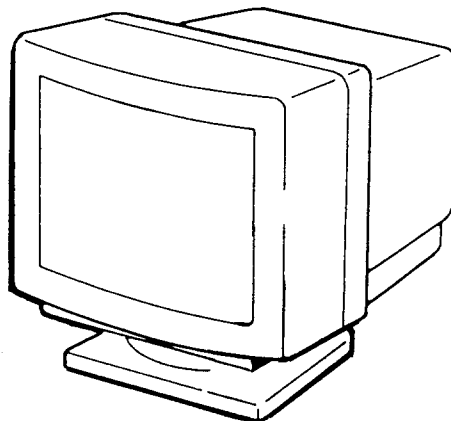


# CPD-1404S

## SERVICE MANUAL

REVISED



*AEP Model*  
*UK Model*

Chassis No. SCC-D40B-A

*Australian Model*  
Chassis No. SCC-D40C-A

## Multiscan

### SPECIFICATIONS

Computer display	Direct-driven monitor
Picture tube	Super Fine Pitch Trinitron colour tube
	14 inch (13 V) picture tube measured diagonally
	90 degree deflection
	Anti-glaring dark screen
	Useful screen 274 mm x 207 mm
	Phosphor P22
	0.25 mm Aperture Grille pitch
Viewable pixels	1024 x 768
Scanning frequency	Vertical sync signal frequency: 55 - 100Hz
	Horizontal sync signal frequency: 28 - 57kHz
Video input signal	Analog RGB positive
	0.714 Vp-p/75Ω terminated
Sync input	TTL level. Polarity free.
	Composite sync is acceptable at Pin # 8.
	Sync on green is acceptable.
Power requirements	100-120 V / 220-240 V AC, 50 - 60 Hz, 1.8 - 1.0 A

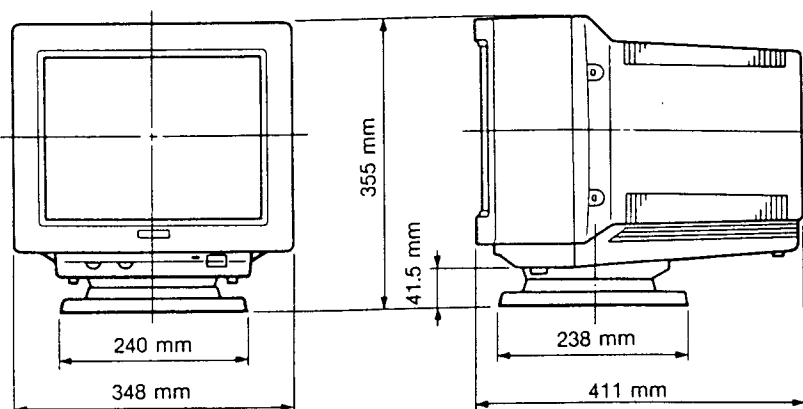
— Continued on next page —



MULTISCAN®  
COLOUR COMPUTER DISPLAY  
**SONY®**

**Dimensions**

355 × 348 × 411 mm (w/h/d)  
(14 × 13<sup>3</sup>/<sub>4</sub> × 16<sup>1</sup>/<sub>8</sub> inches)



**Weight** 13.1 kg (29.1 lb)  
Including the tilt-swivel

**Supplied accessory** AC power cord (1)

Design and specifications subject to change without notice.

**WARNING**

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

Dangerously high voltage is present inside the unit. Do not open the cabinet. Refer servicing to qualified personnel only.

FOR CUSTOMERS IN THE UNITED KINGDOM

**WARNING**  
**THIS APPARATUS MUST BE EARTHED****IMPORTANT**

The wires in this mains lead are coloured in accordance with the following code:

Green-and-yellow	: Earth
Blue	: Neutral
Brown	: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol  $\oplus$  or coloured green or green-and-yellow. The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black. The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.


## TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
<b>1. GENERAL</b>			<b>4. SAFETY RELATED ADJUSTMENT</b>		16
1-1.	Location and Function of Controls	4	<b>5. CIRCUIT ADJUSTMENTS</b>		
1-2.	Connections	5	5-1.	DA(DC-1) Board Adjustment	19
1-3.	Use of the Tilt-Swivel	6	5-2.	D and DA(DC-1) Board Adjustments	20
1-4.	Timing Chart	7	<b>6. DIAGRAMS</b>		
<b>2. DISASSEMBLY</b>			6-1.	Circuit Boards Location	23
2-1.	Tilt and Cabinet Removal	8	6-2.	Schematic Diagrams and Printed Wiring Boards	23
2-2.	DA(DC-1) Board Removal	8		Frame Schematic Diagram	24
2-3.	Chassis and B Block Assembly Removal	9		DA(DC-1) Board	26
2-4.	D Board Removal	10		D Board	33
2-5.	Picture Tube Removal	10		B Board	40
<b>3. SET-UP ADJUSTMENTS</b>			6-3.	Semiconductors	45
3-1.	Beam Landing	11	<b>7. EXPLODED VIEWS</b>		47
3-2.	Convergence	12	<b>8. ELECTRICAL PARTS LIST</b>		48
3-3.	Focus Adjustment	15			
3-4.	White Balance	15			
3-5.	Bright Controllable Confirmation	15			

### NOTE. Parts Difference

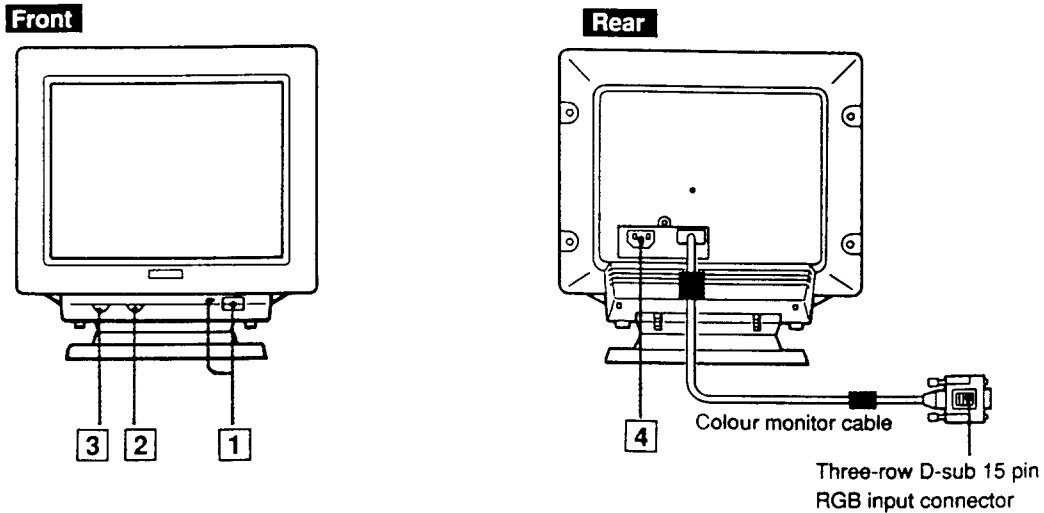
	Serial No. 5,000,001 to 5,008,000	Serial No. 5,008,001 and later
AEP UK	BEZEL ASS'Y (X-4029-894-1) (No include AERIAL ASSY)	BEZEL ASS'Y (X-4029-894-3) (include AERIAL ASSY)
	without CANCEL COIL ASS'Y	with CANCEL COIL ASS'Y (1-941-843-19)
AUS	Serial No. 5,800,001 and later with BEZEL ASS'Y (X-4029-894-3) with CANCEL COIL ASS'Y (1-941-843-19)	

### SAFETY-RELATED COMPONENT WARNING !!

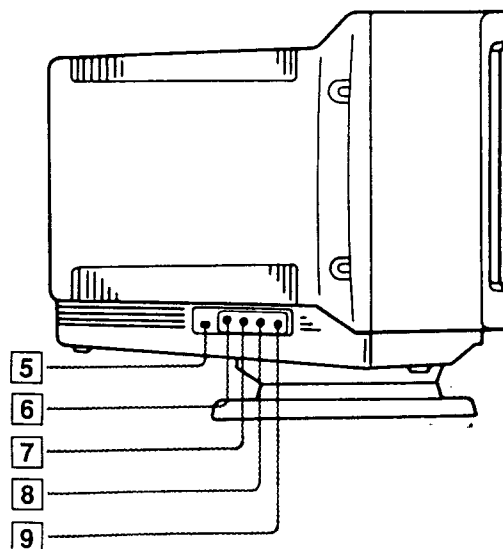
COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

## SECTION 1 GENERAL

### 1-1. LOCATION AND FUNCTION OF CONTROLS



- 1 POWER switch and indicator**  
To turn on the power of the unit, press this switch. The indicator will light up. To turn off the unit, press it again.
- 2 CONTRAST control (●)**  
Turn clockwise to increase contrast, or counterclockwise to decrease contrast.
- 3 BRIGHTNESS control (☆)**  
Turn clockwise for a brighter display, or turn counterclockwise for a darker display.
- 4 AC IN connector**  
Connect to an AC outlet with the supplied AC power cord.



**5 AUTO SIZE switch**

Depending on the microcomputer connected to the display, set this switch to the appropriate position.

**LOCK:** For the IBM PS/2 microcomputer using the VGA mode.

When this switch is set to LOCK, the timing is automatically adjusted to the VGA mode, and the H SIZE, H SHIFT, V SIZE and V CENT controls will have no effect.

**ADJ:** For other microcomputers having analog RGB output.

When this switch is set to ADJ, adjust the display with the H SIZE, H SHIFT, V SIZE and V CENT controls.

**6 H SIZE (horizontal size) control**

Turn this control to adjust the horizontal size of the display.

**7 H SHIFT (horizontal shift) control**

Turn this control to adjust the centre of the display horizontally.

**8 V SIZE (vertical size) control**

Turn this control to adjust the vertical size of the display.

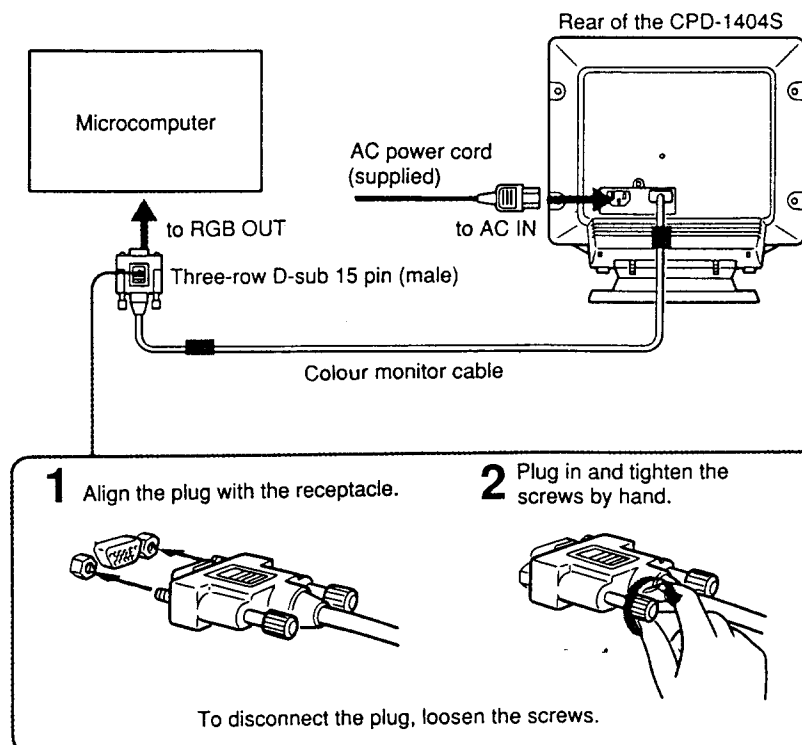
**9 V CENT (vertical center) control**

Turn this control to adjust the centre of the display vertically.

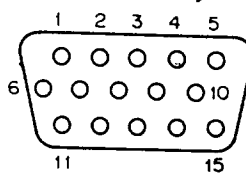
**1-2. CONNECTIONS**

Connect the power cord and the monitor cable.

Be sure to turn the power of the unit off before making the connection.



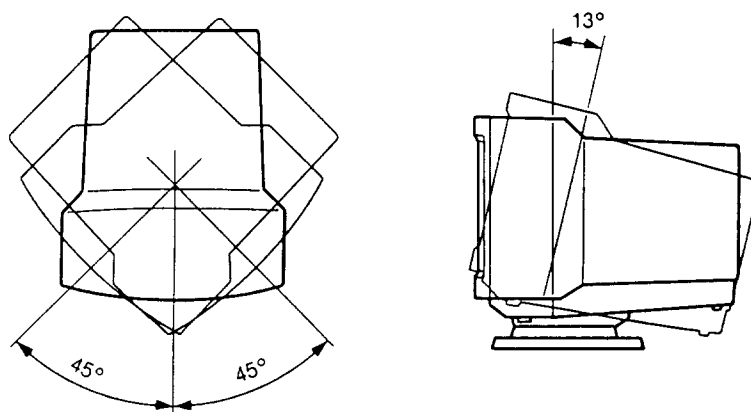
RGB Input Pin Assignment



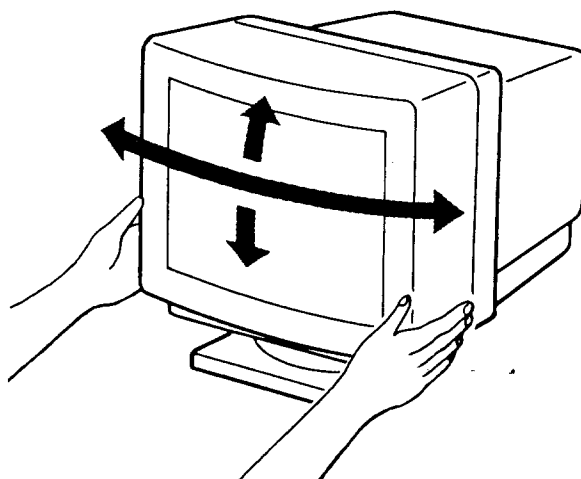
1	2	3	4	5	6	7	8	9
R	G	B	GND	GND	GND	GND	GND	—
10	11	12	13	14	15			
GND	GND	—	H SYNC	V SYNC	—			

### 1-3. 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.



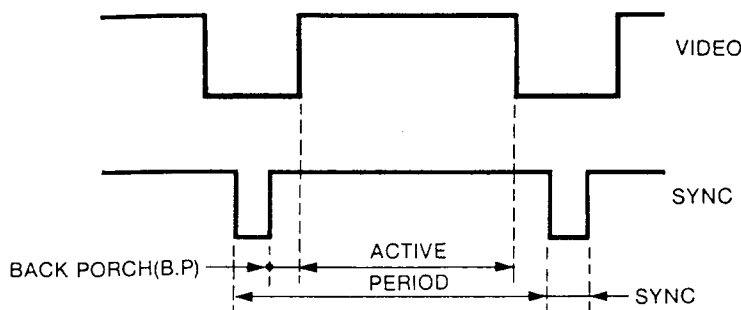
To turn the unit horizontally, hold it at its bottom with both hands as illustrated below.



## 1-4. TIMING CHART

The following timing chart shows approximate values.

## MONITOR ACCEPTABLE TIMING EXAMPLE



## 1 VGA

		1	2	3
FREQ.	H (kHz)	31.47	31.47	31.47
	V (Hz)	70.1	70.1	59.9
H	PERIOD (μS)	31.78	→	→
	SYNC	3.81		
	B.P	1.91		
	ACTIVE	25.42		
V	PERIOD (H)	449	449	525
	SYNC	2	2	2
	B.P	34	59	32
	ACTIVE	400	350	480
SYNC POLARITY	H	NEGA	POSI	NEGA
	V	POSI	NEGA	NEGA
CLOCK FREQ. (MHz)		25.175	25.175	25.175

## 2 1024 × 768 interlace (fh = 35.52 kHz/1v - 3/1)

FREQ.	H (kHz)	35.52
	V (Hz)	59.94
H	PERIOD (μS)	28.15
	SYNC	3.81
	B.P	1.91
	ACTIVE	22.43
V	PERIOD (H)	40.95
	SYNC	2
	B.P	20.25
	ACTIVE	18.75
SYNC POLARITY	H	POSI
	V	POSI
CLOCK FREQ. (MHz)		44.75

1, 2: When the AUTO SIZE SW is in the locked position, picture size is automatically adjusted for the above listed video modes (1, 2). All sizing controls on the left side of the monitor are therefore ineffective.

To adjust sizing for other video modes, change the SW to ADJ and adjust the controls.

3 35 kHz non-interlace (example)  
800 × 600

FREQ.	H (kHz)	35.16
	V (Hz)	56.0
H	PERIOD (μS)	28.44
	SYNC	3.11
	B.P	2.67
	ACTIVE	22.22
V	PERIOD (H)	628
	SYNC	14
	B.P	7
	ACTIVE	600
CLOCK FREQ. (MHz)		36.000

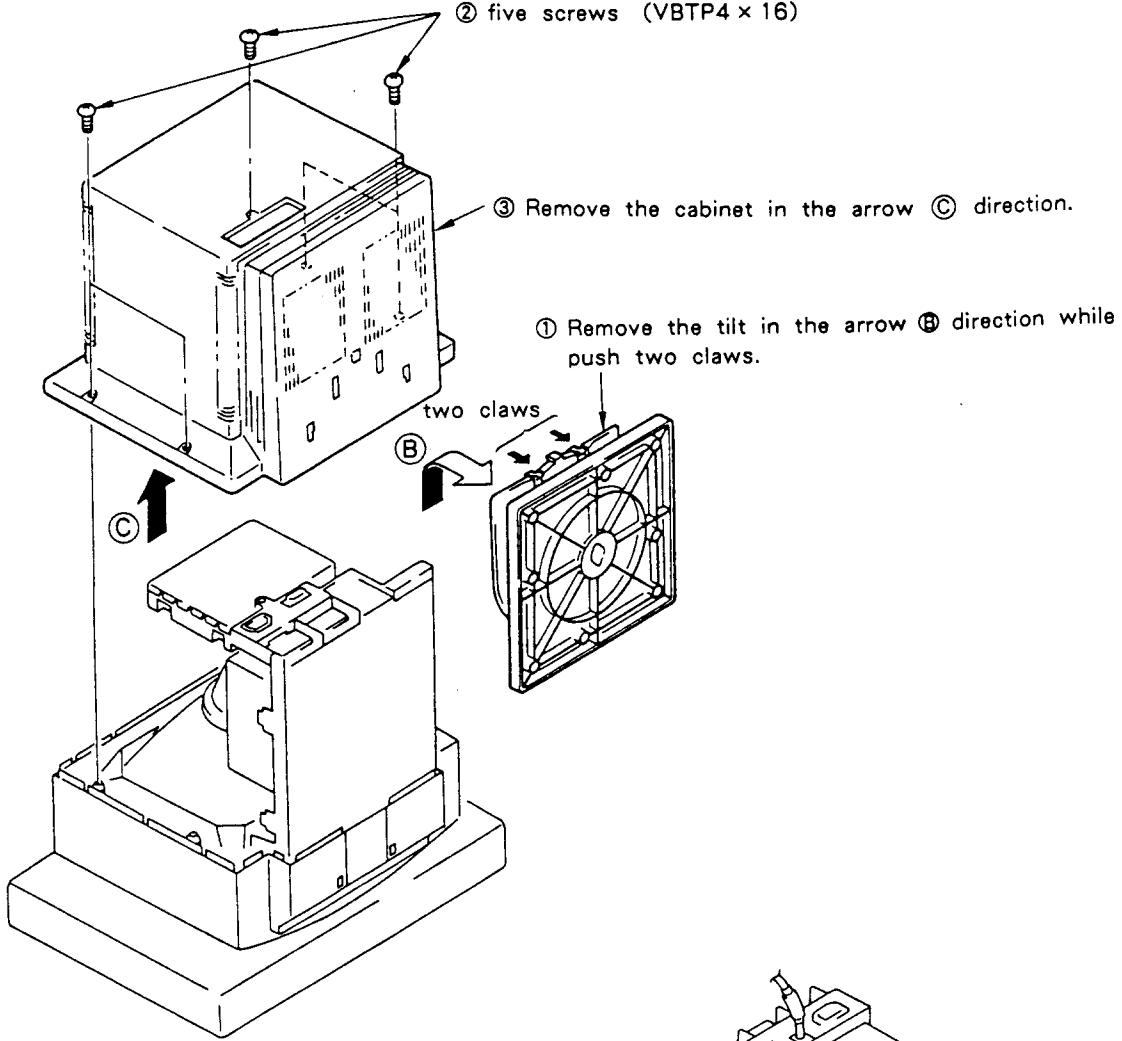
4 48 kHz non-interlace (example)  
1024 × 768

FREQ.	H (kHz)	48.19
	V (Hz)	60.0
H	PERIOD (μS)	20.75
	SYNC	1.00
	B.P	2.75
	ACTIVE	16.00
V	PERIOD (H)	803
	SYNC	4
	B.P	28
	ACTIVE	768
CLOCK FREQ. (MHz)		64.000

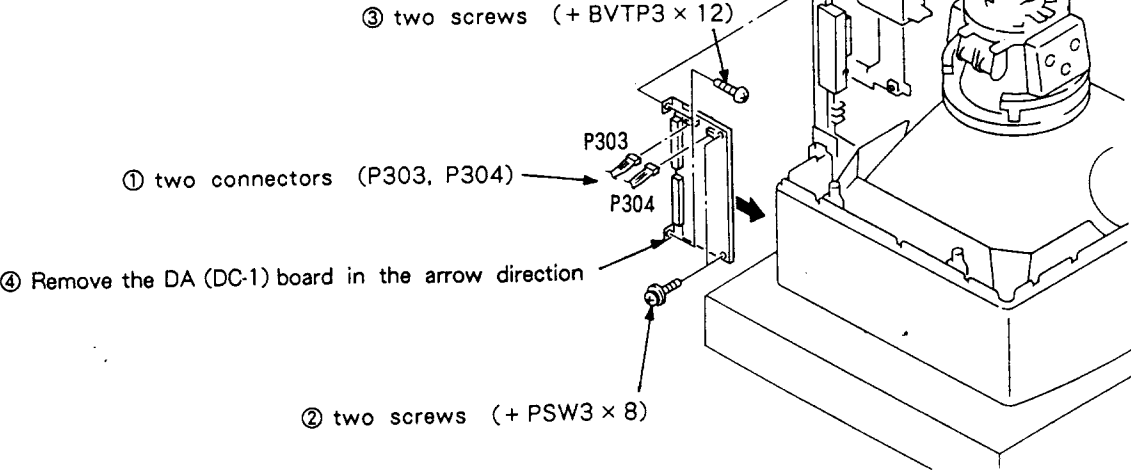
3, 4: SYNC POLARITY FREE

SECTION 2  
DISASSEMBLY

2-1. TILT AND CABINET REMOVAL

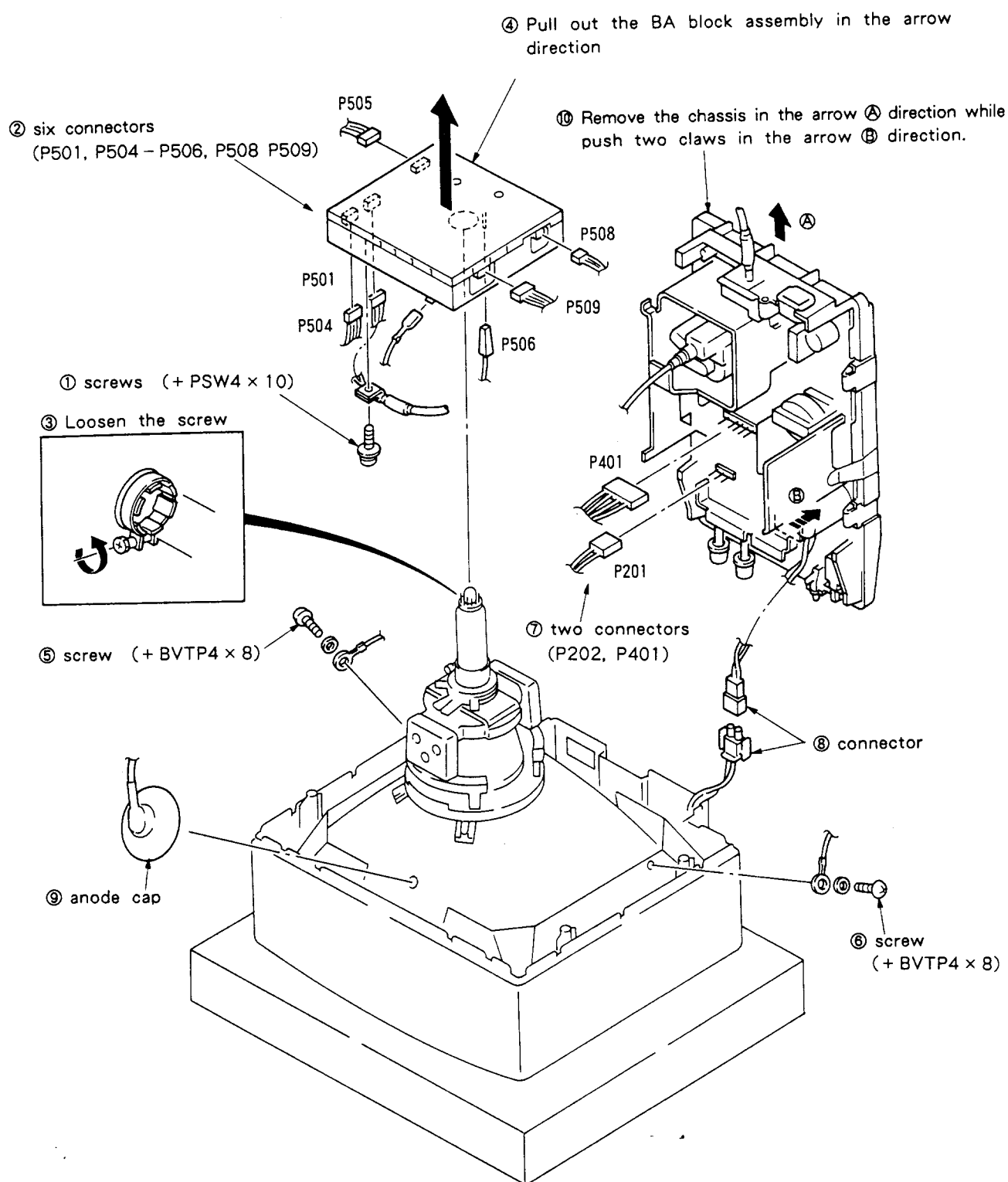


2-2. DA (DC-1) BOARD REMOVAL

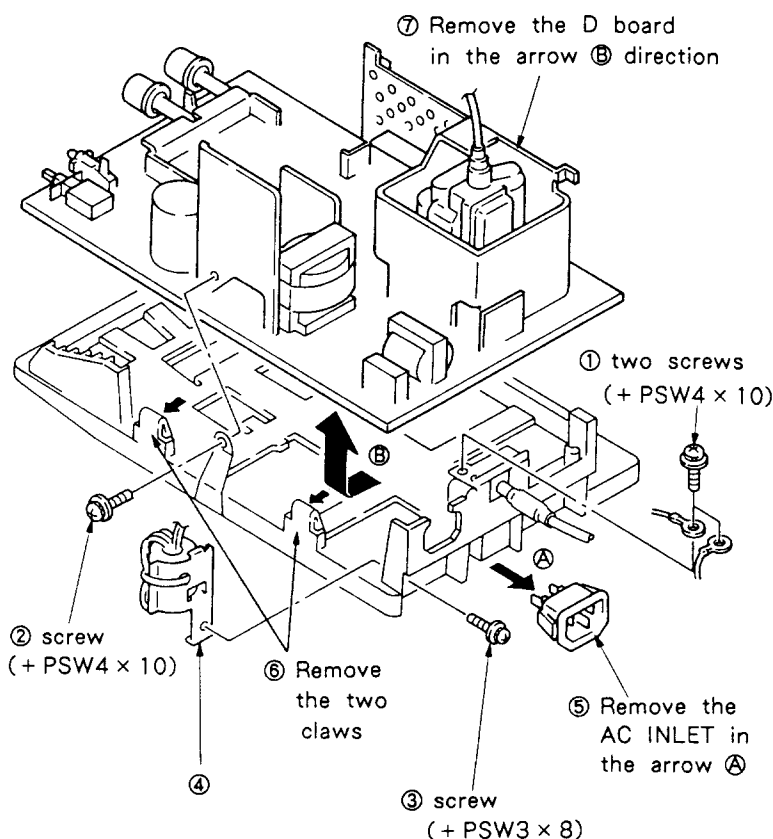




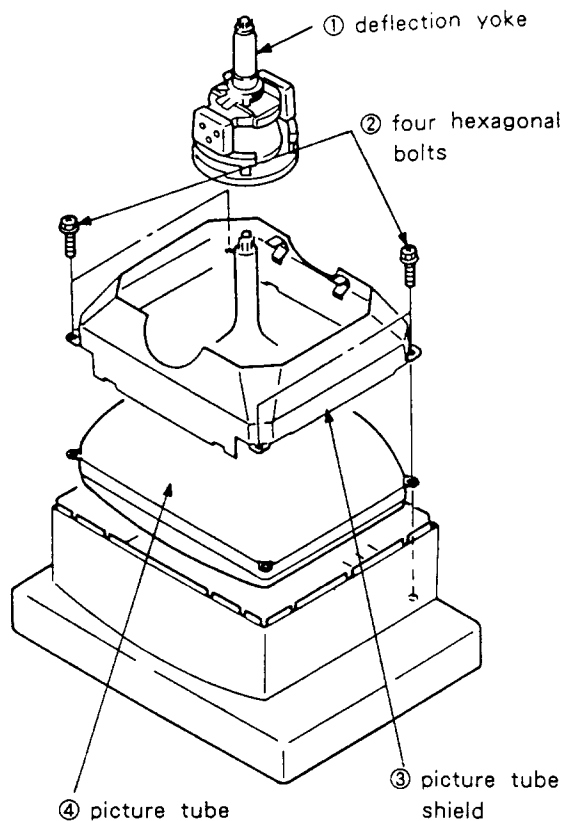
## 2-3. CHASSIS AND B BLOCK ASSEMBLY REMOVAL



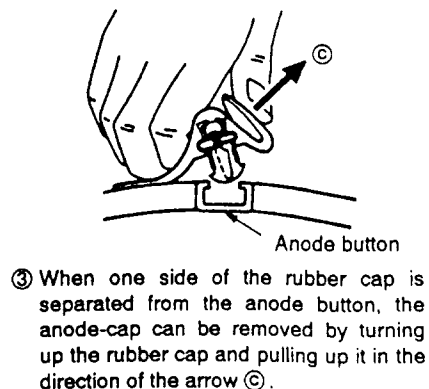
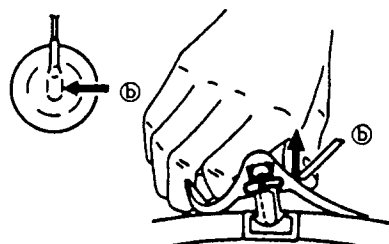
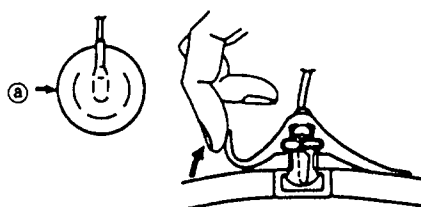
## 2-4. D BOARD REMOVAL



## 2-5. PICTURE TUBE REMOVAL

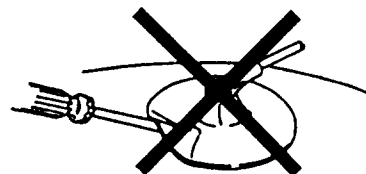
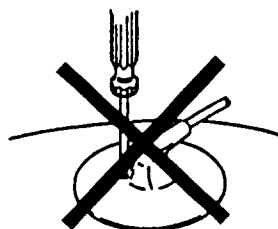


### • REMOVAL OF ANODE-CAP • REMOVING PROCEDURES



### • HOW TO HANDLE AN ANODE-CAP

- ① Don't hurt the surface of anode-caps with sharp shaped material !
- ② Don't press the rubber hardly not to hurt inside of anode-caps !  
A metal fitting called as shatter-hook terminal is built in the rubber.
- ③ Don't turn the foot of rubber over hardly !  
The shatter-hook terminal will stick out or hurt the rubber.



## SECTION 3 SET-UP ADJUSTMENT

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

The control and switch below should be set as follows unless otherwise noted:

CONTRAST control ..... 80%  
BRIGHTNESS control ..... 50%

Perform the adjustments in order as follows:

- 3-1. Beam Landing
- 3-2. Convergence
- 3-3. Focus
- 3-4. White Balance

**Note:** Test Equipment Required.

- Signal generator: VG807, VG809 ... etc (Astro Design)
- Colour Analyzer
- Degausser

### Preparation

- Face the PICTURE TUBE to east or west so as not to be influenced by magnetic force.
- Turn ON the POWER switch, and degauss the entire screen with degausser.

### 3-1. BEAM LANDING

1. Receive a signal of 480 LINE ( $f_H=31$  kHz) with signal generator.
2. Adjust the white balance, convergence and focus coarsely, and then set purity controls to centre position as shown in Fig. 3-1.
3. Switch over the signal generator to green.
4. Move the deflection yoke backward, and adjust purity magnet so that the green on the screen to become in the centre of screen as shown in Fig. 3-2.
5. Move the deflection yoke forward, and adjust with so that the entire screen to become green entirely.
6. Switch over the signal to blue and green, and confirm the condition.
7. When landing at the corners is not right, correct by using the magnet (Fig. 3-3).

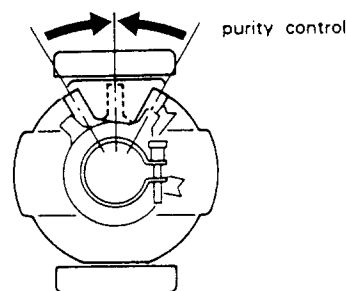


Fig. 3-1

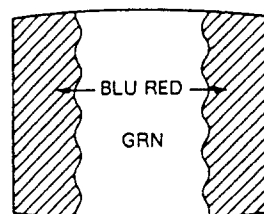


Fig. 3-2

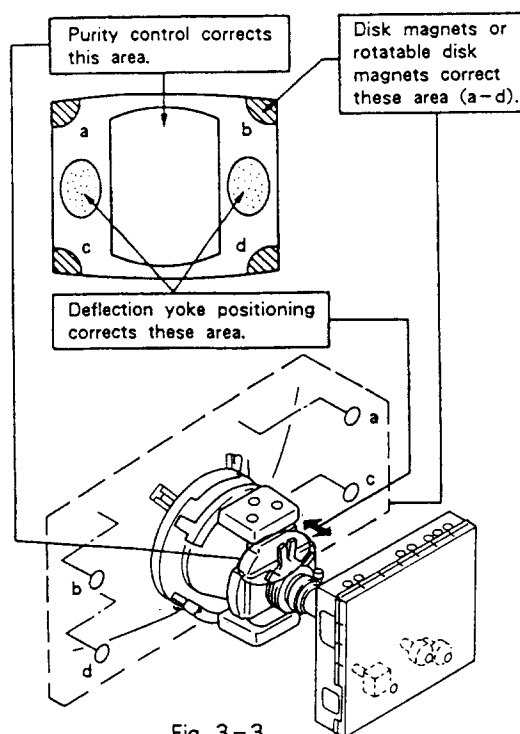
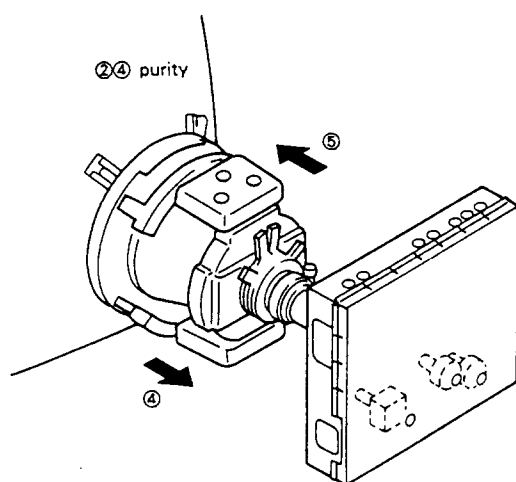


Fig. 3-3

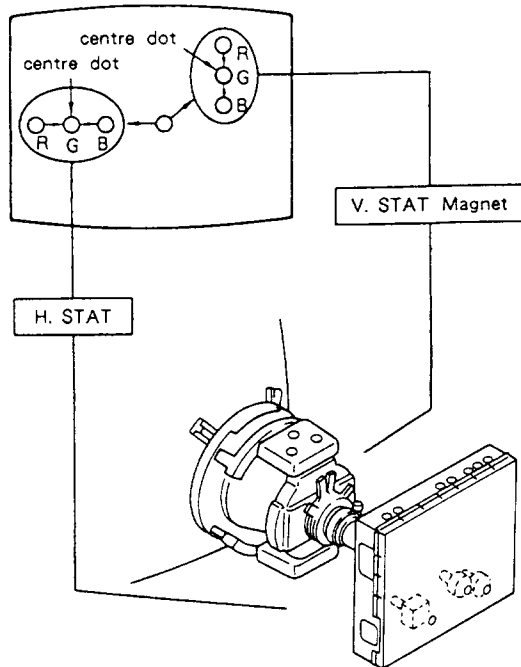
### 3-2. CONVERGENCE

#### (1) Horizontal and Vertical Static Convergence Adjustment on the Centre of Screen.

- Before starting, perform V. SIZE, V. CENT, H. SIZE, H. CENT and Screen Distortion adjustment rightly.

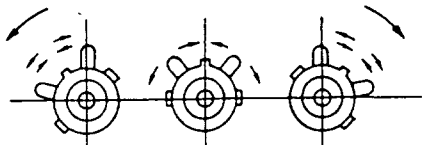
#### (Static Convergence Adjustment)

1. Receive a dot signal and Set CONTRAST to normal.
2. Adjust H. STAT VR to coincide red, green and blue dots on the centre of screen. (Horizontal movement)
3. Adjust V. STAT magnet to coincide red, green and blue dots on the centre of screen. (Vertical movement)



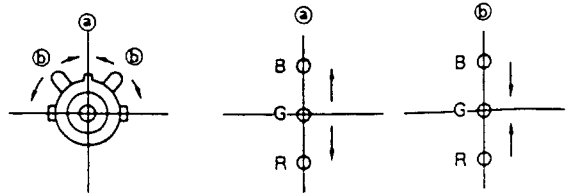
- ※ If the red, green and blue dots do not coincide on the centre of screen with H. STAT VR, perform adjustment using V. STAT at the same time while tracking.

(Tilt the V. STAT magnet and adjust static convergence to open or close the V. STAT magnet.)

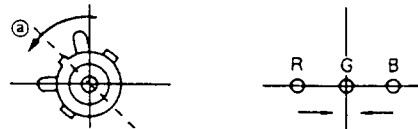


- When the V. STAT magnet is moved in the direction of arrow ③ and ④, red, green and blue dots move as shown below.

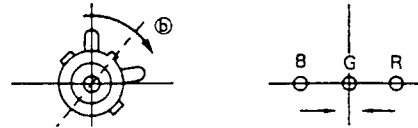
- ① When moving the V. STAT Magnet open or close.



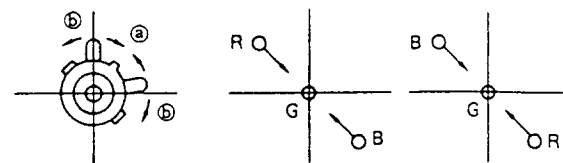
- ② When moving the V. STAT magnet counterclockwise.



- ③ When moving the V. STAT magnet clockwise.



- ④ When tilt the V. STAT magnet and open or close.

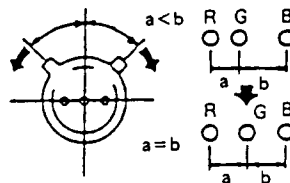


- ※ If the red and green dots do not coincide with blue dot, adjustment with BMC (6-poles) magnet.

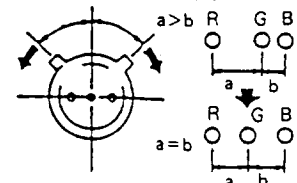
- HMC and VMC correction for BMC (6-Poles) magnet.

1. HMC (Horizontal Misconvergence) correction and motion of the Electron Beam with the BMC (6-poles) magnet.

#### HMC Correction (A)

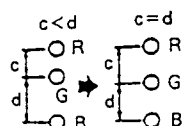
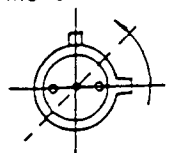


#### HMC Correction (B)

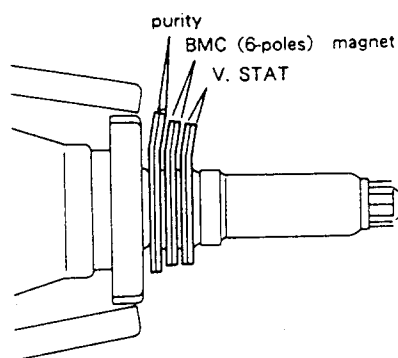
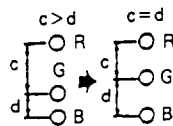
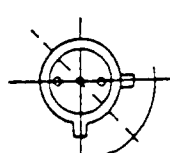


2. VMC (Vertical Misconvergence) correction and motion of the Electron Beam with the BMC (6-poles) magnet.

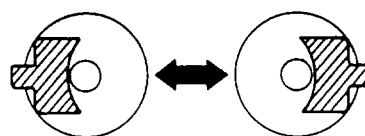
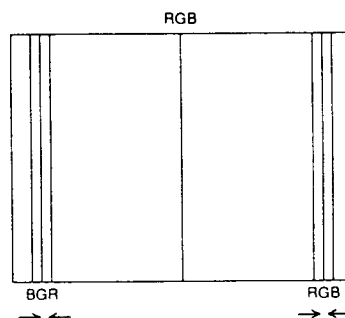
VMC Correction (A)



VMC Correction (B)



- ② H.TILT adjustment



Operation  
(taking out  
and putting  
in)

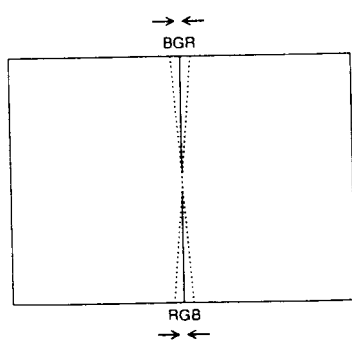
Correction board

Operation  
(taking out  
and putting  
in)

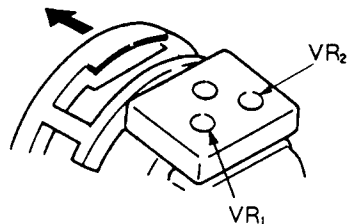
Adjust so that the order of R, G, B is the same on both the right and left sides.

- ① Adjust the Y axis cross misconception.

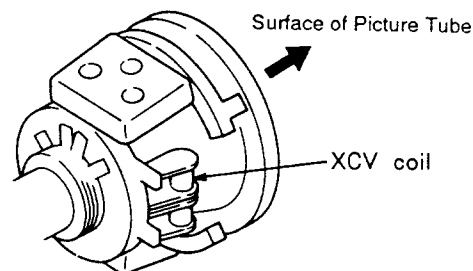
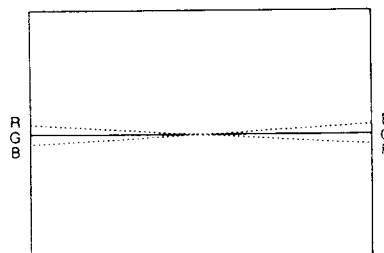
VR<sub>1</sub> Lower section correction  
VR<sub>2</sub> Upper section correction



Surface of Picture Tube



- ③ Adjust the X axis cross misconception.



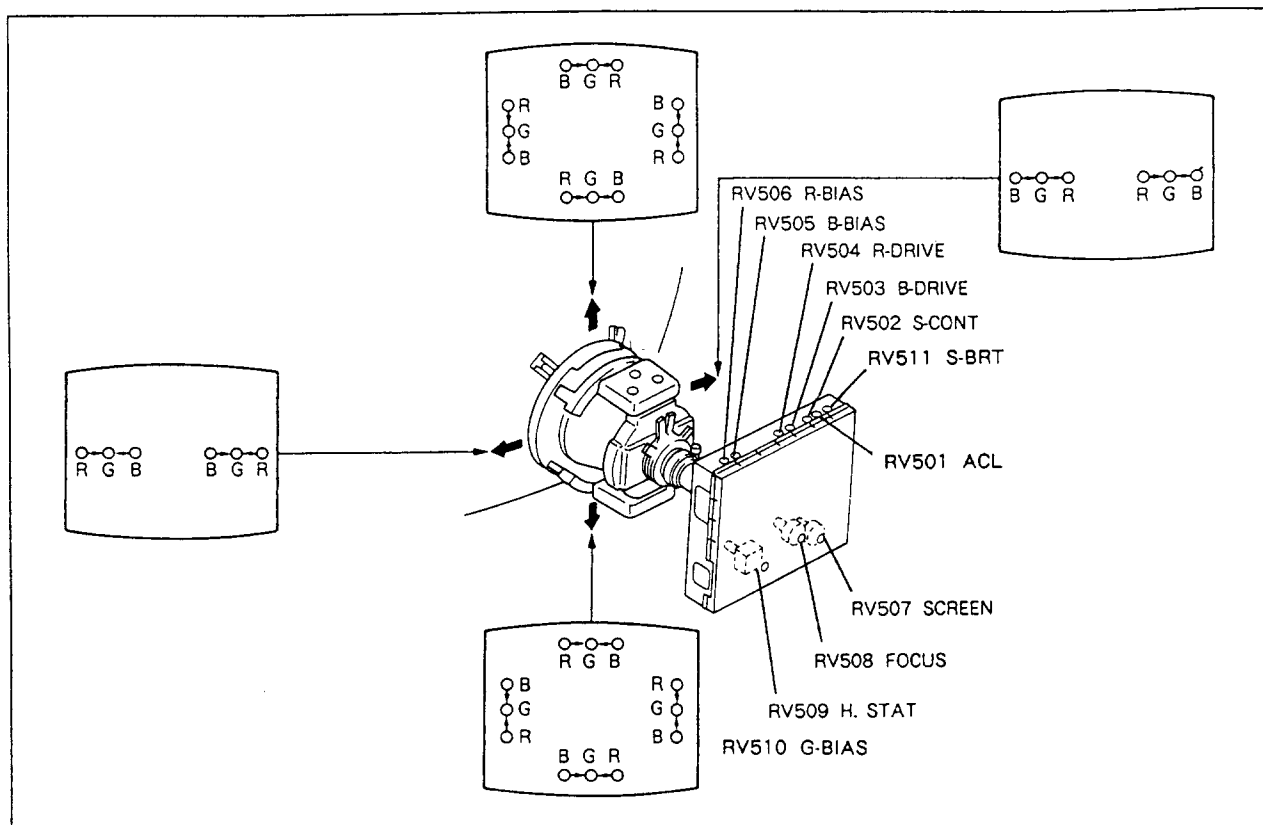
Adjust so that the crosses of R and B disappear.

## (2) Horizontal and Vertical Dynamic Convergence

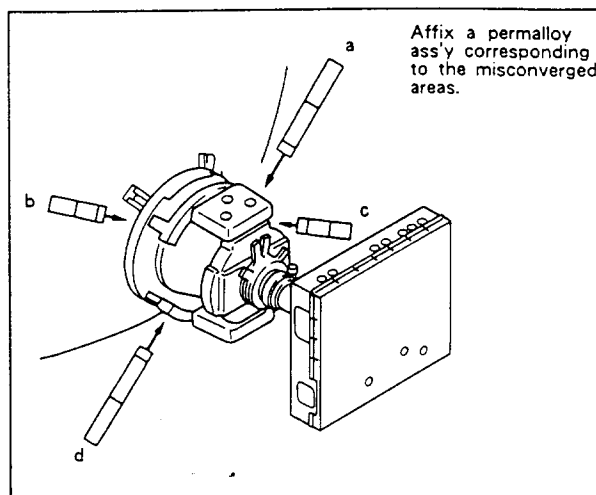
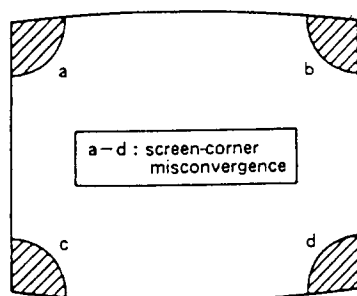
Adjustment the environs of the Screen

### (Dynamic Convergence Adjustment)

1. Loosen deflection yoke screw.
2. Remove deflection yoke spacers.
3. Move the deflection yoke for best convergence.
4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.

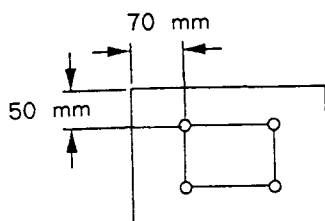


## (3) Screen-corner Convergence



### 3-3. FOCUS ADJUSTMENT

1. Turn the signal to 1024 × 768 ( $f_H = 48\text{kHz}$ ).
2. Receive a dot signal.
3. Adjust FOCUS VR so that the following figure point for best focus.



8. Adjust the CONTRAST VR to MIN, and obtain the white balance at luminance 10 nit using R, G, B-BIAS VR.  
 $X = 0.283, Y = 0.298$   
(Decrease it using the BRIGHT VR if luminance 10 nit cannot be obtained.)
9. Repeat steps 7 to 8, and obtain the white balances at 130 nit and 10 nit.
10. Receive the VIDEO non-signal, check that the raster is CUT-OFF with BRT CENTRE, CONT MAX.
11. Receive the all white signal (VGA 31.5 Hz, 480 LINE), and adjust ACL VR (RV501) so that the luminance becomes  $120 \pm 12$  at both BRT MAX and CONT MAX.

### 3-5. BRIGHT CONTROLLABLE CONFIRMATION

1. Input a signal of 480 LINE ( $f_H = 31\text{ kHz}$ , entire-white, 0.714 Vp-p).
2. CONTRAST control ..... maximum
3. Confirm the variation of luminance signal when controlling BRIGHT volume as follows.
  - 1) Confirm the difference of luminance signal on maximum position as compared with the centre click position is more than +10 NIT.
  - 2) Confirm the difference of luminance signal on minimum position as compared with the centre click position is less than -10 NIT.

Check that the size, position, distortion, and convergence have been adjusted, and that aging has been carried out for more than thirty minutes.

1. Receive the VGA GRAPHICS MODE ( $f_H = 31.5\text{ kHz}$ , 480 LINE).
2. Set the VRs as follows.

BRT	RV205	CENT
CONT	RV204	MAX
SUB-CONT	RV502	CENT
SUB-BRT	RV511	CENT
R-DRIVE	RV504	CENT
B-DRIBE	RV503	CENT
R-BIAS	RV506	MIN
G-BIAS	RV510	MIN
B-BIAS	RV505	MIN
ACL	RV501	MAX

3. Check that the size is as specified. After checking, change the VIDEO to a non signal.  
Horizontal 240 mm  
Vertical 180 mm
4. Use the SCREEN VR (attached to the FOCUS PACK) to display raster.  
Use R,G,B-BIAS VR to adjust any 1 ch VR to MIN, and adjust so that it becomes almost white ( $X = 0.283, Y = 0.298$  approx.  $\pm 0.05$ ).
5. Use the SCREEN VR to adjust the raster to CUT-OFF.
6. Receive the VGA 31.5 kHz, 480 LINE, VIDEO 0.714 Vp-p  $\pm 0.002$ .
7. Receive the white 6% output image rate, adjust the R, B-DRIVE VR so that the white balance becomes  $X = 0.283, Y = 0.298$  and adjust the SUB-CONT VR so that the luminance becomes 130 nit.

## SECTION 4

### SAFETY RELATED ADJUSTMENT

#### RV402, HV REGULATOR. HV HOLD-DOWN AND BEAM LIMIT CIRCUIT CONFIRMATION

When replacing the following components (marked with ☒ on the schematic diagram), make this confirmation.

D BOARD.....IC901, IC902, IC401, D930, C408, C409, C410, C412, C414, C415, C422, C424, R414, R434, R435, L406, T402 (FBT), T901, RV402, DY (Deflection Yoke)

DA (DC-1)

BOARD.....IC101, IC301, D303, R327, R388

#### 1. HV REGULATOR CIRCUIT CONFIRMATION

- 1) Receive a signal of  $f_H = 48\text{kHz}$
- 2) Set the CONT and BRIGHT controls to minimum. (Cut-Off condition).
- 3) Connect a digital multimeter to pin ② of P402 on D board.
- 4) Confirm the voltage is less than 6.48V DC.
- 5) If step 4) is not satisfied, adjust them with RV402.

#### 2. HV. HOLD-DOWN CIRCUIT CONFIRMATION

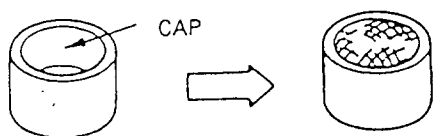
- 1) Receive a signal of  $f_H = 48\text{kHz}$ .
- 2) Set the CONT and BRIGHT controls to minimum. (Cut-Off Condition).
- 3) Apply an external DC voltage gradually to pin ② of P402 on D board, confirm that the minimum voltage is less than 7.40 V DC where by the HOLD-DOWN circuit operates immediately and raster disappears.

#### 3. BEAM LIMITER CIRCUIT CONFIRMATION

- 1) Receive a signal of  $f_H = 48\text{kHz}$ .
- 2) Adjust CONT and BRIGHT controls so that the screen luminance to become 100 NIT.  
CONT control..... maximum  
BRIGHT control..... centre
- 3) Connect a digital multimeter to pin ① of P402 on D board.
- 4) Confirm that the voltage is  $-2.80 \pm 1.00$  V DC
- 5) Apply an external DC voltage gradually to pin ① of P402 on D board, and when the voltage becomes more than  $-11.30\text{V}$ , confirm the BEAM-LIMITER circuit operates and raster disappears.

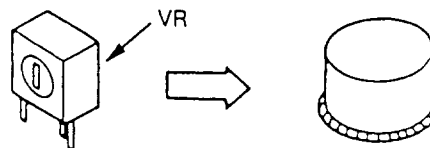
NOTE: After adjustment, cover on ☒ RV402 with seal cap as follows.

- ① Insert in seal cap with RTV (silicone) as follows.



- seal cap (3-710-578-01)
- RTV (KE-490, 7-322-065-19)

- ② Cover the seal cap on RV402, and make paste together silicone and printed board.



#### WARNING :

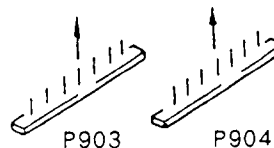
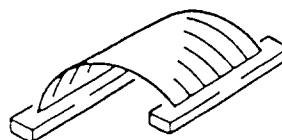
IF RV402 (sealed variable resistor) replacement is required, federal require that after adjustment the control is to be sealed so no further adjustment can be made to this resistor.

#### OVP CIRCUIT CONFIRMATION

When replacing following components, perform this confirmation.

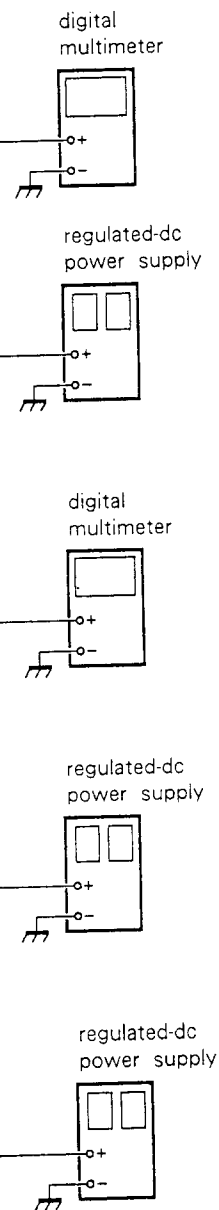
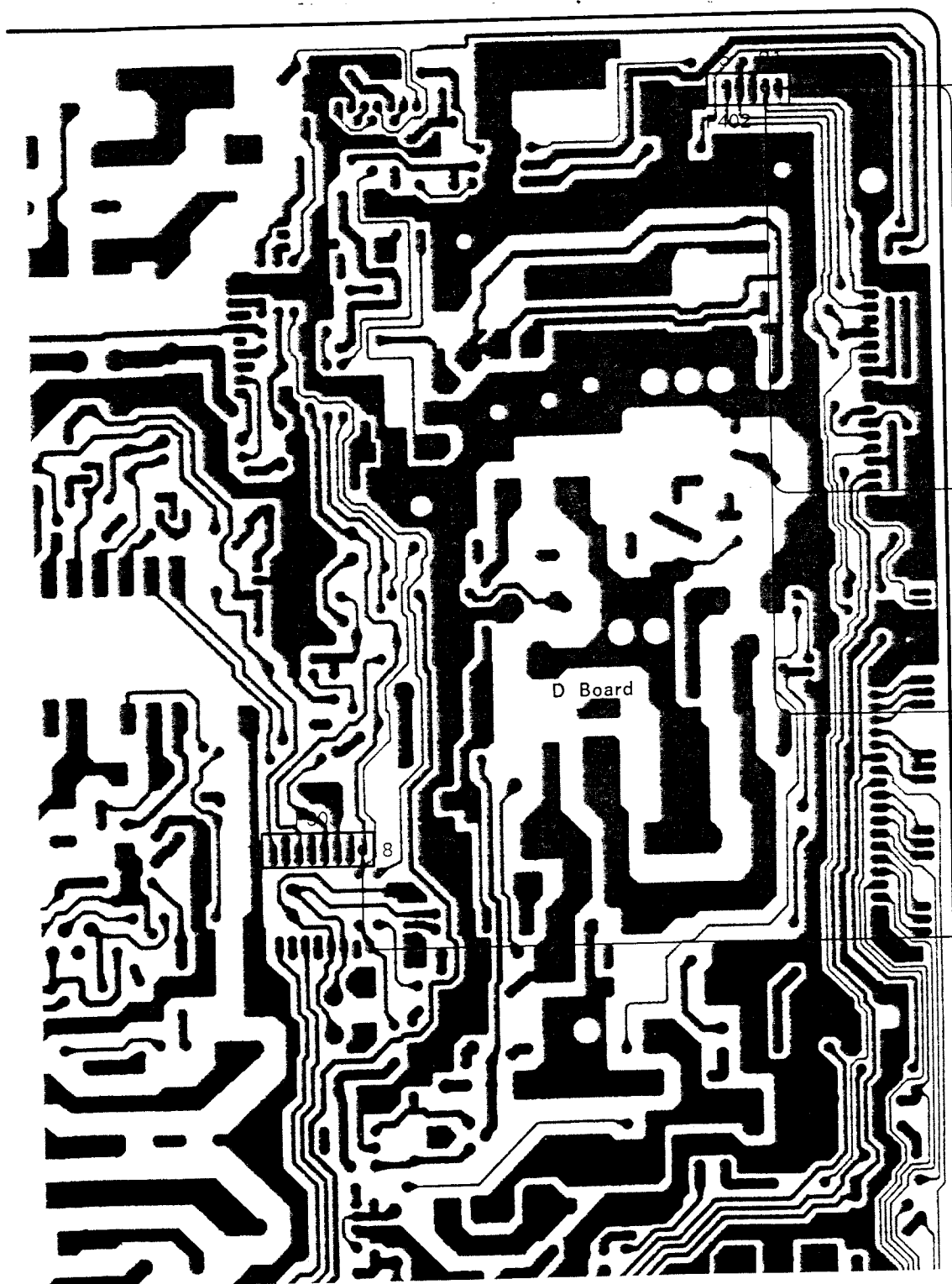
D BOARD.....Q901, R922, R923, D927, D928, D929

1. Turn OFF the POWER switch.
2. Remove P903 and P904 connectors from D board.



3. Apply an external DC voltage of less than 216.00 V DC (SET UP THE CURRENT LIMITER TO 0.2 A) to pin ⑧ of P903 on D board for two second.
4. At the moment (item 3), confirm the OVP circuit operates immediately and an external DC voltage is drop by limiter operation.
5. If OVP circuit is not operate, check up Q901, R913, R914 and L906.





## SECTION 5 CIRCUIT ADJUSTMENTS

		VGA 1	VGA 2	VGA 3	8514
FREQUENCY	HORIZONTAL KHz	31.47	31.47	31.47	35.5
	VERTICAL Hz	70.1	70.1	59.94	86.96
HORIZONTAL	T1 $\mu s$	31.78	31.78	31.78	28.15
	T2 $\mu s$	3.81	3.81	3.81	3.92
	T3 $\mu s$	1.91	1.91	1.91	1.25
	T4 $\mu s$	25.42	25.42	25.42	22.81
VERTICAL	T1 H	449	449	525	408.5
	T2 H	2	2	2	4
	T3 H	60	35	33	20.5
	T4 H	350	400	480	384
SYNC POLARITY	HORIZONTAL	POSITIVE	NEGATIVE	NEGATIVE	POSITIVE
	VERTICAL	NEGATIVE	POSITIVE	NEGATIVE	POSITIVE
CLOCK	MHz	25.175	25.175	25.175	44.900
RESOLUTION	H $\times$ V	640 $\times$ 350	720 $\times$ 400	640 $\times$ 480	1024 $\times$ 768
MODE		NO INTERLACE	NO INTERLACE	NO INTERLACE	INTERLACE

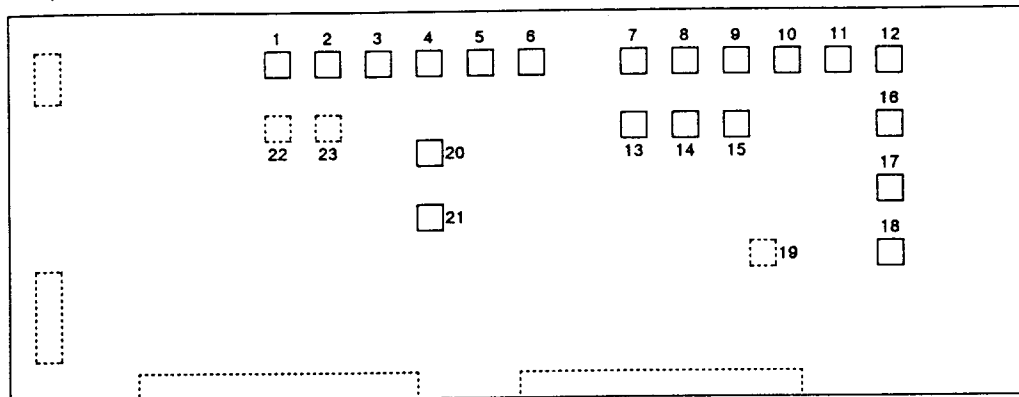
T1 : PERIODE, T2 : SYNC, T3 : BACK PORCH, T4 : ACTIVE

		Mac II	48KHz	57KHz
FREQUENCY	HORIZONTAL KHz	35.01	48.78	56.476
	VERTICAL Hz	66.7	60	70.069
HORIZONTAL	T1 $\mu s$	28.56	20.5	17.707
	T2 $\mu s$	2.12	1.5	1.813
	T3 $\mu s$	3.16	2.0	1.920
	T4 $\mu s$	21.16	16.0	13.653
VERTICAL	T1 H	525	813	806
	T2 H	3	3	6
	T3 H	39	39	29
	T4 H	480	768	768
SYNC POLARITY	HORIZONTAL	POSITIVE/NEGATIVE	NEGATIVE	NEGATIVE
	VERTICAL	POSITIVE/NEGATIVE	NEGATIVE	NEGATIVE
CLOCK	MHz	30.25	64.000	75.000
RESOLUTION	H $\times$ V	640 $\times$ 480	1024 $\times$ 768	1024 $\times$ 768
MODE		NO INTERLACE	NO INTERLACE	NO INTERLACE

T1 : PERIODE, T2 : SYNC, T3 : BACK PORCH, T4 : ACTIVE

## 5-1. DA (DC-1) BOARD ADJUSTMENT

DA (DC-1) VR POSITION



No.	Adjustment	Reference	Settings during VGA switch locked
1	SIDE PIN (L)	RV307	
2	SIDE PIN (H)	RV310	
3	PARA CORE	RV308	
4	PIN PHASE	RV309	
5	PIN UP	RV313	
6	PIN BAL	RV311	
7	HORIZONTAL POSITION (L)	RV304	(LOCK)
8	HORIZONTAL SIZE (L)	RV306	(LOCK)
9	VERTICAL SIZE (L <sub>1</sub> )	RV252	480 LINE (LOCK)
10	VERTICAL SIZE (L <sub>2</sub> )	RV253	400 LINE (LOCK)
11	VERTICAL SIZE (L <sub>3</sub> )	RV254	350 LINE (LOCK)
12	VERTICAL POSITION	RV255	
13	HORIZONTAL POSITION (M)	RV303	during receiving 8514 (LOCK)
14	HORIZONTAL SIZE (M)	RV305	during receiving 8514 (LOCK)
15	VERTICAL SIZE (M)	RV251	during receiving 8514 (LOCK)
16	User VR setting (1)	RV257	
17	User VR setting (2)	RV256	
18	User VR H size maximum value setting	RV312	
19	20V setting	RV314 (*)	
20	F <sub>0</sub> setting (FH = Max)	RV301	
21	F <sub>0</sub> setting (FH = Min deviation correction)	RV302	
22	F-V conversion voltage setting (6V during FH = Max)	RV601 (*)	
23	Frequency setting of relay switchover signal (40 kHz)	RV602 (*)	

(\*) indicate DA (DC-1) board manufacturer adjustment

**H to ADJUSTMENT (RV301, RV302)**

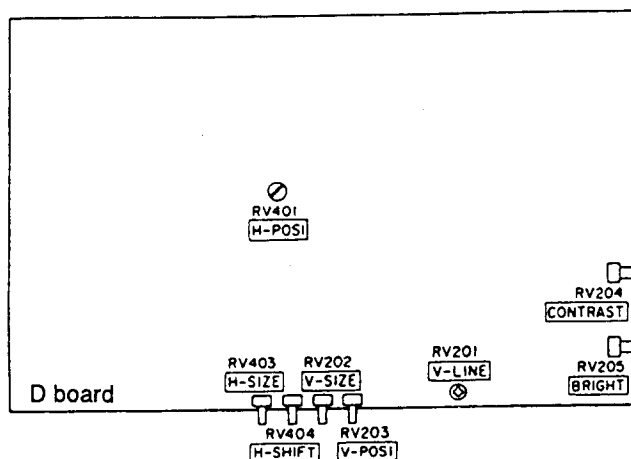
(57 kHz)

1. Receive a signal of 57 kHz.
2. Short circuit between pin ① and pin ③ of TP301 with a jumper wire.
3. Connect a frequency counter across collector of Q402 and ground.
4. Adjust RV301 (FH MIN)  $31.47 \text{ Hz} \pm 500 \text{ Hz}$  on the frequency counter.

(31 kHz)

1. Receive a signal of 31 kHz.
2. Short circuit between pin ① and pin ③ of TP301 with a jumper wire.
3. Connect a frequency counter across collector of Q402 and ground.
4. Adjust RV302 (FH MIN) for  $31.47 \text{ kHz} \pm 500 \text{ Hz}$  on the frequency counter.

**5-2. D AND DA (DC-1) BOARD ADJUSTMENT**



**H. POSITION (RV401, SW401)**

1. Input a cross-hatch signal of 48 kHz.
2. Display a back-raster on the screen with G2 VR.
3. Adjust RV401 (H. POSI) so that the back-raster position to come centre.
4. In case of the back-raster is not move till centre, using SW401 (H. POSI TAP SW).

**V. LINE, V. SIZE, V. POSI (RV201, RV202, RV203)**

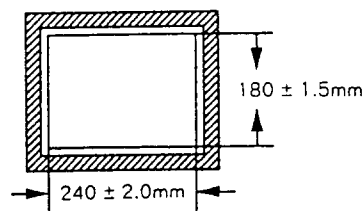
1. Input a cross-hatch signal of 48 kHz.
2. Adjust RV203 (V. POSI) so that the vertical position to come centre.
3. Adjust vertical linearity with RV201 (V. LINE).
4. Adjust vertical size with RV202 (V. SIZE).

**H. SIZE, LIMITER (RV403, RV312)**

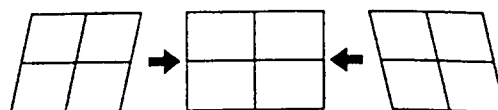
1. Input a cross-hatch signal of 48 kHz.
2. Rotate RV403 (H. SIZE) from maximum to minimum, and then observe the local strain.
3. In case of a local strain occurring on the screen, adjust them with RV312 (H. S LIMIT) on DA (DC-1) board.
4. Input a cross-hatch signal of 31 kHz (48 LINE).
5. Switch over AUTO SIZE SW to ADJ position.
6. Turn RV403 (H. SIZE) from maximum to minimum, and then observe the local strain.
7. In case of a local strain occurring on the screen, adjust them with RV312 (H. S LIMIT) on DA (DC-1) board.

**48 kHz, DEFLECTION SYSTEM ADJUSTMENT**

- \* Input a cross-hatch signal of 48 kHz as following adjustment.
- H. SIZE (RV403)  
Adjust RV403 (H. SIZE) on D board so that the horizontal size to become  $240 \pm 2.0\text{mm}$ .

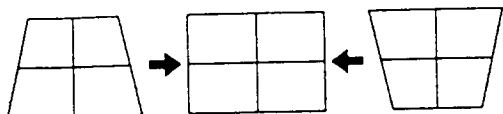


- PARA CORE (RV308)  
Adjust direct association and parallelogram strain with RV308 (PARA CORE) on DA (DC-1) board.



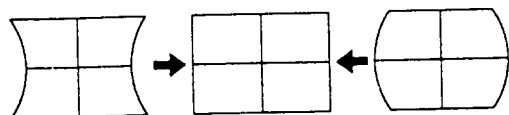
• PIN PHASE (RV309)

Adjust trapezoidal strain with RV309 (PIN PHASE) on DA (DC-1) board.



• SIDE PIN (RV310)

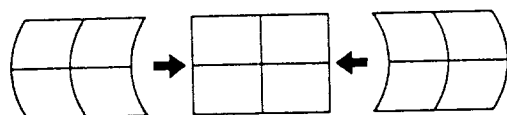
Adjust pin cushion strain about right and left with RV310 (SIDE PIN) on DA (DC-1) board.



NOTE: In case of pin cushion strain of right and left rate is differ, correct them with RV311 (PIN BAL) too.

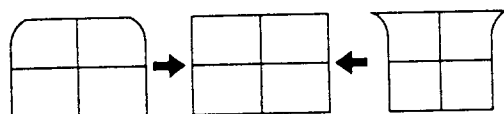
• PIN BAL (RV311)

Adjust PIN balance strain with RV311 (PIN BAL) on DA (DC-1) board.



• PIN UP (RV313)

Adjust upper PIN strain with RV313 (PIN UP) on DA (DC-1) board.



<GRAPHIC MODE>

31 kHz, H. PHASE, H. SIZE (RV304, RV305)

Switch over AUTO SIZE SW to LOCK position.

1. Input a cross-hatch signal of GRAPHIC mode (31 kHz, 480 LINE).
2. Adjust RV304 (H. PHASE (L)) so that the horizontal direction of screen to come centre.
3. Adjust RV306 (H. SIZE (L)) so that the horizontal size to become  $240 \pm 2.0\text{mm}$ .

<GRAPHIC MODE>

31 kHz, V. POSI, V. SIZE (RV255, RV252)

Switch over AUTO SIZE SW to LOCK position.

1. Input a cross-hatch signal of GRAPHIC mode (31 kHz, 480 LINE).

2. Adjust RV255 (V. POSI (L)) so that the vertical direction of screen to come centre.
3. Adjust RV252 (V. SIZE (L1)) so that the vertical size to become  $180 \pm 1.5\text{mm}$

<GRAPHIC MODE>

31 kHz, PIN AMP (RV307)

1. Input a cross-hatch signal of GRAPHIC mode (31 kHz, 480 LINE).
2. Adjust RV307 (SIDE PIN (LOW)) so that the right and left becomes straight line.
3. Correct the H. SIZE with RV305 (H. SIZE (L)), confirm they have not strain.

31 kHz AND 48 kHz, STRAIN CORRECTION (RV308, RV309, RV311, RV313)

1. Adjust RV308 (PARA CORE), RV309 (PIN PHASE), RV311 (PIN BAL) and RV313 (PIN UP) to become best condition about both 31 kHz (480 LINE) mode and 48 kHz mode.

TEXT MODE (31 kHz, 400 LINE) V. SIZE (RV253)

Switch over AUTO SIZE SW to LOCK position.

1. Input a cross-hatch signal of 31 kHz (400 LINE).
  2. Adjust RV253 (V. SIZE) so that the vertical size to become  $180 \pm 1.5\text{mm}$
- ※ Regarding V. POSI adjustment, GRAPHIC mode (31 kHz, 480 LINE) adjustment take priority of another adjustment, and perform adjustment only V. SIZE.

EGA EMULATE MODE (31 kHz, 350 LINE) V. SIZE (RV254)

Switch over AUTO SIZE SW to LOCK position.

1. Input a cross-hatch signal of 31 kHz (350 LINE).
  2. Adjust RV254 (V. SIZE (L2)) so that the vertical size to become  $180 \pm 1.5\text{mm}$
- ※ Regarding V. POSI adjustment, GRAPHIC mode (31 kHz, 480 LINE) adjustment take priority of another adjustment, and perform adjustment only V. SIZE.

8514 MODE (35 kHz) H. PHASE, H. SIZE (RV303, RV306)

Switch over AUTO SIZE SW to LOCK position.

1. Input a cross-hatch signal of 35 kHz (8514).
2. Adjust H. PHASE and H. SIZE with RV303 (H. PHASE (M)) and RV305 (H. SIZE (M)).

**8514 MODE (35 kHz) V. SIZE (RV251)**

Switch over AUTO SIZE SW to LOCK position.

1. Input a cross-hatch signal of 35 kHz (8514).
2. Adjust RV251 (V. SIZE (M)) so that the vertical size to become  $180 \pm 1.5$  mm

※ Regarding V. POSI adjustment, GRAPHIC mode (31 kHz, 480 LINE) adjustment take priority of another adjustment, and perform adjustment only V. SIZE.

**EACH FREQUENCY (MODE) CONFIRMATION**

Confirm screen size and position strain are not sliding, and confirm each mode about TEXT (31 kHz, 400 LINE), EGA emulate (31 kHz, 350 LINE), GRAPHIC (31 kHz, 480 LINE), 8514 (35 kHz) and 48 kHz, 57 kHz.

**H. SIZE VARIABLE EXTENT ADJUSTMENT (RV312)**

1. Input a cross-hatch signal of  $800 \times 600$  (35 kHz).
2. Switch over AUTO SIZE SW (SW402) to ADJ position.
3. Set RV202 (V. SIZE) of user volume to minimum.
4. Adjust RV403 of user volume and RV312 (HS LIMIT) so that the horizontal size to become maximum.
5. Adjust RV312 (HS LIMIT) so that the horizontal size to become  $250 \pm 2$  mm.
6. Input a cross-hatch signal of GRAPHIC mode (31 kHz, 480 LINE).
7. Set RV403 (H. SIZE) of user volume to maximum and RV202 (V. SIZE) to minimum.
8. When item 7, confirm they have not local strain.
9. Input a cross-hatch signal of 48 kHz.
10. When set RV403 (H. SIZE) of user volume to minimum, confirm horizontal size is less than 232 mm.
11. When set RV202 (V. SIZE) of user volume to maximum, confirm they have not local strain.

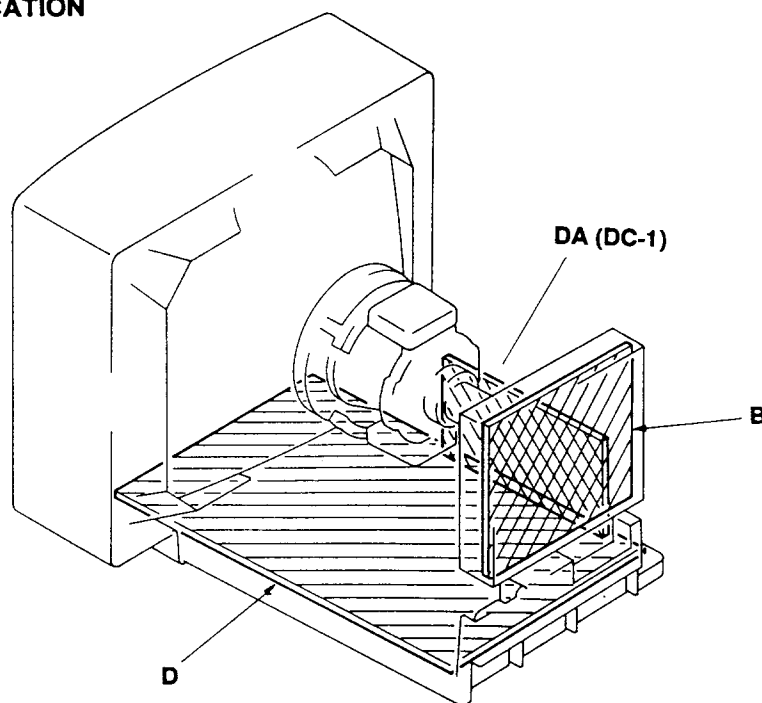
**800×600 MODE ADJUSTMENT**

1. Input a cross-hatch signal of  $800 \times 600$  (35 kHz).
  2. Adjust RV403 (H. SIZE) so that the horizontal size to become  $240 \pm 4.0$  mm.
  3. Adjust RV404 (H. SHIFT) so that the horizontal direction to come centre position.
  4. Adjust RV202 (V. SIZE) so that the vertical size to become  $180 \pm 3.0$  mm.
  5. Set RV203 (V. POSI) to centre click point.
  6. Adjust the vertical position with RV256 (SUB POSI 1) and RV257 (SUB POSI 2).
- ※ When perform adjustment, make move RV256 to upper side or RV257 to lower side.

7. Rotate RV203, and confirm they are moved more than 3.0 mm.

## SECTION 6 DIAGRAMS

### 6-1. CIRCUIT BOARDS LOCATION



### 6-2. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

- All resistor are in ohms. 1/4W unless otherwise noted.  
k  $\Omega$  : 1000  $\Omega$  , M  $\Omega$  : 1000k  $\Omega$  .
- All capacitors are in  $\mu$  F unless otherwise noted. pF:  $\mu$   $\mu$  F  
50WV or less are not indicated except for electrolytics and tantalums.
- All electrolytics are in 50V unless otherwise specified.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : fusible resistor
- : nonflammable resistor.
- $\Delta$  : internal component.
- : panel designation and adjustment for repair.

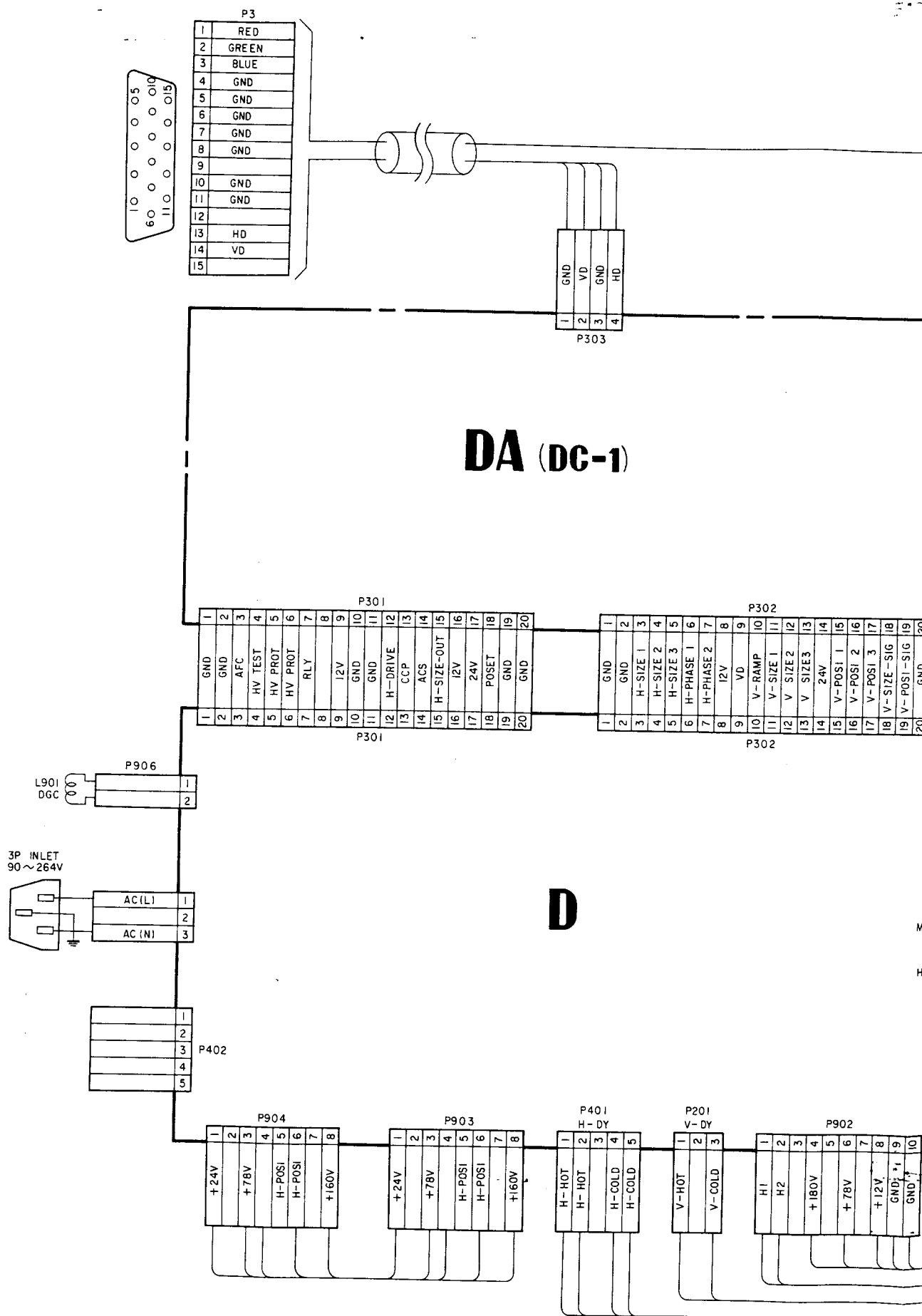
- Circled numbers refer to waveforms.
- All voltages are in V.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a colour-bar signal input.  
(DIGITAL VIDEO GENERATOR H: 31.47kHz, V:70.1Hz)
- Readings are taken with a 10M  $\Omega$  digital multimeter.
- Voltage variations may be noted due to normal production tolerances.
- \* : Can not be measured.
- : B + line
- : B - line

- The components identified by in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by , make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by and repeat the adjustment until the specified value is achieved. (Refer to RV402 on pages 16, 17 of section 4. )
- When replacing the part in below table, be sure to perform the related adjustment.

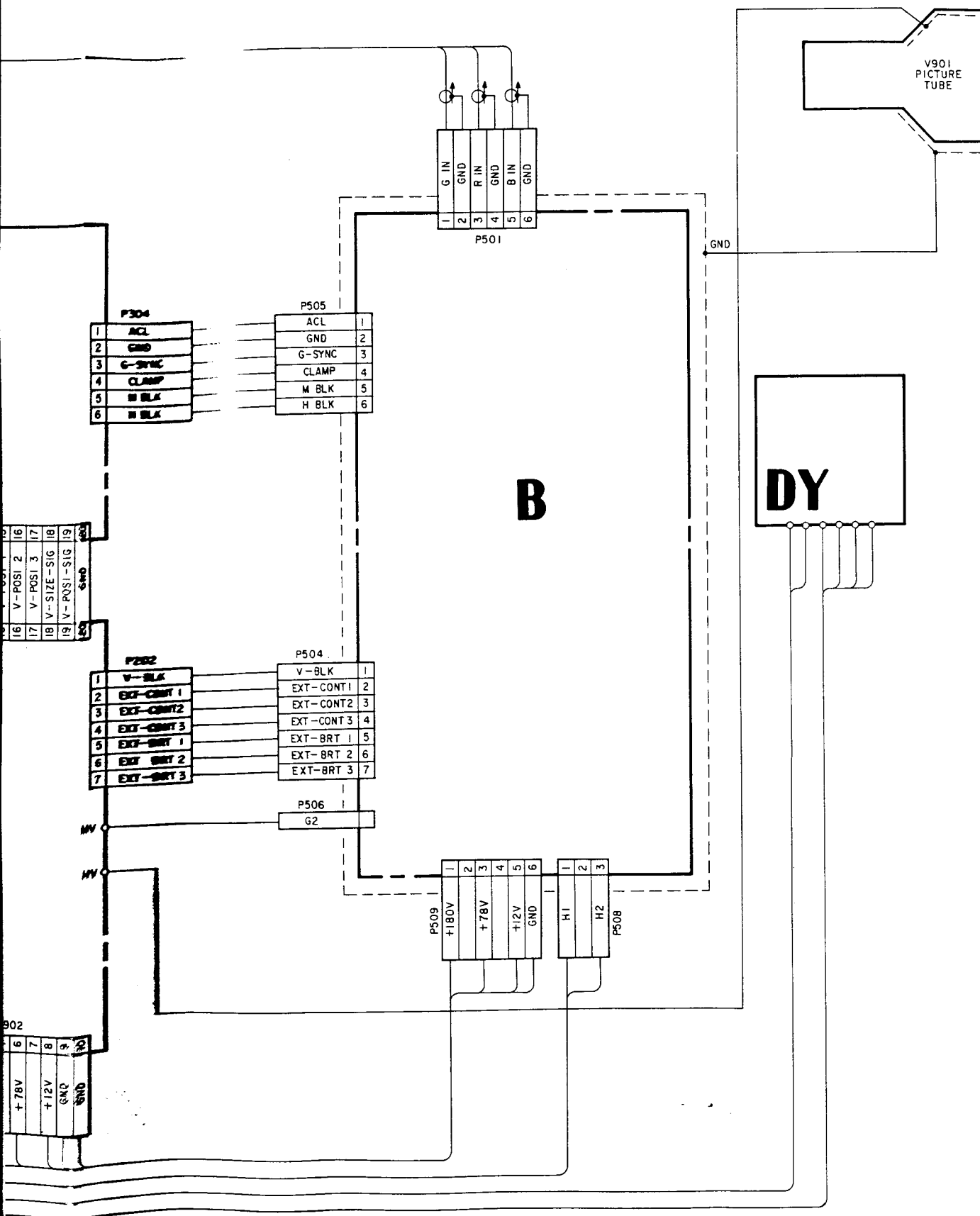
Part replaced ()	Adjustment ()
IC901, IC902, IC401, D930, C408, C409, C410, C412, C414, C415, C422, C424, R414, R434, R435, L406, T402 (FBT), T901, RV402, DY (Deflection Yoke)..... D BOARD	RV402  HV REGULATOR, HV HOLD-DOWN, BEAM LIMIT CRUIT
IC101, IC301, D303, R327, R388, ..... DA (DC-1) BOARD	

Note : The Coimponents identified by shading and mark are critical for safety. Replace only with part number specified.

FRAME SCHEMATIC DIAGRAM







## DA(DC-1)

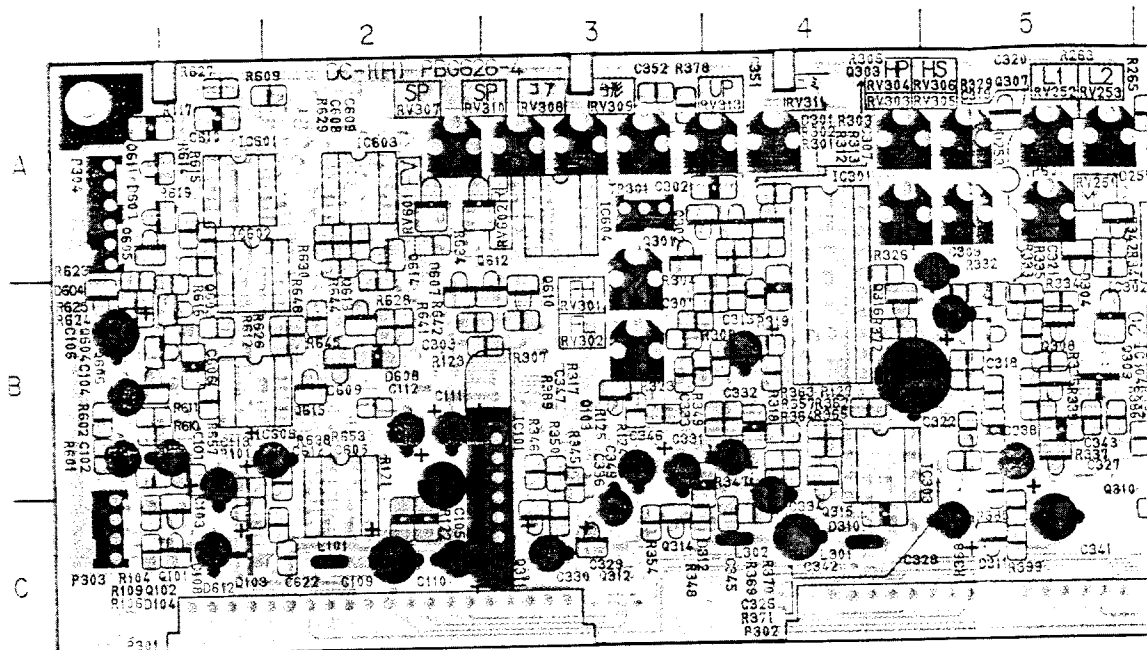
[DEFLECTION CONTROL]

- DA(DC-1) BOARD -

DA (DC-1) BOARD  
COMPONENT SIDE

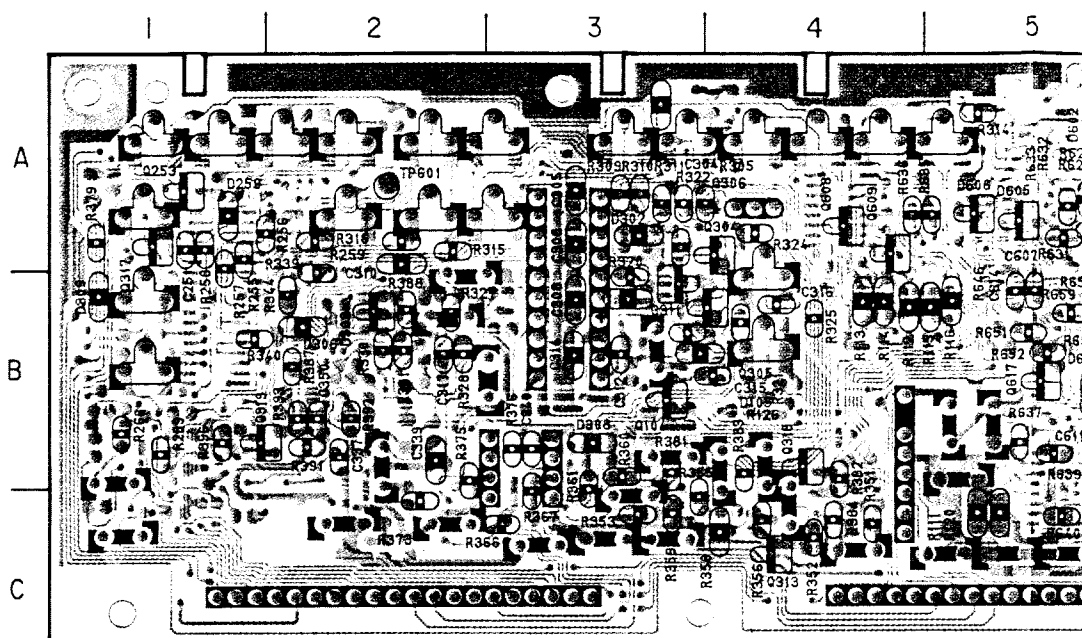
( COMPONENT SIDE )



IC	DIODE
IC101 B-3	D103 C-1
IC250 A-6	D104 C-1
IC301 A-4	D253 A-5
IC303 B-4	D254 A-6
IC304 B-6	D255 A-5
IC601 A-1	D257 B-6
IC602 A-1	D301 A-4
IC603 A-2	D304 B-5
IC604 A-3	D310 C-4
IC605 B-2	D311 C-5
IC606 B-1	D312 C-3
TRANSISTOR	D603 A-1
	D604 B-1
	D607 B-2
	D608 B-2
	D609 B-2
Q101 C-1	D612 C-1
Q102 C-1	VARIABLE RESISTOR
Q254 B-6	
Q255 C-6	RV251 A-5
Q301 A-3	RV252 A-5
Q302 A-3	RV253 A-5
Q303 A-4	RV254 A-6
Q307 A-5	RV255 A-6
Q308 B-5	RV256 B-6
Q309 B-5	RV257 A-6
Q310 B-5	RV301 B-3
Q311 C-3	RV302 B-3
Q312 C-3	RV303 A-4
Q314 C-3	RV304 A-4
Q315 C-4	RV305 A-5
Q316 B-4	RV306 A-5
Q320 B-6	RV307 A-2
Q321 B-6	RV308 A-3
Q603 B-1	RV310 A-3
Q604 B-1	RV311 A-4
Q605 A-1	RV312 B-6
Q606 B-1	RV313 A-4
Q610 B-3	RV314 A-4
Q611 A-1	RV601 A-2
Q612 B-3	RV602 A-3
Q613 B-2	
Q614 A-2	
Q615 B-2	

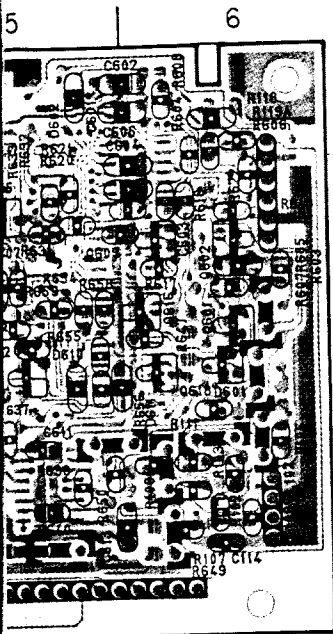


- : Pattern from the side wh
- : Pattern of the rear side.

( CONDUCTOR SIDE )

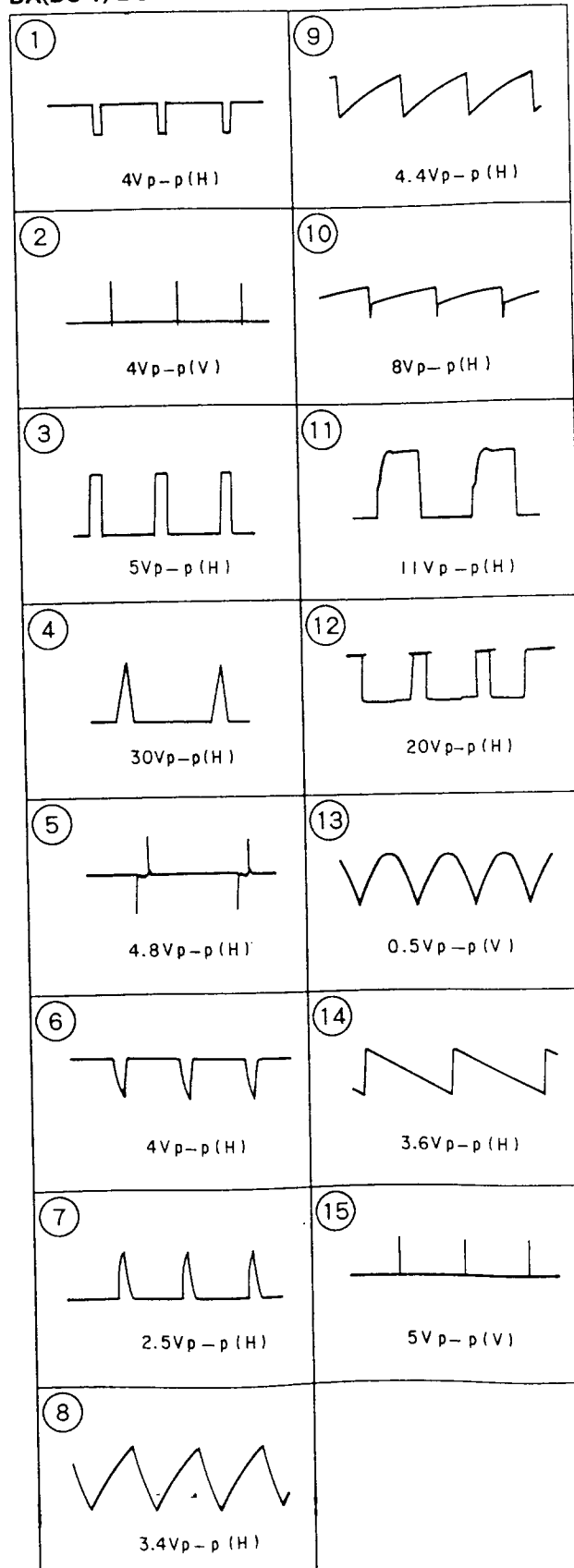


-  : Pattern from the
-  : Pattern of the

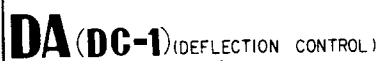
DA (DC-1) BOARD  
CONDUCTOR SIDE

TRANSISTOR	DIODE
Q253 A-1	D259 A-1
Q304 A-4	D302 A-3
Q305 B-4	D303 B-2
Q306 A-4	D306 B-2
Q313 C-4	D308 B-3
Q317 B-1	D309 B-1
Q318 B-4	D601 B-6
Q319 B-1	D602 A-5
Q601 B-6	D605 A-5
Q602 A-6	D606 A-5
Q607 A-6	D610 B-5
Q608 A-4	D611 B-6
Q609 A-4	
Q616 B-6	
Q617 B-5	
Q618 B-6	

DA(DC-1) BOARD



from the side which enables seeing.  
from the rear side.



3

4

5

6

7

8

9

10

DC-1 (DEFLECTION CONTROL)

D612  
RD5.7P8  
5V ZENER

D103  
RD5.6MB2  
HD PROTECT

Q101  
2SA812  
HD DRIVE 1

Q601,602  
2SA1462  
HD DRIVE 2,3

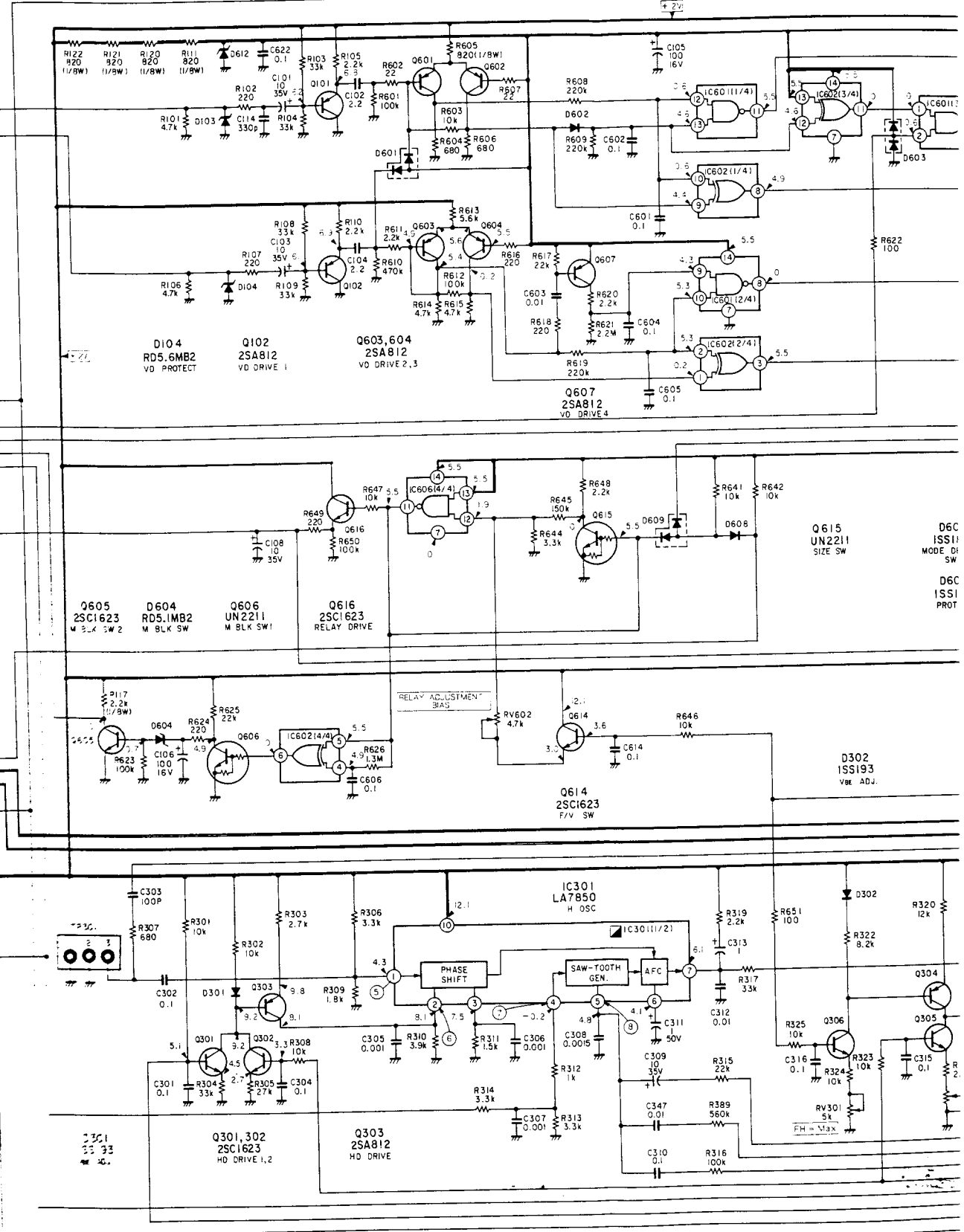
D601  
ISS181  
81AS

D602  
ISS193

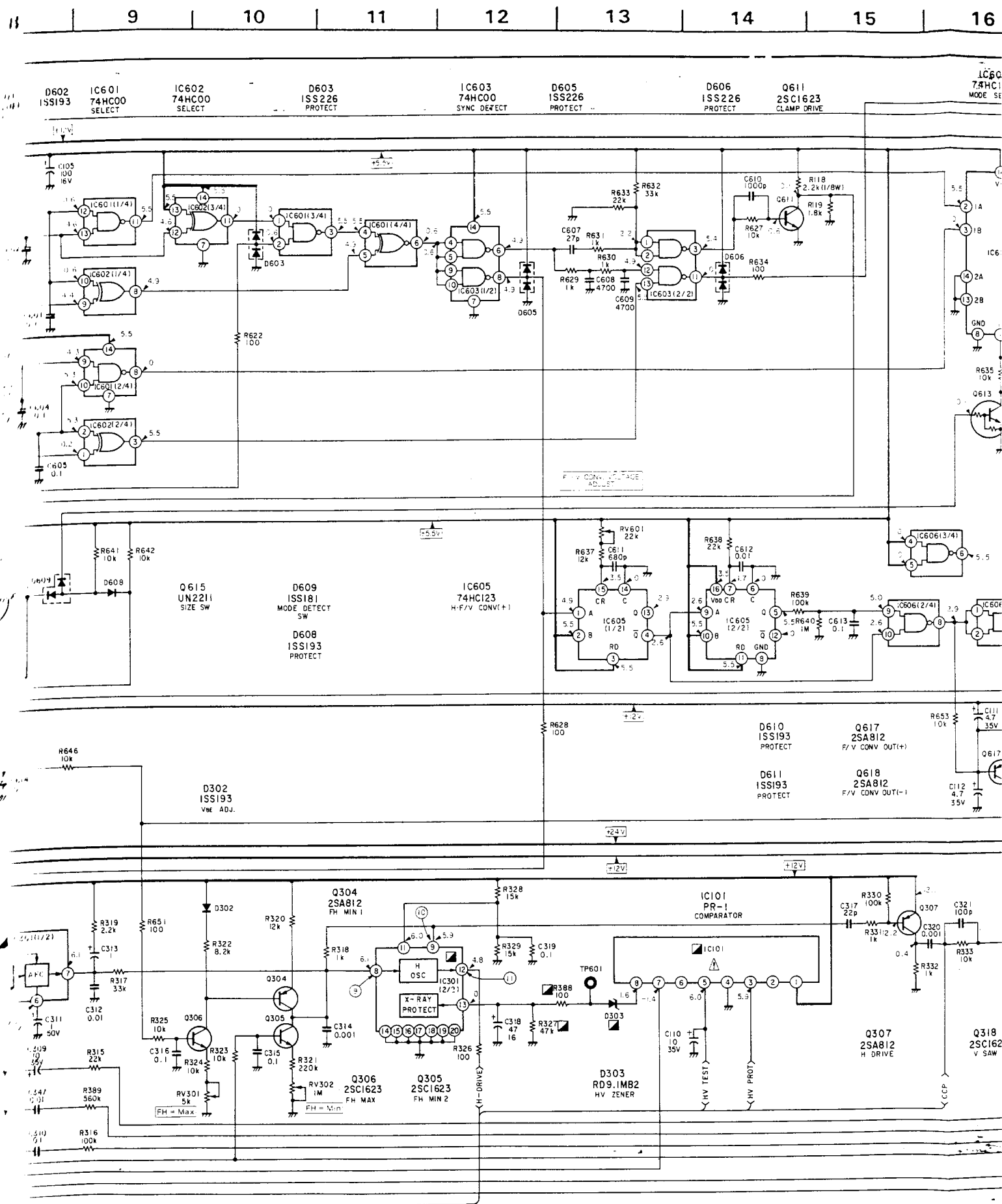
IC601  
74HC00  
SELECT

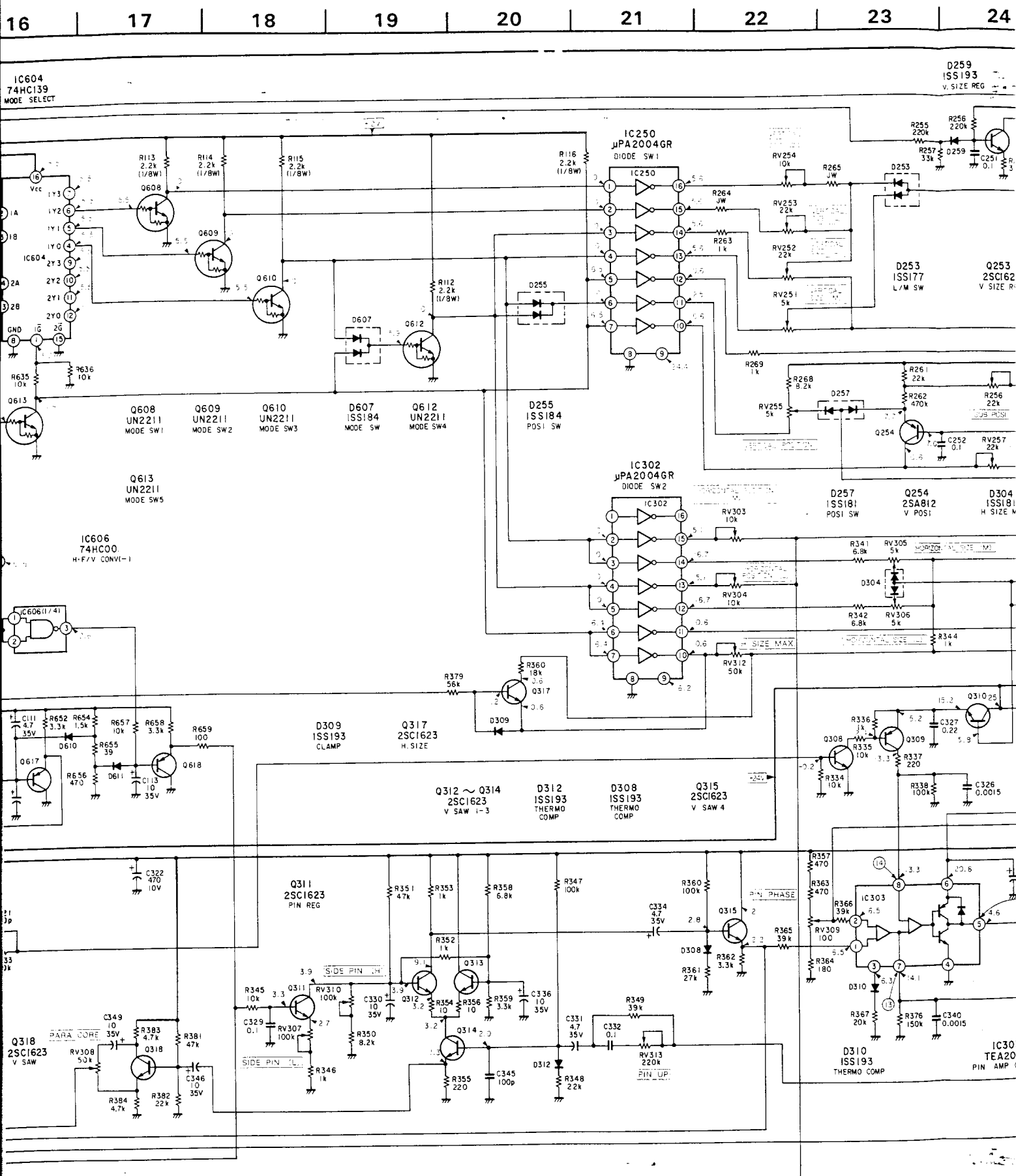
IC602  
74HC00  
SELECT

IS  
PR

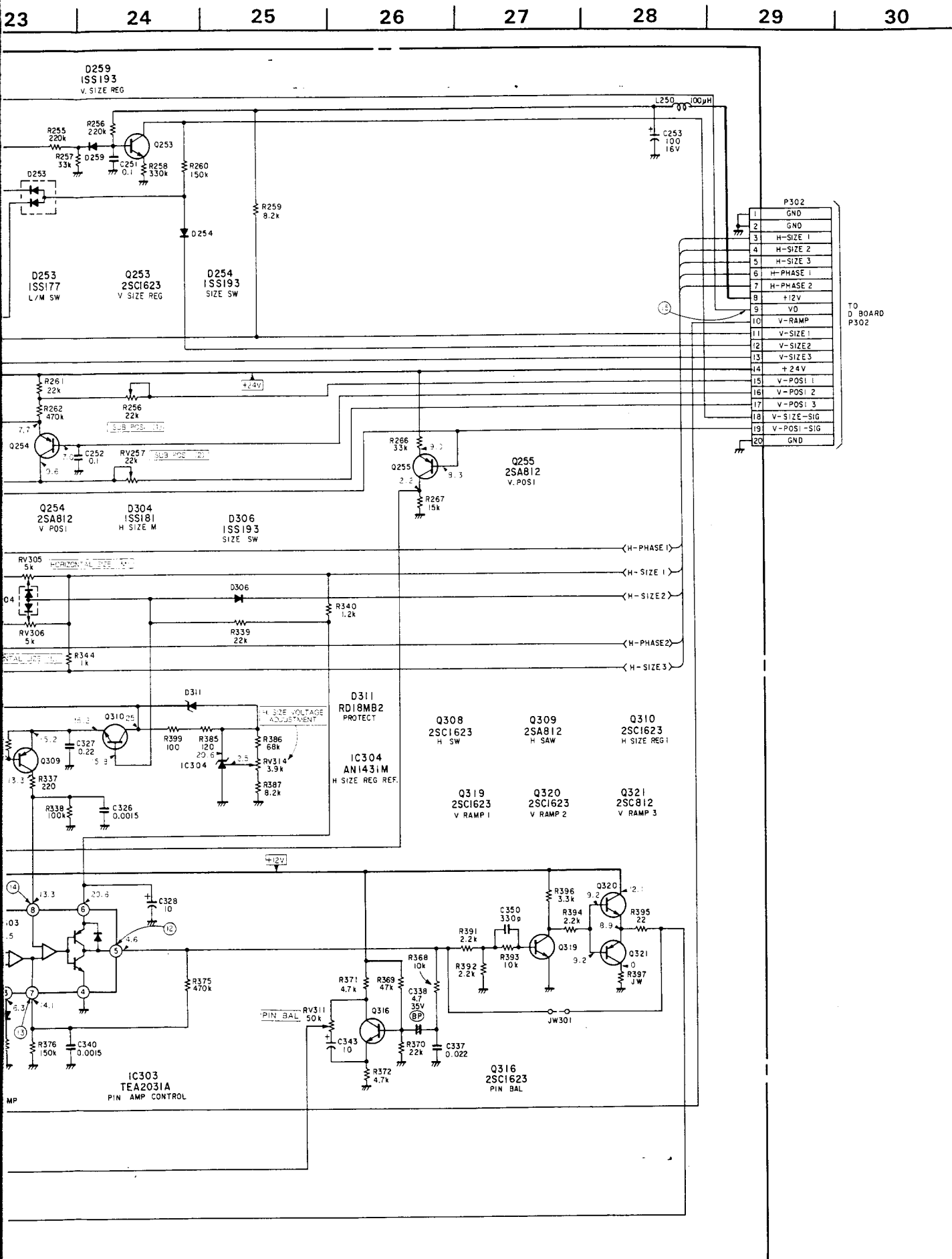


## CPD-1404S

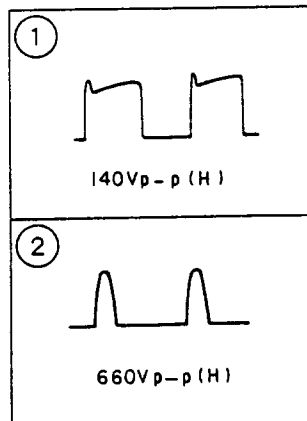




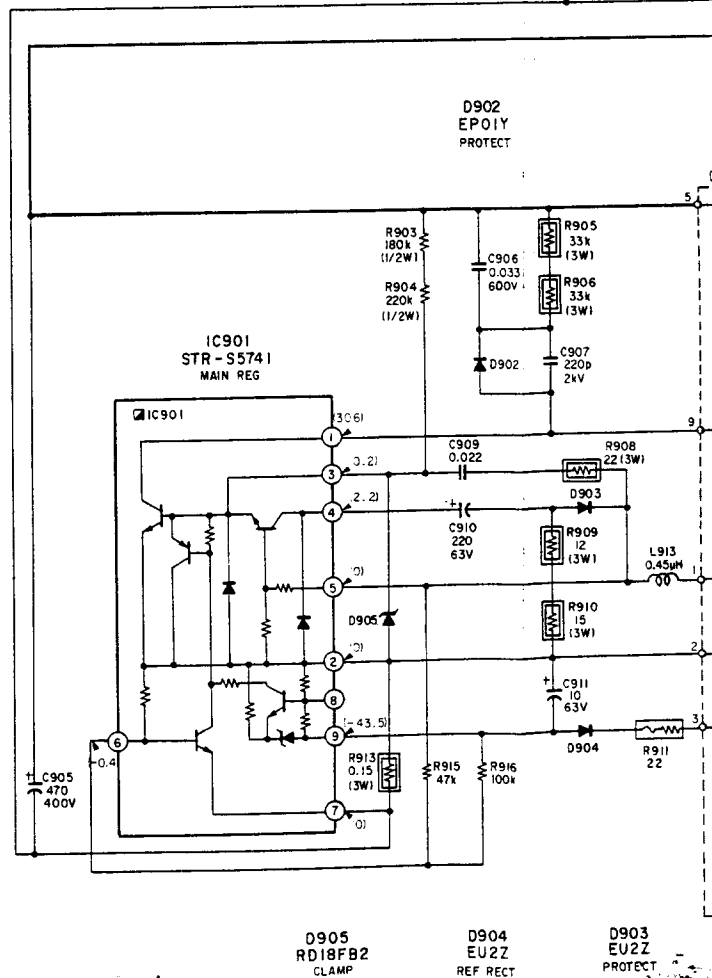
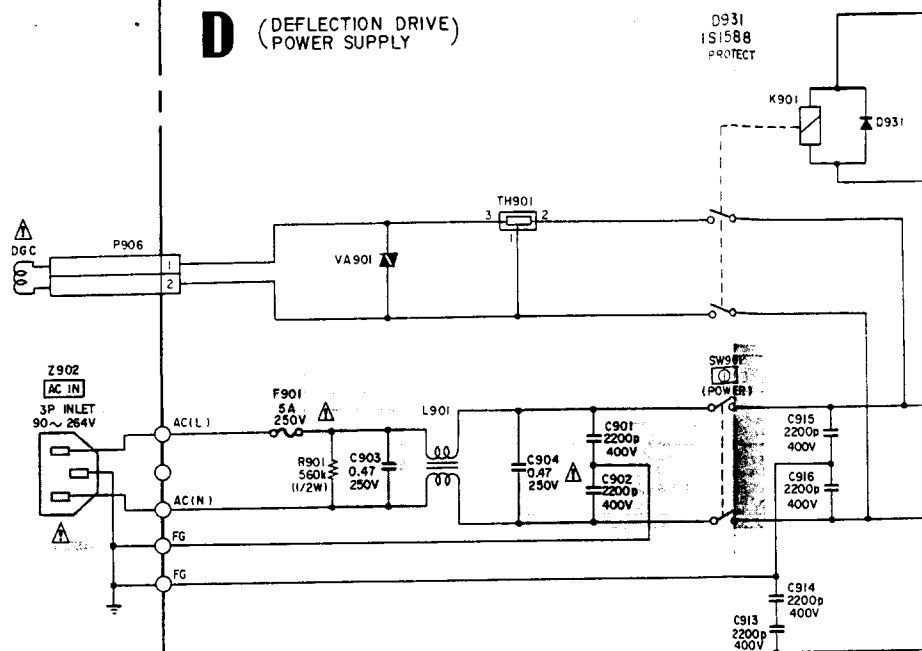




D BOARD

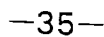


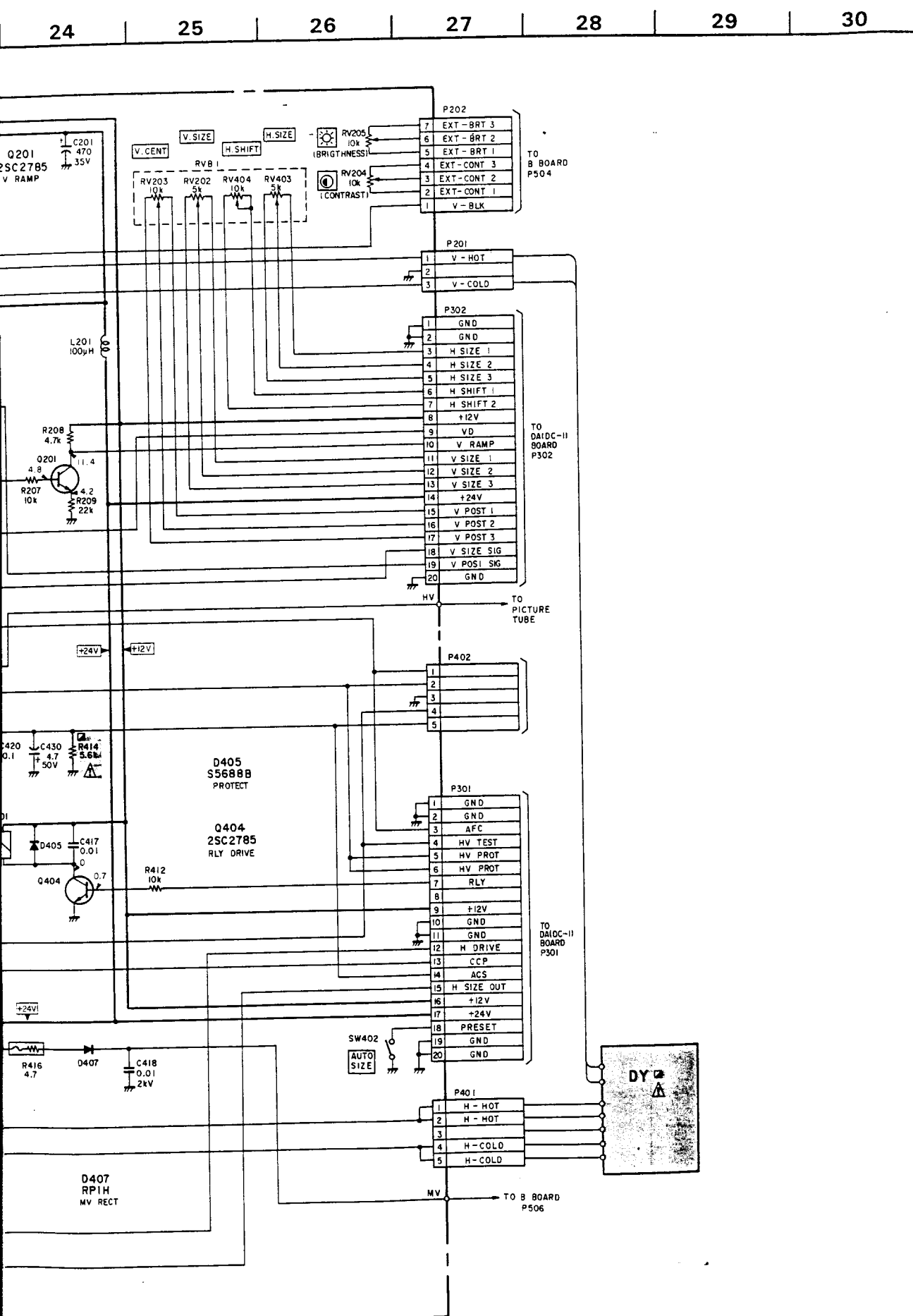
**D** (DEFLECTION DRIVE) POWER SUPPLY



The voltage within ( ) is the value between pin 1 of IC901



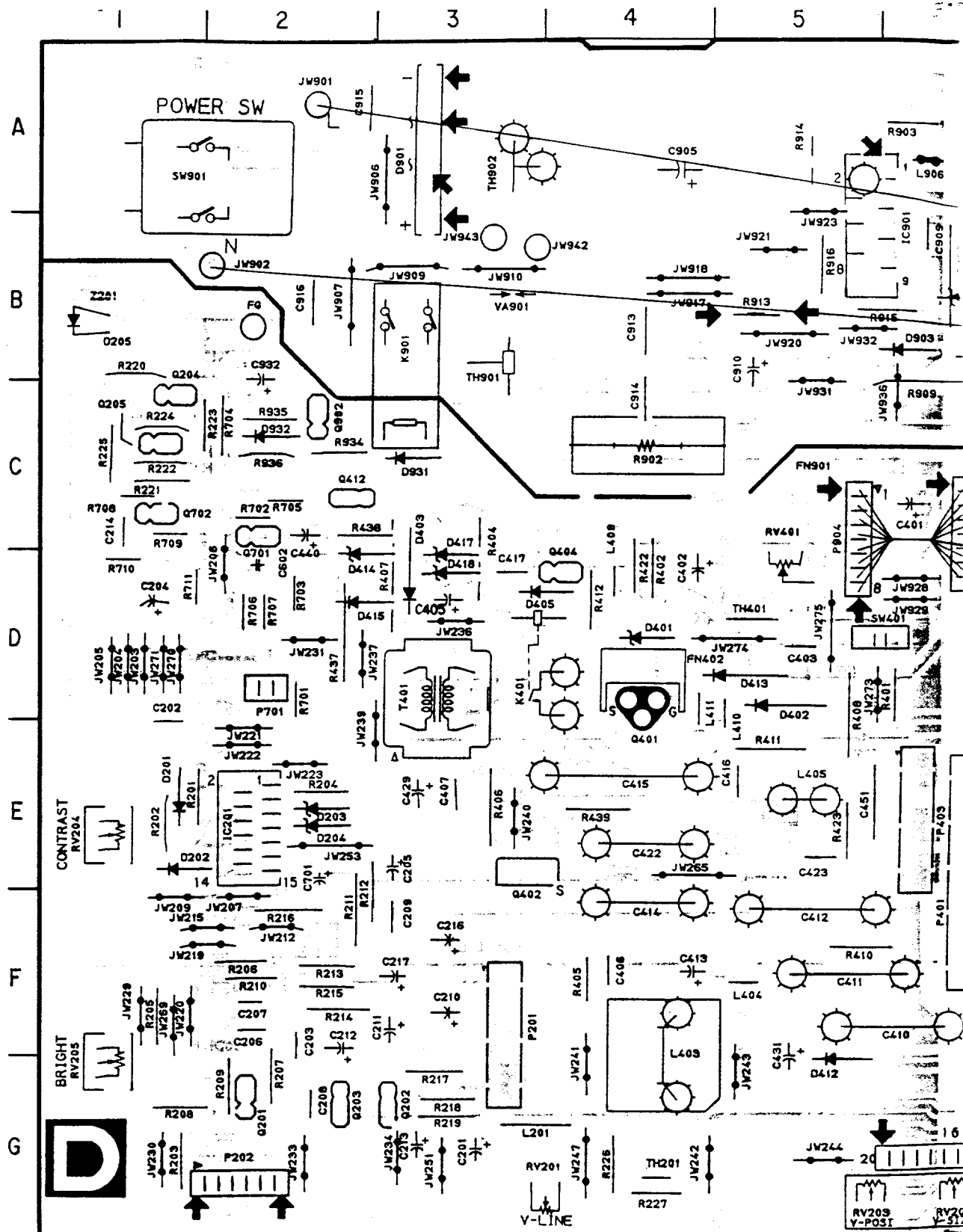


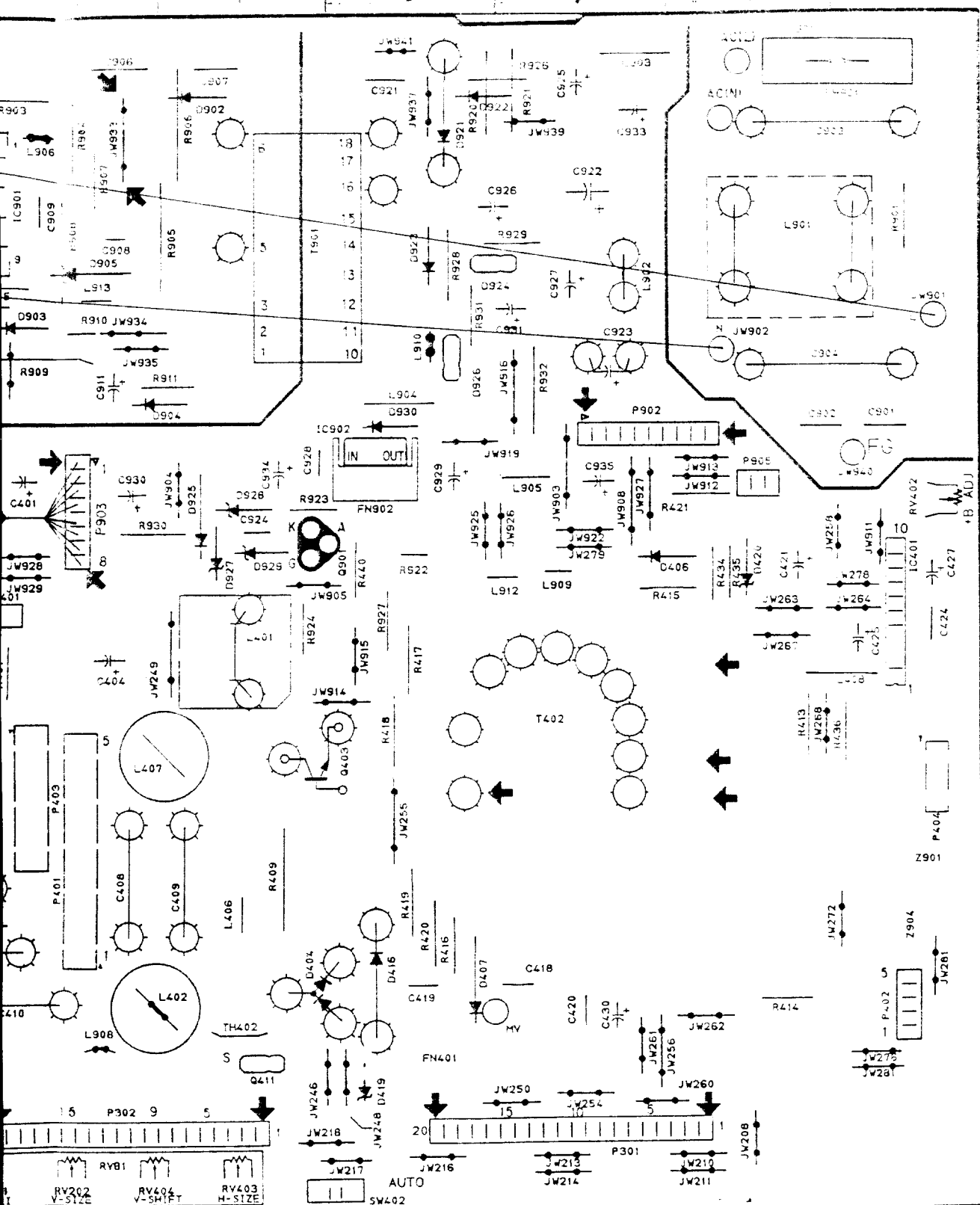


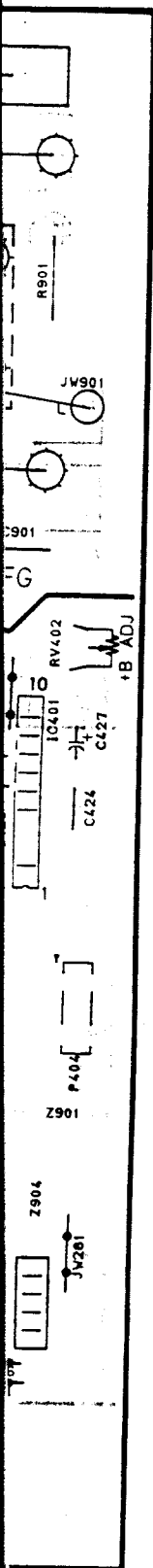
D

[DEFLECTION DRIVE, POWER SUPPLY]

- D BOARD -

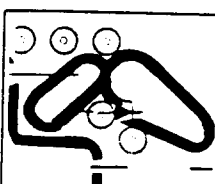






# D BOARD

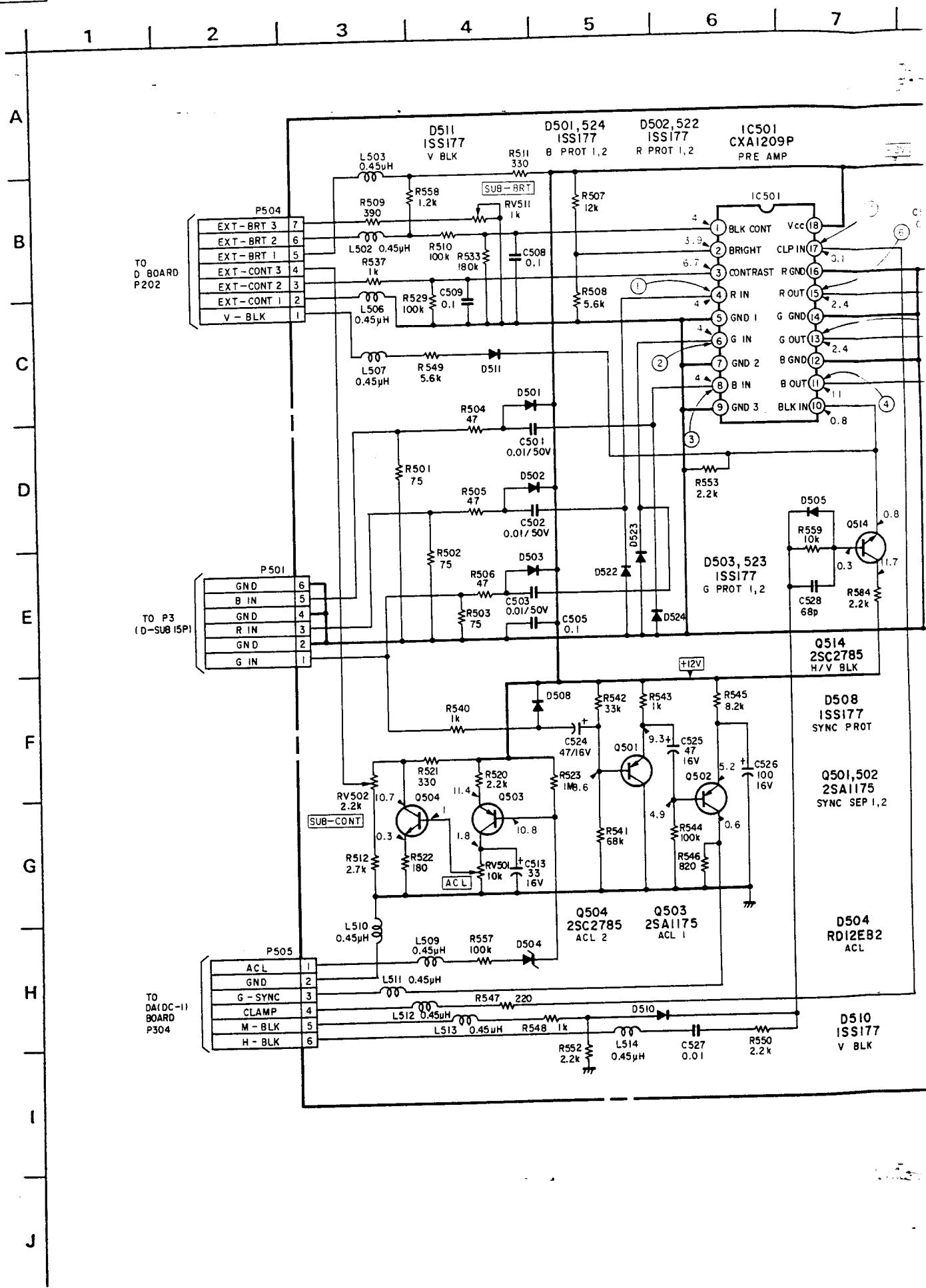
IC		D407	F-8
		D412	G-5
IC201	E-2	D413	D-5
IC401	D-11	D414	D-2
IC901	B-6	D415	D-2
IC902	C-8	D416	F-8
		D417	D-3
TRANSISTOR		D418	D-3
		D419	G-8
Q201	G-2	D420	D-10
Q202	G-3	D901	A-3
Q203	G-2	D902	A-7
Q204	C-1	D903	B-6
Q205	C-1	D904	C-6
Q401	E-4	D905	B-6
Q402	F-3	D921	A-8
Q403	E-7	D922	A-8
Q404	D-4	D923	B-8
Q411	G-7	D924	B-8
Q412	C-2	D925	C-7
Q901	D-7	D926	C-8
Q902	C-2	D927	D-7
		D928	C-7
DIODE		D929	D-7
		D930	C-8
D201	E-1	D931	C-3
D202	E-1	D932	C-2
D203	E-2	VARIABLE RESISTOR	
D204	E-2	RV201	G-3
D205	B-1	RV204	E-1
D401	D-4	RV205	G-1
D402	D-5	RV401	D-5
D403	D-3	RV402	C-11
D404	F-8	RVB1	G-6
D405	D-3		
D406	D-10		

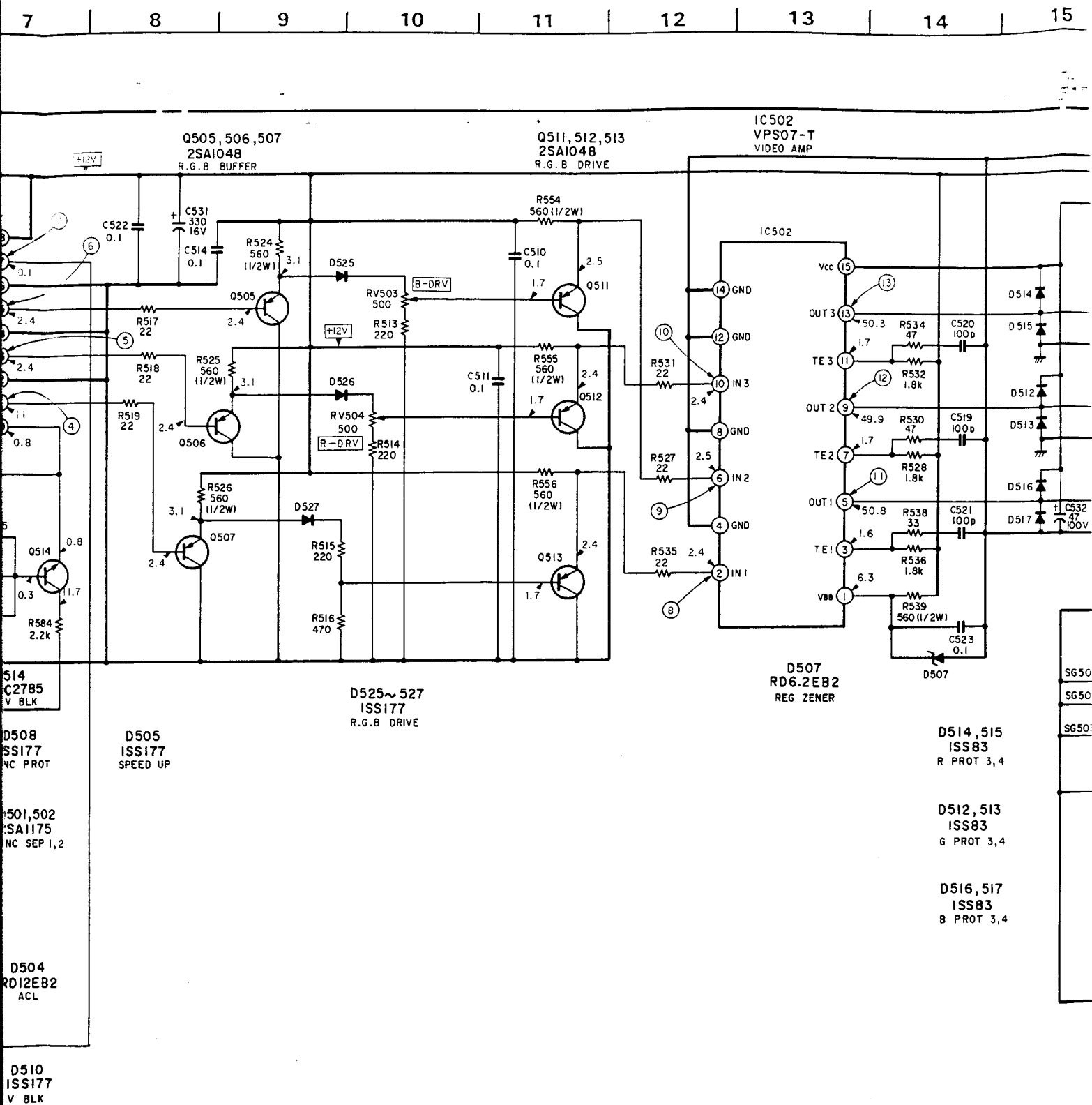


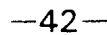
## NOTE:

The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

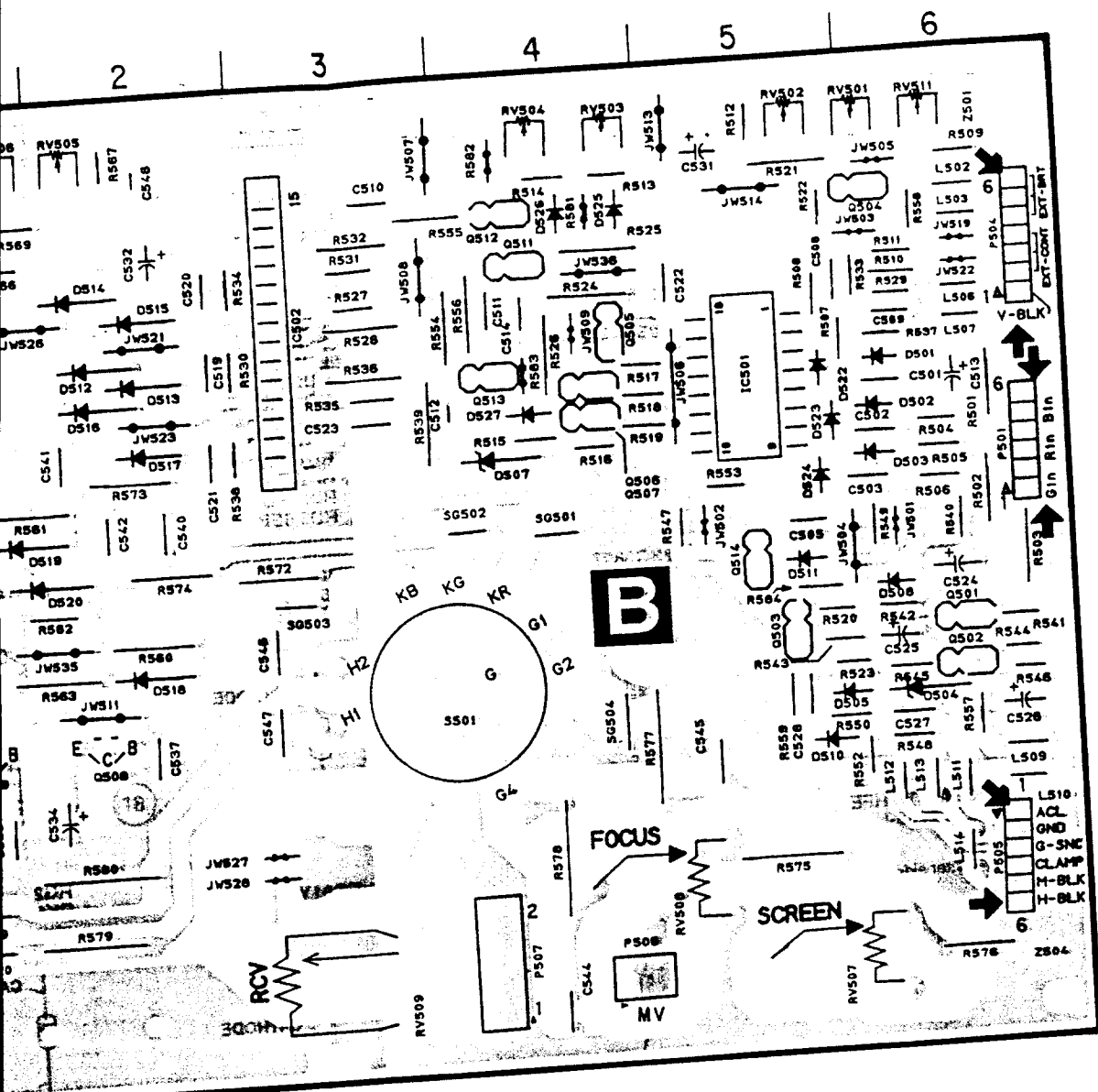










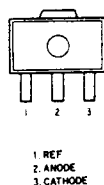


# B BOARD

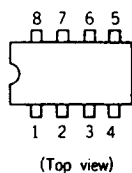
IC		
IC501	B-5	D511 C
IC502	B-3	D512 B
TRANSISTOR		D513 B
Q501	C-6	D514 A
Q502	C-6	D515 B
Q503	C-5	D516 B
Q504	A-6	D517 E
Q505	B-4	D518 C
Q506	B-4	D519 C
Q507	B-4	D520 C
Q508	D-2	D521 E
Q509	D-1	D522
Q510	C-1	D523
Q511	A-4	D524
Q512	A-4	D525
Q513	B-4	D526
Q514	C-5	D527
DIODE		VARIA RESIS
D501	B-6	RV501
D502	B-6	RV502
D503	B-6	RV503
D504	D-6	RV504
D505	D-5	RV505
D507	B-4	RV506
D508	C-6	RV507
D510	D-5	RV508
		RV509
		RV510
		RV511

### 6-3. SEMICONDUCTORS

**AN1431M**



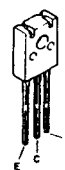
**TEA2031A**



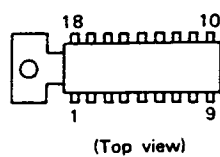
**IRF710**



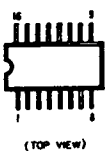
**2SA1507**



**CXA1209P**



**μPA2004GR**



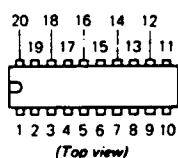
**UN2211**  
**2SA812**  
**2SC1462**  
**2SC1623**



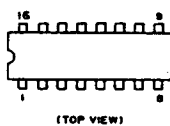
**2SB984-K**  
**2SD1312-K**  
**2SD1312-L**



**LA7850**  
**LA7856**



**μPA81C**  
**74HC123**  
**74HC139**



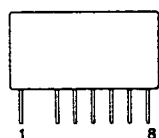
**2SA1091-O**



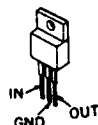
**2SC3897**



**PR-1**



**μPC7812HF**



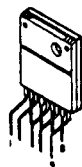
**2SA1175-HFE**  
**2SC2785-HFE**



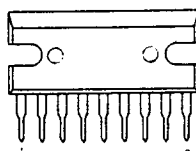
**2SJ117**



**STR-S5741**



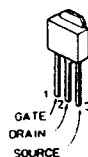
**VPS07-T**



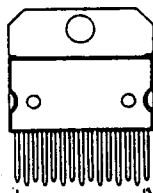
**2SA1206-14**



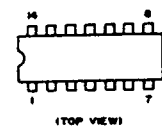
**2SK612**



**TDA1670A**



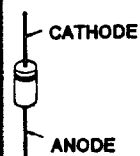
**74HC00**



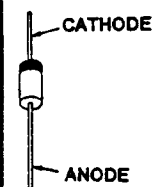
5SB60



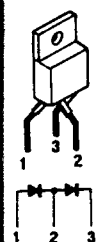
G01  
U2A  
U2YX  
U2Z  
D11EB1  
D12EB2  
D15EB2  
D18FB2  
D27EB2  
D27FB2  
D5.6EB2  
D6.2EB2  
D6.8EB-TA11R  
D9.1EB2  
SS83  
S1588



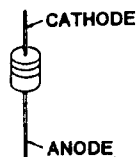
G01Y  
P01C  
P1H



SC011M-15



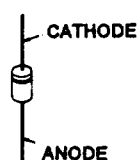
RD11ESB1  
RD12ESB2  
RD15ESB2  
RD27ESB2  
RD5.6ESB2  
RD6.2ESB2  
RD9.1ESB2  
1SS177



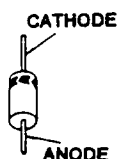
RD18MB2  
RD5.1MB2  
RD5.6MB2  
RD6.6MB2  
1SS184  
1SS193



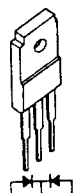
RG2  
RK14



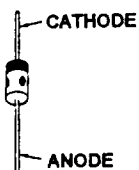
RU-4DS



SB50-09J



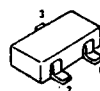
S5688B  
S5688G



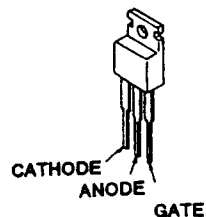
1SS181



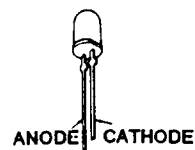
1SS228



5P-4M



GL5EG8



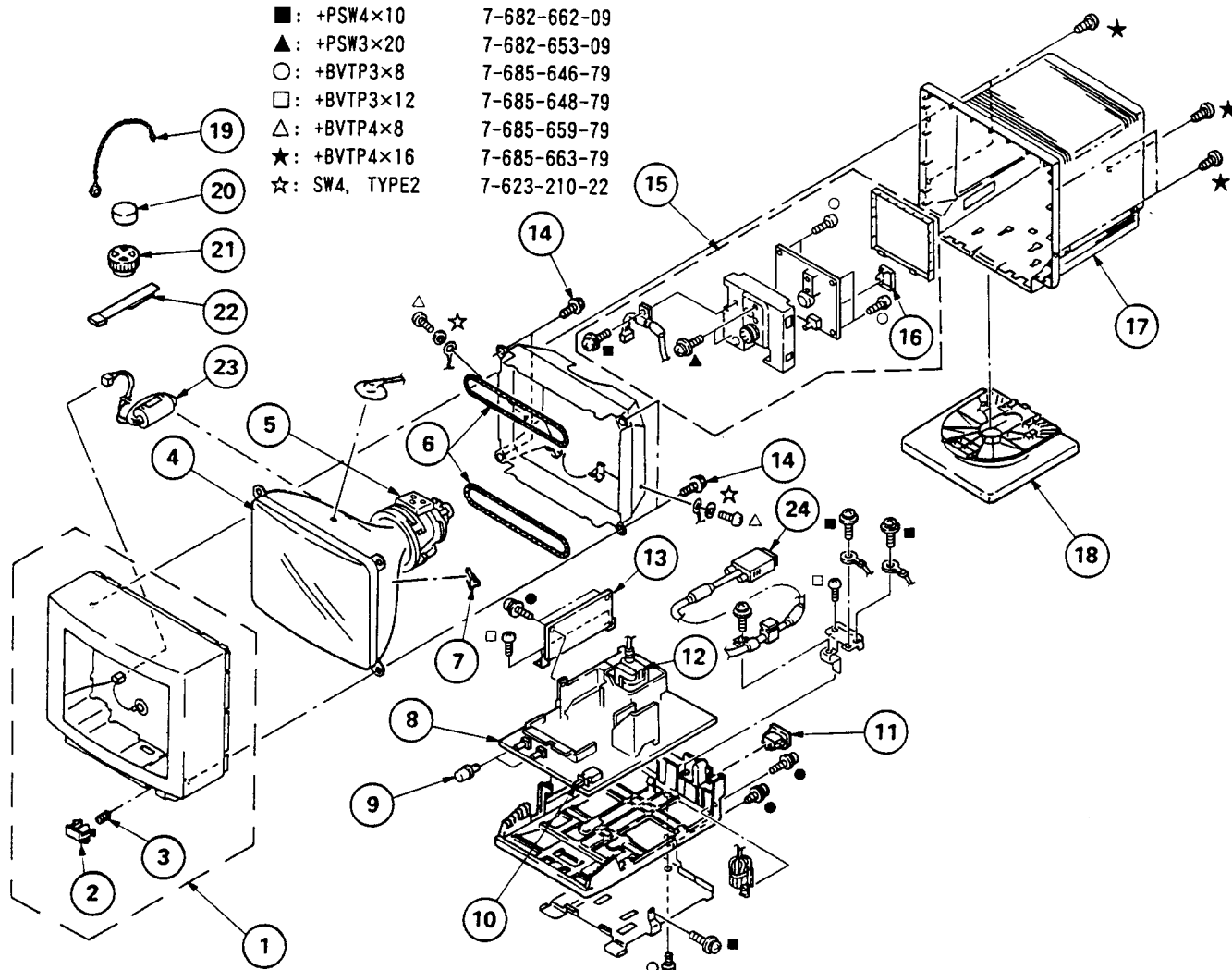
## SECTION 7 EXPLODED VIEWS

## NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

- |               |              |
|---------------|--------------|
| ●: +PSW3×8    | 7-682-978-01 |
| ■: +PSW4×10   | 7-682-662-09 |
| ▲: +PSW3×20   | 7-682-653-09 |
| ○: +BVTP3×8   | 7-685-646-79 |
| □: +BVTP3×12  | 7-685-648-79 |
| △: +BVTP4×8   | 7-685-659-79 |
| ★: +BVTP4×16  | 7-685-663-79 |
| ☆: SW4, TYPE2 | 7-623-210-22 |



REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
1	X-4029-894-1	BEZEL ASS'Y		12	$\Delta$ 1-453-130-11	TRANSFORMER ASS'Y, FLYBACK	
	X-4029-894-3	BEZEL ASS'Y		13	*A-1346-088-A	DA BOARD, COMPLETE	
		(SER.NO. 5,008,001 AND LATER & AUS)		14	4-307-249-00	SCREW (5), TAPPING	
2	4-392-708-01	BUTTON, POWER		15	*A-1478-955-A	B BLOCK ASS'Y	
3	3-509-046-01	SPRING, COMPRESSION		16	*4-370-995-01	COVER (LOWER), H STAT	
4	$\Delta$ 8-738-265-05	PICTURE TUBE 14FGES(M34JNQ15X) (AEP, UK)		17	4-392-714-11	CABINET	
	$\Delta$ 8-738-263-05	PICTURE TUBE 14FGES(AUS)		18	X-4392-703-2	TILT ASS'Y	
5	$\Delta$ 1-451-409-11	DEFLECTION YOKE (TCD-13301)		19	4-308-870-00	CLIP LEAD WIRE	
6	$\Delta$ 1-402-744-11	COIL, DEGAUSSING		20	1-452-032-00	MAGNET, DISK; 10MM $\phi$	
7	3-703-003-00	SPACER, DY		21	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM $\phi$	
8	*A-1345-995-A	D BOARD, COMPLETE	13	22	X-4309-608-0	PERMALLOY ASS'Y, CONVERGENCE	
9	4-392-705-01	KNOB, VR		23	1-941-843-19	CANCEL COIL ASS'Y	
10	$\Delta$ 1-571-433-12	SWITCH, PUSH (AC POWER)				(SER.NO. 5,008,001 AND LATER)	
11	$\Delta$ 1-526-954-11	INLET, AC		24	1-941-843-17	CABLE ASSY, SIGNAL	



**B**

## SECTION 8 ELECTRICAL PARTS LIST

## NOTE:

The components identified by shading and mark  $\Delta$  are critical for safety.

Replace only with part number specified.

• Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

## CAPACITORS

• MF :  $\mu$ F, PF :  $\mu$ F

## COILS

• MMH : mH, UH :  $\mu$ H

• The components identified by  $\boxtimes$  in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

• \* : Selected to yield optimum performance.

• There are some cases the reference number on one board overlaps on the other board. Therefore, when ordering parts by the reference number, please include the board name.

## RESISTORS

• All resistors are in ohms  
• F : nonflammable

When indicating parts by reference number, please include the board name.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
*A-1478-955-A B BOARD, COMPLETE *****				D508	8-719-820-58	DIODE 1SS177	
<CAPACITOR>				D510	8-719-820-58	DIODE 1SS177	
C501	1-137-370-11	MYLAR	0.01MF 5% 50V	D511	8-719-820-58	DIODE 1SS177	
C502	1-137-370-11	MYLAR	0.01MF 5% 50V	D512	8-719-901-83	DIODE 1SS83	
C503	1-137-370-11	MYLAR	0.01MF 5% 50V	D513	8-719-901-83	DIODE 1SS83	
C505	1-162-901-21	CERAMIC	0.1MF 10% 50V	D514	8-719-901-83	DIODE 1SS83	
C508	1-162-901-21	CERAMIC	0.1MF 10% 50V	D515	8-719-901-83	DIODE 1SS83	
C509	1-162-901-21	CERAMIC	0.1MF 10% 50V	D516	8-719-901-83	DIODE 1SS83	
C510	1-162-901-21	CERAMIC	0.1MF 10% 50V	D517	8-719-901-83	DIODE 1SS83	
C511	1-162-901-21	CERAMIC	0.1MF 10% 50V	D518	8-719-901-83	DIODE 1SS83	
C513	1-124-034-51	ELECT	33MF 20% 16V	D519	8-719-901-83	DIODE 1SS83	
C514	1-161-772-11	CERAMIC	0.1MF 10% 25V	D520	8-719-901-83	DIODE 1SS83	
C519	1-102-973-00	CERAMIC	100PF 5% 50V	D521	8-719-820-56	DIODE S5688B	
C520	1-102-973-00	CERAMIC	100PF 5% 50V	D522	8-719-820-58	DIODE 1SS177	
C521	1-102-973-00	CERAMIC	100PF 5% 50V	D523	8-719-820-58	DIODE 1SS177	
C522	1-162-901-21	CERAMIC	0.1MF 10% 50V	D524	8-719-820-58	DIODE 1SS177	
C523	1-162-901-21	CERAMIC	0.1MF 10% 50V	D525	8-719-820-58	DIODE 1SS177	
C524	1-124-477-11	ELECT	47MF 20% 16V	D526	8-719-820-58	DIODE 1SS177	
C525	1-124-477-11	ELECT	47MF 20% 16V	D527	8-719-820-58	DIODE 1SS177	
C526	1-126-101-11	ELECT	100MF 20% 16V	<IC>			
C527	1-130-483-00	MYLAR	0.01MF 5% 50V	IC501	8-752-052-83	IC CXA1209P	
C528	1-102-525-11	CERAMIC	68PF 5% 50V	IC502	8-749-922-81	IC VPS07T	
C531	1-124-119-00	ELECT	330MF 20% 16V	<COIL>			
C532	1-124-931-11	ELECT	47MF 20% 100V	L503	1-410-396-41	INDUCTOR 0.45UH	
C533	1-124-666-11	ELECT	4.7MF 20% 250V	L506	1-410-396-41	INDUCTOR 0.45UH	
C534	1-126-772-11	ELECT	1MF 20% 250V	L510	1-410-396-41	INDUCTOR 0.45UH	
C535	1-126-772-11	ELECT	1MF 20% 250V	L519	1-410-396-41	INDUCTOR 0.45UH	
C536	1-126-772-11	ELECT	1MF 20% 250V	L520	1-410-396-41	INDUCTOR 0.45UH	
C537	1-108-686-11	MYLAR	0.0033MF 10% 200V	<CONNECTOR>			
C538	1-108-686-11	MYLAR	0.0033MF 10% 200V	P501	*1-560-894-00	PIN, CONNECTOR 6P	
C539	1-108-686-11	MYLAR	0.0033MF 10% 200V	P504	*1-560-895-00	PIN, CONNECTOR 7P	
C540	1-136-209-11	FILM	0.1MF 10% 250V	P505	*1-564-031-00	PIN, CONNECTOR 6P	
C541	1-136-209-11	FILM	0.1MF 10% 250V	P508	*1-564-028-00	PIN, CONNECTOR 3P	
C542	1-136-209-11	FILM	0.1MF 10% 250V	P509	*1-564-031-00	PIN, CONNECTOR 6P	
C543	1-136-209-11	FILM	0.1MF 10% 250V	<TRANSISTOR>			
C544	1-162-978-11	CERAMIC	0.01MF 2KV	Q501	8-729-119-76	TRANSISTOR 2SA1175-HFE	
C545	1-162-978-11	CERAMIC	0.01MF 2KV	Q502	8-729-119-76	TRANSISTOR 2SA1175-HFE	
C546	1-162-116-00	CERAMIC	680PF 10% 2KV	Q503	8-729-119-76	TRANSISTOR 2SA1175-HFE	
C547	1-162-116-00	CERAMIC	680PF 10% 2KV	Q504	8-729-119-78	TRANSISTOR 2SC2785-HFE	
<DIODE>				Q505	8-729-119-76	TRANSISTOR 2SA1175-HFE	
D501	8-719-820-58	DIODE 1SS177		Q506	8-729-119-76	TRANSISTOR 2SA1175-HFE	
D502	8-719-820-58	DIODE 1SS177		Q507	8-729-119-76	TRANSISTOR 2SA1175-HFE	
D503	8-719-820-58	DIODE 1SS177		Q508	8-729-200-17	TRANSISTOR 2SA1091-0	
D504	8-719-110-31	DIODE RD12ES-B2		Q509	8-729-200-17	TRANSISTOR 2SA1091-0	
D505	8-719-820-58	DIODE 1SS177		Q510	8-729-200-17	TRANSISTOR 2SA1091-0	
D507	8-719-109-93	DIODE RD6.2ES-B2					

REF. NO.	PART NO.	DESCRIPTION			
Q511	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q512	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q513	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q514	8-729-119-78	TRANSISTOR	2SC2785-HFE		
<RESISTOR>					
R501	1-214-702-00	METAL	75	1%	1/4W
R502	1-214-702-00	METAL	75	1%	1/4W
R503	1-214-702-00	METAL	75	1%	1/4W
R504	1-249-401-11	CARBON	47	5%	1/4W
R505	1-249-401-11	CARBON	47	5%	1/4W
R506	1-249-401-11	CARBON	47	5%	1/4W
R507	1-249-430-11	CARBON	12K	5%	1/4W
R508	1-249-426-11	CARBON	5.6K	5%	1/4W
R509	1-249-412-11	CARBON	390	5%	1/4W
R510	1-249-441-11	CARBON	100K	5%	1/4W
R511	1-249-411-11	CARBON	330	5%	1/4W
R512	1-249-422-11	CARBON	2.7K	5%	1/4W
R513	1-249-409-11	CARBON	220	5%	1/4W
R514	1-249-409-11	CARBON	220	5%	1/4W
R515	1-249-409-11	CARBON	220	5%	1/4W
R516	1-249-413-11	CARBON	470	5%	1/4W
R517	1-249-397-11	CARBON	22	5%	1/4W
R518	1-249-397-11	CARBON	22	5%	1/4W
R519	1-249-397-11	CARBON	22	5%	1/4W
R520	1-249-421-11	CARBON	2.2K	5%	1/4W
R521	1-247-706-11	CARBON	330	5%	1/4W
R522	1-249-408-11	CARBON	180	5%	1/4W
R523	1-247-903-00	CARBON	1M	5%	1/4W
R524	1-247-749-11	CARBON	560	5%	1/2W
R525	1-247-749-11	CARBON	560	5%	1/2W
R526	1-247-749-11	CARBON	560	5%	1/2W
R527	1-249-397-11	CARBON	22	5%	1/4W
R528	1-247-716-11	CARBON	1.8K	5%	1/4W
R529	1-249-441-11	CARBON	100K	5%	1/4W
R530	1-249-401-11	CARBON	47	5%	1/4W
R531	1-249-397-11	CARBON	22	5%	1/4W
R532	1-247-716-11	CARBON	1.8K	5%	1/4W
R533	1-247-885-00	CARBON	180K	5%	1/4W
R534	1-249-401-11	CARBON	47	5%	1/4W
R535	1-249-397-11	CARBON	22	5%	1/4W
R536	1-247-716-11	CARBON	1.8K	5%	1/4W
R537	1-249-417-11	CARBON	1K	5%	1/4W
R538	1-249-399-11	CARBON	33	5%	1/4W
R539	1-247-749-11	CARBON	560	5%	1/2W
R540	1-249-417-11	CARBON	1K	5%	1/4W
R541	1-249-439-11	CARBON	68K	5%	1/4W
R542	1-249-435-11	CARBON	33K	5%	1/4W
R543	1-249-417-11	CARBON	1K	5%	1/4W
R544	1-249-441-11	CARBON	100K	5%	1/4W
R545	1-249-428-11	CARBON	8.2K	5%	1/4W
R546	1-249-416-11	CARBON	820	5%	1/4W
R547	1-249-409-11	CARBON	220	5%	1/4W
R548	1-249-417-11	CARBON	1K	5%	1/4W
R549	1-249-426-11	CARBON	5.6K	5%	1/4W
R550	1-249-421-11	CARBON	2.2K	5%	1/4W
R552	1-249-421-11	CARBON	2.2K	5%	1/4W
R553	1-249-421-11	CARBON	2.2K	5%	1/4W
R554	1-247-749-11	CARBON	560	5%	1/2W
R555	1-247-749-11	CARBON	560	5%	1/2W
R556	1-247-749-11	CARBON	560	5%	1/2W
R557	1-249-441-11	CARBON	100K	5%	1/4W
R558	1-249-418-11	CARBON	1.2K	5%	1/4W
R559	1-249-429-11	CARBON	10K	5%	1/4W
R560	1-214-964-00	RES. HIGH MEG	OHM 1M		
R561	1-214-964-00	RES. HIGH MEG	OHM 1M		

—49—

D

—50—

The components identified by shading and mark.  $\Delta$  are critical for safety.  
Replace only with part number specified.

D

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
L201	1-408-080-00	INDUCTOR 100UH		R216	1-216-349-00	METAL OXIDE 1 5%	1W F
L401	1-459-996-11	COIL, CHOKE 2.0MMH		R217	1-215-885-00	METAL OXIDE 68 5%	2W F
L402	1-460-001-11	COIL, CHOKE 2200UH		R218	1-212-865-00	FUSIBLE 22 5%	1/4W F
L403	1-424-251-11	COIL, PIN MODULATION		R219	1-247-725-11	CARBON 10K 5%	1/4W
L404	1-407-498-00	INDUCTOR 3.3MMH		R220	1-247-749-11	CARBON 560 5%	1/2W
L405	1-459-997-11	COIL, HORIZONTAL LINEARITY		R221	1-247-725-11	CARBON 10K 5%	1/4W
L406	1-421-329-00	COIL, CHOKE		R222	1-247-725-11	CARBON 10K 5%	1/4W
L407	1-459-111-00	COIL, DRAM, CORE 10UH		R223	1-247-725-11	CARBON 10K 5%	1/4W
L408	1-408-080-00	INDUCTOR 100UH		R224	1-247-725-11	CARBON 10K 5%	1/4W
L409	1-410-396-41	INDUCTOR 0.45UH		R225	1-247-701-11	CARBON 120 5%	1/4W
L901	1-423-333-11	TRANSFORMER, LINE FILTER		R226	1-246-543-00	CARBON 820K 5%	1/4W
L902	1-459-999-11	COIL, CHOKE 18UH		R227	1-247-887-00	CARBON 220K 5%	1/4W
L903	1-408-119-00	INDUCTOR 15UH		R401	1-247-721-11	CARBON 4.7K 5%	1/4W
L904	1-408-119-00	INDUCTOR 15UH		R402	1-249-465-11	CARBON 47K 5%	1/4W
L905	1-459-998-11	COIL, CHOKE 150UH		R404	1-213-086-00	FUSIBLE 120 5%	1W F
L908	1-410-396-41	INDUCTOR 0.45UH		R405	1-247-713-11	CARBON 1K 5%	1/4W
L909	1-410-396-41	INDUCTOR 0.45UH		R406	1-215-896-00	METAL OXIDE 4.7K 5%	2W F
L912	1-410-396-41	INDUCTOR 0.45UH		R407	1-216-390-11	METAL OXIDE 1.2 5%	3W F
<CONNECTOR>				R408	1-215-880-00	METAL OXIDE 10 5%	2W F
P201	1-506-348-XX	PIN, CONNECTOR 3P		R409	1-216-393-00	METAL OXIDE 2.2 5%	3W F
P202	*1-560-895-00	PIN, CONNECTOR 7P		R410	1-260-082-91	CARBON 39 5%	1/2W
P301	*1-566-226-11	PIN, CONNECTOR 20P		R411	1-212-994-00	FUSIBLE 330 5%	1/2W F
P302	*1-566-226-11	PIN, CONNECTOR 20P		R412	1-247-725-11	CARBON 10K 5%	1/4W
P401	1-506-348-XX	PIN, CONNECTOR 5P		R413	1-212-849-00	FUSIBLE 4.7 5%	1/4W F
P402	*1-560-893-00	PIN, CONNECTOR 5P		R414	$\Delta$ 1-214-746-11	METAL FILM 5.6K 1%	1/4W
P902	*1-560-898-00	PIN, CONNECTOR 10P		R415	1-212-849-00	FUSIBLE 4.7 5%	1/4W F
P903	*1-560-896-00	PIN, CONNECTOR 8P		R416	1-212-849-00	FUSIBLE 4.7 5%	1/4W F
P904	*1-560-896-00	PIN, CONNECTOR 8P		R417	1-260-119-11	CARBON 47K 5%	1/2W
P905	*1-560-891-00	PIN, CONNECTOR 3P		R418	1-260-119-11	CARBON 47K 5%	1/2W
				R419	1-260-120-11	CARBON 56K 5%	1/2W
<TRANSISTOR>				R420	1-260-120-11	CARBON 56K 5%	1/2W
Q201	8-729-119-78	TRANSISTOR 2SC2785-HFE		R421	1-212-865-00	FUSIBLE 22 5%	1/4W F
Q202	8-729-111-54	TRANSISTOR 2SD1312-L		R422	1-249-466-11	CARBON 56K 5%	1/4W
Q203	8-729-111-52	TRANSISTOR 2SB984-K		R423	1-212-877-11	FUSIBLE 68 5%	1/4W F
Q204	8-729-119-76	TRANSISTOR 2SA1175-HFE		R434	1-247-883-00	CARBON 150K 5%	1/4W
Q205	8-729-119-78	TRANSISTOR 2SC2785-HFE		R435	1-247-885-00	CARBON 180K 5%	1/4W
Q401	8-729-927-10	TRANSISTOR IRF9630		R436	1-249-469-11	CARBON 100K 5%	1/4W
Q402	8-729-012-56	TRANSISTOR IRF710		R437	1-216-480-11	METAL OXIDE 820 5%	3W F
Q403	8-729-821-95	TRANSISTOR 2SC3897		R438	1-249-462-11	CARBON 22K 5%	1/4W
Q404	8-729-119-78	TRANSISTOR 2SC2785-HFE		R439	1-214-921-55	METAL 220K 5%	1/2W
Q411	8-729-119-00	TRANSISTOR 2SK612		R440	1-247-704-11	CARBON 220 5%	1/4W
Q412	8-729-012-62	TRANSISTOR 2SA1507		R901	1-214-931-00	METAL GLAZE 560K 5%	1/2W
Q901	8-719-108-18	THYRISTOR 5P6M		R902	1-205-779-11	WIREWOUND 1 5%	10W F
Q902	8-729-119-78	TRANSISTOR 2SC2785-HFE		R903	1-260-126-91	CARBON 180K 5%	1/2W
<RESISTOR>				R904	1-260-127-91	CARBON 220K 5%	1/2W
R201	1-247-722-11	CARBON 5.6K 5%	1/4W	R905	1-215-926-00	METAL OXIDE 33K 5%	3W F
R202	1-249-459-11	CARBON 12K 5%	1/4W	R906	1-215-926-00	METAL OXIDE 33K 5%	3W F
R203	1-247-725-11	CARBON 10K 5%	1/4W	R908	1-215-907-11	METAL OXIDE 22 5%	3W F
R204	1-247-721-11	CARBON 4.7K 5%	1/4W	R909	1-216-469-11	METAL OXIDE 12 5%	3W F
R205	1-249-463-11	CARBON 27K 5%	1/4W	R910	1-215-906-11	METAL OXIDE 15 5%	3W F
R206	1-247-895-00	CARBON 470K 5%	1/4W	R911	1-212-865-00	FUSIBLE 22 5%	1/4W F
R207	1-247-725-11	CARBON 10K 5%	1/4W	R913	1-205-956-11	WIREWOUND 0.15 10%	3W
R208	1-247-721-11	CARBON 4.7K 5%	1/4W	R915	1-214-769-00	METAL 47K 1%	1/4W
R209	1-249-462-11	CARBON 22K 5%	1/4W	R916	1-214-777-00	METAL 100K 1%	1/4W
R210	1-247-891-00	CARBON 330K 5%	1/4W	R920	1-217-501-00	FUSIBLE 470 5%	1W F
R211	1-215-865-11	METAL OXIDE 220 5%	1W F	R921	1-217-501-00	FUSIBLE 470 5%	1W F
R212	1-249-453-11	CARBON 3.3 5%	1/4W	R922	1-205-616-00	WIREWOUND 1 5%	5W F
R213	1-247-716-11	CARBON 1.8K 5%	1/4W	R923	1-247-713-11	CARBON 1K 5%	1/4W
R214	1-247-701-11	CARBON 120 5%	1/4W	R924	1-260-127-91	CARBON 220K 5%	1/2W
R215	1-247-715-11	CARBON 1.5K 5%	1/4W	R926	1-217-637-00	FUSIBLE 1 5%	1/4W F
				R927	1-249-467-11	CARBON 68K 5%	1/4W
				R928	1-212-934-00	FUSIBLE 1 5%	1/2W F
				R929	1-207-451-00	RES, WIRE 0.1	1/6W

D

DA(DC-1)

The components identified by **M** in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

The components identified by shading and mark **Δ** are critical for safety. Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
R930	1-212-934-00	FUSIBLE 1 5% 1/2W F	
R931	1-207-451-00	RES. WIRE 0.1 1/6W	
R932	1-216-371-00	METAL OXIDE 1.5 5% 2W F	
R934	1-247-698-11	CARBON 68 5% 1/4W	
R935	1-247-726-11	CARBON 33K 5% 1/4W	
R936	1-249-465-11	CARBON 47K 5% 1/4W	
<VARIABLE RESISTOR>			
RV201	1-228-997-00	RES. ADJ. CERMET 100K	
RV204	1-238-449-21	RES. VAR. CARBON 10K	
RV205	1-241-715-21	RES. VER. CARBON 10K	
RV401	1-238-688-11	RES. VAR. WIREWOUND 100	
RV402	Δ 1-223-213-11	RES. ADJ. CERMET	
<VOLUME>			
RVB1	1-238-721-11	VOLUME (4 GANG) 5K/10K/5K/10K	
<SWITCH>			
SW401	1-571-427-11	SWITCH, SLIDE	
SW402	1-572-022-11	SWITCH, SLIDE	
SW901	Δ 1-571-433-11	SWITCH, PUSH (AC POWER)	
<TRANSFORMER>			
T401	1-423-345-11	TRANSFORMER, HORIZONTAL DRIVE	
T402	Δ 1-453-130-11	TRANSFORMER ASSY FLYBACK	
T901	Δ 1-423-346-11	TRANSFORMER	
<THERMISTOR>			
TH201	1-807-796-11	THERMISTOR	
TH901	1-808-059-31	THERMISTOR, POSITIVE	
<CONNECTOR>			
Z201	4-380-083-01	HOLDER(E), LED	
Z404	4-392-771-01	CAP. SEAL	
Z903	1-543-966-11	CORE, EMI	
*****			
*A-1346-088-A DA BOARD, COMPLETE			
*****			
<CAPACITOR>			
C101	1-126-399-11	ELECT CHIP 10MF 20% 35V	
C102	1-124-767-00	ELECT 2.2MF 20% 50V	
C103	1-126-399-11	ELECT CHIP 10MF 20% 35V	
C104	1-124-767-00	ELECT 2.2MF 20% 50V	
C105	1-126-101-11	ELECT 100MF 20% 16V	
C106	1-126-101-11	ELECT 100MF 20% 16V	
C108	1-126-399-11	ELECT CHIP 10MF 20% 35V	
C109	1-126-101-11	ELECT 100MF 20% 16V	
C110	1-126-399-11	ELECT CHIP 10MF 20% 35V	
C111	1-126-398-11	ELECT CHIP 4.7MF 20% 35V	
C112	1-126-398-11	ELECT CHIP 4.7MF 20% 35V	
C113	1-126-399-11	ELECT CHIP 10MF 20% 35V	
C114	1-163-193-00	CERAMIC CHIP 330PF 5% 50V	
C251	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C252	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C253	1-126-101-11	ELECT 100MF 20% 16V	

REF.NO.	PART NO.	DESCRIPTION	REMARK
C301	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C302	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C303	1-163-251-11	CERAMIC CHIP 100PF	5% 50V
C304	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C305	1-163-205-00	CERAMIC CHIP 0.001MF	5% 50V
C306	1-163-205-00	CERAMIC CHIP 0.001MF	5% 50V
C307	1-163-205-00	CERAMIC CHIP 0.001MF	5% 50V
C308	1-163-209-00	CERAMIC CHIP 0.0015MF	5% 50V
C309	1-126-399-11	ELECT CHIP 10MF	20% 35V
C310	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C311	1-126-301-11	ELECT 1MF	20% 50V
C312	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C313	1-126-401-11	ELECT CHIP 1MF	20% 50V
C314	1-163-205-00	CERAMIC CHIP 0.001MF	5% 50V
C315	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C316	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C317	1-163-235-11	CERAMIC CHIP 22PF	5% 50V
C318	1-126-396-11	ELECT CHIP 47MF	20% 16V
C319	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C320	1-163-205-00	CERAMIC CHIP 0.001MF	5% 50V
C321	1-163-251-11	CERAMIC CHIP 100PF	5% 50V
C322	1-126-103-11	ELECT 470MF	20% 16V
C326	1-163-209-00	CERAMIC CHIP 0.0015MF	5% 50V
C327	1-164-222-11	CERAMIC CHIP 0.22MF	25V
C328	1-123-875-11	ELECT 10MF	20% 35V
C329	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C330	1-126-399-11	ELECT CHIP 10MF	20% 35V
C331	1-126-398-11	ELECT CHIP 4.7MF	20% 35V
C332	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C334	1-126-398-11	ELECT CHIP 4.7MF	20% 35V
C336	1-126-399-11	ELECT CHIP 10MF	20% 35V
C337	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C338	1-124-277-11	ELECT 4.7MF	20% 35V
C340	1-163-011-11	CERAMIC CHIP 0.0015MF	10% 50V
C341	1-124-910-11	ELECT 47MF	20% 35V
C342	1-126-101-11	ELECT 100MF	20% 16V
C345	1-163-251-11	CERAMIC CHIP 100PF	5% 50V
C346	1-126-399-11	ELECT CHIP 10MF	20% 35V
C347	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C349	1-126-399-11	ELECT CHIP 10MF	20% 35V
C350	1-163-193-00	CERAMIC CHIP 330PF	5% 50V
C601	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C602	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C603	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C604	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C605	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C606	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C607	1-163-237-11	CERAMIC CHIP 27PF	5% 50V
C608	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
C609	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
C610	1-163-205-00	CERAMIC CHIP 0.001MF	5% 50V
C611	1-163-137-00	CERAMIC CHIP 680PF	5% 50V
C612	1-163-021-91	CERAMIC CHIP 0.01MF	5% 50V
C613	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C614	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C622	1-163-038-00	CERAMIC CHIP 0.1MF	25V
<DIODE>			
D103	8-719-105-91	DIODE RD5.6M-B2	
D104	8-719-105-91	DIODE RD5.6M-B2	
D253	8-719-820-05	DIODE 1SS181	
D254	8-719-801-48	DIODE 1SS193	
D255	8-719-801-78	DIODE 1SS184	

## DA(DC-1)

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
D257	8-719-820-05	DIODE ISS181		Q301	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D259	8-719-801-48	DIODE ISS193		Q302	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D301	8-719-801-48	DIODE ISS193		Q303	8-729-216-22	TRANSISTOR 2SA1162-G	
D302	8-719-801-48	DIODE ISS193		Q304	8-729-216-22	TRANSISTOR 2SA1162-G	
D303	8-719-106-44	DIODE RD9.1M-B2		Q305	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D304	8-719-820-05	DIODE ISS181		Q306	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D306	8-719-801-48	DIODE ISS193		Q307	8-729-216-22	TRANSISTOR 2SA1162-G	
D308	8-719-801-48	DIODE ISS193		Q308	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D309	8-719-801-48	DIODE ISS193		Q309	8-729-216-22	TRANSISTOR 2SA1162-G	
D310	8-719-801-48	DIODE ISS193		Q310	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D311	8-719-107-15	DIODE RD18M-B2		Q311	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D312	8-719-801-48	DIODE ISS193		Q312	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D601	8-719-820-05	DIODE ISS181		Q313	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D602	8-719-801-48	DIODE ISS193		Q314	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D603	8-719-800-76	DIODE ISS226		Q315	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D604	8-719-105-82	DIODE RD5.1ES-B2		Q316	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D605	8-719-800-76	DIODE ISS226		Q317	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D606	8-719-800-76	DIODE ISS226		Q318	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D607	8-719-801-78	DIODE ISS184		Q319	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D608	8-719-801-48	DIODE ISS193		Q320	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D609	8-719-820-05	DIODE ISS181		Q321	8-729-216-22	TRANSISTOR 2SA1162-G	
D610	8-719-801-48	DIODE ISS193		Q601	8-729-112-65	TRANSISTOR 2SA1462-Y33	
D611	8-719-801-48	DIODE ISS193		Q602	8-729-112-65	TRANSISTOR 2SA1462-Y33	
D612	8-719-026-17	DIODE RD5.1PB		Q603	8-729-216-22	TRANSISTOR 2SA1162-G	
				Q604	8-729-216-22	TRANSISTOR 2SA1162-G	
<IC>				Q605	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
IC101	8-749-923-30	IC PR-1		Q606	8-729-421-22	TRANSISTOR UN2211	
IC250	8-759-064-06	IC UPA2004GR		Q607	8-729-216-22	TRANSISTOR 2SA1162-G	
IC301	8-759-822-53	IC LA7850		Q608	8-729-421-22	TRANSISTOR UN2211	
IC302	8-759-064-06	IC UPA2004GR		Q609	8-729-421-22	TRANSISTOR UN2211	
IC303	8-759-942-16	IC TEA2031A		Q610	8-729-421-22	TRANSISTOR UN2211	
IC304	8-759-064-03	IC AN1431M		Q611	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
IC601	8-759-032-01	IC MC74HC00AF		Q612	8-729-421-22	TRANSISTOR UN2211	
IC602	8-759-239-23	IC TC74HC86AF		Q613	8-729-421-22	TRANSISTOR UN2211	
IC603	8-759-032-01	IC MC74HC00AF		Q614	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
IC604	8-759-926-12	IC SN74HC139ANS		Q615	8-729-421-22	TRANSISTOR UN2211	
IC605	8-759-239-55	IC TC74HC123AF		Q616	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
IC606	8-759-032-01	IC MC74HC00AF		Q617	8-729-216-22	TRANSISTOR 2SA1162-G	
				Q618	8-729-216-22	TRANSISTOR 2SA1162-G	
<COIL>				<RESISTOR>			
L101	1-408-080-00	INDUCTOR	100UH	R101	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
L102	1-412-390-21	INDUCTOR		R102	1-216-033-00	METAL GLAZE	220 5% 1/10W
L103	1-412-390-21	INDUCTOR		R103	1-216-085-00	METAL GLAZE	33K 5% 1/10W
L250	1-408-080-00	INDUCTOR	100UH	R104	1-216-085-00	METAL GLAZE	33K 5% 1/10W
L301	1-408-080-00	INDUCTOR	100UH	R105	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
L302	1-408-080-00	INDUCTOR	100UH	R106	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
				R107	1-216-033-00	METAL GLAZE	220 5% 1/10W
<CONNECTOR>				R108	1-216-085-00	METAL GLAZE	33K 5% 1/10W
P301	*1-563-226-11	CONNECTOR, INTERNATIONAL		R109	1-216-085-00	METAL GLAZE	33K 5% 1/10W
P302	*1-563-226-11	CONNECTOR, INTERNATIONAL		R110	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
P303	*1-560-892-00	PIN, CONNECTOR 4P		R111	1-216-196-00	CHIP	820 5% 1/8W
P304	*1-560-894-00	PIN, CONNECTOR 6P		R112	1-216-206-00	METAL GLAZE	2.2K 5% 1/8W
TP301	*1-560-891-00	PIN, CONNECTOR 3P		R113	1-216-206-00	METAL GLAZE	2.2K 5% 1/8W
				R114	1-216-206-00	METAL GLAZE	2.2K 5% 1/8W
				R115	1-216-206-00	METAL GLAZE	2.2K 5% 1/8W
<TRANSISTOR>				R116	1-216-206-00	METAL GLAZE	2.2K 5% 1/8W
Q101	8-729-216-22	TRANSISTOR 2SA1162-G		R117	1-216-206-00	METAL GLAZE	2.2K 5% 1/8W
Q102	8-729-216-22	TRANSISTOR 2SA1162-G		R118	1-216-206-00	METAL GLAZE	2.2K 5% 1/8W
Q253	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R119	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
Q254	8-729-216-22	TRANSISTOR 2SA1162-G		R120	1-216-196-00	CHIP	820 5% 1/8W
Q255	8-729-216-22	TRANSISTOR 2SA1162-G		R121	1-216-196-00	CHIP	820 5% 1/8W
				R122	1-216-196-00	CHIP	820 5% 1/8W

## DA(DC-1)

REF. NO.	PART NO.	DESCRIPTION	REMARK
R255	1-216-105-00	METAL GLAZE 220K 5%	1/10W
R256	1-216-105-00	METAL GLAZE 220K 5%	1/10W
R257	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R258	1-216-109-00	METAL GLAZE 330K 5%	1/10W
R259	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R260	1-216-101-00	METAL GLAZE 150K 5%	1/10W
R261	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R262	1-216-113-00	METAL GLAZE 470K 5%	1/10W
R263	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R264	1-216-295-00	CHIP 0 5%	1/10W
R265	1-216-295-00	CHIP 0 5%	1/10W
R266	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R267	1-216-077-00	METAL GLAZE 15K 5%	1/10W
R268	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R269	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R301	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R302	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R303	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
R304	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R305	1-216-083-00	METAL GLAZE 27K 5%	1/10W
R306	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R307	1-216-045-00	METAL GLAZE 680 5%	1/10W
R308	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R309	1-216-055-00	METAL GLAZE 1.8K 5%	1/10W
R310	1-216-063-00	METAL GLAZE 3.9K 5%	1/10W
R311	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R312	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R313	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R314	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R315	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R316	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R317	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R318	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R319	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R320	1-216-075-00	METAL GLAZE 12K 5%	1/10W
R321	1-216-105-00	METAL GLAZE 220K 5%	1/10W
R322	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R323	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R324	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R325	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R326	1-216-025-00	METAL GLAZE 100 5%	1/10W
R327	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R328	1-216-077-00	METAL GLAZE 15K 5%	1/10W
R329	1-216-077-00	METAL GLAZE 15K 5%	1/10W
R330	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R331	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R332	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R333	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R334	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R335	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R336	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R337	1-216-033-00	METAL GLAZE 220 5%	1/10W
R338	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R339	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R340	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
R341	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
R342	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
R344	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R345	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R346	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R347	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R348	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R349	1-216-689-11	METAL FILM CHIP 39K 5%	1/10W
R350	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W

REF. NO.	PART NO.	DESCRIPTION	REMARK
R351	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R352	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R353	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R354	1-216-001-00	METAL GLAZE 10 5%	1/10W
R355	1-216-033-00	METAL GLAZE 220 5%	1/10W
R356	1-216-001-00	METAL GLAZE 10 5%	1/10W
R357	1-216-041-00	METAL GLAZE 470 5%	1/10W
R358	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
R359	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R360	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R361	1-216-083-00	METAL GLAZE 27K 5%	1/10W
R362	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R363	1-216-041-00	METAL GLAZE 470 5%	1/10W
R364	1-216-031-00	METAL GLAZE 180 5%	1/10W
R365	1-216-689-11	METAL FILM CHIP 39K 5%	1/10W
R366	1-216-689-11	METAL FILM CHIP 39K 5%	1/10W
R367	1-216-080-00	METAL GLAZE 20K 5%	1/10W
R368	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R369	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R370	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R371	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R372	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R375	1-216-113-00	METAL GLAZE 470K 5%	1/10W
R376	1-216-101-00	METAL GLAZE 150K 5%	1/10W
R379	1-216-091-00	METAL GLAZE 56K 5%	1/10W
R380	1-216-079-00	METAL GLAZE 18K 5%	1/10W
R381	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R382	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R383	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R384	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R385	1-216-027-00	METAL GLAZE 120 5%	1/10W
R386	1-216-093-00	METAL GLAZE 68K 5%	1/10W
R387	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R388	1-216-025-00	METAL GLAZE 100 5%	1/10W
R389	1-216-115-00	METAL GLAZE 560K 5%	1/10W
R391	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R392	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R393	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R394	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R395	1-216-009-00	METAL GLAZE 22 5%	1/10W
R396	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R397	1-216-295-00	CHIP 0 5%	1/10W
R399	1-216-025-00	METAL GLAZE 100 5%	1/10W
R601	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R602	1-216-009-00	METAL GLAZE 22 5%	1/10W
R603	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R604	1-216-045-00	METAL GLAZE 680 5%	1/10W
R605	1-216-196-00	METAL GLAZE 820 5%	1/8W
R606	1-216-045-00	METAL GLAZE 680 5%	1/10W
R607	1-216-009-00	METAL GLAZE 22 5%	1/10W
R608	1-216-105-00	METAL GLAZE 220K 5%	1/10W
R609	1-216-105-00	METAL GLAZE 220K 5%	1/10W
R610	1-216-113-00	METAL GLAZE 470K 5%	1/10W
R611	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R612	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R613	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
R614	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R615	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R616	1-216-033-00	METAL GLAZE 220 5%	1/10W
R617	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R618	1-216-033-00	METAL GLAZE 220 5%	1/10W
R619	1-216-105-00	METAL GLAZE 220K 5%	1/10W
R620	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W

The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

DA(DC-1)

REF. NO.	PART NO.	DESCRIPTION	REMARK
R621	1-216-129-00	METAL GLAZE 2.2M 5%	1/10W
R622	1-216-025-00	METAL GLAZE 100 5%	1/10W
R623	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R624	1-216-033-00	METAL GLAZE 220 5%	1/10W
R625	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R626	1-216-124-11	METAL GLAZE 1.3M 5%	1/10W
R627	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R628	1-216-025-00	METAL GLAZE 100 5%	1/10W
R629	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R630	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R631	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R632	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R633	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R634	1-216-025-00	METAL GLAZE 100 5%	1/10W
R635	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R636	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R637	1-216-075-00	METAL GLAZE 12K 5%	1/10W
R638	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R639	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R640	1-216-121-00	METAL GLAZE 1M 5%	1/10W
R641	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R642	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R644	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R645	1-216-101-00	METAL GLAZE 150K 5%	1/10W
R646	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R647	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R648	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R649	1-216-033-00	METAL GLAZE 220 5%	1/10W
R650	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R651	1-216-025-00	METAL GLAZE 100 5%	1/10W
R652	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R653	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R654	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R655	1-216-015-00	METAL GLAZE 39 5%	1/10W
R656	1-216-041-00	METAL GLAZE 470 5%	1/10W
R657	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R658	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R659	1-216-025-00	METAL GLAZE 100 5%	1/10W

## &lt;VARIABLE RESISTOR&gt;

RV251	1-228-993-00	RES, ADJ, CERMET 5K
RV252	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K
RV253	1-228-995-00	RES, ADJ, CARBON 22K
RV254	1-228-994-00	RES, ADJ, CERMET 10K
RV255	1-228-993-00	RES, ADJ, CERMET 5K
RV256	1-228-995-00	RES, ADJ, METAL GLAZE 22K
RV257	1-228-995-00	RES, ADJ, METAL GLAZE 22K
RV301	1-238-693-11	RES, ADJ, CARBON 5K
RV302	1-237-524-21	RES, ADJ, CARBON 1M
RV303	1-228-994-00	RES, ADJ, CERMET 10K
RV304	1-228-994-00	RES, ADJ, CERMET 10K
RV305	1-228-993-00	RES, ADJ, CERMET 5K
RV306	1-228-993-00	RES, ADJ, CERMET 5K
RV307	1-228-997-00	RES, ADJ, METAL GLAZE 100K
RV308	1-228-996-00	RES, ADJ, CERMET 50K
RV309	1-238-688-11	RES, VAR, WIREWOUND 100
RV310	1-228-997-00	RES, ADJ, CERMET 100K
RV311	1-228-996-00	RES, ADJ, CERMET 50K
RV312	1-228-996-00	RES, ADJ, CERMET 50K
RV313	1-228-998-00	RES, ADJ, METAL GLAZE 220K
RV314	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K
RV601	1-230-871-11	RES, ADJ, METAL GLAZE 22K
RV602	1-237-964-11	RES, ADJ, METAL GLAZE 4.7K

REF. NO.	PART NO.	DESCRIPTION	REMARK
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MISCELLANEOUS  
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$\Delta$  1-402-744-11 COIL, DEGAUSSING  
 $\Delta$  1-451-409-11 DEFLECTION YOKE (TCD-13301)  
 1-452-032-00 MAGNET, DISK: 10MM  $\phi$   
 1-941-843-17 CABLE ASSY, SIGNAL  
 V901  $\Delta$  8-738-265-05 PICTURE TUBE 14FGES (M34JNQ15X) (AEP, UK)  
 V901  $\Delta$  8-738-263-05 PICTURE TUBE 14FGES (AUS)

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ACCESSORIES & PACKING MATERIALS  
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PART NO.	DESCRIPTION	REMARK
$\Delta$ 1-690-447-11	CORD, POWER (13A/250V) (AEP, UK)	
$\Delta$ 1-558-481-11	CORD, POWER (10A/250V) (AUS)	
3-754-056-11	MANUAL, INSTRUCTION	
*4-033-166-01	CARTON, INDIVIDUAL	
*4-312-246-00	BAG, PROTECTION	
*4-392-724-01	SPACER	
*4-392-725-01	CUSHION (UPPER) (ASSY)	
*4-392-726-01	CUSHION (LOWER) (ASSY)	