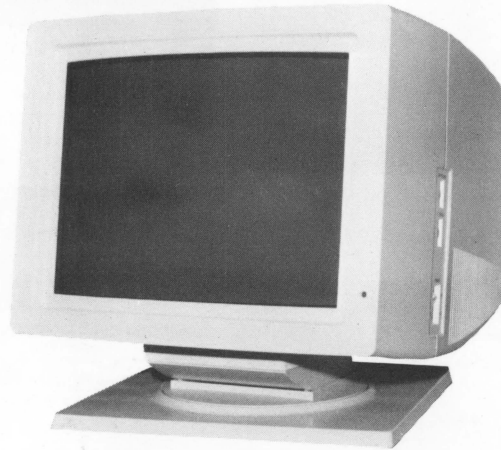


# CPD-1390

## SERVICE MANUAL

US Model  
Canadian Model

Chassis No. SCC-A31A-A



**MULTISCAN**

### SPECIFICATIONS

Picture tube	Super Fine Pitch Trinitron color tube 13-inch picture tube measured diagonally 90 degree deflection Anti-gleer dark screen Useful screen 274mm x 207mm Phosphor P22 Phosphor pitch 0.26mm
Resolution	900 dots X 560 lines
Scanning frequency	Vertical sync signal frequency: 50-100 Hz Horizontal sync signal frequency: 15.0-34.0 kHz
Input	RGB input (D-sub 9 pin) (Analog and TTL available)

### ANALOG

- \* Sync on Green automatic if horizontal or composite sync is not assigned at Pin 8.
- \*\* IBM PGC should be connected with PGC Video cable (SMF513)

### DIGITAL (TTL LEVEL)

- "Normal" is for 8 colors (R, G & B)
- "D1" is for 16 colors (R, G, B & I)
- "D2" is for IBM Digital color Graphic Boards (CGA, MDA, EGA) and there is no need to readjust anything among these cards.

### SYNC

- Composite sync is acceptable at Pin 8.
- Every polarity is acceptable at Pin 8 & 9.

### VERTICAL Size

- Vertical size depends on vertical frequency and can be manually adjusted.

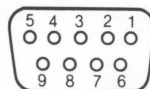
Power requirements	120V AC, 50/60 Hz
Power consumption	96 W (maximum)
Dimensions	370 x 330 x 415 mm (w/h/d) (14 <sup>5</sup> / <sub>8</sub> x 13 x 16 <sup>3</sup> / <sub>8</sub> inches) including projecting parts
Weight	14.5 kg (32 lb)
Supplied accessory	AC power cord (1)

### Optional accessories

- Monitor cable (9-pin ↔ 9-pin)
  - SMF-512
  - SMF-513
  - SMF-514
- Tilt-swivel Display stand SU-535

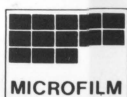
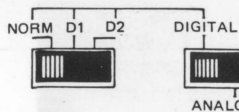
Design and specifications subject to change without notice.

### PIN ASSIGNMENT



		1	2	3	4	5	6	7	8	9
ANALOG **		GND	GND	R	*G	B	GND	-	H/HV	V
DIGITAL	NORMAL	GND	GND	R	G	B	GND	-	H/HV	V
	D1	GND	GND	R	G	B	I	-	H/HV	V
	CGA	GND	GND	R	G	B	I	-	H/HV	V
	D2	MDA	GND	GND	-	-	I	G	H/HV	V
	EGA	GND	r	R	G	B	g	b	H/HV	V

(Input Selection) GND: Ground R: Red Signal G: Green Signal  
B: Blue Signal - : No connection  
H: Horizontal Sync V: Vertical Sync  
HV: Composite sync I: Intensity signal  
r: Secondary Red for EGA 64 colors  
g: Secondary Green for EGA 64 colors  
b: Secondary Blue for EGA 64 colors

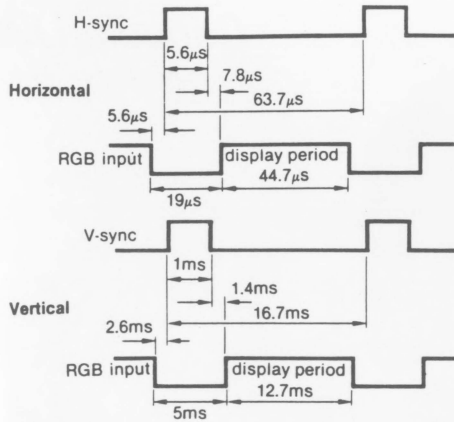


**TRINITRON® CHARACTER DISPLAY**

**MON**

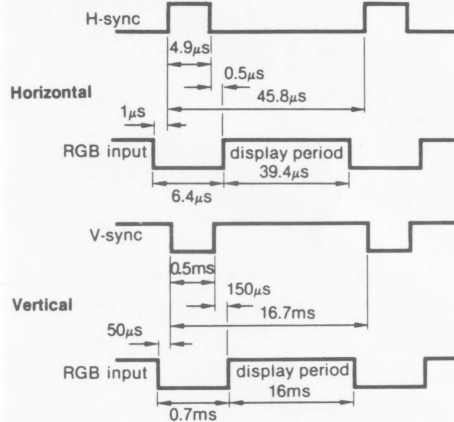
## Timing Charts (for approximate reference)

### 1 D2-1 (IBM CGA compatible)



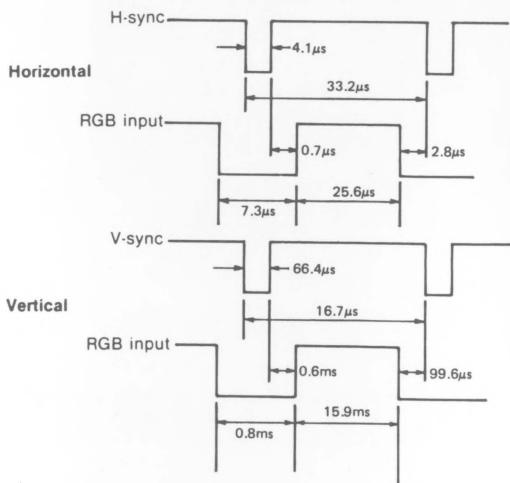
The indicated values apply when the line period is 63.7  $\mu$ s and the field period is 16.7ms.

### 2 D2-2 (IBM EGA compatible)



The indicated values apply when the line period is 45.8  $\mu$ s and the field period is 16.7ms.

### 3 ANALOG (IBM PGA Compatible)



The indicated values apply when the line period is 33.2  $\mu$ s and the field period is 16.7ms.

**Note**

The picture may be biased or the picture size may be changed depending on the timing of the connected equipment.

## INFORMATION

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Relocate the equipment with respect to the receiver
- Move the equipment away from the receiver
- Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

A shielded interface cable such as the SMF-series recommended on page 6 must be used with this equipment.

### WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

### SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARKED  $\Delta$  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.

### ATTENTION AUX COMPOSANTS RELATIFS A LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE  $\Delta$  SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIÈCES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÈCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIÉS DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.

## SAFETY CHECK

(US Model only)

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any).  
Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.

## LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

## HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60-100 watt trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)

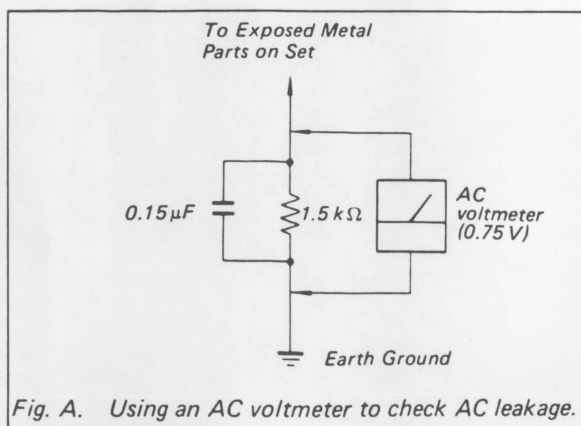


Fig. A. Using an AC voltmeter to check AC leakage.

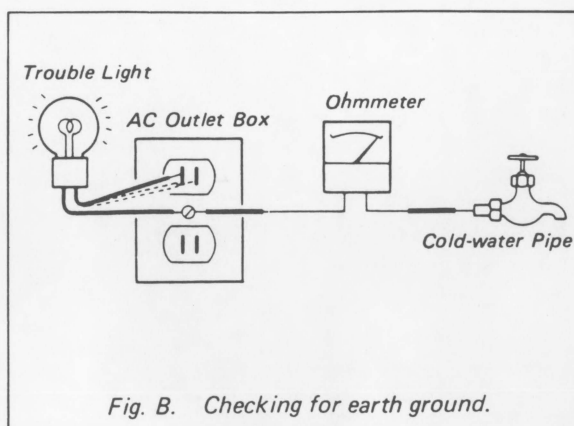


Fig. B. Checking for earth ground.

SAFETY CHECK  
(US Model only)

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HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60-100 watt trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. If both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)

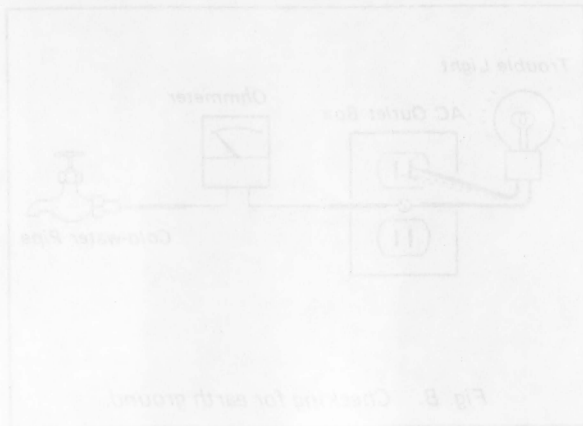


Fig. B - Checking for earth ground

Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.

Check the condition of the monopole antenna (if any).

Make sure the end is not broken off, and hit the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.

Check the B+ and HV to see they are at the values specified. Make sure your instrument are accurate by inspection of your HV meter. It sets always low for HV.

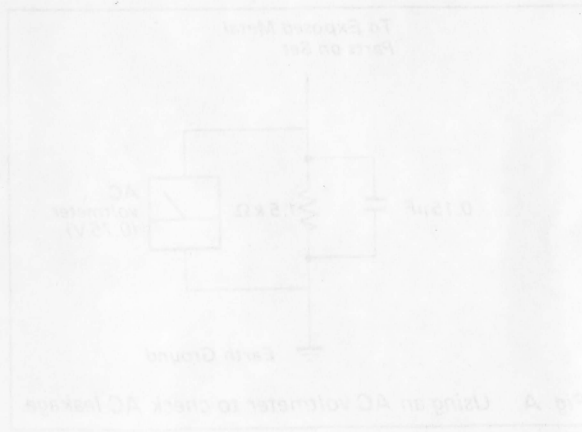
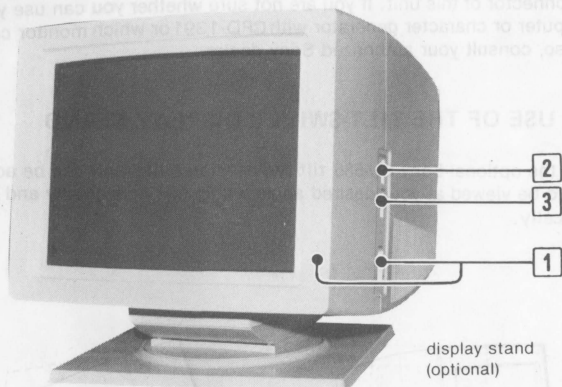


Fig. A - Using an AC voltmeter to check AC leakage

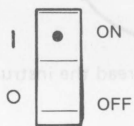
# SECTION 1 GENERAL

## 1-1. LOCATION AND FUNCTION OF CONTROLS

### On the front panel

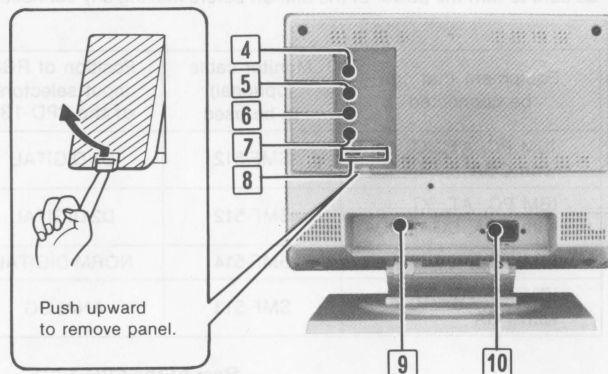


- 1 POWER switch and indicator (green)**  
To turn on the power of the unit, press this switch to ON. The indicator will light up. To turn off the unit, press towards OFF.

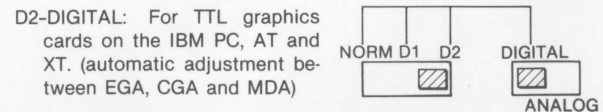
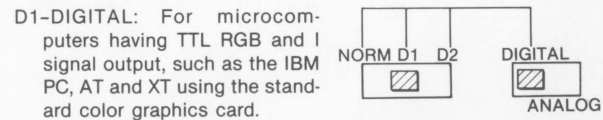
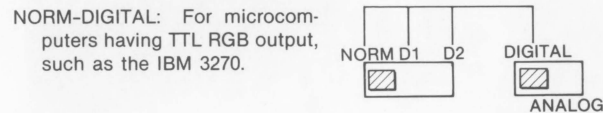
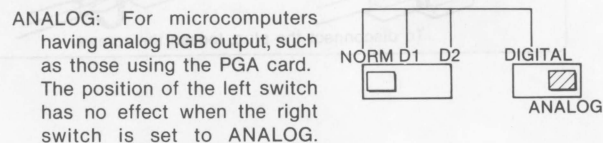


- 2 PICTURE control**  
Adjusts the contrast. Turn downwards to increase contrast, or upwards for less contrast.
- 3 BRIGHTNESS control**  
Normally keep this control at the center detent position. For a brighter display, turn this knob downwards, or for a darker display, turn it upwards.

### On the rear panel



- 4 H SHIFT (horizontal shift) control**  
Turn this control to center the displays of microcomputers, character generators, etc. that are shifted toward the left or right side of the screen.
- 5 V SHIFT (vertical shift) control**  
Turn this control to eliminate any shifting in the vertical direction.
- 6 H SIZE (horizontal size) control**  
Turn this control to adjust the horizontal size.
- 7 V SIZE (vertical size) control**  
Turn this control to adjust the vertical size.
- 8 RGB input selectors**  
Depending on the RGB output of the equipment you have connected, set these switches to one of the following four positions.

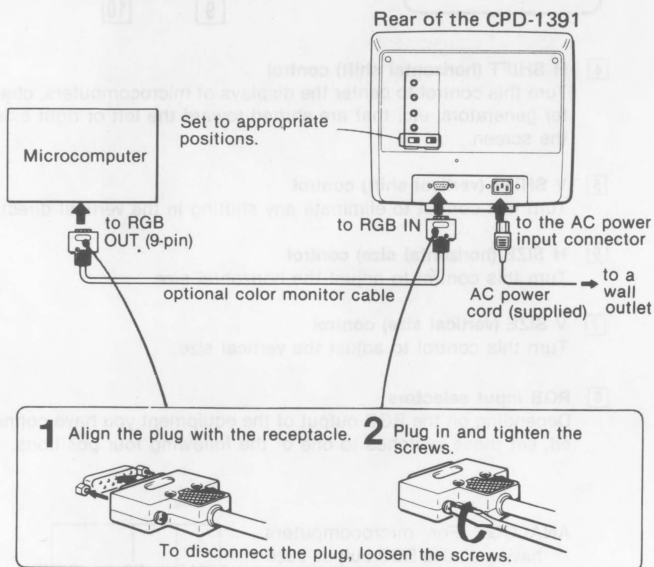


- 9 RGB IN (input) connector (9-pin D-sub)**  
Allows a microcomputer having either analog or digital RGB output to be connected.
- 10 AC IN connector**  
Connect to the AC outlet with the supplied AC power cord.

1-2. CONNECTIONS

Use an appropriate optional color monitor cable with 9-pin D-sub connectors shown in the table. Be sure to turn the power of the unit off before making any connections.

Equipment that can be connected	Monitor cable (optional) to be used	Position of RGB input selectors of the CPD-1391
IBM PC, AT, XT with CGA	SMF-512	D1-DIGITAL
IBM PC, AT, XT with EGA, CGA, MDA	SMF-512	D2-DIGITAL
IBM 3270	SMF-514	NORM-DIGITAL
IBM PC, AT, XT with VGA	SMF-513	ANALOG

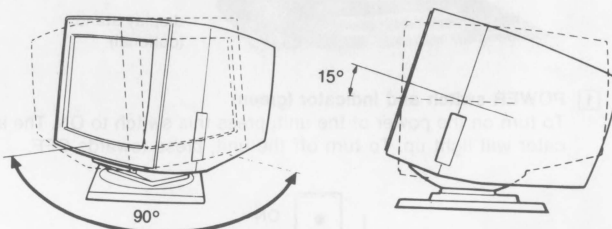


Note

The monitor cable should arrange the RGB output signals of the connected equipment so that they match the signal assignment of the RGB IN connector of this unit. If you are not sure whether you can use your computer or character generator with CPD-1391 or which monitor cable to use, consult your authorized Sony dealer.

1-3. USE OF THE TILT-SWIVEL DISPLAY STAND

With the optional Sony SU-535 tilt-swivel stand, this unit can be adjusted to be viewed at your desired angle within 90° horizontally and 15° vertically.

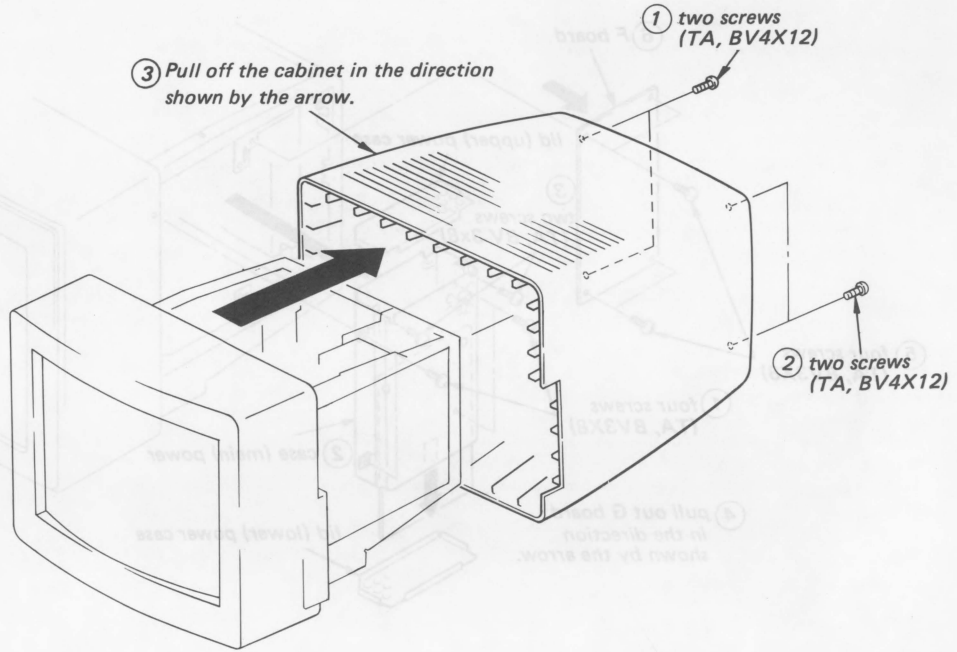


For details, read the instructions of the tilt-swivel.

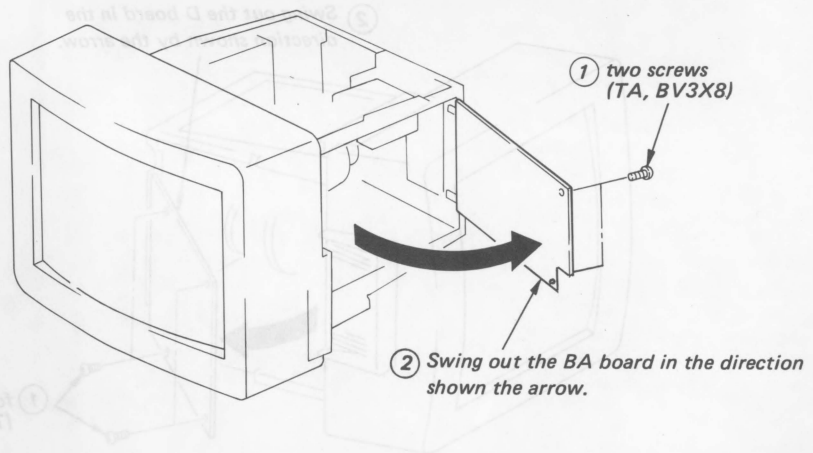
## SECTION 2 DISASSEMBLY

- Follow the disassembly procedure in the numerical order given.

### 2-1. CABINET REMOVAL

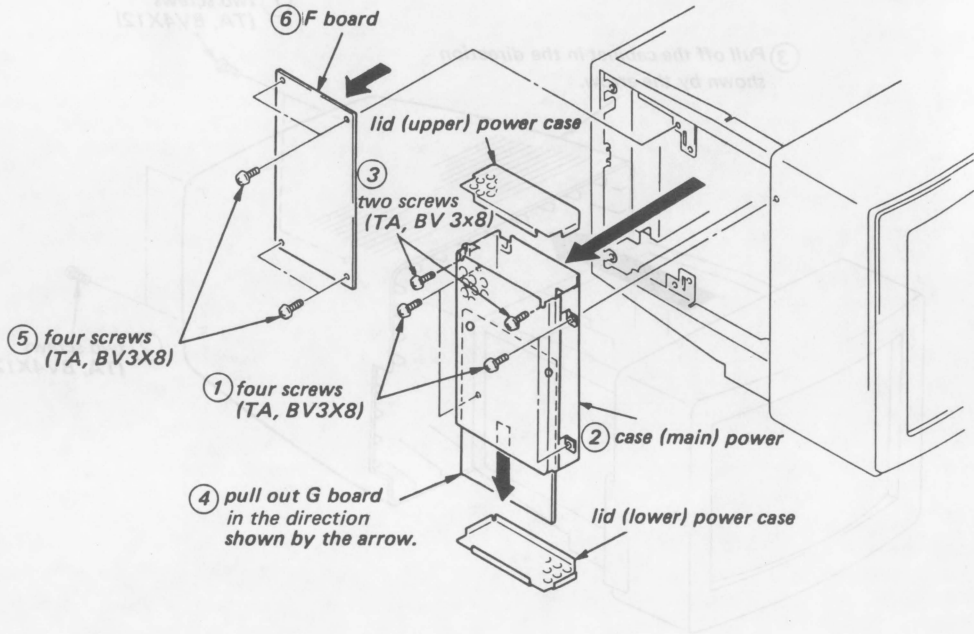


### 2-2. BA BOARD CHECK

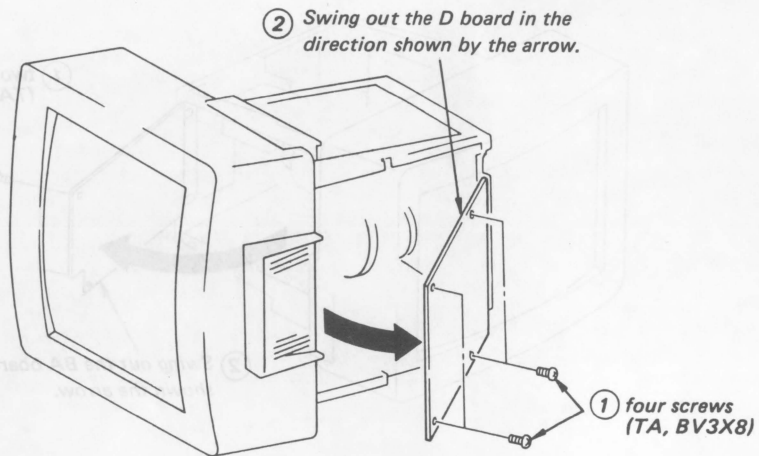


SECTION 2  
DISASSEMBLY

2-3. G AND F BOARDS CHECK

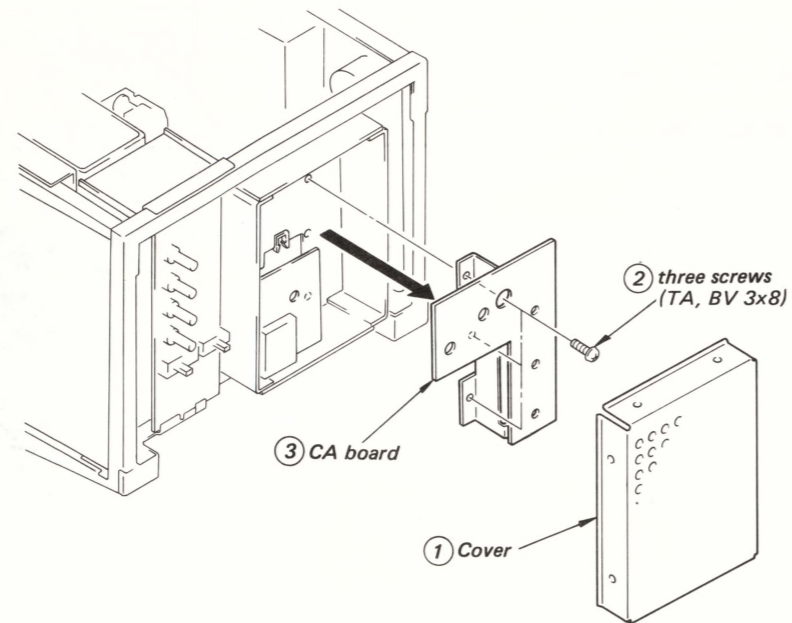


2-4. D BOARD CHECK

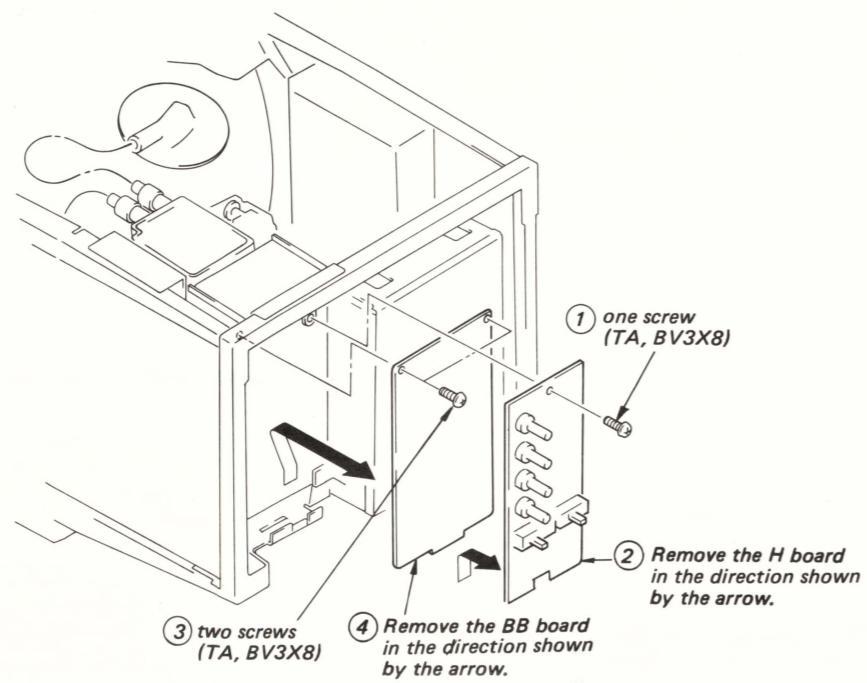




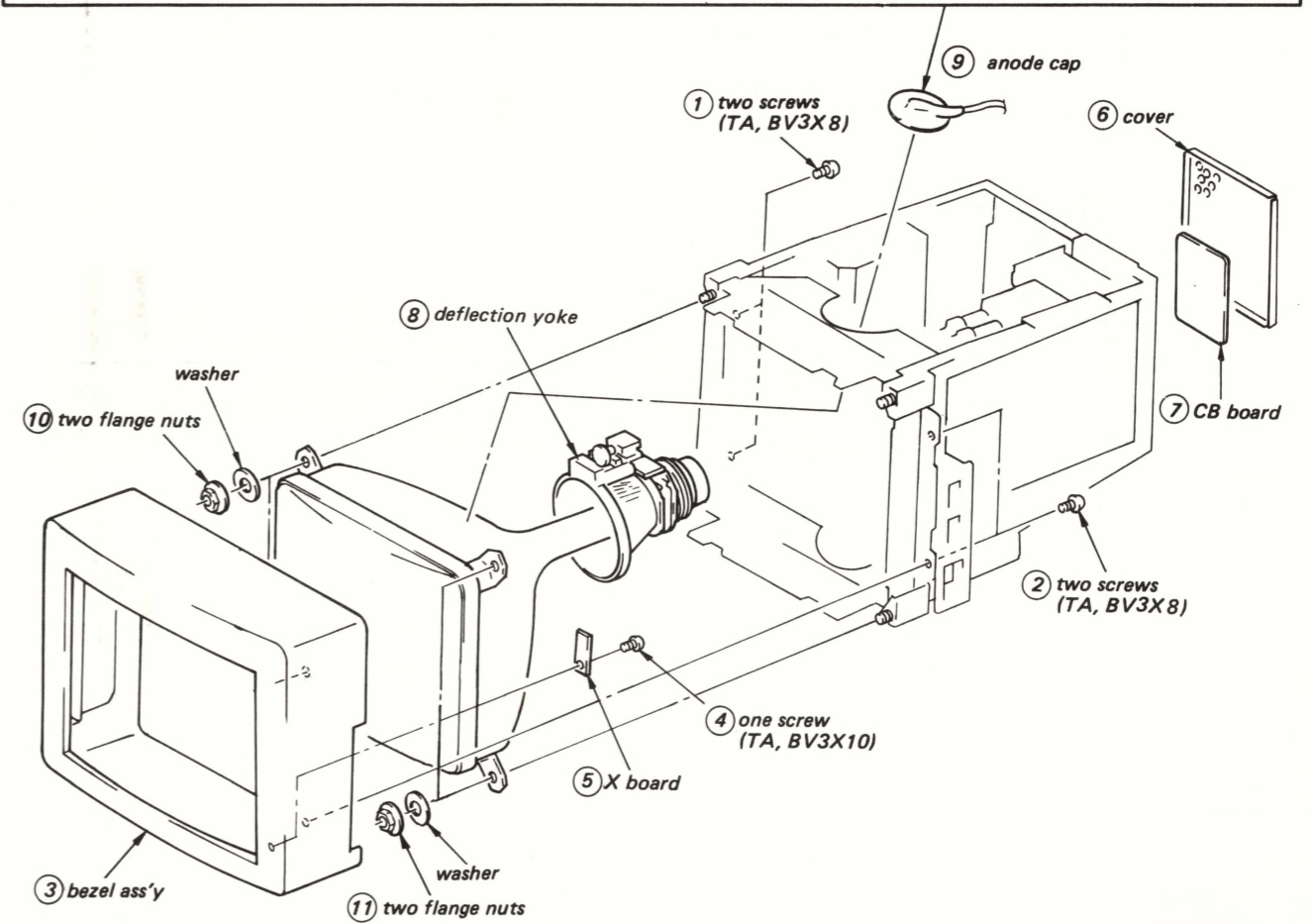
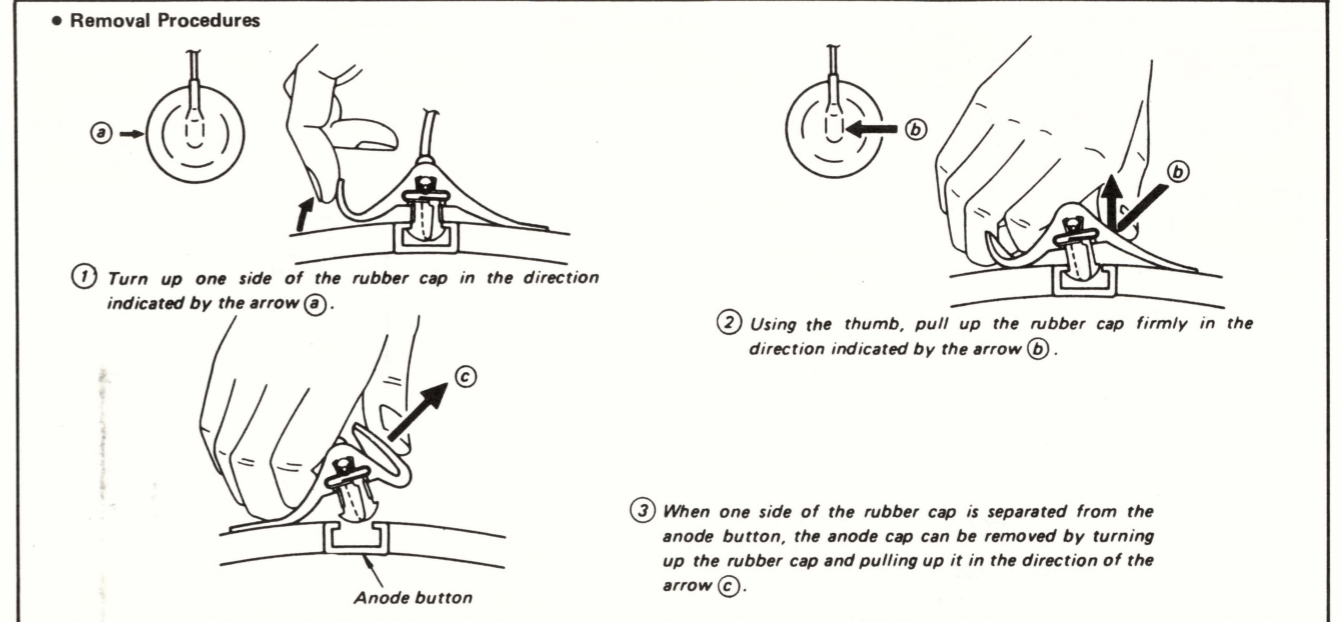
2-5. CA BOARD CHECK



2-6. H AND BB BOARDS CHECK

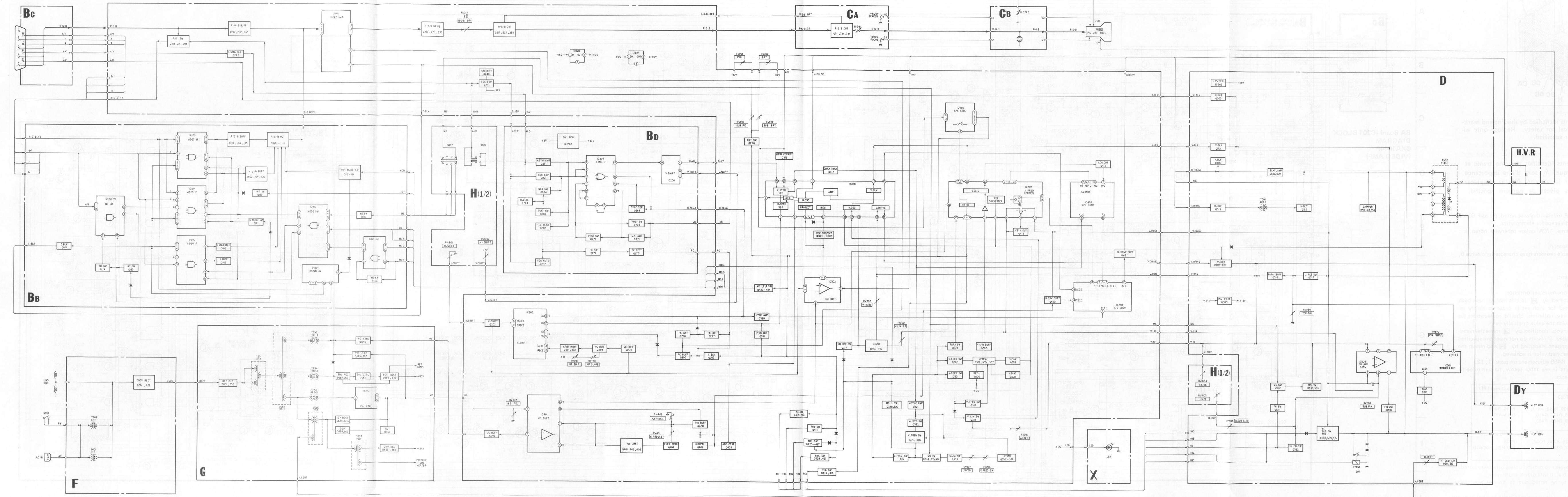


2-7. PICTURE TUBE REMOVAL

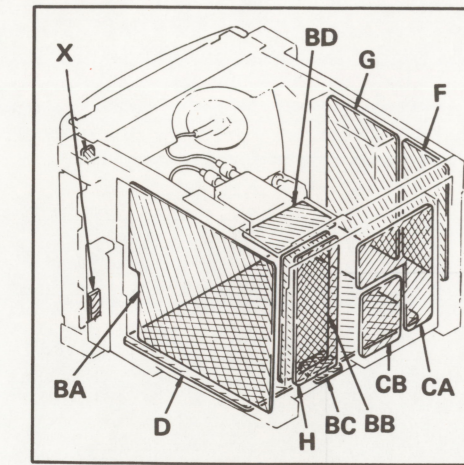


SECTION 4  
DIAGRAMS

4-1. BLOCK DIAGRAM



4-2. CIRCUIT BOARD LOCATIONS



Note: The components identified by shading and marked with a triangle are critical for safety. Replace only with part number specified.

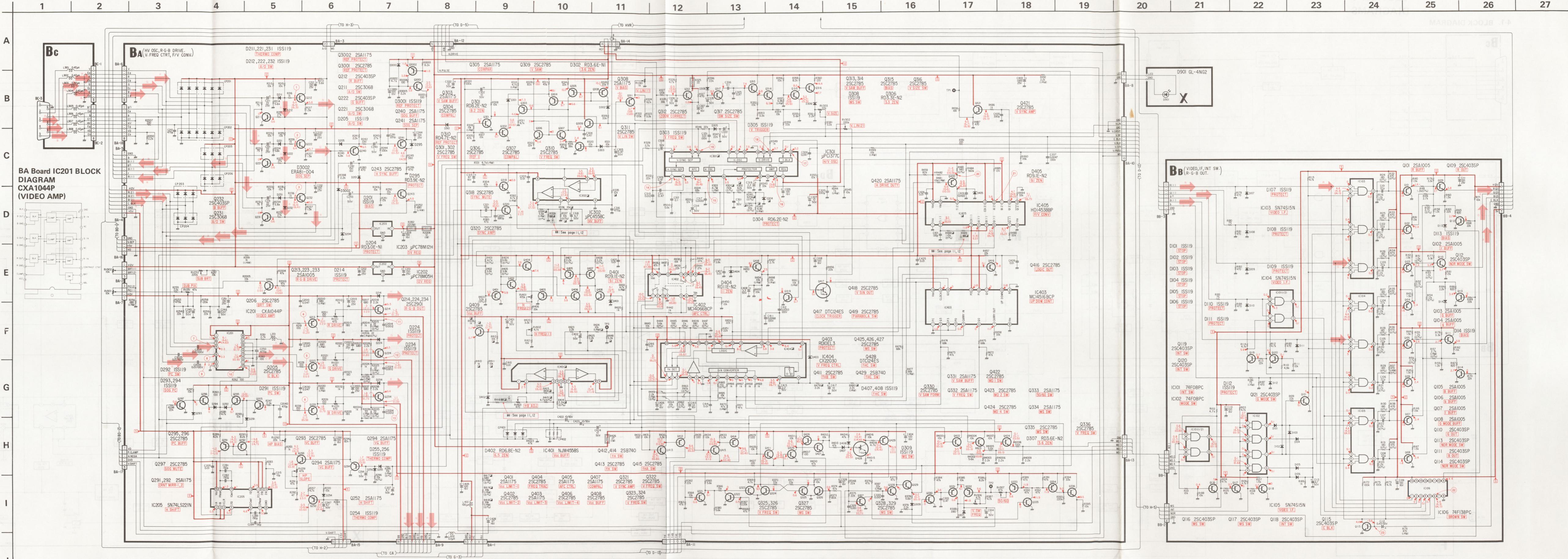
Note: Les composants identifiés par une trame et par une marque  $\Delta$  sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié.

- Note:
- All capacitors are in  $\mu F$  unless otherwise noted. p :  $\mu F$  50VW or less are not indicated except for electrolytics.
  - All resistors are in ohms, 1/6W unless otherwise noted. k : 1000 $\Omega$ , M : 1000k $\Omega$ .
  - $\square$  : nonflammable resistor.
  - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
  - $\square$  : fusible resistor.
  - $\Delta$  : internal component.
  - $\square$  : panel designation.
  - $*$  : selected to yield optimum performance.
  - The components identified by  $\square$  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.
  - When replacing components identified by  $\square$  make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by  $\square$  and repeat the adjustment until the specified value is achieved. (Refer to R339, R416, R489 adjustment on page 11, 12.)
  - When replacing the parts in the table below, be sure to perform the related adjustments.

Part replaced ( $\square$ )	Adjustment ( $\square$ )
(G Board) Q653, R658, R659, T653 (BA Board) IC401, IC404, IC405, Q409, R409, R410, R411, R412, R413, R414, R415, R416, R417, R418, R419, R424, R425, R448, R479, R480, R488, R489.	R416, R489 (+B MAX)
(BA Board) IC301, IC302, R301, R302, R335, R336, R337, R338, R339, R340, R341, R342, D304	R339 (HV HOLD DOWN)
(D Board) R565, R566	

- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a 10 M $\Omega$  digital multimeter.
- Voltage variations may be noted due to normal production tolerances.
- Readings are taken with a color-bar-signal input. (SONY SMC-70)
- $\square$  : adjustment to repair.
- no mark : with 15.73kHz color-bar signal received.
- ( ) : with 21.8kHz color-bar signal received.
- ( ) : with 30.12kHz color-bar signal received.
- $\rightarrow$  : signal path.

4-3. SCHEMATIC DIAGRAM



44. PRINTED WIRING BOARDS

**BA** [HV. OSC, R-G-B DRIVE, V. FREQ CTRT, F/V CONV.]

**BB** [Video, IF, INT SW.]

**BC** [R-G-B OUT.]

**X**

CPD-1390

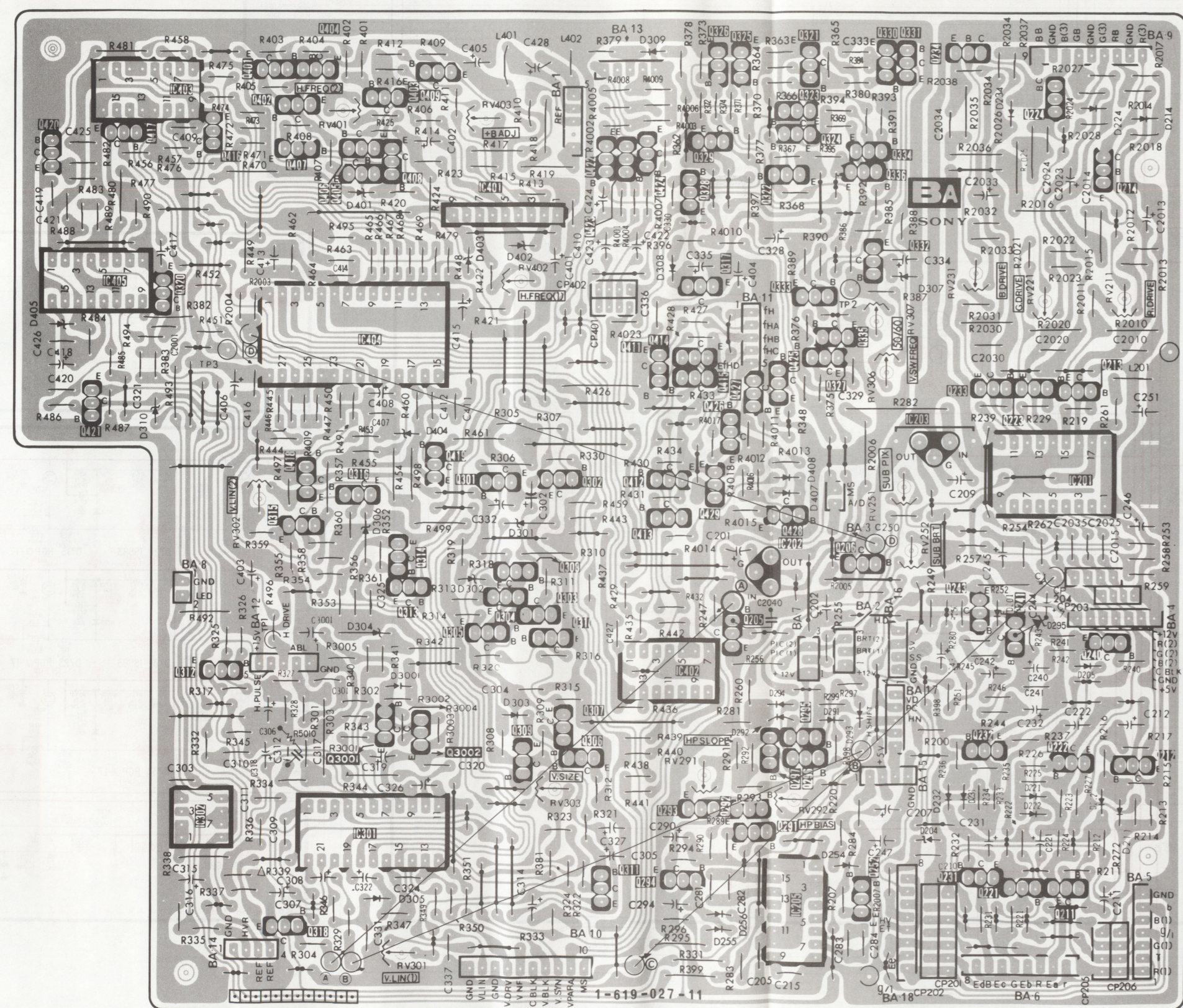
CPD-1390

CPD-1390

CPD-1390

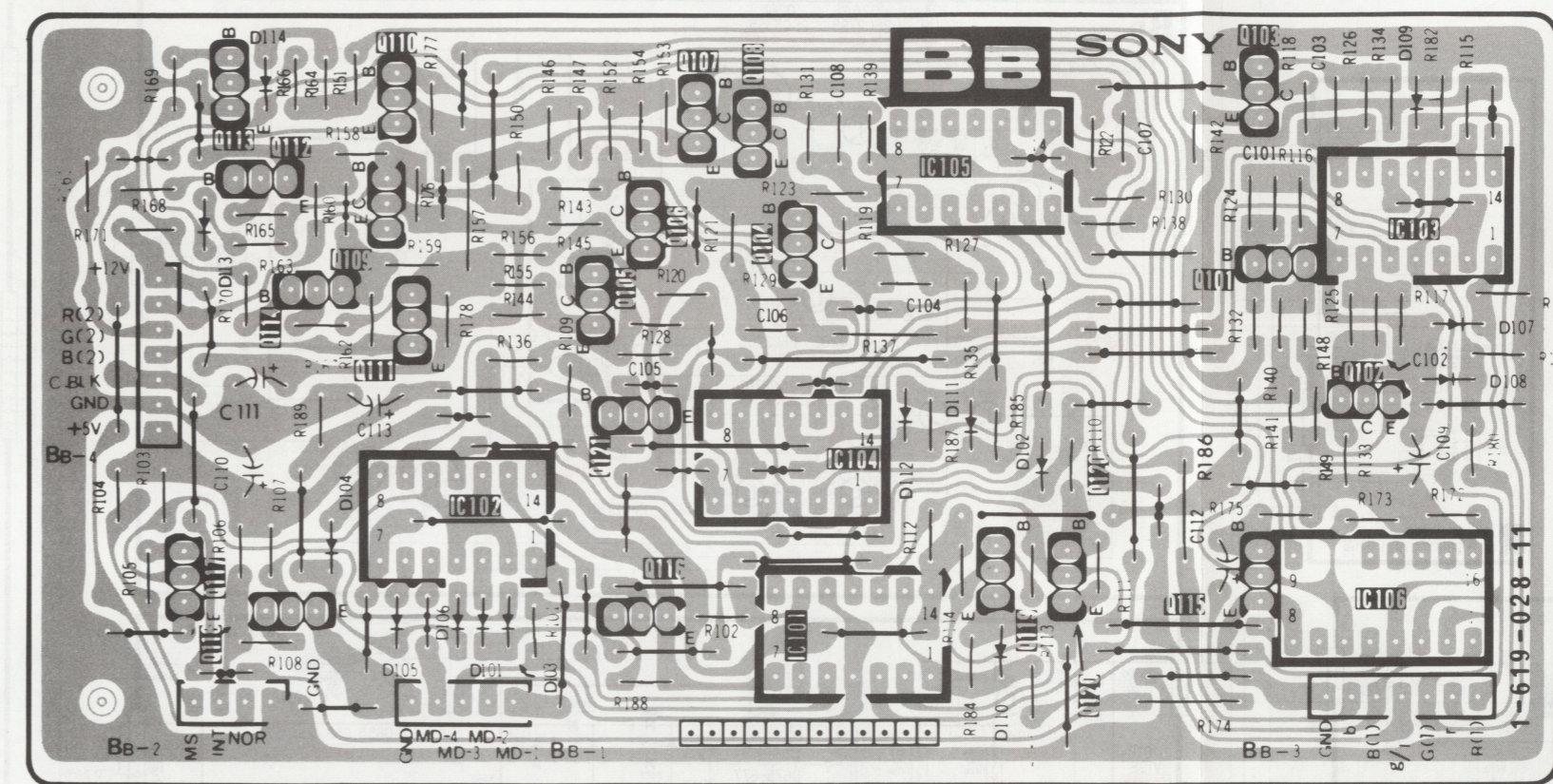
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27

- BA Board -

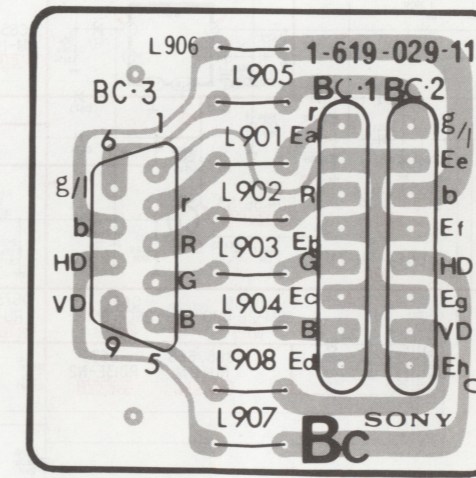


IC, Q	D	ADJ
401, 409, 325, 234	309	
404, 403, 321		RV401
402, 330, 224		RV403
IC403	224	
420, 417, 329, 323	234	
416	214	
407, 406, 422, 334		
408, 423, 336		
405, 424, 214		
322		
IC401	401	
320		
332		
IC405	402	RV402
317	403	RV231
333	308	RV221
405	307	RV211
IC404	405	RV307
411, 425		
414, 425		
415, 427		
233	310	RV306
223		
213		
421	404	
426		
419	408	RV302
IC201	407	RV251
418, 429		
316, 301	412	
315, 302, 428	306	
413		
314	206	RV252
308	302	
IC202		
313, 303		
304, 243	201	
305, 310, 205, 241	240	
240	304	
205		
312	3001	
IC402	294	
3001, 307	303	
3002, 297	292	
306, 295, 232	291	
309, 296, 222		
212		
IC302	232	RV303
293	231	RV291
IC301	221	
291	211	
	212	
	211	
	204	
	254	
311	305	
IC205	231	
294, 252, 221	256	
211	255	
318		RV301
IC, Q	D	ADJ

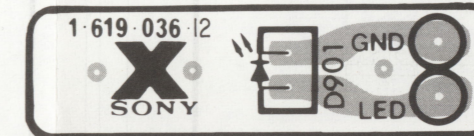
- BB Board -



- BC Board -



- X Board -



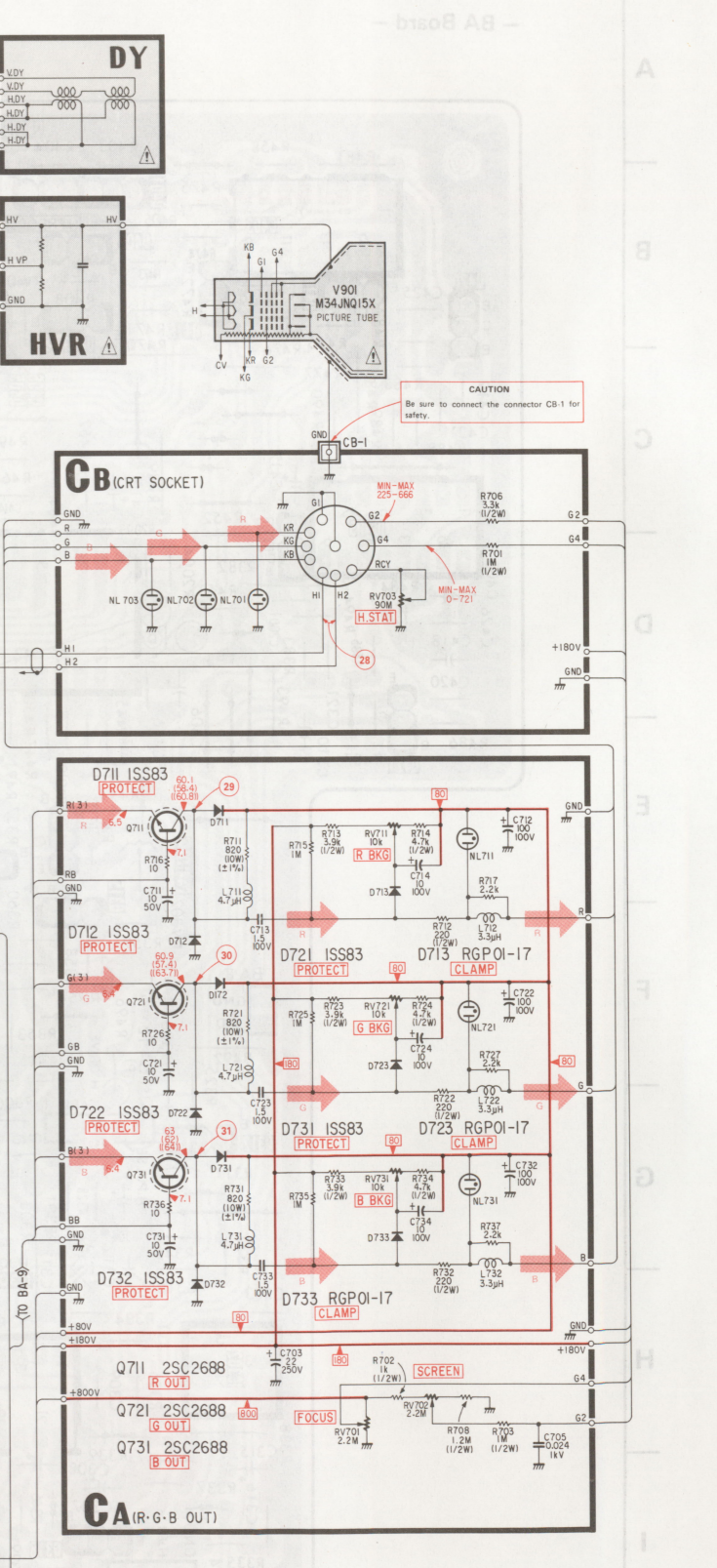
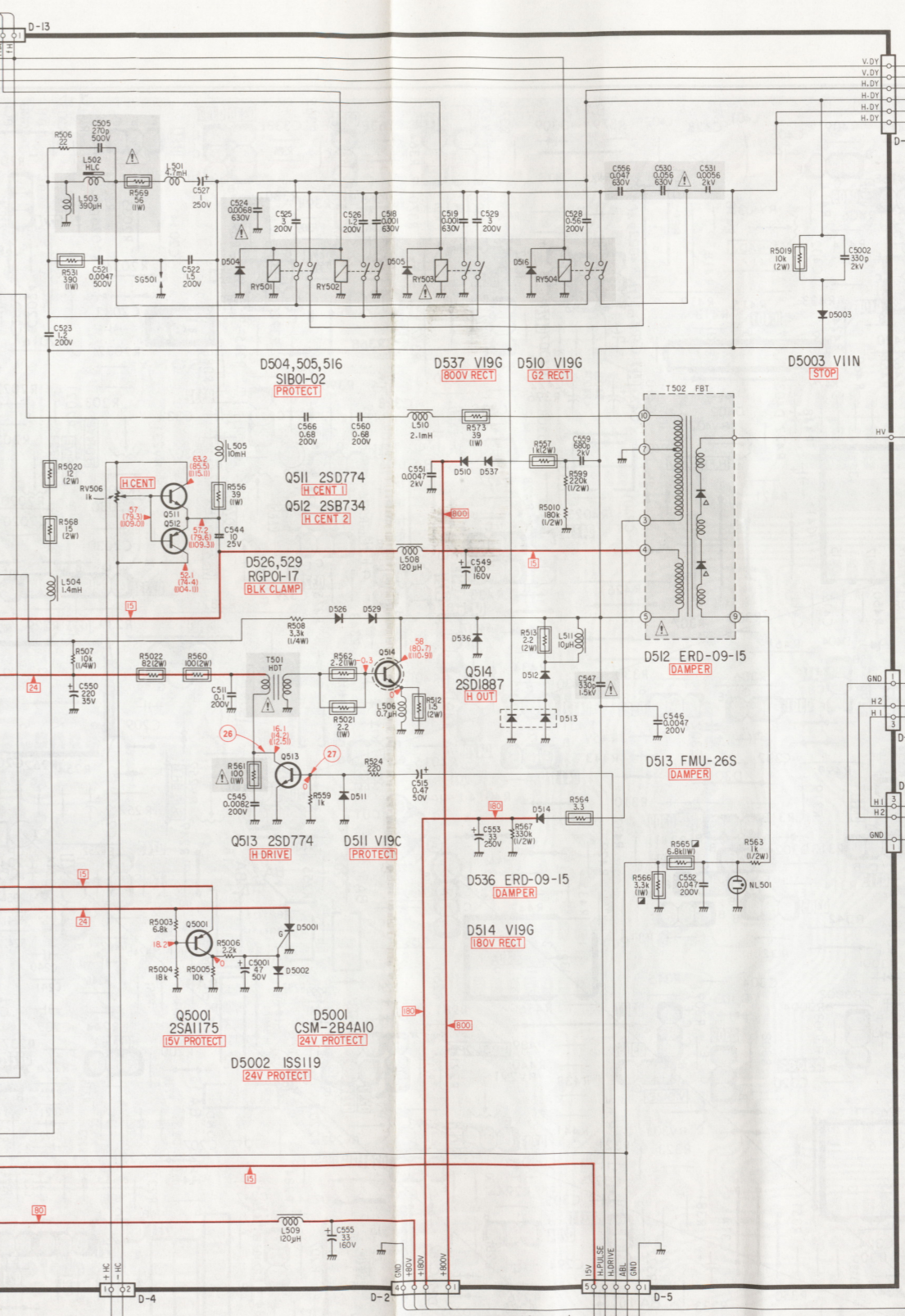
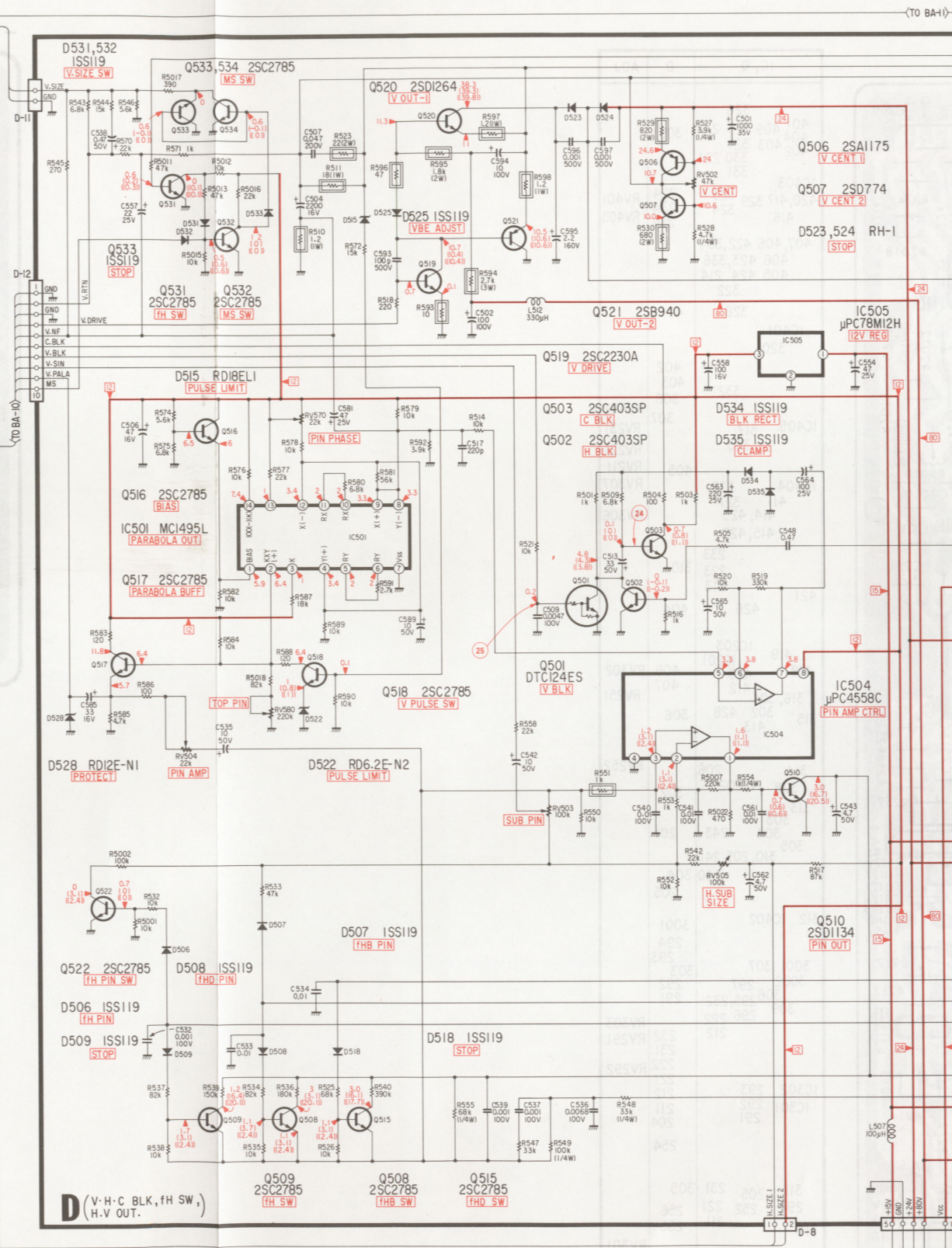
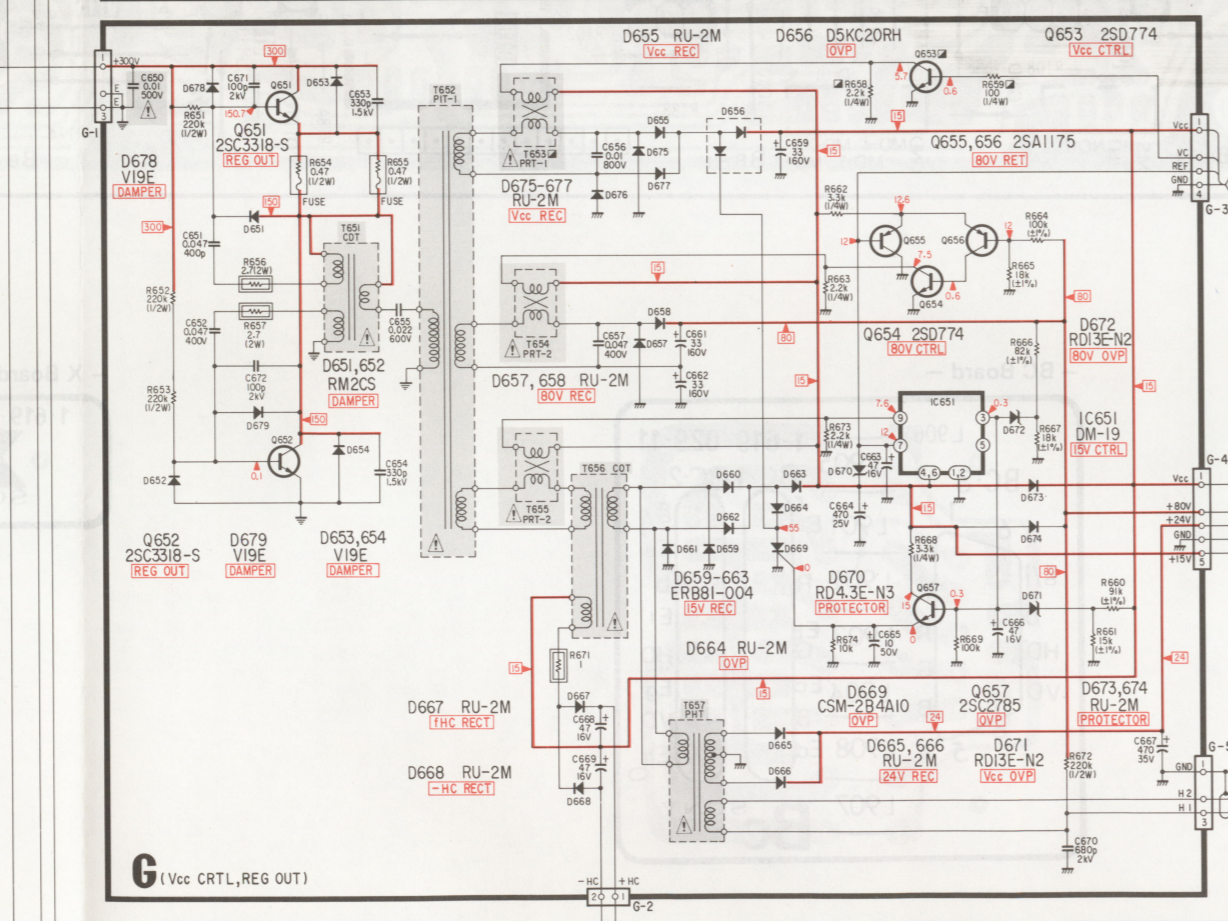
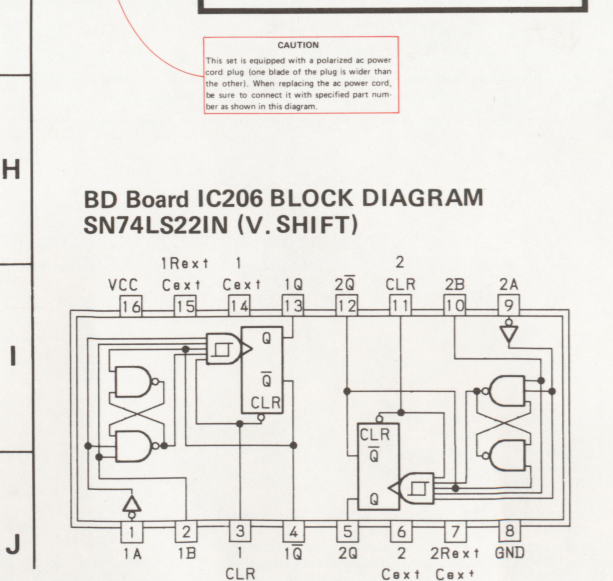
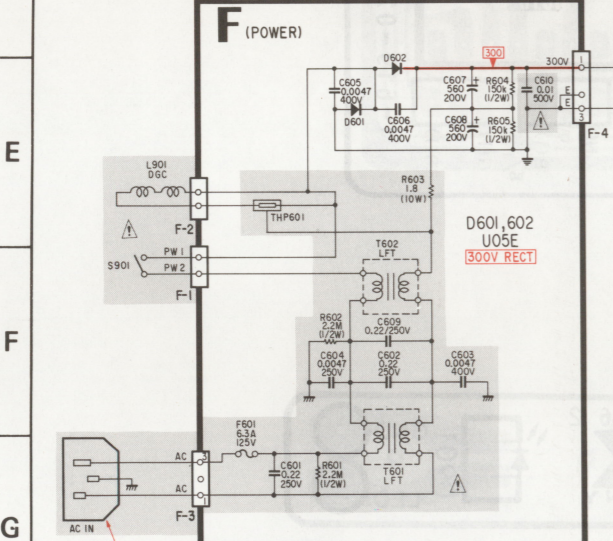
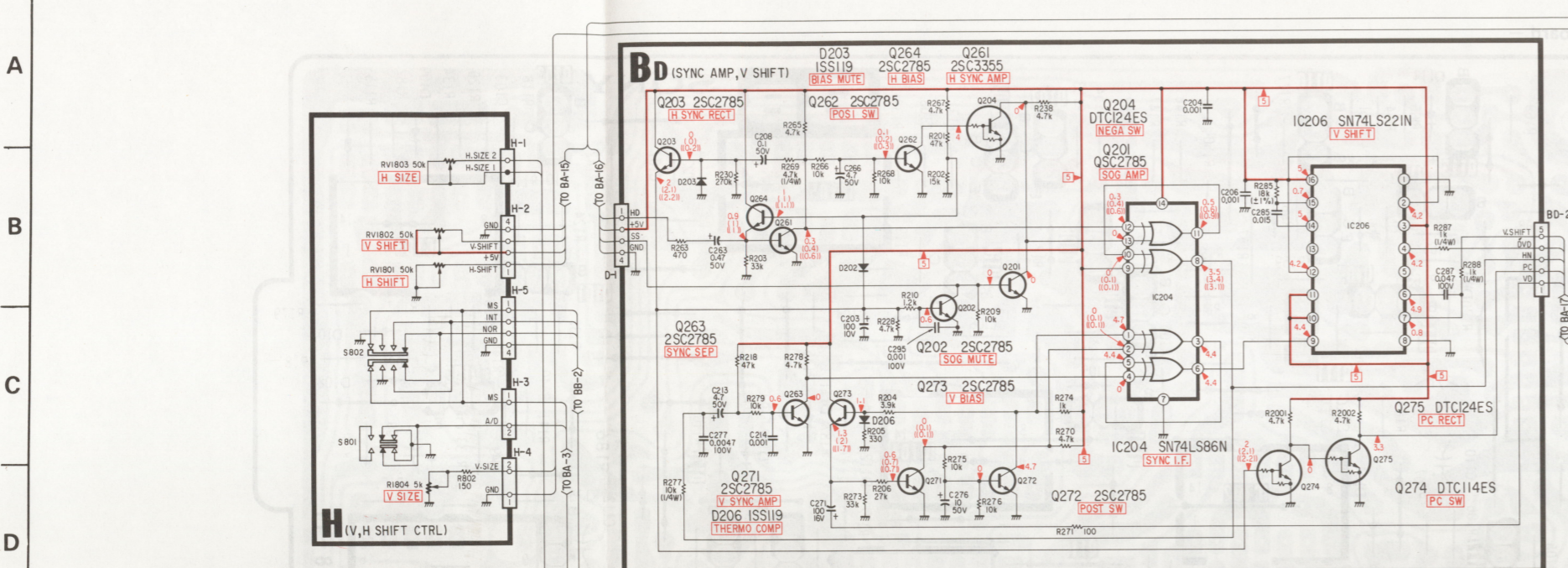
Note: The components identified by shading and marked with a triangle are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et par une marque triangle sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié.

- Note:
- All capacitors are in  $\mu F$  unless otherwise noted. p :  $\mu F$  50WV or less are not indicated except for electrolytics.
  - All resistors are in ohms, 1/6W unless otherwise noted. k : 1000 $\Omega$ , M : 1000k $\Omega$ .
  - : nonflammable resistor.
  - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
  - ~ : fusible resistor.
  - △ : internal component.
  - : panel designation.
  - \* : selected to yield optimum performance.
  - The components identified by □ 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.
  - 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 R339, R416, R489 adjustment on page 11, 12.)
  - When replacing the parts in the table below, be sure to perform the related adjustments.

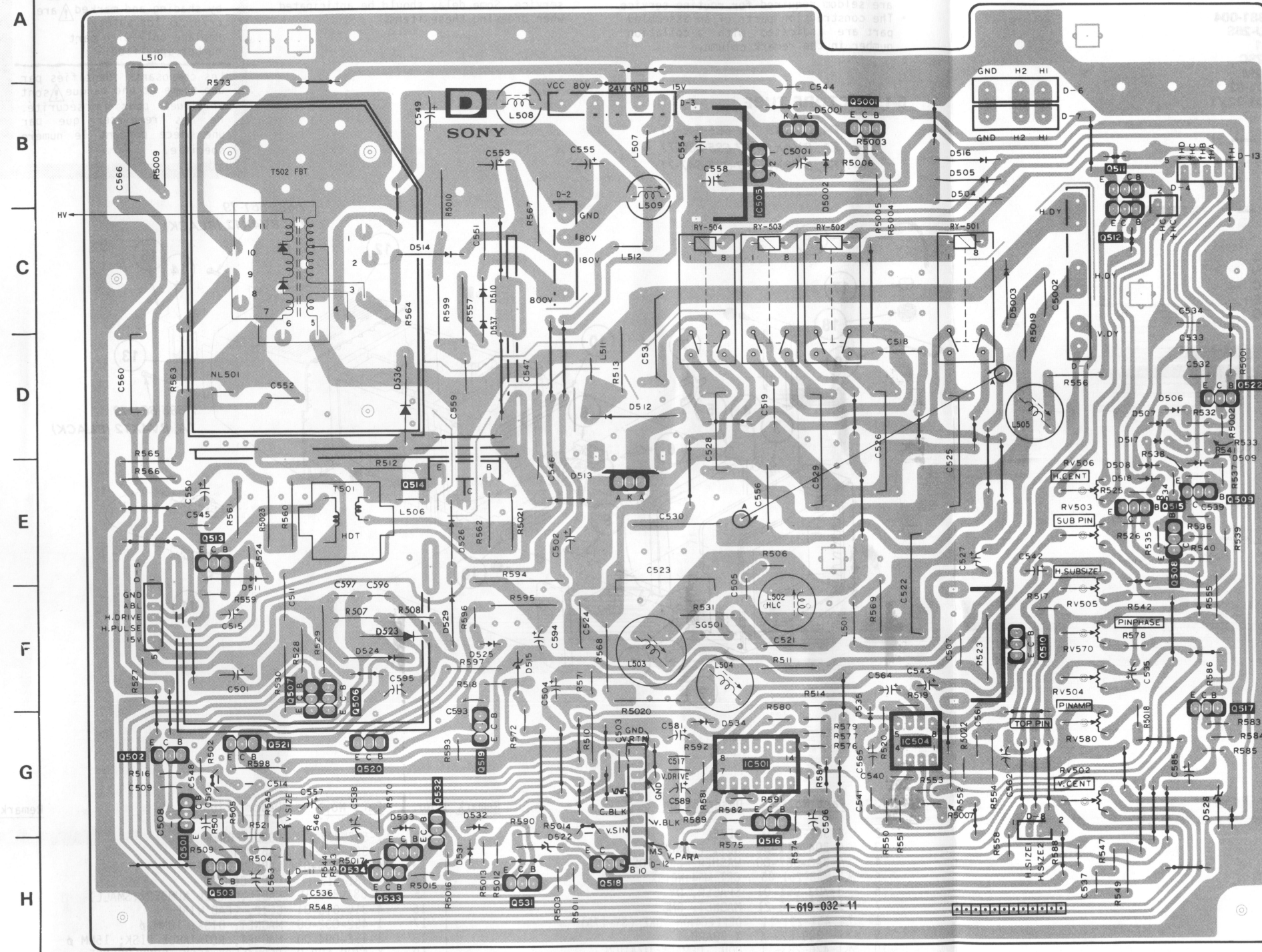
Part replaced (□)	Adjustment (□)
(G Board) Q653, R658, R659, T653 (BA Board) IC401, IC404, IC405, Q409, R409, R410, R411, R412, R413, R414, R415, R416, R417, R418, R419, R424, R425, R448, R479, R480, R488, R489.	R416, R489 (+B MAX)
(BA Board) IC301, IC302, R301, R302, R335, R336, R337, R338, R339, R340, R341, R342, D304 (D Board) R565, R566	R339 (HV HOLD DOWN)

- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a 10 M $\Omega$  digital multimeter.
- Voltage variations may be noted due to normal production tolerances.
- Readings are taken with a color-bar-signal input. (SONY SMC-70)
- □ : adjustment to repair.
- no mark : with 15.73kHz color-bar signal received.
- ( ) : with 21.8kHz color-bar signal received.
- ( ) : with 30.12kHz color-bar signal received.
- ● : signal path.

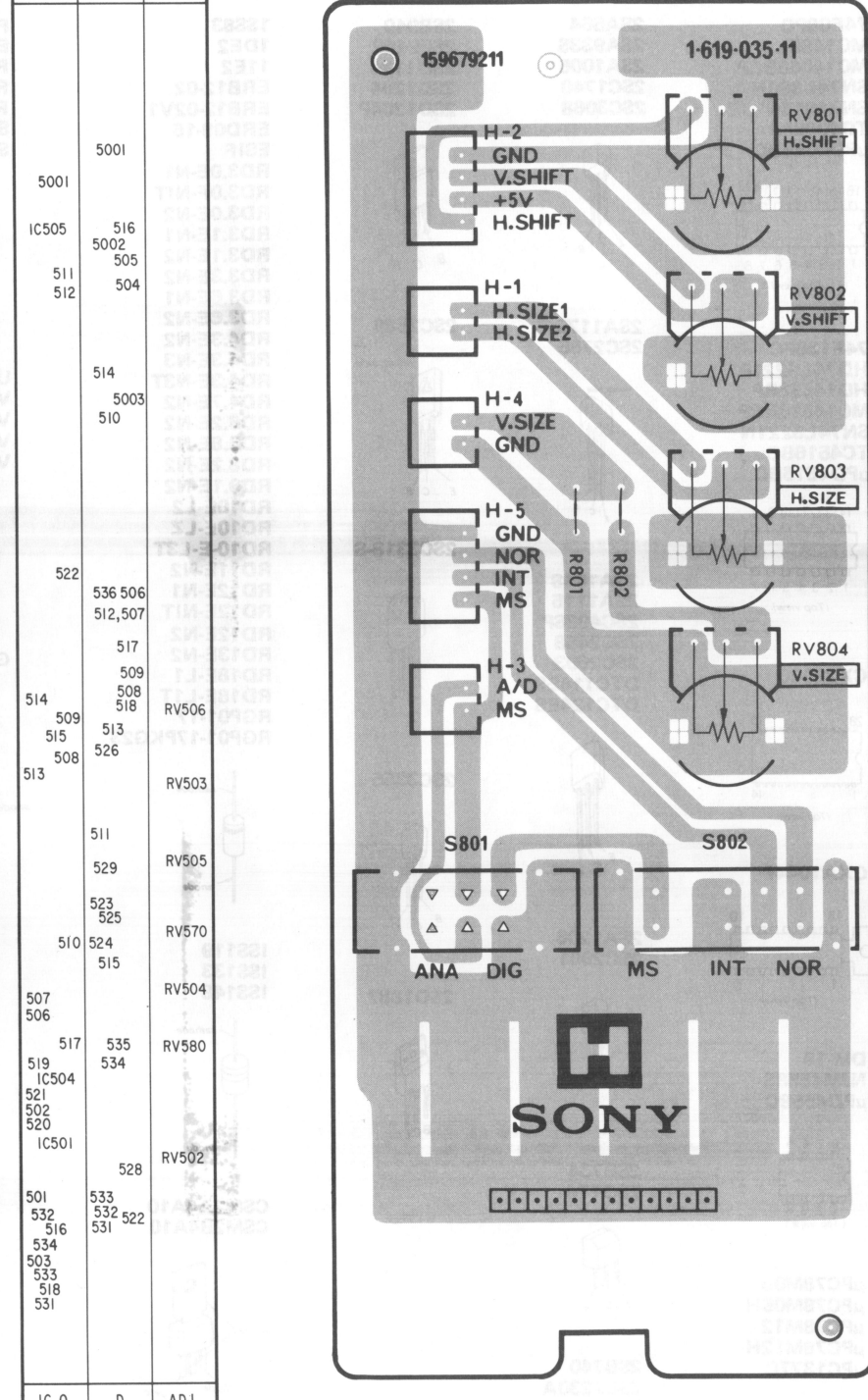


**D** [V-H-C BLK, FH SW, H.V. OUT.]    **H** [V, H SHIFT CRTL.]    **G** [Vcc CRTL, REG OUT]    **CB** [CRT SOCKET]    **BD** [SYNC AMP, V SHIFT.]    **F** [POWER]    **CA** [R-G-B OUT.]

- D Board -

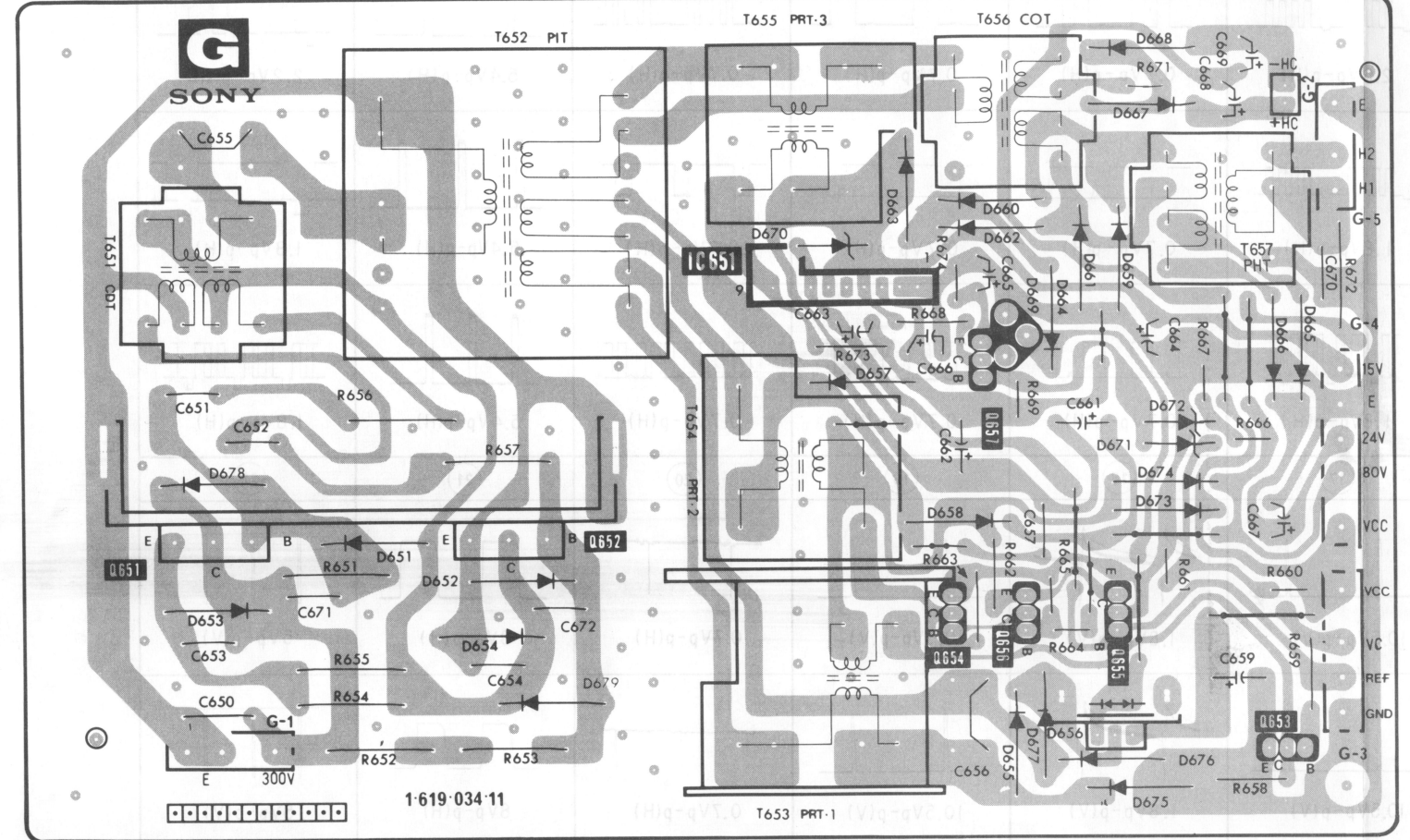


- H Board -

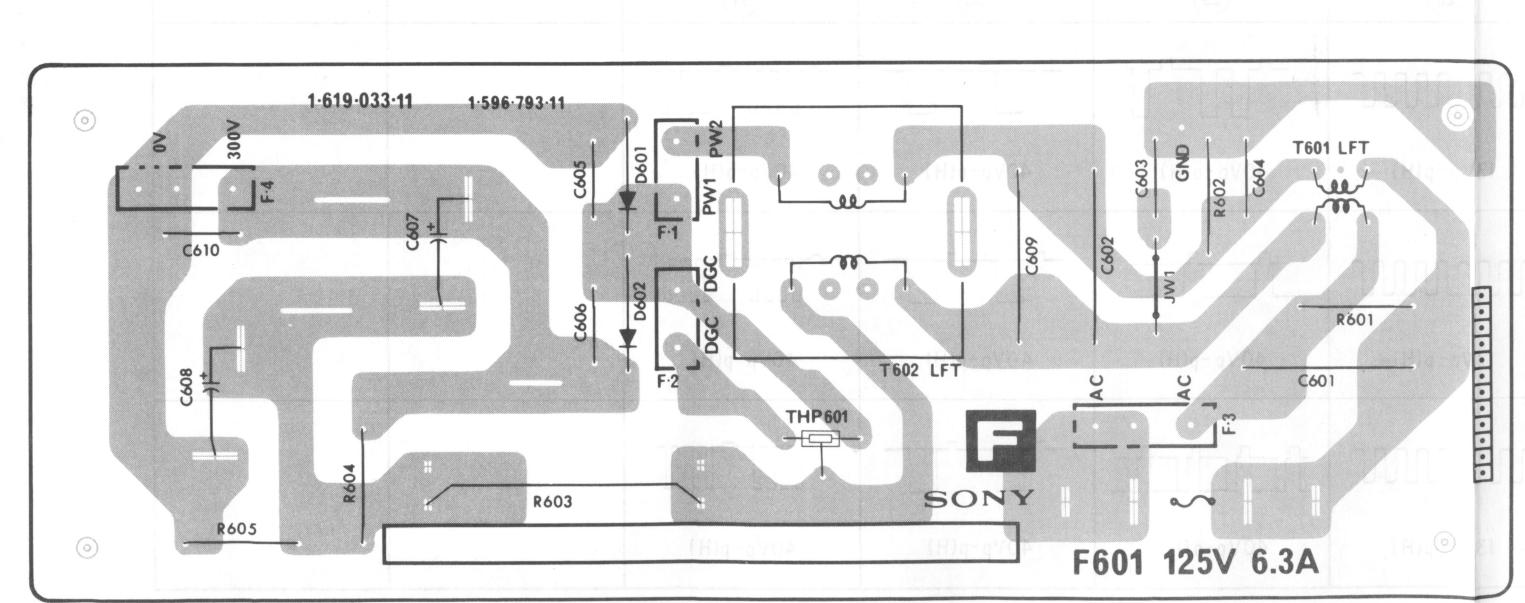


IC, Q	D	ADJ
5001		
5001		
IC505	516	
5002	505	
511	504	
512		
514	5003	
510		
522		
536	506	
512,507		
517		
509	RV506	
518		
514	513	
509	515	
513	RV503	
526		
511	RV505	
529		
523	RV505	
525		
510	RV570	
514		
507	RV504	
506		
517	RV580	
519	IC504	
521	534	
502		
520	RV502	
IC501		
501	533	
532	532	
516	531	
534		
503		
535		
518		
531		

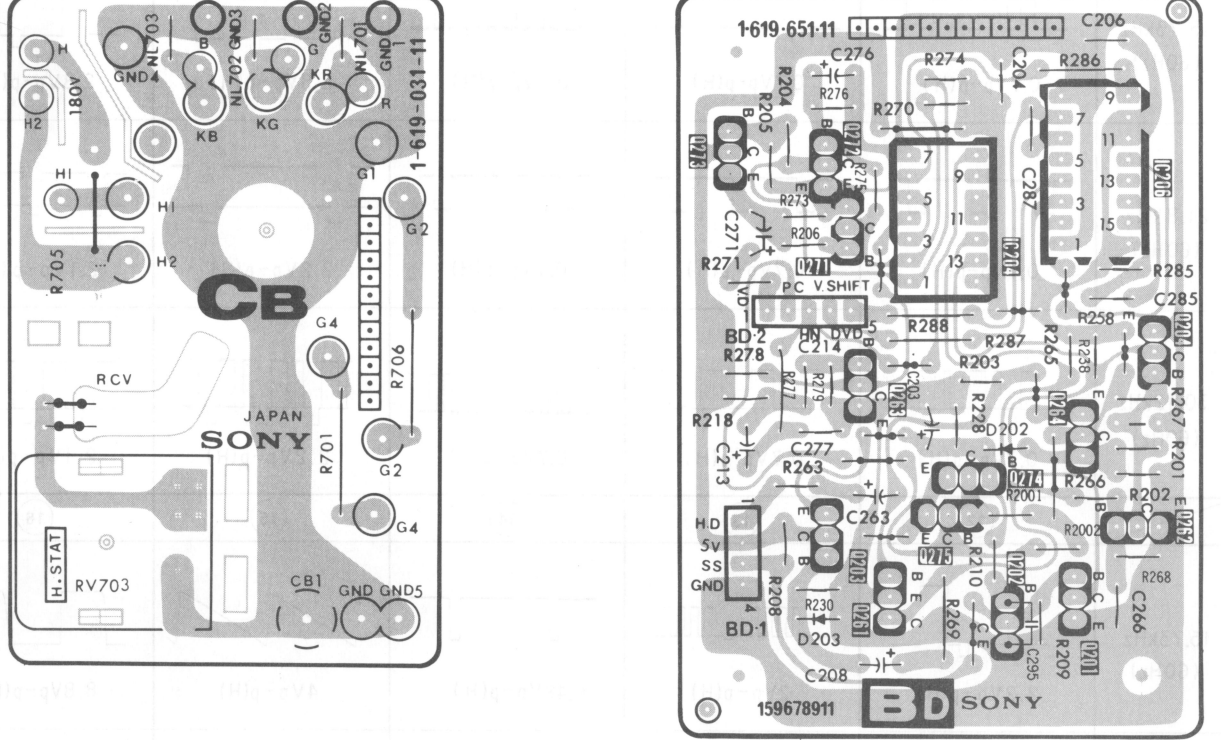
- G Board -



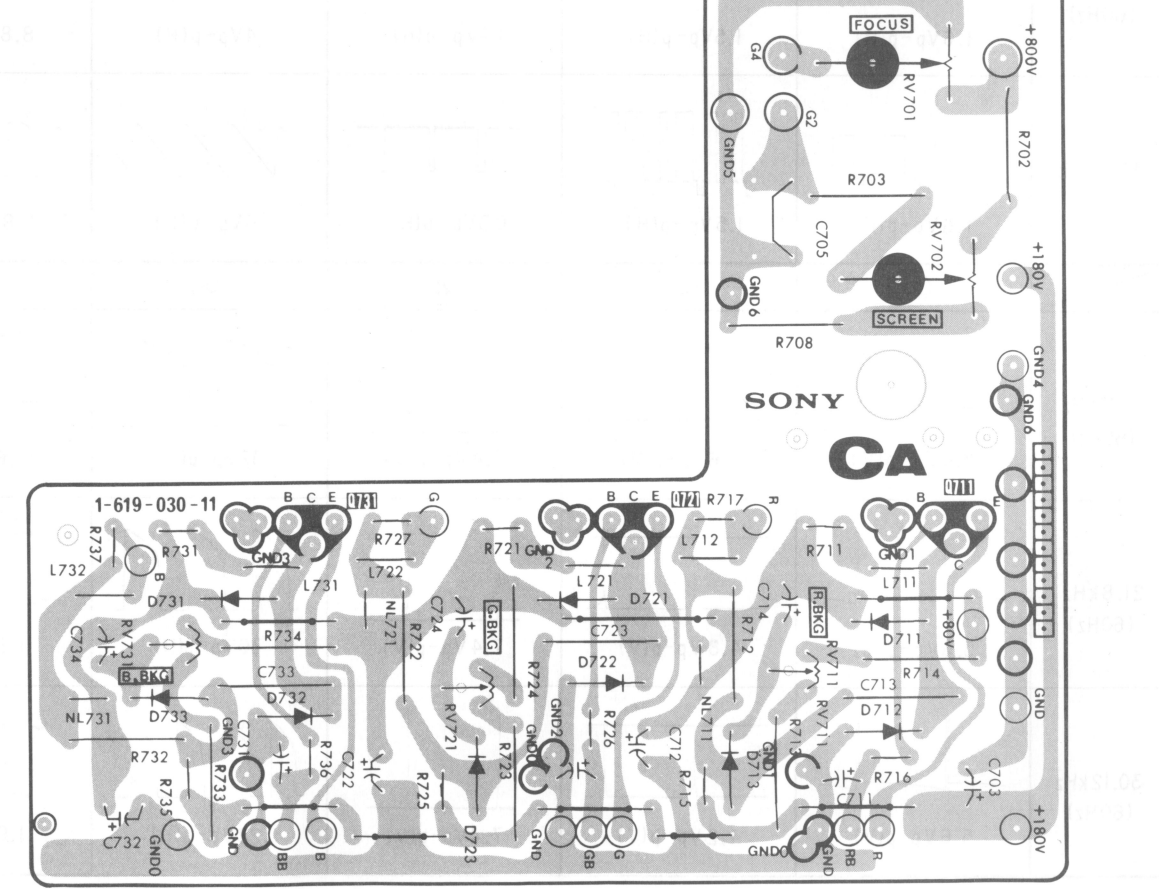
- F Board -



- BD Board -



- CA Board -



4-5. WAVE FORM

	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪
15.73kHz (60Hz)											
	0.7Vp-p(H)	0.7Vp-p(H)	0.7Vp-p(H)	2.8Vp-p(H)	2.8Vp-p(H)	2.6Vp-p(H)	0.7Vp-p(H)	0.7Vp-p(H)	0.7Vp-p(H)	5.4Vp-p(H)	2.2Vp-p(H)
21.8kHz (60Hz)											
	0.7Vp-p(H)	0.7Vp-p(H)	0.7Vp-p(H)	2.2Vp-p(H)	2.1Vp-p(H)	1.8Vp-p(H)	0.7Vp-p(H)	0.7Vp-p(H)	0.7Vp-p(H)	5.4Vp-p(H)	1.8Vp-p(H)
30.12kHz (60Hz)											
	0.7Vp-p(H)	0.7Vp-p(H)	0.7Vp-p(H)	2.2Vp-p(H)	2.1Vp-p(H)	1.8Vp-p(H)	0.7Vp-p(H)	0.7Vp-p(H)	0.7Vp-p(H)	5.4Vp-p(H)	1.8Vp-p(H)
15.73kHz (60Hz)											
	2.2Vp-p(H)	2Vp-p(H)	0.48Vp-p(H)	4Vp-p(H)	8.8Vp-p(H)	10.5Vp-p(V)	1.8Vp-p(V)	10.5Vp-p(V)	0.7Vp-p(H)	8Vp-p(H)	5Vp-p(V)
21.8kHz (60Hz)											
	1.6Vp-p(H)	1.5Vp-p(H)	0.4Vp-p(H)	4Vp-p(H)	8.8Vp-p(H)	10.5Vp-p(V)	1.8Vp-p(V)	10.5Vp-p(V)	0.7Vp-p(H)	8Vp-p(H)	5Vp-p(V)
30.12kHz (60Hz)											
	1.6Vp-p(H)	1.5Vp-p(H)	0.3Vp-p(H)	4Vp-p(H)	8.8Vp-p(H)	10.5Vp-p(V)	1.8Vp-p(V)	10.5Vp-p(V)	0.7Vp-p(H)	8Vp-p(H)	5Vp-p(V)
15.73kHz (60Hz)											
	5.6Vp-p(V)	5.6Vp-p(V)	7.4Vp-p(V)	32Vp-p(H)	1.6Vp-p(H)	13Vp-p(H)	40Vp-p(H)	40Vp-p(H)	40Vp-p(H)	40Vp-p(H)	40Vp-p(H)
21.8kHz (60Hz)											
	5.6Vp-p(V)	4.8Vp-p(V)	7.4Vp-p(V)	30Vp-p(H)	1.6Vp-p(H)	13Vp-p(H)	40Vp-p(H)	40Vp-p(H)	40Vp-p(H)	40Vp-p(H)	40Vp-p(H)
30.12kHz (60Hz)											
	5.6Vp-p(V)	4.2Vp-p(V)	7.4Vp-p(V)	28Vp-p(H)	1.6Vp-p(H)	13Vp-p(H)	40Vp-p(H)	40Vp-p(H)	40Vp-p(H)	40Vp-p(H)	40Vp-p(H)

4-6. SEMICONDUCTORS

<p><b>74F08PC</b> MC1495L MC14066BCP SN74LS88N SN74LS15N TC4066BP μPD4066BC</p> <p>16 15 14 13 12 11 10 9 1 2 3 4 5 6 7 8 (Top view)</p>	<p><b>2SA564</b> 2SA933S 2SA1005 2SC1740 2SC3068</p>	<p><b>2SB940</b> 2SB940P 2SD1134 2SD1264 2SD1264P</p>	<p><b>1SS83</b> 1DE2 11E2 ERB12-02 ERB12-02V1 ERD09-15 ESIF RD3.0E-N1 RD3.0F-NIT RD3.0E-N2 RD3.1E-N1 RD3.1E-N2 RD3.3E-N2 RD3.6E-N1 RD3.6E-N2 RD4.3E-N2 RD4.3E-N3 RD4.3E-N3T RD4.7E-N2 RD6.2E-N2 RD6.8E-N2 RD8.2E-N2 RD9.1E-N2 RD10E-L2 RD10E-LZ RD10E-L3T RD11E-N2 RD12E-N1 RD12E-NIT RD12E-N2 RD13E-N2 RD18E-L1 RD18E-L1T RGP01-17 RGP01-17PKG23</p>	<p><b>FRB81-004</b> EMU-28S RM-1 RM2SC RU-2M SIB01-02 SIB01-02V1</p>
<p><b>74F138PC</b> HD74LS221P HD14538BP MC14518BCP SN74LS221N TC4518BC μPD4518BC</p> <p>14 13 12 11 10 9 8 1 2 3 4 5 6 7 (Top view)</p>	<p><b>2SA1175</b> 2SC2785</p>	<p><b>2SC2688</b></p>	<p><b>2SC3318-S</b></p>	<p><b>U05E</b> V11N V19C V19E V19G</p>
<p><b>CX22030</b></p> <p>15 14 (Top view)</p>	<p><b>2SA1048</b> 2SA1115 2SC403SP 2SC2458 2SC2803 DTC114ES DTC124ES</p>	<p><b>2SC3355</b></p>	<p><b>ISS119</b> ISS133 ISS148</p>	<p><b>GL-4NG2</b></p>
<p><b>CXA1044P</b></p> <p>18 10 (Top view)</p>	<p><b>2SA1206</b> 2SC2901</p>	<p><b>2SD1887</b></p>	<p><b>CSM2A4A10</b> CSM2B4A10</p>	<p><b>DM-19</b> NJM4558S μPD4558C</p> <p>8 7 6 5 4 3 2 1 (Top view)</p>
<p><b>μPC78M05</b> μPC78M05H μPC78M12 μPC78M12H μPC1377C</p> <p>22 12 (Top view)</p>	<p><b>2SB734</b> 2SD774</p>	<p><b>D5KC20RH</b></p>	<p><b>2SB740</b> 2SC2230A 2SD789</p>	

SECTION 5  
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.

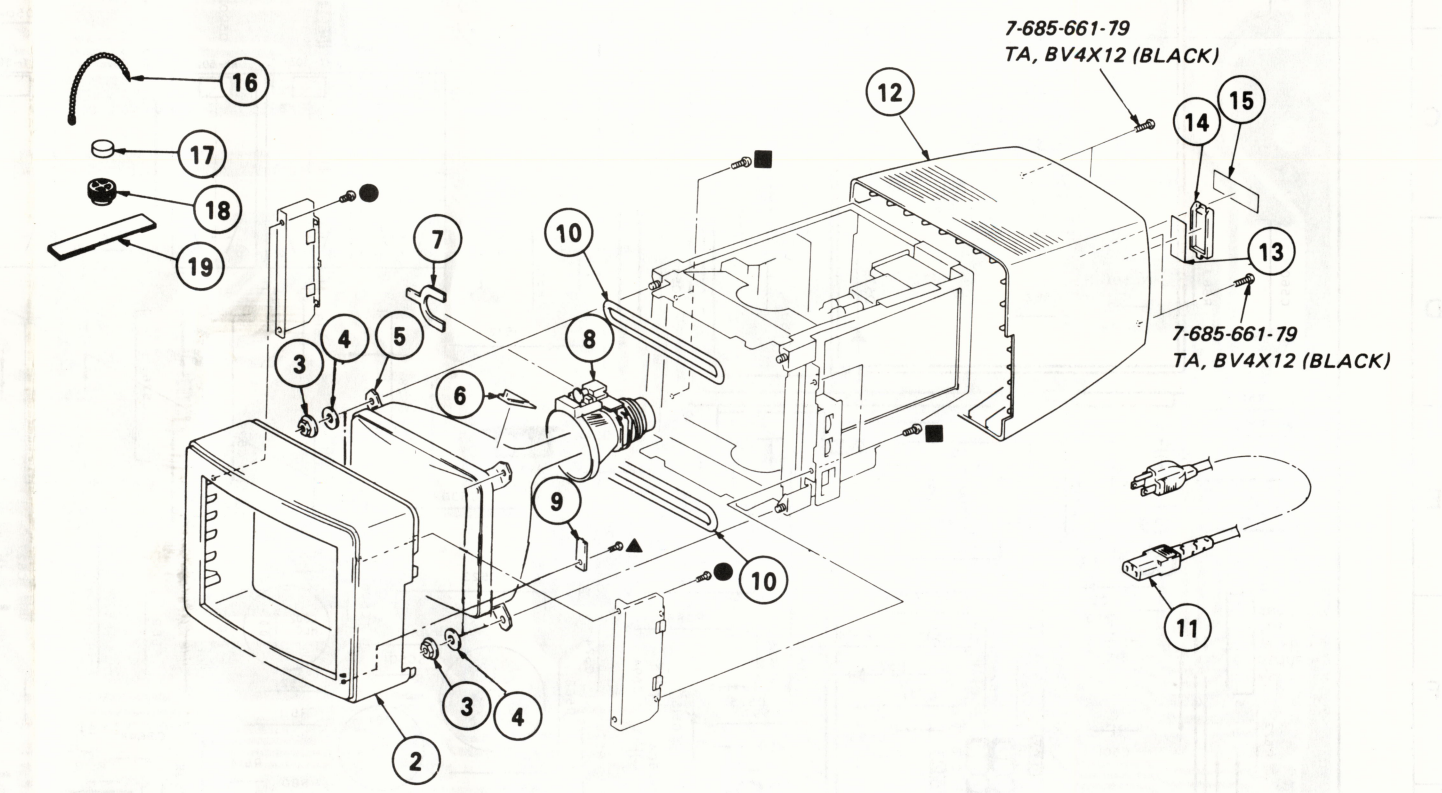
• Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

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

Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

5-1. PICTURE TUBE

- TA, BV3X8 7-685-646-71
- TA, BV4X10 7-685-660-71
- ▲ TA, BV3X10 7-685-647-71

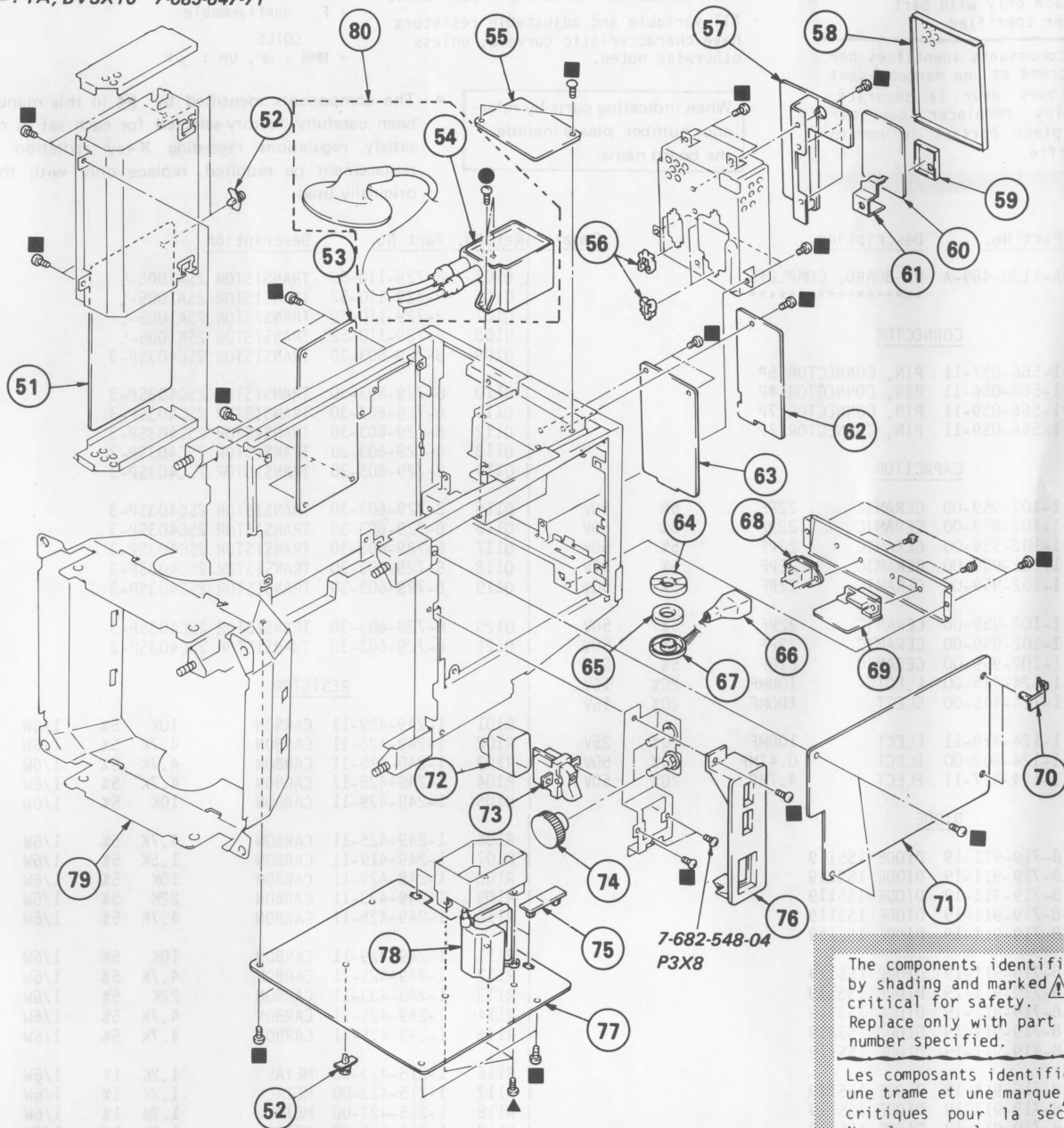


No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
1	4-381-839-01	BEZEL		11	▲ 1-558-377-11	CORD, POWER	
2	4-304-511-00	NUT, FLANGE		12	4-381-820-11	CABINET	
3	4-348-567-00	WASHER, CRT POSITION		13	4-381-826-01	LABEL, CONTROL	
4	▲ 8-738-251-05	CRT M54JN015X		14	4-381-817-11	LID, CONTROL	
5	3-703-961-01	SPACER, DY		15	★ 4-381-838-01	LABEL, MODEL NUMBER (SMALL)	
6	1-452-146-21	MAGNET, BMC		16	4-316-035-01	CLIP, LEAD WIRE	
7	▲ 1-451-291-11	DEFLECTION YOKE (SY-175)		17	1-452-032-00	MAGNET, DISK; 10MM φ	
8	▲ 1-1389-829-A	X BOARD		18	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM φ	
9	▲ 1-426-283-11	COIL, DEMAGNETIZATION		19	X-4309-608-0	PERMALLOY ASSY, CONVERGENCE	

BB

5-2. CHASSIS ASSY

- : TA, BV3X8 7-685-646-71
- : TA, BV4X10 7-685-660-71
- ▲ : TA, BV3X10 7-685-647-71



The components identified by shading and marked ▲ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ▲ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
51	*A-1316-059-A	G BOARD		66	*4-601-466-11	COVER, 3P INLET	
52	*3-670-570-11	SPACER, SUPPORT		67	*4-361-124-01	COVER (A), CORE	
53	*A-1240-695-A	F BOARD		68	▲ 1-509-546-11	3P INLET	
54	▲ 1-230-666-11	RESISTOR ASSY. HIGH-VOLTAGE		69	*1-619-029-11	BC BOARD	
55	*A-1130-510-A	BD BOARD		70	*3-701-832-00	HINGE, CIRCUIT BOARD	
56	4-343-123-00	RETAINER, AC CORD		71	*A-1135-387-A	BA BOARD, COMPLETE	
57	*A-1389-771-A	CA BOARD		72	*4-381-806-01	COVER, SWITCH	
58	*4-377-601-01	COVER		73	▲ 1-554-953-31	SWITCH, SEESAW (AC POWER)	
59	*4-370-995-01	COVER (LOWER), H.STAT		74	4-372-107-01	KNOB, ROTARY	
60	*A-1330-716-A	CB BOARD		75	*4-313-732-00	CLIP, HINGE, CIRCUIT BOARD	
61	*4-370-996-01	COVER (UPPER), H.STAT		76	*4-381-828-11	PANEL, SWITCH	
62	*A-1371-187-A	H BOARD		77	*A-1340-829-A	D BOARD, COMPLETE	
63	*A-1130-489-A	BB BOARD, COMPLETE		78	▲ 1-439-390-11	TRANSFORMER ASSY. FLYBACK	
64	*4-361-125-01	COVER (B), CORE		79	*X-4381-802-1	SHIELD ASSY, CRT	
65	1-543-179-00	CORE, RING		80	*A-1465-149-A	HV BLOCK ASSY	



**BB**

## SECTION 6 ELECTRICAL PARTS LIST

NOTE:

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

Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- 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 :  $\mu$ PF

RESISTORS  
• All resistors are in ohms  
• F : nonflammable

COILS  
• MMH : mH, UH :  $\mu$ H

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

- The components identified by **X** 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.

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
*A-1130-489-A	BB BOARD, COMPLETE	*****		Q105	8-729-110-52	TRANSISTOR 2SA1005-L	
<b>CONNECTOR</b>				Q106	8-729-110-52	TRANSISTOR 2SA1005-L	
BB1	*1-566-057-11	PIN, CONNECTOR 5P		Q107	8-729-110-52	TRANSISTOR 2SA1005-L	
BB2	*1-566-056-11	PIN, CONNECTOR 4P		Q108	8-729-110-52	TRANSISTOR 2SA1005-L	
BB3	*1-566-059-11	PIN, CONNECTOR 7P		Q109	8-729-603-30	TRANSISTOR 2SC4035P-3	
BB4	*1-566-059-11	PIN, CONNECTOR 7P		Q110	8-729-603-30	TRANSISTOR 2SC4035P-3	
<b>CAPACITOR</b>				Q111	8-729-603-30	TRANSISTOR 2SC4035P-3	
C101	1-102-959-00	CERAMIC 22PF 5% 50V		Q112	8-729-603-30	TRANSISTOR 2SC4035P-3	
C102	1-102-959-00	CERAMIC 22PF 5% 50V		Q113	8-729-603-30	TRANSISTOR 2SC4035P-3	
C103	1-102-959-00	CERAMIC 22PF 5% 50V		Q114	8-729-603-30	TRANSISTOR 2SC4035P-3	
C104	1-102-959-00	CERAMIC 22PF 5% 50V		Q115	8-729-603-30	TRANSISTOR 2SC4035P-3	
C105	1-102-959-00	CERAMIC 22PF 5% 50V		Q116	8-729-603-30	TRANSISTOR 2SC4035P-3	
C106	1-102-959-00	CERAMIC 22PF 5% 50V		Q117	8-729-603-30	TRANSISTOR 2SC4035P-3	
C107	1-102-959-00	CERAMIC 22PF 5% 50V		Q118	8-729-603-30	TRANSISTOR 2SC4035P-3	
C108	1-102-959-00	CERAMIC 22PF 5% 50V		Q119	8-729-603-30	TRANSISTOR 2SC4035P-3	
C109	1-124-445-00	ELECT 100MF 20% 16V		Q120	8-729-603-30	TRANSISTOR 2SC4035P-3	
C110	1-124-445-00	ELECT 100MF 20% 16V		Q121	8-729-603-30	TRANSISTOR 2SC4035P-3	
C111	1-124-478-11	ELECT 100MF 20% 25V		<b>RESISTOR</b>			
C112	1-124-902-00	ELECT 0.47MF 20% 50V		R101	1-249-429-11	CARBON 10K 5% 1/6W	
C113	1-124-927-11	ELECT 4.7MF 20% 50V		R102	1-249-425-11	CARBON 4.7K 5% 1/6W	
<b>DIODE</b>				R103	1-249-425-11	CARBON 4.7K 5% 1/6W	
D101	8-719-911-19	DIODE 1SS119		R104	1-249-425-11	CARBON 4.7K 5% 1/6W	
D102	8-719-911-19	DIODE 1SS119		R105	1-249-429-11	CARBON 10K 5% 1/6W	
D103	8-719-911-19	DIODE 1SS119		R106	1-249-425-11	CARBON 4.7K 5% 1/6W	
D104	8-719-911-19	DIODE 1SS119		R107	1-249-419-11	CARBON 1.5K 5% 1/6W	
D105	8-719-911-19	DIODE 1SS119		R108	1-249-429-11	CARBON 10K 5% 1/6W	
D106	8-719-911-19	DIODE 1SS119		R109	1-249-433-11	CARBON 22K 5% 1/6W	
D107	8-719-911-19	DIODE 1SS119		R110	1-249-425-11	CARBON 4.7K 5% 1/6W	
D108	8-719-911-19	DIODE 1SS119		R111	1-249-429-11	CARBON 10K 5% 1/6W	
D109	8-719-911-19	DIODE 1SS119		R112	1-249-425-11	CARBON 4.7K 5% 1/6W	
D110	8-719-911-19	DIODE 1SS119		R113	1-249-433-11	CARBON 22K 5% 1/6W	
D111	8-719-911-19	DIODE 1SS119		R114	1-249-425-11	CARBON 4.7K 5% 1/6W	
D112	8-719-911-19	DIODE 1SS119		R115	1-249-425-11	CARBON 4.7K 5% 1/6W	
D113	8-719-911-19	DIODE 1SS119		R116	1-215-423-00	METAL 1.2K 1% 1/6W	
D114	8-719-911-19	DIODE 1SS119		R117	1-215-423-00	METAL 1.2K 1% 1/6W	
<b>IC</b>				R118	1-215-423-00	METAL 1.2K 1% 1/6W	
IC101	8-759-904-81	IC 74F08PC		R119	1-215-423-00	METAL 1.2K 1% 1/6W	
IC102	8-759-904-81	IC 74F08PC		R120	1-215-423-00	METAL 1.2K 1% 1/6W	
IC103	8-759-910-15	IC SN74S15N		R121	1-215-423-00	METAL 1.2K 1% 1/6W	
IC104	8-759-910-15	IC SN74S15N		R122	1-215-423-00	METAL 1.2K 1% 1/6W	
IC105	8-759-910-15	IC SN74S15N		R123	1-215-423-00	METAL 1.2K 1% 1/6W	
IC106	8-759-917-52	IC 74F138PC		R124	1-215-403-00	METAL 180 1% 1/6W	
<b>TRANSISTOR</b>				R125	1-215-403-00	METAL 180 1% 1/6W	
Q101	8-729-110-52	TRANSISTOR 2SA1005-L		R126	1-215-403-00	METAL 180 1% 1/6W	
Q102	8-729-110-52	TRANSISTOR 2SA1005-L		R127	1-215-403-00	METAL 180 1% 1/6W	
Q103	8-729-110-52	TRANSISTOR 2SA1005-L		R128	1-215-403-00	METAL 180 1% 1/6W	
Q104	8-729-110-52	TRANSISTOR 2SA1005-L		R129	1-215-403-00	METAL 180 1% 1/6W	
				R130	1-215-403-00	METAL 180 1% 1/6W	
				R131	1-215-403-00	METAL 180 1% 1/6W	
				R132	1-215-413-00	METAL 470 1% 1/6W	
				R133	1-215-413-00	METAL 470 1% 1/6W	
				R134	1-215-413-00	METAL 470 1% 1/6W	

**BB** **BD**

Ref.No.	Part No.	Description	Quantity	Unit	Power	Remark	Ref.No.	Part No.	Description	Quantity	Unit	Power	Remark
R135	1-215-413-00	METAL	470	1%	1/6W		R188	1-249-429-11	CARBON	10K	5%	1/6W	
R136	1-215-413-00	METAL	470	1%	1/6W		R189	1-249-417-11	CARBON	1K	5%	1/6W	
R137	1-214-721-00	METAL	470	1%	1/4W		*****						
R138	1-215-413-00	METAL	470	1%	1/6W			*A-1130-510-A	BD BOARD, COMPLETE				
R139	1-215-413-00	METAL	470	1%	1/6W				*****				
R140	1-249-419-11	CARBON	1.5K	5%	1/6W				CONNECTOR				
R141	1-249-419-11	CARBON	1.5K	5%	1/6W								
R142	1-249-419-11	CARBON	1.5K	5%	1/6W								
R143	1-249-419-11	CARBON	1.5K	5%	1/6W		BD1	*1-566-056-11	PIN, CONNECTOR 4P				
R144	1-249-419-11	CARBON	1.5K	5%	1/6W		BD2	*1-566-057-11	PIN, CONNECTOR 5P				
R145	1-249-419-11	CARBON	1.5K	5%	1/6W				CAPACITOR				
R146	1-249-419-11	CARBON	1.5K	5%	1/6W								
R147	1-249-419-11	CARBON	1.5K	5%	1/6W								
R148	1-215-423-00	METAL	1.2K	1%	1/6W		C203	1-124-443-00	ELECT	100MF	20%	10V	
R149	1-215-431-00	METAL	2.7K	1%	1/6W		C204	1-102-074-00	CERAMIC	0.001MF	10%	50V	
R150	1-215-431-00	METAL	2.7K	1%	1/6W		C206	1-101-004-00	CERAMIC	0.01MF		50V	
R151	1-215-423-00	METAL	1.2K	1%	1/6W		C208	1-123-607-00	ELECT	0.1MF	20%	50V	
R152	1-215-431-00	METAL	2.7K	1%	1/6W		C213	1-124-927-11	ELECT	4.7MF	20%	50V	
R153	1-215-431-00	METAL	2.7K	1%	1/6W		C214	1-101-001-00	CERAMIC	0.001MF		50V	
R154	1-215-423-00	METAL	1.2K	1%	1/6W		C263	1-124-902-00	ELECT	0.47MF		50V	
R155	1-215-423-00	METAL	1.2K	1%	1/6W		C266	1-124-927-11	ELECT	4.7MF	20%	50V	
R156	1-215-431-00	METAL	2.7K	1%	1/6W		C271	1-124-445-00	ELECT	100MF	20%	16V	
R157	1-214-739-00	METAL	2.7K	1%	1/4W		C276	1-124-907-00	ELECT	10MF	20%	50V	
R158	1-247-833-00	CARBON	1.2K	5%	1/6W		C277	1-108-622-91	MYLAR	0.0047MF	10%	100V	
R159	1-247-833-00	CARBON	1.2K	5%	1/6W		C285	1-106-200-00	MYLAR	0.015MF	10%	100V	
R160	1-249-419-11	CARBON	1.5K	5%	1/6W		C287	1-106-212-00	MYLAR	0.047MF	10%	100V	
R161	1-249-419-11	CARBON	1.5K	5%	1/6W		C295	1-108-614-91	MYLAR	0.001MF	10%	100V	
R162	1-249-419-11	CARBON	1.5K	5%	1/6W				DIODE				
R163	1-249-433-11	CARBON	22K	5%	1/6W		D202	8-719-911-19	DIODE 1SS119				
R164	1-247-839-00	CARBON	2.2K	5%	1/6W		D203	8-719-911-19	DIODE 1SS119				
R165	1-247-829-00	CARBON	820	5%	1/6W		D206	8-719-911-19	DIODE 1SS119				
R166	1-247-829-00	CARBON	820	5%	1/6W				IC				
R167	1-247-829-00	CARBON	820	5%	1/6W		IC204	8-759-900-86	IC SN74LS86N				
R168	1-249-433-11	CARBON	22K	5%	1/6W		IC206	8-759-902-21	IC SN74LS221N				
R169	1-249-433-11	CARBON	22K	5%	1/6W				TRANSISTOR				
R170	1-249-433-11	CARBON	22K	5%	1/6W		Q201	8-729-178-54	TRANSISTOR 2SC2785				
R171	1-249-429-11	CARBON	10K	5%	1/6W		Q202	8-729-178-54	TRANSISTOR 2SC2785				
R172	1-249-425-11	CARBON	4.7K	5%	1/6W		Q203	8-729-178-54	TRANSISTOR 2SC2785				
R173	1-249-425-11	CARBON	4.7K	5%	1/6W		Q204	8-729-900-36	TRANSISTOR DTC124ES				
R174	1-247-708-11	CARBON	470	5%	1/4W		Q261	8-729-104-80	TRANSISTOR 2SC3355				
R175	1-249-441-11	CARBON	100K	5%	1/6W		Q262	8-729-178-54	TRANSISTOR 2SC2785				
R176	1-249-423-11	CARBON	3.3K	5%	1/6W		Q263	8-729-178-54	TRANSISTOR 2SC2785				
R177	1-249-423-11	CARBON	3.3K	5%	1/6W		Q264	8-729-178-54	TRANSISTOR 2SC2785				
R178	1-249-423-11	CARBON	3.3K	5%	1/6W		Q271	8-729-178-54	TRANSISTOR 2SC2785				
R179	1-247-823-00	CARBON	470	5%	1/6W		Q272	8-729-178-54	TRANSISTOR 2SC2785				
R180	1-247-804-00	CARBON	75	5%	1/6W		Q273	8-729-178-54	TRANSISTOR 2SC2785				
R181	1-247-823-00	CARBON	470	5%	1/6W		Q274	8-729-900-80	TRANSISTOR DTC114ES				
R182	1-247-823-00	CARBON	470	5%	1/6W		Q275	8-729-900-36	TRANSISTOR DTC124ES				
R183	1-247-804-00	CARBON	75	5%	1/6W								
R184	1-247-823-00	CARBON	470	5%	1/6W								
R185	1-247-823-00	CARBON	470	5%	1/6W								
R186	1-247-104-00	CARBON	75	5%	1/4W								
R187	1-247-823-00	CARBON	470	5%	1/6W								

**BD BA**

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
<u>RESISTOR</u>							
R201	1-249-437-11	CARBON	47K 5% 1/6W	BA13	*1-566-057-11	PIN, CONNECTOR 5P	
R202	1-247-859-00	CARBON	15K 5% 1/6W	BA14	*1-566-056-11	PIN, CONNECTOR 4P	
R203	1-249-435-11	CARBON	33K 5% 1/6W	BA15	*1-566-056-11	PIN, CONNECTOR 4P	
R204	1-247-845-00	CARBON	3.9K 5% 1/6W	BA16	*1-566-056-11	PIN, CONNECTOR 4P	
R205	1-247-819-00	CARBON	330 5% 1/6W	BA17	*1-566-057-11	PIN, CONNECTOR 5P	
R206	1-249-434-11	CARBON	27K 5% 1/6W	BA18	*1-566-060-11	PIN, CONNECTOR 8P	
R209	1-249-429-11	CARBON	10K 5% 1/6W	<u>CAPACITOR</u>			
R210	1-247-833-00	CARBON	1.2K 5% 1/6W	C201	1-124-127-91	ELECT 100MF	20% 25V
R218	1-249-437-11	CARBON	47K 5% 1/6W	C202	1-124-478-11	ELECT 100MF	20% 25V
R228	1-249-425-11	CARBON	4.7K 5% 1/6W	C205	1-101-004-00	CERAMIC 0.01MF	50V
R230	1-247-889-00	CARBON	270K 5% 1/6W	C207	1-124-927-11	ELECT 4.7MF	20% 50V
R238	1-249-425-11	CARBON	4.7K 5% 1/6W	C209	1-123-973-00	ELECT 100MF	20% 16V
R263	1-247-823-00	CARBON	470 5% 1/6W	C210	1-102-114-00	CERAMIC 470PF	10% 50V
R265	1-249-425-11	CARBON	4.7K 5% 1/6W	C211	1-124-481-11	ELECT 22MF	20% 25V
R266	1-249-429-11	CARBON	10K 5% 1/6W	C212	1-124-478-11	ELECT 100MF	20% 25V
R267	1-249-425-11	CARBON	4.7K 5% 1/6W	C215	1-102-947-00	CERAMIC 10PF	5% 50V
R268	1-249-429-11	CARBON	10K 5% 1/6W	C221	1-124-481-11	ELECT 22MF	20% 25V
R269	1-247-721-11	CARBON	4.7K 5% 1/4W	C222	1-124-478-11	ELECT 100MF	20% 25V
R270	1-249-425-11	CARBON	4.7K 5% 1/6W	C231	1-124-481-11	ELECT 22MF	20% 25V
R271	1-249-405-11	CARBON	100 5% 1/6W	C232	1-124-478-11	ELECT 100MF	20% 25V
R273	1-249-435-11	CARBON	33K 5% 1/6W	C240	1-124-903-00	ELECT 1MF	20% 50V
R274	1-249-417-11	CARBON	1K 5% 1/6W	C241	1-102-978-00	CERAMIC 220PF	5% 50V
R275	1-249-429-11	CARBON	10K 5% 1/6W	C242	1-124-445-00	ELECT 100MF	20% 16V
R276	1-249-429-11	CARBON	10K 5% 1/6W	C243	1-124-903-00	ELECT 1MF	20% 50V
R277	1-247-725-11	CARBON	10K 5% 1/4W	C244	1-124-478-11	ELECT 100MF	20% 25V
R278	1-249-425-11	CARBON	4.7K 5% 1/6W	C245	1-124-902-00	ELECT 0.47MF	20% 50V
R279	1-249-429-11	CARBON	10K 5% 1/6W	C246	1-124-902-00	ELECT 0.47MF	20% 50V
R285	1-215-451-00	METAL	18K 1% 1/6W	C247	1-124-927-11	ELECT 4.7MF	20% 50V
R286	1-247-713-11	CARBON	1K 5% 1/4W	C250	1-102-114-00	CERAMIC 470PF	10% 50V
R287	1-247-713-11	CARBON	1K 5% 1/4W	C251	1-124-478-11	ELECT 100MF	20% 25V
R288	1-247-713-11	CARBON	1K 5% 1/4W	C281	1-102-500-00	CERAMIC 150PF	5% 50V
R2001	1-249-425-11	CARBON	4.7K 5% 1/6W	C282	1-102-500-00	CERAMIC 150PF	5% 50V
R2002	1-249-425-11	CARBON	4.7K 5% 1/6W	C283	1-102-500-00	CERAMIC 150PF	5% 50V
*****				C284	1-102-492-00	CERAMIC 56PF	5% 50V
*A-1135-387-A BA BOARD, COMPLETE				C290	1-124-445-00	ELECT 100MF	20% 16V
*****				C294	1-124-903-00	ELECT 1MF	20% 50V
<u>CONNECTOR</u>				C301	1-124-271-00	ELECT 1MF	20% 50V
BA1	*1-566-057-11	PIN, CONNECTOR 5P		C302	1-124-907-00	ELECT 10MF	20% 50V
BA2	*1-566-055-11	PIN, CONNECTOR 3P		C303	1-101-004-00	CERAMIC 0.01MF	50V
BA3	*1-566-054-11	PIN, CONNECTOR 2P		C304	1-136-173-00	FILM 0.47MF	5% 50V
BA4	*1-566-059-11	PIN, CONNECTOR 7P		C305	1-124-902-00	ELECT 0.47MF	20% 50V
BA5	*1-566-059-11	PIN, CONNECTOR 7P		C306	1-124-907-00	ELECT 10MF	20% 50V
BA6	*1-566-060-11	PIN, CONNECTOR 8P		C307	1-124-475-11	ELECT 470MF	20% 16V
BA7	*1-566-055-11	PIN, CONNECTOR 3P		C308	1-124-903-00	ELECT 1MF	20% 50V
BA8	*1-566-054-11	PIN, CONNECTOR 2P		C309	1-136-173-00	FILM 0.47MF	5% 50V
BA9	*1-566-061-11	PIN, CONNECTOR 9P		C310	1-108-627-91	MYLAR 0.012MF	10% 100V
BA10	*1-566-062-11	PIN, CONNECTOR 10P		C311	1-136-173-00	FILM 0.47MF	5% 50V
BA11	*1-566-057-11	PIN, CONNECTOR 5P		C312	1-136-165-00	FILM 0.1MF	5% 50V
BA12	*1-566-057-11	PIN, CONNECTOR 5P		C314	1-124-903-00	ELECT 1MF	20% 50V
				C315	1-123-332-00	ELECT 47MF	20% 16V
				C316	1-102-114-00	CERAMIC 470PF	10% 50V
				C317	1-110-201-00	MYLAR 0.0033MF	5% 50V

Ref.No.	Part No.	Description	Value	Tolerance	Voltage	Ref.No.	Part No.	Description	Value	Tolerance	Voltage
C 318	1-124-927-11	ELECT	4.7MF	20%	50V	C2023	1-124-127-91	ELECT	100MF	20%	25V
C 319	1-124-904-00	ELECT	2.2MF	20%	50V	C2024	1-102-118-00	CERAMIC	0.0012MF	10%	50V
C 320	1-102-112-00	CERAMIC	330PF	10%	50V	C2025	1-106-196-00	MYLAR	0.01MF	10%	100V
C 321	1-102-973-00	CERAMIC	100PF	5%	50V	C2030	1-101-006-00	CERAMIC	0.047MF		50V
C 322	1-124-903-00	ELECT	1MF	20%	50V	C2033	1-124-127-91	ELECT	100MF	20%	25V
C 324	1-108-812-91	MYLAR	0.047MF	5%	50V	C2034	1-102-118-00	CERAMIC	0.0012MF	10%	50V
C 325	1-136-173-00	FILM	0.47MF	5%	50V	C2035	1-106-196-00	MYLAR	0.01MF	10%	100V
C 326	1-124-445-00	ELECT	100MF	20%	16V	C2040	1-102-114-00	CERAMIC	470PF	10%	50V
C 327	1-124-907-00	ELECT	10MF	20%	50V	C3001	1-124-443-00	ELECT	100MF	20%	10V
C 328	1-123-332-00	ELECT	47MF	20%	16V	C3002	1-136-165-00	FILM	0.1MF	5%	50V
C 329	1-102-074-00	CERAMIC	0.001MF	10%	50V	DIODE					
C 330	1-102-074-00	CERAMIC	0.001MF	10%	50V	D201	8-719-911-19	DIODE	1SS119		
C 331	1-106-196-00	MYLAR	0.01MF	10%	100V	D204	8-719-102-49	DIODE	RD3.0E-N1		
C 332	1-124-907-00	ELECT	10MF	20%	50V	D205	8-719-911-19	DIODE	1SS119		
C 333	1-136-173-00	FILM	0.47MF	5%	50V	D211	8-719-911-19	DIODE	1SS119		
C 334	1-124-038-00	ELECT	1MF	20%	50V	D212	8-719-911-19	DIODE	1SS119		
C 335	1-124-903-00	ELECT	1MF	20%	50V	D214	8-719-911-19	DIODE	1SS119		
C 336	1-136-165-00	FILM	0.1MF	5%	50V	D221	8-719-911-19	DIODE	1SS119		
C 337	1-108-622-91	MYLAR	0.0047MF	10%	100V	D222	8-719-911-19	DIODE	1SS119		
C401	1-124-907-00	ELECT	10MF	20%	50V	D224	8-719-911-19	DIODE	1SS119		
C402	1-124-903-00	ELECT	1MF	20%	50V	D231	8-719-911-19	DIODE	1SS119		
C403	1-124-557-11	ELECT	1000MF	20%	25V	D232	8-719-911-19	DIODE	1SS119		
C404	1-124-445-00	ELECT	100MF	20%	16V	D234	8-719-911-19	DIODE	1SS119		
C405	1-124-445-00	ELECT	100MF	20%	16V	D254	8-719-911-19	DIODE	1SS119		
C406	1-123-332-00	ELECT	47MF	20%	16V	D255	8-719-911-19	DIODE	1SS119		
C407	1-102-129-00	CERAMIC	0.01MF	10%	50V	D256	8-719-911-19	DIODE	1SS119		
C408	1-124-905-11	ELECT	3.3MF	20%	50V	D291	8-719-911-19	DIODE	1SS119		
C409	1-101-004-00	CERAMIC	0.01MF		50V	D292	8-719-911-19	DIODE	1SS119		
C410	1-101-004-00	CERAMIC	0.01MF		50V	D293	8-719-911-19	DIODE	1SS119		
C411	1-106-192-00	MYLAR	0.0068MF	10%	100V	D294	8-719-911-19	DIODE	1SS119		
C412	1-108-620-91	MYLAR	0.0033MF	10%	100V	D295	8-719-102-60	DIODE	RD3.9E-N2		
C413	1-124-896-00	ELECT	33MF	20%	16V	D301	8-719-102-84	DIODE	RD8.2E-N2		
C414	1-102-129-00	CERAMIC	0.01MF	10%	50V	D302	8-719-102-58	DIODE	RD3.6E-N2		
C415	1-124-904-00	ELECT	2.2MF	20%	50V	D303	8-719-911-19	DIODE	1SS119		
C416	1-101-004-00	CERAMIC	0.01MF		50V	D304	8-719-102-74	DIODE	RD6.2E-N2		
C417	1-124-907-00	ELECT	10MF	20%	50V	D305	8-719-911-19	DIODE	1SS119		
C418	1-124-445-00	ELECT	100MF	20%	16V	D306	8-719-102-56	DIODE	RD3.3E-N2		
C419	1-106-180-00	MYLAR	0.0022MF	5%	50V	D307	8-719-102-58	DIODE	RD3.6E-N2		
C420	1-102-112-00	CERAMIC	330PF	10%	50V	D308	8-719-911-19	DIODE	1SS119		
C421	1-102-530-00	CERAMIC	120PF	5%	50V	D309	8-719-911-19	DIODE	1SS119		
C422	1-124-907-00	ELECT	10MF	20%	50V	D310	8-719-102-65	DIODE	RD4.7E-N2		
C423	1-124-907-00	ELECT	10MF	20%	50V	D401	8-719-102-87	DIODE	RD9.1E-N2		
C424	1-124-907-00	ELECT	10MF	20%	50V	D402	8-719-102-78	DIODE	RD6.8E-N2		
C425	1-101-004-00	CERAMIC	0.01MF		50V	D403	8-719-101-76	DIODE	RD10E-L2		
C426	1-101-004-00	CERAMIC	0.01MF		50V	D404	8-719-102-94	DIODE	RD11E-N2		
C427	1-101-004-00	CERAMIC	0.01MF		50V	D405	8-719-102-87	DIODE	RD9.1E-N2		
C428	1-123-332-00	ELECT	47MF	20%	16V	D407	8-719-911-19	DIODE	1SS119		
C2001	1-102-116-00	CERAMIC	680PF	10%	50V	D408	8-719-911-19	DIODE	1SS119		
C2010	1-101-006-00	CERAMIC	0.047MF		50V	D3001	8-719-911-19	DIODE	1SS119		
C2013	1-124-127-91	ELECT	100MF	20%	25V	D3002	8-719-981-01	DIODE	ERAB1-004		
C2014	1-102-118-00	CERAMIC	0.0012MF	10%	50V						
C2015	1-106-196-00	MYLAR	0.01MF	10%	100V						
C2020	1-101-006-00	CERAMIC	0.047MF		50V						

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Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
		<u>IC</u>					
IC201	8-752-030-45	IC CXA1044P		Q306	8-729-178-54	TRANSISTOR 2SC2785	
IC202	8-759-170-12	IC UPC78M12H		Q307	8-729-178-54	TRANSISTOR 2SC2785	
	*4-314-225-00	HEAT SINK, (A); IC202		Q308	8-729-117-54	TRANSISTOR 2SA1175	
IC203	8-759-170-05	IC UPC78M05H		Q309	8-729-178-54	TRANSISTOR 2SC2785	
	*4-314-225-00	HEAT SINK, (A); IC203		Q310	8-729-178-54	TRANSISTOR 2SC2785	
IC205	8-759-902-21	IC SN74LS221N		Q311	8-729-178-54	TRANSISTOR 2SC2785	
IC301	8-759-100-60	IC UPC1377C		Q312	8-729-178-54	TRANSISTOR 2SC2785	
IC302	8-759-145-58	IC UPC4558C		Q313	8-729-178-54	TRANSISTOR 2SC2785	
IC401	8-759-700-08	IC NJM4558S		Q314	8-729-178-54	TRANSISTOR 2SC2785	
IC402	8-759-240-66	IC TC4066BP		Q315	8-729-178-54	TRANSISTOR 2SC2785	
IC403	8-759-245-16	IC TC4516BP		Q316	8-729-178-54	TRANSISTOR 2SC2785	
IC404	8-752-203-00	IC CX22030		Q317	8-729-178-54	TRANSISTOR 2SC2785	
IC405	8-759-345-38	IC HD14538BP		Q318	8-729-178-54	TRANSISTOR 2SC2785	
		<u>COIL</u>		Q320	8-729-178-54	TRANSISTOR 2SC2785	
L201	1-407-717-00	MICRO INDUCTOR 1MMH		Q321	8-729-178-54	TRANSISTOR 2SC2785	
L401	1-407-705-00	MICRO INDUCTOR 100UH		Q322	8-729-178-54	TRANSISTOR 2SC2785	
L402	1-408-403-00	MICRO INDUCTOR 3.3UH		Q323	8-729-178-54	TRANSISTOR 2SC2785	
		<u>TRANSISTOR</u>		Q324	8-729-178-54	TRANSISTOR 2SC2785	
Q205	8-729-178-54	TRANSISTOR 2SC2785		Q325	8-729-178-54	TRANSISTOR 2SC2785	
Q206	8-729-178-54	TRANSISTOR 2SC2785		Q326	8-729-178-54	TRANSISTOR 2SC2785	
Q211	8-729-800-10	TRANSISTOR 2SC3068		Q327	8-729-178-54	TRANSISTOR 2SC2785	
Q212	8-729-603-30	TRANSISTOR 2SC403SP-3		Q328	8-729-178-54	TRANSISTOR 2SC2785	
Q213	8-729-110-53	TRANSISTOR 2SA1005		Q329	8-729-178-54	TRANSISTOR 2SC2785	
Q214	8-729-190-12	TRANSISTOR 2SC2901		Q330	8-729-178-54	TRANSISTOR 2SC2785	
Q221	8-729-800-10	TRANSISTOR 2SC3068		Q331	8-729-117-54	TRANSISTOR 2SA1175	
Q222	8-729-603-30	TRANSISTOR 2SC403SP-3		Q332	8-729-117-54	TRANSISTOR 2SA1175	
Q223	8-729-110-53	TRANSISTOR 2SA1005		Q333	8-729-117-54	TRANSISTOR 2SA1175	
Q224	8-729-190-12	TRANSISTOR 2SC2901		Q334	8-729-117-54	TRANSISTOR 2SA1175	
Q231	8-729-800-10	TRANSISTOR 2SC3068		Q335	8-729-178-54	TRANSISTOR 2SC2785	
Q232	8-729-603-30	TRANSISTOR 2SC403SP-3		Q336	8-729-178-54	TRANSISTOR 2SC2785	
Q233	8-729-110-53	TRANSISTOR 2SA1005		Q401	8-729-117-54	TRANSISTOR 2SA1175	
Q234	8-729-190-12	TRANSISTOR 2SC2901		Q402	8-729-178-54	TRANSISTOR 2SC2785	
Q240	8-729-117-54	TRANSISTOR 2SA1175		Q403	8-729-117-54	TRANSISTOR 2SA1175	
Q241	8-729-117-54	TRANSISTOR 2SA1175		Q404	8-729-178-54	TRANSISTOR 2SC2785	
Q243	8-729-178-54	TRANSISTOR 2SC2785		Q405	8-729-117-54	TRANSISTOR 2SA1175	
Q252	8-729-117-54	TRANSISTOR 2SA1175		Q406	8-729-178-54	TRANSISTOR 2SC2785	
Q291	8-729-117-54	TRANSISTOR 2SA1175		Q407	8-729-117-54	TRANSISTOR 2SA1175	
Q292	8-729-117-54	TRANSISTOR 2SA1175		Q408	8-729-178-54	TRANSISTOR 2SC2785	
Q293	8-729-178-54	TRANSISTOR 2SC2785		Q409	8-729-178-54	TRANSISTOR 2SC2785	
Q294	8-729-117-54	TRANSISTOR 2SA1175		Q411	8-729-178-54	TRANSISTOR 2SC2785	
Q295	8-729-178-54	TRANSISTOR 2SC2785		Q412	8-729-374-02	TRANSISTOR 2SB740	
Q296	8-729-178-54	TRANSISTOR 2SC2785		Q413	8-729-178-54	TRANSISTOR 2SC2785	
Q297	8-729-178-54	TRANSISTOR 2SC2785		Q414	8-729-374-02	TRANSISTOR 2SB740	
Q301	8-729-178-54	TRANSISTOR 2SC2785		Q415	8-729-178-54	TRANSISTOR 2SC2785	
Q302	8-729-178-54	TRANSISTOR 2SC2785		Q416	8-729-178-54	TRANSISTOR 2SC2785	
Q303	8-729-117-54	TRANSISTOR 2SA1175		Q417	8-729-900-36	TRANSISTOR DTC124ES	
Q304	8-729-117-54	TRANSISTOR 2SA1175		Q418	8-729-178-54	TRANSISTOR 2SC2785	
Q305	8-729-117-54	TRANSISTOR 2SA1175		Q419	8-729-178-54	TRANSISTOR 2SC2785	
				Q420	8-729-117-54	TRANSISTOR 2SA1175	
				Q421	8-729-178-54	TRANSISTOR 2SC2785	
				Q422	8-729-178-54	TRANSISTOR 2SC2785	
				Q423	8-729-178-54	TRANSISTOR 2SC2785	
				Q424	8-729-178-54	TRANSISTOR 2SC2785	

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Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
Q425	8-729-178-54	TRANSISTOR 2SC2785		R258	1-247-881-00	CARBON 120K 5%	1/6W
Q426	8-729-178-54	TRANSISTOR 2SC2785		R259	1-249-433-11	CARBON 22K 5%	1/6W
Q427	8-729-178-54	TRANSISTOR 2SC2785		R260	1-249-405-11	CARBON 100 5%	1/6W
Q428	8-729-900-36	TRANSISTOR DTC124ES		R261	1-249-422-11	CARBON 2.7K 5%	1/6W
Q429	8-729-374-02	TRANSISTOR 2SB740		R262	1-249-405-11	CARBON 100 5%	1/6W
Q3001	8-729-178-54	TRANSISTOR 2SC2785		R272	1-247-849-00	CARBON 5.6K 5%	1/6W
Q3002	8-729-117-54	TRANSISTOR 2SA1175		R280	1-247-823-00	CARBON 470 5%	1/6W
		RESISTOR		R281	1-249-425-11	CARBON 4.7K 5%	1/6W
				R282	1-215-907-11	METAL OXIDE 22 5%	3W F
				R283	1-249-417-11	CARBON 1K 5%	1/6W
R200	1-247-839-00	CARBON 2.2K 5%	1/6W	R284	1-249-417-11	CARBON 1K 5%	1/6W
R207	1-249-425-11	CARBON 4.7K 5%	1/6W	R289	1-247-853-00	CARBON 8.2K 5%	1/6W
R211	1-247-804-00	CARBON 75 5%	1/6W	R290	1-247-853-00	CARBON 8.2K 5%	1/6W
R212	1-249-434-11	CARBON 27K 5%	1/6W	R291	1-249-437-11	CARBON 47K 5%	1/6W
R213	1-249-429-11	CARBON 10K 5%	1/6W	R292	1-247-799-00	CARBON 47 5%	1/6W
R214	1-247-849-00	CARBON 5.6K 5%	1/6W	R293	1-249-417-11	CARBON 1K 5%	1/6W
R215	1-249-429-11	CARBON 10K 5%	1/6W	R294	1-249-440-11	CARBON 82K 5%	1/6W
R216	1-249-417-11	CARBON 1K 5%	1/6W	R295	1-214-753-00	METAL 10K 1%	1/4W
R217	1-249-419-11	CARBON 1.5K 5%	1/6W	R296	1-215-445-00	METAL 10K 1%	1/6W
R219	1-249-405-11	CARBON 100 5%	1/6W	R297	1-249-429-11	CARBON 10K 5%	1/6W
R220	1-249-429-11	CARBON 10K 5%	1/6W	R298	1-249-433-11	CARBON 22K 5%	1/6W
R221	1-247-804-00	CARBON 75 5%	1/6W	R299	1-249-429-11	CARBON 10K 5%	1/6W
R222	1-249-434-11	CARBON 27K 5%	1/6W	R301	1-215-473-00	METAL 150K 1%	1/6W
R223	1-249-429-11	CARBON 10K 5%	1/6W	R302	1-215-464-00	METAL 62K 1%	1/6W
R224	1-247-849-00	CARBON 5.6K 5%	1/6W	R303	1-202-727-00	SOLID 4.7M 10%	1/2W
R225	1-249-429-11	CARBON 10K 5%	1/6W	R304	1-249-437-11	CARBON 47K 5%	1/6W
R226	1-249-417-11	CARBON 1K 5%	1/6W	R305	1-249-437-11	CARBON 47K 5%	1/6W
R227	1-249-419-11	CARBON 1.5K 5%	1/6W	R306	1-247-725-11	CARBON 10K 5%	1/4W
R229	1-249-405-11	CARBON 100 5%	1/6W	R307	1-249-429-11	CARBON 10K 5%	1/6W
R231	1-247-804-00	CARBON 75 5%	1/6W	R308	1-249-429-11	CARBON 10K 5%	1/6W
R232	1-249-434-11	CARBON 27K 5%	1/6W	R309	1-249-440-11	CARBON 82K 5%	1/6W
R233	1-249-429-11	CARBON 10K 5%	1/6W	R310	1-247-721-11	CARBON 4.7K 5%	1/4W
R234	1-247-849-00	CARBON 5.6K 5%	1/6W	R311	1-249-425-11	CARBON 4.7K 5%	1/6W
R235	1-249-429-11	CARBON 10K 5%	1/6W	R312	1-249-433-11	CARBON 22K 5%	1/6W
R236	1-249-417-11	CARBON 1K 5%	1/6W	R313	1-247-870-00	CARBON 43K 5%	1/6W
R237	1-249-419-11	CARBON 1.5K 5%	1/6W	R314	1-249-433-11	CARBON 22K 5%	1/6W
R239	1-249-405-11	CARBON 100 5%	1/6W	R315	1-247-862-00	CARBON 20K 5%	1/6W
R240	1-247-851-00	CARBON 6.8K 5%	1/6W	R316	1-247-869-00	CARBON 39K 5%	1/6W
R241	1-247-839-00	CARBON 2.2K 5%	1/6W	R317	1-247-823-00	CARBON 470 5%	1/6W
R242	1-247-815-00	CARBON 220 5%	1/6W	R318	1-249-433-11	CARBON 22K 5%	1/6W
R243	1-249-434-11	CARBON 27K 5%	1/6W	R319	1-249-435-11	CARBON 33K 5%	1/6W
R244	1-247-891-00	CARBON 330K 5%	1/6W	R320	1-249-429-11	CARBON 10K 5%	1/6W
R245	1-249-414-11	CARBON 560 5%	1/6W	R321	1-249-429-11	CARBON 10K 5%	1/6W
R246	1-247-823-00	CARBON 470 5%	1/6W	R322	1-247-881-00	CARBON 120K 5%	1/6W
R247	1-247-839-00	CARBON 2.2K 5%	1/6W	R323	1-249-423-11	CARBON 3.3K 5%	1/6W
R249	1-249-429-11	CARBON 10K 5%	1/6W	R324	1-247-874-00	CARBON 62K 5%	1/6W
R250	1-249-429-11	CARBON 10K 5%	1/6W	R325	1-249-397-11	CARBON 22 5%	1/6W F
R251	1-249-429-11	CARBON 10K 5%	1/6W	R326	1-249-425-11	CARBON 4.7K 5%	1/6W
R252	1-247-711-11	CARBON 680 5%	1/4W	R327	1-247-881-00	CARBON 120K 5%	1/6W
R253	1-247-895-00	CARBON 470K 5%	1/6W	R328	1-247-869-00	CARBON 39K 5%	1/6W
R254	1-249-433-11	CARBON 22K 5%	1/6W	R329	1-249-422-11	CARBON 2.7K 5%	1/6W
R255	1-247-839-00	CARBON 2.2K 5%	1/6W	R330	1-247-891-00	CARBON 330K 5%	1/6W
R256	1-247-711-11	CARBON 680 5%	1/4W	R331	1-247-721-11	CARBON 4.7K 5%	1/4W
R257	1-249-429-11	CARBON 10K 5%	1/6W				


The components identified by  $\Delta$  in this manual have been carefully factory selected for each set in order to comply with the X-ray emission standard. Original equipment is required, therefore, only with the value number specified.


Les composants identifiés par  $\Delta$  dans ce manuel ont été soigneusement sélectionnés par le fabricant pour répondre aux exigences de la norme relative aux émissions de rayons X. L'équipement d'origine est requis, par conséquent, uniquement avec le numéro spécifié.


The components identified by  $\Delta$  in this manual have been carefully factory selected for each set in order to comply with the X-ray emission standard. Original equipment is required, therefore, only with the value number specified.

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Ref.No.	Part No.	Description	Quantity	Material	Remark	Ref.No.	Part No.	Description	Quantity	Material	Remark	
R332	1-249-433-11	CARBON	22K	5%	1/6W	R385	1-249-429-11	CARBON	10K	5%	1/6W	
R333	1-247-857-00	CARBON	12K	5%	1/6W	R386	1-247-853-00	CARBON	8.2K	5%	1/6W	
R334	1-247-875-00	CARBON	68K	5%	1/6W	R387	1-249-425-11	CARBON	4.7K	5%	1/6W	
R335	1-249-429-11	CARBON	10K	5%	1/6W	R388	1-247-821-00	CARBON	390	5%	1/6W	
R336	1-249-429-11	CARBON	10K	5%	1/6W	R389	1-249-437-11	CARBON	47K	5%	1/6W	
R337	1-215-445-00	METAL	10K	1%	1/6W	R390	1-249-437-11	CARBON	47K	5%	1/6W	
R338	1-214-747-00	METAL	5.6K	1%	1/4W	R391	1-249-437-11	CARBON	47K	5%	1/6W	
R339	1-215-488-00	METAL			1/6W	R392	1-249-437-11	CARBON	47K	5%	1/6W	
R340	1-215-488-00	METAL	620K	1%	1/6W	R393	1-247-887-00	CARBON	220K	5%	1/6W	
R341	1-215-457-00	METAL	33K	1%	1/6W	R394	1-249-435-11	CARBON	33K	5%	1/6W	
R342	1-247-723-11	CARBON	6.8K	5%	1/4W	R395	1-249-429-11	CARBON	10K	5%	1/6W	
R343	1-249-435-11	CARBON	33K	5%	1/6W	R396	1-249-433-11	CARBON	22K	5%	1/6W	
R344	1-247-713-11	CARBON	1K	5%	1/4W	R397	1-247-163-00	CARBON	22K	5%	1/4W	
R345	1-249-429-11	CARBON	10K	5%	1/6W	R398	1-247-767-00	CARBON	2.2	5%	1/6W	
R346	1-249-433-11	CARBON	22K	5%	1/6W	R399	1-247-713-11	CARBON	1K	5%	1/4W	
R347	1-249-433-11	CARBON	22K	5%	1/6W	R401	1-215-437-00	METAL	4.7K	1%	1/6W	
R348	1-249-433-11	CARBON	22K	5%	1/6W	R402	1-215-434-00	METAL	3.6K	1%	1/6W	
R349	1-249-417-11	CARBON	1K	5%	1/6W	R403	1-215-433-00	METAL	3.3K	1%	1/6W	
R350	1-249-429-11	CARBON	10K	5%	1/6W	R404	1-215-435-00	METAL	3.9K	1%	1/6W	
R351	1-249-405-11	CARBON	100	5%	1/6W	R405	1-215-435-00	METAL	3.9K	1%	1/6W	
R352	1-249-429-11	CARBON	10K	5%	1/6W	R406	1-249-435-11	CARBON	33K	5%	1/6W	
R353	1-249-423-11	CARBON	3.3K	5%	1/6W	R407	1-215-429-00	METAL	2.2K	1%	1/6W	
R354	1-249-429-11	CARBON	10K	5%	1/6W	R408	1-215-429-00	METAL	2.2K	1%	1/6W	
R355	1-247-849-00	CARBON	5.6K	5%	1/6W	R409	1-249-417-11	CARBON	1K	5%	1/6W	
R356	1-249-429-11	CARBON	10K	5%	1/6W	R410	1-249-417-11	CARBON	1K	5%	1/6W	
R357	1-247-723-11	CARBON	6.8K	5%	1/4W	R411	1-249-429-11	CARBON	10K	5%	1/6W	
R358	1-247-853-00	CARBON	8.2K	5%	1/6W	R412	1-249-429-11	CARBON	10K	5%	1/6W	
R359	1-249-435-11	CARBON	33K	5%	1/6W	R413	1-247-885-00	CARBON	180K	5%	1/6W	
R360	1-247-809-00	CARBON	120	5%	1/6W	R414	1-215-429-00	METAL	2.2K	1%	1/6W	
R361	1-247-839-00	CARBON	2.2K	5%	1/6W	R415	1-215-437-00	METAL	4.7K	1%	1/6W	
R362	1-249-433-11	CARBON	22K	5%	1/6W	R416	METAL				1/6W	
R363	1-249-437-11	CARBON	47K	5%	1/6W	R417	1-214-725-00	METAL	680	1%	1/4W	
R364	1-249-429-11	CARBON	10K	5%	1/6W	R418	1-214-767-00	METAL	39K	1%	1/4W	
R365	1-247-849-00	CARBON	5.6K	5%	1/6W	R419	1-214-767-00	METAL	39K	1%	1/4W	
R366	1-247-859-00	CARBON	15K	5%	1/6W	R420	1-249-417-11	CARBON	1K	5%	1/6W	
R367	1-247-887-00	CARBON	220K	5%	1/6W	R421	1-249-429-11	CARBON	10K	5%	1/6W	
R368	1-249-437-11	CARBON	47K	5%	1/6W	R422	1-249-423-11	CARBON	3.3K	5%	1/6W	
R369	1-249-425-11	CARBON	4.7K	5%	1/6W	R423	1-247-839-00	CARBON	2.2K	5%	1/6W	
R370	1-249-435-11	CARBON	33K	5%	1/6W	R424	1-247-725-11	CARBON	10K	5%	1/4W	
R371	1-249-433-11	CARBON	22K	5%	1/6W	R425	1-247-839-00	CARBON	2.2K	5%	1/6W	
R372	1-249-429-11	CARBON	10K	5%	1/6W	R426	1-216-447-00	METAL OXIDE	27	5%	2W	F
R373	1-247-885-00	CARBON	180K	5%	1/6W	R427	1-249-405-11	CARBON	100	5%	1/6W	
R374	1-249-437-11	CARBON	47K	5%	1/6W	R428	1-249-429-11	CARBON	10K	5%	1/6W	
R375	1-249-433-11	CARBON	22K	5%	1/6W	R429	1-247-819-00	CARBON	330	5%	1/6W	
R376	1-249-437-11	CARBON	47K	5%	1/6W	R430	1-249-423-11	CARBON	3.3K	5%	1/6W	
R377	1-249-437-11	CARBON	47K	5%	1/6W	R431	1-249-429-11	CARBON	10K	5%	1/6W	
R378	1-247-849-00	CARBON	5.6K	5%	1/6W	R432	1-247-819-00	CARBON	330	5%	1/6W	
R379	1-247-839-00	CARBON	2.2K	5%	1/6W	R433	1-249-423-11	CARBON	3.3K	5%	1/6W	
R380	1-247-849-00	CARBON	5.6K	5%	1/6W	R434	1-249-429-11	CARBON	10K	5%	1/6W	
R381	1-249-423-11	CARBON	3.3K	5%	1/6W	R435	1-247-819-00	CARBON	330	5%	1/6W	
R382	1-247-721-11	CARBON	4.7K	5%	1/4W	R436	1-249-437-11	CARBON	47K	5%	1/6W	
R383	1-249-437-11	CARBON	47K	5%	1/6W	R437	1-249-417-11	CARBON	1K	5%	1/6W	
R384	1-249-437-11	CARBON	47K	5%	1/6W	R438	1-249-429-11	CARBON	10K	5%	1/6W	

- The components identified by  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 marked  are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description	Quantity	Material	Power	Remark	Ref.No.	Part No.	Description	Quantity	Material	Power	Remark
R439	1-249-433-11	CARBON	22K	5%	1/6W		R488	1-215-470-00	METAL	110K	1%	1/6W	
R440	1-249-434-11	CARBON	27K	5%	1/6W		R489 A	METAL				1/6W	
R441	1-249-434-11	CARBON	27K	5%	1/6W		R490	1-249-435-11	CARBON	33K	5%	1/6W	
R442	1-249-417-11	CARBON	1K	5%	1/6W		R491	1-247-845-00	CARBON	3.9K	5%	1/6W	
R443	1-249-429-11	CARBON	10K	5%	1/6W		R492	1-247-717-11	CARBON	2.2K	5%	1/4W	
R444	1-215-439-00	METAL	5.6K	1%	1/6W		R493	1-247-721-11	CARBON	4.7K	5%	1/4W	
R445	1-215-409-00	METAL	330	1%	1/6W		R494	1-249-435-11	CARBON	33K	5%	1/6W	
R446	1-215-428-00	METAL	2K	1%	1/6W		R495	1-215-445-00	METAL	10K	1%	1/6W	
R447	1-215-433-00	METAL	3.3K	1%	1/6W		R496	1-249-405-11	CARBON	100	5%	1/6W	
R448	1-249-423-11	CARBON	3.3K	5%	1/6W		R497	1-249-422-11	CARBON	2.7K	5%	1/6W	
R449	1-214-737-00	METAL	2.2K	1%	1/4W		R498	1-247-135-00	CARBON	1.5K	5%	1/4W	
R450	1-249-429-11	CARBON	10K	5%	1/6W		R499	1-247-725-11	CARBON	10K	5%	1/4W	
R451	1-249-433-11	CARBON	22K	5%	1/6W		R2003	1-249-437-11	CARBON	47K	5%	1/6W	
R452	1-249-433-11	CARBON	22K	5%	1/6W		R2004	1-249-437-11	CARBON	47K	5%	1/6W	
R453	1-249-417-11	CARBON	1K	5%	1/6W		R2005	1-249-429-11	CARBON	10K	5%	1/6W	
R454	1-247-726-11	CARBON	33K	5%	1/4W		R2006	1-216-421-11	METAL OXIDE	12	5%	1W	F
R455	1-249-435-11	CARBON	33K	5%	1/6W		R2007	1-247-815-00	CARBON	220	5%	1/6W	
R456	1-249-433-11	CARBON	22K	5%	1/6W		R2010	1-247-711-11	CARBON	680	5%	1/4W	
R457	1-249-433-11	CARBON	22K	5%	1/6W		R2011	1-249-405-11	CARBON	100	5%	1/6W	
R458	1-249-435-11	CARBON	33K	5%	1/6W		R2012	1-249-417-11	CARBON	1K	5%	1/6W	
R459	1-249-440-11	CARBON	82K	5%	1/6W		R2013	1-247-813-00	CARBON	180	5%	1/6W	
R460	1-247-869-00	CARBON	39K	5%	1/6W		R2014	1-249-417-11	CARBON	1K	5%	1/6W	
R461	1-247-725-11	CARBON	10K	5%	1/4W		R2015	1-214-092-00	METAL	22	1%	1/4W	
R462	1-215-429-00	METAL	2.2K	1%	1/6W		R2016	1-214-092-00	METAL	22	1%	1/4W	
R463	1-215-483-00	METAL	390K	1%	1/6W		R2017	1-249-415-11	CARBON	680	5%	1/6W	
R464	1-215-452-00	METAL	20K	1%	1/6W		R2018	1-247-839-00	CARBON	2.2K	5%	1/6W	
R465	1-215-449-00	METAL	15K	1%	1/6W		R2020	1-247-711-11	CARBON	680	5%	1/4W	
R466	1-249-417-11	CARBON	1K	5%	1/6W		R2021	1-249-405-11	CARBON	100	5%	1/6W	
R467	1-249-417-11	CARBON	1K	5%	1/6W		R2022	1-249-417-11	CARBON	1K	5%	1/6W	
R468	1-249-417-11	CARBON	1K	5%	1/6W		R2023	1-247-813-00	CARBON	180	5%	1/6W	
R469	1-249-417-11	CARBON	1K	5%	1/6W		R2024	1-249-417-11	CARBON	1K	5%	1/6W	
R470	1-249-465-11	CARBON	47K	5%	1/4W		R2025	1-214-092-00	METAL	22	1%	1/4W	
R471	1-249-437-11	CARBON	47K	5%	1/6W		R2026	1-214-092-00	METAL	22	1%	1/4W	
R472	1-249-437-11	CARBON	47K	5%	1/6W		R2027	1-249-415-11	CARBON	680	5%	1/6W	
R473	1-249-437-11	CARBON	47K	5%	1/6W		R2028	1-247-839-00	CARBON	2.2K	5%	1/6W	
R474	1-247-875-00	CARBON	68K	5%	1/6W		R2030	1-247-711-11	CARBON	680	5%	1/4W	
R475	1-247-875-00	CARBON	68K	5%	1/6W		R2031	1-249-405-11	CARBON	100	5%	1/6W	
R476	1-247-875-00	CARBON	68K	5%	1/6W		R2032	1-249-417-11	CARBON	1K	5%	1/6W	
R477	1-249-467-11	CARBON	68K	5%	1/4W		R2033	1-247-813-00	CARBON	180	5%	1/6W	
R479	1-247-839-00	CARBON	2.2K	5%	1/6W		R2034	1-249-417-11	CARBON	1K	5%	1/6W	
R480	1-247-717-11	CARBON	2.2K	5%	1/4W		R2035	1-214-092-00	METAL	22	1%	1/4W	
R481	1-247-725-11	CARBON	10K	5%	1/4W		R2036	1-214-092-00	METAL	22	1%	1/4W	
*R482	1-215-437-00	METAL	4.7K	1%	1/6W		R2037	1-249-415-11	CARBON	680	5%	1/6W	
*R482	1-215-441-00	METAL	6.8K	1%	1/6W		R2038	1-247-839-00	CARBON	2.2K	5%	1/6W	
*R482	1-215-445-00	METAL	10K	1%	1/6W		R3001	1-247-819-00	CARBON	330	5%	1/6W	
*R482	1-215-453-00	METAL	22K	1%	1/6W		R3002	1-249-425-11	CARBON	4.7K	5%	1/6W	
*R482	1-215-461-00	METAL	47K	1%	1/6W		R3003	1-247-853-00	CARBON	8.2K	5%	1/6W	
*R482	1-215-469-00	METAL	100K	1%	1/6W		R3004	1-249-405-11	CARBON	100	5%	1/6W	
R483	1-215-415-00	METAL	560	1%	1/6W		R3005	1-247-839-00	CARBON	2.2K	5%	1/6W	
R484	1-247-897-00	CARBON	560K	5%	1/6W		R3006	1-247-893-00	CARBON	390K	5%	1/6W	
R485	1-247-857-00	CARBON	12K	5%	1/6W		R4001	1-249-429-11	CARBON	10K	5%	1/6W	
R486	1-249-417-11	CARBON	1K	5%	1/6W		R4002	1-247-849-00	CARBON	5.6K	5%	1/6W	
R487	1-247-823-00	CARBON	470	5%	1/6W		R4003	1-247-839-00	CARBON	2.2K	5%	1/6W	

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

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- The components identified by **A** 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.





Ref.No.	Part No.	Description	Quantity	Power	Remark
R4004	1-249-429-11	CARBON	10K	5%	1/6W
R4005	1-247-849-00	CARBON	5.6K	5%	1/6W
R4006	1-247-839-00	CARBON	2.2K	5%	1/6W
R4007	1-249-429-11	CARBON	10K	5%	1/6W
R4008	1-247-849-00	CARBON	5.6K	5%	1/6W
R4009	1-247-839-00	CARBON	2.2K	5%	1/6W
R4010	1-249-437-11	CARBON	47K	5%	1/6W
R4011	1-249-429-11	CARBON	10K	5%	1/6W
R4012	1-249-429-11	CARBON	10K	5%	1/6W
R4013	1-249-437-11	CARBON	47K	5%	1/6W
R4014	1-249-437-11	CARBON	47K	5%	1/6W
R4015	1-249-417-11	CARBON	1K	5%	1/6W
R4016	1-249-429-11	CARBON	10K	5%	1/6W
R4017	1-249-405-11	CARBON	100	5%	1/6W
R4018	1-249-425-11	CARBON	4.7K	5%	1/6W
R4019	1-215-411-00	METAL	390	1%	1/6W
R4023	1-249-437-11	CARBON	47K	5%	1/6W
R5010	1-247-849-00	CARBON	5.6K	5%	1/6W

VARIABLE RESISTOR

RV211	1-224-248-XX	RES, ADJ, METAL GLAZE	470
RV221	1-224-248-XX	RES, ADJ, METAL GLAZE	470
RV231	1-224-248-XX	RES, ADJ, METAL GLAZE	470
RV251	1-224-254-XX	RES, ADJ, METAL GLAZE	47K
RV252	1-224-256-XX	RES, ADJ, METAL GLAZE	220K

RV291	1-224-254-XX	RES, ADJ, METAL GLAZE	47K
RV292	1-224-253-XX	RES, ADJ, METAL GLAZE	22K
RV301	1-224-249-XX	RES, ADJ, METAL GLAZE	1K
RV302	1-224-256-XX	RES, ADJ, METAL GLAZE	220K
RV303	1-224-253-XX	RES, ADJ, METAL GLAZE	22K

RV306	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K
RV307	1-224-254-XX	RES, ADJ, METAL GLAZE	47K
RV401	1-224-134-XX	RES, ADJ, METAL GLAZE	470K
RV402	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K
RV403	1-224-248-XX	RES, ADJ, METAL GLAZE	470

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\*A-1240-695-A F BOARD, COMPLETE  
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1-533-190-11 CLIP, FUSE

CAPACITOR

C601	1-136-360-51	FILM	0.22MF	20%	250V
C602	1-136-360-51	FILM	0.22MF	20%	250V
C603	1-161-953-51	CERAMIC	0.0047MF	20%	400V
C604	1-161-953-51	CERAMIC	0.0047MF	20%	400V
C605	1-161-953-00	CERAMIC	0.0047MF	20%	400V
C606	1-161-953-00	CERAMIC	0.0047MF	20%	400V
C607	1-125-295-00	ELECT(BLOCK)	560MF	20%	200V
C608	1-125-295-00	ELECT(BLOCK)	560MF	20%	200V
C609	1-136-360-51	FILM	0.22MF	20%	250V
C610	1-102-050-51	CERAMIC	0.01MF		500V

Ref.No.	Part No.	Description	Remark
DIODE			
D601	8-719-911-55	DIODE U05G	
D602	8-719-911-55	DIODE U05G	

CONNECTOR

F1	*1-508-786-00	2P PLUG (M)
F2	*1-508-786-00	2P PLUG (M)
F3	*1-508-765-00	3P PLUG (M)
F4	*1-508-765-00	3P PLUG (M)

FUSE

F601 1-532-509-11 FUSE, GLASS TUBE 6.3A

RESISTOR

R601	1-202-723-51	SOLID	2.2M	10%	1/2W
R602	1-202-723-51	SOLID	2.2M	10%	1/2W
R603	1-205-741-11	CEMENTED	1.8	5%	10W
R604	1-244-925-00	CARBON	150K	5%	1/2W
R605	1-244-925-00	CARBON	150K	5%	1/2W

TRANSFORMER

T601	1-421-357-31	TRANSFORMER, LINE FILTER
T602	1-421-426-11	TRANSFORMER, FERRITE

THERMISTOR

THP601 1-806-214-21 THERMISTOR (POSITIVE)

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\*A-1316-059-A G BOARD, COMPLETE  
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\*4-314-225-00 HEAT SINK, (A)  
4-363-414-00 SPACER, MICA  
\*4-368-683-01 SPRING

CAPACITOR

C650	1-102-050-51	CERAMIC	0.01MF		500V
C651	1-136-060-00	FILM	0.047MF	5%	400V
C652	1-136-060-00	FILM	0.047MF	5%	400V
C653	1-102-327-00	CERAMIC	330PF	15%	1.5KV
C654	1-102-327-00	CERAMIC	330PF	15%	1.5KV
C655	1-130-661-00	FILM	0.022MF	3%	600V
C656	1-136-239-11	FILM	0.01MF	3%	1KV
C657	1-136-060-00	FILM	0.047MF	5%	400V
C659	1-123-024-00	ELECT	33MF		160V
C661	1-123-024-00	ELECT	33MF		160V
C662	1-123-024-00	ELECT	33MF		160V
C663	1-124-035-00	ELECT	47MF	20%	16V
C664	1-124-128-00	ELECT	470MF	20%	25V
C665	1-123-875-91	ELECT	10MF	20%	50V
C666	1-124-035-00	ELECT	47MF	20%	16V
C667	1-124-900-11	ELECT	470MF	20%	35V

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Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C668	1-123-332-00	ELECT 47MF	20% 16V	Q656	8-729-117-54	TRANSISTOR 2SA1175	
C669	1-123-332-00	ELECT 47MF	20% 16V	Q657	8-729-178-54	TRANSISTOR 2SC2785	
C670	1-162-116-00	CERAMIC 680PF	10% 2KV	<u>RESISTOR</u>			
C671	1-162-558-11	CERAMIC 100PF	10% 2KV	R651	1-202-842-51	SOL ID 220K	1/2W
C672	1-162-558-11	CERAMIC 100PF	10% 2KV	R652	1-202-842-51	SOL ID 220K	1/2W
<u>DIODE</u>				R653	1-202-842-51	SOL ID 220K	1/2W
D651	8-719-301-18	DIODE RM2CS		R654	1-217-418-00	FUS IBLE 0.47	10% 1/2W F
D652	8-719-301-18	DIODE RM2CS		R655	1-217-418-00	FUS IBLE 0.47	10% 1/2W F
D653	8-719-901-93	DIODE V19E		R656	1-216-374-00	META_ OX IDE 2.7	5% 2W F
D654	8-719-901-93	DIODE V19E		R657	1-216-374-00	META_ OX IDE 2.7	5% 2W F
D655	8-719-302-00	DIODE RU-2M		R658	1-247-717-11	CARBON 2.2K	5% 1/4W
D656	8-719-500-25	DIODE D5KC20RH		R659	1-247-700-11	CARBON 100	5% 1/4W
D657	8-719-302-00	DIODE RU-2M		*R660	1-215-468-00	METAL 91K	1% 1/6W
D658	8-719-302-00	DIODE RU-2M		*R660	1-215-469-00	METAL 100K	1% 1/6W
D659	8-719-982-04	DIODE ERB81-004		*R660	1-215-470-00	METAL 110K	1% 1/6W
D660	8-719-982-04	DIODE ERB81-004		R661	1-215-449-00	METAL 15K	1% 1/6W
D661	8-719-982-04	DIODE ERB81-004		R662	1-247-719-11	CARBON 3.3K	5% 1/4W
D662	8-719-982-04	DIODE ERB81-004		R663	1-247-717-11	CARBON 2.2K	5% 1/4W
D663	8-719-982-04	DIODE ERB81-004		R664	1-215-469-00	METAL 100K	1% 1/6W
D664	8-719-302-00	DIODE RU-2M		R665	1-215-451-00	METAL 18K	1% 1/6W
D665	8-719-302-00	DIODE RU-2M		R666	1-215-467-00	METAL 82K	1% 1/6W
D666	8-719-302-00	DIODE RU-2M		R667	1-215-451-00	META_ 18K	1% 1/6W
D667	8-719-302-00	DIODE RU-2M		R668	1-247-719-11	CARBON 3.3K	5% 1/4W
D668	8-719-302-00	DIODE RU-2M		R669	1-249-441-11	CARBON 100K	5% 1/6W
D669	8-719-901-24	THYRISTOR CSM2A4A10		R671	1-249-381-11	CARBON 1	5% 1/6W F
D670	8-719-102-62	DIODE RD4.3E-N2		R672	1-202-842-51	SOL ID 220K	1/2W
D671	8-719-103-06	DIODE RD13E-N2		R673	1-247-717-11	CARBON 2.2K	5% 1/4W
D672	8-719-103-06	DIODE RD13E-N2		R674	1-249-429-11	CARBON 10K	5% 1/6W
D673	8-719-302-00	DIODE RU-2M		<u>TRANSFORMER</u>			
D674	8-719-302-00	DIODE RU-2M		T651	▲ 1-421-704-11	CDT	
D675	8-719-302-00	DIODE RU-2M		T652	▲ 1-421-886-11	PIT	
D676	8-719-302-00	DIODE RU-2M		T653	▲ 1-421-888-11	PRT	
D677	8-719-302-00	DIODE RU-2M		T654	▲ 1-421-889-11	PRT	
D678	8-719-901-93	DIODE V19E		T655	▲ 1-421-889-11	PRT	
D679	8-719-901-93	DIODE V19E		T656	▲ 1-421-885-11	COT	
<u>CONNECTOR</u>				T657	▲ 1-421-887-11	PHT	
G1	*1-508-765-00	3P PLUG (M)		*****			
G2	*1-566-054-11	PIN, CONNECTOR 2P		*A-1330-716-A CB BOARD, COMPLETE			
G3	*1-508-766-00	4P PLUG (M)		*****			
G4	*1-508-767-00	5P PLUG		1-526-762-00 SOCKET, CRT			
G5	*1-508-765-00	3P PLUG (M)		<u>NEON LAMP</u>			
<u>MODULE</u>				NL701	1-519-371-11	LAMP, NEON	
IC651	1-235-449-11	POWER MODULE (DM-19)		NL702	1-519-371-11	LAMP, NEON	
<u>TRANSISTOR</u>				NL703	1-519-371-11	LAMP, NEON	
Q651	8-729-904-23	TRANSISTOR 2SC3318-S		<u>RESISTOR</u>			
Q652	8-729-904-23	TRANSISTOR 2SC3318-S		R701	1-202-719-00	SOL ID 1M	10% 1/2W
Q653	8-729-177-43	TRANSISTOR 2SD774		R706	1-202-824-00	SOL ID 3.3K	1/2W
Q654	8-729-177-43	TRANSISTOR 2SD774					
Q655	8-729-117-54	TRANSISTOR 2SA1175					

● \* : selected to yield optimum performance.

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Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
<b>VARIABLE RESISTOR</b>							
RV703	1-230-798-11	RES, ADJ, METAL GLAZE 90M		C547	1-102-327-11	CERAMIC 330PF	15% 1.5KV
				C548	1-136-173-00	FILM 0.47MF	5% 50V
				C549	1-124-347-00	ELECT 100MF	20% 160V
				C550	1-124-484-11	ELECT 220MF	20% 35V
				C551	1-162-114-00	CERAMIC 0.0047MF	2KV
*****							
*A-1340-829-A		D BOARD, COMPLETE		C552	1-108-429-00	MYLAR 0.047MF	10% 200V
		*****		C553	1-123-949-00	ELECT 33MF	20% 250V
*4-314-225-00		HEAT SINK, (A)		C554	1-124-477-11	ELECT 47MF	20% 25V
*4-323-833-00		HEAT SINK, PIN OUT		C555	1-123-024-00	ELECT 33MF	160V
*4-323-833-00		HEAT SINK, PIN OUT		C556	1-129-722-51	FILM 0.047MF	10% 630V
*4-363-414-00		SPACER, MICA		C557	1-124-481-11	ELECT 22MF	20% 25V
*4-381-827-01		HOLDER, TR		C558	1-124-445-00	ELECT 100MF	20% 16V
<b>CAPACITOR</b>							
C159	1-162-116-00	CERAMIC 680PF	10% 2KV	C560	1-136-308-11	FILM 0.68MF	5% 200V
C501	1-124-448-00	ELECT 1000MF	20% 35V	C561	1-106-196-00	MYLAR 0.01MF	10% 100V
C502	1-124-932-11	ELECT 100MF	20% 100V	C562	1-124-927-11	ELECT 4.7MF	20% 50V
C504	1-124-556-11	ELECT 2200MF	20% 16V	C563	1-124-120-11	ELECT 220MF	20% 25V
C505	1-102-234-51	CERAMIC 270PF	10% 500V	C564	1-124-478-11	ELECT 100MF	20% 25V
C506	1-123-332-00	ELECT 47MF	20% 16V	C565	1-124-907-00	ELECT 10MF	20% 50V
C507	1-108-429-00	MYLAR 0.047MF	10% 200V	C566	1-136-308-11	FILM 0.68MF	5% 200V
C509	1-108-622-91	MYLAR 0.0047MF	10% 100V	C570	1-162-134-11	CERAMIC 470PF	10% 2KV
C511	1-108-433-00	MYLAR 0.1MF	10% 200V	C581	1-124-477-11	ELECT 47MF	20% 25V
C513	1-124-909-11	ELECT 33MF	20% 50V	C585	1-124-896-00	ELECT 33MF	20% 16V
C515	1-124-902-00	ELECT 0.47MF	20% 50V	C589	1-124-907-00	ELECT 10MF	20% 50V
C517	1-102-978-00	CERAMIC 220PF	5% 50V	C593	1-162-117-00	CERAMIC 100PF	10% 500V
C518	1-129-702-00	FILM 0.001MF	10% 630V	C594	1-123-640-00	ELECT 10MF	20% 100V
C519	1-129-702-00	FILM 0.001MF	10% 630V	C595	1-123-267-00	ELECT 2.2MF	20% 160V
C521	1-161-830-00	CERAMIC 0.0047MF	500V	C596	1-102-038-00	CERAMIC 0.001MF	500V
C522	1-136-179-00	FILM 1.5MF	5% 200V	C597	1-102-038-00	CERAMIC 0.001MF	500V
C523	1-136-053-00	FILM 1.2MF	5% 200V	C5001	1-124-910-11	ELECT 47MF	20% 50V
C524	1-129-712-51	FILM 0.0068MF	10% 630V	C5002	1-162-115-00	CERAMIC 330PF	10% 2KV
C525	1-136-331-11	FILM 3MF	5% 200V	<b>CONNECTOR</b>			
C526	1-136-053-00	FILM 1.2MF	5% 200V	D1	*1-564-038-00	CONNECTOR PLUG, DY (MINI) 6P	
C527	1-123-943-00	ELECT 1MF	20% 250V	D2	*1-508-766-00	4P PLUG (M)	
C528	1-136-115-00	FILM 0.56MF	5% 200V	D3	*1-508-767-00	5P PLUG	
C529	1-136-331-11	FILM 3MF	5% 200V	D4	*1-566-054-11	PIN, CONNECTOR 2P	
C530	1-129-723-51	FILM 0.056MF	10% 630V	D5	*1-566-057-11	PIN, CONNECTOR 5P	
C531	1-136-089-11	FILM 0.0056MF	3% 2KV	D6	*1-508-765-00	3P PLUG (M)	
C532	1-108-614-91	MYLAR 0.001MF	10% 100V	D7	*1-508-765-00	3P PLUG (M)	
C533	1-102-129-00	CERAMIC 0.01MF	10% 50V	D8	*1-566-054-11	PIN, CONNECTOR 2P	
C534	1-102-129-00	CERAMIC 0.01MF	10% 50V	D11	*1-566-054-11	PIN, CONNECTOR 2P	
C535	1-124-907-00	ELECT 10MF	20% 50V	D12	*1-566-062-11	PIN, CONNECTOR 10P	
C536	1-106-192-00	MYLAR 0.0068MF	10% 100V	D13	*1-566-057-11	PIN, CONNECTOR 5P	
C537	1-106-196-00	MYLAR 0.01MF	10% 100V	<b>DIODE</b>			
C538	1-124-902-00	ELECT 0.47MF	20% 50V	D504	8-719-901-02	DIODE S1B01-02	
C539	1-108-614-91	MYLAR 0.001MF	10% 100V	D505	8-719-901-02	DIODE S1B01-02	
C540	1-106-196-00	MYLAR 0.01MF	10% 100V	D506	8-719-911-19	DIODE 1SS119	
C541	1-106-196-00	MYLAR 0.01MF	10% 100V	D507	8-719-911-19	DIODE 1SS119	
C542	1-124-907-00	ELECT 10MF	20% 50V	D508	8-719-911-19	DIODE 1SS119	
C543	1-124-192-00	ELECT 4.7MF	20% 50V	D509	8-719-911-19	DIODE 1SS119	
C545	1-108-691-81	MYLAR 0.0082MF	10% 200V	D510	8-719-918-77	DIODE V19G	
C546	1-108-688-91	MYLAR 0.0047MF	10% 200V	D511	8-719-901-93	DIODE V19E	

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

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
D512	8-719-973-95	DIODE ERD09-15		Q508	8-729-178-54	TRANSISTOR 2SC2785	
D513	8-719-302-59	DIODE FMU-26S		Q509	8-729-178-54	TRANSISTOR 2SC2785	
D514	8-719-918-77	DIODE V19G		Q510	8-729-313-42	TRANSISTOR 2SD1134	
D515	8-719-101-94	DIODE RD18E-L1		Q511	8-729-177-43	TRANSISTOR 2SD774	
D516	<u>A</u> 8-719-901-02	DIODE SIB01-02		Q512	8-729-374-02	TRANSISTOR 2SB740	
D518	8-719-911-19	DIODE 1SS119		Q513	8-729-177-43	TRANSISTOR 2SD774	
D522	8-719-102-74	DIODE RD6.2E-N2		Q514	8-729-805-07	TRANSISTOR 2SD1887-CA	
D523	8-719-300-76	DIODE RH1A		Q515	8-729-178-54	TRANSISTOR 2SC2785	
D524	8-719-300-76	DIODE RH1A		Q516	8-729-178-54	TRANSISTOR 2SC2785	
D525	8-719-911-19	DIODE 1SS119		Q517	8-729-178-54	TRANSISTOR 2SC2785	
D526	8-719-300-65	DIODE ES1F		Q518	8-729-178-54	TRANSISTOR 2SC2785	
D528	8-719-102-97	DIODE RD12E-N2		Q519	8-729-213-12	TRANSISTOR 2SC2230A	
D529	8-719-300-65	DIODE ES1F		Q520	8-729-401-21	TRANSISTOR 2SD1264-P	
D531	8-719-911-19	DIODE 1SS119		Q521	8-729-401-18	TRANSISTOR 2SB940-P	
D532	8-719-911-19	DIODE 1SS119		Q522	8-729-178-54	TRANSISTOR 2SC2785	
D533	8-719-911-19	DIODE 1SS119		Q531	8-729-178-54	TRANSISTOR 2SC2785	
D534	8-719-911-19	DIODE 1SS119		Q532	8-729-178-54	TRANSISTOR 2SC2785	
D535	8-719-911-19	DIODE 1SS119		Q533	8-729-178-54	TRANSISTOR 2SC2785	
D536	8-719-973-95	DIODE ERD09-15		Q534	8-729-178-54	TRANSISTOR 2SC2785	
D537	8-719-918-77	DIODE V19G		Q5001	8-729-117-54	TRANSISTOR 2SA1175	
D5001	8-719-901-24	THYRISTOR CSM2B4A10		<u>RESISTOR</u>			
D5002	8-719-911-19	DIODE 1SS119		R501	1-249-417-11	CARBON 1K 5%	1/6W
D5003	8-719-901-19	DIODE V11N		R503	1-249-417-11	CARBON 1K 5%	1/6W
		<u>IC</u>		R504	1-249-405-11	CARBON 100 5%	1/6W
IC501	8-759-014-95	IC MC1495I		R505	1-249-425-11	CARBON 4.7K 5%	1/6W
IC504	8-759-145-58	IC UPC4558C		R506	1-247-791-00	CARBON 22 5%	1/6W
IC505	8-759-170-12	IC UPC78M12H		R507	1-247-725-11	CARBON 10K 5%	1/4W
		<u>COIL</u>		R508	1-247-719-11	CARBON 3.3K 5%	1/4W
L501	1-408-239-00	MICRO INDUCTOR 4.7MMH		R509	1-247-851-00	CARBON 6.8K 5%	1/6W
L502	<u>A</u> 1-459-670-11	H.L.C		R510	1-216-350-11	METAL OXIDE 1.2 5%	1W F
L503	<u>A</u> 1-459-671-11	COIL (WITH CORE)		R511	1-216-428-00	METAL OXIDE 180 5%	1W F
L504	1-459-123-00	COIL, DUST CORE(PAC)		R512	1-216-371-00	METAL OXIDE 1.5 5%	2W F
L505	1-459-104-00	COIL, DUST CORE		R513	1-216-373-11	METAL OXIDE 2.2 5%	2W F
L506	1-407-365-00	COIL, CHOKE (HIGH FREQUENCY)		R514	1-249-429-11	CARBON 10K 5%	1/6W
L507	1-421-421-00	COIL, CHOKE 100UH		R516	1-249-417-11	CARBON 1K 5%	1/6W
L508	1-459-215-00	CORE COIL		R517	1-249-440-11	CARBON 82K 5%	1/6W
L509	1-459-215-00	CORE COIL		R518	1-247-815-00	CARBON 220 5%	1/6W
L510	1-459-454-00	COIL, FERRITE CHOKE		R519	1-247-891-00	CARBON 330K 5%	1/6W
L511	1-421-329-00	COIL, CHOKE		R520	1-249-429-11	CARBON 10K 5%	1/6W
L512	1-407-711-00	MICRO INDUCTOR 330UH		R521	1-249-429-11	CARBON 10K 5%	1/6W
		<u>NEON LAMP</u>		R523	1-215-882-00	METAL OXIDE 22 5%	2W F
NL 501	1-519-237-11	LAMP, NEON		R524	1-247-815-00	CARBON 220 5%	1/6W
		<u>TRANSISTOR</u>		R525	1-247-875-00	CARBON 68K 5%	1/6W
Q501	8-729-900-36	TRANSISTOR DTC124ES		R526	1-249-429-11	CARBON 10K 5%	1/6W
Q502	8-729-603-50	TRANSISTOR 2SC403SP		R527	1-247-145-00	CARBON 3.9K 5%	1/4W
Q503	8-729-603-50	TRANSISTOR 2SC403SP		R528	1-247-721-11	CARBON 4.7K 5%	1/4W
Q506	8-729-117-54	TRANSISTOR 2SA1175		R529	1-216-456-00	METAL OXIDE 820 5%	2W F
Q507	8-729-177-43	TRANSISTOR 2SD774		R530	1-215-891-11	METAL OXIDE 680 5%	2W F
				R531	1-216-430-11	METAL OXIDE 390 5%	1W F
				R532	1-249-429-11	CARBON 10K 5%	1/6W
				R533	1-249-437-11	CARBON 47K 5%	1/6W
				R534	1-249-440-11	CARBON 82K 5%	1/6W

The components identified by shading and marked A are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque A sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

D

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R535	1-249-429-11	CARBON 10K 5%	1/6W	R589	1-249-429-11	CARBON 10K 5%	1/6W
R536	1-247-885-00	CARBON 180K 5%	1/6W	R590	1-249-429-11	CARBON 10K 5%	1/6W
R537	1-249-440-11	CARBON 82K 5%	1/6W	R591	1-249-422-11	CARBON 2.7K 5%	1/6W
R538	1-249-429-11	CARBON 10K 5%	1/6W	R592	1-247-845-00	CARBON 3.9K 5%	1/6W
R539	1-247-883-00	CARBON 150K 5%	1/6W	R593	1-249-393-11	CARBON 10 5%	1/6W F
R540	1-247-893-00	CARBON 390K 5%	1/6W	R594	1-216-483-11	METAL OXIDE 2.7K 5%	3W F
R542	1-249-433-11	CARBON 22K 5%	1/6W	R595	1-216-458-11	METAL OXIDE 1.8K 5%	2W F
R543	1-247-851-00	CARBON 6.8K 5%	1/6W	R596	1-249-401-11	CARBON 47 5%	1/6W F
R544	1-247-859-00	CARBON 15K 5%	1/6W	R597	1-216-350-11	METAL OXIDE 1.2 5%	1W F
R545	1-247-817-00	CARBON 270 5%	1/6W	R598	1-216-350-11	METAL OXIDE 1.2 5%	1W F
R546	1-247-849-00	CARBON 5.6K 5%	1/6W	R599	1-202-842-51	SOLID 220K	1/2W
R547	1-249-435-11	CARBON 33K 5%	1/6W	R5001	1-249-429-11	CARBON 10K 5%	1/6W
R548	1-247-726-11	CARBON 33K 5%	1/4W	R5002	1-249-441-11	CARBON 100K 5%	1/6W
R549	1-249-469-11	CARBON 100K 5%	1/4W	R5003	1-247-851-00	CARBON 6.8K 5%	1/6W
R550	1-249-429-11	CARBON 10K 5%	1/6W	R5004	1-249-432-11	CARBON 18K 5%	1/6W
R551	1-249-417-11	CARBON 1K 5%	1/6W F	R5005	1-249-429-11	CARBON 10K 5%	1/6W
R552	1-249-429-11	CARBON 10K 5%	1/6W	R5006	1-247-839-00	CARBON 2.2K 5%	1/6W
R553	1-249-417-11	CARBON 1K 5%	1/6W	R5007	1-247-887-00	CARBON 220K 5%	1/6W
R554	1-247-713-11	CARBON 1K 5%	1/4W	R5010	1-202-841-00	SOLID 180K	10% 1/2W
R555	1-249-467-11	CARBON 68K 5%	1/4W	R5011	1-249-437-11	CARBON 47K 5%	1/6W
R556	1-216-424-11	METAL OXIDE 39 5%	1W F	R5012	1-249-429-11	CARBON 10K 5%	1/6W
R557	1-215-892-11	METAL OXIDE 1K 5%	2W F	R5013	1-249-437-11	CARBON 47K 5%	1/6W
R558	1-249-433-11	CARBON 22K 5%	1/6W	R5015	1-249-429-11	CARBON 10K 5%	1/6W
R559	1-249-417-11	CARBON 1K 5%	1/6W	R5016	1-249-433-11	CARBON 22K 5%	1/6W
R560	1-215-886-11	METAL OXIDE 100 5%	2W F	R5017	1-247-821-00	CARBON 390 5%	1/6W
R561	△ 1-215-863-51	METAL OXIDE 100 5%	1W F	R5018	1-249-440-11	CARBON 82K 5%	1/6W
R562	1-216-353-00	METAL OXIDE 2.2 5%	1W F	R5019	1-215-898-11	METAL OXIDE 10K 5%	2W F
R563	1-202-818-00	SOLID 1K	1/2W	R5020	1-216-445-11	METAL OXIDE 12 5%	2W F
R564	1-249-387-11	CARBON 3.3 5%	1/6W F	R5021	1-216-353-00	METAL OXIDE 2.2 5%	1W F
R565	1-215-874-11	METAL OXIDE 6.8K 5%	1W F	R5022	1-247-823-00	CARBON 470 5%	1/6W
R566	1-215-872-11	METAL OXIDE 3.3K 5%	1W F	R5023	1-216-450-00	METAL OXIDE 82 5%	2W F
R567	1-244-933-00	CARBON 330K 5%	1/2W	VARIABLE RESISTOR			
R568	1-215-881-11	METAL OXIDE 15 5%	2W F	RV502	1-228-727-00	RES, ADJ, CERAMIC CARBON	47K
R569	△ 1-216-425-51	METAL OXIDE 56 5%	1W F	RV503	1-228-728-00	RES, ADJ, CERAMIC CARBON	100K
R570	1-249-433-11	CARBON 22K 5%	1/6W	RV504	1-228-725-00	RES, ADJ, CERAMIC CARBON	22K
R571	1-249-417-11	CARBON 1K 5%	1/6W	RV505	1-228-728-00	RES, ADJ, CERAMIC CARBON	100K
R572	1-247-859-00	CARBON 15K 5%	1/6W	RV506	1-228-720-00	RES, ADJ, CERAMIC CARBON	1K
R573	1-216-424-11	METAL OXIDE 39 5%	1W F	RV570	1-228-725-00	RES, ADJ, CERAMIC CARBON	22K
R574	1-247-849-00	CARBON 5.6K 5%	1/6W	RV580	1-228-729-00	RES, ADJ, CERAMIC CARBON	220K
R575	1-247-851-00	CARBON 6.8K 5%	1/6W	RELAY			
R576	1-249-429-11	CARBON 10K 5%	1/6W	RY501	△ 1-515-626-11	RELAY	
R577	1-249-433-11	CARBON 22K 5%	1/6W	RY502	△ 1-515-626-11	RELAY	
R578	1-249-429-11	CARBON 10K 5%	1/6W	RY503	△ 1-515-626-11	RELAY	
R579	1-249-429-11	CARBON 10K 5%	1/6W	RY504	△ 1-515-626-11	RELAY	
R580	1-247-851-00	CARBON 6.8K 5%	1/6W	SPARK GAP			
R581	1-247-873-00	CARBON 56K 5%	1/6W	SG501	1-519-063-XX	DISCHARGING GAP	
R582	1-249-429-11	CARBON 10K 5%	1/6W				
R583	1-247-809-00	CARBON 120 5%	1/6W				
R584	1-249-429-11	CARBON 10K 5%	1/6W				
R585	1-249-425-11	CARBON 4.7K 5%	1/6W				
R586	1-249-405-11	CARBON 100 5%	1/6W				
R587	1-249-432-11	CARBON 18K 5%	1/6W				
R588	1-247-809-00	CARBON 120 5%	1/6W				

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**D H BC CA**

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
<u>TRANSFORMER</u>				<u>CAPACITOR</u>			
T501	A, 1-437-164-11	HDT		C703	1-123-948-00	ELECT 22MF 20% 250V	
T502	A, 1-439-390-11	TRANSFORMER ASSY, FLYBACK		C705	1-136-338-11	FILM 0.024MF 3% 1KV	
*****				C711	1-124-907-00	ELECT 10MF 20% 50V	
	*A-1371-187-A	H BOARD, COMPLETE	*****	C712	1-124-932-11	ELECT 100MF 20% 100V	
<u>CONNECTOR</u>				C713	1-130-983-00	FILM 1.5MF 5% 100V	
H1	*1-566-041-11	PIN, CONNECTOR 2P		C714	1-124-928-11	ELECT 10MF 20% 100V	
H2	1-566-043-21	PIN, CONNECTOR 4P		C721	1-124-907-00	ELECT 10MF 20% 50V	
H3	*1-566-041-31	PIN, CONNECTOR 2P		C722	1-124-932-11	ELECT 100MF 20% 100V	
H4	*1-566-041-11	PIN, CONNECTOR 2P		C723	1-130-983-00	FILM 1.5MF 5% 100V	
H5	*1-566-043-11	PIN, CONNECTOR 4P		C724	1-124-928-11	ELECT 10MF 20% 100V	
<u>RESISTOR</u>				C731	1-124-907-00	ELECT 10MF 20% 50V	
R802	1-247-811-00	CARBON 150 5% 1/6W		C732	1-124-932-11	ELECT 100MF 20% 100V	
<u>VARIABLE RESISTOR</u>				C733	1-130-983-00	FILM 1.5MF 5% 100V	
RV801	1-228-911-00	RES, VAR, CARBON 50K		C734	1-124-928-11	ELECT 10MF 20% 100V	
RV802	1-228-911-00	RES, VAR, CARBON 50K		<u>DIODE</u>			
RV803	1-228-911-00	RES, VAR, CARBON 50K		D711	8-719-901-83	DIODE 1SS83	
RV804	1-237-359-11	RES, VAR, CARBON 5K		D712	8-719-901-83	DIODE 1SS83	
<u>SWITCH</u>				D713	8-719-300-65	DIODE ES1F	
S801	1-516-970-00	SWITCH, SLIDE		D721	8-719-901-83	DIODE 1SS83	
S802	1-553-111-00	SWITCH, SLIDE		D722	8-719-901-83	DIODE 1SS83	
*****				D723	8-719-300-65	DIODE ES1F	
	*1-619-029-11	BC BOARD	*****	D731	8-719-901-83	DIODE 1SS83	
<u>CONNECTOR</u>				D732	8-719-901-83	DIODE 1SS83	
BC1	*1-566-060-11	PIN, CONNECTOR 8P		D733	8-719-300-65	DIODE ES1F	
BC2	*1-566-060-11	PIN, CONNECTOR 8P		<u>COIL</u>			
BC3	1-563-301-11	SOCKET, CONNECTOR (D-SUB) 9P		L711	1-407-689-00	MICRO INDUCTOR 4.7UH	
<u>COIL</u>				L712	1-407-687-00	MICRO INDUCTOR 3.3UH	
L901	1-410-314-11	MICRO INDUCTOR 0.47UH		L721	1-407-689-00	MICRO INDUCTOR 4.7UH	
L902	1-410-314-11	MICRO INDUCTOR 0.47UH		L722	1-407-687-00	MICRO INDUCTOR 3.3UH	
L903	1-410-314-11	MICRO INDUCTOR 0.47UH		L731	1-407-689-00	MICRO INDUCTOR 4.7UH	
L904	1-410-314-11	MICRO INDUCTOR 0.47UH		L732	1-407-687-00	MICRO INDUCTOR 3.3UH	
L905	1-410-314-11	MICRO INDUCTOR 0.47UH		<u>NEON LAMP</u>			
L906	1-410-314-11	MICRO INDUCTOR 0.47UH		NL711	1-519-405-11	LAMP, NEON	
L907	1-410-314-11	MICRO INDUCTOR 0.47UH		NL721	1-519-405-11	LAMP, NEON	
L908	1-410-314-11	MICRO INDUCTOR 0.47UH		NL731	1-519-405-11	LAMP, NEON	
*****				<u>TRANSISTOR</u>			
	*A-1389-771-A	CA BOARD, COMPLETE	*****	Q711	8-729-168-82	TRANSISTOR 2SC2688	
	4-370-970-01	SPACER, TR		Q721	8-729-168-82	TRANSISTOR 2SC2688	
<u>RESISTOR</u>				Q731	8-729-168-82	TRANSISTOR 2SC2688	
R702	1-202-818-00	SOLID 1K 1/2W		<u>RESISTOR</u>			
R703	1-202-719-00	SOLID 1M 10% 1/2W		R702	1-202-818-00	SOLID 1K 1/2W	
R708	1-202-720-00	SOLID 1.2M 10% 1/2W		R703	1-202-719-00	SOLID 1M 10% 1/2W	
R711	1-216-732-11	METAL 820 1% 10W		R708	1-202-720-00	SOLID 1.2M 10% 1/2W	
R712	1-202-557-00	SOLID 220 20% 1/2W		R711	1-216-732-11	METAL 820 1% 10W	
R713	1-244-887-51	CARBON 3.9K 5% 1/2W		R712	1-202-557-00	SOLID 220 20% 1/2W	

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

Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

**CA X**

Ref.No.	Part No.	Description	Remark
R714	1-244-889-51	CARBON 4.7K 5% 1/2W	
R715	1-247-903-00	CARBON 1M 5% 1/6W	
R716	1-247-783-00	CARBON 10 5% 1/6W	
R717	1-247-839-00	CARBON 2.2K 5% 1/6W	
R721	1-216-732-11	METAL 820 1% 10W	
R722	1-202-557-00	SOLID 220 20% 1/2W	
R723	1-244-887-51	CARBON 3.9K 5% 1/2W	
R724	1-244-889-51	CARBON 4.7K 5% 1/2W	
R725	1-247-903-00	CARBON 1M 5% 1/6W	
R726	1-247-783-00	CARBON 10 5% 1/6W	
R727	1-247-839-00	CARBON 2.2K 5% 1/6W	
R731	1-216-732-11	METAL 820 1% 10W	
R732	1-202-557-00	SOLID 220 20% 1/2W	
R733	1-244-887-51	CARBON 3.9K 5% 1/2W	
R734	1-244-889-51	CARBON 4.7K 5% 1/2W	
R735	1-247-903-00	CARBON 1M 5% 1/6W	
R736	1-247-783-00	CARBON 10 5% 1/6W	
R737	1-247-839-00	CARBON 2.2K 5% 1/6W	

VARIABLE RESISTOR

RV701	1-226-114-00	RES, ADJ, METAL GLAZE 2.2M
RV702	1-226-063-00	RES, ADJ, CARBON 2.2M
RV711	1-224-252-XX	RES, ADJ, METAL GLAZE 10K
RV721	1-224-252-XX	RES, ADJ, METAL GLAZE 10K
RV731	1-224-252-XX	RES, ADJ, METAL GLAZE 10K

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\*A-1389-829-A X BOARD, COMPLETE  
\*\*\*\*\*

DIODE

D901	8-719-902-19	DIODE GL-4NG2
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MISCELLANEOUS  
\*\*\*\*\*

A.1-230-666-12	RESISTOR ASSY, HIGH-VOLTAGE
A.1-451-291-12	DEFLECTION YOKE (SY-175)
1-452-146-21	MAGNET, BMC
A.1-509-546-11	3P INLET
1-543-179-00	CORE, RING
L901 A.1-426-283-11	COIL, DEMAGNETIZATION
RV901	1-230-536-11 RES, VAR, CARBON 10K
RV902	1-230-536-21 RES, VAR, CARBON 10K
S901 A.1-554-953-31	SWITCH, SEESAW (AC POWER)
V901 A.8-738-251-05	CRT M34JNQ15X

Ref.No.	Part No.	Description	Remark
		ACCESSORIES AND PACKING MATERIALS *****	
	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
	A.1-558-377-11	CORD, POWER	
	4-337-201-02	BAG, PROTECTION	

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

Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

## SONY® SERVICE MANUAL

US Model  
Canadian Model  
Chassis No. SCC-A31A-A

### CORRECTION


No. 1




Correct the service manual as shown below.  
File this correction with the service manual.

**MULTISCAN**

#### INTRODUCTION

Contents of main modifications are as follows.




- BA board Addition: C203, R201, R300  
Alteration: C402, C415  
Deletion: R339
  - BB board Alteration: IC106
  - D board Deletion: C5001, D5001, D5002, Q5001, R5003~R5006  
Deletion: C505, C5002, D5003, R506, R5019  
Alteration : R513
-  : Corrected Portion
- Parts to be replaced.

BOARD	OLD		NEW	
BA	C402	1-124-903-00	ELECT 1MF 20% 50V	C203 1-102-119-00 CERAMIC 0.0015MF 10%
	C415	1-124-904-00	ELECT 2.2MF 20% 50V	C402 1-124-903-00 ELECT 10MF 20% 50V
		---		C415 1-124-904-00 ELECT 10MF 20% 50V
		---		R201 1-249-425-11 CARBON 4.7K 5%
	 R339 		METAL 1/6W	R300 1-246-501-75 CARBON 15K 5%
BB	IC106	8-759-917-52	IC 74F138PC	IC106 8-759-917-52 IC SN74LS138N
D	C505	 1-102-234-51	CERAMIC 270PF 10% 500V	---
	C5001	1-124-910-11	ELECT 47MF 20% 50V	---
	C5002	1-162-115-00	CERAMIC 330PF 10% 2KV	---
	D5001	8-719-901-24	THYRISTOR CSM2B4A10	---
	D5002	8-719-911-19	DIODE 1SS119	---
	D5003	8-719-901-19	DIODE V11N	---
	Q5001	8-729-117-54	TRANSISTOR 2SA1175	---
	R506	1-247-791-00	CARBON 22 5% 1/6W	---
	R513	1-216-373-11	METAL OXIDE 2.2 5% 2W F	R513 1-216-369-51 METAL OXIDE 1 5% 2W F
	R5003	1-247-851-00	CARBON 6.8K 5% 1/6W	---
	R5004	1-249-432-11	CARBON 18K 5% 1/6W	---
	R5005	1-249-429-11	CARBON 10K 5% 1/6W	---
	R5006	1-247-839-00	CARBON 2.2K 5% 1/6W	---
R5019	1-215-898-11	METAL OXIDE 12 5% 2W F	---	

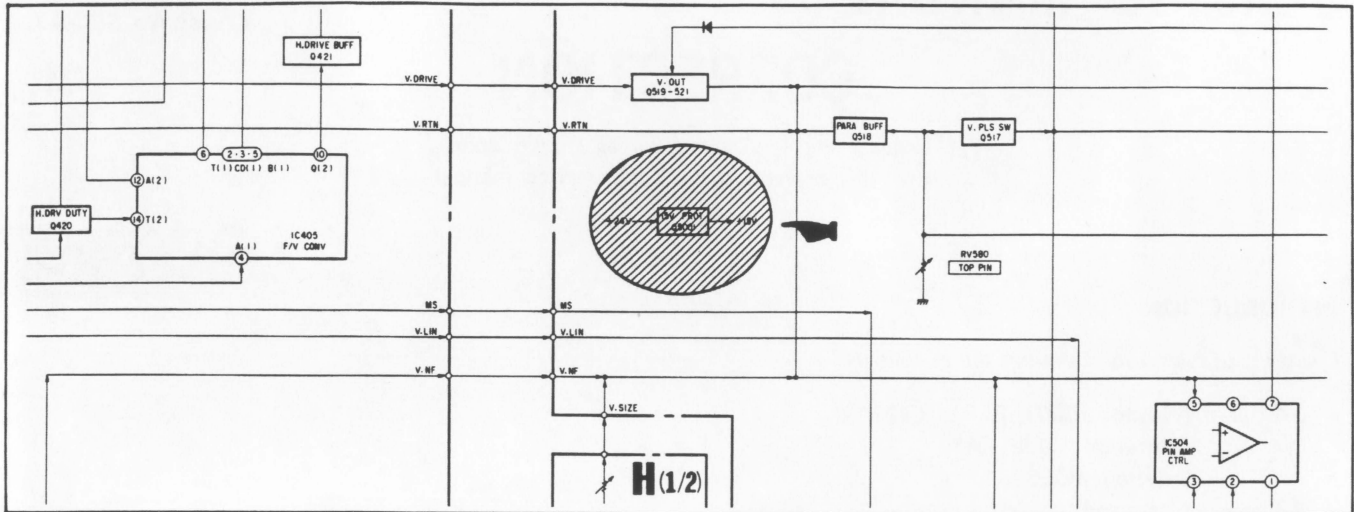




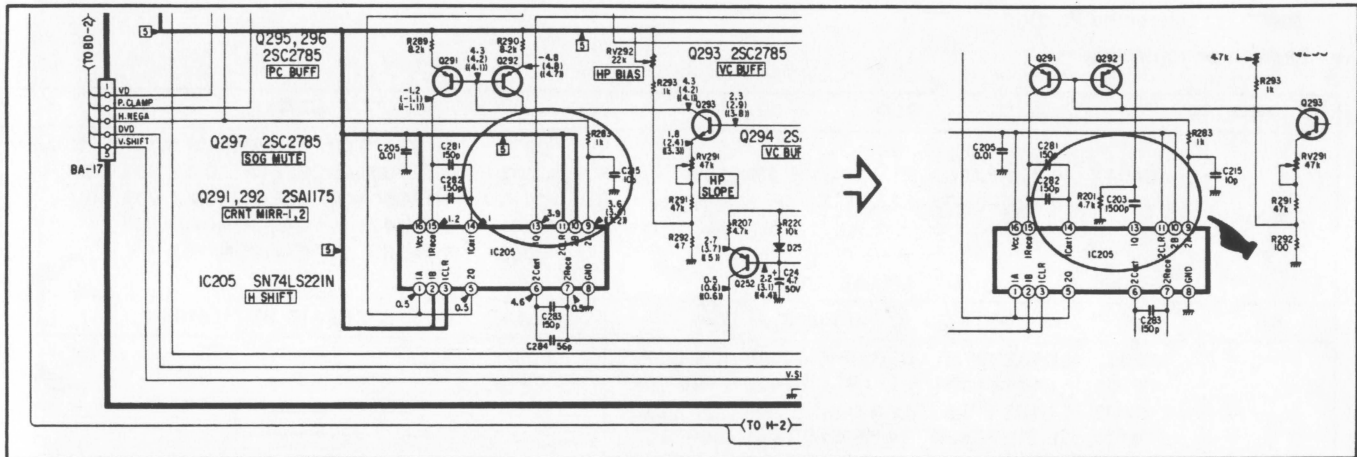
SECTION 4  
DIAGRAMS

-  : corrected portion.
-  : deleted portion
-  : altered and added portion

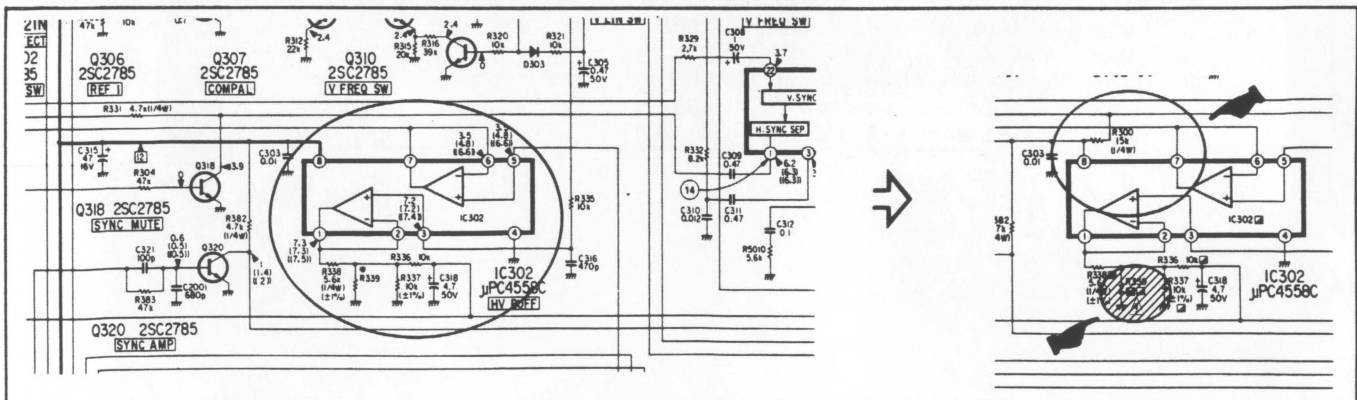
4-1. BLOCK DIAGRAM : PAGE 15 ~ 16/Q5001 to be deleted (D board).



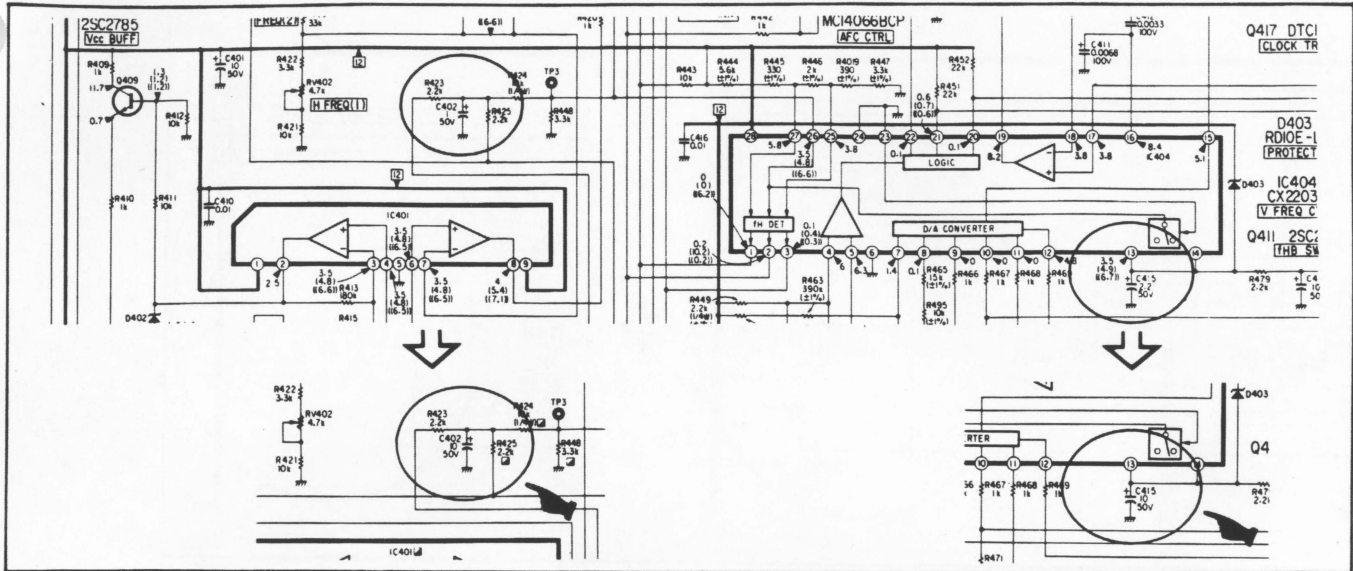
4-3. SCHEMATIC DIAGRAMS : PAGE 17 ~ 18/C203 and R201 to be added (BA board).



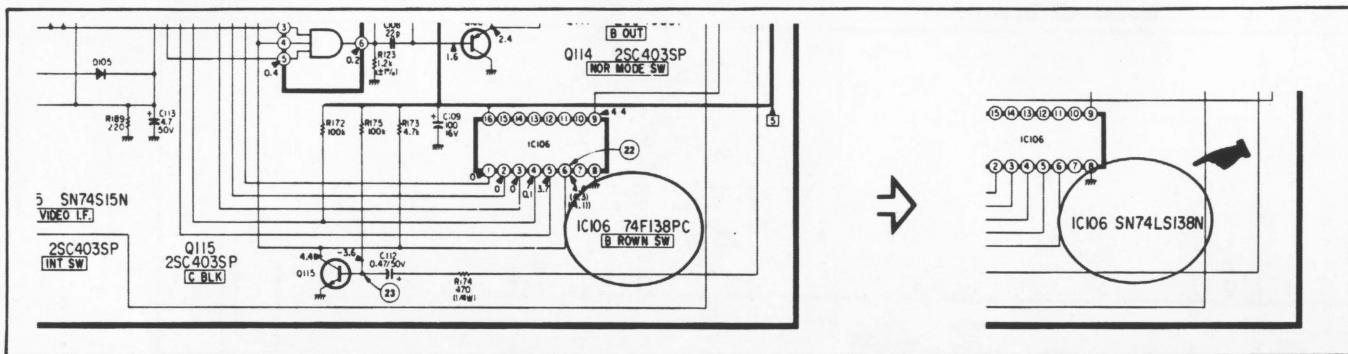
PAGE 18 ~ 19/R339 to be deleted and R300 to be added (BA board).



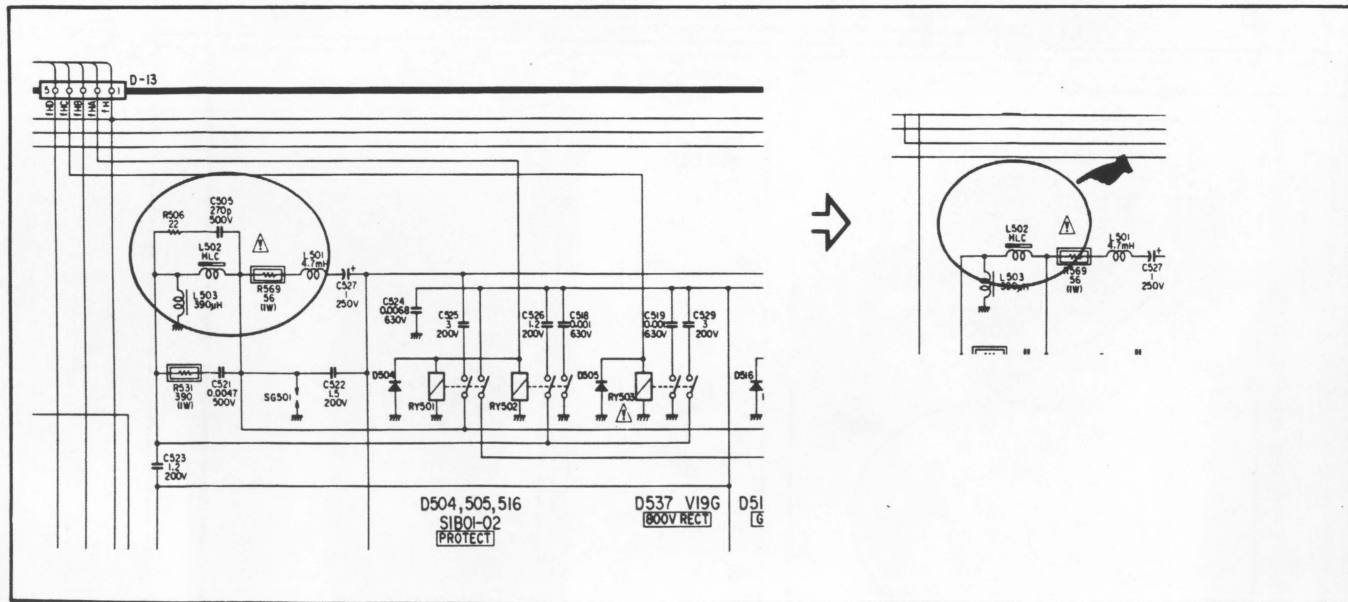
PAGE 18 ~ 19/C402 and C415 to be altered (BA board).



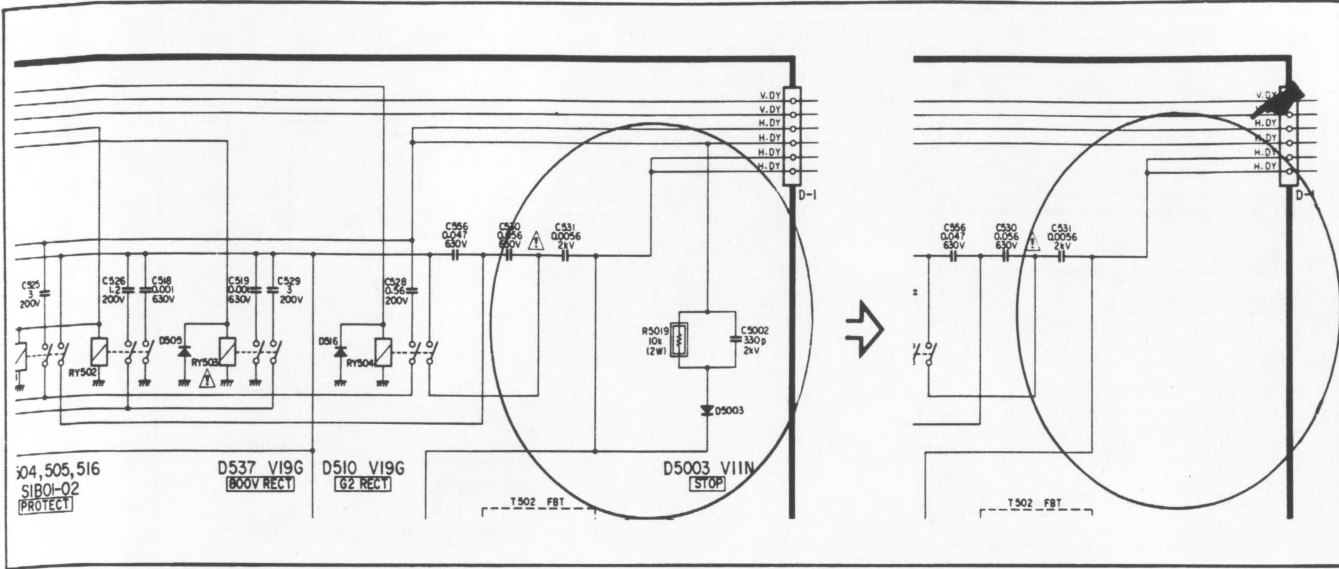
PAGE 20/IC106 to be altered (BB board).



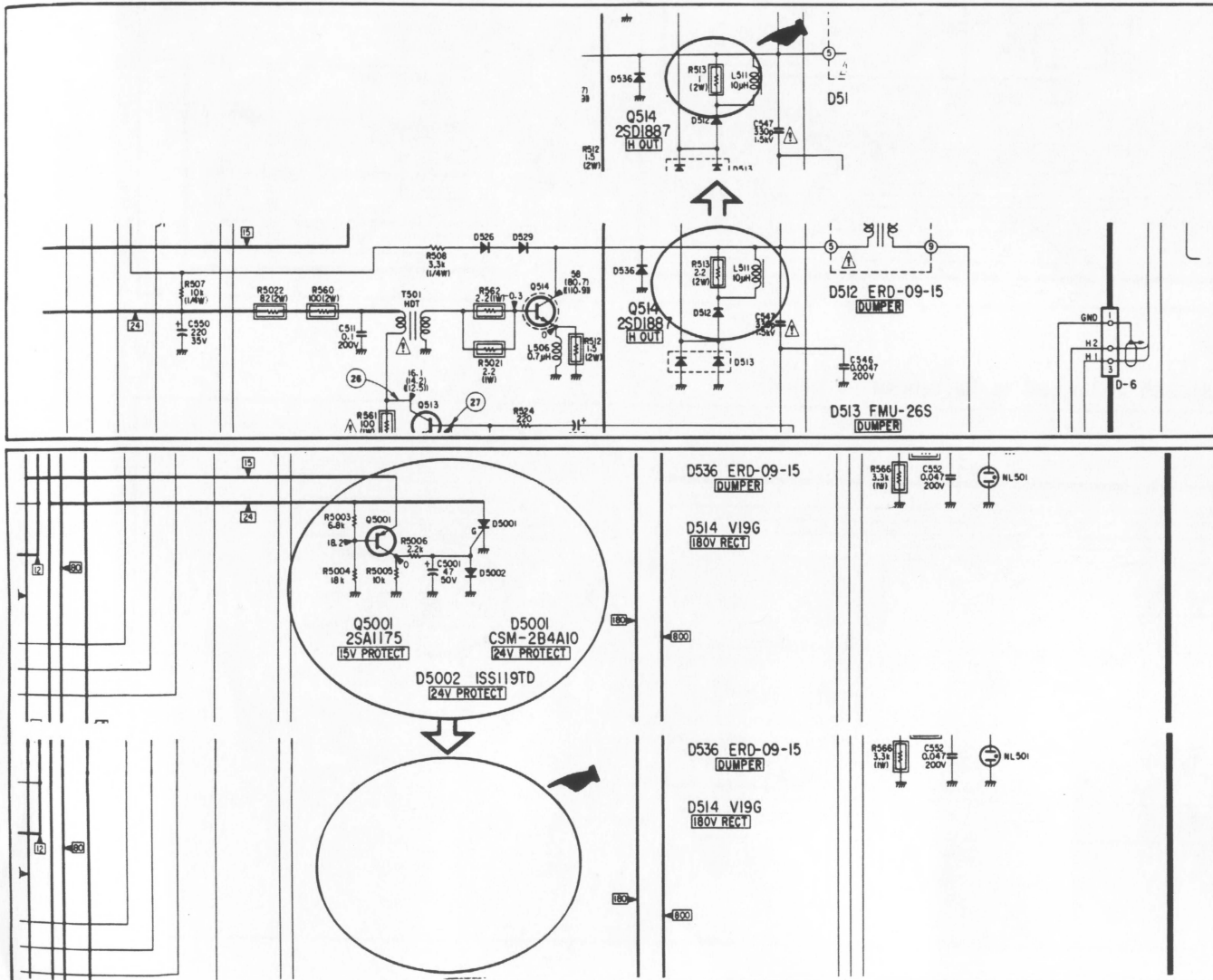
PAGE 27 ~ 28/C505 and R506 to be deleted (D board).



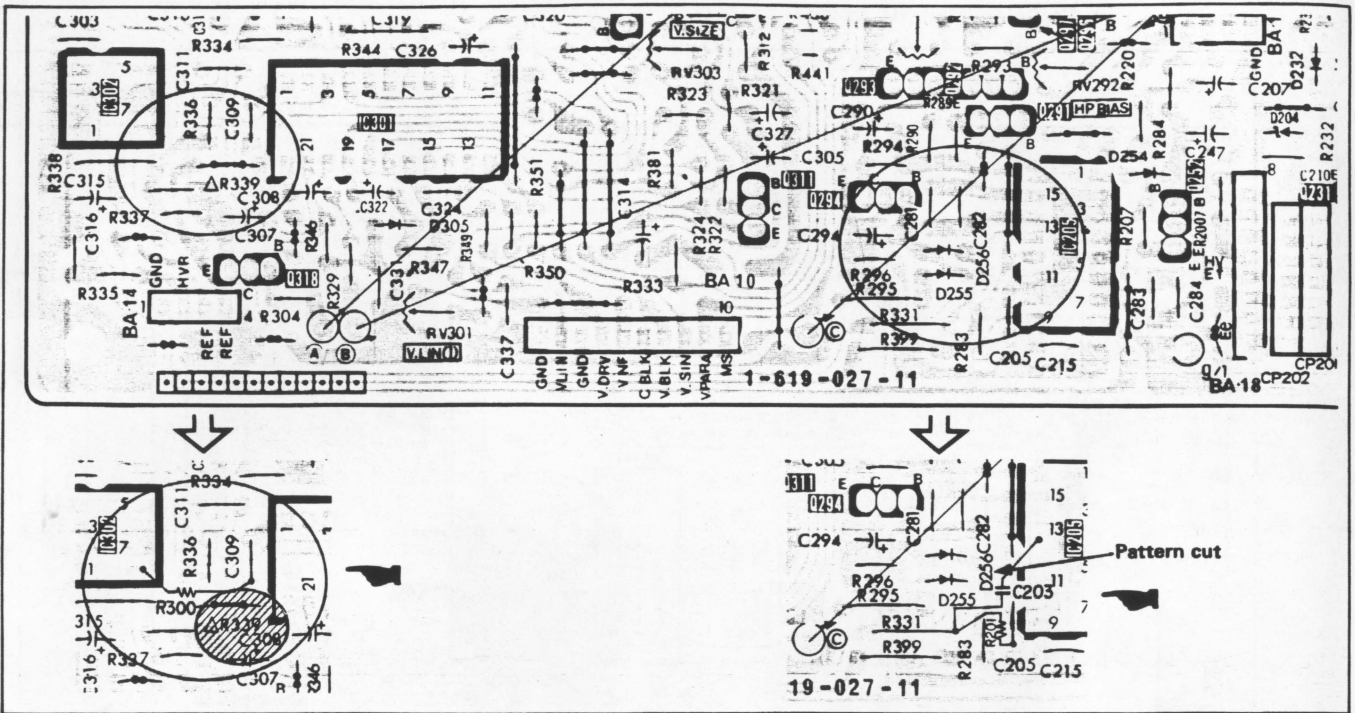
PAGE 27 ~ 28/C5002 and D5003 and R5019 to be deleted (D board).



PAGE 27 ~ 28/C5001 and D5001, D5002 and Q501 and R5003 ~ R5006 to be deleted (D board).  
/R513 to be altered (D board).



4.4. PRINTED WIRING BOARDS : PAGE 21 ~ 22/C203 and R201 to be added.  
R339 to be deleted and R300 to be added (BA board).





## SONY SERVICE MANUAL

US Model  
Canadian Model  
Chassis No. SCC-A31A-A

### CORRECTION-2

Correct the service manual as shown below.

File this correction with the service manual and supplement-1.

 : indicates corrected portion

SECTION 3 (Service Manual), SECTION 2 (Supplement)

SAFETY RELATED ADJUSTMENTS

PAGE	INCORRECT	CORRECT
<p>11 (Service Manual) 7 (Supplement)</p>	<p><b>+B MAX ( <input checked="" type="checkbox"/> R416, R489 )</b></p> <p><i>Be sure to perform the following adjustment after replacing the parts below. (Marked on <input checked="" type="checkbox"/> the schematic diagram).</i></p> <p>(G board) Q653, R658, R659, T653 (BA board) IC401, IC404, IC405, Q409, R409, R410, R411, R412, R413, R414, R415, R416, R417, R418, R419, R424, R425, R448, R479, R480, R489, R488.</p> <ol style="list-style-type: none"> <li>1. Input a dot signal and set PICTURE, BRIGHT to minimum.</li> <li>2. Turn +B VR (RV403) to maximum.</li> <li>3. Observe BA board to connector pin ① BA-1 on the digital multimeter.</li> <li>4. Set SMC-70 output to fH = 15.734 kHz and confirm that the +B line is less than 62.0V dc.</li> <li>5. Set SMC-70 output to fH = 18.4 kHz and confirm that the +B line is less than 72.8V dc.</li> <li>6. Set SMC-70 output to fH = 21.8 kHz and confirm that the +B line is less than 86.0V dc.</li> <li>7. Set SMC-70 output to fH = 25 kHz and confirm that the +B line is less than 97.8V dc.</li> <li>8. Set SMC-70 output to fH = 31.5 kHz and confirm that the +B line is less than 124.5V dc.</li> <li>9. If the specification is not met, adjust R416, R489 and repeat steps 1 and 3 until satisfied.</li> </ol>	<p><b>+B MAX ( <input checked="" type="checkbox"/> R416, R489 )</b></p> <p><i>Be sure to perform the following adjustment after replacing the parts below. (Marked on <input checked="" type="checkbox"/> the schematic diagram).</i></p> <p>(G board) Q653, R658, R659, T653 (BA board) IC401, IC404, IC405, Q409, R409, R410, R411, R412, R413, R414, R415, R416, R417, R418, R419, R424, R425, R448, R479, R480, R489, R488.</p> <ol style="list-style-type: none"> <li>1. Supply 130±<math>\frac{3}{5}</math>V AC to with variable auto-transformer.</li> <li>2. Input a dot signal and set PICTURE, BRIGHT to minimum.</li> <li>3. Turn +B VR (RV403) to maximum.</li> <li>4. Observe BA board to connector pin ① BA-1 on the digital multimeter.</li> <li>5. Set SMC-70 output to fH = 15.734 kHz and confirm that the +B line is less than 62.0V dc.</li> <li>6. Set SMC-70 output to fH = 18.4 kHz and confirm that the +B line is less than 72.8V dc.</li> <li>7. Set SMC-70 output to fH = 21.8 kHz and confirm that the +B line is less than 86.0V dc.</li> <li>8. Set SMC-70 output to fH = 25 kHz and confirm that the +B line is less than 97.8V dc.</li> <li>9. Set SMC-70 output to fH = 31.5 kHz and confirm that the +B line is less than 124.5V dc.</li> <li>10. If the specification is not met, adjust R416, R489 and repeat steps 1 and 3 until satisfied.</li> </ol>

PAGE	INCORRECT	CORRECT
<p>12 (Service Manual) 8 (Supplement)</p>	<p><b>CONFIRMATION WHEN REPLACING H. V. R. (HIGH VOLTAGE REGISTER)</b></p> <p>The following adjustments should always be performed with reference to whether an X-ray radiation control circuit is connected or not, when replacing H. V. R.</p> <p>* This check is to be performed when H. V. R. only is replaced, and has no relation to the hold-down circuit readjustment for replacement of parts marked <math>\blacktriangle</math>. (Connection Confirmation)</p> <ol style="list-style-type: none"> <li>1. Turn the POWER switch ON, and receive white signals and set the PICTURE and BRIGHTNESS controls to MAX.</li> <li>2. When the set is operating normally with 120V AC supply, confirm the voltage of the connection point for connector (2) pin BA-14 is <math>7.3 \pm 0.8V</math> dc.</li> </ol>	<p><b>CONFIRMATION WHEN REPLACING H. V. R. (HIGH VOLTAGE REGISTER)</b></p> <p>The following adjustments should always be performed with reference to whether an X-ray radiation control circuit is connected or not, when replacing H. V. R.</p> <p>* This check is to be performed when H. V. R. only is replaced, and has no relation to the hold-down circuit readjustment for replacement of parts marked <math>\blacktriangle</math>. (Connection Confirmation)</p> <ol style="list-style-type: none"> <li>1. Supply 120V AC to with variable auto-transformer.</li> <li>2. Turn the POWER switch ON, and receive white signals and set the PICTURE and BRIGHTNESS controls to MAX.</li> <li>3. Set SMC-70 output to <math>fH \pm 21, 8kHz</math> and confirm the voltage of the connection point for connector (2) pin BA-14 is <math>7.3 \pm 0.8V</math> dc.</li> </ol>

SECTION 4 (Service Manual)  
4-3. SCHEMATIC DIAGRAM

PAGE	INCORRECT	CORRECT
<p>28</p>	<p>24   25   :</p>	<p>24   25   :</p> <div data-bbox="852 972 1317 1144" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p><b>CAUTION</b></p> <p>When replacing HVR be sure to check the HOLD DOWN check point voltage value. Refer to the Safety Adjustment Section of the Service Manual.</p> </div>

SECTION 5  
EXPLODED VIEWS

**INCORRECT**

**5-1. PICTURE TUBE**

- : TA, BV3X8 7-685-646-71
- : TA, BV4X10 7-685-660-71
- ▲ : TA, BV3X10 7-685-647-71

No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
1	*3-668-914-31	EMBLEM, SONY		11	▲1-558-377-11	CORD, POWER	
2	X-4381-801-1	BEZEL ASSY		12	4-381-820-01	CABINET	
3	4-304-511-00	NUT, FLANGE		13	4-381-826-01	LABEL, CONTROL	
4	4-348-567-00	WASHER, CRT POSITION		14	4-381-817-01	LID, CONTROL	
5	▲8-738-251-05	CRT M34JNQ15X		15	*4-381-812-01	LABEL, MODEL NUMBER (SMALL)	
6	3-703-961-01	SPACER, DY		16	4-316-015-01	CLIP, LEAD WIRE	
7	1-452-146-21	MAGNET, BMC		17	1-452-032-00	MAGNET, DISK; 10MM φ	
8	▲1-451-291-11	DEFLECTION YOKE (SY-175)		18	1-452-094-00	MAGNET, ROTABLE DISK; 15MM φ	
9	*1-619-036-11	X BOARD		19	X-4309-608-0	PERMALLOY ASSY, CONVERGENCE	
10	▲1-426-283-11	COIL, DEMAGNETIZATION					

**CORRECT**

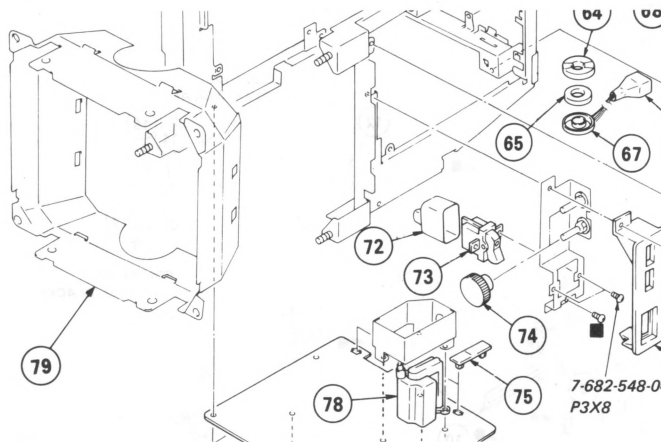
**5-1. PICTURE TUBE**

- : TA, BV3X8 7-685-646-71
- : TA, BV4X10 7-685-660-71
- ▲ : TA, BV3X10 7-685-647-71

No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
1	*3-668-914-31	EMBLEM, SONY		11	▲1-558-377-11	CORD, POWER	
2	X-4381-801-1	BEZEL ASSY		12	4-381-820-01	CABINET	
3	4-304-511-00	NUT, FLANGE		13	4-381-826-01	LABEL, CONTROL	
4	4-348-567-00	WASHER, CRT POSITION		14	4-381-817-01	LID, CONTROL	
5	▲8-738-251-05	CRT M34JNQ15X		15	*4-381-812-01	LABEL, MODEL NUMBER (SMALL)	
6	3-703-961-01	SPACER, DY		16	4-316-015-01	CLIP, LEAD WIRE	
7	1-452-146-21	MAGNET, BMC		17	1-452-032-00	MAGNET, DISK; 10MM φ	
8	▲1-451-291-11	DEFLECTION YOKE (SY-175)		18	1-452-094-00	MAGNET, ROTABLE DISK; 15MM φ	
9	*1-619-036-11	X BOARD		19	X-4309-608-0	PERMALLOY ASSY, CONVERGENCE	
10	▲1-426-283-11	COIL, DEMAGNETIZATION		20	▲4-381-813-01	BRACKET BEZEL	



INCORRECT

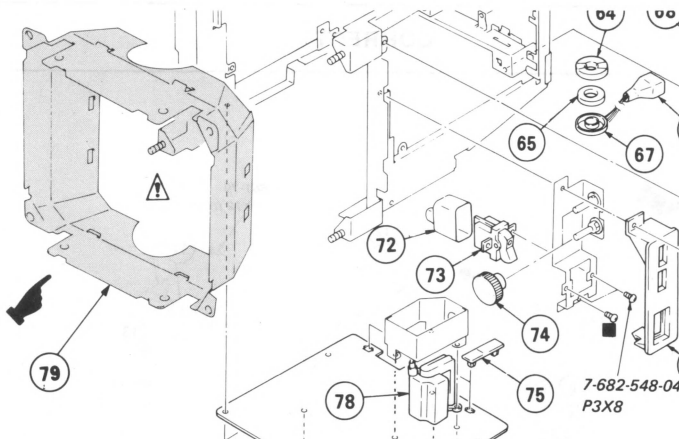


The components identified by shading and mark  $\triangle$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque  $\triangle$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
51	*1-619-034-11	G BOARD		65	1-543-179-00	CORE, RING	
52	*3-703-961-01	SPACER, SUPPORT		66	*4-601-466-11	COVER, 3P INLET	
53	*1-619-033-11	F BOARD		67	*4-361-124-01	COVER (A), CORE	
54	$\triangle$ 1-230-666-11	RESISTOR ASSY, HIGH-VOLTAGE		68	$\triangle$ 1-509-546-11	3P INLET	
55	*1-619-651-11	BD BOARD		69	*1-619-029-11	BC BOARD	
56	4-343-123-00	RETAINER, AC CORD		70	*3-701-832-00	HINGE, CIRCUIT BOARD	
57	*1-619-030-11	CA BOARD		71	*A-1135-387-A	BA BOARD, COMPLETE	
58	*4-377-601-01	COVER		72	*4-381-806-01	COVER, SWITCH	
59	*4-370-995-01	COVER (LOWER), H.STAT		73	$\triangle$ 1-554-953-31	SWITCH, SEESAW (AC POWER)	
60	*1-619-031-11	CB BOARD		74	4-372-107-01	KNOB, ROTARY	
61	*4-370-996-01	COVER (UPPER), H.STAT		75	*4-313-732-00	CLIP, HINGE, CIRCUIT BOARD	
62	*1-619-035-11	H BOARD		76	*4-381-828-01	PANEL, SWITCH	
63	*A-1130-489-A	BB BOARD, COMPLETE		77	*A-1340-829-A	D BOARD, COMPLETE	
64	*4-361-125-01	COVER (B), CORE		78	$\triangle$ 1-439-390-11	TRANSFORMER ASSY, FLYBACK	
65	1-543-179-00	CORE,RING		79	*X-4381-802-1	SHIELD ASSY, CRT	
				80	*A-1465-149-A	HV BLOCK ASSY	

CORRECT



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

Les composants identifiés par une trame et une marque  $\triangle$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
51	*1-619-034-11	G BOARD		65	1-543-179-00	CORE, RING	
52	*3-703-961-01	SPACER, SUPPORT		66	*4-601-466-11	COVER, 3P INLET	
53	*1-619-033-11	F BOARD		67	*4-361-124-01	COVER (A), CORE	
54	$\triangle$ 1-230-666-11	RESISTOR ASSY, HIGH-VOLTAGE		68	$\triangle$ 1-509-546-11	3P INLET	
55	*1-619-651-11	BD BOARD		69	*1-619-029-11	BC BOARD	
56	4-343-123-00	RETAINER, AC CORD		70	*3-701-832-00	HINGE, CIRCUIT BOARD	
57	*1-619-030-11	CA BOARD		71	*A-1135-387-A	BA BOARD, COMPLETE	
58	*4-377-601-01	COVER		72	*4-381-806-01	COVER, SWITCH	
59	*4-370-995-01	COVER (LOWER), H.STAT		73	$\triangle$ 1-554-953-31	SWITCH, SEESAW (AC POWER)	
60	*1-619-031-11	CB BOARD		74	4-372-107-01	KNOB, ROTARY	
61	*4-370-996-01	COVER (UPPER), H.STAT		75	*4-313-732-00	CLIP, HINGE, CIRCUIT BOARD	
62	*1-619-035-11	H BOARD		76	*4-381-828-01	PANEL, SWITCH	
63	*A-1130-489-A	BB BOARD, COMPLETE		77	*A-1340-829-A	D BOARD, COMPLETE	
64	*4-361-125-01	COVER (B), CORE		78	$\triangle$ 1-439-390-11	TRANSFORMER ASSY, FLYBACK	
65	1-543-179-00	CORE,RING		79	$\triangle$ *X-4381-802-1	SHIELD ASSY, CRT	
				80	*A-1465-149-A	HV BLOCK ASSY	