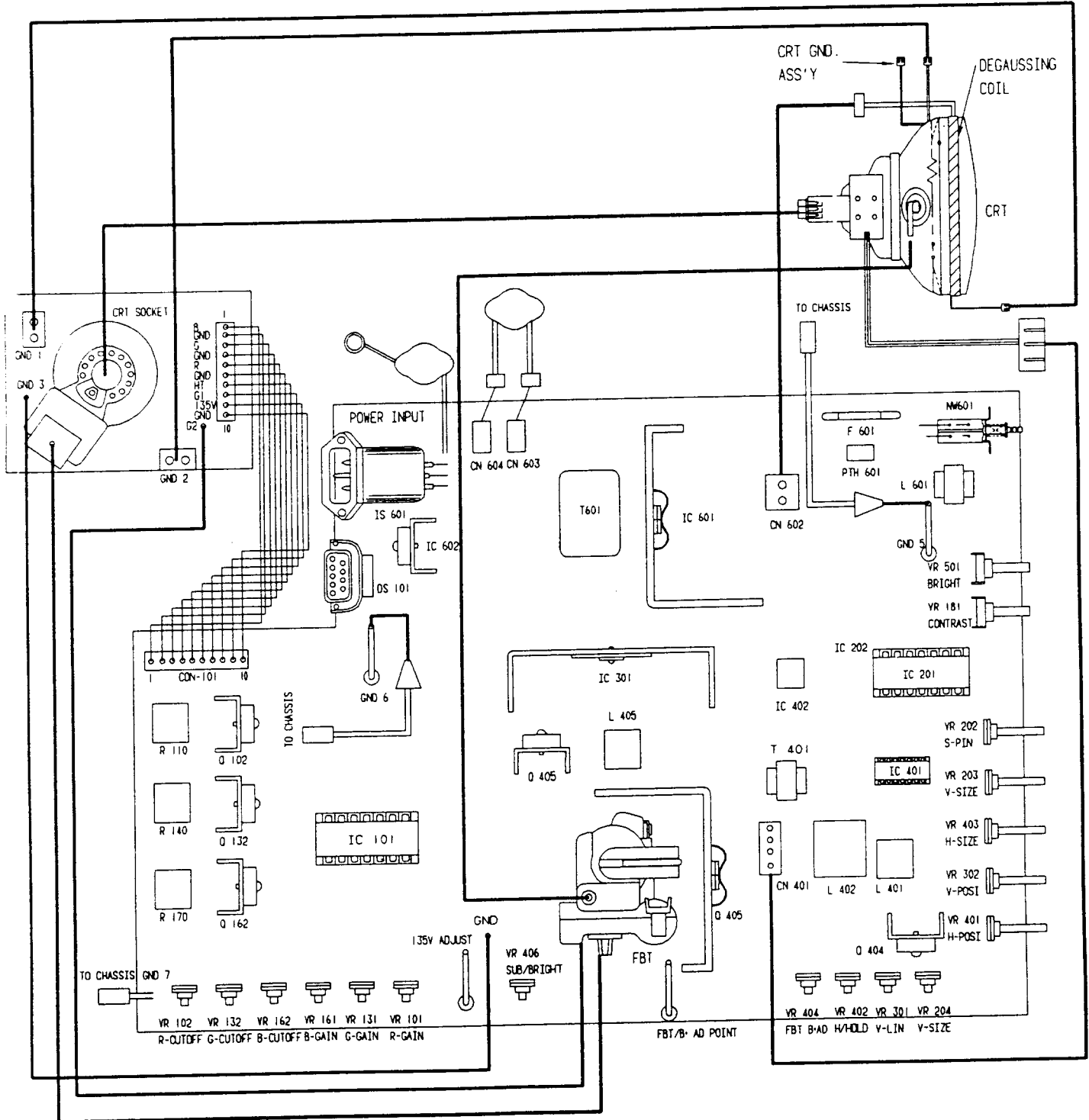
### 1. STAND & CABINET REMOVAL



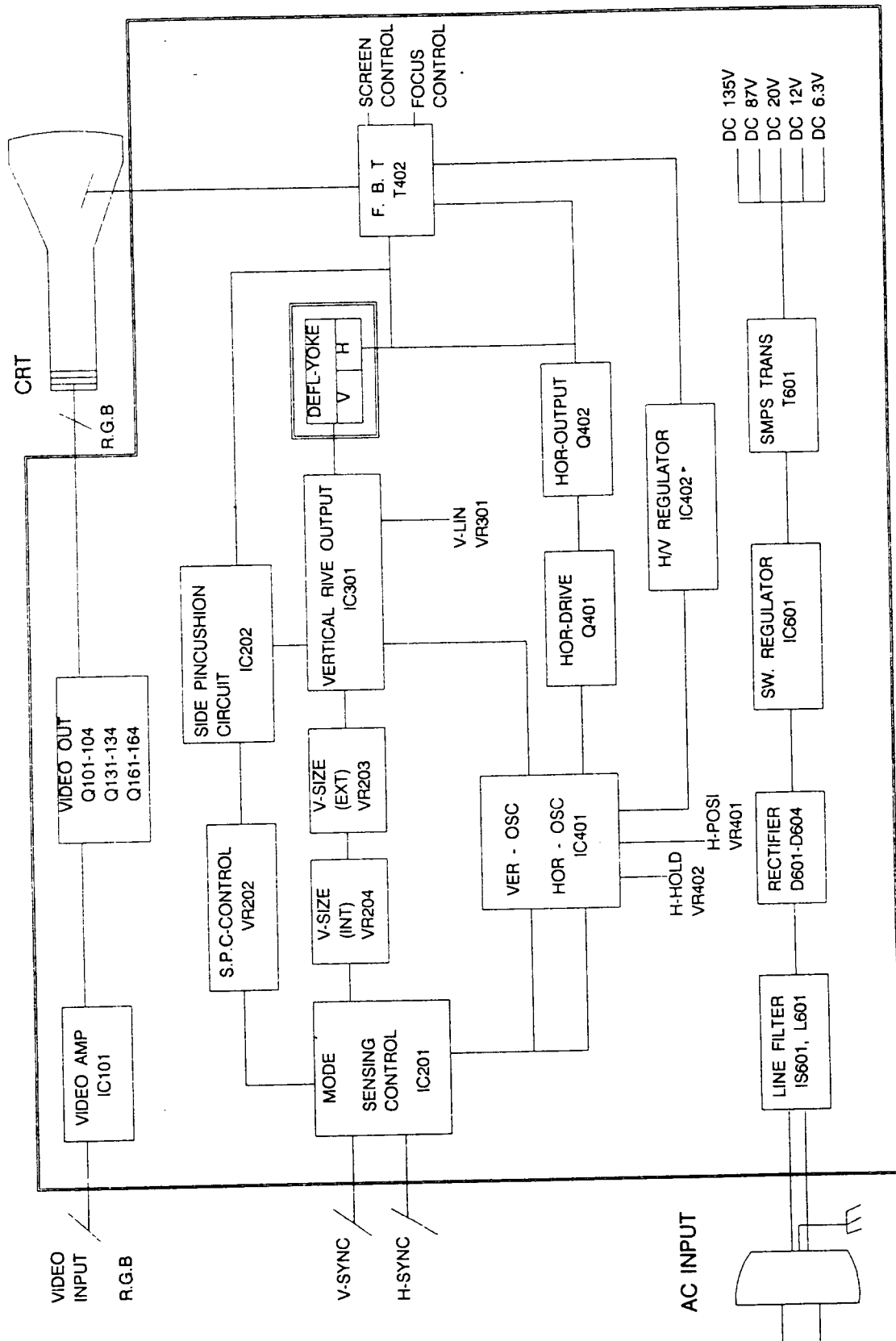
### 2. BOTTOM SHIELD REMOVAL



# WIRING DIAGRAM



# BLOCK DIAGRAM



## ALIGNMENT PROCEDURE

### ADJUSTMENT CONDITIONS AND PRECAUTIONS

- Power supply voltage  
AC 100V - 240V (60Hz/50Hz)
- Warm up time  
The display must be on for 15 minutes before starting alignment  
This is especially critical in color temperature and white balance adjustments.
- Signal  
Video Analog 0.7Vp-p Positive at 75 ohm Terminated.  
  
Sync on green: Video 0.7Vp-p Positive  
                  : Sync 0.3Vp-p Negative  
Sync             : TTL level negative / positive
- Scanning frequency (Horizontal / Vertical)  
31.47KHz / 70Hz, 31.47KHz / 60Hz, 35.5KHz / 87Hz, 37.86KHz / 72.8Hz, 35.15KHz / 56Hz, 37.88KHz / 60Hz.

### 1. MAIN PWB PREPARE ADJUSTMENT

- (1) Operate the monitor.
- (2) Connect the plus pole of DVM (Digital Multi Meter) to the cathode of D610 (135V ADJUST) and connect the other pole (GND) to chassis gnd.
- (3) Rotate the B<sup>+</sup> voltage adjusting control (VR601) to provide 135V DC.

**Condition** : brightness, contrast VR max in white pattern.

### 2. HORIZONTAL FREQUENCY ADJUSTMENT

(Instrument in use: frequency counter, scope probe)

- (1) Connect the plus pole of the scope probe to RED wire jacket of DY and the minus pole to chassis frame.

- (2) At self raster (disconnect the signal cable), adjust the horizontal frequency control (VR402) so that the horizontal frequency is 31.5KHz. (Free running frequency: 31.5KHz  $\pm$  100Hz)

### 3. HORIZONTAL(Position) ADJUSTMENT

Adjust horizontal phase control (Located at the front panel) so that the image (or test pattern) is placed on the center of the raster.

### 4. FOCUS ADJUSTMENT

- (1) Operate the monitor to display the full white pattern on the screen.
- (2) Set the brightness & contrast control at maximum position.
- (3) Change the pattern into "H" character pattern on the screen.
- (4) Rotate the focus adjusting control in FBT for the best focus.

### 5. FBT B<sup>+</sup> ADJUSTMENT (HIGH VOLTAGE)

- (1) Connect the plus pole of DVM to the FBT /B<sup>+</sup>AD POINT and connect the other pole to the chassis GND.
- (2) Rotate the B<sup>+</sup> voltage adjusting control (VR404) to provide 85.0  $\pm$  0.3V DC.

**Condition** : brightness, contrast VR max. VGA3 mode.

### 6. SIDE PINCUSHION ADJUSTMENT

Adjust the side pincushion control (Located at the front panel) until the side lines become straight in VGA3.

## 7. VERTICAL LINEARITY ADJUSTMENT

Adjust the vertical linearity control (VR301) until the vertical linearity is best in VGA3.

## 8. VERTICAL CENTERING ADJUSTMENT

Adjust VR302(Located at the front panel) until the vertical center is set at screen center. (Vertical centering tolerance is  $\pm 2.5\text{mm}$ )

## 9. WIDTH ADJUSTMENT

Adjust the horizontal size VR403(Located at the front panel) so that the horizontal size of displayed pattern is 240mm.(Tolerance:  $\pm 5\text{mm}$ )

## 10. VERTICAL SIZE ADJUSTMENT

Adjust the vertical size control (VR204) so that the vertical size of displayed pattern is 180mm in VGA3. (Tolerance:  $180 \pm 5\text{mm}$ )

## 11. SCREEN ADJUSTMENT

Operate the monitor to display the full white pattern on screen and warm up for more than 15 minutes.

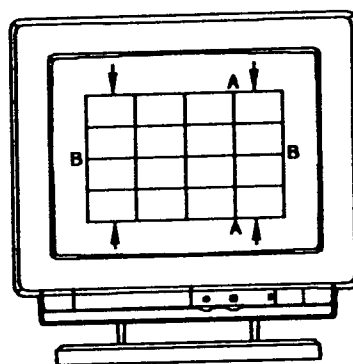
Adjust screen VR(in FBT) so that back raster appears clearly at brightness and contrast VR max, but disappears at brightness VR center (detent position) and contrast VR max.

## 12. WHITE BALANCE ADJUSTMENT

(Instrument in use: color analyzer)

(1) Operate the computer to display the full white 60mm square pattern of the VGA3 centered on the screen.

- (2) Set the brightness control (VR501) to the maximum position of the VR and adjust the VR102 (R-BIAS) and VR162 (B-BIAS) so that the back raster color to be white with unaided eye.
- (3) Set the brightness control (VR501) to the mechanical center position (center detent) and the contrast control (VR181) to the max position.
- (4) Change the video signal to the full green 60mm square pattern of the VGA3.
- (5) Adjust the VR131(G-GAIN) so that the luminance of the green pattern is  $33 \pm 2$  F/L.
- (6) Change the video signal to the full white pattern of the VGA3.
- (7) Adjust the VR101 (R-GAIN) and VR161 (B-GAIN) for the display color to be white. (Use the color analyzer:  $X=0.281 \pm 0.03$ ,  $Y=0.311 \pm 0.03$ )
- (8) Adjust the contrast control (VR181) so that the luminance is 3 F/L.
- (9) Adjust slightly VR102 (R-BIAS) and VR162 (B-BIAS) for the display color to be white.
- (10) Check the color coordinates at 20 F/L luminance. If there is some error, adjust the VR101 (R-GAIN) and VR161 (B-GAIN) for the display color to be white.
- (11) Recheck the color coordinates at 3 F/L luminance and check the white color with rotating the contrast control (VR181). If there is some error, retry the adjustment from (2).



### 13. CRT TILT ADJUSTMENT

Reassembly the CRT with fastening screws so that the dimension A and B are separately equal.

### 14. STATIC (CENTER) CONVERGENCE

Switch the monitor ON and warm up for 15 minutes. Operate the computer in such a way that the cross hatch pattern is displayed on screen. Convergence error should not be over than following table.

POSITION	ERROR IN (MM)	CRT. DOT-PITCH	MODEL NO
CENTER	0.3	0.28	CVM4967T, CVM4787T
		0.31	CVM4961T, CVM4781T
		0.39	CVM4963T, CVM4783T
CORNER	0.4	0.41	CVM4964T, CVM4965T
			CVM4784T, CVM4785T
	0.45	0.28	CVM4967T, CVM4787T
			CVM4961T, CVM4781T
	0.5	0.31	CVM4963T, CVM4783T
			CVM4964T, CVM4965T
	0.7	0.41	CVM4784T, CVM4785T

Proceed as follows.

- (1) Locate the pair of four pole magnet rings.
- (2) Rotate the individual rings (change spacing between tabs) to converge the vertical red and blue lines.
- (3) Rotate the pair of rings (maintaining spacing between tabs) to converge the horizontal red and blue lines.
- (4) After completing the red and blue center convergence, locate the pair of six pole magnet ring.
- (5) Rotate the individual rings (change spacing between tabs) to converge the vertical red and blue (magenta) and green lines
- (6) Rotate the pair of rings (maintaining spacing between tabs) to converge the horizontal red and blue (magenta) and green lines.
- (7) Magnet position HITACHI and SED(CRT maker) 4pole / 6pole / 2pole (from the front of CDT).
- (8) Don't rotate the 2pole magnet because it's object is to adjust the purity.



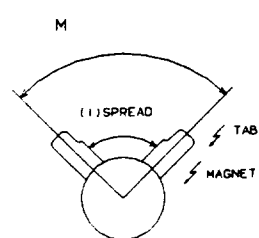
## 17. DYNAMIC CONVERGENCE

Dynamic convergence (convergence of the three color fields at the edge of the CRT screen) is accomplished by the proper

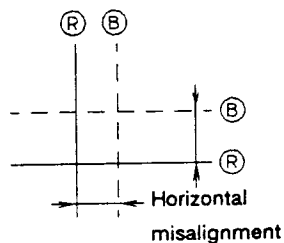
insertion and positioning of the three wedges between the edge of deflection yoke and the funnel of the CRT.

### • Alignment of (R) and (B) with the 4-pole magnet

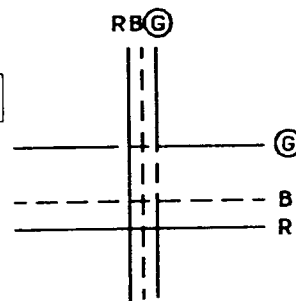
Movable in spread condition



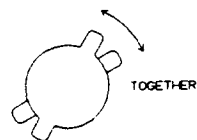
O-MAGNETIC FIELD



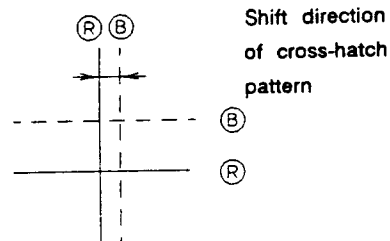
MOTION (1)



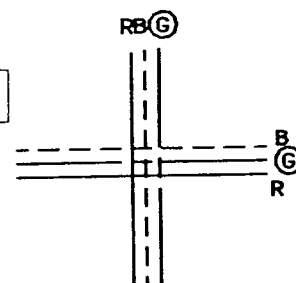
Vertical direction



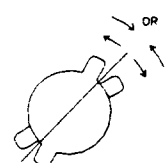
MOTION (1)



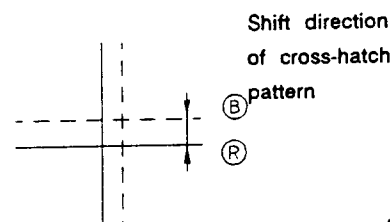
MOTION (2)



Horizontal direction

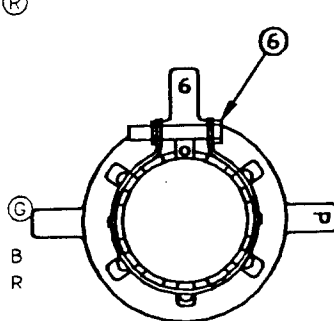
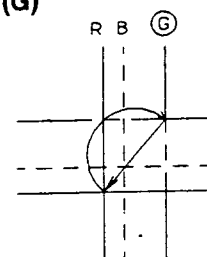


MOTION (2)



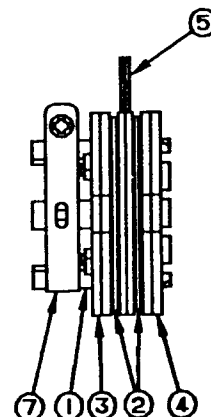
### • Alignment of (R) and (B) with (G) (6-pole magnet)

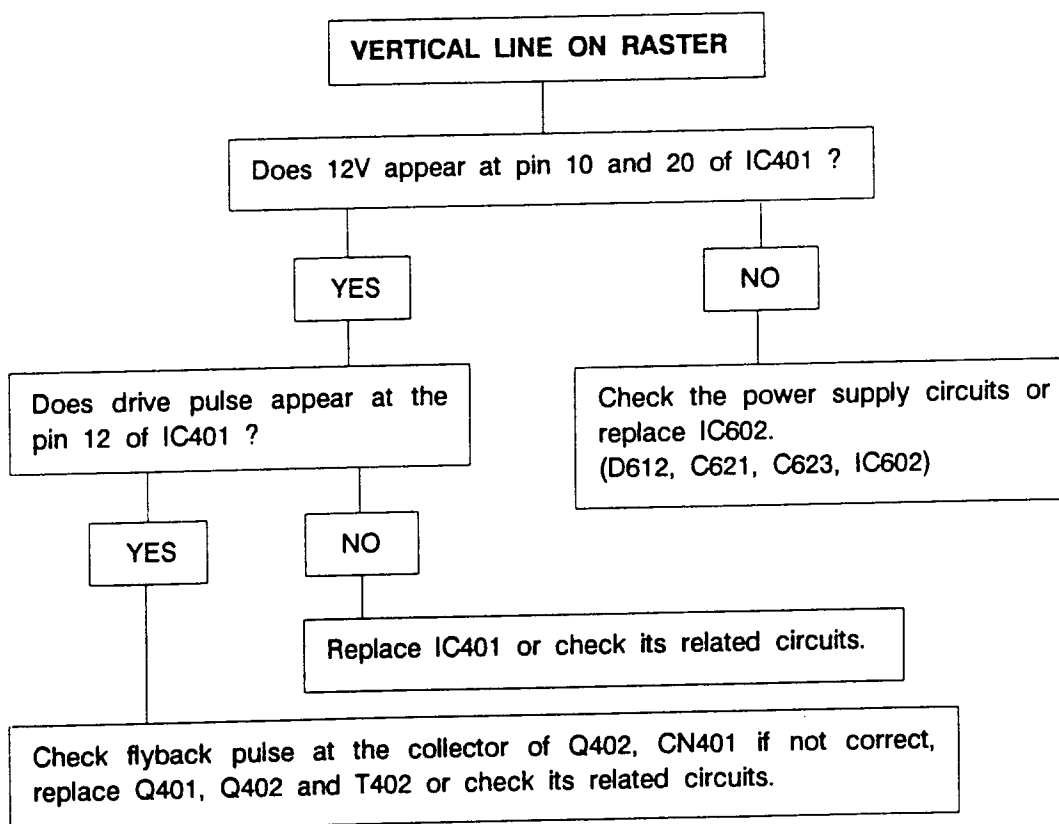
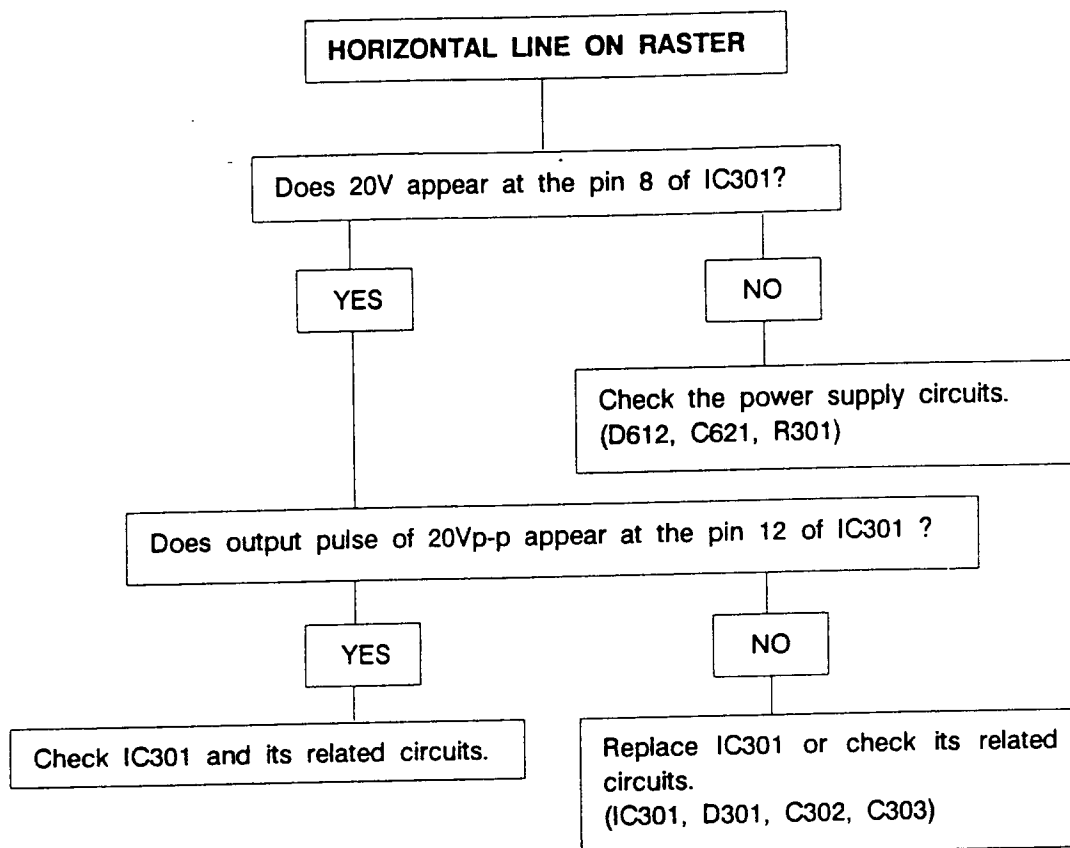
O-MAGNETIC FIELD

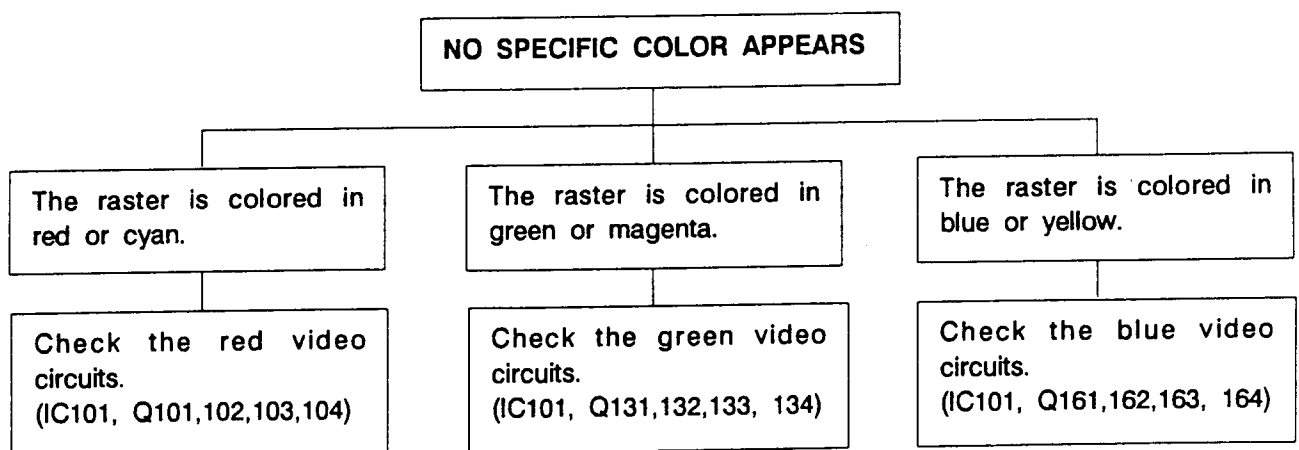
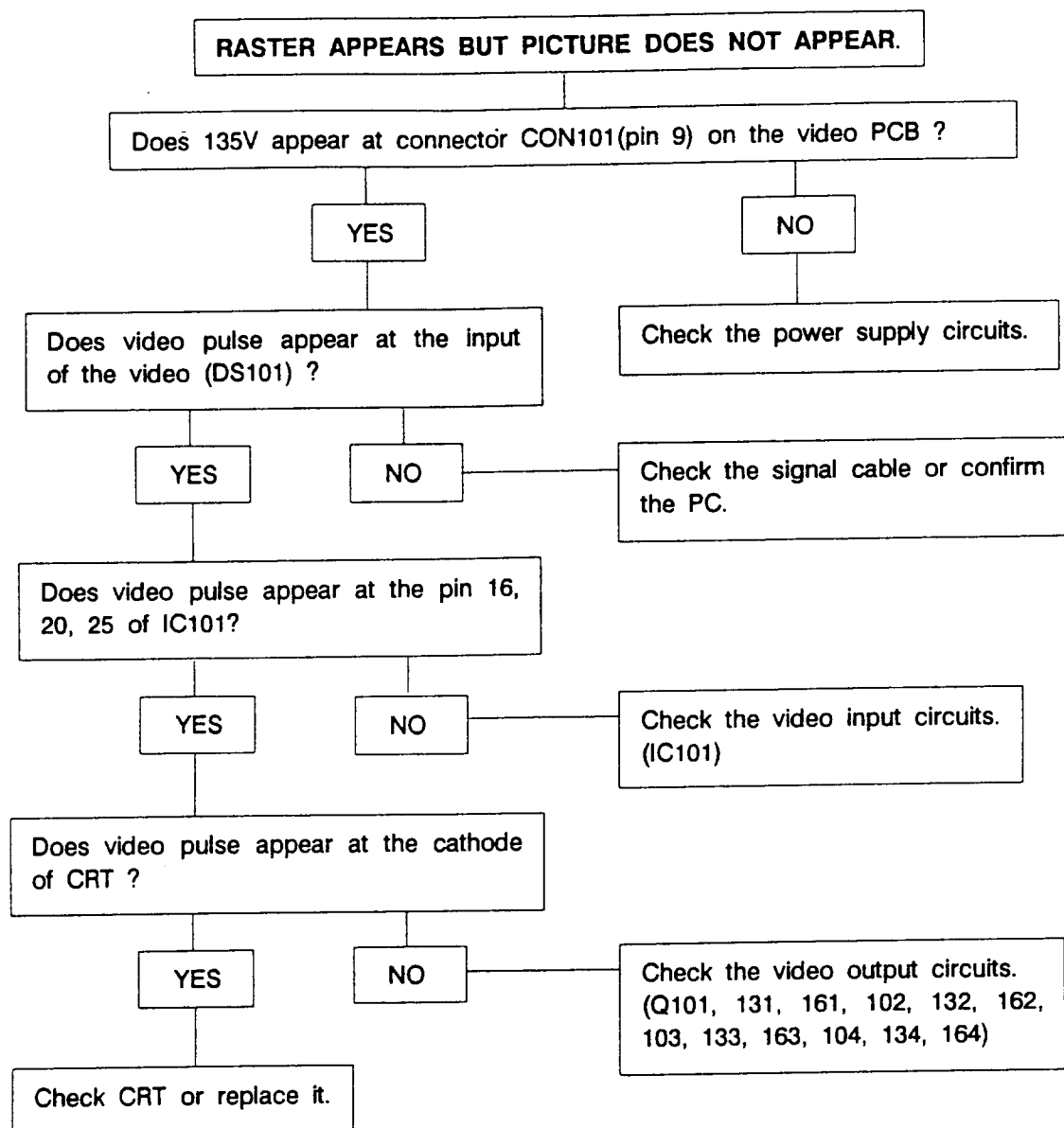


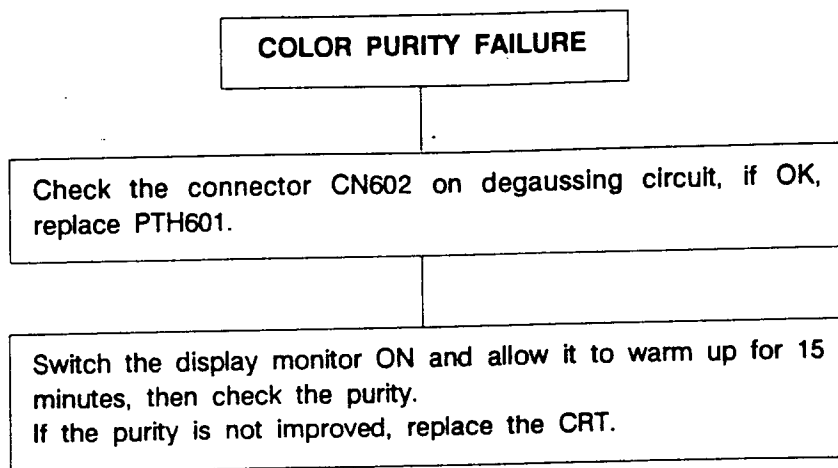
Convergence Purity Magnet

1. Holder
2. Spacers
3. Purity magnet
4. 4 pole magnet
5. 6 pole magnet
6. Setup bolt
7. Band

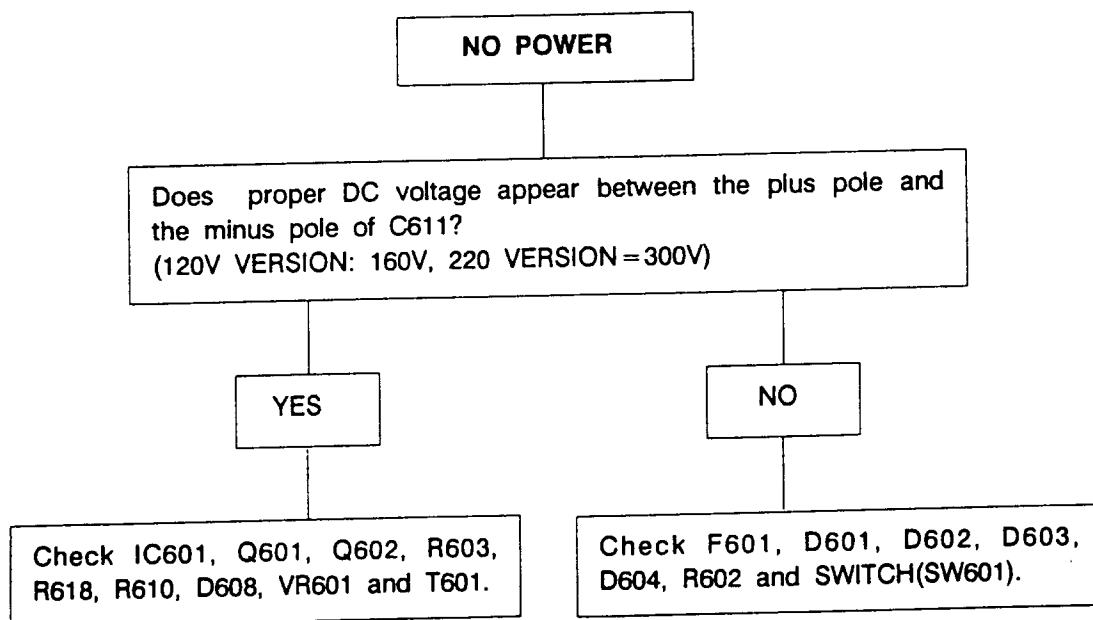




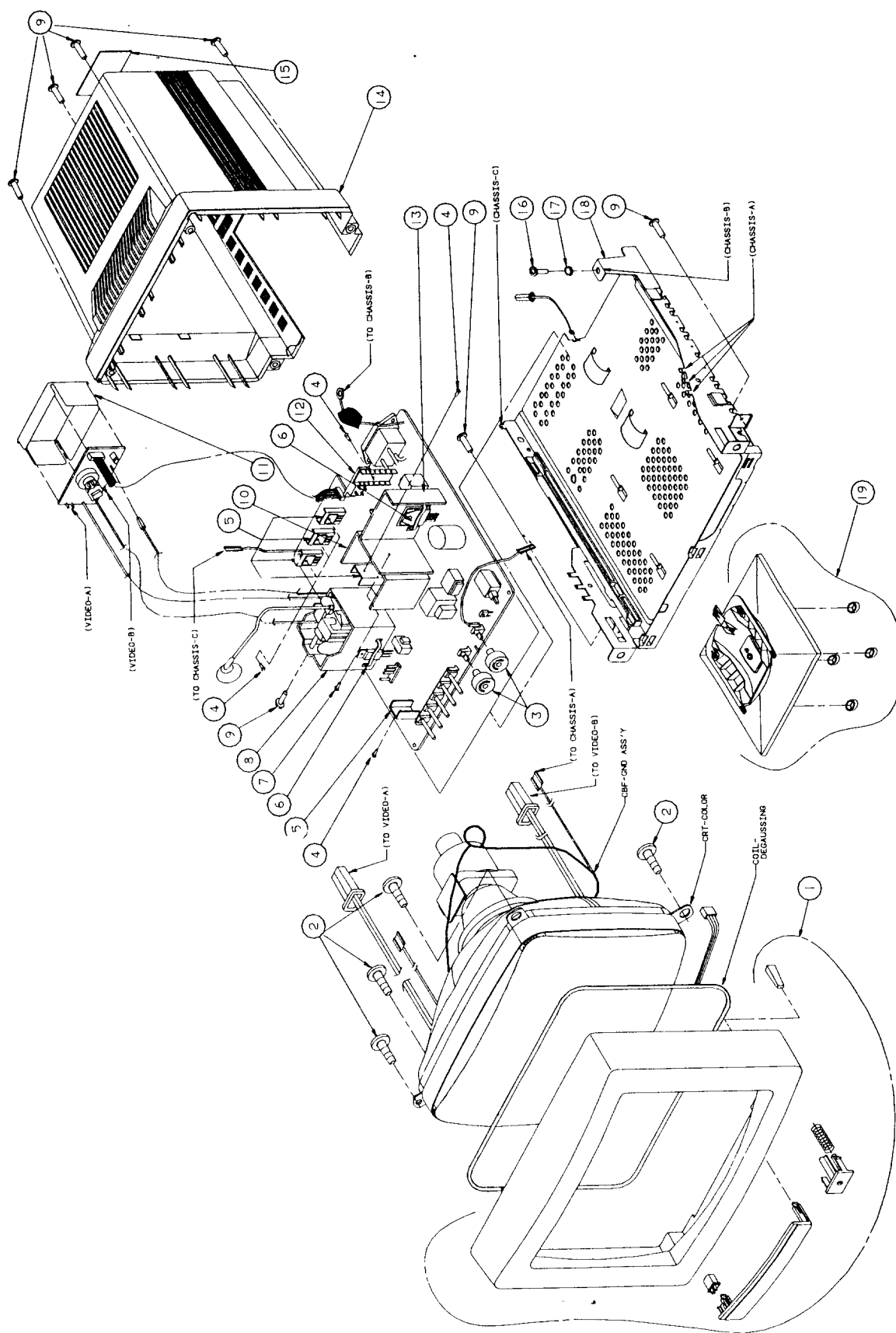




NOTE: If color purity is not normal, manual degaussing should be done by mandatory method using the manual degaussing coil before inspection.



# EXPLODED VIEW AND PARTS LIST



NO.	DESCRIPTION	CODE-NO.	SPECIFICATION	Q'TY	REMARK
1	COVER/FRONT-ASSY	811 468001AA	ABS V0 VH-0800D #C7155	1EA	
2	TAPPING, BH	842 840023BA	BH, +,2,M5,L30,ZPC3,W/W	4EA	
3	KNOB-CONTROL	831 171037BA	ABS V0 VH-0800D #C7155	2EA	
4	SPECIAL, TAPTITE	847 501007EG	B,BH, +,M3,L8,ZPC	6EA	
5	HEATSINK-V,OUT	831 513021AA	SPC-1 T1.0 FZ-2	5EA	
6	SPRING-TR(A)	813 468062AC	SUS-304 1/2H T0.17/T0.5	2EA	
7	SPECIAL, TAPTITE	847 502005AA	B,BH, +,M3,L10,ZPC3,SWCH	1EA	
8	HEATSINK-FBT	831 514504DA	A1050S-H14 T1.5	1EA	
9	SPECIAL, TAPTITE	847 501007FC	B,BH, +,M4,L10,ZPC3,SWCH	7EA	
10	HEATSINK-VR.IC	831 513523BA	A1050S-H14 T2.0	1EA	
11	SHIELD-VIDEO	813 464177AA	SPTE T0.306	1EA	
12	HEATSINK-POWER	831 513012AA	SPC-1 T1.0	1EA	
13	HEATSINK-POWER	831 513523AA	A1050S-H14 T2.0	1EA	
14	COVER-REAR	821 460314AA	ABS V0 VH-0800D #C7155	1EA	
15	LABEL-RATING	825 139473AA	P.E. T0.1	1EA	
16	SPECIAL, TAPTITE	847 501007FC	B,BH, +,M4,L16,ZPC3,SWCH	6EA	
17	WASHER,SPRING	855 124001BB	M4,ID4,1,OD7.6,T1,ZPC3	1EA	
18	CHASSIS-ASSY	811 466016AB	SECC-1 T1.0	1EA	
19	STAND-ASSY	811 460039AA	ABS V0 VH-0800D #C7155	1EA	

# SCHEMATIC DIAGRAM

WARNING : BEFORE SERVICING THIS CHASSIS, READ X-RAY RADIATION PRECAUTION, "SAFETY PRECAUTION," PRODUCT SAFETY NOTICE.

## CAUTION

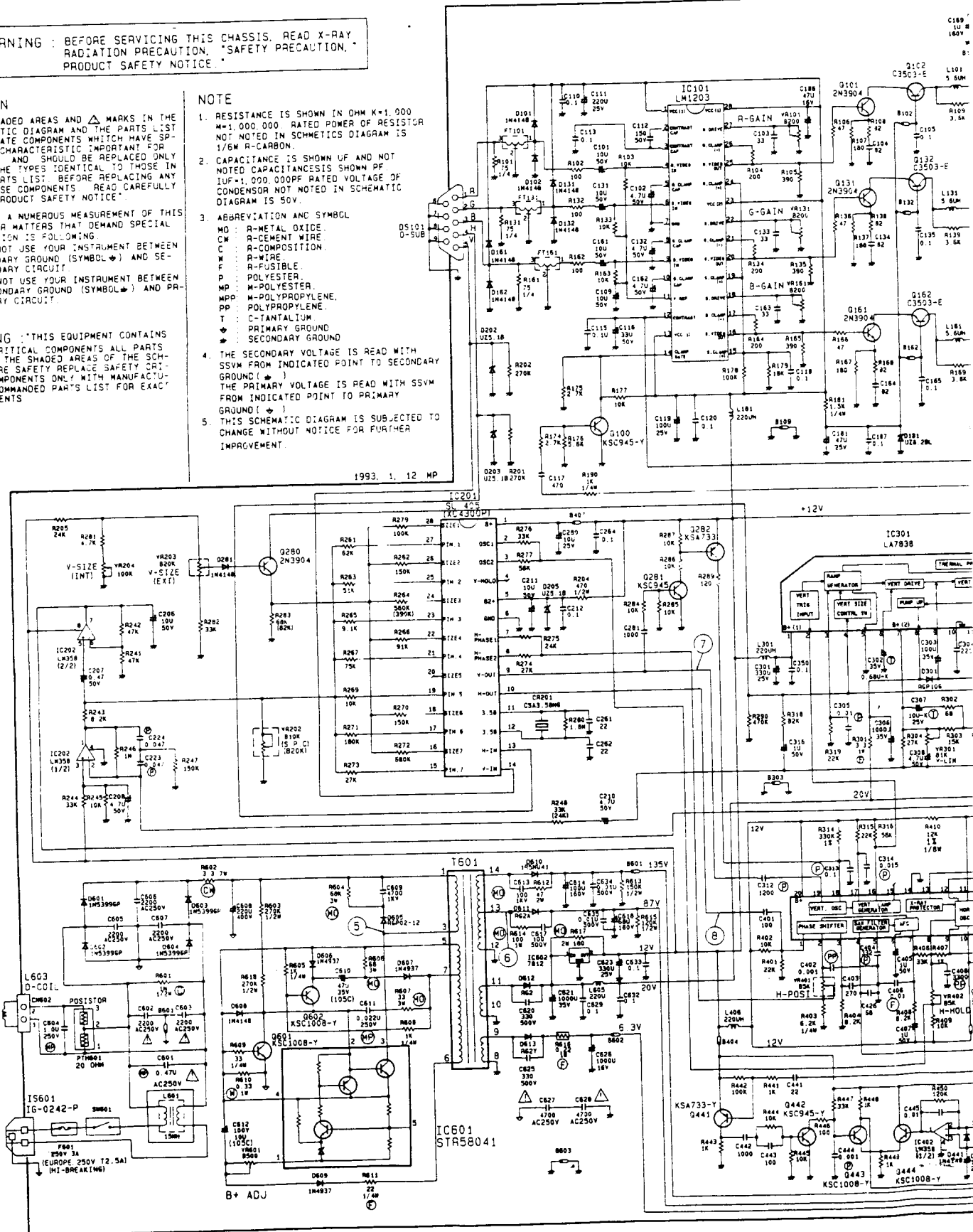
1. THE SHADED AREAS AND  $\Delta$  MARKS IN THE SCHEMATIC DIAGRAM AND THE PARTS LIST DESIGNATE COMPONENTS WHICH HAVE SPECIAL CHARACTERISTIC IMPORTANT FOR SAFETY AND SHOULD BE REPLACED ONLY WITH THE TYPES IDENTICAL TO THOSE IN THE PARTS LIST. BEFORE REPLACING ANY OF THESE COMPONENTS, READ CAREFULLY THE "PRODUCT SAFETY NOTICE".
2. DURING A NUMEROUS MEASUREMENT OF THIS MONITOR MATTERS THAT DEMAND SPECIAL ATTENTION IS FOLLOWING:
  - 1) DO NOT USE YOUR INSTRUMENT BETWEEN PRIMARY GROUND (SYMBOL  $\nabla$ ) AND SECONDARY CIRCUIT.
  - 2) DO NOT USE YOUR INSTRUMENT BETWEEN SECONDARY GROUND (SYMBOL  $\nabla$ ) AND PRIMARY CIRCUIT.

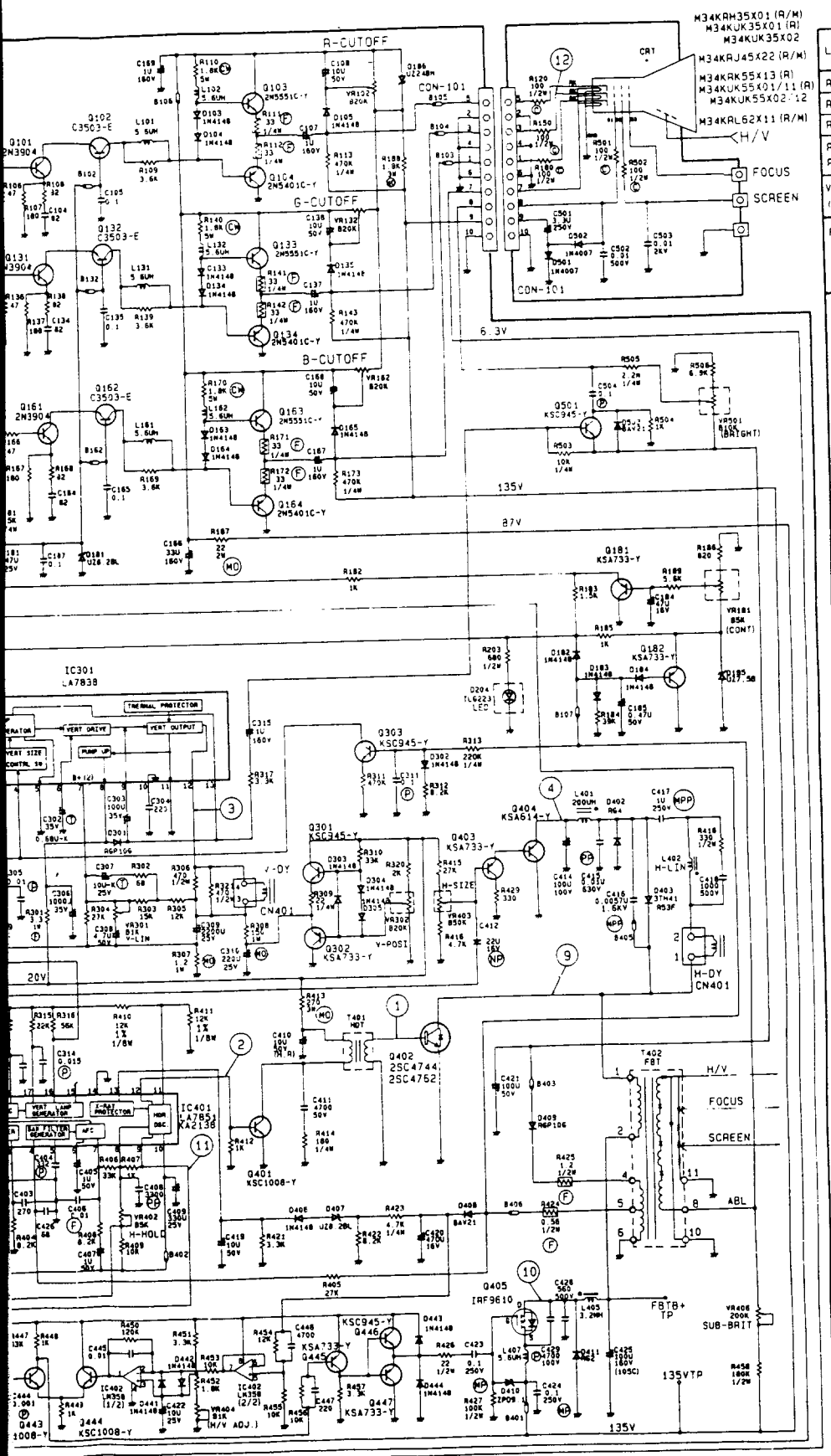
WARNING : THIS EQUIPMENT CONTAINS SAFETY CRITICAL COMPONENTS ALL PARTS SHOWN IN THE SHADED AREAS OF THE SCHEMATIC ARE SAFETY REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURERS RECOMMENDED PARTS LIST FOR EXACT REPLACEMENTS

## NOTE

1. RESISTANCE IS SHOWN IN OHM K=1,000 M=1,000,000. RATED POWER OF RESISTOR NOT NOTED IN SCHEMATIC DIAGRAM IS 1/8W R-CARBON.
2. CAPACITANCE IS SHOWN UF AND NOT NOTED CAPACITANCE IS SHOWN PF. IUF=1,000,000PF. RATED VOLTAGE OF CONDENSOR NOT NOTED IN SCHEMATIC DIAGRAM IS 50V.
3. ABBREVIATION AND SYMBOL:
  - MO : R-METAL OXIDE.
  - CM : R-CEMENT WIRE.
  - C : R-COMPOSITION.
  - W : R-WIRE.
  - F : R-FUSIBLE.
  - P : POLYESTER.
  - MP : M-POLYESTER.
  - MPP : M-POLYPROPYLENE.
  - PP : POLYPROPYLENE.
  - T : C-TANTALUM.
  - $\nabla$  : PRIMARY GROUND.
  - $\nabla$  : SECONDARY GROUND.
4. THE SECONDARY VOLTAGE IS READ WITH SSVM FROM INDICATED POINT TO SECONDARY GROUND ( $\nabla$ ). THE PRIMARY VOLTAGE IS READ WITH SSVM FROM INDICATED POINT TO PRIMARY GROUND ( $\nabla$ ).
5. THIS SCHEMATIC DIAGRAM IS SUBJECT TO CHANGE WITHOUT NOTICE FOR FURTHER IMPROVEMENT.

1993. 1. 12 MP












## ELECTRICAL PARTS LIST

### IMPORTANT SAFETY NOTICE

Component identified by the symbol  have special characteristic important to safety. When replacing any of these components, use only manufacturer's specified parts.

### NOTE

- Tolerance : F;  $\pm 1\%$ , J;  $\pm 5\%$ , K;  $\pm 10\%$ , M;  $\pm 20\%$ , P;  $+100 \sim 0\%$ , Z;  $+80 \sim -20\%$
- Rated Voltage  
 0J: 6.3V, 1A: 10V, 1C: 16V, 1D: 20V, 1E: 25V, 1F: 35V, 1G: 40V, 1H: 50V, 1J: 63V, 1K: 75V, 2A: 100V, 2B: 125V, 2C: 160V, 2D: 200V, 2E: 250V, 2V: 350, 2G: 400V, 2W: 450V, 2H: 500V, 2J: 630V, 3A: 1KV, 3C: 1.6KV, 3D: 2KV

LOC. NO	DESCRIPTION	CODE NO	REMARK
<b>CAPCITORS</b>			
C101	CAP-AL.ELEC,475M,1H	917 121470HM	
C102	CAP-AL.ELEC,475M,1H	917 121470HM	
C103	CAP-CERAMIC,330J,1H,NPO	915 312330HJXH	
C104	CAP-CERAMIC,820J,1H,NPO	915 312820HJXH	
C105	CAP-CERAMIC,104Z,1H,Y5V	915 336100HZVH	
C107	CAP-AL.ELEC,105M,2C	917 121100NM	
C108	CAP-AL.ELEC,106M,1H	917 122100HM	
C109	CAP-AL.ELEC,106M,1H	917 122100HM	
C110	CAP-CERAMIC,104Z,1H,Y5V	915 336100HZVH	
C111	CAP-AL.ELEC,227M,1E	917 123220EM	
C112	CAP-CERAMIC,151K,1H,Y5P	915 323150HKPH	
C113	CAP-CERAMIC,104Z,1H,Y5V	915 336100HZVH	
C115	CAP-CERAMIC,104Z,1H,Y5V	915 336100HZVH	
C116	CAP-AL.ELEC,336M,1H	917 122330HM	
C117	CAP-CERAMIC,471K,1H,Y5P	915 323470HKPH	
C118	CAP-CERAMIC,104Z,1H,Y5V	915 336100HZVH	
C119	CAP-AL.ELEC,107M,1E	917 123100EM	
C120	CAP-CERAMIC,104Z,1H,Y5V	915 336100HZVH	
C131	CAP-AL.ELEC,106M,1H	917 122100HM	
C132	CAP-AL.ELEC,475M,1H	917 121470HM	
C133	CAP-CERAMIC,330J,1H,NPO	915 312330HJXH	
C134	CAP-CERAMIC,820J,1H,NPO	915 312820HJXH	
C135	CAP-CERAMIC,104Z,1H,Y5V	915 336100HZVH	
C137	CAP-AL.ELEC,105M,2C	917 121100NM	
C138	CAP-AL.ELEC,106M,1H	917 122100HM	

LOC. NO	DESCRIPTION	CODE NO	REMARK
C161	CAP-AL.ELEC,106M,1H	917 122100HM	
C162	CAP-AL.ELEC,475M,1H	917 121470HM	
C163	CAP-CERAMIC,330J,1H,NPO	915 312330HJXH	
C164	CAP-CERAMIC,820J,1H,NPO	915 312820HJXH	
C165	CAP-CERAMIC,104Z,1H,Y5V	915 336100HZVH	
C166	CAP-AL.ELEC,336M,2C	917 122330NM	
C167	CAP-AL.ELEC,105M,2C	917 121100NM	
C168	CAP-AL.ELEC,106M,1H	917 122100HM	
C169	CAP-AL.ELEC,105M,2C	917 121100NH	
C181	CAP-AL.ELEC,476M,1E	917 122470EM	
C184	CAP-AL.ELEC,476M,1C	917 122470CM	
C185	CAP-AL.ELEC,474M,1H	917 120470HM	
C186	CAP-AL.ELEC,476M,1C	917 122470CM	
C187	CAP-CERAMIC,104Z,1H,Y5V	915 336100HZVH	
C206	CAP-AL.ELEC,106M,1H	917 122100HM	
C207	CAP-AL.ELEC,474M,1H	917 121470HM	
C208	CAP-AL.ELEC,475M,1H	917 121470HM	
C210	CAP-AL.ELEC,475M,1H	917 121470HM	
C211	CAP-AL.ELEC,106M,1H	917 122100HM	
C212	CAP-CERAMIC,104Z,1H,Y5V	915 336100HZVH	
C223	CAP-MYLAR,473J,2A,5P	916 165470LJAH	
C224	CAP-MYLAR,473J,2A,5P	916 165470LJAH	
C261	CAP-CERAMIC,220J,1H,SL	915 312220HJHH	
C262	CAP-CERAMIC,220J,1H,SL	915 312220HJHH	
C264	CAP-CERAMIC,104Z,1H,Y5V	915 336100HZVH	
C280	CAP-AL.ELEC,106M,1E	917 122100EM	
C281	CAP-CERAMIC,102K,1H,Y5P	915 324100HKPH	
C301	CAP-AL.ELEC,337M,1E	917 123330EM	
C302	CAP-TANTAL,684K,1V	917 310680FK	
C303	CAP-AL.ELEC,107M,1V	917 123100FMAX	
C304	CAP-CERAMIC,221K,1H,Y5P	915 323220HKPH	
C305	CAP-MYLAR,103J,2A,5P	916 165100LJAH	
C306	CAP-AL.ELEC,108M,1V,16X25	917 124100FMXH	
C307	CAP-TANTAL,106K,1E	917 312100EK	
C308	CAP-AL.ELEC,475M,1H	917 121470HM	
C309	CAP-AL.ELEC,228M,1E,16X25	917 844220EMXH	
C310	CAP-AL.ELEC,227M,1E	917 123220EM	
C311	CAP-MYLAR,104J,2A,5P	916 166100LJAH	
C312	CAP-MYLAR,122J,2A,5P	916 164120LJAH	
C313	CAP-MYLAR,104J,2A,5P	916 166100LJAH	
C314	CAP-MYLAR,153J,2A,5P	916 165150LJAH	
C315	CAP-AL.ELEC,105M,2C	917 121100NM	

LOC. NO	DESCRIPTION	CODE NO	REMARK
C316	CAP-AL.ELEC,105M,1H	917 121100HM	
C350	CAP-CERAMIC,104Z,1H,Y5V	915 336100HZVH	
C401	CAP-CERAMIC,101K,1H,Y5P	915 323100HKPH	
C402	CAP-PPF,102J,2A,7.5P	916 354100LJAL	
C403	CAP-CERAMIC,271K,1H,Y5P	915 323270HKPH	
C404	CAP-MYLAR,332J,2A,5P	916 164330LJAH	
C405	CAP-AL.ELEC,105M,1H	917 121100HM	
C406	CAP-MYLAR,103J,2A,5P	916 165100LJAH	
C407	CAP-AL.ELEC,105M,1H	917 121100HM	
C408	CAP-PPF,332J,2A,7.5P	916 354330LJAL	
C409	CAP-AL.ELEC,337M,1E	917 123330EM	
C410	CAP-AL.ELEC,106M,1H	917 122100HMAX	
C411	CAP-CERAMIC,472K,1H,Y5P	915 324470HKPH	
C412	CAP-AL.NP-ELEC,226M,1C	917 222220CMAX	
C414	CAP-AL.ELEC,107M,2A	917 123100LM	
C415	CAP-PPF,103J,2J,7.5P	916 355100WJAL	
C416	CAP-MPE/PP,572J,3C	916 944570YJ	
C417	CAP-MPPF,105J,2E	916 657100QJAX	
C418	CAP-CERAMIC,102K,2H,Y5P	915 324100VKPH	
C419	CAP-AL.ELEC,106M,1H	917 122100HM	
C420	CAP-AL.ELEC,477M,1C	917 123470CM	
C421	CAP-AL.ELEC,107M,1H	917 123100HM	
C422	CAP-AL.ELEC,106M,1H	917 122100HM	
C423	CAP-MPETP,104J,2E,7.5P	916 556100QJAL	
C424	CAP-MPETP,104J,2E,7.5P	916 556100QJAL	
C425	CAP-AL.ELEC,107M,2C,105C	917 743100NMXH	
C426	CAP-MYLAR,472J,2A,5P	916 164470LZAH	
C428	CAP-CERAMIC,561K,2H,Y5P	915 323560VKPH	
C441	CAP-CERAMIC,220J,1H,SL	915 312220HJHH	
C442	CAP-CERAMIC,102K,1H,Y5P	915 324100HKPH	
C443	CAP-CERAMIC,101K,1H,Y5P	915 323100HKPH	
C444	CAP-MYLAR,102J,2A,5P	916 164100LJAH	
C445	CAP-CERAMIC,103Z,1H,Y5V	915 325100HZVH	
C446	CAP-CERAMIC,472K,1H,Y5P	915 324470HKPH	
C447	CAP-CERAMIC,221K,1H,Y5P	915 323220HKPH	
C501	CAP-AL.ELEC,335M,2E	917 121330QM	
C502	CAP-CERAMIC,103Z,2H,Y5V	915 325100VZVH	
C503	CAP-CERAMIC,103P,3D,Y5U	915 325100YPUX	
C504	CAP-MYLAR,104J,2A,5P	916 166100LJAH	
△ C601	CAP-MPAPER,474K,250VAC	918 146470QK	
△ C602	CAP-CERAMIC,AC/CKS45 B 125V 2200	01461-131-206	
△ C603	CAP-CERAMIC,AC/CKS45 B 125V 2200	01461-131-206	

LOC. NO	DESCRIPTION	CODE NO	REMARK
C604	CAP-MPETP,105K,2E,7.5P	916 557100QKAL	
C605	CAP-CERAMIC,222Z,2E,DISC	915 374220QZEH	
C606	CAP-CERAMIC,222Z,2E,DISC	915 374220QZEH	
C607	CAP-CERAMIC,222Z,2E,DISC	915 374220QZEH	
C608	CAP-AL.ELEC,227M,2G,30X35	917 793220TMFX	
C609	CAP-CERAMIC,472M,3A,Y5P	915 324470XMPX	
C610	CAP-AL.ELEC,476M,1V,105C	917 742470FM	
C611	CAP-MPETP,223J,2E,7.5P	916 555220QJAL	
C612	CAP-AL.ELEC,106M,2A,105C	917 782100LM	
C613	CAP-CERAMIC,101K,3A,Y5P	915 323100XKPH	
C614	CAP-AL.ELEC,107M,2C	917 123100NM	
C617	CAP-CERAMIC,101K,2H,Y5P	915 323100VKPH	
C618	CAP-AL.ELE,686M,2C,16X25	917 122680NM	
C620	CAP-CERAMIC,331K,2H,Y5P	915 323330VKPH	
C621	CAP-AL.ELEC,108M,1V,16X25	917 124100FMXH	
C623	CAP-AL.ELEC,337M,1E	917 123330EM	
C625	CAP-CERAMIC,331K,2H,Y5P	915 323330VKPH	
C626	CAP-AL.ELEC,108M,1C	917 124100CM	
△ C627	CAP-CERAMIC,472M,2B,Y5V	915 344470MMVX	
△ C628	CAP-CERAMIC,472M,2B,Y5V	915 344470MMVX	
C629	CAP-CERAMIC,104Z,1H,Y5V	915 336100HZVH	
C632	CAP-CERAMIC,104Z,1H,Y5V	915 336100HZVH	
C633	CAP-CERAMIC,104Z,1H,Y5V	915 336100HZVH	
C634	CAP-CERAMIC,103Z,2H,Y5V	915 325100VZVH	
C635	CAP-CERAMIC,103Z,2H,Y5V	915 325100VZVH	
<b>COILS</b>			
L101	INDUCTOR-AXIAL,5.6UH	925 001002AK	
L102	INDUCTOR-AXIAL,5.6UH	925 001002AK	
L131	INDUCTOR-AXIAL,5.6UH	925 001002AK	
L132	INDUCTOR-AXIAL,5.6UH	925 001002AK	
L161	INDUCTOR-AXIAL,5.6UH	925 001002AK	
L162	INDUCTOR-AXIAL,5.6UH	925 001002AK	
L181	INDUCTOR-AXIAL,220UH	925 001001AN	
L301	INDUCTOR-AXIAL,220UH	925 001001AN	
L401	COIL-CHOKE,200UH(ROBOT)	925 460125AB	
L402	COIL-H/LINEARITY,14.5UH	925 460164CB	
L405	COIL-CHOKE,3.2MH,ROBOT	925 460181SA	
L406	INDUCTOR-AXIAL,220UH	925 001001AN	
L407	INDUCTOR-AXIAL,5.6UF	925 001002AK	
△ L601	COIL-LINE FILTER,15MH	925 460044AB	
L605	INDUCTOR-AXIAL,220UH	925 001001AN	

LOC. NO	DESCRIPTION	CODE NO	REMARK
<b>CONNECTORS</b>			
CON101	CBF-CONN ASSY,250MM,10P	955 460462AAAA	
CN401	PIN-GT	03124-700-810	
CN602	CON-WALL HEADER,3P,3.96	935 240903DLSA	
CN603	CON-WALL HEADER,3P,3.96	935 240903DLSA	
CN604	CON-WALL HEADER,3P,3.96	935 240903DLSA	
GND1	CBF-LUG TERMINAL,250MM	955 460465AAAA	
GND5	CBF-LUG TERMINAL,150MM	955 460473AAAA	
GND6	CBF-LUG TERMINAL,80MM	955 460473AAAB	
GND7	CBF-LUG TERMINAL,80MM	955 460474AAAA	
	CBF-CON ASSY,350MM,4P	955 460171AZAA	
<b>DIODES</b>			
D101	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D102	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D103	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D104	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D105	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D131	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D132	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D133	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D134	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D135	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D161	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D162	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D163	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D164	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D165	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D181	DIODE-ZEN,UZ-8.2BL,DO-35	893 290031AA	
D182	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D183	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D184	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D185	DIODE-ZEN,UZ-7.5BM,DO-35	893 290031KBNA	
D186	DIODE-ZEN,UZ-24BH,DO-35	893 290031DC	
D202	DIODE-ZEN,UZ-5.1B,DO-35	893 290031FB	
D203	DIODE-ZEN,UZ-5.1B,DO-35	893 290031FB	
D204	LED,G,ETC,3.5MM	895 190018GA	
D205	DIODE-ZEN,UZ-5.1B,DO-35	893 290031FB	
D281	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D301	DIODE-REC,RGP10G,DO-41	893 390010AD	

LOC. NO	DESCRIPTION	CODE NO	REMARK
D302	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D303	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D304	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D305	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D402	DIODE-REC,RG4,	893 399017AA	
D403	DIODE-REC,3TH41,DO-201AD	893 399069AA	
D406	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D407	DIODE-ZEN,UZ-8.2BL,DO-35	893 290031AA	
D408	DIODE-SIG,BAV21,DO-35	893 190021AANA	
D409	DIODE-REC, RGP10G,DO-41	893 390010AD	
D410	DIODE-ZEN,ZPD9.1,DO-41	893 290002BC	
D411	DIODE-REC,RG2	893 399016AA	
D441	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D442	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D443	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D444	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D501	DIODE-REC,1N4007,DO-41	893 314007AANC	
D502	DIODE-REC,1N4007,DO-41	893 314007AANC	
D503	DIODE-SIG,BAV21,DO-35	893 190021AANA	
D601	DIODE-REC,1N5399GP,DO-15	893 315399AA	
D602	DIODE-REC,1N5399GP,DO-15	893 315399AA	
D603	DIODE-REC,1N5399GP,DO-15	893 315399AA	
D604	DIODE-REC,1N5399GP,DO-15	893 315399AA	
D605	DIODE,RGP902-12(GI)	02169-206-297	
D606	DIODE-REC,1N4937,DO-41	893 314937AB	
D607	DIODE-REC,1N4937,DO-41	893 314937AB	
D608	DIODE-SIG,1N4148,DO-35	893 114148AANM	
D609	DIODE-REC,1N4937,DO-41	893 314937AB	
D610	DIODE-REC,1R5NU41	893 399032AA	
D611	DIODE-REC,RG2AV(T)	893 399016AE	
D612	DIODE-REC,RG2	893 399016AA	
D613	DIODE-REC,RG2YV(T)	893 399016AF	
<b>FERRITE-CORES</b>			
B102	FERRITE-CORE	02429-048-017	
B103	MAG-CORE,FERRITE,BEAD	937 120211AA	
B104	MAG-CORE,FERRITE,BEAD	937 120211AA	
B105	MAG-CORE,FERRITE,BEAD	937 120211AA	
B106	MAG-CORE,FERRITE,BEAD	937 120211AA	
B107	FERRITE-CORE	02429-048-017	
B132	FERRITE-CORE	02429-048-017	



LOC. NO	DESCRIPTION	CODE NO	REMARK
B303	FERRITE-CORE	02429-048-017	
B401	FERRITE-CORE	02429-048-017	
B402	FERRITE-CORE	02429-048-017	
B403	FERRITE-CORE	02429-048-017	
B404	FERRITE-CORE	02429-048-017	
B405	FERRITE-CORE	02429-048-017	
B406	MAG-CORE,FERRITE,BEAD	937 120211AA	
B407	MAG-CORE,FERRITE,BEAD	937 120211AA	
B601	MAG-CORE,FERRITE,BEAD	937 120211AA	
B602	MAG-CORE,FERRITE,BEAD	937 120211AA	
B603	FERRITE-CORE	02429-048-017	
<b>ICS</b>			
IC101	IC-LIN,1203,OP AMP	881 101203AA	
IC201	IC-CUS,SL405,MODESENSING	885 460003AA	
IC202	IC-LIN,358,OP AMP	881 100358AANA	
IC301	IC-LIN,7838,VERTICAL	881 707838SA	
IC401	IC-LIN,7851,VERTICAL	881 707851AA	
IC402	IC-LIN,358,OP AMP	881 100358AANA	
IC601	IC-LIN,58041,REGULATOR	881 358041SA	
IC602	IC-LIN,7812,REGULATOR	881 307812KANB	
<b>RESISTORS</b>			
R101	REF-MF,75,1%,1/4W	911 427505DA	
R102	REF-CF,100,5%,1/6W	911 131007YA	
R103	REF-CF,10K,5%,1/6W	911 151007YA	
R104	REF-CF,200,5%,1/6W	911 132007YA	
R105	REF-CF,390,5%,1/6W	911 133907YA	
R106	REF-CF,47,5%,1/6W	911 124707YA	
R107	REF-CF,180,5%,1/6W	911 131807YA	
R108	REF-CF,82,5%,1/6W	911 128207YA	
R109	REF-CF,3.6K,5%,1/6W	911 143607YA	
R110	REF-MF,1.8K,5%,5W	911 441807PW	
R111	REF-FUSIBLE,33,5%,1/4W	911 823307DA	
R112	REF-FUSIBLE,82,5%,1/4W	911 828207DA	
R113	REF-CF,470K,5%,1/4W	911 164707DA	
R120	REF-CC,100,20%,1/2W	911 231009FA	
R131	REF-MF,75,1%,1/4W	911 427505DA	
R132	REF-CF,100,5%,1/6W	911 131007YA	
R133	REF-CF,10K,5%,1/6W	911 151007YA	
R134	REF-CF,200,5%,1/6W	911 132007YA	

LOC. NO	DESCRIPTION	CODE NO	REMARK
R135	REF-CF,390,5%,1/6W	911 133907YA	
R120	REF-CC,100,20%,1/2W	911 231009FA	
R131	REF-MF,75,1%,1/4W	911 427505DA	
R132	REF-CF,100,5%,1/6W	911 131007YA	
R133	REF-CF,10K,5%,1/6W	911 151007YA	
R134	REF-CF,200,5%,1/6W	911 132007YA	
R135	REF-CF,390,5%,1/6W	911 133907YA	
R136	REF-CF,47,5%,1/6W	911 124707YA	
R137	REF-CF,180,5%,1/6W	911 131807YA	
R138	REF-CF,82,5%,1/6W	911 128207YA	
R139	REF-CF,3.6K,5%,1/6W	911 143607YA	
R140	REF-MF,1.8K,5%,5W	911 441807PW	
R141	REF-FUSIBLE,33,5%,1/4W	911 823307DA	
R142	REF-FUSIBLE,33,5%,1/4W	911 823307DA	
R143	REF-CF,470K,5%,1/4W	911 164707DA	
R150	REF-CC,100,20%,1/2W	911 231009FA	
R161	REF-MF,75,1%,1/4W	911 427505DA	
R162	REF-CF,100,5%,1/6W	911 131007YA	
R163	REF-CF,10K,5%,1/6W	911 151007YA	
R164	REF-CF,200,5%,1/6W	911 132007YA	
R165	REF-CF,390,5%,1/6W	911 133907YA	
R166	REF-CF,47,5%,1/6W	911 124707YA	
R167	REF-CF,180,5%,1/6W	911 131807YA	
R168	REF-CF,82,5%,1/6W	911 128207YA	
R169	REF-CF,3.6K,5%,1/6W	911 143607YA	
R170	REF-MF,1.8K,5%,5W	911 441807PW	
R171	REF-FUSIBLE,33,5%,1/4W	911 823307DA	
R172	REF-FUSIBLE,82,5%,1/4W	911 823307DA	
R173	REF-CF,470K,5%,1/4W	911 164707DA	
R174	REF-CF,2.7K,5%,1/6W	911 142707YA	
R175	REF-CF,2.7K,5%,1/6W	911 142707YA	
R176	REF-CF,5.6K,5%,1/6W	911 145607YA	
R177	REF-CF,10K,5%,1/6W	911 151007YA	
R178	REF-CF,100K,5%,1/6W	911 161007YA	
R179	REF-CF,18K,5%,1/6W	911 151807YA	
R180	REF-CC,100,20%,1/2W	911 231009FA	
R181	REF-CF,1.5K,5%,1/6W	911 141507YA	
R182	REF-CF,1K,5%,1/6W	911 141007YA	
R183	REF-CF,1.5K,5%,1/6W	911 141507YA	
R184	REF-CF,39K,5%,1/6W	911 153907YA	
R185	REF-CF,1K,5%,1/6W	911 141007YA	
R186	REF-CF,820,5%,1/6W	911 138207YA	

LOC. NO	DESCRIPTION	CODE NO	REMARK
R187	REF-MO,22,5%,2W(S)	911 322207JF	FOR NORMAL FOR MPRII
R188	REF-MO,1.8K,5%,3W(S)	911 341807LF	
R189	REF-CF,5.6K,5%,1/6W	911 145607YA	
R190	REF-CF,1K,5%,1/4W	911 141007DA	
R201	REF-CF,270K,5%,1/6W	911 162707YA	
R202	REF-CF,270K,5%,1/6W	911 162707YA	
R203	REF-CF,680,5%,1/2W(S)	911 136807FF	
R204	REF-CF,470,5%,1/2W(S)	911 134707FF	
R205	REF-CF,24K,5%,1/6W	911 152407YA	
R241	REF-CF,47K,5%,1/6W	911 154707YA	
R242	REF-CF,47K,5%,1/6W	911 154707YA	
R243	REF-CF,8.2K,5%,1/6W	911 148207YA	
R244	REF-CF,33K,5%,1/6W	911 153307YA	
R245	REF-CF,10K,5%,1/6W	911 151007YA	
R246	REF-CF,1M,5%,1/6W	911 171007YA	
R247	REF-CF,150K,5%,1/6W	911 161507YA	
R248	REF-CF,33K,5%,1/6W	911 153307YA	
R248	REF-CF,33K,5%,1/6W	911 152407YA	
R261	REF-CF,62K,5%,1/6W	911 156207YA	
R262	REF-CF,820K,5%,1/6W	911 168207YA	
R263	REF-CF,51K,5%,1/6W	911 155107YA	
R264	REF-CF,51K,5%,1/6W	911 155107YA	FOR NORMAL FOR MPRII
R264	REF-CF,51K,5%,1/6W	911 153907YA	
R265	REF-CF,9.1K,5%,1/6W	911 149107YA	
R266	REF-CF,160K,5%,1/8W	911 161607CA	
R267	REF-CF,75K,5%,1/6W	911 157507YA	
R268	REF-CF,24K,5%,1/6W	911 152407YA	
R268	REF-CF,24K,5%,1/6W	911 151807YA	
R269	REF-CF,10K,5%,1/6W	911 151007YA	
R270	REF-CF,680K,5%,1/6W	911 166807YA	
R271	REF-CF,180K,5%,1/6W	911 161807YA	
R272	REF-CF,39K,5%,1/6W	911 153907YA	
R272	REF-CF,39K,5%,1/6W	911 153307YA	
R273	REF-CF,27K,5%,1/6W	911 152707YA	
R274	REF-CF,27K,5%,1/6W	911 152707YA	
R275	REF-CF,24K,5%,1/6W	911 152407YA	
R276	REF-CF,33K,5%,1/6W	911 153307YA	
R277	REF-CF,56K,5%,1/6W	911 155607YA	
R279	REF-CF,220K,5%,1/6W	911 162207YA	
R280	REF-CF,1.8M,5%,1/6W	911 171807YA	
R281	REF-CF,12K,5%,1/6W	911 151207YA	FOR NORMAL FOR MPRII
R281	REF-CF,12K,5%,1/6W	911 144707DA	

LOC. NO	DESCRIPTION	CODE NO	REMARK
R282	REF-CF,33K,5%,1/6W	911 153307YA	FOR NORMAL FOR MPRII
R283	REF-CF,47K,5%,1/6W	911 154707YA	
R284	REF-CF,10K,5%,1/6W	911 151007YA	
R285	REF-CF,10K,5%,1/6W	911 151007YA	
R286	REF-CF,10K,5%,1/6W	911 151007YA	
R287	REF-CF,10K,5%,1/6W	911 151007YA	
R289	REF-CF,470,5%,1/6W	911 131207YA	
R290	REF-CF,470K,5%,1/6W	911 164707YA	
R301	REF-FUSIBLE,3.3,5%,1W	911 813307GA	
R302	REF-CF,68,5%,1/6W	911 126807YA	
R303	REF-CF,15K,5%,1/6W	911 151507YA	
R304	REF-CF,27K,5%,1/6W	911 152707YA	
R305	REF-CF,12K,5%,1/6W	911 151207YA	
R306	- NOT USED -	911 134707FA	
R306	REF-CF,470,5%,1/2W	911 134707FA	
R307	REF-MO,1.2,5%,1W(S)	911 311207GF	
R308	REF-MO,150,5%,1W(S)	911 331507GF	
R309	REF-CF,22,5%,1/4W	911 122207DA	
R310	REF-CF,33K,5%,1/6W	911 153307YA	
R311	REF-CF,470K,5%,1/6W	911 164707YA	
R312	REF-CF,8.2K,5%,1/6W	911 148207YA	
R313	REF-CF,220K,5%,1/4W	911 162207DA	
R314	REF-MF,330K,1%,1/4W	911 463305DA	
R315	REF-CF,22K,5%,1/6W	911 152207YA	
R316	REF-CF,56K,5%,1/6W	911 155607YA	
R317	REF-CF,3.3K,5%,1/6W	911 143307YA	
R318	REF-CF,82K,5%,1/6W	911 158207YA	
R319	REF-CF,22K,5%,1/6W	911 152207YA	
R320	REF-CF,2K,5%,1/4W	911 142007DA	
R321	REF-CF,470,5%,1/2W	911 134707FA	
R401	REF-CF,22K,5%,1/6W	911 152207YA	
R402	REF-CF,10K,5%,1/8W	911 151007YA	
R403	REF-CF,6.2K,5%,1/4W	911 146207DA	
R404	REF-CF,8.2K,5%,1/6W	911 148207YA	
R405	REF-CF,27K,5%,1/6W	911 152707YA	
R406	REF-CF,33K,5%,1/6W	911 153307YA	
R407	REF-CF,1K,5%,1/6W	911 141007YA	
R408	REF-CF,8.2K,5%,1/6W	911 148207YA	
R409	REF-CF,10K,5%,1/6W	911 151007YA	
R410	REF-MF,12K,1%,1/8W	911 451205CA	
R411	REF-MF,12K,1%,1/8W	911 451205CA	
R412	REF-CF,1K,5%,1/6W	911 141007YA	

LOC. NO	DESCRIPTION	CODE NO	REMARK
R413	REF-MO,270,5%,3W	911 332707LA	
R414	REF-CF,180,5%,1/4W	911 131807DA	
R415	REF-CF,27K,5%,1/6W	911 152707YA	
R416	REF-CF,2.2K,5%,1/6W	911 142207YA	
R418	REF-CF,330,5%,1/2W	911 133307FA	
R421	REF-CF,3.3K,5%,1/6W	911 143307YA	
R422	REF-CF,8.2K,5%,1/6W	911 148207YA	
R423	REF-CF,4.7K,5%,1/4W	911 144707DA	
R424	REF-FUSIBLE,0.56,5%,1/2W	911 805607FA	
R425	REF-FUSIBLE,1.2,5%,1/2W	911 811207FA	
R426	REF-CF,22,5%,1/2W	911 122207FA	
R427	REF-CF,100K,5%,1/2W(S)	911 161007FF	
R429	REF-CF,330,5%,1/6W	911 133307YA	
R441	REF-CF,1K,5%,1/6W	911 141007YA	
R442	REF-CF,100K,5%,1/6W	911 161007YA	
R443	REF-CF,1K,5%,1/6W	911 141007YA	
R444	REF-CF,10K,5%,1/6W	911 151007YA	
R445	REF-CF,10K,5%,1/6W	911 151007YA	
R446	REF-CF,100,5%,1/6W	911 131007YA	
R447	REF-CF,33K,5%,1/6W	911 153307YA	
R448	REF-CF,1K,5%,1/6W	911 141007YA	
R449	REF-CF,1K,5%,1/6W	911 141007YA	
R450	REF-CF,120K,5%,1/6W	911 161207YA	
R451	REF-CF,3.3K,5%,1/6W	911 143307YA	
R452	REF-CF,1.8K,5%,1/6W	911 141807YA	
R453	REF-CF,10K,5%,1/6W	911 151007YA	
R454	REF-CF,12K,5%,1/6W	911 151207YA	
R455	REF-CF,10K,5%,1/6W	911 151007YA	
R456	REF-CF,10K,5%,1/6W	911 151007YA	
R457	REF-CF,3.3K,5%,1/6W	911 143307YA	
R458	REF-CF,270K,5%,1/2W(S)	911 162707FF	
R501	REF-CC,100,20%,1/2W	911 231009FA	
R502	REF-CC,100,20%,1/2W	911 231009FA	
R503	REF-CF,10K,5%,1/4W	911 151007DA	
R504	REF-CF,1K,5%,1/6W	911 141007YA	
R505	REF-CF,2.2M*,5%,1/4W	911 172207DA	
R506	REF-CF,6.8K,5%,1/6W	911 146807YA	
R601	REF-CC,1M*,10%,1/2W	911 271008FA	
R602	REF-WW,3.3,5%,7W	911 613307QZ	
R603	REF-CF,270K,5%,1/2W(S)	911 162707FF	
R604	REF-MO,68K,5%,3W(S)	911 356807LF	
R605	REF-CF,1K,5%,1/4W	911.141007DA	

LOC. NO	DESCRIPTION	CODE NO	REMARK
R606	REF-MO,68,5%,3W(S)	911 326807LF	FOR NORMAL FOR MPRII
R607	REF-MO,33,5%,3W(T)	911 323307LAXA	
R608	REF-CF,1K,5%,1/4W	911 141007DA	
R609	REF-CF,33,5%,1/4W	911 123307DA	
R610	REF-WW,0.33,5%,1W	911 603307GB	
R611	REF-FUSIBLE,22,5%,1/4W	911 822207DA	
R612	REF-MO,47,5%,2W	911 324707JA	
R613	REF-CF,150K,5%,1/2W(S)	911 161507FF	
R614	REF-MO,100,5%,1W(S)	911 331007GF	
R615	REF-CF,120K,5%,1/2W(S)	911 161207FF	
R616	REF-FUSIBLE,0.22,5%,1W	911 802207GA	
R617	REF-MO,180,5%,2W(S)	911 331807JF	
R618	REF-CF,270K,5%,1/2W(S)	911 162707FF	
VR-ARRAY	RES-VAR,ARRAY,ROTARY,25M	913 910011AA	
VR-ARRAY	RES-VAR,ARRAY,ROTARY,25M	913 910011AB	
VR101	RES-VAR,SF-ROUND,200OHM	913 432008BF	
VR102	RES-VAR,SF-ROUND,20KOHM	913 452008BF	
VR131	RES-VAR,SF-ROUND,200OHM	913 432008BF	
VR132	RES-VAR,SF-ROUND,20KOHM	913 452008BF	
VR161	RES-VAR,SF-ROUND,200OHM	913 432008BF	
VR162	RES-VAR,SF-ROUND,20KOHM	913 452008BF	
VR181	RES-VAR,ROTARY,5K	913 145007AB	
VR204	RES-VAR,SF-ROUND,100KOHM	913 461008BF	
VR301	RES-VAR,SF-ROUND,1KOHM	913 441008BF	
VR402	RES-VAR,SF-ROUND,5KOHM	913 445008BF	
VR404	RES-VAR,SF-ROUND,1KOHM	913 441008BF	
VR406	RES-VAR,SF-ROUND,200K	913 462008BF	
VR501	RES-VAR,ROTARY,10K	913 151007ABCT	
VR601	RES-VAR,SF-ROUND,500OHM	913 435008BH	
TRANSFORMERS			
△ T401	TRANS-HOR DRIVE(CVM4967)	923 460136AA	
△ T402	TRANS-FBT,CVL495	923 460082DA	
△ T601	TRANS-POWER,FREE-VOLT	923 460153BA	
TRANSISTORS			
Q100	TR-NPN,KSC945,TO-92	891 390006XB	
Q101	TR-NPN,2N3904,TO-92	891 323904XANC	
Q102	TR-NPN,KSC3503,TO-126	891 493503AA	
Q103	TRANSISTOR:2N5551C-Y(T)	02139-301-488	
Q104	TRANSISTOR:2N5401C-Y(T)	02139-101-158	

LOC. NO	DESCRIPTION	CODE NO	REMARK
Q131	TR-NPN,2N3904,TO-92	891 323904XANC	
Q132	TR-NPN,KSC3503,TO-126	891 493503AA	
Q133	TRANSISTOR:2N5551C-Y(T)	02139-301-488	
Q134	TRANSISTOR:2N5401C-Y(T)	02139-101-158	
Q161	TR-NPN,2N3904,TO-92	891 323904XANC	
Q162	TR-NPN,KSC3503,TO-126	891 493503AA	
Q163	TRANSISTOR:2N5551C-Y(T)	02139-301-488	
Q164	TRANSISTOR:2N5401C-Y(T)	02139-101-158	
Q181	TR-PNP,KSA733,TO-92	891 190733XC	
Q182	TR-PNP,KSA733,TO-92	891 190733XC	
Q280	TR-NPN,2N39045,TO-92	891 323904XANC	
Q281	TR-NPN,KSC945,TO-92	891 390006XB	
Q282	TR-PNP,KSA733,TO-92	891 190733XC	
Q301	TR-NPN,KSC945,TO-92	891 390006XB	
Q302	TR-PNP,KSA733,TO-92	891 190733XC	
Q303	TR-NPN,KSC945,TO-92	891 390006XB	
Q401	TR-NPN,KSC1008,TO-92	891 391008XA	
Q402	TR-NPN,2SC4762,2-16E3A	891 464762AA	
Q403	TR-PNP,KSA733,TO-92	891 190733XC	
Q404	TR-PNP,KSA614,TO-220	891 290614AB	
Q405	FET-P,IRF9610,TO-220	891 799610AA	
Q441	TR-PNP,KSA733,TO-92	891 190733XC	
Q442	TR-NPN,KSC945,TO-92	891 390006XB	
Q443	TR-NPN,KSC1008,TO-92	891 391008XA	
Q444	TR-NPN,KSC1008,TO-92	891 391008XA	
Q445	TR-PNP,KSA733,TO-92	891 190733XC	
Q446	TR-NPN,KSC945,TO-92	891 390006XB	
Q447	TR-PNP,KSA733,TO-92	891 190733XC	
Q501	TR-NPN,KSC945,TO-92	891 390006XB	
Q601	TR-NPN,KSC1008,TO-92	891 391008XA	
Q602	TR-NPN,KSC1008,TO-92	891 391008XA	
OTHERS			
CR201	C-RESO,3.58M,0.5%	941 210011TA	FOR 110V FOR 220V (SCAN,EU)
△ IS601	FIL-LPF,EMI,250V,3A	943 150034BA	
△ PTH601	POSI,20,SQUARE	897 110007AA	
△ F601	FUSE-GLASS TUBE,3A,250V	949 110505AE	
△ F601	FUSE-CERAMIC TUBE,T2.5,250V	949 115105TA	
F601	FUSE-CLIP,5.2X20,30MOHM	953 260023BC	
FT101	FILTER-LPF,LC,220PF,20%	943 150026AA	
FT131	FILTER-LPF,LC,220PF,20%	943 150026AA	

LOC. NO	DESCRIPTION	CODE NO	REMARK
FT161	FILTER-LPF,LC,220PF,20%	943 150026AA	
135TP	PIN-GT	03124-700-810	
FBTTP	PIN-GT	03124-700-810	
GND1	PIN-GT	03124-700-810	
GND2	PIN-GT	03124-700-810	
GND3	PIN-GT	03124-700-810	
GND5	PIN-GT	03124-700-810	
GND6	PIN-GT	03124-700-810	
	CBF-JUMPER WIRE,52MM	955 005001AAAB	
△ SW601	SWITCH-KEY,SPST,250V,5A	933 217007AB	
DS101	CON-D-SUB,9P,RECEPTACLE	935 100109FG	
CRT	CON-JACK CRT SOCKET	935 720901AD	
GND4	CBF-LUG TERMINAL,CORE,1P	955 460476AAAA	
L602	CBF-CON ASSY,CORE,1P	955 460475AAAA	
	CBF-CRT GND ASS'Y,CVT-2	955 460472AAAA	
D/COIL	COIL-DEGAUSSING,7.5MH	925 460181AA	
P-CORD	CBF-POWER CORD,AC ASSY,1200MM	955 000050AAAA	USA,CAP
	CBF-POWER CORD,AC	955 000126AAAA	UK,CAP
	CBF-POWER CORD,1200MM,KS	955 001415AAAA	DOMESTIC,CAP
	AC-POWER CORD,1850MM,KS	955 001424AAAA	DOMESTIC,WALL
	CBF-POWER CORD,1830MM	955 001372AAAA	U.S.A. WALL
P-CORD	CBF-POWER CORD,1850MM	955 001400AAAA	AU,WALL
PC601	CBF-POWER CORD,AC,6FT	955 000129AAAA	EU,WALL
SIG/CA	CBF-SIGNAL CABLE,1200MM	955 460468AAAA	
△ CRT	CRT,COLOR,14":M34JCA30X15	897 250008AA	
	CRT,COLOR:E2940B22-TC27 ETH	897 250018AA	
	CRT,COLOR:E2894B22-TC68ETHHT	897 250019AA	
	CRT,COLOR:M34JBK 00X15	897 250020AA	
	CRT,COLOR,:M34JMA 30X15	897 250035AAAA	
	CRT,COLOR,14":M34KRL62X12(R)	897 250061AA	
	CRT,COLOR,14":M34KRJ45X22(R)	897 250062AA	
	CRT,COLOR,14":M34KRL62X11(R)	897 250063AA	
	CRT,COLOR,14":M34KRL62X11(M)	897 250066AA	
	CRT,COLOR,14":M34KRJ45X22(M)	897 250068AA	
	CRT,COLOR,14":M34KRK55X13	897 250069AA	
	CRT,COLOR,14":M34KRL62X11	897 250070AA	
	CRT,COLOR,14":M34KRL62X12	897 250071AA	
	CRT,COLOR,:M34KRJ45X22	897 250075AA	
	CRT,COLOR:M34JCA30X15(R)	897 250079AA	
	CRT,COLOR,14":M34KUK55X02/12	897 250105AA	
	CRT,COLOR,14":M34KRK55X13(R),0.39,S	897 250108AA	

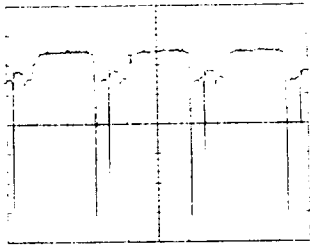
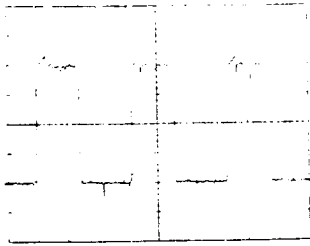
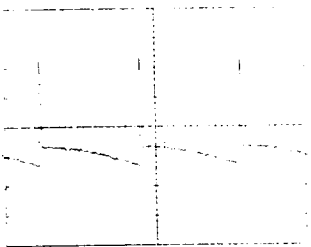
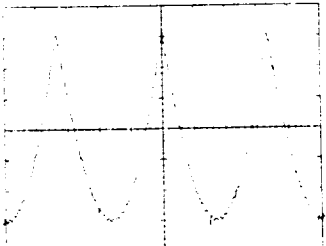
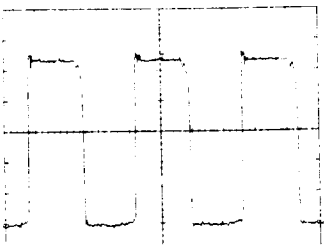
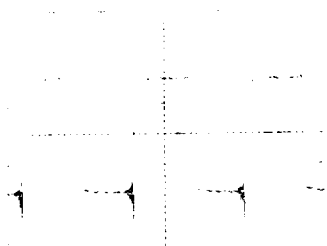
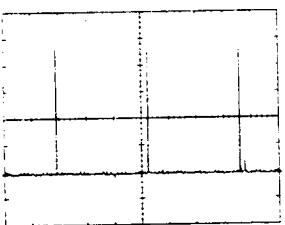
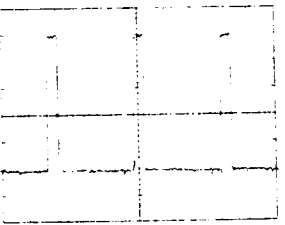
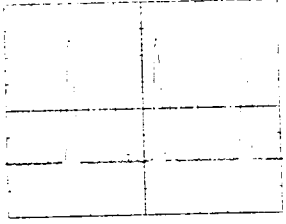
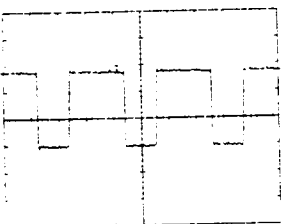
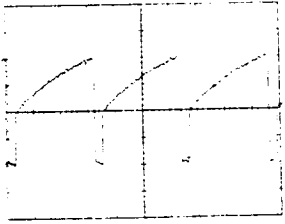
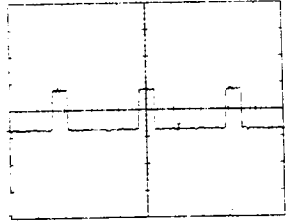


LOC. NO	DESCRIPTION	CODE NO	REMARK
	CRT,COLOR,14":M34KUK55X01/11	897 250109AA	
	CRT,COLOR,14":M34KUK55X01/11(R)	897 250110AA	
	CRT,COLOR,14":E8253B22-TC03ETHT(L1C	897 250033AA	
	CRT,COLOR,14":M34KNM23XX07	897 250053AA	
	CRT,COLOR,14":M34KAM00X06(J)/ANTI-G	897 250078AA	
	CRT,COLOR,14":M34KUK35X01	897 250106AA	
	CRT,COLOR,14":M34KRH35X01(R)	897 250107AA	
	CRT,COLOR,14":M34KUK35X01(R).28VLMF	897 250127AA	
	CRT,COLOR,14":M34KUK35X02 .28LMF + E	897 250128AA	
	CRT,COLOR,14":M34KNM22XX07(L1G7)	897 250129AA	
	CRT-COLOR:M34KRH35X01	02019-238-710	



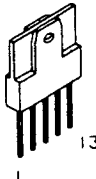



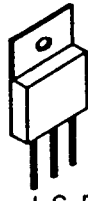

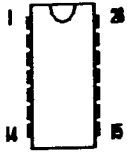
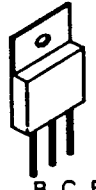
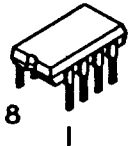
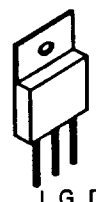
**NOTE: CRT SPECIFICATION LIST**

CODE NO.	SPECIFICATION	DESCRIPTION	REMARK
02019-238-710	SED,M34KRH35X01	0.28, the Northern Hemisphere	NORMAL
897 250107AA	SED,M34KRH35X01R	0.28, the Southern Hemisphere	NORMAL
897 250140AA	SED,M34KRH35X01(M)	0.28, the Equator	NORMAL
897 250107AA	SED,M34KUK35X01	0.28, the Northern Hemisphere	VLMF
897 250127AA	SED,M34KUK35X01(R)	0.28, the Southern Hemisphere	VLMF
897 250128AA	SED,M34KUK35X02	0.28, the Northern Hemisphere	MPR II
897 250129AA	TOSHIBA,M34KNM22XX07	0.28, the Northern Hemisphere	VLMF
897 250053AA	TOSHIBA,M34KNM23XX07	0.28, the Northern Hemisphere	MPR II
897 250078AA	HITACHI,M34KAM00X06	0.28, the Northern Hemisphere	NORMAL
897 250065AA	HITACHI,M34KDD80X06(S)	0.28, the Northern Hemisphere	MPR II
897 250075AA	SED,M34KRJ45X22	0.31, the Northern Hemisphere	NORMAL
897 250062AA	SED,M34KRJ45X22(R)	0.31, the Southern Hemisphere	NORMAL
897 250068AA	SED,M34KRJ45X22(M)	0.31, the Equator	NORMAL
897 250008AA	HITACHI,M34JCA30X15	0.31, the Northern Hemisphere	NORMAL
897 250079AA	HITACHI,M34JCA30X15(R)	0.31, the Southern Hemisphere	NORMAL
897 250069AA	SED,M34KRK55X13	0.39, the Northern Hemisphere	NORMAL
897 250108AA	SED,M34KRK55X13	0.39, the Southern Hemisphere	NORMAL
897 250109AA	SED,M34KUK55X01/11	0.39, the Northern Hemisphere	VLMF
897 250110AA	SED,M34KUK55X01/11(R)	0.39, the Southern Hemisphere	VLMF
897 250105AA	SED,M34KUK55X02/12	0.39, the Northern Hemisphere	MPR II
897 250035AA	HITACHI,M34JMA30X15	0.39, the Northern Hemisphere	NORMAL
897 250070AA	SED,M34KRL62X11	0.41, the Northern Hemisphere	NORMAL
897 250063AA	SED,M34KRJ62X11(R)	0.41, the Southern Hemisphere	NORMAL
897 250066AA	SED,M34KRL62X11(M)	0.41, the Equator	NORMAL

# WAVEFORMS

		
(1) 11.9 Vp-p (H-period)	(2) 1.10 Vp-p (H-period)	(3) 38.8 Vp-p (V-period)
		
(4) 5.94 Vp-p (V-period)	(5) 290 Vp-p (H-period)	(6) 238 Vp-p (H-period)
		
(7) 5.24 Vp-p (V-period)	(8) 5.56 Vp-p (H-period)	(9) 960 Vp-p (H-period)
		
(10) 150 Vp-p (Regulation out)	(11) 8.24 Vp-p (H-OSC)	(12) 33.6 V (Video out)

# SEMICONDUCTOR LEAD IDENTIFICATION

PARTS	TYPE NO.	REF. NO.	PARTS	TYPE. NO.	REF. NO.
 E B C	KSC945-Y	Q301, Q303, Q442, Q443, Q444, Q446, Q100, Q501, Q280 Q281.		LA7851 (KA2138)	IC401
	KSC1008-Y	Q401, Q601, Q602	 1 13	LA7838	IC301
	KSC733-Y	Q181, Q182, Q302, Q403, Q441, Q445, Q447, Q282.			
	2N3904	Q101, Q131, Q161.			
 E C B	2N5410C-Y	Q104, Q134, Q164		STR58041 (UNIVERSAL VERSION)	IC601
	2N5551C-Y	Q103, Q133, Q163			
 B C E	2SC4744 2SC4762	Q402	 I G D	MC7812C	IC602
 E C B	KSC3503E	Q102, Q132, Q162			
 I B 15	SL405 LM1203	IC201 IC101	 B C E	KSA614	Q404
 8 I	LM358	IC202, IC402	 I G D	IRF9610	Q405