

CCD-V100E

SERVICE MANUAL

AEP Model
UK Model
Australian Model
E Model



Video 8

This manual contains the SUPPLEMENT-1~4.

SPECIFICATIONS

System

Video recording system

Rotary two heads,
Helical scanning FM system

Audio recording system

Rotary head, FM system

Video signal

PAL colour, CCIR standards

Usable cassette

8mm video format cassette

Tape speed

SP: Approx. 20.051 mm/sec.
LP: Approx. 10.058 mm/sec.

Recording or playback time

SP: 90 min. (P5-90)
LP: 180 min. (P5-90)

Fast forward time

Approx. 4 min.

Image device

CCD (Charge Coupled Device)

Viewfinder

Electric viewfinder
(0.7" black and white)

Lens

Combined 6 × power zoom
lens, variable zooming speed
(approx. 5 to 15 sec.)
f = 12-72 mm, F1.4 with macro
Filter diameter: 52 mm

Auto focus system

TCL

Colour temperature

Preset values: 5,800 K
 3,200 K

Auto: From the light at a
tungsten lamp to the light
on a slightly overcast day.

Minimum illumination 17 lux (F1.4), SENS at HIGH
(1.6 footcandles)

Illumination range 17 lux-100,000 lux
(1.6-9,294 footcandles)

Recommended illumination

More than 300 lux
(28 footcandles)

Aperture correction

Automatic, manual (variable)

Input and output connector

MULTI CONNECTOR 24-pin

Video input: 1 Vp-p, 75 ohms
unbalanced, sync negative

Video output: 1 Vp-p, 75 ohms
unbalanced, sync negative

Audio input: -6 dBs, input
impedance more than
47 kilohms

Audio output: -6 dBs, at
output impedance less than
1 kilohm

Accessory jacks

Video input: miniphono,
1 Vp-p, 75 ohms

unbalanced, sync negative
Video output: miniphono,
1 Vp-p, 75 ohms

unbalanced, sync negative

Earpiece jack

Minijack, 8-ohm impedance

Remote connector

5-pin connector

MIC jack

Minijack, -66 dBs, low im-
pedance

With 2.5-3 V DC output, im-
pedance 6.8 kilohms

Microphone power output jack

Special minijack, 5 V DC

- Continued on next page -



VIDEO

8 VIDEO CAMERA RECORDER

SONY®

Display in the viewfinder**Mode and caution indication**

Main title indication Small 14 characters × 2 lines
Large 10 characters × 2 lines,
7 colours selectable

Sub title indication Small, 6 + 8 characters, 7 colours selectable

Date or time indication

Small 8 characters
Date: From 1 Jan. 1986 to
31 Dec. 2015

Time: 24 hour cycle

Clock

Crystal lock

Memory back-up

Approx. 2 years using the
CR2025 lithium battery

General**Power requirements**

MULTI CONNECTOR 8.5 V
Battery compartment 6 V/8.5 V

Power consumption

7W (camera recording)
including the viewfinder
Horizontally, vertically

Installation**Operating temperature**

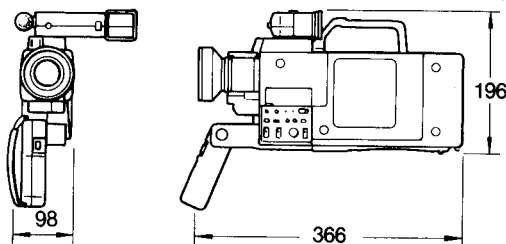
0°C to 40°C (32°F to 104°F)

Storage temperature

-20°C to +60°C (-4°F to
+140°F)

Dimensions

Approx. 98 × 196 × 366 mm (w/h/d)
(3⁷/₈ × 7³/₄ × 14¹/₂ in.)

**Weight**

Approx. 2.3 kg (5 lb 1 oz)
excluding the battery and
cassette

Approx. 2.6 kg (5 lb 13 oz)
including the battery and
cassette

Microphone

Electret condenser
microphone, uni-directional
monaural type

Accessories supplied

Shoulder strap (1)

Sticker (1)

Lithium battery (1)

Optional accessories

Tuner timer unit TT-V8EC/V8UB, AC power adaptor
AC-V8E/V8UB, Battery pack NP-22, NP-4000, DC pack
DCP-80, Car battery cord DCC-16AE, External
microphone shoe SAD-100, Remote Commander
RM-84, Cable VMC-262M (2 phono to 6-pin), VMC-
2104M (4 phono to 21-pin), VMC-2106S (3 phono to
21-pin), VMC-600M/601M (2 phono to 2 phono) VMC-
602MS/603MS (2 phono to 3 phono), AVM-T515V
(miniphono to 2 phono)

SAFETY CHECK-OUT

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

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

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.

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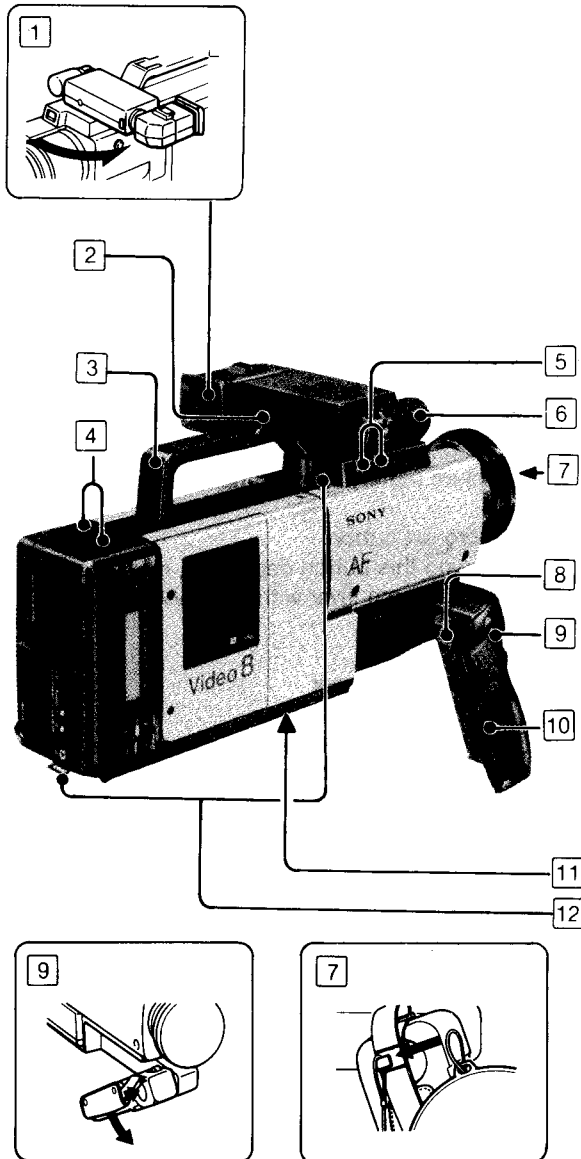
SUPPLEMENT-1

SUPPLEMENT-2

SECTION 1 GENERAL

1-1. LOCATION AND FUNCTION OF PARTS AND CONTROLS

A-1



For details on the use of each control, refer to the pages indicated in the brackets.

Video camera section

A-1

1 Viewfinder

The picture being recorded or played back can be monitored in monochrome through this viewfinder. Data such as the tape counter, function mode, caution indicators, recording title, date, time, are also displayed on the viewfinder screen.

2 Accessory shoe

Attach an optional external microphone, video light, etc.

3 Handle

4 Battery compartment and battery eject switch

Insert a battery pack, AC pack or DC pack.

5 MIC jack and DC OUT (microphone power output) jack

Connect an external microphone. The MIC jack accepts Sony "plug-in-power" microphones.

6 Built-in microphone

7 Lens cap

8 Power zoom button

Press for smooth power zooming between wide-angle (W) and telephoto (T) positions.

9 Release button [p.14]

Press to unlock the hand grip when adjusting the grip position.

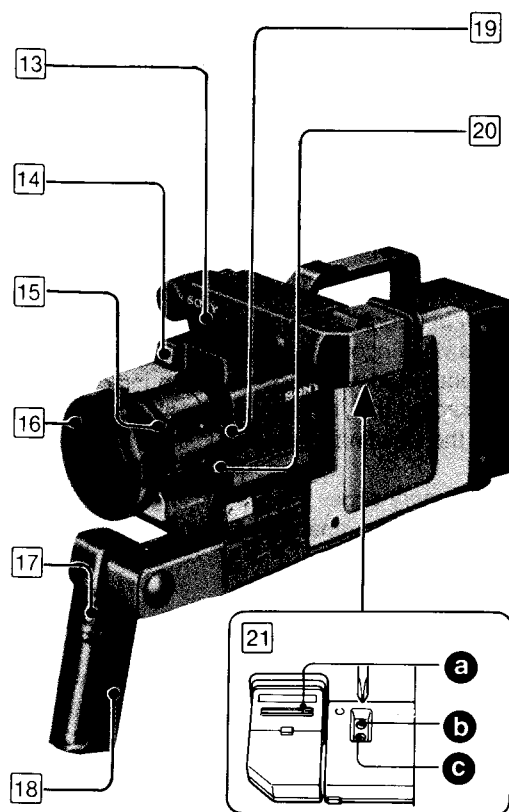
10 Hand grip and grip strap [p.13]

11 Tripod receptacle

Attach an optional tripod.

12 Hooks for shoulder strap [p.14]

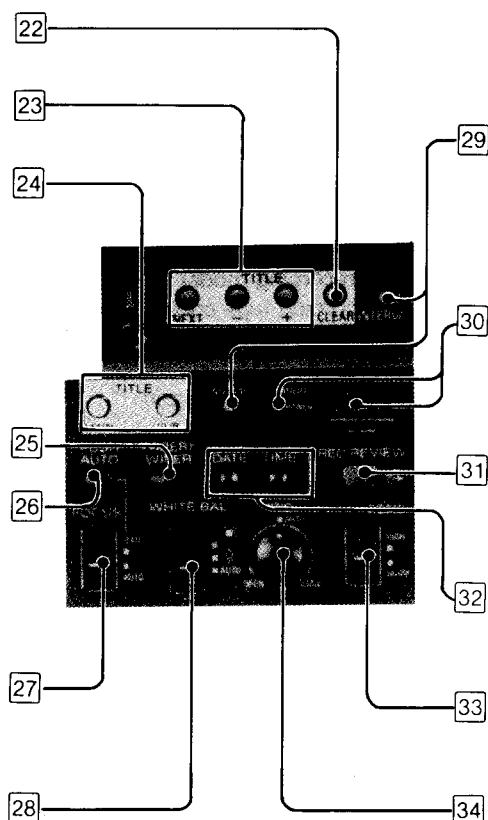
A-2



A-2

- 13 Camera recording/battery lamp**
Lights during camera recording. It blinks when the battery is exhausted.
- 14 White balance sensor**
This is the sensor for the auto white balance adjustment. Be careful not to cover it.
- 15 Focus ring [p.18]**
For manual focusing, turn this ring to focus while looking through the viewfinder. This ring will be turned automatically during auto focusing.
- 16 Lens hood**
Normally keep it attached. When attaching an optional filter or special lens or for macro shooting, turn it counterclockwise to remove.
- 17 START/STOP button**
Press to start or stop camera recording.
- 18 Lithium battery compartment [p.12]**
- 19 Macro set button**
Keeping this button depressed, move the manual zoom lever within the MACRO range for close-ups.
- 20 Manual zoom lever**
- 21 Bottom of the viewfinder**
 - a Viewfinder lens adjustment lever [p.13]**
Adjust to your eyesight to assure good focus. Be sure to adjust this knob when shooting for the first time.
 - b Focus control screw**
 - c Brightness control screw**
Normally, there is no need to adjust these screws. Adjust only when the picture is not displayed clearly.

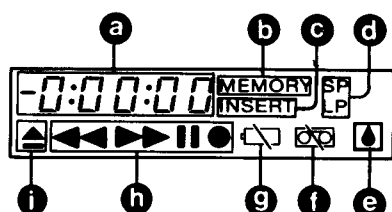
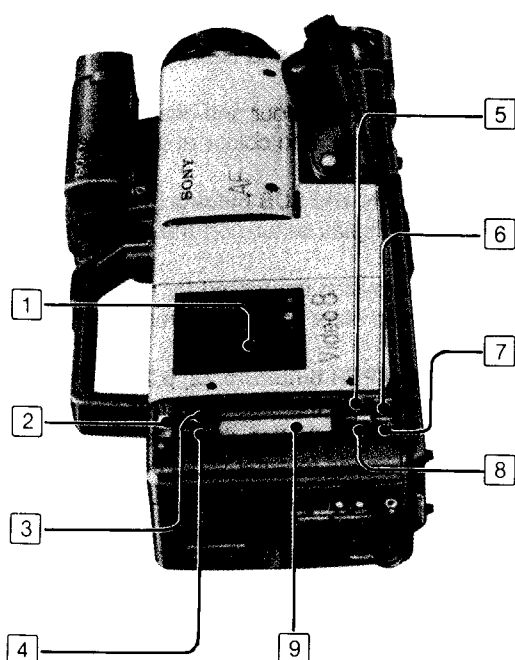
A-3



A-3

- 22 CLEAR button** [p.27]
Press to clear the preset main or sub title.
- 23 TITLE +/- buttons and NEXT button** [p.23, p.24, p.27]
Used to set the colour and characters of the title, date, time, and colour of the wiper.
- 24 TITLE MAIN and SUB buttons** [p.27]
Press to display or turn off the main and sub titles.
Keep the button depressed for more than 3 seconds to enter title setting mode.
- 25 FADER/WIPER button** [p.22, p.23]
Press to select the fader, wiper or normal mode. Keep the button depressed for more than 3 seconds to enter wiper colour setting mode.
- 26 PUSH AUTO button** [p.18]
Keep it depressed to activate the auto focusing if in the manual focusing mode.
- 27 FOCUS switch** [p.18]
Normally set to AUTO for the auto focusing.
To focus manually, set to MAN (manual).
- 28 WHITE BAL (white balance) switch** [p.20]
Normally set to AUTO for the auto white balance adjustment. Set it to ☼ (outdoors) or ☆ (indoors) according to lighting conditions.
- 29 INTERVAL recording button and lamp** [p.21]
Press to activate the automatic interval recording function. The lamp lights during interval recording.
- 30 CAMERA POWER switch and lamp** [p.13]
Slide to the right to turn on the camera section. The lamp lights up. Slide again to turn it off.
- 31 REC REVIEW (recording review) button** [p.16]
Press to play back the end of the previously recorded part for several seconds.
- 32 DATE and TIME buttons** [p.25]
Press to display or turn off the date or time.
Keep these buttons depressed simultaneously for more than 3 seconds to enter date and time setting mode.
- 33 SENS (sensitivity) selector** [p.21]
Normally set to NORM (normal).
- 34 IRIS control** [p.21]
Normally set to AUTO.

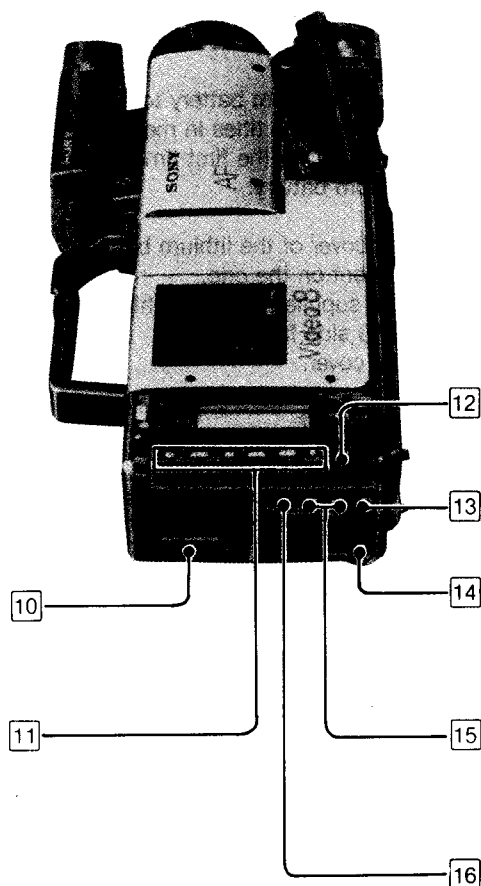
A-4



Video cassette recorder section

A-4

- 1 **Cassette compartment**
- 2 **▲ (cassette eject) switch**
- 3 **VTR POWER switch and lamp**
Press to turn on the recorder section. The lamp lights up. Press the switch again to turn it off.
- 4 **REC MODE (recording mode) selector**
Select the recording tape speed, LP or SP.
- 5 **RESET button**
Press to reset the counter to zero.
- 6 **MEMORY button [p.29]**
To return the tape to the counter zero point, press this button to display the MEMORY indicator in the display window, and press the ►► or ◀◀ button.
- 7 **INSERT button [p.30]**
Press to insert a new picture and sound onto a previously recorded tape.
- 8 **EDIT switch**
Normally keep this switch at the left position. When editing a tape, set to EDIT.
- 9 **Display window**
 - a Tape counter
 - b MEMORY indicator
 - c INSERT indicator
 - d Tape speed indicator
 - e Blinks when moisture has condensed inside the unit.
 - f Lights steadily when no cassette is inserted. Blinks when the tape approaches its end.
 - g Blinks when the battery is weak.
 - h Tape operation mode indicators
 - i Blinks when moisture has condensed on the tape, when the tape approaches its end during camera recording or when the tape does not run normally. Lights steadily when the cassette is being unloaded.

A-5**A-5****MULTI CONNECTOR**

Connect an RFU adaptor, AC power adaptor or tuner timer unit.

Tape transport buttons

◀◀ (rewind), ▶ (playback), ▶▶ (fast-forward), ■ (stop), || (pause), ||▶ FRAME (frame-by-frame playback)

REC (recording) switch

Slide to the right to start recording.

Ⓜ (earphone) jack (mini)**REMOTE connector (5-pin)**

Connect an optional Remote Commander, editing controller, etc.

ACCESSORY IN/OUT jacks (miniphono)

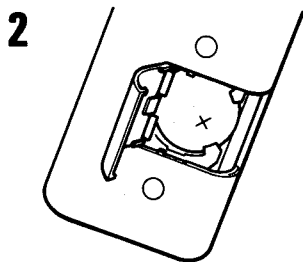
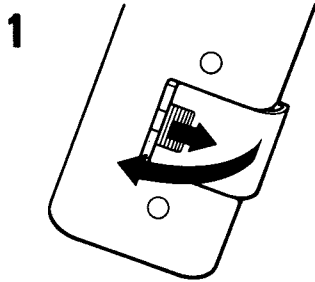
Connect an optional colour corrector, etc.

SHARPNESS control

Normally set to the center detent position.

1-2. LITHIUM BATTERY

B-8



B-8

This unit uses a lithium battery to activate the clock and to keep the titles in memory. Before operating the unit for the first time, install the supplied lithium battery.

- 1 Open the cover of the lithium battery compartment on the grip.
- 2 Install the supplied CR2025 lithium battery with the ⊕ side facing out.
- 3 Close the cover.

LITHIUM BATTERY LIFE

Approximately 2 years in normal operation.

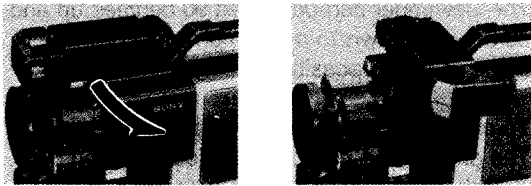
When the lithium battery becomes weak, the time indication will blink on the viewfinder screen for several seconds immediately after the CAMERA POWER switch is turned on.

NOTES ON LITHIUM BATTERY

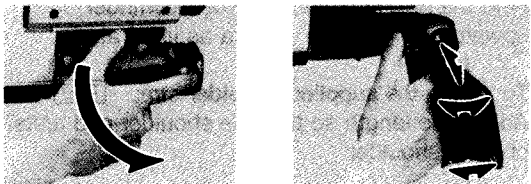
- Keep the lithium battery out of the reach of children. Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.
- Do not break up the battery nor throw it into a fire, which might cause it to explode. Carefully dispose of the used batteries.

1-3. PREPARATIONS FOR CAMERA RECORDING

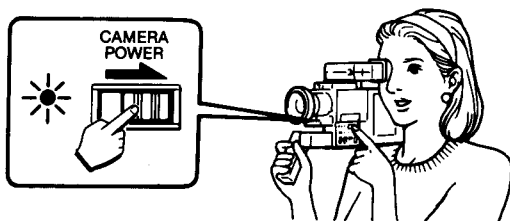
D-1



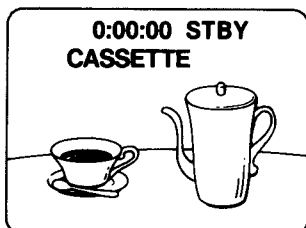
D-2



D-3



D-4



1 Set the viewfinder. **D-1**

Turn the viewfinder until it locks (90 degrees).

2 Set the grip. **D-2**

- ❶ Pressing the release button, turn the grip until it locks.
- ❷ Hold the grip so that your thumb and forefinger can manipulate the power zoom button and the START/STOP button respectively.
- ❸ Adjust the length of the grip strap.

3 Slide the CAMERA POWER switch to the right. **D-3**

4 Position the video camera recorder. **D-3**

Remove the lens cap.

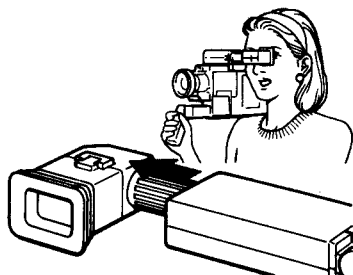
For stable shooting, rest the unit on your shoulder while holding the upper arm firmly against your body.

5 Adjust the position of the viewfinder lens. **D-4**

This adjustment is necessary only when you use the camera for the first time or after another person has used it, because the distance of optimum vision varies from person to person.

Turn the viewfinder upward and adjust the viewfinder lens adjustment lever so that the indications displayed on the viewfinder screen come into sharp focus.

D-5



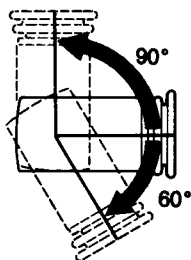
To view with your left eye **D-5**

Pull out the viewfinder until it locks.

To change the angle of the viewfinder **D-6**

The viewfinder can be turned 90 degrees up and 60 degrees down to make high-angle or low-angle shooting possible.

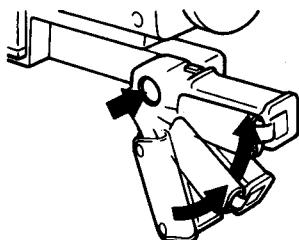
D-6



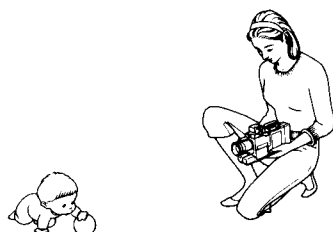
When shooting from a low angle **D-8**

Fold the grip in place, turn the viewfinder upward and hold the camera as illustrated.

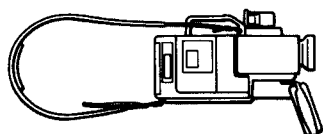
D-7



D-8



D-9

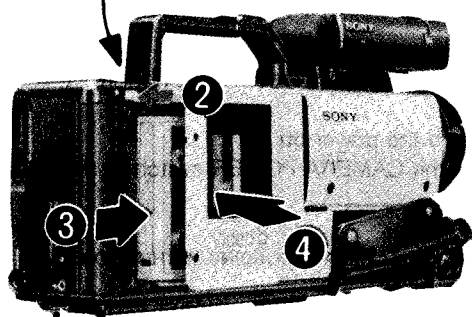
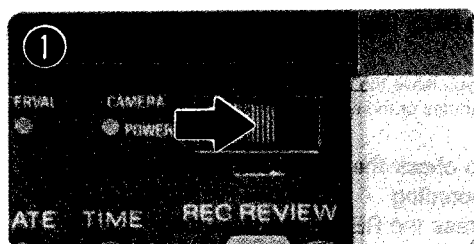


To attach the supplied shoulder strap **D-9**

Adjust the length so that the shoulder pad rests on your shoulder.

14. EASY CAMERA RECORDING WITH AUTOMATIC ADJUSTMENT

E-1



OPERATION

1 Slide the CAMERA POWER switch to the right (to set to CAMERA mode) and insert a cassette. **E-1**

2 Set the REC MODE selector to LP or SP, according to the length of the programme to be recorded. **E-2**

The recording time of a cassette in the LP mode is twice as long as that in the SP mode.

3 Set the following selectors to the standard position (green position) for automatic adjustments. **E-3**

FOCUS → AUTO (auto focusing)

WHITE BAL → AUTO (linear auto white balance)

IRIS → AUTO (auto iris)

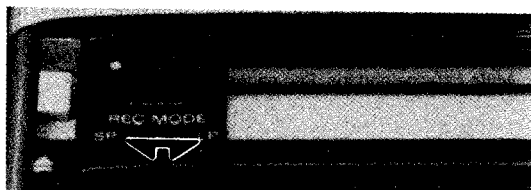
4 Position the camera and press the START/STOP button. **E-4**

The subject seen through the viewfinder and the sound picked up through the microphone can be recorded.

5 To stop recording, press the START/STOP button.

The unit will enter recording pause mode.

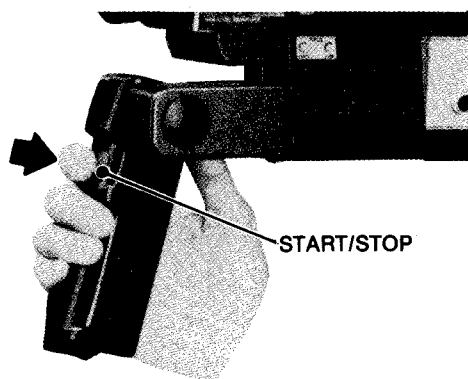
E-2

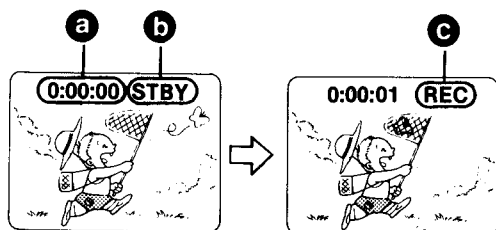
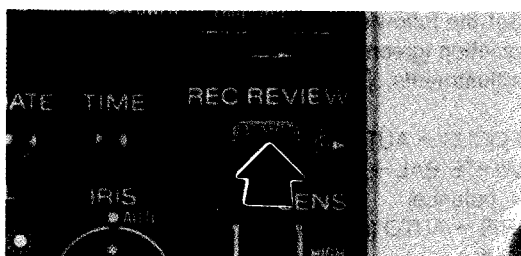
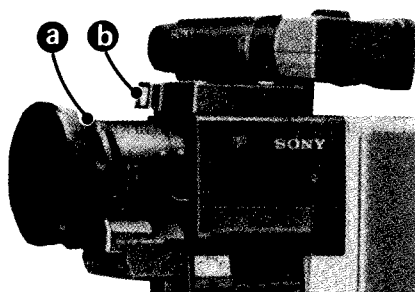


E-3



E-4



E-5**E-6****E-7****Check on the viewfinder screen E-5**

- **a** Tape counter
- **b** STBY: Displayed during recording pause mode.
- **c** REC: Displayed during recording.

If you leave the unit in the recording pause mode for 7 minutes or more, the power will be automatically turned off.

To check the last scene of the previous recording

Press the REC REVIEW button. **E-6**

The last few seconds of the recorded scene are played back in reverse, and then played back normally. Then the unit will enter recording pause mode.

To resume recording

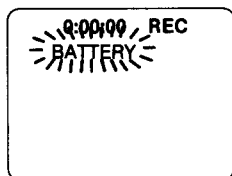
Simply press the START/STOP button.

To turn the power off

Slide the CAMERA POWER switch to the right again.

NOTES ON CAMERA RECORDING WITH AUTOMATIC ADJUSTMENT

- During camera recording, do not touch the focus ring **a** or cover the white balance sensor **b**. **E-7**
- If there is insufficient light and the LOW LIGHT indicator is displayed on the viewfinder screen, the auto focusing and linear auto white balance do not operate properly. Add an appropriate light.
- The camera recording with automatic adjustment may not produce optimum results under certain conditions or ambient lighting. In this case, manually adjust the focus, white balance and iris. See pages 18,20 and 21.

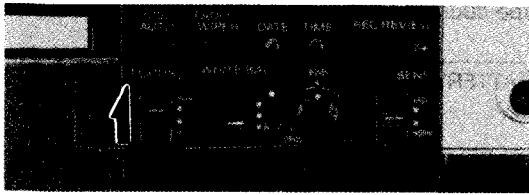
E-8**CAUTION INDICATORS ON THE
VIEWFINDER SCREEN** **E-8**

A caution indicator will be displayed below the tape counter on the viewfinder screen.

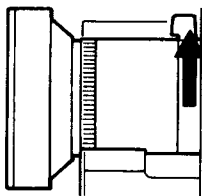
BATTERY	Blinks slowly, then rapidly.	The battery is exhausted.
TAPE END	Blinks slowly, then rapidly.	The tape approaches and then reaches its end.
CASSETTE	Blinks.	• No cassette inserted. • The safety tab is out.
LOW LIGHT	Lights.	Insufficient light
WHITE BAL	Blinks.	Auto white balance does not operate. (page 20)
DEW	Blinks.	Moisture condensation inside the unit. (page 31)
CAUTION	Blinks.	Moisture condensation on the tape surface. (page 31)

1-5. MANUAL FOCUSING

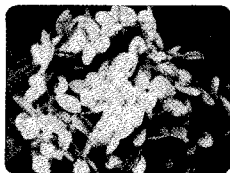
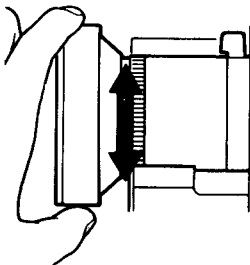
F-1



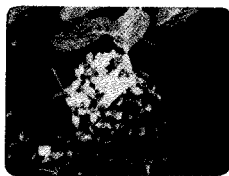
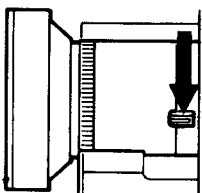
F-2



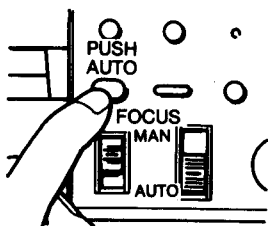
F-3



F-4



F-5



Auto focusing will be activated for almost any subject centered in the viewfinder. However, for some subjects listed on page 19, use manual focusing.

- 1 Set the FOCUS switch to MAN. **F-1**

The white mark appears at the bottom of the viewfinder screen.

- 2 Turn the manual zoom lever to the telephoto position (72) to make the subject as large as possible in the viewfinder. **F-2**

- 3 Turn the focus ring to achieve sharp focus. **F-3**

- 4 Set the desired shot length using the manual zoom lever. **F-4**

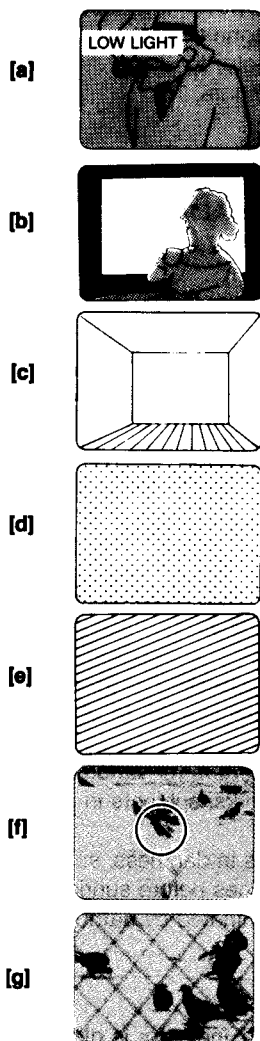
QUICK FOCUS ADJUSTMENT **F-5**

Press the PUSH AUTO button during recording in the manual focusing mode. Auto focusing will be activated only when the PUSH AUTO button is kept depressed.

SOME HELPFUL HINTS

- When shooting a scene with lots of movement in bright light, the subject can be kept in good focus regardless of movement by setting the zoom lever to 12 and the focus ring to 2 m.
- The figures on the focus ring indicate the distance between the subject and the ϕ mark on the side of the recorder body.
- When shooting in low lights situations, such as indoors, the depth of field for proper focus becomes very shallow. For best results, set the focus in telephoto, and shoot at wide angles.

F-6



DIFFICULT CONDITIONS FOR AUTO FOCUSING F-6

- [a] Insufficient light
- [b] Too much bright light behind the subject
- [c] Subjects with flat colours and less contrast—wall, sky, etc.
- [d] Finely detailed repetitive patterns
- [e] Slant stripes
- [f] When the distance between subjects at the center is extreme (e.g. one subject is close, the other is away)
- [g] Subjects beyond screens, nets, etc. or when another subject passes across the camera

OTHER USES OF MANUAL FOCUSING

- When using special effects lenses or filters
 - When shooting still subjects on a tripod
 - To save battery wear
- (When the FOCUS switch is set to AUTO, the auto focusing operates to move the focus ring automatically even in recording pause mode. This causes the battery to wear continuously.)

For focusing in close-up shooting.

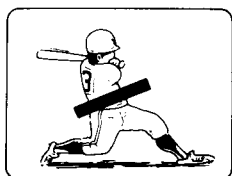
TCL AUTO FOCUSING SYSTEM

The TCL (Through Camera Lens) auto focusing system incorporated in this unit utilizes high-precision sensors to determine picture contrast at the center of the viewfinder screen and adjust focus accordingly for automatic, highly accurate focusing. F-7

Note

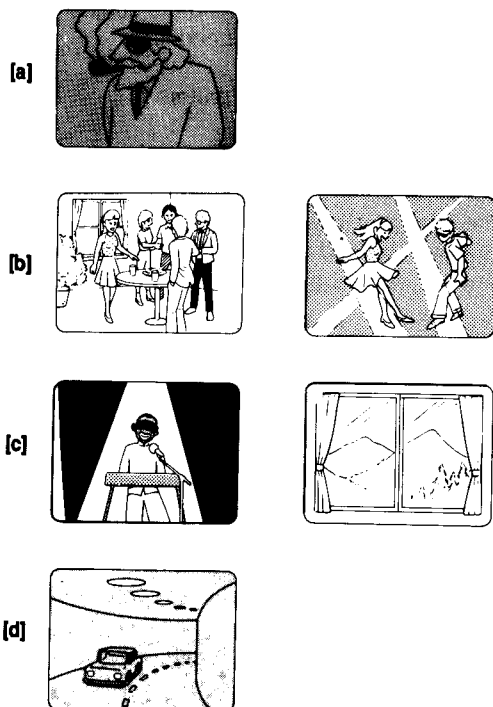
It may take several seconds to get focus when the camera is rapidly panned from a near subject to a distant subject with less contrast.

F-7

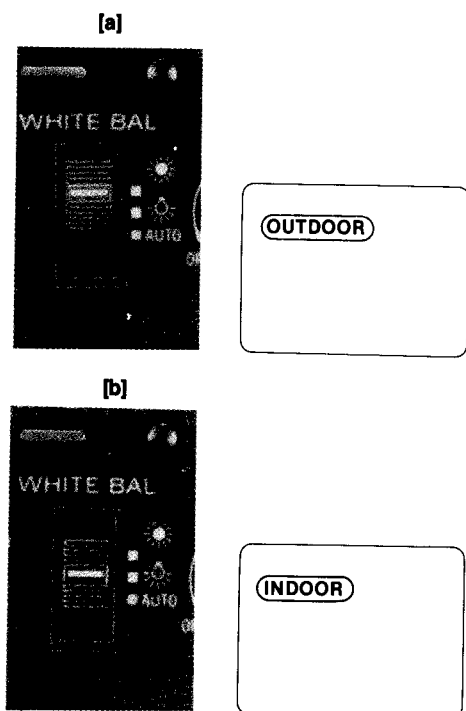


1-6. WHITE BALANCE

G-1



G-2



In most cases, the linear auto white balance function of this unit adjusts the white balance automatically. However, if it does not work correctly in the conditions listed below, set the WHITE BAL selector to ☀ or 🌙 according to the lighting condition.

DIFFICULT CONDITIONS FOR LINEAR AUTO WHITE BALANCE G-1

- [a] Insufficient light
- [b] When lighting conditions change quickly
- [c] When the light source for the subject is different from that illuminating this unit
ex. when the subject is in a spotlight, or when the subject is outdoors but the camera is indoors, etc.
- [d] Special light sources such as sodium lamps, etc.

HOW TO SET THE WHITE BAL SELECTOR G-2

- [a] **Recording outdoors**—Set to ☀ (5,800 K)
- [b] **Recording indoors**—Set to 🌙 (3,200 K)

Recommended setting for various subjects

- ☀: sunset, fireworks, subjects in a sunny window, etc.
- 🌙: candle flames in darkness, subjects in the spotlight, scenes before sunrise, subjects in a tunnel (illuminated by sodium lamps), neons, etc.

Note

If the LOW LIGHT indicator is displayed in the viewfinder, the OUTDOOR or INDOOR indicator does not appear.

WHAT IS THE WHITE BALANCE?

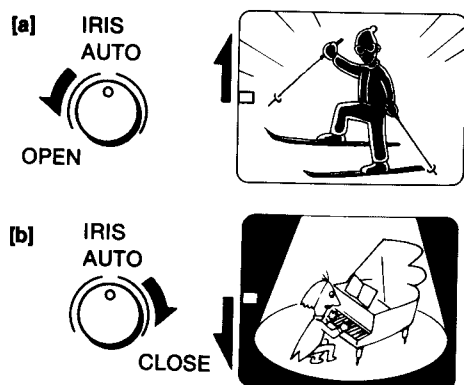
The colour of the subject being recorded can be affected by the ambient light. White balance adjustment is necessary for compensating for this colour variation, so that a white subject, for example, can be recorded white without reference to the light source.

LINEAR AUTO WHITE BALANCE SYSTEM

The auto white balance system of this unit utilizes the white balance sensor located below the built-in microphone to determine the colour temperature of the ambient light and adjust the white balance accordingly. As the ambient lighting condition changes gradually, such as in twilight, the white balance will be readjusted automatically. As the sensor is built in the unit, however, optimum white balance adjustment cannot be obtained if the subject and this unit are under different lighting conditions.

1-7. IRIS AND SENSITIVITY ADJUSTMENT

H



IRIS ADJUSTMENT **H**

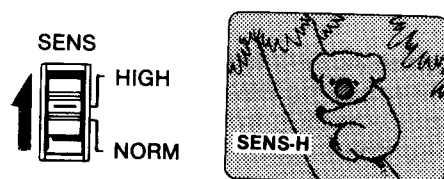
The iris is adjusted automatically with the IRIS control set to AUTO. When shooting a scene with strong contrast, adjust the IRIS control.

- [a] When backlit shot results in the subject being too dark → Turn IRIS toward OPEN.
- [b] When a subject is too bright against a dark background → Turn IRIS toward CLOSE.

When the IRIS control is turned, the white mark moves at the left side of the viewfinder screen.

After shooting that particular scene, reset the IRIS control to AUTO.

I



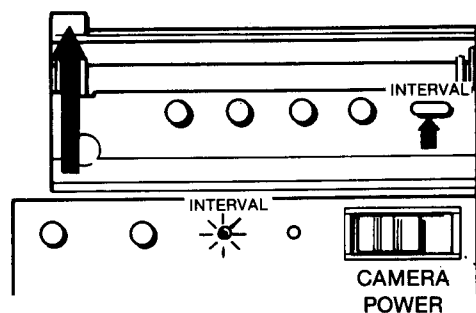
SENSITIVITY ADJUSTMENT **I**

When the entire scene is too dark and the subject is not clear, set the SENS selector to HIGH. The SENS H indicator appears on the viewfinder screen.

The subject can be recorded more clearly though the recorded picture may appear slightly noisy. After shooting that particular scene, reset the SENS selector to NORM.

1-8. AUTOMATIC INTERVAL RECORDING

L



L

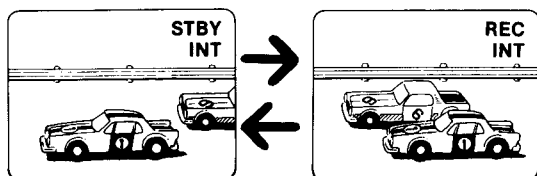
A very short recording of 8 frames will be activated repeatedly at 15-second intervals, simply by pressing the INTERVAL button.

- 1 Slide the CAMERA POWER switch to the right to set the unit to the recording pause mode.
- 2 Press the INTERVAL button.
The INTERVAL lamp will light and the unit will enter the interval recording mode.

A very short recording of 8 frames will be made at 15-second intervals and the recording pause mode will resume. This procedure is repeated for approximately 30 minutes and then the unit will remain in the recording pause mode.

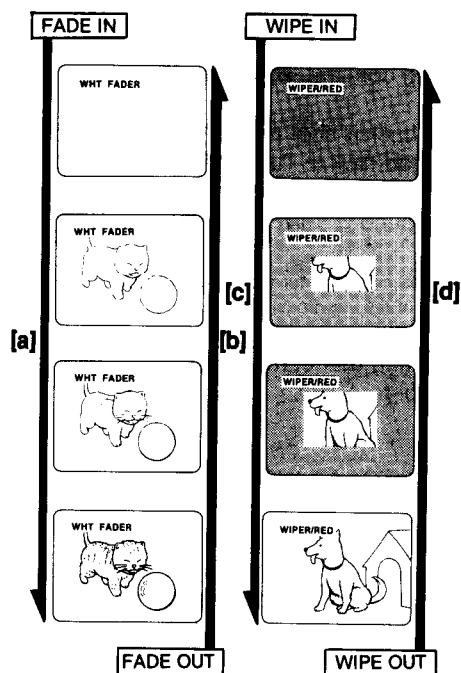
The pause mode will be released automatically after about 7 minutes and the unit will be turned off.

To stop the interval recording
Press the INTERVAL button to turn the INTERVAL lamp off.

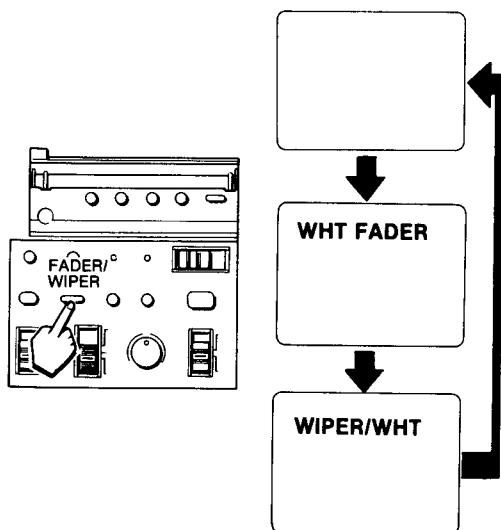


1-9. FADER AND WIPER

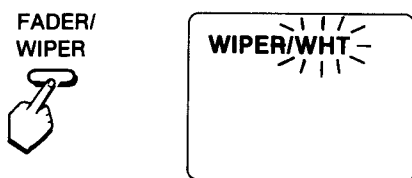
M-1



M-2



M-3



M-1

With the fader and wiper functions, you can add dramatic effects at the beginning, at the end, or in other portions of the video programme you are recording.

- [a] **Fade In**—the picture and sound will come gradually from a white, silent scene.
- [b] **Fade out**—the picture and sound will go out gradually until a white, silent scene is reached.
- [c] **Wipe In**—the picture will become visible gradually from the center of the screen and the sound volume will increase.
- [d] **Wipe out**—the picture will go out of sight gradually toward the center of the screen and the sound volume will decrease.

The colour of the fader is white only, while the colour of the wiper can be selected among 7 colours.

How to press the FADER/WIPER button

- Each time the FADER/WIPER button is pressed momentarily, the unit will be set to the following three modes consecutively. **M-2**



- When the FADER/WIPER button is kept pressed for more than 3 seconds in any mode, the unit will enter the wiper colour setting mode. The colour indicator blinks on the viewfinder screen. **M-3**

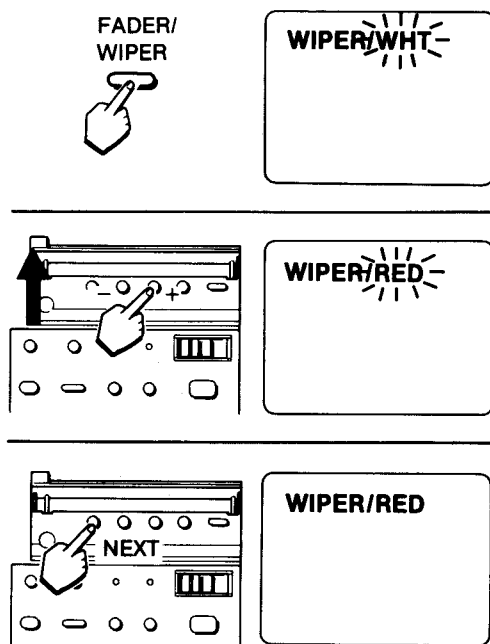
FADER OPERATION

To fade in

- 1 Slide the CAMERA POWER switch to the right to set the unit to the recording pause mode.
- 2 Press the FADER/WIPER button **once** to set the unit to FADER mode.
- 3 Press the START/STOP button to start camera recording.

To fade out

- 1 During camera recording, press the FADER/WIPER button **once** to set the unit to FADER mode.
- 2 Press the START/STOP button to stop recording.

M-4**WIPER OPERATION**

To set the colour of the wiper **M-4**

- 1 Press the FADER/WIPER button for more than 3 seconds to set the unit to wiper colour setting mode.
- 2 Press the + or - button repeatedly until the desired colour indicator appears.
WHT (white), BLUE, GRN (green), CYAN, RED, VIO (violet), YEL (yellow)
- 3 Press the NEXT button to memorize the setting.
The colour indicator lights steadily.

To wipe in

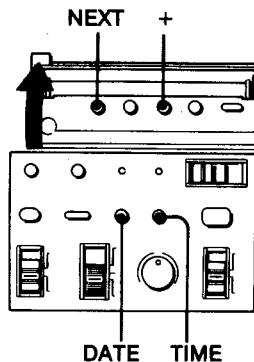
- 1 Slide the CAMERA POWER switch to the right to set the unit to the recording pause mode.
- 2 Press the FADER/WIPER button twice to set the unit to WIPER mode.
- 3 Press the START/STOP button to start camera recording.

To wipe out

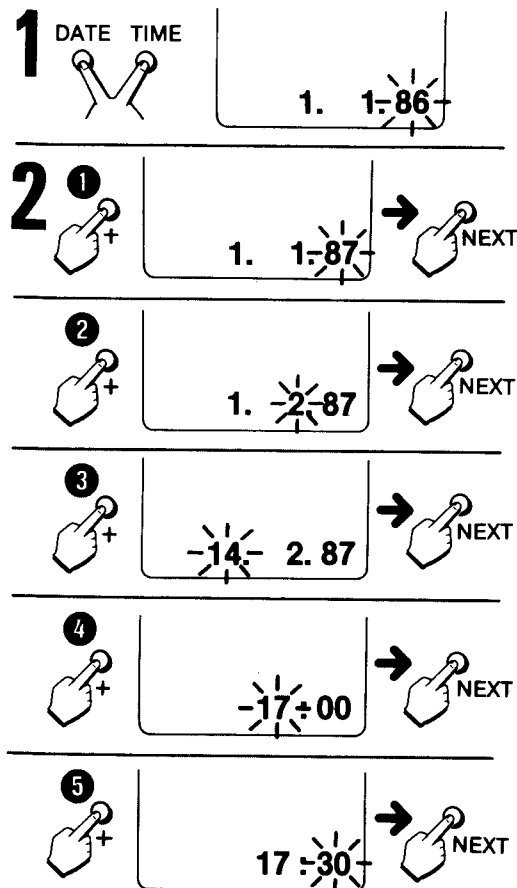
- 1 During camera recording, press the FADER/WIPER button twice to set the unit to WIPER mode.
- 2 Press the START/STOP button to stop recording.

1-10. RECORDING DATE OR TIME

N-1



N-2



Once the date and the current time are adjusted, the date or time can be recorded together with the picture.

Before setting the date and time

- Make sure that the lithium battery is installed. See page 12.
- Slide the CAMERA POWER switch to the right to set the unit to CAMERA mode.
(If a cassette is inserted, the power will be turned off automatically in 7 minutes.)

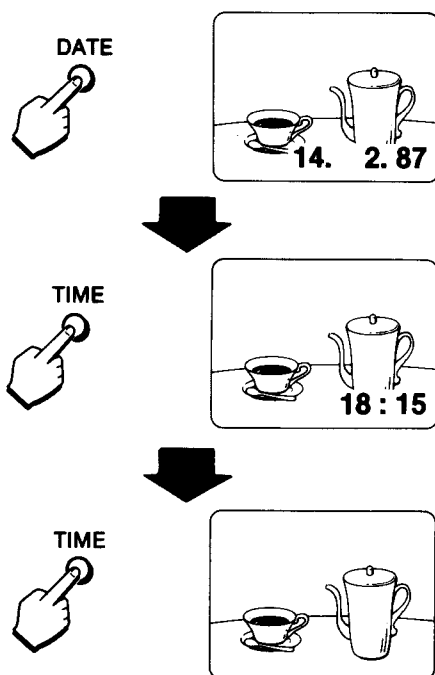
DATE/TIME SETTING **N-1**

- 1 Press the DATE and TIME buttons simultaneously **for more than 3 seconds**. The date indication will appear on the viewfinder screen (date/time setting mode).
- 2 Adjust the year, month, day, hour and minute in sequence, following the illustration **N-2**. First adjust the blinking digits with the + button, and then press the NEXT button.
 - ① Year: 86 = 1986, 00 = 2000
 - ② Month
 - ③ Day
 - ④ Hour
 - ⑤ Minute
 After adjusting the minute digits, press the NEXT button at the same time with an announced time signal.

The time indication disappears and the clock starts operating. There is no need to readjust the date and time as long as the lithium battery remains.

THE + BUTTON CAN BE PRESSED IN TWO WAYS:

- When you keep the button pressed, the digits will advance continuously.
- When you press and immediately release the button, the digits will advance by one.

N-3**To check the preset date and time** **N-3**

- 1 Press the DATE button to display the date.
- 2 Press the TIME button to display the time.
- 3 Press the TIME button. The time indication goes off.

To readjust an incorrect date or time

Set the unit to date/time setting mode and press the NEXT button repeatedly until the incorrect digit blinks. Correct it with the + button and press the NEXT button until the time indication disappears.

TO RECORD THE DATE OR TIME **N-4**

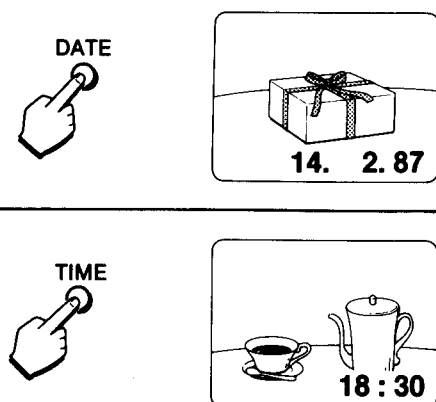
During camera recording or in recording pause mode, press the DATE or TIME button to display the date or time on the viewfinder screen.

If the unit is set to recording mode, the date or time being displayed will be recorded together with the picture.

To stop recording the date or time, press the DATE or TIME button again. The picture recording will continue.

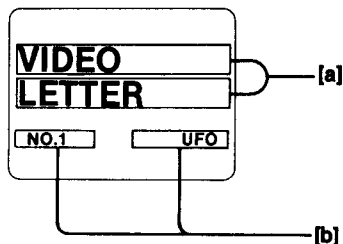
Note

The date or time can be recorded only during a camera recording. To insert the date or time while editing a tape, see "INSERT RECORDING" on page 30.

N-4

1-11. RECORDING A TITLE

O-1



A main title and a sub title can be created and recorded together with the picture.

O-1

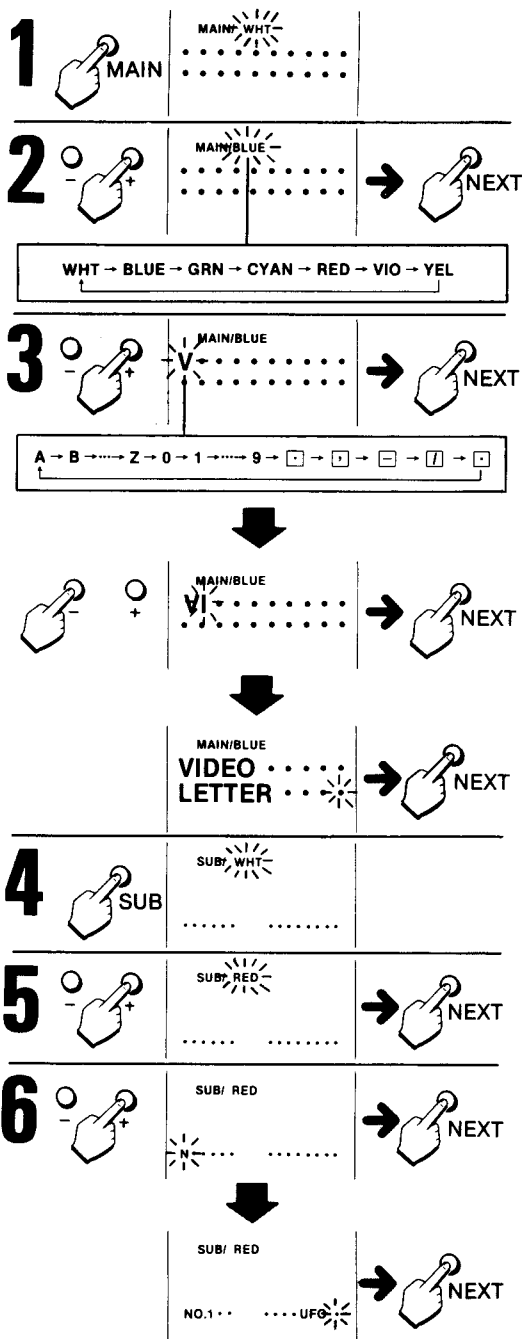
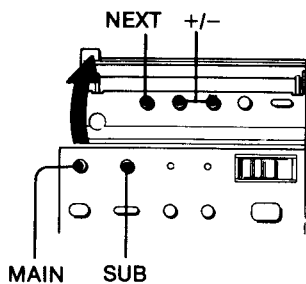
- [a] **Main title:** 10 characters × 2 lines, displayed in large characters
- [b] **Sub title:** 6 + 8 characters, displayed in small characters

- Selectable colours:
WHT (white), BLUE, GRN (green), CYAN, RED, VIO (violet), YEL (yellow)
- Selectable characters:
alphabet, numerals, 4 symbols (period, apostrophe, hyphen and slash), space

Before setting the titles

- Make sure that the lithium battery is installed. See page 12.
- Slide the CAMERA POWER switch to the right to set the unit to CAMERA mode.
(If a cassette is inserted, the power will be turned off automatically in 7 minutes.)
- Lift up the viewfinder lens for easier viewing.

O-2



TITLE SETTING O-2

- 1 Press the MAIN button **for more than 3 seconds**.
The MAIN title will appear on the viewfinder screen and the colour indicator will blink (main title setting mode).
- 2 Set the colour with the +/- buttons, and then press the NEXT button.
- 3 Set the characters one by one, with the +/- buttons and the NEXT button.*

When the last character is set, the main title will be memorized and disappear from the screen.

- 4 Press the SUB button **for more than 3 seconds**.
The SUB title will appear and the colour indicator will blink (sub title setting mode).
- 5 Set the colour with the +/- buttons, and then press the NEXT button.
- 6 Set the characters one by one, with the +/- buttons and the NEXT button.*

When the last character is set, the sub title will be memorized and disappear from the screen.

***To set a space, press the NEXT button without pressing the +/- buttons. The dot remains displayed during setting.**

To check the title

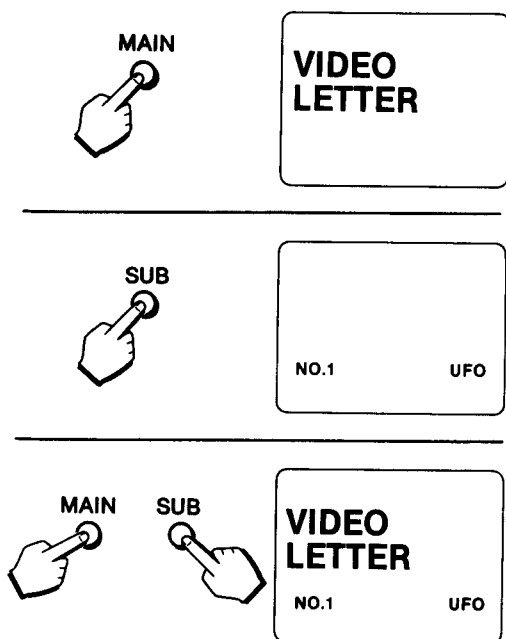
To check the main title, press the MAIN button.
To check the sub title, press the SUB button.
To turn off the title, press the same button
again.

To clear the title

Set the unit to the main or sub title setting mode and press the **CLEAR** button.

To change a part of the title

Set the unit to the main or sub title setting mode and press the NEXT button repeatedly until the desired character blinks. Change it with the +/- buttons and press the NEXT button until the title disappears.

O-3**TO RECORD THE TITLE O-3**

During camera recording or in recording pause mode, press the MAIN button and/or SUB button to display the main title and/or sub title. If the unit is set to recording mode, the title(s) will be recorded together with the picture.

To stop recording the title(s), press the MAIN button and/or SUB button. The picture recording will continue.

Note

The title can be recorded only during a camera recording. To insert a title while editing a tape, see "INSERT RECORDING" on page 30.

When recording the title in fader or wiper mode

In fader mode, the title will appear and disappear with the picture fade-in and fade-out. In wiper mode, the title remains displayed while the picture is wiped in and wiped out.

- The colour of the title characters may be blurred or shifted when the tape is played back.
- Check the combination of the colours of the title and the wiper on the monitor screen.

1-12. FRAME RECORDING

A very short recording of 8 frames can be activated manually for creating an animated programme of your own.

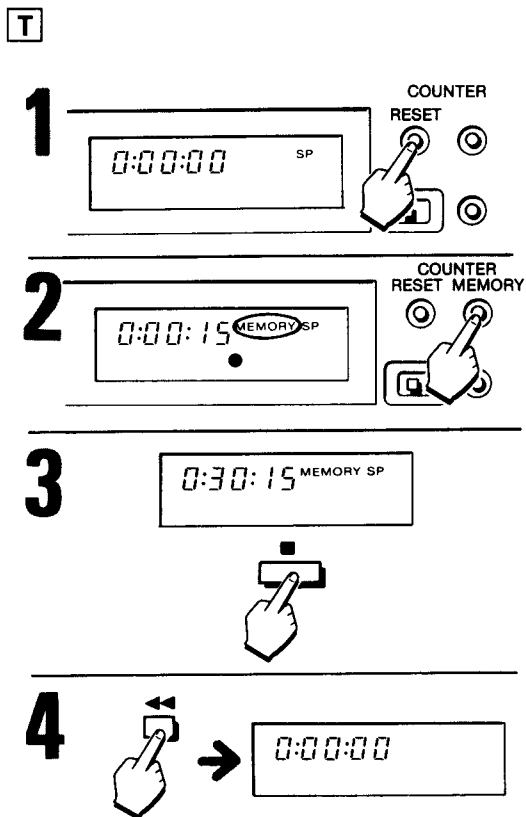
- 1 Press the VTR POWER switch and then slide the CAMERA POWER switch. The unit is set to recording pause mode.
- 2 Slide the REC switch to the right.
A recording of 8 frames will be made and the recording pause mode will resume.
- 3 Move the object a little and repeat step 2 as many times as you like.

When the recording pause mode lasts for more than approximately 7 minutes, the pause mode will be automatically released and the unit will be set in the stop mode.

TO RECORD FROM A VTR

Make the necessary connections as described in editing from another VTR and press the VTR POWER switch. Set the video camera recorder to recording pause mode and proceed to steps 2 and 3 above.

1-13. USE OF THE TAPE COUNTER



TO INDEX THE WHOLE TAPE

Press the **RESET** button at the beginning of the tape so that the counter shows "0:00:00". By noting the counter reading at a particular point, you can easily find that point later by referring to the tape counter.

TO RETURN TO A PRE-REGISTERED POINT **T**

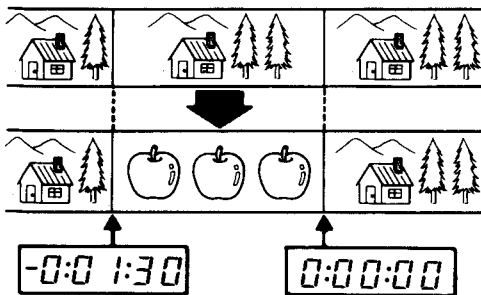
- 1 During recording or playback, press the **RESET** button at the point you later want to locate.
- 2 Press the **MEMORY** button and the "MEMORY" indicator will appear in the display window.
- 3 Press the **■** button, when the recording or playback has finished.
- 4 Press the **◀** or **▶** button.
The tape will be rewound or sent forward and stop automatically when the counter reaches "0:00:00".

NOTES

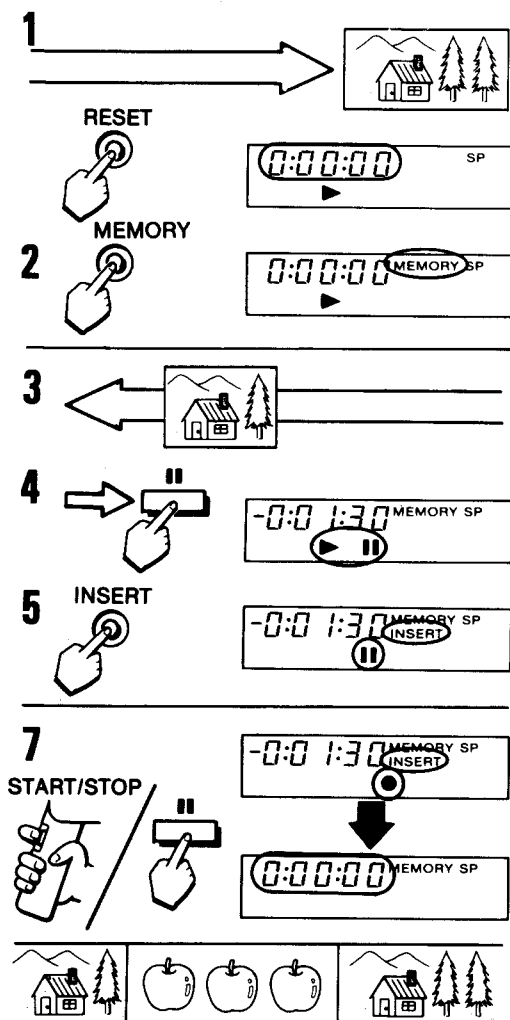
- While the "MEMORY" indicator is displayed, the counter cannot be reset to "0:00:00", therefore, press the **MEMORY** button to cancel the function.
- The counter reading and the point of the tape may not correspond exactly (5 digits max.)
There may be more time lag when playing back a tape with LP- and SP-recorded programmes mixed.
- The counter serves as a rough time counter. 1 digit represents approximately 1 second.
- The counter will not advance during any blank portion of a tape.

1-14. INSERT RECORDING

W-1



W-2



You can insert (record) video and audio simultaneously from the camera, a TV or a VTR onto any recorded tape. **W-1**

PREPARATION

Connect the necessary equipment and prepare a programme source to be inserted. For details, refer to the corresponding page.

To insert camera recording [page 15]

Slide the CAMERA POWER switch to the right and then press the VTR POWER switch (VTR-CAMERA mode).

To insert a TV programme

Press the VTR POWER switch.

To insert a recording from a VTR

Press the VTR POWER switch.

Select the same recording mode in which the original tape was recorded.

OPERATION **W-2**

Monitor the playback picture of the recorded tape on the viewfinder screen.

- Find the position for the end of the insert and press the RESET button. The counter returns to "0:00:00".
- Press the MEMORY button. The "MEMORY" indicator appears in the display window.
- Rewind the tape back a little further than the point where the insert should begin by pressing the ◀◀ button during playback.
- Release the ◀◀ button to resume playback and press the || button at the place where the insert should begin.
- Press the INSERT button. The unit is set to the insert pause mode. The INSERT and the || indicators will appear.
- Play the inserting source.
- Start insert recording:
 - For camera recording, press the START/STOP button.
 - For other recording, press the || button.
 The insert recording will stop at the counter reading "0:00:00".

You can start an insert recording without registering the end point.

In this case, start operating from step 3. Proceed with the remaining steps and stop the insertion by pressing the ■ button.

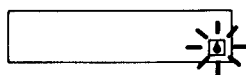
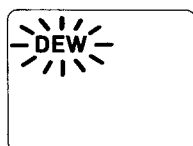
When the pause mode lasts for approximately 7 minutes, the pause mode will be automatically released and the unit will be set in the stop mode.

Note

When the inserted tape is played back, the picture may be distorted at the end of the inserted part.

1-15. NOTES ON MOISTURE CONDENSATION

X-1



If the unit is brought directly from a cold to a warm location, moisture may condense inside the unit, on the surface of the tape or on the lens. In this condition, the tape may adhere to the head drum and damaged or the unit may not operate correctly. To prevent possible damage under these circumstances, the unit is furnished with moisture sensors.

If moisture is present inside the recorder section

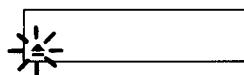
X-1

When the power is turned on, the DEW indicator blinks in the viewfinder and the  indicator blinks in the display window. No function button except the  switch will work.

Eject the cassette if present, and turn off the unit and let it sit with the cassette compartment open (at least for one hour).

The unit can be used again if none of the DEW and  indicators appears when the power is turned on again.

X-2



If moisture is present on the surface of the tape

X-2

When the tape is inserted and a tape transport button is pressed, the CAUTION indicator blinks in the viewfinder and the  indicator blinks in the display window. No function button except the  switch will work.

Eject the cassette and let the unit and the cassette sit at least for one hour.

The cassette can be used again if none of the CAUTION and  indicators appears when the cassette is inserted and a tape transport button is pressed.

If moisture is present on the lens

There are no caution indicator, but the lens becomes dim. Turn off the power and leave the unit unused at least for one hour.

1-16. TROUBLE INDICATORS

 lighting
  blinking slow
  blinking fast

Operating mode	CAMERA mode		VTR mode		VTR-CAMERA mode	
Cause	Viewfinder	Display window	Viewfinder	Display window	Viewfinder	Display window
The battery is weak.	BATTERY				BATTERY	
The tape is near its end.	TAPE END				TAPE END	
The tape is at its end.						
Moisture has condensed on the tape, etc.					CAUTION	
No cassette is inserted.	CASSETTE				CASSETTE	
The tab on the cassette is out.	CASSETTE	 				
Moisture has condensed inside the unit.	DEW				DEW	
Light is insufficient.	LOW LIGHT				LOW LIGHT	
The linear auto white balance does not work.	WHITE BAL				WHITE BAL	

1-17. UNDERSTANDING LIGHT AND COLOUR

Brightness levels

The single greatest influence on picture quality is the brightness level. Using the following chart as a reference, take a few minutes to familiarize yourself with brightness levels to improve your recording.

When to use an ND filter

Exceptionally bright scenes such as sunny days at the beach in summer or on snow fields in winter will look "washed out" when recorded. To make these scenes recorded naturally, an ND filter is required. (Refer to the chart)

Three types are available—ND2, ND4, ND8—which reduce the exposure level to 1/2, 1/4, and 1/8, respectively.

Select filters to match the lens diameter of 52 mm.

ND filter required	Unit: lux	Snow-covered mountains Snow fields Sandy beach, clear day in summer
Normal recording	100,000	Clear day, mid-day (100,000) Clear day, mid-afternoon (35,000) Overcast day, mid-day (32,000)
	10,000	Overcast day, one hour after sunrise (2,000)
	1,000	Office lit by fluorescent lamps, near window (1,000) Clear day, one hour before sunset (1,000)
	500	Department store counter (500~700) Station wicket (650) Office lit by fluorescent lamps (400~500) Room lit by two 30 W fluorescent lamps (300)
	300	Subway station platform (300)
Video light recommended	100	Arcade at night (150~200)
Video light required	10	Theater lobby (15~35) Candle light (10~15)

Colour temperature—how it effects white balance adjustment

If the temperature of an object continues to increase, it will eventually begin giving off light. At this time, there is a fixed relationship between the object's temperature and its "light colour." The temperature of the object radiating the light is expressed in absolute temperature (K). This is also known as the colour temperature, which in turn stands for "light colour." As colour temperature increases, the light colour changes from red to yellow to white to blue.

Natural light colour temperature (K)	Colour change	Artificial light colour temperature (K)
Clear sky Slightly overcast 	10,000K 8,000K 7,000K 6,000K 5,000K	Fluorescent lamp (clear) 
Cloudy, rainy 	4,000K 3,500K	Fluorescent lamp (white) Fluorescent lamp (off white) Studio lamp Halogen lamp
Direct sunlight 	White Yellow 2,000K	Tungsten lamp 
Time after sunrise/ before sunset		Candle light 
2 hr. 1 hr. 40 min. 30 min. 20 min. Sunrise/sunset		

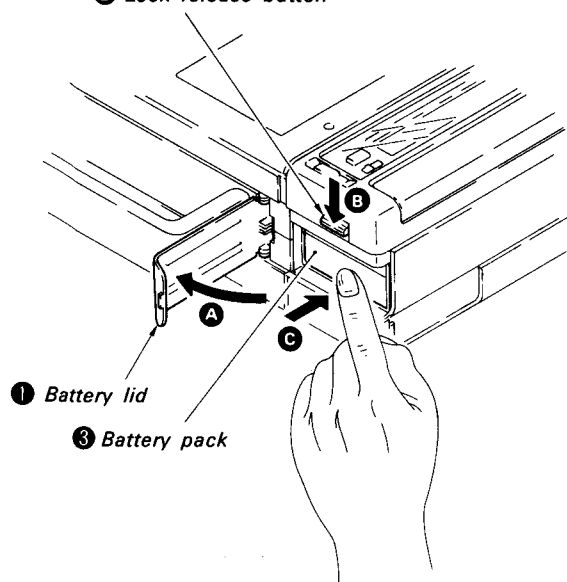
SECTION 2

DISASSEMBLY

2-1. REMOVAL OF BATTERY PACK

- 1) Open battery lid ① in the direction of arrow A.
- 2) Press deeply battery pack ③ in the direction of arrow C until it clicks while pressing lock release button ② in the direction of arrow B.
- 3) Take out battery pack ③ which is pushed out by spring.

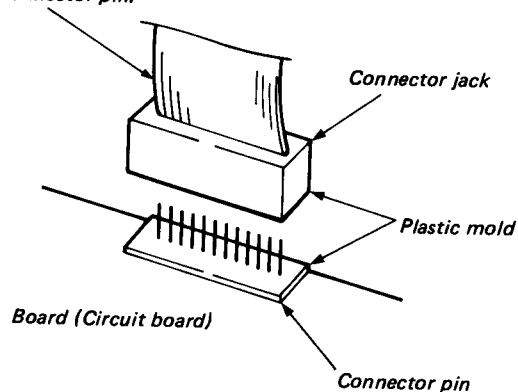
② Lock release button



Note: Caution to be exercised when connecting connector.

The colours of all the plastic molds of the connector jacks and connector pins had formerly been the same. However, hereafter the colour of the plastic mold of some of the connector jacks will be changed to white irrespective of the colour of the plastic molds of the connector pins. In this case, the colour of the lead wire of Pin ① becomes the same colour as the plastic mold of the connector pin.

Only the lead wire of Pin ① will be changed to the same colour as the plastic mold of the connector pin.

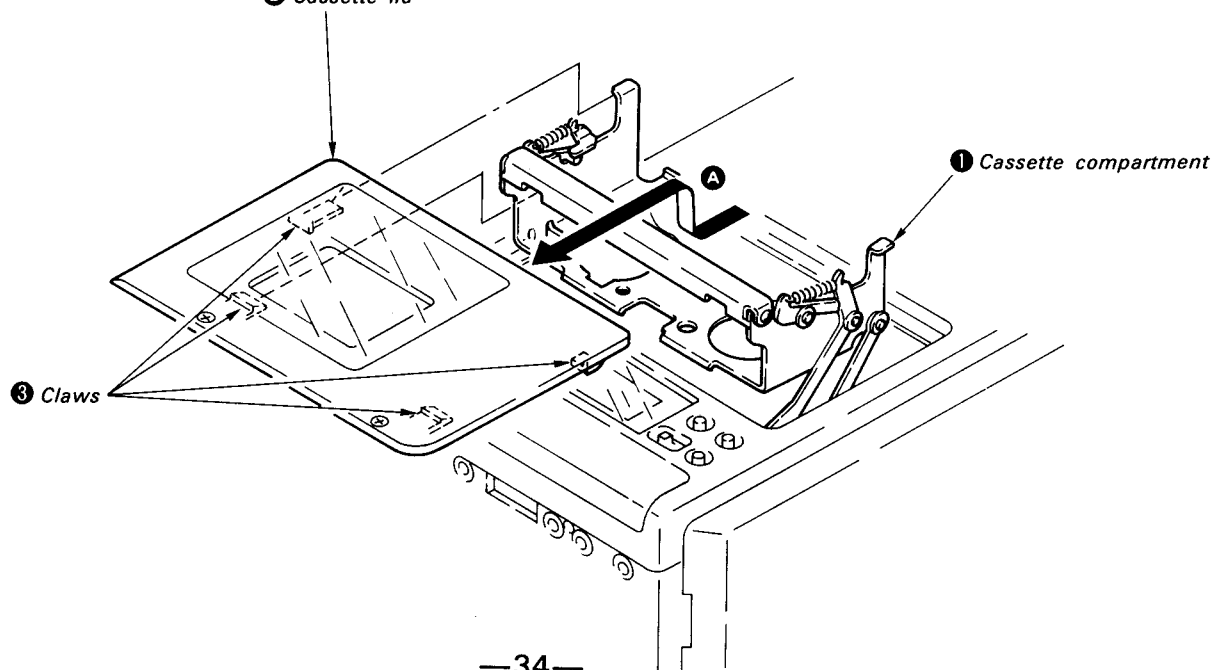


2-2. REMOVAL OF CASSETTE LID

- 1) Turn ON the power supply, slide the EJECT knob, and make the cassette compartment ① into the up state.
- 2) Remove cassette lid ② by sliding in the direction of arrow A.

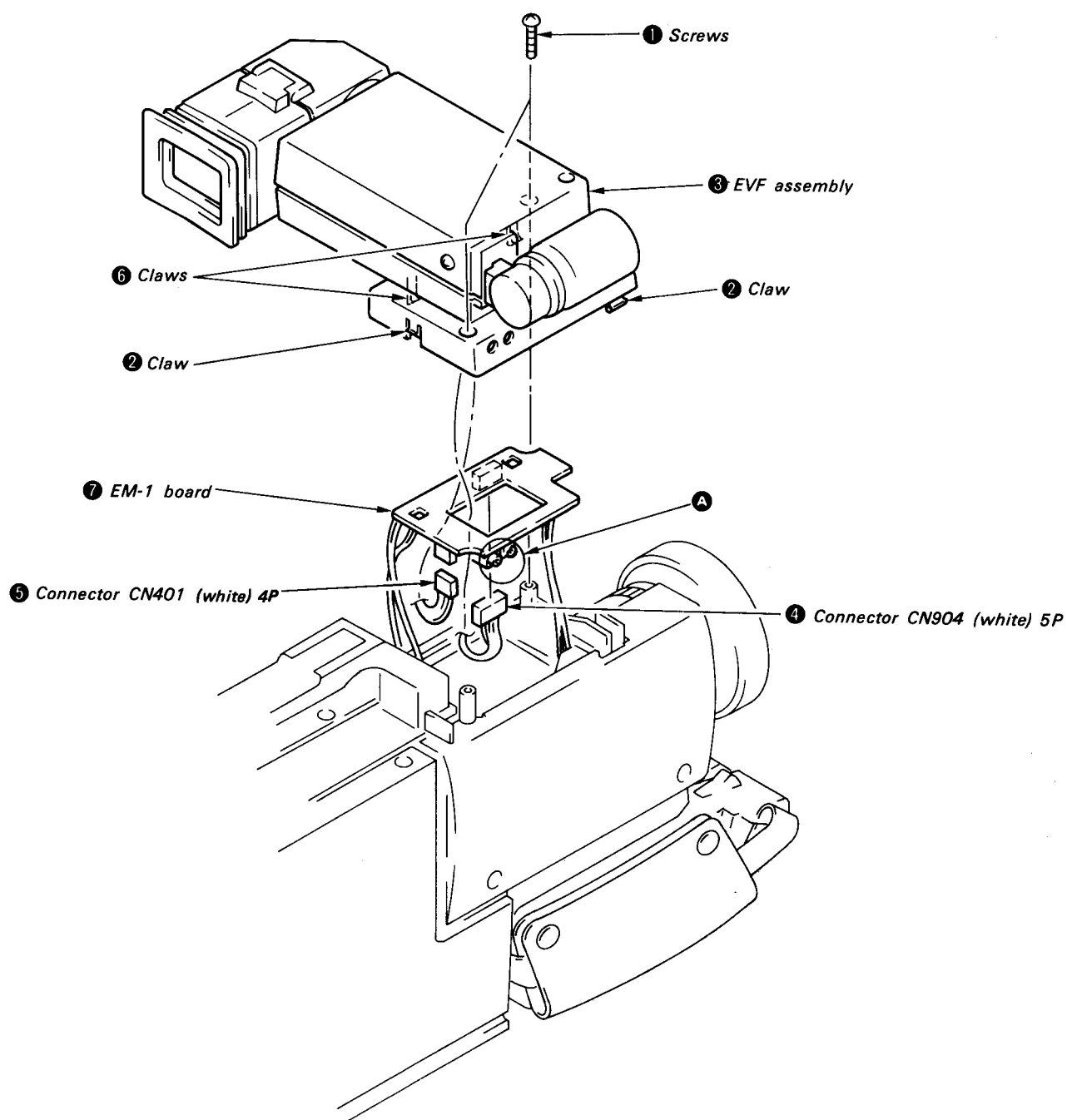
Note: When setting cassette lid ②, set the cassette lid so that respective claws ③ put into the respective positions.

② Cassette lid



2-3. REMOVAL OF EVF (ELECTRONIC VIEW FINDER) ASSEMBLY

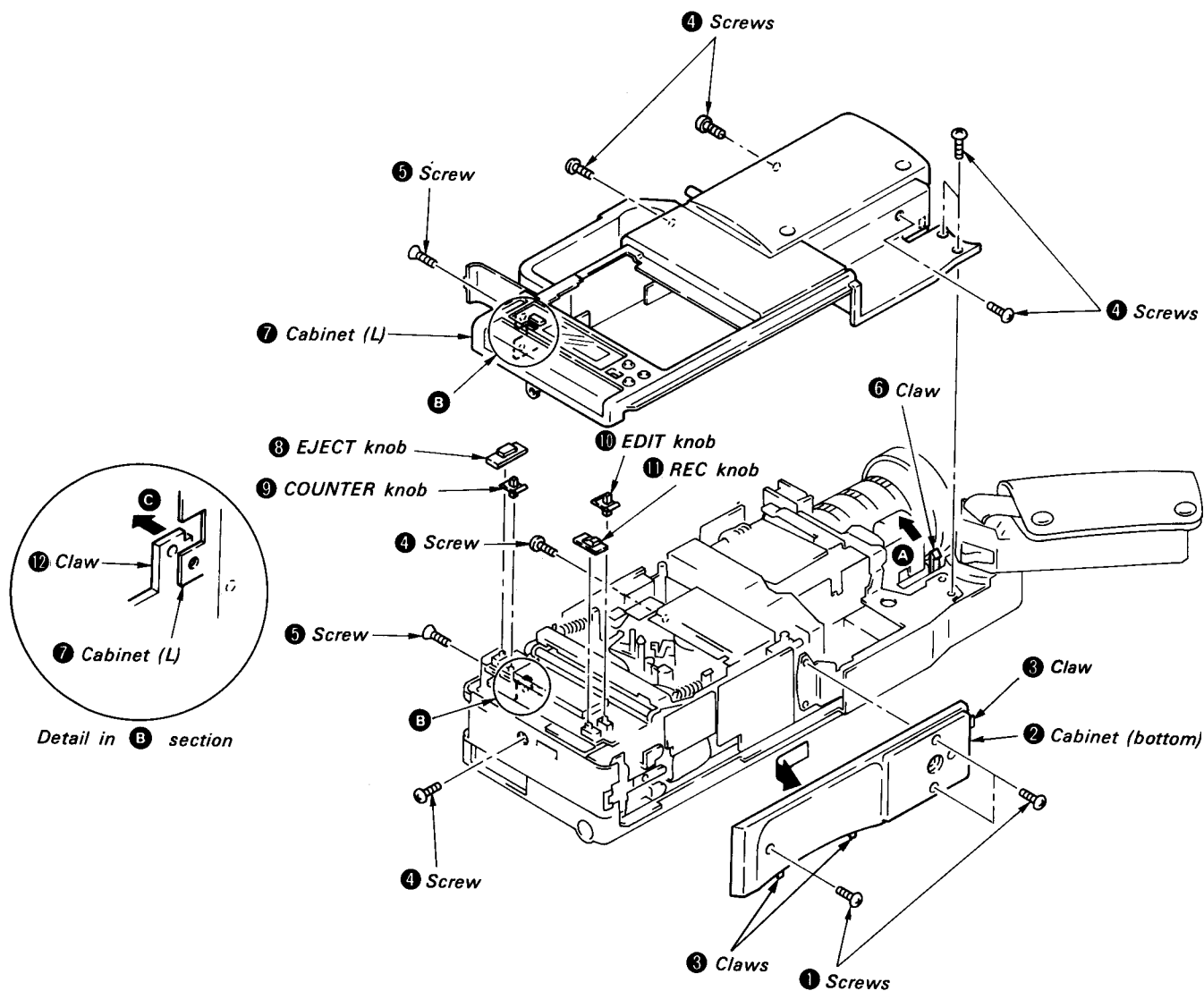
- 1) Remove two screws ①.
- 2) Remove two claws ② and remove EVF assembly ③.
- 3) Remove the connectors CN904 (white) ④ and CN401 (white) ⑤.
- 4) Remove two claws ⑥ and remove EM-1 board ⑦ by taking care to section A.



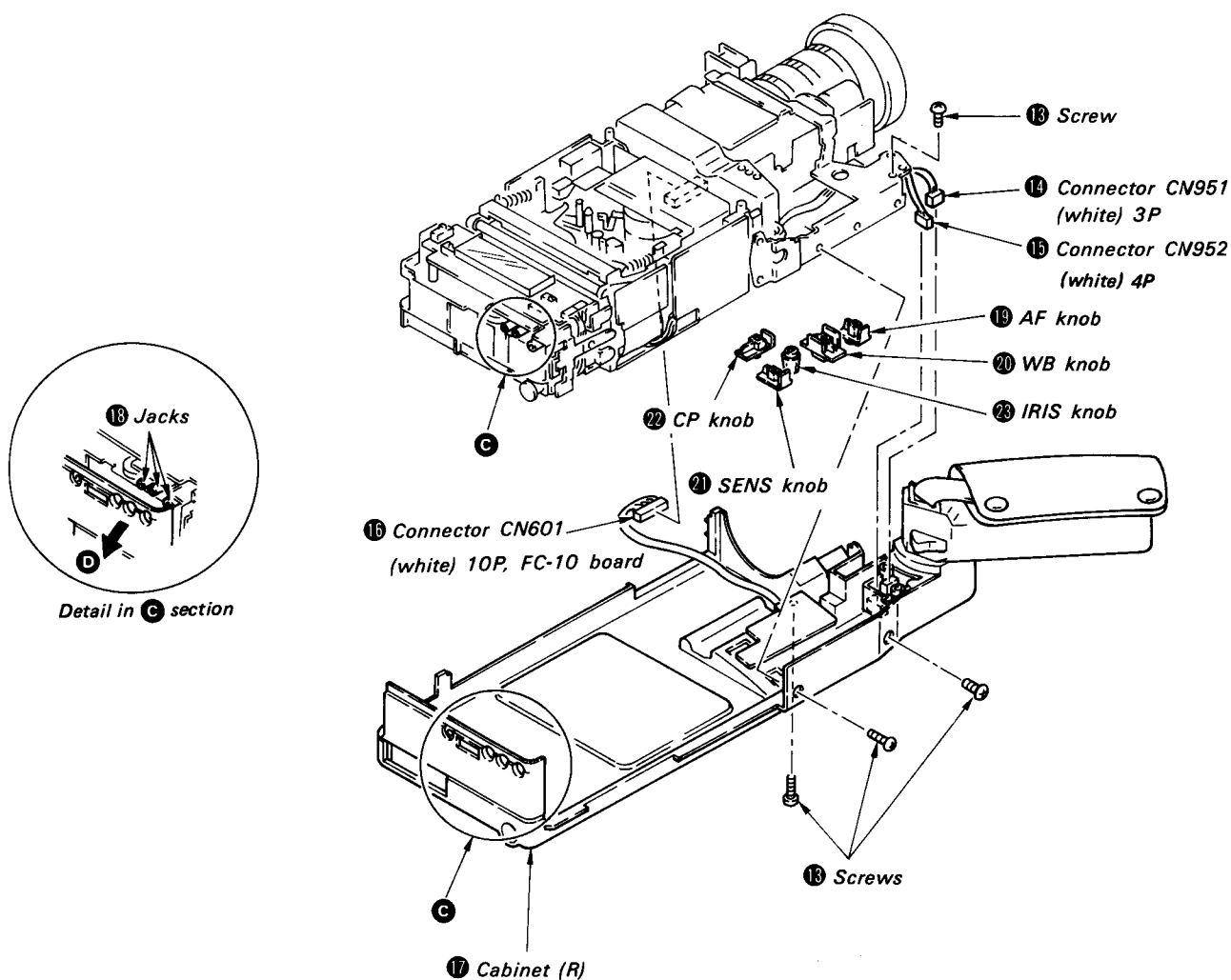
2-4. REMOVAL OF CABINET

- 1) Remove cassette lid by referring to 2-2.
- 2) Remove EVF assembly by referring to 2-3.
- 3) Remove three screws ①.
- 4) Remove cabinet (bottom) ② by shifting it in the direction of arrow while unhooking claws ③.
- 5) Remove seven screws ④ and two screws ⑤.
- 6) While pressing claw ⑥ in the direction of arrow A, remove cabinet (L) ⑦.
- 7) Remove EJECT knob ⑧, COUNTER knob ⑨, EDIT knob ⑩, and REC knob ⑪.

Note: When installing cabinet (L) ⑦, install it between the main body and claw ⑫ in the section B by opening it in the direction of arrow C.

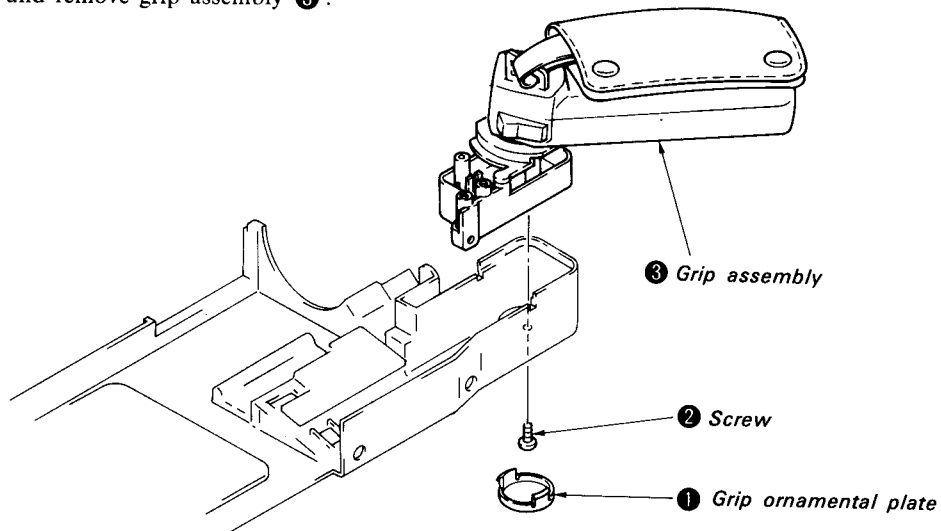


- 8) Remove four screws 13 .
- 9) Remove the connectors CN951 (white) 14 , CN952 (white) 15 and CN601 (white) 16 .
- 10) Remove cabinet (R) 17 in section C by opening it widely in the direction of arrow D while releasing it from jack 18 .
- 11) Remove AF knob 19 , WB knob 20 , SENS knob 21 , CP knob 22 and IRIS knob 23 .



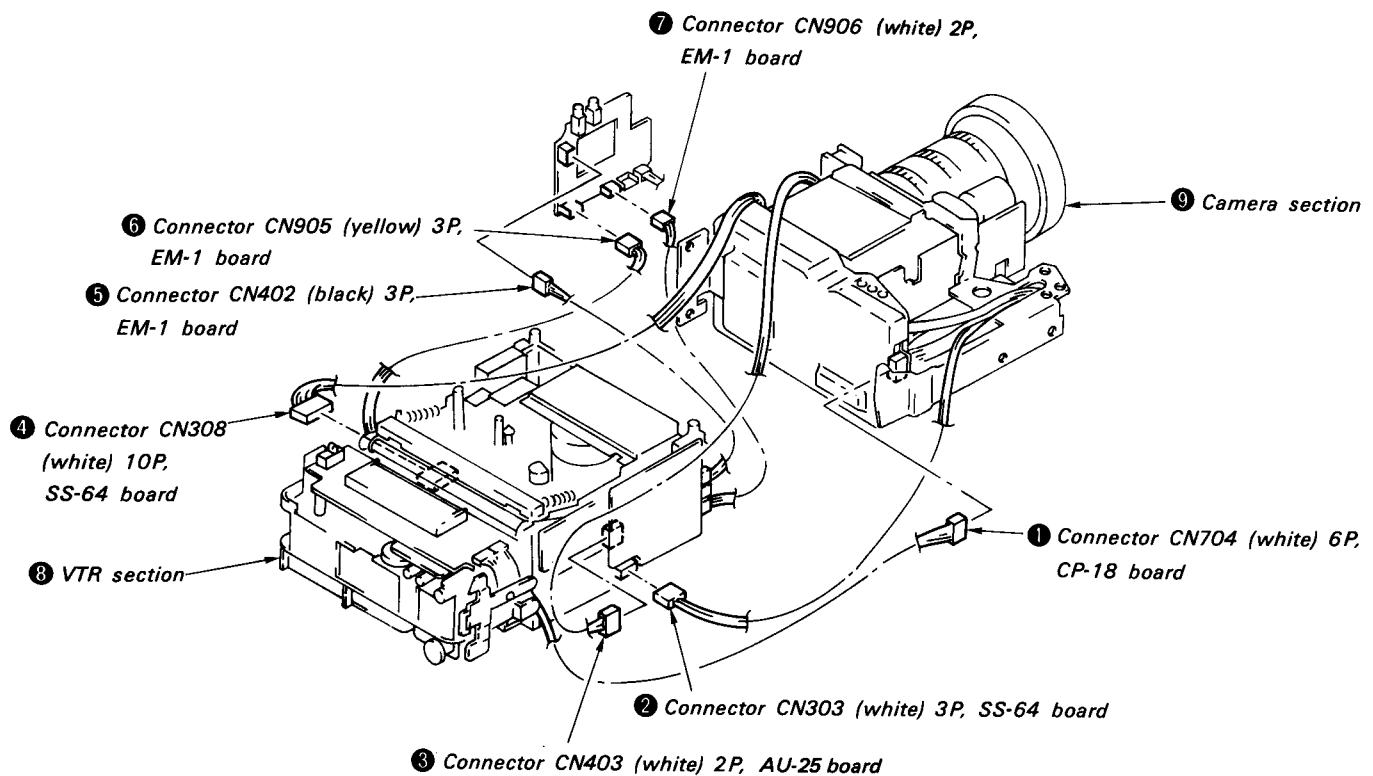
2-5. REMOVAL OF GRIP ASSEMBLY

- 1) Remove cabinet (R) by referring to 2-4.
- 2) Remove grip ornamental plate ①.
- 3) Remove screw ② and remove grip assembly ③.



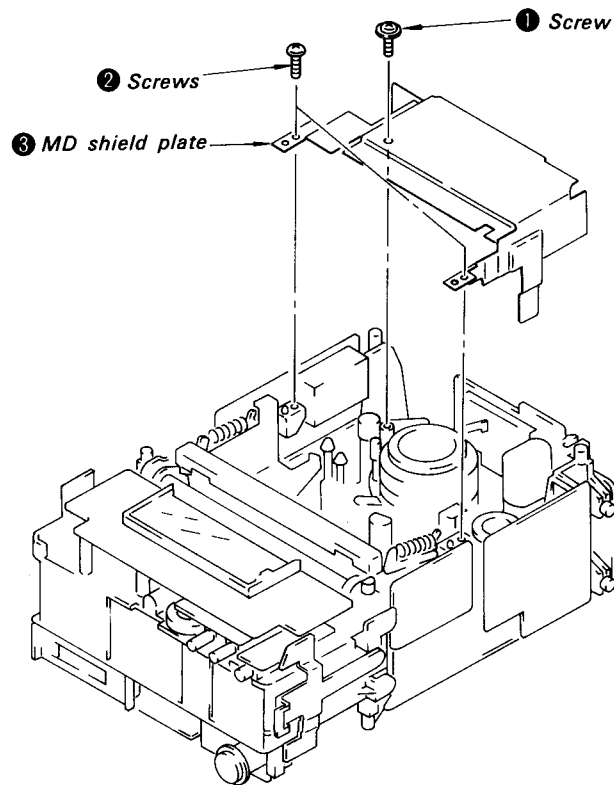
2-6. SEPARATION OF VTR SECTION AND CAMERA SECTION

- 1) Remove connectors CN704 (white) ①, CN303 (white) ②, CN403 (white) ③, CN308 (white) ④, CN402 (black) ⑤, CN905 (yellow) ⑥ and CN906 (white) ⑦.
- 2) Separate VTR section ⑧ and camera section ⑨.



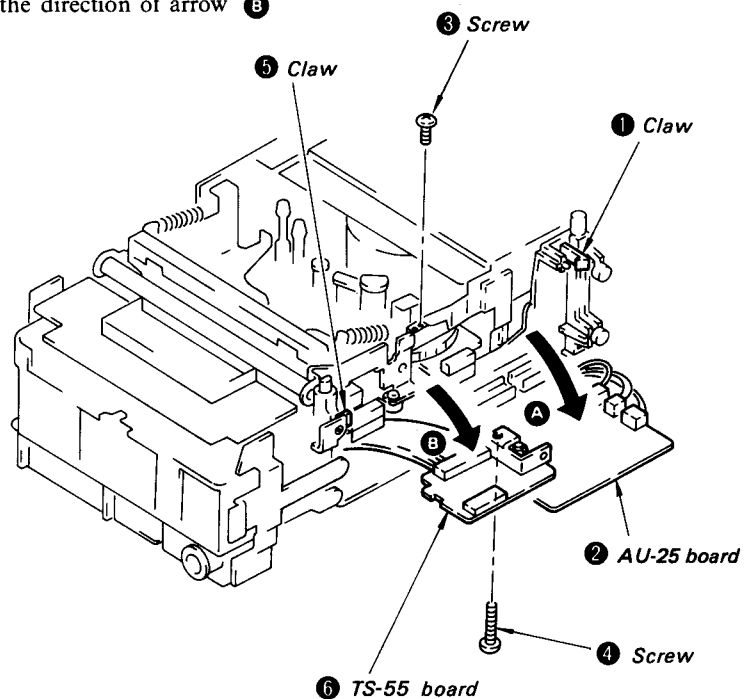
2-7. REMOVAL OF MD SHIELD PLATE

- 1) Remove screw ① and two screws ② and remove MD shield plate ③.



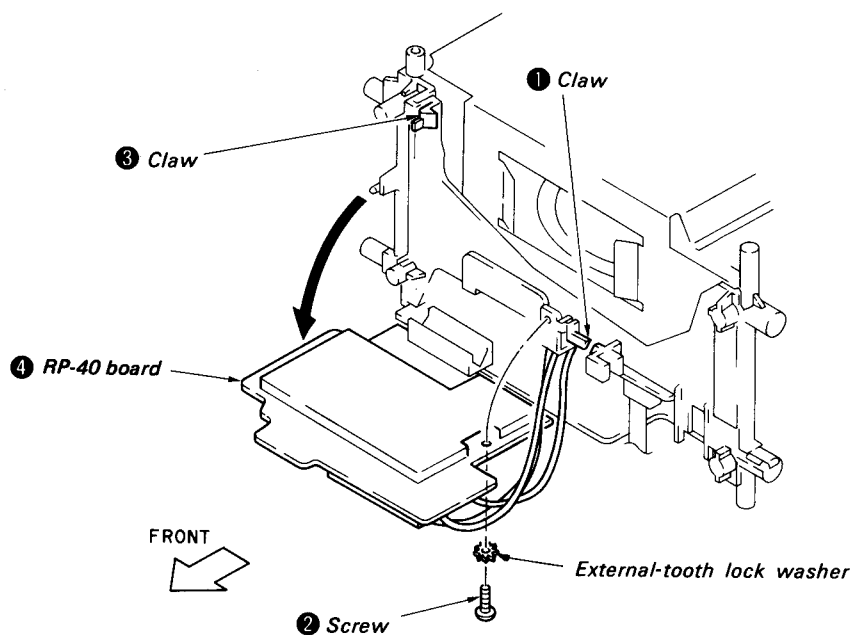
2-8. OPENING OF THE AU-25 BOARD AND THE TS-55 BOARD

- 1) Remove claw ① and open the AU-25 board ② in the direction of arrow A. (Do not care the opening sound.)
- 2) Remove screws ③ and ④.
- 3) Open the TS-55 board ⑥ in the direction of arrow B while removing claw ⑤.



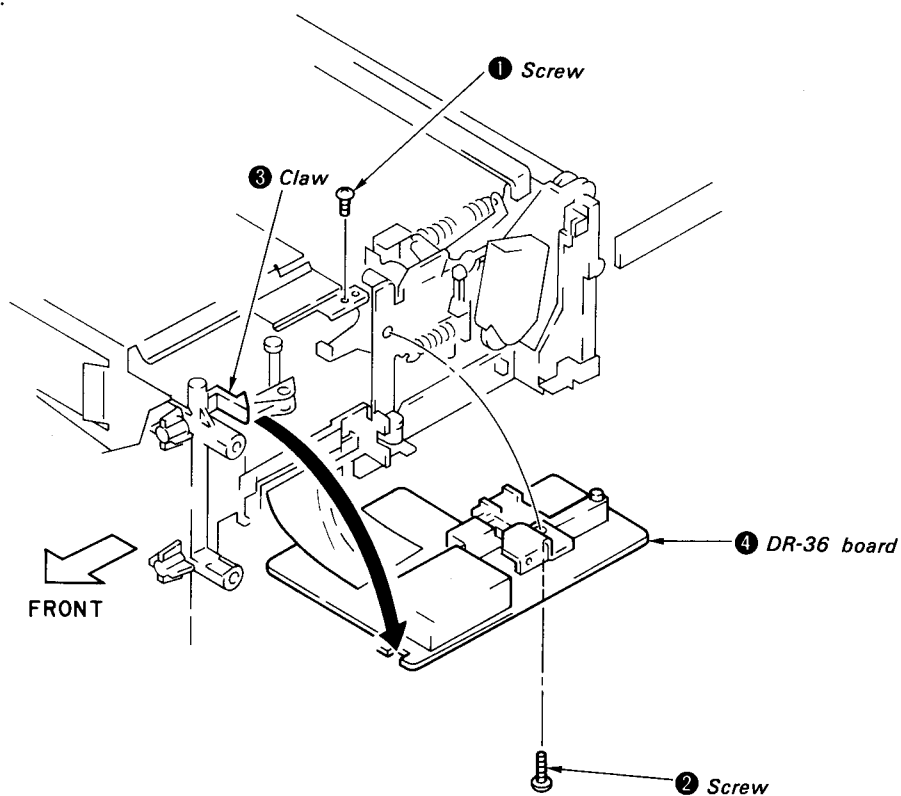
2-9. OPENING OF THE RP-40 BOARD

- 1) Remove the harness from claw ①.
- 2) Remove screw ②.
- 3) Remove claw ③ and open the RP-40 board ④ in the direction of arrow. (Do not care the opening sound.)



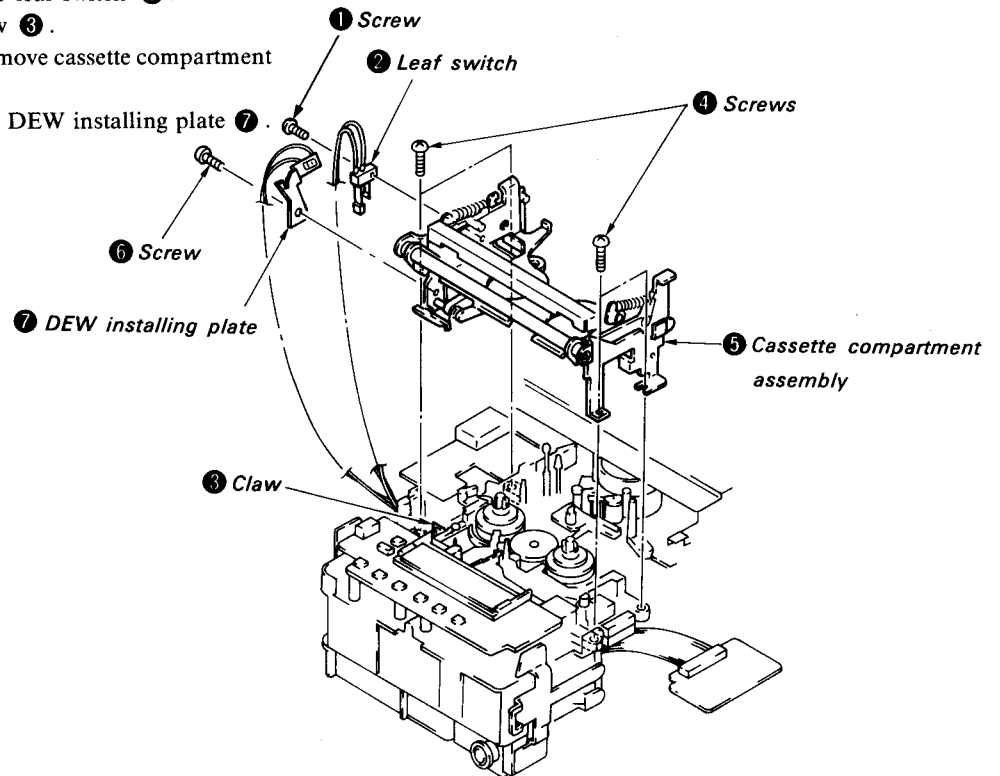
2-10. OPENING OF THE DR-36 BOARD

- 1) Remove screws ① and ②.
- 2) Remove claw ③ and open the DR-36 board ④ in the direction of arrow.



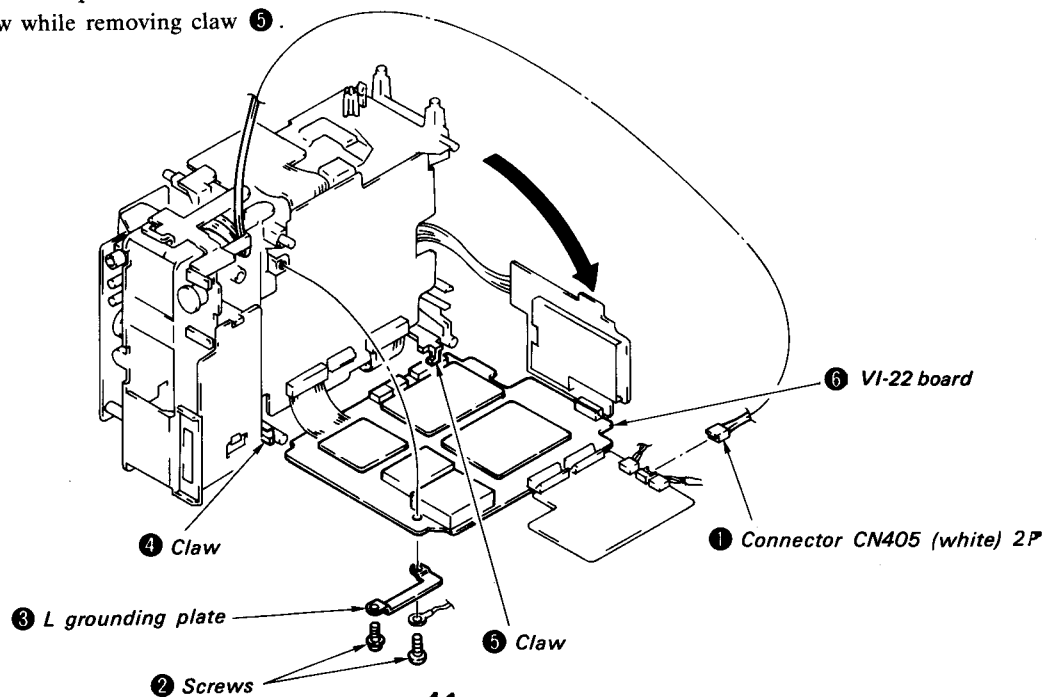
2-11. REMOVAL OF CASSETTE COMPARTMENT ASSEMBLY

- 1) Open the TS-55 board by referring to 2-8.
- 2) Open the DR-36 board by referring to 2-10.
- 3) Remove screw ① and remove leaf switch ②.
- 4) Remove the harness from claw ③.
- 5) Remove four screws ④ and remove cassette compartment assembly ⑤.
- 6) Remove screw ⑥ and remove DEW installing plate ⑦.



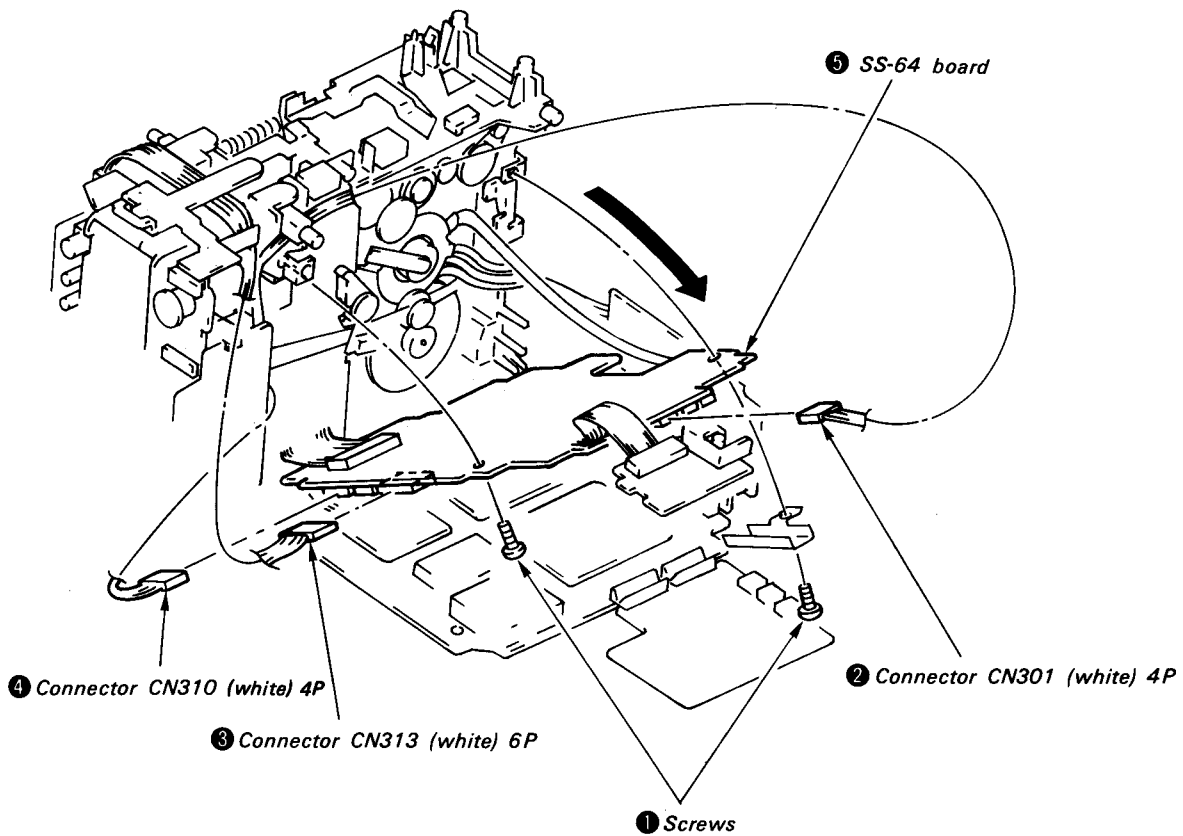
2-12. OPENING OF THE VI-22 BOARD

- 1) Open the AU-25 board by referring to 2-8.
- 2) Open the RP-40 board by referring to 2-9.
- 3) Remove connector CN405 (white) ①.
- 4) Remove two screws ② and remove L grounding plate ③.
- 5) Remove claw ④ and open the VI-22 board ⑥ in the direction of arrow while removing claw ⑤.



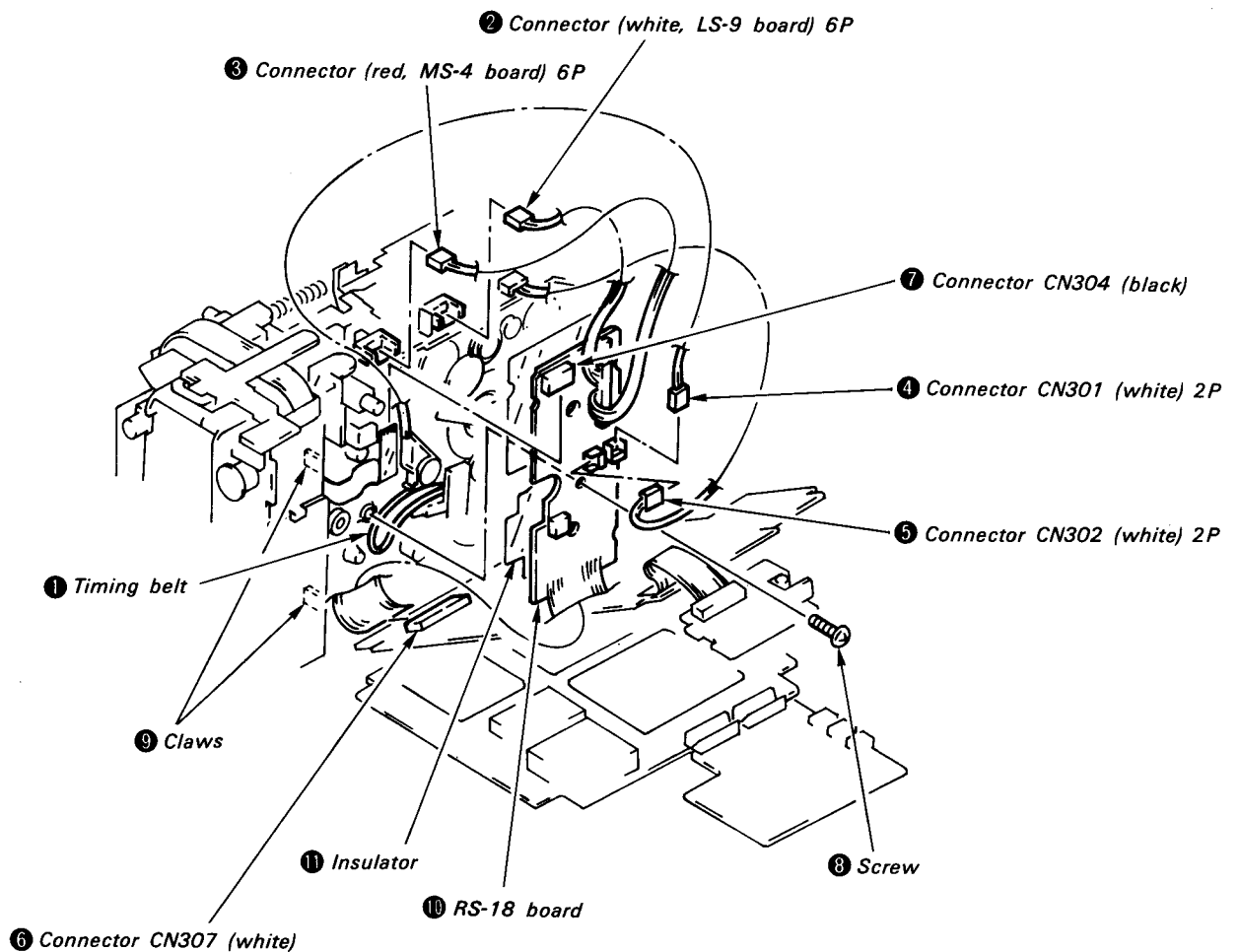
2-13. OPENING OF THE SS-64 BOARD

- 1) Open the VI-22 board by referring to 2-12.
- 2) Open the TS-55 board by referring to 2-8.
- 3) Remove two screws ①.
- 4) Remove connectors CN301 (white) ②, CN313 (white) ③ and CN310 (white) ④.
- 5) Open the SS-64 board ⑤ in the direction of arrow.



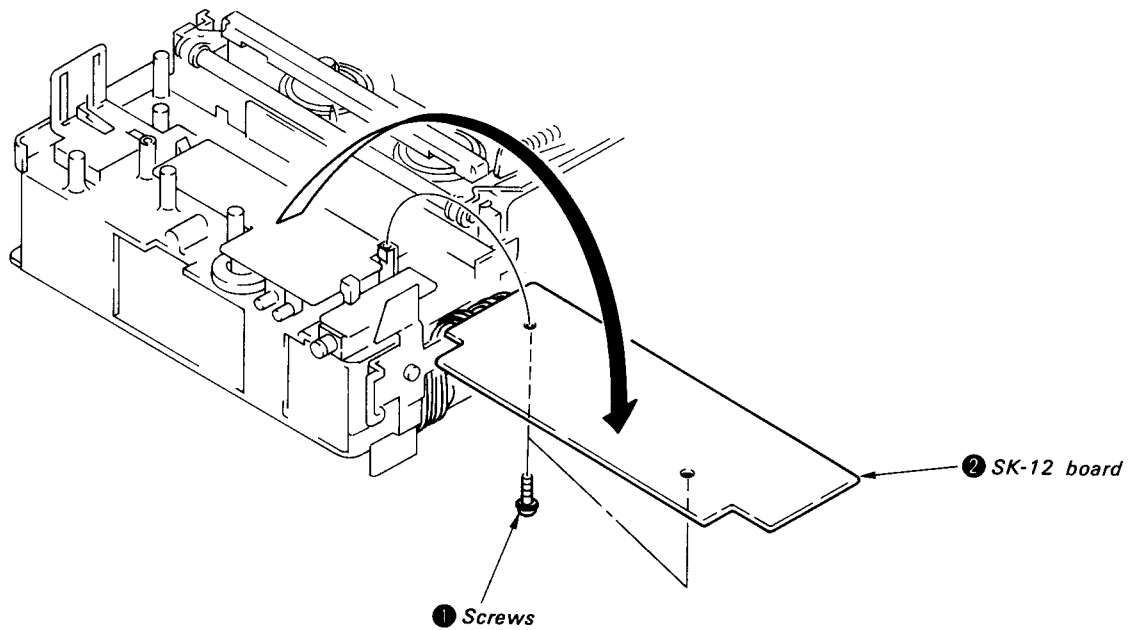
2-14. REMOVAL OF THE RS-18 BOARD

- 1) Open the SS-64 board by referring to 2-13.
- 2) Remove timing belt **1** from the pulley.
- 3) Remove connectors **2** (white, LS-9 board), **3** (red, MS-4 board), CN301 (white) **4**, CN302 (white) **5**, CN307 (white) **6** and CN304 (black) **7**.
- 4) Remove screw **8**.
- 5) Remove the RS-18 board **10** while removing two claws **9**.
- 6) Remove insulator **11**.



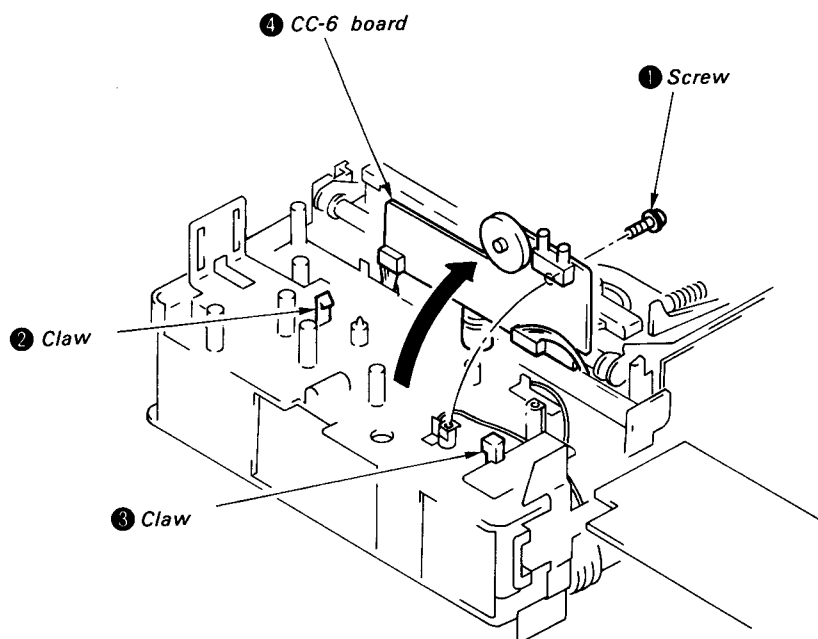
2-15. OPENING OF THE SK-12 BOARD

- 1) Remove two screw ① and open the SK-12 board ② in the direction of arrow.



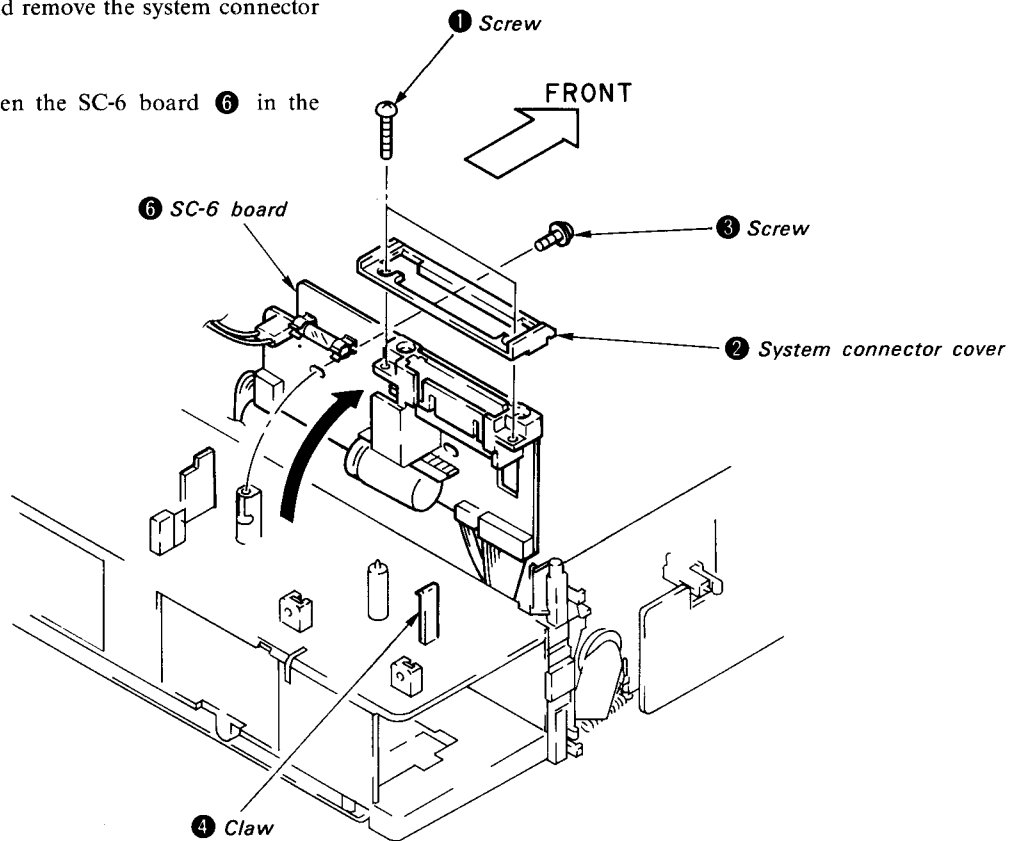
2-16. OPENING OF THE CC-6 BOARD

- 1) Open the SK-12 board by referring to 2-15.
- 2) Remove screw ①.
- 3) Remove claw ② and open the CC-6 board ④ in the direction of arrow while removing claw ③.



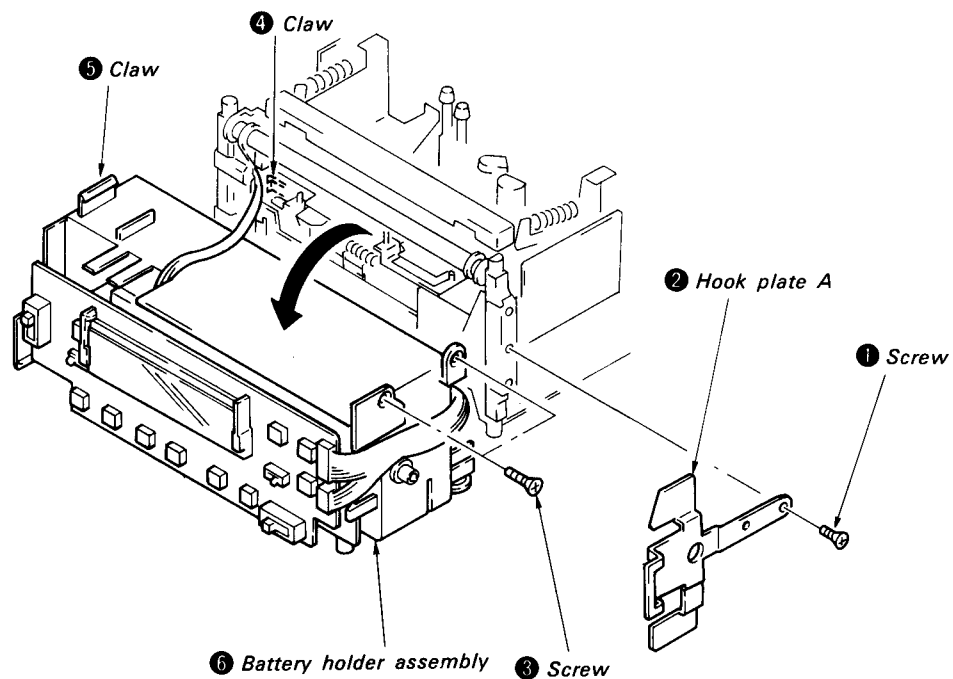
2-17. OPENING OF THE SC-6 BOARD

- 1) Remove two screws ① and remove the system connector cover ②.
- 2) Remove screw ③.
- 3) Remove claw ④ and open the SC-6 board ⑥ in the direction of arrow.



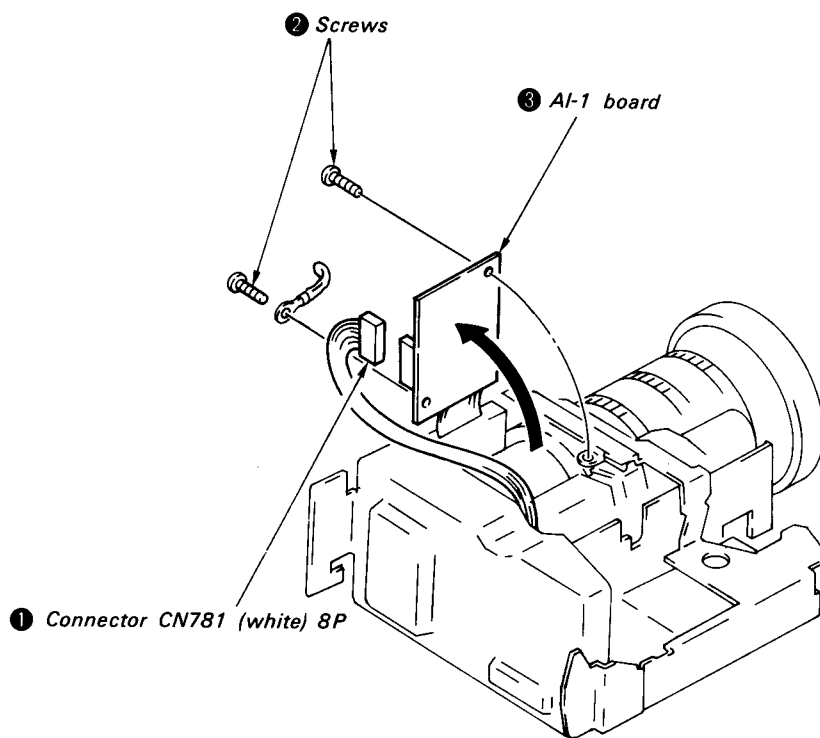
2-18. OPENING OF THE BATTERY HOLDER ASSEMBLY

- 1) Remove screw ① and remove the hook plate A ②.
- 2) Remove two screws ③.
- 3) Remove the harness from claw ④.
- 4) Open the battery holder assembly ⑥ while removing claw ⑤.



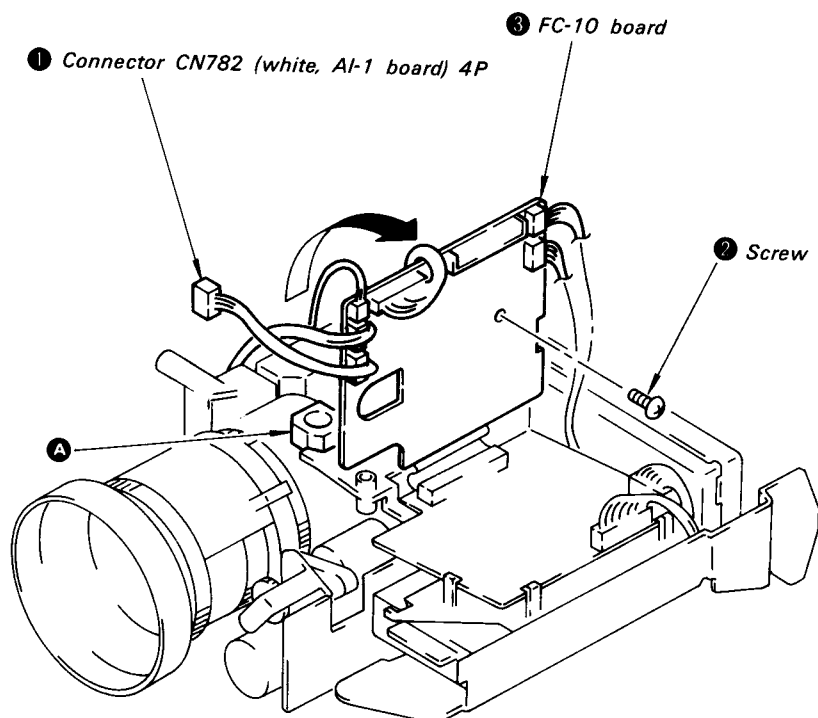
2-19. OPENING OF THE AI-1 BOARD

- 1) Remove connector CN781 (white) ①.
- 2) Remove two screws ② and open the AI-1 board ③ in the direction of arrow.



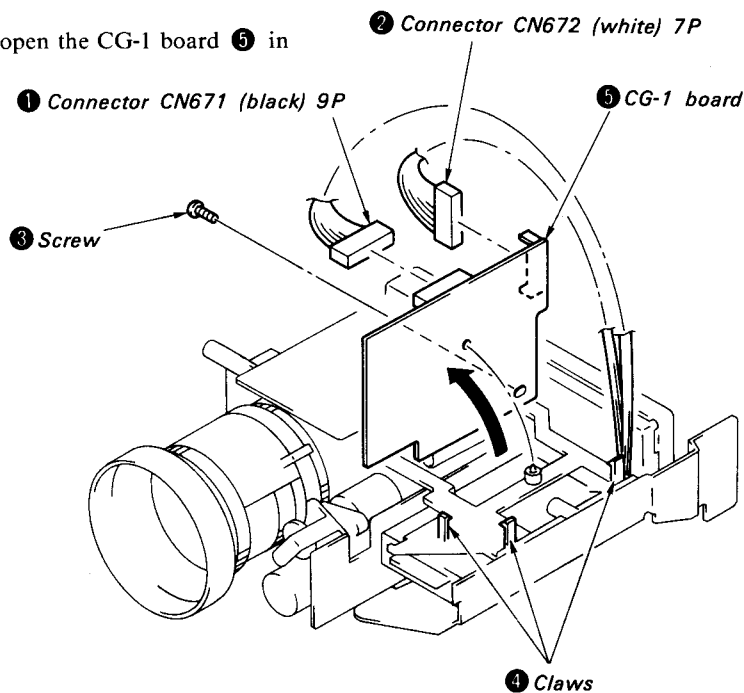
2-20. OPENING OF THE FC-10 BOARD

- 1) Remove connector CN782 (white) ①.
- 2) Remove screw ②.
- 3) Open the FC-10 board ③ in the direction of arrow while removing the A section.



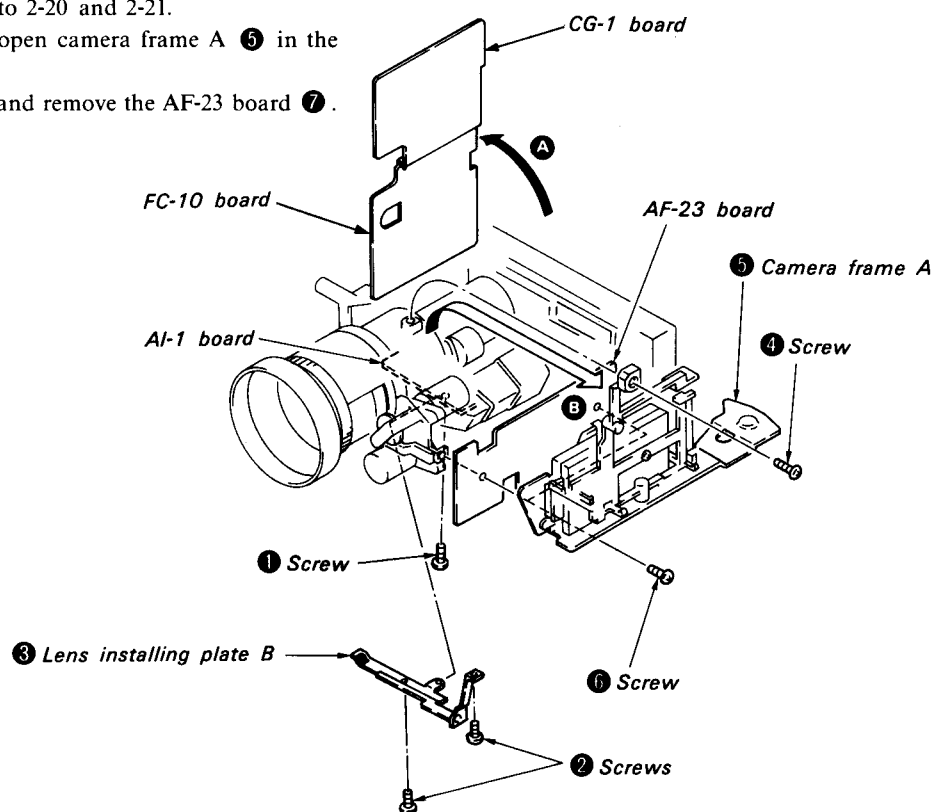
2-21. OPENING OF THE CG-1 BOARD

- 1) Remove connectors CN671 (black) ① and CN672 (white) ②.
- 2) Remove screw ③.
- 3) Remove three claws ④ and open the CG-1 board ⑤ in the direction of arrow.



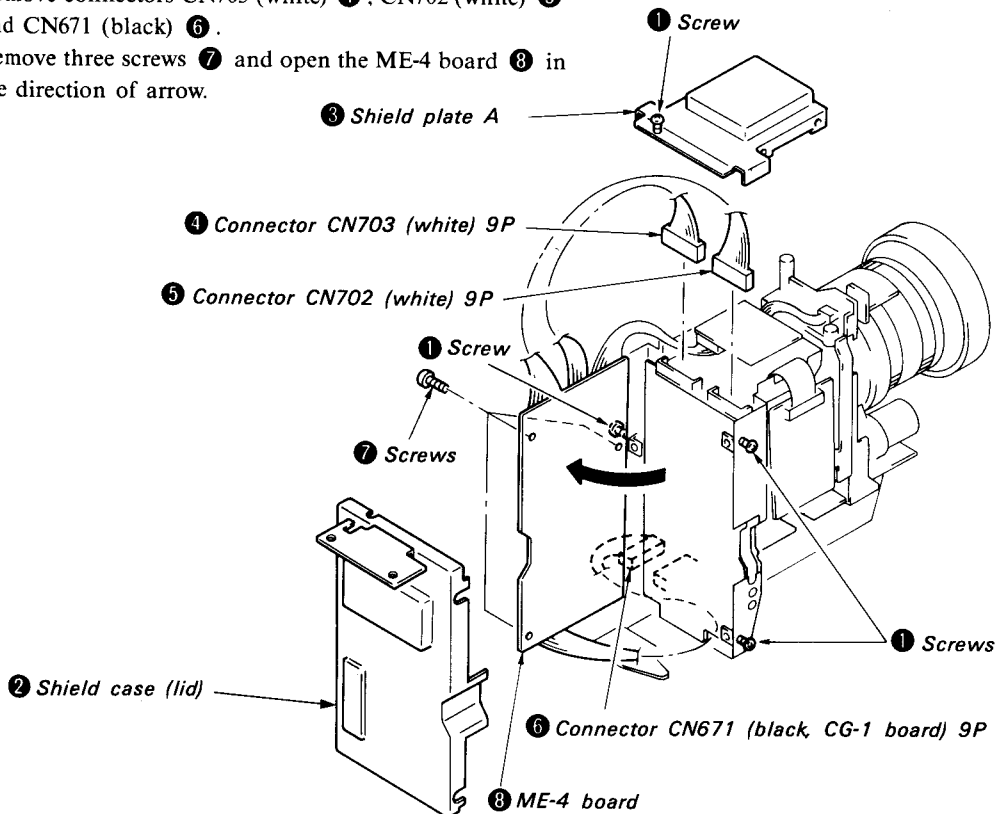
2-22. REMOVAL OF THE AF-23 BOARD

- 1) Remove screw ① fastening the AI-1 board.
- 2) Remove two screws ② and remove the lens installing plate B ③.
- 3) Open the FC-10 board and CG-1 board in the direction of arrow A by referring to 2-20 and 2-21.
- 4) Remove screw ④ and open camera frame A ⑤ in the direction of arrow B.
- 5) Remove two screws ⑥ and remove the AF-23 board ⑦.



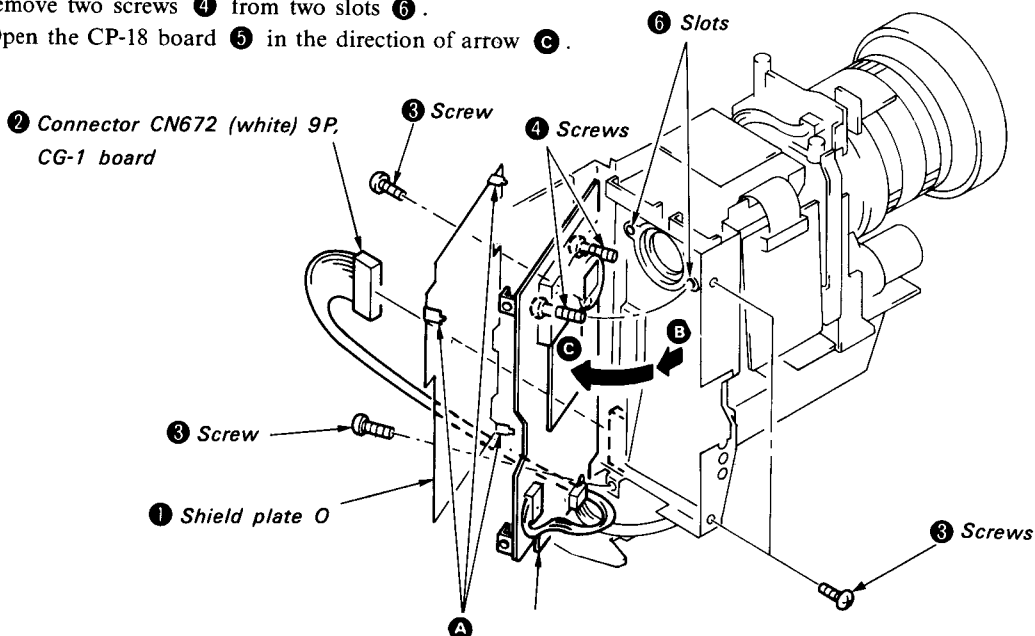
2-23. OPENING OF THE ME-4 BOARD

- 1) Loosen four screws ① and remove shield case (lid) ②.
- 2) Remove shield plate A ③.
- 3) Remove connectors CN703 (white) ④, CN702 (white) ⑤ and CN671 (black) ⑥.
- 4) Remove three screws ⑦ and open the ME-4 board ⑧ in the direction of arrow.

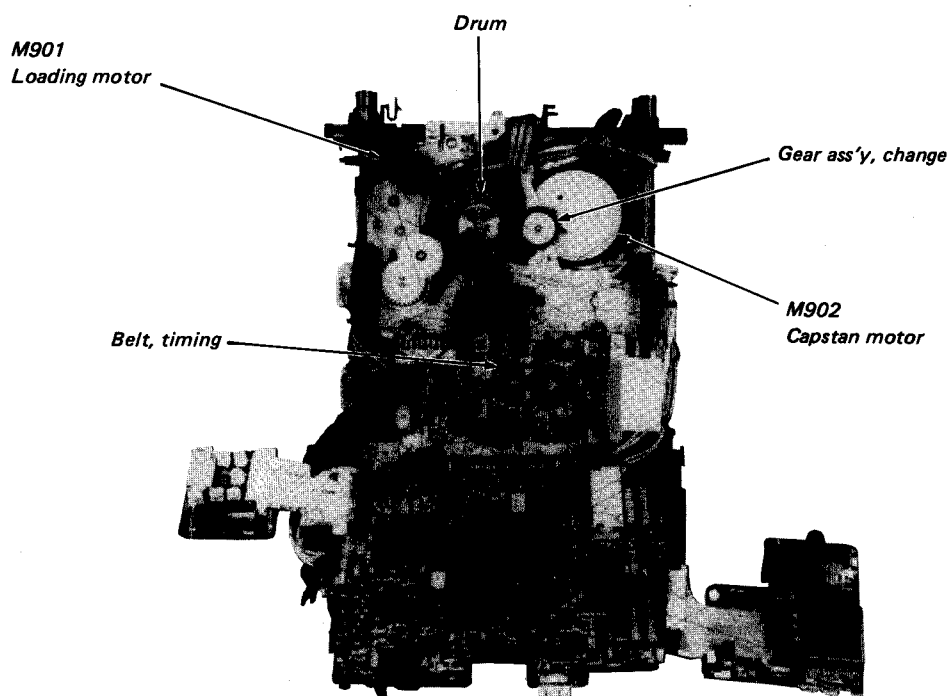
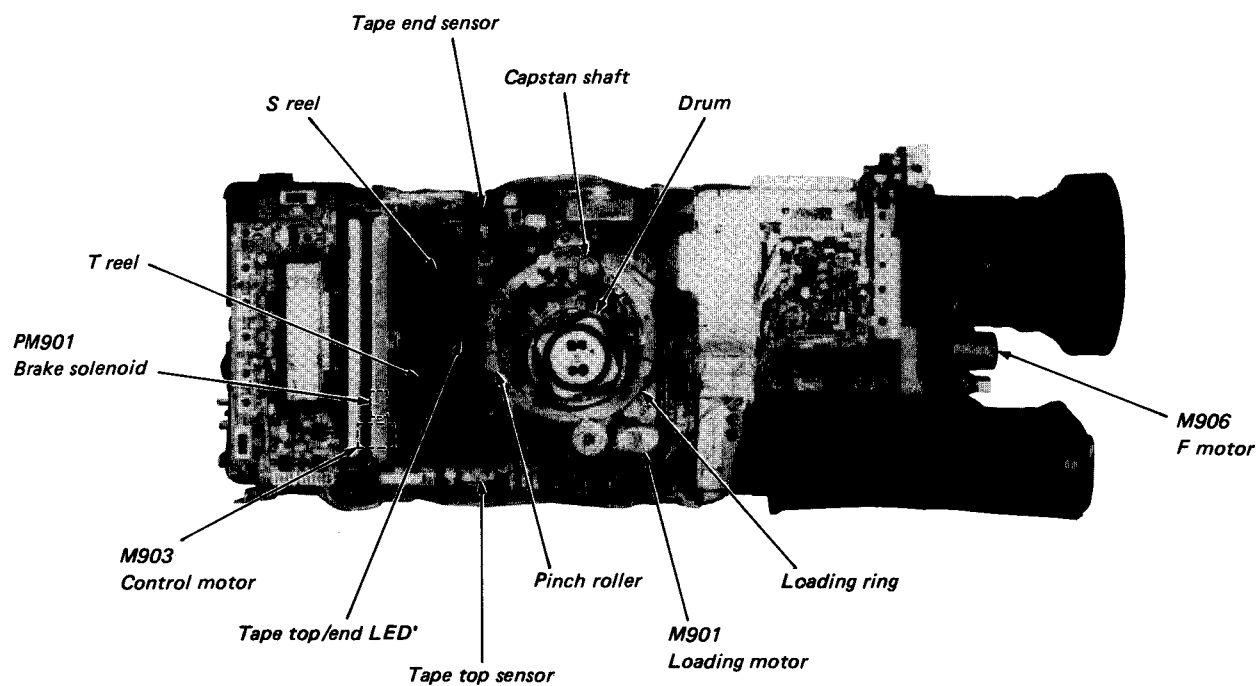


2-24. OPENING OF THE CP-18 BOARD

- 1) Open the ME-4 board by referring to 2-23.
- 2) Remove three solders in the A section and remove the shield plate O ①.
- 3) Remove connector CN672 (white) ②.
- 4) Remove four screws ③ and loose two screws ④.
- 5) Shift the CP-18 board ⑤ in the direction of arrow B and remove two screws ④ from two slots ⑥.
- 6) Open the CP-18 board ⑤ in the direction of arrow C.

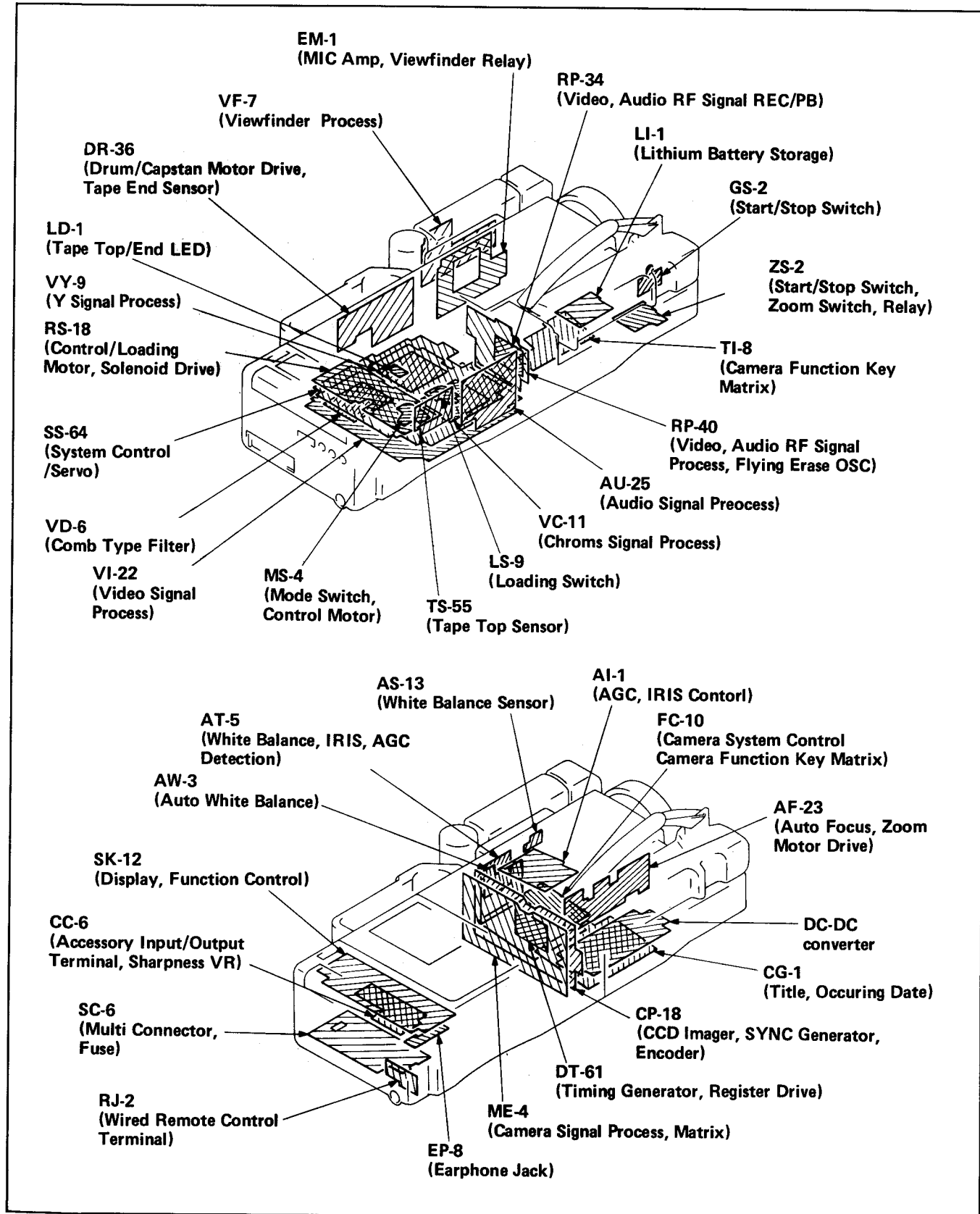


2-25. INTERNAL VIEW

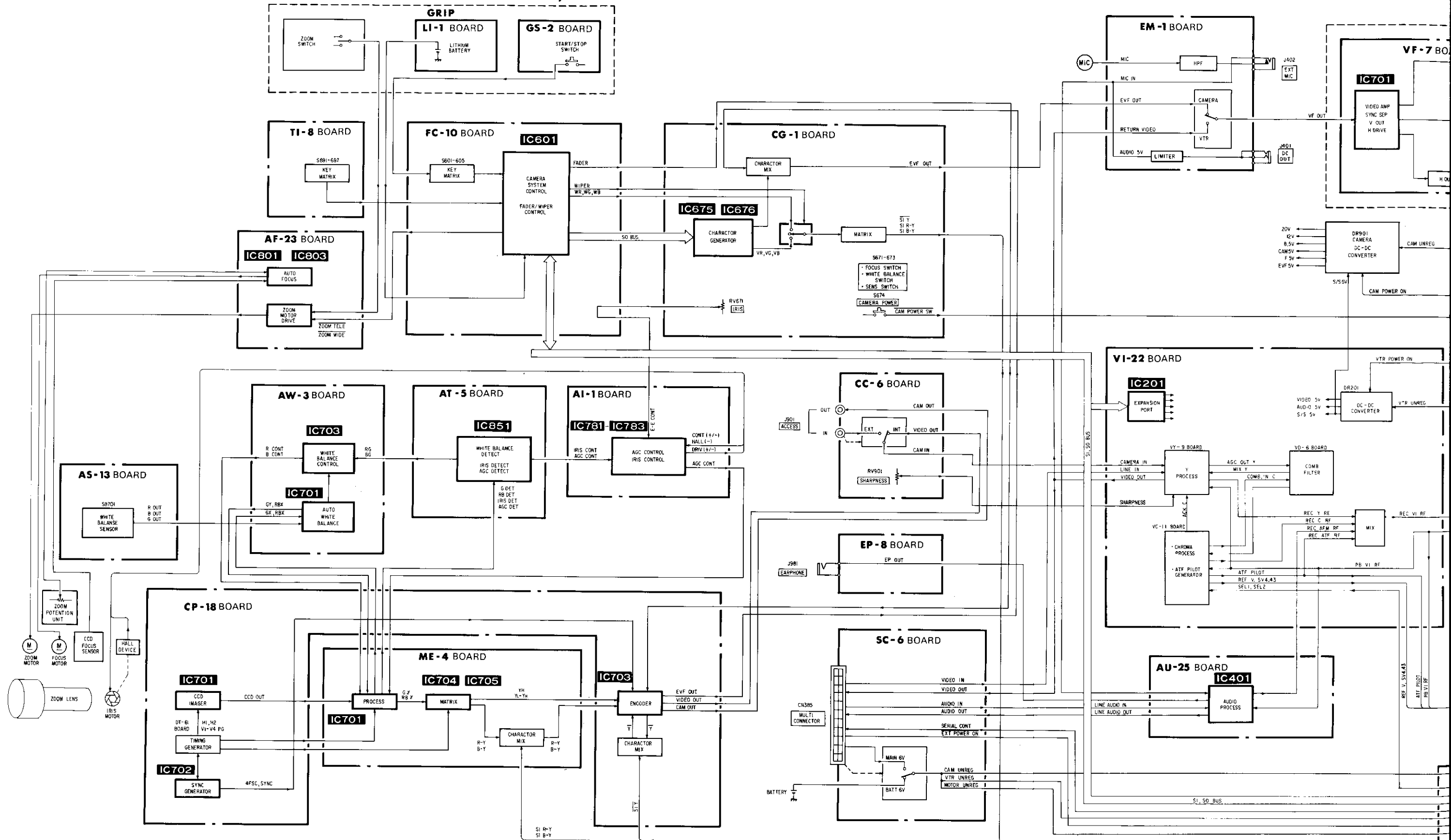


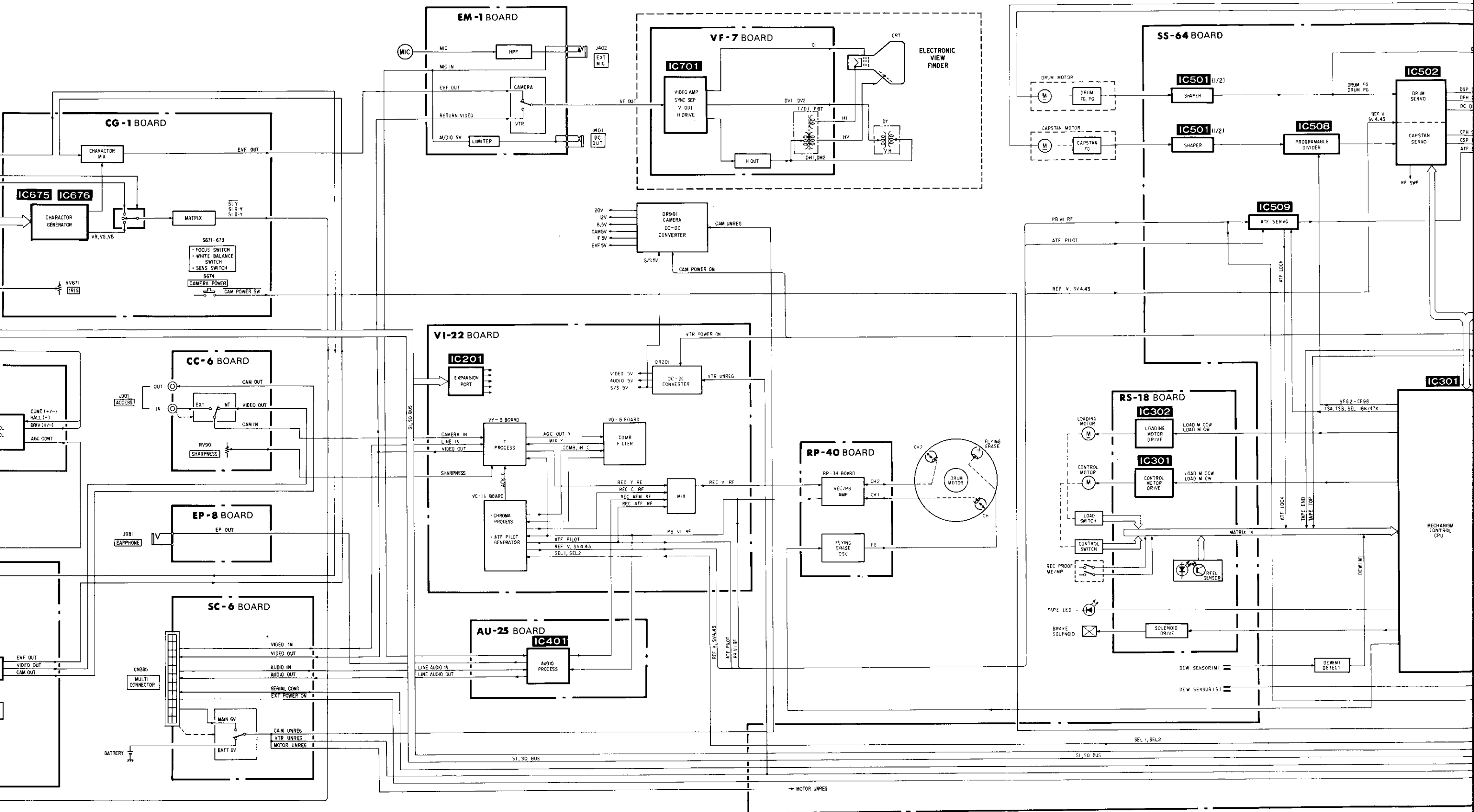
SECTION 3 DIAGRAMS

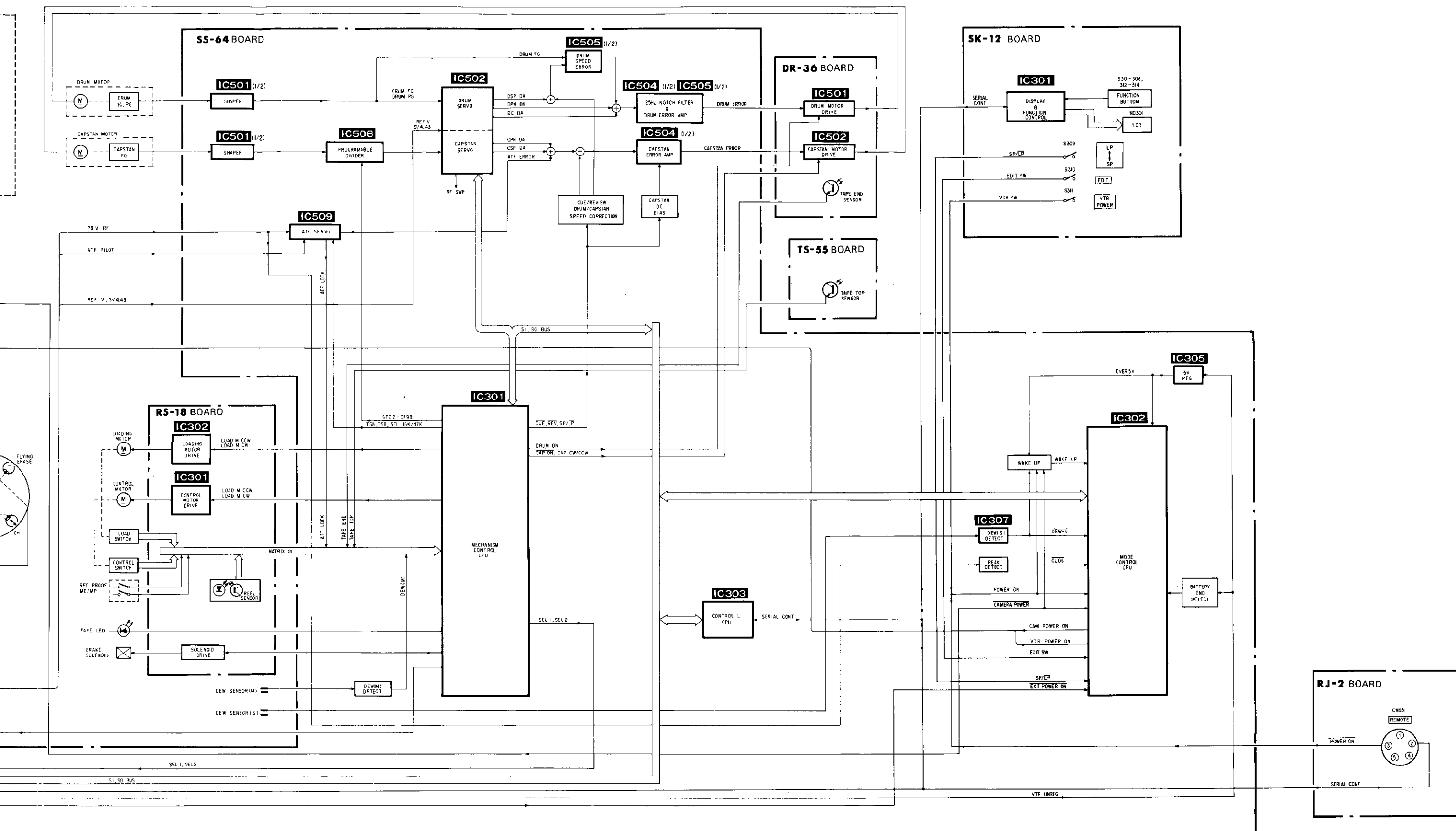
3-1. CIRCUIT BOARDS LOCATION



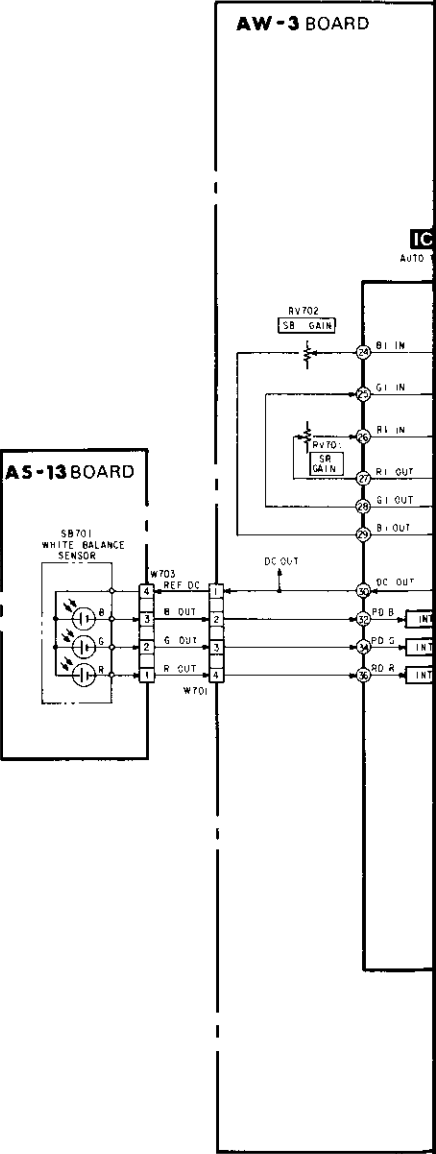
3-2. OVERALL BLOCK DIAGRAM



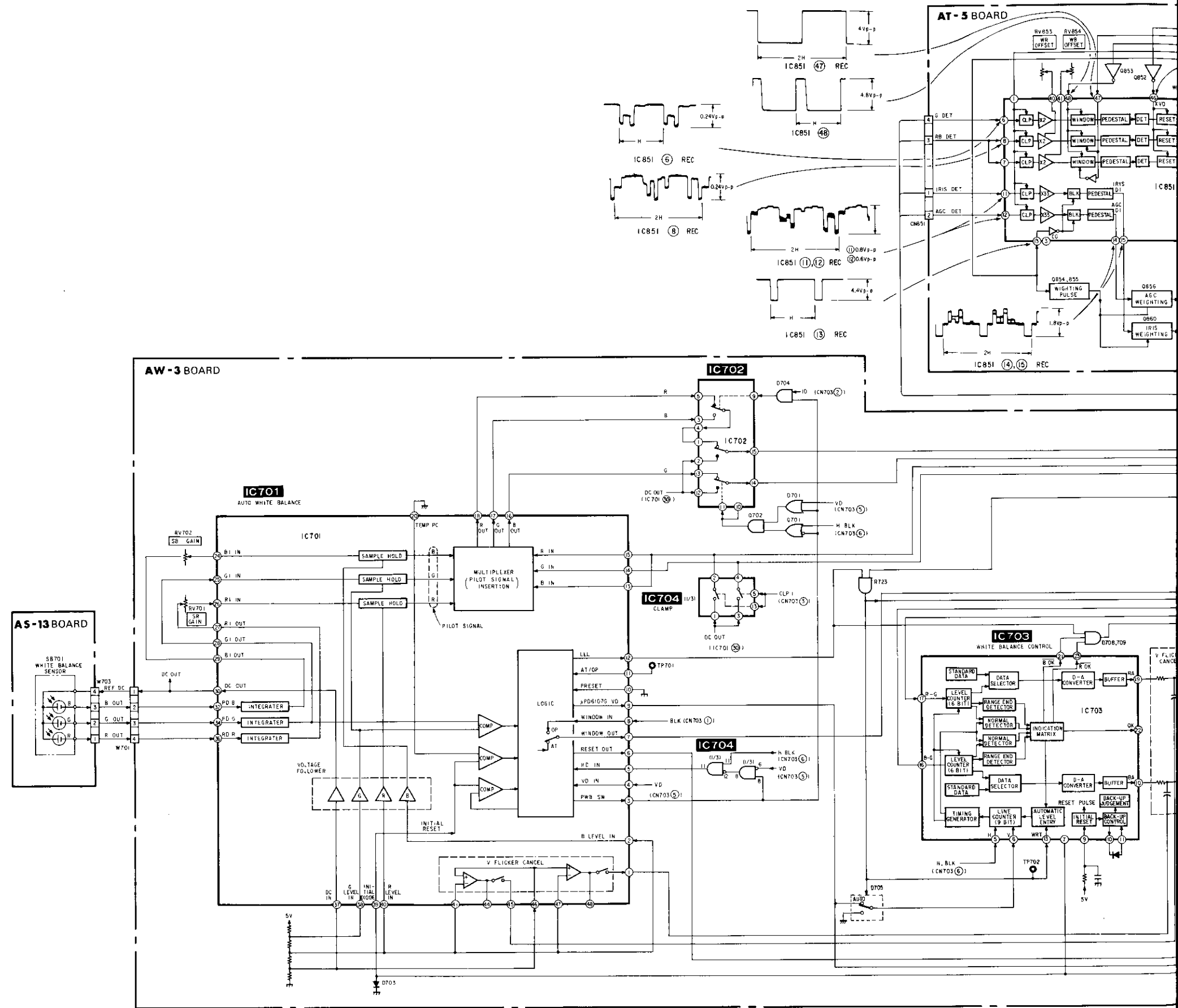


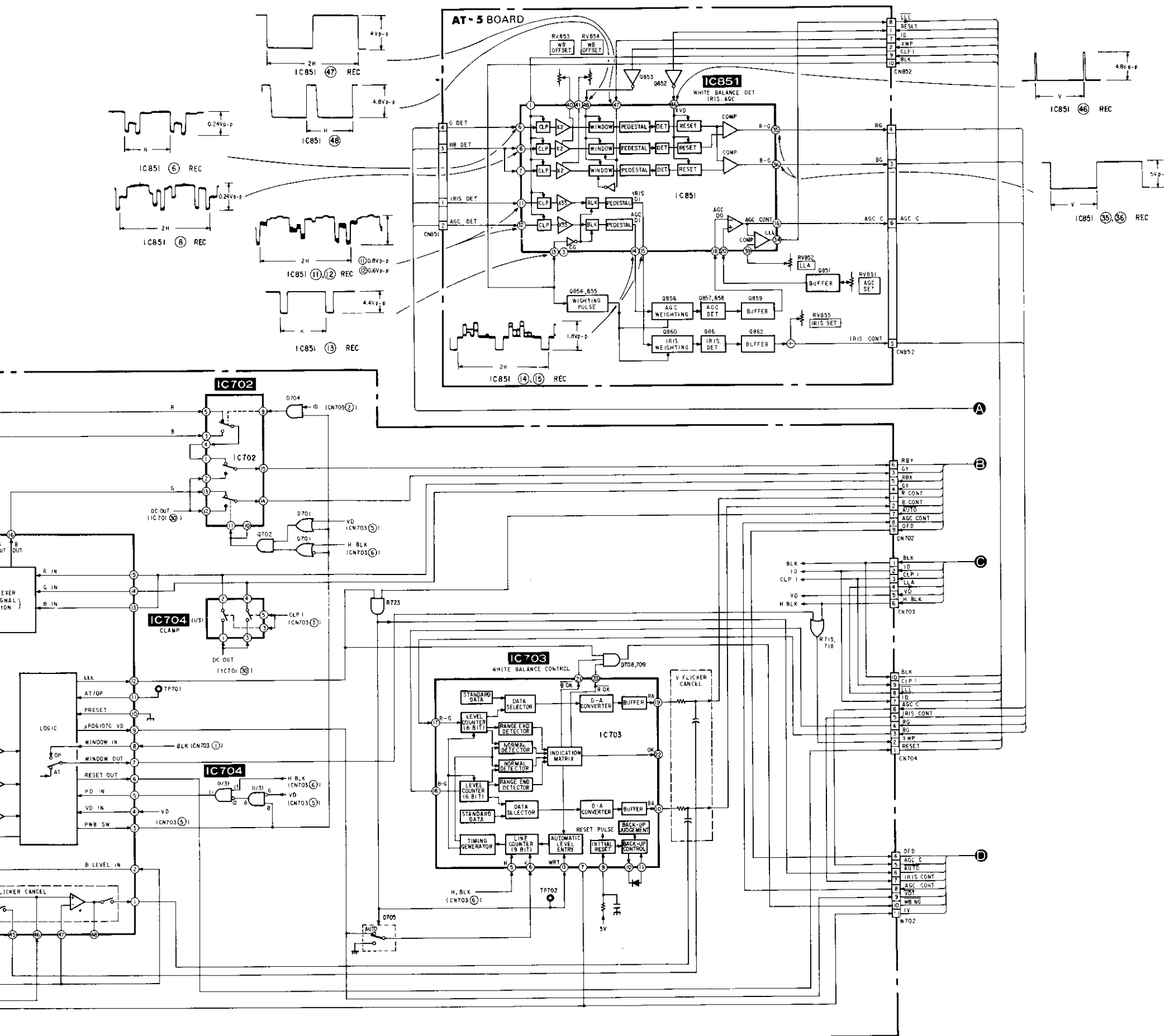


3-3. CAMERA BLOCK DIAGRAM (1)-1

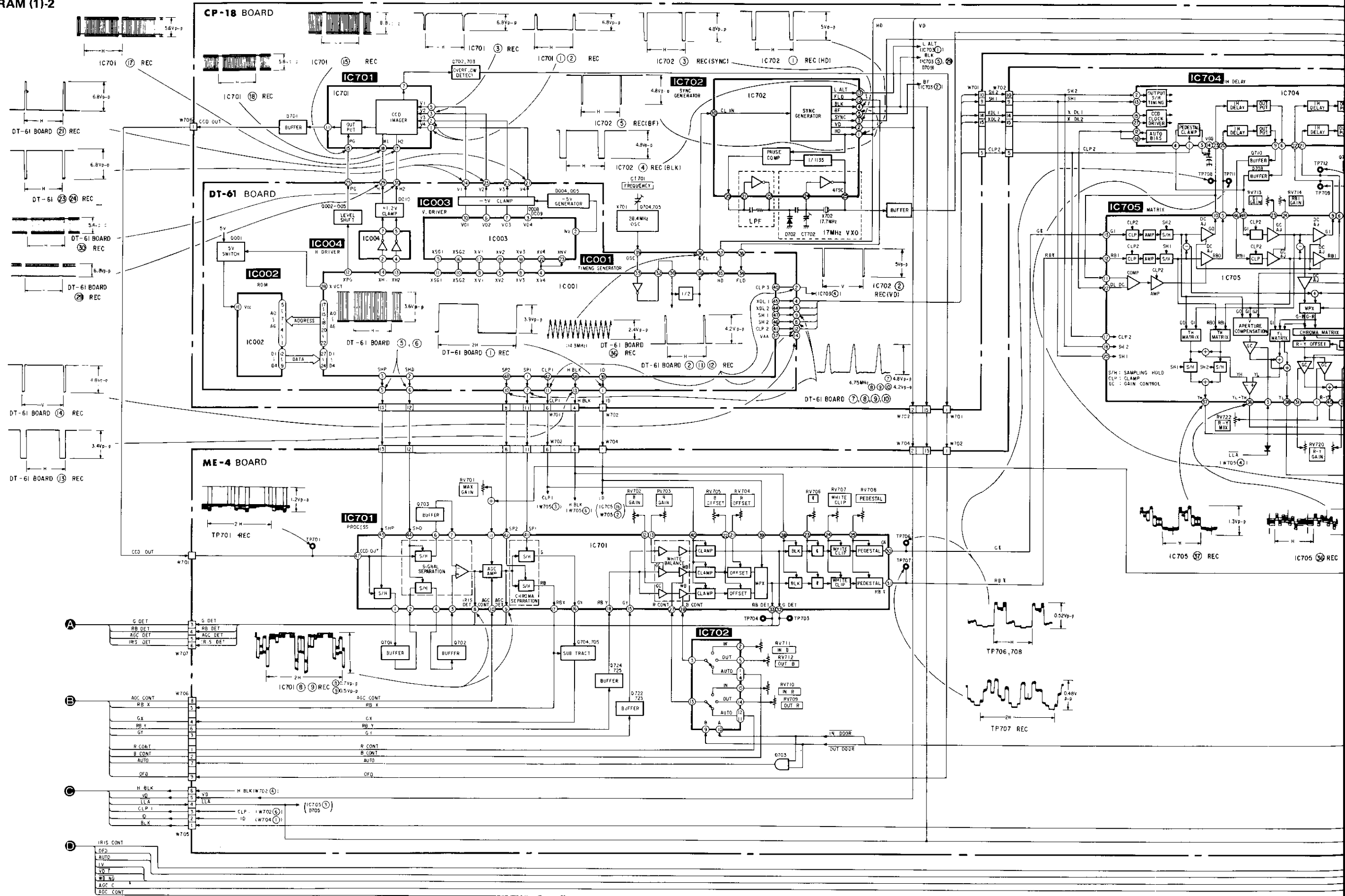


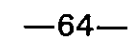
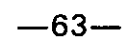
3-3. CAMERA BLOCK DIAGRAM (1)-1



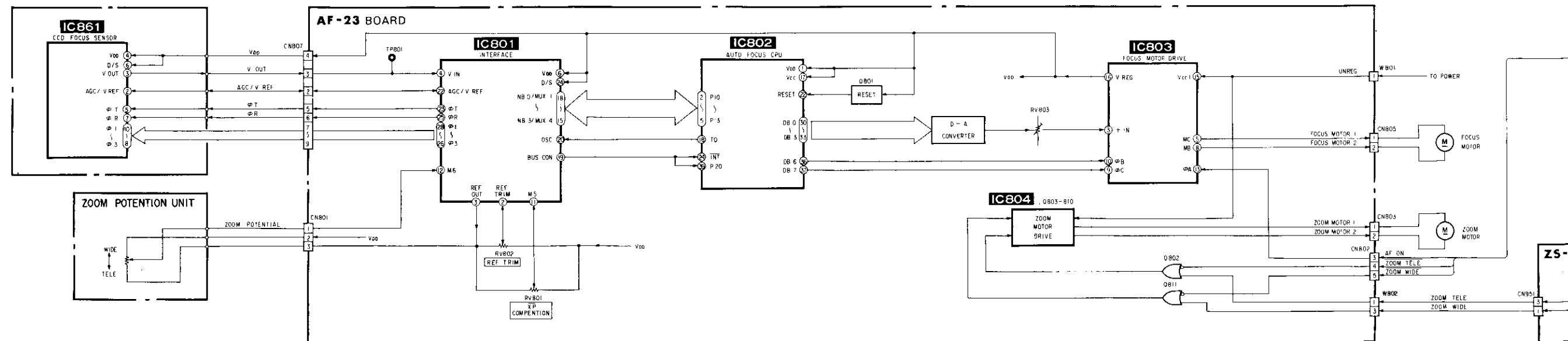
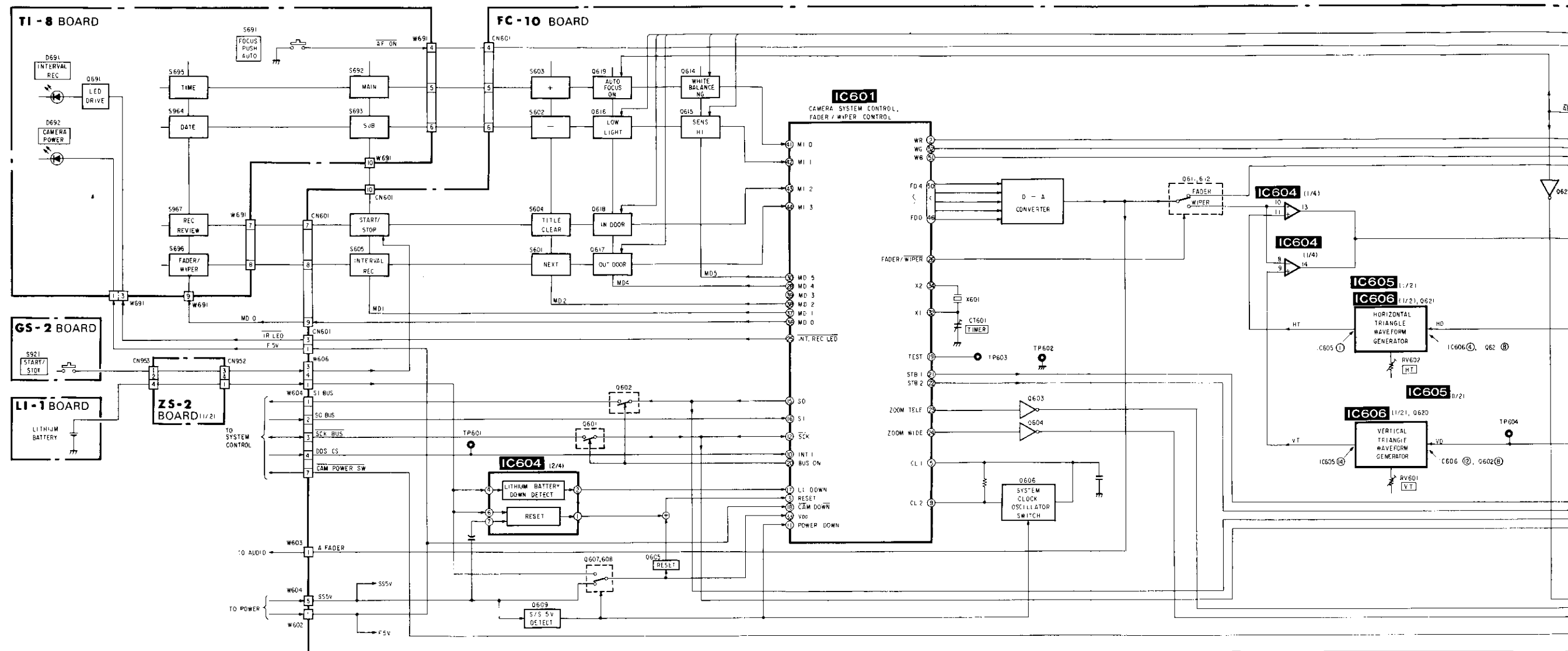


3-4. CAMERA BLOCK DIAGRAM (1)-2

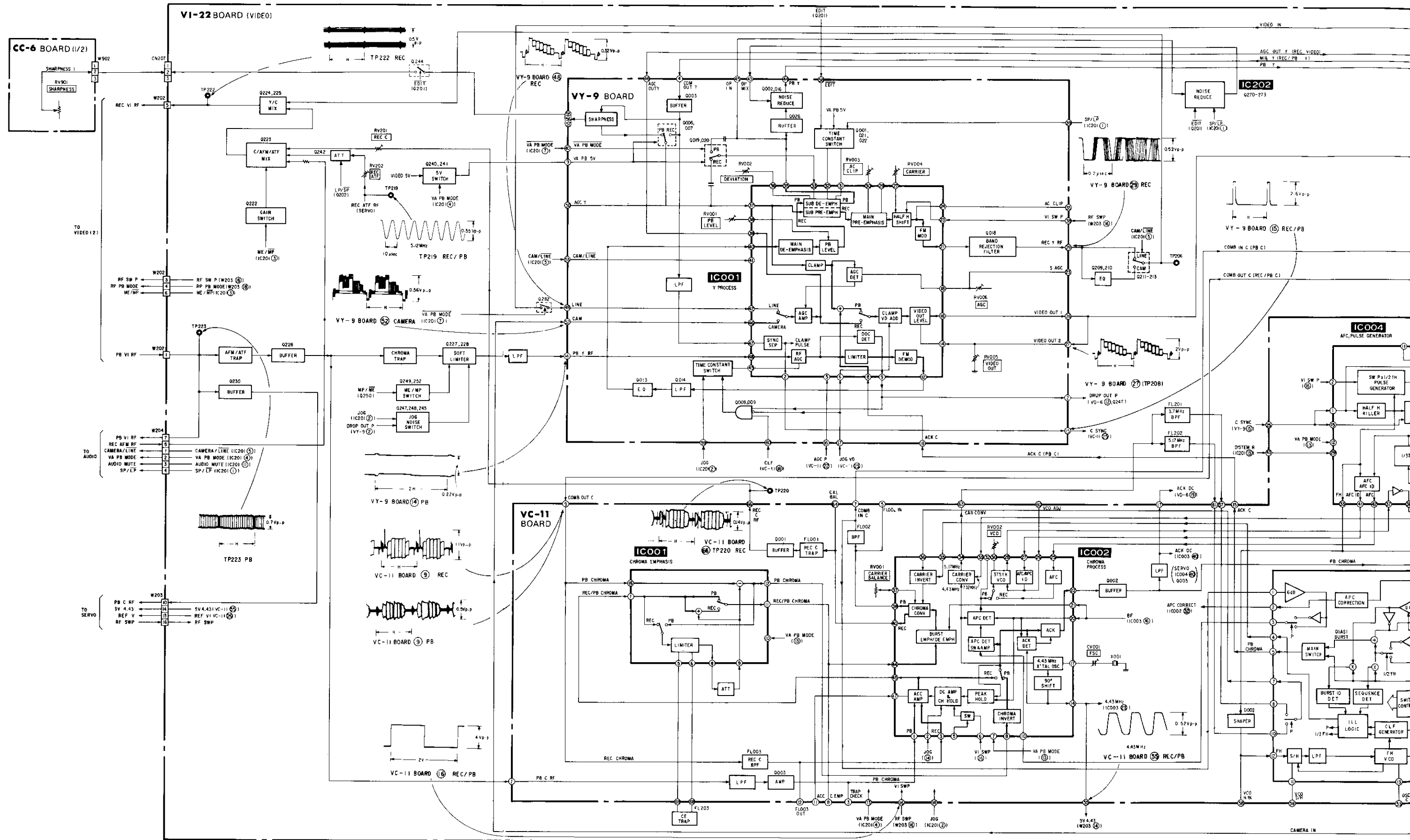


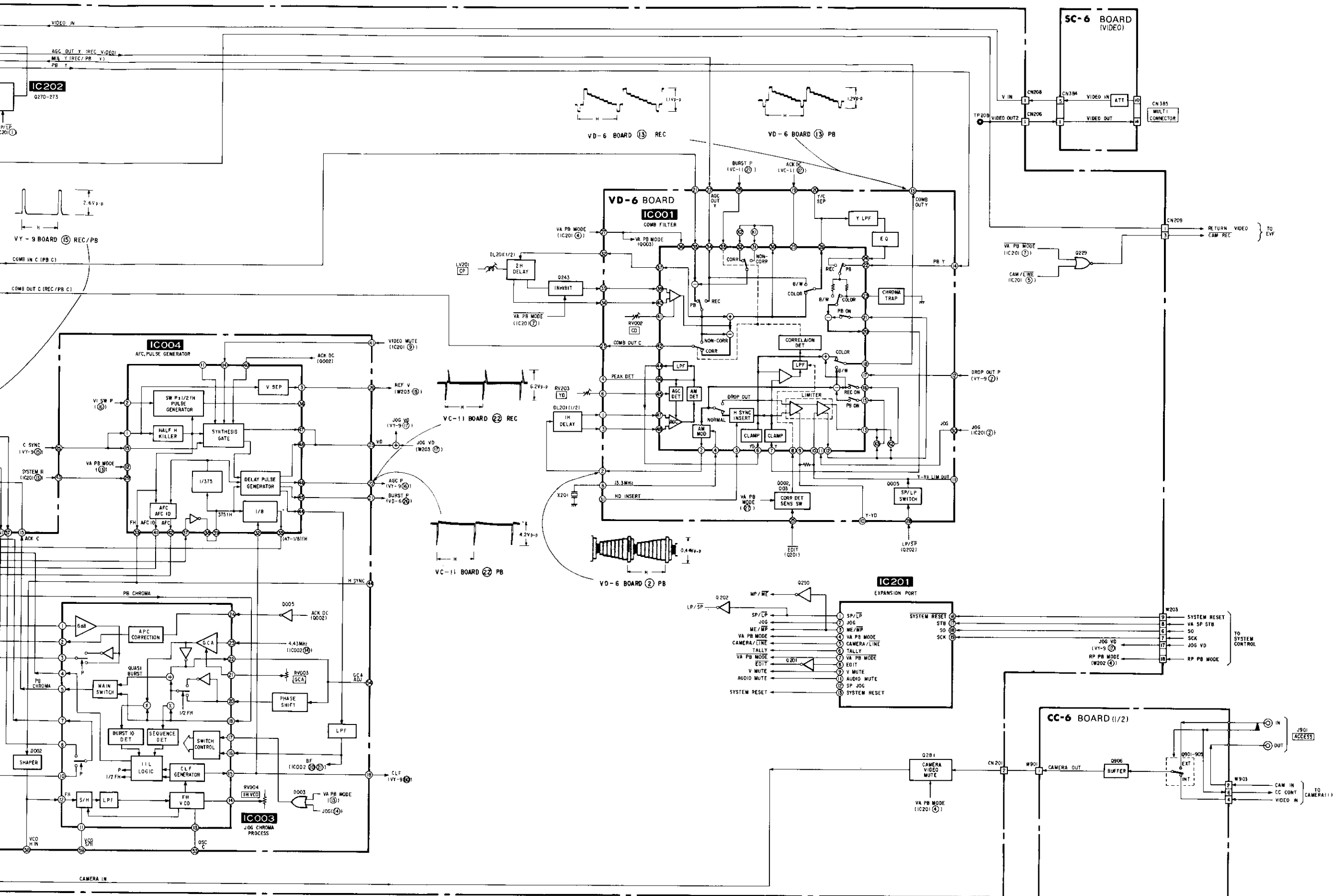


3-5. CAMERA BLOCK DIAGRAM (2)



3-6. VIDEO BLOCK DIAGRAM (1)

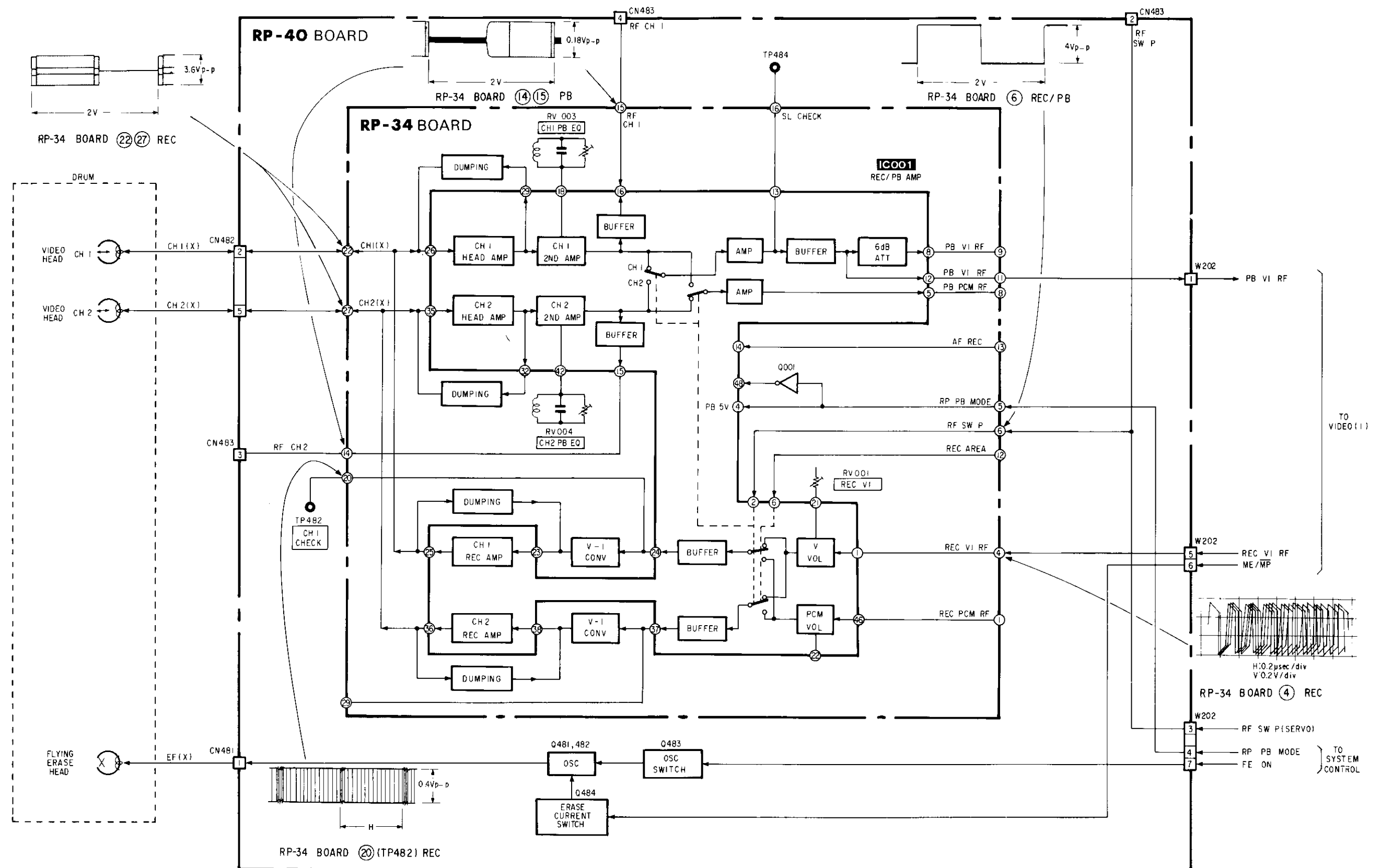




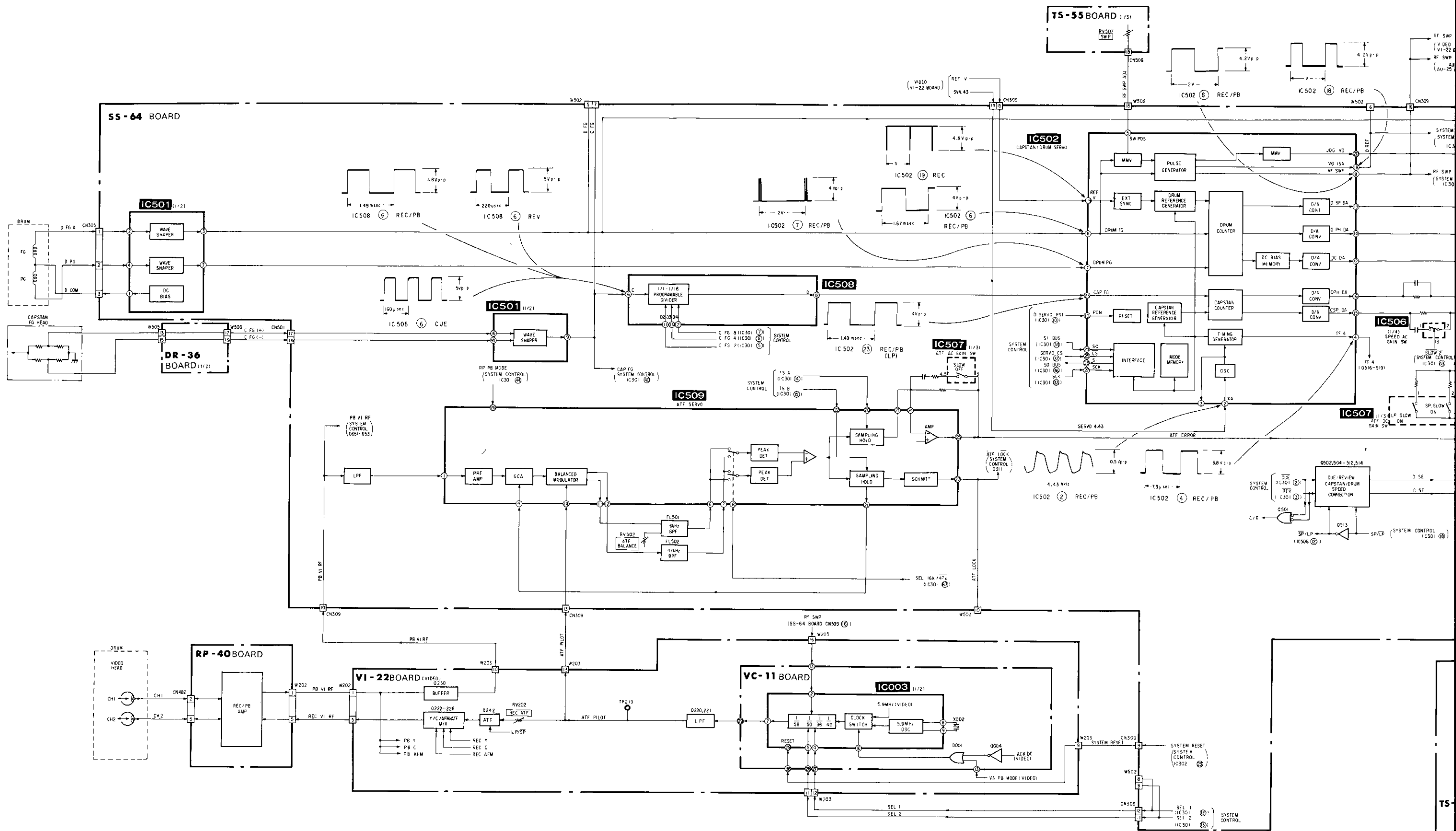
- 43 -

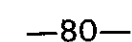
- 44 -

3-7. VIDEO BLOCK DIAGRAM (2)



3-8. SERVO BLOCK DIAGRAM





3-9. MODE CONTROL CPU (IC302 on SS-64 Board) — PERIPHERAL CIRCUITS INTERFACE

Signal name	I/O	Pin No.	Input/Output level
$\overline{\text{TEST}}$	I	1	Pull-up to "H" level. It becomes TEST mode when "L".
$\overline{\text{SAFTY}}$	I	2	Fixed at "L" level.
$\overline{\text{EXT POWER ON}}$	I	3	"L" when the power supply of equipments (AC adaptor or T/T unit) which is connected to multi-connector is ON.
VTR POWER ON	I	4	"L" when the VTR POWER button of the main unit or the remote commander is pressed.
CAMERA POWER ON	I	5	"L" when the CAMERA POWER switch S674 (CG-1 board) is pressed.
START/STOP	I	6	Pull-up to "H" level.
$\overline{\text{EJECT}}$	I	7	Pull-up to "H" level.
VA SP STB	O	8	A strobe signal (V cycle "H" pulse) for the EXPANSION PORT (IC201 on VI-22 board)
MECHA CS	O	9	A communication request signal (V cycle "H" pulse) to the mechanism control CPU (IC301 on SS-64 board)
LS TBC CS	O	10	A communication request signal (V cycle "L" pulse) to the control L CPU (IC 303 on SS-64 board)
DDS CS	O	11	A communication request signal (V cycle "H" pulse) to the CAMERA system control CPU (IC601 on FC-10 board)
HMS/REEL	I	14	Pull up to the "H" level of the counter display selection input.
SP/LP	I	15	"H" when the SP/LP switch (S309 on SK-12 board) is on the SP side.
$\overline{\text{CLOG}}$	I	16	During SP mode playback, "H" when the PB RF signal is played back normally.
$\overline{\text{EDIT}}$	I	17	"L" when the EDIT switch (S310 on SK-12 board) is at ON.
$\overline{\text{PB SP}}$	I	18	Pull-up to "H" level.
$\overline{\text{PB LP}}$	I	19	Pull-up to "H" level.
$\overline{\text{VTR ON}}$	O	20	When it is at "L", the DC-DC converter (DR201) on VI-22 board is turned ON.
$\overline{\text{CAM ON}}$	O	21	When it is at "L", the DC-DC converter on the CAMERA is turned ON.
$\overline{\text{BE/PD}}$	O	22	"L" when in the battery pre-end detection and TEST mode.
SYSTEM RESET	O	23	When the power supply is turned ON, reset the respective CPUs. ("L" when resetting)
$\overline{\text{VTR LED}}$	O	27	"L" when VTR mode or VTR + CAMERA mode.
$\overline{\text{RESET}}$	I	32	A resetting input when turning the UNREG power supply ON/OFF. ("L" pulse when resetting)
SCK	I/O	33	Serial data transfer clock input/output for communication to the respective CPUs ("L" pulse train of the V cycle)
SO	O	34	Serial data output for communication to the respective CPUs ("H" pulse train of the V cycle)
SI	I	36	Serial data input for communication to the respective CPUs ("L" pulse train of the V cycle)
WAKE UP	I	39	A selection pulse ($\sqcap$) input from the power save mode to the normal mode
COUNTER	I	40	A pulse ($\sqcup$) input for the tape counter when in CUE/REVIEW and FF/REW modes
DDS RESET	O	41	A reset signal output ("H" when resetting) for the CAMERA system control CPU (IC601 on FC-10 board)
RF SW PULSE	I	48	A pulse input of 25Hz duty 50%

Signal name	I/O	Pin No.	Input/Output level
OSC ON	O	50	"H" when FF/REW mode and CUE/REV mode.
FF + REW	O	51	"H" when FF/REW mode.
SYSTEM SYNC	I	59	An interruption request signal from the servo IC (IC502 on SS-64 board) (V cycle pulse)
CAP $\overline{\text{CW/CCW}}$	I	60	An input for the tape counter. "H" when the capstan is rotating in FWD direction.
$\overline{\text{CAP ON}}$	I	61	An input for the tape counter. "L" when the capstan is rotating.
$\overline{\text{DEW S}}$	I	62	"L" when dew condensation is generated in the mechanism
$\overline{\text{BATT DOWN}}$	O	64	"L" when the battery is down

3-10. SY

Signal name
SP/LP
JOG
ME/MP
VA PB M
CAM/LIN
TALLY
VA PB M
EDIT
V MUTE
A MUTE
SP JOG
SYSTEM
FE ON
RP PB M
JOG VD
VTR ON
CAM ON

- *1 Mainta
- *2 Depen
- *3 Depen
- *4 "H" wh
- *5 "L" wh
- *6 Pulse c
- *7 "L" wh
- section
- *8 "L" wh
- *9 Depen

3-10. SYSTEM CONTROL — CAMERA, VIDEO AND AUDIO BLOCKS INTERFACE

Signal name	I/O	REF No.	PIN No.	STOP	FF	REW	CUE	RE-VIEW	PB	PB/PAUSE	FRA-ME	REC	REC/PAUSE	RE-VERSE
SP/LP	O	VI-22 board IC201	①	*9	*9	*9	*1	*1	*2	*1	*1	*9	*9	*1
JOG	O	VI-22 board IC201	②	L	L	L	H	H	L	H	H	L	L	H
ME/MP	O	VI-22 board IC201	③	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3
VA PB MODE	O	VI-22 board IC201	④	L	L	L	H	H	H	H	H	L	L	H
CAM/LINE	O	VI-22 board IC201	⑤	L*4	L*4	L*4	L*4	L*4	L*4	L*4	L*4	L*4	L*4	L*4
TALLY	O	VI-22 board IC201	⑥	L	L	L	L	L	L	L	L	L*4	L	L
VA PB MODE	O	VI-22 board IC201	⑦	H	H	H	L	L	L	L	L	H	H	L
EDIT	O	VI-22 board IC201	⑧	H	H	H	H	H	H*5	H*5	H*5	H	H	H
V MUTE	O	VI-22 board IC2-1	⑨	L	L	L	L	L	L	L	L	L	L	L
A MUTE	O	VI-22 board IC 201	⑪	L	L	L	H	H	L	H	H	L	L	H
SP JOG	O	VI-22 board IC201	⑫											
SYSTEM RESET	O	VI-22 board IC201	⑬	L	L	L	L	L	L	L	L	L	L	L
FE ON	O	SS-64 board IC301	⑫	L	L	L	L	L	L	L	L	H	L	L
RP PB MODE	O	SS-64 board IC301	⑭	L	L	L	H	H	H	H	H	L	L	H
JOG VD	O	SS-64 board IC301	⑮	L	L	L	*6	*6	L	*6	*6	L	L	*6
VTR ON	O	SS-64 board IC302	⑯	L	L	L	L	L	L	L	L	L	L	L
CAM ON	O	SS-64 board IC302	⑰	H*7	H*7	H*7	H*7	H*7	H*7	H*7	H*7	H*8	H*8	H*7

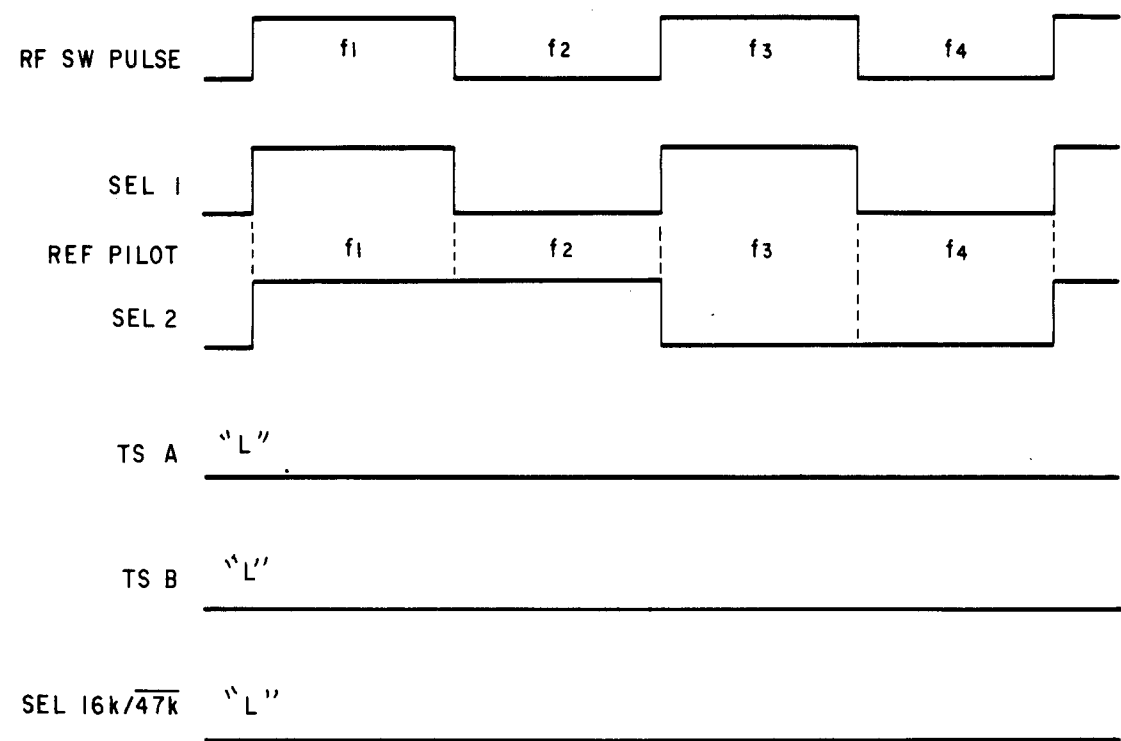
- *1 Maintains the prior level.
*2 Dependent upon recording mode (SP/LP) of playback tape.
*3 Dependent upon the type of tape.
*4 "H" when power supply is ON (CAM ON = "L") at the camera section.
*5 "L" when EDIT switch (S310 on SK-12 board) is ON.
*6 Pulse of V cycle (JL).
*7 "L" when VTR+CAMERA mode (After turning the VTR POWER ON with the VTR POWER switch, operate the camera section by pressing the CAMERA POWER switch).
*8 "L" when VTR+CAMERA or CAMERA mode.
*9 Dependent upon SP/LP selector (S309 on SK-12 board).

3-11. MECHANISM CONTROL CPU (IC301 on SS-64 board) — SERVO BLOCK INTERFACE

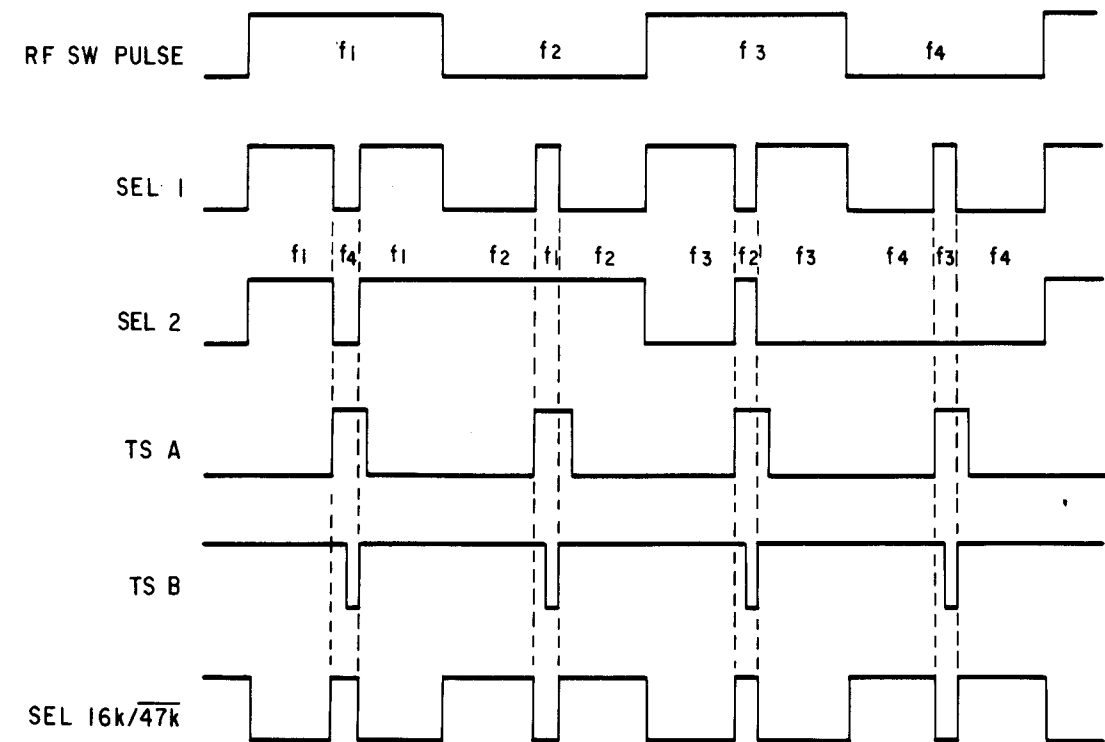
Signal name	I/O	Pin No.	STOP	FF	REW	CUE	REVIEW	PB	PB/PAUSE	FRA-ME	REC	REC/PAUSE	REVERSE *1
CUE	O	②	H	H	H	L	H	H	H	H	H	H	H
REVIEW	O	③	H	H	H	H	L	H	H	H	H	H	H
CFG 2	O	⑤	L	H	H	L	H	L	L	L	L	L	L
CFG 4	O	⑥	L	L	H	L	H	L	L	L	L	L	L
CFG 8	O	⑦	L	H	H	H	L	L	L	L	L	L	L
D SERVO RESET	O	⑩	L	L	L	L	L	L	L	L	L	L	L
D COMP	O	⑪	L	L	L	L	L	L	L	L*2	L	L	L
SEL 1	O	⑫	H	H	H	*3	*4	*5	H	H*7	*9	H	*10
SEL 2	O	⑬	H	H	H	*3	*4	*5	H/L	H/L	*9	H/L	*10
TS A	O	⑭	L	L	L	*3	*4	*5	L	L	L	L	*10
TS B	O	⑮	L	L	L	*3	*4	*5	*6	*8	L	L	*10
M SP/LP	O	⑰	*11	*11	*11	*12	*12	*13	*12	*12	*11	*11	*12
SCK	I/O	⑳	Serial communication with servo IC (IC502 on SS-64 board)										
SI	O	㉑											
SO	I	㉒											
CAP FG	I	㉓	H/L	*14	*14	*14	*14	*14	H/L	*14	*14	H/L	*14
SLOW 2	O	㉔	H	H	H	H	H	H	L	L	H	H	H
RP PB MODE	O	㉕	L	L	L	H	H	H	H	H	L	L	H
RF SW PULSE	I	㉖ ㉗	L	*15	*15	*15	*15	*15	*15	*15	*15	*15	*15
CAP ON	O	㉘	H	L	L	L	L	L	H	H*7	L	H	L
CAP CW/CCW	O	㉙	H	H	L	H	L	H	H	H*7	H	H	L
CAP ERH	O	㉚	H	H	H	H	H	H	H	H*7	H	H	H
DRUM ON	O	㉛	H	L	L	L	L	L	L	L	L	L	L
SST	I	㉜	H	25Hz trapezoidal wave which has been synchronized with RF SW PULSE									
JOG VD	I	㉝	L	*16	*16	*16	*16	*16	*16	*16	*16	*16	*16
SEL 16K/47K	O	㉞	L	L	L	*3	*4	*5	H	H*17	L	L	*10

- *1 Performed only during REC REVIEW.
*2 "H" pulse during frame forwarding (JL).
*3 See timing chart 4.
*4 See timing chart 5.
*5 See timing chart 2.
*6 See timing chart 3.
*7 "L" pulse during frame forwarding (JL).
*8 V cycle "L" pulse. However no "L" pulse during frame forwarding.
*9 See timing chart 1.
*10 See timing chart 6.
*11 Dependent upon SP/LP selector (S309 on SK-12 board).
*12 Maintains prior level.
*13 Dependent upon recording mode (SP/LP) of playback tape.
*14 The frequency pulse proportionate to the rotating number of the capstan motor.
*15 25 Hz 50% duty pulse.
*16 V cycle "H" pulse.
*17 "L" pulse during frame forwarding (JLJ).

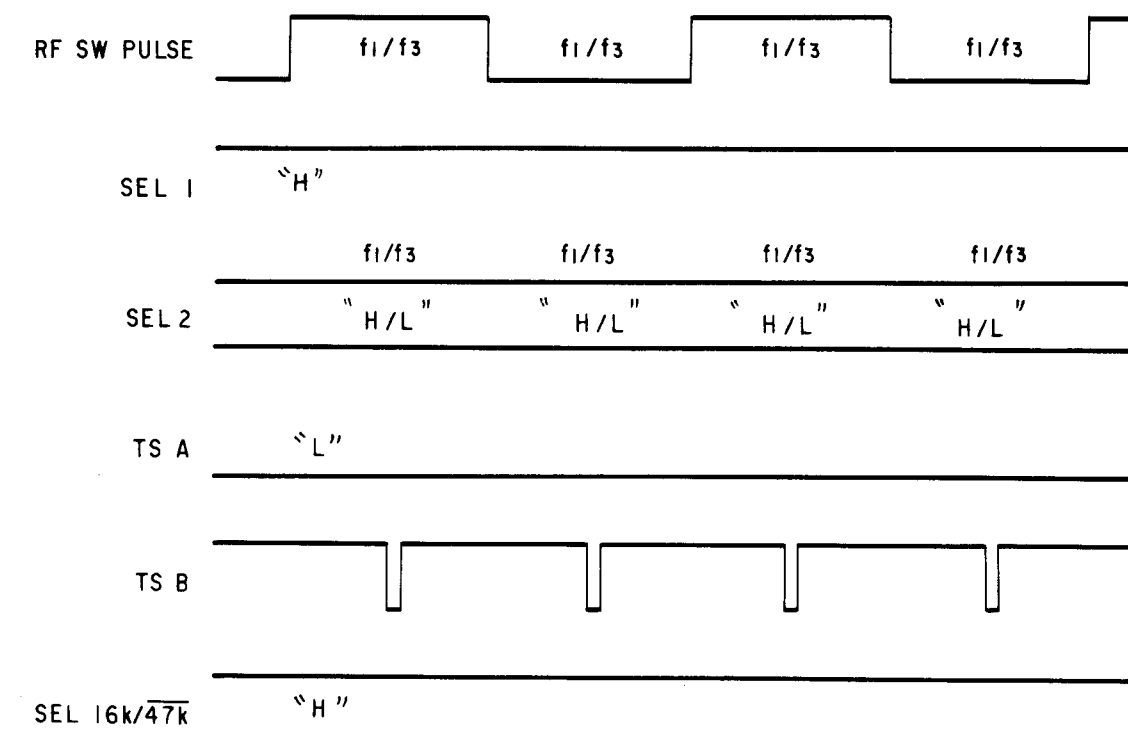
3-12. TIMING CHART 1 (REC)



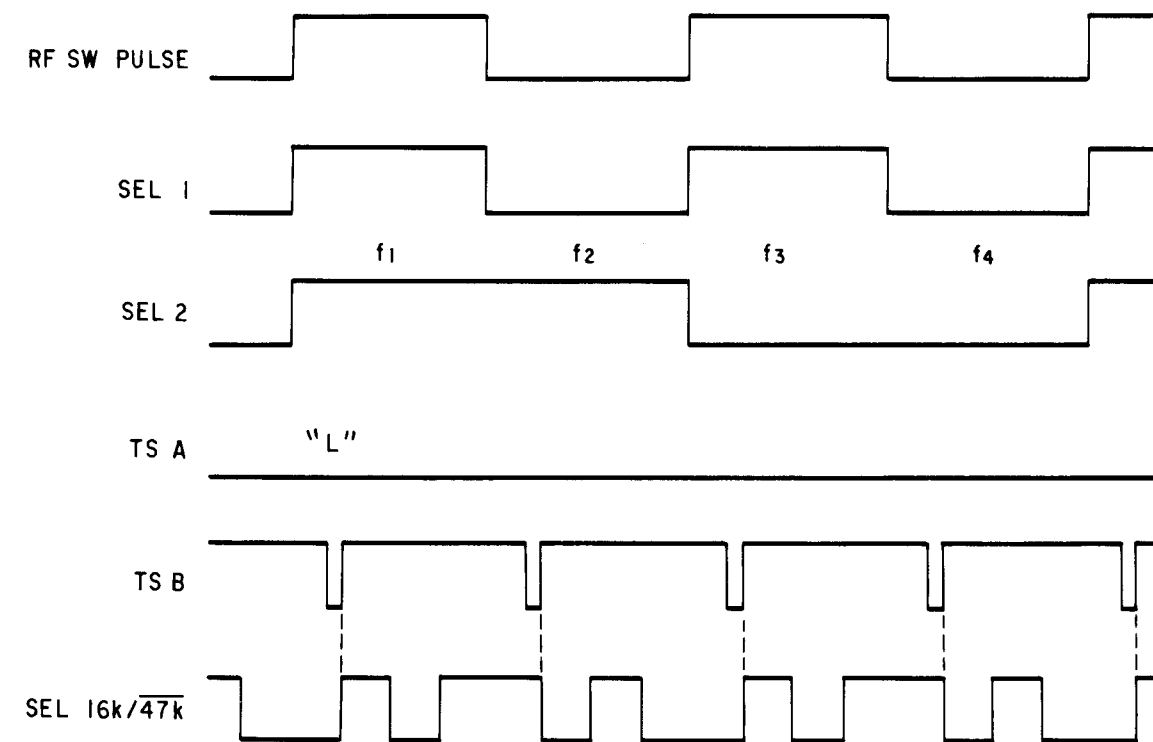
3-13. TIMING CHART 2 (PB)



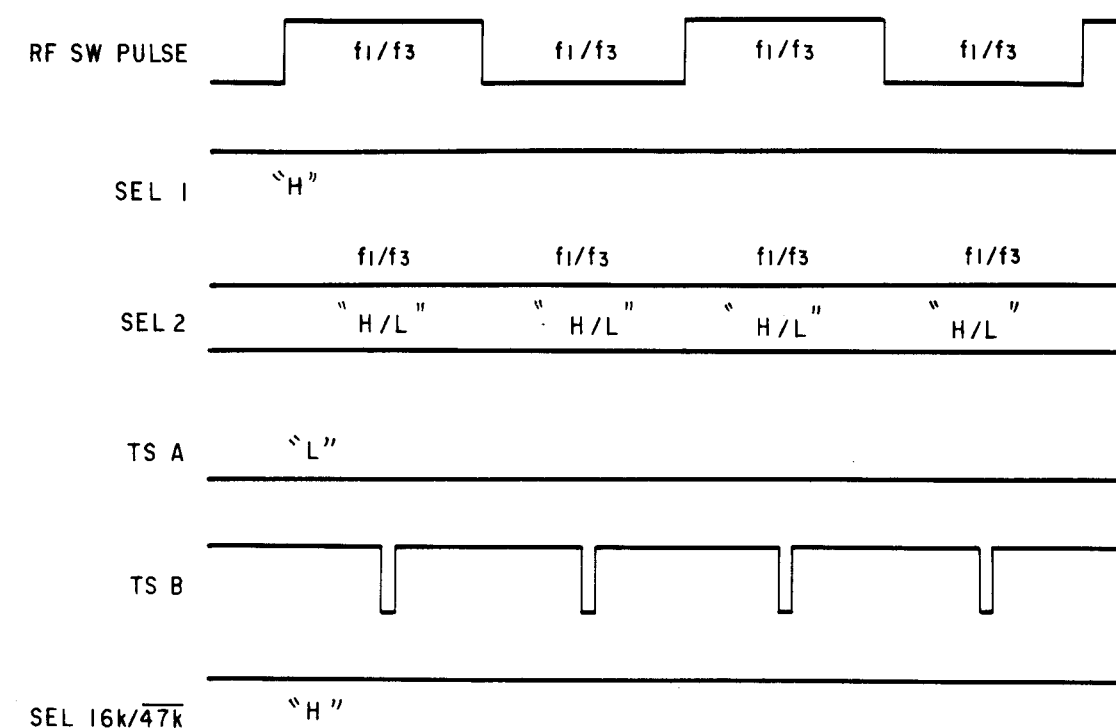
3-14. TIMING CHART 3 (PB-PAUSE)



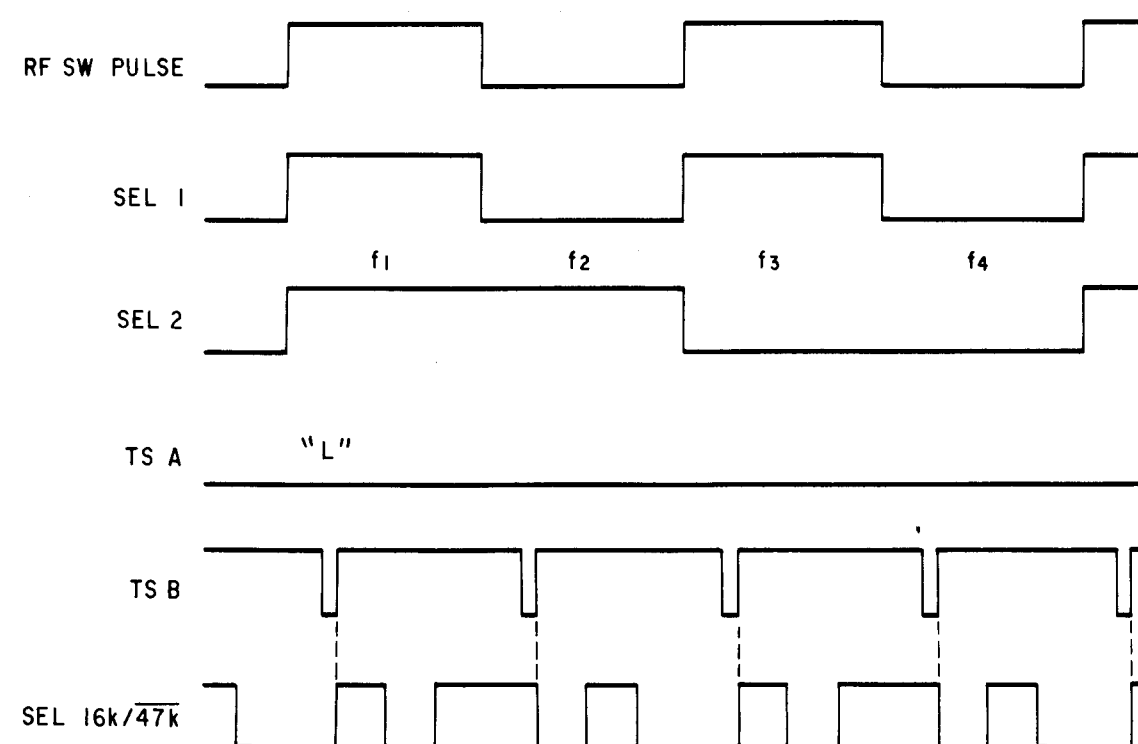
3-15. TIMING CHART 4 (CUE)



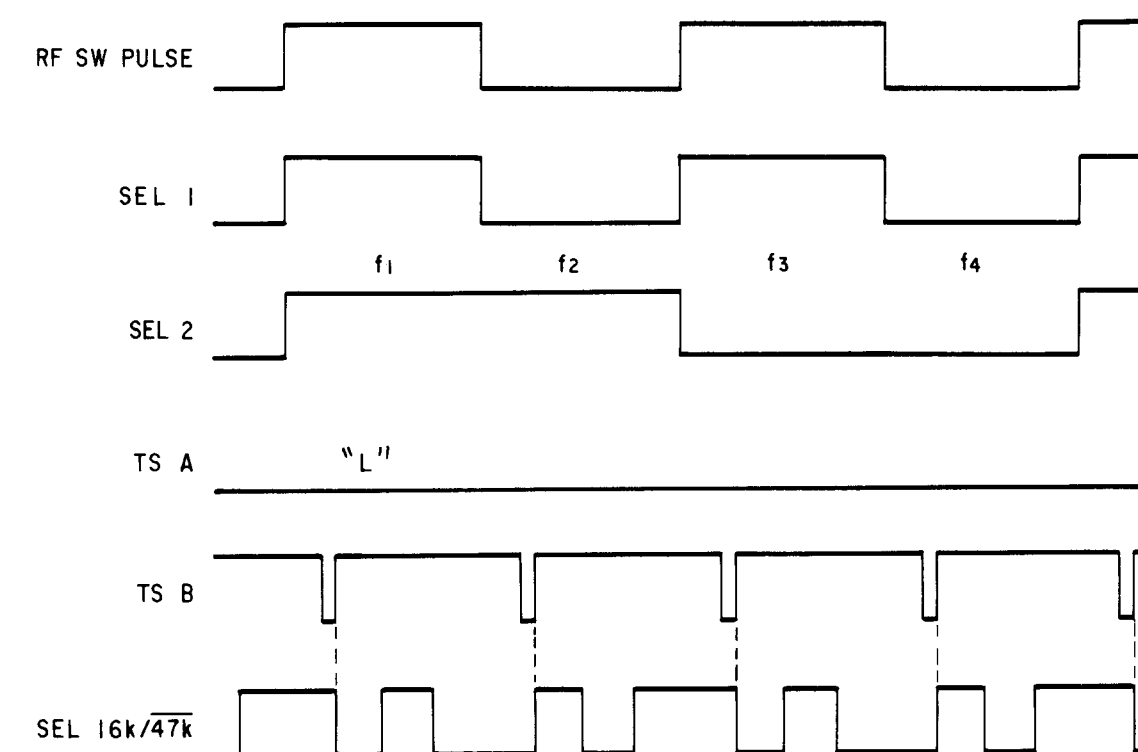
3-14. TIMING CHART 3 (PB·PAUSE)



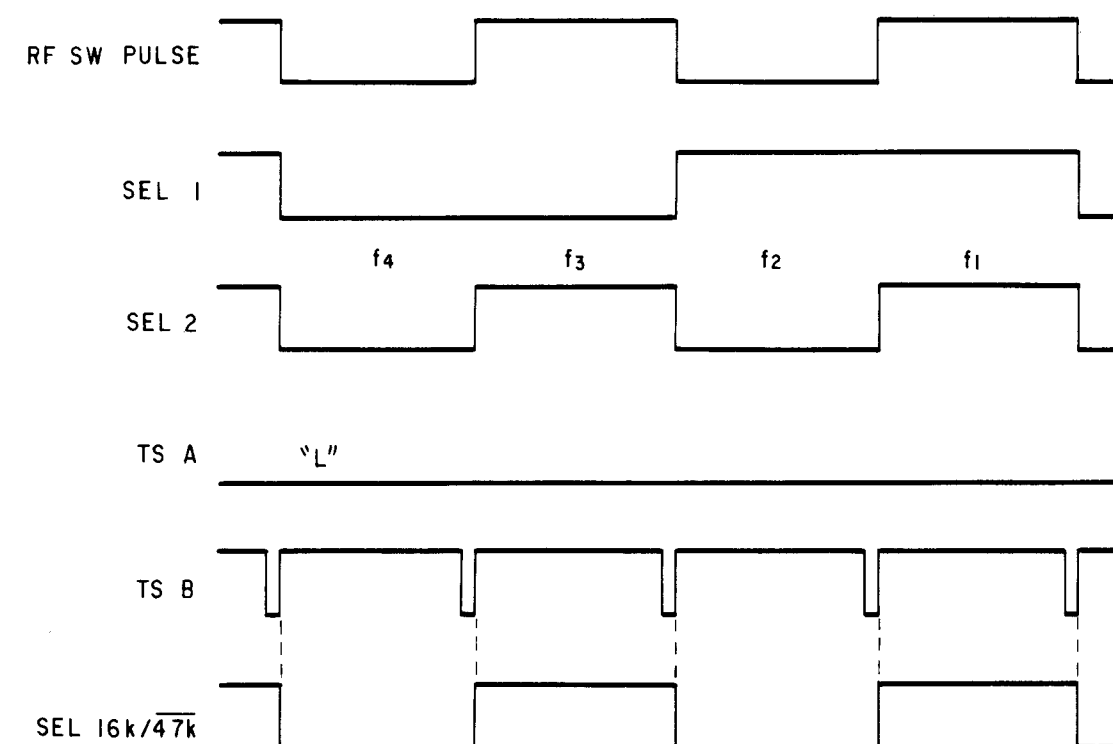
3-15. TIMING CHART 4 (CUE)



3-16. TIMING CHART 5 (REVIEW)



3-17. TIMING CHART 6 (REVERSE)



3-18. SYSTEM CONTROL – MECHANISM BLOCK INTERFACE

Signal name	I/O	REF.No., PIN No.	STOP	FF	REW	CUE	REV	PB	PB/ PAUSE	REC	REC/ PAUSE	RVS
MODE SW*1	I	SS-64 BOARD IC301 MATRIX IN	3	6	6	1	5	1	1	1	1	5
LOAD SW*2	I	SS-64 BOARD IC301 MATRIX IN	3	3	3	3	3	3	3	3	3	3
CASSETTE LOCK SW	I	SS-64 BOARD IC301 MATRIX IN	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
TAPE TOP	I	SS-64 BOARD IC301 MATRIX IN	NC	NC	H	H/NC	H	NC	NC	NC	H	H
TAPE END	I	SS-64 BOARD IC301 MATRIX IN	H/NC	H	NC	H	H	H	H	H	H	H
DEW (M)	I	SS-64 BOARD IC301 MATRIX IN	"L" when dew condensation is generated (IC304 ①)									
REEL TA	I	SS-64 BOARD C301 MATRIX IN										
REEL TB	I	SS-64 BOARD C301 MATRIX IN										
REEL S	I	SS-64 BOARD C301 MATRIX IN										
CM CONT (CW)	O	SS-64 BOARD IC301 ⑩	L	L	L	L	L	L	L	L	L	L
CM CONT (CCW)	O	SS-64 BOARD IC301 ⑪	L	L	L	L	L	L	L	L	L	L
LM CONT (CW)	O	SS-64 BOARD IC301 ⑧	L	L	L	L	L	L	L	L	L	L
LM CONT (CCW)	O	SS-64 BOARD IC301 ⑨	L	L	L	L	L	L	L	L	L	L
BRAKE START	O	SS-64 BOARD IC301 ⑳	H	H	H	H	H	H	H	H	H	H
BRAKE HOLD	O	SS-64 BOARD IC301 ㉑	H	L	L	H	L	H	H	H	H	L
TAPE LED	O	SS-64 BOARD IC301 ㉒	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3
REEL LED	O	SS-64 BOARD IC301 ⑲	A pulse of approximately 1kHz									

*1 See "Mode switch pattern"
*2 See "Loading switch pattern"
*3 H/L pulse

3-19. MODE SWITCH PATTERN

Rotating direction of mode switch
(↺) CW ← → CCW (↻)

Switch position (mode)		EJECT		LOAD		FF/ REW		STOP		FWD		RVS	
Switch pattern	7	4	7	2	7	6	7	3	7	1	7	5	7
MODE SW A	×	○	×	○	×	○	×	×	×	×	×	×	×
MODE SW B	×	○	×	×	×	×	×	×	×	○	×	○	×
MODE SW C	×	×	×	○	×	×	×	○	×	○	×	×	×

○ ... Short-circuit
× ... Open

3-20. LOADING SWITCH PATTERN

Rotating direction of loading switch
(↻)CCW ← → CW (↺)

Switch position (mode)	LOADING TOP		UNLOAD WAIT		DRUM START		T REEL START		LOADING END
Switch pattern	1	7	5	7	4	7	6	7	3
LOAD SW A	×	×	×	×	○	×	○	×	×
LOAD SW B	○	×	○	×	○	×	×	×	×
LOAD SW C	○	×	×	×	×	×	×	×	○

○ ... Short-circuit
× ... Open

3-21. CAMERA SYSTEM CONTROL CPU (IC601 on FC-10 Board)
– PERIPHERAL CIRCUITS INTERFACE

Signal name	I/O	Pin No.	Input/Output level
WR	O	2	"H" when the colour setting of wiper is at white, red, violet or yellow.
RESET	I	3	Normally "L". "H" pulse is input when the lithium battery is mounted or when the power supply turns ON without the lithium battery.
CL1	I	5	System clock oscillation pin (It oscillates continuously during the period the S/S 5V is at ON. Oscillation frequency: Approx. 330kHz) It oscillates approx. 70kHz intermittently every 0.5sec. during the lithium battery is in operation.
CL2	O	9	
DDS CS	I	10	Communication request signal ("H" pulse of V cycle) from mode control CPU (IC302 on SS-64 board)

3-19. MODE SWITCH PATTERN

Rotating direction of mode switch
(↺) CW ← → CCW (↻)

Switch position (mode)		EJECT		LOAD		FF/REW		STOP		FWD		RVS	
Switch pattern	7	4	7	2	7	6	7	3	7	1	7	5	7
MODE SW A	×	○	×	○	×	○	×	×	×	×	×	×	×
MODE SW B	×	○	×	×	×	×	×	×	×	○	×	○	×
MODE SW C	×	×	×	○	×	×	×	○	×	○	×	×	×

○ ... Short-circuit
× ... Open

3-20. LOADING SWITCH PATTERN

Rotating direction of loading switch
(↻) CCW ← → CW (↺)

Switch position (mode)	LOADING TOP		UNLOAD WAIT		DRUM START		T REEL START		LOADING END
Switch pattern	1	7	5	7	4	7	6	7	3
LOAD SW A	×	×	×	×	○	×	○	×	×
LOAD SW B	○	×	○	×	○	×	×	×	×
LOAD SW C	○	×	×	×	×	×	×	×	○

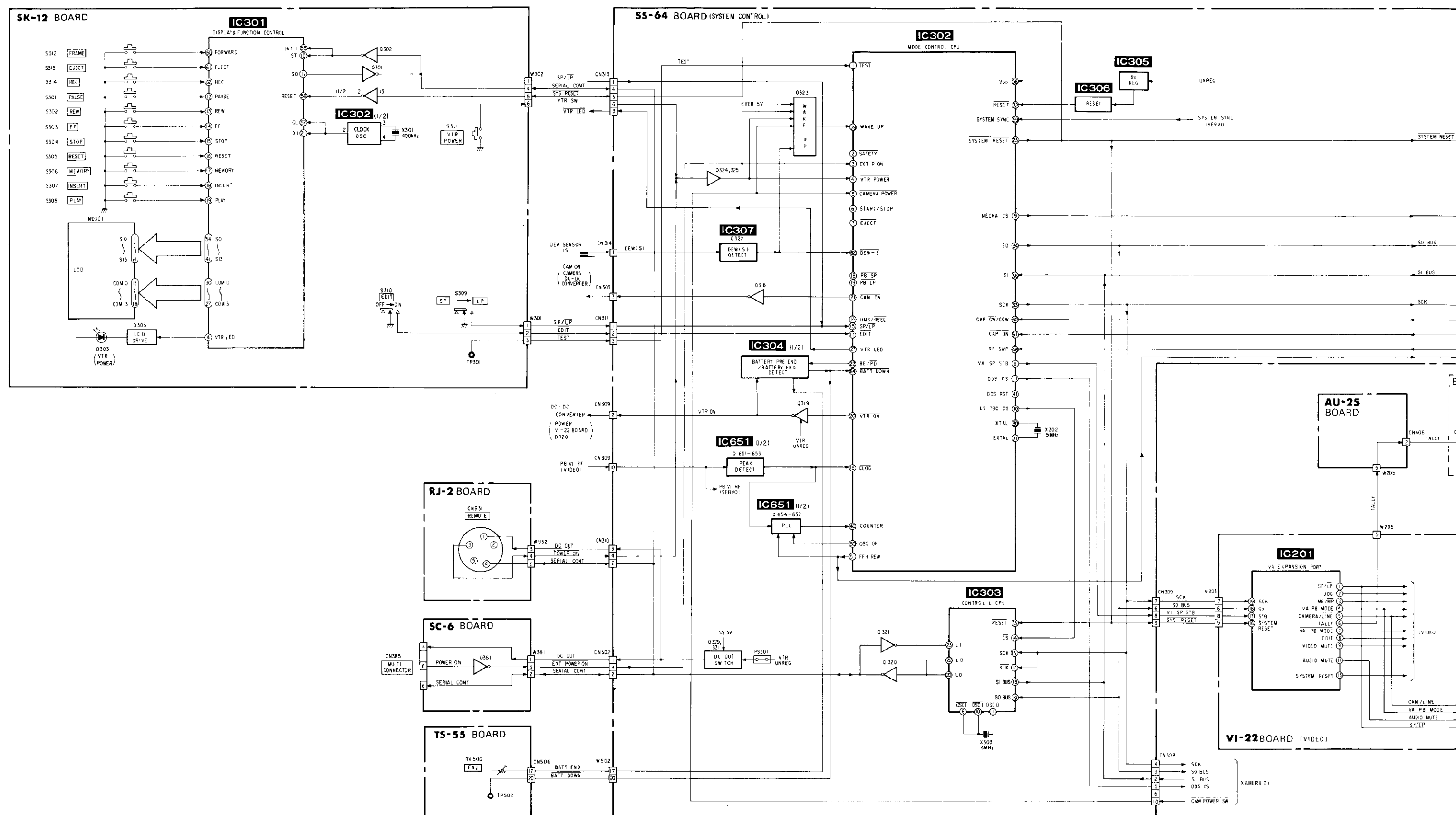
○ ... Short-circuit
× ... Open

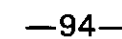
3-21. CAMERA SYSTEM CONTROL CPU (IC601 on FC-10 Board)
- PERIPHERAL CIRCUITS INTERFACE

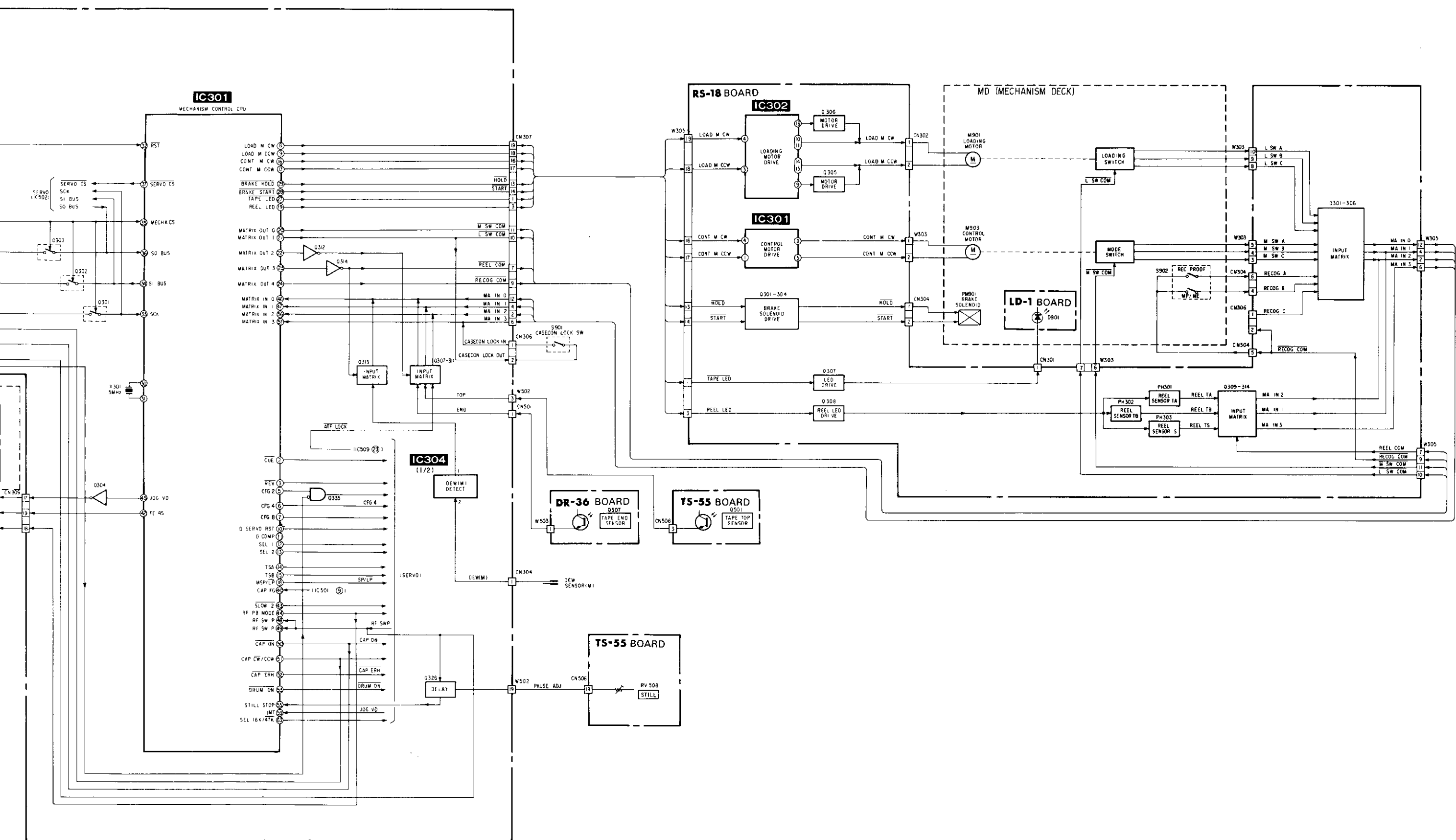
Signal name	I/O	Pin No.	Input/Output level
WR	O	2	"H" when the colour setting of wiper is at white, red, violet or yellow.
RESET	I	3	Normally "L". "H" pulse is input when the lithium battery is mounted or when the power supply turns ON without the lithium battery.
CL1	I	5	System clock oscillation pin (It oscillates continuously during the period the S/S 5V is at ON. Oscillation frequency: Approx. 330kHz) It oscillates approx. 70kHz intermittently every 0.5sec. during the lithium battery is in operation.
CL2	O	9	
DDS CS	I	10	Communication request signal ("H" pulse of V cycle) from mode control CPU (IC302 on SS-64 board)

Signal name	I/O	Pin No.	Input/Output level
POWER DOWN	I	11	"L" when the power supply (S/S 5V) of VTR section is at ON.
SCK	I/O	12	Communication serial data transfer clock input/output ("L" pulse train of V cycle) with mode control CPU and character generator (IC675/676 on CG-1 board)
SO	O	15	Serial data output ("H" pulse train of V cycle) to mode control CPU and character generator
SI	I	16	Serial data input ("H" pulse train of V cycle) from mode control CPU
LI DWN	I	17	Detection input of lithium battery down. "H" when battery is down.
CAM DWN	I	18	"H" when the power supply (F 5V) of camera section is at ON.
TEST	I	19	Pull-up to "H" level. TEST mode when at "L".
BUS ON	O	20	Communication selection signal of mode control CPU and character generator ("H" level during communication with mode control CPU. Communication cycle is V cycle.)
STB1	O	21	Strobe signal for EVF character generator (IC676 on CG-1 board) ("H" pulse output of 4V cycle)
STB2	O	22	Strobe signal for video output character generator (IC675 on CG-1 board) ("H" pulse output of 4V cycle)
ZOOM TELE	O	23	"H" when the zoom ring is turned to TELE side.
ZOOM WIDE	O	24	"H" when the zoom ring is turned to WIDE side.
INT REC LED	O	25	"L" during INTERVAL REC mode.
FD/WIPER	O	26	Selection output of fader mode and wiper mode ("H" during fader mode)
MD4	O	28	Key matrix scanning output ("L" pulse of 4V cycles)
MD5	O	30	Key matrix scanning output ("H" pulse of 4V cycles)
X1	I	32	Timer clock oscillating pin (Oscillates regularly when the lithium battery is mounted. Oscillating frequency is approx. 32.8kHz.)
X2	O	34	
MD0	O	36	Key matrix scanning output ("L" pulse of 4V cycles)
MD1	O	37	
MD2	O	38	
MD3	O	39	
MI0	I	41	Key matrix scanning input
MI1	I	42	
MI2	I	43	
MI3	I	44	
FD0	O	46	Normally "L" level. "H" pulse output during operating of fader or wiper.
FD1	O	47	
FD2	O	48	
FD3	O	49	
FD4	O	50	
WB	O	51	"H" when the colour setting of wiper is at white, blue, cyan or violet.
WG	O	52	"H" when the colour setting of wiper is at white, green, cyan or yellow.

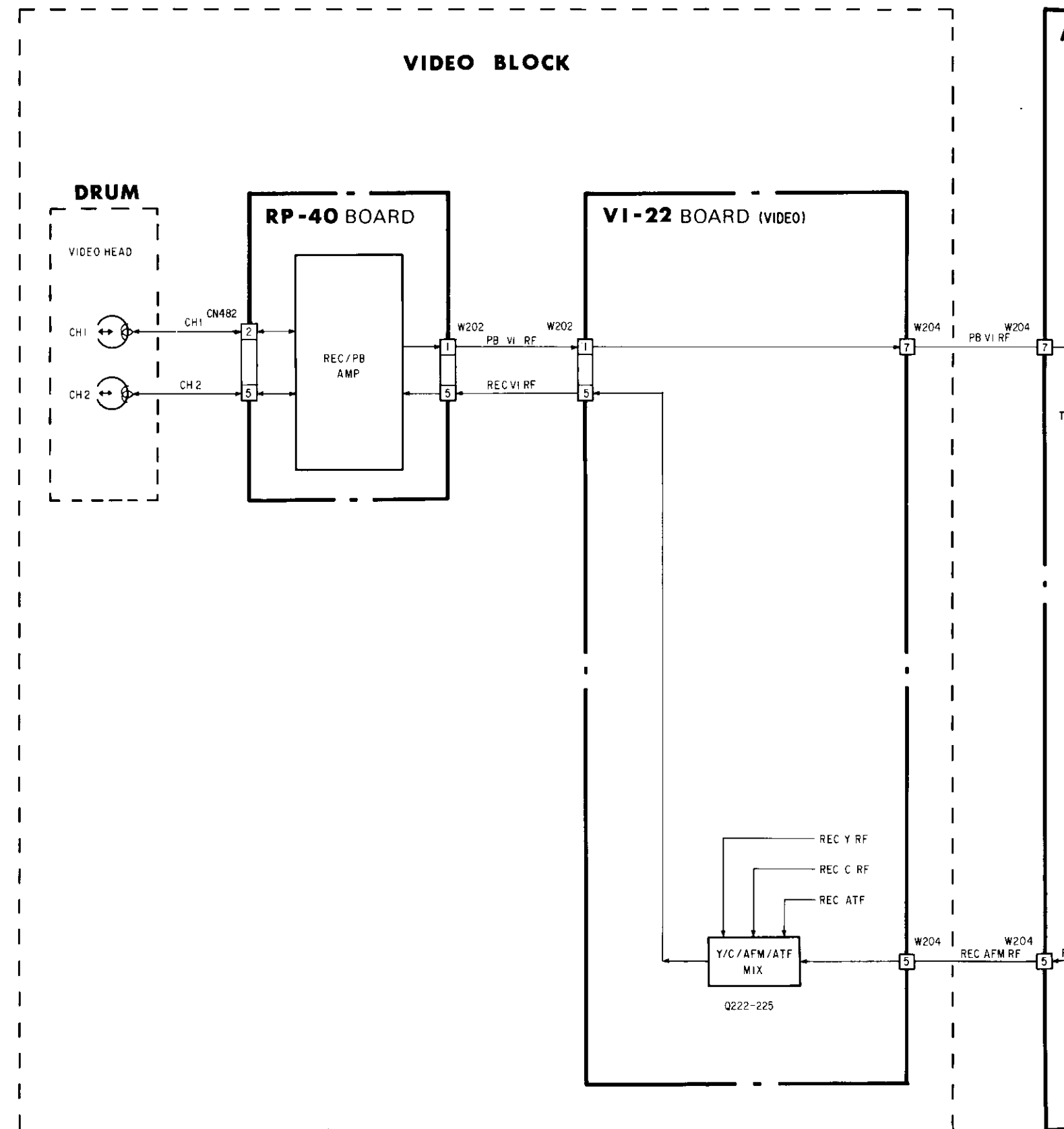
3-22. SYSTEM CONTROL BLOCK DIAGRAM





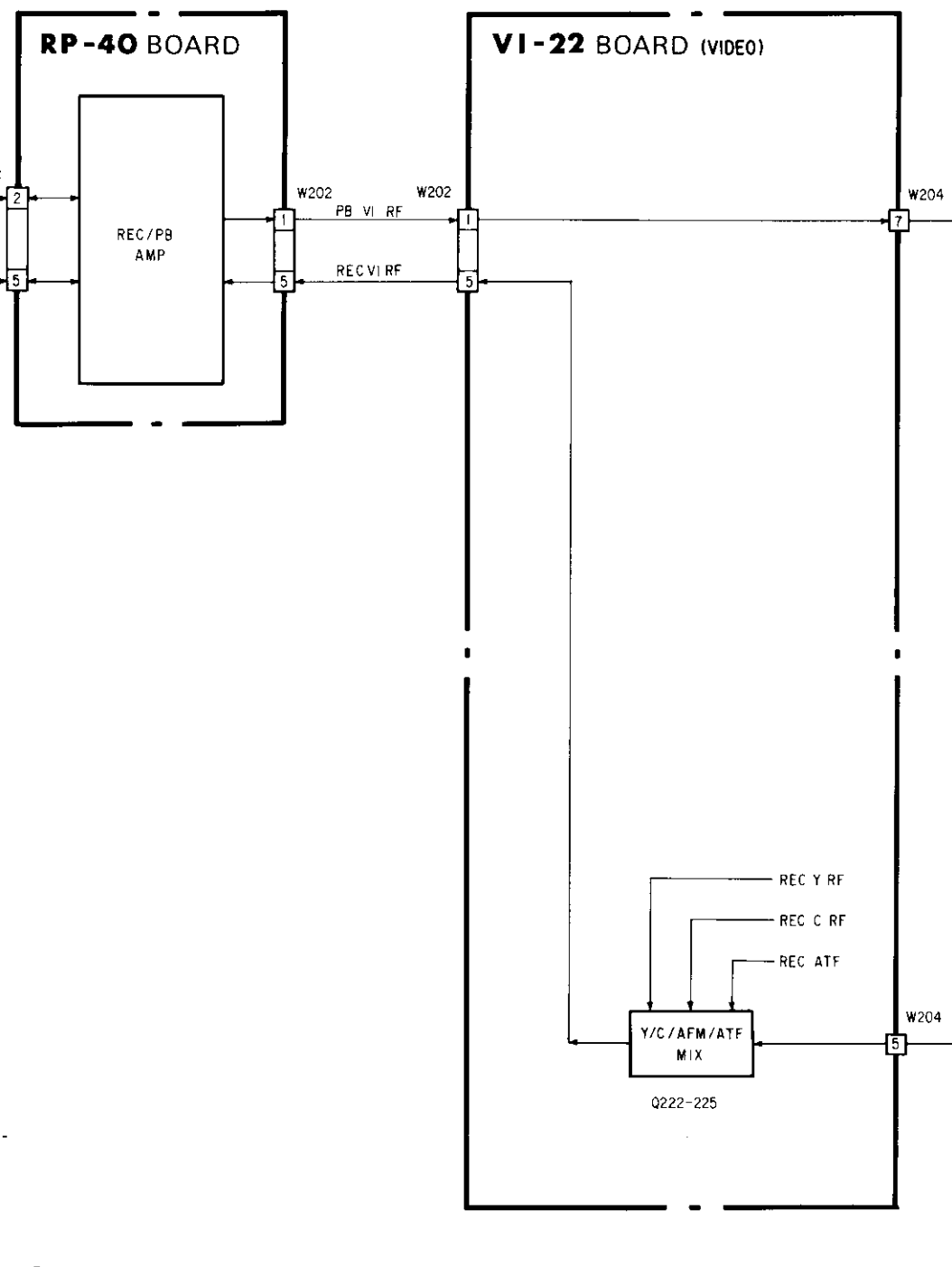


3-23. AUDIO BLOCK DIAGRAM

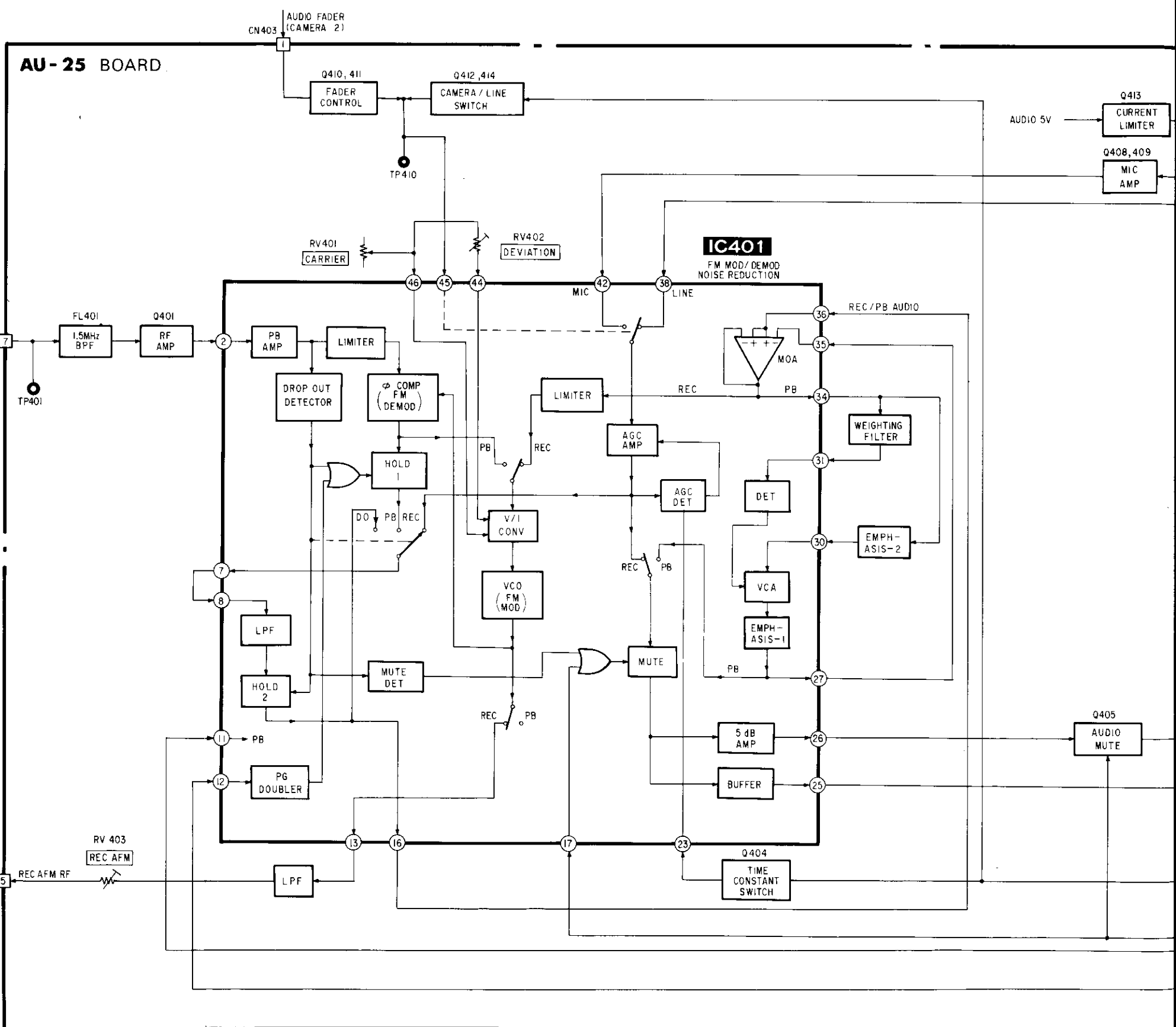


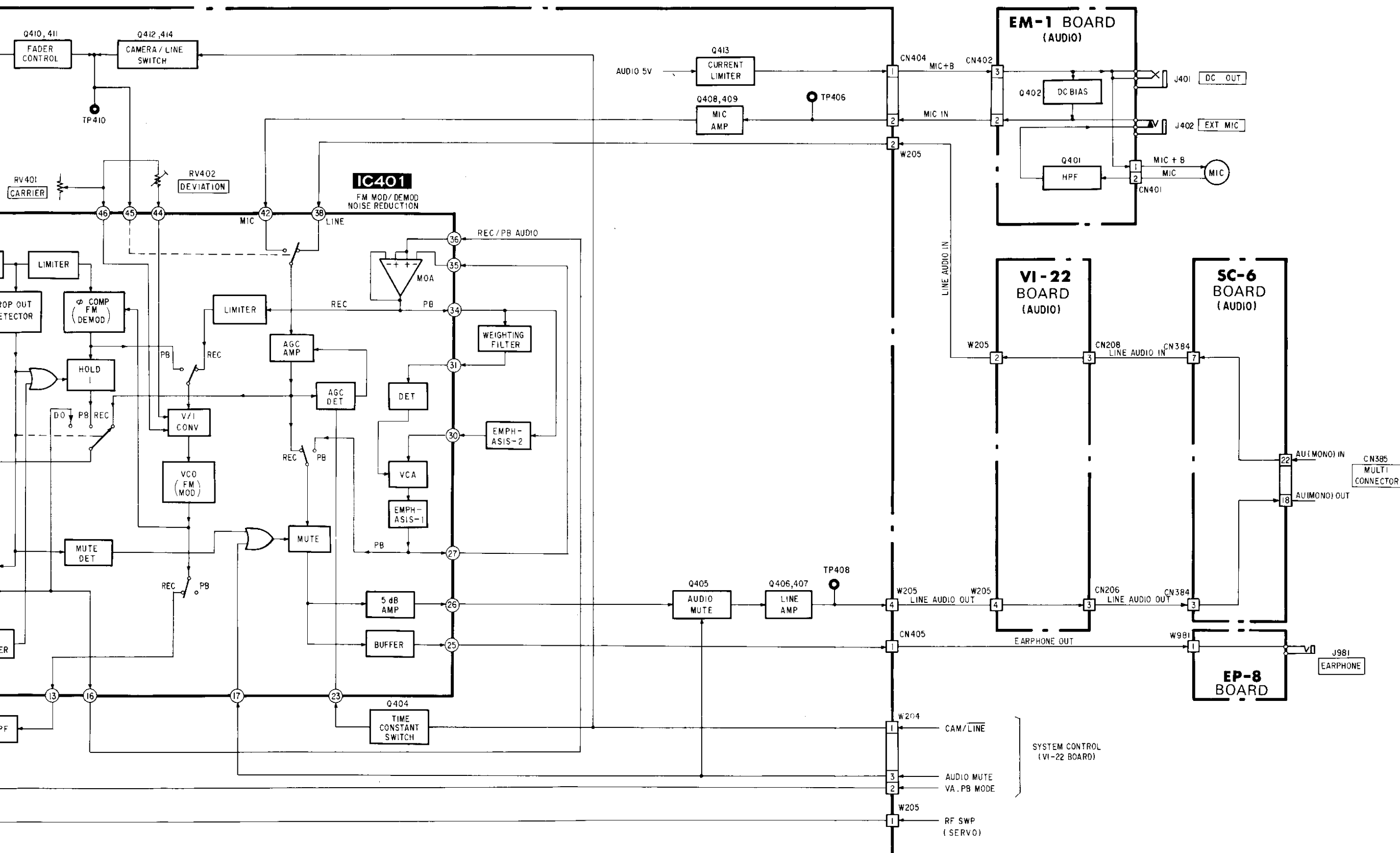
96

VIDEO BLOCK

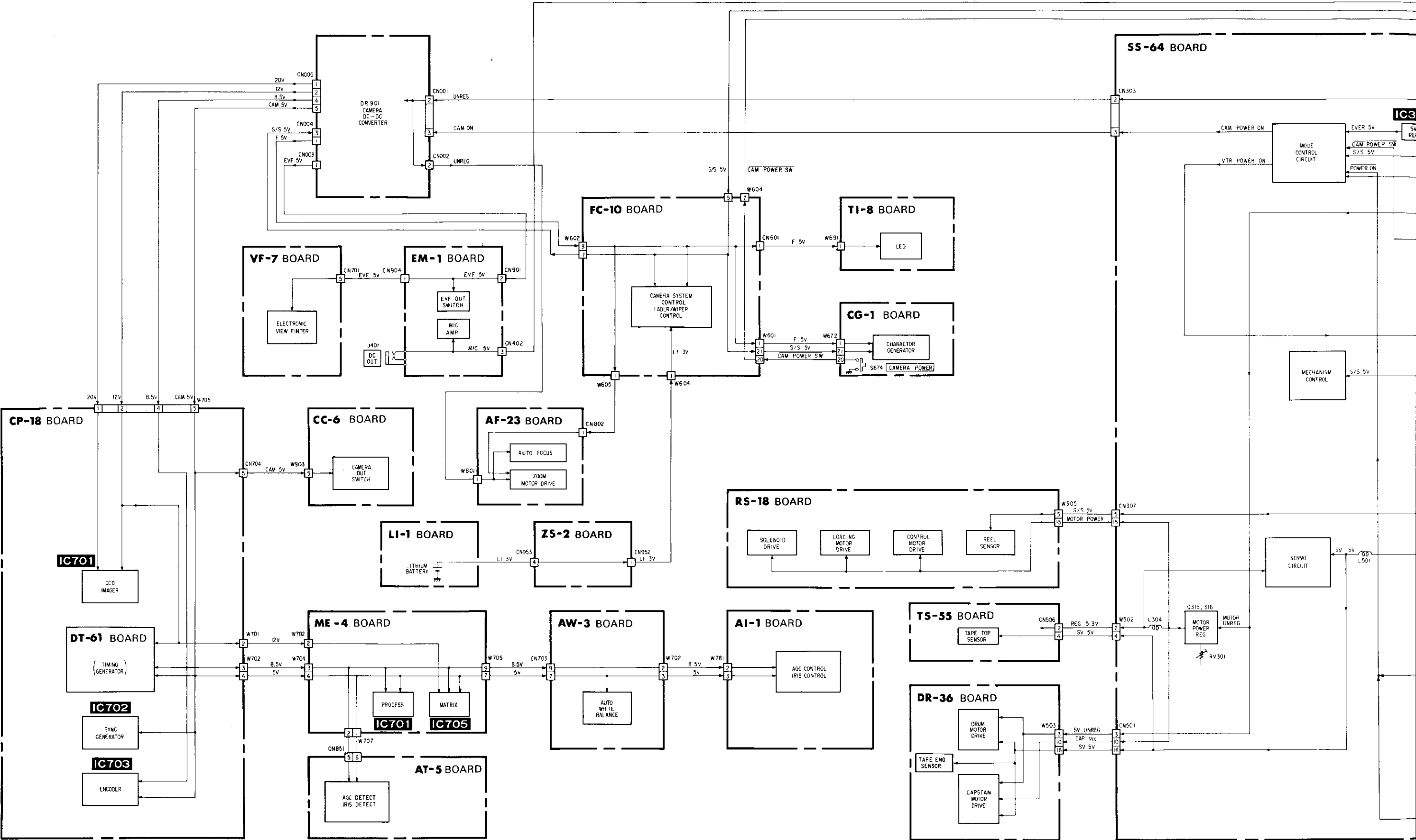


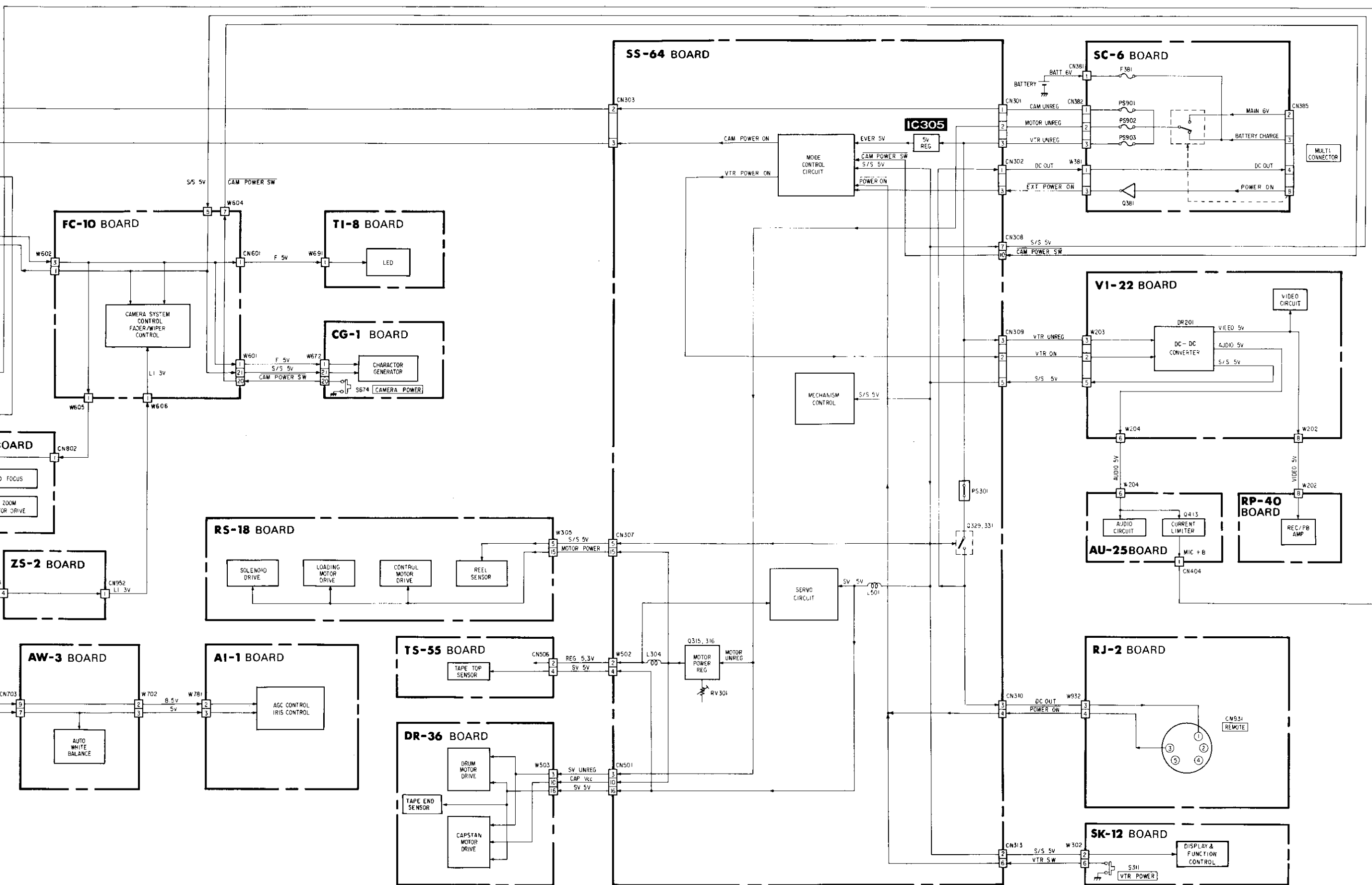
AU-25 BOARD



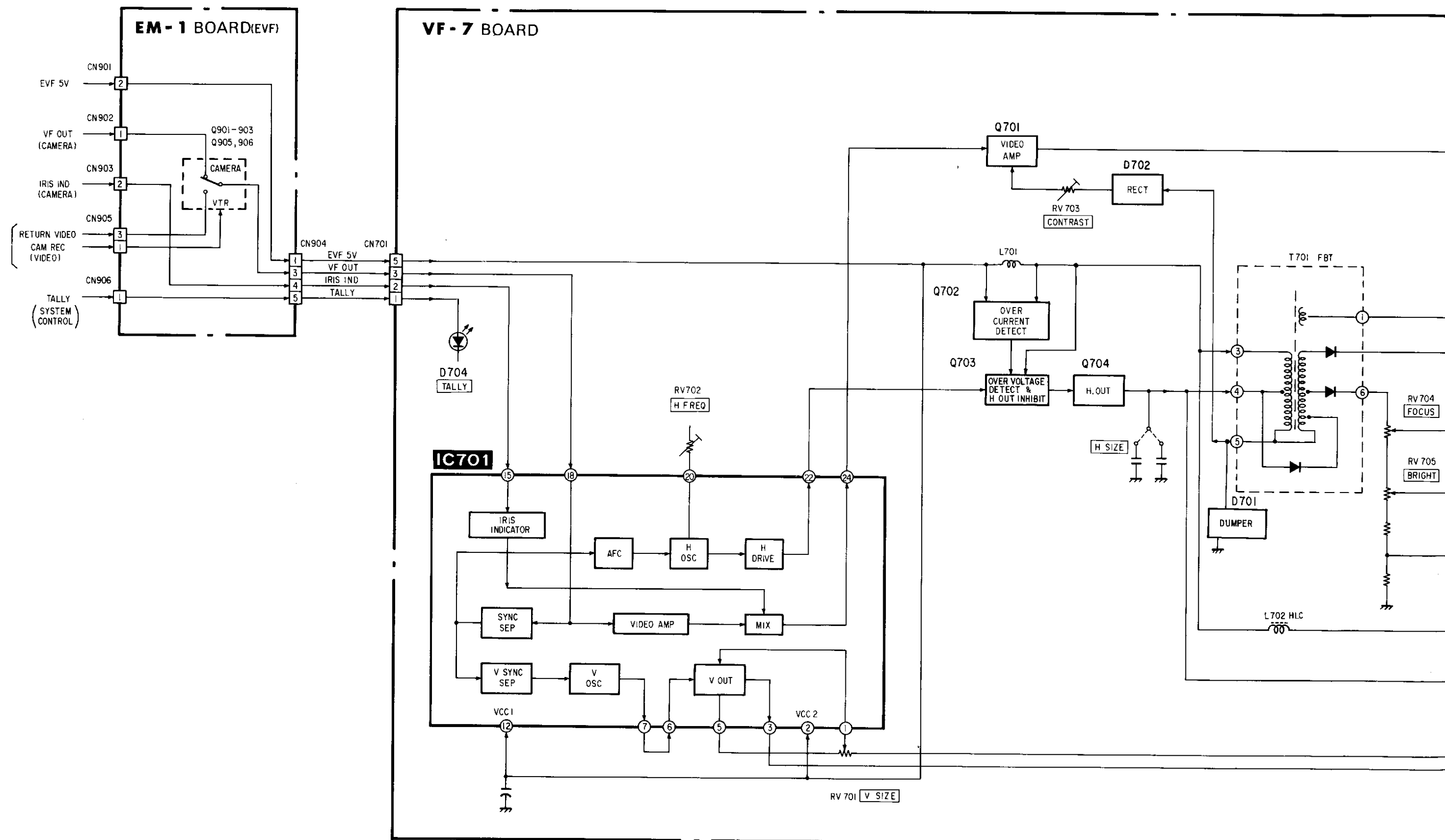


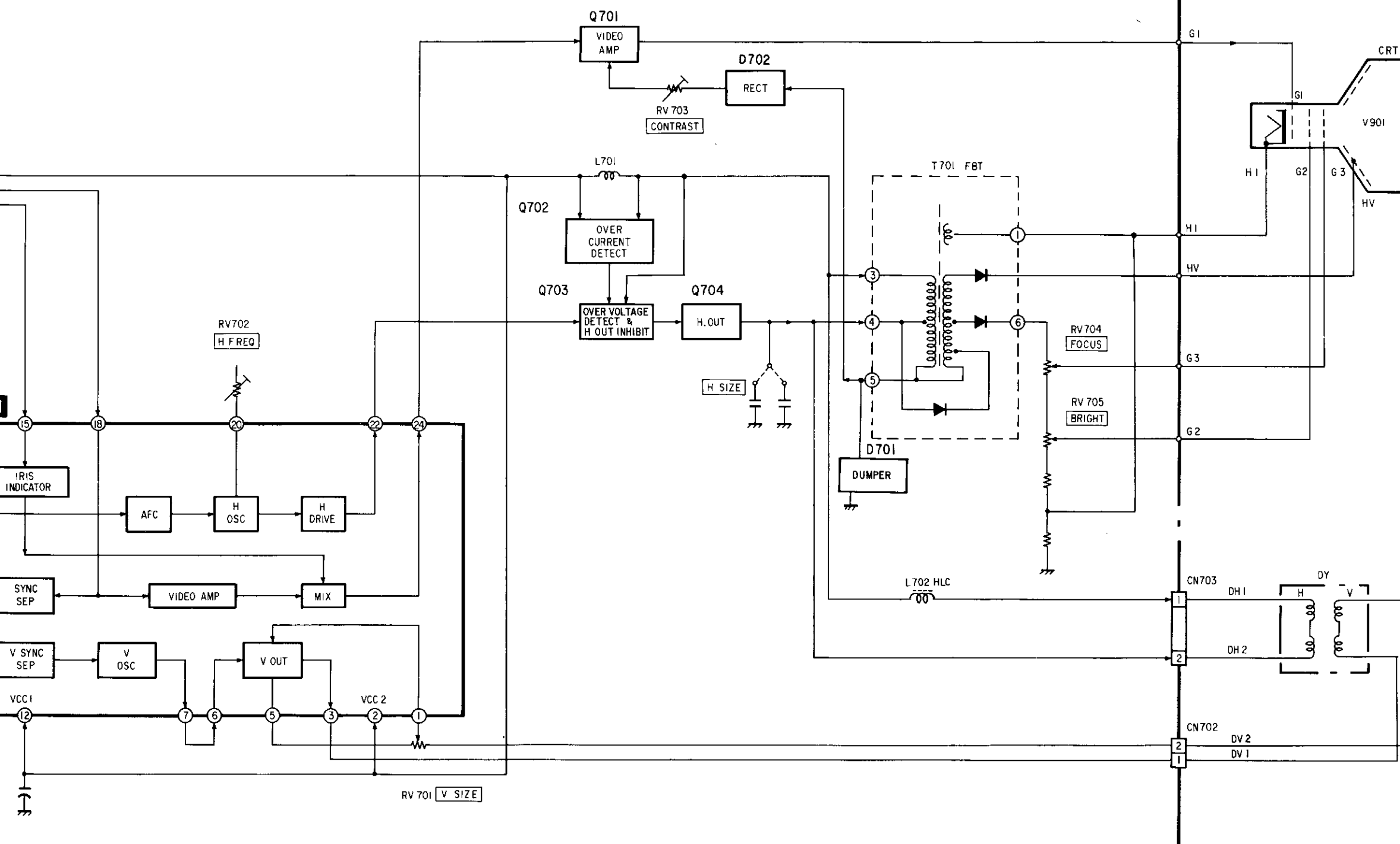
3-24. POWER BLOCK DIAGRAM





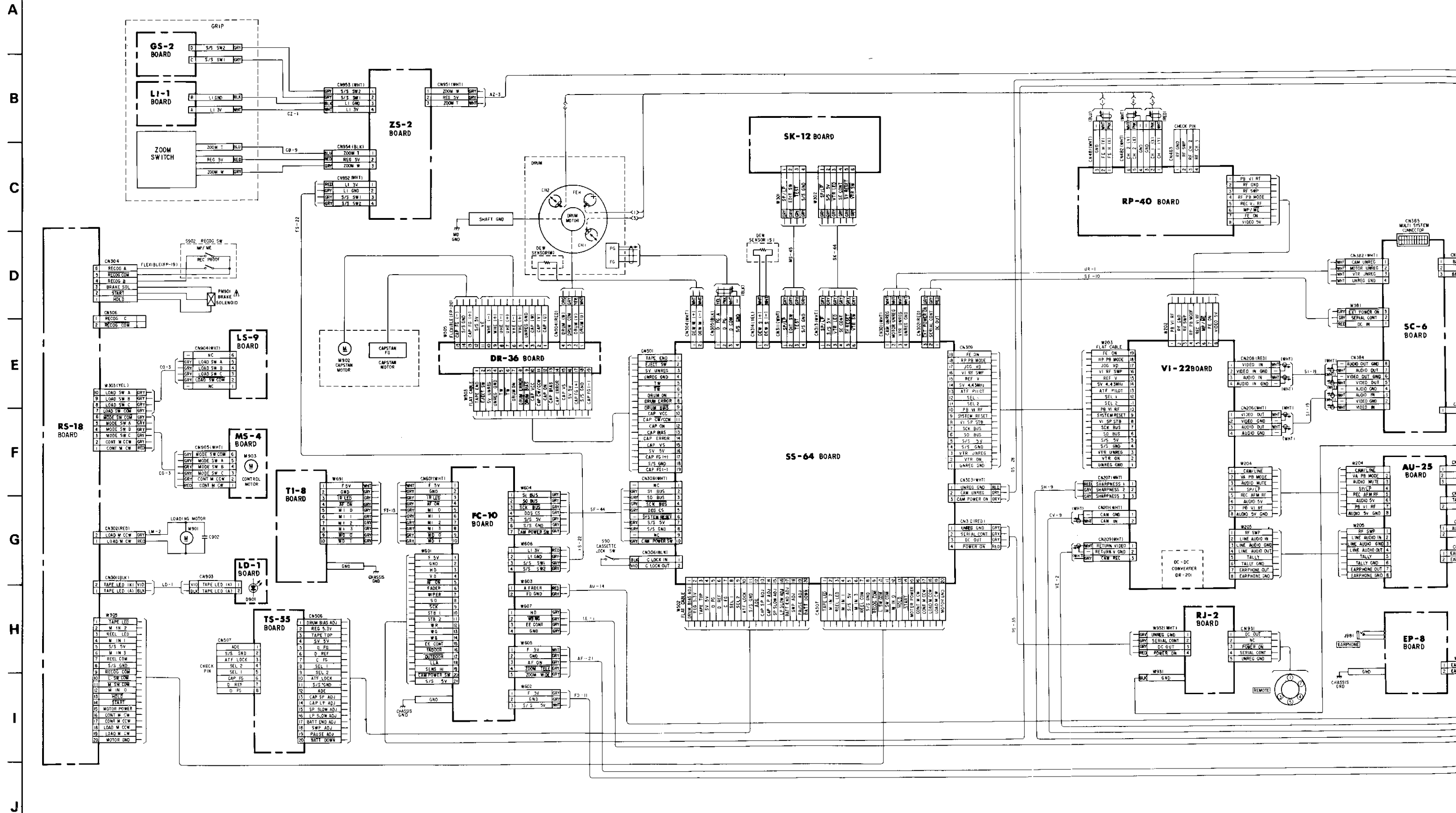
3-25. ELECTRONIC VIEW FINDER BLOCK DIAGRAM

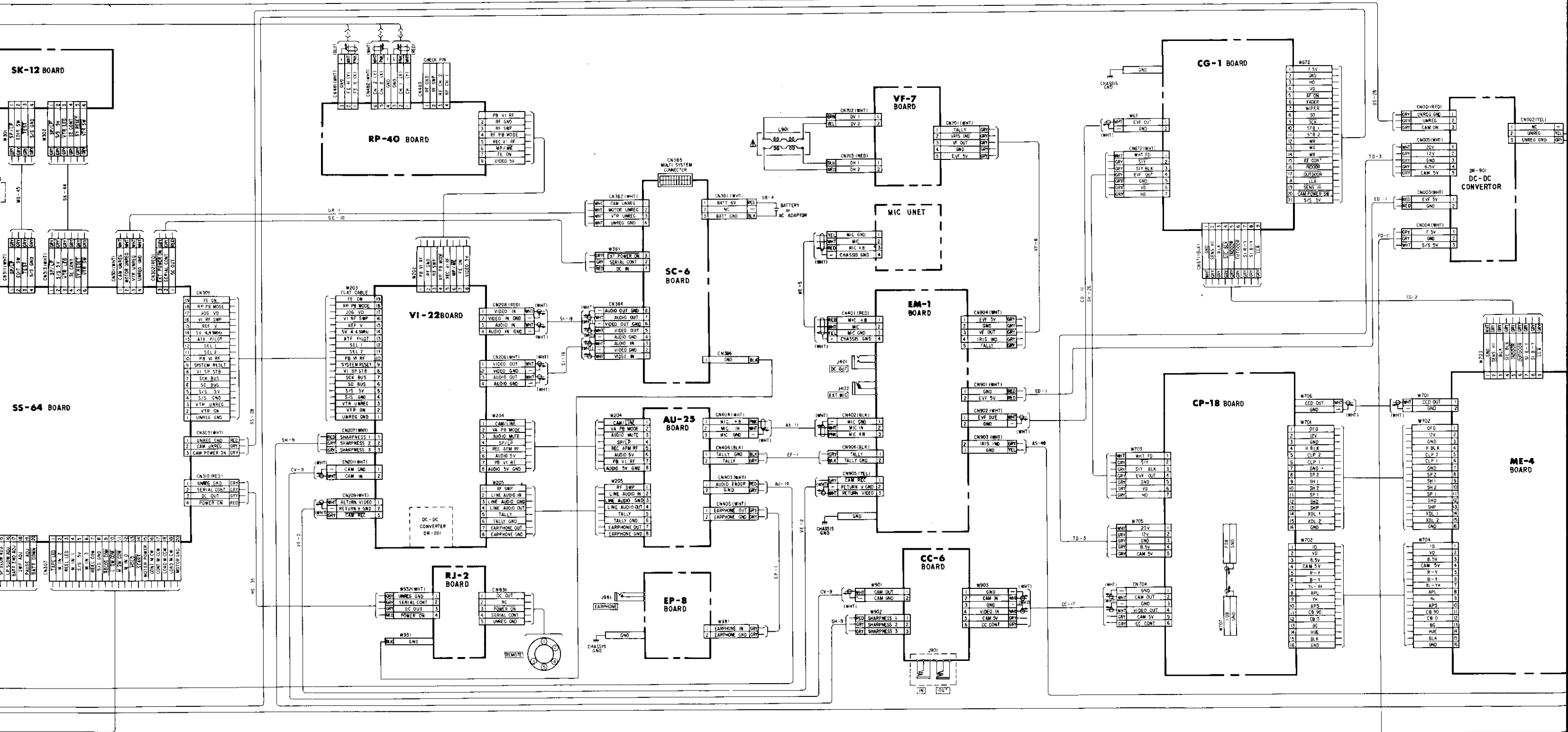




PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



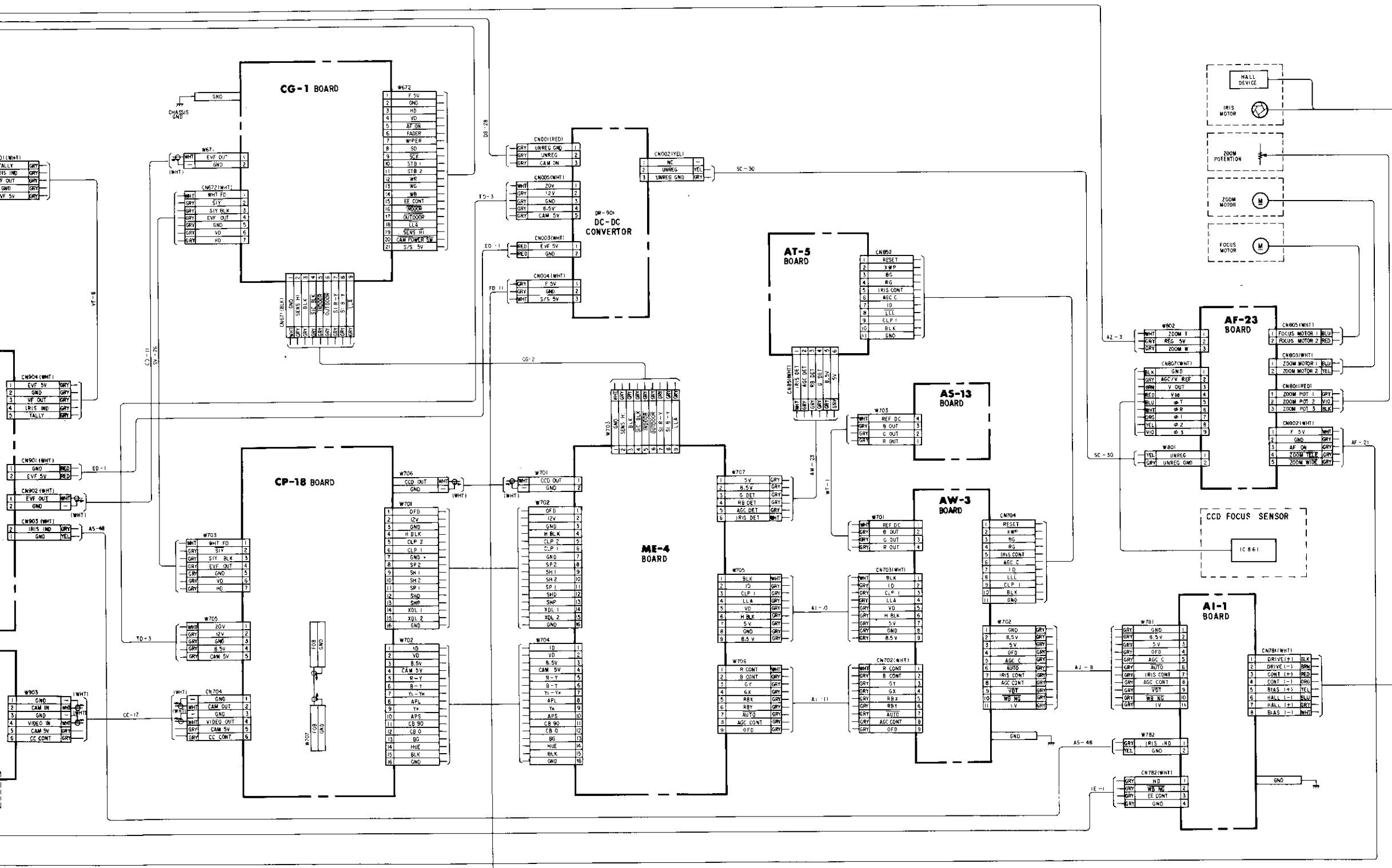


20 21 22 23 24 25 26 27 28 29 30 31 32

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

Note on replacing CCD imager block

- With a pair of IC701 (CCD imager) on the CP-18 complete board and IC002 (Corrector ROM) on the DT-61 complete board, it is used as a repair part of the CCD imager block.
- Since corrector ROM IC is manufactured to match the CCD imager, replacement of a single unit of the CCD imager or corrector ROM cannot be made.
- The IC701 is not mounted on the already mounted CP-18 board which has been supplied as a repair part and IC002 is not mounted on the already mounted DT-61 board for the same reason.
- When the respective boards are replaced, remove the respective ICs from the old boards and install them to the new ones respectively.
- After the CCD imager block has been replaced, perform the entire adjustments of the camera section.
- CCD imager is structurally capable being broken down by static electricity. For this reason, take care to handle it as well as MOS IC. Moreover, care should be taken for dust not to be stuck on the light reseiving section and for strong light not to get into it.



4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note (Printed Wiring Board):

- ⊗ : mark is through hole.
- : lead wire attached to the component side.
- : lead wire attached to the soldering side.
- ▨ : pattern from the side which enables seeing.
- ▩ : pattern of the rear side.
- ⊕ : B+ Pattern.
- Digital transistor (CP-18: Q711, 712) transistor with resistors. Refer to the CP-18 board schematic diagram for digital transistor

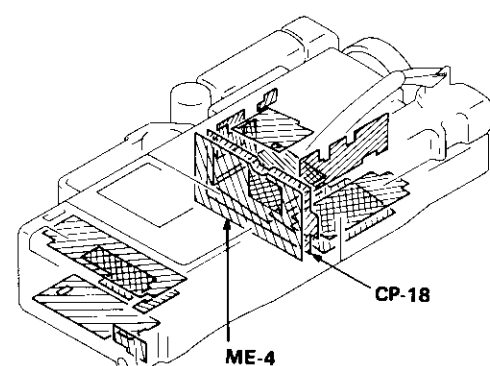
Note

Soldering side: Parts on the soldering side being seen from the soldering are stated.

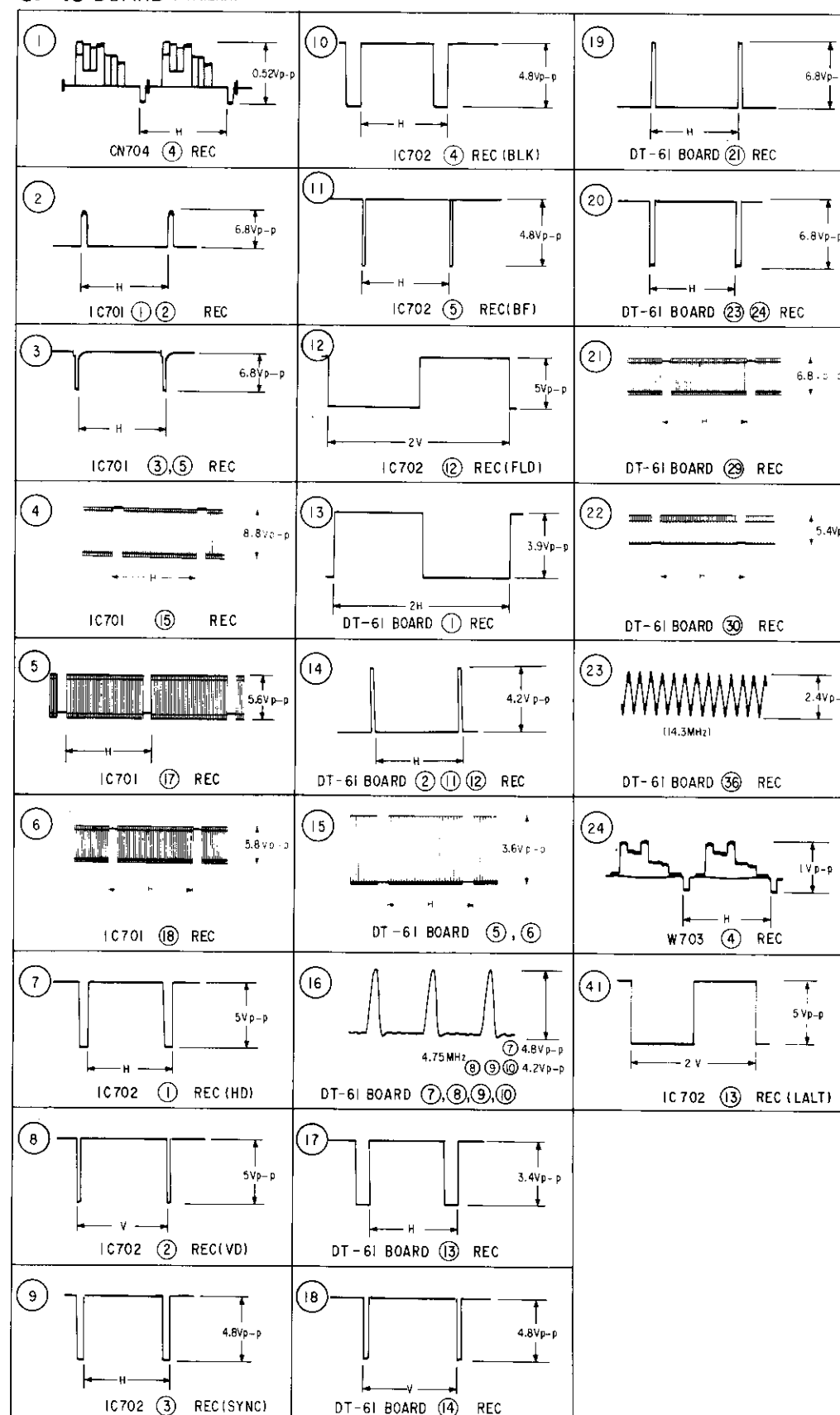
Component side: Parts on the component side being seen from the component are stated.

Regarding color indication of patterns

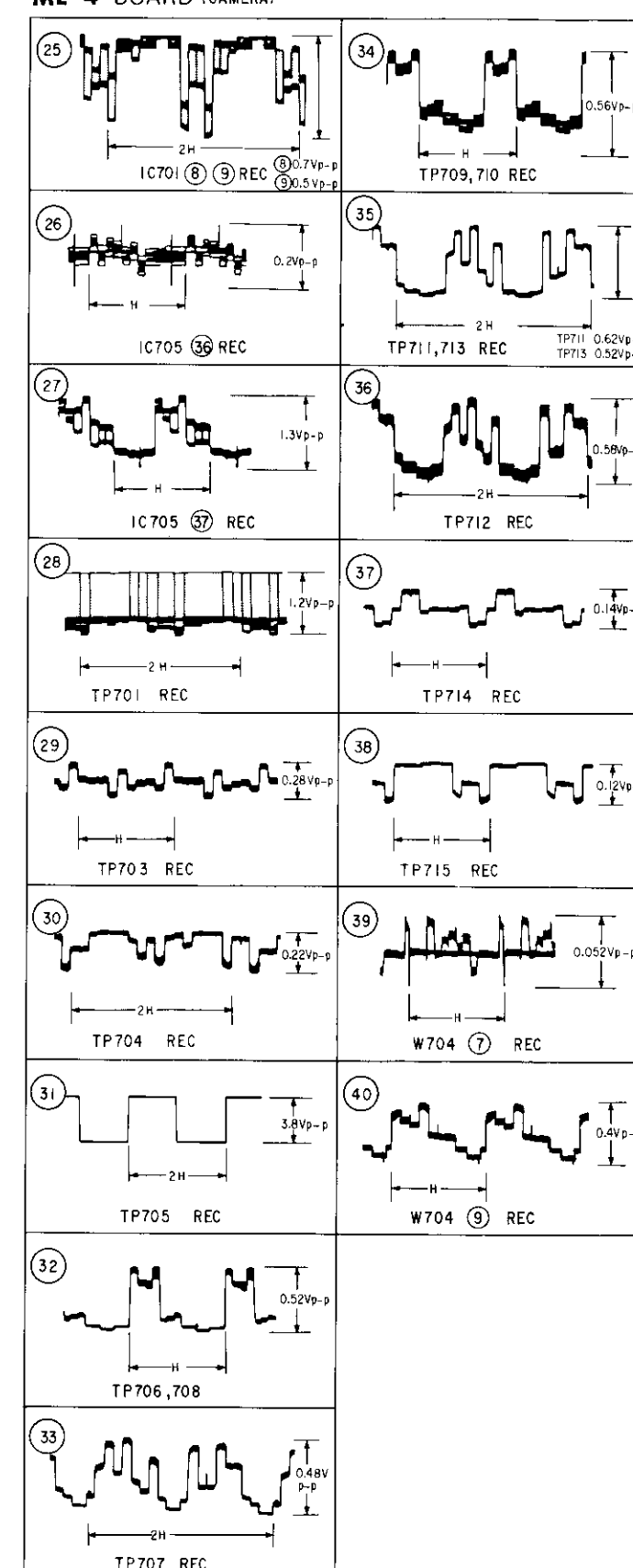
- Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- Pattern being seen in the state of the rear surface side is indicated in green pattern.



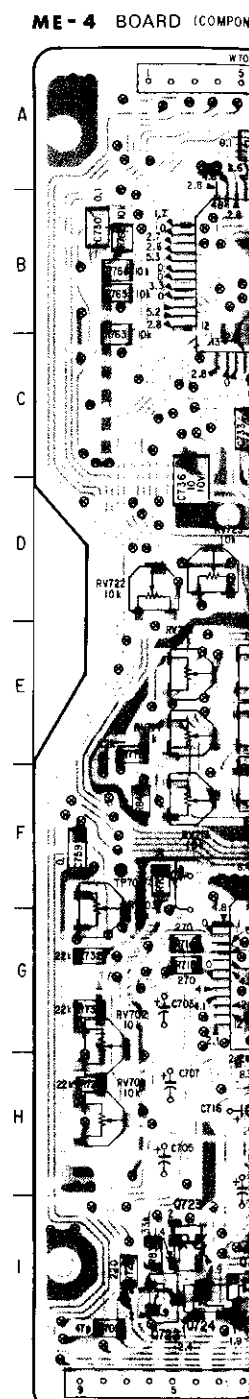
CP-18 BOARD (CAMERA)



ME-4 BOARD (CAMERA)



D701	F-8
D702	H-5
D703	H-8
D704	E-10
D705	A-10
D706	E-10
IC701	G-3
IC702	I-7
IC703	G-4
IC704	C-9
IC705	B-2
Q701	G-10
Q702	H-10
Q703	H-10
Q704	I-9
Q705	I-9
Q706	I-9
Q707	F-7
Q708	C-11
Q709	B-11
Q710	C-11
Q711	B-11
Q712	B-4
Q713	B-8
Q714	B-7
Q715	B-4
Q716	B-7
Q717	C-7
Q718	C-8
Q719	C-8
Q720	C-8
Q721	C-4
Q722	I-1
Q723	I-2
Q724	I-2
Q725	I-2
RV701	H-1
RV702	G-1
RV703	F-1
RV704	G-4
RV705	G-4
RV706	F-4
RV707	F-4
RV708	F-4
RV709	I-4
RV710	I-4
RV711	I-4
RV712	I-4
RV713	F-2
RV714	E-2
RV715	F-2
RV716	E-2
RV717	E-2
RV718	F-3
RV719	E-3
RV720	E-3
RV721	E-2
RV722	D-1
RV723	D-2
RV724	A-5
RV725	A-4
RV726	A-4
RV727	A-4
RV728	A-3
RV729	A-3
RV730	A-5
RV731	A-3
TP701	H-3
TP702	H-3
TP703	I-3
TP704	H-2
TP705	F-1
TP706	F-3
TP707	D-4
TP708	D-4
TP709	C-5
TP710	C-5
TP711	D-5
TP712	C-5
TP713	B-5
TP714	B-5
TP715	B-5



CAMERA

Ref. No. CP-18 BOARD, 1000 series, ML-4 BOARD, 1000 series.

21 REC

23 24 REC

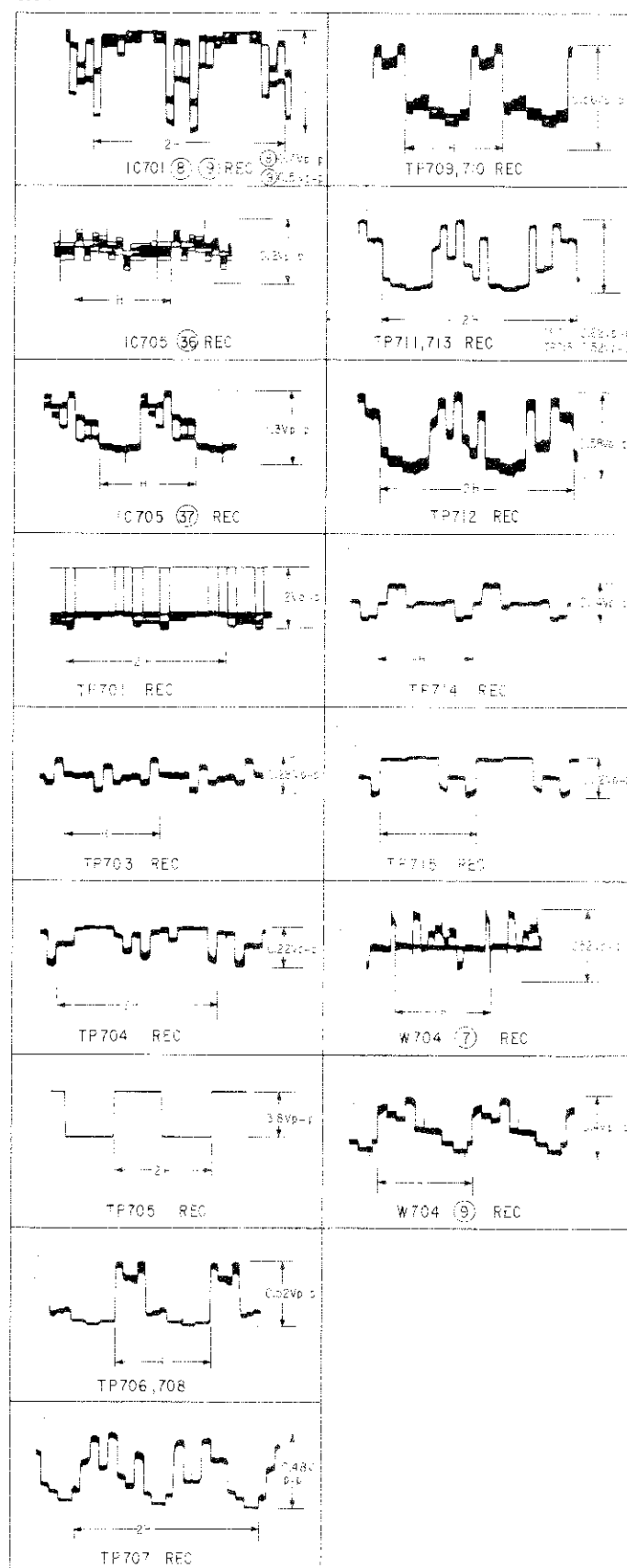
29 REC

30 REC

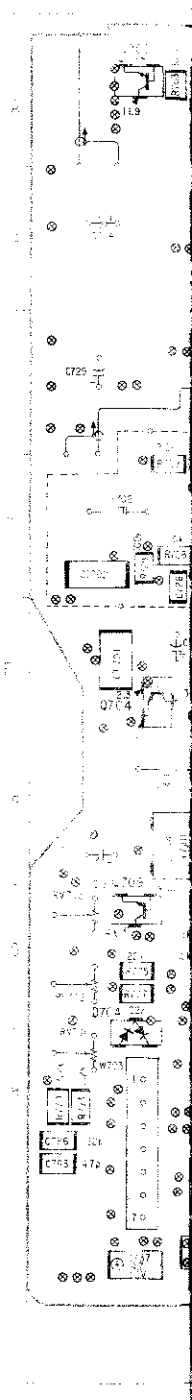
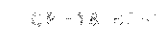
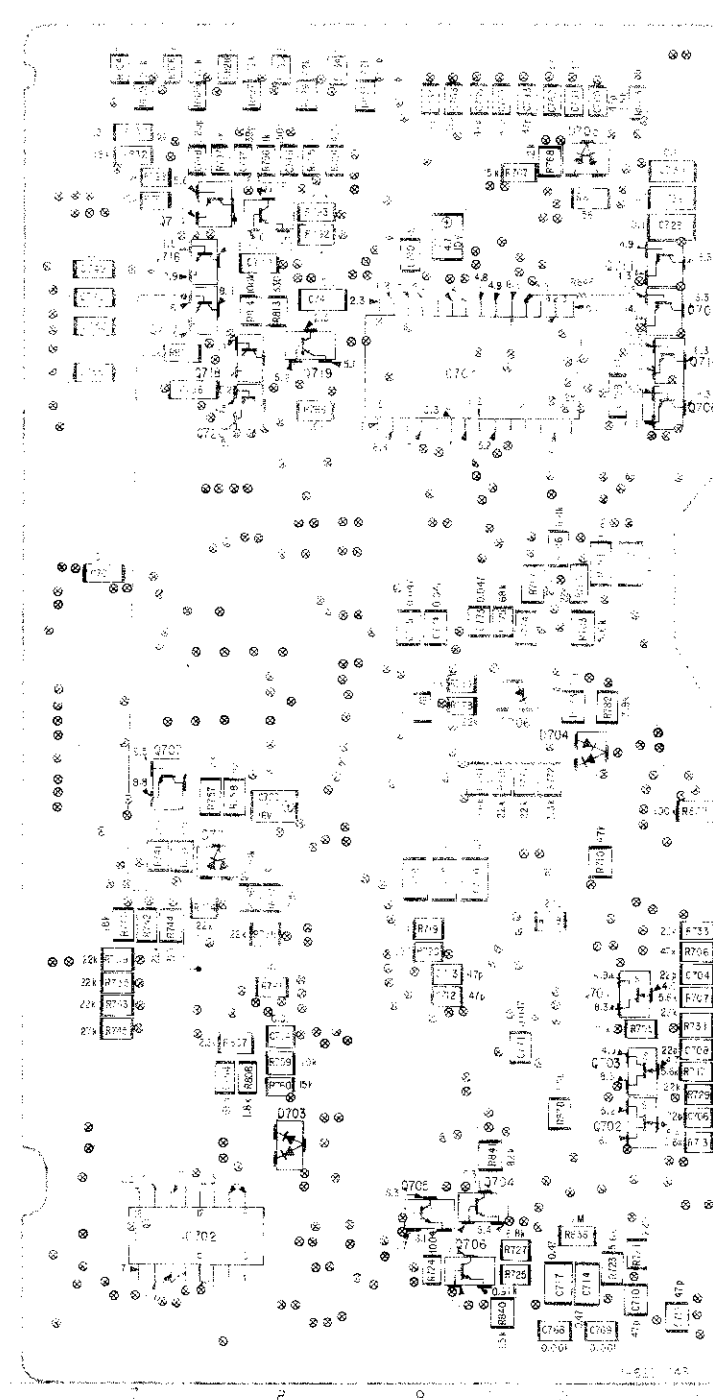
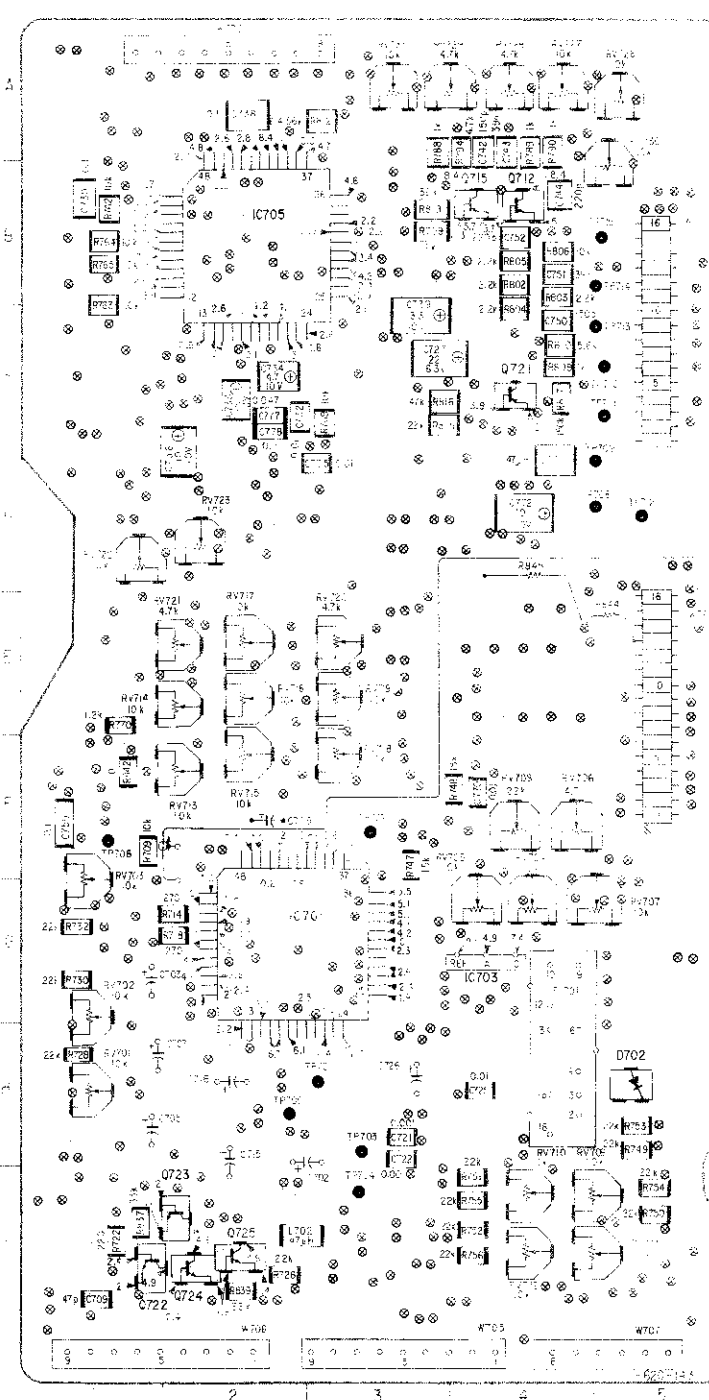
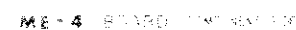
35 REC

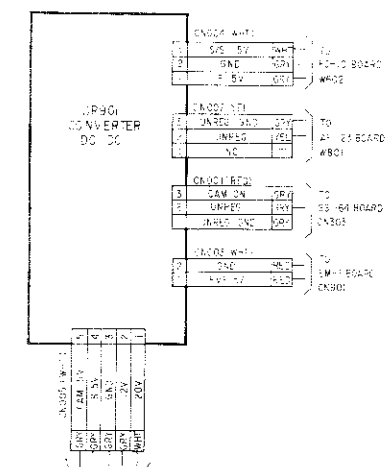
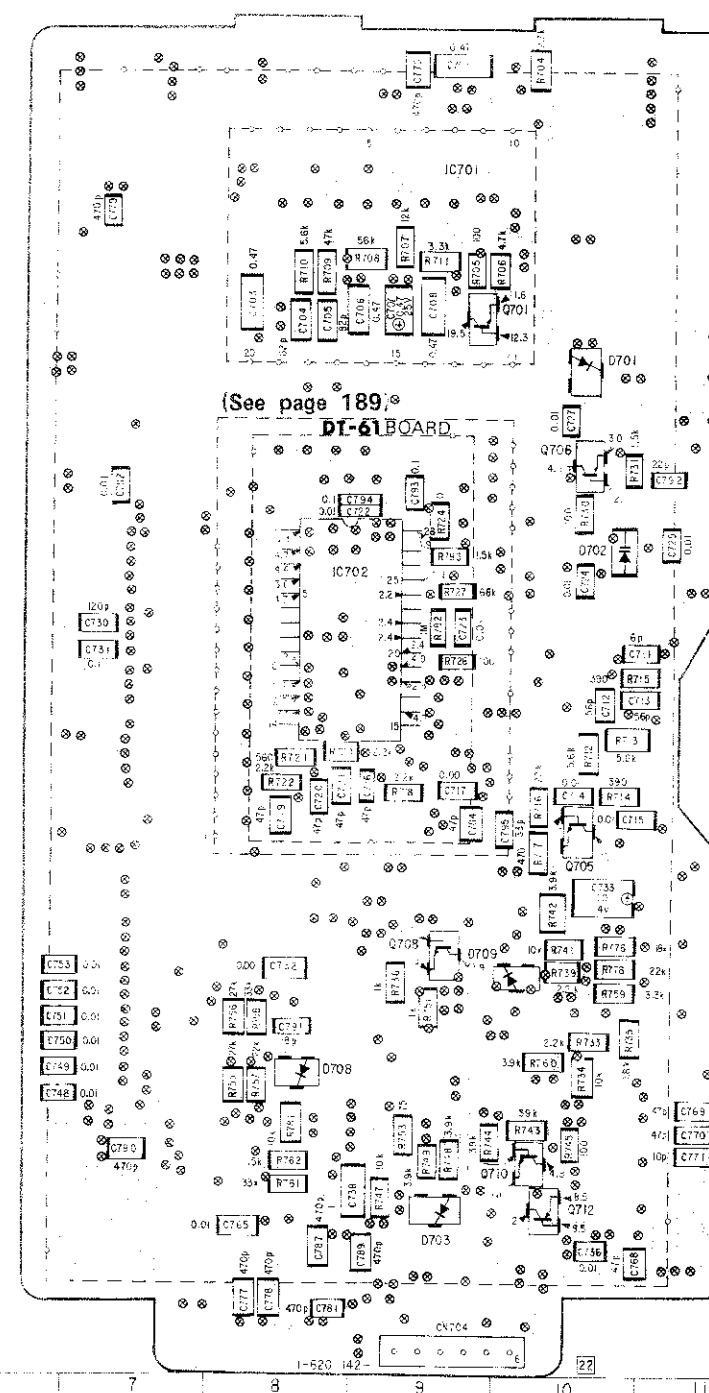
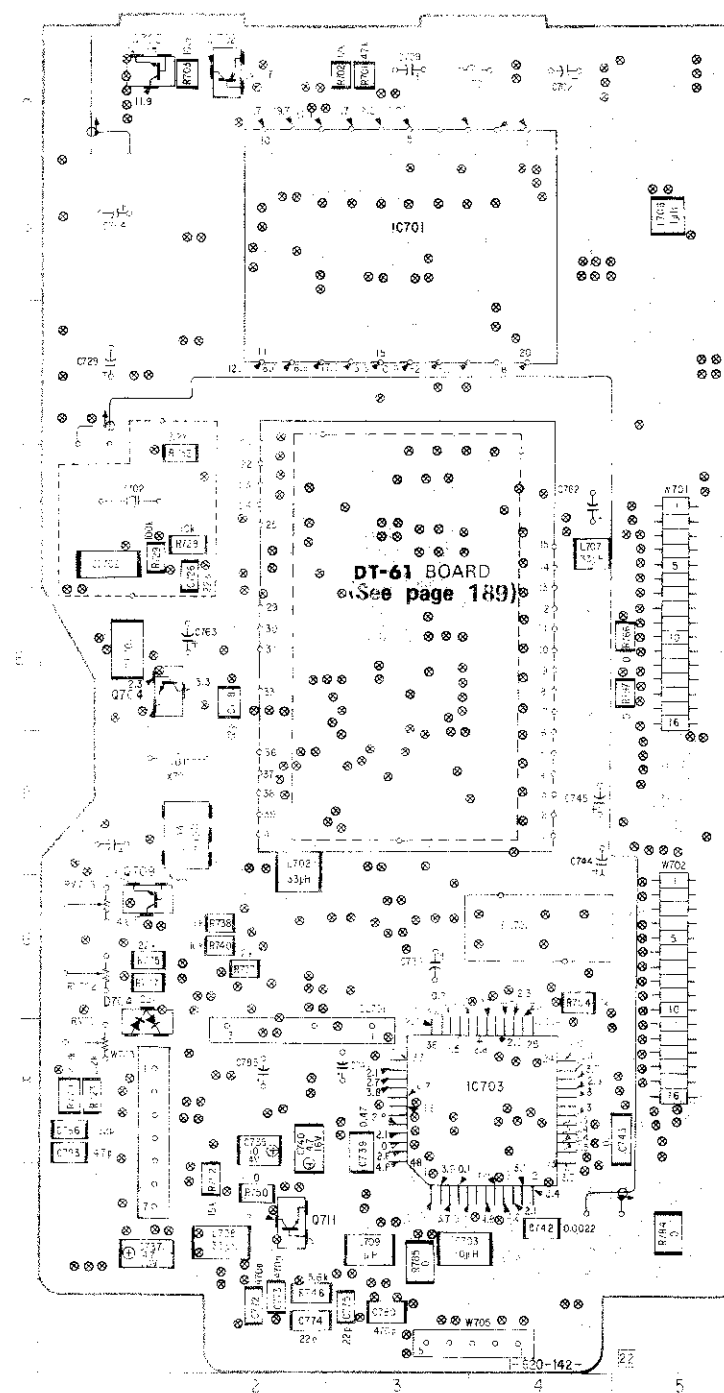
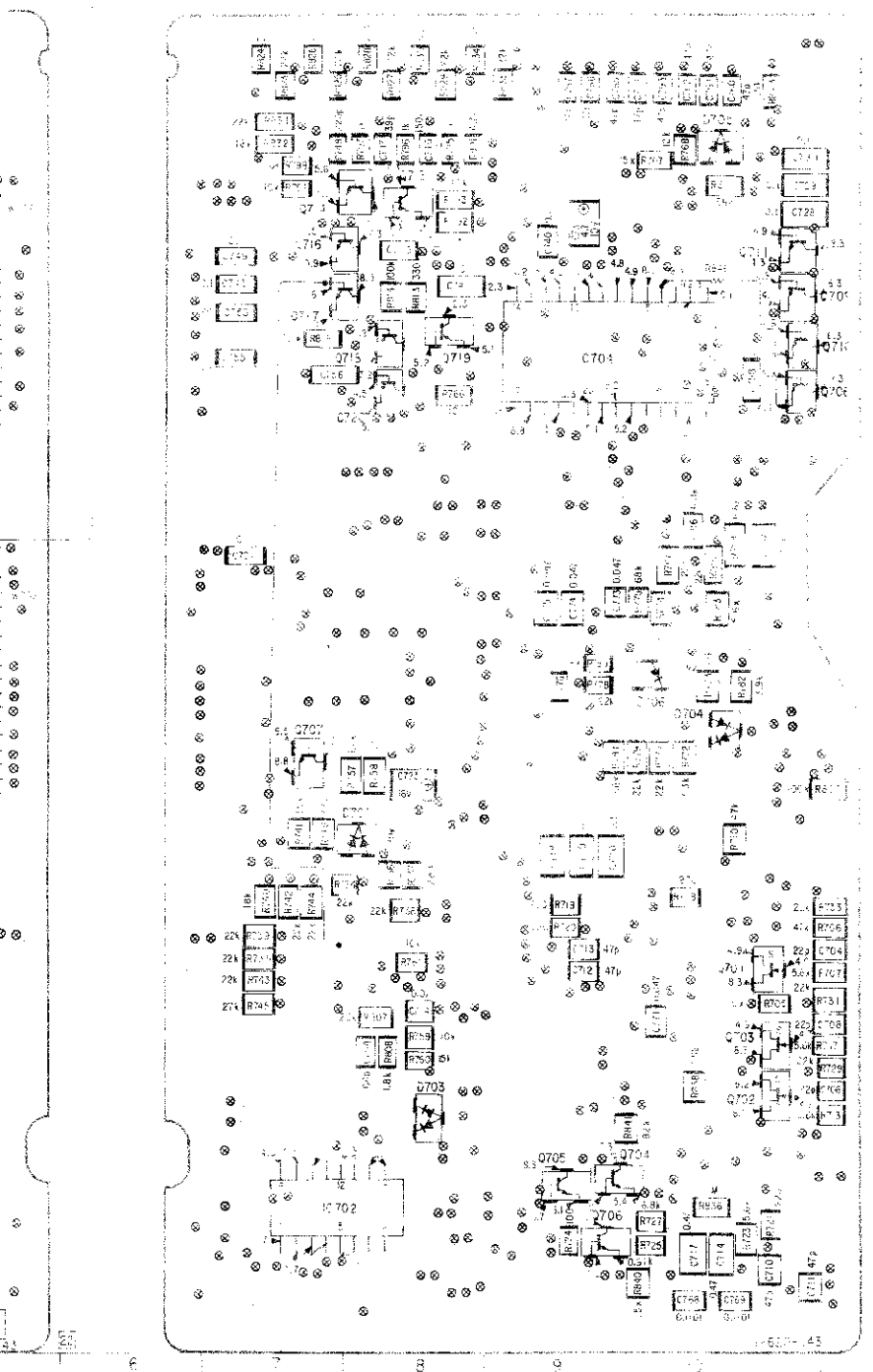
4 REC

3 REC (LALT)



Q701	F-8
Q702	H-5
Q703	H-5
Q704	E-10
Q705	A-10
Q706	E-17
Q707	G-7
Q708	I-7
Q709	G-4
Q70A	C-9
Q70B	B-2
Q701	G-10
Q702	H-10
Q703	H-10
Q704	I-3
Q705	C-5
Q706	I-9
Q707	F-7
Q708	C-11
Q709	B-11
Q710	C-11
Q711	B-11
Q712	B-4
Q713	B-8
Q714	B-7
Q715	B-4
Q716	B-7
Q717	C-7
Q718	C-8
Q719	C-5
Q720	C-11
Q721	C-4
Q722	I-1
Q723	I-2
Q724	I-2
Q725	I-2
RV701	H-1
RV702	G-3
RV703	F-1
RV704	G-4
RV705	G-4
RV706	G-4
RV707	G-5
RV708	F-4
RV709	I-5
RV710	I-2
RV711	I-5
RV712	I-4
RV713	F-2
RV714	F-2
RV715	F-2
RV716	E-2
RV717	E-2
RV718	F-3
RV719	E-3
RV720	E-3
RV721	E-2
RV722	D-1
RV723	D-2
RV724	A-5
RV725	A-4
RV726	A-4
RV727	A-4
RV728	A-5
RV729	A-5
RV730	A-5
TP701	H-3
TP703	H-3
TP704	I-3
TP705	F-3
TP706	F-1
TP707	F-3
TP708	D-4
TP709	C-5
TP710	C-5
TP711	C-5
TP712	D-5
TP713	C-5
TP714	B-5
TP715	B-5



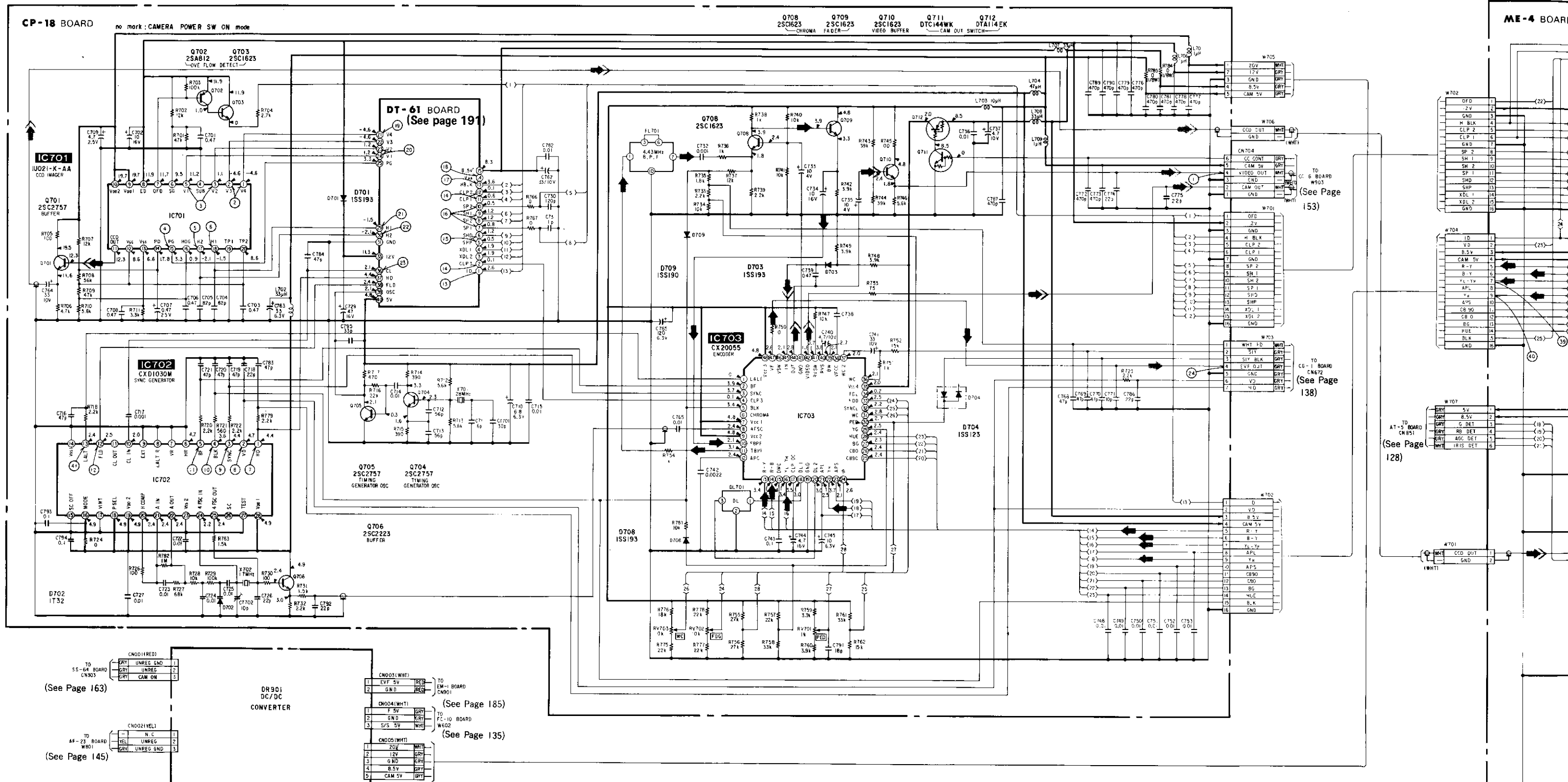


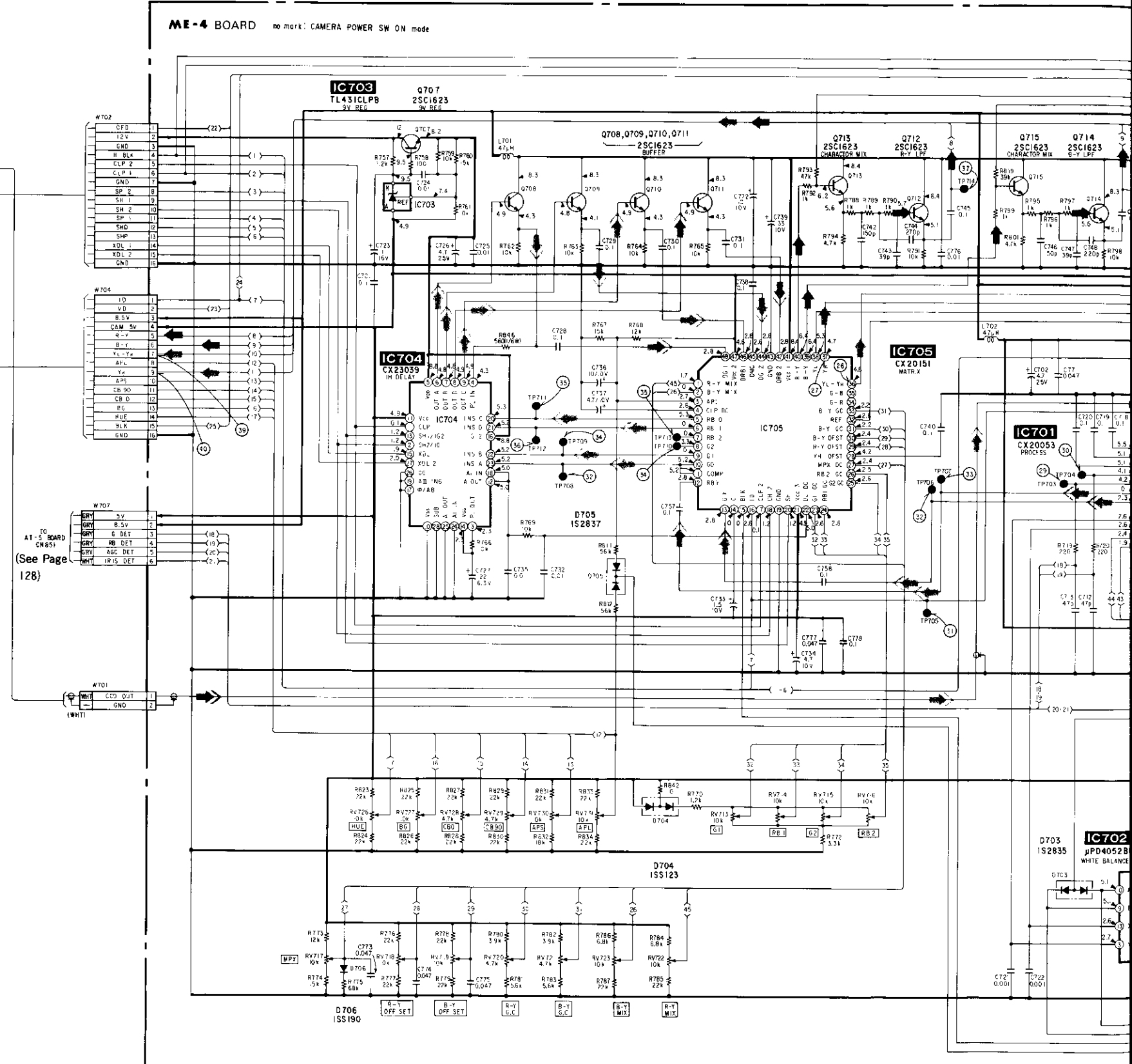
CAMERA CAMERA

CP-18(CCD IMAGER, SYNC GENERATOR, ENCODER), ME-4 (CAMERA SIGNAL PROCESS, MATRIX) SCHEMATIC DIAGRAM

— Ref. No. CP-18 BOARD: 1000 series, ME-4 BOARD: 2000 series —

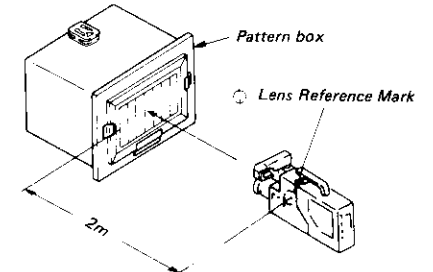
A
B
C
D
E
F
G
H
I
J





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

1. Connection



2. Adjust the distance so that the output w form of Fig. a and the Fig. b can be obtain.

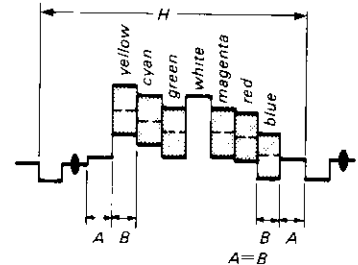


Fig. a Camera output waveform of Pin (2) of CN201 on VI-22 board

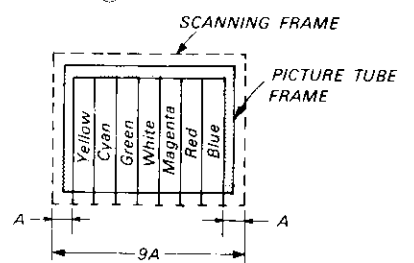


Fig. b Picture of TV monitor screen

Note (Printed Wiring Board):

- ⊗ : mark is through hole.
 - ○ : lead wire attached to the component side.
 - ● : lead wire attached to the soldering side.
 -  : pattern from the side which enables seeing.
 -  : pattern of the rear side.
 -  : B+ Pattern.
 - Digital transistor (AW-3: Q701, AI-1: Q790, AT-5: Q852, 854) transistor with resistors.
- Refer to the AW-3, AI-1, AT-5 boards schematic diagram for digital transistor.

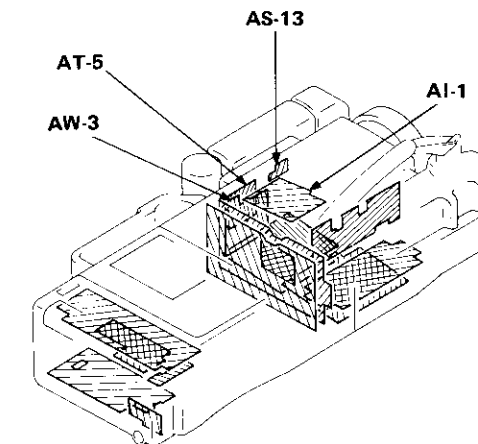
Note

Soldering side: Parts on the soldering side being seen from the soldering are stated.

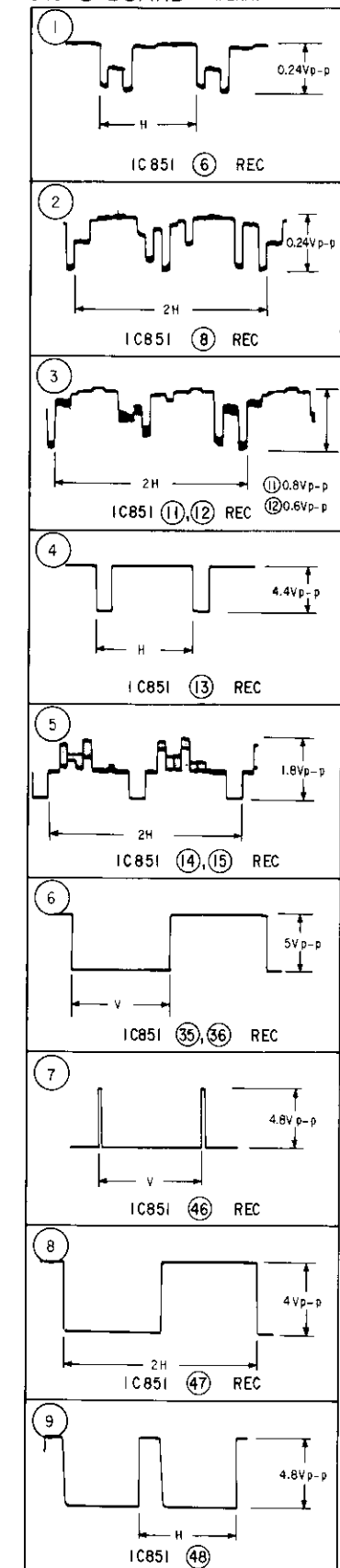
Component side: Parts on the component side being seen from the component are stated.

Regarding color indication of patterns

- * Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.

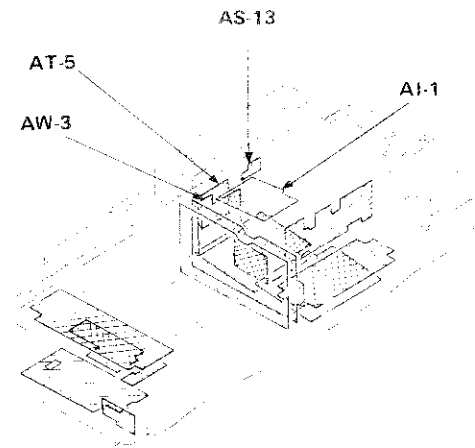


AT-5 BOARD (CAMERA)

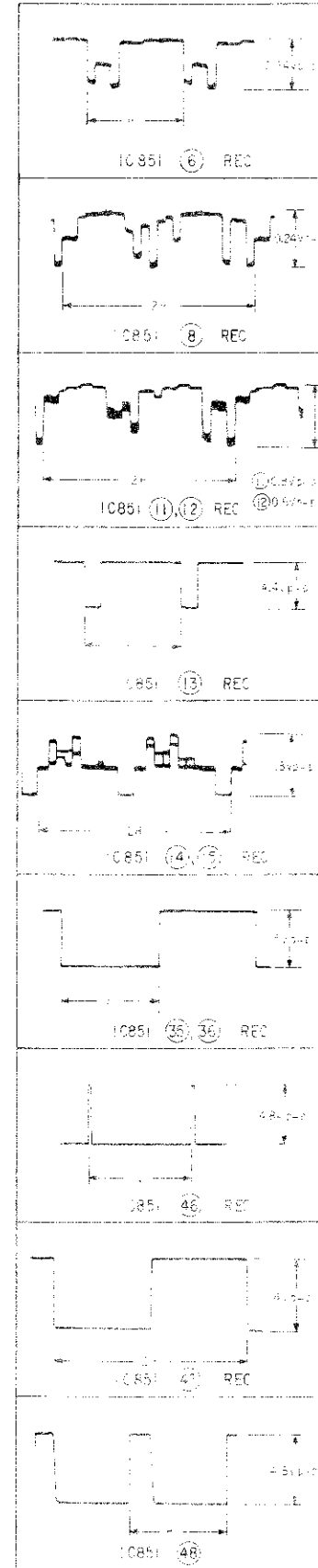


AW-3 (AUTO WHITE BALANCE), AT-5 (WHITE BALANCE, IRIS, AGC DETECTION), AS-13 (WHITE BALANCE SENSOR), AI-1 (AGC, IRIS, ILLUMINANCE)

Ref. No. AW-3, AT-5 BOARDS: 3000 series, AI-1 BOARD: 4000 series, AS-13 BOARD: 5000 series

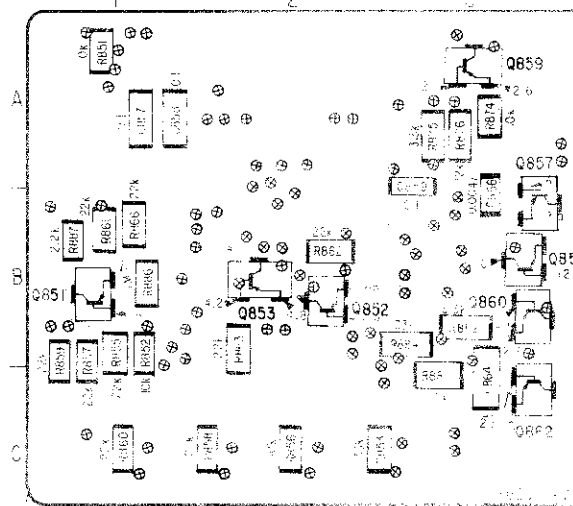


AT-5 BOARD (CAMERA)

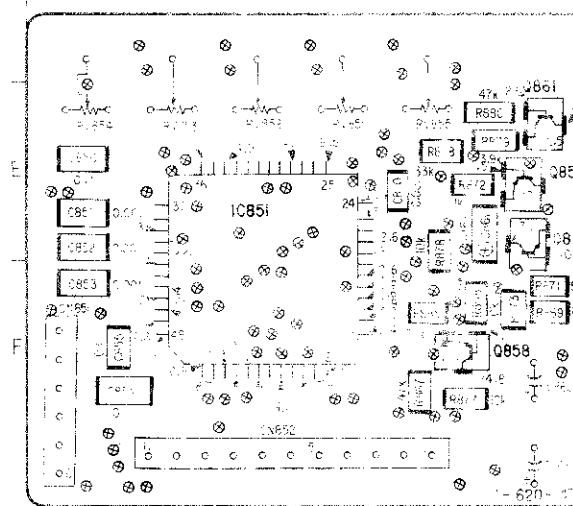


AT-5 BOARD (CAMERA)

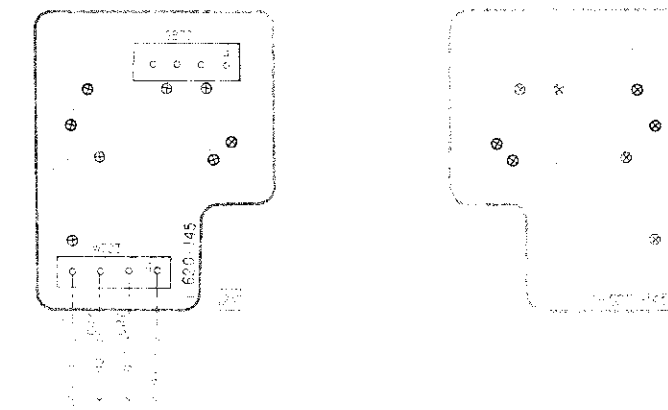
IC851 F-2
Q851 B-1
Q852 B-2
Q853 B-3
Q854 B-4
Q855 B-5
Q856 B-6
Q857 B-7
Q858 B-8
Q859 B-9
Q860 B-10
Q861 B-11
Q862 B-12
RV851 F-2
RV852 F-3
RV853 F-4
RV854 F-5
RV855 F-6



AT-5 BOARD (CAMERA)

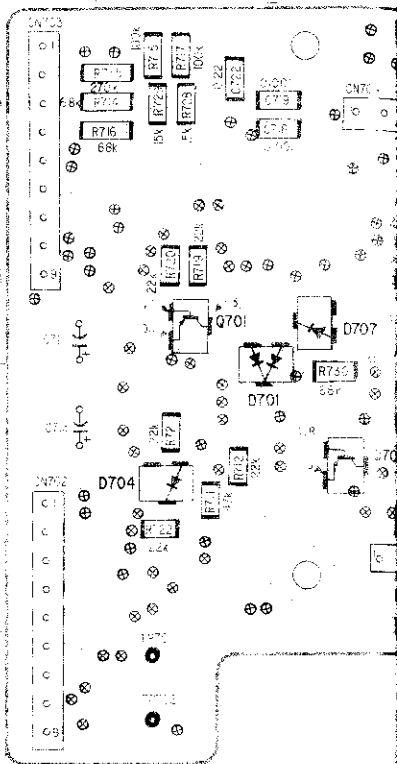


AS-13 BOARD (CAMERA)

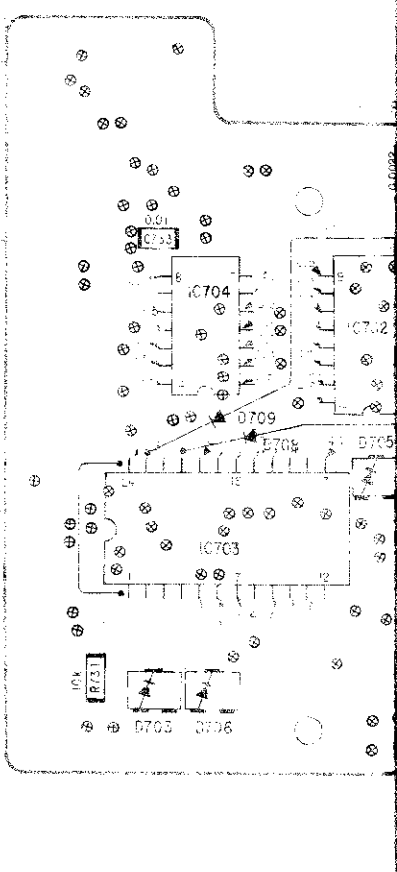


AW-3 BOARD (CAMERA)

D701 F-2
D702 F-3
D703 F-4
D704 F-5
D705 F-6
D706 F-7
D707 F-8
D708 F-9
D709 F-10
D710 F-11
D711 F-12
D712 F-13
D713 F-14
D714 F-15
D715 F-16
D716 F-17
D717 F-18
D718 F-19
D719 F-20
D720 F-21
D721 F-22
D722 F-23
D723 F-24
D724 F-25
D725 F-26
D726 F-27
D727 F-28
D728 F-29
D729 F-30
D730 F-31
D731 F-32
D732 F-33
D733 F-34
D734 F-35
D735 F-36
D736 F-37
D737 F-38
D738 F-39
D739 F-40
D740 F-41
D741 F-42
D742 F-43
D743 F-44
D744 F-45
D745 F-46
D746 F-47
D747 F-48
D748 F-49
D749 F-50
D750 F-51
D751 F-52
D752 F-53
D753 F-54
D754 F-55
D755 F-56
D756 F-57
D757 F-58
D758 F-59
D759 F-60
D760 F-61
D761 F-62
D762 F-63
D763 F-64
D764 F-65
D765 F-66
D766 F-67
D767 F-68
D768 F-69
D769 F-70
D770 F-71
D771 F-72
D772 F-73
D773 F-74
D774 F-75
D775 F-76
D776 F-77
D777 F-78
D778 F-79
D779 F-80
D780 F-81
D781 F-82
D782 F-83
D783 F-84
D784 F-85
D785 F-86
D786 F-87
D787 F-88
D788 F-89
D789 F-90
D790 F-91
D791 F-92
D792 F-93
D793 F-94
D794 F-95
D795 F-96
D796 F-97
D797 F-98
D798 F-99
D799 F-100



AW-3 BOARD (CAMERA)

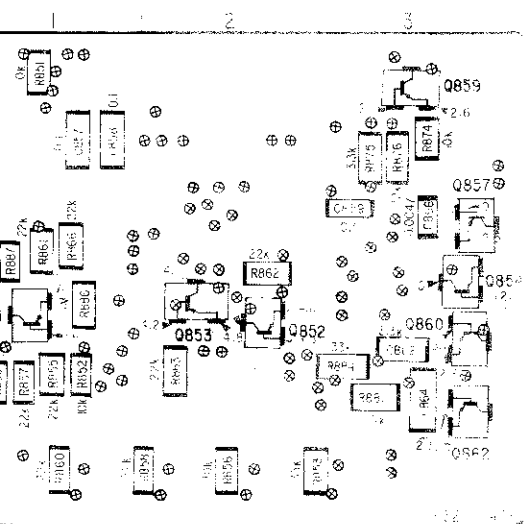


CAMERA CAMERA

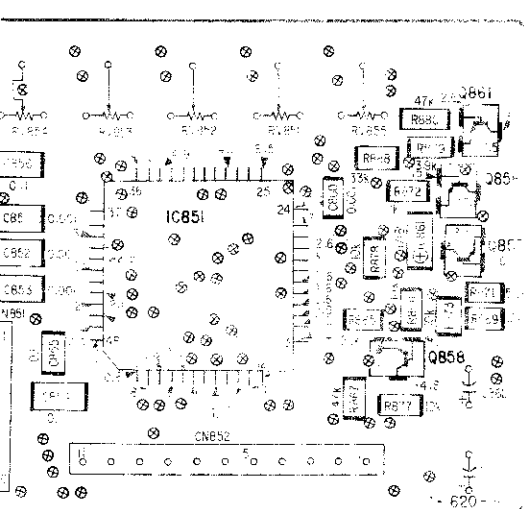
ANCE), AT-5 (WHITE BALANCE, IRIS, AGC DETECTION) AS-13 (WHITE BALANCE SENSOR), AI-1 (AGC, IRIS CONTROL) PRINTED WIRING BOARD

S. 3000 series, AI-1 BOARD: 4000 series, AS-13 BOARD: 5000 series

-5 BOARD (SOLDER SIDE)



-5 BOARD (COMPONENT SIDE)



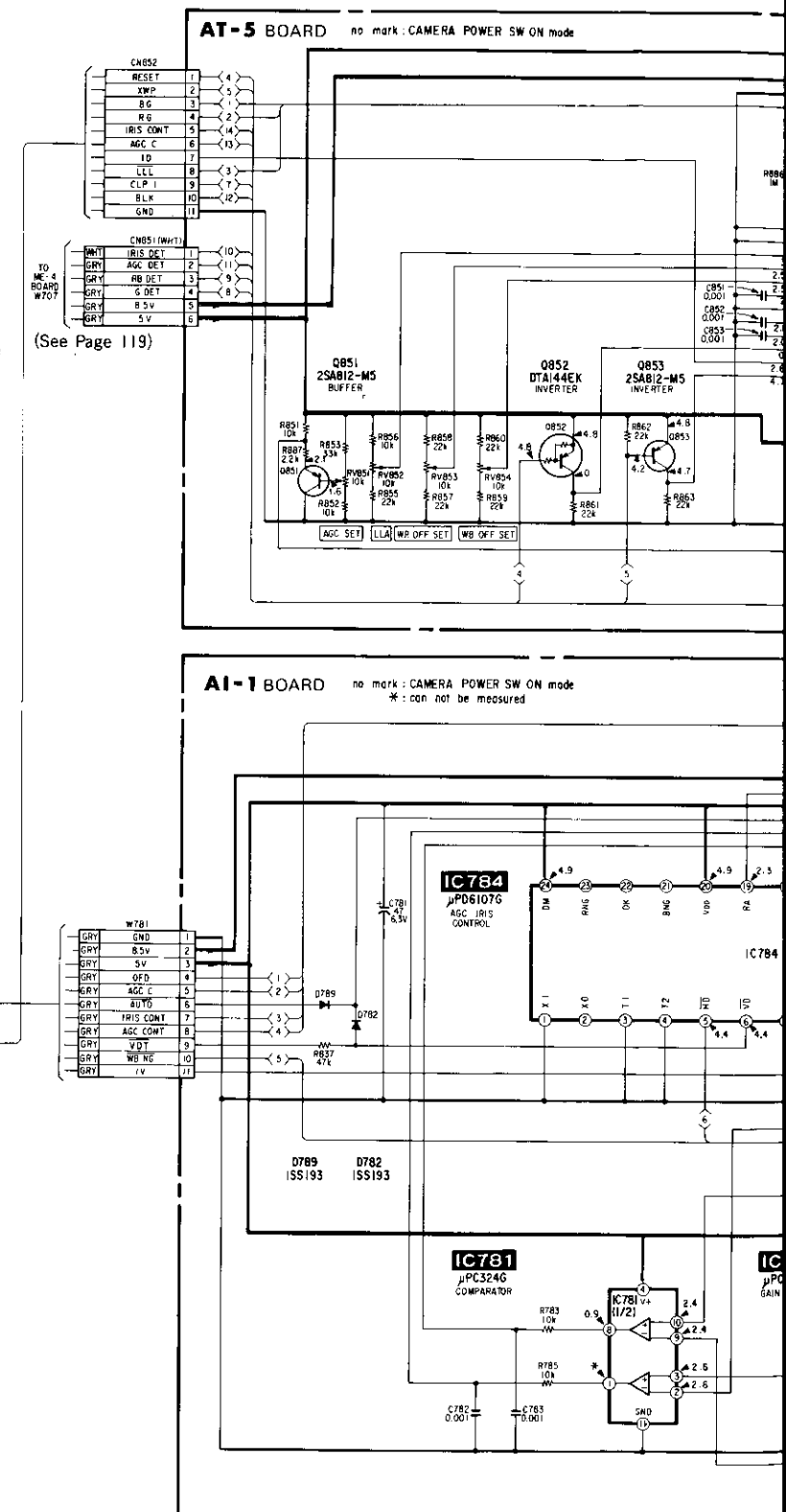
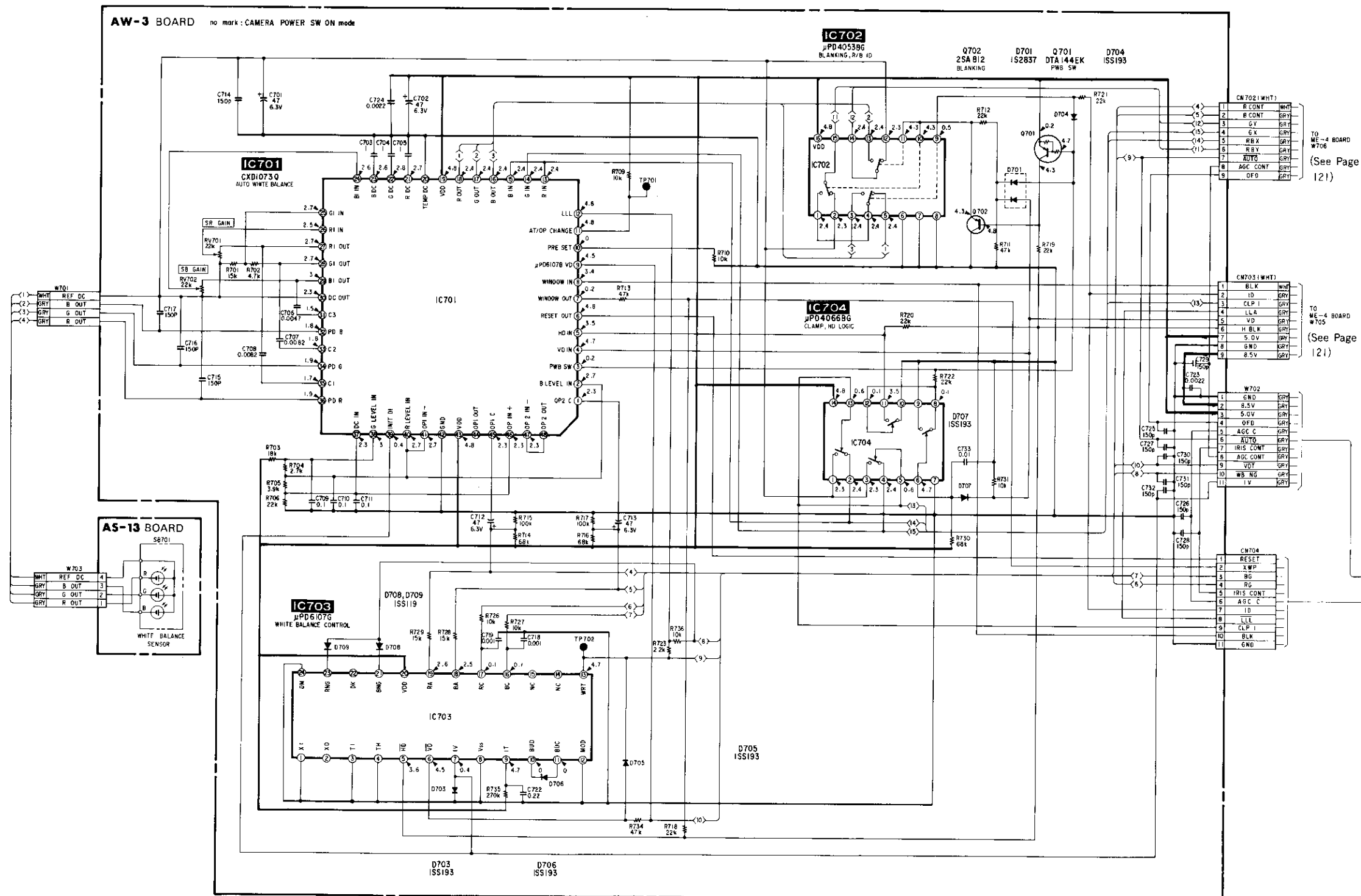
RD-1000-145

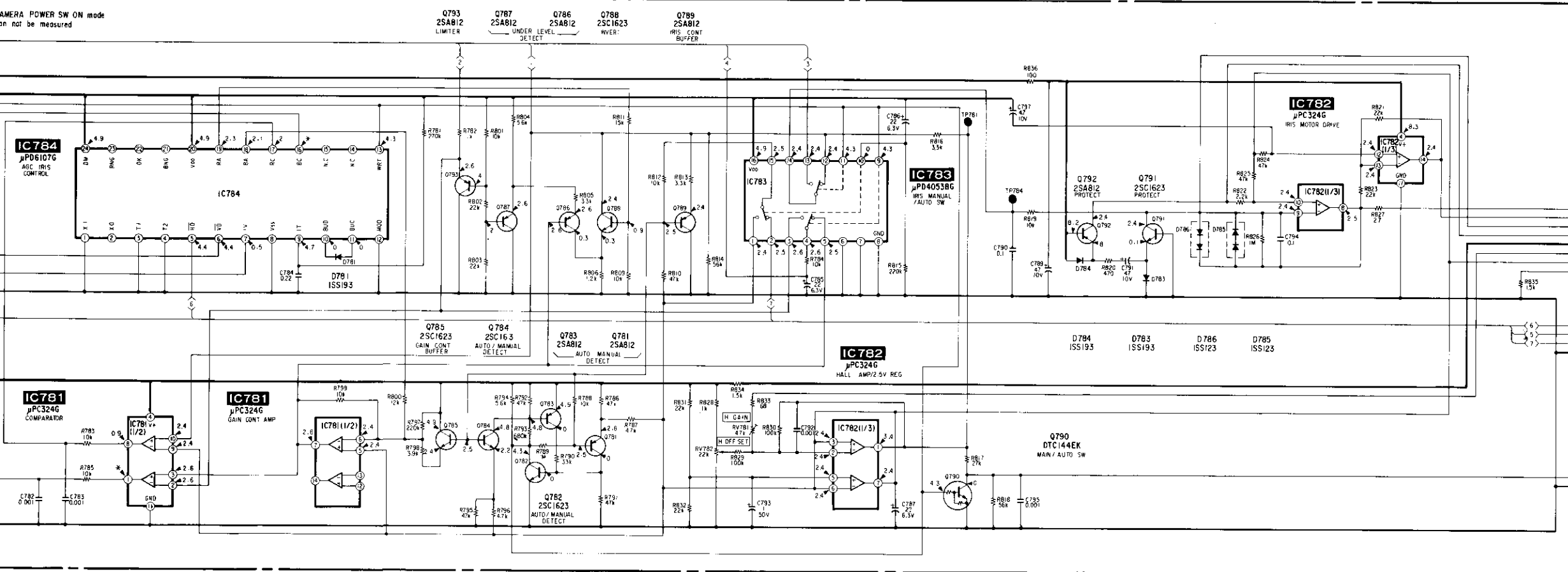
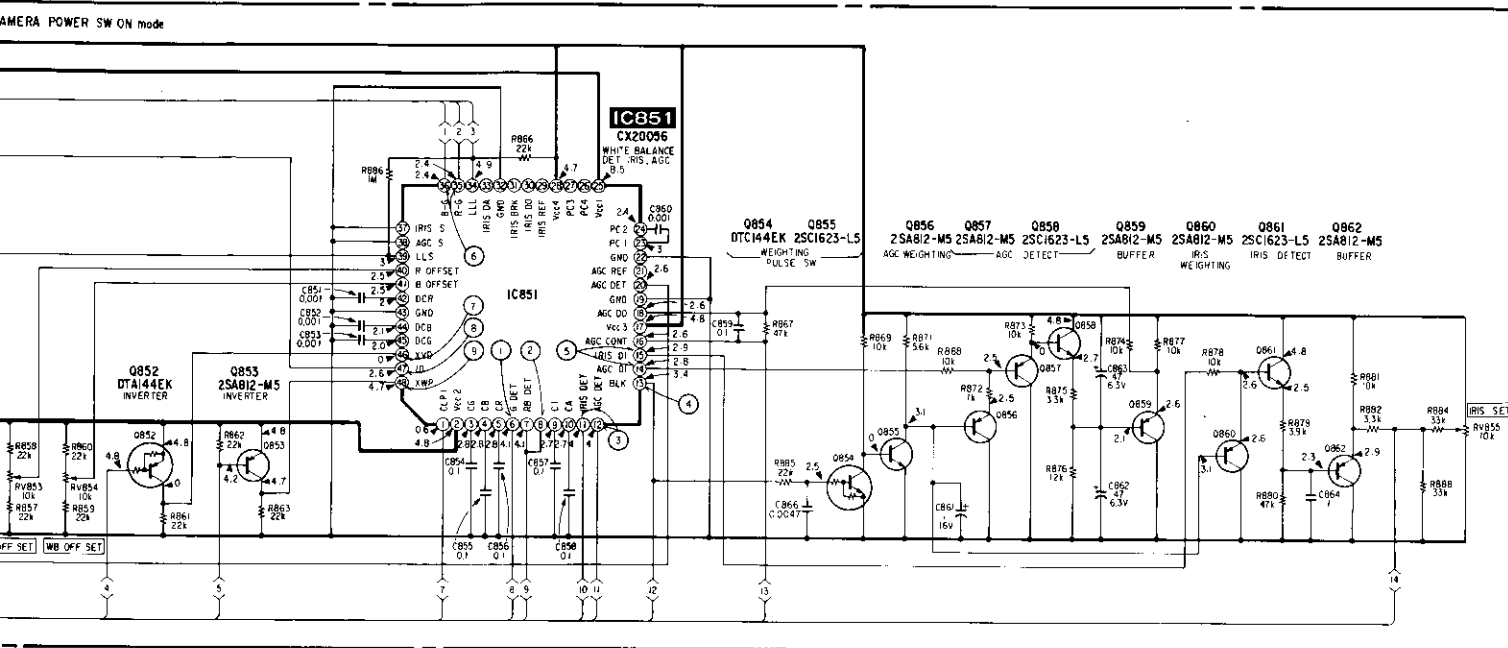


CAMERA	CAMERA

AW-3 (AUTO WHITE BALANCE), AT-5 (WHITE BALANCE, IRIS, AGC DETECTION), AS-13 (WHITE BALANCE SENSOR), AI-1 (AGC, IRIS CONTROL) SCHEMATIC DIAGRAM

— Ref. No. AW-3, AT-5 BOARDS: 3000 series, AI-1 BOARD: 4000 series, AS-13 BOARD: 5000 series —

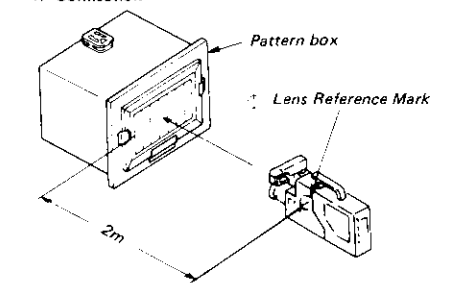




Note (Schematic Diagram):

- Caution to be exercised when replacing chip components. Do not reuse the removed components but use new components.
Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance
 $\text{k}\Omega = 1000\Omega$ and $\text{M}\Omega = 1000\text{k}\Omega$
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- $\square$: panel designation.
- $\square$: adjustment designation.
- --- : B+ line.
- Measuring conditions of voltage value and waveform
(1) The subject is color bar of pattern box.
(2) The voltage value is a reference value between the grounding.
(The tester used is the digital multimeter DC10M Ω)

1. Connection



2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

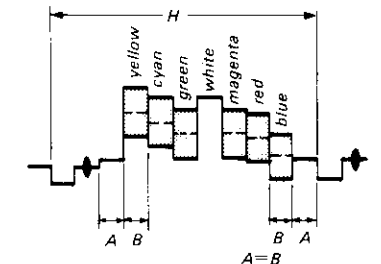


Fig. a Camera output waveform of Pin ② of CN201 on VI-22 board

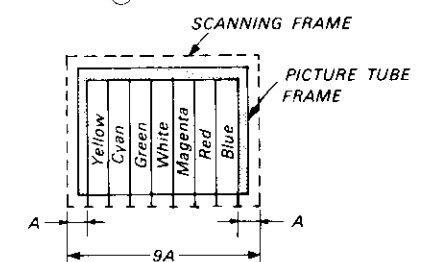


Fig. b Picture of TV monitor screen

CAMERA

CG-1 (TITLE, OCCURING DATE), FC-10 (CAMERA SYSTEM CONTROL

— Ref. No. CG-1 BOARD: 1000 series, FC-10 BOARD: 2000 series, TI-8 BOARD: 3000 series

Note (Printed Wiring Board):

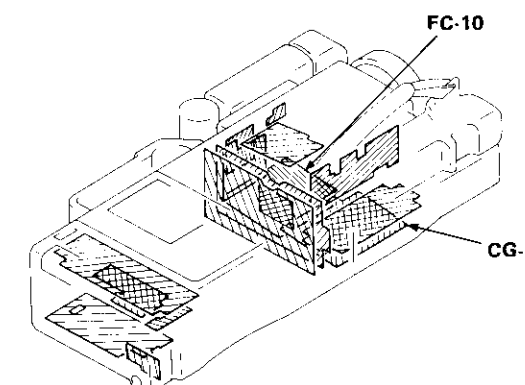
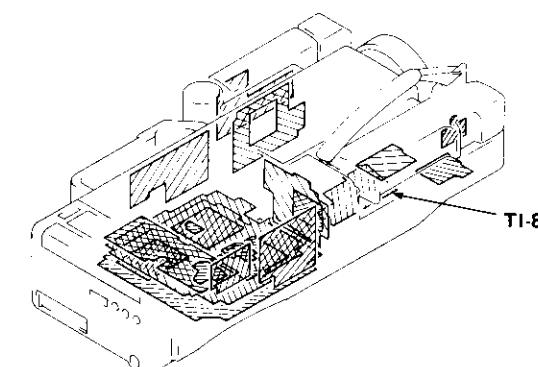
- ⊗ : mark is through hole.
- : lead wire attached to the component side.
- : lead wire attached to the soldering side.
- ⊙ : pattern from the side which enables seeing.
- ⊖ : pattern of the rear side
- ⊕ : B+ Pattern.
- Digital transistor (FC-10: Q601, 602, 603, 604, 609, 612, 622, CG-1: Q671, TI-8: Q691) transistor with resistors.
Refe to the FC-10, CG-1, TI-8 boards schematic diagram for digital transistor.

Note

Soldering side: Parts on the soldering side being seen from the soldering are stated.
Component side: Parts on the component side being seen from the component are stated.

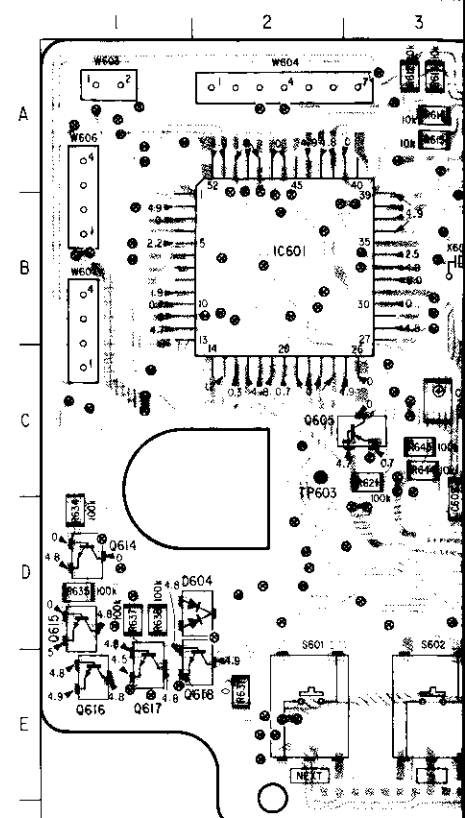
Regarding color indication of patterns

- * Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.

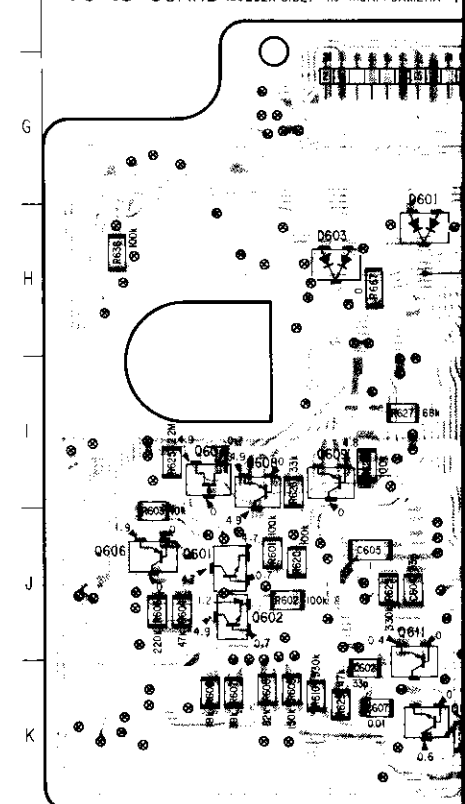


FC-10 BOARD (COMPONENT SIDE) no mark: CAMERA

CT601	B-3
D601	H-3
D602	H-5
D603	H-2
D604	D-1
D605	I-5
IC601	B-2
IC604	C-4
IC605	B-4
IC606	J-5
Q601	J-2
Q602	J-2
Q603	H-3
Q604	C-5
Q605	C-3
Q606	J-1
Q607	I-1
Q608	I-2
Q609	I-2
Q611	J-3
Q612	K-3
Q614	D-1
Q616	D-1
Q617	E-1
Q618	E-1
Q619	D-5
Q620	B-4
Q621	B-4
Q622	C-5
RV601	C-5
RV602	B-5
TP601	A-4
TP602	D-5
TP603	C-2
TP604	C-5



FC-10 BOARD (SOLDER SIDE) no mark: CAMERA

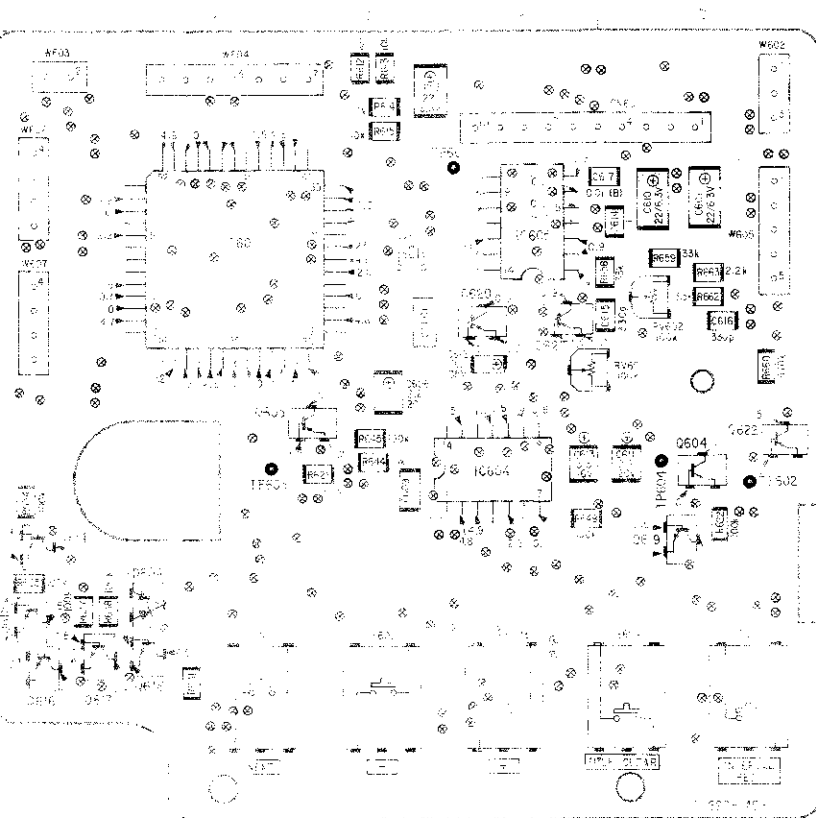
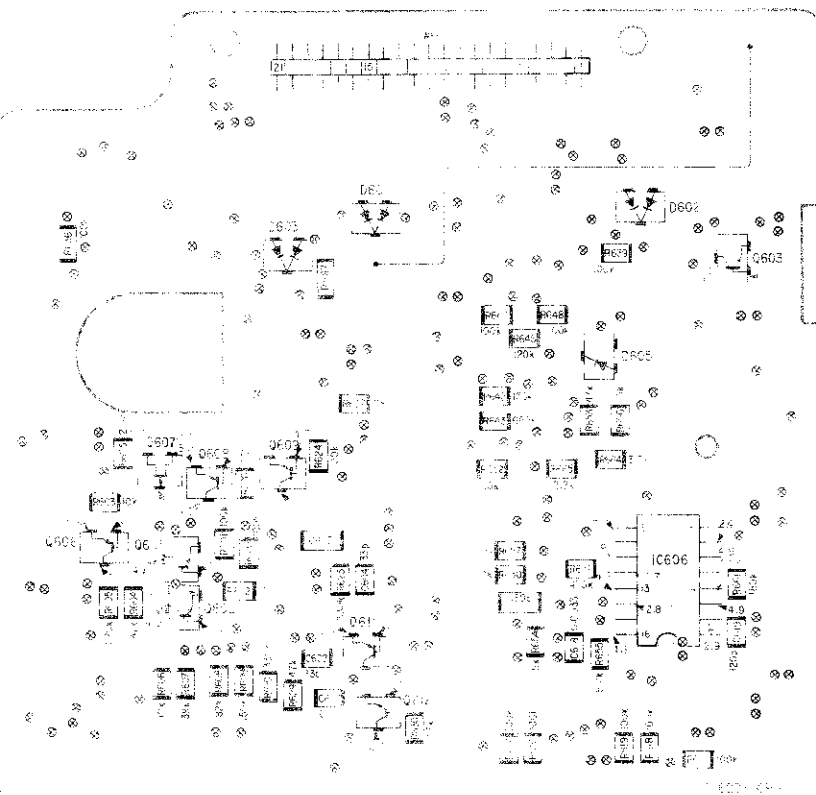


CAMERA

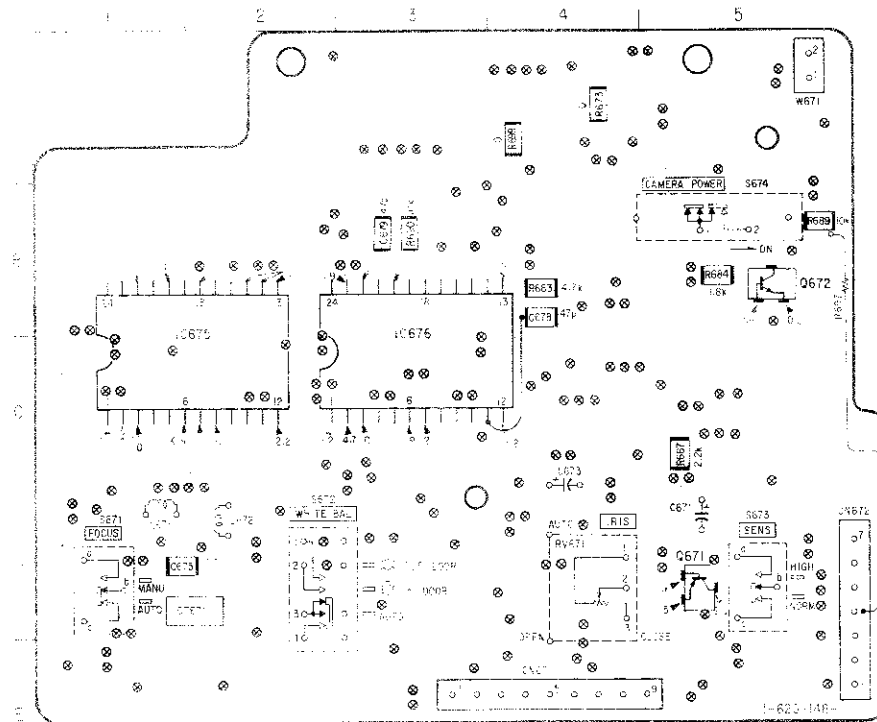
10 (CAMERA SYSTEM CONTROL, CAMERA FUNCTION KEY MATRIX), T1-8 (CAMERA FUNCTION KEY MATRIX) PRINTED WIRING BOARD

BOARD: 2006 series, The BO-ARD, 1990 series

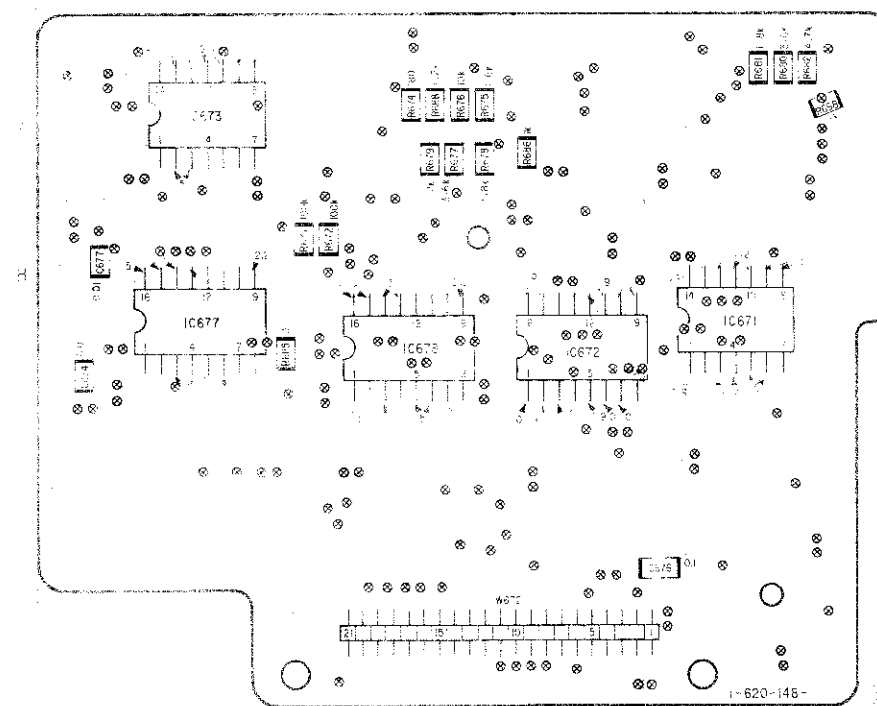
DE-10 **3767** **MAGNETIC**

[illegible]

CG-1 BOARD - IMPROVEMENT SIDE

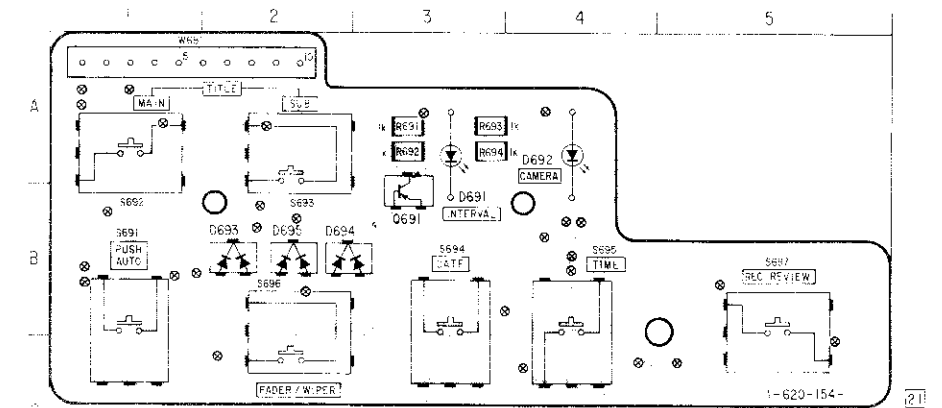


CG-1 BOARD SELF-TEST

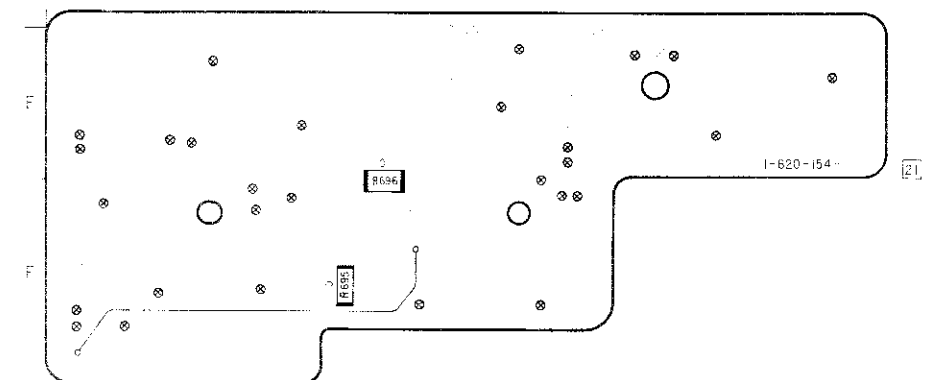


D691	A - 3
D692	A - 4
D693	B - 2
D694	B - 2
D695	B - 2
Q691	B - 3

T1-8 BOARD (COMPONENT SIDE)



TI-8 BOARD (SCDER SIDE)

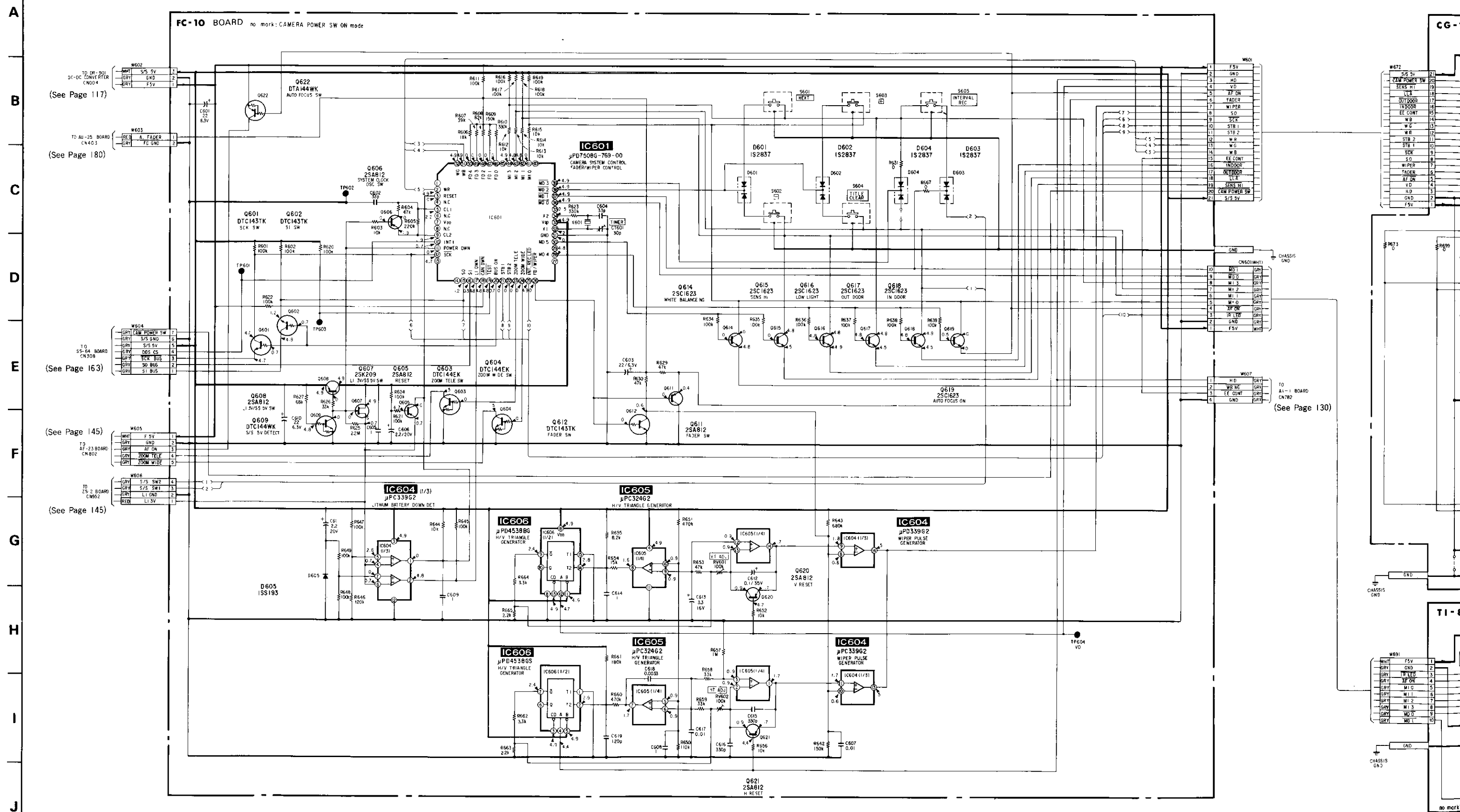


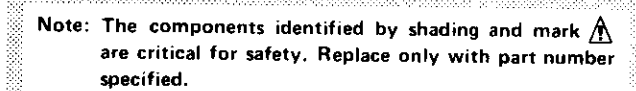
CAMERA CAMERA

CG-1 (TITLE, OCCURRING DATE), FC-10 (CAMERA SYSTEM CONTROL CAMERA FUNCTION KEY MATRIX), TI-8 (CAMERA FUNCTION KEY MATRIX) SCHEMATIC DIAGRAM

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

- Ref. No. CG-1 BOARD: 1000 series, FC-10 BOARD: 2000 series, TI-8 BOARD: 3000 series -





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

Fig. b Picture of TV monitor screen

AF-23 (AUTO FOCUS, ZOOM MOTOR DRIVE), ZS-2 (START/STOP SWITCH, ZOOM SWITCH, RELAY), LI-1 (LITHIUM BATTERY ST

— Ref. No. AF-23, ZS-2 BOARDS: 1000 series, GS-2 BOARD: 2000 series, LI-1 BOARD: 6000 series —

Note (Printed Wiring Board):

-  : mark is through hole.
-  : lead wire attached to the component side.
-  : lead wire attached to the soldering side.
-  : pattern from the side which enables seeing.
-  : pattern of the rear side.
-  : B+ Pattern.
- Digital transistor (AF-23: Q802, 811) transistor with resistors. Refer to the AF-23 board schematic diagram for digital transistor.

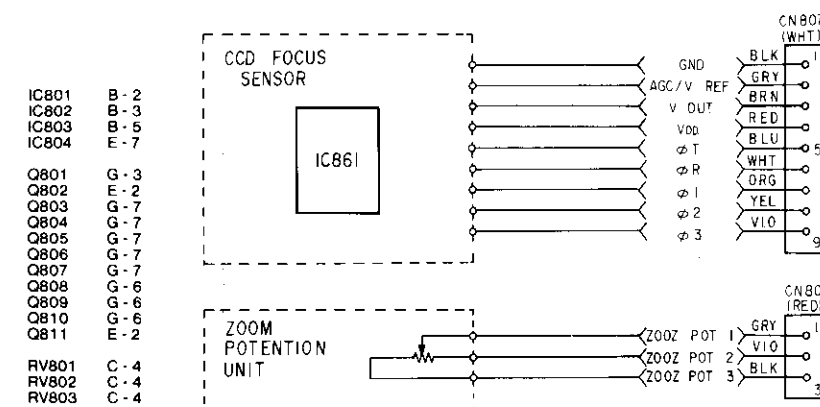
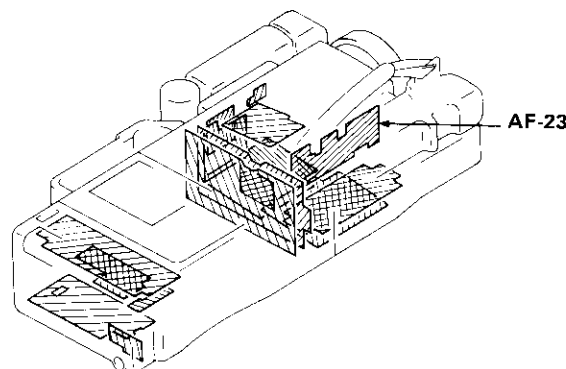
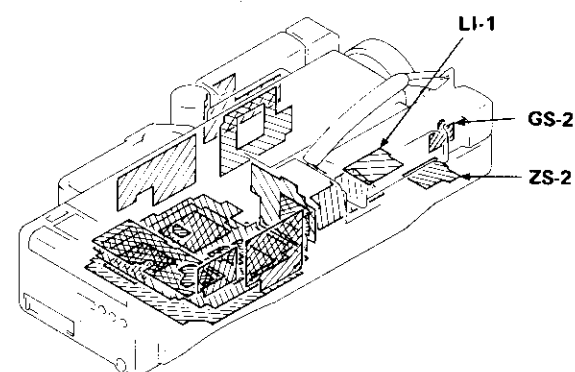
Note

Soldering side: Parts on the soldering side being seen from the soldering are stated.

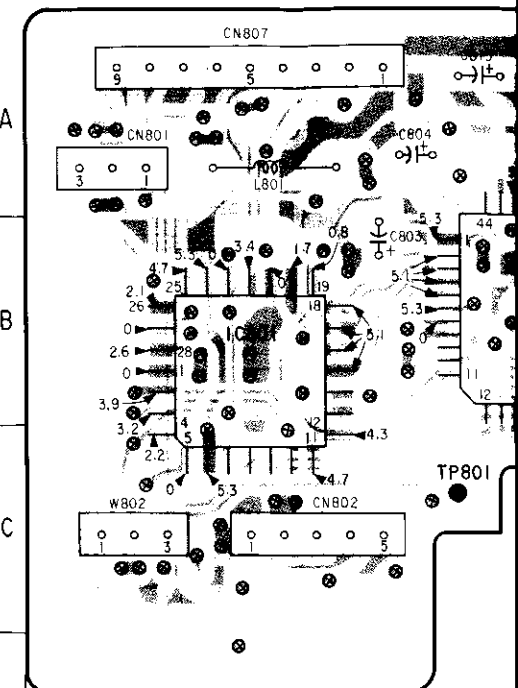
Component side: Parts on the component side being seen from the component are stated.

Regarding color indication of patterns

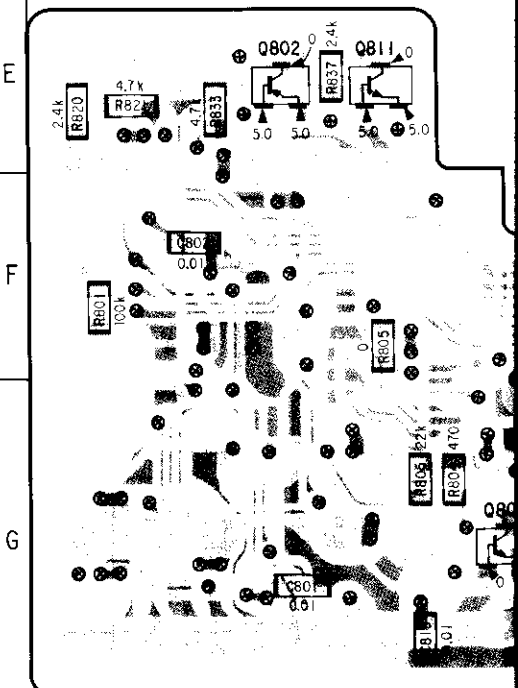
- * Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.



AF-23 BOARD (COMPONENT SIDE) no mar



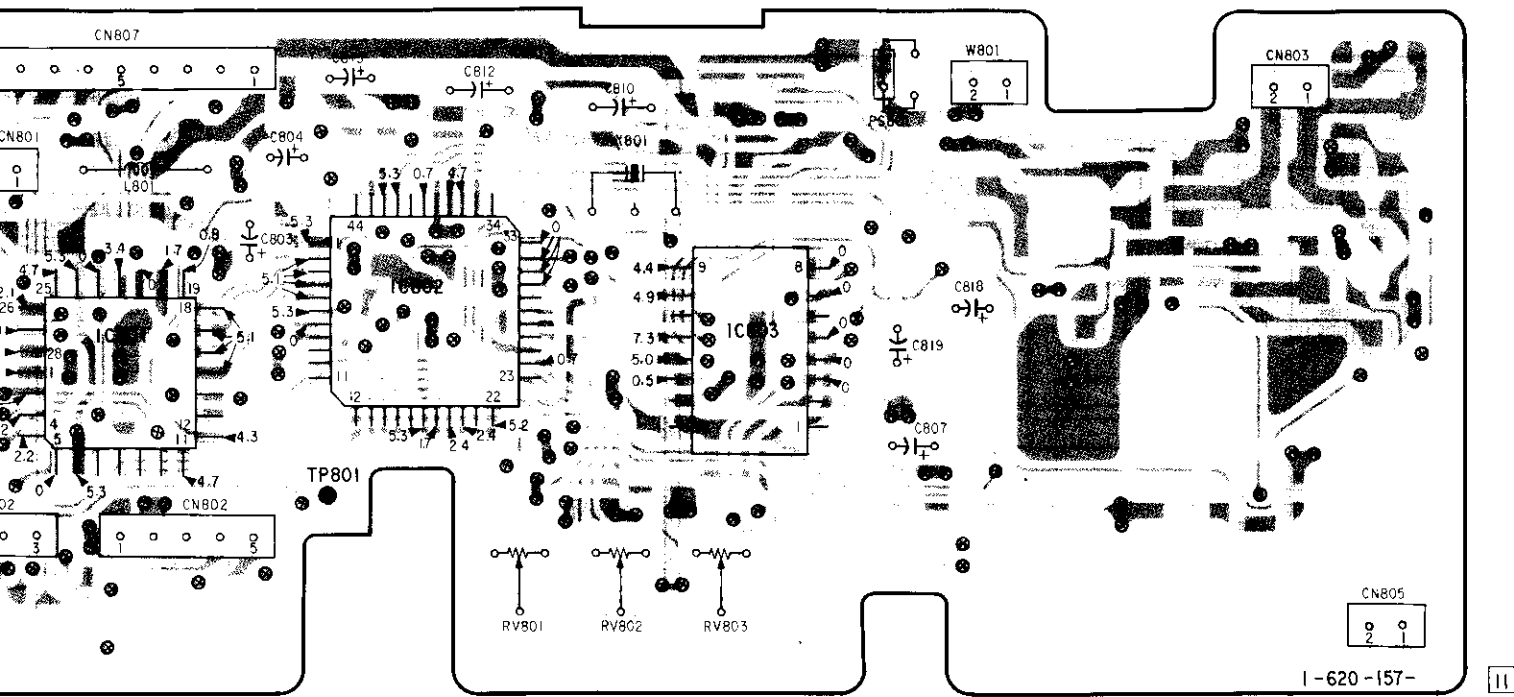
AF-23 BOARD (SOLDER SIDE) no mark : C



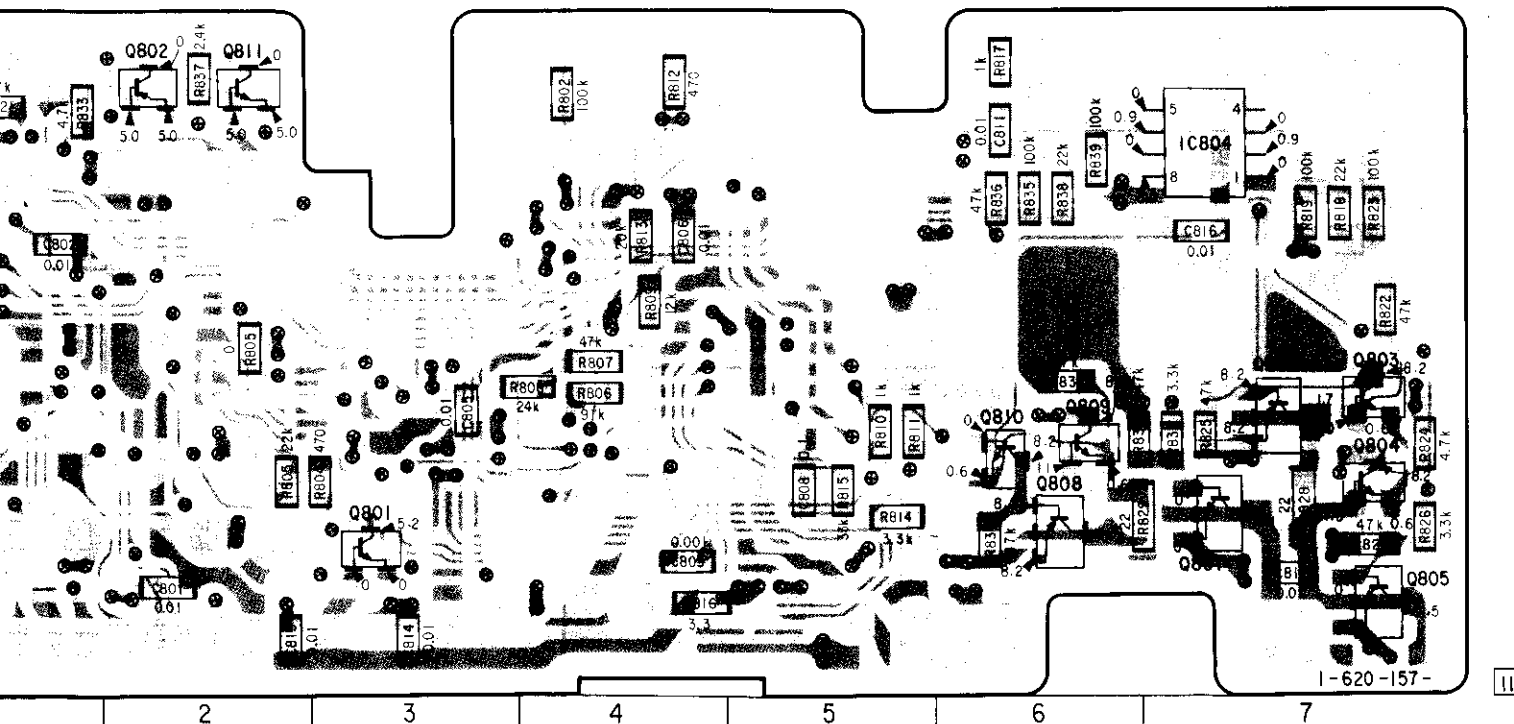
CAMERA CAMERA

Y), LI-1 (LITHIUM BATTERY STORAGE), GS-2 (START/STOP SWITCH) PRINTED WIRING BOARD

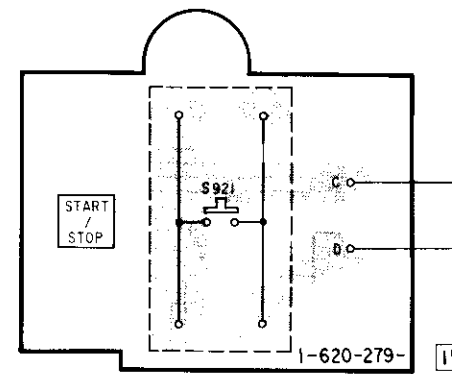
BOARD (COMPONENT SIDE) no mark: CAMERA POWER SW ON mode



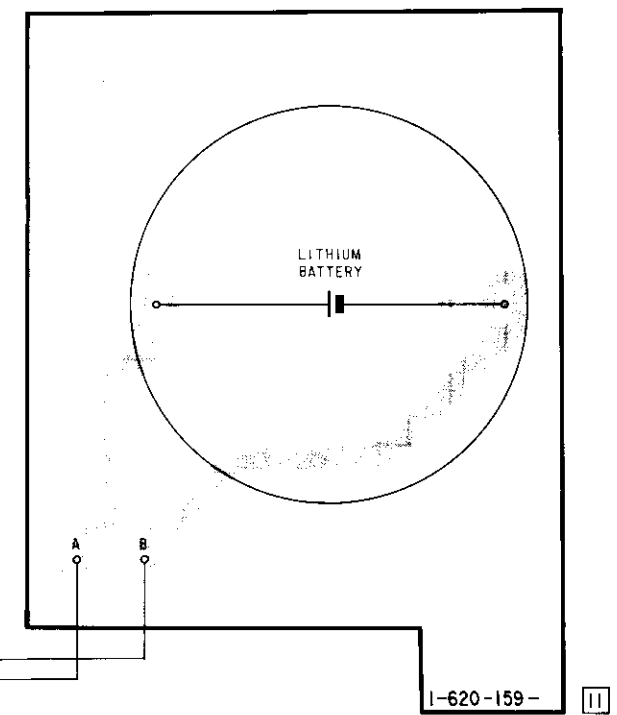
BOARD (SOLDER SIDE) no mark: CAMERA POWER SW ON mode



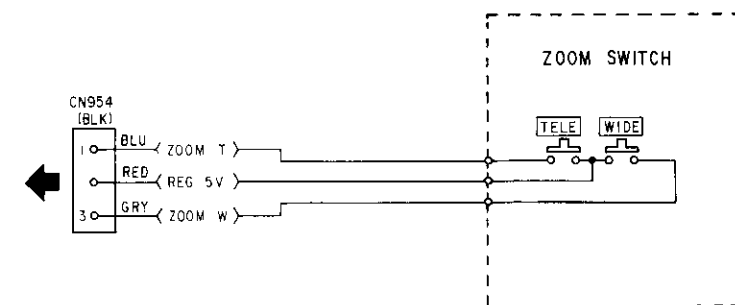
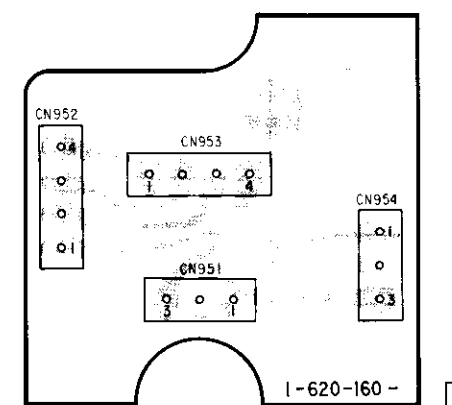
GS-2 BOARD



LI-1 BOARD



ZS-2 BOARD



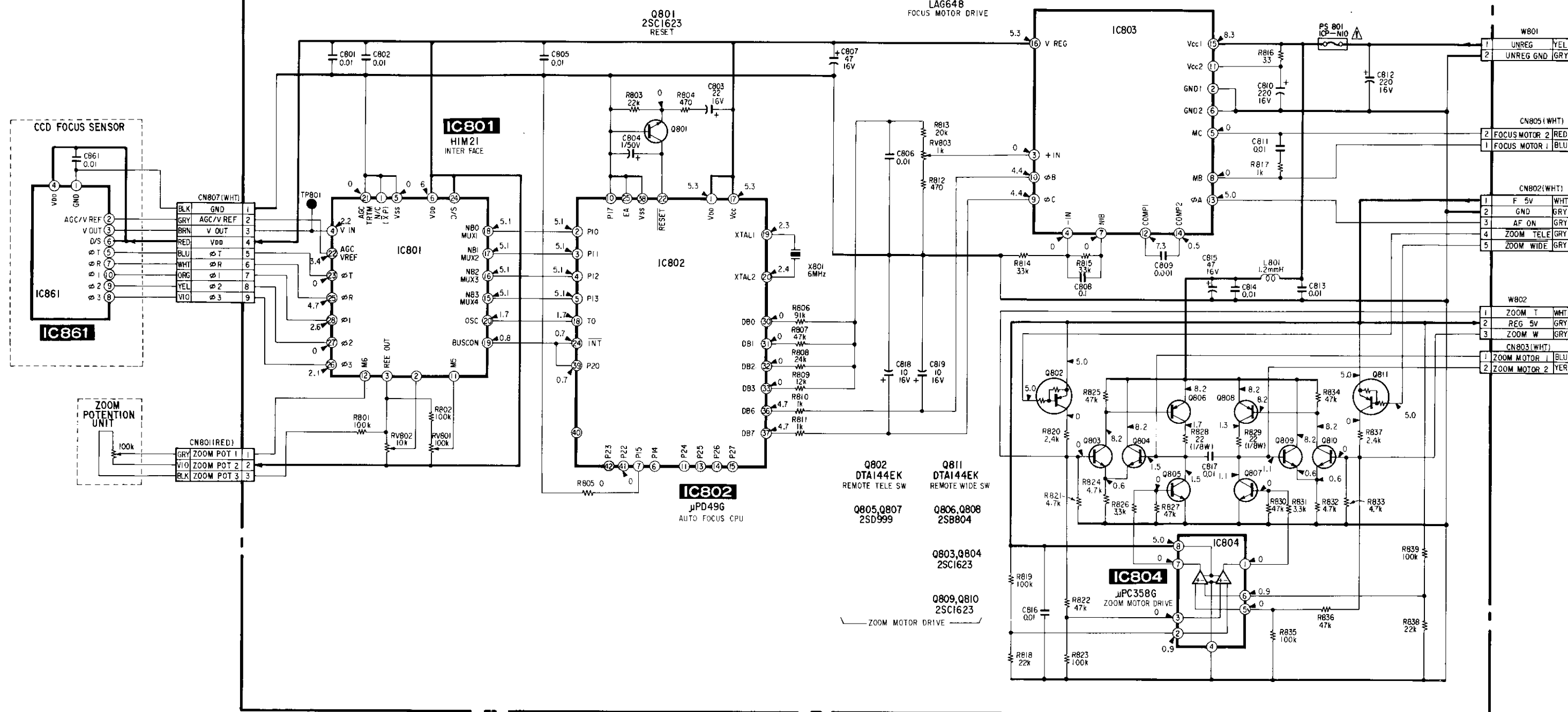
CAMERA CAMERA

AF-23 (AUTO FOCUS, ZOOM MOTOR DRIVE), ZS-2 (START/STOP SWITCH, ZOOM SWITCH, RELAY), LI-1 (LITHIUM BATTERY STORAGE), GS-2 (START/STOP SWITCH) SCHEMATIC DIAGRAM

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

— Ref. No. AF-23, ZS-2 BOARDS: 1000 series, GS-2 BOARD: 2000 series, LI-1 BOARD: 6000 series —

AF-23 BOARD no mark: CAMERA POWER SW ON mode



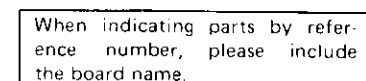
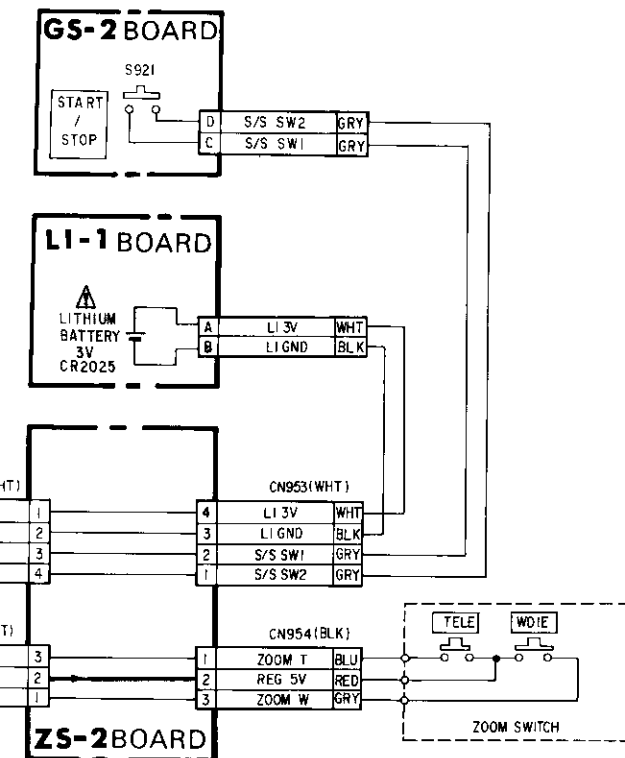
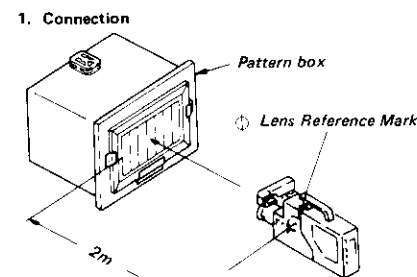


Fig. b Picture of TV monitor



Note (Schematic Diagram):

- Caution to be exercised when replacing chip components. Do not reuse the removed components but use new components. Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance. $k\Omega = 1000\Omega$ and $M\Omega = 1000k\Omega$.
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- : panel designation.
- : adjustment designation.
- : B+ line.
- Measuring conditions of voltage value and waveform
 - The subject is color bar of pattern box.
 - The voltage value is a reference value between the grounding.
 (The tester used is the digital multimeter DC10M Ω)



2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

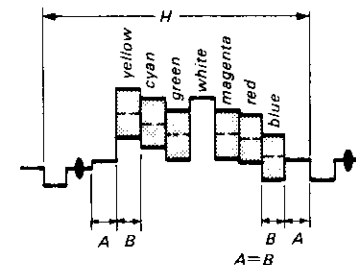


Fig. a Camera output waveform of Pin ② of CN201 on VI-22 board

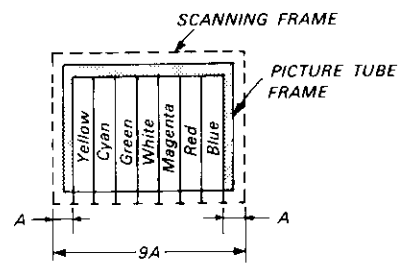
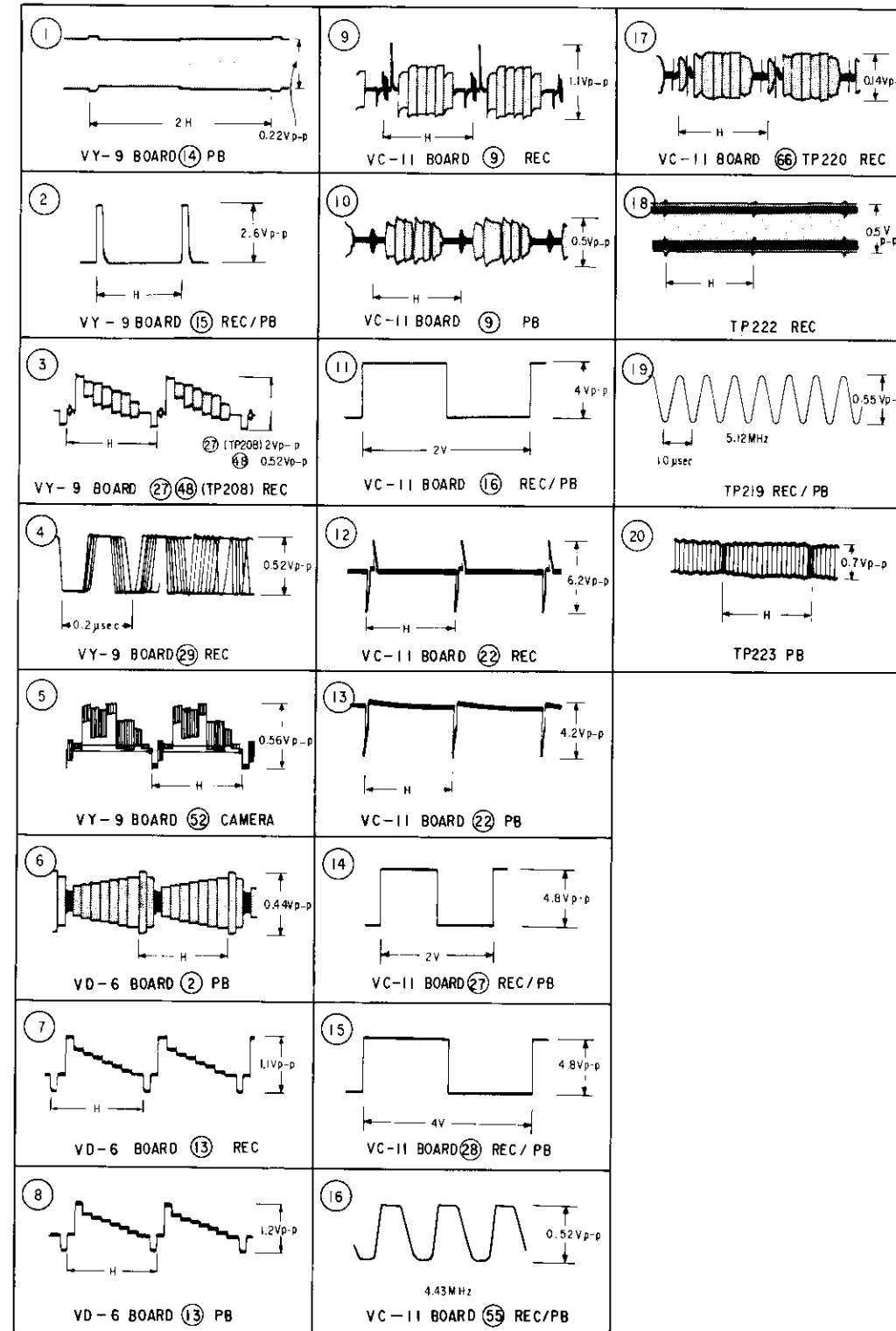


Fig. b Picture of TV monitor screen

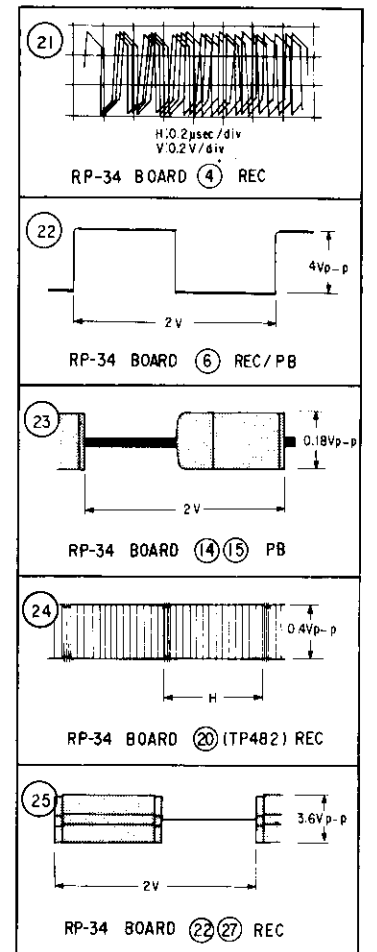
Note: The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

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

VI-22BOARD (VIDEO)



RP-34BOARD (VIDEO)

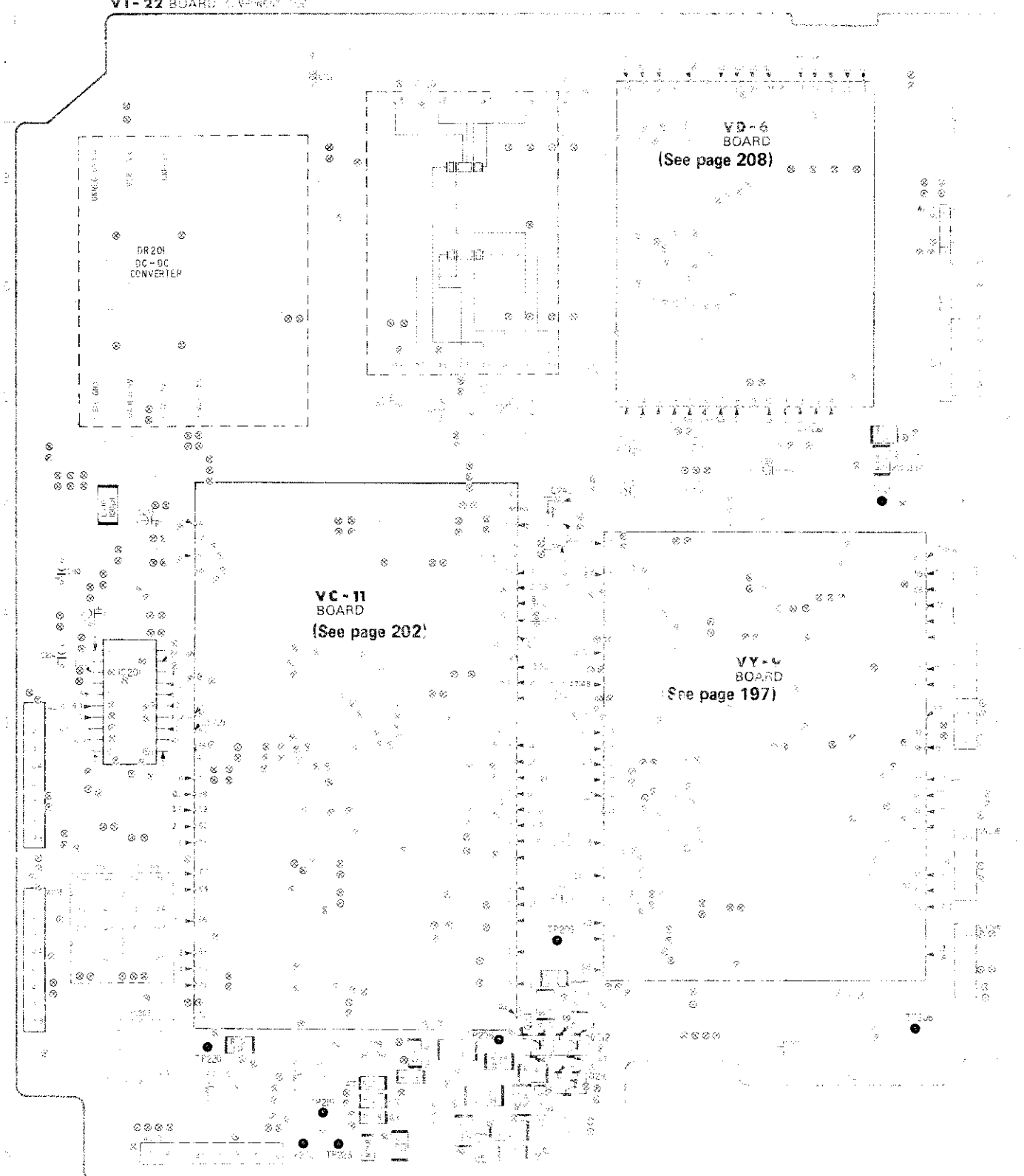


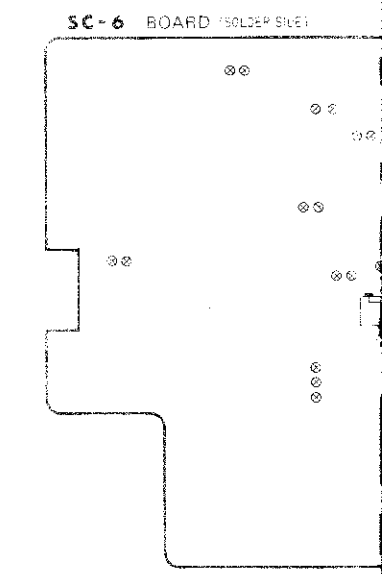
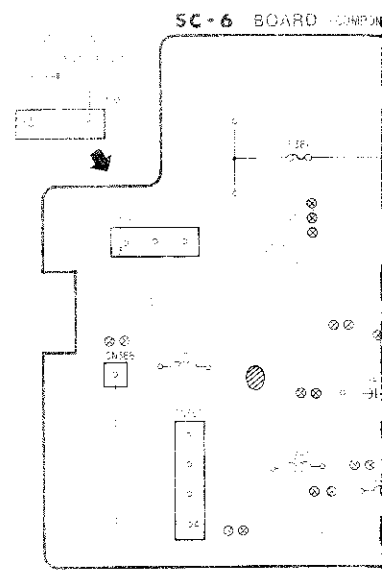
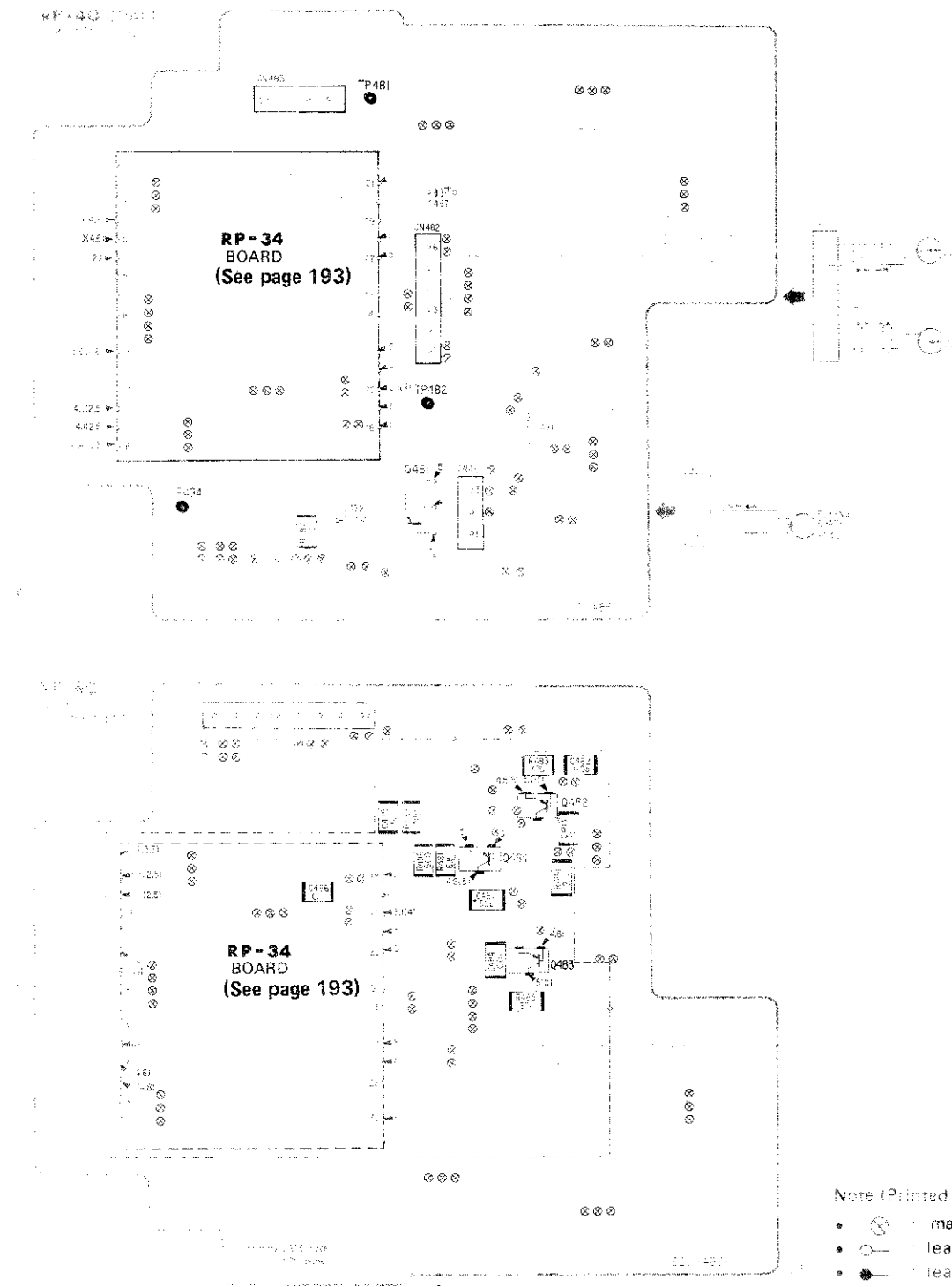
VI-22 (VIDEO SIGNAL PROCESS), RP-40 (VIDEO AUDIO RF SIGNAL PROCESS) BOARD

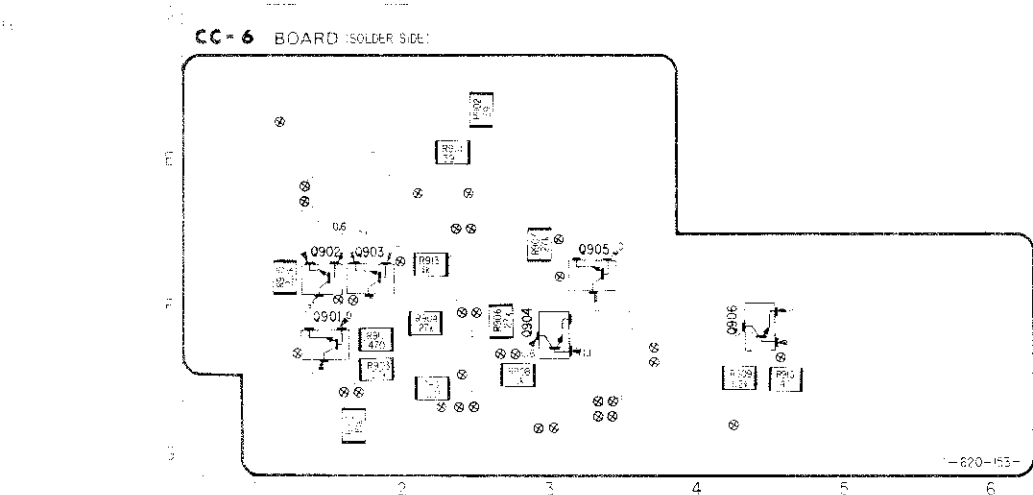
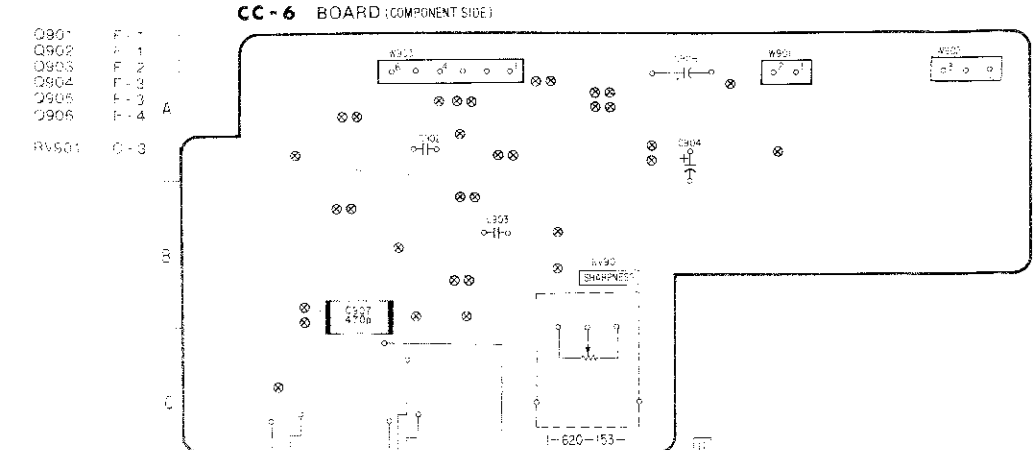
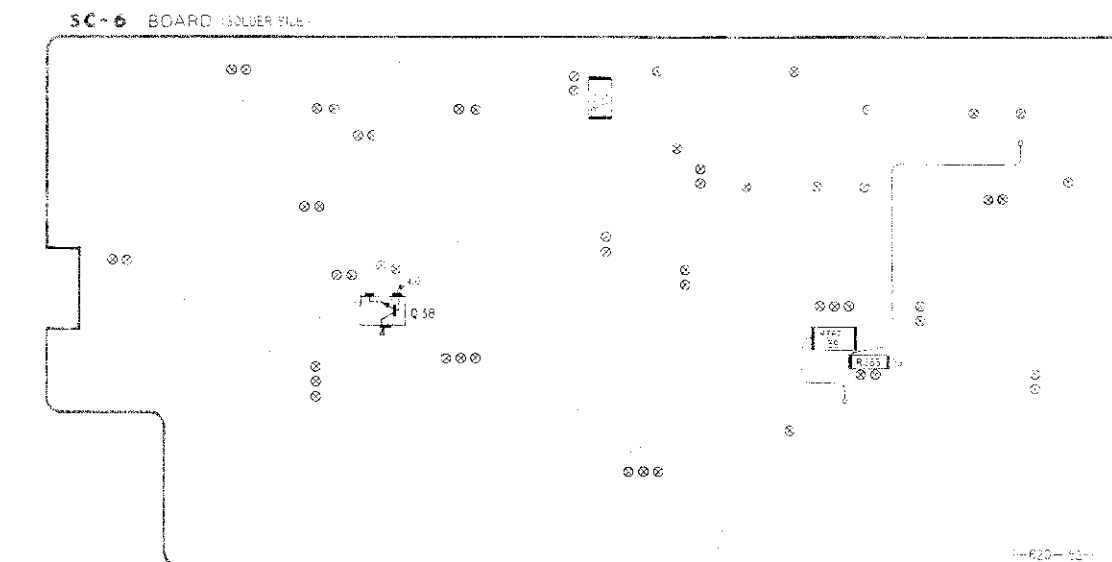
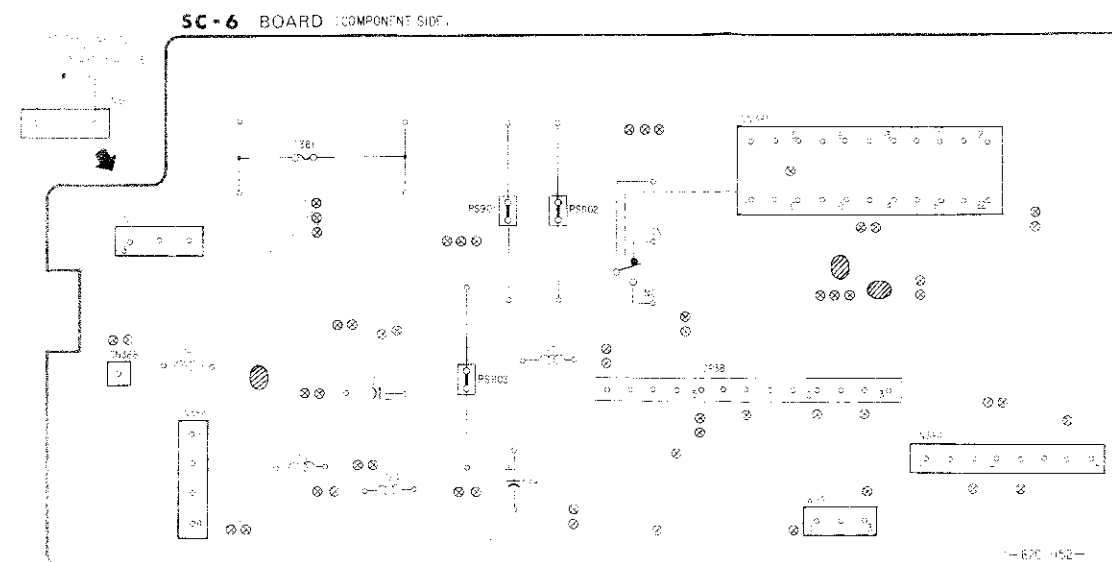
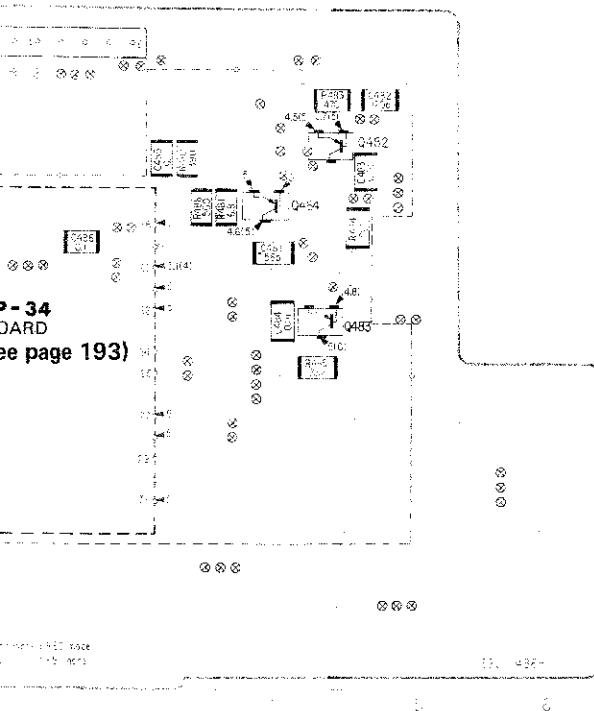
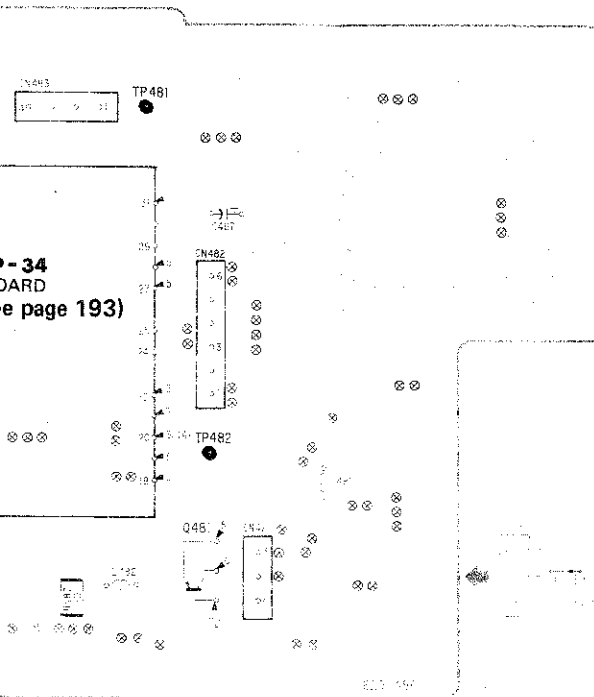
- Ref. No. VI-22, CC-6 BOARDS: 3000-series, SC & RP-40 (RU) VIDEO BOARD

VI-22 BOARD COMPONENT LIST

D201	J-16
D202	I-12
IC201	G-2
IC202	H-13
LV201	D-5
Q201	F-12
Q202	F-14
Q209	J-14
Q210	J-6
Q211	J-8
Q212	J-8
Q213	J-14
Q220	F-16
Q221	F-15
Q222	H-17
Q224	I-17
Q225	H-17
Q226	K-16
Q227	K-17
Q228	H-16
Q229	G-14
Q230	H-17
Q240	J-8
Q241	H-14
Q242	J-17
Q243	B-16
Q244	F-12
Q245	I-16
Q247	B-13
Q248	B-13
Q249	H-17
Q250	H-16
Q252	I-17
Q270	H-12
Q271	G-13
Q272	L-13
Q273	L-13
Q281	I-12
Q282	I-11
RV201	J-2
RV202	L-3
RV203	E-9
TP201	E-9
TP206	J-5
TP208	I-5
TP209	I-5
TP219	K-2
TP220	J-2
TP222	K-3
TP223	K-5

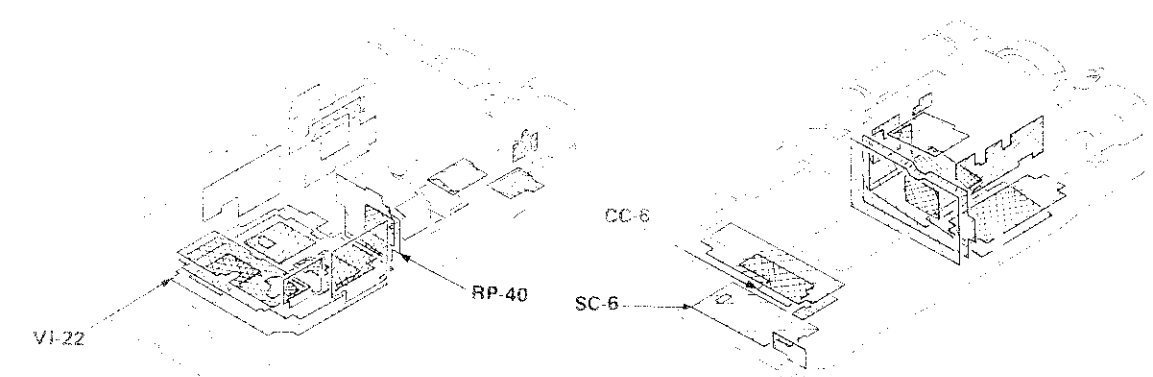






- Note (Printed Wiring Board):
- mark is through hole.
 - lead wire attached to the component side.
 - lead wire attached to the soldering side.
 - pattern from the side which enables seeing.

- Digital transistor (VI-22, Q201, 202, 213, 222, 229, 240, 241, 242, 243, 244, 245, 248, 249, 250, 252, 270, 273, 282, SC-6, Q381, RP-40, Q483, 484, CC-6, Q901, 904, 905) transistor with resistors.
- Refer to the VI-22, SC-6, RP-40, CC-6 boards schematic diagram for digital transistor.



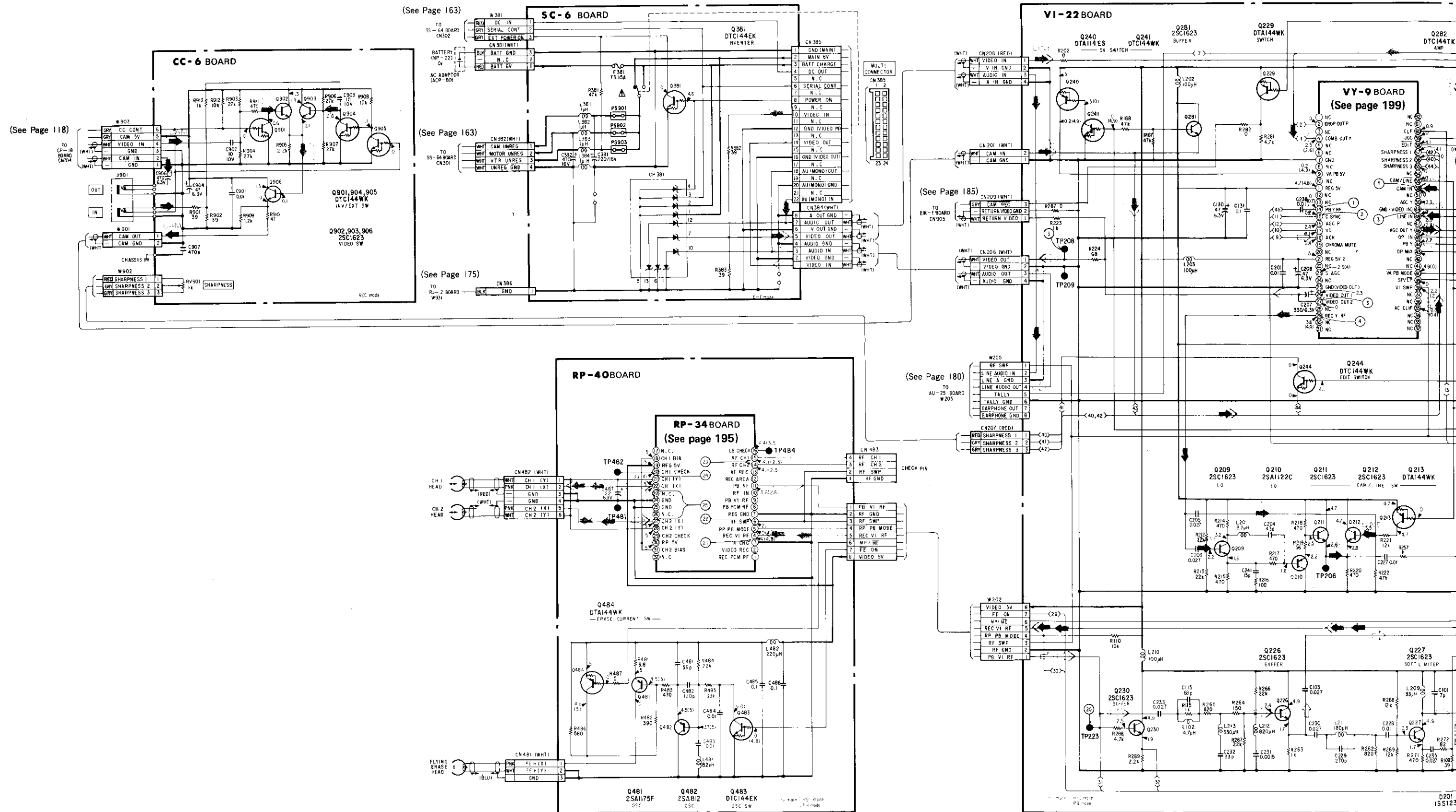
VIDEO VIDEO

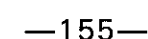
VI-22 (VIDEO SIGNAL PROCESS), RP-40 (VIDEO, AUDIO RF SIGNAL PROCESS, FLYING ERASE OSC), CC-6 (ACCESSORY INPUT/OUTPUT TERMINAL, SHARPNESS VR), SC-6 (MULTI CONNECTOR, FUSE) SCHEMATIC DIAGRAM

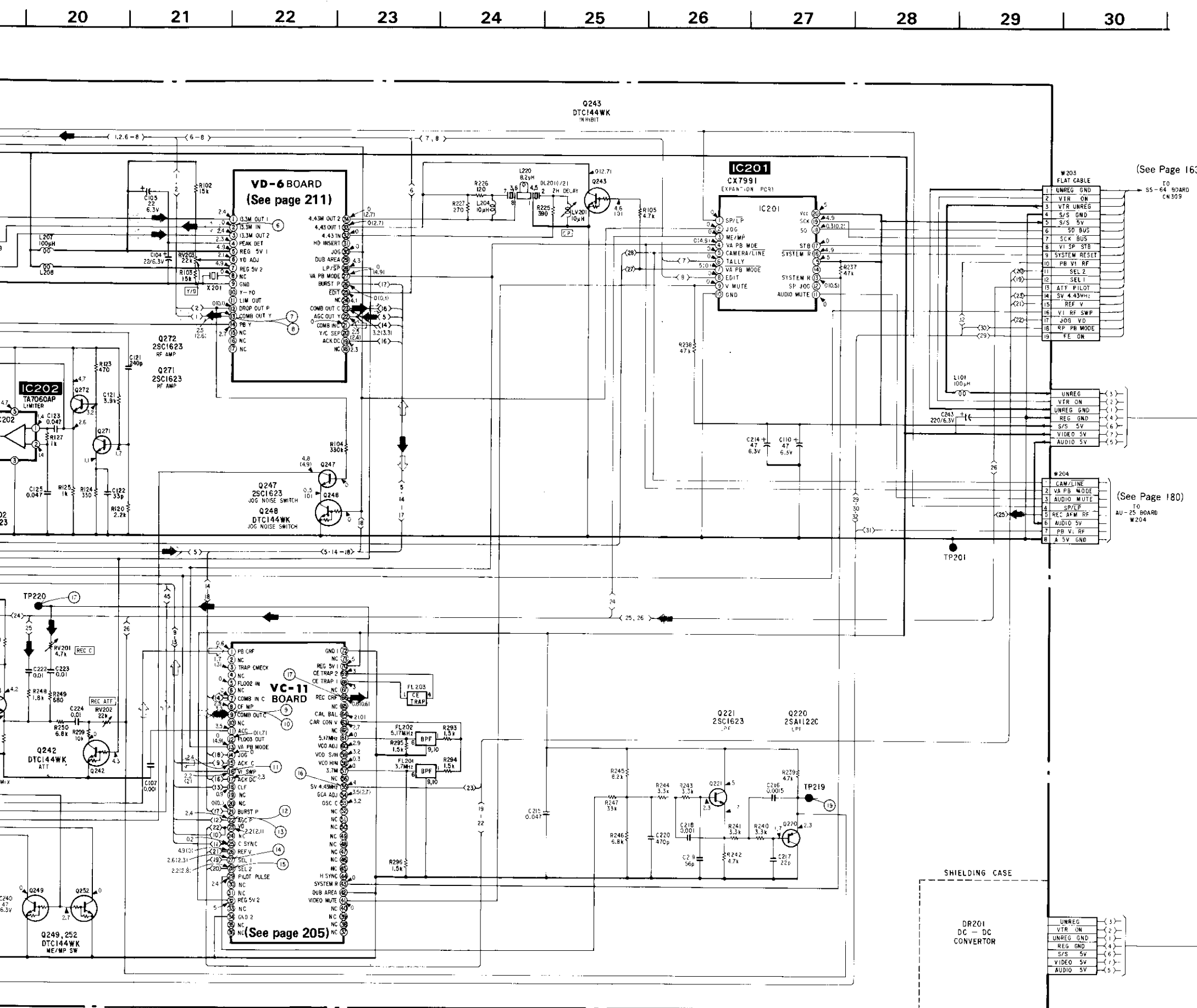
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

- Ref. No. VI-22, CC-6 BOARDS: 3000 series, SC-6, RP-40 BOARDS: 4000 series -

A
B
C
D
E
F
G
H
I
J







Note (Schematic Diagram):

- Caution to be exercised when replacing chip components. Do not reuse the removed components but use new components.
- Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance. $k\Omega = 1000\Omega$ and $M\Omega = 1000k\Omega$
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- : panel designation.
- : adjustment designation.
- : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape.
- All voltage are dc mesured with a VOM (10M Ω)

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

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

• Signal path

- REC Y SIGNAL
- PB Y SIGNAL
- REC CHROMA SIGNAL
- PB CHROMA SIGNAL
- REC Y & CHROMA SIGNAL
- PB Y & CHROMA SIGNAL
- REC AUDIO SIGNAL
- PB AUDIO SIGNAL

Note (Printed Wiring Board):

- ⊗ : mark is through hole.
- : lead wire attached to the component side.
- : lead wire attached to the soldering side.
- ▨ : pattern from the side which enables seeing.
- ▩ : pattern of the rear side.
- ⋯ : B+ Pattern.

Digital transistor (SS-64: Q301, 302, 303, 304, 305, 306, 308, 310, 311, 312, 313, 314, 318, 319, 320, 321, 324, 325, 326, 329, 332, 333, 336, 502, 508, 510, 511, 512, 513, 515, 523, 524, 525, 657, DR-36: Q502) transistor with resistors. Refer to the SS-64, DR-36 boards schematic diagram for digital transistor.

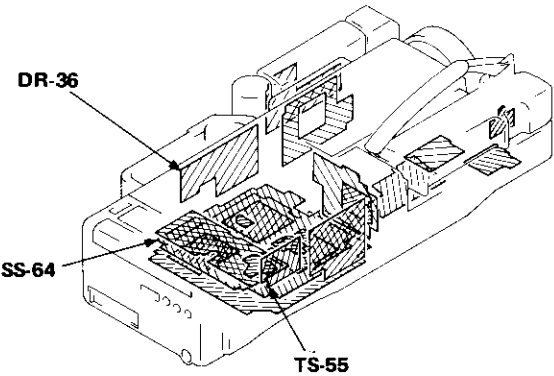
Note

Soldering side: Parts on the soldering side being seen from the soldering are stated.

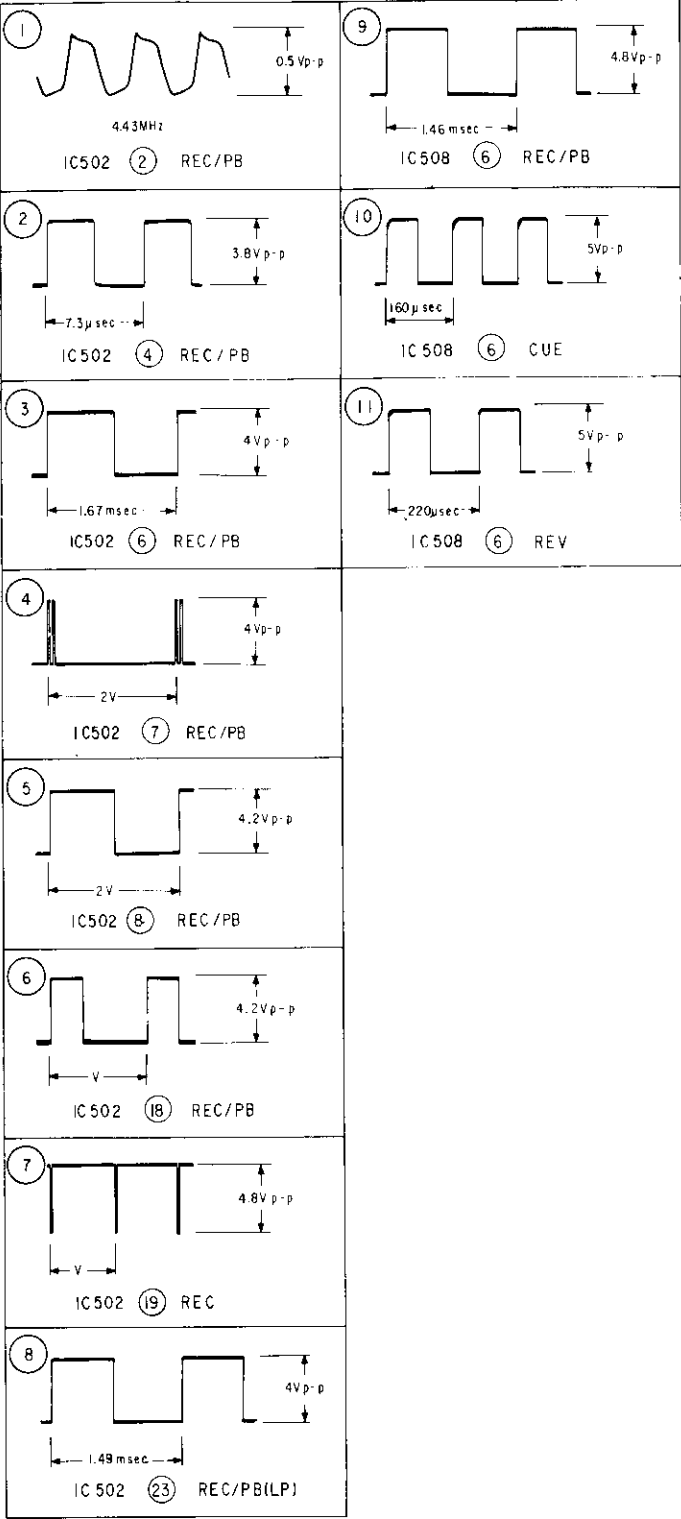
Component side: Parts on the component side being seen from the component are stated.

Regarding color indication of patterns

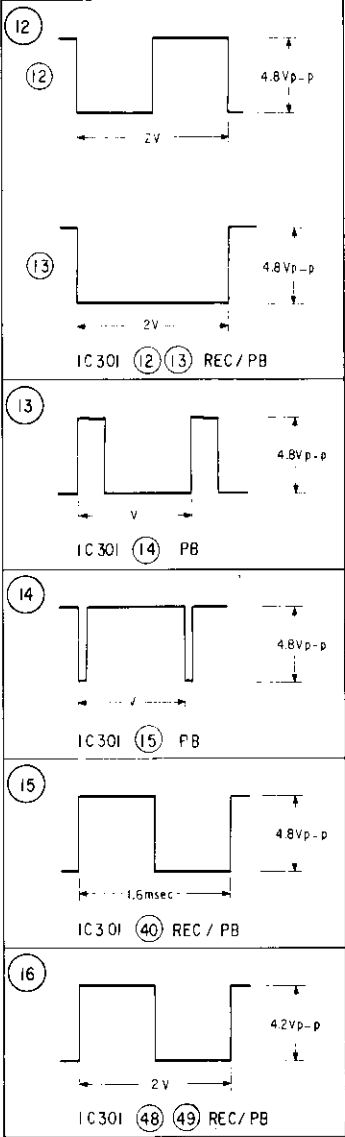
- Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- Pattern being seen in the state of the rear surface side is indicated in green pattern.



SS - 64 BOARD (SERVO)

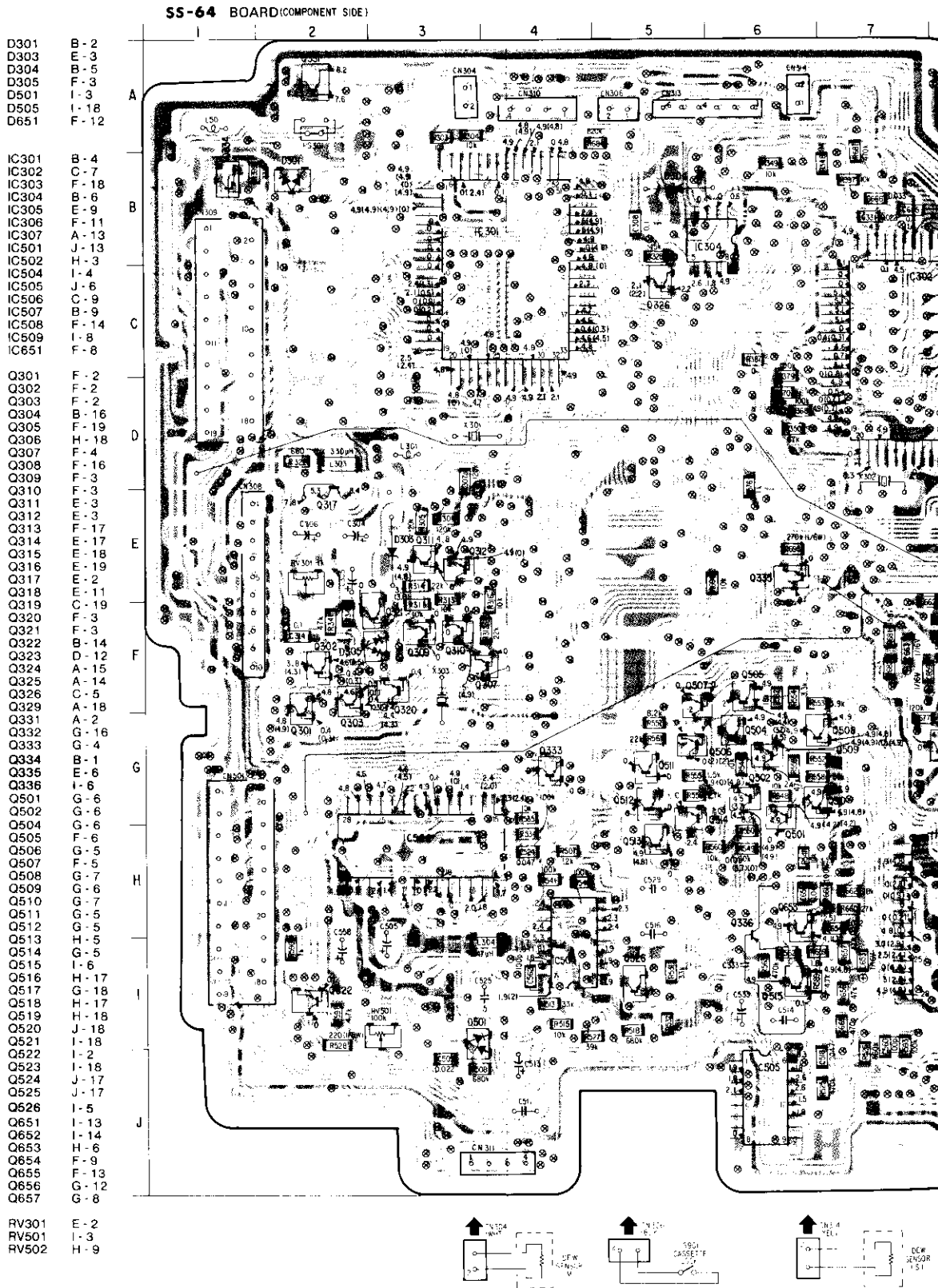


SS-64 BOARD (MECHANISM CONTROL)



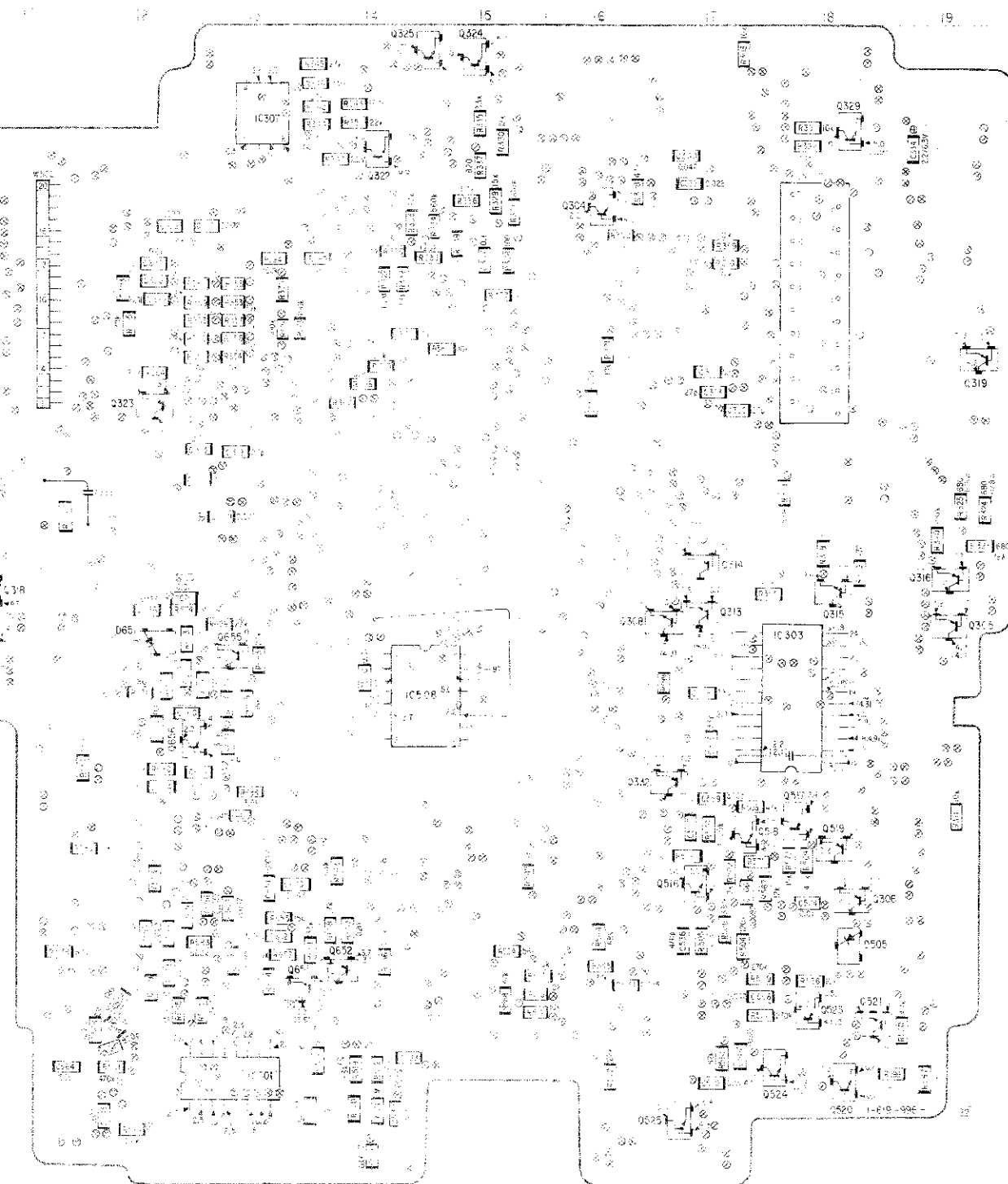
SERVO, SYSTEM CONTROL SERVO, SYSTEM CON

SS-64 (SYSTEM CONTROL/SERVO), DR-36 (DRUM/CAPSTAN MOTOR DRIVE, TAPE END SENSOR) — Ref. No. SS-64 BOARD: 5000 series, DR-36 BOARD: 6000 series, TS-55 BOARD: 7000 series —



WIRING BOARD

BOARD VIEW

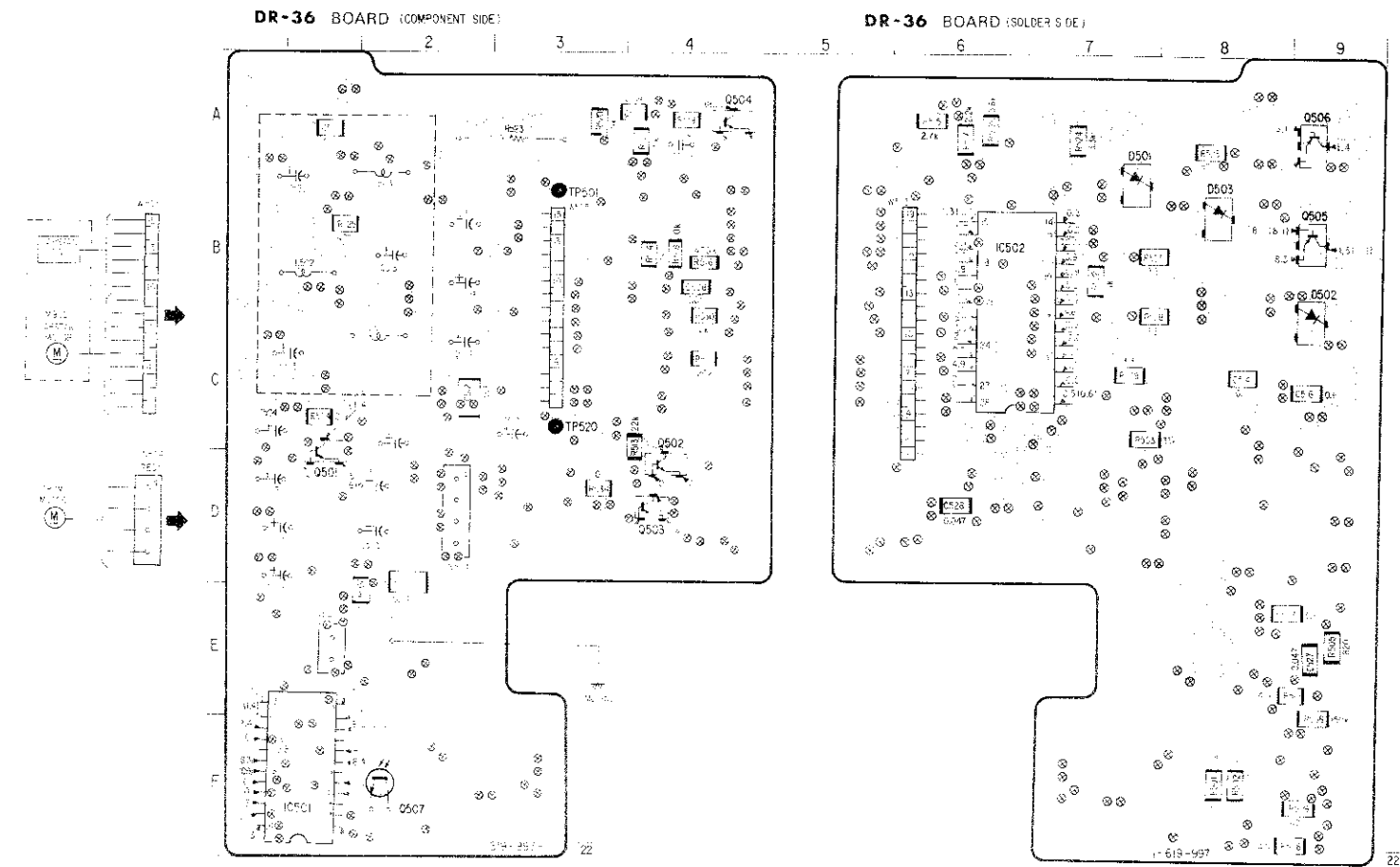


D501 A-7
 D502 B-9
 D503 B-8

 IC501 F-1
 IC502 B-6

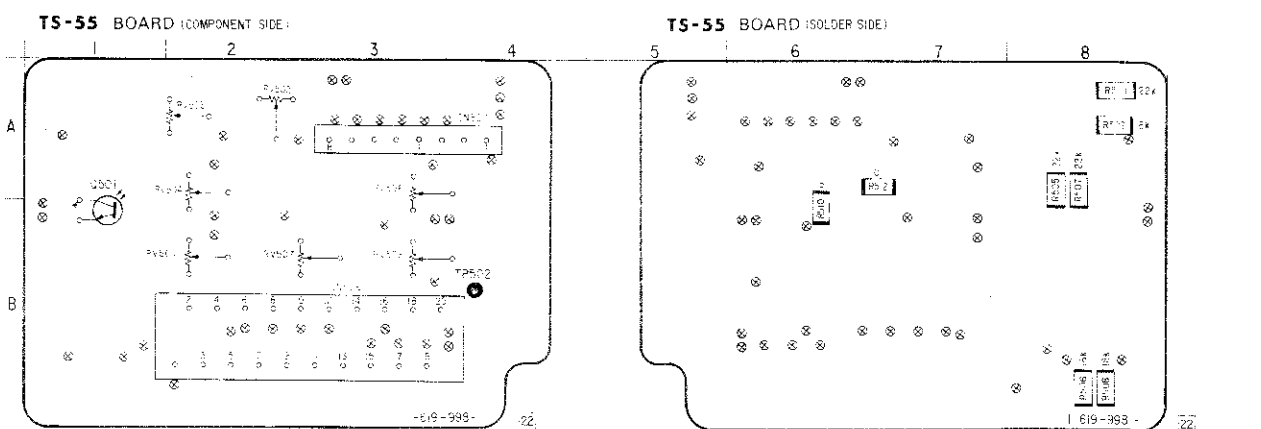
 Q501 D-1
 Q502 D-4
 Q503 D-4
 Q504 A-4
 Q505 B-9
 Q506 A-9
 Q507 F-2

 TP501 B-8
 TP520 C-3



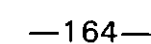
Q501 B-1
 RV501 B-2
 RV502 A-2
 RV503 A-2
 RV504 A-2
 RV505 A-3
 RV507 B-2
 RV508 B-3

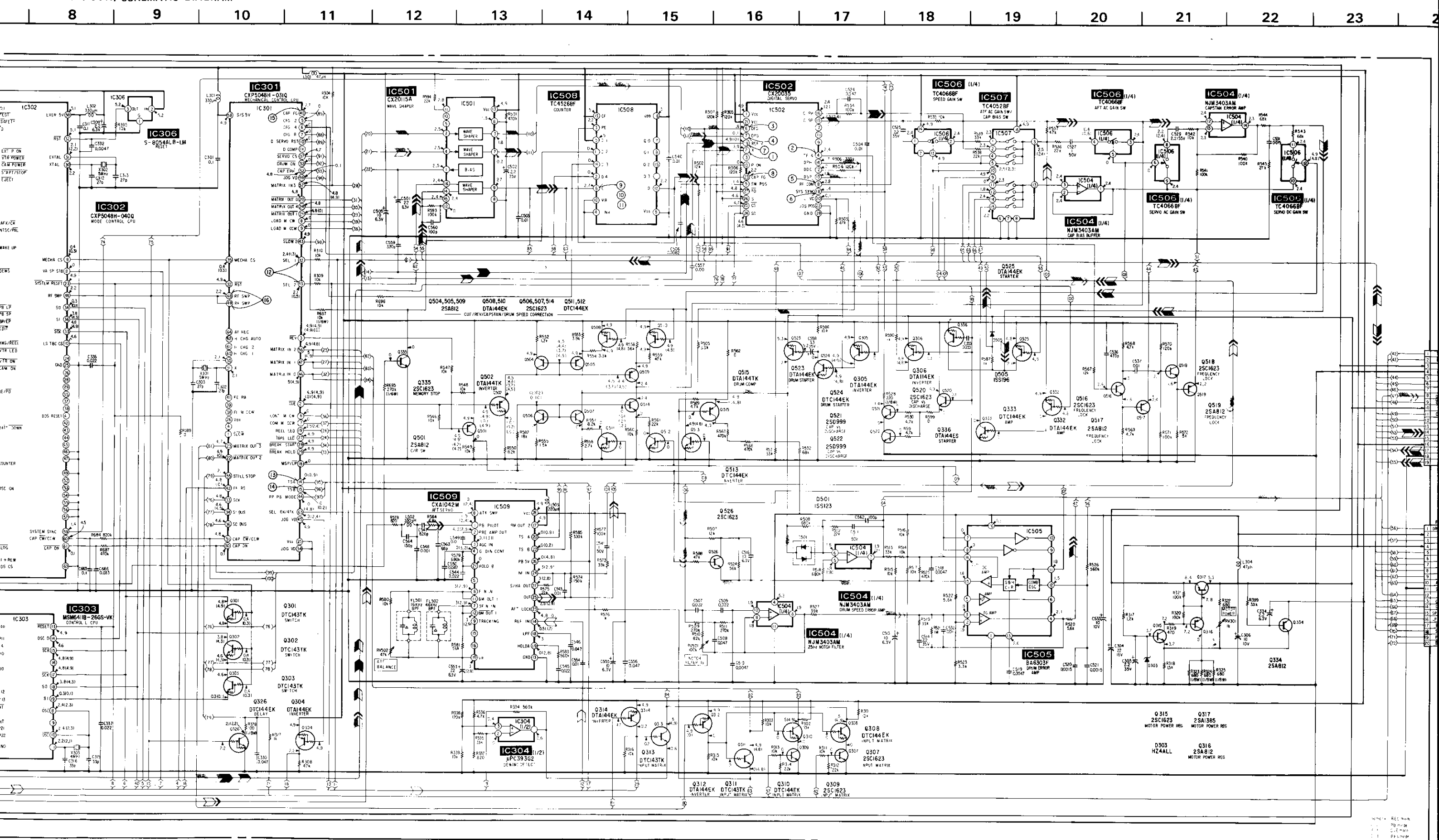
 TP502 B-4

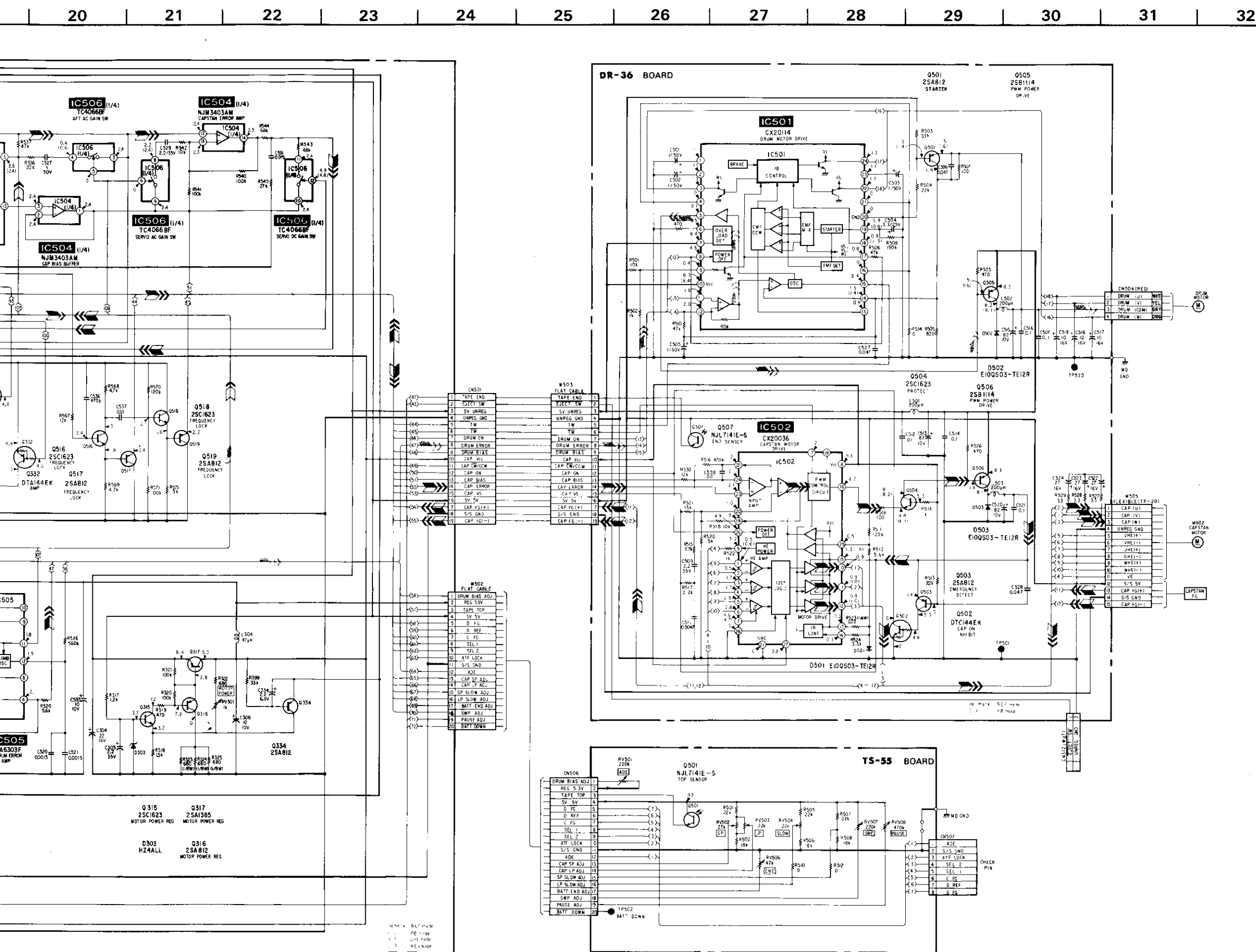


SERVO, SYSTEM CONTROL

- Ref. No. SS-64 BOARD: 5000 series, DR-36 BOARD: 6000 series, TS-55 BOARD: 7000 series -







Note (Schematic Diagram):

- Caution to be exercised when replacing chip components. Do not reuse the removed components but use new components. Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance. $k\Omega = 1000\Omega$ and $M\Omega = 1000k\Omega$.
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- : panel designation.
- : adjustment designation.
- : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape.
- All voltage are dc mesured with a VOM (10M Ω).

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

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

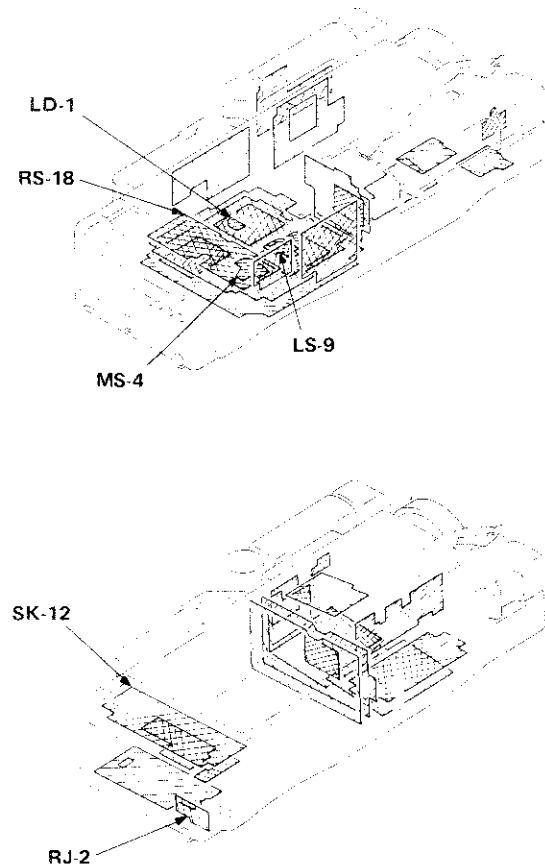
Signal Path

	REC	REC/PB	PB
Drum speed servo			
Drum phase servo			
Drum servo (speed and phase)			
Capstan speed servo			
Capstan phase servo			
Capstan servo (speed and phase)			

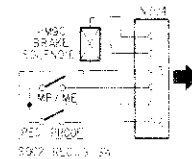
Note (Printed Wiring Board):

- ⊗ : mark is slew hole.
- : lead wire attached to the component side.
- : lead wire attached to the pattern side.
- : pattern from the side which enables seeing.

- Digital transistor (SK-12: Q301, 302, 303, RS-18: Q302, 303, 304, 307, 310, 312, 314) transistor with resistors.
Refer to the SK-12, RS-18 boards schematic diagram for digital transistor.



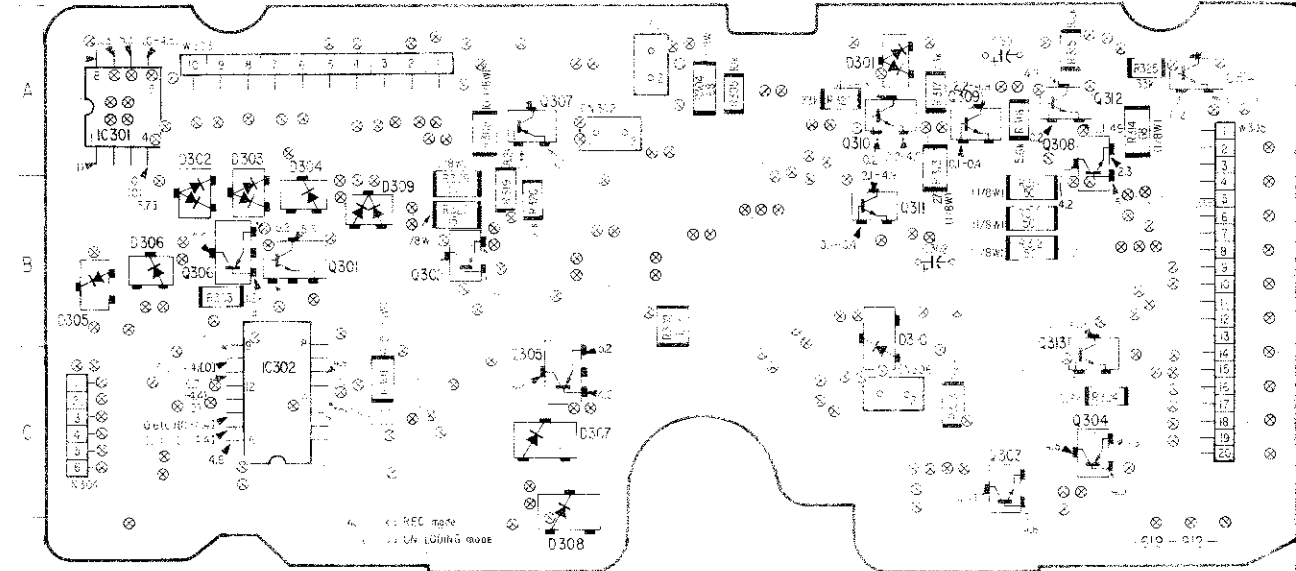
D301	A-5
D302	B-1
D303	B-2
D304	B-2
D305	B-1
D306	B-1
D307	C-4
D308	C-4
D309	B-2
D310	B-6
IC301	A-1
IC302	C-2
PH301	F-3
PH302	G-3
PH303	F-6
Q301	B-2
Q302	B-3
Q303	C-6
Q304	C-7
Q305	C-4
Q306	B-2
Q307	A-3
Q308	A-7
Q309	A-6
Q310	A-5
Q311	B-5
Q312	A-7
Q313	C-7
Q314	A-7



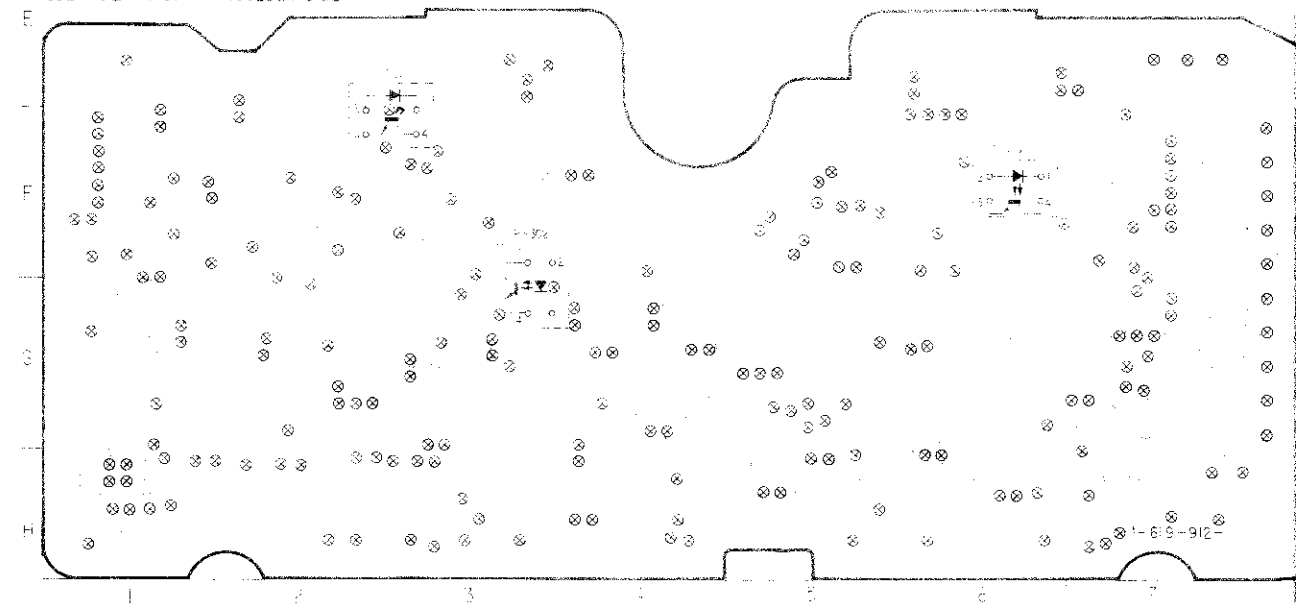
RS-18 (CONTROL/LOADING MOTOR, SOLENOID DRIVE), LS-9 (LOADING SWITCH), MS-4 (MODE SWITCH, CONTROL MOTOR), LD-1 (TAPE TO OPEN)

- Ref. No. RS-18 BOARD: 4000 series, MS-4 BOARD: 5000 series, LD-1, LS-9 BOARDS: 6000 series, SK-12, RJ-2 BOARD: 7000 series -

RS-18 BOARD (COMPONENT SIDE)



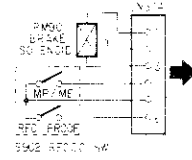
RS-18 BOARD (SOLDER SIDE)



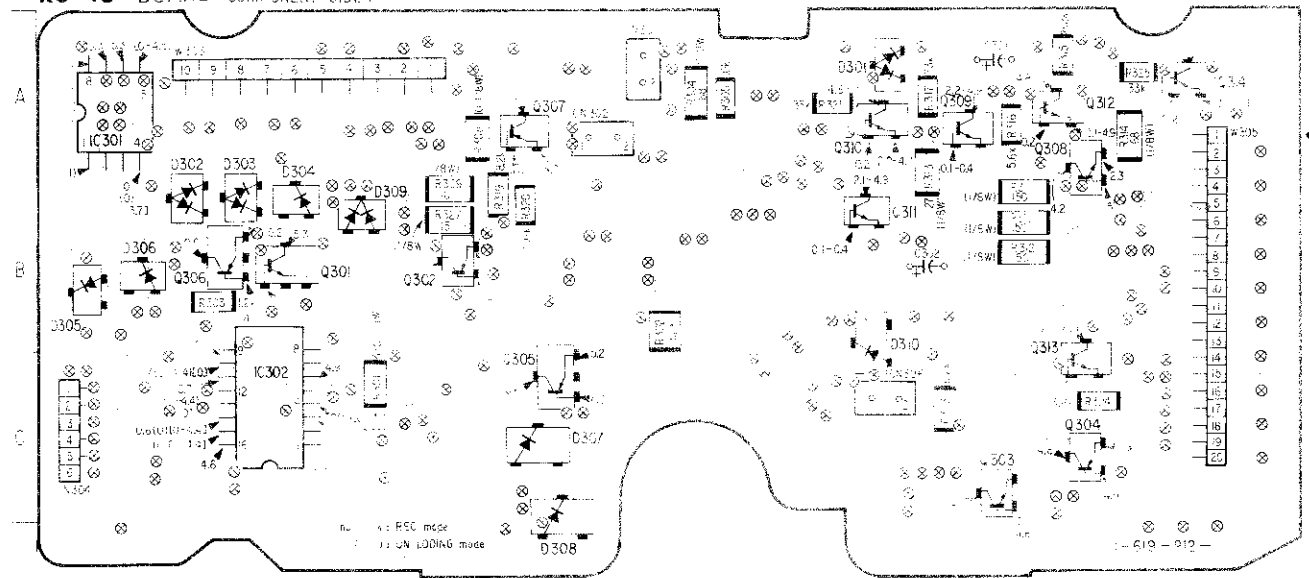
CONTROL/LOADING MOTOR, SOLENOID DRIVE), LS-9 (LOADING SWITCH), MS-4 (MODE SWITCH, CONTROL MOTOR), LD-1 (TAPE TOP/END LED), SK-12 (DISPLAY, FUNCTION CONTROL), RJ-2 (WIRED REMOTE CONTROL TERMINAL/PRINTED WIRING BOARD).

RS-18 BOARD: 4000 series, MS-4 BOARD: 5000 series, LD-1, LS-9 BOARDS: 6000 series, SK-12, RJ-2 BOARDS: 7000 series

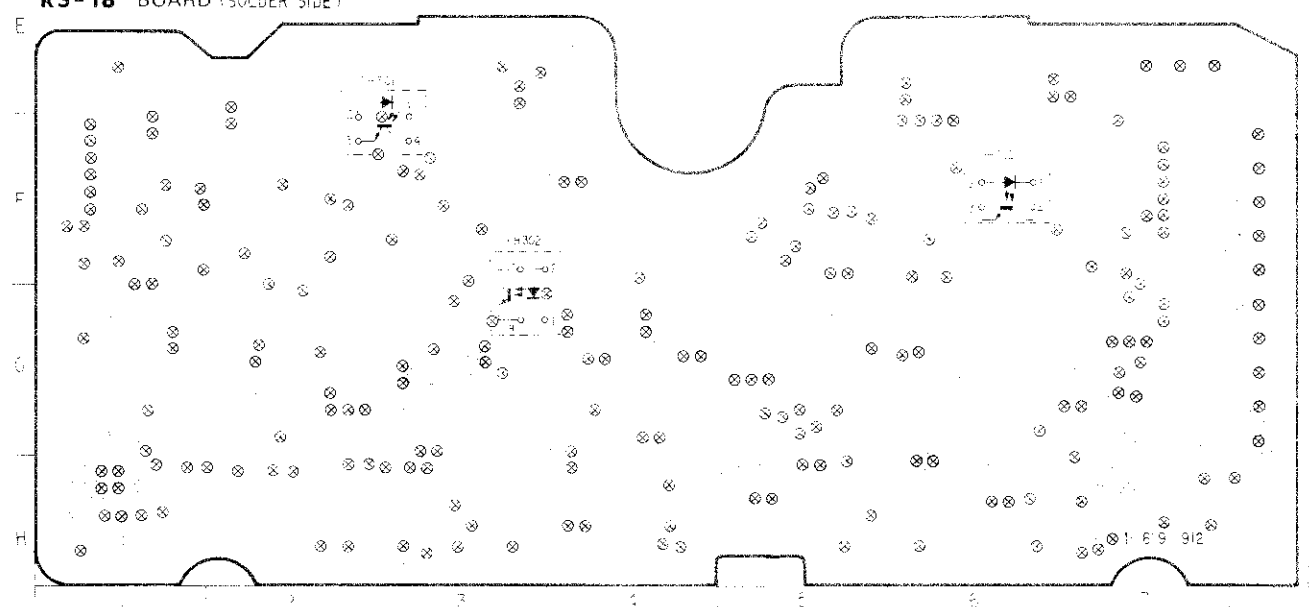
A-6
B-1
B-2
B-2
B-1
C-4
C-4
B-2
B-6
A-1
C-2
F-3
G-3
F-6
B-2
B-3
C-6
C-7
C-4
B-2
A-3
A-7
A-6
A-5
A-7
C-7
A-7



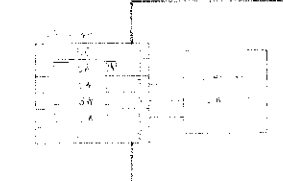
RS-18 BOARD (COMPONENT SIDE)



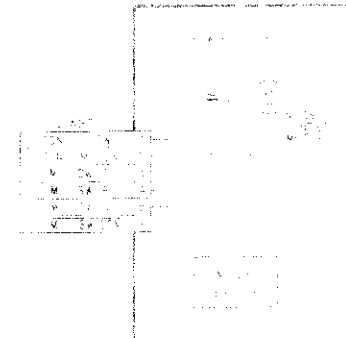
RS-18 BOARD (SOLDER SIDE)



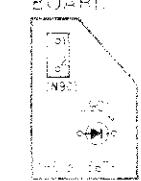
LS-9 BOARD



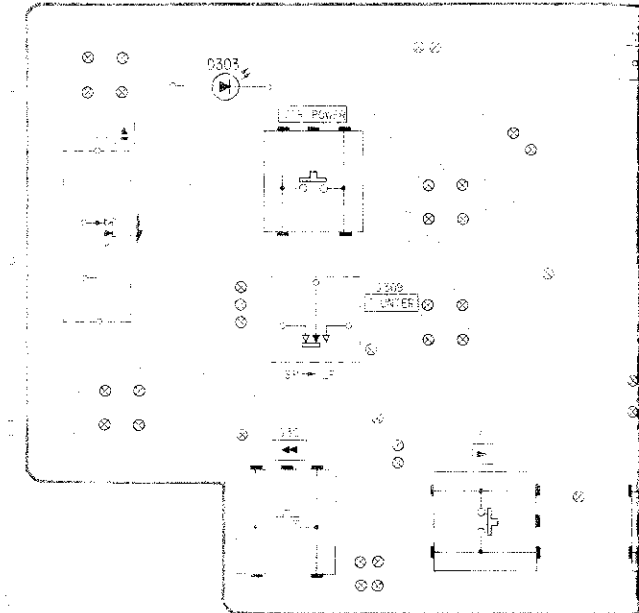
MS-4 BOARD



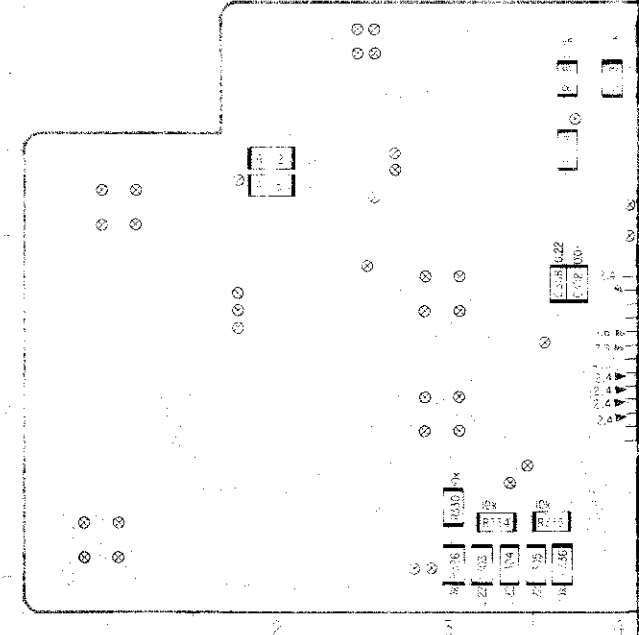
LD-1 BOARD



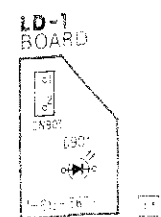
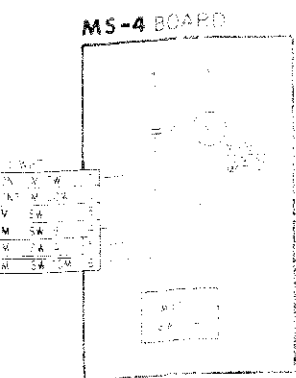
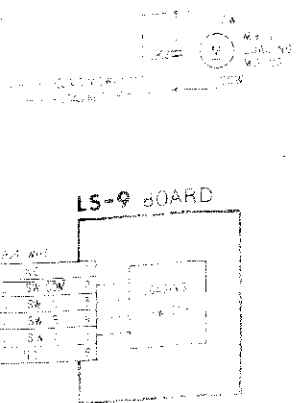
SK-12 BOARD (COMPONENT SIDE)



SK-12 BOARD (SOLDER SIDE)

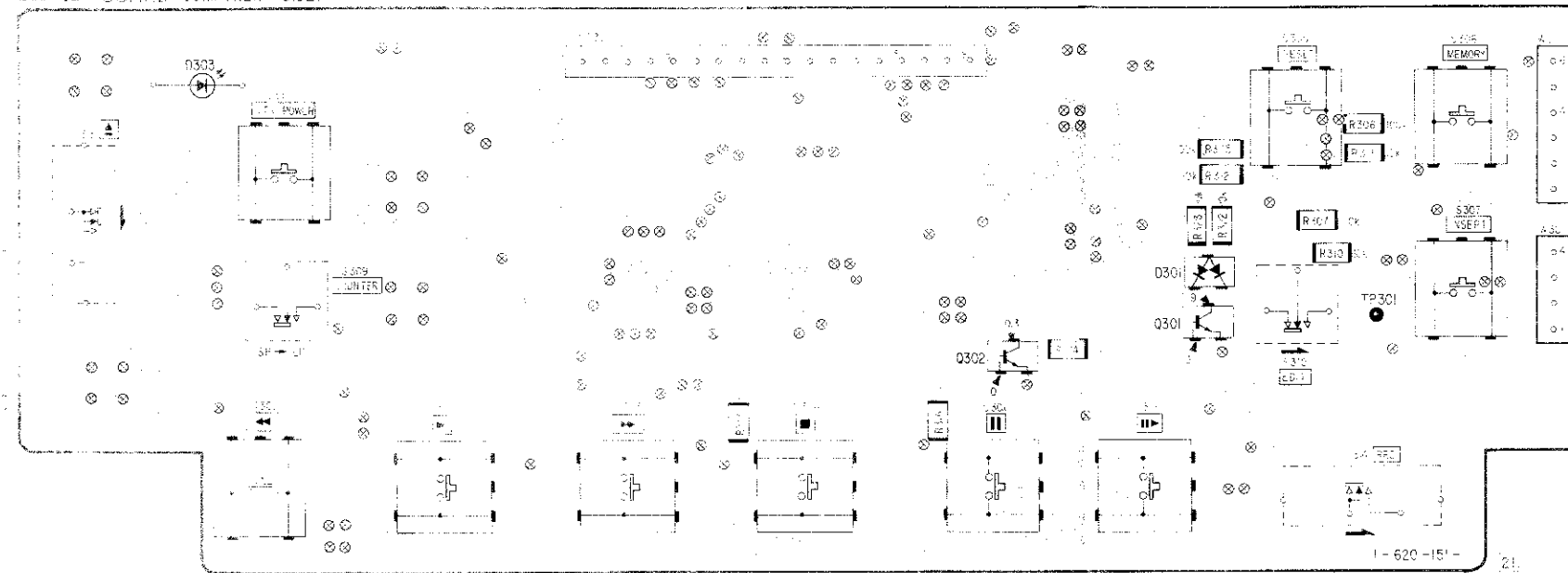


ON CONTROL, R/J Z (WIRED REMOTE CONTROL TERMINAL) PRINTED WIRING BOARD

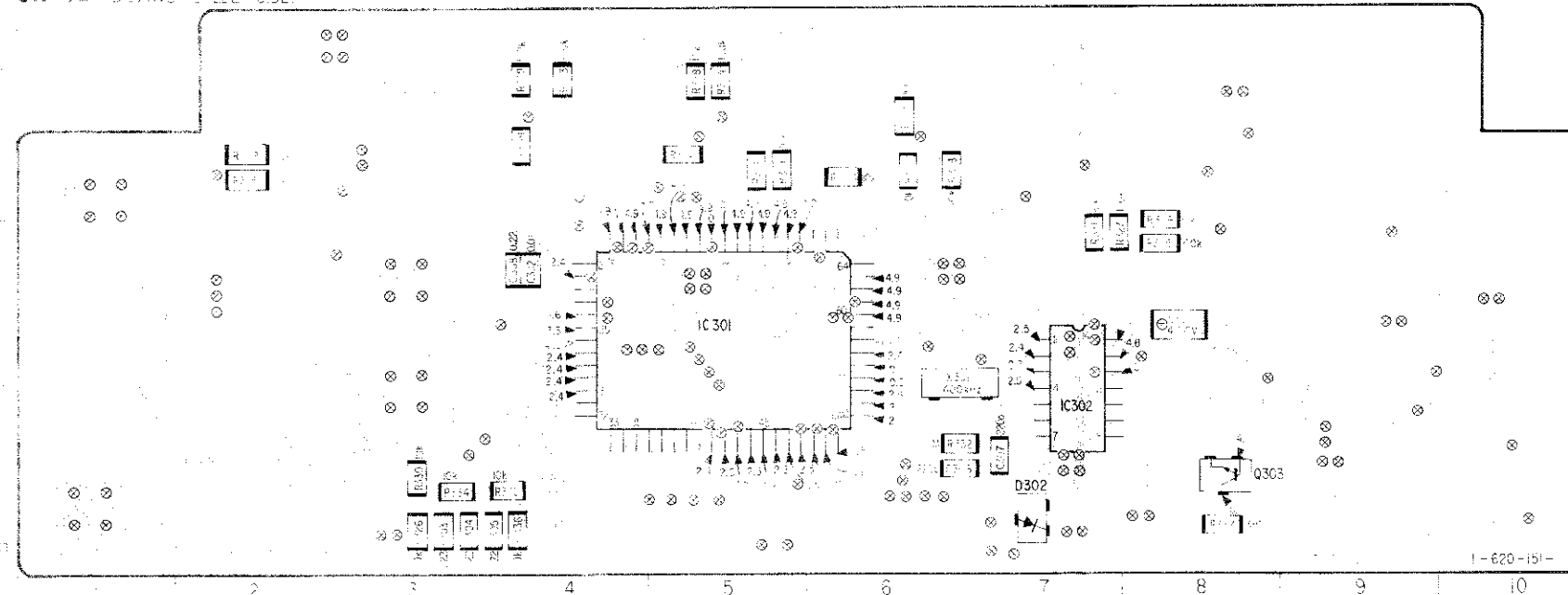


D301
D302
D303
IC301
IC302
Q301
Q302
Q303
TP301

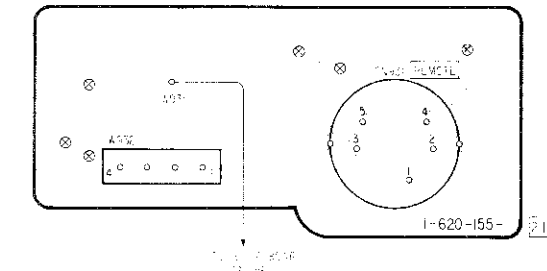
SK-12 BOARD (COMPONENT SIDE)



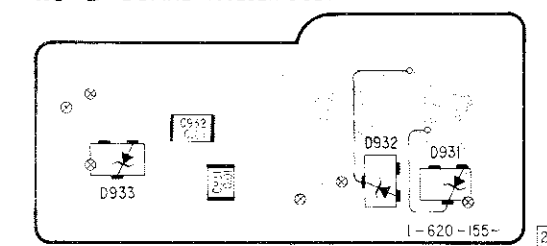
SK-12 BOARD (SOLDER SIDE)



RJ-2 BOARD (COMPONENT SIDE)



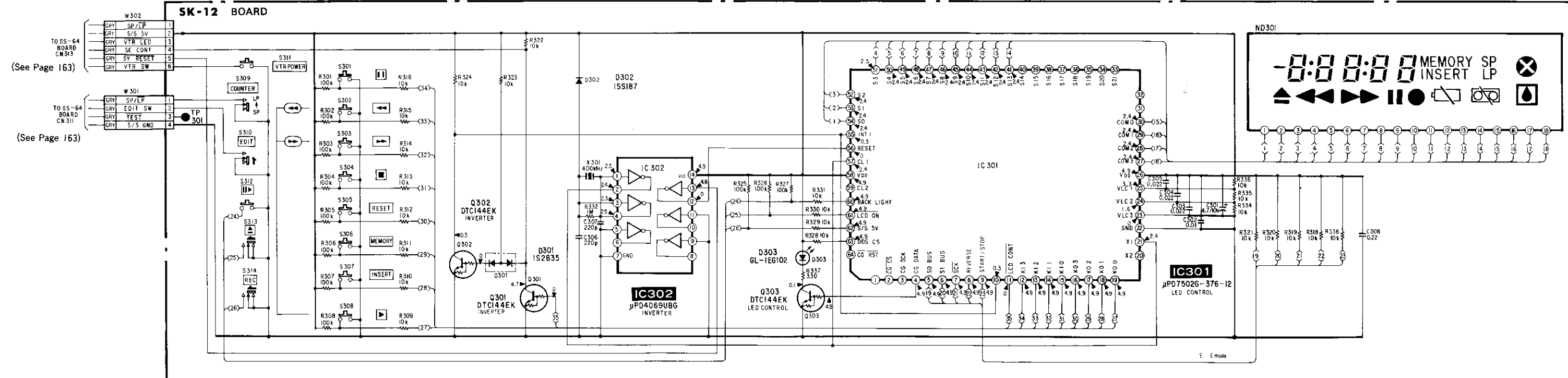
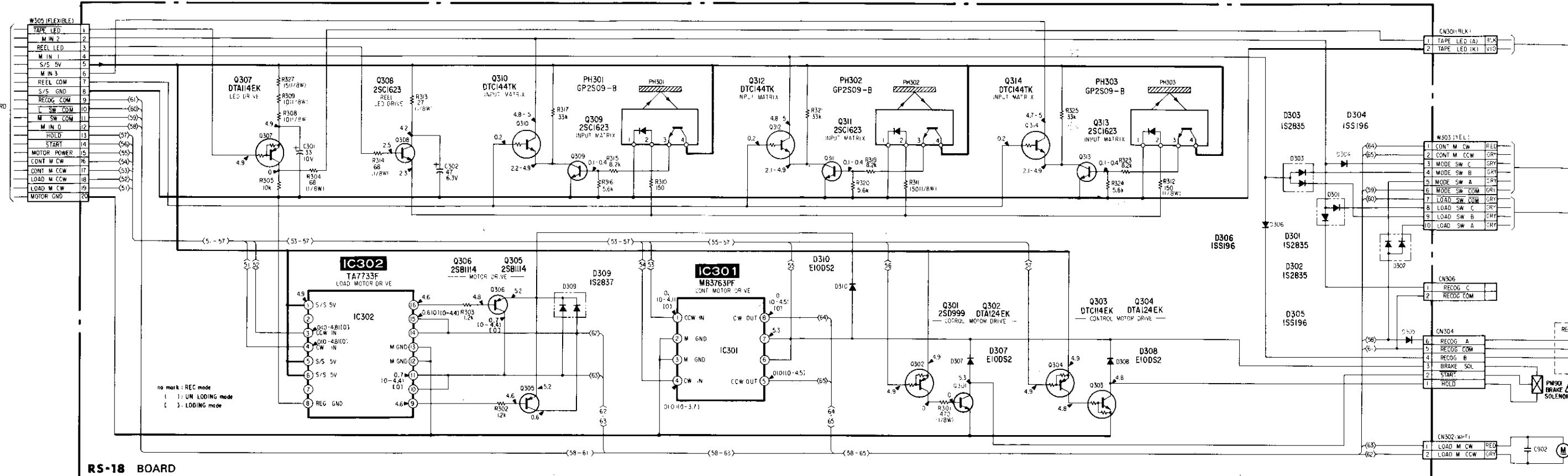
RJ-2 BOARD (SOLDER SIDE)



SERVO, MECHANISM CONTROL

RS-18 (CONTROL/LOADING MOTOR, SOLENOID DRIVE), LS-9 (LOADING SWITCH), MS-4 (MODE SWITCH, CONTROL MOTOR), LD-1 (TAPE TOP/END LED), SK-12 (DISPLAY, FUNCTION CONTROL), RJ-2 (WIRED REMOTE CONTROL TERMINAL)

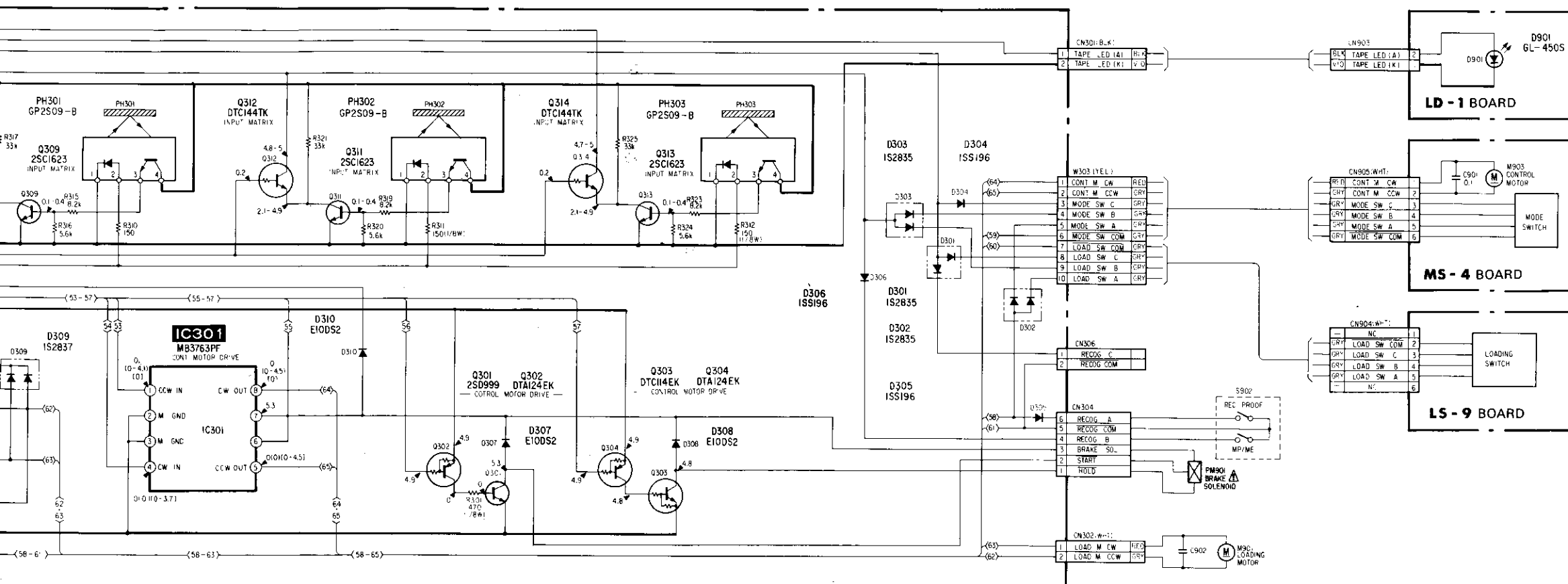
- Ref. No. RS-18 BOARD: 4000 series, MS-4 BOARD: 5000series, LD-1, LS-9 BOARDS: 6000 series, SK-12, RJ-2 BOARDS: 7000 series -



CH, CONTROL MOTOR), LD-1 (TAPE TOP/END LED), SK-12 (DISPLAY, FUNCTION CONTROL), RJ-2 (WIRED REMOTE CONTROL TERMINAL)

7 8 9 10 11 12 13 14 15 16 17 18 19

7000 series -

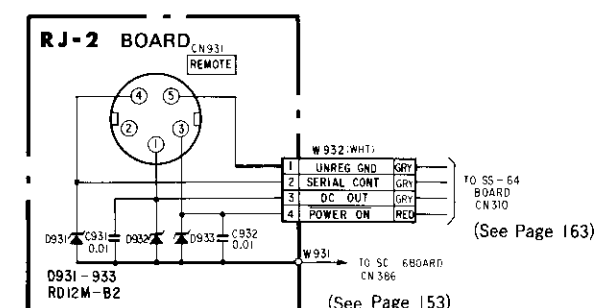
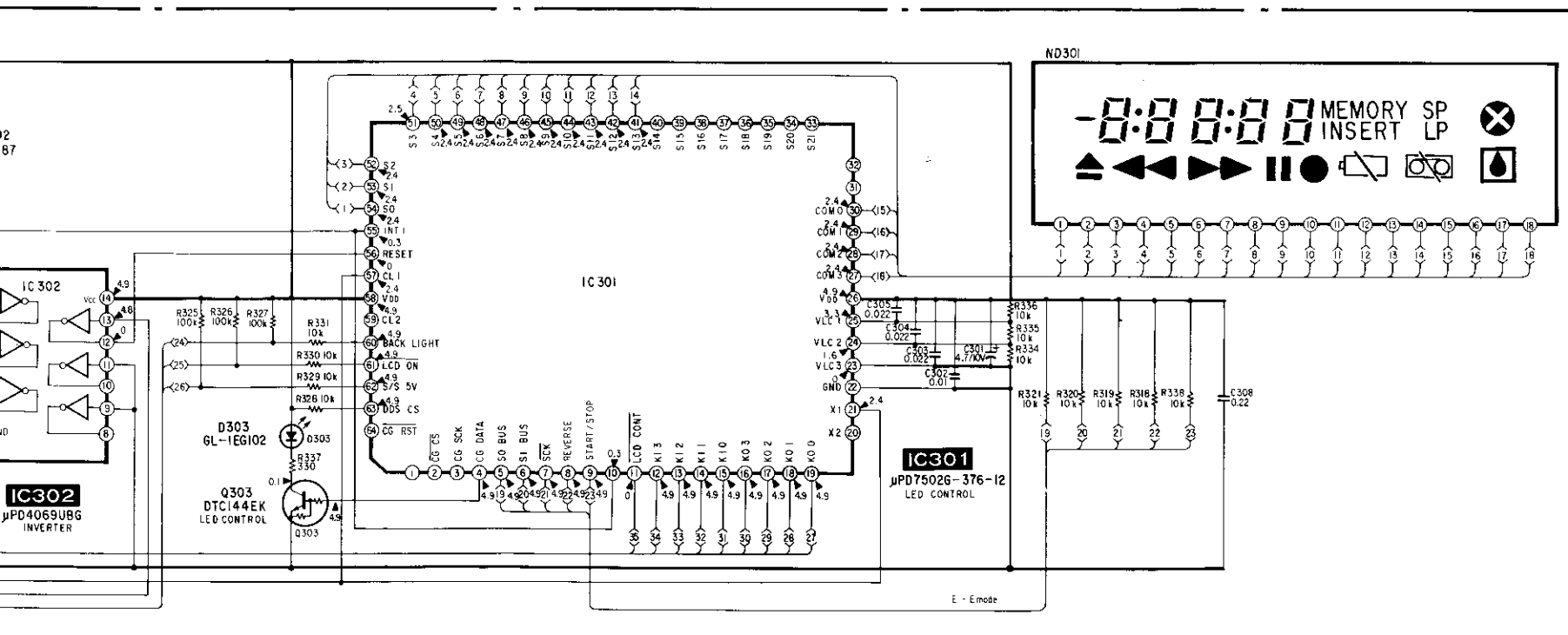


Note (Schematic Diagram):

- Caution to be exercised when replacing chip components. Do not reuse the removed components but use new components.
- Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance. $\text{k}\Omega = 1000\Omega$ and $\text{M}\Omega = 1000\text{k}\Omega$
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- : panel designation.
- : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape.
- All voltage are dc mesured with a VOM (10M Ω)

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

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



Note (Printed Wiring Board):

- ⊗ : mark is through hole.
- ○- : lead wire attached to the component side.
- ●- : lead wire attached to the soldering side.
- — : pattern from the side which enables seeing.

- Digital transistor (AU-25: Q404, 412, 414) transistor with resistors.
Refer to the AU-25 board schematic diagram for digital transistor.

Note

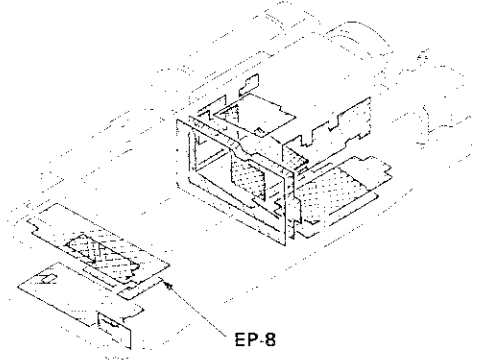
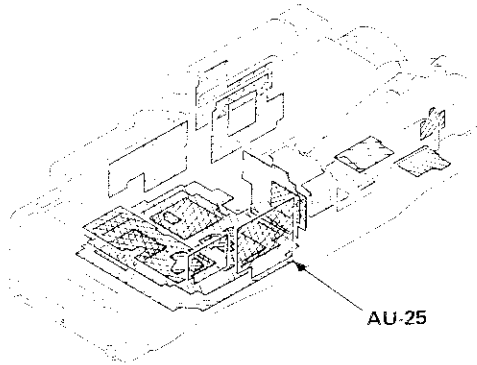
When using side Parts on the soldering side being seen from the soldering side (A side)

Component side. Parts on the component side being seen from the component side (B side)

Regarding the indication of pattern

Patterns being seen in the soldering side are indicated in gray pattern and red pattern (B+ pattern)

Patterns being seen in the component side are indicated in green pattern

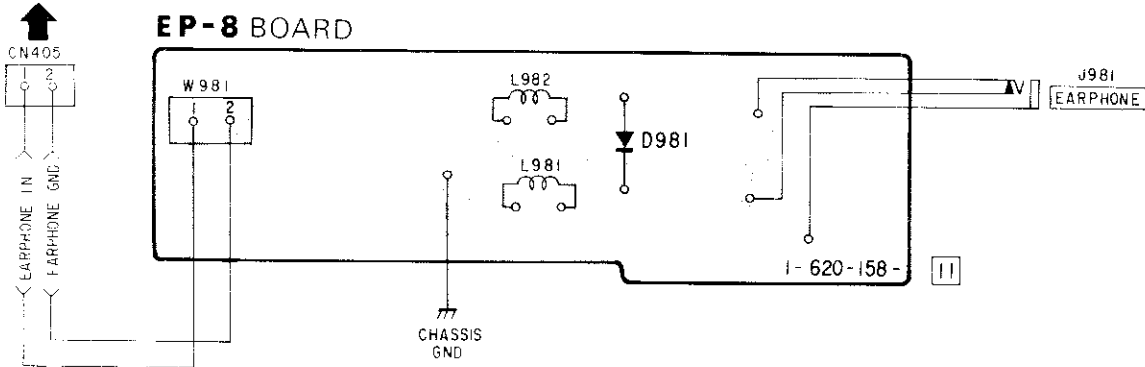
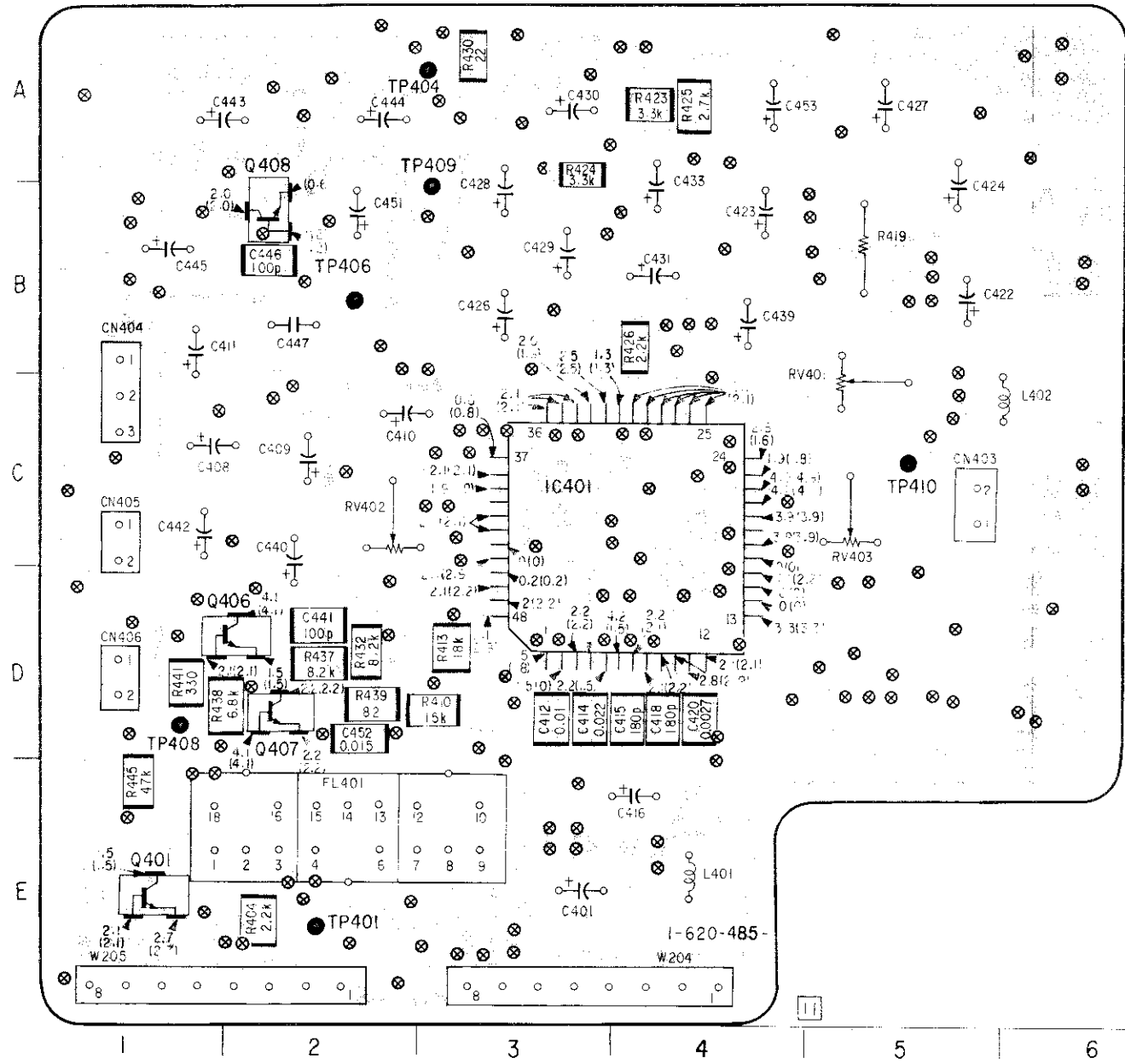


AU-25 (AUDIO SIGNAL PROCESS), EP-8 (EARPHONE JACK) PRINTED WIRING BOARD

Ref. No. AU-25, EP-8 BOARDS: 8000 series

AU - 25 BOARD (COMPONENT SIDE)

IC401	C-4
Q401	E-1
Q404	B-7
Q405	D-10
Q406	D-2
Q407	D-2
Q408	B-2
Q409	B-11
Q410	D-7
Q411	D-7
Q412	D-7
Q413	A-11
Q414	E-7
RV401	C-5
RV402	C-2
RV403	C-5
TP401	E-2
TP404	A-3
TP406	B-2
TP408	C-1
TP409	B-3
TP410	C-5

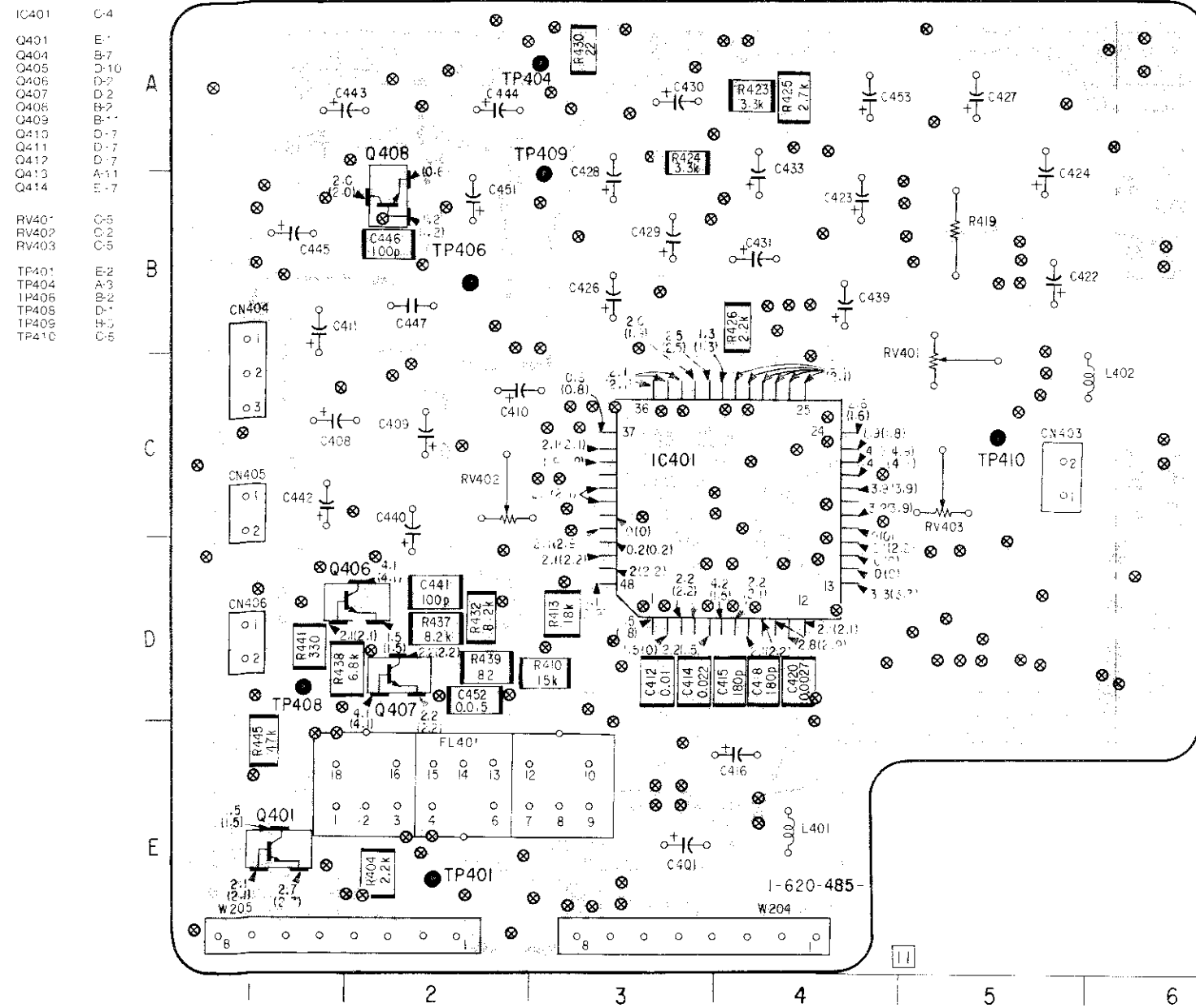


AUDIO	AUDIO

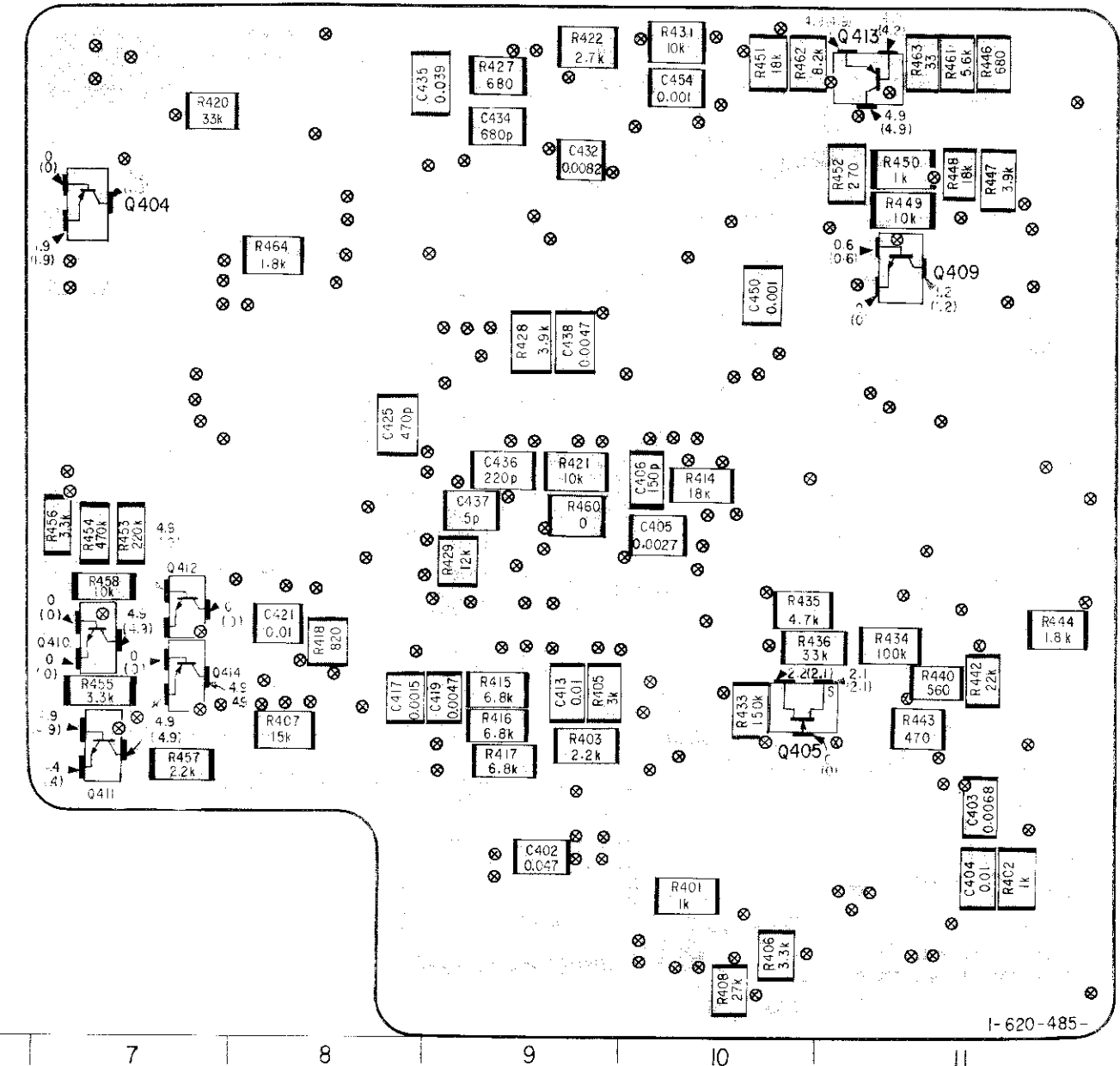
AU-25 (AUDIO SIGNAL PROCESS), EP-8 (EARPHONE JACK) PRINTED WIRING BOARD

— Ref. No. AU-25, EP-8 BOARDS: 8000 series —

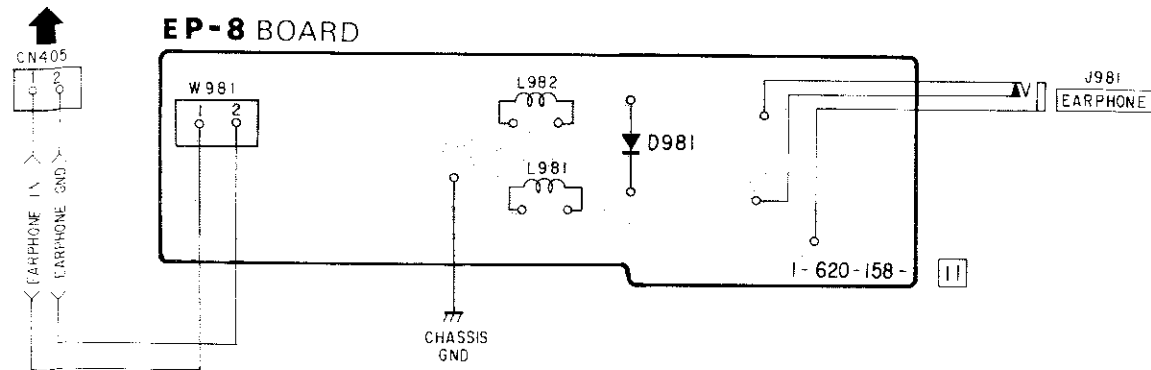
AU - 25 BOARD (COMPONENT SIDE)



AU - 25 BOARD (SOLDER SIDE)

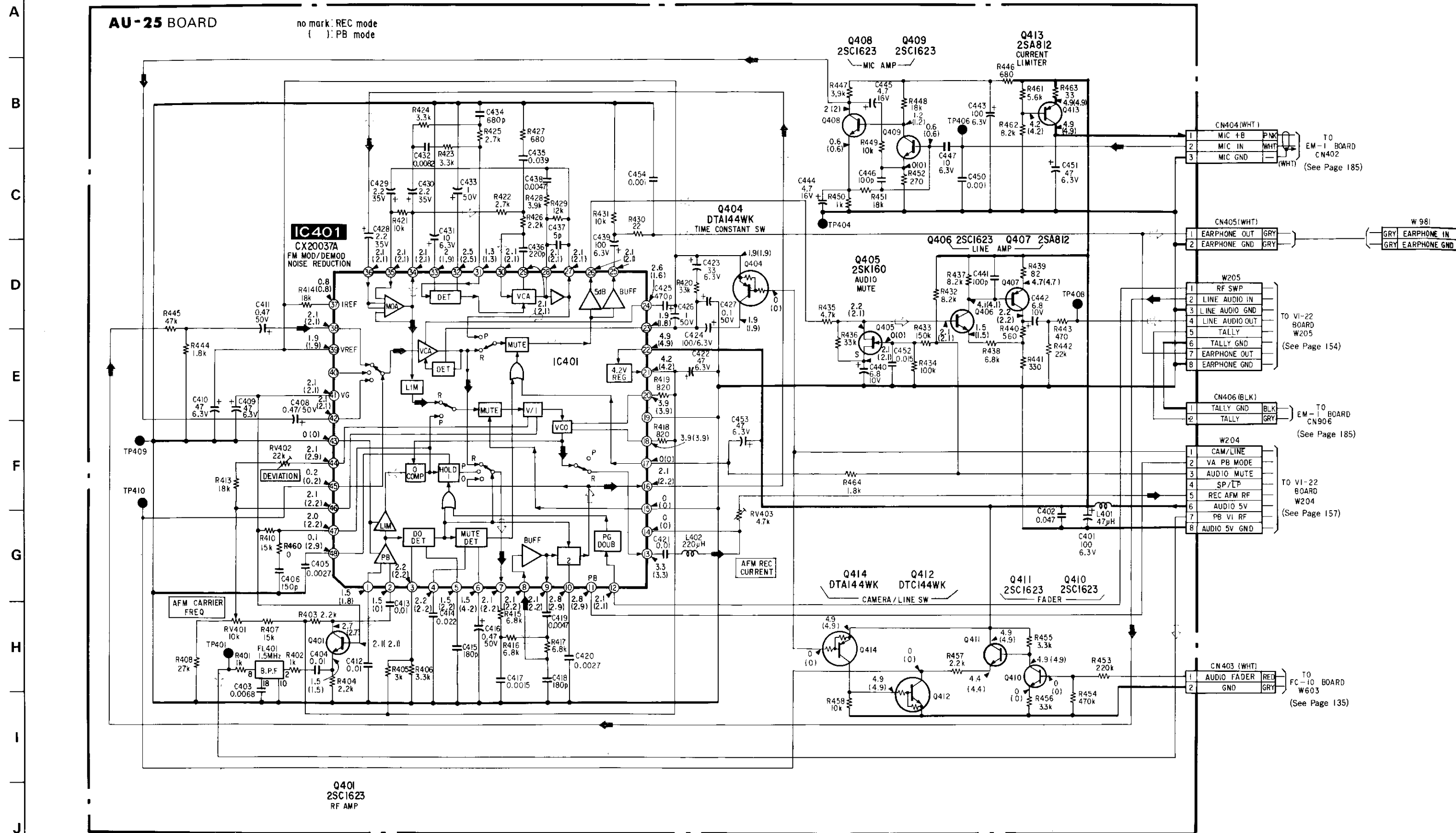


EP-8 BOARD



AU-25 (AUDIO SIGNAL PROCESS), EP-8 (EARPHONE JACK) SCHEMATIC DIAGRAM

— Ref. No. AU-25, EP-8 BOARDS: 8000 series —

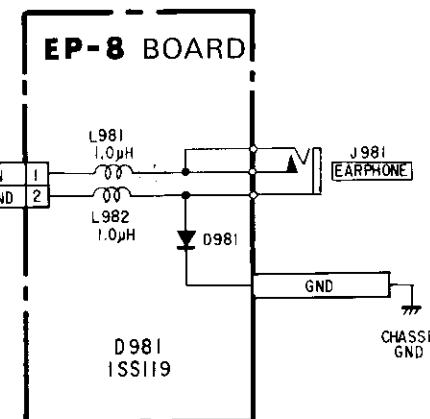




- Caution to be exercised when replacing chip components
Do not reuse the removed components but use new components.
Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, $1/10\text{W}$ in chip resistance.
 $\text{k}\Omega = 1000\Omega$ and $\text{M}\Omega = 1000\text{k}\Omega$
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
-  : panel designation.
-  : adjustment designation.
-  : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape .
- All voltage are dc mesured with a VOM (10M Ω)

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

- **Signal path**
 - ➡ REC AUDIO SIGNAL
 - ➡ PB AUDIO SIGNAL



- Note (Printed Wiring Board):
- ⊗ : mark is through hole.
 - : lead wire attached to the component side.
 - : lead wire attached to the soldering side.
 - : pattern from the side which enables seeing.
 - : pattern of the rear side
 - : B+ Pattern.
 - Digital transistor (EM-1: Q901, 905, 906) transistor with resistors.
- Refer to the EM-1 board schematic diagram for digital transistor.

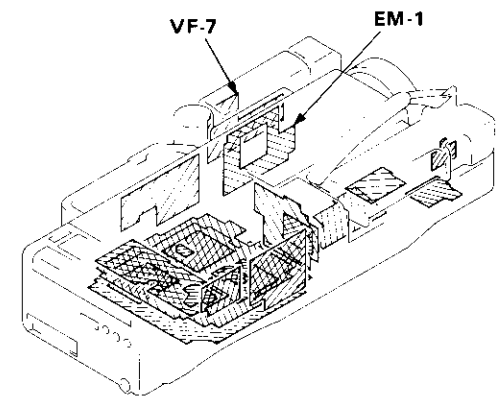
Note

Soldering side: Parts on the soldering side being seen from the soldering are stated.

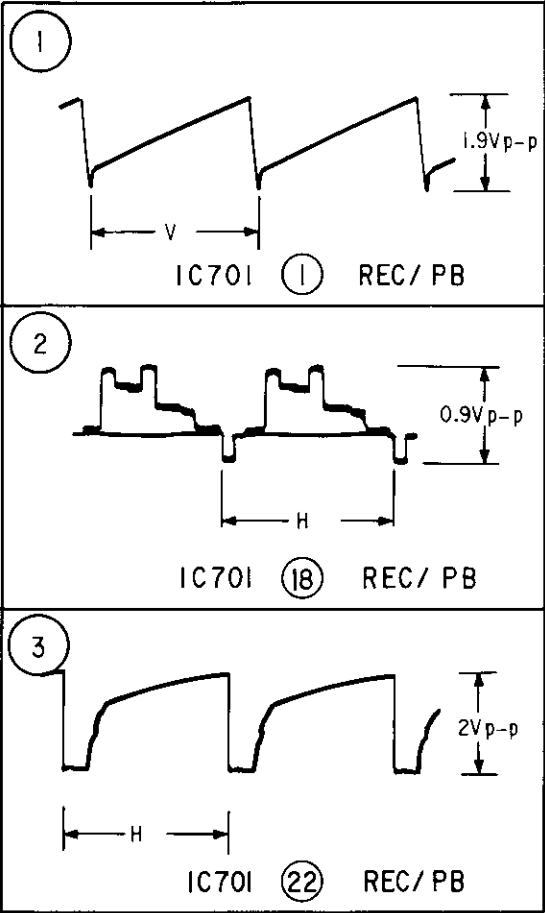
Component side: Parts on the component side being seen from the component are stated.

Regarding color indication of patterns

- * Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.

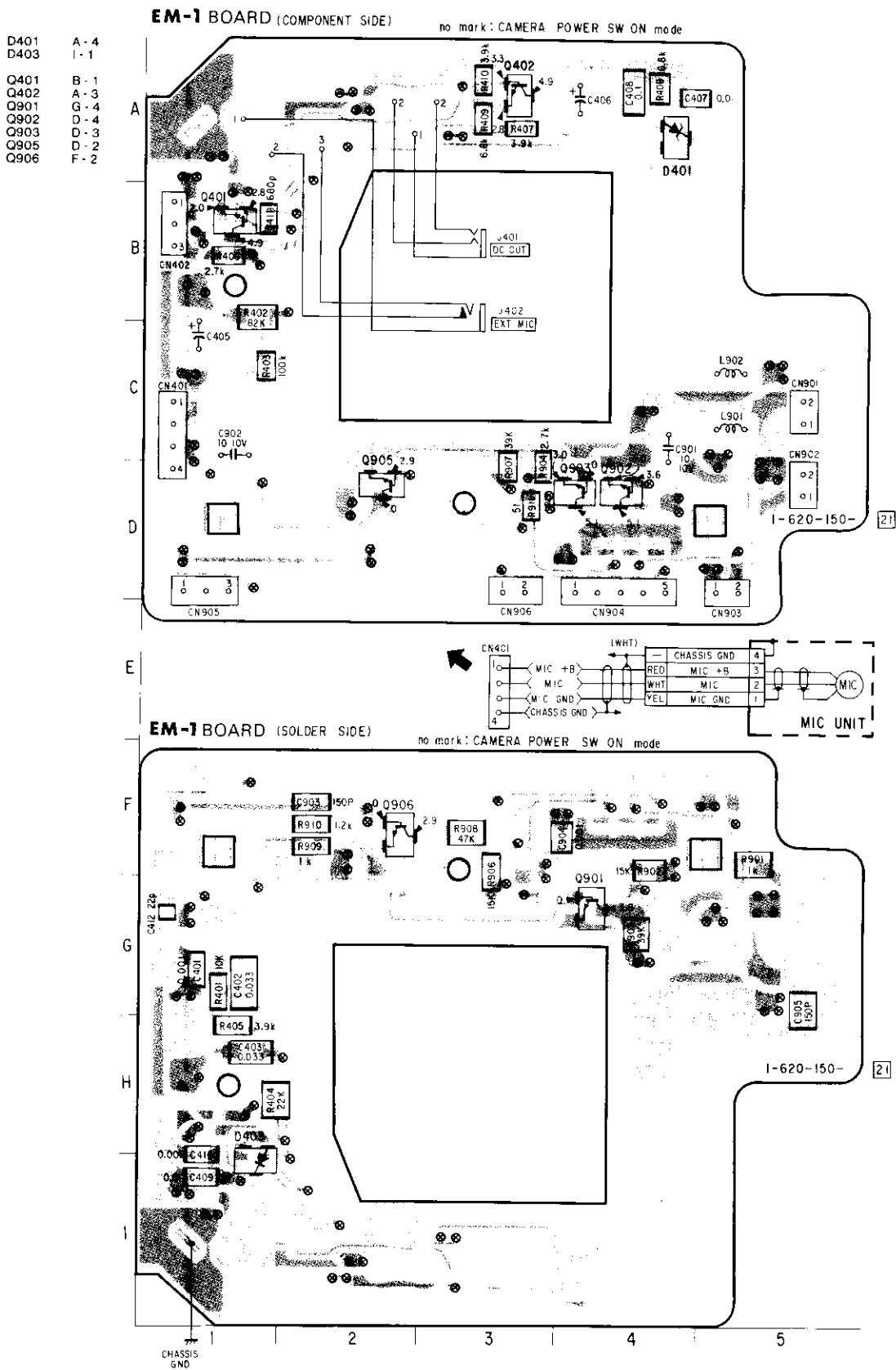


VF-7 BOARD



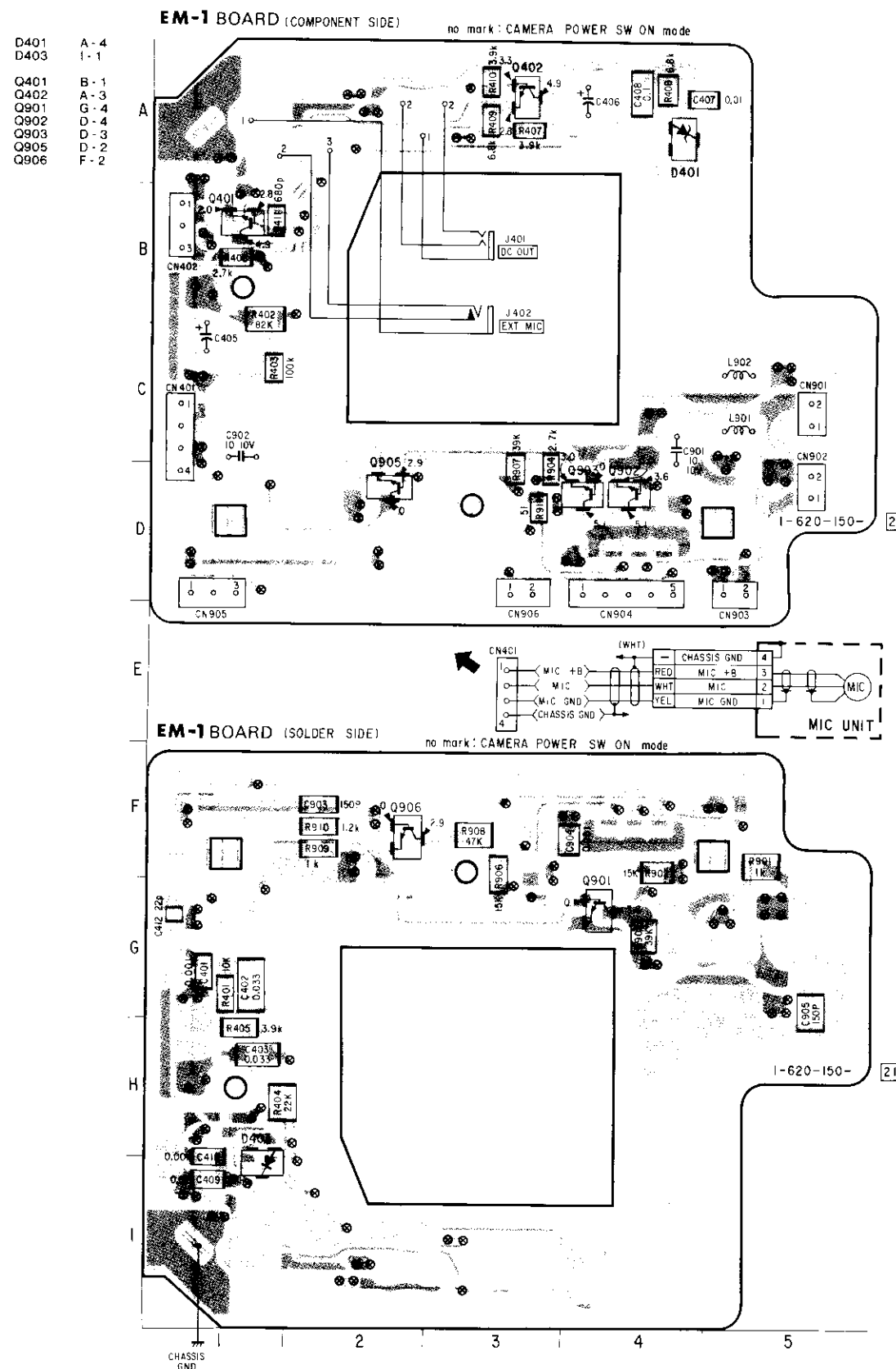
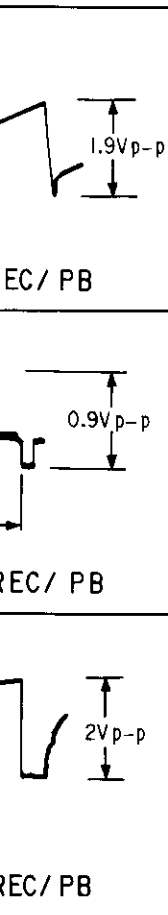
VF-7 (VIEW FINDER PROCESS), EM-1 (MIC AMP, VIEW FINDER RELAY) PRINTED WIRING BOARD

— Ref. No. VF-7, EM-1 BOARDS: 9000 series —

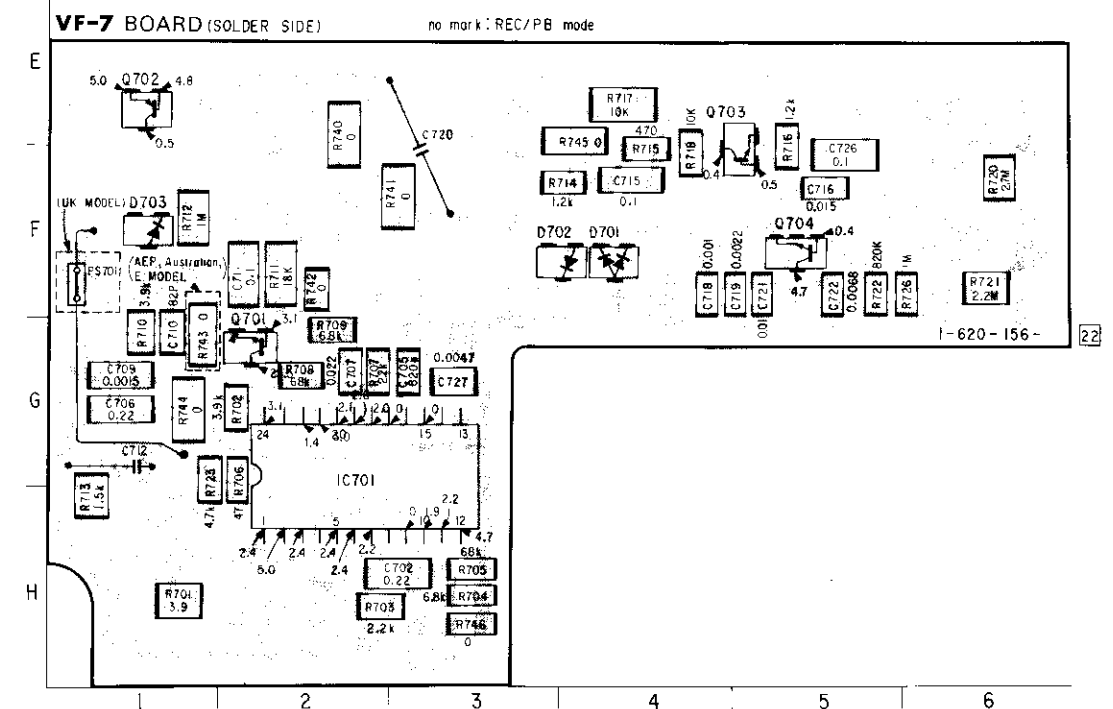
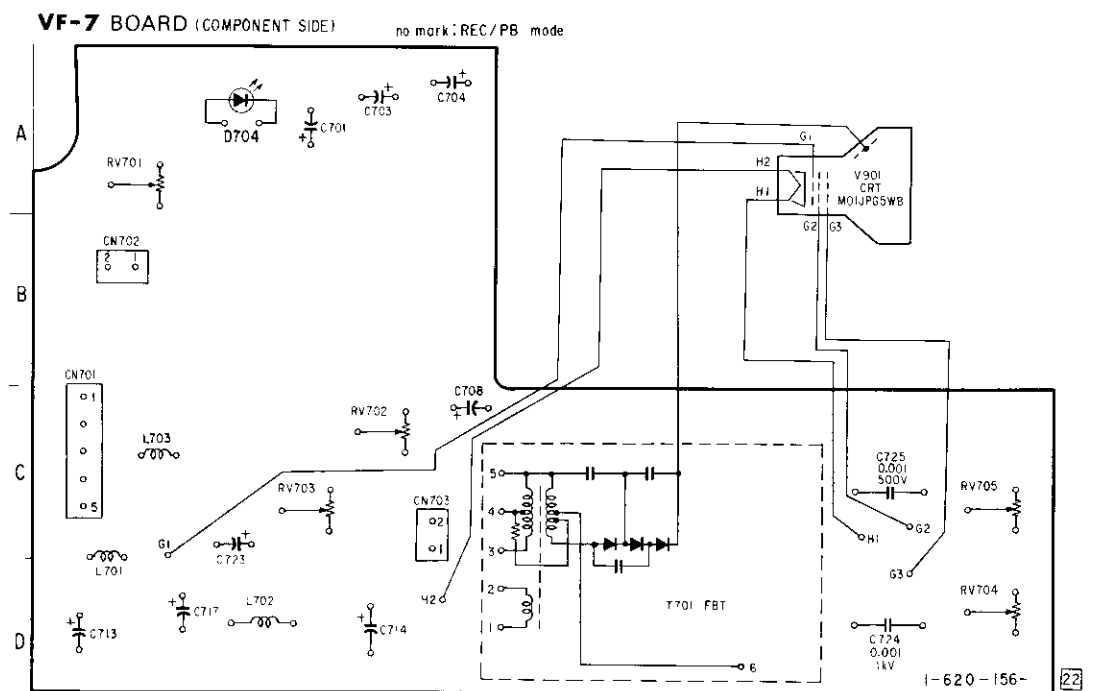


VF-7 (VIEW FINDER PROCESS), EM-1 (MIC AMP, VIEW FINDER RELAY) PRINTED WIRING BOARD

- Ref. No. VF-7, EM-1 BOARDS: 9000 series -

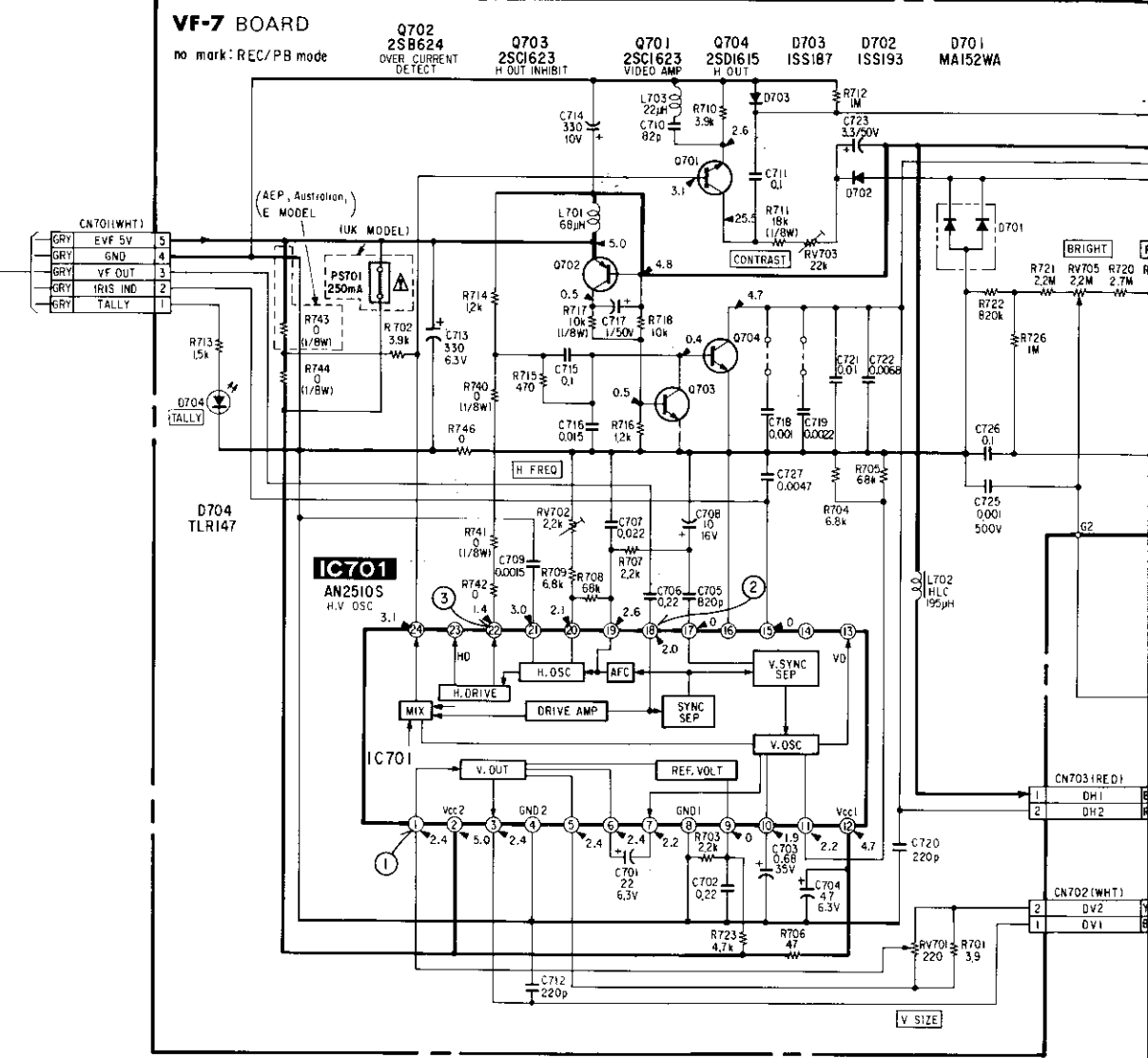


D701 F-4
D702 F-4
D703 F-1
D704 A-2
IC701 G-2
Q701 G-2
Q702 E-1
Q703 F-5
Q704 F-5
RV701 A-1
RV702 C-3
RV703 C-2
RV704 D-6
RV705 C-6



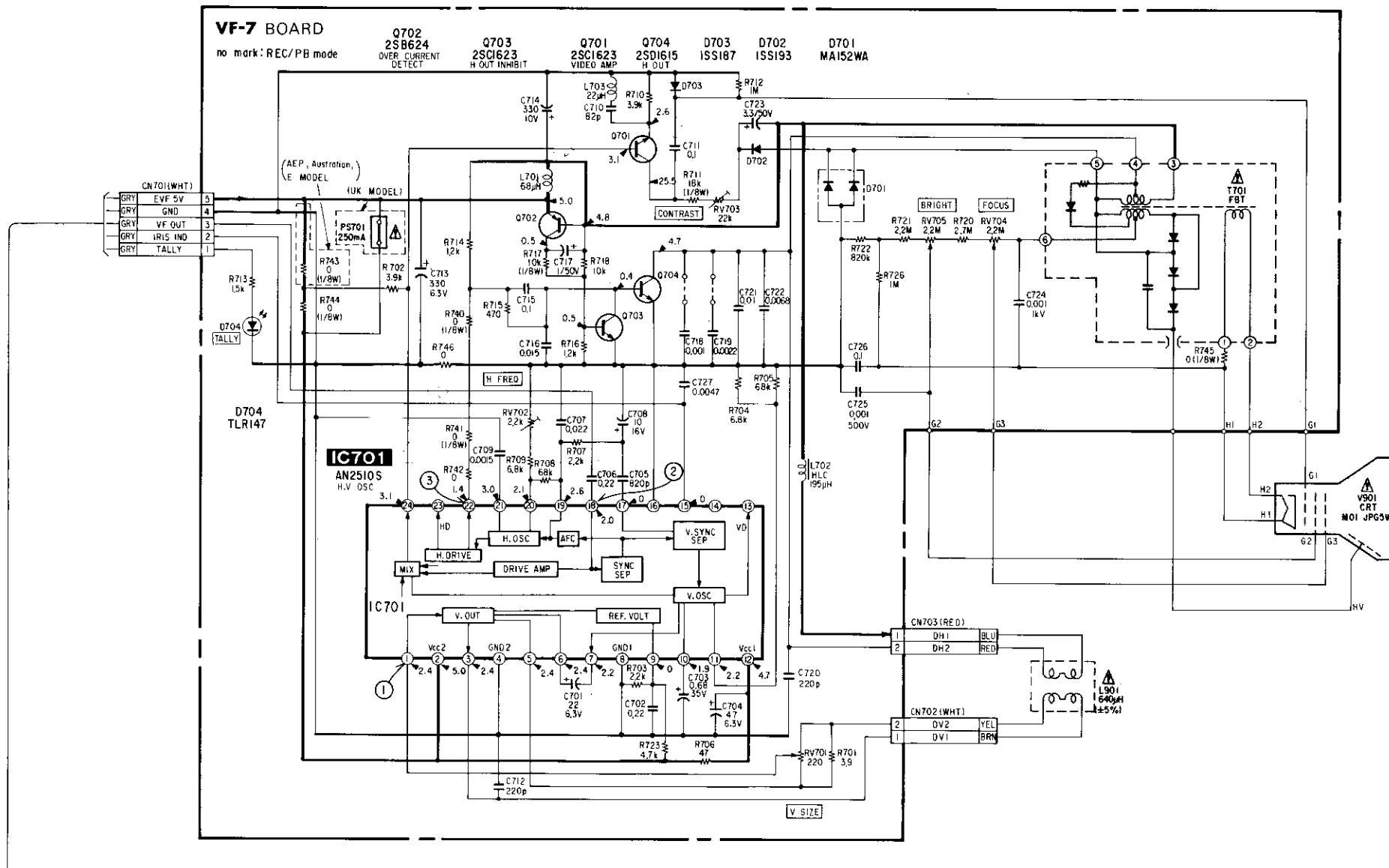
ELECTRONIC VIEW FINDER

— Ref. No. VF-7, EM-1 BOARDS: 9000 series —

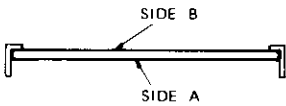


- Note:** The components identified by shading and mark  are critical for safety. Replace only with part number specified.

- **Signal path**
 - :PB Y SIGNAL
 - :PB Y & CHROMA SIGNAL
 - REC AUDIO SIGNAL



- Note (Printed Wiring Board):
- ⊗ : mark is through hole.
 - : lead wire attached to the component side.
 - : lead wire attached to the soldering side.
 - ▨ : pattern from the side which enables seeing.
 - ⋯ : pattern of the rear side.
 - ⋯ : B+ pattern.
 - ▨ : printing resistance.



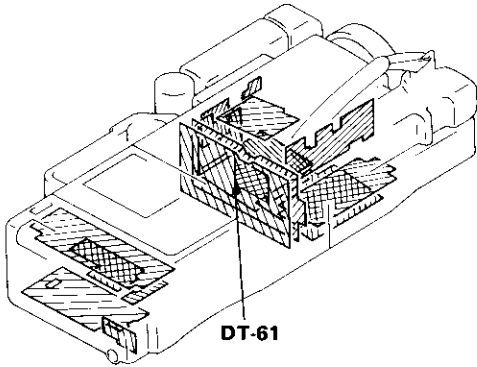
Note

Soldering side: Parts on the soldering side being seen from the soldering are stated. (SIDE A)

Component side: Parts on the component side being seen from the component are stated. (SIDE B)

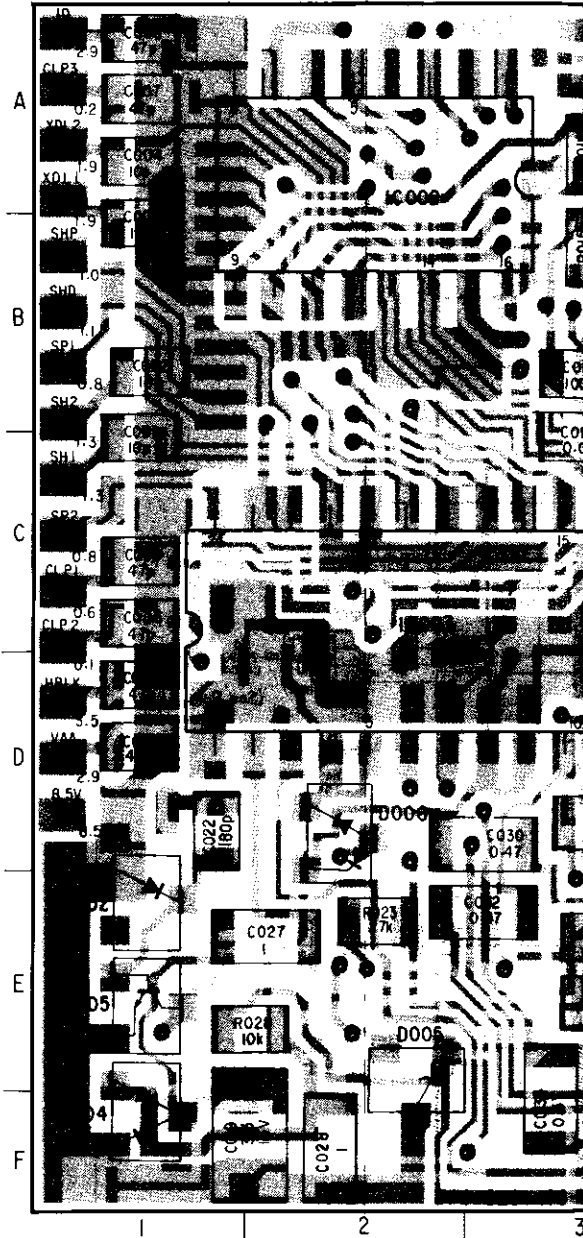
Regarding color indication of patterns

- Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- Pattern being seen in the state of the rear surface side is indicated in green pattern.



D001	E-8
D002	E-1
D003	E-6
D004	F-1
D005	E-2
D006	D-2
D007	E-8
D008	E-6
D009	F-6
D010	D-6
IC001	B-7
IC002	A-2
IC003	C-2
IC004	D-7
Q001	A-3
Q002	D-8
Q003	D-8
Q004	E-8
Q005	E-1
Q006	F-8

DT-61 BOARD (SIDE B) no mark:CAMERA POWER



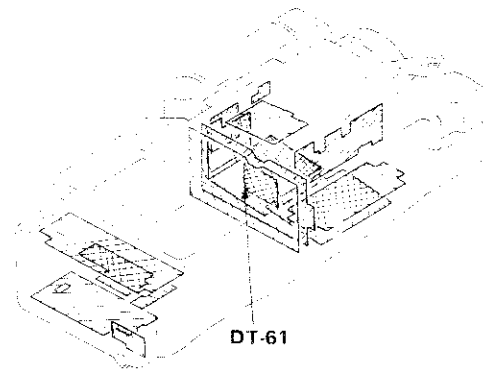
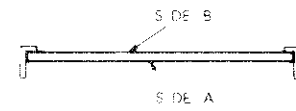
CAMERA

DT-61 (TIMING GENERATOR, REGISTER DRIVE) PRINTED WIRING BOARD

Note (Printed Wiring Board):

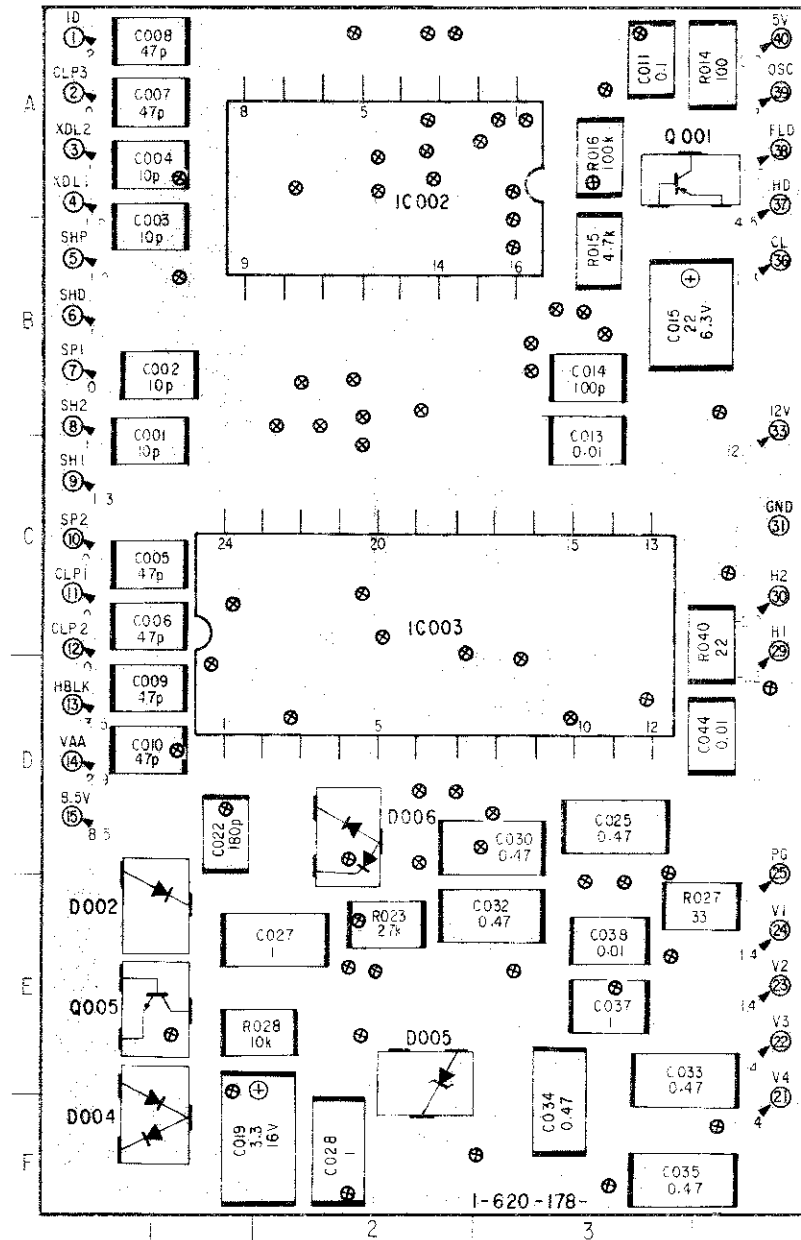
-  : mark is through hole.
-  : lead wire attached to the component side.
-  : lead wire attached to the soldering side.
-  : pattern from the side which enables seeing.

- : printing resistance.

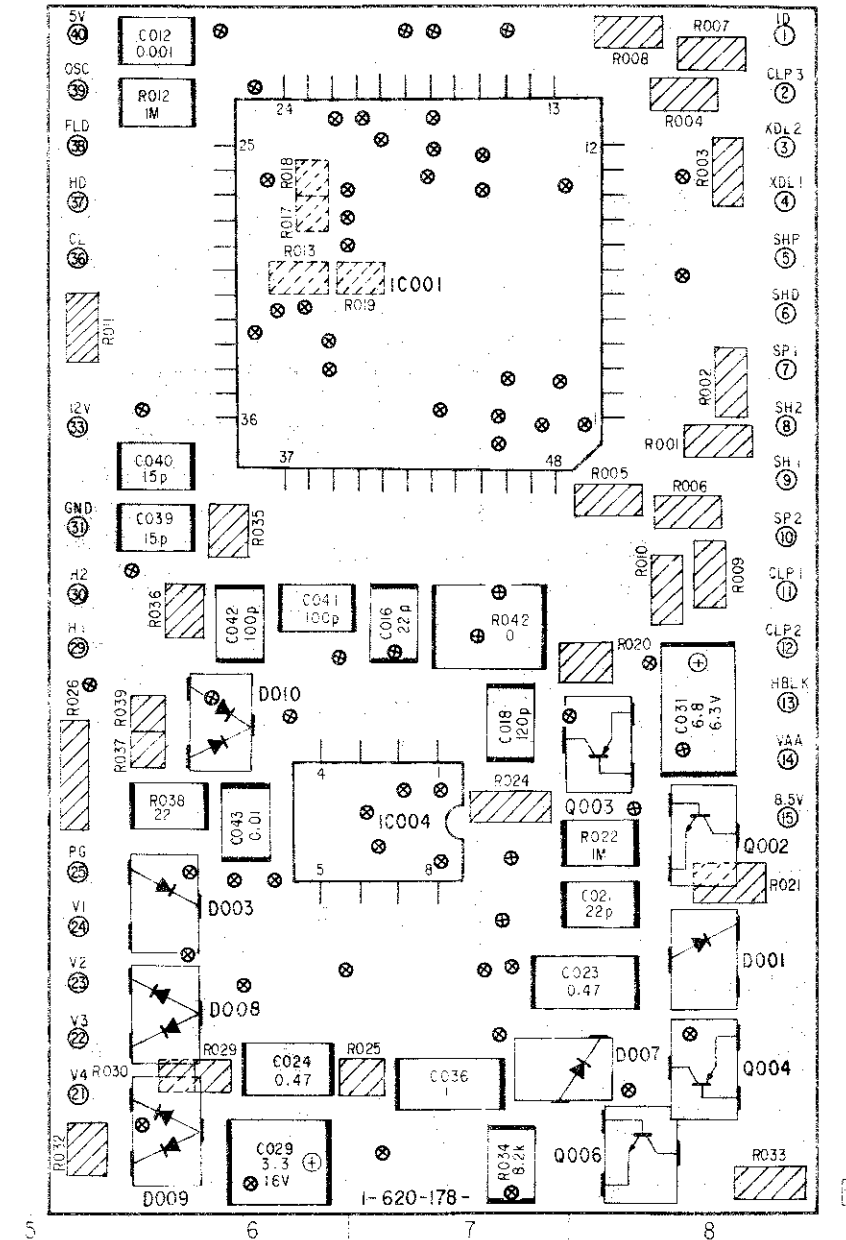


DT-61

DT-61 BOARD (SIDE B)

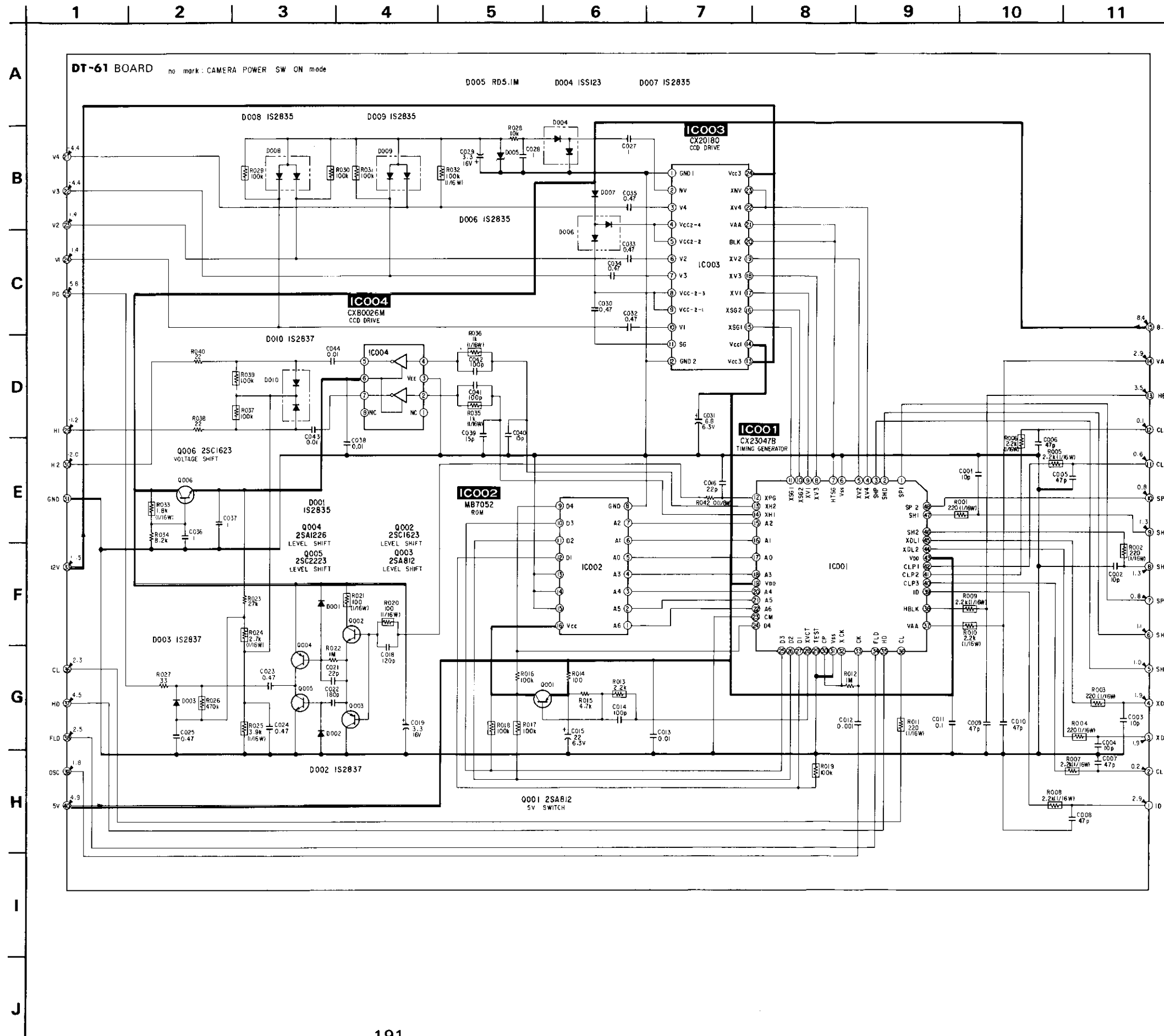


DT-61 BOARD (SIDE A)



CAMERA	CAMERA

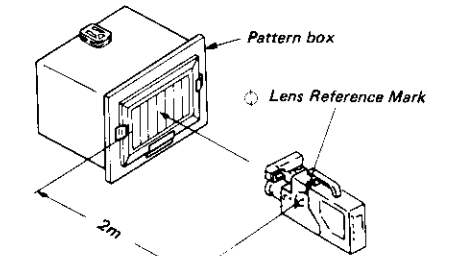
DT-61 (TIMING GENERATOR, REGISTER DRIVE) SCHEMATIC DIAGRAM



Note (Schematic Diagram):

- Caution to be exercised when replacing chip components
Do not reuse the removed components but use new components.
Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance; 1/32W in printing resistance.
 $\text{k}\Omega = 1000\Omega$ and $\text{M}\Omega = 1000\text{k}\Omega$
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
-  : printing resistor.
-  : panel designation.
-  : B+ line.
- Measuring conditions of voltage value and waveform
 - (1) The subject is color bar of pattern box.
 - (2) The voltage value is a reference value between the grounding.
 (The tester used is the digital multimeter DC10M Ω)

1. Connection



- Adjust the distance so that the output w form of Fig. a and the Fig. b can be obtain.

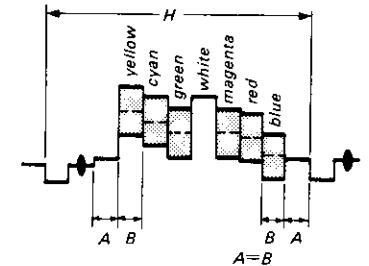


Fig. a Camera output waveform of Pin (2) of CN201 on VI-22 board

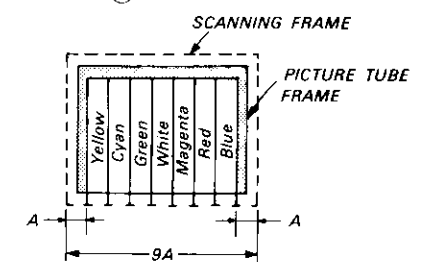
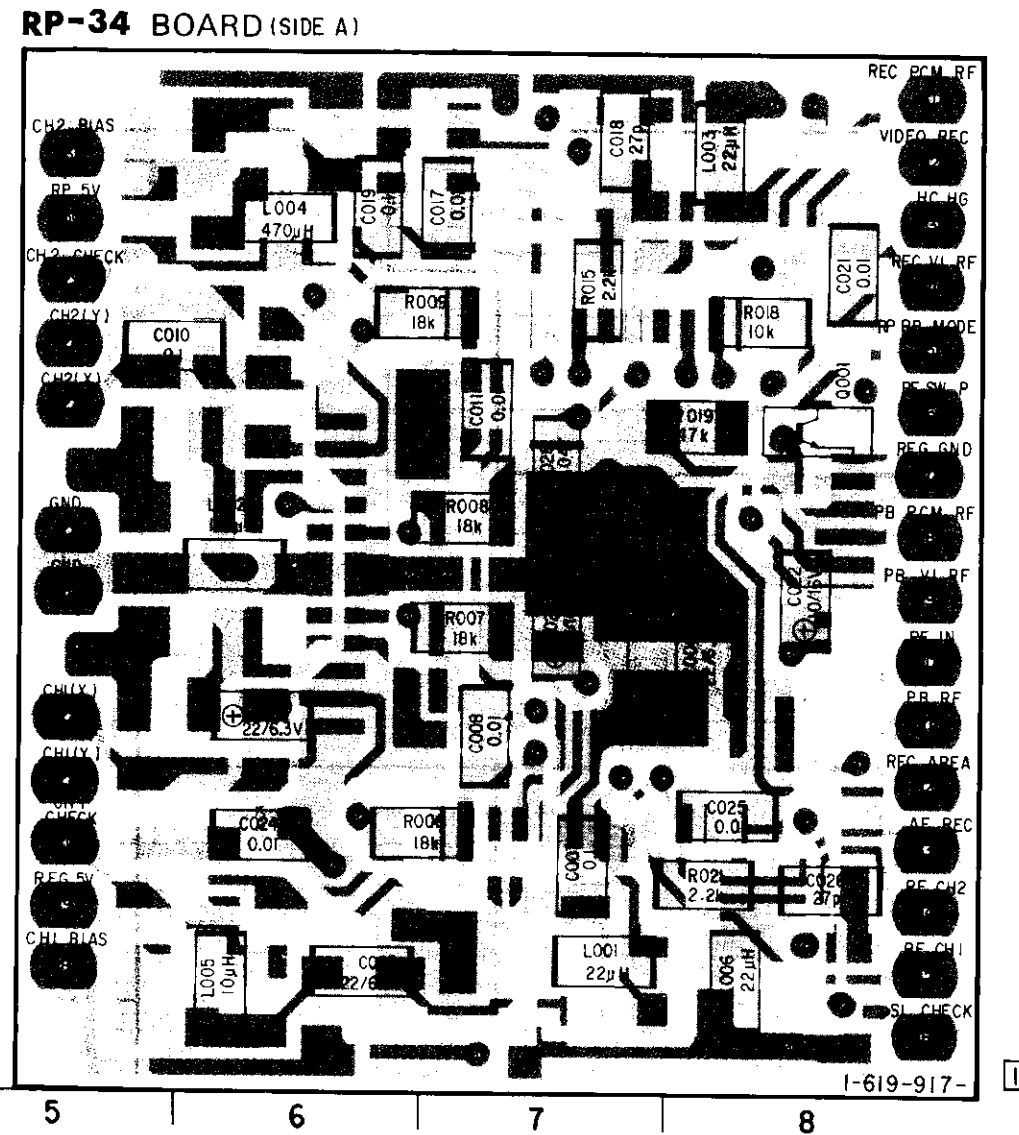
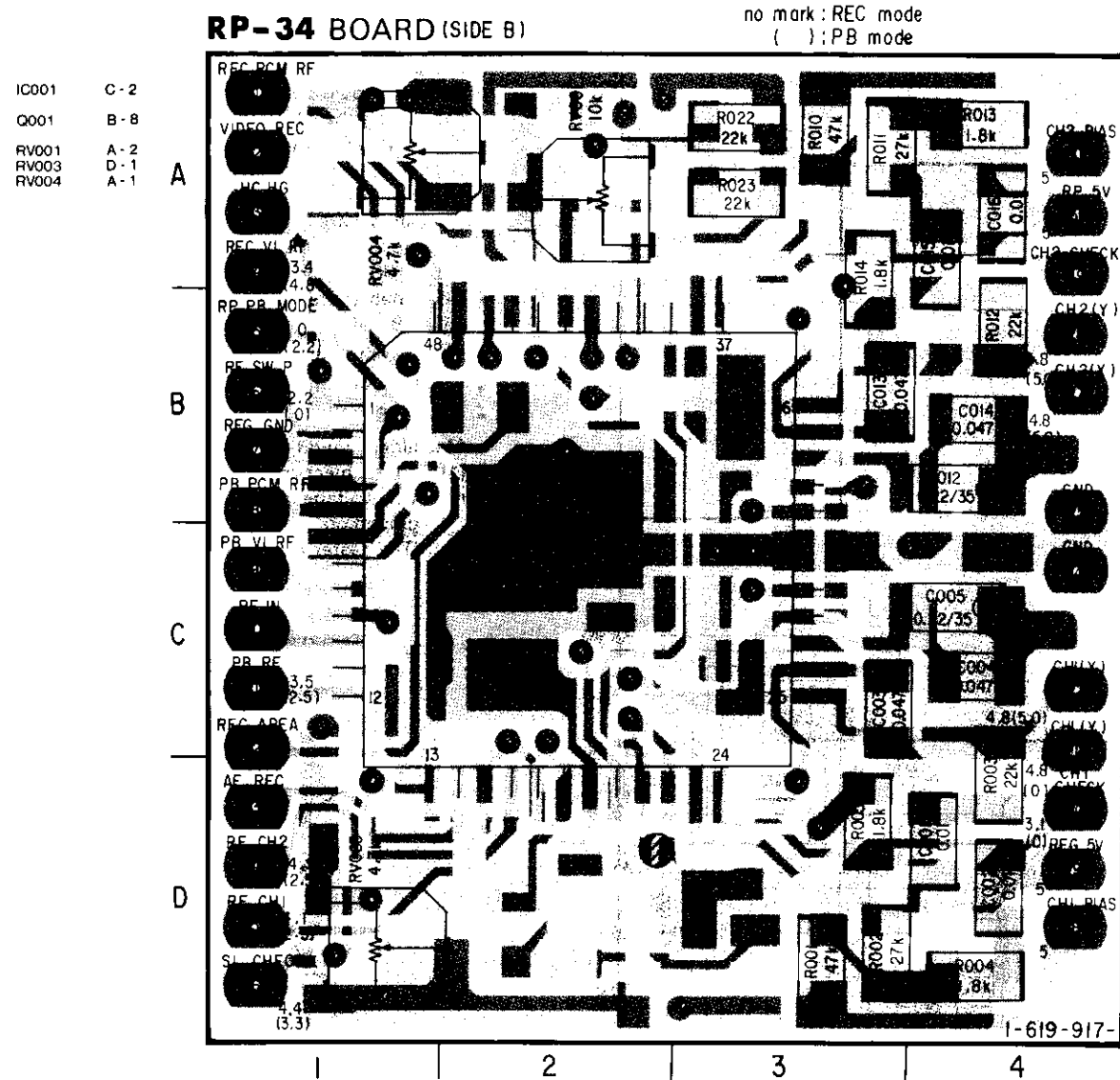


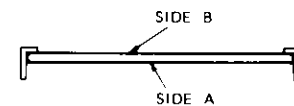
Fig. b Picture of TV monitor screen

RP-34 (VIDEO, AUDIO RF SIGNAL REC/PB) PRINTED WIRING BOARD



Note (Printed Wiring Board):

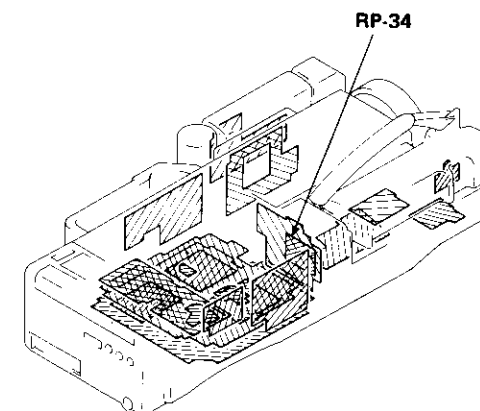
- ⊗ : mark is through hole.
- : lead wire attached to the component side.
- : lead wire attached to the soldering side.
- ▨ : pattern from the side which enables seeing.
- ▤ : pattern of the rear side.
- ▥ : B+ pattern.
- Digital transistor (RP-34: Q001) transistor with resistors. Refer to the RP-39 board schematic diagram for digital transistor.



Note
Soldering side: Parts on the soldering side being seen from the soldering are stated.
Component side: Parts on the component side being seen from the component are stated.

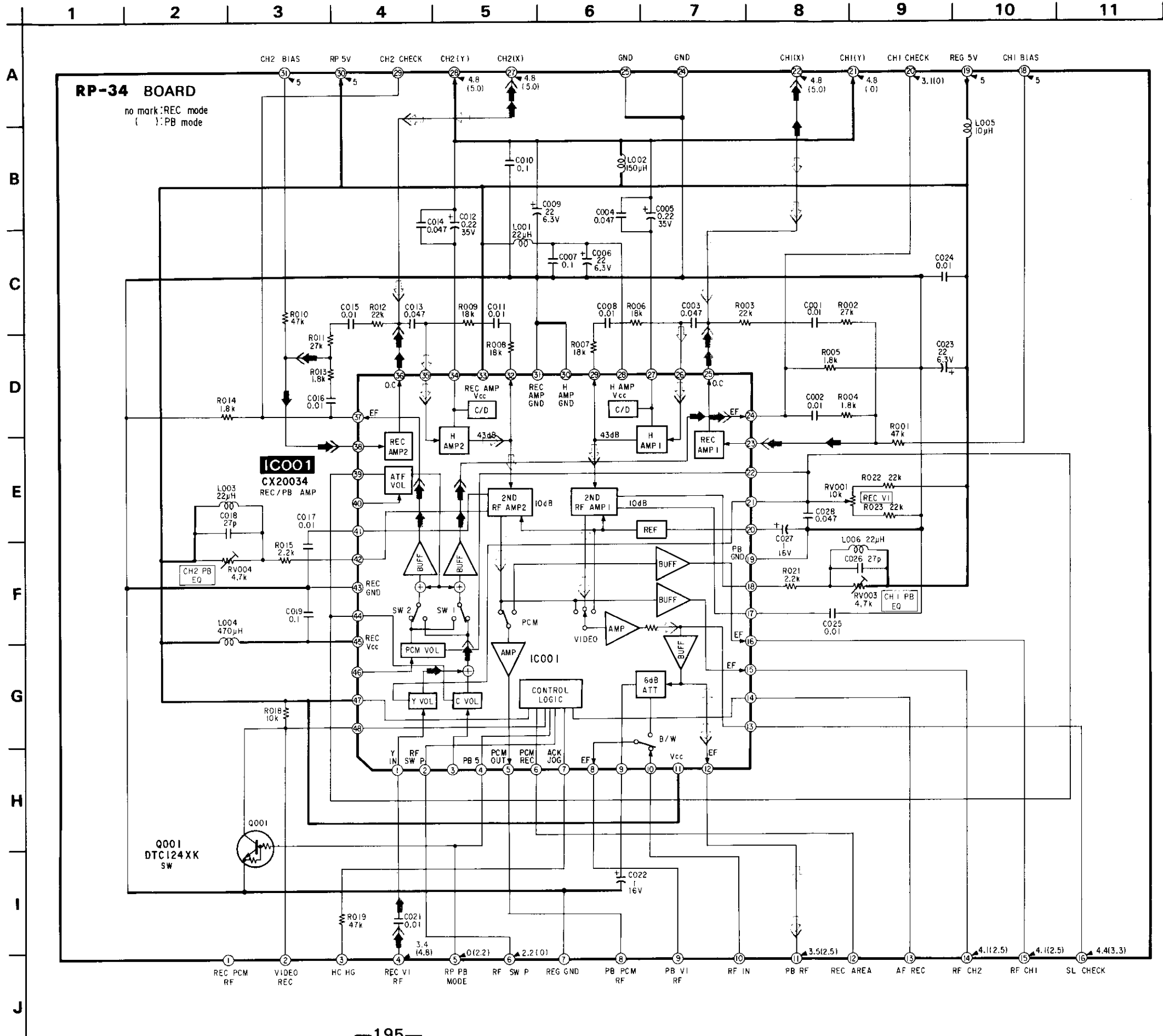
Regarding color indication of patterns

- * Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.



VIDEO VIDEO

RP-34 (VIDEO, AUDIO RF SIGNAL REC/PB) SCHEMATIC DIAGRAM



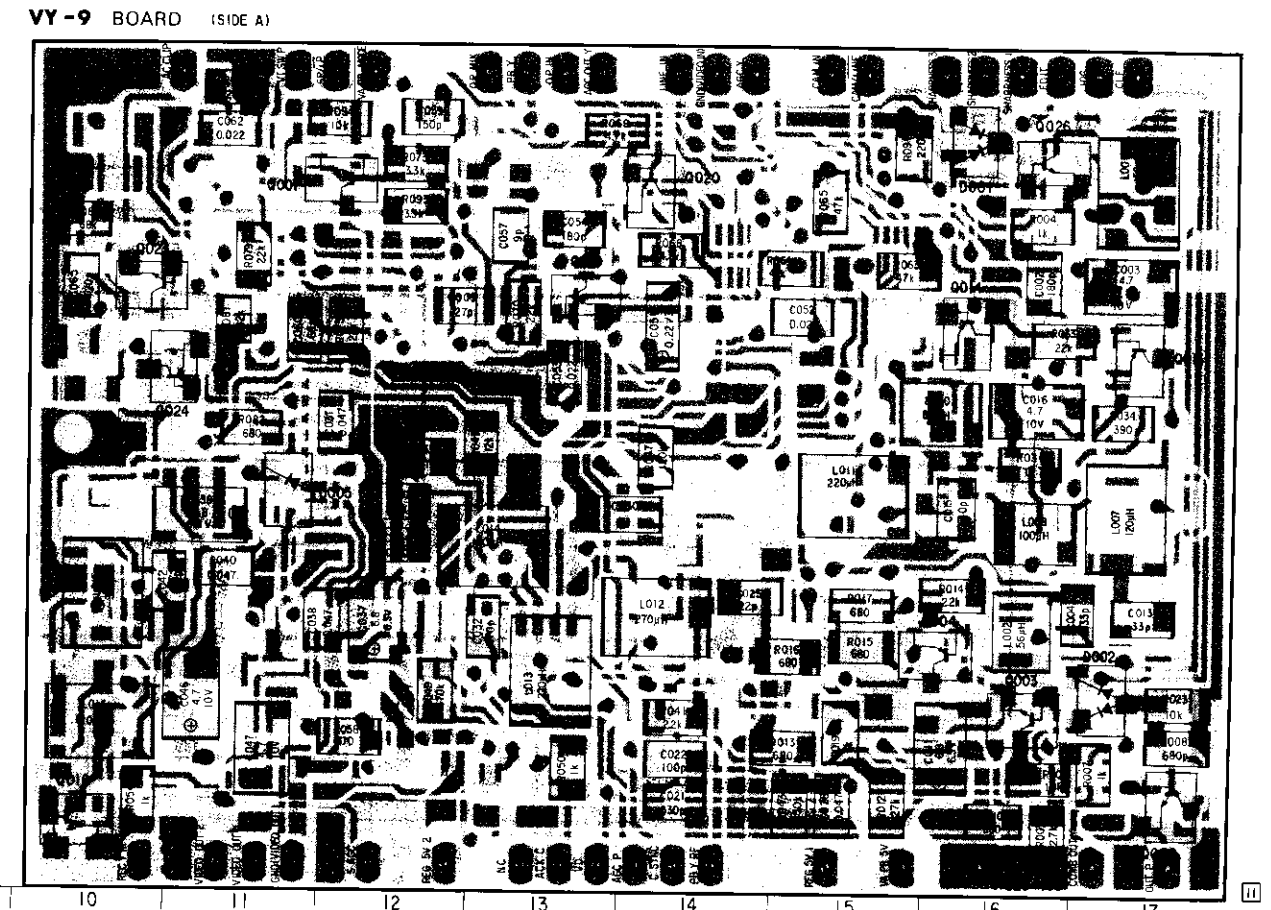
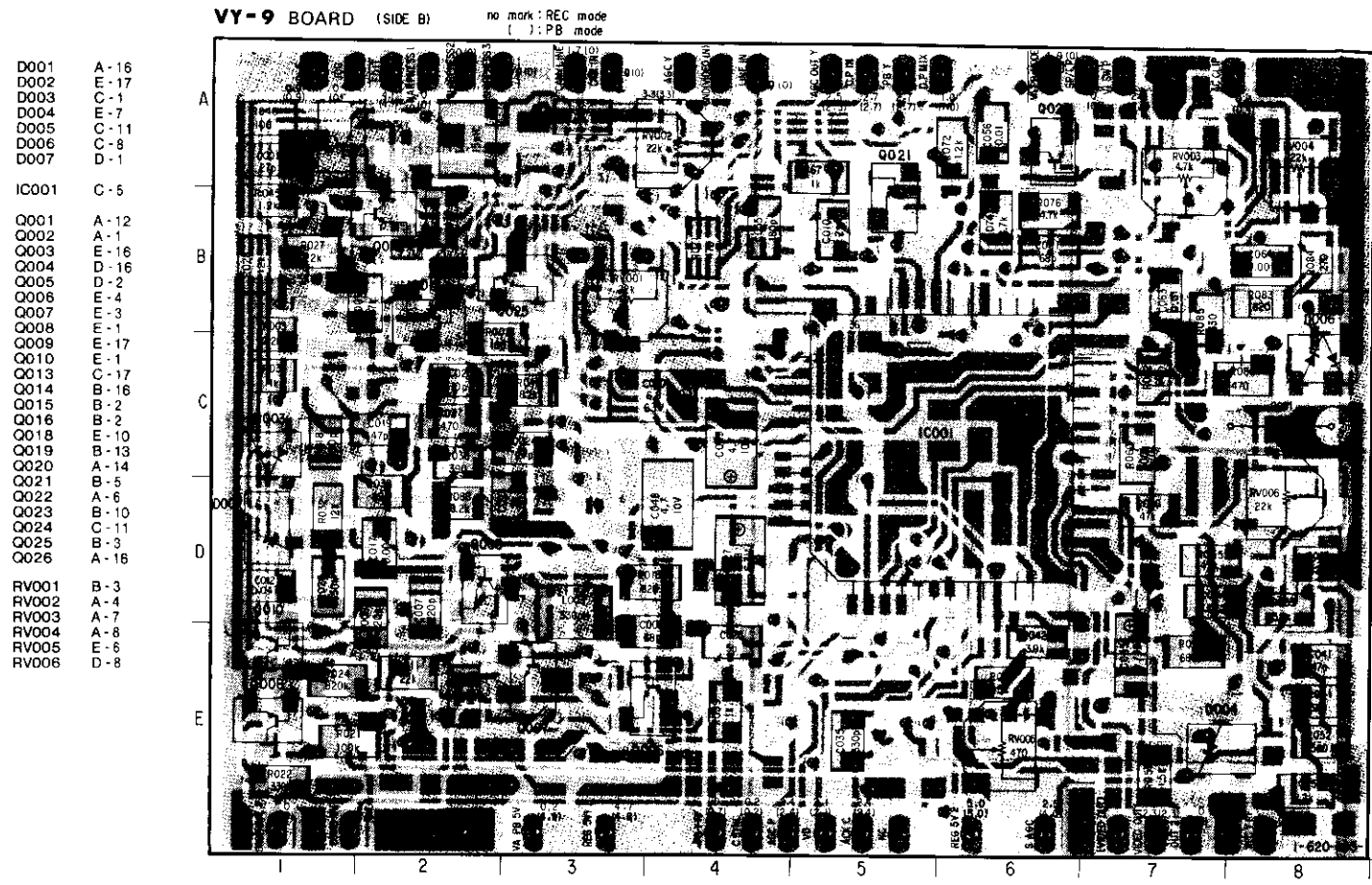
Note (Schematic Diagram):

- Caution to be exercised when replacing chip components
Do not reuse the removed components but use new components.
Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance.
 $\text{k}\Omega = 1000\Omega$ and $\text{M}\Omega = 1000\text{k}\Omega$
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
-  : panel designation.
-  : adjustment designation.
-  : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape .
- All voltage are dc mesured with a VOM (10M Ω)

- **Signal path**

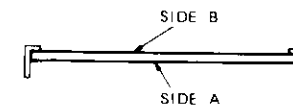
- ➡➡ :REC Y & CHROMA SIGNAL
 ➡➡ :PB Y & CHROMA SIGNAL
 ➡➡ :REC AUDIO SIGNAL
 ➡➡ :PB AUDIO SIGNAL

VY-9 (Y SIGNAL PROCESS) PRINTED WIRING BOARD



Note (Printed Wiring Board):

- ⊗ : mark is through hole.
- : lead wire attached to the component side.
- : lead wire attached to the soldering side.
- : pattern from the side which enables seeing.
- : pattern of the rear side.
- ⊕ : B+ pattern.
- Digital transistor (VY-9: Q001, 009, 010, 021, 022) transistor with resistors.
Refer to the VY-9 board schematic diagram for digital transistor.

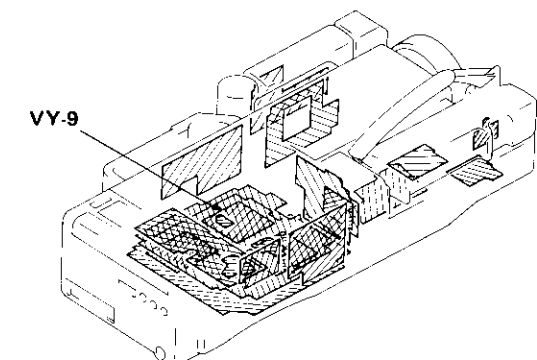


Note

Soldering side: Parts on the soldering side being seen from the soldering are stated.
(SIDE A)
Component side: Parts on the component side being seen from the component are stated.
(SIDE B)

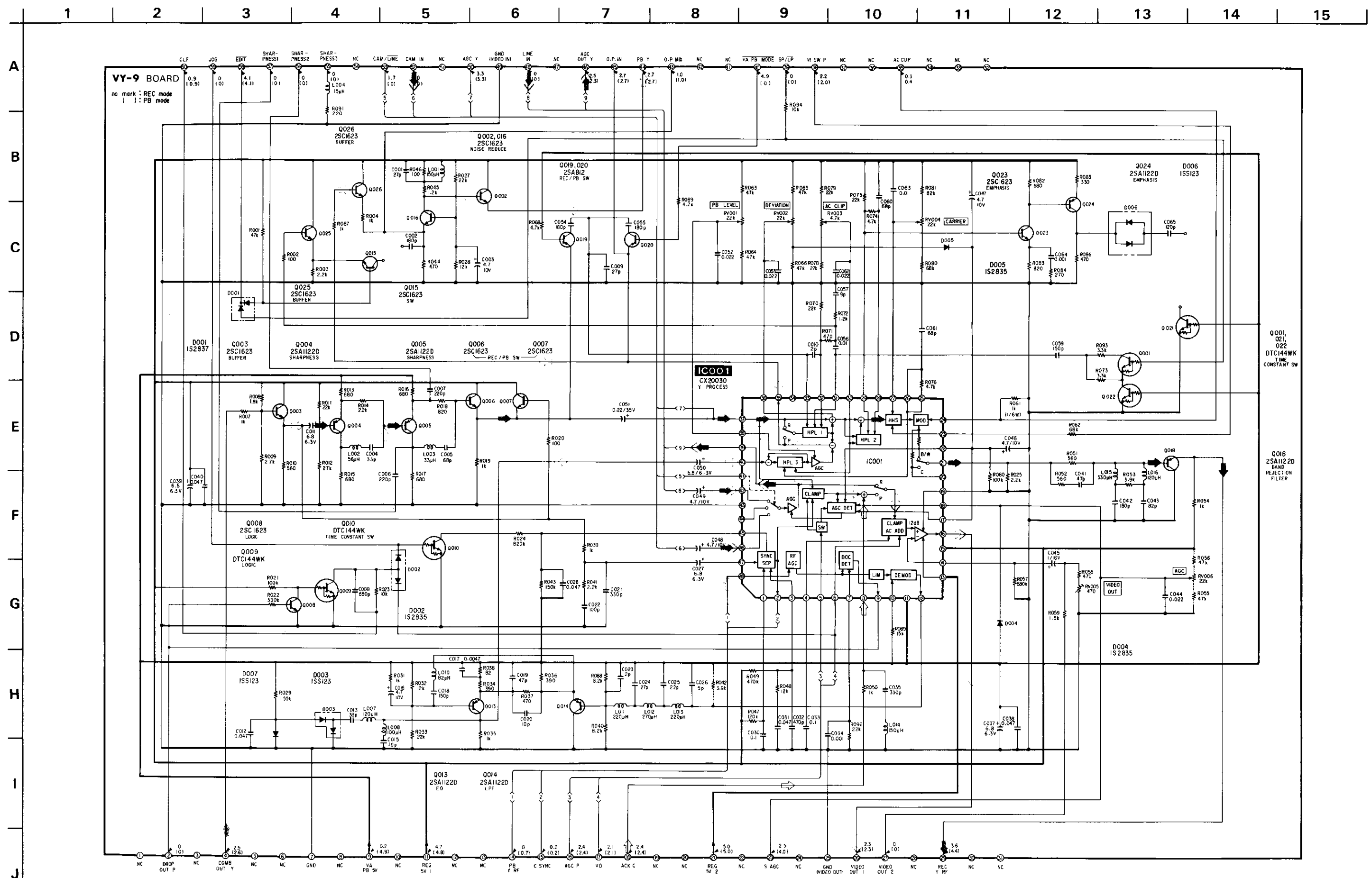
Regarding color indication of patterns

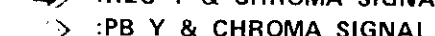
- Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- Pattern being seen in the state of the rear surface side is indicated in green pattern.



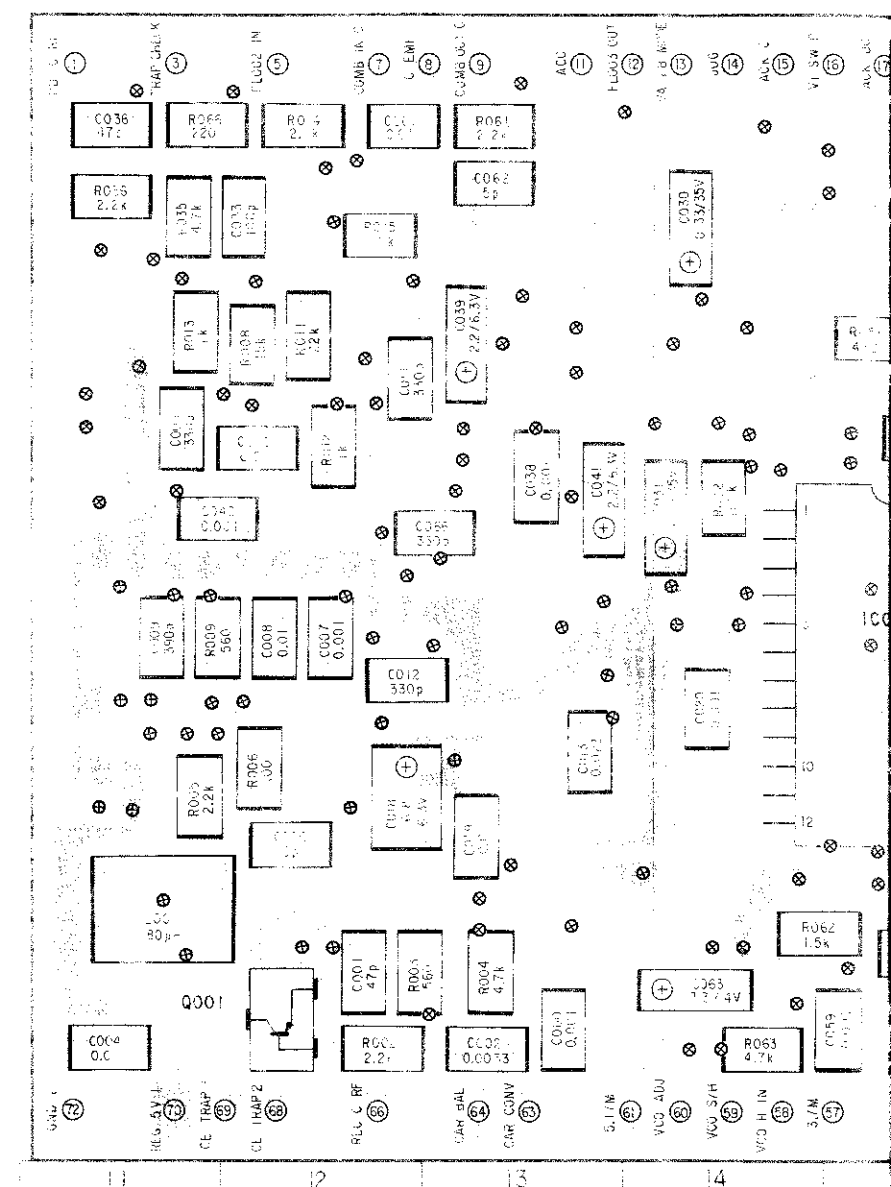
VIDEO	VIDEO

VY-9 (Y SIGNAL PROCESS) SCHEMATIC DIAGRAM

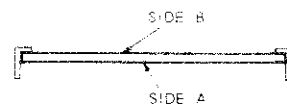




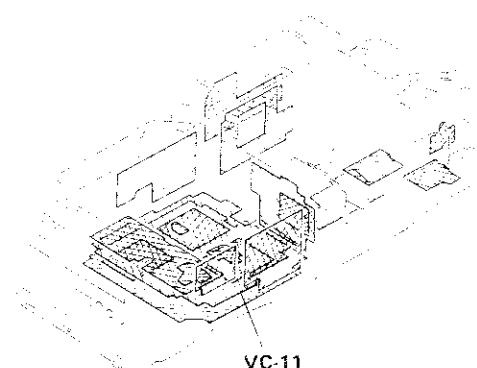
VC-11 BOARD (SIDE B)



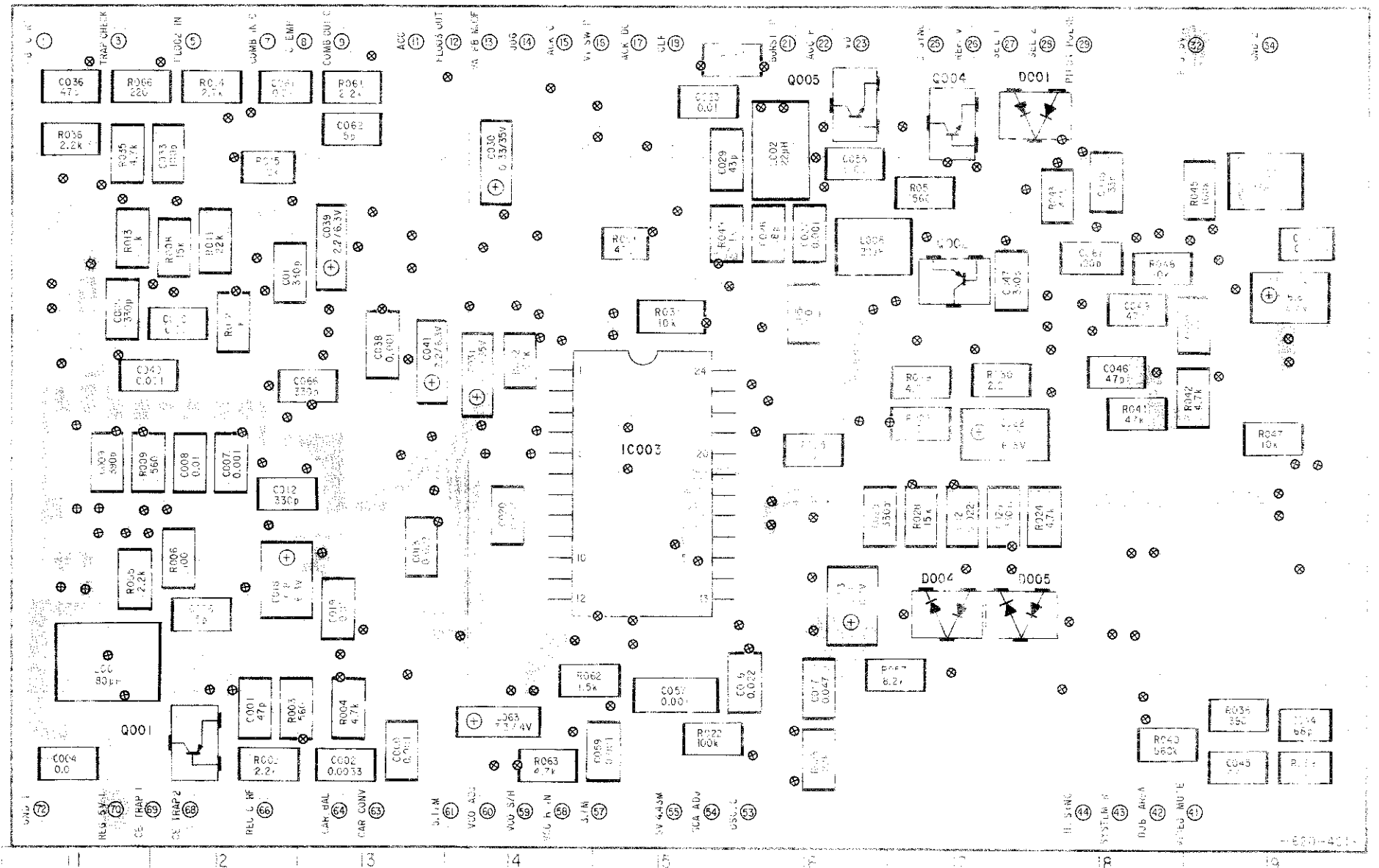
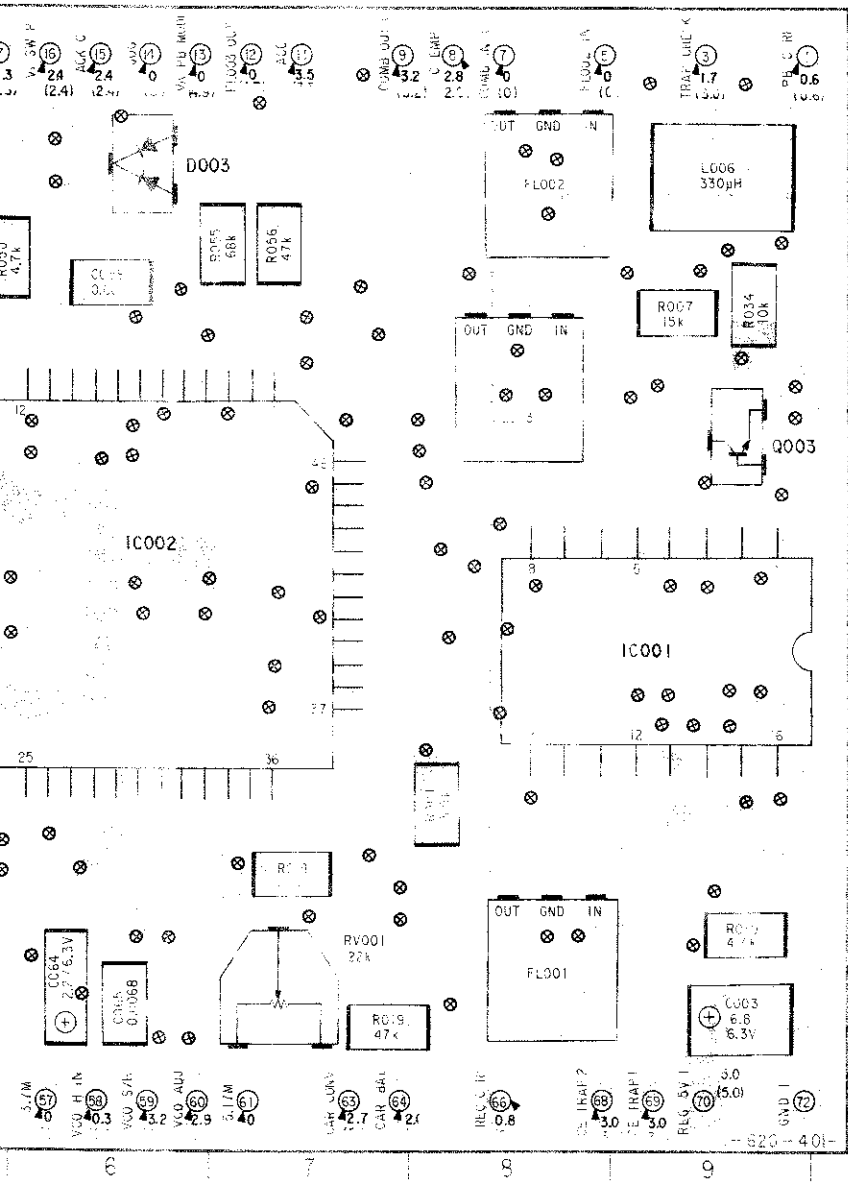
-  : mark is through hole.
-  : lead wire attached to the component side.
-  : lead wire attached to the soldering side.
-  : pattern from the side which enables seeing.



- Digital transistor (VC-11: Q004, 005) transistor with resistors. Refer to the VC-11 board schematic diagram for digital transistor.

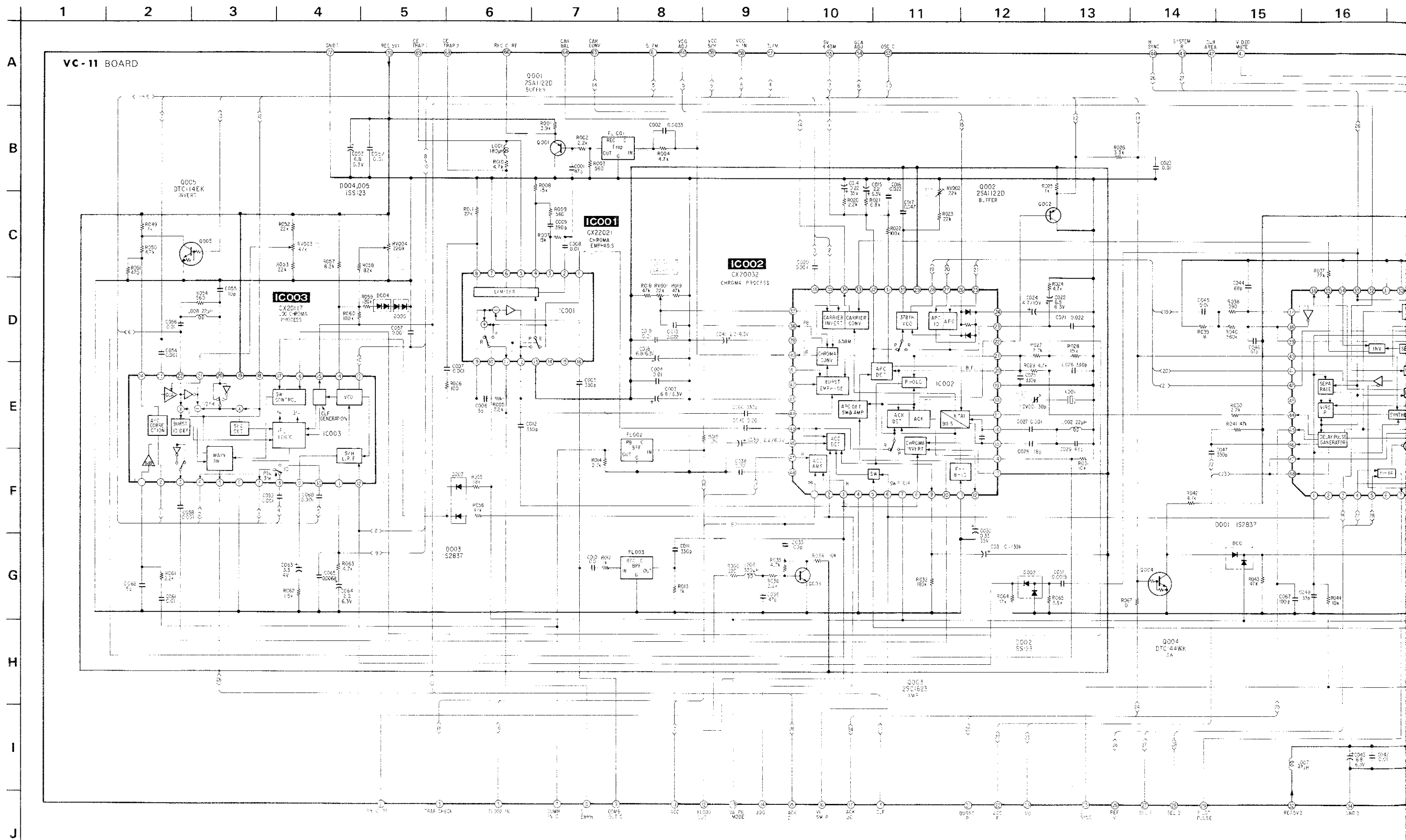


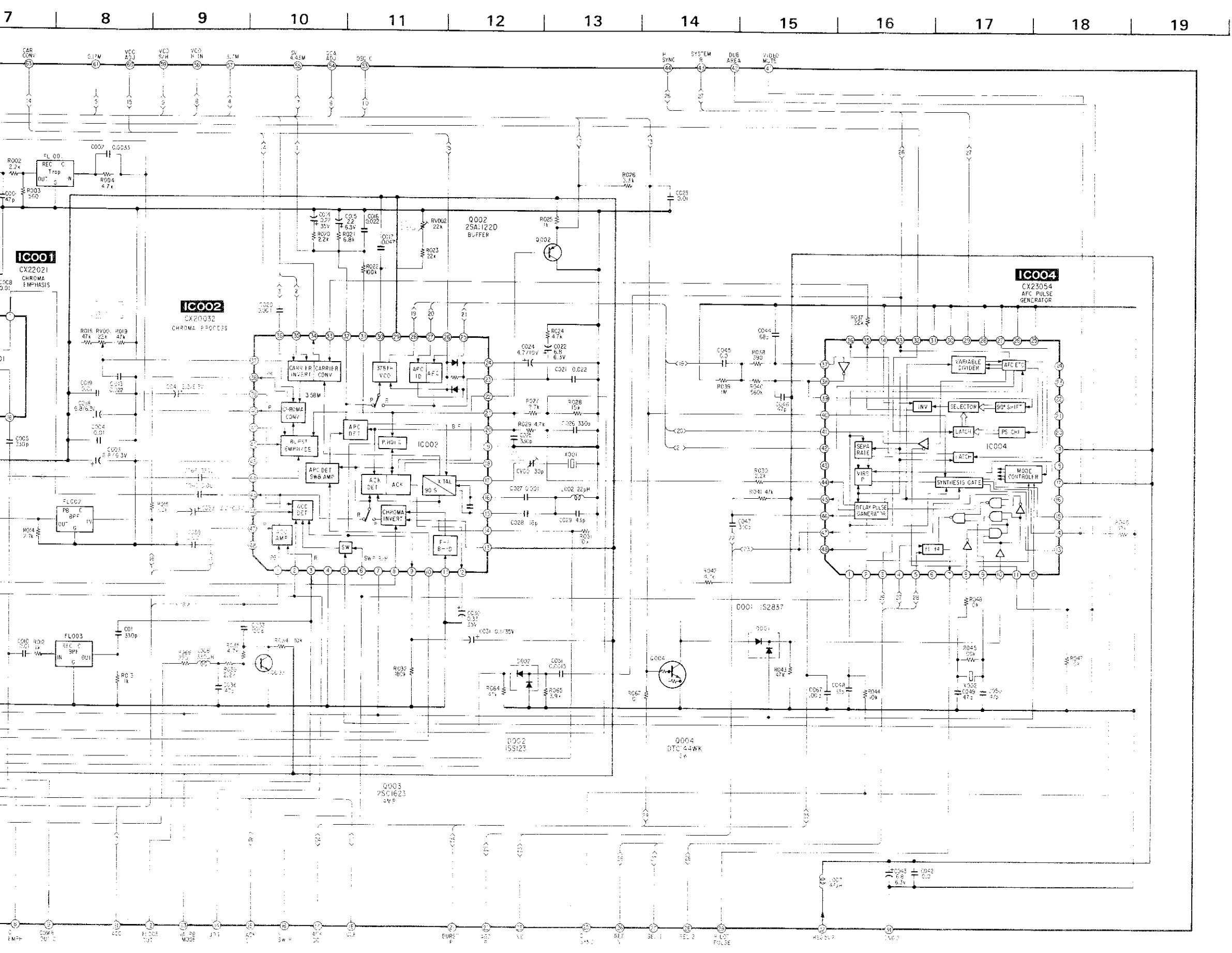
VC-11 BOARD 'SIDE A'



VIDEO	VIDEO

VC-11 (CHROMA SIGNAL PROCESS) SCHEMATIC DIAGRAM





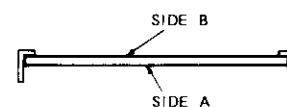
- Note (Schematic Diagram):
- Caution to be exercised when replacing chip components. Do not reuse the removed components but use new components. Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
 - All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
 - All resistors are in ohms, 1/10W in chip resistance. $\text{k}\Omega = 1000\Omega$ and $\text{M}\Omega = 1000\text{k}\Omega$
 - All variable and adjustable resistors have characteristics curve B, which definition is omitted.
 - : panel designation.

• Signal path

VD-6 (COMB TYPE FILTER) PRINTED WIRING BOARD

Note (Printed Wiring Board):

-  : mark is through hole.
-  : lead wire attached to the component side.
-  : lead wire attached to the soldering side.
-  : pattern from the side which enables seeing.
-  : pattern of the rear side.
-  : B+ pattern.
- Digital transistor (VD-6: Q002, 003, 005) transistor with resistor.
Ref to the VD-6 board schematic diagram for digital transistor.



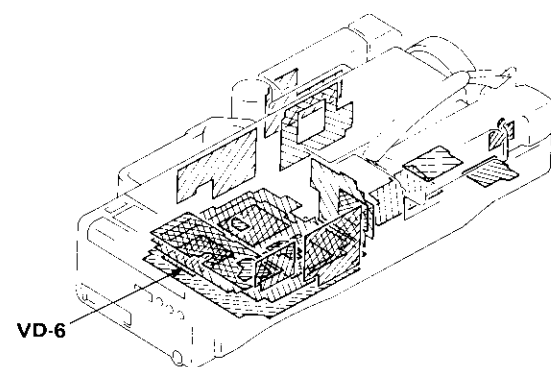
Note

Soldering side: Parts on the soldering side being seen from the soldering are stated.
(SIDE A)

Component side: Parts on the component side being seen from the component are stated.
(SIDE B)

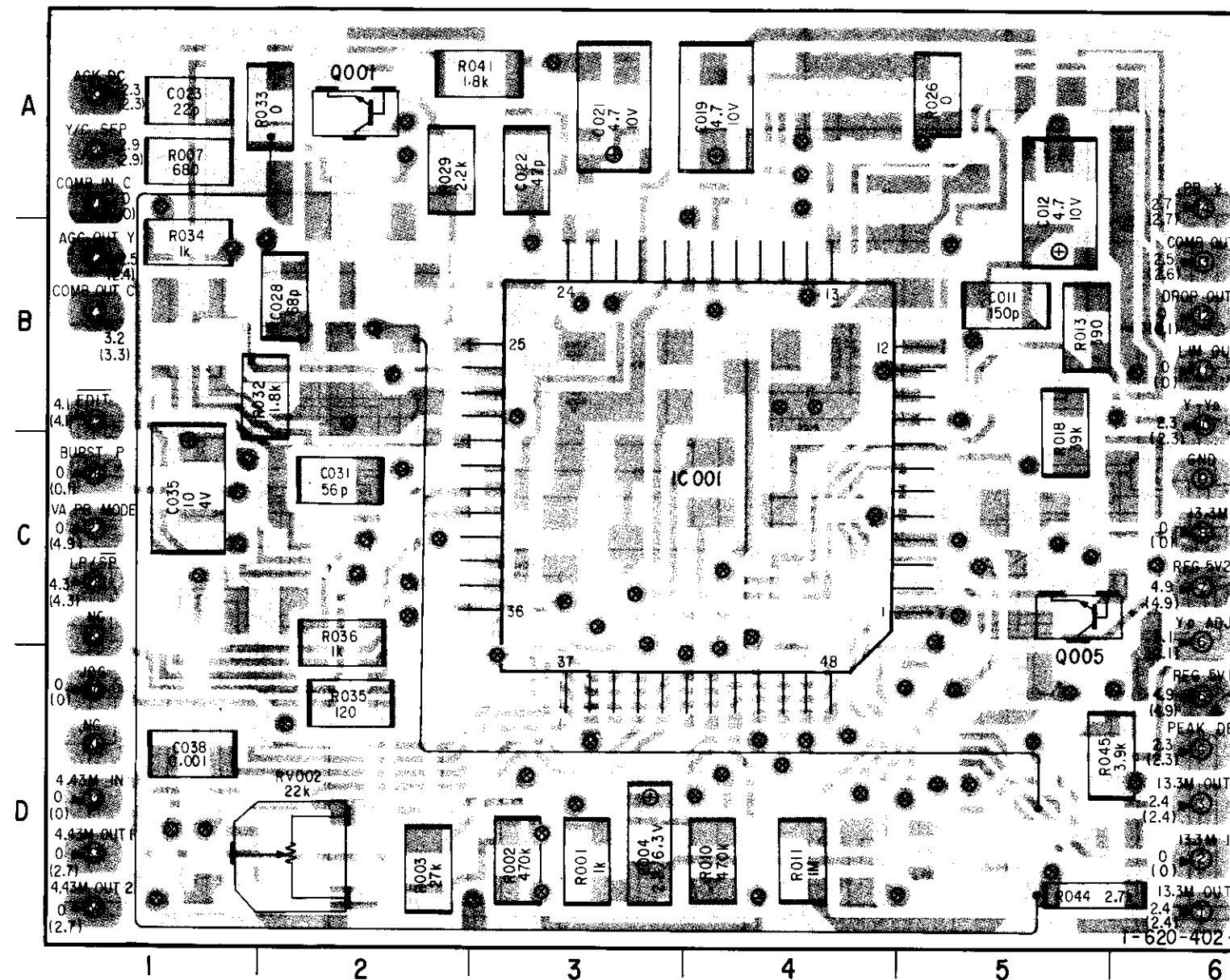
Regarding color indication of patterns

- Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- Pattern being seen in the state of the rear surface side is indicated in green pattern.



D001	B-10
D003	C-9
IC001	C-4
Q001	A-2
Q002	C-9
Q003	C-10
Q005	C-5
Q006	B-11
RV002	D-2

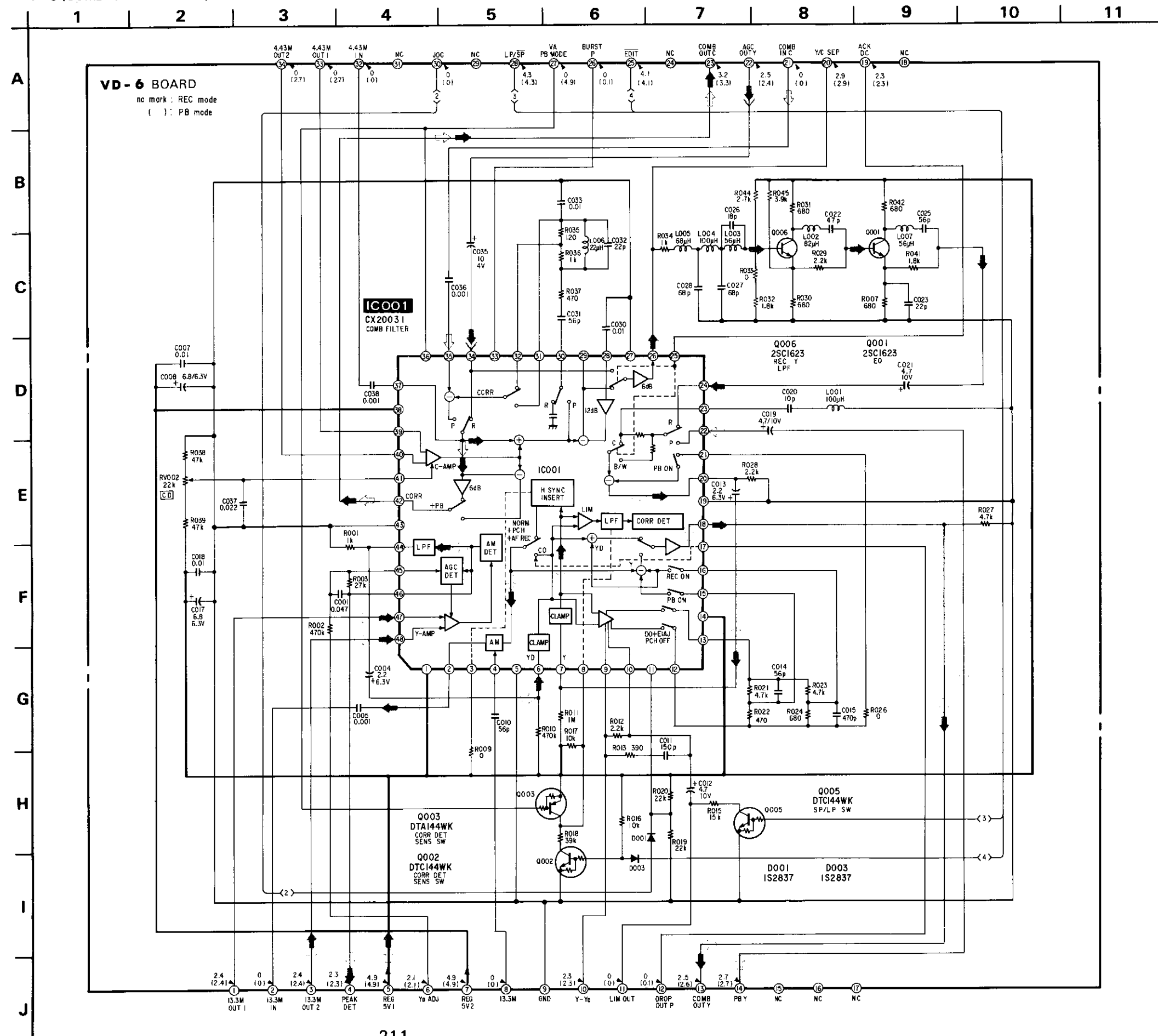
VD-6 BOARD (SIDE B) (no mark: REC mode, (): PB mode)



015 5k
 C018 0.01
 C017 6.8 6.3V
 R012 22k
 C010 56p
 R009 0
 C006 0.001
 C015 170k
 R021 4.7k
 C014 56p
 R022 470
 R027 4.7k
 R019 22k
 Q002
 D003
 R017 10k
 C013 2.2/6.3V
 R037 470
 L001 100μH
 R028 2.2k
 C025 56p
 C020 10p
 L007 56μH
 R042 680
 L004 100μH
 L002 82μH
 L003 56μH
 L005 68μH
 Q006
 C026 18p
 R032 22p
 C033 0.01
 R030 680
 C027 168p
 L006 22μH
 C036 0.001
 C001 0.047
 C007 0.01
 C037 0.022
 R038 47k
 C008 6.8 6.3V
 R039 47k
 ACK DC
 Y/C SEP
 COMB IN C
 AGC OUT Y
 COMB OUT C
 EDIT
 BURST P
 VA RB MODE
 LP/SP
 NC
 JCG
 NC
 4.43M IN
 4.43M OUT 1
 4.43M OUT 2
 I-620-402-

VIDEO VIDEO

VD-6 (COMB TYPE FILTER) SCHEMATIC DIAGRAM



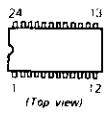
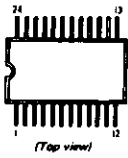
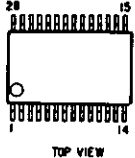
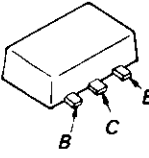
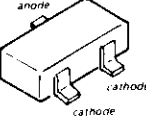
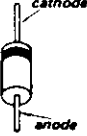
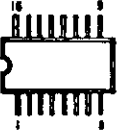
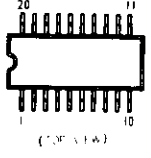
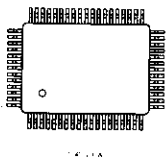
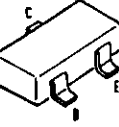
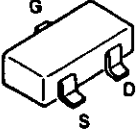
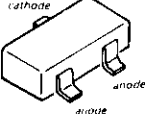
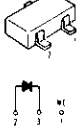
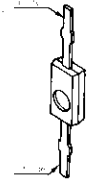
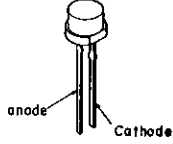
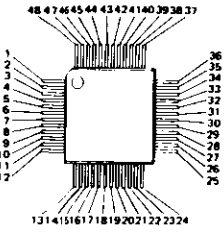
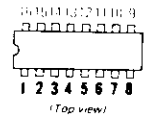
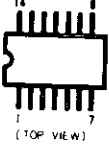
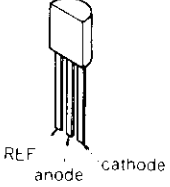
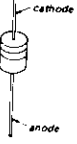
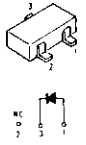
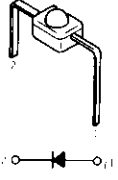
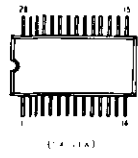
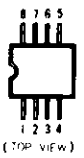
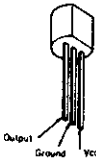
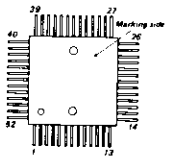
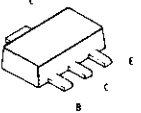
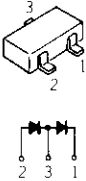
Note (Schematic Diagram):

- Caution to be exercised when replacing chip components
Do not reuse the removed components but use new components.
Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, $1/10\text{W}$ in chip resistance.
 $\text{k}\Omega = 1000\Omega$ and $\text{M}\Omega = 1000\text{k}\Omega$
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
-  : panel designation.
-  : adjustment designation.
-  : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape .
- All voltage are dc measured with a VOM (10M Ω)

- **Signal path**

- ➡ :REC Y SIGNAL
- ⋮
- ➡ :PB Y SIGNAL
- ➡ :REC CHROMA SIGNAL
- ➡ :PB CHROMA SIGNAL
- ➡ :REC Y & CHROMA SIGNAL

4-3. SEMICONDUCTORS

AN2510S  (Top view)	CX20114 CX20117 CX20180 μ PD6105G μ PD6107G  (Top view)	CXD1030M  TOP VIEW	S-81250AG  Pin 1: Ground 2: Input 3: Output	2SA1037K 2SA1122 2SA1162 2SA1226 2SA812 2SB624 2SC1623 2SC2223 2SC2412 2SC2712 2SC2757 2SC2812	2SC3052 DTA114EK DTA124EK DTA144EK DTA144TK DTA144WK DTC114EK DTC124EK DTC124XK DTC143TK DTC144EK DTC144TK DTC144WK  B C E	2SD999 2SD1366 2SD1615  anode cathode cathode	1SS187 1SS190  cathode anode	HZ4ALL RD8.2E-B2 RD13E-B2  cathode anode	GP-2S09-B 
BA6303F CX20115A CX22021 TC4052BF TC4526BF μ PD4052BG μ PD4053BG μ PD4538BG μ PD74HC157G μ PD74HC174G 	CX7991  (Top view)	CXP5048H-031Q CXP5048H-040Q μ PD7502G  TOP VIEW	TA7060AP  1 2 3 4 5	2SA1175  C B E	2SK94 2SK160 2SK209 2SK209G 2SK303  G S D	1S2837 DAN202K MA151WK  cathode anode anode	1SS193 1SS220 E10DS2 E10QS03 RD5.1M-B3 RD10M-B2 RD12M-B2  1 2 3 4 5 6 7	1T32 1T32-2 	TLR147  anode Cathode
CX20030 CX20031 CX20032 CX20034 CX20037A CX20053 CX20055 CX20056 CX20151 CX23047B CX23054 CXD1073Q  48 47 46 45 44 43 42 41 40 39 38 37 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	CXA1042M MSM6411B-26GS-VK TA7733F  (Top view)	NJM3403AM TC4066BF TC74HC04F μ PC324G2 μ PC339G2 μ PD4066BG μ PD4069UBG μ PD74HC02G μ PD74HC04G  (TOP VIEW)	TL431CLPB  REF anode cathode	2SA1385  B C E	DTA144ES  C B E	1SS119 1SS133 1SS148  cathode anode	1SS196  1 2 3 4 5 6 7	GL-1EG102 GL-1HY102  1 2 3 4 5 6 7 8 9 10 11 12	
CX20035 CX20036 CX23039  (Top view)	CXB0026M MB3763PF μ PC393G2 μ PC4250G2  (TOP VIEW)	S-8054ALB  Output Ground Vcc	μ PD7508G  Marking side	2SB1114 2SD1664  C B E	NJL7141E-S  E C	1SS123 DA204K MA152WA MA153 MA157  3 2 1 2 3 1	1SS222  cathode anode	GL-450S  anode cathode	

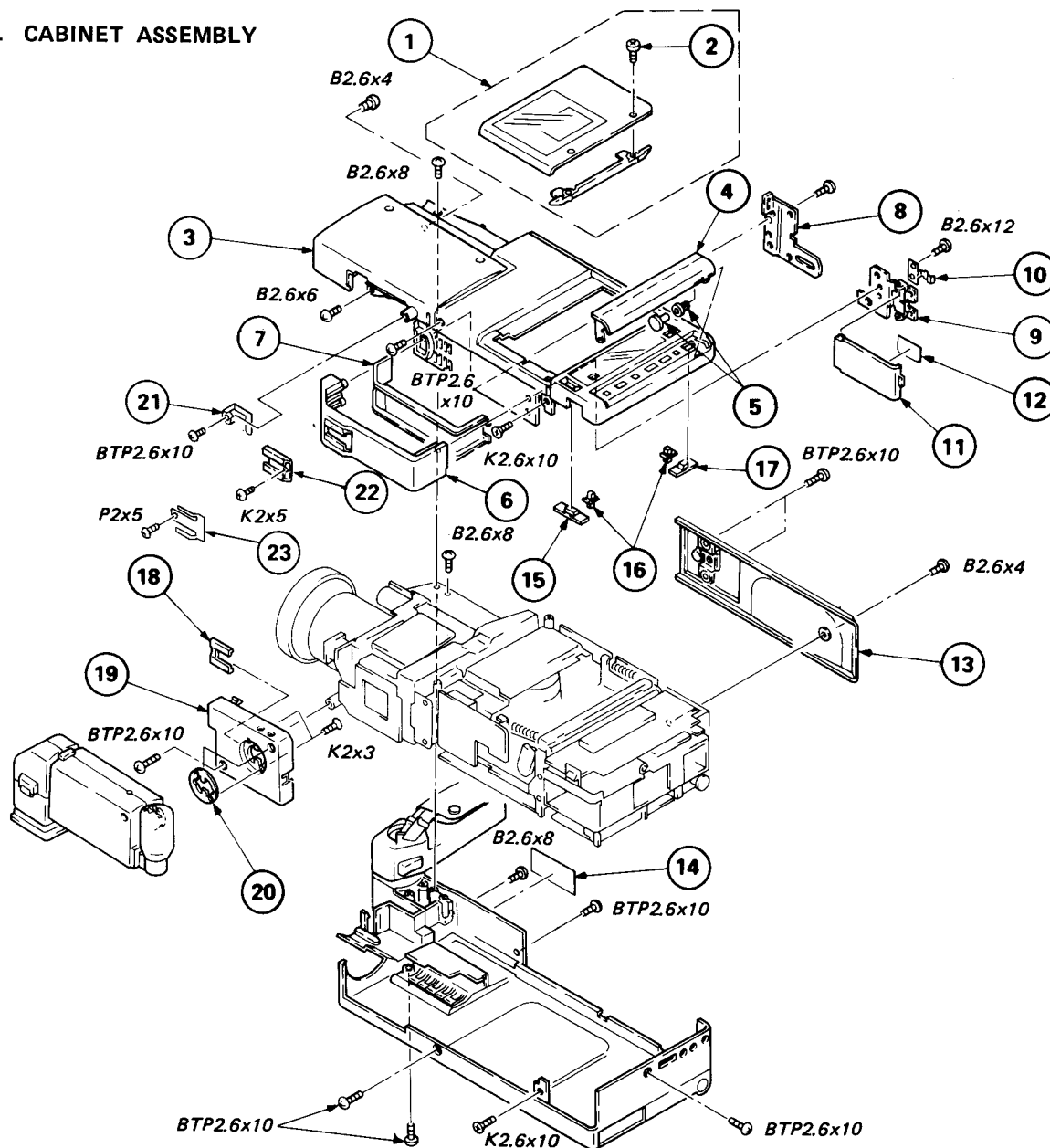
SECTION 5 EXPLODED VIEWS

NOTE:

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

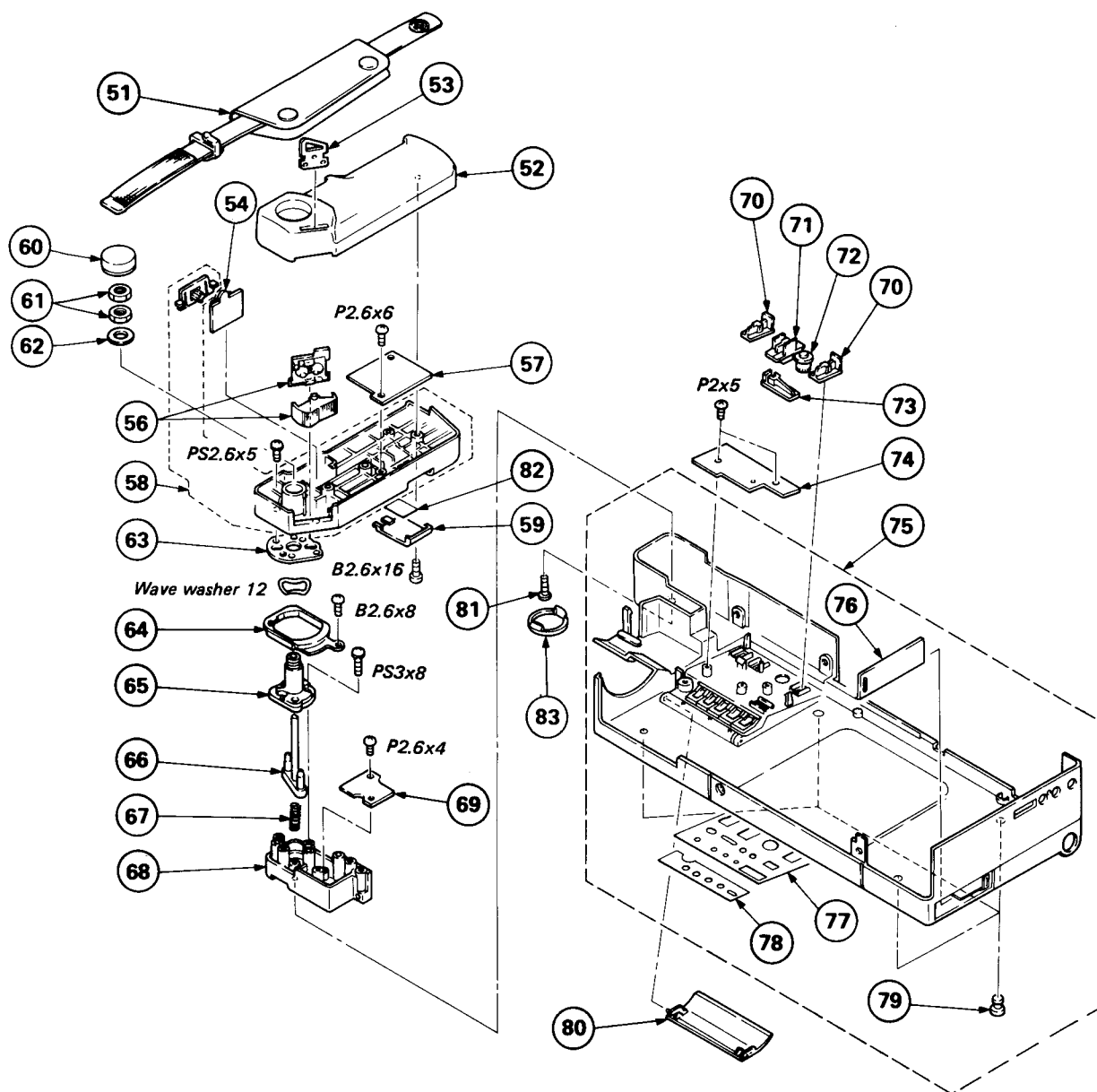
The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

5-1. CABINET ASSEMBLY



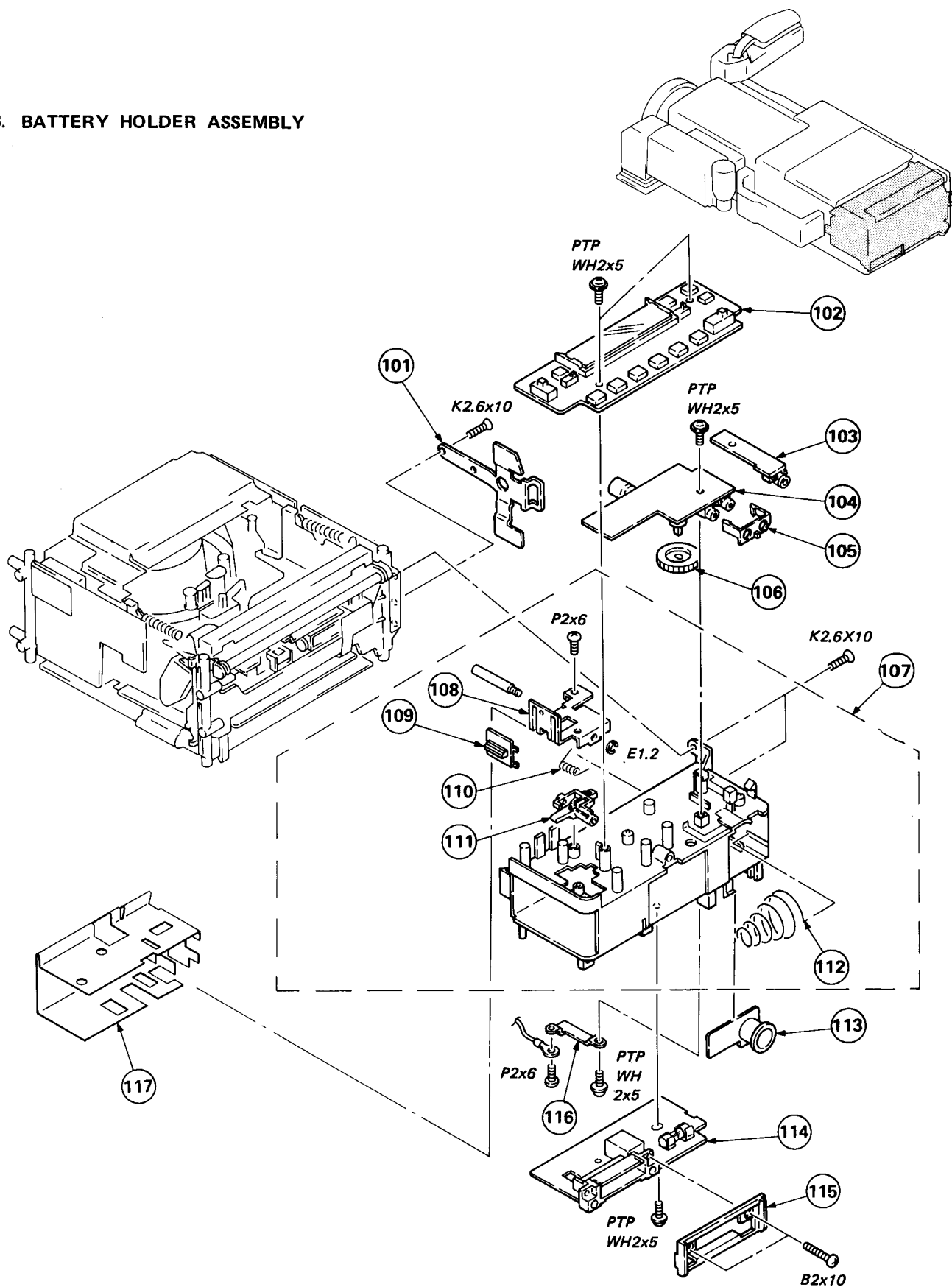
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
1	*X-3686-894-1	LID ASSY, CASSETTE		14	*3-712-593-01	LABEL, MODEL NUMBER	
2	3-712-679-01	SCREW (2X5), TAPPING	2			(FTZ object in AEP MODEL)	
3	X-3686-897-1	CABINET (L) ASSY			*3-713-541-01	LABEL, MODEL NUMBER	
4	*3-712-692-01	DOOR, FUNCTION				(AEP, AUSTRALIAN, E, UK MODELS are	
5	3-531-576-31	RIVET, NYLON				beyond the object of the FTZ)	
6	3-712-585-01	HANDLE		15	3-713-539-01	KNOB, EJECT	
7	3-712-584-01	HANDLE (LOWER)		16	3-713-538-01	KNOB, EDIT	
8	*3-712-636-01	SUPPORT (A), HANDLE		17	3-713-540-01	KNOB, REC	
9	*3-712-637-01	SUPPORT (B), HANDLE		18	*3-712-647-01	SUPPORT, EVF ROTARY SHAFT	
10	3-712-638-01	PLATE, CLICK, BA		19	3-712-619-01	CABINET (UPPER)	
11	3-712-583-01	LID, BATTERY		20	3-712-676-01	PLATE, CLICK	
12	3-712-640-01	LABEL, BATTERY PICK		21	*3-713-543-01	PLATE (L), CONNECTION	
13	X-3686-869-1	CABINET (BOTTOM) ASSY		22	3-688-985-01	SHOE, ACCESSORY	
				23	3-688-940-01	SPRING, LEAF	

5-2. CABINET (R) AND GRIP ASSEMBLY



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
51	3-712-621-01	BELT, GRIP		67	3-534-235-00	SPRING, COMPRESSION	
52	3-712-604-01	GRIP (2)		68	*3-712-602-01	REINFORCEMENT, CABINET (L)	
53	3-712-598-01	BRACKET, BELT		69	*1-620-160-11	ZS-2 BOARD	
54	*1-620-279-11	GS-2 BOARD		70	3-712-567-01	KNOB, AF	
56	1-570-785-11	SWITCH, PUSH (ZOOM)		71	3-712-568-01	KNOB, WB	
57	*1-620-159-11	LI-1 BOARD		72	3-713-537-01	KNOB, IRIS	
58	X-3686-904-1	GRIP (1) SUB ASSY		73	3-712-578-01	KNOB, CP	
59	3-712-601-01	LID, BATTERY CASE		74	*1-620-154-21	TI-8P BOARD	
60	3-712-644-01	BUTTON, RELEASE		75	X-3686-866-1	CABINET (RIGHT) ASSY	76-79
61	3-712-653-01	NUT (M8), TUBE		76	3-713-502-01	DOOR	
62	3-712-650-01	COLLAR		77	3-712-682-01	PLATE, ORNAMENTAL, CONTROL BLOCK	
63	3-712-675-01	RATCHET		78	3-712-683-01	PLATE, ORNAMENTAL, SET BLOCK	
64	*3-712-618-01	PLATE, ORNAMENTAL, CABINET (R)		79	3-688-931-11	FOOT, RUBBER	
65	X-3686-879-1	HOLDER ASSY, RATCHET		80	3-713-506-01	DOOR, SET	
66	X-3686-858-1	RETAINER ASSY		81	3-714-003-01	B 4x10	
				82	*3-713-573-01	LABEL, BATTERY REPLACEMENT	
				83	3-712-600-01	PLATE, ORNAMENTAL, GRIP	

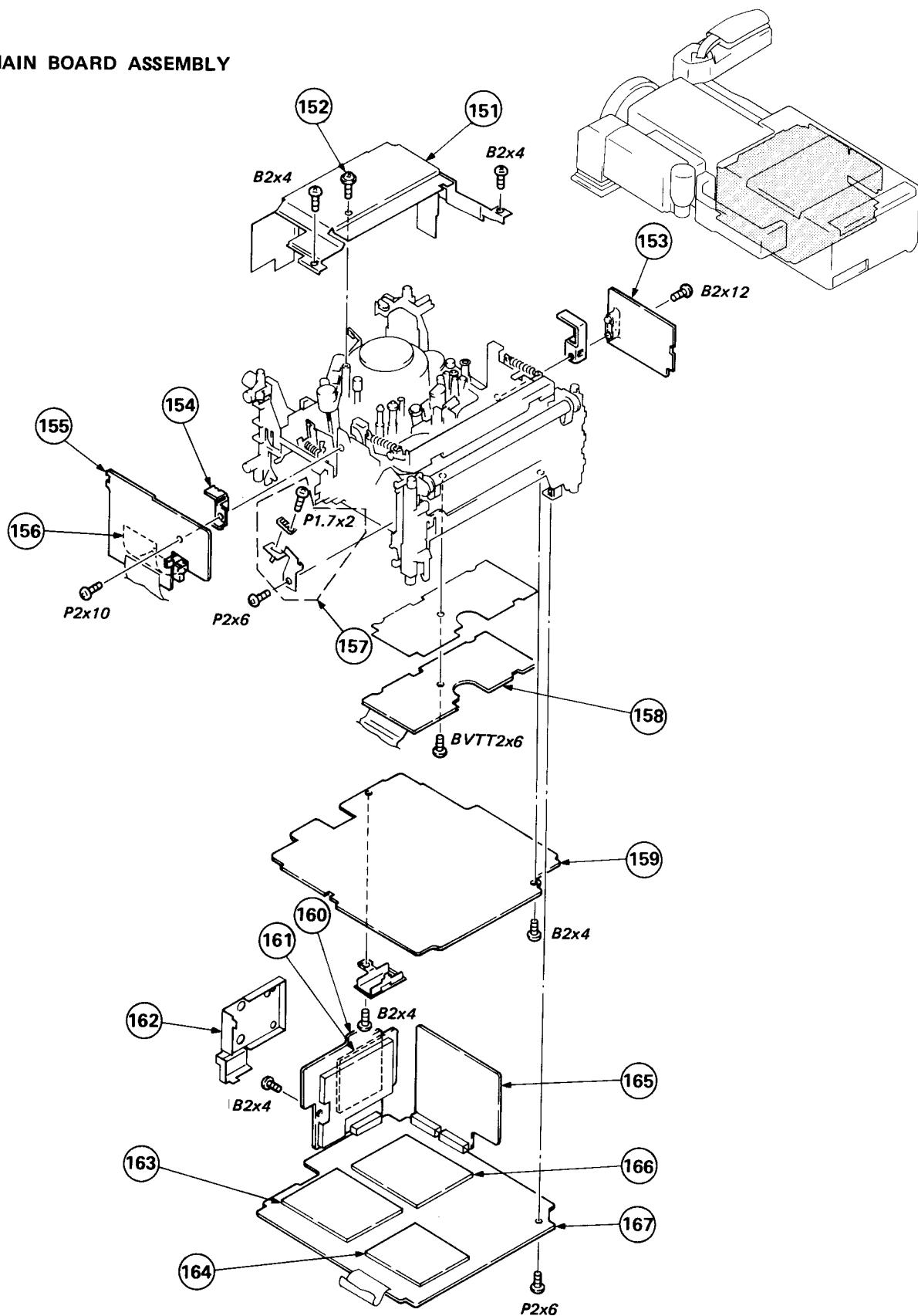
5-3. BATTERY HOLDER ASSEMBLY



No.	Part No.	Description
101	3-712-606-01	PLATE (A), HOOK
102	*A-7060-618-A	SK-12P BOARD, COMPLETE
103	*1-620-158-11	EP-8 BOARD
104	*A-7060-620-A	CC-6P BOARD, COMPLETE
105	*3-712-608-01	MOLD, BLIND
106	3-712-610-01	KNOB, SHARPNESS
107	X-3686-865-1	HOLDER ASSY, BATTERY
108	3-712-581-01	BRACKET, RELEASE BUTTON
109	3-712-614-01	BUTTON, LOCK RELEASE

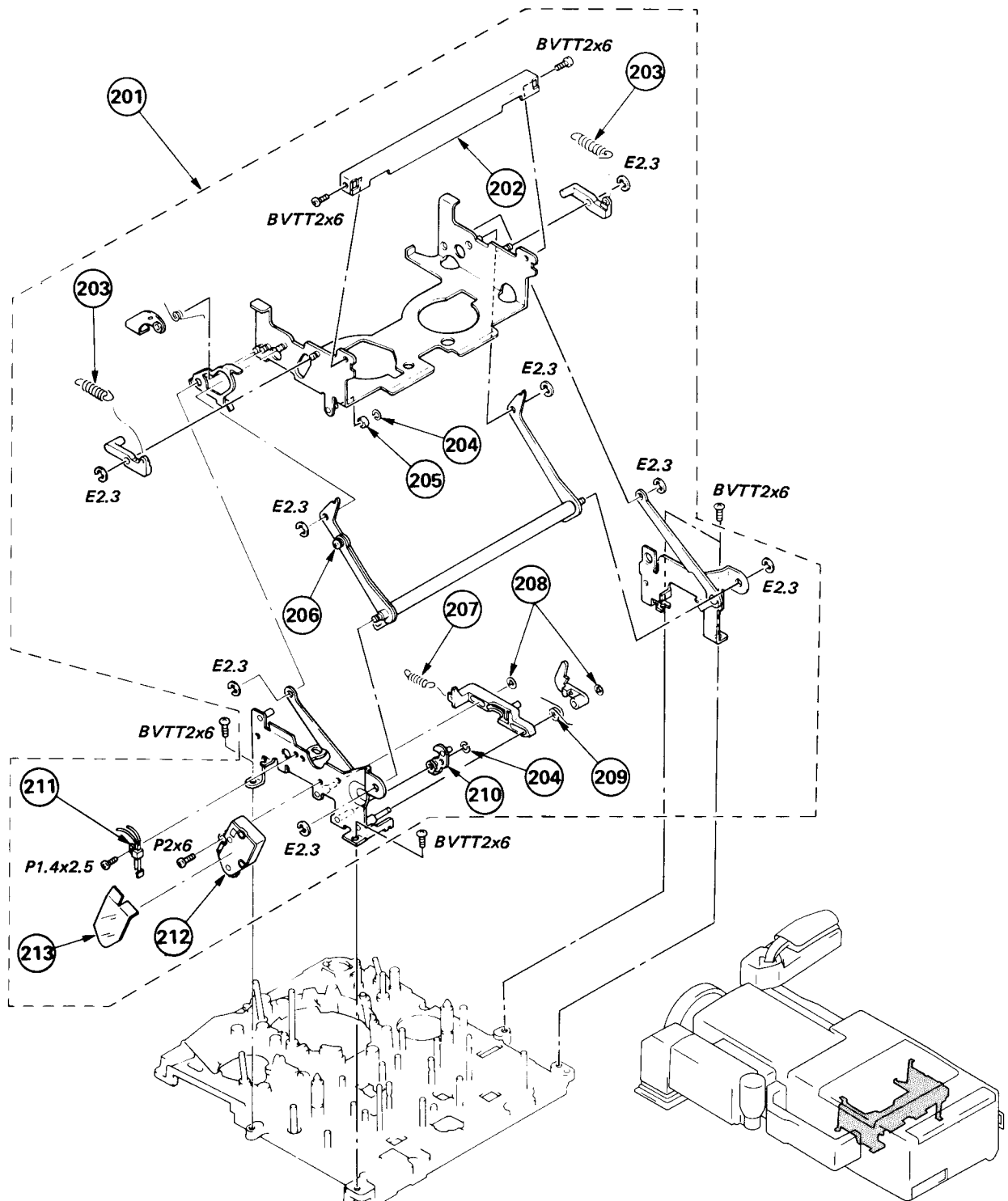
Remark	No.	Part No.	Description	Remark
	110	3-713-520-01	SPRING	
	111	3-712-580-01	CLAW, BATTERY LOCK	
	112	3-686-775-01	SPRING	
	113	*1-620-155-21	RJ-2P BOARD	
	114	*A-7050-619-A	SC-6P BOARD, COMPLETE	
	115	*3-713-507-01	COVER	
108-112	116	*3-712-611-01	PLATE, GROUND, L	
	117	*3-713-521-01	COVER, SHIELD	

5-4. MAIN BOARD ASSEMBLY



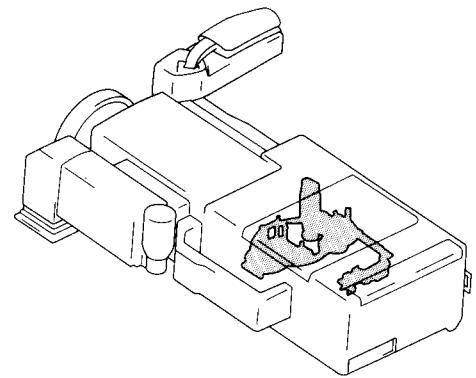
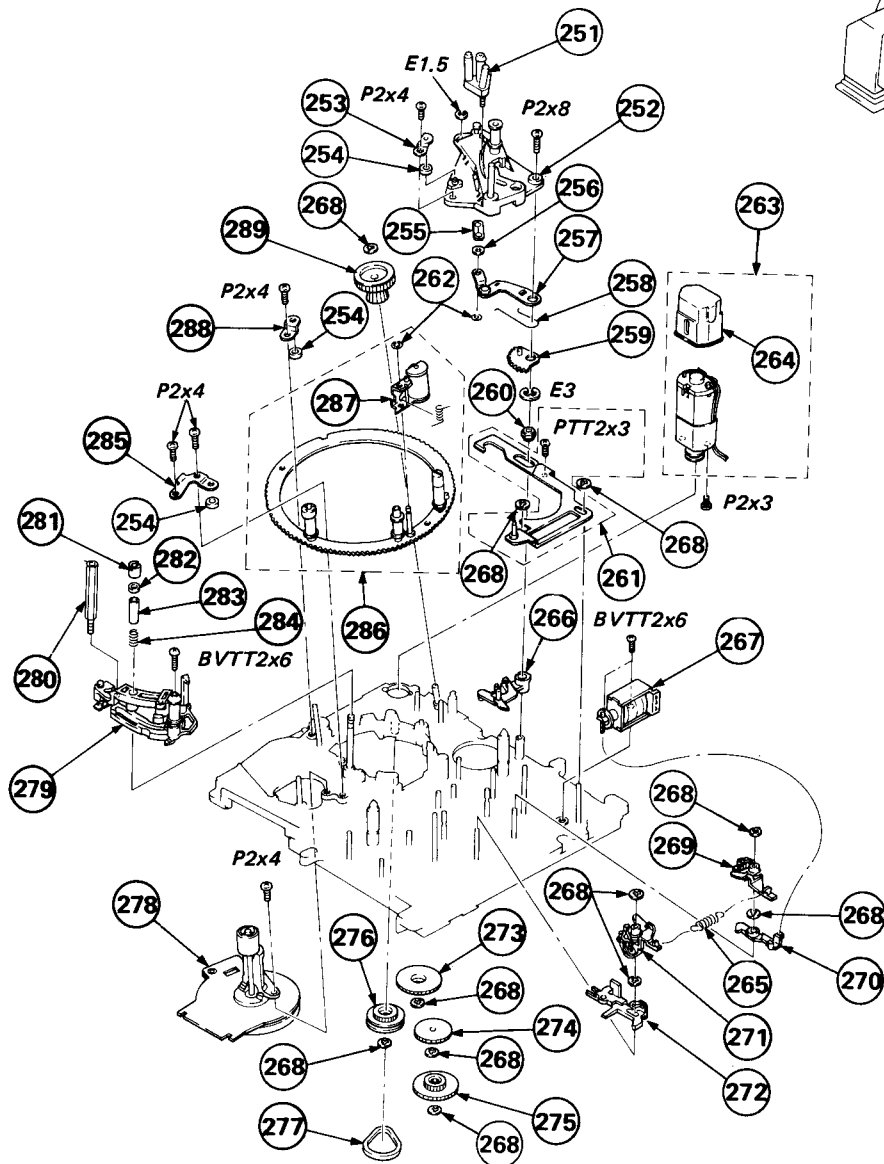
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
151	*3-712-529-01	PLATE, SHIELD, MD		159	*A-7060-702-A	SS-64P BOARD, COMPLETE (UK MODEL)	
152	3-703-502-31	SCREW		160	*A-7060-491-A	RP-40 BOARD, COMPLETE	161
153	*A-7060-617-A	TS-55P BOARD, COMPLETE		161	A-7068-037-A	RP-34P HIC BOARD, COMPLETE	
154	*X-3686-837-1	HOLDER ASSY, END		162	*X-3686-845-1	LTD ASSY, UPPER, RP SHIELD	
155	*A-7060-494-A	DR-36P BOARD, COMPLETE	156	163	*A-7068-034-A	VY-9 HIC BOARD, COMPLETE	
156	A-7070-249-A	FP-20 BOARD, COMPLETE		164	A-7068-035-A	VD-6 HIC BOARD, COMPLETE	
157	1-807-744-11	SENSOR (DEW)		165	*A-7060-633-A	AU-25 BOARD, COMPLETE	
158	*A-7060-486-A	RS-18P BOARD, COMPLETE		166	A-7068-036-A	VC-11 HIC BOARD, COMPLETE	
159	*A-7060-616-A	SS-64P BOARD, COMPLETE		167	*A-7060-615-A	VI-22 BOARD, COMPLETE	163, 164, 166
		(AEP, AUSTRALIAN, E-MODEL)					

5-5. CASSETTE COMPARTMENT ASSEMBLY



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
201	A-7040-005-A	CASSETTE COMPARTMENT ASSY	202-213	208	3-669-465-00	WASHER (1.5), STOPPER	
202	3-686-718-01	REINFORCEMENT		209	3-686-694-01	SPRING, TORSION	
203	3-686-883-01	SPRING, TENSION		210	*X-3686-541-1	CLAW ASSY, LOCK	
204	3-578-265-11	WASHER, STOPPER		211	1-553-226-00	SWITCH, LEAF (CASSETTE LOCK) S901	
205	*3-686-693-01	ROLLER, LOCK		212	*3-681-528-00	DAMPER	
206	3-672-561-00	+PSW 2X4		213	*3-686-937-01	INSULATOR, DAMPER	
207	3-696-047-01	SPRING, TENSION					

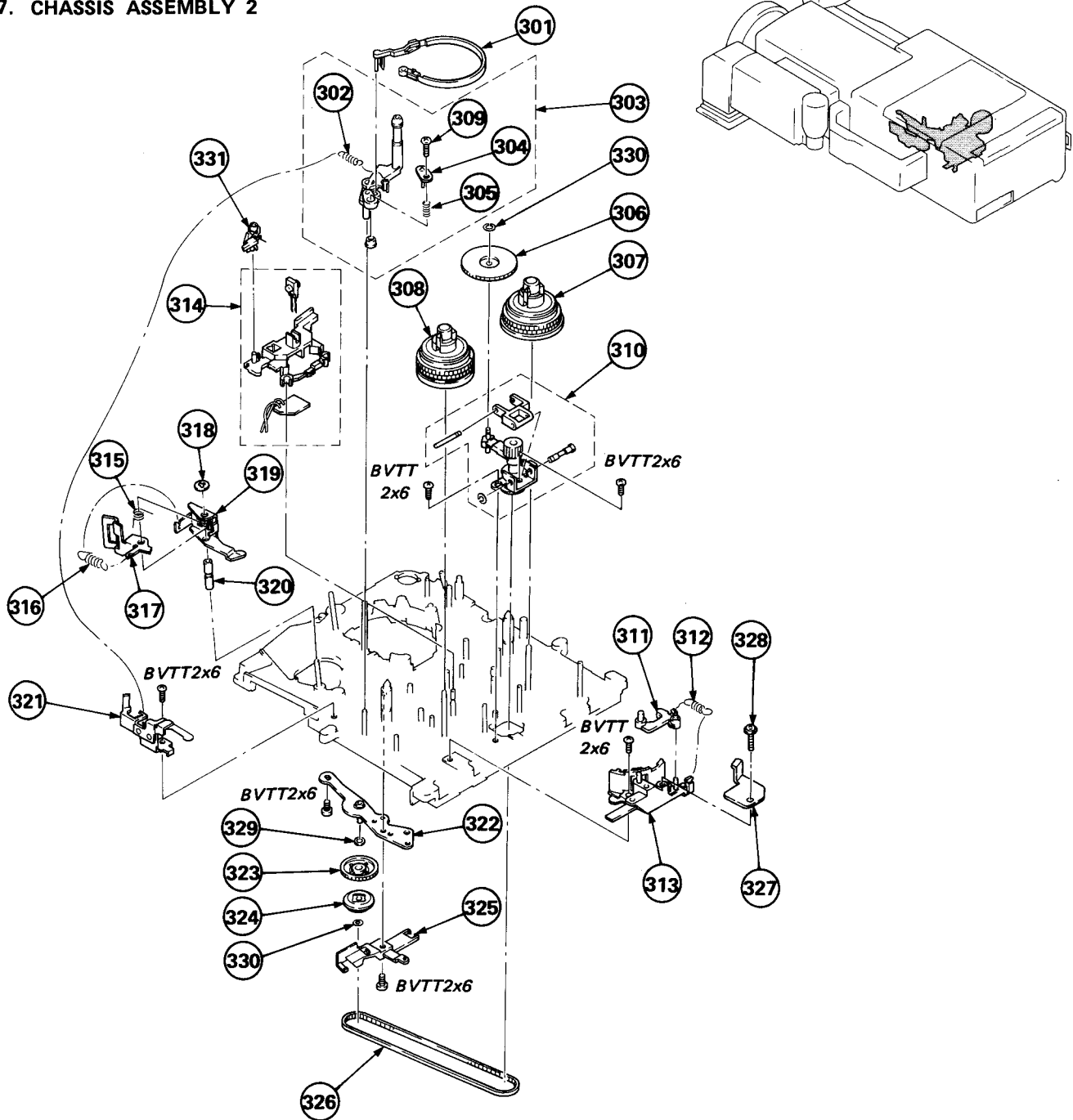
5-6. CHASSIS ASSEMBLY 1



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

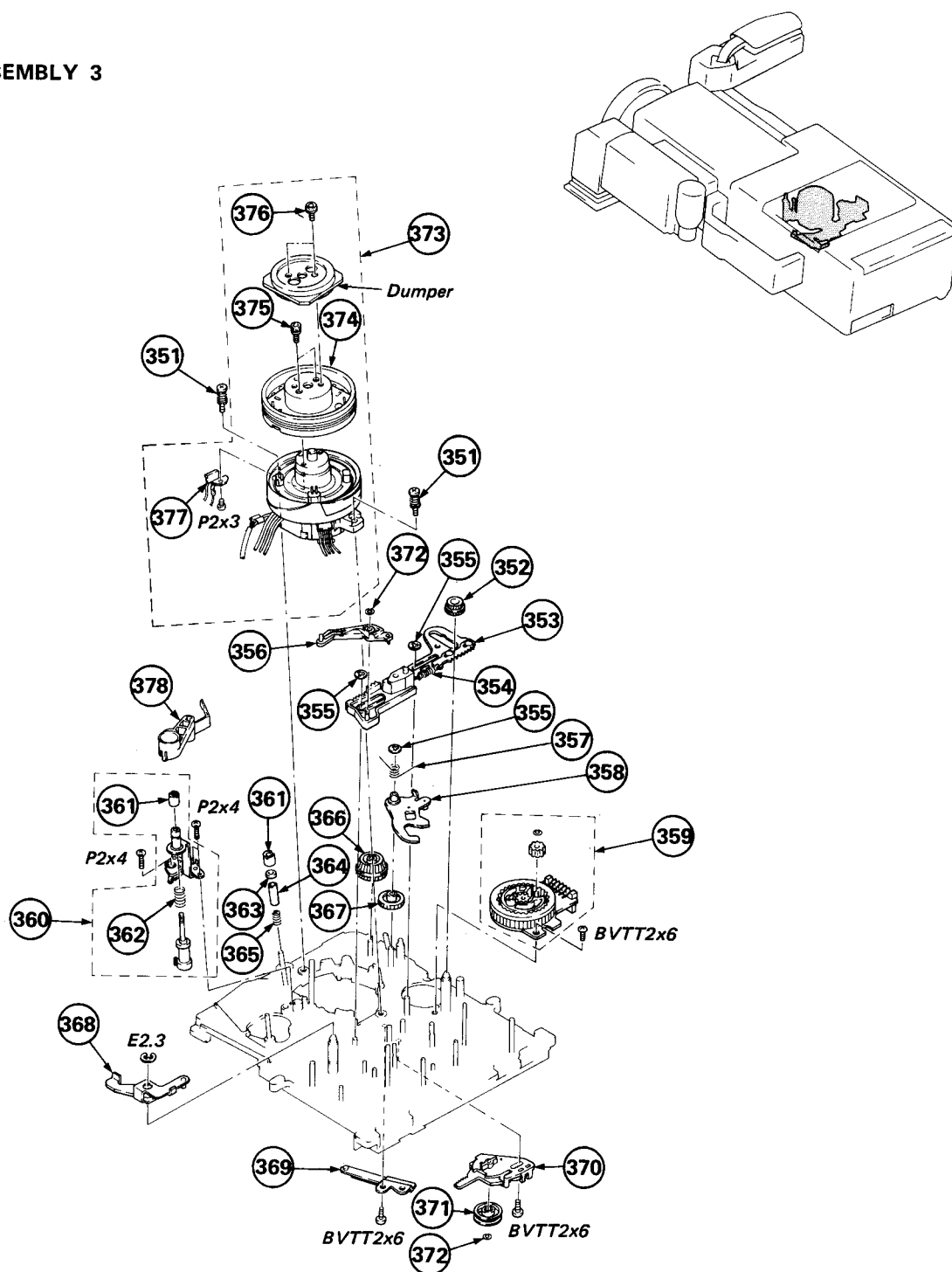
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
251	X-3686-502-1	BASE ASSY, GUIDE		270	*3-686-635-01	ARM, P	
252	X-3686-577-1	CHASSIS ASSY, GUIDE, SLANT		271	X-3686-573-1	BRAKE ASSY, MAIN, SUPPLY	
253	*3-686-503-01	RETAINER, ROLLER		272	*3-686-629-01	SLIDER, SELECTION, UPPER & LOWER	
254	3-697-538-01	ROLLER, RING		273	3-686-508-01	GEAR, NO.2	
255	3-686-663-01	WASHER, STOPPER, 2 GANG		274	3-686-545-01	GEAR, NO.3	
256	3-701-436-21	WASHER, POLYETHYLENE		275	3-686-544-01	GEAR, NO.4	
257	X-3686-537-1	ARM ASSY		276	X-3686-514-1	GEAR ASSY, NO.1	
258	3-686-701-01	SPRING		277	3-686-546-01	BELT, L- MOTOR	
259	3-699-509-01	GEAR, SECTOR		278	8-835-196-01	MOTOR, DC BHF-2802A (CAPSTAN) M902	
260	3-686-537-01	RETAINER, LOCK SLIDER		279	A-7040-054-A	GUIDE (P) ASSY, ENTRANCE	
261	A-7040-072-A	SLIDER ASSY, LOCK		280	3-686-561-01	SCREW, DRUM GUARD	
262	3-315-384-31	WASHER, STOPPER		281	3-686-724-01	NUT, GUIDE	
263	A-7040-031-A	MOTOR ASSY, L (LOADING) M901	264	282	*3-686-894-01	FLANGE, #3 #4 GUIDE	
264	*3-686-757-01	CAP, SHIELD, L MOTOR		283	3-686-912-01	GUIDE, #3 #4	
265	3-686-882-01	SPRING, TENSION		284	3-699-609-01	SPRING, COMPRESSION	
266	*3-686-636-01	ARM, T.S RELEASE		285	*3-686-675-01	STOPPER, RING	
267	Δ 1-454-377-21	SOLENOID, PLUNGER PM901 (BRAKE)		286	A-7040-007-A	RING ASSY, LOADING	262, 287
268	3-669-465-00	WASHER (1.5), STOPPER		287	X-3686-576-1	ARM ASSY, PINCH ROLLER	
269	X-3686-574-1	BRAKE ASSY, MAIN, TAKE-UP		288	*3-686-911-01	PLATE, TOP, ROLLER	
				289	3-697-518-01	GEAR, NO.10	

5-7. CHASSIS ASSEMBLY 2



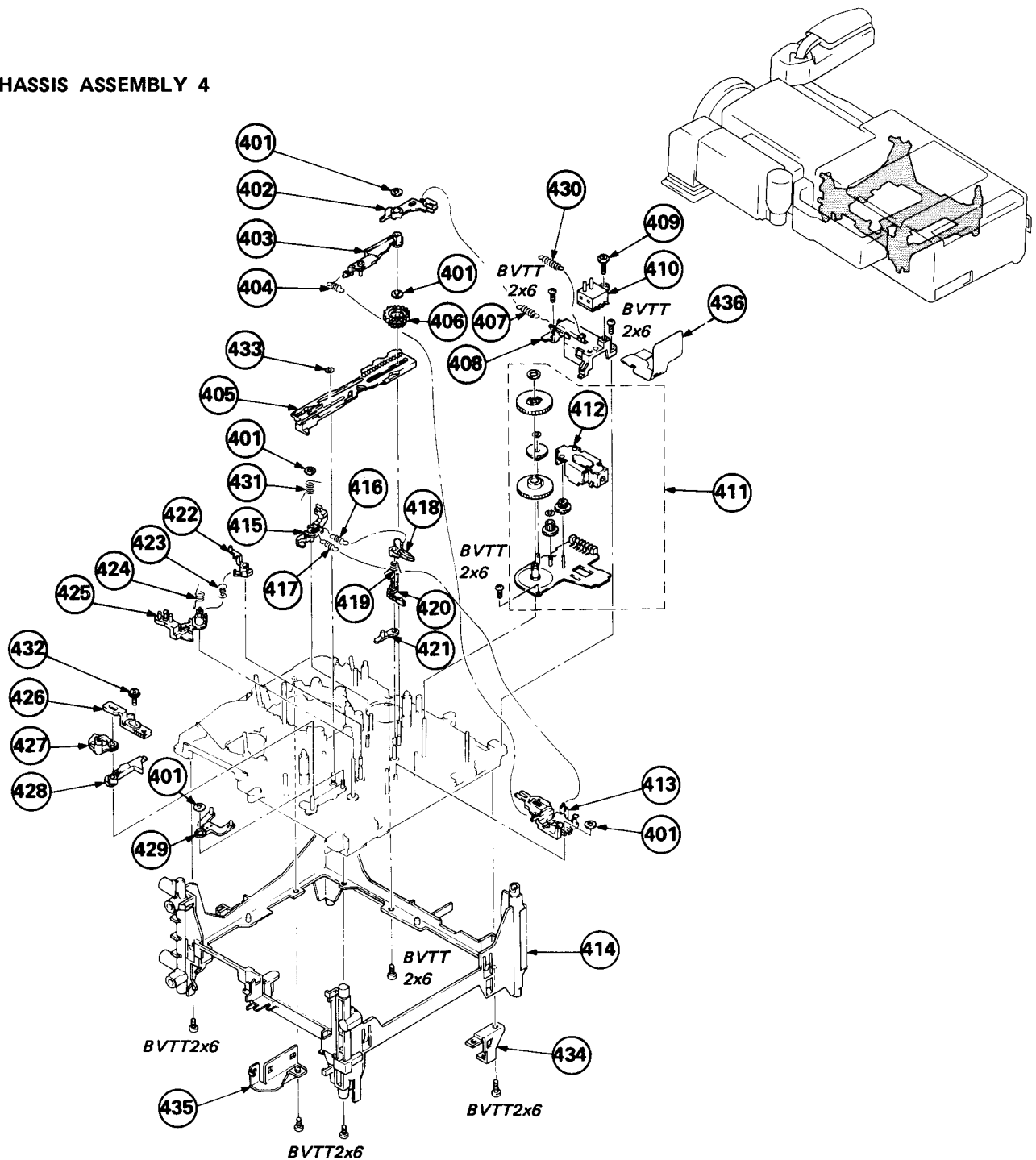
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
301	X-3686-531-1	BAND ASSY, TENSION REGULATOR		316	3-686-885-01	SPRING, TENSION	
302	3-699-519-01	SPRING, TENSION		317	*3-686-641-01	ARM, PINCH PRESS	
303	A-7040-059-A	ARM ASSY, TENSION REGULATOR		318	3-669-465-00	WASHER (1.5), STOPPER	
304	*X-3686-523-1	PLATE ASSY, TENSION REGULATOR	302, 304, 305, 309	319	*3-686-660-01	ARM, PINCH LIMITER	
305	3-699-609-01	SPRING, COMPRESSION		320	*3-686-567-01	SLEEVE, PINCH PRESS	
306	X-3686-763-1	GEAR (B) ASSY, DRIVING		321	*X-3686-525-1	HOOKE ASSY, SPRING	
307	X-3686-572-2	TABLE ASSY, REEL, TAKE-UP		322	*X-3686-529-1	BASE ASSY, CHANGE GEAR	
308	X-3686-571-2	TABLE ASSY, REEL, SUPPLY		323	X-3686-520-1	GEAR ASSY, CHANGE	
309	3-697-546-01	SCREW (+-M2X6), SPECIAL		324	*3-686-596-01	FLANGE, GEAR	
310	X-3686-750-1	DRIVING COMPLETE ASSY		325	3-712-406-01	CLAMP, WIRE	
311	*3-686-637-01	BRAKE (S), SOFT		326	3-686-646-01	BELT, TIMING	
312	3-696-082-01	SPRING, TENSION		327	*3-686-991-01	STOPPER, REEL TABLE	
313	*3-686-760-01	GUIDE, BAND		328	3-669-480-11	+ PTPWH 2	
314	*A-7070-024-A	LD-1 BOARD, COMPLETE		329	3-701-436-11	WASHER, 1.6	
315	3-686-568-01	SPRING, TORSION		330	3-315-384-31	WASHER, STOPPER	
				331	X-3686-590-1	BRAKE ASSY, REV	

5-8. CHASSIS ASSEMBLY 3



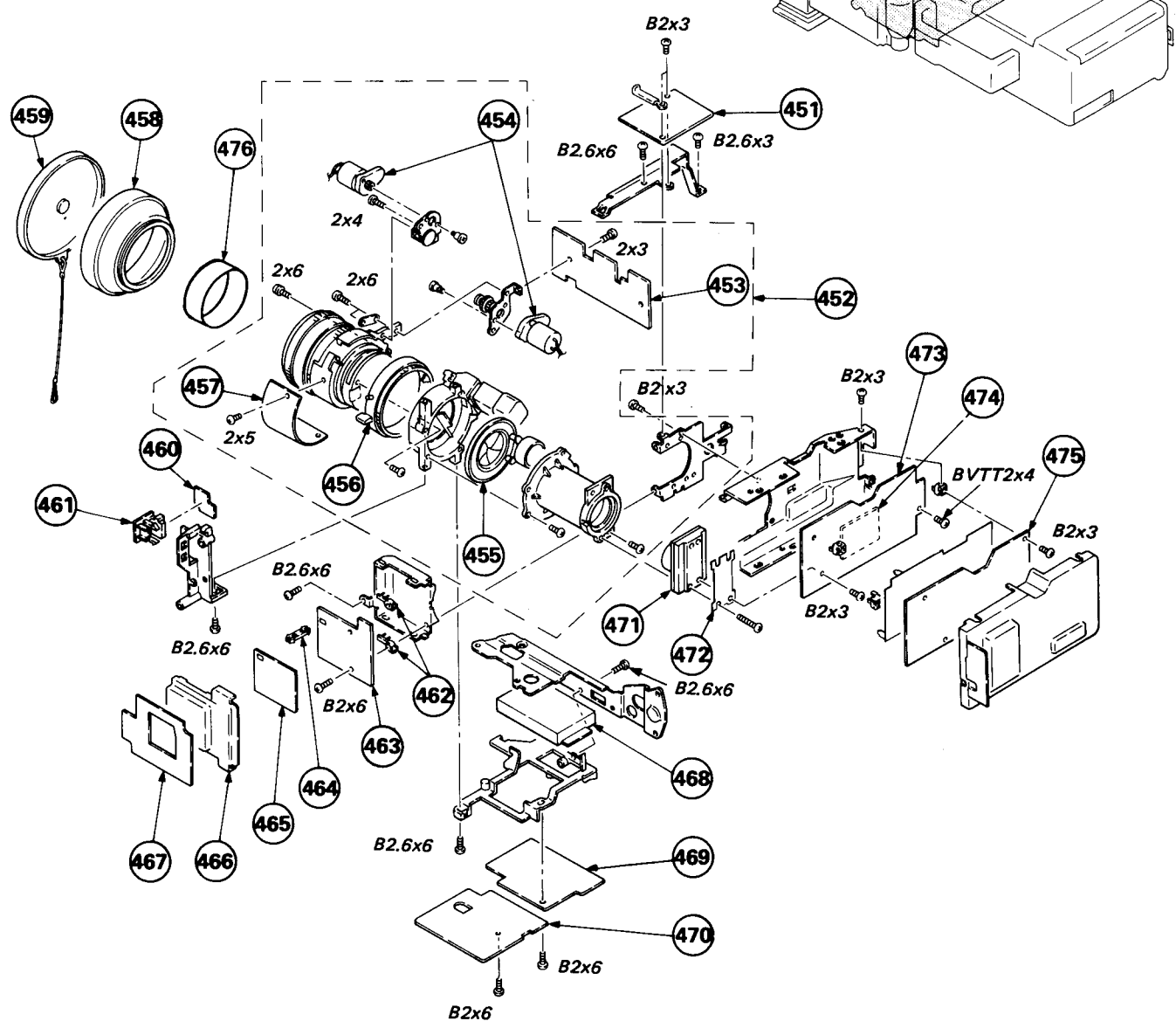
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
351	X-3686-569-1	SCREW ASSY, FITTING		366	3-686-539-01	GEAR, NO.9	
352	3-686-702-01	GEAR, DRIVING, GUIDE, SLANT		367	3-686-535-01	GEAR, NO.8	
353	*X-3686-548-2	SLIDER SUB ASSY, L		368	*X-3686-509-1	LEVER ASSY, PINCH PRESS	
354	3-686-886-01	SPRING, TENSION		369	1-535-535-11	TERMINAL, SHAFT GROUND	
355	3-669-465-00	WASHER (1.5), STOPPER		370	X-3686-521-1	BASE ASSY, IDLER	
356	*X-3686-518-1	ARM ASSY		371	X-3686-522-1	IDLER ASSY	
357	3-686-540-01	SPRING, TORSION		372	3-315-384-31	WASHER, STOPPER	
358	X-3686-579-1	CHANGE ASSY, DRIVE		373	A-7048-040-A	DRUM ASSY (DVH-03D-R)	374-377
359	X-3712-403-1	L-SW ASSY		374	A-7049-005-A	DRUM ASSY, ROTARY UPPER (DVR-03-R)	
360	A-7040-053-A	GUIDE BLOCK COMPLETE ASSY, #5	361, 362	375	3-686-403-01	SCREW (2x5), BOLT WASHER	
361	3-686-724-01	NUT, GUIDE		376	3-686-422-01	WASHER (2x2.7), BOLT, HOLE	
362	3-686-889-01	SPRING, COMPRESSION		377	1-806-975-11	SENSOR, DEW CONDENSATION	
363	*3-686-894-01	FLANGE, #3 #4 GUIDE		378	*3-688-917-01	STOPPER, TAPE	
364	3-686-912-01	GUIDE, #3 #4		380	3-686-561-01	SCREW, DRUM GUARD	
365	3-699-609-01	SPRING, COMPRESSION					

5-9. CHASSIS ASSEMBLY 4



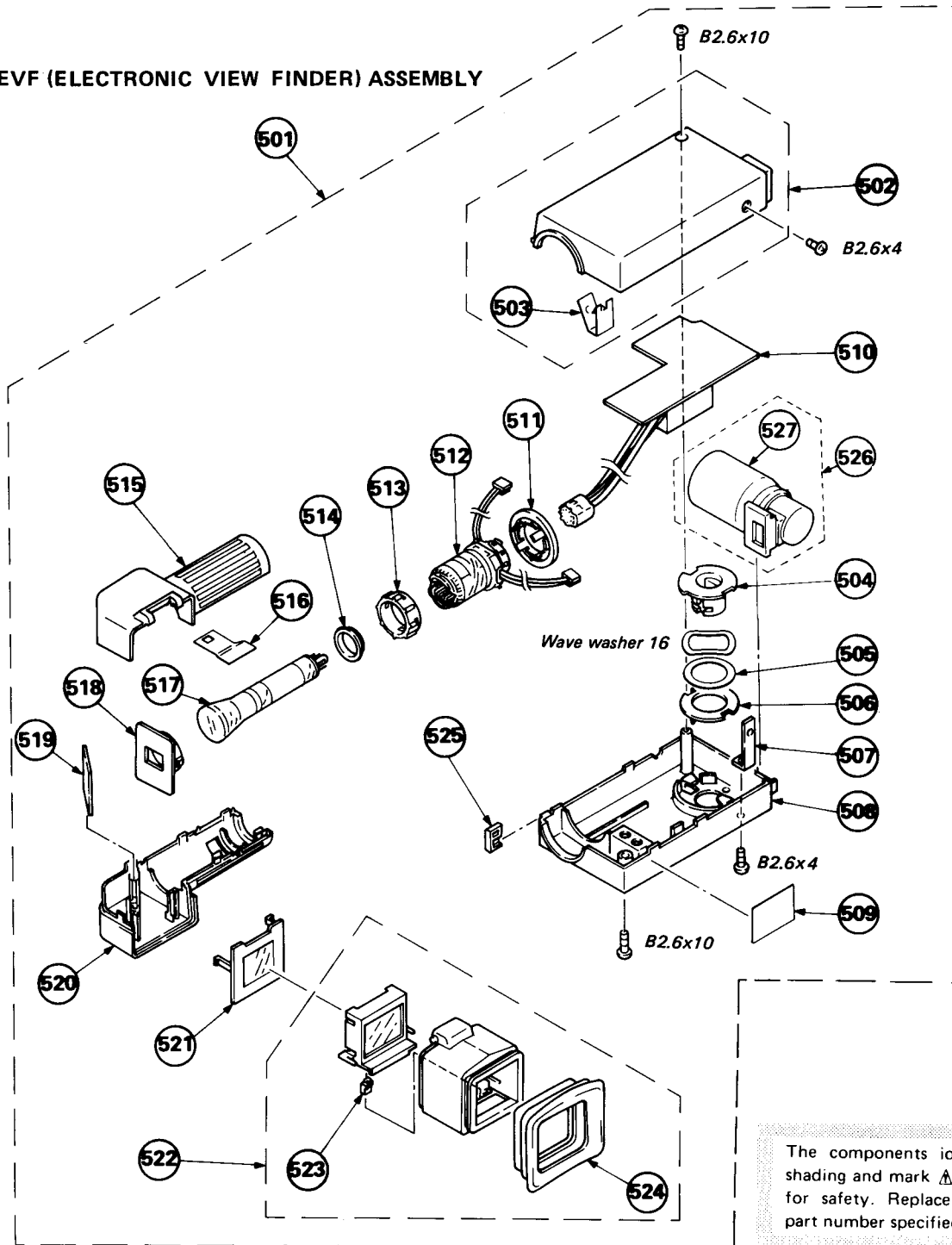
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
401	3-669-465-00	WASHER (1.5), STOPPER		419	3-686-617-01	SPRING	
402	X-3686-777-1	BRAKE ASSY, T.S		420	*3-686-638-01	ARM, RVS	
403	*X-3686-528-1	ARM ASSY, B RELEASE		421	*3-686-580-01	ARM, SET UP	
404	3-686-903-01	SPRING, TENSION		422	3-686-996-01	BRAKE (S), HARD	
405	*3-686-657-08	SLIDER, M		423	3-686-905-02	SPRING, TENSION	
406	3-686-909-01	GEAR, MODE OUTPUT		424	3-686-603-04	SPRING	
407	3-699-649-01	SPRING, TENSION		425	*3-686-644-01	ARM, BAND	
408	*3-699-556-01	COVER, CONTROL MOTOR		426	*3-686-642-01	PLATE, ADJUSTMENT, BAND	
409	3-669-480-11	+ PTPWH 2		427	*3-686-755-01	DISK, EJECT	
410	1-554-942-11	SWITCH, PUSH (RECOG) S902		428	*3-686-643-01	ARM, MODE	
411	A-7090-029-A	M-SW ASSY	412	429	*X-3686-530-1	ARM (A) ASSY, SELECTION	
412	8-835-110-01	MOTOR, DC (DMR-5301A) (CONTROL) M903		430	3-699-650-01	SPRING, TENSION	
413	*3-686-656-01	SLIDER, B RELEASE		431	3-686-579-01	SPRING	
414	X-3686-848-1	FRAME ASSY, MOLD	434, 435	432	3-686-528-01	SCREW (2X6), +	
415	*3-686-634-01	ARM, RL		433	3-315-384-31	WASHER, STOPPER	
416	3-686-906-01	SPRING, TENSION		434	3-712-507-01	SHEET METAL, VI FITTING	
417	3-686-904-01	SPRING, TENSION		435	3-712-527-01	BRACKET, SS	
418	X-3686-510-1	BRAKE ASSY, REW		436	1-619-921-11	FP-19 BOARD	

5-10. CAMERA ASSEMBLY



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
451	*A-7060-626-A	AI-1P BOARD, COMPLETE		464	3-712-582-01	BRACKET, AW	
452	1-547-213-11	LENS, ZOOM (VCL-1206YG)	453-457	465	*A-7060-625-A	AT-5P BOARD, COMPLETE	
453	*A-7060-604-A	AF-23 BOARD, COMPLETE		466	*X-3686-878-1	PLATE (A) ASSY, SHIELD	
454	8-835-127-01	MOTOR, DC (DNR-6300D)		467	*A-7060-632-A	EM-1P BOARD, COMPLETE	
455	3-707-289-01	IRIS UNIT		468	1-464-704-11	CONVERTER UNIT, DC-DC (S)	
456	3-707-290-01	RING ASSY, ZOOM		469	*A-7060-628-A	CG-1P BOARD, COMPLETE	
457	3-707-288-01	RING, ORNAMENTAL		470	*A-7060-627-A	FC-10P BOARD, COMPLETE	
458	3-706-855-00	HOOD		471	8-750-010-35	IU021-K-AA	
459	3-712-617-01	CAP, HOOD		472	*3-690-235-01	SHEET, INSULATING, CCD	
460	*1-620-145-21	AS-13P BOARD		473	*A-7060-622-A	CP-18P BOARD, COMPLETE	474
461	3-712-627-02	HOLDER, SENSOR		474	A-7068-049-A	DT-61P HIC BOARD, COMPLETE	
462	*3-712-571-01	CALLOR, AW		475	*A-7060-621-A	ME-4P BOARD, COMPLETE	
463	*A-7060-624-A	AW-3P BOARD, COMPLETE		476	A-7002-184-A	RING ASSY, HOOD	

5-11. EVF (ELECTRONIC VIEW FINDER) ASSEMBLY



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
501	A-7019-040-A	EVF ASSY (AEP, AUSTRALIAN, E MODEL)		512	Δ 1-451-296-11	DEELECTION YOKE (BLACK & WHITE) L 901	
	A-7019-045-A	EVF ASSY (UK MODEL)	502-526	513	*3-712-658-01	RETAINER, CRT	
502	X-3686-874-1	CASE ASSY, UPPER, EVF		514	*3-712-660-01	RING, RUBBER	
503	X-3686-873-1	SPRING ASSY	502-526	515	3-712-670-01	HOLDER (UPPER), CRT	
504	3-712-664-01	SHAFT, EVF ROTARY	503	516	3-712-657-01	SPRING, LEAF	
505	3-712-655-01	SLIDER, EVF		517	Δ 1-546-061-11	CATHODE-RAY TUBE, B/W (M01JPG5WB) V901	
506	X-3686-871-1	HOLDER ASSY, CLICK		518	*3-712-659-01	COVER, CRT	
507	3-713-558-01	BRACKET		519	3-712-656-01	MIRROR, REFLECTION	
508	3-712-672-01	CASE, EVF (LOWER)		520	X-3686-872-1	HOLDER (LOWER) ASSY, CRT	
509	3-663-807-00	LABEL, CAUTION, EVF		521	X-3686-859-1	HOLDER (2) ASSY, LENS	
510	*A-7060-631-A	VF-7P BOARD, COMPLETE (AEP, AUSTRALIAN, E MODEL)		522	A-7090-503-A	HOLDER ASSY, LENS	523, 524
	*A-7060-748-A	VF-7P BOARD, COMPLETE (UK MODEL)		523	3-712-566-01	KNOB, ADJUSTMENT	
511	3-712-645-01	RING, CRT HOLDER		524	3-696-016-11	EYE COP	
				525	3-712-667-01	PLATE, ORNAMENTAL	
				526	8-814-225-90	MICROPHONE C-2012	527
				527	X-2536-705-1	SCREEN ASSY WINDOW	

5-12. HARDWARE LIST

SCREW

7-621-255-10 SCREW +P 2x3
7-621-255-20 SCREW +P 2x4
7-621-255-45 SCREW +P 2x6
7-621-255-50 SCREW +P 2x8
7-621-255-65 SCREW +P 2x10

7-621-256-05 SCREW +P 2x16
7-621-259-25 SCREW +P 2.6x4
7-621-555-10 SCREW +K 2x3
7-621-772-08 SCREW +B 2x3
7-621-772-18 SCREW +B 2x4

7-621-772-38 SCREW +B 2x6
7-621-772-50 SCREW +B 2x10
7-621-772-68 SCREW +B 2x12
7-621-775-08 SCREW +B 2.6x3
7-621-775-10 SCREW +B 2.6x4

7-621-775-40 SCREW +B 2.6x8
7-628-254-05 SCREW +PS2.6x5
7-682-561-09 SCREW +B 4x8
7-685-103-14 SCREW +P 2x5 TYPE2 NON-SLIT
7-685-104-14 SCREW +P 2x6 TYPE2 NON-SLIT

WASHER

7-623-710-67 WASHER 12, WABE TYPE
7-623-710-87 WASHER 16, WABE TYPE

RING

7-624-101-01 STOP RING 1.2, TYPE-E
7-624-102-04 STOP RING 1.5, TYPE-E
7-624-105-04 STOP RING 2.3, TYPE-E
7-624-106-04 STOP RING 3.0, TYPE-E

PRECISION-SCREW

7-627-552-27 SCREW, PRECISION +P 1.7x2
7-627-553-48 SCREW, PRECISION +P 2x4
7-627-850-18 SCREW, PRECISION +P 1.4x2.5

TAPPING-SCREW

7-685-233-19 SCREW +KTP 2.6x10 TYPE2 NON-SLIT
7-685-133-14 SCREW +BTP 2.6x6 TYPE2 NON-SLIT
7-685-134-19 SCREW +BTP 2.6x8 TYPE2 NON-SLIT
7-685-535-14 SCREW +BTP 2.6x10 TYPE2 NON-SLIT
7-685-535-19 SCREW +BTP 2.6x10 TYPE2 NON-SLIT

7-685-780-04 SCREW +PTT 2x3 (S)
7-685-781-04 SCREW +BVTT 2x4 (S)
7-685-853-01 SCREW +BVTT 2x6 (S)

SECTION 6

ELECTRICAL PARTS LIST

NOTE:

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

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

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.

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

RESISTORS

- All resistors are in ohms
- F : nonflammable

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

CAPACITORS

- MF : μ F, PF : μ μ F

COILS

- MMH : mH, UH : μ H

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
*A-7060-615-A		VI-22 BOARD, COMPLETE *****		C231	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V
*A-7068-034-A		VY-9 BOARD, COMPLETE		C232	1-163-105-00	CERAMIC CHIP 33PF	5% 50V
A-7068-035-A		VD-6 BOARD, COMPLETE		C233	1-163-986-00	CERAMIC CHIP 0.027MF	10% 25V
A-7068-036-A		VC-11 BOARD, COMPLETE		C234	1-163-093-00	CERAMIC CHIP 10PF	5% 50V
2-279-715-01		RIVET, NYLON		C235	1-163-986-00	CERAMIC CHIP 0.027MF	10% 25V
CAPACITOR				C236	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
C101	1-163-090-00	CERAMIC CHIP 7PF	0.25PF 50V	C237	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
C102	1-163-108-00	CERAMIC CHIP 43PF	5% 50V	C238	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
C103	1-163-986-00	CERAMIC CHIP 0.027MF	10% 25V	C239	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
C104	1-124-222-00	ELECT 22MF	20% 6.3V	C240	1-124-224-00	ELECT 47MF	20% 6.3V
C105	1-124-222-00	ELECT 22MF	20% 6.3V	C241	1-163-097-00	CERAMIC CHIP 15PF	5% 50V
C106	1-163-129-00	CERAMIC CHIP 330PF	5% 50V	C243	1-124-587-11	ELECT 220MF	20% 6.3V
C107	1-163-141-00	CERAMIC CHIP 0.001MF	10% 50V	C250	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
C109	1-163-038-00	CERAMIC CHIP 0.1MF	25V	CONNECTOR			
C110	1-124-224-00	ELECT 47MF	20% 6.3V	CN201	*1-564-012-00	PIN, CONNECTOR 2P	
C115	1-163-113-00	CERAMIC CHIP 68PF	5% 50V	CN206	*1-564-014-00	PIN, CONNECTOR 4P	
C121	1-163-126-00	CERAMIC CHIP 240PF	5% 50V	CN207	*1-564-013-00	PIN, CONNECTOR 3P	
C122	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	CN208	*1-564-014-00	PIN, CONNECTOR 4P	
C123	1-163-035-00	CERAMIC CHIP 0.047MF	50V	CN209	*1-564-013-00	PIN, CONNECTOR 3P	
C125	1-163-035-00	CERAMIC CHIP 0.047MF	50V	W202	*1-564-098-00	CONNECTOR, BOARD TO BOARD 8P	
C126	1-163-035-00	CERAMIC CHIP 0.047MF	50V	W204	*1-564-098-00	CONNECTOR, BOARD TO BOARD 8P	
C127	1-163-124-00	CERAMIC CHIP 200PF	5% 50V	W205	*1-564-098-00	CONNECTOR, BOARD TO BOARD 8P	
C129	1-163-038-00	CERAMIC CHIP 0.1MF	25V	DIODE			
C130	1-124-224-00	ELECT 47MF	20% 6.3V	D201	8-719-101-23	DIODE 1SS123	
C131	1-163-038-00	CERAMIC CHIP 0.1MF	25V	D202	8-719-101-23	DIODE 1SS123	
C135	1-163-035-00	CERAMIC CHIP 0.047MF	50V	DELAY LINE			
C160	1-163-088-00	CERAMIC CHIP 5PF	0.25PF 50V	DL201	1-415-517-21	DELAY LINE, DUAL 1H-2H	
C180	1-163-035-00	CERAMIC CHIP 0.047MF	50V	CONVERTER			
C201	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	DR201	1-464-689-12	CONVERTER, DC-DC	
C203	1-163-986-00	CERAMIC CHIP 0.027MF	10% 25V	FILTER			
C204	1-163-108-00	CERAMIC CHIP 43PF	5% 50V	FL201	1-235-632-11	BPF (3.7MHZ)	
C205	1-163-986-00	CERAMIC CHIP 0.027MF	10% 25V	FL202	1-235-633-11	BPF (5.17MHZ)	
C207	1-124-442-00	ELECT 330MF	20% 6.3V	FL203	1-409-394-11	TRAP, CHROMA EMPHASIS	
C208	1-124-224-00	ELECT 47MF	20% 6.3V	IC			
C214	1-124-224-00	ELECT 47MF	20% 6.3V	IC201	8-757-991-00	IC CX-7991	
C215	1-163-035-00	CERAMIC CHIP 0.047MF	50V	IC202	8-759-200-60	IC TA7060AP	
C216	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V	COIL			
C217	1-163-101-00	CERAMIC CHIP 22PF	5% 50V	L101	1-410-627-11	COIL, CHOKE 100UH	
C218	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	L102	1-410-377-11	INDUCTOR CHIP 4.7UH	
C219	1-163-111-00	CERAMIC CHIP 56PF	5% 50V	L121	1-408-970-21	MICRO INDUCTOR 10UH	
C220	1-163-133-00	CERAMIC CHIP 470PF	5% 50V	L201	1-408-969-21	MICRO INDUCTOR 8.2UH	
C222	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	L202	1-408-982-21	MICRO INDUCTOR 100UH	
C223	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	L203	1-408-982-21	MICRO INDUCTOR 100UH	
C224	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	L204	1-408-970-21	MICRO INDUCTOR 10UH	
C225	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	L205	1-408-958-21	MICRO INDUCTOR 1UH	
C226	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V				
C227	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V				
C228	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V				
C229	1-163-127-00	CERAMIC CHIP 270PF	5% 50V				
C230	1-163-986-00	CERAMIC CHIP 0.027MF	10% 25V				

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
L206	1-408-958-21	MICRO INDUCTOR 1UH		R103	1-216-077-00	METAL CHIP 15K 5% 1/10W	
L207	1-408-982-21	MICRO INDUCTOR 100UH		R104	1-216-109-00	METAL CHIP 330K 5% 1/10W	
L208	1-408-982-21	MICRO INDUCTOR 100UH		R105	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
L209	1-408-976-21	MICRO INDUCTOR 33UH		R109	1-216-015-00	METAL CHIP 39 5% 1/10W	
L210	1-410-393-11	INDUCTOR CHIP 100UH		R110	1-216-073-00	METAL CHIP 10K 5% 1/10W	
L211	1-407-172-XX	MICRO INDUCTOR 180UH		R115	1-216-049-00	METAL CHIP 1K 5% 1/10W	
L212	1-410-167-31	INDUCTOR CHIP 820UH		R120	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
L213	1-408-795-21	INDUCTOR CHIP 330UH		R121	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
L220	1-408-969-21	MICRO INDUCTOR 8.2UH		R122	1-216-049-00	METAL CHIP 1K 5% 1/10W	
VARIABLE COIL				R123	1-216-041-00	METAL CHIP 470 5% 1/10W	
LV201	1-404-594-11	COIL, VARIABLE		R124	1-216-037-00	METAL CHIP 330 5% 1/10W	
TRANSISTOR				R125	1-216-049-00	METAL CHIP 1K 5% 1/10W	
Q201	8-729-901-03	TRANSISTOR DTC144WK		R126	1-216-077-00	METAL CHIP 15K 5% 1/10W	
Q202	8-729-901-03	TRANSISTOR DTC144WK		R127	1-216-049-00	METAL CHIP 1K 5% 1/10W	
Q209	8-729-100-66	TRANSISTOR 2SC1623		R128	1-216-049-00	METAL CHIP 1K 5% 1/10W	
Q210	8-729-312-22	TRANSISTOR 2SA1122		R129	1-216-049-00	METAL CHIP 1K 5% 1/10W	
Q211	8-729-100-66	TRANSISTOR 2SC1623		R130	1-216-077-00	METAL CHIP 15K 5% 1/10W	
Q212	8-729-100-66	TRANSISTOR 2SC1623		R131	1-216-085-00	METAL CHIP 33K 5% 1/10W	
Q213	8-729-900-99	TRANSISTOR DTA144WK		R132	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
Q220	8-729-312-22	TRANSISTOR 2SA1122		R133	1-216-077-00	METAL CHIP 15K 5% 1/10W	
Q221	8-729-100-66	TRANSISTOR 2SC1623		R160	1-216-037-00	METAL CHIP 330 5% 1/10W	
Q222	8-729-900-99	TRANSISTOR DTA144WK		R165	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
Q223	8-729-100-66	TRANSISTOR 2SC1623		R166	1-216-085-00	METAL CHIP 33K 5% 1/10W	
Q224	8-729-100-66	TRANSISTOR 2SC1623		R167	1-216-089-00	METAL CHIP 47K 5% 1/10W	
Q225	8-729-100-66	TRANSISTOR 2SC1623		R168	1-216-089-00	METAL CHIP 47K 5% 1/10W	
Q226	8-729-100-66	TRANSISTOR 2SC1623		R202	1-216-295-00	METAL CHIP 0 5% 1/10W	
Q227	8-729-100-66	TRANSISTOR 2SC1623		R203	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
Q228	8-729-100-66	TRANSISTOR 2SC1623		R204	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
Q229	8-729-900-99	TRANSISTOR DTA144WK		R212	1-216-081-00	METAL CHIP 22K 5% 1/10W	
Q230	8-729-100-66	TRANSISTOR 2SC1623		R213	1-216-081-00	METAL CHIP 22K 5% 1/10W	
Q240	8-729-900-61	TRANSISTOR DTA114ES		R214	1-216-041-00	METAL CHIP 470 5% 1/10W	
Q241	8-729-901-03	TRANSISTOR DTC144WK		R215	1-216-041-00	METAL CHIP 470 5% 1/10W	
Q242	8-729-901-03	TRANSISTOR DTC144WK		R216	1-216-025-00	METAL CHIP 100 5% 1/10W	
Q243	8-729-901-03	TRANSISTOR DTC144WK		R217	1-216-041-00	METAL CHIP 470 5% 1/10W	
Q244	8-729-901-03	TRANSISTOR DTC144WK		R218	1-216-041-00	METAL CHIP 470 5% 1/10W	
Q245	8-729-900-99	TRANSISTOR DTA144WK		R219	1-216-019-00	METAL CHIP 56 5% 1/10W	
Q247	8-729-100-66	TRANSISTOR 2SC1623		R220	1-216-041-00	METAL CHIP 470 5% 1/10W	
Q248	8-729-901-03	TRANSISTOR DTC144WK		R221	1-216-075-00	METAL CHIP 12K 5% 1/10W	
Q249	8-729-901-03	TRANSISTOR DTC144WK		R222	1-216-089-00	METAL CHIP 47K 5% 1/10W	
Q250	8-729-901-03	TRANSISTOR DTC144WK		R223	1-216-049-00	METAL CHIP 1K 5% 1/10W	
Q252	8-729-901-03	TRANSISTOR DTC144WK		R224	1-216-021-00	METAL CHIP 68 5% 1/10W	
Q270	8-729-903-29	TRANSISTOR DTA144TK		R225	1-216-039-00	METAL CHIP 390 5% 1/10W	
Q271	8-729-100-66	TRANSISTOR 2SC1623		R226	1-216-027-00	METAL CHIP 120 5% 1/10W	
Q272	8-729-100-66	TRANSISTOR 2SC1623		R227	1-216-035-00	METAL CHIP 270 5% 1/10W	
Q273	8-729-901-03	TRANSISTOR DTC144WK		R228	1-216-027-00	METAL CHIP 120 5% 1/10W	
Q281	8-729-100-66	TRANSISTOR 2SC1623		R229	1-216-009-00	METAL CHIP 22 5% 1/10W	
Q282	8-729-903-30	TRANSISTOR DTC144TK		R230	1-216-025-00	METAL CHIP 100 5% 1/10W	
RESISTOR				R237	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R101	1-216-077-00	METAL CHIP 15K 5% 1/10W		R238	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R102	1-216-077-00	METAL CHIP 15K 5% 1/10W		R239	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
				R240	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
				R241	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
				R242	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	

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

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Ref.No	Part No.	Description	Remark
R243	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R244	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R245	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R246	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R247	1-216-085-00	METAL CHIP 33K 5%	1/10W
R248	1-216-055-00	METAL CHIP 1.8K 5%	1/10W
R249	1-216-045-00	METAL CHIP 680 5%	1/10W
R250	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R251	1-216-049-00	METAL CHIP 1K 5%	1/10W
R252	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R253	1-216-063-00	METAL CHIP 3.9K 5%	1/10W
R254	1-216-085-00	METAL CHIP 33K 5%	1/10W
R255	1-216-081-00	METAL CHIP 22K 5%	1/10W
R256	1-216-043-00	METAL CHIP 560 5%	1/10W
R257	1-216-049-00	METAL CHIP 1K 5%	1/10W
R258	1-216-049-00	METAL CHIP 1K 5%	1/10W
R259	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R260	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R261	1-216-043-00	METAL CHIP 560 5%	1/10W
R262	1-216-047-00	METAL CHIP 820 5%	1/10W
R263	1-216-049-00	METAL CHIP 1K 5%	1/10W
R264	1-216-029-00	METAL CHIP 150 5%	1/10W
R265	1-216-047-00	METAL CHIP 820 5%	1/10W
R266	1-216-081-00	METAL CHIP 22K 5%	1/10W
R267	1-216-081-00	METAL CHIP 22K 5%	1/10W
R268	1-216-075-00	METAL CHIP 12K 5%	1/10W
R269	1-216-075-00	METAL CHIP 12K 5%	1/10W
R270	1-216-049-00	METAL CHIP 1K 5%	1/10W
R271	1-216-041-00	METAL CHIP 470 5%	1/10W
R272	1-216-023-00	METAL CHIP 82 5%	1/10W
R273	1-216-055-00	METAL CHIP 1.8K 5%	1/10W
R274	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R276	1-216-049-00	METAL CHIP 1K 5%	1/10W
R279	1-216-073-00	METAL CHIP 10K 5%	1/10W
R280	1-216-073-00	METAL CHIP 10K 5%	1/10W
R281	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R282	1-216-295-00	METAL CHIP 0 5%	1/10W
R287	1-216-295-00	METAL CHIP 0 5%	1/10W
R288	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R289	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R293	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R294	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R295	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R296	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R297	1-216-081-00	METAL CHIP 22K 5%	1/10W
R298	1-216-081-00	METAL CHIP 22K 5%	1/10W
R299	1-216-073-00	METAL CHIP 10K 5%	1/10W
R486	1-216-071-00	METAL CHIP 8.2K 5%	1/10W

VARIABLE RESISTOR

RV201	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K
RV202	1-230-524-11	RES, ADJ, METAL GLAZE 22K
RV203	1-230-524-11	RES, ADJ, METAL GLAZE 22K

Ref.No	Part No.	Description	Remark

CRYSTAL

X201 1-567-347-11 OSCILLATOR, CERAMIC

*A-7060-633-A AU-25 BOARD, COMPLETE

CAPACITOR

C401	1-124-225-00	ELECT 100MF	20%	6.3V
C402	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C403	1-163-019-00	CERAMIC CHIP 0.0068MF	10%	50V
C404	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C405	1-163-014-00	CERAMIC CHIP 0.0027MF	10%	50V
C406	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C408	1-124-253-00	ELECT 0.47MF	20%	50V
C409	1-124-224-00	ELECT 47MF	20%	6.3V
C410	1-124-224-00	ELECT 47MF	20%	6.3V
C411	1-124-253-00	ELECT 0.47MF	20%	50V
C412	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C413	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C414	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C415	1-163-123-00	CERAMIC CHIP 180PF	5%	50V
C416	1-124-253-00	ELECT 0.47MF	20%	50V
C417	1-163-145-00	CERAMIC CHIP 0.0015MF	5%	50V
C418	1-163-123-00	CERAMIC CHIP 180PF	5%	50V
C419	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C420	1-163-014-00	CERAMIC CHIP 0.0027MF	10%	50V
C421	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C422	1-124-224-00	ELECT 47MF	20%	6.3V
C423	1-124-229-00	ELECT 33MF	20%	6.3V
C424	1-124-225-00	ELECT 100MF	20%	6.3V
C425	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C426	1-124-255-00	ELECT 1MF	20%	50V
C427	1-124-249-00	ELECT 0.1MF	20%	50V
C428	1-124-257-00	ELECT 2.2MF	20%	35V
C429	1-124-257-00	ELECT 2.2MF	20%	35V
C430	1-124-257-00	ELECT 2.2MF	20%	35V
C431	1-124-233-00	ELECT 10MF	20%	6.3V
C432	1-163-020-00	CERAMIC CHIP 0.0082MF	10%	50V
C433	1-124-255-00	ELECT 1MF	20%	50V
C434	1-163-137-00	CERAMIC CHIP 680PF	5%	50V
C435	1-163-079-00	CERAMIC CHIP 0.039MF	10%	25V
C436	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C437	1-163-088-00	CERAMIC CHIP 5PF	0.25PF	50V
C438	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C439	1-124-225-00	ELECT 100MF	20%	6.3V
C440	1-124-239-00	ELECT 6.8MF	20%	10V
C441	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C442	1-124-239-00	ELECT 6.8MF	20%	10V
C443	1-124-225-00	ELECT 100MF	20%	6.3V
C444	1-124-245-00	ELECT 4.7MF	20%	16V
C445	1-124-245-00	ELECT 4.7MF	20%	16V

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

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C446	1-163-117-00	CERAMIC CHIP 100PF	5%	R414	1-216-079-00	METAL CHIP	18K 5% 1/10W
C447	1-126-100-11	ELECT 10MF	20% 6.3V	R415	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
C450	1-163-141-00	CERAMIC CHIP 0.001MF	5%	R416	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
C451	1-124-224-00	ELECT 47MF	20% 6.3V	R417	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
C452	1-163-023-00	CERAMIC CHIP 0.015MF	10%	R418	1-216-047-00	METAL CHIP	820 5% 1/10W
C453	1-124-224-00	ELECT 47MF	20% 6.3V	R419	1-247-829-00	CARBON	820 5% 1/6W
C454	1-163-141-00	CERAMIC CHIP 0.001MF	10%	R420	1-216-085-00	METAL CHIP	33K 5% 1/10W
<u>CONNECTOR</u>				R421	1-216-073-00	METAL CHIP	10K 5% 1/10W
CN403	*1-564-012-00	PIN, CONNECTOR 2P		R422	1-216-059-00	METAL CHIP	2.7K 5% 1/10W
CN404	*1-564-013-00	PIN, CONNECTOR 3P		R423	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
CN405	*1-564-012-00	PIN, CONNECTOR 2P		R424	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
CN406	*1-564-012-00	PIN, CONNECTOR 2P		R425	1-216-059-00	METAL CHIP	2.7K 5% 1/10W
W204	*1-564-098-00	CONNECTOR, BOARD TO BOARD 8P		R426	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
W205	*1-564-098-00	CONNECTOR, BOARD TO BOARD 8P		R427	1-216-045-00	METAL CHIP	680 5% 1/10W
<u>FILTER</u>				R428	1-216-063-00	METAL CHIP	3.9K 5% 1/10W
FL401	1-235-398-11	BPF (1.5MHZ)		R429	1-216-075-00	METAL CHIP	12K 5% 1/10W
<u>IC</u>				R430	1-216-009-00	METAL CHIP	22 5% 1/10W
IC401	8-752-003-79	IC CX20037A		R431	1-216-073-00	METAL CHIP	10K 5% 1/10W
<u>COIL</u>				R432	1-216-071-00	METAL CHIP	8.2K 5% 1/10W
L401	1-407-165-XX	MICRO INDUCTOR 47UH		R433	1-216-101-00	METAL CHIP	150K 5% 1/10W
L402	1-408-948-00	MICRO INDUCTOR 220UH		R434	1-216-097-00	METAL CHIP	100K 5% 1/10W
<u>TRANSISTOR</u>				R435	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
Q401	8-729-100-67	TRANSISTOR 2SC1623-L7		R436	1-216-085-00	METAL CHIP	33K 5% 1/10W
Q404	8-729-900-99	TRANSISTOR DTA144WK		R437	1-216-071-00	METAL CHIP	8.2K 5% 1/10W
Q405	8-729-116-04	TRANSISTOR 2SK160-K4		R438	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
Q406	8-729-100-67	TRANSISTOR 2SC1623-L7		R439	1-216-023-00	METAL CHIP	82 5% 1/10W
Q407	8-729-100-76	TRANSISTOR 2SA812		R440	1-216-043-00	METAL CHIP	560 5% 1/10W
Q408	8-729-100-67	TRANSISTOR 2SC1623-L7		R441	1-216-037-00	METAL CHIP	330 5% 1/10W
Q409	8-729-100-67	TRANSISTOR 2SC1623-L7		R442	1-216-081-00	METAL CHIP	22K 5% 1/10W
Q410	8-729-100-67	TRANSISTOR 2SC1623-L7		R443	1-216-041-00	METAL CHIP	470 5% 1/10W
Q411	8-729-100-67	TRANSISTOR 2SC1623-L7		R444	1-216-055-00	METAL CHIP	1.8K 5% 1/10W
Q412	8-729-901-03	TRANSISTOR DTC144WK		R445	1-216-089-00	METAL CHIP	47K 5% 1/10W
Q413	8-729-100-76	TRANSISTOR 2SA812		R446	1-216-045-00	METAL CHIP	680 5% 1/10W
Q414	8-729-900-99	TRANSISTOR DTA144WK		R447	1-216-063-00	METAL CHIP	3.9K 5% 1/10W
<u>RESISTOR</u>				R448	1-216-079-00	METAL CHIP	18K 5% 1/10W
R401	1-216-049-00	METAL CHIP	1K 5% 1/10W	R449	1-216-073-00	METAL CHIP	10K 5% 1/10W
R402	1-216-049-00	METAL CHIP	1K 5% 1/10W	R450	1-216-049-00	METAL CHIP	1K 5% 1/10W
R403	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	R451	1-216-079-00	METAL CHIP	18K 5% 1/10W
R404	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	R452	1-216-035-00	METAL CHIP	270 5% 1/10W
R405	1-216-060-00	METAL CHIP	3K 5% 1/10W	R453	1-216-105-00	METAL CHIP	220K 5% 1/10W
R406	1-216-061-00	METAL CHIP	3.3K 5% 1/10W	R454	1-216-113-00	METAL CHIP	470K 5% 1/10W
R407	1-216-077-00	METAL CHIP	15K 5% 1/10W	R455	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R408	1-216-083-00	METAL CHIP	27K 5% 1/10W	R456	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R410	1-216-077-00	METAL CHIP	15K 5% 1/10W	R457	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R413	1-216-079-00	METAL CHIP	18K 5% 1/10W	R458	1-216-073-00	METAL CHIP	10K 5% 1/10W
				R460	1-216-295-00	METAL CHIP	0 5% 1/10W
				R461	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
				R462	1-216-071-00	METAL CHIP	8.2K 5% 1/10W
				R463	1-216-013-00	METAL CHIP	33 5% 1/10W
				R464	1-216-055-00	METAL CHIP	1.8K 5% 1/10W

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

AU-25**RP-40****RS-18P**

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
<u>VARIABLE RESISTOR</u>				<u>CAPACITOR</u>			
RV401	1-230-523-11	RES, ADJ, METAL GLAZE 10K		C301	1-124-229-00	ELECT 33MF	20% 10V
RV402	1-230-524-11	RES, ADJ, METAL GLAZE 22K		C302	1-124-224-00	ELECT 47MF	20% 6.3V
RV403	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K		<u>CONNECTOR</u>			
*****				CN301	*1-564-012-00	PIN, CONNECTOR 2P	
*A-7060-491-A RP-40 BOARD, COMPLETE				CN302	*1-564-012-00	PIN, CONNECTOR 2P	
*****				CN304	1-563-494-11	CONNECTOR, F.P.C 6P	
A-7068-037-A RP-34P BOARD, COMPLETE				CN306	*1-564-012-00	PIN, CONNECTOR 2P	
<u>CAPACITOR</u>				<u>DIODE</u>			
C481	1-163-111-00	CERAMIC CHIP 56PF	5% 50V	D301	8-719-100-03	DIODE 1S2835	
C482	1-163-119-00	CERAMIC CHIP 120PF	5% 50V	D302	8-719-100-03	DIODE 1S2835	
C483	1-163-021-00	CERAMIC CHIP 0.01MF	50V	D303	8-719-100-03	DIODE 1S2835	
C484	1-163-021-00	CERAMIC CHIP 0.01MF	50V	D304	8-719-801-41	DIODE 1SS196	
C485	1-163-038-00	CERAMIC CHIP 0.1MF	25V	D305	8-719-801-41	DIODE 1SS196	
C486	1-163-038-00	CERAMIC CHIP 0.1MF	25V	D306	8-719-801-41	DIODE 1SS196	
C487	1-124-222-00	ELECT 22MF	20% 6.3V	D307	8-719-200-27	DIODE E10DS2	
<u>CONNECTOR</u>				D308	8-719-200-27	DIODE E10DS2	
CN481	*1-564-013-00	PIN, CONNECTOR 3P		D309	8-719-100-05	DIODE 1S2837	
CN482	*1-564-016-00	PIN, CONNECTOR 6P		D310	8-719-200-27	DIODE E10DS2	
CN483	*1-564-003-00	PIN, CONNECTOR 4P		<u>IC</u>			
<u>COIL</u>				IC301	8-759-908-81	IC MB3763PF	
L481	1-408-969-21	MICRO INDUCTOR 8.2UH		IC302	8-759-207-00	IC TA7733F	
L482	1-408-948-00	MICRO INDUCTOR 220UH		<u>DIODE</u>			
<u>TRANSISTOR</u>				PH301	8-719-939-11	GP2S09-B	
Q481	8-729-117-54	TRANSISTOR 2SA1175		PH302	8-719-939-11	GP2S09-B	
Q482	8-729-100-76	TRANSISTOR 2SA812		PH303	8-719-939-11	GP2S09-B	
Q483	8-729-901-01	TRANSISTOR DTC144EK		<u>TRANSISTOR</u>			
Q484	8-729-900-99	TRANSISTOR DTA144WK		Q301	8-729-199-92	TRANSISTOR 2SD999	
<u>RESISTOR</u>				Q302	8-729-901-05	TRANSISTOR DTA124EK	
R481	1-216-311-00	METAL CHIP 6.8 5%	1/10W	Q303	8-729-900-53	TRANSISTOR DTC114EK	
R482	1-216-039-00	METAL CHIP 390 5%	1/10W	Q304	8-729-901-05	TRANSISTOR DTA124EK	
R483	1-216-041-00	METAL CHIP 470 5%	1/10W	Q305	8-729-106-40	TRANSISTOR 2SB1114-ZK	
R484	1-216-081-00	METAL CHIP 22K 5%	1/10W	Q306	8-729-106-40	TRANSISTOR 2SB1114-ZK	
R485	1-216-085-00	METAL CHIP 33K 5%	1/10W	Q307	8-729-901-04	TRANSISTOR DTA114EK	
R486	1-216-043-00	METAL CHIP 560 5%	1/10W	Q308	8-729-100-67	TRANSISTOR 2SC1623-L7	
R487	1-216-295-00	METAL CHIP 0 5%	1/10W	Q309	8-729-100-67	TRANSISTOR 2SC1623-L7	
*****				Q310	8-729-903-30	TRANSISTOR DTC144TK	
*A-7060-486-A RS-18P BOARD, COMPLETE				Q311	8-729-100-67	TRANSISTOR 2SC1623-L7	
*****				Q312	8-729-903-30	TRANSISTOR DTC144TK	
3-712-106-01 REINFORCEMENT (333)				Q313	8-729-100-67	TRANSISTOR 2SC1623-L7	
3-712-410-01 HOLDER, RS				Q314	8-729-903-30	TRANSISTOR DTC144TK	
				<u>RESISTOR</u>			
				R301	1-216-190-00	METAL CHIP 470 5%	1/8W
				R302	1-216-051-00	METAL CHIP 1.2K 5%	1/10W
				R303	1-216-051-00	METAL CHIP 1.2K 5%	1/10W
				R304	1-216-170-00	METAL CHIP 68 5%	1/8W
				R305	1-216-073-00	METAL CHIP 10K 5%	1/10W

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

RS-18P**AF-23**

Ref.No	Part No.	Description	Remark		
R308	1-216-150-00	METAL CHIP	10	5%	1/8W
R309	1-216-150-00	METAL CHIP	10	5%	1/8W
R310	1-216-178-00	METAL CHIP	150	5%	1/8W
R311	1-216-178-00	METAL CHIP	150	5%	1/8W
R312	1-216-178-00	METAL CHIP	150	5%	1/8W
R313	1-216-160-00	METAL CHIP	27	5%	1/8W
R314	1-216-170-00	METAL CHIP	68	5%	1/8W
R315	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R316	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R317	1-216-085-00	METAL CHIP	33K	5%	1/10W
R319	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R320	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R321	1-216-085-00	METAL CHIP	33K	5%	1/10W
R323	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R324	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R325	1-216-085-00	METAL CHIP	33K	5%	1/10W
R327	1-216-154-00	METAL CHIP	15	5%	1/8W

*A-7060-604-A AF-23 BOARD, COMPLETE

CAPACITOR

C801	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C802	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C803	1-123-622-00	ELECT	22MF	20%	16V
C804	1-124-438-00	ELECT	1MF	20%	50V
C805	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C806	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C807	1-123-821-00	ELECT	47MF	20%	16V
C808	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C809	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C810	1-123-321-00	ELECT	220MF	20%	16V
C811	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C812	1-123-321-00	ELECT	220MF	20%	16V
C813	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C814	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C815	1-123-821-00	ELECT	47MF	20%	16V
C816	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C817	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C818	1-123-617-00	ELECT	10MF	20%	16V
C819	1-124-462-00	ELECT	10MF	20%	16V

CONNECTOR

CN801	*1-564-002-00	PIN, CONNECTOR	3P
CN802	*1-564-015-00	PIN, CONNECTOR	5P
CN803	*1-564-001-11	PIN, CONNECTOR	2P
CN805	*1-564-001-11	PIN, CONNECTOR	2P
CN807	*1-564-008-00	PIN, CONNECTOR	9P

IC

IC801	_____	IC HIM21
IC802	9-990-856-01	IC UPD49G
IC803	9-990-855-01	IC LAG648

- IC801 is unreplaceable. If it is defective, replace AF-23 board with a new one to which IC801 has been mounted.
- IC861 (CCD focus sensor) which has been connected to CN807 on AF-23 board is unreplaceable. If it is defective, replace zoom lens with a new one.

Ref.No	Part No.	Description	Remark		
IC803					
IC804	8-759-193-58	IC UPC358G			
		<u>COIL</u>			
L801	1-407-718-00	MICRO INDUCTOR 1.2MMH			
		<u>IC LINK</u>			
PS801A	1-532-605-11	LINK, IC (ICP-N10)			
		<u>TRANSISTOR</u>			
Q801	8-729-100-66	TRANSISTOR 2SC1623			
Q802	8-729-901-15	TRANSISTOR DTA144EK			
Q803	8-729-100-66	TRANSISTOR 2SC1623			
Q804	8-729-100-66	TRANSISTOR 2SC1623			
Q805	8-729-199-92	TRANSISTOR 2SD999			
Q806	8-729-104-24	TRANSISTOR 2SB804			
Q807	8-729-199-92	TRANSISTOR 2SD999			
Q808	8-729-104-24	TRANSISTOR 2SB804			
Q809	8-729-100-66	TRANSISTOR 2SC1623			
Q810	8-729-100-66	TRANSISTOR 2SC1623			
Q811	8-729-901-15	TRANSISTOR DTA144EK			
		<u>RESISTOR</u>			
R801	1-216-097-00	METAL CHIP	100K	5%	1/10W
R802	1-216-097-00	METAL CHIP	100K	5%	1/10W
R803	1-216-081-00	METAL CHIP	22K	5%	1/10W
R804	1-216-041-00	METAL CHIP	470	5%	1/10W
R805	1-216-295-00	METAL CHIP	0	5%	1/10W
R806	1-216-096-00	METAL CHIP	91K	5%	1/10W
R807	1-216-089-00	METAL CHIP	47K	5%	1/10W
R808	1-216-082-00	METAL CHIP	24K	5%	1/10W
R809	1-216-075-00	METAL CHIP	12K	5%	1/10W
R810	1-216-049-00	METAL CHIP	1K	5%	1/10W
R811	1-216-049-00	METAL CHIP	1K	5%	1/10W
R812	1-216-041-00	METAL CHIP	470	5%	1/10W
R813	1-216-080-00	METAL CHIP	20K	5%	1/10W
R814	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R815	1-216-085-00	METAL CHIP	33K	5%	1/10W
R816	1-216-304-11	METAL CHIP	3.3	5%	1/10W
R817	1-216-049-00	METAL CHIP	1K	5%	1/10W
R818	1-216-081-00	METAL CHIP	22K	5%	1/10W
R819	1-216-097-00	METAL CHIP	100K	5%	1/10W
R820	1-216-058-00	METAL CHIP	2.4K	5%	1/10W
R821	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R822	1-216-089-00	METAL CHIP	47K	5%	1/10W
R823	1-216-097-00	METAL CHIP	100K	5%	1/10W
R824	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R825	1-216-089-00	METAL CHIP	47K	5%	1/10W
R826	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R827	1-216-089-00	METAL CHIP	47K	5%	1/10W
R828	1-216-158-00	METAL CHIP	22	5%	1/8W
R829	1-216-158-00	METAL CHIP	22	5%	1/8W

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

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

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R830	1-216-089-00	METAL CHIP	47K 5% 1/10W	<u>RESISTOR</u>			
R831	1-216-061-00	METAL CHIP	3.3K 5% 1/10W	R301	1-216-097-00	METAL CHIP	100K 5% 1/10W
R832	1-216-065-00	METAL CHIP	4.7K 5% 1/10W	R302	1-216-097-00	METAL CHIP	100K 5% 1/10W
R833	1-216-065-00	METAL CHIP	4.7K 5% 1/10W	R303	1-216-097-00	METAL CHIP	100K 5% 1/10W
R834	1-216-089-00	METAL CHIP	47K 5% 1/10W	R304	1-216-097-00	METAL CHIP	100K 5% 1/10W
R835	1-216-097-00	METAL CHIP	100K 5% 1/10W	R305	1-216-097-00	METAL CHIP	100K 5% 1/10W
R836	1-216-089-00	METAL CHIP	47K 5% 1/10W	R306	1-216-097-00	METAL CHIP	100K 5% 1/10W
R837	1-216-058-00	METAL CHIP	2.4K 5% 1/10W	R307	1-216-097-00	METAL CHIP	100K 5% 1/10W
R838	1-216-081-00	METAL CHIP	22K 5% 1/10W	R308	1-216-097-00	METAL CHIP	100K 5% 1/10W
R839	1-216-097-00	METAL CHIP	100K 5% 1/10W	R309	1-216-073-00	METAL CHIP	10K 5% 1/10W
<u>VARIABLE RESISTOR</u>				R310	1-216-073-00	METAL CHIP	10K 5% 1/10W
RV801	1-230-874-11	RES, ADJ, METAL GLAZE 100K		R311	1-216-073-00	METAL CHIP	10K 5% 1/10W
RV802	1-230-870-21	RES, ADJ, METAL GLAZE 10K		R312	1-216-073-00	METAL CHIP	10K 5% 1/10W
RV803	1-237-411-11	RES, ADJ, METAL GLAZE 1K		R313	1-216-073-00	METAL CHIP	10K 5% 1/10W
<u>CRYSTAL</u>				R314	1-216-073-00	METAL CHIP	10K 5% 1/10W
X801	1-567-470-11	VIBRATOR, CERAMIC (6MHZ)		R315	1-216-073-00	METAL CHIP	10K 5% 1/10W
*****				R316	1-216-073-00	METAL CHIP	10K 5% 1/10W
*A-7060-618-A SK-12P BOARD, COMPLETE				R318	1-216-073-00	METAL CHIP	10K 5% 1/10W
*****				R319	1-216-073-00	METAL CHIP	10K 5% 1/10W
*3-712-579-01 HOLDER, LCD				R320	1-216-073-00	METAL CHIP	10K 5% 1/10W
<u>CAPACITOR</u>				R321	1-216-073-00	METAL CHIP	10K 5% 1/10W
C301	1-135-096-21	TANTAL. CHIP 4.7MF	20% 10V	R322	1-216-073-00	METAL CHIP	10K 5% 1/10W
C302	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	R323	1-216-073-00	METAL CHIP	10K 5% 1/10W
C303	1-163-033-00	CERAMIC CHIP 0.022MF	50V	R324	1-216-073-00	METAL CHIP	10K 5% 1/10W
C304	1-163-033-00	CERAMIC CHIP 0.022MF	50V	R325	1-216-097-00	METAL CHIP	100K 5% 1/10W
C305	1-163-033-00	CERAMIC CHIP 0.022MF	50V	R326	1-216-097-00	METAL CHIP	100K 5% 1/10W
C306	1-163-125-00	CERAMIC CHIP 220PF	5% 50V	R327	1-216-097-00	METAL CHIP	100K 5% 1/10W
C307	1-163-125-00	CERAMIC CHIP 220PF	5% 50V	R328	1-216-073-00	METAL CHIP	10K 5% 1/10W
C308	1-163-081-00	CERAMIC CHIP 0.22MF	25V	R329	1-216-073-00	METAL CHIP	10K 5% 1/10W
<u>DIODE</u>				R330	1-216-073-00	METAL CHIP	10K 5% 1/10W
D301	8-719-100-03	DIODE 1S2835		R331	1-216-073-00	METAL CHIP	10K 5% 1/10W
D302	8-719-801-45	DIODE 1SS187		R332	1-216-121-00	METAL CHIP	1M 5% 1/10W
D303	8-719-918-67	DIODE GL-1EG102		R334	1-216-073-00	METAL CHIP	10K 5% 1/10W
<u>IC</u>				R335	1-216-073-00	METAL CHIP	10K 5% 1/10W
IC301	8-759-111-52	IC UPD7502G-376-12		R336	1-216-073-00	METAL CHIP	10K 5% 1/10W
IC302	8-759-106-26	IC UPD4069UBG		R337	1-216-037-00	METAL CHIP	330 5% 1/10W
<u>INDICATOR TUBE, FLUORESCENT</u>				R338	1-216-073-00	METAL CHIP	10K 5% 1/10W
ND301	1-807-613-11	DISPLAY PANEL, LIQUID CRYSTAL		<u>SWITCH</u>			
<u>TRANSISTOR</u>				S301	1-554-371-31	SWITCH, TACT (■)	
Q301	8-729-901-01	TRANSISTOR DTC144EK		S302	1-554-371-31	SWITCH, TACT (◀◀)	
Q302	8-729-901-01	TRANSISTOR DTC144EK		S303	1-554-371-31	SWITCH, TACT (▶▶)	
Q303	8-729-901-01	TRANSISTOR DTC144EK		S304	1-554-371-31	SWITCH, TACT (■)	
				S305	1-554-371-31	SWITCH, TACT (RESET)	
				S306	1-554-371-31	SWITCH, TACT (MEMORY)	
				S307	1-554-371-31	SWITCH, TACT (INSERT)	
				S308	1-554-371-31	SWITCH, TACT (▶)	
				S309	1-553-977-00	SWITCH, SLIDE (SP/LP)	
				S310	1-553-977-00	SWITCH, SLIDE (EDIT)	
				S311	1-554-371-31	SWITCH, TACT (VTR POWER)	
				S312	1-554-371-31	SWITCH, TACT (■▶)	

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

SK-12P**SC-6P****CC-6P****ME-4P**

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
S313	1-554-364-00	SWITCH, SLIDE (▲)		*A-7060-620-A	CC-6P BOARD, COMPLETE		
S314	1-554-364-00	SWITCH, SLIDE (REC)		*****			
<u>CRYSTAL</u>				<u>CAPACITOR</u>			
X301	1-527-532-00	OSCILLATOR, CERAMIC		C901	1-163-021-00	CERAMIC CHIP 0.01MF	50V
*****				C902	1-124-287-00	ELECT 10MF	20% 10V
*A-7050-619-A SC-6P BOARD, COMPLETE				C903	1-124-287-00	ELECT 10MF	20% 10V
*****				C904	1-124-224-00	ELECT 47MF	20% 6.3V
*1-533-146-00 HOLDER, FUSE				C906	1-123-298-00	ELECT 470MF	20% 6.3V
<u>CAPACITOR</u>				C907	1-163-005-00	CERAMIC CHIP 470PF	10% 50V
C381	1-123-321-00	ELECT 220MF	20% 16V	<u>JACK</u>			
C382	1-123-323-00	ELECT 470MF	20% 16V	J901	1-563-469-11	JACK, PIN (MINIATURE) 2P (IN/OUT)	
<u>CONNECTOR</u>				<u>TRANSISTOR</u>			
CN381	*1-560-891-00	PIN, CONNECTOR 3P		Q901	8-729-901-03	TRANSISTOR DTC144WK	
CN382	*1-564-029-00	PIN, CONNECTOR 4P		Q902	8-729-100-67	TRANSISTOR 2SC1623-L7	
CN384	*1-564-018-11	PIN, CONNECTOR 8P		Q903	8-729-100-67	TRANSISTOR 2SC1623-L7	
CN385	1-562-582-12	SOCKET, CONNECTOR 22P		Q904	8-729-901-03	TRANSISTOR DTC144WK	
CN386	*1-564-187-00	PIN, CONNECTOR 1P		Q905	8-729-901-03	TRANSISTOR DTC144WK	
<u>COMPOSITION CIRCUIT BLOCK</u>				Q906	8-729-100-67	TRANSISTOR 2SC1623-L7	
CP381	1-232-838-11	COMPOSITION CIRCUIT BLOCK		<u>RESISTOR</u>			
<u>FUSE</u>				R901	1-216-015-00	METAL CHIP 39 5%	1/10W
F381	▲.1-532-237-11	FUSE TIME-LAG (250V/T3, 15A)		R902	1-216-015-00	METAL CHIP 39 5%	1/10W
<u>COIL</u>				R903	1-216-083-00	METAL CHIP 27K 5%	1/10W
L381	1-410-337-11	MICRO INDUCTOR 1UH		R904	1-216-083-00	METAL CHIP 27K 5%	1/10W
L382	1-410-337-11	MICRO INDUCTOR 1UH		R905	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
L383	1-410-337-11	MICRO INDUCTOR 1UH		R906	1-216-083-00	METAL CHIP 27K 5%	1/10W
L384	1-410-337-11	MICRO INDUCTOR 1UH		R907	1-216-083-00	METAL CHIP 27K 5%	1/10W
<u>IC LINK</u>				R908	1-216-073-00	METAL CHIP 10K 5%	1/10W
PS901	▲.1-532-840-21	LINK, IC (PRF) 1250		R909	1-216-051-00	METAL CHIP 1.2K 5%	1/10W
PS902	▲.1-532-840-21	LINK, IC (PRF) 1250		R910	1-216-017-00	METAL CHIP 47 5%	1/10W
PS903	▲.1-532-840-21	LINK, IC (PRF) 1250		R911	1-216-041-00	METAL CHIP 470 5%	1/10W
<u>TRANSISTOR</u>				R912	1-216-073-00	METAL CHIP 10K 5%	1/10W
Q381	8-729-901-01	TRANSISTOR DTC144EK		R913	1-216-049-00	METAL CHIP 1K 5%	1/10W
<u>RESISTOR</u>				<u>VARIABLE RESISTOR</u>			
R381	1-216-089-00	METAL CHIP 47K 5%	1/10W	RV901	1-237-411-11	RES, VAR, CARBON 1K (SHARPNESS)	
R382	1-216-015-00	METAL CHIP 39 5%	1/10W	*****			
R383	1-216-015-00	METAL CHIP 39 5%	1/10W	*A-7060-621-A ME-4P BOARD, COMPLETE			

				2-279-715-21 RIVET, NYLON			
				<u>CAPACITOR</u>			
				C701	1-163-077-00	CERAMIC CHIP 0.1MF	50V
				C702	1-123-616-00	ELECT 4.7MF	20% 25V
				C703	1-123-647-00	ELECT 47MF	20% 6.3V
				C704	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
				C705	1-123-647-00	ELECT 47MF	20% 6.3V

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

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

ME-4P

Ref.No	Part No.	Description			Remark	Ref.No	Part No.	Description			Remark
C706	1-163-101-00	CERAMIC CHIP 22PF	5%	50V		C759	1-163-077-00	CERAMIC CHIP 0.1MF			50V
C707	1-123-661-00	ELECT 100MF	20%	6.3V		C760	1-163-109-00	CERAMIC CHIP 47PF	5%		50V
C708	1-163-101-00	CERAMIC CHIP 22PF	5%	50V		C761	1-163-109-00	CERAMIC CHIP 47PF	5%		50V
C709	1-163-109-00	CERAMIC CHIP 47PF	5%	50V		C762	1-163-109-00	CERAMIC CHIP 47PF	5%		50V
C710	1-163-109-00	CERAMIC CHIP 47PF	5%	50V		C763	1-163-109-00	CERAMIC CHIP 47PF	5%		50V
C711	1-163-109-00	CERAMIC CHIP 47PF	5%	50V		C764	1-163-109-00	CERAMIC CHIP 47PF	5%		50V
C712	1-163-109-00	CERAMIC CHIP 47PF	5%	50V		C765	1-163-109-00	CERAMIC CHIP 47PF	5%		50V
C713	1-163-109-00	CERAMIC CHIP 47PF	5%	50V		C766	1-163-109-00	CERAMIC CHIP 47PF	5%		50V
C714	1-162-637-91	CERAMIC CHIP 0.47MF		16V		C767	1-163-109-00	CERAMIC CHIP 47PF	5%		50V
C715	1-123-820-00	ELECT 33MF	20%	16V		C768	1-163-141-00	CERAMIC CHIP 0.001MF	10%		50V
C716	1-123-820-00	ELECT 33MF	20%	16V		C769	1-163-141-00	CERAMIC CHIP 0.001MF	10%		50V
C717	1-162-637-91	CERAMIC CHIP 0.47MF		16V		C770	1-163-021-00	CERAMIC CHIP 0.01MF	10%		50V
C718	1-163-077-00	CERAMIC CHIP 0.1MF		50V		C771	1-163-035-00	CERAMIC CHIP 0.047MF	10%		25V
C719	1-163-077-00	CERAMIC CHIP 0.1MF		50V		C772	1-135-093-21	TANTAL. CHIP 10MF	20%		10V
C720	1-163-077-00	CERAMIC CHIP 0.1MF		50V		C773	1-163-035-00	CERAMIC CHIP 0.047MF	10%		25V
C721	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V		C774	1-163-035-00	CERAMIC CHIP 0.047MF	10%		25V
C722	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V		C775	1-163-035-00	CERAMIC CHIP 0.047MF	10%		25V
C723	1-135-091-00	TANTAL. CHIP 1MF	20%	16V		C776	1-163-021-00	CERAMIC CHIP 0.01MF	10%		50V
C724	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V		C777	1-163-035-00	CERAMIC CHIP 0.047MF	10%		25V
C725	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V		C778	1-163-038-00	CERAMIC CHIP 0.1MF			25V
C726	1-123-616-00	ELECT 4.7MF	20%	25V		C779	1-131-387-00	TANTALUM 47MF	10%		6.3V
C727	1-135-101-21	TANTAL. CHIP 22MF	20%	6.3V				DIODE			
C728	1-163-077-00	CERAMIC CHIP 0.1MF		50V		D701	8-719-100-05	DIODE 1S2837			
C729	1-163-077-00	CERAMIC CHIP 0.1MF		50V		D702	8-719-801-52	DIODE 1SS190			
C730	1-163-077-00	CERAMIC CHIP 0.1MF		50V		D703	8-719-100-03	DIODE 1S2835			
C731	1-163-077-00	CERAMIC CHIP 0.1MF		50V		D704	8-719-101-23	DIODE 1SS123			
C732	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V		D705	8-719-100-05	DIODE 1S2837			
C733	1-135-095-00	TANTAL. CHIP 1.5MF	20%	10V		D706	8-719-801-52	DIODE 1SS190			
C734	1-135-096-21	TANTAL. CHIP 4.7MF	20%	10V				FILTER			
C735	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V		FL701	1-235-442-11	FILTER, LOW PASS (YH)			
C736	1-135-093-21	TANTAL. CHIP 10MF	20%	10V				IC			
C737	1-135-096-21	TANTAL. CHIP 4.7MF	20%	10V		IC701	8-759-908-09	IC CX20053			
C738	1-163-077-00	CERAMIC CHIP 0.1MF		50V		IC702	8-759-106-22	IC UPD4052BG			
C739	1-135-125-21	TANTAL. CHIP 33MF	20%	10V		IC703	8-759-914-44	IC TL431CLPB			
C740	1-163-077-00	CERAMIC CHIP 0.1MF		50V		IC704	8-752-303-90	IC CX23039			
C741	1-163-077-00	CERAMIC CHIP 0.1MF		50V		IC705	8-752-015-10	IC CX20151			
C742	1-163-121-00	CERAMIC CHIP 150PF	5%	50V				COIL			
C743	1-163-107-00	CERAMIC CHIP 39PF	5%	50V		L701	1-410-389-11	INDUCTOR CHIP 47UH			
C744	1-163-125-00	CERAMIC CHIP 220PF	5%	50V		L702	1-410-389-11	INDUCTOR CHIP 47UH			
C745	1-163-077-00	CERAMIC CHIP 0.1MF		50V				TRANSISTOR			
C746	1-163-121-00	CERAMIC CHIP 150PF	5%	50V		0701	8-729-109-44	TRANSISTOR 2SK94			
C747	1-163-107-00	CERAMIC CHIP 39PF	5%	50V		0702	8-729-109-44	TRANSISTOR 2SK94			
C748	1-163-125-00	CERAMIC CHIP 220PF	5%	50V		0703	8-729-109-44	TRANSISTOR 2SK94			
C749	1-163-077-00	CERAMIC CHIP 0.1MF		50V		0704	8-729-100-66	TRANSISTOR 2SC1623			
C750	1-163-121-00	CERAMIC CHIP 150PF	5%	50V		0705	8-729-100-66	TRANSISTOR 2SC1623			
C751	1-163-107-00	CERAMIC CHIP 39PF	5%	50V		0706	8-729-100-66	TRANSISTOR 2SC1623			
C752	1-163-125-00	CERAMIC CHIP 220PF	5%	50V		0707	8-729-100-66	TRANSISTOR 2SC1623			
C753	1-163-077-00	CERAMIC CHIP 0.1MF		50V							
C754	1-163-113-00	CERAMIC CHIP 68PF	5%	50V							
C755	1-163-077-00	CERAMIC CHIP 0.1MF		50V							
C756	1-162-638-11	CERAMIC CHIP 1MF		16V							
C757	1-163-077-00	CERAMIC CHIP 0.1MF		50V							
C758	1-163-077-00	CERAMIC CHIP 0.1MF		50V							

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

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
0708	8-729-100-66	TRANSISTOR 2SC1623		R742	1-216-081-00	METAL CHIP 22K 5% 1/10W	
0709	8-729-100-66	TRANSISTOR 2SC1623		R743	1-216-081-00	METAL CHIP 22K 5% 1/10W	
0710	8-729-100-66	TRANSISTOR 2SC1623		R744	1-216-081-00	METAL CHIP 22K 5% 1/10W	
0711	8-729-100-66	TRANSISTOR 2SC1623		R745	1-216-083-00	METAL CHIP 27K 5% 1/10W	
0712	8-729-100-66	TRANSISTOR 2SC1623		R746	1-216-085-00	METAL CHIP 33K 5% 1/10W	
0713	8-729-100-66	TRANSISTOR 2SC1623		R747	1-216-077-00	METAL CHIP 15K 5% 1/10W	
0714	8-729-100-66	TRANSISTOR 2SC1623		R748	1-216-077-00	METAL CHIP 15K 5% 1/10W	
0715	8-729-100-66	TRANSISTOR 2SC1623		R749	1-216-081-00	METAL CHIP 22K 5% 1/10W	
0716	8-729-100-66	TRANSISTOR 2SC1623		R750	1-216-081-00	METAL CHIP 22K 5% 1/10W	
0717	8-729-100-66	TRANSISTOR 2SC1623		R751	1-216-081-00	METAL CHIP 22K 5% 1/10W	
0718	8-729-100-76	TRANSISTOR 2SA812		R752	1-216-081-00	METAL CHIP 22K 5% 1/10W	
0719	8-729-100-76	TRANSISTOR 2SA812		R753	1-216-081-00	METAL CHIP 22K 5% 1/10W	
0720	8-729-100-76	TRANSISTOR 2SA812		R754	1-216-081-00	METAL CHIP 22K 5% 1/10W	
0721	8-729-100-76	TRANSISTOR 2SA812		R755	1-216-081-00	METAL CHIP 22K 5% 1/10W	
0722	8-729-100-66	TRANSISTOR 2SC1623		R756	1-216-081-00	METAL CHIP 22K 5% 1/10W	
0723	8-729-100-66	TRANSISTOR 2SC1623		R757	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
0724	8-729-100-66	TRANSISTOR 2SC1623		R758	1-216-025-00	METAL CHIP 100 5% 1/10W	
0725	8-729-100-66	TRANSISTOR 2SC1623		R759	1-216-073-00	METAL CHIP 10K 5% 1/10W	
<u>RESISTOR</u>				R760	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R705	1-216-073-00	METAL CHIP 10K 5% 1/10W		R761	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R706	1-216-089-00	METAL CHIP 47K 5% 1/10W		R762	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R707	1-216-067-00	METAL CHIP 5.6K 5% 1/10W		R763	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R708	1-216-035-00	METAL CHIP 270 5% 1/10W		R764	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R709	1-216-073-00	METAL CHIP 10K 5% 1/10W		R765	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R710	1-216-089-00	METAL CHIP 47K 5% 1/10W		R766	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R713	1-216-067-00	METAL CHIP 5.6K 5% 1/10W		R767	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R714	1-216-035-00	METAL CHIP 270 5% 1/10W		R768	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R717	1-216-067-00	METAL CHIP 5.6K 5% 1/10W		R769	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R718	1-216-035-00	METAL CHIP 270 5% 1/10W		R770	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R719	1-216-033-00	METAL CHIP 220 5% 1/10W		R772	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R720	1-216-033-00	METAL CHIP 220 5% 1/10W		R773	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R721	1-216-033-00	METAL CHIP 220 5% 1/10W		R774	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R722	1-216-033-00	METAL CHIP 220 5% 1/10W		R775	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R723	1-216-067-00	METAL CHIP 5.6K 5% 1/10W		R776	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R724	1-216-025-00	METAL CHIP 100 5% 1/10W		R777	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R725	1-216-049-00	METAL CHIP 1K 5% 1/10W		R778	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R726	1-216-081-00	METAL CHIP 22K 5% 1/10W		R779	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R727	1-216-069-00	METAL CHIP 6.8K 5% 1/10W		R780	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R728	1-216-081-00	METAL CHIP 22K 5% 1/10W		R781	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R729	1-216-081-00	METAL CHIP 22K 5% 1/10W		R782	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R730	1-216-081-00	METAL CHIP 22K 5% 1/10W		R783	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R731	1-216-081-00	METAL CHIP 22K 5% 1/10W		R784	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R732	1-216-081-00	METAL CHIP 22K 5% 1/10W		R785	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R733	1-216-081-00	METAL CHIP 22K 5% 1/10W		R786	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R734	1-216-081-00	METAL CHIP 22K 5% 1/10W		R787	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R735	1-216-081-00	METAL CHIP 22K 5% 1/10W		R788	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R736	1-216-109-00	METAL CHIP 330K 5% 1/10W		R789	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R737	1-216-105-00	METAL CHIP 220K 5% 1/10W		R790	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R738	1-216-081-00	METAL CHIP 22K 5% 1/10W		R791	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R739	1-216-081-00	METAL CHIP 22K 5% 1/10W		R792	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R740	1-216-079-00	METAL CHIP 18K 5% 1/10W		R793	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R741	1-216-077-00	METAL CHIP 15K 5% 1/10W		R794	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
				R795	1-216-049-00	METAL CHIP 1K 5% 1/10W	

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

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R796	1-216-049-00	METAL CHIP 1K 5% 1/10W		RV705	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
R797	1-216-049-00	METAL CHIP 1K 5% 1/10W		RV706	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
R798	1-216-073-00	METAL CHIP 10K 5% 1/10W		RV707	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
R799	1-216-049-00	METAL CHIP 1K 5% 1/10W		RV708	1-230-871-21	RES, ADJ, METAL GLAZE 22K	
R801	1-216-065-00	METAL CHIP 4.7K 5% 1/10W		RV709	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
R802	1-216-057-00	METAL CHIP 2.2K 5% 1/10W		RV710	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
R803	1-216-057-00	METAL CHIP 2.2K 5% 1/10W		RV711	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
R804	1-216-057-00	METAL CHIP 2.2K 5% 1/10W		RV712	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
R805	1-216-057-00	METAL CHIP 2.2K 5% 1/10W		RV713	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
R806	1-216-073-00	METAL CHIP 10K 5% 1/10W		RV714	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
R807	1-216-057-00	METAL CHIP 2.2K 5% 1/10W		RV715	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
R808	1-216-055-00	METAL CHIP 1.8K 5% 1/10W		RV716	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
R809	1-216-049-00	METAL CHIP 1K 5% 1/10W		RV717	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
R810	1-216-067-00	METAL CHIP 5.6K 5% 1/10W		RV718	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
R811	1-216-091-00	METAL CHIP 56K 5% 1/10W		RV719	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
R812	1-216-091-00	METAL CHIP 56K 5% 1/10W		RV720	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
R813	1-216-037-00	METAL CHIP 330 5% 1/10W		RV721	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
R814	1-216-097-00	METAL CHIP 100K 5% 1/10W		RV722	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
R815	1-216-081-00	METAL CHIP 22K 5% 1/10W		RV723	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
R816	1-216-089-00	METAL CHIP 47K 5% 1/10W		RV726	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
R817	1-216-101-00	METAL CHIP 150K 5% 1/10W		RV727	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
R818	1-216-109-00	METAL CHIP 330K 5% 1/10W		RV728	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
R819	1-216-087-00	METAL CHIP 39K 5% 1/10W		RV729	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
R823	1-216-081-00	METAL CHIP 22K 5% 1/10W		RV730	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
R824	1-216-081-00	METAL CHIP 22K 5% 1/10W		RV731	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
R825	1-216-081-00	METAL CHIP 22K 5% 1/10W		*****			
R826	1-216-081-00	METAL CHIP 22K 5% 1/10W		*A-7060-622-A CP-18P BOARD, COMPLETE			
R827	1-216-081-00	METAL CHIP 22K 5% 1/10W		*****			
R828	1-216-081-00	METAL CHIP 22K 5% 1/10W		* A-7068-049-A DT-61P BOARD, COMPLETE			
R829	1-216-081-00	METAL CHIP 22K 5% 1/10W		2-279-715-21 RIVET, NYLON			
R830	1-216-081-00	METAL CHIP 22K 5% 1/10W		CAPACITOR			
R831	1-216-081-00	METAL CHIP 22K 5% 1/10W		C701	1-162-637-91	CERAMIC CHIP 0.47MF	16V
R832	1-216-079-00	METAL CHIP 18K 5% 1/10W		C702	1-123-617-00	ELECT 10MF	20% 16V
R833	1-216-081-00	METAL CHIP 22K 5% 1/10W		C703	1-162-637-91	CERAMIC CHIP 0.47MF	16V
R834	1-216-081-00	METAL CHIP 22K 5% 1/10W		C704	1-163-115-00	CERAMIC CHIP 82PF	5% 50V
R835	1-216-097-00	METAL CHIP 100K 5% 1/10W		C705	1-163-115-00	CERAMIC CHIP 82PF	5% 50V
R836	1-216-121-00	METAL CHIP 1M 5% 1/10W		C706	1-162-637-91	CERAMIC CHIP 0.47MF	16V
R837	1-216-085-00	METAL CHIP 33K 5% 1/10W		C707	1-135-083-00	TANTAL. CHIP 0.47MF	20% 25V
R838	1-216-053-00	METAL CHIP 1.5K 5% 1/10W		C708	1-162-637-91	CERAMIC CHIP 0.47MF	16V
R839	1-216-085-00	METAL CHIP 33K 5% 1/10W		C709	1-123-616-00	ELECT 4.7MF	20% 25V
R840	1-216-053-00	METAL CHIP 1.5K 5% 1/10W		C710	1-131-388-00	TANTALUM 68MF	10% 6.3V
R841	1-216-095-00	METAL CHIP 82K 5% 1/10W		C711	1-163-089-00	CERAMIC CHIP 6PF	0.5PF 50V
R842	1-216-295-00	METAL CHIP 0 5% 1/10W		C712	1-163-111-00	CERAMIC CHIP 56PF	5% 50V
R843	1-216-053-00	METAL CHIP 1.5K 5% 1/10W		C713	1-163-111-00	CERAMIC CHIP 56PF	5% 50V
R844	1-249-405-11	CARBON 100 5% 1/6W		C714	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
R845	1-249-417-11	CARBON 1K 5% 1/6W		C715	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
R846	1-249-414-11	CARBON 560 5% 1/6W		C716	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
VARIABLE RESISTOR				C717	1-163-141-00	CERAMIC CHIP 0.001MF	10% 50V
RV701	1-230-870-21	RES, ADJ, METAL GLAZE 10K		C718	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
RV702	1-230-870-21	RES, ADJ, METAL GLAZE 10K		C719	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
RV703	1-230-870-21	RES, ADJ, METAL GLAZE 10K		C720	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
RV704	1-230-870-21	RES, ADJ, METAL GLAZE 10K					

* The IC701 and IC002 have not been mounted on the already mounted CP-18 board and DT-61 board respectively.

Moreover, each single IC does not become repair part but with a pair they become a CCD imager block (IU021-K-AA).

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

CP-18P

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C721	1-163-109-00	CERAMIC CHIP 47PF	5% 50V	C787	1-163-005-00	CERAMIC CHIP 470PF	10% 50V
C722	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C789	1-163-005-00	CERAMIC CHIP 470PF	10% 50V
C723	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C790	1-163-005-00	CERAMIC CHIP 470PF	10% 50V
C724	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C791	1-163-099-00	CERAMIC CHIP 18PF	5% 50V
C725	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C792	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C726	1-163-101-00	CERAMIC CHIP 22PF	5% 50V	C793	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C727	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C794	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C729	1-123-821-00	ELECT 47MF	20% 16V	C795	1-163-105-00	CERAMIC CHIP 33PF	5% 50V
C730	1-163-119-00	CERAMIC CHIP 120PF	5% 50V	<u>CONNECTOR</u>			
C731	1-163-083-00	CERAMIC CHIP 1PF	0.25PF 50V	CN704	*1-564-005-00	PIN, CONNECTOR 6P	
C732	1-163-141-00	CERAMIC CHIP 0.001MF	10% 50V	<u>TRIMMER</u>			
C733	1-135-104-00	TANTAL. CHIP 10MF	20% 4V	CT701	1-141-331-11	CAP, VAR, TRIMMER (CHIP) 30PF	
C734	1-123-617-00	ELECT 10MF	20% 16V	CT702	1-141-329-11	CAP, VAR, TRIMMER (CHIP) 30PF	
C735	1-135-104-00	TANTAL. CHIP 10MF	20% 4V	<u>DIODE</u>			
C736	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	D701	8-719-801-48	DIODE 1SS193	
C737	1-135-096-21	TANTAL. CHIP 4.7MF	20% 10V	D702	8-713-220-01	DIODE 1T32-2	
C738	1-162-638-11	CERAMIC CHIP 1MF	16V	D703	8-719-801-48	DIODE 1SS193	
C739	1-162-637-91	CERAMIC CHIP 0.47MF	16V	D704	8-719-101-23	DIODE 1SS123	
C740	1-135-096-21	TANTAL. CHIP 4.7MF	20% 10V	D708	8-719-801-48	DIODE 1SS193	
C741	1-124-229-00	ELECT 33MF	20% 10V	D709	8-719-801-52	DIODE 1SS190	
C742	1-163-013-00	CERAMIC CHIP 0.0022MF	10% 50V	<u>DELAY LINE</u>			
C743	1-163-077-00	CERAMIC CHIP 0.1MF	50V	DL701	1-415-448-11	DELAY LINE	
C744	1-124-245-00	ELECT 4.7MF	20% 16V	<u>FILTER</u>			
C745	1-124-233-00	ELECT 10MF	20% 6.3V	FL701	1-235-439-11	FILTER, BAND PASS (4.43MHZ)	
C748	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	<u>IC</u>			
C749	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	IC701	8-750-010-21	IU021-K-AA (CCD IMAGER BLOCK)	
C750	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	IC702	8-752-321-16	IC CXD1030M	
C751	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	IC703	8-759-908-11	IC CX20055	
C752	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	<u>COIL</u>			
C753	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	L701	1-408-958-21	MICRO INDUCTOR 1UH	
C762	1-123-645-00	ELECT 33MF	20% 10V	L702	1-410-387-11	INDUCTOR CHIP 33UH	
C763	1-123-646-00	ELECT 33MF	20% 6.3V	L703	1-410-381-11	INDUCTOR CHIP 10UH	
C764	1-123-645-00	ELECT 33MF	20% 10V	L704	1-421-904-21	COIL, CHOKE 47UH	
C765	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	L706	1-410-369-11	INDUCTOR CHIP 1UH	
C768	1-163-109-00	CERAMIC CHIP 47PF	5% 50V	L707	1-410-387-11	INDUCTOR CHIP 33UH	
C769	1-163-109-00	CERAMIC CHIP 47PF	5% 50V	L708	1-410-387-11	INDUCTOR CHIP 33UH	
C770	1-163-109-00	CERAMIC CHIP 47PF	5% 50V	L709	1-410-369-11	INDUCTOR CHIP 1UH	
C771	1-163-093-00	CERAMIC CHIP 10PF	5% 50V	<u>TRANSISTOR</u>			
C772	1-163-005-00	CERAMIC CHIP 470PF	10% 50V	Q701	8-729-175-72	TRANSISTOR 2SC2757-33	
C773	1-163-005-00	CERAMIC CHIP 470PF	10% 50V	Q702	8-729-100-76	TRANSISTOR 2SA812	
C774	1-163-101-00	CERAMIC CHIP 22PF	5% 50V	Q703	8-729-100-66	TRANSISTOR 2SC1623	
C775	1-163-101-00	CERAMIC CHIP 22PF	5% 50V	Q704	8-729-175-72	TRANSISTOR 2SC2757-33	
C776	1-163-005-00	CERAMIC CHIP 470PF	10% 50V	Q705	8-729-175-72	TRANSISTOR 2SC2757-33	
C777	1-163-005-00	CERAMIC CHIP 470PF	10% 50V				
C778	1-163-005-00	CERAMIC CHIP 470PF	10% 50V				
C779	1-163-005-00	CERAMIC CHIP 470PF	10% 50V				
C780	1-163-005-00	CERAMIC CHIP 470PF	10% 50V				
C781	1-163-005-00	CERAMIC CHIP 470PF	10% 50V				
C782	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V				
C783	1-163-109-00	CERAMIC CHIP 47PF	5% 50V				
C784	1-163-109-00	CERAMIC CHIP 47PF	5% 50V				
C785	1-124-566-11	ELECT 120MF	20% 6.3V				
C786	1-163-101-00	CERAMIC CHIP 22PF	5% 50V				

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

CP-18P**AW-3P**

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
0706	8-729-102-06	TRANSISTOR 2SC2223		R748	1-216-063-00	METAL CHIP 3.9K 5%	1/10W
0708	8-729-100-66	TRANSISTOR 2SC1623		R749	1-216-063-00	METAL CHIP 3.9K 5%	1/10W
0709	8-729-100-66	TRANSISTOR 2SC1623		R750	1-216-295-00	METAL CHIP 0 5%	1/10W
0710	8-729-100-66	TRANSISTOR 2SC1623		R751	1-216-049-00	METAL CHIP 1K 5%	1/10W
0711	8-729-901-03	TRANSISTOR DTC144WK		R752	1-216-077-00	METAL CHIP 15K 5%	1/10W
0712	8-729-901-04	TRANSISTOR DTA114EK		R753	1-216-022-00	METAL CHIP 75 5%	1/10W
<u>RESISTOR</u>				R754	1-216-049-00	METAL CHIP 1K 5%	1/10W
R701	1-216-089-00	METAL CHIP 47K 5%	1/10W	R755	1-216-083-00	METAL CHIP 27K 5%	1/10W
R702	1-216-075-00	METAL CHIP 12K 5%	1/10W	R756	1-216-083-00	METAL CHIP 27K 5%	1/10W
R703	1-216-097-00	METAL CHIP 100K 5%	1/10W	R757	1-216-081-00	METAL CHIP 22K 5%	1/10W
R704	1-216-059-00	METAL CHIP 2.7K 5%	1/10W	R758	1-216-085-00	METAL CHIP 33K 5%	1/10W
R705	1-216-025-00	METAL CHIP 100 5%	1/10W	R759	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R706	1-216-065-00	METAL CHIP 4.7K 5%	1/10W	R760	1-216-063-00	METAL CHIP 3.9K 5%	1/10W
R707	1-216-075-00	METAL CHIP 12K 5%	1/10W	R761	1-216-085-00	METAL CHIP 33K 5%	1/10W
R708	1-216-091-00	METAL CHIP 56K 5%	1/10W	R762	1-216-077-00	METAL CHIP 15K 5%	1/10W
R709	1-216-089-00	METAL CHIP 47K 5%	1/10W	R766	1-216-295-00	METAL CHIP 0 5%	1/10W
R710	1-216-067-00	METAL CHIP 5.6K 5%	1/10W	R767	1-216-295-00	METAL CHIP 0 5%	1/10W
R711	1-216-061-00	METAL CHIP 3.3K 5%	1/10W	R775	1-216-081-00	METAL CHIP 22K 5%	1/10W
R712	1-216-067-00	METAL CHIP 5.6K 5%	1/10W	R776	1-216-079-00	METAL CHIP 18K 5%	1/10W
R713	1-216-067-00	METAL CHIP 5.6K 5%	1/10W	R777	1-216-081-00	METAL CHIP 22K 5%	1/10W
R714	1-216-039-00	METAL CHIP 390 5%	1/10W	R778	1-216-081-00	METAL CHIP 22K 5%	1/10W
R715	1-216-039-00	METAL CHIP 390 5%	1/10W	R779	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R716	1-216-081-00	METAL CHIP 22K 5%	1/10W	R781	1-216-073-00	METAL CHIP 10K 5%	1/10W
R717	1-216-041-00	METAL CHIP 470 5%	1/10W	R782	1-216-121-00	METAL CHIP 1M 5%	1/10W
R718	1-216-057-00	METAL CHIP 2.2K 5%	1/10W	R783	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R720	1-216-057-00	METAL CHIP 2.2K 5%	1/10W	R784	1-216-296-00	METAL CHIP 0 5%	1/8W
R721	1-216-043-00	METAL CHIP 560 5%	1/10W	R785	1-216-296-00	METAL CHIP 0 5%	1/8W
R722	1-216-057-00	METAL CHIP 2.2K 5%	1/10W	<u>VARIABLE RESISTOR</u>			
R723	1-216-057-00	METAL CHIP 2.2K 5%	1/10W	RV701	1-237-529-11	RES, ADJ, METAL FILM 1K	
R724	1-216-295-00	METAL CHIP 0 5%	1/10W	RV702	1-230-287-00	RES, ADJ, METAL GLAZE 10K	
R726	1-216-025-00	METAL CHIP 100 5%	1/10W	RV703	1-230-287-00	RES, ADJ, METAL GLAZE 10K	
R727	1-216-093-00	METAL CHIP 68K 5%	1/10W	<u>CRYSTAL</u>			
R728	1-216-073-00	METAL CHIP 10K 5%	1/10W	X701	1-567-732-11	VIBRATOR, CRYSTAL (28MHZ)	
R729	1-216-097-00	METAL CHIP 100K 5%	1/10W	X702	1-567-733-11	VIBRATOR, CRYSTAL (17MHZ)	
R730	1-216-025-00	METAL CHIP 100 5%	1/10W	*****			
R731	1-216-053-00	METAL CHIP 1.5K 5%	1/10W	*A-7060-624-A AW-3P BOARD, COMPLETE			
R732	1-216-057-00	METAL CHIP 2.2K 5%	1/10W	*****			
R733	1-216-057-00	METAL CHIP 2.2K 5%	1/10W	<u>CAPACITOR</u>			
R734	1-216-073-00	METAL CHIP 10K 5%	1/10W	C701	1-124-224-00	ELECT 47MF	20% 6.3V
R735	1-216-055-00	METAL CHIP 1.8K 5%	1/10W	C702	1-124-224-00	ELECT 47MF	20% 6.3V
R736	1-216-049-00	METAL CHIP 1K 5%	1/10W	C703	1-162-638-11	CERAMIC CHIP 1MF	16V
R737	1-216-075-00	METAL CHIP 12K 5%	1/10W	C704	1-162-638-11	CERAMIC CHIP 1MF	16V
R738	1-216-049-00	METAL CHIP 1K 5%	1/10W	C705	1-162-638-11	CERAMIC CHIP 1MF	16V
R739	1-216-057-00	METAL CHIP 2.2K 5%	1/10W	C706	1-136-287-11	FILM 0.0047MF	5% 100V
R740	1-216-073-00	METAL CHIP 10K 5%	1/10W	C707	1-136-293-11	FILM 0.0082MF	5% 100V
R741	1-216-073-00	METAL CHIP 10K 5%	1/10W	C708	1-136-293-11	FILM 0.0082MF	5% 100V
R742	1-216-063-00	METAL CHIP 3.9K 5%	1/10W	C709	1-163-038-00	CERAMIC CHIP 0.1MF	25V
R743	1-216-087-00	METAL CHIP 39K 5%	1/10W	C710	1-163-038-00	CERAMIC CHIP 0.1MF	25V
R744	1-216-087-00	METAL CHIP 39K 5%	1/10W				
R745	1-216-025-00	METAL CHIP 100 5%	1/10W				
R746	1-216-067-00	METAL CHIP 5.6K 5%	1/10W				
R747	1-216-073-00	METAL CHIP 10K 5%	1/10W				

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

AW-3P**AT-5P**

Ref.No	Part No.	Description	Remark
C711	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C712	1-124-224-00	ELECT 47MF	20% 6.3V
C713	1-124-224-00	ELECT 47MF	20% 6.3V
C714	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C715	1-163-121-00	CERAMIC CHIP 150PF	5% 50V

C716	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C717	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C718	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C719	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C722	1-163-081-00	CERAMIC CHIP 0.22MF	25V

C723	1-163-013-00	CERAMIC CHIP 0.0022MF	10% 50V
C724	1-163-013-00	CERAMIC CHIP 0.0022MF	10% 50V
C725	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C726	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C727	1-163-121-00	CERAMIC CHIP 150PF	5% 50V

C728	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C729	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C730	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C731	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C732	1-163-121-00	CERAMIC CHIP 150PF	5% 50V

C733	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V

CONNECTOR

CN702	*1-564-008-00	PIN, CONNECTOR 9P	
CN703	*1-564-008-00	PIN, CONNECTOR 9P	
CN704	*1-563-530-11	CONNECTOR, BOARD TO BOARD 11P	

DIODE

D701	8-719-100-05	DIODE 1S2837	
D703	8-719-801-48	DIODE 1SS193	
D704	8-719-801-48	DIODE 1SS193	
D705	8-719-801-48	DIODE 1SS193	
D706	8-719-801-48	DIODE 1SS193	

D707	8-719-801-48	DIODE 1SS193	
D708	8-719-911-19	DIODE 1SS119	
D709	8-719-911-19	DIODE 1SS119	

IC

IC701	8-752-322-56	IC CXD10730	
IC702	8-759-103-25	IC UPD4053BG	
IC703	8-759-103-03	IC UPD6107G	
IC704	8-759-106-23	IC UPD40668G	

TRANSISTOR

O701	8-729-901-06	TRANSISTOR DTA144EK	
O702	8-729-100-76	TRANSISTOR 2SA812	

RESISTOR

R701	1-216-077-00	METAL CHIP 15K 5%	1/10W
R702	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R703	1-216-079-00	METAL CHIP 18K 5%	1/10W
R704	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R705	1-216-063-00	METAL CHIP 3.9K 5%	1/10W

Ref.No	Part No.	Description	Remark
R706	1-216-081-00	METAL CHIP 22K 5%	1/10W
R709	1-216-073-00	METAL CHIP 10K 5%	1/10W
R710	1-216-073-00	METAL CHIP 10K 5%	1/10W
R711	1-216-089-00	METAL CHIP 47K 5%	1/10W
R712	1-216-081-00	METAL CHIP 22K 5%	1/10W

R713	1-216-089-00	METAL CHIP 47K 5%	1/10W
R714	1-216-093-00	METAL CHIP 68K 5%	1/10W
R715	1-216-097-00	METAL CHIP 100K 5%	1/10W
R716	1-216-093-00	METAL CHIP 68K 5%	1/10W
R717	1-216-097-00	METAL CHIP 100K 5%	1/10W

R718	1-216-081-00	METAL CHIP 22K 5%	1/10W
R719	1-216-081-00	METAL CHIP 22K 5%	1/10W
R720	1-216-081-00	METAL CHIP 22K 5%	1/10W
R721	1-216-081-00	METAL CHIP 22K 5%	1/10W
R722	1-216-081-00	METAL CHIP 22K 5%	1/10W

R723	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R726	1-216-073-00	METAL CHIP 10K 5%	1/10W
R727	1-216-073-00	METAL CHIP 10K 5%	1/10W
R728	1-216-077-00	METAL CHIP 15K 5%	1/10W
R729	1-216-077-00	METAL CHIP 15K 5%	1/10W

R730	1-216-093-00	METAL CHIP 68K 5%	1/10W
R731	1-216-073-00	METAL CHIP 10K 5%	1/10W
R734	1-216-089-00	METAL CHIP 47K 5%	1/10W
R735	1-216-107-00	METAL CHIP 270K 5%	1/10W
R736	1-249-422-11	CARBON 2.7K 5%	1/6W

VARIABLE RESISTOR

RV701	1-230-871-21	RES, ADJ, METAL GLAZE 22K	
RV702	1-230-871-21	RES, ADJ, METAL GLAZE 22K	

*A-7060-625-A AT-5P BOARD, COMPLETE

CAPACITOR

C851	1-163-205-00	CERAMIC CHIP 0.001MF	5% 50V
C852	1-163-205-00	CERAMIC CHIP 0.001MF	5% 50V
C853	1-163-205-00	CERAMIC CHIP 0.001MF	5% 50V
C854	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C855	1-163-077-00	CERAMIC CHIP 0.1MF	50V

C856	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C857	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C858	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C859	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C860	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V

C861	1-135-091-00	TANTAL. CHIP 1MF	20% 16V
C862	1-124-224-00	ELECT 47MF	20% 6.3V
C863	1-124-224-00	ELECT 47MF	20% 6.3V
C864	1-162-638-11	CERAMIC CHIP 1MF	16V
C866	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V

CONNECTOR

CN851	*1-564-005-00	PIN, CONNECTOR 6P	

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

AT-5P**AI-1P**

Ref.No	Part No.	Description	Remark
CN852	*1-566-130-11	CONNECTOR, BOARD TO BOARD 11P	
<u>IC</u>			
IC851	8-759-908-12	IC CX20056	
<u>TRANSISTOR</u>			
Q851	8-729-100-76	TRANSISTOR 2SA812	
Q852	8-729-901-06	TRANSISTOR DTA144EK	
Q853	8-729-100-76	TRANSISTOR 2SA812	
Q854	8-729-901-01	TRANSISTOR DTC144EK	
Q855	8-729-100-66	TRANSISTOR 2SC1623	
Q856	8-729-100-76	TRANSISTOR 2SA812	
Q857	8-729-100-76	TRANSISTOR 2SA812	
Q858	8-729-100-66	TRANSISTOR 2SC1623	
Q859	8-729-100-76	TRANSISTOR 2SA812	
Q860	8-729-100-76	TRANSISTOR 2SA812	
Q861	8-729-100-66	TRANSISTOR 2SC1623	
Q862	8-729-100-76	TRANSISTOR 2SA812	
<u>RESISTOR</u>			
R851	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R852	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R853	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R855	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R856	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R857	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R858	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R859	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R860	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R861	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R862	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R863	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R866	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R867	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R868	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R869	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R871	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R872	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R873	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R874	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R875	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R876	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R877	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R878	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R879	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R880	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R881	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R882	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R884	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R885	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R886	1-216-121-00	METAL CHIP 1M 5% 1/10W	

Ref.No	Part No.	Description	Remark
R887	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R888	1-216-085-00	METAL CHIP 33K 5% 1/10W	
<u>VARIABLE RESISTOR</u>			
RV851	1-230-287-00	RES, ADJ, METAL GLAZE 10K	
RV852	1-230-287-00	RES, ADJ, METAL GLAZE 10K	
RV853	1-230-287-00	RES, ADJ, METAL GLAZE 10K	
RV854	1-230-287-00	RES, ADJ, METAL GLAZE 10K	
RV855	1-230-287-00	RES, ADJ, METAL GLAZE 10K	

*A-7060-626-A AI-1P BOARD, COMPLETE			

<u>CAPACITOR</u>			
C781	1-124-224-00	ELECT 47MF 20% 6.3V	
C782	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V	
C783	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V	
C784	1-163-081-00	CERAMIC CHIP 0.22MF 25V	
C785	1-124-222-00	ELECT 22MF 20% 6.3V	
C786	1-124-222-00	ELECT 22MF 20% 6.3V	
C787	1-124-222-00	ELECT 22MF 20% 6.3V	
C789	1-124-236-00	ELECT 47MF 20% 10V	
C790	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C791	1-124-236-00	ELECT 47MF 20% 10V	
C792	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V	
C793	1-124-255-00	ELECT 1MF 20% 50V	
C794	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C795	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V	
C797	1-131-375-00	TANTALUM 4.7MF 10% 10V	
<u>CONNECTOR</u>			
CN781	*1-564-007-00	PIN, CONNECTOR 8P	
CN782	*1-564-003-00	PIN, CONNECTOR 4P	
<u>DIODE</u>			
D781	8-719-801-48	DIODE 1SS193	
D782	8-719-801-48	DIODE 1SS193	
D783	8-719-801-48	DIODE 1SS193	
D784	8-719-801-48	DIODE 1SS193	
D785	8-719-101-23	DIODE 1SS123	
D786	8-719-101-23	DIODE 1SS123	
D789	8-719-801-48	DIODE 1SS193	
<u>IC</u>			
IC781	8-759-100-95	IC UPC324G2	
IC782	8-759-100-95	IC UPC324G2	
IC783	8-759-103-25	IC UPD4053BG	
IC784	8-759-103-03	IC UPD6107G	
<u>TRANSISTOR</u>			
Q781	8-729-100-76	TRANSISTOR 2SA812	

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

AI-1P**FC-10P**

Ref.No	Part No.	Description	Remark
0782	8-729-100-66	TRANSISTOR 2SC1623	
0783	8-729-100-76	TRANSISTOR 2SA812	
0784	8-729-100-66	TRANSISTOR 2SC1623	
0785	8-729-100-66	TRANSISTOR 2SC1623	
0786	8-729-100-76	TRANSISTOR 2SA812	
0787	8-729-100-76	TRANSISTOR 2SA812	
0788	8-729-100-66	TRANSISTOR 2SC1623	
0789	8-729-100-76	TRANSISTOR 2SA812	
0790	8-729-901-01	TRANSISTOR DTC144EK	
0791	8-729-100-66	TRANSISTOR 2SC1623	
0792	8-729-100-76	TRANSISTOR 2SA812	
0793	8-729-100-76	TRANSISTOR 2SA812	
RESISTOR			
R781	1-216-107-00	METAL CHIP 270K 5% 1/10W	
R782	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R783	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R784	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R785	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R786	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R787	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R788	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R789	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R790	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R791	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R792	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R793	1-216-117-00	METAL CHIP 680K 5% 1/10W	
R794	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R795	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R796	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R797	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R798	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R799	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R800	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R801	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R802	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R803	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R804	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R805	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R806	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R809	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R810	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R811	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R812	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R813	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R814	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R815	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R816	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R817	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R818	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R819	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R820	1-216-041-00	METAL CHIP 470 5% 1/10W	
R821	1-216-081-00	METAL CHIP 22K 5% 1/10W	

Ref.No	Part No.	Description	Remark
R822	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R823	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R824	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R825	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R826	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R827	1-216-011-00	METAL CHIP 27 5% 1/10W	
R828	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R829	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R830	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R831	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R832	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R833	1-216-021-00	METAL CHIP 68 5% 1/10W	
R834	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R835	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R836	1-216-025-00	METAL CHIP 100 5% 1/10W	
R837	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R838	1-216-049-00	METAL CHIP 1K 5% 1/10W	
VARIABLE RESISTOR			
RV781	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV782	1-230-871-21	RES, ADJ, METAL GLAZE 22K	

*A-7060-627-A FC-10P BOARD, COMPLETE			

3-712-106-01 REINFORCEMENT (333)			
CAPACITOR			
C601	1-135-101-21	TANTAL. CHIP 22MF 20% 6.3V	
C602	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	
C603	1-135-101-21	TANTAL. CHIP 22MF 20% 6.3V	
C604	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	
C605	1-162-638-11	CERAMIC CHIP 1MF 16V	
C606	1-135-088-21	TANTAL. CHIP 2.2MF 20% 20V	
C607	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C608	1-162-638-11	CERAMIC CHIP 1MF 16V	
C609	1-162-638-11	CERAMIC CHIP 1MF 16V	
C610	1-135-101-21	TANTAL. CHIP 22MF 20% 6.3V	
C611	1-135-088-21	TANTAL. CHIP 2.2MF 20% 20V	
C612	1-135-070-00	TANTAL. CHIP 0.1MF 20% 35V	
C613	1-135-092-21	TANTAL. CHIP 3.3MF 20% 16V	
C614	1-162-638-11	CERAMIC CHIP 1MF 16V	
C615	1-163-263-00	CERAMIC CHIP 330PF 5% 50V	
C616	1-163-263-00	CERAMIC CHIP 330PF 5% 50V	
C617	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C618	1-163-015-00	CERAMIC CHIP 0.0033MF 10% 50V	
C619	1-163-119-00	CERAMIC CHIP 120PF 5% 50V	
CONNECTOR			
CN601	*1-564-020-00	PIN, CONNECTOR 10P	

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

Ref.No	Part No.	Description	Remark
<u>TRIMMER</u>			
CT601	1-141-331-11	CAP, VAR, TRIMMER (CHIP) (30PF)	
<u>DIODE</u>			
D601	8-719-100-05	DIODE 1S2837	
D602	8-719-100-05	DIODE 1S2837	
D603	8-719-100-05	DIODE 1S2837	
D604	8-719-100-05	DIODE 1S2837	
D605	8-719-801-48	DIODE 1SS193	
<u>IC</u>			
IC601	8-759-112-03	IC UPD7508G-769-00	
IC604	8-759-100-97	IC UPC339G2	
IC605	8-759-100-95	IC UPC324G2	
IC606	8-759-106-40	IC UPD4538RG	
<u>TRANSISTOR</u>			
Q601	8-729-900-98	TRANSISTOR DTC143TK	
Q602	8-729-900-98	TRANSISTOR DTC143TK	
Q603	8-729-901-01	TRANSISTOR DTC144EK	
Q604	8-729-901-01	TRANSISTOR DTC144EK	
Q605	8-729-100-76	TRANSISTOR 2SA812	
Q606	8-729-100-76	TRANSISTOR 2SA812	
Q607	8-729-109-44	TRANSISTOR 2SK94	
Q608	8-729-100-76	TRANSISTOR 2SA812	
Q609	8-729-901-03	TRANSISTOR DTC144WK	
Q611	8-729-100-76	TRANSISTOR 2SA812	
Q612	8-729-900-98	TRANSISTOR DTC143TK	
Q614	8-729-100-66	TRANSISTOR 2SC1623	
Q615	8-729-100-66	TRANSISTOR 2SC1623	
Q616	8-729-100-66	TRANSISTOR 2SC1623	
Q617	8-729-100-66	TRANSISTOR 2SC1623	
Q618	8-729-100-66	TRANSISTOR 2SC1623	
Q619	8-729-100-66	TRANSISTOR 2SC1623	
Q620	8-729-100-76	TRANSISTOR 2SA812	
Q621	8-729-100-76	TRANSISTOR 2SA812	
Q622	8-729-900-99	TRANSISTOR DTA144WK	
<u>RESISTOR</u>			
R601	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R602	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R603	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R604	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R605	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R606	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R607	1-216-087-00	METAL CHIP 39K 5% 1/10W	
R608	1-216-095-00	METAL CHIP 82K 5% 1/10W	
R609	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R610	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R611	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R612	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R613	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R614	1-216-073-00	METAL CHIP 10K 5% 1/10W	

Ref.No	Part No.	Description	Remark
R615	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R616	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R617	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R618	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R619	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R620	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R621	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R622	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R623	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R624	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R625	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	
R626	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R627	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R629	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R630	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R631	1-216-295-00	METAL CHIP 0 5% 1/10W	
R634	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R635	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R636	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R637	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R638	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R639	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R642	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R643	1-216-117-00	METAL CHIP 680K 5% 1/10W	
R644	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R645	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R646	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R647	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R648	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R649	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R650	1-216-098-00	METAL CHIP 110K 5% 1/10W	
R651	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R652	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R653	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R654	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R655	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R656	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R657	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R658	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R659	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R660	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R661	1-216-103-00	METAL CHIP 180K 5% 1/10W	
R662	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R663	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R664	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R665	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R667	1-216-295-00	METAL CHIP 0 5% 1/10W	
<u>VARIABLE RESISTOR</u>			
RV601	1-230-874-11	RES, ADJ, METAL GLAZE 100K	
RV602	1-230-874-11	RES, ADJ, METAL GLAZE 100K	

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

FC-10P**CG-1P****TI-8P**

Ref.No Part No. Description Remark

SWITCH

S601 1-554-371-31 SWITCH, TACT (NEXT)
S602 1-554-371-31 SWITCH, TACT (-)
S603 1-554-371-31 SWITCH, TACT (+)
S604 1-554-371-31 SWITCH, TACT (TITLE CLEAR)
S605 1-554-371-31 SWITCH, TACT (INTERVAL REC)

CRYSTAL

X601 1-527-997-00 VIBRATOR, CRYSTAL

*A-7060-628-A CG-1P BOARD, COMPLETE

3-573-141-00 WASHER (B), THRUST
3-712-106-01 REINFORCEMENT (333)

CAPACITOR

C671 1-124-222-00 ELECT 22MF 20% 6.3V
C673 1-131-375-00 TANTALUM 4.7MF 10% 10V
C674 1-163-021-00 CERAMIC CHIP 0.01MF 10% 50V
C675 1-163-097-00 CERAMIC CHIP 15PF 5% 50V
C676 1-163-077-00 CERAMIC CHIP 0.1MF 50V

C677 1-163-021-00 CERAMIC CHIP 0.01MF 10% 50V
C678 1-163-109-00 CERAMIC CHIP 47PF 5% 50V
C679 1-163-109-00 CERAMIC CHIP 47PF 5% 50V

CONNECTOR

CN671 *1-564-008-61 PIN, CONNECTOR 9P
CN672 *1-564-006-51 PIN, CONNECTOR 7P

TRIMMER

CT671 1-141-331-11 CAP, VAR, TRIMMER (CHIP) 30PF

IC

IC671 8-759-106-63 IC UPD74HC02G
IC672 8-759-106-89 IC UPD74HC157G
IC673 8-759-204-96 IC TC74HC04F
IC675 8-759-107-89 IC UPD6105G-102
IC676 8-759-107-89 IC UPD6105G-102

IC677 8-759-106-96 IC UPD74HC174G
IC678 8-759-106-96 IC UPD74HC174G

COIL

L671 1-408-970-21 MICRO INDUCTOR 10UH
L672 1-407-165-XX MICRO INDUCTOR 47UH

TRANSISTOR

Q671 8-729-901-06 TRANSISTOR DTA144EK
Q672 8-729-100-66 TRANSISTOR 2SC1623

Ref.No Part No. Description Remark

RESISTOR

R671 1-216-097-00 METAL CHIP 100K 5% 1/10W
R672 1-216-097-00 METAL CHIP 100K 5% 1/10W
R673 1-216-295-00 METAL CHIP 0 5% 1/10W
R674 1-216-031-00 METAL CHIP 180 5% 1/10W
R675 1-216-054-00 METAL CHIP 1.6K 5% 1/10W

R676 1-216-073-00 METAL CHIP 10K 5% 1/10W
R677 1-216-062-00 METAL CHIP 3.6K 5% 1/10W
R678 1-216-055-00 METAL CHIP 1.8K 5% 1/10W
R679 1-216-051-00 METAL CHIP 1.2K 5% 1/10W
R680 1-216-062-00 METAL CHIP 3.6K 5% 1/10W

R680 1-216-062-00 METAL CHIP 3.6K 5% 1/10W
R681 1-216-055-00 METAL CHIP 1.8K 5% 1/10W
R682 1-216-065-00 METAL CHIP 4.7K 5% 1/10W
R683 1-216-065-00 METAL CHIP 4.7K 5% 1/10W
R684 1-216-055-00 METAL CHIP 1.8K 5% 1/10W

R685 1-216-295-00 METAL CHIP 0 5% 1/10W
R686 1-216-049-00 METAL CHIP 1K 5% 1/10W
R687 1-216-057-00 METAL CHIP 2.2K 5% 1/10W
R688 1-216-051-00 METAL CHIP 1.2K 5% 1/10W
R689 1-216-073-00 METAL CHIP 10K 5% 1/10W

R690 1-216-073-00 METAL CHIP 10K 5% 1/10W
R697 A 1-211-451-00 CARBON 1K 5% 1/8W F
R698 1-216-049-00 METAL CHIP 1K 5% 1/10W
R699 1-216-295-00 METAL CHIP 0 5% 1/10W

VARIABLE RESISTOR

RV671 1-230-226-00 RES, VAR, CARBON 10K (IRIS)

SWITCH

S671 1-553-977-00 SWITCH, SLIDE (FOCUS MANU/AUTO)
S672 1-554-945-12 SWITCH, SLIDE (WHITE BLANCE)
S673 1-553-977-00 SWITCH, SLIDE (SENS HIGH/LOW)
S674 1-554-364-00 SWITCH, SLIDE (CAMERA POWER SW)

*1-620-154-21 TI-8P BOARD

DIODE

D691 8-719-918-66 DIODE GL-1HY102 (INTERVAL)
D692 8-719-918-67 DIODE GL-1EG102 (CAMERA)
D693 8-719-100-05 DIODE 1S2837
D694 8-719-100-05 DIODE 1S2837
D695 8-719-100-05 DIODE 1S2837

TRANSISTOR

Q691 8-729-903-29 TRANSISTOR DTA144TK

RESISTOR

R691 1-216-049-00 METAL CHIP 1K 5% 1/10W

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

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

TI-8P
VF-7P

Ref.No	Part No.	Description	Remark
R692	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R693	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R694	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R695	1-216-295-00	METAL CHIP 0 5% 1/10W	
R696	1-216-295-00	METAL CHIP 0 5% 1/10W	

SWITCH

S691	1-554-371-31	SWITCH, TACT (FOCUS PUSH AUTO)	
S692	1-554-371-31	SWITCH, TACT (MAIN)	
S693	1-554-371-31	SWITCH, TACT (SUB)	
S694	1-554-371-31	SWITCH, TACT (DATE)	
S695	1-554-371-31	SWITCH, TACT (TIME)	
S696	1-554-371-31	SWITCH, TACT (FADER/WIPER)	
S697	1-554-371-31	SWITCH, TACT (REC/REVIEW)	

*A-7060-631-A VF-7P BOARD, COMPLETE (AEP, Australian, E MODEL)

*A-7060-748-A VF-7P BOARD, COMPLETE (UK MODEL)

1-526-926-11 SOCKET ASSY, CRT
*3-662-075-00 COVER, CONTROL
*3-712-665-01 HOLDER, LED

CAPACITOR

C701	1-123-618-00	ELECT 22MF 20% 6.3V	
C702	1-163-081-00	CERAMIC CHIP 0.22MF 25V	
C703	1-131-346-00	TANTALUM 0.68MF 10% 35V	
C704	1-124-224-00	ELECT 47MF 20% 6.3V	
C705	1-163-139-00	CERAMIC CHIP 820PF 10% 50V	
C706	1-163-081-00	CERAMIC CHIP 0.22MF 25V	
C707	1-163-033-00	CERAMIC CHIP 0.022MF 10% 25V	
C708	1-123-617-00	ELECT 10MF 20% 16V	
C709	1-163-209-00	CERAMIC CHIP 0.0015MF 5% 50V	
C710	1-163-115-00	CERAMIC CHIP 82PF 5% 50V	
C711	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C712	1-163-125-00	CERAMIC CHIP 220PF 10% 50V	
C713	1-124-442-00	ELECT 330MF 20% 6.3V	
C714	1-124-604-00	ELECT 330MF 20% 10V	
C715	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C716	1-163-023-00	CERAMIC CHIP 0.015MF 10% 50V	
C717	1-123-611-00	ELECT 1MF 20% 50V	
C718	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C719	1-163-013-00	CERAMIC CHIP 0.0022MF 10% 50V	
C720	1-163-189-00	CERAMIC CHIP 220PF 10% 50V	
C721	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C722	1-163-019-00	CERAMIC CHIP 0.0068MF 10% 50V	
C723	1-123-613-00	ELECT 3.3MF 20% 50V	
C724	1-162-146-00	CERAMIC 0.001MF 1KV	
C725	1-102-038-00	CERAMIC 0.001MF 99% 500V	
C726	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C727	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	

Ref.No	Part No.	Description	Remark
<u>CONNECTOR</u>			
CN701	*1-564-004-00	PIN, CONNECTOR 5P	
CN702	*1-564-001-11	PIN, CONNECTOR 2P	
CN703	*1-564-001-11	PIN, CONNECTOR 2P	

DIODE

D701	8-719-400-20	DIODE MA152WA	
D702	8-719-801-48	DIODE 1SS193	
D703	8-719-801-45	DIODE 1SS187	
D704	8-719-800-24	DIODE TLR147 (TALLY)	

IC

IC701	8-759-403-49	IC AN2510S	

COIL

L701	1-407-167-XX	MICRO INDUCTOR 68UH	
L702	1-459-683-11	COIL, FERRITE (HLC)	
L703	1-407-161-XX	MICRO INDUCTOR 22UH	

IC LINK

PS701A	1-532-833-21	LINK, IC 250mA (UK MODEL)	

TRANSISTOR

Q701	8-729-100-66	TRANSISTOR 2SC1623	
Q702	8-729-162-44	TRANSISTOR 2SB624-BV4	
Q703	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q704	8-729-106-64	TRANSISTOR 2SD1615	

RESISTOR

R701	1-216-306-11	METAL CHIP 3.9 5% 1/10W	
R702	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R703	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R704	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R705	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R706	1-216-017-00	METAL CHIP 47 5% 1/10W	
R707	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R708	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R709	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R710	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R711	1-216-228-00	METAL CHIP 18K 5% 1/8W	
R712	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R713	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R714	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R715	1-216-041-00	METAL CHIP 470 5% 1/10W	
R716	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R717	1-216-222-00	METAL CHIP 10K 5% 1/8W	
R718	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R720	1-216-131-11	METAL CHIP 2.7M 5% 1/10W	
R721	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	
R722	1-216-119-00	METAL CHIP 820K 5% 1/10W	
R723	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	

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

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

VF-7P**EM-1P****SS-64P**

Ref.No	Part No.	Description	Remark
R726	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R740	1-216-296-00	METAL CHIP 0 5% 1/8W	
R741	1-216-296-00	METAL CHIP 0 5% 1/8W	
R742	1-216-295-00	METAL CHIP 0 5% 1/10W	
R743	1-216-296-00	METAL CHIP 0 5% 1/8W	
		(AEP, Australian, E MODEL)	

R744	1-216-296-00	METAL CHIP 0 5% 1/8W	
R745	1-216-296-00	METAL CHIP 0 5% 1/8W	
R746	1-216-295-00	METAL CHIP 0 5% 1/10W	
R747	1-216-295-00	METAL CHIP 0 5% 1/10W	
R748	1-216-295-00	METAL CHIP 0 5% 1/10W	

VARIABLE RESISTOR

RV701	1-226-925-00	RES, ADJ, SOLID 220	
RV702	1-226-708-00	RES, ADJ, SOLID 2.2K	
RV703	1-226-711-00	RES, ADJ, SOLID 22K	
RV704	1-230-041-00	RES, ADJ, METAL GLAZE 2.2M	
RV705	1-230-041-00	RES, ADJ, METAL GLAZE 2.2M	

TRANSFORMER

T701 **A** 1-439-394-11 TRANSFORMER ASSY, FLYBACK

*A-7060-632-A EM-1P BOARD, COMPLETE

CAPACITOR

C401	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C402	1-163-074-00	CERAMIC CHIP 0.033MF	10%	25V
C403	1-163-074-00	CERAMIC CHIP 0.033MF	10%	25V
C405	1-123-661-00	ELECT 100MF	20%	6.3V
C406	1-123-647-00	ELECT 47MF	20%	6.3V
C407	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C408	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C409	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C410	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C411	1-163-137-00	CERAMIC CHIP 680PF	5%	50V
C412	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C901	1-124-287-00	ELECT 10MF	20%	10V
C902	1-124-287-00	ELECT 10MF	20%	10V
C903	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C904	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C905	1-163-121-00	CERAMIC CHIP 150PF	5%	50V

CONNECTOR

CN401	*1-564-003-00	PIN, CONNECTOR 4P	
CN402	1-564-002-00	PIN, CONNECTOR 3P	
CN901	*1-564-001-11	PIN, CONNECTOR 2P	
CN902	*1-564-001-11	PIN, CONNECTOR 2P	
CN903	*1-564-001-11	PIN, CONNECTOR 2P	
CN904	*1-564-004-00	PIN, CONNECTOR 5P	
CN905	*1-564-002-00	PIN, CONNECTOR 3P	
CN906	*1-564-001-11	PIN, CONNECTOR 2P	

Ref.No	Part No.	Description	Remark
		DIODE	
D401	8-719-106-53	DIODE RD10M-B2	
D403	8-719-801-48	DIODE 1SS193	

JACK

J401	1-563-454-11	JACK, MINIATURE (DC OUT)	
J402	1-507-921-00	JACK (EXT MIC)	

COIL

L901	1-408-958-21	MICRO INDUCTOR 1UH	
L902	1-408-958-21	MICRO INDUCTOR 1UH	

TRANSISTOR

Q401	8-729-100-66	TRANSISTOR 2SC1623	
Q402	8-729-100-66	TRANSISTOR 2SC1623	
Q901	8-729-901-01	TRANSISTOR DTC144EK	
Q902	8-729-100-66	TRANSISTOR 2SC1623	
Q903	8-729-100-66	TRANSISTOR 2SC1623	
Q905	8-729-901-01	TRANSISTOR DTC144EK	
Q906	8-729-901-01	TRANSISTOR DTC144EK	

RESISTOR

R401	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R402	1-216-095-00	METAL CHIP 82K 5% 1/10W	
R403	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R404	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R405	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R406	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R407	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R408	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R409	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R410	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R901	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R902	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R903	1-216-087-00	METAL CHIP 39K 5% 1/10W	
R904	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R906	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R907	1-216-087-00	METAL CHIP 39K 5% 1/10W	
R908	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R909	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R910	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R911	1-216-018-00	METAL CHIP 51 5% 1/10W	

*A-7060-616-A SS-64P BOARD, COMPLETE
(AEP, AUSTRALIAN, E MODEL)

*A-7060-702-A SS-64P BOARD, COMPLETE (UK MODEL)

2-279-715-21 RIVET, NYLON
3-712-398-01 REINFORCEMENT (31)

CAPACITOR

C301	1-163-077-00	CERAMIC CHIP 0.1MF	50V

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

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

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C302	1-163-103-00	CERAMIC CHIP 27PF	5% 50V	C533	1-124-233-00	ELECT 10MF	20% 10V
C303	1-163-103-00	CERAMIC CHIP 27PF	5% 50V	C536	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C304	1-124-234-00	ELECT 22MF	20% 16V	C537	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
C305	1-124-257-00	ELECT 2.2MF	20% 35V	C540	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C306	1-124-233-00	ELECT 10MF	20% 10V	C541	1-124-499-11	ELECT 1MF	20% 50V
C307	1-163-077-00	CERAMIC CHIP 0.1MF	50V	C543	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
C308	1-163-077-00	CERAMIC CHIP 0.1MF	50V	C544	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V
C309	1-135-099-00	TANTAL. CHIP 2.2MF	20% 6.3V	C545	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V
C311	1-163-077-00	CERAMIC CHIP 0.1MF	50V	C546	1-163-035-00	CERAMIC CHIP 0.047MF	10% 25V
C312	1-163-103-00	CERAMIC CHIP 27PF	5% 50V	C547	1-163-139-00	CERAMIC CHIP 820PF	5% 50V
C313	1-163-103-00	CERAMIC CHIP 27PF	5% 50V	C548	1-163-141-00	CERAMIC CHIP 0.001MF	10% 50V
C314	1-163-077-00	CERAMIC CHIP 0.1MF	50V	C549	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
C315	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	C550	1-163-035-00	CERAMIC CHIP 0.047MF	10% 25V
C316	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	C553	1-124-222-00	ELECT 22MF	20% 6.3V
C318	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V	C554	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
C321	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V	C555	1-124-233-00	ELECT 10MF	20% 6.3V
C322	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V	C556	1-163-035-00	CERAMIC CHIP 0.047MF	10% 25V
C323	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C557	1-163-141-00	CERAMIC CHIP 0.001MF	10% 50V
C325	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C558	1-124-258-00	ELECT 3.3MF	20% 25V
C327	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C559	1-163-129-00	CERAMIC CHIP 330PF	5% 50V
C329	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C560	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C330	1-163-035-00	CERAMIC CHIP 0.047MF	10% 25V	C562	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C331	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V	C563	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
C332	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	C564	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C333	1-161-057-00	CERAMIC 0.033MF	10% 25V	C651	1-163-013-00	CERAMIC CHIP 0.0022MF	10% 50V
C334	1-135-099-00	TANTAL. CHIP 2.2MF	20% 6.3V	C652	1-163-023-00	CERAMIC CHIP 0.015MF	10% 50V
C335	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V	C653	1-135-091-00	TANTAL. CHIP 1MF	20% 16V
C336	1-161-025-00	CERAMIC 0.1MF	10% 25V	C654	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V
C337	1-161-055-00	CERAMIC 0.022MF	10% 25V	C655	1-163-035-00	CERAMIC CHIP 0.047MF	10% 25V
C501	1-124-222-00	ELECT 22MF	20% 6.3V	C656	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V
C502	1-124-257-00	ELECT 2.2MF	20% 35V	C657	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C503	1-163-021-00	CERAMIC CHIP 0.01MF	50V	C658	1-124-233-00	ELECT 10MF	20% 6.3V
C504	1-163-021-00	CERAMIC CHIP 0.01MF	50V	C659	1-135-091-00	TANTAL. CHIP 1MF	20% 16V
C505	1-124-233-00	ELECT 10MF	20% 6.3V	C660	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V
C506	1-163-020-00	CERAMIC CHIP 0.0082MF	10% 50V	C661	1-163-141-00	CERAMIC CHIP 0.001MF	10% 50V
C507	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V	C662	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C508	1-163-035-00	CERAMIC CHIP 0.047MF	10% 25V	C663	1-135-091-00	TANTAL. CHIP 1MF	20% 16V
C509	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V	C664	1-163-141-00	CERAMIC CHIP 0.001MF	10% 50V
C510	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	C665	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C511	1-124-499-11	ELECT 1MF	20% 50V	C666	1-163-034-00	CERAMIC CHIP 0.033MF	10% 25V
C513	1-124-233-00	ELECT 10MF	20% 6.3V	C667	1-163-035-00	CERAMIC CHIP 0.047MF	10% 25V
C514	1-126-099-11	ELECT 2.2MF	20% 35V	C669	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C516	1-126-100-11	ELECT 10MF	20% 6.3V	C670	1-163-035-00	CERAMIC CHIP 0.047MF	10% 25V
C518	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	C671	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
C519	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	CONNECTOR			
C520	1-163-692-11	CERAMIC CHIP 0.0015MF	5% 50V	CN301	*1-564-029-00	PIN, CONNECTOR 4P	
C521	1-163-692-11	CERAMIC CHIP 0.0015MF	5% 50V	CN302	*1-564-013-00	PIN, CONNECTOR 3P	
C524	1-163-035-00	CERAMIC CHIP 0.047MF	10% 25V	CN303	*1-564-013-00	PIN, CONNECTOR 3P	
C525	1-126-099-11	ELECT 2.2MF	20% 35V	CN304	*1-564-012-00	PIN, CONNECTOR 2P	
C527	1-124-499-11	ELECT 1MF	20% 50V	CN305	*1-564-014-00	PIN, CONNECTOR 4P	
C529	1-126-099-11	ELECT 2.2MF	20% 35V	CN306	*1-564-012-00	PIN, CONNECTOR 2P	
C531	1-163-023-00	CERAMIC CHIP 0.015MF	10% 50V	CN307	*1-562-887-11	CONNECTOR, F.P.C 20P	
C532	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V				

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

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Ref.No	Part No.	Description
CN308	*1-564-020-00	PIN, CONNECTOR 10P
CN309	1-563-492-11	CONNECTOR, F.P.C 19P
CN310	*1-564-014-00	PIN, CONNECTOR 4P
CN311	*1-564-003-00	PIN, CONNECTOR 4P
CN313	*1-564-016-00	PIN, CONNECTOR 6P
CN314	*1-564-012-00	PIN, CONNECTOR 2P
CN501	1-563-492-11	CONNECTOR, F.P.C 19P

DIODE

D301	8-719-100-03	DIODE 1S2835
D303	8-719-914-11	DIODE HZ4ALL
D304	8-719-914-11	DIODE HZ4ALL
D305	8-719-100-03	DIODE 1S2835
D501	8-719-101-23	DIODE 1SS123
D505	8-719-801-41	DIODE 1SS196
D651	8-719-801-41	DIODE 1SS196

FILTER

FL501	1-235-612-21	BPF (16KHZ)
FL502	1-235-611-21	BPF (46KHZ)

IC

IC301	8-752-801-11	IC CXP5048H-031Q
IC302	8-752-801-12	IC CXP5048H-040Q
IC303	8-759-925-43	IC MSM6411R-26GS-VK
IC304	8-759-100-93	IC UPC393G2
IC305	8-759-922-54	IC S-81250AG
IC306	8-759-913-41	IC S-8054ALB
IC307	8-759-100-92	IC UPC4250G2
IC501	8-759-107-68	IC CX20115A
IC502	8-752-003-50	IC CX20035
IC504	8-759-701-36	IC NJM3403AM
IC505	8-759-925-66	IC BA6303F
IC506	8-759-201-01	IC TC4066BF
IC507	8-759-201-00	IC TC4052BF
IC508	8-759-201-80	IC TC4526BF
IC509	8-759-928-56	IC CXA1042M
IC651	8-759-100-93	IC UPC393G2

COIL

L301	1-408-987-21	MICRO INDUCTOR 330UH
L302	1-408-795-21	INDUCTOR CHIP 330UH
L303	1-408-795-21	INDUCTOR CHIP 330UH
L304	1-410-389-11	INDUCTOR CHIP 47UH
L501	1-407-165-XX	MICRO INDUCTOR 47UH
L502	1-408-987-21	MICRO INDUCTOR 330UH
L503	1-408-948-00	MICRO INDUCTOR 220UH

IC LINK

PS301A 1-532-605-11 LINK, IC

Remark	Ref.No	Part No.	Description	Remark
			TRANSISTOR	
	Q301	8-729-900-98	TRANSISTOR DTC143TK	
	Q302	8-729-900-98	TRANSISTOR DTC143TK	
	Q303	8-729-900-98	TRANSISTOR DTC143TK	
	Q304	8-729-901-06	TRANSISTOR DTA144EK	
	Q305	8-729-901-06	TRANSISTOR DTA144EK	
	Q306	8-729-901-04	TRANSISTOR DTA114EK	
	Q307	8-729-100-67	TRANSISTOR 2SC1623-L7	
	Q308	8-729-901-01	TRANSISTOR DTC144EK	
	Q309	8-729-100-67	TRANSISTOR 2SC1623-L7	
	Q310	8-729-901-01	TRANSISTOR DTC144EK	
	Q311	8-729-900-98	TRANSISTOR DTC143TK	
	Q312	8-729-901-06	TRANSISTOR DTA144EK	
	Q313	8-729-900-98	TRANSISTOR DTC143TK	
	Q314	8-729-901-06	TRANSISTOR DTA144EK	
	Q315	8-729-100-67	TRANSISTOR 2SC1623-L7	
	Q316	8-729-100-76	TRANSISTOR 2SA812	
	Q317	8-729-105-29	TRANSISTOR 2SA1385	
	Q318	8-729-901-06	TRANSISTOR DTA144EK	
	Q319	8-729-901-06	TRANSISTOR DTA144EK	
	Q320	8-729-901-01	TRANSISTOR DTC144EK	
	Q321	8-729-901-01	TRANSISTOR DTC144EK	
	Q322	8-729-100-67	TRANSISTOR 2SC1623-L7	
	Q323	8-729-100-76	TRANSISTOR 2SA812	
	Q324	8-729-901-06	TRANSISTOR DTA144EK	
	Q325	8-729-901-01	TRANSISTOR DTC144EK	
	Q326	8-729-901-01	TRANSISTOR DTC144EK	
	Q329	8-729-901-01	TRANSISTOR DTC144EK	
	Q331	8-729-106-40	TRANSISTOR 2SB1114-ZK	
	Q332	8-729-901-06	TRANSISTOR DTA144EK	
	Q333	8-729-901-01	TRANSISTOR DTC144EK	
	Q334	8-729-100-76	TRANSISTOR 2SA812	
	Q335	8-729-100-66	TRANSISTOR 2SC1623	
	Q336	8-729-900-89	TRANSISTOR DTA144ES	
	Q501	8-729-100-76	TRANSISTOR 2SA812	
	Q502	8-729-903-29	TRANSISTOR DTA144TK	
	Q504	8-729-100-76	TRANSISTOR 2SA812	
	Q505	8-729-100-76	TRANSISTOR 2SA812	
	Q506	8-729-100-66	TRANSISTOR 2SC1623	
	Q507	8-729-100-66	TRANSISTOR 2SC1623	
	Q508	8-729-901-06	TRANSISTOR DTA144EK	
	Q509	8-729-100-76	TRANSISTOR 2SA812	
	Q510	8-729-901-06	TRANSISTOR DTA144EK	
	Q511	8-729-901-01	TRANSISTOR DTC144EK	
	Q512	8-729-901-01	TRANSISTOR DTC144EK	
	Q513	8-729-901-01	TRANSISTOR DTC144EK	
	Q514	8-729-100-66	TRANSISTOR 2SC1623	
	Q515	8-729-903-29	TRANSISTOR DTA144TK	
	Q516	8-729-100-67	TRANSISTOR 2SC1623-L7	
	Q517	8-729-100-76	TRANSISTOR 2SA812	
	Q518	8-729-100-67	TRANSISTOR 2SC1623-L7	

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

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

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
Q519	8-729-100-76	TRANSISTOR 2SA812		R337	1-216-047-00	METAL CHIP 820 5%	1/10W
Q520	8-729-100-67	TRANSISTOR 2SC1623-L7		R338	1-216-099-00	METAL CHIP 120K 5%	1/10W
Q521	8-729-199-92	TRANSISTOR 2SD999		R339	1-216-073-00	METAL CHIP 10K 5%	1/10W
Q522	8-729-199-92	TRANSISTOR 2SD999		R340	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
Q523	8-729-901-06	TRANSISTOR DTA144EK		R341	1-216-089-00	METAL CHIP 47K 5%	1/10W
Q524	8-729-901-01	TRANSISTOR DTC144EK		R342	1-216-083-00	METAL CHIP 27K 5%	1/10W
Q525	8-729-901-06	TRANSISTOR DTA144EK		R343	1-216-103-00	METAL CHIP 180K 5%	1/10W
Q526	8-729-100-67	TRANSISTOR 2SC1623-L7		R344	1-216-079-00	METAL CHIP 18K 5%	1/10W
Q651	8-729-100-67	TRANSISTOR 2SC1623-L7		R345	1-216-083-00	METAL CHIP 27K 5%	1/10W
Q652	8-729-100-76	TRANSISTOR 2SA812		R346	1-216-101-00	METAL CHIP 150K 5%	1/10W
Q653	8-729-100-67	TRANSISTOR 2SC1623-L7		R347	1-216-129-00	METAL CHIP 2.2M 5%	1/10W
Q654	8-729-100-76	TRANSISTOR 2SA812		R348	1-216-121-00	METAL CHIP 1M 5%	1/10W
Q655	8-729-100-67	TRANSISTOR 2SC1623-L7		R349	1-216-073-00	METAL CHIP 10K 5%	1/10W
Q656	8-729-100-76	TRANSISTOR 2SA812		R350	1-216-089-00	METAL CHIP 47K 5%	1/10W
Q657	8-729-901-06	TRANSISTOR DTA144EK		R351	1-216-081-00	METAL CHIP 22K 5%	1/10W
RESISTOR				R353	1-216-073-00	METAL CHIP 10K 5%	1/10W
R301	1-216-073-00	METAL CHIP 10K 5%	1/10W	R354	1-216-073-00	METAL CHIP 10K 5%	1/10W
R302	1-216-073-00	METAL CHIP 10K 5%	1/10W	R355	1-216-073-00	METAL CHIP 10K 5%	1/10W
R303	1-216-073-00	METAL CHIP 10K 5%	1/10W	R356	1-216-073-00	METAL CHIP 10K 5%	1/10W
R304	1-216-073-00	METAL CHIP 10K 5%	1/10W	R357	1-216-073-00	METAL CHIP 10K 5%	1/10W
R305	1-216-099-00	METAL CHIP 120K 5%	1/10W	R359	1-216-097-00	METAL CHIP 100K 5%	1/10W
R306	1-216-099-00	METAL CHIP 120K 5%	1/10W	R360	1-216-097-00	METAL CHIP 100K 5%	1/10W
R307	1-216-099-00	METAL CHIP 120K 5%	1/10W	R361	1-216-097-00	METAL CHIP 100K 5%	1/10W
R308	1-216-089-00	METAL CHIP 47K 5%	1/10W	R362	1-216-097-00	METAL CHIP 100K 5%	1/10W
R309	1-216-073-00	METAL CHIP 10K 5%	1/10W	R363	1-216-097-00	METAL CHIP 100K 5%	1/10W
R310	1-216-073-00	METAL CHIP 10K 5%	1/10W	R364	1-216-105-00	METAL CHIP 220K 5%	1/10W
R311	1-216-073-00	METAL CHIP 10K 5%	1/10W	R365	1-216-107-00	METAL CHIP 270K 5%	1/10W
R312	1-216-081-00	METAL CHIP 22K 5%	1/10W	R366	1-216-097-00	METAL CHIP 100K 5%	1/10W
R313	1-216-073-00	METAL CHIP 10K 5%	1/10W	R367	1-216-097-00	METAL CHIP 100K 5%	1/10W
R314	1-216-081-00	METAL CHIP 22K 5%	1/10W	R368	1-216-097-00	METAL CHIP 100K 5%	1/10W
R315	1-216-073-00	METAL CHIP 10K 5%	1/10W	R369	1-216-073-00	METAL CHIP 10K 5%	1/10W
R316	1-216-073-00	METAL CHIP 10K 5%	1/10W	R370	1-216-097-00	METAL CHIP 100K 5%	1/10W
R317	1-216-051-00	METAL CHIP 1.2K 5%	1/10W	R371	1-216-073-00	METAL CHIP 10K 5%	1/10W
R318	1-216-053-00	METAL CHIP 1.5K 5%	1/10W	R373	1-216-097-00	METAL CHIP 100K 5%	1/10W
R319	1-216-041-00	METAL CHIP 470 5%	1/10W	R375	1-216-097-00	METAL CHIP 100K 5%	1/10W
R320	1-216-097-00	METAL CHIP 100K 5%	1/10W	R376	1-216-097-00	METAL CHIP 100K 5%	1/10W
R321	1-216-097-00	METAL CHIP 100K 5%	1/10W	R377	1-216-049-00	METAL CHIP 1K 5%	1/10W
R322	1-216-045-00	METAL CHIP 680 5%	1/10W	R378	1-216-174-00	METAL CHIP 100 5%	1/8W
R323	1-216-194-00	METAL CHIP 680 5%	1/8W	R379	1-216-097-00	METAL CHIP 100K 5%	1/10W
R324	1-216-194-00	METAL CHIP 680 5%	1/8W	R381	1-216-073-00	METAL CHIP 10K 5%	1/10W
R325	1-216-194-00	METAL CHIP 680 5%	1/8W	R383	1-216-295-00	METAL CHIP 0 5%	1/10W
R326	1-216-073-00	METAL CHIP 10K 5%	1/10W	R385	1-216-295-00	METAL CHIP 0 5%	1/10W
R327	1-216-123-11	METAL CHIP 1.2M 5%	1/10W	R387	1-216-295-00	METAL CHIP 0 5%	1/10W
R328	1-216-077-00	METAL CHIP 15K 5%	1/10W	R389	1-216-295-00	METAL CHIP 0 5%	1/10W
R329	1-216-077-00	METAL CHIP 15K 5%	1/10W	R390	1-216-073-00	METAL CHIP 10K 5%	1/10W
R330	1-216-075-00	METAL CHIP 12K 5%	1/10W	R391	1-216-073-00	METAL CHIP 10K 5%	1/10W
R331	1-216-097-00	METAL CHIP 100K 5%	1/10W	R392	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R332	1-216-085-00	METAL CHIP 33K 5%	1/10W	R393	1-216-073-00	METAL CHIP 10K 5%	1/10W
R333	1-216-089-00	METAL CHIP 47K 5%	1/10W	R394	1-216-097-00	METAL CHIP 100K 5%	1/10W
R334	1-216-115-00	METAL CHIP 560K 5%	1/10W	R395	1-216-073-00	METAL CHIP 10K 5%	1/10W
R335	1-216-085-00	METAL CHIP 33K 5%	1/10W	R396	1-216-097-00	METAL CHIP 100K 5%	1/10W
R336	1-216-065-00	METAL CHIP 4.7K 5%	1/10W	R397	1-216-073-00	METAL CHIP 10K 5%	1/10W
				R398	1-216-295-00	METAL CHIP 0 5%	1/10W

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

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R399	1-216-085-00	METAL CHIP	33K 5% 1/10W	R555	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R501	1-216-113-00	METAL CHIP	470K 5% 1/10W	R556	1-216-059-00	METAL CHIP	2.7K 5% 1/10W
R502	1-216-075-00	METAL CHIP	12K 5% 1/10W	R557	1-216-071-00	METAL CHIP	8.2K 5% 1/10W
R503	1-216-089-00	METAL CHIP	47K 5% 1/10W	R558	1-216-091-00	METAL CHIP	56K 5% 1/10W
R504	1-216-099-00	METAL CHIP	120K 5% 1/10W	R559	1-216-089-00	METAL CHIP	47K 5% 1/10W
R505	1-216-061-00	METAL CHIP	3.3K 5% 1/10W	R560	1-216-073-00	METAL CHIP	10K 5% 1/10W
R506	1-216-109-00	METAL CHIP	330K 5% 1/10W	R561	1-216-081-00	METAL CHIP	22K 5% 1/10W
R507	1-216-075-00	METAL CHIP	12K 5% 1/10W	R562	1-216-295-00	METAL CHIP	0 5% 1/10W
R508	1-216-117-00	METAL CHIP	680K 5% 1/10W	R563	1-216-113-00	METAL CHIP	470K 5% 1/10W
R509	1-216-107-00	METAL CHIP	270K 5% 1/10W	R566	1-216-113-00	METAL CHIP	470K 5% 1/10W
R510	1-216-095-00	METAL CHIP	82K 5% 1/10W	R567	1-216-075-00	METAL CHIP	12K 5% 1/10W
R511	1-216-107-00	METAL CHIP	270K 5% 1/10W	R568	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R512	1-216-081-00	METAL CHIP	22K 5% 1/10W	R569	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R513	1-216-085-00	METAL CHIP	33K 5% 1/10W	R570	1-216-099-00	METAL CHIP	120K 5% 1/10W
R514	1-216-073-00	METAL CHIP	10K 5% 1/10W	R571	1-216-097-00	METAL CHIP	100K 5% 1/10W
R515	1-216-073-00	METAL CHIP	10K 5% 1/10W	R572	1-216-077-00	METAL CHIP	15K 5% 1/10W
R516	1-216-073-00	METAL CHIP	10K 5% 1/10W	R573	1-216-087-00	METAL CHIP	39K 5% 1/10W
R517	1-216-073-00	METAL CHIP	10K 5% 1/10W	R574	1-216-101-00	METAL CHIP	150K 5% 1/10W
R518	1-216-117-00	METAL CHIP	680K 5% 1/10W	R575	1-216-081-00	METAL CHIP	22K 5% 1/10W
R519	1-216-085-00	METAL CHIP	33K 5% 1/10W	R576	1-216-049-00	METAL CHIP	1K 5% 1/10W
R520	1-216-067-00	METAL CHIP	5.6K 5% 1/10W	R577	1-216-097-00	METAL CHIP	100K 5% 1/10W
R521	1-216-121-00	METAL CHIP	1M 5% 1/10W	R578	1-216-047-00	METAL CHIP	820 5% 1/10W
R522	1-216-067-00	METAL CHIP	5.6K 5% 1/10W	R579	1-216-117-00	METAL CHIP	680K 5% 1/10W
R523	1-216-061-00	METAL CHIP	3.3K 5% 1/10W	R580	1-216-073-00	METAL CHIP	10K 5% 1/10W
R524	1-216-091-00	METAL CHIP	56K 5% 1/10W	R581	1-216-091-00	METAL CHIP	56K 5% 1/10W
R525	1-216-113-00	METAL CHIP	470K 5% 1/10W	R582	1-216-079-00	METAL CHIP	18K 5% 1/10W
R526	1-216-115-00	METAL CHIP	560K 5% 1/10W	R583	1-216-115-00	METAL CHIP	560K 5% 1/10W
R527	1-216-087-00	METAL CHIP	39K 5% 1/10W	R584	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R528	1-216-182-00	METAL CHIP	220 5% 1/8W	R585	1-216-109-00	METAL CHIP	330K 5% 1/10W
R529	1-216-304-11	METAL CHIP	3.3 5% 1/10W	R586	1-216-073-00	METAL CHIP	10K 5% 1/10W
R530	1-216-065-00	METAL CHIP	4.7K 5% 1/10W	R587	1-216-049-00	METAL CHIP	1K 5% 1/10W
R531	1-216-085-00	METAL CHIP	33K 5% 1/10W	R588	1-216-089-00	METAL CHIP	47K 5% 1/10W
R532	1-216-093-00	METAL CHIP	68K 5% 1/10W	R589	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R533	1-216-097-00	METAL CHIP	100K 5% 1/10W	R590	1-216-049-00	METAL CHIP	1K 5% 1/10W
R534	1-216-097-00	METAL CHIP	100K 5% 1/10W	R591	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R535	1-216-073-00	METAL CHIP	10K 5% 1/10W	R593	1-216-097-00	METAL CHIP	100K 5% 1/10W
R536	1-216-081-00	METAL CHIP	22K 5% 1/10W	R594	1-216-081-00	METAL CHIP	22K 5% 1/10W
R537	1-216-089-00	METAL CHIP	47K 5% 1/10W	R599	1-216-295-00	METAL CHIP	0 5% 1/10W
R538	1-216-081-00	METAL CHIP	22K 5% 1/10W	R651	1-216-085-00	METAL CHIP	33K 5% 1/10W
R539	1-216-085-00	METAL CHIP	33K 5% 1/10W	R652	1-216-073-00	METAL CHIP	10K 5% 1/10W
R540	1-216-097-00	METAL CHIP	100K 5% 1/10W	R653	1-216-047-00	METAL CHIP	820 5% 1/10W
R541	1-216-097-00	METAL CHIP	100K 5% 1/10W	R654	1-216-015-00	METAL CHIP	39 5% 1/10W
R542	1-216-073-00	METAL CHIP	10K 5% 1/10W	R655	1-216-029-00	METAL CHIP	150 5% 1/10W
R543	1-216-093-00	METAL CHIP	68K 5% 1/10W	R656	1-216-089-00	METAL CHIP	47K 5% 1/10W
R544	1-216-093-00	METAL CHIP	68K 5% 1/10W	R657	1-216-097-00	METAL CHIP	100K 5% 1/10W
R545	1-216-083-00	METAL CHIP	27K 5% 1/10W	R658	1-216-083-00	METAL CHIP	27K 5% 1/10W
R546	1-216-073-00	METAL CHIP	10K 5% 1/10W	R659	1-216-055-00	METAL CHIP	1.8K 5% 1/10W
R547	1-216-073-00	METAL CHIP	10K 5% 1/10W	R660	1-216-083-00	METAL CHIP	27K 5% 1/10W
R548	1-216-073-00	METAL CHIP	10K 5% 1/10W	R661	1-216-097-00	METAL CHIP	100K 5% 1/10W
R549	1-216-073-00	METAL CHIP	10K 5% 1/10W	R662	1-216-079-00	METAL CHIP	18K 5% 1/10W
R550	1-216-071-00	METAL CHIP	8.2K 5% 1/10W	R663	1-216-073-00	METAL CHIP	10K 5% 1/10W
R552	1-216-051-00	METAL CHIP	1.2K 5% 1/10W	R664	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
R553	1-216-063-00	METAL CHIP	3.9K 5% 1/10W	R665	1-216-073-00	METAL CHIP	10K 5% 1/10W
R554	1-216-061-00	METAL CHIP	3.3K 5% 1/10W				

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

SS-64P**DR-36P**

Ref.No	Part No.	Description	Remark			Ref.No	Part No.	Description	Remark		
R666	1-216-097-00	METAL CHIP	100K	5%	1/10W	C508	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
R667	1-216-295-00	METAL CHIP	0	5%	1/10W	C509	1-126-099-11	ELECT	2.2MF	20%	35V
R668	1-216-087-00	METAL CHIP	39K	5%	1/10W	C511	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
R669	1-216-119-00	METAL CHIP	820K	5%	1/10W	C512	1-163-077-00	CERAMIC CHIP	0.1MF		50V
R670	1-216-101-00	METAL CHIP	150K	5%	1/10W	C513	1-124-577-11	ELECT	82MF	20%	10V
R671	1-216-045-00	METAL CHIP	680	5%	1/10W	C514	1-163-077-00	CERAMIC CHIP	0.1MF		50V
R672	1-216-027-00	METAL CHIP	120	5%	1/10W	C515	1-124-577-11	ELECT	82MF	20%	10V
R673	1-216-047-00	METAL CHIP	820	5%	1/10W	C516	1-163-077-00	CERAMIC CHIP	0.1MF		50V
R674	1-216-121-00	METAL CHIP	1M	5%	1/10W	C517	1-124-233-00	ELECT	10MF	20%	16V
R675	1-216-085-00	METAL CHIP	33K	5%	1/10W	C518	1-124-233-00	ELECT	10MF	20%	16V
R676	1-216-073-00	METAL CHIP	10K	5%	1/10W	C519	1-124-233-00	ELECT	10MF	20%	16V
R677	1-216-099-00	METAL CHIP	120K	5%	1/10W	C520	1-124-577-11	ELECT	82MF	20%	10V
R678	1-216-091-00	METAL CHIP	56K	5%	1/10W	C521	1-163-077-00	CERAMIC CHIP	0.1MF		50V
R679	1-216-109-00	METAL CHIP	330K	5%	1/10W	C522	1-124-596-11	ELECT	27MF	20%	16V
R680	1-216-073-00	METAL CHIP	10K	5%	1/10W	C523	1-124-596-11	ELECT	27MF	20%	16V
R681	1-216-101-00	METAL CHIP	150K	5%	1/10W	C524	1-124-596-11	ELECT	27MF	20%	16V
R682	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	C527	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V
R683	1-216-083-00	METAL CHIP	27K	5%	1/10W	C528	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V
R684	1-216-119-00	METAL CHIP	820K	5%	1/10W						
R685	1-216-077-00	METAL CHIP	15K	5%	1/10W						
R686	1-216-121-00	METAL CHIP	1M	5%	1/10W	CN312	*1-564-012-00	PIN, CONNECTOR	2P		
R687	1-216-113-00	METAL CHIP	470K	5%	1/10W	CN504	*1-564-014-00	PIN, CONNECTOR	4P		
R688	1-216-067-00	METAL CHIP	5.6K	5%	1/10W						
R689	1-216-083-00	METAL CHIP	27K	5%	1/10W						
R691	1-216-119-00	METAL CHIP	820K	5%	1/10W						
R695	1-247-889-00	CARBON	270K	5%	1/6W						
R696	1-216-073-00	METAL CHIP	10K	5%	1/10W						
R697	1-249-429-11	CARBON	10K	5%	1/6W						

*A-7060-494-A DR-36P BOARD, COMPLETE *****											

DR-36P**TS-55P****LD-1****MS-4****LS-9****EP-8****ZS-2**

Ref.No	Part No.	Description	Remark
R506	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R507	1-216-025-00	METAL CHIP 100 5% 1/10W	
R508	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R509	1-216-041-00	METAL CHIP 470 5% 1/10W	
R510	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R511	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R512	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R513	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R514	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R515	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R516	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R517	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R518	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R519	1-216-025-00	METAL CHIP 100 5% 1/10W	
R520	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R521	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R522	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R523	1-214-972-00	METAL 0.22 5% 1/4W	
R524	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R525	1-216-041-00	METAL CHIP 470 5% 1/10W	
R526	1-216-041-00	METAL CHIP 470 5% 1/10W	
R527	1-216-304-11	METAL CHIP 3.3 5% 1/10W	
R528	1-216-304-11	METAL CHIP 3.3 5% 1/10W	
R530	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R534	1-216-295-00	METAL CHIP 0 5% 1/10W	

*A-7060-617-A TS-55P BOARD, COMPLETE
*****CONNECTORCN506 *1-562-887-11 CONNECTOR, F.P.C 20P
CN507 *1-564-018-11 PIN, CONNECTOR 8PTRANSISTOR

0501 8-729-700-10 NJL7141E-S

RESISTORR501 1-216-081-00 METAL CHIP 22K 5% 1/10W
R502 1-216-079-00 METAL CHIP 18K 5% 1/10W
R505 1-216-081-00 METAL CHIP 22K 5% 1/10W
R506 1-216-079-00 METAL CHIP 18K 5% 1/10W
R507 1-216-081-00 METAL CHIP 22K 5% 1/10WR508 1-216-079-00 METAL CHIP 18K 5% 1/10W
R510 1-216-295-00 METAL CHIP 0 5% 1/10W
R512 1-216-295-00 METAL CHIP 0 5% 1/10WVARIABLE RESISTORRV501 1-230-528-11 RES, ADJ, METAL GLAZE 220K
RV502 1-230-524-11 RES, ADJ, METAL GLAZE 22K
RV503 1-230-524-11 RES, ADJ, METAL GLAZE 22K
RV504 1-230-524-11 RES, ADJ, METAL GLAZE 22K
RV506 1-230-526-11 RES, ADJ, METAL GLAZE 47K

Ref.No	Part No.	Description	Remark

RV507 1-230-528-11 RES, ADJ, METAL GLAZE 220K
RV508 1-230-529-11 RES, ADJ, METAL GLAZE 470K

*A-7070-024-A LD-1 BOARD, COMPLETE
*****DIODE

D901 8-719-928-54 DIODE GL-450S

MS-4 BOARD

CAPACITOR

C901 1-163-038-00 CERAMIC CHIP 0.1MF 25V

CONNECTOR

CN905 1-564-671-31 PIN, CONNECTOR (HOOK TYPE)

LS-9 BOARD

CONNECTOR

CN904 1-564-671-11 PIN, CONNECTOR (HOOK TYPE)

*1-620-158-11 EP-8 BOARD
*****DIODE

D981 8-719-911-19 DIODE 1SS119

JACK

J981 1-507-921-00 JACK (EARPHONE)

COILL981 1-408-958-21 MICRO INDUCTOR 1UH
L982 1-408-958-21 MICRO INDUCTOR 1UH

*1-620-160-11 ZS-2 BOARD
*****CONNECTORCN951 *1-564-002-00 PIN, CONNECTOR 3P
CN952 *1-564-003-00 PIN, CONNECTOR 4P
CN953 *1-564-003-00 PIN, CONNECTOR 4P
CN954 *1-564-002-00 PIN, CONNECTOR 3P

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

GS-2**RJ-2P****AS-13P****LI-1**

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
*1-620-279-11	GS-2 BOARD	*****		ACCESSORIES AND PACKING MATERIALS			

				3-696-079-01	BAG, PROTECTION		
				3-712-595-21	BELT, SHOULDER		
				*3-712-596-01	CUSHION (UPPER)		
				*3-712-597-01	CUSHION (LOWER)		
				3-714-016-01	PAT, SHOULDER		
				*3-764-461-01	INSTRUCTION (AEP MODEL)		
				3-765-608-11	MANUAL, INSTRUCTION (ENGLISH)		
				3-765-608-41	MANUAL, INSTRUCTION		
					(FRENCH, GERMAN, DUTCH) (AEP, E MODEL)		
				3-765-608-51	MANUAL, INSTRUCTION		
					(SPANISH, SWEDISH, ITALIAN)		
					(AEP, E MODEL)		
				3-765-608-61	MANUAL, INSTRUCTION (ARABIC) (E MODEL)		

				MISCELLANEOUS			

				A-7090-029-A	M-SW ASSY		
				X-3712-403-1	L-SW ASSY		
				1-535-535-11	TERMINAL, SHAFT GROUND		
				1-547-213-11	LENS, ZOOM (VCL-1206YG)		
				1-570-785-12	SWITCH, PUSH (ZOOM)		
				1-616-921-11	PC BOARD, FP-19 FLEXIBLE		
				1-807-744-11	DEW SENSOR		
				8-750-010-21	IU021-K-AA (CCD IMAGER BLOCK)		
				8-814-225-90	MICROPHONE C-2012		
				DR901 1-464-704-11	CONVERTER UNIT, DC-DC(S)		
				L901 A.1-451-296-11	DEFLECTION YOKE (BLACK & WHITE) 640UH+5%		
				M901 A-7040-031-A	MOTOR ASSY, L (LOADING)		
				M902 8-835-196-01	MOTOR, DC BHF-2802A (CAPSTAN)		
				M903 8-835-110-01	MOTOR, DC (DNR-5301A) (CONTROL)		
				PM901A.1-454-377-21	SOLENOID, PLUNGER (BRAKE)		
				S901 1-553-226-00	SWITCH, LEAF (CASSETTE LOCK)		
				S902 1-554-942-11	SWITCH, PUSH (RECOG)		
				V901 A.1-546-061-11	CATHODE-RAY TUBE, B/W		
Ref.No	Part No.	Description	Remark				
*1-620-155-21	RJ-2P BOARD	*****					

SECTION 7

CAMERA ADJUSTMENTS

During the adjustment, see the parts arrangement diagram relevant to the adjustment on page 280.

Pre-adjustment preparations (Camera block)

7-1. LIST OF SERVICING JIGS

- Oscilloscope
- AC adaptor (T/T unit)
- Adjusting screwdriver
- L wrench
- Colour monitor
- Vectorscope
- Regulated-DC power supply

Ref No.	Part name	Part No.	Use	Q'ty
J-1	Filter (W14)	J-6080-830-A	R gain, B gain adjustment	1
	Filter (C22)	J-6080-829-A	R gain, B gain adjustment	1
	Filter (Daylight)	J-6080-058-A	Outdoors white balance adjustment	1
J-2	ND filter 0.4	J-6080-806-A	IRIS setting adjustment, Max. gain adjustment, LLA adjustment	1
	ND filter 0.1	J-6080-807-A	IRIS setting adjustment, LLA adjustment	2
	ND filter 1.0	J-6080-808-A	LLA adjustment	1
	ND filter 0.9	J-6080-833-A	Max. gain adjustment, LLA adjustment	2
J-3	Pattern box PTB-100	J-6020-490-A		1
J-4	Pattern box color chart	J-6020-250-A		1
J-5	Extension cord (6P)	J-6080-861-A		1
	Extension cord (10P)	J-6080-862-A		1
	Extension cord (3P)	J-6080-863-A		1
	Extension cord (3P, shield wire is used)	J-6080-864-A		1

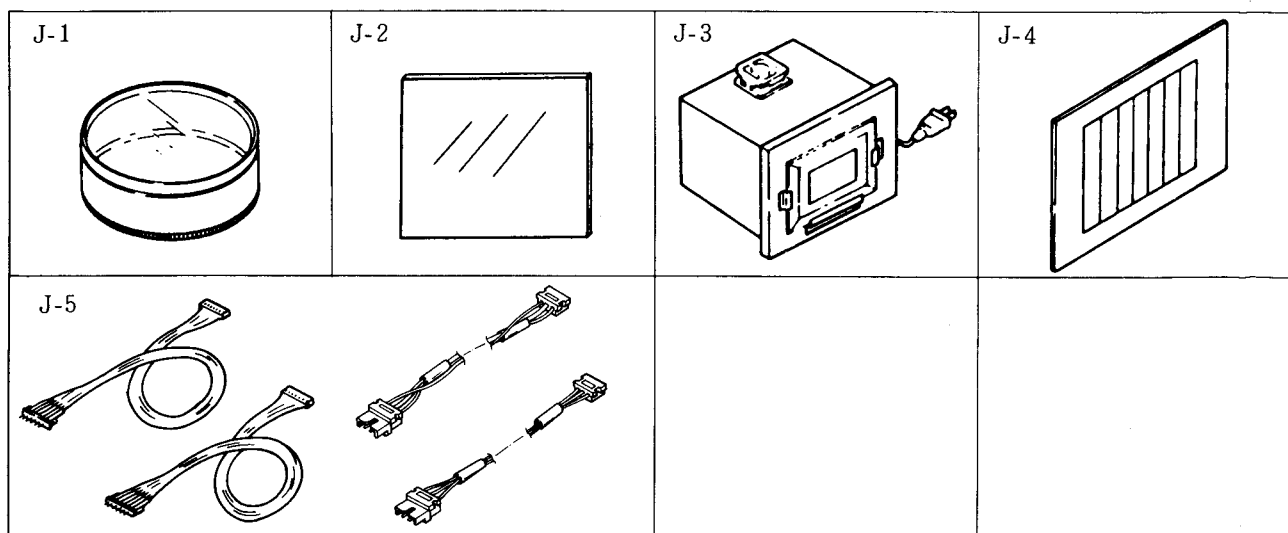


Fig. 7-1.

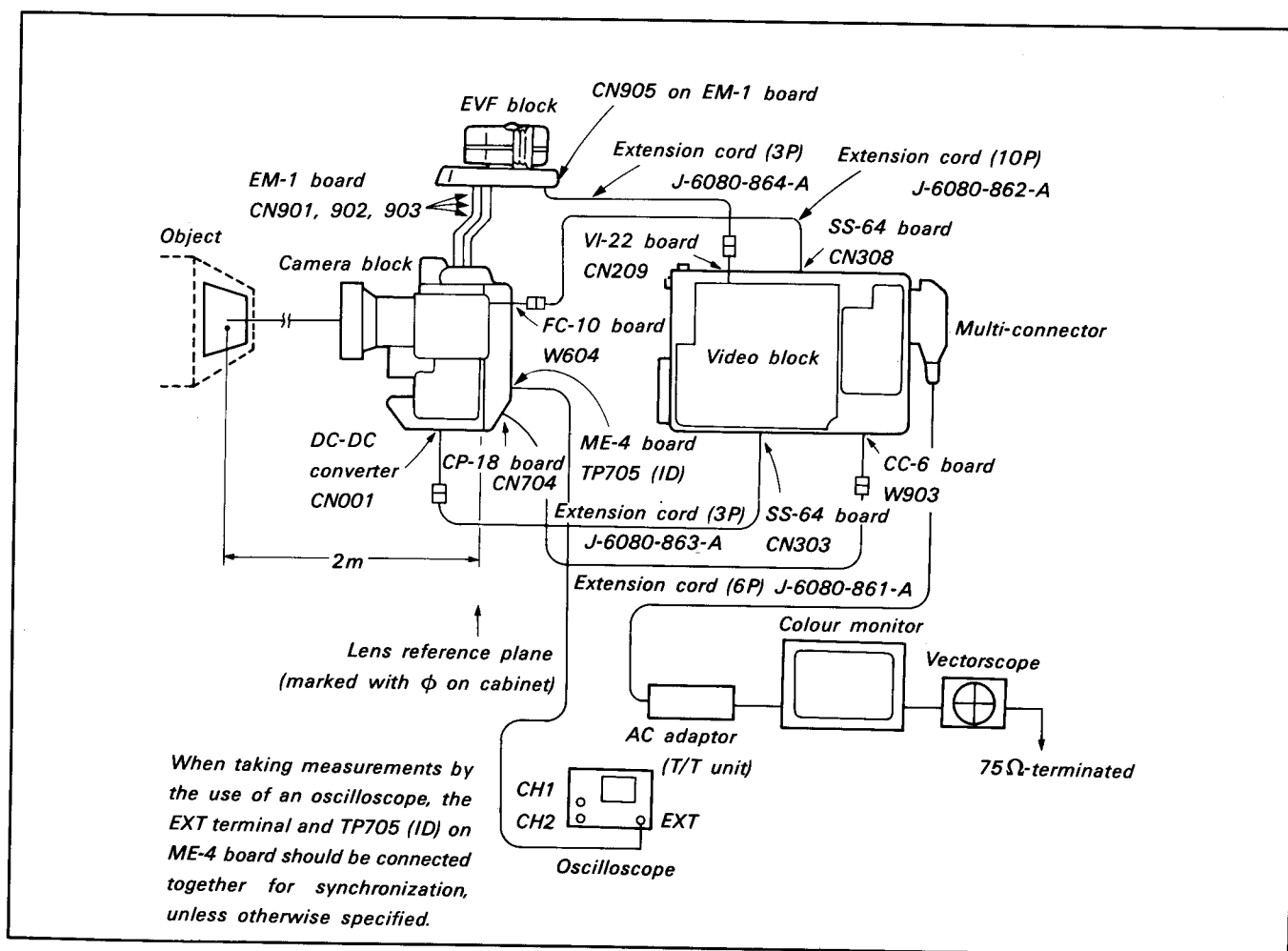


Fig. 7-2.

7-2. PREPARATIONS

Note: For details of the cabinet and individual boards removal procedure, refer to Section 2. DISASSEMBLY.

- 1) Remove cabinet (L) and cabinet (R).
Before removing cabinet (R), disconnect CN951 and CN952 on ZS-2 board of grip block, and CN601 on FC-10 board of camera block.
- 2) Separate camera block from video block.
 1. Disconnect CN403, CN404 and CN406 on AU-25 board of video block.
 2. Disconnect CN704 on CP-18 board of camera block, and connect extension cord (6P).
 3. Disconnect CN303 on SS-64 board of video block, and connect extension cord (3P).
 4. Disconnect CN308 on SS-64 board of video block, and connect extension cord (10P).
 5. Disconnect CN905 on EM-1 board of EVF (electronic view finder) block, and connect extension cord (3P, shield wire is used). (This connection is required only when adjusting EVF block.)
- 3) When EVF (electronic view finder) block is unnecessary, remove it off the camera block. The EVF block is required for the following adjustments or checks:
 1. Camera DC-DC converter voltage check
 2. LLA adjustment
 3. EVF block adjustment

Before removing EVF block off the camera block, first disconnect CN901, CN902 and CN903 on EM-1 board and chassis ground line of camera block.

7-3. CAUTION

1) Switch settings

Unless otherwise specified, employ the following switch and control settings in making adjustments:

1. FOCUS switch (S671 on CG-1 board)... AUTO
2. WHITE BALANCE switch (S672 on CG-1 board)... IN-DOOR (☀)
3. SENS switch (S673 on CG-1 board)... NORMAL
4. IRIS control (RV671 on CG-1 board)... Center click position (AUTO)

2) Adjusting order

As a rule, observe the order specified.

3) Objects

1. Colour bar chart (Standard picture frame)

When making adjustments by the use of a colour bar chart, first adjust image frame as shown in Fig 7-3 (standard picture frame).

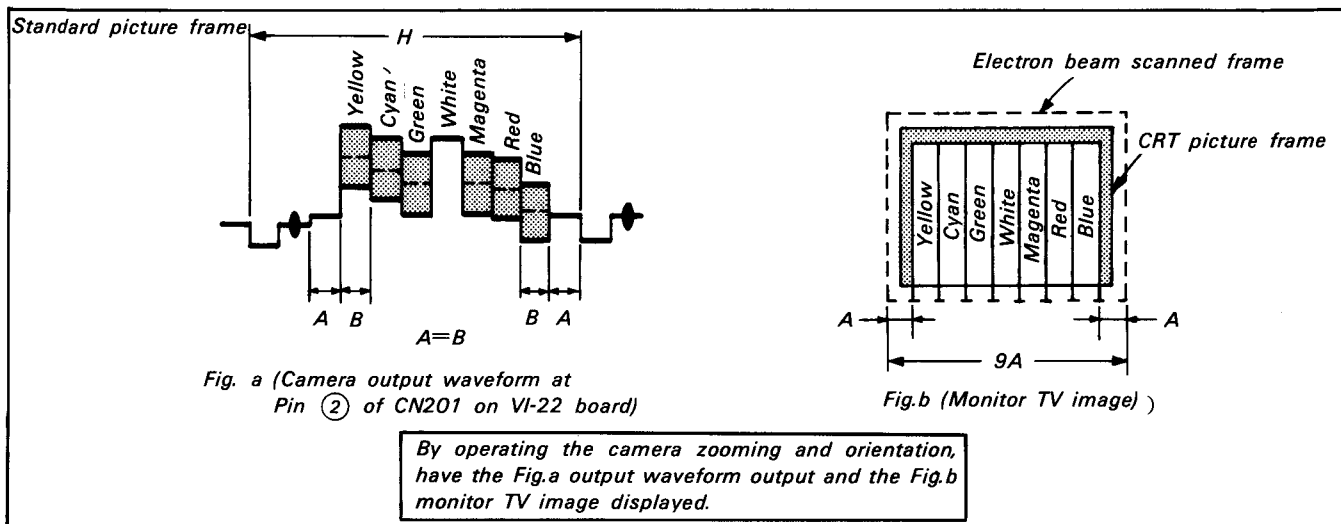


Fig. 7-3.

2. Totally white pattern

Remove color bar chart off pattern box, and set zoom lever at its extreme TELE position (72 mm).

3. High luminance pattern

Prepare a high luminance pattern as shown in Fig. 7-4 and adjust picture frame as shown in Fig. 7-5.

4. Siemens star and sign chart

Orient camera to have the pattern center coincide with the monitor screen center on a monitor TV screen.

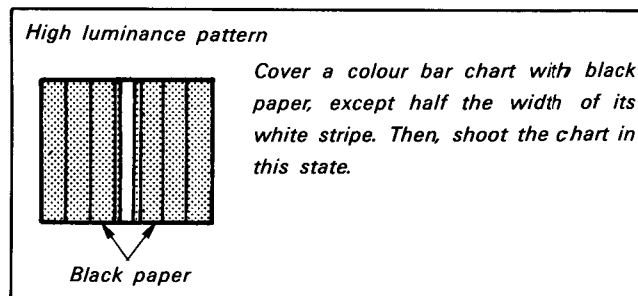


Fig. 7-4.

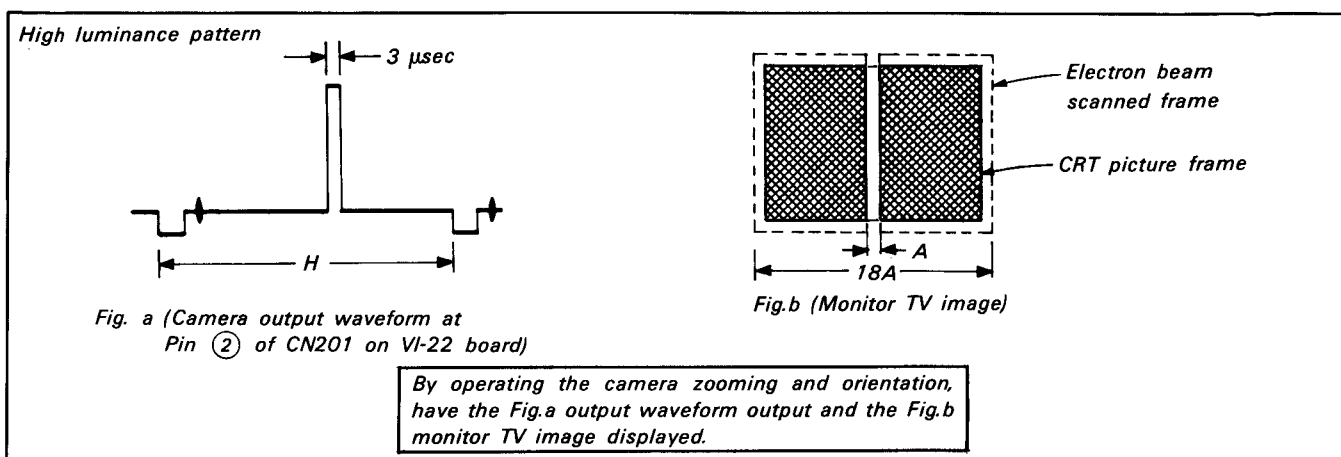


Fig. 7-5.

7-4. CAMERA SYSTEM ADJUSTMENT

7-4-1. Flange Back Adjustment

Object	Siemens star (At 2m directly in front of lens reference plane ("φ" marked))
Measurement Point	} Check with a monitor TV
Measuring Instrument	
Adjusting Element	Flange back adjusting pin
Tools	L wrench (1.5 mm) and flat blade (-) screwdriver

Adjusting method:

- 1) Set FOCUS switch (S671 on CG-1 board) at its MANUAL position.
- 2) Set IRIS control (RV671 on CG-1 board) at its OPEN position.
- 3) Position a Siemens star 2m directly in front of lens reference plane.
- 4) Orient camera block to have the center of the Siemens star imaged on the monitor TV screen coincide with the monitor screen center.
- 5) Check to assure the smooth motion of zoom lever to both its extreme WIDE position (12 mm) and TELE position (72 mm), and then set it at the extreme WIDE position. (In this process, also check the monitor image to assure its due zooming operation.)
- 6) Set the lens focusing mark at the center of "2".

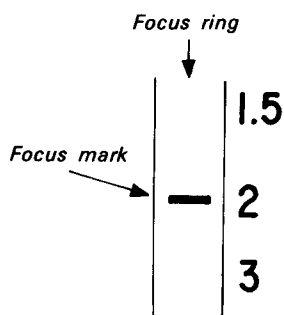


Fig. 7-6.

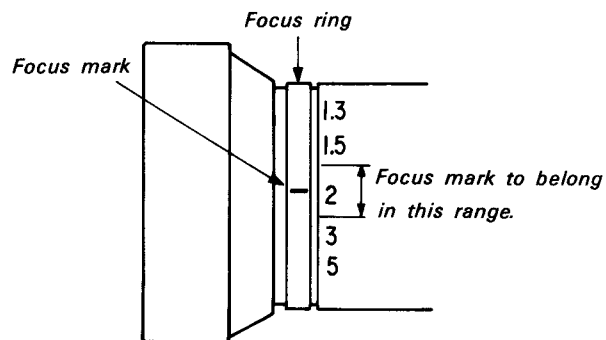


Fig. 7-7.

- 11) Turn zoom lever fully to its extreme TELE position.
 - 12) By turning focusing ring, check to assure the position that provides the highest definition view of the wedge to be within the Fig. 7-8 range.
- If this specification fails to meet, repeat steps 5) to 12).

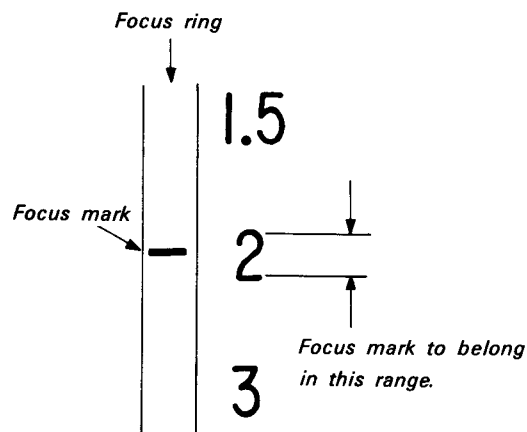


Fig. 7-8.

- 13) Restore a center click position (AUTO position) of the IRIS control.

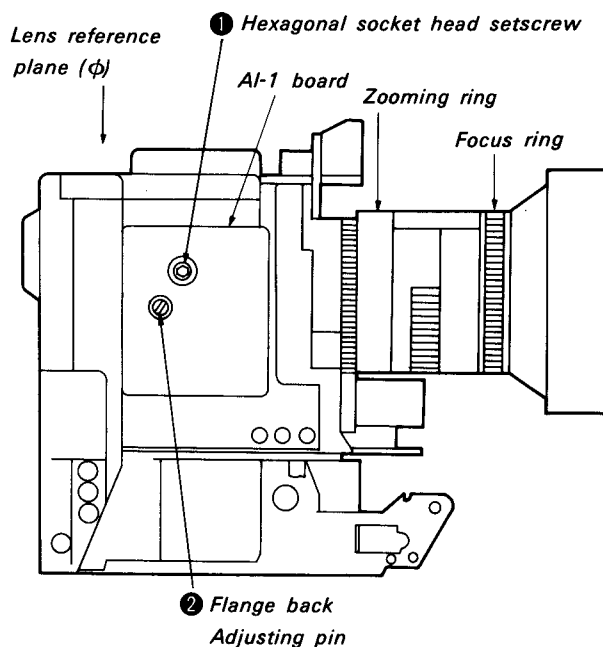


Fig. 7-9.

- 7) Loosen hexagonal socket head setscrew ① with an L wrench. (See Fig. 7-9).
 - 8) By turning flange back adjusting Pin ② while watching the monitor screen, attain the highest definition of a wedge at the Siemens star center on the screen. (Turn it a few times to the right and left, to assure the definition to be the highest.)
- Note:** Do not turn the adjusting pin excessively in either direction at a time.
- 9) While holding flange back adjusting Pin ② down for any further turns, retighten hexagonal socket head setscrew ①.
 - 10) With zoom lever fixed at its WIDE end, turn focusing ring, and set it at a position that provides the highest definition image of the wedge. Check to assure the focusing mark position thus attained to be within the Fig. 7-7 range.

7-4-2. Camera DC-DC Converter Voltage Check (Camera DC-DC Converter)

Measuring Instrument	Digital voltmeter
CAM 5V check	
Measurement Point	Pin ⑤ of CN005
Specified Value	$5.0 \pm 0.2 \text{Vdc}$
F5V check	
Measurement Point	Pin ① of CN004
Specified Value	$5.05 \pm 0.2 \text{Vdc}$
8.5V check	
Measurement Point	Pin ④ of CN005
Specified Value	$8.55 \pm 0.2 \text{Vdc}$
12V check	
Measurement Point	Pin ② of CN005
Specified Value	$12.0 \pm 0.2 \text{Vdc}$
20V check	
Measurement Point	Pin ① of CN005
Specified Value	$20.0 \pm 0.5 \text{Vdc}$
EVF 5V check	
Measurement Point	Pin ① of CN003
Specified Value	$5.0 \pm 0.2 \text{Vdc}$

Note: Run the above checks with EVF block connected thereon.

Checking method:

- 1) Each individual power supply voltage should be at its specified level.

7-4-3. Clock Oscillating Frequency Adjustment (CP-18 Board)

Measurement Point	Pin ③⑥ (CL) on DT-61 board
Measuring Instrument	Frequency counter
Adjusting Element	CT701
Specified Value	$14187500 \pm 110 \text{ Hz}$

Adjusting method:

- 1) Adjust to $14187500 \pm 110 \text{ Hz}$ with CT701.

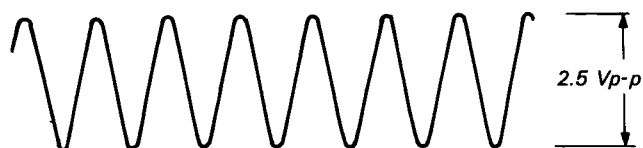


Fig. 7-10.

7-4-4. PLL Adjustment (CP-18 Board)

Measuring Point	Hot side pin of CN724
Measuring Instrument	Digital voltmeter
Adjusting Element	CT702
Specified Value	$2.5 \pm 0.3 \text{Vdc}$

Adjusting method:

- 1) Adjust to $2.5 \pm 0.3 \text{Vdc}$ with CT702.

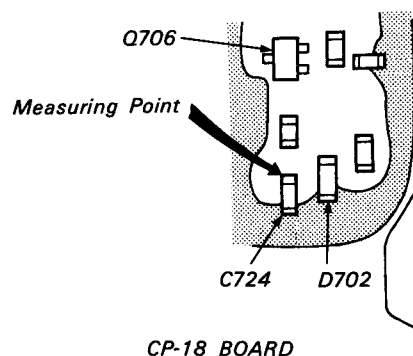


Fig. 7-11.

7-4-5. HALL Setting Adjustment (AI-1 Board)

Object	Colour bar chart standard picture frame
Measurement Point	TP781 (HALL)
Measuring Instrument	Oscilloscope (DC range) or digital voltmeter
Adjusting Element	H GAIN: RV781 H OFFSET: RV782
Specified Value	$4.0 \pm 0.1 \text{Vdc}$ (RV782) $3.0 \pm 0.1 \text{Vdc}$ (RV781)

Adjusting method:

- 1) Connect TP784 (Pin ⑭ of IC783) and GND with jumper.
- 2) Turn RV782 so that it becomes $4.0 \pm 0.1 \text{Vdc}$.
- 3) Remove jumper.
- 4) Connect TP784 and Pin ③ of W781 (5.0V) with jumper.
- 5) Turn RV781 so that it becomes $3.0 \pm 0.1 \text{Vdc}$.
- 6) Repeat items 1) to 5) and confirm that both specified values have been satisfied.
- 7) Remove jumper.

7-4-6. IRIS Setting Adjustment (AT-5, ME-4 Boards)

Object	Colour bar chart standard picture frame
Filters	ND filters: 0.4 and 0.1
Measurement Point	TP701 (CCD OUT) on ME-4 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV885 (IRIS SET) on AT-5 board
Specified Value	200 ± 5 mV

Adjusting method:

- 1) By turning RV885 on AT-5 board, adjust for a 200 ± 5 mV signal level with no ND filter mounted on. (See Fig. 7-12) (Be sure to conclude this adjustment by turning RV885 in a direction to lower the signal level.)
- 2) Mount ND filters of 0.5 (0.4+0.1) on in front of lens, and check to assure a smooth variation of the signal level.
- 3) Remove the ND filters, and check to assure the signal level is 200 ± 5 mV.
- 4) If the above specification fails to meet, repeat steps 1) to 3).

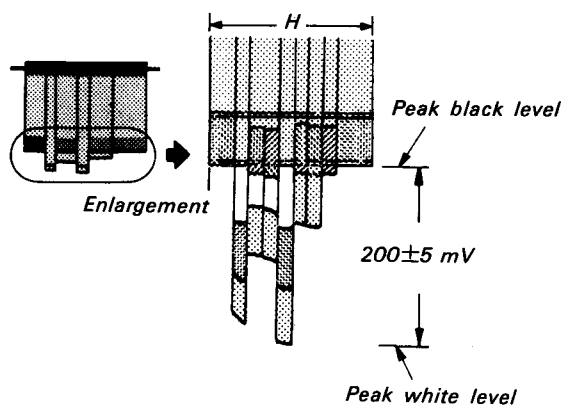


Fig. 7-12.

7-4-7. AGC Setting Adjustment (AT-5, ME-4 Boards)

Object	Colour bar chart standard picture frame
Measurement Point	TP703 (G DET) on ME-4 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV851 (AGC SET) on AT-5 board
Specified Value	250 ± 5 mV

Note: Set the three following RVs on the ME-4 board at their mechanical centers in advance:

1. RV703 (R GAIN)
2. RV702 (B GAIN)
3. RV701 (MAX GAIN)

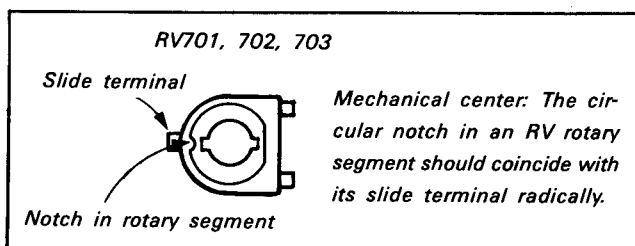


Fig. 7-13.

Adjusting method:

- 1) By turning RV851 on AT-5 board, adjust for a 250 ± 5 mV signal level.

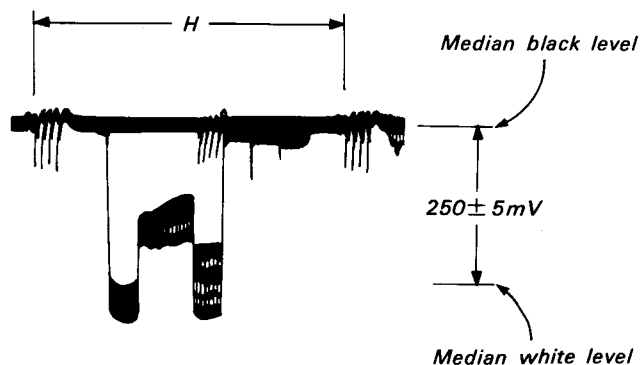


Fig. 7-14.

7-4-8. G-pedestal Adjustment (1) (ME-4 Board)

Object	Totally black (with lens blocked with a black cap)
Measurement Point	TP706 (G- γ)
Measuring Instrument	Oscilloscope
Adjusting Element	RV708 (G-PEDESTAL)
Specified Value	55 ± 5 mV

Note: Turn the two following RVs to the extreme counterclockwise ($\curvearrowright$) positions in advance:

1. RV706 (γ)
2. RV707 (WHITE CLIP (1))

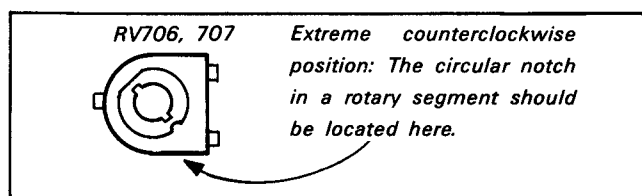


Fig. 7-15.

Adjusting method:

- 1) By turning RV708, adjust for a 55 ± 5 mV pedestal level.

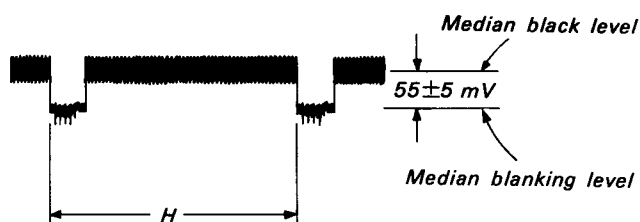


Fig. 7-16.

7-4-9. G-gamma Adjustment (ME-4 Board)

Object	Colour bar chart standard picture frame
Measurement Point	TP706 (G- γ)
Measuring Instrument	Oscilloscope
Adjusting Element	RV706 (γ)
Specified Value	440 ± 5 mV

Note: Turn RV707 (WHITE CLIP (1)) to its extreme counterclockwise ($\curvearrowright$) position in advance. (See Fig. 7-15)

Adjusting method:

- 1) By turning RV706, adjust for a 440 ± 5 mV level.

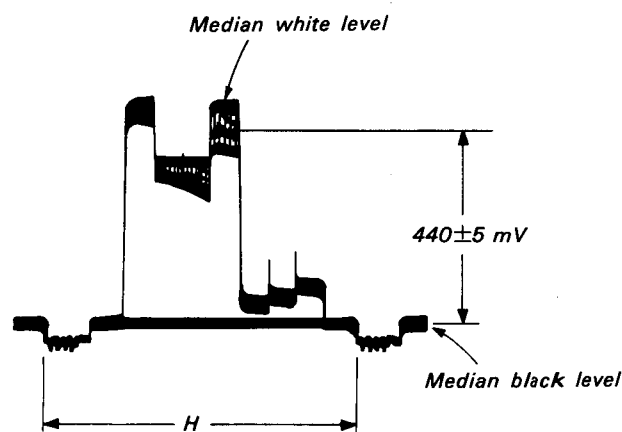


Fig. 7-17.

7-4-10. White Clip Adjustment (1) (ME-4 Board)

Object	High luminance pattern
Measurement Point	TP706 (G- γ)
Measuring Instrument	Oscilloscope
Adjusting Element	RV707 (WHITE CLIP (1))
Specified Value	515 ± 15 mV

Adjusting method:

- 1) By turning RV707, adjust for a 515 ± 15 mV white peak level.

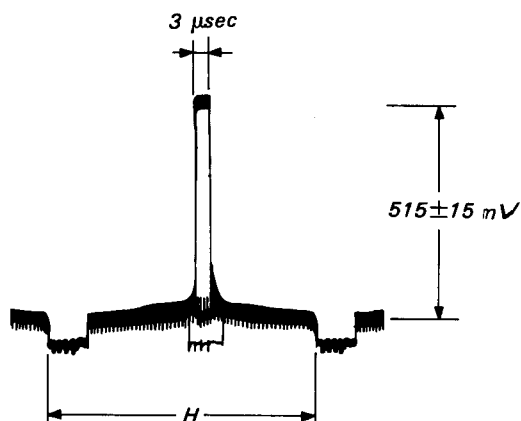


Fig. 7-18.

7-4-11. G-pedestal Adjustment (2) (ME-4 Board)

Object	Totally black (with lens blocked with a black cap)
Measurement Point	TP706 (G- γ)
Measuring Instrument	Oscilloscope
Adjusting Element	RV708 (G-PEDESTAL)
Specified Value	35 ± 5 mV

Adjusting method:

- 1) By turning RV708, adjust for a 35 ± 5 mVp-p level.

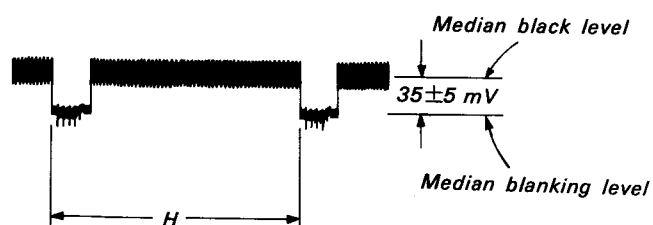


Fig. 7-19.

7-4-12. G-gamma Level Checks (ME-4 Board)

Object	Colour bar chart standard picture frame
Measurement Point	TP706 (G- γ)
Measuring Instrument	Oscilloscope
Adjusting Element	RV707 (WHITE CLIP (1))
Specified Value	400 ± 20 mV

Checking method:

- 1) Check to assure the white level at 400 ± 20 mV.
- 2) If the above specification fails to meet, turn RV707 to meet it.

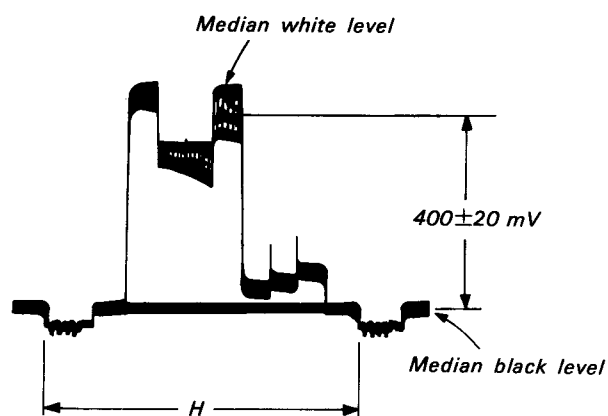


Fig. 7-20.

7-4-13. RB Offset Adjustment (ME-4 Board)

Object	Totally black (with lens blocked with a black cap)
Measurement Point	CH1: TP707 (RB- γ) CH2: TP706 (G- γ) EXT TRIGGER: TP705 (ID)
Measuring Instrument	Oscilloscope Vertical mode: ADD CH2 polarity: INVERT
Adjusting Element	RV704 (R.OFF SET), RV705 (B.OFF SET)
Specified Value	The blanking level should be centrally situated within the noise width.

Adjusting method:

- 1) By turning RV704 and RV705, adjust for a blanking level centrally situated within the noise width. (No level difference at every 1H should be exhibited.)

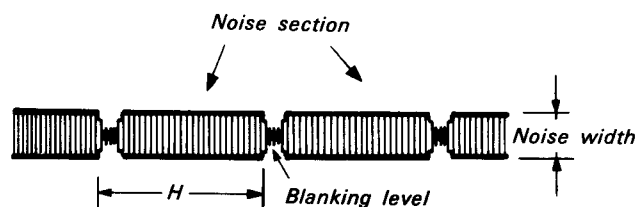


Fig. 7-21.

7-4-14. R-gain/B-gain Adjustments (ME-4 Board)

Object	Totally white pattern
Filter	Colour temperature converting filters: C22 (For R-gain adjustment) W14 (For B-gain adjustment)
Measurement Point	CH1: TP707 (RB- γ) CH2: TP706 (G- γ) EXT TRIGER: TP705 (ID)
Measuring Instrument	Oscilloscope Vertical mode: ADD CH2 polarity: INVERT
Adjusting Element	R-gain adjustment: RV703 B-gain adjustment: RV702
Specified Value	R-gain adjustment: The level differences of the R-G signal from the blanking level should be +10 mV max. and 0 mV min. B-gain adjustment: The level differences of the B-G signal from the blanking level should be +10 mV max. and 0 mV min.

Note: Turn the two following RVs to the extreme counterclockwise (↺) positions in advance to maximize the signal level of TP707:

1. RV710 (INDOOR R)
2. RV711 (INDOOR B)

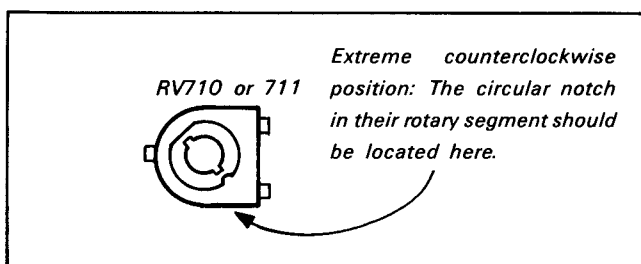


Fig. 7-22.

Adjusting method:

- 1) Mount colour temperature compensating filter C22 on lens.
- 2) Set the oscilloscope trigger slope at "+".
- 3) By turning RV703, adjust for a +10 mV max. and 0 mV min. the level difference of the R-G signal against the blanking level.
- 4) Exchange the colour temperature compensating filter to W14.
- 5) Set the oscilloscope trigger slope at "-".
- 6) By turning RV702, adjust for a +10 mV max. and 0 mV min. the level difference of the B-G signal against the blanking level.

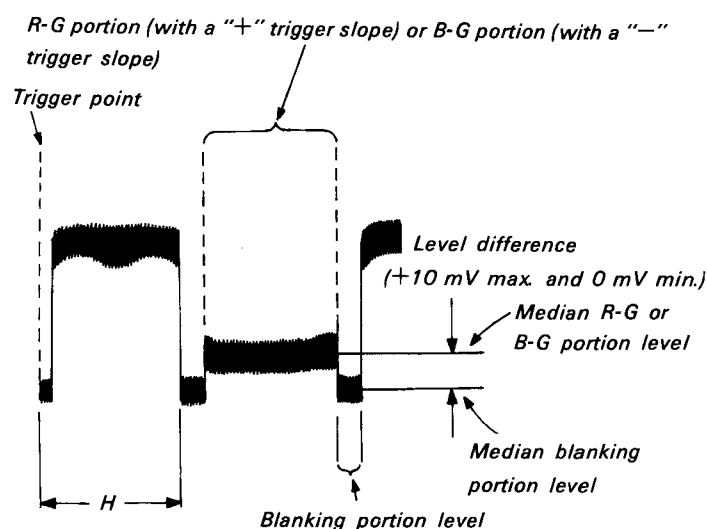


Fig. 7-23.

7-4-15. Indoor White Balance Adjustment (1) (ME-4 Board)

Object	Colour bar chart standard picture frame
Measurement Point	CH1: TP707 (RB- γ) CH2: TP706 (G- γ) EXT TRIGER: TP705 (ID)
Measuring Instrument	Oscilloscope Vertical mode: ADD CH2 polarity: INVERT
Adjusting Element	RV710 (INDOOR R) RV711 (INDOOR B)
Specified Value	The level difference between the white and black levels should be less than 5 mV.

Adjusting method:

- 1) By turning RV710, equalize the R-G signal white level with the black level.
- 2) By turning RV711, equalize the B-G signal white level with the black level.

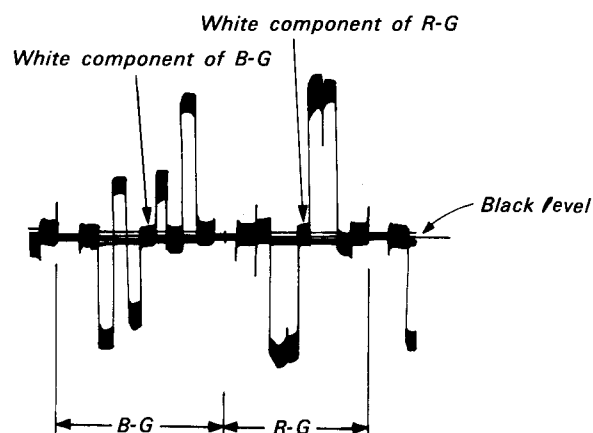


Fig. 7-24.

7-4-16. MPX Adjustment (ME-4 Board)

Object	Totally black (with lens blocked with a black cap)
Measurement Point	CH1 (X): TP715 (B-Y) CH2 (Y): TP714 (R-Y)
Measuring Instrument	Oscilloscope (X-Y mode)
Adjusting Element	RV717 (MPX)
Specified Value	Only one black luminance spot of a minimized size should be exhibited.

- Note:** 1) When adjustments are made difficult by an overly low signal level, use a 1 : 1 probe in lieu of the 10 : 1 probe.
- 2) For the elimination of high frequency noises, insert a resistor (approximately 10 k Ω when employing a 10 : 1 probe or approximately 1 k Ω when employing a 1 : 1 probe) in series in between the probe and the test point.

Adjusting method:

- 1) By turning RV717, bring black luminance spots into one.

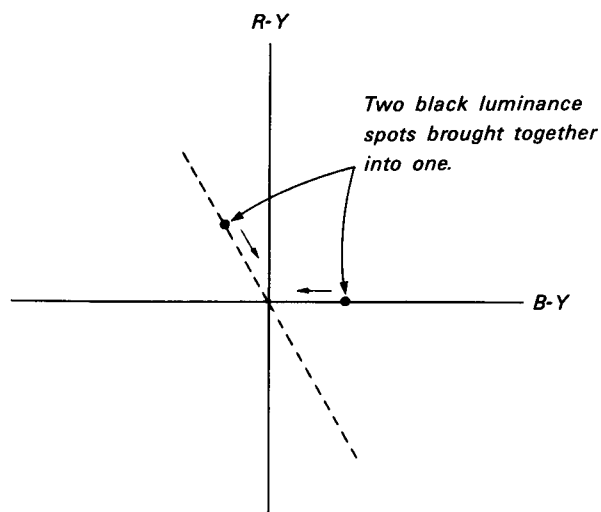


Fig. 7-25.

7-4-17. Matrix Gain Adjustments (ME-4 Board)

Object	White pattern (Should insert a black frame. See Fig. 7-26)
Measuring Instrument	Oscilloscope Vertical mode: ADD CH2 polarity: INVERT
G1 gain adjustment	
Measurement Point	CH1: TP708 (G0) on ME-4 board CH2: TP709 (G1) on ME-4 board
Adjusting Element	RV713 (G1)
Specified Value	No level difference should be exhibited by the white and black signals.
G2 gain adjustment	
Measurement Point	CH1: TP708 (G0) on ME-4 board CH2: TP710 (G2) on ME-4 board
Adjusting Element	RV715 (G2)
Specified Value	No level difference should be exhibited by the white and black signals.
RB1 gain adjustment	
Measurement Point	CH1: TP711 (RB0) on ME-4 board CH2: TP712 (RB1) on ME-4 board
Adjusting Element	RV714 (RB1)
Specified Value	No level difference should be exhibited by the white and black signals.
RB2 gain adjustment	
Measurement Point	CH1: TP711 (RB0) on ME-4 board CH2: TP713 (RB2) on ME-4 board
Adjusting Element	RV716 (RB2)
Specified Value	No level difference should be exhibited by the white and black signals.

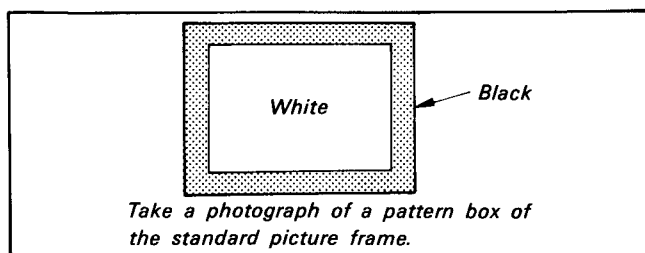


Fig. 7-26.

Adjusting method:

- 1) By turning the respective RVs, eliminate all level differences between the white and black signals.

Note: The adjustment is unnecessary when there is no signal level difference between the white and black signals.

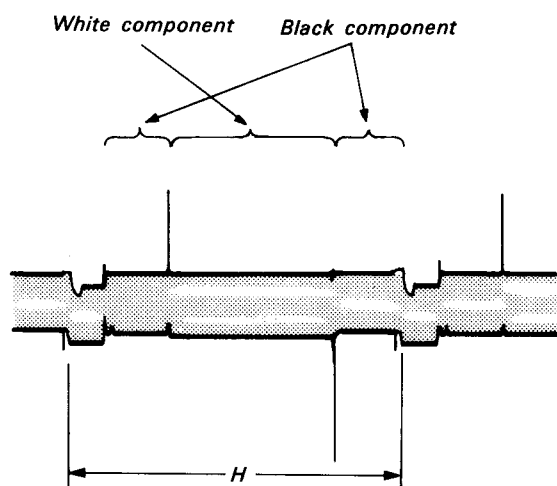


Fig. 7-27.

7-4-18. Wiper White Adjustment (ME-4, VI-22 Boards)

Object	Arbitrary
Measurement Point	Pin ② of CN201 on VI-22 board (CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV728 (CB0°), RV729 (CB 90°) on the ME-4 board
Specified Value	The 4.43 MHz component of white (wiper) signals should be minimized.

Adjusting method:

- 1) Supply Pin ① of W603 (A, FADER) on FC-10 board with the 5.0Vdc DC voltage from a regulated DC power supply.
- 2) By turning RV728 and RV729 on the ME-4 board, minimize the amplitude of the white (wiper) signals.

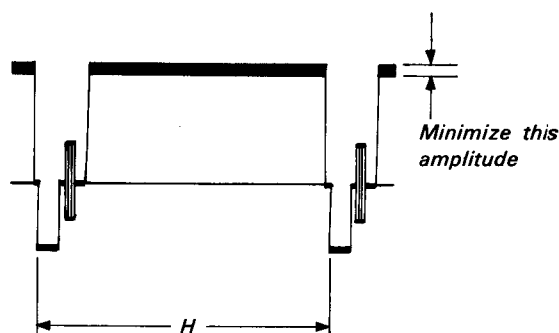


Fig. 7-28.

7-4-19. Carrier Blance Adjustment (ME-4 Board)

Object	Totally black (with lens blocked with a black cap)
Measuring Instrument	Oscilloscope
R-Y offset adjustment	
Measurement Point	TP714 (R-Y)
Adjusting Element	RV718 (R-Y OFFSET)
Specified Value	The median black signal level should be equal to the median blanking level.
B-Y offset adjustment	
Measurement Point	TP715 (B-Y)
Adjusting Element	RV719 (B-Y OFFSET)
Specified Value	The median black signal level should be equal to the median blanking level.

- Note:**
- 1) When adjustments are made difficult by an overly low signal level, use a 1 : 1 probe in lieu of the 10 : 1 probe.
 - 2) For the elimination of high frequency noises, insert a resistor (approximately 10 k Ω when employing a 10 : 1 probe or approximately 1 k Ω when employing a 1 : 1 probe) in series in between the probe and the test point.

Adjusting method:

- 1) By turning the respective RVs, eliminate all level differences between the median black level and the median blanking level.

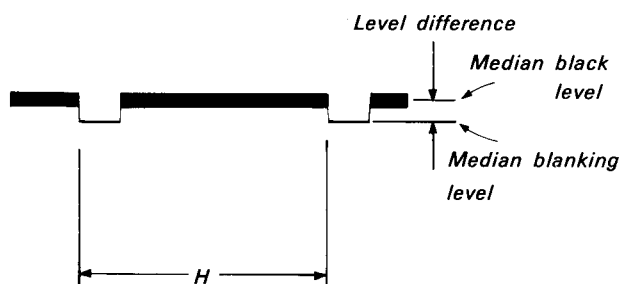


Fig. 7-29.

7-4-20. SET-UP Adjustment (CP-18, VI-22 Boards)

Object	Totally black (with lens blocked with a black cap)
Measurement Point	Pin ② of CN201 on VI-22 board (CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV701 (SET-UP) on CP-18 board
Specified Value	15 $\pm$ 5 mV

Adjusting method:

- 1) By turning RV701 on CP-18 board, adjust for a 15 $\pm$ 5 mV SET-UP level.

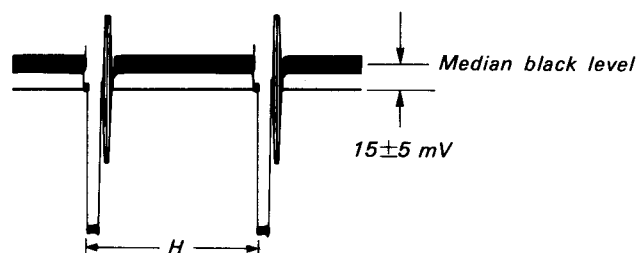


Fig. 7-30.

7-4-21. Y-level Adjustment (CP-18, VI-22 Boards)

Object	Colour bar chart standard picture frame
Measurement Point	Pin ② of CN201 on VI-22 board (CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV702 (FDG) on CP-18 board
Specified Value	350 $\pm$ 5 mV

Adjusting method:

- 1) By turning RV702 on CP-18 board, adjust for a 350 $\pm$ 5 mV Y level.

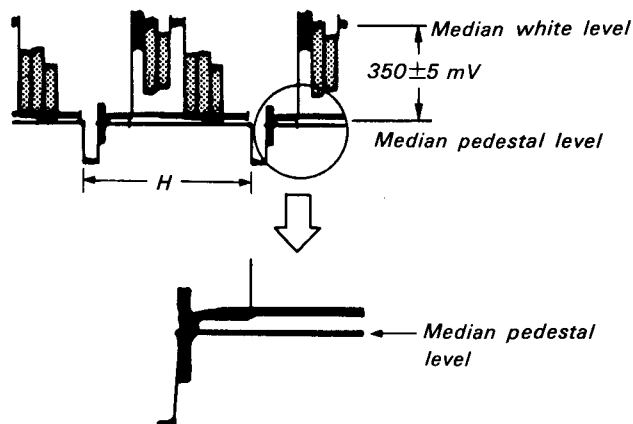


Fig. 7-31.

7-4-22. Aperture Adjustment (ME-4, VI-22 Boards)

Object	Colour bar chart standard picture frame
Measurement Point	Pin ② of CN201 on VI-22 board (CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV730 (APS) and RV731 (APL) on ME-4 board
Specified Value	RV730: Aperture level at 120 ± 10 mV RV731: Aperture level at 60 ± 10 mV

Note: Preset the following VRs as stipulated, in advance:

1. ME-4 board: RV730 (APS)... Mechanical center
2. ME-4 board: RV731 (APL)... Extreme counterclockwise (↺)
3. CP-18 board: RV703 (WHITE CLIP (2))... Extreme clockwise (↻)

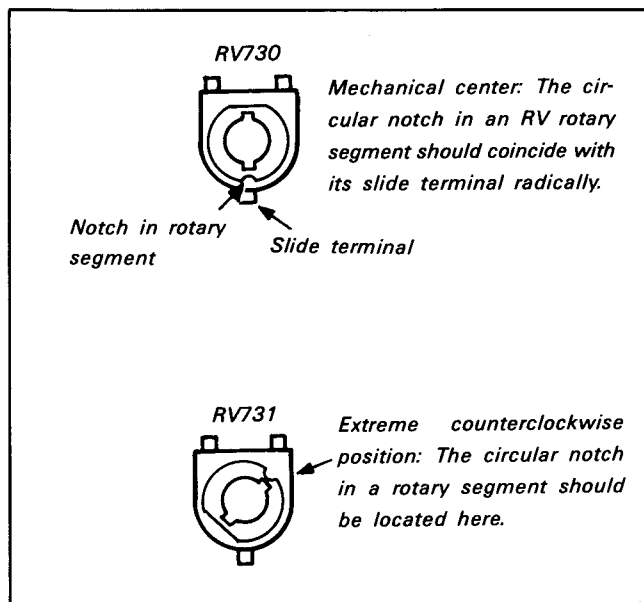


Fig. 7-32.

Adjusting method:

- 1) After focusing is completed, slightly swing camera block to the right and left, and fix it where the aperture level in between white and magenta (See Fig. 7-33) is maximized.
- 2) By turning RV730 on ME-4 board, adjust for a 120 ± 10 mV aperture level.
- 3) By turning RV731 on ME-4 board, adjust for a 60 ± 10 mV aperture level.

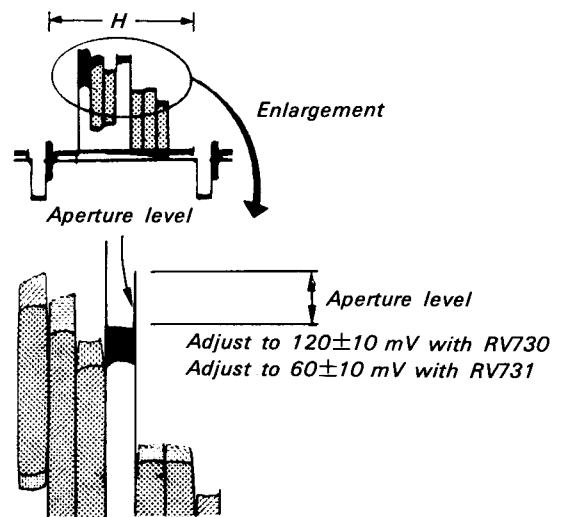


Fig. 7-33.

7-4-23. White Clip Adjustment (2) (CP-18, VI-22 Boards)

Object	High luminance pattern
Measurement Point	Pin ② of CN201 on VI-22 board (CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV703 on CP-18 board (WHITE CLIP (2))
Specified Value	420 ± 10 mV

Adjusting method:

- 1) By turning RV703 on CP-18 board, adjust for a 420 ± 10 mV signal level.

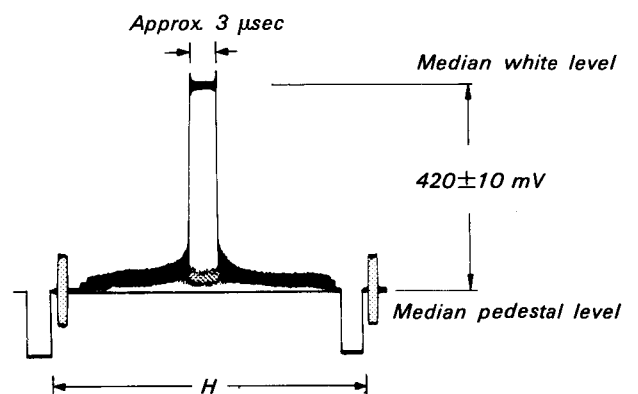


Fig. 7-34.

7-4-24. Output Level Checks (VI-22, CP-18 Boards)

Object	Colour bar chart standard picture frame
Measurement Point	Pin ② of CN201 on VI-22 board (CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	Y level: RV702 (FDG) on CP-18 board SET-UP: RV701 on CP-18 board (SET-UP)
Specified Value	Y level: 350 ± 5 mV SET UP: 15 ± 5 mV SYNC level: 140 ± 15 mV

Checking method:

- 1) Check the output level at Pin ② of CN201 on VI-22 board, and if the specifications fail to meet, make adjustments by turning RV701 and RV702.

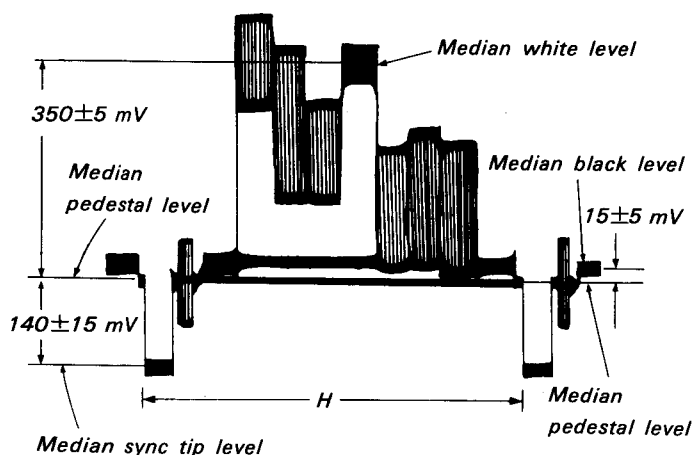


Fig. 7-35.

7-4-25. Max. Gain Adjustment (ME-4, VI-22 Boards)

Object	Colour bar chart standard picture frame
Filter	ND filter: 0.9 ... 2 pcs. ND filter: 0.4 ... 1 pc.
Measurement Point	Pin ② of CN201 on VI-22 board (CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV701 on ME-4 board (MAX GAIN)
Specified Value	175 ± 5 mV

Adjustment method:

- 1) Set the SENS switch (S673 on CG-1 board) at its HIGH position.
- 2) Mount ND filters of 2.2 (0.9+0.9+0.4) on lens.
- 3) By turning RV701 on ME-4 board, adjust for a 175 ± 5 mV level.
- 4) Set the SENS switch at its NORMAL position.

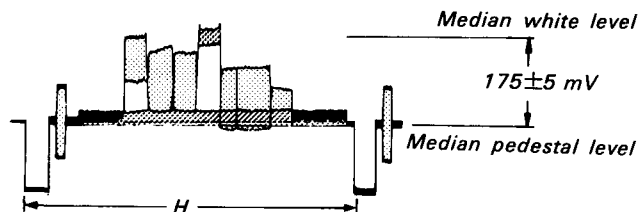


Fig. 7-36.

7-4-26. AGC Setting Check (AT-5, ME-4 Boards)

Object	Colour bar chart standard picture frame
Measurement Point	TP703 (G DET) on ME-4 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV851 (AGC SET) on AT-5 board
Specified Value	250 ± 20 mVp-p

Checking method:

- 1) Check to assure that the signal level is 250 ± 20 mVp-p.
- 2) When the specification fails to meet, make adjustments for a 250 ± 20 mVp-p level by turning RV851 on the AT-5 board.

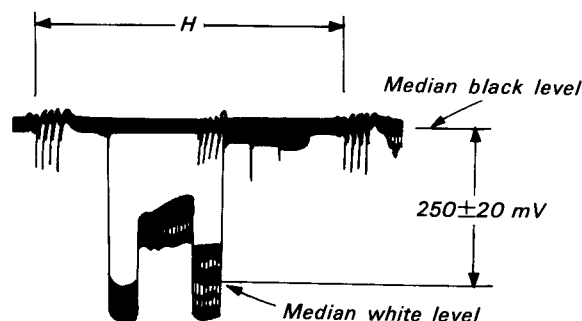


Fig. 7-37.

7-4-27. LLA Adjustment (AT-5 Board)

Object	Colour bar chart standard picture frame
Filter	ND filter: 0.1 ... 2 pcs. ND filter: 1.0 ... 1 pc. ND filter: 0.4 ... 1 pc.
Measurement Point	} EVF displays should be observed.
Measuring Instrument	
Adjustment Element	RV852 (LLA)
Specified Value	A "LOW LIGHT" display should be made with ND filter of 1.6. No "LOW LIGHT" display with that of 1.5.

Adjusting method:

- 1) Engage either a STANDBY or REC mode.
- 2) Mount ND filter of 1.6 ($1.0+0.4+0.1+0.1$) on in front of lens.
- 3) By turning RV852, adjust for no "LOW LIGHT" display in EVF.
- 4) Slowly turn RV852, and stop turning it where a "LOW LIGHT" display is made.
- 5) Remove just one ND filter of 0.1.
- 6) Check to assure that the "LOW LIGHT" display has disappeared.
- 7) If the display fails to disappear, repeat steps 2) to 6) until it does.

7-4-28. Burst Phase and Burst Level Adjustment (ME-4, VI-22 Boards)

Object	Colour bar chart standard picture frame
Measurement Point	Pin ② of CN201 on VI-22 board (CAM OUT)
Measuring Instrument	Oscilloscope Trigger slope: +
Adjusting Element	RV726 (HUE) and RV727 (BURST GAIN) on ME-4 board
Specified Value	(Burst phase) Should become a single line. (Burst level) 150 ± 5 mVp-p

Note: When performing colour reproductivity adjustment with a vectorscope, this adjustment becomes unnecessary.

Adjusting method:

- 1) Make burst waveform into a single line with RV726. There are 2 points in the rotating range of RV726 in which the waveform becomes a single line. Select the one in which the colour is reproduced correctly on the monitor screen.
- 2) Turn RV727 so that the burst amplitude becomes 150 ± 5 mVp-p.

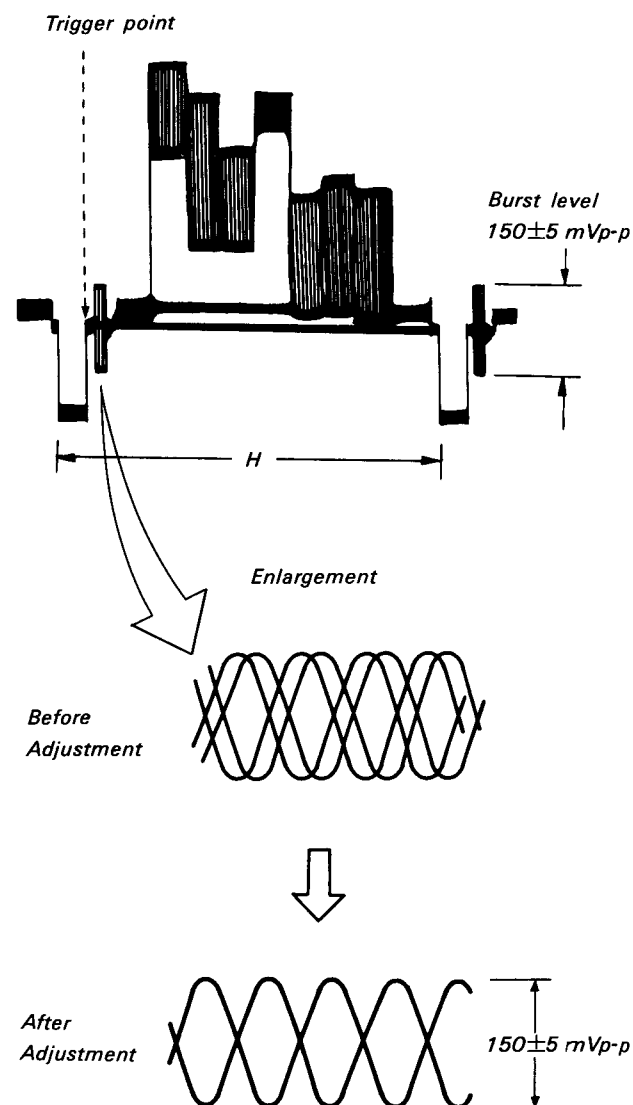


Fig. 7-38.

7-4-29. Indoor White Balance Adjustment (2) (ME-4 Board)

Object	Colour bar standard picture frame
Measurement Point	CH1 (X): TP715 (B-Y) CH2 (Y): TP714 (R-Y)
Measuring Instrument	Oscilloscope (X-Y mode)
Adjusting Element	RV710 (INDOOR R) RV711 (INDOOR B)
Specified Value	The white and black luminance spots should coincide with each other in location.

- Note:** 1) When adjustments are made difficult by an overly low signal level, use a 1 : 1 probe in lieu of the 10 : 1 probe.
- 2) For the elimination of high frequency noises, insert a resistor (approximately 10 k Ω when employing a 10 : 1 probe or approximately 1 k Ω when employing a 1 : 1 probe) in series in between the probe and the test point.

Adjusting method:

- 1) By turning RV710 and RV711, have the white luminance spot coincide with the black luminance spot in location.

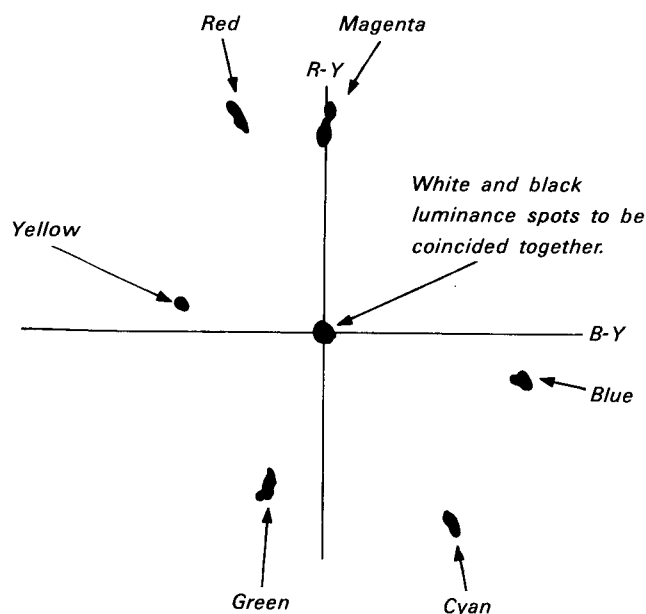


Fig. 7-39.

7-4-30. Colour Reproducibility Adjustments (Vectorscope Employing Process) (ME-4 Board)

Object	Colour bar chart standard picture frame
Measurement Point	VIDEO OUT terminal of AC adaptor or T/T unit
Measuring Instrument	Vectorscope
Adjusting Element	RV721 (B-Y GAIN) RV723 (B-Y MIX) RV720 (R-Y GAIN) RV722 (R-Y MIX) RV726 (HUE) RV727 (BURST GAIN)
Specified Value	Each individual luminance colour spot should be located within its colour reproduction frame. (Fig 7-40)

- Note:** First check to assure that the burst luminance spot is located at its specified position and the white luminance spot has coincided with the origin point, before making adjustments. (When the white luminance spot and origin point fail to coincide with each other in location, perform white balance adjustment (RV710 and RV711) and carrier balance adjustment (RV718 and RV719) over again.)

Adjusting method:

- 1) Turn RV726 and RV727 and match the burst luminance spot at the specified location (135°, 75%) on the vectorscope.
- 2) By turning RV720 and RV722, locate the "red" luminance spot within its colour reproduction frame.
- 3) By turning RV721 and RV723, locate the "yellow" luminance spot within its colour reproduction frame.
- 4) By repeating steps 1) and 2), locate all the respective colour luminance spots within their colour reproduction frames.

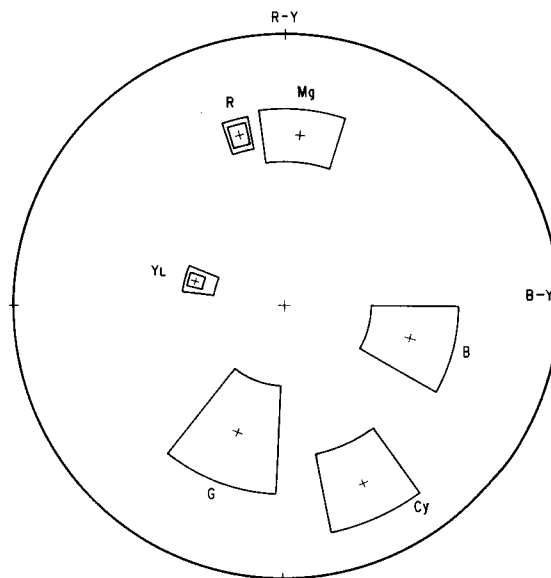


Fig. 7-40.

7-4-31. Colour Reproducibility Adjustments (Oscilloscope Employing Process)

A. Gain adjustment (ME-4, VI-22 boards)

Object	Colour bar chart standard picture frame
Measurement Point	Pin ② of CN201 on VI-22 board (CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV721 (B-Y GAIN) on ME-4 board RV720 (R-Y GAIN) on ME-4 board
Specified Value	"Magenta" level: 235 ± 5 mVp-p "Yellow" level: 127 ± 5 mVp-p

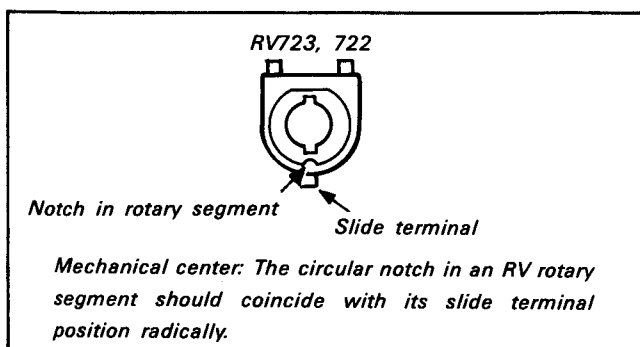


Fig. 7-41.

Adjusting method:

- 1) Set RV723 (B-Y MIX) and RV722 (R-Y MIX) on ME-4 board at its mechanical center. (See Fig. 7-41)
- 2) By turning RV720 on ME-4 board, adjust for a "Magenta" amplitude at 235 ± 5 mVp-p. (Fig. 7-42 ①)
- 3) By turning RV721 on ME-4 board, adjust for a "Yellow" amplitude at 127 ± 5 mVp-p. (Fig. 7-42 ②)

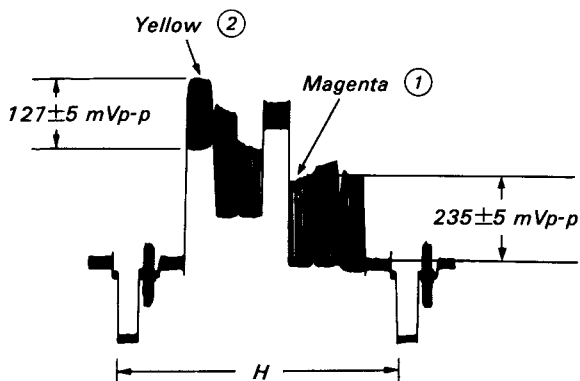


Fig. 7-42.

B. Hue adjustment (ME-4 board)

Object	Colour bar standard picture frame
Measurement Point	CH1 (X): TP715 (B-Y) CH2 (Y): TP714 (R-Y)
Measuring Instrument	Oscilloscope (X-Y mode) * With an oscilloscope oriented colour reproduction frame stuck on in advance.
Adjusting Element	RV723 (B-Y MIX), RV722 (R-Y MIX)
Specified Value	Respective colour luminance spots should be located within their colour reproduction frame. (See Fig. 7-43)

- Note:**
- 1) When adjustments are made difficult by an overly low signal level, use a 1 : 1 probe in lieu of the 10 : 1 probe.
 - 2) For the elimination of high frequency noises, insert a resistor (approximately 10 kΩ when employing a 10 : 1 probe or approximately 1 kΩ when employing a 1 : 1 probe) in series in between the probe and the test point.

Adjusting method:

- 1) Have the "black" luminance spot on the oscilloscope coincide with the origin point of the colour reproduction frame in location.
- 2) Check to assure that the "white" and "black" luminance spots are coincided with each other in location. (If they have not, make white balance adjustments (RV710 and RV711) over again.)
- 3) By turning RV723 and RV722 alternately, locate the "red" and "yellow" luminance spots within their colour reproduction frames. (Also check to assure that the other colour luminance spots have been located within their colour reproduction frame.)
- 4) Check the colours reproduced on the monitor screen.

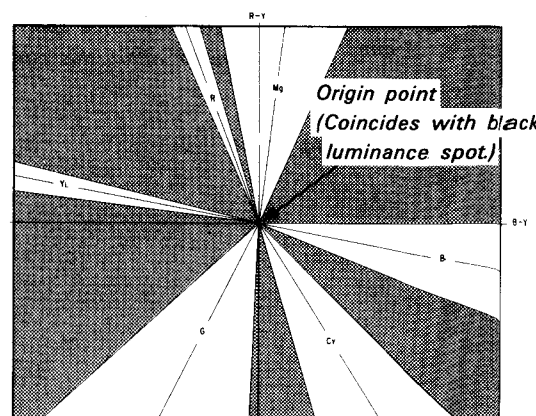


Fig. 7-43.

7-4-32. Outdoor White Balance Adjustment
(Vectorscope Employing Process) (ME-4 Board)

Object	Colour bar chart standard picture frame
Filter	Daylight filter (C14)
Measurement Point	VIDEO OUT terminal of either AC adaptor or T/T unit
Measuring Instrument	Vectorscope
Adjusting Element	RV709 (OUTDOOR R) RV712 (OUTDOOR B)
Specified Value	See Fig. 7-44

Adjusting method:

- 1) With a daylight filter dismounted, check to assure that the white luminance spot on the vectorscope is located at the origin point when the WHITE BALANCE switch (S672 on CG-1 board) is set at its INDOOR (☒) position. (If the spot is not at the origin point, make white balance adjustments (RV710 and RV711) and carrier balance adjustments (RV728 and RV729) over again.)
- 2) Mount a daylight filter on the lens, and set the WHITE BALANCE switch at its OUTDOOR (☒) position.
- 3) By turning RV709 and RV712, adjust the white luminance spot to the lower left of the origin point and at 1 mm on the Q axis.
- 4) Restore an INDOOR (☒) position setting of the WHITE BALANCE switch.

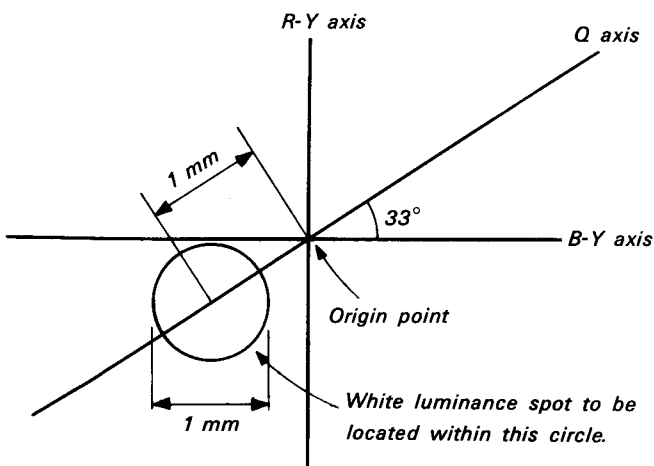


Fig. 7-44.

7-4-33. Outdoor White Balance Adjustment
(Oscilloscope Employing Process) (ME-4 Board)

Object	Colour bar chart standard picture frame
Filter	Daylight filter (C14)
Measurement Point	CH1 (X): TP715 (B-Y) CH2 (Y): TP714 (R-Y)
Measuring Instrument	Oscilloscope (X-Y mode)
Adjusting Element	RV709 (OUTDOOR R) RV712 (OUTDOOR B)
Specified Value	See Fig. 7-45

- Note:**
- 1) When adjustments are made difficult by an overly low signal level, use a 1 : 1 probe in lieu of the 10 : 1 probe.
 - 2) For the elimination of high frequency noises, insert a resistor (approximately 10 k Ω when employing a 10 : 1 probe or approximately 1 k Ω when employing a 1 : 1 probe) in series in between the probe and the test point.

Adjusting method:

- 1) Set the WHITE BALANCE switch (S672 on CG-1 board) at its OUTDOOR (☒) position.
- 2) By turning RV709, adjust for a 3 mV potential difference in the R-Y axis direction between centers of the white and black luminance spots (with the white luminance spot situated beneath the black luminance spot).
- 3) By turning RV712, adjust for a 4 mV potential difference in the B-Y axis direction between centers of the white and black luminance spots (with the white luminance spot situated to the left of the black luminance spot).
- 4) Restore an INDOOR (☒) position of the WHITE BALANCE switch.

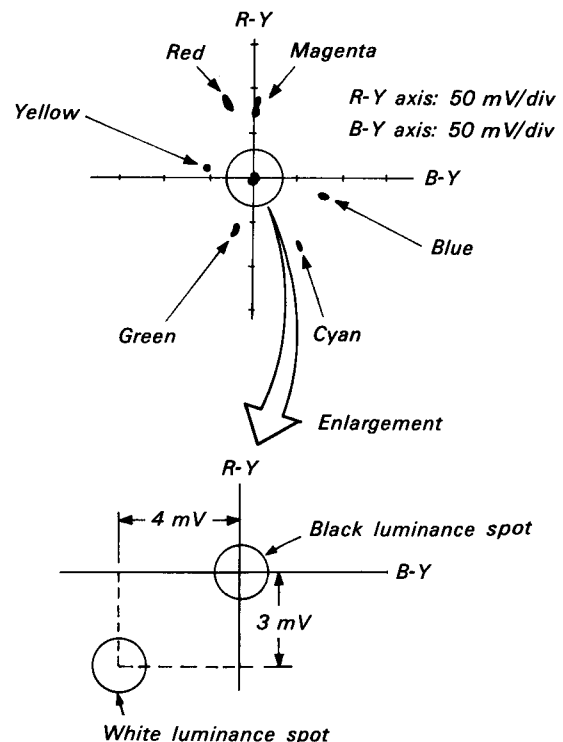


Fig. 7-45.

**7-4-34. Auto-tracking White Balance Adjustments
(AT-5, AW-3, ME-4 Boards)**

Object	Totally white pattern *Note: 1)
Measurement Point	CH1 (X): TP715 (B-Y) on ME-4 board CH2 (Y): TP714 (R-Y) on ME-4 board
Measuring Instrument	Oscilloscope (X-Y mode)
Adjusting Element	RV853 (WR OFFSET) on AT-5 board RV854 (WB OFFSET) on AT-5 board RV701 (SR GAIN) on AW-3 board RV702 (SB GAIN) on AW-3 board

Note: 1) If any other light than that from pattern box enters the WHITE BALANCE sensor (SB701 on AS-13 board), no valid adjustments are possible. Accordingly, adjustments should preferably be made in a dark room or equivalent, but where such an arrangement is not possible, follow the instructions below before making adjustments.

1. Place camera block on a piece of black paper or equivalent. (This precaution is required even when making adjustments in a dark room.)
 2. Bring camera block and pattern box closer together than 0.5m apart. (No focusing is required, however.)
 3. Cover the WHITE BALANCE sensor with black paper or equivalent to block any other light than that of pattern box from entering the sensor.
- 2) When potential difference readings are made difficult by an overly low signal level, use a 1 : 1 probe in lieu of the 10 : 1 probe.
 - 3) For the elimination of high frequency noises, insert a resistor (approximately 10 k Ω when employing a 10 : 1 probe or approximately 1 k Ω when employing a 1 : 1 probe) in series in between the probe and the test point.

Adjusting method:

- 1) Set the WHITE BALANCE switch (S672 on CG-1 board) at its AUTO position.
- 2) Connect TP701 (ONE PUSH) on AW-3 board to ground with a jumper wire.
- 3) Connect TP702 (WRITE) on AW-3 board to Pin ⑦ of CN703 (5V) on AW-3 board with a jumper wire.
- 4) By turning RV853 and RV854 on AT-5 board, have the white and black luminance spots coincide with each other.
- 5) Disconnect the TP701 connecting jumper wire.
- 6) Disconnect the TP702 connecting jumper wire.
- 7) By turning RV701 and RV702 on AW-3 board, have the white and black luminance spots coincide with each other.
- 8) Set the WHITE BALANCE switch at its INDOOR (☀) position.

White and black luminance spots to be superimposed together.

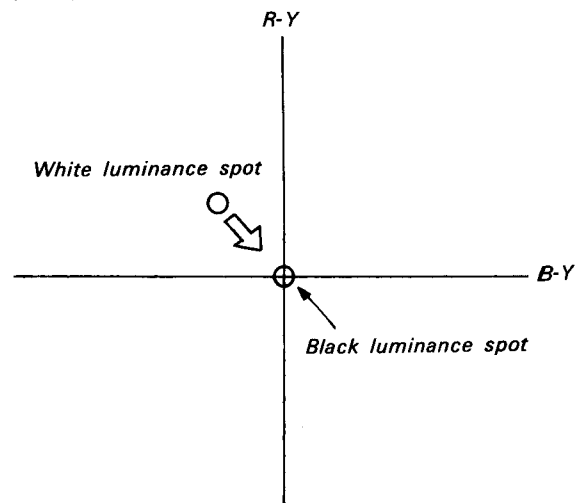


Fig. 7-46.

7-4-35. Auto-tracking White Balance Operational Checks

Object	Totally white pattern *Note
Filter	Colour temperature compensating filters: C22 and W14
Measurement Point	} Run checks on the monitor TV screen.
Measuring Instrument	

Note: Refer to note 1) in the last paragraph.

Checking method:

- 1) Set the WHITE BALANCE switch (S672 on CG-1 board) at its AUTO position.
- 2) Cover camera block with black paper or equivalent, to prevent the incidence of any other light than that of pattern box to the WHITE BALANCE sensor (SB701 on AS-13 board).
- 3) Check to assure that there is no colouring on the monitor screen.
- 4) Mount colour temperature compensating filter C22 on the WHITE BALANCE sensor (exercising care against the entry into the sensor of any other light than that through the filter, with black paper or equivalent).
- 5) Check the monitor screen to assure it has turned orange in colour.
- 6) Exchange the colour temperature compensating filter to W14.
- 7) Check the monitor screen to assure that it has turned cyan in colour.
- 8) Restore an INDOOR (☼) position of the WHITE BALANCE switch.

7-5. CHARACTER GENERATOR SYSTEM ADJUSTMENT

7-5-1. Character Generator Clock Frequency Adjustment (CG-1, FC-10 Boards)

Mode	Standby
Object	Arbitrary
Measurement Point	Pin ③ of CN672 on CG-1 board
Measuring Instrument	Oscilloscope
Adjusting Element	CT671 on CG-1 board
Specified Value	$36.0 \pm 0.5 \mu\text{sec}$

Connection:

- 1) Make jumper wire connections at the two following locations on the FC-10 board.
 1. Pin ⑱ of IC601 ($\overline{\text{CAM DOWN}}$) — GND
 2. TP603 (Pin ⑲ of IC601: $\overline{\text{TEST}}$) — GND

Adjusting method:

- 1) Switch CAMERA POWER (S674 on CG-1 board) on, and engage a standby mode.
- 2) Check to assure the display either on a monitor TV or the EVF screen of the characters such as shown in Fig. 7-47.
- 3) By operating CT671, adjust for a $36.0 \pm 0.5 \mu\text{sec}$ cycle time. (See Fig. 7-48)

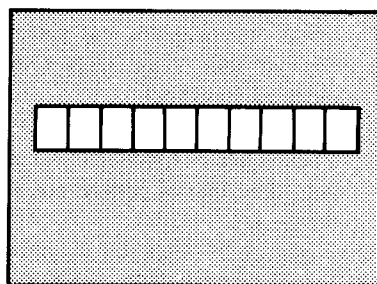


Fig. 7-47.

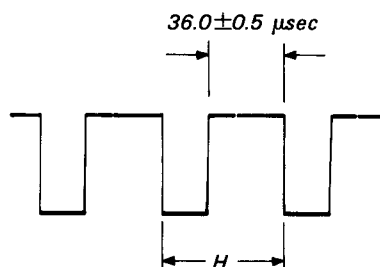


Fig. 7-48.

7-5-2. Clock Frequency Adjustment (FC-10 Board)

Mode	Standby
Object	Arbitrary
Measurement Point	Pin ③⑦ of IC601
Measuring Instrument	Frequency counter
Adjusting Element	CT601
Specified Value	8192.00±0.05 Hz

Connection:

- 1) Make jumper wire connections at the two following locations.
 1. Pin ⑮ of TC601 ($\overline{\text{CAM DOWN}}$) — GND
 2. TP603 (Pin ⑰ of TC601: $\overline{\text{TEST}}$) — GND

Adjusting method:

- 1) Switch CAMERA POWER (S674 on CG-1 board) on, and engage a standby mode.
- 2) Check to assure the display either on a monitor TV or the EVF screen of the characters such as shown in Fig. 7-47.
- 3) Supply Pin ① of W606 (LBV) on FC-10 board with the 3.00Vdc voltage from a regulated-DC power supply.
- 4) Switch CAMERA POWER (S674 on CG-1 board) off.
- 5) By operating CT601, adjust for a 8192.00±0.05 Hz frequency.

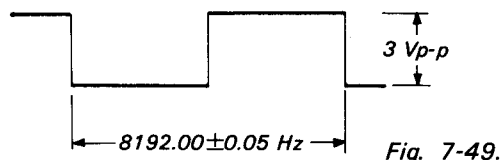


Fig. 7-49.

7-5-3. Wiper Adjustment (FC-10 Board)

Mode	Standby
Object	Arbitrary
V _T Adjustment	
Measurement Point	Pin ⑭ of IC605
Measuring Instrument	Oscilloscope
Adjusting Element	RV601
Specified Value	3±0.05 Vp-p
Wiper Window Height Adjustment	
Measurement Point	Pin ⑭ of IC604
Measuring Instrument	Oscilloscope (sweep, V-range)
Adjusting Element	Voltage VR of stabilized power supply
Specified Value	2±0.1m sec
Wiper Window Width Adjustment	
Measurement Point	Pin ⑭ of IC604
Measuring Instrument	Oscilloscope (sweep, H-range)
Adjusting Element	RV602
Specified Value	5.0±0.5 μsec

Connection:

- 1) Connect stabilized power supply to Pin ① of W603 on FC-10 board. (A. FADER)

Adjusting method:

- 1) Adjust Pin ⑭ of IC605 waveform height to 3±0.05 Vp-p with RV601 (See Fig. 7-50 (a)).
- 2) Set width of the pulse generated at Pin ⑭ of IC604 to 2±0.1msec by adjusting DC stabilized power supply voltage (See Fig. 7-50 (b)).
- 3) Set width of the pulse generated at Pin ⑭ of IC604 to 5±0.5 μsec by adjusting RV602 (See Fig. 7-50 (c)).

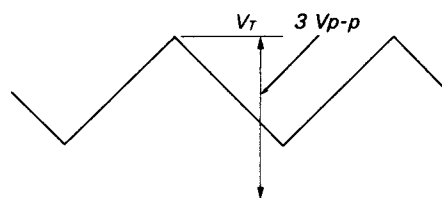


Fig. 7-50 (a)



Fig. 7-50 (b)

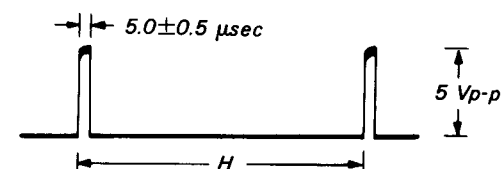
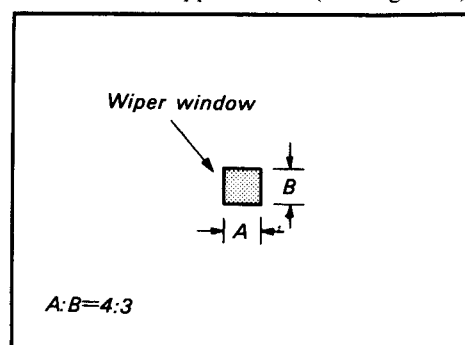


Fig. 7-50 (c)

Confirmation:

- 1) Horizontal/vertical ratio of monitor TV screen wiper window should be approx. 4 : 3 (See Fig. 7-51).



Monitor TV screen

Fig. 7-51.

7-6. ELECTRONIC VIEW FINDER (EVF) SYSTEM ADJUSTMENT

7-6-1. Horizontal Tilt Adjustment

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3 CSP), monoscope portion
Specified Value	See Fig 7-53

Adjusting method:

- 1) By turning RV705 (BRIGHT), adjust for a luminance level that provides appropriate visibility of the CRT screen.
- 2) Loosen the DY (deflection yoke) tightening band.
- 3) By turning DY, achieve a horizontal position of the image.
- 4) Position the DY rear end 52.5 ± 0.3 mm away from the CRT face plate.
- 5) Retighten the DY tightening band (exercising care against any excessive tightening).

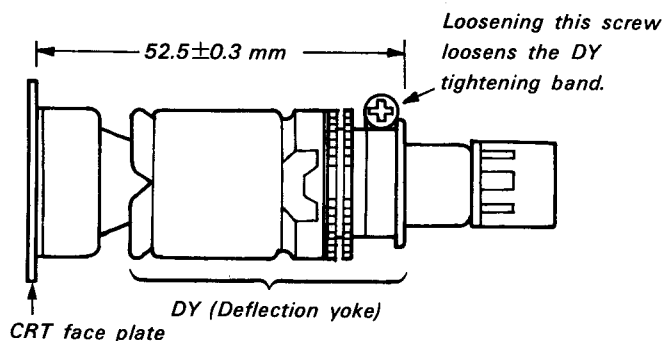
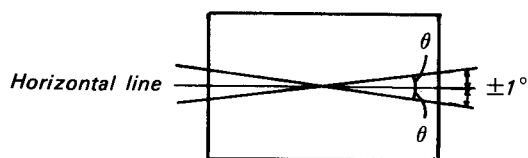


Fig. 7-52.



Specified value: Image orientation to be within $\pm 1^\circ$ of horizontal line

Fig. 7-53.

7-6-2. Centering Adjustment

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3 CSP), monoscope portion
Specified Value	See Fig 7-55

Adjusting method:

- 1) By operating centering magnets, provide the image with even peripheral margins, both horizontally and vertically.

Note: Since the centering position is affected by the earth magnetism, turn the equipment over 360° horizontally, and make adjustments at the orientation that exhibits median displacements of the image.

For vertical positional adjustment

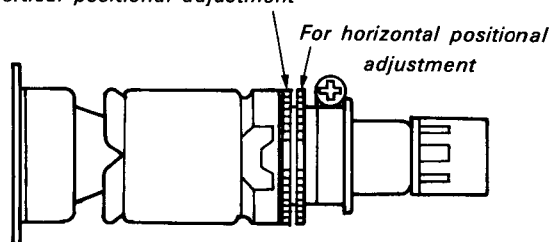
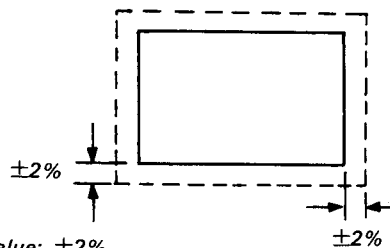


Fig. 7-54.



Adjusted value: $\pm 2\%$

Fig. 7-55.

7-6-3. Horizontal Oscillating Frequency Adjustment (VF-7 Board)

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3 CSP)
Measurement Point	Positive terminal of C708
Measuring Instrument	Digital voltmeter or oscilloscope (DC range)
Adjusting Element	RV702
Specified Value	2.30 ± 0.1 Vdc

Adjusting method:

- 1) By turning RV702, adjust for a 2.30 ± 0.1 Vdc terminal voltage.

7-6-4. Horizontal Amplitude Adjustment (VF-7 Board)

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3CSP), monoscope portion
Adjusting Element	C718, C719
Specified Value	$6\pm3\%$

Adjusting method:

- 1) By turning RV704, focus the image.
- 2) By turning RV701, align upper and lower edges of the monoscope image with those of the screen.
- 3) By turning RV705, attain a normal brightness level.
- 4) To achieve $6\pm3\%$ horizontal overscans (half side), short-circuit or open the patterns (A and B) for H size adjusting capacitors (C718 and C719), one at a time until the overscan level is achieved. (See Fig. 7-57)

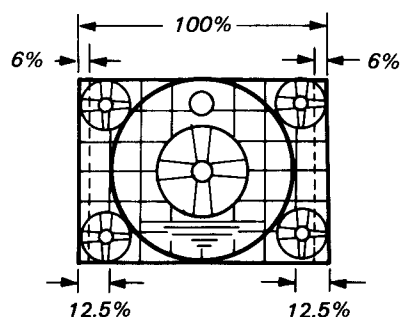
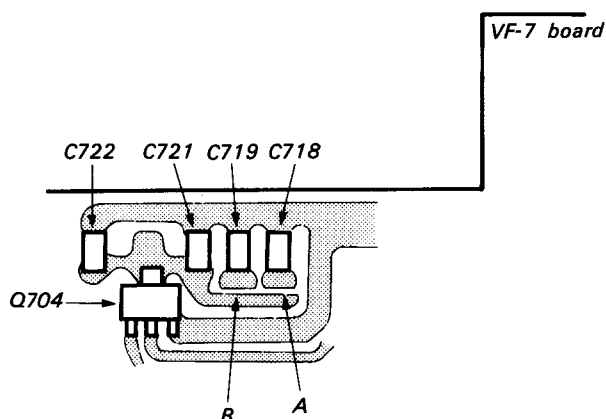


Fig. 7-56.



A	B	H size
Open	Open	Small
Short-circuit	Open	
Open	Short-circuit	
Short-circuit	Short-circuit	Large

Fig. 7-57.

7-6-5. Vertical Amplitude Adjustment (VF-7 Board)

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3CSP), monoscope portion
Adjusting Element	RV701
Specified Value	$6\pm3\%$

Adjusting method:

- 1) By turning RV701, adjust for $6\pm3\%$ vertical overscans (half side).

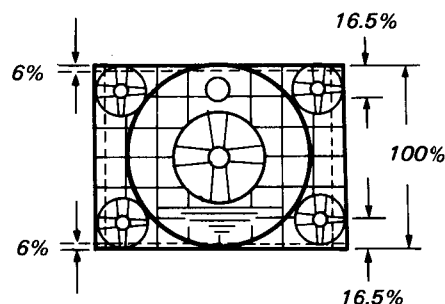


Fig. 7-58.

7-6-6. Brightness, Contrast Adjustments (VF-7 Board)

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3CSP), monoscope portion
Adjusting Element	Brightness: RV705 Contrast: RV703

Adjusting method:

- 1) By turning RV705 and RV703 alternately, adjust for the valid display of light and dark areas of a gray scale. (The light area should not be made light enough for a fuzzy display of cross-hatches within the monoscopic circle, be sure to maintain the brightness of the dark area in a degree in which discrimination between the darkest area and a second darkest area can scarcely be made.)

7-6-7. Focus Adjustment (VF-7 Board)

Mode	Playback
Signal	Alignment tape for operational checks (WRS-3 CSP), monoscope portion
Adjusting Element	RV704

Adjusting method:

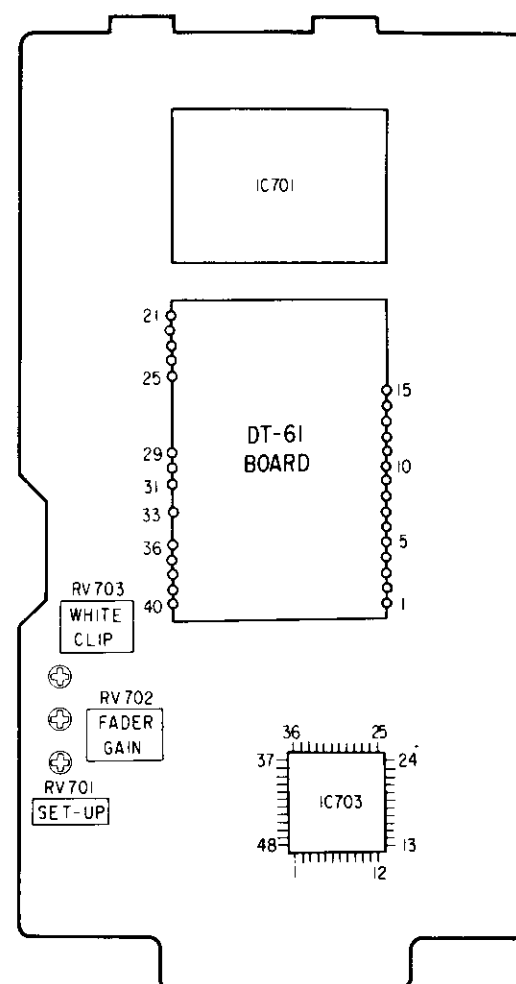
- 1) By turning RV704, adjust for the optimally focused images.

7-6-8. Horizontal and Vertical Amplitude Checks

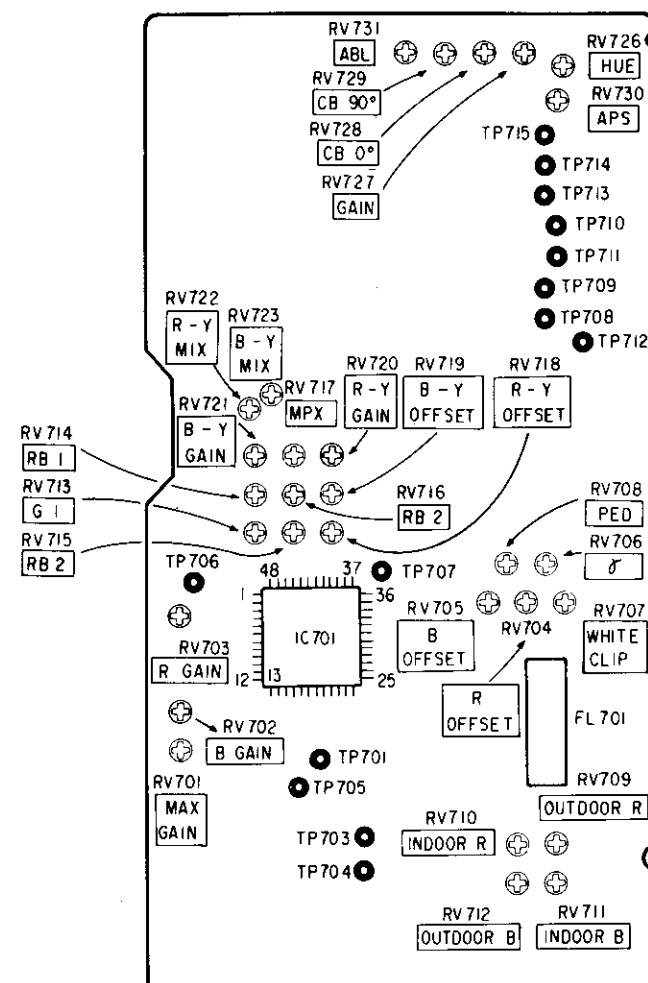
Specifications should have been met by 7-6-4. Horizontal amplitude adjustment and 7-6-5. Vertical amplitude adjustment, but if they are not, readjustments should be made. In the latter case, 7-6-6. Brightness, contrast adjustments and 7-6-7. Focusing adjustment should also be made over again.

ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

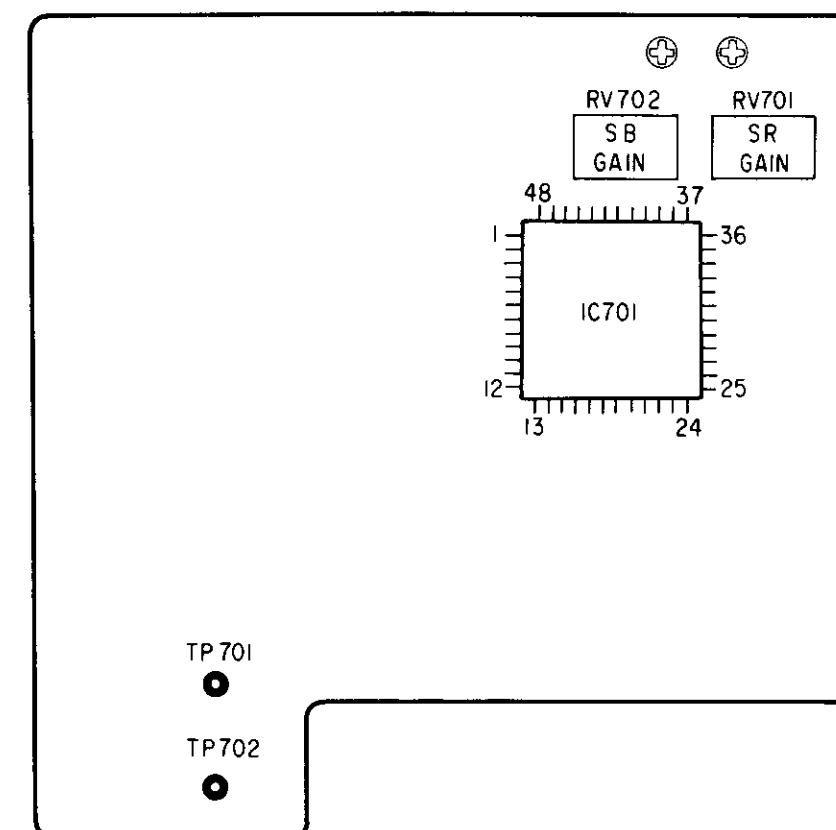
CP-18 BOARD (COMPONENT SIDE)



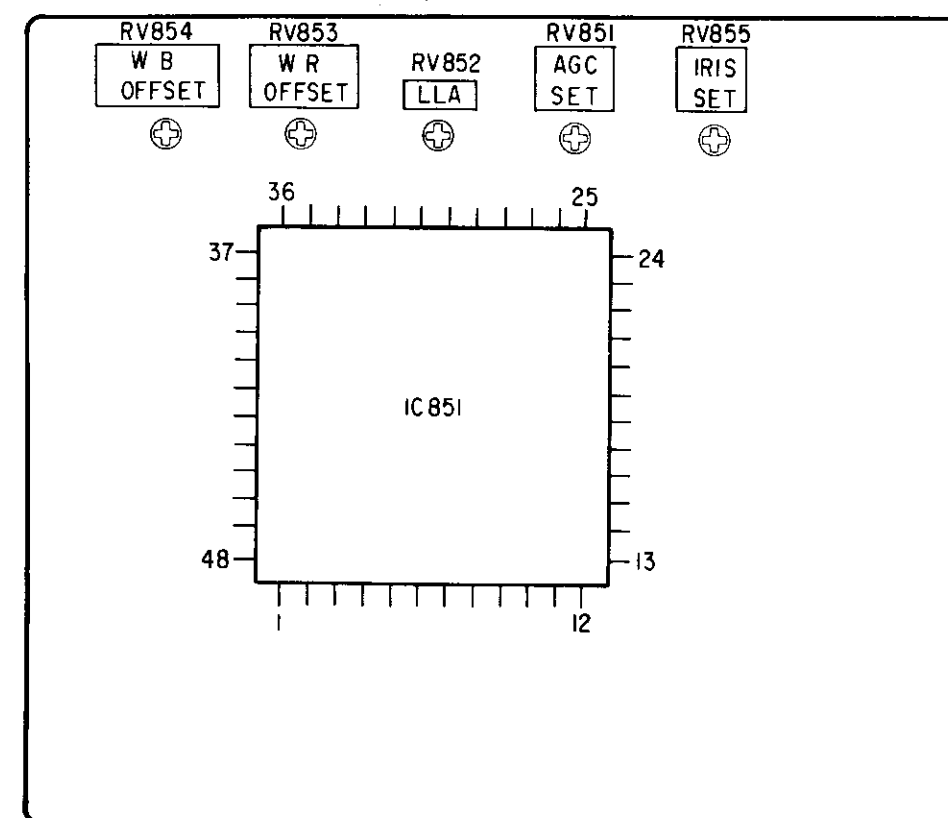
ME-4 BOARD (COMPONENT SIDE)



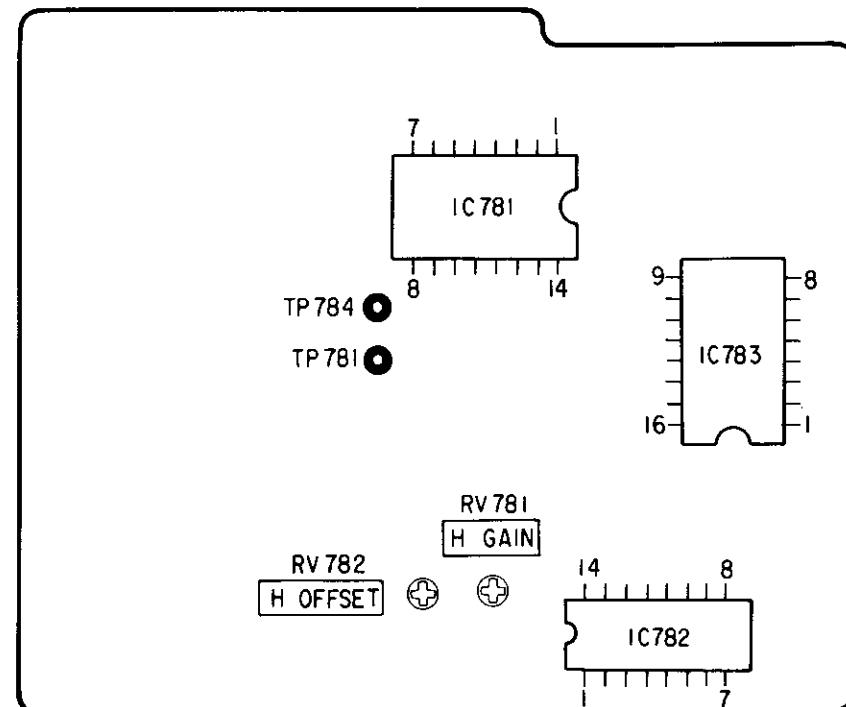
AW-3 BOARD (COMPONENT SIDE)



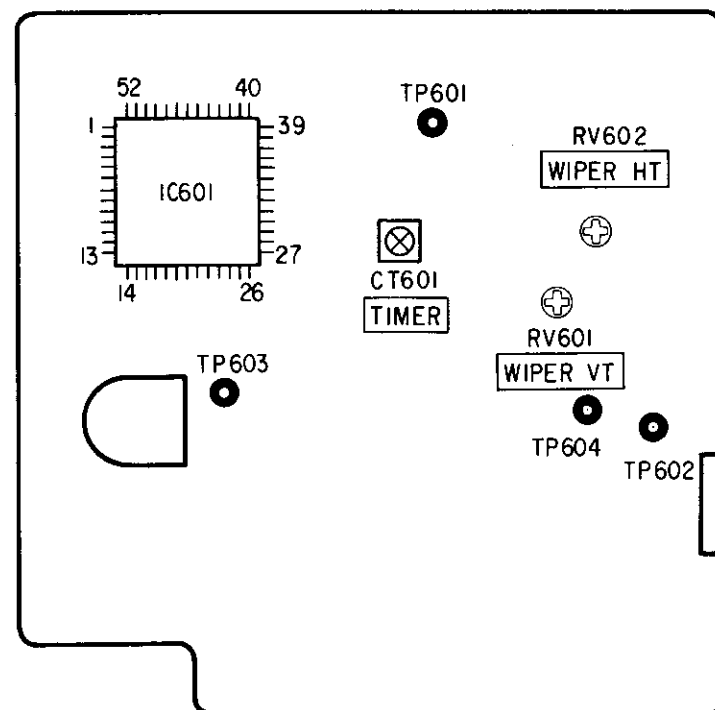
AT-5 BOARD (COMPONENT SIDE)



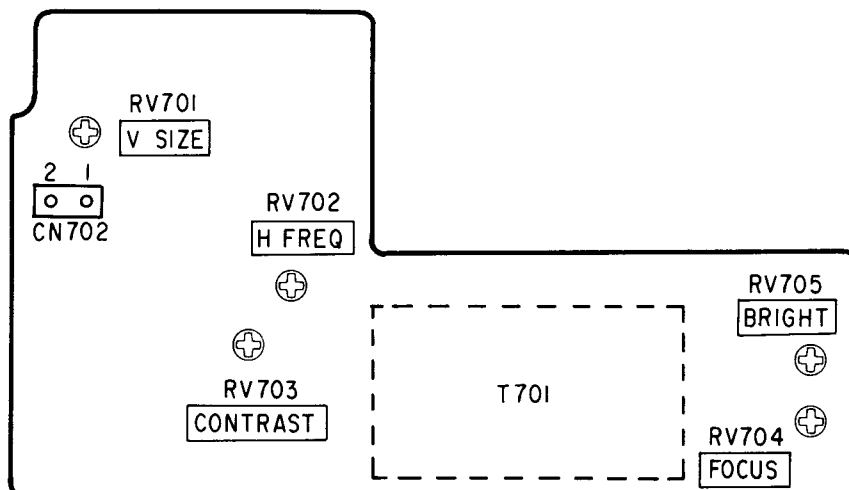
AI-1 BOARD (COMPONENT SIDE)



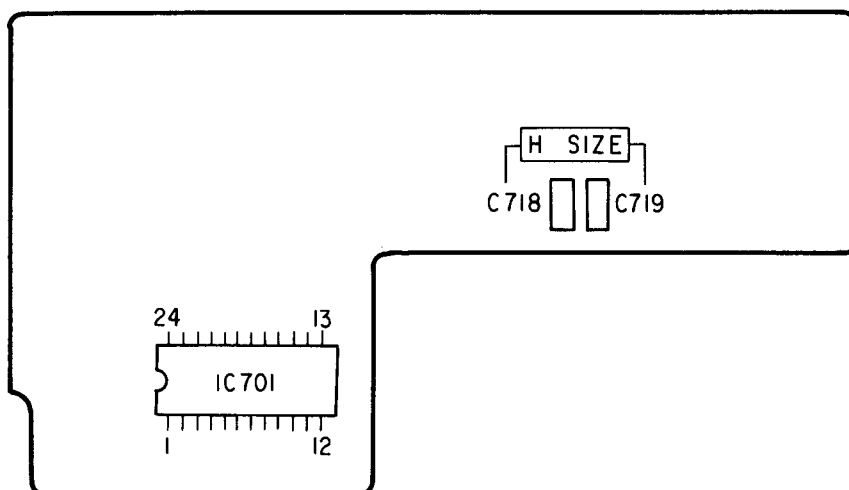
FC-10 BOARD (COMPONENT SIDE)



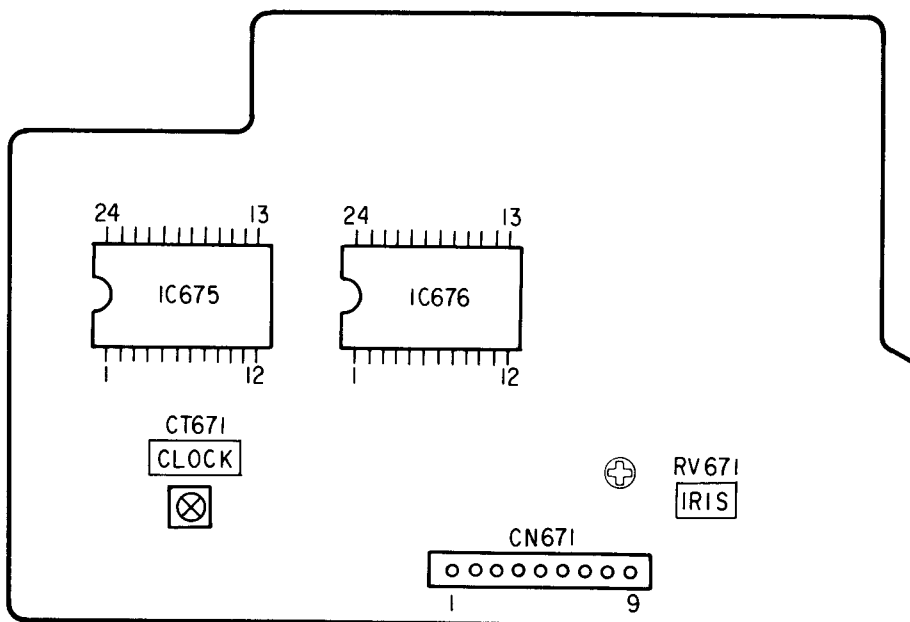
VF-7 BOARD (COMPONENT SIDE)



VF-7 BOARD (SOLDERING SIDE)



CG-1 BOARD (COMPONENT SIDE)



SECTION 8

MECHANISM ADJUSTMENTS

8-1. PREPARATION ITEMS FOR MECHANISM SECTION CHECKING, ADJUSTMENT AND REPLACEMENT

Note: Regarding removal of cabinet and respective boards,
see Section 2. DISASSEMBLY.

8-1-1. Remounting of Cassette Compartment Assembly (See Fig. 8-1a)

- 1) Remount DEW assembly ① with screw ②.
- 2) Remount cassette compartment assembly ③ and tighten four screws ④ by referring to Figs. 8-1a and 1b.
(At this point, care should be taken not to hit cassette compartment assembly ③, so set the eject disk ⑤ in the direction of arrow.)
- 3) Hook the harness on claw ⑥.
- 4) Remount leaf switch ⑦ with screw ⑧.
- 5) See 2-10, and remount the DR-36 board.
- 6) See 2-8, and remount the AU-25 board and the TS-55 board.

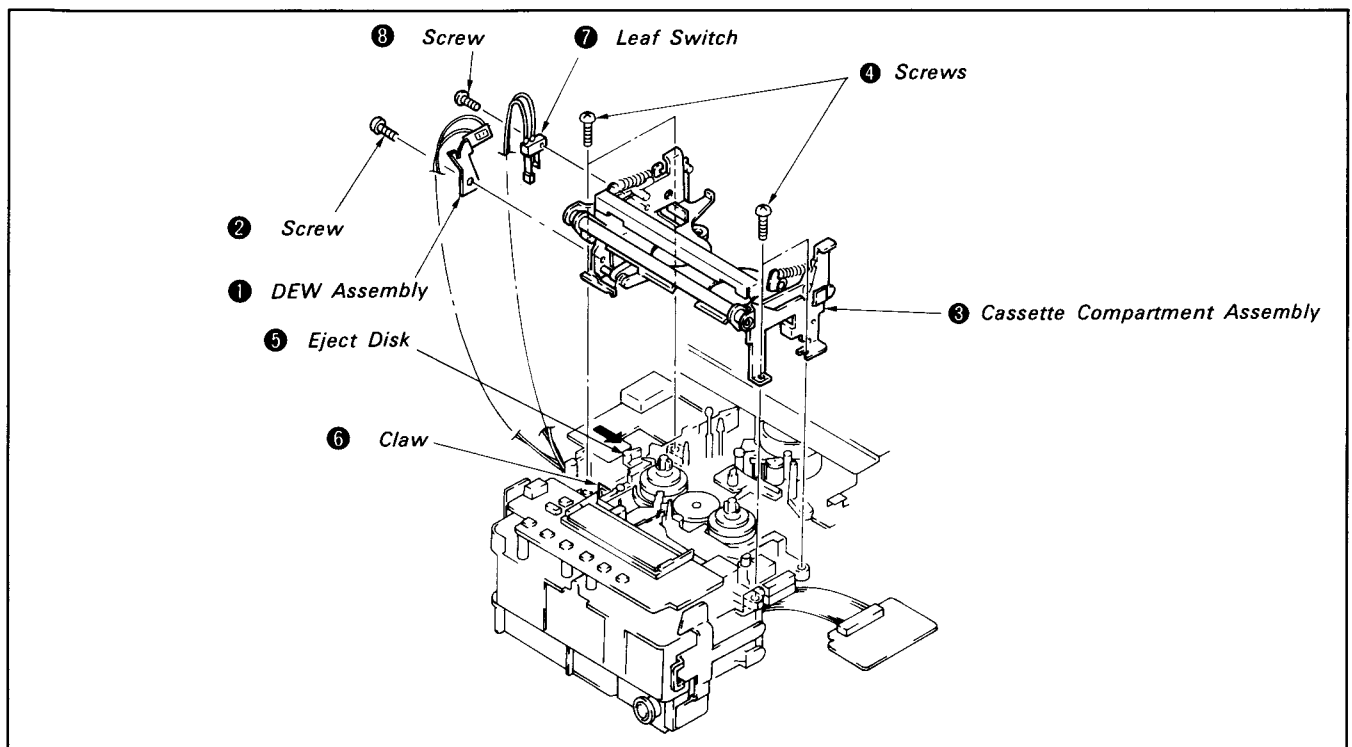


Fig. 8-1a.

Description of installation order of screws ④

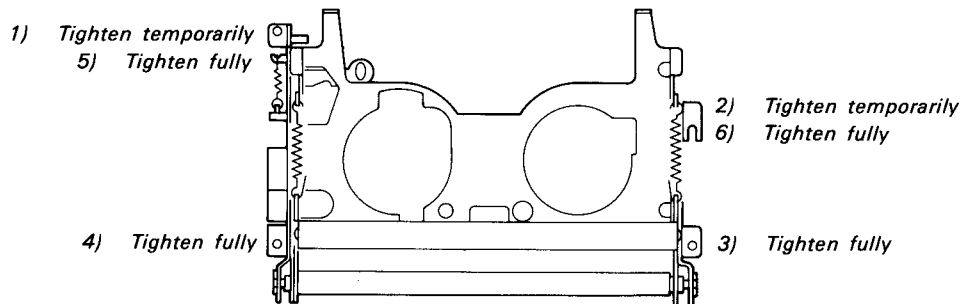


Fig. 8-1b.

8-1-2. Operating without Cassette Compartment Assembly and a Tape

Note: Take note that if there is a strong light source near the set, there are cases in which the set may not operate.

1. Method to loading (See Fig. 8-2)

- 1) Mount a battery pack and turn ON power supply switch ①.
- 2) Adhere tape onto the pin which extends from RECOG SW assembly ②.
- 3) Turn ON the leaf switch ③.

2. Method to set playback mode (See Fig. 8-2)

- 1) Mount a battery pack and turn ON power supply switch ①.
- 2) Apply a rubber ring ④ between S reel side and T reel side.
- 3) Press the playback button and press tension Regulator arm assembly ⑤ in the direction of arrow when the T reel side starts to rotate.
(At this point, the tension Regulator band is released and the S reel side starts to rotate.)
- 4) Press the STOP button to stop.

3. Method to set recording mode (See Fig. 8-2)

- 1) Mount a battery pack and turn ON the power supply switch ①.
- 2) Apply a rubber ring ④ between S reel side and T reel side.
- 3) Press the RECORD button and press tension Regulator arm assembly ⑤ in the direction of arrow when the T reel side starts to rotate.
(At this point, the tension Regulator band is released and the S reel side starts to rotate.)
- 4) Press the STOP button to stop.

4. Method to eject

- 1) Press the EJECT button.

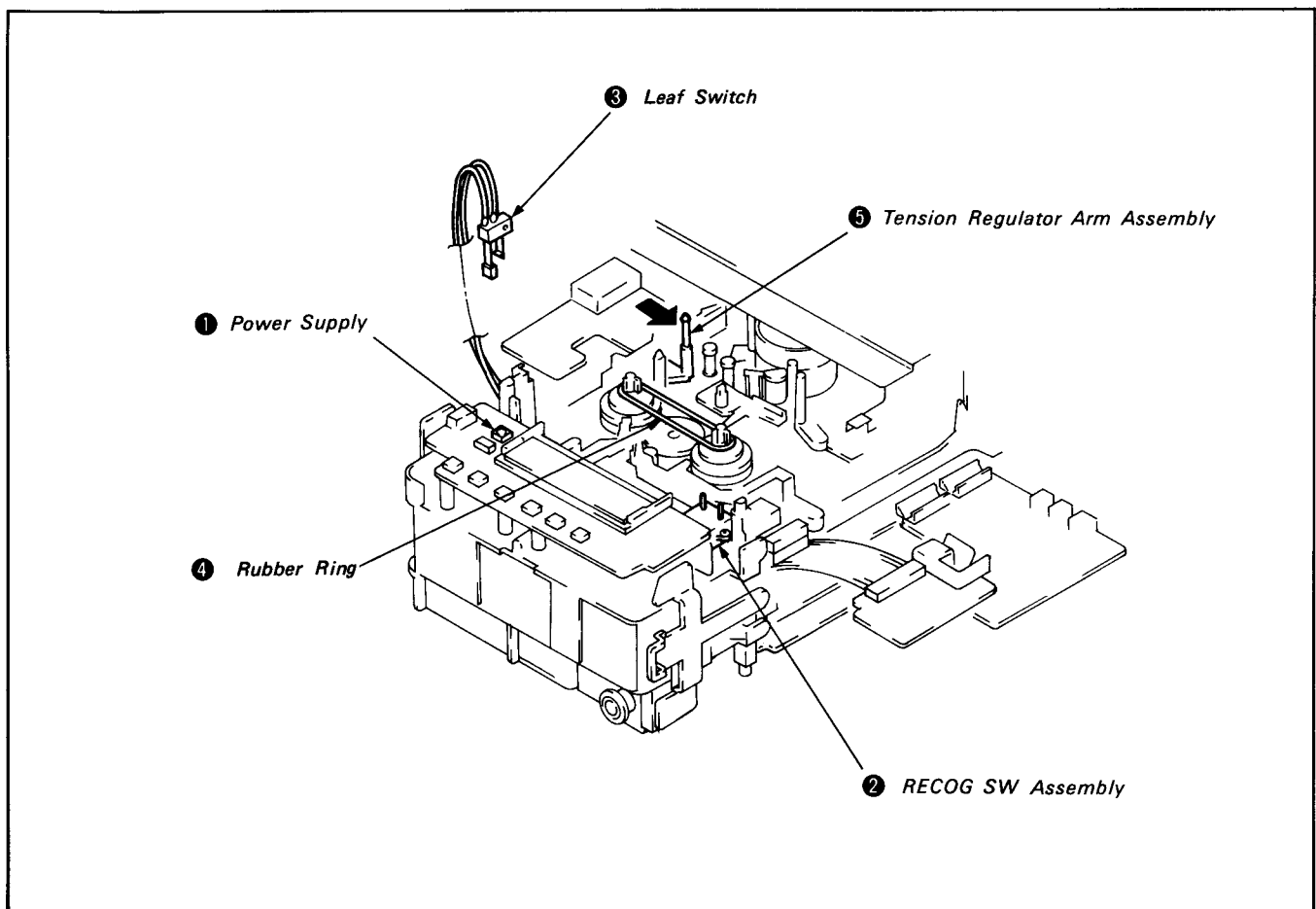


Fig. 8-2.

8-1-3. Mode Selector Operation

1. Selector parts (External view)

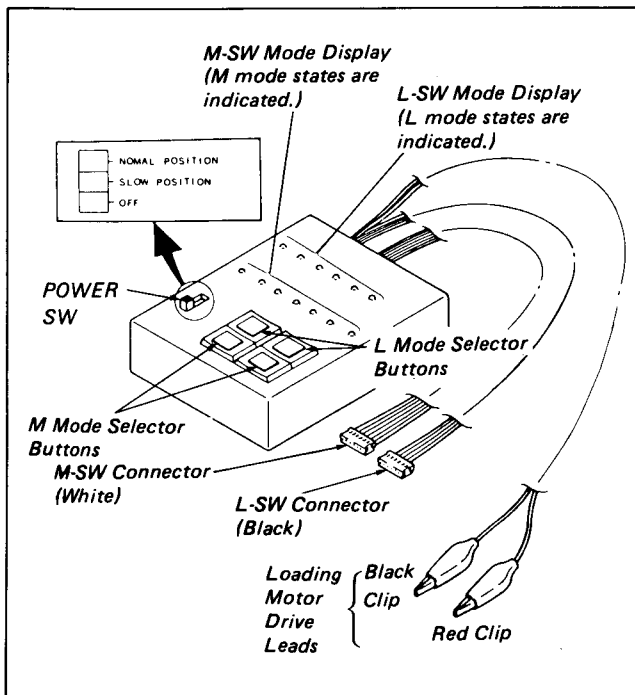


Fig. 8-3.

2. Connection

- 1) Plug the M-SW connector (6P connector, 6 harnesses, white) to the MS-4 Board (CN905) of the set.
- 2) Plug the L-SW connector (6P connector, 4 harnesses, black) to the LS-9 Board (CN904) of the set.
- 3) Connect each of red and black clip of the loading motor to each of red and gray loading motor drive lead wire, respectively. (See Fig. 8-3.)

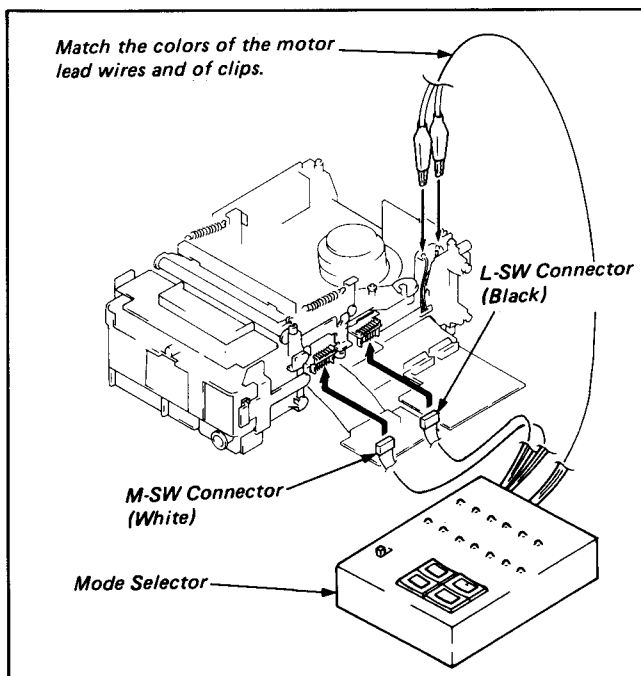


Fig. 8-4.

3. Precautions

- 1) Make sure to set the M-SW mode to LOADING/UNLOADING when operating L-SW.
- 2) Make sure to set the L-SW mode to TOP or END when operating M-SW.

4. Operation

“BLANK” lights if each mode state is not set up during selection regardless of the L or M mode.

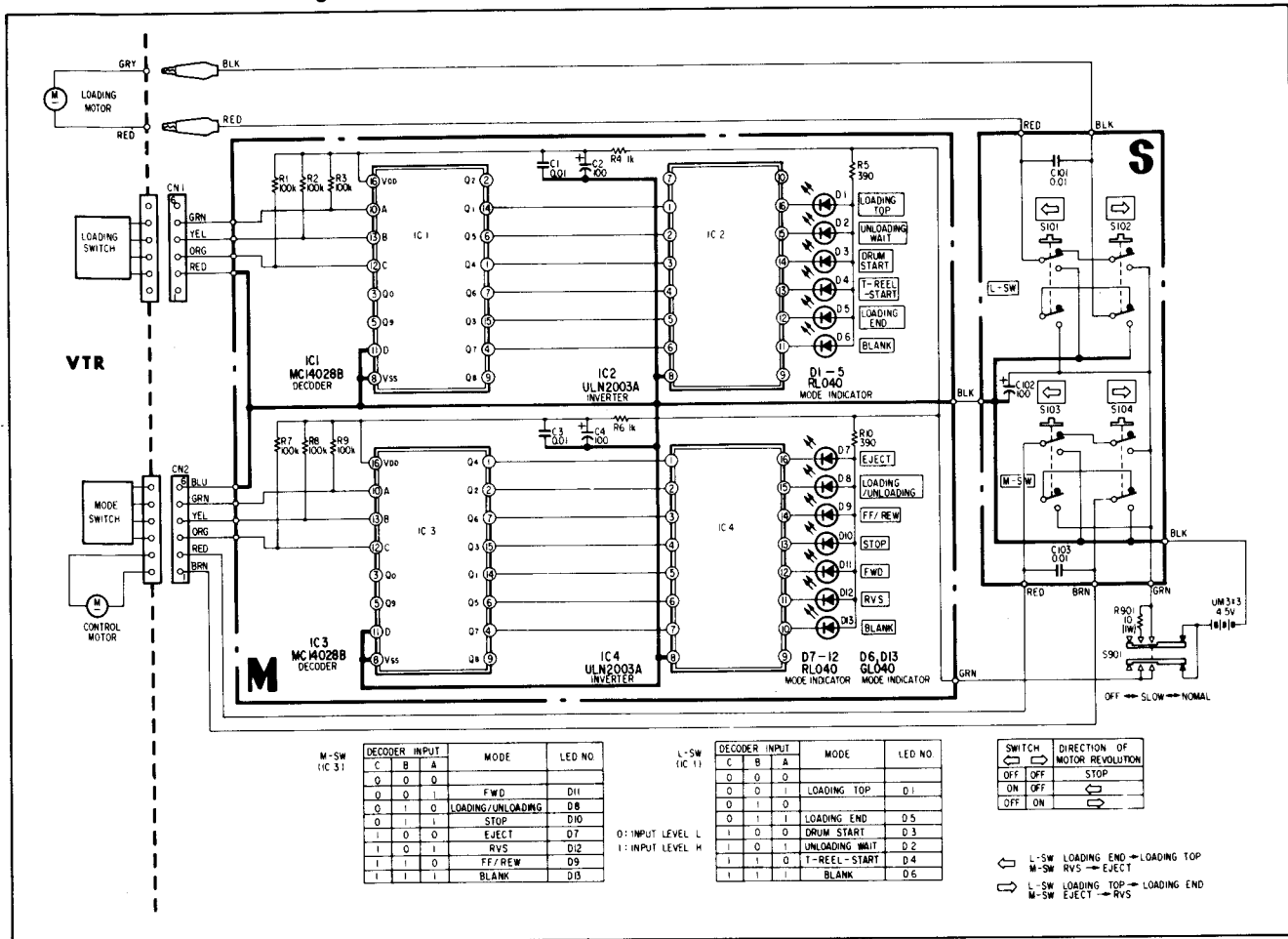
1) L Mode

- Lighted to right sequentially from LOADING TOP to LOADING END when the righthand side button of the L mode selector buttons is kept pressing.
- Keep pressing the selector button on the lefthand side to set up the desired mode in order to change from LOADING END to LOADING TOP.
- The L mode operates more slowly in the slow position than in the normal position.

2) M Mode

- Set L-SW to LOADING TOP to eject.
- Set L-SW to LOADING END to change from FF/REW to RVS or from RVS to FF/REW.
- Keep pressing the righthand side selector button of the M mode to light to right sequentially from EJECT to RVS.
- Keep pressing the selector button on the lefthand side to set up the desired mode in order to change from RVS to EJECT.

5. Mode selector circuit diagram



6. Mode selector parts list

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
CAPACITOR			IC		
C1	1-108-579-00	MYLAR 0.01μF 50V	IC1	8-759-240-28	IC TC4028BP
C2	1-123-333-00	ELECT 100μF 24V	IC2	8-759-120-03	IC μPA2003A
C3	1-108-579-00	MYLAR 0.01μF 50V	IC3	8-759-240-28	IC TC4028BP
C4	1-123-333-00	ELECT 100μF 24V	IC4	8-759-120-03	IC μPA2003A
C101	1-108-579-00	MYLAR 0.01μF 50V	RESISTOR		
C102	1-123-333-00	ELECT 100μF 24V	R1	1-247-179-00	CARBON 100K ¼W
C103	1-108-597-00	MYLAR 0.01μF 50V	R2	1-247-179-00	CARBON 100K ¼W
DIODE			R3	1-247-179-00	CARBON 100K ¼W
D1	8-719-812-31	DIODE TLR123	R4	1-247-131-00	CARBON 1K ¼W
D2	8-719-812-31	DIODE TLR123	R5	1-247-121-00	CARBON 390 ¼W
D3	8-719-812-31	DIODE TLR123	R6	1-247-131-00	CARBON 1K ¼W
D4	8-719-812-31	DIODE TLR123	R7	1-247-179-00	CARBON 100K ¼W
D5	8-719-812-31	DIODE TLR123	R8	1-247-179-00	CARBON 100K ¼W
D6	8-719-812-33	DIODE TLG123A	R9	1-247-179-00	CARBON 100K ¼W
D7	8-719-812-31	DIODE TLR123	R10	1-247-121-00	CARBON 390 ¼W
D8	8-719-812-31	DIODE TLR123	R901	1-214-594-00	METAL 10 1W
D9	8-719-812-31	DIODE TLR123			
D10	8-719-812-31	DIODE TLR123			
D11	8-719-812-31	DIODE TLR123			
D12	8-719-812-31	DIODE TLR123			
D13	8-719-812-33	DIODE TLG123A			

8-2. PERIODIC CHECKING AND MAINTENANCE ITEMS

Maintenance and periodic checking should be performed as described below to demonstrate the set functions and performance fully, as well as for the sake of the machine and tapes. Provide the following maintenance work after a repair regardless of the duration of operation by the user.

8-2-1. Cleaning Rotary Drum Assembly

- 1) Lightly place chamois leather (Ref. No. J-2) moistened with a cleaning solution (Ref. No. J-1) on the rotary upper drum assembly and slowly rotate the rotary upper drum assembly counterclockwise by a finger to clean.

Note: Do not rotate the drum by the motor by turning on power or by rotating clockwise by a finger.

The chances of the head chip being damaged are very high if chamois leather is moved perpendicular to the head chip. Absolutely no cleaning method other than that described above should be used.

8-2-2. Tape Guide System Cleaning

- 1) Set up the cassette compartment assembly in an eject state and clean the tape guide system (No. 1 to 11 guides, capstan spindle and pinch roller) with chamois leather moistened with a cleaning solution. (See Fig. 8-5.)

8-2-3. Driving System Cleaning

- 1) Clean the drive system (timing belt and reel table surfaces) with a cloth moistened with a cleaning solution.

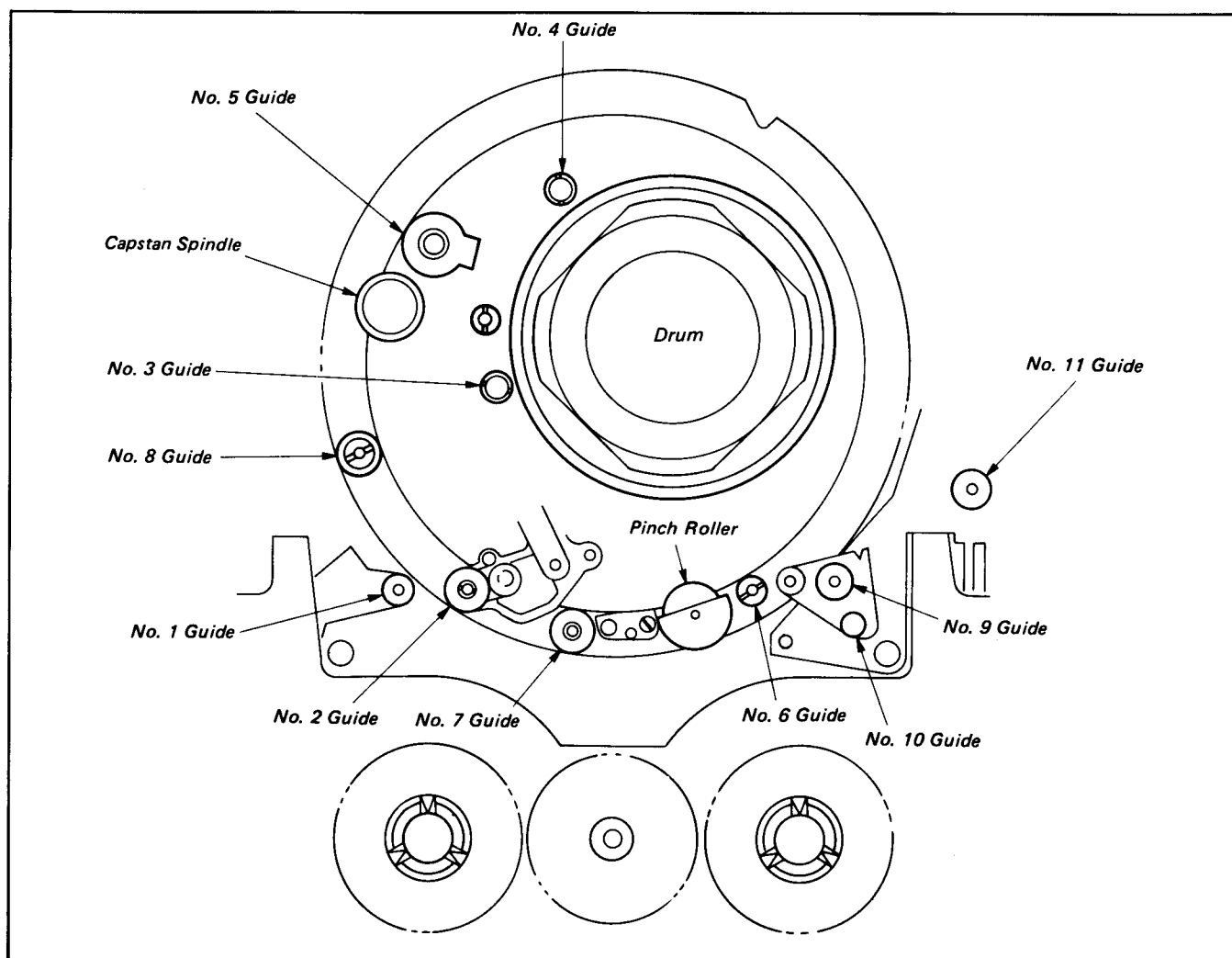


Fig. 8-5.

8-2-4. Periodic Check Items

Provide the following maintenance and checking depending on the user use duration.

○ Cleaning ◎ Oiling ★ Replacement ☆ Checking

Maintenance and Check Part		Hours in Operation (h)										Remarks
		500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Tape Guide System	Cleaning of tape running surfaces	○	○	○	○	○	○	○	○	○	○	Avoid oil
	Cleaning and demagnetizing of rotary drum assembly	○	○	○	○	○	○	○	○	○	○	Avoid oil
Drive System	L motor belt	○	○	○	○	○	○	○	★	○	○	3-686-546-01 Replace here, or every two years
	Timing belt	○	○	○	○	○	○	○	○	○	○	3-686-646-01
	Plunger solenoid	—	—	—	○	—	—	—	○	—	—	1-454-377-21
	Capstan bearing	—	◎	—	◎	—	◎	—	◎	—	◎	Absolutely avoid oil on tape running surfaces.
	Loading motor	—	☆	—	☆	—	☆	—	☆	—	☆	A-7040-031-A
	Control motor	—	☆	—	☆	—	☆	—	☆	—	☆	8-835-110-01
Performance Checking	Abnormal sound	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
	FWD } Torque measurement RVS }	—	☆	—	☆	—	☆	—	☆	—	☆	

Note: Replace parts in overhaul taking the foregoing items into consideration.

Note: SONY Oil

- Be sure to use SONY oil, always. (Various kinds of trouble may occur if the oil viscosity, etc. change.)
SONY oil: Parts No. 7-661-018-01 (Mitsubishi Diamond oil Hydrofluid EP56)
- Be sure to use SONY oil completely free from dust, etc. mixed in it when oiling the bearings. (The bearings may wear and may be seized if oil mixed with dust, etc. is used.)
- One drop of oil is approximately the amount of oil on tip of a stick 2mm in diameter as shown in the diagram. (See Fig. 8-6.)

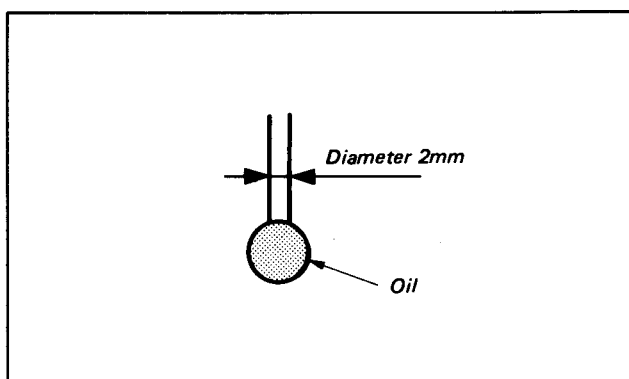
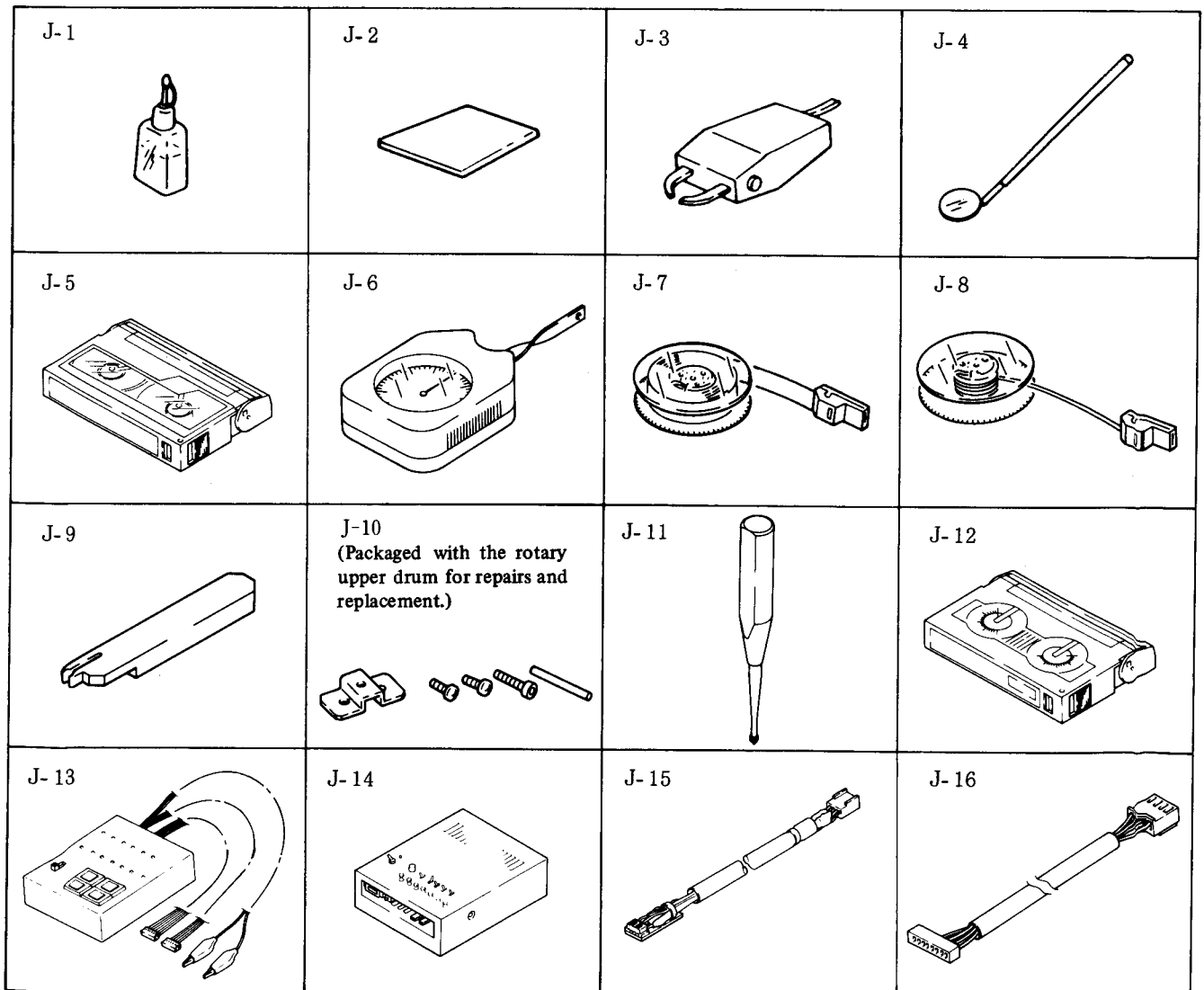


Fig. 8-6.

8-2-5. Summary of Servicing Tools

Ref. No.	Name	Part Code	Fixture No.	Use
J-1	Cleaning Fluid	Y-2031-001-0	—	
J-2	Chamois Cloth	2-034-697-00	—	
J-3	Head Demagnetizer		—	
J-4	Dental Mirror (handle) Dental Mirror (mirror)	J-6080-029-A J-6080-030-1	SL-5052	Tape Path
J-5	Alignment Tape (WR5-1C)	8-967-995-06		Tape Path
J-6	Dial Tension Gauge	J-6080-827-A		Measuring torques
J-7	Tension measuring reel	J-6080-831-A		With $\phi 30$ tape
J-8	Tension measuring reel	J-6080-832-A		With $\phi 16$ string
J-9	No. 10 gear phase matching	J-6080-823-A	GD-2047	
J-10	Rotary DRUM JIG	(Packaged with the rotary upper drum for repairs and replacement.)		
J-11	No. 6 Guide Lock JIG	J-6080-826-A		
J-12	FWD, RVS Take-up Torque Cassette	J-6080-824-A	GD-2086	
J-13	Mode Selector	J-6080-825-A		The whole
J-14	TRACK SHIFT & MONITOR JIG	J-6080-851-A		Tape path
J-15	RF/SWP Connector	J-6080-843-3		Tape path
J-16	CTL Connector	J-6080-859-A		Tape path

Other equipment: Oscilloscope
Analog Tester (20k Ω)



8-3. MECHANISM SECTION CHECKING, ADJUSTMENT AND REPLACEMENT

- Note:** • Use a mode selector (Ref. No. J-13) to check, adjust, and replace this mechanism section.
- The modes in are set up by pressing the mode selector buttons.

8-3-1. S Reel Table Assembly

1. Removal

- 1) Remove the cassette compartment assembly as instructed in 2-11.
- 2) Set up the **FF/REW** mode.
- 3) Remove the screw ❶ and reel table stopper ❷.
- 4) Remove the REV brake ❸.
- 5) Remove the S reel table assembly ❹. (See Fig. 8-7.)

Note: Be sure to hold the upper click part in hand when removing. (See the Note in Fig. 8-7.)

2. Remounting

- 1) Oil half a drop of oil on the upper spherical part of the spindle ❺.
- 2) Move the S main brake assembly ❻ toward the arrow.
- 3) Remount the S reel table assembly ❹ not to touch the tension regulator band assembly ❼.

Note: Be sure to hold the upper click part in hand when mounting. (See the Note in Fig. 8-7.)

- 4) Remount the REV brake ❸.
- 5) Remount the reel table stopper ❷ and tighten the screw ❶. (See Fig. 8-7.)
- 6) Set up the **LOADING/UNLOADING** mode.
- 7) Remount the cassette compartment assembly as instructed in 8-1-1.
- 8) Perform FWD back tension adjustment of 8-3-21.

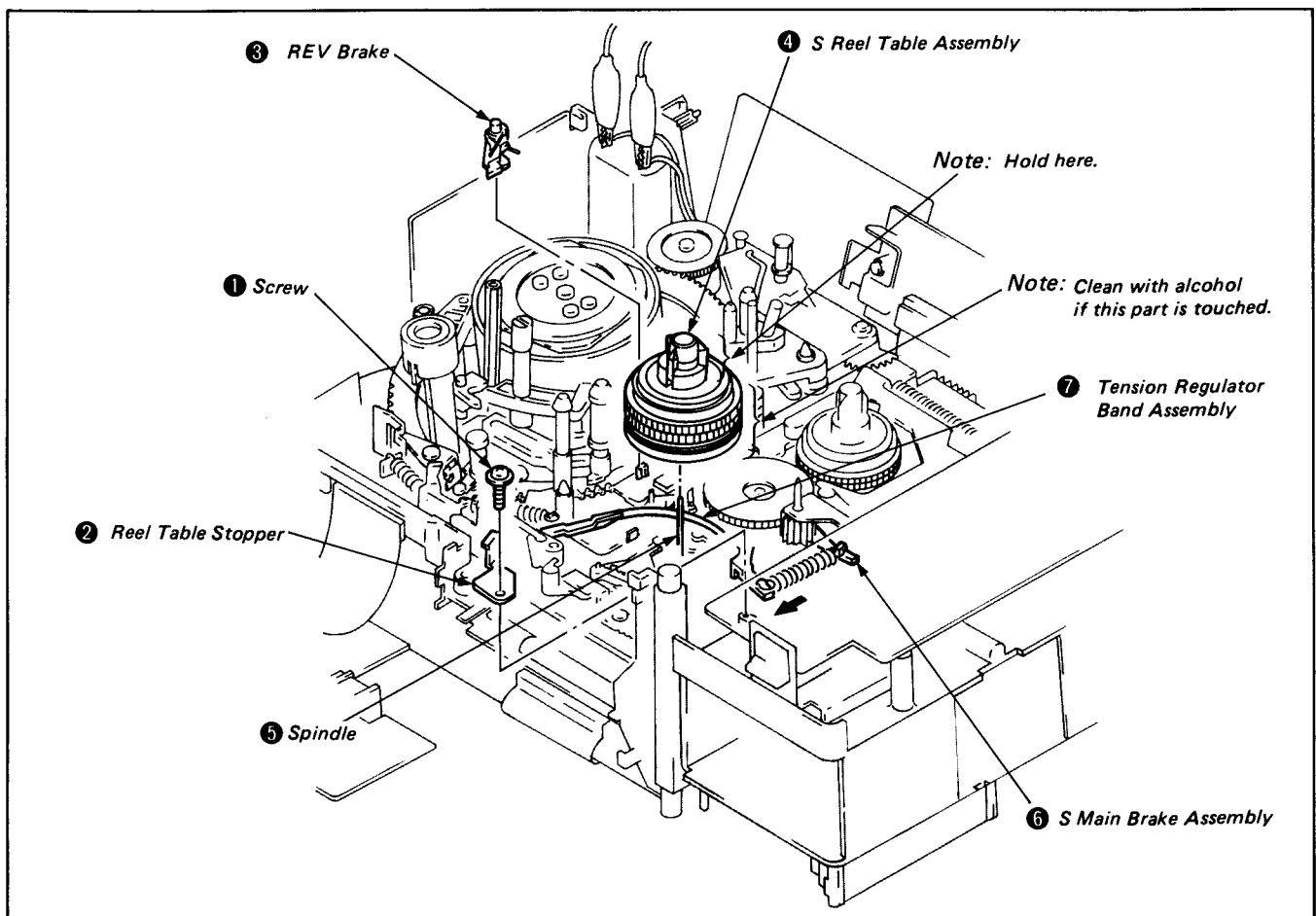


Fig. 8-7.

8-3-2. T Reel Table Assembly

1. Removal

- 1) Remove the cassette compartment assembly as instructed in 2-11.
- 2) Set up the **UNLOADING WAIT** mode.
- 3) Hook the spring ② tying the T soft brake ① on the click of the lock slider.
- 4) Remove the stopper washer ③ and T soft brake ①.
- 5) Set up the **EJECT** mode.
- 6) Move the drive gear (B) ④ toward the arrow.
- 7) Remove the T reel table assembly ⑤. (See Fig. 8-8.)

Note: Be sure to hold the upper click part in hand when removing. (See the Note in Fig. 8-7.)

2. Remounting

- 1) Oil half a drop of oil on the upper spherical part of the spindle ⑥.
- 2) Move the drive gear (B) ④ toward the arrow. (Check that the **EJECT** mode is set up.)
- 3) Remount the T reel table assembly ⑤.
- 4) Remount the T soft brake ① and stop washer ③.
- 5) Rehook the spring ② on the click of the T soft brake ①. (See Fig. 8-8.)
- 6) Set up the **LOADING TOP** and **LOADING/UNLOADING** modes.
- 7) Remount the cassette compartment assembly as instructed in 8-1-1.

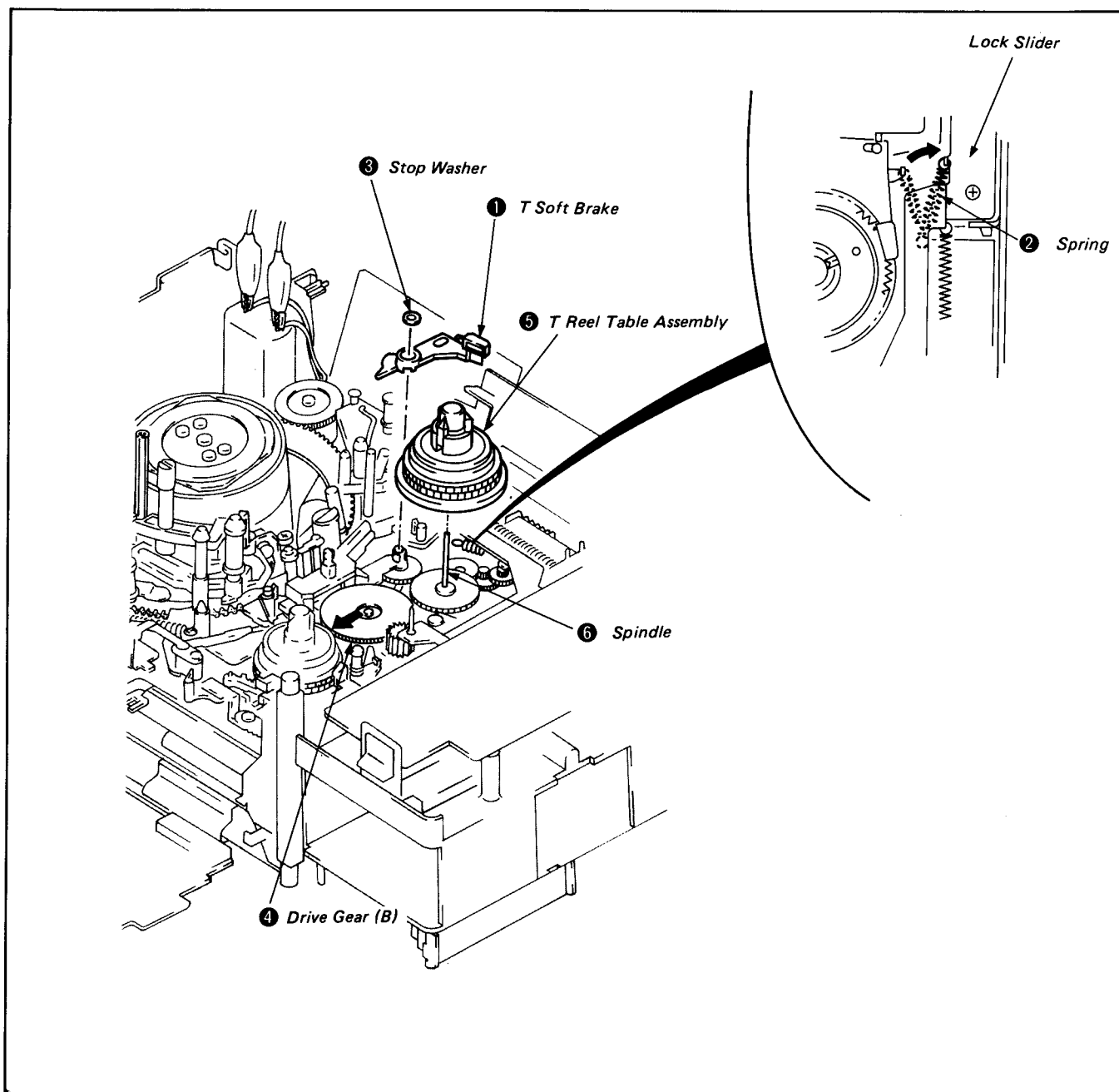


Fig. 8-8.

8-3-3. Pinch Pressure Arm Assembly

1. Removal

- 1) Hook the spring ① on the pinch press arm assembly ②.
- 2) Remove the stop washer ③ and pinch press arm assembly ②. (See Fig. 8-9.)

2. Remounting

- 1) Oil half a drop of oil on the spindle ④.
- 2) Remount the pinch press arm assembly ② and stop washer ③.
- 3) Rehook the spring ① on the tension regulator spring hook assembly ⑤. (See Fig. 8-9.)

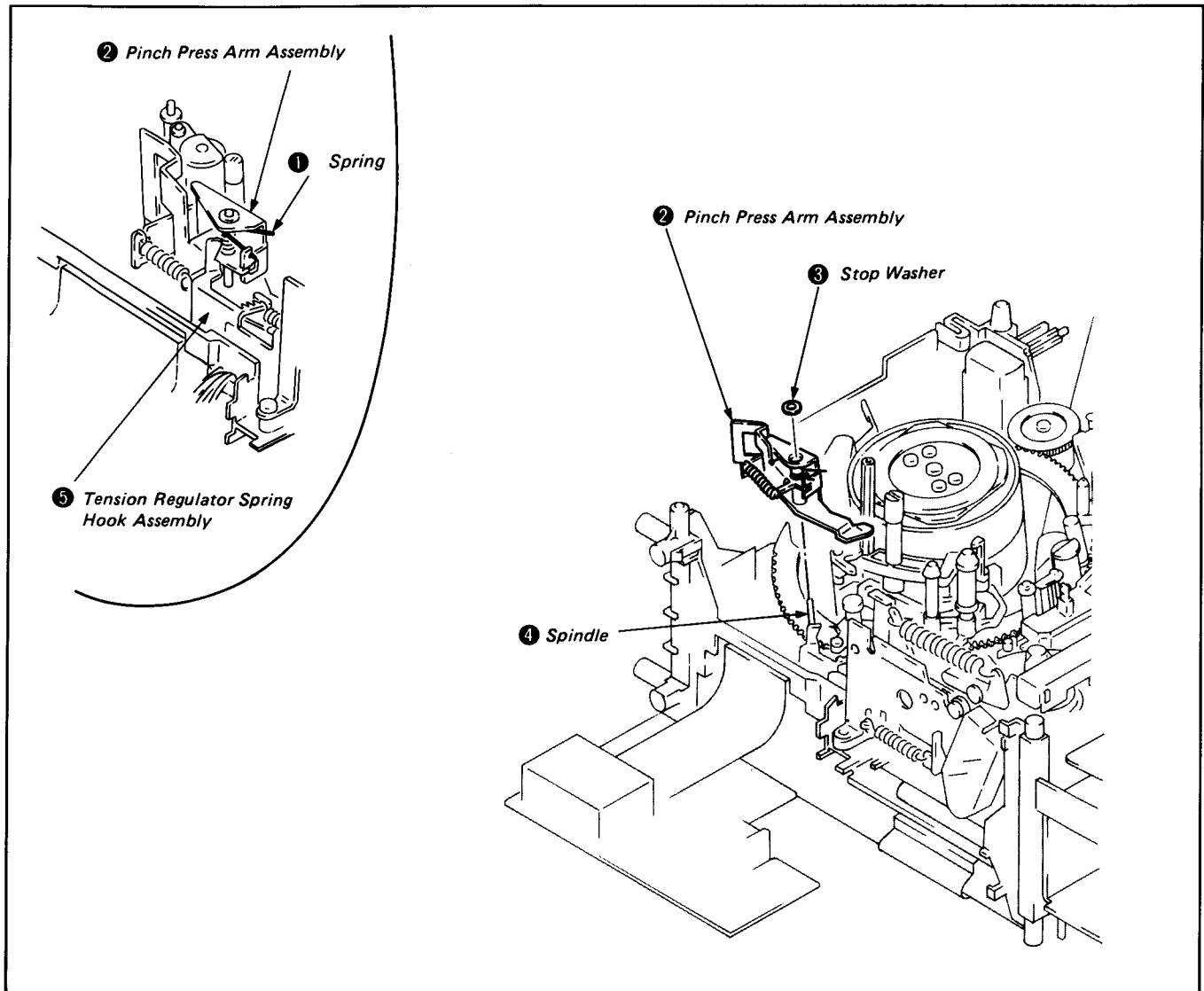


Fig. 8-9.

8-3-4. Tension Regulator Arm Assembly

1. Removal

- 1) Remove the cassette compartment assembly as instructed in 2-11.
- 2) Change the hooking position of the spring as instructed in 1) of Removal in 1. of 8-3-3.
- 3) Remove the spring ①. (Write down the spring hooking position).
- 4) Remove the screw ② and tension regulator spring hook assembly ③.
- 5) Set up the **FF/REW** mode.
- 6) Disengage the click ④ of the tension regulator band assembly.
- 7) Remove the tension regulator arm assembly ⑤. (See Fig. 8-10.)

2. Remounting

- 1) Oil half a drop of oil on the spindle ⑥.
- 2) Remount the tension regulator arm assembly ⑤ inserting the tension regulator load arm assembly pin ⑦ in the cam groove on the rear side of the tension regulator arm assembly ⑤.
- 3) Reengage the tension regulator band assembly click ④. (Do not touch or deform the band.)
- 4) Set up the **LOADING/UNLOADING** mode.
- 5) Remount the tension regulator spring hook assembly ③ and tighten the screw ②.
- 6) Rehook the spring ① in the previous position and lock the screw. (See Fig. 8-10.)
- 7) Rehook the spring as instructed in 3) of Remounting in 2. of 8-3-3.
- 8) Remount the cassette compartment assembly as instructed in 8-1-1.

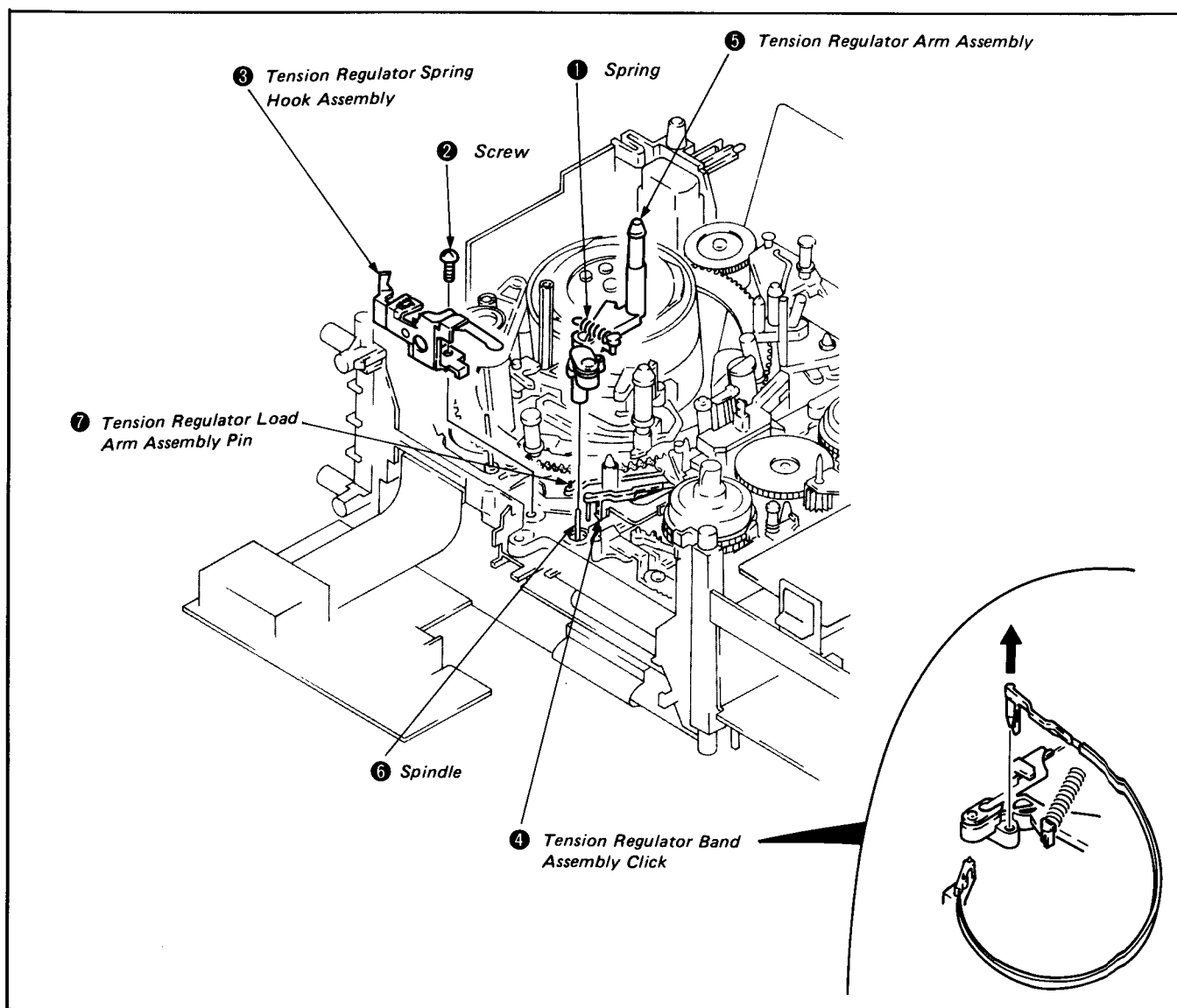


Fig. 8-10.

8-3-5. Tension Regulator Band Assembly

1. Removal

- 1) Remove the S reel table assembly as instructed in 8-3-1.
- 2) Disengage the band arm assembly click ❶.
- 3) Disengage the click ❷ and remove the tension regulator band assembly ❸. (See Fig. 8-11.)

2. Remounting

- 1) Remount the tension regulator band assembly ❸. (Do not touch or deform the band.)
- 2) Reengage the band arm assembly click ❶. (See Fig. 8-11.)
- 3) Remount the S reel table assembly as instructed in 8-3-1.
- 4) Adjust the FWD back tension as instructed in 8-3-21.

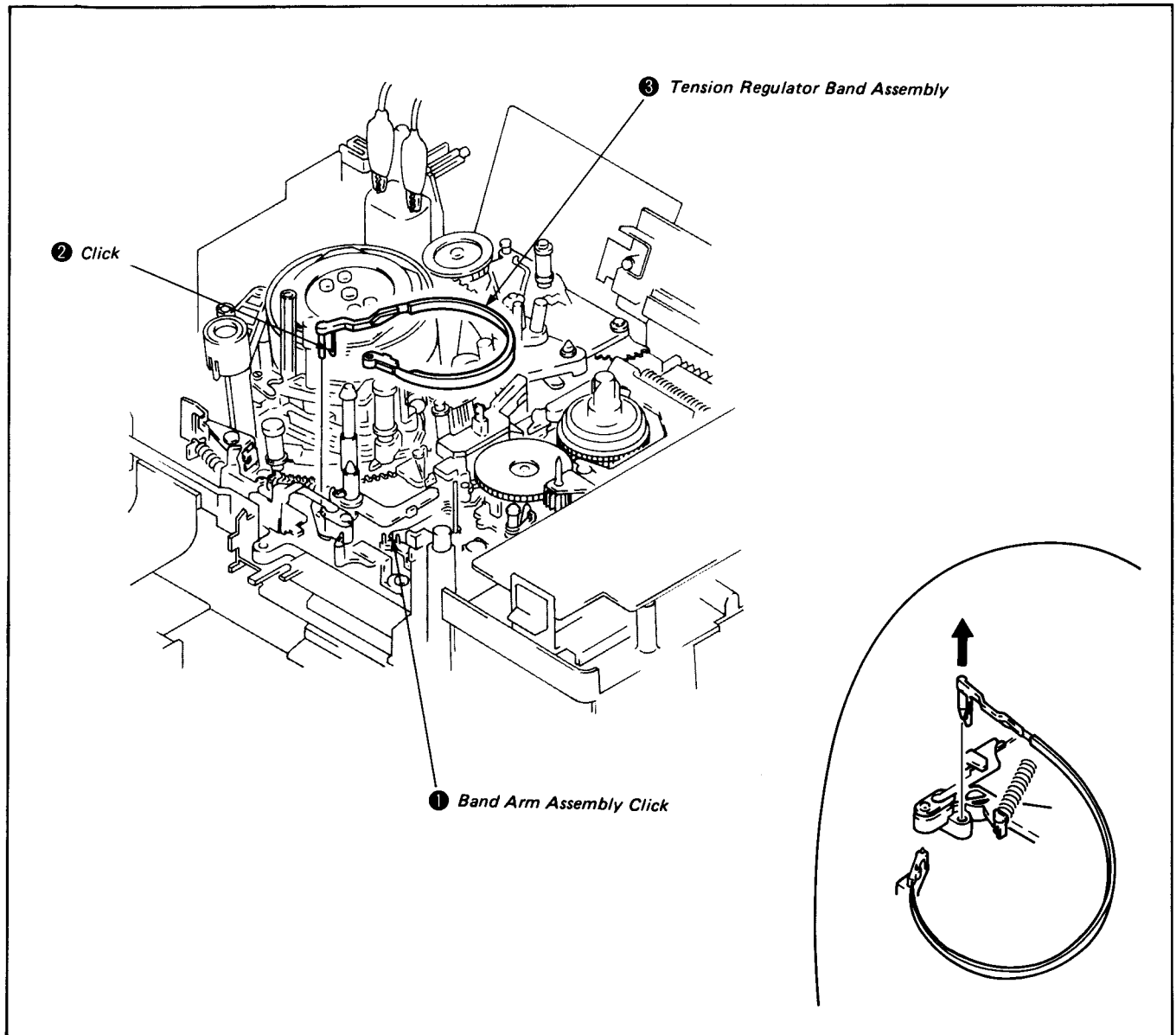


Fig. 8-11.

8-3-6. Loading Motor Assembly

1. Removal

- 1) Open the SS-64 Board as instructed in 2-13.
- 2) Remove the L motor belt ①.
- 3) Disconnect the connector ② CN302 (white) 2P from the RS-18 Board.
- 4) Remove the two screws ③ and loading motor assembly ④. (See Fig. 8-12.)

2. Remounting

- 1) Remount the loading motor assembly ④ and tighten the two screws ③.
- 2) Reconnect the connector ② CN302 (white) 2P to the RS-18 board.
- 3) Remount the L motor belt ①. (See Fig. 8-12.)
- 4) Reassemble the circuit boards reversing the sequence.

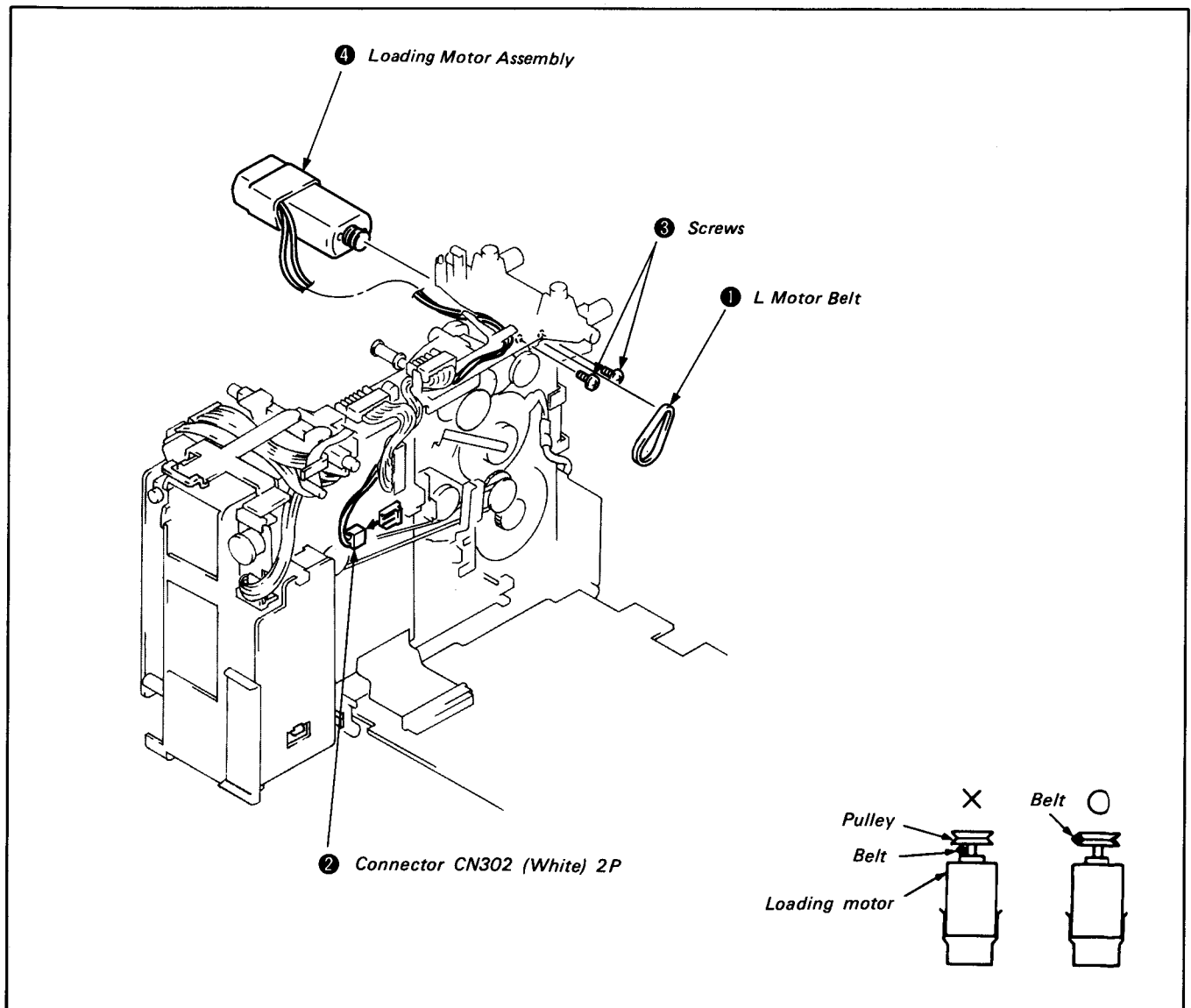


Fig. 8-12.

8-3-7. Loading Ring Assembly

1. Removal

- 1) Operate the mode selectors to move the guide base assembly ① to immediately before the lock and the No. 2 guide ② to the position where the screw of the ring stopper ③ immediately before the lock. (Do not move the loading ring assembly ⑪.)
- 2) Remove the stop washer ④ and disengage the No. 10 gear assembly ⑤.

- 3) Remove the screw ⑥, roller retainer ⑦ and roller ⑧.
- 4) Remove the two screws ⑨, ring stopper ③ and roller ⑩.
- 5) Remove the loading ring assembly ⑪ in the arrow direction. (See Fig. 8-13.)

Note: Care should be taken not to strike the drum when removing the loading ring assembly ⑪.

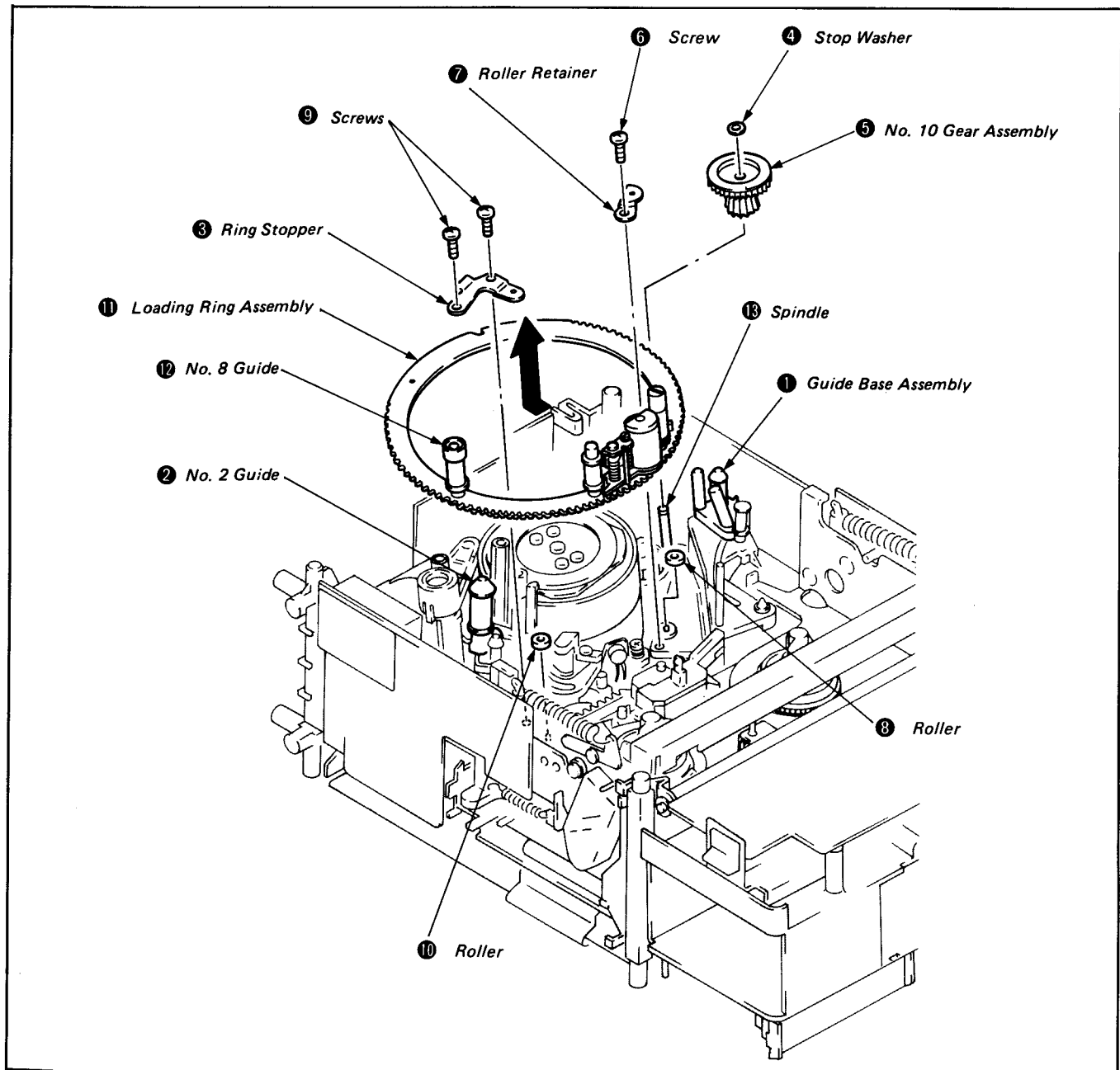


Fig. 8-13.

2. Remounting

- 1) Remount the loading ring assembly ⑪ in an unthreading condition (with the pinch roller moved to the camera section side). (Check that the loading ring assembly is in the condition of 1) of Removal.)
 - 2) Remount the roller ⑩ and ring stopper ③ and tighten the two screws ⑨. (The No. 8 guide ⑫ should be located near the control panel than the ring stopper ③.)
 - 3) Remount the roller ⑧ and roller retainer ⑦ and tighten the screw ⑥. (Check that the loading ring assembly fits the three rollers.)
 - 4) Oil half a drop of oil on the spindle ⑬. (See Fig. 8-13.)
 - 5) Check that the tooth of the drive changer is engaging the dent of the L-SW assembly and plug the No. 10 gear phase alignment jig (Ref. No. J-9) (See Fig. 8-14.)
 - 6) Remount the No. 10 gear ⑤ and stop washer ④ pressing the No. 8 guide ⑫ to the ring stopper ③.
 - 7) Pull out the No. 10 gear phase alignment jig.
 - 8) Set up the **LOADING TOP** mode.
- Note:** Be sure to adjust the tape path as instructed in 8-4 after remounting.

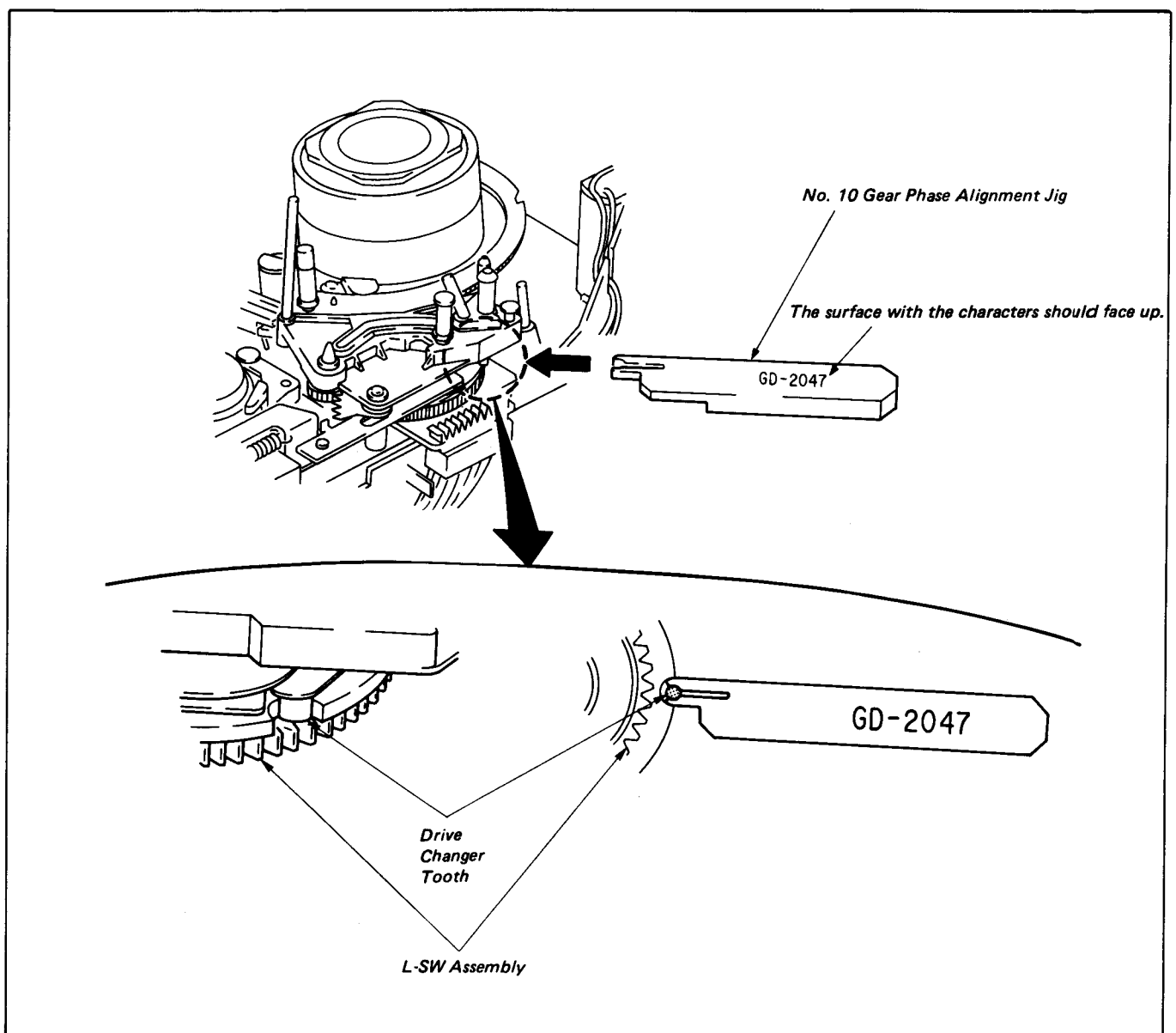


Fig. 8-14.

8-3-8. Pinch Roller Assembly

1. Removal

- 1) Remove the loading ring assembly as instructed in 8-3-7.
- 2) Remove the stop washer ①. (See Fig. 8-15.)
- 3) Change the hooking position of the spring ③ on the No. 7 guide assembly ②. (See Fig. 8-16.)
- 4) Rotate the pinch roller assembly ④ in the arrow direction. (See Fig. 8-17.)
- 5) Remove the pinch roller assembly ④ toward the arrow. (See Fig. 8-18.)
- 6) Remove the spring ③. (See Fig. 8-19.)

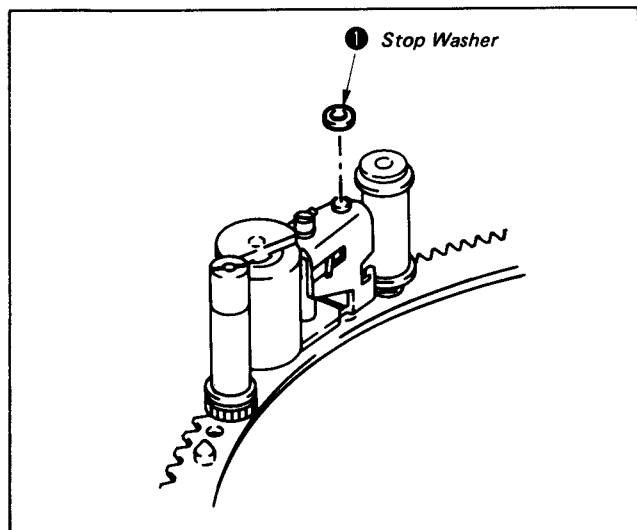


Fig. 8-15.

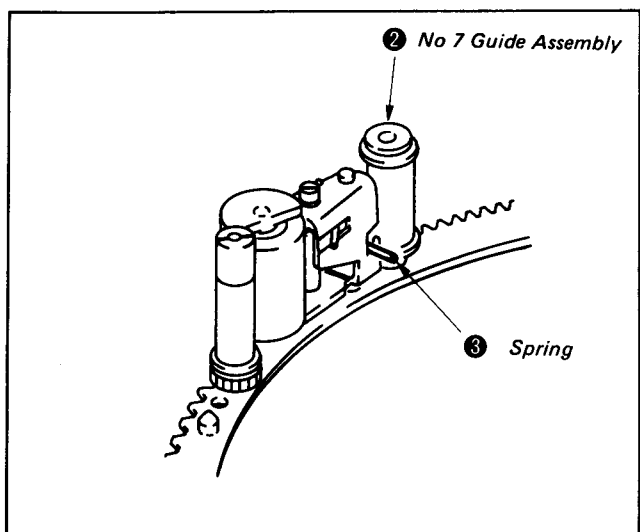


Fig. 8-16.

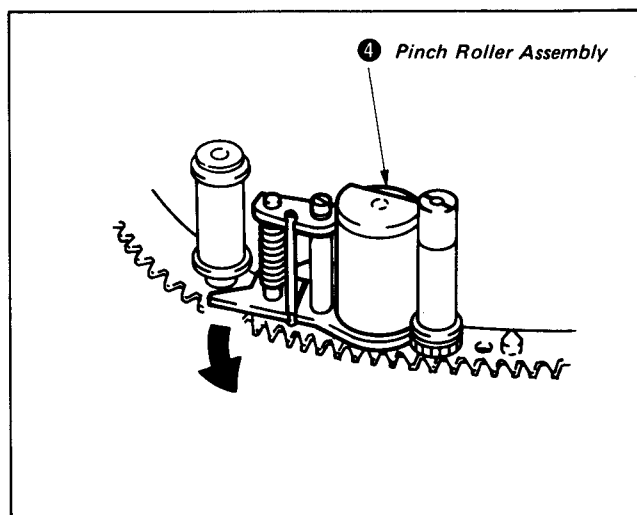


Fig. 8-17.

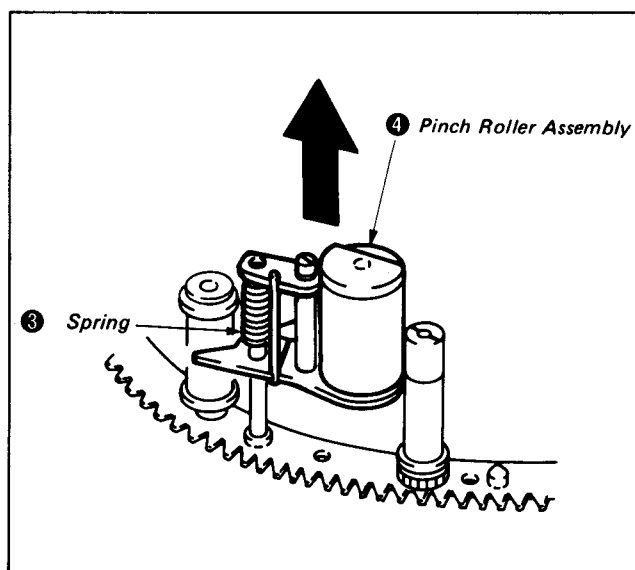


Fig. 8-18.

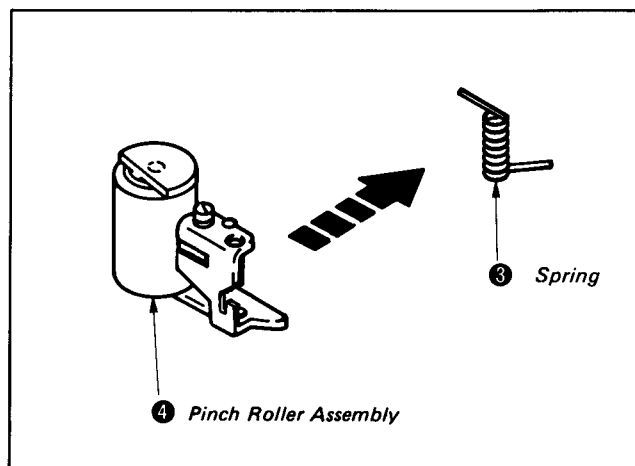


Fig. 8-19.

2. Remounting

- 1) Rehook the spring ③. (See Fig. 8-20.)
- 2) Reinsert a thin object like a clip ⑤ into the pinch roller assembly hole ⑥. (See Fig. 8-21 and 22.)
- 3) Recontact the loading ring assembly spindle ⑦ with the tip of the clip ⑤ and fit the pinch roller assembly ④. (See Fig. 8-23 and 24.)
- 4) Rehook the spring on the No. 7 guide assembly ②. Confirm that the spring is hooked to part A at this time. (See Fig. 8-25.)
- 5) Remount the stop washer ①. (See Fig. 8-26.)
- 6) Remount the loading ring assembly as instructed in 8-3-7.

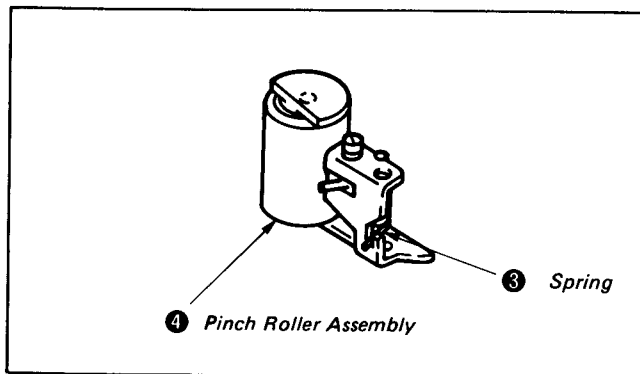


Fig. 8-20.

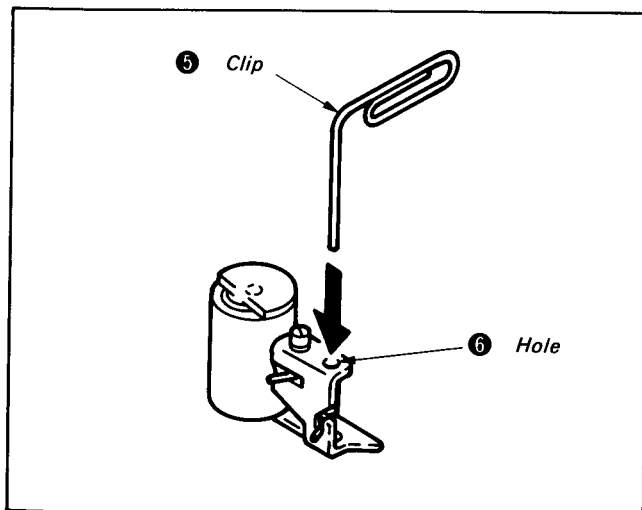


Fig. 8-21.

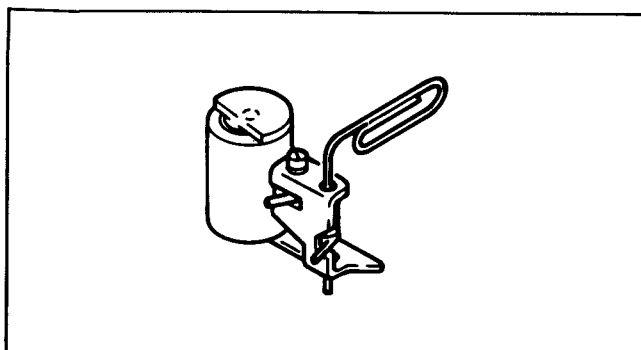


Fig. 8-22.

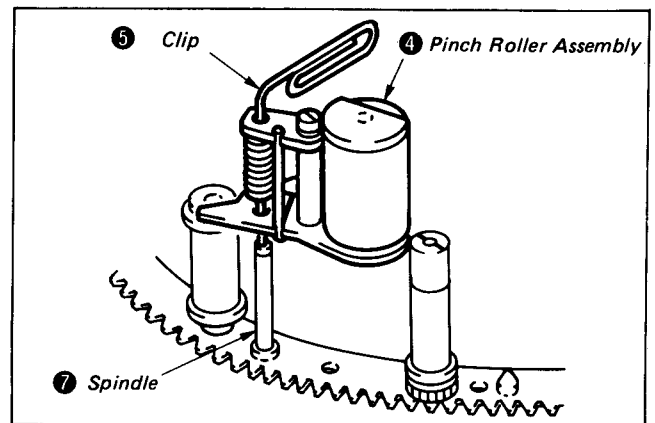


Fig. 8-23.

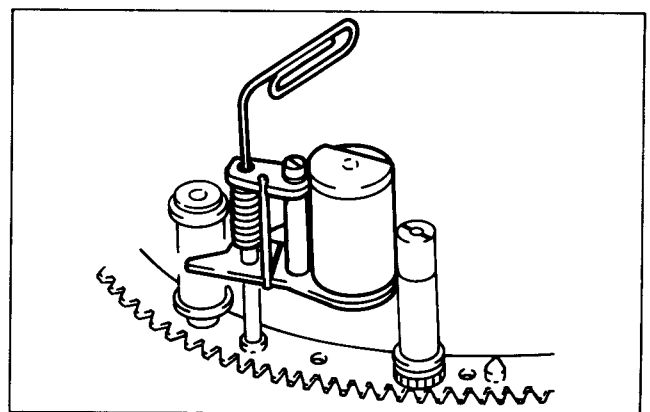


Fig. 8-24.

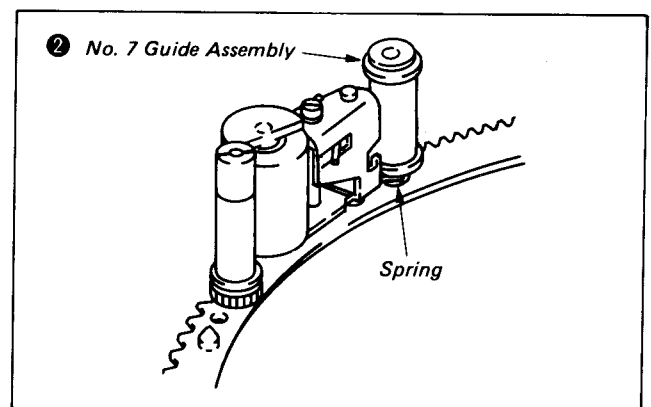


Fig. 8-25.

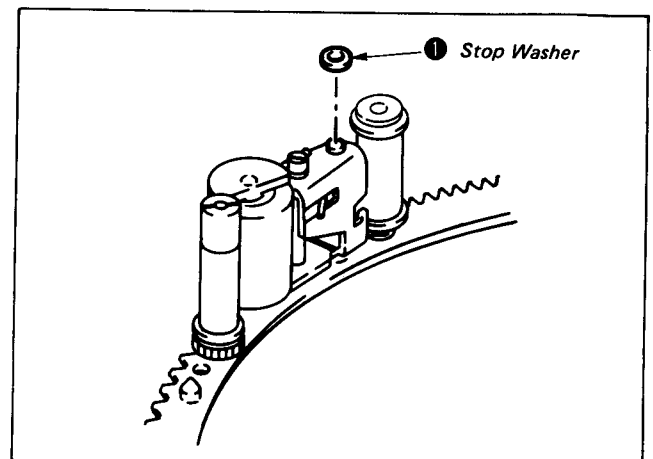


Fig. 8-26.

8-3-9. Slant Guide Chassis Assembly

1. Removal

- 1) Set up the **EJECT** mode and raise the cassette compartment assembly.
- 2) Remove the loading ring assembly as instructed in 8-3-7.
- 3) Remove the screw ① and E ring ②.
- 4) Remove the slant guide chassis assembly ③. (See Fig. 8-27.)

2. Remounting

- 1) Operate the mode selector and align the righthand edge of the L slider and that of the lock slider. (See Fig. 8-28.)
- 2) Set the guide base assembly of the slant guide chassis assembly in an unthreading condition (with the guide base assembly moved to the Camera section side) and remount it. (See Fig. 8-29.)
Check the meshing position of the slant guide drive gear and the L slider gear at this time.
- 3) Refit the E ring ② and tighten the screw ①. (See Fig. 8-27.)
- 4) Set to Condition 1) of 1. Remounting in 8-3-7.
- 5) Remount the loading ring assembly as instructed in 8-3-7.
- 6) Lower the cassette compartment assembly.

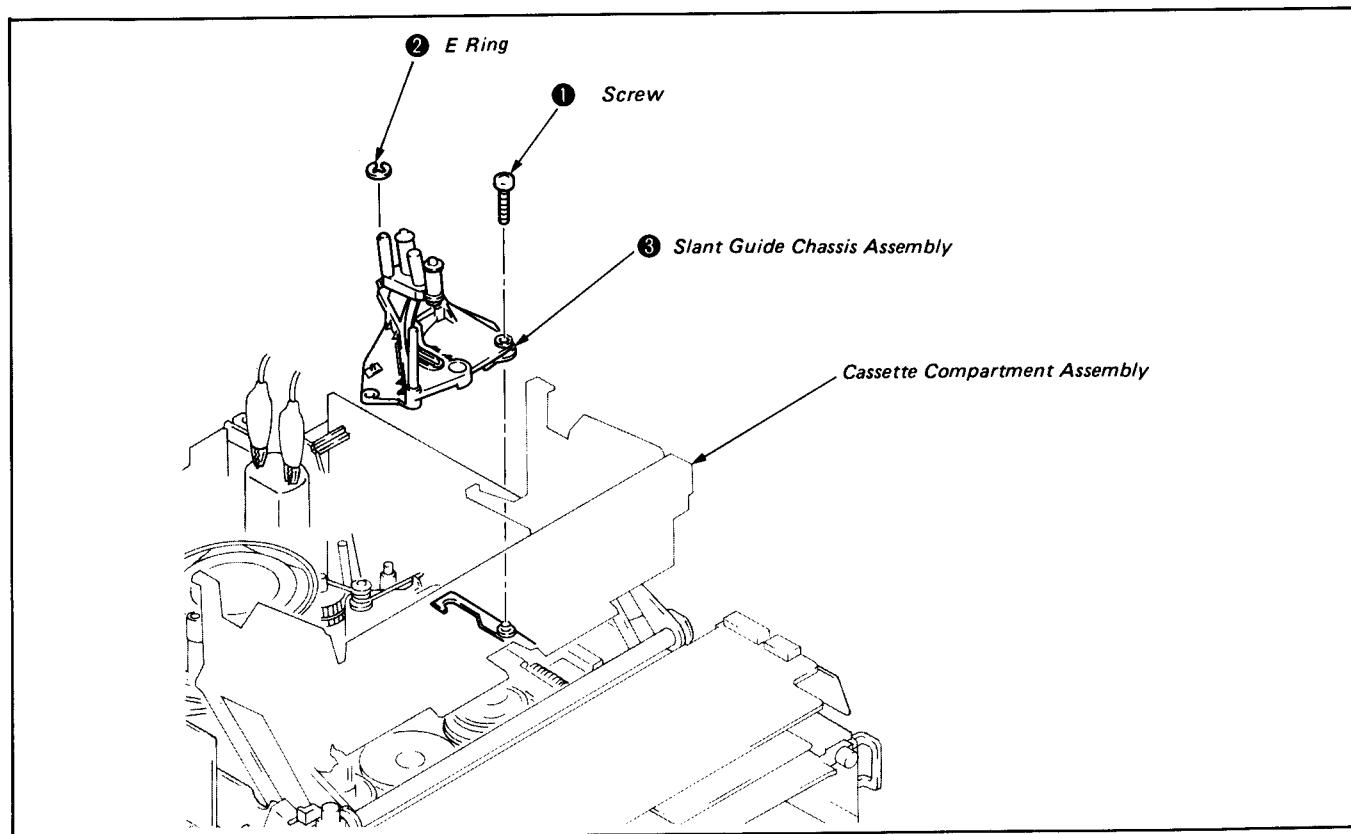


Fig. 8-27.

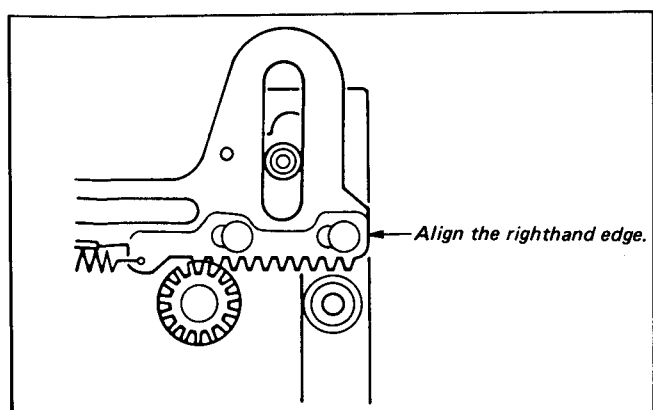


Fig. 8-28.

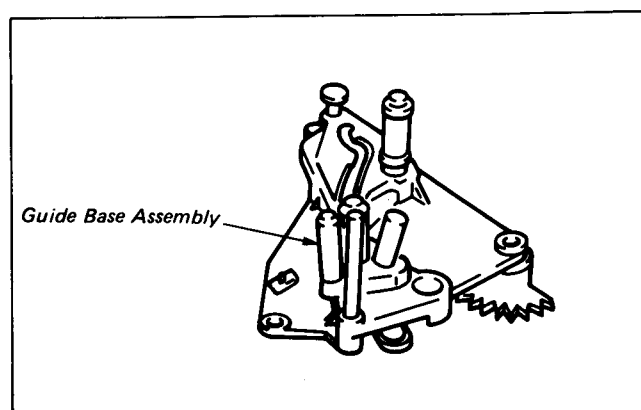


Fig. 8-29.

8-3-10. No.2 Guide Assembly

1. Removal

- 1) Release and remove claw of tape stopper ①.
- 2) Rotate the rotary upper drum counterclockwise so that the head does not contact.
- 3) Remove the drum guard screw ②.
- 4) Remove the screw ③.
- 5) Remove the guide nut ④ of the No. 3 guide, as well as the guide flange ⑤, guide ⑥ and compression spring ⑦.
- 6) Remove the No. 2 guide assembly ⑧. (See Fig. 8-30.)

2. Remounting

- 1) Confirm that it is in the **LOADING TOP** mode.
- 2) Mesh the toothless part **A** of the toothed wheel under the No. 2 guide assembly (entrance guide (P) assembly) and that **B** of the L slider.
- 3) Remount the compression spring ⑦, guide ⑥, and guide flange ⑤ in this order and tighten the guide nut ④ temporarily.
- 4) Tighten the screw ③.
- 5) Tighten the drum guard screw ②.
- 6) Refit the tape stopper ①. (See Fig. 8-30.)
- 7) Perform FWD back tension adjustment of 8-3-21.

Note: Be sure to adjust the tape path as instructed in 8-4 after remounting.

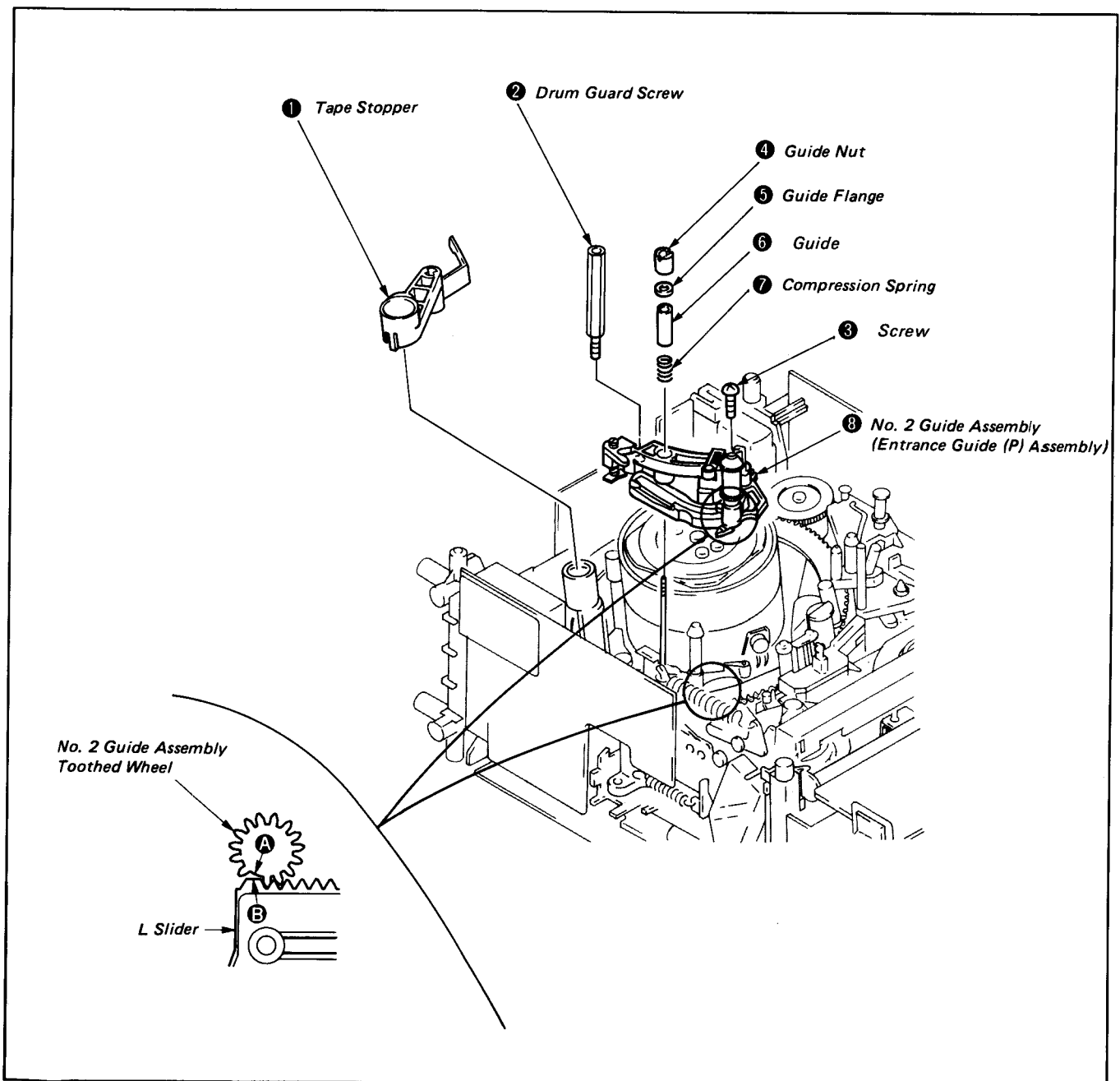


Fig. 8-30.

8-3-11. L Slider Assembly

1. Removal

- 1) Remove the slant guide chassis assembly as instructed in 8-3-9.
- 2) Remove the No. 2 guide assembly (entrance guide (P) assembly) as instructed in 8-3-10.
- 3) Set up the **DRUM START** mode.
- 4) Remove the slant guide drive gear ①.
- 5) Remove the pin of the tension regulator load arm assembly ② from the cam groove of the tension regulator arm assembly. (Refer to 8-3-4 Tension regulator arm assembly.)
- 6) Remove the two stopper washers ③.
- 7) Remove the L slider assembly ⑤ push the RL arm assembly lug ④ toward the arrow.
- 8) Remove the stopper washer ⑥ and tension regulator load arm assembly ②. (See Fig. 8-31.)

2. Remounting

- 1) Grease the parts. (See Fig. 8-32.)
- 2) Remount the tension regulator load arm assembly ② and stop washer ⑥. (See Fig. 8-31.)
- 3) Remount the L slider assembly ⑤ pushing the RL arm assembly lug ④ toward the arrow.
- 4) Refit the two stop washers ③.
- 5) Reinsert the pin of the tension regulator load arm assembly ② into the groove of the M slider. (Refer to 8-3-15 M Slider.)
- 6) Reinsert the pin of the tension regulator load arm assembly ② in the cam groove of the tension regulator arm assembly referring to 2) of 2. Remounting in 8-3-4. (Refer to 8-3-4 Tension regulator arm assembly.)
- 7) Operate the mode selector and align the righthand edges of the L slider and lock slider. (Refer to 1) of 2. Remounting in 8-3-9.)
- 8) Mesh the notch of the slant guide drive gear ① with the tooth at the left edge of the L slider assembly sliding one tooth while taking note to the upper and lower parts of the slant guide drive gear ①. (See Fig. 8-33.)
- 9) Remount the No. 2 guide assembly in accordance with 8-3-10.
- 10) Remount the slant guide chassis assembly as instructed in 8-3-9.

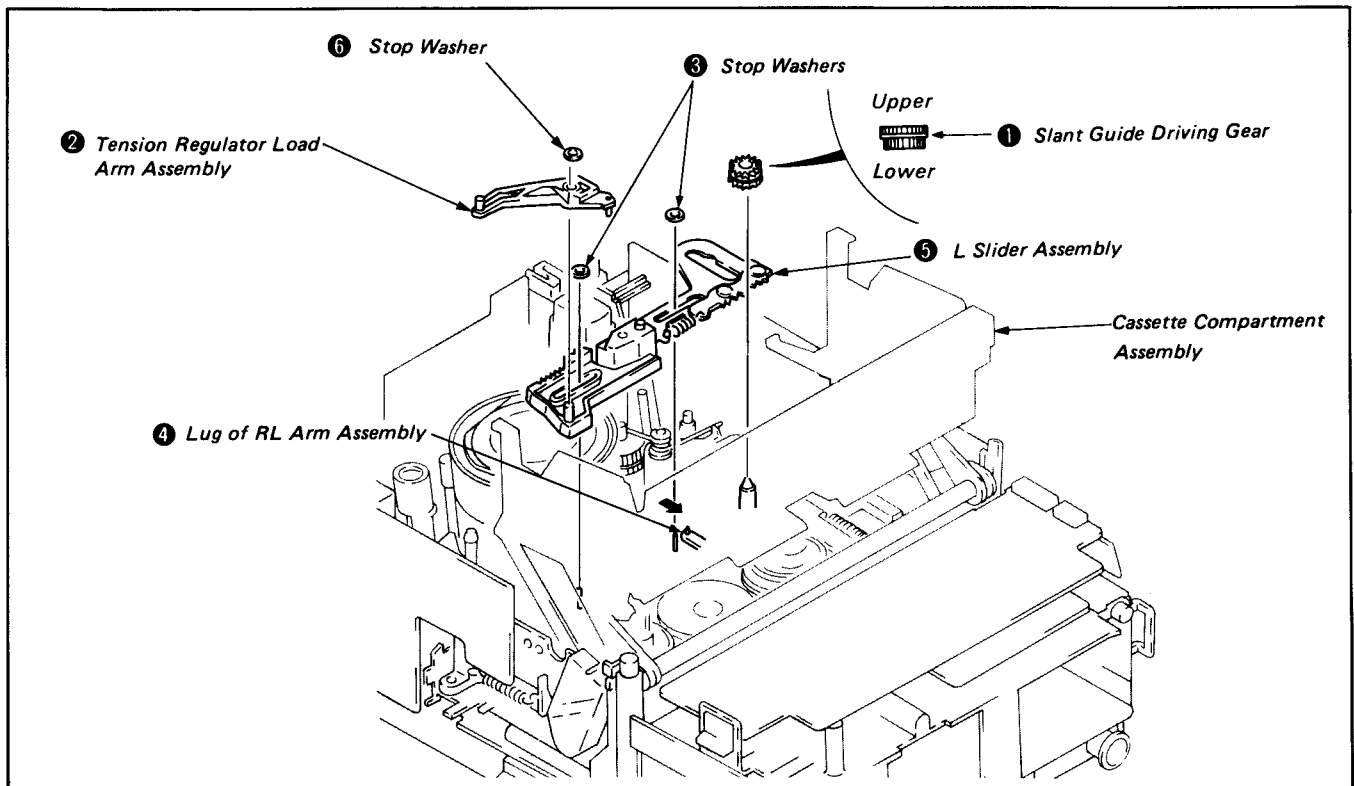


Fig. 8-31.

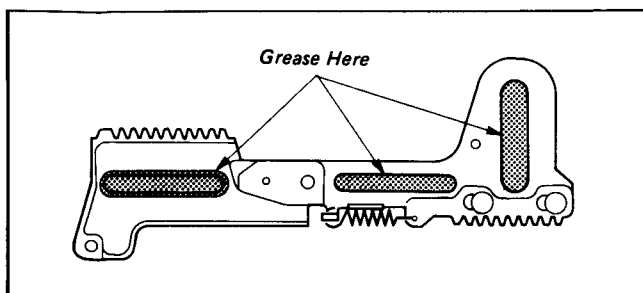


Fig. 8-32.

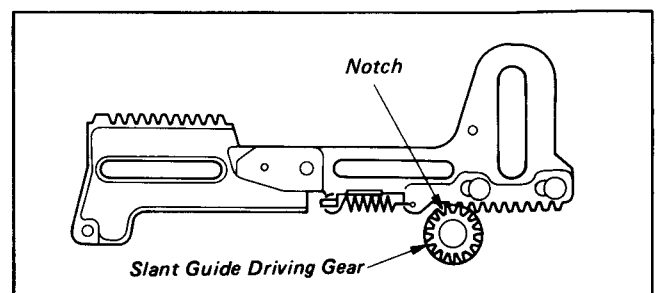


Fig. 8-33.

8-3-12. L-SW Assembly

1. Removal

- 1) Remove the L slider assembly as instructed in 8-3-11.
- 2) Remove the lock slider retainer ①.
- 3) Remove the screw ② and lock slider ③.
- 4) Remove the stop washer ④ and spring ⑤.
- 5) Remove the drive changer assembly ⑥.
- 6) Remove the connector ⑦.
- 7) Remove two screws ⑧ and L-SW assembly ⑨. (See Fig. 8-34.)

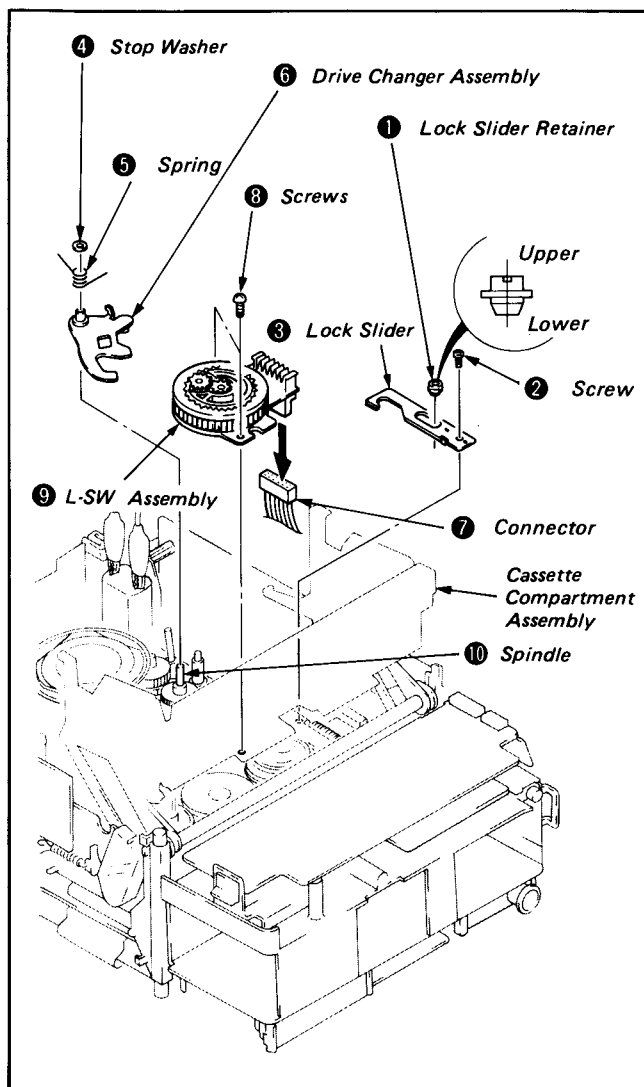


Fig. 8-34.

2. Remounting

- 1) Oil half a drop of oil on the spindle (planetary roller spindle) of the L-SW assembly ⑨.
- 2) Remount the L-SW assembly ⑨ and tighten two screws ⑧.
- 3) Reconnect the connector ⑦.
- 4) Operate the mode selector and check that the L-SW assembly ⑨ rotates.
- 5) Oil half a drop of oil on the spindle ⑩.
- 6) Grease the drive changer assembly ⑥. (See Fig. 8-35.)
- 7) Remount the drive changer assembly ⑥. (See Fig. 8-34.)
- 8) Rehook the spring ⑤ and refit the stop washer ④.
- 9) Operate the mode selector and check that the L-SW assembly ⑨ rotates.
- 10) Operate the mode selector, and set in the position shown in Fig. 8-36.
- 11) Remount lock slider ③ and secure with screw ②.
- 12) Remount by taking note of lock slider retainer ① upper and lower sections. (See Fig. 8-34.)
- 13) Remount L slider assembly in accordance with 8-3-11.

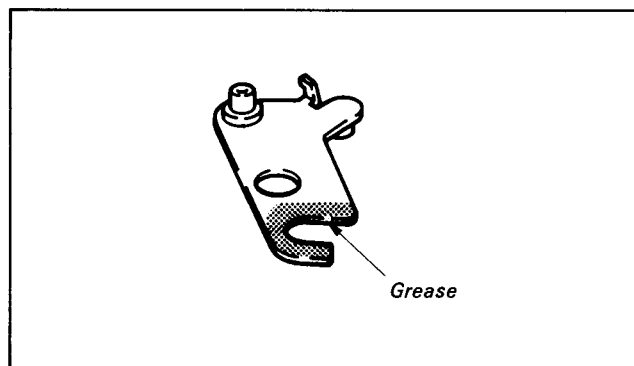


Fig. 8-35.

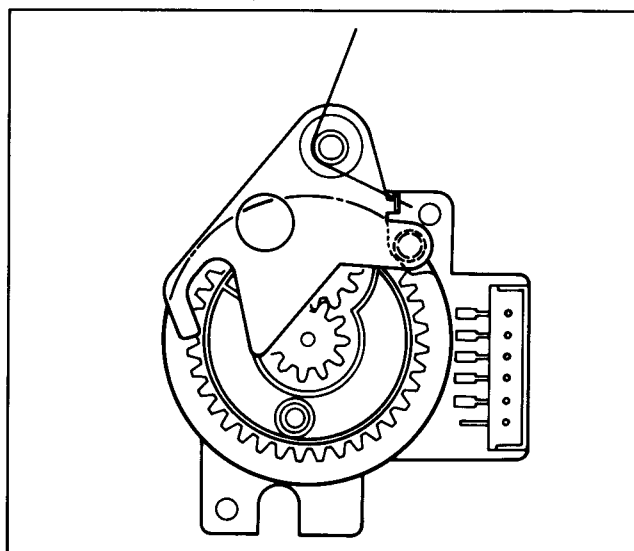


Fig. 8-38.

8-3-13. Plunger Solenoid

1. Removal

- 1) Open the battery holder assembly in accordance with 2-18.
- 2) Remove cassette compartment in accordance with 2-11.
- 3) Remove T reel table assembly in accordance with 8-3-2.
- 4) Remove the spring ①.
- 5) Remove two stop washers ②.
- 6) Remove the screw ③ and lock slider ④.
- 7) Remove soldering from ③ sections of the terminal of the plunger solenoid ⑥.
- 8) Remove two screws ⑤ and the plunger solenoid ⑥.
(See Fig. 8-37.)

2. Remounting

- 1) Reinsert the pin ⑦ of the plunger solenoid in the P arm hole ⑧ and tighten two screws ⑤. Be careful not to inflict scars on the T reel table by a screwdriver or touch it.)
- 2) Solder 3 sections of the terminal of the plunger solenoid ⑥.
- 3) Remount the lock slider ④ and tighten the screw ③.
- 4) Refit the two stop washers ②.
- 5) Refit the spring ①. (See Fig. 8-37.)
- 6) Remount T reel table assembly in accordance with 8-3-2.
- 7) Remount the cassette compartment assembly in accordance with 8-1-1.
- 8) Remount the battery holder assembly in reverse procedure of 2-18.

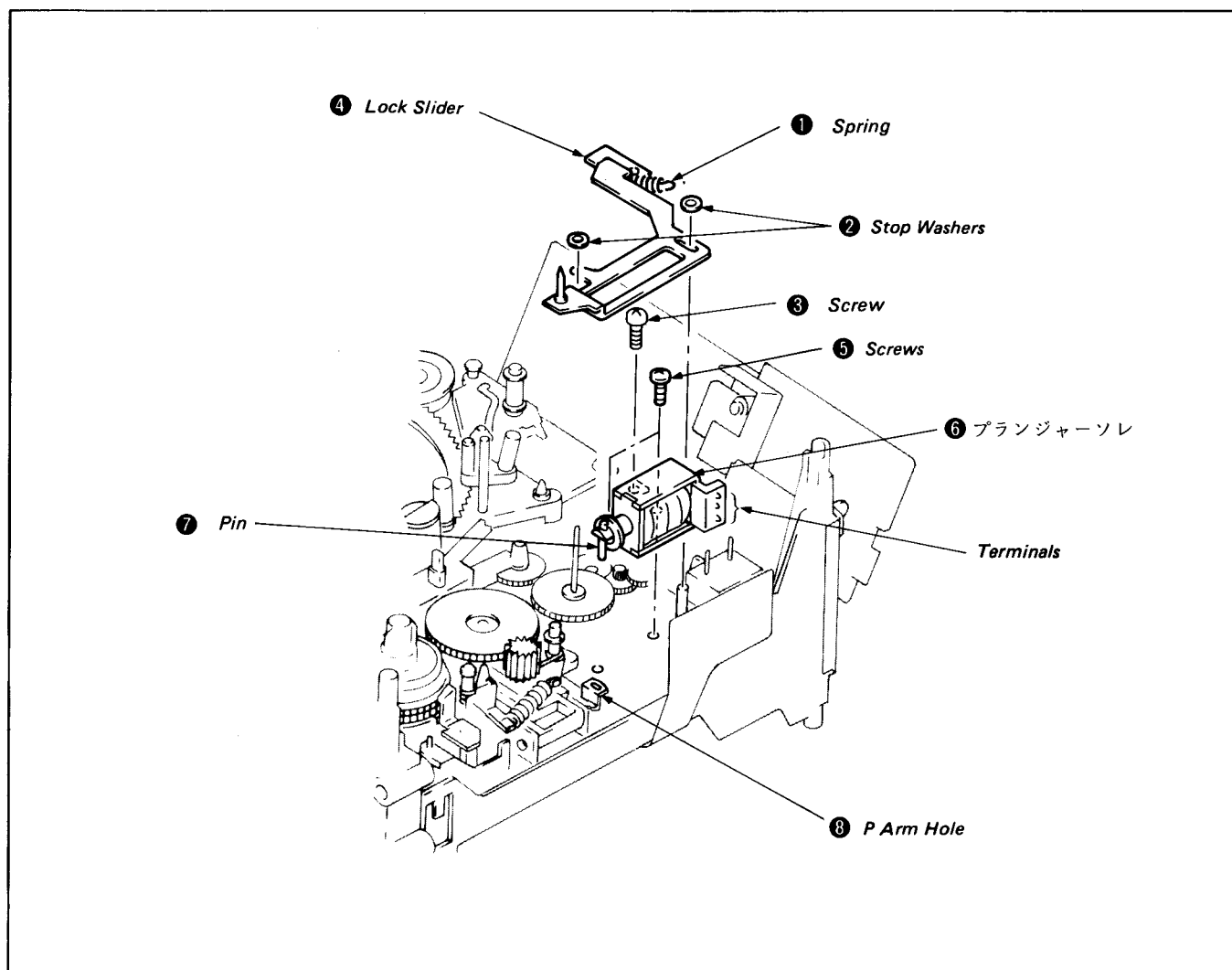


Fig. 8-37.

8-3-14. M-SW Assembly

1. Removal

- 1) Open the battery holder assembly in accordance with 2-18.
- 2) Remove the T reel table assembly as instructed in 8-3-2.
- 3) Remove the stop washer ① and drive gear (B) assembly ②.
- 4) Remove the complete LD-1 board ③. (See Fig. 8-38.)
- 5) Remove the lock slider as instructed in 3), 4), and 5) of 1. Removal in 8-3-13.
- 6) Remove the spring ④ and B release arm assembly ⑤.
- 7) Check that the **EJECT** mode is set up.
- 8) Remove the stop washer ⑥ and mode output gear ⑦.
- 9) Remove soldering from three sections of terminal of RECOG SW assembly ⑧.
- 10) Remove the screw ⑨ and RECOG SW assembly (S902) ⑧.
- 11) Disconnect the connector ⑩.
- 12) Remove three screws ⑪, control motor cover ⑫.
- 13) Push TS release arm ⑬ in the direction of arrow **A** while raising up the M-SW assembly ⑭ and next push the T main brake assembly ⑮ in the direction of arrow **B** and remove the M-SW assembly ⑭.
- 14) Remove solder **C** and the control motor (M903) ⑯. (See Fig. 8-39.)

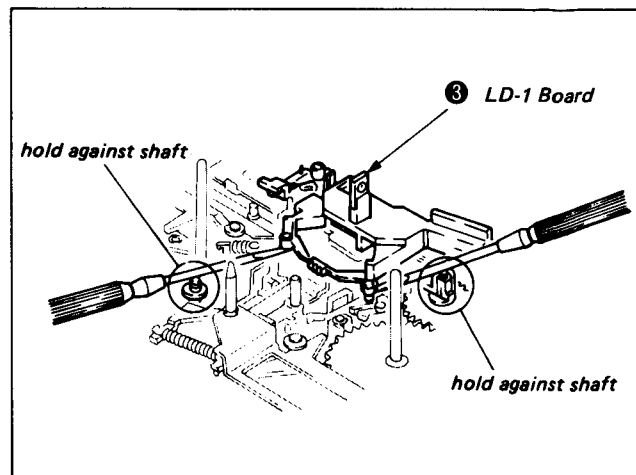


Fig. 8-38.

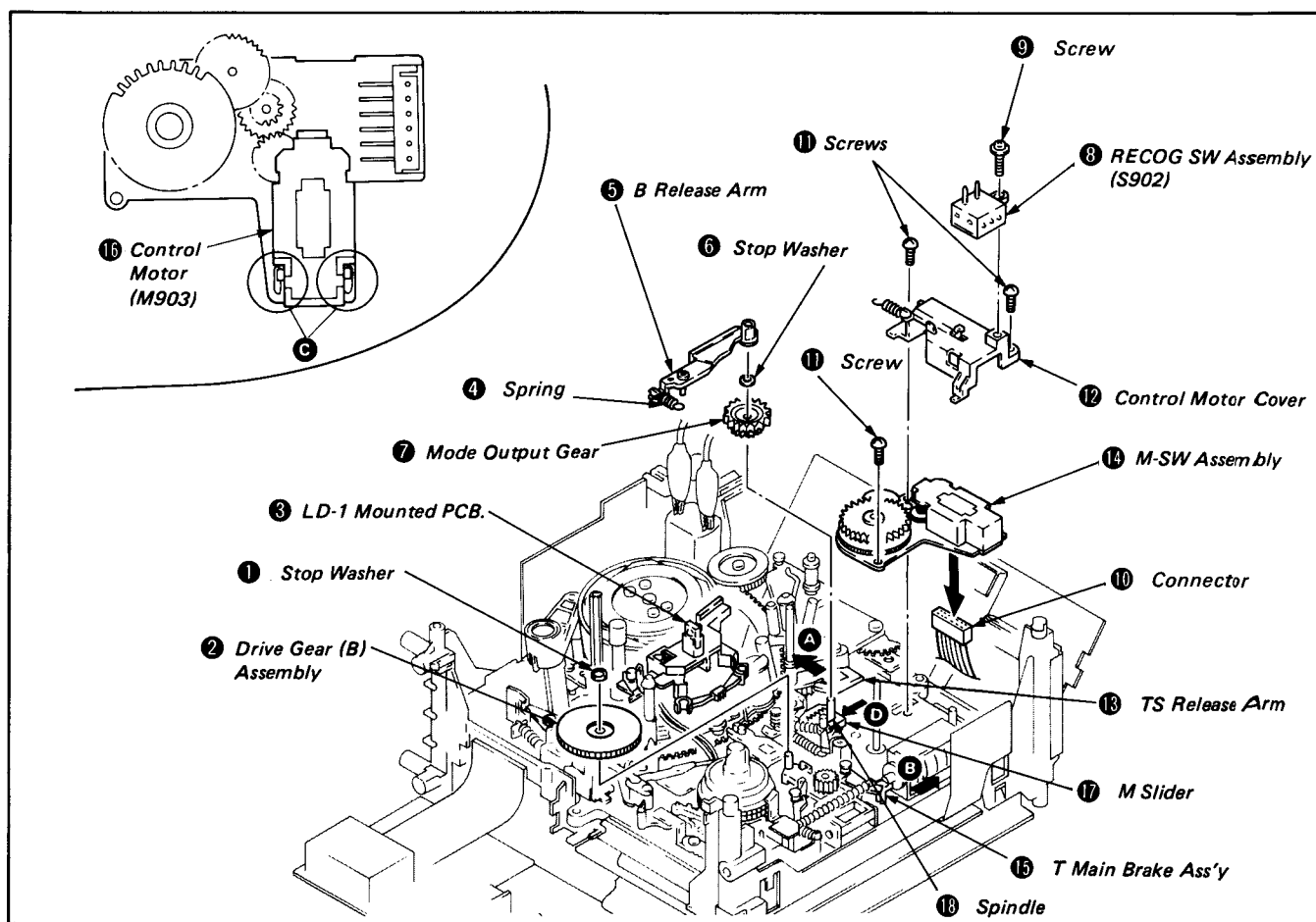


Fig. 8-39.

2. Remounting

- 1) Resolder the control motor (M903) ⑩ .
- 2) Remount M-SW assembly ⑭ in the reverse procedure of 13) Removal.
- 3) Remount Control motor cover ⑫ and secure with three screws ⑪ .
- 4) Connect connector ⑩ .
- 5) Solder three sections of terminal of RECOG SW assembly ⑧ .
- 6) Remount RECOG SW assembly ⑧ and tighten the screw ⑨ .
- 7) Check that the **EJECT** mode is set up.
- 8) Check that the M slider ⑰ is moved toward the arrow ⑤ fully.
- 9) Oil half a drop of oil on the spindle ⑱ . (See Fig. 8-39.)
- 10) Remount the mode output gear ⑦ so that the alignment holes are linear. (See Fig. 8-40.)
- 11) Refit the stop washer ⑥ .
- 12) Set to the **LOADING/UNLOADING** mode.
- 13) Remount the B release arm assembly ⑤ and rehook the spring ④ .
- 14) Remount the lock slider as instructed in 3), 4) and 5) of 2. Remounting in 8-3-13.
- 15) Remount the complete LD-1 board ③ .
- 16) Remount the drive gear (B) assembly ② and refit the stop washer ① . (See Fig. 8-39.)
- 17) Remount the T reel table assembly as instructed in 8-3-2.
- 18) Remount the battery holder assembly in the reverse procedure of 2-18.

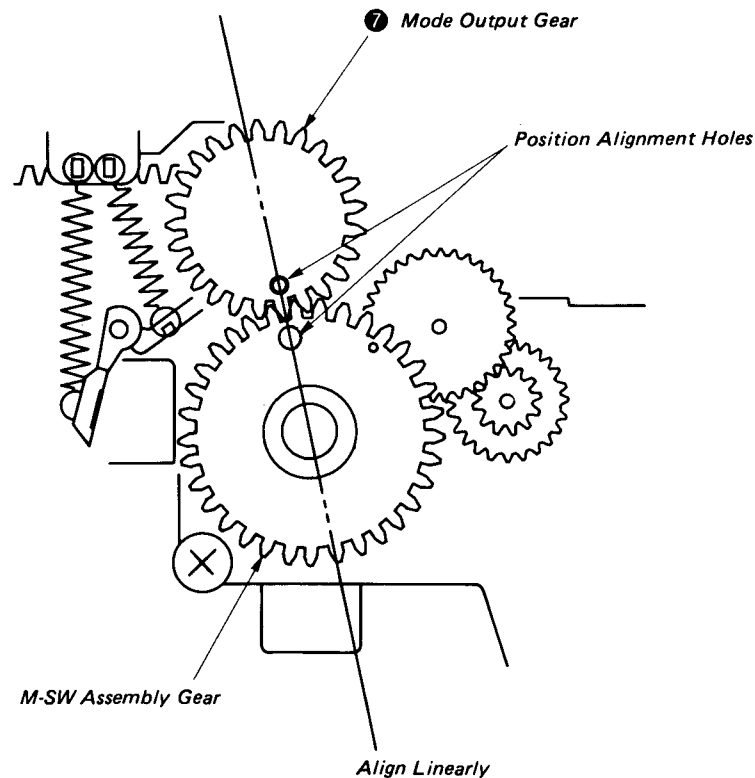


Fig. 8-40.

8-3-15. M Slider

1. Removal

- 1) Open the SS-64 Board as instructed in 2-13. and remove the timing belt ①.
 - 2) Remove S reel table assembly in accordance with 8-3-1.
 - 3) Remove T reel table assembly in accordance with 8-3-2.
 - 4) Remove the pinch press arm assembly as instructed in 8-3-3.
 - 5) Remove the tension regulator arm assembly as instructed in 8-3-4.
 - 6) Remove the tension regulator band assembly as instructed in 8-3-5.
 - 7) Remove the loading ring assembly as instructed in 8-3-7.
 - 8) Perform Steps 2) to 6) of 8-3-14.
 - 9) Remove the tension regulator load arm assembly as instructed in 8) of 1. Removal in 8-3-11.
 - 10) Remove the spring ②.
 - 11) Remove two stop washers ③, S main brake assembly ④ and T main brake assembly ⑤.
 - 12) Set up the **LOADING TOP** and **LOADING/UN-LOADING** modes.
 - 13) Remove two screws ⑥ and the driving arm complete assembly ⑦.
 - 14) Perform Step 8) of 1. Removal in 8-3-14.
 - 15) Remove two springs ⑧.
 - 16) Remove the REW brake assembly ⑨.
 - 17) Remove the RVS arm ⑩.
 - 18) Remove the stop washer ⑪ and B release slider ⑫.
 - 19) Remove the stop washer ⑬, spring ⑭, and RL arm ⑮.
 - 20) Move the M slider ⑯ toward the right (leave approximately 5mm on the left).
 - 21) Remove the E ring ⑰ and pinch press lever assembly ⑱.
 - 22) Remove the spring ⑲ and hard brake (S) ⑳.
 - 23) Remove the stop washer ㉑, push the mode arm ㉒ toward the arrow then remove the M slider ⑯ by lifting the lefthand side of the M slider ⑯.
- (See Fig. 8-41.)

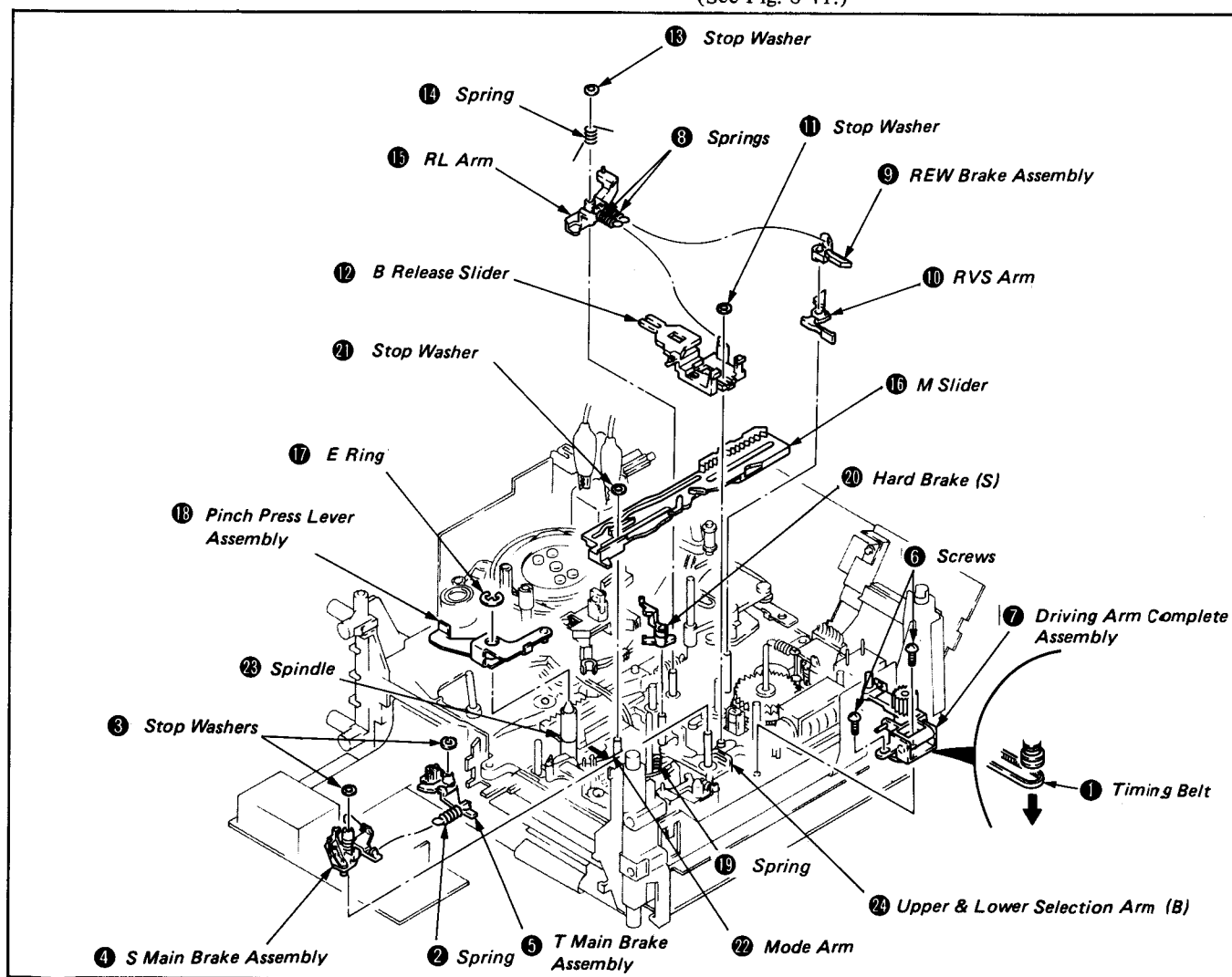


Fig. 8-41.

2. Remounting

- 1) Grease the slider. (See Fig. 8-42.)
- 2) Push the mode arm 22 in the arrow direction, remount the M slider 16 referring to Fig. 8-43 and paying attention to the vertical position relationship with other portions of the slider, and refit the stop washer 21. (See Fig. 8-41.)
- 3) Remount the hard brake (S) 20 and rehook the spring 19.
- 4) Grease as shown in Fig. 8-44.
- 5) Oil half a drop of oil on the parts below the spindle 23 groove, mount the pinch press lever assembly 18, and refit the E ring 17.
- 6) Remount the RL arm 15, rehook the spring 14, and refit the stop washer 13.
- 7) Remount B release slider 12 and place stop washer 11.
- 8) Slide B release slider 12 on the side of drum and remount reverse arm 10.
- 9) Remount the REW brake assembly 9.
- 10) Rehook two springs 8.

Note: Rehook two springs as noted below so as not to misplace them.

The spring for the B release slider

outside diam: 2mm, wire diam: 0.18mm

The spring for the REW ass'y

outside diam: 1.6mm, wire diam: 0.12mm

- 11) Move the M slider 16 fully to the left.
- 12) Set up the **EJECT** mode.
- 13) Perform Steps 9), 10) and 11) of 2. Remounting in 8-3-14.
- 14) Set up the **LOADING/UNLOADING** mode.
- 15) Insert the horizontal spindle of the driving arm complete assembly 7 in the groove of the upper & lower selection arm (B) 24, insert the lug of the RVS arm 12 in the dented part of the driving arm complete assembly 7, and tighten two screws 6.
- 16) Remount the T main brake assembly 5 and S main brake assembly 4, refit two each stop washers 3, and refit the spring 2. (See Fig. 8-41.)
- 17) Remount the tension regulator load arm assembly as instructed in 2) of 2. Remounting in 8-3-11.
- 18) Perform Steps 13) to 17) of 2. Remounting in 8-3-14.
- 19) Remount the loading ring assembly as instructed in 8-3-7.
- 12) Remount the tension regulator band assembly as instructed in 8-3-5.
- 21) Remount the tension regulator arm assembly as instructed in 8-3-4.
- 22) Remount the pinch press arm assembly as instructed in 8-3-3.
- 23) Remount T reel table assembly in accordance with 8-3-2.
- 24) Remount S reel table assembly in accordance with 8-3-1.
- 25) Remount timing belt 1, and remount SS-64 board by referring to 2-13.

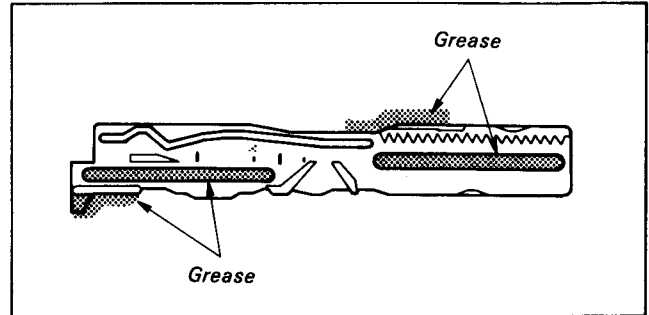


Fig. 8-42.

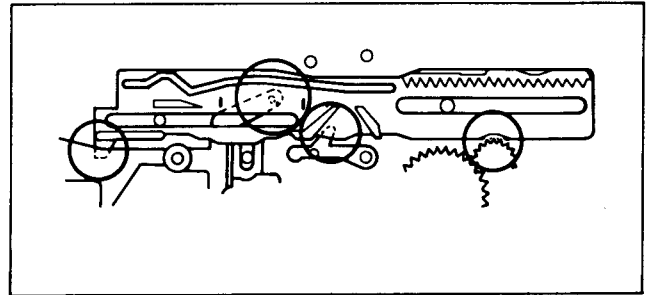


Fig. 8-43.

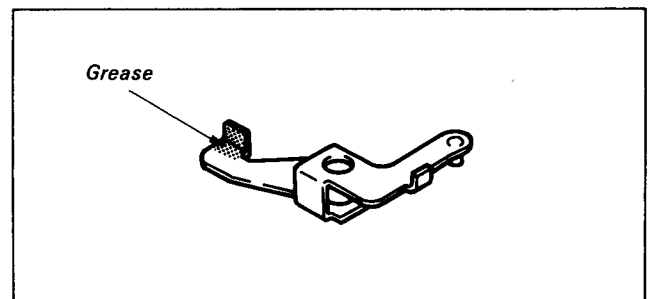


Fig. 8-44.

8-3-16. Capstan Motor

1. Removal

- 1) Remove the tape stopper as instructed in 1) of 1. Removal in 8-3-10.
- 2) Remove the loading ring assembly as instructed in 8-3-7.
- 3) Open the SS-64 Board as instructed in 2-13. and turn the set upside down.
- 4) Remove wiring from wire clamp ②.
- 5) Remove screw ① and remove wire clamp ②.

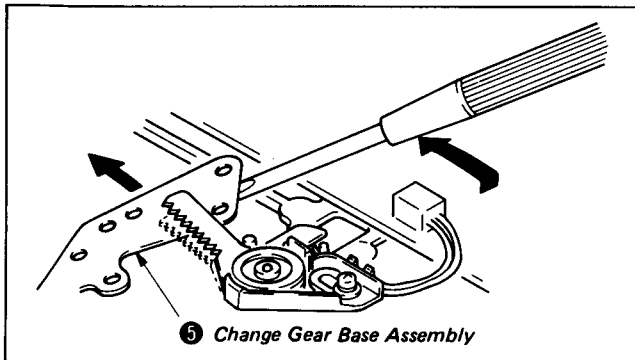


Fig. 8-45.

- 6) Remove the timing belt ③.
- 7) Remove the screw ④ and the change gear base assembly ⑤ using a screwdriver. (See Fig. 8-45 and 46.)
- 8) Remove flexible connector ⑥.
- 9) Remove two screws ⑦ and remove capstan motor assembly ⑧ in the direction of arrow. (See Fig. 8-46.)

2. Remounting

- 1) Remount the capstan motor (M902) ⑧ and tighten two screws ⑦.
- 2) Connect flexible connector ⑥. (See Fig. 8-46.)
- 3) Remount the change gear base assembly ⑤ and tighten the screw ④.
- 4) Re-place the timing belt ③.
- 5) Remount the wire clamp ② and tighten the screw ①. (See Fig. 8-46.)
- 6) Remount wiring into wire clamp ②.
- 7) Remount SS-64 board with set in upward position in accordance with 2-13.
- 8) Remount the loading ring assembly as instructed in 8-3-7.
- 9) Remount the tape stopper as instructed in 6) of 2. Remounting in 8-3-10.

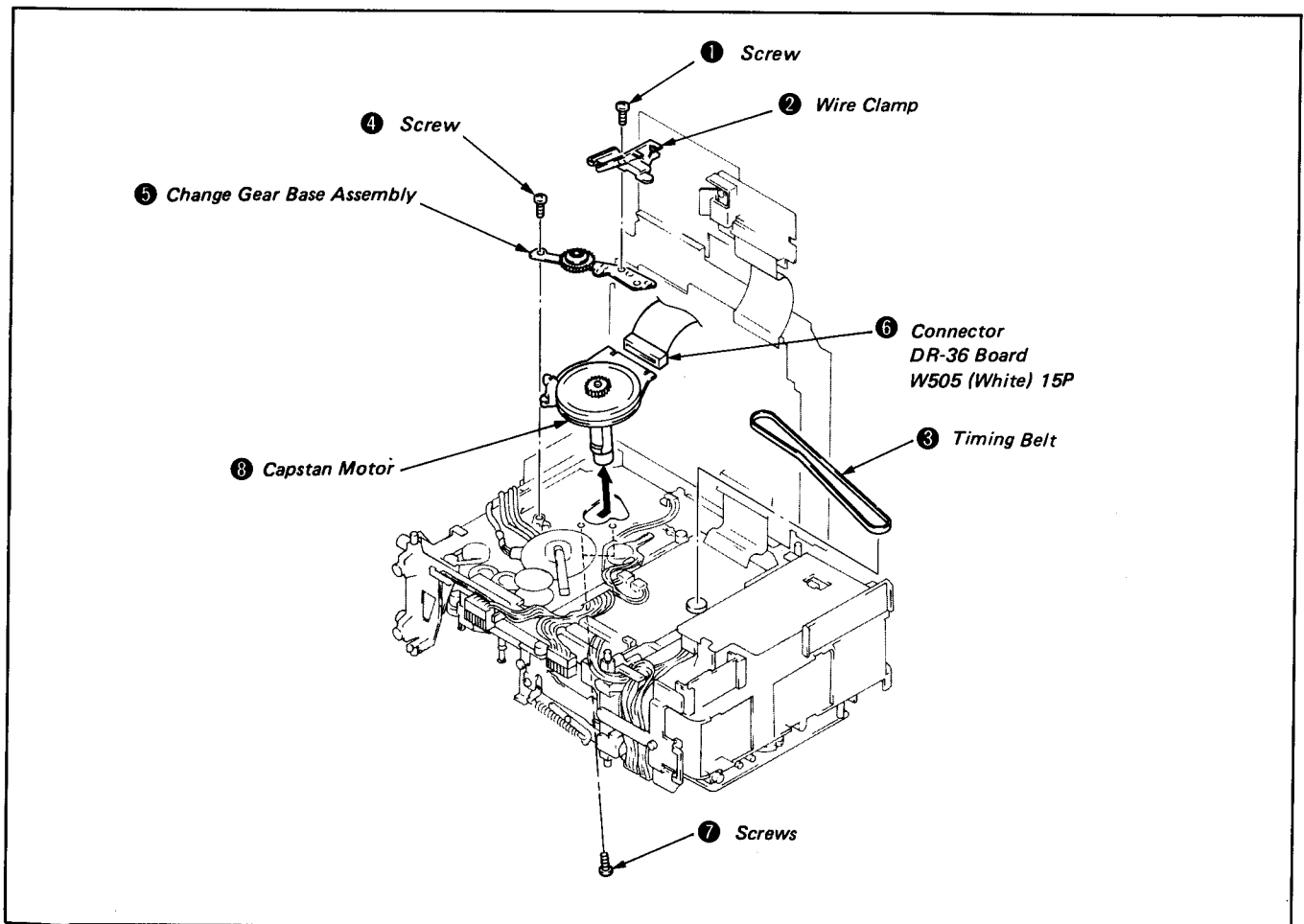


Fig. 8-46.

8-3-17. Rotary Upper Drum Replacement

1. Removal

Note: If it is possible to be video-recorded, perform video recording before hand and then remove it.

- 1) Remove two hexagon socket screws (2 x 2.7) ① and dismount the dynamic damper ②. (See Fig. 8-47.)
- 2) Suction solder at all of the soldered eight positions A. Check that the printed wiring board and pins jutting out from below freely move using tweezers, or other tool. (See Fig. 8-47.)
- 3) Remove the two hexagon socket screws (2x5) ③. (See Fig. 8-47.)
- 4) Remount the dismantling Jig B by the accessory screws ④ utilizing the screw holes in which the dynamic damper was mounted. Drive the hexagon socket screw ⑤ into the jig and pulled up the rotary upper drum ⑥. (See Fig. 8-48.)

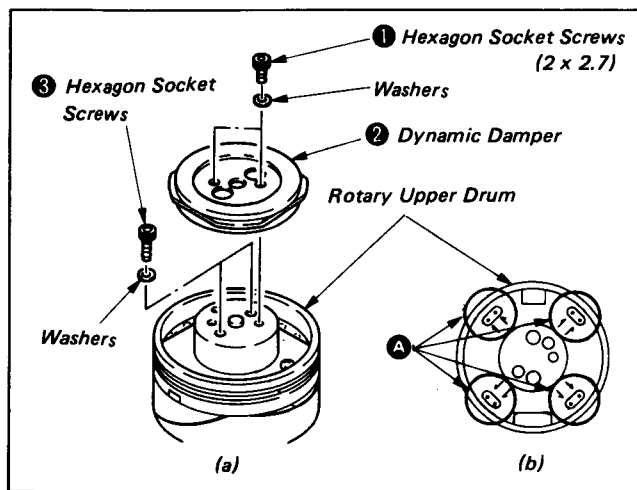


Fig. 8-47.

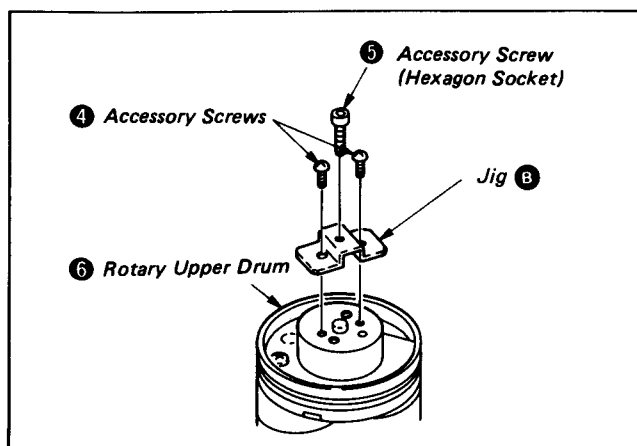


Fig. 8-48.

2. Remounting

- 1) Carefully clean the flange surfaces and planes of the rotary upper drum and visually check that no blemishes or flaws are left.
- 2) Insert Jig C in the positioning hole D so that the holes of the rotary upper drum ⑥ and flange coincide. Lightly insert the rotary upper drum in the drum shaft while aligning their positions. (See Fig. 8-49.) (Check that pins are projecting above the holes on the printed circuit board of the rotary upper drum. When the pins are caught, correct using tweezers, etc.)
- 3) Remove Jig C, lightly push the rotary upper drum by hands. If the rotary upper drum does not go in to the bottom, alternately tighten the two hexagon socket screws (2 x 5) ③ by hand and temporarily fix them. (See Fig. 8-47 and 8-50.)
- 4) Reinsert the Jig C in the positioning hole and check that the jig can be inserted smoothly. (When the jig cannot be inserted, loosen the two hexagon socket screws (2 x 5) ③ and slide it inserting a clock screwdriver in the hole.)
- 5) Tighten the two hexagon socket screws (2 x 5) ③.
- 6) Solder the eight positions A. (See Fig. 8-47.)
- 7) Tighten the two hexagon socket screws (2 x 2.7) ① reversing the screw removal procedure and remount the dynamic damper ②. (See Fig. 8-47.)

Note: Do not tighten too strongly.

Note: Be careful not to flow solder below the printed wiring board.

Note: Do not tighten too strongly.

When remounting, do not mix the hexagon socket screws (2 x 2.7) ① and hexagon socket screws (2 x 5) ③.

Note: Be sure to adjust the tape path as instructed in 8-4 after remounting.

Note: Replay the recorded tape after adjusting the tape path and before exchanging the rotary upper drum and check that the tape replays properly.

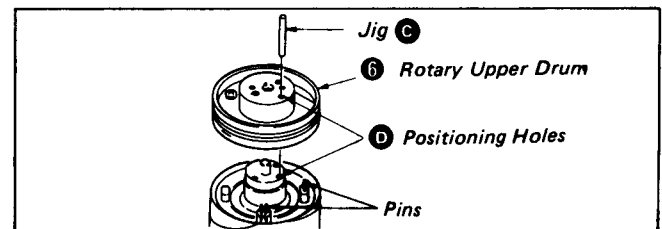


Fig. 8-49.

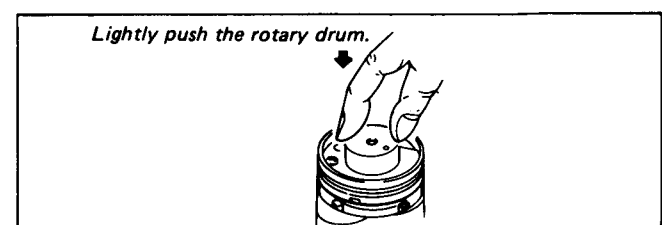


Fig. 8-50.

8-3-18. Drum Assembly Replacement

1. Removal

- 1) Open the SS-64 Board as instructed in 2-13.
- 2) Remove the screw ①.
- 3) Remove the screw ② and shaft ground terminal ③.
(See Fig. 8-51.)
- 4) Disconnect five connectors ④.
- 5) Remove two screws ⑤.
- 6) Remove the drum assembly ⑥. (See Fig. 8-52.)

2. Remounting

- 1) Remount the drum assembly ⑥ and tighten two screws ⑤.
- 2) Connect five connectors ④. (See Fig. 8-52.)
- 3) Remount the shaft ground terminal ③ and tighten the screw ②.
- 4) Remount the screw ①. (See Fig. 8-51.)
- 5) Remount SS-64 board in the reverse procedure of 2-13.

Note: Be sure to adjust the tape path as instructed in 8-4 after remounting.

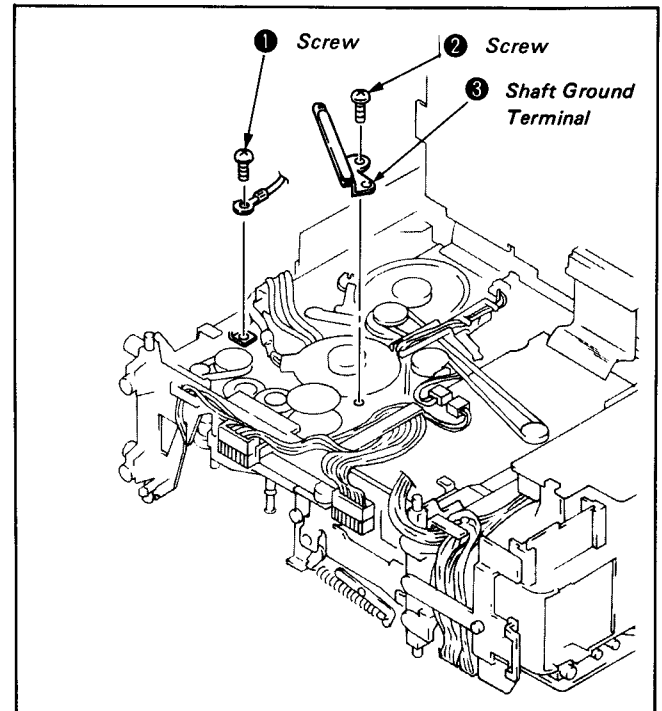


Fig. 8-51.

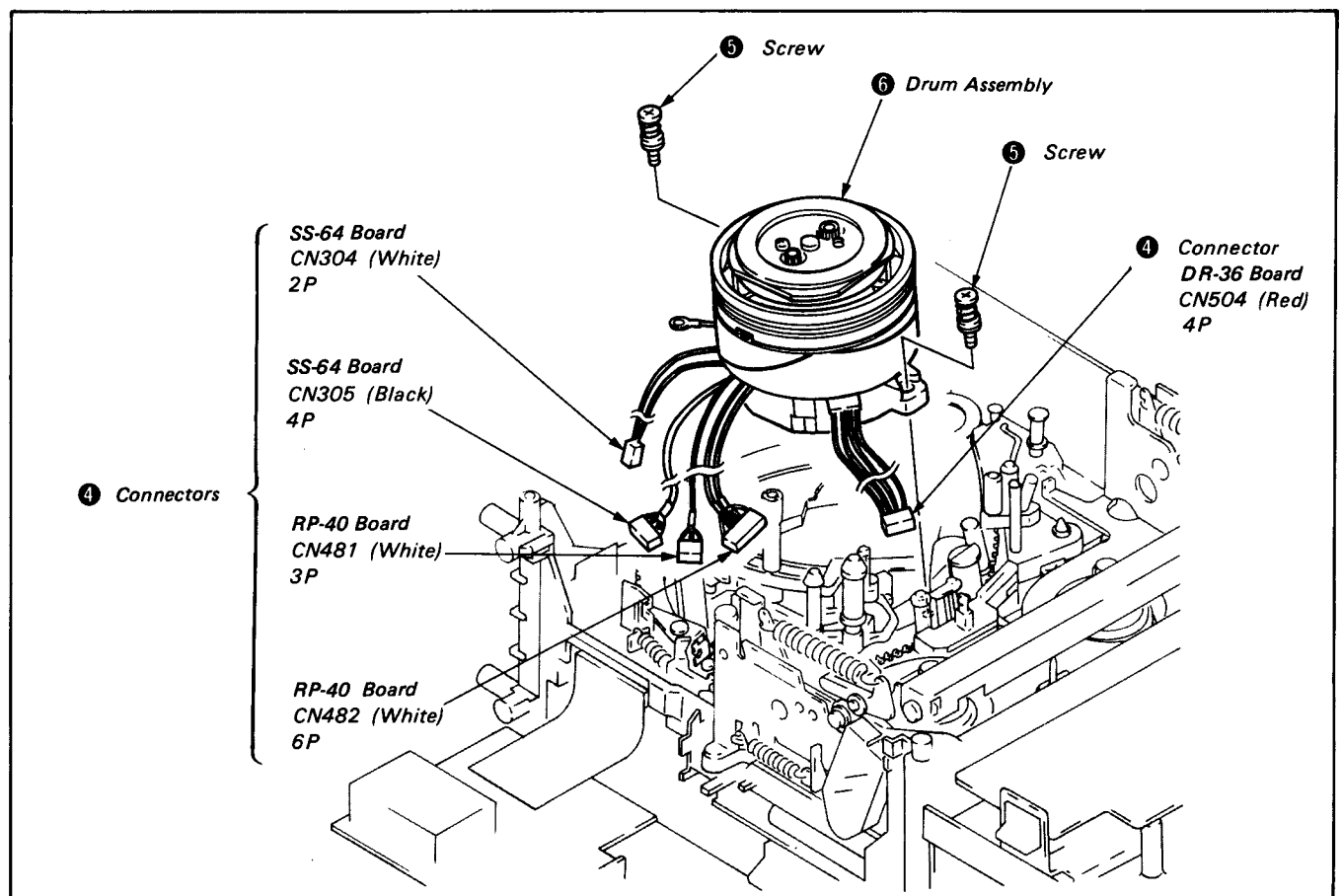


Fig. 8-52.

8-3-19. Adjustment after Replacing No.3 and No.4 Guides

Run the tape on the upper flanges for both No. 3 and 4 guides after replacing them. (See Fig. 8-88.)

8-3-20. No.5 Guide Assembly

1. Removal

- 1) Remove the tape stopper as instructed in 1) of 1. removal in 8-3-10.
- 2) Remove three screws ① and No. 5 guide assembly.
- 3) Remove the guide nut ②, the spring ③ and the shaft ④. (See Fig. 8-53.)

2. Remounting

- 1) Reinsert the spring ③ in the shaft ④, reengage the dent and bump in the lower parts, and tighten the guide nut ②.
- 2) Remount the No. 5 guide assembly and tighten three screws ①. (See Fig. 8-53.)
- 3) Remount the tape stopper as instructed in 6) of 2. Remounting in 8-3-10.

Note: Be sure to adjust the tape path as instructed in 8-4 after remounting.

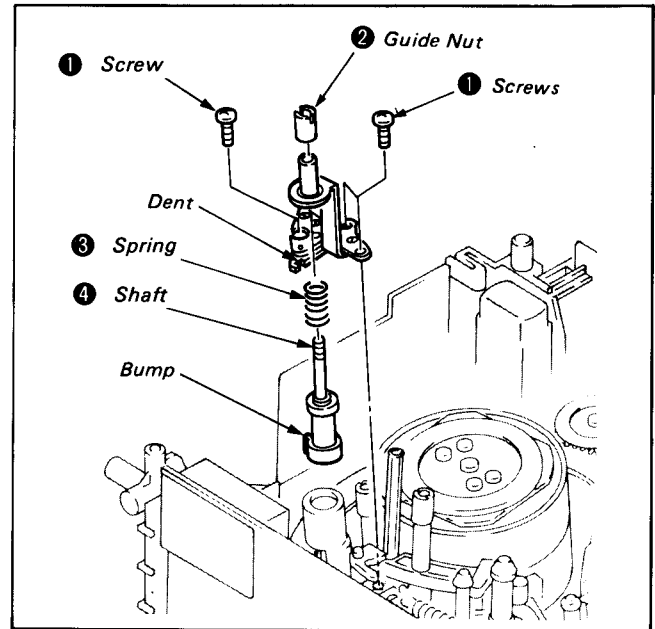


Fig. 8-53.

8-3-21. FWD Back Tension Adjustment

Note: Prior to the adjustment, perform tape FWD running for over 2 minutes.

- 1) Set up the **LOADING END** and **FWD** modes.
- 2) Loosen the screw ② of the band adjustment plate ①, adjust the slit ③ and pin ④ of the tension regulator arm assembly to be in the position shown by the arrow A in the Fig. 8-54, then tighten the screw ②.
- 3) Place the reel (Ref. No. J-7) ⑥ to measure tensions on the S reel table ⑤ and run a tape along No. 1, 2 and 3 guides and the drum.

- 4) Pull the dial tension gauge (Ref. No. J-6) ⑦ in the arrow B direction and re-place the spring ⑨ on the tension regulator spring hook assembly ⑧ as mentioned below so that the value becomes $13.0 \pm 1g$. (See Fig. 8-54.)

Larger than standard Arrow C direction
Smaller than standard. Arrow D direction

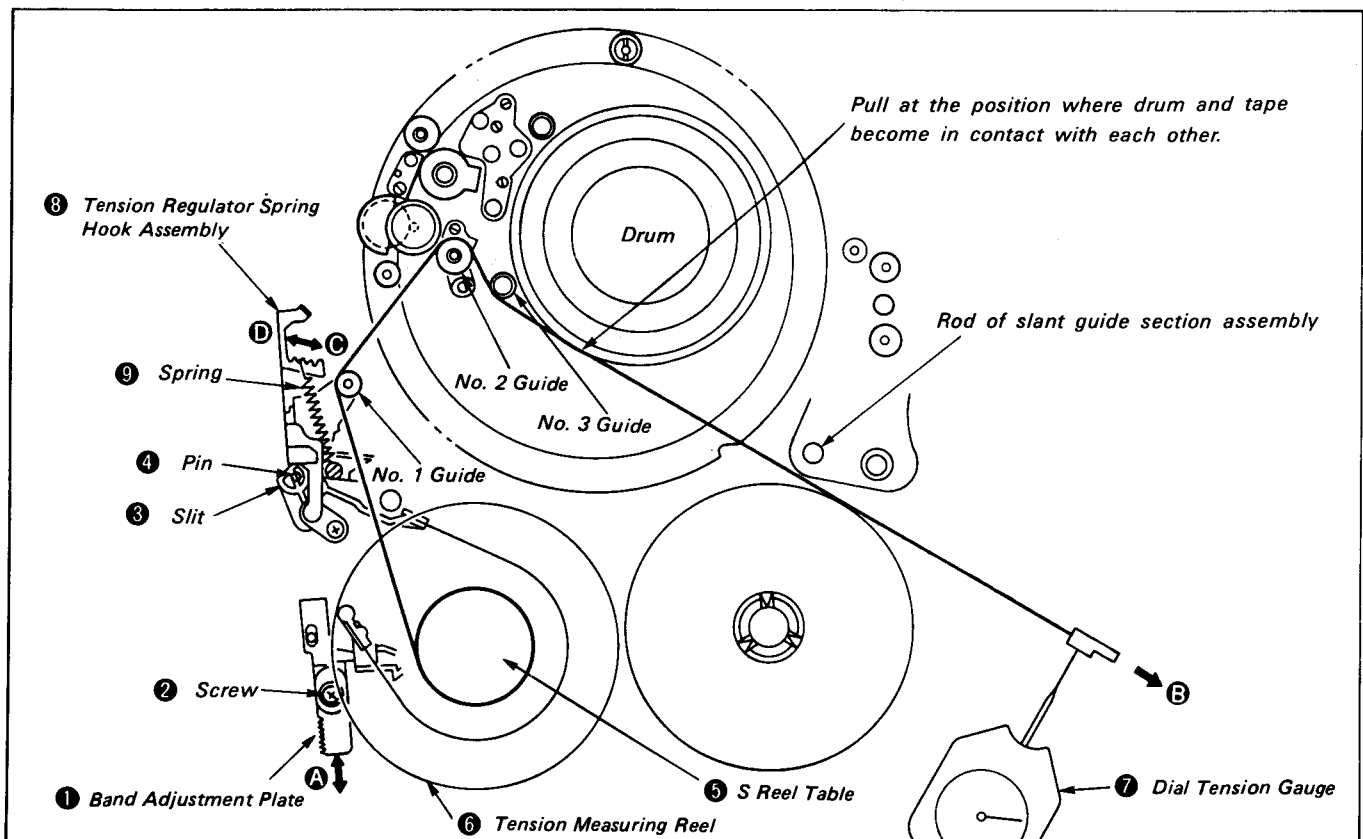


Fig. 8-54.

8-3-22. Checking and Adjustment of Timing Belt Tension

- 1) Remove the timing belt. (Refer to 1) of 1. Removal in 8-3-15.)
- 2) Cover the LED photodetector section (TS-55 Board) for tape end detection with a vinyl tape, and load.
- 3) Short-circuit Pin ③ of CN302 and GND on SS-64 board. (See Fig. 8-55.)
- 4) Disengage the pinch press arm side (round hook side) of the tension spring hooked on the pinch press arm assembly. (See Fig. 8-56.)
- 5) Hold the safety pin of the RECOG switch (rec proof side) and tape it. press the REC button to set up the REC mode. (See Fig. 8-57.)
- 6) Measure voltage (V_o) at both ends of R523 on DR-36 board with analog tester (Non-load state). (See Fig. 8-58.)
- 7) Remount the timing belt. (Refer to 4) of 2. Remounting in 8-3-16.
- 8) Remove the driving gear (B) assembly as instructed in 3) of 1. Removal in 8-3-14.
- 9) Set into REC mode in accordance with 5) and measure voltage (V_x) at both ends of R523 as in 6). (During tension adjustment)
- 10) Check that the voltage (V_x) during tension adjustment is 22 to 44mV higher than the voltage (V_o) in a no-load state. Adjust as follows if the voltage is not as required.

Adjustment Method:

- i) Loosen the screw ❶, slide the idler assembly as shown by the arrow A, and fix it by tightening the screw ❶. (See Fig. 8-59.)
 - ii) Recheck after performing Step 9).
 - iii) Repeat i) and ii) until the standard is satisfied.
- 11) Eliminate short-circuit between Pin ③ of CN302 and GND on SS-64 board.
 - 12) Remount the driving gear (B) assembly and the tension spring of the pinch press arm assembly.

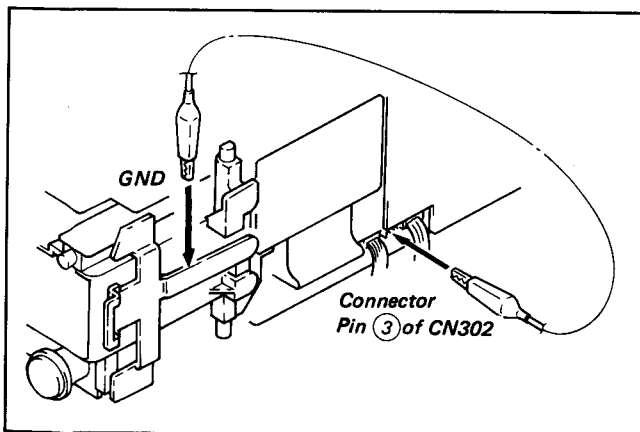


Fig. 8-55.

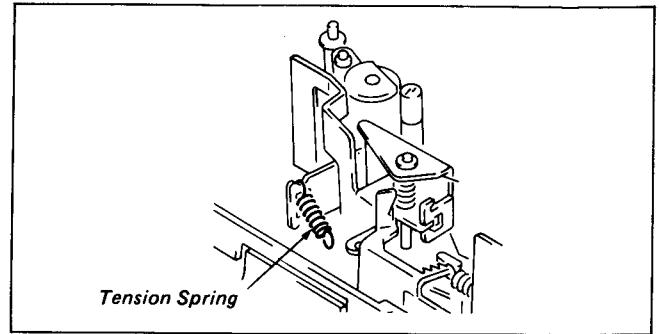


Fig. 8-56.

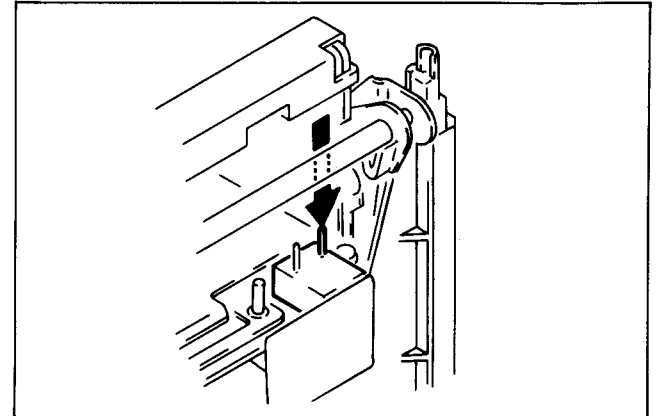


Fig. 8-57.

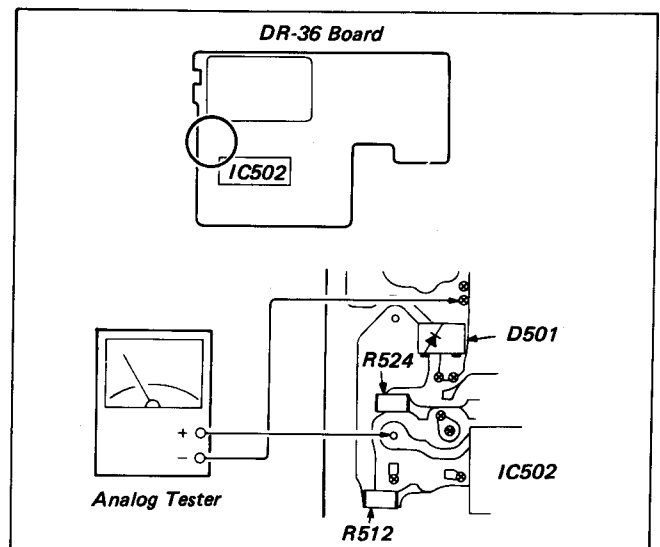


Fig. 8-58.

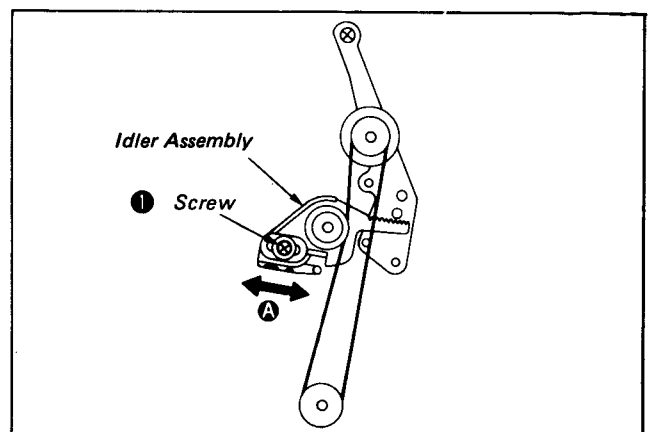


Fig. 8-59.

8-3-23. Checking S and T Main Brake Torques

- 1) Remove the battery holder assembly in accordance with 2-18.
- 2) Remove the cassette compartment assembly as instructed in 2-11.

1. S main brake torque

- 1) Set up the **FF/REW** mode.
- 2) place the tension measuring reel (Ref. No. J-8) on the S reel table.
- 3) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 8-60 and 61.)

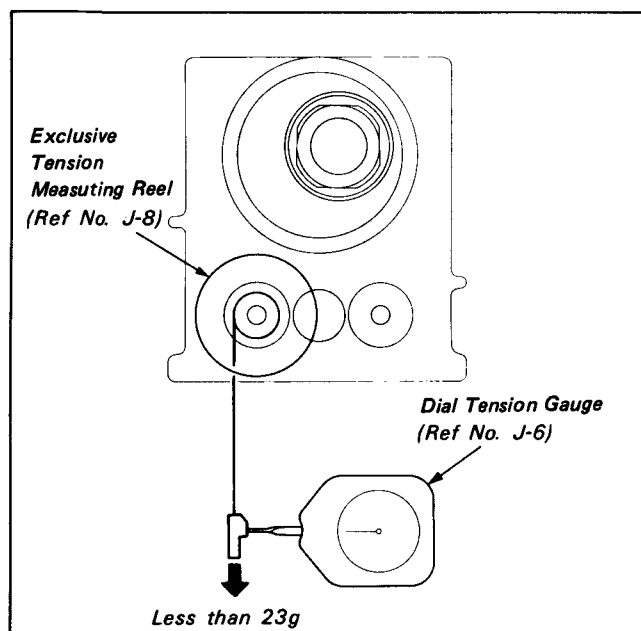


Fig. 8-60.

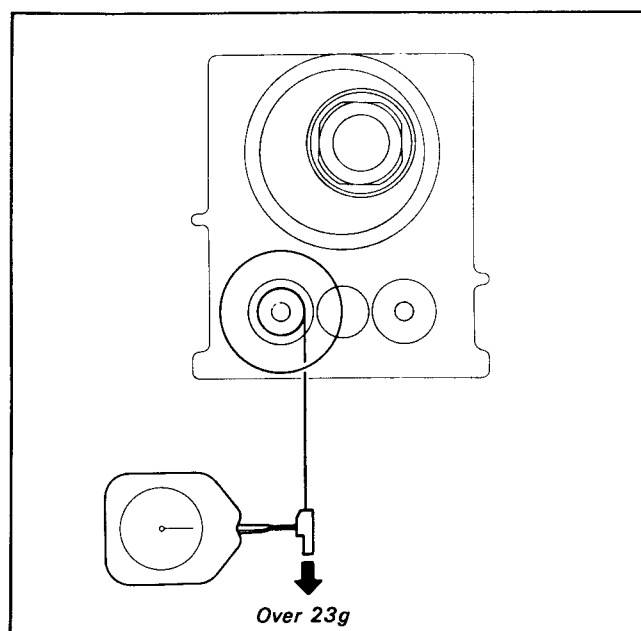


Fig. 8-61.

2. T main brake torque

- 1) Set up the **FF/REW** mode.
- 2) Place the tension measuring reel (Ref. No. J-8) on the T reel table.
- 3) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 8-62 and 63.)

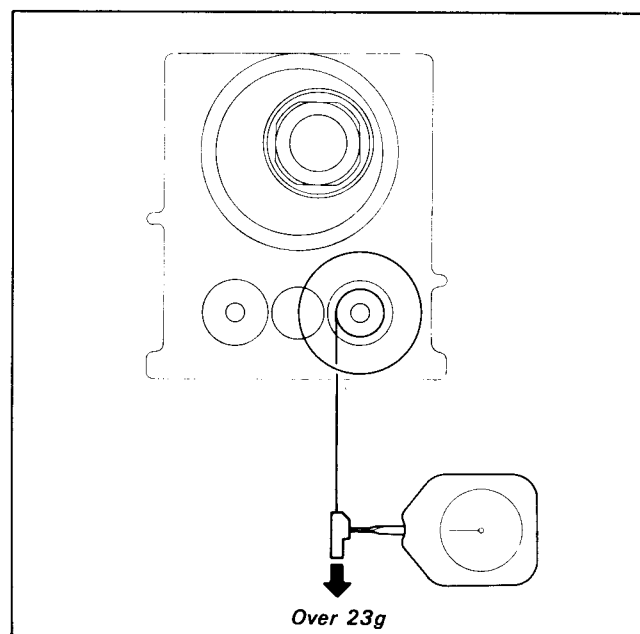


Fig. 8-62.

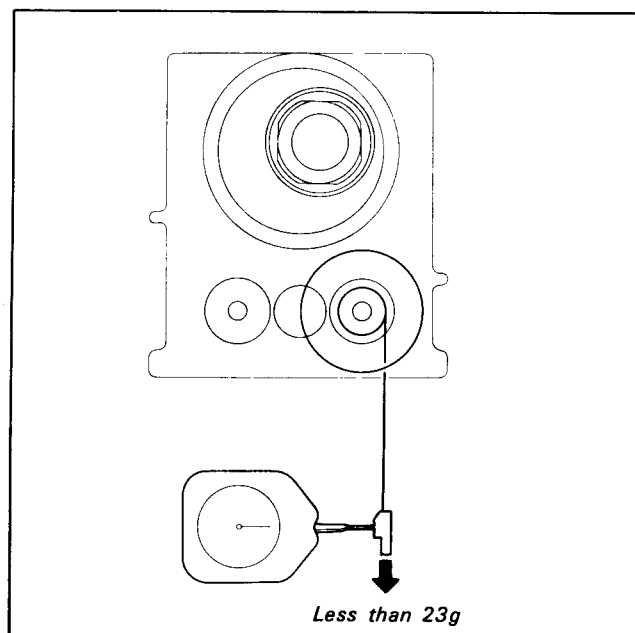


Fig. 8-63.

8-3-24. Checking S and T Soft Brake Torques

- 1) Remove the battery holder assembly in accordance with 2-18.
- 2) Remove the cassette compartment assembly as instructed in 2-11.

1. S soft brake torque

- 1) Set up the **FF/REW** mode.
- 2) Place the tension measuring reel (Ref. No. J-8) on the S reel table.
- 3) Release the S main brake with a finger.
- 4) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 8-64.)

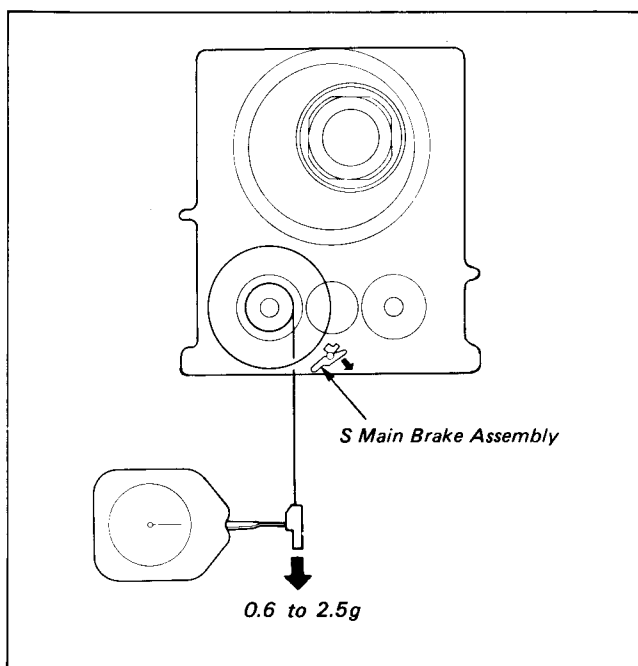


Fig. 8-64.

2. T soft brake torque

- 1) Set up the **REV** mode.
- 2) Place the tension measuring reel (Ref. No. J-8) on the T reel table.
- 3) Release the T main brake with a finger.
- 4) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 8-65.)

Note: In the REV mode, both the T soft brake and REW brake are engaged.

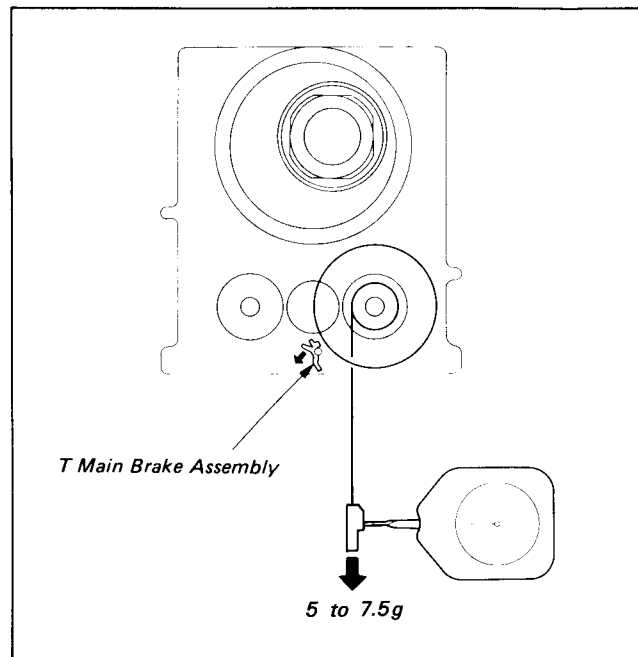


Fig. 8-65.

8-3-25. Checking REV and REW Brake Torques

- 1) Remove the battery holder assembly in accordance with 2-18.
- 2) Remove the cassette compartment assembly as instructed in 2-11.

1. REV brake torque

- 1) Set up the **REV** mode.
- 2) Place the tension measuring reel (Ref. No. J-8) on the S reel table.
- 3) Release the S main brake assembly with a finger.
- 4) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 8-66.)

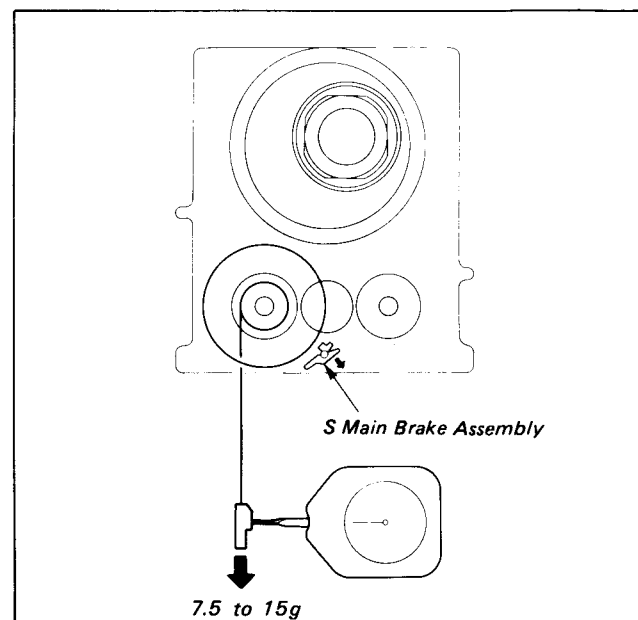


Fig. 8-66.

2. REV brake torque

- 1) Set up the **FF/REW** mode.
- 2) Place the tension measuring reel (Ref. No. J-8) on the T reel table.
- 3) Release T main brake with finger.
- 4) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 8-67.)

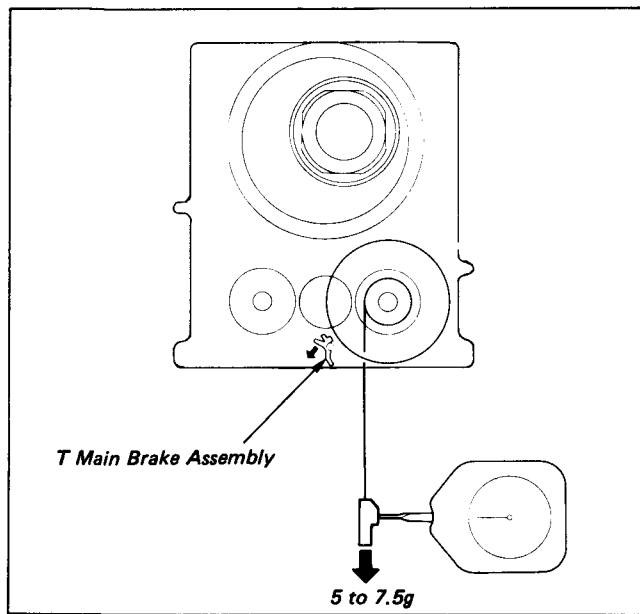


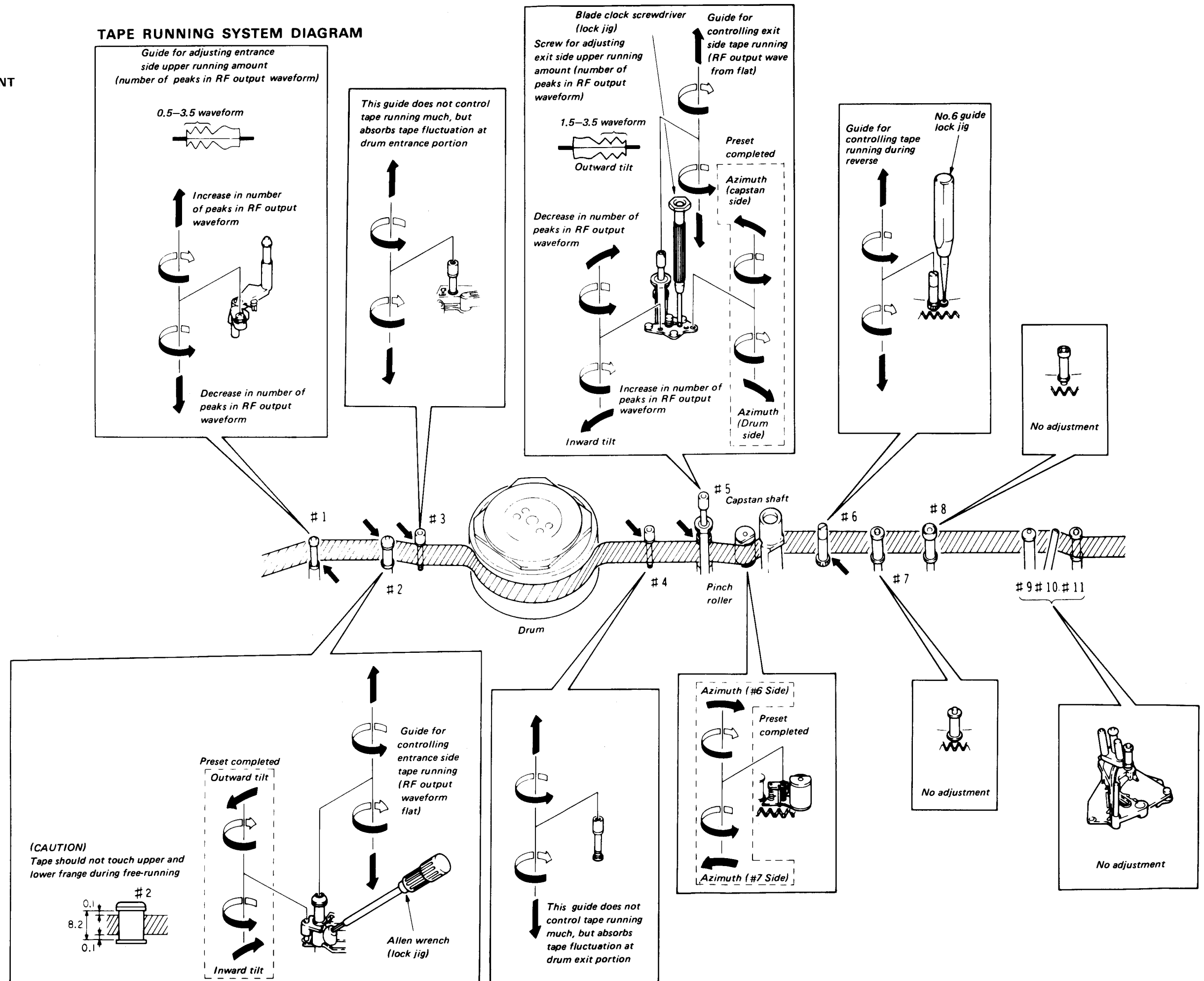
Fig. 8-67.

8-3-26. Checking by FWD and RVS Take-up Torque Cassette

- 1) Remove cassette cover in accordance with 2-2.
- 2) Set the FWD and RVS take-up torque cassette (Ref. No. J-12).
- 3) Set up the **PLAY BACK** mode and check that the torque value on the T reel table side is 9.5 to 15.5g.cm.
- 4) Set up the **PLAY BACK** mode and check that the torque value on the S reel table side immediately after pressing the **REW** button is 17 to 23g.cm.
- 5) Replace the reel tables if the foregoing values are not satisfied.

8-4. TAPE PATH ADJUSTMENT

TAPE RUNNING SYSTEM DIAGRAM



[REGARDING TRACK SHIFT & MONITOR JIG]

The video 8 system employs a high precision tracking ATF (auto track finding) and instantaneously controls the tape running speed with the 4 kinds pilot signals. In this way, the tracking adjustment knob becomes unnecessary, and accurate tracing has become possible.

However, on the other hand, there has been difficulty in adjusting the tape path system with the ATF method. It was due to the fact that complete adjustment had been impossible to be performed because even when the tracing of the head had been a slightly off course, the ATF would perform correction automatically.

Because of this, adjustment is carried out to the tape path system by using the track shift & monitor jig (Ref. No J-6080-851-A). As the track shift and monitor jig forcibly releases the ATF and sets the tracking amount (track shift) manually, the adjustment of the tape path system can easily be carried out.

Perform this adjustment after the Section 7. camera adjustments and Section 9. video adjustments have been completed.

8-4-1. Connection with Track Shift 8 Monitor Jig

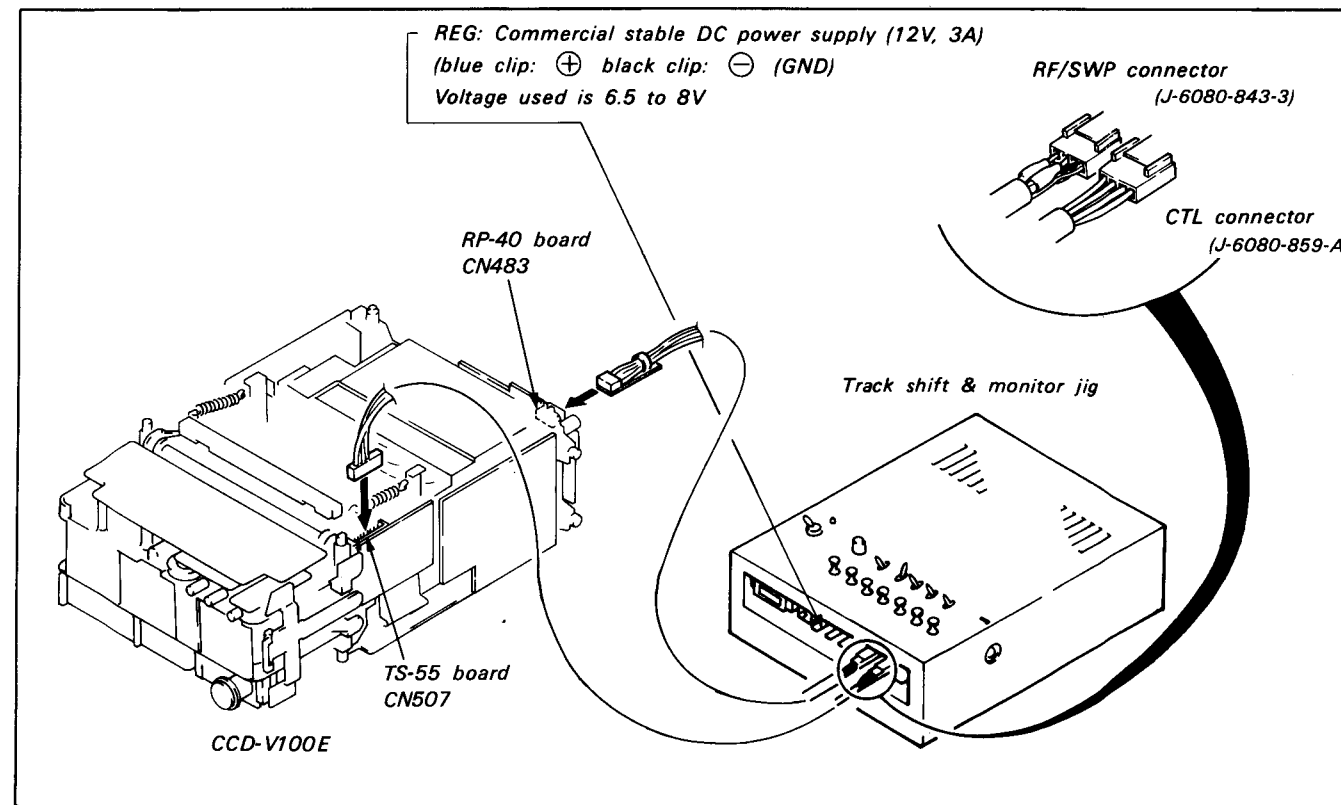


Fig. 8-68.

[Track Shift & Monitor Jig Power Supply]

The track shift & monitor jig has three types of connectors for external power supply, and the following three types of power supply can be used.

Connector Name	Power Supply
SYSTEM CONN	Connect modified CCD-V100E AC adapter AC-V8 E/UB. (Refer to the track shift and monitor jig instruction manual for the modification procedure.)
AC ADP	Betamovie AC adapter AC-M100E/UB is connected.
REG	Connect commercially sold DC stable power supply of more than 12V3A and use at 6.5 ~ 8V. Be sure to make correct ⊕ and ⊖ connections.

- Two or more types of power supply can not be used at the same time.
- In connecting the track shift & monitor jig always use the specified connector.
- Power supplies or voltages other than those given above should not be used.
- When using the modified AC-V8E/UB, the circuit power supply is cut off about 10 seconds after the AC-V8E/UB power switch is turned off.
- Power is not supplied to CCD-V100E itself, so be sure to supply AC power to it at the same time.

[Connector Connection]

Connect the track shift & monitor jig and CCD-V100E as shown in 8-68. Connect RF/SWP connector to RP-40 board CN483, and the CTL connector to TS-55 board CN507.

[Switch Settings]

SEL switch: Set to ON when doing track shift. When OFF, control is from CCD-V100E side.

PATTERN switch: Set to EV side.

ATF LOCK: Set to OFF.

Other switches are not used during CCD-V100E adjustment.

8-4-2. Preparation for Adjustment

- 1) Perform cleaning of the tape running surface (the individual tape guides drums, capstan shafts and pinch rollers).
- 2) Connection of oscilloscope
1ch: CH2 pin (RF signal)
EXT TRIG: RF SWP pin (RF SWP signal) (Fig. 8-68)
- 3) Set the SEL switch of the track shift & monitor jig to OFF, then play back the alignment tape (WR5-1C) for tracking, and confirm that the RF waveform of both the entrance and exit sides become flat (Fig. ① in 8-69). If the RF waveform of both sides is not flat, the adjustment should be carried out in accordance with the following.
 - * In case the RF waveform on the entrance side is not flat (Fig. ② in 8-69) . . . Perform the adjustment in Item 8-4-3, Entrance side adjustment
 - * In case RF waveform on the exit side is not flat (Fig. ③ in 8-69) . . . Perform the adjustment in Item 8-4-4, Exit Side Adjustment

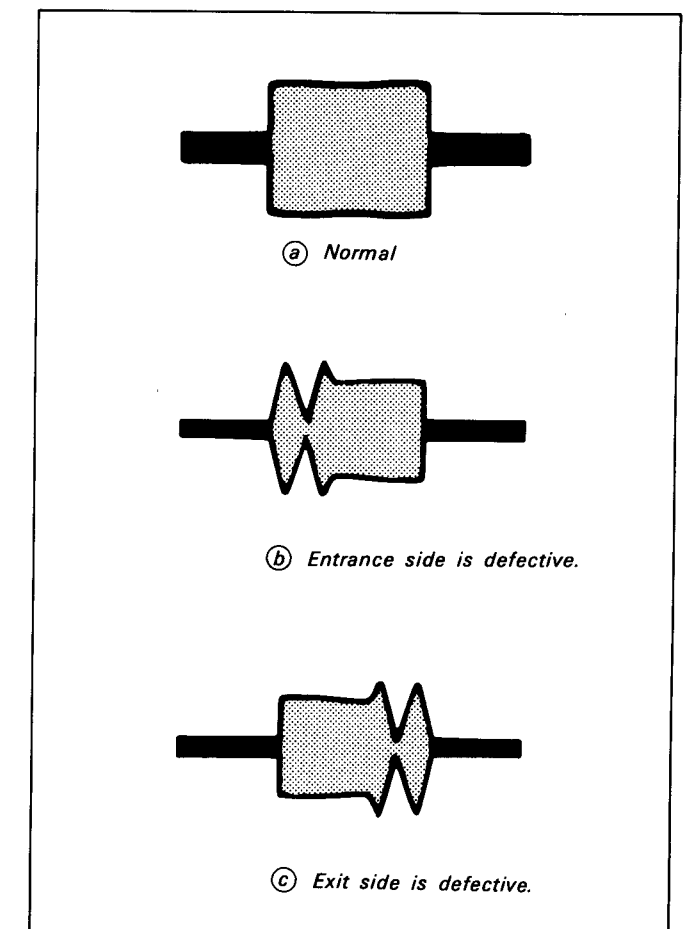


Fig. 8-69.

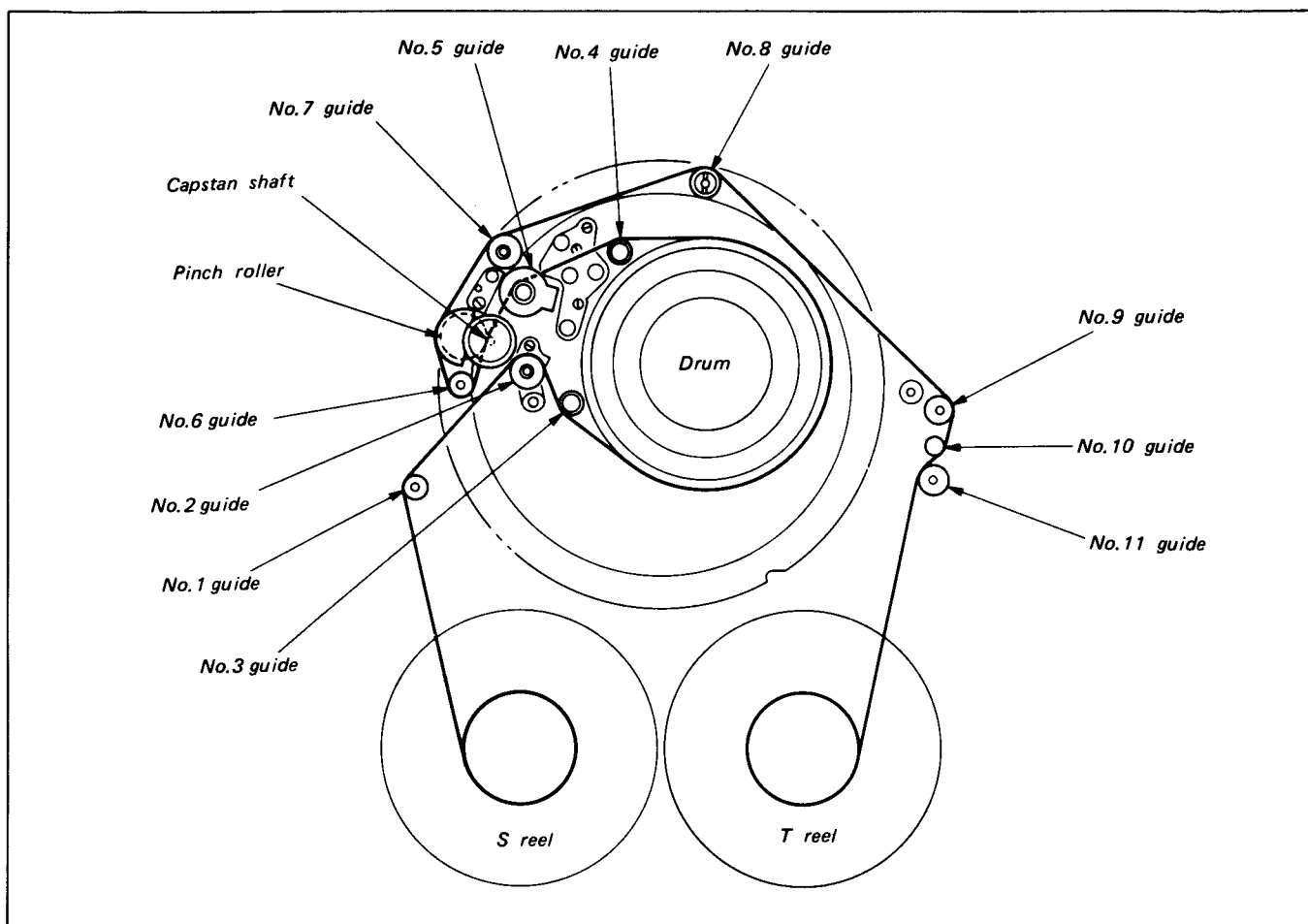


Fig. 8-70. Tape guide arrangement diagram

8-4-3. Entrance Side Adjustment

- 1) While playing back the tracking alignment tape (WR5-IC), loosen the No.2 guide lock screw ❶ with a hexagonal wrench screwdriver (7-700-766-01), and turn the No.2 and No.3 guides counterclockwise so that the running of the tape on the entrance side becomes free.

(Fig. 8-71 (a), (b))

Note: Since the space between the top and bottom flanges of No.2 guide is narrow, confirm that the tape is contacting neither top nor bottom flanges at this point. If No.2 guide is loosened excessively, the tape contacts the bottom flange and the RF waveform on the entrance side ceases to be the original free waveform.

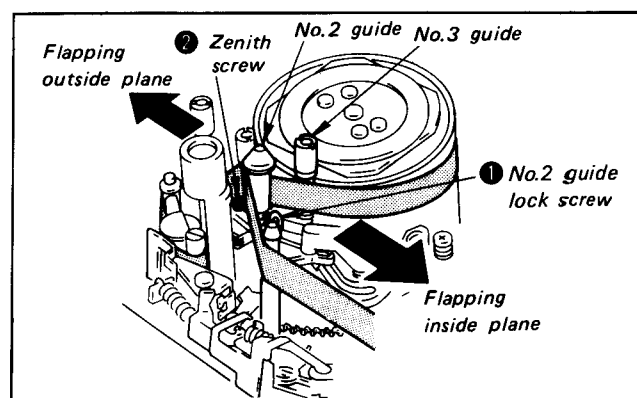


Fig. 8-71. (a)

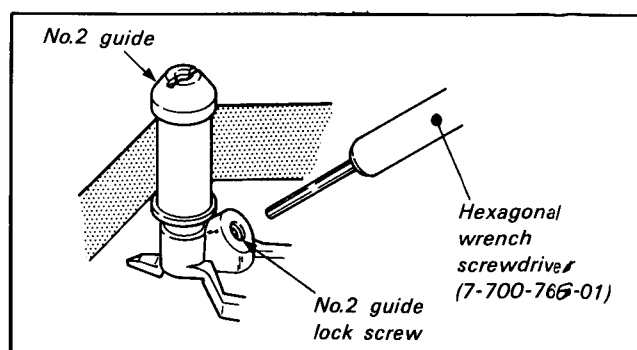


Fig. 8-71. (b)

- 2) Confirm that RF waveform on the entrance side has 0.5 to 3.5 peaks in this condition. If not, adjust as follows. (Fig. 8-72)

<less than 0.5 peak>

Adjust the No.2 guide zenith screw ② by turning it counterclockwise 90° at a time. (Fig. 8-71. (a))

<more than 3.5 peaks>

Adjust the height adjustment screw of No.1 guide (tension regulator assembly) by turning it counterclockwise 90° at a time. (Fig. 8-73)

- * Height adjustment of the No.1 guide becomes possible after unloading the cassette and lowering the cassette compartment. Accordingly, the guide height adjustment can be achieved by performing loading and unloading of the cassette and the height adjustment alternately.
- 3) Slowly rotate the No.2 guide clockwise to make the entrance side waveform approximately flat (Fig. 8-74)

Note: Do not rotate No.2 guide excessively.

- 4) Set the SEL switch of the track shift & monitor jig to ON, then turn the track shift knob until the RF waveform amplitude is 2/3. (Fig. 8-75)
- 5) Turn No.2 guide so that the entrance side waveform flattens slightly. (Fig. 8-76)
- 6) Flatten the waveform with No.3 guide. (Fig. 8-77)
- 7) Turn off the SEL switch of the tracking shift & monitor jig and confirm that the RF waveform is as shown in a of Fig. 8-69.
- 8) Tighten the No.2 guide lock screw with a hexagonal wrench screwdriver. (See Fig. 8-71 (b).)

Note: Be sure to perform checking in accordance with 8-4-5.

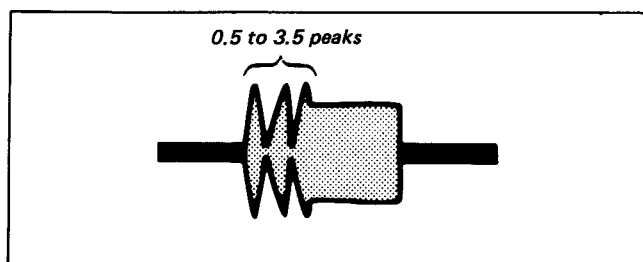


Fig. 8-72.

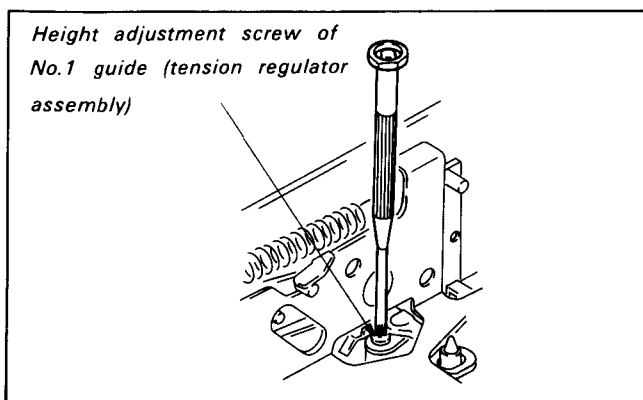


Fig. 8-73.

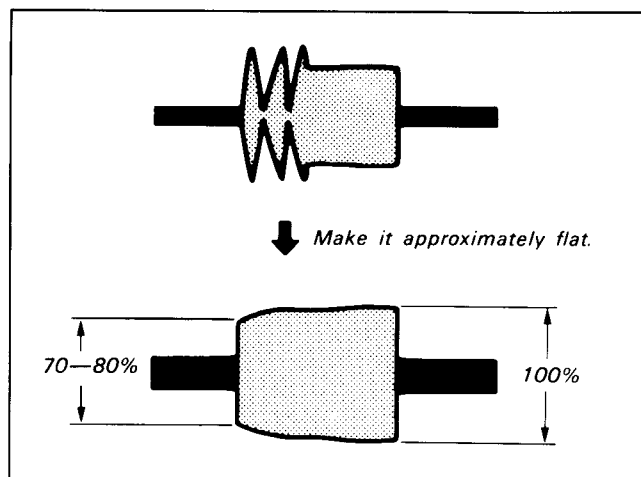


Fig. 8-74.

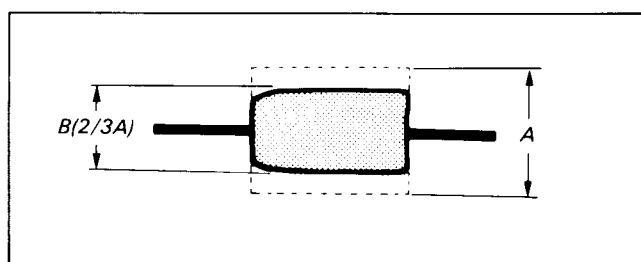


Fig. 8-75.

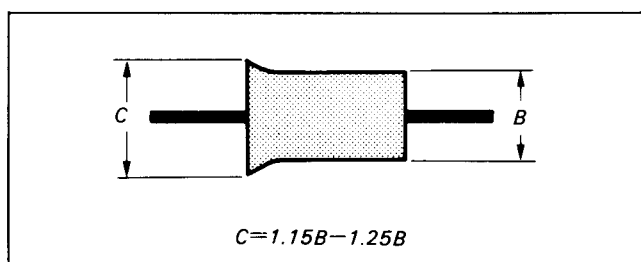


Fig. 8-76.

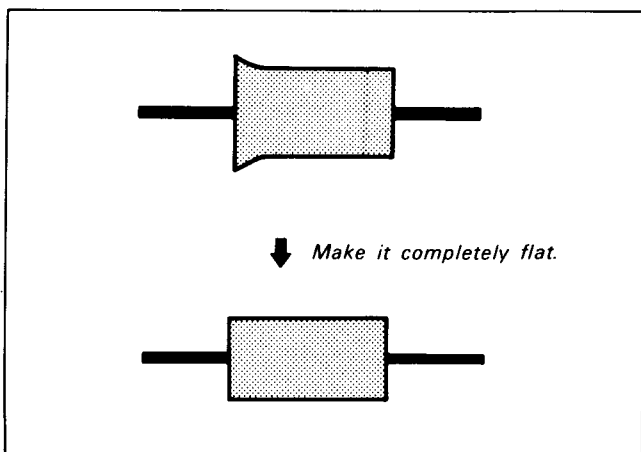


Fig. 8-77.

8-4-4. Exit Side Adjustment

- 1) Play back the alignment tape (WR5-1C) for tracking and rotate No.4 guide counterclockwise and No.5 guide clockwise in order to make the tape running on the exit side free. (Fig. 8-78)

Note:

- If screw lock is stuck to the No.5 guide nut, it may prevent the nut from rotating. Rotate the guide after immersing the nut thread into alcohol and to dissolve the screw lock agent.
- Check that the tape is not contacting the top and bottom of flanges of No.5 guide during free tape running.

- 2) Check that the RF waveform on the exit side has 1.5 to 3.5 peaks. If not, readjust as follows. (Fig. 8-79)

If off standard

- i) Rotate the lock screw ① counterclockwise to loosen.
- ii) Slowly rotate the zenith screw ② 45° at a time and wait until the RF waveform varies.
- iii) Rotate the lock screw ① clockwise to tighten. (Fig. 8-78)

Note:

- The waveform varies if the lock screw is tightened too strongly. Tighten moderately.
- Never rotate the azimuth screw of No.5 guide.

- 3) Rotate No.5 guide counterclockwise to make the RF waveform on the exit side approximately flat. (Fig. 8-80)

Note: The waveform reaction is slow against nut rotation. Rotate the nut after the waveform variations are stabilized.

- 4) Set the SEL switch of the track shift & monitor jig to ON, then turn the track shift knob until the RF waveform amplitude is 2/3. (Fig. 8-81)
- 5) Turn No.5 guide so that the exit side waveform flats slightly. (Fig 8-82)
- 6) Turn No.4 guide so that waveform flat (Fig. 8-83)
- 7) Turn off the SEL switch of the tracking shift & monitor jig and confirm that the RF waveform is as shown in a of Fig. 8-69.

Note: Be sure to perform checking in accordance with 8-4-5 after making the adjustment

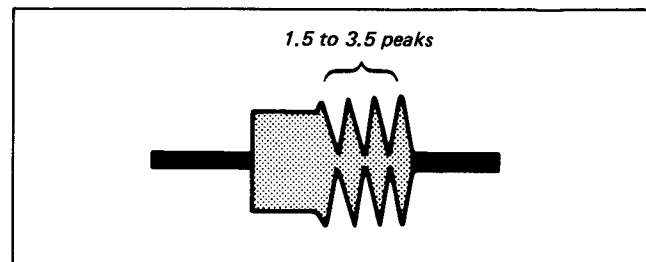


Fig. 8-79.

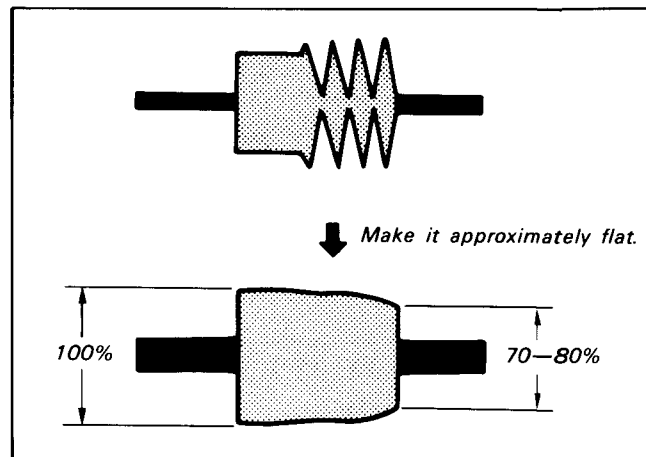


Fig. 8-80.

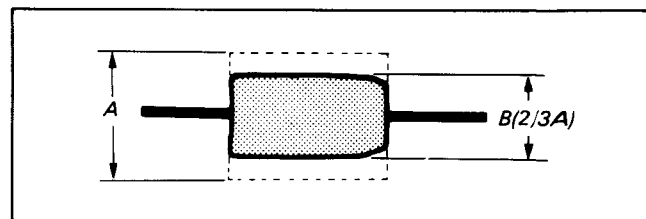


Fig. 8-81.

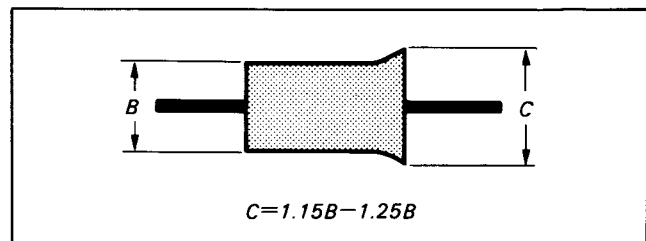


Fig. 8-82.

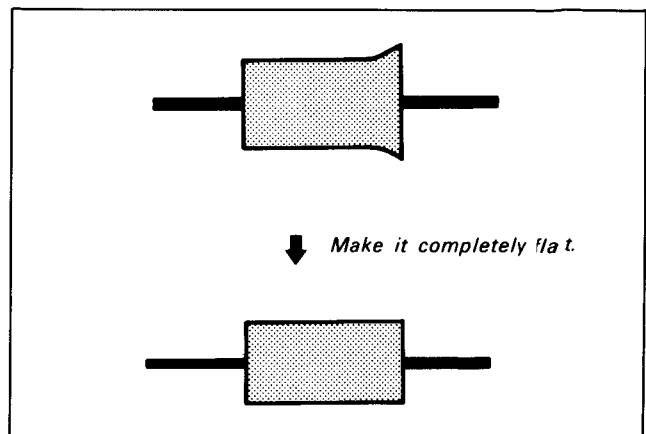


Fig. 8-83.

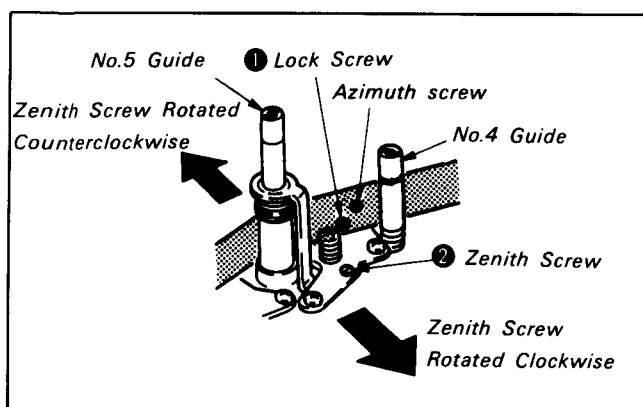


Fig. 8-78.

8-4-5. Checking After Adjustment

1. Tracking check

- 1) Play back the alignment tape (WR5-1C) for tracking.
- 2) Set the SEL switch of the track shift & monitor jig to ON, and turn track shift knob until the RF waveform amplitude is 2/3. (8-84)

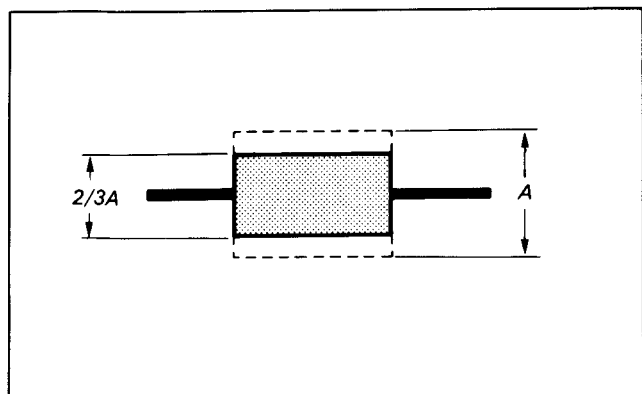


Fig. 8-84.

- 3) Confirm that the RF waveform amplitude minimum value (E min) at this time is more than 80% of maximum value (E max.). (Fig. 8-85)

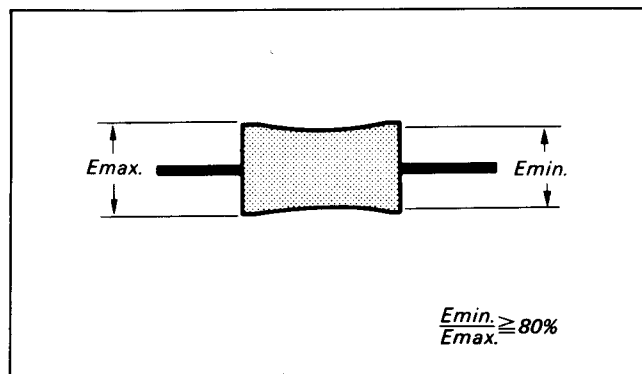


Fig. 8-85.

- 4) Check that the fluctuation amount of RF waveform entrance and exit sides both is as shown in Fig. 8-85.

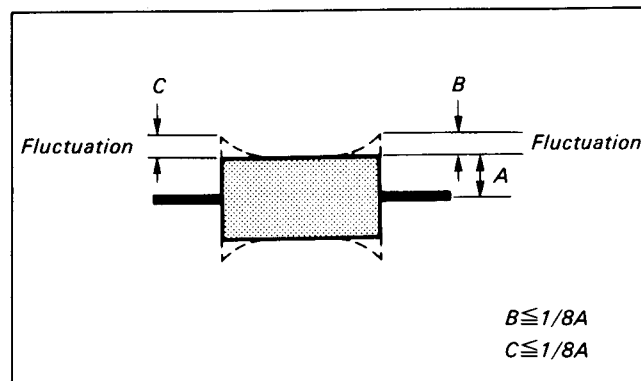


Fig. 8-86.

- 5) Set the SEL switch of the track shift & monitor jig to OFF.
- 6) Set up the REV mode and confirm that the waveform noise pitches are uniform. If not adjust as follows. (Fig. 8-87)

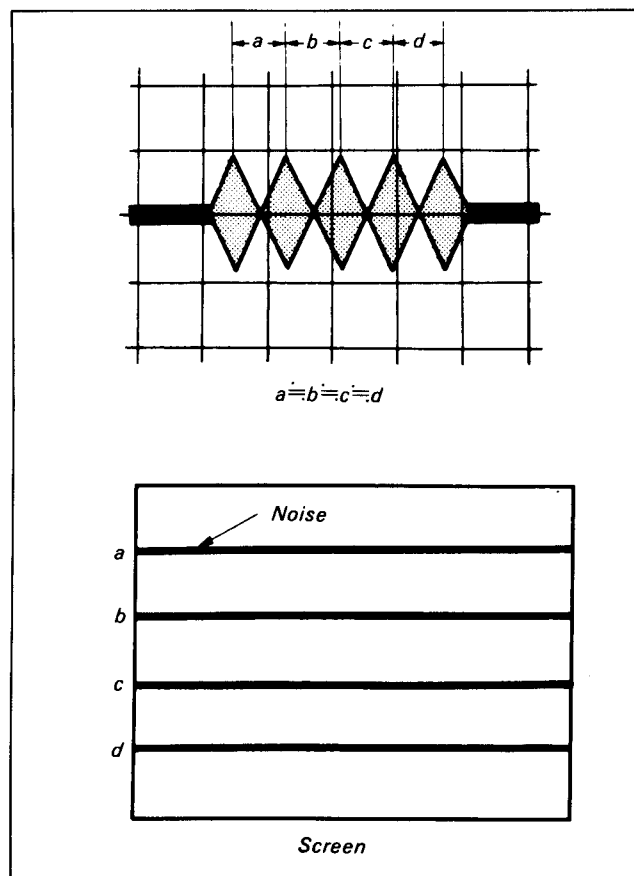


Fig. 8-87.

[Narrow noise pitch on entrance side (upper screen)]

(Fig. 8-88)

Confirm that the RF waveforms are flat in the PLAYBACK mode.

Waveform is not flat:

Adjust the heights of No.2 and 3 guides as in 8-4-3. Entrance Side Adjustment.

Waveform is flat:

Check again by performing No.1 guide height and No.2 guide zenith adjustment according to 8-4-3. Entrance Side Adjustment.

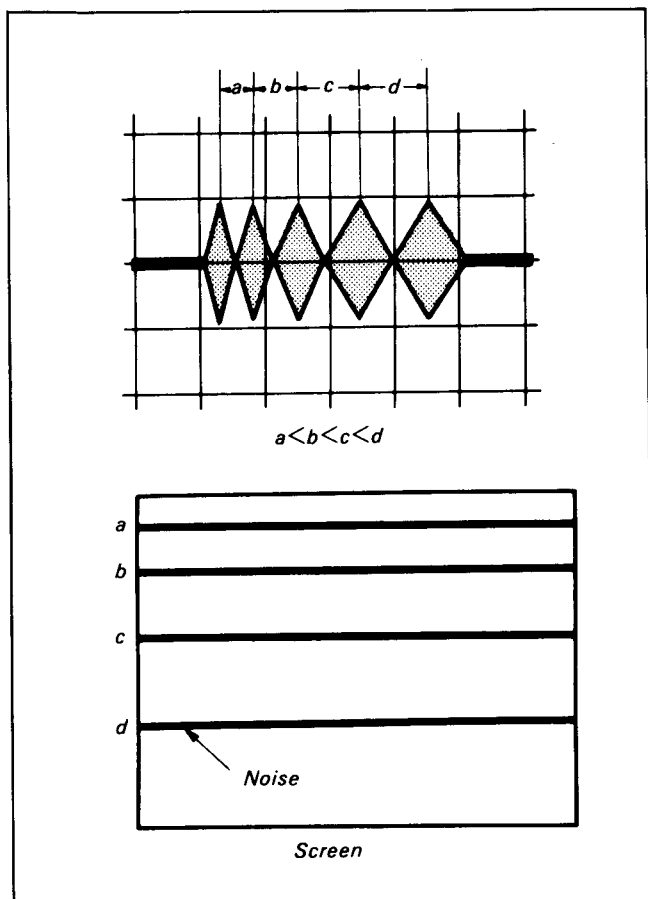


Fig. 8-88

[Narrow noise pitch on exit side (lower screen)]

(Fig. 8-89)

Set up the PLAYBACK mode and adjust No. 4 and 5 guide heights in accordance with 8-4-4. Exit Side Adjustment.

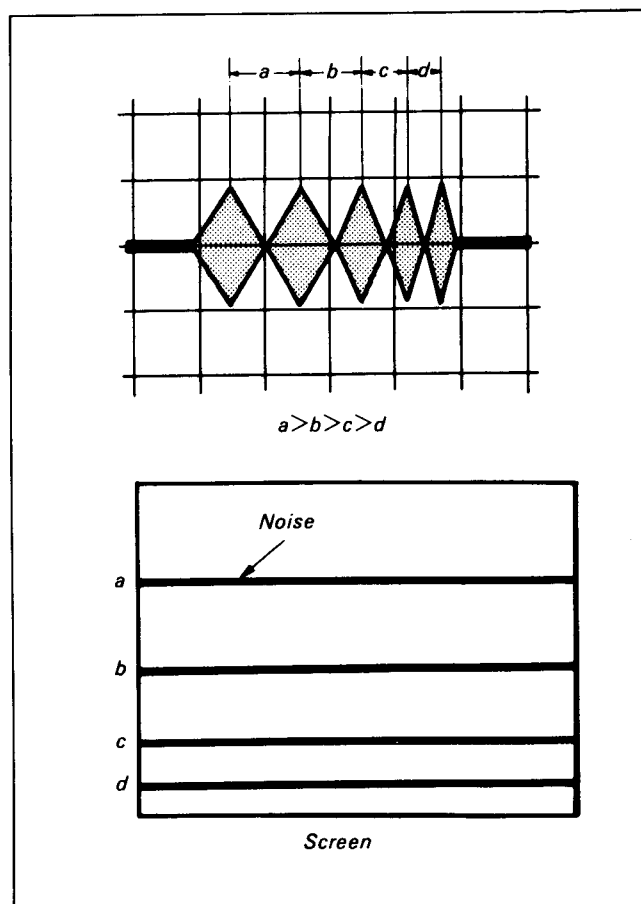


Fig. 8-89

[Wide noise pitch on exit side (lower screen)]

(Fig. 8-90)

Set up the **PLAYBACK** mode and confirm that the RF waveform is flat.

Waveform is not flat:

Adjustment height of No.4 and 5 guides in accordance 8-4-4. Exit Side Adjustment.

Waveform is flat:

Rotate the guide lower toothed wheel counterclockwise with No.6 guide lock jig (Ref. No.J-11) to loosen the toothed wheel. Rotate No.6 guide counterclockwise 45° to tighten the lower toothed wheel. Confirm the RF waveform of the **REV** mode again. (Fig. 8-91)

Note: Wrinkles may be caused in Part **A** between the capstan spindle and No.5 guide, if No.6 guide is raised excessively. Confirm that no wrinkles have been caused. (Fig. 8-92)

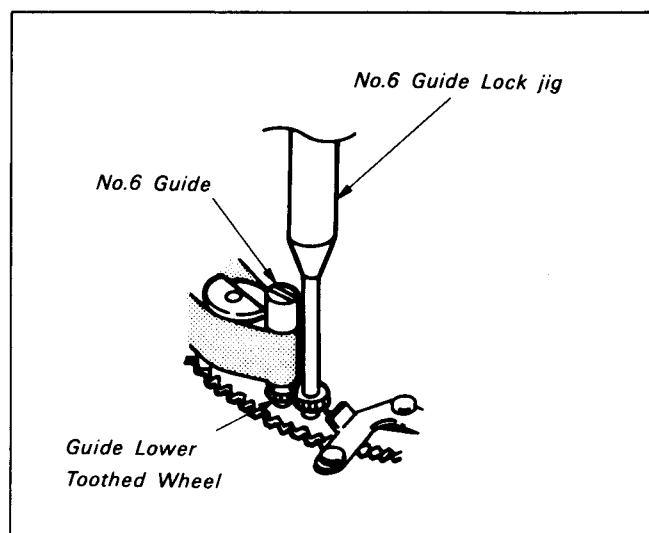


Fig. 8-91

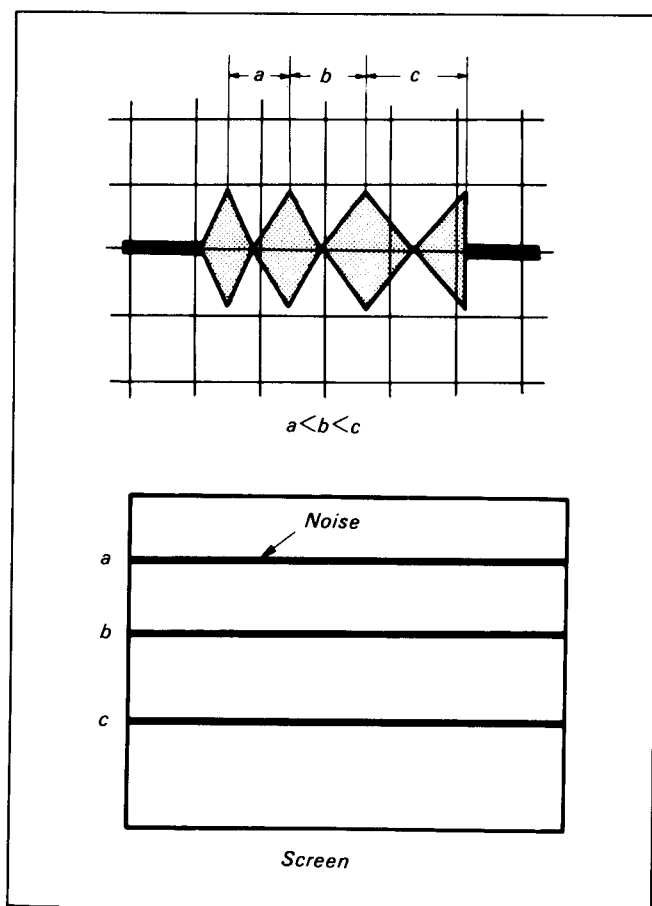


Fig. 8-90

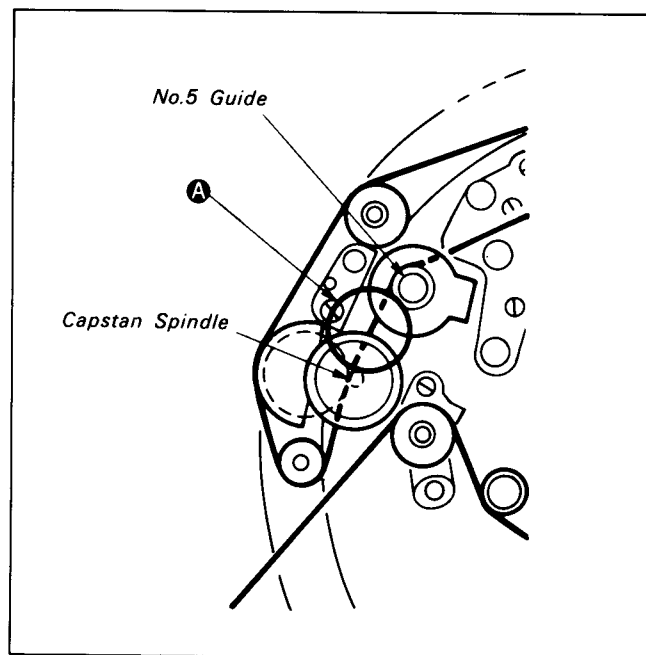


Fig. 8-92

2. Checking rising edge

- 1) Check that the RF waveform rises horizontally during playback after finishing loading, after CUE/REV, and during playing back after FF. If not, adjust as follows.

[Noise emits from the exit side (lower screen) with rising during playback after finishing loading]

(Fig. 8-93)

Check that the FWD back tension is not too low.

If too low:

Readjust as instructed in 8-3-21. FWD Back Tension Adjustment.

If normal:

Rotate the azimuth screw of the pinch roller clockwise 5° at a time and adjust after rechecking the rising edge. (Fig. 8-94)

[Noise emits from the exit side (lower screen) with rising during playback after REV]

(Fig. 8-93)

Loosen the guide lower toothed wheel of No.6 guide using No.6 guide lock jig, rotate No.6 guide 90° counterclockwise to tighten the toothed wheel, then recheck the rising edge.

Note: Wrinkles may be caused in Part A of Fig. 8-92, if No.6 guide is raised excessively at this time, between the capstan spindle and No.5 guide, so check that no wrinkles are caused.

[Noise emits from the exit side (lower screen) with rising during playing back after FF]

(Fig. 8-93)

Confirm that the FWD back tension is not too low.

If too low:

Readjust as required in 8-3-21. FWD Back Tension Adjustment.

If normal:

Rotate the azimuth screw of the pinch roller clockwise by 5° at a time and adjust after checking the rising edge. (Fig. 8-94)

Note: Be sure to check play rising after finishing loading in case an adjustment is made.

3. Tape running check

In playback and REV modes, there should be no spaces and curl should be within 0.3 mm for No.1, 2 and 5 guides at No.1—No.6 guide flanges (Fig. 8-95). Check also that there is no space or curl at No.3, 4 and 6 guides.

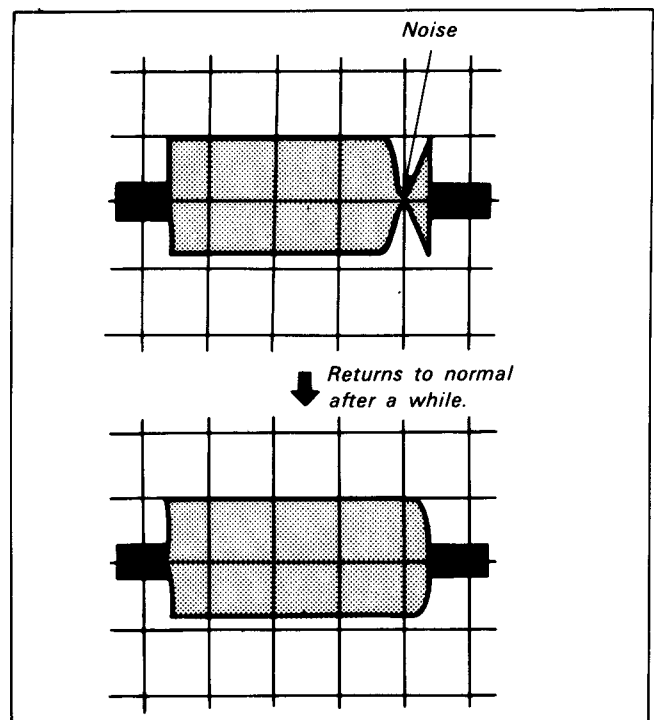


Fig. 8-93

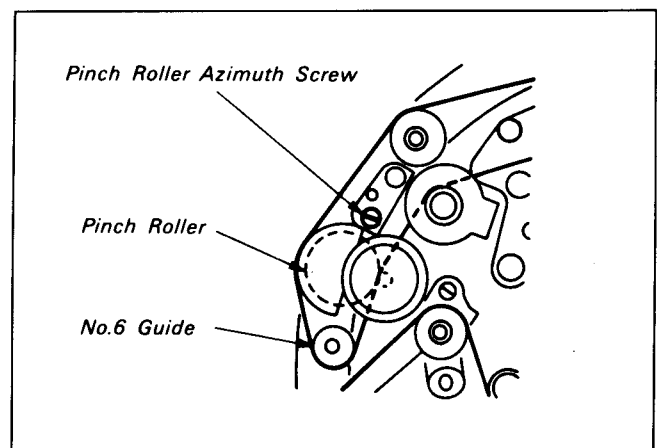


Fig. 8-94

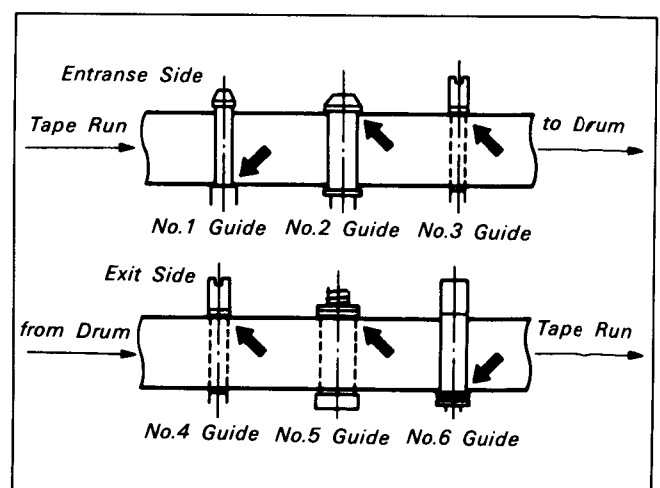


Fig. 8-95

SECTION 9

VIDEO ADJUSTMENTS

During the adjustment, see the parts arrangement diagram relevant to the adjustment on page 350.

For the adjustment of the VTR block, use the following measuring equipment.

[Equipment to be used]

- 1) Monitor TV
 - 2) AC adaptor or T/T unit
 - 3) Dual trace oscilloscope of over 10 MHz band which incorporates delay mode (Unless otherwise specified, use 10 : 1 probe.)
 - 4) Frequency counter
 - 5) Pattern generator incorporates video output terminal
 - 6) Digital voltmeter
 - 7) Audio generator
 - 8) Audio level meter
 - 9) Audio distortion meter
 - 10) Audio attenuator
 - 11) Regulated-DC power supply
 - 12) Alignment tape
- Tracking adjustment (WR5-1C)
Parts Code: 8-967-995-06
- Video frequency response adjustment (WR5-2C)
Parts Code: 8-967-995-16
- Operation check (WR5-3CL)
Parts Code: 8-967-995-36
- Operation check (WR5-3CSP)
Parts Code: 8-967-995-27

[Precautions for adjustment]

In the video block adjustment, it can be performed even by removing the camera block and EVF block except for "Battery down adjustment" of the system control system adjustment. When removing the camera and EVF blocks, disconnect the following seven connectors.

1. EM-1 board	CN402 (BLK)
2. EM-1 board	CN905 (YEL)
3. EM-1 board	CN906 (BLK)
4. SS-64 board	CN303 (WHT)
5. SS-64 board	CN308 (WHT)
6. AU-25 board	CN403 (RED)
7. CP-18 board	CN704

In the servo system adjustments; namely, "MOTOR POWER voltage adjustment", "Notch filter f_0 adjustment" and "ATF BPF balance adjustment" and almost all adjusting items of the video system adjustments, it is necessary to perform the adjustments by opening the AU-25, RP-40, and VI-22 boards. In this case, moreover, the adjustment should be performed by removing CN405 (WHT) on the AU-25 board.

[Connection of equipments]

Unless otherwise specified, perform the adjustment by connecting the measuring equipment as shown in figure below.

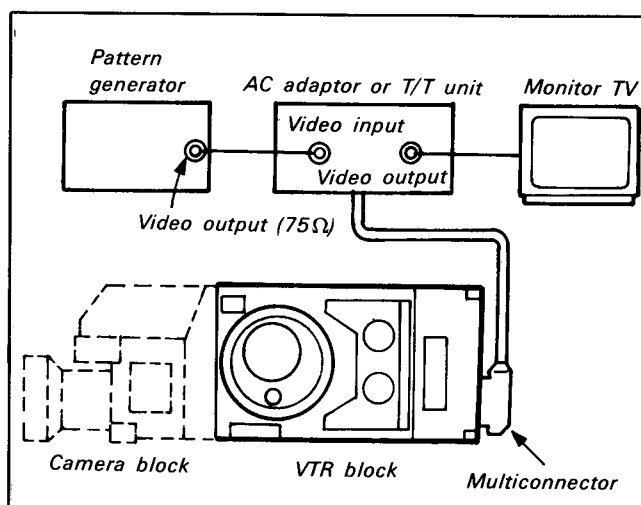


Fig. 9-1.

[Set-up during adjustment]

Since the video output signal obtained from the pattern generator is used as the adjusting signal of the VTR block adjustment, it is necessary that this video output signal has to be within the specification. Connect an oscilloscope to Pin ⑩ (VIDEO IN) of CN385 on the SC-6 board and make sure that the amplitude of the video SYNC signal is approximately 0.3V, that the video block is approximately 0.7V, that the burst signal is 0.3V with flat characteristics, and the signal level ratio between the burst signal and "Red" signal is 0.30 : 0.66.

The video signal (colour bar) used in the VTR block adjustment is as shown in Fig. 9-2.

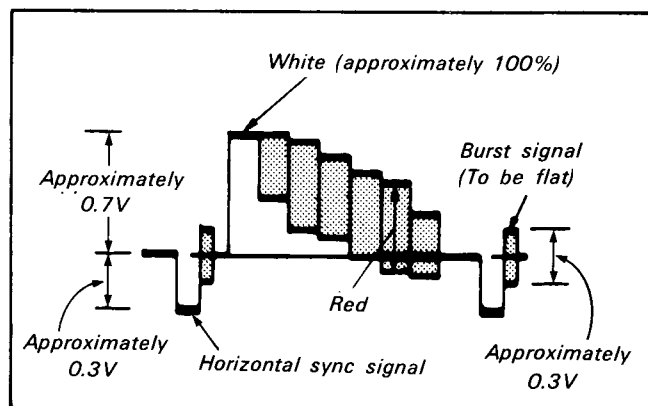
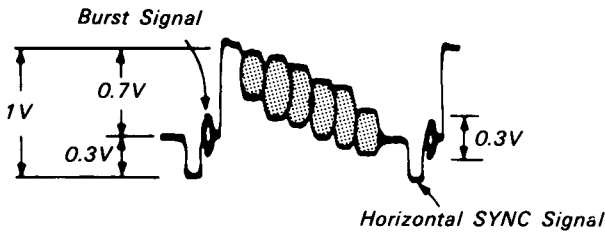


Fig. 9-2. Colour bar signal of pattern generator

[Alignment tape]

Tape	Content	Use
Tracking (WR5-1C)	1. Recording area: PCM — video 2. Recording content: CH2: 1 MHz linearity adjustment signal (CH1: 9 MHz)	Drum linearity adjustment
Video Frequency Response (WR5-2C)	1. Recording area: Video 2. Recording content: RF sweep 0 to 10 MHz 3. Marker: 1, 3.58, 5.5 and 7 MHz	Ferquency characteristic adjustment
Operation Check SP mode (WR5-3CSP) LP mode (WR5-3CL)	1. Recording area: Video 2. Recording content: ■ Video track • Video signals Colour bars 10 sec Monoscope 8 sec } Iterative (Colour bars) Burst Signal  (100%) White Yellow Cyan Green Magenta Red Blue Black • Audio signals (AFM) 400 Hz 60% modulation ■ PCM track (WR5-3CSP only) • Audio signals (PCM) 1kHz 0dBs 10sec 20Hz -6dBs 2sec 400Hz -6dBs 4sec 14kHz -0.7dBs 2sec } Iterative	Operation check

Note:
PCM area is not included in WR5-3CL.

[T/T unit or AC adaptor I/O level and impedance]

Video input Pin jack

Input signal: 1 Vp-p, 75Ω unbalance, negative SYNC

Video output Pin jack

Output signal: 1 Vp-p, 75Ω unbalance, negative SYNC

Audio input Pin jack

Input level: -6dBs (0dBs=0.775 Vrms)

Input impedance: Over 47 kΩ

Audio output Pin jack

Specified output: -6dBs with 47 kΩ load

Loading impedance: Over 10 kΩ

9-1. POWER SUPPLY CHECK (VI-22 BOARD)

9-1-1. REG 5V Check

Mode	Stop
Measurement Point	Positive probe: Pin ⑥ of CN204 (AUDIO 5V) Pin ⑧ of W202 (VIDEO 5V) Pin ⑤ of W203 (S/S 5V) Negative probe: GND
Measuring Instrument	Digital voltmeter
Specified Value	$5.0 \pm 0.15 \text{Vdc}$

Checking method:

- 1) It should be $5.0 \pm 0.15 \text{Vdc}$.

9-2. SYSTEM CONTROL ADJUSTMENT

9-2-1. Battery Down Adjustment (TS-55, SK-12 Boards)

Mode	Camera mode REC
Object	Arbitrary
Measurement Point	TP502 on TS-55 board (BATT DOWN)
Measuring Instrument	Oscilloscope (DC range)
Adjusting Element	RV506 on TS-55 board
Specified Value	$5.77 \pm 0.01 \text{Vdc}$

Connection:

- 1) Remove multiconnector and connect the regulated-DC power supply and digital voltmeter as shown in Fig. below.

Note: Be sure to perform the adjustment by connecting the camera block.

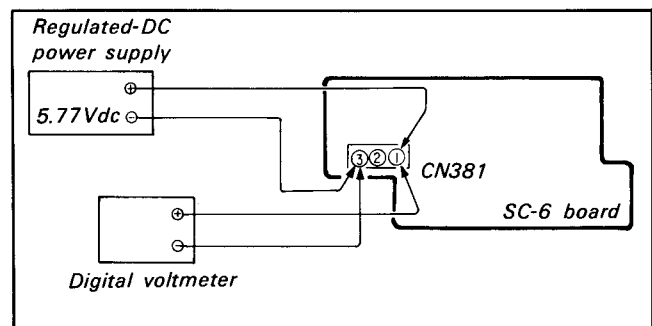


Fig. 9-3.

Adjusting method:

- 1) Connect TP301 (TEST) on the SK-12 board and GND with a jumper and set to test mode.
- 2) Adjust the output voltage of the regulated-DC power supply so that the indication of the digital voltmeter becomes $5.77 \pm 0.01 \text{Vdc}$. (VTR is in REC mode)
- 3) Turn slowly RV506 on the TS-55 board and set the DC level of TP502 on the TS-55 board to the point where it is about to turn "L" from "H".
- 4) Remove the jumper.

Checking method:

Perform the following checks and if the results are not satisfied, repeat the checks again.

- 1) Adjust the output voltage of the regulated-DC power supply so that the indication of the digital voltmeter becomes $5.90 \pm 0.01 \text{Vdc}$. (VTR is in REC mode)
- 2) Make sure that the  mark of the LCD does not light on and the TALLY lamp does not flicker.
- 3) Decrease the output voltage of the regulated-DC power supply so that the indication of the digital voltmeter becomes $5.85 \pm 0.01 \text{Vdc}$.
- 4) Make sure that the  mark of the LCD and the TALLY lamp flicker every other second.
- 5) Decrease the output voltage of the regulated-DC power supply so that the indication of the digital voltmeter becomes $5.75 \pm 0.01 \text{Vdc}$.
- 6) Make sure that the VTR is stopped and the power supply is turned OFF.

9-3. SERVO SYSTEM ADJUSTMENT

9-3-1. MOTOR POWER Voltage Adjustment (SS-64 Board)

Mode	Stop
Measurement Point	Pin ⑩ of CN501
Measuring Instrument	Digital voltmeter
Adjusting Element	RV301
Specified Value	$5.30 \pm 0.05 \text{ Vdc}$

Adjusting method:

- 1) Adjust with RV301 so that it becomes $5.30 \pm 0.05 \text{ Vdc}$.

9-3-2. Notch Filter fo Adjustment (SS-64 Board)

Mode	Stop
Signal	See Fig. 9-4
Measurement Point	
Measuring Instrument	Oscilloscope, audio generator, and frequency counter
Adjusting Element	RV501
Specified Value	Signal output of 25 Hz is minimize

Connection:

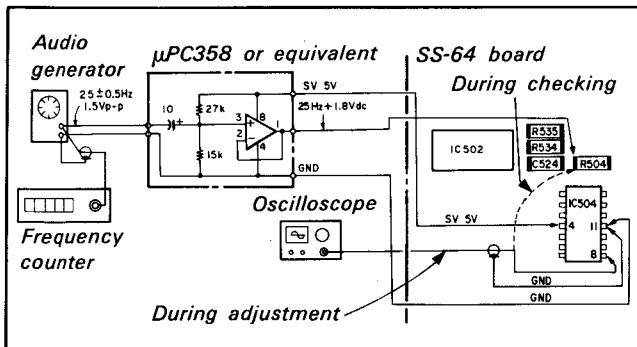


Fig. 9-4.

Adjusting method:

- 1) Adjust the oscillating frequency of the audio generator to $25 \pm 0.5 \text{ Hz}$.
- 2) Connect an oscilloscope to R504 and check the following 2 points: (See Fig. 9-4)
 1. Make sure the DC level is approximately 1.8 Vdc when the audio generator is turned OFF.
 2. Adjust the audio generator output level so that the 25 Hz sine wave signal level becomes 1.5 Vp-p .
- 3) Connect an oscilloscope to Pin ⑧ of IC504.
- 4) Adjust with RV501 so that the 25 Hz signal level becomes minimum.



Fig. 9-5. 25 Hz notch filter adjustment

9-3-3. Drum Free Speed Adjustment (TS-55 Board)

Mode	REC
Signal	Arbitrary
Measurement Point	Pin ① (ADE) of CN507
Measuring Instrument	Digital voltmeter
Adjusting Element	RV501
Specified Value	$2.3 \pm 0.1 \text{ Vdc}$

Adjusting method:

- 1) Adjust with RV501 so that it becomes $2.3 \pm 0.1 \text{ Vdc}$.

9-3-4. Capstan Free Speed Adjustment (TS-55, RP-40 Boards)

Mode	Playback
Signal	Arbitrary tape
Measurement Point	Pin ⑥ (CFG) of CN507 on TS-55 board
Measuring Instrument	Frequency counter
Adjusting Element	SP mode: RV502 on TS-55 board LP mode: RV503 on TS-55 board
Specified Value	SP mode: $1341 \pm 2 \text{ Hz}$ LP mode: $671 \pm 1 \text{ Hz}$

Connection:

- 1) Connect Pin ⑩ (TP484: SL CHECK) and GND on the RP-34 board on the RP-40 board with an electrolytic capacitor. (GND is on the negative side of the capacitor.)
- 2) Connect Pin ③ (ATF LOCK) and GND of CN507 on the TS-55 board with a jumper.

Adjusting method:

The adjusting element of LP mode is shown in parentheses [].

- 1) Set the SP/LP switch (S309 on the SK-12 board) to the position of the SP [LP].
- 2) Turn "VTR POWER" from OFF to ON.
- 3) Adjust with RV502 [RV503] so that it becomes $1341 \pm 2 \text{ Hz}$ [$671 \pm 1 \text{ Hz}$] in the playback mode.



$1341 \pm 2 \text{ Hz}$ (SP mode)
 $671 \pm 1 \text{ Hz}$ (LP mode)

Fig. 9-6.

9-3-5. Switching Position Adjustment (TS-55 board)

Mode	Playback
Signal	Alignment tape: For operation confirmation (WR5-3CSP)
Measurement Point	CH1: TP208 on VI-22 board (Pin ① of CN206: VIDEO OUT) CH2: Pin ② of CN483 (RF SWP) on RP-40 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV507 on TS-55 board
Specified Value	$6.5 \pm 0.3H$ ($416 \pm 20 \mu\text{sec}$)

Adjusting method:

- 1) Adjust with RV507 on the TS-55 board so that it becomes $6.5 \pm 0.3H$ ($416 \pm 20 \mu\text{sec}$).

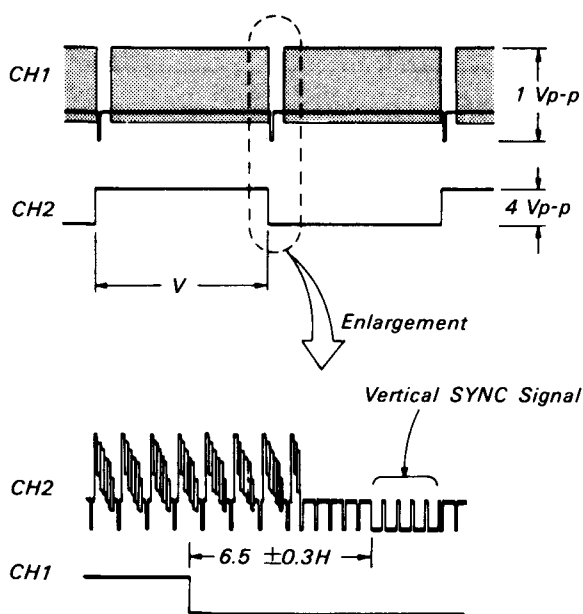


Fig. 9-7. Switching position adjustment

9-3-6. ATF BPF Balance Adjustment (SS-64 Board)

Mode	Playback
Signal	} See Fig. 9-8
Measurement Point	
Measuring Instrument	Oscilloscope, audio generator, and frequency counter
Adjusting Element	RV502
Specified Value	Be sure that the 16 kHz signal level (Pin ① of IC509) is equivalent to the 47 kHz signal level (Pin ⑫ of IC509).

Connection:

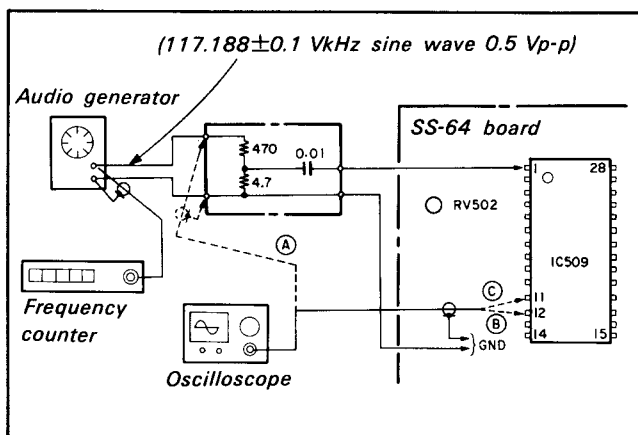


Fig. 9-8.

Adjusting method:

- 1) Check the output level of the audio generator with an oscilloscope and adjust so that the sine wave output level becomes approximately 0.5 Vp-p. (Fig. 9-8 (A))
- 2) Adjust the oscillation frequency of the audio generator so that reading of the frequency counter becomes $117.188 \pm 0.1 \text{ kHz}$.
- 3) Play back an arbitrary tape.
- 4) Connect an oscilloscope to Pin ⑫ of IC509 and read the 47 kHz signal level. (Approximately 2 Vp-p) (Fig. 9-8 (B))
- 5) Connect an oscilloscope to Pin ① of IC509. (Fig. 9-8 (C))
- 6) Adjust with RV502 so that the 16 kHz signal level becomes equivalent to the 47 kHz signal level.

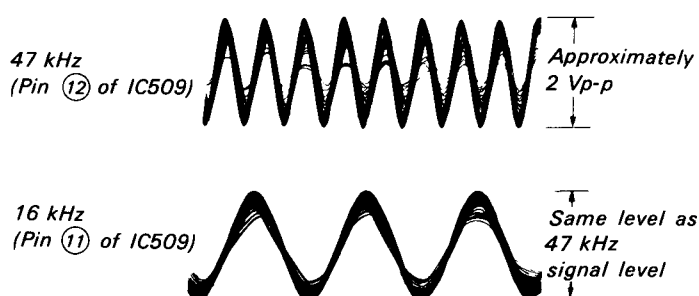


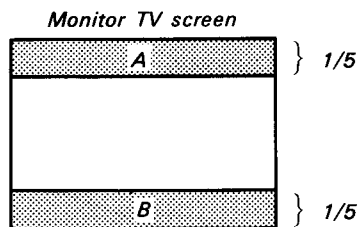
Fig. 9-9.

9-3-7. Playback Pause Adjustment (TS-55 Board)

Mode	Playback pause
Signal	A tape onto which colour bar signal has been video-recorded by itself in LP mode.
Measurement Point	} Confirm with monitor TV screen picture
Measuring Instrument	
Adjusting Element	RV508
Specified Value	Be sure that there is no noise on the monitor TV screen except for the upper and lower 1/5 sections. (See Fig. 9-10)

Adjusting method:

- 1) Set to playback mode, and set to playback pause mode when the playback image is stabilized.
- 2) Be sure that there is no noise on the monitor TV screen except for the upper and lower 1/5 sections. (See Fig. 9-10)
- 3) When the specified value is not satisfied, repeat 1) and 2) by turning RV508.



Specification: Noise should not be appear in parts other than part A or B.

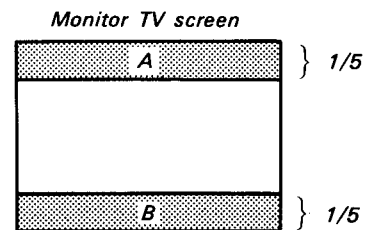
Fig. 9-10.

9-3-8. Slow Adjustment (TS-55 Board)

Mode	1/30 Slow playback
Signal	A tape onto which colour bar signal has been video-recorded by itself in LP mode.
Measurement Point	} Confirm with monitor TV screen picture
Measuring Instrument	
Adjusting Element	RV504
Specified Value	Be sure that there is no noise on the monitor TV screen except for the upper and lower 1/5 sections. (See Fig. 9-11)

Adjusting method:

- 1) Set to playback pause mode.
- 2) Press the FRAME button (S312 on the SK-12 board) continuously and set to 1/30 slow playback mode.
- 3) Adjust with RV504 so that noise on the monitor screen is hidden into its upper and lower sections.



Specification: Noise should not be appear in parts other than part A or B.

Fig. 9-11.

9-4. VIDEO BLOCK ADJUSTMENT

The adjustment of the video system should in principle be followed the undermentioned adjustment procedure.

The colour video signal supplied from the pattern generator is utilized as the video input signal of the video system adjustment in recording mode. Make sure to check that the SYNC signal and colour burst signal are matched with those in the set-up of during the adjustment of as shown in Fig. 9-2.

[Adjustment procedure]

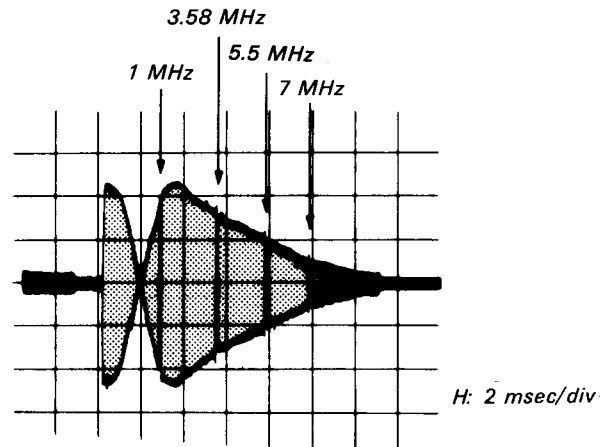
- 1) Playback frequency characteristics adjustment
- 2) Flying erase check
- 3) Crystal oscillator f_0 adjustment
- 4) Y/C separation adjustment
- 5) Y comb type filter adjustment
- 6) SYNC AGC adjustment
- 7) VIDEO OUT level adjustment
- 8) PB Y level adjustment
- 9) Y FM carrier frequency adjustment
- 10) Y FM deviation adjustment
- 11) AC clipping adjustment
- 12) $375f_H$ VCO adjustment
- 13) Chroma emphasis f_0 adjustment
- 14) Carrier balance adjustment
- 15) GCA adjustment
- 16) f_H VCO adjustment
- 17) REC Y recording current adjustment
- 18) REC C recording current adjustment
- 19) REC AFM recording current adjustment
- 20) REC ATF recording current adjustment

9-4-1. Playback Frequency Characteristics Adjustment (RP-34/RP-40 Boards)

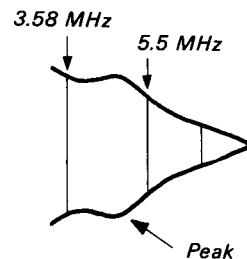
The adjusting element of CH2 is shown in parentheses [].

Mode	Playback
Signal	Alignment tape: For frequency characteristics adjustment (WR5-2C)
Measurement Point	Pin ④ [Pin ③] of CN483 on RP-40 board External trigger: Pin ② of CN483 Trigger slope: + [-]
Measuring Instrument	Oscilloscope
Adjusting Element	RV003 [RV004] on RP-34 board
Specified Value	From 3.58 MHz to 7 MHz is almost a straight line.

a) RF waveform



b)



c)

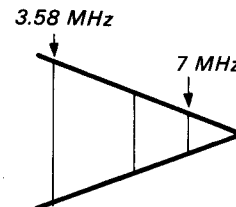


Fig. 9-12. Playback frequency characteristics adjustment

Adjusting method

- 1) Adjust with RV003 [RV004] on the RP-34 board so that peak appears in the envelope of the RF waveform. (See Fig. 9-12. b))
- 2) Adjust with RV003 [RV004] on the RP-34 board so that the peak of the RF waveform envelope becomes small and the waveform from 3.58 MHz to 7 MHz section becomes almost a straight line. (See Fig. 9-12. c))
At this point, be sure to confirm that the level difference ratio between 3.58 MHz and 5.5 MHz is approximately 4 : 3 [4 : 3].
- 3) Perform self recording and be sure to confirm that there are no occurrence of black noise and white noise due to over modulation.

9-4-2. Flying Erase Check (RP-40 Board)

Mode	REC
Signal	Arbitrary
Measurement Point	Pin ① of CN481 (FE(X))
Measuring Instrument	Oscilloscope and frequency counter
Specified Value	Frequency: Over 7 MHz Voltage: Over 8 Vp-p

Note: Be sure to use MP type tape (Pin ⑥ of W202 should be "L").

Checking method:

- 1) Make sure that the oscillation frequency is over 7 MHz and the oscillation voltage is over 8 Vp-p.

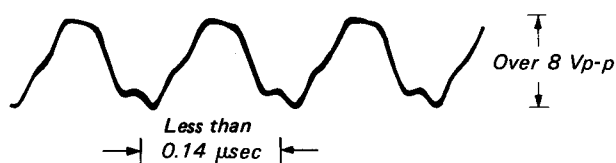


Fig. 9-13.

9-4-3. Crystal Oscillator f_0 Adjustment (VC-11/VI-22 Boards)

Mode	Playback
Signal	Alignment tape: For operation confirmation (WR5-3CSP)
Measurement Point	Pin ⑤⑤ on VC-11 board
Measuring Instrument	Frequency counter
Adjusting Element	CV001 on VC-11 board
Specified Value	4433619±50 Hz

Note: Connect the frequency counter through a buffer of high impedance (approximately 10 MΩ) and low capacitance (less than 10 pF)

Adjusting method:

- 1) Adjust with CV001 on the VC-11 board so that it becomes 4433619±50 Hz.

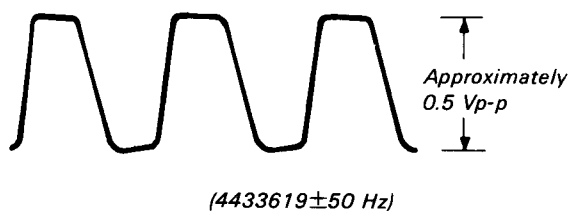


Fig. 9-14. Crystal oscillator f_0 adjustment

9-4-4. Chroma Comb Filter Adjustment (VD-6/VI-22 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin ②⑩ on VD-6 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV002 on VD-6 board and LV201 on VI-22 board
Specified Value	Minimum residual chroma component

Connection:

- 1) Connect Q243 base to GND with a jumper wire.

Adjusting method:

- 1) Adjust with RV002 on the VD-6 board and LV201 on the VI-22 board alternately so that the residual chroma component becomes minimum.

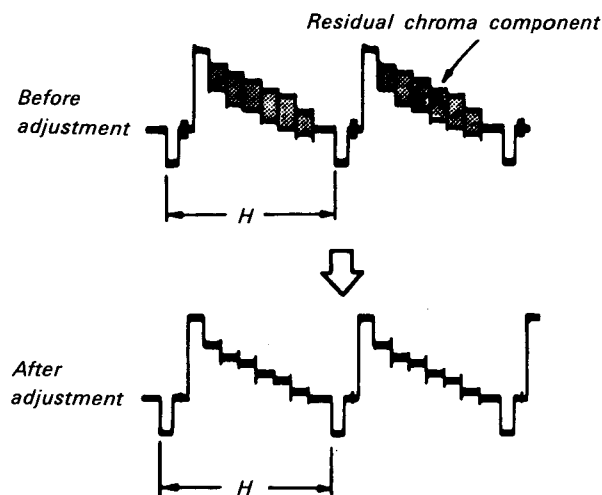


Fig. 9-15. Chroma comb filter adjustment

9-4-5. Y Comb Type Filter Adjustment (VD-6/VI-22 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin ⑩ on VD-6 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV203 on VI-22 board
Specified Value	The amplitude between the yellow lever center and the pedestal is 50 ± 25 mVp-p.

Note: Be sure to connect a 22 k Ω of resistor in series between Pin ⑩ on the VD-6 board and 10 : 1 probe.

Adjusting method:

- 1) Adjust with RV203 on the VI-22 board so that the amplitude between the yellow level center and pedestal becomes 50 ± 25 mVp-p.
- 2) While playing back a tape in which dropouts are recorded, be sure to confirm that these dropouts are not discernible. In the event the dropouts become discernible, adjust with RV203 so that they become undiscernible.

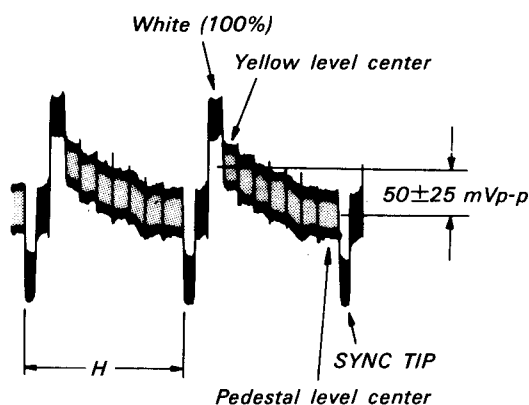


Fig. 9-16. Y comb AGC adjustment

9-4-6. SYNC AGC Adjustment (VY-9/VI-22 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin ⑤① on VY-9 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV006 on VY-9 board
Specified Value	0.50 ± 0.01 Vp-p

Adjusting method:

- 1) Adjust with RV006 on VY-9 board so that it becomes 0.50 ± 0.01 Vp-p.

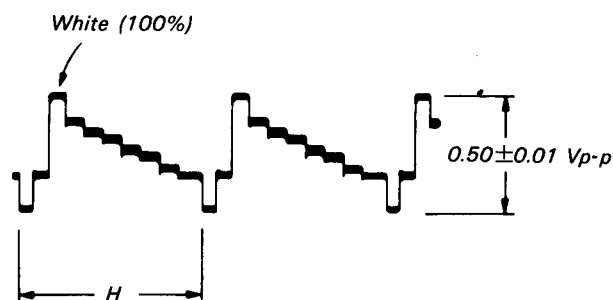


Fig. 9-17. SYNC AGC adjustment

9-4-7. VIDIO OUT Level Adjustment (VY-9/VI-22 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	TP208 on VI-22 board (Pin ① of CN206: VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV005 on VY-9 board
Specified Value	$1.00^{+0.025}_{-0.05}$ Vp-p

Note: Be sure that the multiconnector has been connected to the T/T unit or AC adaptor.

Adjusting method:

- 1) Adjust with RV005 on the VY-9 board so that it becomes $1.00^{+0.025}_{-0.05}$ Vp-p.

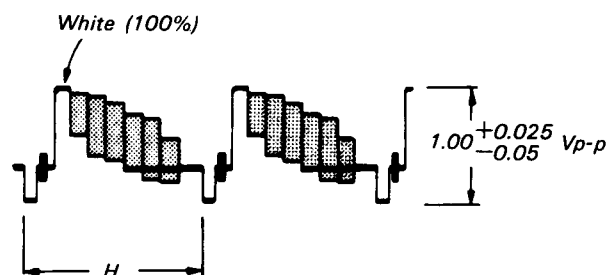


Fig. 9-18. VIDEO OUT level adjustment

9-4-8. PB Y Level Adjustment (VY-9/VI-22 Boards)

Mode	Playback
Signal	Alignment tape: For operation confirmation (WR5-3CSP) Colour bar section
Measurement Point	TP208 on VI-22 board (Pin ① of CN206: VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV001 on VY-9 board
Specified Value	1.00 ± 0.05 V _{p-p}

- Note:** 1. Be sure that the multiconnector has been connected to the T/T unit or AC adaptor.
2. Be sure that the EDIT switch (S310 on SK-12 board) is turned OFF.

Adjusting method:

- 1) Adjust with RV001 on the VY-9 board so that it becomes 1.00 ± 0.05 V_{p-p}.

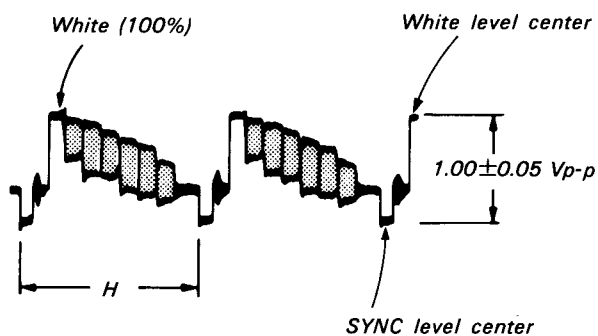


Fig. 9-19. PB Y level adjustment

9-4-9. Y FM Carrier Frequency Adjustment (VY-9/VI-22 Boards)

Mode	E-E
Signal	Non-signal
Measurement Point	Pin ②⑨ on VY-9 board (REC Y RF)
Measuring Instrument	Frequency counter
Adjusting Element	RV004 on VY-9 board
Specified Value	4.20 ± 0.03 MHz

Adjusting method:

- 1) Set RV003 (AC CLIP) on the VY-9 board to the mechanical center. (The slide pin of RV003 is approximately 2.7Vdc.)
- 2) Adjust with RV004 on the VY-9 board so that it becomes 4.20 ± 0.03 MHz.
- 3) Be sure to perform the "Deviation adjustment" and "AC CLIP adjustment".

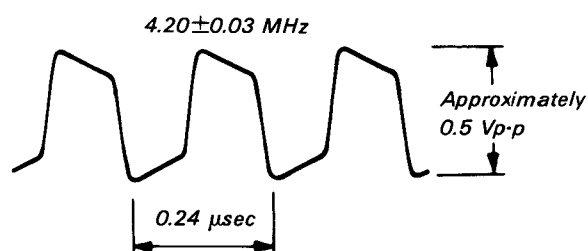


Fig. 9-20. Y FM carrier frequency adjustment

9-4-10. Y FM Deviation Adjustment (VY-9/VI-22 Boards)

Mode	Recording and playback
Signal	Colour bar
Measurement Point	TP208 on VI-22 board (Pin ① of CN206: VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV002 on VY-9 board
Specified Value	Playback level: 1.00 ± 0.05 Vp-p

- Note:** 1. Be sure that the "VIDEO OUT level adjustment", "PB Y level adjustment" and "Y FM carrier frequency adjustment" have been completed.
2. Be sure the multiconnector is connected to the T/T unit or AC adaptor.
3. Be sure the EDIT switch (S310 on the SK-12 board) is turned OFF.

Adjusting method:

- 1) Record the colour bar signal.
- 2) Play back the recorded section.
- 3) Be sure to check the playback output level.
Specified value: 1.00 ± 0.05 Vp-p
- 4) When the specified value is not satisfied, repeat 1) to 3) after turning RV002 on the VY-9 board in the following manner.

	Turning direction of RV002
When larger than the specified value	Clockwise (↻)
When smaller than the specified value	Counterclockwise (↺)

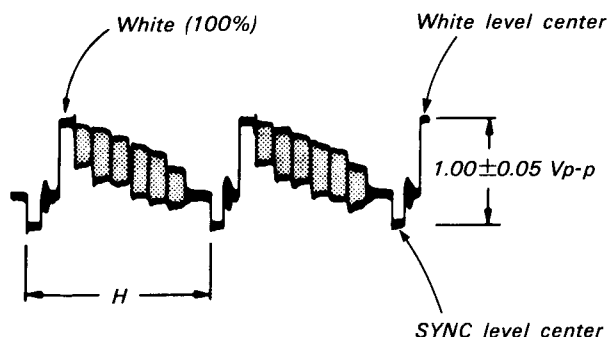


Fig. 9-21. Y FM deviation adjustment

9-4-11. AC Clip Adjustment (VY-9/VI-22 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin ③⑤ on VY-9 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV003 on VY-9 board
Specified Value	$240 \pm 10\%$

Adjusting method:

- 1) Adjust with RV003 on the VY-9 board so that the peak of the white 100% becomes $240 \pm 10\%$.

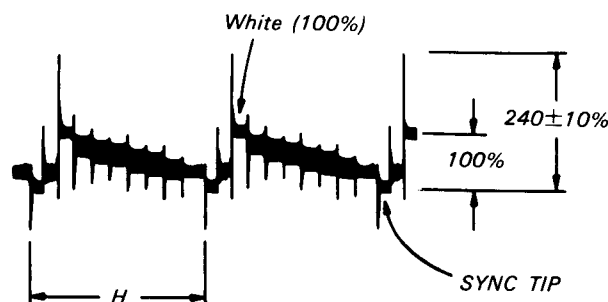


Fig. 9-22. AC clip adjustment

9-4-12. 375f_H VCO Adjustment (VC-11/VI-22 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin ⑥⑩ on VC-11 board
Measuring Instrument	Digital voltmeter
Adjusting Element	RV002 on VC-11 board
Specified Value	3.0 ± 0.4 Vdc

Adjusting method:

- 1) Adjust with RV002 on the VC-11 board so that it becomes 3.0 ± 0.4 Vdc.

9-4-13. Chroma Emphasis f_0 Adjustment (VI-22 Board)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin ⑧ on VC-11 board
Measuring Instrument	Oscilloscope
Adjusting Element	FL203 on VI-22 board
Specified Value	Be sure to confirm that the f_0 component is minimum and zero cross appears between green and magenta.

Connection:

- 1) Connect Pin ⑪ (ACC) on the VC-11 board and Pin ① (PB VI RF) of the W202 with a 1 k Ω resistor.

Adjusting method:

- 1) Adjust with FL203 on the VI-22 board so that the amplitude of the flat cyan section of the chroma signal becomes minimum.
At this point, be sure to confirm that the zero cross appears between the green and magenta.

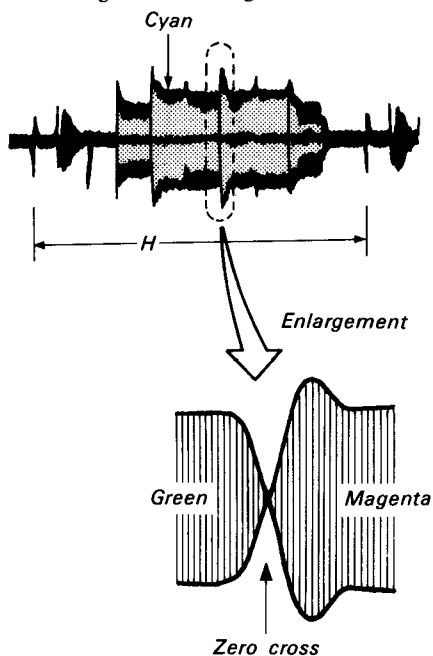


Fig. 9-23. Chroma emphasis f_0 adjustment

9-4-14. Carrier Balance Adjustment (VC-11/VI-22 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin ⑥④ on VC-11 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV001 on VC-11 board
Specified Value	Minimize 5.17 MHz signal component

Adjusting method:

- 1) Adjust with RV001 on the VC-11 board so that the 5.17 MHz signal component becomes minimum.

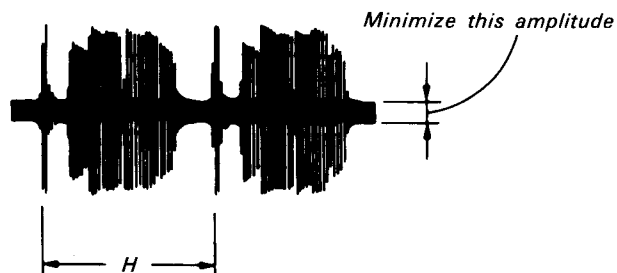


Fig. 9-24. Carrier balance adjustment

9-4-15. GCA Adjustment (VC-11/VI-22 Boards)

Mode	Playback
Signal	Arbitrary tape
Measurement Point	Pin ⑤④ on VC-11 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV003 on VC-11 board
Specified Value	460 $\pm$ 30 mVp-p

Adjusting method:

- 1) Adjust with RV003 on the VC-11 board so that it becomes 460 $\pm$ 30 mVp-p.
- 2) Set to either the STILL, CUE, OR REVIEW mode, and be sure to confirm that the thickness of the colour does not differ from that of the playback mode. If necessary, adjust with RV003. (Be sure to play back a tape of LP mode.)



Fig. 9-25.

9-4-16. f_H VCO Adjustment (VC-11/VI-22 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	CH1: Pin ⑤③ of VC-11 board CH2: TP208 (Pin ① of CN206) on VI-22 board (VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV004 on VI-11 board
Specified Value	$14.0 \pm 0.2 \mu\text{sec}$

Adjusting method:

- 1) Adjust RV004 on the VC-11 board so that the T_R of CH1 is $14.0 \pm 0.2 \mu\text{sec}$.
- 2) Confirm that the H (time) of CH1 and CH2 is stable.

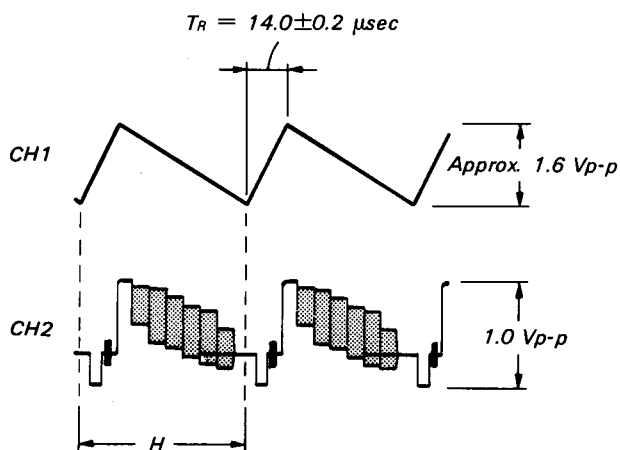


Fig. 9-26. f_H VCO adjustment

9-4-17. REC Y Recording Current Adjustment (RP-34/RP-40 Boards)

Mode	REC
Signal	Non-signal
Measurement Point	TP482 on RP-40 board (CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV001 (REC VI) on RP-34 board
Specified Value	200 mVp-p

Note: Be sure to always perform the adjustment of the respective recording currents of the REC C, REC AFM, and REC ATF after the REC Y recording current adjustment has been completed.

Adjusting method:

- 1) Adjust with RV001 of the RP-34 board so that it becomes 200 mVp-p.

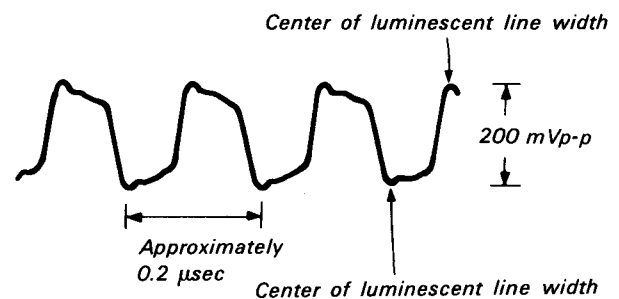


Fig. 9-27. REC Y recording current adjustment

**9-4-18. REC C Recording Current Adjustment
(RP-40, VI-22 Boards)**

Mode	REC
Signal	Colour bar
Measurement Point	TP482 on RP-40 board (CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV201 on VI-22 board
Specified Value	38 mVp-p

- Note:** 1. Be sure to always perform the adjustment of the respective recording currents of the REC AFM and REC ATF after the REC C recording current adjustment has been completed.
2. Be sure to use the MP type tape.
(Be sure Pin ③ of IC201 on the VI-22 board is at "L".)
3. Be sure to eliminate the solder on Pin ⑦ (FE ON) of the connector W202 on the RP-40 board and stop the flying erase oscillation.

Connection:

- 1) Connect the following two points on the VI-22 board with a jumper.
 1. Pin ⑳ on the VY-9 board (REC Y RF) and GND
 2. TP219 (Q220 ㉔ : REC ATF RF) and GND
- 2) Connect the following one point on the AU-25 board with a jumper.
 1. The connector (W204) pin side of RV403 (REC AFM ADJ) and GND (TP409).

Adjusting method:

- 1) Adjust with RV201 on the VI-22 board so that it becomes 38 mVp-p.

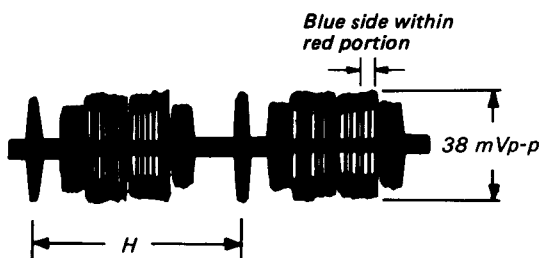


Fig. 9-28. REC C LEVEL Adjustment

**9-4-19. REC AFM Recording Current Adjustment
(RP-40, VI-22 Boards)**

Mode	REC (LP mode)
Signal	Non-signal
Measurement Point	TP482 on RP-40 board (CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV403 on AU-25 board
Specified Value	7.5 mVp-p

- Note:** 1. Be sure to use the MP type tape.
(Be sure Pin ③ of IC201 on the VI-22 board is at "L".)
2. When the TP482 signal level is too small to read, do not use the 10 : 1 probe, but connect it directly a resistor of 100Ω as shown in Fig. below.

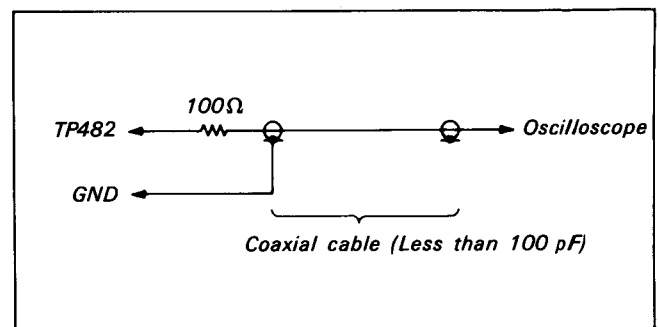


Fig. 9-29.

3. Be sure to eliminate the solder on Pin ⑦ (FE ON) of the connector W202 on the RP-40 board and stop the flying erase oscillation.

Connection:

- 1) Connect the following two points on the VI-22 board with a jumper.
 1. Pin ㉔ (REC Y RF) on the VY-9 board and GND.
 2. TP219 (the pin of Q220 side of RV202 (REC ATF ADJ)) and GND.

Adjusting method:

- 1) Adjust with RV403 on the AU-25 board so that it becomes 7.5 mVp-p.

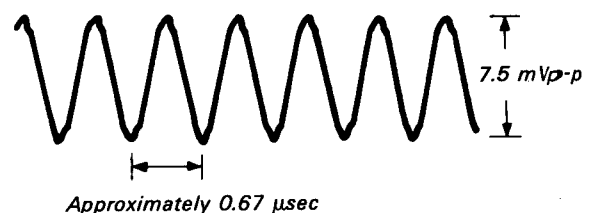


Fig. 9-30. AFM recording current adjustment

9-4-20. REC ATF Recording Current Adjustment (RP-40, VI-22 Boards)

Mode	REC (LP mode)
Signal	Non-signal
Measurement Point	TP482 on RP-40 board (CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV202 on VI-22 board
Specified Value	6.7mVp-p

Note: 1. Be sure to use the MP type tape.
(Be sure Pin ③ of IC201 on the VI-22 board is at "L".)
2. When the TP482 signal level is too small to read, do not use the 10 : 1 probe, but connect it directly a resistor of 100Ω as shown in Fig. below.

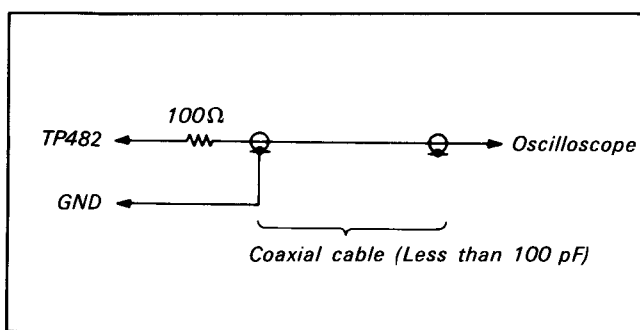


Fig. 9-31.

3. Be sure to eliminate the solder on Pin ⑦ (FE ON) of the connector W202 on the RP-40 board and stop the flying erase oscillation.

Connection:

- 1) Connect the following one point on the VI-22 board with a jumper.
Pin ⑳ (REC Y RF) on the VY-9 board and GND
- 2) Connect the following one point on the AU-25 board with a jumper.
The pin of connector (W204) side of RV403 (REC AFM ADJ) and GND

Adjusting method

- 1) Adjust with RV202 on the VI-22 board so that it becomes 6.7mVp-p.

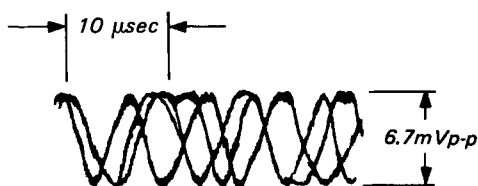


Fig. 9-32. REC ATF recording current adjustment

9-5. AUDIO SYSTEM ADJUSTMENT

In addition to the video system measuring instruments, connect the audio system ones as shown in Fig. below.

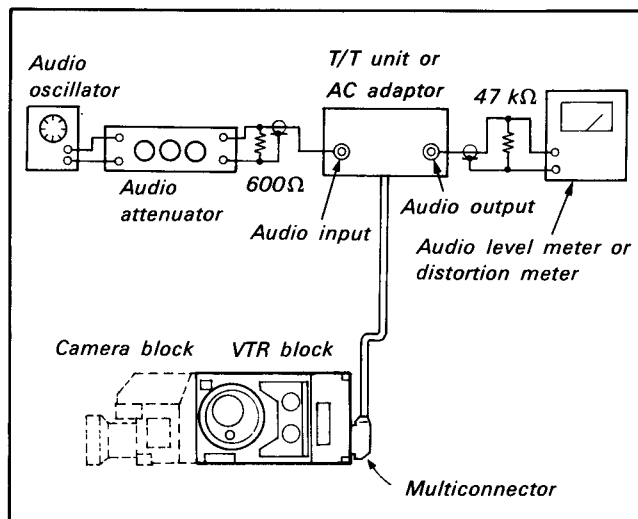


Fig. 9-33.

9-5-1. AFM Carrier Frequency Adjustment (AU-25 Board)

Mode	REC (SP mode)
Signal	Non-signal
Measurement Point	Pin ⑭ of IC401 or RV403
Measuring Instrument	Frequency counter
Adjusting Element	RV401
Specified Value	1.500±0.002 MHz

Adjusting method:

- 1) Adjust with RV401 so that it becomes 1.500±0.002 MHz.

9-5-2. AFM Deviation Adjustment (AU-25 Board)

Mode	Playback
Signal	Alignment tape: For operation confirmation (WR5-3CSP)
Measurement Point	See Fig. 9-33
Measuring Instrument	Audio level meter
Adjusting Element	RV402
Specified Value	-6±0.2 dBs

Adjusting method:

- 1) Adjust with RV402 so that the audio output level becomes -6±0.2 dBs.

Mode	E-E
Signal	400 Hz, -6 dBs
Measurement Point	See Fig. 9-33.
Measuring Instrument	Audio level meter
Specified Value	-6±2 dBs

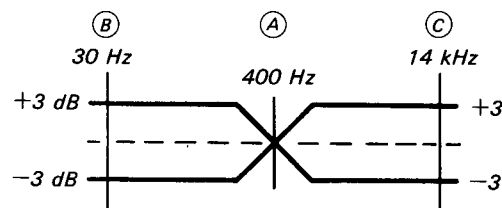
1) Be sure the audio output level is -6 ± 2 dBs.

Mode	Self-recording and playback
Signal	400 Hz, -6 dBs
Measurement Point	See Fig. 9-33.
Measuring Instrument	Audio level meter
Specified Value	-6±3 dBs

- 1) Record the signal.
- 2) Play back the recorded section.
- 3) Be sure the audio output level is -6 ± 3 dBs.

Mode	Self-recording and playback
Signal	Ⓐ 400 Hz, -20 dBs Ⓑ 30 Hz, -20 dBs Ⓒ 14 kHz, -20 dBs
Measurement Point	See Fig. 9-33.
Measuring Instrument	Audio level meter
Specified Value	When the 400 Hz playback output level is specified as 0 dB, the playback output levels of 30 Hz and 14 kHz become both 0 ± 3 dB.

- 1) Record the signals of **A** to **C** in sequence.
- 2) Play back the recorded section.
- 3) Be sure that when the 400 Hz playback output level is specified as 0 dB, the playback output levels of 30 Hz and 14 kHz become both 0 ± 3 dB.



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Mode	Self-recording and playback
Signal	400 Hz, -6 dBs
Measurement Point	See Fig. 9-33
Measuring Instrument	Distortion meter
Specified Value	Less than 0.5%* ¹

- 1) Record the signal.
- 2) Play back the recorded section.
- 3) Be sure the distortion is less than $0.5\%^{*1}$.

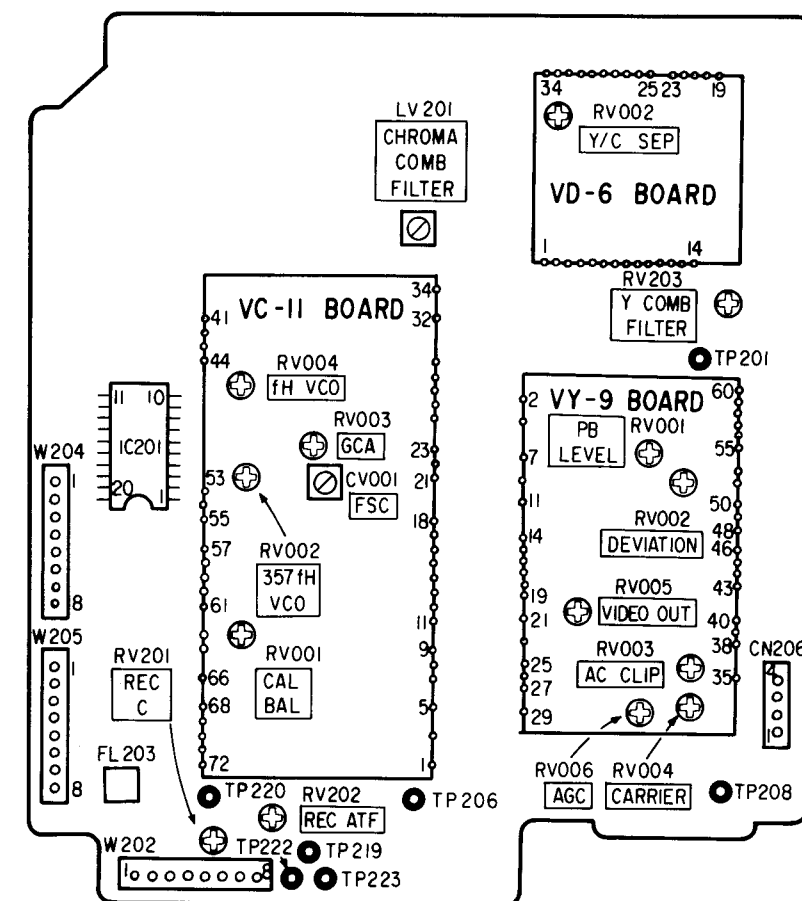
Fig. 9-35. Distortion measuring filter

Mode	Self-recording and playback
Signal	Non-signal Short-circuit Pin ②② (AUDIO IN) of multicconnector (SC-6 board) and Pin ②① (GND) with a jumper.
Measurement Point	See Fig. 9-33.
Measuring Instrument	Audio level meter
Specified Value	Less than -66 dBs^{*2}

- 1) Record the signal.
- 2) Play back the recorded section.
- 3) Be sure the noise level is less than -66 dBs*².

*2: The value when an IHF-A listening sensitivity correction filter is used.

SS-64

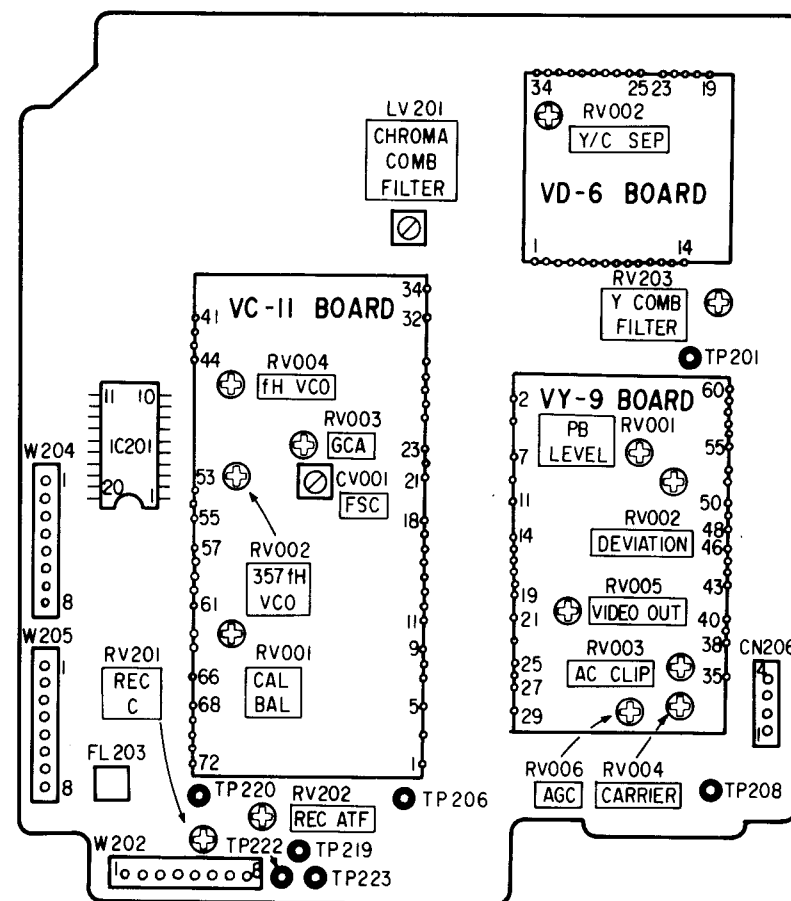


Block diagram of the AFM Carrier section. The diagram shows the following components and their interconnections:

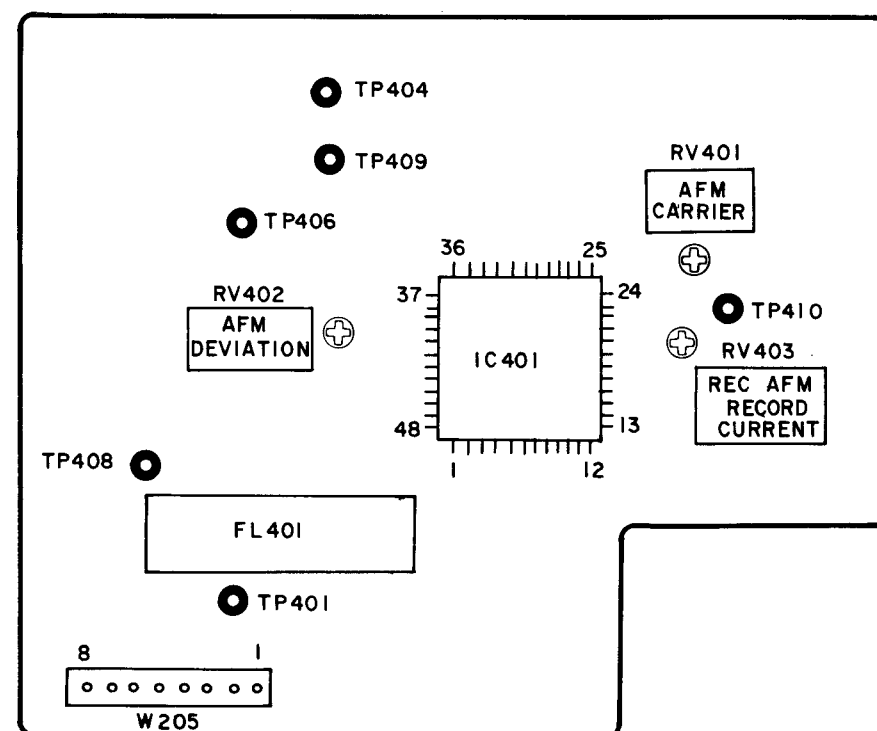
- TP401** (Test Point) is connected to **FL401** (Low Level AFM Frequency Limiter).
- TP408** (Test Point) is connected to **FL401**.
- RV402** (AFM Deviation Control) is connected to **FL401**.
- TP406** (Test Point) is connected to **RV402**.
- TP409** (Test Point) is connected to **RV402**.
- TP404** (Test Point) is connected to **RV402**.
- RV401** (AFM Carrier Control) is connected to **IC401** (AFM Carrier IC).
- RV403** (REC AFM Record Current Control) is connected to **IC401**.
- TP410** (Test Point) is connected to **RV403**.
- IC401** (AFM Carrier IC) is a 40-pin component with pins 1, 12, 13, 24, 25, 36, 37, and 48 labeled.
- W205** (Variable Resistor) is connected to **TP401** and **TP408**.

ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

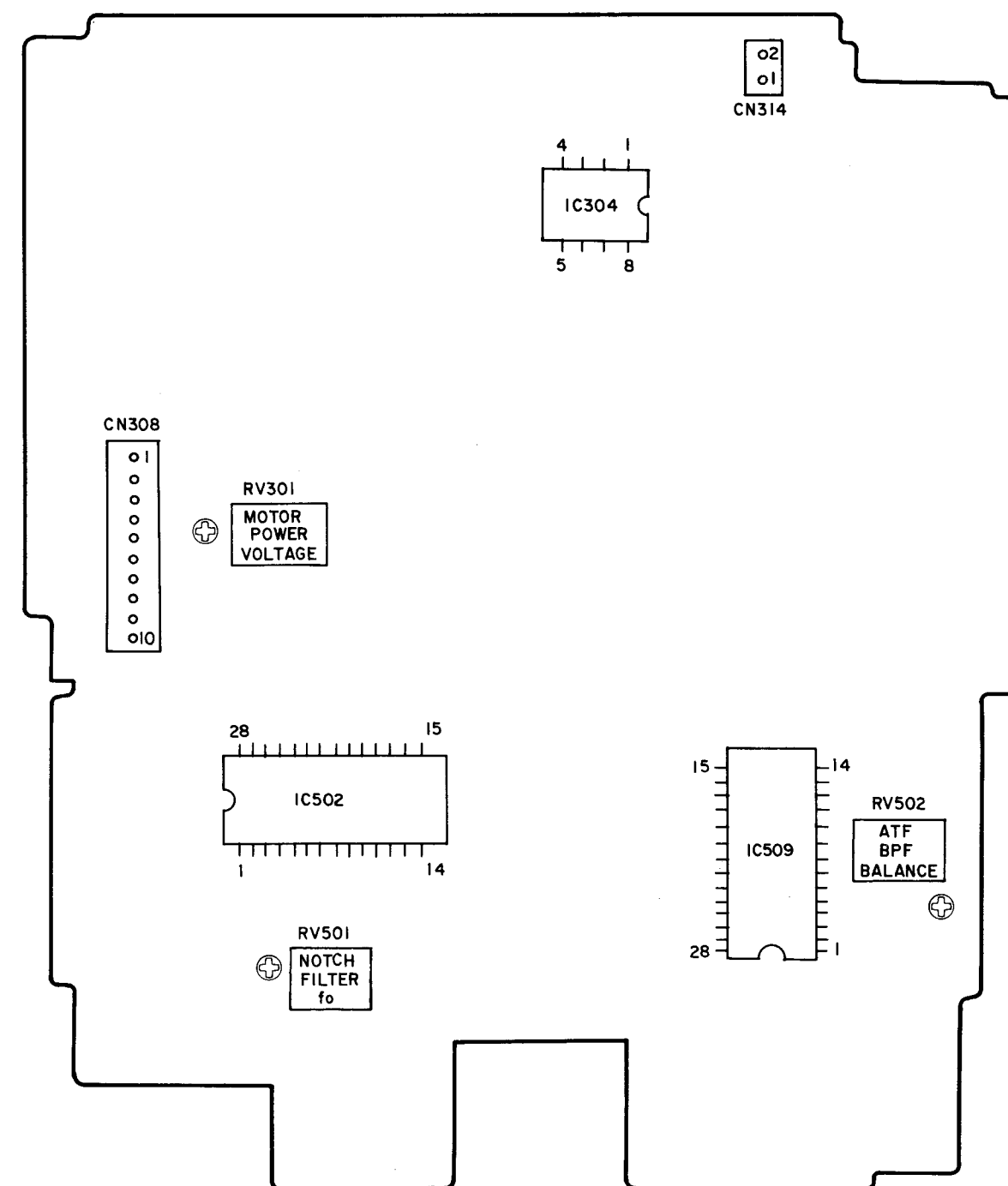
VI-22 BOARD (COMPONENT SIDE)



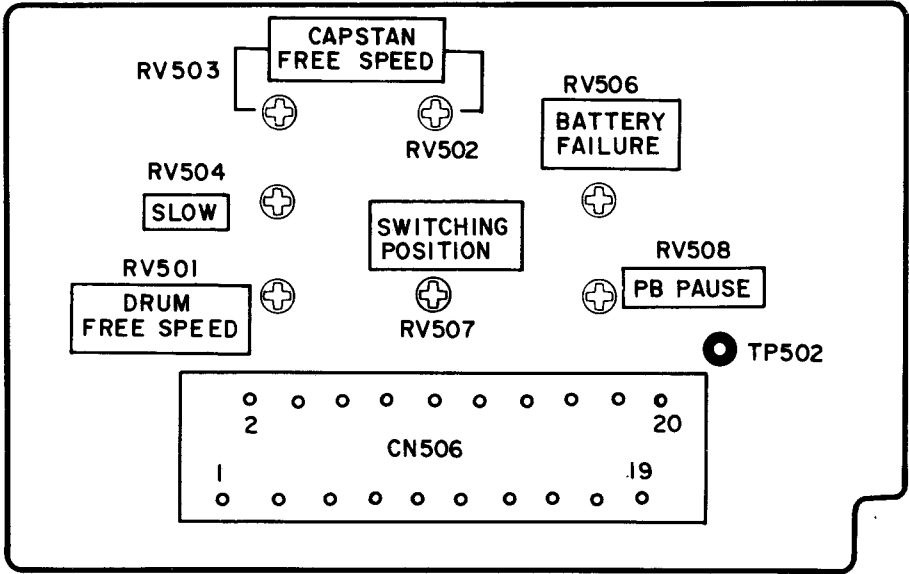
AU-25 BOARD (COMPONENT SIDE)



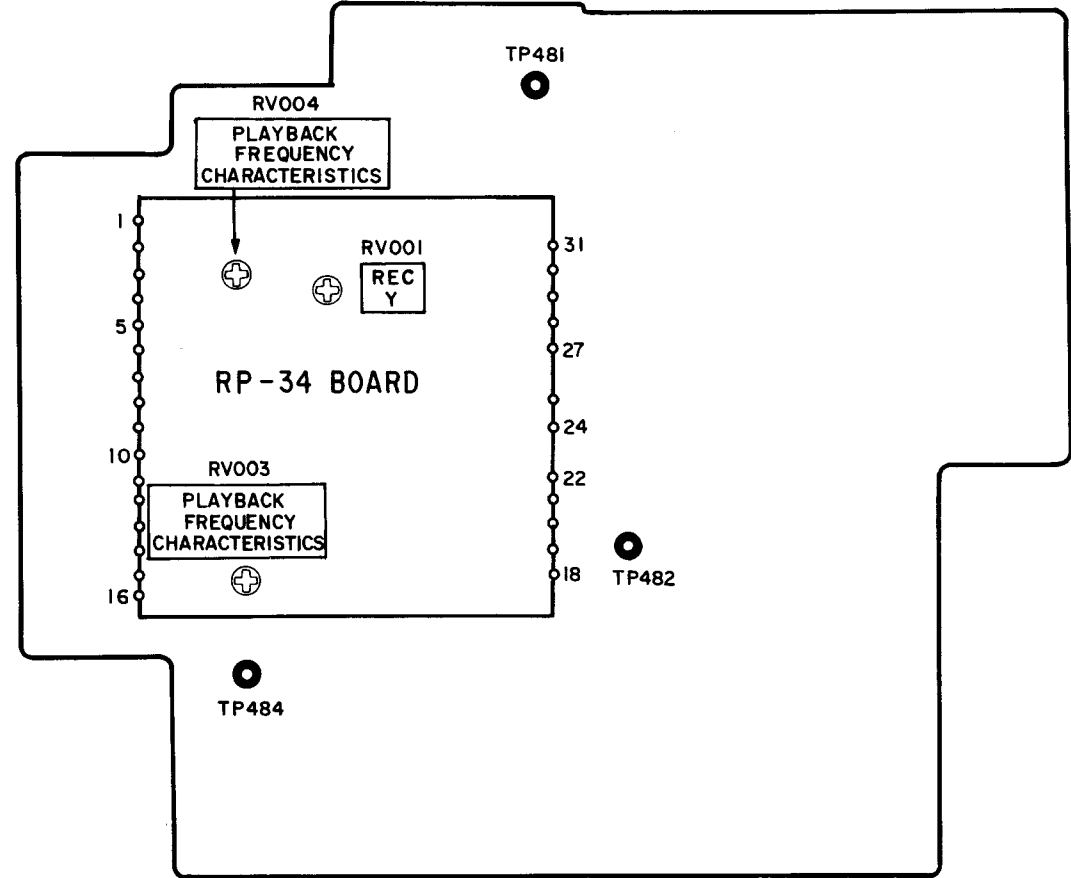
SS-64 BOARD (COMPONENT SIDE)



TS-55 BOARD (COMPONENT SIDE)



RP-40 BOARD (COMPONENT SIDE)



CCD-V100E

SONY[®] SERVICE MANUAL

*AEP Model
UK Model
Australian Model
E Model*

December, 1986

SUPPLEMENT-1

Subject: Partial change of parts of AEP Model

- File this supplement with the service manual.
- In the AEP Model, parts to sets after Serial No. 400001 have been changed as follows:

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<u>No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
14	*3-713-961-01	LABEL, MODEL NUMBER (FTZ object in AEP MODEL)	
	*3-713-960-01	LABEL, MODEL NUMBER (AEP MODEL is beyond the object of the FTZ)	

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

CCD-V100E

SONY[®] SERVICE MANUAL

AEP Model
UK Model
Australian Model
E Model

January, 1987

SUPPLEMENT-2

Subject: Camera auto focus system adjustment

- File this supplement with the service manual.

1. AUTO FOCUS SYSTEM ADJUSTMENT

Place the Sign Chart 2m (or 1m) away from the lens base plane as shown in Fig. 1-1 and perform adjustment. Set lighting brightness to such a value (120 lux) that the "LOW LIGHT" indication is displayed within EVF.

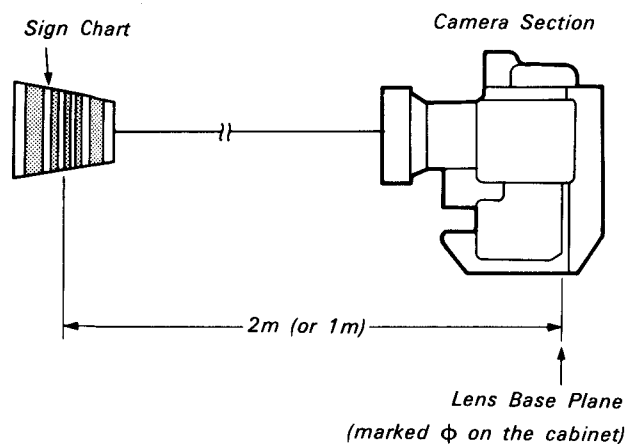


Fig. 1-1.

1-1. AD CONVERTER REFERENCE VOLTAGE ADJUSTMENT (AF-23 BOARD)

Object	Arbitrary
Measurement Point	Both terminals of RV802 (See Fig. 1-2)
Measuring Instrument	Digital voltmeter
Adjusting Element	RV802
Specified Value	$2.04 \pm 0.05 \text{Vdc}$

Adjusting method:

- 1) Set the FOCUS switch (S671 on CG-1 board) to AUTO position.
- 2) Adjust to $2.04 \pm 0.05 \text{Vdc}$ with RV802.

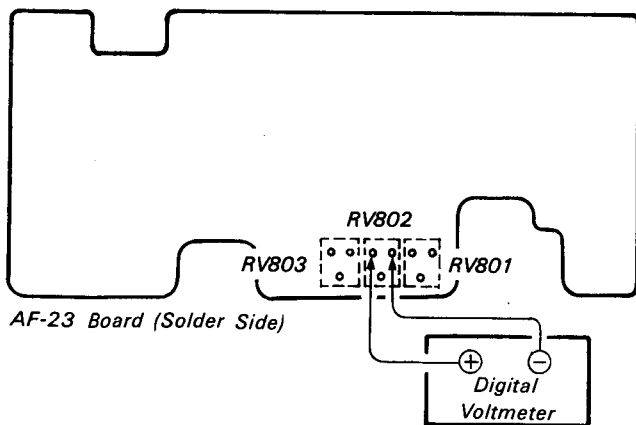


Fig. 1-2.

1-2. $\bar{X}_p$ ADJUSTMENT (AF-23 board)

Object	Sign Chart (2.0m in front of lens base plane (φ mark))
Measurement Point	CH1: Pin ⑪ of IC802 CH2: Pin ⑭ of IC802
Measuring Instrument	Oscilloscope (DC range)
Adjusting Element	RV801
Specified Value	Pulse should be output alternately from CH1 and CH2

Connection:

- 1) Oscilloscope

AF-23 Board (Solder Side)

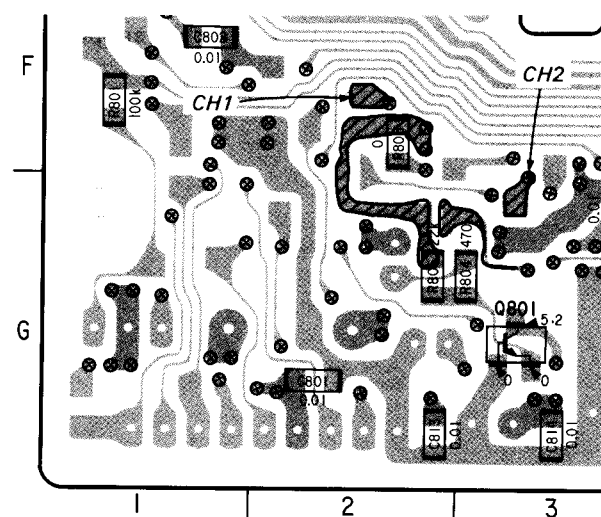


Fig. 1-3.

- 2) Remove CG-1 board in Fig. 1-4 fixing screw and three claws, then pull CG-1 board down. Contact Pin ④ of IC802 to GND (at the spot specified in Fig. 1-5) and set to ALIGNMENT mode.

Note: If the FOCUS switch is set to manual after adjustment, it returns to original state.

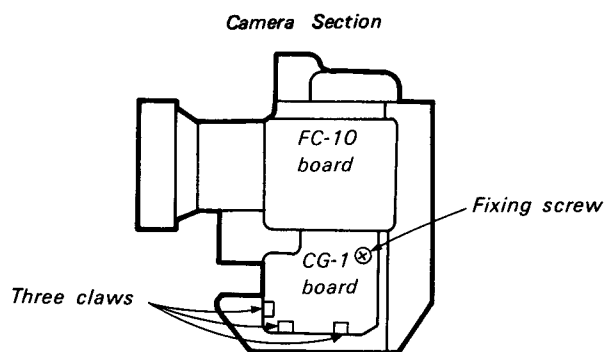


Fig. 1-4.

AF-23 Board (Component Side)

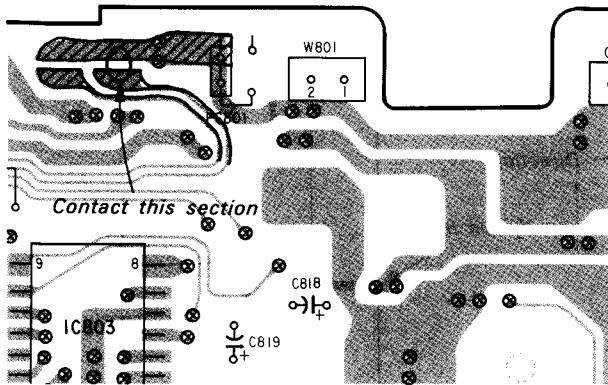


Fig. 1-5.

Setting of switches:

1. FOCUS switch (S671 of CG-1 board) AUTO
2. Zoom lever 40 mm (approx.)

Adjusting method:

- 1) Turn the focus ring and set focus index to the center of "2".
- 2) Adjust with RV801 so that pulses are output alternately from CH1 and CH2.

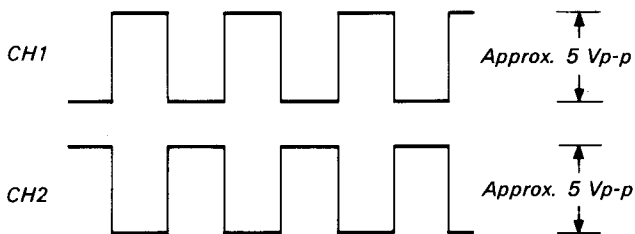


Fig. 1-6.

1-3. Z-AXIS ADJUSTMENT

Object	Sign Chart (2.0m in front of lens base plane (Φ mark))
Specified Value	TELE side: ± 1 m WIDE side: $+10$ mm -7 mm

Adjusting method:

- 1) Set the FOCUS switch (S671 on CG-1 board) to AUTO position.
- 2) Set the zoom lever to TELE end position (72 mm).
- 3) Loosen Z-frame fixing screws ① (Fig. 1-8).
- 4) Remove the adhesive.
- 5) Move the Z-frame to and fro (A→B direction) until the focus ring stops at the center of index "2" (Fig. 1-7, 8).
- 6) Tighten Z-frame fixing screws ① (Fig. 1-8).
- 7) Set the zoom lever to the WIDE end position (12 mm).
- 8) Turn focus ring to the 1.3m position and release the hand from it.
- 9) Confirm that focus ring stop position (index position) is within $+10$ mm from the center of "2" (Fig. 1-7).

- 10) Turn the focus ring to ∞ position and release the hand from it.
- 11) Confirm that focus ring stop position is within the above range.
- 12) If the above standards are not satisfied, repeat steps 2) to 11).

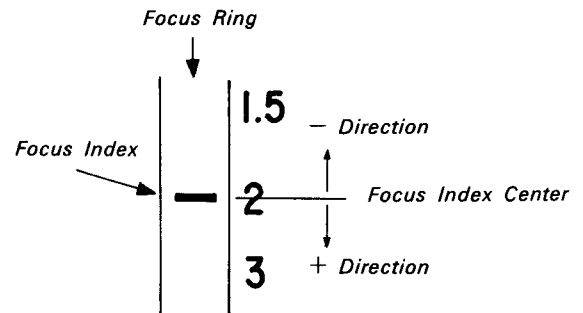


Fig. 1-7.

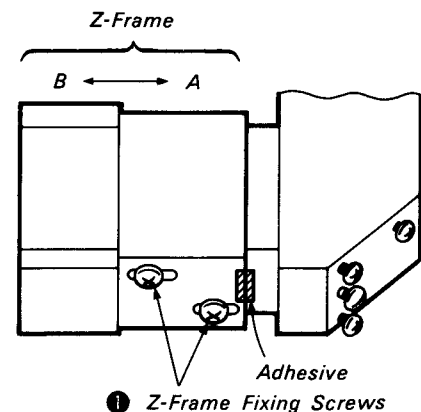
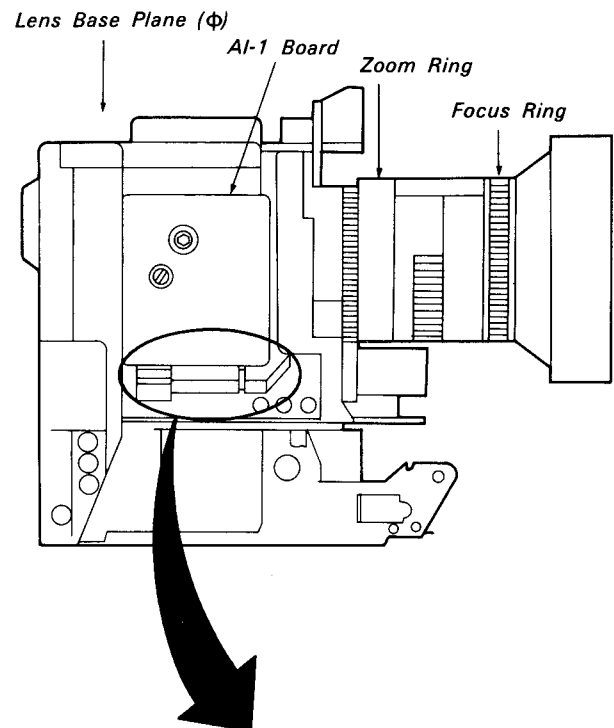


Fig. 1-8.

1-4. MOTOR VOLTAGE ADJUSTMENT (AF-23 BOARD)

Object	Sign Chart (1.0m in front of lens base plane (Φ mark).)
Measuring Instrument	Stopwatch
Adjusting Element	RV803
Specified Value	2.5 ± 0.5 sec

Setting of switches:

1. FOCUS switch (S671 on CG-1 board)..... AUTO
2. Zoom lever..... 20 mm (approx.)

Adjusting method:

- 1) Set focus ring to infinity position (∞).
- 2) Measure time from the moment you release the focus ring until it turns back to the short-distance end position (1.3m).
- 3) If the above standards are not satisfied, repeat steps 1) and 2) after turning RV803.

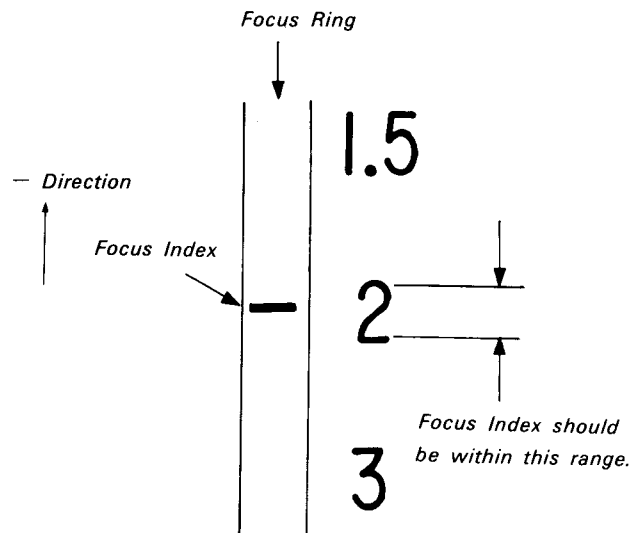


Fig. 1-9.

1-5. AUTO FOCUS CHECK

Object	Sign Chart (2.0m in front of lens base plane (Φ mark))
Specified Value	TELE side: Within ± 1.0 mm against exact (manual) focus setting WIDE side: Within $\begin{matrix} +20 \\ -10 \end{matrix}$ mm against exact (manual) focus setting

Adjusting method:

- 1) Set the FOCUS switch (S671 on CG-1 board) to MANUAL position.
- 2) Set the zoom lever to TELE end position (72 mm).
- 3) Adjust focus by turning the focus ring. Confirm that the focus index position is within the range shown in Fig. 1-9. Also, memorize the focus index position (If this condition cannot be attained, perform flange-back adjustment).

- 4) Set the FOCUS switch to AUTO position.
- 5) Turn the focus ring to ∞ position and release the hand from it.
- 6) Confirm that the focus ring stops within ± 1.0 mm against the manual focus position (i.e. the focus index position memorized in step 3)).
- 7) Turn the focus ring to the 1.3m position and release the hand from it.
- 8) Confirm that the focus ring stops within ± 1.0 mm against the manual focus position.
- 9) Fix the zoom lever at the WIDE end position (12 mm).
- 10) Repeat steps 5) to 7). Confirm that the focus standards at the WIDE end position is $\begin{matrix} +20 \\ -10 \end{matrix}$ mm against the manual focus position (i.e. the focus index position memorized in step 3)).

CCD-V100E

SONY[®] SERVICE MANUAL

*AEP Model
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SUPPLEMENT-3

The Camera section, Video section, Servo/System control section, Servo/Mechanism control section, and Viewfinder section were modified for improvements. Also the end of printed wiring board numbers were changed. Consequently, the schematic diagrams and printed wiring boards were partially revised.

Contents of main modifications are as follows.

- Camera section
 - Camera (1)
 - ME-4 board Alterations: resistor, capacitor, diode, transistor
Elimination: capacitor
 - CP-18 board Alterations: capacitor
Elimination: resistor, capacitor
 - Camera (2)
 - AT-5 board Alteration: resistor
 - AI-1 board Alteration: resistor, capacitor
 - AW-3 board Alteration: resistor
Elimination: D706, D708, D709
Connection change of IC701 Pin (47)
 - Camera (3)
 - FC-10 board Alteration: switch
 - CG-1 board Alteration: resistor, capacitor
Elimination: resistor
- Video section
 - VI-22 board Alteration: resistor, capacitor
- Servo/System control section
 - SS-64 board Alteration: resistor, capacitor, inductor, IC301, IC302, Q502, Q503
Elimination: Q335, Q336, resistor, capacitor
 - DR-36 board Alteration: resistor
 - TS-55 board Alteration: RV501
- Servo/Mechanism control section
 - SK-12 board Alteration: resistor
Elimination: capacitor
- Viewfinder section
 - VF-7 board Alteration: resistor, capacitor

With issuing of Supplement-3, the end of numbers for the following printed wiring boards were changed from 22 to 24.

ME-4, CP-18, AT-5, AI-1, AW-3 and VF-7 boards

MODifications on the schematic diagrams and printed wiring boards caused by changed of the ends are almost the ends 23 and 24.

The end of number for the CG-1 board were changed from 21 to 23.

The modification are almost same the ends 21 and 22.

The end of numbers for the VI-22 board were changed from 11 to 12.

The end of numbers for the SS-64, DR-36 and TS-55 boards were changed from 22 to 23.

The end of number for the SK-12 board were changed from 21 to 24. The modification are almost same the ends 21 and 22, also 23 and 24.

SECTION 4

PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

ME-4 BOARD (Last two digits **24**) **CAMERA (1)**

- Parts to be replaced.

Ref. No.	Old	New
C709	1-163-109-00 CERAMIC CHIP 47PF 5% 50V	Deletes
C777	1-163-035-00 CERAMIC CHIP 0.047MF	1-162-637-11 CERAMIC CHIP 0.47MF
C778	1-163-038-00 CERAMIC CHIP 0.1MF 25V	Deletes
C779	1-131-387-00 TANTALUM 47MF 10% 6.3V	1-135-101-21 TANTAL, CHIP 22MF 20% 6.3V
D704	8-719-101-23 DIODE 1SS123	8-719-801-54 DIODE 1SS190
Q721	8-729-100-76 TRANSISTOR 2SA812	8-729-200-74 TRANSISTOR 2SA1162
R722	1-216-033-00 METAL CHIP 220 5% 1/10W	1-216-077-00 METAL CHIP 15K 5% 1/10W
R844	1-249-405-11 CARBON 100 5% 1/6W	1-216-025-00 METAL CHIP 100 5% 1/10W
R845	1-249-417-11 CARBON 1K 5% 1/6W	1-216-049-00 METAL CHIP 1K 5% 1/10W
R846	1-249-414-11 CARBON 560 5% 1/6W	1-216-043-00 METAL CHIP 560 5% 1/10W
R847	_____	1-216-087-00 METAL CHIP 39K 5% 1/10W

Deletes (Printed wiring board)

Deletes (Schematic diagram)

Replaced

D701 F-8
D702 H-6
D703 H-8
D704 E-10
D705 A-10
D706 E-10

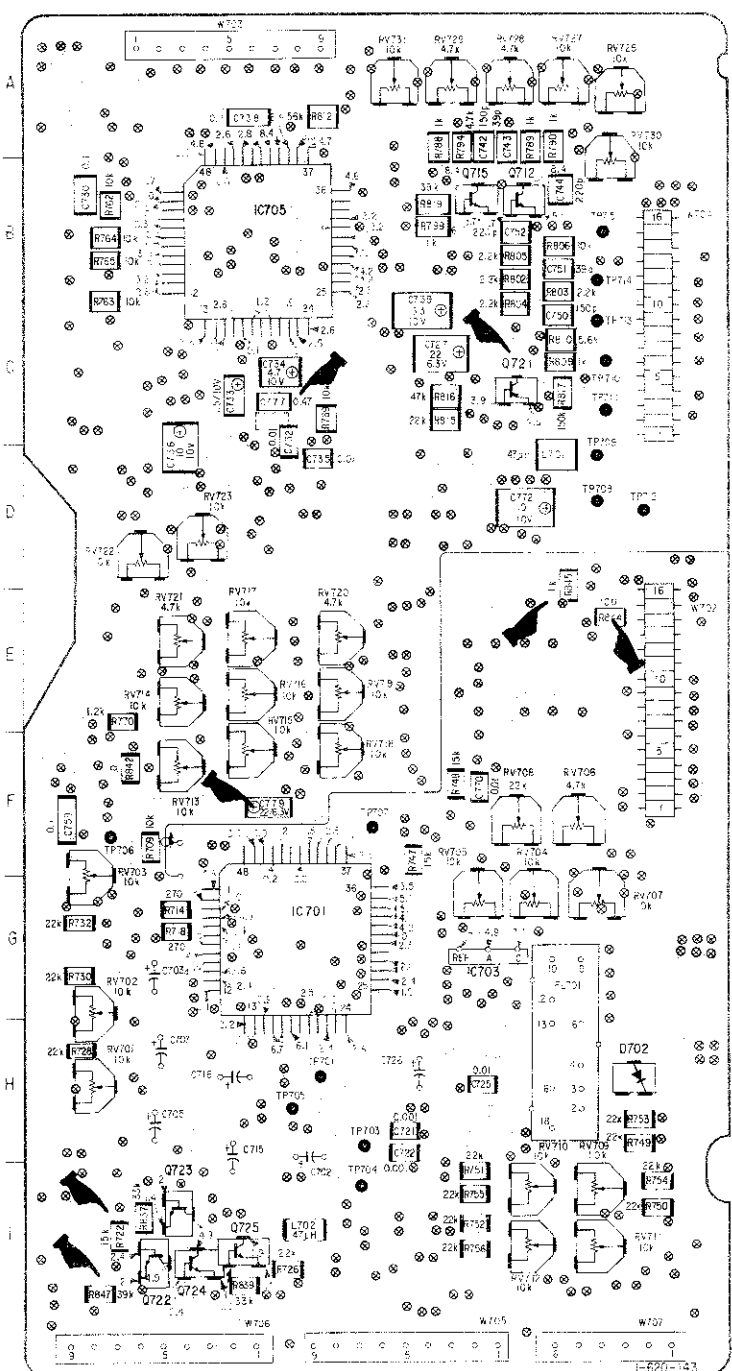
IC701 G-3
IC702 I-7
IC703 G-4
IC704 C-9
IC705 B-2

Q701 G-10
Q702 H-10
Q703 H-10
Q704 I-9
Q705 I-9
Q706 I-9
Q707 F-7
Q708 C-11
Q709 B-11
Q710 C-11
Q711 B-11
Q712 B-4
Q713 B-7
Q714 B-7
Q715 B-4
Q716 B-7
Q717 C-7
Q718 C-8
Q719 C-8
Q720 C-8
Q721 C-4
Q722 I-1
Q723 I-2
Q724 I-2
Q725 I-2

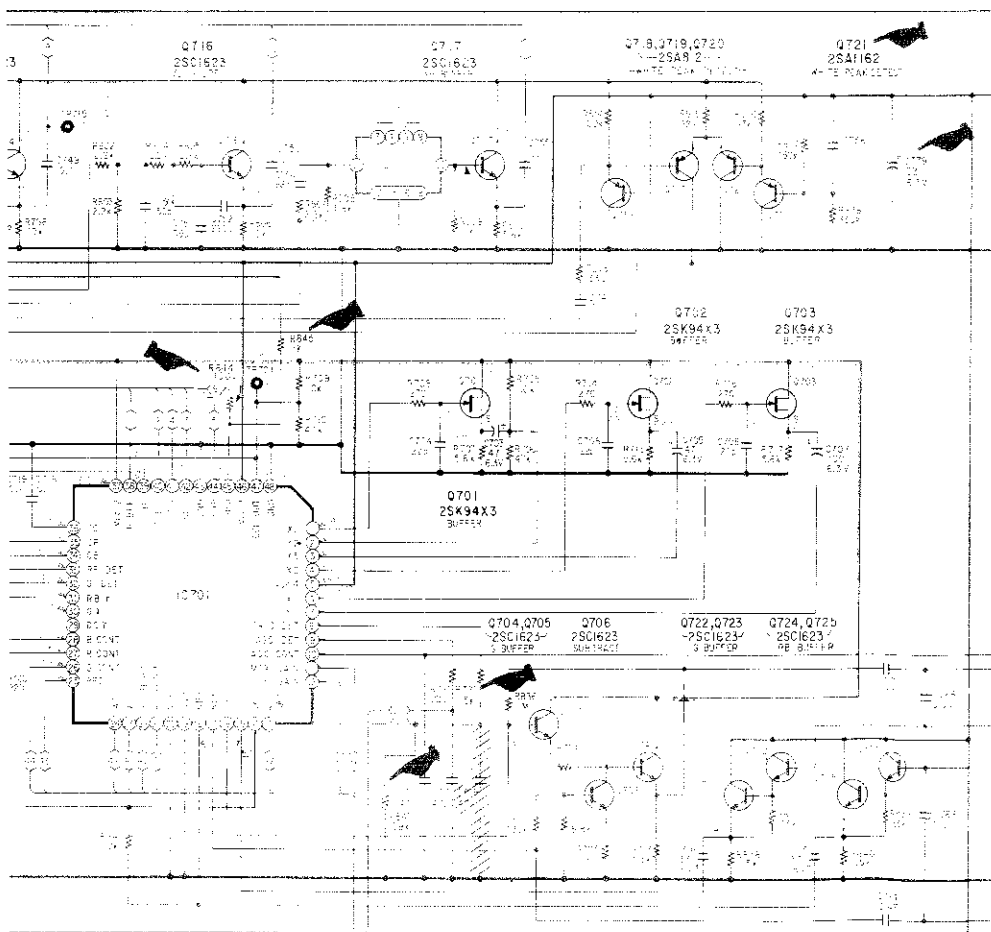
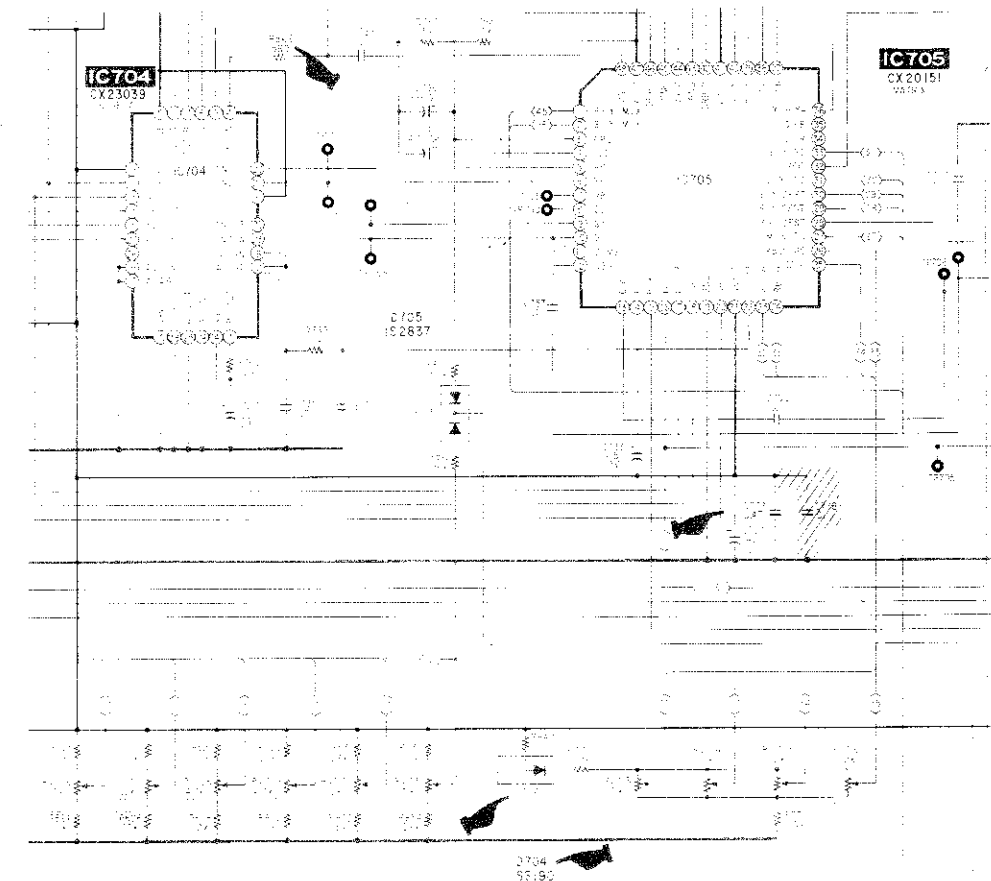
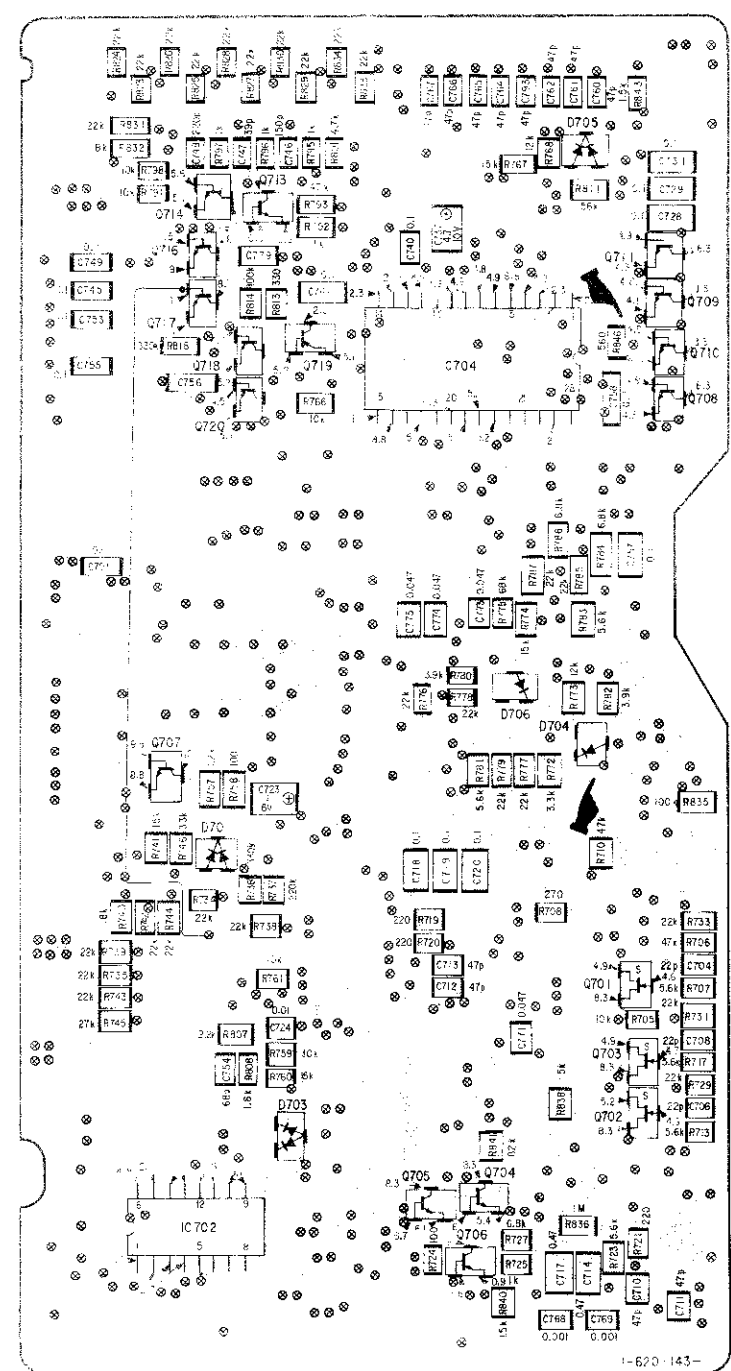
RV701 H-1
RV702 G-1
RV703 F-1
RV704 G-4
RV705 G-4
RV706 F-4
RV707 G-5
RV708 F-4
RV709 I-5
RV710 I-4
RV711 I-5
RV712 I-4
RV713 F-2
RV714 E-2
RV715 F-2
RV716 E-2
RV717 E-2
RV718 F-3
RV719 E-3
RV720 E-3
RV721 E-2
RV722 D-1
RV723 D-2
RV726 A-5
RV727 A-4
RV728 A-4
RV729 A-3
RV730 A-5
RV731 A-3

TP701 H-3
TP703 H-3
TP704 I-3
TP705 H-2
TP706 F-1
TP707 F-3
TP708 D-4
TP709 D-4
TP710 C-5
TP711 C-5
TP712 B-5
TP713 B-5
TP714 B-5
TP715 B-5

ME-4 BOARD (COMPONENT SIDE)



ME-4 BOARD (SOLDER SIDE)

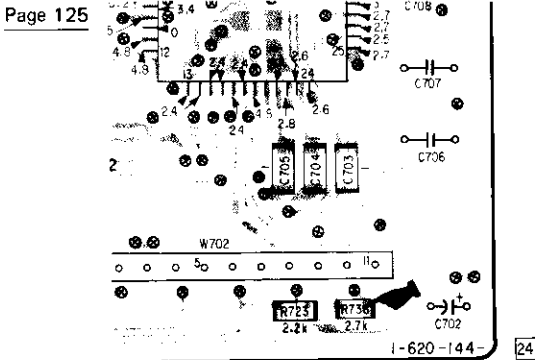


AW-3 BOARD (Last two digits 24) CAMERA (2)

- Parts to be replaced.

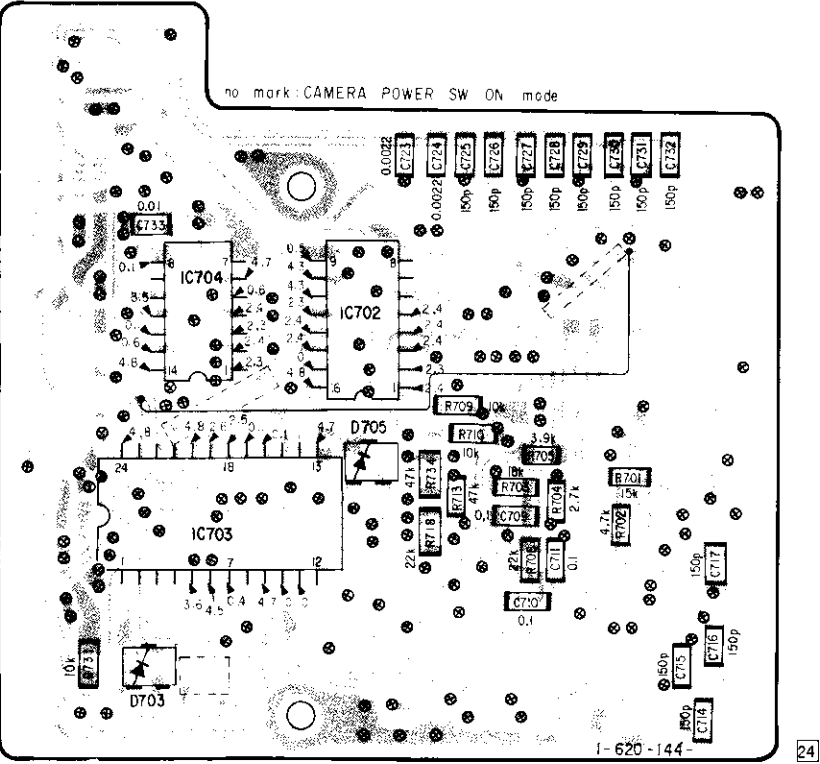
Ref. No.	Old					New				
D706	8-719-801-48	DIODE	ISS193			Deletes				
D708	8-719-911-19	DIODE	ISS119			Deletes				
D709	8-719-911-19	DIODE	ISS119			Deletes				
R736	1-249-422-11	CARBON	2.7K	5%	1/6W	1-216-059-00	METAL CHIP	2.7K	5%	1/10W

----- : Deletes (Printed wiring board)
//// : Deletes (Schematic diagram)
■ : Replaced

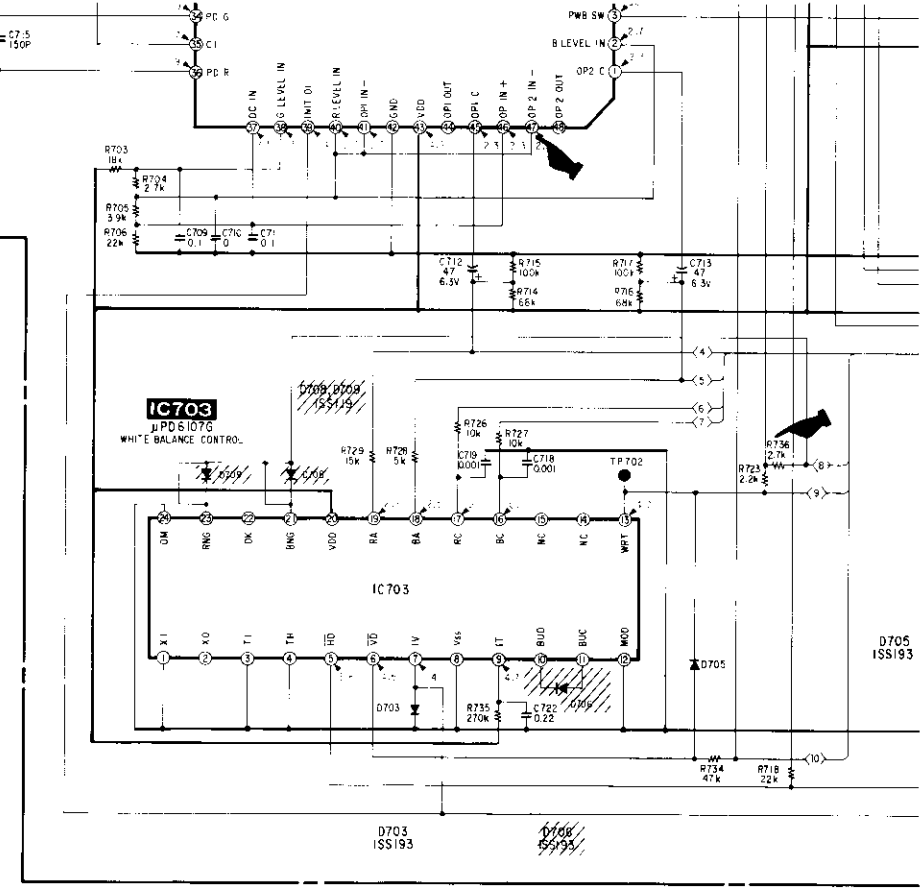


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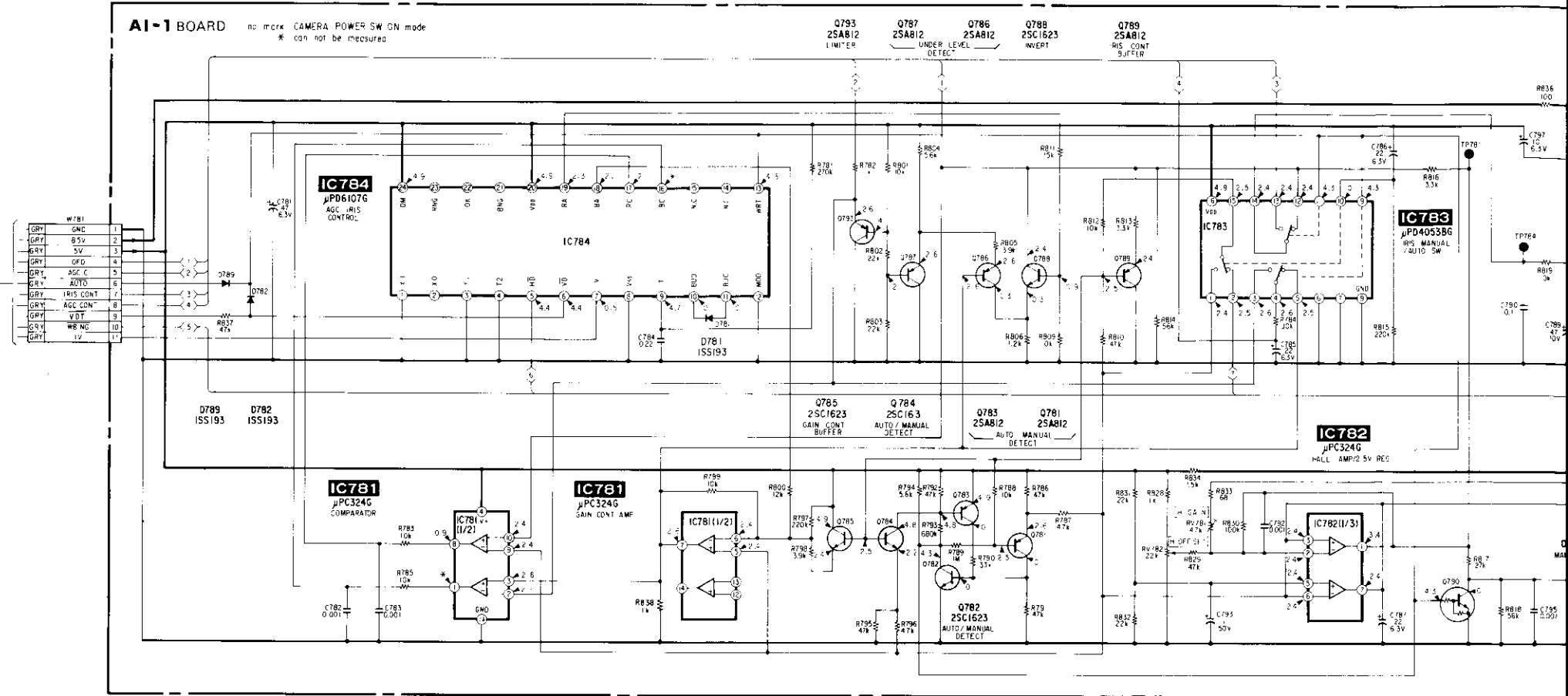
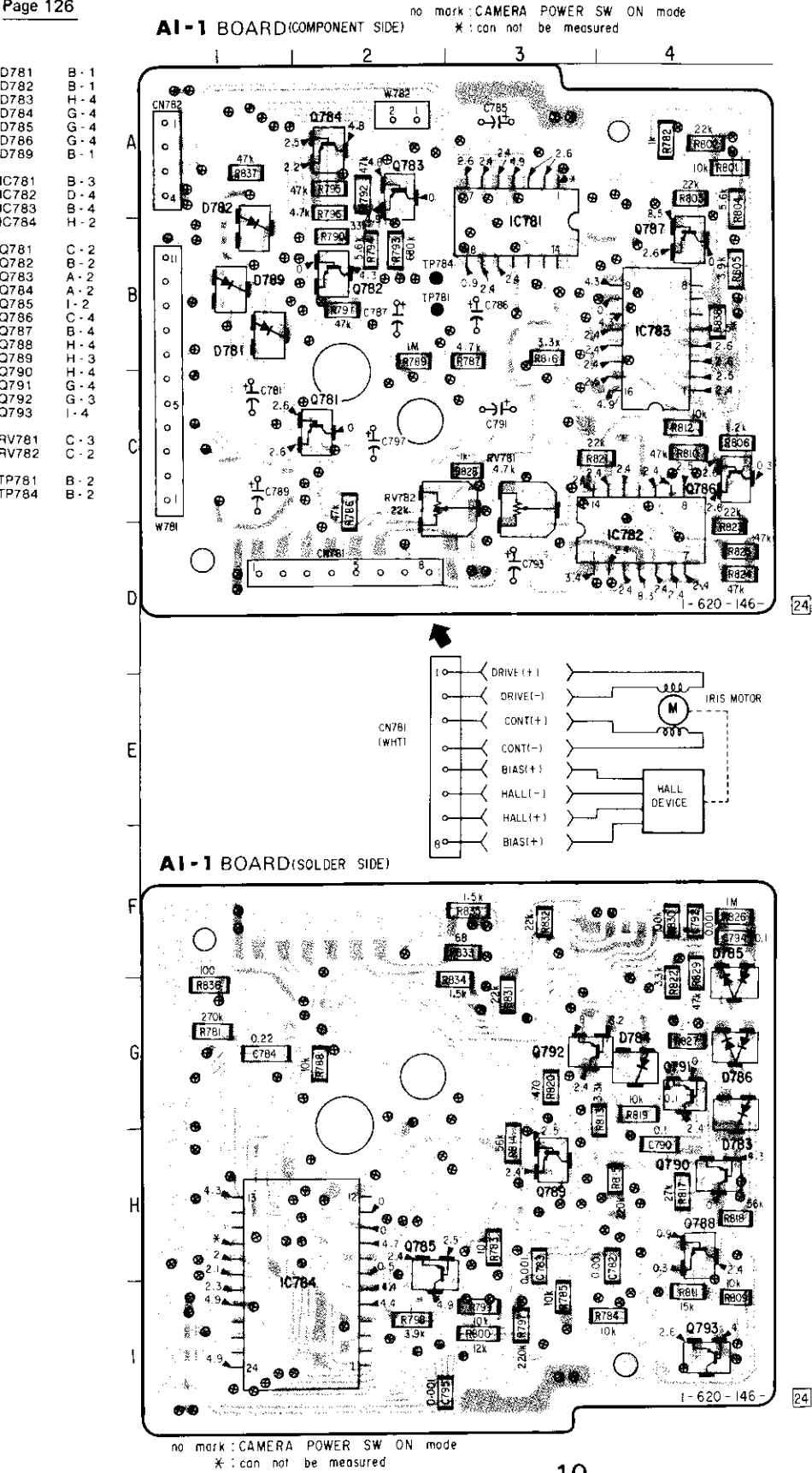
AW-3 BOARD(SOLDER SIDE)



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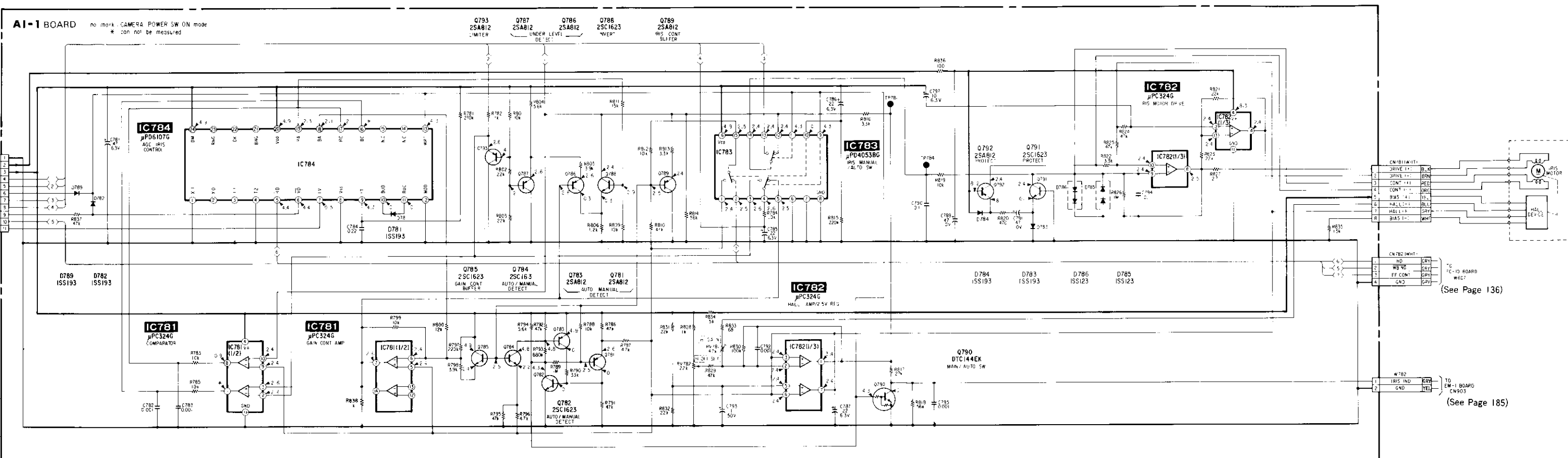
As to parts to be replaced, refer to the Electrical parts list.



Parts to

Ref. No.	
S601	1
S602	1
S603	1
S604	1
S605	1

Printed W



FC-10 BOARD (Last two digits 23) CAMERA (3)

- Parts to be replaced.

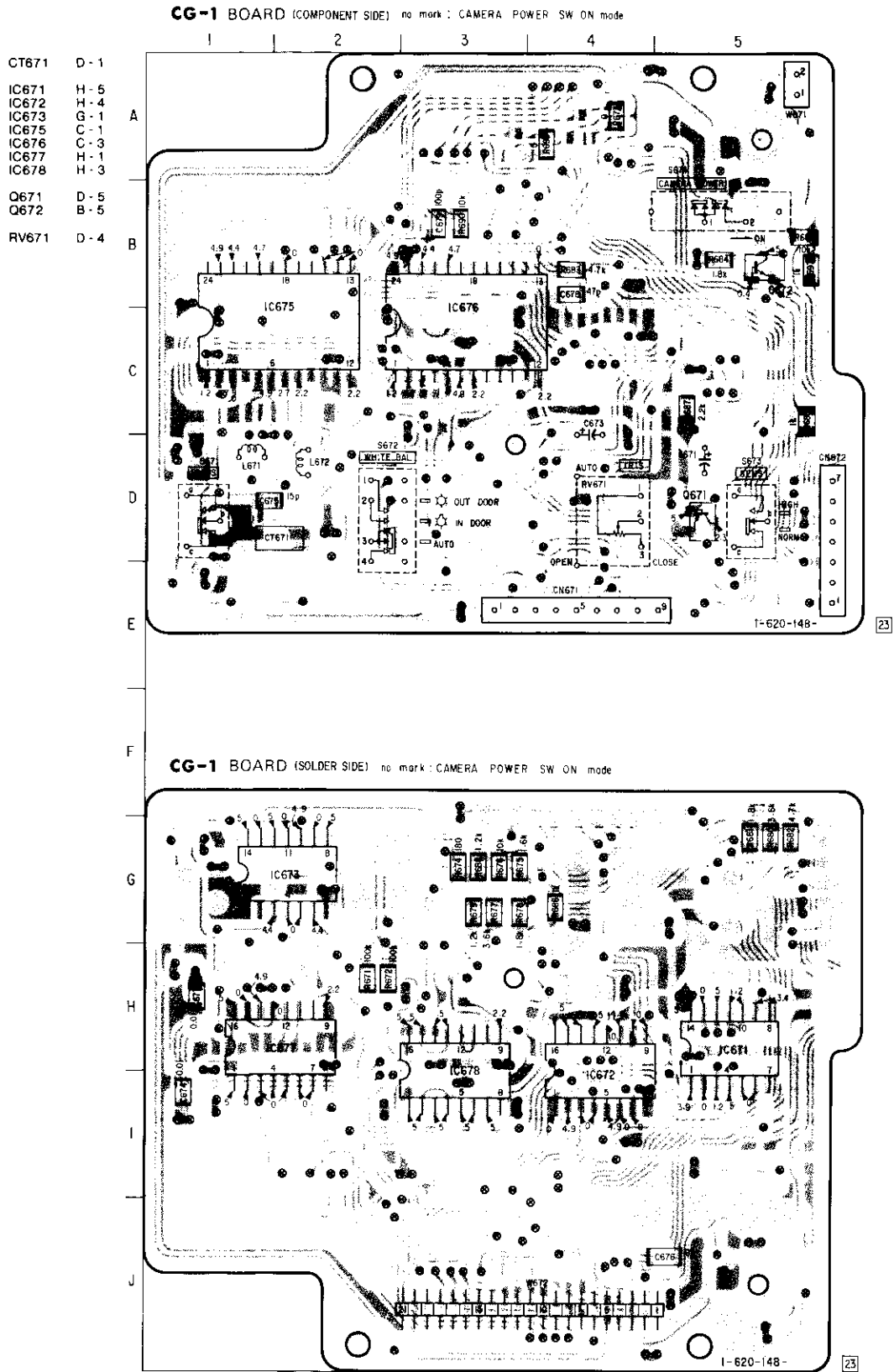
Ref. No.	Old	New
S601	1-554-371-31 SWITCH, TACT	1-570-909-21 SWITCH, TACTIL (REFLOW TYPE)
S602	1-554-371-31 SWITCH, TACT	1-570-909-21 SWITCH, TACTIL (REFLOW TYPE)
S603	1-554-371-31 SWITCH, TACT	1-570-909-21 SWITCH, TACTIL (REFLOW TYPE)
S604	1-554-371-31 SWITCH, TACT	1-570-909-21 SWITCH, TACTIL (REFLOW TYPE)
S605	1-554-371-31 SWITCH, TACT	1-570-909-21 SWITCH, TACTIL (REFLOW TYPE)

- Printed Wiring Board and Schematic Diagram are omitted.

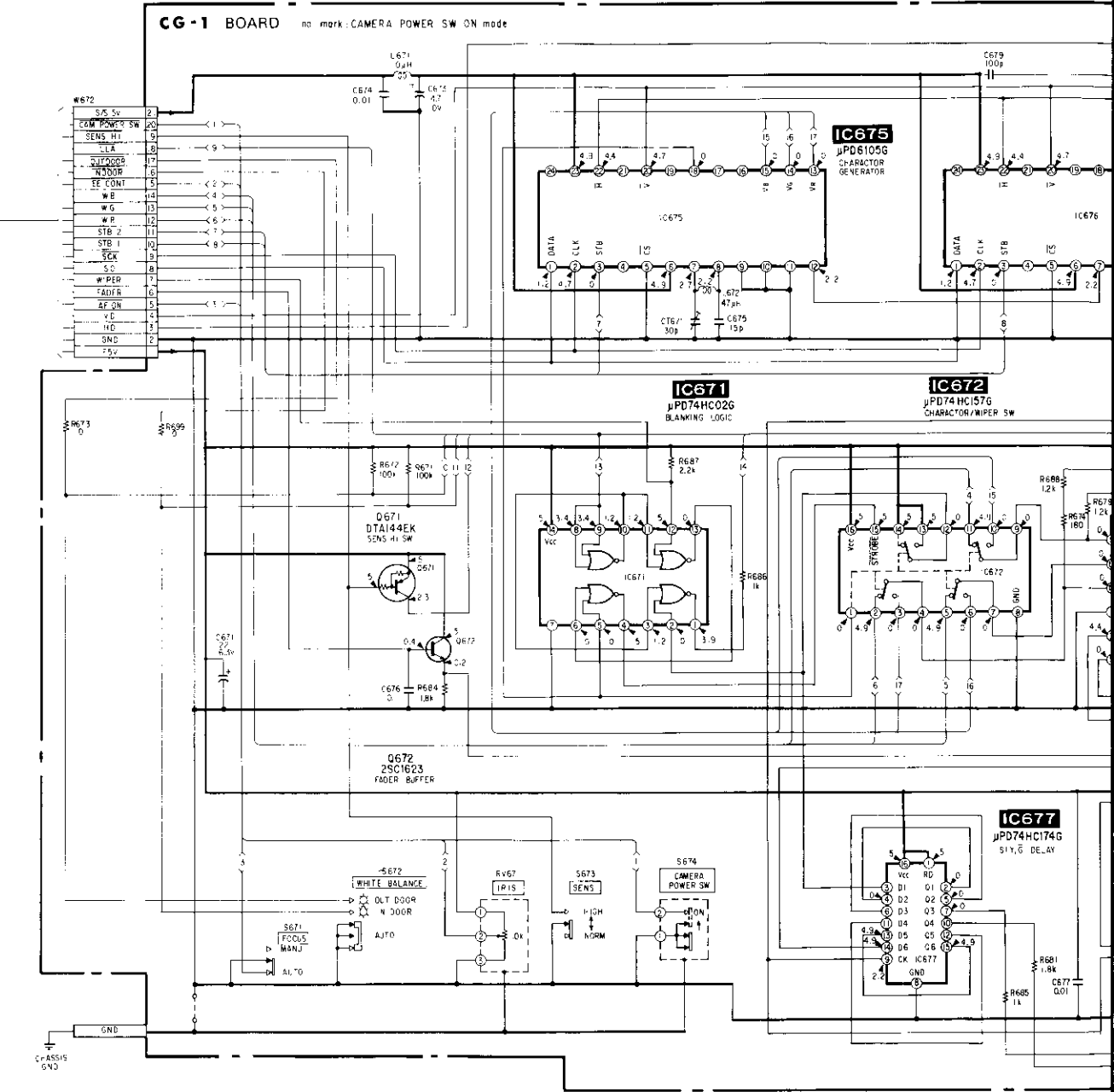
CG-1 BOARD (Last two digits 23) CAMERA (3)

- As to parts to be replaced, refer to the Electrical parts list.

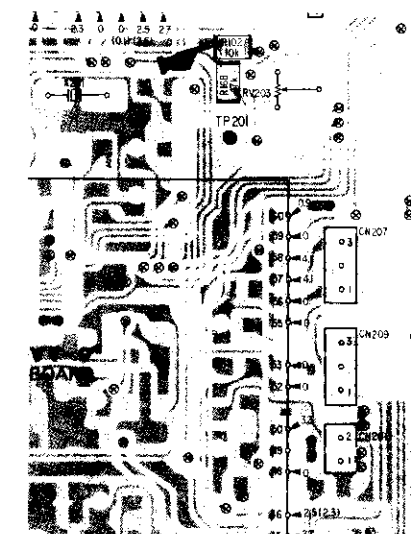
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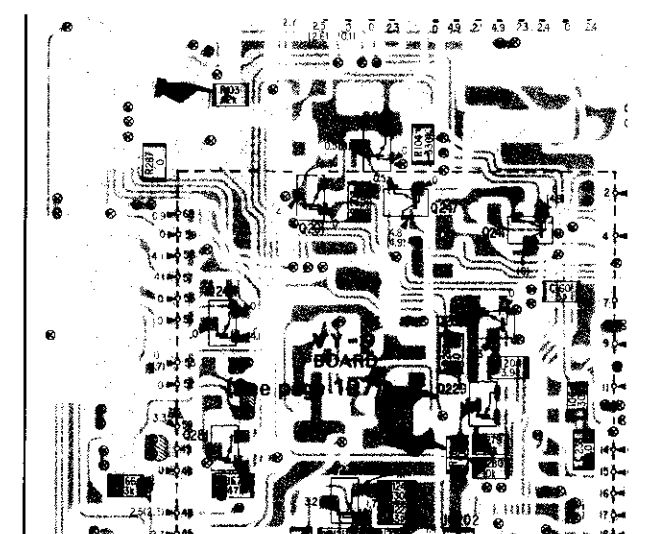
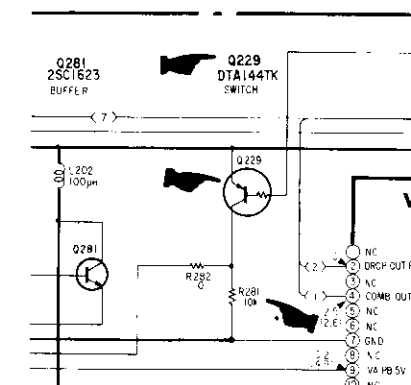
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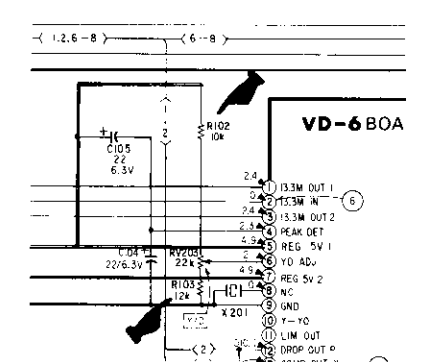
- Parts to be replaced.

Page 148  : Replaced

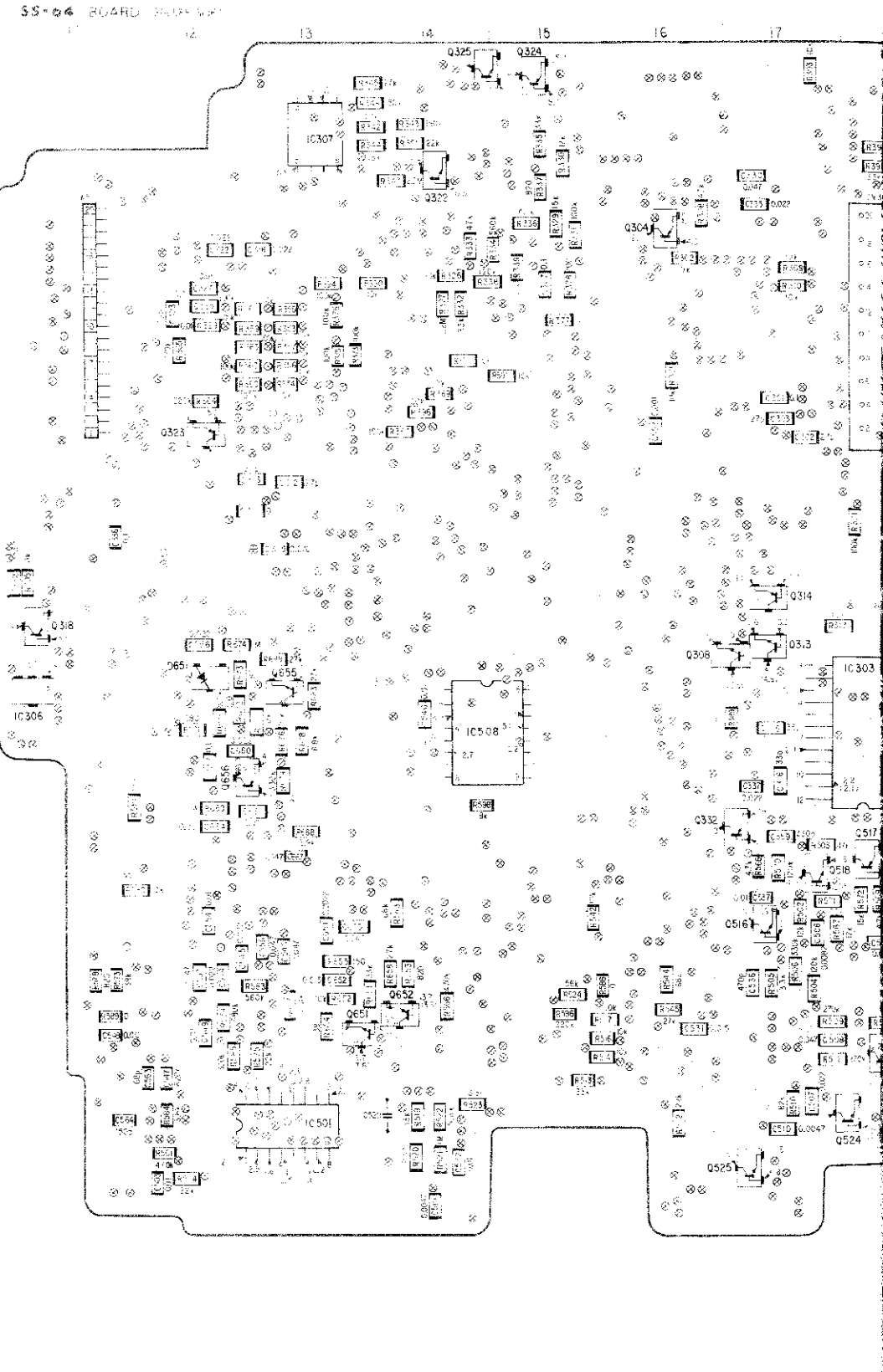
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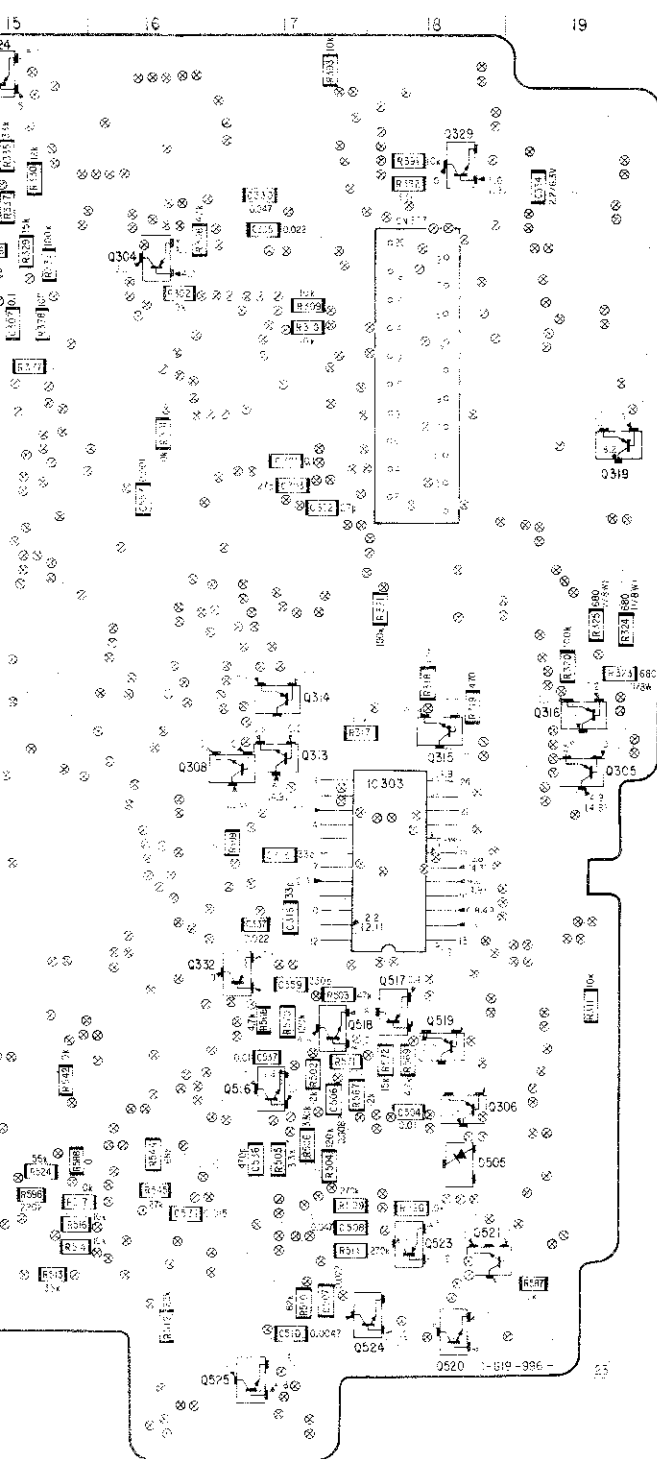


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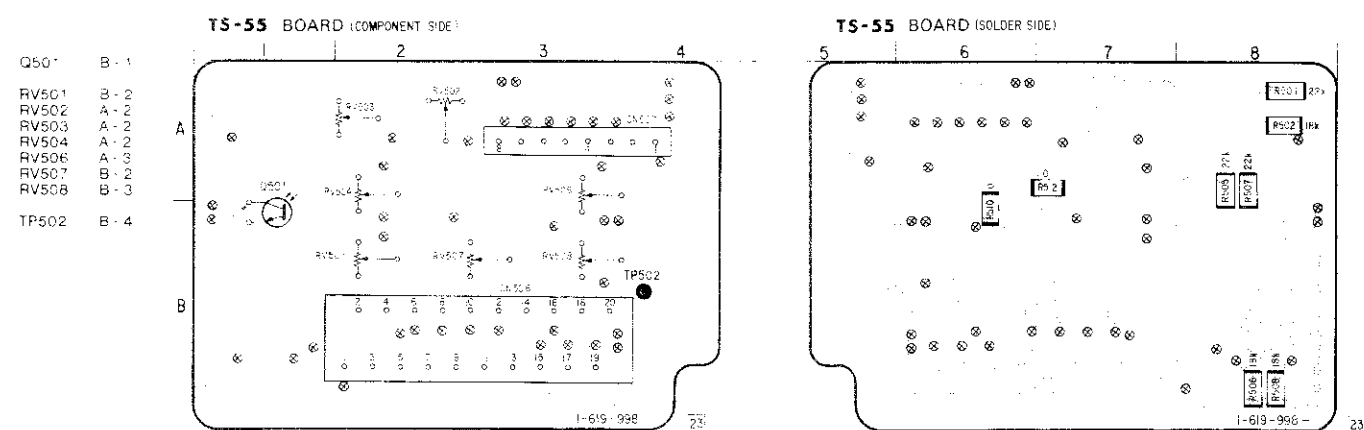
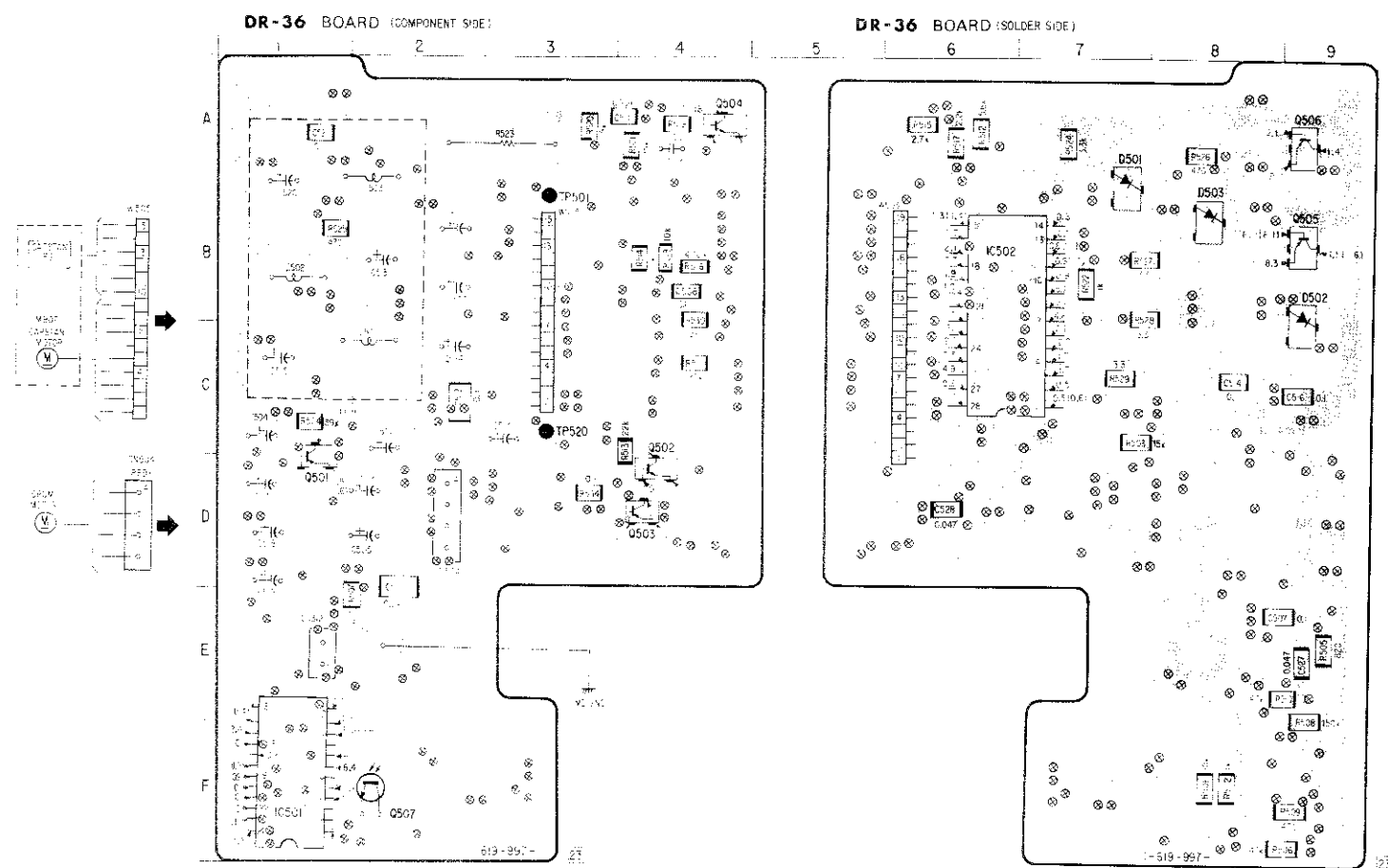


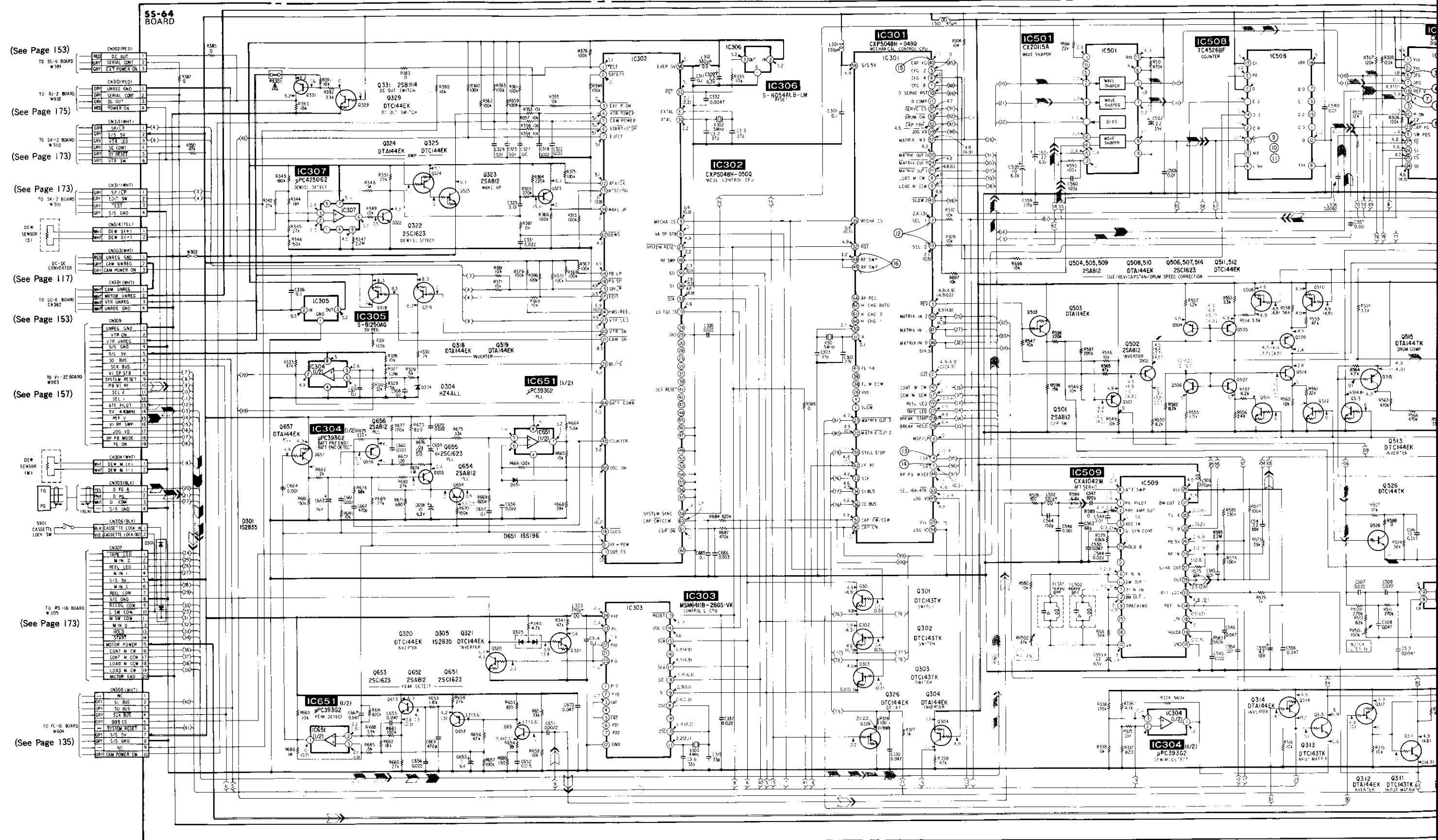
• As to parts to be replaced, refer to the Electrical parts list.



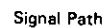


D501	A - 7
D502	B - 9
D503	B - 8
IC501	F - 1
IC502	B - 6
Q501	D - 1
Q502	D - 4
Q503	D - 4
Q504	A - 4
Q505	B - 9
Q506	A - 9
Q507	F - 2
TP501	B - 3
TP520	C - 8









	REC	REC/PB	PB
Drum speed servo			
Drum phase servo			
Drum servo (speed and phase)			
Capstan speed servo			
Capstan phase servo			
Capstan servo (speed and phase)			
Blank			

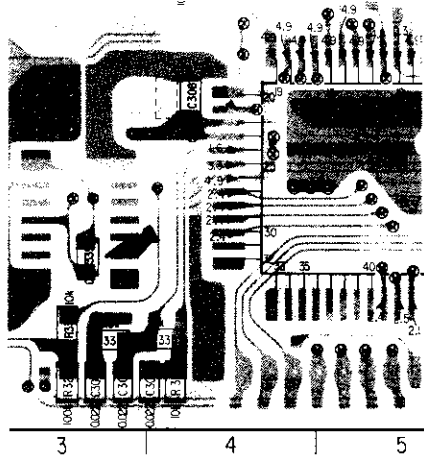
SK-12 BOARD (Last two digits 24) SERVO · MECHANISM CONTROL

- Parts to be replaced.

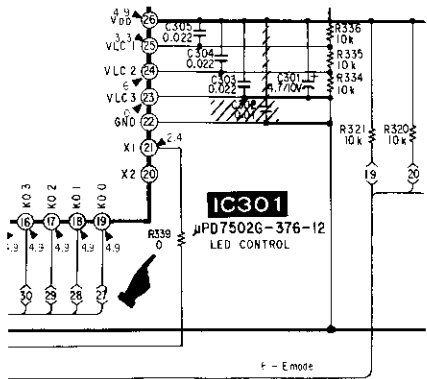
Ref. No.	Old	New
C302	1-163-021-00 CERAMIC CHIP 0.01MF 10% 50V	Deletes
R339		1-216-295-00 METAL CHIP 0 5% 1/10W

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---: Deletes (Printed wiring board)
///: Deletes (Schematic diagram)
■: Replaced



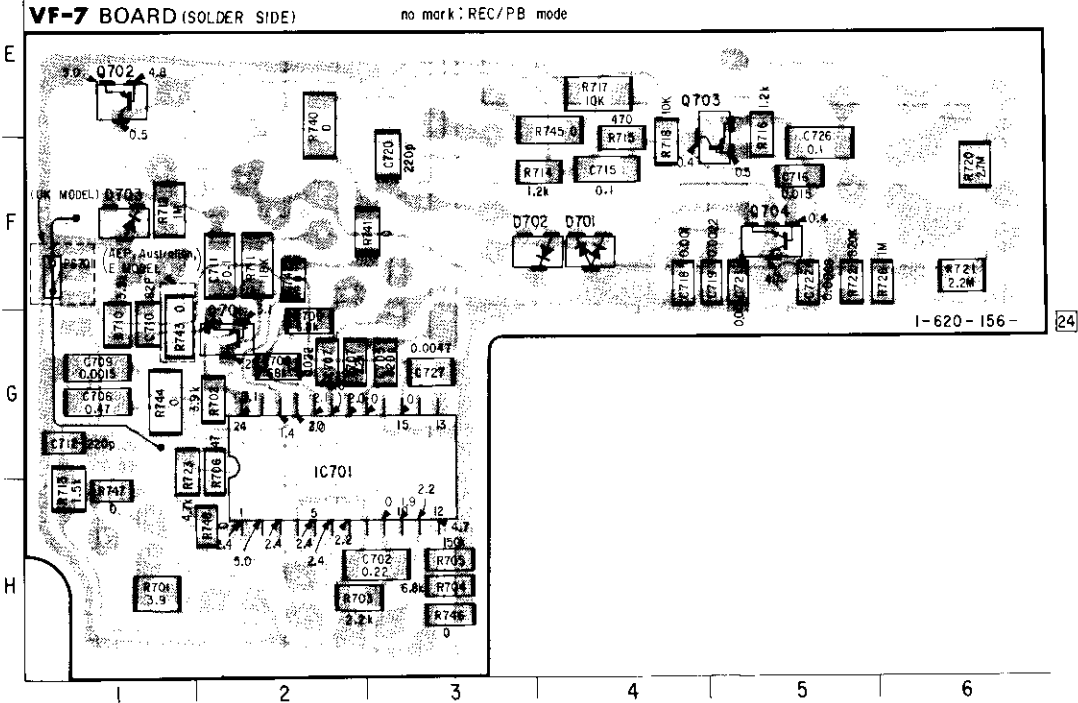
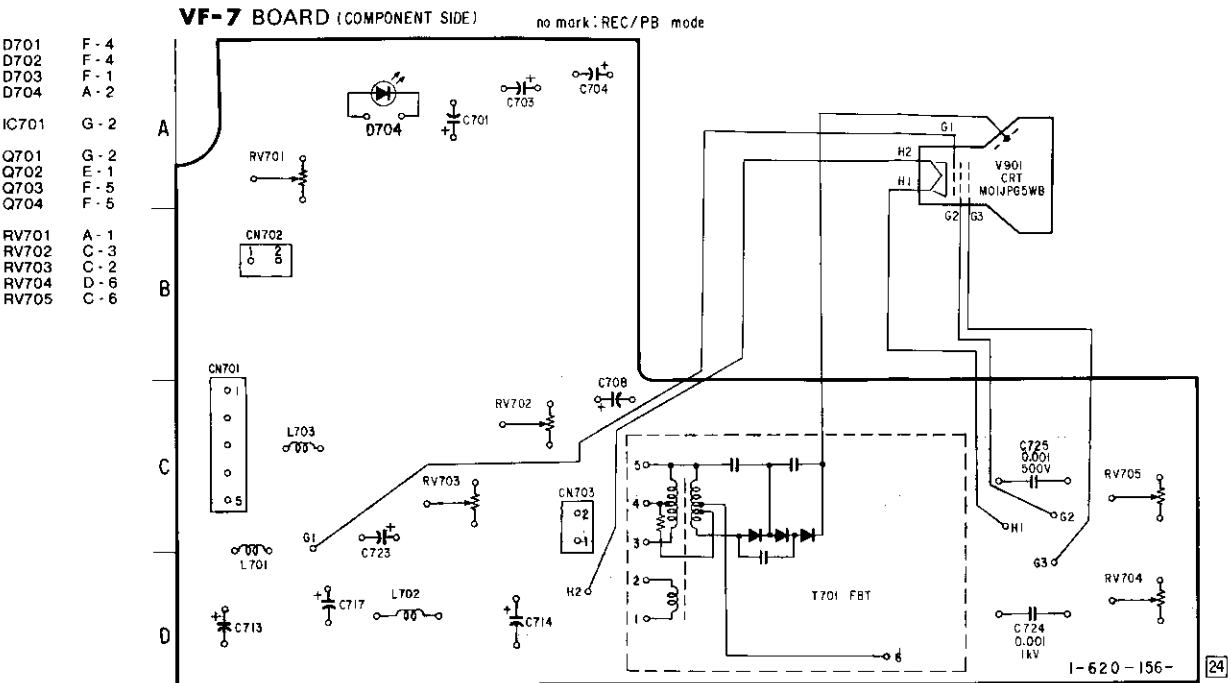
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VF-7 BOARD (Last two digits 24) ELECTRONIC VIEW FINDER

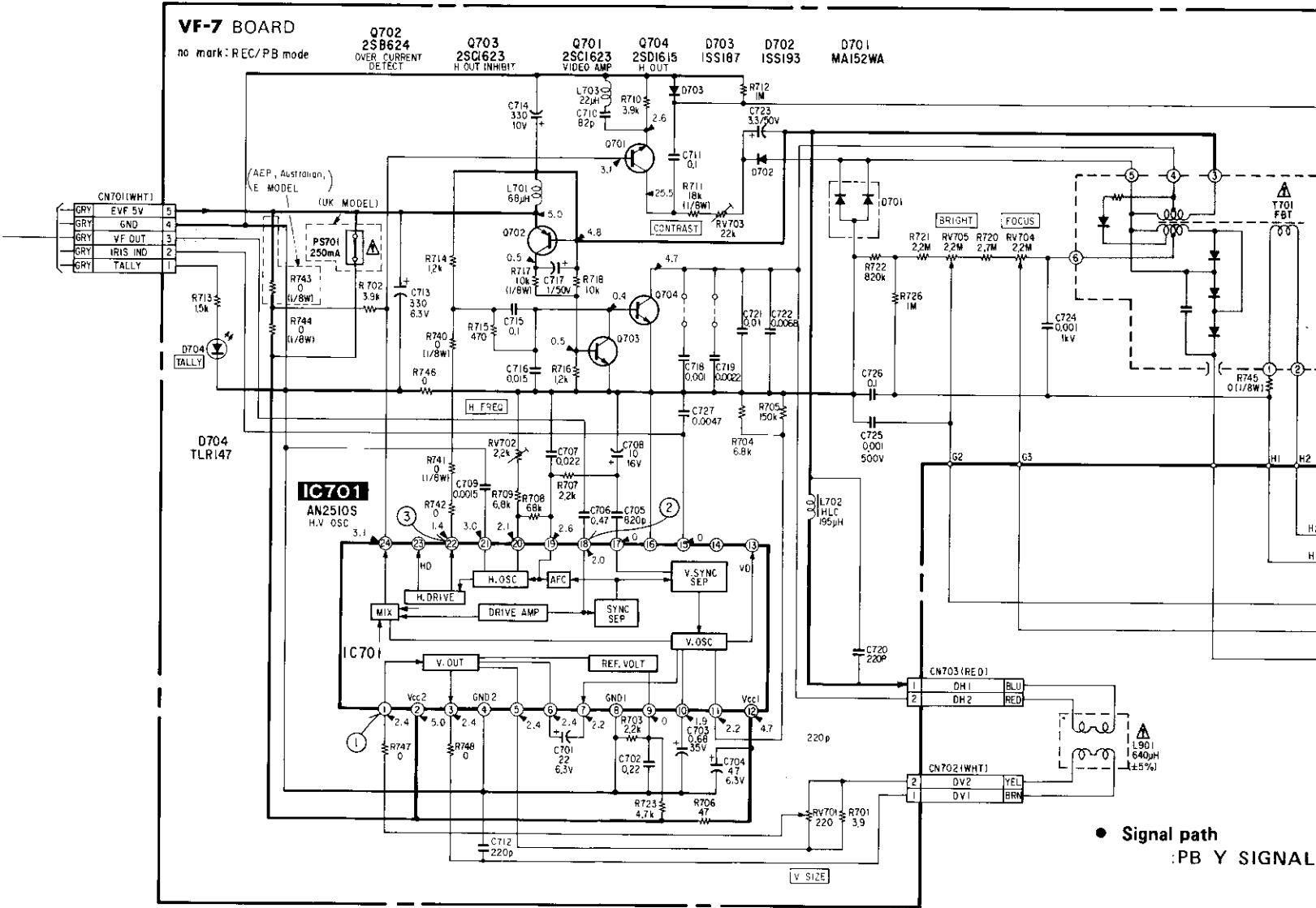
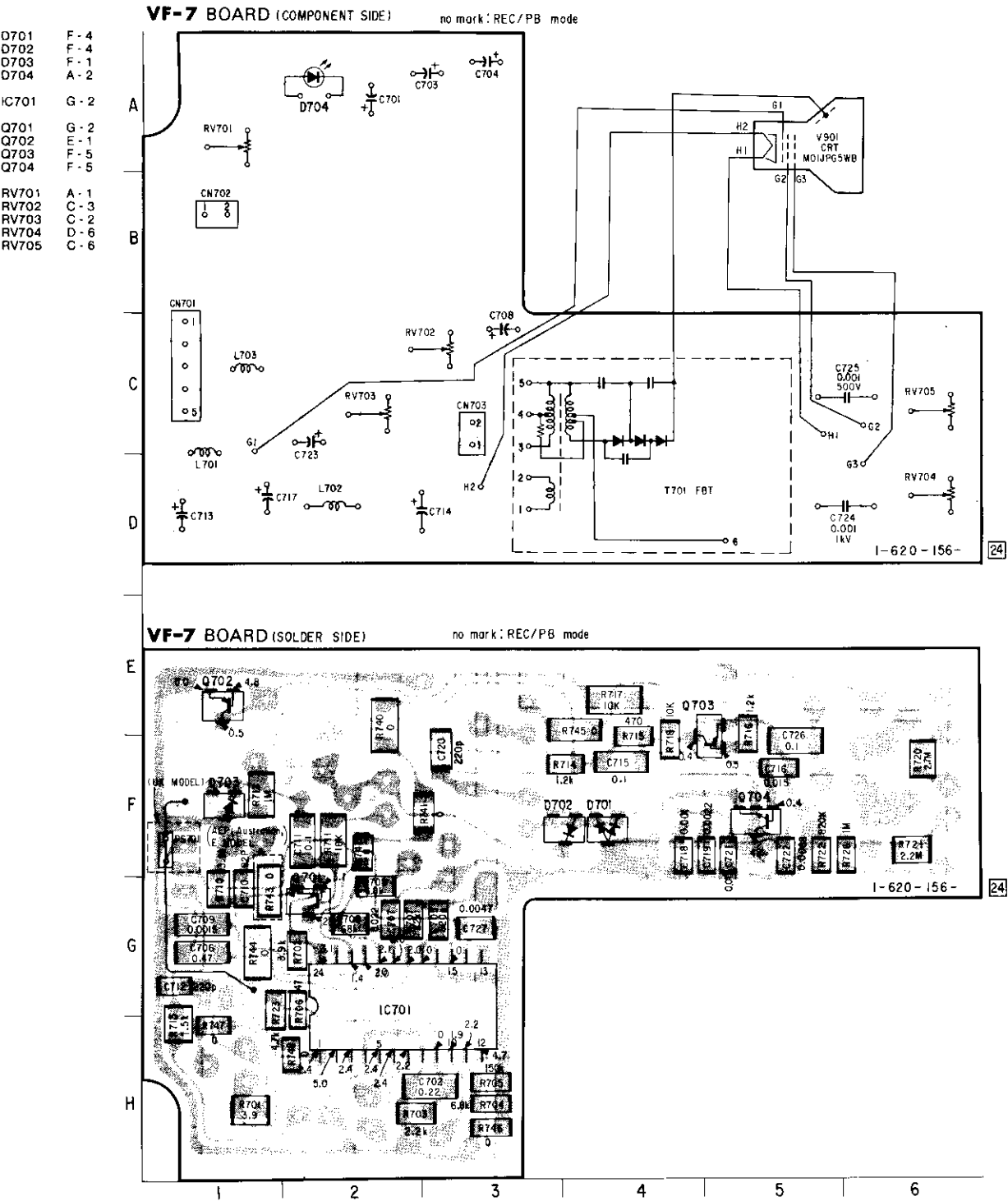
- As to parts to be replaced, refer to the Electrical parts list.

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VF-7 BOARD (Last two digits 24) ELECTRONIC VIEW FINDER

As to parts to be replaced, refer to the Electrical parts list.



AI-1P

NOTE:

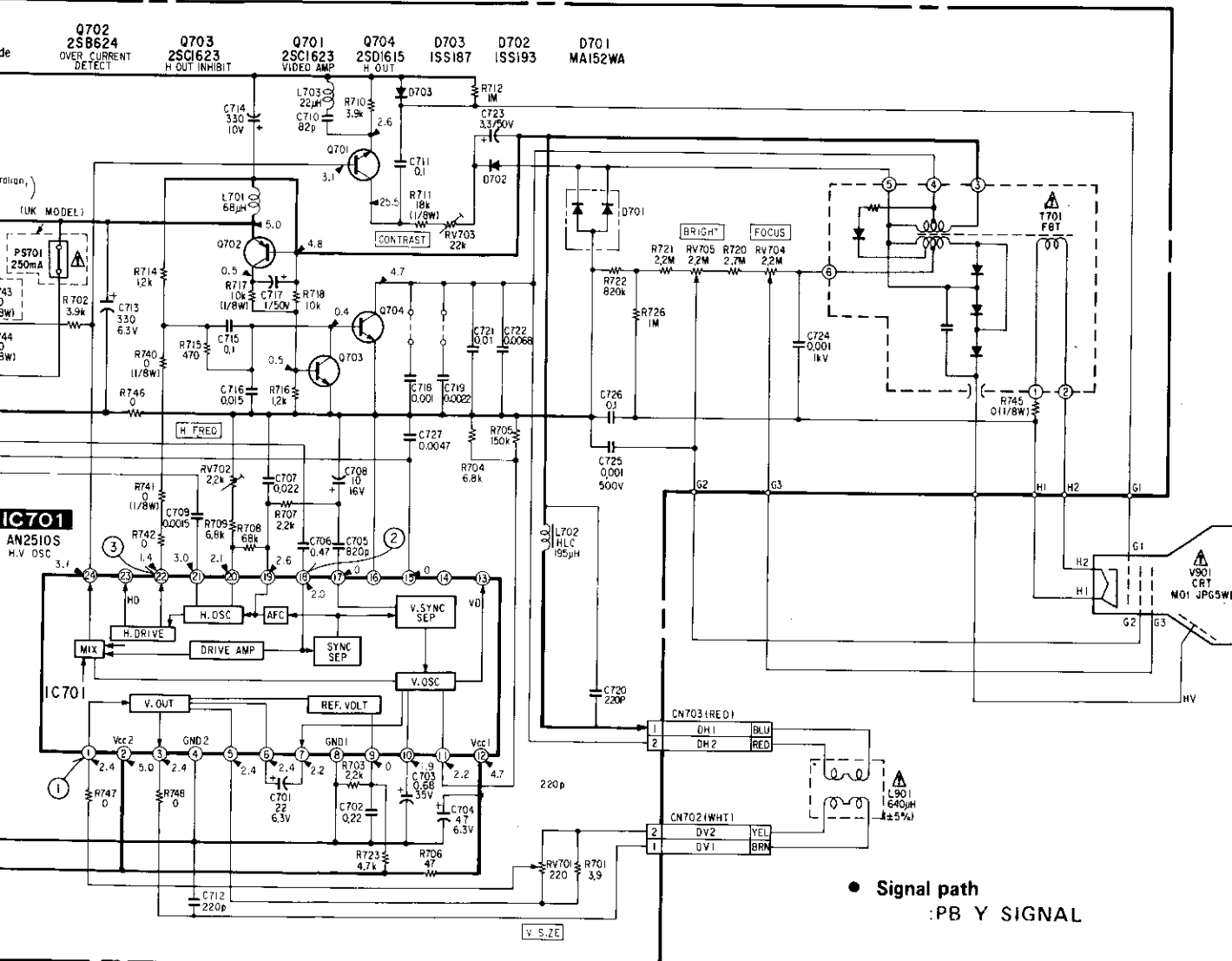
The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

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

SECTION 6 ELECTRICAL PARTS LIST

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- RESISTORS
 - All resistors are in ohms
 - F : nonflammable
- CAPACITORS
 - MF : μ F, PF : μ F
- COILS
 - MMH : mH, UH : μ H



• Signal path
: PB Y SIGNAL

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
*A-7060-626-A AI-1P BOARD, COMPLETE				RESISTOR			
*****				R781	1-216-107-00	METAL CHIP 270K 5%	1/10W
CAPACITOR				R782	1-216-049-00	METAL CHIP 1K 5%	1/10W
C781	1-124-224-00	ELECT 47MF	20% 6.3V	R783	1-216-073-00	METAL CHIP 10K 5%	1/10W
C782	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	R784	1-216-073-00	METAL CHIP 10K 5%	1/10W
C783	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	R785	1-216-073-00	METAL CHIP 10K 5%	1/10W
C784	1-163-081-00	CERAMIC CHIP 0.22MF	25V	R786	1-216-089-00	METAL CHIP 47K 5%	1/10W
C785	1-124-222-00	ELECT 22MF	20% 6.3V	R787	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
C786	1-124-222-00	ELECT 22MF	20% 6.3V	R788	1-216-073-00	METAL CHIP 10K 5%	1/10W
C787	1-124-222-00	ELECT 22MF	20% 6.3V	R789	1-216-121-00	METAL CHIP 1M 5%	1/10W
C788	1-124-236-00	ELECT 47MF	20% 10V	R790	1-216-085-00	METAL CHIP 33K 5%	1/10W
C789	1-163-038-00	CERAMIC CHIP 0.1MF	25V	R791	1-216-089-00	METAL CHIP 47K 5%	1/10W
C790	1-163-038-00	CERAMIC CHIP 0.1MF	25V	R792	1-216-089-00	METAL CHIP 47K 5%	1/10W
C791	1-124-236-00	ELECT 47MF	20% 10V	R793	1-216-117-00	METAL CHIP 680K 5%	1/10W
C792	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	R794	1-216-067-00	METAL CHIP 5.6K 5%	1/10W
C793	1-124-255-00	ELECT 1MF	20% 50V	R795	1-216-089-00	METAL CHIP 47K 5%	1/10W
C794	1-163-038-00	CERAMIC CHIP 0.1MF	25V	R796	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
C795	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	R797	1-216-105-00	METAL CHIP 220K 5%	1/10W
C797	1-131-383-00	TANTALUM 10MF	10% 6.3V	R798	1-216-063-00	METAL CHIP 3.9K 5%	1/10W
CONNECTOR				R799	1-216-073-00	METAL CHIP 10K 5%	1/10W
CN781	*1-564-007-00	PIN, CONNECTOR 8P		R800	1-216-075-00	METAL CHIP 12K 5%	1/10W
CN782	*1-564-003-00	PIN, CONNECTOR 4P		R801	1-216-073-00	METAL CHIP 10K 5%	1/10W
DIODE				R802	1-216-081-00	METAL CHIP 22K 5%	1/10W
D781	8-719-801-48	DIODE 1SS193		R803	1-216-081-00	METAL CHIP 22K 5%	1/10W
D782	8-719-801-48	DIODE 1SS193		R804	1-216-067-00	METAL CHIP 5.6K 5%	1/10W
D783	8-719-801-48	DIODE 1SS193		R805	1-216-063-00	METAL CHIP 3.9K 5%	1/10W
D784	8-719-801-48	DIODE 1SS193		R806	1-216-051-00	METAL CHIP 1.2K 5%	1/10W
D785	8-719-101-23	DIODE 1SS123		R809	1-216-073-00	METAL CHIP 10K 5%	1/10W
D786	8-719-101-23	DIODE 1SS123		R810	1-216-089-00	METAL CHIP 47K 5%	1/10W
D789	8-719-801-48	DIODE 1SS193		R811	1-216-077-00	METAL CHIP 15K 5%	1/10W
IC				R812	1-216-073-00	METAL CHIP 10K 5%	1/10W
IC781	8-759-100-95	IC UPC324G2		R813	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
IC782	8-759-100-95	IC UPC324G2		R814	1-216-091-00	METAL CHIP 56K 5%	1/10W
IC783	8-759-103-25	IC UPD4053BG		R815	1-216-105-00	METAL CHIP 220K 5%	1/10W
IC784	8-759-103-03	IC UPD6107G		R816	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
TRANSISTOR				R817	1-216-083-00	METAL CHIP 27K 5%	1/10W
Q781	8-729-100-76	TRANSISTOR 2SA812		R818	1-216-091-00	METAL CHIP 56K 5%	1/10W
Q782	8-729-100-66	TRANSISTOR 2SC1623		R819	1-216-073-00	METAL CHIP 10K 5%	1/10W
Q783	8-729-100-76	TRANSISTOR 2SA812		R820	1-216-041-00	METAL CHIP 470 5%	1/10W
Q784	8-729-100-66	TRANSISTOR 2SC1623		R821	1-216-081-00	METAL CHIP 22K 5%	1/10W
Q785	8-729-100-66	TRANSISTOR 2SC1623		R822	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
Q786	8-729-100-76	TRANSISTOR 2SA812		R823	1-216-081-00	METAL CHIP 22K 5%	1/10W
Q787	8-729-100-76	TRANSISTOR 2SA812		R824	1-216-089-00	METAL CHIP 47K 5%	1/10W
Q788	8-729-100-66	TRANSISTOR 2SC1623		R825	1-216-089-00	METAL CHIP 47K 5%	1/10W
Q789	8-729-100-76	TRANSISTOR 2SA812		R826	1-216-121-00	METAL CHIP 1M 5%	1/10W
Q790	8-729-901-01	TRANSISTOR DTC144EK		R827	1-216-011-00	METAL CHIP 27 5%	1/10W
Q791	8-729-100-66	TRANSISTOR 2SC1623		R828	1-216-049-00	METAL CHIP 1K 5%	1/10W
Q792	8-729-100-76	TRANSISTOR 2SA812		R829	1-216-089-00	METAL CHIP 47K 5%	1/10W
Q793	8-729-100-76	TRANSISTOR 2SA812		R830	1-216-097-00	METAL CHIP 100K 5%	1/10W
				R831	1-216-081-00	METAL CHIP 22K 5%	1/10W
				R832	1-216-081-00	METAL CHIP 22K 5%	1/10W
				R833	1-216-021-00	METAL CHIP 68 5%	1/10W

AI-1P**CG-1P****VF-7P**

Ref.No	Part No.	Description	Remark
R834	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R835	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R836	1-216-025-00	METAL CHIP 100 5% 1/10W	
R837	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R838	1-216-049-00	METAL CHIP 1K 5% 1/10W	

VARIABLE RESISTOR

RV781	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K
RV782	1-230-871-21	RES, ADJ, METAL GLAZE 22K

*A-7060-628-A CG-1P BOARD, COMPLETE

3-573-141-00 WASHER (B), THRUST
3-712-106-01 REINFORCEMENT (333)

CAPACITOR

C671	1-124-222-00	ELECT 22MF 20% 6.3V
C673	1-131-375-00	TANTALUM 4.7MF 10% 10V
C674	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V
C675	1-163-097-00	CERAMIC CHIP 15PF 5% 50V
C676	1-163-077-00	CERAMIC CHIP 0.1MF 50V
C677	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V
C678	1-163-109-00	CERAMIC CHIP 47PF 5% 50V
C679	1-163-117-00	CERAMIC CHIP 100PF 5% 50V

CONNECTOR

CN671	*1-564-008-61	PIN, CONNECTOR 9P
CN672	*1-564-006-51	PIN, CONNECTOR 7P

TRIMMER

CT671	1-141-331-11	CAP, VAR, TRIMMER (CHIP) 30PF

IC

IC671	8-759-106-63	IC UPD74HC02G
IC672	8-759-106-89	IC UPD74HC157G
IC673	8-759-204-96	IC TC74HC04F
IC675	8-759-107-89	IC UPD6105G-102
IC676	8-759-107-89	IC UPD6105G-102
IC677	8-759-106-96	IC UPD74HC174G
IC678	8-759-106-96	IC UPD74HC174G

COIL

L671	1-408-970-21	MICRO INDUCTOR 10UH
L672	1-407-165-XX	MICRO INDUCTOR 47UH

TRANSISTOR

O671	8-729-901-06	TRANSISTOR DTA144EK
O672	8-729-100-66	TRANSISTOR 2SC1623

Ref.No	Part No.	Description	Remark
<u>RESISTOR</u>			
R671	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R672	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R673	1-216-295-00	METAL CHIP 0 5% 1/10W	
R674	1-216-031-00	METAL CHIP 180 5% 1/10W	
R675	1-216-054-00	METAL CHIP 1.6K 5% 1/10W	

R676	1-216-073-00	METAL CHIP 10K 5% 1/10W
R677	1-216-062-00	METAL CHIP 3.6K 5% 1/10W
R678	1-216-055-00	METAL CHIP 1.8K 5% 1/10W
R679	1-216-051-00	METAL CHIP 1.2K 5% 1/10W
R680	1-216-062-00	METAL CHIP 3.6K 5% 1/10W

R680	1-216-062-00	METAL CHIP 3.6K 5% 1/10W
R681	1-216-055-00	METAL CHIP 1.8K 5% 1/10W
R682	1-216-065-00	METAL CHIP 4.7K 5% 1/10W
R683	1-216-065-00	METAL CHIP 4.7K 5% 1/10W
R684	1-216-055-00	METAL CHIP 1.8K 5% 1/10W

R685	1-216-049-00	METAL CHIP 1K 5% 1/10W
R686	1-216-049-00	METAL CHIP 1K 5% 1/10W
R687	1-216-057-00	METAL CHIP 2.2K 5% 1/10W
R688	1-216-051-00	METAL CHIP 1.2K 5% 1/10W
R689	1-216-073-00	METAL CHIP 10K 5% 1/10W

R690	1-216-073-00	METAL CHIP 10K 5% 1/10W
R697	1-216-049-00	METAL CHIP 1K 5% 1/10W F
R699	1-216-295-00	METAL CHIP 0 5% 1/10W

VARIABLE RESISTOR

RV671	1-230-226-00	RES, VAR, CARBON 10K (IRIS)

SWITCH

S671	1-553-977-00	SWITCH, SLIDE (FOCUS MANU/AUTO)
S672	1-554-945-12	SWITCH, SLIDE (WHITE BLANCE)
S673	1-553-977-00	SWITCH, SLIDE (SENS HIGH/LOW)
S674	1-554-364-00	SWITCH, SLIDE (CAMERA POWER SW)

*A-7060-631-A VF-7P BOARD, COMPLETE (AEP, Australian,
E MODEL)

*A-7060-748-A VF-7P BOARD, COMPLETE (UK MODEL)

1-526-926-11 SOCKET ASSY, CRT
*3-662-075-00 COVER, CONTROL
*3-712-665-01 HOLDER, LED

CAPACITOR

C701	1-123-618-00	ELECT 22MF 20% 6.3V
C702	1-163-081-00	CERAMIC CHIP 0.22MF 25V
C703	1-131-346-00	TANTALUM 0.68MF 10% 35V
C704	1-124-224-00	ELECT 47MF 20% 6.3V
C705	1-163-139-00	CERAMIC CHIP 820PF 10% 50V

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

VF-7P**SS-64P**

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C706	1-162-637-11	CERAMIC CHIP 0.47MF	16V	R703	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
C707	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V	R704	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
C708	1-123-617-00	ELECT 10MF	20% 16V	R705	1-216-101-00	METAL CHIP 150K 5%	1/10W
C709	1-163-209-00	CERAMIC CHIP 0.0015MF	5% 50V	R706	1-216-017-00	METAL CHIP 47 5%	1/10W
C710	1-163-115-00	CERAMIC CHIP 82PF	5% 50V	R707	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
C711	1-163-077-00	CERAMIC CHIP 0.1MF	50V	R708	1-216-093-00	METAL CHIP 68K 5%	1/10W
C712	1-163-125-00	CERAMIC CHIP 220PF	10% 50V	R709	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
C713	1-124-442-00	ELECT 330MF	20% 6.3V	R710	1-216-063-00	METAL CHIP 3.9K 5%	1/10W
C714	1-124-604-00	ELECT 330MF	20% 10V	R711	1-216-228-00	METAL CHIP 18K 5%	1/8W
C715	1-163-077-00	CERAMIC CHIP 0.1MF	50V	R712	1-216-121-00	METAL CHIP 1M 5%	1/10W
C716	1-163-023-00	CERAMIC CHIP 0.015MF	10% 50V	R713	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
C717	1-123-611-00	ELECT 1MF	20% 50V	R714	1-216-051-00	METAL CHIP 1.2K 5%	1/10W
C718	1-163-141-00	CERAMIC CHIP 0.001MF	10% 50V	R715	1-216-041-00	METAL CHIP 470 5%	1/10W
C719	1-163-013-00	CERAMIC CHIP 0.0022MF	10% 50V	R716	1-216-051-00	METAL CHIP 1.2K 5%	1/10W
C720	1-163-189-00	CERAMIC CHIP 220PF	10% 50V	R717	1-216-222-00	METAL CHIP 10K 5%	1/8W
C721	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	R718	1-216-073-00	METAL CHIP 10K 5%	1/10W
C722	1-163-019-00	CERAMIC CHIP 0.0068MF	10% 50V	R720	1-216-131-11	METAL CHIP 2.7M 5%	1/10W
C723	1-123-613-00	ELECT 3.3MF	20% 50V	R721	1-216-129-00	METAL CHIP 2.2M 5%	1/10W
C724	1-162-146-00	CERAMIC 0.001MF	1KV	R722	1-216-119-00	METAL CHIP 820K 5%	1/10W
C725	1-102-038-00	CERAMIC 0.001MF	99% 500V	R723	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
C726	1-163-077-00	CERAMIC CHIP 0.1MF	50V	R726	1-216-121-00	METAL CHIP 1M 5%	1/10W
C727	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	R740	1-216-296-00	METAL CHIP 0 5%	1/8W
<u>CONNECTOR</u>				R741	1-216-296-00	METAL CHIP 0 5%	1/8W
CN701	*1-564-004-00	PIN, CONNECTOR 5P		R742	1-216-295-00	METAL CHIP 0 5%	1/10W
CN702	*1-564-001-11	PIN, CONNECTOR 2P		R743	1-216-296-00	METAL CHIP 0 5%	1/8W
CN703	*1-564-001-11	PIN, CONNECTOR 2P		(AEP, Australian, E MODEL)			
<u>DIODE</u>				R744	1-216-296-00	METAL CHIP 0 5%	1/8W
D701	8-719-400-20	DIODE MA152WA		R745	1-216-296-00	METAL CHIP 0 5%	1/8W
D702	8-719-801-48	DIODE 1SS193		R746	1-216-295-00	METAL CHIP 0 5%	1/10W
D703	8-719-801-45	DIODE 1SS187		R747	1-216-295-00	METAL CHIP 0 5%	1/10W
D704	8-719-800-24	DIODE TLR147 (TALLY)		R748	1-216-295-00	METAL CHIP 0 5%	1/10W
<u>IC</u>				<u>VARIABLE RESISTOR</u>			
IC701	8-759-403-49	IC AN2510S		RV701	1-226-925-00	RES, ADJ, SOLID 220	
<u>COIL</u>				RV702	1-226-708-00	RES, ADJ, SOLID 2.2K	
L701	1-407-167-XX	MICRO INDUCTOR 68UH		RV703	1-226-711-00	RES, ADJ, SOLID 22K	
L702	1-459-683-11	COIL, FERRITE (HLC)		RV704	1-230-041-00	RES, ADJ, METAL GLAZE 2.2M	
L703	1-407-161-XX	MICRO INDUCTOR 22UH		RV705	1-230-041-00	RES, ADJ, METAL GLAZE 2.2M	
<u>IC LINK</u>				<u>TRANSFORMER</u>			
PS701	1-532-833-21	LINK, IC 250mA (UK MODEL)		T701	1-439-394-11	TRANSFORMER ASSY, PLYBACK	
<u>TRANSISTOR</u>				*****			
Q701	8-729-100-66	TRANSISTOR 2SC1623		*A-7060-616-A	SS-64P BOARD, COMPLETE		
Q702	8-729-162-44	TRANSISTOR 2SB624-BV4		(AEP, AUSTRALIAN, E MODEL)			
Q703	8-729-100-67	TRANSISTOR 2SC1623-L7		*****			
Q704	8-729-106-64	TRANSISTOR 2SD1615		*A-7060-702-A	SS-64P BOARD, COMPLETE (UK MODEL)		
<u>RESISTOR</u>				*****			
R701	1-216-306-11	METAL CHIP 3.9 5%	1/10W	2-279-715-21	RIVET, NYLON		
R702	1-216-063-00	METAL CHIP 3.9K 5%	1/10W	3-712-398-01	REINFORCEMENT (31)		
				<u>CAPACITOR</u>			
C301	1-163-077-00	CERAMIC CHIP 0.1MF	50V				

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C302	1-163-103-00	CERAMIC CHIP 27PF	5% 50V	C533	1-124-233-00	ELECT 10MF	20% 10V
C303	1-163-103-00	CERAMIC CHIP 27PF	5% 50V	C536	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C304	1-124-234-00	ELECT 22MF	20% 16V	C537	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
C305	1-124-257-00	ELECT 2.2MF	20% 35V	C540	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C306	1-124-233-00	ELECT 10MF	20% 10V	C541	1-126-099-11	ELECT 2.2MF	20% 35V
C307	1-163-077-00	CERAMIC CHIP 0.1MF	50V	C543	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
C308	1-163-077-00	CERAMIC CHIP 0.1MF	50V	C544	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V
C309	1-135-099-00	TANTAL. CHIP 2.2MF	20% 6.3V	C545	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V
C311	1-163-077-00	CERAMIC CHIP 0.1MF	50V	C546	1-163-035-00	CERAMIC CHIP 0.047MF	10% 25V
C312	1-163-103-00	CERAMIC CHIP 27PF	5% 50V	C547	1-163-139-00	CERAMIC CHIP 820PF	5% 50V
C313	1-163-103-00	CERAMIC CHIP 27PF	5% 50V	C548	1-163-141-00	CERAMIC CHIP 0.001MF	10% 50V
C314	1-163-077-00	CERAMIC CHIP 0.1MF	50V	C549	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
C315	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	C550	1-163-035-00	CERAMIC CHIP 0.047MF	10% 25V
C316	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	C553	1-124-222-00	ELECT 22MF	20% 6.3V
C318	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V	C554	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
C322	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V	C555	1-127-487-00	ELECT 4.7MF	20% 10V
C323	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C556	1-163-035-00	CERAMIC CHIP 0.047MF	10% 25V
C325	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C557	1-163-141-00	CERAMIC CHIP 0.001MF	10% 50V
C327	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C558	1-124-258-00	ELECT 3.3MF	20% 25V
C329	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C559	1-163-129-00	CERAMIC CHIP 330PF	5% 50V
C330	1-163-035-00	CERAMIC CHIP 0.047MF	10% 25V	C560	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C331	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V	C562	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C332	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	C563	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
C334	1-135-099-00	TANTAL. CHIP 2.2MF	20% 6.3V	C564	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C335	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V	C651	1-163-013-00	CERAMIC CHIP 0.0022MF	10% 50V
C336	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C652	1-163-023-00	CERAMIC CHIP 0.015MF	10% 50V
C337	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V	C653	1-135-091-00	TANTAL. CHIP 1MF	20% 16V
C501	1-124-222-00	ELECT 22MF	20% 6.3V	C654	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V
C502	1-124-257-00	ELECT 2.2MF	20% 35V	C655	1-163-035-00	CERAMIC CHIP 0.047MF	10% 25V
C503	1-163-021-00	CERAMIC CHIP 0.01MF	50V	C656	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V
C504	1-163-021-00	CERAMIC CHIP 0.01MF	50V	C657	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C505	1-124-233-00	ELECT 10MF	20% 6.3V	C658	1-124-233-00	ELECT 10MF	20% 6.3V
C506	1-163-020-00	CERAMIC CHIP 0.0082MF	10% 50V	C659	1-135-091-00	TANTAL. CHIP 1MF	20% 16V
C507	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V	C660	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V
C508	1-163-035-00	CERAMIC CHIP 0.047MF	10% 25V	C661	1-163-141-00	CERAMIC CHIP 0.001MF	10% 50V
C509	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V	C662	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C510	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	C663	1-135-091-00	TANTAL. CHIP 1MF	20% 16V
C511	1-124-499-11	ELECT 1MF	20% 50V	C664	1-163-141-00	CERAMIC CHIP 0.001MF	10% 50V
C513	1-124-233-00	ELECT 10MF	20% 6.3V	C665	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C514	1-126-099-11	ELECT 2.2MF	20% 35V	C666	1-163-034-00	CERAMIC CHIP 0.033MF	10% 25V
C516	1-126-100-11	ELECT 10MF	20% 6.3V	C667	1-163-035-00	CERAMIC CHIP 0.047MF	10% 25V
C518	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	C669	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C519	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	C670	1-163-035-00	CERAMIC CHIP 0.047MF	10% 25V
C520	1-130-487-00	MYLAR 0.022MF	5% 50V	C672	1-163-033-00	CERAMIC CHIP 0.022MF	10% 25V
C524	1-163-035-00	CERAMIC CHIP 0.047MF	10% 25V	CONNECTOR			
C525	1-126-099-11	ELECT 2.2MF	20% 35V	CN301	*1-564-029-00	PIN, CONNECTOR 4P	
C527	1-124-499-11	ELECT 1MF	20% 50V	CN302	*1-564-013-00	PIN, CONNECTOR 3P	
C529	1-126-099-11	ELECT 2.2MF	20% 35V	CN303	*1-564-013-00	PIN, CONNECTOR 3P	
C531	1-163-023-00	CERAMIC CHIP 0.015MF	10% 50V	CN304	*1-564-012-00	PIN, CONNECTOR 2P	
C532	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	CN305	*1-564-014-00	PIN, CONNECTOR 4P	
				CN306	*1-564-012-00	PIN, CONNECTOR 2P	
				CN307	*1-562-887-11	CONNECTOR, F.P.C 20P	

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SS-64P

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
CN308	*1-564-020-00	PIN, CONNECTOR 10P		TRANSISTOR			
CN309	1-563-492-11	CONNECTOR, F.P.C 19P		Q301	8-729-900-98	TRANSISTOR DTC143TK	
CN310	*1-564-014-00	PIN, CONNECTOR 4P		Q302	8-729-900-98	TRANSISTOR DTC143TK	
CN311	*1-564-003-00	PIN, CONNECTOR 4P		Q303	8-729-900-98	TRANSISTOR DTC143TK	
CN313	*1-564-016-00	PIN, CONNECTOR 6P		Q304	8-729-901-06	TRANSISTOR DTA144EK	
CN314	*1-564-012-00	PIN, CONNECTOR 2P		Q305	8-729-901-06	TRANSISTOR DTA144EK	
CN501	1-563-492-11	CONNECTOR, F.P.C 19P		Q306	8-729-901-04	TRANSISTOR DTA114EK	
DIODE				Q307	8-729-100-67	TRANSISTOR 2SC1623-L7	
D301	8-719-100-03	DIODE 1S2835		Q308	8-729-901-01	TRANSISTOR DTC144EK	
D303	8-719-914-11	DIODE HZ4ALL		Q309	8-729-100-67	TRANSISTOR 2SC1623-L7	
D304	8-719-914-11	DIODE HZ4ALL		Q310	8-729-901-01	TRANSISTOR DTC144EK	
D305	8-719-100-03	DIODE 1S2835		Q311	8-729-900-98	TRANSISTOR DTC143TK	
D501	8-719-101-23	DIODE 1SS123		Q312	8-729-901-06	TRANSISTOR DTA144EK	
D505	8-719-801-41	DIODE 1SS196		Q313	8-729-900-98	TRANSISTOR DTC143TK	
D651	8-719-801-41	DIODE 1SS196		Q314	8-729-901-06	TRANSISTOR DTA144EK	
FILTER				Q315	8-729-100-67	TRANSISTOR 2SC1623-L7	
FL501	1-235-612-21	8PF (16KHZ)		Q316	8-729-100-76	TRANSISTOR 2SA812	
FL502	1-235-611-21	8PF (46KHZ)		Q317	8-729-105-29	TRANSISTOR 2SA1385	
IC				Q318	8-729-901-06	TRANSISTOR DTA144EK	
IC301	8-752-801-50	IC CXP5048H-049Q		Q319	8-729-901-06	TRANSISTOR DTA144EK	
IC302	8-752-801-51	IC CXP5048H-050Q		Q320	8-729-901-01	TRANSISTOR DTC144EK	
IC303	8-759-925-43	IC MSM6411R-26GS-VK		Q321	8-729-901-01	TRANSISTOR DTC144EK	
IC304	8-759-100-93	IC UPC393G2		Q322	8-729-100-67	TRANSISTOR 2SC1623-L7	
IC305	8-759-922-54	IC S-81250AG		Q323	8-729-100-76	TRANSISTOR 2SA812	
IC306	8-759-913-41	IC S-8054ALR		Q324	8-729-901-06	TRANSISTOR DTA144EK	
IC307	8-759-100-92	IC UPC4250G2		Q325	8-729-901-01	TRANSISTOR DTC144EK	
IC501	8-759-107-68	IC CX20115A		Q326	8-729-901-01	TRANSISTOR DTC144EK	
IC502	8-752-003-50	IC CX20035		Q329	8-729-901-01	TRANSISTOR DTC144EK	
IC504	8-759-701-36	IC NJM3403AM		Q331	8-729-106-40	TRANSISTOR 2SB1114-ZK	
IC505	8-759-925-66	IC BA6303F		Q332	8-729-901-06	TRANSISTOR DTA144EK	
IC506	8-759-201-01	IC TC4066BF		Q333	8-729-901-01	TRANSISTOR DTC144EK	
IC507	8-759-201-00	IC TC4052RF		Q334	8-729-100-76	TRANSISTOR 2SA812	
IC508	8-759-201-80	IC TC4526BF		Q501	8-729-100-76	TRANSISTOR 2SA812	
IC509	8-759-928-56	IC CXA1042M		Q502	8-729-102-72	TRANSISTOR 2SA812	
IC651	8-759-100-93	IC UPC393G2		Q503	8-729-901-09	TRANSISTOR DTA114EK	
COIL				Q504	8-729-100-76	TRANSISTOR 2SA812	
L301	1-408-987-21	MICRO INDUCTOR 330UH		Q505	8-729-100-76	TRANSISTOR 2SA812	
L302	1-408-795-21	INDUCTOR CHIP 330UH		Q506	8-729-100-66	TRANSISTOR 2SC1623	
L303	1-408-795-21	INDUCTOR CHIP 330UH		Q507	8-729-100-66	TRANSISTOR 2SC1623	
L304	1-410-389-11	INDUCTOR CHIP 47UH		Q508	8-729-901-06	TRANSISTOR DTA144EK	
L501	1-407-165-XX	MICRO INDUCTOR 47UH		Q509	8-729-100-76	TRANSISTOR 2SA812	
L502	1-408-795-21	INDUCTOR CHIP 330UH		Q510	8-729-901-06	TRANSISTOR DTA144EK	
L503	1-408-793-21	INDUCTOR CHIP 220UH		Q511	8-729-901-01	TRANSISTOR DTC144EK	
IC LINK				Q512	8-729-901-01	TRANSISTOR DTC144EK	
PS301A	1-532-605-11	LINK, IC		Q513	8-729-901-01	TRANSISTOR DTC144EK	
				Q514	8-729-100-66	TRANSISTOR 2SC1623	
				Q515	8-729-903-29	TRANSISTOR DTA144TK	
				Q516	8-729-100-67	TRANSISTOR 2SC1623-L7	
				Q517	8-729-100-76	TRANSISTOR 2SA812	
				Q518	8-729-100-67	TRANSISTOR 2SC1623-L7	

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
Q519	8-729-100-76	TRANSISTOR 2SA812		R337	1-216-047-00	METAL CHIP 820 5% 1/10W	
Q520	8-729-100-67	TRANSISTOR 2SC1623-L7		R338	1-216-099-00	METAL CHIP 120K 5% 1/10W	
Q521	8-729-199-92	TRANSISTOR 2SD999		R339	1-216-073-00	METAL CHIP 10K 5% 1/10W	
Q522	8-729-199-92	TRANSISTOR 2SD999		R340	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
Q523	8-729-901-06	TRANSISTOR DTA144EK		R341	1-216-089-00	METAL CHIP 47K 5% 1/10W	
Q524	8-729-901-01	TRANSISTOR DTC144EK		R342	1-216-083-00	METAL CHIP 27K 5% 1/10W	
Q525	8-729-901-06	TRANSISTOR DTA144EK		R343	1-216-103-00	METAL CHIP 180K 5% 1/10W	
Q526	8-729-403-49	TRANSISTOR DTC144TK		R344	1-216-079-00	METAL CHIP 18K 5% 1/10W	
Q651	8-729-100-67	TRANSISTOR 2SC1623-L7		R345	1-216-083-00	METAL CHIP 27K 5% 1/10W	
Q652	8-729-100-76	TRANSISTOR 2SA812		R346	1-216-101-00	METAL CHIP 150K 5% 1/10W	
Q653	8-729-100-67	TRANSISTOR 2SC1623-L7		R347	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	
Q654	8-729-100-76	TRANSISTOR 2SA812		R348	1-216-121-00	METAL CHIP 1M 5% 1/10W	
Q655	8-729-100-67	TRANSISTOR 2SC1623-L7		R349	1-216-073-00	METAL CHIP 10K 5% 1/10W	
Q656	8-729-100-76	TRANSISTOR 2SA812		R350	1-216-089-00	METAL CHIP 47K 5% 1/10W	
Q657	8-729-901-06	TRANSISTOR DTA144EK		R351	1-216-081-00	METAL CHIP 22K 5% 1/10W	
RESISTOR				R353	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R301	1-216-073-00	METAL CHIP 10K 5% 1/10W		R354	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R302	1-216-073-00	METAL CHIP 10K 5% 1/10W		R355	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R303	1-216-073-00	METAL CHIP 10K 5% 1/10W		R356	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R304	1-216-073-00	METAL CHIP 10K 5% 1/10W		R357	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R305	1-216-099-00	METAL CHIP 120K 5% 1/10W		R359	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R306	1-216-099-00	METAL CHIP 120K 5% 1/10W		R360	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R307	1-216-099-00	METAL CHIP 120K 5% 1/10W		R361	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R308	1-216-089-00	METAL CHIP 47K 5% 1/10W		R362	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R309	1-216-073-00	METAL CHIP 10K 5% 1/10W		R363	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R310	1-216-073-00	METAL CHIP 10K 5% 1/10W		R364	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R311	1-216-073-00	METAL CHIP 10K 5% 1/10W		R365	1-216-107-00	METAL CHIP 270K 5% 1/10W	
R312	1-216-081-00	METAL CHIP 22K 5% 1/10W		R366	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R313	1-216-073-00	METAL CHIP 10K 5% 1/10W		R367	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R314	1-216-081-00	METAL CHIP 22K 5% 1/10W		R368	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R315	1-216-073-00	METAL CHIP 10K 5% 1/10W		R369	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R316	1-216-073-00	METAL CHIP 10K 5% 1/10W		R370	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R317	1-216-051-00	METAL CHIP 1.2K 5% 1/10W		R371	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R318	1-216-053-00	METAL CHIP 1.5K 5% 1/10W		R373	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R319	1-216-041-00	METAL CHIP 470 5% 1/10W		R375	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R320	1-216-097-00	METAL CHIP 100K 5% 1/10W		R376	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R321	1-216-097-00	METAL CHIP 100K 5% 1/10W		R377	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R322	1-216-045-00	METAL CHIP 680 5% 1/10W		R378	1-216-174-00	METAL CHIP 100 5% 1/8W	
R323	1-216-194-00	METAL CHIP 680 5% 1/8W		R379	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R324	1-216-194-00	METAL CHIP 680 5% 1/8W		R381	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R325	1-216-194-00	METAL CHIP 680 5% 1/8W		R383	1-216-295-00	METAL CHIP 0 5% 1/10W	
R326	1-216-073-00	METAL CHIP 10K 5% 1/10W		R385	1-216-295-00	METAL CHIP 0 5% 1/10W	
R327	1-216-123-11	METAL CHIP 1.2M 5% 1/10W		R387	1-216-295-00	METAL CHIP 0 5% 1/10W	
R328	1-216-077-00	METAL CHIP 15K 5% 1/10W		R389	1-216-295-00	METAL CHIP 0 5% 1/10W	
R329	1-216-077-00	METAL CHIP 15K 5% 1/10W		R390	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R330	1-216-075-00	METAL CHIP 12K 5% 1/10W		R391	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R331	1-216-097-00	METAL CHIP 100K 5% 1/10W		R392	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R332	1-216-085-00	METAL CHIP 33K 5% 1/10W		R393	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R333	1-216-089-00	METAL CHIP 47K 5% 1/10W		R394	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R334	1-216-115-00	METAL CHIP 560K 5% 1/10W		R395	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R335	1-216-085-00	METAL CHIP 33K 5% 1/10W		R396	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R336	1-216-065-00	METAL CHIP 4.7K 5% 1/10W		R397	1-216-073-00	METAL CHIP 10K 5% 1/10W	

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

SS-64P

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R399	1-216-085-00	METAL CHIP	33K 5% 1/10W	R557	1-216-071-00	METAL CHIP	8.2K 5% 1/10W
R501	1-216-113-00	METAL CHIP	470K 5% 1/10W	R558	1-216-091-00	METAL CHIP	56K 5% 1/10W
R502	1-216-075-00	METAL CHIP	12K 5% 1/10W	R559	1-216-089-00	METAL CHIP	47K 5% 1/10W
R503	1-216-089-00	METAL CHIP	47K 5% 1/10W	R560	1-216-073-00	METAL CHIP	10K 5% 1/10W
R504	1-216-099-00	METAL CHIP	120K 5% 1/10W	R561	1-216-081-00	METAL CHIP	22K 5% 1/10W
R505	1-216-061-00	METAL CHIP	3.3K 5% 1/10W	R563	1-216-113-00	METAL CHIP	470K 5% 1/10W
R506	1-216-109-00	METAL CHIP	330K 5% 1/10W	R564	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R507	1-216-075-00	METAL CHIP	12K 5% 1/10W	R565	1-216-089-00	METAL CHIP	47K 5% 1/10W
R508	1-216-117-00	METAL CHIP	680K 5% 1/10W	R566	1-216-113-00	METAL CHIP	470K 5% 1/10W
R509	1-216-107-00	METAL CHIP	270K 5% 1/10W	R567	1-216-075-00	METAL CHIP	12K 5% 1/10W
R510	1-216-095-00	METAL CHIP	82K 5% 1/10W	R568	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R511	1-216-107-00	METAL CHIP	270K 5% 1/10W	R569	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R512	1-216-081-00	METAL CHIP	22K 5% 1/10W	R570	1-216-099-00	METAL CHIP	120K 5% 1/10W
R513	1-216-085-00	METAL CHIP	33K 5% 1/10W	R571	1-216-097-00	METAL CHIP	100K 5% 1/10W
R514	1-216-073-00	METAL CHIP	10K 5% 1/10W	R572	1-216-077-00	METAL CHIP	15K 5% 1/10W
R515	1-216-073-00	METAL CHIP	10K 5% 1/10W	R573	1-216-087-00	METAL CHIP	39K 5% 1/10W
R516	1-216-073-00	METAL CHIP	10K 5% 1/10W	R574	1-216-101-00	METAL CHIP	150K 5% 1/10W
R517	1-216-073-00	METAL CHIP	10K 5% 1/10W	R575	1-216-081-00	METAL CHIP	22K 5% 1/10W
R518	1-216-117-00	METAL CHIP	680K 5% 1/10W	R576	1-216-049-00	METAL CHIP	1K 5% 1/10W
R519	1-216-085-00	METAL CHIP	33K 5% 1/10W	R577	1-216-097-00	METAL CHIP	100K 5% 1/10W
R520	1-216-067-00	METAL CHIP	5.6K 5% 1/10W	R578	1-216-047-00	METAL CHIP	820 5% 1/10W
R521	1-216-121-00	METAL CHIP	1M 5% 1/10W	R579	1-216-117-00	METAL CHIP	680K 5% 1/10W
R522	1-216-067-00	METAL CHIP	5.6K 5% 1/10W	R580	1-216-073-00	METAL CHIP	10K 5% 1/10W
R523	1-216-061-00	METAL CHIP	3.3K 5% 1/10W	R581	1-216-091-00	METAL CHIP	56K 5% 1/10W
R524	1-216-091-00	METAL CHIP	56K 5% 1/10W	R582	1-216-673-11	METAL CHIP	8.2K 0.5% 1/16W
R525	1-216-113-00	METAL CHIP	470K 5% 1/10W	R583	1-216-115-00	METAL CHIP	560K 5% 1/10W
R526	1-216-095-00	METAL CHIP	82K 5% 1/10W	R584	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R527	1-216-087-00	METAL CHIP	39K 5% 1/10W	R585	1-216-109-00	METAL CHIP	330K 5% 1/10W
R528	1-216-182-00	METAL CHIP	220 5% 1/8W	R586	1-216-073-00	METAL CHIP	10K 5% 1/10W
R529	1-216-304-11	METAL CHIP	3.3 5% 1/10W	R587	1-216-049-00	METAL CHIP	1K 5% 1/10W
R530	1-216-065-00	METAL CHIP	4.7K 5% 1/10W	R588	1-216-295-00	METAL CHIP	0 5% 1/10W
R531	1-216-085-00	METAL CHIP	33K 5% 1/10W	R589	1-216-295-00	METAL CHIP	0 5% 1/10W
R532	1-216-093-00	METAL CHIP	68K 5% 1/10W	R590	1-216-049-00	METAL CHIP	1K 5% 1/10W
R533	1-216-097-00	METAL CHIP	100K 5% 1/10W	R591	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R534	1-216-073-00	METAL CHIP	10K 5% 1/10W	R593	1-216-097-00	METAL CHIP	100K 5% 1/10W
R535	1-216-073-00	METAL CHIP	10K 5% 1/10W	R594	1-216-081-00	METAL CHIP	22K 5% 1/10W
R536	1-216-081-00	METAL CHIP	22K 5% 1/10W	R595	1-216-129-00	METAL CHIP	2.2M 5% 1/10W
R537	1-216-089-00	METAL CHIP	47K 5% 1/10W	R596	1-216-105-00	METAL CHIP	220K 5% 1/10W
R538	1-216-081-00	METAL CHIP	22K 5% 1/10W	R597	1-216-105-00	METAL CHIP	220K 5% 1/10W
R539	1-216-085-00	METAL CHIP	33K 5% 1/10W	R598	1-216-079-00	METAL CHIP	18K 5% 1/10W
R540	1-216-097-00	METAL CHIP	100K 5% 1/10W	R651	1-216-085-00	METAL CHIP	33K 5% 1/10W
R541	1-216-097-00	METAL CHIP	100K 5% 1/10W	R652	1-216-073-00	METAL CHIP	10K 5% 1/10W
R542	1-216-073-00	METAL CHIP	10K 5% 1/10W	R653	1-216-047-00	METAL CHIP	820 5% 1/10W
R543	1-216-093-00	METAL CHIP	68K 5% 1/10W	R654	1-216-015-00	METAL CHIP	39 5% 1/10W
R544	1-216-093-00	METAL CHIP	68K 5% 1/10W	R655	1-216-029-00	METAL CHIP	150 5% 1/10W
R545	1-216-083-00	METAL CHIP	27K 5% 1/10W	R656	1-216-089-00	METAL CHIP	47K 5% 1/10W
R546	1-216-073-00	METAL CHIP	10K 5% 1/10W	R657	1-216-097-00	METAL CHIP	100K 5% 1/10W
R547	1-216-073-00	METAL CHIP	10K 5% 1/10W	R658	1-216-083-00	METAL CHIP	27K 5% 1/10W
R548	1-216-073-00	METAL CHIP	10K 5% 1/10W	R659	1-216-055-00	METAL CHIP	1.8K 5% 1/10W
R549	1-216-073-00	METAL CHIP	10K 5% 1/10W	R660	1-216-083-00	METAL CHIP	27K 5% 1/10W
R550	1-216-071-00	METAL CHIP	8.2K 5% 1/10W	R661	1-216-097-00	METAL CHIP	100K 5% 1/10W
R552	1-216-051-00	METAL CHIP	1.2K 5% 1/10W	R662	1-216-079-00	METAL CHIP	18K 5% 1/10W
R553	1-216-061-00	METAL CHIP	3.3K 5% 1/10W	R663	1-216-073-00	METAL CHIP	10K 5% 1/10W
R554	1-216-061-00	METAL CHIP	3.3K 5% 1/10W	R664	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
R555	1-216-655-11	METAL CHIP	1.5K 0.5% 1/16W	R665	1-216-073-00	METAL CHIP	10K 5% 1/10W
R556	1-216-660-11	METAL CHIP	2.4K 0.5% 1/16W				

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

SS-64P**DR-36P**

Ref.No	Part No.	Description	Remark		
R666	1-216-097-00	METAL CHIP	100K	5%	1/10W
R668	1-216-087-00	METAL CHIP	39K	5%	1/10W
R669	1-216-119-00	METAL CHIP	820K	5%	1/10W
R670	1-216-101-00	METAL CHIP	150K	5%	1/10W
R671	1-216-045-00	METAL CHIP	680	5%	1/10W
R672	1-216-027-00	METAL CHIP	120	5%	1/10W
R673	1-216-047-00	METAL CHIP	820	5%	1/10W
R674	1-216-121-00	METAL CHIP	1M	5%	1/10W
R675	1-216-085-00	METAL CHIP	33K	5%	1/10W
R676	1-216-073-00	METAL CHIP	10K	5%	1/10W
R677	1-216-099-00	METAL CHIP	120K	5%	1/10W
R678	1-216-093-00	METAL CHIP	68K	5%	1/10W
R679	1-216-109-00	METAL CHIP	330K	5%	1/10W
R680	1-216-073-00	METAL CHIP	10K	5%	1/10W
R681	1-216-101-00	METAL CHIP	150K	5%	1/10W
R682	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R683	1-216-083-00	METAL CHIP	27K	5%	1/10W
R684	1-216-119-00	METAL CHIP	820K	5%	1/10W
R685	1-216-077-00	METAL CHIP	15K	5%	1/10W
R686	1-216-121-00	METAL CHIP	1M	5%	1/10W
R687	1-216-113-00	METAL CHIP	470K	5%	1/10W
R688	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R689	1-216-083-00	METAL CHIP	27K	5%	1/10W
R691	1-216-119-00	METAL CHIP	820K	5%	1/10W
R696	1-216-073-00	METAL CHIP	10K	5%	1/10W
R697	1-216-073-00	METAL CHIP	10K	5%	1/10W

VARIABLE RESISTOR

RV301	1-230-867-11	RES, ADJ, METAL GLAZE 1K
RV501	1-230-874-11	RES, ADJ, METAL GLAZE 100K
RV502	1-230-873-11	RES, ADJ, METAL GLAZE 47K

CRYSTAL

X301	1-567-346-11	OSCILLATOR, CERAMIC (5MHZ)
X302	1-567-346-11	OSCILLATOR, CERAMIC (5MHZ)
X303	1-567-192-11	OSCILLATOR, CERAMIC (4MHZ)

*A-7060-494-A DR-36P BOARD, COMPLETE

CAPACITOR

C501	1-124-255-00	ELECT	1MF	20%	50V
C502	1-124-255-00	ELECT	1MF	20%	50V
C503	1-124-255-00	ELECT	1MF	20%	50V
C504	1-124-258-00	ELECT	3.3MF	20%	25V
C505	1-124-255-00	ELECT	1MF	20%	50V
C506	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V
C507	1-163-077-00	CERAMIC CHIP	0.1MF		50V

Ref.No	Part No.	Description	Remark		
C508	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C509	1-126-099-11	ELECT	2.2MF	20%	35V
C511	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C512	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C513	1-124-577-11	ELECT	82MF	20%	10V
C514	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C515	1-124-577-11	ELECT	82MF	20%	10V
C516	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C517	1-124-233-00	ELECT	10MF	20%	16V
C518	1-124-233-00	ELECT	10MF	20%	16V
C519	1-124-233-00	ELECT	10MF	20%	16V
C520	1-124-577-11	ELECT	82MF	20%	10V
C521	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C522	1-124-596-11	ELECT	27MF	20%	16V
C523	1-124-596-11	ELECT	27MF	20%	16V
C524	1-124-596-11	ELECT	27MF	20%	16V
C527	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V
C528	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V

CONNECTOR

CN312	*1-564-012-00	PIN, CONNECTOR 2P
CN504	*1-564-014-00	PIN, CONNECTOR 4P

DIODE

D501	8-719-200-35	DIODE E10QS03
D502	8-719-200-35	DIODE E10QS03
D503	8-719-200-35	DIODE E10QS03

IC

IC501	8-759-202-45	IC CX20114
IC502	8-752-003-60	IC CX20036

COIL

L501	1-410-628-11	COIL, CHOKE 200UH
L502	1-410-628-11	COIL, CHOKE 200UH
L503	1-410-628-11	COIL, CHOKE 200UH

TRANSISTOR

Q501	8-729-100-76	TRANSISTOR 2SA812
Q502	8-729-901-01	TRANSISTOR DTC144EK
Q503	8-729-100-76	TRANSISTOR 2SA812
Q504	8-729-100-67	TRANSISTOR 2SC1623-L7
Q505	8-729-106-40	TRANSISTOR 2SB1114-ZK
Q506	8-729-106-40	TRANSISTOR 2SB1114-ZK
Q507	8-729-700-10	NJL7141E-S

RESISTOR

R501	1-216-073-00	METAL CHIP	10K	5%	1/10W
R502	1-216-049-00	METAL CHIP	1K	5%	1/10W
R503	1-216-077-00	METAL CHIP	15K	5%	1/10W
R504	1-216-087-00	METAL CHIP	39K	5%	1/10W
R505	1-216-047-00	METAL CHIP	820	5%	1/10W

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

DR-36P**TS-55P**

Ref.No	Part No.	Description	Remark
R506	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R507	1-216-025-00	METAL CHIP 100 5% 1/10W	
R508	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R509	1-216-041-00	METAL CHIP 470 5% 1/10W	
R510	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R511	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R512	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R513	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R514	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R515	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R516	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R517	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R518	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R519	1-216-025-00	METAL CHIP 100 5% 1/10W	
R520	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R521	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R522	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R523	1-214-972-00	METAL 0.22 5% 1/4W	
R524	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R525	1-216-041-00	METAL CHIP 470 5% 1/10W	
R526	1-216-041-00	METAL CHIP 470 5% 1/10W	
R527	1-216-304-11	METAL CHIP 3.3 5% 1/10W	
R528	1-216-304-11	METAL CHIP 3.3 5% 1/10W	
R530	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R534	1-216-295-00	METAL CHIP 0 5% 1/10W	

*A-7060-617-A TS-55P BOARD, COMPLETE

CONNECTOR

CN506 *1-562-887-11 CONNECTOR, F.P.C 20P
CN507 *1-564-018-11 PIN, CONNECTOR 8P

TRANSISTOR

O501 8-729-700-10 NJL7141E-S

RESISTOR

R501	1-216-081-00	METAL CHIP 22K 5% 1/10W
R502	1-216-079-00	METAL CHIP 18K 5% 1/10W
R505	1-216-081-00	METAL CHIP 22K 5% 1/10W
R506	1-216-079-00	METAL CHIP 18K 5% 1/10W
R507	1-216-081-00	METAL CHIP 22K 5% 1/10W
R508	1-216-079-00	METAL CHIP 18K 5% 1/10W
R510	1-216-295-00	METAL CHIP 0 5% 1/10W
R512	1-216-295-00	METAL CHIP 0 5% 1/10W

VARIABLE RESISTOR

RV501	1-230-526-11	RES, ADJ, METAL GLAZE 47K
RV502	1-230-524-11	RES, ADJ, METAL GLAZE 22K
RV503	1-230-524-11	RES, ADJ, METAL GLAZE 22K
RV504	1-230-524-11	RES, ADJ, METAL GLAZE 22K
RV506	1-230-526-11	RES, ADJ, METAL GLAZE 47K

Ref.No	Part No.	Description	Remark
RV507	1-230-528-11	RES, ADJ, METAL GLAZE 220K	
RV508	1-230-529-11	RES, ADJ, METAL GLAZE 470K	

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

CCD-V100E

SONY[®] SERVICE MANUAL

AEP Model
UK Model
Australian Model
E Model

SUPPLEMENT-4

Subject: Partial change of parts of UK Model

- File this supplement with the service manual.
- In the UK Model, parts to sets after Serial No. 400001 have been changed as follows:

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<u>No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
14	*3-713-960-01	LABEL, MODEL NUMBER (UK MODEL is beyond the object of the FTZ)	

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<u>Ref.No</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
ACCESSORIES AND PACKING MATERIALS *****			
1-570-730-11		SWITCH, ANTENNA (ANS-37)	
3-712-673-01		SCREW DRIVER	

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