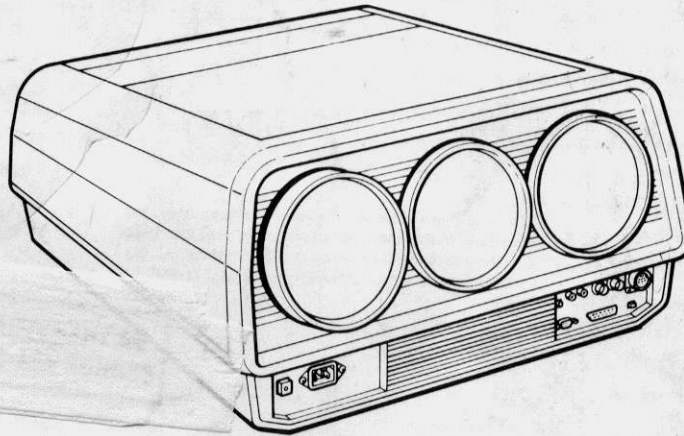


VPH-1031QM

SERVICE MANUAL

AEP Model

Chassis No. SCC-759C-A



MULTISCAN

SPECIFICATIONS

Optical

Projection system 3 picture tubes, 3 lenses, direct projection system
 Picture tube 5.5-inch high-brightness monochrome tubes, with coolant sealed
 Projection lens High-performance hybrid lenses F 1.0/135 mm
 Projected picture size 67—250 inches measured diagonally
 Factory-adjusted to 100 inches measured diagonally
 Light output 300 lm

General

Color system PAL, SECAM, NTSC and NTSC4.43 systems, switched automatically
 Resolution 1100 TV lines (RGB inputs)
 650 TV lines (video input)
 RGB inputs Character display capacity:
 4050 characters at 21 kHz
 (5 × 7 dots, 90 letters × 45 lines)
 Graphic display capacity:
 1024 × 500 dots
 Horizontal frequency:
 15 kHz to 36 kHz
 Vertical frequency:
 40 Hz to 150 Hz
 Test signal Cross-hair test pattern generator is incorporated.
 Speaker 8 cm (3 1/8 inches) dia., 2 units, total 3 W
 Inputs

LINE

VIDEO IN: BNC connector
 Composite video input,
 1 Vp-p ± 2 dB, sync negative,
 75 ohms terminated
 AUDIO IN: phono jack
 0.5 Vrms
 Impedance: more than
 47 k ohms

Output

TO VPR-722 connector

Power requirements
 Power consumption
 Dimensions

Weight

Accessories supplied

RGB 1

RGB 1: D-sub 9-pin connector
 Digital signal (TTL level)
 See "Pin assignment".
 AUDIO IN: phono jack
 0.5 Vrms
 Impedance: more than
 47 k ohms

RGB 2

RGB 2: 21-pin connector
 See "Pin assignment".
 VIDEO OUT: BNC connector
 Composite video output,
 1 Vp-p ± 2 dB, impedance
 75 ohms, selected video output
 With the remote controller:
 video signal from the
 controller
 Without the remote controller:
 video signal from the
 VIDEO IN connector

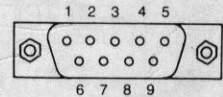
14-pin connector
 See "Pin assignment".
 220—240 V AC, 50/60 Hz
 195 W
 Approx. 532 × 280 × 597 mm
 (w/h/d)
 (21 × 11 1/8 × 23 5/8 inches)
 with the brackets pushed down,
 incl. projecting parts and controls
 Approx. 38 kg (83 lb 12 oz)
 AC power cord (1)
 Spacer for 72" projection
 Label of the RGB MORE SELECT
 switch for the VPR-722 (1)

OPTIONAL ACCESSORIES

Remote controller VPR-722
 Projector pedestal SU-722
 Projector suspension support PSS-722, PSS-10
 Screen VPS-100F1 (100" flat)
 VPS-72HG1 (72" curved)
 VPS-100HG1 (100" curved)
 Carrying case VLC-1040
 CCQ cables

Signal assignment

RGB 1 connector
 (D-sub 9-pin)



Digital signal (TTL level)

Pin No.	Signal assignment
1	Ground
2	Ground
3	Red input
4	Green input
5	Blue input
6	Intensity input
7	No connection
8	H. sync or composite sync input (positive/negative)
9	V. sync input (positive/negative)

Design and specifications subject to change without notice.

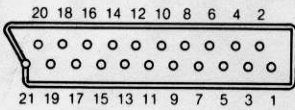
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COLOR VIDEO PROJECTOR
SONY®

MON

RGB 2 connector (21-pin)

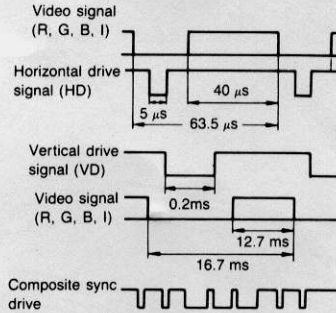


Pin No.	Signal	Signal level
1	Audio output B (right)	Standard level: 0.5 Vrms Output impedance: Less than 1 k ohm*
2	Audio input B (right)	Standard level: 0.5 Vrms Input impedance: More than 10 k ohms*
3	Audio output A (left)	Standard level: 0.5 Vrms Output impedance: Less than 1 k ohm*
4	Ground (audio)	
5	Ground (blue)	
6	Audio input A (left)	Standard level: 0.5 Vrms Input impedance: More than 10 k ohms*
7	Blue input	0.7 V ± 2 dB, 75 ohms, positive
8	Function select (AV control)	High state (9.5—12 V): Peri mode Low state (0—2 V): TV mode Input impedance: More than 10 k ohms Input capacitance: Less than 2 nF
9	Ground (green)	
10	Open	
11	Green/Green with sync input	Green signal: 0.7 V ± 2 dB; 75 ohms, positive Green with sync signal: 1 V ± 2 dB, 75 ohms, positive
12	Open	
13	Ground (red)	
14	Ground (blanking)	
15	Red input	(Same as Pin 7)
16	Blanking input (Ys signal)	High state (1—3 V) Low state (0—0.4 V) Input impedance: 75 ohms
17	Ground (video output)	
18	Ground (video input)	
19	Video output	1 V ± 2 dB, 75 ohms, positive Sync: 0.3 V (-3, ± 10 dB)
20	Video input	1 V ± 2 dB, 75 ohms, positive Sync: 0.3 V (-3, ± 10 dB)
21	Common ground (plug, shield)	

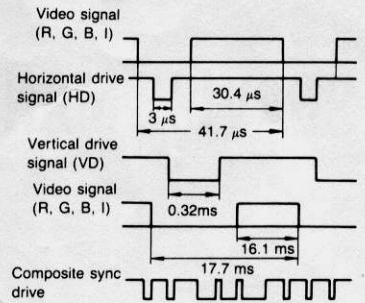
*at 20 Hz—20 kHz

Timing chart

15.75 kHz scanning frequency



24 kHz scanning frequency



Note

If the input signals are not the recommended ones, the dimensions of the character display area may change or the picture may be decentered due to the timing of the connected microcomputer. This is not a fault of the monitor.

WARNING

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

Dangerously high voltages are present inside the set. Do not open the cabinet. Refer servicing to qualified personnel only.

NOTICE FOR THE CUSTOMERS IN THE UNITED KINGDOM

WARNING THIS APPARATUS MUST BE EARTHED

IMPORTANT

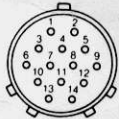
The wires in this mains lead are coloured in accordance with the following code:

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

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

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

TO VPR-722 connector (14-pin)



Pin No.	Signal	Pin No.	Signal
1	Ground	8	Input select
2	+ 28V ---- 60mA	9	Audio (incl. volume control)
3	Hue 1	10	Brightness
4	Hue 2	11	Sharpness
5	Hue 3	12	Color
6	Video	13	Picture
7	Ground (video)	14	Power ON: 12V OFF: 0V

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WARNING !!

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

SAFETY-RELATED COMPONENT WARNING !!

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

SECTION 1 GENERAL

1-1. LOCATION AND FUNCTION OF CONTROLS

Control panel

SUPERIMPOSE MIX LEVEL control

RGB 1/RGB 2 H SHIFT controls

R/B V CENT controls

R/B H CENT controls

NORMAL/SECAM/TEST selector *

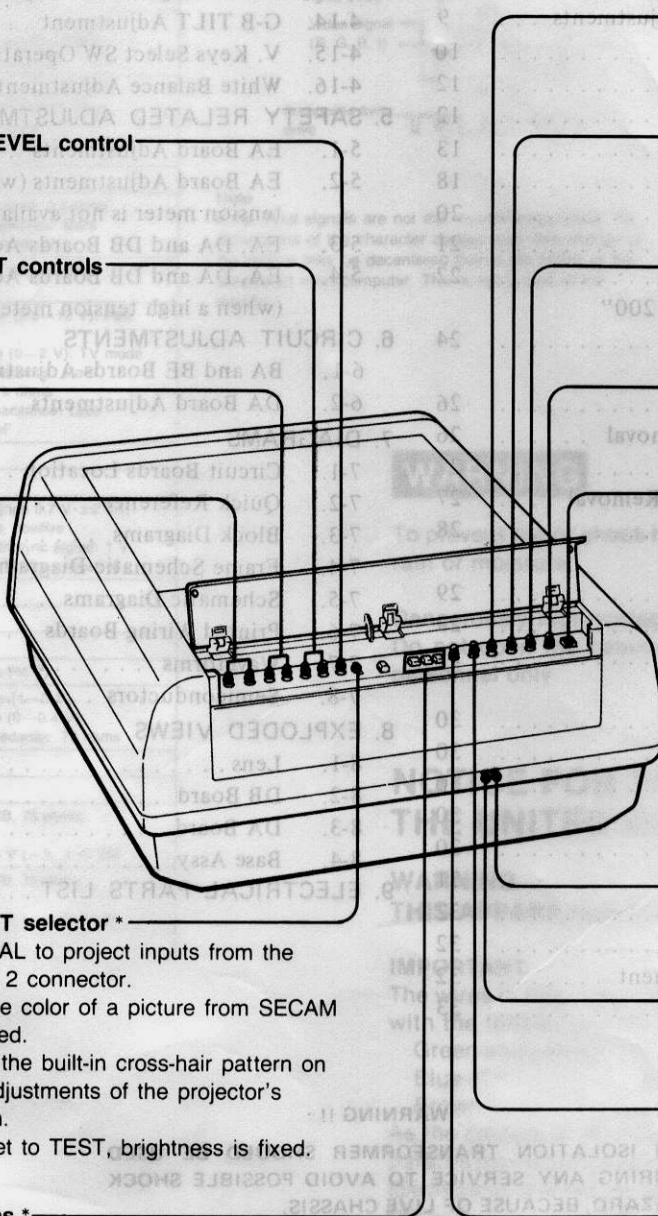
Normally, set to NORMAL to project inputs from the VIDEO IN or RGB 1 or 2 connector.
Set to SECAM when the color of a picture from SECAM color sources is disturbed.
Set to TEST to display the built-in cross-hair pattern on the screen for easier adjustments of the projector's position and registration.
When this selector is set to TEST, brightness is fixed.

INPUT SELECT buttons *

Press to select the program source to be projected.
LINE: For inputs from the TO VPR-722 connector or the VIDEO IN/AUDIO IN connectors.
RGB 1: For inputs from the RGB 1 connector and AUDIO IN (RGB 1) jack.
RGB 2: For inputs from the RGB 2 connector.

Notes

- SHARPNESS, COLOR and HUE controls do not function for RGB inputs.
- Controls and buttons with * do not function when the VPR-722 remote controller is connected to the TO VPR-722 connector. The same controls on the VPR-722 are operative.



Connector panel

Blue lens

Speakers

Green lens

Red lens

POWER switch

AC IN socket

AUDIO IN (LINE) jack

Connect to the audio line output of a video tape recorder, video camera, TV, etc.

AUDIO IN (RGB 1) jack

Connect to the analog RGB multioutput connector of a microcomputer.

VIDEO IN (LINE) connector

VIDEO OUT connector

TO VPR-722 connector

NORMAL/SUPER selector

Normally, set to NORMAL.

Set to SUPER when superimposing the data from the microcomputer connected to the RGB 2 connector, on the picture from No. 20 (video input) pin of the RGB 2 connector when the function select (AV control) signal fed through No. 8 pin is in the high state or no signal is fed through No. 8 pin, or on the picture from the TO VPR-722 or VIDEO IN connector when the signal fed through No. 8 pin is in the low state.

RGB 2 input connector

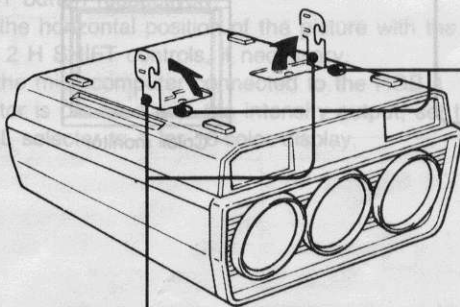
RGB 1 input connector

DIGITAL selector

Normally set to 2.

When the microcomputer provided with the intensity output is connected, set to 1 for 16-color display.

Bottom



Brackets

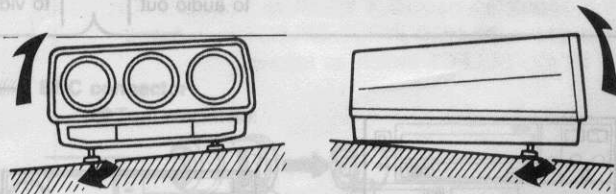
For attaching the projector to the PSS-722 suspension support or the SU-722 pedestal.

Adjustable feet

The horizontal balance and angle of the projector can be adjusted with these feet. The feet are factory-adjusted to the shortest length for a flat base.

Turn either foot to obtain horizontal balance.

Turn both feet to adjust the angle.

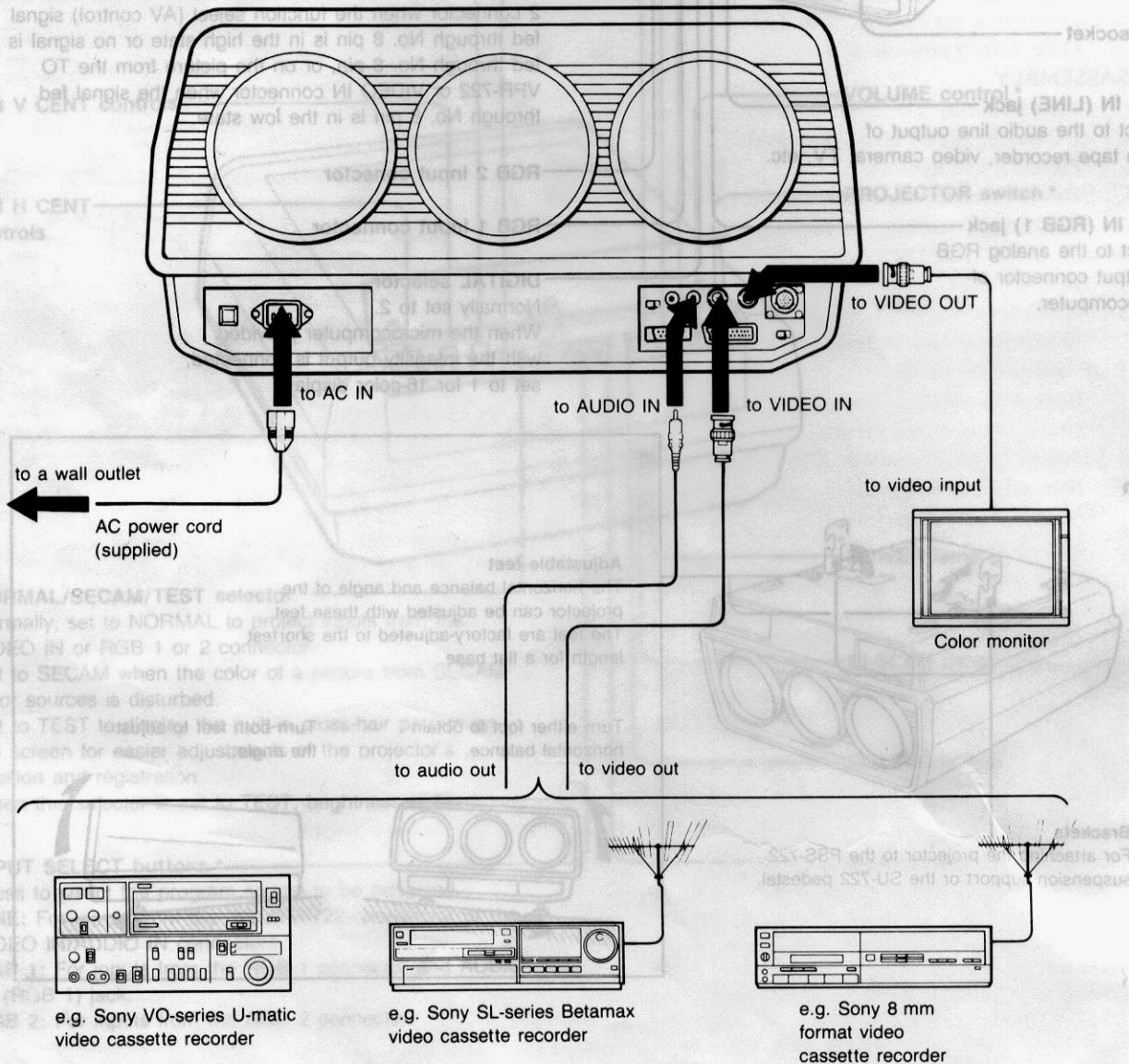


1-2. SYSTEM CONNECTIONS

Connecting notes

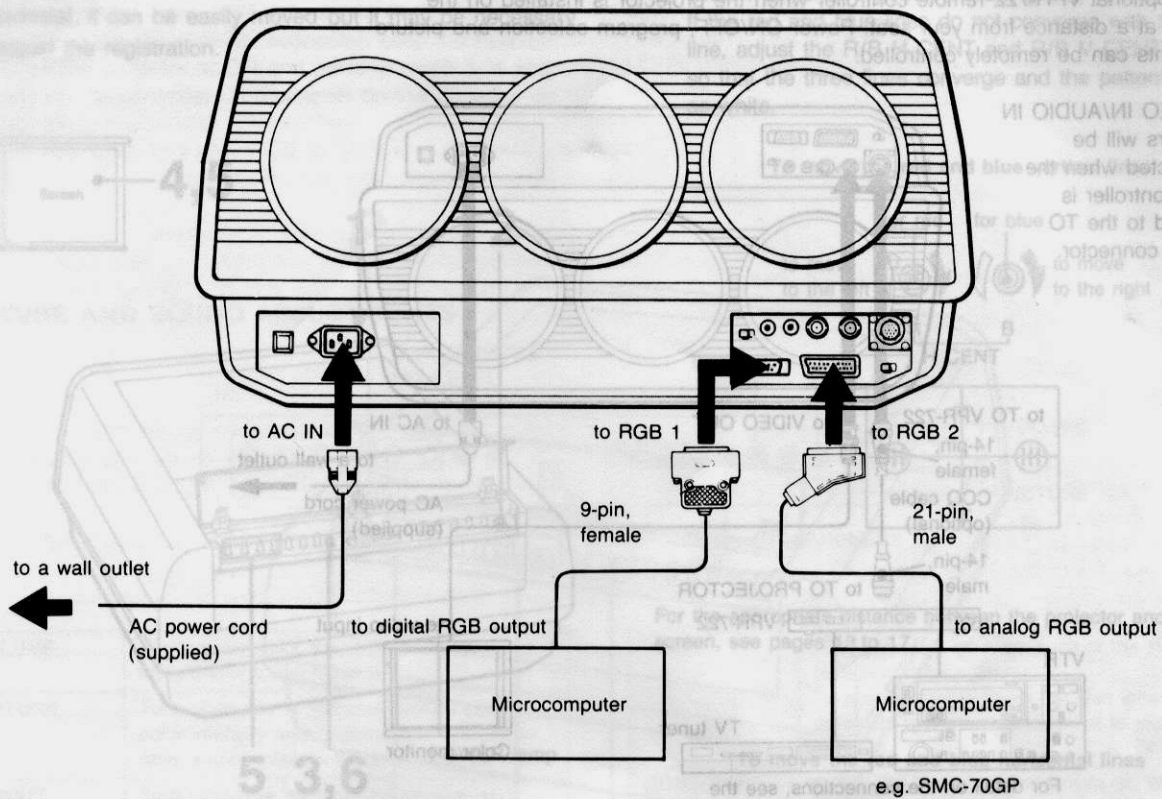
- First make sure that the power to each piece of equipment is turned off.
- The cable connectors should be fully inserted into the jacks. A loose connection may cause hum and noise.
- To disconnect the cable, pull it out by grasping the plug. Never pull the cable itself.
- Use suitable connecting cables according to the equipment to be connected.
- For connection to the VIDEO IN and TO VPR-722 connectors, the connecting cable may be extended to max. 50 m (164 feet 1/2 inch). If the connecting cable is too long (longer than 50 m), picture quality may be impaired somewhat.
- Read the instruction manual of the equipment to be connected.

WITHOUT USING THE REMOTE CONTROLLER



Notes To project the picture input from the VIDEO IN connector, press the LINE INPUT SELECT button.

CONNECTING A MICROCOMPUTER



- To project the picture input from the RGB 1 connector or RGB 2 connector, press the RGB 1 or RGB 2 INPUT SELECT button respectively. Adjust the horizontal position of the picture with the RGB 1/RGB 2 H SHIFT controls, if necessary.
- When the microcomputer connected to the RGB 1 connector is provided with the intensity output, set the DIGITAL selector to 1 for 16-color display.

- To perform superimposing of the data from the microcomputer connected to the RGB 2 connector, set the NORMAL/SUPER selector to SUPER. (The signal from the microcomputer should be processed for superimposition.) Adjust the contrast of the superimposed picture with the SUPERIMPOSE MIX LEVEL control, if necessary.

- If your microcomputer is equipped with a composite video output, connect it to the VIDEO IN (LINE) connector on the projector.
- If necessary, connect an audio source to the RGB AUDIO IN jack.

Note
Do not leave a still picture from a microcomputer or video disc player projected for more than one hour.

BNC connector

- ① Turn clockwise.



- ② Align and insert.

9-pin connector

- ① Insert.

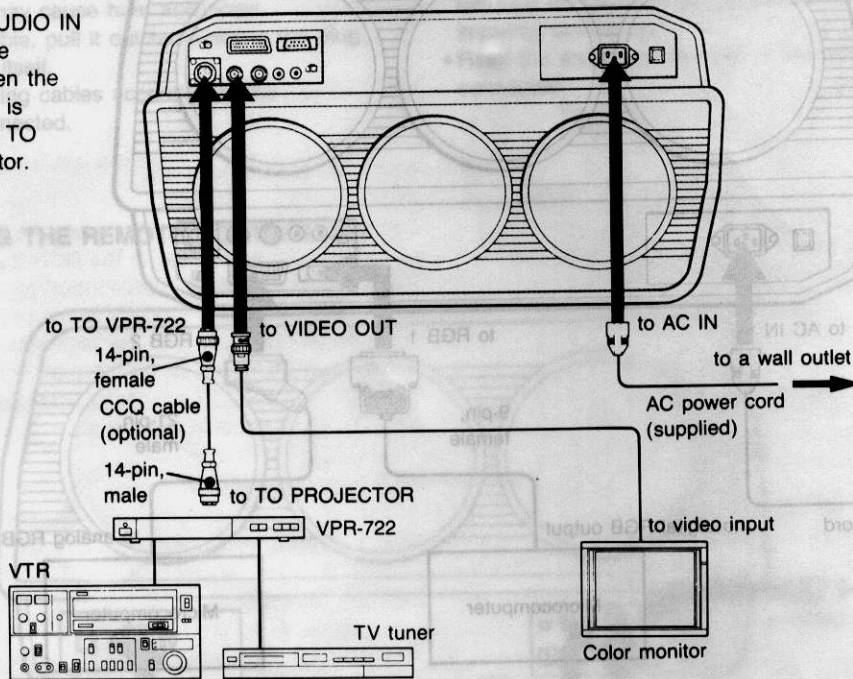


- ② Tighten the screws.

1-2. USING THE REMOTE CONTROLLER

Use the optional VPR-722 remote controller when the projector is installed on the ceiling or at a distance from your seat. Power ON/OFF, program selection and picture adjustments can be remotely controlled.

The VIDEO IN/AUDIO IN connectors will be disconnected when the remote controller is connected to the TO VPR-722 connector.



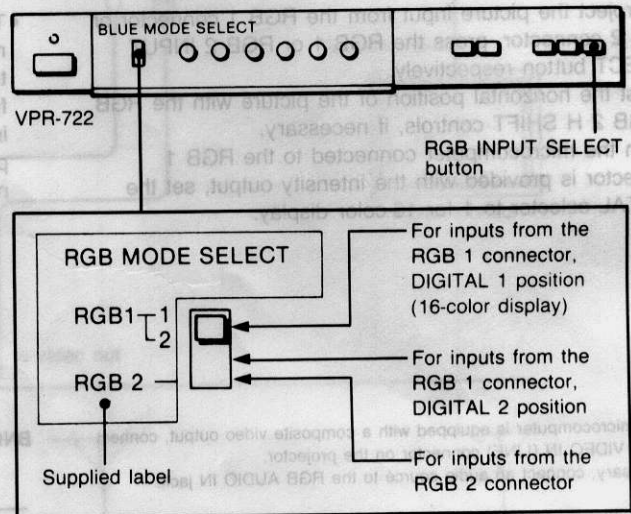
For detail on the connections, see the instruction manual of the VPR-722.

When the remote controller is connected, the PROJECTOR switch, INPUT SELECT buttons and controls for picture adjustments on this unit do not function. Keep the POWER switch on the projector ON and operate these functions with the remote controller.

Note on the BLUE MODE SELECT switch

When the VPR-722 is connected to this unit, the BLUE MODE SELECT switch on the VPR-722 functions as the RGB MODE SELECT switch. Attach the label supplied with this unit to the BLUE MODE SELECT switch.

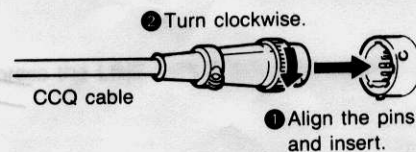
To project the signals connected to the RGB 1 or RGB 2 connector, first press the RGB INPUT SELECT button and set the RGB MODE SELECT switch as follows.



Notes

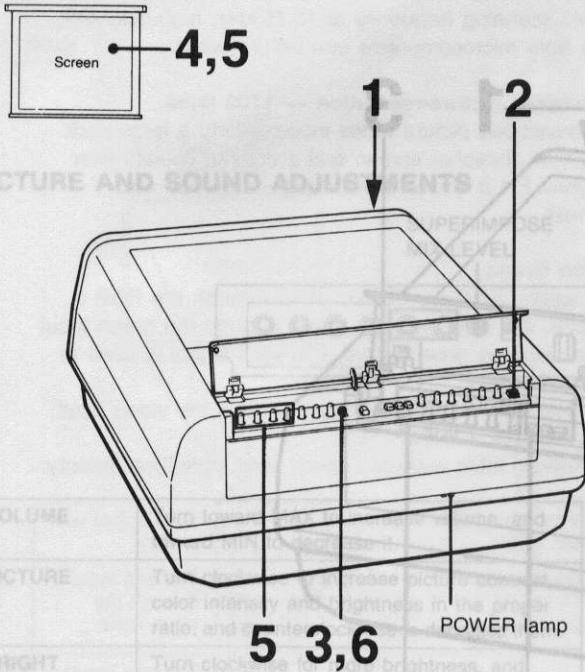
- When the remote controller is connected to the TO VPR-722 connector:
 - the VIDEO IN/AUDIO IN (LINE) connectors are disconnected automatically.
 - the PROJECTOR switch, INPUT SELECT buttons, RGB BLUE MODE SELECT switch and the controls for picture and sound adjustments (except H SHIFT and V HOLD) do not function.

14-pin connector



1-3. POSITION AND REGISTRATION ADJUSTMENTS

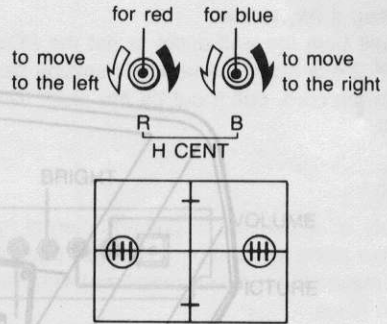
When the projector is installed on a desk or on the floor using the pedestal, it can be easily moved but it may be necessary to readjust the registration.



5 Check the convergence of red, green and blue.

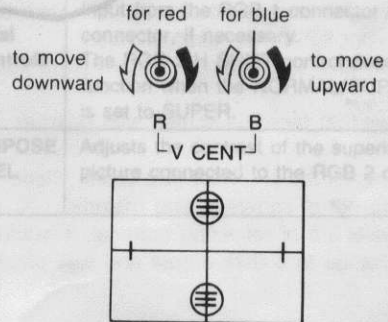
If the red and blue lines do not converge with the green line, adjust the R/B H CENT and R/B V CENT controls so that the three lines converge and the pattern is seen as white.

To move the red and blue vertical lines



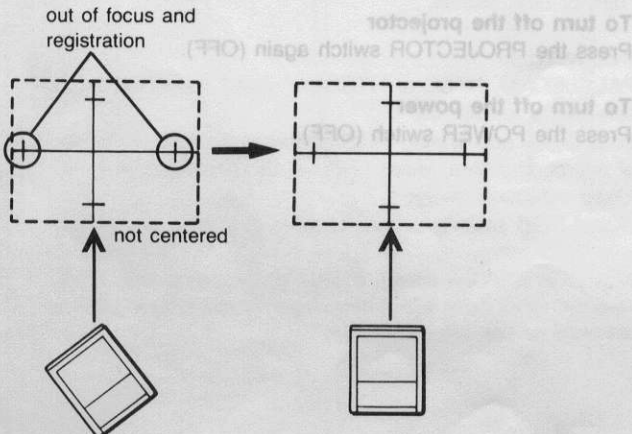
For the appropriate distance between the projector and the screen, see pages 13 to 17.

To move the red and blue horizontal lines

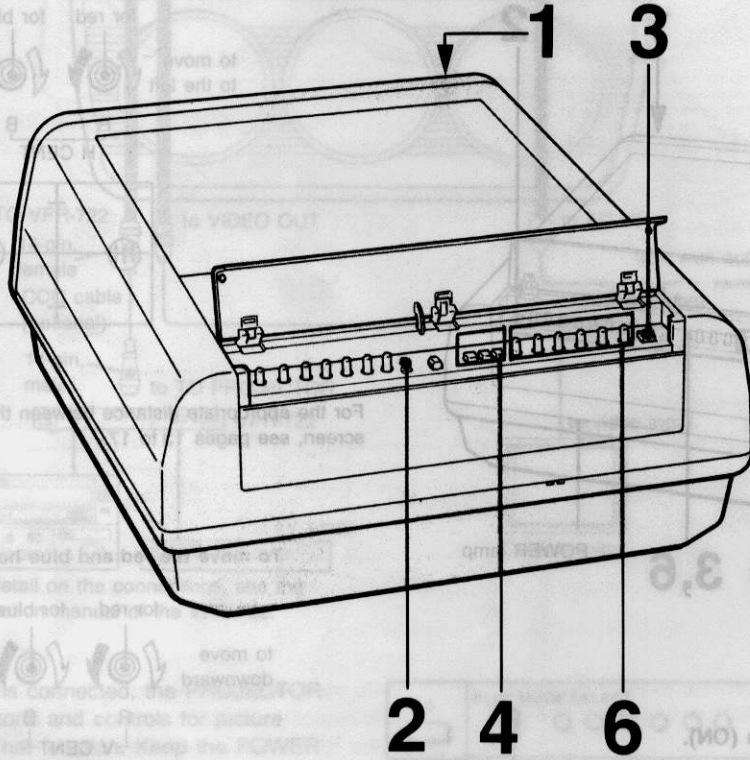


- 1 Depress the POWER switch (ON).
- 2 Depress the PROJECTOR switch (ON).
When the remote controller is used, turn the PROJECTOR switch on the remote controller on. The green POWER lamp will light.
- 3 Set the NORMAL/SECAM/TEST selector to TEST.
The built-in cross-hair pattern will be displayed.
- 4 Check the focus and centering.
If the test pattern is not centered and focused on the screen, move the projector slightly so that the pattern is displayed clearly.

- 6 After the adjustment is complete, set the NORMAL/SECAM/TEST selector to NORMAL.



14. PROJECTING



OPERATION

- 1 Depress the **POWER** switch (ON).
- 2 Make sure that the **NORMAL/SECAM/TEST** selector is set to **NORMAL**.
- 3 Depress the **PROJECTOR** switch (ON).
- 4 Select the program to be projected by pressing the appropriate **INPUT SELECT** button.
- 5 Turn on the connected equipment.
The picture will be projected on the screen and the sound will be heard from the speaker.
- 6 Adjust the picture and sound to your preference. See below.

To turn off the projector
Press the **PROJECTOR** switch again (OFF).

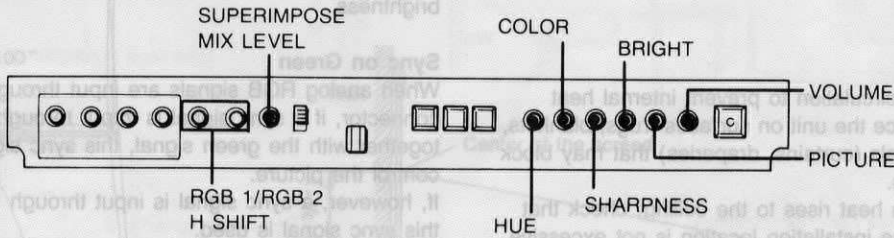
To turn off the power
Press the **POWER** switch (OFF).

OPERATION USING THE REMOTE CONTROLLER

When the optional Sony VPR-722 remote controller is connected to the TO VPR-722 connector, keep the POWER switch on the projector at ON and perform steps 3, 4 and 6 above on the controller. The controls on the projector do not function.

Note
R/B V CENT, R/B H CENT, H SHIFT and SUPERIMPOSE MIX LEVEL control adjustments cannot be operated with the controller.

PICTURE AND SOUND ADJUSTMENTS



VOLUME	Turn toward MAX to increase volume, and toward MIN to decrease it.
PICTURE	Turn clockwise to increase picture contrast, color intensity and brightness in the proper ratio, and counterclockwise to decrease them.
BRIGHT	Turn clockwise for more brightness, and counterclockwise for less.
SHARPNESS	Turn clockwise for sharp picture, and counterclockwise for soft picture.
COLOR	Turn clockwise for more color intensity, and counterclockwise for less.

HUE	(Effective only for a program of the NTSC or NTSC4.43 color system) Turn clockwise to make the skin tones greenish, and counterclockwise to make them purplish.
RGB1/RGB2 H SHIFT (horizontal shift) controls	Adjust the horizontal position of the picture input from the RGB 1 connector and RGB 2 connector, if necessary. The RGB 2 H SHIFT control does not function when the NORMAL/SUPER selector is set to SUPER.
SUPERIMPOSE MIX LEVEL control	Adjusts the contrast of the superimposed picture connected to the RGB 2 connector.

1-5. PRECAUTIONS

On safety

- Check that the operating voltage of your unit is identical with the voltage of your local power supply. If voltage adaptation is required, consult your Sony dealer or qualified personnel.
- 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 or set the POWER switch to OFF if it is not to be used for several days.
- To disconnect the 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. Be aware that room heat rises to the ceiling; check that temperature near the installation location is not excessive.
- 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 or humidity, mechanical vibration or shock.

On illumination

- To obtain a clear picture, the screen should not be exposed to illumination or sunlight directly from the front.
- Ceiling mounted spot lighting is recommended. Use a construction over light-scattering illumination such as fluorescent lamps.
- Cover the windows that face the screen with opaque draperies.
- It is desirable to install the projector in a room whose floor and walls are not of light-reflecting material. If the floor and walls are of reflecting material, it would be desirable to change to a dark carpet and wall paper.

On cleaning

- To keep the cabinet 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.
- Avoid touching the lens. To remove dust on the lens, use a soft dry cloth. Do not use a damp cloth, detergent solution, or thinner.

On repacking

Save the original shipping carton and packing material; they will come in handy if you ever have to ship your unit. For maximum protection, repack your unit as it was originally packed at the factory.

1-6. FEATURES

Multiscan projector

The projector accepts 15 kHz ~ 36 kHz horizontal scanning frequencies and 40 Hz ~ 150 Hz vertical scanning frequencies, and detects the frequencies automatically. In addition to VCRs, video cameras and TVs having the standard scanning frequency of 15.75 kHz, high-resolution picture from microcomputers can be projected.

Fine-detailed picture-resolution — 1100 lines

Newly-developed picture tubes incorporating a large-neck gun, a new phosphor screen and a colored coolant filter and hybrid F 1.0 lenses provide high resolution and brightness.

Sync on Green

When analog RGB signals are input through the RGB 2 connector, if a sync signal is input through the green input together with the green signal, this sync signal is used to control the picture.

If, however, a sync signal is input through the video input, this sync signal is used.

The following table indicates which sync signal has priority:

Signals input through the video input	Signals input through the green input	Sync signal with priority
Sync signal included	Sync signal included	The one input through the video input
Sync signal included	Sync signal not included	The one input through the green input
Sync signal not included	Sync signal included	The one input through the green input

Various installation possibilities

The projector is designed to be installed on desk, floor or ceiling and can be used with either a flat screen or curved screen.

Portable single unit

The power supply and control sections are incorporated in one compact, easy-to-transport unit.

Illuminated control panel

When the panel cover is open, the control panel where the user controls are located is illuminated for easy operation in dim or dark places.

Other features

- PAL, SECAM, NTSC or NTSC4.43* color system is selected automatically.
- Both digital and analog RGB connectors allow connection of microcomputers, video cameras or special adaptors for future videotex/teletext.
- Digital RGB selector allows 16-color display.

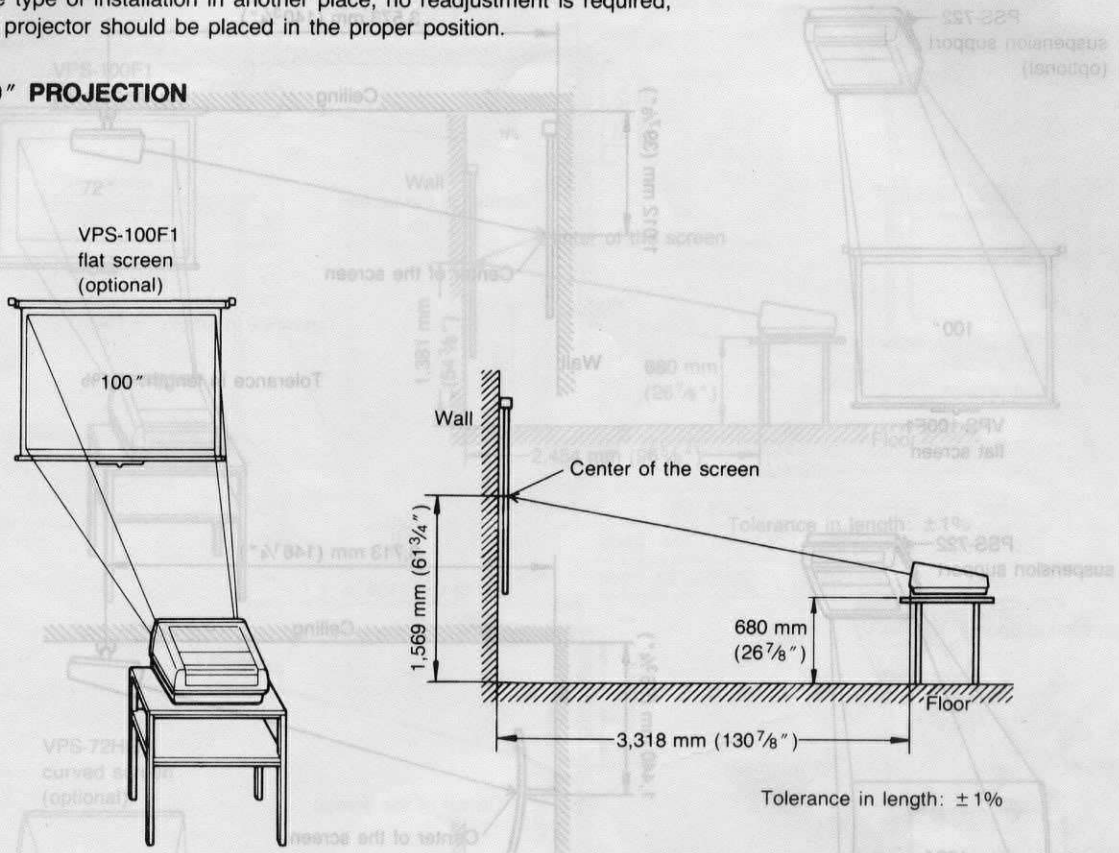
* A signal of NTSC4.43 system is obtained by playing back NTSC-recorded video tapes with a video tape recorder/player specially designed for use with this system.

1-7. INSTALLATION DIAGRAMS

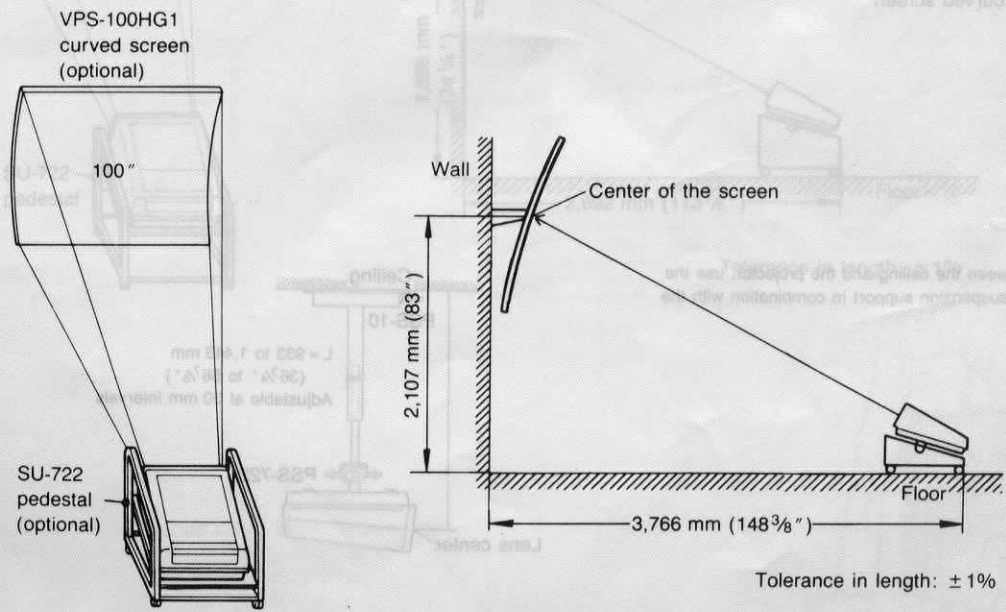
For the same type of installation in another place, no readjustment is required, although the projector should be placed in the proper position.

FOR 100" PROJECTION

Desk



Floor



Ceiling

On safety

- Check that the projector is properly installed and that the unit is level.
- If voltage regulation is required, use a voltage stabilizer or transformer.
- Show any liquid or gas leaks to a qualified technician.
- Do not touch the projector or its components.
- Unplug the projector from the power outlet before cleaning.
- To disconnect the projector from the power outlet, never pull the cord itself.

On installation

- Allow adequate clearance for air circulation around the projector.
- Do not place the projector on a surface that is subject to vibration or shock.
- Use a mounting bracket that is compatible with the projector.
- Cover the projector with a dust cover when not in use.
- It is desirable to install the projector in a room where the floor and walls are of reflecting material. If the floor and walls are of absorbing material, it would be desirable to change to a dark carpet and wall paper.

On illumination

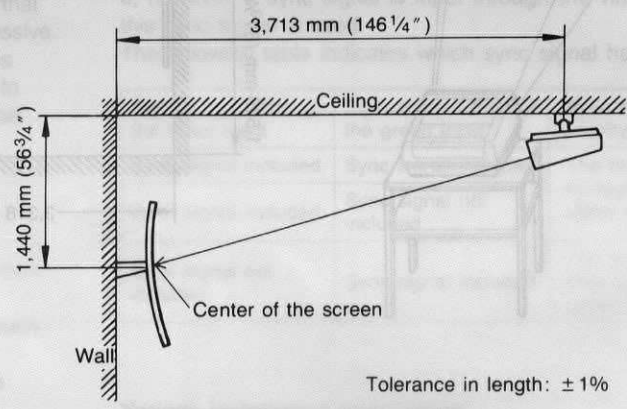
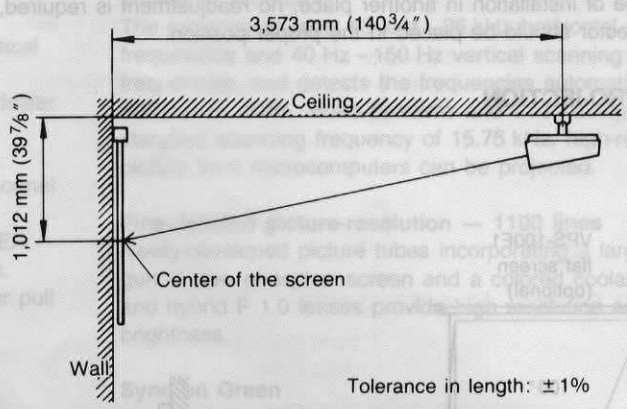
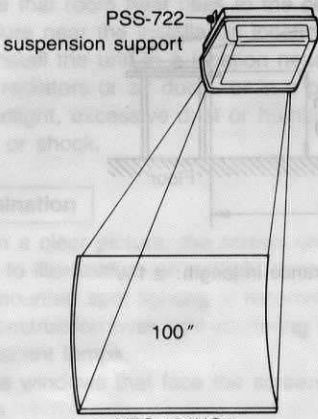
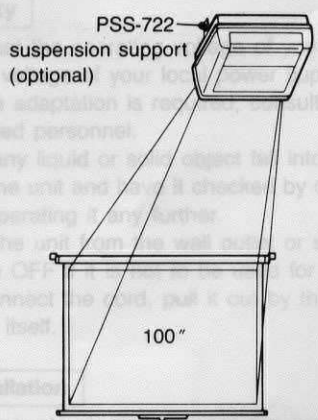
- To obtain a clear image, the projector should be focused on the screen.
- Calling attention to the screen. Use a remote control or a hand-held remote control.
- Cover the projector with a dust cover when not in use.
- It is desirable to install the projector in a room where the floor and walls are of reflecting material. If the floor and walls are of absorbing material, it would be desirable to change to a dark carpet and wall paper.

On cleaning

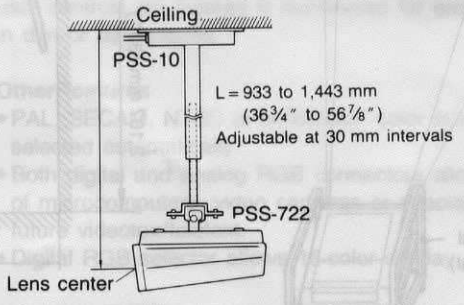
- To keep the cabinet looking brand-new, periodically clean it with a soft cloth. Stubborn marks may be removed with a cloth lightly dampened with a mild detergent solution. Never use strong solvents such as alcohol or benzene.
- Use a dry cloth to dry the projector. Do not use a damp cloth.

On exposing

- Save the original packaging. They will come in handy for maximum protection when the projector is packed at the factory.

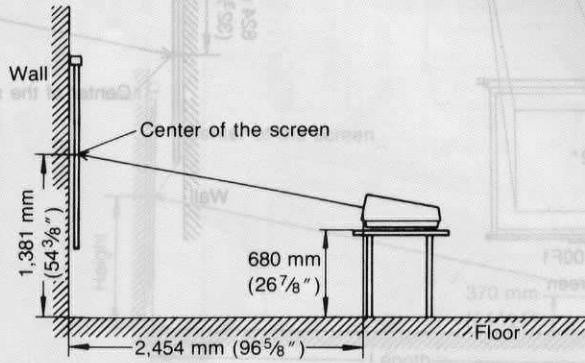
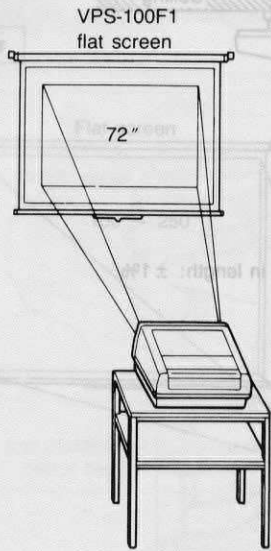


To adjust the distance between the ceiling and the projector, use the optional PSS-10 projector suspension support in combination with the PSS-722.



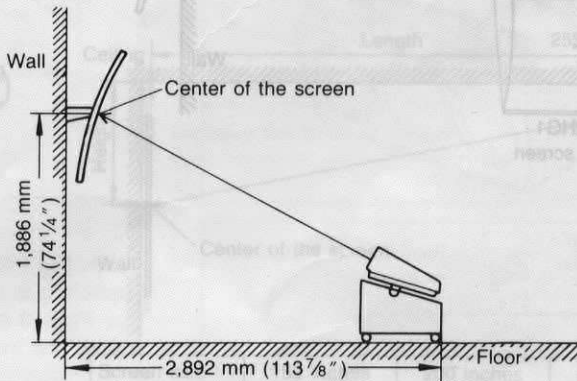
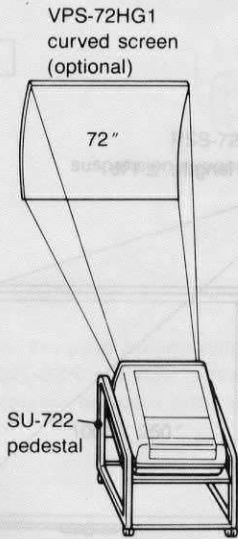
FOR 72" PROJECTION

Desk



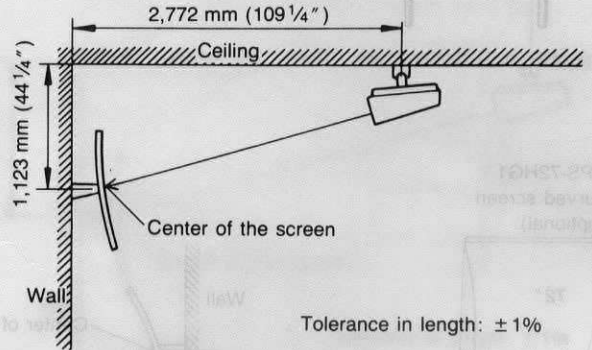
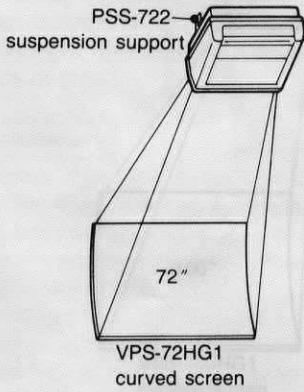
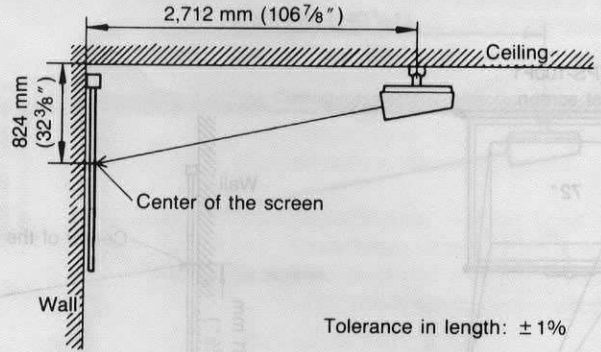
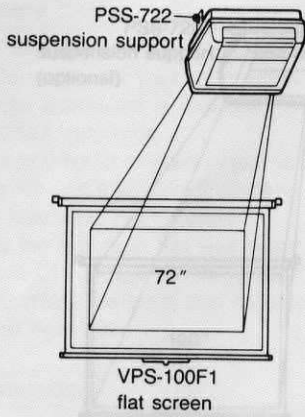
Tolerance in length: ±1%

Floor



Tolerance in length: ±1%

Ceiling



To transport the projector, use the VLC-1040 carrying case (optional).

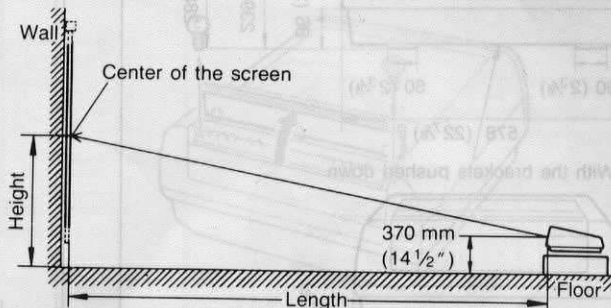
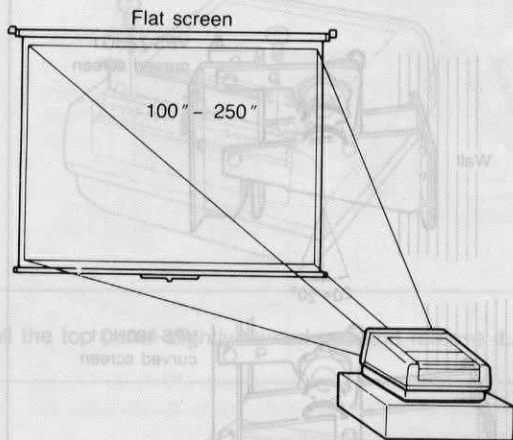


FOR 100" - 250" PROJECTION

Decide the length and height according to the size of the screen to be used.

For a screen not described in the tables, set the length approximately 1.6 times screen width.

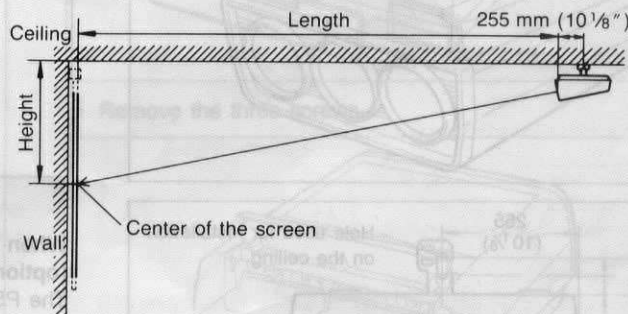
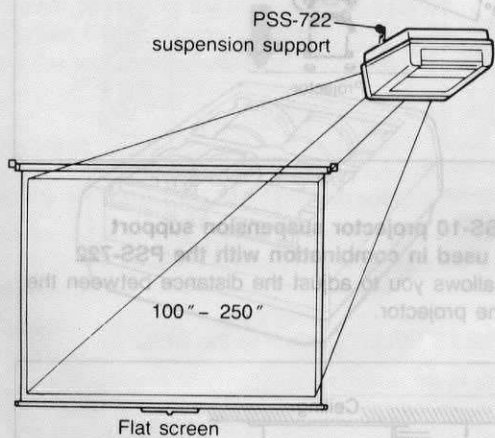
Floor



Screen size	150 inches	200 inches	250 inches
Length mm	4850 (191")	6410 (252 1/2")	7960 (313 1/2")
Height mm	1410 (55 1/2")	1740 (68 1/2")	2080 (82")

Tolerance in length: $\pm 1\%$

Ceiling



Screen size	150 inches	200 inches	250 inches
Length mm	4850 (191")	6410 (252 1/2")	7960 (313 1/2")
Height mm	1350 (53 1/4")	1680 (66 1/4")	2020 (79 1/2")

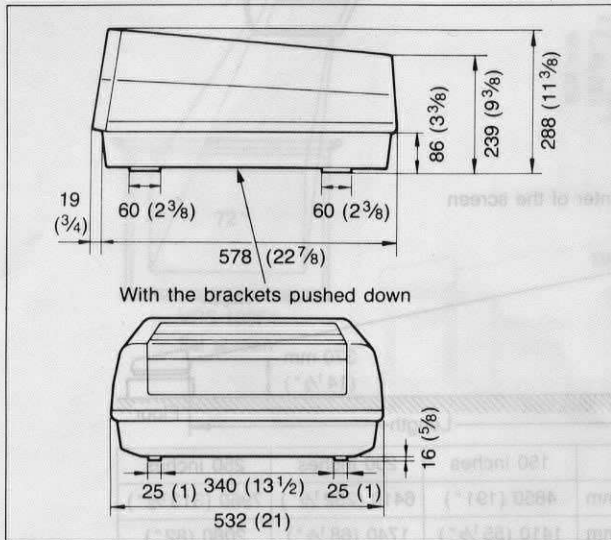
Tolerance in length: $\pm 1\%$

To use 150" to 250" screens, the projector should be converted for 200" projection. For conversion, consult the qualified Sony personnel.

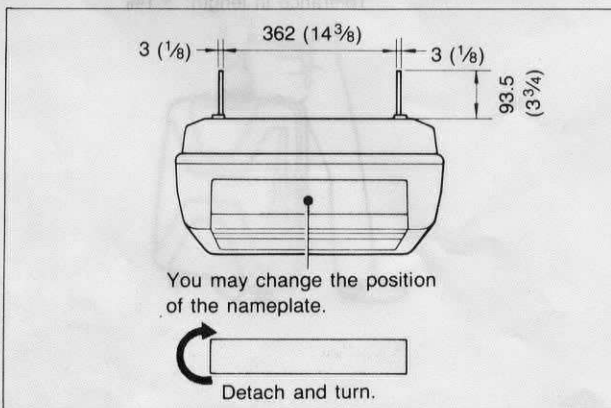
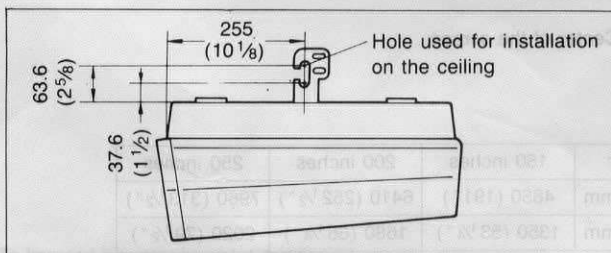
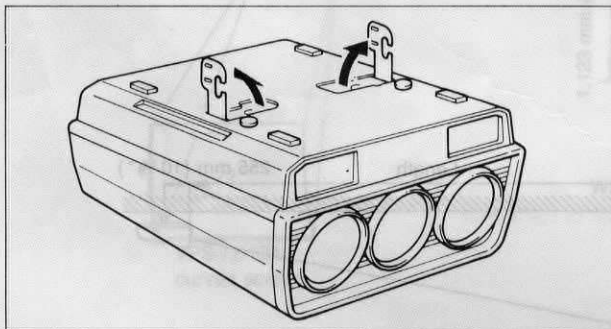
1-8. NOTES ON INSTALLATION

PROJECTOR'S DIMENSIONS

Unit: mm (inches)

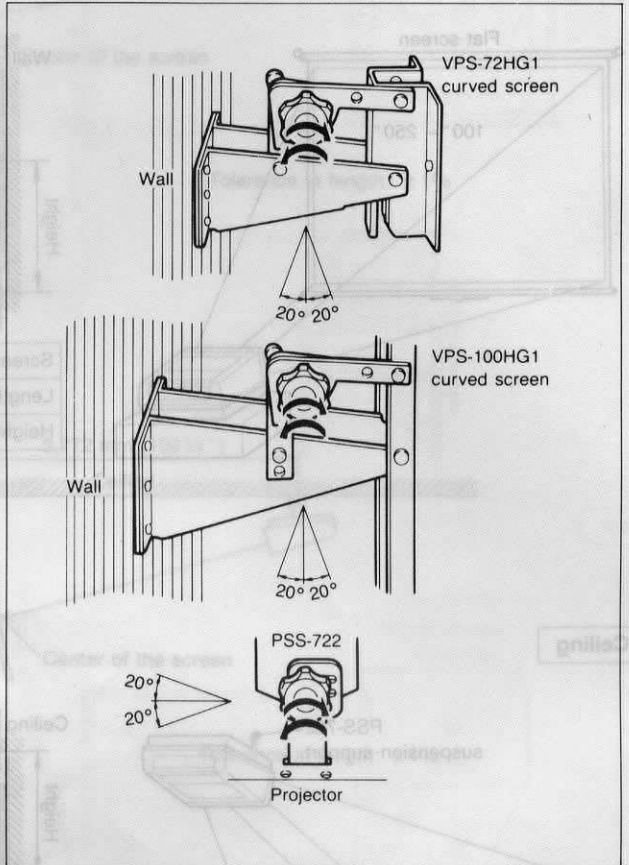


Raise the brackets when installing the projector on the ceiling or floor.

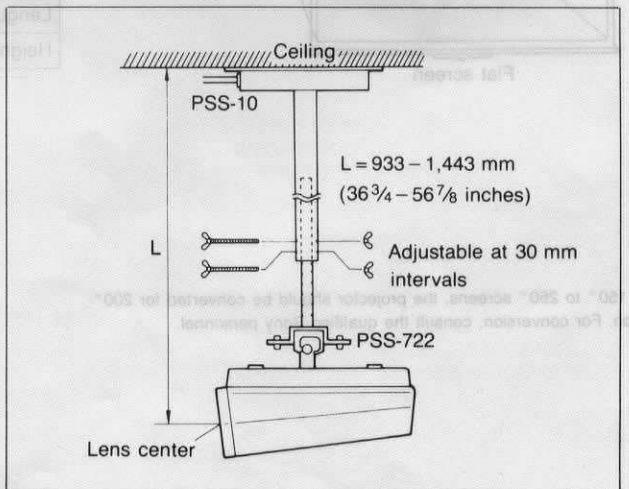


TO ADJUST THE ANGLE OF THE SCREEN/PROJECTOR

Loosen the knobs, adjust the angle, then tighten the knobs down firmly.



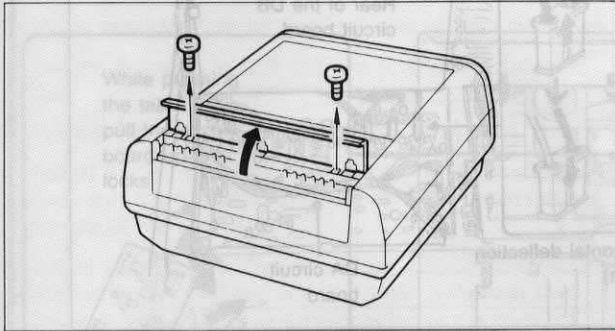
When the PSS-10 projector suspension support (optional) is used in combination with the PSS-722 The PSS-10 allows you to adjust the distance between the ceiling and the projector.



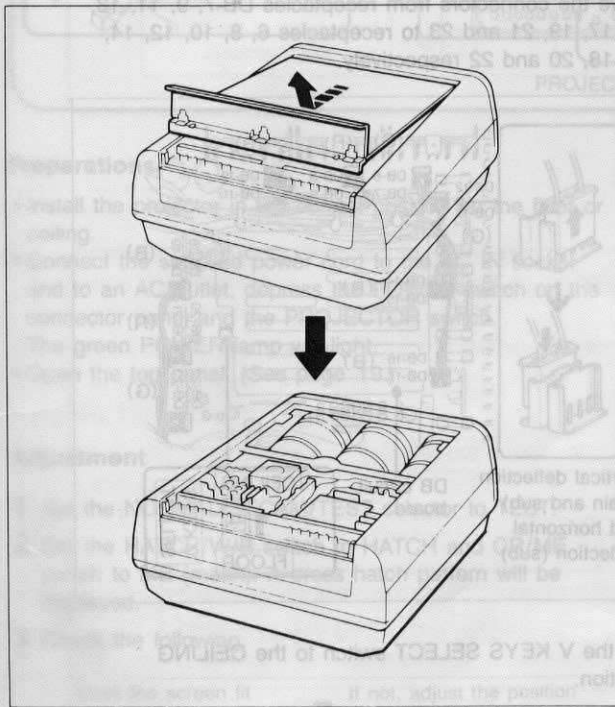
TO OPEN THE TOP PANEL

You will need a medium size Phillips head screwdriver.

- 1 Open the control panel cover.
- 2 Remove the two screws.

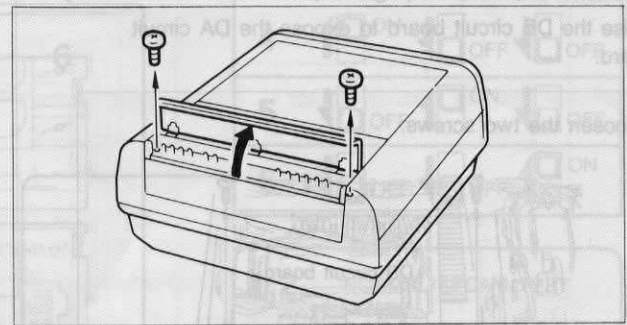


- 3 Pull the top panel slightly toward you and remove it.

**TO OPEN THE CABINET**

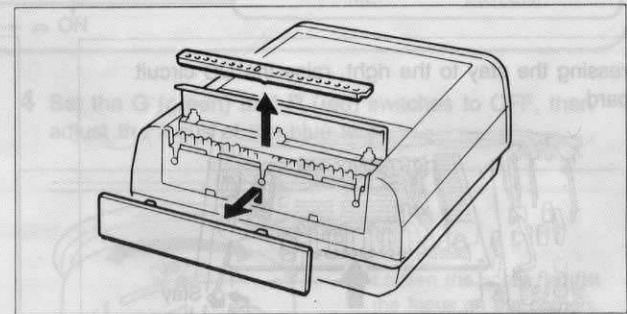
Open the cabinet when changing the polarity and when converting the unit for 72" or 200" projection.

- 1 Open the control panel cover.
- 2 Remove the two screws on the control panel.

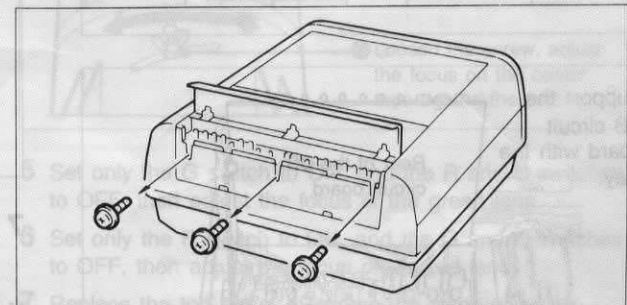


- 3 Slide the nameplate upward and pull it toward you to remove.

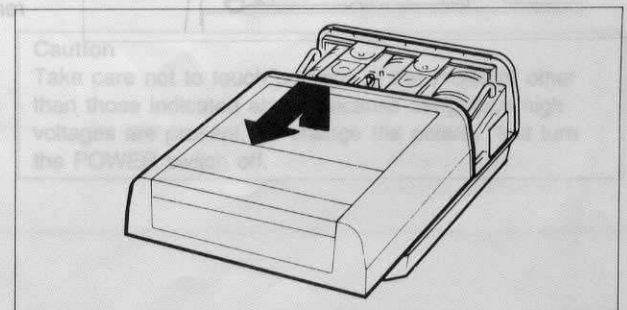
- 4 Remove the control panel.



- 5 Remove the three screws.



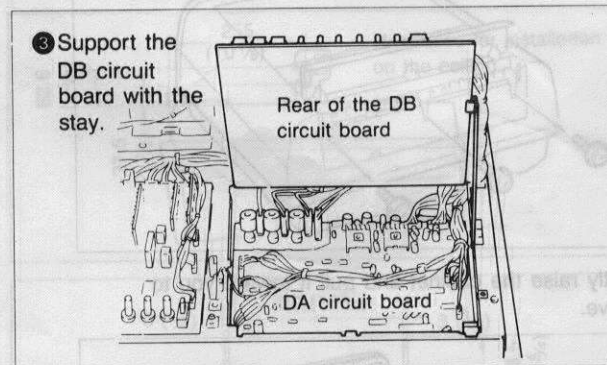
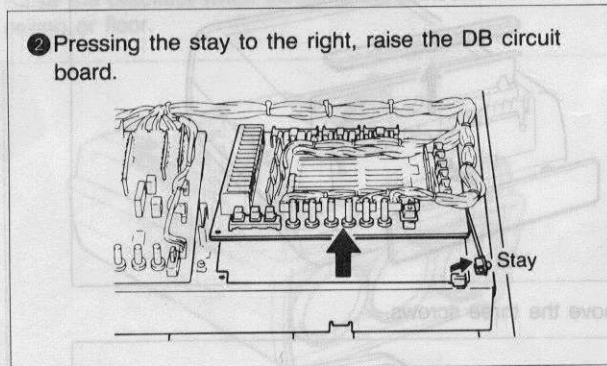
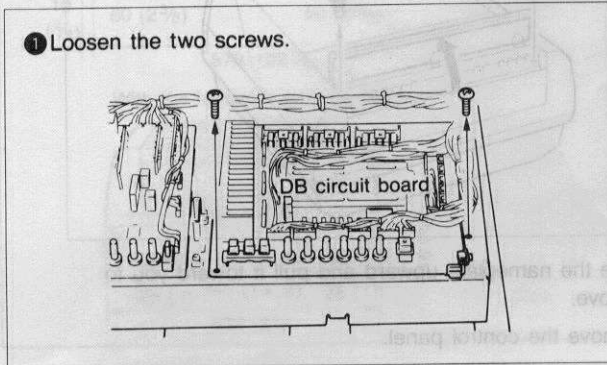
- 6 Slightly raise the cabinet and pull it toward you to remove.



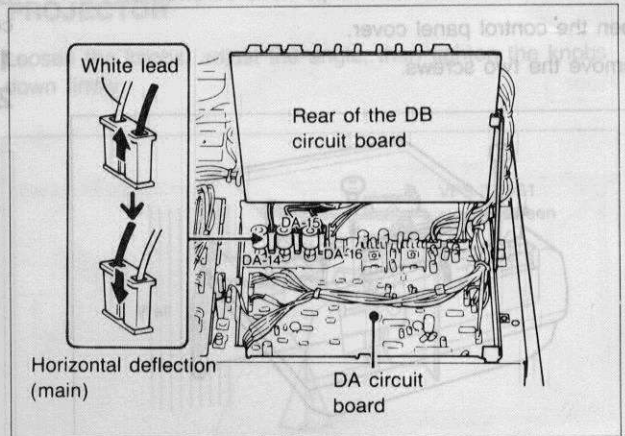
1-9. POLARITY CHANGE

The projector is preadjusted at the factory for use on desk or floor with the bracket side down. When the projector is installed on the ceiling with the bracket side up, the polarity should be changed.

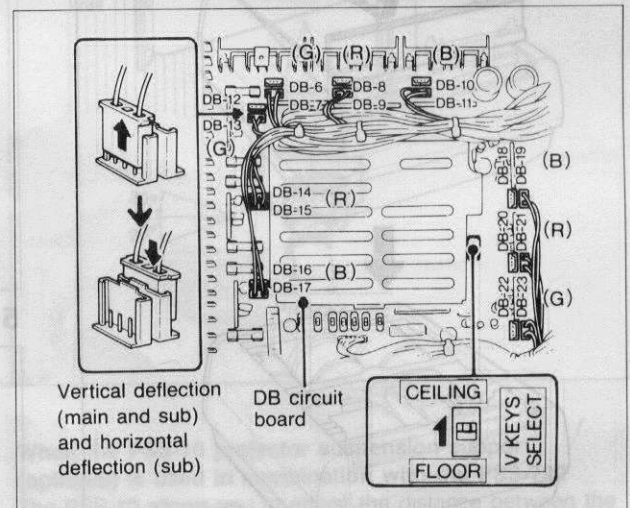
- 1 Make sure that power is not connected.
- 2 Open the cabinet. (See page 19.)
- 3 Raise the DB circuit board to expose the DA circuit board.



- 4 Reverse the polarity of connectors DA-14, 15 and 16.



- 5 Replace the DB circuit board.
- 6 Move the connectors from receptacles DB-7, 9, 11, 13, 15, 17, 19, 21 and 23 to receptacles 6, 8, 10, 12, 14, 16, 18, 20 and 22 respectively.

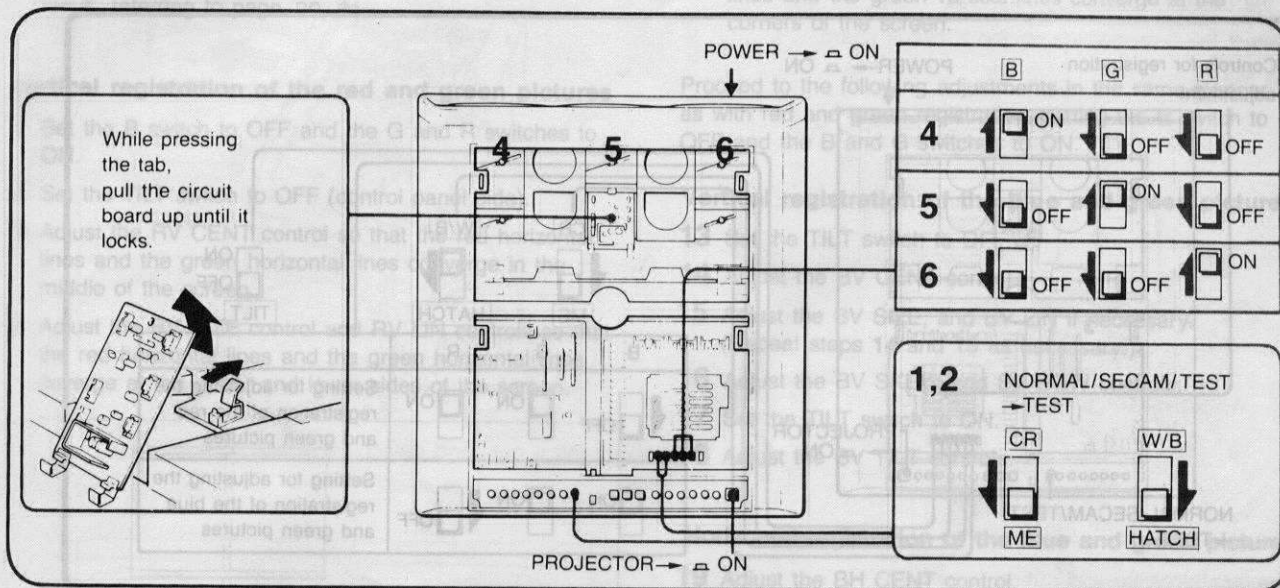


- 7 Set the V KEYS SELECT switch to the CEILING position.

Note
Check that the connectors are inserted firmly, then proceed to lens focus adjustment with the projector's cabinet removed.

1-10. LENS FOCUS ADJUSTMENT

The lens focus is preadjusted at the factory for 100" flat screen. For other type screens, the lens focus should be adjusted.

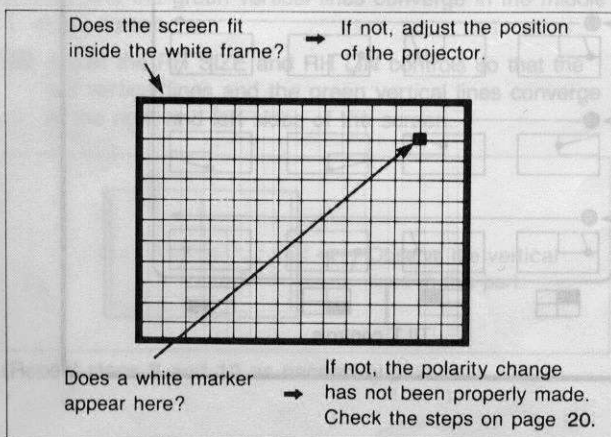


Preparations

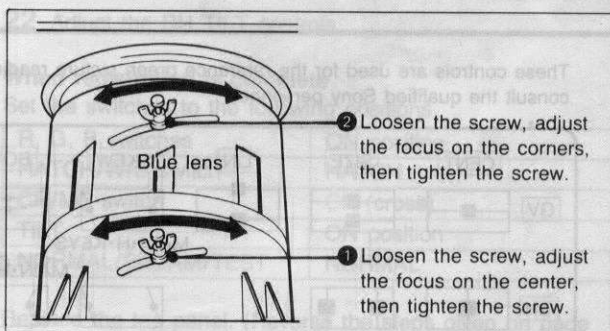
- Install the projector in the correct position on the floor or ceiling.
- Connect the supplied power cord to the AC IN socket and to an AC outlet, depress the POWER switch on the connector panel and the PROJECTOR switch. The green POWER lamp will light.
- Open the top panel. (See page 19.)

Adjustment

- 1 Set the NORMAL/SECAM/TEST selector to TEST.
- 2 Set the HATCH/W/B switch to HATCH and CR/ME switch to ME (mesh). A cross hatch pattern will be displayed.
- 3 Check the following.



- 4 Set the G (green) and R (red) switches to OFF, then adjust the focus of the blue lens.



- 5 Set only the G switch to ON, and the R and B switches to OFF, then adjust the focus of the green lens.
- 6 Set only the R switch to ON, and the G and B switches to OFF, then adjust the focus of the red lens.
- 7 Replace the top panel. (Reverse the steps given on page 19.)

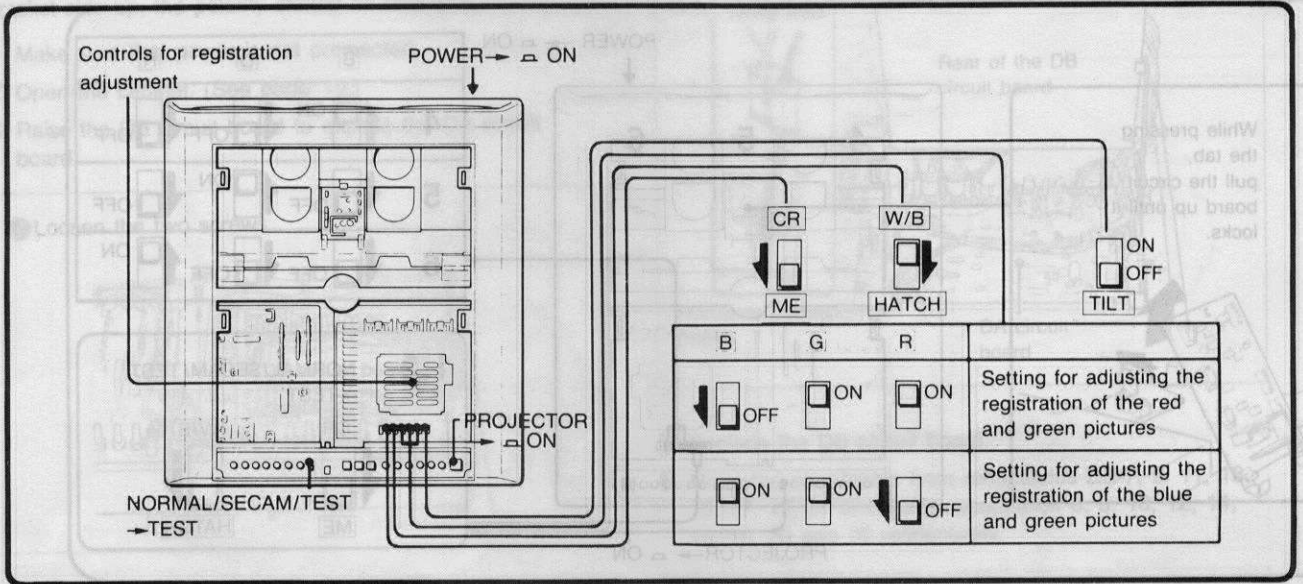
Proceed to registration adjustment.

Caution

Take care not to touch portions of the projector other than those indicated above because dangerous high voltages are present. To change the polarity, first turn the POWER switch off.

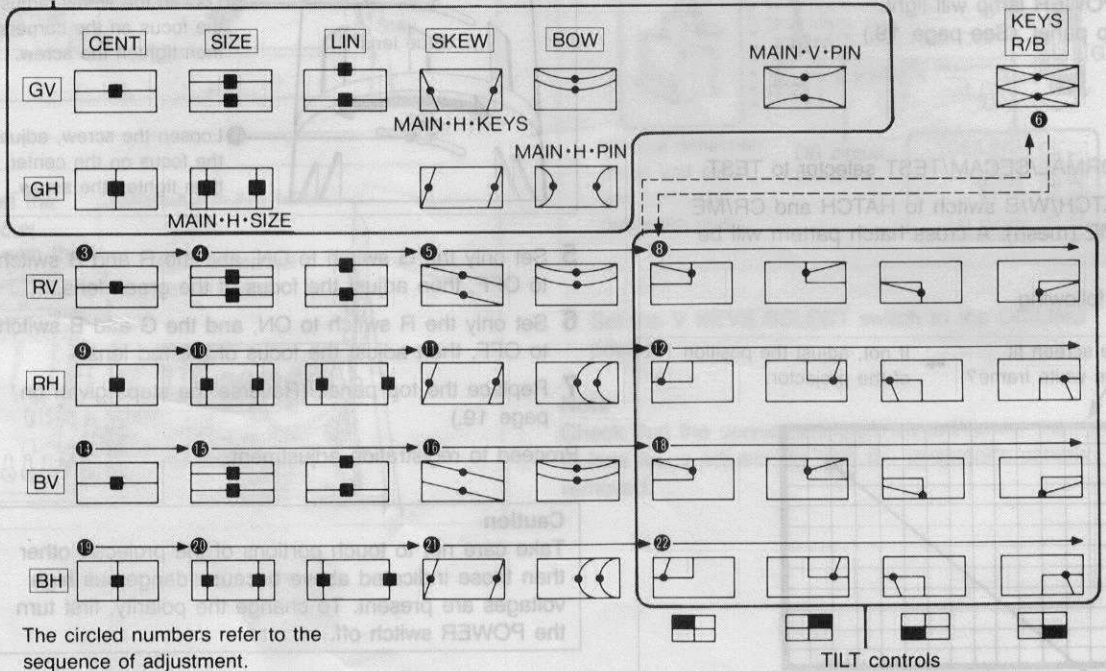
1-11. REGISTRATION ADJUSTMENT

Use a small screwdriver to adjust the controls through the holes.



Controls for registration adjustment

These controls are used for the reference green picture readjustment. If readjustment is necessary, consult the qualified Sony personnel.

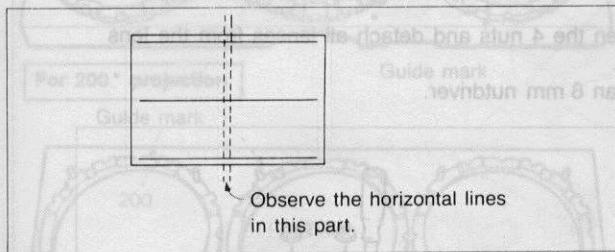


Preparations

- 1 Keep the G switch at ON and set the B and R switches to OFF. A green cross hatch pattern will be displayed.
- 2 Check the position of the projector, polarity and lens focus, referring to page 20, 21.

Vertical registration of the red and green pictures

- 1 Set the B switch to OFF and the G and R switches to ON.
- 2 Set the TILT switch to OFF (control panel side).
- 3 Adjust the RV CENT control so that the red horizontal lines and the green horizontal lines converge in the middle of the screen.
- 4 Adjust the RV SIZE control and RV LIN controls so that the red horizontal lines and the green horizontal lines cover at the upper and lower sides of the screen.

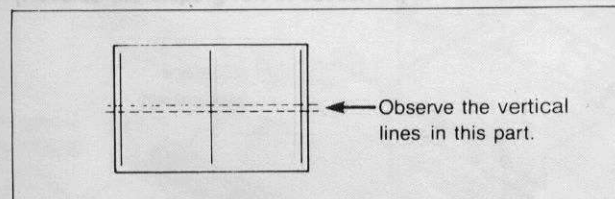


(Repeat steps 3 and 4 as necessary.)

- 5 Adjust the RV SKEW and RV BOW controls if the red horizontal lines and the green horizontal lines do not converge in the middle of the screen.
- 6 Adjust the KEYS R/B control so that the red horizontal lines at the top and bottom of the screen are parallel.
- 7 Set the TILT switch to ON (lens side).
- 8 Adjust the RV TILT controls so that the red horizontal lines and the green horizontal lines converge in the corners of the screen.

Horizontal registration of the red and green pictures

- 9 Adjust the RH CENT control so that the red vertical lines and the green vertical lines converge in the middle of the screen.
- 10 Adjust the RH SIZE and RH LIN controls so that the red vertical lines and the green vertical lines converge at the right and left sides of the screen.



(Repeat steps 9 and 10 as necessary.)

- 11 Adjust the RH SKEW and RH BOW controls so that the red vertical lines and the green vertical lines converge in the middle of the screen.
- 12 Adjust the RH TILT controls so that the red vertical lines and the green vertical lines converge at the corners of the screen.

Proceed to the following adjustments in the same manner as with red and green registration, setting the R switch to OFF and the B and G switches to ON.

Vertical registration of the blue and green pictures

- 13 Set the TILT switch to OFF.
- 14 Adjust the BV CENT control.
- 15 Adjust the BV SIZE, and BV LIN if necessary. (Repeat steps 14 and 15 as necessary.)
- 16 Adjust the BV SKEW and BV BOW controls.
- 17 Set the TILT switch to ON.
- 18 Adjust the BV TILT controls.

Horizontal registration of the blue and green pictures

- 19 Adjust the BH CENT control.
- 20 Adjust the BH SIZE, and BH LIN. (Repeat steps 19 and 20 as necessary.)
- 21 Adjust the BH SKEW and BH BOW controls.
- 22 Adjust the BH TILT controls.

When registration is complete

Set the switches to the following positions

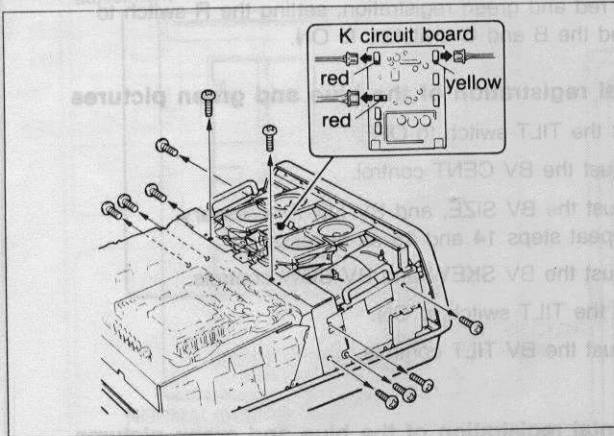
R, G, B switches	ON position
HATCH/W/B switch	HATCH
CR/ME switch	CR (cross)
TILT	ON position
NORMAL/SECAM/TEST	NORMAL

Replace the top panel. (Reverse the steps given on page 19.)

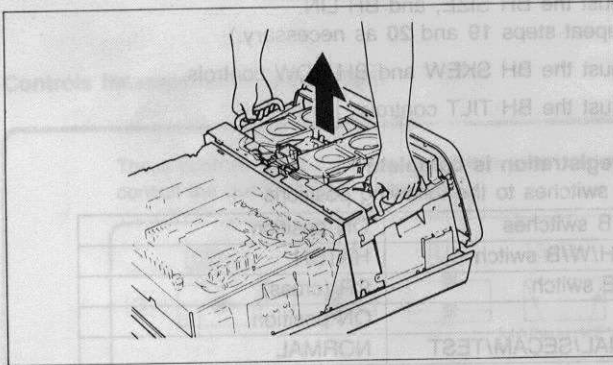
1-12. CONVERSION FOR 72" (67") or 200" (150-250") PROJECTION

1 Separate the lens block from the main body.

- ① Open the cabinet. (See page 19.)
- ② Disconnect the 3 connectors on the K circuit board.
- ③ Loosen the 10 screws.

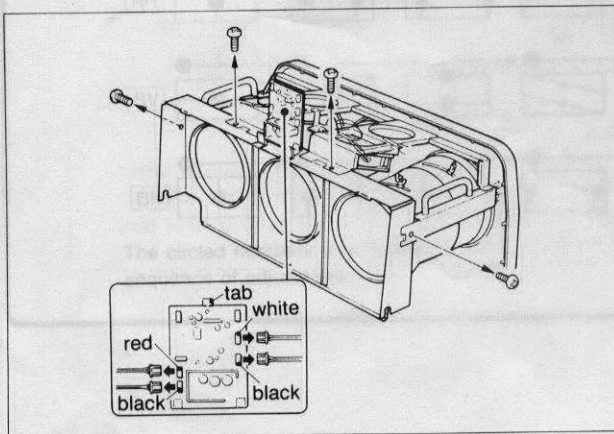


- ④ Pull the lens block up and out.

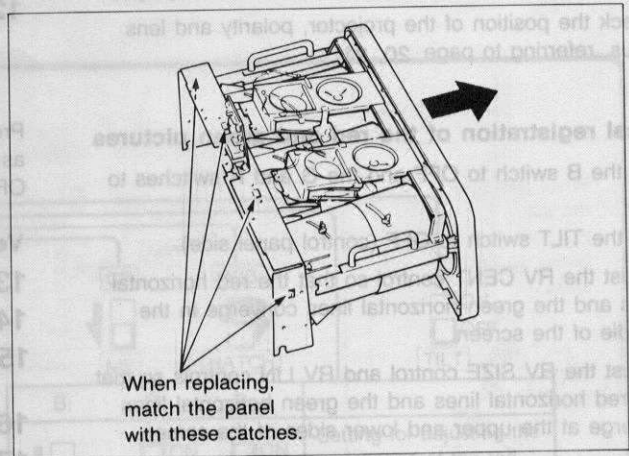


2 Disassemble the lens block.

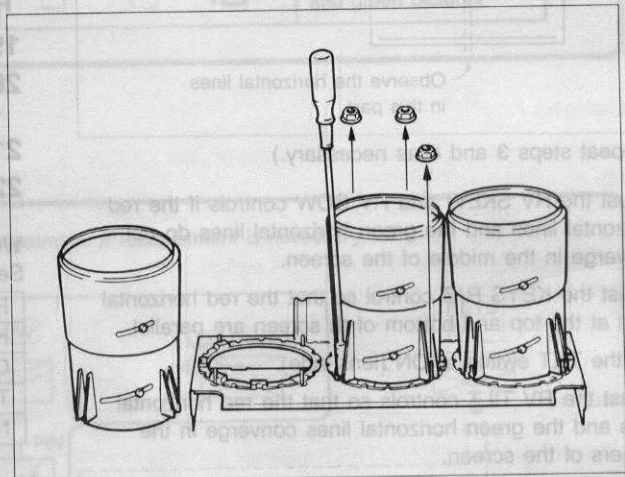
- ① Loosen the 4 screws.
- ② Disconnect the 4 connectors on the K circuit board.
- ③ Pressing the tab, raise the K circuit board.



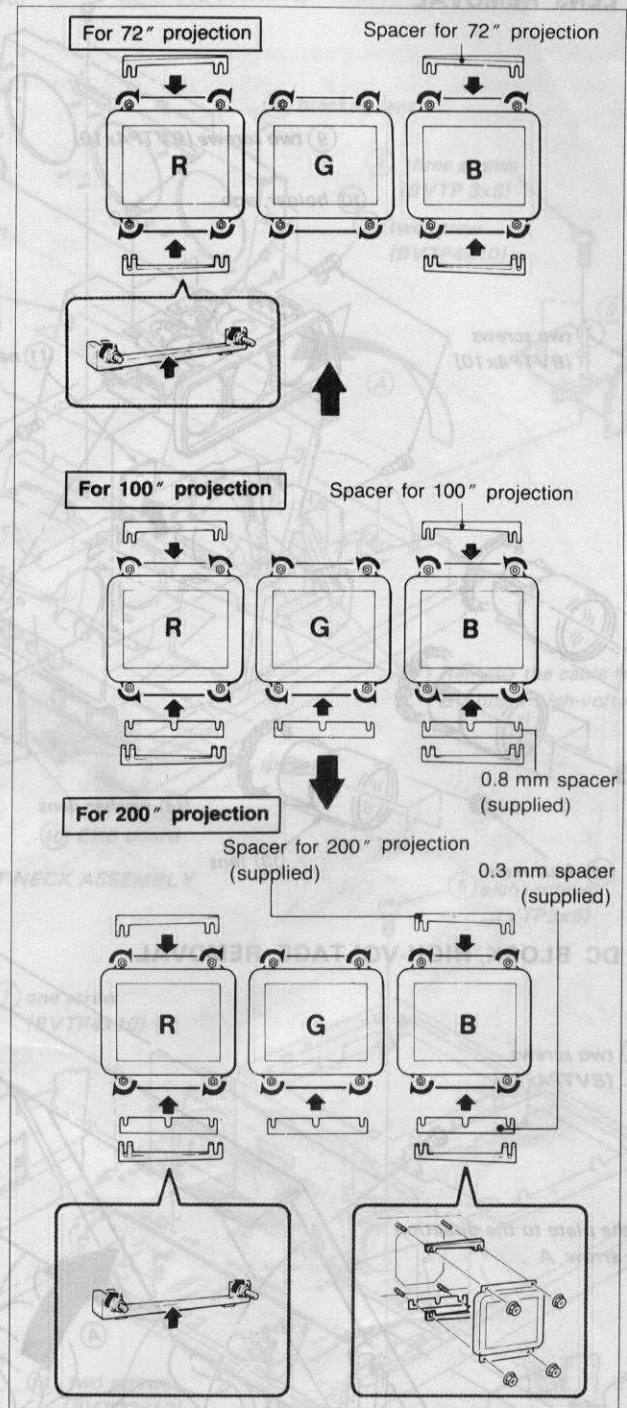
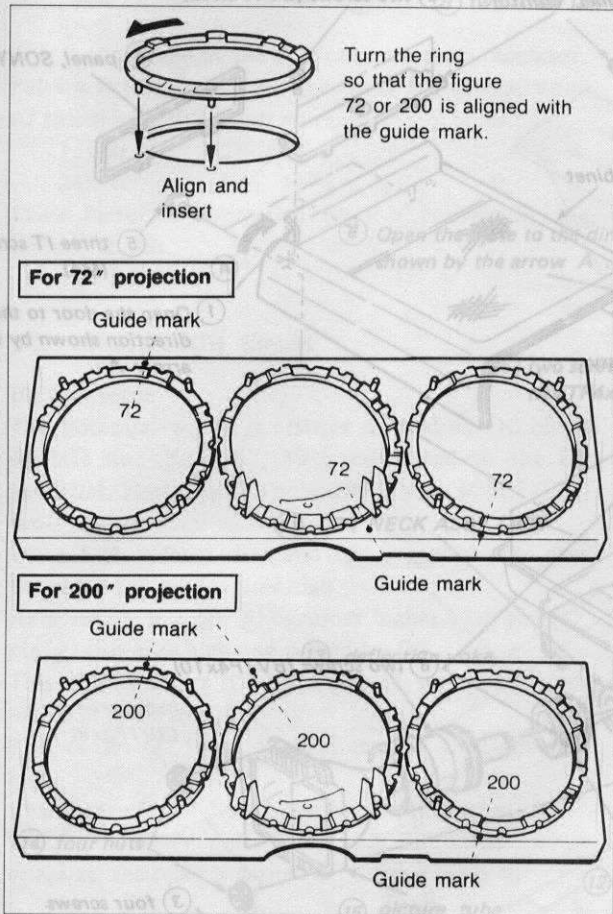
- ④ Remove the lens panel.



- ⑤ Loosen the 4 nuts and detach all lenses from the lens base. Use an 8 mm nutdriver.



3 Change the positions of the lens rings.



4 Adjust the mounting angles of the CRTs.

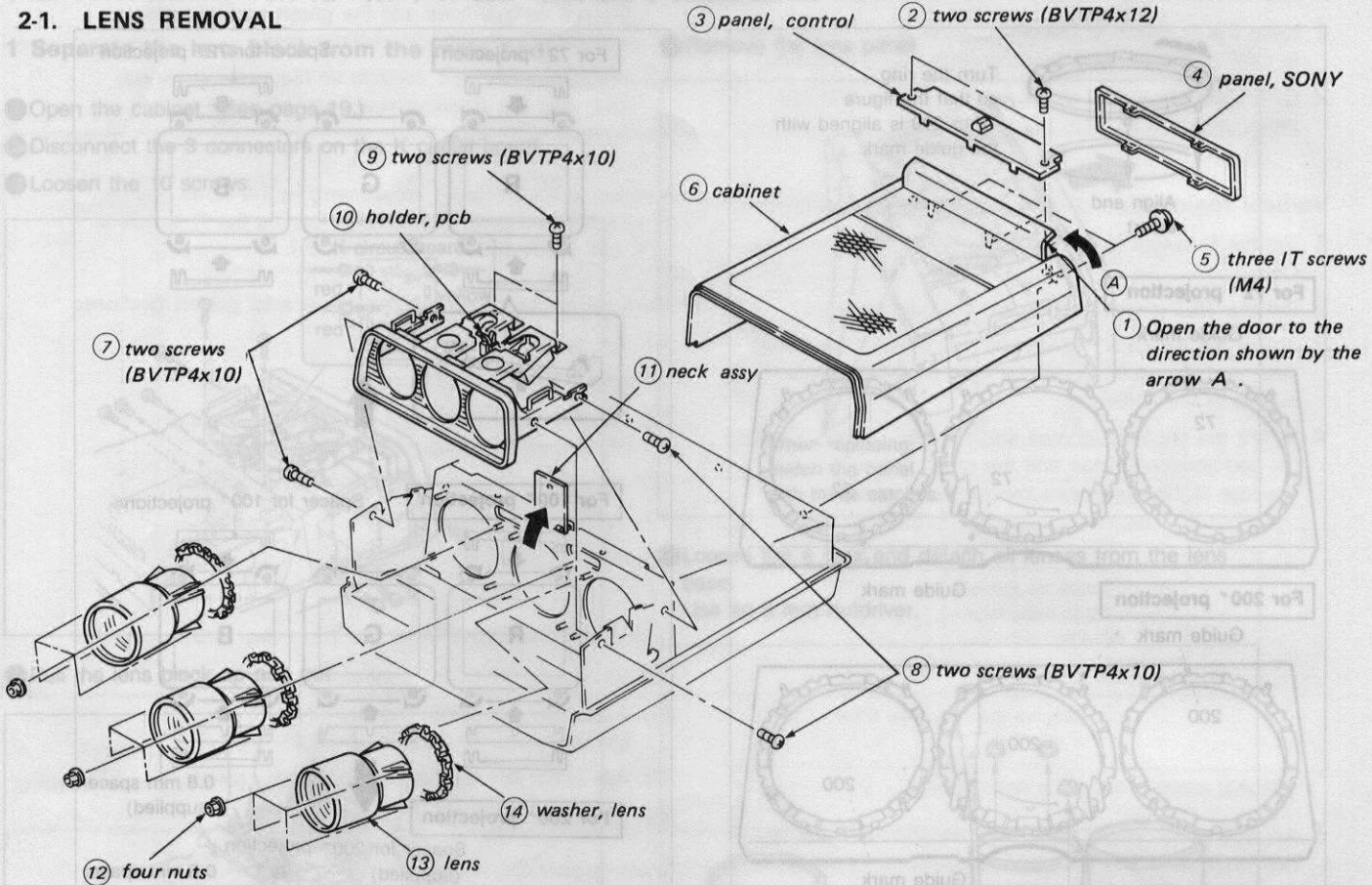
Use an 8 mm nutdriver.

- 1 Loosen the nuts and remove all the spacers from the top and bottom of each lens.
- 2 Insert the supplied spacers as illustrated. Insert the spacers with the thinner end toward the center CRT.
- 3 Tighten all the nuts completely for accurate angles of the lenses.

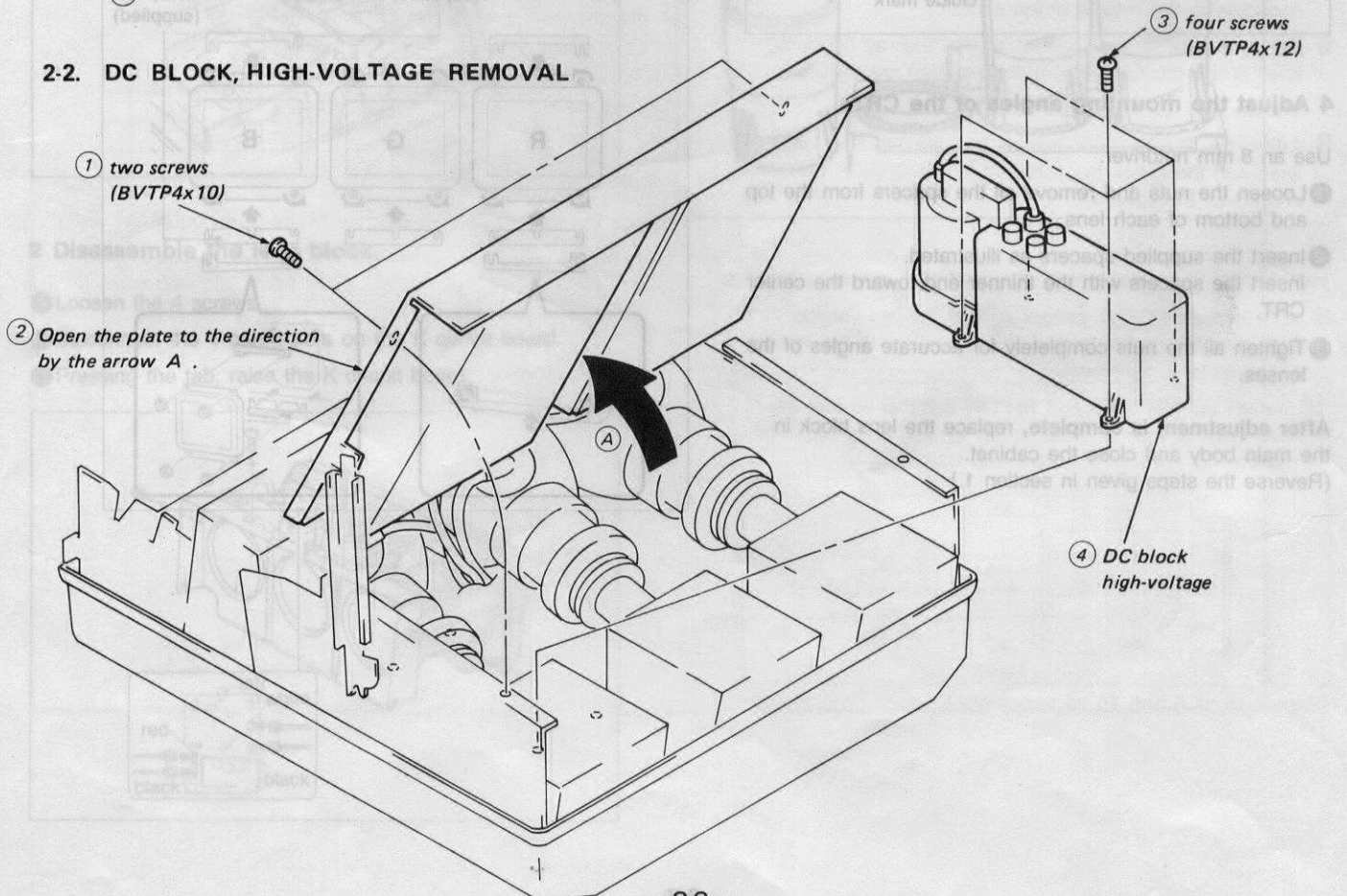
After adjustment is complete, replace the lens block in the main body and close the cabinet.
(Reverse the steps given in section 1.)

SECTION 2 DISASSEMBLY

2-1. LENS REMOVAL



2-2. DC BLOCK, HIGH-VOLTAGE REMOVAL



SECTION 3

2-3. PICTURE TUBE REMOVAL

3-1. H.V. REG

This is composed of the conventional series regulator.

Pulse width is 7μsec and wave peak is 840-950Vp-p.

At this time HV Reg out voltage is:

15kHz: 58-66V

26kHz: 104-117V

Drive factor is controlled by E-V conversion.

same as H. out.

3-2. PROTECTOR Circuit

HV Protector

The potential which is resistor divided by DC block 400MΩ and R31, R2, R3 is compared to the D8 potential. Normally D8 potential is high, so IC2 (2/2) pin ① is low.

When high voltage rises and D8 goes over D8 potential, pin ① goes high.

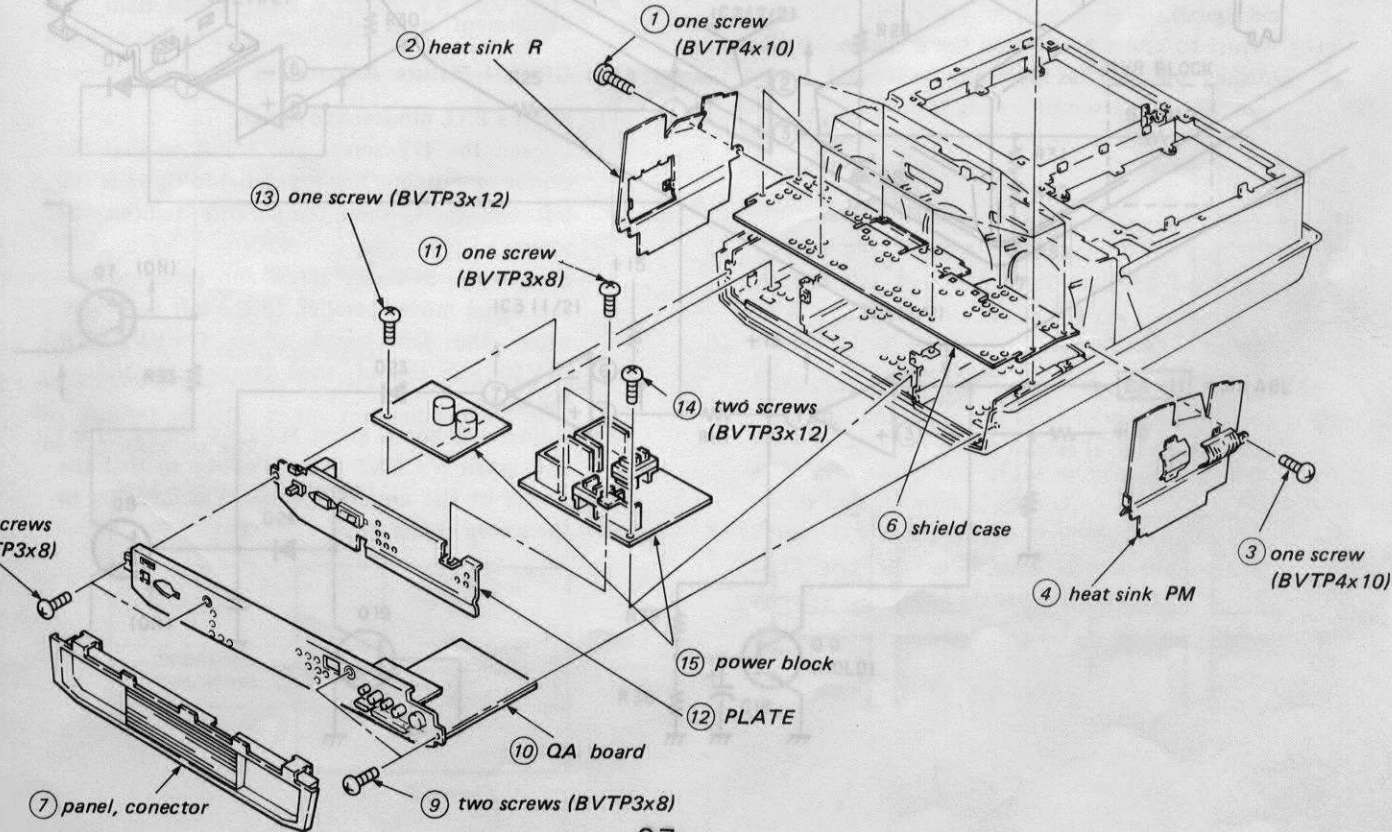
As a result, IC2 pin ② becomes higher than pin ① also goes high and IC2 pin ③ goes high.

This output enters IC3 (1/2) pin ④ pin ⑤ goes high and IC3 pin ⑥ goes high.

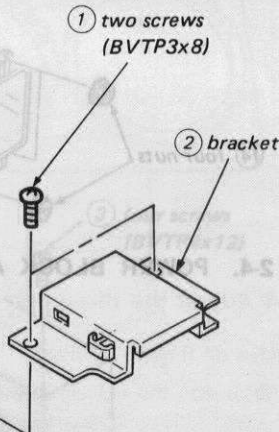
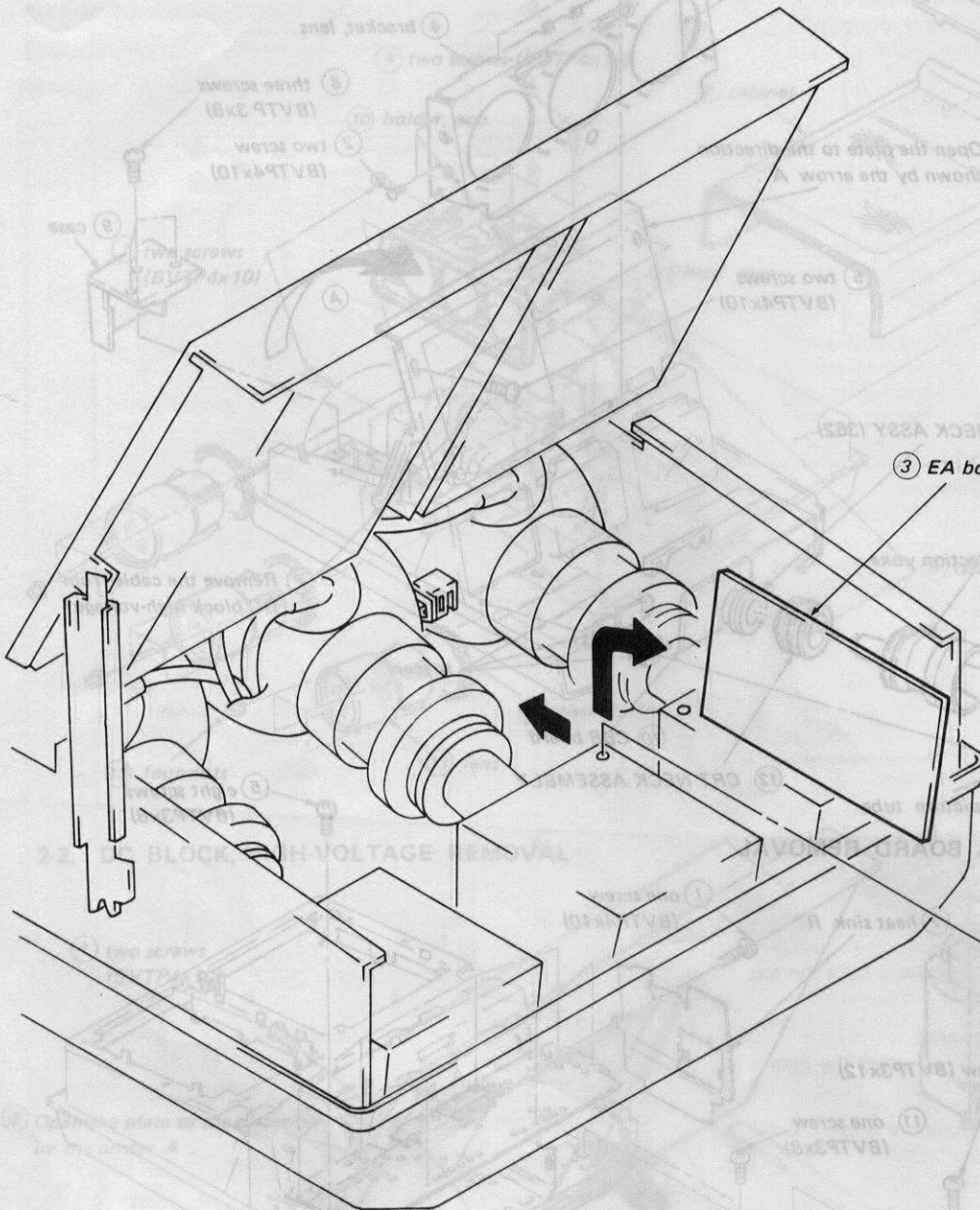
This turns off the drive to the picture tube.

When the picture tube is cut off, the picture tube is cut off.

2-4. POWER BLOCK AND QA BOARD REMOVAL



2.5. EA BOARD REMOVAL



SECTION 3

CIRCUIT DESCRIPTIONS

3-1. H.V REG

This is composed of the conventional series regulator. Pulse width is 7μsec and wave peak is 840–950Vp-p. At this time HV Reg out voltage is:

- 15kHz: 58–66V
- 26kHz: 104–117V

Drive factor is controlled by F-V conversion, the same as H. out.

3-2. PROTECTOR Circuit

HV Protector

The potential which is resistor divided by DC block 600MΩ and R31, 82, 83 is compared to the D8 potential. Normally D8 potential is high, so IC2 (2/2) pin ① is low.

When high voltage rises and the potential goes over D8 potential, pin ① goes high.

As a result, IC2 pin ⑤ becomes higher than pin ⑥, pin ⑦ also goes high and is held by D7.

This output enters IC3 (1/2) pin ⑤, pin ⑦ also goes high and turns on Q8.

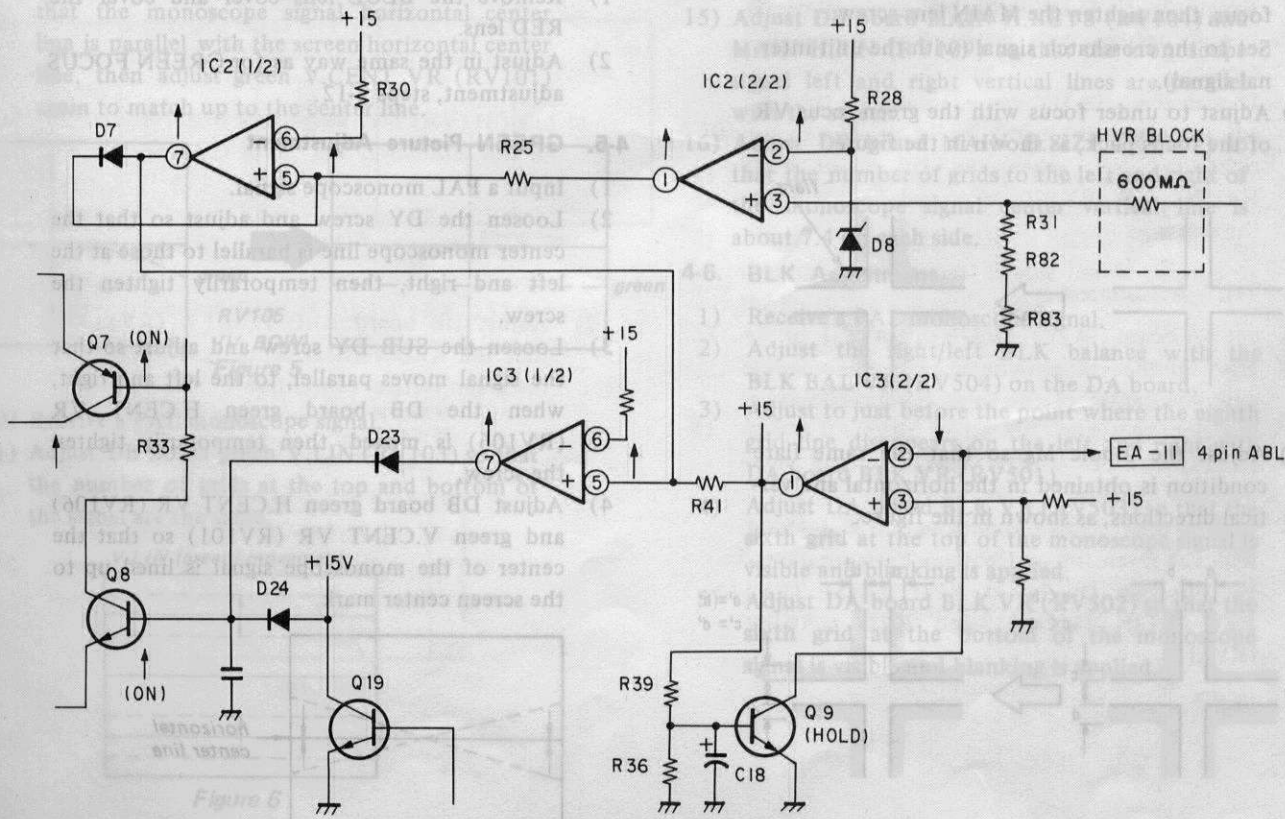
This causes Q7 to go on also, and the collector goes high.

This turns off the drive pulse for the converter.

When the CONV pulse disappears, DA board circuit operates, the relay is turned off and power is cut.

3-3. BEAM CURRENT PROTECTOR

When the beam flows, the potential at EA-11 connector ABL pin ④ drops. When ABL is passed (about 1500–1800μA), IC3 (2/2) pin ② potential drops below that of pin ③, and pin ① goes high. Q9 is a hold circuit. Therefore, the same as above, IC3 pin ⑦ goes high, turning Q7 on, and high voltage is stopped.



SECTION 4

SET-UP ADJUSTMENTS

4-1. BASIC ADJUSTMENTS

Basic Adjustments

<Registration>

- 1) Degauss the entire chassis.
- 2) Set the variable resistor on the DB board to mechanical center. Also, set the BA board H CENT and V CENT to mechanical center.
- 3) Adjust the knobs and switches on the set as follows:

BRIGHT: fully clockwise (maximum)

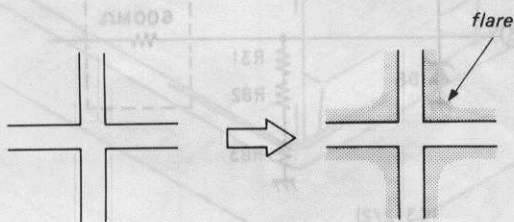
PICTURE: maximum

V. KEY SELECT (S2): Floor

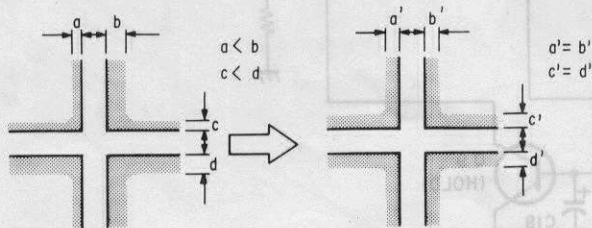
TILT SW (S1): OFF

4-2. GREEN FOCUS Adjustment

- 1) Receive a monoscope signal.
- 2) Cover the RED and BLUE lenses.
- 3) Set the GREEN lens SUB lens fully forward.
- 4) Rotate the MAIN lens and set for optimum focus on the screen.
- 5) Turn the GREEN focus VR on the focus pack and set for optimum conditions.
- 6) Rotate the MAIN lens for best focus in the center of the screen and temporarily tighten the lens screw.
- 7) Rotate the SUB lens for best focus in the center of the screen and tighten the lens screw.
- 8) Loosen the MAIN lens screw, fine adjust the focus, then tighten the MAIN lens screw.
- 9) Set to the crosshatch signal (with the unit internal signal).
- 10) Adjust to under focus with the green focus VR of the focus pack, as shown in the figure.



- 11) Adjust the 2-pole Mg so that the same flare condition is obtained in the horizontal and vertical directions, as shown in the figure.



- 12) Adjust to just focus with the green focus VR of the focus pack.

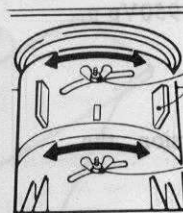


Figure 1-1

- 2) Loosen the screw and adjust the focus, then for the periphery tighten the screw again. (MAIN lens)
- 1) Loosen the screw and adjust the center focus, then tighten the screw again. (SUB lens)

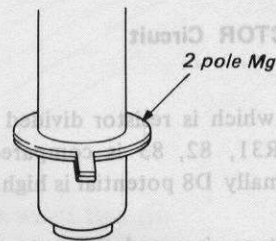


Figure 1-2

4-3. RED FOCUS Adjustment

- 1) Remove the RED lens cover and cover the GREEN and BLUE lenses.
- 2) Adjust in the same way as for GREEN FOCUS adjustment, steps 2-12.

4-4. BLUE FOCUS Adjustment

- 1) Remove the BLUE lens cover and cover the RED lens.
- 2) Adjust in the same way as for GREEN FOCUS adjustment, steps 2-12.

4-5. GREEN Picture Adjustment

- 1) Input a PAL monoscope signal.
- 2) Loosen the DY screw and adjust so that the center monoscope line is parallel to those at the left and right, then temporarily tighten the screw.
- 3) Loosen the SUB DY screw and adjust so that the signal moves parallel, to the left and right, when the DB board green H.CENT VR (RV106) is moved, then temporarily tighten the screw.
- 4) Adjust DB board green H.CENT VR (RV106) and green V.CENT VR (RV101) so that the center of the monoscope signal is lined up to the screen center mark.

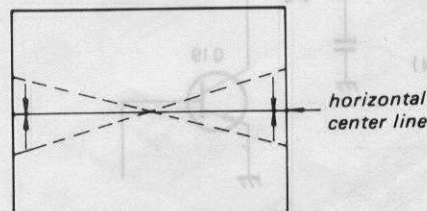


Figure 2

- 5) Tighten the screws after positioning the DY and SUB DY correctly.
- 6) Adjust DB board MAIN H.SIZE VR (RV107), green V.SIZE VR (RV102) and green V.LIN (RV103) and perform rough size adjustment.

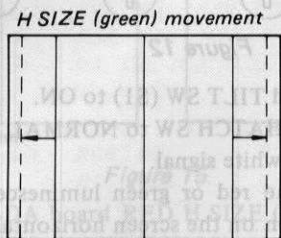


Figure 3

- 7) Adjust DB board MAIN V.PIN VR (RV2) so that the lines at the top and bottom of the signal are almost parallel with the screen.

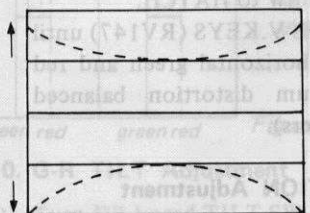
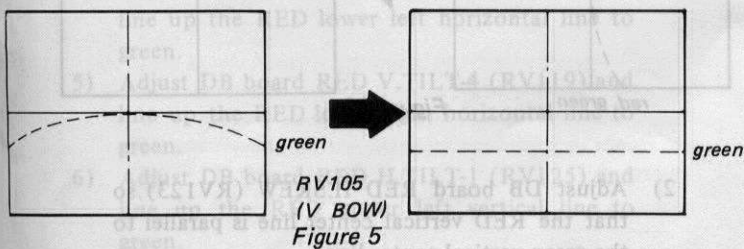


Figure 4

- 8) Receive an NTSC monoscope signal.
- 9) Adjust DB board green V.BOW (RV105) so that the monoscope signal horizontal center line is parallel with the screen horizontal center line, then adjust green V.CENT VR (RV101) again to match up to the center line.



RV105 (V BOW)

Figure 5

- 10) Receive a PAL monoscope signal.
- 11) Adjust DB board green V.LIN (RV103) so that the number of grids at the top and bottom of the signal are the same.

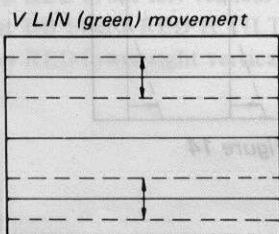


Figure 6

- 12) Adjust DB board green V.SIZE (RV102) so that there are about 11.0 grids at the top and bottom of the monoscope signal.

V SIZE (green) movement

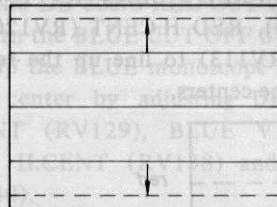


Figure 7

- 13) Adjust DB board MAIN V.PIN (RV2) so that the top and bottom monoscope signal lines are parallel with the screen frame.
- 14) Line up the monoscope signal center vertical line to the screen center vertical line by adjusting DB board green H.SKEW (RV108) and green H.CENT (RV106).

vertical center line



Figure 8

H SKEW (green) movement

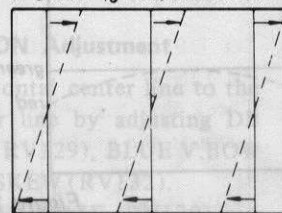


Figure 9

- 15) Adjust DB board MAIN H.KEYS (RV104) and MAIN H.PIN (RV109) so that the monoscope signal left and right vertical lines are parallel with the screen.
- 16) Adjust DB board MAIN H.SIZE (RV107) so that the number of grids to the left and right of the monoscope signal center vertical line is about 7.4 on each side.

4-6. BLK Adjustment

- 1) Receive a PAL monoscope signal.
- 2) Adjust the right/left BLK balance with the BLK BAL VR (RV504) on the DA board.
- 3) Adjust to just before the point where the eighth grid line disappears on the left and right with DA board BLK VR (RV501).
- 4) Adjust DA board BLK VR (RV503) so that the sixth grid at the top of the monoscope signal is visible and blanking is applied.
- 5) Adjust DA board BLK VR (RV502) so that the sixth grid at the bottom of the monoscope signal is visible and blanking is applied.

4-7. RED DY Adjustment

- 1) Turn DB board blue CUT OFF SW off and project green and red.
- 2) Adjust DB board RED V.CENT (RV110), RED V.LIN (RV113), RED H.CENT (RV120) and RED H.LIN (RV113) to line up the red and green monoscope centers.

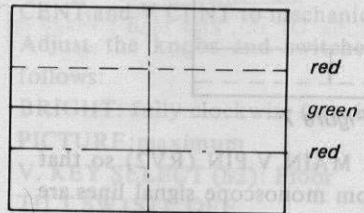


Figure 10

- 3) Loosen the RED DY screw.
- 4) Set the BA board HATCH SW to HATCH.
- 5) Adjust DB board RED V.BOW (RV115) so that the horizontal center line is straight.

V BOW (red) movement

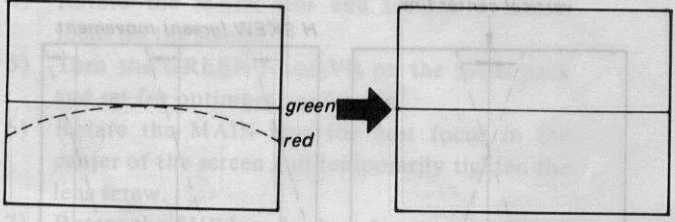


Figure 11

- 6) Rotate the RED DY until the horizontal center line is parallel with green, then tighten the screw.
- 7) Loosen the SUB DY screw, rotate the DY, and adjust so that the hatch moves parallel to the right and left, when the DB board RED H.CENT VR (RV120) is moved, then tighten the screw.

4-8. TILT Adjustment

- 1) Set BA board HATCH switch to HATCH.
- 2) Line up the red horizontal center line center with the center of the green horizontal center line by adjusting DB board RED V.CENT (RV110), RED V.BOW (RV115) and RED V.SKEW (RV114).
- 3) Line up the red top and bottom horizontal lines with the green top and bottom horizontal lines by adjusting DB board RED V.SIZE (RV112), RED V.LIN (RV113) and RED V.SKEW (RV114).

- 4) Set the RED V.TILT VR's 1-4 as shown below.

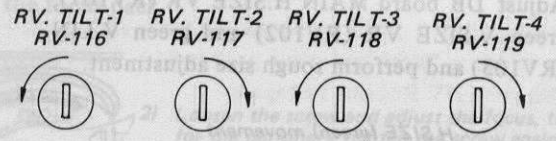


Figure 12

- 5) Turn DB board TILT SW (S1) to ON.
- 6) Set BA board HATCH SW to NORMAL.
- 7) Receive an all-white signal.
- 8) Check that the red or green luminescent line can not be seen on the screen horizontal center line.
If it is visible, adjust DB board KEYS CENT VR (R1) until it disappears.
- 9) Turn the TILT SW to OFF.
- 10) Set the RED V.TILT VR's 1-4 to mechanical center.
- 11) Set BA board HATCH SW to HATCH.
- 12) Adjust RED and BLUE V.KEYS (RV147) until the top and bottom horizontal green and red lines match (minimum distortion balanced evenly at all four corners).

4-9. G-R H. REGISTRATION Adjustment

- 1) Adjust DB board RED H.BOW (RV124) so that the RED vertical center line is straight.

H BOW (red) movement

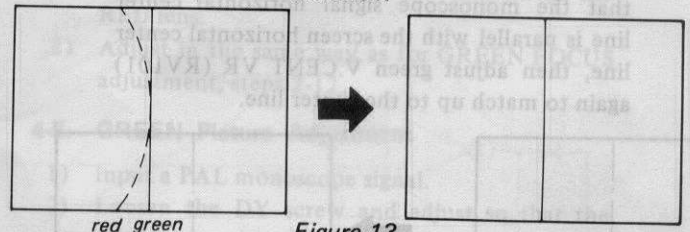


Figure 13

- 2) Adjust DB board RED H.SKEW (RV123) so that the RED vertical center line is parallel to the green vertical center line.

H SKEW (red) movement
H. SKEW

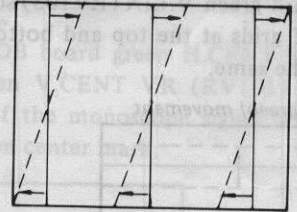


Figure 14

- Adjust DB board RED H.CENT (RV120) so that the red and green vertical center lines match up.

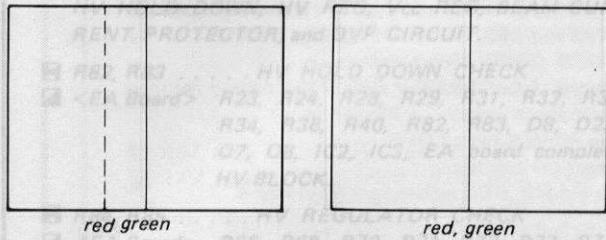
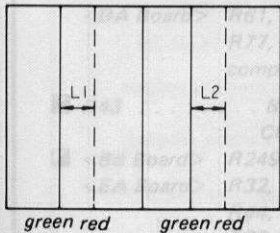


Figure 15

- Adjust DA board RED H.SIZE (L801) and DB board RED H.LIN (RV122) so that the centers of the RED left and right vertical lines match up to the centers of the green left and right vertical lines.



(1) Adjust RV121 (R.H SIZE) so that the red and green vertical lines overlap at the left and right sides of the screen, or so that L1 and L2 are the same distances.

Figure 16

4-10. G-R TILT Adjustment

- Turn DB board TILT SW (S1) to ON.
- Adjust DB board RED V.TILT-1 (RV116) and line up the RED upper left horizontal line to green.
- Adjust DB board RED V.TILT-2 (RV117) and line up the RED upper right horizontal line to green.
- Adjust DB board RED V.TILT-3 (RV118) and line up the RED lower left horizontal line to green.
- Adjust DB board RED V.TILT-4 (RV119) and line up the RED lower right horizontal line to green.
- Adjust DB board RED H.TILT-1 (RV125) and line up the RED upper left vertical line to green.
- Adjust DB board RED H.TILT-2 (RV126) and line up the RED upper right vertical line to green.
- Adjust DB board RED H.TILT-3 (RV127) and line up RED lower left vertical line to green.
- Adjust DB board RED H.TILT-4 (RV128) and line up RED lower right vertical line to green.

4-11. BLUE DY Adjustment

- Set the BA board HATCH SW to NORMAL and receive a monoscope signal.
- Turn the DB board RED CUT OFF SW to OFF and turn the BLUE CUT OFF SW to ON.
- Line up the BLUE monoscope signal center to green center by adjusting DB board BLUE V.CENT (RV129), BLUE V.LIN (RV131), BLUE H.CENT (RV138) and BLUE H.LIN (RV140).
- Loosen BLUE DY screw.
- Set BA board HATCH SW to HATCH.
- Adjust DB board BLUE V.BOW (RV133) so that the center horizontal line is straight.
- Adjust BLUE DY so that the horizontal center line is parallel to green, then tighten the DY screw.
- Loosen the SUB DY screw and rotate to adjust so that the hatch moves parallel to the left and right when DB board BLUE H.CENT VR (RV138) is moved, then tighten the screw.

4-12. G-B V. REGISTRATION Adjustment

- Line up the blue horizontal center line to the green horizontal center line by adjusting DB board BLUE V.CENT (RV129), BLUE V.BOW (RV133) and BLUE V.SKEW (RV132).
- Adjust DB board BLUE V.SIZE (RV130) and BLUE V.LIN (RV131) so that the centers of the blue top and bottom horizontal lines match up to the centers of the green top and bottom horizontal lines.

4-13. G-B H. REGISTRATION Adjustment

- Adjust DB board BLUE H.BOW (RV142) so that the blue vertical center line is straight.
- Adjust DB board BLUE H.SKEW (RV141) so that the blue vertical center line is parallel to the green vertical center line.
- Adjust DB board BLUE H.CENT (RV138) so that the blue vertical center line matches up to the green vertical center line.
- Adjust DA board BLUE H.SIZE (L803) and DB board BLUE H.LIN (RV140) so that the centers of left and right blue vertical lines match up to the centers of the green left and right vertical lines.



4-14. G-B TILT Adjustment

- 1) Line up the top left blue horizontal line to green by adjusting DB board BLUE V.TILT-1 (RV134).
- 2) Line up top right blue horizontal line to green by adjusting DB board BLUE V.TILT-2 (RV135).
- 3) Line up bottom left blue horizontal line to green by adjusting DB board BLUE V.TILT-3 (RV136).
- 4) Line up bottom right blue horizontal line to green by adjusting DB board BLUE V.TILT-4 (RV137).
- 5) Line up top left blue vertical line to green by adjusting DB board BLUE H.TILT-1 (RV143).
- 6) Line up to right blue vertical line to green with DB board BLUE H.TILT-2 (RV144).
- 7) Line up bottom left blue vertical line to green with DB board BLUE H.TILT-3 (RV145).
- 8) Line up bottom right blue vertical line to green with DB board BLUE H.TILT-4 (RV146).

4-15. V. KEYS SELECT SW Operation Check

- 1) Set DB board V.KEYS SELECT SW (S2) to CEILING.
- 2) Check that the crosshatch horizontal lines have green at the center with red and blue not lined up.
- 3) Confirm that registration is corrected when the V.KEYS SELECT SW is set to FLOOR.
- 4) Set BA board HATCH SW to NORMAL.

4-16. White Balance Adjustment

- 1) Turn the focus pack RED, GREEN and BLUE G2 VR's to minimum.
- 2) Set picture VR and color VR to minimum, set bright VR to mechanical center and receive a color bar signal.
- 3) Adjust so that the red bar glows faintly by adjusting focus pack GREEN G2 VR.
- 4) Set bright VR to minimum.
- 5) Adjust white balance with the RED and BLUE G2 VR's. When fine adjustment can not be done with the G2 VR's, adjust with the BA board RGB BKG VR's.
- 6) Set picture VR and bright VR to maximum.
- 7) Adjust white balance with BA board R DRIVE VR and B DRIVE VR.

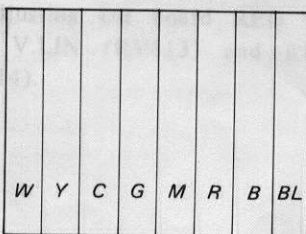


Figure 17

SECTION 5

SAFETY RELATED ADJUSTMENTS

5-1. EA BOARD ADJUSTMENTS

- When replacing the following components, make the HV HOLD DOWN, HV REG, Vcc REG, BEAM CURRENT PROTECTOR, and OVP CIRCUIT.

R82, R83 HV HOLD DOWN CHECK
 <EA Board> R23, R24, R28, R29, R31, R32, R33, R34, R38, R40, R82, R83, D8, D23, Q7, Q8, IC2, IC3, EA board complete HV BLOCK.

R84, R85 HV REGULATOR CHECK
 <EA Board> R65, R68, R70, R71, R72, R73, R74, R75, R84, R85, C36, C37, C39, C40, Q4, Q15, Q16, Q17, D17, D18, D19, D20, EA board complete
 <EB Board> T1, EB board mount HV BLOCK

R78 VCC REG CHECK
 <GA Board> IC604, GA board complete
 <DA Board> R61, R69, R70, R73, R74, R75, R76, R77, R78, D14, Q14, IC7, DA board complete

R43 BEAM CURRENT PROTECTOR CHECK
 <BB Board> R249, BB board complete
 <EA Board> R32, R33, R34, R38, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, D23, C20, Q7, Q8, IC3, EA board complete

OVP CIRCUIT CHECK

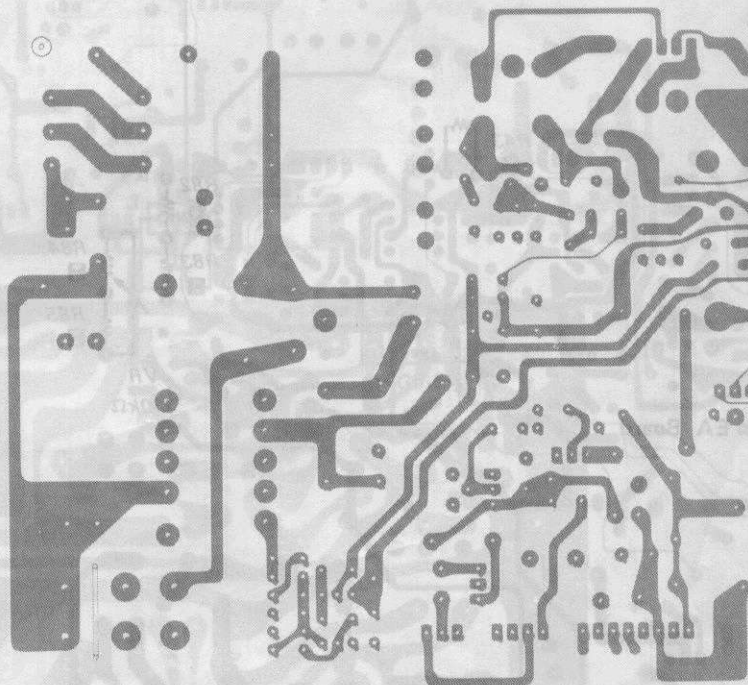
<GA Board> R612, IC602, GA board complete
 <GB Board> R1, D9, GB board mount
 <EA Board> R32, R33, R35, R86, R88, D24, Q7, Q8, Q19, EA board complete

BEAM CURRENT PROTECTOR Check (R43)

1. Input monoscope (fH = 15.75KHz) signal.
 - AC 120V
2. Turn R.G.B BEAM SW ON.
3. Turn MAIN POWER SW and SUB POWER SW ON.
4. Turn the R.G.B G2 VRs (Focus Pack) BRIGHT VR and PICTURE VR each slowly and confirm that the ABL Current reading on the ammeter connected as shown in Fig. 1 is less than 1800µA, the PROTECTOR circuit operates and the raster disappears. (Fig. 1)

HV HOLD DOWN Circuit Check (R82, R83)

1. Confirm that the SUB POWER SW OFF.
2. Disconnect the EA-11 connector on the EA board and install the tool. (Fig. 1)
3. Connect a 330 kΩ semi-fixed VR between one side of R84 and one side of R85 on the EA board.
4. Connect the positive lead of the high tension meter to the HV. DC block and the negative lead to the ground lug beside the heat sink as shown in Fig.-2.
5. Receive a monoscope signal (15.75kHz) and turn the SUB POWER SW ON. (In this case, set BRIGHT (50%), PICTURE at MIN and input the monoscope signal.)
6. Set the G2 VR (Red, Green, Blue) at MIN and turn on the power.



7. When the voltage at G2 is gradually increased, the current flow may stop temporarily (near 1.1mA) due to ABL operation.
8. Set the PICTURE VR at MAX.
9. Adjust VR (330kΩ) for high voltage is less than 32.8KV, the HV HOLD DOWN circuit operates and the raster disappears.

HV Regulator Circuit Check (R84, R85)

1. Confirm that the MAIN POWER SW and SUB POWER SW to OFF.
2. Set PICTURE VR to 80% and BRIGHT VR to 50%.
 - R.G.B BEAM SW (S402, 403, 404): OFF
 - FOCUS pack R.G.B, G2: MIN
3. Receive a monoscope signal (15.75kHz and input 120V AC current.)
4. Remove the red anode lead from the HV. DC block, and connect the positive lead of the high tension meter to the HV. DC block and the negative lead to the ground lug beside the heat sink as shown in Fig.-2.
5. Confirm that high voltage is less than 31.30KV when the MAIN POWER SW and SUB POWER SW are turned ON.

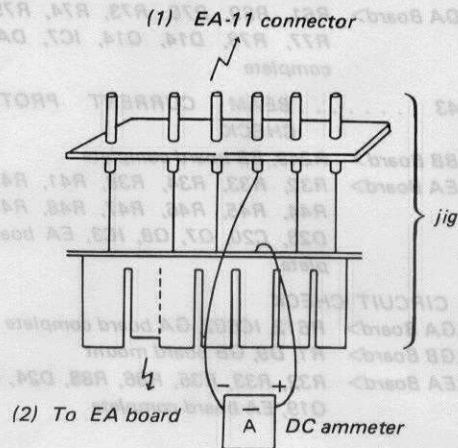
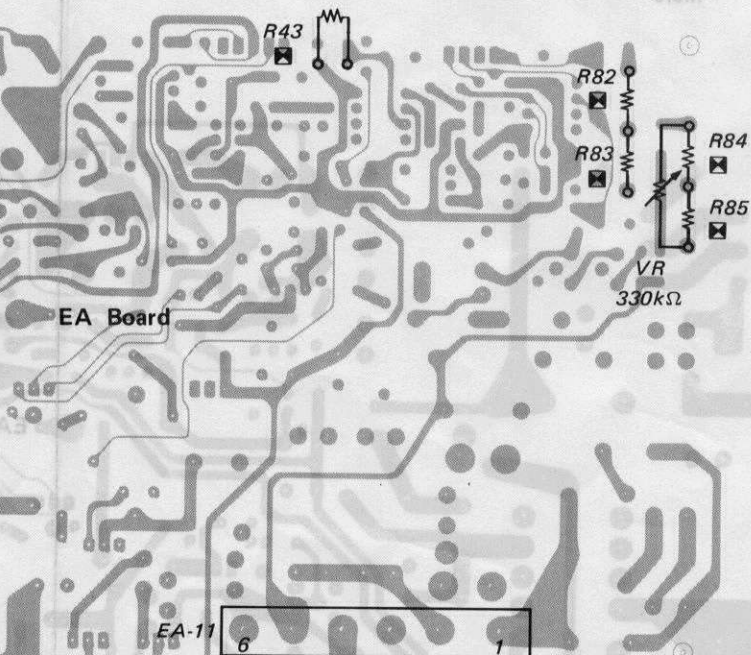


Fig. 1

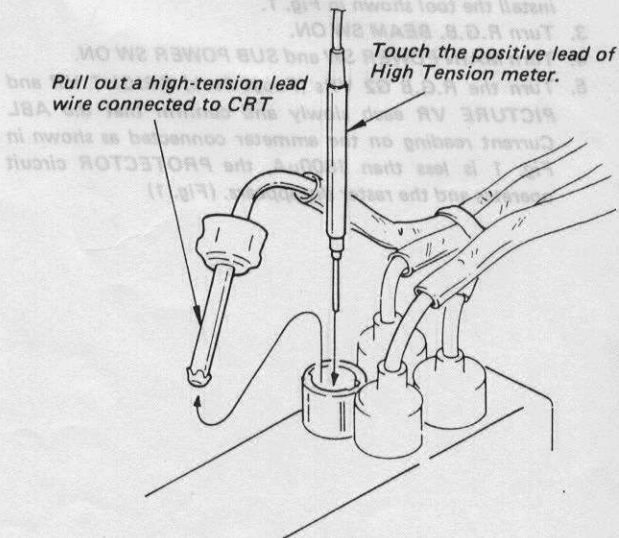


Fig. 2

5-2. EA BOARD ADJUSTMENTS — When a high tension meter is not available —

- When replacing the following components, make the HV HOLD DOWN, HV REG, Vcc REG, BEAM CURRENT PROTECTOR, and OVP CIRCUIT.

- ☑ R82, R83 HV HOLD DOWN CHECK
- ☑ <EA Board> R23, R24, R28, R29, R31, R32, R33, R34, R38, R40, R82, R83, D8, D23, Q7, Q8, IC2, IC3, EA board complete HV BLOK

- ☑ R84, R85 HV REGULATOR CHECK
- ☑ <EA Board> R65, R68, R70, R71, R72, R73, R74, R75, R84, R85, C36, C37, C39, C40, Q4, Q15, Q16, Q17, D17, D18, D19, D20, EA board complete
- <EB Board> T1, EB board mount HV BLOK

- ☑ R78 VCC REG
- ☑ <GA Board> IC604, GA board complete
- <DA Board> R61, R69, R70, R73, R74, R75, R76, R77, R78, D14, Q14, IC7, DA board complete

- ☑ R43 BEAM CURRENT PROTECTOR CHECK
- ☑ <BB Board> R249, BB board complete
- <EA Board> R32, R33, R34, R38, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, D23, C20, Q7, Q8, IC3, EA board complete

- OVP CIRCUIT CHECK
- ☑ <GA Board> R612, IC602, GA board complete
 - <GB Board> R1, D9, GB board mount
 - <EA Board> R32, R33, R35, R86, R88, D24, Q7, Q8, Q19, EA board complete

BEAM CURRENT PROTECTOR Check (☑ R43)

1. Input monoscope (fH = 15.75kHz) signal.
 - AC120V.
2. Disconnect the EA-11 connector on the EA board and install the tool shown in Fig. 1.
3. Turn R.G.B. BEAM SW ON.
4. Turn MAIN POWER SW and SUB POWER SW ON.
5. Turn the R.G.B G2 VRs (Focus Pack) BRIGHT VR and PICTURE VR each slowly and confirm that the ABL Current reading on the ammeter connected as shown in Fig. 1 is less than 1800µA, the PROTECTOR circuit operates and the raster disappears. (Fig. 1)

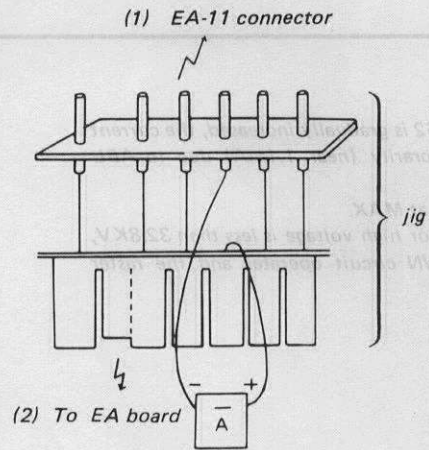
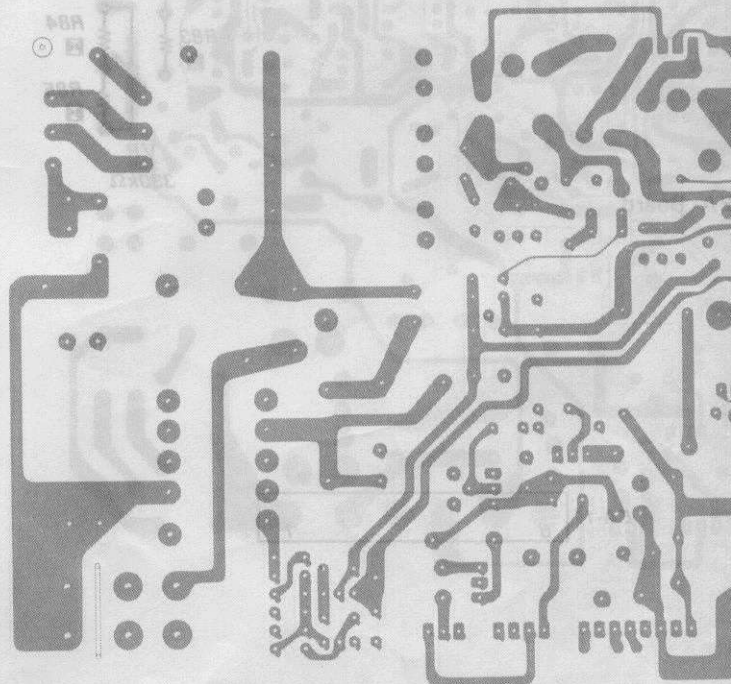


Fig. 1

HV HOLD DOWN Circuit Check (☑ R82, R83)

1. Confirm that the POWER switch is OFF position.
2. Make the following network and connect a digital multi-meter as shown in Fig. 2.

- * Diode (D1) : V30N (8-719-901-19)
- * Capacitors : (C1 to C6) 12000 F/1.2 KV, polyethylene
- * Digital Multimeter : Withstand voltage of 1000V or more



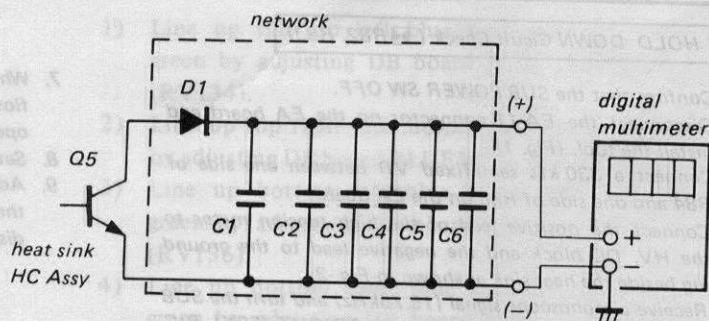


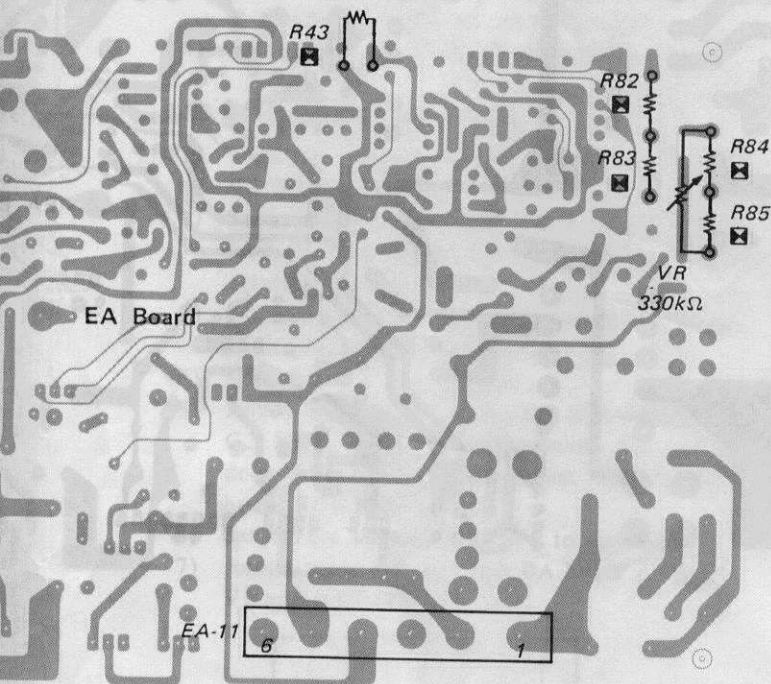
Fig. 2

3. Feed in monoscope pattern from a signal generator and turn the BRIGHT and PICTURE controls for maximum beam current.

4. Turn the POWER switch ON and confirm that the power is automatically turned off just when the voltage on the digital multimeter is $885 \pm 11V$ dc by connecting a resistor across R82 and R83. (HV HOLD DOWN circuit operates).
5. If necessary, select R82 and R83 (1/6W carbon resistor) and repeat above steps.
6. Turn the POWER switch OFF.
7. Disconnect the resistor.
8. Perform the HV REG adjustment from step 4.

HV Regulator Circuit Check (R84, R85)

1. Confirm that the POWER switch is OFF position.
2. Make the following network and connect a digital multimeter as shown in Fig. 2.
3. Feed in monoscope pattern from a signal generator and turn the BRIGHT and PICTURE controls for maximum beam current. (Be sure to synchronize the picture).
4. Turn the POWER switch ON and confirm that the voltage on the digital multimeter is $843V \pm 10V$ dc.
5. If necessary, select R84 and R85 (1/6W carbon resistor) and repeat above steps.
6. Turn the POWER switch OFF and disconnect the network and the digital multimeter.



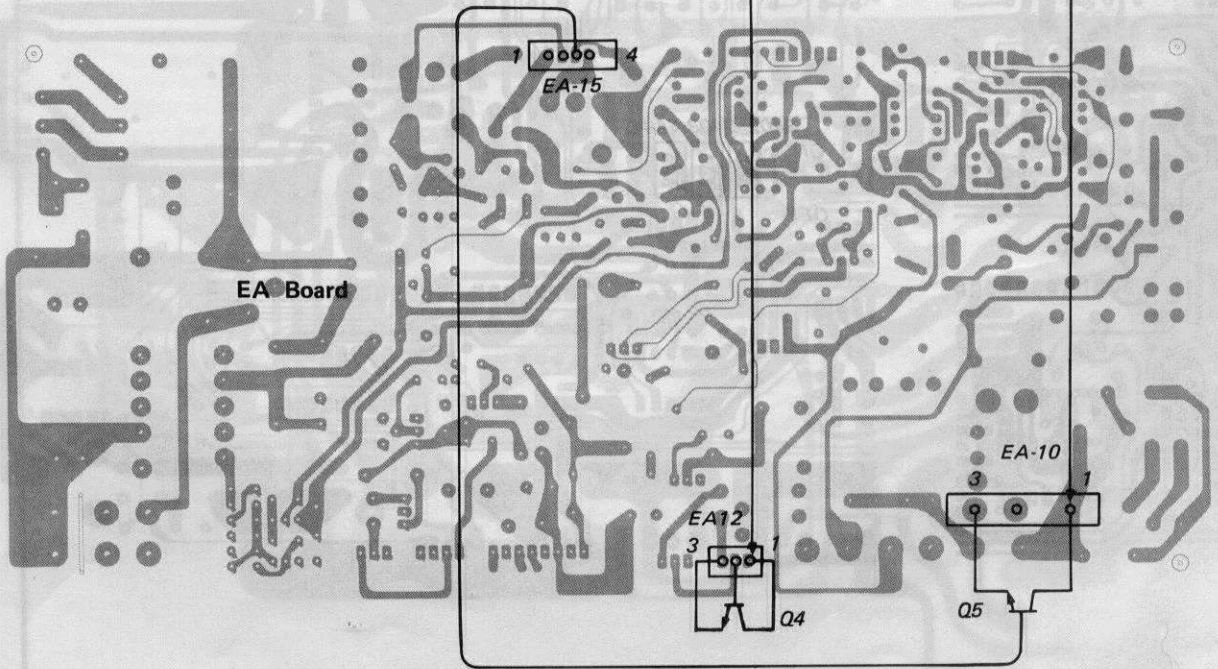
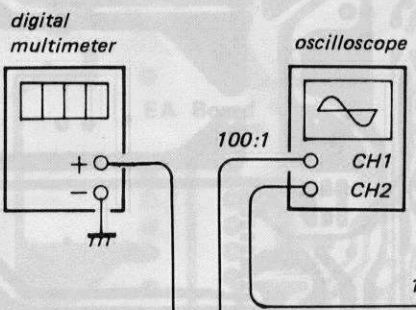
5-3. EA, DA AND DB BOARDS ADJUSTMENTS

OVP Circuit Check

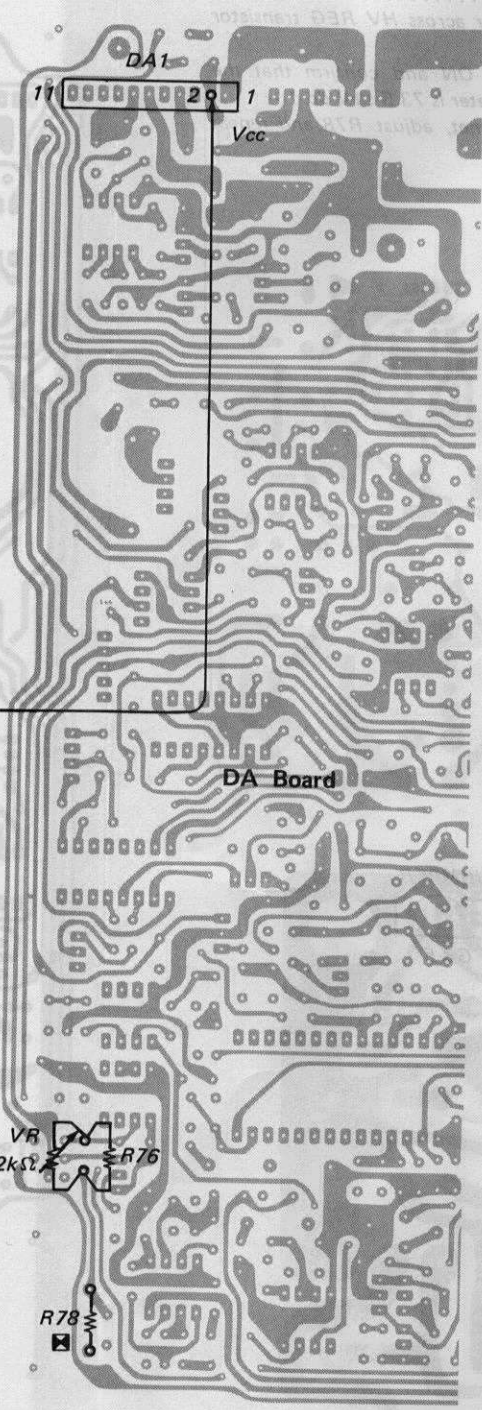
1. Receive an all-white signal (26kHz).
R.G.B. BEAM SW (S402, 403, 404) OFF
R.G.B. G2 VR (Focus pack) MIN
AC 120V [AC]
2. Connect 22 kΩ variable resistor with R76 in parallel on DA board, confirm that the OVP circuit operates when the voltage at Vcc line voltage is less than 158V by turning slowly the 22 kΩ variable resistor.
Also, confirm on the oscilloscope that the converter pulse drops first, before the Vcc line voltage.
Oscilloscope connection :
1. 100: 1 converter Tr (Q5) collector
2. 10: 1 Vcc line

VCC REG Check (R78)

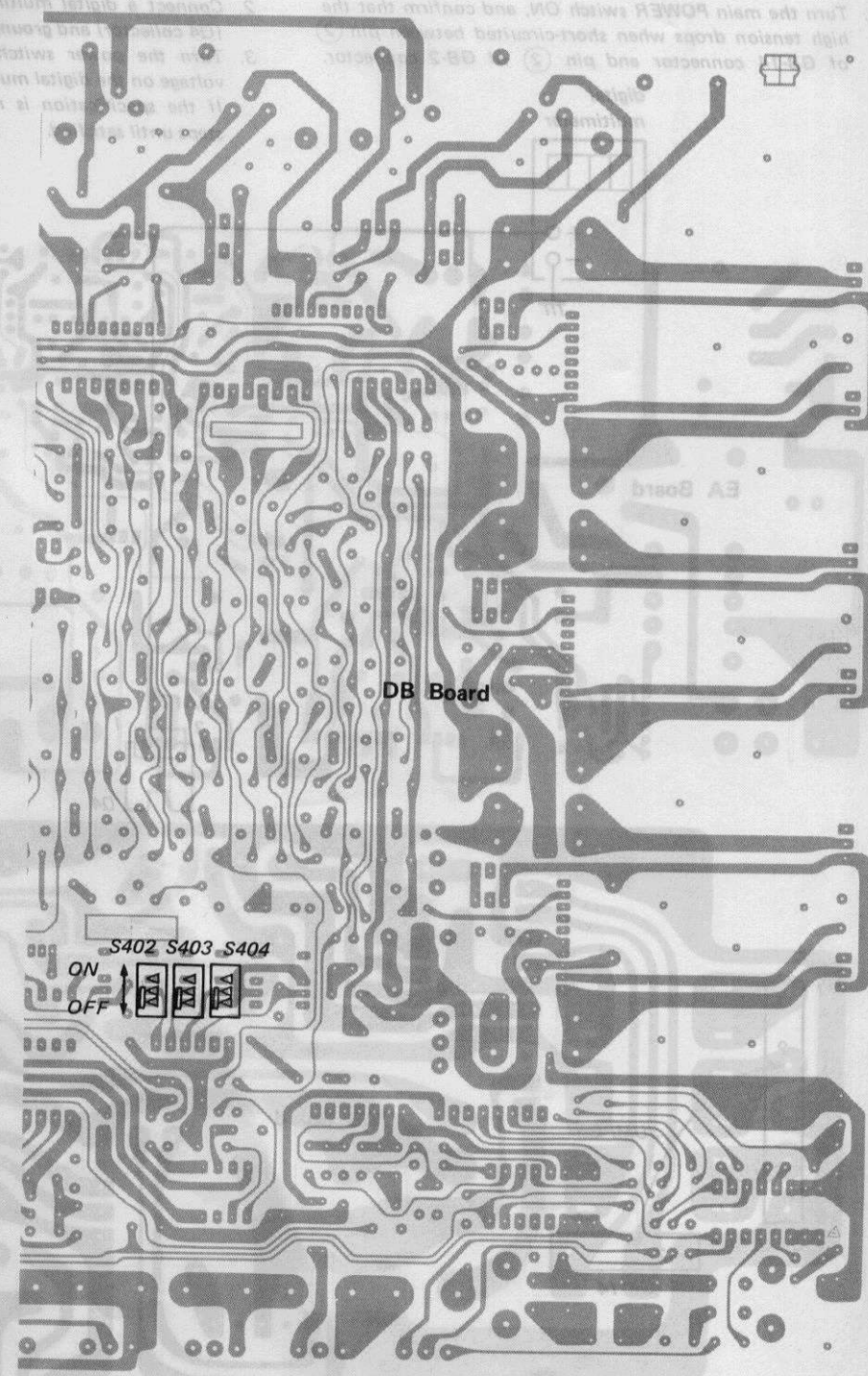
1. Connect SMC-70 and RGB Input signal.
fH = 15.75KHz . . . monoscope
fH = 15KHz All-white
fH = 26KHz All-white
fH = 30KHz All-white
fH = 32KHz All-white
fH = 36KHz All-white
 - R.G.B BEAM SW (S402, S403, S404) . . . OFF
 - R.G.B.G2 VRs (Focus Pack) Mine
 - AC 130V AC
2. Connect a digital multimeter across HV REG transistor (Q4 collector) and ground.
3. Set SMC-70 output to fH = 15.75KHz and confirm that the Vcc line is less than 74.5 Vdc.
4. Set SMC-70 output to fH = 26KHz and adjust R78 so that the Vcc line digital multimeter is less than 125.0 Vdc.
5. Set SMC-70 output to fH = 15KHz and confirm that the Vcc line is less than 71.3 Vdc.
6. Set SMC-70 output to fH = 30KHz and confirm that the Vcc line is less than 145.0 Vdc.
7. Set SMC-70 output to fH = 32KHz and confirm that the Vcc line is less than 148.0 Vdc.
8. Set SMC-70 output to fH = 36KHz and confirm that the Vcc line is less than 149.0 Vdc.
9. If the specification is not met, select R78 and repeat above steps.



EA DA AND DB BOARDS ADJUSTMENTS — When a high tension meter is not available



DA Board



DB Board

5-4. EA, DA AND DB BOARDS ADJUSTMENTS — When a high tension meter is not available —

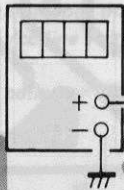
OVP Circuit Check

1. Feed in a monoscope signal. (fH = 15.75KHz)
R.G.B BEAM SW (S402, 403, 404) OFF
R.G.B G2 VR (Focus pack) MIN
2. Confirm that the main POWER switch is in OFF position, and short-circuit between pins ② and ④ of GB-5 connector on the GB board.
3. Turn the main POWER switch ON, and confirm that the high tension drops when short-circuited between pin ② of GB-14 connector and pin ② of GB-2 connector.

VCC REG Check (R78)

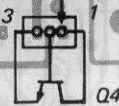
1. Input signal.
Connect SMC-70 and RGB.
fH = 15.75kHz . . . monoscope
R.G.B BEAM SW (S402, 403, 404) OFF
R.G.B G2 VR (Focus Pack) MIN
AC 130V[AC]
2. Connect a digital multimeter across HV REG transistor (Q4 collector) and ground.
3. Turn the power switch to ON and confirm that the voltage on the digital multimeter is 73.5 ±1V dc. If the specification is not met, adjust R78 and repeat steps until satisfied.

digital
multimeter

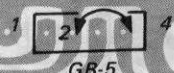


EA Board

EA12

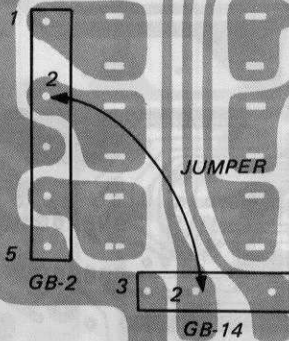


JUMPER



GB Board

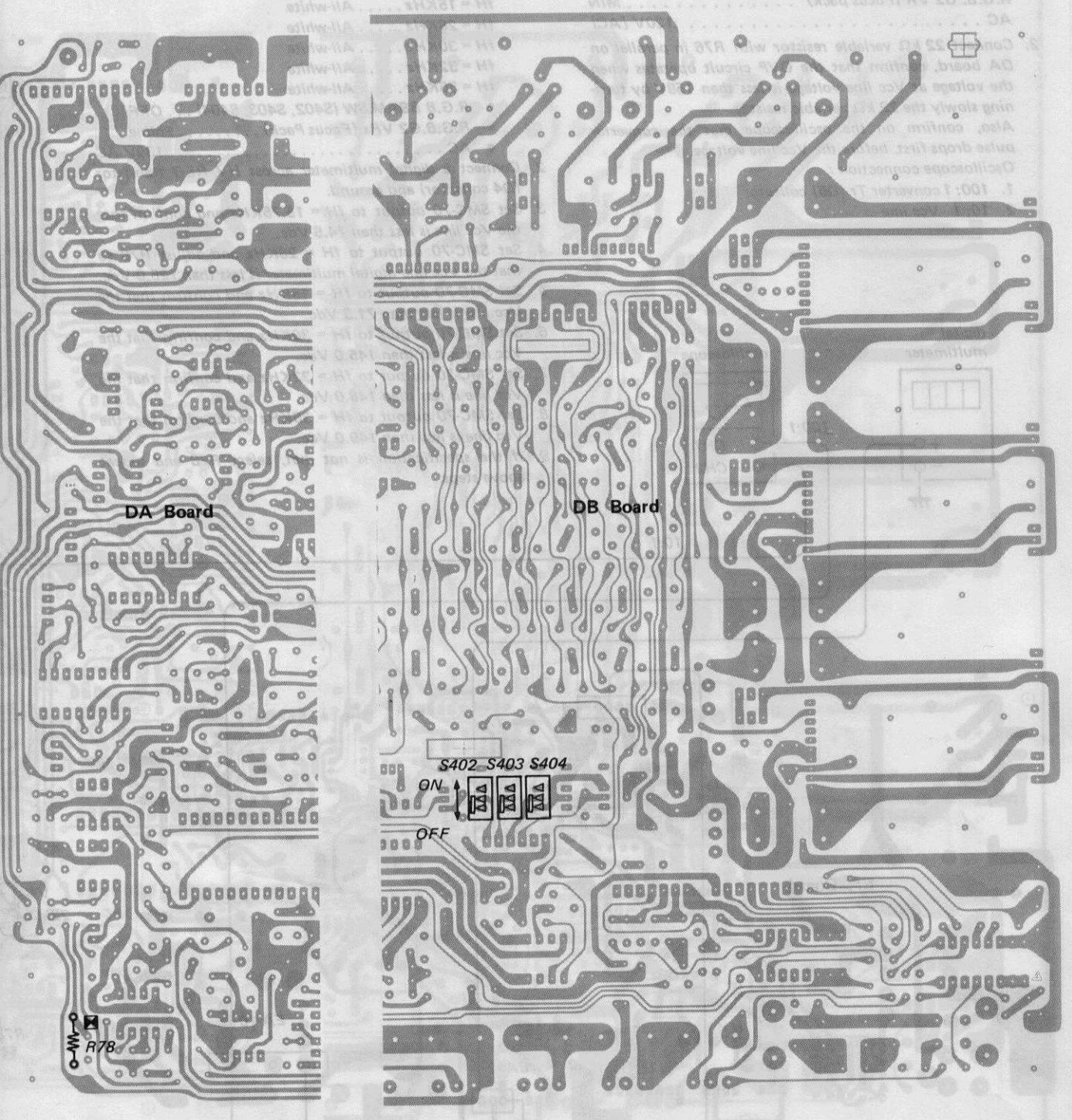
JUMPER



GB-14

Over Circuit Check

VCC REG Check (R78)



DA Board

DB Board

S402 S403 S404

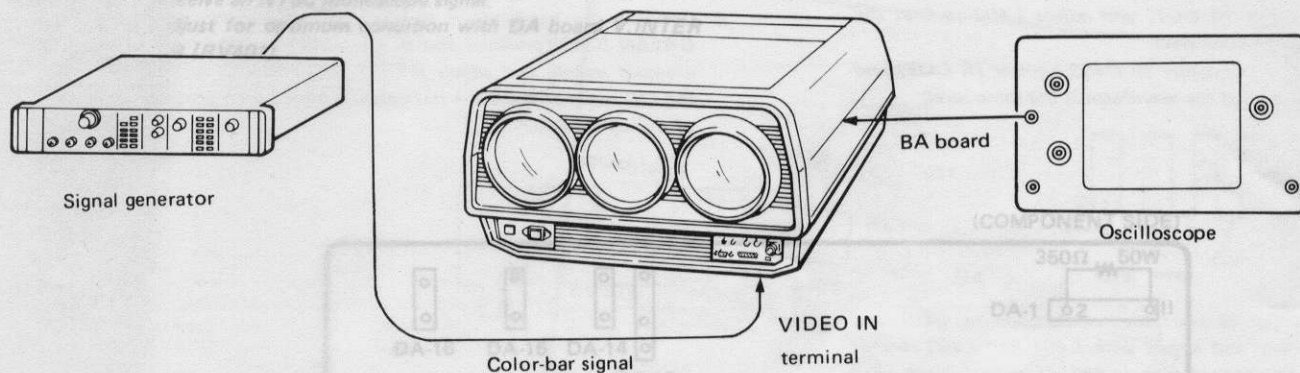
ON

OFF

R78

SECTION 6 CIRCUIT ADJUSTMENTS

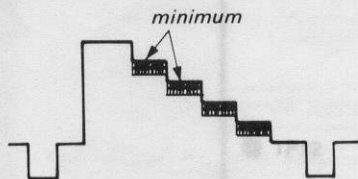
• CONNECTION



6-1. BA, AND BE BOARDS ADJUSTMENTS

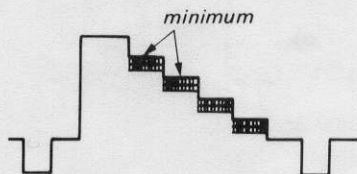
TRAP Adjustment (L111, L113)

1. Input a PAL color bar signal.
2. Observe Q127 emitter on the oscilloscope.
3. Turn L111 (4.43MHz TRAP) core and adjust so that the 4.43MHz carrier component is minimum.
4. Input a SECAM color bar.
5. Observe Q131 emitter on the oscilloscope.
6. Turn L113 (4.25MHz TRAP) core and adjust so that the 4.25MHz carrier component is minimum.



1H COMB Adjustment (L102, RV101)

1. Input an NTSC color bar signal.
2. Observe Q111 emitter on the oscilloscope.
3. White tracking with BA board L102 and RV101, adjust the 3.58MHz carrier component so that it is minimum.



VIDEO AGC (RV1 RV2)

1. Input a monoscope signal.
2. Turn the AGC SW (S702) off and check that Q11 emitter output level is $1.0 \pm 0.2V_{p-p}$.
3. Turn AGC SW (S702) on.
4. Turn SYNC AGC VR (RV1) counterclockwise and maximize Q11 emitter output level.
5. Turn PEAK AGC VR (RV2) and set Q11 emitter output level to $1.1 \pm 0.1V_{p-p}$.
6. Turn SYNC AGC VR (RV1) slowly and set at the point where Q11 output starts to go down.
7. Adjust Q11 emitter output level to $1.0 \pm 0.05V_{p-p}$ with PEAK AGC VR (RV2).

PAL Color Sync Fine Adjustment (RV305, RV306)

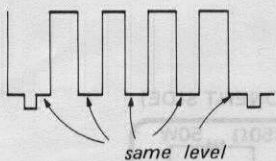
1. Input a PAL color bar.
2. Connect 100k resistor between IC301 Pin (13) and ground and release killer.
3. Connect 10uF/16V electrolytic capacitor between IC301 pin (16) and ground and cut the burst signal.
4. Connect IC3 pin (2) to the +12V line via a 2.2k resistor. (In this case, the state of IC3 pin (9) becomes "Low" mode; PAL mode is available.)
5. Adjust RV305 (APC-2 4.43MHz) to get color sync.
6. Remove the 2.2k resistor in step 4.
7. Input an NTSC color bar.
8. Ground Q23 base momentarily and get 3.58MHz mode. (In this case, the state of IC3 pin (9) becomes "HIGH" mode.)
9. Adjust RV306 (APC-1 3.58MHz) to get color sync.

KILLER Adjustment (RV304)

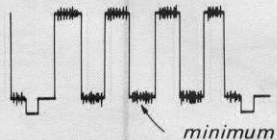
1. Set the TEST SW on the rear panel to "ON".
2. Connect 10uF/16V electrolytic capacitor between IC301 pin (13) and ground.
3. Adjust RV304 for voltage value of IC301 pin (13) is $8.0 \pm 0.05V$ dc.

Color Balance Adjustment L401, L402

1. Input a SECAM color bar signal. Connect the oscilloscope to Q401 emitter (B OUT) and adjust L402 so that the waveform is the same level.
2. Connect the oscilloscope to Q403 emitter (R OUT) and adjust L401 so that the waveform is the same level.



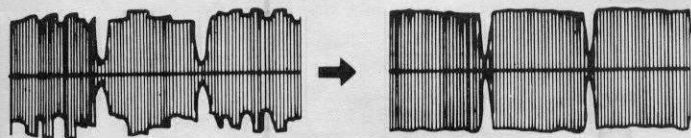
3. Turn S401 on, connect the oscilloscope to Q401 and Q403 emitters, and adjust with L401 and L403 so that the color component leak in the white and black level portions is minimum.



SECAM COLOR L403, T401

1. Bell Filter Adjustment

- (1) Input a SECAM color bar signal.
- (2) Observe IC401 pin (17) and adjust T401 so that the waveform level is uniform.

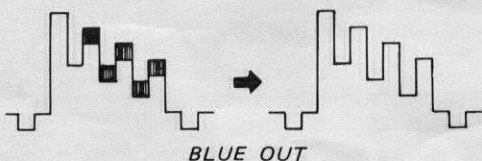


2. ID Adjustment

- (1) Input a SECAM color bar.
- (2) Adjust L403 so that IC401 pin (25) DC level is maximum.

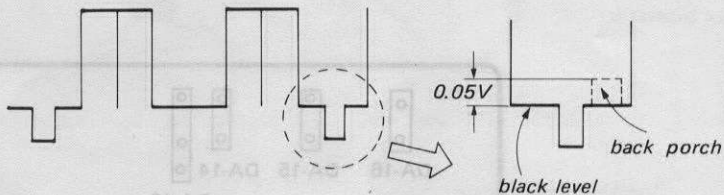
PAL MATRIX RV303, T302

1. Input a PAL color bar signal. Set the COLOR VR to the mechanical center.
2. With observing the waveform of the Q401 emitter (BLUE OUT), set variable range of the waveform to be minimum by adjusting RV303 and T302.



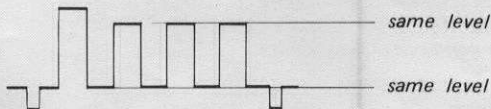
Back porch Level Adjustment (RV401, 402, 403)

1. Input a color bar signal (burst OFF signal).
2. Connect the oscilloscope to the RED (Q403 emitter), GREEN (Q402 emitter) and BLUE (Q401 emitter) measurement points and adjust RV401, 402 and 403 so that the DC levels of the black portion and back porch portion of the signal match.



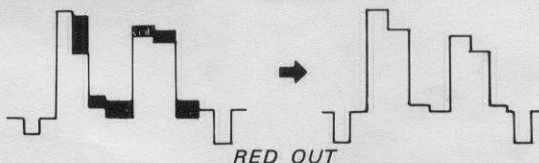
SUB COLOR RV302, RV709

1. Input a SECAM color bar signal and set the color VR to mechanical center.
2. Connect the oscilloscope to Q401 emitter (B OUT) and adjust RV709 so that the waveform is as shown in the diagram. Also, adjust RV302 so that the waveform is as shown in the diagram when a PAL color bar is input.



SUB HUE: ANTI PAL RV303, RV708

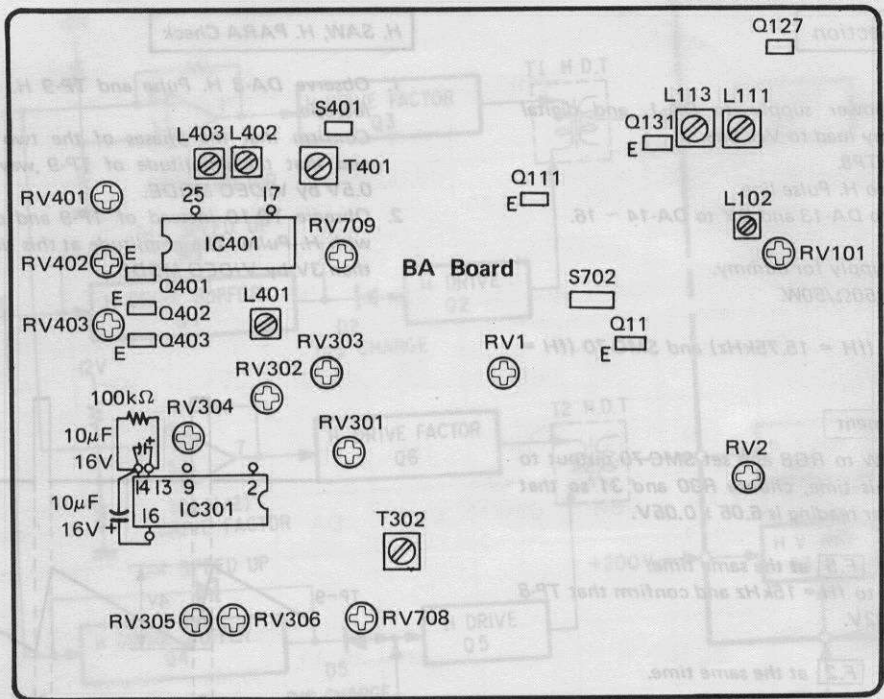
1. Input a special color bar signal. (PHILIPS COLOR PATTERN)
2. Set the color VR and HUE VR to mechanical center.
3. Observe the Q401 emitter (BLUE OUT) and Q403 emitter (RED OUT) waveforms, and adjust RV708 and RV303 so that the ANTI-PAL signal chroma component is minimum.
4. Input an NTSC signal and confirm that there is sufficient variable range when the HUE VR is turned.



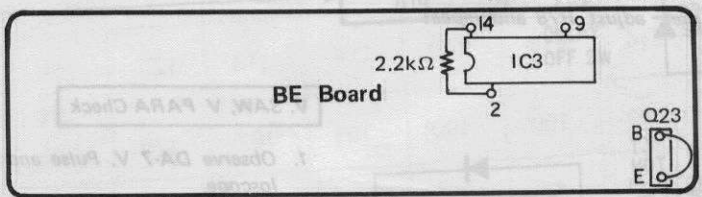
SUB PICTURE RV301

1. Input a PAL color bar signal.
 2. Adjust RV301 so that Q402 emitter (G OUT) output level is $0.85 \pm 0.05V_{p-p}$.
- Note: Be sure to perform this adjustment after back porch level adjustment.

(COMPONENT SIDE)



(COMPONENT SIDE)



NOTE: Q23 between Base and Collector momentarily shortcircuit.

6-2. DA BOARD ADJUSTMENTS

Multiscan Control Section

1. Preparations

Connect dummy power supply to DA-1, and digital voltmeter and dummy load to Vcc line.

Digital voltmeter to TP8.

Frequency counter to H. Pulse line.

Connect EA board to DA-13 and DY to DA-14 ~ 16.

Notes :

- 1) Use Y-Z power supply for dummy.
- 2) Dummy load is 350Ω/50W.

2. Input Signal

VIDEO monoscope (fH = 15.75kHz) and SMC-70 (fH = 15kHz, fH = 30kHz)

F-V Conversion Adjustment

- 1) Set RGB/VIDEO SW to RGB and set SMC-70 output to fH = 30kHz. At this time, choose R30 and 31 so that TP-8 digital voltmeter reading is 6.05 ± 0.05V.

Note: SMC-70

Press **SHIFT** + **F.5** at the same time.

- 2) Set SMC-70 output to fH = 15kHz and confirm that TP-8 reading is 2.99 ± 0.02V.

Note: SMC-70

Press **SHIFT** + **F.2** at the same time.

Vcc Adjustment

- 1) Set SMC-70 output to fH = 30kHz and adjust R78 so that the 145.0V dc.
- 2) Set SMC-70 output to fH = 15kHz and confirm that the Vcc line reading is less than 71.3V dc.
If the specification is not met, adjust R78 and repeat steps 1, and 2, until satisfied.

AFC Adjustment

1. RGB Mode AFC Adjustment

- 1) Connect a 10μF/16V chemical capacitor between IC1 pin ① and GND.

Turn RV-1 fully to the left.

- 2) Set SMC-70 output to fH = 30kHz and adjust RV2 so that the frequency counter reading is 30.059kHz.
- 3) Set SMC-70 output to fH = 15kHz and adjust RV1 so that the frequency counter reading is 15.030kHz.

2. VIDEO Mode AFC Adjustment

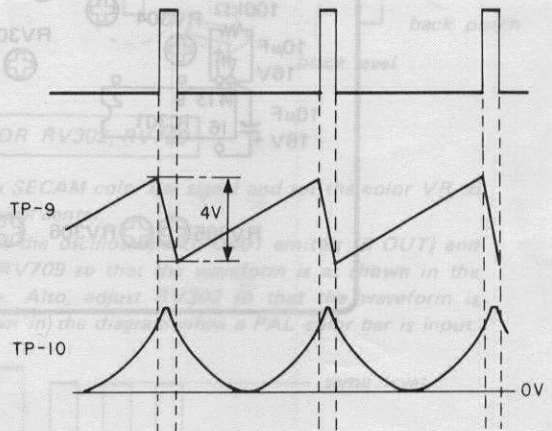
- 1) Set RGB/VIDEO SW to VIDEO and adjust R92.93 so that the frequency counter reading is 15.734kHz.
- 2) Confirm that Vcc line digital voltmeter reading is less than 73.5V dc.

H. SAW, H. PARA Check

1. Observe DA-8 H. Pulse and TP-9 H. SAW on the oscilloscope.

Confirm that the phases of the two waveforms match and that the amplitude of TP-9 waveform is 4Vp-p ± 0.5V by VIDEO MODE.

2. Observe TP-10 instead of TP-9 and compare the phase with H. Pulse. The amplitude at this time should be more than 3V by VIDEO MODE.

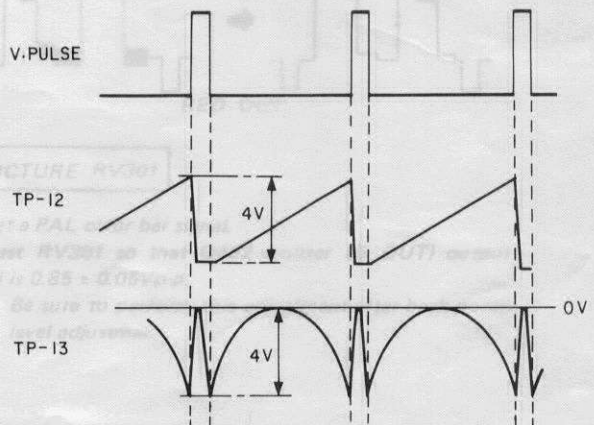


V. SAW, V. PARA Check

1. Observe DA-7 V. Pulse and TP-12 V. SAW on the oscilloscope.

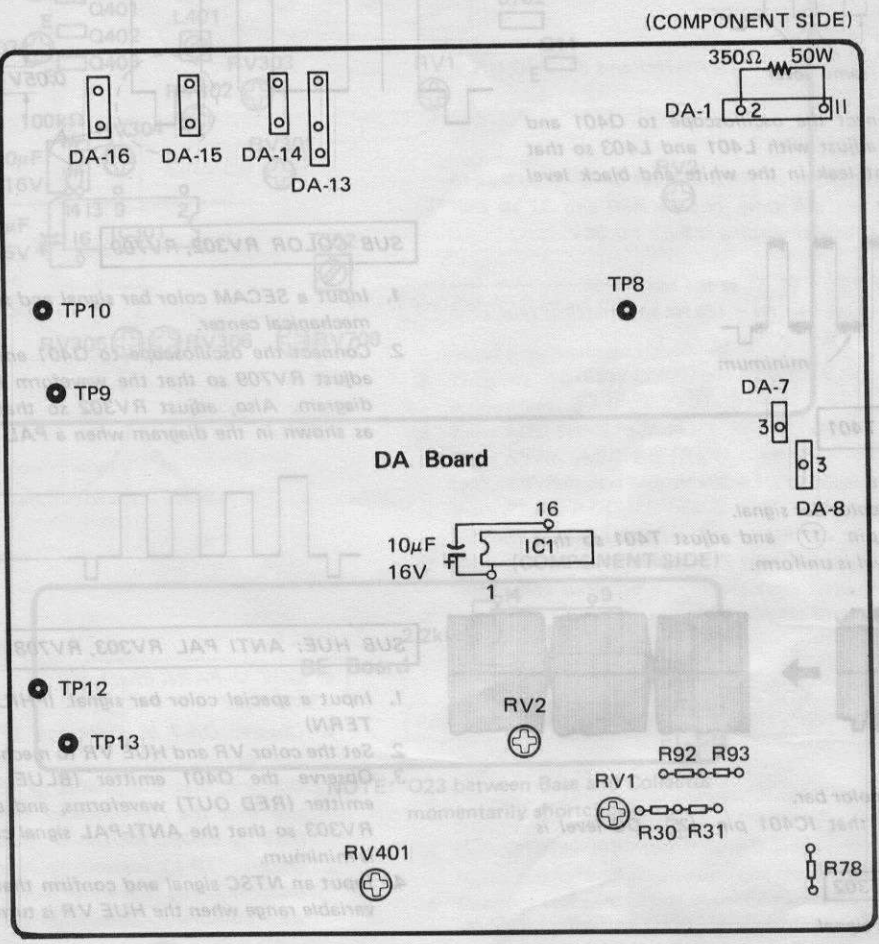
Confirm that the phases of the two waveforms match and that the amplitude of TP-12 Waveform is 4Vp-p ± 0.5V by VIDEO MODE.

2. Observe TP-13 instead of TP-12 and confirm that the phase matches that of V. Pulse, and that the amplitude is 4Vp-p ± 0.5V by VIDEO MODE.



Interlace Adjustment

1. Receive an NTSC monoscope signal.
2. Adjust for optimum condition with DA board V.INTER VR (RV401).



8.2 DA BOARD ADJUSTMENTS

THE ADJUSTMENTS

Multiscan Control Section

1. Preparations

Connect dummy power supply to DA-1 and signal voltmeter and dummy load to Vcc line.

Digital voltmeter to TP8.

Frequency counter to H₁ pin.

Connect EA board to DA-17 and DA-18.

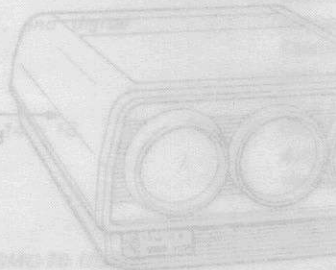
Note:

1) Use V_{cc} power supply for dummy.

2) Dummy load is 100 ohms.

2. Input Signal

VIDEO monoscope (FH = 15.75kHz) and SMC-70 (FH = 30kHz, IH = 30kHz).



F-V Conversion Adjustment

- 1) Set RGR/VIDEO SW to RGR and set SMC-70 to FH = 30kHz. At this time, check R30 and set TP8 digital voltmeter reading to 5.06 ± 0.02.

Note: SMC-70

Press [HPT] + [F] at the same time.

- 2) Set SMC-70 to FH = 15.75kHz. Check TP8 digital voltmeter reading is 2.96 ± 0.02.

Next, SMC-70. Turn the AGC SW (2702) off and check that D11 emitter output level is 1.0 ± 0.2V_{pp}.

- 3) Turn AGC SW (2702) on.
- 4) Turn SYNC AGC VR (RV1) counterclockwise to minimum.

5) Set SMC-70 to FH = 15.75kHz. Turn D11 emitter output level to 1.0 ± 0.2V_{pp} and set D11 emitter output level to 1.0 ± 0.2V_{pp}.

- 6) Turn SYNC AGC VR (RV1) clockwise and set the output level to 1.0 ± 0.2V_{pp}.

7) Adjust D11 emitter output level to 1.0 ± 0.2V_{pp} with PEAK AGC VR (RV2).

PAL Color Sync Fine Adjustment (RV32, RV33)

AFC Adjustment

1. Input a PAL color bar.
2. Connect 100K resistor between IC301 Pin (1) and ground and release filter.

3. Connect 10V resistor to IC301 pin (1) and ground and cut the filter signal.

4. Connect IC3 pin (5) to the 15V line and turn SMC-70 to FH = 15.75kHz.
5. Set SMC-70 to FH = 15.75kHz.

6. Adjust RV302 (AFC) to get color sync. (The color sync signal is 100% when the sync signal is 100%.)

7. Remove the 2K resistor in the V_{cc} line of IC301.
8. Adjust RV302 (AFC) to get color sync.

9. Adjust RV303 (KILLER) to get color sync. (The color sync signal is 100% when the sync signal is 100%.)

10. Confirm the color in the case of the "HIGH" mode. (The color becomes "HIGH" mode.)

11. Adjust RV304 (AFC-1) (3.58MHz) to get color sync.

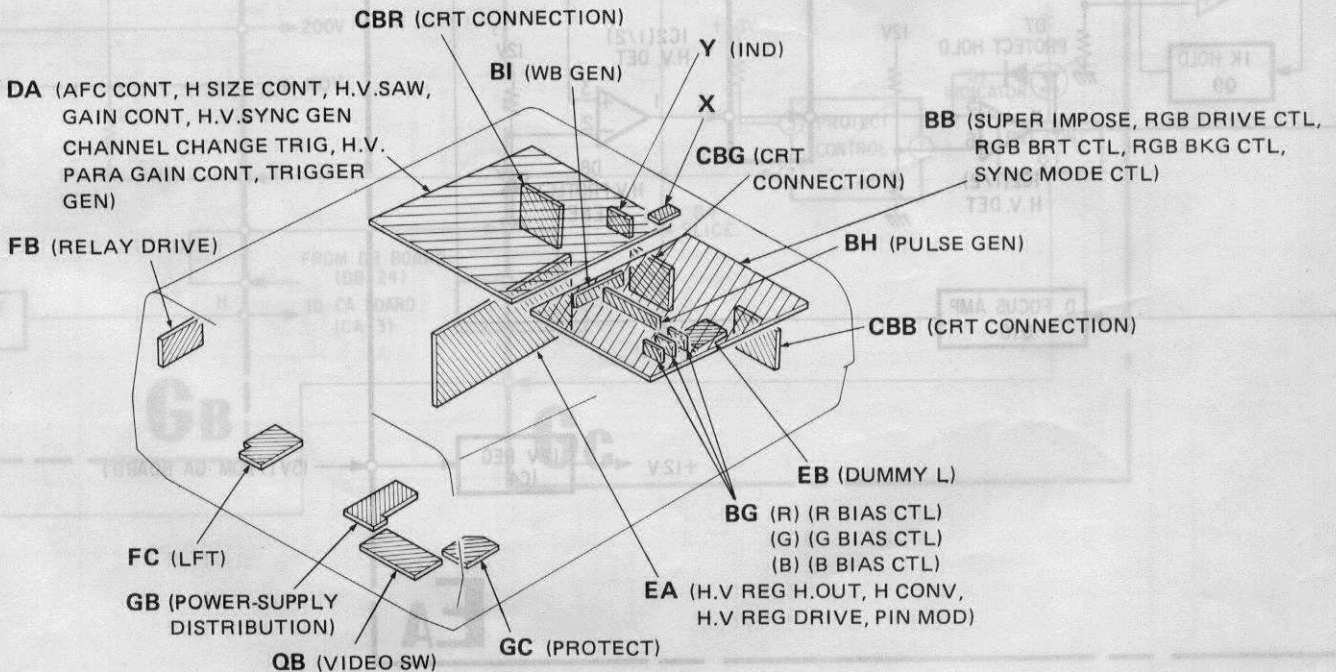
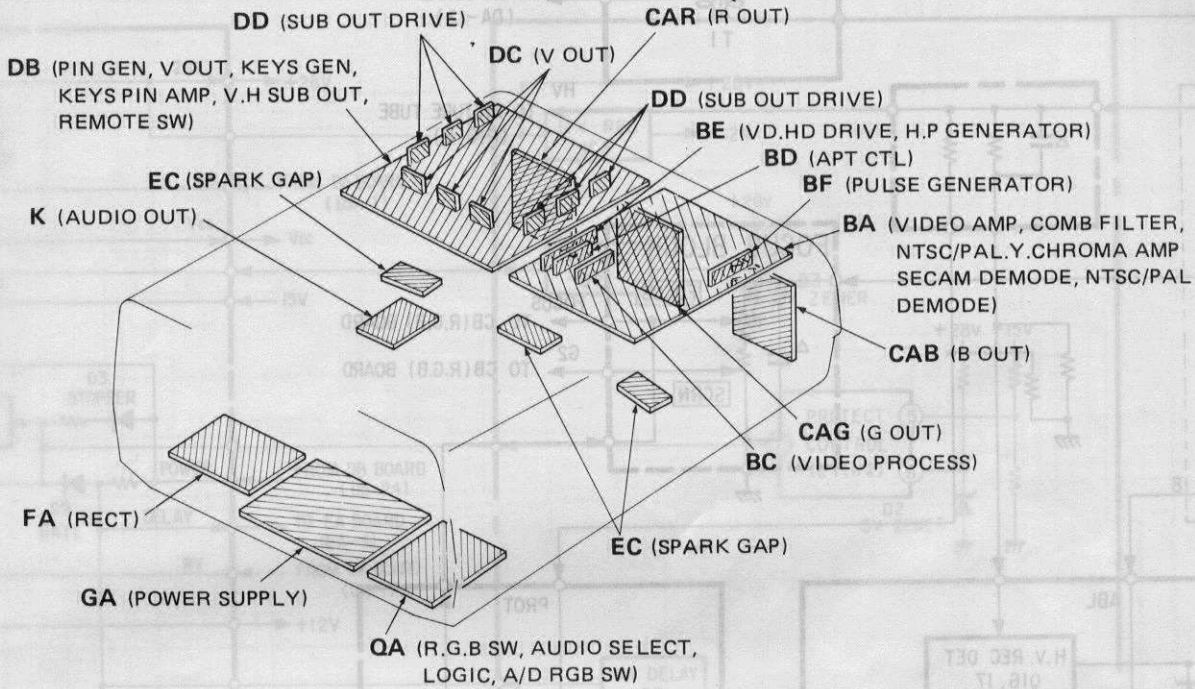
KILLER Adjustment (RV303)

1. Set the TEST SW on the rear panel to "ON".
2. Connect 10V/15V electrolytic capacitor between IC301 pin (1) and ground.

3. Adjust RV304 for voltage value of IC301 pin (1) is 8.0V_{dc}.

SECTION 7 DIAGRAMS

7-1. CIRCUIT BOARDS LOCATION



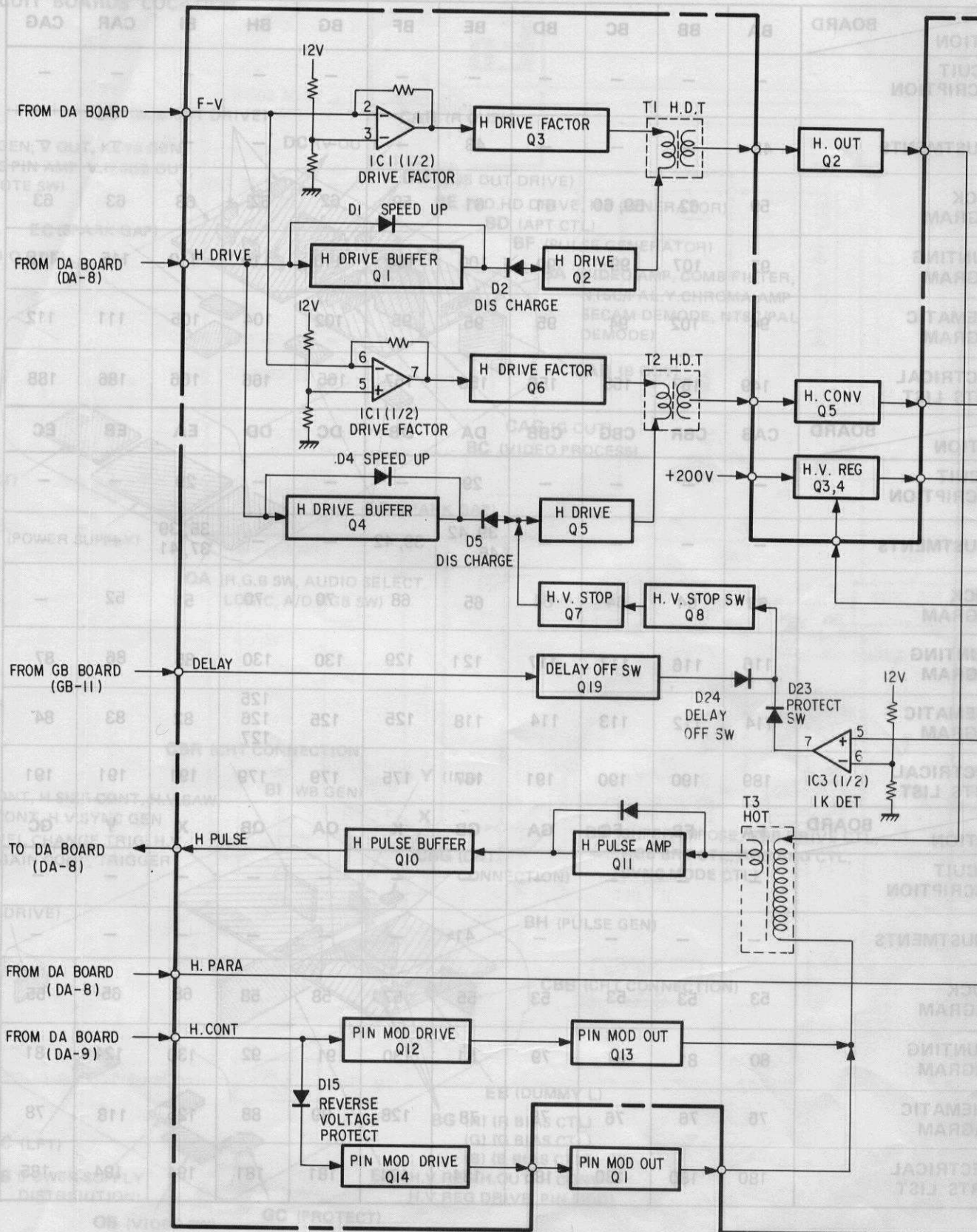
7-2. QUICK REFERENCE

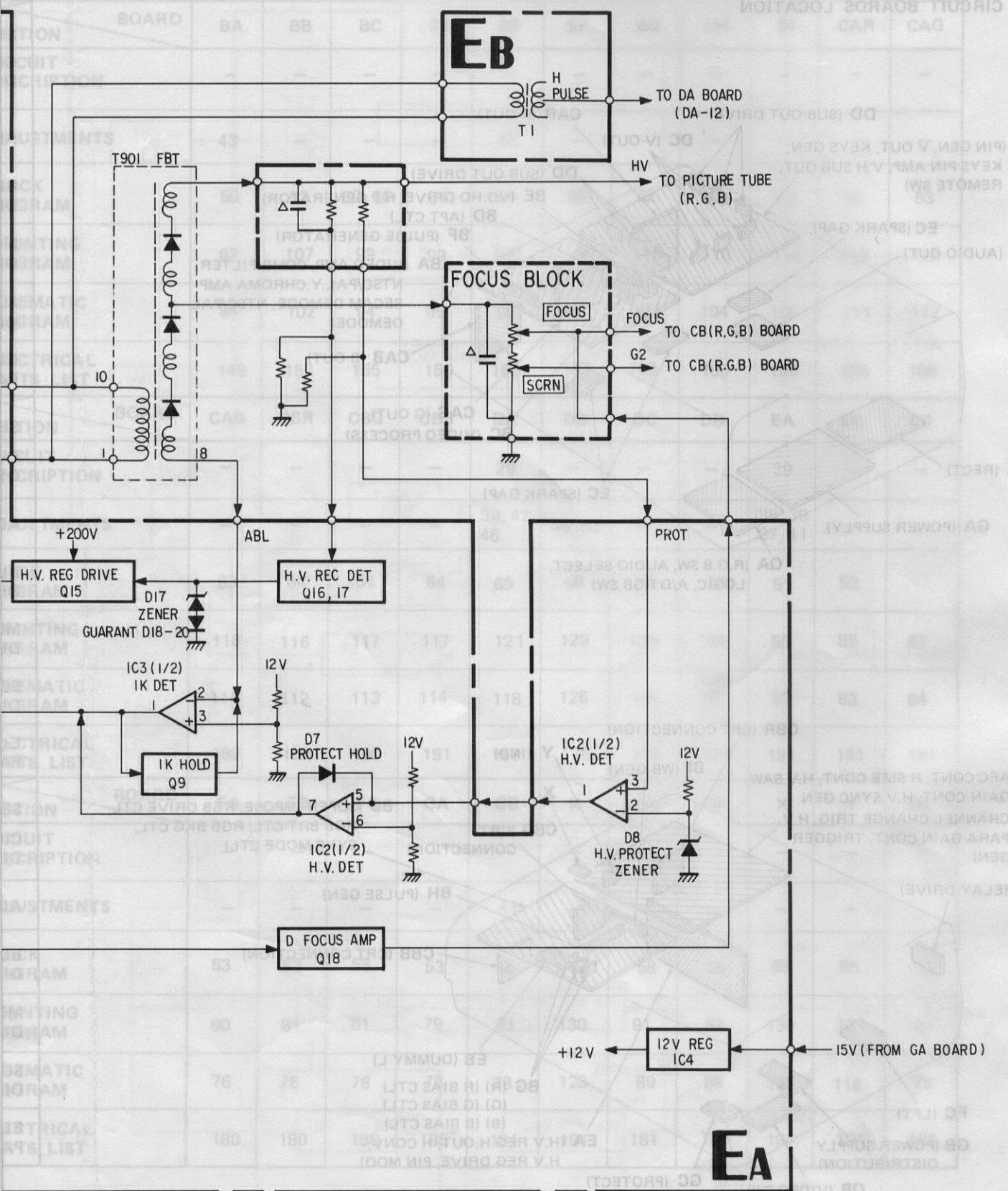
SECTION \ BOARD	BA	BB	BC	BD	BE	BF	BG	BH	BI	CAR	CAG
CIRCUIT DESCRIPTION	-	-	-	-	-	-	-	-	-	-	-
ADJUSTMENTS	43	-	-	-	43	-	-	-	-	-	-
BLOCK DIAGRAM	59	62	59, 60	61	61	59	62	62	63	63	63
MOUNTING DIAGRAM	97	107	99	99	100	100	110	110	110	115	115
SCHEMATIC DIAGRAM	94	102	94	95	95	95	102	104	105	111	112
ELECTRICAL PARTS LIST	149	157	155	156	156	157	165	166	166	186	188
SECTION \ BOARD	CAB	CBR	CBG	CBB	DA	DB	DC	DD	EA	EB	EC
CIRCUIT DESCRIPTION	-	-	-	-	29	-	-	-	29	-	-
ADJUSTMENTS	-	-	-	-	39, 42 46	39, 42	-	-	35, 39 37, 41	-	-
BLOCK DIAGRAM	63	64	64	64	65	68	70	70	51	52	-
MOUNTING DIAGRAM	116	116	117	117	121	129	130	130	85	86	87
SCHEMATIC DIAGRAM	114	112	113	114	118	125	125	125 126 127	82	83	84
ELECTRICAL PARTS LIST	189	190	190	191	167	175	179	179	191	191	191
SECTION \ BOARD	FA	FB	FC	GA	GB	K	QA	QB	X	Y	GC
CIRCUIT DESCRIPTION	-	-	-	-	-	-	-	-	-	-	-
ADJUSTMENTS	-	-	-	-	41	-	-	-	-	-	-
BLOCK DIAGRAM	53	53	53	53	55	57	58	58	68	65	55
MOUNTING DIAGRAM	80	81	81	79	81	130	91	92	130	124	81
SCHEMATIC DIAGRAM	76	76	76	78	78	128	89	88	125	118	78
ELECTRICAL PARTS LIST	180	180	180	185	184	194	181	181	194	194	185

7-3. BLOCK DIAGRAMS

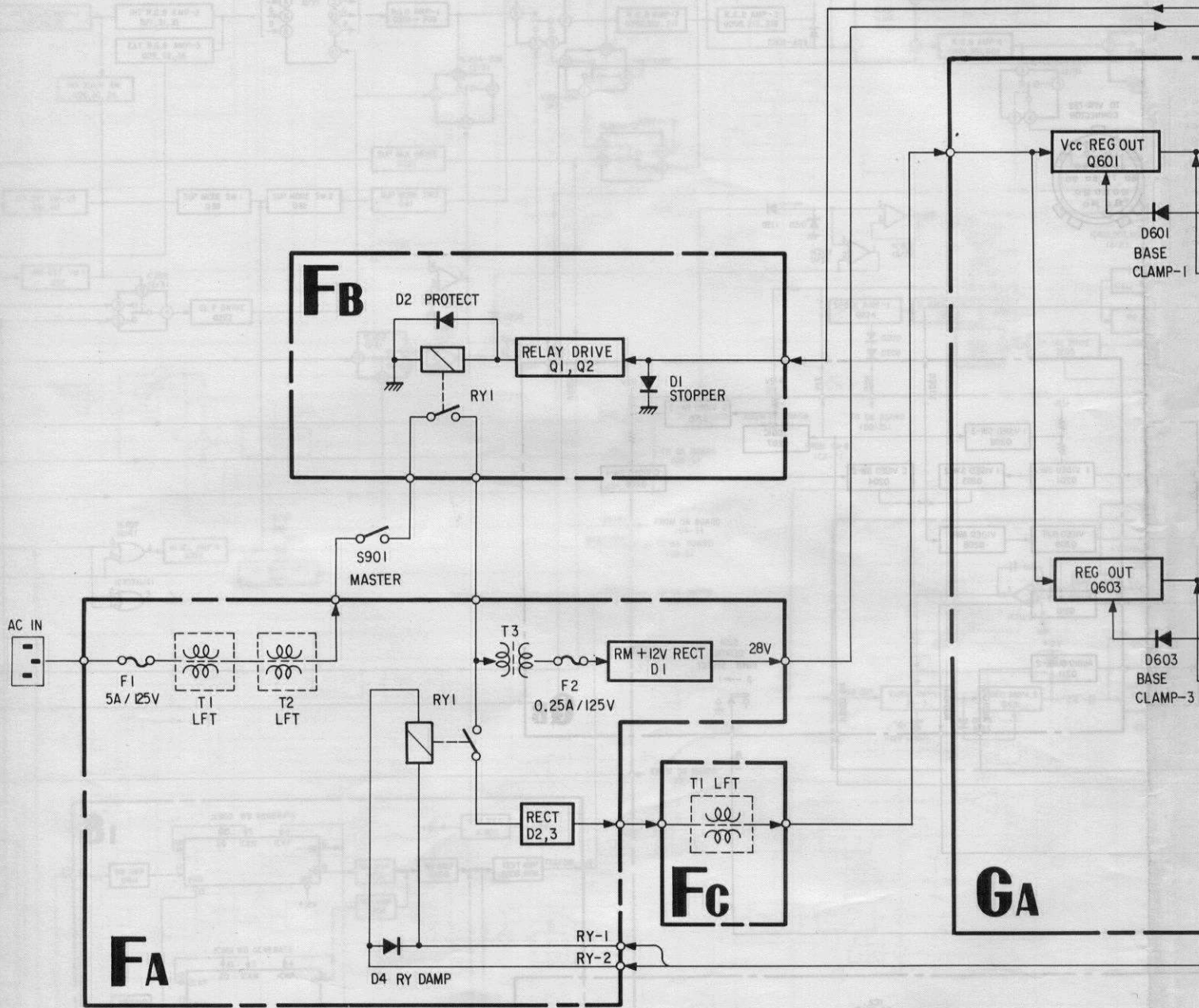
EA, EB BOARDS BLOCK DIAGRAM

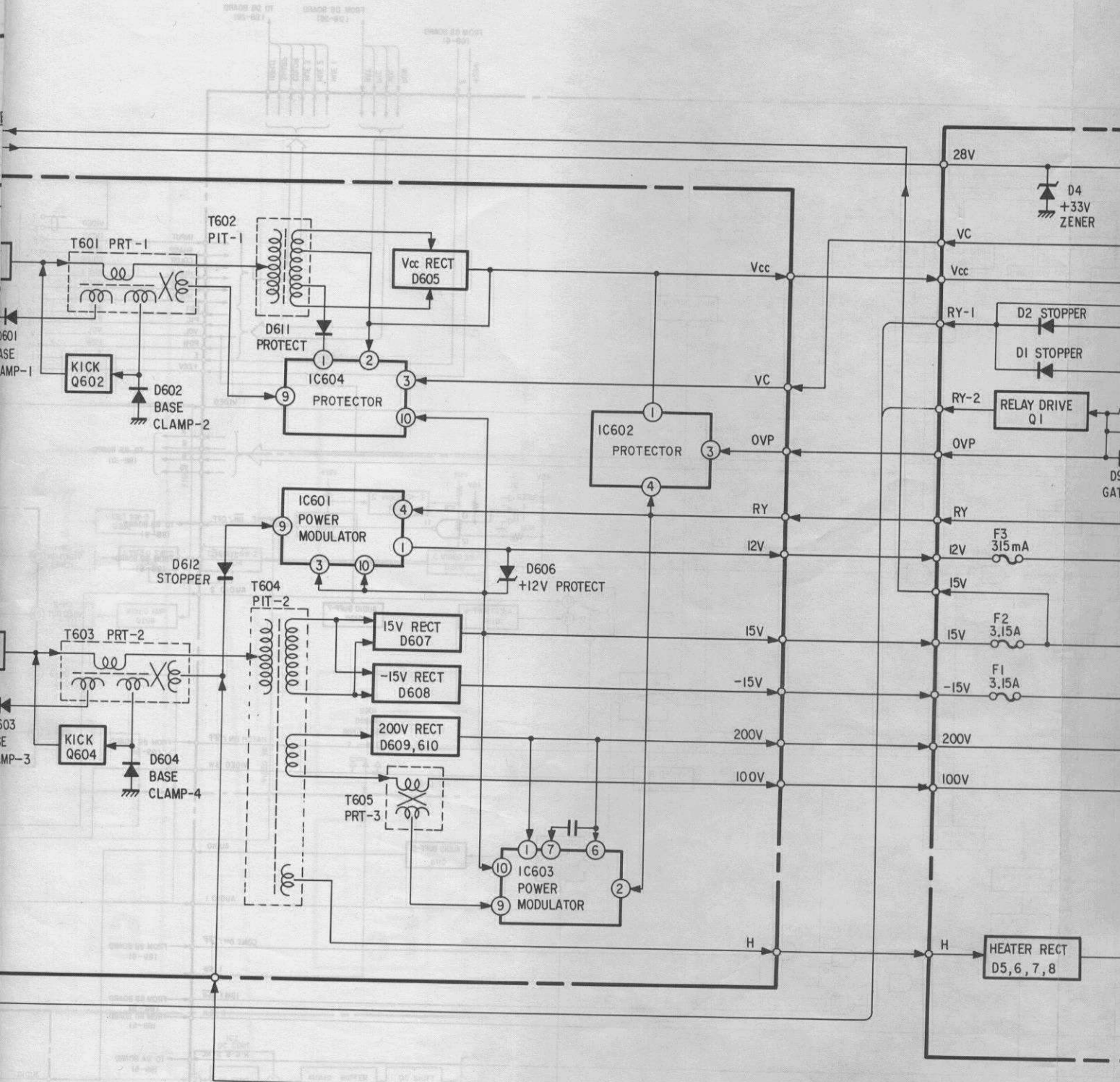
SECTION 7
DIAGRAMS

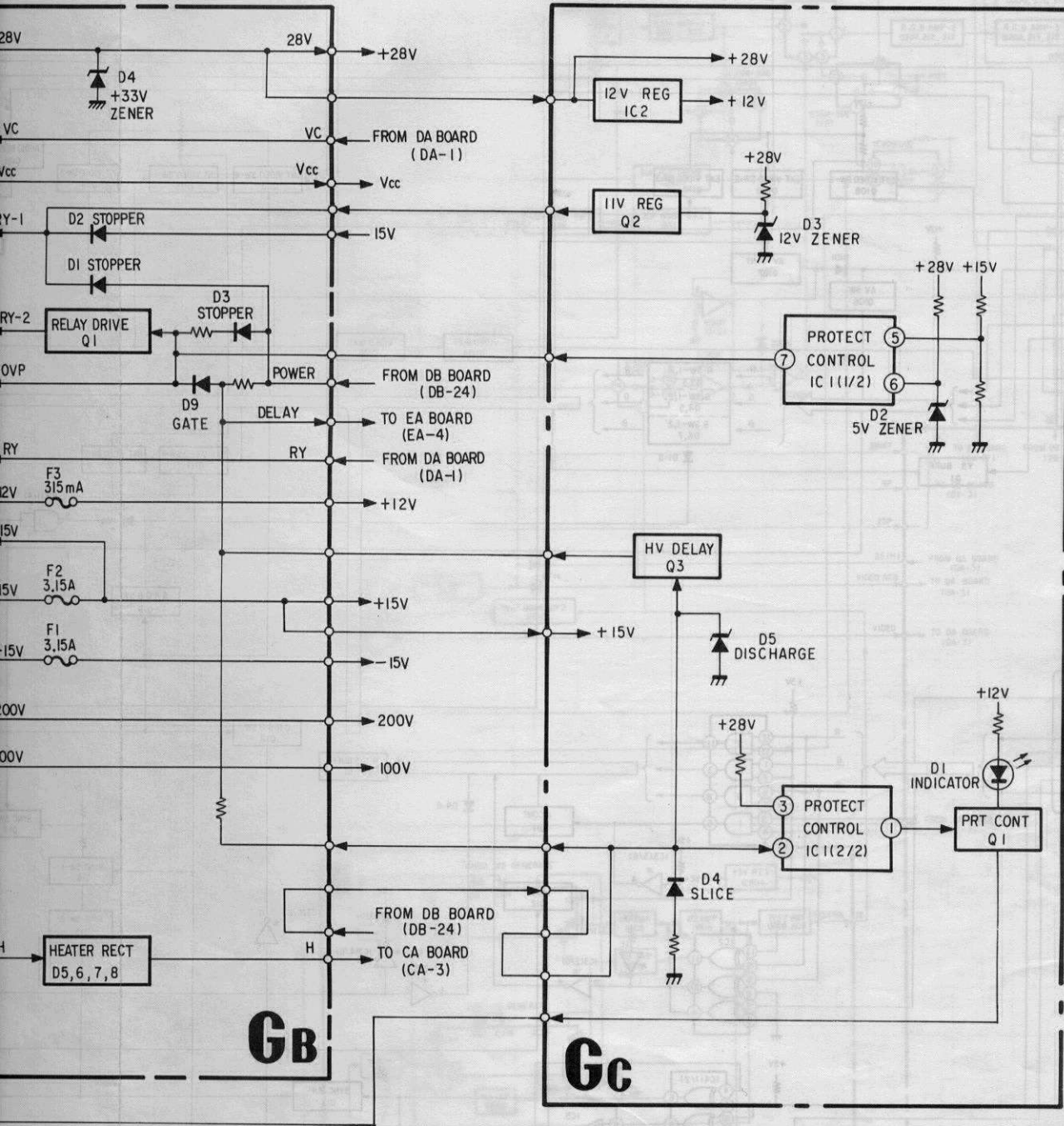




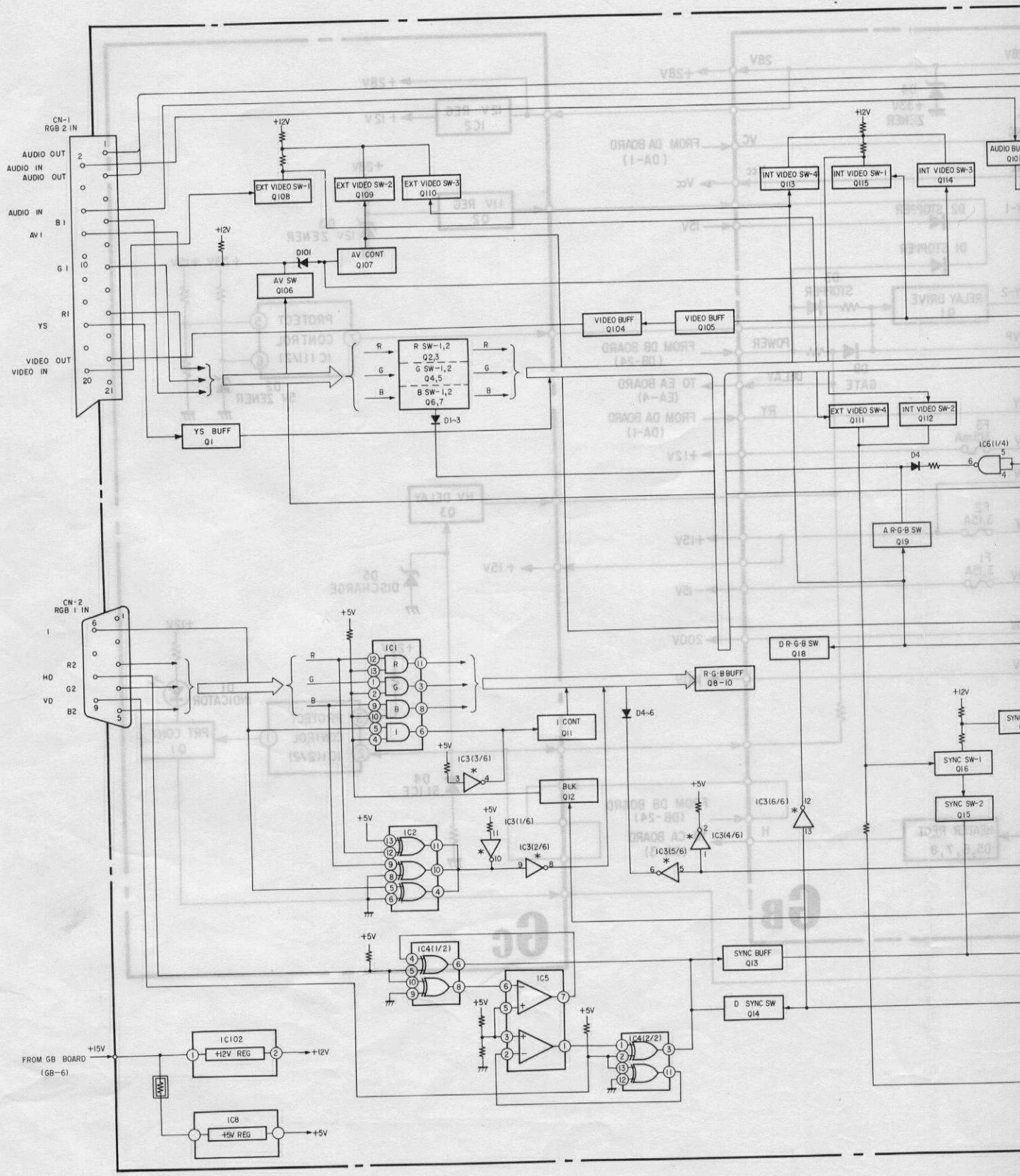
FA, FB, FC, GA, GB, GC BOARDS BLOCK DIAGRAM

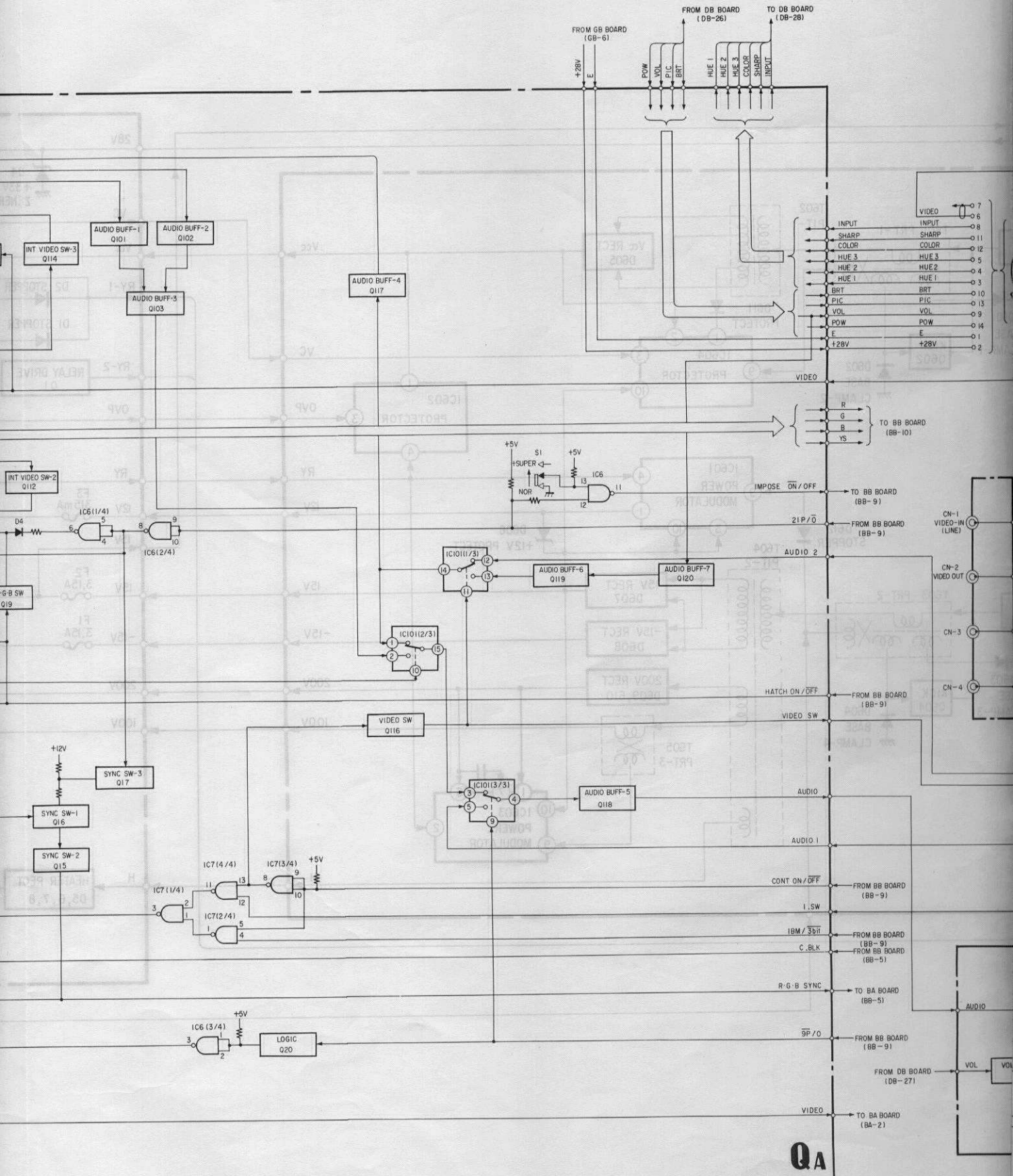




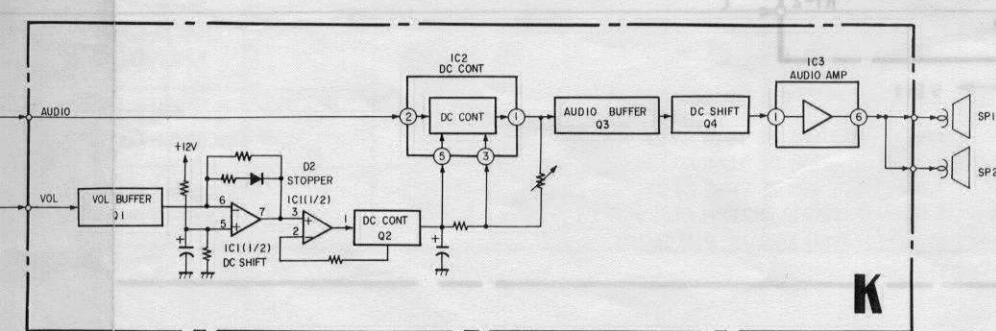
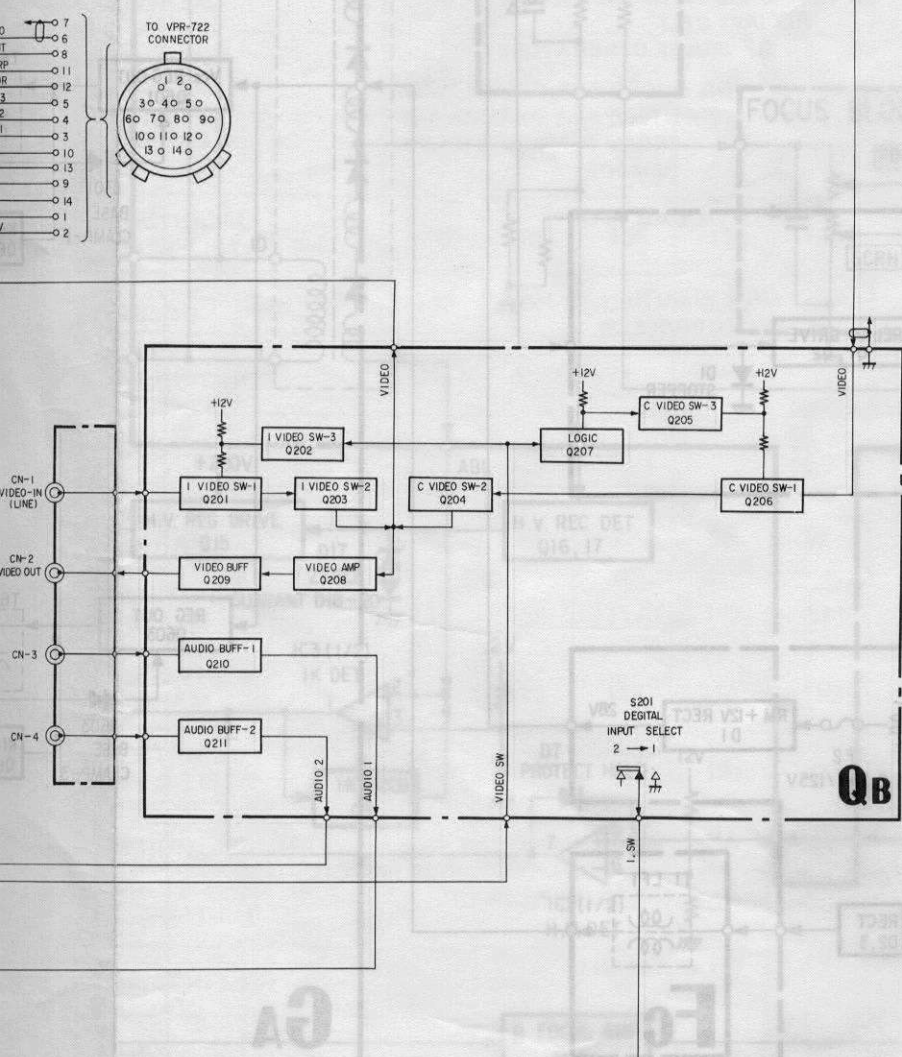


A, QB, K BOARDS BLOCK DIAGRAM

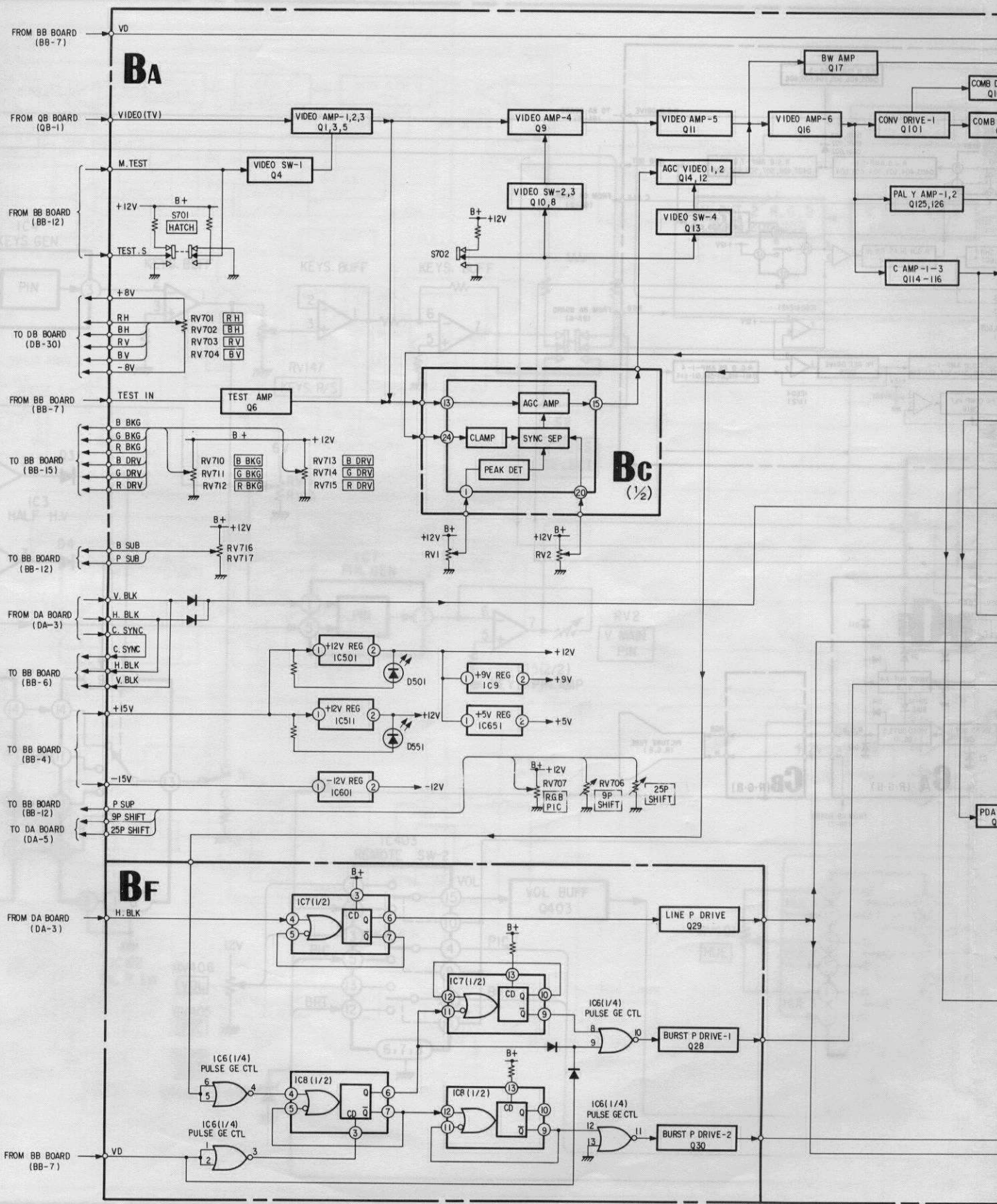


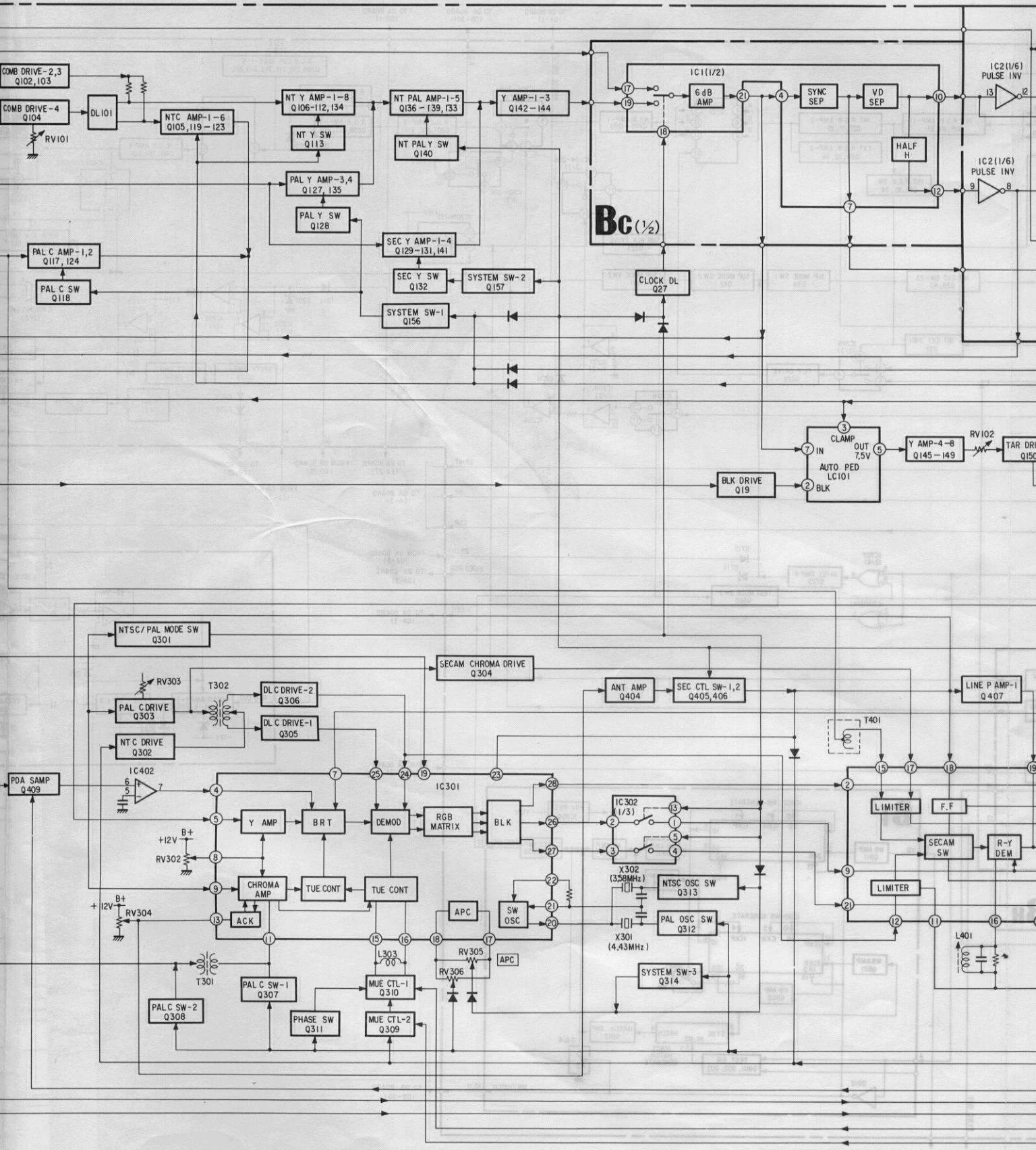


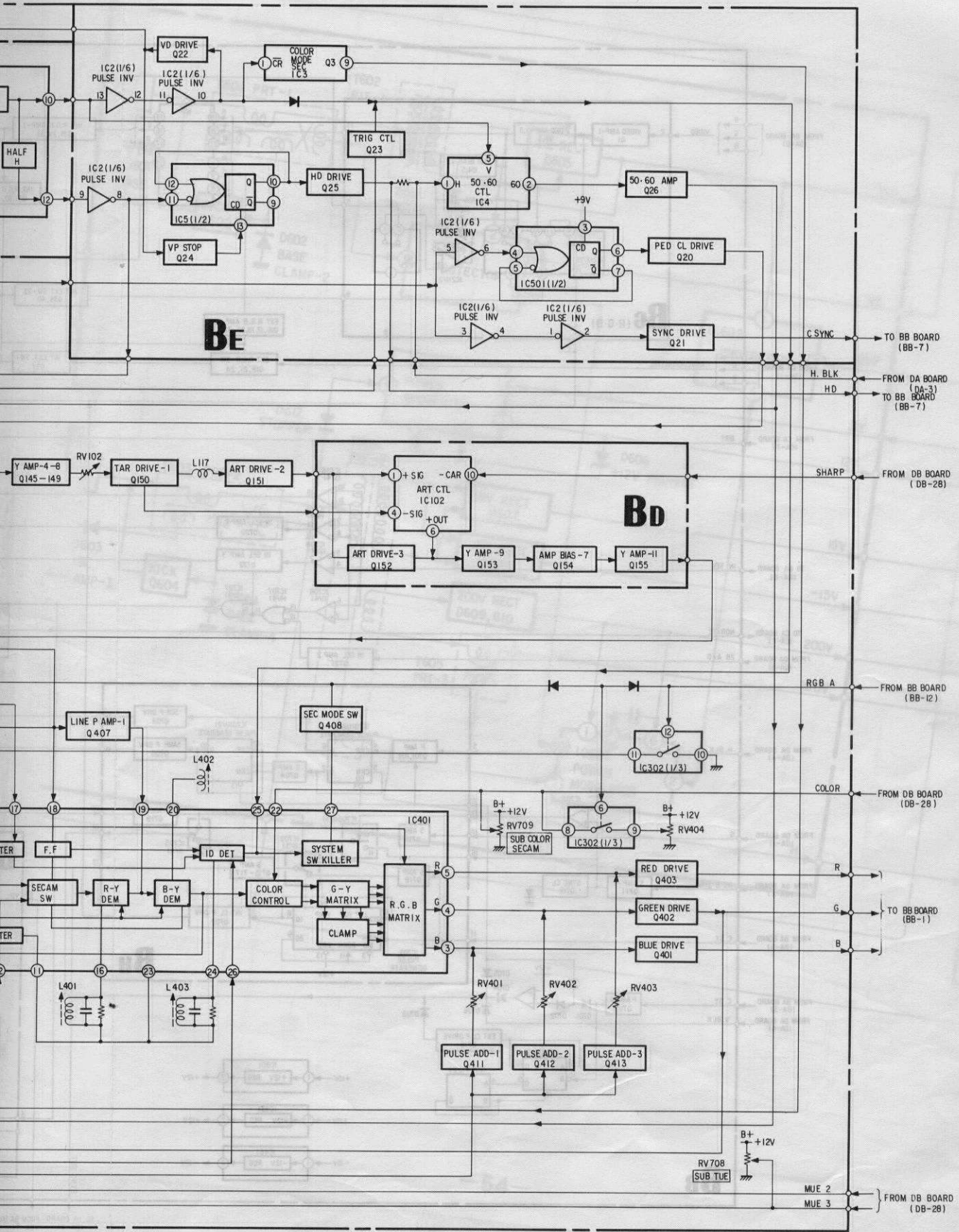
QA



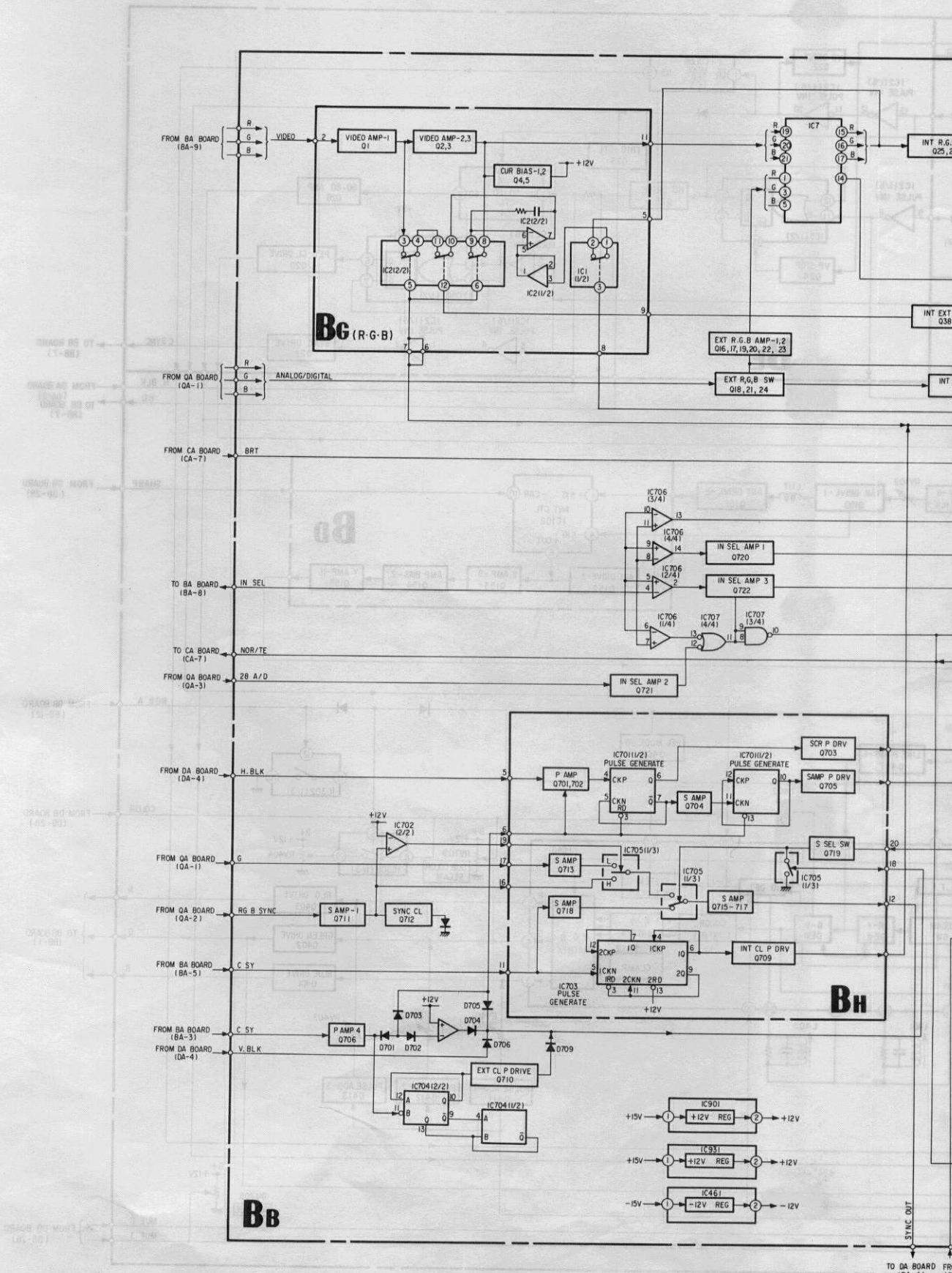
BA, BC, BD, BE, BF BOARDS BLOCK DIAGRAM

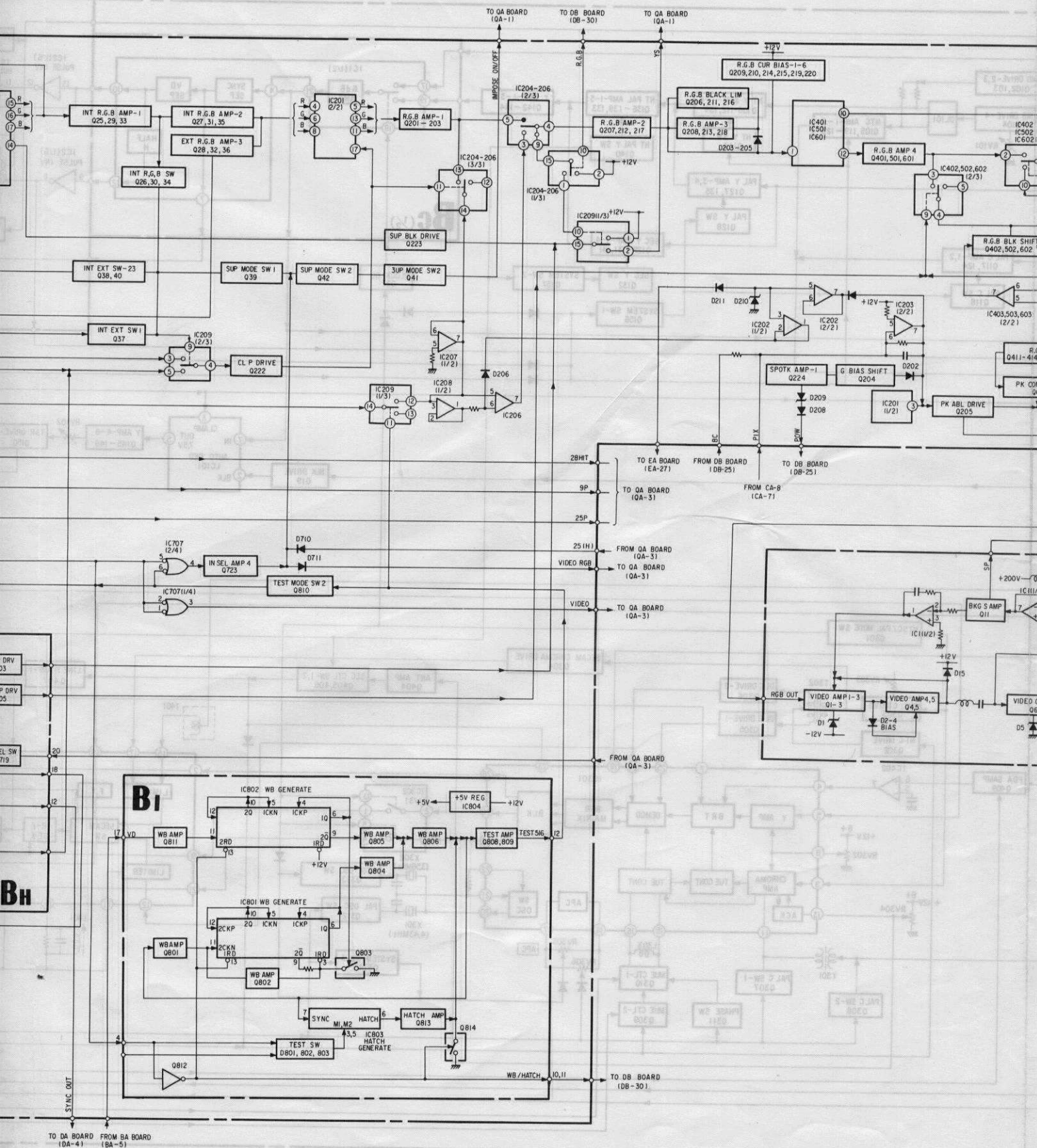


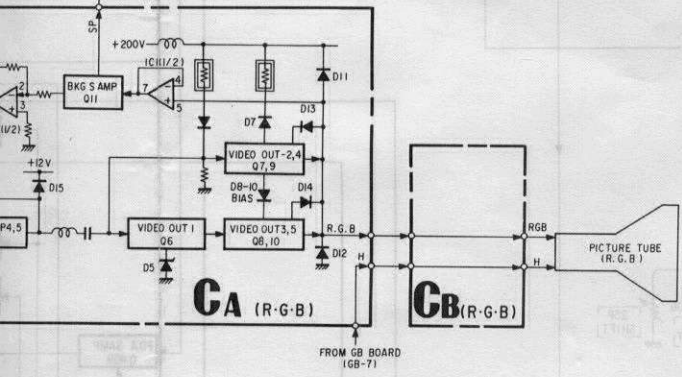
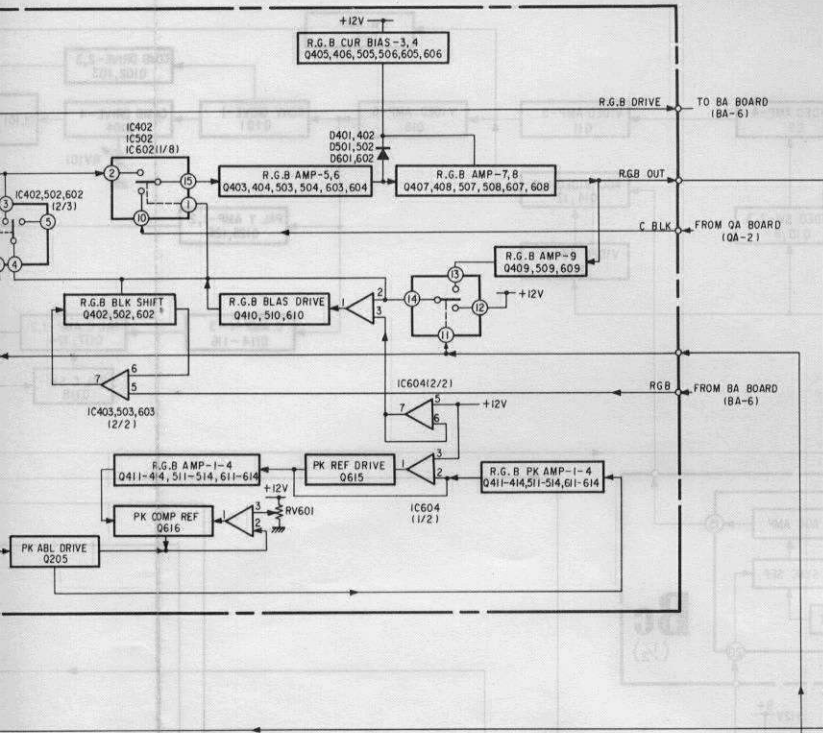




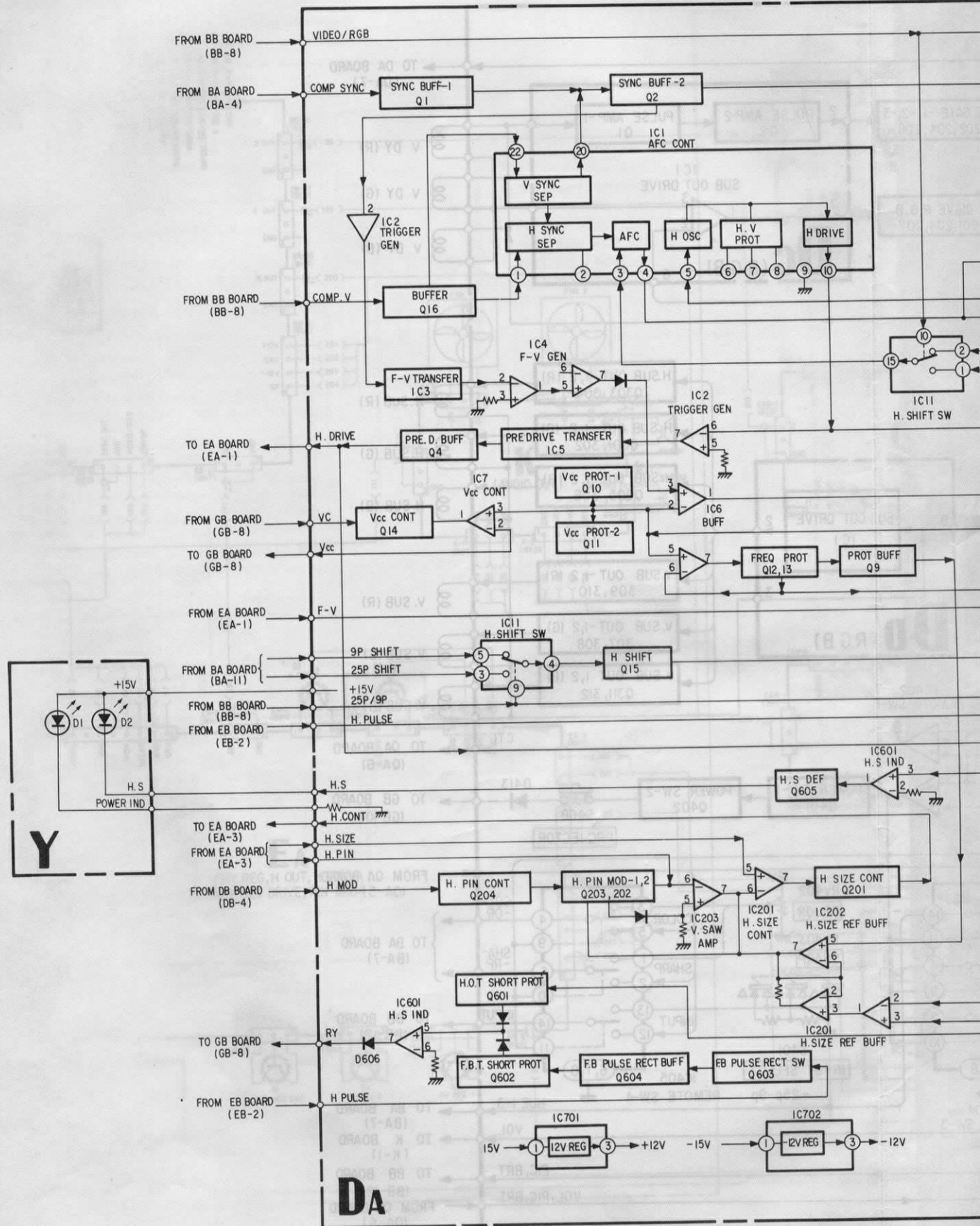
BB, BG, BH, BI, CA, CB BOARDS BLOCK DIAGRAM

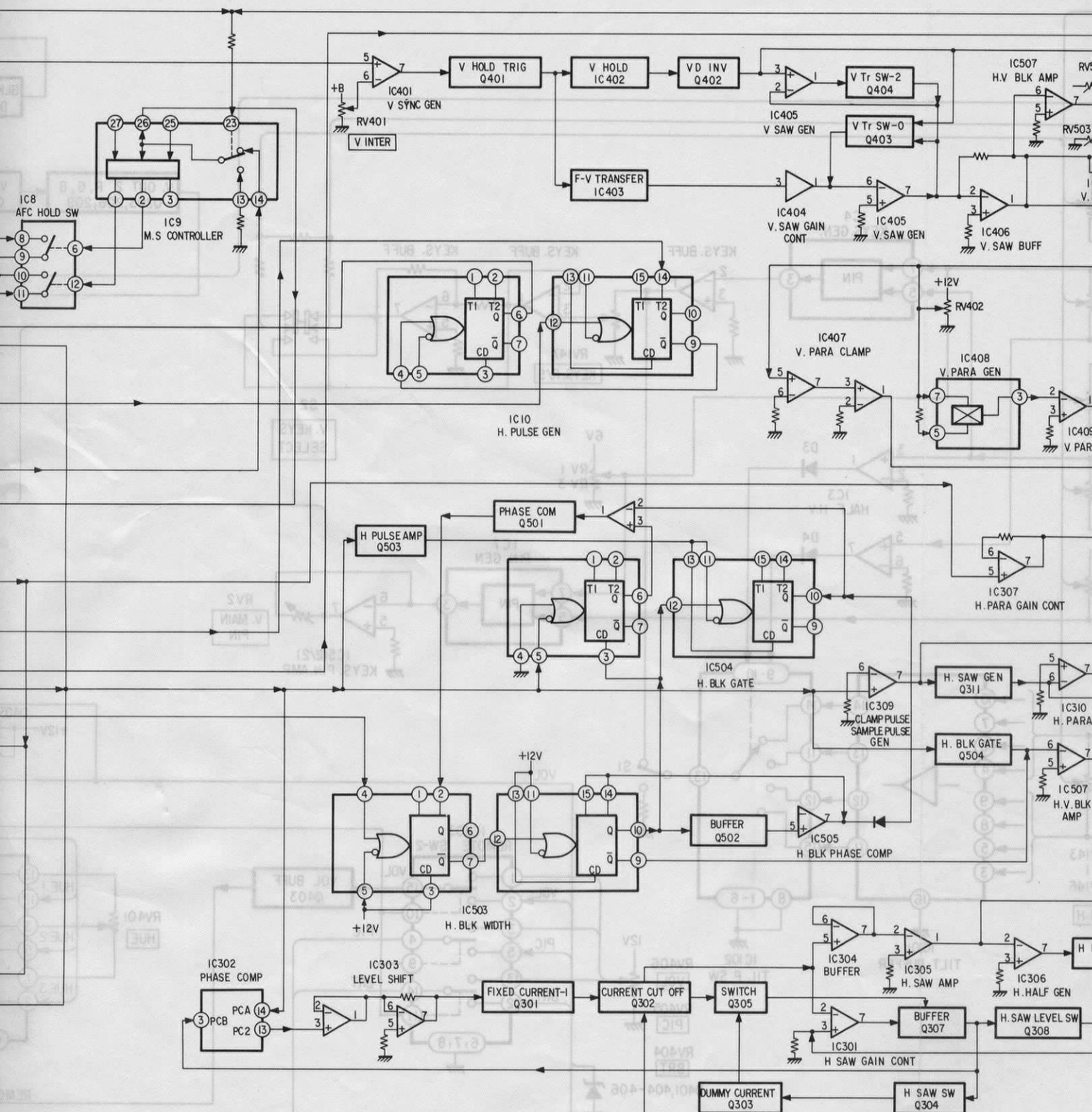


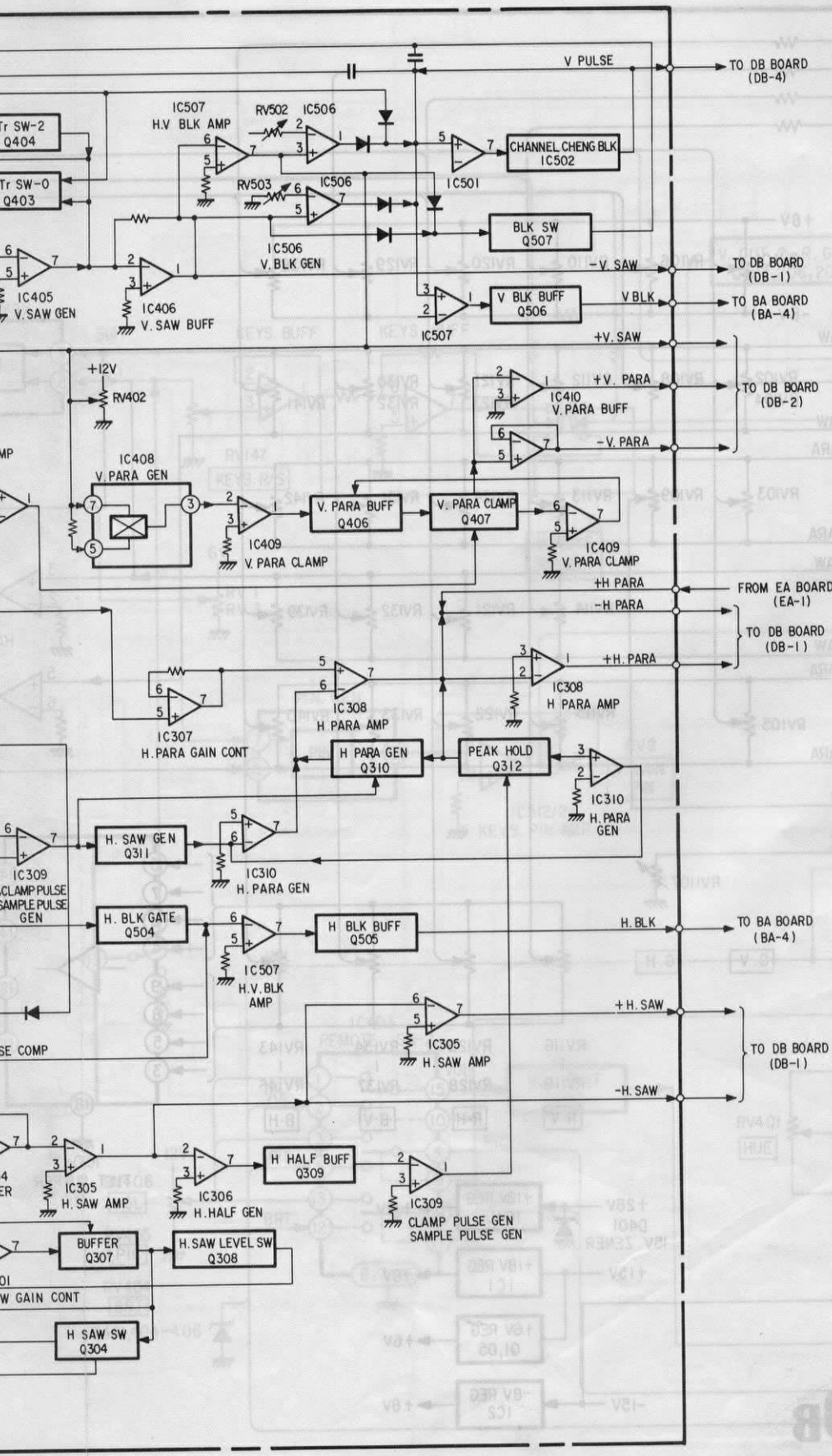




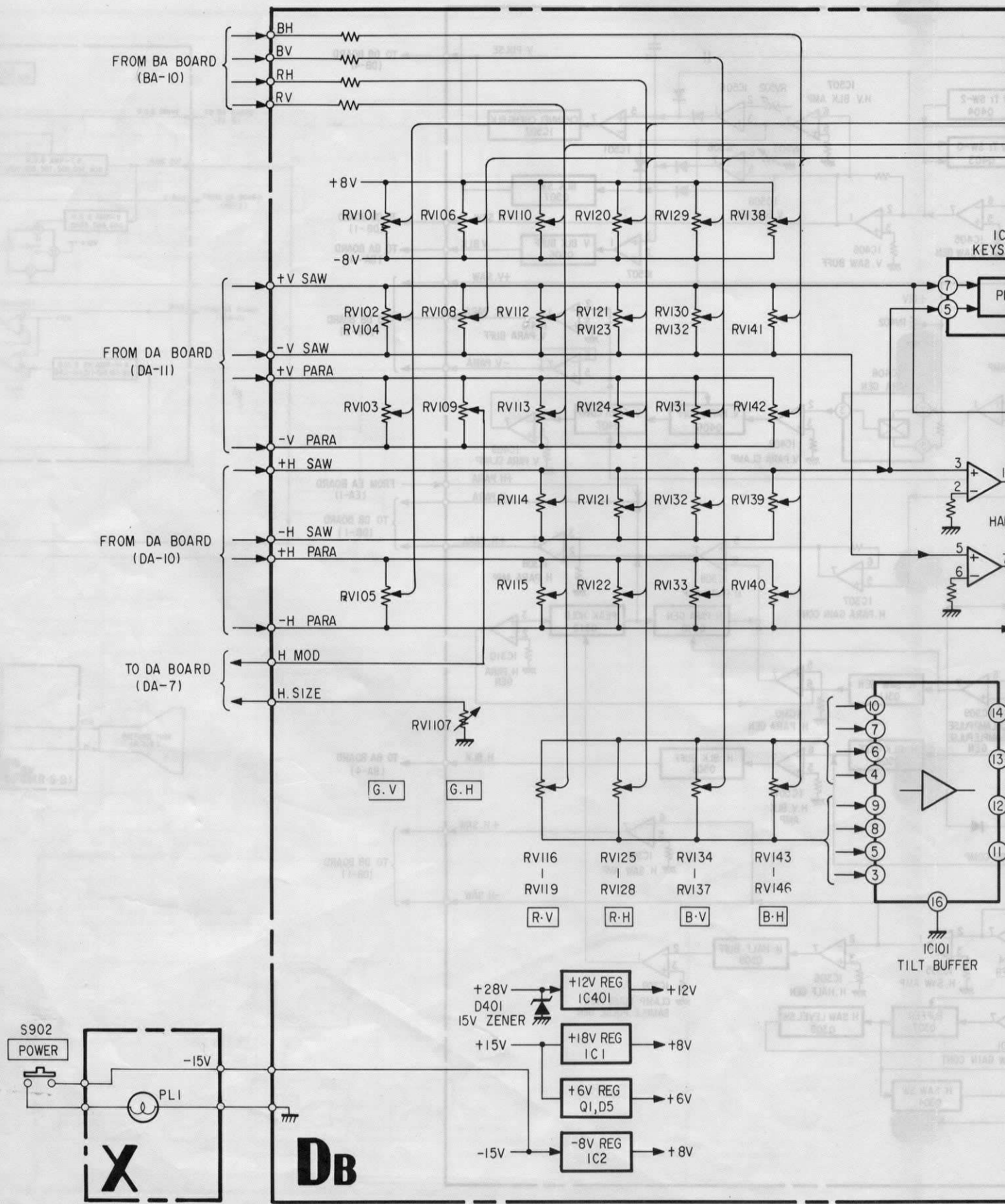
DA, Y BOARDS BLOCK DIAGRAM

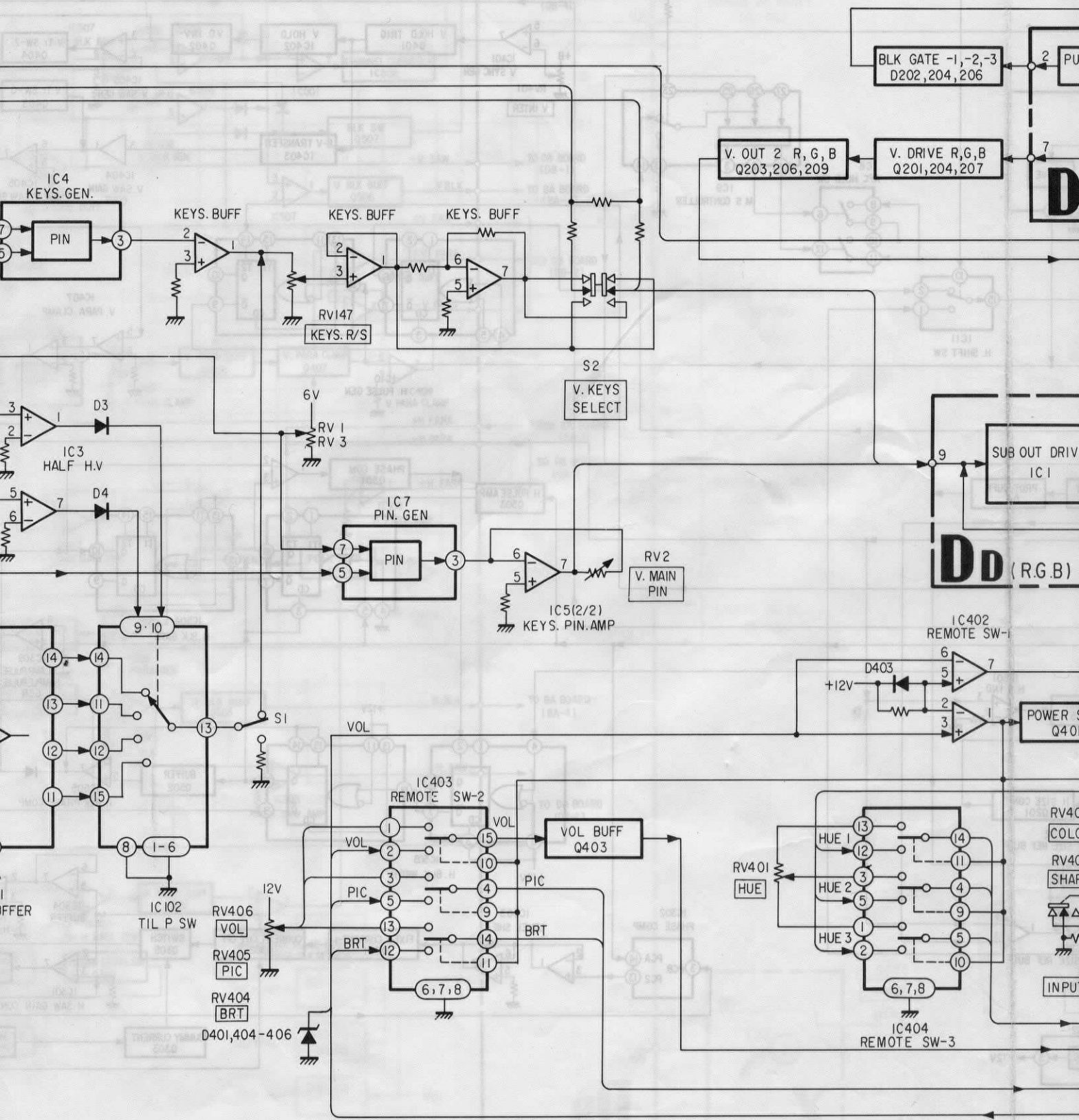


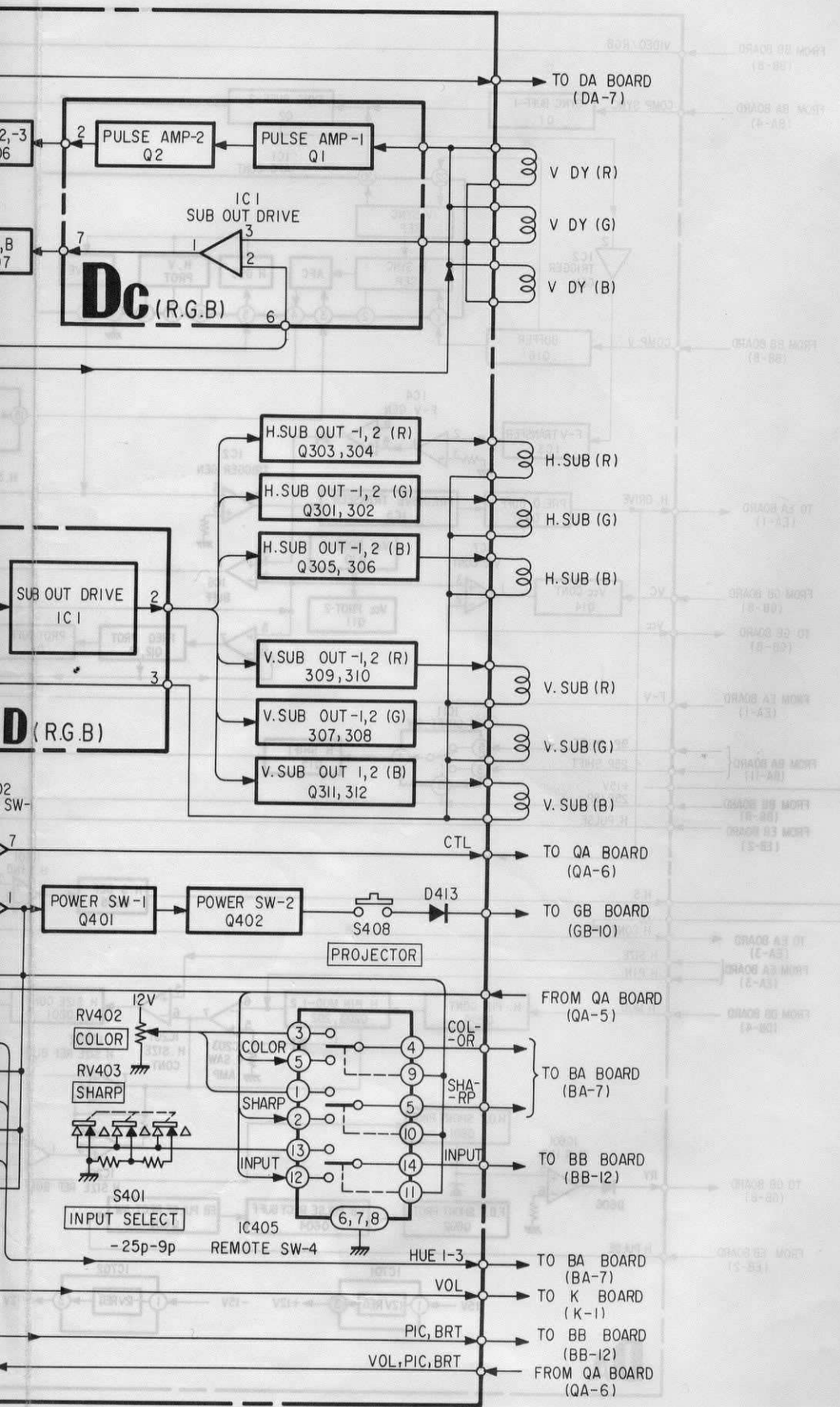




DB, DC, DD, X BOARDS BLOCK DIAGRAM

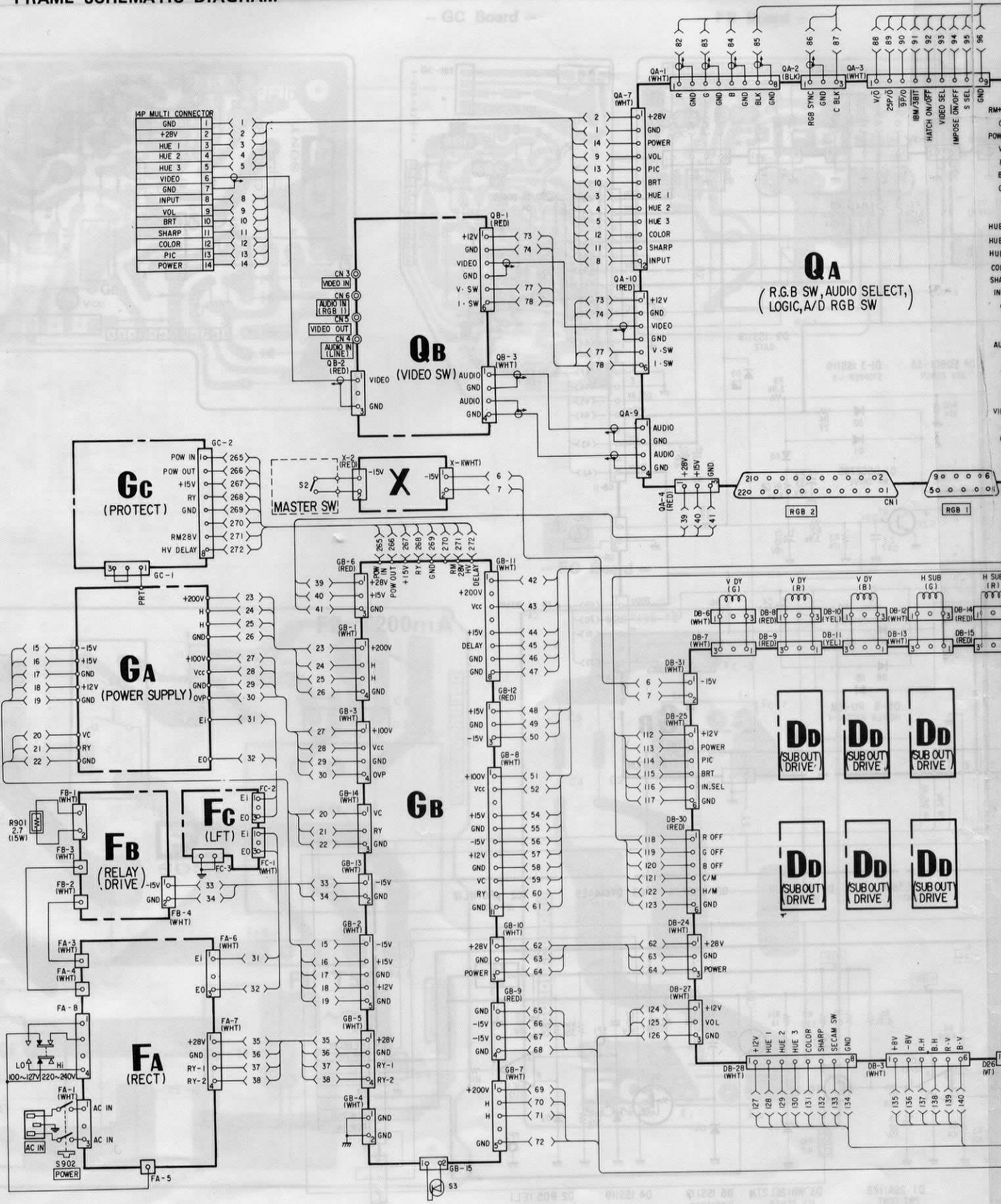


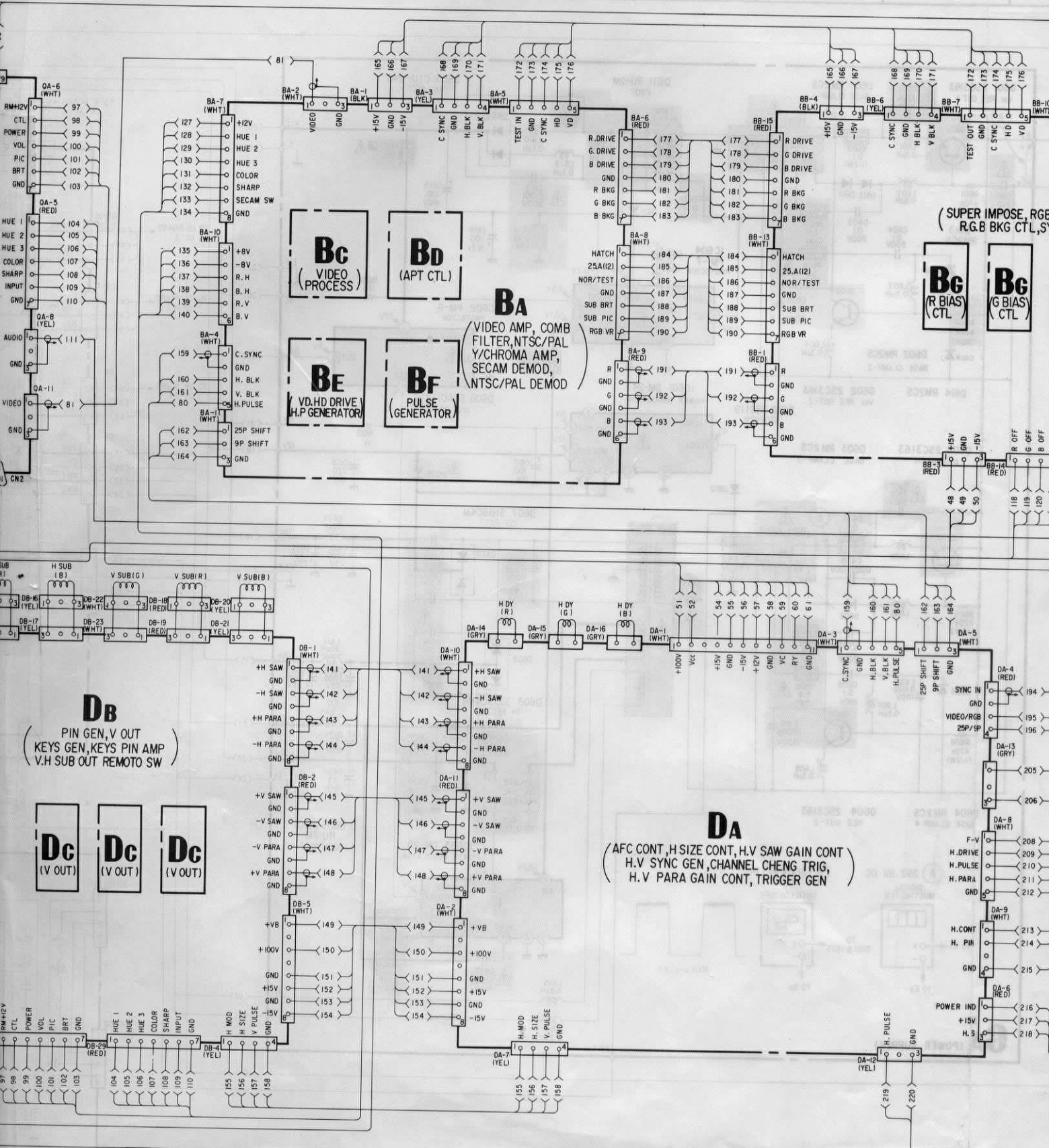


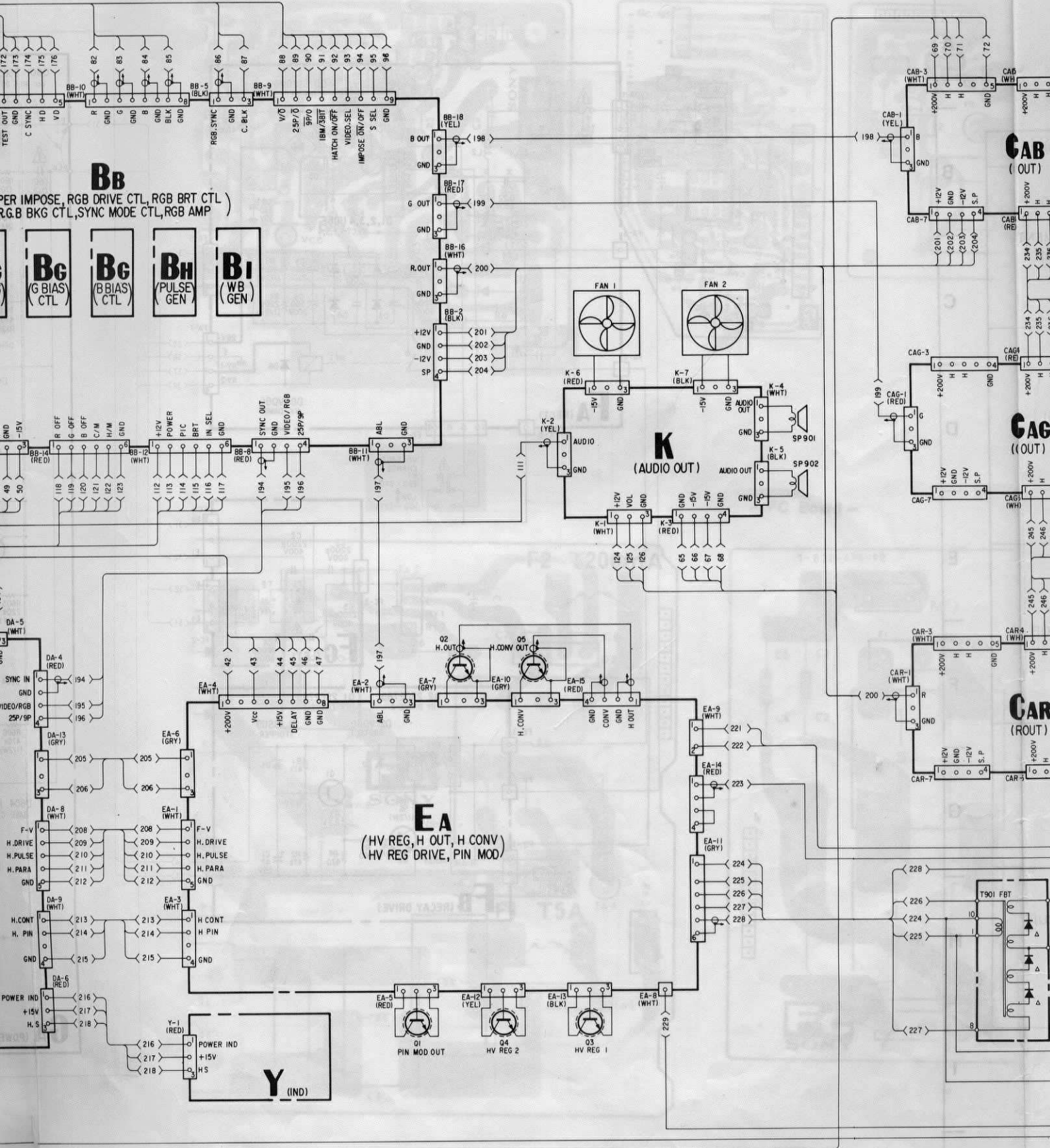


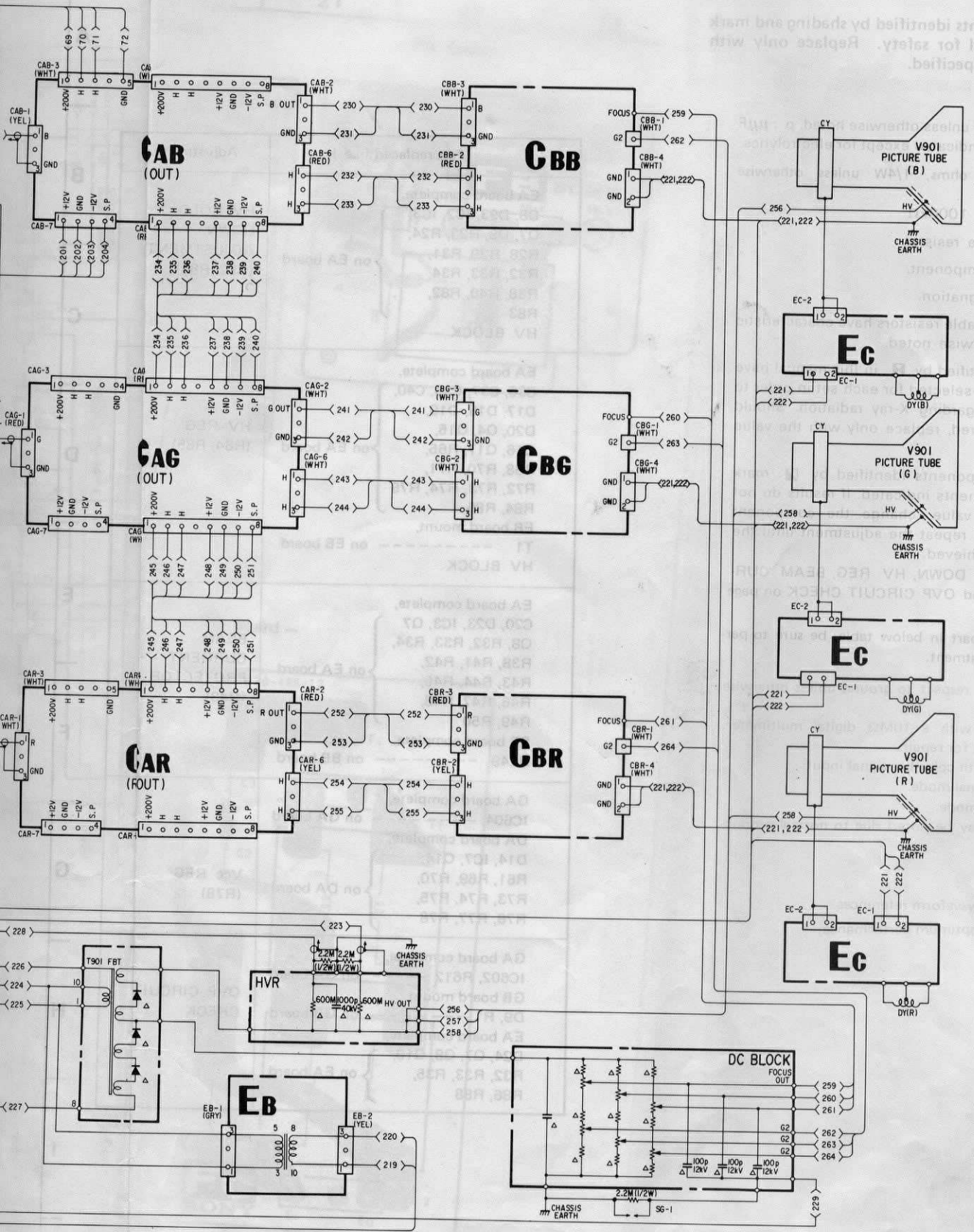
7.4. FRAME SCHEMATIC DIAGRAM

- GC Board -



















component identified by shading and mark
critical for safety. Replace only with
number specified.

7-5. SCHEMATIC DIAGRAMS

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

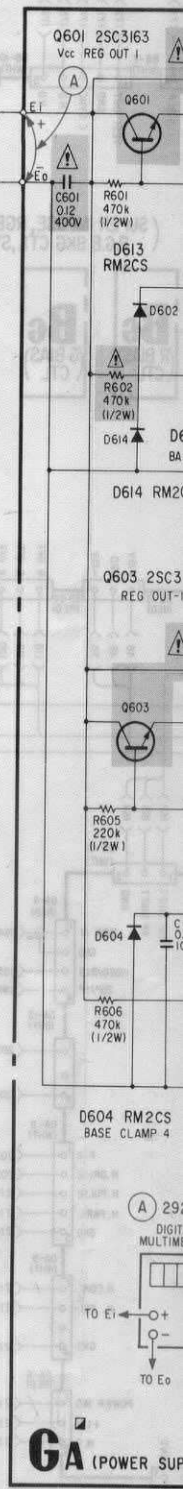
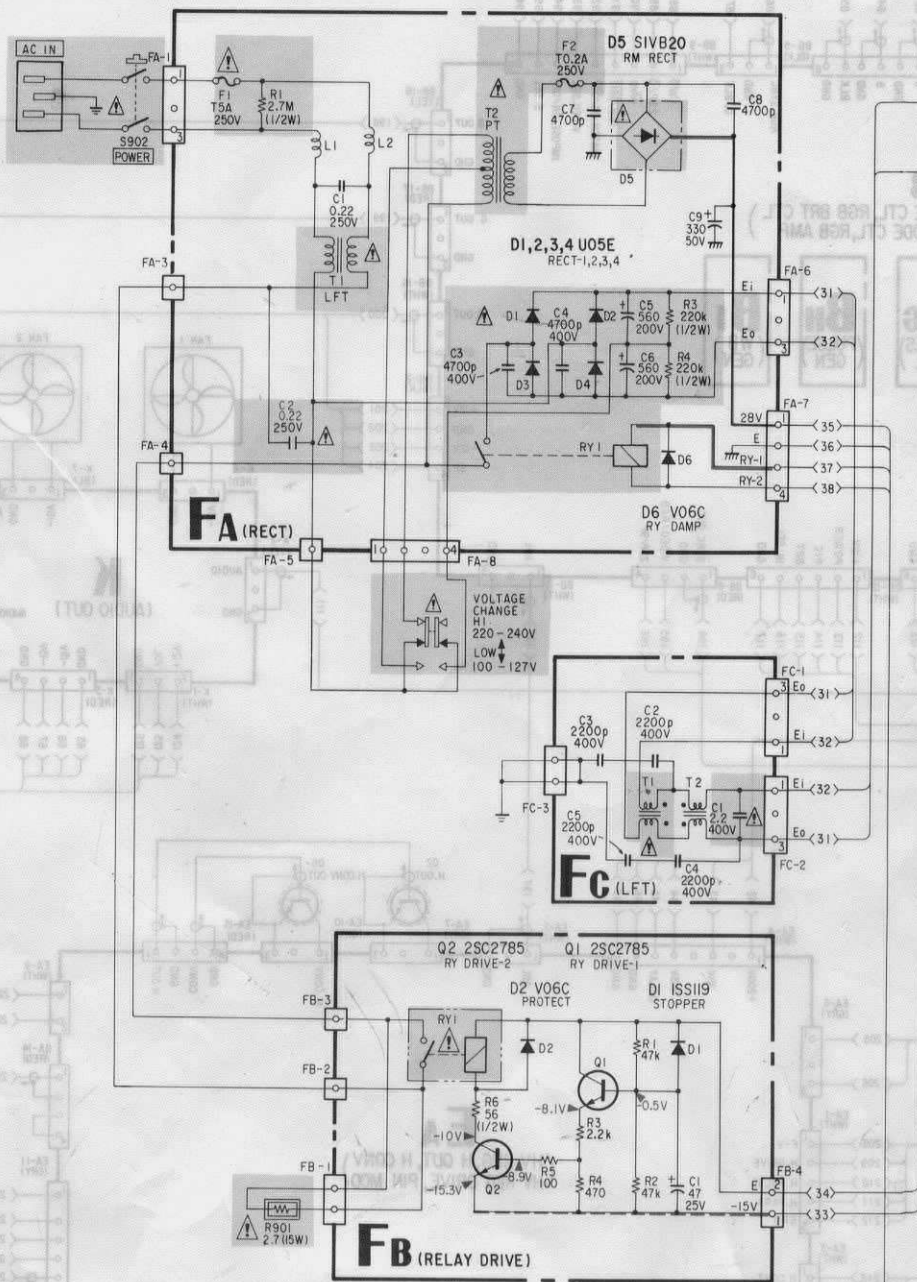
- All Capacitors are in μF unless otherwise noted, p : $\mu\mu\text{F}$ 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, 1/4W unless otherwise noted.
k Ω = 1000 Ω , M Ω = 1000k Ω
-  : nonflamable resistor.
- Δ : internal component.
-  : panel designation.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by  in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by  mark 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 HV HOLD DOWN, HV REG, BEAM CURRENT, VCC REG, and OVP CIRCUIT CHECK on page 35 ~ 42.)
- When replacing the part in below table, be sure to perform the related adjustment.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a 10M Ω digital multimeter.
-  : adjustment for repair.
- Readings are taken with color-bar signal input.
no mark : VIDEO signal mode.
() : HI-SCAN mode.
- Voltage variations may be noted due to normal production tolerances.
-  : B + bus.
-  : B - bus.
- Circled numbers are waveform references.
- * Selected to yield optimum performance.

Part replaced ()	Adjustment
EA board complete, D8, D23, IC2, IC3, Q7, Q8, R23, R24, R28, R29, R31, R32, R33, R34, R38, R40, R82, R83 HV BLOCK } on EA board	HV HOLD DOWN ADJUSTMENT (R82, R83)
EA board complete, C36, C37, C39, C40, D17, D18, D19, D20, Q4, Q15, Q16, Q17, R65, R68, R70, R71, R72, R73, R74, R75, R84, R85 EB board mount, T1 ----- on EB board HV BLOCK	HV REG (R84, R85)
EA board complete, C20, D23, IC3, Q7, Q8, R32, R33, R34, R38, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50 BB board complete, R249 ----- on BB board	BEAM CURRENT PROTECTOR (R43)
GA board complete, IC604 ----- on GA board DA board complete, D14, IC7, Q14, R61, R69, R70, R73, R74, R75, R76, R77, R78 } on DA board	Vcc REG (R78)
GA board complete, IC602, R612 ----- on GA board GB board mount, D9, R1 ----- on GB board EA board complete, D24, Q7, Q8, Q19, R32, R33, R35, R86, R88 } on EA board	OVP CIRCUIT CHECK

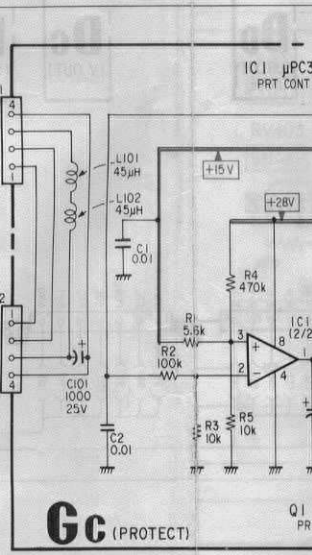
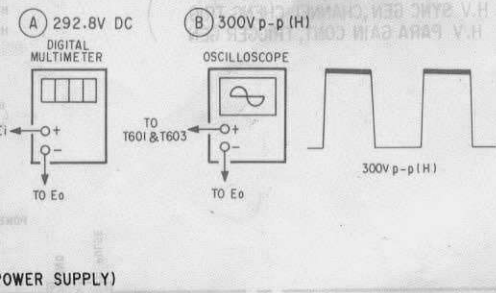
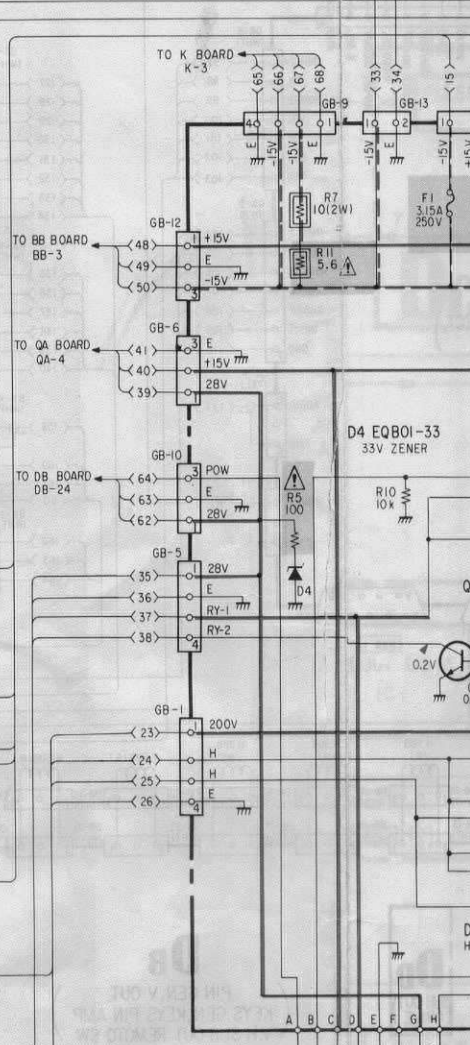
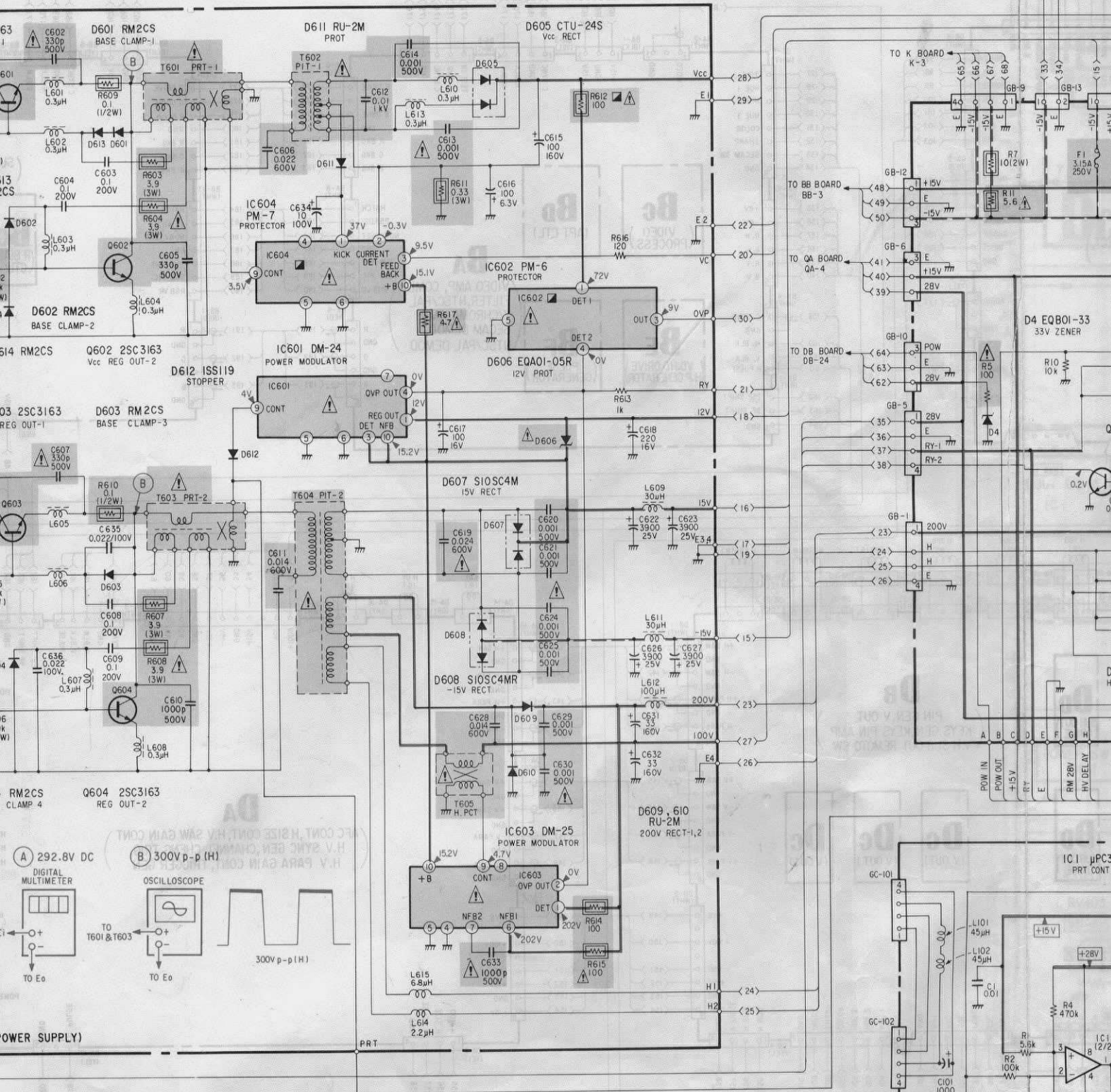
A
B
C
D
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G
H
I
J

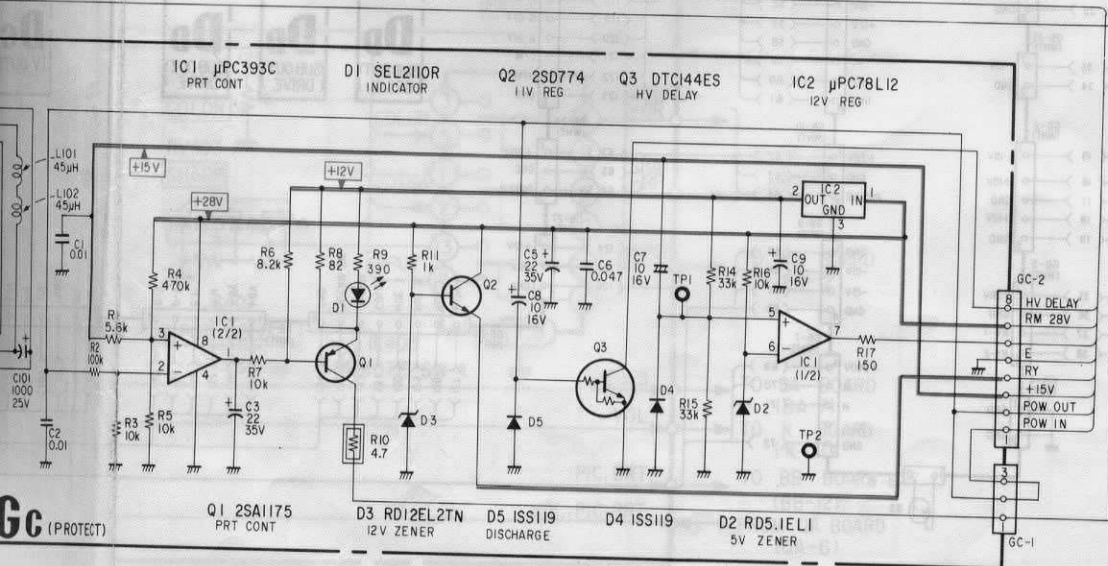
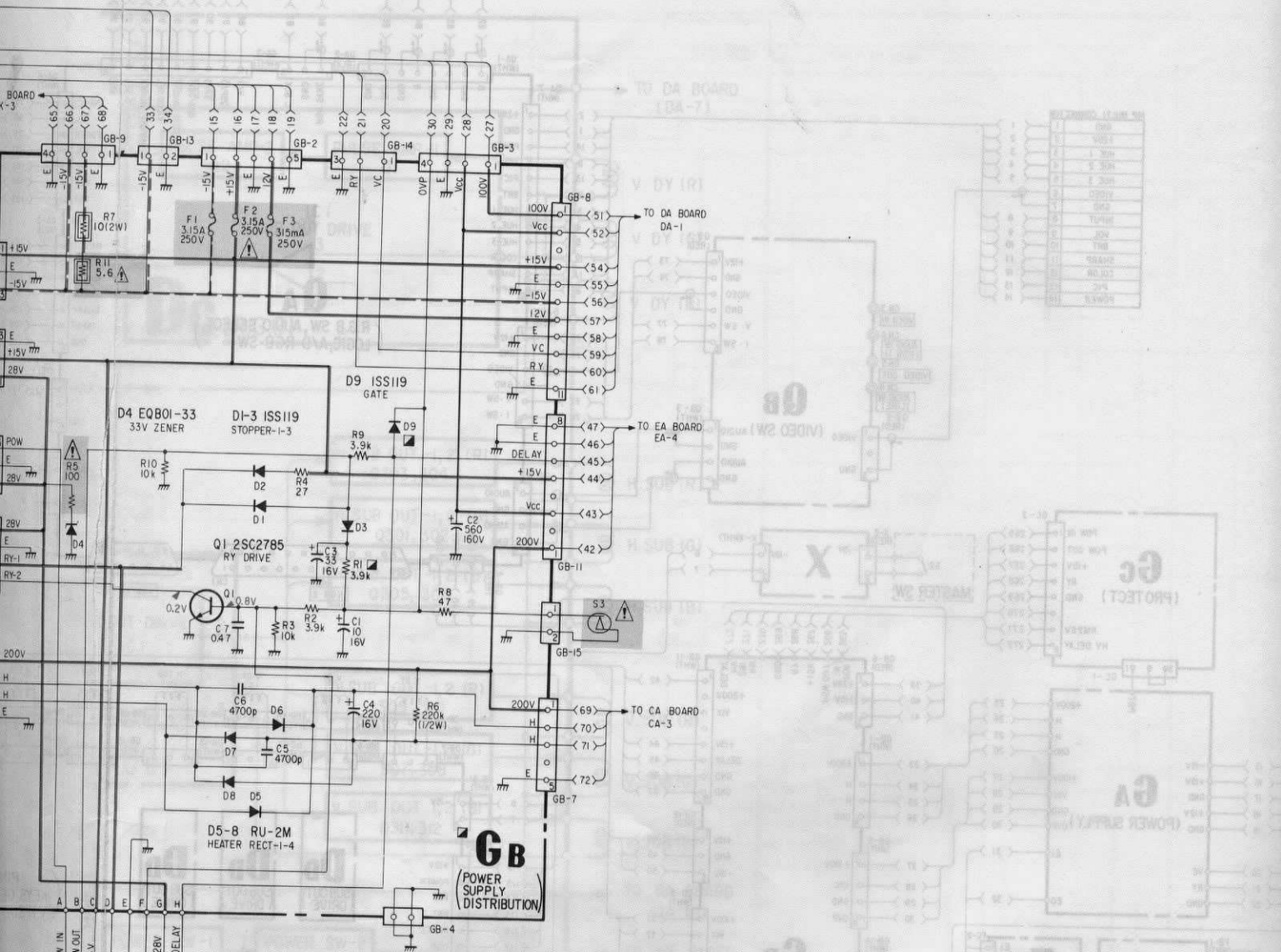
1 2 3 4 5 6 7 8

A
B
C
D
E
F
G
H
I
J



8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16





7-6. PRINTED WIRING BOARDS

- Conductor Side -

GA

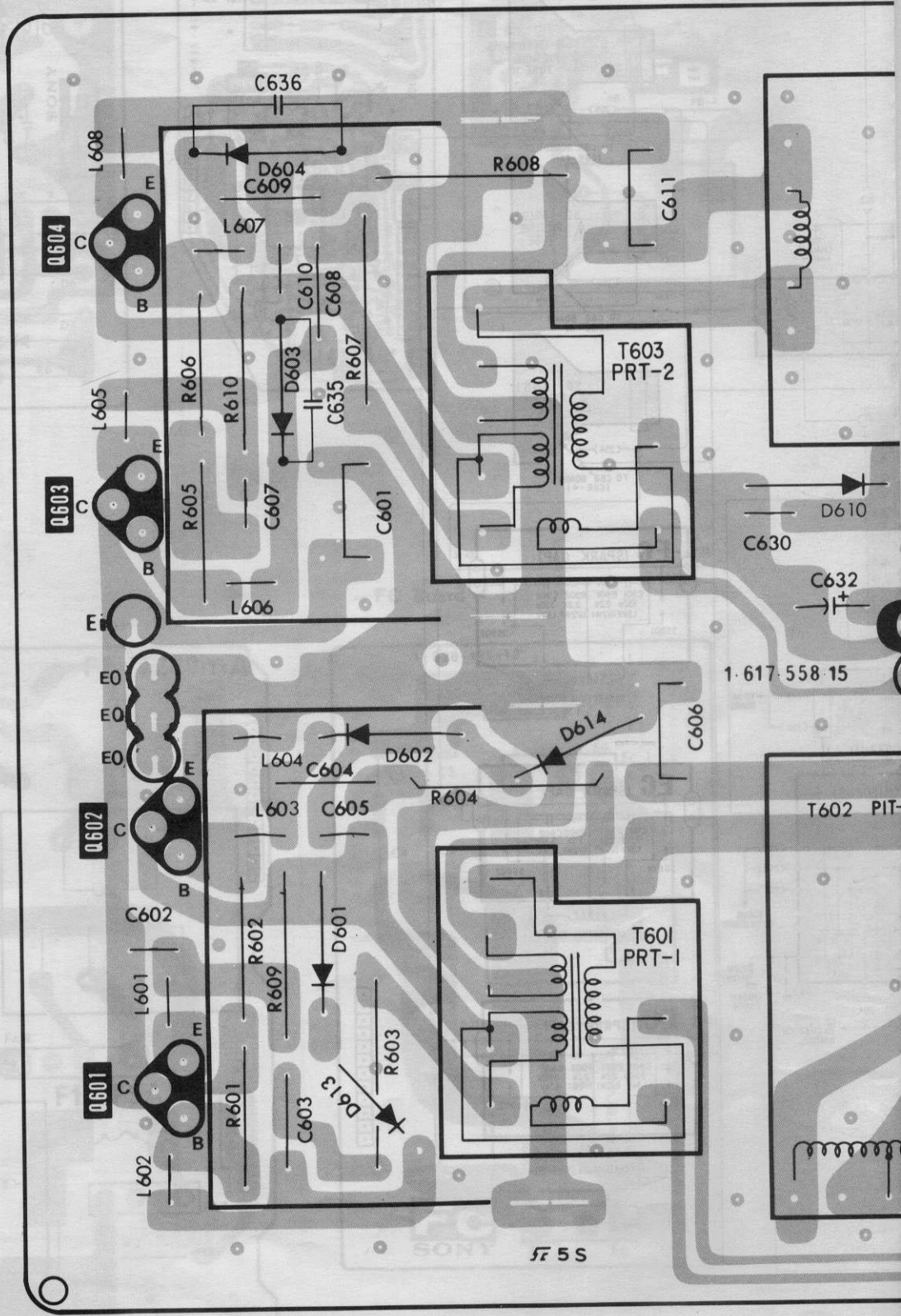
[POWER SUPPLY]

VPH-1031QM

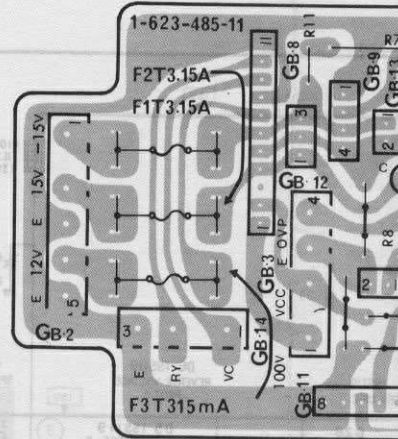
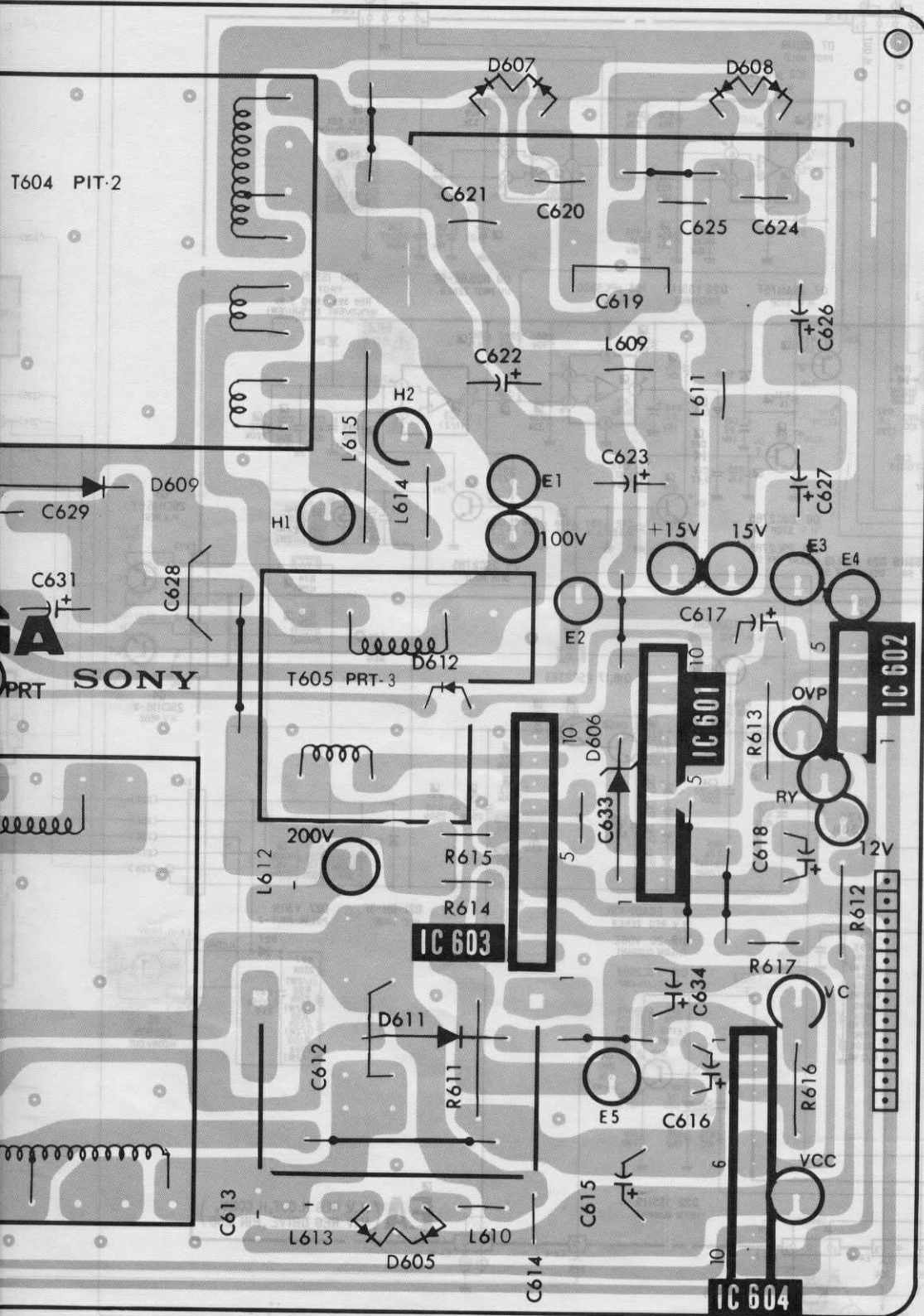
1 2 3 4 5 6 7 8

- GA Board -

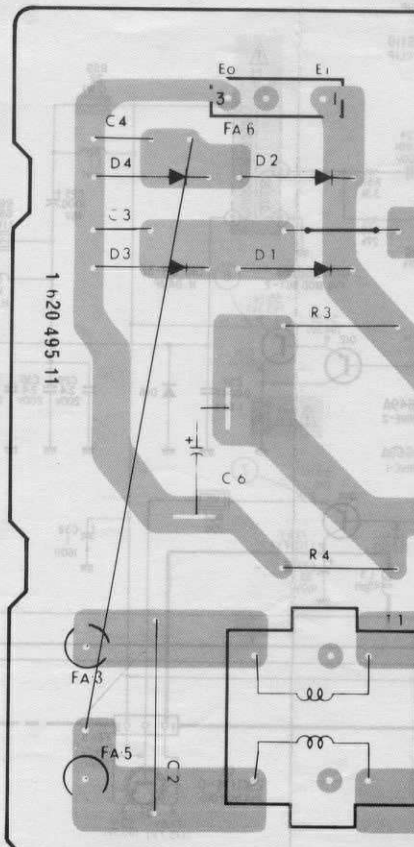
IC, Q	D
	607 608
	607,608
	604
604	
	603
603	610 609
IC602	612
	602
IC601	614
	606
602	
IC603	
	601
	611
601	
	613
IC604	
	605



- GB Board -



- FA Board -



FA

[RECT]

GC

[PROTECT]

FB

[RELAY DRIVE]

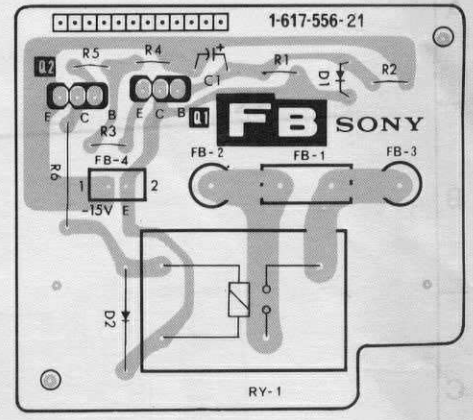
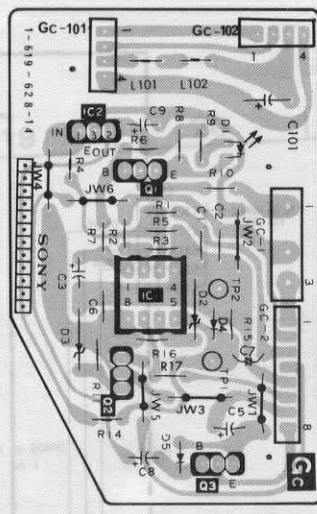
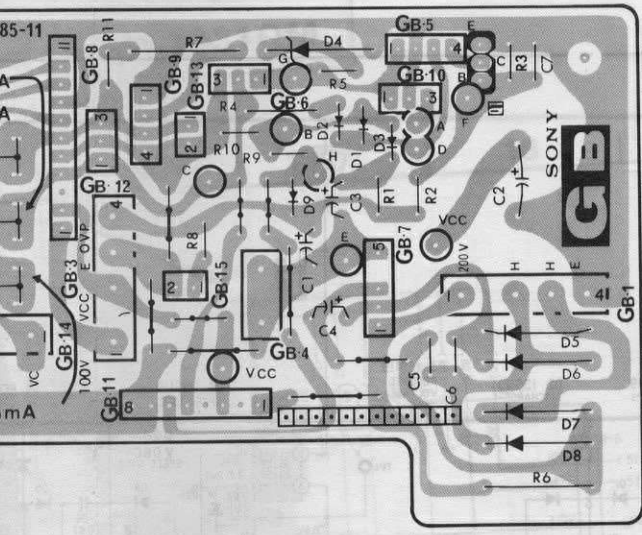
FC

[LFT]

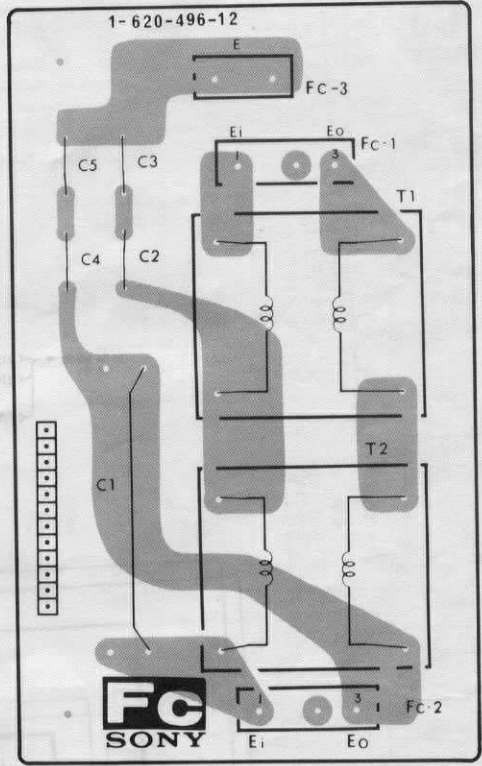
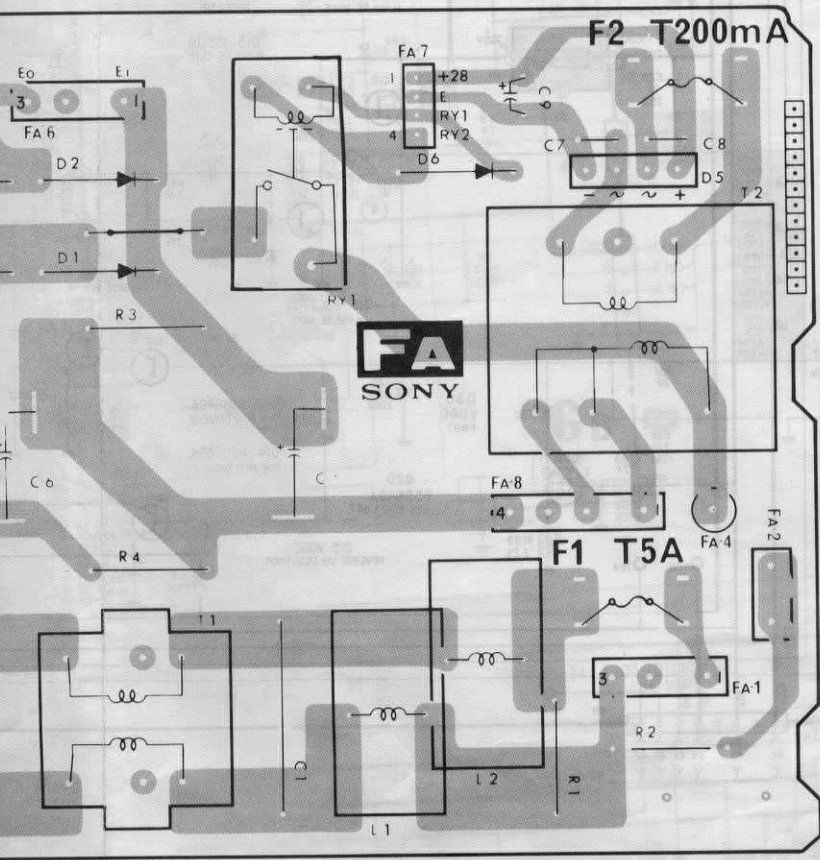
16 17 18 19 20 21 22 23

- GC Board -

- FB Board -



- FC Board -

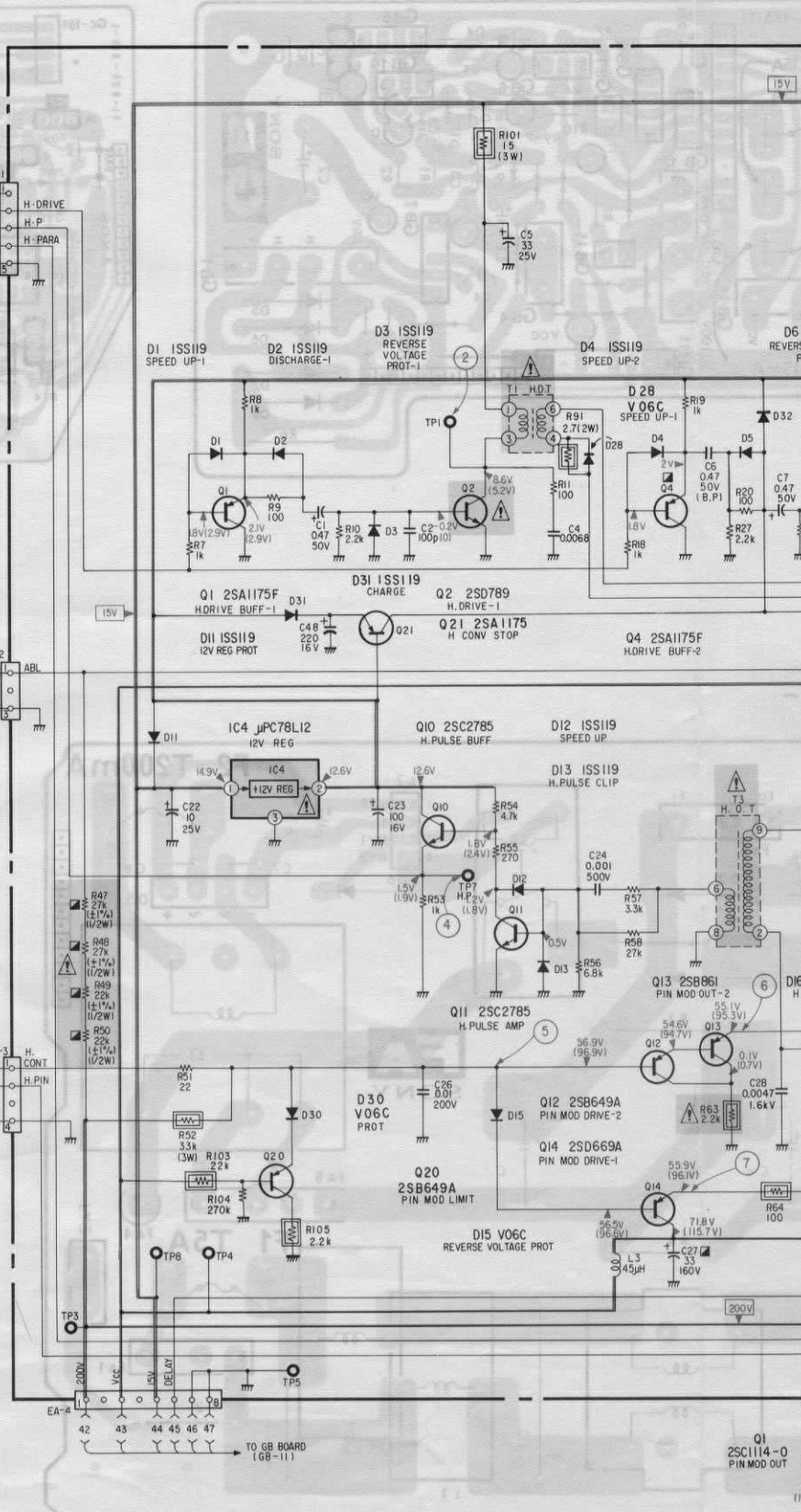
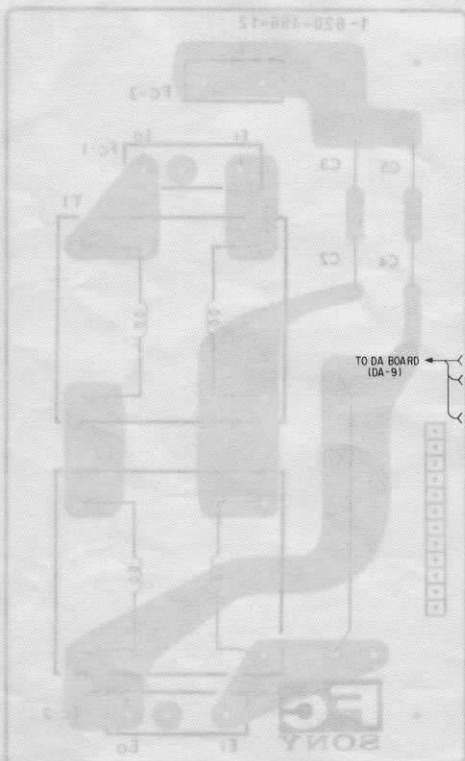
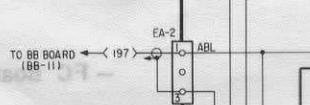
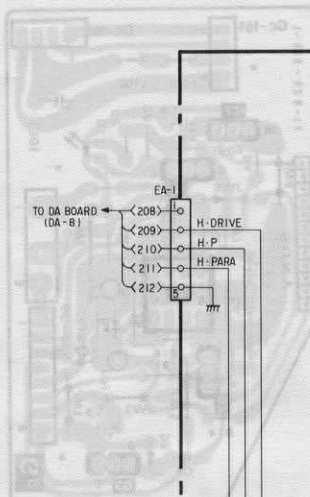
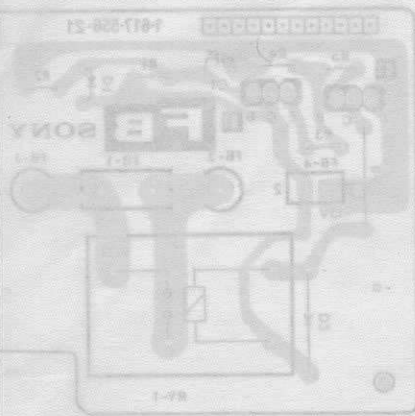


1 2 3 4 5 6 7 8

FB Board

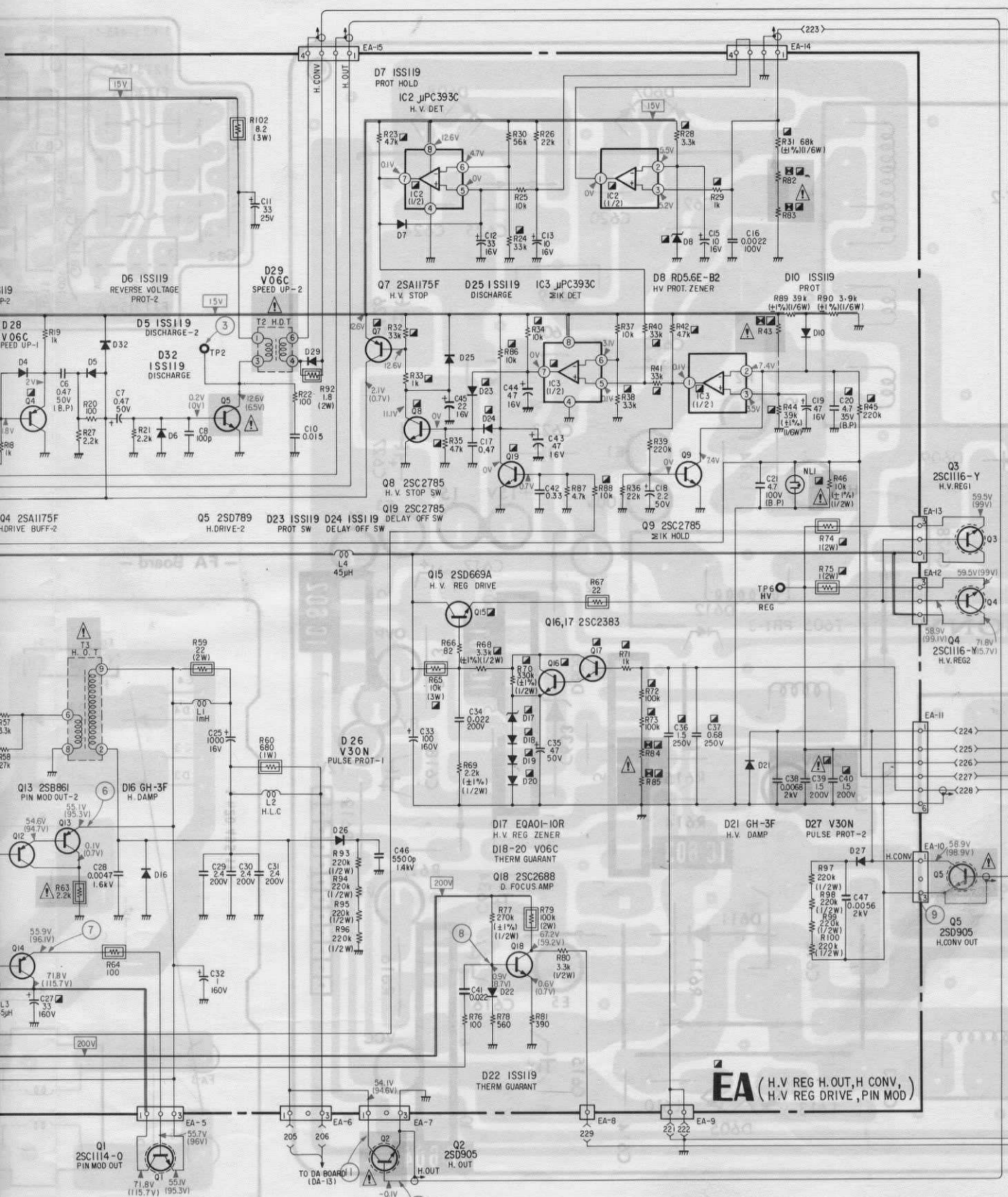
GC Board

A B C D E F G H I J

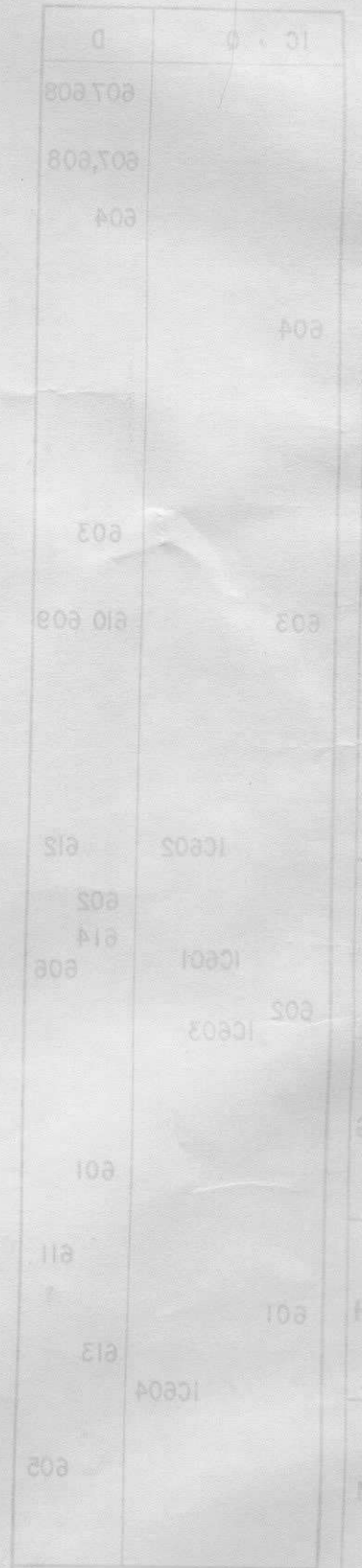
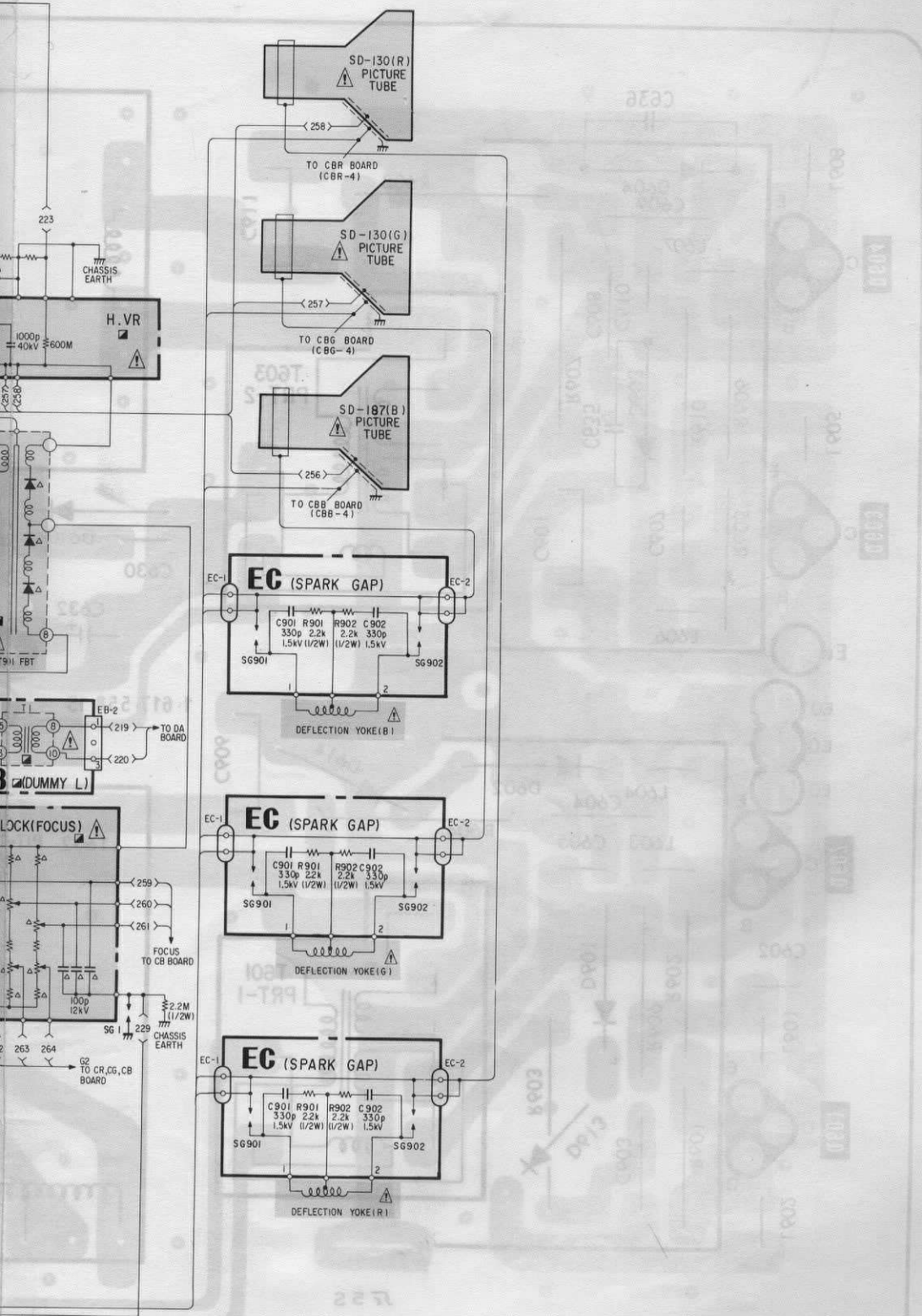




- GB Board -



EA (H.V. REG H. OUT, H CONV, H.V. REG DRIVE, PIN MOD)



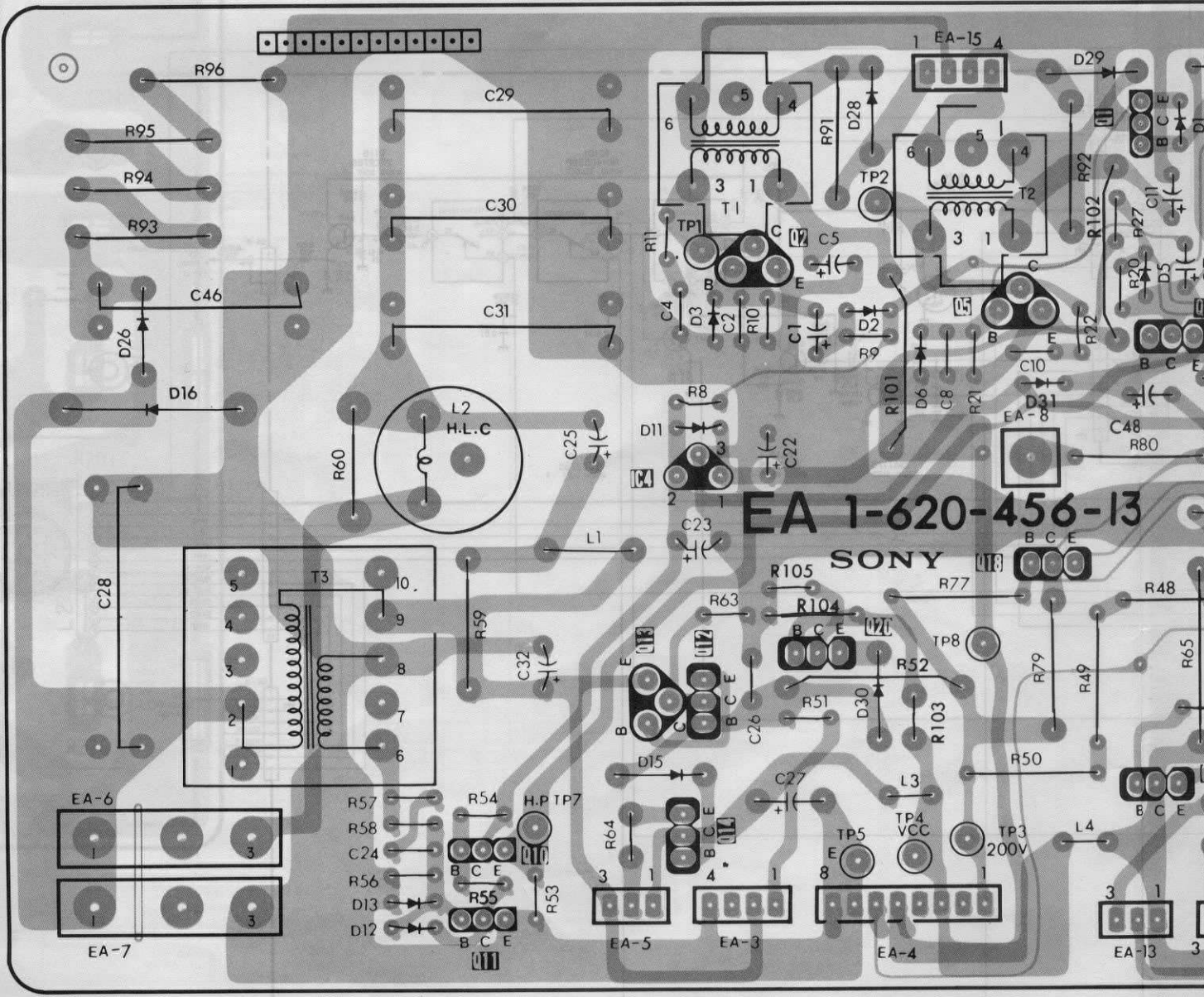
EA

[H.V REG H. OUT, H CONV, H.V REG DRIVE, PIN MOD]

1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---

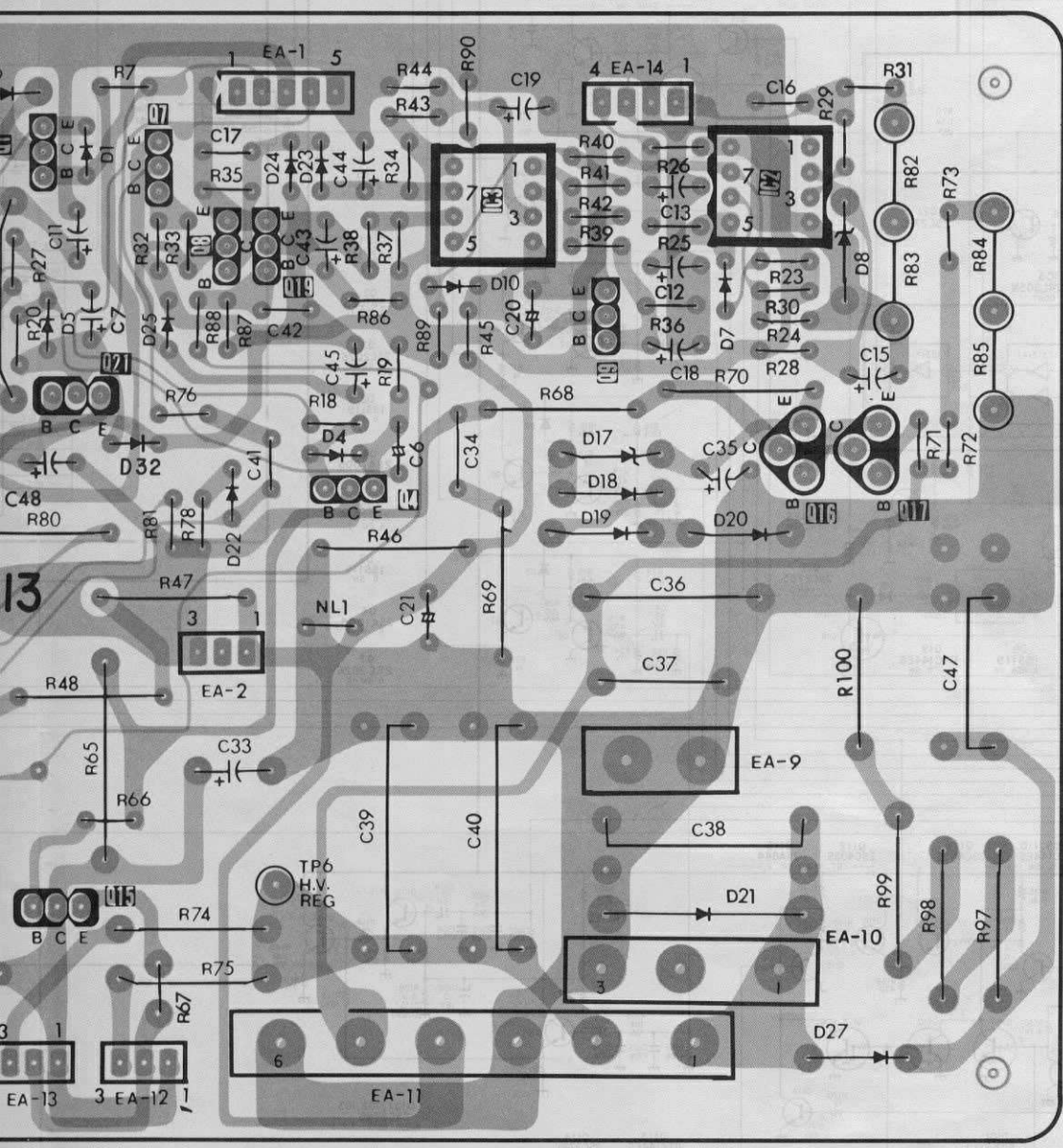
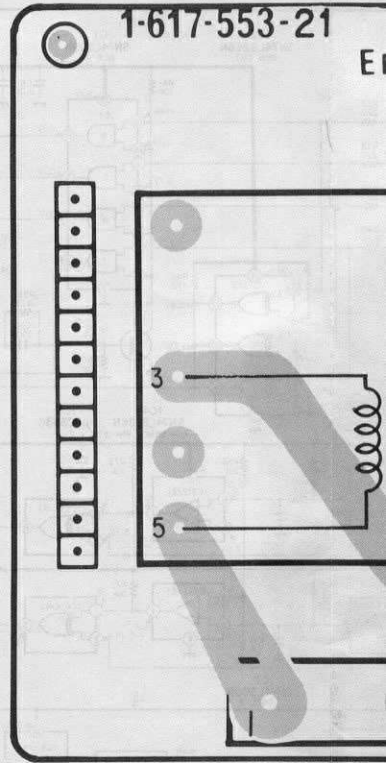
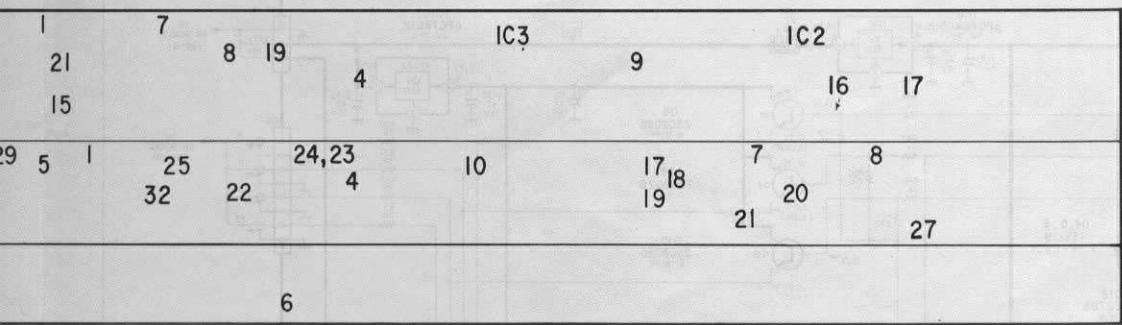
- EA Board -

IC										
Q										
D	26 16			10 11	13 14	2 20	28 2	6	5 18	21 15
TP			13 12		15 11	3	2 30	2	31	29 5
				7			5 4 3	8		



EA 1-620-456-13
SONY

- EB Board -

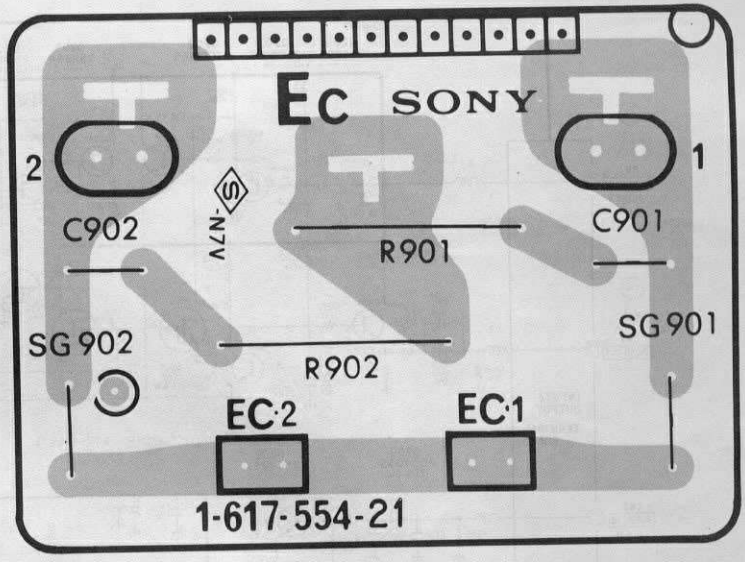
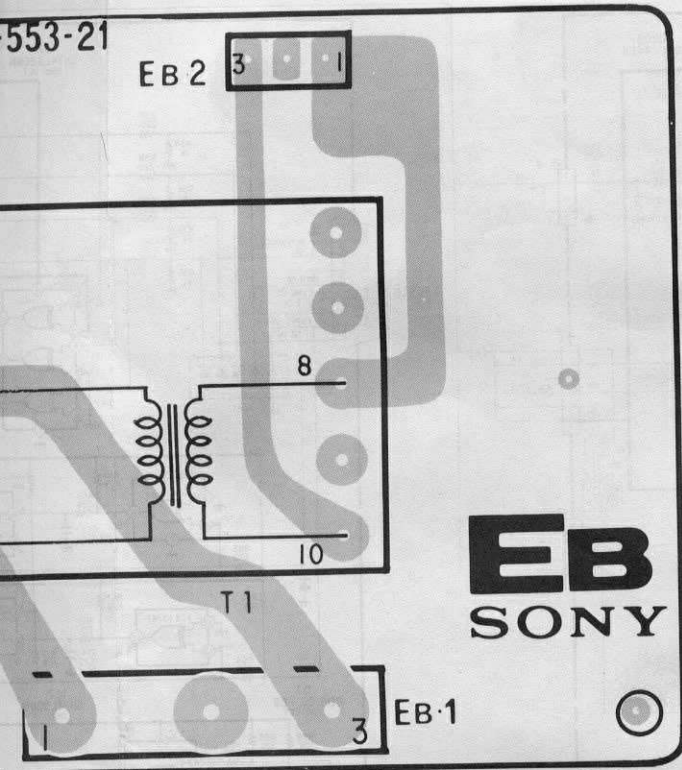


- [Pattern] : Conductor side pattern
- [Pattern] : Component side pattern

EC [SPARK GAP]

16 | 17 | 18 | 19 | 20 | 21 | 22 | 23

- EC Board -



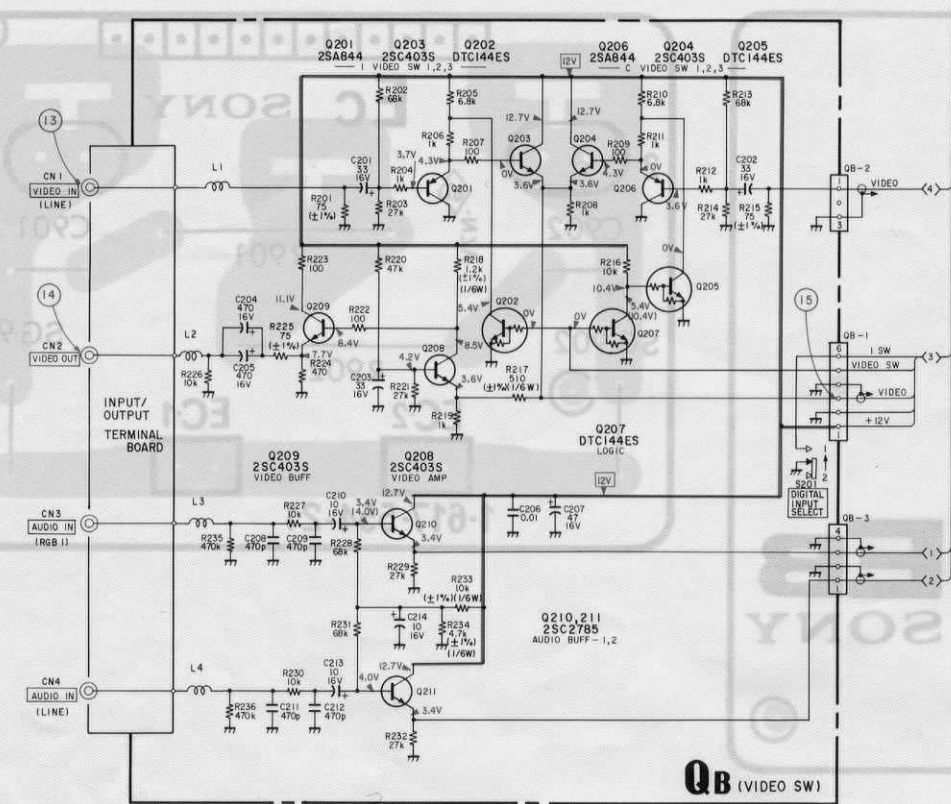
side pattern
side pattern



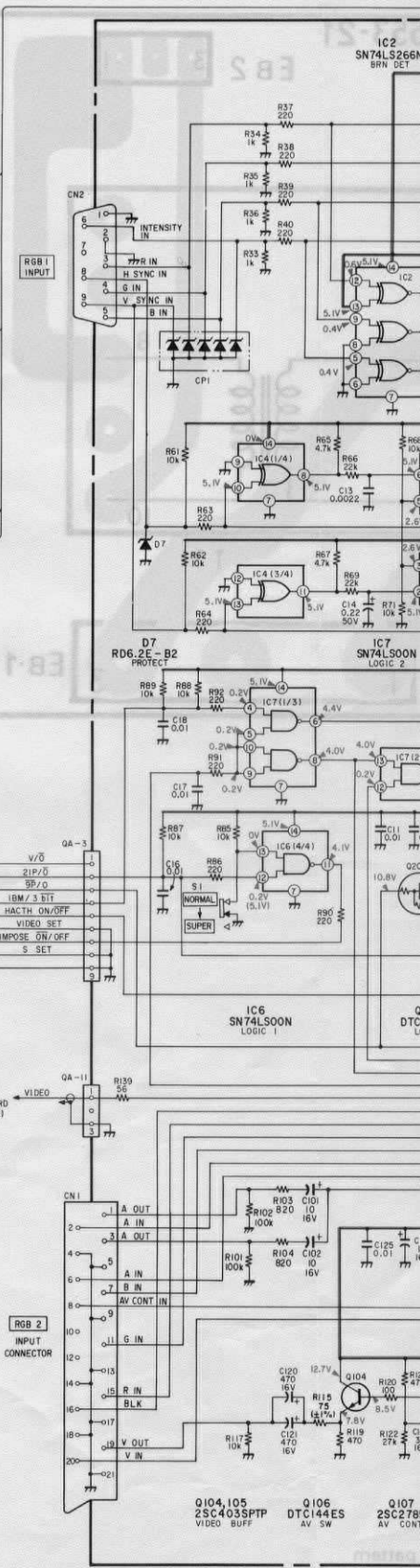
1 2 3 4 5 6 7 8

- EC Board -

A
B
C
D
E
F
G
H
I
J



QB (VIDEO SW)



TO BB BOARD (BB-9)
V/D
21P/D
9P/O
16M/3 BIT
HACTH ON/OFF
VIDEO SET
IMPOSE ON/OFF
S SET

TO BA BOARD (BA-2)
VIDEO

RGB 2
INPUT CONNECTOR

Q104,105 2SC403SPT VIDEO BUFF
Q106 DTC144ES AV SW
Q107 2SC278 AV CONT

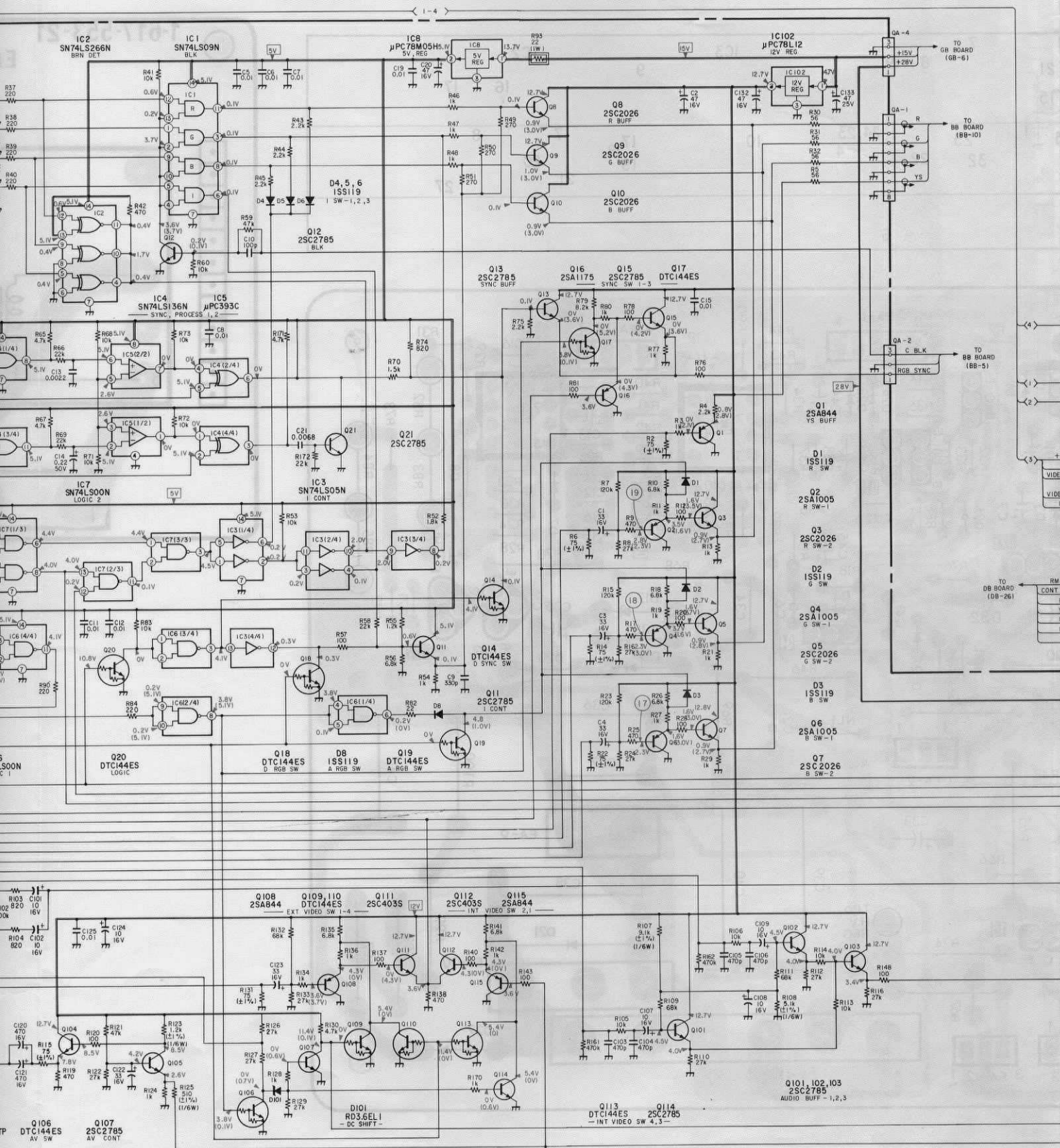


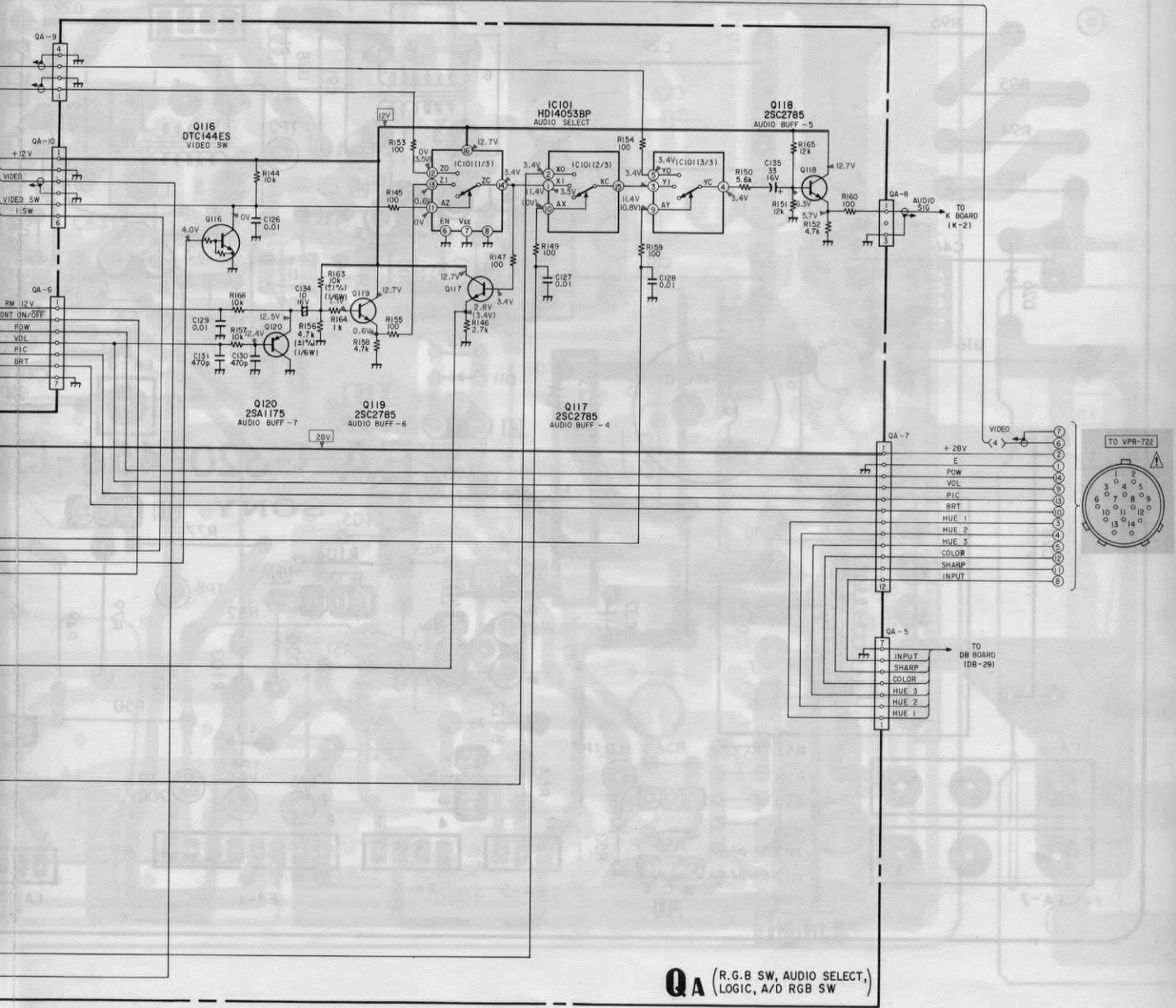
YMMUJ

8 9 10 11 12 13 14 15

- EB Board -

(1-4)





QA (R.G.B SW, AUDIO SELECT, LOGIC, A/D RGB SW)

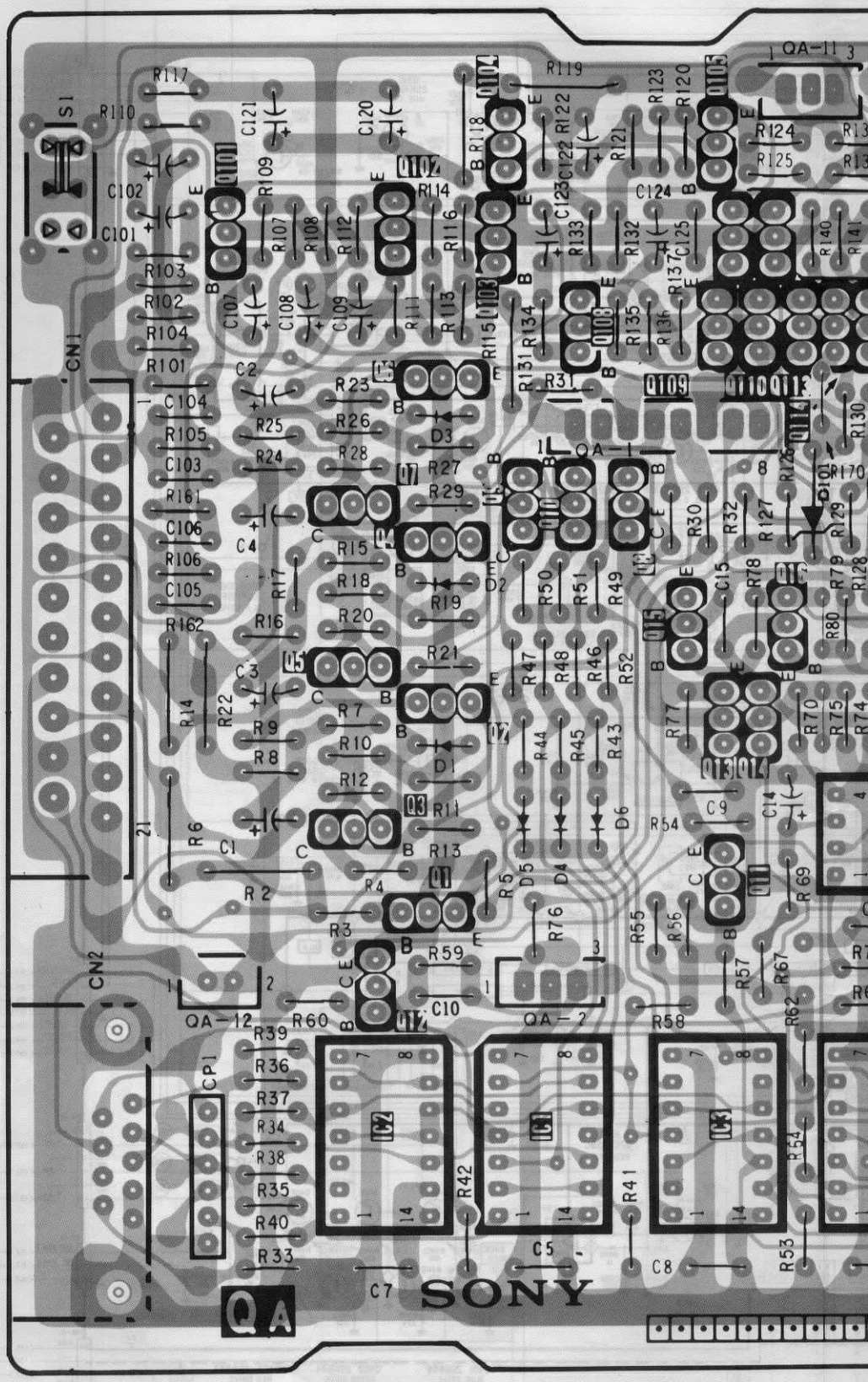
QA

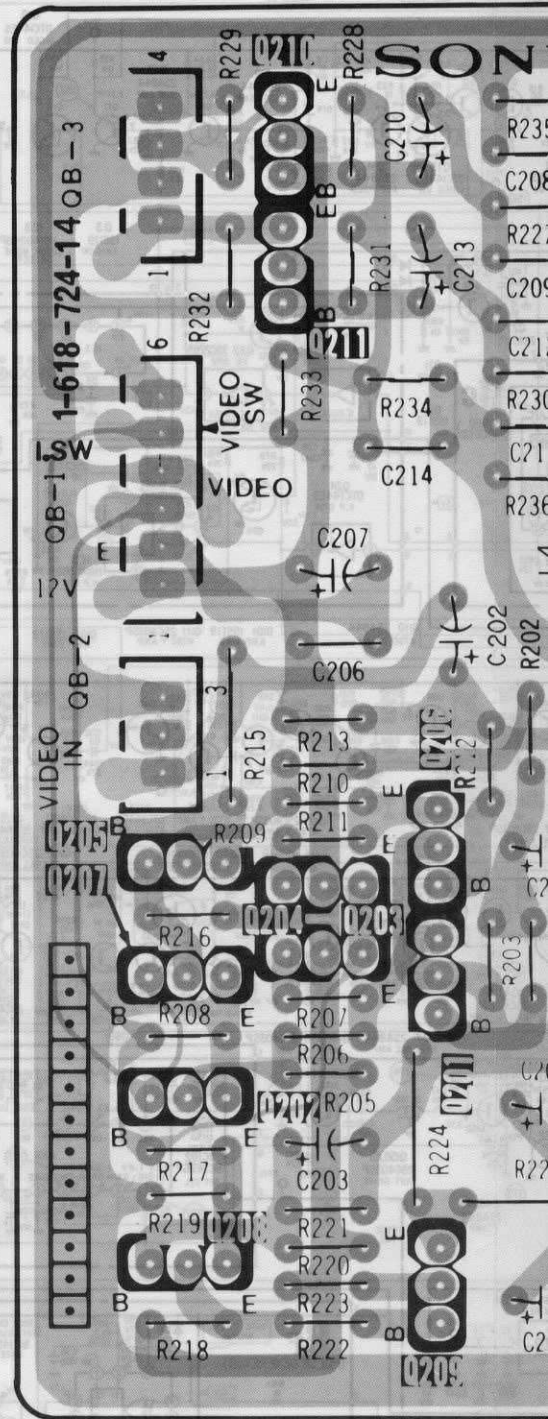
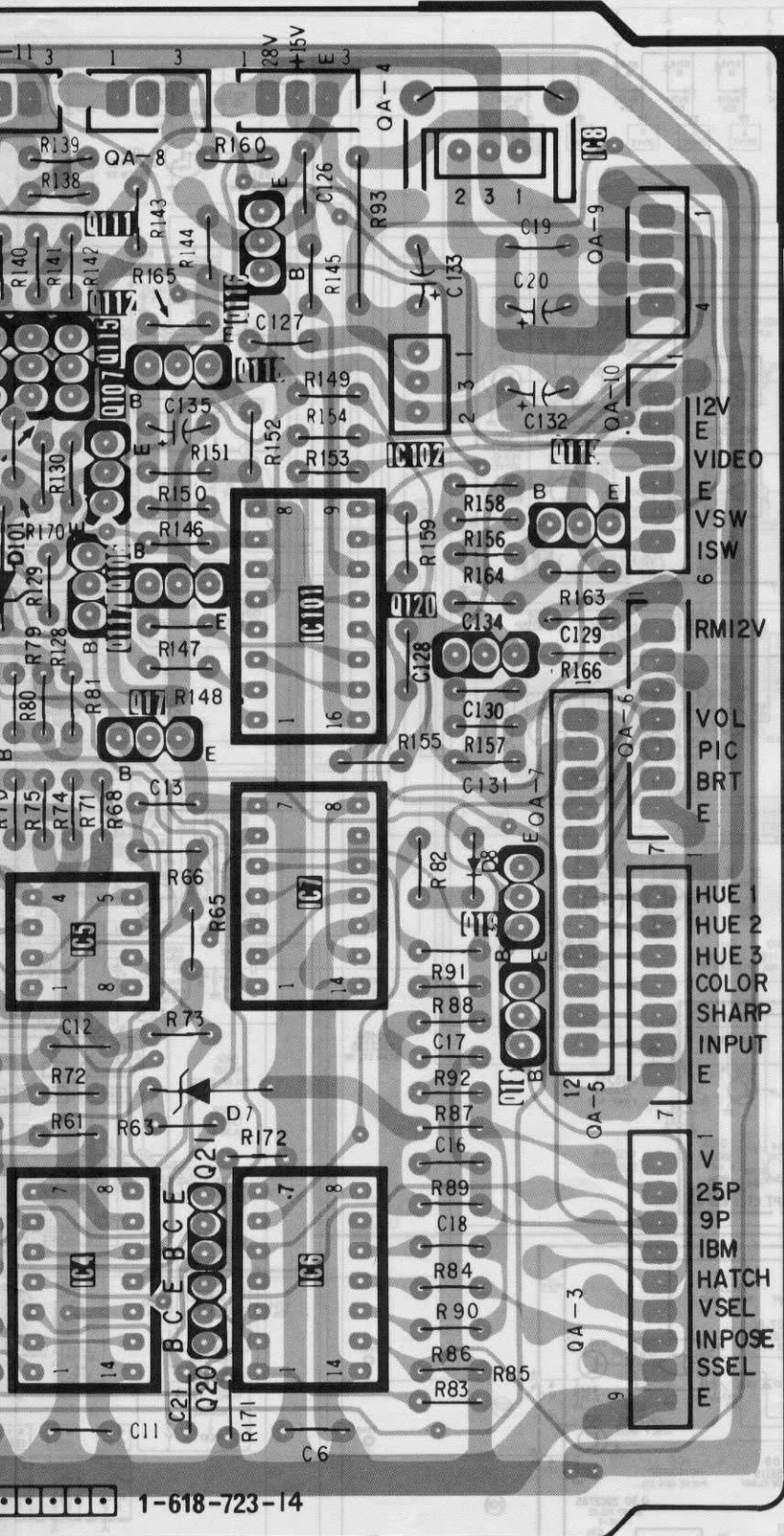
[RGB SW, AUDIO SW, LOGIC, INPUT SELECT]

1 2 3 4 5 6 7 8

- QA Board -

IC	Q	D
104, 105	IC8	
101, 102	III	
103	116	
108	112, 115, 118	
107		
6, 109, 110, 113, 114	IC102, 119	3
7, 9, 10	106	101
4	IC101, 120	
8	117	
16		2
15, 17		
5		
2		
13, 14		1
IC7	19	8
3	IC5	6
1, 11		5, 4
12	18	7
21		
IC2, 1, 3, 4, 6		
20		





16

17

18

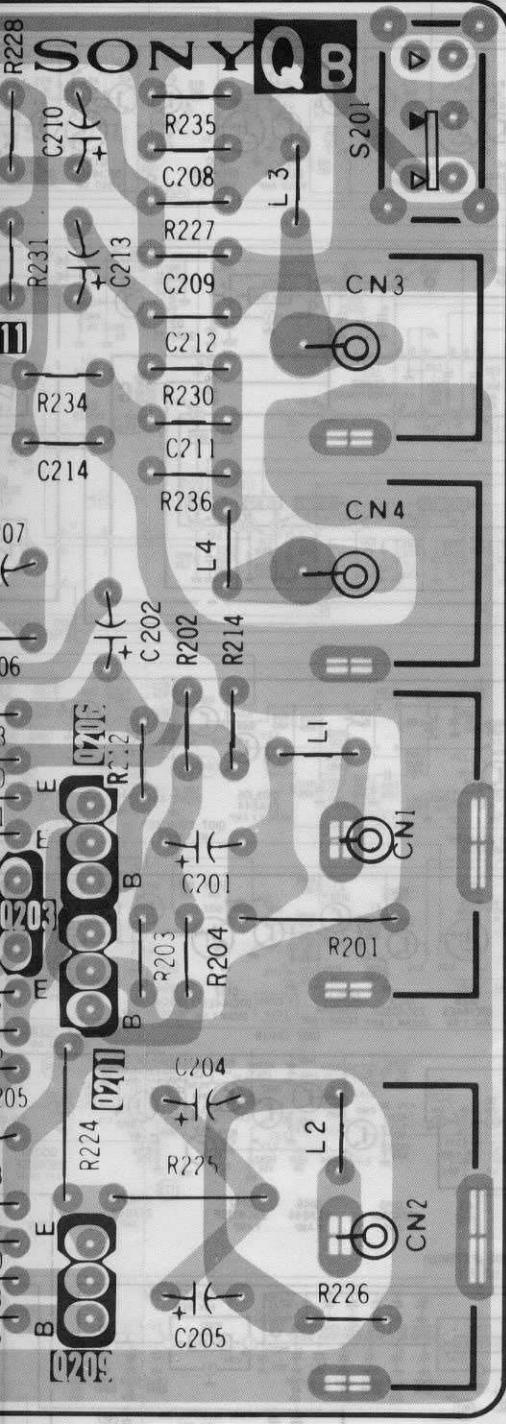
19

20

21

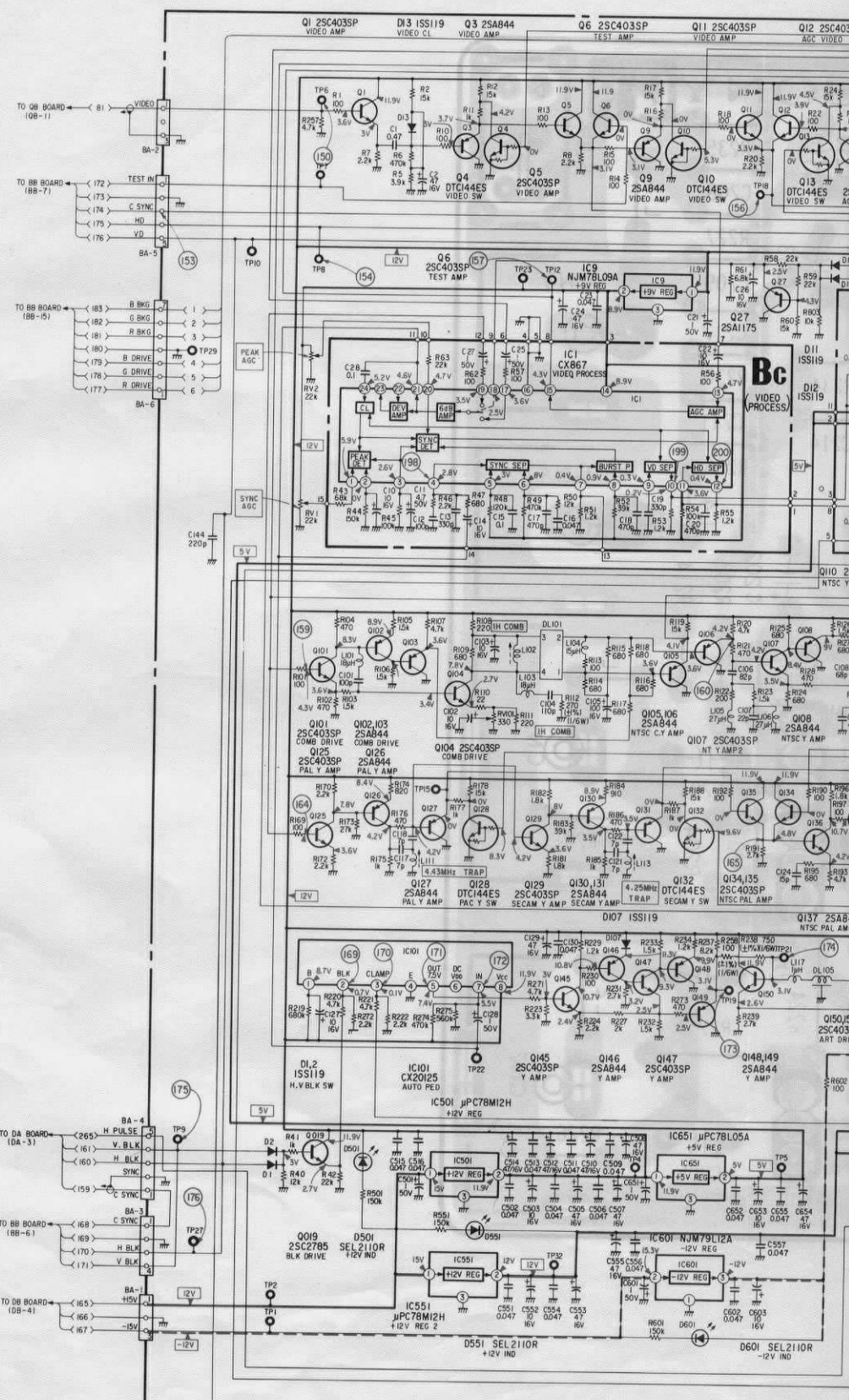
22

23



- [Dark Grey Box] : Conductor side pattern
- [Light Grey Box] : Component side pattern

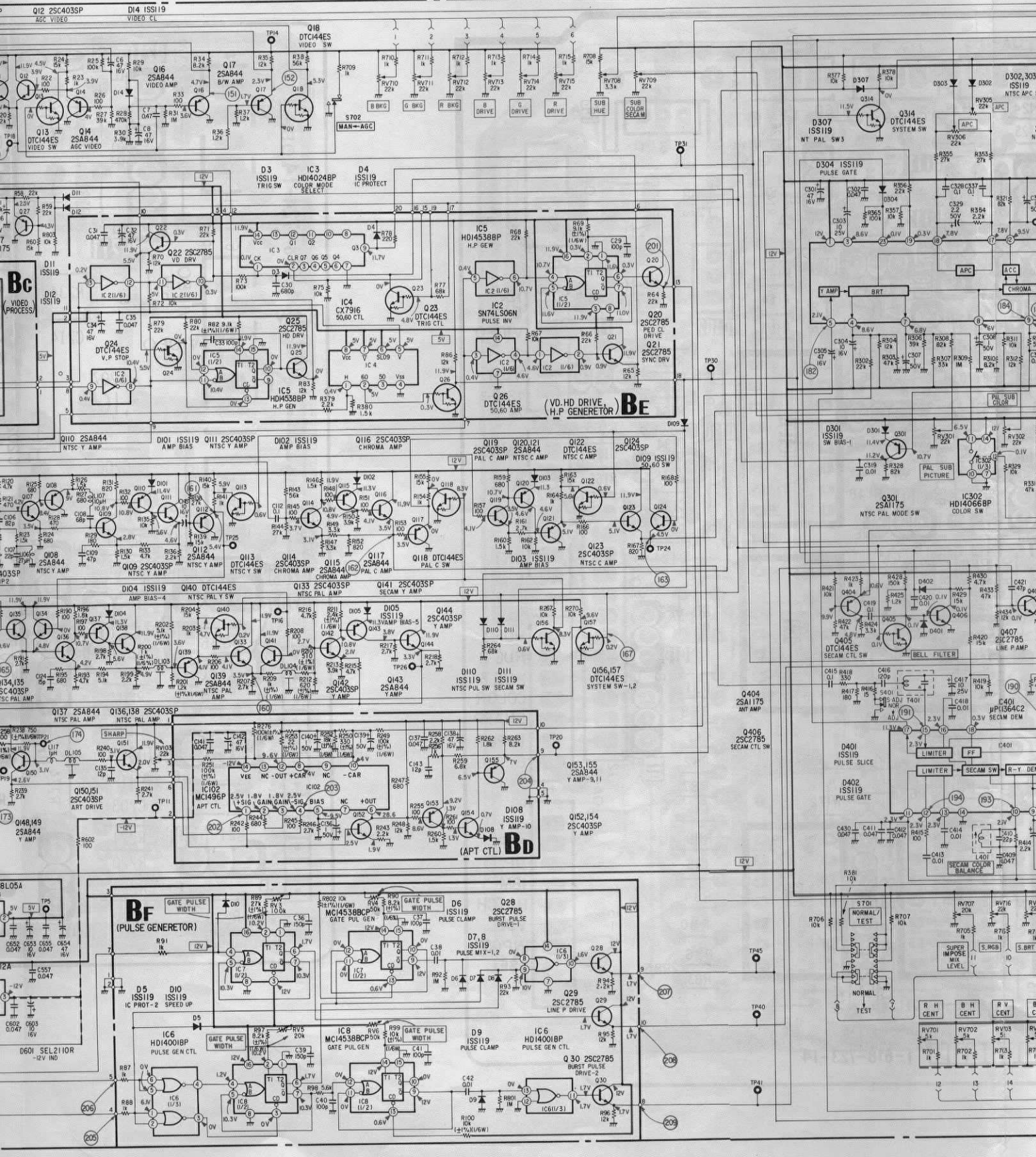
A
B
C
D
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G
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I
J

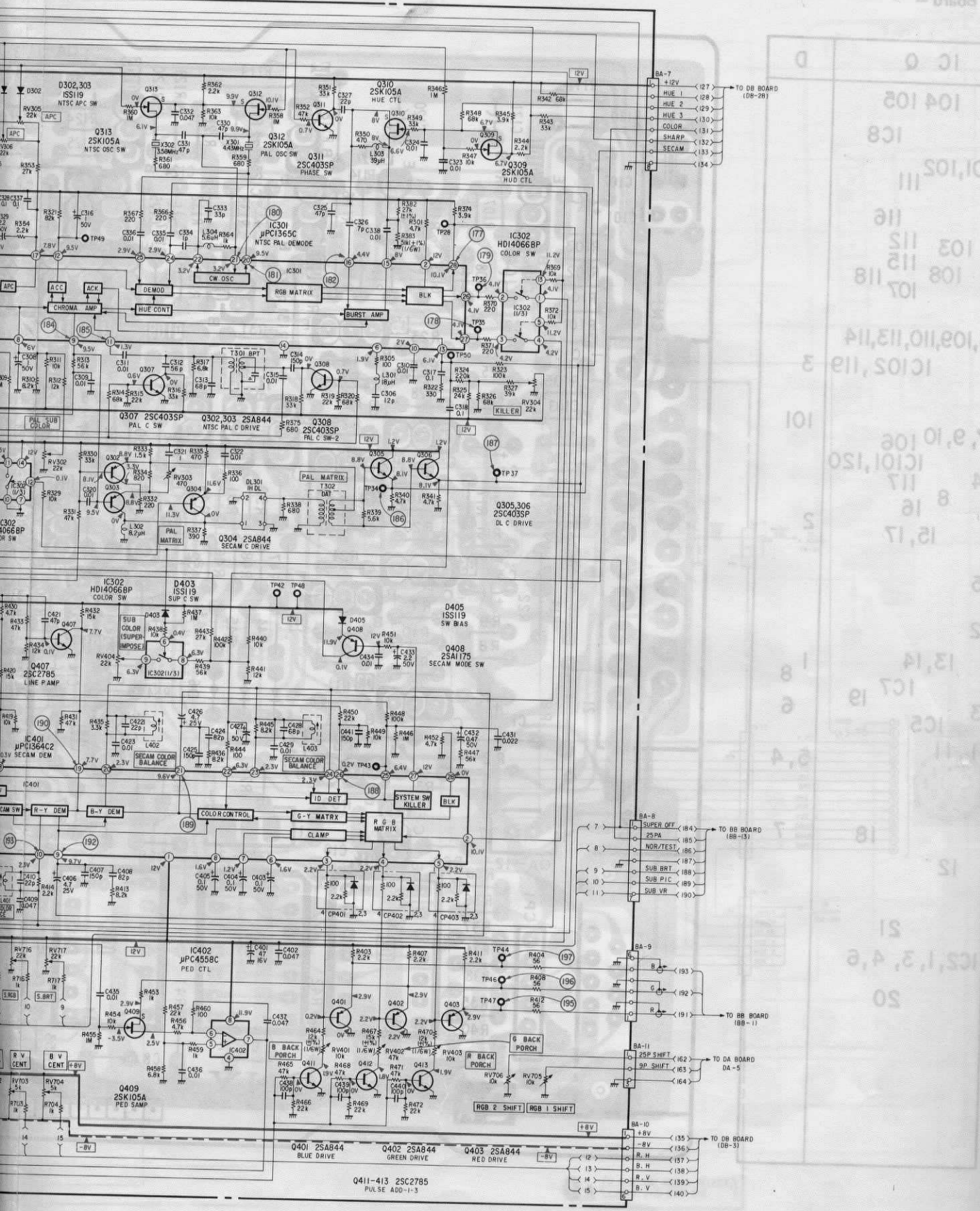


BA (VIDEO AMP COMB FILTER, NTSC/PAL Y. CHROMA AMP) SECAM DEMODE, NTSC/PAL DEMODE



OB Board



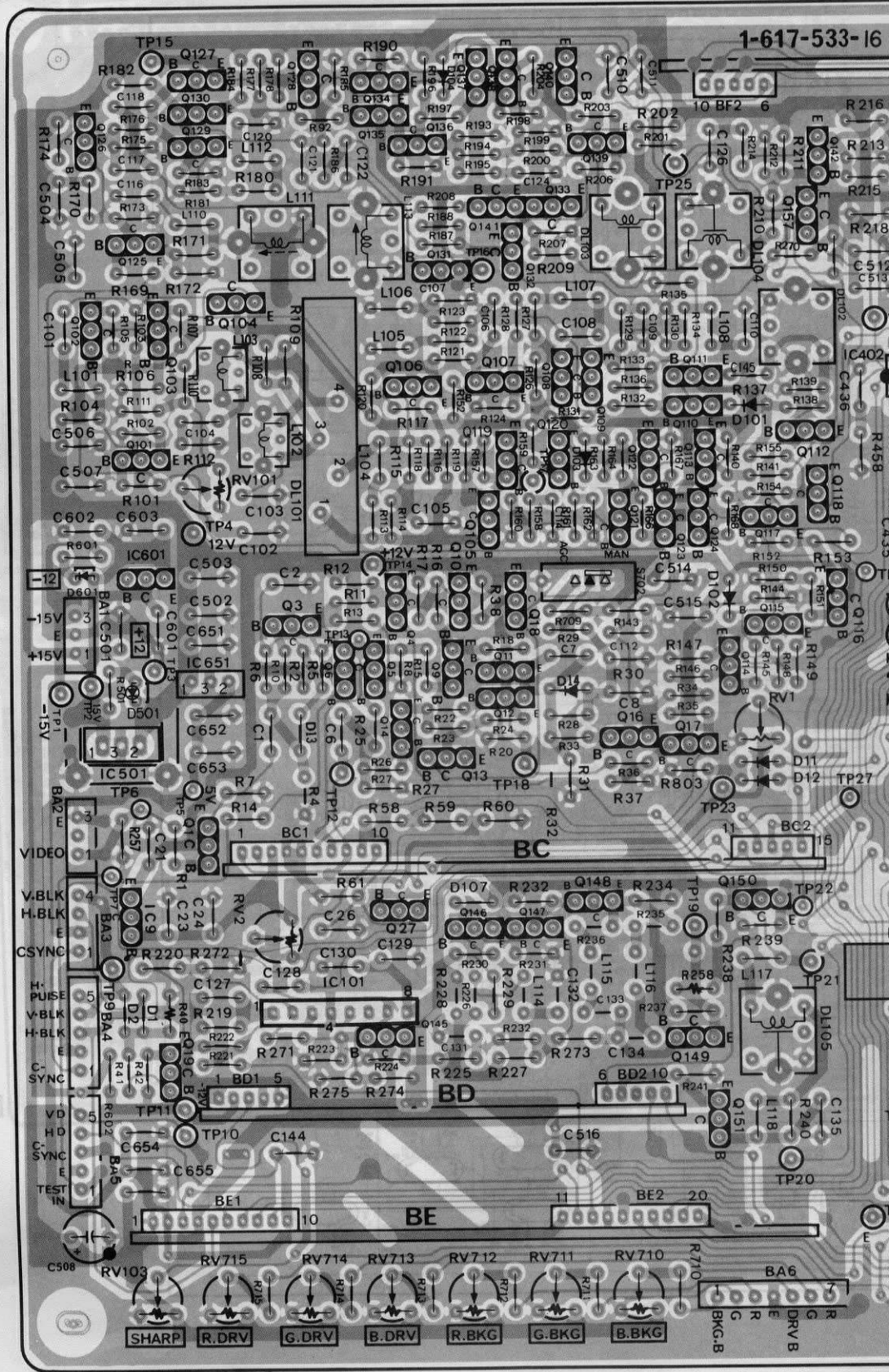


BA

VIDEO AMP, COMB FILTER, NTSC/PAL. Y.CHROMA AMP,
SECAM DEMOD, NTSC/PAL DEMOD

- BA Board -

Q, IC	D	ADJ	TP
137	104		15
127, 38, 40			45
126, 134, 36	105		
130, 135, 139			
410			
129	551		42
142, 143	401		25 40
406	402		41
404			
141, 133			39
125, 157, 144			
156, 405	109		43
132, 407	111		46
131	408		47
	110		
	RV701		
104, 411			26
102, 103			
109	RV401		44
108, 111, 108			
107	RV702		
106, 110, 112	101		
119, 120, 412			103
101, IC401			
401, 409	RV101		17
122, 113, 118	RV402		
105, 123, 117	RV709		4
121, 124			
	RV703		14, 24
IC601			601
10, 402, 413			102
4, 18, 116	403		403
3, 115			
	RV403		
5, 403	RV404		3, 48, 38
6, 9, 11, 114			2, 37
IC651	501		
12	14		
	13		
IC302	302		
16, 17			
IC501	303		11
307, 308			12
301			5, 23
			6, 27
	301		49
	RV304		
	RV705		7
	RV301		
IC9, 27	107		22
148, 150			50
146, 147	RV2		15
	RV706		9, 21
IC301			
IC101	1, 2		35, 36
145, 149	304		34
305			
19	304		
	RV707		11
310			
151			10
			28 33
311			20
313			32
314			
312	307		
	303, 302		
309	RV306		29
	RV708		
	RV305		
	RV717		30
	RV103, RV716		
	RV715		31
	RV714		
	RV713		
	RV712		
	RV711		
	RV710		25
	RV710		
Q, IC	D	ADJ	TP



9

10

11

12

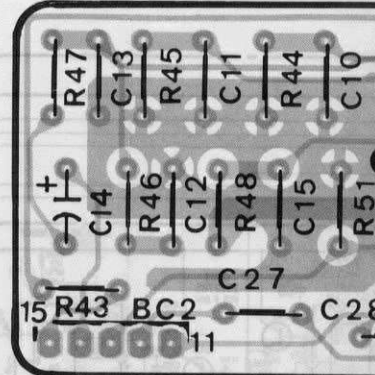
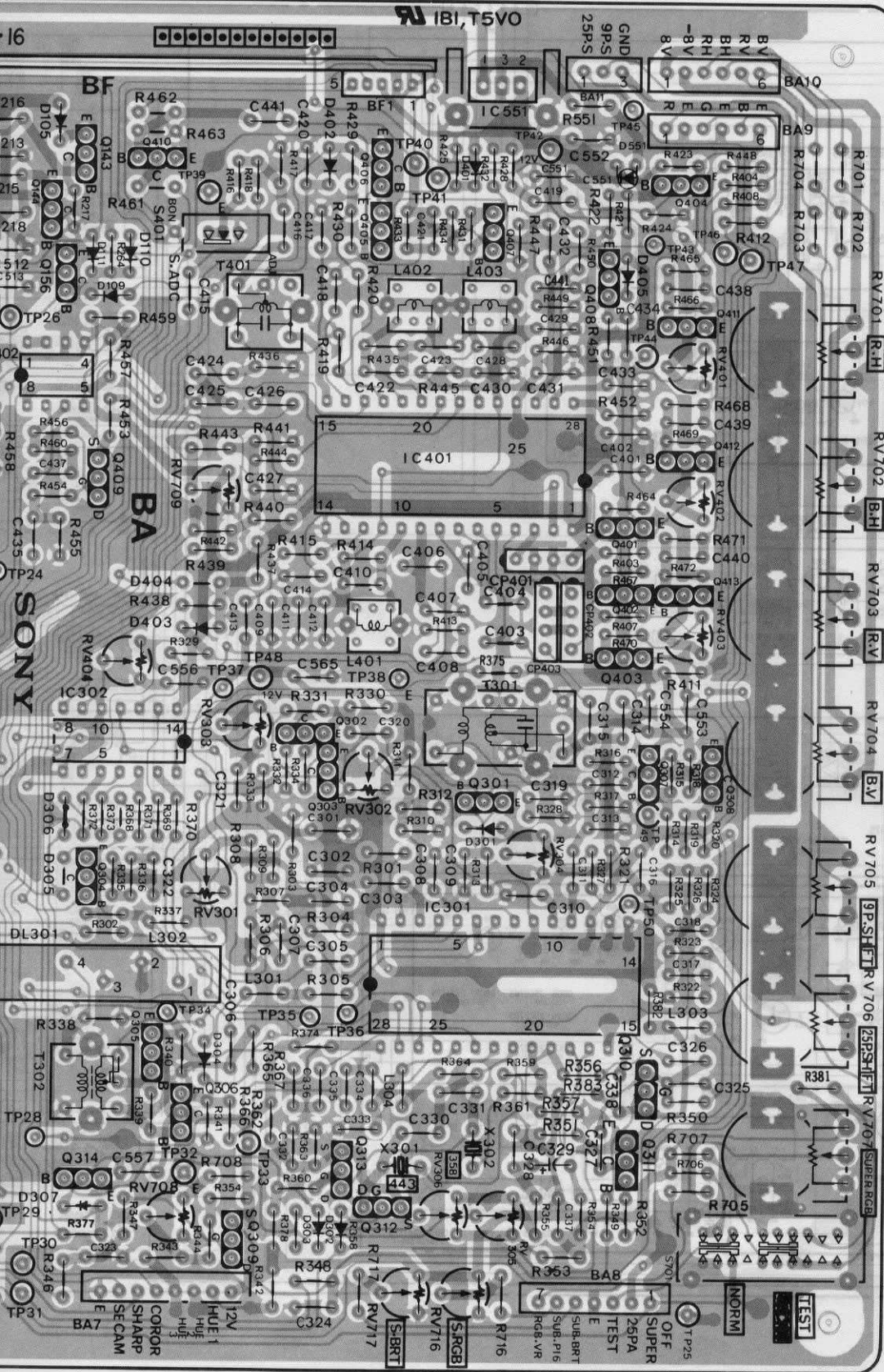
13

14

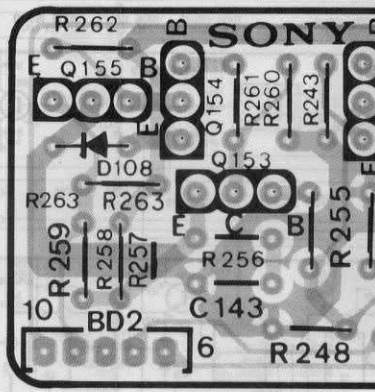
15

16

- BC Board -



- BD Board -

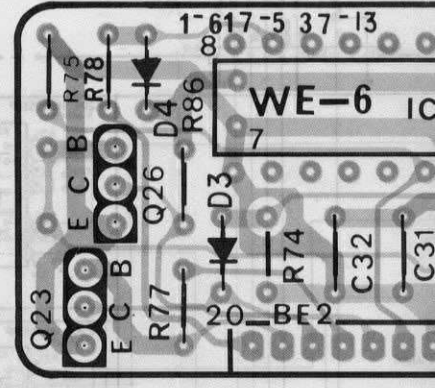
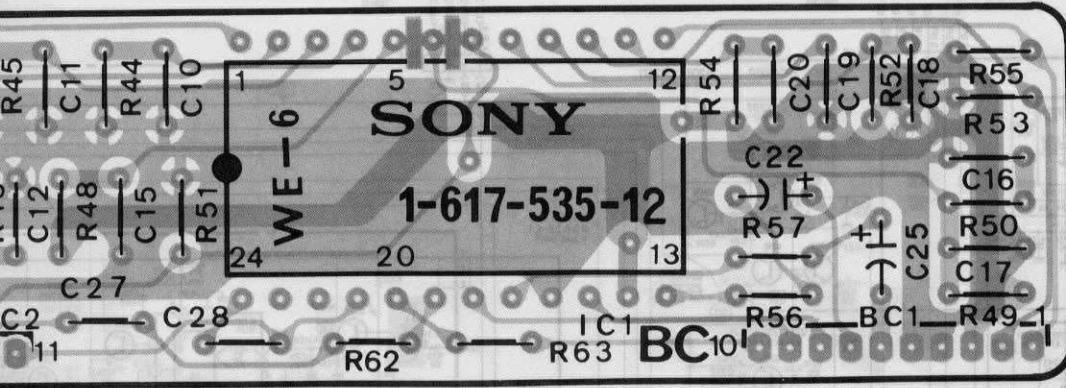


BE

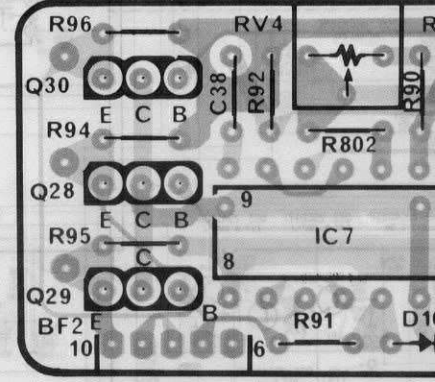
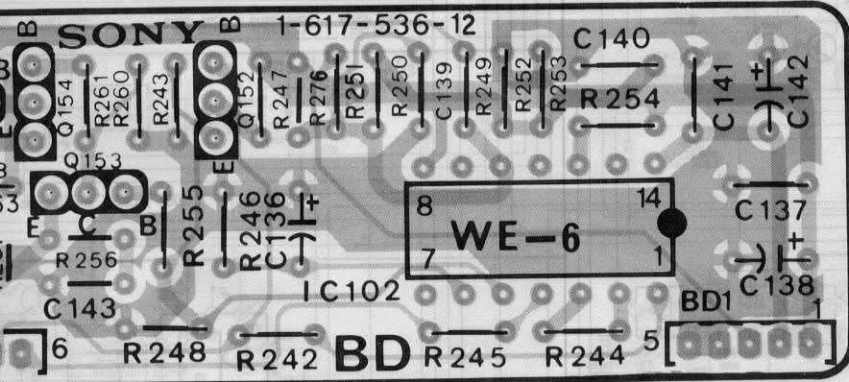
[APT CTL] [VD. HD DRIVE, H.P. GENERATOR]

16 17 18 19 20 21 22 23

- BE Board -



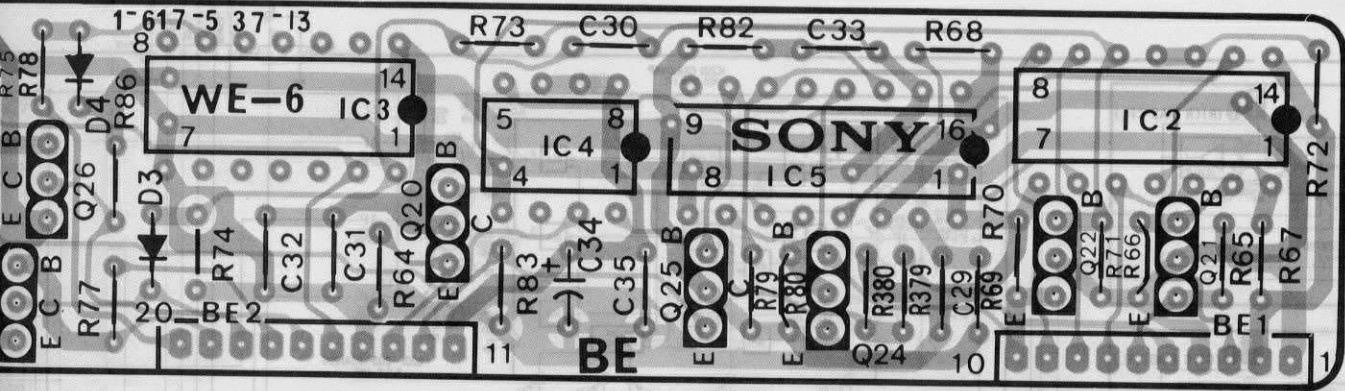
- BF Board -



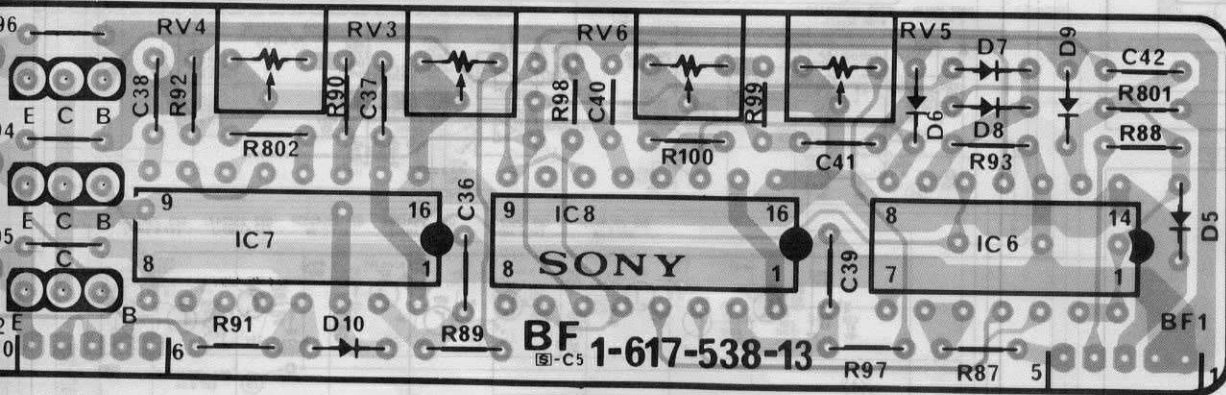
BF [PULSE GENERATOR]

22 | 23 | 24 | 25 | 26 | 27 | 28 | 29

BE Board -



BF Board -

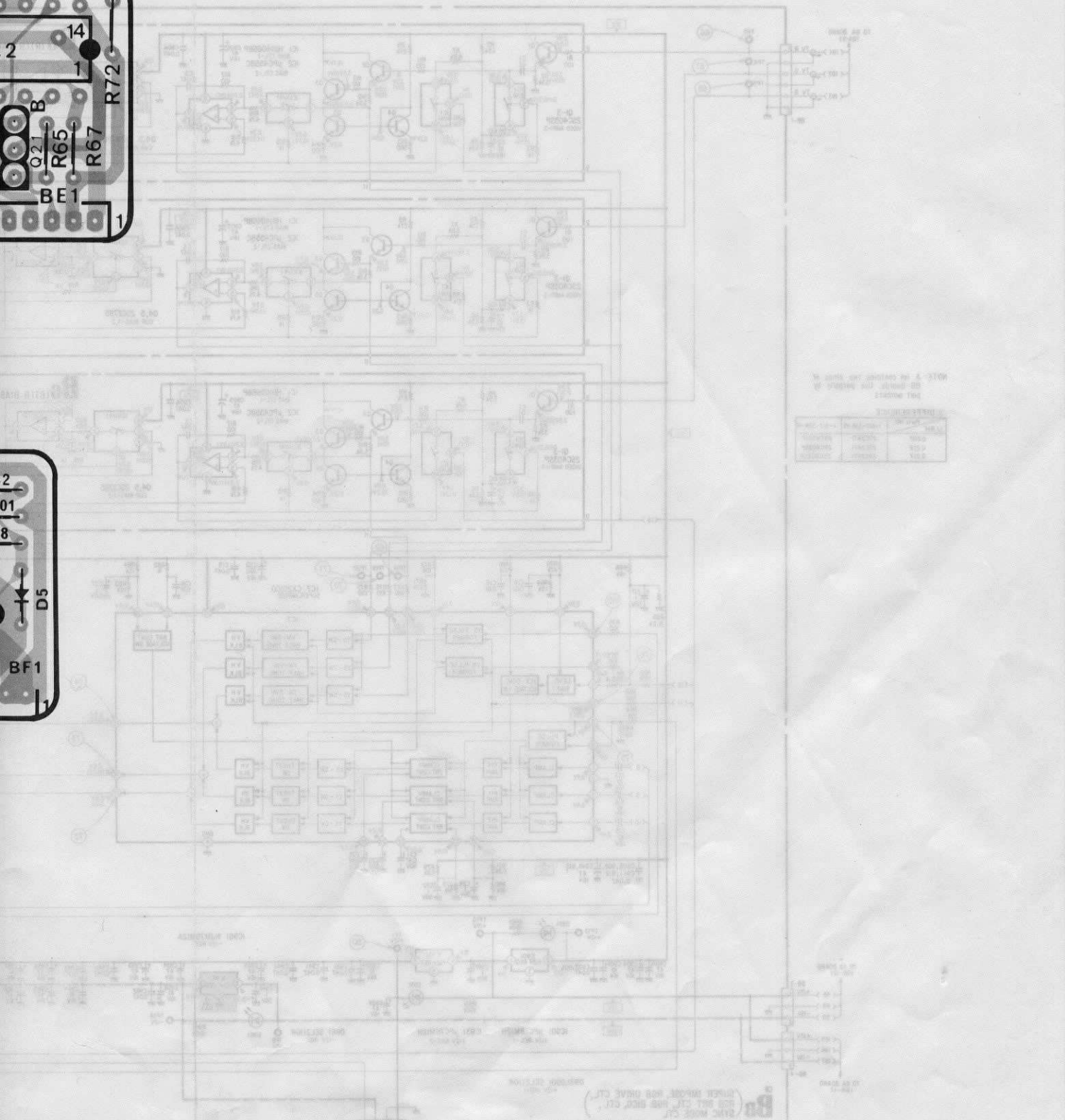
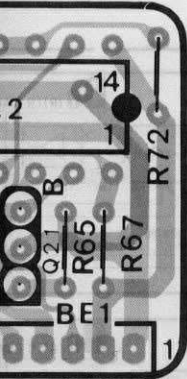


- [Symbol] : Conductor side pattern
- [Symbol] : Component side pattern

28 29

6 5 4 3 2 1

A B C D E F G H I J



uctor side pattern
ponent side pattern

1 2 3 4 5 6 7 8

A

B

C

D

E

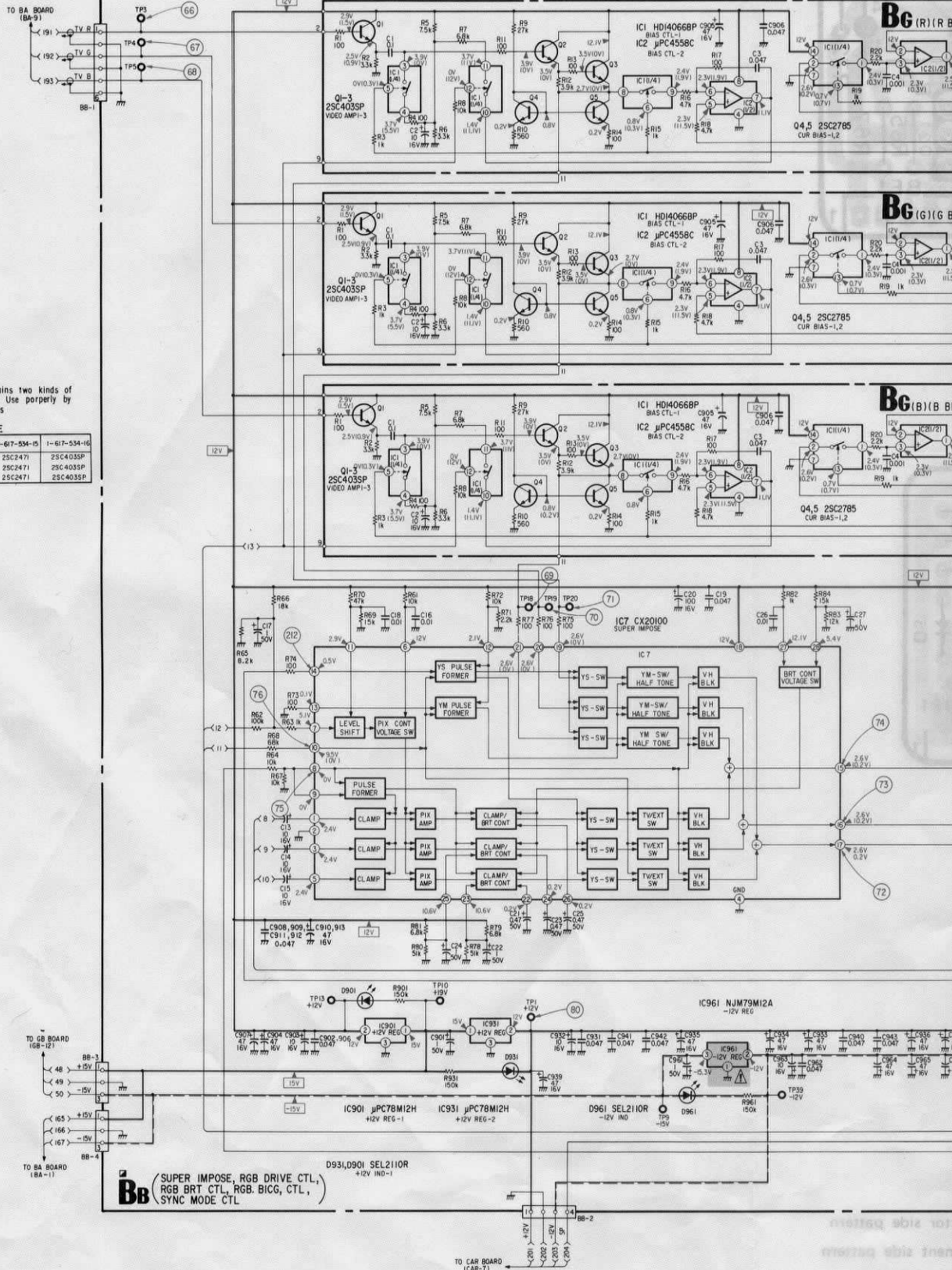
F

G

H

I

J

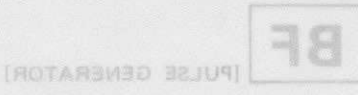


NOTE: A lot contains two kinds of BB-boards. Use properly by part numbers

★ DIFFERENCE

Ref	Part NO.	1-617-534-15	1-617-534-16
Q 207	25C2471	25C4035P	25C4035P
Q 212	25C2471	25C4035P	25C4035P
Q 217	25C2471	25C4035P	25C4035P

BB (SUPER IMPOSE, RGB DRIVE CTL., RGB BRT CTL., RGB. BICG, CTL., SYNC MODE CTL.)



8

9

10

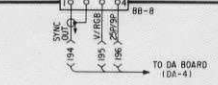
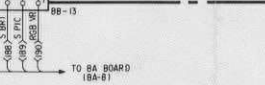
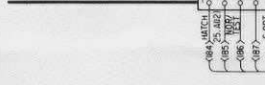
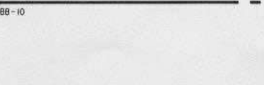
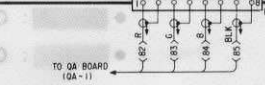
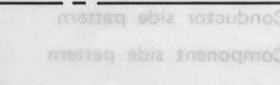
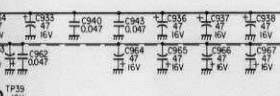
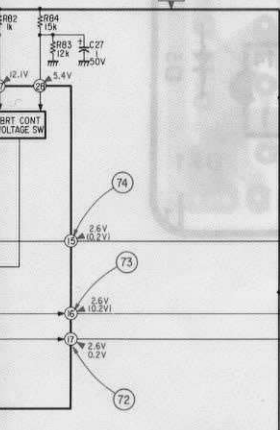
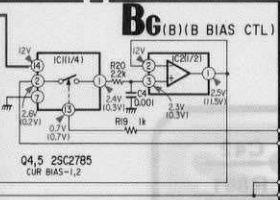
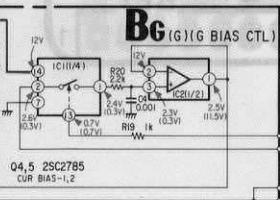
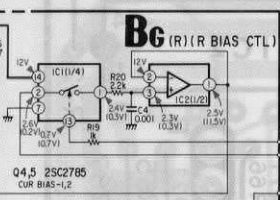
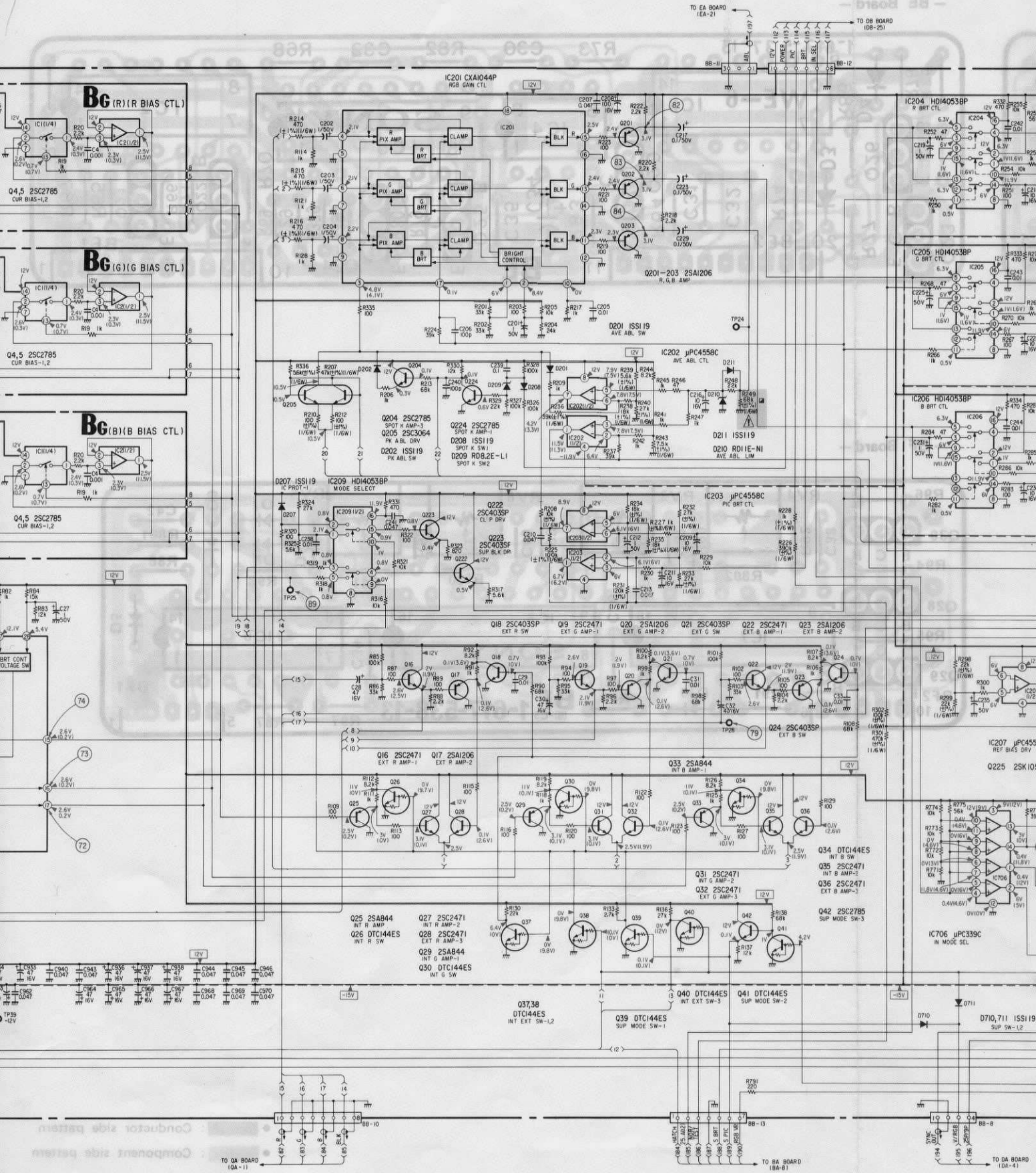
11

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28

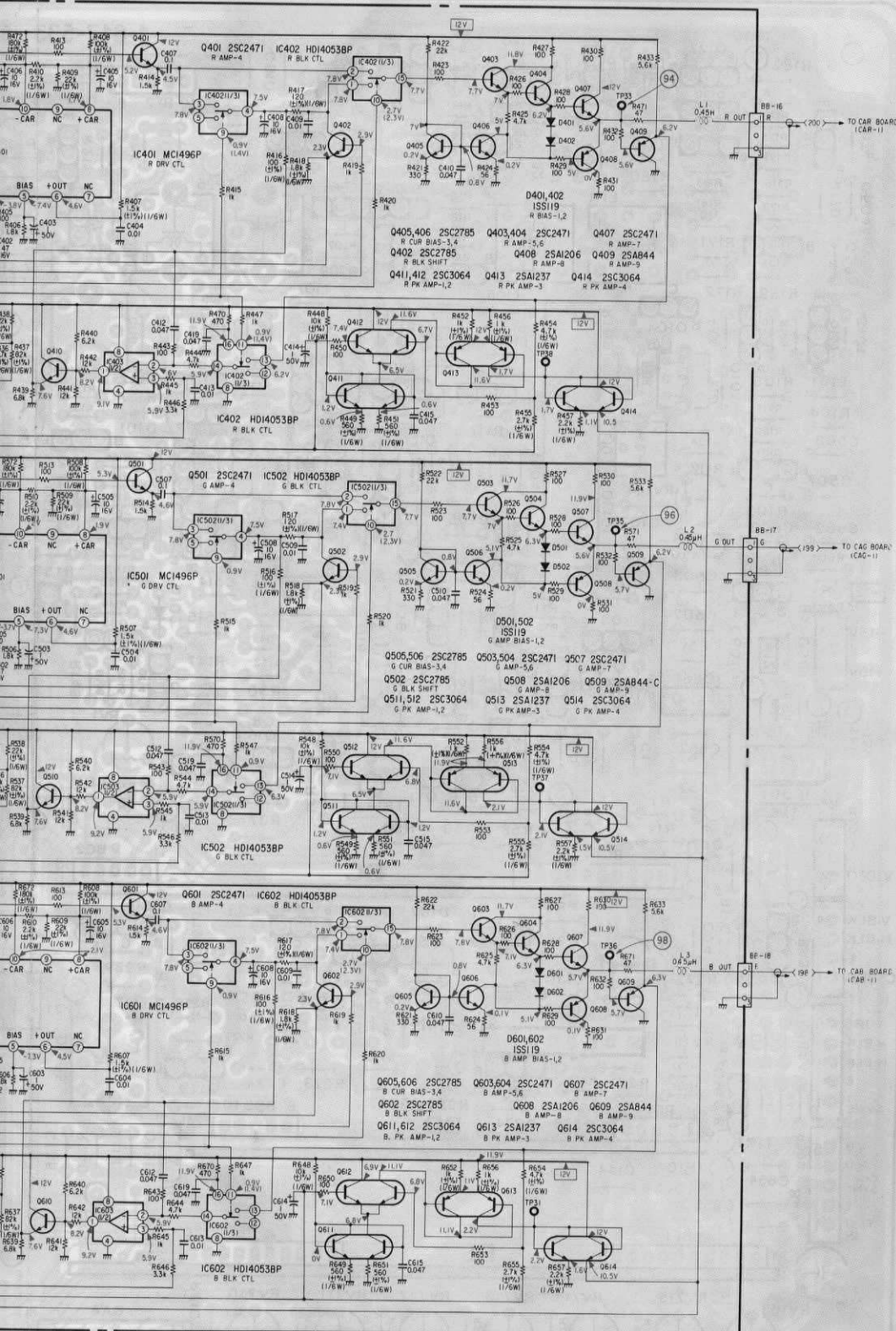
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32

33



BB

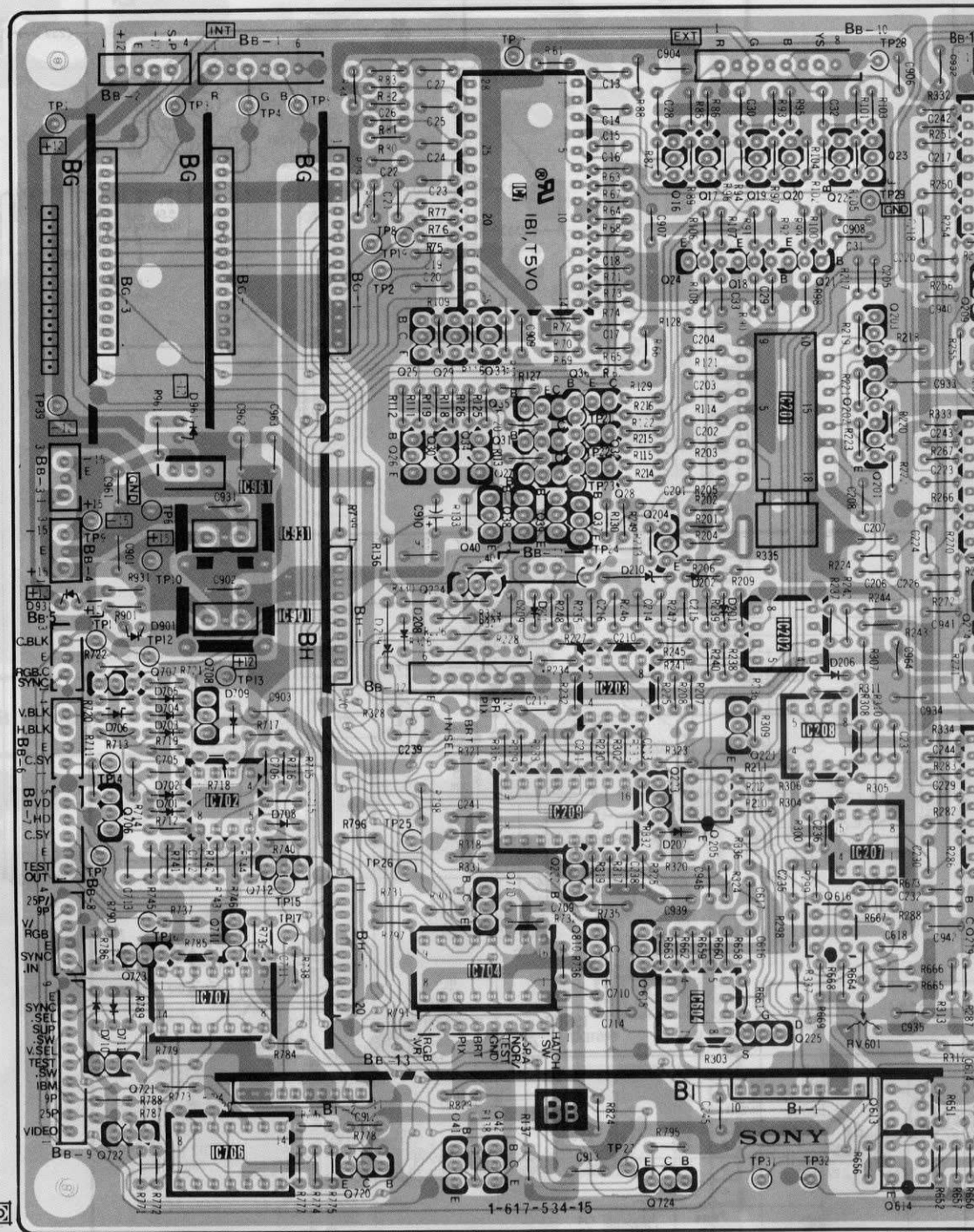
SUPER IMPOSE, RGB DRIVE CTL, RGB BRT CTL, RGB BKG CTL, SYNC MODE CTL, RGB AMP

1 2 3 4 5 6 7 8

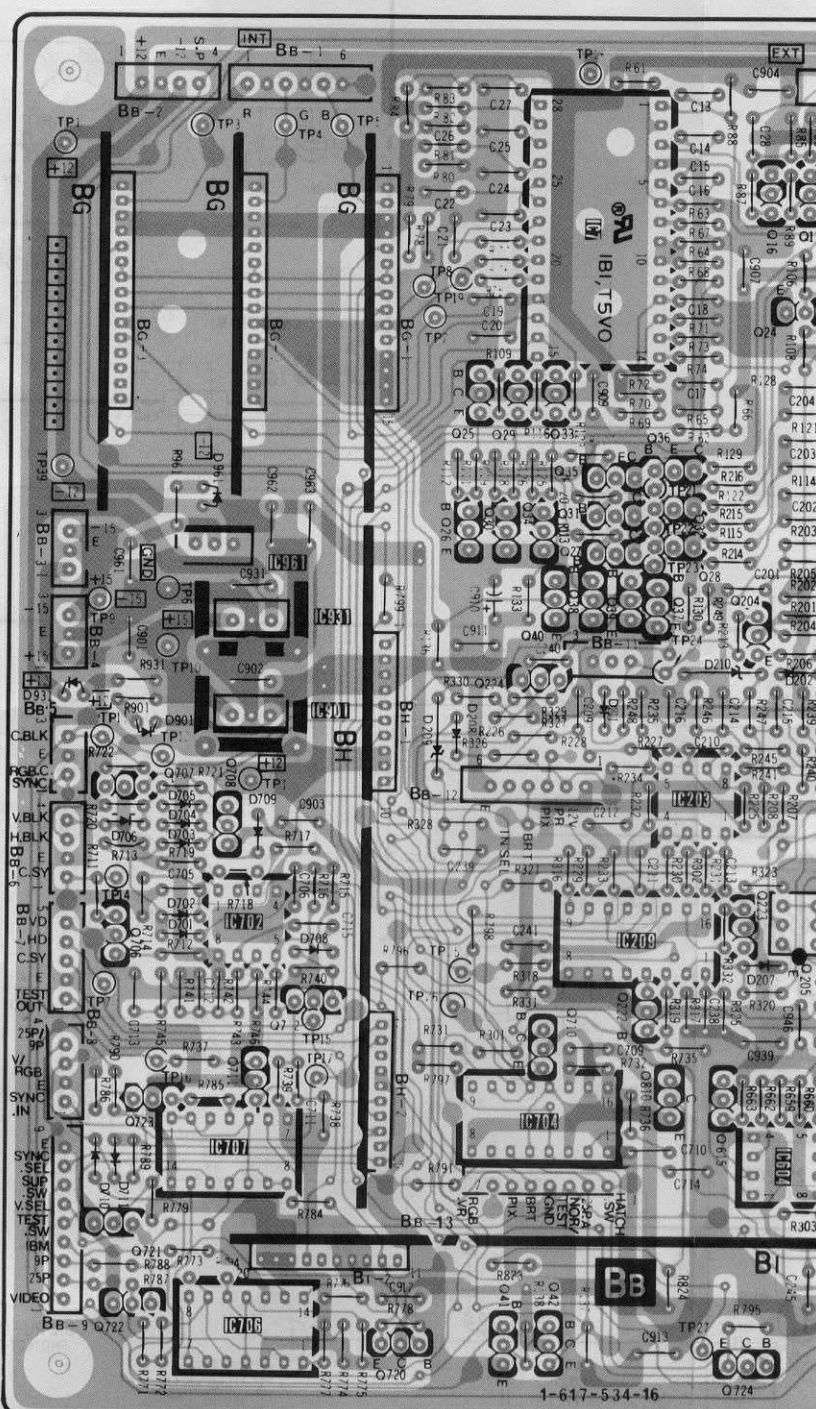
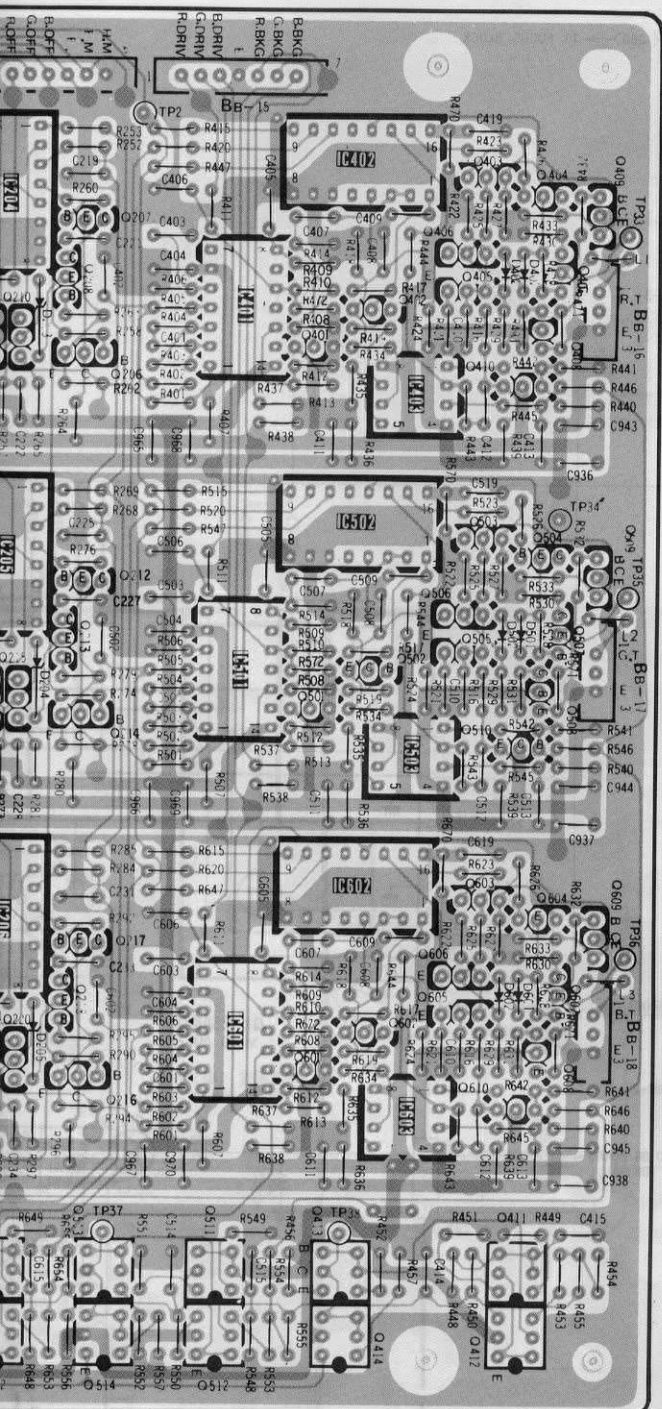
- BB Board - (1-617-534-15)

A B C D E F G H I J

Q, IC	D	ADJ, TP
		TP18
		TP28
		TP5 TP3
		TP2 TP4
		TP1
IC7		
IC204		
403 IC402 23		
404		
409,207,20,19,17		
406		
407		TP33 TP19
405	401 402	TP8
209,210,401		TP20
402 208		
IC401,21,24		
408 18	203	
410 206 203		
IC403		
33 29 25		
35 36 202		TP39
32 31	961	TP21
IC201		
30		
IC502 34		TP34
IC205 27 26		
504 28 IC961		
503 212		TP9
509 213 39 38		
506 40,37		
IC931		
507 204	501 502	TP10
505 215		TP24
IC501 224	202 210	
502	931 201	
508 IC901	204 201	
214	208 211	
510 211 IC202	208 901	TP11
501 707		TP12
	206	TP13
IC203	705	
	709	
	704	
	703 706	
IC208		TP14
221		
603, IC602		
604 IC702	702	
706 IC206, 223	701	
609 IC209, 205	708	
606 217	207	TP25
IC207		TP7
607 222, 712	601 602	TP36
605 220		TP15
602 218		TP26
IC601 710	205	TP16
723 219 711		TP17
610 216 810		
601 IC704		TP30
IC603 616		
615		
IC604, IC707	711 710	RV601
225		
411, 511, 611		
413 513 721		TP38, TP37
613		
IC706 722		
414 41, 42		TP32, TP27
512 612 720		TP31
514 614 724		
Q, IC	D	ADJ, TP

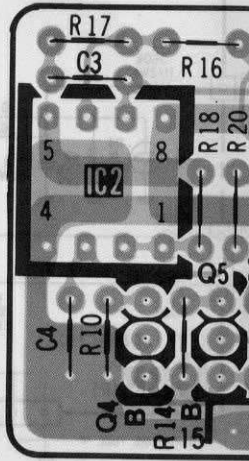


- BB Board - (1-617-534-16)

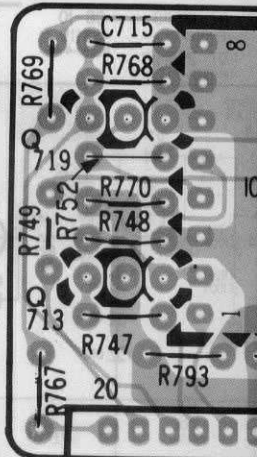


1-617-534-16

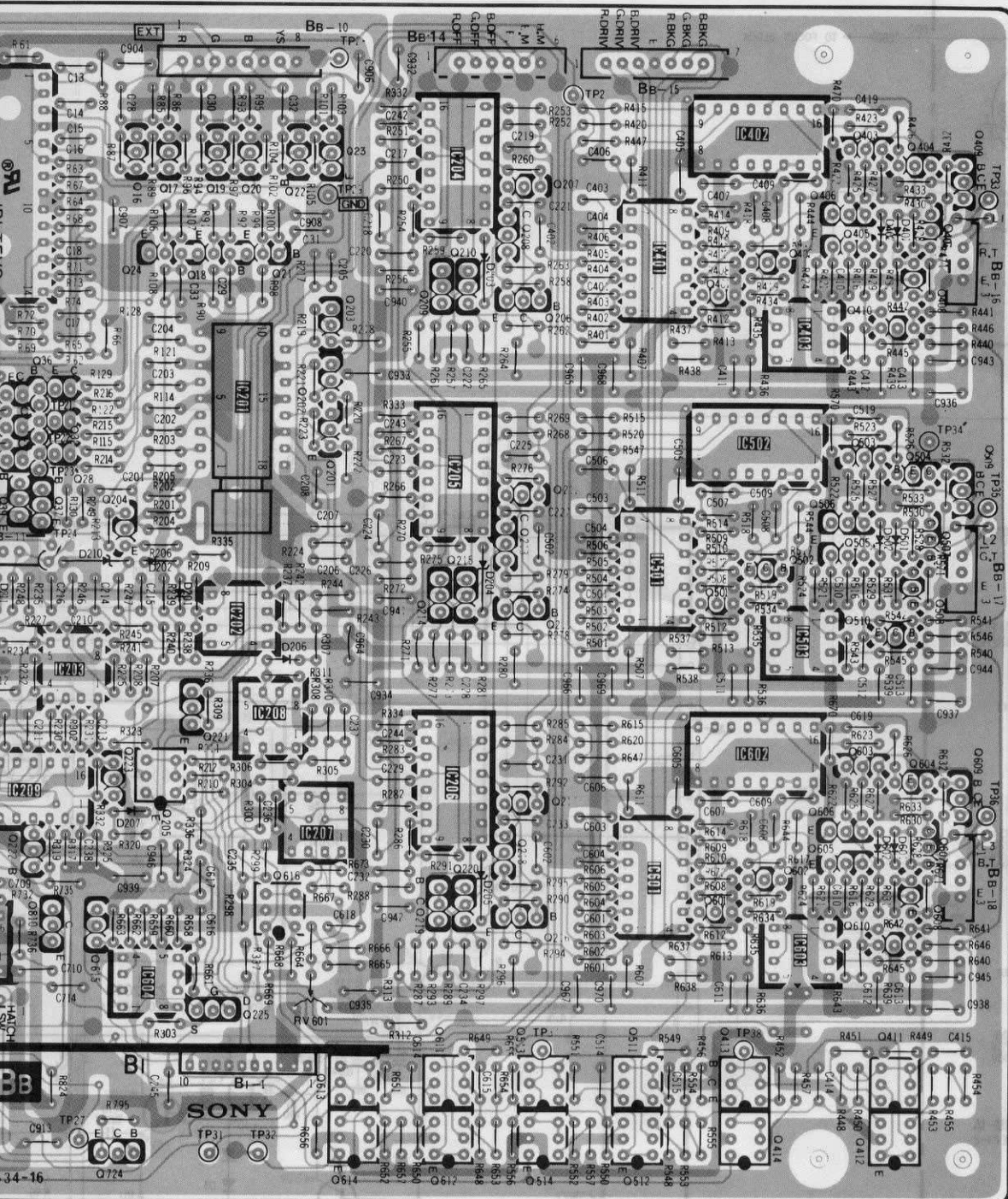
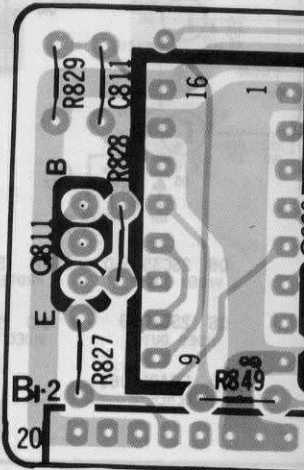
- BG Board -



- BH Board -



- BI Board -



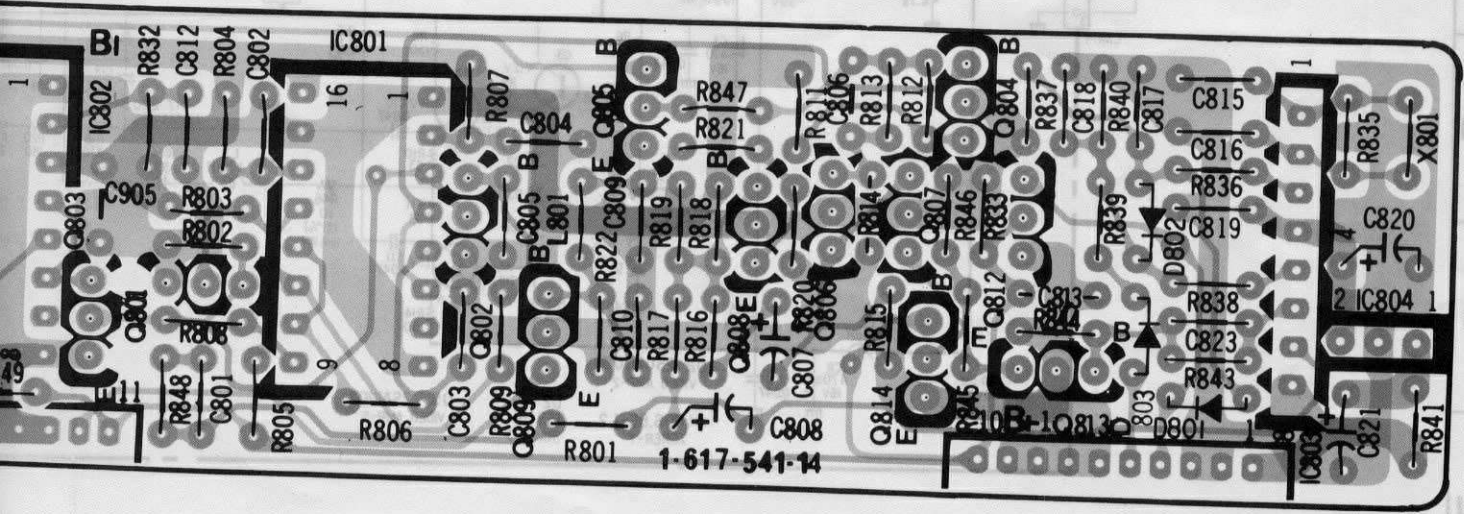
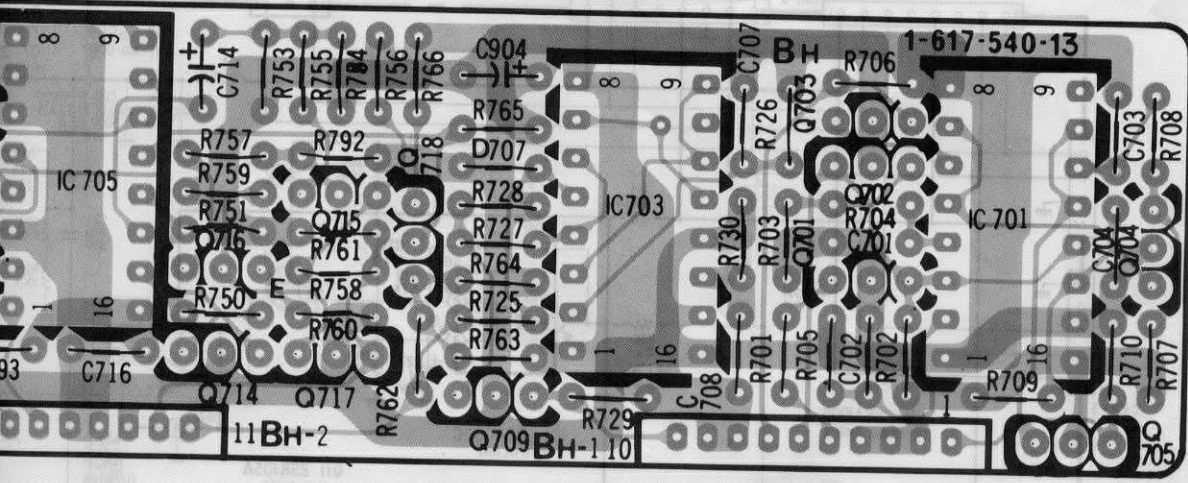
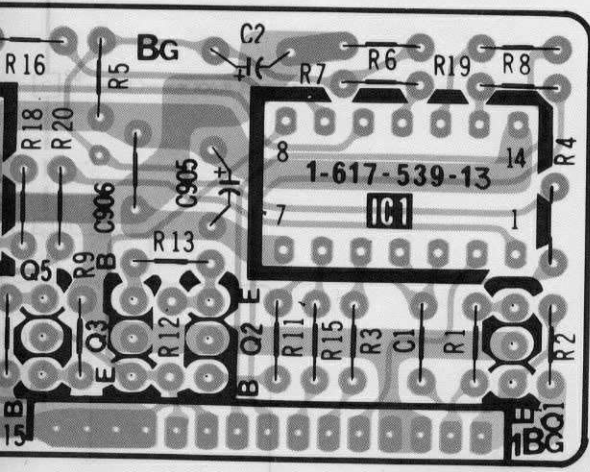
- : Conductor side pattern
- : Component side pattern

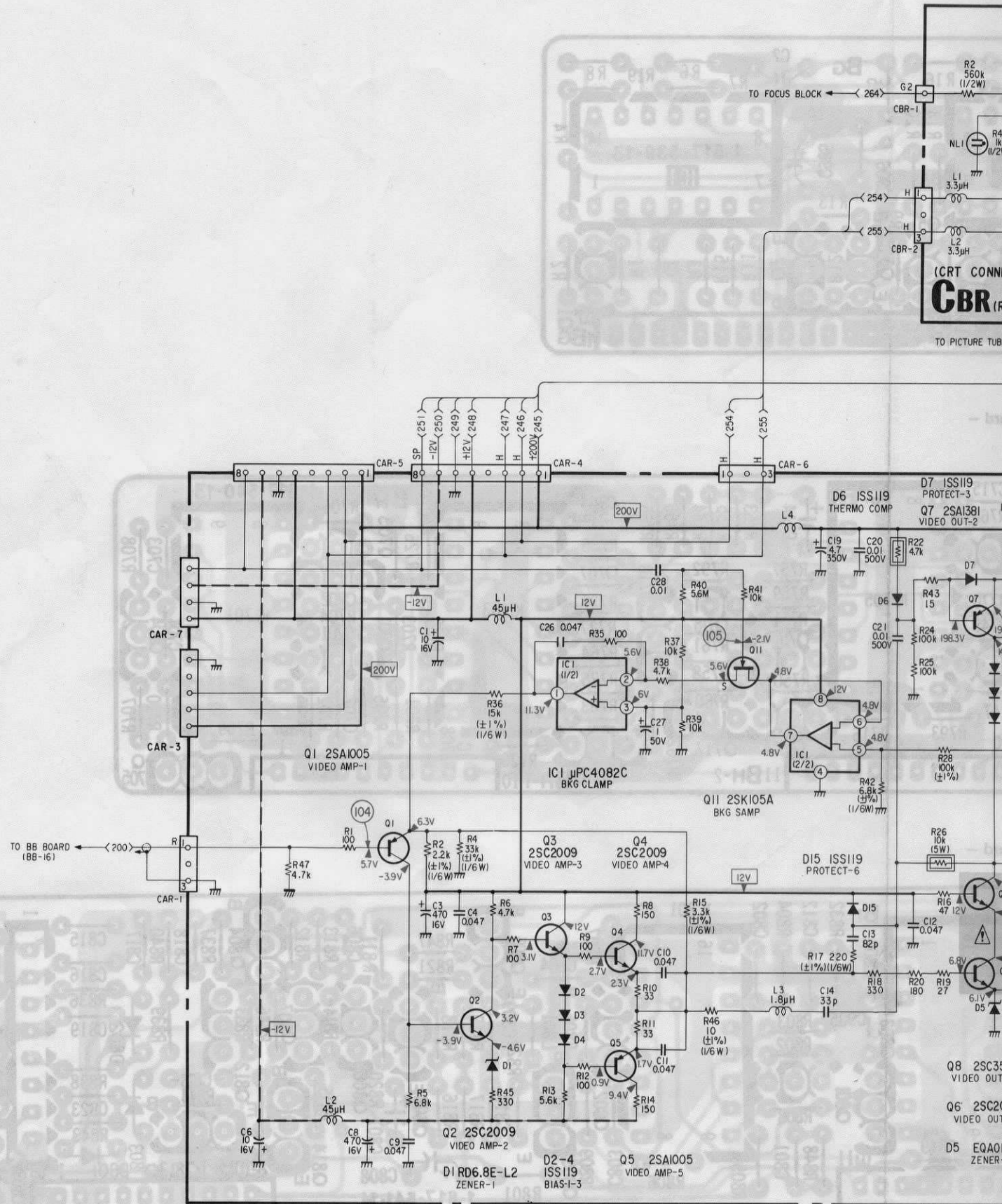
BG [RGB BIAS CTL]

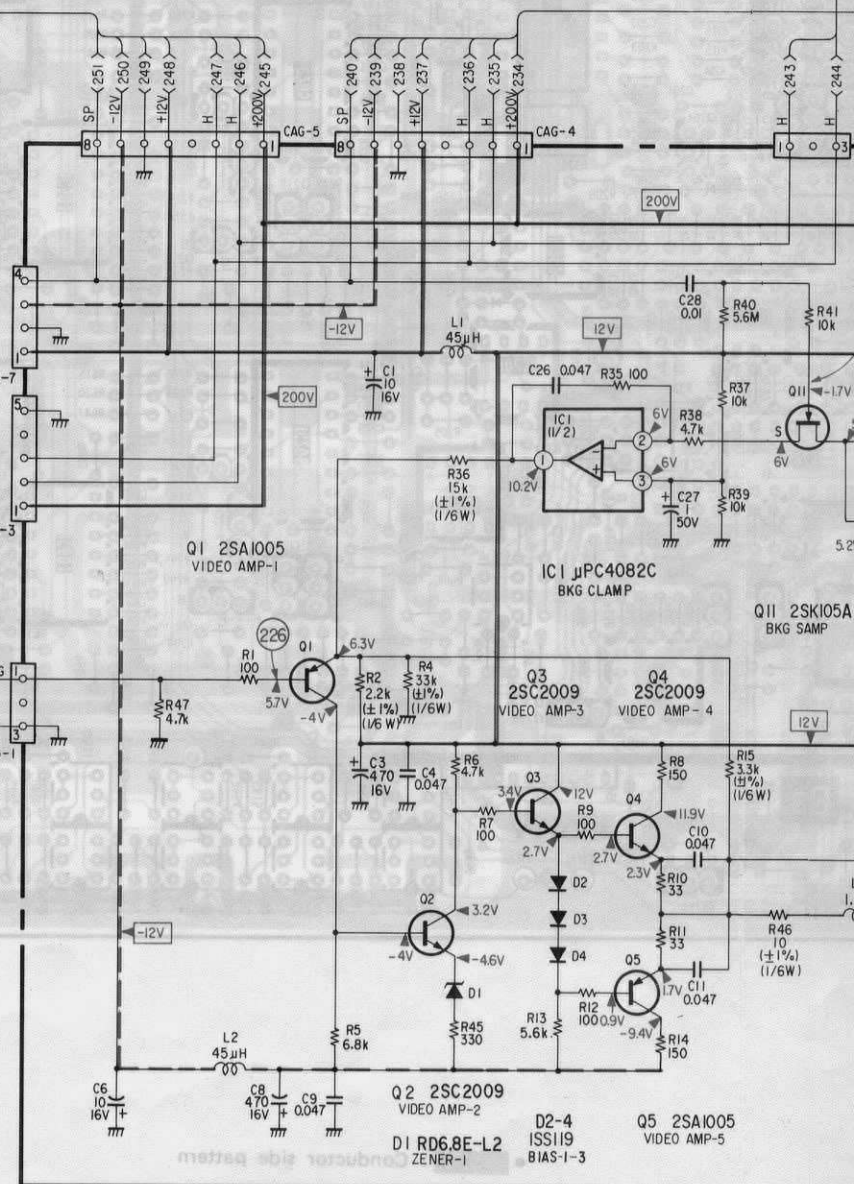
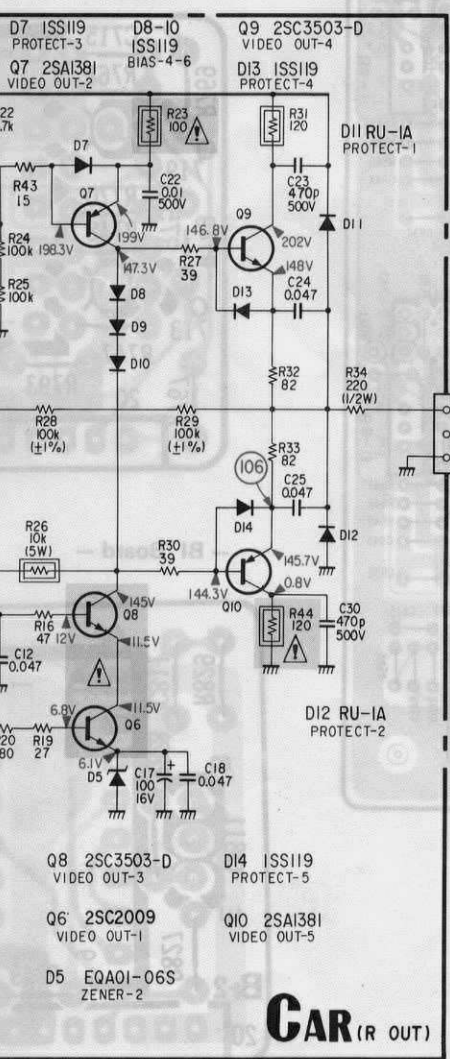
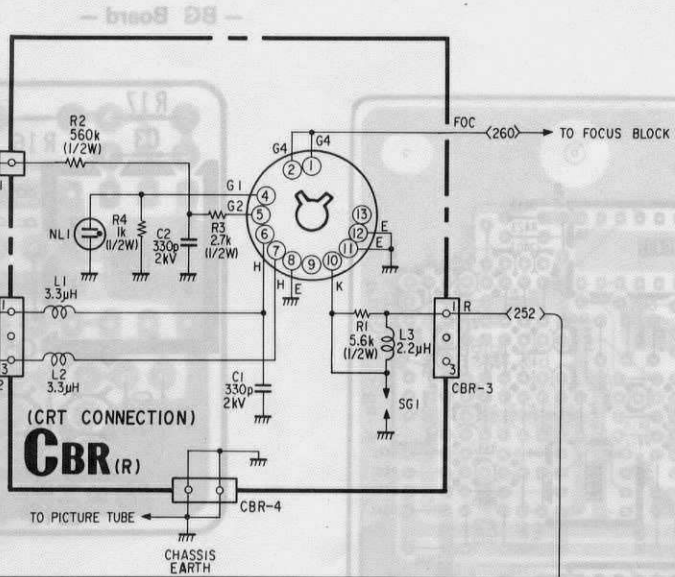
BH [PULSE GEN]

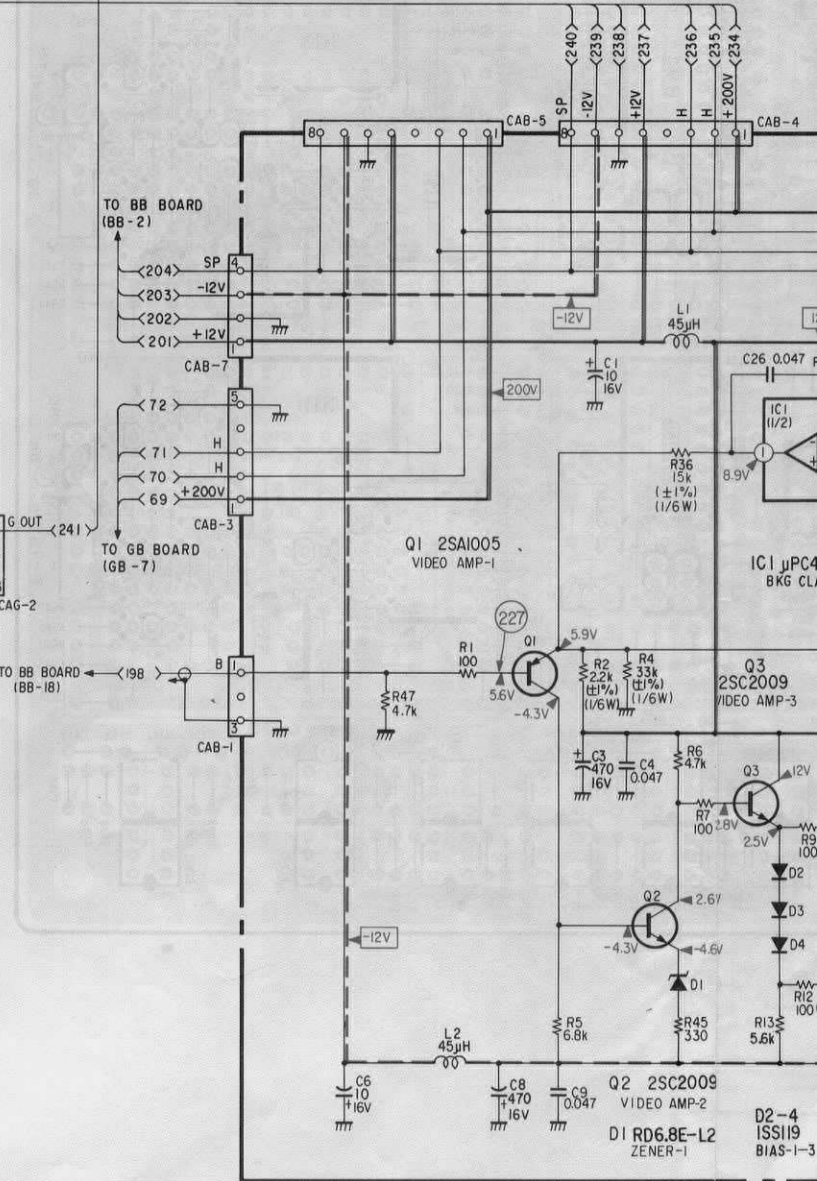
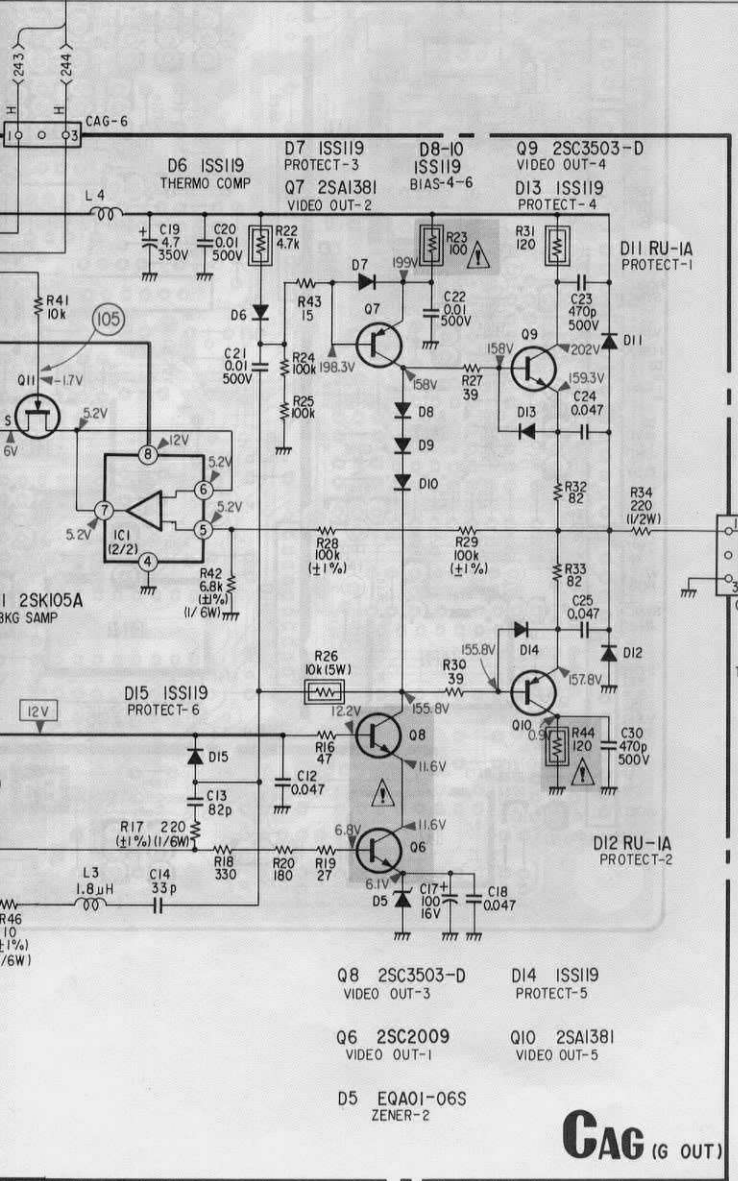
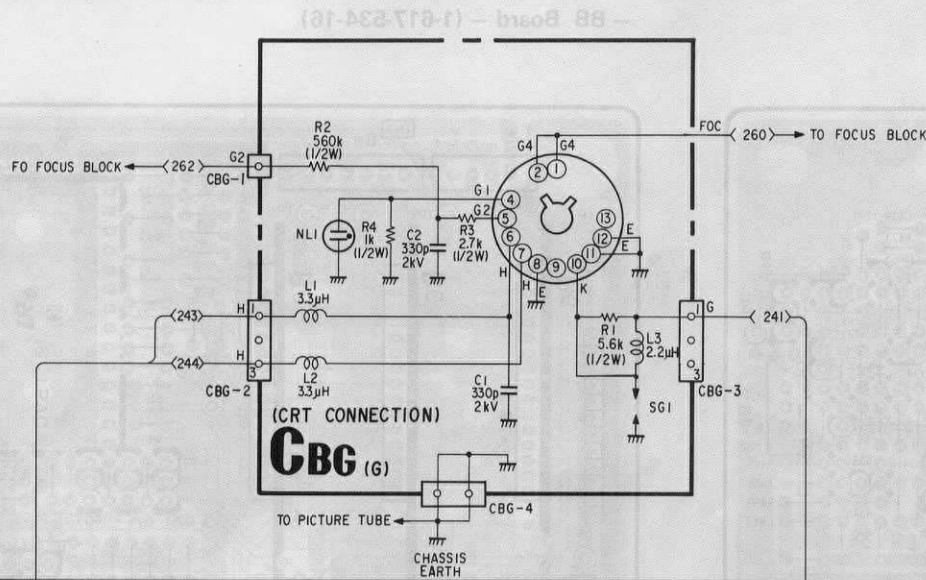
BI [WB GEN]

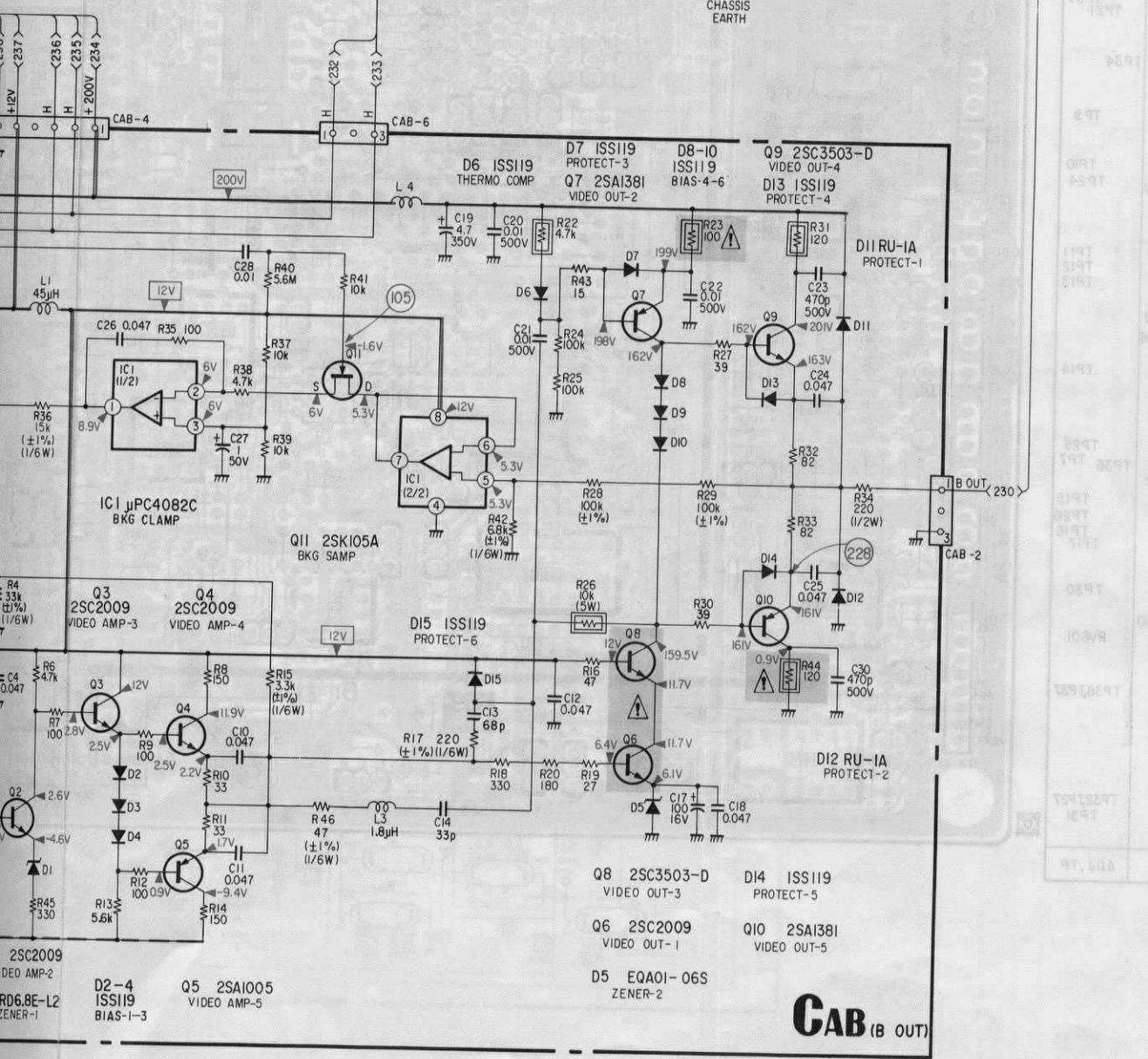
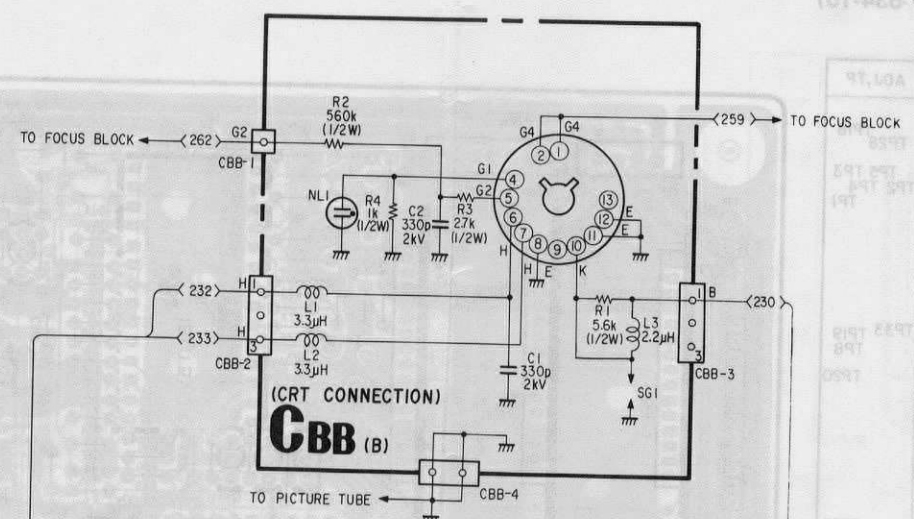
24 25 26 27 28 29 30 31











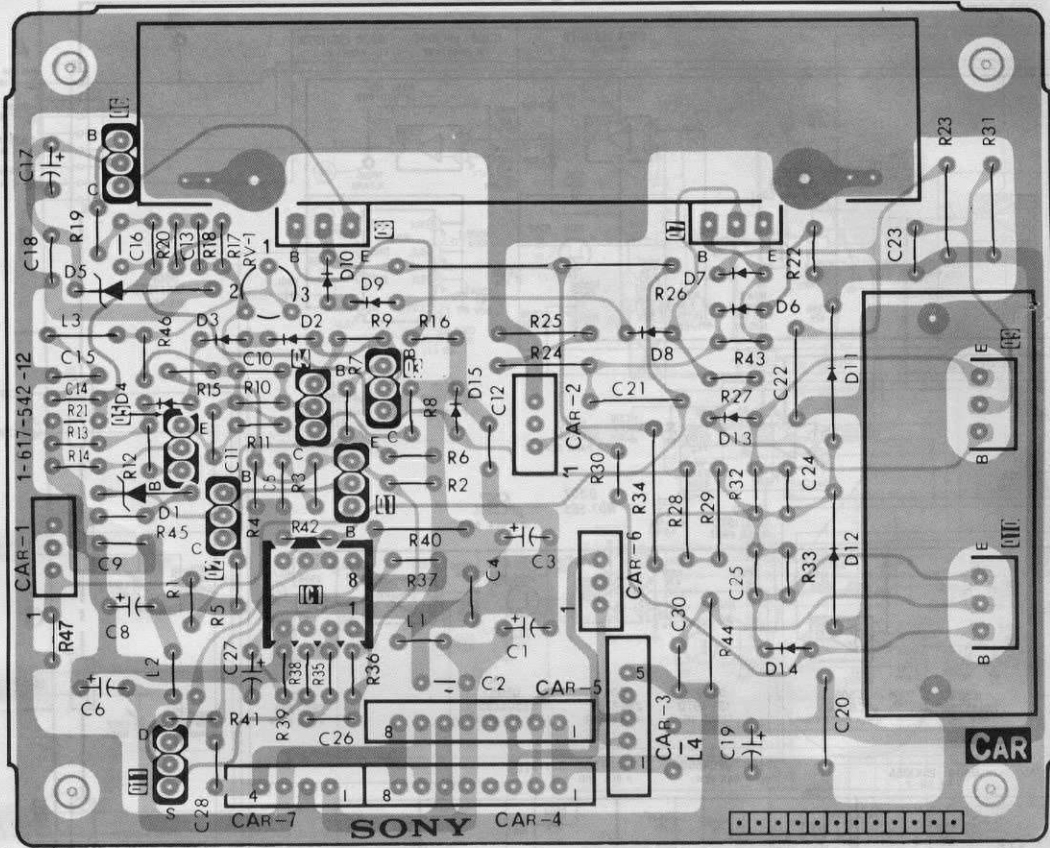
CAR [R OUT]

CAG [G OUT]

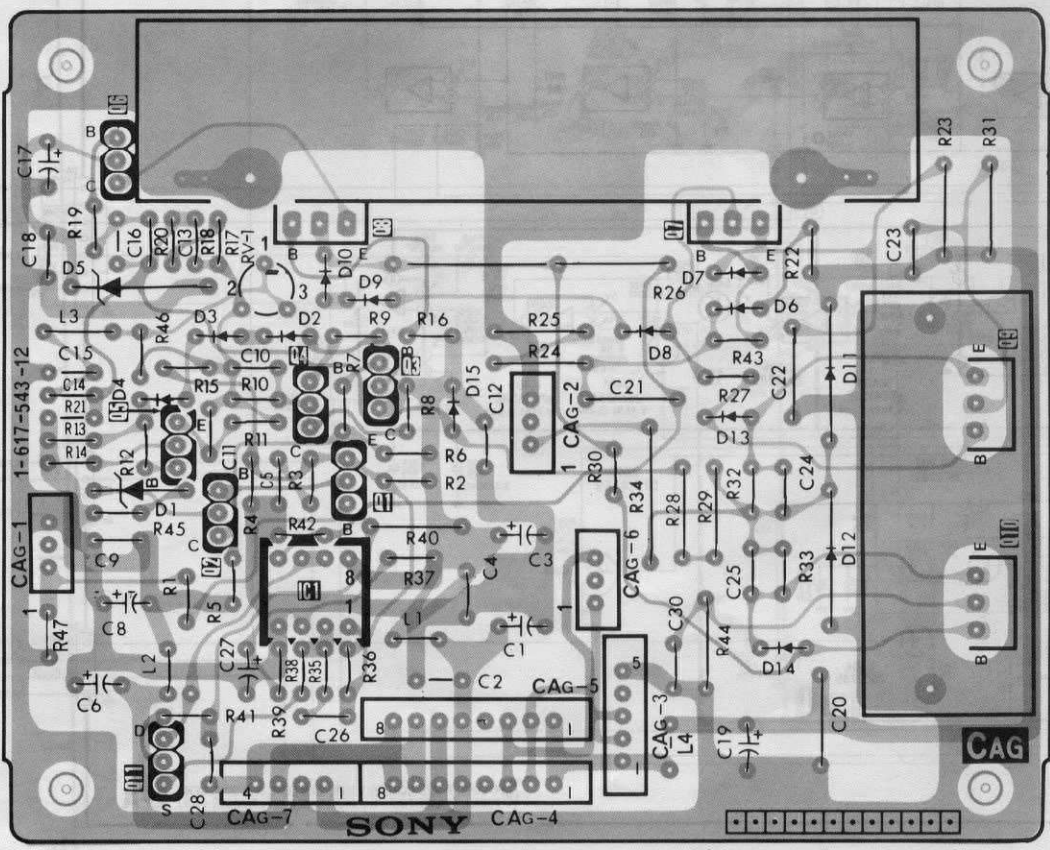
1 2 3 4 5 6 7 8

A B C D E F G H I J

- CAR Board -



- CAG Board -



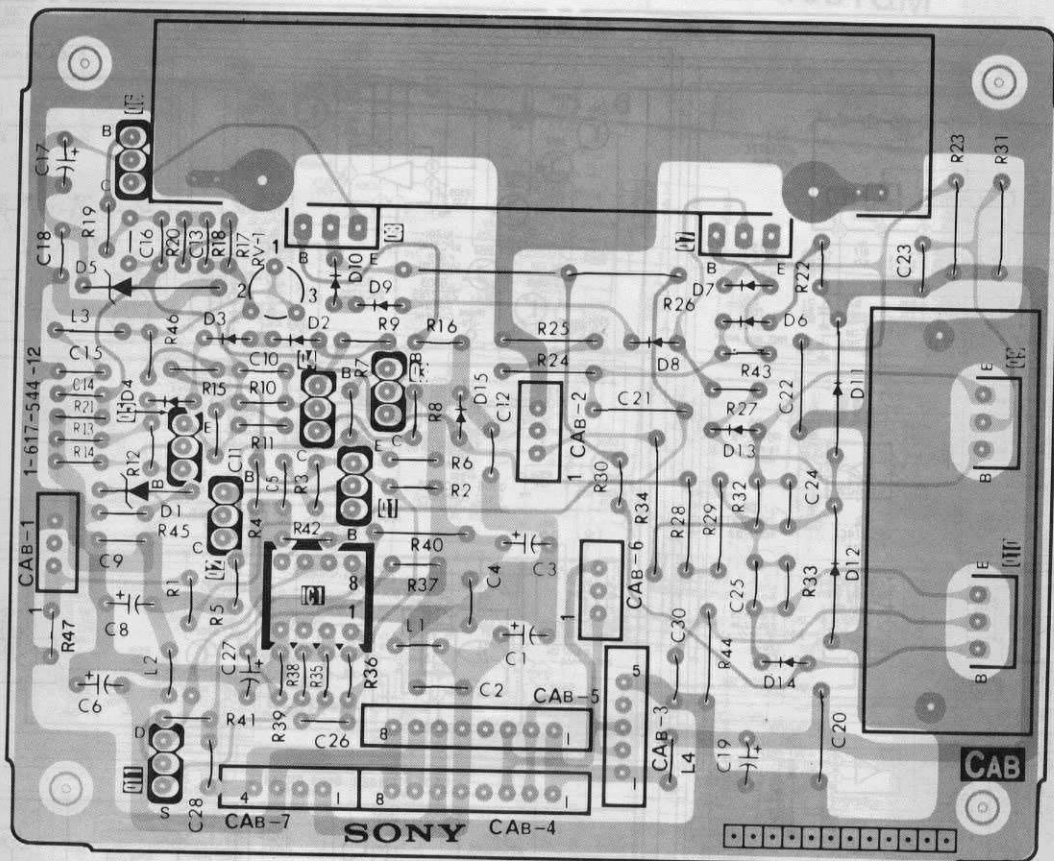
CAB

[B OUT]

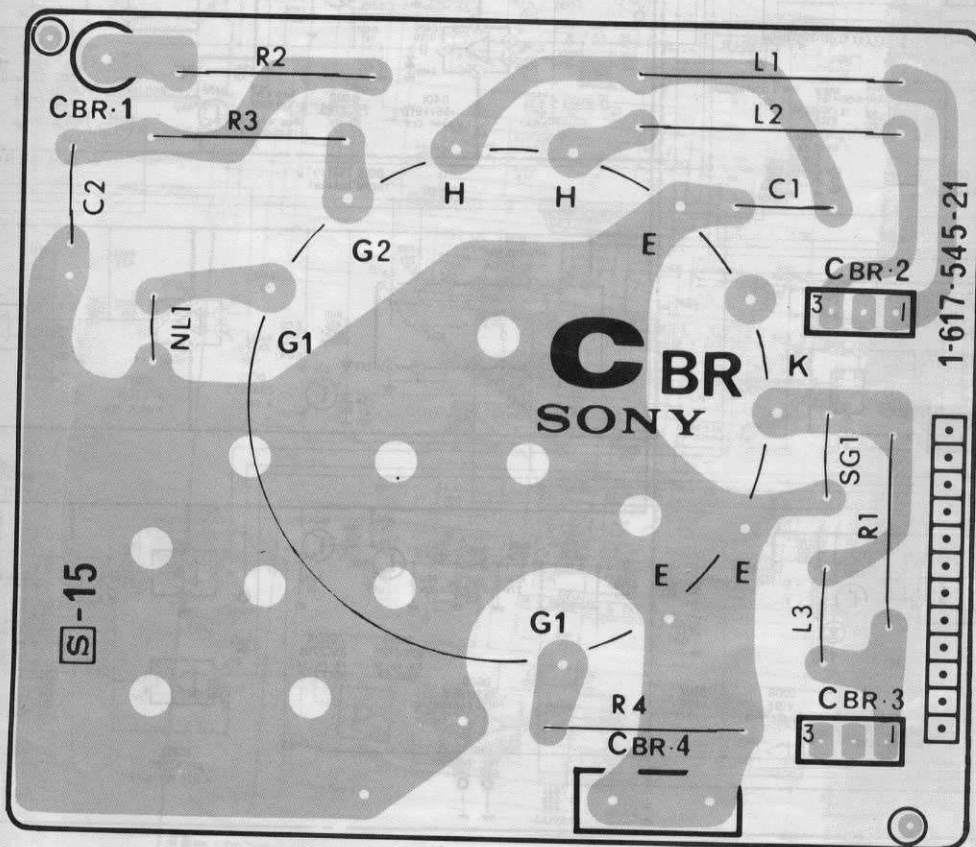
CBR

9 10 11 12 13 14 15 16

- CAB Board -



- CBR Board -

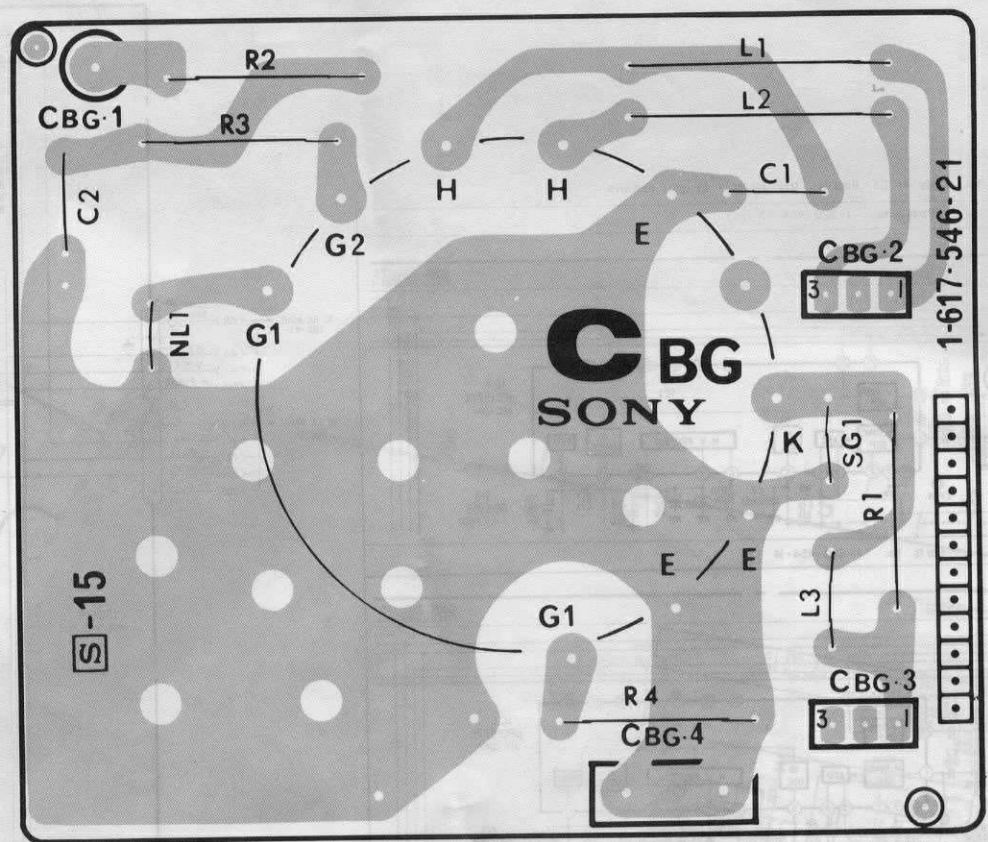


- [Pattern] : Conductor side pattern
- [Pattern] : Component side pattern

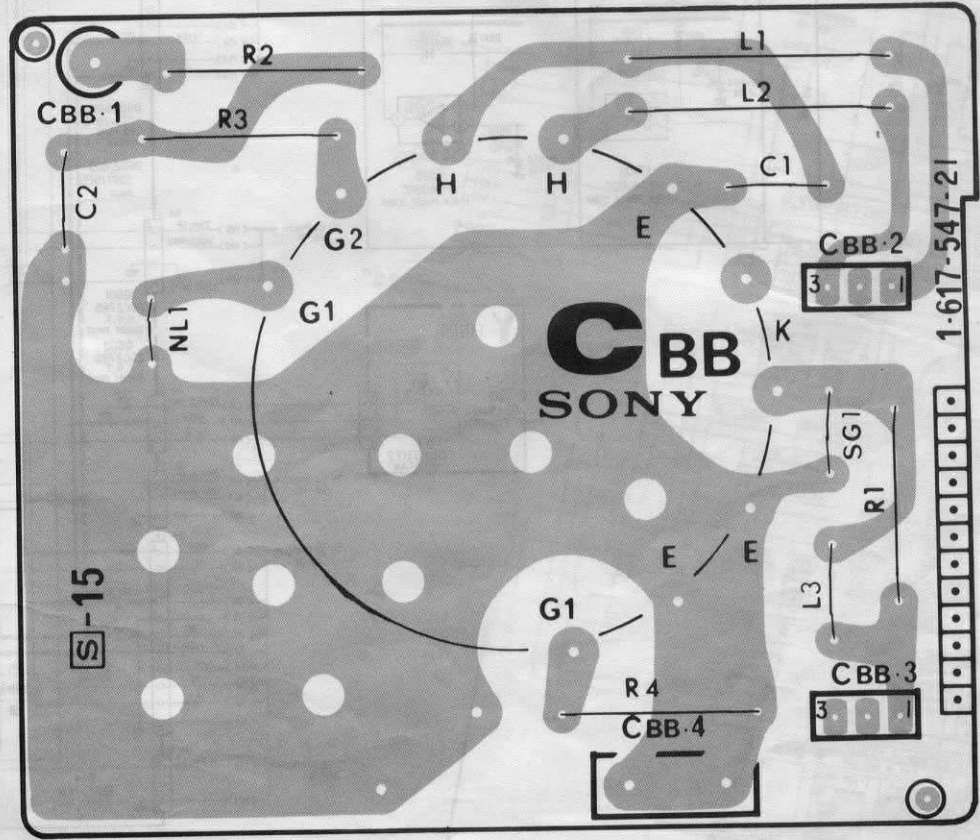
CBG CBB

16 17 18 19 20 21 22 23

- CBG Board -



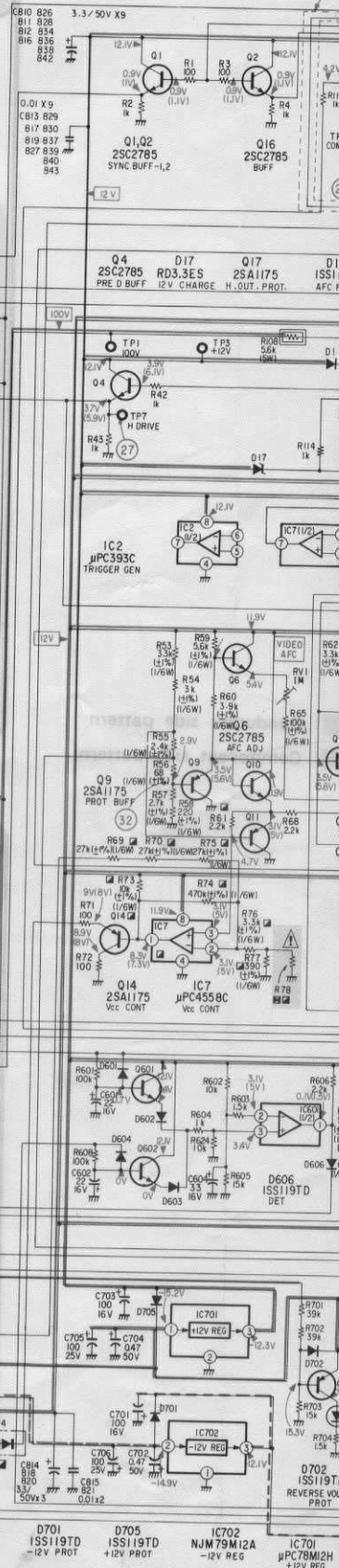
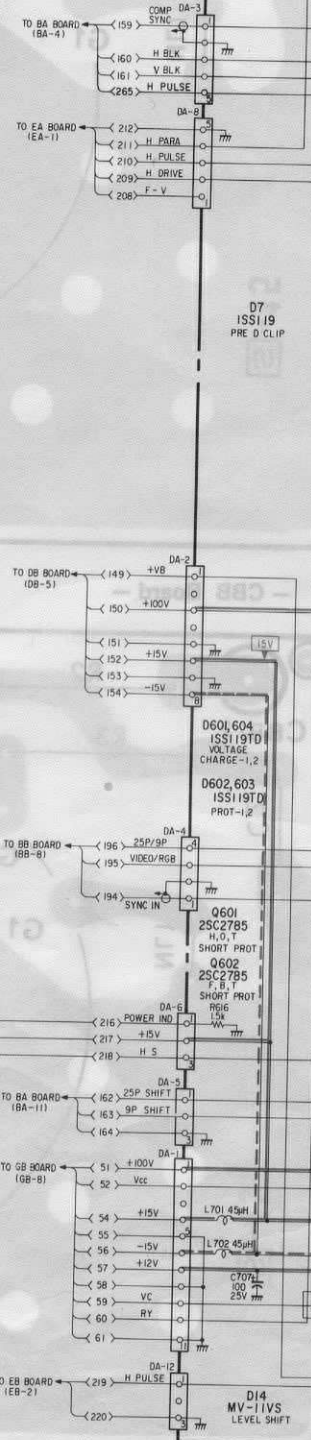
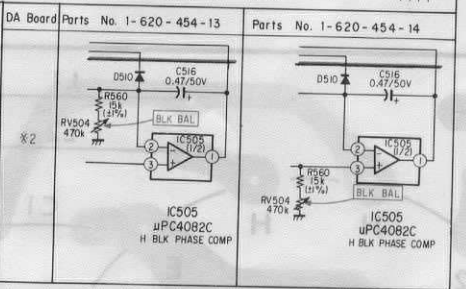
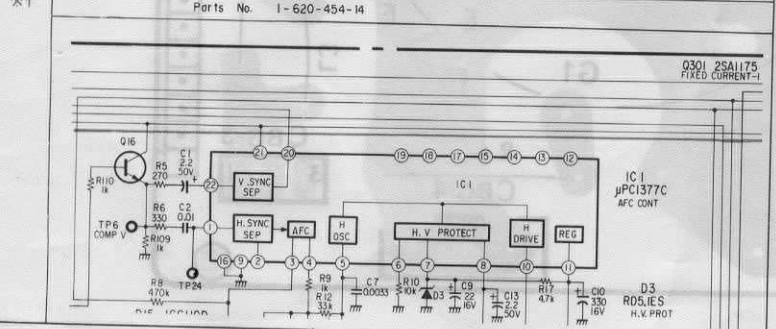
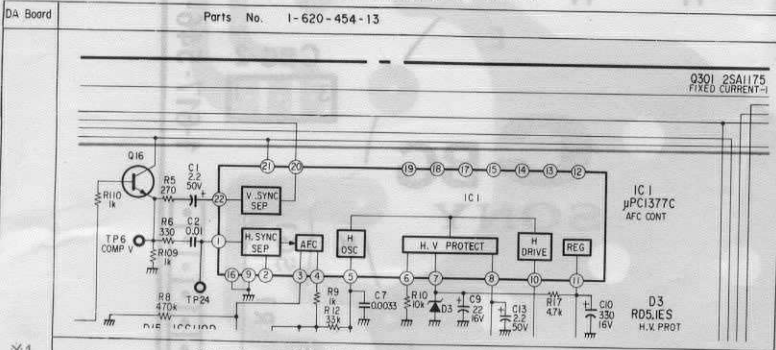
- CBB Board -



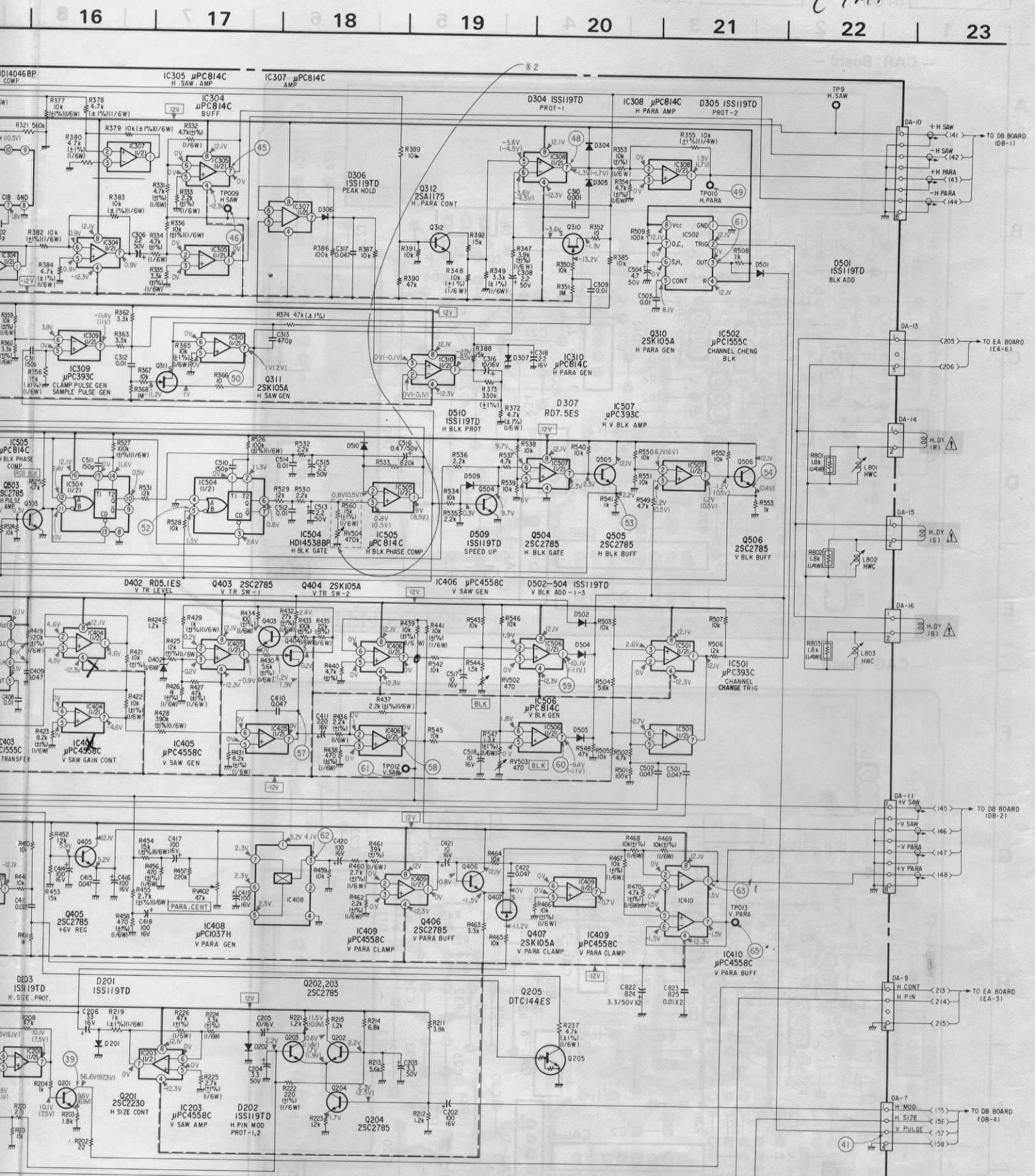
: Conductor side pattern
 : Component side pattern

NOTE: A lot contains two kinds of DA-Boards. Use properly by part numbers.

A B C D E F G H I J



409 → PB SIZE + INVERSION DE C IMAGE



(AFC CONT, H SIZE CONT, H, V SAW, GAIN CONT, H, V SYNC GEN) CHANNEL CHANGE TRIG, HV PARA GAIN CONT, TRIGGER GEN

DA

DA

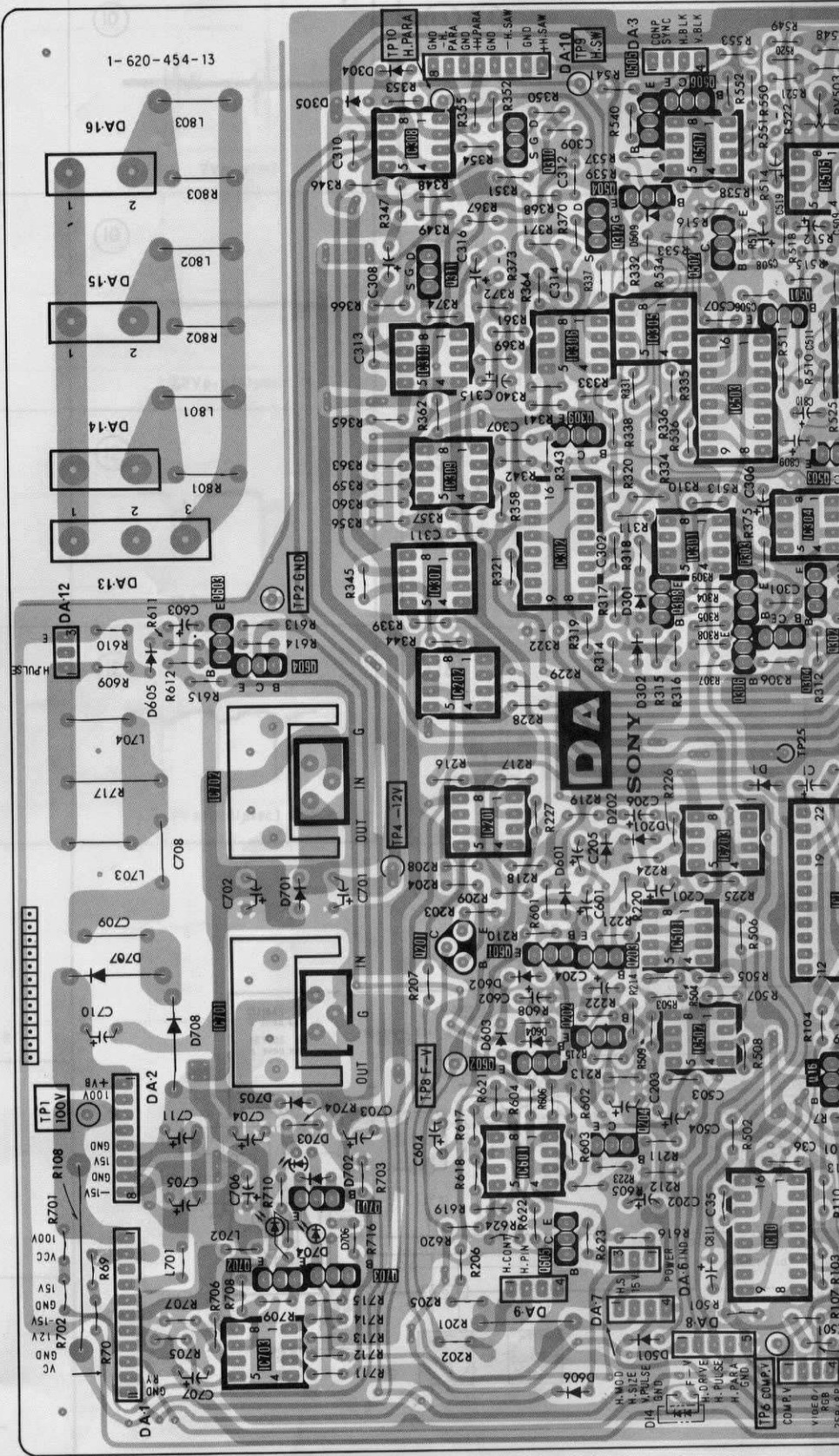
AFC CONT, H SIZE CONT, H.V.SAW, GAIN CONT, H.V. SYNC GEN, CHANNEL CHENG TRIG, H.V.PARA GAIN, GAIN CONT, TRIGGER GEN

VPH-1031QM

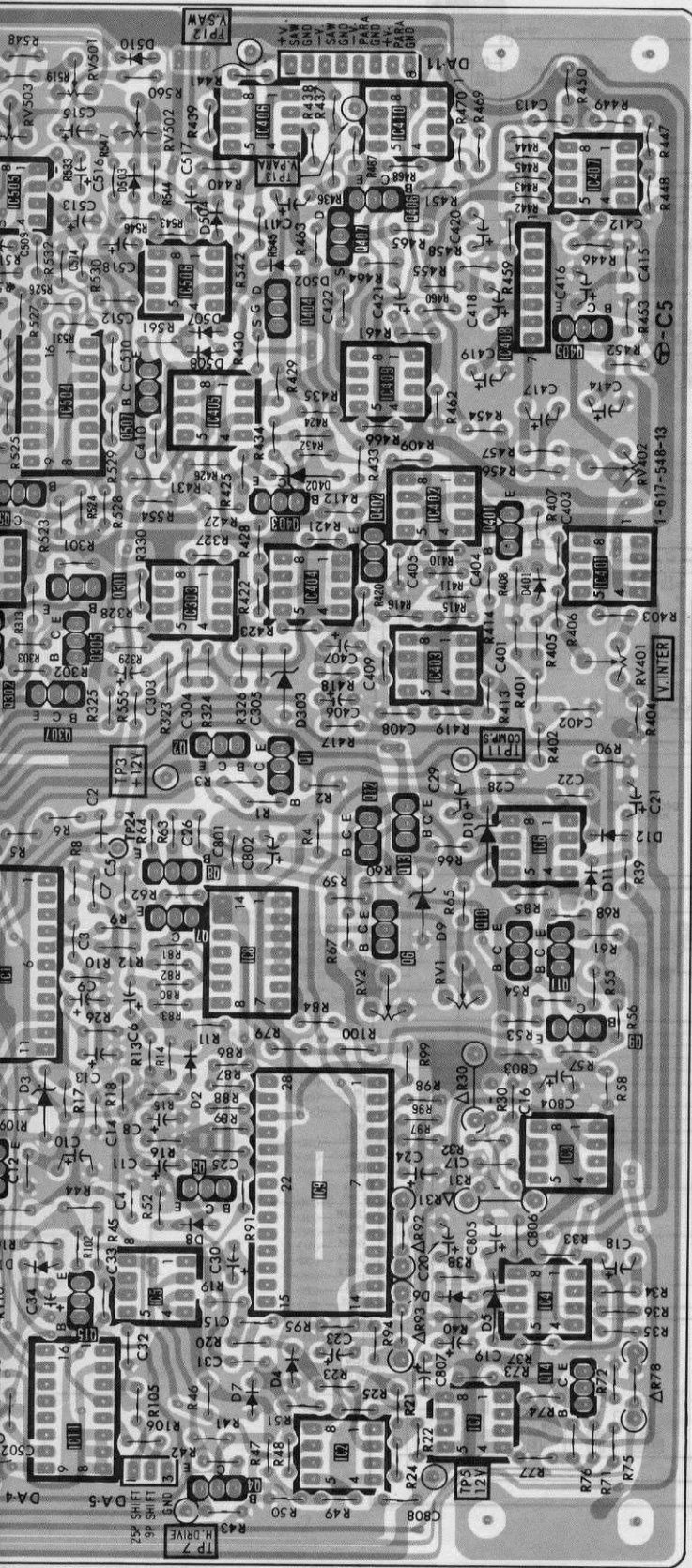
- DA Board - (1-620-454-13)

A
B
C
D
E
F
G
H
I
J

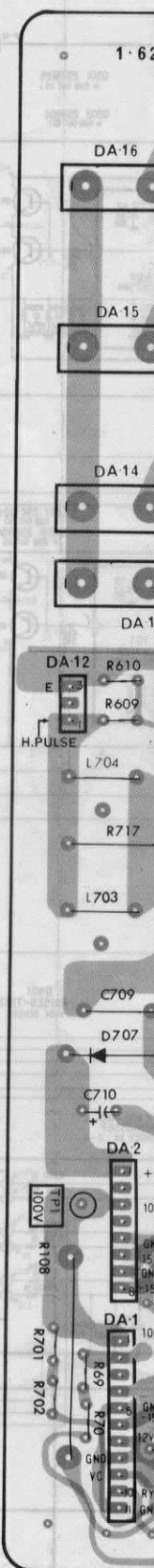
IC	Q	D	ADJ, TP
406,410 308,507	310	304 510 305	TP12 TP10 501 TP13 503 502
407 505	312 504 406	503 504	
506 408	311 502 404	502 405	
305 310 409 503,504 405	501 507	507 508	
309 402	503 403 401	402	402
304 301 404 307 303 302	301	401	
403	304,302 303 308 305	301 303	TP2 401
202	603 306 604	302 605	TP11 403
702 6	1,2 12,13	10, 12	TP3 TP25
201	8	11	TP24
203 8	7 6, 10, 11	202 201	TP4 1 2
501	201	701, 601	
701 502	601,203 202 602	707 602 2 708 3 603,604	TP8 TP1
601	16 204	705 703	8
10	701 15	702	13 6 5
703	605 702,703	704,706 606	4 7
	14	501 606	TP6 14
			TP7, TP5
IC	Q	D	ADJ, TP



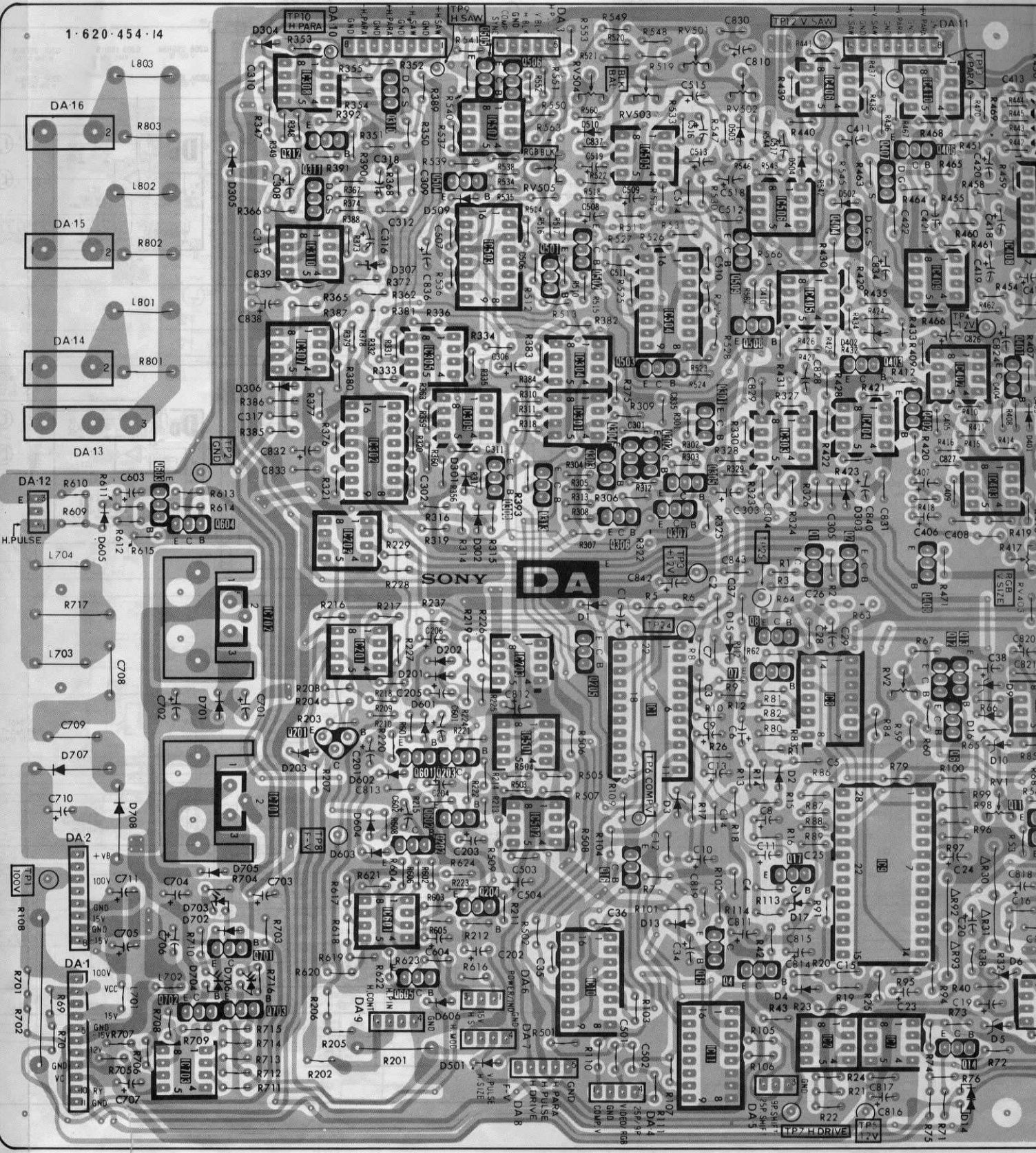
- DA Board - (1-620-454-14)



IC	Q	D	ADJ.TP
		304	TP12
308	406,410	505,506 310	TP10 TP9 501 TP13 503 504,502
507	407	510 503	
505	312	406	505
	504 407	305 504	
506	408	311	509 502
		404,405	
310	503	502,509	
409		501	307
405			
504			
		508	402
307			TP4 402
305		503 403 401	
304			
402		306	
309,301	401	402	401
302	303	301	
		304,302	
		308 303	
403		305	TP2 401
		603 307	
202		605 302	
		1, 2, 408	403
			TP3
702			TP25
			TP24, TP11
201	205	15	
203	7 12,13	202 201	
		9	2
8 6		701 16	
		601	
501	201	203	10,11
	601,203	707 602 2	
701			
502	602 11,9	708 3	
	202 10	604	TP6
		603	TP8
9	16 17	705	
		703 17	TP1
601	204	702 13	
		701 15	
10		605 4	704,706 4
		702,703	606
			5
2 7			
703	14	501	TP7, TP5
IC	Q	D	ADJ.TP



16 | 17 | 18 | 19 | 20 | 21 | 22 | 23



Y [IND]

24

25

26

27

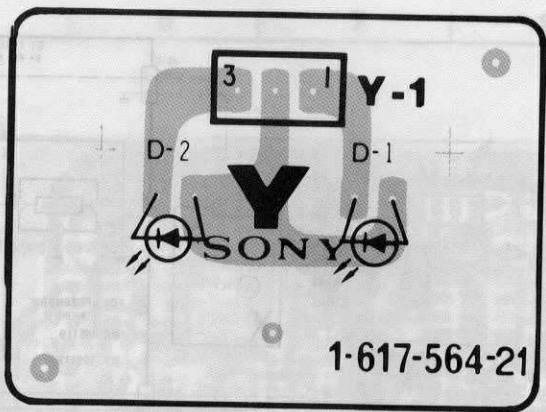
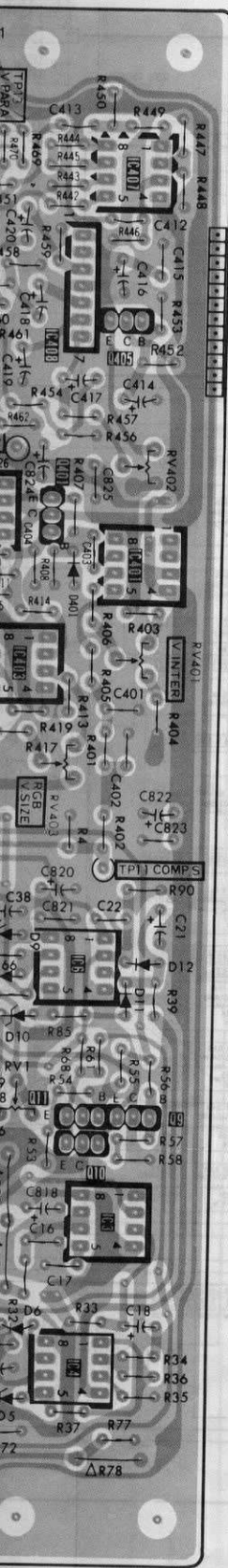
28

29

30

31

- Y Board -

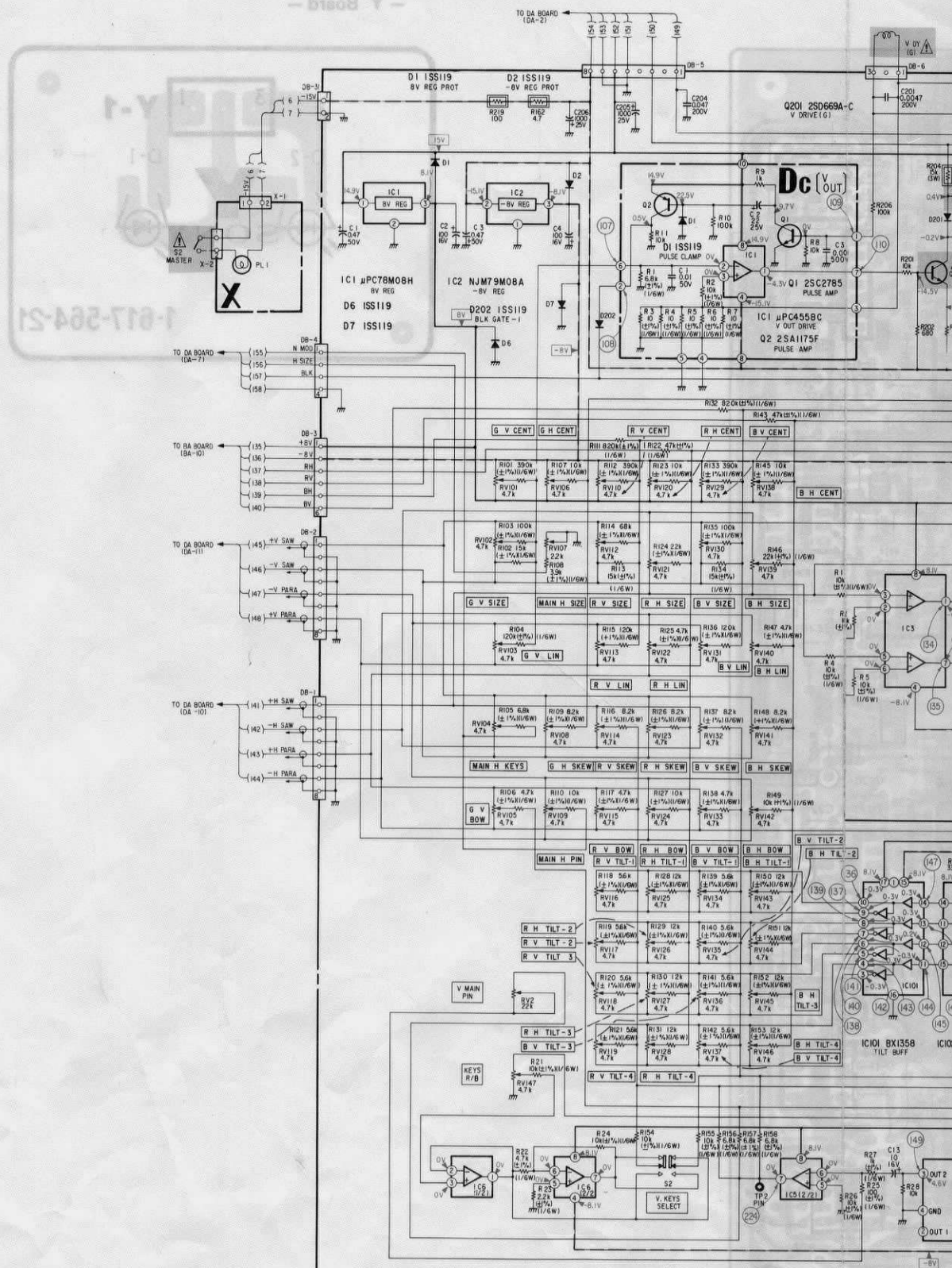


- [Pattern] : Conductor side pattern
- [Pattern] : Component side pattern

Y

1 2 3 4 5 6 7 8

A B C D E F G H I J



DB [PIN GEN, V OUT, KEY S, GEN, KEYS PIN AMP, V H SUB OUT, REMOTE SW]

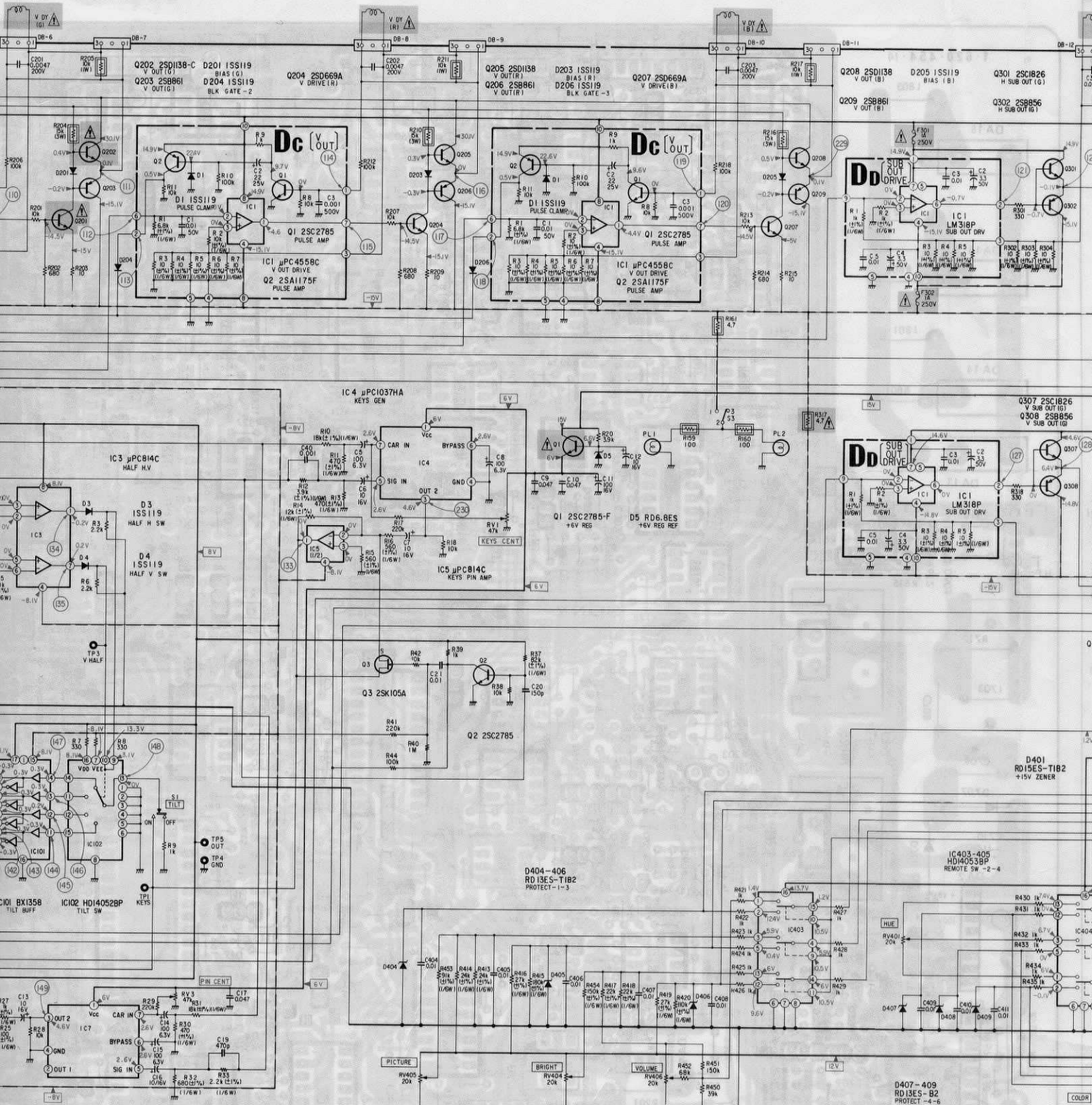
IC6 µPC814C KEYS BUFF

IC5 µPC814C KEYS PIN AMP

Conductor side pattern

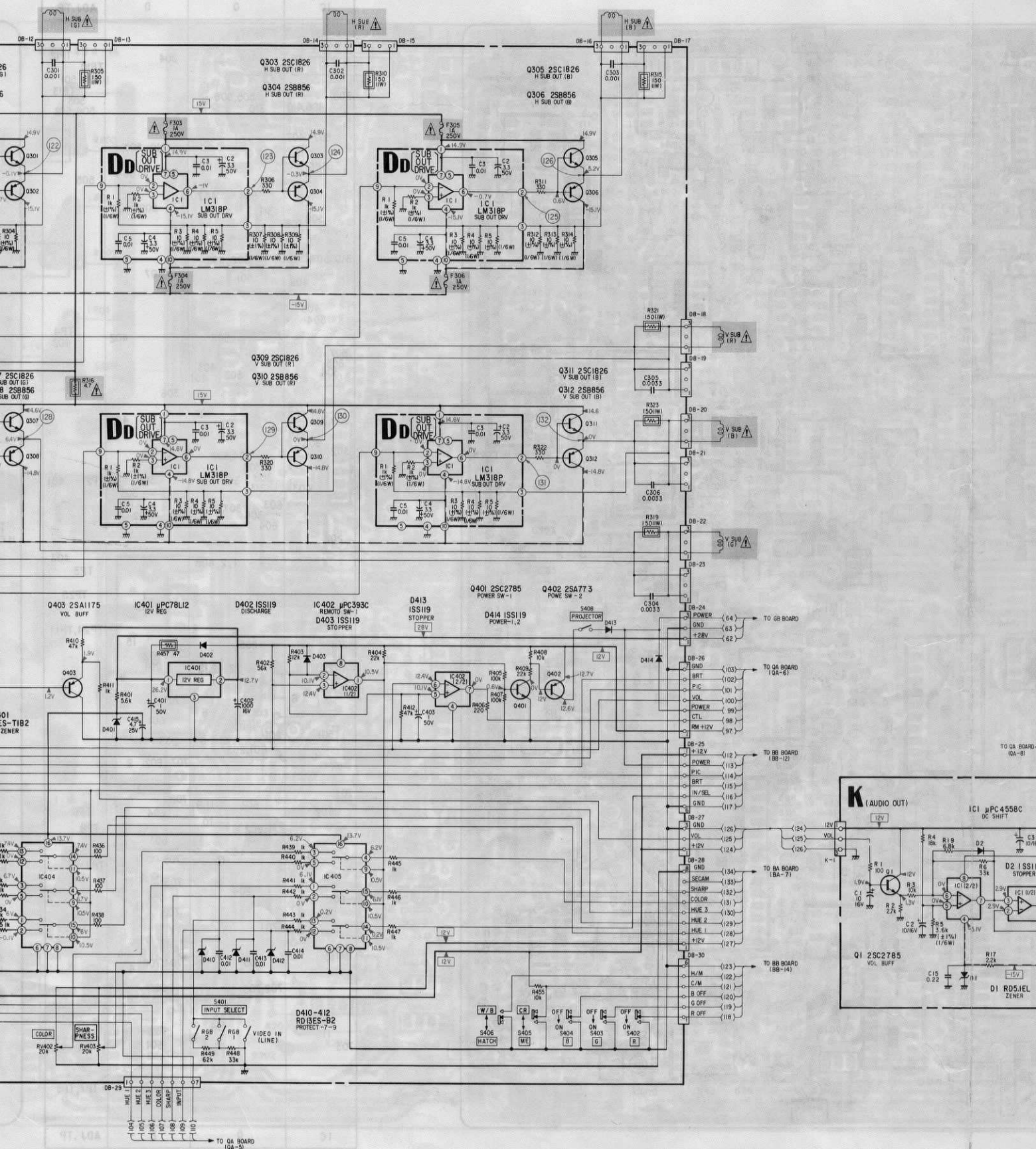
Component side pattern

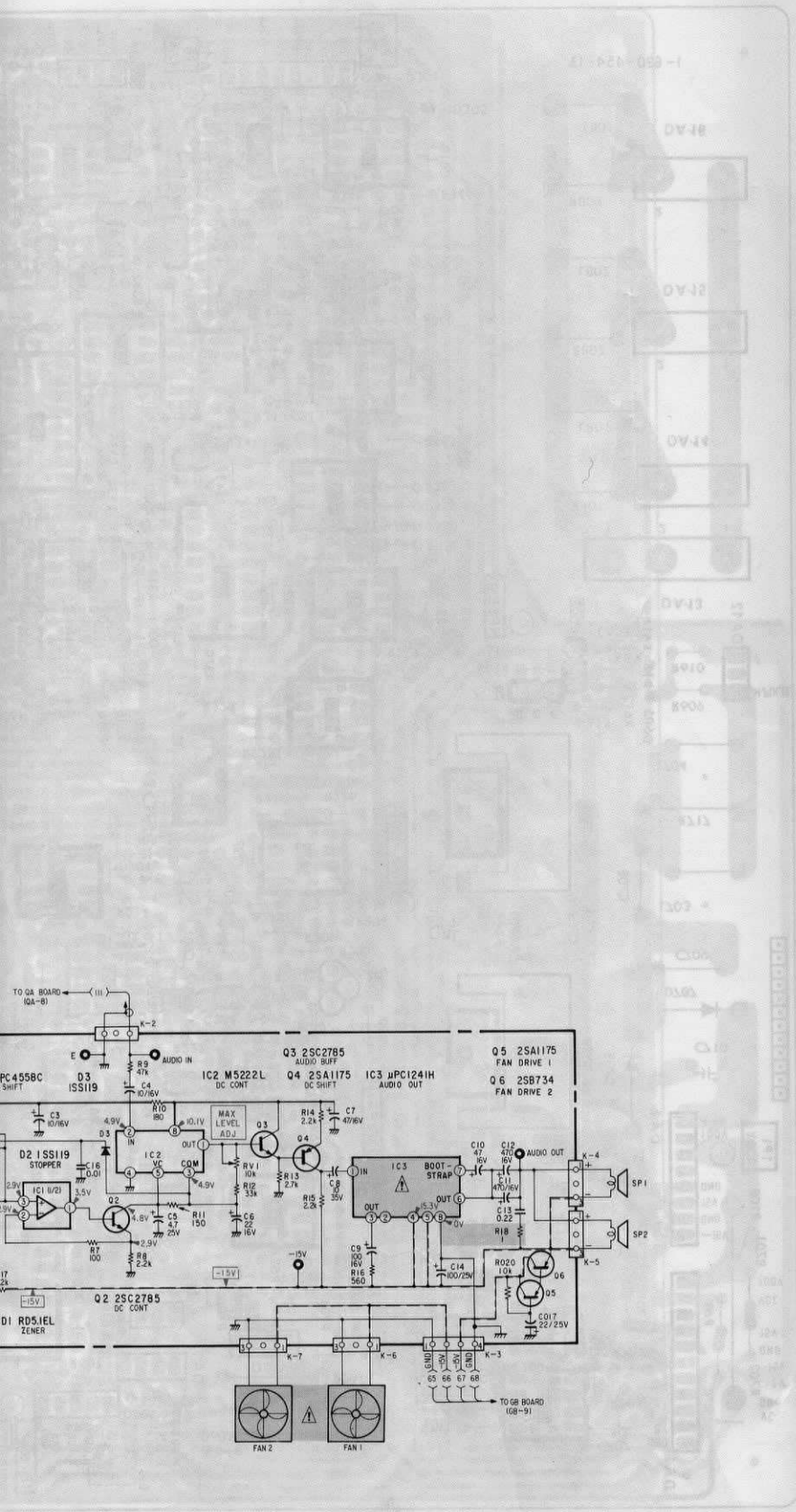
- V Board -



16 | 17 | 18 | 19 | 20 | 21 | 22 | 23

DA Board (1) - 250-884-1





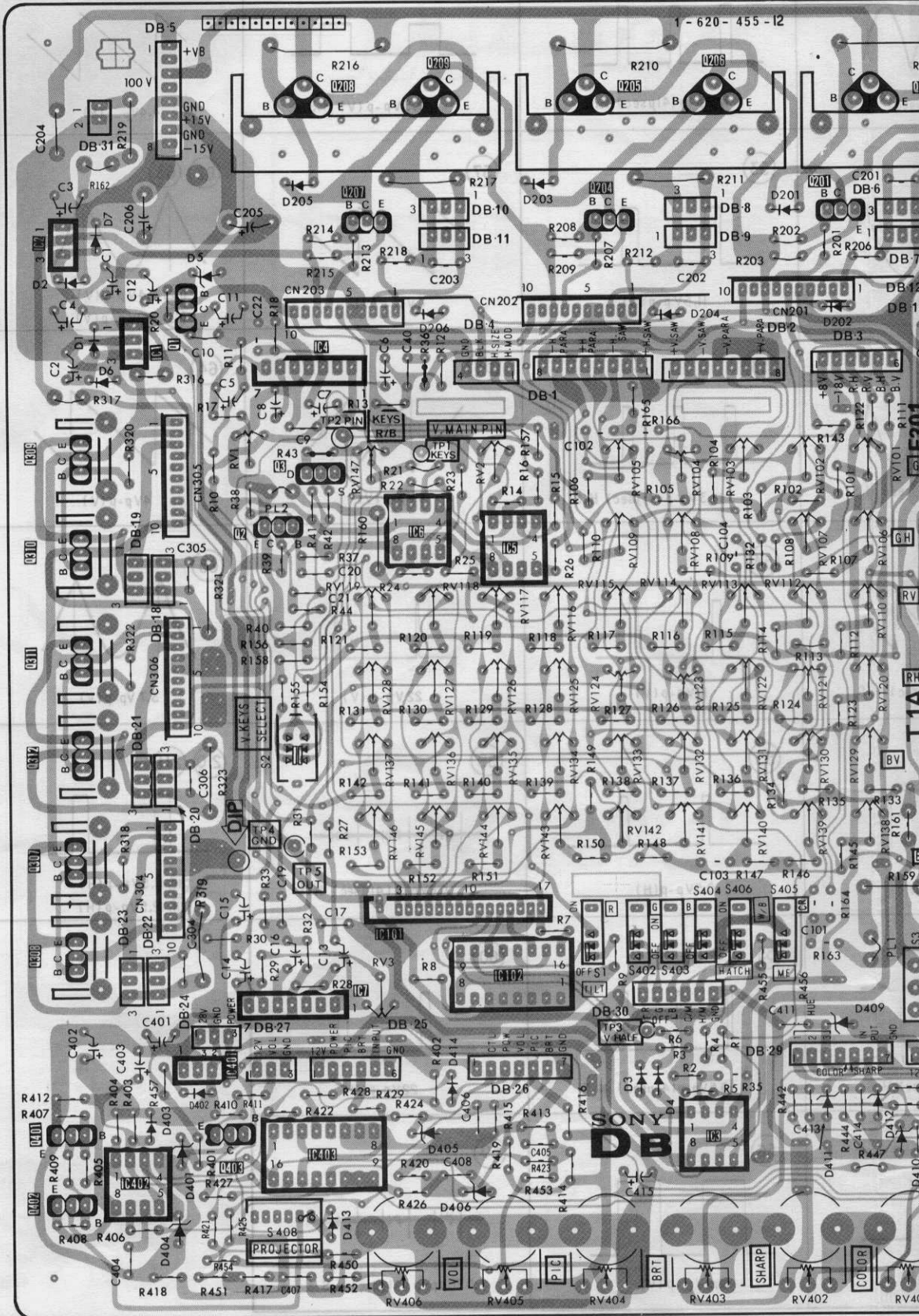
DB

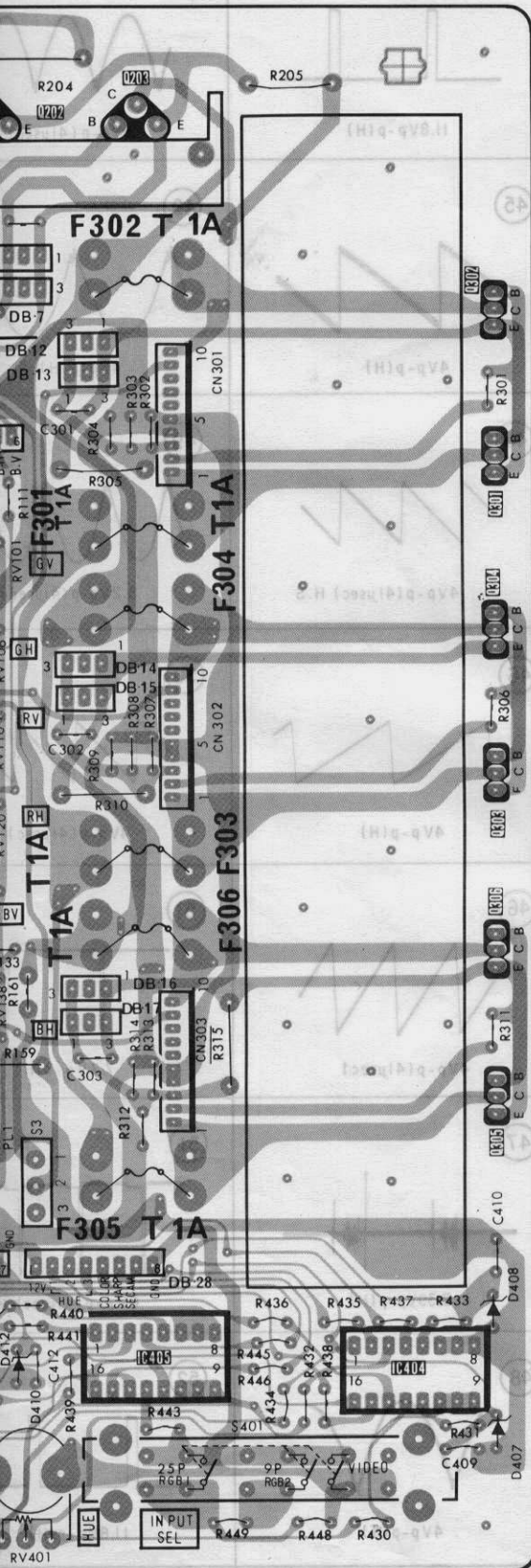
PIN GEN, V OUT, KEYS GEN, KEYS PIN AMP, V.H SUB
OUT, REMOTE SW

1 2 3 4 5 6 7 8

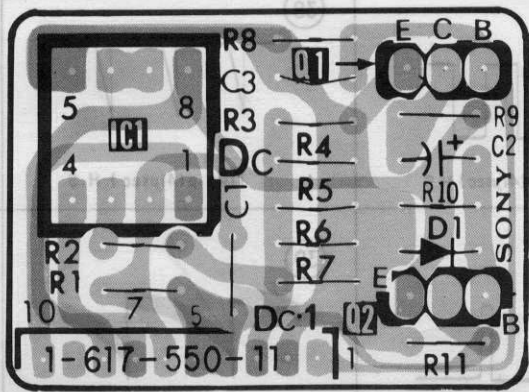
- DB Board -

Q	IC	D	ADJ,TP
209	206		
208	205	202	
	203		
		205	203
		201	
207	204	201	
IC2	302	7	
		5	
		2	
IC1		206	204
		202	
IC4		6	
	301		
309		3	TP2 TP1 RV1 RV147 RV2 RV105
		2	RV109 RV106 RV108 RV107
310	IC5		
			RV119 RV118 RV117 RV116 RV114 RV115
311		303	
			RV128 RV127 RV126 RV125 RV123 RV124
312		306	
			RV137 RV136 RV135 RV134 RV132 RV133
307		306	
			RV146 RV145 RV144 RV143 RV141 RV142
IC101		305	
308	IC102		
IC7		409	RV3
IC401			
		3	4
		402	414
		408	411
		403	412
401	IC405	403	405
	IC403		410
	IC404		407
IC402		406	
402			413
			404
			RV406,404,402 RV405,403,401
Q	IC	D	ADJ,TP

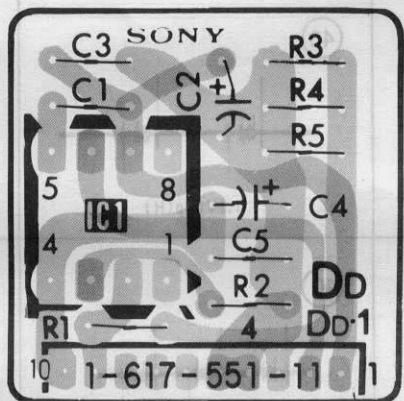




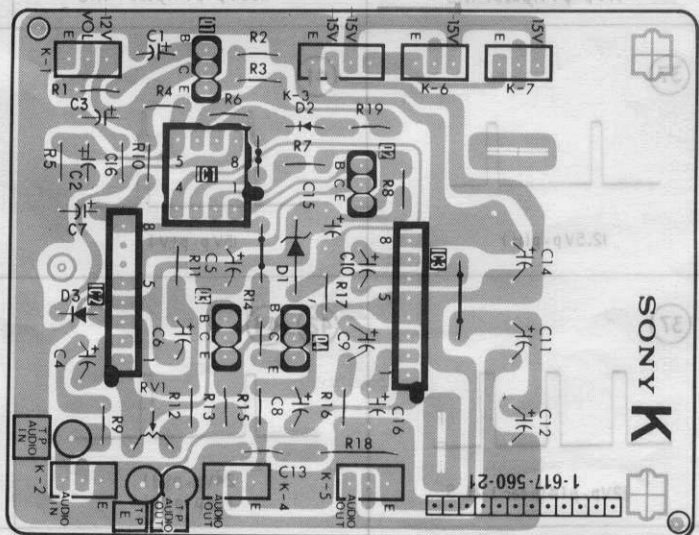
— DC Board —



— DD Board —



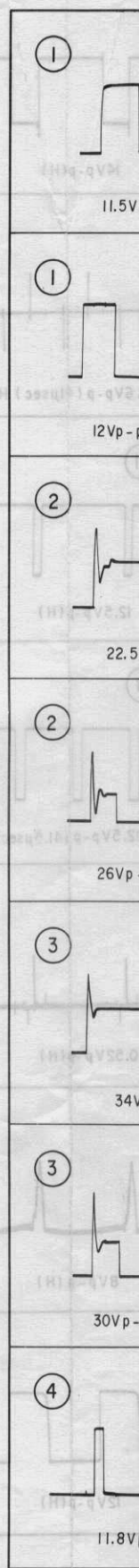
— K Board —



— X Board —



• — : Conductor side pattern
 • — : Component side pattern



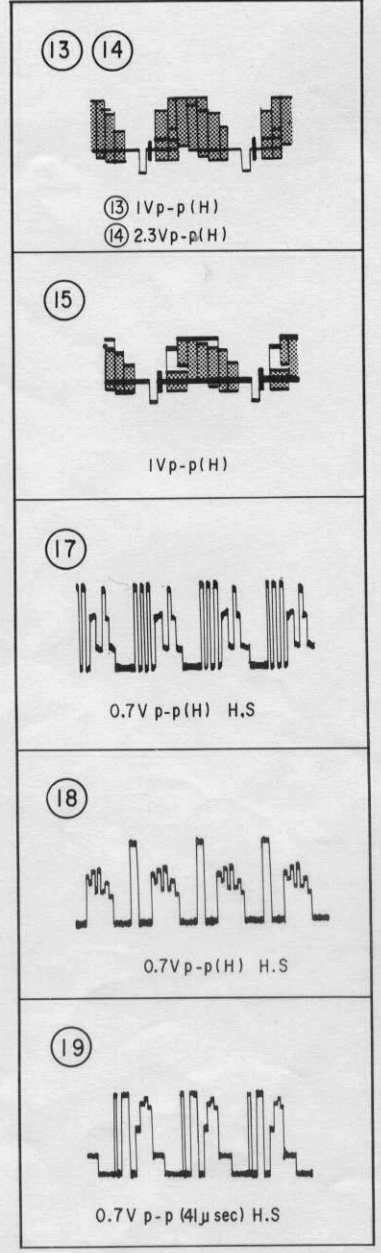
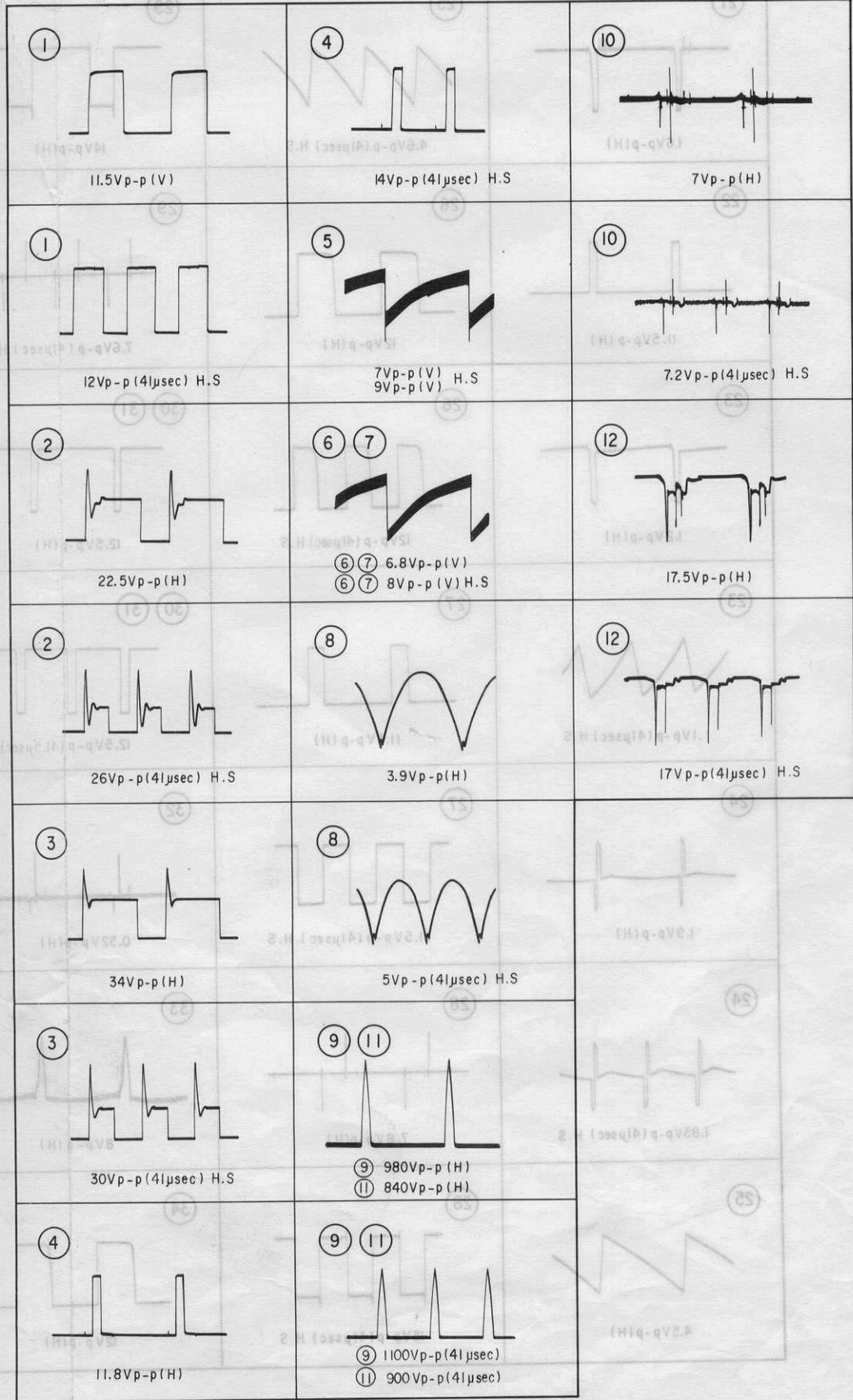
X

7-7. WAVEFORMS

board AD

EA board

QA board

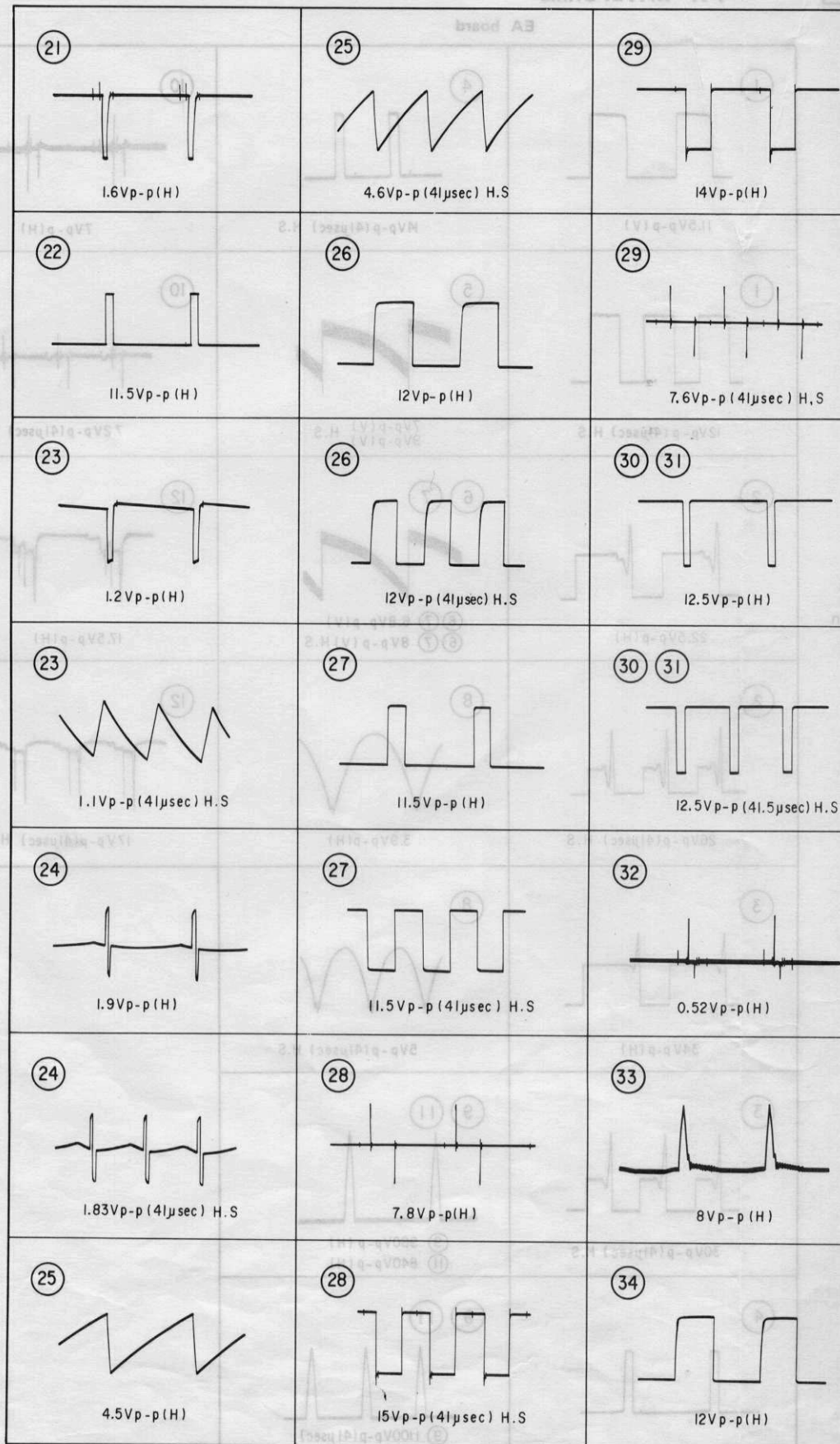


QA

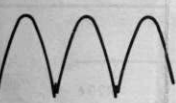
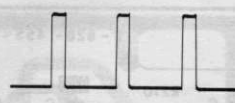
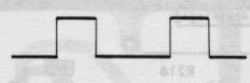
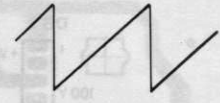

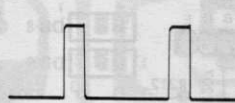











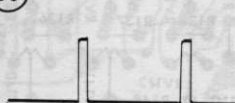










DA board







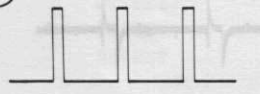



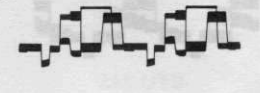


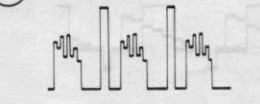

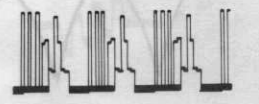

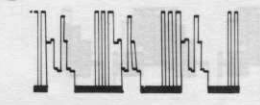

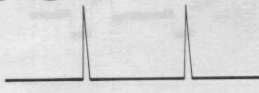
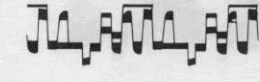


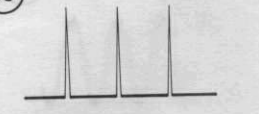

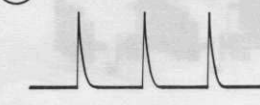
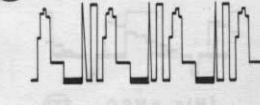
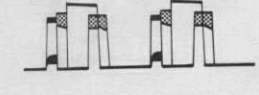
7.7 WAVEFORMS



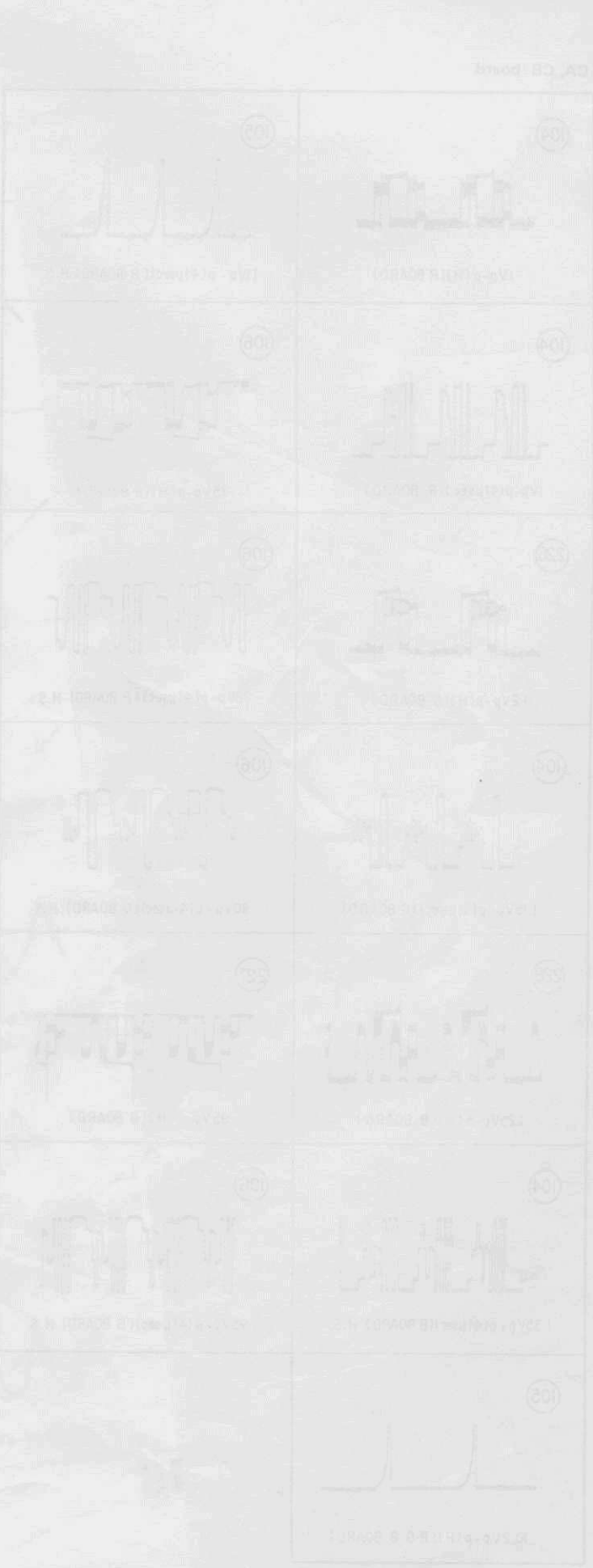
	<p>34</p> <p>11.5Vp-p(4μsec) H.S</p>	<p>38</p> <p>11Vp-p(4μsec) H.S</p>	<p>43</p> <p>11.8Vp-p(H)</p>	<p>48</p> <p>5Vp-p(4μsec)</p>
	<p>35</p> <p>11.8Vp-p(H)</p>	<p>39</p> <p>6.8Vp-p(V) 9Vp-p(V) H.S</p>	<p>45</p> <p>4Vp-p(H)</p>	<p>49</p> <p>4Vp-p(H)</p>
	<p>36</p> <p>11.8Vp-p(H)</p>	<p>40</p> <p>1.1Vp-p(H)</p>	<p>45</p> <p>4Vp-p(4μsec) H.S</p>	<p>49</p> <p>5.2Vp-p(4μsec) H.S</p>
	<p>36</p> <p>11Vp-p(4μsec) H.S</p>	<p>40</p> <p>1.05Vp-p(4μsec) H.S</p>	<p>46</p> <p>4Vp-p(H)</p>	<p>50</p> <p>4Vp-p(4μsec) H.S</p>
	<p>37</p> <p>12.5Vp-p(H)</p>	<p>41</p> <p>15Vp-p(V)</p>	<p>46</p> <p>4Vp-p(4μsec)</p>	<p>51</p> <p>7.7Vp-p(H)</p>
	<p>37</p> <p>12Vp-p(4μsec) H.S</p>	<p>42 44</p> <p>24Vp-p(H) 11Vp-p(H)</p>	<p>47</p> <p>0.39Vp-p(H)</p>	<p>51</p> <p>6Vp-p(4μsec) H.S</p>
	<p>38</p> <p>11.5Vp-p(H)</p>	<p>42 44</p> <p>12Vp-p(4μsec) H.S 11Vp-p(4μsec) H.S</p>	<p>48</p> <p>4Vp-p(H)</p>	<p>52</p> <p>11.8Vp-p(H)</p>

 <p>5Vp-p (4μsec)</p>	<p>52</p>  <p>12Vp-p (4μsec) H.S</p>	<p>56</p>  <p>12.3Vp-p (V) H.S</p>	<p>61</p>  <p>4.4Vp-p (H)</p>
 <p>4Vp-p (H)</p>	<p>53</p>  <p>11.5Vp-p (H)</p>	<p>57</p>  <p>4Vp-p (V)</p>	<p>62 63</p>  <p>62 0.4Vp-p (V) 63 3.8Vp-p (V)</p>
 <p>5.2Vp-p (4μsec) H.S</p>	<p>53</p>  <p>11.3Vp-p (4μsec) H.S</p>	<p>58</p>  <p>4Vp-p (V)</p>	<p>64</p>  <p>4Vp-p (V)</p>
 <p>4Vp-p (4μsec) H.S</p>	<p>54</p>  <p>12Vp-p (V)</p>	<p>59</p>  <p>22Vp-p (V)</p>	<p>65</p>  <p>3.7Vp-p (V)</p>
 <p>7.7Vp-p (H)</p>	<p>55</p>  <p>10.5Vp-p (H)</p>	<p>59</p>  <p>0.8Vp-p (4μsec) H.S</p>	<p>210 211</p>  <p>210 11.5Vp-p (H) 211 12.5Vp-p (H)</p>
 <p>6Vp-p (4μsec) H.S</p>	<p>55</p>  <p>10.5Vp-p (4μsec) H.S</p>	<p>60</p>  <p>22Vp-p (V)</p>	
 <p>11.8Vp-p (H)</p>	<p>56</p>  <p>12.2Vp-p (V)</p>	<p>60</p>  <p>0.76Vp-p (4μsec) H.S</p>	

BB board

<p>66</p>  <p>0.95Vp-p(H)</p>	<p>74</p>  <p>0.85Vp-p(H)</p>	<p>81</p>  <p>11.5Vp-p(H)</p>	<p>86</p>  <p>0.85Vp-p(H)</p>
<p>69</p>  <p>0.95Vp-p(H)</p>	<p>75 76</p>  <p>0.2Vp-p(H)</p>	<p>81</p>  <p>11.3Vp-p(4μsec) H.S</p>	<p>86</p>  <p>0.65Vp-p(4μsec) H.S</p>
<p>68</p>  <p>0.95Vp-p(H)</p>	<p>77</p>  <p>0.7Vp-p(4μsec) H.S</p>	<p>82</p>  <p>1.8Vp-p(H)</p>	<p>87</p>  <p>0.8Vp-p(H)</p>
<p>69</p>  <p>0.85Vp-p(H)</p>	<p>78</p>  <p>0.7Vp-p(4μsec) H.S</p>	<p>83</p>  <p>1.8Vp-p(H)</p>	<p>87</p>  <p>0.65Vp-p(4μsec) H.S</p>
<p>70</p>  <p>0.85Vp-p(H)</p>	<p>79</p>  <p>0.7Vp-p(4μsec) H.S</p>	<p>84</p>  <p>1.8Vp-p(H)</p>	<p>88 89</p>  <p>11.5Vp-p(H)</p>
<p>71 72</p>  <p>71 0.9Vp-p(H) 72 0.8Vp-p(H)</p>	<p>80</p>  <p>11.8Vp-p(H)</p>	<p>85</p>  <p>0.85Vp-p(H)</p>	<p>88</p>  <p>11.3Vp-p(82μsec) H.S</p>
<p>73</p>  <p>0.85Vp-p(H)</p>	<p>80</p>  <p>11.8Vp-p(4μsec) H.S</p>	<p>85</p>  <p>0.65Vp-p(4μsec) H.S</p>	<p>90</p>  <p>1.35Vp-p(H)</p>

<p>90</p> <p>1.35Vp-p (4μsec) H.S</p>	<p>94</p> <p>1Vp-p(H)</p>	<p>98</p> <p>1.35Vp-p (4μsec) H.S</p>	<p>213</p> <p>2.1Vp-p (4.1μsec) H.S</p>
<p>91</p> <p>1.35Vp-p(H)</p>	<p>94</p> <p>1Vp-p (4μsec) H.S</p>	<p>99</p> <p>10Vp-p(H)</p>	<p>214</p> <p>1Vp-p (4μsec) H.S</p>
<p>91</p> <p>1.35Vp-p (4μsec) H.S</p>	<p>95</p> <p>1.1Vp-p (4μsec) H.S</p>	<p>99</p> <p>10Vp-p (4μsec) H.S</p>	<p>8.8Vp-p(H)</p>
<p>92</p> <p>1.3Vp-p(H)</p>	<p>96</p> <p>1.2Vp-p(H)</p>	<p>100 101</p> <p>0.16Vp-p(H)</p>	<p>4Vp-p(H)</p>
<p>92</p> <p>1.3Vp-p (4μsec) H.S</p>	<p>96</p> <p>1.15Vp-p (4μsec) H.S</p>	<p>102</p> <p>0.2Vp-p(H)</p>	<p>1.5Vp-p (4μsec) H.S</p>
<p>93</p> <p>1Vp-p(H)</p>	<p>97</p> <p>1.33p-p (4μsec) H.S</p>	<p>103</p> <p>4.6Vp-p(V)</p>	<p>1.4Vp-p(V)</p>
<p>93</p> <p>1Vp-p (4μsec) H.S</p>	<p>98</p> <p>1.3Vp-p(H)</p>	<p>212</p> <p>5Vp-p(H)</p>	<p>4.7Vp-p(H)</p>



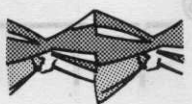
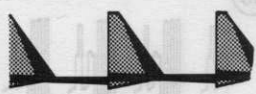


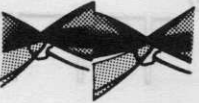
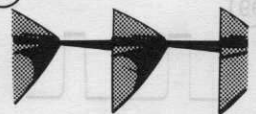


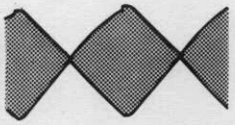
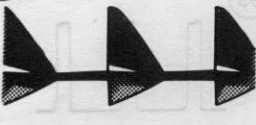
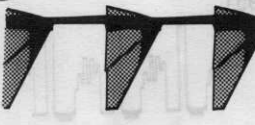
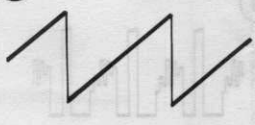
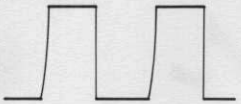
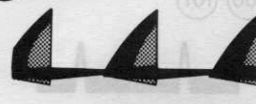
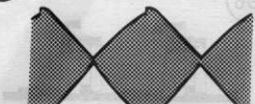
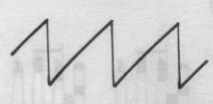
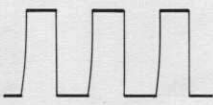
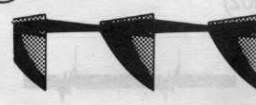
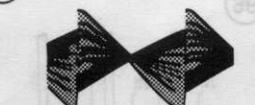
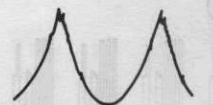
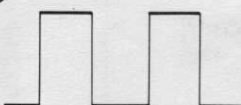
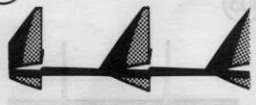
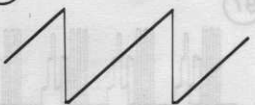


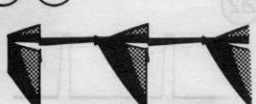

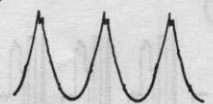
CA, CB board

<p>(104)</p> <p>1Vp-p(H)(R BOARD)</p>	<p>(105)</p> <p>11Vp-p(4μsec)(R BOARD) H.S</p>
<p>(104)</p> <p>1Vp-p(4μsec)(R BOARD)</p>	<p>(106)</p> <p>75Vp-p(H)(R BOARD)</p>
<p>(226)</p> <p>1.2Vp-p(H)(G BOARD)</p>	<p>(106)</p> <p>78Vp-p(4μsec)(R BOARD) H.S</p>
<p>(104)</p> <p>1.15Vp-p(4μsec)(G BOARD)</p>	<p>(106)</p> <p>90Vp-p(4μsec)(G BOARD) H.S</p>
<p>(228)</p> <p>1.25Vp-p(H)(B BOARD)</p>	<p>(227)</p> <p>95Vp-p(H)(B BOARD)</p>
<p>(104)</p> <p>1.35Vp-p(4μsec)(B BOARD) H.S</p>	<p>(106)</p> <p>95Vp-p(4μsec)(B BOARD) H.S</p>
<p>(105)</p> <p>10.2Vp-p(H)(R-G-B BOARD)</p>	

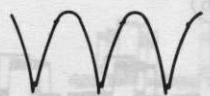
DB board

<p>(107) (112) (117)</p> <p>1.1Vp-p(V)</p>	<p>(125)</p> <p>4.4Vp-p(V) 5.2Vp-p(V)</p>
<p>(108) (113) (118)</p> <p>15.2Vp-p(V)</p>	<p>(126)</p> <p>5.2Vp-p(V) 5.6Vp-p(V)</p>
<p>(109) (114) (119)</p> <p>1.5Vp-p(V)</p>	<p>(127)</p> <p>8Vp-p(V)</p>
<p>(110) (115) (120)</p> <p>2.25Vp-p(V)</p>	<p>(128)</p> <p>6.4Vp-p(V) 11.5Vp-p(V) H.S</p>
<p>(111) (116) (229)</p> <p>45Vp-p(V)</p>	<p>(129)</p> <p>18Vp-p(V)</p>
<p>(121) (122)</p> <p>(121) 3.6Vp-p(V) (121) 3.8Vp-p(V) (122) 3.8Vp-p(V) (122) 3.6Vp-p(V)</p>	<p>(230)</p> <p>0.55Vp-p(V)</p>
<p>(123) (124)</p> <p>(123) 2Vp-p(V) (124) 4Vp-p(V) (123) 4.8Vp-p(V) (124) 4.5Vp-p(V)</p>	<p>(130)</p> <p>16.5Vp-p(V) 19Vp-p(V) H.S</p>

CA, CB

<p>(131)</p>  <p>17.5Vp-p(V)</p>	<p>(137)</p>  <p>4.6Vp-p(V)</p>	<p>(145)</p>  <p>4.6Vp-p(V)</p>	<p>(217)</p>  <p>3.8Vp-p(V)</p>
<p>(132)</p>  <p>17.5Vp-p(V) 20Vp-p(V) H.S</p>	<p>(138)</p>  <p>6Vp-p(V)</p>	<p>(146)</p>  <p>6Vp-p(V)</p>	<p>(218)</p>  <p>4Vp-p(V)</p>
<p>(133)</p>  <p>8.6Vp-p(V)</p>	<p>(139)</p>  <p>6Vp-p(V)</p>	<p>(147)</p>  <p>5.2Vp-p(V)</p>	<p>(219)</p>  <p>4Vp-p(H)</p>
<p>(134)</p>  <p>14Vp-p(H)</p>	<p>(140)</p>  <p>4.8p-p(V)</p>	<p>(148)</p>  <p>8.6Vp-p(V)</p>	<p>(219)</p>  <p>4Vp-p(4μsec) H.S</p>
<p>(134)</p>  <p>14.5Vp-p(4μsec) H.S</p>	<p>(141)</p>  <p>4.8Vp-p(V)</p>	<p>(149)</p>  <p>0.72Vp-p(V)</p>	<p>(220)</p>  <p>4Vp-p(H)</p>
<p>(135)</p>  <p>14.3Vp-p(V)</p>	<p>(142)</p>  <p>5.1Vp-p(V)</p>	<p>(215)</p>  <p>4Vp-p(V)</p>	<p>(220)</p>  <p>4Vp-p(4μsec) H.S</p>
<p>(136)</p>  <p>4.7Vp-p(V)</p>	<p>(143) (144)</p>  <p>(143) 5Vp-p(V) (144) 5.4p-p(V)</p>	<p>(216)</p>  <p>3.7Vp-p(V)</p>	<p>(221)</p>  <p>5.2Vp-p(4μsec) H.S</p>

222



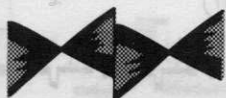
5.2Vp-p (4μsec)

223



4Vp-p (H)

224



5.4Vp-p (V)



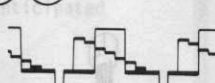
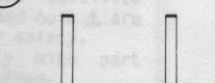
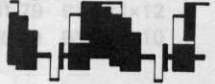
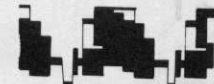
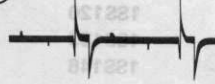








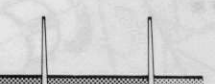
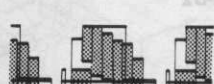
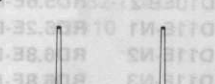

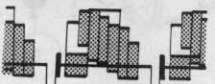


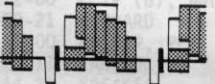
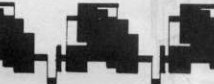


225

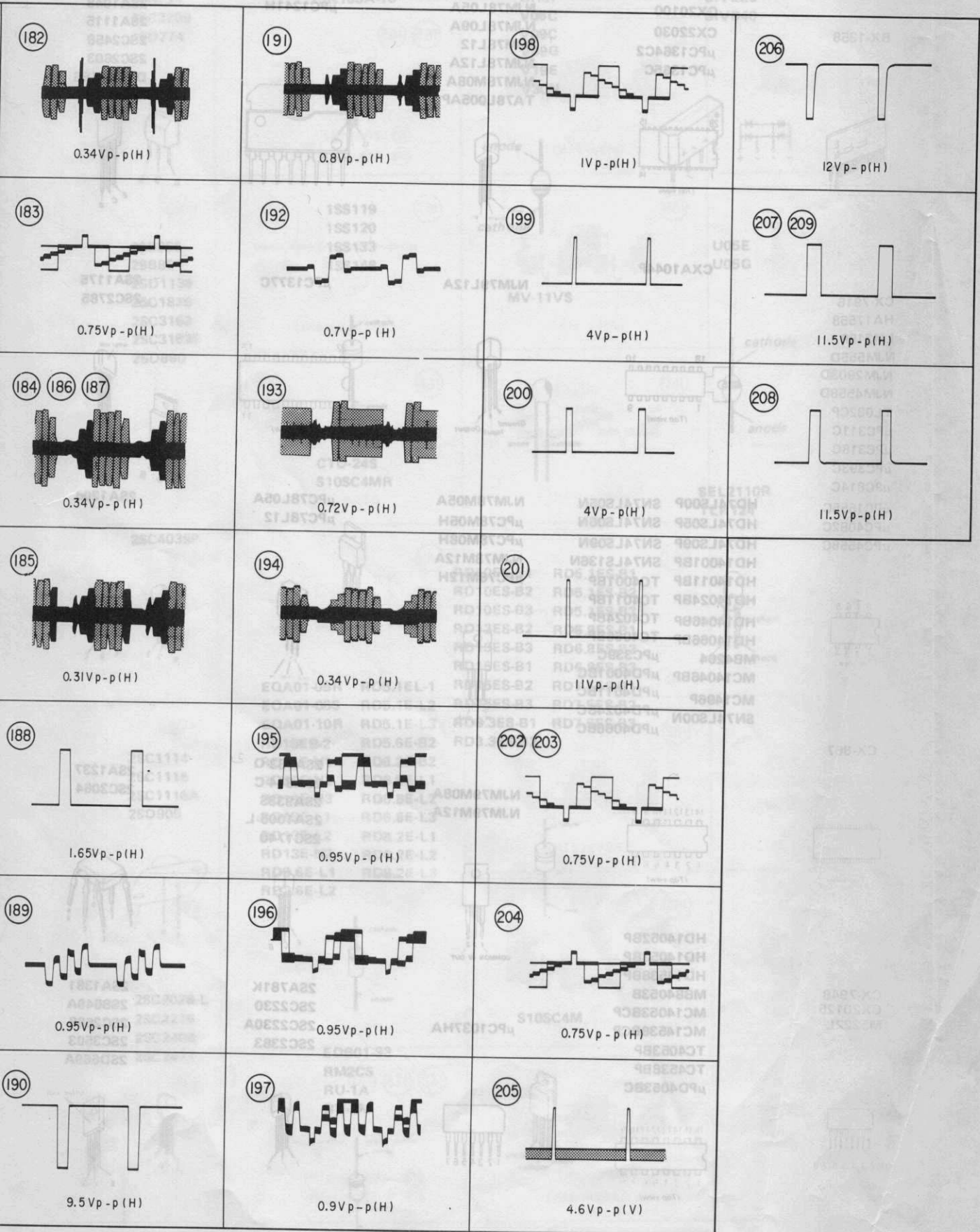


4Vp-p (H)

SECTION 8
EXPLODED VIEWS

BA Board

<p>(150)</p>  <p>1Vp-p(H)</p>	<p>(158)</p>  <p>0.4Vp-p(H)</p>	<p>(165) (166)</p>  <p>(165) 1.2Vp-p(H) (166) 1Vp-p(H)</p>	<p>(175)</p>  <p>11Vp-p(V)</p>
<p>(151) (152)</p>  <p>(151) 1.25Vp-p(H) (152) 0.64Vp-p(H)</p>	<p>(159)</p>  <p>1.25Vp-p(H)</p>	<p>(167)</p>  <p>0.56Vp-p(H)</p>	<p>(176)</p>  <p>13Vp-p(H)</p>
<p>(153)</p>  <p>8.5Vp-p(H)</p>	<p>(160)</p>  <p>0.8Vp-p(H)</p>	<p>(168)</p>  <p>0.58Vp-p(H)</p>	
<p>(154)</p>  <p>0.46Vp-p(V)</p>	<p>(161)</p>  <p>1.1Vp-p(H)</p>	<p>(169)</p>  <p>2.8Vp-p(H)</p>	<p>(178)</p>  <p>0.95Vp-p(H)</p>
<p>(155)</p>  <p>4.6Vp-p(H)</p>	<p>(162)</p>  <p>2.2Vp-p(H)</p>	<p>(170)</p>  <p>3.4Vp-p(H)</p>	<p>(179)</p>  <p>0.7Vp-p(H)</p>
<p>(156)</p>  <p>1.6Vp-p(H)</p>	<p>(163)</p>  <p>0.76Vp-p(H)</p>		<p>(180)</p>  <p>0.54Vp-p(3.58 MHz)</p>
<p>(157)</p>  <p>1.25Vp-p(H)</p>	<p>(164)</p>  <p>1.25Vp-p(H)</p>	<p>(172) (173) (174)</p>  <p>(172) 0.9Vp-p(H) (173) (174) 0.75Vp-p(H)</p>	<p>(181)</p>  <p>2.3Vp-p(H)</p>



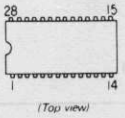
BA

7-8. SEMICONDUCTORS

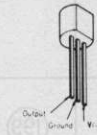
BX-1358



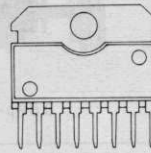
CX20100
CX22030
 μ **PC1364C2**
 μ **PC1365C**



NJM78L05A
NJM78L09A
NJM78L12
NJM78L12A
NJM78M08A
TA78L005AP



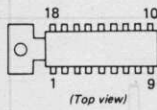
μ **PC1241H**



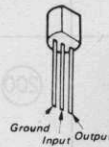
2SA1048
2SA1115
2SC2458
2SC2603
DTC144ES



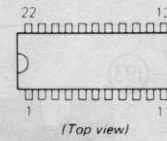
CXA1044P



NJM79L12A



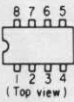
μ **PC1377C**



2SA1175
2SC2785

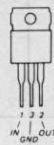


CX-7916
HA17558
LM318P
NJM555D
NJM2903D
NJM4558D
TL082CP
 μ **PC311C**
 μ **PC318C**
 μ **PC393C**
 μ **PC814C**
 μ **PC1555C**
 μ **PC4082C**
 μ **PC4558C**



HD74LS00P **SN74LS05N**
HD74LS05P **SN74LS06N**
HD74LS09P **SN74LS09N**
HD14001BP **SN74LS136N**
HD14011BP **TC4001BP**
HD14024BP **TC4011BP**
HD14046BP **TC4024BP**
HD14066BP **TC4066BP**
MB4204 **μPD4001BC**
MC14046BP **μPD4011BC**
MC1496P **μPD4024BC**
SN74LS00N **μPD4066BC**

NJM78M05A
 μ **PC78M05H**
 μ **PC78M08H**
NJM78M12A
 μ **PC78M12H**



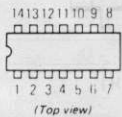
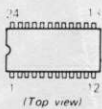
μ **PC78L05A**
 μ **PC78L12**



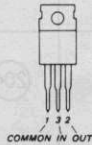
2SA1206



CX-867



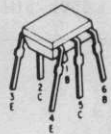
NJM79M08A
NJM79M12A



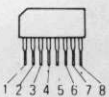
2SA733-Q
2SA844-C
2SA933S
2SA1005-L
2SC1740



2SA1237
2SC3064



CX-7948
CX20125
M5222L



HD14052BP
HD14053BP
HD14538BP
MB84053B
MC14053BCP
MC14538BCP
TC4053BP
TC4538BP
 μ **PD4053BC**

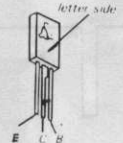
μ **PC1037HA**



2SA781K
2SC2230
2SC2230A
2SC2383



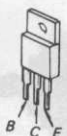
2SA1381
2SB649A
2SC2688
2SC3503
2SD669A



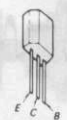
2SB734
2SC209
2SD774



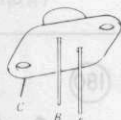
2SB856
2SB861
2SD1138
2SC1826
2SC3163
2SC3163S
2SD880



2SC403SP



2SC1114
2SC1116
2SC1116A
2SD905



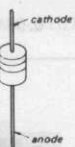
2SC2026-L
2SC2216
2SC2408
2SC2471



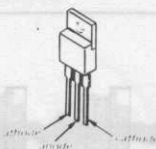
2SK105A-10



1SS119
1SS120
1SS133
1SS148



CTU-24S
S10SC4MR



EQA01-05R	RD5.1EL-1
EQA01-06S	RD5.1E-L2
EQA01-10R	RD5.1E-L3
RD10EB-2	RD5.6E-B2
RD11E-N1	RD6.2E-B2
RD11E-N2	RD6.8E-L1
RD11E-N3	RD6.8E-L2
RD13E-L1	RD6.8E-L3
RD13E-L2	RD8.2E-L1
RD13E-N2	RD8.2E-L2
RD3.6E-L1	RD8.2E-L3
RD3.6E-L2	



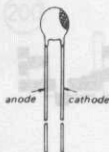
EQB01-33
RM2CS
RU-1A
RU-2M



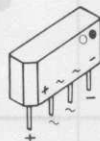
GH3F
V06C
V09C
V09G
V19E
V30N



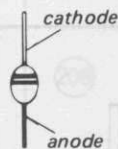
MV-11VS



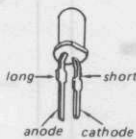
S1VB20
S1VB40



U05E
U05G



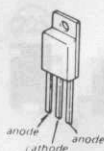
SEL2110R
TLR124



RD10ES-B1	RD5.1ES-B1
RD10ES-B2	RD5.1ES-B2
RD10ES-B3	RD5.1ES-B3
RD13ES-B2	RD6.8ES-B1
RD13ES-B3	RD6.8ES-B2
RD15ES-B1	RD6.8ES-B3
RD15ES-B2	RD7.5ES-B1
RD15ES-B3	RD7.5ES-B2
RD3.3ES-B1	RD7.5ES-B3
RD3.3ES-B2	



S10SC4M



SECTION 8 EXPLODED VIEWS

NOTE:

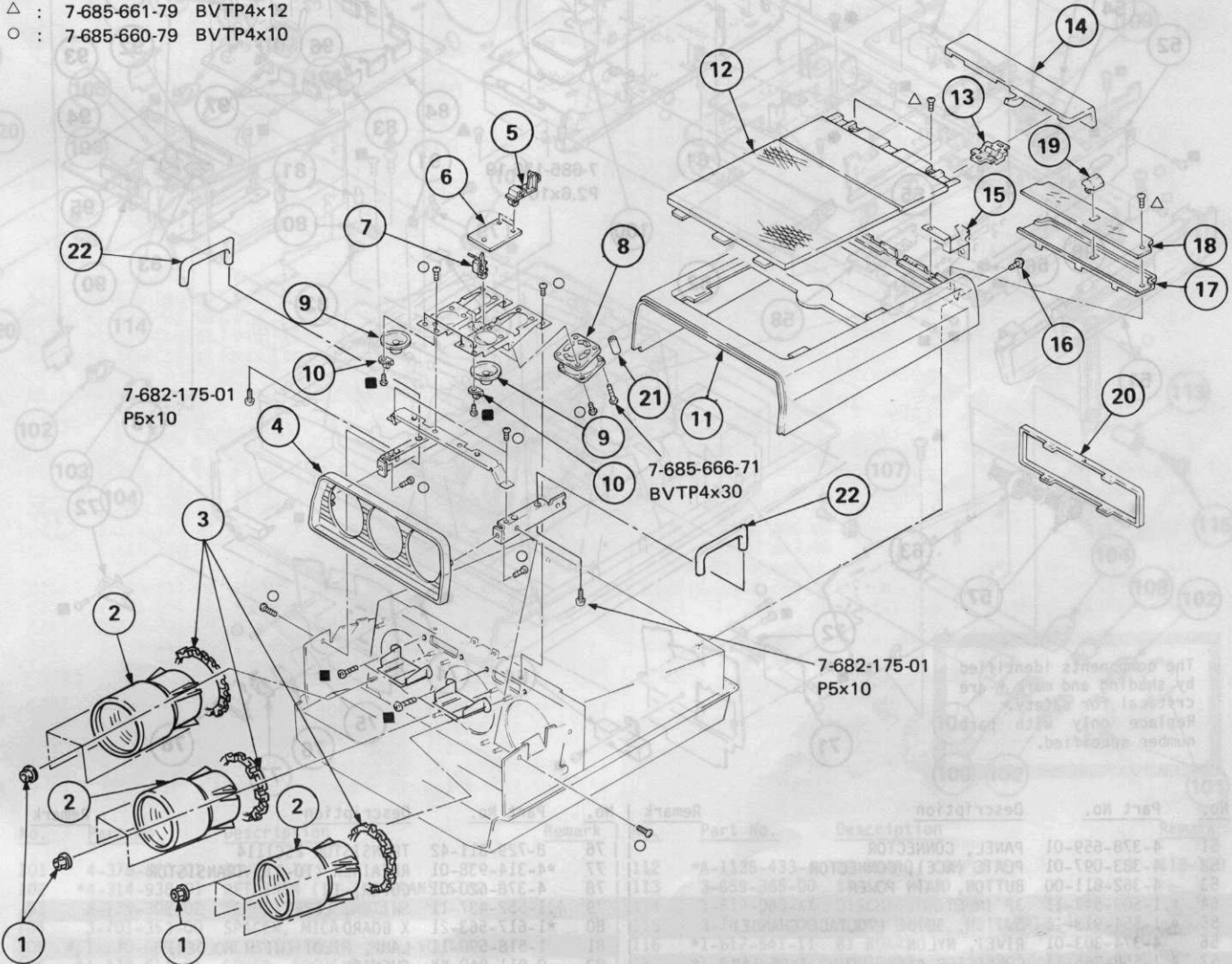
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

- 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 Δ are critical for safety. Replace only with part number specified.

8-1. LENS

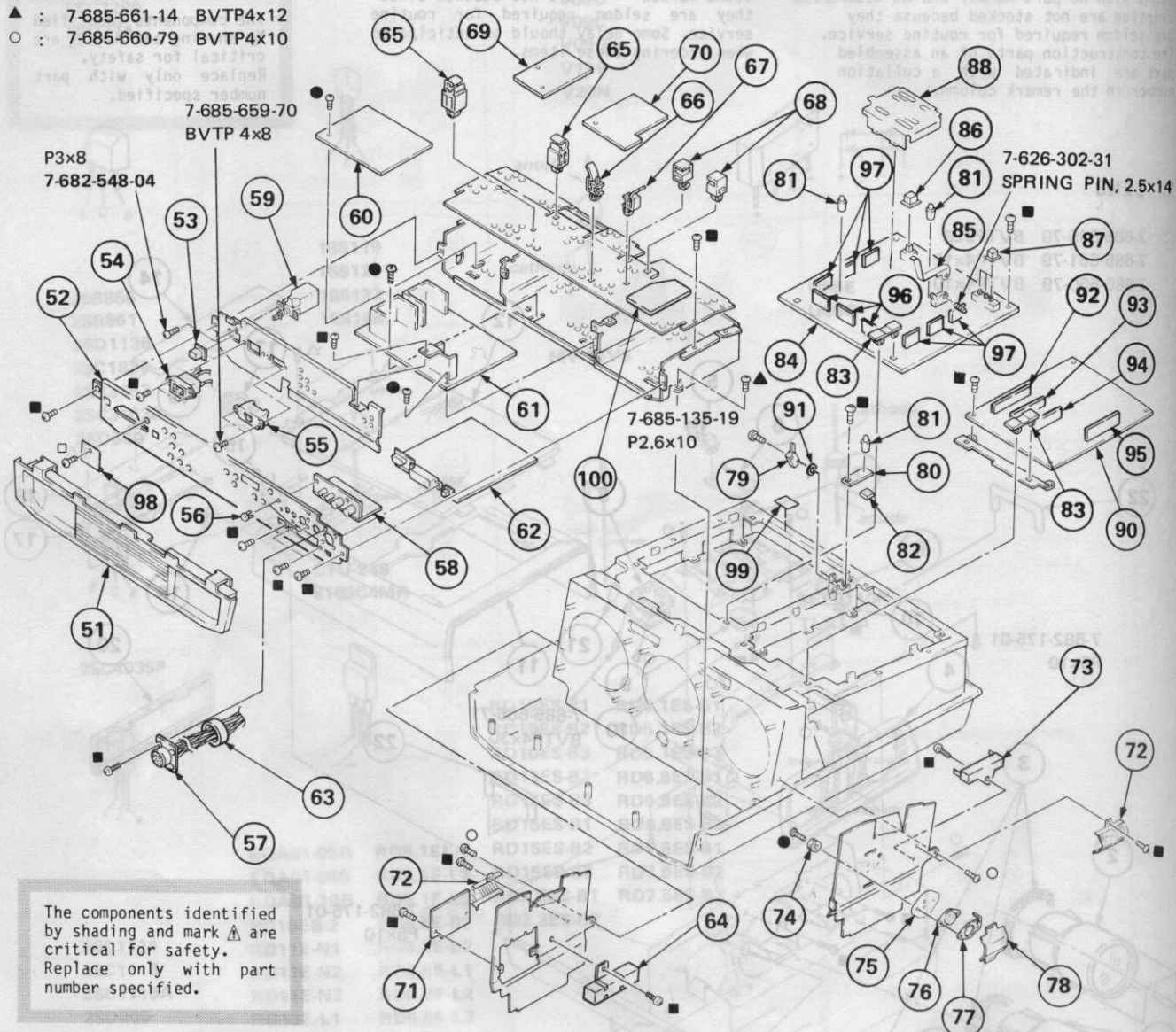
- : 7-685-646-79 BVTP3x8
- △ : 7-685-661-79 BVTP4x12
- : 7-685-660-79 BVTP4x10



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
1	4-304-749-00	NUT, FLANGE		12	X-4378-606-1	PLATE ASSY, TOP	13,14
2	4-383-089-01	LENS, HD6		13	3-659-618-00	HINGE, SPRING	
3	*4-378-642-01	WASHER, LENS		14	X-4378-603-1	DOOR ASSY	
4	4-378-657-01	PANEL, LENS		15	*4-378-670-01	BRACKET, MESH EARTH	
5	*3-682-612-00	CLIP (B), ANCHOR		16	3-703-251-00	SCREW (+M4), IT TAPPING	
6	*1-617-560-21	K BOARD		17	*4-378-648-01	PANEL, CONTROL	
7	*3-703-141-00	HOLDER, PCB		18	4-378-646-02	PLATE, ORNAMENTAL, CONTROL	
8	Δ 1-541-324-11	FAN, DC		19	4-378-613-01	CAP, LAMP	
9	1-503-344-21	SPEAKER		20	4-378-650-01	PANEL, SONY	
10	*4-378-615-01	RETAINER, SPEAKER		21	*3-703-309-11	SPACER (5X16)	
11	4-378-655-01	CABINET		22	*2-254-727-00	HANDLE	

8-2. DB BOARD

- : 7-685-648-79 BVTP3x12
- : 7-685-646-79 BVTP3x8
- ▲ : 7-685-661-14 BVTP4x12
- : 7-685-660-79 BVTP4x10



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

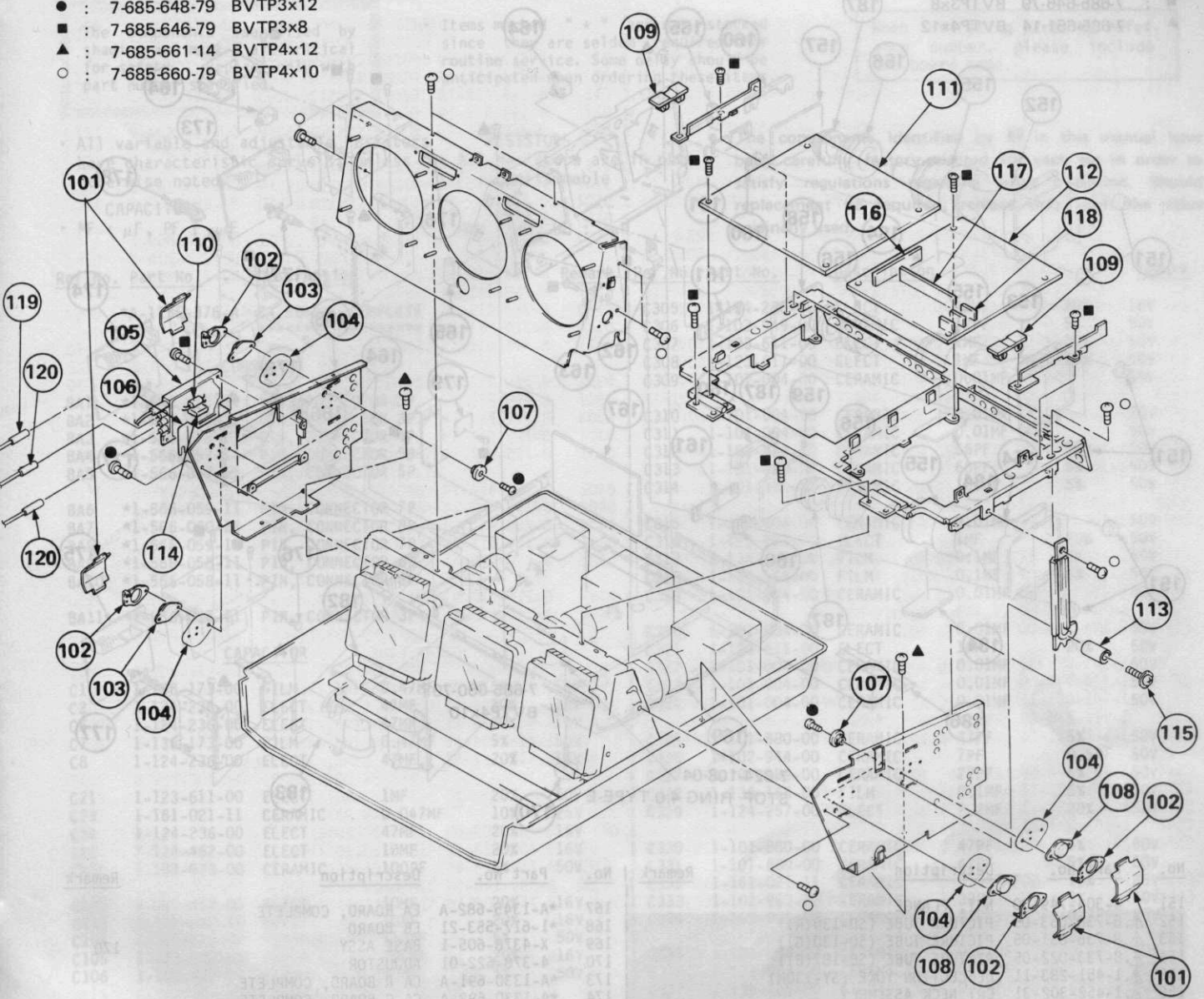
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
51	4-378-659-01	PANEL, CONNECTOR		76	8-729-311-42	TRANSISTOR 2SC1114	
52	4-383-097-01	PLATE (ACE), CONNECTOR		77	*4-314-938-01	RETAINER (TO-3), TRANSISTOR	
53	4-362-811-00	BUTTON, MAIN POWER		78	4-378-620-01	COVER, TR	
54	▲1-509-547-11	3P INLET		79	▲1-552-437-11	SWITCH, LEVER	
55	▲1-554-913-11	SWITCH, SLIDE (VOLTAGE CHANGE)		80	*1-617-563-21	X BOARD	
56	▲4-374-303-01	RIVET, NYLON		81	1-518-590-11	LAMP, PILOT (WITH HOLDER)	
57	▲1-558-365-11	CONNECTOR ASSY, ROUND TYPE 14P		82	9-911-840-XX	CUSHION	
58	*1-618-724-11	QB BOARD		83	*4-313-732-00	CLIP, HINGE, CIRCUIT BOARD	
59	▲1-570-052-12	SWITCH, PUSH (AC POWER)(1 KEY)		84	*A-1165-030-A	DB BOARD, COMPLETE	96,97
60	*1-620-495-11	FA BOARD		85	*4-378-608-01	ACTUATOR	
61	*A-1316-058-A	GA BOARD, COMPLETE		86	4-362-808-00	BUTTON, POWER	
62	*A-1275-081-A	QA BOARD, COMPLETE		87	4-362-809-00	BUTTON, SELECT	
63	1-543-179-00	CORE, RING		88	*4-378-633-01	COVER, ADJUSTMENT	
64	▲1-217-183-11	RES, WIREWOUND 2.7 10% 15W		90	*A-1135-376-A	BA BOARD, COMPLETE	92-95
65	*3-659-681-00	HOLDER, PC BOARD		91	*4-309-378-00	SPACER	
66	*3-703-141-00	HOLDER, PCB		92	*1-617-537-11	BE BOARD	
67	*4-321-929-00	HOLDER, PC BOARD		93	*1-617-536-11	BD BOARD	
68	*3-701-903-00	HOLDER, PC BOARD		94	*1-617-535-11	BC BOARD	
69	*1-620-496-11	FC BOARD		95	*1-617-538-11	BF BOARD	
70	*1-623-485-11	GB BOARD		96	*1-617-550-11	DD BOARD	
71	*1-617-556-21	FB BOARD		97	*1-617-551-11	DC BOARD	
72	*4-378-671-01	SPRING		98	*4-373-139-01	COVER, AC SHEET	
73	▲1-570-258-32	SWITCH, THERMAL REED		99	9-911-838-XX	SHEET	
74	4-313-734-00	BUSHING TR, Y		100	*1-619-628-11	GC BOARD	
75	3-701-353-00	SPACER, MICA					

SECTION 9
ELECTRICAL PARTS LIST

BA
L-4 BASE ASSY

8-3. DA BOARD

- : 7-685-648-79 BVTP3x12
- : 7-685-646-79 BVTP3x8
- ▲ : 7-685-661-14 BVTP4x12
- : 7-685-660-79 BVTP4x10

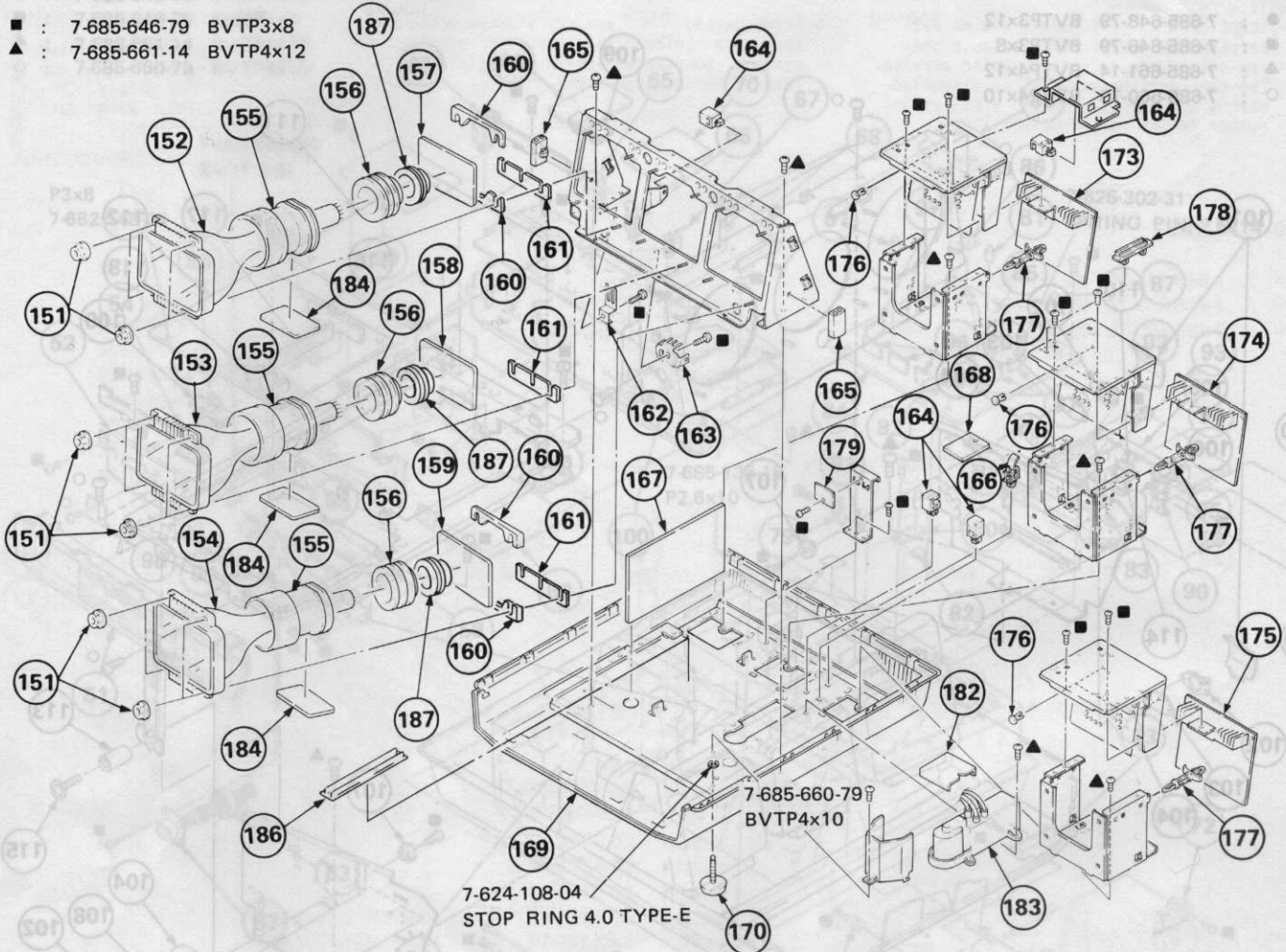


No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
101	4-378-620-01	COVER, TR		112	*A-1135-433-A	BB BOARD, COMPLETE	116-118
102	*4-314-938-01	RETAINER (TO-3), TRANSISTOR		113	3-659-365-00	SPACER (4X3)	
103	8-729-302-02	TRANSISTOR 2SD905		114	1-519-063-XX	DISCHARGING GAP	
104	3-701-353-00	SPACER, MICA		115	3-703-251-00	SCREW (+M4), IT TAPPING	
105	▲ 1-230-089-22	RESISTOR ASSY, HIGH-VOLTAGE		116	*1-617-541-11	BI BOARD	
106	*4-378-614-01	COVER, FOCUS BLOCK		117	*1-617-540-11	BH BOARD	
107	3-703-320-00	BUSHING (A), TRANSISTOR		118	*1-617-539-11	BG BOARD	
108	8-729-311-62	TRANSISTOR 2SC1116		119	1-556-880-51	LEAD ASSY, HIGH-VOLTAGE	
109	*4-313-732-00	CLIP, HINGE, CIRCUIT BOARD		120	1-556-880-81	LEAD ASSY, HIGH-VOLTAGE	
110	1-202-723-00	RES, SOLID 2.2M 10% 1/2W					
111	*A-1165-028-A	DA BOARD, COMPLETE					

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

8-4. BASE ASSY

- : 7-685-646-79 BVTP3x8
- ▲ : 7-685-661-14 BVTP4x12



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
151	4-304-749-00	NUT, FLANGE		167	*A-1345-682-A	EA BOARD, COMPLETE	
152	▲ 8-736-053-05	PICTURE TUBE (SD-130(R))		168	*1-617-553-21	EB BOARD	
153	▲ 8-736-051-05	PICTURE TUBE (SD-130(G))		169	X-4378-605-1	BASE ASSY	170
154	▲ 8-733-022-05	PICTURE TUBE (SD-187(B))		170	4-378-622-01	ADJUSTOR	
155	▲ 1-451-283-11	DEFLECTION YOKE (SY-130M)		173	*A-1330-691-A	CA R BOARD, COMPLETE	
156	▲ 1-452-302-31	CRT NECK ASSEMBLY		174	*A-1330-692-A	CA G BOARD, COMPLETE	
157	*1-617-545-21	CBR BOARD		175	*A-1330-693-A	CA B BOARD, COMPLETE	
158	*1-617-546-21	CBG BOARD		176	4-812-134-11	RIVET NYLON, 3.5	
159	*1-617-547-21	CBB BOARD		177	*3-681-127-00	HOLDER, PC BOARD	
160	*4-378-603-01	SPACER (100"), CRT		178	*3-680-613-11	SUPPORT, PC BOARD	
161	*4-378-602-01	SPACER, 100"		179	*1-617-564-21	Y BOARD	
162	4-332-209-00	SPRING		182	*4-362-889-01	SHEET (G), INSULATING	
163	*4-309-624-00	TERMINAL, EARTH		183	▲ 1-453-095-15	DC BLOCK, HIGH-VOLTAGE(F.B.T)	
164	*3-701-903-00	HOLDER, PC BOARD		184	*1-617-554-21	EC BOARD	
165	*4-026-507-00	SPACER		186	*3-680-613-01	SUPPORT, PC BOARD	
166	*3-703-141-00	HOLDER, PCB		187	▲ 1-452-261-41	CRT NECK ASSY (362)	

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

SECTION 9 ELECTRICAL PARTS LIST

BA

NOTE:

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

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

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

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

RESISTORS

• All resistors are in ohms
• F : nonflammable

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

CAPACITORS

• MF : μ F, PF : μ F

COILS

• MMH : mH, UH : μ H

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
	*A-1135-376-A	BA BOARD, COMPLETE *****		C305	1-124-236-00	ELECT 47MF	20% 16V
		CONNECTOR		C306	1-102-949-00	CERAMIC 12PF	5% 50V
BA1	*1-566-055-11	PIN, CONNECTOR 3P		C307	1-123-611-00	ELECT 1MF	20% 50V
BA2	*1-566-055-11	PIN, CONNECTOR 3P		C308	1-123-611-00	ELECT 1MF	20% 50V
BA3	*1-566-056-11	PIN, CONNECTOR 4P		C309	1-101-004-00	CERAMIC 0.01MF	50V
BA4	*1-566-057-11	PIN, CONNECTOR 5P		C310	1-101-004-00	CERAMIC 0.01MF	50V
BA5	*1-566-057-11	PIN, CONNECTOR 5P		C311	1-101-004-00	CERAMIC 0.01MF	50V
		CAPACITOR		C312	1-101-884-00	CERAMIC 56PF	5% 50V
BA6	*1-566-059-11	PIN, CONNECTOR 7P		C313	1-101-888-00	CERAMIC 68PF	5% 50V
BA7	*1-566-060-11	PIN, CONNECTOR 8P		C314	1-101-361-00	CERAMIC 150PF	5% 50V
BA8	*1-566-059-11	PIN, CONNECTOR 7P		C315	1-101-004-00	CERAMIC 0.01MF	50V
BA9	*1-566-058-11	PIN, CONNECTOR 6P		C316	1-123-611-00	ELECT 1MF	20% 50V
BA10	*1-566-058-11	PIN, CONNECTOR 6P		C317	1-136-165-00	FILM 0.1MF	5% 50V
				C318	1-136-165-00	FILM 0.1MF	5% 50V
BA11	*1-566-055-11	PIN, CONNECTOR 3P		C319	1-101-004-00	CERAMIC 0.01MF	50V
				C320	1-101-004-00	CERAMIC 0.01MF	50V
C1	1-136-173-00	FILM 0.47MF	5% 50V	C321	1-123-611-00	ELECT 1MF	20% 50V
C2	1-124-236-00	ELECT 47MF	20% 16V	C322	1-101-004-00	CERAMIC 0.01MF	50V
C6	1-124-236-00	ELECT 47MF	20% 16V	C323	1-101-004-00	CERAMIC 0.01MF	50V
C7	1-136-173-00	FILM 0.47MF	5% 50V	C324	1-101-004-00	CERAMIC 0.01MF	50V
C8	1-124-236-00	ELECT 47MF	20% 16V	C325	1-101-880-00	CERAMIC 47PF	5% 50V
C21	1-123-611-00	ELECT 1MF	20% 50V	C326	1-102-944-00	CERAMIC 7PF	0.5PF 50V
C23	1-161-021-11	CERAMIC 0.047MF	10% 25V	C327	1-102-959-00	CERAMIC 22PF	5% 50V
C24	1-124-236-00	ELECT 47MF	20% 16V	C328	1-136-165-00	FILM 0.1MF	5% 50V
C26	1-124-462-00	ELECT 10MF	20% 16V	C329	1-124-257-00	ELECT 2.2MF	20% 50V
C101	1-102-973-00	CERAMIC 100PF	5% 50V	C330	1-101-880-00	CERAMIC 47PF	5% 50V
C102	1-124-462-00	ELECT 10MF	20% 16V	C331	1-101-880-00	CERAMIC 47PF	5% 50V
C103	1-124-462-00	ELECT 10MF	20% 16V	C332	1-161-021-11	CERAMIC 0.047MF	10% 25V
C104	1-102-815-00	CERAMIC 110PF	5% 50V	C333	1-102-963-00	CERAMIC 33PF	5% 50V
C105	1-123-333-00	ELECT 100MF	20% 16V	C334	1-102-934-00	CERAMIC 1PF	0.25PF 50V
C106	1-102-971-00	CERAMIC 82PF	5% 50V	C335	1-101-004-00	CERAMIC 0.01MF	50V
C107	1-102-959-00	CERAMIC 22PF	5% 50V	C336	1-101-004-00	CERAMIC 0.01MF	50V
C108	1-101-888-00	CERAMIC 68PF	5% 50V	C337	1-136-165-00	FILM 0.1MF	5% 50V
C109	1-101-880-00	CERAMIC 47PF	5% 50V	C338	1-101-004-00	CERAMIC 0.01MF	50V
C112	1-136-165-00	FILM 0.1MF	5% 50V	C401	1-124-236-00	ELECT 47MF	20% 16V
C117	1-102-944-00	CERAMIC 7PF	0.5PF 50V	C402	1-161-021-11	CERAMIC 0.047MF	10% 25V
C118	1-102-944-00	CERAMIC 7PF	0.5PF 50V	C403	1-124-463-00	ELECT 0.1MF	20% 50V
C121	1-102-944-00	CERAMIC 7PF	0.5PF 50V	C404	1-124-463-00	ELECT 0.1MF	20% 50V
C122	1-102-944-00	CERAMIC 7PF	0.5PF 50V	C405	1-124-463-00	ELECT 0.1MF	20% 50V
C124	1-102-951-00	CERAMIC 15PF	5% 50V	C406	1-124-245-00	ELECT 4.7MF	20% 25V
C127	1-124-462-00	ELECT 10MF	20% 16V	C407	1-101-361-00	CERAMIC 150PF	5% 50V
C128	1-123-611-00	ELECT 1MF	20% 50V	C408	1-102-971-00	CERAMIC 82PF	5% 50V
C129	1-124-236-00	ELECT 47MF	20% 16V	C409	1-161-021-11	CERAMIC 0.047MF	10% 25V
C130	1-161-021-11	CERAMIC 0.047MF	10% 25V	C410	1-102-959-00	CERAMIC 22PF	5% 50V
C135	1-102-949-00	CERAMIC 12PF	5% 50V	C411	1-161-021-11	CERAMIC 0.047MF	10% 25V
C144	1-102-978-00	CERAMIC 220PF	5% 50V	C412	1-161-021-11	CERAMIC 0.047MF	10% 25V
C145	1-124-284-00	ELECT 10MF	20% 16V	C413	1-101-004-00	CERAMIC 0.01MF	50V
C301	1-124-236-00	ELECT 47MF	20% 16V	C414	1-101-004-00	CERAMIC 0.01MF	50V
C302	1-161-021-11	CERAMIC 0.047MF	10% 25V	C415	1-136-165-00	FILM 0.1MF	5% 50V
C303	1-124-247-00	ELECT 10MF	20% 25V	C416	1-102-816-00	CERAMIC 120PF	5% 50V
C304	1-124-462-00	ELECT 10MF	20% 16V	C417	1-124-247-00	ELECT 10MF	20% 25V
				C418	1-101-004-00	CERAMIC 0.01MF	50V
				C419	1-136-165-00	FILM 0.1MF	5% 50V

SECTION 9
ELECTRICAL PARTS LIST

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C420	1-101-004-00	CERAMIC	0.01MF				
C421	1-101-880-00	CERAMIC	47PF				
C422	1-102-959-00	CERAMIC	22PF				
C423	1-101-004-00	CERAMIC	0.01MF				
C424	1-102-971-00	CERAMIC	82PF				
C425	1-101-361-00	CERAMIC	150PF				
C426	1-124-245-00	ELECT	4.7MF				
C427	1-123-611-00	ELECT	1MF				
C428	1-101-888-00	CERAMIC	68PF				
C429	1-101-004-00	CERAMIC	0.01MF				
C430	1-161-021-11	CERAMIC	0.047MF				
C431	1-136-157-00	FILM	0.022MF				
C432	1-124-465-00	ELECT	0.47MF				
C433	1-124-257-00	ELECT	2.2MF				
C434	1-101-004-00	CERAMIC	0.01MF				
C435	1-101-004-00	CERAMIC	0.01MF				
C436	1-101-004-00	CERAMIC	0.01MF				
C437	1-161-021-11	CERAMIC	0.047MF				
C438	1-102-973-00	CERAMIC	100PF				
C439	1-102-973-00	CERAMIC	100PF				
C440	1-102-973-00	CERAMIC	100PF				
C441	1-101-361-00	CERAMIC	150PF				
C501	1-123-611-00	ELECT	1MF				
C502	1-161-021-11	CERAMIC	0.047MF				
C503	1-124-462-00	ELECT	10MF				
C504	1-161-021-11	CERAMIC	0.047MF				
C505	1-124-236-00	ELECT	47MF				
C506	1-161-021-11	CERAMIC	0.047MF				
C507	1-124-236-00	ELECT	47MF				
C508	1-124-236-00	ELECT	47MF				
C509	1-161-021-11	CERAMIC	0.047MF				
C510	1-124-236-00	ELECT	47MF				
C511	1-161-021-11	CERAMIC	0.047MF				
C512	1-124-236-00	ELECT	47MF				
C513	1-161-021-11	CERAMIC	0.047MF				
C514	1-124-236-00	ELECT	47MF				
C515	1-161-021-11	CERAMIC	0.047MF				
C516	1-161-021-11	CERAMIC	0.047MF				
C551	1-161-021-11	CERAMIC	0.047MF				
C552	1-124-462-00	ELECT	10MF				
C553	1-124-236-00	ELECT	47MF				
C554	1-161-021-11	CERAMIC	0.047MF				
C555	1-124-236-00	ELECT	47MF				
C556	1-161-021-11	CERAMIC	0.047MF				
C557	1-161-021-11	CERAMIC	0.047MF				
C601	1-123-611-00	ELECT	1MF				
C602	1-161-021-11	CERAMIC	0.047MF				
C603	1-124-462-00	ELECT	10MF				
C651	1-123-611-00	ELECT	1MF				
C652	1-161-021-11	CERAMIC	0.047MF				
C653	1-124-462-00	ELECT	10MF				
C654	1-124-236-00	ELECT	47MF				
C655	1-161-021-11	CERAMIC	0.047MF				
				DIODE.			
				D1	8-719-911-19	DIODE 1SS119	
				D2	8-719-911-19	DIODE 1SS119	
				D11	8-719-911-19	DIODE 1SS119	
				D12	8-719-911-19	DIODE 1SS119	
				D13	8-719-911-19	DIODE 1SS119	
				D14	8-719-911-19	DIODE 1SS119	
				D101	8-719-911-19	DIODE 1SS119	
				D102	8-719-911-19	DIODE 1SS119	
				D103	8-719-911-19	DIODE 1SS119	
				D104	8-719-911-19	DIODE 1SS119	
				D105	8-719-911-19	DIODE 1SS119	
				D107	8-719-911-19	DIODE 1SS119	
				D109	8-719-911-19	DIODE 1SS119	
				D110	8-719-911-19	DIODE 1SS119	
				D111	8-719-911-19	DIODE 1SS119	
				D301	8-719-911-19	DIODE 1SS119	
				D302	8-719-911-19	DIODE 1SS119	
				D303	8-719-911-19	DIODE 1SS119	
				D304	8-719-911-19	DIODE 1SS119	
				D307	8-719-911-19	DIODE 1SS119	
				D401	8-719-911-19	DIODE 1SS119	
				D402	8-719-911-19	DIODE 1SS119	
				D403	8-719-911-19	DIODE 1SS119	
				D405	8-719-911-19	DIODE 1SS119	
				D501	8-719-812-41	DIODE TLR124	
				D551	8-719-812-41	DIODE TLR124	
				D601	8-719-812-41	DIODE TLR124	
				DELAY LINE			
				DL101	1-415-284-00	DELAY LINE (1H)	
				DL103	1-415-495-11	DELAY LINE, Y	
				DL104	1-415-496-11	DELAY LINE, Y	
				DL105	1-415-494-11	DELAY LINE, Y	
				DL301	1-415-122-31	DELAY LINE, 1H (PAL)	
				IC			
				IC9	8-759-708-09	IC NJM78L09A	
				IC101	8-759-913-11	IC CX20125	
				IC301	8-759-113-65	IC UPC1365C	
				IC302	8-759-140-66	IC UPD4066BC	
				IC401	8-759-100-15	IC UPC1364C2	
				IC402	8-759-145-58	IC UPC4558C	
				IC501	8-759-170-12	IC UPC78M12H	
				IC551	8-759-170-12	IC UPC78M12H	
				IC601	8-759-700-69	IC NJM79L12A	
				IC651	8-759-108-05	IC UPC78L05A	
				COIL			
				L101	1-408-412-00	MICRO INDUCTOR 18UH	
				L102	1-408-513-00	COIL (VARIABLE)	
				L103	1-408-520-00	COIL, VARIABLE	
				L104	1-408-411-00	MICRO INDUCTOR 15UH	

BA

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
L105	1-408-414-00	MICRO INDUCTOR 27UH		Q123	8-729-603-50	TRANSISTOR 2SC403SP	
L106	1-408-414-00	MICRO INDUCTOR 27UH		Q124	8-729-603-50	TRANSISTOR 2SC403SP	
L107	1-408-409-00	MICRO INDUCTOR 10UH		Q125	8-729-603-50	TRANSISTOR 2SC403SP	
L111	1-409-193-00	COIL 3.58MHZ TRAP		Q126	8-729-384-46	TRANSISTOR 2SA844-C	
L113	1-409-193-00	COIL 3.58MHZ TRAP		Q127	8-729-384-46	TRANSISTOR 2SA844-C	
L117	1-408-397-00	MICRO INDUCTOR 1UH		Q128	8-729-900-89	TRANSISTOR DTC144ES	
L301	1-408-412-00	MICRO INDUCTOR 18UH		Q129	8-729-603-50	TRANSISTOR 2SC403SP	
L302	1-408-408-00	MICRO INDUCTOR 8.2UH		Q130	8-729-384-46	TRANSISTOR 2SA844-C	
L303	1-408-416-00	MICRO INDUCTOR 39UH		Q131	8-729-384-46	TRANSISTOR 2SA844-C	
L304	1-408-406-00	MICRO INDUCTOR 5.6UH		Q132	8-729-900-89	TRANSISTOR DTC144ES	
L401	1-408-532-00	COIL, VARIABLE		Q133	8-729-603-50	TRANSISTOR 2SC403SP	
L402	1-408-532-00	COIL, VARIABLE		Q134	8-729-603-50	TRANSISTOR 2SC403SP	
L403	1-408-513-00	COIL (VARIABLE)		Q135	8-729-603-50	TRANSISTOR 2SC403SP	
		TRANSISTOR		Q136	8-729-603-50	TRANSISTOR 2SC403SP	
				Q137	8-729-384-46	TRANSISTOR 2SA844-C	
Q1	8-729-603-50	TRANSISTOR 2SC403SP		Q138	8-729-603-30	TRANSISTOR 2SC403SP	
Q3	8-729-384-46	TRANSISTOR 2SA844-C		Q139	8-729-384-46	TRANSISTOR 2SA844-C	
Q4	8-729-900-89	TRANSISTOR DTC144ES		Q140	8-729-900-89	TRANSISTOR DTC144ES	
Q5	8-729-603-50	TRANSISTOR 2SC403SP		Q141	8-729-603-50	TRANSISTOR 2SC403SP	
Q6	8-729-603-50	TRANSISTOR 2SC403SP		Q142	8-729-603-50	TRANSISTOR 2SC403SP	
Q9	8-729-384-46	TRANSISTOR 2SA844-C		Q143	8-729-384-46	TRANSISTOR 2SA844-C	
Q10	8-729-900-89	TRANSISTOR DTC144ES		Q144	8-729-603-50	TRANSISTOR 2SC403SP	
Q11	8-729-603-50	TRANSISTOR 2SC403SP		Q145	8-729-603-50	TRANSISTOR 2SC403SP	
Q12	8-729-603-50	TRANSISTOR 2SC403SP		Q146	8-729-384-46	TRANSISTOR 2SA844-C	
Q13	8-729-900-89	TRANSISTOR DTC144ES		Q147	8-729-603-50	TRANSISTOR 2SC403SP	
Q14	8-729-384-46	TRANSISTOR 2SA844-C		Q148	8-729-384-46	TRANSISTOR 2SA844-C	
Q16	8-729-384-46	TRANSISTOR 2SA844-C		Q149	8-729-384-46	TRANSISTOR 2SA844-C	
Q17	8-729-384-46	TRANSISTOR 2SA844-C		Q150	8-729-603-50	TRANSISTOR 2SC403SP	
Q18	8-729-900-89	TRANSISTOR DTC144ES		Q151	8-729-603-50	TRANSISTOR 2SC403SP	
Q19	8-729-178-54	TRANSISTOR 2SC2785		Q156	8-729-900-89	TRANSISTOR DTC144ES	
Q27	8-729-117-54	TRANSISTOR 2SA1175		Q157	8-729-900-89	TRANSISTOR DTC144ES	
Q101	8-729-603-50	TRANSISTOR 2SC403SP		Q301	8-729-117-54	TRANSISTOR 2SA1175	
Q102	8-729-384-46	TRANSISTOR 2SA844-C		Q302	8-729-384-46	TRANSISTOR 2SA844-C	
Q103	8-729-384-46	TRANSISTOR 2SA844-C		Q303	8-729-384-46	TRANSISTOR 2SA844-C	
Q104	8-729-603-50	TRANSISTOR 2SC403SP		Q304	8-729-384-46	TRANSISTOR 2SA844-C	
Q105	8-729-384-46	TRANSISTOR 2SA844-C		Q305	8-729-603-50	TRANSISTOR 2SC403SP	
Q106	8-729-384-46	TRANSISTOR 2SA844-C		Q306	8-729-603-50	TRANSISTOR 2SC403SP	
Q107	8-729-603-50	TRANSISTOR 2SC403SP		Q307	8-729-603-50	TRANSISTOR 2SC403SP	
Q108	8-729-384-46	TRANSISTOR 2SA844-C		Q308	8-729-603-50	TRANSISTOR 2SC403SP	
Q109	8-729-603-50	TRANSISTOR 2SC403SP		Q309	8-729-115-10	TRANSISTOR 2SK105A-10	
Q110	8-729-384-46	TRANSISTOR 2SA844-C		Q310	8-729-115-30	TRANSISTOR 2SK105A-30	
Q111	8-729-603-50	TRANSISTOR 2SC403SP		Q311	8-729-603-50	TRANSISTOR 2SC403SP	
Q112	8-729-384-46	TRANSISTOR 2SA844-C		Q312	8-729-115-10	TRANSISTOR 2SK105A-10	
Q113	8-729-900-89	TRANSISTOR DTC144ES		Q313	8-729-115-10	TRANSISTOR 2SK105A-10	
Q114	8-729-603-50	TRANSISTOR 2SC403SP		Q314	8-729-900-89	TRANSISTOR DTC144ES	
Q115	8-729-384-46	TRANSISTOR 2SA844-C		Q401	8-729-384-46	TRANSISTOR 2SA844-C	
Q116	8-729-603-50	TRANSISTOR 2SC403SP		Q402	8-729-384-46	TRANSISTOR 2SA844-C	
Q117	8-729-384-46	TRANSISTOR 2SA844-C		Q403	8-729-384-46	TRANSISTOR 2SA844-C	
Q118	8-729-900-89	TRANSISTOR DTC144ES		Q404	8-729-117-54	TRANSISTOR 2SA1175	
Q119	8-729-603-50	TRANSISTOR 2SC403SP		Q405	8-729-900-89	TRANSISTOR DTC144ES	
Q120	8-729-384-46	TRANSISTOR 2SA844-C		Q406	8-729-178-54	TRANSISTOR 2SC2785	
Q121	8-729-384-46	TRANSISTOR 2SA844-C		Q407	8-729-178-54	TRANSISTOR 2SC2785	
Q122	8-729-900-89	TRANSISTOR DTC144ES		Q408	8-729-117-54	TRANSISTOR 2SA1175	

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Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
Q409	8-729-115-10	TRANSISTOR 2SK105A-10		R109	1-249-415-11	CARBON 680 5%	1/4W
Q411	8-729-178-54	TRANSISTOR 2SC2785		R110	1-249-397-11	CARBON 22 5%	1/4W
Q412	8-729-178-54	TRANSISTOR 2SC2785		R111	1-249-409-11	CARBON 220 5%	1/4W
Q413	8-729-178-54	TRANSISTOR 2SC2785		R112	1-215-407-00	METAL 270 1%	1/6W
				R113	1-249-405-11	CARBON 100 5%	1/4W
				R114	1-249-415-11	CARBON 680 5%	1/4W
				R115	1-249-415-11	CARBON 680 5%	1/4W
				R116	1-249-415-11	CARBON 680 5%	1/4W
				R117	1-249-415-11	CARBON 680 5%	1/4W
				R118	1-249-415-11	CARBON 680 5%	1/4W
				R119	1-249-431-11	CARBON 15K 5%	1/4W
				R120	1-249-425-11	CARBON 4.7K 5%	1/4W
				R121	1-249-413-11	CARBON 470 5%	1/4W
				R122	1-215-404-00	CARBON 200 5%	1/4W
				R123	1-249-419-11	CARBON 1.5K 5%	1/4W
				R124	1-249-415-11	CARBON 680 5%	1/4W
				R125	1-249-415-11	CARBON 680 5%	1/4W
				R126	1-249-419-11	CARBON 1.5K 5%	1/4W
				R127	1-249-415-11	CARBON 680 5%	1/4W
				R128	1-249-413-11	CARBON 470 5%	1/4W
				R129	1-249-408-11	CARBON 180 5%	1/4W
				R130	1-249-419-11	CARBON 1.5K 5%	1/4W
				R131	1-249-416-11	CARBON 820 5%	1/4W
				R132	1-249-405-11	CARBON 100 5%	1/4W
				R133	1-249-425-11	CARBON 4.7K 5%	1/4W
				R135	1-249-429-11	CARBON 10K 5%	1/4W
				R136	1-249-421-11	CARBON 2.2K 5%	1/4W
				R138	1-249-434-11	CARBON 27K 5%	1/4W
				R139	1-249-431-11	CARBON 15K 5%	1/4W
				R140	1-249-431-11	CARBON 15K 5%	1/4W
				R141	1-249-417-11	CARBON 1K 5%	1/4W
				R143	1-249-438-11	CARBON 56K 5%	1/4W
				R144	1-249-434-11	CARBON 27K 5%	1/4W
				R145	1-249-405-11	CARBON 100 5%	1/4W
				R146	1-249-419-11	CARBON 1.5K 5%	1/4W
				R147	1-249-423-11	CARBON 3.3K 5%	1/4W
				R148	1-249-405-11	CARBON 100 5%	1/4W
				R149	1-249-423-11	CARBON 3.3K 5%	1/4W
				R150	1-249-424-11	CARBON 3.9K 5%	1/4W
				R151	1-249-405-11	CARBON 100 5%	1/4W
				R152	1-249-416-11	CARBON 820 5%	1/4W
				R153	1-249-405-11	CARBON 100 5%	1/4W
				R154	1-249-417-11	CARBON 1K 5%	1/4W
				R155	1-249-431-11	CARBON 15K 5%	1/4W
				R157	1-249-405-11	CARBON 100 5%	1/4W
				R159	1-249-415-11	CARBON 680 5%	1/4W
				R160	1-249-419-11	CARBON 1.5K 5%	1/4W
				R161	1-249-422-11	CARBON 2.7K 5%	1/4W
				R162	1-249-429-11	CARBON 10K 5%	1/4W
				R163	1-249-431-11	CARBON 15K 5%	1/4W
				R164	1-249-417-11	CARBON 1K 5%	1/4W
				R166	1-249-405-11	CARBON 100 5%	1/4W
				R167	1-249-416-11	CARBON 820 5%	1/4W
R1	1-249-405-11	CARBON 100 5%	1/4W				
R2	1-249-431-11	CARBON 15K 5%	1/4W				
R5	1-249-424-11	CARBON 3.9K 5%	1/4W				
R6	1-247-895-00	CARBON 470K 5%	1/4W				
R7	1-249-421-11	CARBON 2.2K 5%	1/4W				
R8	1-249-421-11	CARBON 2.2K 5%	1/4W				
R10	1-249-405-11	CARBON 100 5%	1/4W				
R11	1-249-417-11	CARBON 1K 5%	1/4W				
R12	1-249-431-11	CARBON 15K 5%	1/4W				
R13	1-249-405-11	CARBON 100 5%	1/4W				
R14	1-249-405-11	CARBON 100 5%	1/4W				
R15	1-249-405-11	CARBON 100 5%	1/4W				
R16	1-249-417-11	CARBON 1K 5%	1/4W				
R17	1-249-431-11	CARBON 15K 5%	1/4W				
R18	1-249-405-11	CARBON 100 5%	1/4W				
R20	1-249-421-11	CARBON 2.2K 5%	1/4W				
R22	1-249-405-11	CARBON 100 5%	1/4W				
R23	1-249-417-11	CARBON 1K 5%	1/4W				
R24	1-249-431-11	CARBON 15K 5%	1/4W				
R25	1-249-441-11	CARBON 100K 5%	1/4W				
R26	1-249-405-11	CARBON 100 5%	1/4W				
R27	1-249-436-11	CARBON 39K 5%	1/4W				
R28	1-247-895-00	CARBON 470K 5%	1/4W				
R29	1-249-429-11	CARBON 10K 5%	1/4W				
R30	1-249-424-11	CARBON 3.9K 5%	1/4W				
R31	1-215-493-00	CARBON 1M 5%	1/4W				
R33	1-249-405-11	CARBON 100 5%	1/4W				
R34	1-249-428-11	CARBON 8.2K 5%	1/4W				
R35	1-249-430-11	CARBON 12K 5%	1/4W				
R36	1-249-418-11	CARBON 1.2K 5%	1/4W				
R37	1-249-418-11	CARBON 1.2K 5%	1/4W				
R38	1-249-438-11	CARBON 56K 5%	1/4W				
R40	1-249-430-11	CARBON 12K 5%	1/4W				
R41	1-249-417-11	CARBON 1K 5%	1/4W				
R42	1-249-433-11	CARBON 22K 5%	1/4W				
R58	1-249-433-11	CARBON 22K 5%	1/4W				
R59	1-249-433-11	CARBON 22K 5%	1/4W				
R60	1-249-431-11	CARBON 15K 5%	1/4W				
R61	1-249-427-11	CARBON 6.8K 5%	1/4W				
R101	1-249-405-11	CARBON 100 5%	1/4W				
R102	1-249-413-11	CARBON 470 5%	1/4W				
R103	1-249-419-11	CARBON 1.5K 5%	1/4W				
R104	1-249-413-11	CARBON 470 5%	1/4W				
R105	1-249-419-11	CARBON 1.5K 5%	1/4W				
R106	1-249-419-11	CARBON 1.5K 5%	1/4W				
R107	1-249-425-11	CARBON 4.7K 5%	1/4W				
R108	1-249-409-11	CARBON 220 5%	1/4W				

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Ref.No.	Part No.	Description	QTY	UNIT	REMARK	Ref.No.	Part No.	Description	QTY	UNIT	REMARK
R168	1-249-405-11	CARBON	100	5%	1/4W	R230	1-249-405-11	CARBON	100	5%	1/4W
R169	1-249-405-11	CARBON	100	5%	1/4W	R231	1-249-422-11	CARBON	2.7K	5%	1/4W
R170	1-249-421-11	CARBON	2.2K	5%	1/4W	R232	1-249-419-11	CARBON	1.5K	5%	1/4W
R172	1-249-421-11	CARBON	2.2K	5%	1/4W	R233	1-249-419-11	CARBON	1.5K	5%	1/4W
R173	1-249-434-11	CARBON	27K	5%	1/4W	R234	1-249-418-11	CARBON	1.2K	5%	1/4W
R174	1-249-416-11	CARBON	820	5%	1/4W	R237	1-249-428-11	CARBON	8.2K	5%	1/4W
R175	1-249-417-11	CARBON	1K	5%	1/4W	R238	1-215-418-00	METAL	750	1%	1/6W
R176	1-249-413-11	CARBON	470	5%	1/4W	R239	1-249-422-11	CARBON	2.7K	5%	1/4W
R177	1-249-417-11	CARBON	1K	5%	1/4W	R240	1-249-405-11	CARBON	100	5%	1/4W
R178	1-249-431-11	CARBON	15K	5%	1/4W	R241	1-249-422-11	CARBON	2.7K	5%	1/4W
R181	1-249-420-11	CARBON	1.8K	5%	1/4W	R257	1-249-425-11	CARBON	4.7K	5%	1/4W
R182	1-249-420-11	CARBON	1.8K	5%	1/4W	R258	1-215-397-00	METAL	100	1%	1/6W
R183	1-249-436-11	CARBON	39K	5%	1/4W	R264	1-249-439-11	CARBON	68K	5%	1/4W
R184	1-215-420-00	CARBON	910	5%	1/4W	R267	1-249-429-11	CARBON	10K	5%	1/4W
R185	1-249-417-11	CARBON	1K	5%	1/4W	R270	1-249-429-11	CARBON	10K	5%	1/4W
R186	1-249-413-11	CARBON	470	5%	1/4W	R271	1-249-425-11	CARBON	4.7K	5%	1/4W
R187	1-249-417-11	CARBON	1K	5%	1/4W	R272	1-249-421-11	CARBON	2.2K	5%	1/4W
R188	1-249-431-11	CARBON	15K	5%	1/4W	R273	1-249-413-11	CARBON	470	5%	1/4W
R190	1-249-405-11	CARBON	100	5%	1/4W	R274	1-247-895-00	CARBON	470K	5%	1/4W
R191	1-249-422-11	CARBON	2.7K	5%	1/4W	R275	1-215-487-00	CARBON	560K	5%	1/4W
R192	1-249-405-11	CARBON	100	5%	1/4W	R301	1-249-425-11	CARBON	4.7K	5%	1/4W
R193	1-249-425-11	CARBON	4.7K	5%	1/4W	R302	1-249-433-11	CARBON	22K	5%	1/4W
R194	1-215-438-00	CARBON	5.1K	5%	1/4W	R303	1-249-437-11	CARBON	47K	5%	1/4W
R195	1-249-415-11	CARBON	680	5%	1/4W	R304	1-249-430-11	CARBON	12K	5%	1/4W
R196	1-249-420-11	CARBON	1.8K	5%	1/4W	R305	1-249-405-11	CARBON	100	5%	1/4W
R197	1-249-405-11	CARBON	100	5%	1/4W	R306	1-249-436-11	CARBON	39K	5%	1/4W
R198	1-249-422-11	CARBON	2.7K	5%	1/4W	R307	1-249-435-11	CARBON	33K	5%	1/4W
R199	1-249-421-11	CARBON	2.2K	5%	1/4W	R308	1-249-440-11	CARBON	82K	5%	1/4W
R200	1-215-421-00	METAL	1K	1%	1/6W	R309	1-215-493-00	CARBON	1M	5%	1/4W
R201	1-215-423-00	METAL	1.2K	1%	1/6W	R310	1-249-428-11	CARBON	8.2K	5%	1/4W
R202	1-215-438-00	METAL	5.1K	1%	1/6W	R311	1-249-429-11	CARBON	10K	5%	1/4W
R203	1-249-417-11	CARBON	1K	5%	1/4W	R312	1-249-430-11	CARBON	12K	5%	1/4W
R204	1-249-431-11	CARBON	15K	5%	1/4W	R313	1-249-438-11	CARBON	56K	5%	1/4W
R206	1-249-405-11	CARBON	100	5%	1/4W	R314	1-249-439-11	CARBON	68K	5%	1/4W
R207	1-249-422-11	CARBON	2.7K	5%	1/4W	R315	1-249-433-11	CARBON	22K	5%	1/4W
R208	1-249-405-11	CARBON	100	5%	1/4W	R316	1-249-435-11	CARBON	33K	5%	1/4W
R209	1-215-421-00	METAL	1K	1%	1/6W	R317	1-249-427-11	CARBON	6.8K	5%	1/4W
R210	1-215-414-00	METAL	510	1%	1/6W	R318	1-249-435-11	CARBON	33K	5%	1/4W
R211	1-215-430-00	METAL	2.4K	1%	1/6W	R319	1-249-433-11	CARBON	22K	5%	1/4W
R212	1-215-416-00	METAL	620	1%	1/6W	R320	1-249-439-11	CARBON	68K	5%	1/4W
R213	1-249-424-11	CARBON	3.9K	5%	1/4W	R321	1-249-440-11	CARBON	82K	5%	1/4W
R215	1-249-425-11	CARBON	4.7K	5%	1/4W	R322	1-249-411-11	CARBON	330	5%	1/4W
R216	1-249-425-11	CARBON	4.7K	5%	1/4W	R323	1-249-441-11	CARBON	100K	5%	1/4W
R217	1-249-422-11	CARBON	2.7K	5%	1/4W	R324	1-247-887-00	CARBON	220K	5%	1/4W
R218	1-249-422-11	CARBON	2.7K	5%	1/4W	R325	1-215-454-00	CARBON	24K	5%	1/4W
R219	1-215-489-00	CARBON	680K	5%	1/4W	R326	1-249-439-11	CARBON	68K	5%	1/4W
R220	1-249-425-11	CARBON	4.7K	5%	1/4W	R327	1-249-436-11	CARBON	39K	5%	1/4W
R221	1-249-425-11	CARBON	4.7K	5%	1/4W	R328	1-249-440-11	CARBON	82K	5%	1/4W
R222	1-249-421-11	CARBON	2.2K	5%	1/4W	R329	1-249-429-11	CARBON	10K	5%	1/4W
R223	1-249-423-11	CARBON	3.3K	5%	1/4W	R330	1-249-435-11	CARBON	33K	5%	1/4W
R224	1-249-421-11	CARBON	2.2K	5%	1/4W	R331	1-249-437-11	CARBON	47K	5%	1/4W
R227	1-247-838-00	CARBON	2K	5%	1/4W	R332	1-249-409-11	CARBON	220	5%	1/4W
R229	1-249-418-11	CARBON	1.2K	5%	1/4W	R333	1-249-419-11	CARBON	1.5K	5%	1/4W



Ref.No.	Part No.	Description	Quantity	Material	Dimensions	Remark	Ref.No.	Part No.	Description	Quantity	Material	Dimensions	Remark
R334	1-249-416-11	CARBON	820	5%	1/4W		R415	1-249-405-11	CARBON	100	5%	1/4W	
R335	1-249-413-11	CARBON	470	5%	1/4W		R416	1-249-395-11	CARBON	15	5%	1/4W	
R336	1-249-405-11	CARBON	100	5%	1/4W		R417	1-249-408-11	CARBON	180	5%	1/4W	
R337	1-249-412-11	CARBON	390	5%	1/4W		R418	1-249-411-11	CARBON	330	5%	1/4W	
R338	1-249-415-11	CARBON	680	5%	1/4W		R419	1-249-429-11	CARBON	10K	5%	1/4W	
R339	1-247-849-00	CARBON	5.6K	5%	1/4W		R420	1-249-431-11	CARBON	15K	5%	1/4W	
R340	1-249-425-11	CARBON	4.7K	5%	1/4W		R421	1-249-429-11	CARBON	10K	5%	1/4W	
R341	1-249-425-11	CARBON	4.7K	5%	1/4W		R422	1-249-437-11	CARBON	47K	5%	1/4W	
R342	1-249-439-11	CARBON	68K	5%	1/4W		R423	1-249-417-11	CARBON	1K	5%	1/4W	
R343	1-249-435-11	CARBON	33K	5%	1/4W		R424	1-249-423-11	CARBON	3.3K	5%	1/4W	
R344	1-249-421-11	CARBON	2.2K	5%	1/4W		R425	1-249-418-11	CARBON	1.2K	5%	1/4W	
R345	1-249-424-11	CARBON	3.9K	5%	1/4W		R428	1-247-883-00	CARBON	150K	5%	1/4W	
R346	1-215-493-00	CARBON	1M	5%	1/4W		R429	1-249-431-11	CARBON	15K	5%	1/4W	
R347	1-249-429-11	CARBON	10K	5%	1/4W		R430	1-249-425-11	CARBON	4.7K	5%	1/4W	
R348	1-249-439-11	CARBON	68K	5%	1/4W		R431	1-249-437-11	CARBON	47K	5%	1/4W	
R349	1-249-435-11	CARBON	33K	5%	1/4W		R432	1-249-431-11	CARBON	15K	5%	1/4W	
R350	1-249-413-11	CARBON	470	5%	1/4W		R433	1-249-437-11	CARBON	47K	5%	1/4W	
R351	1-249-435-11	CARBON	33K	5%	1/4W		R434	1-249-430-11	CARBON	12K	5%	1/4W	
R352	1-249-437-11	CARBON	47K	5%	1/4W		R435	1-249-423-11	CARBON	3.3K	5%	1/4W	
R353	1-249-434-11	CARBON	27K	5%	1/4W		R436	1-249-428-11	CARBON	8.2K	5%	1/4W	
R354	1-249-421-11	CARBON	2.2K	5%	1/4W		R437	1-215-493-00	CARBON	1M	5%	1/4W	
R355	1-249-434-11	CARBON	27K	5%	1/4W		R438	1-249-429-11	CARBON	10K	5%	1/4W	
R356	1-249-433-11	CARBON	22K	5%	1/4W		R439	1-249-438-11	CARBON	56K	5%	1/4W	
R357	1-249-429-11	CARBON	10K	5%	1/4W		R440	1-249-429-11	CARBON	10K	5%	1/4W	
R358	1-215-493-00	CARBON	1M	5%	1/4W		R441	1-249-430-11	CARBON	12K	5%	1/4W	
R359	1-249-415-11	CARBON	680	5%	1/4W		R442	1-249-441-11	CARBON	100K	5%	1/4W	
R360	1-215-493-00	CARBON	1M	5%	1/4W		R443	1-249-434-11	CARBON	27K	5%	1/4W	
R361	1-249-415-11	CARBON	680	5%	1/4W		R444	1-249-405-11	CARBON	100	5%	1/4W	
R362	1-249-421-11	CARBON	2.2K	5%	1/4W		R445	1-249-428-11	CARBON	8.2K	5%	1/4W	
R363	1-249-429-11	CARBON	10K	5%	1/4W		R446	1-215-493-00	CARBON	1M	5%	1/4W	
R364	1-249-417-11	CARBON	1K	5%	1/4W		R447	1-249-438-11	CARBON	56K	5%	1/4W	
R365	1-249-441-11	CARBON	100K	5%	1/4W		R448	1-249-441-11	CARBON	100K	5%	1/4W	
R366	1-249-409-11	CARBON	220	5%	1/4W		R449	1-249-429-11	CARBON	10K	5%	1/4W	
R367	1-249-409-11	CARBON	220	5%	1/4W		R450	1-249-433-11	CARBON	22K	5%	1/4W	
R369	1-249-429-11	CARBON	10K	5%	1/4W		R451	1-249-429-11	CARBON	10K	5%	1/4W	
R370	1-249-409-11	CARBON	220	5%	1/4W		R452	1-249-425-11	CARBON	4.7K	5%	1/4W	
R371	1-249-409-11	CARBON	220	5%	1/4W		R453	1-249-417-11	CARBON	1K	5%	1/4W	
R372	1-249-429-11	CARBON	10K	5%	1/4W		R454	1-249-429-11	CARBON	10K	5%	1/4W	
R374	1-249-424-11	CARBON	3.9K	5%	1/4W		R455	1-215-493-00	CARBON	1M	5%	1/4W	
R375	1-249-415-11	CARBON	680	5%	1/4W		R456	1-249-425-11	CARBON	4.7K	5%	1/4W	
R377	1-249-429-11	CARBON	10K	5%	1/4W		R457	1-249-433-11	CARBON	22K	5%	1/4W	
R378	1-249-429-11	CARBON	10K	5%	1/4W		R458	1-249-427-11	CARBON	6.8K	5%	1/4W	
R381	1-249-429-11	CARBON	10K	5%	1/4W		R459	1-249-417-11	CARBON	1K	5%	1/4W	
R382	1-215-455-00	METAL	27K	1%	1/6W		R460	1-249-405-11	CARBON	100	5%	1/4W	
R383	1-215-462-00	METAL	51K	1%	1/6W		R464	1-215-447-00	METAL	12K	1%	1/6W	
R403	1-249-421-11	CARBON	2.2K	5%	1/4W		R465	1-249-437-11	CARBON	47K	5%	1/4W	
R404	1-249-402-11	CARBON	56	5%	1/4W		R466	1-249-433-11	CARBON	22K	5%	1/4W	
R407	1-249-421-11	CARBON	2.2K	5%	1/4W		R467	1-215-449-00	METAL	15K	1%	1/6W	
R408	1-249-402-11	CARBON	56	5%	1/4W		R468	1-249-437-11	CARBON	47K	5%	1/4W	
R411	1-249-421-11	CARBON	2.2K	5%	1/4W		R469	1-249-433-11	CARBON	22K	5%	1/4W	
R412	1-249-402-11	CARBON	56	5%	1/4W		R470	1-215-447-00	METAL	12K	1%	1/6W	
R413	1-249-428-11	CARBON	8.2K	5%	1/4W		R471	1-249-437-11	CARBON	47K	5%	1/4W	
R414	1-249-421-11	CARBON	2.2K	5%	1/4W		R472	1-249-433-11	CARBON	22K	5%	1/4W	



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R501	1-247-883-00	CARBON 150K 5% 1/4W		RV716	1-228-995-00	RES, ADJ, CARBON 22K	
R551	1-247-883-00	CARBON 150K 5% 1/4W		RV717	1-228-995-00	RES, ADJ, CARBON 22K	
R601	1-247-883-00	CARBON 150K 5% 1/4W				SWITCH	
R602	1-249-405-11	CARBON 100 5% 1/4W		S401	1-553-716-00	SWITCH, SLIDE	
R701	1-249-417-11	CARBON 1K 5% 1/4W		S701	1-514-633-00	SLIDE SWITCH	
R702	1-249-417-11	CARBON 1K 5% 1/4W				9-911-838-XX SHEET; S701	
R703	1-249-417-11	CARBON 1K 5% 1/4W		S702	1-553-716-00	SWITCH, SLIDE	
R704	1-249-417-11	CARBON 1K 5% 1/4W				TRANSFORMER	
R705	1-249-417-11	CARBON 1K 5% 1/4W		T301	1-425-786-00	TRANSFORMER, BANDPASS(BPT)	
R706	1-249-429-11	CARBON 10K 5% 1/4W		T302	1-404-081-00	TRANSFORMER, DELAY ADJUST	
R707	1-249-429-11	CARBON 10K 5% 1/4W		T401	1-404-146-00	TRANSFORMER	
R708	1-249-431-11	CARBON 15K 5% 1/4W				CRYSTAL	
R709	1-249-417-11	CARBON 1K 5% 1/4W		X301	1-567-504-11	OSCILLATOR, CRYSTAL	
R710	1-249-417-11	CARBON 1K 5% 1/4W		X302	1-567-505-11	OSCILLATOR, CRYSTAL	
R711	1-249-417-11	CARBON 1K 5% 1/4W				*****	
R712	1-249-417-11	CARBON 1K 5% 1/4W				*1-617-535-11 BC BOARD	
R713	1-249-417-11	CARBON 1K 5% 1/4W				*****	
R714	1-249-417-11	CARBON 1K 5% 1/4W				*1-506-602-11 PLUG, L TYPE (2.0MM PITCH) 5P	
R715	1-249-417-11	CARBON 1K 5% 1/4W				*1-506-603-11 PLUG, L TYPE (2.0MM PITCH) 10P	
R716	1-249-417-11	CARBON 1K 5% 1/4W				CAPACITOR	
R717	1-249-417-11	CARBON 1K 5% 1/4W		C10	1-124-462-00	ELECT 10MF 20% 16V	
R803	1-249-429-11	CARBON 10K 5% 1/4W		C11	1-124-259-00	ELECT 4.7MF 20% 50V	
		VARIABLE RESISTOR		C12	1-102-973-00	CERAMIC 100PF 5% 50V	
RV1	1-228-995-00	RES, ADJ, CARBON 22K		C13	1-102-820-00	CERAMIC 330PF 5% 50V	
RV2	1-228-995-00	RES, ADJ, CARBON 22K		C14	1-124-462-00	ELECT 10MF 20% 16V	
RV101	1-230-625-11	RES, ADJ, CARBON 330		C15	1-136-165-00	FILM 0.1MF 5% 50V	
RV103	1-228-995-00	RES, ADJ, CARBON 22K		C16	1-161-021-11	CERAMIC 0.047MF 10% 25V	
RV301	1-228-995-00	RES, ADJ, CARBON 22K		C17	1-102-824-00	CERAMIC 470PF 5% 50V	
RV302	1-228-995-00	RES, ADJ, CARBON 22K		C18	1-102-824-00	CERAMIC 470PF 5% 50V	
RV303	1-230-626-41	RES, ADJ, CARBON 470		C19	1-102-820-00	CERAMIC 330PF 5% 50V	
RV304	1-228-995-00	RES, ADJ, CARBON 22K		C20	1-102-824-00	CERAMIC 470PF 5% 50V	
RV305	1-228-995-00	RES, ADJ, CARBON 22K		C22	1-124-462-00	ELECT 10MF 20% 16V	
RV306	1-228-995-00	RES, ADJ, CARBON 22K		C25	1-123-611-00	ELECT 1MF 20% 50V	
RV401	1-230-630-11	RES, ADJ, CARBON 10K		C27	1-123-611-00	ELECT 1MF 20% 50V	
RV402	1-230-633-41	RES, ADJ, CARBON 47K		C28	1-136-165-00	FILM 0.1MF 5% 50V	
RV403	1-230-630-11	RES, ADJ, CARBON 10K				IC	
RV404	1-228-995-00	RES, ADJ, CARBON 22K		IC1	8-759-208-67	IC CX867	
RV701	1-230-145-00	RES, VAR, CARBON 5K				RESISTOR	
RV702	1-230-145-00	RES, VAR, CARBON 5K		R43	1-249-439-11	CARBON 68K 5% 1/4W	
RV703	1-230-145-00	RES, VAR, CARBON 5K		R44	1-247-883-00	CARBON 150K 5% 1/4W	
RV704	1-230-145-00	RES, VAR, CARBON 5K		R45	1-249-441-11	CARBON 100K 5% 1/4W	
RV705	1-228-578-00	RES, VAR, CARBON 10K		R46	1-249-421-11	CARBON 2.2K 5% 1/4W	
RV706	1-228-578-00	RES, VAR, CARBON 10K		R47	1-249-415-11	CARBON 680 5% 1/4W	
RV707	1-228-937-00	RES, VAR, CARBON 20K					
RV708	1-230-629-41	RES, ADJ, CARBON 3.3K		R48	1-247-881-00	CARBON 120K 5% 1/4W	
RV709	1-228-995-00	RES, ADJ, CARBON 22K		R49	1-247-895-00	CARBON 470K 5% 1/4W	
RV710	1-228-995-00	RES, ADJ, CARBON 22K					
RV711	1-228-995-00	RES, ADJ, CARBON 22K					
RV712	1-228-995-00	RES, ADJ, CARBON 22K					
RV713	1-228-995-00	RES, ADJ, CARBON 22K					
RV714	1-228-995-00	RES, ADJ, CARBON 22K					
RV715	1-228-995-00	RES, ADJ, CARBON 22K					

BC **BD** **BE**

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R50	1-249-430-11	CARBON 12K 5% 1/4W		R252	1-215-451-00	METAL 18K 1% 1/6W	
R51	1-249-418-11	CARBON 1.2K 5% 1/4W		R253	1-215-453-00	METAL 22K 1% 1/6W	
R52	1-249-436-11	CARBON 39K 5% 1/4W		R254	1-249-415-11	CARBON 680 5% 1/4W	
R53	1-249-418-11	CARBON 1.2K 5% 1/4W		R255	1-249-405-11	CARBON 100 5% 1/4W	
R54	1-249-441-11	CARBON 100K 5% 1/4W		R256	1-249-417-11	CARBON 1K 5% 1/4W	
R55	1-249-418-11	CARBON 1.2K 5% 1/4W		R258	1-249-421-11	CARBON 2.2K 5% 1/4W	
R56	1-249-405-11	CARBON 100 5% 1/4W		R259	1-249-427-11	CARBON 6.8K 5% 1/4W	
R57	1-249-405-11	CARBON 100 5% 1/4W		R260	1-249-419-11	CARBON 1.5K 5% 1/4W	
R62	1-249-405-11	CARBON 100 5% 1/4W		R261	1-249-405-11	CARBON 100 5% 1/4W	
R63	1-249-433-11	CARBON 22K 5% 1/4W		R262	1-249-420-11	CARBON 1.8K 5% 1/4W	
*****				R263	1-249-428-11	CARBON 8.2K 5% 1/4W	
*1-617-536-11 BD BOARD *****				R276	1-215-469-00	METAL 100K 1% 1/6W	
*****				*****			
<u>CONNECTOR</u>				*1-617-537-11 BE BOARD *****			
BD1	*1-506-602-11	PLUG, L TYPE (2.0MM PITCH) 5P		<u>CONNECTOR</u>			
BD2	*1-506-602-11	PLUG, L TYPE (2.0MM PITCH) 5P		BE1	*1-506-603-11	PLUG, L TYPE (2.0MM PITCH) 10P	
<u>CAPACITOR</u>				BE2	*1-506-603-11	PLUG, L TYPE (2.0MM PITCH) 10P	
C136	1-123-611-00	ELECT 1MF 20% 50V		<u>CAPACITOR</u>			
C137	1-161-021-11	CERAMIC 0.047MF 10% 25V		C29	1-102-973-00	CERAMIC 100PF 5% 50V	
C138	1-124-236-00	ELECT 47MF 20% 16V		C30	1-102-116-00	CERAMIC 680PF 10% 50V	
C139	1-123-611-00	ELECT 1MF 20% 50V		C31	1-161-021-11	CERAMIC 0.047MF 10% 25V	
C140	1-123-611-00	ELECT 1MF 20% 50V		C32	1-124-236-00	ELECT 47MF 20% 16V	
C141	1-161-021-11	CERAMIC 0.047MF 10% 25V		C33	1-102-973-00	CERAMIC 100PF 5% 50V	
C142	1-124-236-00	ELECT 47MF 20% 16V		C34	1-124-236-00	ELECT 47MF 20% 16V	
C143	1-102-949-00	CERAMIC 12PF 5% 50V		C35	1-161-021-11	CERAMIC 0.047MF 10% 25V	
<u>DIODE</u>				<u>DIODE</u>			
D108	8-719-911-19	DIODE 1SS119		D3	8-719-911-19	DIODE 1SS119	
<u>IC</u>				D4	8-719-911-19	DIODE 1SS119	
IC102	8-759-014-96	IC MC1496P		<u>IC</u>			
<u>TRANSISTOR</u>				IC2	8-759-914-03	IC SN74LS06N	
Q152	8-729-603-50	TRANSISTOR 2SC403SP		IC3	8-759-240-24	IC TC4024BP	
Q153	8-729-384-46	TRANSISTOR 2SA844-C		IC4	8-759-979-16	IC CX7916	
Q154	8-729-603-50	TRANSISTOR 2SC403SP		IC5	8-759-345-38	IC HD14538BP	
Q155	8-729-384-46	TRANSISTOR 2SA844-C		<u>TRANSISTOR</u>			
<u>RESISTOR</u>				Q20	8-729-178-54	TRANSISTOR 2SC2785	
R242	1-249-405-11	CARBON 100 5% 1/4W		Q21	8-729-178-54	TRANSISTOR 2SC2785	
R243	1-249-421-11	CARBON 2.2K 5% 1/4W		Q22	8-729-178-54	TRANSISTOR 2SC2785	
R244	1-249-415-11	CARBON 680 5% 1/4W		Q23	8-729-900-89	TRANSISTOR DTC144ES	
R245	1-249-405-11	CARBON 100 5% 1/4W		Q24	8-729-900-89	TRANSISTOR DTC144ES	
R246	1-249-422-11	CARBON 2.7K 5% 1/4W		Q25	8-729-178-54	TRANSISTOR 2SC2785	
R247	1-249-415-11	CARBON 680 5% 1/4W		Q26	8-729-900-89	TRANSISTOR DTC144ES	
R248	1-249-430-11	CARBON 12K 5% 1/4W		<u>RESISTOR</u>			
R249	1-215-475-00	METAL 180K 1% 1/6W		R64	1-249-433-11	CARBON 22K 5% 1/4W	
R250	1-215-409-00	METAL 330 1% 1/6W		R65	1-249-430-11	CARBON 12K 5% 1/4W	
R251	1-215-469-00	METAL 100K 1% 1/6W					



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R66	1-249-433-11	CARBON	22K 5% 1/4W	Q30	8-729-178-54	TRANSISTOR 2SC2785	
R67	1-249-429-11	CARBON	10K 5% 1/4W			<u>RESISTOR</u>	
R68	1-249-433-11	CARBON	22K 5% 1/4W	R87	1-249-417-11	CARBON	1K 5% 1/4W
R69	1-215-444-00	METAL	9.1K 1% 1/6W	R88	1-249-417-11	CARBON	1K 5% 1/4W
R70	1-249-430-11	CARBON	12K 5% 1/4W	R89	1-215-455-00	METAL	27K 1% 1/6W
R71	1-249-433-11	CARBON	22K 5% 1/4W	R90	1-215-443-00	METAL	8.2K 1% 1/6W
R72	1-249-429-11	CARBON	10K 5% 1/4W	R91	1-249-417-11	CARBON	1K 5% 1/4W
R73	1-249-441-11	CARBON	100K 5% 1/4W	R92	1-215-493-00	CARBON	1M 5% 1/4W
R75	1-249-429-11	CARBON	10K 5% 1/4W	R93	1-249-433-11	CARBON	22K 5% 1/4W
R77	1-249-439-11	CARBON	68K 5% 1/4W	R94	1-249-421-11	CARBON	2.2K 5% 1/4W
R78	1-249-409-11	CARBON	220 5% 1/4W	R95	1-249-430-11	CARBON	12K 5% 1/4W
R79	1-249-433-11	CARBON	22K 5% 1/4W	R96	1-249-430-11	CARBON	12K 5% 1/4W
R80	1-249-433-11	CARBON	22K 5% 1/4W	R97	1-215-443-00	METAL	8.2K 1% 1/6W
R82	1-215-444-00	METAL	9.1K 1% 1/6W	R98	1-247-849-00	CARBON	5.6K 5% 1/4W
R83	1-249-430-11	CARBON	12K 5% 1/4W	R99	1-215-445-00	METAL	10K 1% 1/6W
R86	1-249-430-11	CARBON	12K 5% 1/4W	R100	1-215-445-00	METAL	10K 1% 1/6W
R379	1-249-421-11	CARBON	2.2K 5% 1/4W	R801	1-215-493-00	CARBON	1M 5% 1/4W
R380	1-249-419-11	CARBON	1.5K 5% 1/4W	R802	1-215-445-00	METAL	10K 1% 1/6W

	*1-617-538-11	BF BOARD				<u>VARIABLE RESISTOR</u>	
		*****		RV3	1-228-311-00	RES, ADJ, CERMET 100K	
		<u>CONNECTOR</u>		RV4	1-228-310-00	RES, ADJ, CERMET 50K	
BF1	*1-506-602-11	PLUG, L TYPE (2.0MM PITCH) 5P		RV5	1-228-309-00	RES, ADJ, CERMET 20K	
BF2	*1-506-602-11	PLUG, L TYPE (2.0MM PITCH) 5P		RV6	1-228-310-00	RES, ADJ, CERMET 50K	
		<u>CAPACITOR</u>		*****			
C36	1-101-361-00	CERAMIC	150PF 5% 50V	*A-1135-433-A	BB BOARD, COMPLETE		
C37	1-102-973-00	CERAMIC	100PF 5% 50V		*****		
C38	1-101-004-00	CERAMIC	0.01MF 50V		<u>CONNECTOR</u>		
C39	1-101-361-00	CERAMIC	150PF 5% 50V	BB1	*1-566-058-11	PIN, CONNECTOR 6P	
C40	1-102-973-00	CERAMIC	100PF 5% 50V	BB2	*1-566-056-11	PIN, CONNECTOR 4P	
C41	1-102-973-00	CERAMIC	100PF 5% 50V	BB3	*1-566-055-11	PIN, CONNECTOR 3P	
C42	1-101-004-00	CERAMIC	0.01MF 50V	BB4	*1-566-055-11	PIN, CONNECTOR 3P	
		<u>DIODE</u>		BB5	*1-566-055-11	PIN, CONNECTOR 3P	
D5	8-719-911-19	DIODE 1SS119		BB6	*1-566-056-11	PIN, CONNECTOR 4P	
D6	8-719-911-19	DIODE 1SS119		BB7	*1-566-057-11	PIN, CONNECTOR 5P	
D7	8-719-911-19	DIODE 1SS119		BB8	*1-566-056-11	PIN, CONNECTOR 4P	
D8	8-719-911-19	DIODE 1SS119		BB9	*1-566-061-11	PIN, CONNECTOR 9P	
D9	8-719-911-19	DIODE 1SS119		BB10	*1-566-060-11	PIN, CONNECTOR 8P	
D10	8-719-911-19	DIODE 1SS119		BB11	*1-566-055-11	PIN, CONNECTOR 3P	
		<u>IC</u>		BB12	*1-566-058-11	PIN, CONNECTOR 6P	
IC6	8-759-240-01	IC TC4001BP		BB13	*1-566-059-11	PIN, CONNECTOR 7P	
IC7	8-759-045-38	IC MC14538BCP		BB14	*1-566-058-11	PIN, CONNECTOR 6P	
IC8	8-759-045-38	IC MC14538BCP		BB15	*1-566-059-11	PIN, CONNECTOR 7P	
		<u>TRANSISTOR</u>		BB16	*1-566-055-11	PIN, CONNECTOR 3P	
Q28	8-729-178-54	TRANSISTOR 2SC2785		BB17	*1-566-055-11	PIN, CONNECTOR 3P	
Q29	8-729-178-54	TRANSISTOR 2SC2785		BB18	*1-566-055-11	PIN, CONNECTOR 3P	
					<u>CAPACITOR</u>		
				C13	1-124-462-00	ELECT 10MF 20% 16V	

BB

BB

BB

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C14	1-124-462-00	ELECT	10MF 20% 16V	C236	1-101-004-00	CERAMIC	0.01MF 50V
C15	1-124-462-00	ELECT	10MF 20% 16V	C237	1-161-021-11	CERAMIC	0.047MF 10% 25V
C16	1-101-004-00	CERAMIC	0.01MF 50V	C238	1-101-004-00	CERAMIC	0.01MF 50V
C17	1-123-611-00	ELECT	1MF 20% 50V	C239	1-136-165-00	FILM	0.1MF 5% 50V
C18	1-101-004-00	CERAMIC	0.01MF 50V	C240	1-102-973-00	CERAMIC	100PF 5% 50V
C19	1-161-021-11	CERAMIC	0.047MF 10% 25V	C241	1-161-021-11	CERAMIC	0.047MF 10% 25V
C20	1-123-333-00	ELECT	100MF 20% 16V	C242	1-101-004-00	CERAMIC	0.01MF 50V
C21	1-124-465-00	ELECT	0.47MF 20% 50V	C243	1-101-004-00	CERAMIC	0.01MF 50V
C22	1-123-611-00	ELECT	1MF 20% 50V	C244	1-101-004-00	CERAMIC	0.01MF 50V
C23	1-124-465-00	ELECT	0.47MF 20% 50V	C245	1-101-004-00	CERAMIC	0.01MF 50V
C24	1-123-611-00	ELECT	1MF 20% 50V	C401	1-102-959-00	CERAMIC	22PF 10% 50V
C25	1-124-465-00	ELECT	0.47MF 20% 50V	C402	1-124-236-00	ELECT	47MF 20% 16V
C26	1-101-004-00	CERAMIC	0.01MF 50V	C403	1-123-611-00	ELECT	1MF 20% 50V
C27	1-123-611-00	ELECT	1MF 20% 50V	C404	1-101-004-00	CERAMIC	0.01MF 50V
C28	1-124-236-00	ELECT	47MF 20% 16V	C405	1-124-462-00	ELECT	10MF 20% 16V
C29	1-101-004-00	CERAMIC	0.01MF 50V	C406	1-124-462-00	ELECT	10MF 20% 16V
C30	1-124-236-00	ELECT	47MF 20% 16V	C407	1-136-165-00	FILM	0.1MF 5% 50V
C31	1-101-004-00	CERAMIC	0.01MF 50V	C408	1-124-462-00	ELECT	10MF 20% 16V
C32	1-124-236-00	ELECT	47MF 20% 16V	C409	1-101-004-00	CERAMIC	0.01MF 50V
C33	1-101-004-00	CERAMIC	0.01MF 50V	C410	1-161-021-11	CERAMIC	0.047MF 10% 25V
C201	1-123-611-00	ELECT	1MF 20% 50V	C411	1-101-004-00	CERAMIC	0.01MF 50V
C202	1-123-611-00	ELECT	1MF 20% 50V	C412	1-161-021-11	CERAMIC	0.047MF 10% 25V
C203	1-123-611-00	ELECT	1MF 20% 50V	C413	1-101-004-00	CERAMIC	0.01MF 50V
C204	1-123-611-00	ELECT	1MF 20% 50V	C414	1-123-611-00	ELECT	1MF 20% 50V
C205	1-101-004-00	CERAMIC	0.01MF 50V	C415	1-161-021-11	CERAMIC	0.047MF 10% 25V
C206	1-102-973-00	CERAMIC	100PF 5% 50V	C419	1-161-021-11	CERAMIC	0.047MF 10% 25V
C207	1-161-021-11	CERAMIC	0.047MF 10% 25V	C501	1-102-959-00	CERAMIC	22PF 10% 50V
C208	1-123-333-00	ELECT	100MF 20% 16V	C502	1-124-236-00	ELECT	47MF 20% 16V
C209	1-124-462-00	ELECT	10MF 20% 16V	C503	1-123-611-00	ELECT	1MF 20% 50V
C210	1-161-021-11	CERAMIC	0.047MF 10% 25V	C504	1-101-004-00	CERAMIC	0.01MF 50V
C211	1-124-462-00	ELECT	10MF 20% 16V	C505	1-124-462-00	ELECT	10MF 20% 16V
C212	1-123-611-00	ELECT	1MF 20% 50V	C506	1-124-462-00	ELECT	10MF 20% 16V
C213	1-161-021-11	CERAMIC	0.047MF 10% 25V	C507	1-136-165-00	FILM	0.1MF 5% 50V
C216	1-124-462-00	ELECT	10MF 20% 16V	C508	1-124-462-00	ELECT	10MF 20% 16V
C217	1-124-463-00	ELECT	0.1MF 20% 50V	C509	1-101-004-00	CERAMIC	0.01MF 50V
C218	1-124-462-00	ELECT	10MF 20% 16V	C510	1-161-021-11	CERAMIC	0.047MF 10% 25V
C219	1-123-611-00	ELECT	1MF 20% 50V	C511	1-101-004-00	CERAMIC	0.01MF 50V
C220	1-101-004-00	CERAMIC	0.01MF 50V	C512	1-161-021-11	CERAMIC	0.047MF 10% 25V
C221	1-101-004-00	CERAMIC	0.01MF 50V	C513	1-101-004-00	CERAMIC	0.01MF 50V
C222	1-101-004-00	CERAMIC	0.01MF 50V	C514	1-123-611-00	ELECT	1MF 20% 50V
C223	1-124-463-00	ELECT	0.1MF 20% 50V	C515	1-161-021-11	CERAMIC	0.047MF 10% 25V
C224	1-124-462-00	ELECT	10MF 20% 16V	C519	1-161-021-11	CERAMIC	0.047MF 10% 25V
C225	1-123-611-00	ELECT	1MF 20% 50V	C601	1-102-959-00	CERAMIC	22PF 10% 50V
C226	1-101-004-00	CERAMIC	0.01MF 50V	C602	1-124-236-00	ELECT	47MF 20% 16V
C227	1-101-004-00	CERAMIC	0.01MF 50V	C603	1-123-611-00	ELECT	1MF 20% 50V
C228	1-101-004-00	CERAMIC	0.01MF 50V	C604	1-101-004-00	CERAMIC	0.01MF 50V
C229	1-124-463-00	ELECT	0.1MF 20% 50V	C605	1-124-462-00	ELECT	10MF 20% 16V
C230	1-124-462-00	ELECT	10MF 20% 16V	C606	1-124-462-00	ELECT	10MF 20% 16V
C231	1-123-611-00	ELECT	1MF 20% 50V	C607	1-136-165-00	FILM	0.1MF 5% 50V
C232	1-101-004-00	CERAMIC	0.01MF 50V	C608	1-124-462-00	ELECT	10MF 20% 16V
C233	1-101-004-00	CERAMIC	0.01MF 50V	C609	1-101-004-00	CERAMIC	0.01MF 50V
C234	1-101-004-00	CERAMIC	0.01MF 50V	C610	1-161-021-11	CERAMIC	0.047MF 10% 25V
C235	1-123-611-00	ELECT	1MF 20% 50V	C611	1-101-004-00	CERAMIC	0.01MF 50V



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C612	1-161-021-11	CERAMIC	0.047MF 10% 25V	C970	1-161-021-11	CERAMIC 0.047MF 10% 25V	
C613	1-101-004-00	CERAMIC	0.01MF 50V				
C614	1-123-611-00	ELECT	1MF 20% 50V			DIODE	
C615	1-161-021-11	CERAMIC	0.047MF 10% 25V	D201	8-719-911-19	DIODE 1SS119	
C616	1-123-611-00	ELECT	1MF 20% 50V	D202	8-719-911-19	DIODE 1SS119	
C617	1-123-611-00	ELECT	1MF 20% 50V	D203	8-719-101-70	DIODE RD8.2E-L2	
C618	1-123-611-00	ELECT	1MF 20% 50V	D204	8-719-101-70	DIODE RD8.2E-L2	
C619	1-161-021-11	CERAMIC	0.047MF 10% 25V	D205	8-719-101-70	DIODE RD8.2E-L2	
C705	1-123-611-00	ELECT	1MF 20% 50V	D206	8-719-911-19	DIODE 1SS119	
C706	1-101-004-00	CERAMIC	0.01MF 50V	D207	8-719-911-19	DIODE 1SS119	
C710	1-102-973-00	CERAMIC	100PF 5% 50V	D208	8-719-911-19	DIODE 1SS119	
C711	1-124-245-00	ELECT	4.7MF 20% 25V	D209	8-719-101-70	DIODE RD8.2E-L2	
C712	1-101-004-00	CERAMIC	0.01MF 50V	D210	8-719-102-94	DIODE RD11E-N2	
C713	1-123-611-00	ELECT	1MF 20% 50V	D211	8-719-911-19	DIODE 1SS119	
C714	1-102-973-00	CERAMIC	100PF 5% 50V	D401	8-719-911-19	DIODE 1SS119	
C715	1-102-824-00	CERAMIC	470PF 5% 50V	D402	8-719-911-19	DIODE 1SS119	
C901	1-123-611-00	ELECT	1MF 20% 50V	D501	8-719-911-19	DIODE 1SS119	
C902	1-161-021-11	CERAMIC	0.047MF 10% 25V	D502	8-719-911-19	DIODE 1SS119	
C903	1-124-462-00	ELECT	10MF 20% 16V	D601	8-719-911-19	DIODE 1SS119	
C904	1-124-236-00	ELECT	47MF 20% 16V	D602	8-719-911-19	DIODE 1SS119	
C906	1-161-021-11	CERAMIC	0.047MF 10% 25V	D701	8-719-911-19	DIODE 1SS119	
C907	1-124-236-00	ELECT	47MF 20% 16V	D702	8-719-911-19	DIODE 1SS119	
C908	1-161-021-11	CERAMIC	0.047MF 10% 25V	D703	8-719-911-19	DIODE 1SS119	
C909	1-161-021-11	CERAMIC	0.047MF 10% 25V	D704	8-719-911-19	DIODE 1SS119	
C910	1-124-236-00	ELECT	47MF 20% 16V	D705	8-719-911-19	DIODE 1SS119	
C911	1-161-021-11	CERAMIC	0.047MF 10% 25V	D706	8-719-911-19	DIODE 1SS119	
C912	1-161-021-11	CERAMIC	0.047MF 10% 25V	D708	8-719-911-19	DIODE 1SS119	
C913	1-124-236-00	ELECT	47MF 20% 16V	D709	8-719-911-19	DIODE 1SS119	
C931	1-161-021-11	CERAMIC	0.047MF 10% 25V	D710	8-719-911-19	DIODE 1SS119	
C932	1-124-462-00	ELECT	10MF 20% 16V	D711	8-719-911-19	DIODE 1SS119	
C933	1-124-236-00	ELECT	47MF 20% 16V	D901	8-719-812-41	DIODE TLR124	
C934	1-124-236-00	ELECT	47MF 20% 16V	D931	8-719-812-41	DIODE TLR124	
C935	1-124-236-00	ELECT	47MF 20% 16V	D961	8-719-812-41	DIODE TLR124	
C936	1-124-236-00	ELECT	47MF 20% 16V			IC	
C937	1-124-236-00	ELECT	47MF 20% 16V	IC7	8-752-010-00	IC CX20100	
C938	1-124-236-00	ELECT	47MF 20% 16V	IC201	8-752-030-45	IC CXA1044P	
C939	1-124-236-00	ELECT	47MF 20% 16V	IC202	8-759-145-58	IC UPC4558C	
C940	1-161-021-11	CERAMIC	0.047MF 10% 25V	IC203	8-759-145-58	IC UPC4558C	
C941	1-161-021-11	CERAMIC	0.047MF 10% 25V	IC204	8-759-340-53	IC HD14053BP	
C942	1-161-021-11	CERAMIC	0.047MF 10% 25V	IC205	8-759-340-53	IC HD14053BP	
C943	1-161-021-11	CERAMIC	0.047MF 10% 25V	IC206	8-759-340-53	IC HD14053BP	
C944	1-161-021-11	CERAMIC	0.047MF 10% 25V	IC207	8-759-145-58	IC UPC4558C	
C945	1-161-021-11	CERAMIC	0.047MF 10% 25V	IC208	8-759-145-58	IC UPC4558C	
C946	1-161-021-11	CERAMIC	0.047MF 10% 25V	IC209	8-759-340-53	IC HD14053BP	
C961	1-123-611-00	ELECT	1MF 20% 50V	IC401	8-759-014-96	IC MC1496P	
C962	1-161-021-11	CERAMIC	0.047MF 10% 25V	IC402	8-759-340-53	IC HD14053BP	
C963	1-124-462-00	ELECT	10MF 20% 16V	IC403	8-759-145-58	IC UPC4558C	
C964	1-124-236-00	ELECT	47MF 20% 16V	IC501	8-759-014-96	IC MC1496P	
C965	1-124-236-00	ELECT	47MF 20% 16V	IC502	8-759-340-53	IC HD14053BP	
C966	1-124-236-00	ELECT	47MF 20% 16V	IC503	8-759-145-58	IC UPC4558C	
C967	1-124-236-00	ELECT	47MF 20% 16V	IC601	8-759-014-96	IC MC1496P	
C968	1-161-021-11	CERAMIC	0.047MF 10% 25V	IC602	8-759-340-53	IC HD14053BP	
C969	1-161-021-11	CERAMIC	0.047MF 10% 25V				

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

BB

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
IC603	8-759-145-58	IC UPC4558C		Q211	8-729-603-50	TRANSISTOR 2SC403SP	
IC604	8-759-145-58	IC UPC4558C		Q212	8-729-300-13	TRANSISTOR 2SC2471	
IC702	8-759-103-93	IC UPC393C				(BB BOARD 1-617-534-15 ONLY)	
IC704	8-759-045-38	IC MC14538BCP			8-729-603-50	TRANSISTOR 2SC403SP	
IC706	8-759-133-90	IC UPC339C				(BB BOARD 1-617-534-16 ONLY)	
IC707	8-759-340-11	IC HD14011BP		Q213	8-729-300-13	TRANSISTOR 2SC2471	
IC901	8-759-170-12	IC UPC78M12H		Q214	8-729-178-54	TRANSISTOR 2SC2785	
IC931	8-759-170-12	IC UPC78M12H		Q215	8-729-178-54	TRANSISTOR 2SC2785	
IC961	8-759-700-24	IC NJM79M12A		Q216	8-729-603-50	TRANSISTOR 2SC403SP	
				Q217	8-729-300-13	TRANSISTOR 2SC2471	
						(BB BOARD 1-617-534-15 ONLY)	
					8-729-603-50	TRANSISTOR 2SC403SP	
						(BB BOARD 1-617-534-16 ONLY)	
				Q218	8-729-300-13	TRANSISTOR 2SC2471	
				Q219	8-729-178-54	TRANSISTOR 2SC2785	
				Q220	8-729-178-54	TRANSISTOR 2SC2785	
				Q221	8-729-900-89	TRANSISTOR DTC144ES	
				Q222	8-729-603-50	TRANSISTOR 2SC403SP	
				Q223	8-729-603-50	TRANSISTOR 2SC403SP	
				Q224	8-729-178-54	TRANSISTOR 2SC2785	
				Q225	8-729-115-10	TRANSISTOR 2SK105A-10	
				Q401	8-729-300-13	TRANSISTOR 2SC2471	
				Q402	8-729-178-54	TRANSISTOR 2SC2785	
				Q403	8-729-300-13	TRANSISTOR 2SC2471	
				Q404	8-729-300-13	TRANSISTOR 2SC2471	
				Q405	8-729-178-54	TRANSISTOR 2SC2785	
				Q406	8-729-178-54	TRANSISTOR 2SC2785	
				Q407	8-729-300-13	TRANSISTOR 2SC2471	
				Q408	8-729-112-06	TRANSISTOR 2SA1206	
				Q409	8-729-384-46	TRANSISTOR 2SA844-C	
				Q410	8-729-178-54	TRANSISTOR 2SC2785	
				Q411	8-729-801-46	TRANSISTOR 2SC3064	
				Q412	8-729-801-46	TRANSISTOR 2SC3064	
				Q413	8-729-803-37	TRANSISTOR 2SA1237	
				Q414	8-729-801-46	TRANSISTOR 2SC3064	
				Q501	8-729-300-13	TRANSISTOR 2SC2471	
				Q502	8-729-178-54	TRANSISTOR 2SC2785	
				Q503	8-729-300-13	TRANSISTOR 2SC2471	
				Q504	8-729-300-13	TRANSISTOR 2SC2471	
				Q505	8-729-178-54	TRANSISTOR 2SC2785	
				Q506	8-729-178-54	TRANSISTOR 2SC2785	
				Q507	8-729-300-13	TRANSISTOR 2SC2471	
				Q508	8-729-112-06	TRANSISTOR 2SA1206	
				Q509	8-729-384-46	TRANSISTOR 2SA844-C	
				Q510	8-729-178-54	TRANSISTOR 2SC2785	
				Q511	8-729-801-46	TRANSISTOR 2SC3064	
				Q512	8-729-801-46	TRANSISTOR 2SC3064	
				Q513	8-729-803-37	TRANSISTOR 2SA1237	
				Q514	8-729-801-46	TRANSISTOR 2SC3064	
				Q601	8-729-300-13	TRANSISTOR 2SC2471	
				Q602	8-729-178-54	TRANSISTOR 2SC2785	
				Q603	8-729-300-13	TRANSISTOR 2SC2471	
				Q604	8-729-300-13	TRANSISTOR 2SC2471	
				Q605	8-729-178-54	TRANSISTOR 2SC2785	
				Q606	8-729-178-54	TRANSISTOR 2SC2785	
				Q607	8-729-300-13	TRANSISTOR 2SC2471	
				Q608	8-729-112-06	TRANSISTOR 2SA1206	
				Q609	8-729-384-46	TRANSISTOR 2SA844-C	
				Q610	8-729-178-54	TRANSISTOR 2SC2785	

COIL

- L1 1-410-396-11 MICRO INDUCTOR 0.45UH
- L2 1-410-396-11 MICRO INDUCTOR 0.45UH
- L3 1-410-396-11 MICRO INDUCTOR 0.45UH

TRANSISTOR

- Q16 8-729-300-13 TRANSISTOR 2SC2471
- Q17 8-729-112-06 TRANSISTOR 2SA1206
- Q18 8-729-603-50 TRANSISTOR 2SC403SP
- Q19 8-729-300-13 TRANSISTOR 2SC2471
- Q20 8-729-112-06 TRANSISTOR 2SA1206
- Q21 8-729-603-50 TRANSISTOR 2SC403SP
- Q22 8-729-300-13 TRANSISTOR 2SC2471
- Q23 8-729-112-06 TRANSISTOR 2SA1206
- Q24 8-729-603-50 TRANSISTOR 2SC403SP
- Q25 8-729-384-46 TRANSISTOR 2SA844-C
- Q26 8-729-900-89 TRANSISTOR DTC144ES
- Q27 8-729-300-13 TRANSISTOR 2SC2471
- Q28 8-729-300-13 TRANSISTOR 2SC2471
- Q29 8-729-384-46 TRANSISTOR 2SA844-C
- Q30 8-729-900-89 TRANSISTOR DTC144ES
- Q31 8-729-300-13 TRANSISTOR 2SC2471
- Q32 8-729-300-13 TRANSISTOR 2SC2471
- Q33 8-729-384-46 TRANSISTOR 2SA844-C
- Q34 8-729-900-89 TRANSISTOR DTC144ES
- Q35 8-729-300-13 TRANSISTOR 2SC2471
- Q36 8-729-300-13 TRANSISTOR 2SC2471
- Q37 8-729-900-89 TRANSISTOR DTC144ES
- Q38 8-729-900-89 TRANSISTOR DTC144ES
- Q39 8-729-900-89 TRANSISTOR DTC144ES
- Q40 8-729-900-89 TRANSISTOR DTC144ES
- Q41 8-729-900-89 TRANSISTOR DTC144ES
- Q42 8-729-178-54 TRANSISTOR 2SC2785
- Q201 8-729-112-06 TRANSISTOR 2SA1206
- Q202 8-729-112-06 TRANSISTOR 2SA1206
- Q203 8-729-112-06 TRANSISTOR 2SA1206
- Q204 8-729-178-54 TRANSISTOR 2SC2785
- Q205 8-729-801-46 TRANSISTOR 2SC3064
- Q206 8-729-603-50 TRANSISTOR 2SC403SP
- Q207 8-729-300-13 TRANSISTOR 2SC2471
- (BB BOARD 1-617-534-15 ONLY)
- 8-729-603-50 TRANSISTOR 2SC403SP
- (BB BOARD 1-617-534-16 ONLY)
- Q208 8-729-300-13 TRANSISTOR 2SC2471
- Q209 8-729-178-54 TRANSISTOR 2SC2785
- Q210 8-729-178-54 TRANSISTOR 2SC2785

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



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
Q611	8-729-801-46	TRANSISTOR 2SC3064		R95	1-249-435-11	CARBON 33K 5%	1/4W
Q612	8-729-801-46	TRANSISTOR 2SC3064		R96	1-249-421-11	CARBON 2.2K 5%	1/4W
Q613	8-729-803-37	TRANSISTOR 2SA1237		R97	1-249-405-11	CARBON 100 5%	1/4W
Q614	8-729-801-46	TRANSISTOR 2SC3064		R98	1-249-439-11	CARBON 68K 5%	1/4W
Q615	8-729-384-46	TRANSISTOR 2SA844-C		R99	1-249-417-11	CARBON 1K 5%	1/4W
Q616	8-729-801-46	TRANSISTOR 2SC3064		R100	1-249-428-11	CARBON 8.2K 5%	1/4W
Q706	8-729-117-54	TRANSISTOR 2SA1175		R101	1-249-441-11	CARBON 100K 5%	1/4W
Q707	8-729-178-54	TRANSISTOR 2SC2785		R102	1-249-405-11	CARBON 100 5%	1/4W
Q710	8-729-178-54	TRANSISTOR 2SC2785		R103	1-249-435-11	CARBON 33K 5%	1/4W
Q711	8-729-178-54	TRANSISTOR 2SC2785		R104	1-249-421-11	CARBON 2.2K 5%	1/4W
Q712	8-729-178-54	TRANSISTOR 2SC2785		R105	1-249-405-11	CARBON 100 5%	1/4W
Q720	8-729-178-54	TRANSISTOR 2SC2785		R106	1-249-417-11	CARBON 1K 5%	1/4W
Q721	8-729-900-89	TRANSISTOR DTC144ES		R107	1-249-428-11	CARBON 8.2K 5%	1/4W
Q722	8-729-900-89	TRANSISTOR DTC144ES		R108	1-249-439-11	CARBON 68K 5%	1/4W
Q723	8-729-178-54	TRANSISTOR 2SC2785		R109	1-249-405-11	CARBON 100 5%	1/4W
Q724	8-729-117-54	TRANSISTOR 2SA1175		R111	1-249-417-11	CARBON 1K 5%	1/4W
Q810	8-729-900-89	TRANSISTOR DTC144ES		R112	1-249-428-11	CARBON 8.2K 5%	1/4W
				R113	1-249-405-11	CARBON 100 5%	1/4W
				R114	1-215-421-00	METAL 1K 1%	1/6W
				R115	1-249-405-11	CARBON 100 5%	1/4W
				R116	1-249-405-11	CARBON 100 5%	1/4W
				R118	1-249-417-11	CARBON 1K 5%	1/4W
				R119	1-249-428-11	CARBON 8.2K 5%	1/4W
				R120	1-249-405-11	CARBON 100 5%	1/4W
				R121	1-215-421-00	METAL 1K 1%	1/6W
				R122	1-249-405-11	CARBON 100 5%	1/4W
				R123	1-249-405-11	CARBON 100 5%	1/4W
				R125	1-249-417-11	CARBON 1K 5%	1/4W
				R126	1-249-428-11	CARBON 8.2K 5%	1/4W
				R127	1-249-405-11	CARBON 100 5%	1/4W
				R128	1-215-421-00	METAL 1K 1%	1/6W
				R129	1-249-405-11	CARBON 100 5%	1/4W
				R130	1-249-433-11	CARBON 22K 5%	1/4W
				R133	1-249-422-11	CARBON 2.7K 5%	1/4W
				R136	1-249-434-11	CARBON 27K 5%	1/4W
				R137	1-249-430-11	CARBON 12K 5%	1/4W
				R138	1-249-439-11	CARBON 68K 5%	1/4W
				R201	1-249-435-11	CARBON 33K 5%	1/4W
				R202	1-249-435-11	CARBON 33K 5%	1/4W
				R203	1-249-405-11	CARBON 100 5%	1/4W
				R204	1-215-454-00	CARBON 24K 5%	1/4W
				R205	1-249-429-11	CARBON 10K 5%	1/4W
				R206	1-249-417-11	CARBON 1K 5%	1/4W
				R207	1-215-461-00	METAL 47K 1%	1/6W
				R208	1-215-445-00	METAL 10K 1%	1/6W
				R209	1-249-417-11	CARBON 1K 5%	1/4W
				R210	1-215-397-00	METAL 100 1%	1/6W
				R212	1-215-397-00	METAL 100 1%	1/6W
				R213	1-249-439-11	CARBON 68K 5%	1/4W
				R214	1-215-413-00	METAL 470 1%	1/6W
				R215	1-215-413-00	METAL 470 1%	1/6W
				R216	1-215-413-00	METAL 470 1%	1/6W
				R217	1-249-417-11	CARBON 1K 5%	1/4W

RESISTOR

R61	1-249-429-11	CARBON	10K	5%	1/4W
R62	1-249-441-11	CARBON	100K	5%	1/4W
R63	1-249-417-11	CARBON	1K	5%	1/4W
R64	1-249-429-11	CARBON	10K	5%	1/4W
R65	1-249-428-11	CARBON	8.2K	5%	1/4W
R66	1-249-432-11	CARBON	18K	5%	1/4W
R67	1-249-429-11	CARBON	10K	5%	1/4W
R68	1-249-439-11	CARBON	68K	5%	1/4W
R69	1-249-431-11	CARBON	15K	5%	1/4W
R70	1-249-437-11	CARBON	47K	5%	1/4W
R71	1-249-421-11	CARBON	2.2K	5%	1/4W
R72	1-249-429-11	CARBON	10K	5%	1/4W
R73	1-249-405-11	CARBON	100	5%	1/4W
R74	1-249-405-11	CARBON	100	5%	1/4W
R75	1-249-405-11	CARBON	100	5%	1/4W
R76	1-249-405-11	CARBON	100	5%	1/4W
R77	1-249-405-11	CARBON	100	5%	1/4W
R78	1-215-462-00	CARBON	51K	5%	1/4W
R79	1-249-427-11	CARBON	6.8K	5%	1/4W
R80	1-215-462-00	CARBON	51K	5%	1/4W
R81	1-249-427-11	CARBON	6.8K	5%	1/4W
R82	1-249-417-11	CARBON	1K	5%	1/4W
R83	1-249-430-11	CARBON	12K	5%	1/4W
R84	1-249-431-11	CARBON	15K	5%	1/4W
R85	1-249-441-11	CARBON	100K	5%	1/4W
R86	1-249-435-11	CARBON	33K	5%	1/4W
R87	1-249-405-11	CARBON	100	5%	1/4W
R88	1-249-421-11	CARBON	2.2K	5%	1/4W
R89	1-249-405-11	CARBON	100	5%	1/4W
R90	1-249-439-11	CARBON	68K	5%	1/4W
R91	1-249-417-11	CARBON	1K	5%	1/4W
R92	1-249-428-11	CARBON	8.2K	5%	1/4W
R93	1-249-441-11	CARBON	100K	5%	1/4W
R94	1-249-405-11	CARBON	100	5%	1/4W

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

BB

Ref.No.	Part No.	Description	Quantity	Material	Remark	Ref.No.	Part No.	Description	Quantity	Material	Remark
R218	1-249-421-11	CARBON	2.2K	5%	1/4W	R271	1-249-429-11	CARBON	10K	5%	1/4W
R219	1-249-405-11	CARBON	100	5%	1/4W	R272	1-249-438-11	CARBON	56K	5%	1/4W
R220	1-249-421-11	CARBON	2.2K	5%	1/4W	R273	1-249-434-11	CARBON	27K	5%	1/4W
R221	1-249-405-11	CARBON	100	5%	1/4W	R274	1-249-405-11	CARBON	100	5%	1/4W
R222	1-249-421-11	CARBON	2.2K	5%	1/4W	R275	1-249-421-11	CARBON	2.2K	5%	1/4W
R223	1-249-405-11	CARBON	100	5%	1/4W	R276	1-249-405-11	CARBON	100	5%	1/4W
R224	1-249-436-11	CARBON	39K	5%	1/4W	R277	1-249-414-11	CARBON	560	5%	1/4W
R225	1-215-469-00	METAL	100K	1%	1/6W	R278	1-249-427-11	CARBON	6.8K	5%	1/4W
R226	1-215-483-00	METAL	390K	1%	1/6W	R279	1-249-405-11	CARBON	100	5%	1/4W
R227	1-215-421-00	METAL	1K	1%	1/6W	R280	1-249-405-11	CARBON	100	5%	1/4W
R228	1-215-421-00	METAL	1K	1%	1/6W	R281	1-249-405-11	CARBON	100	5%	1/4W
R229	1-249-429-11	CARBON	10K	5%	1/4W	R282	1-249-417-11	CARBON	1K	5%	1/4W
R230	1-249-417-11	CARBON	1K	5%	1/4W	R283	1-249-405-11	CARBON	100	5%	1/4W
R231	1-215-471-00	METAL	120K	1%	1/6W	R284	1-249-401-11	CARBON	47	5%	1/4W
R232	1-215-455-00	METAL	27K	1%	1/6W	R285	1-249-417-11	CARBON	1K	5%	1/4W
R233	1-215-455-00	METAL	27K	1%	1/6W	R286	1-249-429-11	CARBON	10K	5%	1/4W
R234	1-215-451-00	METAL	18K	1%	1/6W	R287	1-249-429-11	CARBON	10K	5%	1/4W
R235	1-215-451-00	METAL	18K	1%	1/6W	R288	1-249-438-11	CARBON	56K	5%	1/4W
R236	1-215-459-00	METAL	39K	1%	1/6W	R289	1-249-434-11	CARBON	27K	5%	1/4W
R237	1-249-436-11	CARBON	39K	5%	1/4W	R290	1-249-405-11	CARBON	100	5%	1/4W
R238	1-215-451-00	METAL	18K	1%	1/6W	R291	1-249-421-11	CARBON	2.2K	5%	1/4W
R239	1-215-439-00	METAL	5.6K	1%	1/6W	R292	1-249-405-11	CARBON	100	5%	1/4W
R240	1-215-455-00	METAL	27K	1%	1/6W	R293	1-249-414-11	CARBON	560	5%	1/4W
R241	1-249-417-11	CARBON	1K	5%	1/4W	R294	1-249-427-11	CARBON	6.8K	5%	1/4W
R242	1-249-417-11	CARBON	1K	5%	1/4W	R295	1-249-405-11	CARBON	100	5%	1/4W
R243	1-215-442-00	METAL	7.5K	1%	1/6W	R296	1-249-405-11	CARBON	100	5%	1/4W
R244	1-249-428-11	CARBON	8.2K	5%	1/4W	R297	1-249-405-11	CARBON	100	5%	1/4W
R245	1-249-417-11	CARBON	1K	5%	1/4W	R298	1-215-453-00	METAL	22K	1%	1/6W
R246	1-249-401-11	CARBON	47	5%	1/4W	R299	1-215-453-00	METAL	22K	1%	1/6W
R247	1-249-417-11	CARBON	1K	5%	1/4W	R300	1-249-417-11	CARBON	1K	5%	1/4W
R248	1-249-433-11	CARBON	22K	5%	1/4W	R301	1-215-485-00	METAL	470K	1%	1/6W
R249	1-215-465-91	METAL	68K	1%	1/6W	R302	1-215-469-00	METAL	100K	1%	1/6W
R250	1-249-417-11	CARBON	1K	5%	1/4W	R303	1-215-493-00	CARBON	1M	5%	1/4W
R251	1-249-405-11	CARBON	100	5%	1/4W	R304	1-215-421-00	METAL	1K	1%	1/6W
R252	1-249-401-11	CARBON	47	5%	1/4W	R305	1-215-461-00	METAL	47K	1%	1/6W
R253	1-249-417-11	CARBON	1K	5%	1/4W	R306	1-249-417-11	CARBON	1K	5%	1/4W
R254	1-249-429-11	CARBON	10K	5%	1/4W	R307	1-249-429-11	CARBON	10K	5%	1/4W
R255	1-249-429-11	CARBON	10K	5%	1/4W	R308	1-215-439-00	METAL	5.6K	1%	1/6W
R256	1-249-438-11	CARBON	56K	5%	1/4W	R309	1-249-436-11	CARBON	39K	5%	1/4W
R257	1-249-434-11	CARBON	27K	5%	1/4W	R310	1-249-422-11	CARBON	2.7K	5%	1/4W
R258	1-249-405-11	CARBON	100	5%	1/4W	R311	1-215-439-00	METAL	5.6K	1%	1/6W
R259	1-249-421-11	CARBON	2.2K	5%	1/4W	R312	1-249-417-11	CARBON	1K	5%	1/4W
R260	1-249-405-11	CARBON	100	5%	1/4W	R313	1-247-881-00	CARBON	120K	5%	1/4W
R261	1-249-414-11	CARBON	560	5%	1/4W	R316	1-249-429-11	CARBON	10K	5%	1/4W
R262	1-249-427-11	CARBON	6.8K	5%	1/4W	R317	1-247-849-00	CARBON	5.6K	5%	1/4W
R263	1-249-405-11	CARBON	100	5%	1/4W	R318	1-249-417-11	CARBON	1K	5%	1/4W
R264	1-249-405-11	CARBON	100	5%	1/4W	R319	1-249-417-11	CARBON	1K	5%	1/4W
R265	1-249-405-11	CARBON	100	5%	1/4W	R320	1-249-405-11	CARBON	100	5%	1/4W
R266	1-249-417-11	CARBON	1K	5%	1/4W	R321	1-249-429-11	CARBON	10K	5%	1/4W
R267	1-249-405-11	CARBON	100	5%	1/4W	R322	1-249-405-11	CARBON	100	5%	1/4W
R268	1-249-401-11	CARBON	47	5%	1/4W	R323	1-249-416-11	CARBON	820	5%	1/4W
R269	1-249-417-11	CARBON	1K	5%	1/4W	R324	1-249-434-11	CARBON	27K	5%	1/4W
R270	1-249-429-11	CARBON	10K	5%	1/4W	R325	1-247-849-00	CARBON	5.6K	5%	1/4W

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BB

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R326	1-249-441-11	CARBON	100K 5% 1/4W	R442	1-249-430-11	CARBON	12K 5% 1/4W
R327	1-249-441-11	CARBON	100K 5% 1/4W	R443	1-249-405-11	CARBON	100 5% 1/4W
R328	1-249-441-11	CARBON	100K 5% 1/4W	R444	1-249-425-11	CARBON	4.7K 5% 1/4W
R329	1-249-433-11	CARBON	22K 5% 1/4W	R445	1-249-417-11	CARBON	1K 5% 1/4W
R330	1-249-430-11	CARBON	12K 5% 1/4W	R446	1-249-423-11	CARBON	3.3K 5% 1/4W
R331	1-249-413-11	CARBON	470 5% 1/4W	R447	1-249-417-11	CARBON	1K 5% 1/4W
R332	1-249-413-11	CARBON	470 5% 1/4W	R448	1-215-445-00	METAL	10K 1% 1/6W
R333	1-249-413-11	CARBON	470 5% 1/4W	R449	1-215-415-00	METAL	560 1% 1/6W
R334	1-249-413-11	CARBON	470 5% 1/4W	R450	1-249-405-11	CARBON	100 5% 1/4W
R335	1-249-405-11	CARBON	100 5% 1/4W	R451	1-215-415-00	METAL	560 1% 1/6W
R336	1-215-439-00	METAL	5.6K 1% 1/6W	R452	1-215-421-00	METAL	1K 1% 1/6W
R337	1-215-445-00	METAL	10K 1% 1/6W	R453	1-249-405-11	CARBON	100 5% 1/4W
R401	1-249-405-11	CARBON	100 5% 1/4W	R454	1-215-437-00	METAL	4.7K 1% 1/6W
R402	1-249-429-11	CARBON	10K 5% 1/4W	R455	1-215-431-00	METAL	2.7K 1% 1/6W
R403	1-215-425-00	METAL	1.5K 1% 1/6W	R456	1-215-421-00	METAL	1K 1% 1/6W
R404	1-249-417-11	CARBON	1K 5% 1/4W	R457	1-215-429-00	METAL	2.2K 1% 1/6W
R405	1-249-405-11	CARBON	100 5% 1/4W	R470	1-249-413-11	CARBON	470 5% 1/4W
R406	1-249-420-11	CARBON	1.8K 5% 1/4W	R471	1-249-401-11	CARBON	47 5% 1/4W
R407	1-215-425-00	METAL	1.5K 1% 1/6W	R472	1-215-475-00	METAL	180K 1% 1/6W
R408	1-215-469-00	METAL	100K 1% 1/6W	R501	1-249-405-11	CARBON	100 5% 1/4W
R409	1-215-453-00	METAL	22K 1% 1/6W	R502	1-249-429-11	CARBON	10K 5% 1/4W
R410	1-215-429-00	METAL	2.2K 1% 1/6W	R503	1-215-425-00	METAL	1.5K 1% 1/6W
R411	1-215-469-00	METAL	100K 1% 1/6W	R504	1-249-417-11	CARBON	1K 5% 1/4W
R412	1-215-425-00	METAL	1.5K 1% 1/6W	R505	1-249-405-11	CARBON	100 5% 1/4W
R413	1-249-405-11	CARBON	100 5% 1/4W	R506	1-249-420-11	CARBON	1.8K 5% 1/4W
R414	1-249-419-11	CARBON	1.5K 5% 1/4W	R507	1-215-425-00	METAL	1.5K 1% 1/6W
R415	1-249-417-11	CARBON	1K 5% 1/4W	R508	1-215-469-00	METAL	100K 1% 1/6W
R416	1-215-397-00	METAL	100 1% 1/6W	R509	1-215-453-00	METAL	22K 1% 1/6W
R417	1-215-399-00	METAL	120 1% 1/6W	R510	1-215-429-00	METAL	2.2K 1% 1/6W
R418	1-215-427-00	METAL	1.8K 1% 1/6W	R511	1-215-469-00	METAL	100K 1% 1/6W
R419	1-249-417-11	CARBON	1K 5% 1/4W	R512	1-215-425-00	METAL	1.5K 1% 1/6W
R420	1-249-417-11	CARBON	1K 5% 1/4W	R513	1-249-405-11	CARBON	100 5% 1/4W
R421	1-249-411-11	CARBON	330 5% 1/4W	R514	1-249-419-11	CARBON	1.5K 5% 1/4W
R422	1-249-433-11	CARBON	22K 5% 1/4W	R515	1-249-417-11	CARBON	1K 5% 1/4W
R423	1-249-405-11	CARBON	100 5% 1/4W	R516	1-215-397-00	METAL	100 1% 1/6W
R424	1-249-402-11	CARBON	56 5% 1/4W	R517	1-215-399-00	METAL	120 1% 1/6W
R425	1-249-425-11	CARBON	4.7K 5% 1/4W	R518	1-215-427-00	METAL	1.8K 1% 1/6W
R426	1-249-405-11	CARBON	100 5% 1/4W	R519	1-249-417-11	CARBON	1K 5% 1/4W
R427	1-249-405-11	CARBON	100 5% 1/4W	R520	1-249-417-11	CARBON	1K 5% 1/4W
R428	1-249-405-11	CARBON	100 5% 1/4W	R521	1-249-411-11	CARBON	330 5% 1/4W
R429	1-249-405-11	CARBON	100 5% 1/4W	R522	1-249-433-11	CARBON	22K 5% 1/4W
R430	1-249-405-11	CARBON	100 5% 1/4W	R523	1-249-405-11	CARBON	100 5% 1/4W
R431	1-249-405-11	CARBON	100 5% 1/4W	R524	1-249-402-11	CARBON	56 5% 1/4W
R432	1-249-405-11	CARBON	100 5% 1/4W	R525	1-249-425-11	CARBON	4.7K 5% 1/4W
R433	1-247-849-00	CARBON	5.6K 5% 1/4W	R526	1-249-405-11	CARBON	100 5% 1/4W
R434	1-249-425-11	CARBON	4.7K 5% 1/4W	R527	1-249-405-11	CARBON	100 5% 1/4W
R435	1-249-417-11	CARBON	1K 5% 1/4W	R528	1-249-405-11	CARBON	100 5% 1/4W
R436	1-215-437-00	METAL	4.7K 1% 1/6W	R529	1-249-405-11	CARBON	100 5% 1/4W
R437	1-215-467-00	METAL	82K 1% 1/6W	R530	1-249-405-11	CARBON	100 5% 1/4W
R438	1-215-453-00	METAL	22K 1% 1/6W	R531	1-249-405-11	CARBON	100 5% 1/4W
R439	1-249-427-11	CARBON	6.8K 5% 1/4W	R532	1-249-405-11	CARBON	100 5% 1/4W
R440	1-215-440-00	CARBON	6.2K 5% 1/4W	R533	1-247-849-00	CARBON	5.6K 5% 1/4W
R441	1-249-430-11	CARBON	12K 5% 1/4W	R534	1-249-425-11	CARBON	4.7K 5% 1/4W

BB

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R535	1-249-417-11	CARBON	1K 5% 1/4W	R628	1-249-405-11	CARBON	100 5% 1/4W
R536	1-215-437-00	METAL	4.7K 1% 1/6W	R629	1-249-405-11	CARBON	100 5% 1/4W
R537	1-215-467-00	METAL	82K 1% 1/6W	R630	1-249-405-11	CARBON	100 5% 1/4W
R538	1-215-453-00	METAL	22K 1% 1/6W	R631	1-249-405-11	CARBON	100 5% 1/4W
R539	1-249-427-11	CARBON	6.8K 5% 1/4W	R632	1-249-405-11	CARBON	100 5% 1/4W
R540	1-215-440-00	CARBON	6.2K 5% 1/4W	R633	1-247-849-00	CARBON	5.6K 5% 1/4W
R541	1-249-430-11	CARBON	12K 5% 1/4W	R634	1-249-425-11	CARBON	4.7K 5% 1/4W
R542	1-249-430-11	CARBON	12K 5% 1/4W	R635	1-249-417-11	CARBON	1K 5% 1/4W
R543	1-249-405-11	CARBON	100 5% 1/4W	R636	1-215-437-00	METAL	4.7K 1% 1/6W
R544	1-249-425-11	CARBON	4.7K 5% 1/4W	R637	1-215-467-00	METAL	82K 1% 1/6W
R545	1-249-417-11	CARBON	1K 5% 1/4W	R638	1-215-453-00	METAL	22K 1% 1/6W
R546	1-249-423-11	CARBON	3.3K 5% 1/4W	R639	1-249-427-11	CARBON	6.8K 5% 1/4W
R547	1-249-417-11	CARBON	1K 5% 1/4W	R640	1-215-440-00	CARBON	6.2K 5% 1/4W
R548	1-215-445-00	METAL	10K 1% 1/6W	R641	1-249-430-11	CARBON	12K 5% 1/4W
R549	1-215-415-00	METAL	560 1% 1/6W	R642	1-249-430-11	CARBON	12K 5% 1/4W
R550	1-249-405-11	CARBON	100 5% 1/4W	R643	1-249-405-11	CARBON	100 5% 1/4W
R551	1-215-415-00	METAL	560 1% 1/6W	R644	1-249-425-11	CARBON	4.7K 5% 1/4W
R552	1-215-421-00	METAL	1K 1% 1/6W	R645	1-249-417-11	CARBON	1K 5% 1/4W
R553	1-249-405-11	CARBON	100 5% 1/4W	R646	1-249-423-11	CARBON	3.3K 5% 1/4W
R554	1-215-437-00	METAL	4.7K 1% 1/6W	R647	1-249-417-11	CARBON	1K 5% 1/4W
R555	1-215-431-00	METAL	2.7K 1% 1/6W	R648	1-215-445-00	METAL	10K 1% 1/6W
R556	1-215-421-00	METAL	1K 1% 1/6W	R649	1-215-415-00	METAL	560 1% 1/6W
R557	1-215-429-00	METAL	2.2K 1% 1/6W	R650	1-249-405-11	CARBON	100 5% 1/4W
R570	1-249-413-11	CARBON	470 5% 1/4W	R651	1-215-415-00	METAL	560 1% 1/6W
R571	1-249-401-11	CARBON	47 5% 1/4W	R652	1-215-421-00	METAL	1K 1% 1/6W
R572	1-215-475-00	METAL	180K 1% 1/6W	R653	1-249-405-11	CARBON	100 5% 1/4W
R601	1-249-405-11	CARBON	100 5% 1/4W	R654	1-215-437-00	METAL	4.7K 1% 1/6W
R602	1-249-429-11	CARBON	10K 5% 1/4W	R655	1-215-431-00	METAL	2.7K 1% 1/6W
R603	1-215-425-00	METAL	1.5K 1% 1/6W	R656	1-215-421-00	METAL	1K 1% 1/6W
R604	1-249-417-11	CARBON	1K 5% 1/4W	R657	1-215-429-00	METAL	2.2K 1% 1/6W
R605	1-249-405-11	CARBON	100 5% 1/4W	R658	1-215-451-00	METAL	18K 1% 1/6W
R606	1-249-420-11	CARBON	1.8K 5% 1/4W	R659	1-215-434-00	METAL	3.6K 1% 1/6W
R607	1-215-425-00	METAL	1.5K 1% 1/6W	R660	1-215-449-00	METAL	15K 1% 1/6W
R608	1-215-469-00	METAL	100K 1% 1/6W	R661	1-249-417-11	CARBON	1K 5% 1/4W
R609	1-215-453-00	METAL	22K 1% 1/6W	R662	1-249-417-11	CARBON	1K 5% 1/4W
R610	1-215-429-00	METAL	2.2K 1% 1/6W	R663	1-249-425-11	CARBON	4.7K 5% 1/4W
R611	1-215-469-00	METAL	100K 1% 1/6W	R664	1-215-449-00	METAL	15K 1% 1/6W
R612	1-215-425-00	METAL	1.5K 1% 1/6W	R665	1-215-431-00	METAL	2.7K 1% 1/6W
R613	1-249-405-11	CARBON	100 5% 1/4W	R666	1-215-449-00	METAL	15K 1% 1/6W
R614	1-249-419-11	CARBON	1.5K 5% 1/4W	R667	1-249-417-11	CARBON	1K 5% 1/4W
R615	1-249-417-11	CARBON	1K 5% 1/4W	R668	1-215-421-00	METAL	1K 1% 1/6W
R616	1-215-397-00	METAL	100 1% 1/6W	R669	1-215-429-00	METAL	2.2K 1% 1/6W
R617	1-215-399-00	METAL	120 1% 1/6W	R670	1-249-413-11	CARBON	470 5% 1/4W
R618	1-215-427-00	METAL	1.8K 1% 1/6W	R671	1-249-401-11	CARBON	47 5% 1/4W
R619	1-249-417-11	CARBON	1K 5% 1/4W	R672	1-215-475-00	METAL	180K 1% 1/6W
R620	1-249-417-11	CARBON	1K 5% 1/4W	R673	1-249-422-11	CARBON	2.7K 5% 1/4W
R621	1-249-411-11	CARBON	330 5% 1/4W	R711	1-249-405-11	CARBON	100 5% 1/4W
R622	1-249-433-11	CARBON	22K 5% 1/4W	R712	1-249-425-11	CARBON	4.7K 5% 1/4W
R623	1-249-405-11	CARBON	100 5% 1/4W	R713	1-249-433-11	CARBON	22K 5% 1/4W
R624	1-249-402-11	CARBON	56 5% 1/4W	R714	1-215-493-00	CARBON	1M 5% 1/4W
R625	1-249-425-11	CARBON	4.7K 5% 1/4W	R715	1-249-433-11	CARBON	22K 5% 1/4W
R626	1-249-405-11	CARBON	100 5% 1/4W	R716	1-249-437-11	CARBON	47K 5% 1/4W
R627	1-249-405-11	CARBON	100 5% 1/4W	R717	1-249-429-11	CARBON	10K 5% 1/4W

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

BB **BG**

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R718	1-249-429-11	CARBON	10K 5% 1/4W		*1-617-539-11	BG BOARD *****	
R719	1-249-421-11	CARBON	2.2K 5% 1/4W				
R720	1-249-430-11	CARBON	12K 5% 1/4W				
R721	1-249-417-11	CARBON	1K 5% 1/4W				
R722	1-249-419-11	CARBON	1.5K 5% 1/4W				
						<u>CONNECTOR</u>	
R731	1-249-417-11	CARBON	1K 5% 1/4W	BG1	*1-506-604-11	PLUG, L TYPE (2.0MM PITCH) 15P	
R732	1-215-439-00	METAL	5.6K 1% 1/6W				
R735	1-249-423-11	CARBON	3.3K 5% 1/4W				
R736	1-215-469-00	METAL	100K 1% 1/6W				
R737	1-249-405-11	CARBON	100 5% 1/4W				
						<u>CAPACITOR</u>	
R738	1-249-416-11	CARBON	820 5% 1/4W	C1	1-136-165-00	FILM 0.1MF 5% 50V	
R739	1-249-429-11	CARBON	10K 5% 1/4W	C2	1-124-462-00	ELECT 10MF 20% 16V	
R740	1-249-437-11	CARBON	47K 5% 1/4W	C3	1-161-021-11	CERAMIC 0.047MF 10% 25V	
R741	1-215-413-00	METAL	470 1% 1/6W	C4	1-102-074-00	CERAMIC 0.001MF 10% 50V	
R742	1-215-458-00	METAL	36K 1% 1/6W	C905	1-124-236-00	ELECT 47MF 20% 16V	
				C906	1-161-021-11	CERAMIC 0.047MF 10% 25V	
						<u>IC</u>	
R743	1-249-429-11	CARBON	10K 5% 1/4W	IC1	8-759-140-66	IC UPD4066BC	
R744	1-249-429-11	CARBON	10K 5% 1/4W	IC2	8-759-145-58	IC UPC4558C	
R745	1-249-437-11	CARBON	47K 5% 1/4W				
R746	1-249-433-11	CARBON	22K 5% 1/4W				
R771	1-249-429-11	CARBON	10K 5% 1/4W				
						<u>TRANSISTOR</u>	
R772	1-249-429-11	CARBON	10K 5% 1/4W	Q1	8-729-603-50	TRANSISTOR 2SC403SP	
R773	1-249-429-11	CARBON	10K 5% 1/4W	Q2	8-729-603-50	TRANSISTOR 2SC403SP	
R774	1-249-429-11	CARBON	10K 5% 1/4W	Q3	8-729-603-50	TRANSISTOR 2SC403SP	
R775	1-249-438-11	CARBON	56K 5% 1/4W	Q4	8-729-178-54	TRANSISTOR 2SC2785	
R776	1-249-436-11	CARBON	39K 5% 1/4W	Q5	8-729-178-54	TRANSISTOR 2SC2785	
						<u>RESISTOR</u>	
R777	1-249-436-11	CARBON	39K 5% 1/4W	R1	1-249-405-11	CARBON 100 5% 1/4W	
R778	1-249-429-11	CARBON	10K 5% 1/4W	R2	1-249-423-11	CARBON 3.3K 5% 1/4W	
R779	1-249-436-11	CARBON	39K 5% 1/4W	R3	1-249-417-11	CARBON 1K 5% 1/4W	
R784	1-249-417-11	CARBON	1K 5% 1/4W	R4	1-249-405-11	CARBON 100 5% 1/4W	
R785	1-249-405-11	CARBON	100 5% 1/4W	R5	1-215-442-00	CARBON 7.5K 5% 1/4W	
R786	1-249-429-11	CARBON	10K 5% 1/4W	R6	1-249-423-11	CARBON 3.3K 5% 1/4W	
R787	1-249-409-11	CARBON	220 5% 1/4W	R7	1-249-427-11	CARBON 6.8K 5% 1/4W	
R788	1-249-417-11	CARBON	1K 5% 1/4W	R8	1-249-429-11	CARBON 10K 5% 1/4W	
R789	1-249-417-11	CARBON	1K 5% 1/4W	R9	1-249-434-11	CARBON 27K 5% 1/4W	
R790	1-249-417-11	CARBON	1K 5% 1/4W	R10	1-249-414-11	CARBON 560 5% 1/4W	
R791	1-249-409-11	CARBON	220 5% 1/4W	R11	1-249-405-11	CARBON 100 5% 1/4W	
R794	1-249-409-11	CARBON	220 5% 1/4W	R12	1-249-424-11	CARBON 3.9K 5% 1/4W	
R795	1-249-429-11	CARBON	10K 5% 1/4W	R13	1-249-405-11	CARBON 100 5% 1/4W	
R796	1-249-429-11	CARBON	10K 5% 1/4W	R14	1-249-405-11	CARBON 100 5% 1/4W	
R797	1-249-429-11	CARBON	10K 5% 1/4W	R15	1-249-417-11	CARBON 1K 5% 1/4W	
R798	1-249-405-11	CARBON	100 5% 1/4W	R16	1-249-425-11	CARBON 4.7K 5% 1/4W	
R799	1-249-405-11	CARBON	100 5% 1/4W	R17	1-249-405-11	CARBON 100 5% 1/4W	
R823	1-249-417-11	CARBON	1K 5% 1/4W	R18	1-249-425-11	CARBON 4.7K 5% 1/4W	
R824	1-249-425-11	CARBON	4.7K 5% 1/4W	R19	1-249-417-11	CARBON 1K 5% 1/4W	
R901	1-247-883-00	CARBON	150K 5% 1/4W	R20	1-249-421-11	CARBON 2.2K 5% 1/4W	
R931	1-247-883-00	CARBON	150K 5% 1/4W				
R961	1-247-883-00	CARBON	150K 5% 1/4W				
						<u>VARIABLE RESISTOR</u>	
RV601	1-228-995-00	RES, ADJ, CARBON 22K					

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Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
	*1-617-540-11	BH BOARD *****		R725	1-249-417-11	CARBON	1K 5% 1/4W
				R726	1-215-439-00	METAL	5.6K 1% 1/6W
				R727	1-249-416-11	CARBON	820 5% 1/4W
				R728	1-249-430-11	CARBON	12K 5% 1/4W
				R729	1-249-430-11	CARBON	12K 5% 1/4W
		<u>CONNECTOR</u>		R730	1-215-481-00	METAL	330K 1% 1/6W
BH1	*1-506-603-11	PLUG, L TYPE (2.0MM PITCH) 10P		R747	1-249-417-11	CARBON	1K 5% 1/4W
BH2	*1-506-603-11	PLUG, L TYPE (2.0MM PITCH) 10P		R748	1-249-422-11	CARBON	2.7K 5% 1/4W
				R749	1-249-429-11	CARBON	10K 5% 1/4W
				R750	1-249-405-11	CARBON	100 5% 1/4W
		<u>CAPACITOR</u>		R751	1-249-421-11	CARBON	2.2K 5% 1/4W
C701	1-102-973-00	CERAMIC 100PF 5% 50V		R752	1-249-429-11	CARBON	10K 5% 1/4W
C702	1-102-973-00	CERAMIC 100PF 5% 50V		R753	1-249-439-11	CARBON	68K 5% 1/4W
C703	1-102-973-00	CERAMIC 100PF 5% 50V		R754	1-249-441-11	CARBON	100K 5% 1/4W
C707	1-102-973-00	CERAMIC 100PF 5% 50V		R755	1-249-405-11	CARBON	100 5% 1/4W
C708	1-102-973-00	CERAMIC 100PF 5% 50V		R756	1-249-424-11	CARBON	3.9K 5% 1/4W
C714	1-124-236-00	ELECT 47MF 20% 16V		R757	1-249-405-11	CARBON	100 5% 1/4W
C715	1-101-004-00	CERAMIC 0.01MF 50V		R758	1-249-425-11	CARBON	4.7K 5% 1/4W
C716	1-101-004-00	CERAMIC 0.01MF 50V		R759	1-249-425-11	CARBON	4.7K 5% 1/4W
C904	1-124-236-00	ELECT 47MF 20% 16V		R760	1-249-401-11	CARBON	47 5% 1/4W
		<u>DIODE</u>		R761	1-249-421-11	CARBON	2.2K 5% 1/4W
D707	8-719-911-19	DIODE 1SS119		R762	1-249-434-11	CARBON	27K 5% 1/4W
				R763	1-249-432-11	CARBON	18K 5% 1/4W
		<u>IC</u>		R764	1-249-425-11	CARBON	4.7K 5% 1/4W
IC701	8-759-045-38	IC MC14538BCP		R765	1-249-423-11	CARBON	3.3K 5% 1/4W
IC703	8-759-345-38	IC HD14538BP		R766	1-249-423-11	CARBON	3.3K 5% 1/4W
IC705	8-759-340-53	IC HD14053BP		R767	1-249-434-11	CARBON	27K 5% 1/4W
				R768	1-249-431-11	CARBON	15K 5% 1/4W
		<u>TRANSISTOR</u>		R769	1-249-429-11	CARBON	10K 5% 1/4W
Q701	8-729-117-53	TRANSISTOR 2SA1175-H		R770	1-249-441-11	CARBON	100K 5% 1/4W
Q702	8-729-178-54	TRANSISTOR 2SC2785		R792	1-215-418-00	CARBON	750 5% 1/4W
Q703	8-729-178-54	TRANSISTOR 2SC2785		R793	1-249-413-11	CARBON	470 5% 1/4W
Q704	8-729-117-54	TRANSISTOR 2SA1175		*****			
Q705	8-729-178-54	TRANSISTOR 2SC2785		*1-617-541-11	BI BOARD	*****	
Q709	8-729-178-54	TRANSISTOR 2SC2785				<u>CONNECTOR</u>	
Q713	8-729-178-54	TRANSISTOR 2SC2785		B11	*1-506-603-11	PLUG, L TYPE (2.0MM PITCH) 10P	
Q714	8-729-178-54	TRANSISTOR 2SC2785		B12	*1-506-603-11	PLUG, L TYPE (2.0MM PITCH) 10P	
Q715	8-729-178-54	TRANSISTOR 2SC2785				<u>CAPACITOR</u>	
Q716	8-729-117-54	TRANSISTOR 2SA1175		C801	1-102-973-00	CERAMIC 100PF 5% 50V	
Q717	8-729-603-50	TRANSISTOR 2SC403SP		C802	1-101-361-00	CERAMIC 150PF 5% 50V	
Q718	8-729-117-54	TRANSISTOR 2SA1175		C803	1-102-973-00	CERAMIC 100PF 5% 50V	
Q719	8-729-178-54	TRANSISTOR 2SC2785		C804	1-101-361-00	CERAMIC 150PF 5% 50V	
				C805	1-102-074-00	CERAMIC 0.001MF 10% 50V	
		<u>RESISTOR</u>		C807	1-124-236-00	ELECT 47MF 20% 16V	
R701	1-249-405-11	CARBON 100 5% 1/4W		C808	1-124-236-00	ELECT 47MF 20% 16V	
R702	1-249-419-11	CARBON 1.5K 5% 1/4W		C809	1-102-963-00	CERAMIC 33PF 5% 50V	
R703	1-249-430-11	CARBON 12K 5% 1/4W		C810	1-102-963-00	CERAMIC 33PF 5% 50V	
R704	1-215-435-00	METAL 3.9K 1% 1/6W		C811	1-136-165-00	FILM 0.1MF 5% 50V	
R705	1-215-455-00	METAL 27K 1% 1/6W					
R706	1-249-419-11	CARBON 1.5K 5% 1/4W					
R707	1-249-430-11	CARBON 12K 5% 1/4W					
R708	1-215-433-00	METAL 3.3K 1% 1/6W					
R709	1-215-447-00	METAL 12K 1% 1/6W					
R710	1-249-419-11	CARBON 1.5K 5% 1/4W					

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



Ref.No.	Part No.	Description	Value	Remark	Ref.No.	Part No.	Description	Value	Remark
C812	1-101-004-00	CERAMIC	0.01MF	50V	R812	1-249-425-11	CARBON	4.7K	5% 1/4W
C813	1-101-004-00	CERAMIC	0.01MF	50V	R813	1-249-430-11	CARBON	12K	5% 1/4W
C815	1-102-965-00	CERAMIC	39PF	5% 50V	R814	1-249-430-11	CARBON	12K	5% 1/4W
C816	1-102-965-00	CERAMIC	39PF	5% 50V	R815	1-249-421-11	CARBON	2.2K	5% 1/4W
C817	1-101-004-00	CERAMIC	0.01MF	50V	R816	1-249-431-11	CARBON	15K	5% 1/4W
C818	1-101-004-00	CERAMIC	0.01MF	50V	R817	1-249-433-11	CARBON	22K	5% 1/4W
C819	1-161-021-11	CERAMIC	0.047MF	10% 25V	R818	1-249-427-11	CARBON	6.8K	5% 1/4W
C820	1-124-462-00	ELECT	10MF	20% 16V	R819	1-249-428-11	CARBON	8.2K	5% 1/4W
C821	1-123-611-00	ELECT	1MF	20% 50V	R820	1-249-425-11	CARBON	4.7K	5% 1/4W
C823	1-101-880-00	CERAMIC	47PF	5% 50V	R821	1-249-412-11	CARBON	390	5% 1/4W
C905	1-161-021-11	CERAMIC	0.047MF	10% 25V	R822	1-249-412-11	CARBON	390	5% 1/4W
		<u>DIODE</u>			R827	1-249-417-11	CARBON	1K	5% 1/4W
D801	8-719-911-19	DIODE 1SS119			R828	1-249-430-11	CARBON	12K	5% 1/4W
D802	8-719-911-19	DIODE 1SS119			R829	1-215-467-00	METAL	82K	1% 1/6W
D803	8-719-911-19	DIODE 1SS119			R832	1-215-479-00	METAL	270K	1% 1/6W
		<u>IC</u>			R833	1-249-433-11	CARBON	22K	5% 1/4W
IC801	8-759-345-38	IC HD14538BP			R835	1-247-902-00	CARBON	910K	5% 1/4W
IC802	8-759-345-38	IC HD14538BP			R836	1-249-417-11	CARBON	1K	5% 1/4W
IC803	8-757-948-00	IC CX7948			R837	1-249-429-11	CARBON	10K	5% 1/4W
IC804	8-759-108-05	IC UPC78L05A			R838	1-249-417-11	CARBON	1K	5% 1/4W
		<u>COIL</u>			R839	1-249-429-11	CARBON	10K	5% 1/4W
L801	1-408-414-00	MICRO INDUCTOR 27UH			R840	1-249-427-11	CARBON	6.8K	5% 1/4W
		<u>TRANSISTOR</u>			R841	1-249-416-11	CARBON	820	5% 1/4W
Q801	8-729-178-54	TRANSISTOR 2SC2785			R843	1-249-417-11	CARBON	1K	5% 1/4W
Q802	8-729-178-54	TRANSISTOR 2SC2785			R844	1-249-428-11	CARBON	8.2K	5% 1/4W
Q803	8-729-900-89	TRANSISTOR DTC144ES			R845	1-249-417-11	CARBON	1K	5% 1/4W
Q804	8-729-178-54	TRANSISTOR 2SC2785			R846	1-249-428-11	CARBON	8.2K	5% 1/4W
Q805	8-729-900-89	TRANSISTOR DTC144ES			R847	1-249-418-11	CARBON	1.2K	5% 1/4W
Q806	8-729-178-54	TRANSISTOR 2SC2785			R848	1-249-425-11	CARBON	4.7K	5% 1/4W
Q807	8-729-178-54	TRANSISTOR 2SC2785			R849	1-249-433-11	CARBON	22K	5% 1/4W
Q808	8-729-178-54	TRANSISTOR 2SC2785					<u>CRYSTAL</u>		
Q809	8-729-117-54	TRANSISTOR 2SA1175			X801	1-567-505-11	OSCILLATOR, CRYSTAL		
Q811	8-729-178-54	TRANSISTOR 2SC2785					*****		
Q812	8-729-900-89	TRANSISTOR DTC144ES					*A-1165-028-A	DA BOARD, COMPLETE	
Q813	8-729-117-54	TRANSISTOR 2SA1175						*****	
Q814	8-729-900-89	TRANSISTOR DTC144ES					*4-363-146-00	HEAT SINK, V.OUT	
		<u>RESISTOR</u>					<u>CAPACITOR</u>		
R801	1-249-417-11	CARBON	1K	5% 1/4W	C1	1-123-381-00	ELECT	2.2MF	20% 50V
R802	1-249-425-11	CARBON	4.7K	5% 1/4W	C2	1-136-153-00	FILM	0.01MF	5% 50V
R803	1-249-425-11	CARBON	4.7K	5% 1/4W	C3	1-136-165-00	FILM	0.1MF	5% 50V
R804	1-215-471-00	METAL	120K	1% 1/6W	C4	1-136-157-00	FILM	0.022MF	5% 50V
R805	1-249-433-11	CARBON	22K	5% 1/4W	C5	1-130-481-00	MYLAR	0.0068MF	5% 50V
R806	1-249-429-11	CARBON	10K	5% 1/4W	C6	1-124-259-00	ELECT	4.7MF	20% 50V
R807	1-215-469-00	METAL	100K	1% 1/6W	C7	1-130-865-00	FILM	0.0033MF	5% 50V
R808	1-249-433-11	CARBON	22K	5% 1/4W	C8	1-123-356-00	ELECT	10MF	20% 16V
R809	1-249-437-11	CARBON	47K	5% 1/4W	C9	1-123-622-00	ELECT	22MF	20% 16V
R811	1-249-429-11	CARBON	10K	5% 1/4W	C10	1-123-322-00	ELECT	330MF	20% 16V
					C11	1-123-382-00	ELECT	3.3MF	20% 50V
					C12	1-101-004-00	CERAMIC	0.01MF	50V

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Ref.No.	Part No.	Description	Value	Tol	Vol	Ref.No.	Part No.	Description	Value	Tol	Vol
C13	1-123-381-00	ELECT	2.2MF	20%	50V	C413	1-136-157-00	FILM	0.022MF	5%	50V
C14	1-102-820-00	CERAMIC	330PF	5%	50V	C414	1-123-333-00	ELECT	100MF	20%	16V
C15	1-130-479-00	MYLAR	0.0047MF	5%	50V	C415	1-101-006-00	CERAMIC	0.047MF	5%	50V
C16	1-102-816-00	CERAMIC	120PF	5%	50V	C416	1-123-333-00	ELECT	100MF	20%	16V
C17	1-136-153-00	FILM	0.01MF	5%	50V	C417	1-123-333-00	ELECT	100MF	20%	16V
C18	1-123-356-00	ELECT	10MF	20%	16V	C418	1-123-333-00	ELECT	100MF	20%	16V
C19	1-123-382-00	ELECT	3.3MF	20%	50V	C419	1-123-333-00	ELECT	100MF	20%	16V
C20	1-123-381-00	ELECT	2.2MF	20%	50V	C420	1-123-333-00	ELECT	100MF	20%	16V
C21	1-123-381-00	ELECT	2.2MF	20%	50V	C421	1-123-356-00	ELECT	10MF	20%	16V
C22	1-136-153-00	FILM	0.01MF	5%	50V	C422	1-136-161-00	FILM	0.047MF	5%	50V
C23	1-123-356-00	ELECT	10MF	20%	16V	C501	1-136-161-00	FILM	0.047MF	5%	50V
C24	1-123-318-00	ELECT	33MF	20%	16V	C502	1-136-161-00	FILM	0.047MF	5%	50V
C25	1-136-153-00	FILM	0.01MF	5%	50V	C503	1-136-153-00	FILM	0.01MF	5%	50V
C28	1-101-006-00	CERAMIC	0.047MF	5%	50V	C504	1-124-259-00	ELECT	4.7MF	20%	50V
C29	1-123-382-00	ELECT	3.3MF	20%	50V	C506	1-130-471-00	MYLAR	0.001MF	5%	50V
C34	1-124-259-00	ELECT	4.7MF	20%	50V	C507	1-101-361-00	CERAMIC	150PF	5%	50V
C35	1-101-361-00	CERAMIC	150PF	5%	50V	C508	1-123-381-00	ELECT	2.2MF	20%	50V
C36	1-102-816-00	CERAMIC	120PF	5%	50V	C509	1-123-381-00	ELECT	2.2MF	20%	50V
C37	1-136-161-00	FILM	0.047MF	5%	50V	C510	1-101-361-00	CERAMIC	150PF	5%	50V
C38	1-123-318-00	ELECT	33MF	20%	16V	C511	1-101-361-00	CERAMIC	150PF	5%	50V
C201	1-123-356-00	ELECT	10MF	20%	50V	C512	1-136-153-00	FILM	0.01MF	5%	50V
C202	1-123-333-00	ELECT	100MF	20%	16V	C513	1-123-381-00	ELECT	2.2MF	20%	50V
C203	1-123-382-00	ELECT	3.3MF	20%	50V	C514	1-136-153-00	FILM	0.01MF	5%	50V
C204	1-123-382-00	ELECT	3.3MF	20%	50V	C515	1-123-381-00	ELECT	2.2MF	20%	50V
C205	1-123-356-00	ELECT	10MF	20%	16V	C516	1-123-379-00	ELECT	0.47MF	20%	50V
C206	1-123-318-00	ELECT	33MF	20%	16V	C517	1-123-356-00	ELECT	10MF	20%	16V
C301	1-130-479-00	MYLAR	0.0047MF	5%	50V	C518	1-123-356-00	ELECT	10MF	20%	16V
C302	1-102-973-00	CERAMIC	100PF	5%	50V	C519	1-123-381-00	ELECT	2.2MF	20%	50V
C303	1-123-381-00	ELECT	2.2MF	20%	50V	C601	1-123-622-00	ELECT	22MF	20%	16V
C304	1-136-153-00	FILM	0.01MF	5%	50V	C602	1-123-622-00	ELECT	22MF	20%	16V
C305	1-130-473-00	MYLAR	0.0015MF	5%	50V	C603	1-123-381-00	ELECT	2.2MF	20%	50V
C306	1-130-381-00	ELECT	2.2MF	20%	50V	C604	1-123-318-00	ELECT	33MF	20%	16V
C308	1-123-381-00	ELECT	2.2MF	20%	50V	C701	1-123-333-00	ELECT	100MF	20%	16V
C309	1-136-153-00	FILM	0.01MF	5%	50V	C702	1-123-379-00	ELECT	0.47MF	20%	50V
C310	1-130-471-00	MYLAR	0.001MF	5%	50V	C703	1-123-333-00	ELECT	100MF	20%	16V
C311	1-101-361-00	CERAMIC	150PF	5%	50V	C704	1-123-379-00	ELECT	0.47MF	20%	50V
C312	1-123-153-00	FILM	0.01MF	5%	50V	C705	1-123-333-00	ELECT	100MF	20%	25V
C313	1-102-824-00	CERAMIC	470PF	5%	50V	C706	1-123-333-00	ELECT	100MF	20%	25V
C316	1-123-356-00	ELECT	10MF	20%	16V	C707	1-123-333-00	ELECT	100MF	20%	25V
C317	1-136-165-00	FILM	0.1MF	5%	50V	C708	1-106-387-00	MYLAR	0.068MF	10%	200V
C318	1-123-330-00	ELECT	22MF	20%	16V	C709	1-106-387-00	MYLAR	0.068MF	10%	200V
C401	1-130-477-00	MYLAR	0.0033MF	5%	50V	C710	1-123-932-00	ELECT	4.7MF	20%	160V
C402	1-136-153-00	FILM	0.01MF	5%	50V	C711	1-123-333-00	ELECT	100MF	20%	25V
C403	1-130-471-00	MYLAR	0.001MF	5%	50V	C810	1-123-382-00	ELECT	3.3MF	20%	50V
C404	1-136-161-00	FILM	0.047MF	5%	50V	C811	1-123-382-00	ELECT	3.3MF	20%	50V
C405	1-136-153-00	FILM	0.01MF	5%	50V	C812	1-123-382-00	ELECT	3.3MF	20%	50V
C406	1-123-381-00	ELECT	2.2MF	20%	50V	C813	1-101-004-00	CERAMIC	0.01MF	5%	50V
C407	1-123-381-00	ELECT	2.2MF	20%	50V	C814	1-123-382-00	ELECT	3.3MF	20%	50V
C408	1-136-153-00	FILM	0.01MF	5%	50V	C815	1-101-004-00	CERAMIC	0.01MF	5%	50V
C409	1-136-161-00	FILM	0.047MF	5%	50V	C816	1-123-382-00	ELECT	3.3MF	20%	50V
C410	1-136-161-00	FILM	0.047MF	5%	50V	C817	1-101-004-00	CERAMIC	0.01MF	5%	50V
C411	1-123-321-00	ELECT	220MF	20%	16V	C818	1-123-382-00	ELECT	3.3MF	20%	50V
C412	1-136-153-00	FILM	0.01MF	5%	50V	C819	1-101-004-00	CERAMIC	0.01MF	5%	50V

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

DA

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C820	1-123-382-00	ELECT 3.3MF	20%	50V	D502	8-719-911-19	DIODE 1SS119
C821	1-101-004-00	CERAMIC		50V	D503	8-719-911-19	DIODE 1SS119
C822	1-123-382-00	ELECT 3.3MF	20%	50V	D504	8-719-911-19	DIODE 1SS119
C823	1-101-004-00	CERAMIC		50V	D509	8-719-911-19	DIODE 1SS119
C824	1-123-382-00	ELECT 3.3MF	20%	50V	D510	8-719-911-19	DIODE 1SS119
C825	1-101-004-00	CERAMIC		50V	D601	8-719-911-19	DIODE 1SS119
C826	1-123-382-00	ELECT 3.3MF	20%	50V	D602	8-719-911-19	DIODE 1SS119
C827	1-101-004-00	CERAMIC		50V	D603	8-719-911-19	DIODE 1SS119
C828	1-123-382-00	ELECT 3.3MF	20%	50V	D604	8-719-911-19	DIODE 1SS119
C829	1-101-004-00	CERAMIC		50V	D605	8-719-911-19	DIODE 1SS119
C830	1-101-004-00	CERAMIC		50V	D606	8-719-911-19	DIODE 1SS119
C831	1-101-004-00	CERAMIC		50V	D701	8-719-911-19	DIODE 1SS119
C832	1-123-382-00	ELECT 3.3MF	20%	50V	D702	8-719-911-19	DIODE 1SS119
C833	1-101-004-00	CERAMIC		50V	D703	8-719-812-41	DIODE TLR124
C834	1-123-382-00	ELECT 3.3MF	20%	50V	D704	8-719-812-41	DIODE TLR124
C835	1-101-004-00	CERAMIC		50V	D705	8-719-911-19	DIODE 1SS119
C836	1-123-382-00	ELECT 3.3MF	20%	50V	D706	8-719-812-41	DIODE TLR124
C837	1-101-004-00	CERAMIC		50V	D707	8-719-911-77	DIODE V19G
C838	1-123-382-00	ELECT 3.3MF	20%	50V	D708	8-719-918-77	DIODE V19G
C839	1-101-004-00	CERAMIC		50V			
C840	1-123-382-00	ELECT 3.3MF	20%	50V			
C842	1-123-382-00	ELECT 3.3MF	20%	50V			
C843	1-101-004-00	CERAMIC		50V			
DIODE							
D1	8-719-911-19	DIODE 1SS119			DA1	*1-566-063-11	PIN, CONNECTOR 11P
D2	8-719-911-19	DIODE 1SS119			DA2	*1-566-060-11	PIN, CONNECTOR 8P
D3	8-719-109-84	DIODE RD5.1ES-B1			DA3	*1-566-057-11	PIN, CONNECTOR 5P
D4	8-719-911-19	DIODE 1SS119			DA4	*1-566-056-11	PIN, CONNECTOR 4P
D5	8-719-110-16	DIODE RD10ES-B1			DA5	*1-566-055-11	PIN, CONNECTOR 3P
D6	8-719-911-19	DIODE 1SS119			DA6	*1-566-055-11	PIN, CONNECTOR 3P
D9	8-719-110-17	DIODE RD10ES-B2			DA7	*1-566-056-11	PIN, CONNECTOR 4P
D10	8-719-110-16	DIODE RD10ES-B1			DA8	*1-566-057-11	PIN, CONNECTOR 5P
D11	8-719-911-19	DIODE 1SS119			DA9	*1-566-056-11	PIN, CONNECTOR 4P
D12	8-719-911-19	DIODE 1SS119			DA10	*1-566-060-11	PIN, CONNECTOR 8P
D13	8-719-911-19	DIODE 1SS119			DA11	*1-566-060-11	PIN, CONNECTOR 8P
D14	8-719-901-27	DIODE MV-11VS			DA12	*1-566-055-11	PIN, CONNECTOR 3P
D15	8-719-911-19	DIODE 1SS119			DA13	*1-506-348-XX	3P PLUG (L)
D16	8-719-911-19	DIODE 1SS119			DA14	*1-506-371-00	2P PLUG (L)
D17	8-719-109-66	DIODE RD3.3ES-B2			DA15	*1-506-371-00	2P PLUG (L)
D201	8-719-911-19	DIODE 1SS119			DA16	*1-506-371-00	2P PLUG (L)
D202	8-719-911-19	DIODE 1SS119					
D203	8-719-911-19	DIODE 1SS119					
D301	8-719-911-19	DIODE 1SS119					
D302	8-719-911-19	DIODE 1SS119					
D303	8-719-110-16	DIODE RD10ES-B1					
D304	8-719-911-19	DIODE 1SS119					
D305	8-719-911-19	DIODE 1SS119					
D306	8-719-911-19	DIODE 1SS119					
D307	8-719-110-02	DIODE RD7.5ES-B1					
D401	8-719-911-19	DIODE 1SS119					
D402	8-719-109-84	DIODE RD5.1ES-B1					
D501	8-719-911-19	DIODE 1SS119					
CONNECTOR							
					IC1	8-759-100-60	IC UPC1377C
					IC2	8-759-103-93	IC UPC393C
					IC3	8-759-115-55	IC UPC1555C
					IC4	8-759-109-82	IC UPC814C
					IC6	8-759-145-58	IC UPC4558C
					IC7	8-759-145-58	IC UPC4558C
					IC8	8-759-140-66	IC UPD4066BC
					IC9	8-752-203-00	IC CX22030
					IC10	8-759-345-38	IC HD14538BP
					IC11	8-759-340-53	IC HD14053BP
					IC201	8-759-145-58	IC UPC4558C
					IC202	8-759-145-58	IC UPC4558C
					IC203	8-759-145-58	IC UPC4558C
					IC301	8-759-131-11	IC UPC311C
IC							

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

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

* Selected to yield optimum performance.

DA

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
IC302	8-759-340-46	IC HD14046BP		Q16	8-729-178-54	TRANSISTOR 2SC2785	
IC303	8-759-109-82	IC UPC814C		Q17	8-729-117-54	TRANSISTOR 2SA1175	
IC304	8-759-109-82	IC UPC814C		Q201	8-729-213-12	TRANSISTOR 2SC2230A	
IC305	8-759-109-82	IC UPC814C		Q202	8-729-178-54	TRANSISTOR 2SC2785	
IC307	8-759-109-82	IC UPC814C		Q203	8-729-178-54	TRANSISTOR 2SC2785	
IC308	8-759-109-82	IC UPC814C		Q204	8-729-178-54	TRANSISTOR 2SC2785	
IC309	8-759-103-93	IC UPC393C		Q205	8-729-900-89	TRANSISTOR DTC144ES	
IC310	8-759-109-82	IC UPC814C		Q301	8-729-117-54	TRANSISTOR 2SA1175	
IC401	8-759-145-58	IC UPC4558C		Q302	8-729-117-54	TRANSISTOR 2SA1175	
IC402	8-759-115-55	IC UPC1555C		Q303	8-729-178-54	TRANSISTOR 2SC2785	
IC403	8-759-115-55	IC UPC1555C		Q304	8-729-178-54	TRANSISTOR 2SC2785	
IC404	8-759-145-58	IC UPC4558C		Q305	8-729-117-54	TRANSISTOR 2SA1175	
IC405	8-759-145-58	IC UPC4558C		Q306	8-729-178-54	TRANSISTOR 2SC2785	
IC406	8-759-145-58	IC UPC4558C		Q307	8-729-178-54	TRANSISTOR 2SC2785	
IC407	8-759-103-93	IC UPC393C		Q308	8-729-178-54	TRANSISTOR 2SC2785	
IC408	8-759-111-69	IC UPC1037HA		Q310	8-729-115-10	TRANSISTOR 2SK105A-10	
IC409	8-759-145-58	IC UPC4558C		Q311	8-729-115-10	TRANSISTOR 2SK105A-10	
IC410	8-759-145-58	IC UPC4558C		Q312	8-729-117-54	TRANSISTOR 2SA1175	
IC501	8-759-103-93	IC UPC393C		Q313	8-729-900-89	TRANSISTOR DTC144ES	
IC502	8-759-115-55	IC UPC1555C		Q401	8-729-178-54	TRANSISTOR 2SC2785	
IC503	8-759-345-38	IC HD14538BP		Q402	8-729-178-54	TRANSISTOR 2SC2785	
IC504	8-759-345-38	IC HD14538BP		Q403	8-729-178-54	TRANSISTOR 2SC2785	
IC505	8-759-109-82	IC UPC814C		Q404	8-729-115-10	TRANSISTOR 2SK105A-10	
IC506	8-759-109-82	IC UPC814C		Q405	8-729-178-54	TRANSISTOR 2SC2785	
IC507	8-759-103-93	IC UPC393C		Q406	8-729-178-54	TRANSISTOR 2SC2785	
IC601	8-759-103-93	IC UPC393C		Q407	8-729-115-10	TRANSISTOR 2SK105A-10	
IC701	8-759-170-12	IC UPC78M12H		Q408	8-729-900-89	TRANSISTOR DTC144ES	
IC702	8-759-700-24	IC NJM79M12A		Q501	8-729-117-54	TRANSISTOR 2SA1175	
IC703	8-759-103-93	IC UPC393C		Q502	8-729-178-54	TRANSISTOR 2SC2785	
		<u>COIL</u>		Q503	8-729-178-54	TRANSISTOR 2SC2785	
L701	1-459-155-00	COIL (WITH CORE) 45UH		Q504	8-729-178-54	TRANSISTOR 2SC2785	
L702	1-459-155-00	COIL (WITH CORE) 45UH		Q505	8-729-178-54	TRANSISTOR 2SC2785	
L703	1-459-104-00	COIL, DUST CORE		Q506	8-729-178-54	TRANSISTOR 2SC2785	
L704	1-459-104-00	COIL, DUST CORE		Q508	8-729-900-89	TRANSISTOR DTC144ES	
L801	1-459-367-00	COIL, VAR, FERRITE (HWC)		Q509	8-729-900-89	TRANSISTOR DTC144ES	
L802	1-459-367-00	COIL, VAR, FERRITE (HWC)		Q601	8-729-178-54	TRANSISTOR 2SC2785	
L803	1-459-367-00	COIL, VAR, FERRITE (HWC)		Q602	8-729-178-54	TRANSISTOR 2SC2785	
		<u>TRANSISTOR</u>		Q603	8-729-178-54	TRANSISTOR 2SC2785	
Q1	8-729-178-54	TRANSISTOR 2SC2785		Q604	8-729-178-54	TRANSISTOR 2SC2785	
Q2	8-729-178-54	TRANSISTOR 2SC2785		Q605	8-729-178-54	TRANSISTOR 2SC2785	
Q4	8-729-178-54	TRANSISTOR 2SC2785		Q701	8-729-117-54	TRANSISTOR 2SA1175	
Q6	8-729-178-54	TRANSISTOR 2SC2785		Q702	8-729-117-54	TRANSISTOR 2SA1175	
Q7	8-729-117-54	TRANSISTOR 2SA1175		Q703	8-729-117-54	TRANSISTOR 2SA1175	
Q8	8-729-117-54	TRANSISTOR 2SA1175				<u>RESISTOR</u>	
Q9	8-729-117-54	TRANSISTOR 2SA1175		R1	1-249-405-11	CARBON 100 5% 1/4W	
Q10	8-729-178-54	TRANSISTOR 2SC2785		R2	1-249-417-11	CARBON 1K 5% 1/4W	
Q11	8-729-117-54	TRANSISTOR 2SA1175		R3	1-249-405-11	CARBON 100 5% 1/4W	
Q12	8-729-178-54	TRANSISTOR 2SC2785		R4	1-249-417-11	CARBON 1K 5% 1/4W	
Q13	8-729-178-54	TRANSISTOR 2SC2785		R5	1-249-410-11	CARBON 270 5% 1/4W	
Q14	8-729-117-54	TRANSISTOR 2SA1175		R6	1-249-411-11	CARBON 330 5% 1/4W	
Q15	8-729-117-54	TRANSISTOR 2SA1175		R7	1-249-421-11	CARBON 2.2K 5% 1/4W	
				R8	1-247-895-00	CARBON 470K 5% 1/4W	



Ref.No.	Part No.	Description	Q'ty	Unit	Remark	Ref.No.	Part No.	Description	Q'ty	Unit	Remark
R9	1-249-417-11	CARBON	1K	5%	1/4W	R40	1-249-433-11	CARBON	22K	5%	1/4W
R10	1-249-429-11	CARBON	10K	5%	1/4W	R42	1-249-417-11	CARBON	1K	5%	1/4W
R11	1-249-440-11	CARBON	82K	5%	1/4W	R43	1-249-417-11	CARBON	1K	5%	1/4W
R12	1-249-435-11	CARBON	33K	5%	1/4W	R53	1-215-433-00	METAL	3.3K	1%	1/6W
R13	1-249-423-11	CARBON	3.3K	5%	1/4W	R54	1-215-432-00	METAL	3K	1%	1/6W
R14	1-249-440-11	CARBON	82K	5%	1/4W	R55	1-215-430-00	MITAL	2.4K	1%	1/6W
R15	1-249-433-11	CARBON	22K	5%	1/4W	R56	1-215-393-00	METAL	68	1%	1/6W
R16	1-249-431-11	CARBON	15K	5%	1/4W	R57	1-215-431-00	METAL	2.7K	1%	1/6W
R17	1-249-425-11	CARBON	4.7K	5%	1/4W	R58	1-215-405-00	METAL	220	1%	1/6W
R18	1-249-420-11	CARBON	1.8K	5%	1/4W	R59	1-215-439-00	METAL	5.6K	1%	1/6W
R19	1-249-429-11	CARBON	10K	5%	1/4W	R60	1-215-445-00	METAL	10K	1%	1/6W
R20	1-249-435-11	CARBON	33K	5%	1/4W	R61	1-249-421-11	CARBON	2.2K	5%	1/4W
R21	1-249-429-11	CARBON	10K	5%	1/4W	R62	1-215-433-00	METAL	3.3K	1%	1/6W
R22	1-249-425-11	CARBON	4.7K	5%	1/4W	R64	1-215-433-00	METAL	3.3K	1%	1/6W
R23	1-249-425-11	CARBON	4.7K	5%	1/4W	R65	1-215-479-00	METAL	270K	1%	1/6W
R24	1-249-425-11	CARBON	4.7K	5%	1/4W	R66	1-249-429-11	CARBON	10K	5%	1/4W
R25	1-249-435-11	CARBON	4.7K	5%	1/4W	R67	1-215-445-00	METAL	10K	1%	1/6W
R26	1-249-435-11	CARBON	33K	5%	1/4W	R68	1-249-421-11	CARBON	2.2K	5%	1/4W
*R30	1-215-439-00	METAL	5.6K	1%	1/6W	R69	1-215-455-00	METAL	27K	1%	1/6W
*R30	1-215-441-00	METAL	6.8K	1%	1/6W	R70	1-215-455-00	METAL	27K	1%	1/6W
*R30	1-215-443-00	METAL	8.2K	1%	1/6W	R71	1-249-405-11	CARBON	100	5%	1/4W
*R30	1-215-445-00	METAL	10K	1%	1/6W	R72	1-249-405-11	CARBON	100	5%	1/4W
*R30	1-215-447-00	METAL	12K	1%	1/6W	R73	1-215-445-00	METAL	10K	1%	1/6W
*R30	1-215-449-00	METAL	15K	1%	1/6W	R74	1-215-485-00	METAL	470K	1%	1/6W
*R30	1-215-451-00	METAL	18K	1%	1/6W	R75	1-215-455-00	METAL	27K	1%	1/6W
*R30	1-215-453-00	METAL	22K	1%	1/6W	R76	1-215-433-00	METAL	3.3K	1%	1/6W
*R30	1-215-454-00	METAL	24K	1%	1/6W	R77	1-215-411-00	METAL	390	1%	1/6W
*R30	1-215-455-00	METAL	27K	1%	1/6W	*R78	▲	METAL			1/6W
*R30	1-215-456-00	METAL	30K	1%	1/6W	R79	1-249-417-11	CARBON	1K	5%	1/4W
*R30	1-215-457-00	METAL	33K	1%	1/6W	R80	1-249-429-11	CARBON	10K	5%	1/4W
*R30	1-215-458-00	METAL	36K	1%	1/6W	R81	1-249-433-11	CARBON	22K	5%	1/4W
*R31	1-215-373-31	METAL	10	1%	1/6W	R82	1-249-434-11	CARBON	27K	5%	1/4W
*R31	1-215-411-00	METAL	390	1%	1/6W	R83	1-249-434-11	CARBON	27K	5%	1/4W
*R31	1-215-413-00	METAL	470	1%	1/6W	R84	1-249-417-11	CARBON	1K	5%	1/4W
*R31	1-215-415-00	METAL	560	1%	1/6W	R85	1-215-438-00	METAL	5.1K	1%	1/6W
*R31	1-215-417-00	METAL	680	1%	1/6W	R86	1-215-439-00	METAL	5.6K	1%	1/6W
*R31	1-215-419-00	METAL	820	1%	1/6W	R87	1-215-409-00	METAL	330	1%	1/6W
*R31	1-215-421-00	METAL	1K	1%	1/6W	R88	1-215-427-00	METAL	1.8K	1%	1/6W
*R31	1-215-423-00	METAL	1.2K	1%	1/6W	R89	1-215-435-00	METAL	3.9K	1%	1/6W
*R31	1-215-425-00	METAL	1.5K	1%	1/6W	R90	1-249-423-11	CARBON	3.3K	5%	1/4W
*R31	1-215-427-00	METAL	1.8K	1%	1/6W	R91	1-249-433-11	CARBON	22K	5%	1/4W
*R31	1-215-429-00	METAL	2.2K	1%	1/6W	*R92	1-215-401-11	METAL	150	1%	1/6W
*R31	1-215-445-00	METAL	2.7K	1%	1/6W	*R92	1-215-403-00	METAL	180	1%	1/6W
*R31	1-215-433-00	METAL	3.3K	1%	1/6W	*R92	1-215-409-00	METAL	330	1%	1/6W
*R31	1-215-435-00	METAL	3.9K	1%	1/6W	*R92	1-215-411-00	METAL	390	1%	1/6W
R32	1-215-467-00	METAL	82K	1%	1/6W	*R92	1-215-413-00	METAL	470	1%	1/6W
R33	1-249-417-11	CARBON	1K	5%	1/4W	*R92	1-215-415-00	METAL	560	1%	1/6W
R34	1-215-445-00	METAL	10K	1%	1/6W	*R92	1-215-417-00	METAL	680	1%	1/6W
R35	1-215-437-00	METAL	4.7K	1%	1/6W	*R92	1-215-419-00	METAL	820	1%	1/6W
R36	1-215-445-00	METAL	10K	1%	1/6W	*R92	1-215-421-00	METAL	1K	1%	1/6W
R37	1-215-445-00	METAL	10K	1%	1/6W	*R92	1-215-422-00	METAL	1.1K	1%	1/6W
R38	1-249-421-11	CARBON	2.2K	5%	1/4W	*R92	1-215-423-00	METAL	1.2K	1%	1/6W
R39	1-249-421-11	CARBON	2.2K	5%	1/4W	*R92	1-215-424-00	METAL	1.3K	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. Should replacement be required, replace only with the value originally used.

• * : Selected to yield optimum performance.

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

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Ref.No.	Part No.	Description	Quantity	Material	Remark	Ref.No.	Part No.	Description	Quantity	Material	Remark
*R92	1-215-425-00	METAL	1.5K	1%	1/6W	R214	1-249-427-11	CARBON	6.8K	5%	1/4W
*R93	1-215-373-31	METAL	10	1%	1/6W	R215	1-249-418-11	CARBON	1.2K	5%	1/4W
*R93	1-215-377-00	METAL	15	1%	1/6W	R216	1-215-421-00	METAL	1K	1%	1/6W
*R93	1-215-381-00	METAL	22	1%	1/6W	R217	1-215-415-00	METAL	560	1%	1/6W
*R93	1-215-383-00	METAL	27	1%	1/6W	R218	1-215-421-00	METAL	1K	1%	1/6W
*R93	1-215-385-00	METAL	33	1%	1/6W	R219	1-215-421-00	METAL	1K	1%	1/6W
*R93	1-215-387-00	METAL	39	1%	1/6W	R220	1-249-422-11	CARBON	2.7K	5%	1/4W
*R93	1-215-389-00	METAL	47	1%	1/6W	R221	1-249-418-11	CARBON	1.2K	5%	1/4W
*R93	1-215-391-00	METAL	56	1%	1/6W	R222	1-215-405-00	METAL	220	1%	1/6W
*R93	1-215-393-00	METAL	68	1%	1/6W	R223	1-249-418-11	CARBON	1.2K	5%	1/4W
*R93	1-215-395-00	METAL	82	1%	1/6W	R224	1-215-433-00	METAL	3.3K	1%	1/6W
*R93	1-215-397-00	METAL	100	1%	1/6W	R225	1-215-431-00	METAL	2.7K	1%	1/6W
*R93	1-215-399-00	METAL	120	1%	1/6W	R226	1-215-461-00	METAL	47K	1%	1/6W
*R93	1-215-401-11	METAL	150	1%	1/6W	R227	1-215-421-00	METAL	1K	1%	1/6W
*R93	1-215-403-00	METAL	180	1%	1/6W	R228	1-249-429-11	CARBON	10K	5%	1/4W
*R93	1-215-405-00	METAL	220	1%	1/6W	R229	1-215-437-00	METAL	4.7K	1%	1/6W
*R93	1-215-407-00	METAL	270	1%	1/6W	R237	1-215-437-00	METAL	4.7K	1%	1/6W
*R93	1-215-418-00	METAL	750	1%	1/6W	R301	1-249-418-11	CARBON	15K	5%	1/4W
*R93	1-215-420-00	METAL	910	1%	1/6W	R302	1-249-429-11	CARBON	10K	5%	1/4W
R94	1-215-445-00	METAL	10K	1%	1/6W	R303	1-249-421-11	CARBON	2.2K	5%	1/4W
R95	1-215-435-00	METAL	3.9K	1%	1/6W	R304	1-249-423-11	CARBON	3.3K	5%	1/4W
R96	1-249-421-11	CARBON	2.2K	5%	1/4W	R305	1-249-429-11	CARBON	10K	5%	1/4W
R97	1-249-421-11	CARBON	2.2K	5%	1/4W	R306	1-249-418-11	CARBON	1.2K	5%	1/4W
R98	1-249-429-11	CARBON	10K	5%	1/4W	R307	1-249-419-11	CARBON	1.5K	5%	1/4W
R99	1-249-429-11	CARBON	10K	5%	1/4W	R308	1-249-419-11	CARBON	1.5K	5%	1/4W
R100	1-249-429-11	CARBON	10K	5%	1/4W	R309	1-249-424-11	CARBON	3.9K	5%	1/4W
R101	1-215-413-00	METAL	470	1%	1/6W	R310	1-249-418-11	CARBON	1.2K	5%	1/4W
R102	1-215-429-00	METAL	2.2K	1%	1/6W	R311	1-249-419-11	CARBON	1.5K	5%	1/4W
R103	1-215-453-00	METAL	22K	1%	1/6W	R312	1-249-421-11	CARBON	2.2K	5%	1/4W
R104	1-249-430-11	CARBON	12K	5%	1/4W	R313	1-249-419-11	CARBON	1.5K	5%	1/4W
R105	1-215-429-00	METAL	2.2K	1%	1/6W	R314	1-249-417-11	CARBON	1K	5%	1/4W
R106	1-215-429-00	METAL	2.2K	1%	1/6W	R315	1-249-421-11	CARBON	2.2K	5%	1/4W
R107	1-249-433-11	CARBON	22K	5%	1/4W	R316	1-249-429-11	CARBON	10K	5%	1/4W
R108	1-216-509-11	METAL OXIDE	5.6K	5%	5W	R317	1-249-429-11	CARBON	10K	5%	1/4W
R109	1-249-417-11	CARBON	1K	5%	1/4W	R318	1-249-433-11	CARBON	22K	5%	1/4W
R110	1-249-417-11	CARBON	1K	5%	1/4W	R319	1-249-417-11	CARBON	1K	5%	1/4W
R111	1-249-405-11	CARBON	100	5%	1/4W	R320	1-249-417-11	CARBON	1K	5%	1/4W
R112	1-247-887-00	CARBON	220K	5%	1/4W	R321	1-215-487-00	CARBON	560K	5%	1/4W
R113	1-249-417-11	CARBON	1K	5%	1/4W	R323	1-249-417-11	CARBON	1K	5%	1/4W
R114	1-249-417-11	CARBON	1K	5%	1/4W	R324	1-249-428-11	CARBON	8.2K	5%	1/4W
R201	1-214-599-00	METAL OXIDE	68K	5%	1W	R325	1-249-440-11	CARBON	82K	5%	1/4W
R202	1-249-397-11	CARBON	22	5%	1/4W	R326	1-249-435-11	CARBON	33K	5%	1/4W
R203	1-249-420-11	CARBON	1.8K	5%	1/4W	R327	1-215-451-00	METAL	18K	1%	1/6W
R204	1-249-417-11	CARBON	1K	5%	1/4W	R328	1-215-447-00	METAL	12K	1%	1/6W
R205	1-249-441-11	CARBON	100K	5%	1/4W	R329	1-215-451-00	METAL	18K	1%	1/6W
R206	1-249-441-11	CARBON	100K	5%	1/4W	R330	1-215-449-00	METAL	15K	1%	1/6W
R207	1-249-417-11	CARBON	1K	5%	1/4W	R331	1-215-437-00	METAL	4.7K	1%	1/6W
R208	1-249-437-11	CARBON	47K	5%	1/4W	R332	1-215-437-00	METAL	4.7K	1%	1/6W
R209	1-215-431-00	METAL	2.7K	1%	1/6W	R333	1-215-429-00	METAL	2.2K	1%	1/6W
R210	1-249-431-11	CARBON	15K	5%	1/4W	R334	1-215-437-00	METAL	4.7K	1%	1/6W
R211	1-249-424-11	CARBON	3.9K	5%	1/4W	R335	1-215-433-00	METAL	3.3K	1%	1/6W
R212	1-249-418-11	CARBON	1.2K	5%	1/4W	R336	1-215-445-00	METAL	10K	1%	1/6W
R213	1-247-849-00	CARBON	5.6K	5%	1/4W	R347	1-215-435-00	METAL	3.9K	1%	1/6W

* : Selected to yield optimum performance.



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R348	1-215-445-00	METAL	10K 1% 1/6W	R417	1-249-437-11	CARBON	47K 5% 1/4W
R349	1-215-433-00	METAL	3.3K 1% 1/6W	R418	1-249-433-11	CARBON	22K 5% 1/4W
R350	1-249-429-11	CARBON	10K 5% 1/4W	R419	1-215-471-00	METAL	120K 1% 1/6W
R351	1-215-493-00	CARBON	1M 5% 1/4W	R420	1-249-429-11	CARBON	10K 5% 1/4W
R352	1-249-393-11	CARBON	10 5% 1/4W	R421	1-215-445-00	METAL	10K 1% 1/6W
R353	1-215-445-00	METAL	10K 1% 1/6W	R422	1-215-445-00	METAL	10K 1% 1/6W
R354	1-215-437-00	METAL	4.7K 1% 1/6W	R423	1-215-443-00	METAL	8.2K 1% 1/6W
R355	1-215-445-00	METAL	10K 1% 1/6W	R424	1-249-418-11	CARBON	1.2K 5% 1/4W
R356	1-215-449-00	METAL	15K 1% 1/6W	R425	1-215-447-00	METAL	12K 1% 1/6W
R359	1-215-445-00	METAL	10K 1% 1/6W	R426	1-215-421-00	METAL	1K 1% 1/6W
R360	1-215-433-00	METAL	3.3K 1% 1/6W	R427	1-215-461-00	METAL	47K 1% 1/6W
R362	1-249-423-11	CARBON	3.3K 5% 1/4W	R428	1-215-483-00	METAL	390K 1% 1/6W
R363	1-249-423-11	CARBON	3.3K 5% 1/4W	R429	1-215-421-00	METAL	1K 1% 1/6W
R365	1-215-461-00	METAL	10K 1% 1/6W	R430	1-215-439-00	METAL	5.6K 1% 1/6W
R366	1-249-393-11	CARBON	10 5% 1/4W	R431	1-215-443-00	METAL	8.2K 1% 1/6W
R367	1-249-429-11	CARBON	10K 5% 1/4W	R432	1-215-455-00	METAL	27K 1% 1/6W
R368	1-215-493-00	CARBON	1M 5% 1/4W	R433	1-215-469-00	METAL	100K 1% 1/6W
R372	1-215-437-00	METAL	4.7K 1% 1/6W	R434	1-215-397-00	METAL	100 1% 1/6W
R374	1-215-461-00	METAL	47K 1% 1/6W	R436	1-215-429-00	METAL	2.2K 1% 1/6W
R375	1-215-445-00	METAL	10K 1% 1/6W	R437	1-215-429-00	METAL	2.2K 1% 1/6W
R376	1-215-437-00	METAL	4.7K 1% 1/6W	R438	1-215-413-00	METAL	470 1% 1/6W
R377	1-215-445-00	METAL	10K 1% 1/6W	R439	1-215-445-00	METAL	10K 1% 1/6W
R378	1-215-437-00	METAL	4.7K 1% 1/6W	R440	1-215-437-00	METAL	4.7K 1% 1/6W
R379	1-215-445-00	METAL	10K 1% 1/6W	R441	1-215-445-00	METAL	10K 1% 1/6W
R380	1-215-437-00	METAL	4.7K 1% 1/6W	R442	1-249-429-11	CARBON	10K 5% 1/4W
R382	1-215-445-00	METAL	10K 1% 1/6W	R443	1-249-429-11	CARBON	10K 5% 1/4W
R383	1-215-445-00	METAL	10K 1% 1/6W	R444	1-249-425-11	CARBON	4.7K 5% 1/4W
R384	1-215-437-00	METAL	4.7K 1% 1/6W	R445	1-215-431-00	METAL	2.7K 1% 1/6W
R385	1-249-429-11	CARBON	10K 5% 1/4W	R445	1-249-425-11	CARBON	4.7K 5% 1/4W
R386	1-249-441-11	CARBON	100K 5% 1/4W	R446	1-215-449-00	METAL	15K 1% 1/6W
R387	1-249-429-11	CARBON	10K 5% 1/4W	R447	1-215-445-00	METAL	10K 1% 1/6W
R388	1-249-431-11	CARBON	15K 5% 1/4W	R448	1-215-445-00	METAL	10K 1% 1/6W
R389	1-249-429-11	CARBON	10K 5% 1/4W	R449	1-249-429-11	CARBON	10K 5% 1/4W
R390	1-249-437-11	CARBON	47K 5% 1/4W	R450	1-249-429-11	CARBON	10K 5% 1/4W
R391	1-249-429-11	CARBON	10K 5% 1/4W	R451	1-215-493-00	CARBON	1M 5% 1/4W
R392	1-249-431-11	CARBON	15K 5% 1/4W	R452	1-249-430-11	CARBON	12K 5% 1/4W
R393	1-215-449-00	METAL	15K 1% 1/6W	R453	1-249-431-11	CARBON	15K 5% 1/4W
R401	1-249-429-11	CARBON	10K 5% 1/4W	R454	1-215-449-00	METAL	15K 1% 1/6W
R402	1-249-429-11	CARBON	10K 5% 1/4W	R456	1-215-413-00	METAL	470 1% 1/6W
R403	1-215-453-00	METAL	22K 1% 1/6W	R457	1-247-887-00	CARBON	220K 5% 1/4W
R404	1-215-433-00	METAL	3.3K 1% 1/6W	R458	1-215-413-00	METAL	470 1% 1/6W
R405	1-249-417-11	CARBON	1K 5% 1/4W	R459	1-249-429-11	CARBON	10K 5% 1/4W
R406	1-249-417-11	CARBON	1K 5% 1/4W	R460	1-215-431-00	METAL	2.7K 1% 1/6W
R407	1-249-417-11	CARBON	1K 5% 1/4W	R461	1-215-459-00	METAL	39K 1% 1/6W
R408	1-215-467-00	METAL	82K 1% 1/6W	R462	1-215-429-00	METAL	2.2K 1% 1/6W
R409	1-215-489-00	METAL	680K 1% 1/6W	R463	1-249-423-11	CARBON	3.3K 5% 1/4W
R410	1-215-453-00	METAL	22K 1% 1/6W	R464	1-249-429-11	CARBON	10K 5% 1/4W
R411	1-249-429-11	CARBON	10K 5% 1/4W	R465	1-249-429-11	CARBON	10K 5% 1/4W
R412	1-249-417-11	CARBON	1K 5% 1/4W	R466	1-215-445-00	METAL	10K 1% 1/6W
R413	1-249-429-11	CARBON	10K 5% 1/4W	R467	1-215-445-00	METAL	10K 1% 1/6W
R414	1-249-417-11	CARBON	1K 5% 1/4W	R468	1-215-445-00	METAL	10K 1% 1/6W
R415	1-215-437-00	METAL	4.7K 1% 1/6W	R469	1-215-445-00	METAL	10K 1% 1/6W
R416	1-215-437-00	METAL	4.7K 1% 1/6W	R470	1-215-437-00	METAL	4.7K 1% 1/6W

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Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R471	1-215-449-00	METAL 15K 1% 1/6W		R562	1-249-429-11	CARBON 10K 5% 1/4W	
R501	1-249-441-11	CARBON 100K 5% 1/4W		R601	1-249-441-11	CARBON 100K 5% 1/4W	
R502	1-249-425-11	CARBON 4.7K 5% 1/4W		R602	1-249-429-11	CARBON 10K 5% 1/4W	
R503	1-249-429-11	CARBON 10K 5% 1/4W		R603	1-249-419-11	CARBON 1.5K 5% 1/4W	
R504	1-247-849-00	CARBON 5.6K 5% 1/4W		R604	1-249-417-11	CARBON 1K 5% 1/4W	
R505	1-249-429-11	CARBON 10K 5% 1/4W		R605	1-249-431-11	CARBON 15K 5% 1/4W	
R506	1-249-430-11	CARBON 12K 5% 1/4W		R606	1-249-421-11	CARBON 2.2K 5% 1/4W	
R507	1-249-429-11	CARBON 10K 5% 1/4W		R608	1-249-441-11	CARBON 100K 5% 1/4W	
R508	1-249-417-11	CARBON 1K 5% 1/4W		R609	1-247-887-00	CARBON 220K 5% 1/4W	
R509	1-249-441-11	CARBON 100K 5% 1/4W		R610	1-249-434-11	CARBON 27K 5% 1/4W	
R510	1-215-437-00	METAL 4.7K 1% 1/6W		R611	1-249-441-11	CARBON 100K 5% 1/4W	
R511	1-215-421-00	METAL 1K 1% 1/6W		R612	1-249-435-11	CARBON 33K 5% 1/4W	
R512	1-215-443-00	METAL 8.2K 1% 1/6W		R613	1-249-430-11	CARBON 12K 5% 1/4W	
R513	1-249-429-11	CARBON 10K 5% 1/4W		R614	1-249-405-11	CARBON 100 5% 1/4W	
R514	1-215-445-00	METAL 10K 1% 1/6W		R615	1-249-429-11	CARBON 10K 5% 1/4W	
R515	1-249-417-11	CARBON 1K 5% 1/4W		R616	1-249-419-11	CARBON 1.5K 5% 1/4W	
R516	1-249-417-11	CARBON 1K 5% 1/4W		R617	1-215-449-00	METAL 15K 1% 1/6W	
R517	1-249-421-11	CARBON 2.2K 5% 1/4W		R618	1-215-439-00	METAL 5.6K 1% 1/6W	
R518	1-249-421-11	CARBON 2.2K 5% 1/4W		R619	1-215-409-00	METAL 330 1% 1/6W	
R519	1-215-457-00	METAL 33K 1% 1/6W		R620	1-215-437-00	METAL 4.7K 1% 1/6W	
R520	1-215-463-00	METAL 56K 1% 1/6W		R621	1-249-429-11	CARBON 10K 5% 1/4W	
R521	1-215-441-00	METAL 6.8K 1% 1/6W		R622	1-249-417-11	CARBON 1K 5% 1/4W	
R523	1-249-429-11	CARBON 10K 5% 1/4W		R623	1-249-418-11	CARBON 1.2K 5% 1/4W	
R524	1-249-429-11	CARBON 10K 5% 1/4W		R624	1-249-429-11	CARBON 10K 5% 1/4W	
R525	1-249-425-11	CARBON 4.7K 5% 1/4W		R701	1-249-436-11	CARBON 39K 5% 1/4W	
R526	1-215-469-00	METAL 100K 1% 1/6W		R702	1-249-436-11	CARBON 39K 5% 1/4W	
R527	1-215-469-00	METAL 100K 1% 1/6W		R703	1-249-431-11	CARBON 15K 5% 1/4W	
R528	1-249-429-11	CARBON 10K 5% 1/4W		R704	1-249-419-11	CARBON 1.5K 5% 1/4W	
R529	1-249-430-11	CARBON 12K 5% 1/4W		R705	1-249-425-11	CARBON 4.7K 5% 1/4W	
R530	1-249-421-11	CARBON 2.2K 5% 1/4W		R706	1-249-429-11	CARBON 10K 5% 1/4W	
R531	1-249-430-11	CARBON 12K 5% 1/4W		R707	1-249-429-11	CARBON 10K 5% 1/4W	
R532	1-249-421-11	CARBON 2.2K 5% 1/4W		R708	1-249-429-11	CARBON 10K 5% 1/4W	
R534	1-249-429-11	CARBON 10K 5% 1/4W		R709	1-249-417-11	CARBON 1K 5% 1/4W	
R535	1-249-421-11	CARBON 2.2K 5% 1/4W		R710	1-249-419-11	CARBON 1.5K 5% 1/4W	
R536	1-249-421-11	CARBON 2.2K 5% 1/4W		R711	1-249-425-11	CARBON 4.7K 5% 1/4W	
R537	1-249-425-11	CARBON 4.7K 5% 1/4W		R712	1-249-429-11	CARBON 10K 5% 1/4W	
R538	1-249-429-11	CARBON 10K 5% 1/4W		R713	1-249-429-11	CARBON 10K 5% 1/4W	
R539	1-249-429-11	CARBON 10K 5% 1/4W		R714	1-249-429-11	CARBON 10K 5% 1/4W	
R540	1-249-429-11	CARBON 10K 5% 1/4W		R715	1-249-417-11	CARBON 1K 5% 1/4W	
R541	1-249-417-11	CARBON 1K 5% 1/4W		R716	1-249-419-11	CARBON 1.5K 5% 1/4W	
R542	1-249-429-11	CARBON 10K 5% 1/4W		R717	1-215-899-11	METAL OXIDE 15K 5% 2W F	
R543	1-249-429-11	CARBON 10K 5% 1/4W		R801	1-247-716-11	CARBON 1.8K 5% 1/4W F	
R544	1-249-419-11	CARBON 1.5K 5% 1/4W		R802	1-247-716-11	CARBON 1.8K 5% 1/4W F	
R545	1-249-429-11	CARBON 10K 5% 1/4W		R803	1-247-716-11	CARBON 1.8K 5% 1/4W F	
R546	1-249-429-11	CARBON 10K 5% 1/4W					
R547	1-215-424-00	METAL 1.3K 1% 1/6W		VARIABLE RESISTOR			
R548	1-249-437-11	CARBON 47K 5% 1/4W		RV1	1-224-874-41	RES, ADJ, METAL GLAZE 1M	
R549	1-249-425-11	CARBON 4.7K 5% 1/4W		RV2	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
R550	1-249-429-11	CARBON 10K 5% 1/4W		RV401	1-224-250-XX	RES, ADJ, METAL GLAZE 2.2K	
R551	1-249-429-11	CARBON 10K 5% 1/4W		RV402	1-224-254-XX	RES, ADJ, METAL GLAZE 47K	
				RV403	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
R552	1-249-429-11	CARBON 10K 5% 1/4W		RV501	1-224-254-XX	RES, ADJ, METAL GLAZE 47K	
R553	1-249-417-11	CARBON 1K 5% 1/4W		RV502	1-224-248-XX	RES, ADJ, METAL GLAZE 470	
R560	1-215-449-00	METAL 15K 1% 1/6W					

Selected to yield optimum performance

DA DB

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
RV503	1-224-248-XX	RES, ADJ, METAL GLAZE 470		C409	1-101-004-00	CERAMIC 0.01MF	50V
RV504	1-224-134-XX	RES, ADJ, METAL GLAZE 470K		C410	1-101-004-00	CERAMIC 0.01MF	50V
RV505	1-224-254-XX	RES, ADJ, METAL GLAZE 47K		C411	1-101-004-00	CERAMIC 0.01MF	50V
*****				C412	1-101-004-00	CERAMIC 0.01MF	50V
*****				C413	1-101-004-00	CERAMIC 0.01MF	50V
*****				C414	1-101-004-00	CERAMIC 0.01MF	50V
*A-1165-030-A	DB BOARD, COMPLETE	*****		C415	1-124-245-00	ELECT 4.7MF	20% 25V
*1-533-146-00	HOLDER, FUSE			<u>DIODE</u>			
2-832-007-00	BUSHING (K), INSULATING			D1	8-719-911-19	DIODE 1SS119	
*4-378-621-01	RETAINER, TR			D2	8-719-911-19	DIODE 1SS119	
<u>CAPACITOR</u>				D3	8-719-911-19	DIODE 1SS119	
C1	1-123-379-00	ELECT 0.47MF	20% 50V	D4	8-719-911-19	DIODE 1SS119	
C2	1-123-333-00	ELECT 100MF	20% 16V	D5	8-719-109-97	DIODE RD6.8ES-B2	
C3	1-123-379-00	ELECT 0.47MF	20% 50V	D6	8-719-911-19	DIODE 1SS119	
C4	1-123-333-00	ELECT 100MF	20% 16V	D7	8-719-911-19	DIODE 1SS119	
C5	1-123-661-00	ELECT 100MF	20% 6.3V	D201	8-719-911-19	DIODE 1SS119	
C6	1-123-356-00	ELECT 10MF	20% 16V	D202	8-719-911-19	DIODE 1SS119	
C7	1-123-356-00	ELECT 10MF	20% 16V	D203	8-719-911-19	DIODE 1SS119	
C8	1-123-661-00	ELECT 100MF	20% 6.3V	D204	8-719-911-19	DIODE 1SS119	
C9	1-101-006-00	CERAMIC 0.047MF	50V	D205	8-719-911-19	DIODE 1SS119	
C10	1-101-006-00	CERAMIC 0.047MF	50V	D206	8-719-911-19	DIODE 1SS119	
C11	1-123-333-00	ELECT 100MF	20% 16V	D401	8-719-110-41	DIODE RD15ES-T1B2	
C12	1-123-356-00	ELECT 10MF	20% 16V	D402	8-719-911-19	DIODE 1SS119	
C13	1-123-356-00	ELECT 10MF	20% 16V	D403	8-719-911-19	DIODE 1SS119	
C14	1-123-661-00	ELECT 100MF	20% 6.3V	D404	8-719-110-36	DIODE RD13ES-B2	
C15	1-123-661-00	ELECT 100MF	20% 6.3V	D405	8-719-110-36	DIODE RD13ES-B2	
C16	1-123-356-00	ELECT 10MF	20% 16V	D406	8-719-110-36	DIODE RD13ES-B2	
C17	1-101-006-00	CERAMIC 0.047MF	50V	D407	8-719-110-36	DIODE RD13ES-B2	
C19	1-102-824-00	CERAMIC 470PF	5% 50V	D408	8-719-110-36	DIODE RD13ES-B2	
C20	1-101-361-00	CERAMIC 150PF	5% 50V	D409	8-719-110-36	DIODE RD13ES-B2	
C21	1-136-153-00	FILM 0.01MF	5% 50V	D410	8-719-110-36	DIODE RD13ES-B2	
C201	1-106-359-00	MYLAR 0.0047MF	10% 200V	D411	8-719-110-36	DIODE RD13ES-B2	
C202	1-106-359-00	MYLAR 0.0047MF	10% 200V	D412	8-719-110-36	DIODE RD13ES-B2	
C203	1-106-359-00	MYLAR 0.0047MF	10% 200V	D413	8-719-911-19	DIODE 1SS119	
C204	1-106-383-00	MYLAR 0.047MF	10% 200V	D414	8-719-911-19	DIODE 1SS119	
C205	1-123-337-00	ELECT 1000MF	20% 25V	<u>CONNECTOR</u>			
C206	1-123-337-00	ELECT 1000MF	20% 25V	DB1	*1-566-060-11	PIN, CONNECTOR 8P	
C301	1-130-471-00	MYLAR 0.001MF	5% 50V	DB2	*1-566-060-11	PIN, CONNECTOR 8P	
C302	1-130-471-00	MYLAR 0.001MF	5% 50V	DB3	*1-566-058-11	PIN, CONNECTOR 6P	
C303	1-130-471-00	MYLAR 0.001MF	5% 50V	DB4	*1-566-056-11	PIN, CONNECTOR 4P	
C304	1-130-477-00	MYLAR 0.0033MF	5% 50V	DB5	*1-566-060-11	PIN, CONNECTOR 8P	
C305	1-130-477-00	MYLAR 0.0033MF	5% 50V	DB6	*1-566-055-11	PIN, CONNECTOR 3P	
C306	1-130-477-00	MYLAR 0.0033MF	5% 50V	DB7	*1-566-055-11	PIN, CONNECTOR 3P	
C401	1-123-380-00	ELECT 1MF	20% 50V	DB8	*1-566-055-11	PIN, CONNECTOR 3P	
C402	1-123-324-00	ELECT 1000MF	20% 16V	DB9	*1-566-055-11	PIN, CONNECTOR 3P	
C403	1-123-380-00	ELECT 1MF	20% 50V	DB10	*1-566-055-11	PIN, CONNECTOR 3P	
C404	1-101-004-00	CERAMIC 0.01MF	50V	DB11	*1-566-055-11	PIN, CONNECTOR 3P	
C405	1-101-004-00	CERAMIC 0.01MF	50V	DB12	*1-566-055-11	PIN, CONNECTOR 3P	
C406	1-101-004-00	CERAMIC 0.01MF	50V	DB13	*1-566-055-11	PIN, CONNECTOR 3P	
C407	1-101-004-00	CERAMIC 0.01MF	50V	DB14	*1-566-055-11	PIN, CONNECTOR 3P	
C408	1-101-004-00	CERAMIC 0.01MF	50V	DB15	*1-566-055-11	PIN, CONNECTOR 3P	

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



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
DB16	*1-566-055-11	PIN, CONNECTOR 3P		Q203	8-729-386-12	TRANSISTOR 2SB861	
DB17	*1-566-055-11	PIN, CONNECTOR 3P			4-342-013-00	SPACER, MICA; Q203	
DB18	*1-566-055-11	PIN, CONNECTOR 3P		Q204	8-729-306-92	TRANSISTOR 2SD669A	
DB19	*1-566-055-11	PIN, CONNECTOR 3P		Q205	8-729-313-82	TRANSISTOR 2SD1138	
DB20	*1-566-055-11	PIN, CONNECTOR 3P			4-342-013-00	SPACER, MICA; Q205	
DB21	*1-566-055-11	PIN, CONNECTOR 3P		Q206	8-729-386-12	TRANSISTOR 2SB861	
DB22	*1-566-055-11	PIN, CONNECTOR 3P			4-342-013-00	SPACER, MICA; Q206	
DB23	*1-566-055-11	PIN, CONNECTOR 3P		Q207	8-729-306-92	TRANSISTOR 2SD669A	
DB24	*1-566-055-11	PIN, CONNECTOR 3P		Q208	8-729-313-82	TRANSISTOR 2SD1138	
DB25	*1-566-058-11	PIN, CONNECTOR 6P			4-342-013-00	SPACER, MICA; Q208	
DB26	*1-566-059-11	PIN, CONNECTOR 7P		Q209	8-729-386-12	TRANSISTOR 2SB861	
DB27	*1-566-055-11	PIN, CONNECTOR 3P			4-342-013-00	SPACER, MICA; Q209	
DB28	*1-566-060-11	PIN, CONNECTOR 8P		Q301	8-729-382-63	TRANSISTOR 2SC1826-Y	
DB29	*1-566-059-11	PIN, CONNECTOR 7P			3-701-754-00	PLATE, INSULATING; Q301	
DB30	*1-566-058-11	PIN, CONNECTOR 6P		Q302	8-729-315-63	TRANSISTOR 2SB856	
DB31	*1-566-054-11	PIN, CONNECTOR 2P			3-701-754-00	PLATE, INSULATING; Q302	
		FUSE		Q303	8-729-382-63	TRANSISTOR 2SC1826-Y	
F301	▲1-532-078-11	FUSE, TIME-LAG 1A/250V			3-701-754-00	PLATE, INSULATING; Q303	
F302	▲1-532-078-11	FUSE, TIME-LAG 1A/250V		Q304	8-729-315-63	TRANSISTOR 2SB856	
F303	▲1-532-078-11	FUSE, TIME-LAG 1A/250V			3-701-754-00	PLATE, INSULATING; Q304	
F304	▲1-532-078-11	FUSE, TIME-LAG 1A/250V		Q305	8-729-382-63	TRANSISTOR 2SC1826-Y	
F305	▲1-532-078-11	FUSE, TIME-LAG 1A/250V			3-701-754-00	PLATE, INSULATING; Q305	
F306	▲1-532-078-11	FUSE, TIME-LAG 1A/250V		Q306	8-729-315-63	TRANSISTOR 2SB856	
		IC			3-701-754-00	PLATE, INSULATING; Q306	
IC1	8-759-170-08	IC UPC78M08H		Q307	8-729-382-63	TRANSISTOR 2SC1826-Y	
IC2	8-759-700-22	IC NJM79M08A		Q308	8-729-315-63	TRANSISTOR 2SB856	
IC3	8-759-109-82	IC UPC814C		Q309	8-729-382-63	TRANSISTOR 2SC1826-Y	
IC4	8-759-111-69	IC UPC1037HA		Q310	8-729-315-63	TRANSISTOR 2SB856	
IC5	8-759-109-82	IC UPC814C		Q311	8-729-382-63	TRANSISTOR 2SC1826-Y	
IC6	8-759-109-82	IC UPC814C		Q312	8-729-315-63	TRANSISTOR 2SB856	
IC7	8-759-111-69	IC UPC1037HA		Q401	8-729-178-54	TRANSISTOR 2SC2785	
IC101	8-741-135-80	IC BX1358		Q402	8-729-173-36	TRANSISTOR 2SA733-Q	
IC102	8-759-340-52	IC HD14052BP		Q403	8-729-117-54	TRANSISTOR 2SA1175	
IC401	8-759-178-12	IC UPC78L12				RESISTOR	
IC402	8-759-103-93	IC UPC393C		R1	1-215-445-00	METAL 10K 1% 1/6W	
IC403	8-759-340-53	IC HD14053BP		R2	1-215-445-00	METAL 10K 1% 1/6W	
IC404	8-759-340-53	IC HD14053BP		R3	1-249-421-11	CARBON 2.2K 5% 1/4W	
IC405	8-759-340-53	IC HD14053BP		R4	1-215-445-00	METAL 10K 1% 1/6W	
		TERMINAL		R5	1-215-445-00	METAL 10K 1% 1/6W	
PL1	*1-535-615-11	TERMINAL (LAMP SOCKET)		R6	1-249-421-11	CARBON 2.2K 5% 1/4W	
PL2	*1-535-615-11	TERMINAL (LAMP SOCKET)		R7	1-249-411-11	CARBON 330 5% 1/4W	
		TRANSISTOR		R8	1-249-411-11	CARBON 330 5% 1/4W	
Q1	▲8-729-178-54	TRANSISTOR 2SC2785-F		R9	1-249-417-11	CARBON 1K 5% 1/4W	
Q2	8-729-178-54	TRANSISTOR 2SC2785		R10	1-215-451-00	METAL 18K 1% 1/6W	
Q3	8-729-115-10	TRANSISTOR 2SK105A-10		R11	1-215-413-00	METAL 470 1% 1/6W	
Q201	▲8-729-306-92	TRANSISTOR 2SD669A-C		R12	1-215-435-00	METAL 3.9K 1% 1/6W	
Q202	▲8-729-313-82	TRANSISTOR 2SD1138-C		R13	1-215-413-00	METAL 470 1% 1/6W	
	4-342-013-00	SPACER, MICA; Q202		R14	1-215-447-00	METAL 12K 1% 1/6W	
				R15	1-215-415-00	METAL 560 1% 1/6W	
				R16	1-215-415-00	METAL 560 1% 1/6W	
				R17	1-247-887-00	CARBON 220K 5% 1/4W	
				R18	1-249-429-11	CARBON 10K 5% 1/4W	

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

DB

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R20	1-249-424-11	CARBON	3.9K 5% 1/4W	R133	1-215-483-00	METAL	390K 1% 1/6W
R21	1-215-445-00	METAL	10K 1% 1/6W	R134	1-215-449-00	METAL	15K 1% 1/6W
R22	1-215-437-00	METAL	4.7K 1% 1/6W	R135	1-215-469-00	METAL	100K 1% 1/6W
R23	1-215-429-00	METAL	2.2K 1% 1/6W	R136	1-215-471-00	METAL	120K 1% 1/6W
R24	1-215-445-00	METAL	10K 1% 1/6W	R137	1-215-443-00	METAL	8.2K 1% 1/6W
R25	1-215-397-00	METAL	100 1% 1/6W	R138	1-215-437-00	METAL	4.7K 1% 1/6W
R26	1-215-445-00	METAL	10K 1% 1/6W	R139	1-215-439-00	METAL	5.6K 1% 1/6W
R27	1-215-421-00	METAL	1K 1% 1/6W	R140	1-215-439-00	METAL	5.6K 1% 1/6W
R28	1-249-429-11	CARBON	10K 5% 1/4W	R141	1-215-439-00	METAL	5.6K 1% 1/6W
R29	1-247-887-00	CARBON	220K 5% 1/4W	R142	1-215-439-00	METAL	5.6K 1% 1/6W
R30	1-215-413-00	METAL	470 1% 1/6W	R143	1-215-461-00	METAL	47K 1% 1/6W
R31	1-215-451-00	METAL	18K 1% 1/6W	R145	1-215-445-00	METAL	10K 1% 1/6W
R32	1-215-417-00	METAL	680 1% 1/6W	R146	1-215-453-00	METAL	22K 1% 1/6W
R33	1-215-429-00	METAL	2.2K 1% 1/6W	R147	1-215-437-00	METAL	4.7K 1% 1/6W
R37	1-215-467-00	METAL	82K 1% 1/6W	R148	1-215-443-00	METAL	8.2K 1% 1/6W
R38	1-249-429-11	CARBON	10K 5% 1/4W	R149	1-215-445-00	METAL	10K 1% 1/6W
R39	1-249-417-11	CARBON	1K 5% 1/4W	R150	1-215-447-00	METAL	12K 1% 1/6W
R40	1-215-493-00	CARBON	1M 5% 1/4W	R151	1-215-447-00	METAL	12K 1% 1/6W
R41	1-247-887-00	CARBON	220K 5% 1/4W	R152	1-215-447-00	METAL	12K 1% 1/6W
R42	1-249-429-11	CARBON	10K 5% 1/4W	R153	1-215-447-00	METAL	12K 1% 1/6W
R44	1-249-441-11	CARBON	100K 5% 1/4W	R154	1-215-445-00	METAL	10K 1% 1/6W
R101	1-215-483-00	METAL	390K 1% 1/6W	R155	1-215-445-00	METAL	10K 1% 1/6W
R102	1-215-449-00	METAL	15K 1% 1/6W	R156	1-215-441-00	METAL	6.8K 1% 1/6W
R103	1-215-469-00	METAL	100K 1% 1/6W	R157	1-215-441-00	METAL	6.8K 1% 1/6W
R104	1-215-471-00	METAL	120K 1% 1/6W	R158	1-215-441-00	METAL	6.8K 1% 1/6W
R105	1-215-441-00	METAL	6.8K 1% 1/6W	R159	1-247-700-11	CARBON	100 5% 1/4W F
R106	1-215-437-00	METAL	4.7K 1% 1/6W	R160	1-247-700-11	CARBON	100 5% 1/4W F
R107	1-215-445-00	METAL	10K 1% 1/6W	R161	1-249-389-11	CARBON	4.7 5% 1/4W F
R108	1-215-435-00	METAL	3.9K 1% 1/6W	R162	1-249-389-11	CARBON	4.7 5% 1/4W F
R109	1-215-443-00	METAL	8.2K 1% 1/6W	R194	1-215-445-00	METAL	10K 1% 1/6W
R110	1-215-445-00	METAL	10K 1% 1/6W	R201	1-249-429-11	CARBON	10K 5% 1/4W
R111	1-215-491-00	METAL	820K 1% 1/6W	R202	1-249-415-11	CARBON	680 5% 1/4W
R112	1-215-483-00	METAL	390K 1% 1/6W	R203	1-249-393-11	CARBON	10 5% 1/4W
R113	1-215-449-00	METAL	15K 1% 1/6W	R204	1-215-924-00	METAL OXIDE	15K 5% 3W F
R114	1-215-469-00	METAL	100K 1% 1/6W	R205	1-215-875-11	METAL OXIDE	10K 5% 1W F
R115	1-215-471-00	METAL	120K 1% 1/6W	R206	1-249-441-11	CARBON	100K 5% 1/4W
R116	1-215-443-00	METAL	8.2K 1% 1/6W	R207	1-249-429-11	CARBON	10K 5% 1/4W
R117	1-215-437-00	METAL	4.7K 1% 1/6W	R208	1-249-415-11	CARBON	680 5% 1/4W
R118	1-215-439-00	METAL	5.6K 1% 1/6W	R209	1-249-393-11	CARBON	10 5% 1/4W
R119	1-215-439-00	METAL	5.6K 1% 1/6W	R210	1-215-924-00	METAL OXIDE	15K 5% 3W F
R120	1-215-439-00	METAL	5.6K 1% 1/6W	R211	1-215-875-11	METAL OXIDE	10K 5% 1W F
R121	1-215-439-00	METAL	5.6K 1% 1/6W	R212	1-249-441-11	CARBON	100K 5% 1/4W
R122	1-215-461-00	METAL	47K 1% 1/6W	R213	1-249-429-11	CARBON	10K 5% 1/4W
R123	1-215-445-00	METAL	10K 1% 1/6W	R214	1-249-415-11	CARBON	680 5% 1/4W
R124	1-215-453-00	METAL	22K 1% 1/6W	R215	1-249-393-11	CARBON	10 5% 1/4W
R125	1-215-437-00	METAL	4.7K 1% 1/6W	R216	1-215-924-00	METAL OXIDE	15K 5% 3W F
R126	1-215-443-00	METAL	8.2K 1% 1/6W	R217	1-215-875-11	METAL OXIDE	10K 5% 1W F
R127	1-215-445-00	METAL	10K 1% 1/6W	R218	1-249-441-11	CARBON	100K 5% 1/4W
R128	1-215-447-00	METAL	12K 1% 1/6W	R219	1-247-700-11	CARBON	100 5% 1/4W F
R129	1-215-447-00	METAL	12K 1% 1/6W	R301	1-249-411-11	CARBON	330 5% 1/4W
R130	1-215-447-00	METAL	12K 1% 1/6W				
R131	1-215-447-00	METAL	12K 1% 1/6W				
R132	1-215-491-00	METAL	820K 1% 1/6W				

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

DB

Ref.No.	Part No.	Description	QTY	TOL	UNIT	Remark	Ref.No.	Part No.	Description	QTY	TOL	UNIT	Remark
R302	1-215-373-31	METAL	10	1%	1/6W		R432	1-249-417-11	CARBON	1K	5%	1/4W	
R303	1-215-373-31	METAL	10	1%	1/6W		R433	1-249-417-11	CARBON	1K	5%	1/4W	
R304	1-215-373-31	METAL	10	1%	1/6W		R434	1-249-417-11	CARBON	1K	5%	1/4W	
R305	1-215-864-00	METAL OXIDE	150	5%	1W	F	R435	1-249-417-11	CARBON	1K	5%	1/4W	
R306	1-249-411-11	CARBON	330	5%	1/4W		R436	1-249-405-11	CARBON	100	5%	1/4W	
R307	1-215-373-31	METAL	10	1%	1/6W		R437	1-249-405-11	CARBON	100	5%	1/4W	
R308	1-215-373-31	METAL	10	1%	1/6W		R438	1-249-405-11	CARBON	100	5%	1/4W	
R309	1-215-373-31	METAL	10	1%	1/6W		R439	1-249-417-11	CARBON	1K	5%	1/4W	
R310	1-215-864-00	METAL OXIDE	150	5%	1W	F	R440	1-249-417-11	CARBON	1K	5%	1/4W	
R311	1-249-411-11	CARBON	330	5%	1/4W		R441	1-249-417-11	CARBON	1K	5%	1/4W	
R312	1-215-373-31	METAL	10	1%	1/6W		R442	1-249-417-11	CARBON	1K	5%	1/4W	
R313	1-215-373-31	METAL	10	1%	1/6W		R443	1-249-417-11	CARBON	1K	5%	1/4W	
R314	1-215-373-31	METAL	10	1%	1/6W		R444	1-249-417-11	CARBON	1K	5%	1/4W	
R315	1-215-864-00	METAL OXIDE	150	5%	1W	F	R445	1-249-417-11	CARBON	1K	5%	1/4W	
R316	Δ1-249-389-51	CARBON	4.7	5%	1/4W	F	R446	1-249-417-11	CARBON	1K	5%	1/4W	
R317	Δ1-249-389-51	CARBON	4.7	5%	1/4W	F	R447	1-249-417-11	CARBON	1K	5%	1/4W	
R318	1-249-411-11	CARBON	330	5%	1/4W		R448	1-249-435-11	CARBON	33K	5%	1/4W	
R319	1-215-864-00	METAL OXIDE	150	5%	1W	F	R449	1-215-464-00	CARBON	62K	5%	1/4W	
R320	1-249-411-11	CARBON	330	5%	1/4W		R450	1-249-436-11	CARBON	39K	5%	1/4W	
R321	1-215-864-00	METAL OXIDE	150	5%	1W	F	R451	1-247-883-00	CARBON	150K	5%	1/4W	
R322	1-249-411-11	CARBON	330	5%	1/4W		R452	1-249-439-11	CARBON	68K	5%	1/4W	
R323	1-215-864-00	METAL OXIDE	150	5%	1W	F	R453	1-215-468-00	METAL	91K	1%	1/6W	
R401	1-247-849-00	CARBON	5.6K	5%	1/4W		R454	1-215-473-00	METAL	150K	1%	1/6W	
R402	1-249-438-11	CARBON	56K	5%	1/4W		R455	1-249-429-11	CARBON	10K	5%	1/4W	
R403	1-249-430-11	CARBON	12K	5%	1/4W		R457	1-249-401-11	CARBON	47	5%	1/4W	F
R404	1-249-433-11	CARBON	22K	5%	1/4W				VARIABLE RESISTOR				
R405	1-249-441-11	CARBON	100K	5%	1/4W		RV1	1-224-254-XX	RES, ADJ, METAL GLAZE	47K			
R406	1-249-409-11	CARBON	220	5%	1/4W		RV2	1-224-253-XX	RES, ADJ, METAL GLAZE	22K			
R407	1-249-441-11	CARBON	100K	5%	1/4W		RV3	1-224-254-XX	RES, ADJ, METAL GLAZE	47K			
R408	1-249-429-11	CARBON	10K	5%	1/4W		RV101	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R409	1-249-433-11	CARBON	22K	5%	1/4W		RV102	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R410	1-249-437-11	CARBON	47K	5%	1/4W		RV103	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R411	1-249-417-11	CARBON	1K	5%	1/4W		RV104	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R412	1-249-437-11	CARBON	47K	5%	1/4W		RV105	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R413	1-215-454-00	METAL	24K	1%	1/6W		RV106	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R414	1-215-454-00	METAL	24K	1%	1/6W		RV107	1-224-250-XX	RES, ADJ, METAL GLAZE	2.2K			
R415	1-215-475-00	METAL	180K	1%	1/6W		RV108	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R416	1-215-455-00	METAL	27K	1%	1/6W		RV109	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R417	1-215-453-00	METAL	22K	1%	1/6W		RV110	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R418	1-215-453-00	METAL	22K	1%	1/6W		RV112	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R419	1-215-455-00	METAL	27K	1%	1/6W		RV113	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R420	1-215-470-00	METAL	110K	1%	1/6W		RV114	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R421	1-249-417-11	CARBON	1K	5%	1/4W		RV115	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R422	1-249-417-11	CARBON	1K	5%	1/4W		RV116	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R423	1-249-417-11	CARBON	1K	5%	1/4W		RV117	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R424	1-249-417-11	CARBON	1K	5%	1/4W		RV118	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R425	1-249-417-11	CARBON	1K	5%	1/4W		RV119	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R426	1-249-417-11	CARBON	1K	5%	1/4W		RV120	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R427	1-249-417-11	CARBON	1K	5%	1/4W		RV121	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R428	1-249-417-11	CARBON	1K	5%	1/4W		RV122	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R429	1-249-417-11	CARBON	1K	5%	1/4W		RV123	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R430	1-249-417-11	CARBON	1K	5%	1/4W		RV124	1-224-251-XX	RES, ADJ, METAL GLAZE	4.7K			
R431	1-249-417-11	CARBON	1K	5%	1/4W								

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



Ref.No.	Part No.	Description	Remark
RV125	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV126	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV127	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV128	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV129	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV130	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV131	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV132	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV133	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV134	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV135	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV136	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV137	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV138	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV139	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV140	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV141	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV142	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV143	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV144	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV145	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV146	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV147	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV401	1-228-938-00	RES, VAR, CARBON 20K	
RV402	1-228-937-00	RES, VAR, CARBON 20K	
RV403	1-228-937-00	RES, VAR, CARBON 20K	
RV404	1-228-937-00	RES, VAR, CARBON 20K	
RV405	1-228-938-00	RES, VAR, CARBON 20K	
RV406	1-228-938-00	RES, VAR, CARBON 20K	

SWITCH

S1	1-553-716-00	SWITCH, SLIDE	
S2	1-553-755-00	SWITCH, SLIDE	
S3	1-552-437-00	SWITCH, LEVER	
S401	1-554-500-00	SWITCH, PUSH (3 KEY)	
S402	1-553-716-00	SWITCH, SLIDE	
S403	1-553-716-00	SWITCH, SLIDE	
S404	1-553-716-00	SWITCH, SLIDE	
S405	1-553-716-00	SWITCH, SLIDE	
S406	1-553-716-00	SWITCH, SLIDE	
S408	1-552-737-00	SWITCH, PUSH	

*1-617-550-11 DC BOARD

CAPACITOR

C1	1-136-153-00	FILM	0.01MF	5%	50V
C2	1-124-598-11	ELECT	22MF	20%	25V
C3	1-162-318-11	CERAMIC	0.001MF	10%	500V

Ref.No.	Part No.	Description	Remark
<u>DIODE</u>			
D1	8-719-911-19	DIODE 1SS119	
<u>CONNECTOR</u>			
DC1	*1-506-603-11	PLUG, L TYPE (2.0MM PITCH) 10P	
<u>IC</u>			
IC1	8-759-145-58	IC UPC4558C	
<u>TRANSISTOR</u>			
Q1	8-729-178-54	TRANSISTOR 2SC2785	
Q2	8-729-117-54	TRANSISTOR 2SA1175	
<u>RESISTOR</u>			
R1	1-215-441-00	METAL	6.8K 1% 1/6W
R2	1-215-445-00	METAL	10K 1% 1/6W
R3	1-215-373-31	METAL	10 1% 1/6W
R4	1-215-373-31	METAL	10 1% 1/6W
R5	1-215-373-31	METAL	10 1% 1/6W
R6	1-215-373-31	METAL	10 1% 1/6W
R7	1-215-373-31	METAL	10 1% 1/6W
R8	1-249-429-11	CARBON	10K 5% 1/4W
R9	1-249-417-11	CARBON	1K 5% 1/4W
R10	1-249-441-11	CARBON	100K 5% 1/4W
R11	1-249-429-11	CARBON	10K 5% 1/4W

*1-617-551-11 DD BOARD

CAPACITOR

C2	1-124-258-00	ELECT	3.3MF	20%	50V
C3	1-101-004-00	CERAMIC	0.01MF		50V
C4	1-124-258-00	ELECT	3.3MF	20%	50V
C5	1-101-004-00	CERAMIC	0.01MF		50V

CONNECTOR

DD1	*1-506-603-11	PLUG, L TYPE (2.0MM PITCH) 10P	
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IC

IC1	8-759-903-16	IC LM318P	
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RESISTOR

R1	1-215-421-00	METAL	1K	1%	1/6W
R2	1-215-421-00	METAL	1K	1%	1/6W
R3	1-215-373-31	METAL	10	1%	1/6W
R4	1-215-373-31	METAL	10	1%	1/6W
R5	1-215-373-31	METAL	10	1%	1/6W

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FB **FA** **FC**

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
	*1-617-556-21	FB BOARD *****		D6	8-719-900-95	DIODE V09G	
		<u>CAPACITOR</u>				<u>FUSE</u>	
C1	1-123-332-00	ELECT 47MF 20% 25V		F1	△ 1-532-299-11	FUSE, TIME-LAG 5A/250V	
		<u>DIODE</u>			*1-533-146-00	HOLDER, FUSE; F1	
D1	8-719-911-19	DIODE 1SS119		F2	△ 1-532-613-11	FUSE, TIME-LAG 0.2A/250V	
D2	8-719-900-95	DIODE V09G			*1-533-146-00	HOLDER, FUSE; F2	
		<u>CONNECTOR</u>				<u>CONNECTOR</u>	
FB1	*1-508-786-00	2P PLUG (M)		FA1	*1-508-765-00	3P PLUG (M)	
FB2	*1-508-784-00	1P PLUG		FA3	*1-508-784-00	1P PLUG	
FB3	*1-508-784-00	1P PLUG		FA4	*1-508-784-00	1P PLUG	
FB4	*1-566-054-11	PIN, CONNECTOR 2P		FA5	*1-508-784-00	1P PLUG	
		<u>TRANSISTOR</u>		FA6	*1-508-765-00	3P PLUG (M)	
Q1	8-729-178-54	TRANSISTOR 2SC2785		FA7	*1-566-056-11	PIN, CONNECTOR 4P	
Q2	8-729-178-54	TRANSISTOR 2SC2785		FA8	*1-508-766-00	4P PLUG (M)	
		<u>RESISTOR</u>				<u>COIL</u>	
R1	1-249-437-11	CARBON 47K 5% 1/4W		L1	1-421-860-11	COIL, NOISE FILTER	
R2	1-249-437-11	CARBON 47K 5% 1/4W		L2	1-421-860-11	COIL, NOISE FILTER	
R3	1-249-421-11	CARBON 2.2K 5% 1/4W				<u>RESISTOR</u>	
R4	1-249-413-11	CARBON 470 5% 1/4W		R1	△ 1-202-655-91	SOLID 2.7M 5% 1/2W	
R5	1-249-405-11	CARBON 100 5% 1/4W		R3	△ 1-244-929-91	CARBON 220K 5% 1/2W	
R6	1-247-736-11	CARBON 56 5% 1/2W		R4	△ 1-244-929-91	CARBON 220K 5% 1/2W	
		<u>RELAY</u>				<u>RELAY</u>	
RY1	△ 1-515-489-11	RELAY		RY1	△ 1-515-579-11	RELAY	
		*****				<u>TRANSFORMER</u>	
	*1-620-495-11	FA BOARD *****		T1	△ 1-421-662-11	LFT	
		<u>CAPACITOR</u>		T2	△ 1-448-374-11	TRANSFORMER, POWER	
C1	1-136-360-00	FILM 0.22MF 20% 250V				*****	
C2	△ 1-136-360-11	FILM 0.22MF 20% 250V			*1-620-496-11	FC BOARD *****	
C3	△ 1-161-743-51	CERAMIC 0.0047MF 400V				<u>CAPACITOR</u>	
C4	△ 1-161-743-51	CERAMIC 0.0047MF 400V		C1	△ 1-136-135-11	FILM 2.2MF 5% 400V	
C5	△ 1-125-457-11	ELECT(BLOCK) 560MF 20% 200V		C2	1-161-742-00	CERAMIC 0.0022MF 20% 400V	
C6	△ 1-125-457-11	ELECT(BLOCK) 560MF 20% 200V		C3	1-161-742-00	CERAMIC 0.0022MF 20% 400V	
C7	1-101-003-00	CERAMIC 0.0047MF 50V		C4	1-161-742-00	CERAMIC 0.0022MF 20% 400V	
C8	1-101-003-00	CERAMIC 0.0047MF 50V		C5	1-161-742-00	CERAMIC 0.0022MF 20% 400V	
C9	1-123-362-00	ELECT 330MF 20% 50V				<u>CONNECTOR</u>	
		<u>DIODE</u>		FC1	*1-508-765-00	3P PLUG (M)	
D1	△ 8-719-911-54	DIODE U05E		FC2	*1-508-765-00	3P PLUG (M)	
D2	△ 8-719-911-54	DIODE U05E		FC3	*1-508-786-00	2P PLUG (M)	
D3	△ 8-719-911-54	DIODE U05E				<u>TRANSFORMER</u>	
D4	△ 8-719-911-54	DIODE U05E		T1	△ 1-421-776-11	LFT	
D5	△ 8-719-511-20	DIODE S1VB20		T2	1-421-776-11	LFT	

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QB **QA**

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
*1-618-724-11	QB BOARD	*****		R212	1-249-417-11	CARBON 1K 5%	1/4W
1-536-991-11	TERMINAL BOARD, INPUT/OUTPUT			R213	1-249-439-11	CARBON 68K 5%	1/4W
	<u>CAPACITOR</u>			R214	1-249-434-11	CARBON 27K 5%	1/4W
C201	1-123-820-00	ELECT 33MF 20%	16V	R215	1-214-702-00	METAL 75 1%	1/4W
C202	1-123-820-00	ELECT 33MF 20%	16V	R216	1-249-429-11	CARBON 10K 5%	1/4W
C203	1-123-820-00	ELECT 33MF 20%	16V	R217	1-215-414-00	METAL 510 1%	1/6W
C204	1-123-323-00	ELECT 470MF 20%	16V	R218	1-215-423-00	METAL 1.2K 1%	1/6W
C205	1-123-323-00	ELECT 470MF 20%	16V	R219	1-249-417-11	CARBON 1K 5%	1/4W
C206	1-101-004-00	CERAMIC 0.01MF	50V	R220	1-249-437-11	CARBON 47K 5%	1/4W
C207	1-124-236-00	ELECT 47MF 20%	16V	R221	1-249-434-11	CARBON 27K 5%	1/4W
C208	1-102-824-00	CERAMIC 470PF 5%	50V	R222	1-249-405-11	CARBON 100 5%	1/4W
C209	1-102-824-00	CERAMIC 470PF 5%	50V	R223	1-249-405-11	CARBON 100 5%	1/4W
C210	1-124-462-00	ELECT 10MF 20%	16V	R224	1-247-708-11	CARBON 470 5%	1/4W
C211	1-102-824-00	CERAMIC 470PF 5%	50V	R225	1-214-702-00	METAL 75 1%	1/4W
C212	1-102-824-00	CERAMIC 470PF 5%	50V	R226	1-249-429-11	CARBON 10K 5%	1/4W
C213	1-124-462-00	ELECT 10MF 20%	16V	R227	1-249-429-11	CARBON 10K 5%	1/4W
C214	1-124-462-00	ELECT 10MF 20%	16V	R228	1-249-439-11	CARBON 68K 5%	1/4W
	<u>COIL</u>			R229	1-249-434-11	CARBON 27K 5%	1/4W
L1	1-410-396-41	FERRITE BEAD INDUCTOR		R230	1-249-429-11	CARBON 10K 5%	1/4W
L2	1-410-396-41	FERRITE BEAD INDUCTOR		R231	1-249-439-11	CARBON 68K 5%	1/4W
L3	1-410-396-41	FERRITE BEAD INDUCTOR		R232	1-249-434-11	CARBON 27K 5%	1/4W
L4	1-410-396-41	FERRITE BEAD INDUCTOR		R233	1-215-445-00	METAL 10K 1%	1/6W
	<u>TRANSISTOR</u>			R234	1-215-437-00	METAL 4.7K 1%	1/6W
Q201	8-729-384-46	TRANSISTOR 2SA844-C		R235	1-247-895-00	CARBON 470K 5%	1/4W
Q202	8-729-900-89	TRANSISTOR DTC144ES		R236	1-247-895-00	CARBON 470K 5%	1/4W
Q203	8-729-603-50	TRANSISTOR 2SC403SP			<u>SWITCH</u>		
Q204	8-729-603-50	TRANSISTOR 2SC403SP		S201	1-553-725-00	SWITCH, SLIDE	
Q205	8-729-900-89	TRANSISTOR DTC144ES			*****		
Q206	8-729-384-46	TRANSISTOR 2SA844-C		*A-1275-081-A	QA BOARD, COMPLETE		
Q207	8-729-900-89	TRANSISTOR DTC144ES			*****		
Q208	8-729-603-50	TRANSISTOR 2SC403SP			<u>CAPACITOR</u>		
Q209	8-729-603-50	TRANSISTOR 2SC403SP		C1	1-123-820-00	ELECT 33MF 20%	16V
Q210	8-729-178-54	TRANSISTOR 2SC2785		C2	1-124-236-00	ELECT 47MF 20%	16V
Q211	8-729-178-54	TRANSISTOR 2SC2785		C3	1-123-820-00	ELECT 33MF 20%	16V
	<u>CONNECTOR</u>			C4	1-123-820-00	ELECT 33MF 20%	16V
QB1	*1-566-058-11	PIN, CONNECTOR 6P		C5	1-101-004-00	CERAMIC 0.01MF	50V
QB2	*1-566-055-11	PIN, CONNECTOR 3P		C6	1-101-004-00	CERAMIC 0.01MF	50V
QB3	*1-566-056-11	PIN, CONNECTOR 4P		C7	1-101-004-00	CERAMIC 0.01MF	50V
	<u>RESISTOR</u>			C8	1-101-004-00	CERAMIC 0.01MF	50V
R201	1-214-702-00	METAL 75 1%	1/4W	C9	1-102-820-00	CERAMIC 330PF 5%	50V
R202	1-249-439-11	CARBON 68K 5%	1/4W	C10	1-102-973-00	CERAMIC 100PF 5%	50V
R203	1-249-434-11	CARBON 27K 5%	1/4W	C11	1-101-004-00	CERAMIC 0.01MF	50V
R204	1-249-417-11	CARBON 1K 5%	1/4W	C12	1-101-004-00	CERAMIC 0.01MF	50V
R205	1-249-427-11	CARBON 6.8K 5%	1/4W	C13	1-130-475-00	MYLAR 0.0022MF 5%	50V
R206	1-249-417-11	CARBON 1K 5%	1/4W	C14	1-124-464-11	ELECT 0.22MF 20%	50V
R207	1-249-405-11	CARBON 100 5%	1/4W	C15	1-101-004-00	CERAMIC 0.01MF	50V
R208	1-249-417-11	CARBON 1K 5%	1/4W	C16	1-101-004-00	CERAMIC 0.01MF	50V
R209	1-249-405-11	CARBON 100 5%	1/4W	C17	1-101-004-00	CERAMIC 0.01MF	50V
R210	1-249-427-11	CARBON 6.8K 5%	1/4W	C18	1-101-004-00	CERAMIC 0.01MF	50V
R211	1-249-417-11	CARBON 1K 5%	1/4W	C19	1-101-004-00	CERAMIC 0.01MF	50V



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
Q120	8-729-117-54	TRANSISTOR 2SA1175		R52	1-249-420-11	CARBON 1.8K 5% 1/4W	
		RESISTOR		R53	1-249-429-11	CARBON 10K 5% 1/4W	
				R54	1-249-417-11	CARBON 1K 5% 1/4W	
				R55	1-249-418-11	CARBON 1.2K 5% 1/4W	
R2	1-214-702-00	METAL 75 1% 1/4W		R56	1-249-427-11	CARBON 6.8K 5% 1/4W	
R3	1-249-417-11	CARBON 1K 5% 1/4W					
R4	1-249-421-11	CARBON 2.2K 5% 1/4W		R57	1-249-405-11	CARBON 100 5% 1/4W	
R5	1-249-402-11	CARBON 56 5% 1/4W		R58	1-249-433-11	CARBON 22K 5% 1/4W	
R6	1-214-702-00	METAL 75 1% 1/4W		R59	1-249-437-11	CARBON 47K 5% 1/4W	
				R60	1-249-429-11	CARBON 10K 5% 1/4W	
R7	1-247-881-00	CARBON 120K 5% 1/4W		R61	1-249-429-11	CARBON 10K 5% 1/4W	
R8	1-249-434-11	CARBON 27K 5% 1/4W					
R9	1-249-413-11	CARBON 470 5% 1/4W		R62	1-249-429-11	CARBON 10K 5% 1/4W	
R10	1-249-427-11	CARBON 6.8K 5% 1/4W		R63	1-249-409-11	CARBON 220 5% 1/4W	
R11	1-249-417-11	CARBON 1K 5% 1/4W		R64	1-249-409-11	CARBON 220 5% 1/4W	
				R65	1-249-425-11	CARBON 4.7K 5% 1/4W	
R12	1-249-405-11	CARBON 100 5% 1/4W		R66	1-249-433-11	CARBON 22K 5% 1/4W	
R13	1-249-417-11	CARBON 1K 5% 1/4W					
R14	1-214-702-00	METAL 75 1% 1/4W		R67	1-249-425-11	CARBON 4.7K 5% 1/4W	
R15	1-247-881-00	CARBON 120K 5% 1/4W		R68	1-249-429-11	CARBON 10K 5% 1/4W	
R16	1-249-434-11	CARBON 27K 5% 1/4W		R69	1-249-433-11	CARBON 22K 5% 1/4W	
				R70	1-249-419-11	CARBON 1.5K 5% 1/4W	
R17	1-249-413-11	CARBON 470 5% 1/4W		R71	1-249-429-11	CARBON 10K 5% 1/4W	
R18	1-249-427-11	CARBON 6.8K 5% 1/4W					
R19	1-249-417-11	CARBON 1K 5% 1/4W		R72	1-249-429-11	CARBON 10K 5% 1/4W	
R20	1-249-405-11	CARBON 100 5% 1/4W		R73	1-249-429-11	CARBON 10K 5% 1/4W	
R21	1-249-417-11	CARBON 1K 5% 1/4W		R74	1-249-416-11	CARBON 820 5% 1/4W	
				R75	1-249-421-11	CARBON 2.2K 5% 1/4W	
R22	1-214-702-00	METAL 75 1% 1/4W		R76	1-249-405-11	CARBON 100 5% 1/4W	
R23	1-247-881-00	CARBON 120K 5% 1/4W					
R24	1-249-434-11	CARBON 27K 5% 1/4W		R77	1-249-417-11	CARBON 1K 5% 1/4W	
R25	1-249-413-11	CARBON 470 5% 1/4W		R78	1-249-405-11	CARBON 100 5% 1/4W	
R26	1-249-427-11	CARBON 6.8K 5% 1/4W		R79	1-249-428-11	CARBON 8.2K 5% 1/4W	
				R80	1-249-417-11	CARBON 1K 5% 1/4W	
R27	1-249-417-11	CARBON 1K 5% 1/4W		R81	1-249-405-11	CARBON 100 5% 1/4W	
R28	1-249-405-11	CARBON 100 5% 1/4W					
R29	1-249-417-11	CARBON 1K 5% 1/4W		R82	1-249-397-11	CARBON 22 5% 1/4W	
R30	1-249-402-11	CARBON 56 5% 1/4W		R83	1-249-429-11	CARBON 10K 5% 1/4W	
R31	1-249-402-11	CARBON 56 5% 1/4W		R84	1-249-409-11	CARBON 220 5% 1/4W	
				R85	1-249-429-11	CARBON 10K 5% 1/4W	
R32	1-249-402-11	CARBON 56 5% 1/4W		R86	1-249-409-11	CARBON 220 5% 1/4W	
R33	1-249-417-11	CARBON 1K 5% 1/4W					
R34	1-249-417-11	CARBON 1K 5% 1/4W		R87	1-249-429-11	CARBON 10K 5% 1/4W	
R35	1-249-417-11	CARBON 1K 5% 1/4W		R88	1-249-429-11	CARBON 10K 5% 1/4W	
R36	1-249-417-11	CARBON 1K 5% 1/4W		R89	1-249-429-11	CARBON 10K 5% 1/4W	
				R90	1-249-409-11	CARBON 220 5% 1/4W	
R37	1-249-409-11	CARBON 220 5% 1/4W		R91	1-249-409-11	CARBON 220 5% 1/4W	
R38	1-249-409-11	CARBON 220 5% 1/4W					
R39	1-249-409-11	CARBON 220 5% 1/4W		R92	1-249-409-11	CARBON 220 5% 1/4W	
R40	1-249-409-11	CARBON 220 5% 1/4W		R93	1-215-859-00	METAL OXIDE 22 5% 1W F	
R41	1-249-429-11	CARBON 10K 5% 1/4W		R101	1-249-441-11	CARBON 100K 5% 1/4W	
				R102	1-249-441-11	CARBON 100K 5% 1/4W	
R42	1-249-413-11	CARBON 470 5% 1/4W		R103	1-249-416-11	CARBON 820 5% 1/4W	
R43	1-249-421-11	CARBON 2.2K 5% 1/4W					
R44	1-249-421-11	CARBON 2.2K 5% 1/4W		R104	1-249-416-11	CARBON 820 5% 1/4W	
R45	1-249-421-11	CARBON 2.2K 5% 1/4W		R105	1-249-429-11	CARBON 10K 5% 1/4W	
R46	1-249-417-11	CARBON 1K 5% 1/4W		R106	1-249-429-11	CARBON 10K 5% 1/4W	
				R107	1-215-444-00	METAL 9.1K 1% 1/6W	
R47	1-249-417-11	CARBON 1K 5% 1/4W		R108	1-215-438-00	METAL 5.1K 1% 1/6W	
R48	1-249-417-11	CARBON 1K 5% 1/4W					
R49	1-249-410-11	CARBON 270 5% 1/4W		R109	1-249-439-11	CARBON 68K 5% 1/4W	
R50	1-249-410-11	CARBON 270 5% 1/4W		R110	1-249-434-11	CARBON 27K 5% 1/4W	
R51	1-249-410-11	CARBON 270 5% 1/4W		R111	1-249-439-11	CARBON 68K 5% 1/4W	

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

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

QA

GB

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R112	1-249-434-11	CARBON 27K 5% 1/4W		R166	1-249-429-11	CARBON 10K 5% 1/4W	
R113	1-249-429-11	CARBON 10K 5% 1/4W		R170	1-249-417-11	CARBON 1K 5% 1/4W	
R114	1-249-429-11	CARBON 10K 5% 1/4W		R171	1-249-425-11	CARBON 4.7K 5% 1/4W	
R116	1-249-434-11	CARBON 27K 5% 1/4W		R172	1-249-433-11	CARBON 22K 5% 1/4W	
R117	1-249-429-11	CARBON 10K 5% 1/4W				SWITCH	
R118	1-214-702-00	METAL 75 1% 1/4W		S1	1-553-725-00	SWITCH, SLIDE	
R119	1-247-708-11	CARBON 470 5% 1/4W				*****	
R120	1-249-405-11	CARBON 100 5% 1/4W		*1-623-485-11	GB BOARD		
R121	1-249-437-11	CARBON 47K 5% 1/4W				*****	
R122	1-249-434-11	CARBON 27K 5% 1/4W		*1-533-146-00	HOLDER, FUSE		
R123	1-215-423-00	METAL 1.2K 1% 1/6W				CAPACITOR	
R124	1-249-417-11	CARBON 1K 5% 1/4W		C1	1-124-462-00	ELECT 10MF 20% 16V	
R125	1-215-414-00	METAL 510 1% 1/6W		C2	1-125-494-11	ELECT(BLOCK) 560MF 20% 160V	
R126	1-249-434-11	CARBON 27K 5% 1/4W		C3	1-123-820-00	ELECT 33MF 20% 16V	
R127	1-249-434-11	CARBON 27K 5% 1/4W		C4	1-123-321-00	ELECT 220MF 20% 16V	
R128	1-249-417-11	CARBON 1K 5% 1/4W		C5	1-101-003-00	CERAMIC 0.0047MF 50V	
R129	1-249-434-11	CARBON 27K 5% 1/4W		C6	1-101-003-00	CERAMIC 0.0047MF 50V	
R130	1-249-425-11	CARBON 4.7K 5% 1/4W		C7	1-136-173-00	FILM 0.47MF 5% 50V	
R131	1-214-702-00	METAL 75 1% 1/4W				DIODE	
R132	1-249-439-11	CARBON 68K 5% 1/4W		D1	8-719-911-19	DIODE 1SS119	
R133	1-249-434-11	CARBON 27K 5% 1/4W		D2	8-719-911-19	DIODE 1SS119	
R134	1-249-417-11	CARBON 1K 5% 1/4W		D3	8-719-911-19	DIODE 1SS119	
R135	1-249-427-11	CARBON 6.8K 5% 1/4W		D4	8-719-931-33	DIODE EQB01-33	
R136	1-249-417-11	CARBON 1K 5% 1/4W		D5	8-719-302-00	DIODE RU-2M	
R137	1-249-405-11	CARBON 100 5% 1/4W		D6	8-719-302-00	DIODE RU-2M	
R138	1-249-413-11	CARBON 470 5% 1/4W		D7	8-719-302-00	DIODE RU-2M	
R139	1-249-402-11	CARBON 56 5% 1/4W		D8	8-719-302-00	DIODE RU-2M	
R140	1-249-405-11	CARBON 100 5% 1/4W		D9	8-719-911-19	DIODE 1SS119	
R141	1-249-427-11	CARBON 6.8K 5% 1/4W				FUSE	
R142	1-249-417-11	CARBON 1K 5% 1/4W		F1	▲ 1-532-237-11	FUSE, TIME-LAG 3.15A/250V	
R143	1-249-405-11	CARBON 100 5% 1/4W		F2	▲ 1-532-237-11	FUSE, TIME-LAG 3.15A/250V	
R144	1-249-429-11	CARBON 10K 5% 1/4W		F3	▲ 1-532-235-11	FUSE, TIME-LAG 0.315A/250V	
R145	1-249-405-11	CARBON 100 5% 1/4W				CONNECTOR	
R146	1-249-422-11	CARBON 2.7K 5% 1/4W		GB1	*1-508-766-00	4P PLUG (M)	
R147	1-249-405-11	CARBON 100 5% 1/4W		GB2	*1-508-767-00	5P PLUG	
R148	1-249-405-11	CARBON 100 5% 1/4W		GB3	*1-508-766-00	4P PLUG (M)	
R149	1-249-405-11	CARBON 100 5% 1/4W		GB4	*1-508-786-00	2P PLUG (M)	
R150	1-247-849-00	CARBON 5.6K 5% 1/4W		GB5	*1-566-056-11	PIN, CONNECTOR 4P	
R151	1-249-430-11	CARBON 12K 5% 1/4W		GB6	*1-566-055-11	PIN, CONNECTOR 3P	
R152	1-249-425-11	CARBON 4.7K 5% 1/4W		GB7	*1-566-057-11	PIN, CONNECTOR 5P	
R153	1-249-405-11	CARBON 100 5% 1/4W		GB8	*1-566-063-11	PIN, CONNECTOR 11P	
R154	1-249-405-11	CARBON 100 5% 1/4W		GB9	*1-566-056-11	PIN, CONNECTOR 4P	
R155	1-249-405-11	CARBON 100 5% 1/4W		GB10	*1-566-055-11	PIN, CONNECTOR 3P	
R156	1-215-437-00	METAL 4.7K 1% 1/6W		GB11	*1-566-060-11	PIN, CONNECTOR 8P	
R157	1-249-429-11	CARBON 10K 5% 1/4W		GB12	*1-566-055-11	PIN, CONNECTOR 3P	
R158	1-249-425-11	CARBON 4.7K 5% 1/4W		GB13	*1-566-054-11	PIN, CONNECTOR 2P	
R159	1-249-405-11	CARBON 100 5% 1/4W					
R160	1-249-405-11	CARBON 100 5% 1/4W					
R161	1-247-895-00	CARBON 470K 5% 1/4W					
R162	1-247-895-00	CARBON 470K 5% 1/4W					
R163	1-215-445-00	METAL 10K 1% 1/6W					
R164	1-249-417-11	CARBON 1K 5% 1/4W					
R165	1-249-430-11	CARBON 12K 5% 1/4W					

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Ref.No.	Part No.	Description	Remark
GB14	*1-508-765-00	3P PLUG (M)	
GB15	*1-566-054-11	PIN, CONNECTOR 2P	
<u>TRANSISTOR</u>			
Q1	8-729-178-54	TRANSISTOR 2SC2785	
<u>RESISTOR</u>			
R1	1-249-424-11	CARBON	3.9K 5% 1/4W
R2	1-249-424-11	CARBON	3.9K 5% 1/4W
R3	1-249-429-11	CARBON	10K 5% 1/4W
R4	1-247-693-11	CARBON	27 5% 1/4W
R5	△1-247-807-91	CARBON	100 5% 1/4W
R6	1-202-842-11	SOLID	220K 10% 1/2W
R7	1-215-880-00	METAL OXIDE	10 5% 2W F
R8	1-249-401-11	CARBON	47 5% 1/4W
R9	1-249-424-11	CARBON	3.9K 5% 1/4W
R10	1-249-429-11	CARBON	10K 5% 1/4W
R11	△1-249-390-51	CARBON	5.6 5% 1/4W F

*1-619-628-11 GC BOARD

<u>CAPACITOR</u>			
C1	1-101-004-00	CERAMIC	0.01MF 50V
C2	1-101-004-00	CERAMIC	0.01MF 50V
C3	1-123-817-11	ELECT	22MF 20% 35V
C5	1-123-817-11	ELECT	22MF 20% 35V
C6	1-161-059-00	CERAMIC	0.047MF 10% 50V
C7	1-124-284-00	ELECT	10MF 20% 16V
C8	1-124-462-00	ELECT	10MF 20% 16V
C9	1-124-462-00	ELECT	10MF 20% 16V
C101	1-123-337-00	ELECT	1000MF 20% 25V

<u>DIODE</u>			
D1	8-719-812-41	DIODE TLR124	
D2	8-719-101-50	DIODE RD5.1E-L2	
D3	8-719-101-83	DIODE RD12E-L2	
D4	8-719-911-19	DIODE 1SS119	
D5	8-719-911-19	DIODE 1SS119	

<u>CONNECTOR</u>			
GC1	*1-508-765-00	3P PLUG (M)	
GC2	*1-566-060-11	PIN, CONNECTOR 8P	
GC101	*1-566-056-11	PIN, CONNECTOR 4P	
GC102	*1-566-056-11	PIN, CONNECTOR 4P	

<u>IC</u>			
IC1	8-759-103-93	IC UPC393C	
IC2	8-759-178-12	IC UPC78L12	

Ref.No.	Part No.	Description	Remark
<u>COIL</u>			
L101	1-459-155-00	COIL (WITH CORE) 45UH	
L102	1-459-155-00	COIL (WITH CORE) 45UH	

<u>TRANSISTOR</u>			
Q1	8-729-117-54	TRANSISTOR 2SA1175	
Q2	8-729-177-43	TRANSISTOR 2SD774	
Q3	8-729-900-89	TRANSISTOR DTC144ES	

<u>RESISTOR</u>			
R1	1-247-849-00	CARBON	5.6K 5% 1/4W
R2	1-249-441-11	CARBON	100K 5% 1/4W
R3	1-249-429-11	CARBON	10K 5% 1/4W
R4	1-247-895-00	CARBON	470K 5% 1/4W
R5	1-249-429-11	CARBON	10K 5% 1/4W
R6	1-249-428-11	CARBON	8.2K 5% 1/4W
R7	1-249-429-11	CARBON	10K 5% 1/4W
R8	1-249-404-00	CARBON	82 5% 1/4W
R9	1-249-412-11	CARBON	390 5% 1/4W
R10	1-249-389-11	CARBON	4.7 5% 1/4W F
R11	1-249-417-11	CARBON	1K 5% 1/4W
R14	1-249-435-11	CARBON	33K 5% 1/4W
R15	1-249-435-11	CARBON	33K 5% 1/4W
R16	1-249-429-11	CARBON	10K 5% 1/4W
R17	1-249-407-11	CARBON	150 5% 1/4W

*A-1316-058-A GA BOARD, COMPLETE

4-374-104-01 HOLDER, TR
4-378-619-01 SPACER, MICA

<u>CAPACITOR</u>			
C601	△1-136-131-11	FILM	0.12MF 5% 400V
C602	△1-102-030-91	CERAMIC	330PF 10% 500V
C603	1-136-103-00	FILM	0.1MF 5% 200V
C604	1-136-103-00	FILM	0.1MF 5% 200V
C605	△1-102-030-91	CERAMIC	330PF 10% 500V
C606	△1-130-661-11	FILM	0.022MF 3% 600V
C607	△1-102-030-91	CERAMIC	330PF 10% 500V
C608	1-136-103-00	FILM	0.1MF 5% 200V
C609	1-136-103-00	FILM	0.1MF 5% 200V
C610	△1-162-318-91	CERAMIC	0.001MF 10% 500V
C611	△1-130-920-11	FILM	0.014MF 5% 600V
C612	△1-136-239-11	FILM	0.01MF 3% 1KV
C613	△1-162-318-91	CERAMIC	0.001MF 10% 500V
C614	△1-162-318-91	CERAMIC	0.001MF 10% 500V
C615	1-124-347-00	ELECT	100MF 20% 160V
C616	1-126-101-11	ELECT	100MF 20% 6.3V
C617	1-123-333-00	ELECT	100MF 20% 16V
C618	1-123-321-00	ELECT	220MF 20% 16V
C619	△1-130-696-11	FILM	0.024MF 3% 600V

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GA CAR

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C620	▲ 1-162-318-91	CERAMIC	0.001MF 10% 500V	L613	1-425-612-00	COIL, ARE-CORE	
C621	▲ 1-162-318-91	CERAMIC	0.001MF 10% 500V	L614	1-407-685-00	MICRO INDUCTOR 2.2UH	
C622	1-124-441-11	ELECT	3900MF 20% 25V	L615	1-407-556-00	CHOKE COIL	
C623	1-124-441-11	ELECT	3900MF 20% 25V				
C624	▲ 1-162-318-91	CERAMIC	0.001MF 10% 500V				
TRANSISTOR							
C625	▲ 1-162-318-91	CERAMIC	0.001MF 10% 500V	Q601	▲ 8-729-902-00	TRANSISTOR 2SC3163	
C626	1-124-441-11	ELECT	3900MF 20% 25V	Q602	▲ 8-729-902-00	TRANSISTOR 2SC3163	
C627	1-124-441-11	ELECT	3900MF 20% 25V	Q603	▲ 8-729-902-00	TRANSISTOR 2SC3163	
C628	▲ 1-130-920-11	FILM	0.014MF 5% 600V	Q604	▲ 8-729-902-00	TRANSISTOR 2SC3163	
C629	▲ 1-162-318-91	CERAMIC	0.001MF 10% 500V				
RESISTOR							
C630	▲ 1-162-318-91	CERAMIC	0.001MF 10% 500V	R601	1-202-846-00	SOLID 470K 10% 1/2W	
C631	1-123-024-00	ELECT	33MF 160V	R602	▲ 1-202-846-91	SOLID 470K 10% 1/2W	
C632	1-123-024-00	ELECT	33MF 160V	R603	▲ 1-216-396-51	METAL OXIDE 3.9 5% 3W F	
C633	▲ 1-162-318-91	CERAMIC	0.001MF 10% 500V	R604	▲ 1-216-396-51	METAL OXIDE 3.9 5% 3W F	
C634	1-124-667-11	ELECT	10MF 20% 100V	R605	1-202-842-11	SOLID 220K 10% 1/2W	
C635	1-106-375-12	MYLAR	0.022MF 10% 100V	R606	1-202-846-00	SOLID 470K 10% 1/2W	
C636	1-106-375-12	MYLAR	0.022MF 10% 100V	R607	▲ 1-216-396-51	METAL OXIDE 3.9 5% 3W F	
DIODE							
D601	8-719-301-18	DIODE RM2CS		R608	▲ 1-216-396-51	METAL OXIDE 3.9 5% 3W F	
D602	8-719-301-18	DIODE RM2CS		R609	1-207-451-00	WIREWOUND 0.1 10% 1/2W	
D603	8-719-301-18	DIODE RM2CS		R610	▲ 1-207-451-11	WIREWOUND 0.1 10% 1/2W	
D604	8-719-301-18	DIODE RM2CS		R611	▲ 1-217-243-11	WIREWOUND 0.33 10% 3W F	
D605	8-719-300-09	DIODE CTU-24S		R612	▲ 1-247-700-51	CARBON 100 5% 1/4W F	
D606	▲ 8-719-936-05	DIODE EQA01-05R		R613	1-247-713-11	CARBON 1K 5% 1/4W	
D607	8-719-500-30	DIODE S10SC4M		R614	▲ 1-249-405-51	CARBON 100 5% 1/4W F	
D608	8-719-500-31	DIODE S10SC4MR		R615	▲ 1-249-405-51	CARBON 100 5% 1/4W F	
D609	8-719-302-00	DIODE RU-2M		R616	1-247-701-11	CARBON 120 5% 1/4W	
D610	8-719-302-00	DIODE RU-2M		R617	▲ 1-249-389-11	CARBON 4.7 5% 1/4W F	
D611	8-719-302-00	DIODE RU-2M		TRANSFORMER			
D612	8-719-911-19	DIODE 1SS119		T601	▲ 1-421-793-11	PRT	
D613	8-719-301-18	DIODE RM2CS		T602	▲ 1-421-833-11	PIT	
D614	8-719-301-18	DIODE RM2CS		T603	▲ 1-421-793-11	PRT	
MODULE							
IC601	▲ 1-235-772-11	POWER MODULE		T604	▲ 1-421-832-11	PIT	
IC602	▲ 1-235-508-11	PROTECTOR MODULE (PM-6)		T605	▲ 1-421-718-11	H.PCT	
IC603	▲ 1-235-773-11	POWER MODULE		*****			
IC604	▲ 1-235-774-11	PROTECTOR MODULE (PM-7)		*A-1330-691-A	CA R BOARD, COMPLETE		
COIL							
L601	1-425-612-00	COIL, ARE-CORE					
L602	1-425-612-00	COIL, ARE-CORE		4-370-970-01	SPACER, TR		
L603	1-425-612-00	COIL, ARE-CORE		*4-378-693-01	RETAINER (A), TR		
L604	1-425-612-00	COIL, ARE-CORE		*4-378-694-01	RETAINER (B), TR		
L605	1-425-612-00	COIL, ARE-CORE		CAPACITOR			
L606	1-425-612-00	COIL, ARE-CORE		C1	1-124-462-00	ELECT 10MF 20% 16V	
L607	1-425-612-00	COIL, ARE-CORE		C3	1-123-323-00	ELECT 470MF 20% 16V	
L608	1-425-612-00	COIL, ARE-CORE		C4	1-101-006-00	CERAMIC 0.047MF 50V	
L609	1-459-407-00	COIL, FERRITE CHOKE		C6	1-124-462-00	ELECT 10MF 20% 16V	
L610	1-425-612-00	COIL, ARE-CORE		C8	1-123-323-00	ELECT 470MF 20% 16V	
L611	1-459-407-00	COIL, FERRITE CHOKE		C9	1-101-006-00	CERAMIC 0.047MF 50V	
L612	1-421-421-00	COIL, CHOKE 100UH		C10	1-101-006-00	CERAMIC 0.047MF 50V	
				C11	1-101-006-00	CERAMIC 0.047MF 50V	
				C12	1-101-006-00	CERAMIC 0.047MF 50V	

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Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C13	1-102-971-00	CERAMIC 82PF	5% 50V	Q6	△8-765-300-08	TRANSISTOR 2SC2009-8	
C14	1-102-963-00	CERAMIC 33PF	5% 50V	Q7	8-729-801-88	TRANSISTOR 2SA1381	
C17	1-123-333-00	ELECT 100MF	20% 16V	Q8	△8-729-801-97	TRANSISTOR 2SC3503-D	
C18	1-101-006-00	CERAMIC 0.047MF	50V	Q9	8-729-801-97	TRANSISTOR 2SC3503	
C19	1-123-007-00	ELECT 4.7MF	350V	Q10	8-729-801-88	TRANSISTOR 2SA1381	
C20	1-102-050-00	CERAMIC 0.01MF	500V	Q11	8-729-115-10	TRANSISTOR 2SK105A-10	
C21	1-102-050-00	CERAMIC 0.01MF	500V				
C22	1-102-050-00	CERAMIC 0.01MF	500V				
C23	1-102-228-00	CERAMIC 470PF	10% 500V				
C24	1-101-006-00	CERAMIC 0.047MF	50V				
C25	1-101-006-00	CERAMIC 0.047MF	50V				
C26	1-101-006-00	CERAMIC 0.047MF	50V				
C27	1-123-611-00	ELECT 1MF	20% 50V				
C28	1-101-004-00	CERAMIC 0.01MF	50V				
C30	1-102-228-00	CERAMIC 470PF	10% 500V				
		<u>CONNECTOR</u>					
CAR1	*1-566-055-11	PIN, CONNECTOR 3P					
CAR2	*1-566-055-11	PIN, CONNECTOR 3P					
CAR4	*1-566-060-11	PIN, CONNECTOR 8P					
CAR6	*1-566-055-11	PIN, CONNECTOR 3P					
		<u>DIODE</u>					
D1	8-719-101-64	DIODE RD6.8E-L2					
D2	8-719-911-19	DIODE 1SS119		R17	1-215-405-00	METAL 220	1% 1/6W
D3	8-719-911-19	DIODE 1SS119		R18	1-249-411-11	CARBON 330	5% 1/4W
D4	8-719-911-19	DIODE 1SS119		R19	1-249-398-11	CARBON 27	5% 1/4W
D5	8-719-937-06	DIODE EQA01-06S		R20	1-249-408-11	CARBON 180	5% 1/4W
D6	8-719-911-19	DIODE 1SS119		R22	1-249-425-11	CARBON 4.7K	5% 1/4W F
D7	8-719-911-19	DIODE 1SS119		R23	△1-247-700-51	CARBON 100	5% 1/4W F
D8	8-719-911-19	DIODE 1SS119		R24	1-249-469-11	CARBON 100K	5% 1/4W
D9	8-719-911-19	DIODE 1SS119		R25	1-249-469-11	CARBON 100K	5% 1/4W
D10	8-719-911-19	DIODE 1SS119		R26	1-215-948-00	METAL OXIDE 10K	5% 5W F
D11	8-719-300-80	DIODE RU-1C		R27	1-249-400-11	CARBON 39	5% 1/4W
D12	8-719-300-80	DIODE RU-1C		R28	1-214-777-00	METAL 100K	1% 1/4W
D13	8-719-911-19	DIODE 1SS119		R29	1-214-777-00	METAL 100K	1% 1/4W
D14	8-719-911-19	DIODE 1SS119		R30	1-249-400-11	CARBON 39	5% 1/4W
D15	8-719-911-19	DIODE 1SS119		R31	1-247-701-11	CARBON 120	5% 1/4W F
		<u>IC</u>		R32	1-249-404-00	CARBON 82	5% 1/4W
IC1	8-759-990-82	IC TL082CP		R33	1-249-404-00	CARBON 82	5% 1/4W
		<u>COIL</u>		R34	1-202-557-00	SOL ID 220	5% 1/2W
L1	1-459-155-00	COIL (WITH CORE) 45UH		R35	1-249-405-11	CARBON 100	5% 1/4W
L2	1-459-155-00	COIL (WITH CORE) 45UH		R36	1-215-449-00	METAL 15K	1% 1/6W
L3	1-407-684-00	MICRO INDUCTOR 1.8UH		R37	1-249-429-11	CARBON 10K	5% 1/4W
L4	1-410-396-41	FERRITE BEAD INDUCTOR		R38	1-249-425-11	CARBON 4.7K	5% 1/4W
		<u>TRANSISTOR</u>		R39	1-249-429-11	CARBON 10K	5% 1/4W
Q1	8-729-110-52	TRANSISTOR 2SA1005-L		R40	1-202-473-00	SOL ID 5.6M	5% 1/4W
Q2	8-765-300-00	TRANSISTOR 2SC2009		R41	1-249-429-11	CARBON 10K	5% 1/4W
Q3	8-765-300-00	TRANSISTOR 2SC2009		R42	1-215-441-00	METAL 6.8K	1% 1/6W
Q4	8-765-300-00	TRANSISTOR 2SC2009		R43	1-249-395-11	CARBON 15	5% 1/4W
Q5	8-729-110-52	TRANSISTOR 2SA1005-L		R44	△1-247-701-51	CARBON 120	5% 1/4W F
				R45	1-249-411-11	CARBON 330	5% 1/4W
				R46	1-215-373-31	METAL 10	1% 1/6W
				R47	1-249-425-11	CARBON 4.7K	5% 1/4W

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CAG

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*A-1330-692-A	CA G BOARD, COMPLETE	*****		D11	8-719-300-80	DIODE RU-1C	
4-370-970-01	SPACER, TR			D12	8-719-300-80	DIODE RU-1C	
*4-378-693-01	RETAINER (A), TR			D13	8-719-911-19	DIODE 1SS119	
*4-378-694-01	RETAINER (B), TR			D14	8-719-911-19	DIODE 1SS119	
				D15	8-719-911-19	DIODE 1SS119	
	<u>CAPACITOR</u>				<u>IC</u>		
C1	1-124-462-00	ELECT	10MF 20% 16V	IC1	8-759-990-82	IC TL082CP	
C3	1-123-323-00	ELECT	470MF 20% 16V		<u>COIL</u>		
C4	1-101-006-00	CERAMIC	0.047MF 50V	L1	1-459-155-00	COIL (WITH CORE) 45UH	
C6	1-124-462-00	ELECT	10MF 20% 16V	L2	1-459-155-00	COIL (WITH CORE) 45UH	
C8	1-123-323-00	ELECT	470MF 20% 16V	L3	1-407-684-00	MICRO INDUCTOR 1.8UH	
C9	1-101-006-00	CERAMIC	0.047MF 50V	L4	1-410-396-41	FERRITE BEAD INDUCTOR	
C10	1-101-006-00	CERAMIC	0.047MF 50V		<u>TRANSISTOR</u>		
C11	1-101-006-00	CERAMIC	0.047MF 50V	Q1	8-729-110-52	TRANSISTOR 2SA1005-L	
C12	1-101-006-00	CERAMIC	0.047MF 50V	Q2	8-765-300-00	TRANSISTOR 2SC2009	
C13	1-102-971-00	CERAMIC	82PF 5% 50V	Q3	8-765-300-00	TRANSISTOR 2SC2009	
C14	1-102-963-00	CERAMIC	33PF 5% 50V	Q4	8-765-300-00	TRANSISTOR 2SC2009	
C17	1-123-333-00	ELECT	100MF 20% 16V	Q5	8-729-110-52	TRANSISTOR 2SA1005-L	
C18	1-101-006-00	CERAMIC	0.047MF 50V	Q6	△8-765-300-08	TRANSISTOR 2SC2009-B	
C19	1-123-007-00	ELECT	4.7MF 350V	Q7	8-729-801-88	TRANSISTOR 2SA1381	
C20	1-102-050-00	CERAMIC	0.01MF 500V	Q8	△8-729-801-97	TRANSISTOR 2SC3503-D	
C21	1-102-050-00	CERAMIC	0.01MF 500V	Q9	8-729-801-97	TRANSISTOR 2SC3503	
C22	1-102-050-00	CERAMIC	0.01MF 500V	Q10	8-729-801-88	TRANSISTOR 2SA1381	
C23	1-102-228-00	CERAMIC	470PF 10% 500V	Q11	8-729-115-10	TRANSISTOR 2SK105A-10	
C24	1-101-006-00	CERAMIC	0.047MF 50V		<u>RESISTOR</u>		
C25	1-101-006-00	CERAMIC	0.047MF 50V	R1	1-249-405-11	CARBON 100 5% 1/4W	
C26	1-101-006-00	CERAMIC	0.047MF 50V	R2	1-215-429-00	METAL 2.2K 1% 1/6W	
C27	1-123-611-00	ELECT	1MF 20% 50V	R4	1-215-457-00	METAL 33K 1% 1/6W	
C28	1-101-004-00	CERAMIC	0.01MF 50V	R5	1-249-427-11	CARBON 6.8K 5% 1/4W	
C30	1-102-228-00	CERAMIC	470PF 10% 500V	R6	1-249-425-11	CARBON 4.7K 5% 1/4W	
	<u>CONNECTOR</u>			R7	1-249-405-11	CARBON 100 5% 1/4W	
CAG1	*1-566-055-11	PIN, CONNECTOR 3P		R8	1-249-407-11	CARBON 150 5% 1/4W	
CAG2	*1-566-055-11	PIN, CONNECTOR 3P		R9	1-249-405-11	CARBON 100 5% 1/4W	
CAG4	*1-566-060-11	PIN, CONNECTOR 8P		R10	1-249-399-11	CARBON 33 5% 1/4W	
CAG5	*1-566-060-11	PIN, CONNECTOR 8P		R11	1-249-399-11	CARBON 33 5% 1/4W	
CAG6	*1-566-055-11	PIN, CONNECTOR 3P		R12	1-249-405-11	CARBON 100 5% 1/4W	
	<u>DIODE</u>			R13	1-247-849-00	CARBON 5.6K 5% 1/4W	
D1	8-719-101-64	DIODE RD6.8E-L2		R14	1-249-407-11	CARBON 150 5% 1/4W	
D2	8-719-911-19	DIODE 1SS119		R15	1-215-433-00	METAL 3.3K 1% 1/6W	
D3	8-719-911-19	DIODE 1SS119		R16	1-249-401-11	CARBON 47 5% 1/4W	
D4	8-719-911-19	DIODE 1SS119		R17	1-215-405-00	METAL 220 1% 1/6W	
D5	8-719-937-06	DIODE EQA01-06S		R18	1-249-411-11	CARBON 330 5% 1/4W	
D6	8-719-911-19	DIODE 1SS119		R19	1-249-398-11	CARBON 27 5% 1/4W	
D7	8-719-911-19	DIODE 1SS119		R20	1-249-408-11	CARBON 180 5% 1/4W	
D8	8-719-911-19	DIODE 1SS119		R22	1-249-425-11	CARBON 4.7K 5% 1/4W	F
D9	8-719-911-19	DIODE 1SS119		R23	△1-247-700-51	CARBON 100 5% 1/4W	F
D10	8-719-911-19	DIODE 1SS119		R24	1-249-469-11	CARBON 100K 5% 1/4W	
				R25	1-249-469-11	CARBON 100K 5% 1/4W	
				R26	1-215-948-00	METAL OXIDE 10K 5% 5W	F

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CAG
CAB

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R27	1-249-400-11	CARBON 39 5% 1/4W		C27	1-123-611-00	ELECT 1MF 20% 50V	
R28	1-214-777-00	METAL 100K 1% 1/4W		C28	1-101-004-00	CERAMIC 0.01MF 50V	
R29	1-214-777-00	METAL 100K 1% 1/4W		C30	1-102-228-00	CERAMIC 470PF 10% 500V	
R30	1-249-400-11	CARBON 39 5% 1/4W				<u>CONNECTOR</u>	
R31	1-247-701-11	CARBON 120 5% 1/4W F					
R32	1-249-404-00	CARBON 82 5% 1/4W		CAB1	*1-566-055-11	PIN, CONNECTOR 3P	
R33	1-249-404-00	CARBON 82 5% 1/4W		CAB2	*1-566-055-11	PIN, CONNECTOR 3P	
R34	1-202-557-00	SOL ID 220 5% 1/2W		CAB3	*1-566-057-11	PIN, CONNECTOR 5P	
R35	1-249-405-11	CARBON 100 5% 1/4W		CAB4	*1-566-060-11	PIN, CONNECTOR 8P	
R36	1-215-449-00	METAL 15K 1% 1/6W		CAB6	*1-566-055-11	PIN, CONNECTOR 3P	
R37	1-249-429-11	CARBON 10K 5% 1/4W		CAB7	*1-566-056-11	PIN, CONNECTOR 4P	
R38	1-249-425-11	CARBON 4.7K 5% 1/4W				<u>DIODE</u>	
R39	1-249-429-11	CARBON 10K 5% 1/4W		D1	8-719-101-64	DIODE RD6.8E-L2	
R40	1-202-473-00	SOL ID 5.6M 5% 1/4W		D2	8-719-911-19	DIODE 1SS119	
R41	1-249-429-11	CARBON 10K 5% 1/4W		D3	8-719-911-19	DIODE 1SS119	
R42	1-215-441-00	METAL 6.8K 1% 1/6W		D4	8-719-911-19	DIODE 1SS119	
R43	1-249-395-11	CARBON 15 5% 1/4W		D5	8-719-937-06	DIODE EQA01-06S	
R44	▲1-247-701-51	CARBON 120 5% 1/4W F		D6	8-719-911-19	DIODE 1SS119	
R45	1-249-411-11	CARBON 330 5% 1/4W		D7	8-719-911-19	DIODE 1SS119	
R46	1-215-373-31	METAL 10 1% 1/6W		D8	8-719-911-19	DIODE 1SS119	
R47	1-249-425-11	CARBON 4.7K 5% 1/4W		D9	8-719-911-19	DIODE 1SS119	

*A-1330-693-A	CA B BOARD, COMPLETE			D11	8-719-300-80	DIODE RU-1C	
	*****			D12	8-719-300-80	DIODE RU-1C	
4-370-970-01	SPACER, TR			D13	8-719-911-19	DIODE 1SS119	
*4-378-693-01	RETAINER (A), TR			D14	8-719-911-19	DIODE 1SS119	
*4-378-694-01	RETAINER (B), TR			D15	8-719-911-19	DIODE 1SS119	
	<u>CAPACITOR</u>					<u>IC</u>	
C1	1-124-462-00	ELECT 10MF 20% 16V		IC1	8-759-990-82	IC TL082CP	
C3	1-123-323-00	ELECT 470MF 20% 16V				<u>COIL</u>	
C4	1-101-006-00	CERAMIC 0.047MF 50V		L1	1-459-155-00	COIL (WITH CORE) 45UH	
C6	1-124-462-00	ELECT 10MF 20% 16V		L2	1-459-155-00	COIL (WITH CORE) 45UH	
C8	1-123-323-00	ELECT 470MF 20% 16V		L3	1-407-684-00	MICRO INDUCTOR 1.8UH	
C9	1-101-006-00	CERAMIC 0.047MF 50V		L4	1-410-396-41	FERRITE BEAD INDUCTOR	
C10	1-101-006-00	CERAMIC 0.047MF 50V				<u>TRANSISTOR</u>	
C11	1-101-006-00	CERAMIC 0.047MF 50V		Q1	8-729-110-52	TRANSISTOR 2SA1005-L	
C12	1-101-006-00	CERAMIC 0.047MF 50V		Q2	8-765-300-00	TRANSISTOR 2SC2009	
C13	1-101-888-00	CERAMIC 68PF 5% 50V		Q3	8-765-300-00	TRANSISTOR 2SC2009	
C14	1-102-963-00	CERAMIC 33PF 5% 50V		Q4	8-765-300-00	TRANSISTOR 2SC2009	
C17	1-123-333-00	ELECT 100MF 20% 16V		Q5	8-729-110-52	TRANSISTOR 2SA1005-L	
C18	1-101-006-00	CERAMIC 0.047MF 50V		Q6	▲8-765-300-08	TRANSISTOR 2SC2009-8	
C19	1-123-007-00	ELECT 4.7MF 350V		Q7	8-729-801-88	TRANSISTOR 2SA1381	
C20	1-102-050-00	CERAMIC 0.01MF 500V		Q8	▲8-729-801-97	TRANSISTOR 2SC3503-D	
C21	1-102-050-00	CERAMIC 0.01MF 500V		Q9	8-729-801-97	TRANSISTOR 2SC3503	
C22	1-102-050-00	CERAMIC 0.01MF 500V		Q10	8-729-801-88	TRANSISTOR 2SA1381	
C23	1-102-228-00	CERAMIC 470PF 10% 500V		Q11	8-729-115-10	TRANSISTOR 2SK105A-10	
C24	1-101-006-00	CERAMIC 0.047MF 50V					
C25	1-101-006-00	CERAMIC 0.047MF 50V					
C26	1-101-006-00	CERAMIC 0.047MF 50V					

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CAB CBR CBG

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
RESISTOR				*1-617-545-21 CBR BOARD			
R1	1-249-405-11	CARBON	100 5% 1/4W			*****	
R2	1-215-429-00	METAL	2.2K 1% 1/6W		1-526-812-11	SOCKET, CRT	
R4	1-215-457-00	METAL	33K 1% 1/6W	CAPACITOR			
R5	1-249-427-11	CARBON	6.8K 5% 1/4W	C1	1-162-115-00	CERAMIC 330PF	10% 2KV
R6	1-249-425-11	CARBON	4.7K 5% 1/4W	C2	1-162-115-00	CERAMIC 330PF	10% 2KV
R7	1-249-405-11	CARBON	100 5% 1/4W	CONNECTOR			
R8	1-249-407-11	CARBON	150 5% 1/4W	CBR1	*1-508-784-00	1P PLUG	
R9	1-249-405-11	CARBON	100 5% 1/4W	CBR2	*1-566-055-11	PIN, CONNECTOR 3P	
R10	1-249-399-11	CARBON	33 5% 1/4W	CBR3	*1-566-055-11	PIN, CONNECTOR 3P	
R11	1-249-399-11	CARBON	33 5% 1/4W	CBR4	*1-508-786-00	2P PLUG (M)	
R12	1-249-405-11	CARBON	100 5% 1/4W	COIL			
R13	1-247-849-00	CARBON	5.6K 5% 1/4W	L1	1-407-364-00	COIL, SPOOK CHOKE 3.3UH	
R14	1-249-407-11	CARBON	150 5% 1/4W	L2	1-407-364-00	COIL, SPOOK CHOKE 3.3UH	
R15	1-215-433-00	METAL	3.3K 1% 1/6W	L3	1-407-685-00	MICRO INDUCTOR 2.2UH	
R16	1-249-401-11	CARBON	47 5% 1/4W	NEON LAMP			
R17	1-215-405-00	METAL	220 1% 1/6W	NL1	1-519-013-13	DISCHARGE TUBE	
R18	1-249-411-11	CARBON	330 5% 1/4W	RESISTOR			
R19	1-249-398-11	CARBON	27 5% 1/4W	R1	1-202-827-11	SOLID 5.6K 10% 1/2W	
R20	1-249-408-11	CARBON	180 5% 1/4W	R2	1-202-847-00	SOLID 560K 10% 1/2W	
R22	1-249-425-11	CARBON	4.7K 5% 1/4W F	R3	1-202-823-11	SOLID 2.7K 10% 1/2W	
R23	△1-247-700-51	CARBON	100 5% 1/4W F	R4	1-202-818-00	SOLID 1K 10% 1/2W	
R24	1-249-469-11	CARBON	100K 5% 1/4W	SPARK GAP			
R25	1-249-469-11	CARBON	100K 5% 1/4W	SG1	1-519-063-XX	DISCHARGING GAP	
R26	1-215-948-00	METAL OXIDE	10K 5% 5W F	*****			
R27	1-249-400-11	CARBON	39 5% 1/4W		*1-617-546-21	CBG BOARD	
R28	1-214-777-00	METAL	100K 1% 1/4W		*****		
R29	1-214-777-00	METAL	100K 1% 1/4W		1-526-812-11	SOCKET, CRT	
R30	1-249-400-11	CARBON	39 5% 1/4W	CAPACITOR			
R31	1-247-701-11	CARBON	120 5% 1/4W F	C1	1-162-115-00	CERAMIC 330PF	10% 2KV
R32	1-249-404-00	CARBON	82 5% 1/4W	C2	1-162-115-00	CERAMIC 330PF	10% 2KV
R33	1-249-404-00	CARBON	82 5% 1/4W	CONNECTOR			
R34	1-202-557-00	SOLID	220 5% 1/2W	CBG1	*1-508-784-00	1P PLUG	
R35	1-249-405-11	CARBON	100 5% 1/4W	CBG2	*1-566-055-11	PIN, CONNECTOR 3P	
R36	1-215-449-00	METAL	15K 1% 1/6W	CBG3	*1-566-055-11	PIN, CONNECTOR 3P	
R37	1-249-429-11	CARBON	10K 5% 1/4W	CBG4	*1-508-786-00	2P PLUG (M)	
R38	1-249-425-11	CARBON	4.7K 5% 1/4W	COIL			
R39	1-249-429-11	CARBON	10K 5% 1/4W	L1	1-407-364-00	COIL, SPOOK CHOKE 3.3UH	
R40	1-202-473-00	SOLID	5.6M 5% 1/4W	L2	1-407-364-00	COIL, SPOOK CHOKE 3.3UH	
R41	1-249-429-11	CARBON	10K 5% 1/4W	L3	1-407-685-00	MICRO INDUCTOR 2.2UH	
R42	1-215-441-00	METAL	6.8K 1% 1/6W				
R43	1-249-395-11	CARBON	15 5% 1/4W				
R44	△1-247-701-51	CARBON	120 5% 1/4W F				
R45	1-249-411-11	CARBON	330 5% 1/4W				
R46	1-215-389-00	METAL	47 1% 1/6W				
R47	1-249-425-11	CARBON	4.7K 5% 1/4W				

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CBG **CBB** **EB** **EC** **EA**

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
		<u>NEON LAMP</u>		EB2	*1-566-055-11	PIN, CONNECTOR 3P	
NL1	1-519-013-13	DISCHARGE TUBE				<u>TRANSFORMER</u>	
		<u>RESISTOR</u>		T1	<u>A</u> 1-421-834-11	TRANSFORMER, FERRITE	
R1	1-202-827-11	SOLID	5.6K 10% 1/2W	*****			
R2	1-202-847-00	SOLID	560K 10% 1/2W			*1-617-554-21	EC BOARD
R3	1-202-823-11	SOLID	2.7K 10% 1/2W			*****	
R4	1-202-818-00	SOLID	1K 10% 1/2W			<u>CAPACITOR</u>	
		<u>SPARK GAP</u>		C901	1-102-327-00	CERAMIC	330PF 15% 1.5KV
SG1	1-519-063-XX	DISCHARGING GAP		C902	1-102-327-00	CERAMIC	330PF 15% 1.5KV
*****						<u>CONNECTOR</u>	
		*1-617-547-21	CBB BOARD	EC1	*1-566-041-11	PIN, CONNECTOR 2P	
		*****		EC2	*1-566-041-11	PIN, CONNECTOR 2P	
		1-526-812-11	SOCKET, CRT			<u>RESISTOR</u>	
		<u>CAPACITOR</u>		R901	1-202-822-00	SOLID	2.2K 10% 1/2W
C1	1-162-115-00	CERAMIC	330PF 10% 2KV	R902	1-202-822-00	SOLID	2.2K 10% 1/2W
C2	1-162-115-00	CERAMIC	330PF 10% 2KV			<u>SPARK GAP</u>	
		<u>CONNECTOR</u>		SG901	1-519-063-XX	DISCHARGING GAP	
CBB1	*1-508-784-00	1P PLUG		SG902	1-519-063-XX	DISCHARGING GAP	
CBB2	*1-566-055-11	PIN, CONNECTOR 3P		*****			
CBB3	*1-566-055-11	PIN, CONNECTOR 3P				*A-1345-682-A	EA BOARD, COMPLETE
CBB4	*1-508-786-00	2P PLUG (M)				*****	
		<u>COIL</u>				<u>CAPACITOR</u>	
L1	1-407-364-00	COIL, SPOOK CHOKE	3.3UH	C1	1-123-379-00	ELECT	0.47MF 20% 50V
L2	1-407-364-00	COIL, SPOOK CHOKE	3.3UH	C2	1-102-973-00	CERAMIC	100PF 5% 50V
L3	1-407-685-00	MICRO INDUCTOR	2.2UH	C4	1-130-481-00	MYLAR	0.0068MF 5% 50V
		<u>NEON LAMP</u>		C5	1-123-343-00	ELECT	33MF 20% 25V
NL1	1-519-013-13	DISCHARGE TUBE		C6	1-124-270-11	ELECT	0.47MF 20% 50V
		<u>RESISTOR</u>		C7	1-123-379-00	ELECT	0.47MF 20% 50V
R1	1-202-827-11	SOLID	5.6K 10% 1/2W	C8	1-102-973-00	CERAMIC	100PF 5% 50V
R2	1-202-847-00	SOLID	560K 10% 1/2W	C10	1-136-155-00	FILM	0.015MF 5% 50V
R3	1-202-823-11	SOLID	2.7K 10% 1/2W	C11	1-123-343-00	ELECT	33MF 20% 25V
R4	1-202-818-00	SOLID	1K 10% 1/2W	C12	1-123-356-00	ELECT	10MF 20% 16V
		<u>SPARK GAP</u>		C13	1-123-318-00	ELECT	33MF 20% 16V
SG1	1-519-063-XX	DISCHARGING GAP		C15	1-123-356-00	ELECT	10MF 20% 16V
*****				C16	1-108-618-91	MYLAR	0.0022MF 10% 100V
		*1-617-553-21	EB BOARD	C17	1-136-173-00	FILM	0.47MF 5% 50V
		*****		C18	1-123-381-00	ELECT	2.2MF 20% 50V
		<u>CONNECTOR</u>		C19	1-123-332-00	ELECT	47MF 20% 16V
EB1	*1-506-348-XX	3P PLUG (L)		C20	1-124-648-00	ELECT	4.7MF 20% 35V
				C21	1-125-195-00	ELECT	4.7MF 100V
				C22	1-123-356-00	ELECT	10MF 20% 25V
				C23	1-123-333-00	ELECT	100MF 20% 16V
				C24	1-102-038-00	CERAMIC	0.001MF 500V

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EA

Ref.No.	Part No.	Description	Quantity	Remark	Ref.No.	Part No.	Description	Quantity	Remark
C25	1-123-324-00	ELECT	1000MF	20%	16V	D30	8-719-900-95	DIODE V09G	
C26	1-108-692-81	MYLAR	0.01MF	10%	200V	D31	8-719-911-19	DIODE 1SS119	
C27	1-123-024-00	ELECT	33MF		160V	D32	8-719-911-19	DIODE 1SS119	
C28	1-136-178-00	FILM	0.0047MF	3%	1.6KV				
C29	1-136-186-00	FILM	2.4MF	5%	200V				
C30	1-136-186-00	FILM	2.4MF	5%	200V	EA1	*1-566-057-11	PIN, CONNECTOR 5P	
C31	1-136-186-00	FILM	2.4MF	5%	200V	EA2	*1-566-055-11	PIN, CONNECTOR 3P	
C32	1-124-940-00	ELECT	1MF	20%	160V	EA3	*1-566-056-11	PIN, CONNECTOR 4P	
C33	1-124-347-00	ELECT	100MF	20%	160V	EA4	*1-566-060-11	PIN, CONNECTOR 8P	
C34	1-108-425-00	MYLAR	0.022MF	10%	200V	EA5	*1-566-055-11	PIN, CONNECTOR 3P	
C35	1-123-359-00	ELECT	47MF	20%	50V	EA6	*1-506-348-XX	3P PLUG (L)	
C36	1-136-217-00	MYLAR	1.5MF	10%	250V	EA7	*1-506-348-XX	3P PLUG (L)	
C37	1-136-184-00	MYLAR	0.68MF	10%	250V	EA8	*1-508-784-00	1P PLUG	
C38	△ 1-136-091-11	FILM	0.0068MF	3%	2KV	EA9	*1-508-786-00	2P PLUG (M)	
C39	△ 1-136-179-11	FILM	1.5MF	5%	200V	EA10	*1-506-348-XX	3P PLUG (L)	
C40	△ 1-136-179-11	FILM	1.5MF	5%	200V	EA11	1-506-348-XX	6P PLUG	
C41	1-136-157-00	FILM	0.022MF	5%	50V	EA12	*1-566-055-11	PIN, CONNECTOR 3P	
C42	1-136-171-00	FILM	0.33MF	5%	50V	EA13	*1-566-055-11	PIN, CONNECTOR 3P	
C43	1-124-236-00	ELECT	47MF	20%	16V	EA14	*1-566-056-11	PIN, CONNECTOR 4P	
C44	1-124-236-00	ELECT	47MF	20%	16V	EA15	*1-566-056-11	PIN, CONNECTOR 4P	
C45	1-123-622-00	ELECT	22MF	20%	16V				
C46	1-136-063-00	FILM	0.0055MF	3%	1.4KV				
C47	1-136-089-00	FILM	0.0056MF	3%	2KV	IC2	8-759-103-93	IC UPC393C	
C48	1-123-321-00	ELECT	220MF	20%	16V	IC3	8-759-103-93	IC UPC393C	
						IC4	△ 8-759-178-12	IC UPC78L12	
		<u>DIODE</u>							
D1	8-719-911-19	DIODE 1SS119							
D2	8-719-911-19	DIODE 1SS119							
D3	8-719-911-19	DIODE 1SS119							
D4	8-719-911-19	DIODE 1SS119							
D5	8-719-911-19	DIODE 1SS119							
D6	8-719-911-19	DIODE 1SS119							
D7	8-719-911-19	DIODE 1SS119							
D8	8-719-100-35	DIODE RD5.6E-B2							
D10	8-719-911-19	DIODE 1SS119							
D11	8-719-911-19	DIODE 1SS119							
D12	8-719-911-19	DIODE 1SS119							
D13	8-719-911-19	DIODE 1SS119							
D15	8-719-900-95	DIODE V09G							
D16	8-719-305-15	DIODE GH3F							
D17	8-719-100-57	DIODE RD10E-B2							
D18	8-719-900-95	DIODE V09G							
D19	8-719-900-95	DIODE V09G							
D20	8-719-900-95	DIODE V09G							
D21	8-719-305-15	DIODE GH3F							
D22	8-719-911-19	DIODE 1SS119							
D23	8-719-911-19	DIODE 1SS119							
D24	8-719-911-19	DIODE 1SS119							
D25	8-719-911-19	DIODE 1SS119							
D26	8-719-903-09	DIODE V30N							
D27	8-719-903-09	DIODE V30N							
D28	8-719-900-95	DIODE V09G							
D29	8-719-900-95	DIODE V09G							
							<u>COIL</u>		
						L1	1-408-231-00	MICRO INDUCTOR 1MMH	
						L2	1-459-353-00	COIL, FERRITE (HLC)	
						L3	1-459-155-00	COIL (WITH CORE) 45UH	
						L4	1-459-155-00	COIL (WITH CORE) 45UH	
							<u>NEON LAMP</u>		
						NL1	1-519-237-11	LAMP, NEON	
							<u>TRANSISTOR</u>		
						Q1	8-729-117-54	TRANSISTOR 2SA1175	
						Q2	△ 8-729-378-92	TRANSISTOR 2SD789-4	
						Q4	8-729-117-54	TRANSISTOR 2SA1175	
						Q5	△ 8-729-378-92	TRANSISTOR 2SD789-4	
						Q7	8-729-117-54	TRANSISTOR 2SA1175	
						Q8	8-729-178-54	TRANSISTOR 2SC2785	
						Q9	8-729-178-54	TRANSISTOR 2SC2785	
						Q10	8-729-178-54	TRANSISTOR 2SC2785	
						Q11	8-729-178-54	TRANSISTOR 2SC2785	
						Q12	8-729-304-92	TRANSISTOR 2SB649A	
						Q13	8-729-386-12	TRANSISTOR 2SB861	
						Q14	8-729-306-92	TRANSISTOR 2SD669A	
						Q15	8-729-306-92	TRANSISTOR 2SD669A	
						Q16	8-729-238-32	TRANSISTOR 2SC2383	
						Q17	8-729-238-32	TRANSISTOR 2SC2383	
						Q18	8-729-168-82	TRANSISTOR 2SC2688	
						Q19	8-729-178-54	TRANSISTOR 2SC2785	

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Q20	8-729-304-92	TRANSISTOR 2SB649A		R64	1-249-405-11	CARBON 100 5% 1/4W	F
Q21	8-729-117-54	TRANSISTOR 2SA1175		R65	1-215-923-00	METAL OXIDE 10K 5% 3W	F
<u>RESISTOR</u>				R66	1-249-404-00	CARBON 82 5% 1/4W	
R7	1-249-417-11	CARBON 1K 5% 1/4W		R67	1-249-397-11	CARBON 22 5% 1/4W	F
R8	1-249-417-11	CARBON 1K 5% 1/4W		R68	1-214-876-00	METAL 3.3K 1% 1/2W	
R9	1-249-405-11	CARBON 100 5% 1/4W		R69	1-214-872-00	METAL 2.2K 1% 1/2W	
R10	1-249-421-11	CARBON 2.2K 5% 1/4W		R70	1-214-925-00	METAL 330K 1% 1/2W	
R11	1-249-405-11	CARBON 100 5% 1/4W		R71	1-249-417-11	CARBON 1K 5% 1/4W	
R18	1-249-417-11	CARBON 1K 5% 1/4W		R72	1-249-441-11	CARBON 100K 5% 1/4W	
R19	1-249-417-11	CARBON 1K 5% 1/4W		R73	1-249-441-11	CARBON 100K 5% 1/4W	
R20	1-249-405-11	CARBON 100 5% 1/4W		R74	1-216-369-00	METAL OXIDE 1 5% 2W	F
R21	1-249-421-11	CARBON 2.2K 5% 1/4W		R75	1-216-369-00	METAL OXIDE 1 5% 2W	F
R22	1-249-405-11	CARBON 100 5% 1/4W		R76	1-249-405-11	CARBON 100 5% 1/4W	
R23	1-249-425-11	CARBON 4.7K 5% 1/4W		R77	1-214-923-00	METAL 270K 1% 1/2W	
R24	1-249-435-11	CARBON 33K 5% 1/4W		R78	1-249-414-11	CARBON 560 5% 1/4W	
R25	1-249-429-11	CARBON 10K 5% 1/4W		R79	1-215-904-11	METAL OXIDE 100K 5% 2W	F
R26	1-249-433-11	CARBON 22K 5% 1/4W		R80	1-202-824-00	SOLID 3.3K 10% 1/2W	
R27	1-249-421-11	CARBON 2.2K 5% 1/4W		R81	1-249-412-11	CARBON 390 5% 1/4W	
R28	1-249-423-11	CARBON 3.3K 5% 1/4W		☒R82	△	CARBON 1/4W	
R29	1-249-417-11	CARBON 1K 5% 1/4W		☒R83	△	CARBON 1/4W	
R30	1-249-438-11	CARBON 56K 5% 1/4W		☒R84	△	CARBON 1/4W	
R31	1-215-465-00	METAL 68K 1% 1/6W		☒R85	△	CARBON 1/4W	
R32	1-249-435-11	CARBON 33K 5% 1/4W		R86	1-249-429-11	CARBON 10K 5% 1/4W	
R33	1-249-417-11	CARBON 1K 5% 1/4W		R87	1-249-425-11	CARBON 4.7K 5% 1/4W	
R34	1-249-429-11	CARBON 10K 5% 1/4W		R88	1-249-429-11	CARBON 10K 5% 1/4W	
R35	1-249-425-11	CARBON 4.7K 5% 1/4W		R89	1-215-459-00	METAL 39K 1% 1/6W	
R36	1-249-433-11	CARBON 22K 5% 1/4W		R90	1-215-435-00	METAL 3.9K 1% 1/6W	
R37	1-249-429-11	CARBON 10K 5% 1/4W		R91	1-216-374-00	METAL OXIDE 2.7 5% 2W	F
R38	1-249-423-11	CARBON 3.3K 5% 1/4W		R92	1-216-372-11	METAL OXIDE 1.8 5% 2W	F
R39	1-247-887-00	CARBON 220K 5% 1/4W		R93	1-202-842-11	SOLID 220K 10% 1/2W	
R40	1-249-435-11	CARBON 33K 5% 1/4W		R94	1-202-842-11	SOLID 220K 10% 1/2W	
R41	1-249-435-11	CARBON 33K 5% 1/4W		R95	1-202-842-11	SOLID 220K 10% 1/2W	
R42	1-249-425-11	CARBON 4.7K 5% 1/4W		R96	1-202-842-11	SOLID 220K 10% 1/2W	
☒R43	△	METAL 1/6W		R97	1-202-842-11	SOLID 220K 10% 1/2W	
R44	1-215-459-00	METAL 39K 1% 1/6W		R98	1-202-842-11	SOLID 220K 10% 1/2W	
R45	1-247-887-00	CARBON 220K 5% 1/4W		R99	1-202-842-11	SOLID 220K 10% 1/2W	
R46	△	1-214-888-91 METAL 10K 1% 1/2W		R100	1-202-842-11	SOLID 220K 10% 1/2W	
R47	△	1-214-899-91 METAL 27K 1% 1/2W		R101	1-215-906-11	METAL OXIDE 15 5% 3W	F
R48	△	1-214-899-91 METAL 27K 1% 1/2W		R102	1-216-400-11	METAL OXIDE 8.2 5% 3W	F
R49	△	1-214-897-91 METAL 22K 1% 1/2W		R103	1-249-433-11	CARBON 22K 5% 1/4W	F
R50	△	1-214-897-91 METAL 22K 1% 1/2W		R104	1-246-531-00	CARBON 270K 5% 1/4W	
R51	1-249-397-11	CARBON 22 5% 1/4W		R105	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R52	1-215-926-00	METAL OXIDE 33K 5% 3W	F	<u>TRANSFORMER</u>			
R53	1-249-417-11	CARBON 1K 5% 1/4W		T1	△	1-437-133-11 TRANSFORMER, FERRITE (HDT)	
R54	1-249-425-11	CARBON 4.7K 5% 1/4W		T2	△	1-437-133-11 TRANSFORMER, FERRITE (HDT)	
R55	1-249-410-11	CARBON 270 5% 1/4W		T3	△	1-439-320-12 TRANSFORMER, FERRITE (HOT)	
R56	1-249-427-11	CARBON 6.8K 5% 1/4W					
R57	1-249-423-11	CARBON 3.3K 5% 1/4W					
R58	1-249-434-11	CARBON 27K 5% 1/4W					
R59	1-215-882-00	METAL OXIDE 22 5% 2W	F				
R60	1-215-868-00	METAL OXIDE 680 5% 1W	F				
R63	△	1-249-421-51 CARBON 2.2K 5% 1/4W	F				

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

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

Ref.No.	Part No.	Description	Remark
	△ 1-451-283-11	DEFLECTION YOKE (SY-130M)	
	△ 1-452-261-41	CRT NECK ASSY (362)	
	△ 1-452-302-31	CRT NECK ASSEMBLY	
	△ 1-509-547-11	3P INLET	
	1-518-590-11	LAMP, PILOT (WITH HOLDER)	
	1-519-063-XX	DISCHARGING GAP	
	1-543-179-00	CORE, RING	
	△ 1-554-913-11	SWITCH, SLIDE (VOLTAGE CHANGE)	
	1-556-880-51	LEAD ASSY, HIGH-VOLTAGE	
	1-556-880-81	LEAD ASSY, HIGH-VOLTAGE	
	△ 1-558-365-11	CONNECTOR ASSY, ROUND TYPE 14P	
	△ 8-733-022-05	PICTURE TUBE (SD-187(B))	
	△ 8-736-051-05	PICTURE TUBE (SD-130(G))	
	△ 8-736-053-05	PICTURE TUBE (SD-130(R))	
FAN1	△ 1-541-324-11	FAN, DC	
FAN2	△ 1-541-324-11	FAN, DC	
Q1	8-729-311-42	TRANSISTOR 2SC1114	
Q2	△ 8-729-302-02	TRANSISTOR 2SD905	
Q3	8-729-311-62	TRANSISTOR 2SC1116	
Q4	8-729-311-62	TRANSISTOR 2SC1116	
Q5	△ 8-729-302-02	TRANSISTOR 2SD905	
R901	△ 1-217-183-11	RES, WIREWOUND 2.7 10% 15W	
S2	△ 1-552-437-11	SWITCH, LEVER	
S3	△ 1-570-258-32	SWITCH, THERMAL REED	
S902	△ 1-570-052-12	SWITCH, PUSH (AC POWER)(1 KEY)	
SP1	1-503-344-21	SPEAKER	
SP2	1-503-344-21	SPEAKER	
T901	△ 1-453-095-15	DC BLOCK, HIGH-VOLTAGE (F.B.T)	

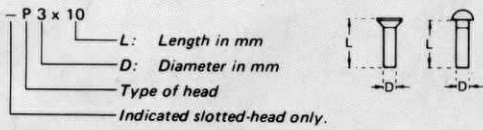
ACCESSORIES AND PACKING MATERIALS

Part No.	Description	Remark
△ 1-556-760-11	CORD, POWER (3 CORE)	
*4-310-638-00	BAG, PROTECTION	
4-378-601-01	SPACER (72"), CRT	
4-378-625-01	LABEL, REMOTE CONTROL	
*4-378-674-01	CUSHION (UPPER) (ASSY)	
*4-378-681-01	CUSHION (LOWER) (ASSY)	
*4-378-685-01	SPACER (200")	
*4-378-686-01	SPACER (200"), CRT	
*4-383-098-01	SPACER	
*4-387-701-01	INDIVIDUAL CARTON	
4-482-486-11	MANUAL, INSTRUCTION	
4-490-302-11	INSTRUCTION	

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

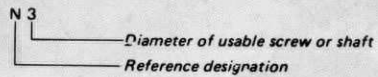
HARDWARE NOMENCLATURE

Screw:



Indicated slotted-head only.
Unless otherwise indicated, it means cross-recessed head (Phillips type).

Nut, Washer, Retaining ring:



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	