

KV-M14D/P14D

RM-658

SERVICE MANUAL

AEP Model

KV-M14D

Chassis No. SCC-B66A-A

KV-P14D

Chassis No. SCC-B66B-A

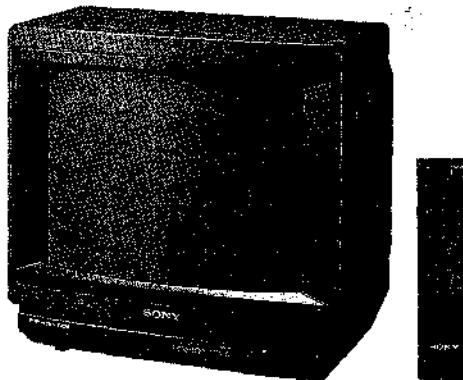


Photo: KV-M14D

B-1 CHASSIS

Note: The service manual for RM-658 has been issued separately.

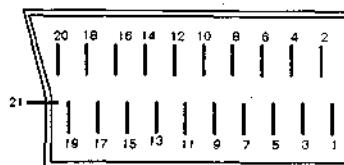
SPECIFICATIONS

| | |
|----------------------|--|
| Television system | CCIR B, G and H |
| Color system | PAL SECAM |
| Channel coverage | VHF E2-S20 UHF E21-E69 |
| Picture tube | Trinitron tube 90degree deflection Approx. 36.8cm (14inches) (Approx.38.7cm picture measured diagonally) |
| Input | 21 - pin connector : CENELEC standard AV connector |
| Output | Earphone Jack : minijack, 21 - pin connector : CENELEC standard |
| Power consumption | 47Wh |
| Dimensions | Approx. 368×346.5×401mm (W/H/D) |
| Weight | Approx. 11kg |
| Supplied accessories | RM-658 Remote Commander (1) (KV-M14D ONLY) IEC designation R6 batteries (2) (KV-M14D ONLY) VHF telescopic antenna (1) Antenna connector (300-75 ohm matching transformer is built-in.) (1) Sound output 3.5w (music power) |

MODELS OF THE SAME SERIES

KV-M14D/P14D

21-pin Euro Connector Configuration



| PIN | SIGNAL | SPECIFICATION |
|-----|-----------------------|---------------------------|
| 1 | Audio output | 0.5Vrms/1kilohm or less |
| 2 | Audio input | 0.5Vrms/10kilohms or more |
| 3 | Audio output | 0.5Vrms/1kilohm or less |
| 4 | Earth (audio) | |
| 5 | Earth (G-input) | |
| 6 | Audio input | 0.5Vrms/10kilohms or more |
| 7 | G-input | 0.7Vp-p/75ohms |
| 8 | Function switching | 9.5V to 12V |
| 9 | Earth (G-input) | |
| 10 | | |
| 11 | G-input | 0.7Vp-p/75ohms |
| 12 | | |
| 13 | Earth (R-input) | |
| 14 | | |
| 15 | R-input | 0.7Vp-p/75ohms |
| 16 | Fast blanking | 1V to 3V/75ohms |
| 17 | Earth (video) | |
| 18 | Earth (fast blanking) | |
| 19 | Video output | 1Vp-p/75ohms |
| 20 | Video input | 1Vp-p/75ohms |
| 21 | Screening plug | |

Design and specifications are subject to change without notice.

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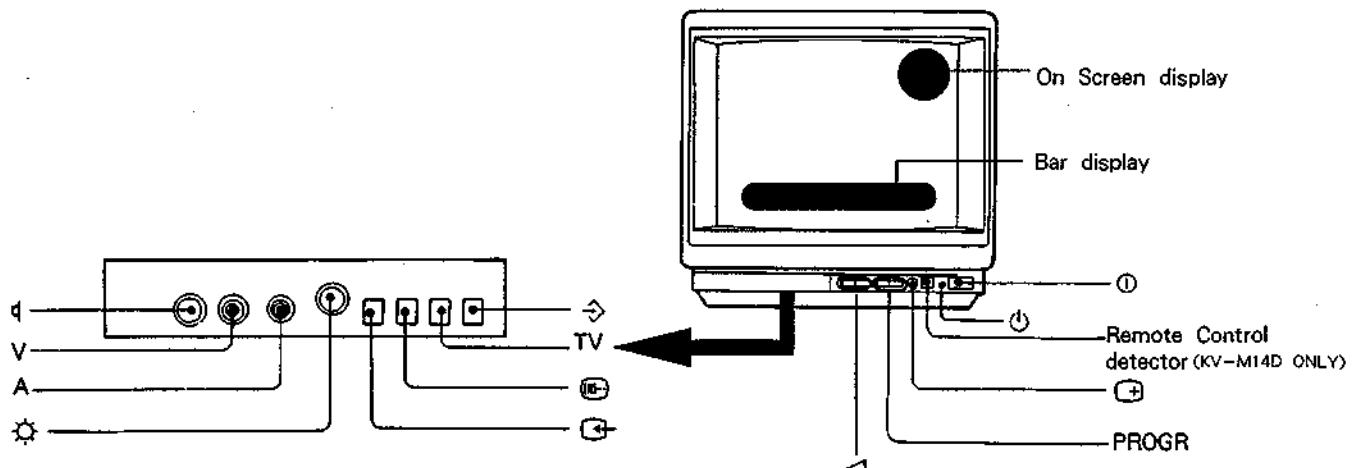
SAFETY-RELATED COMPONENT WARNING !!

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.

SECTION 1

GENERAL

1-1. FUNCTION OF CONTROLS



On the set

On-screen display

Indicates program numbers and input mode : . Press the button to make the display appear on the screen, and again to make it disappear. See also "On the Remote Commander" below.

Bar display

Indicates the level of the user controls when they are adjusted : volume, contrast or color.

power switch

To cut off the mains electricity supply, press this switch. Ensure correct operation by pressing the switch fully.

Remote control detector (KV-M14D ONLY)

Point the Remote Commander towards this detector.

standby indicator

Lights up brightly when the set is in standby mode.

volume +/− buttons

Use to adjust the volume to the required level.

PROGR +/− buttons

Use to scan the available channels. To turn on the set from standby mode without a Remote Commander, press one of these buttons.

Inside the panel

earphone jack (minijack)

preset button

analogue select buttons

Press repeatedly until the on-screen display of the required adjustment appears (volume, contrast or color). Adjust by using the + or − buttons.

input button

Press this button to view the input picture coming in through the 21-pin connector or the connectors on the front panel. appears on the screen. Press again or PROGR + / − to return to the TV mode.

Extra equipment can be connected to the TV using both the 21-pin connector and the input connectors, but only one piece of equipment besides the TV should be turned on at one time.

brightness control

Turn clockwise for more brightness or anticlockwise for less.

Video/Audio input connectors (phono)

Connect to a VTR, micro-computer, etc.

- V (Yellow) video input
- A (Black) audio input (mono)

TV button

Set TV to the system used in your local area.

Each time TV button is pressed, "L" or "B/G" appears on the screen alternately.

L : for French TV standard (system L)

B/G : for CCIR TV standards (system B, G and H)
(Western European TV standards)

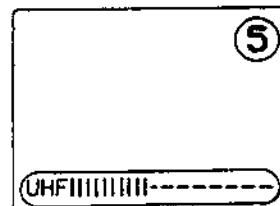
1-2. TO PRESET CHANNELS

Use the buttons inside the panel. To open the panel, pull the centre.

Manual Programming

To Tune in a Channel in Any Desired Program Position

- 1 Press \diamond (preset) to select the presetting mode.
- 2 Select the desired program position by using the PROGR + or - button.
- 3 Press \triangle + or - repeatedly until the TV program of the desired channel appears.
Repeat steps 2 and 3 for all desired channels.
- 4 Press \diamond again to return to the TV mode.

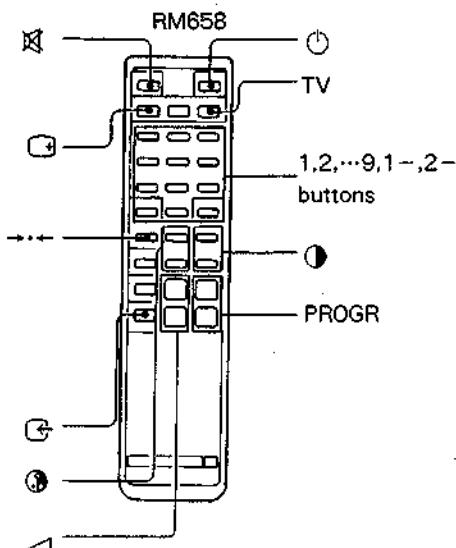


Program position flashes.

Indicates the approximate location in the band of the channel being tuned in.
The number of upright segments increase for a higher-frequency channel and decrease for a lower-frequency channel.

1-3. ON THE REMOTE COMMANDER

(KV-M14D ONLY)



To operate the Commander, point it toward the remote control detector.

\times mute button

Use to mute the sound. Press \triangle + or \times to restore the sound.

0, ..., 9, 1-, 2-buttons

To select:

program 15, press 1- and 5,
program 25, press 2- and 5.

$\rightarrow \leftarrow$ normal button

Press to return color and contrast to factory-set levels.

\odot standby button

Press to select standby mode. Use this facility to turn off the set for short periods of time.

To return to TV mode, press TV or the program number on the Remote Commander; there will be a slight delay before the picture is restored. If the main power is turned off when in standby mode, the indicator will take 2 to 6 seconds to go off.

\square On-screen display button

Press to make the display appear on the screen, and again to make it disappear.

\triangle PROGR + / - buttons

Use to scan the available channels.

\triangle $\pm/-$ volume buttons

\odot color buttons

\bullet contrast buttons

\square input button

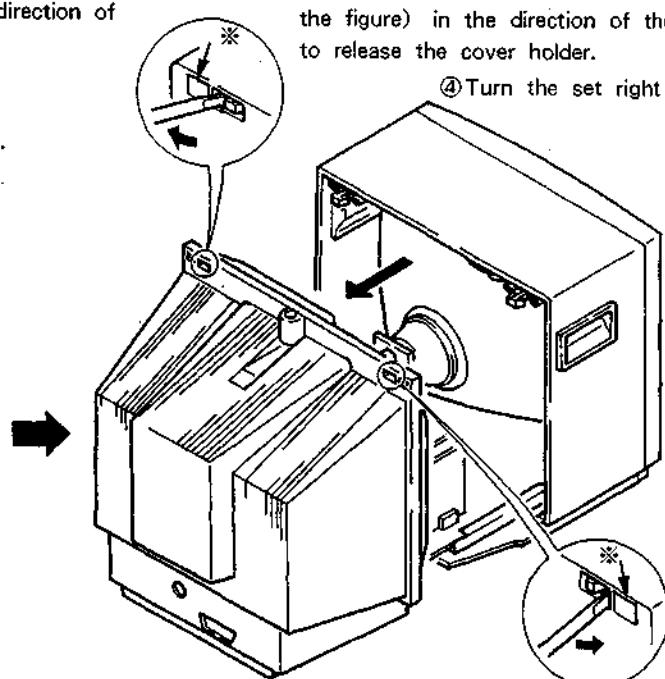
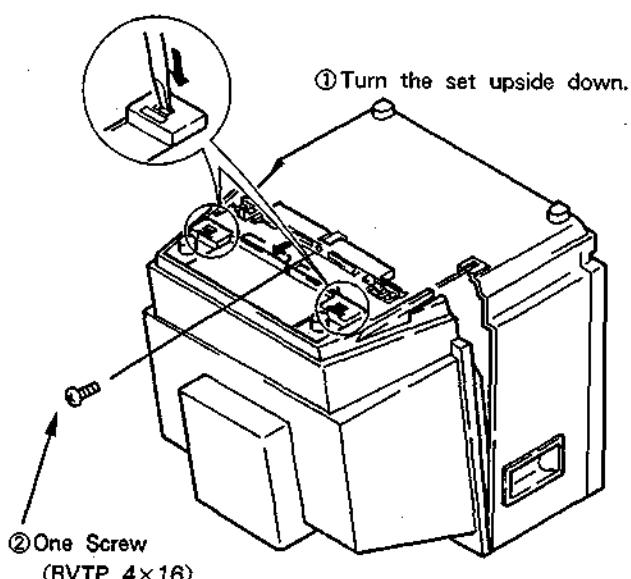
Press to view the input picture from the \odot connector or \square connectors. " \odot " appears on the screen. Press \square PROGR + / - or a program number key to return to the TV mode.

SECTION 2

DISASSEMBLY

2-1. REAR COVER REMOVAL

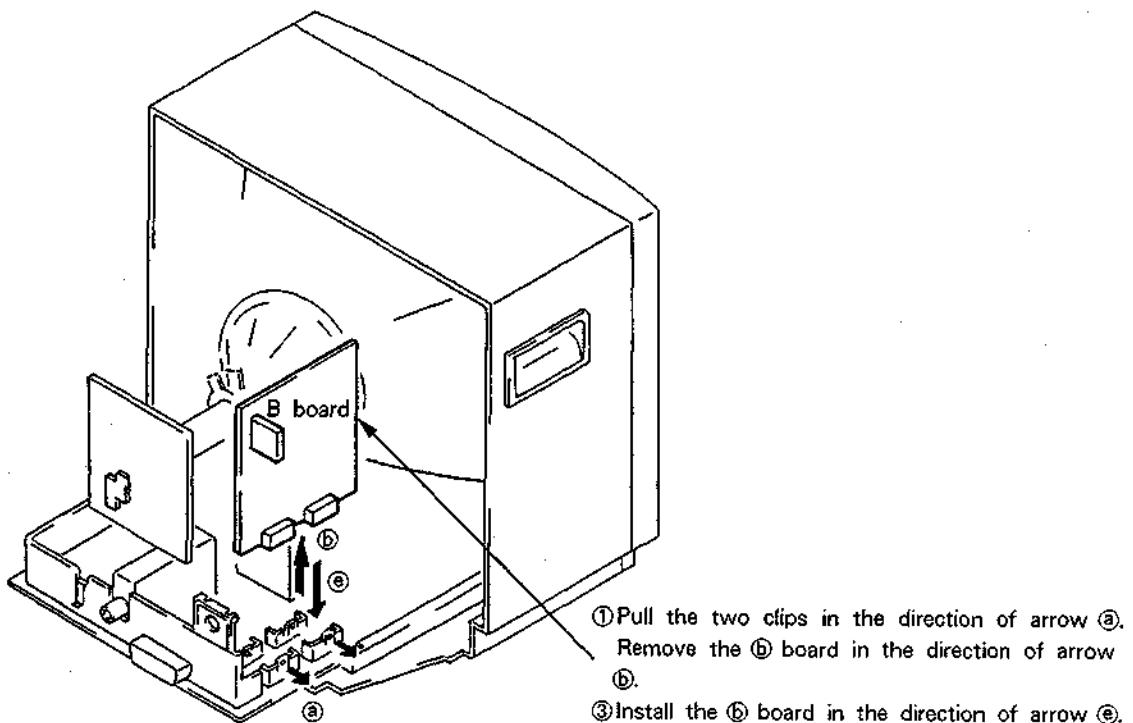
- ③ On the bottom of the rear cover, use a screwdriver to push down the two tabs (circled in the figure) in the direction of the arrow to release the cover.



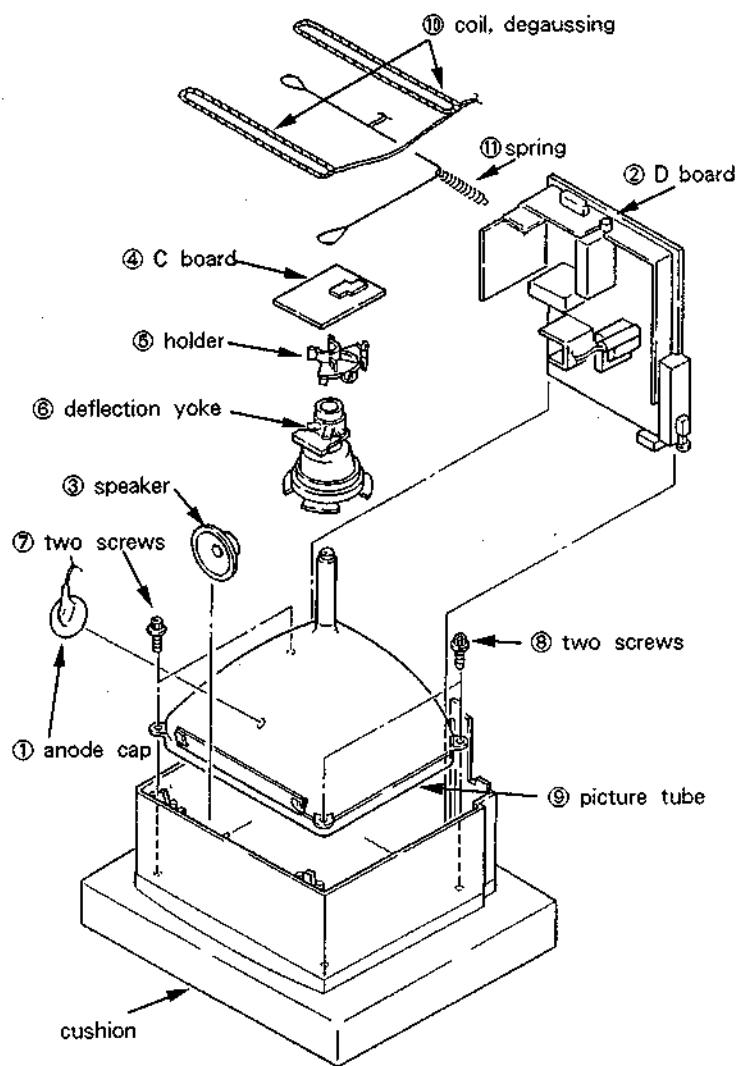
- ⑥ Repeat step 5 for the other tab, as shown in the figure.

* In case a nut is provided, please remove it.

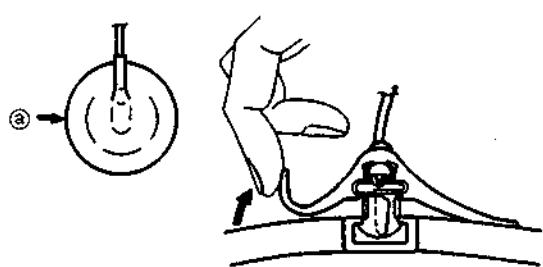
2-2. B BOARD REMOVAL



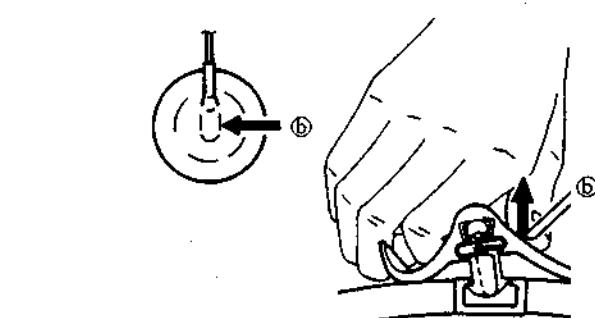
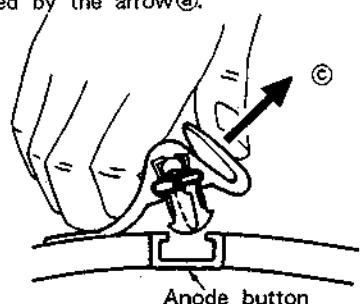
2-3. PICTURE TUBE REMOVAL



● **Removing Procedures**



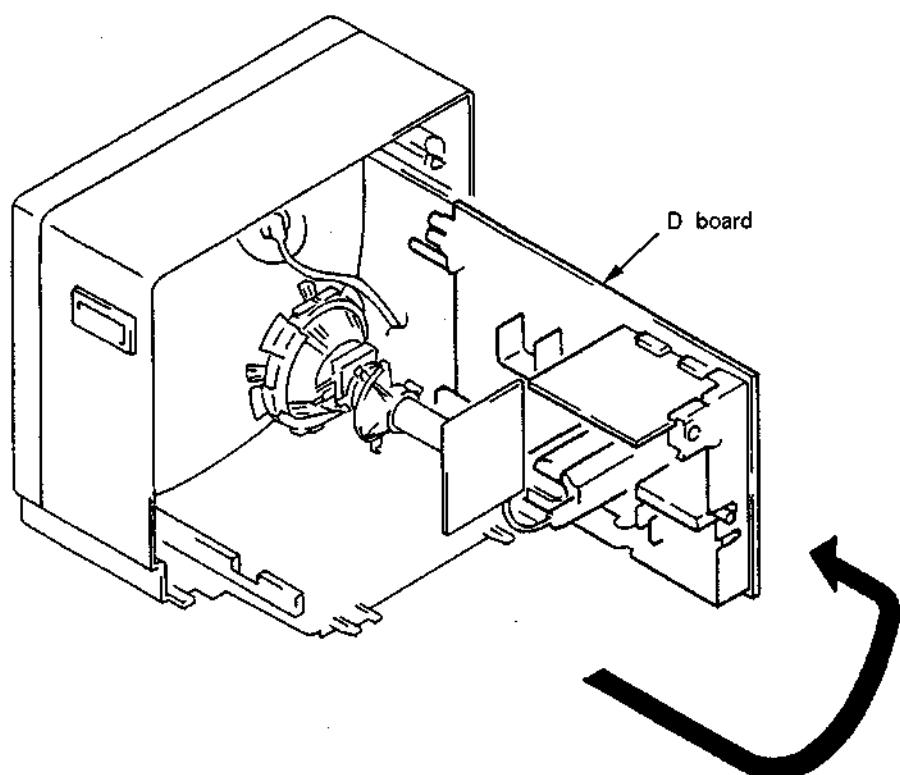
① Turn up one side of the rubber cap in the direction indicated by the arrow ②.



② Using a thumb, pull up the rubber cap firmly in the direction indicated by the arrow ⑤.

③ When one side of the rubber cap is separated from the anode button, the anode cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⑥.

2-4. SERVICE POSITION



SECTION 3 SET-UP ADJUSTMENTS

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

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

- CONTRAST control 80% (or Normal by Commander)
BRIGHTNESS control 50%

Perform the adjustments in order as follows :

- Beam Landing
- Convergence
- Focus
- White Balance

Note : Test Equipment Required.

- Color Bar/Pattern Generator
- Degausser
- DC Power Supply
- Digital multimeter
- Oscilloscope

3-1. BEAM LANDING

- Input a raster signal with the pattern generator.
CONTRAST } normal
BRIGHTNESS }
- Turn the raster signal of the pattern generator to red.
- Move the deflection yoke backward, and adjust with the purity control so that red is in the center and blue and green are at the sides, evenly.
(Fig. 3-1 — 3-3)
- Move the deflection yoke forward, and adjust so that the entire screen becomes red.(Fig. 3-1)
- Switch over the raster signal to blue and green and confirm the condition.
- When the position of the deflection yoke is determined, tighten it with a deflection yoke mounting screw.
- When landing at the corners is not right, adjust by using the magnet.(Fig. 3-4)

Fig.3-1

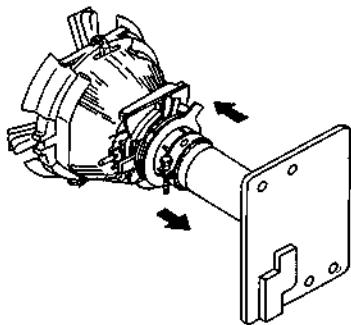


Fig.3-2

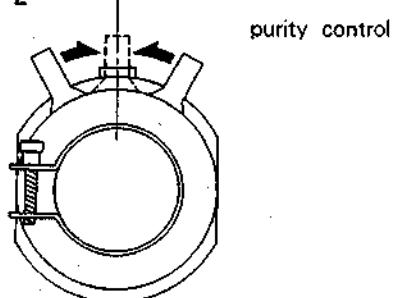


Fig.3-3

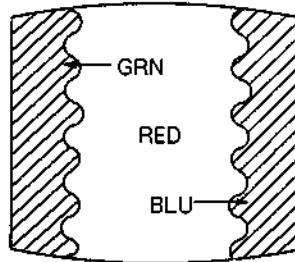
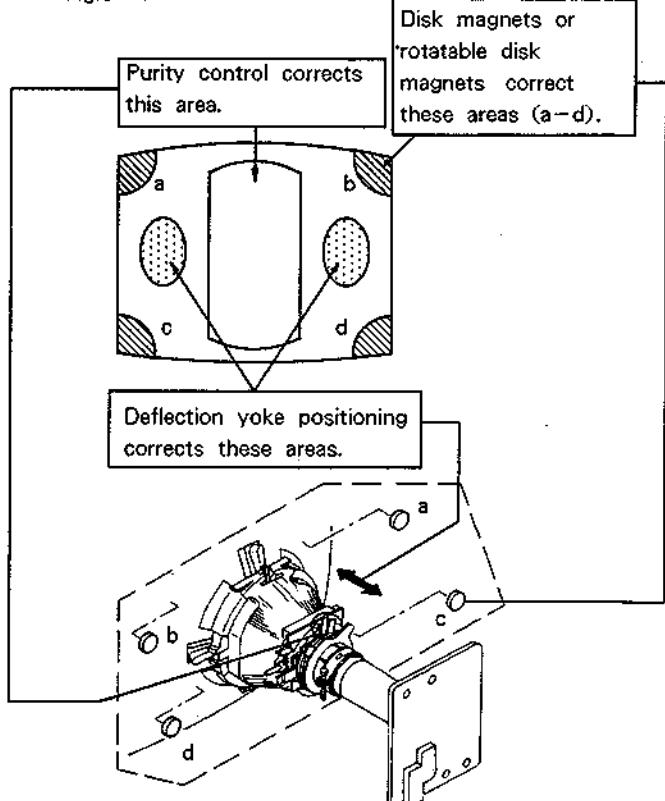


Fig.3-4

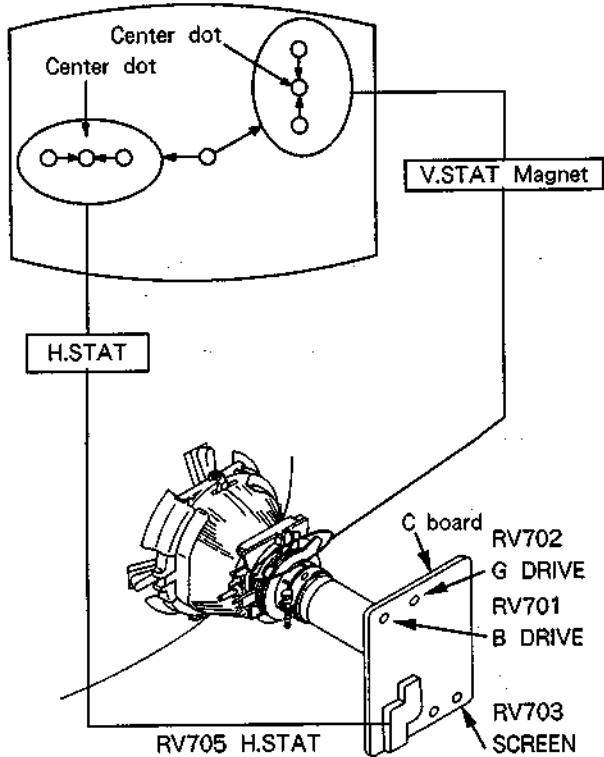


3-2. CONVERGENCE

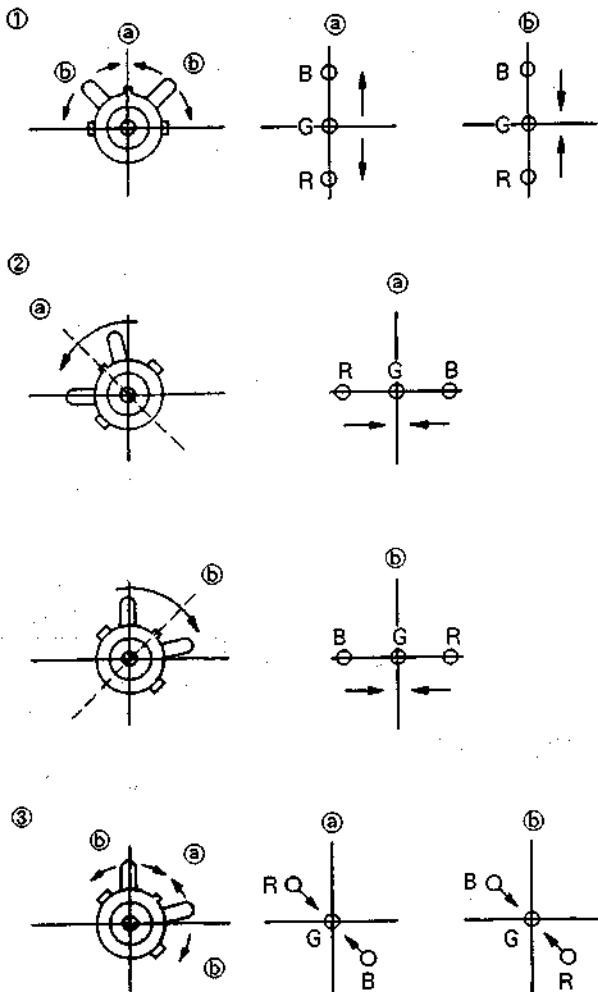
Preparation :

- Before starting, perform FOCUS, H. SIZE and V. SIZE adjustments.
- Set BRIGHTNESS control to minimum.
- Feed in the dot pattern.

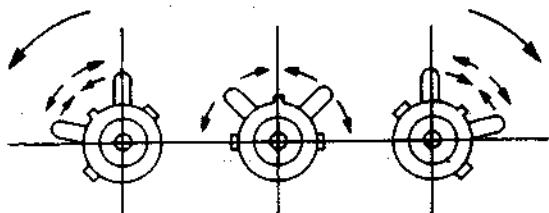
(1) Horizontal and Vertical Static Convergence



4. When the V. STAT magnet is moved in the direction of arrow (a) and (b), red, green and blue dots move as shown below.



1. Adjust H. STAT VR to coincide red, green and blue dots on the center of screen.(Horizontal movement)
2. Adjust V. STAT magnet to coincide red, green and blue dots on the center of screen.(Vertical movement)
3. If the red, green and blue dots do not coincide on the center of screen with H. STAT VR, perform horizontal convergence adjustment using H. STAT VR and V. STAT magnet as shown below. (In this case, H. STAT VR and V. STAT magnet effect each other.)
- Tilt the V. STAT magnet and adjust static convergence to open or close the V. STAT magnet.

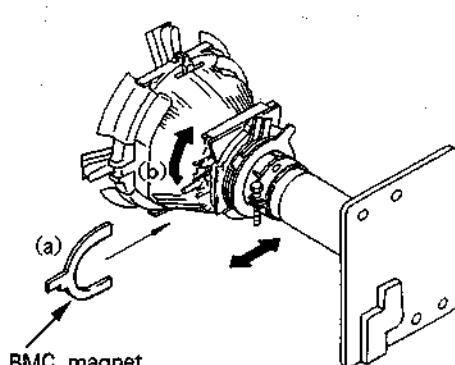


If the red and blue dots do not coincide with green dot, perform following steps.

Move BMC magnet (a) to correct insufficient H. static convergence.

Rotate BMC magnet (b) to correct insufficient V. static convergence.

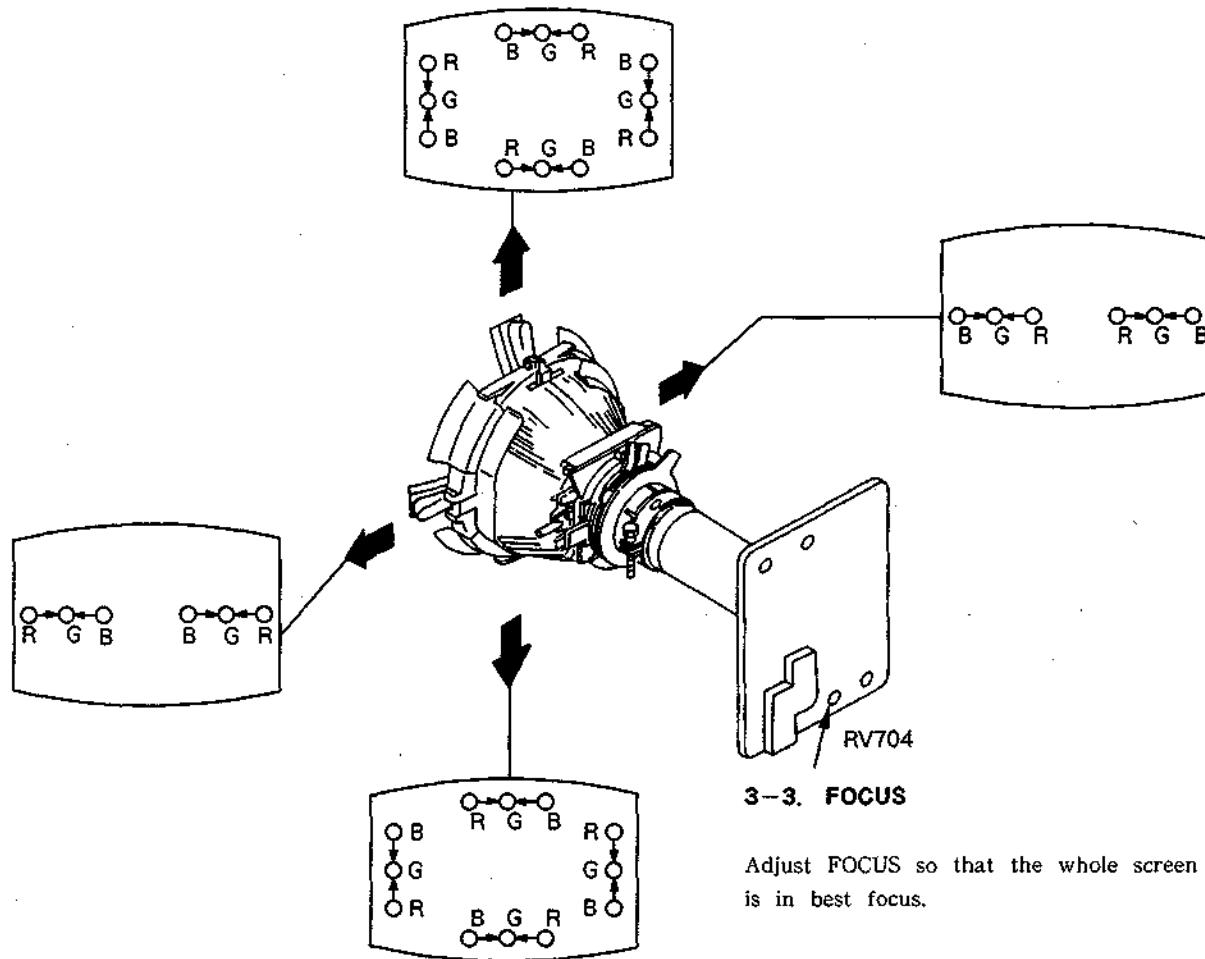
In either case, repeat Beam Landing Adjustment.



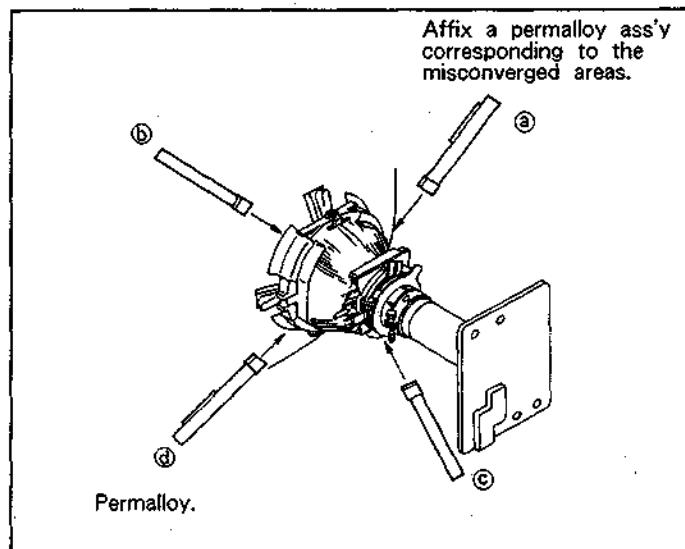
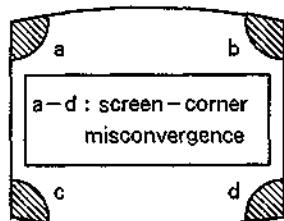
(3) Dynamic Convergence Adjustment

Preparation :

- Before starting, perform Horizontal and Vertical Static Convergence Adjustment..
- 1. Slightly loosen deflection yoke screw.
- 2. Remove deflection yoke spacers.
- 3. Move the deflection yoke for best convergence as shown below.
- 4. Tighten the deflection yoke screw.
- 5. Install the deflection yoke spacers.



(4) Screen-corner Convergence



SECTION 4 CIRCUIT ADJUSTMENTS

3-4. WHITE BALANCE

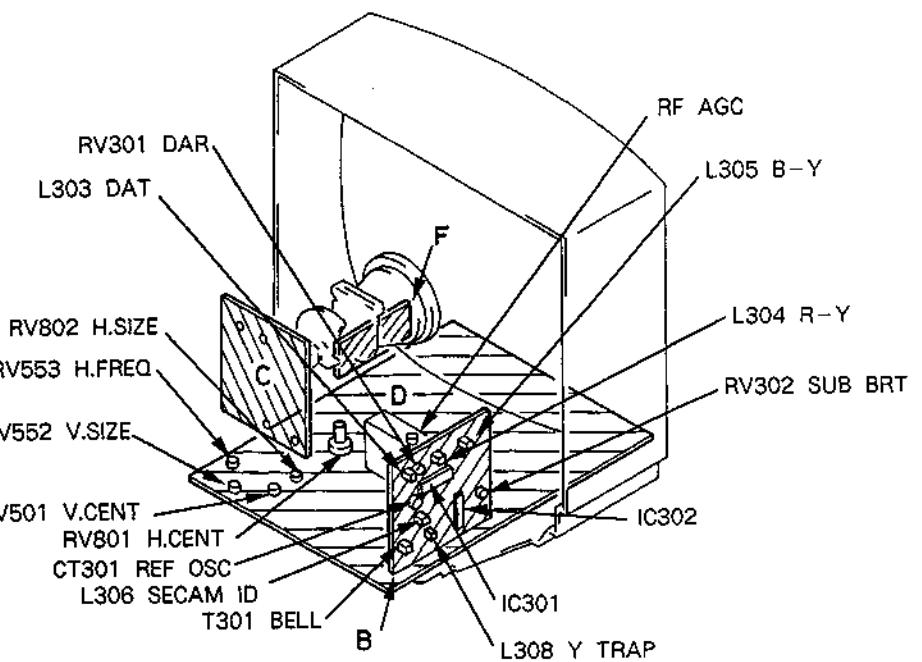
(Screen (G2) Setting)

1. Input dot signals from the pattern generator.
2. Set the picture BRIGHTNESS control to the minimum level.
3. Apply 140 V DC to the cathodes of R, G, and B from an external power source.
4. While watching the picture, adjust the G2 volume (RV703) immediately before the fly-back line disappears.

(White Balance Adjustment)

1. Input all-white signals from the pattern generator.
2. Adjust the BRIGHTNESS and COLOR controls to the standard level.
3. Adjust the white balance using RV701 (B DRIVE) and RV702 (G DRIVE).

In the following adjustments, the CONTRAST COLOR and BRIGHTNESS controls are set to normal unless otherwise specified.

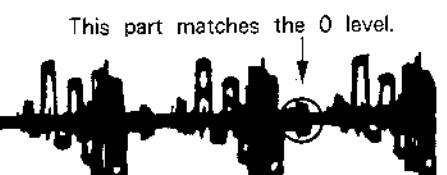


4-1.B BOARD ADJUSTMENTS

REF OSC Adjustment (CT301)

1. Input a PAL COLOR BAR pattern.
2. Short circuit between pin ⑩ of IC301 and ground.
3. Adjust CT301 to obtain color synchronization.
4. Remove the jumper wire from IC301.

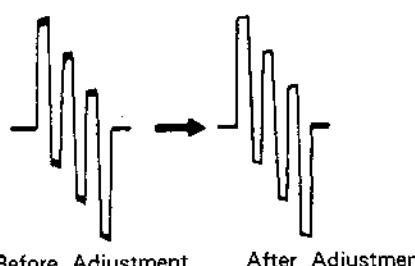
5. Rotate the RV301 VR and adjust till the ANT PAL part of the waveform matches the 0 level.



Before Adjustment



After Adjustment



1H DELAY LINE Adjustment (L303 DAT, RV301 DAR)

1. Input a PAL COLOR BAR pattern.
2. Connect the oscilloscope to pin ③ (B-Y) of IC301 and observe the waveform of the H block on the oscilloscope.
3. Adjust L303 to minimize the double waveform outline.

6. L303 and RV301 affect each other, so repeat till the conditions of both are met.

Y TRAP 4.25 MHz ADJUSTMENT (L308)

1. Input a SECAM COLOR BAR pattern.
2. Connect pin ⑫ of IC302 to the oscilloscope and adjust L308 so that the waveform level becomes minimum.



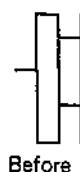
4. Input a PAL TEST COLOR BAR pattern.

SECAM

1. Input
2. Connec
3. Adjus
- maxir

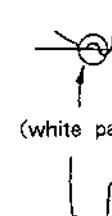
BELL FI

1. Input
2. Connec
3. Adjus



SECAM J

1. Input
2. Connec
3. Adjus
- of th
4. Connec
5. Adjus



(white pa

(Befor

Before Adjustment

After Adjustment

F AGC

L305 B-Y

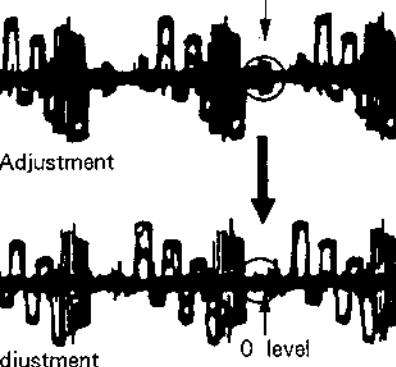
L304 R-Y

RV302 SUB BRT

02

the RV801 VR and adjust till the ANT PAL waveform matches the 0 level.

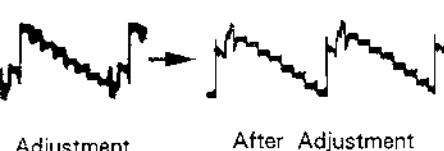
This part matches the 0 level.



RV301 affect each other, so repeat till the both are met.

MHz ADJUSTMENT (L308)

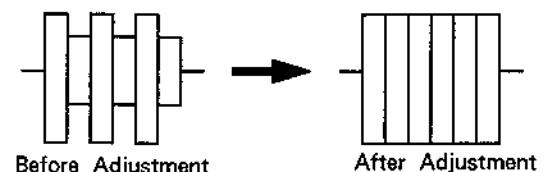
Input a SECAM COLOR BAR pattern, connect pin ⑩ of IC302 to the oscilloscope and adjust so that the waveform level becomes minimum.

**SECAM ID Adjustment (L306)**

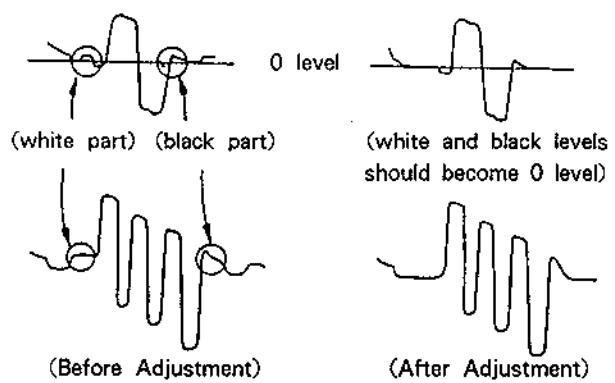
1. Input a SECAM COLOR BAR pattern.
2. Connect a Digital Multimeter at pin ⑩ of IC301.
3. Adjust L306 so that the indicator goes up to the maximum.

BELL FILTER Adjustment (T301)

1. Input a SECAM COLOR BAR pattern.
2. Connect an oscilloscope to the Q302 emitter.
3. Adjust T301 so that the waveform becomes flat.

**SECAM DISCRI Adjustment (L304 R-Y L305 B-Y)**

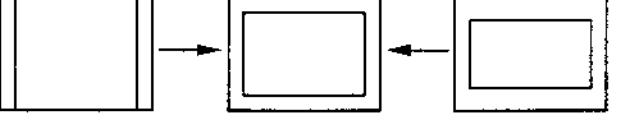
1. Input a SECAM COLOR BAR pattern.
2. Connect an oscilloscope to pin ① of IC301.
3. Adjust L304 (R-Y) so that white and black parts of the waveform of pin ① becomes 0 level.
4. Connect an oscilloscope to pin ③ of IC301.
5. Adjust L305 (B-Y) so that white and black parts of the waveform of pin ③ becomes 0 level.

**SUB BRT Adjustment (RV302)**

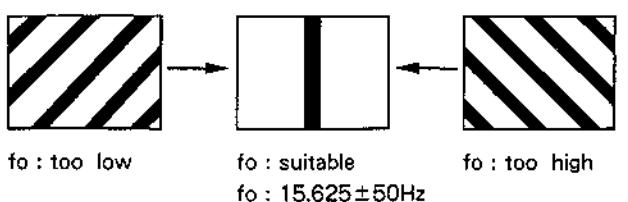
1. Input a PAL COLOR BAR signal.
2. Set CONTRAST and COLOR volume to a minimum, and set the BRIGHTNESS volume control to the mechanical center.
3. Slowly rotate SUB BRT (RV302) until the red portion is faintly illuminated.

4-2. D BOARD ADJUSTMENTS**TU AGC (RF AGC)**

1. Tune in air signals.
2. Adjust AGC VR (RF AGC) so that snow-noise and cross-modulation just disappear from the picture.

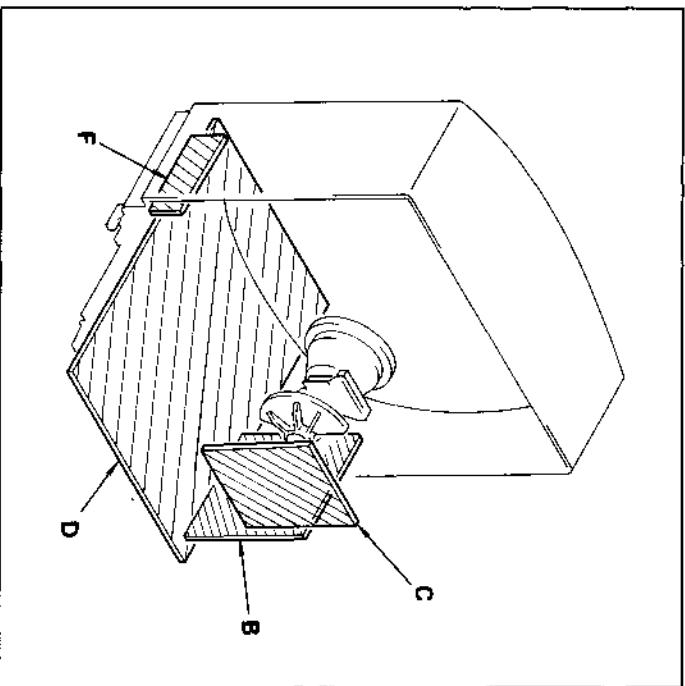
RV801 H.CENT (HORIZONTAL CENTER)**RV802 H.SIZE (HORIZONTAL SIZE)****RV501 V.CENT (VERTICAL CENTER)****RV552 V.SIZE (VERTICAL SIZE)****H. FREQ (RV553)**

1. Input a PAL COLOR BAR signal, then connect an electrolytic capacitor ($100 \mu/16V$) between Pin ⑤ and GND of IC551.
2. Adjust RV553 (H. FREQ) to stop scrolling of the picture in the horizontal direction.
3. After adjustment, remove the electrolytic capacitor.



SECTION 5 DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION



Note:

- All capacitors are in μF unless otherwise noted. pF : μpF : $\mu\mu\text{F}$: 50MV or less are not indicated except for electrolytics.
- Indication of resistance, which does not have one for rating electrical power is as follows.

Pitch : 5mm

Rating electrical power : $1/4\text{W}$

- All resistors are in ohms.
- : nonflammable resistor.
- : fusible resistor.
- : internal component.
- : panel designation.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- All voltages are in V.
- Readings are taken with a $10\text{M}\Omega$ digital multimeter.
- Readings are taken with a color-bar signal input, no mark : PAL
- () : SECAM
- : adjustment for repair.
- : B+ line
- : signal path

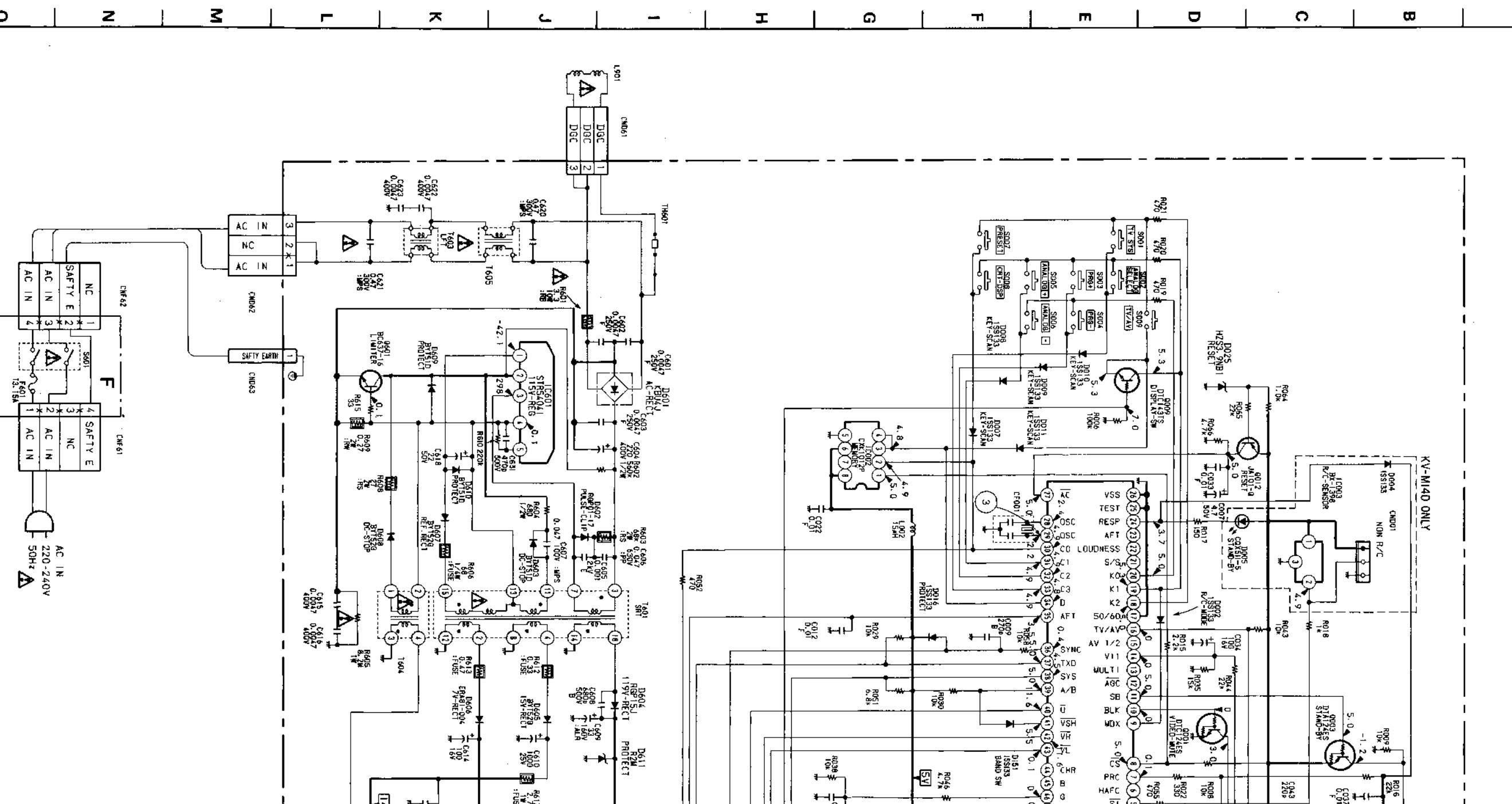
Reference information

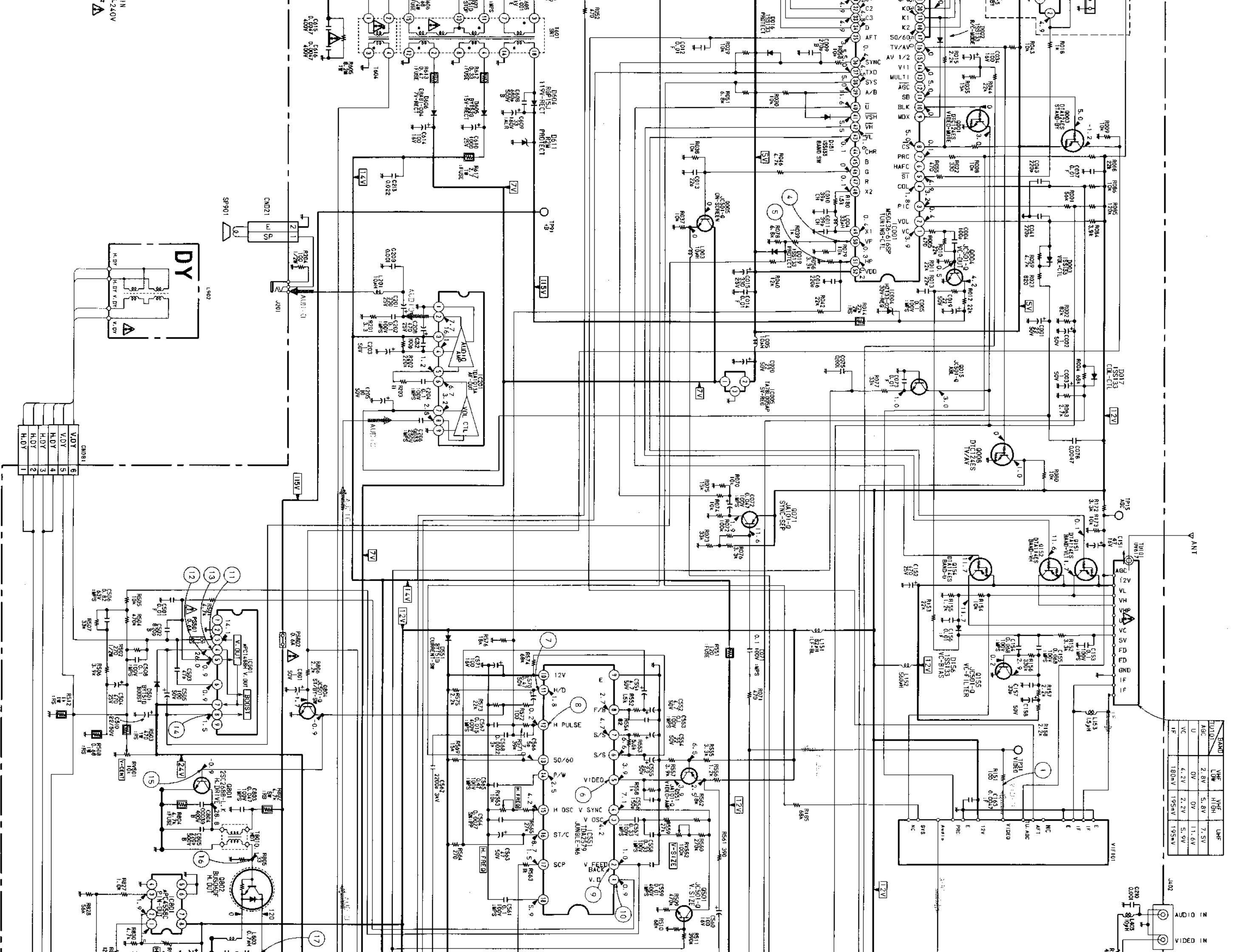
| | | |
|-----------|---------|-------------------------|
| RESISTOR | : RN | METAL FILM |
| | : RC | SOLID |
| | : FPRD | NONFLAMMABLE CARBON |
| | : FUSE | NONFLAMMABLE WIREWOUND |
| | : RS | NONFLAMMABLE CEMENT |
| COIL | : RB | |
| CAPACITOR | : LF-8L | MICRO INDUCTOR |
| | : PS | TANTALUM |
| | : PP | STYROL |
| | : PT | POLYPROPYLENE |
| | : MPS | MYLAR |
| | : MPP | METALIZED POLYESTER |
| | : ABL | METALIZED POLYPROPYLENE |
| | : ALT | BIPOLAR |
| | : ALR | HIGH TEMPERATURE |
| | | HIGH RIPPLE |

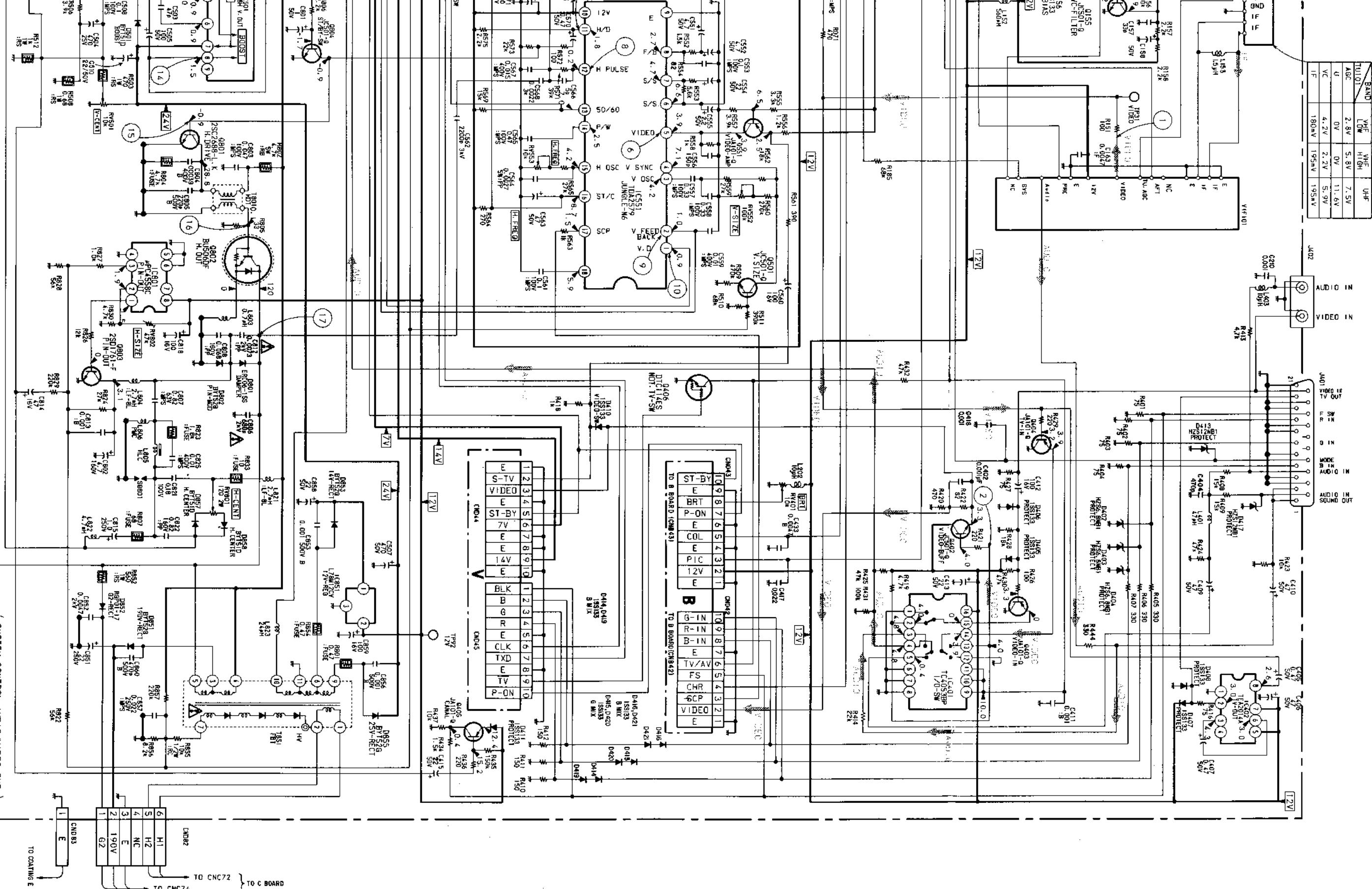
Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.

5-2. SCHEMATIC DIAGRAMS (1)

1 2 3 4 5 6 7







D

(SYSTEM CONTROL, AUDIO/VIDEO OUT.)

MEMORY, H/V OUT, TUNER,

LINE RECT. PWM REG.

SYSTEM CONTROL, AUDIO/VIDEO OUT,
MEMORY, H/V OUT, TUNER,
LINE RECT, PWM REG.

D

D

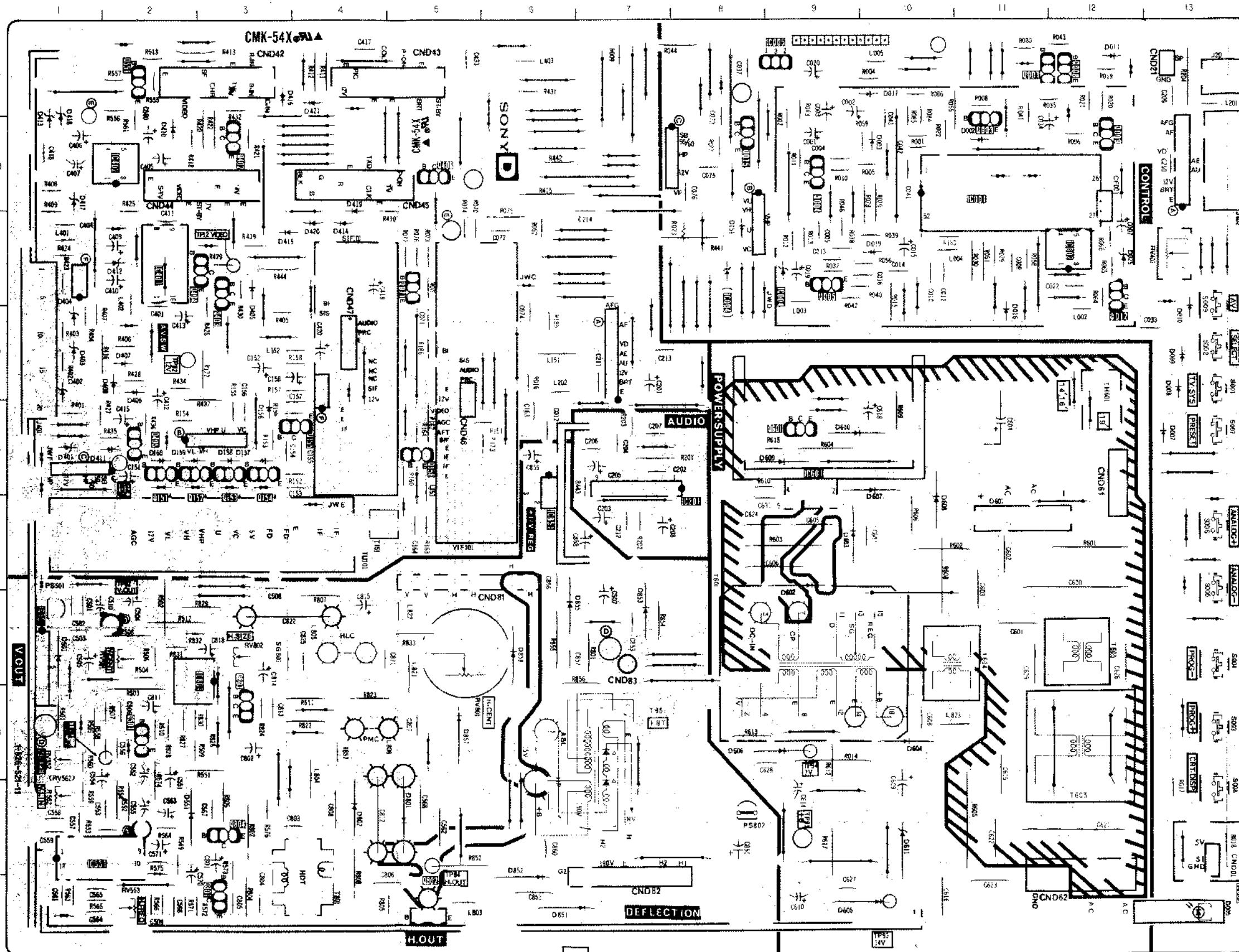
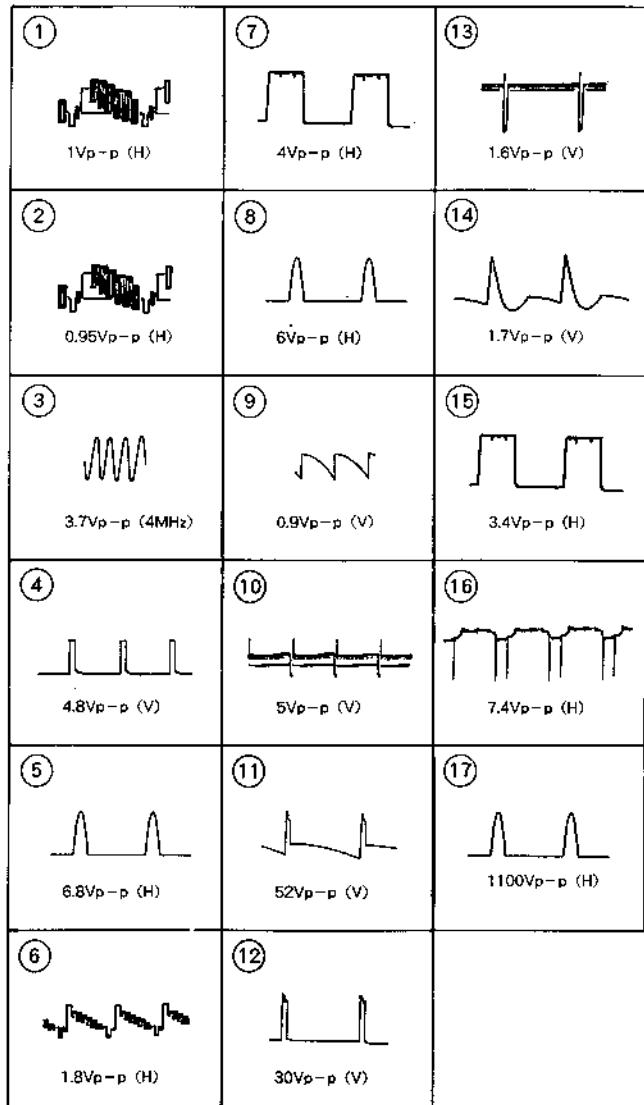
NOTE:

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

5.3. PRINTED WIRING BOARDS (1)

- D Board -

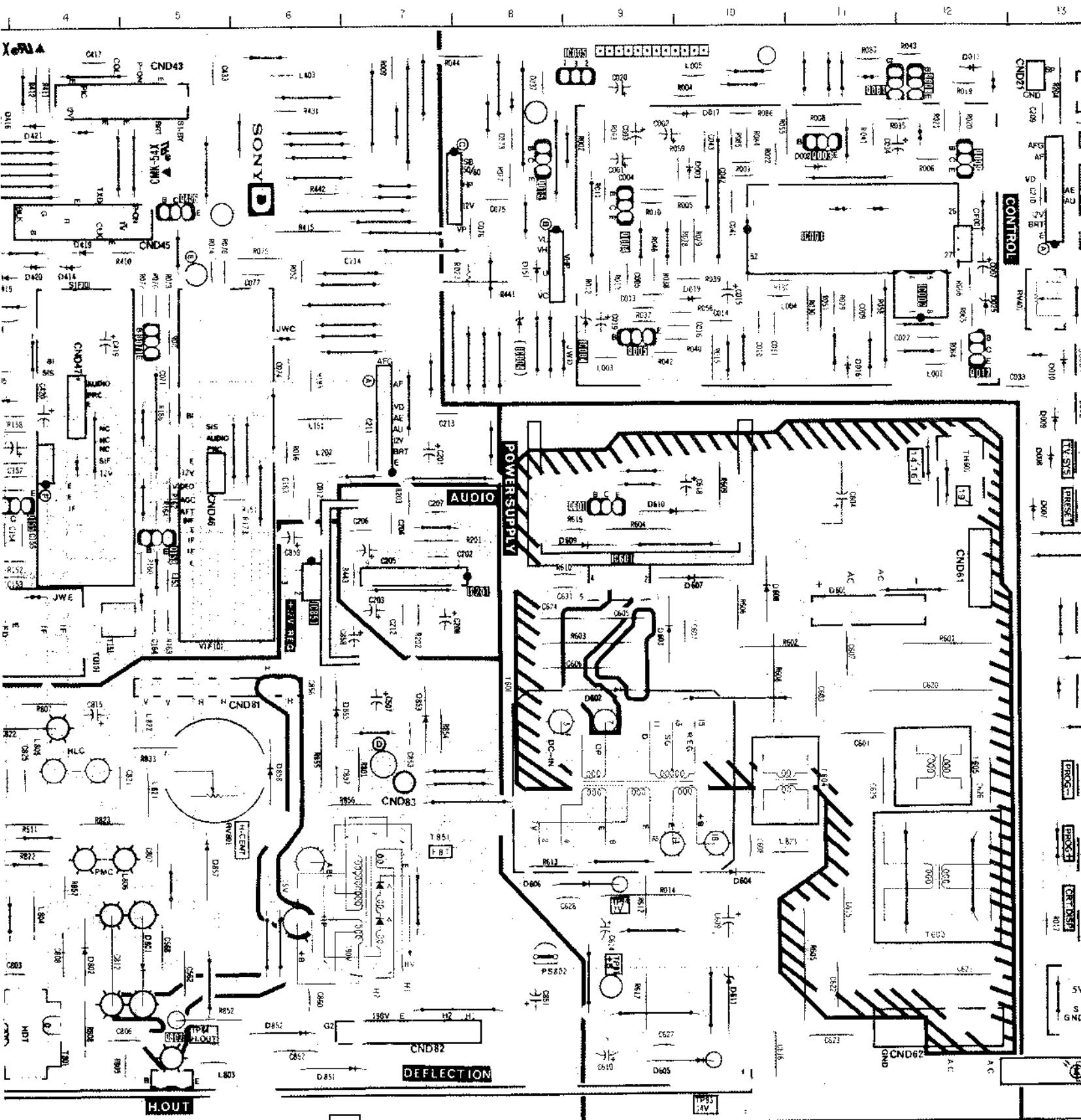
• D BOARD WAVEFORM



| |
|-------|
| IC001 |
| IC002 |
| IC003 |
| IC005 |
| IC201 |
| IC401 |
| IC402 |
| IC501 |
| IC551 |
| IC601 |
| IC801 |
| IC851 |
| TRAN |
| Q001 |
| Q003 |
| Q004 |
| Q005 |
| Q008 |
| Q009 |
| Q012 |
| Q015 |
| Q071 |
| Q151 |
| Q152 |
| Q153 |
| Q154 |
| Q155 |
| Q158 |
| Q402 |
| Q403 |
| Q404 |
| Q405 |
| Q406 |
| Q501 |
| Q551 |
| Q601 |
| Q801 |
| Q802 |
| Q803 |
| Q804 |
| C |
| D004 |
| D005 |
| D007 |
| D008 |
| D009 |
| D010 |
| D011 |
| D016 |

D

D

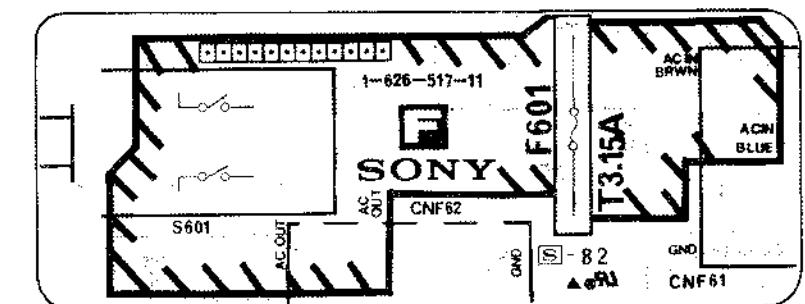


NOTE:

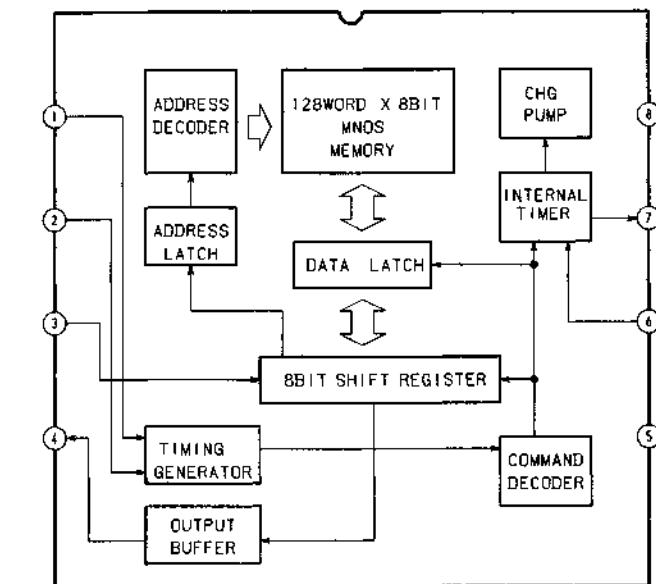
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

F

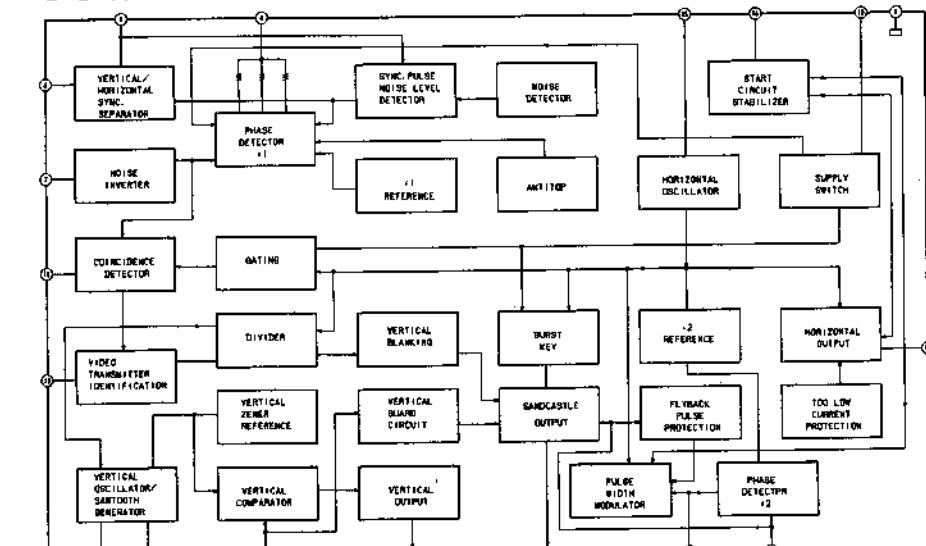
- F Board -



D BOARD IC002 CXK1012P



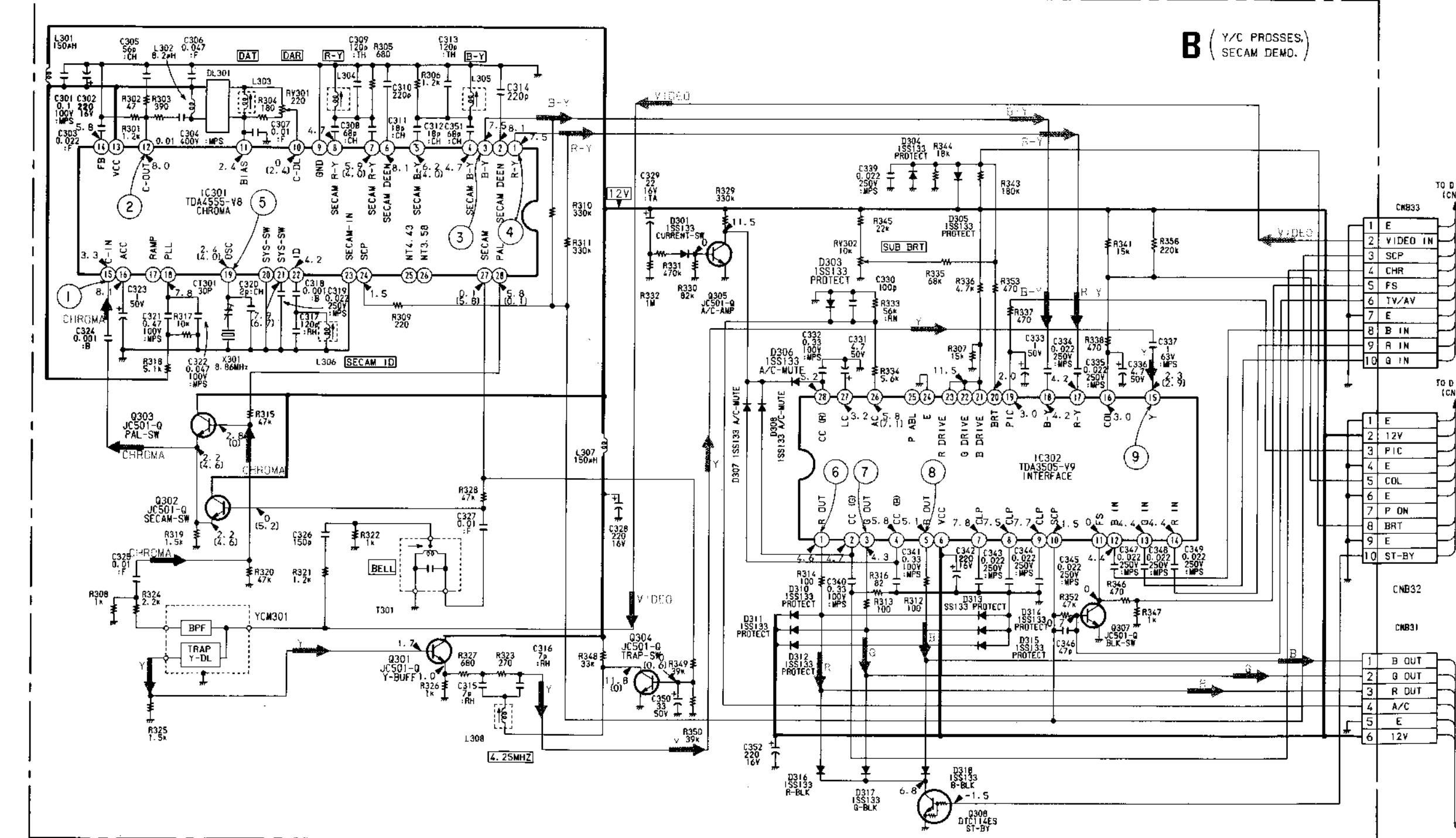
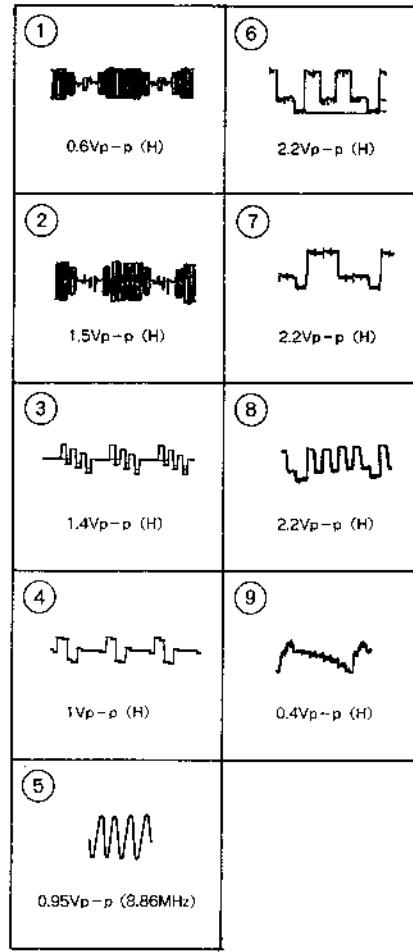
D BOARD IC551 TDA2579



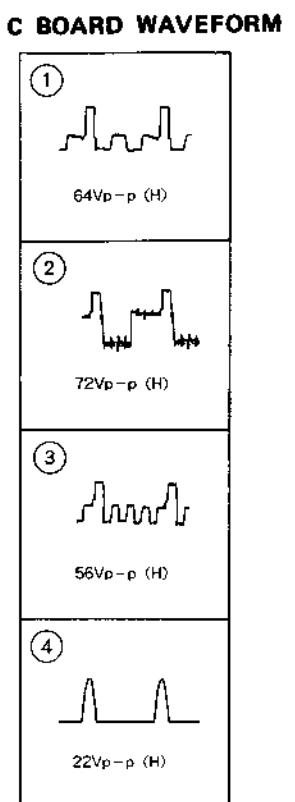
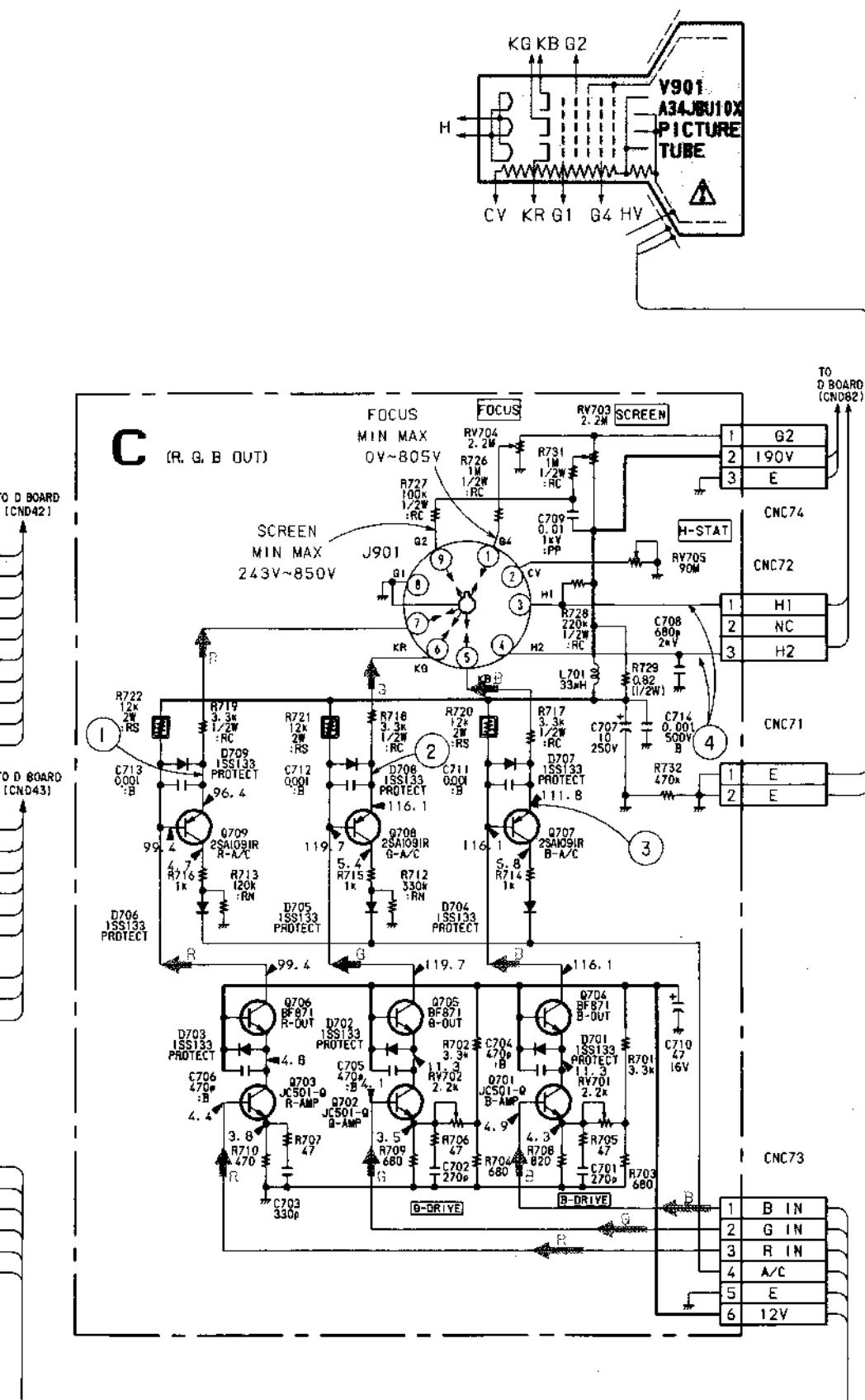
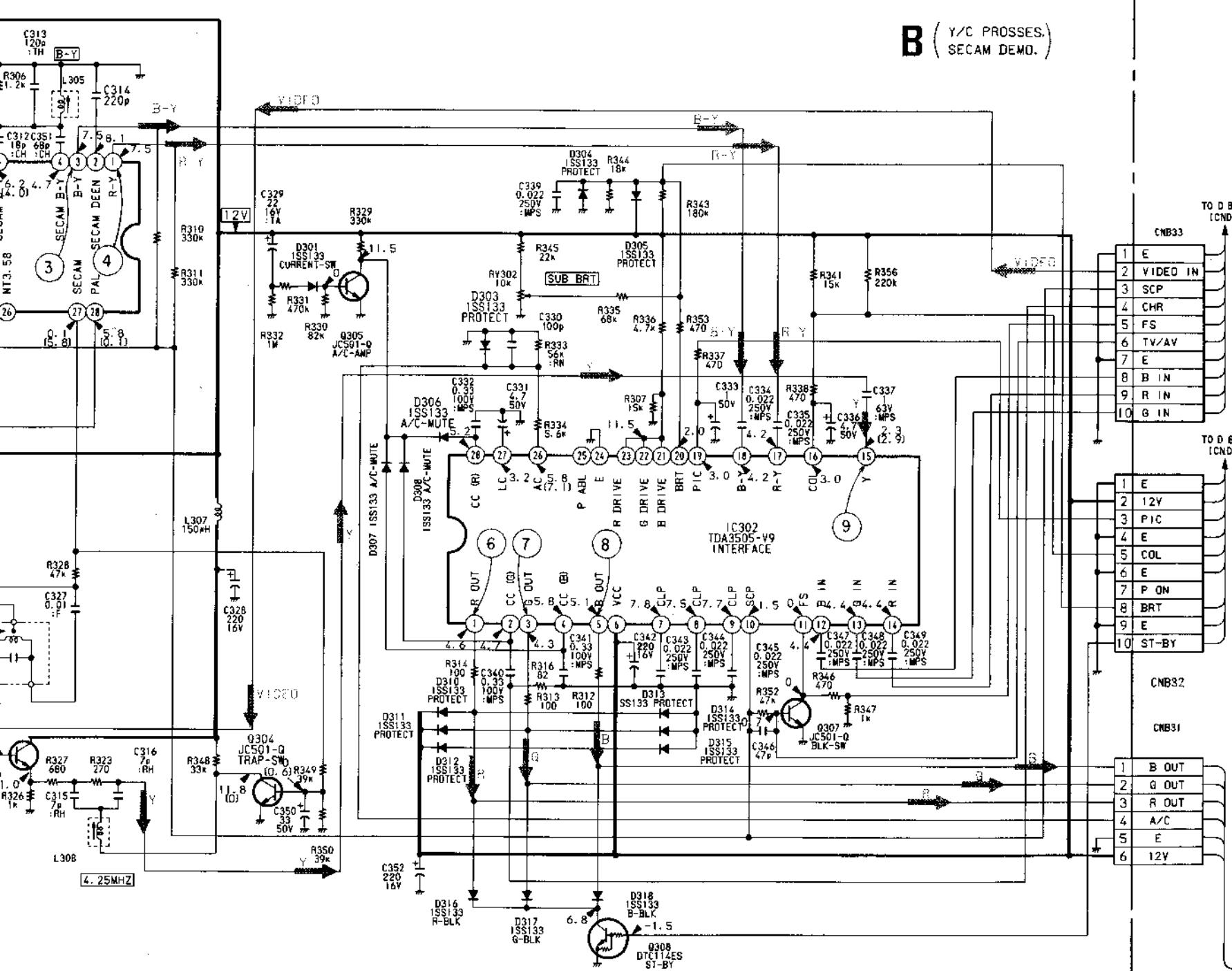
5-4. SCHEMATIC DIAGRAMS (2)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

B BOARD WAVEFORM



8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23



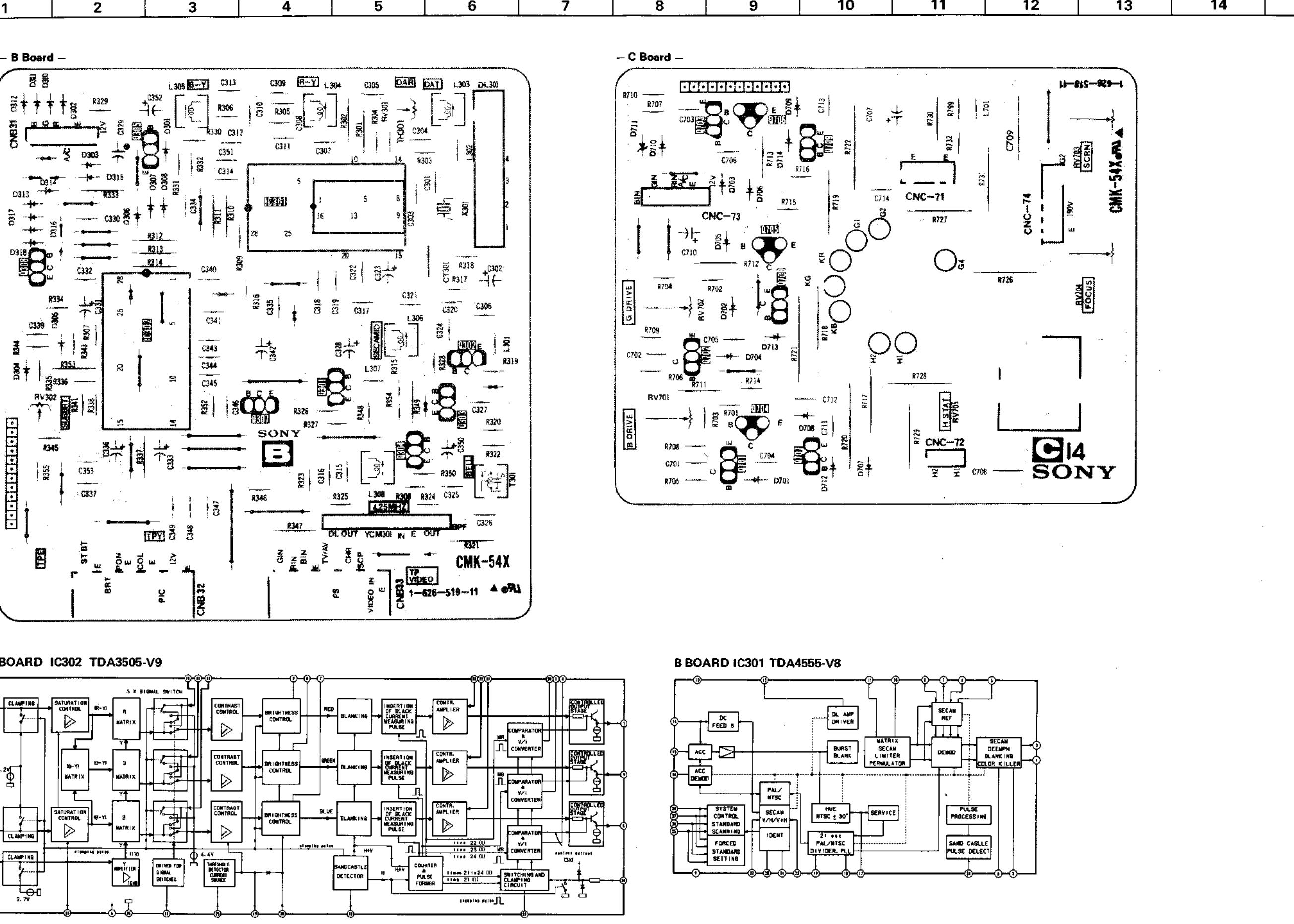
5-5. PRINTED WIRING BOARDS (2)

Y/C PROSES,
SECAM DEMO.

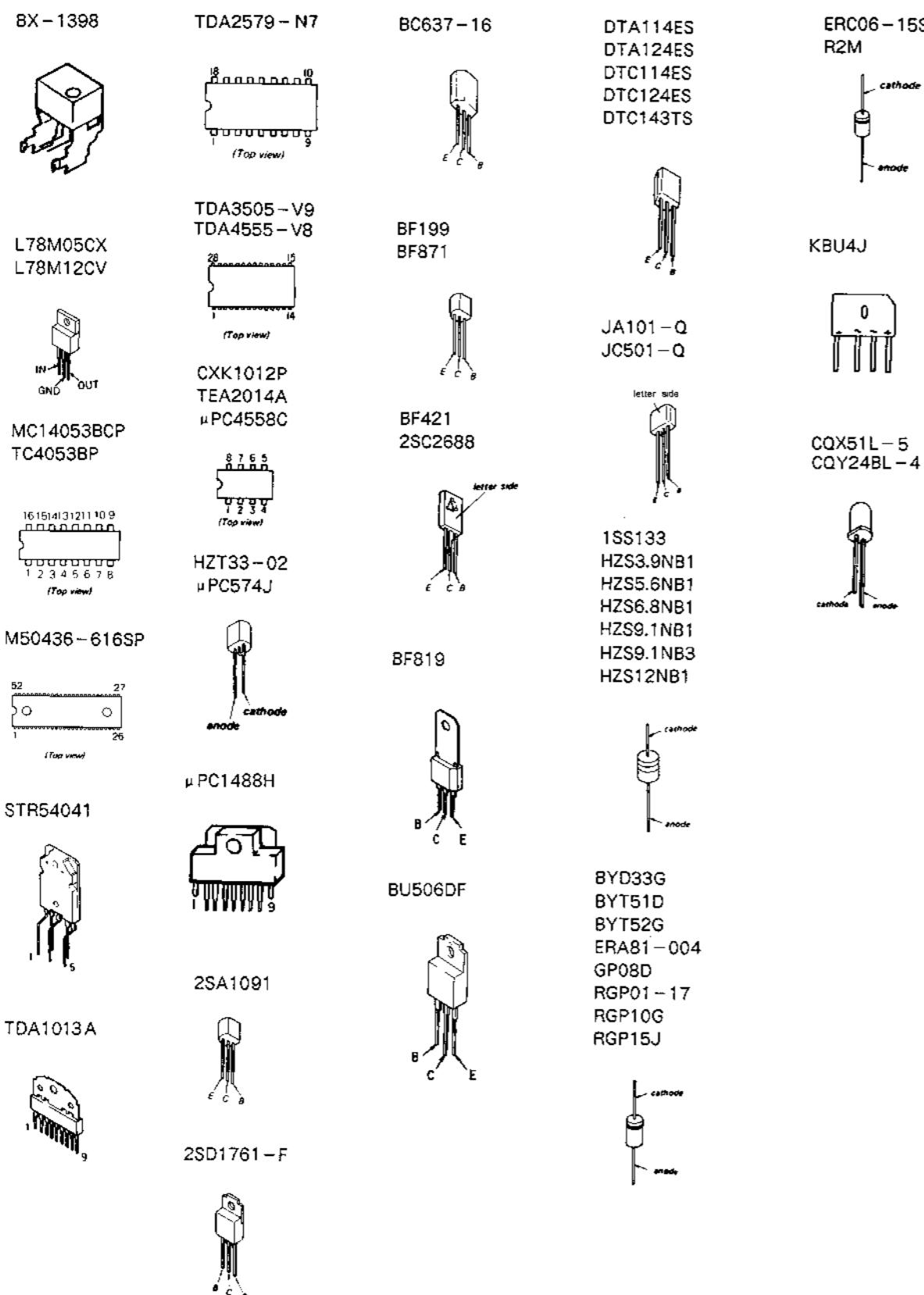
B

C

[R, G, B OUT]



5-6. SEMICONDUCTORS

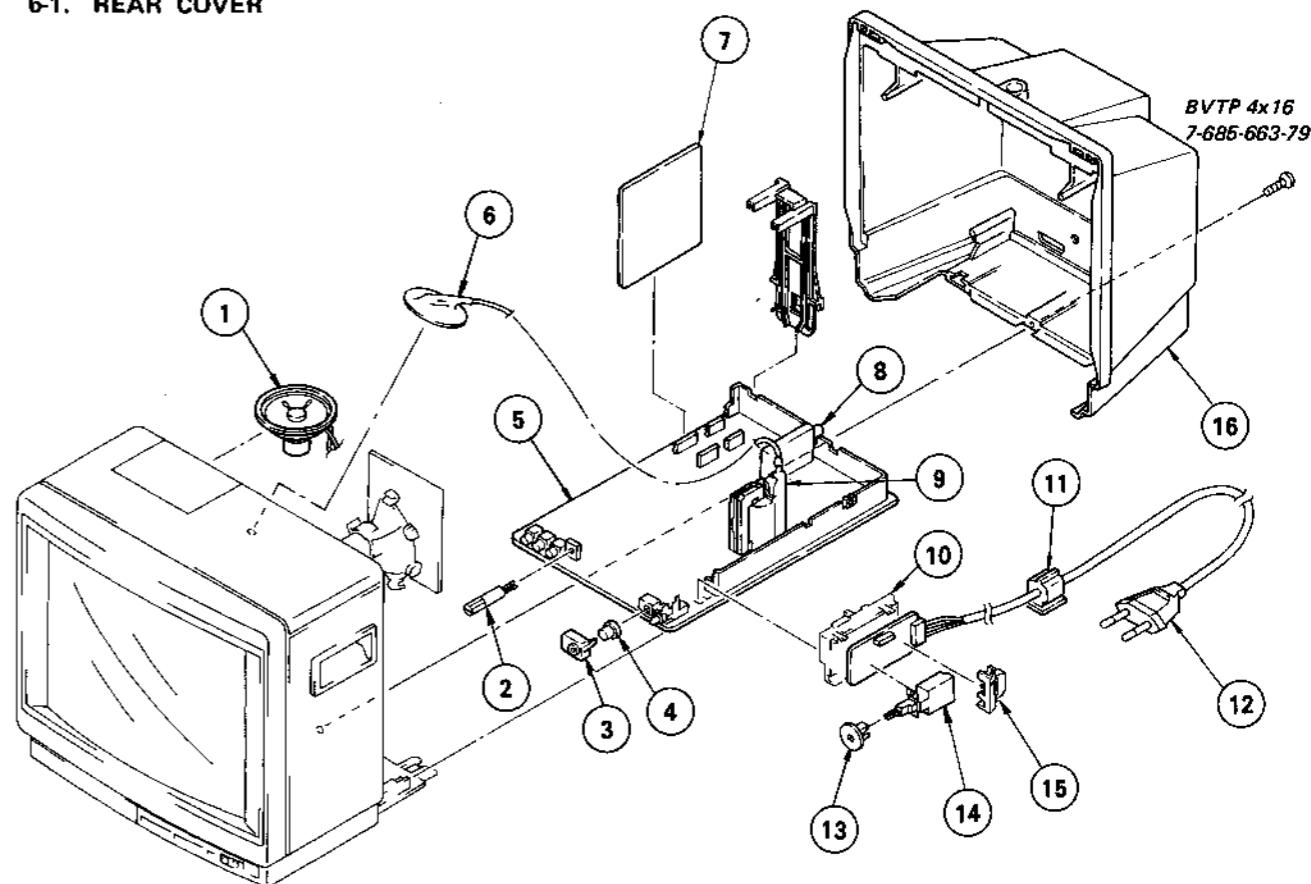


NOTE:
 • Items with no part number and no description are not stocked because they are seldom required for routine service.
 • The construction parts of an assembled part are indicated with a collation number in the remark column.
 • Items marked "*" are not stocked since they are seldom required for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

SECTION 6
EXPLODED VIEWS

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

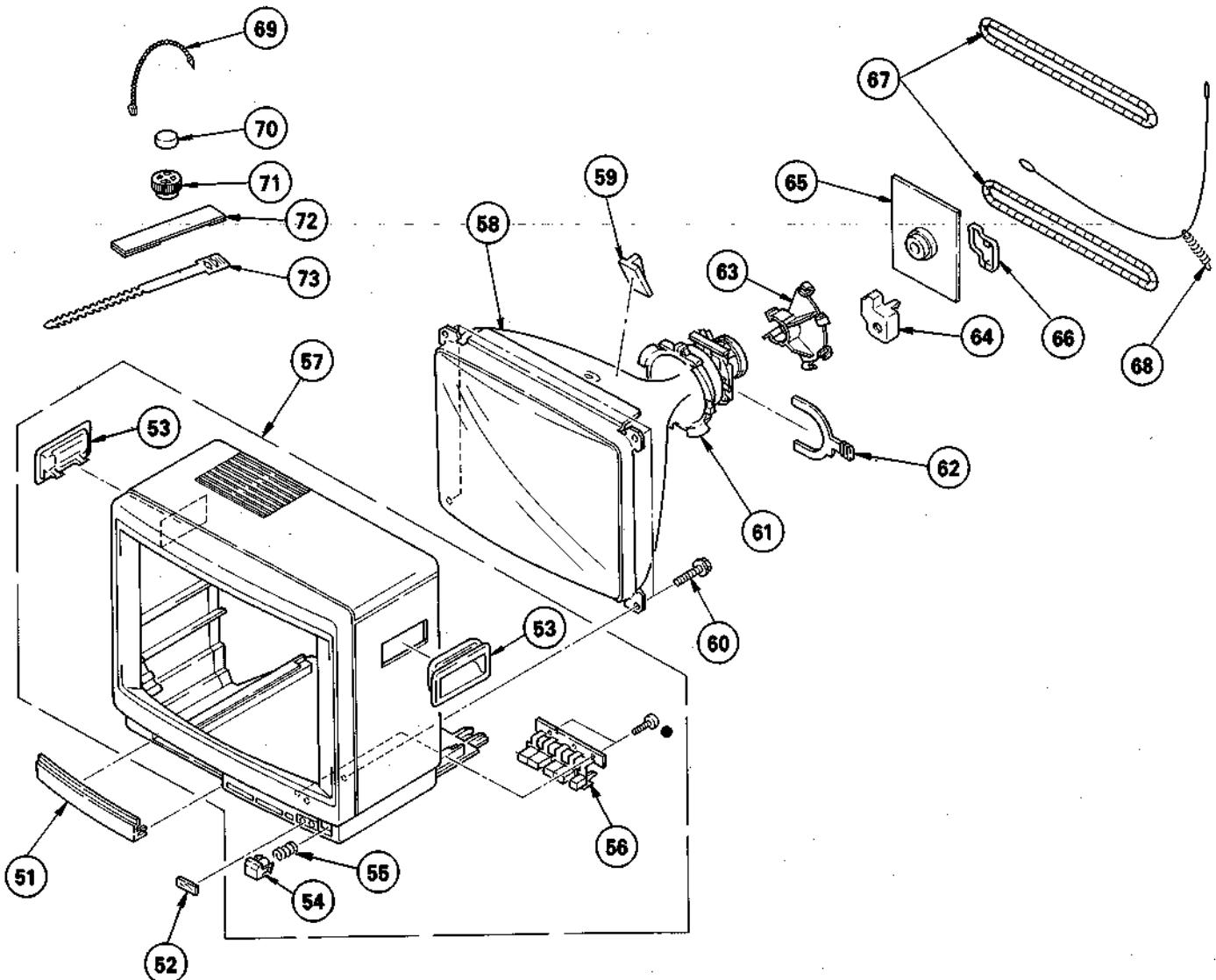
6-1. REAR COVER



| No. | Part No. | Description | Remark | No. | Part No. | Description | Remark |
|-----|---------------|----------------------------------|--------|-----|---------------|--|--------|
| 1 | 1-503-767-11 | SPEAKER (8CM CONE TYPE) | | 10 | *1-626-517-11 | F BOARD | |
| 2 | 4-389-302-01 | KNOB, VOLUME | | 11 | 4-022-115-01 | HOLDER, AC CORD | |
| 3 | *4-388-955-01 | BRACKET (B), LIGHT GUIDE | | 12 | 1-559-346-11 | CORD, POWER (WITH CONNECTOR) | |
| 4 | *4-374-987-01 | GUIDE, LIGHT | | 13 | 4-386-611-01 | COVER, SWITCH | |
| 5 | *A-1345-775-A | D BOARD, COMPLETE (KV-M14D ONLY) | | 14 | 1-571-433-11 | SWITCH, PUSH (AC POWER) | |
| | *A-1345-787-A | D BOARD, COMPLETE (KV-P14D ONLY) | | 15 | *4-386-620-01 | COVER, POWER | |
| 7 | *A-1135-501-A | B BOARD, COMPLETE | | 16 | 4-389-322-01 | COVER, REAR (FOR BLACK) | |
| 8 | 1-463-881-11 | TUNER, ET (UV-617) | | | 4-389-322-11 | COVER, REAR (FOR WHITE) (KV-M14D ONLY) | |
| 9 | 1-439-432-11 | TRANSFORMER ASSY, FLYBACK | | | | | |

6-2. BEZEL

• BVTP 3x12 7-685-648-79



| No. | Part No. | Description | Remark | No. | Part No. | Description | Remark |
|-----|------------------|--|--------|-----|---------------|--------------------------------|--------|
| 51 | X-4389-301-1 | DOOR ASSY (FOR BLACK) | | 59 | 3-703-961-01 | SPACER, DY | |
| | X-4389-301-3 | DOOR ASSY (FOR WHITE) (KV-M14D ONLY) | | 60 | 4-365-808-00 | SCREW (5), TAPPING | |
| 52 | 4-389-310-01 | WINDOW (M), ORNAMENTAL (KV-M14D ONLY) | | 61 | A1-451-249-31 | DEFLECTION YOKE (SY-125B) | |
| | 4-389-304-01 | WINDOW (P), PRNAMELIAL (KV-P14D ONLY) | | 62 | 1-452-277-00 | MAGNET, BMC | |
| 53 | 4-389-320-01 | HANDLE (FOR BLACK) | | 63 | *4-385-422-01 | HOLDER, LEAD | |
| | 4-389-320-11 | HANDLE (FOR WHITE) (KV-M14D ONLY) | | 64 | *4-374-912-01 | COVER (MAIN), CV VOL | |
| 54 | 4-389-312-01 | BUTTON, POWER (FOR BLACK) | | 65 | *A-1330-868-A | C BOARD, COMPLETE | |
| | 4-389-312-11 | BUTTON, POWER (FOR WHITE) (KV-M14D ONLY) | | 66 | *4-374-913-01 | COVER (REAR LID), CV VOL | |
| 55 | 4-389-306-01 | SPRING, COMPRESSION | | 67 | A1-426-145-21 | COIL, DEGAUSSING | |
| 56 | 4-389-317-01 | BUTTON, MULTI (FOR BLACK) | | 68 | 4-369-318-00 | SPRING, TENSION | |
| | 4-389-317-11 | BUTTON, MULTI (FOR WHITE) (KV-M14D ONLY) | | 69 | 4-308-870-00 | CLIP, LEAD WIRE | |
| 57 | X-4389-305-2 | BEZEL ASSY (FOR BLACK) | 53-56 | 70 | 1-452-032-00 | MAGNET, DISK; 10MM Ø | |
| | X-4389-305-3 | BEZEL ASSY (FOR WHITE) | 53-56 | 71 | 1-452-094-00 | MAGNET, ROTATABLE DISK; 15MM Ø | |
| | (KV-M14D ONLY) | | | 72 | X-4309-608-0 | PERMALLOY ASSY, CONVERGENCE | |
| | 58 A8-735-555-05 | PICTURE TUBE (A34JBU10X) | | 73 | 3-701-007-00 | BAND, BINDING | |

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

SECTION 7
ELECTRICAL PARTS LIST

B

NOTE:

The components identified by shading and mark \triangle 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.

CAPACITORS COILS
• MF : μF , PF : $\mu\mu\text{F}$ • MMH : mH, UH : μH

Note: In this parts list, the mounting diagram is for a different product.
Therefore, an excess of parts is listed.

RESISTORS

All resistors are in ohms
• F : nonflammable

| Ref.No. | Part No. | Description | Remark | Ref.No. | Part No. | Description | Remark | |
|------------------|---------------|-------------------|---------|---------|--------------|-------------------|---------------|----------------------------|
| | *A-1135-501-A | B BOARD, COMPLETE | ***** | C350 | 1-124-917-11 | ELECT | 33MF 20% 50V | |
| | | | | C351 | 1-101-888-00 | CERAMIC | 60PF 5% 50V | |
| | | | | C352 | 1-124-120-11 | ELECT | 220MF 20% 16V | |
| | | | | C353 | 1-102-959-00 | CERAMIC | 22PF 10% 50V | |
| <u>CAPACITOR</u> | | | | | | | | |
| C301 | 1-110-175-81 | MYLAR | 0.1MF | 10% | 100V | <u>CONNECTOR</u> | | |
| C302 | 1-124-120-11 | ELECT | 220MF | 20% | 16V | CNB31 | *1-560-126-00 | PLUG, CONNECTOR (2.5MM) 6P |
| C303 | 1-101-005-00 | CERAMIC | 0.022MF | | 50V | CNB32 | *1-565-393-11 | CONNECTOR, BOARD TO BOARD |
| C304 | 1-110-190-81 | MYLAR | 0.01MF | 10% | 400V | CNB33 | *1-565-393-11 | CONNECTOR, BOARD TO BOARD |
| C305 | 1-101-884-00 | CERAMIC | 56PF | 5% | 50V | | | |
| C306 | 1-101-006-00 | CERAMIC | 0.047MF | | 50V | <u>TRIMMER</u> | | |
| C307 | 1-101-004-00 | CERAMIC | 0.01MF | | 50V | CT301 | 1-141-392-11 | CAP, VAR, TRIMMER (1 GANG) |
| C308 | 1-101-888-00 | CERAMIC | 68PF | 5% | 50V | | | |
| C309 | 1-102-735-00 | CERAMIC | 120PF | 5% | 50V | <u>DIODE</u> | | |
| C310 | 1-102-978-00 | CERAMIC | 220PF | 5% | 50V | D301 | 8-719-911-19 | DIODE 1SS119 |
| C311 | 1-102-953-00 | CERAMIC | 18PF | 5% | 50V | D303 | 8-719-911-19 | DIODE 1SS119 |
| C312 | 1-102-953-00 | CERAMIC | 18PF | 5% | 50V | D304 | 8-719-911-19 | DIODE 1SS119 |
| C313 | 1-102-735-00 | CERAMIC | 120PF | 5% | 50V | D305 | 8-719-911-19 | DIODE 1SS119 |
| C314 | 1-102-978-00 | CERAMIC | 220PF | 5% | 50V | D306 | 8-719-911-19 | DIODE 1SS119 |
| C315 | 1-102-662-00 | CERAMIC | 7PF | 0.5PF | 50V | D307 | 8-719-911-19 | DIODE 1SS119 |
| C316 | 1-102-662-00 | CERAMIC | 7PF | 0.5PF | 50V | D308 | 8-719-911-19 | DIODE 1SS119 |
| C317 | 1-102-679-00 | CERAMIC | 120PF | 5% | 50V | D310 | 8-719-911-19 | DIODE 1SS119 |
| C318 | 1-102-074-00 | CERAMIC | 0.001MF | 10% | 50V | D311 | 8-719-911-19 | DIODE 1SS119 |
| C319 | 1-110-182-81 | MYLAR | 0.022MF | 10% | 250V | D312 | 8-719-911-19 | DIODE 1SS119 |
| C320 | 1-102-935-00 | CERAMIC | 2PF | 0.25PF | 50V | D313 | 8-719-911-19 | DIODE 1SS119 |
| C321 | 1-110-329-81 | MYLAR | 0.47MF | 10% | 100V | D314 | 8-719-911-19 | DIODE 1SS119 |
| C322 | 1-110-171-81 | MYLAR | 0.047MF | 10% | 100V | D315 | 8-719-911-19 | DIODE 1SS119 |
| C323 | 1-124-499-11 | ELECT | 1MF | 20% | 50V | D316 | 8-719-911-19 | DIODE 1SS119 |
| C324 | 1-102-074-00 | CERAMIC | 0.001MF | 10% | 50V | D317 | 8-719-911-19 | DIODE 1SS119 |
| C325 | 1-101-004-00 | CERAMIC | 0.01MF | | 50V | D318 | 8-719-911-19 | DIODE 1SS119 |
| C326 | 1-101-361-00 | CERAMIC | 150PF | 5% | 50V | <u>DELAY LINE</u> | | |
| C327 | 1-101-004-00 | CERAMIC | 0.01MF | | 50V | DL301 | 1-415-187-13 | DELAY LINE |
| C328 | 1-124-120-11 | ELECT | 220MF | 20% | 16V | | | |
| C329 | 1-131-373-00 | TANTALUM | 22MF | 10% | 16V | <u>IC</u> | | |
| C330 | 1-102-973-00 | CERAMIC | 100PF | 5% | 50V | | | |
| C331 | 1-124-927-11 | ELECT | 4.7MF | 20% | 50V | I1C301 | 8-759-947-20 | IC TDA4555-V8 |
| C332 | 1-110-327-81 | MYLAR | 0.33MF | 10% | 100V | I1C302 | 8-759-947-19 | IC TDA3505-V9 |
| C333 | 1-124-499-11 | ELECT | 1MF | 20% | 50V | | | |
| C334 | 1-110-182-81 | MYLAR | 0.022MF | 10% | 250V | <u>COIL</u> | | |
| C335 | 1-110-182-81 | MYLAR | 0.022MF | 10% | 250V | L301 | 1-408-423-00 | INDUCTOR 150UH |
| C336 | 1-124-927-11 | ELECT | 4.7MF | 20% | 50V | L302 | 1-408-408-00 | INDUCTOR 8.2UH |
| C337 | 1-110-333-81 | MYLAR | 1MF | 10% | 63V | L303 | 1-404-539-11 | COIL |
| C339 | 1-110-182-81 | MYLAR | 0.022MF | 10% | 250V | L304 | 1-404-554-11 | COIL |
| C340 | 1-110-327-81 | MYLAR | 0.33MF | 10% | 100V | L305 | 1-404-554-11 | COIL |
| C341 | 1-110-327-81 | MYLAR | 0.33MF | 10% | 100V | | | |
| C342 | 1-124-120-11 | ELECT | 220MF | 20% | 16V | L306 | 1-404-554-11 | COIL |
| C343 | 1-110-182-81 | MYLAR | 0.022MF | 10% | 250V | L307 | 1-408-423-00 | INDUCTOR 150UH |
| C344 | 1-110-182-81 | MYLAR | 0.022MF | 10% | 250V | L308 | 1-404-495-00 | COIL |
| C345 | 1-110-182-81 | MYLAR | 0.022MF | 10% | 250V | | | |
| C346 | 1-101-880-00 | CERAMIC | 47PF | 5% | 50V | | | |
| C347 | 1-110-182-81 | MYLAR | 0.022MF | 10% | 250V | | | |
| C348 | 1-110-182-81 | MYLAR | 0.022MF | 10% | 250V | | | |
| C349 | 1-110-182-81 | MYLAR | 0.022MF | 10% | 250V | | | |

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

B **F** **C**

| <u>Ref.No.</u> | <u>Part No.</u> | <u>Description</u> | <u>Remark</u> | <u>Ref.No.</u> | <u>Part No.</u> | <u>Description</u> | <u>Remark</u> |
|-------------------|-----------------|---------------------|---------------|----------------|--|---------------------------------|--|
| TRANSISTOR | | | | | | | |
| Q301 | 8-729-178-54 | TRANSISTOR 2SC2785 | | RV301 | 1-238-009-11 | RES, ADJ, CARBON 220 | |
| Q302 | 8-729-178-54 | TRANSISTOR 2SC2785 | | RV302 | 1-238-016-11 | RES, ADJ, CARBON 10K | |
| Q303 | 8-729-178-54 | TRANSISTOR 2SC2785 | | | | | |
| Q304 | 8-729-178-54 | TRANSISTOR 2SC2785 | | | | | |
| Q305 | 8-729-178-54 | TRANSISTOR 2SC2785 | | | | | |
| Q307 | 8-729-178-54 | TRANSISTOR 2SC2785 | | T301 | 1-404-584-11 | COIL | |
| Q308 | 8-729-900-80 | TRANSISTOR DTC114ES | | | | | |
| RESISTOR | | | | | | | |
| R301 | 1-249-418-11 | CARBON | 1.2K | 5% | 1/4W | X301 | 1-567-131-00 OSCILLATOR, CRYSTAL |
| R302 | 1-249-401-11 | CARBON | 47 | 5% | 1/4W | | |
| R303 | 1-249-412-11 | CARBON | 390 | 5% | 1/4W | CRYSTAL | |
| R304 | 1-249-408-11 | CARBON | 180 | 5% | 1/4W | | |
| R305 | 1-249-416-11 | CARBON | 820 | 5% | 1/4W | XCM301 | 1-235-753-21 YC MODULE |
| R306 | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W | | |
| R307 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | | |
| R308 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | YC MODULE | |
| R309 | 1-249-409-11 | CARBON | 220 | 5% | 1/4W | | |
| R310 | 1-247-891-00 | CARBON | 330K | 5% | 1/4W | | |
| R311 | 1-247-891-00 | CARBON | 330K | 5% | 1/4W | | |
| R312 | 1-249-405-11 | CARBON | 100 | 5% | 1/4W | | |
| R313 | 1-249-405-11 | CARBON | 100 | 5% | 1/4W | | |
| R314 | 1-249-405-11 | CARBON | 100 | 5% | 1/4W | | |
| R315 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | | |
| R316 | 1-249-404-00 | CARBON | 82 | 5% | 1/4W | CONNECTOR | |
| R317 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | CNF61 | *1-566-664-11 PIN, CONNECTOR 4P |
| R318 | 1-247-848-11 | CARBON | 5.1K | 5% | 1/4W | CNF62 | *1-566-664-11 PIN, CONNECTOR 4P |
| R319 | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W | | |
| R320 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | FUSE | |
| R321 | 1-249-418-11 | CARBON | 1.2K | 5% | 1/4W | F601 | Δ 1-576-016-11 FUSE, TIME LAG, 3.15A/250V |
| R322 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | | |
| R323 | 1-249-410-11 | CARBON | 270 | 5% | 1/4W | F601 | Δ 1-571-433-11 HOLDER, FUSE; F601 |
| R324 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | | |
| R325 | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W | SWITCH | |
| R326 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | S601 | Δ 1-571-433-11 SWITCH, PUSH (AC POWER) |
| R327 | 1-249-415-11 | CARBON | 680 | 5% | 1/4W | | |
| R328 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | | |
| R329 | 1-247-891-00 | CARBON | 330K | 5% | 1/4W | | |
| R330 | 1-249-440-11 | CARBON | 82K | 5% | 1/4W | CAPACITOR | |
| R331 | 1-247-895-00 | CARBON | 470K | 5% | 1/4W | *A-1330-868-A C BOARD, COMPLETE | |
| R332 | 1-247-903-00 | CARBON | 1M | 5% | 1/4W | | |
| R333 | 1-216-963-91 | METAL | 56K | 1% | 1/4W | | |
| R334 | 1-249-426-11 | CARBON | 5.6K | 5% | 1/4W | | |
| R335 | 1-249-439-11 | CARBON | 68K | 5% | 1/4W | | |
| R336 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | C701 | 1-102-980-00 CERAMIC |
| R337 | 1-249-413-11 | CARBON | 470 | 5% | 1/4W | C702 | 1-102-980-00 CERAMIC |
| R338 | 1-249-413-11 | CARBON | 470 | 5% | 1/4W | C703 | 1-102-820-00 CERAMIC |
| R341 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | C704 | 1-102-114-00 CERAMIC |
| R343 | 1-247-885-00 | CARBON | 180K | 5% | 1/4W | C705 | 1-102-114-00 CERAMIC |
| R344 | 1-249-432-11 | CARBON | 18K | 5% | 1/4W | C706 | 1-102-114-00 CERAMIC |
| R345 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W | C707 | 1-123-947-00 ELECT |
| R346 | 1-249-413-11 | CARBON | 470 | 5% | 1/4W | C708 | 1-162-116-00 CERAMIC |
| R347 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | C709 | 1-136-666-11 FILM |
| R348 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W | C710 | 1-124-477-11 ELECT |
| R349 | 1-249-436-11 | CARBON | 39K | 5% | 1/4W | C711 | 1-102-074-00 CERAMIC |
| R350 | 1-249-436-11 | CARBON | 39K | 5% | 1/4W | C712 | 1-102-074-00 CERAMIC |
| R352 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | C713 | 1-102-074-00 CERAMIC |
| R353 | 1-249-413-11 | CARBON | 470 | 5% | 1/4W | C714 | 1-162-318-11 CERAMIC |
| R355 | 1-247-887-00 | CARBON | 220K | 5% | 1/4W | | |
| CONNECTOR | | | | | | | |
| | | | | CNC71 | *1-508-786-00 2P PLUG (M) | | |
| | | | | CNC72 | *1-560-123-00 PLUG, CONNECTOR (2.5MM) 3P | | |
| | | | | CNC73 | *1-560-126-00 PLUG, CONNECTOR (2.5MM) 6P | | |
| | | | | CNC74 | *1-508-765-00 3P PLUG (M) | | |

C **D**

Ref. No. Part No. Description

Ref. No. Part No. Description Remark

DIODE

D701 8-719-911-19 DIODE 1SS119
 D702 8-719-911-19 DIODE 1SS119
 D703 8-719-911-19 DIODE 1SS119
 D704 8-719-911-19 DIODE 1SS119
 D705 8-719-911-19 DIODE 1SS119

 D706 8-719-911-19 DIODE 1SS119
 D707 8-719-911-19 DIODE 1SS119
 D708 8-719-911-19 DIODE 1SS119
 D709 8-719-911-19 DIODE 1SS119

JACK

J901 1-526-819-11 SOCKET, PICTURE TUBE

COIL

L701 1-408-415-00 INDUCTOR 33UH

TRANSISTOR

Q701 8-729-178-54 TRANSISTOR 2SC2785
 Q702 8-729-178-54 TRANSISTOR 2SC2785
 Q703 8-729-178-54 TRANSISTOR 2SC2785
 Q704 8-729-906-70 TRANSISTOR BF871
 Q705 8-729-906-70 TRANSISTOR BF871

 Q706 8-729-906-70 TRANSISTOR BF871
 Q707 8-729-200-17 TRANSISTOR 2SA1091
 Q708 8-729-200-17 TRANSISTOR 2SA1091
 Q709 8-729-200-17 TRANSISTOR 2SA1091

RESISTOR

R701 1-249-423-11 CARBON 3.3K 5% 1/4W
 R702 1-249-423-11 CARBON 3.3K 5% 1/4W
 R703 1-249-415-11 CARBON 680 5% 1/4W
 R704 1-249-415-11 CARBON 680 5% 1/4W
 R705 1-249-401-11 CARBON 47 5% 1/4W

 R706 1-249-401-11 CARBON 47 5% 1/4W
 R707 1-249-401-11 CARBON 47 5% 1/4W
 R708 1-249-417-11 CARBON 1K 5% 1/4W
 R709 1-249-416-11 CARBON 820 5% 1/4W
 R710 1-249-413-11 CARBON 470 5% 1/4W

 R712 1-247-891-91 CARBON 330K 1% 1/4W
 R713 1-247-881-91 CARBON 120K 1% 1/4W
 R714 1-249-417-11 CARBON 1K 5% 1/4W
 R715 1-249-417-11 CARBON 1K 5% 1/4W

 R716 1-249-417-11 CARBON 1K 5% 1/4W
 R717 1-202-824-00 SOLID 3.3K 10% 1/2W
 R718 1-202-824-00 SOLID 3.3K 10% 1/2W
 R719 1-202-824-00 SOLID 3.3K 10% 1/2W
 R720 1-218-087-51 METAL OXIDE 12K 5% 2W

VARIABLE RESISTOR

RV701 1-237-749-11 RES, ADJ, CARBON 2200
 RV702 1-237-749-11 RES, ADJ, CARBON 2200
 RV703 1-230-641-21 RES, ADJ, METAL GLAZE 2.2M
 RV704 1-230-641-21 RES, ADJ, METAL GLAZE 2.2M
 RV705 1-230-798-11 RES, ADJ, METAL GLAZE 90M

 *A-1345-775-A D BOARD, COMPLETE (KV-M14D ONLY)

*A-1345-787-A D BOARD, COMPLETE (KV-P140 ONLY)

CAPACITOR

C001 1-124-908-11 ELECT 22MF 20% 50V
 C002 1-124-499-11 ELECT 1MF 20% 50V
 C003 1-124-499-11 ELECT 1MF 20% 50V
 C004 1-102-973-00 CERAMIC 100PF 5% 50V
 C005 1-110-175-81 MYLAR 0.1MF 10% 100V

 C007 1-124-927-11 ELECT 4.7MF 20% 50V
 C009 1-102-111-00 CERAMIC 270PF 10% 50V
 C010 1-102-965-00 CERAMIC 39PF 5% 50V
 C011 1-102-965-00 CERAMIC 39PF 5% 50V
 C012 1-101-004-00 CERAMIC 0.01MF 50V

 C013 1-102-959-00 CERAMIC 22PF 5% 50V
 C014 1-101-004-00 CERAMIC 0.01MF 50V
 C015 1-124-479-11 ELECT 330MF 20% 25V
 C016 1-102-978-00 CERAMIC 220PF 5% 50V
 C019 1-124-908-11 ELECT 22MF 20% 50V

 C020 1-124-908-11 ELECT 22MF 20% 50V
 C022 1-101-004-00 CERAMIC 0.01MF 50V
 C033 1-101-004-00 CERAMIC 0.01MF 50V
 C034 1-126-101-11 ELECT 100MF 20% 16V
 C037 1-101-004-00 CERAMIC 0.01MF 50V

 C041 1-102-116-00 CERAMIC 680PF 10% 50V
 C043 1-102-978-00 CERAMIC 220PF 5% 50V
 C071 1-110-175-81 MYLAR 0.1MF 10% 100V
 C072 1-110-171-81 MYLAR 0.047MF 10% 100V
 C073 1-101-004-00 CERAMIC 0.01MF 50V

 C075 1-102-074-00 CERAMIC 0.001MF 10% 50V
 C076 1-102-125-00 CERAMIC 0.0047MF 10% 50V
 C151 1-124-477-11 ELECT 47MF 20% 16V
 C152 1-124-480-11 ELECT 470MF 20% 25V
 C153 1-110-175-81 MYLAR 0.1MF 10% 100V

 C154 1-110-173-81 MYLAR 0.068MF 10% 100V
 C155 1-110-173-81 MYLAR 0.068MF 10% 100V
 C156 1-101-004-00 CERAMIC 0.03MF 50V
 C157 1-102-963-00 CERAMIC 33PF 5% 50V
 C158 1-124-477-11 ELECT 47MF 20% 16V

 C163 1-101-003-00 CERAMIC 0.0047MF 50V
 C164 1-101-003-00 CERAMIC 0.0047MF 50V
 C201 1-124-479-11 ELECT 330MF 20% 25V
 C202 1-110-175-81 MYLAR 0.1MF 10% 100V
 C203 1-124-038-00 ELECT 1MF 20% 50V

 C204 1-110-171-81 MYLAR 0.047MF 10% 100V
 C205 1-123-875-11 ELECT 10MF 20% 50V
 C206 1-110-184-81 MYLAR 0.033MF 10% 250V
 C207 1-110-175-81 MYLAR 0.1MF 10% 100V
 C208 1-124-128-00 ELECT 470MF 20% 25V

