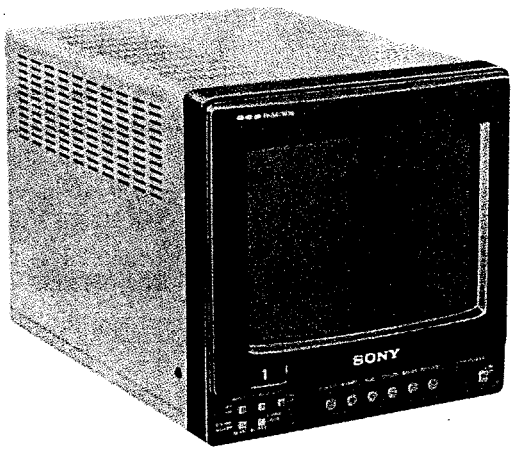
PVM-8220

SERVICE MANUAL

US Model
Canadian Model

Chassis No. SCC-684A-A



August, 1985

SPECIFICATIONS

Color system	NTSC system
Picture tube	Microblack Trinitron tube 8-inch picture measured diagonally, 70-degree deflection
Resolution	250 TV lines (B/W)
Color temperature	9300°K
Frequency response	4 MHz (−3 dB)
Horizontal linearity	±8%
Vertical linearity	±8%
Line pull range	Horizontal ±500 Hz
Overscan of the picture	6%
Underscan of the picture	5%
H/V delay	Horizontal : Approx. 1/4 line Vertical : Approx. 1/2 field
Return loss	5 MHz, −30 dB (VIDEO A IN, VIDEO B IN)
Zooming	Within 3%
Convergence	Central area 0.5 mm Periphery 0.7 mm
Brightness	More than 50 foot-lamberts
Inputs	VIDEO IN (VIDEO A, VIDEO B) : BNC connector Composite 1 V p-p ±6 dB, 75 ohms, unbalanced, sync negative Non-composite 0.7 V p-p EXT SYNC IN : BNC connector Composite sync 4 V p-p ±6 dB, sync negative, 75 ohms and high impedance switchable
Loop-through outputs	VIDEO OUT (VIDEO A, VIDEO B) : BNC connector Composite 1 V p-p ±6 dB, 75 ohms, unbalanced, sync negative Non-composite 0.7 V p-p EXT SYNC OUT : BNC connector Composite sync 4 V p-p ±6 dB, sync negative, 75 ohms and high impedance switchable
TALLY connector	4-pin DIN connector
Power requirements	120 V ac, 50/60 Hz
Power consumption	30 W ac, max.
Dimensions	Approx. 216 × 219 × 319 mm (w/h/d) (8⅝ × 8⅝ × 12⅝ inches) incl. projecting parts and controls
Weight	Approx. 7.5 kg (16 lb 9 oz) not incl. accessories
Accessories supplied	AC power cord (1) Tally connector (4-pin DIN) (1) Number plate (1 set)
Optional accessory	Mounting bracket MB-504

TRINITRON®
COLOR VIDEO MONITOR
SONY®

MON

TABLE OF CONTENTS

SAFETY-RELATED COMPONENT WARNING !!

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

ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÈS PAR UNE TRAME ET PAR UNE MARQUE ⚠ SUR LES SCHÉMAS DE PRINCPE, 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 PIÉCE 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 IDENTIFIES DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.

SAFETY CHECK-OUT

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.
9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

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 microampers). 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 watts 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)

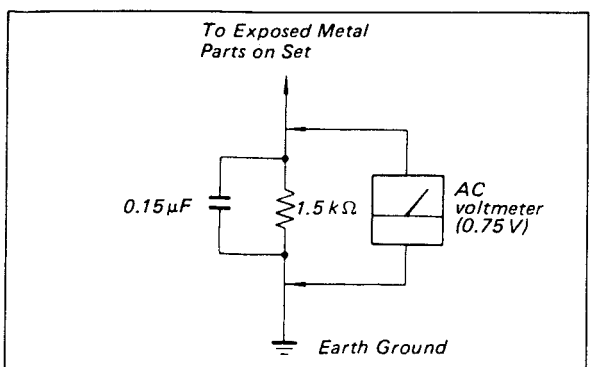


Fig. A. Using an AC voltmeter to check AC leakage.

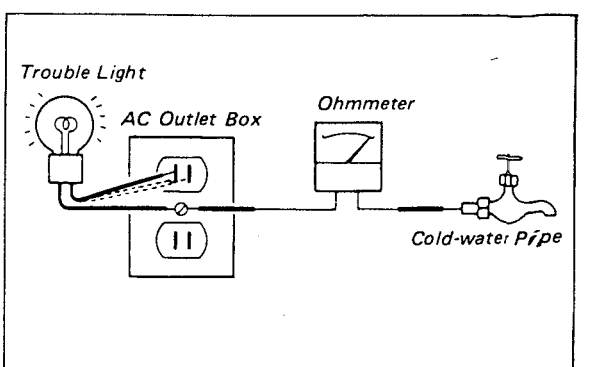


Fig. B. Checking for earth ground.

SECTION 1
GENERAL

1-1. FEATURES

Microblack™ Trinitron® picture tube
The Microblack Trinitron picture tube gives a high resolution, high contrast picture.

Push-to-lock controls
In the locked position, the controls are protected from damage during carriage of the unit. The protruding position allows easier operation.

Monitor of sync signals
The H/V-DELAY switch allows horizontal and vertical sync signals to be displayed on the screen.

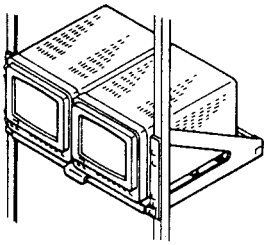
Blue only picture
By using the B-ONLY switch, the picture can be displayed in blue and black only, facilitating hue adjustment or observation of VTR noise.

Underscan mode
The signal normally scanned outside of the screen can be monitored in the underscan mode facilitating check of video signals.

External sync connection
The unit can operate on an external sync signal in synchronization with other VTR equipment.

Two video inputs
Two video sources can be connected to the unit. Either input can easily be switched by pressing the INPUT select switch.

By using an optional MB-504 mounting bracket, this unit can be mounted in an EIA standard 19-inch rack.



For mounting details, refer to the instruction manual of the MB-504.

1-2. PRECAUTIONS

On safety
- Operate the unit only on 120 V ac.
  Use only the supplied ac power cord. Do not use any other type.
- Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not to be used for serveral days.
- To disconnect the ac power cord, pull it out by the plug. Never pull the cord itself.

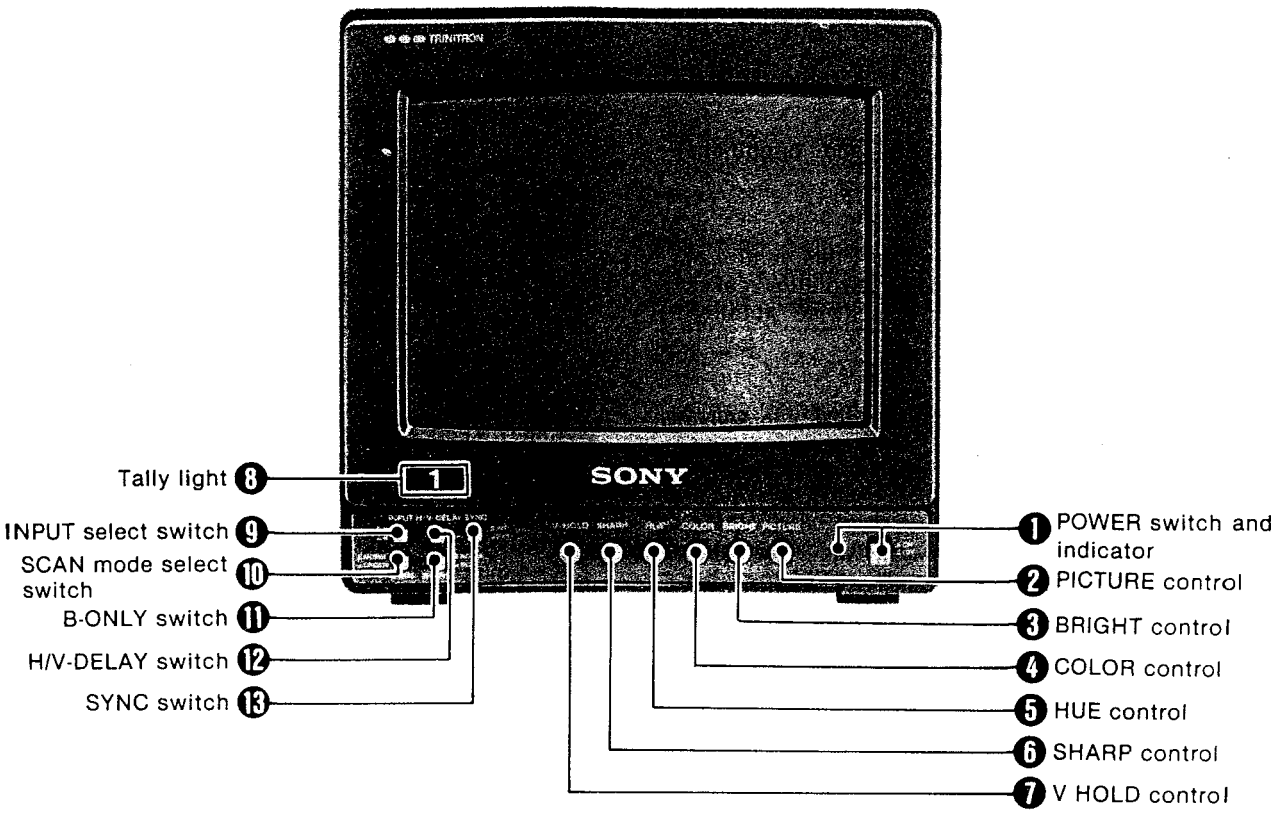
On installation
- Allow adequate air circulation to prevent internal heat build-up.
  Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Keep the unit away from a loudspeaker or motor, as the picture may be affected.

On cleaning
To keep the unit looking brand-new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use strong solvents such as thinner or benzine, or abrasive cleansers since these will damage the cabinet. As a safety precaution, unplug the unit before cleaning it.

On repacking
Do not throw away the carton and packing materials. They make an ideal container in which to transport the unit. When shipping the unit to another location, repack it as illustrated on the carton.

If you have any questions about this unit, contact your authorized Sony dealer.

1-3. LOCATION AND FUNCTION OF CONTROLS



❶ POWER switch and indicator
To turn the monitor on, depress the POWER switch (⏏ ON). The POWER indicator lights. To turn it off, press the switch again (⎍ OFF).

❷ PICTURE control
Adjusts the contrast, intensity and brightness simultaneously in the proper ratio.

❸ BRIGHT (brightness) control
Adjusts the brightness. Normally set this control at the center detent position. Clockwise rotation makes the picture brighter; counterclockwise rotation makes it darker.

❹ COLOR control
Adjusts the color intensity of the picture. Clockwise rotation makes the picture more vivid; counterclockwise rotation makes it paler.

❺ HUE control
Use to obtain the most natural skin tones. Clockwise rotation makes the skin tones more greenish; counterclockwise rotation makes them more purplish.

❻ SHARP (sharpness) control
Adjusts the sharpness of the picture. Clockwise rotation makes the picture sharper; counterclockwise rotation makes it softer.

❼ V HOLD (vertical hold) control
If the picture rolls vertically, correct it with this control.

Before turning one of the controls ❷ to ❼, for easier operation press on it to release the control to a protruding position.

❽ Tally light
This light is turned on and off according to the signal supplied to the TALLY connector at the rear from a console or special-effects generator. To identify the monitor, insert the supplied number plate.

❾ INPUT select switch
Keep this switch released (⎍ A) to monitor the signal from the VIDEO A IN connector.
Depress the switch (⏏ B) to monitor the signal from the VIDEO B IN connector.

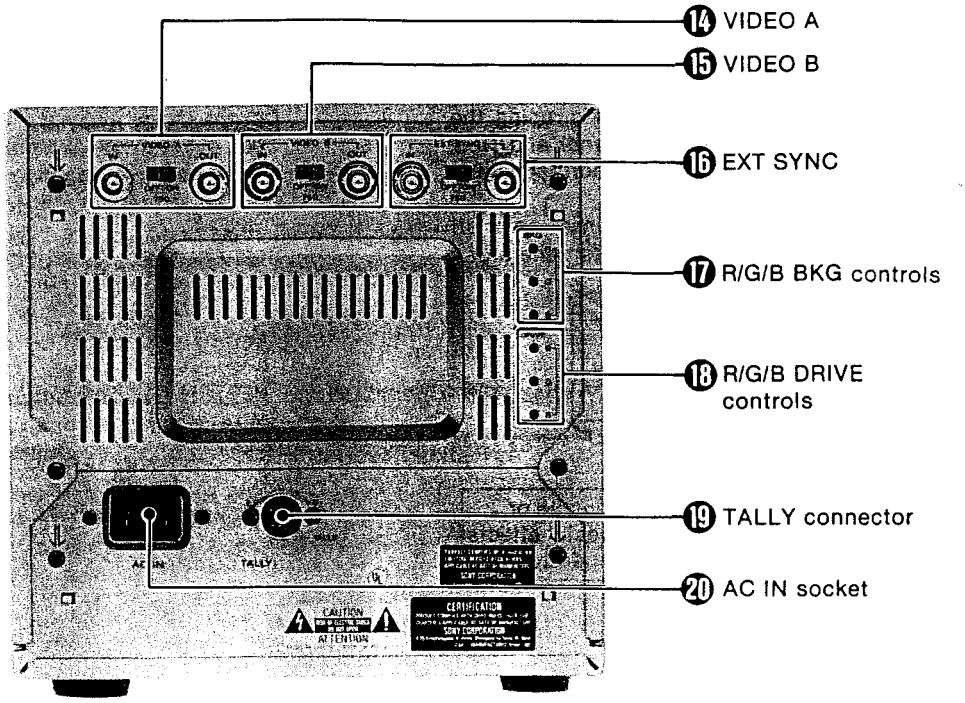
❿ SCAN mode select switch
Keep this switch released (⎍ NORM) for normal scanning.
Depress the switch (⏏ UNDER) to reduce the display size by about 5% (underscanning mode) and to view a picture which does not appear in normal scanning.

⓫ B-ONLY (blue only) switch
Normally keep this switch released (⎍ NORM).
Depress the switch (⏏ BLUE) to turn off the red and green beams. The picture will be displayed in blue and black only. This facilitates hue adjustment or observation of VTR noise.

⓬ H/V-DELAY switch
Normally keep this switch released.
To monitor the sync signals, depress the switch. The picture is shifted horizontally and vertically. The horizontal sync is displayed in left approximately one quarter of the screen and the vertical sync is displayed near the center of the screen.

⓭ SYNC switch
Normally keep this switch released (⎍ INT). The monitor is driven with the internal sync signal.
To drive the monitor with an external sync signal connected to the SYNC IN connector at the rear, depress the switch (⏏ EXT).

Rear



⑭ VIDEO A, ⑮ VIDEO B
Two video input connectors (VIDEO A and VIDEO B) for the composite video signals and their loop-through output connectors.
To monitor the input signals connected to the VIDEO A IN connector, keep the INPUT select switch released (⊓ A).
To monitor the input signals to the VIDEO B IN connector, depress the INPUT select switch (⊓ B).

IN connector (BNC type)
Connect to the video output of video equipment, such as a VTR or a color video camera.

OUT connector (BNC type)
Loop-through output of the IN connector. Connect to the video input of a VTR or another monitor.

75Ω termination switch
When only the IN connector is used (the OUT connector is not used), set this switch to ON. When both the IN and OUT connectors are used together for a loop-through connection, set the switch to OFF.

⑯ EXT SYNC (external sync)
IN connector (BNC type)
When this monitor operates on an external sync signal, connect the reference signal from a sync generator to this connector.

OUT connector (BNC type)
Loop-through output of the EXT SYNC IN connector. Connect to the external sync input of video equipment to be synchronized with this monitor.

75Ω termination switch
When only the EXT SYNC IN connector is used (the EXT SYNC OUT connector is not used), set this switch to ON. When both the EXT SYNC IN and OUT connectors are used together for a loop-through connection, set the switch to OFF.

⑰ R/G/B BKG (background) controls
Used for adjusting the white balance of the background.

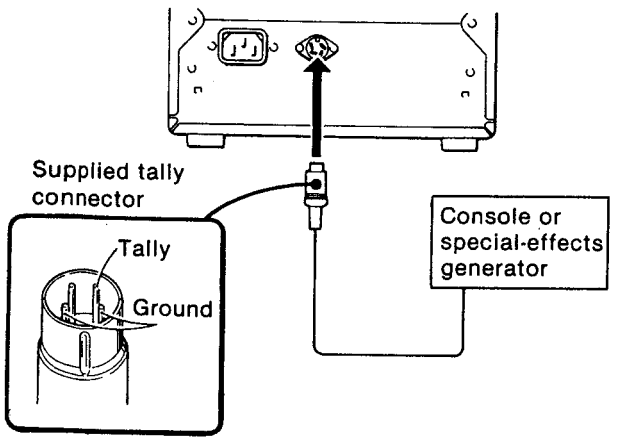
⑱ R/G/B DRIVE controls
Used for adjusting the white balance at the white peak.

⑲ TALLY connector (4-pin DIN)
Connect to the tally output of a control console, special-effects generator, etc. The tally light on the front panel will be turned on or off by the connected console or special-effects generator.

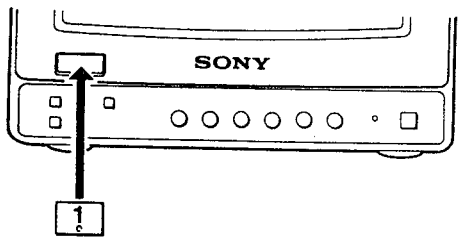
⑳ AC IN socket
Connect the supplied ac power cord.

TALLY CONNECTOR

To utilize the tally-light feature of this monitor, connect the TALLY connector at the rear of the monitor to a control console, special-effects generator, etc. using the supplied tally connector. The No.1 (ground) and No.2 (tally) pins should be connected to the corresponding pins of the tally out connector.
The tally light on the front panel will be turned on or off by operating the console or special-effects generator.

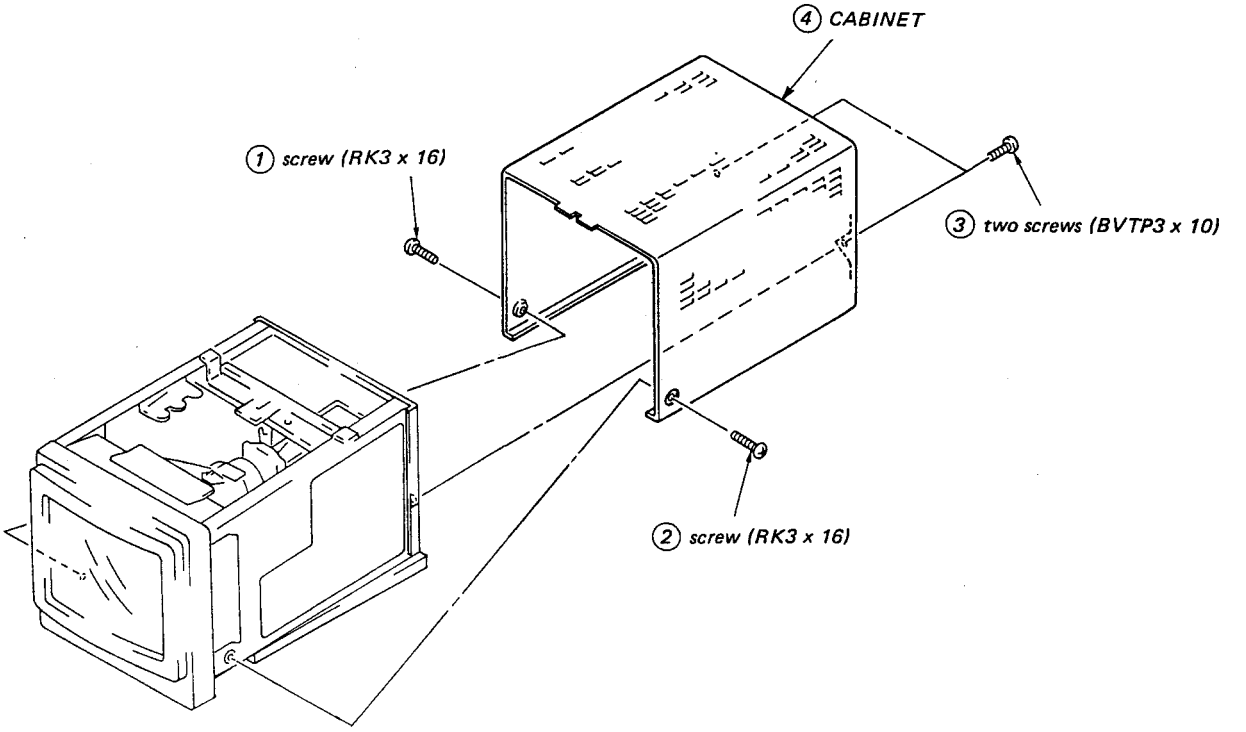


How to use the supplied number plate
To identify the monitor in your system, insert the supplied number plate under the tally light cover. When the tally light lights, the number will be illuminated.

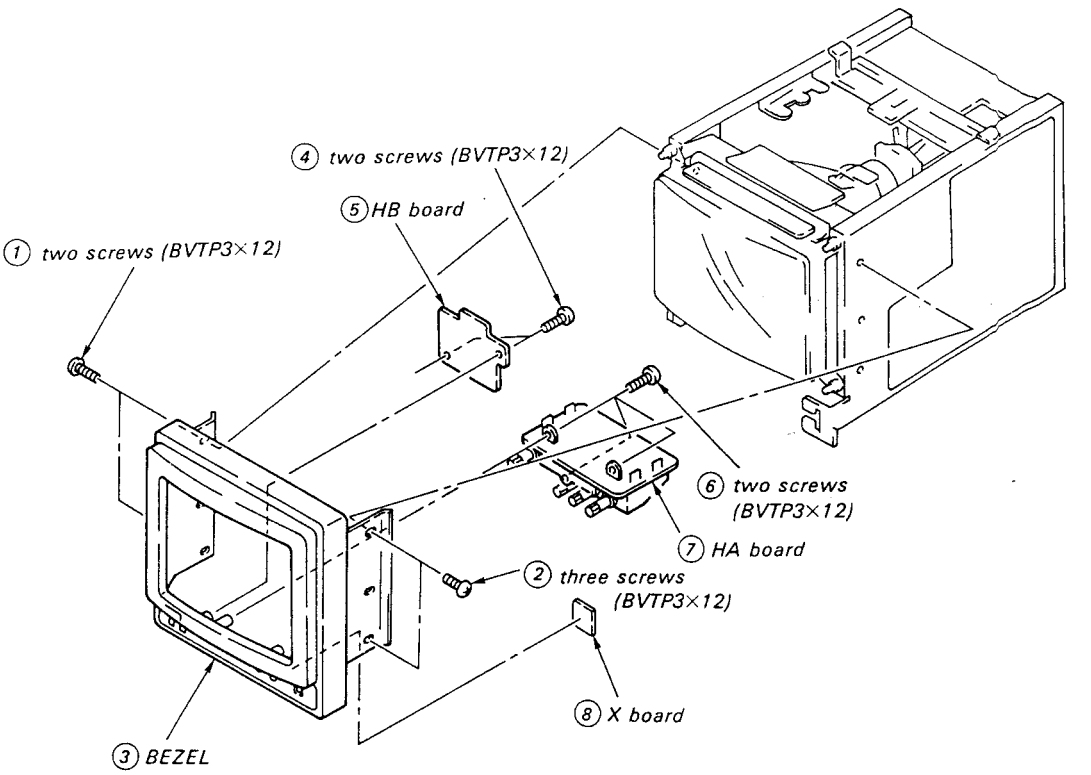


SECTION 2
DISASSEMBLY

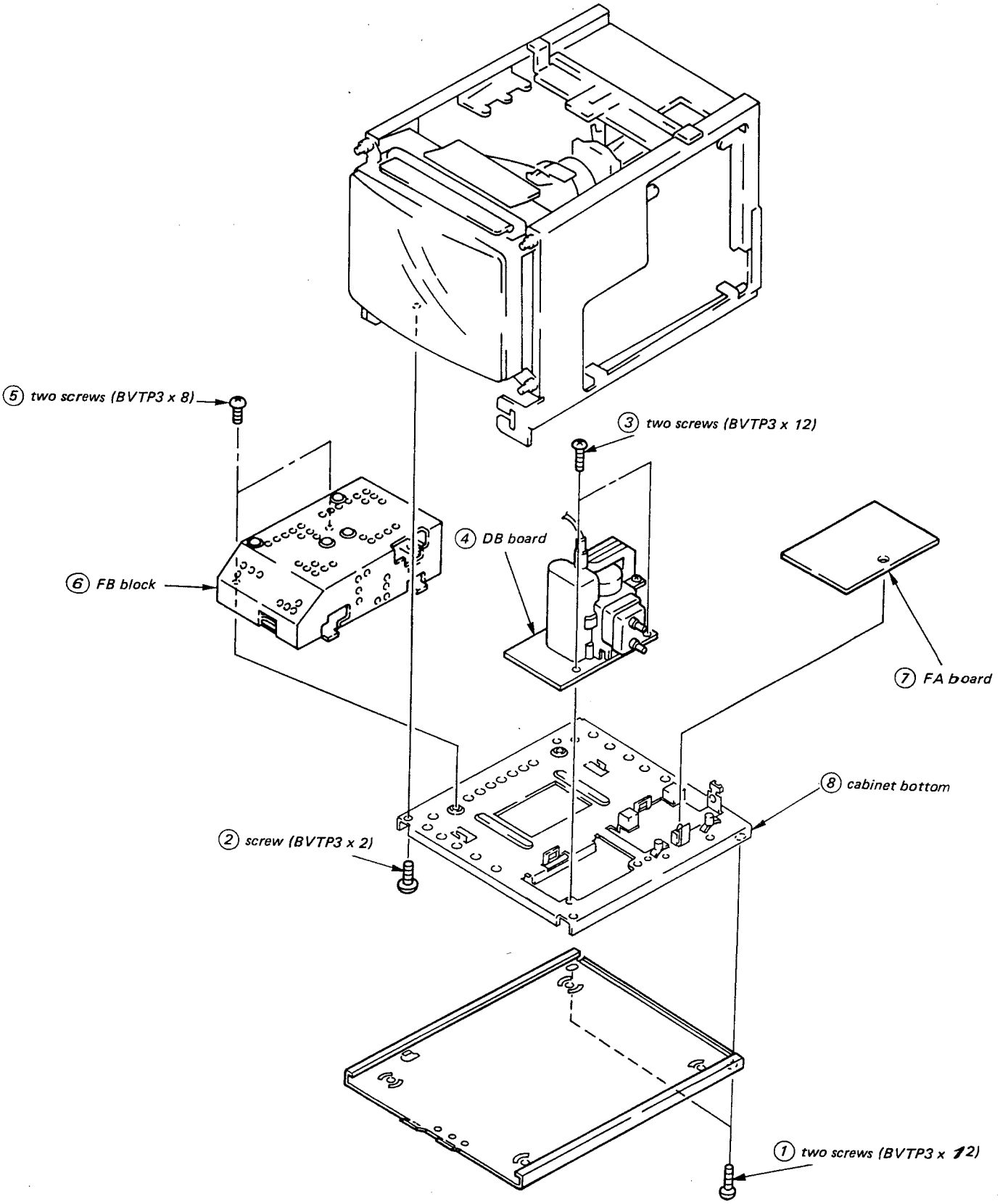
2-1. CABINET REMOVAL



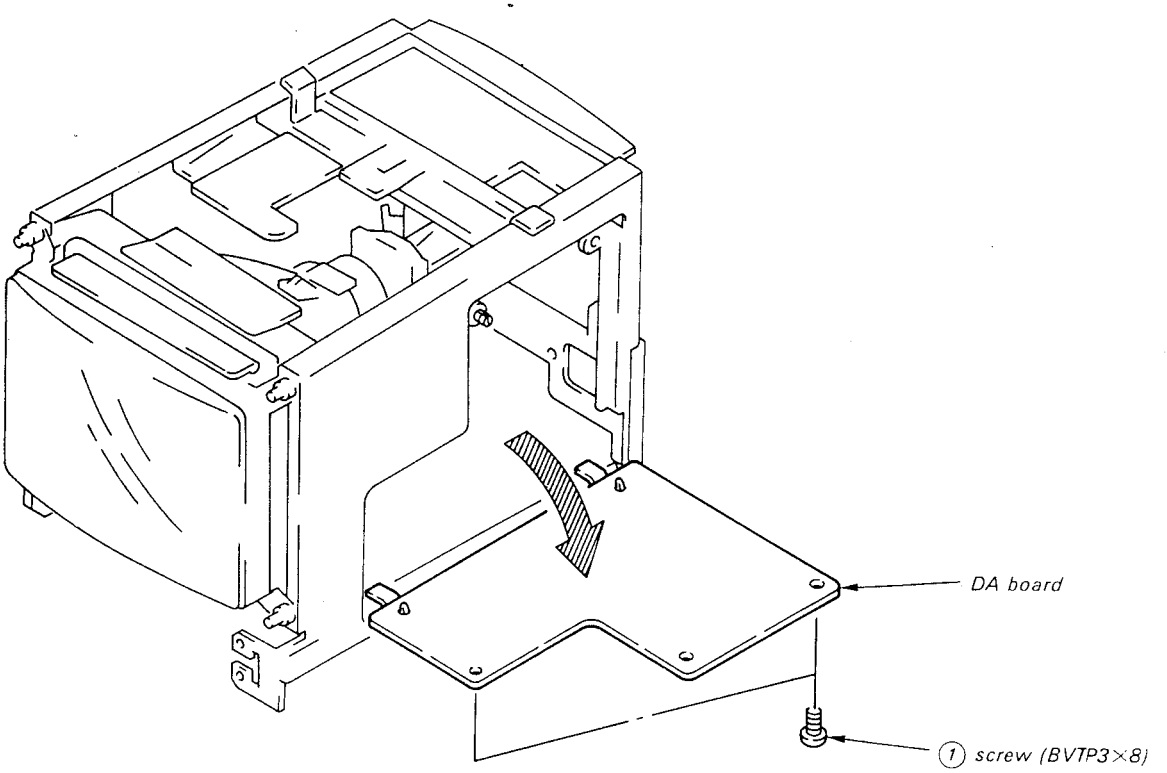
2-2. BEZEL REMOVAL (HA, HB, X BOARD)



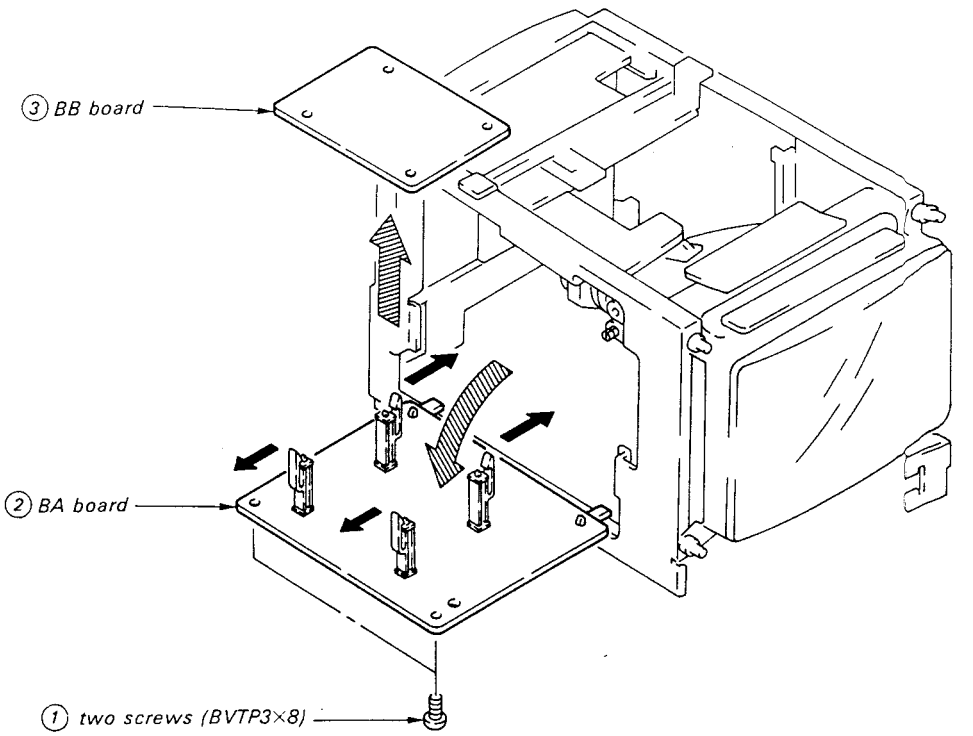
2-3. CABINET BOTTOM REMOVAL



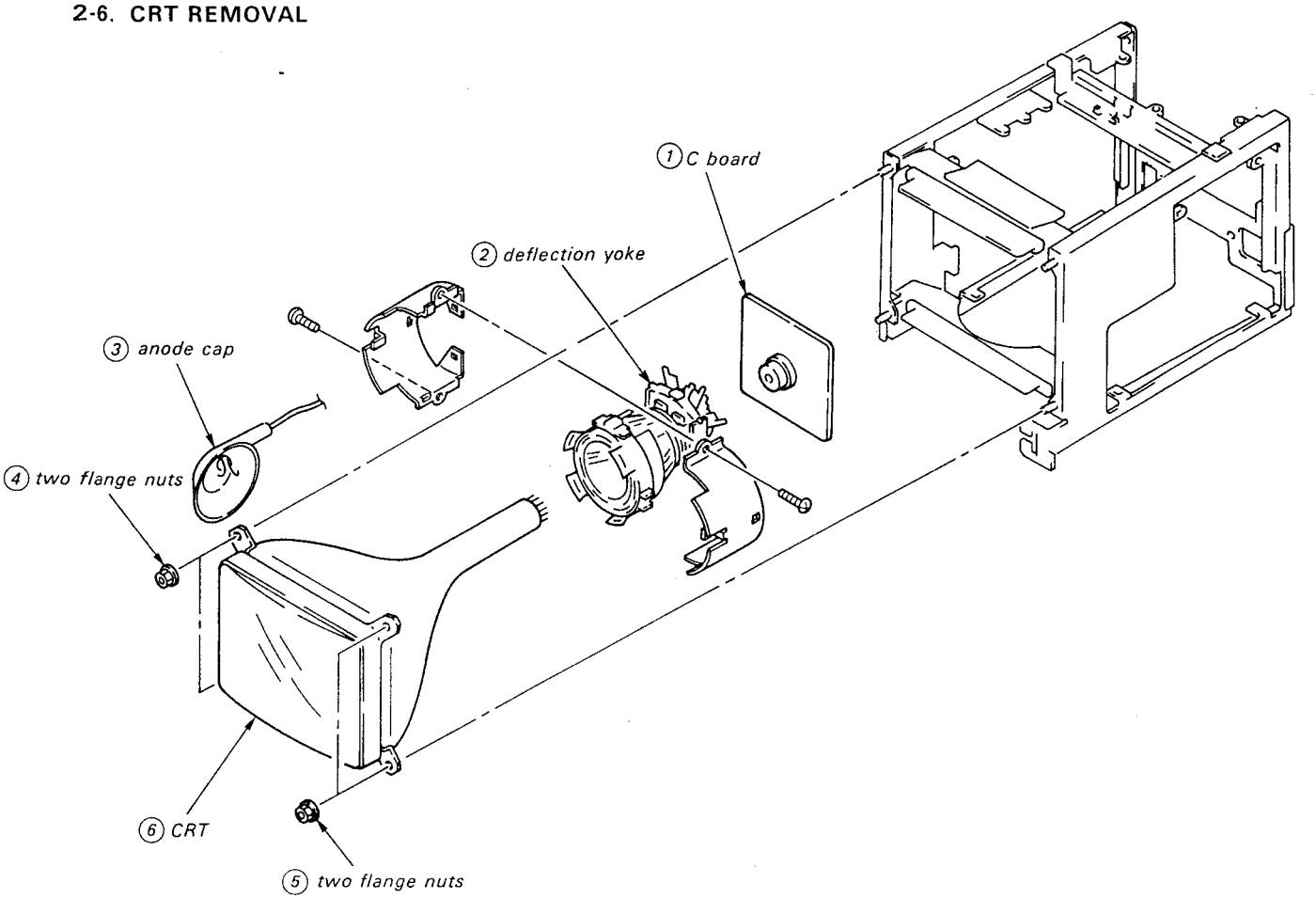
2-4. DA BOARD REMOVAL



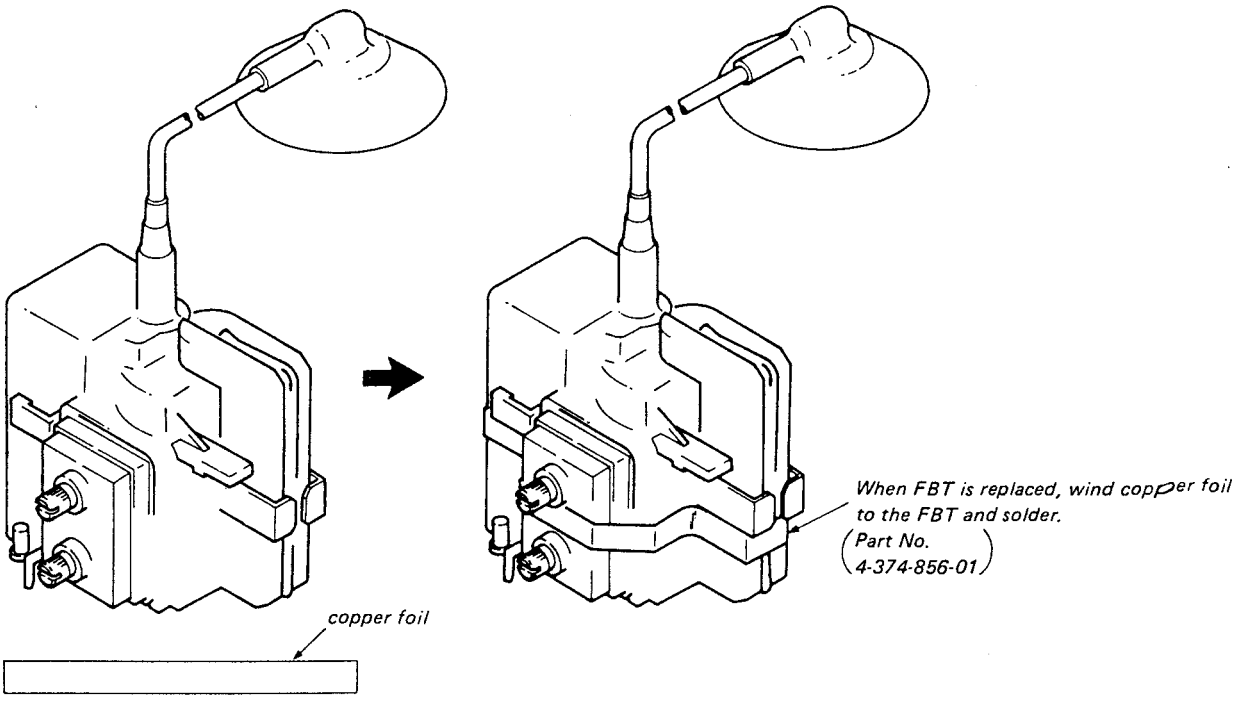
2-5. BA, BB BOARD REMOVAL



2-6. CRT REMOVAL



2-7. REPLACING FBT



SECTION 3
SET-UP ADJUSTMENTS

The following adjustments should be made when a complete realignment is required or a new picture tube is installed.

Controls and switch should be set as follows unless otherwise noted:

BRT, CONTR controls ..... fully clockwise

Make the following adjustments in the order as follows given:

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

Note: Test Equipment Required
1. Color-bar/pattern generator
2. Degausser

3-1. BEAM LANDING

Preparation:

- Before starting, degauss the entire screen.

1. Loosen deflection yoke screw.
2. Remove deflection yoke spacers.
3. Adjust purity control to center the slide between two projections as shown in Fig. 1-1.
4. Slide deflection yoke as far forward as it will go.
5. Turn RED CUT OFF VR (RV259) MAX and GREEN (RV261) and BLUE CUT OFF RV (RV263) MIN.
6. Turn purity control to center vertical red band as shown in Fig. 1-2.
7. Slide deflection yoke back for a uniform red screen.
8. Check green and blue rasters for uniformity. Repeat the steps 6, 7 and 8.
9. Turn all CUT OFF VR (RV259, 261, 263) for mechanical CENTER.
10. Install the deflection yoke spacers.
11. Tighten the deflection yoke screw.
12. Check if mislanding appears at corners a-d as shown in Fig. 1-3. If mislanding is observed, correct it as shown in Fig. 1-4.

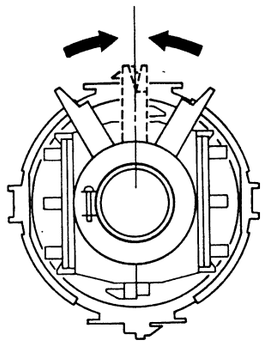


Fig. 1-1

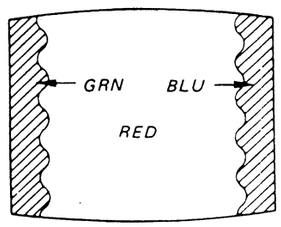
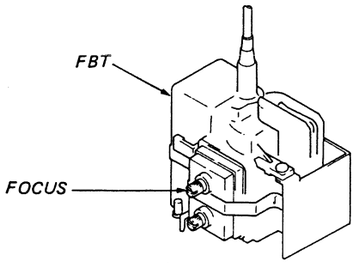


Fig. 1-2

3-2. FOCUS ADJUSTMENT

(1) Input monoscope signal.
PICTURE control 80%
BRICHT control 50%

(2) Adjust FOCUS control for a best picture at the center and both sides of the screen.



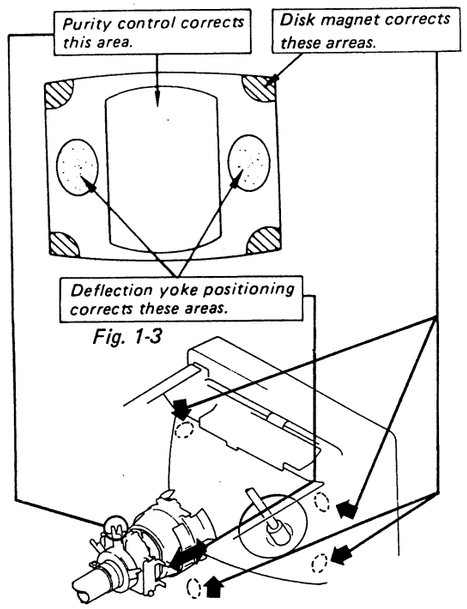


Fig. 1-3

Fig. 1-4

3-3. CONVERGENCE

Preparation:

- Before starting, make FOCUS, H.SIZE, V.SIZE and V.LIN adjustments.
- Turn BRT control fully counterclockwise.
- Feed in the dot pattern.

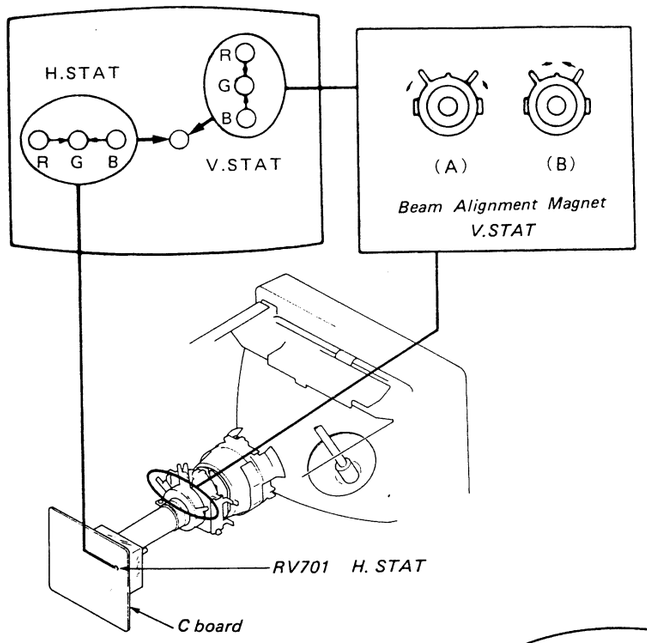
(1) Horizontal Static Convergence and Vertical Static Convergence

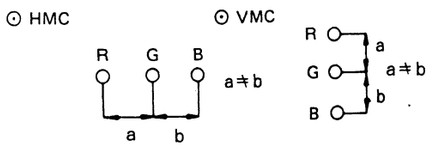
If blue dot does not coincide with red and green dots,

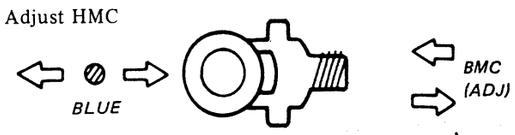
Move BMC magnet to correct insufficient H.Static convergence.

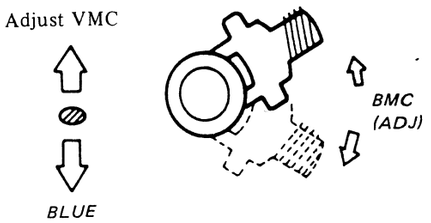
Rotate BMC magnet to correct insufficient V.static convergence.

In either case, repeat Beam Landing Adjustment.







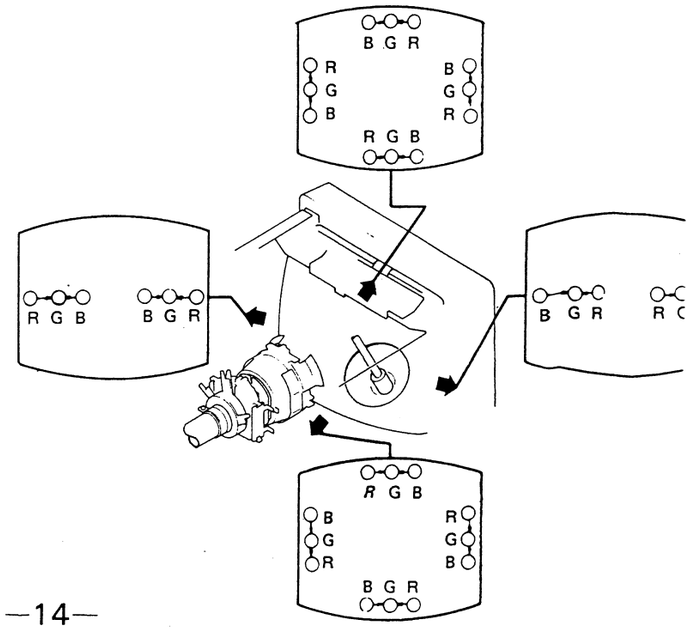


(2) Dynamic Convergence Adjustment

Preparation:

- Before starting, perform Horizontal and Vertical Static Convergence Adjustment.

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



3-3. CONVERGENCE

Preparation:

- Before starting, make FOCUS, H.SIZE, V.SIZE and V.LIN adjustments.
- Turn BRT control fully counterclockwise.
- Feed in the dot pattern.

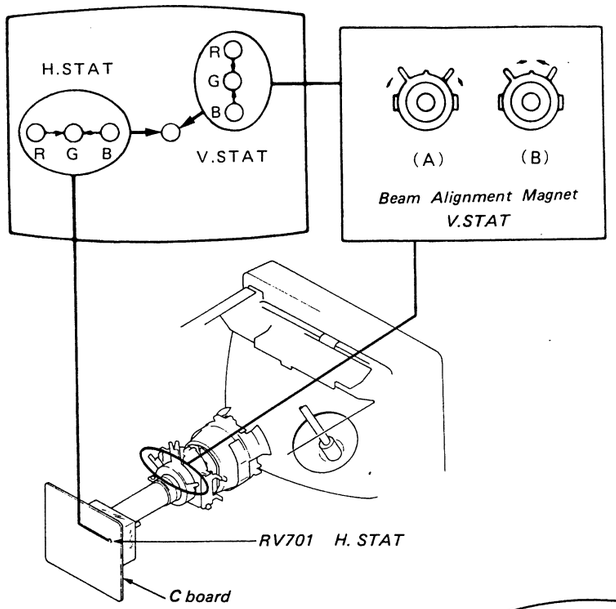
(1) Horizontal Static Convergence and Vertical Static Convergence

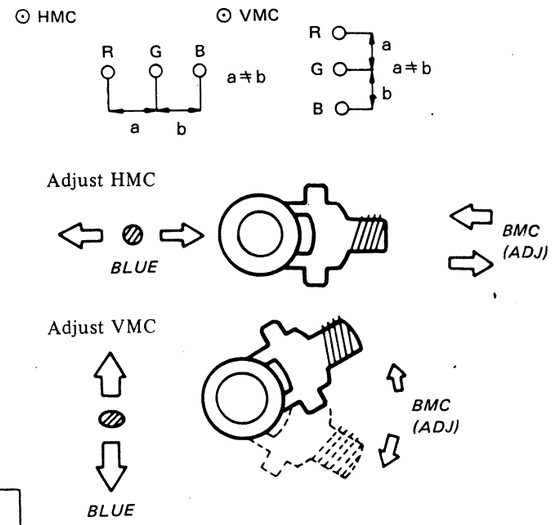
If blue dot does not coincide with red and green dots,

Move BMC magnet to correct insufficient H.Static convergence.

Rotate BMC magnet to correct insufficient V.static convergence.

In either case, repeat Beam Landing Adjustment.



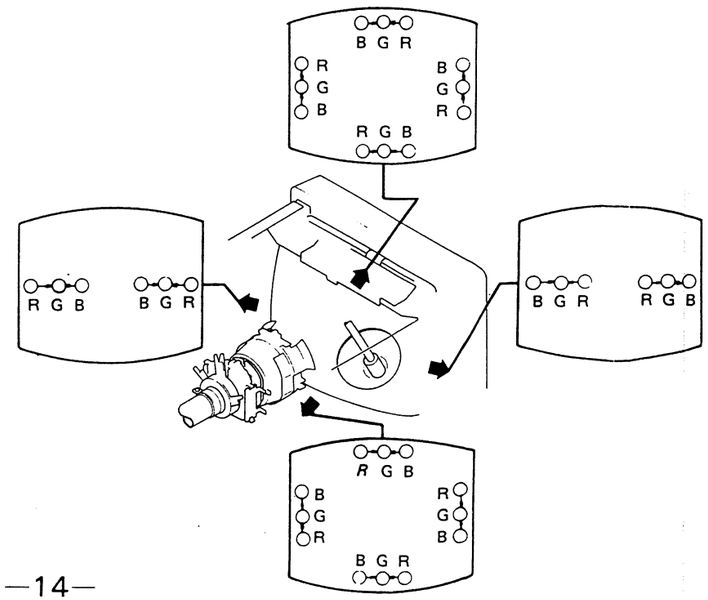


(2) Dynamic Convergence Adjustment

Preparation:

- Before starting, perform Horizontal and Vertical Static Convergence Adjustment.

1. Loosen deflection yoke screw.
2. Remove deflection yoke spacers.
3. Move the deflection yoke for best convergence as shown below.
4. Tightening the deflection yoke screw.
5. Install the deflection yoke spacers.



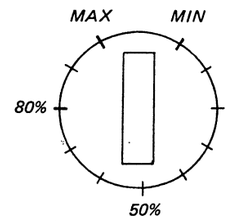
3-4. WHITE BALANCE

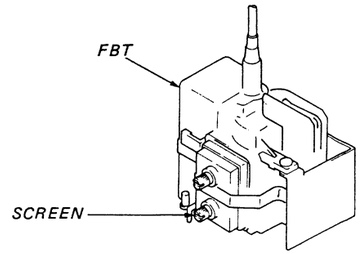
(1) SCREEN (G2)

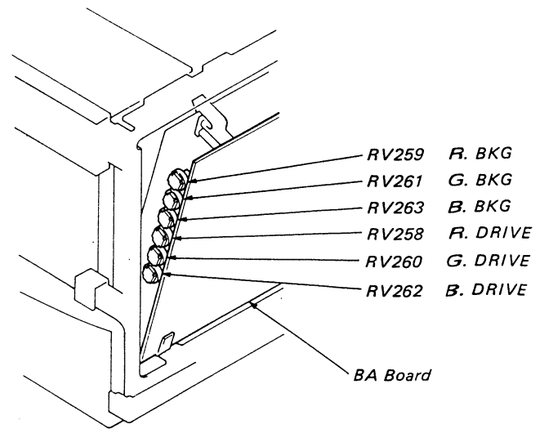
1. In put a dots pattern.
2. Set the PICTURE control at minimum and turn the BRIGHT control fully counterclock wise.
3. Confirm that BKG voltage is less than 105V dc when turning RV259 (R.BKG), RV261 (G.BKG) and RV263 (B.BKG).
4. Note the color which becomes visible first when turning SCREEN VR.

(2) WHITE BALANCE

1. Input a cross-hatch pattern.
2. Set the PICTURE control to minimum and turn the BRIGHT control click position.
3. Turn RV262 (B.DRIVE), RV260 (G.DRIVE) and RV258 (R.DRIVE) fully clockwise.
4. Set RV259 (R.BKG), RV261 (G.BKG) and RV263 (B.BKG) to minimum.
5. Turn RV509 (SUB BRT) slowly to obtain a faintly visible cross-hatch. Note the color that first becomes visible by turning. Do not turn a BKG control for this color.
6. Adjust the other two BKG controls for best white balance (neutral gray) of the faint cross-hatch. Set the PICTURE control to maximum and turn the BRIGHT control fully clockwise. Observe the screen and adjust the DRIVE controls for best white balance.
7. Repeat steps 1. through 6. several times.





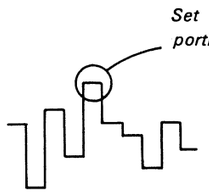


SECTION 4
CIRCUIT ADJUSTMENTS

4-1. BA BOARD ADJUSTMENTS

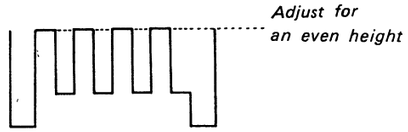
HUE BIAS ADJUSTMENT

1. *Input a color bar signal.*
   PICTURE 80%
   BRT 50%
2. *Connect an oscilloscope to pin (3) of the BA-6*
3. *Turn RV254 fully counterclockwise, then slowly return RV254 untill the waveform at pin (3) of BA-6 connector begin to change.*



SUB COLOR ADJUSTMENT

1. *Input a color bar signal.*
   PICTURE 80%
   BRT 50%
   COLOR 50%
2. *Adjust RV264 for the waveform at connector BA-6 (3) to become as illustrated.*



APC ADJUSTMENT

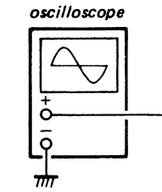
1. *Input a color bar signal.*
   PICTURE 80%
   BRT 50%
   COLOR 50%
2. *Connect a 100 kΩ resistor between IC253 pin (13) and ground. (Killor circuit goes off)*
3. *Ground IC253 pin (16) with a 10μ/16V chemical capacitor and remove color sync.*
4. *Adjust RV256 to get color sync.*

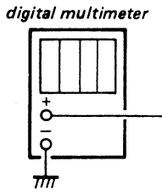
KILLER POINT ADJUSTMENT

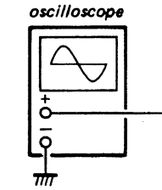
1. *Tune in an off-air signal.*
2. *Connect digital multimeter between R255 and R378.*
3. *Adjust RV255 so that the voltage is 8.3V dc.*

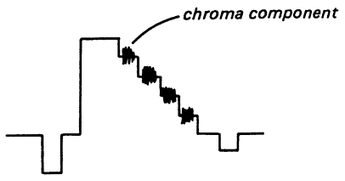
CHROMA TRAP ADJUSTMENT

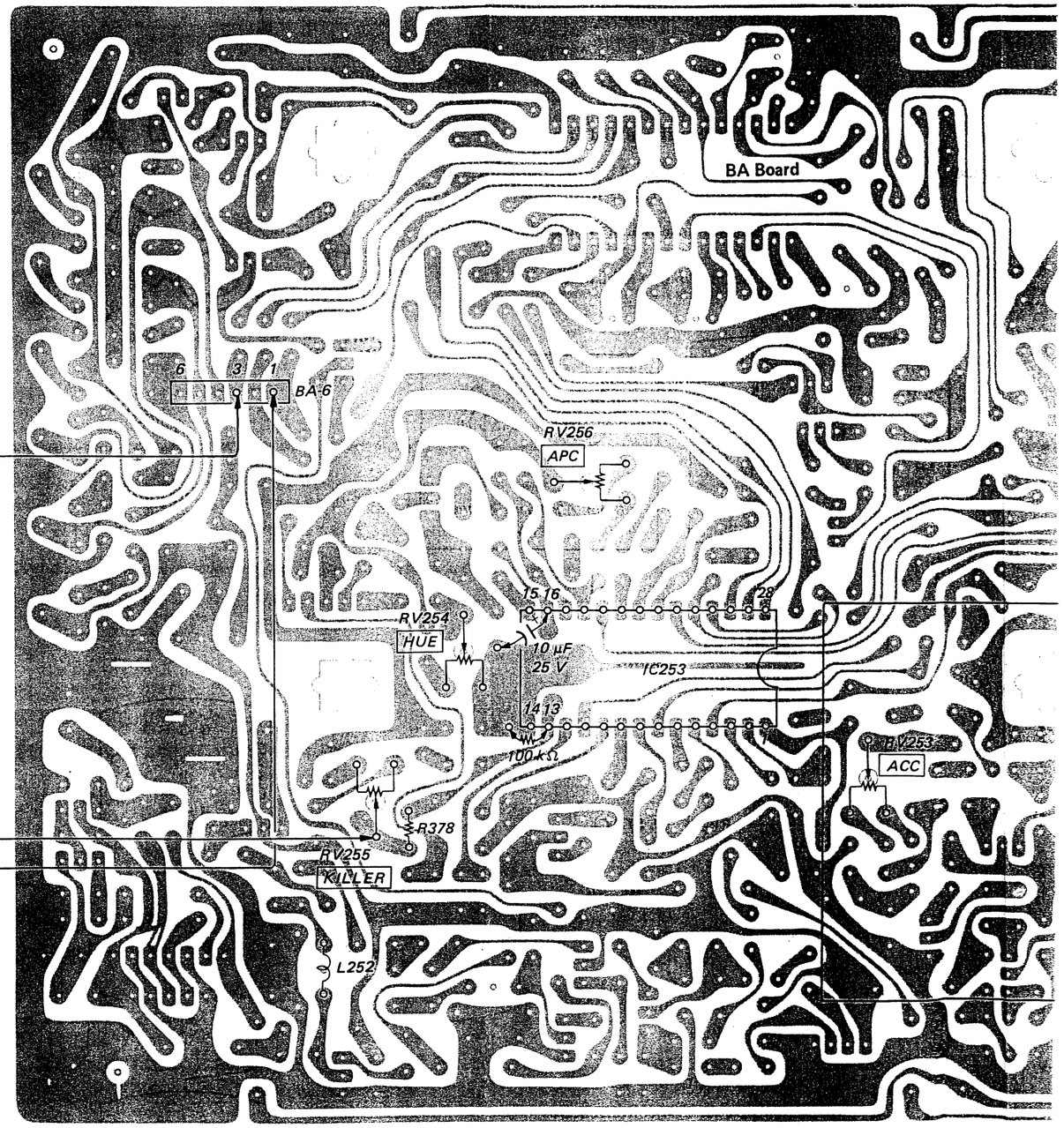
1. *Input a color bar signal.*
   PICTURE 80%
   BRT 50%
2. *Observe connector BA-6 pin (1) waveform on the oscilloscope and adjust L252 for minimum chroma component.*

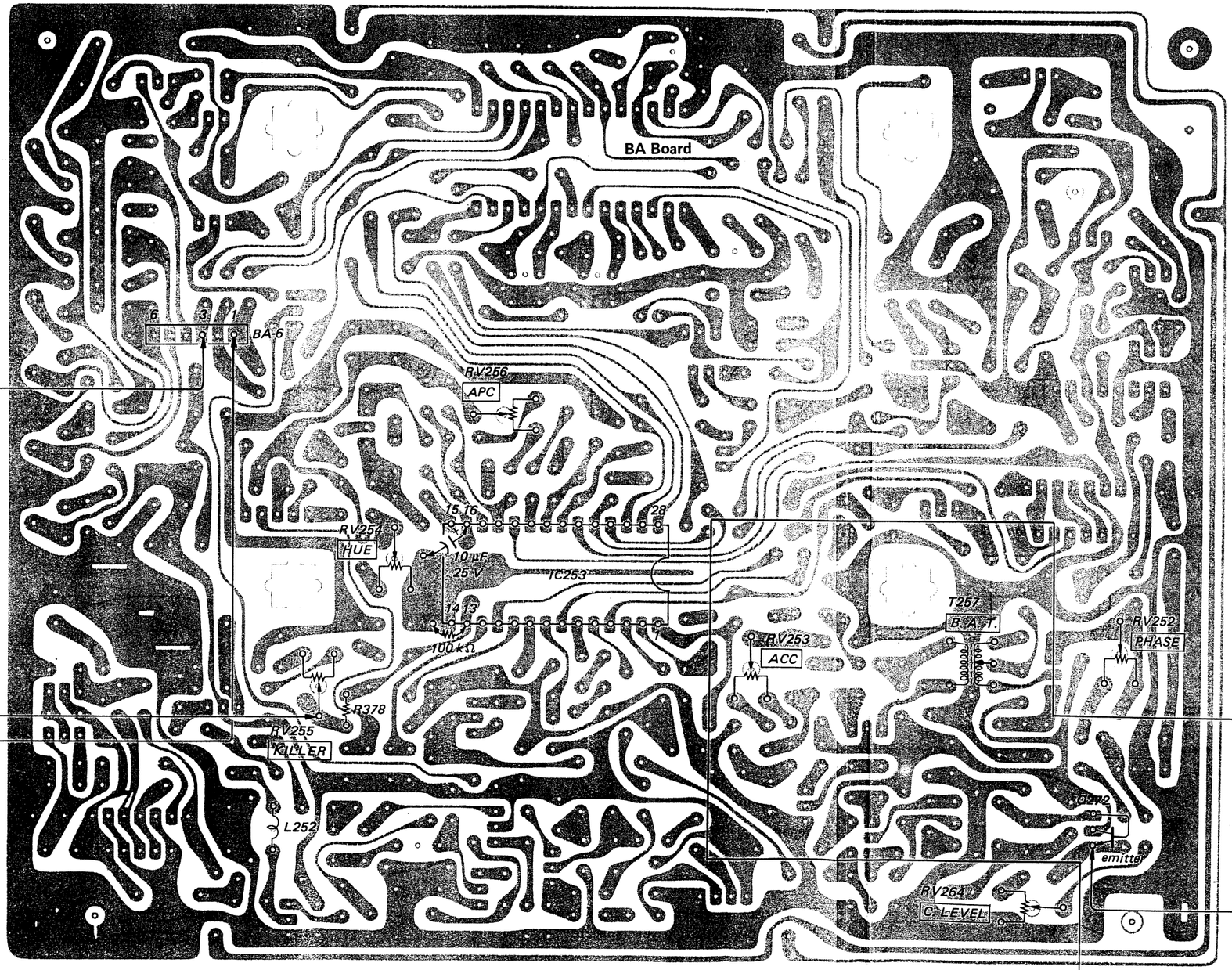












HUE ADJUSTMENT

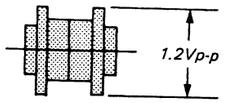
1. *Input a color bar signal.*
   PICTURE 80%
   BRT 50%
   COLOR 50%
2. *Set RV505 (user control HUE VR) at mechanical center.*
3. *Adjust RV252 so that the hue is optimized.*

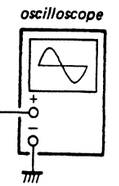
BAT ADJUSTMENT

1. *Input a color bar signal.*
   PICTURE 80%
   BRT 50%
   COLOR 50%
2. *Observe Q272 (E) waveform on the oscilloscope and adjust T257 for minimum chrome component.*

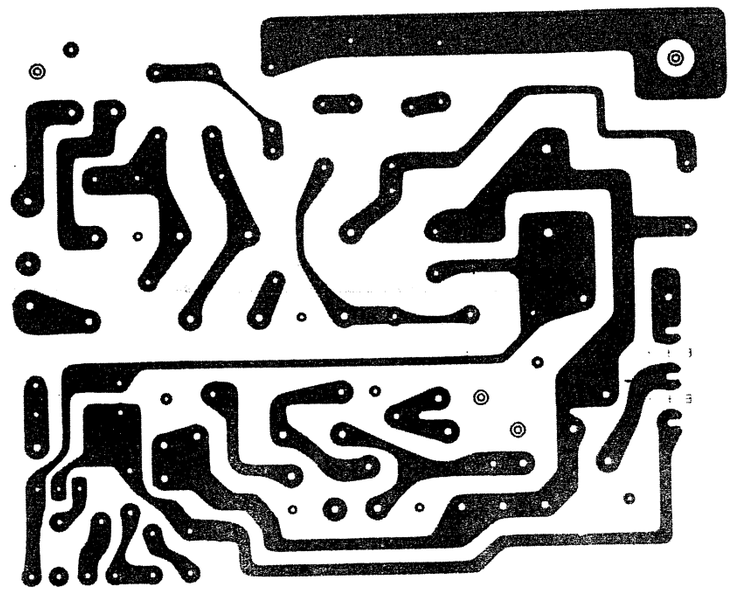
ACC ADJUSTMENT

1. *Input a color bar signal.*
   PICTURE 80%
   BRT 50%
   COLOR 50%
2. *Observe Q272 (E) waveform on the oscilloscope and adjust RV253 so that the signal component is 1.2 Vp-p.*

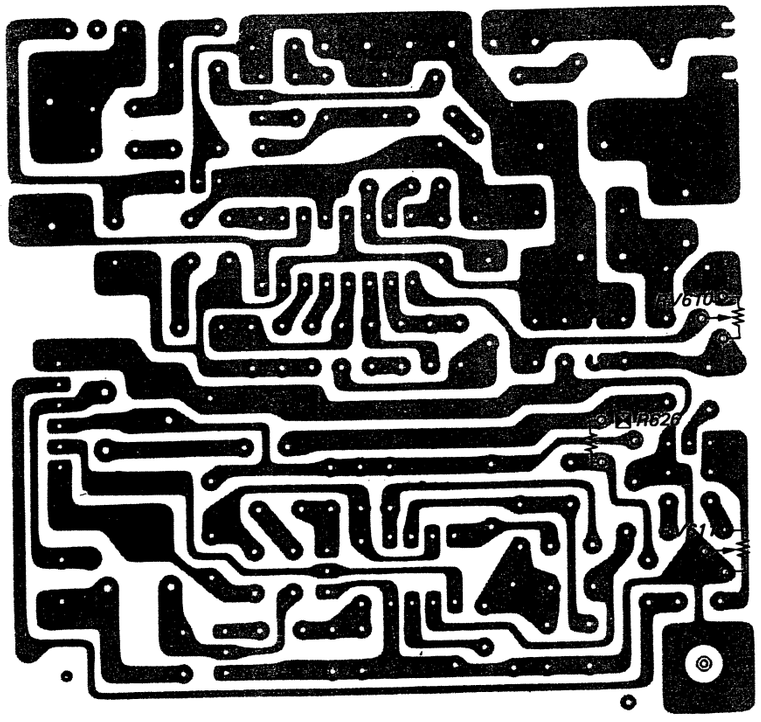




4-2. SAFETY RELATED ADJUSTMENTS



FB Board



+B MAX CHECK - ⊠ R626 ADJUSTMENT

Be sure to perform this adjustment when replacing the following parts (marked ◪ on the schematic)

◪ *R619, R620, R626, R627, R628, RV610, D626, IC611*

1. *Input a monoscope signal. (PICTURE 80% BRT 50%)*
2. *Turn +B ADJ VR (RV807) fully so that +B value is maximum. (Input of 130V $^{+2}_{-0}$ V AC)*
3. *Confirm that TP91 value is less than 31.5V dc.*

HV PROTECTOR OPERATION CHECK HOLD DOWN ⊠ R856 ADJUSTMENT

Be sure to perform this adjustment when replacing the following parts (marked ◪ on the schemacic)

◪ *R807, R818, R822, R826, R855, R856, R873, R874, R876, D800, D805, D824, D825, IC802, C807, C855*

1. *Input a monoscope signal. (PICTUER 80% BRT 50%)*
2. *Comfirm that voltage of 19.6±1.6V appears between TP61 and GND during input of 120V AC.*
3. *Confirm that the HOLD-DOWN cirucit operates (the raster disappears) . by adding 25.0V DC between TP61 and GND.*

BLANKING OPERATION CHECK ⊠ R859 ADJUSTMENT

Be sure to perform this adjustment when replacing the following parts (marked ◪ on the schematic)

◪ *R456, R457, R807, R819, R820, R822, R859, R862, D800, D801, IC253, IC802*

1. *Input a monoscope signal. (PICTURE 80% BRT 50%)*
2. *Turn +B ADJ VR (RV807) fully so that +B value is DOWN.*
3. *Confirm that the BLANKING circuit opeates (the raster disappears) by adding 24.5V DC between TP91 and GND.*

POWER SUPPLY OPERATION CHECK

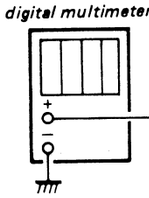
1. *Input a monoscope signal.*
   PICTURE 80%
   BRT 50%
   AC 120 V ±2 V
2. *Connect a digital voltmeter to connector DA-2.*
3. *Adjust RV610 for 30.5~31.5 V ±0.2 V DC.*

4-3. DA BO

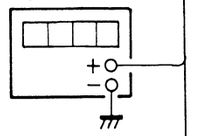
H.SIZE ADJ

1. *Input a PICTURE BRT*
2. *Set the H (H.SIZE*

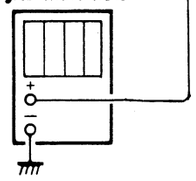
digital multimeter



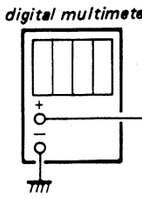
DC power supply



digital multimeter



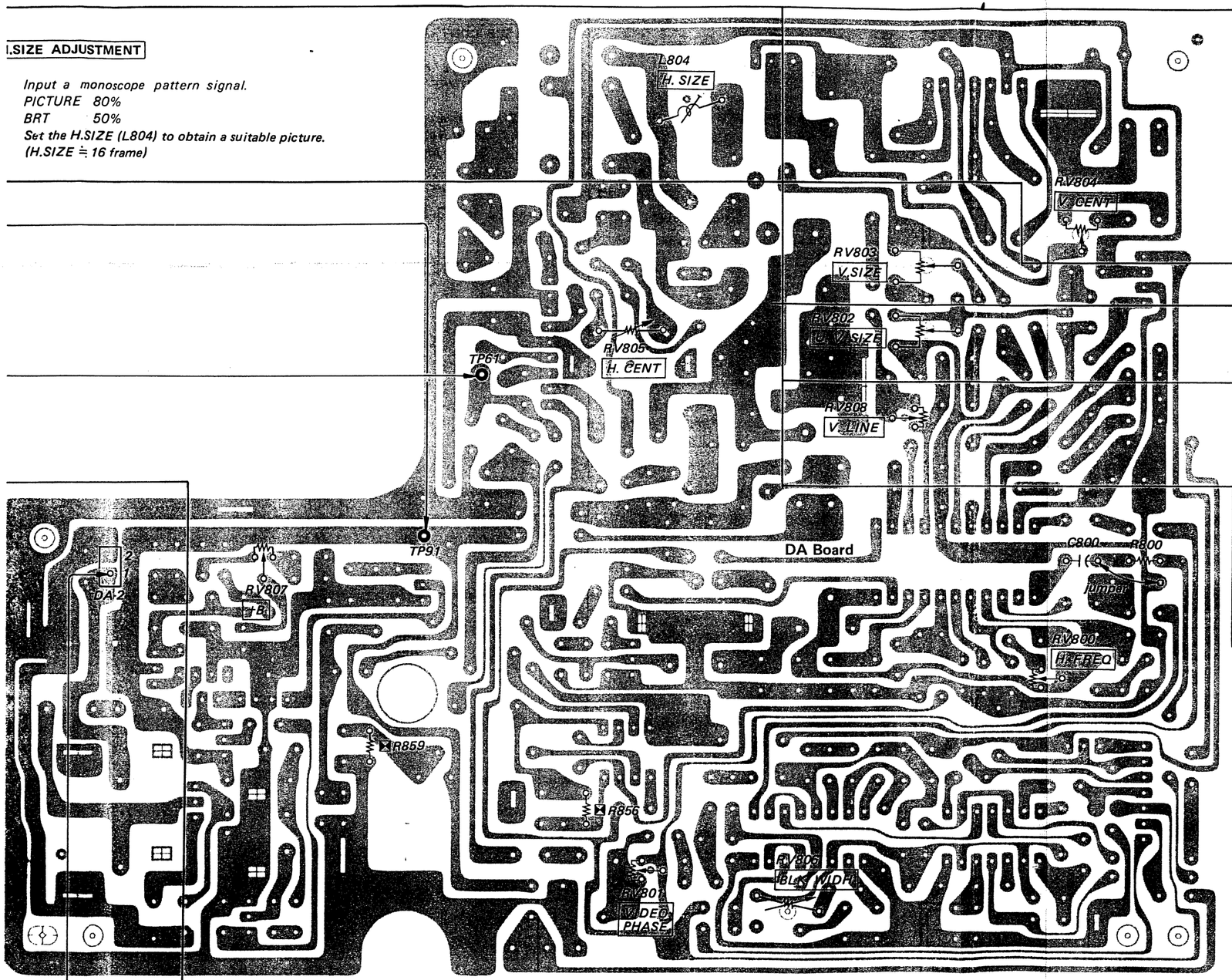
digital multimeter



3. DA BOARD ADJUSTMENTS

H.SIZE ADJUSTMENT

Input a monoscope pattern signal.
PICTURE 80%
BRT 50%
Set the H.SIZE (L804) to obtain a suitable picture.
(H.SIZE ≒ 16 frame)



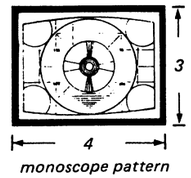
V. CENT ADJUSTMENT

1. *Input a monoscope pattern signal.*
   PICTURE 80%
   BRT 50%
2. *Adjust with RV804 so that picture is cetered.*

V. SIZE ADJUSTMENT

1. *Input a monoscope pattern signal.*
   PICTURE 80%
   BRT 50%
2. *Set the V.SIZE (RV803) to obtain a suitable picture.*

UNDER-SCAN V. SIZE ADJUSTMENT



monoscope pattern

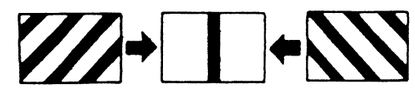
1. *Input a monoscope pattern signal.*
   PICTURE 80%
   BRT 50%
   SCAN UNDER
2. *Adjust UN V.SIZE (RV802) so that the monoscope pattern of H.SIZE and V.SIZE is 4:3.*
   (V. SIZE ≒ 11.75 frame)

V. LINE ADJUSTMENT

1. *Input a monoscope pattern signal.*
   PICTURE 80%
   BRT 50%
2. *Set the V.LIN (RV808) to obtain a suitable picture.*

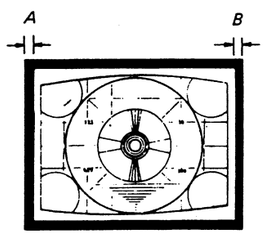
H. FREQ ADJUSTMENT

1. *Input a monoscope pattern signal.*
   PICTURE 80%
   BRT 50%
2. *Connect to ground C800 and R800 with Jamper.*
3. *Adjust with RV800 (H.FREQ) as shown in figure.*


fo low *fo correct* *fo high*

H BLANKING ADJUSTMENT

1. *Input a monoscope pattern signal.*
   PICTURE 80%
   BRT 50%
   SCAN UNDER
2. *Adjust VIDEO PHASE (RV801) and H.BLK WIDTH (RV806) to be A=B, as shown in the figure.*

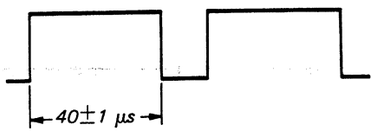


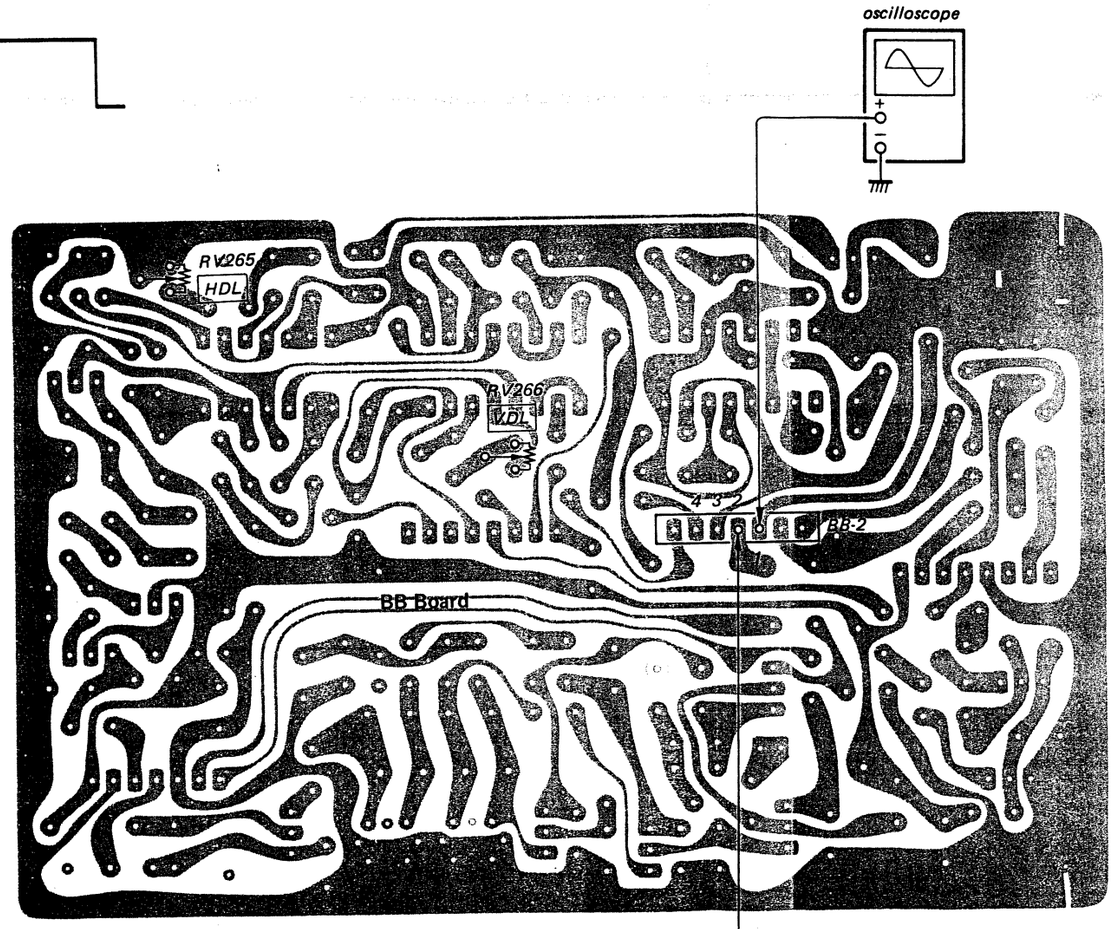
monoscope pattern

4-4. BB BOARD ADJUSTMENTS

1H DELAY ADJUSTMENT

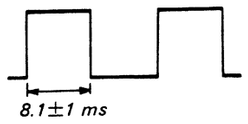
1. *Input a color bar signal.*
   PICTURE 80%
   BRT 50%
2. *Observe the connector BB-2 pin (1) waveform on the oscilloscope, and adjust RV265 for 40±1 µS.*

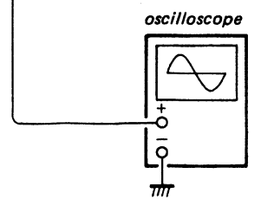




V. DELAY ADJUSTMENT

1. *Input a color bar signal.*
   PICTURE 80%
   BRT 50%
2. *Observe the connector BB-2 pin (2) waveform on the oscilloscope, and adjust RV266 for 8.1±1 ms.*

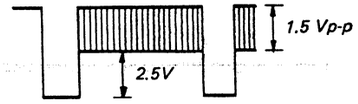


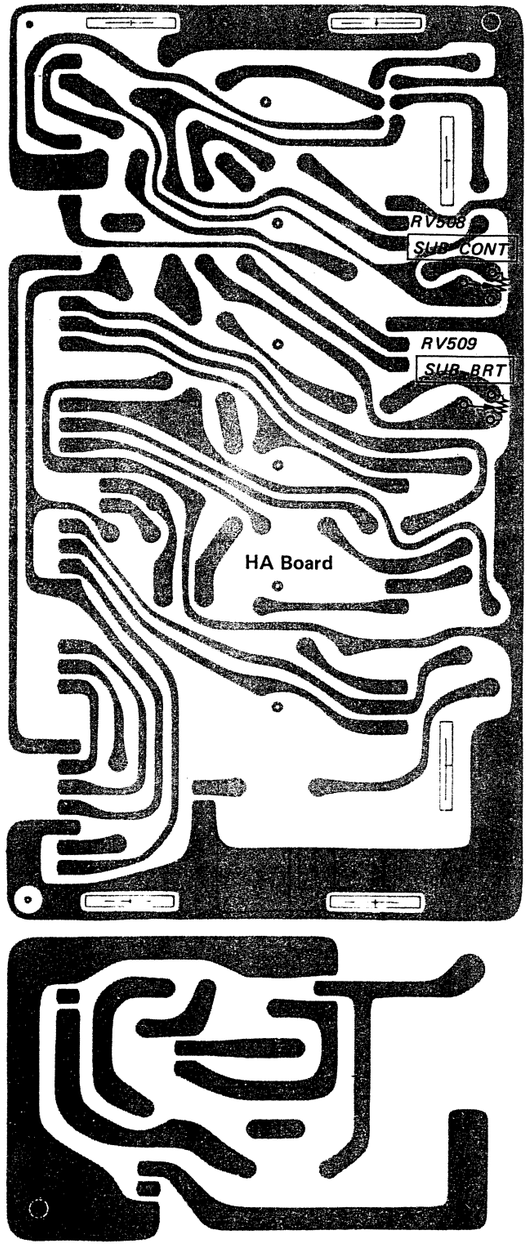


4-5. HA BOARD ADJUSTMENT

SUB CONTRAST ADJUSTMENT

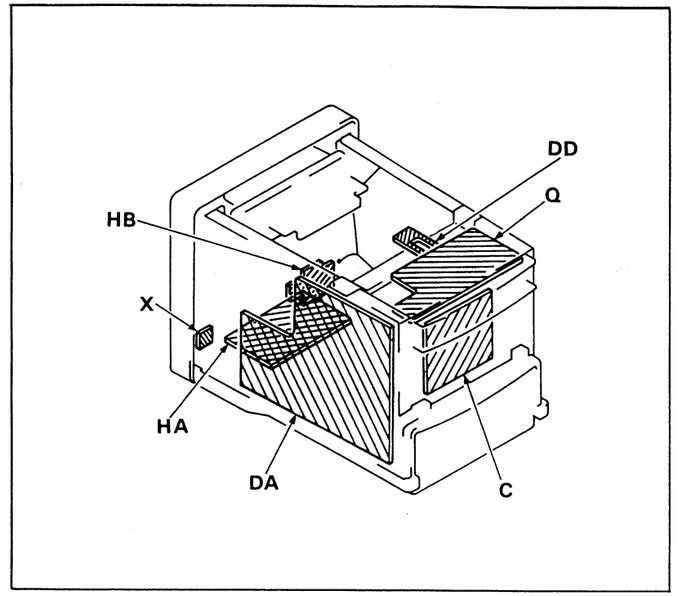
1. *Input a monoscope pattern signal.*
   PICTURE 100%
   BRT 50%
2. *Observe connector C-1 pin (3) on the oscilloscope and adjust RV508.*
   So that the signal component is 1.5 Vp-p.

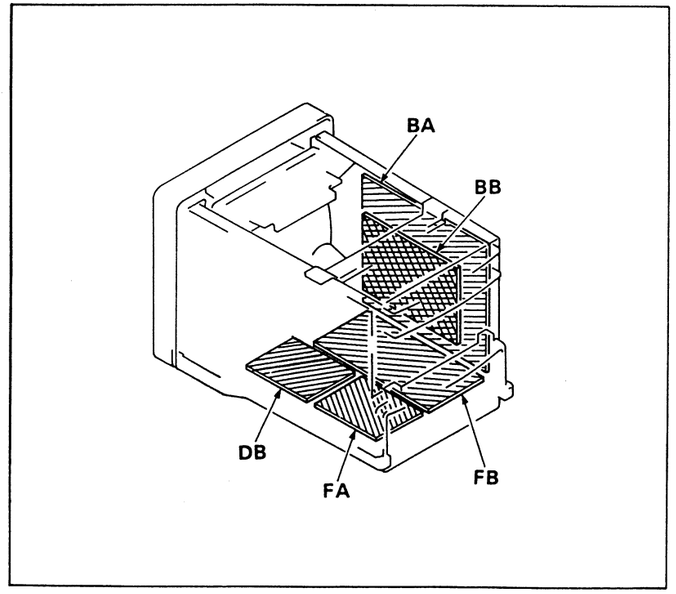




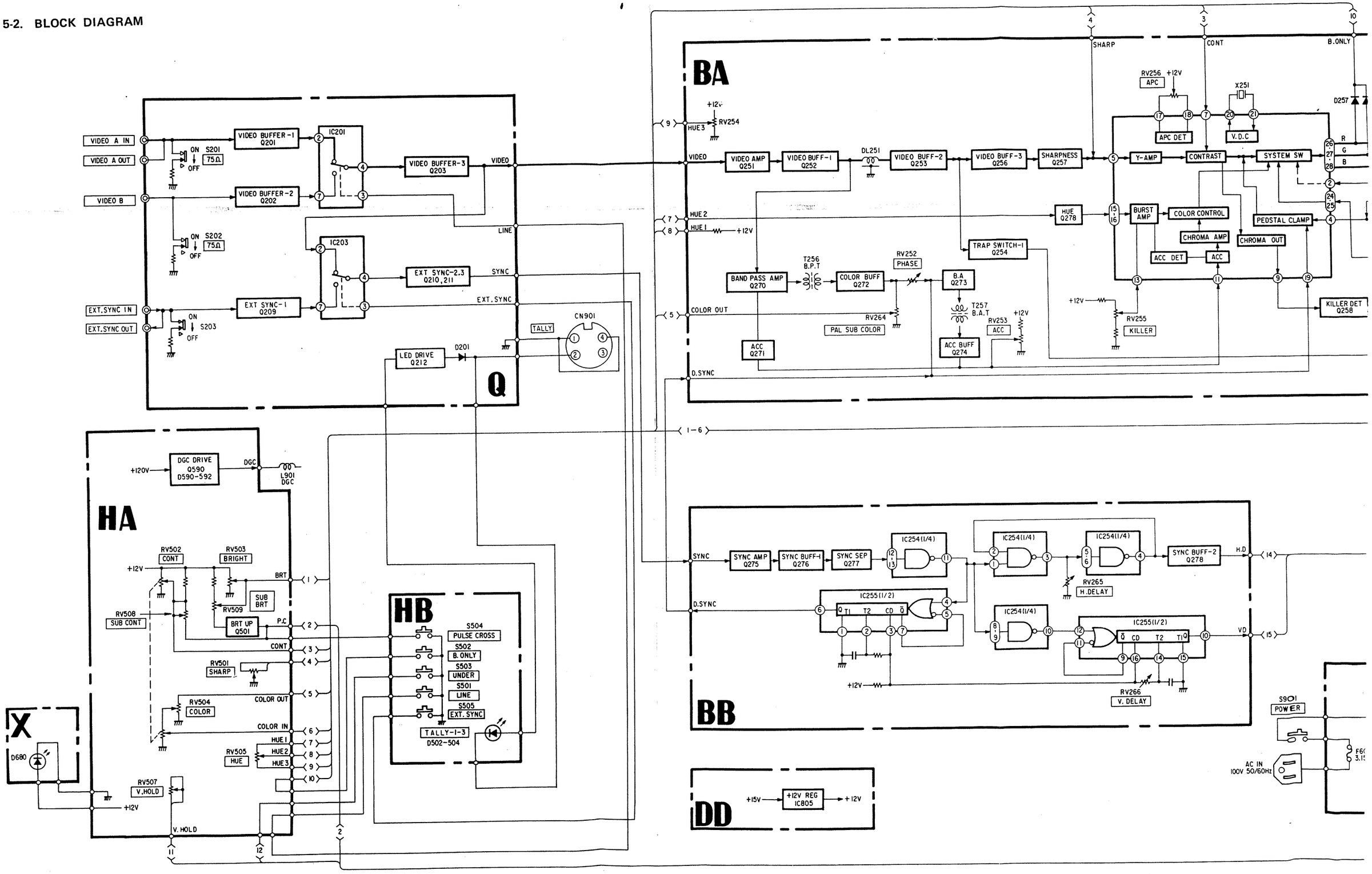
SECTION 5
DIAGRAMS

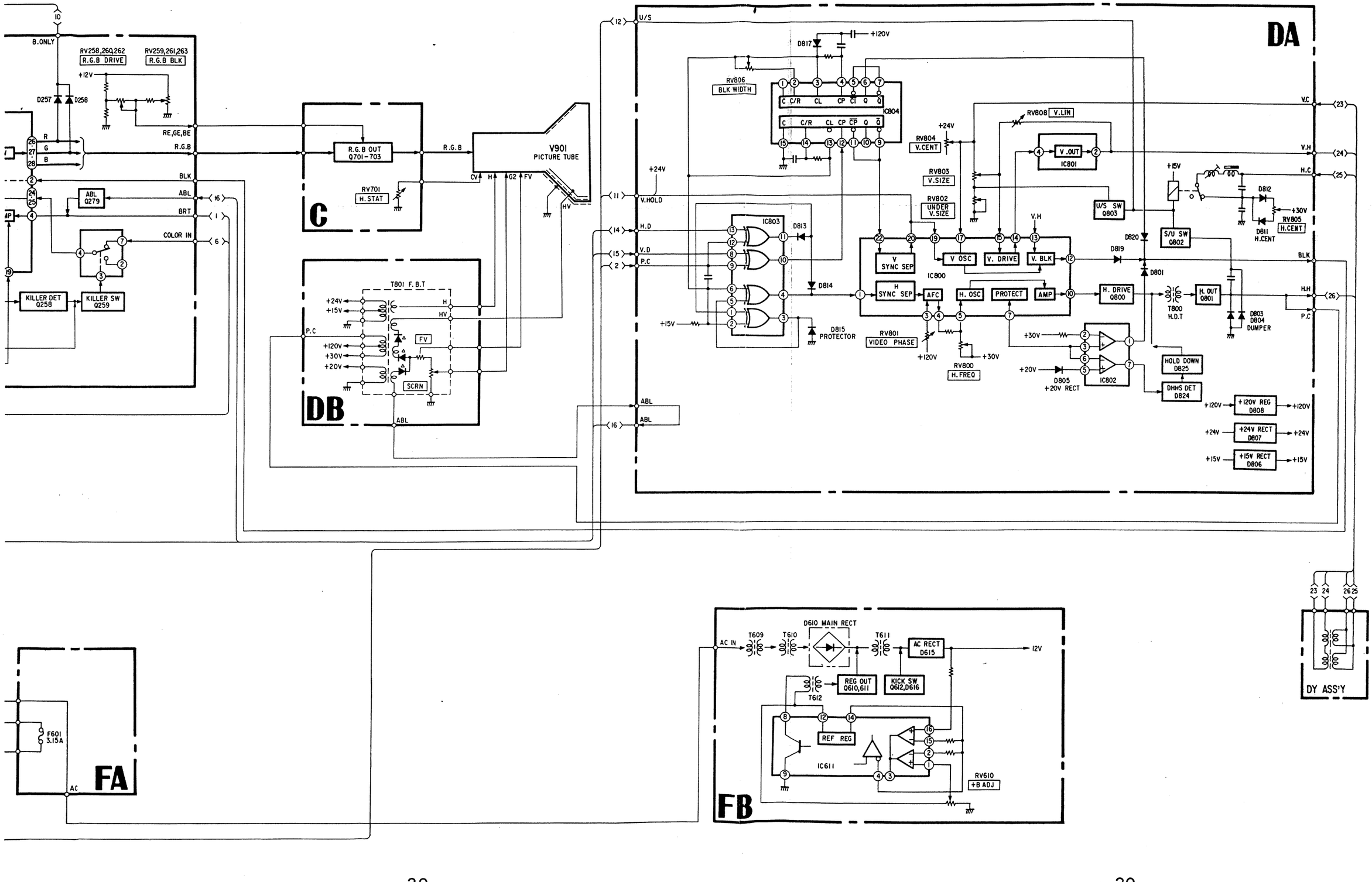
5-1. CIRCUIT BOARDS LOCATION





5-2. BLOCK DIAGRAM





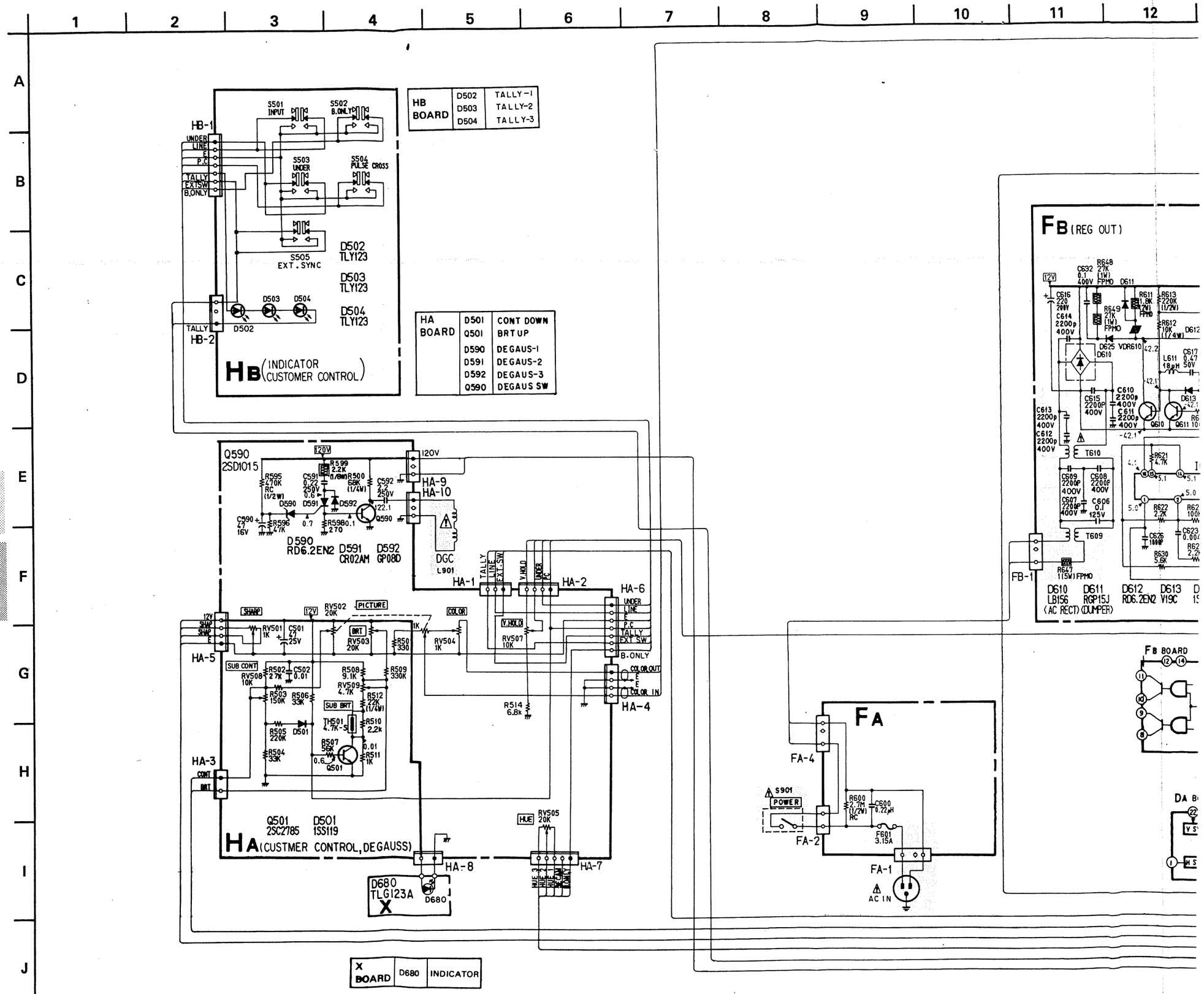
5-3. SCHEMATIC DIAGRAM

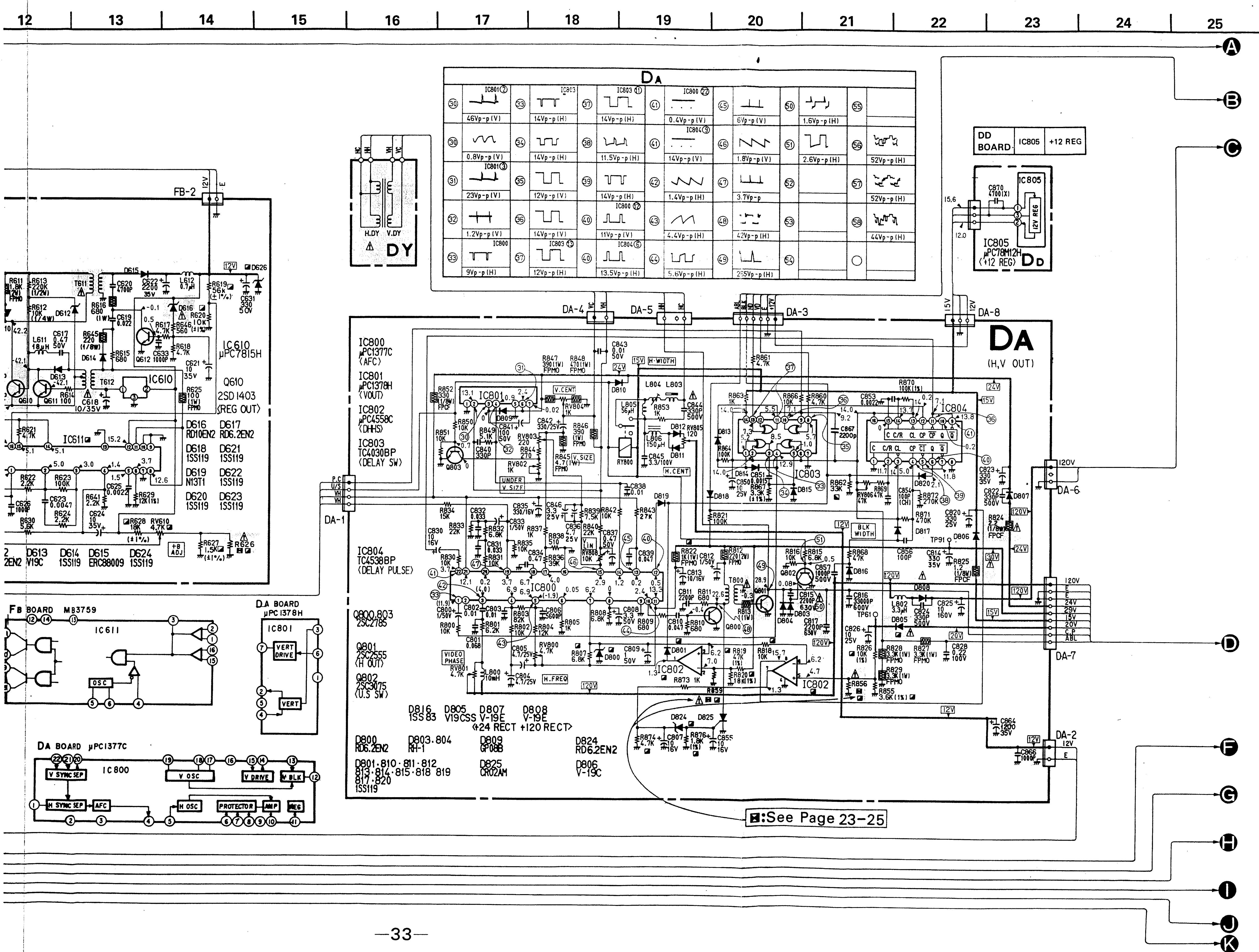
Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics.
- All resistors are in ohms, 1/6 W unless otherwise noted. k: 1000 Ω, M: 1000 kΩ
- △ : internal component.
- ⟨W⟩ : nonflammable resistor.
- ▭ : panel designation.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by ⧓ in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪, make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by ⧓ and repeat the adjustment until the specified value is achieved. (Refer to R626 R859 adjustment on page 20, 21.)
- All voltages are in V.
- Voltages are dc with respect to ground unless otherwise noted.
- ▭ : adjustment for repair.
- ▬▬ : B+ bus.
- ▬ ▬ : B− bus.

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

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.





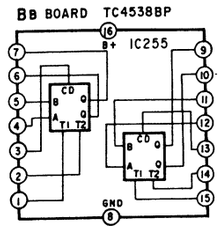
FB BOARD	D610	AC RECT
	D611	DUMPER-1
	D612	BIAS-1
	D613	PROTECT
	D614	DUMPER-3
	D615	RECT
	D616	C. STOP-3
	D625	DUMPER-2
	D626	
	IC610	+ 15VREG
	IC611	SW REG
	Q610	REG OUT
	Q611	DRIVE
	Q612	KICK SW

DA BOARD	D800	BIAS-1
	D801	STOPPER-1
	D802	
	D803	DUMPER-1
	D804	DUMPER-2
	D805	20V RECT
	D806	15V RECT
	D807	+24 RECT
	D808	+120 RECT
	D809	PROTECTOR
	D810	PROTECTOR
	D811	H. CENT-1
	D812	H. CENT-2
	D813	STOPPER-2
	D814	STOPPER-3
	D815	PROTECTOR
	D817	STOPPER-4
	D818	ABL
	D819	STOPPER-6
	D820	STOPPER-5
	D824	DHHS DET
	D825	HOLD DOWN
	IC800	AFC
	IC801	V OUT
	IC802	DHHS
	IC803	DELAY SW
	IC804	DELAY PULSE
	Q800	H DRIVE
	Q801	H OUT
	Q802	U/S SW
	Q803	U/S SW

BA BOARD		
	D253	BIAS-1
	D255	ACC
	D257	C. STOP-1
	D258	C. STOP-2
	IC251	KILLER
	IC253	Y.PAL
	Q251	VIDEO AMP
	Q252	VIDEO BUF-1
	Q253	VIDEO BUF-2
	Q254	TRAP SW
	Q256	VIDEO BUF-3
	Q257	SHARPNESS
	Q258	KILLER DET
	Q259	KILLER SW-1
	Q270	B.P.A
	Q271	ACC
	Q272	COLOR BUF
	Q273	B.A
	Q274	ACC BUF
	Q278	HUE
	Q279	ABL

BB BOARD		
	IC254	H MM-1
	IC255	H/V MM
	Q275	SYNC AMP
	Q276	SYNC BUF-1
	Q277	SYNC SEP
	Q278	SYNC BUF-2

BB BOARD TC4538BP



BB

③	3.5Vp-p (H)	⑳	2Vp-p (H)	㉕	11Vp-p (H)
㉑	12Vp-p	㉖	15.5Vp-p (H)		
㉒	11Vp-p (H)	㉗	13Vp-p (V)		
㉓	0.13Vp-p	㉘	12Vp-p (H)		
㉔	12Vp-p (H)	㉙	12Vp-p (V)		

Q BOARD		
	D201	PROTECT
	IC201	VIDEO SW
	IC203	EXT SYNC
	Q201	VIDEO BUF-1
	Q202	VIDEO BUF-2
	Q203	VIDEO BUF-3
	Q209	EXT SYNC-1
	Q210	EXT SYNC-2
	Q211	EXT SYNC-3
	Q212	

BB (SYNC/SEP.)

IC254 TC4011BP IC255 TC4538BP Q275 2SC4035P Q276 2SC2785 Q277 2SA1175 Q278 2SC2785

BB-1 BB-2

V.DELAY H.DELAY

Q BOARD CX-20061

IC201 IC203 D206 D201
CX-20061 CX20061 RD10EN2 1SS119
(VIDEO SW) (EXT SYNC)
Q201 Q202 Q203 Q209
2SC2785 2SC2785 2SC2785 2SC2785
(VIDEO BUF-1)(VIDEO BUF-2)(VIDEO BUF-3)(EXT SYNC-1)
Q210 Q211 Q212 2SC2785
2SC403SP 2SC2785
(EXT SYNC-2)(EXT SYNC-3)

VIDEO SW. EXT SYNC. VIDEO BUFF Q

Q-1 Q-2 Q-3 Q-4

CN901 TALLY

Q BOARD CX-20061

IC202

AUDIO AMP | FM DET | VOLUME CONTROL | AF PRE AMP | AF OUT

BA (R,G,B DEMOD.) Q272 2SC2785 Q273 2SC403SP Q274 2SC2785 Q278 2SK105A Q279 2SC2785

Q251 2SC403SP Q252 2SC2785 Q253 2SC2785 Q254 2SC2785 Q256 2SC2785 Q257 2SC403SP Q258 2SA1175 Q259 2SC2785 Q270 2SC403SP

IC253 IC251 PC1365C CX20061TES (Y.PAL)

Q271 2SC2785

BA BOARD CX20061TES

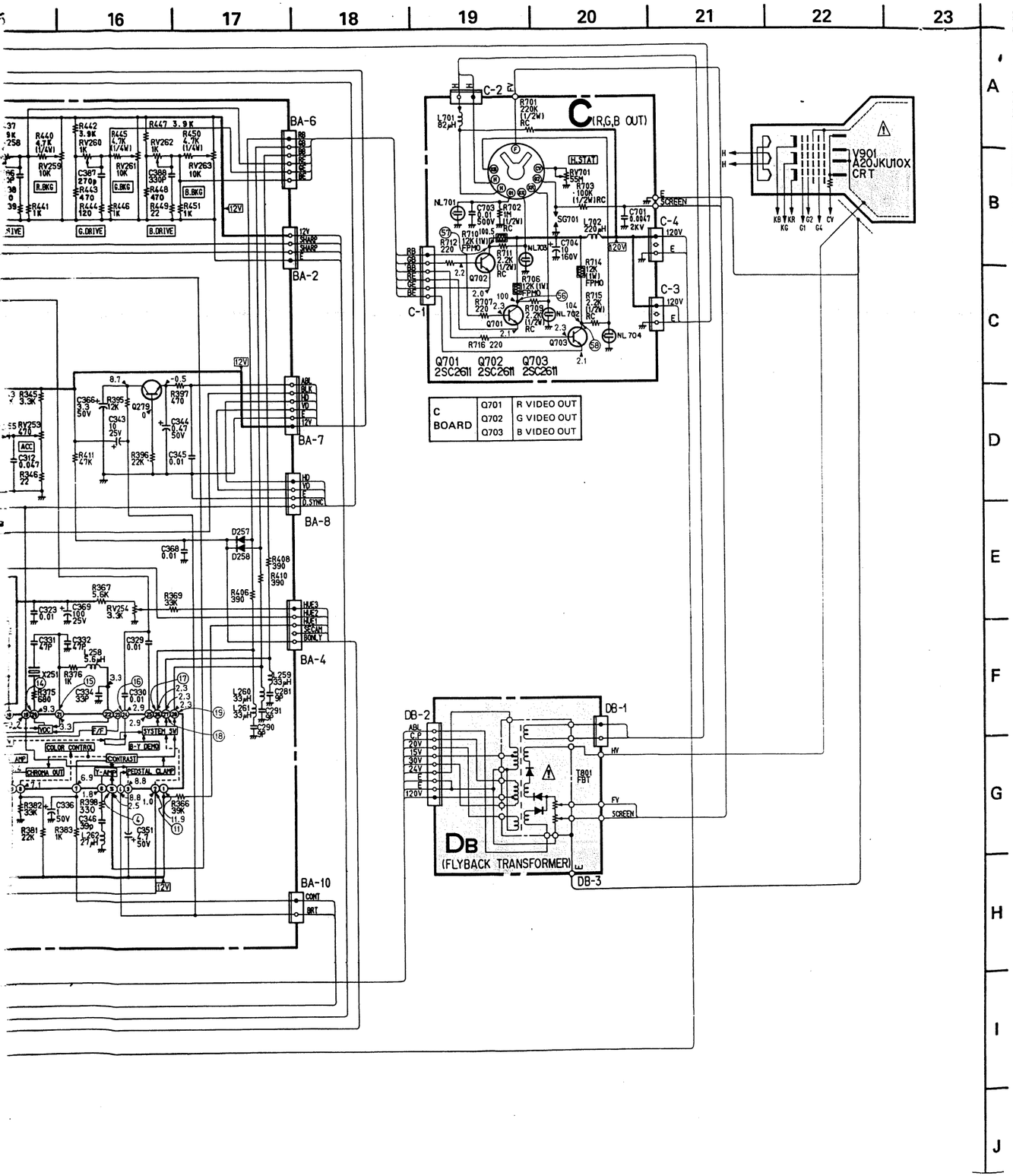
Q

①	1.8Vp-pV (H)				

IC251

BA

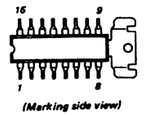
②		⑤	IC251 1.6Vp-p (H)	⑦	1.5Vp-p (H)	⑫	0.13Vp-p (H)	⑰	3.5Vp-p (H)
③	Q252 3.6Vp-p (H)	⑤	COLOR IN 0.17Vp-p (H)	⑧	0.7Vp-p (H)	⑬	1.4Vp-p (H)	⑱	3.5Vp-p (H)
③	Q253 1.8Vp-p (H)	⑤	COLOR OUT 0.8Vp-p (H)	⑨	3.6Vp-p (H)	⑭	3.57MHz 2.1Vp-p	⑲	3.5Vp-p (H)
④	Q256,Q257 1.8Vp-p (H)	⑥	Q272 2Vp-p (H)	⑩	2.9Vp-p (H)	⑮	3.75MHz 0.6Vp-p		
④	IC253 1.7Vp-p (H)	⑥	IC251 0.16Vp-p (V)	⑪	4Vp-p (H)	⑯	0.28Vp-p (H)		



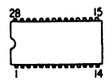
C BOARD		
	Q701	R VIDEO OUT
	Q702	G VIDEO OUT
	Q703	B VIDEO OUT

5-4. SEMICONDUCTORS

AN5250



μPC1365C

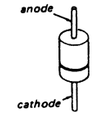


2SA933S
2SC1740S

2SD774

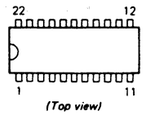
CR02AM-4
CR02AM-8

RDG15J

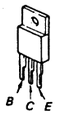


CX-20061

μPC1377C

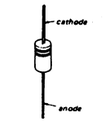


2SC2334
2SD1134

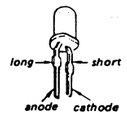


2SD1015
2SD789

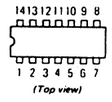
ERC24-06S
GP08B
RH-1
RH-1A



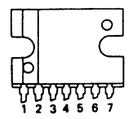
TLG123A
TLY123



HD14011BP
HD14538BP
TC4011BP
TC4030BP
μPD4030BC



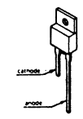
μPC1378H-L



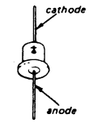
2SC2456
2SC2611

2SK105A

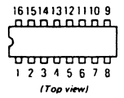
ERC88-009



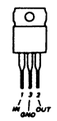
U05G



HD14538BP
TC4538BP



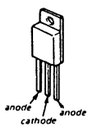
μPC78M12H



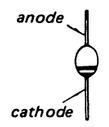
2SC2555

1SS83
1S1555
1S2076
ERC81-004
HZ11A
HZ18
HZ6C2
RD10E-N2
RD12EB2
RD20E-N1
RD20E-N2
RD20E-N3
RD20E-N4
RD6.2E-N2
RD8.2E-N2

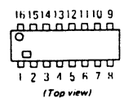
ESAB82-004
ESAC82-004



V19C
V19CSS
V19E



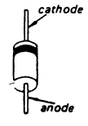
MB3759-SNY



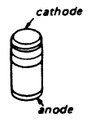
2SA1048
2SA1115
2SC2458
2SC2603
2SC403SP

2SC3075

1SS119
1SS133
1SS148



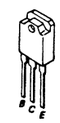
LB156



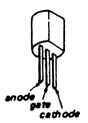
NJM2903D
NJM4558C
μPC4558C

2SA1175
2SC2785

2SD1403



N13T1



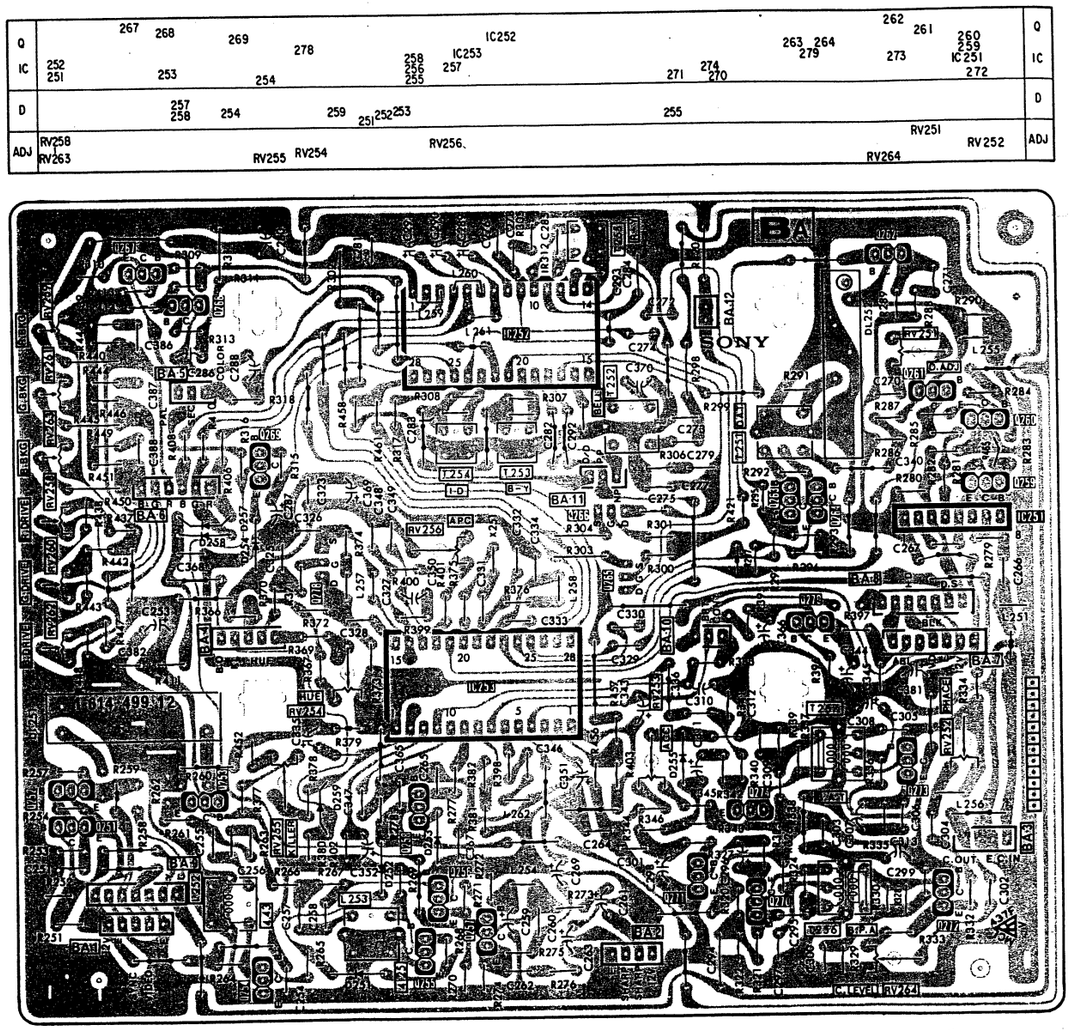
5-5. PRINTED WIRING BOARDS

BA [R.G.B DEMOD] **BB** [SYNC SEP] **Q** [VIDEO SW, EXT SYNC, VIDEO BUFF] **C** [R.G.B DEMOD]

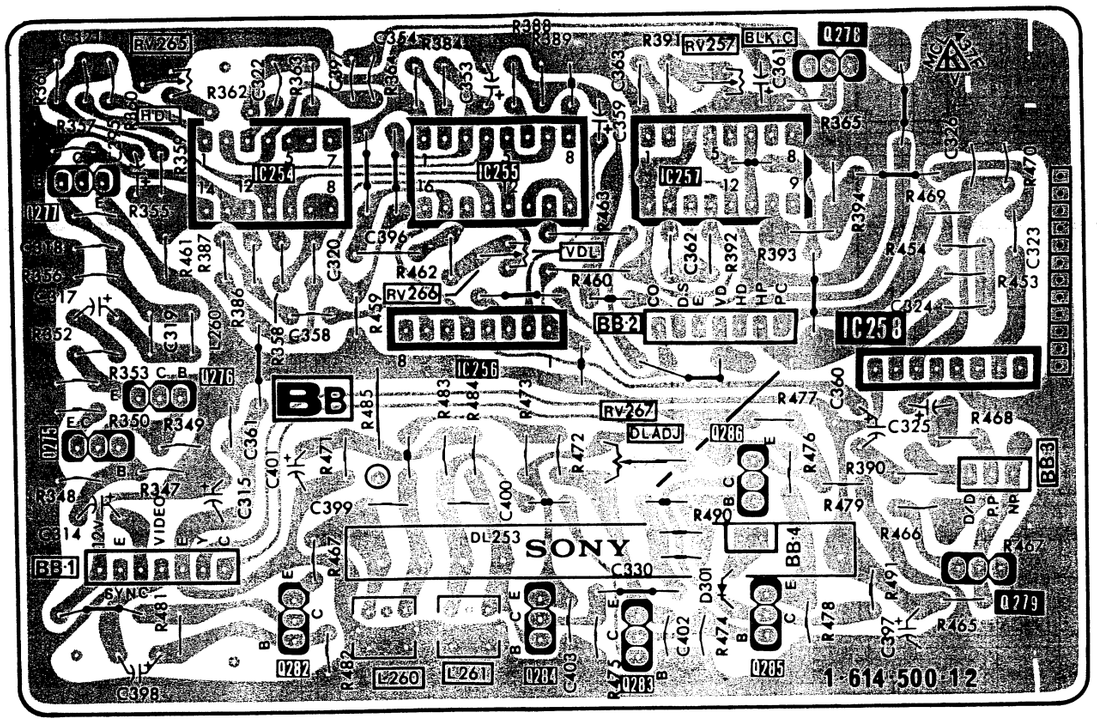
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

A B C D E F G H I

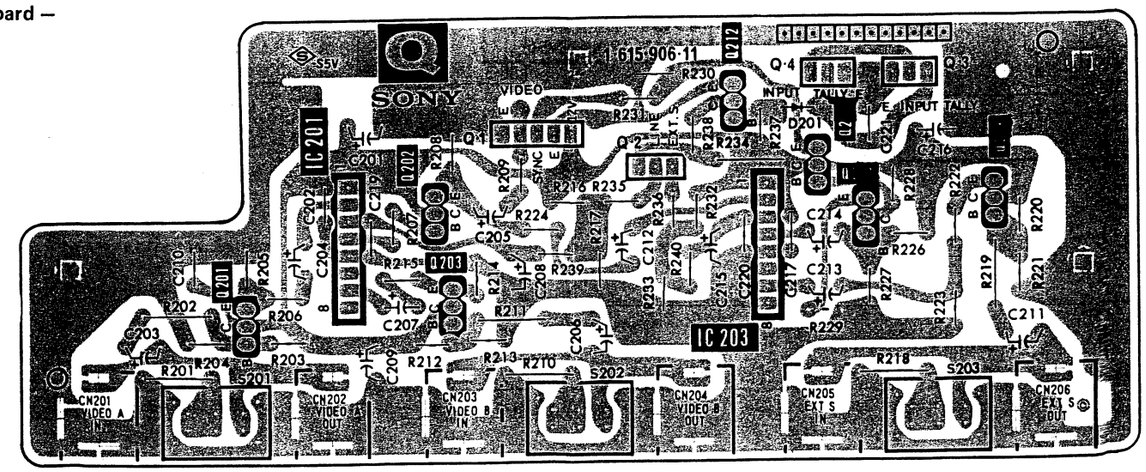
— BA Board —



— BB Board —



— Q Board —

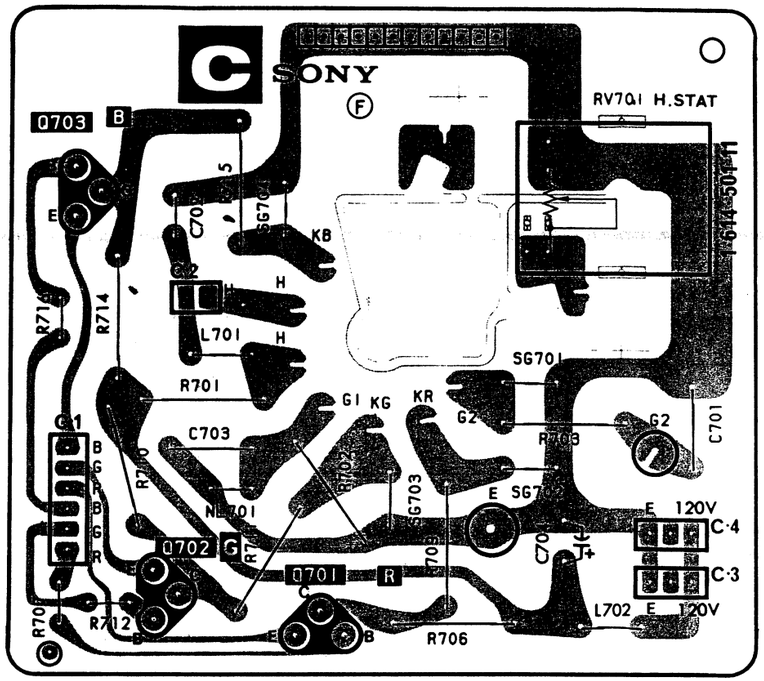


HA [CUSTMER CONTROL, DEGAUSS] HB [INDICATOR CUSTOMER CONTROL] DD [REG] X

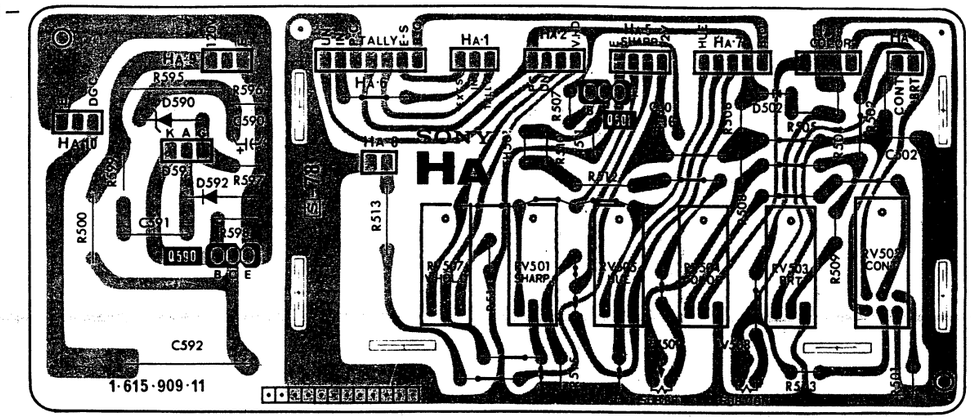
16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

A B C D E F G H I

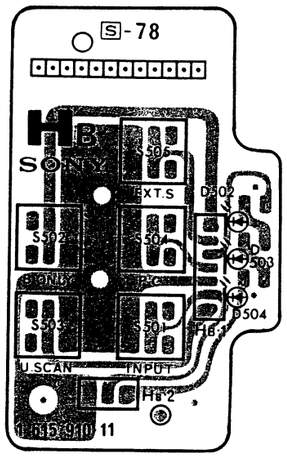
— C Board —



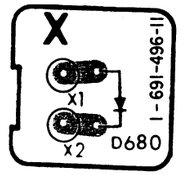
— HA Board —



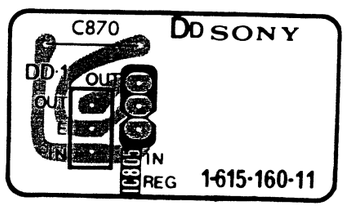
— HB Board —



— X Board —



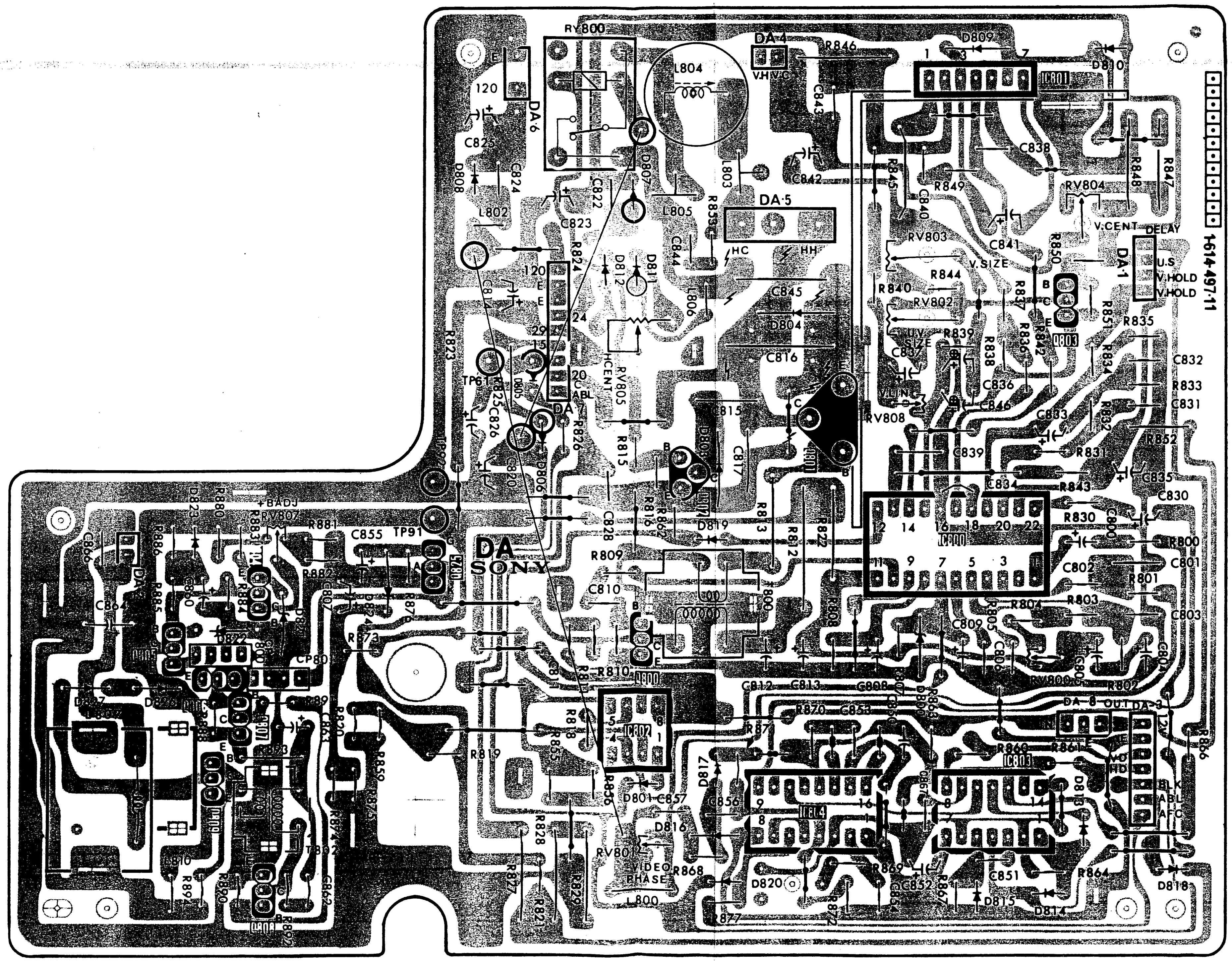
— DD Board —



DA [H.V OUT]

– DA Board –

	3	4	5	6	7	8	9	10	11	12
Q·IC		805 806 809 807 804 808		825	800 IC802	802	801 IC804	IC801 IC800 IC803	803	
D	827 826	823 822 821	824	808	805 806 812 807 811 801	819 816 803 817 820		800 809 815 814	813 810	818
ADJ			RV807		RV805 RV801			RV803 RV802 RV808 RV800	RV804	

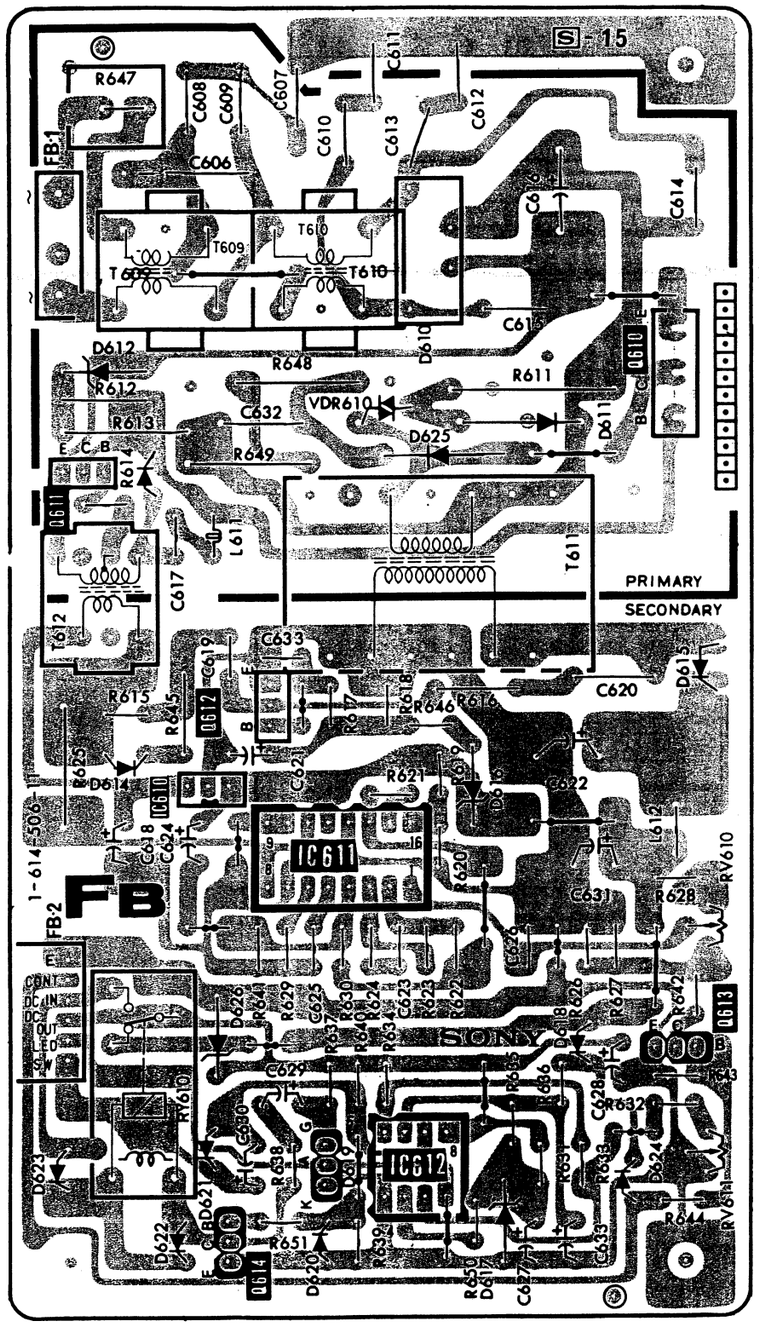


FB [REG] FA DB [FLYBACK TRANSFORMER]

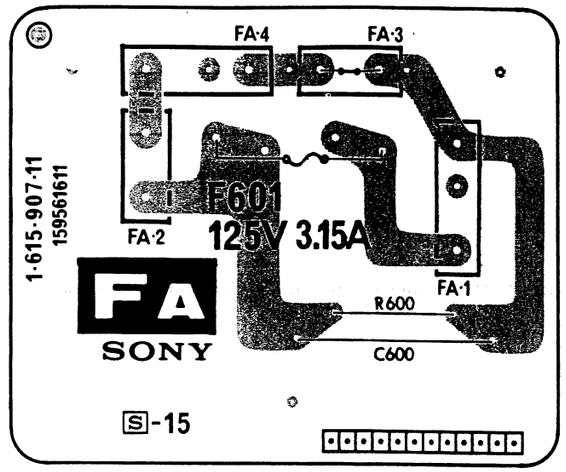
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

A B C D E F G H I

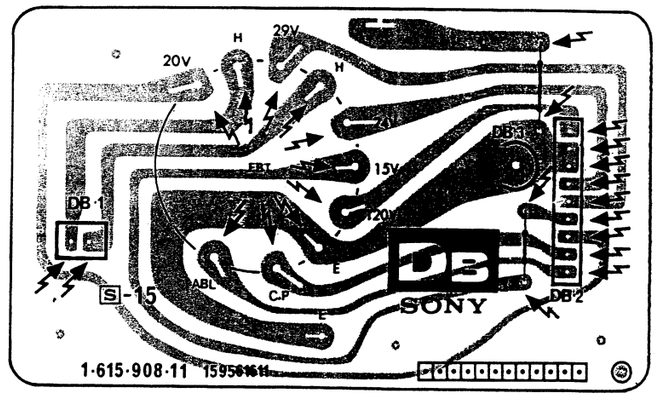
— FB Board —



— FA Board —



— DB Board —



SECTION 6
EXPLODED VIEWS

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

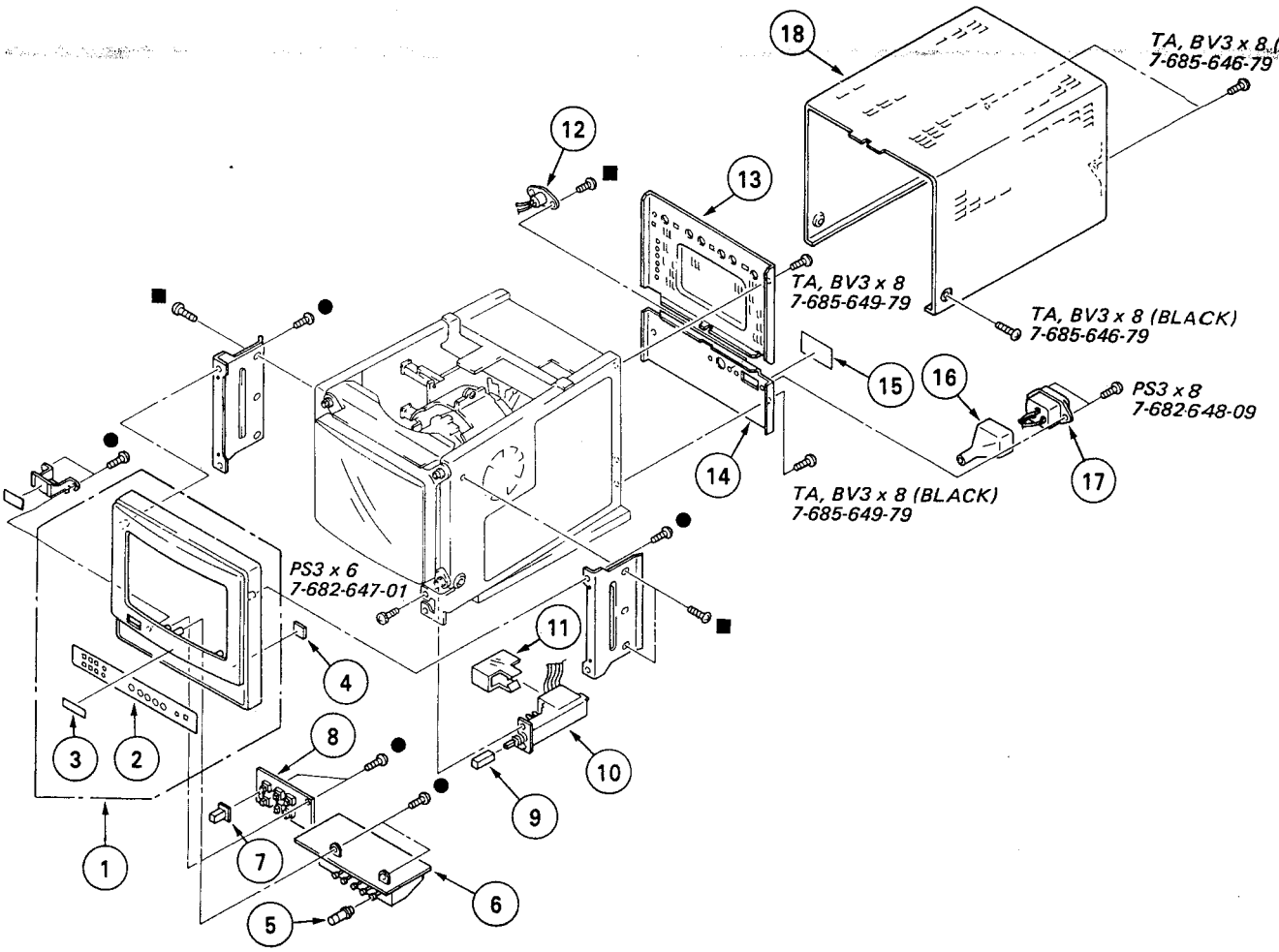
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ 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.

6-1. BEZEL

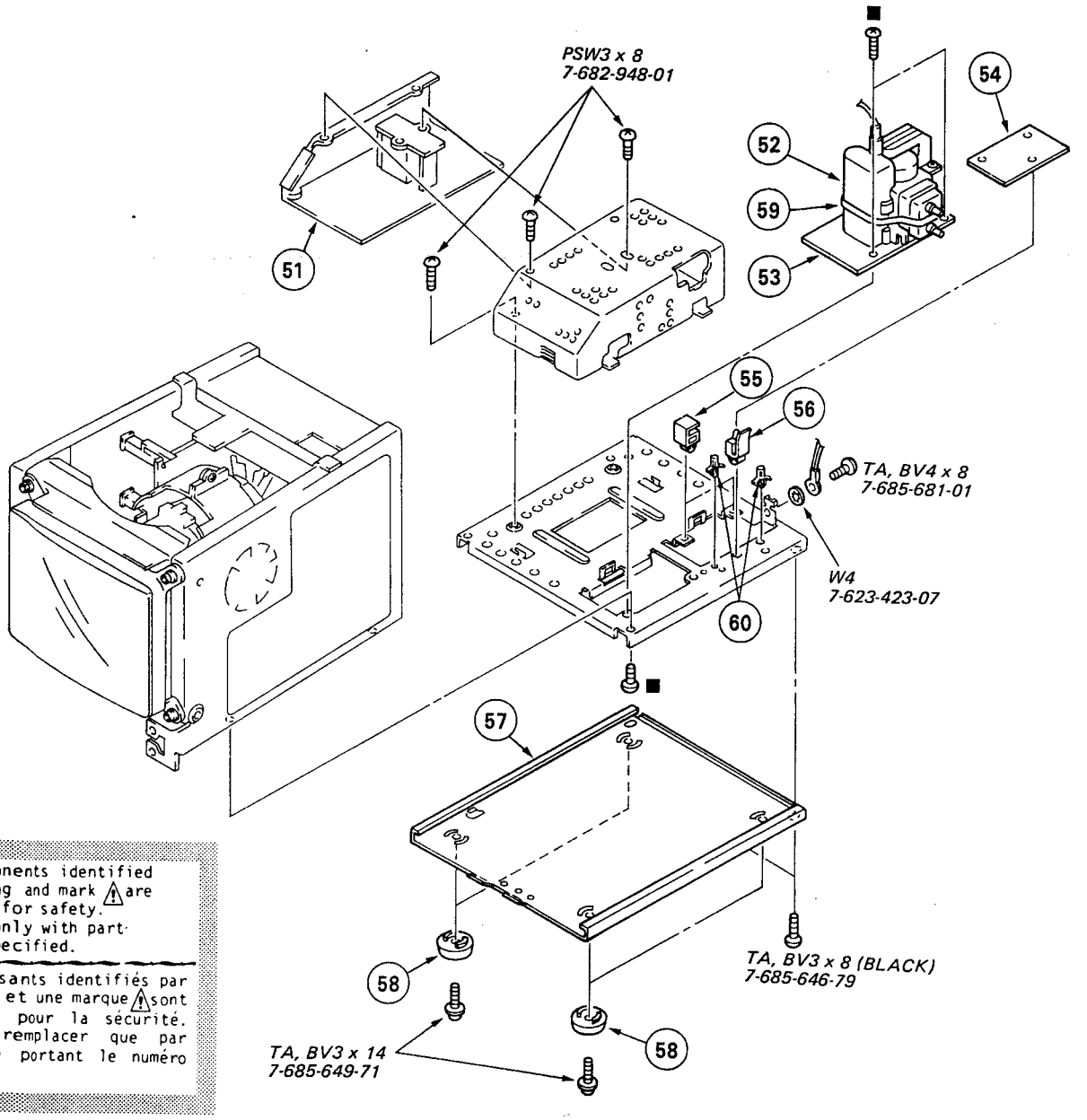
■ : TA, BV3 x 8 7-685-646-71
● : TA, BV3 x 12 7-685-648-71



No.	Part No.	Description	Remark
1	X-4374-810-1	BEZEL ASSY	2,3
2	4-374-863-01	LABEL, CONTROL	
3	3-566-707-00	EMBLEM, SONY	
4	*1-614-496-11	X BOARD	
5	4-374-820-01	KNOB, CONTROL	
6	*1-615-909-11	HA BOARD	
7	4-369-627-11	PUSH BUTTON	
8	*1-615-910-11	HB BOARD	
9	4-374-839-01	BUTTON (A)	
10	⚠1-570-200-11	SWITCH, PUSH (AC POWER))1 KEY)	
11	*4-374-825-01	COVER, SWITCH	
12	1-509-718-00	DIN 4P SOCKET	
13	*4-374-861-01	PANEL, CONNECTOR	
14	*4-374-862-01	PANEL, POWER	
15	*4-374-867-01	LABEL (LARGE), MODEL NUMBER	
16	*4-601-466-11	COVER, 3P INLET	
17	⚠1-509-546-11	3P INLET	
18	*4-374-864-01	CABINET (UPPER)	

6-2. CABINET

■ : TA, BV3 x 8 7-685-646-71



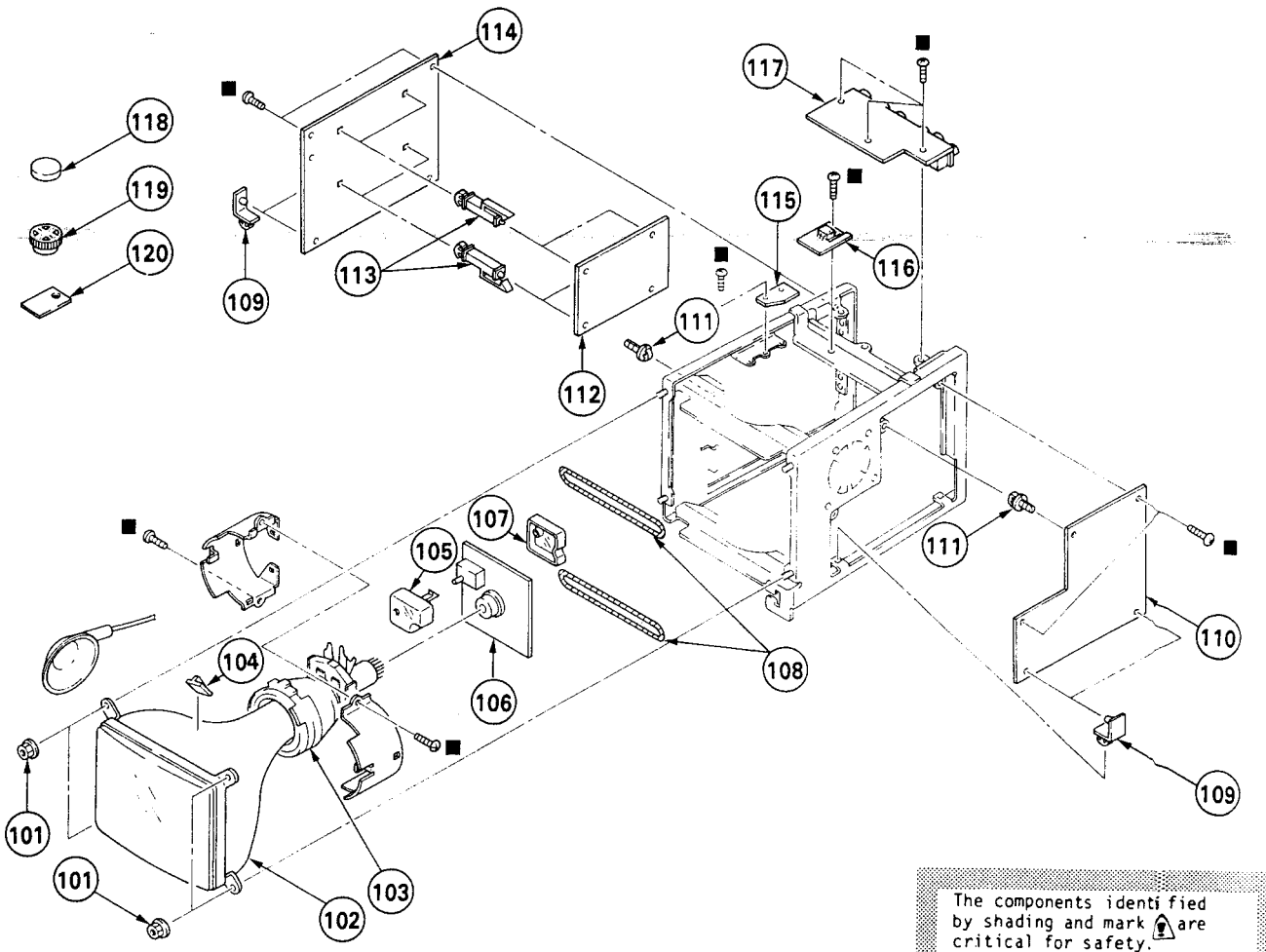
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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
51	*A-1245-288-A	FB BOARD, COMPLETE	
52	⚠ 1-439-358-11	TRANSFORMER ASSY, FLYBACK	
53	*1-615-908-11	DB BOARD	
54	*1-615-907-11	FA BOARD	
55	*3-701-903-00	HOLDER, PC BOARD	
56	*3-659-681-00	HOLDER, PC BOARD	
57	*4-374-865-01	CABINET (LOWER)	
58	4-374-857-01	FOOT	
59	4-374-856-01	TAPE, COPPER FOIL	
60	*3-670-570-00	SPACER, SUPPORT	

6-3. CHASSIS

■ : TA, BV3 x 8 7-685-646-71



The components identified by shading and mark ⚠ 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
101	4-304-511-00	NUT, FLANGE	
102	⚠ 8-737-151-05	CRT (A20JKU10X)	
103	⚠ 1-451-265-11	DEFLECTION YOKE (SY-167)	
104	4-309-369-00	SPACER, DEFLECTION YOKE	
105	*4-374-822-01	COVER (A), CONTROL	
106	*A-1330-584-A	C BOARD, COMPLETE	
107	*4-374-806-01	COVER (B), CONTROL	
108	⚠ 1-426-043-12	COIL, DEGAUSSING	
109	*3-701-832-00	HINGE, CIRCUIT BOARD	
110	*A-1345-552-A	DA BOARD, COMPLETE	
111	*4-303-473-00	SUPPORT, PC	
112	*A-1135-288-A	BB BOARD, COMPLETE	
113	*3-657-516-00	SUPPORT, PC BOARD	
114	*A-1135-322-A	BA BOARD, COMPLETE	
115	*4-374-868-01	INSULATOR (DD)	
116	*1-615-160-11	DD BOARD	
117	*A-1270-161-A	Q BOARD, COMPLETE	
118	1-452-032-00	MAGNET DISK; 10MM ø	
119	1-452-094-00	MAGNET ROTATABLE DISK; 15MM ø	
120	1-452-126-11	MAGNET	

BB BA

NOTE:

The components identified by shading and mark ⚠ 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.

- 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.

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

CAPACITORS
- MF : μF, PF : μμF

RESISTORS
- All resistors are in ohms
- F : nonflammable

COILS
- MMH : mH, UH : μH

Ref.No.	Part No.	Description			Remark
	*A-1135-288-A	BB BOARD, COMPLETE			
		**********			
		CONNECTOR			
BB1	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P			
BB2	*1-564-440-11	PLUG, CONNECTOR (2.5MM) 4P			
		CAPACITOR			
C314	1-123-333-00	ELECT	100MF	20% 25V	
C315	1-123-333-00	ELECT	100MF	20% 25V	
C317	1-123-381-00	ELECT	2.2MF	20% 50V	
C318	1-102-119-00	CERAMIC	0.0015MF	10% 50V	
C319	1-102-971-00	CERAMIC	82PF	5% 50V	
C320	1-106-184-00	MYLAR	0.0033MF	10% 100V	
C321	1-101-361-00	CERAMIC	150PF	5% 50V	
C322	1-106-188-00	MYLAR	0.0047MF	10% 100V	
C353	1-123-329-51	ELECT	10MF	20% 25V	
C354	1-101-888-00	CERAMIC	68PF	5% 50V	
C355	1-102-129-00	CERAMIC	0.01MF	10% 50V	
C395	1-123-329-51	ELECT	10MF	20% 25V	
C396	1-108-599-00	MYLAR	0.068MF	5% 50V	
C397	1-102-973-00	CERAMIC	100PF	5% 50V	
		IC			
IC254	8-759-240-11	IC TC40118P			
IC255	8-759-345-38	IC HD14538BP			
		COIL			
L260	1-408-417-00	MICRO INDUCTOR 47UH			
		TRANSISTOR			
Q275	8-729-603-30	TRANSISTOR 2SC403SP-3			
Q276	8-729-245-83	TRANSISTOR 2SC2458			
Q277	8-729-204-83	TRANSISTOR 2SA1048GR			
Q278	8-729-245-83	TRANSISTOR 2SC2458			
		RESISTOR			
R347	1-247-863-00	CARBON	22K	5% 1/6W	
R348	1-247-841-00	CARBON	2.7K	5% 1/6W	
R349	1-247-831-00	CARBON	1K	5% 1/6W	
R350	1-247-831-00	CARBON	1K	5% 1/6W	
R352	1-247-817-00	CARBON	270	5% 1/6W	
R353	1-247-831-00	CARBON	1K	5% 1/6W	
R355	1-249-437-11	CARBON	47K	5% 1/6W	
R356	1-247-889-00	CARBON	270K	5% 1/6W	
R357	1-247-823-00	CARBON	470	5% 1/6W	
R358	1-249-434-11	CARBON	27K	5% 1/6W	
R359	1-247-847-00	CARBON	4.7K	5% 1/6W	
R360	1-247-841-00	CARBON	2.7K	5% 1/6W	
R361	1-247-863-00	CARBON	22K	5% 1/6W	
R362	1-247-859-00	CARBON	15K	5% 1/6W	
R363	1-247-841-00	CARBON	2.7K	5% 1/6W	
R364	1-249-437-11	CARBON	47K	5% 1/6W	
R365	1-249-421-11	CARBON	2.2K	5% 1/6W	
R384	1-247-867-00	CARBON	33K	5% 1/6W	
R388	1-247-841-00	CARBON	2.7K	5% 1/6W	
R389	1-249-421-11	CARBON	2.2K	5% 1/6W	
R459	1-247-831-00	CARBON	1K	5% 1/6W	
R461	1-247-831-00	CARBON	1K	5% 1/6W	
R462	1-247-879-00	CARBON	100K	5% 1/6W	
R463	1-247-700-11	CARBON	100	5% 1/4W	
		VARIABLE RESISTOR			
RV265	1-226-773-00	RES, ADJ, METAL GLAZE 22K			
RV266	1-226-775-00	RES, ADJ, METAL GLAZE 100K			
		**********			
	*A-1135-322-A	BA BOARD, COMPLETE			
		**********			
		CONNECTOR			
BA1	*1-564-441-11	PLUG, CONNECTOR (2.5MM) 5P			
BA2	*1-564-440-11	PLUG, CONNECTOR (2.5MM) 4P			
BA3	*1-564-440-11	PLUG, CONNECTOR (2.5MM) 4P			
BA4	*1-564-441-11	PLUG, CONNECTOR (2.5MM) 5P			
BA6	*1-564-442-11	PLUG, CONNECTOR (2.5MM) 6P			
BA7	*1-564-442-11	PLUG, CONNECTOR (2.5MM) 6P			
BA8	*1-564-440-11	PLUG, CONNECTOR (2.5MM) 4P			
BA9	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P			
BA10	*1-564-353-00	PLUG, CONNECTOR (2.5MM) 2P			
		CAPACITOR			
C251	1-102-953-00	CERAMIC	18PF	5% 50V	
C253	1-123-333-00	ELECT	100MF	20% 25V	
C254	1-101-004-00	CERAMIC	0.01MF	50V	
C255	1-102-662-00	CERAMIC	7PF	0.5PF 50V	
C256	1-102-662-00	CERAMIC	7PF	0.5PF 50V	
C259	1-123-318-00	ELECT	33MF	20% 16V	
C260	1-101-361-00	CERAMIC	150PF	5% 50V	
C261	1-123-380-00	ELECT	1MF	20% 50V	
C262	1-102-973-00	CERAMIC	100PF	5% 50V	
C263	1-123-819-00	ELECT	33MF	20% 25V	
C264	1-101-006-21	CERAMIC	0.047MF	50V	
C265	1-101-004-00	CERAMIC	0.01MF	50V	
C266	1-101-004-00	CERAMIC	0.01MF	50V	
C267	1-101-004-00	CERAMIC	0.01MF	50V	
C268	1-101-004-00	CERAMIC	0.01MF	50V	
C269	1-123-318-00	ELECT	33MF	20% 16V	
C281	1-102-946-00	CERAMIC	9PF	1PF 50V	
C290	1-102-946-00	CERAMIC	9PF	1PF 50V	
C291	1-102-946-00	CERAMIC	9PF	1PF 50V	
C294	1-161-313-00	CERAMIC	150PF	10% 50V	
C295	1-102-937-00	CERAMIC	4PF	0.5PF 50V	
C296	1-123-332-00	ELECT	47MF	20% 25V	
C297	1-101-006-21	CERAMIC	0.047MF	50V	

Ref.No.	Part No.	Description			Remark
C298	1-123-356-00	ELECT	10MF	20%	16V
C299	1-102-848-00	CERAMIC	180PF	5%	50V
C300	1-101-006-21	CERAMIC	0.047MF		50V
C301	1-101-004-00	CERAMIC	0.01MF		50V
C302	1-101-004-00	CERAMIC	0.01MF		50V
C303	1-106-212-00	MYLAR	0.047MF	10%	100V
C304	1-102-965-00	CERAMIC	39PF	5%	50V
C305	1-102-937-00	CERAMIC	4PF	0.5PF	50V
C306	1-106-212-00	MYLAR	0.047MF	10%	100V
C307	1-131-368-00	TANTALUM	3.3MF	10%	16V
C308	1-123-356-00	ELECT	10MF	20%	16V
C309	1-102-129-00	CERAMIC	0.01MF	10%	50V
C310	1-102-129-00	CERAMIC	0.01MF	10%	50V
C311	1-123-380-00	ELECT	1MF	20%	50V
C312	1-101-006-21	CERAMIC	0.047MF		50V
C313	1-123-333-00	ELECT	100MF	20%	25V
C323	1-102-129-00	CERAMIC	0.01MF	10%	50V
C325	1-102-129-00	CERAMIC	0.01MF	10%	50V
C326	1-101-880-00	CERAMIC	47PF	5%	50V
C327	1-102-944-00	CERAMIC	7PF	0.5PF	50V
C328	1-102-129-00	CERAMIC	0.01MF	10%	50V
C329	1-102-129-00	CERAMIC	0.01MF	10%	50V
C330	1-102-129-00	CERAMIC	0.01MF	10%	50V
C331	1-101-880-00	CERAMIC	47PF	5%	50V
C332	1-101-880-00	CERAMIC	47PF	5%	50V
C334	1-102-963-00	CERAMIC	33PF	5%	50V
C335	1-131-341-00	TANTALUM	0.1MF	20%	35V
C336	1-123-380-00	ELECT	1MF	20%	50V
C340	1-101-006-21	CERAMIC	0.047MF		50V
C343	1-123-329-51	ELECT	10MF	20%	25V
C344	1-123-379-00	ELECT	0.47MF	20%	50V
C345	1-102-129-00	CERAMIC	0.01MF	10%	50V
C346	1-102-965-00	CERAMIC	39PF	5%	50V
C347	1-102-129-00	CERAMIC	0.01MF	10%	50V
C348	1-106-212-00	MYLAR	0.047MF	10%	100V
C349	1-106-212-00	MYLAR	0.047MF	10%	100V
C350	1-123-381-00	ELECT	2.2MF	20%	50V
C351	1-123-369-00	ELECT	4.7MF	20%	50V
C352	1-123-380-00	ELECT	1MF	20%	50V
C365	1-102-129-00	CERAMIC	0.01MF	10%	50V
C366	1-123-382-00	ELECT	3.3MF	20%	50V
C367	1-102-129-00	CERAMIC	0.01MF	10%	50V
C368	1-102-129-00	CERAMIC	0.01MF	10%	50V
C369	1-123-333-00	ELECT	100MF	20%	25V
C381	1-123-333-00	ELECT	100MF	20%	25V
C382	1-101-004-00	CERAMIC	0.01MF		50V
C386	1-102-820-00	CERAMIC	330PF	5%	50V
C387	1-102-980-00	CERAMIC	270PF	5%	50V
C388	1-102-820-00	CERAMIC	330PF	5%	50V

DIODE

D253	8-719-911-19	DIODE 1SS119
D255	8-719-911-19	DIODE 1SS119
D257	8-719-911-19	DIODE 1SS119
D258	8-719-911-19	DIODE 1SS119

DELAY LINE

DL251	1-415-330-00	DELAY LINE, Y

IC

IC251	8-752-006-10	IC CX20061
IC253	8-759-113-65	IC UPC1365C

COIL

L251	1-408-412-00	MICRO INDUCTOR 18UH
L252	1-409-193-00	COIL 3.58MHZ TRAP
L254	1-408-424-00	MICRO INDUCTOR 180UH
L256	1-408-418-00	MICRO INDUCTOR 56UH
L257	1-408-416-00	MICRO INDUCTOR 39UH
L258	1-408-406-00	MICRO INDUCTOR 5.6UH
L259	1-408-415-00	MICRO INDUCTOR 33UH
L260	1-408-415-00	MICRO INDUCTOR 33UH
L261	1-408-415-00	MICRO INDUCTOR 33UH
L262	1-408-414-00	MICRO INDUCTOR 27UH

TRANSISTOR

Q251	8-729-603-30	TRANSISTOR 2SC403SP-3
Q252	8-729-245-83	TRANSISTOR 2SC2458
Q253	8-729-245-83	TRANSISTOR 2SC2458
Q254	8-729-245-83	TRANSISTOR 2SC2458
Q256	8-729-245-83	TRANSISTOR 2SC2458
Q257	8-729-603-30	TRANSISTOR 2SC403SP-3
Q258	8-729-204-83	TRANSISTOR 2SA1048GR
Q259	8-729-245-83	TRANSISTOR 2SC2458
Q270	8-729-603-30	TRANSISTOR 2SC403SP-3
Q271	8-729-178-55	TRANSISTOR 2SC2785-E
Q272	8-729-245-83	TRANSISTOR 2SC2458
Q273	8-729-603-30	TRANSISTOR 2SC403SP-3
Q274	8-729-245-83	TRANSISTOR 2SC2458
Q278	8-729-115-30	TRANSISTOR 2SK105A-30
Q279	8-729-245-83	TRANSISTOR 2SC2458

RESISTOR

R251	1-247-867-00	CARBON	33K	5%	1/6W
R252	1-247-851-00	CARBON	6.8K	5%	1/6W
R253	1-247-825-00	CARBON	560	5%	1/6W
R254	1-247-833-00	CARBON	1.2K	5%	1/6W
R257	1-247-831-00	CARBON	1K	5%	1/6W
R258	1-247-807-00	CARBON	100	5%	1/6W
R259	1-249-419-11	CARBON	1.5K	5%	1/6W
R260	1-249-419-11	CARBON	1.5K	5%	1/6W
R261	1-247-831-00	CARBON	1K	5%	1/6W
R262	1-247-831-00	CARBON	1K	5%	1/6W
R263	1-247-819-00	CARBON	330	5%	1/6W
R264	1-249-429-11	CARBON	10K	5%	1/6W
R265	1-247-867-00	CARBON	33K	5%	1/6W

BA

Ref.No.	Part No.	Description				Remark
R270	1-247-831-00	CARBON	1K	5%	1/6W	
R271	1-247-807-00	CARBON	100	5%	1/6W	
R272	1-249-419-11	CARBON	1.5K	5%	1/6W	
R273	1-247-807-00	CARBON	100	5%	1/6W	
R274	1-247-831-00	CARBON	1K	5%	1/6W	
R275	1-247-819-00	CARBON	330	5%	1/6W	
R276	1-247-819-00	CARBON	330	5%	1/6W	
R277	1-247-873-00	CARBON	56K	5%	1/6W	
R278	1-247-877-00	CARBON	82K	5%	1/6W	
R279	1-247-807-00	CARBON	100	5%	1/6W	
R280	1-247-861-00	CARBON	18K	5%	1/6W	
R281	1-249-429-11	CARBON	10K	5%	1/6W	
R282	1-247-807-00	CARBON	100	5%	1/6W	
R283	1-247-867-00	CARBON	33K	5%	1/6W	
R320	1-247-843-00	CARBON	3.3K	5%	1/6W	
R321	1-247-811-00	CARBON	150	5%	1/6W	
R322	1-247-837-00	CARBON	1.8K	5%	1/6W	
R323	1-247-827-00	CARBON	680	5%	1/6W	
R324	1-247-825-00	CARBON	560	5%	1/6W	
R326	1-247-823-00	CARBON	470	5%	1/6W	
R327	1-249-421-11	CARBON	2.2K	5%	1/6W	
R328	1-249-429-11	CARBON	10K	5%	1/6W	
R329	1-247-847-00	CARBON	4.7K	5%	1/6W	
R330	1-247-837-00	CARBON	1.8K	5%	1/6W	
R332	1-247-823-00	CARBON	470	5%	1/6W	
R333	1-247-791-00	CARBON	22	5%	1/6W	
R334	1-247-843-00	CARBON	3.3K	5%	1/6W	
R335	1-249-421-11	CARBON	2.2K	5%	1/6W	
R336	1-247-823-00	CARBON	470	5%	1/6W	
R337	1-247-827-00	CARBON	680	5%	1/6W	
R338	1-247-853-00	CARBON	8.2K	5%	1/6W	
R339	1-249-429-11	CARBON	10K	5%	1/6W	
R340	1-247-831-00	CARBON	1K	5%	1/6W	
R341	1-247-807-00	CARBON	100	5%	1/6W	
R342	1-247-807-00	CARBON	100	5%	1/6W	
R343	1-247-883-00	CARBON	150K	5%	1/6W	
R344	1-249-429-11	CARBON	10K	5%	1/6W	
R345	1-247-843-00	CARBON	3.3K	5%	1/6W	
R346	1-247-791-00	CARBON	22	5%	1/6W	
R366	1-247-869-00	CARBON	39K	5%	1/6W	
R367	1-247-849-00	CARBON	5.6K	5%	1/6W	
R369	1-247-867-00	CARBON	33K	5%	1/6W	
R370	1-247-875-00	CARBON	68K	5%	1/6W	
R371	1-247-867-00	CARBON	33K	5%	1/6W	
R372	1-249-434-11	CARBON	27K	5%	1/6W	
R373	1-247-873-00	CARBON	56K	5%	1/6W	
R374	1-247-823-00	CARBON	470	5%	1/6W	
R375	1-247-827-00	CARBON	680	5%	1/6W	
R376	1-247-831-00	CARBON	1K	5%	1/6W	
R377	1-249-419-11	CARBON	1.5K	5%	1/6W	
R378	1-247-887-00	CARBON	220K	5%	1/6W	
R379	1-247-827-00	CARBON	680	5%	1/6W	
R381	1-247-863-00	CARBON	22K	5%	1/6W	

Ref.No.	Part No.	Description				Remark
R382	1-247-867-00	CARBON	33K	5%	1/6W	
R383	1-247-831-00	CARBON	1K	5%	1/6W	
R395	1-247-857-00	CARBON	12K	5%	1/6W	
R396	1-247-863-00	CARBON	22K	5%	1/6W	
R397	1-247-823-00	CARBON	470	5%	1/6W	
R398	1-247-819-00	CARBON	330	5%	1/6W	
R399	1-249-421-11	CARBON	2.2K	5%	1/6W	
R400	1-249-434-11	CARBON	27K	5%	1/6W	
R401	1-249-434-11	CARBON	27K	5%	1/6W	
R402	1-247-877-00	CARBON	82K	5%	1/6W	
R404	1-247-883-00	CARBON	150K	5%	1/6W	
R406	1-247-821-00	CARBON	390	5%	1/6W	
R408	1-247-821-00	CARBON	390	5%	1/6W	
R410	1-247-821-00	CARBON	390	5%	1/6W	
R411	1-249-437-11	CARBON	47K	5%	1/6W	
R437	1-247-845-00	CARBON	3.9K	5%	1/6W	
R438	1-247-823-00	CARBON	470	5%	1/6W	
R439	1-247-791-00	CARBON	22	5%	1/6W	
R440	1-247-721-11	CARBON	4.7K	5%	1/4W	
R441	1-247-831-00	CARBON	1K	5%	1/6W	
R442	1-247-845-00	CARBON	3.9K	5%	1/6W	
R443	1-247-823-00	CARBON	470	5%	1/6W	
R444	1-247-809-00	CARBON	120	5%	1/6W	
R445	1-247-721-11	CARBON	4.7K	5%	1/4W	
R446	1-247-831-00	CARBON	1K	5%	1/6W	
R447	1-247-845-00	CARBON	3.9K	5%	1/6W	
R448	1-247-823-00	CARBON	470	5%	1/6W	
R449	1-247-791-00	CARBON	22	5%	1/6W	
R450	1-247-721-11	CARBON	4.7K	5%	1/4W	
R451	1-247-831-00	CARBON	1K	5%	1/6W	
R452	1-247-847-00	CARBON	4.7K	5%	1/6W	
R456	1-247-841-00	CARBON	2.7K	5%	1/6W	
R457	1-247-849-00	CARBON	5.6K	5%	1/6W	
R465	1-247-867-00	CARBON	33K	5%	1/6W	

VARIABLE RESISTOR

RV252	1-228-723-00	RES, ADJ, CERAMIC CARBON	4.7K
RV253	1-228-719-00	RES, ADJ, CERAMIC CARBON	470
RV254	1-228-722-00	RES, ADJ, CERAMIC CARBON	3.3K
RV255	1-228-722-00	RES, ADJ, CERAMIC CARBON	3.3K
RV256	1-228-725-00	RES, ADJ, CERAMIC CARBON	22K
RV258	1-224-660-00	RES, ADJ, METAL FILM	1K
RV259	1-224-493-00	RES, ADJ, METAL FILM	10K
RV260	1-224-660-00	RES, ADJ, METAL FILM	1K
RV261	1-224-493-00	RES, ADJ, METAL FILM	10K
RV262	1-224-660-00	RES, ADJ, METAL FILM	1K
RV263	1-224-493-00	RES, ADJ, METAL FILM	10K
RV264	1-228-720-00	RES, ADJ, CERAMIC CARBON	1K

TRANSFORMER

T256	1-425-794-00	8PT-2
T257	1-405-372-00	COIL BAT

Ref.No.	Part No.	Description			Remark
		CRYSTAL			
X251	1-527-396-00	CRYSTAL, OSC			
**********					
	*1-615-907-11	FA BOARD			
		********			
		CAPACITOR			
C600	1-108-745-00	MYLAR	0.22MF	20% 125V	
	*4-316-137-00	COVER, CAPACITOR; C600			
		FUSE			
F601 ⚠	1-532-557-11	FUSE, GLASS TUBE	3.15A		
	1-533-087-00	HOLDER, FUSE; F601			
		CONNECTOR			
FA1	*1-508-765-00	3P PLUG (M)			
FA2	*1-508-786-00	2P PLUG (M)			
FA4	*1-508-765-00	3P PLUG (M)			
		RESISTOR			
R600	1-202-724-00	SOLID	2.7M	10% 1/2W	
**********					
	*A-1245-288-A	FB BOARD, COMPLETE			
		******************			
	*2-430-232-00	INSULATOR (SR12E), TRANSISTOR			
	*4-374-808-01	SPACER, INSULATING			
	*4-374-846-01	COVER, CAPACITOR, CAP TYPE			
	*4-374-846-11	COVER, CAPACITOR, CAP TYPE			
		CAPACITOR			
C606 ⚠	1-136-345-51	FILM	0.1MF	20% 125V	
C607 ⚠	1-161-742-51	CERAMIC	0.0022MF	20% 400V	
C608 ⚠	1-161-742-51	CERAMIC	0.0022MF	20% 400V	
C609 ⚠	1-161-742-51	CERAMIC	0.0022MF	20% 400V	
C610 ⚠	1-161-742-51	CERAMIC	0.0022MF	20% 400V	
C611 ⚠	1-161-742-51	CERAMIC	0.0022MF	20% 400V	
C612 ⚠	1-161-742-51	CERAMIC	0.0022MF	20% 400V	
C613 ⚠	1-161-742-51	CERAMIC	0.0022MF	20% 400V	
C614	1-161-742-00	CERAMIC	0.0022MF	20% 400V	
C615 ⚠	1-161-742-51	CERAMIC	0.0022MF	20% 400V	
C616	1-125-392-11	ELECT(BLOCK)	220MF	20% 200V	
C617	1-136-173-00	FILM	0.47MF	5% 50V	
C618	1-123-356-00	ELECT	10MF	20% 35V	
C619	1-108-587-00	MYLAR	0.022MF	10% 50V	
C620	1-161-328-00	CERAMIC	0.0047MF	30% 50V	
C621	1-123-356-00	ELECT	10MF	20% 35V	
C622	1-124-602-00	ELECT	2200MF	20% 35V	
C623	1-108-833-00	MYLAR	0.0047MF	10% 50V	
C624	1-123-356-00	ELECT	10MF	20% 35V	
C625	1-106-180-00	MYLAR	0.0022MF	10% 50V	
C626	1-102-074-00	CERAMIC	0.001MF	10% 50V	
C631	1-123-362-00	ELECT	330MF	20% 50V	
C632	1-130-806-00	FILM	0.1MF	10% 400V	
C633	1-102-074-00	CERAMIC	0.001MF	10% 50V	
		DIODE			
D610	8-719-300-63	DIODE LB-156			
D611	8-719-924-06	DIODE ERC24-06S			
D612	8-719-102-74	DIODE RD6.2E-N2			
D613	8-719-901-93	DIODE V19E			
D614	8-719-911-19	DIODE 1SS119			
D615	8-719-908-20	DIODE ERC88-009			
D616 ⚠	8-719-102-90	DIODE RD10E-N2			
D625	8-719-924-06	DIODE ERC24-06S			
D626	8-719-101-24	DIODE RD39E-B2			
		CONNECTOR			
FB1	*1-508-765-00	3P PLUG (M)			
FB2	*1-564-450-11	PLUG, CONNECTOR (2.5MM) 2P			
		IC			
IC610	8-759-171-15	IC UPC7815H			
IC611	8-759-906-62	IC MB3759-SNY			
		COIL			
L611	1-408-412-00	MICRO INDUCTOR 18UH			
L612	1-407-365-00	COIL, CHOKE			
		TRANSISTOR			
Q610 ⚠	8-729-802-07	TRANSISTOR 2SD1403			
Q611 ⚠	8-729-177-43	TRANSISTOR 2SD774			
Q612	8-729-177-43	TRANSISTOR 2SD774			
		RESISTOR			
R611	1-206-670-00	METAL OXIDE	1.8K	5% 2W	F
R612	1-247-725-11	CARBON	10K	5% 1/4W	
R613	1-244-929-00	CARBON	220K	5% 1/2W	
R614	1-247-807-00	CARBON	100	5% 1/6W	
R615	1-247-827-00	CARBON	680	5% 1/6W	
R616	1-215-868-00	METAL OXIDE	680	5% 1W	F
R617	1-247-847-00	CARBON	4.7K	5% 1/6W	
R618	1-247-847-00	CARBON	4.7K	5% 1/6W	
R619	1-215-463-00	METAL	56K	1% 1/6W	
R620	1-215-445-00	METAL	10K	1% 1/6W	
R621	1-247-847-00	CARBON	4.7K	5% 1/6W	
R622	1-249-421-11	CARBON	2.2K	5% 1/6W	
R623	1-247-879-00	CARBON	100K	5% 1/6W	
R624	1-249-421-11	CARBON	2.2K	5% 1/6W	
R625	1-213-131-00	METAL OXIDE	100	5% 1W	F
⊠R626 ⚠		METAL		1/6W	
R627	1-215-449-00	METAL	15K	1% 1/6W	
R628	1-215-465-00	METAL	68K	1% 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. Select the resistance value according to SAFETY RELATED ADJUSTMENT.

The components identified by shading and mark ⚠ 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.

FB **Q**

Ref.No.	Part No.	Description				Remark
R629	1-215-447-00	METAL	12K	1%	1/6W	
R630	1-247-849-00	CARBON	5.6K	5%	1/6W	
R641	1-249-421-11	CARBON	2.2K	5%	1/6W	
R645	1-247-034-00	CARBON	220	5%	1/8W	F
R646	1-247-825-00	CARBON	560	5%	1/6W	
R647 ⚠	1-205-616-11	CEMENTED	1	5%	5W	
R648	1-213-160-11	METAL OXIDE	27K	5%	1W	F
R649	1-213-160-11	METAL OXIDE	27K	5%	1W	F
		VARIABLE RESISTOR				
RV610	1-230-233-11	RES, ADJ, CERAMIC CARBON 4.7K				
		TRANSFORMER				
T609 ⚠	1-421-400-11	COIL, LINE FILTER				
T610 ⚠	1-421-400-11	COIL, LINE FILTER				
T611 ⚠	1-448-108-21	TRANSFORMER, CONVERTER (SRT)				
T612 ⚠	1-437-173-11	TRANSFORMER, DRIVE				
		VARISTOR				
VDR610	1-807-180-11	VARISTOR SNR-14A300K				
**********						
	*A-1270-161-A	Q BOARD, COMPLETE				
		**********				
	1-536-937-11	TERMINAL BOARD, INPUT/OUTPUT				
		CAPACITOR				
C201	1-123-333-00	ELECT	100MF	20%	25V	
C202	1-101-006-21	CERAMIC	0.047MF		50V	
C203	1-123-329-51	ELECT	10MF	20%	25V	
C204	1-123-318-00	ELECT	33MF	20%	16V	
C205	1-123-318-00	ELECT	33MF	20%	16V	
C206	1-123-329-51	ELECT	10MF	20%	25V	
C207	1-123-318-00	ELECT	33MF	20%	16V	
C208	1-123-329-51	ELECT	10MF	20%	25V	
C209	1-123-333-00	ELECT	100MF	20%	25V	
C210	1-101-006-21	CERAMIC	0.047MF		50V	
C211	1-123-329-51	ELECT	10MF	20%	25V	
C212	1-123-318-00	ELECT	33MF	20%	16V	
C213	1-123-318-00	ELECT	33MF	20%	16V	
C214	1-123-318-00	ELECT	33MF	20%	16V	
C215	1-123-329-51	ELECT	10MF	20%	25V	
C216	1-123-333-00	ELECT	100MF	20%	25V	
C217	1-101-006-21	CERAMIC	0.047MF		50V	
C219	1-101-006-21	CERAMIC	0.047MF		50V	
C220	1-101-006-21	CERAMIC	0.047MF		50V	
C221	1-101-006-21	CERAMIC	0.047MF		50V	
		DIODE				
D201	8-719-911-19	DIODE 1SS119				
D206	8-719-102-90	DIODE RD10E-N2				

Ref.No.	Part No.	Description	Remark
		IC	
IC201	8-750-006-10	IC CX20061	
IC203	8-750-006-10	IC CX20061	
		CONNECTOR	
Q1	*1-564-441-11	PLUG, CONNECTOR (2.5MM) 5P	
Q2	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P	
Q3	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P	
Q4	*1-564-354-21	PLUG, CONNECTOR (2.5MM) 3P	
		TRANSISTOR	
Q201	8-729-245-83	TRANSISTOR 2SC2458	
Q202	8-729-245-83	TRANSISTOR 2SC2458	
Q203	8-729-245-83	TRANSISTOR 2SC2458	
Q209	8-729-245-83	TRANSISTOR 2SC2458	
Q210	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q211	8-729-245-83	TRANSISTOR 2SC2458	
Q212	8-729-245-83	TRANSISTOR 2SC2458	
		RESISTOR	
R201	1-214-702-00	METAL 75	1% 1/4W
R202	1-247-713-11	CARBON 1K	5% 1/4W
R203	1-247-875-00	CARBON 68K	5% 1/6W
R204	1-247-873-00	CARBON 56K	5% 1/6W
R205	1-247-831-00	CARBON 1K	5% 1/6W
R206	1-247-807-00	CARBON 100	5% 1/6W
R207	1-247-807-00	CARBON 100	5% 1/6W
R208	1-247-831-00	CARBON 1K	5% 1/6W
R209	1-247-799-00	CARBON 47	5% 1/6W
R210	1-214-702-00	METAL 75	1% 1/4W
R211	1-247-713-11	CARBON 1K	5% 1/4W
R212	1-247-875-00	CARBON 68K	5% 1/6W
R213	1-247-873-00	CARBON 56K	5% 1/6W
R214	1-247-831-00	CARBON 1K	5% 1/6W
R215	1-247-807-00	CARBON 100	5% 1/6W
R216	1-247-849-00	CARBON 5.6K	5% 1/6W
R217	1-247-843-00	CARBON 3.3K	5% 1/6W
R218	1-214-702-00	METAL 75	1% 1/4W
R219	1-247-713-11	CARBON 1K	5% 1/4W
R220	1-247-875-00	CARBON 68K	5% 1/6W
R221	1-247-873-00	CARBON 56K	5% 1/6W
R222	1-247-853-00	CARBON 8.2K	5% 1/6W
R223	1-247-841-00	CARBON 2.7K	5% 1/6W
R224	1-247-807-00	CARBON 100	5% 1/6W
R226	1-247-875-00	CARBON 68K	5% 1/6W
R227	1-247-867-00	CARBON 33K	5% 1/6W
R228	1-247-831-00	CARBON 1K	5% 1/6W
R229	1-247-823-00	CARBON 470	5% 1/6W
R230	1-247-831-00	CARBON 1K	5% 1/6W
R231	1-247-807-00	CARBON 100	5% 1/6W
R232	1-247-849-00	CARBON 5.6K	5% 1/6W
R233	1-247-843-00	CARBON 3.3K	5% 1/6W

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Q C DD DB DA

Ref.No.	Part No.	Description				Remark
R234	1-247-119-00	CARBON	330	5%	1/4W	
R235	1-247-819-00	CARBON	330	5%	1/6W	
R236	1-247-819-00	CARBON	330	5%	1/6W	
R237	1-247-867-00	CARBON	33K	5%	1/6W	
R238	1-247-823-00	CARBON	470	5%	1/6W	
R239	1-249-429-11	CARBON	10K	5%	1/6W	
R240	1-249-429-11	CARBON	10K	5%	1/6W	
		SWITCH				
S201	1-553-725-00	SWITCH, SLIDE				
S202	1-553-725-00	SWITCH, SLIDE				
S203	1-553-725-00	SWITCH, SLIDE				
**********						
	*A-1330-584-A	C BOARD, COMPLETE				
		**********				
	1-526-691-00	SOCKET, CRT				
		CONNECTOR				
C1	*1-564-442-11	PLUG, CONNECTOR (2.5MM) 6P				
C2	*1-564-353-00	PLUG, CONNECTOR (2.5MM) 2P				
C3	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P				
C4	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P				
		CAPACITOR				
C701	1-102-223-00	CERAMIC	0.0047MF	10%	2KV	
C703	1-102-050-00	CERAMIC	0.01MF		500V	
C704	1-123-933-00	ELECT	10MF	20%	160V	
		COIL				
L701	1-407-704-00	MICRO INDUCTOR 82UH				
L702	1-407-709-00	MICRO INDUCTOR 220UH				
		NEON LAMP				
NE702	1-519-013-13	DISCHARGE TUBE				
NE703	1-519-013-13	DISCHARGE TUBE				
NE704	1-519-013-13	DISCHARGE TUBE				
NL701	1-519-108-XX	LAMP, NEON ASSY				
		TRANSISTOR				
Q701	8-729-326-11	TRANSISTOR 2SC2611				
Q702	8-729-326-11	TRANSISTOR 2SC2611				
Q703	8-729-326-11	TRANSISTOR 2SC2611				
		RESISTOR				
R701	1-202-842-11	SOLID	220K	10%	1/2W	
R702	1-202-719-00	SOLID	1M	10%	1/2W	
R703	1-202-838-00	SOLID	100K	10%	1/2W	
R706	1-213-156-00	METAL OXIDE	12K	5%	1W	F
R707	1-247-815-00	CARBON	220	5%	1/6W	
R709	1-202-822-00	SOLID	2.2K	10%	1/2W	
R710	1-213-156-00	METAL OXIDE	12K	5%	1W	F

Ref.No.	Part No.	Description				Remark
R711	1-202-822-00	SOLID	2.2K	10%	1/2W	
R712	1-247-815-00	CARBON	220	5%	1/6W	
R714	1-213-156-00	METAL OXIDE	12K	5%	1W	F
R715	1-202-822-00	SOLID	2.2K	10%	1/2W	
R716	1-247-815-00	CARBON	220	5%	1/6W	
		VARIABLE RESISTOR				
RV701	1-230-164-21	RES, ADJ, METAL GLAZE 55M				
		SPARK GAP				
SG701	1-519-063-XX	DISCHARGING GAP				
**********						
	*1-615-160-11	DD BOARD				
		********				
	*1-564-451-11	PLUG, CONNECTOR (2.5MM) 3P				
		CAPACITOR				
C870	1-161-328-00	CERAMIC	0.0047MF	30%	50V	
		IC				
IC805	8-759-170-12	IC UPC78M12H				
**********						
	*1-615-908-11	DB BOARD				
		********				
		CONNECTOR				
DB1	*1-564-353-00	PLUG, CONNECTOR (2.5MM) 2P				
DB2	*1-564-445-11	PLUG, CONNECTOR (2.5MM) 9P				
**********						
	*A-1345-552-A	DA BOARD, COMPLETE				
		**********				
	3-701-833-01	HEAD, WASHER, TAPPING SCREW				
		CAPACITOR				
C800	1-123-380-00	ELECT	1MF	20%	50V	
C801	1-108-599-00	MYLAR	0.068MF	10%	50V	
C802	1-108-837-00	MYLAR	0.01MF	10%	50V	
C803	1-108-837-00	MYLAR	0.01MF	10%	50V	
C804	1-123-369-00	ELECT	4.7MF	20%	25V	
C805	1-123-369-00	ELECT	4.7MF	20%	25V	
C806	1-130-868-00	FILM	0.0056MF	5%	50V	
C807	1-123-356-00	ELECT	10MF	20%	16V	
C808	1-123-382-00	ELECT	3.3MF	20%	50V	
C809	1-123-380-00	ELECT	1MF	20%	50V	
C810	1-161-059-11	CERAMIC	0.047MF	10%	50V	
C811	1-102-121-00	CERAMIC	0.0022MF	10%	50V	
C812	1-123-380-00	ELECT	1MF	20%	50V	

DA

Ref.No.	Part No.	Description				Remark
C813	1-123-356-00	ELECT	10MF	20%	16V	
C814	1-124-539-51	ELECT	330MF	20%	35V	
C815 ⚠	1-129-706-51	FILM	0.0022MF	10%	630V	
C816 ⚠	1-130-581-11	FILM	0.033MF	3%	600V	
C817 ⚠	1-129-706-51	FILM	0.0022MF	10%	630V	
C820	1-123-335-00	ELECT	330MF	20%	25V	
C822	1-102-030-00	CERAMIC	330PF	10%	500V	
C823	1-123-347-00	ELECT	330MF	20%	35V	
C824	1-102-030-00	CERAMIC	330PF	10%	500V	
C825	1-123-933-00	ELECT	10MF	20%	160V	
C826	1-123-329-51	ELECT	10MF	20%	25V	
C828	1-130-781-00	FILM	0.22MF	10%	100V	
C830	1-123-356-00	ELECT	10MF	20%	16V	
C831	1-108-591-00	MYLAR	0.033MF	10%	50V	
C832	1-108-591-00	MYLAR	0.033MF	10%	50V	
C833	1-123-380-00	ELECT	1MF	20%	50V	
C834	1-136-173-00	FILM	0.47MF	5%	50V	
C835	1-123-322-00	ELECT	330MF	20%	16V	
C836	1-124-245-00	ELECT	4.7MF	20%	25V	
C837	1-123-379-00	ELECT	0.47MF	20%	50V	
C838	1-108-837-00	MYLAR	0.01MF	10%	50V	
C839	1-108-845-00	MYLAR	0.047MF	10%	50V	
C840	1-102-832-00	CERAMIC	330PF	10%	50V	
C841	1-123-360-00	ELECT	100MF	20%	50V	
C842	1-123-335-00	ELECT	330MF	20%	25V	
C843	1-108-837-00	MYLAR	0.01MF	10%	50V	
C844	1-102-030-00	CERAMIC	330PF	10%	500V	
C845	1-136-337-11	FILM	3.3MF	10%	100V	
C846	1-124-258-00	ELECT	3.3MF	20%	25V	
C850	1-123-329-51	ELECT	10MF	20%	25V	
C851	1-106-176-00	MYLAR	0.0015MF	5%	50V	
C853	1-106-180-00	MYLAR	0.0022MF	5%	50V	
C854	1-102-529-00	CERAMIC	100PF	5%	50V	
C855	1-123-356-00	ELECT	10MF	20%	16V	
C856	1-102-973-00	CERAMIC	100PF	10%	50V	
C857	1-102-038-00	CERAMIC	0.001MF		500V	
C864	1-124-537-00	ELECT	1200MF	20%	35V	
C866	1-102-074-00	CERAMIC	0.001MF	10%	50V	
C867	1-101-002-00	CERAMIC	0.0022MF		50V	

DIODE

D800	8-719-102-74	DIODE RD6.2E-N2
D801	8-719-911-19	DIODE 1SS119
D803	8-719-300-76	DIODE RH1A
D804	8-719-300-76	DIODE RH1A
D805 ⚠	8-719-901-95	DIODE V19CSS
D806	8-719-901-93	DIODE V19E
D807	8-719-901-93	DIODE V19E
D808 ⚠	8-719-901-93	DIODE V19E
D809	8-719-911-55	DIODE U05G
D810	8-719-911-19	DIODE 1SS119
D811	8-719-911-19	DIODE 1SS119
D812	8-719-911-19	DIODE 1SS119
D813	8-719-911-19	DIODE 1SS119
D814	8-719-911-19	DIODE 1SS119
D815	8-719-911-19	DIODE 1SS119
D816	8-719-901-83	DIODE 1SS83
D817	8-719-911-19	DIODE 1SS119
D818	8-719-911-19	DIODE 1SS119
D819	8-719-911-19	DIODE 1SS119
D820	8-719-911-19	DIODE 1SS119
D824	8-719-102-61	DIODE RD4.3E-N1
D825	8-719-000-28	THYRISTOR CR02AM-8

CONNECTOR

DA1	*1-564-440-11	PLUG, CONNECTOR (2.5MM) 4P
DA2	*1-564-353-00	PLUG, CONNECTOR (2.5MM) 2P
DA3	*1-564-442-11	PLUG, CONNECTOR (2.5MM) 6P
DA4	*1-564-353-00	PLUG, CONNECTOR (2.5MM) 2P
DA5	*1-508-765-00	3P PLUG (M)
DA6	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P
DA7	*1-564-445-11	PLUG, CONNECTOR (2.5MM) 9P
DA8	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P

IC

IC800	8-759-100-60	IC UPC1377C
IC801	8-759-105-82	IC UPC1378H-P
IC802	8-759-145-58	IC UPC4558C
IC803	8-759-240-30	IC TC4030BP
IC804	8-759-245-38	IC TC4538BP

COIL

L800	1-408-242-00	MICRO INDUCTOR 10MMH
L802	1-408-403-00	MICRO INDUCTOR 3.3UH
L803 ⚠	1-459-370-11	COIL, FERRITE (HLC) 22UH
L804 ⚠	1-459-597-11	COIL, VARIABLE
L805	1-459-403-00	COIL (WITH CORE)
L806	1-408-421-00	MICRO INDUCTOR 100UH

TRANSISTOR

Q800	8-729-245-83	TRANSISTOR 2SC2458
Q801 ⚠	8-729-201-62	TRANSISTOR 2SC2555
	*4-363-404-00	HOLDER, IC; Q801
	4-363-414-00	SPACER, MICA; Q801
Q802	8-729-201-99	TRANSISTOR 2SC3075
Q803	8-729-245-83	TRANSISTOR 2SC2458

RESISTOR

R800	1-249-429-11	CARBON	10K	5%	1/6W
R801	1-247-850-00	CARBON	6.2K	5%	1/6W
R802	1-249-429-11	CARBON	10K	5%	1/6W
R803	1-247-877-00	CARBON	82K	5%	1/6W
R804	1-247-857-00	CARBON	12K	5%	1/6W
R805	1-247-831-00	CARBON	1K	5%	1/6W
R807	1-247-851-00	CARBON	6.8K	5%	1/6W
R808	1-247-851-00	CARBON	6.8K	5%	1/6W

The components identified by shading and mark ⚠ 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				Remark
R809	1-247-827-00	CARBON	680	5%	1/6W	
R810	1-247-827-00	CARBON	680	5%	1/6W	
R811	1-247-827-00	CARBON	680	5%	1/6W	
R812	1-206-648-00	METAL OXIDE	220	5%	2W	F
R813	1-212-360-00	METAL OXIDE	1	5%	1W	F
R815	1-247-851-00	CARBON	6.8K	5%	1/6W	
R816	1-249-429-11	CARBON	10K	5%	1/6W	
R818	1-249-429-11	CARBON	10K	5%	1/6W	
R819	1-215-461-00	METAL	47K	1%	1/6W	
R820	1-215-451-00	METAL	18K	1%	1/6W	
R821	1-247-879-00	CARBON	100K	5%	1/6W	
R822	1-213-143-00	METAL OXIDE	1K	5%	1W	F
R824 ⚠	1-247-023-51	CARBON	2.2	5%	1/8W	F
R825 ⚠	1-210-859-11	CARBON	1.2	5%	1/8W	F
R826	1-215-445-00	METAL	10K	1%	1/6W	
R827	1-213-149-00	METAL OXIDE	3.3K	5%	1W	F
R828	1-213-149-00	METAL OXIDE	3.3K	5%	1W	F
R829	1-213-149-00	METAL OXIDE	3.3K	5%	1W	F
R830	1-249-429-11	CARBON	10K	5%	1/6W	
R831	1-249-429-11	CARBON	10K	5%	1/6W	
R832	1-247-851-00	CARBON	6.8K	5%	1/6W	
R833	1-247-863-00	CARBON	22K	5%	1/6W	
R834	1-247-859-00	CARBON	15K	5%	1/6W	
R835	1-249-429-11	CARBON	10K	5%	1/6W	
R836	1-247-869-00	CARBON	39K	5%	1/6W	
R837	1-247-831-00	CARBON	1K	5%	1/6W	
R838	1-247-824-00	CARBON	510	5%	1/6W	
R839	1-247-852-00	CARBON	7.5K	5%	1/6W	
R840	1-247-863-00	CARBON	22K	5%	1/6W	
R842	1-249-429-11	CARBON	10K	5%	1/6W	
R843	1-249-434-11	CARBON	27K	5%	1/6W	
R844	1-247-817-00	CARBON	270	5%	1/6W	
R845	1-212-368-11	METAL OXIDE	4.7	5%	1W	F
R846	1-213-138-00	METAL OXIDE	390	5%	1W	F
R847	1-213-138-00	METAL OXIDE	390	5%	1W	F
R848	1-213-139-00	METAL OXIDE	470	5%	1W	F
R849	1-247-848-00	CARBON	5.1K	5%	1/6W	
R850	1-249-429-11	CARBON	10K	5%	1/6W	
R851	1-249-429-11	CARBON	10K	5%	1/6W	
R852	1-249-411-11	CARBON	330	5%	1/8W	F
R853	1-247-831-00	CARBON	1K	5%	1/6W	
R855	1-215-434-00	METAL	3.6K	1%	1/6W	
⊠R856 ⚠		METAL			1/6W	
⊠R859 ⚠		METAL			1/6W	
R860	1-247-847-00	CARBON	4.7K	5%	1/6W	
R861	1-247-847-00	CARBON	4.7K	5%	1/6W	
R862	1-247-867-00	CARBON	33K	5%	1/6W	
R863	1-247-831-00	CARBON	1K	5%	1/6W	
R864	1-247-879-00	CARBON	100K	5%	1/6W	
R866	1-249-429-11	CARBON	10K	5%	1/6W	
R867	1-215-433-00	METAL	3.3K	1%	1/6W	
R868	1-249-437-11	CARBON	47K	5%	1/6W	
R869	1-249-437-11	CARBON	47K	5%	1/6W	

Ref.No.	Part No.	Description				Remark
R870	1-215-469-00	METAL	100K	1%	1/6W	
R871	1-247-895-00	CARBON	470K	5%	1/6W	
R872	1-247-889-00	CARBON	270K	5%	1/6W	
R873	1-247-831-00	CARBON	1K	5%	1/6W	
R874	1-247-847-00	CARBON	4.7K	5%	1/6W	
R876	1-215-427-00	METAL	1.8K	1%	1/6W	
		VARIABLE RESISTOR				
RV800	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K				
RV801	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K				
RV802	1-228-720-00	RES, ADJ, CERAMIC CARBON 1K				
RV803	1-228-717-00	RES, ADJ, CERAMIC CARBON 220				
RV804	1-224-249-XX	RES, ADJ, METAL GLAZE 1K				
RV805	1-223-102-00	RES, ADJ, WIREWOUND 120				
RV806	1-228-727-00	RES, ADJ, CERAMIC CARBON 47K				
RV808	1-226-703-00	RES, ADJ, METAL GLAZE 10K				
		RELAY				
RY800	1-515-380-00	RELAY				
		TRANSFORMER				
T800	1-437-082-00	HDT				
		**********				
	*1-615-909-11	HA BOARD				
		********				
	*1-560-278-00	PLUG, CONNECTOR 3P				
	*1-564-451-11	PLUG, CONNECTOR (2.5MM) 3P				
		CAPACITOR				
C501	1-123-332-00	ELECT	47MF	20%	25V	
C502	1-101-004-00	CERAMIC	0.01MF		50V	
C591	1-130-794-00	FILM	0.22MF	10%	250V	
C592	1-130-800-00	FILM	2.2MF	10%	250V	
		DIODE				
D501	8-719-911-19	DIODE 1SS119				
D590	8-719-102-74	DIODE RD6.2E-N2				
D591	8-719-000-28	THYRISTOR CR02AM-8				
D592	8-719-911-55	DIODE U05G				
		CONNECTOR				
HA1	*1-564-451-11	PLUG, CONNECTOR (2.5MM) 3P				
HA2	*1-564-452-11	PLUG, CONNECTOR (2.5MM) 4P				
HA3	*1-564-450-11	PLUG, CONNECTOR (2.5MM) 2P				
HA4	*1-564-452-41	PLUG, CONNECTOR (2.5MM) 4P				
HA5	*1-564-452-41	PLUG, CONNECTOR (2.5MM) 4P				
HA6	*1-564-455-11	PLUG, CONNECTOR (2.5MM) 7P				
HA7	*1-564-453-11	PLUG, CONNECTOR (2.5MM) 5P				
HA8	*1-564-353-00	PLUG, CONNECTOR (2.5MM) 2P				

• The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Select the resistance value according to SAFETY RELATED ADJUSTMENT.

The components identified by shading and mark ⚠ 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.

HA HB X

Ref.No.	Part No.	Description				Remark
		TRANSISTOR				
Q501	8-729-245-83	TRANSISTOR 2SC2458				
Q590	8-765-620-00	TRANSISTOR 2SD1015				
		RESISTOR				
R500	1-246-517-25	CARBON	68K	5%	1/4W	
R501	1-247-819-00	CARBON	330	5%	1/6W	
R502	1-249-434-11	CARBON	27K	5%	1/6W	
R503	1-247-883-00	CARBON	150K	5%	1/6W	
R504	1-247-867-00	CARBON	33K	5%	1/6W	
R505	1-247-887-00	CARBON	220K	5%	1/6W	
R506	1-247-867-00	CARBON	33K	5%	1/6W	
R507	1-247-873-00	CARBON	56K	5%	1/6W	
R508	1-247-854-00	CARBON	9.1K	5%	1/6W	
R509	1-247-891-00	CARBON	330K	5%	1/6W	
R510	1-247-829-00	CARBON	820	5%	1/6W	
R511	1-247-831-00	CARBON	1K	5%	1/6W	
R512	1-247-163-00	CARBON	22K	5%	1/4W	
R513	1-247-713-11	CARBON	1K	5%	1/4W	
R514	1-247-851-00	CARBON	6.8K	5%	1/6W	
R595	1-202-846-00	SOLID	470K		1/2W	
R596	1-249-437-11	CARBON	47K	5%	1/6W	
R598	1-247-817-00	CARBON	270	5%	1/6W	
R599	1-247-839-00	CARBON	2.2K	5%	1/8W	F
		VARIABLE RESISTOR				
RV501	1-230-760-11	RES, VAR, CARBON 1K				
RV502	1-230-761-11	RES, VAR, CARBON 20K/1K				
RV503	1-230-711-11	RES, VAR, CARBON 20K				
RV504	1-230-760-11	RES, VAR, CARBON 1K				
RV505	1-230-762-11	RES, VAR, CARBON 20K				
RV507	1-230-710-11	RES, VAR, CARBON 10K				
RV508	1-226-703-00	RES, ADJ, METAL GLAZE 10K				
RV509	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K				
		THERMISTOR				
TH501	1-800-944-00	THERMISTOR TH-4700				
**********						
	*1-615-910-11	HB BOARD ********				
	*4-374-809-01	HOLDER (3 GANG), LED				
		DIODE				
D502	8-719-812-32	DIODE TLY123				
D503	8-719-812-32	DIODE TLY123				
D504	8-719-812-32	DIODE TLY123				
		CONNECTOR				
HB2	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P				

Ref.No.	Part No.	Description	Remark
		SWITCH	
S501	1-554-118-00	SWITCH, PUSH (1 KEY)	
S502	1-554-118-00	SWITCH, PUSH (1 KEY)	
S503	1-554-118-00	SWITCH, PUSH (1 KEY)	
S504	1-554-118-00	SWITCH, PUSH (1 KEY)	
S505	1-554-118-00	SWITCH, PUSH (1 KEY)	
**********			
	*1-614-496-11	X BOARD *******	
	*4-337-424-00	HOLDER (L), LED	
		DIODE	
D680	8-719-812-33	DIODE TLG123A	
**********			
		MISCELLANEOUS ************	
⚠	1-451-265-11	DEFLECTION YOKE (SY-167)	
	1-452-032-00	MAGNET, DISK; 10MM ø	
	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM ø	
	1-452-126-11	MAGNET	
⚠	1-509-546-11	3P INLET	
	1-509-718-00	DIN 4P SOCKET	
L901 ⚠	1-426-043-12	COIL, DEGAUSSING	
S901 ⚠	1-570-200-11	SWITCH, PUSH (AC POWER))1 KEY)	
T801 ⚠	1-439-358-11	TRANSFORMER ASSY, FLYBACK	
V901 ⚠	8-737-151-05	CRT (A20JKU10X)	

****

ACCESSORIES AND PACKING MATERIALS
****

Part No.	Description	Remark
1-508-723-00	4P PLUG, DIN	
⚠ 1-551-812-11	CORD, POWER	
3-548-372-00	BAG, POLYETHYLENE	
4-374-859-01	PLATE, NUMBER, TALLY	
4-374-870-01	CUSHION (UPPER) (ASSY)	
4-374-871-01	CUSHION (LOWER) (ASSY)	
4-374-877-01	INDIVIDUAL CARTON	
4-482-130-21	MANUAL, INSTRUCTION	
4-491-213-22	INSTRUCTION	

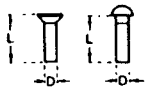
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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.

HARDWARE NOMENCLATURE

Screw: – P 3 x 10

- *L: Length in mm*
- *D: Diameter in mm*
- *Type of head*
- *Indicated slotted-head only. Unless otherwise indicated, it means cross-recessed head (Phillips type).*



Nut, Washer, Retaining ring: N 3

- *Diameter of usable screw or shaft*
- *Reference designation*

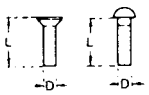
Reference Designation	Shape	Description	Remarks
		SCREWS	
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		brazier-head screw	

Reference Designation	Shape	Description	Remarks
		SELF-TAPPING SCREWS	
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
		SET SCREWS	
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
		NUT	
N		nut	
		WASHERS	
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
		RETAINING RINGS	
E		retaining ring	
G		grip-type retaining ring	

NOMENCLATURE FERRONNERIE

Vis: – P 3 x 10

- *L: Longueur en mm*
- *D: Diamètre en mm*
- *Type de tête*
- *Précise le type de rainure de la tête. Sauf indication contraire il s'agit de vis cruciforme (Type Phillips)*



Ecrou, Rondelle, Circlips: N 3

- *Diamètre de la vis ou de l'axe utilisable*
- *Désignation de la référence*

Désignation de la référence	Forme	Description	Remarques
		VIS	
P		Vis à tête cylindrique large	Peut être remplacée par une vis à tête cylindrique (B).
PWH		Vis à tête cylindrique large et rondelle fixe.	Peut être remplacée par une vis à tête cylindrique (B) et une rondelle fixe.
PS PSP		Vis à tête cylindrique large et rondelle à ressort fixe.	Peut être remplacée par une vis à tête cylindrique (B) et une rondelle à ressort.
PSW PSPW		Vis à tête cylindrique large et rondelles plates et à ressort.	Peut être remplacée par une vis à tête cylindrique (B) et une rondelle plate plus une rondelle à ressort.
R		Vis à tête ronde	Peut être remplacée par une vis à tête cylindrique (B).
K		Vis à tête fraisée	
RK		Vis à tête fraisée bombée	
B		Vis à tête cylindrique	
T		Vis à tête ronde large	Peut être remplacée par une vis à tête cylindrique (B).
F		Vis à tête moulée plate	
RF		Vis à tête moulée	
BV		Vis à tête soudée	

Désignation de la référence	Forme	Description	Remarques
		VIS AUTOTARODEUSES	
TA		Vis autotarodeuse	ex: TA, P 3 x 10
PTP		Vis autotarodeuse à tête cylindrique large.	Peut être remplacée par une vis autotarodeuse à tête cylindrique (TA, B).
PTPWH		Vis autotarodeuse a tête cylindrique large et rondelle fixe.	Peut être remplacée par une vis autotarodeuse à tête cylindrique (TA, B) et une rondelle plate.
PTTWH		Vis à tige filetée et tête cylindrique large avec rondelle fixe.	Peut être remplacée par une vis à tête cylindrique (B) et une rondelle plate.
		VIS DE SERRAGE	
SC		Vis de serrage	
SC		Vis de serrage à douille hexagonale	ex: SC 2,6 x 4, douille hexagonale
		ECROU	
N		Ecrou	
		RONDELLES	
W		Rondelle plate	
SW		Rondelle à ressort	
LW		Rondelle éventail denture intérieure	ex: LW3, intérieure
LW		Rondelle éventail denture extérieure	ex: LW3, extérieure
		CIRCLIPS	
E		Circlips	
G		Circlips à griffe	

PVM-8220

SONY

SERVICE MANUAL

US Model
Canadian Model

Chassis No. SCC-684A-A

October, 1985

No. 1

CORRECTION

SUBJECT: SAFETY CRITICAL COMPONENTS MODIFICATION

All safety critical components will be clearly identified, together with the explanations on the method used on both the schematic and service manual. File this CORRECTION with the service manual.

☛ : Indicates corrected portions

Page 20: SAFETY RELATED ADJUSTMENTS

Incorrect	Correct
HV PROTECTOR OPERATION CHECK **HOLD DOWN ⊠ R856 ADJUSTMENT** *Be sure to perform this adjustment when replacing the following parts (marked ◪ on the schemacic)* *◪ C807, C855, D800, D805, D824, D825, IC802, R807 R818, R822, R826, R855, R856, R873, R874, R876* 1. *Input a monoscope signal. (PICTURE 80% BRT50%)* 2. *Comfirm that voltage of 19.6 ± 1.6V appears between TP61 and GND during input of 120V AC.* 3. *Confirm that the HOLD-DOWN circuit operates (the raster disappears) by adding 25.0V DC between TP61 and GND.*	**HV PROTECTOR OPERATION CHECK** **HOLD DOWN ⊠ R856 ADJUSTMENT** *Be sure to perform this adjustment when replacing the following parts (marked ◪ on the schemacic)* *◪ C807, C855, D800, D805, D824, D825, IC802, R807 R818, R822, R826, R855, R856, R873, R874, R876* 1. *Input a monoscope signal. (PICTURE 80% BRT50%)* 2. *Comfirm that voltage of 19.6 ± 1.6V appears between TP61 and GND during input of 120V AC.* 3. *Confirm that the HOLD-DOWN circuit operates (the raster disappears) by adding 25.00 $^{+0}_{-0.05}$ V DC between TP61 and GND.* ☛
BLANKING OPERATION CHECK **⊠ R859 ADJUSTMENT** *Be sure to perform this adjustment when replacing the following parts (marked ◪ on the schematic)* *◪ D800, D801, IC253, IC802, R456, R457, R807, R819 R820, R822, R859, R862* 1. *Input a monoscope signal. (PICTURE 80% BRT50%)* 2. *Turn +B ADJ VR (RV807) fully so that +B value is DOWN.* 3. *Confirm that the BLANKING circuit operates (the raster disappears) by adding 24.5V DC between TP91 and GND.*	**BLANKING OPERATION CHECK** **⊠ R859 ADJUSTMENT** *Be sure to perform this adjustment when replacing the following parts (marked ◪ on the schematic)* *◪ D800, D801, IC253, IC802, R456, R457, R807, R819 R820, R822, R859, R862* 1. *Input a monoscope signal. (PICTURE 80% BRT50%)* 2. *Turn +B ADJ VR (RV610) fully so that +B value is DOWN.* ☛ 3. *Confirm that the BLANKING circuit operates (the raster disappears) by adding 24.8 $^{+0}_{-0.1}$ DC between TP91 and GND.* ☛

MICROFILM

MON

Page 31: SCHEMATIC DIAGRAMS

Incorrect

Note:

- All capacitors are in μF unless otherwise noted. p: μμF 50 WV or less are not indicated except for electrolytics.
- All resistors are in ohms, 1/6 W unless otherwise noted. k: 1000 Ω, M: 1000 kΩ
- △ : internal component.
- : nonflammable resistor.
- : panel designation.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by ⊠ in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪, make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by ⊠ and repeat the adjustment until the specified value is achieved. (Refer to R626 R859 adjustment on page 20, 21.)
- All voltages are in V.
- Voltages are dc with respect to ground unless otherwise noted.
- : adjustment for repair.
- : B+ bus.
- : B− bus.

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

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

Correct

Note:

- All capacitors are in μF unless otherwise noted. p: μμF 50 WV or less are not indicated except for electrolytics.
- All resistors are in ohms, 1/6 W unless otherwise noted. k: 1000 Ω, M: 1000 kΩ
- △ : internal component.
- : nonflammable resistor.
- : panel designation.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by ⊠ in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪, make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by ⊠ and repeat the adjustment until the specified value is achieved. (Refer to R626, R856, R859 adjustment on page 19, 20, 21.)

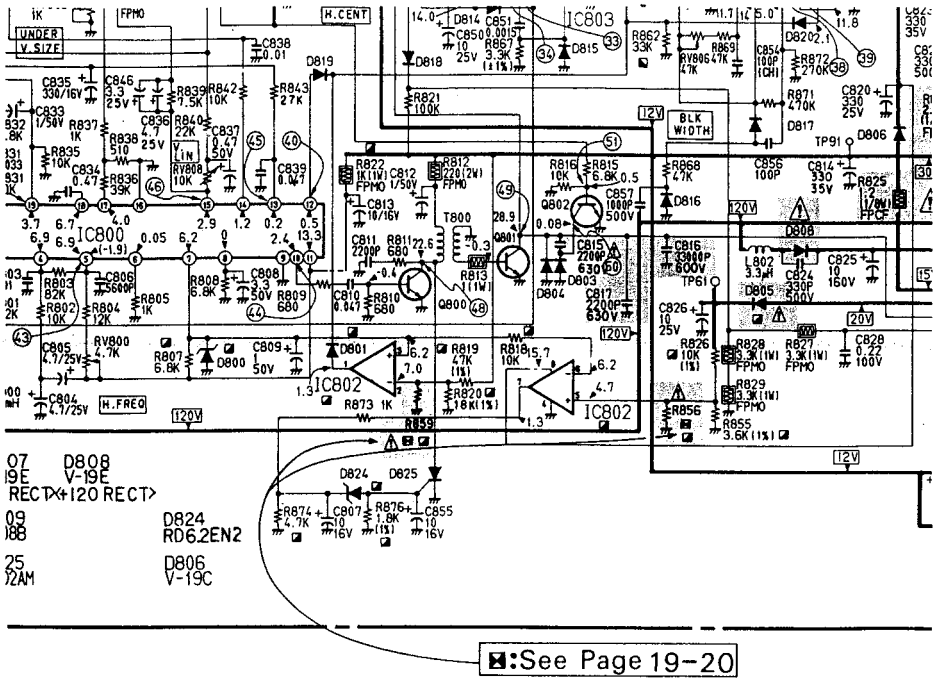
◪	⊠
C807, C855, D800, D805, D824, D825, IC802, R807, R818, R822, R826, R855, R856, R873, R874, R876	R856 (HOLD DOWN ADJUSTMENT)
D800, D801, IC253, IC802, R456, R457, R807, R819, R820, R822, R859, R862	R859 (BLANKING OPERATION CHECK ADJUSTMENT)
D626, IC611, R619, R620, R626, R627, R628, RV610	R626 (+B MAX CHECK ADJUSTMENT)

- All voltages are in V.
- Voltages are dc with respect to ground unless otherwise noted.
- : adjustment for repair.
- : B+ bus.
- : B− bus.

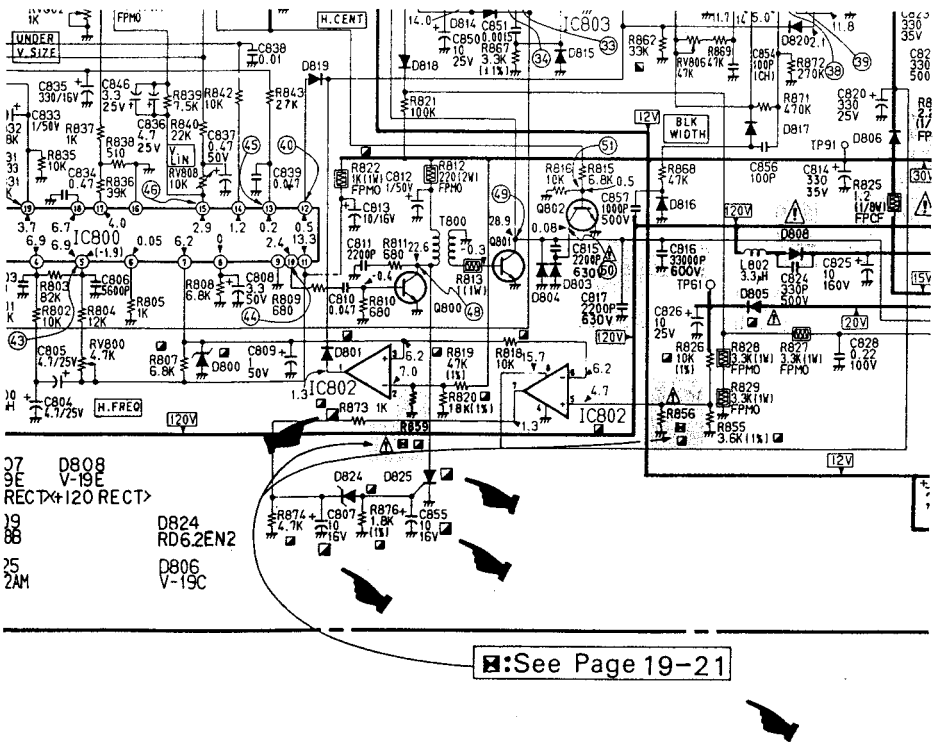
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

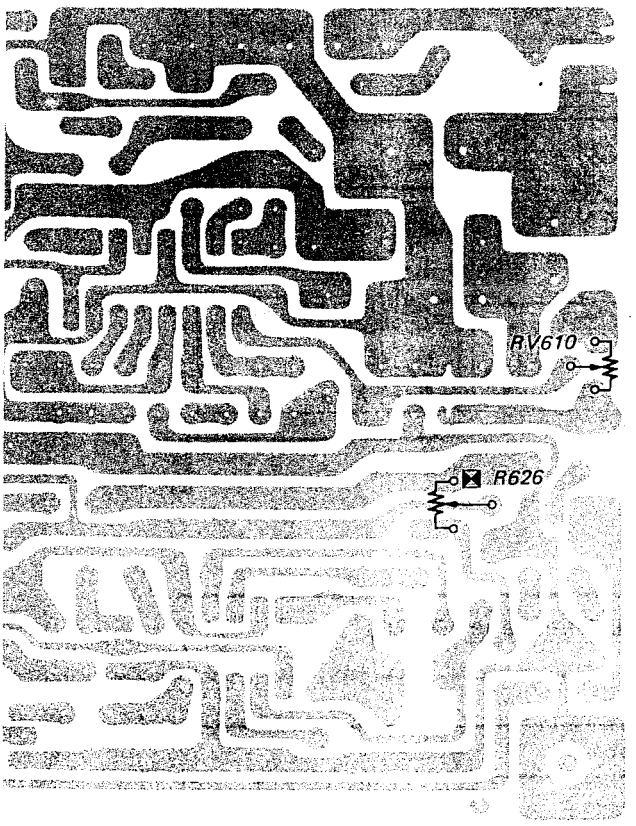
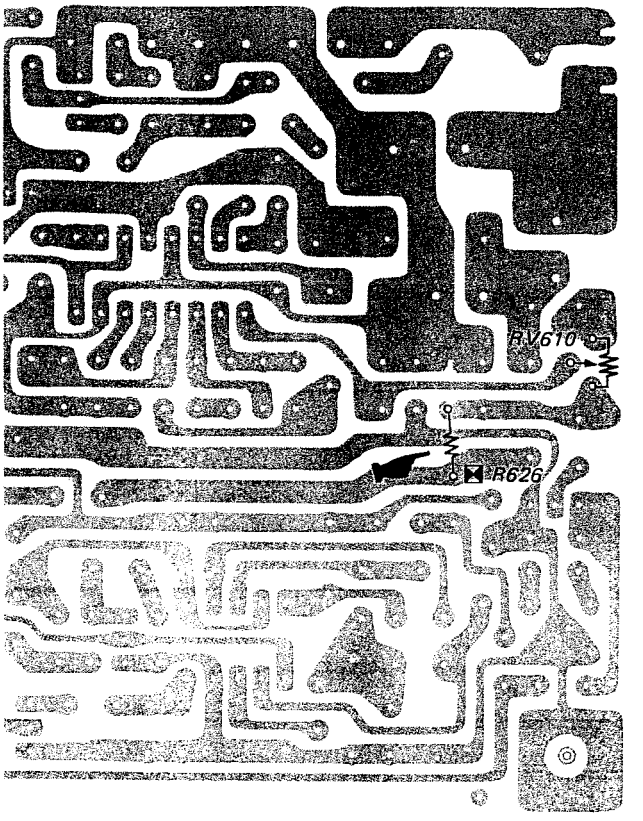
Note: Les composants identifiés par une trame et par une marque ⚠ sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié.

Incorrect



Correct



Incorrect	Correct
FB Board 	
+B MAX CHECK R626 ADJUSTMENT *Be sure to perform this adjustment when replacing the following parts (marked ◪ on the schematic)* ◪ *R619, R620, R626, R627, R628, RV610, D626, IC611* 1. *Input a monoscope signal. (PICTURE 80% BRT 50%)* 2. *Turn +B ADJ VR (RV807) fully so that +B value is maximum. (Input of 130V $^{+2}_{-0}$ V AC)* 3. *Confirm that TP91 value is less than 31.5V dc.*	+B MAX CHECK R626 ADJUSTMENT *Be sure to perform this adjustment when replacing the following parts (marked ◪ on the schematic)* ◪ *R619, R620, R626, R627, R628, RV610, D626, IC611* 1. *Input a monoscope signal. (PICTURE 80% BRT 50%)* 2. *Turn +B ADJ VR (RV610) fully so that +B value is maximum. (Input of 130V $^{+2}_{-0}$ V AC)* 3. *Confirm that TP91 value is less than 31.5V dc.*

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