



V13666

# LDP-1550P

## SERVICE MANUAL

*AEP Model  
UK Model*



### Lasermax

#### SPECIFICATIONS

##### Playback system

Disc format	Laser Vision
Pick-up method	Laser beam (reflective)
Laser	Diode laser ( $\lambda = 7800\text{\AA}$ )
Videodisc	12" and 8"
Maximum playing time	CAV: 36 min/side CLV: 60 min/side
Spindle revolution	CAV: 1500 r.p.m. CLV: 1500 to 570 r.p.m.
Access time	CAV: 2 sec (by frame) 10 sec (by chapter) CLV: 10 sec

##### Video

Signal	CCIR standards, PAL colour
Output	1.0 V p-p, 75 ohms unbalanced, sync negative
Resolution	Color: 450 lines

##### Audio

Output	Line out: Less than 2 kilohms 0 dBV (100% MOD, 1 kHz, 47 kilohms terminated) unbalanced
	Headphones: 8 ohms -20 dBs max.
Signal-to-noise ratio	CX ON: 70 dB CX OFF: 56 dB
Frequency response	20 Hz to 20kHz

##### Video/Audio (TV connector)

Video	1.0 Vp-p
Audio	0 dB [V]
Status	+11 V DC

##### General

Power requirements	220/240V AC, selectable, 50/60 Hz
Power consumption	36 W
Operating temperature	5°C to 35°C (40°F to 95°F)
Operating humidity	25% to 80%
Storage temperature	-20°C to 60°C (-4°F to 140°F)
Dimensions	Approx. 424 x 116 x 405 mm (w/h/d) (16 <sup>3</sup> / <sub>4</sub> x 4 <sup>5</sup> / <sub>8</sub> x 16 inches)
Weight	Approx. 10.7 kg (23 lb 9 oz)
Supplied accessory	AC power cord
Optional accessories	Interface Manual LDM-1550 Rack Mount Kit RMM-201B Remote Control Unit RM-2001 External Sync Lock Board DB-1550P

##### Note

This appliance conforms with EEC Directives 76/889 and 82/499 regarding interference suppression.




 **VIDEODISC PLAYER**  
**SONY**®

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

### SAFETY-RELATED COMPONENT WARNING!!

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

### ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UN TRAMÉ ET UNE MARQUE  SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DU CIRCUIT QUI SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT SONT IDENTIFIÉS DANS CE MANUEL. SUIVRE LES PROCÉDURES QUAND LES COMPOSANTS CRITIQUES SONT REMPLACÉS OU LE FONCTIONNEMENT IMPROPRE EST SUSPECTÉ.



## PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

### WARNING !!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 25 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

### 1. Laser Diode Properties

- Material: GaAlAs
- Wavelength: 780 nm
- Emission Duration: continuous

2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optical Pick-up Block (including APC board).

### DANGER

Invisible laser radiations when open and interlock failed or defeated.  
Avoid direct exposure to beam.

### CLASS I LASER PRODUCT

#### ADVARSEL:

USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UD AF FUNCTION UNDGÅ. UDSAETTELSE FOR STRÅLING.

### CLASS 3A LASER

#### VAROITUS!

SUOJAKOTELOA EI SAA AVATA. LAITE SISÄLTÄÄ LASERDIODIN, JOKA LÄHETTÄÄ (NÄKYMÄTÖNTÄ) SILMILLE VAARALLISTA LASERSÄTEILYÄ.

LASER COMPONENT IN PRODUCT IS CAPABLE OF EMITTING RADIATION EXCEEDING THE LIMIT FOR CLASS I.

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# SECTION 1

## GENERAL

### 1-1. FEATURES

#### No physical contact between pick-up and disc

A laser beam acts as the signal pick-up for contact-free playback and no wear on your valuable videodiscs. The audiovisual pit pattern is recorded below the surface of the videodisc for safe handling. There is no more need to be constantly on your guard against fingerprints and dust.

#### Computer control

The built-in microprocessor controls almost all the functions of this player. Various functions, such as search and repeat, are possible with an external computer through an RS-232C interface connector.

#### Multiple track jump function

Momentary scanning within 200 tracks is possible in the forward or reverse direction without muting video signals. This function is controlled with an external computer.

#### High speed access

Any frame on the disc can be located within 2 seconds.

#### Search operation by the second on CLV disc

Desired picture address on a CLV disc can be searched for by specifying the time (second) number recorded on the disc.

#### Remote control operation

By using the RM-2001 optional remote control unit, not only the operation of the main buttons on the front panel but also search and repeat operation are remotely controlled. Remote control operations are possible in both wired and wireless modes.

#### Automatic front loading

Videodiscs are inserted in the front of the LDP-1550P. This represents a great saving of space when compared with top loading models.

#### Mountable on a 19" rack

The videodisc player can be mounted on an EIA standard 19" rack. An optional RMM-201B rack mount kit is available to install the videodisc player into the 19" rack.

#### Black burst video out signals in the search mode

The signal output from the computer are superimposed over the videodisc picture so that they can even be seen in the search mode.

#### Screw-less mechanism for transportation

This new mechanism eliminates the need to tighten special screws to fix the laser pick-up before transporting the videodisc player.

#### External Sync Lock Board

A sync lock function can be provided by installation of a separate optional board (DB-1550P). This allows various videodisc applications. Contact your authorized Sony representative as adjustment of the unit is necessary.

### 1-2. PRECAUTIONS

#### On safety

- Operate the unit with 220/240 V AC, 50/60 Hz.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not to be used for an extended period of time.
- To disconnect a cord, pull it out by the plug. Never pull the cord itself.

#### On installation

- Avoid placing the player in a location subject to:
  - high humidity
  - high temperature
  - excessive dust
  - mechanical vibration
  - direct sunlight
- Allow adequate air circulation to prevent internal heat buildup. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.

#### On operation

- Do not operate the unit right after having transported it from a cold location directly to a warm location or in a room where the temperature rises suddenly because moisture may condense in the operating section of the unit. Wait for about an hour before turning the power on in the new location or keep the rise in room temperature gradual. If the unit is operated with moisture condensation, the unit and the disc may be damaged. Therefore remove the disc immediately when there is a possibility of moisture condensation and no picture is obtained.  
To evaporate the moisture rapidly, leave the player turned on without a disc loaded.
- Remove the disc from the compartment after playing it, if the unit will not be used for any length of time. Do not transport the unit with a disc in place.
- To open or close the disc compartment, press the OPEN/CLOSE button. Do not pull or push the disc compartment forcibly.
- When the disc compartment is in the open position, do not press down on it strongly, or place heavy objects.

#### On cleaning

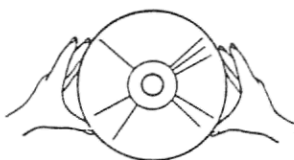
Clean the cabinet, panel and controls with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzine, which may damage the finish.

#### On packing

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

### 1-3. NOTES ON HANDLING VIDEODISCS

Handle the disc by its edge, and keep the disc clean.



Do not stick paper or tape on the disc surface.



Not this way

Do not expose the disc to direct sunlight or heat sources such as hot air ducts, or leave it in a parked car in direct sunlight which can result in a considerable rise in the temperature.

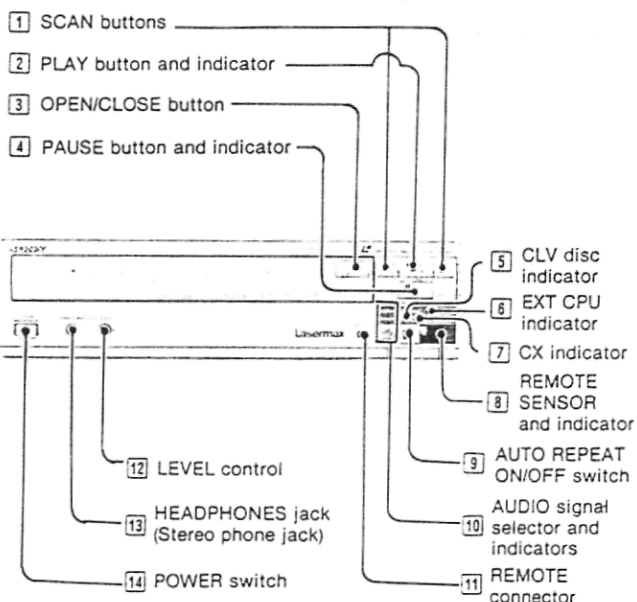
Before playing, clean the disc with a soft cloth.

Do not use solvents (such as benzine or thinner) or commercially available cleaners or anti-static sprays intended for audio discs.

After playing, store the disc in its case.

### 1-4. PARTS IDENTIFICATION

#### FRONT PANEL



#### 1 SCAN buttons

Keep one of these buttons pressed for high-speed playback (about 100 times normal speed). The button initiates scanning in the forward direction, and the button in reverse. When the button is released, normal speed playback will be resumed. With the chapter number displayed on the monitor screen, chapter stop at the beginning of the present chapter (when the button is pressed) or at the beginning of the next chapter (when the button is pressed) is possible. The player enters the still mode with a CAV disc, and the normal playback mode with a CLV disc.

#### 2 PLAY button and indicator

Press this button for normal playback. The indicator blinks while loading or unloading a videodisc.

#### 3 OPEN/CLOSE button

Press to open the disc compartment and again to close it. The compartment will also close automatically when it is pushed lightly. Be sure to press the center of the compartment for proper operation.

#### 4 PAUSE button and indicator

Press this button to set the player to the pause mode. A still picture is displayed for CAV discs. No picture will be displayed on the screen if the disc being played is CLV (muted state). The pause indicator lights up when the videodisc is in the pause mode. The indicator blinks if the disc compartment movement is interrupted while being opened or closed.

The pause indicator also lights up when the player is placed in still or stop mode using the RM-2001 optional remote control unit.

#### 5 CLV disc indicator

Lights when the disc being played back is CLV. This indicator is not illuminated for CAV discs.

#### 6 EXT CPU indicator

Lights when the player is controlled by an external computer through the RS-232C interface connector. In this mode, pressing the function buttons (PLAY, PAUSE, SCAN and AUDIO) on the player and optional remote control unit has no effect. The videodisc player will automatically respond to commands given by the external computer.

#### 7 CX indicator

The indicator will light up when a videodisc containing a special code for activation of the CX Noise Reduction System\* is played.

#### 8 REMOTE SENSOR and indicator

The sensor on the right acts as a receptor for infrared control signals from the optional RM-2001 remote control unit. When a button on the RM-2001 is pressed, the red lamp on the left blinks to indicate command detection.

#### 9 AUTO REPEAT ON/OFF switch

When this switch is ON, the videodisc will be automatically played again from the beginning when it reaches the end. The OFF position means that playback of the videodisc will not be repeated. Like the other controls on the front panel, this switch has no effect when the player is controlled by an external computer (indicated by illumination of EXT CPU indicator).

#### 10 AUDIO signal selector and indicator

Each videodisc has two audio channels: channel 1 and channel 2. When the player is turned on, both channels are selected and the CH-1 and CH-2 indicators will light up. Pressing the selector once will select audio channel 1 and pressing it again will select audio channel 2. The original state (both channels selected) can be restored by pressing the selector once more.

#### 11 REMOTE connector

This special mini jack allows for wired connection of the optional RM-2001 remote control unit. Use of a wire allows for remote control from locations which are not in line of sight with the LDP-1550P.

#### 12 LEVEL control

Turn to adjust the volume of the headphones. Rotation to the right increases the volume.

#### 13 HEADPHONES jack (Stereo phone jack)

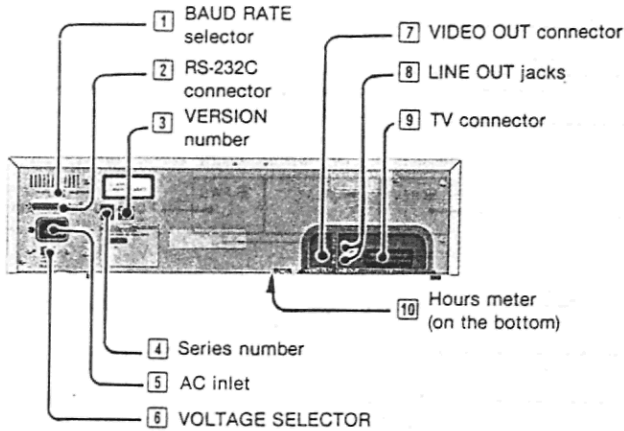
Headphones for audio monitoring are connected here. The volume is adjusted with the LEVEL control.

#### 14 POWER switch

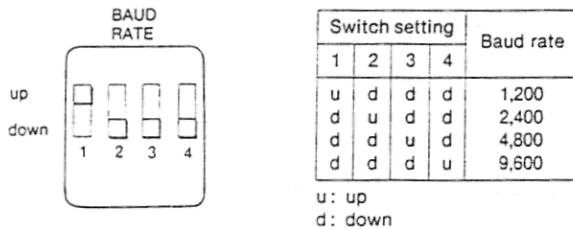
Depress to turn on the power of the player. The CH-1 and CH-2 indicators function as power indicators. Press the button again to turn the power off.

\*CX Noise Reduction System  
This system is employed to improve the signal-noise ratio and enlarge the dynamic range of audio signals recorded on video discs.  
CX is a trademark of CBS.

**REAR PANEL**

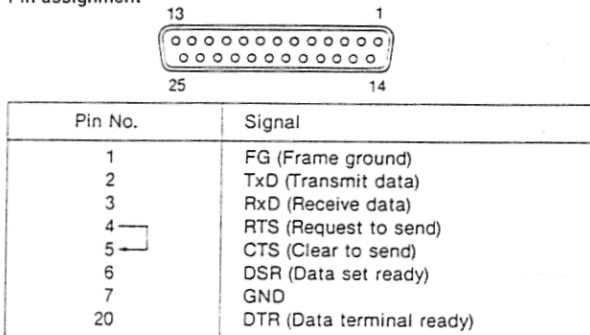


- 1 BAUD RATE selector**  
Select the speed at which data is transmitted over the RS-232C line. The baud rate can be set to 9,600, 4,800, 2,400 or 1,200 baud. Be sure that the selector is matched to the baud rate of the external computer. The factory setting is 1,200 baud.



- 2 RS-232C connector**  
Standard 25-pin RS-232C interface connector for communication with an external computer.  
Refer to page 9 for connection with an external computer.

**Pin assignment**



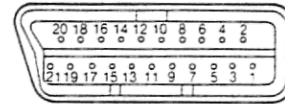
Each signal conforms to the RS-232C specifications.  
(Output level ON: more than +5V, OFF: less than -5V)

**Note:** Check the RS-232C pin assignment of the external computer to be connected. There is a modem mode and terminal mode for pin assignment. The RS-232C pin assignment for LDP-1550P is for the terminal mode.

- 3 VERSION number**  
Shows the ROM version on the player.

- 4 Series number**  
This number distinguishes if an optional board is installed or not.
- 5 AC inlet**  
Grounded three-prong AC power inlet. The power cord is connected here and the other end is inserted into the appropriate AC wall outlet (220V or 240V).
- 6 VOLTAGE SELECTOR**  
This selector is set to either the 220V or 240V position according to the power supplied from the wall outlet.
- 7 VIDEO OUT connector**  
BNC connector for the output of composite video signals.
- 8 LINE OUT jacks**  
Phono jacks (RCA-type) for audio signal output. The audio signals of channel 1 (CH-1) are output from the 1/L jack, and the signals of channel 2 are output from the 2/R jack.
- 9 TV connector**  
21-pin (CENELEC standard) connector for video and audio signal outputs.  
If your monitor TV has a connector of the same type, connect the cable (with the square 21-pin plugs) to this connector to supply the video and audio signals to the monitor TV with a single cable.

**Pin assignment**



Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
1	Audio B	8	Status (+ 11V)	15	NC
2	NC	9	NC	16	NC
3	Audio A	10	NC	17	Video (G)
4	Audio (G)	11	NC	18	NC
5	NC	12	NC	19	Video
6	NC	13	NC	20	NC
7	NC	14	NC	21	GND

NC: no connection

- 10 Hours meter (on the bottom)**  
Indicates the accumulated time for which laser diode is on. Each segment shows 1,000 hours, up to a total of 10,000 hours.

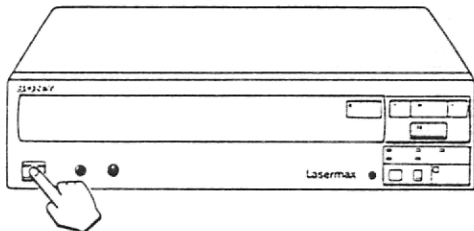
## 1-5. TO PLAY BACK A VIDEODISC

The procedure outlined below deals with operation of the LDP-1550P when it is used by itself. These operations are only possible when the unit is not connected to an external computer (EXT CPU indicator is not illuminated). The optional RM-2001 remote control unit can be used in this mode to control the player. Refer to the manual of the remote control unit.

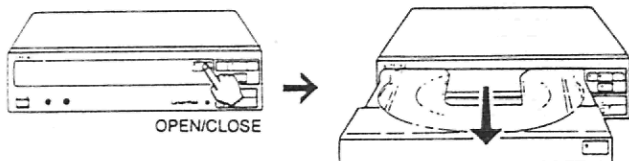
Before starting the operation, keep in mind the following precautions.

- To open and close the disc compartment, press the OPEN/CLOSE button.
- Place a disc in the tray with the side to be played back facing down (with the label of the desired side up). Note that the laser reads from below.
- If a disc is not placed correctly in the tray or the disc has a defect which prevents normal playback, the disc compartment will be ejected as soon as the defect is encountered.

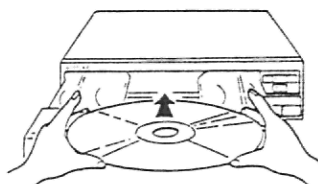
1. Turn on the power of the videodisc player by depressing the POWER switch.



2. Press the OPEN/CLOSE button to open the disc compartment.



3. Place the disc with the desired program label facing up.



Place in the indentation.

4. Press the OPEN/CLOSE button. The disc starts rotating and the lamp on the PLAY button blinks for a few seconds. Playback begins automatically when the lamp lights up.

### To stop the playback

Press the PAUSE button. A still picture will be displayed on the monitor screen for CAV discs, and the video picture will be muted for CLV discs. If any function button is pressed, playback will begin in the selected mode from the point at which the PAUSE button was pressed.

### To remove the disc



Press the OPEN/CLOSE button to stop the playing of the disc, no matter what mode the player is in. The disc will stop rotating, and the disc compartment will be ejected.

### Notes

- At the beginning of the playback, the picture may be distorted. This symptom tends to occur especially when a CLV disc is used.
- To avoid damaging the disc, do not move the videodisc player while it is operating or while it contains a disc.

## 1-6. VARIOUS PLAYBACK MODES



### HIGH SPEED PLAYBACK (CAV and CLV)

Keep one of the SCAN buttons pressed. The  button quickly advances the picture in the forward direction and the  button advances it in reverse. When you release the button, normal playback will be resumed.



**Note:** The picture of a CLV disc may be distorted in this mode.

### CHAPTER STOP (CAV or CLV disc with chapter codes)

Display the chapter number by pressing the INDEX button on the remote control unit and then press either of the SCAN buttons. The  button locates the beginning of the next chapter and the  button locates the beginning of the chapter being played back. When the chapter stop activates, the still mode is obtained with a CAV disc and normal playback will be resumed with a CLV disc. If you want to continue the SCAN mode, keep the button again.

### Note

Chapter stop code is not provided depending on a type of videodisc.

## 1-7. SEARCH AND REPEAT OPERATIONS

Search and repeat operations are activated by the respective commands from an external computer or by operating the RM-2001 remote control unit. For detailed instructions, refer to the LDM-1550 interface manual or to the RM-2001 operating instruction manual.

The use of these operations differ according to whether a videodisc is CAV or CLV.

With CAV discs, enter the frame number. If the chapter number is pre-recorded, the number can be used to perform a search and a repeat operation of the desired chapter on a disc. In the search operation, when a designated frame or the beginning of the chapter number is located, the player is automatically set to display the still picture. In the repeat operation, the desired playback mode can be obtained.

With CLV discs, enter the time number. If chapter numbers are pre-recorded, these numbers can also be used. When the beginning of a designated time number (chapter) is located, the player is set to the normal playback mode.

### Note

If you assign an invalid number to be searched, the search operation may continue about 10 seconds. The player will then enter the still mode with a CAV disc or the play mode with a CLV disc. The still mode (for CAV videodiscs) or the stop mode (for CLV videodiscs) is entered at the beginning of the program area when the player detects lead-in, and at the end of the program area when the player detects lead-out.

## 1-8. NOTES ON OPERATION WITH THE RM-2001 REMOTE CONTROL UNIT

The operating instructions of the RM-2001 contain a description of remote control operations common to Sony videodisc players. The following differences in operation must be noted when the RM-2001 unit is used with the LDP-1550P. Be sure to read the following before use of the RM-2001.

### INDEX button

Pressing this button activates the index function and causes to display the operating mode of the player and number mode (frame or chapter number\* for CAV and time or chapter number for CLV). This indication disappears if the button is pressed again. Press the MODE button after pressing the INDEX button to toggle the display between the frame and chapter (or time and chapter) indication.

\*This is displayed only when disc being used has pre-recorded chapter numbers.

### MODE button

This button is used to toggle the displayed number for search, repeat, and index function.

### MENU button

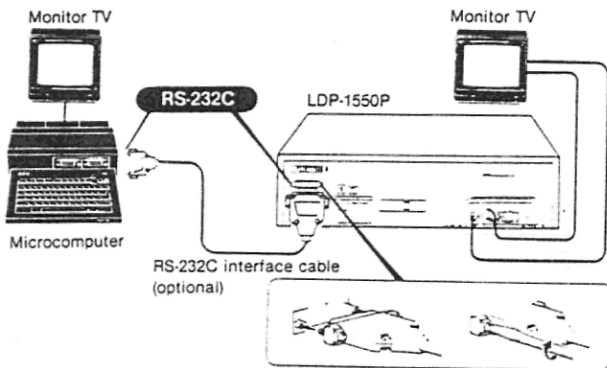
Pressing this button starts playback from the beginning of the program area.

### Search/repeat operations with CLV videodiscs

The time number displayed on the screen takes the form: hours, minutes, and seconds (if they are pre-recorded).

## 1-9. CONNECTION WITH AN EXTERNAL COMPUTER

### TO CONTROL THE PLAYER WITH A MICROCOMPUTER



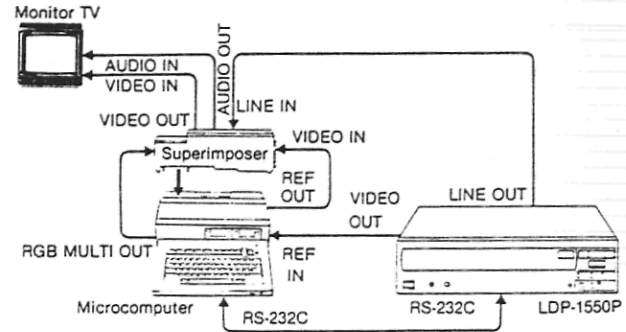
After inserting the cable plug to the receptacle, secure it with these screws.

For details on connecting with an external computer, refer to operating manual of the computer, and for operation, refer to the LDM-1550 interface manual.

## TO SYNTHESIZE THE PLAYER'S PICTURE AND THE MICROCOMPUTER'S PICTURE

With the combination of the microcomputer and the superimposer, synthesized picture of the videodisc player and the microcomputer can be obtained.

### Example: Using the microcomputer and the superimposer

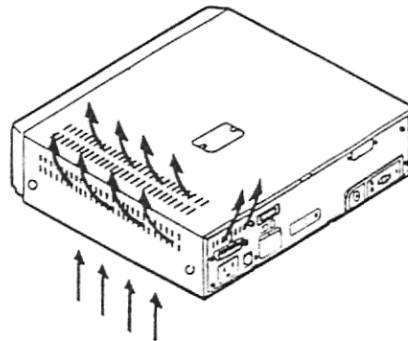


Note: The superimposing output signal may interfere while the track jump function is operating, according to the superimposer being used.

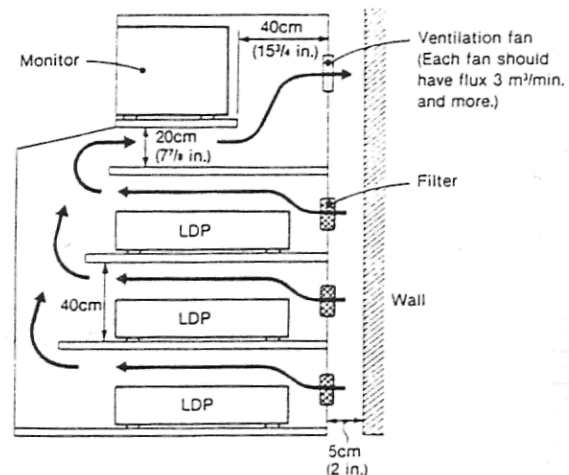
## 1-10. NOTES ON INSTALLING THE PLAYER IN A RACK

When the videodisc player(s) is(are) installed in a rack, special consideration should be taken to prevent internal heat buildup.

### Ventilation holes on the LDP-1550P



### Recommended ventilation when installed in a closed rack



- The air in the rack should be circulated from the bottom to the top as indicated.
- The temperature in the rack should not be over 35°C (95°F).
- Allow at least 5 cm (2 inches) behind the rack when installing it against the wall.
- The distance between each shelf should be at least 40 cm (15 3/4 inches).
- The holes located at the back of the rack should have filters to prevent dust from being drawn into the rack.
- At least two ventilation fans should be used and should be installed in the back of the rack as indicated in the figure.
- If a monitor is installed in the same rack, care should be taken to prevent the heat from the monitor affecting the players.

**Recommended ventilation when installed in a standard 19" rack**

- Use the optional RMM-201B rack mount kit to install the player(s) in a standard 19" rack.
- Three ventilation fans with flux 3 m<sup>3</sup>/min should be used for five players installed in a standard 19" rack. If you have any questionnaire regarding ventilation in a rack, consult your authorized Sony representative.

**Note**

When the player is used in a dusty place, powdery dust will be drawn in the player and contaminate the objective lens in the optical pick-up system. Ask your nearest Sony service facility for lens cleaning.

**1-11. TROUBLESHOOTING**

Many apparent malfunctions may be caused by a misoperation or an oversight. If any difficulty arises in operation, check through this list of symptoms and causes. Should the difficulty persist, unplug the unit and contact your authorized Sony service facility.

- The following list includes troubles when the RM-2001 optional remote control unit is used.

Symptom	Cause
The disc compartment is ejected automatically.	<ul style="list-style-type: none"> <li>• The videodisc is not placed correctly on the tray.</li> <li>• The videodisc is scratched or has dirt on its surface.</li> <li>• The disc is upside down. The side to be played back should be placed facing down.</li> </ul>
The disc compartment does not come out.	<ul style="list-style-type: none"> <li>• Power is not turned on.</li> </ul>
Pressing the PLAY button has no effect.	<ul style="list-style-type: none"> <li>• An external computer is connected to the player.</li> <li>• The indicator on the PLAY button is blinking. Wait until this indicator goes off.</li> <li>• The indicator on the PAUSE button is blinking. Press the OPEN/CLOSE button.</li> <li>• The SEARCH or REPEAT button on the RM-2001 has been pressed when the picture is muted by the STOP button. Clear the search or repeat mode with the CL button or continue the search or repeat operation to the end.</li> </ul>
Picture is not displayed, although the PLAY indicator lights.	<ul style="list-style-type: none"> <li>• The monitor TV is not turned on.</li> <li>• The connection of the monitor TV is not correct.</li> <li>• The input selector of the monitor TV is not set correctly.</li> <li>• The disc is upside down. The side to be played should be facing down.</li> </ul>

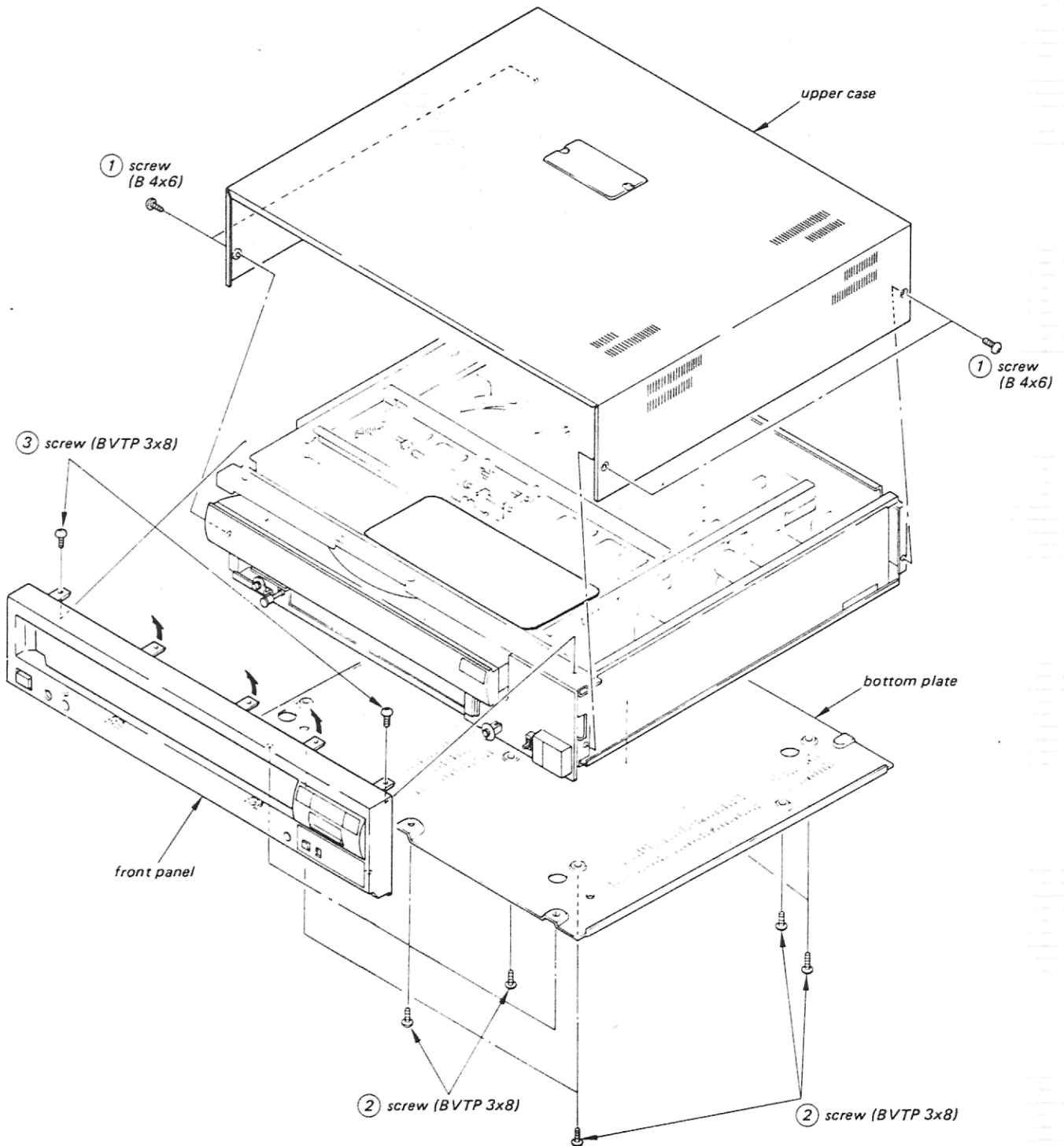
Poor picture quality	<ul style="list-style-type: none"> <li>• Connection of the monitor TV is not correct.</li> <li>• An equipment is near the player to transmit noise and affect the picture quality of the videodisc.</li> <li>• The disc to be played back has a scratch or dirt on the surface.</li> <li>• There is moisture condensation in the videodisc player.</li> </ul>
No audio	<ul style="list-style-type: none"> <li>• The speaker system or TV monitor is not connected correctly.</li> <li>• The volume setting of the amplifier or TV monitor is too low.</li> <li>• Audio is muted in all modes other than normal playback.</li> </ul>
Playback of a certain section of the disc is not possible.	<ul style="list-style-type: none"> <li>• The videodisc is scratched or has dirt on a section of it. Press the SCAN button to advance playback past this point.</li> </ul>
A certain section of the videodisc cannot be located by searching.	<ul style="list-style-type: none"> <li>• The videodisc is scratched or has dirt on a section of it. Replace the defective disc with another one.</li> </ul>
The RM-2001 remote control unit does not operate.	<ul style="list-style-type: none"> <li>• The batteries of the remote control unit are dead when the unit is used in the wireless mode.</li> <li>• Improper connection to REMOTE connector when the remote control unit is used in the wired mode.</li> <li>• When used in the wireless mode (infrared), the remote control unit is not pointed at the REMOTE SENSOR, or something is between the remote control and sensor.</li> <li>• An external computer is connected to the player.</li> <li>• The PAUSE button has been pressed (with a CLV disc).</li> <li>• A search operation is taking place. If the specified number is invalid (not on the disc) or if a defective disc prevents the proper section from being found, the player remains in the search mode for about 10 seconds.</li> <li>• The playback goes to the end of a disc and stops when the AUTO REPEAT switch is set to OFF.</li> </ul>
The picture is muted and the PLAY indicator is not lit.	<ul style="list-style-type: none"> <li>• A CLV disc is used.</li> </ul>
Fast forward or reverse playback is not possible.	<ul style="list-style-type: none"> <li>• A CLV disc is used.</li> </ul>



## SECTION 2 DISASSEMBLY

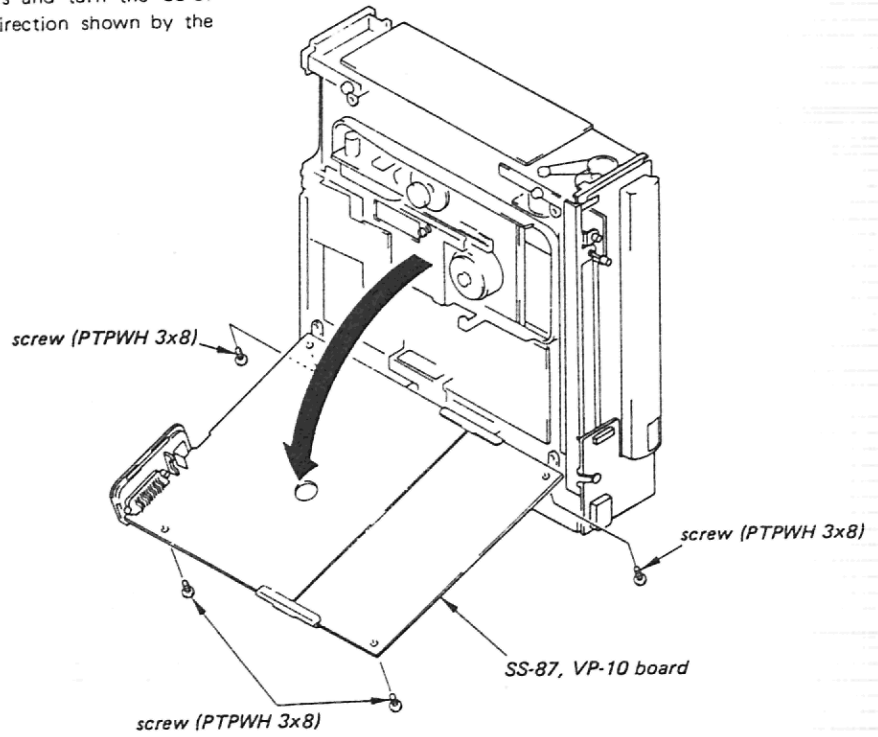
### 2-1. REMOVAL OF CABINET

- 1) Remove the four (B 4x6) screws of ① and take off the upper case.
- 2) Remove the ten (BVTP 3x8) screws of ② and take off the bottom plate.
- 3) Remove the two (BVTP 3x8) screws of ③ and take off the front panel. (It is easy to remove the front panel when the disc compartment is ejected.)



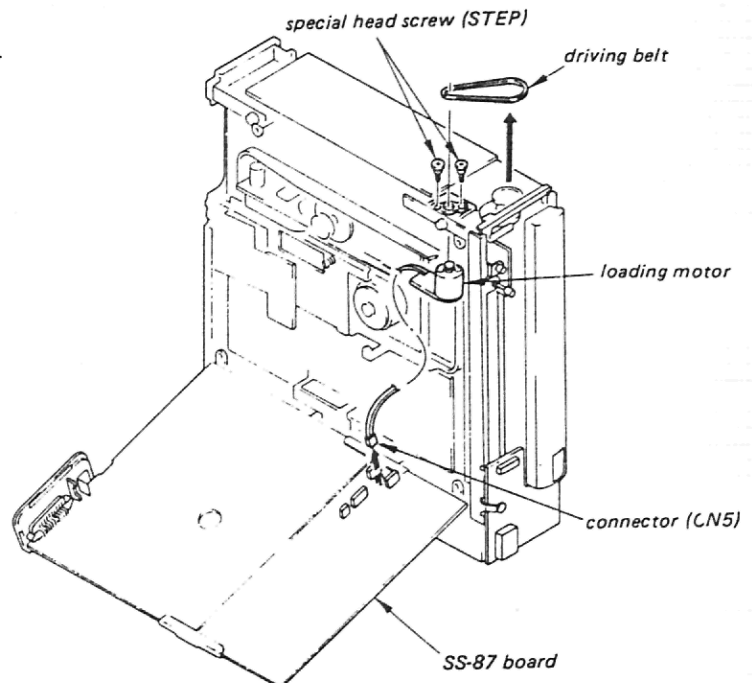
## 2-2. OPENING OF SS-87 AND VP-10 BOARD

- 1) Stand the unit on its right side.
- 2) Remove the four (PTPWH 3x8) screws and turn the SS-87 board and the VP-10 board in the direction shown by the arrow.



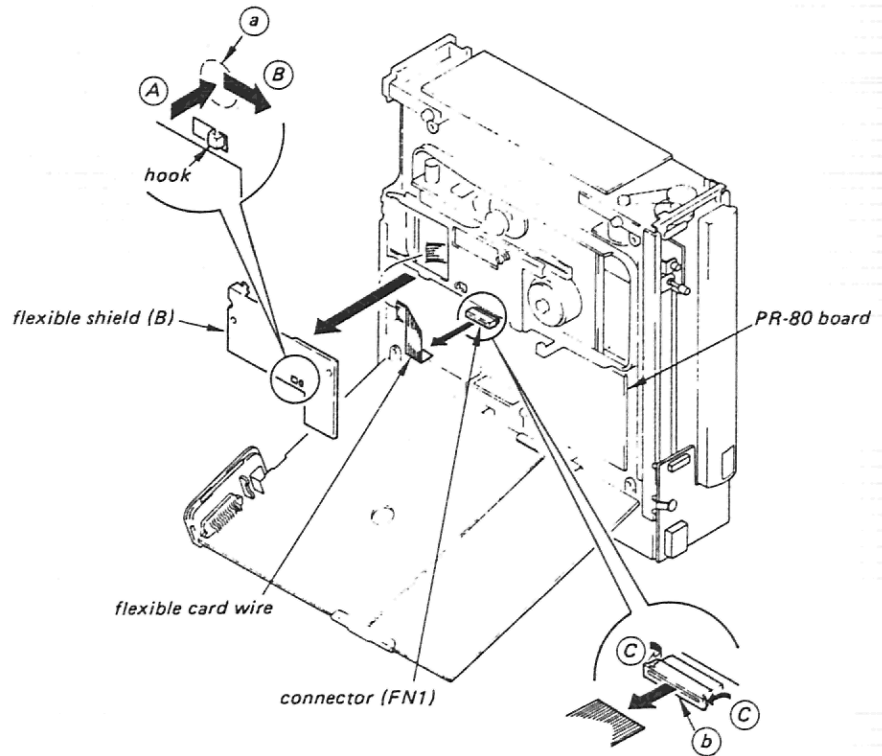
## 2-3. REMOVAL OF LOADING MOTOR

- 1) Take off the driving belt.
- 2) Remove the two special head screws (STEP) to take off the loading motor.
- 3) Disconnect the CN5 connector on the SS-87 board.



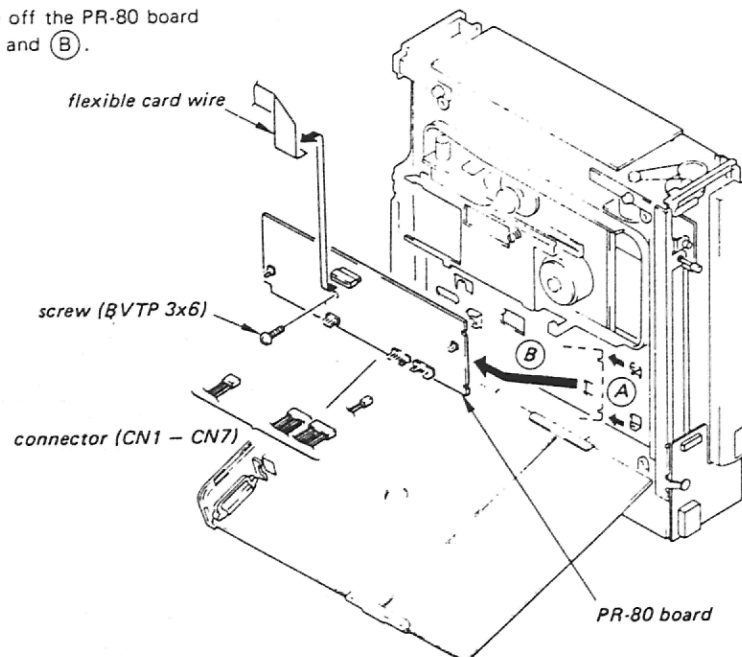
## 2.4. REMOVAL OF FLEXIBLE CARD WIRE

- 1) Pull the flexible shield (B) in the direction shown by the arrow (B) to remove it with pressing the (a) part of the flexible shield (B) in the direction shown by the arrow (A).
- 2) Remove the flexible shield (B).
- 3) Press the (b) part of the FN1 connector on the PR-80 board in the direction shown by the arrow (C) to pull out the flexible card wire.



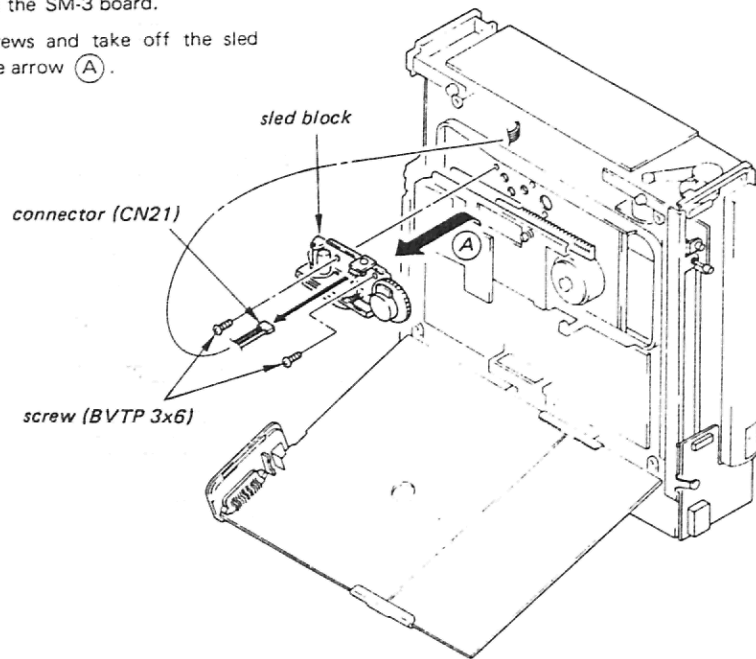
## 2.5. REMOVAL OF PR-80 BOARD

- 1) Pull out the flexible card wire. (Refer to 2-4.)
- 2) Disconnect the seven (CN1 – CN7) connectors.
- 3) Remove the (BVTP 3x6) screw and take off the PR-80 board in the direction shown by the arrows (A) and (B).



## 2-6. REMOVAL OF THE SLED BLOCK

- 1) Disconnect the CN21 connector on the SM-3 board.
- 2) Remove the two (BVTP 3x6) screws and take off the sled block in the direction shown by the arrow (A).



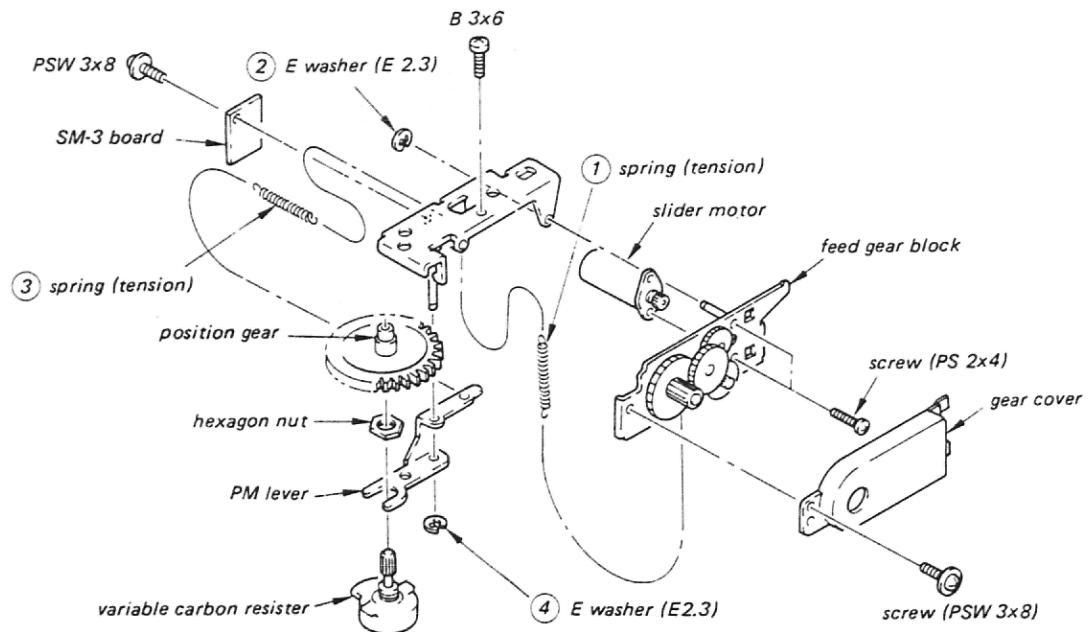
## 2-7. DISASSEMBLY OF SLED BLOCK

### (Feed Gear Block)

- 1) Remove the (PSW 3x8) screw and take off the gear cover.
- 2) Unhook the spring (tension) of (1).
- 3) Take off the (E 2.3) E washer of (2).
- 4) Remove the feed gear block ass'y.
- 5) Remove the two (PS 2x4) screws and take off the slider motor.

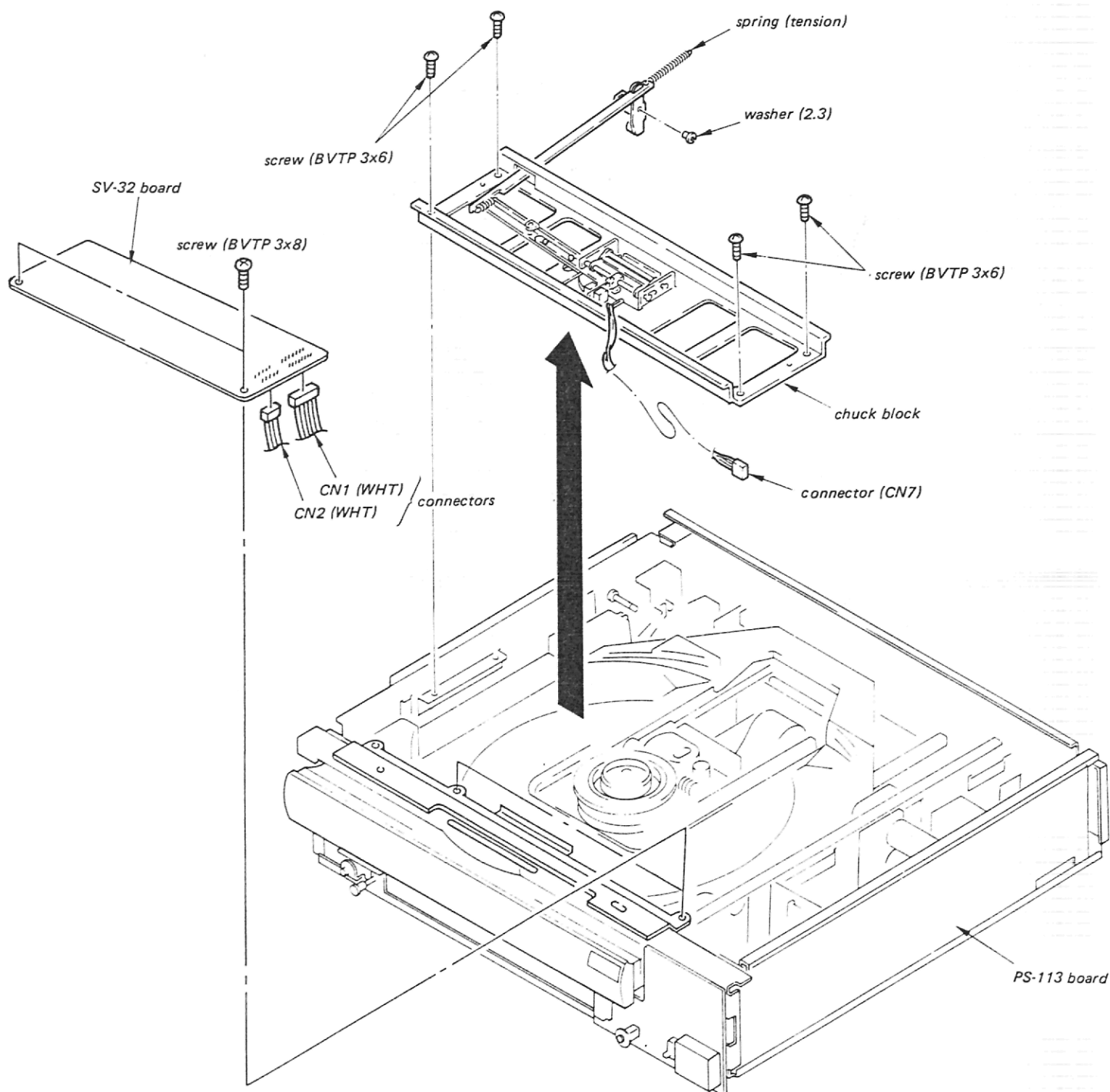
### (PM Lever Block Ass'y)

- 6) Unhook the spring (tension) of (3).
- 7) Take off the (E 2.3) E washer of (4).
- 8) Remove the PM lever.
- 9) Remove the position gear.
- 10) Remove the hexagon nut and take off the variable carbon resistor.



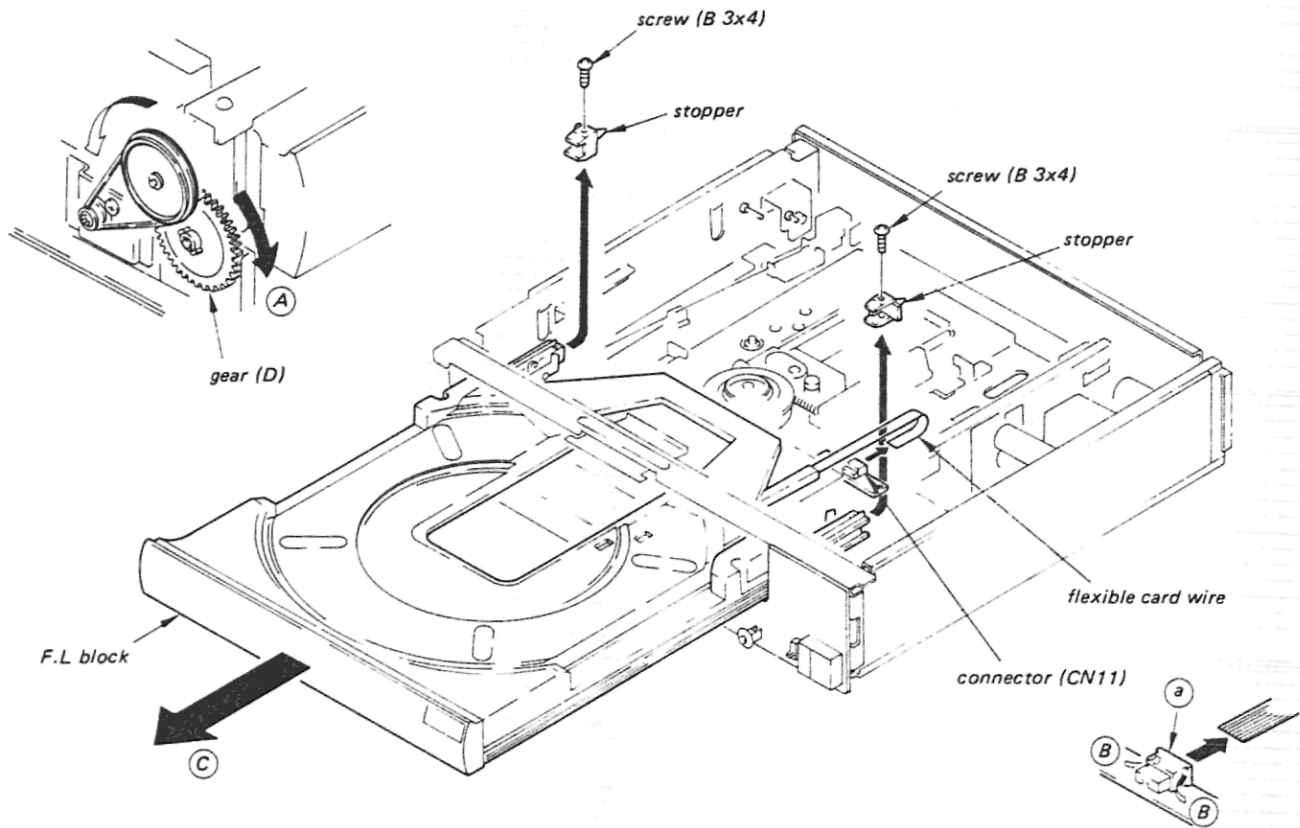
## 2-8. REMOVAL OF SV-32 BOARD AND CHUCK BLOCK

- 1) Remove the two (BVTP 3x8) screws and take off the SV-32 board.
- 2) Disconnect the two (CN1 and CN2) connectors from the SV-32 board.
- 3) Disconnect the CN7 connector on the PS-113 board.
- 4) Unhook the spring (tension).
- 5) Take off the (2.3) washer.
- 6) Remove the four (BVTP 3x6) screws and take off the chuck block ass'y.



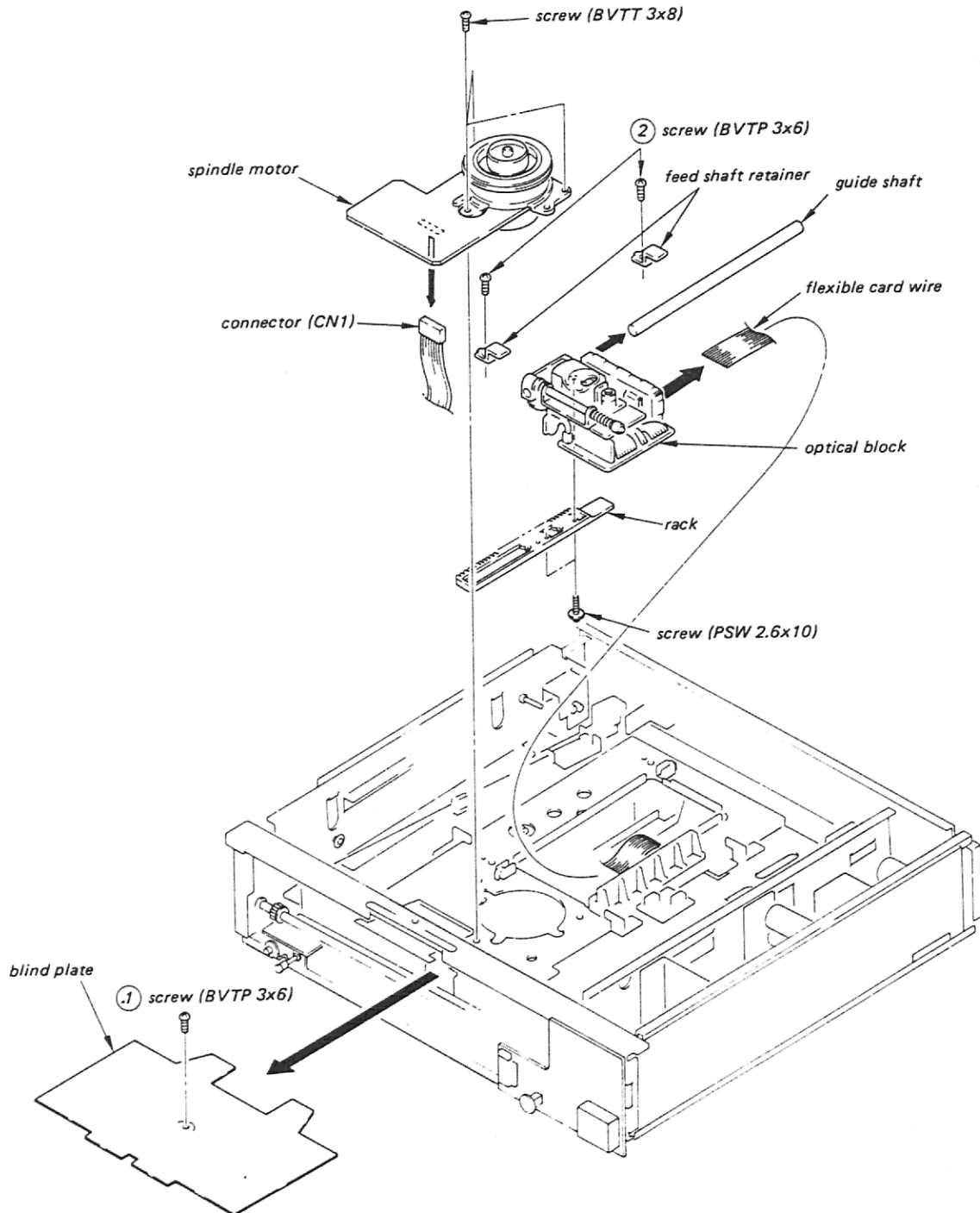
## 2-9. REMOVAL OF F.L BLOCK

- 1) Press the OPEN/CLOSE button and pull out the F.L block.  
(It is possible to pull out the F.L block with turning the (D) gear in the direction shown by the arrow (A).)
- 2) Remove the two (B 3x4) screws and take off the stopper.
- 3) Press the (a) part of the CN11 connector on the DUS-128 board in the direction shown by the arrow (B) and disconnect the flexible card wire.
- 4) Remove the F.L block in the direction shown by the arrow (C).



## 2-10. REMOVAL OF SPINDLE MOTOR AND OPTICAL BLOCK ASS'Y

- 1) Turn the SS-87 and the VP-10 boards (refer to 2-2) and disconnect the CN1 connector on the spindle motor.
- 2) Remove the (BVTP 3x6) screw of ① and take off the blind plate.
- 3) Remove the three (BVTT 3x8) screws and take off the spindle motor.
- 4) Disconnect the flexible card wire.
- 5) Remove the two (BVTP 3x6) screws of ② and take off the feed shaft retainer.
- 6) Remove the guide shaft and take off the optical block.
- 7) Remove the two (PSW 2.6x10) screws and take off the rack.



## NOTE FOR HANDLING OF OPTICAL BLOCK ASS'Y (KSS-141B)

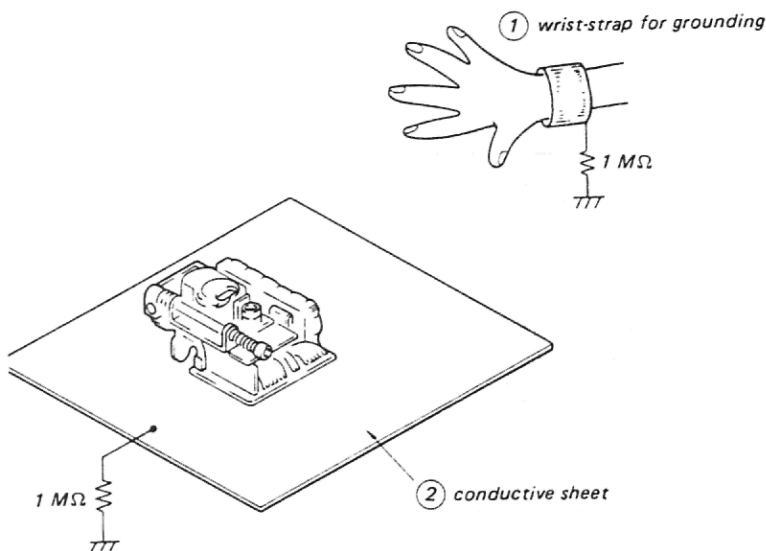
- Sometimes electrostatic breakdown of the laser diode in the optical block ass'y is caused by potential difference between the electrostatic charge of the block and the one of clothes or a human body.  
Be careful to the following notes for preventing the diode from the breakdown.

The following manners are recommended as reference.

1. Cover a work table with a conductive sheet (black sheet used for the part package).
2. Place a set on the sheet so that the chassis of the set contacts the sheet (for making the potential of the set equal to the one of the sheet).
3. Put hands on the conductive sheet (for making the potential of a human body equal to the one of the sheet).
4. Take out the optical block ass'y from its bag.
5. Work should be done on the conductive sheet with care that clothes do not touch the optical block ass'y.

Also, these notes are enclosed in repair part package.

1. Grounding for the human body  
Be sure to put on a wrist-strap for grounding (with impedance lower than  $10^6 \Omega$ ) whose other end is grounded. The strap works to drain away the static electricity build-up on the human body.
2. Grounding for the work table  
Be sure to lay on the table a conductive sheet (with impedance lower than  $10^7 \Omega$ ) such as a sheet of copper, which is grounded.
3. As static electricity build-up on clothes is not drained away, be careful not to let your clothes touch the unit.

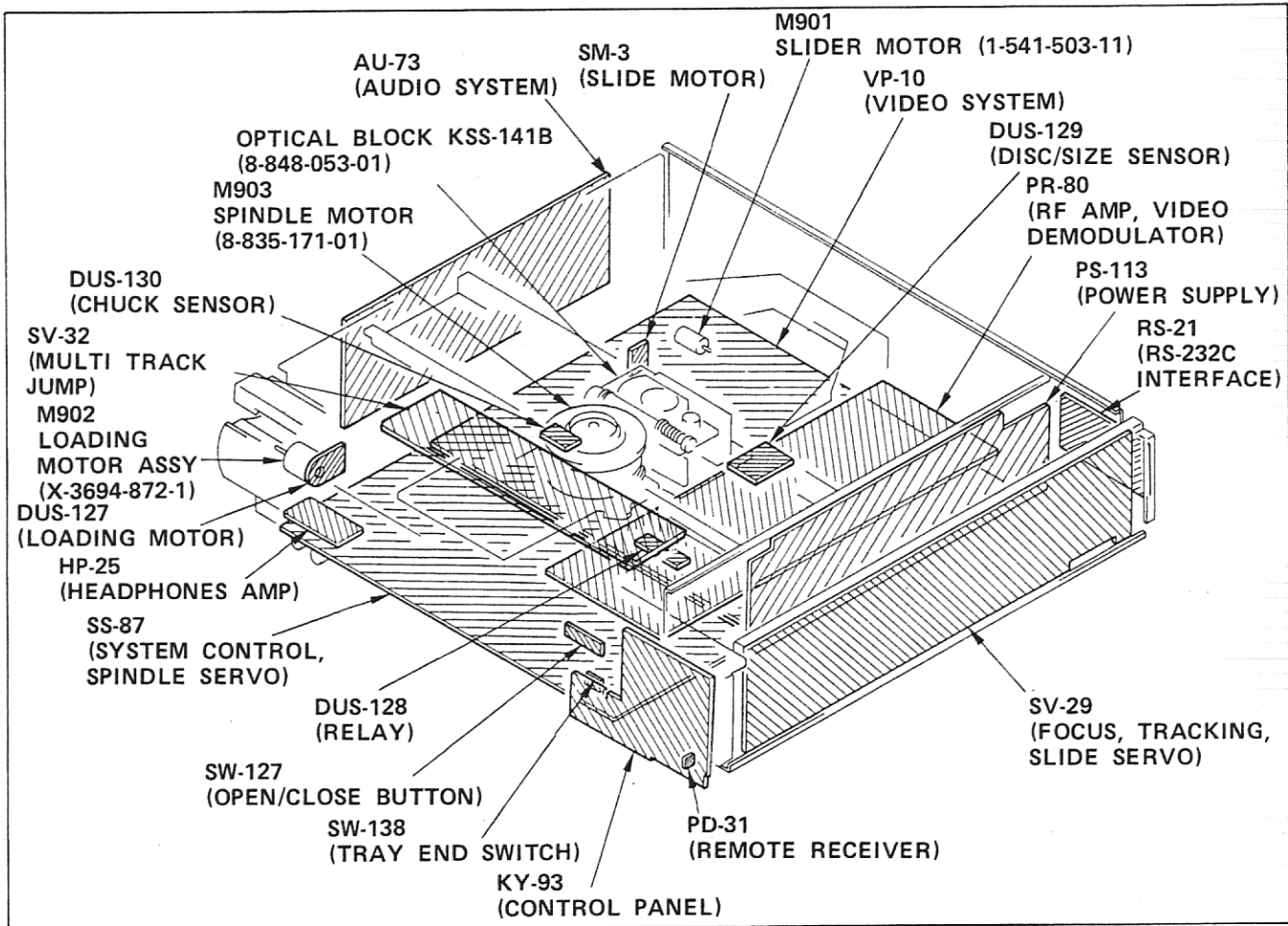


- Be careful not to put dust or fingerprints on the object lens and skew lens while handling.



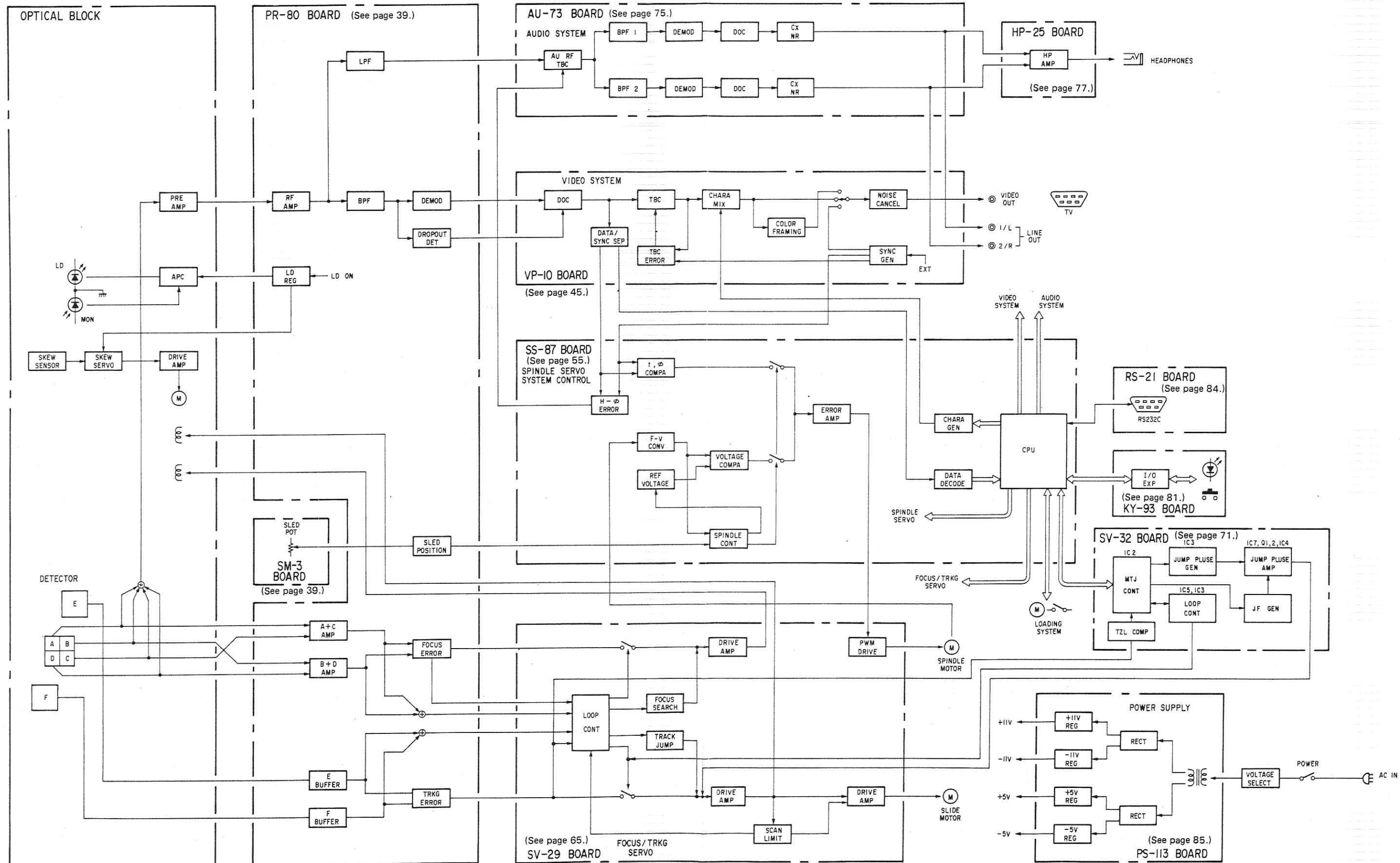
SECTION 3  
DIAGRAMS

3-1. LOCATION OF THE PRINTED CIRCUIT BOARDS



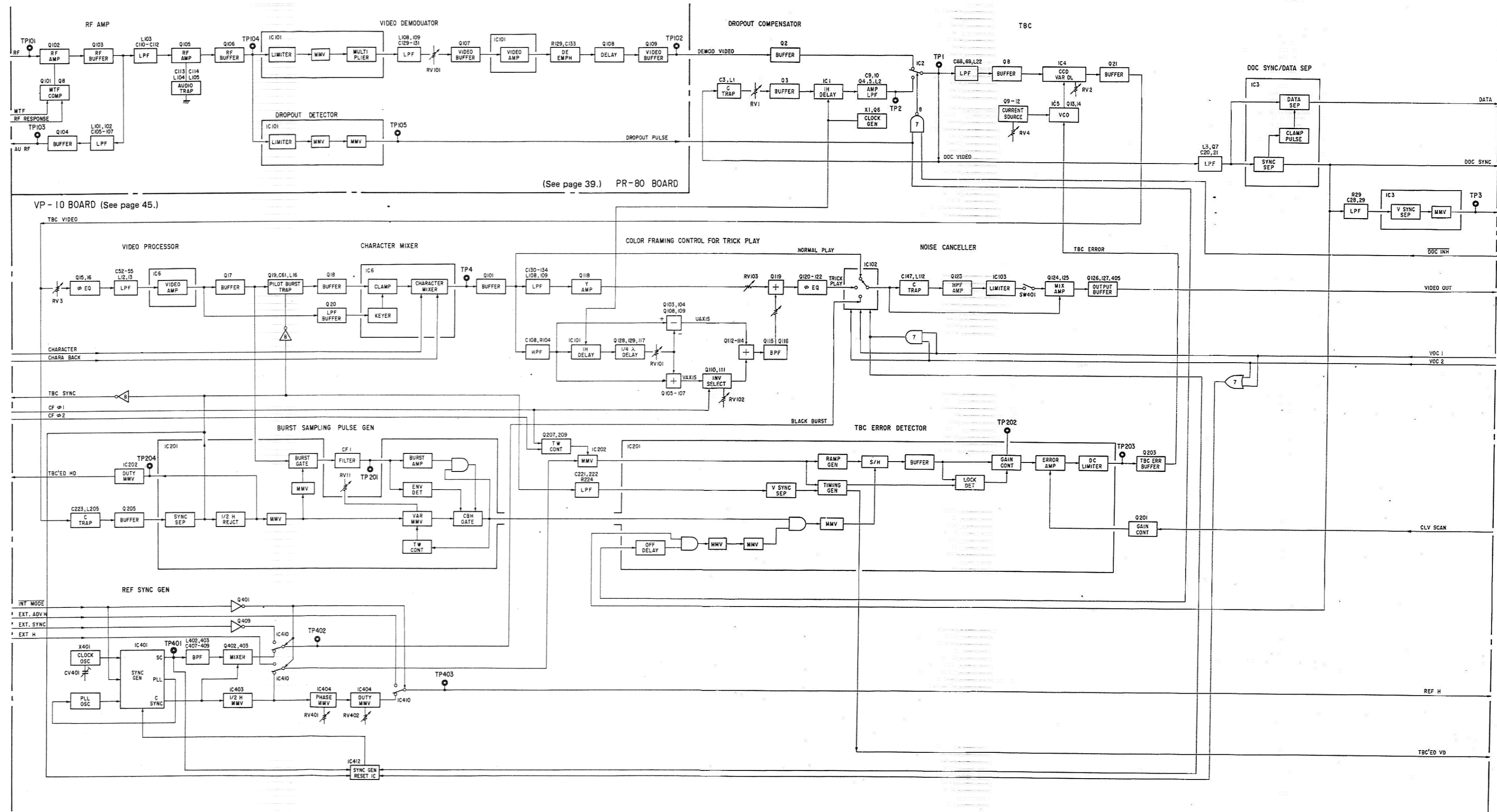
# LDP-1550P

## 3-2. OVERALL BLOCK DIAGRAM



# LDP-1550P

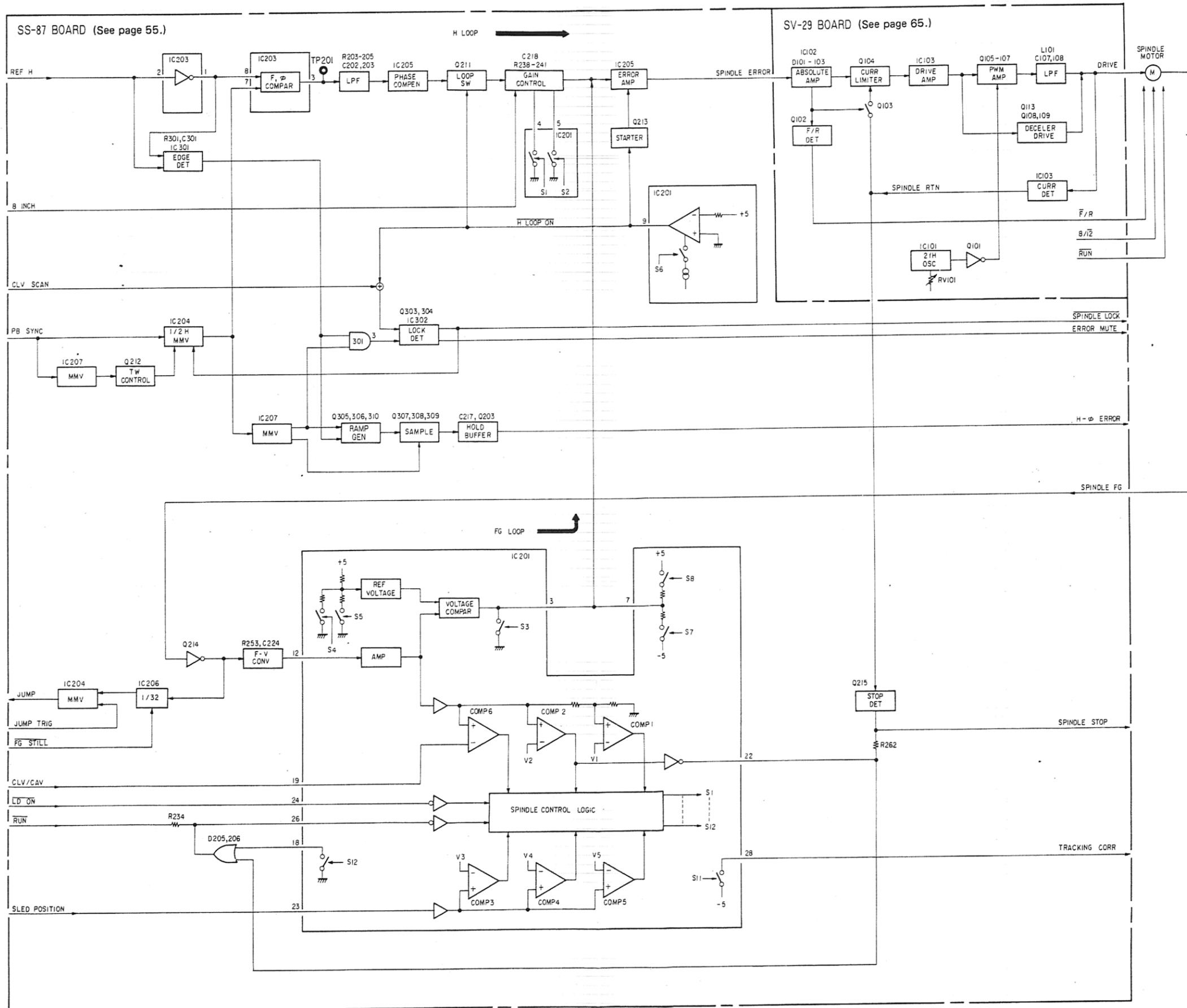
3-3. VIDEO SYSTEM BLOCK DIAGRAM





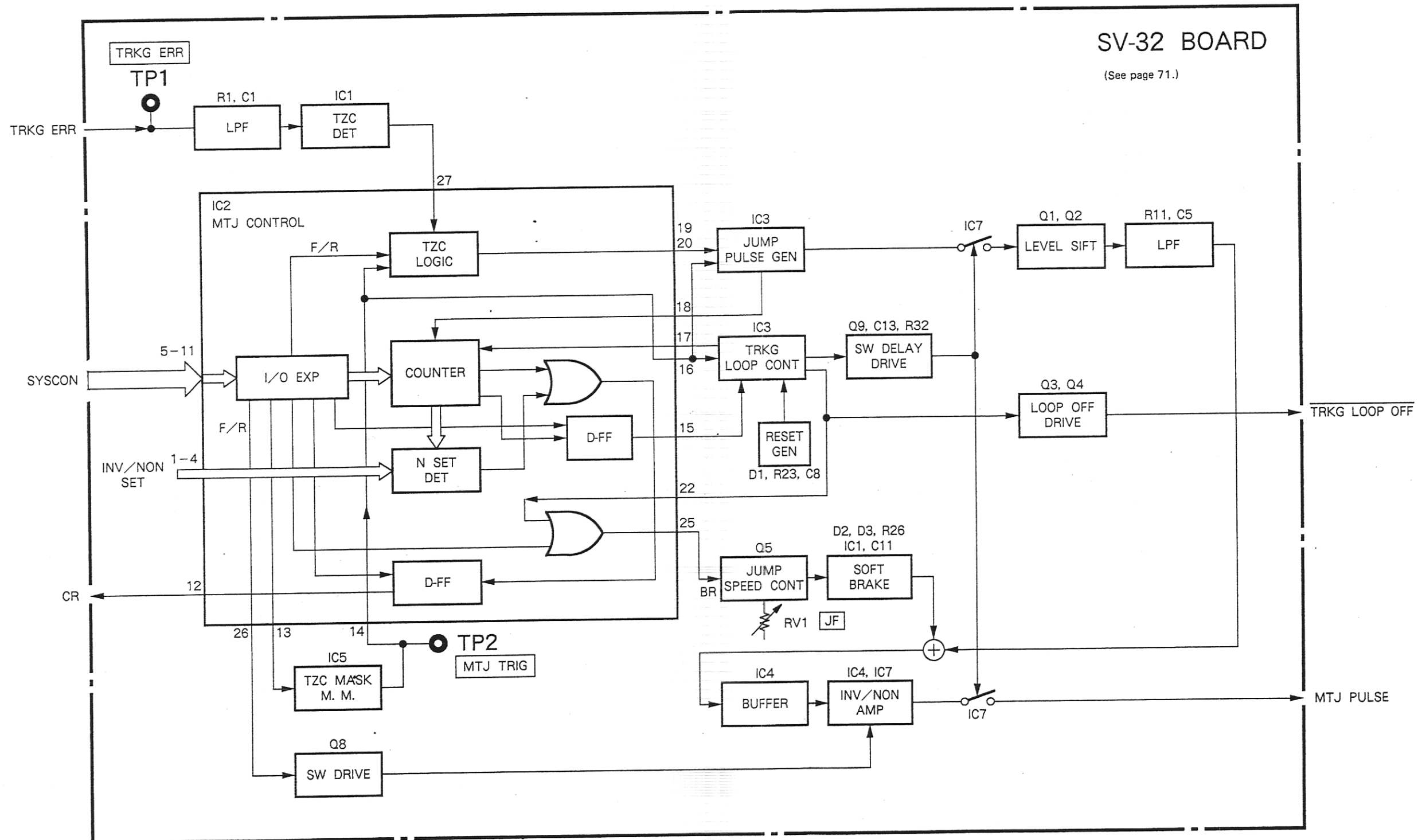
# LDP-1550P

## 3-5. SPINDLE SERVO BLOCK DIAGRAM



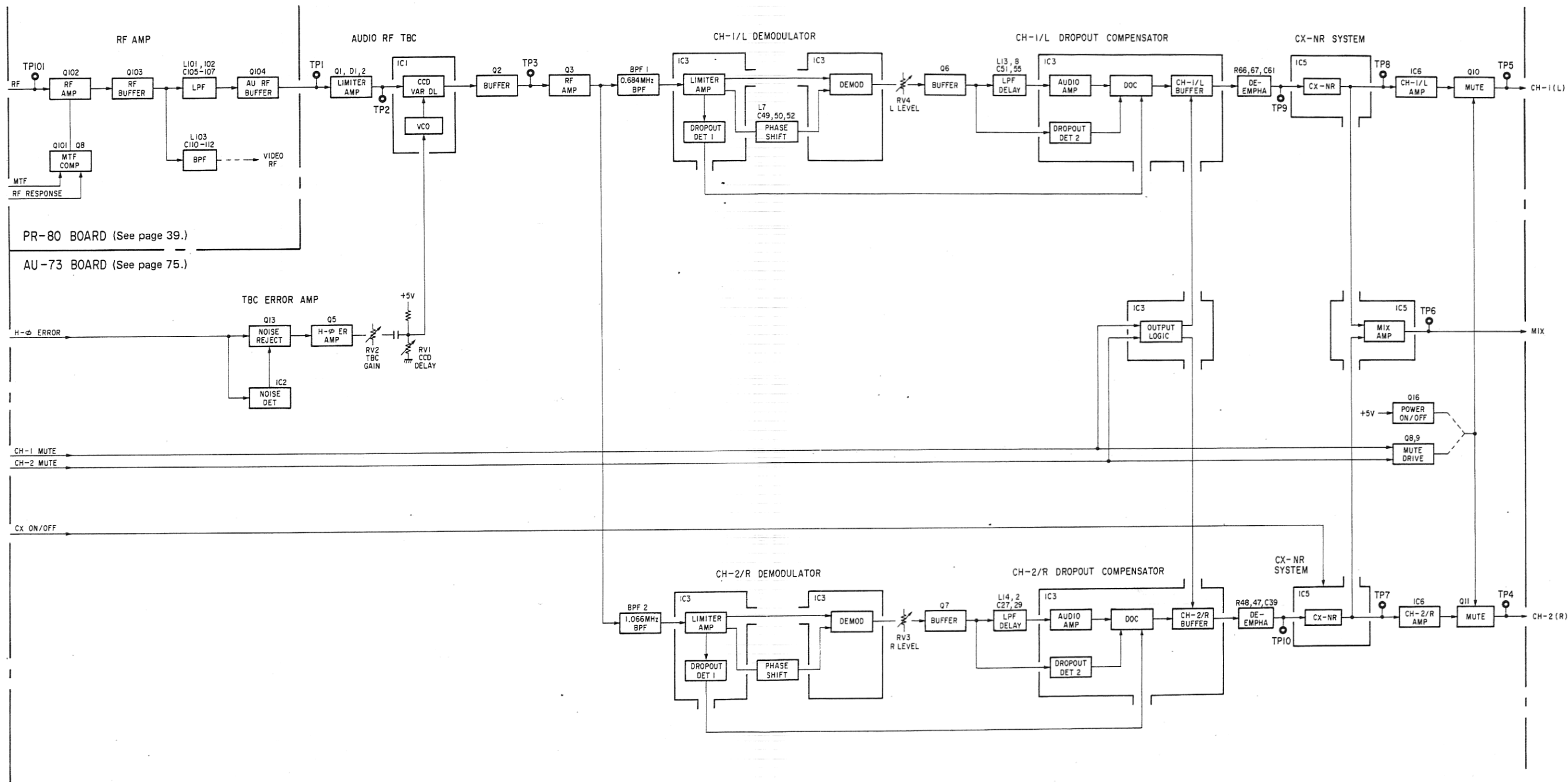
# LDP-1550P

3-6. MULTI TRACK JUMP CONTROL BLOCK DIAGRAM



# LDP-1550P

## 3-7. AUDIO SYSTEM BLOCK DIAGRAM

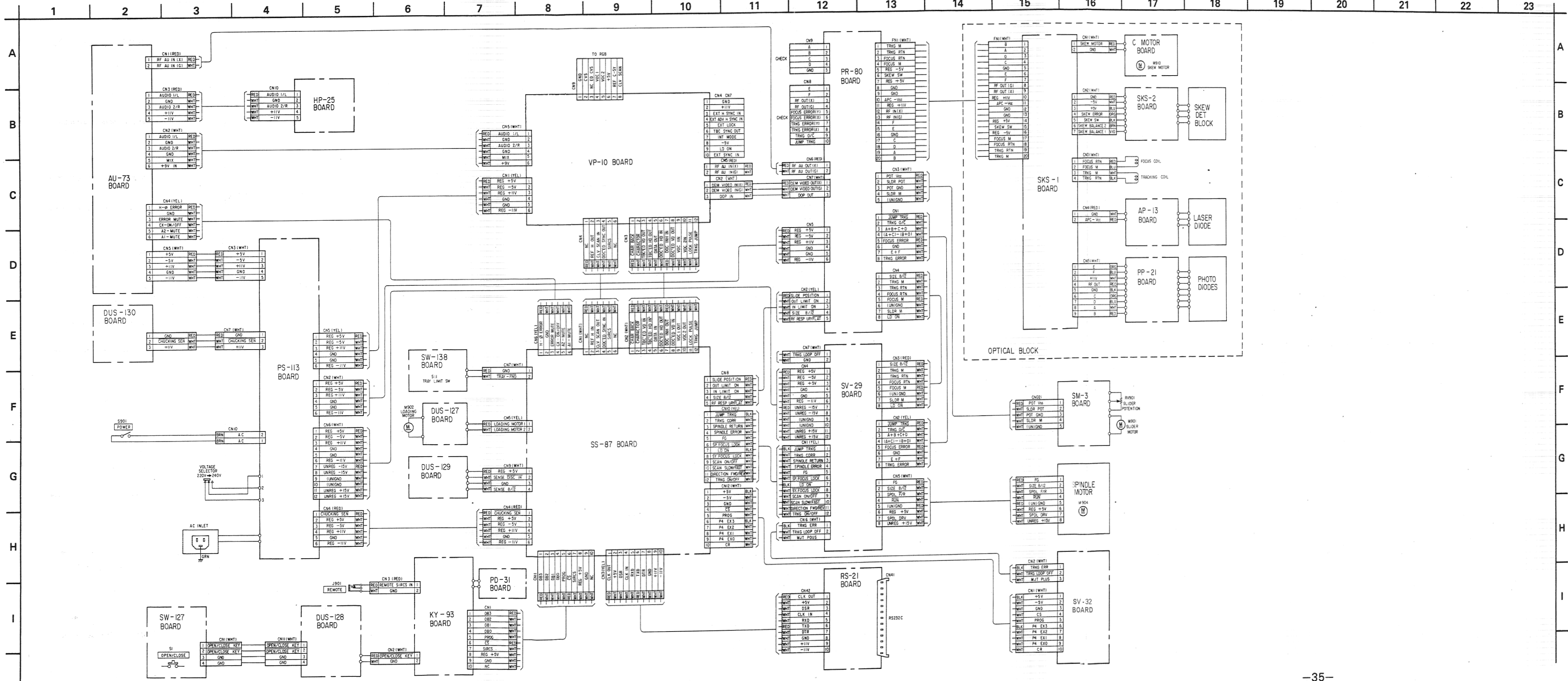




SECTION 4

PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

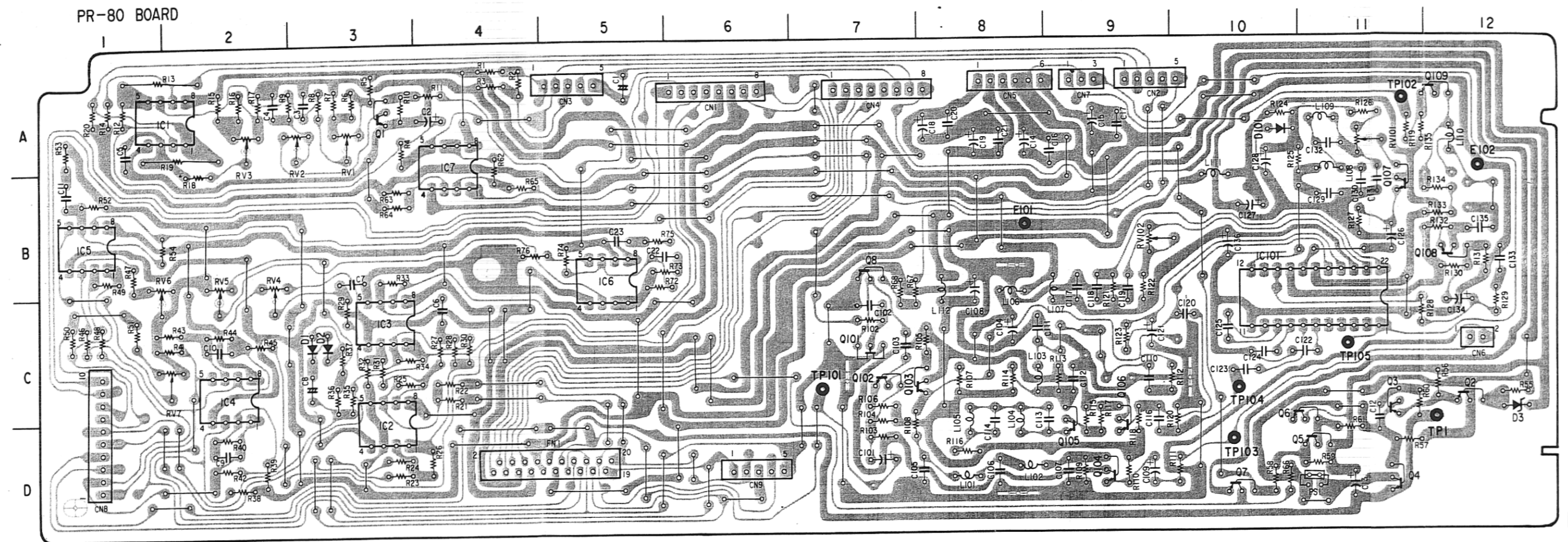
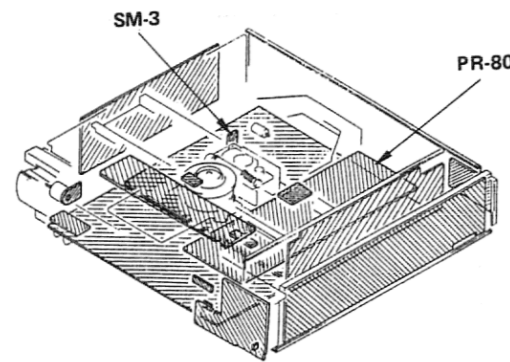
4-1. FRAME SCHEMATIC DIAGRAM





# LDP-1550P

4-2. PR-80 (RF AMP, VIDEO DEMODULATOR), SM-3 (SLIDE MOTOR) PRINTED WIRING BOARDS  
 - Ref. No. PR-80 BOARD: 1,000 series, SM-3 BOARD: 1,400 series -



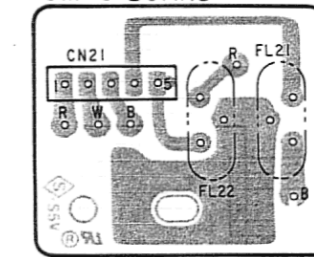
CN1	A-6	IC1	A-2	Q7	D-10	RV4	B-2
CN2	A-9	IC2	D-3	Q8	C-7	RV5	B-2
CN3	A-5	IC3	C-3	Q101	C-7	RV6	B-1
CN4	A-7	IC4	C-2	Q102	C-7	RV7	C-2
CN5	A-8	IC5	B-1	Q103	C-7	RV101	A-11
CN6	C-12	IC6	B-5	Q104	D-9	RV102	B-9
CN7	A-9	IC7	B-4	Q105	D-9		
CN8	D-8	D-1	B-10	Q106	C-9	TP1	D-12
CN9	D-6	IC101	B-10	Q107	B-11	TP101	C-7
D1	C-3	Q1	A-3	Q108	B-12	TP102	A-11
D2	C-3	Q2	C-12	Q109	A-12	TP103	D-10
D3	C-12	Q3	C-11			TP104	C-10
D101	A-10	Q4	D-11	RV1	A-3	TP105	C-11
E101	B-8	Q5	D-11	RV2	A-3		
E102	A-12	Q6	D-11	RV3	A-2		

RF AMP RF AMP

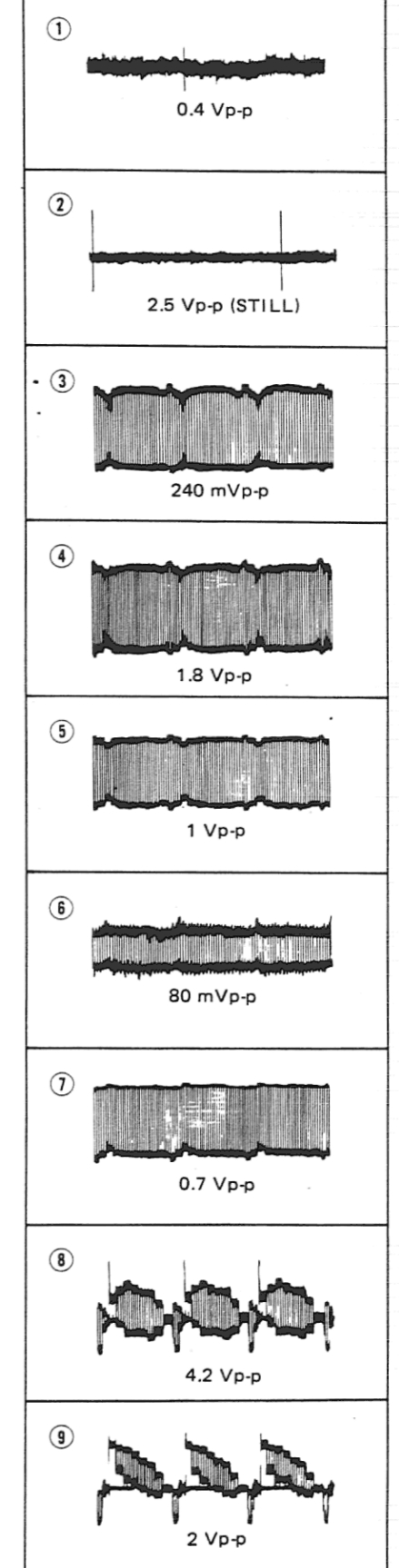
Note:

- : indicates a lead wire mounted on the component side.
- : indicates a lead wire mounted on the printed side.

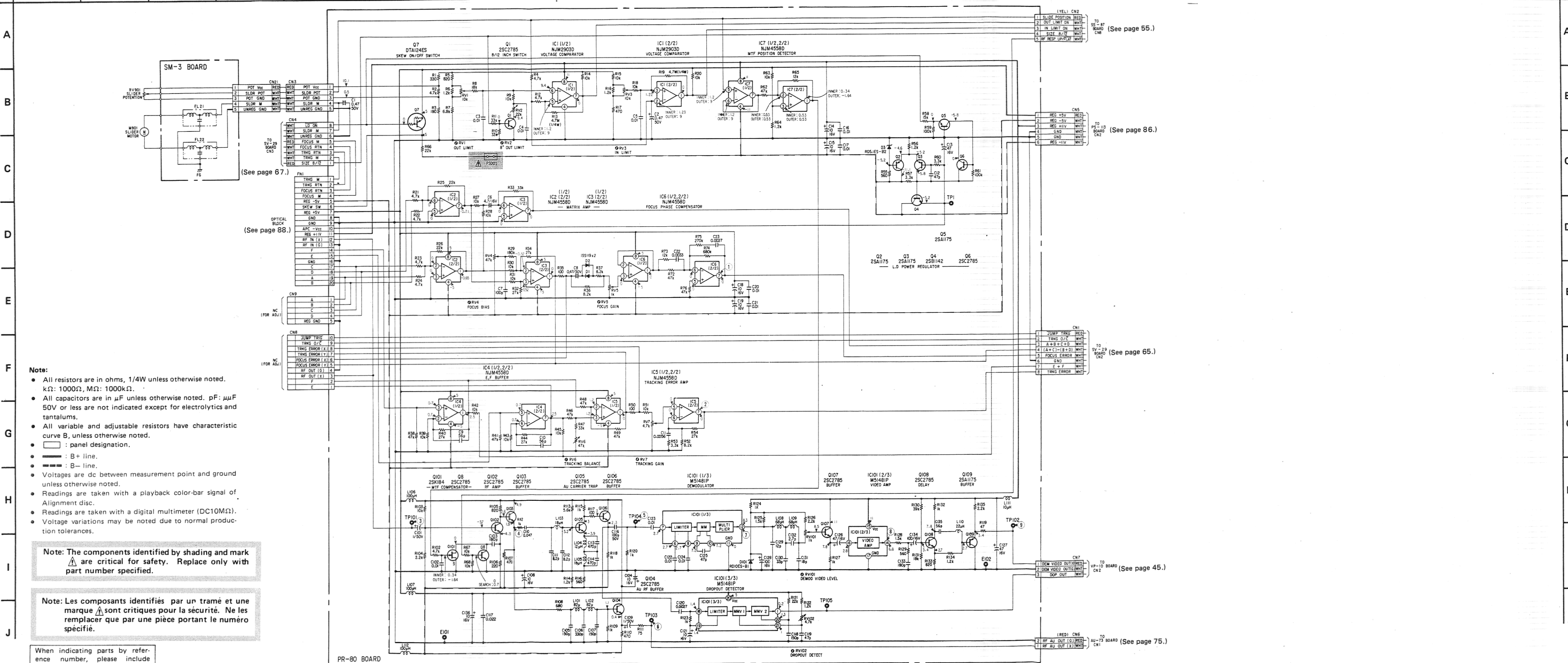
SM-3 BOARD



PR-80 BOARD



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



- Note:**
- All resistors are in ohms, 1/4W unless otherwise noted. k $\Omega$ : 1000 $\Omega$ , M $\Omega$ : 1000k $\Omega$ .
  - All capacitors are in  $\mu$ F unless otherwise noted. pF:  $\mu$ F 50V or less are not indicated except for electrolytics and tantalums.
  - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
  - : panel designation.
  - : B+ line.
  - : B- line.
  - Volts are dc between measurement point and ground unless otherwise noted.
  - Readings are taken with a playback color-bar signal of Alignment disc.
  - Readings are taken with a digital multimeter (DC10M $\Omega$ ).
  - Voltage variations may be noted due to normal production tolerances.

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

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

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



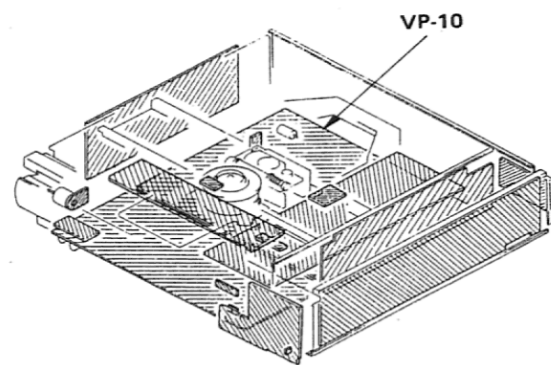
# LDP-1550P

## 4.3. VP-10 (VIDEO SYSTEM) PRINTED WIRING BOARD

— Ref. No. VP-10 BOARD: 2,000 series —

### Note on Printed Wiring Board:

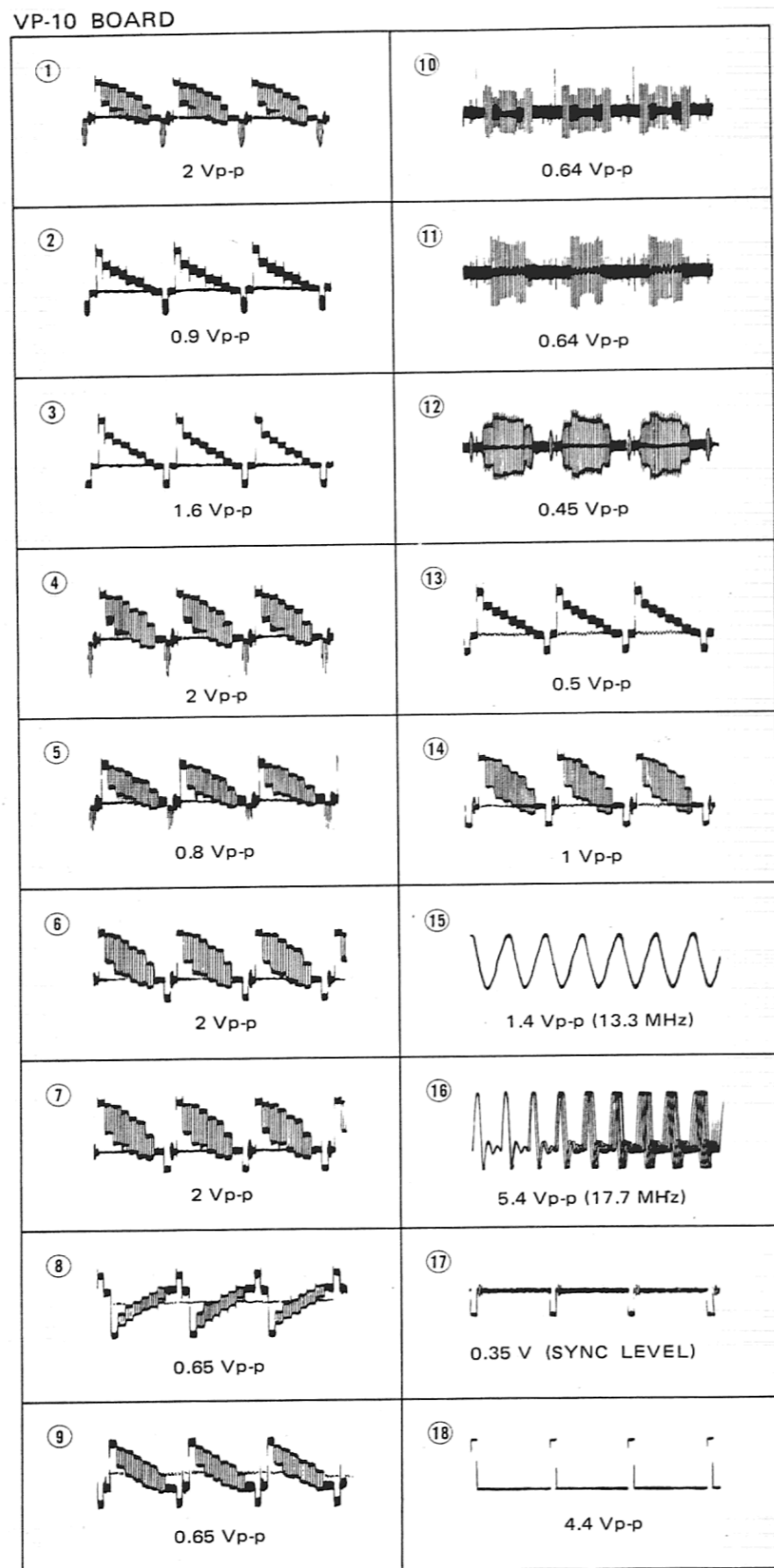
- : indicates a lead wire mounted on the component side.
- : indicates a lead wire mounted on the printed side.



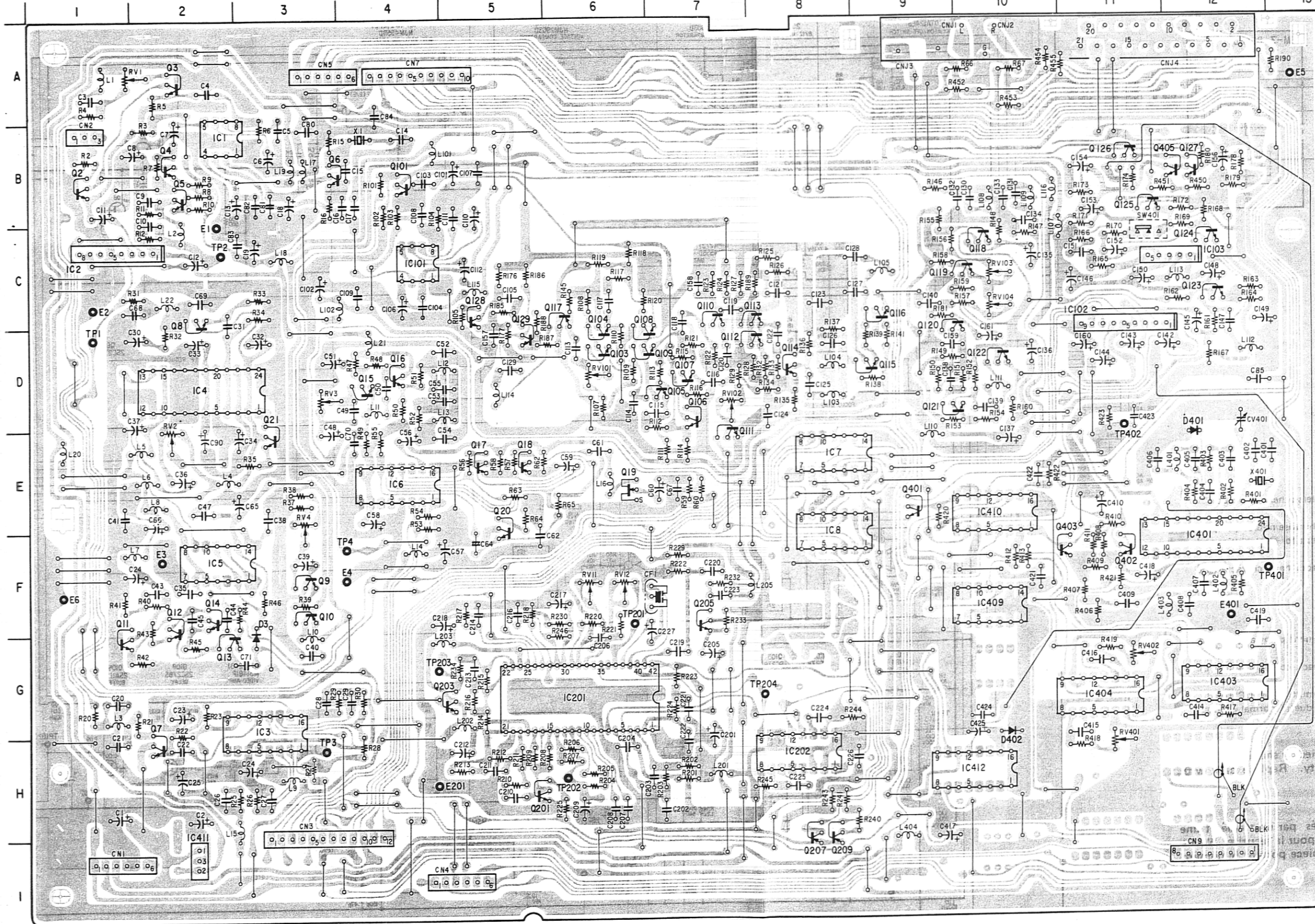
### Note on Schematic Diagram:

- All resistors are in ohms, 1/4W unless otherwise noted. kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: μμF 50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : panel designation.
- : B+ line.
- - - : B- line.
- Voltages are dc between measurement point and ground unless otherwise noted.
- Readings are taken with a playback color-bar signal of Alignment disc.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.

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



## VP-10 BOARD



CN1	I-1	Q201	H-5
CN2	B-1	Q203	G-5
CN3	H-3	Q205	F-7
CN5	I-5	Q207	I-8
CN7	A-3	Q209	I-8
CN7	A-4	Q401	E-9
CN9	I-12	Q402	F-11
		Q403	F-11
		Q405	B-12
CV401	E-12	Q405	B-12
D3	G-3	RV1	A-2
D401	E-12	RV2	E-2
D402	H-10	RV3	D-3
		RV4	E-3
E1	C-2	RV11	F-6
E2	C-1	RV12	F-6
E3	F-2	RV101	D-6
E4	F-4	RV102	D-7
E5	A-13	RV103	C-10
E6	F-1	RV104	C-10
E201	H-4	RV401	G-11
E401	F-12	RV402	G-11
IC1	B-2	TP1	D-1
IC2	C-1	TP2	C-2
IC3	G-3	TP3	H-3
IC4	D-2	TP4	F-4
IC5	F-2	TP201	F-6
IC6	E-4	TP202	H-6
IC7	E-8	TP203	G-4
IC8	F-8	TP204	G-8
IC101	C-4	TP401	F-13
IC102	D-11	TP402	E-11
IC103	C-12		
IC201	G-6		
IC202	H-8		
IC401	F-12		
IC403	G-12		
IC404	G-11		
IC409	F-10		
IC410	E-10		
IC411	I-2		
IC412	H-10		
Q2	B-1		
Q3	A-2		
Q4	B-2		
Q5	B-2		
Q6	B-3		
Q7	H-2		
Q8	C-2		
Q9	F-3		
Q10	F-3		
Q11	F-1		
Q12	F-2		
Q13	G-2		
Q14	F-2		
Q15	D-4		
Q16	D-4		
Q17	E-5		
Q18	E-5		
Q19	E-5		
Q20	E-5		
Q21	E-3		
Q101	B-4		
Q103	D-6		
Q104	D-6		
Q105	D-7		
Q106	D-7		
Q107	D-7		
Q108	D-6		
Q109	D-6		
Q110	D-7		
Q111	E-7		
Q112	D-8		
Q113	D-8		
Q114	D-8		
Q115	D-9		
Q116	C-9		
Q117	C-6		
Q118	C-10		
Q119	C-10		
Q120	D-9		
Q121	D-9		
Q122	D-10		
Q123	C-12		
Q124	C-12		
Q125	B-11		
Q126	B-11		
Q127	B-12		
Q128	C-5		
Q129	D-5		

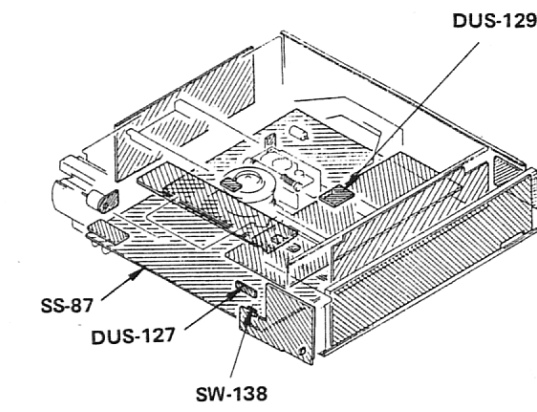






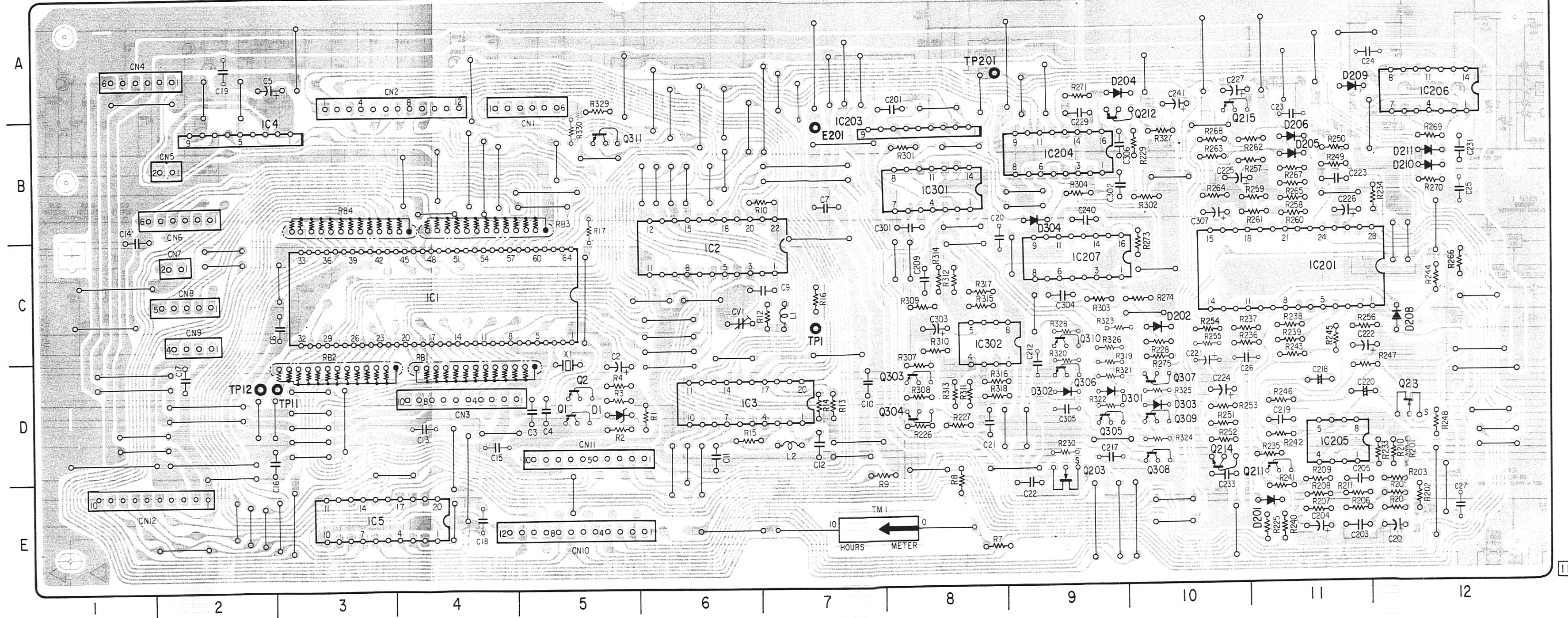
4-4. SS-87 (SYSTEM CONTROL, SPINDLE SERVO), SW-138 (TRAY END SWITCH), DUS-127 (LOADING MOTOR), DUS-129 (DISC/SIZE SENSOR) PRINTED WIRING BOARDS  
 - Ref. No. SS-87 BOARD: 3,000 series, SW-138, DUS-127, DUS-129 BOARDS: 3,500 series -

Note:  
 ○ — : indicates a lead wire mounted on the component side.  
 ● — : indicates a lead wire mounted on the printed side.

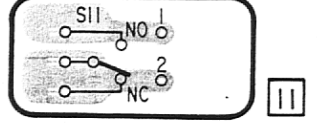


CN1	A-5	D1	D-5	E201	B-7	Q1	D-5	Q309	D-10
CN2	A-3	D201	E-11	IC1	C-4	Q2	D-5	Q310	C-9
CN3	D-4	D202	C-10	IC2	C-6	Q211	D-11	Q311	B-5
CN4	A-1	D204	A-9	IC3	D-6	Q212	B-9	TP1	C-7
CN5	B-2	D205	B-11	IC4	B-2	Q213	D-12	TP11	D-2
CN6	B-2	D206	B-11	IC5	E-3	Q214	D-10	TP12	D-2
CN7	C-2	D208	C-12	IC201	C-11	Q215	B-10	TP201	A-8
CN8	C-2	D209	A-11	IC203	B-8	Q303	D-8		
CN9	C-2	D210	B-12	IC204	B-9	Q304	D-8		
CN10	E-5	D211	B-12	IC205	D-11	Q305	D-9		
CN11	D-5	D301	D-9	IC206	A-12	Q306	D-9		
CN12	E-1	D302	D-10	IC207	C-9	Q307	D-10		
		D303	D-9	IC301	B-8	Q308	D-10		
		D304	B-9	IC302	C-8				

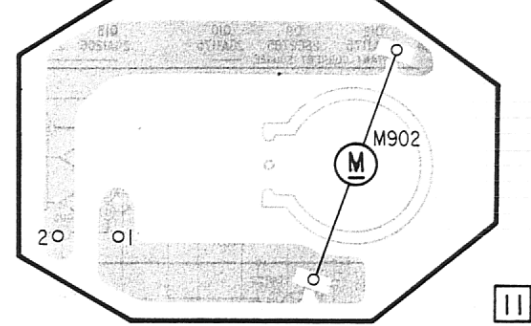
SS-87 BOARD



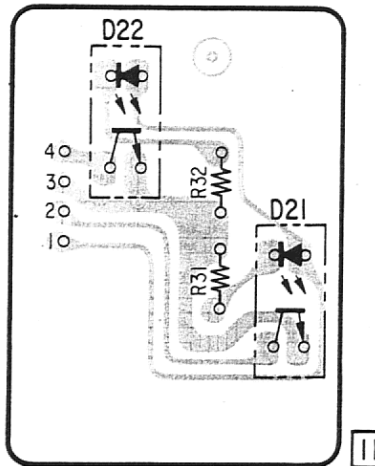
SW-138 BOARD



DUS-127 BOARD



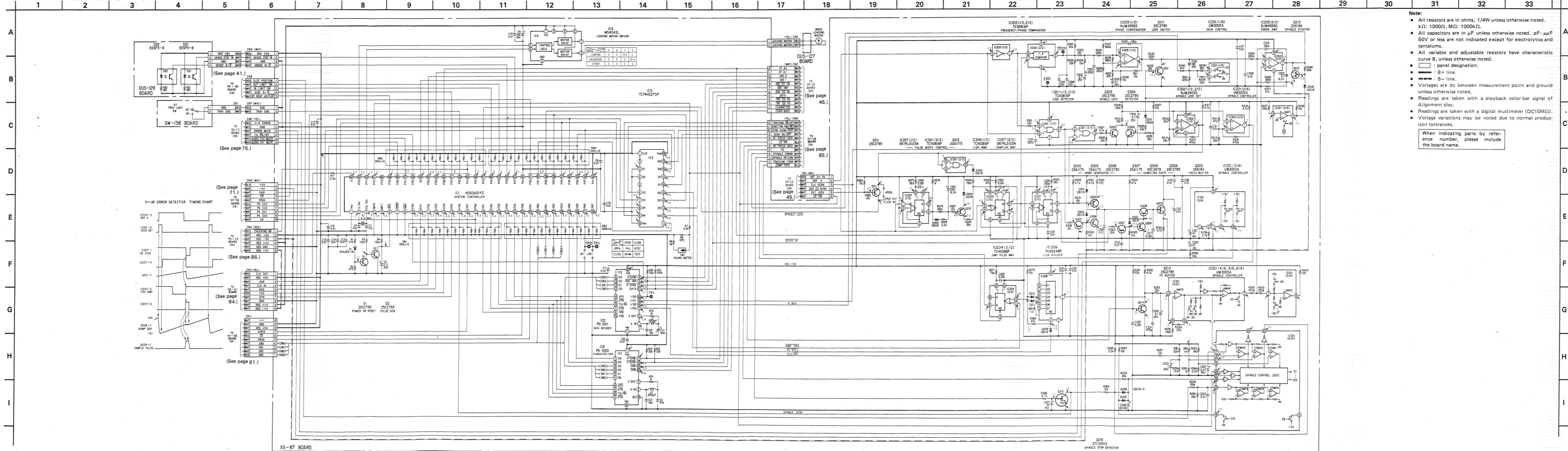
DUS-129 BOARD





SS-87 (SYSTEM CONTROL, SPINDLE SERVO), SW-138 (TRAY\_END SWITCH), DUS-127 (LOADING MOTOR), DUS-129 (DISC/SIZE SENSOR) SCHEMATIC DIAGRAM

- Ref. No. SS-87 BOARD: 3,000 series, SW-138, DUS-127, DUS-129 BOARDS: 3,500 series -



**Note:**

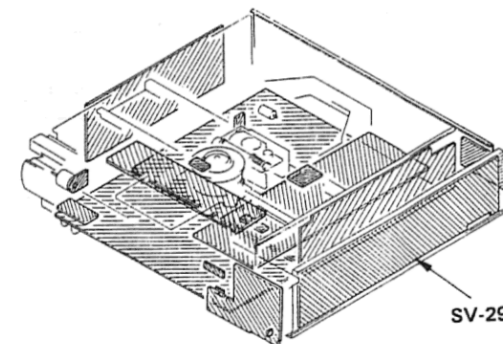
- All resistors are in ohms, 1/4W unless otherwise noted. kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: μF 50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : panel designation.
- : B+ line.
- - - : B- line.
- : Voltages are dc between measurement point and ground unless otherwise noted.
- Readings are taken with a playback color-bar signal of Alignment disc.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.

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

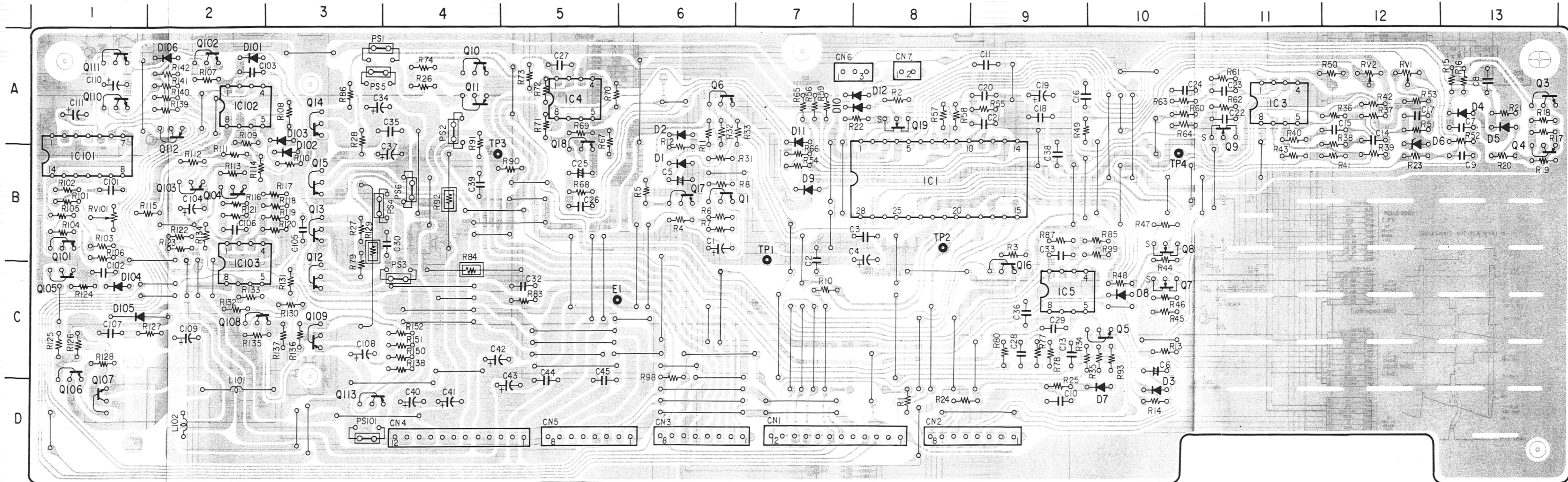


45. SV-29 (FOCUS, TRACKING, SLIDE SERVO) PRINTED WIRING BOARD  
 - Ref. No. SV-29 BOARD: 4,000 series -

Note:  
 ○ : indicates a lead wire mounted on the component side.  
 ● : indicates a lead wire mounted on the printed side.



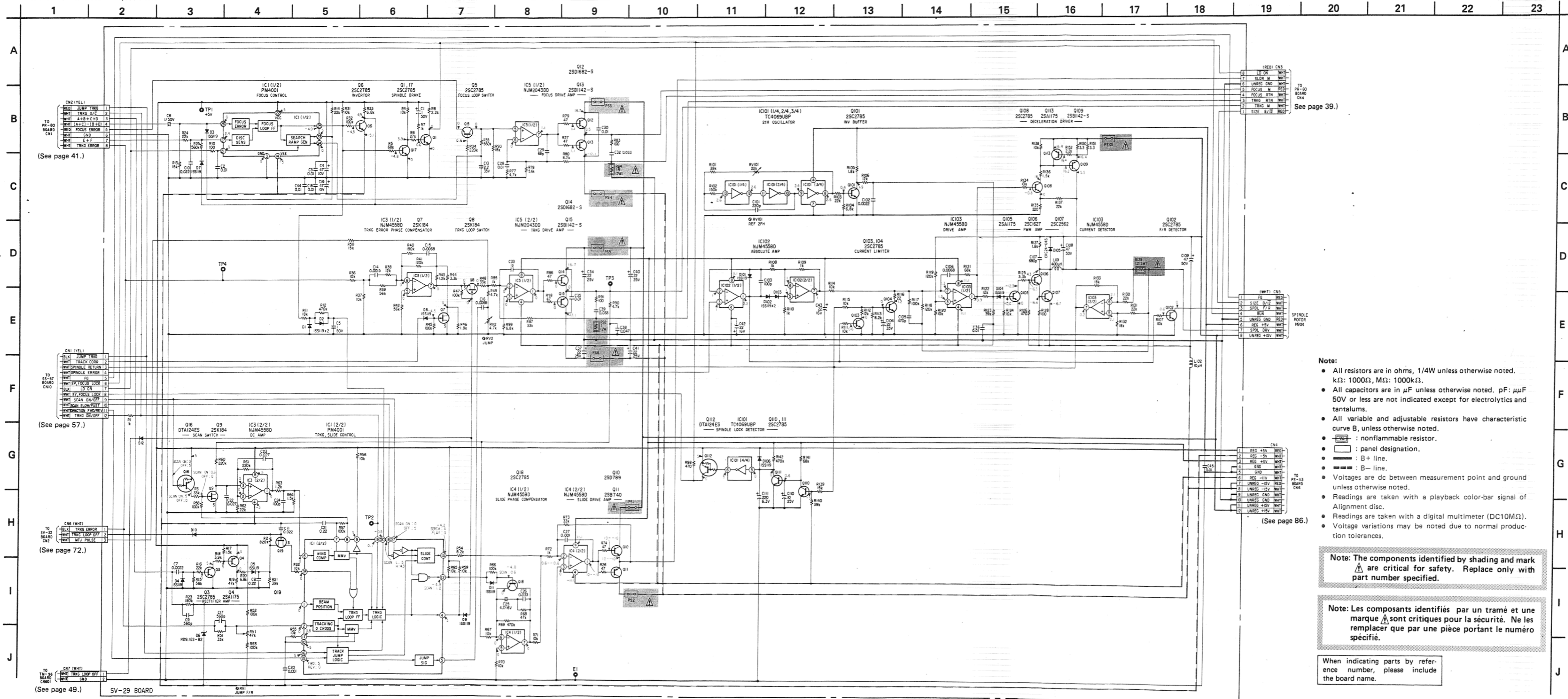
SV-29 BOARD



CN1	D-7	D101	A-2	Q1	B-6	Q18	A-5
CN2	D-8	D102	B-3	Q3	A-13	Q19	A-8
CN3	D-6	D103	A-3	Q4	A-13	Q101	B-1
CN4	D-4	D104	C-1	Q5	C-10	Q102	A-2
CN5	D-5	D105	C-1	Q6	A-6	Q103	B-2
CN6	A-8	D106	A-2	Q7	C-10	Q104	B-2
CN7	A-8			Q8	B-10	Q105	C-1
		E1	C-5	Q9	A-11	Q106	C-1
D1	B-6			Q10	A-4	Q107	D-1
D2	A-6	IC1	B-8	Q11	A-4	Q108	C-2
D3	D-10	IC3	A-11	Q12	C-3	Q109	C-3
D4	A-13	IC4	A-5	Q13	B-3	Q110	A-1
D5	A-13	IC5	C-9	Q14	A-3	Q111	A-1
D6	A-12	IC101	B-1	Q15	B-3	Q112	A-2
D7	D-10	IC102	A-2	Q16	B-9	Q113	D-3
D8	C-10	IC103	C-2	Q17	B-6		
D9	B-7					RV1	A-12
D10	A-8					RV2	A-12
D11	A-7					RV101	B-1
D12	A-8						
						TP1	B-7
						TP2	B-8
						TP3	B-4
						TP4	B-10



SERVO SERVO



- Note:**
- All resistors are in ohms, 1/4W unless otherwise noted. kΩ: 1000Ω, MΩ: 1000kΩ.
  - All capacitors are in μF unless otherwise noted. pF: μF 50V or less are not indicated except for electrolytics and tantalums.
  - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
  - : nonflammable resistor.
  - : panel designation.
  - : B+ line.
  - : B- line.
  - Voltages are dc between measurement point and ground unless otherwise noted.
  - Readings are taken with a playback color-bar signal of Alignment disc.
  - Readings are taken with a digital multimeter (DC10MΩ).
  - Voltage variations may be noted due to normal production tolerances.

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

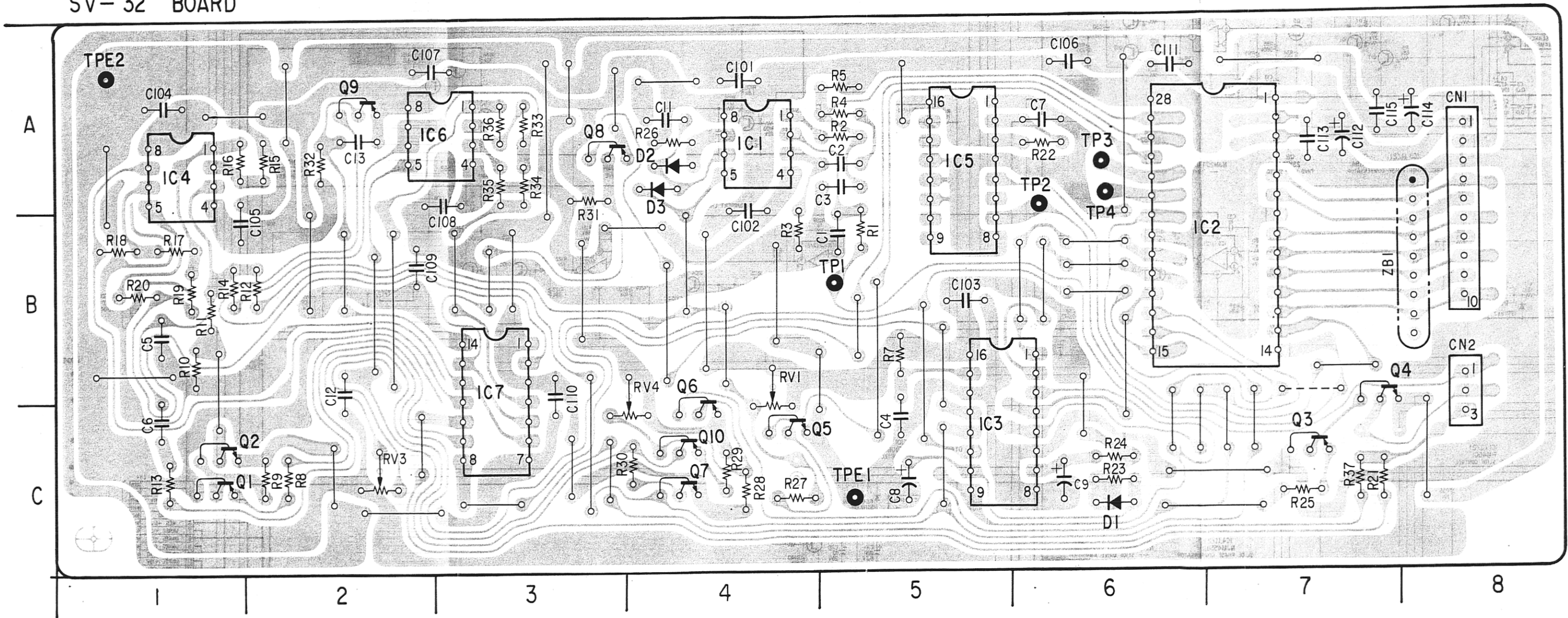
**Note:** Les composants identifiés par un haché et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

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



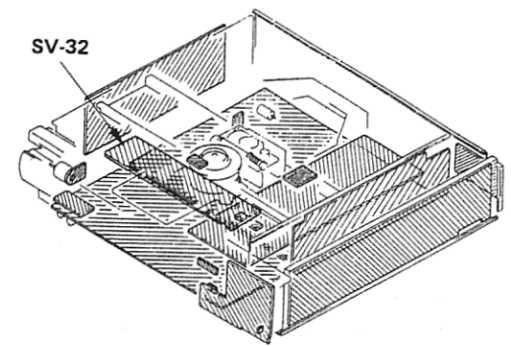
4-6. SV-32 (MULTI TRACK JUMP CONTROL) PRINTED WIRING BOARD  
 - Ref. No. SV-32 BOARD: 7,000 series -

**SV-32 BOARD**



CN1	A-8
CN2	B-8
D1	C-6
D2	A-4
D3	A-4
IC 1	A-4
IC 2	B-7
IC 3	C-5
IC 4	A-1
IC 5	A-5
IC 6	A-2
IC 7	B-3
Q1	C-1
Q2	C-1
Q3	C-7
Q4	C-7
Q5	C-4
Q6	C-4
Q7	C-4
Q8	A-3
Q9	A-2
Q10	C-4
RV1	B-4
RV3	C-2
RV4	C-3
TP1	B-5
TP2	A-6
TP3	A-6
TP4	A-6
TPE1	C-5
TPE2	A-1

**Note:**  
 ● ○ : indicates a lead wire mounted on the component side.  
 ● ● : indicates a lead wire mounted on the printed side.

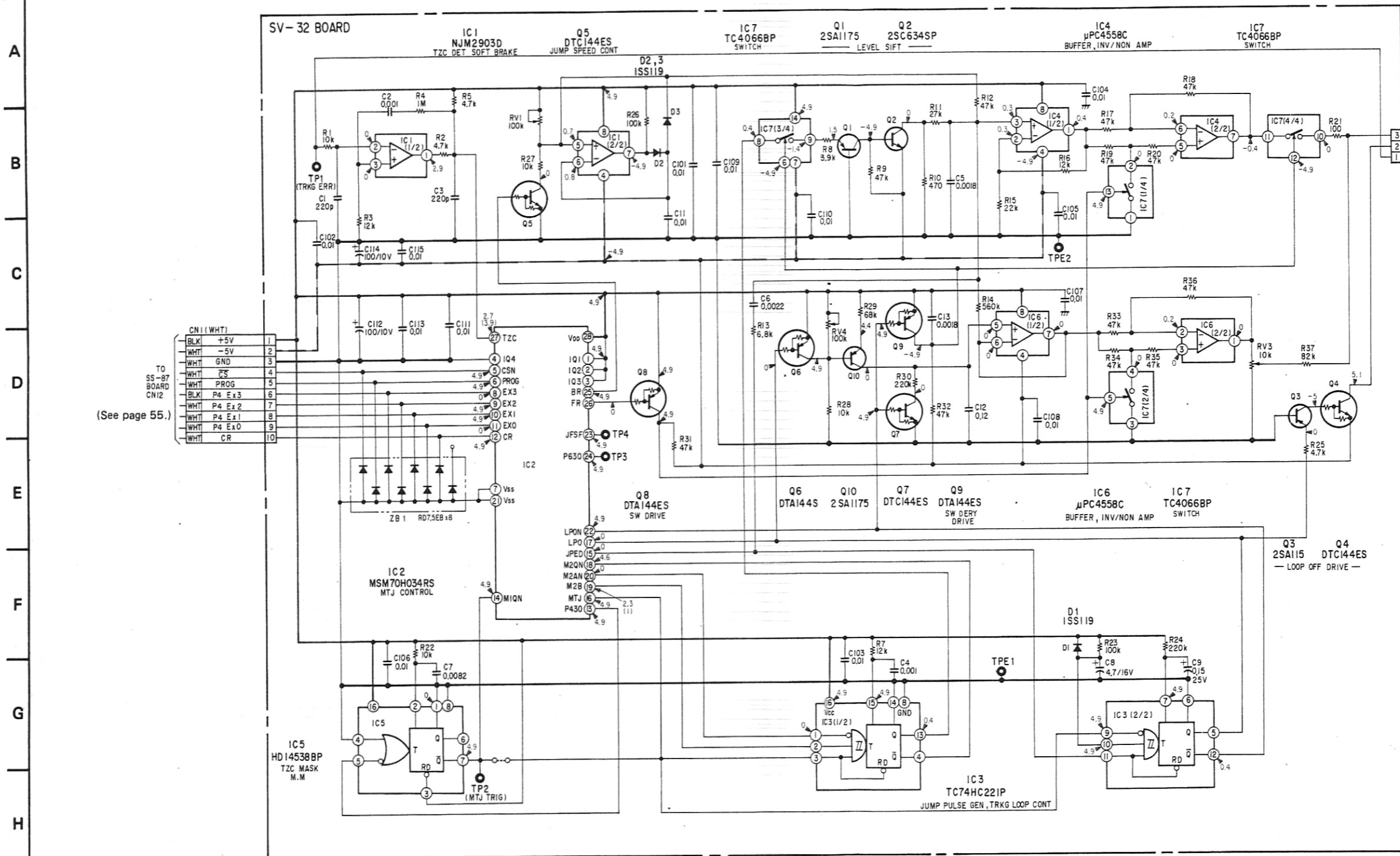


SV-32 (MULTI TRACK JUMP CONTROL) SCHEMATIC DIAGRAM

- Ref. No. SV-32 BOARD: 7,000 series -

LDP-1550P

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



CN2 (WHT)  
 3 MJT PLUSE WHT TO SV-29 BOARD  
 2 TRKG LOOP OFF WHT  
 1 TRKG ERR BLK CN6  
 (See page 65.)

CN1 (WHT)  
 TO SS-97 BOARD  
 1 +5V  
 2 -5V  
 3 GND  
 4 CS  
 5 PROG  
 6 P4 Ex3  
 7 P4 Ex2  
 8 P4 Ex1  
 9 P4 Ex0  
 10 CR  
 (See page 55.)

Note:

- All resistors are in ohms, 1/4W unless otherwise noted. kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: μμF 50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- — : B+ line.
- - - - : B- line.

- Voltages are dc between measurement point and ground unless otherwise noted.
- Readings are taken with a playback color-bar signal of Alignment disc.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.

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



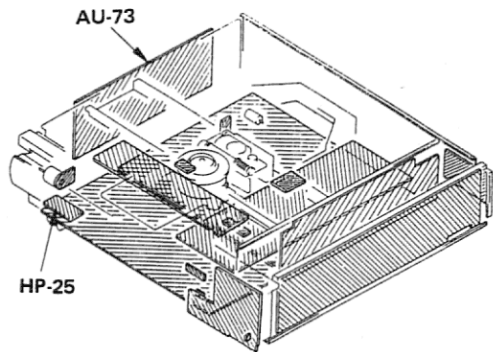
# AUDIO AUDIO

## 4-7. AU-73 (AUDIO SYSTEM), HP-25 (HEADPHONES) PRINTED WIRING BOARDS

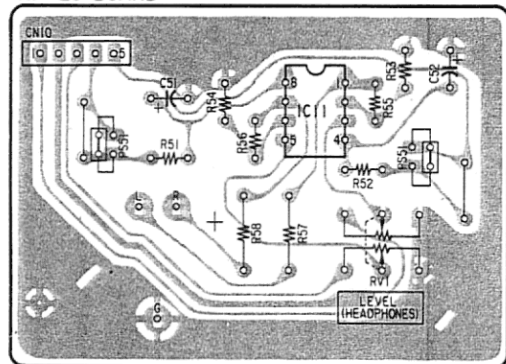
— Ref. No. AU-73 BOARD: 8,000 series, HP-25 BOARD: 2,500 series —

**Note:**

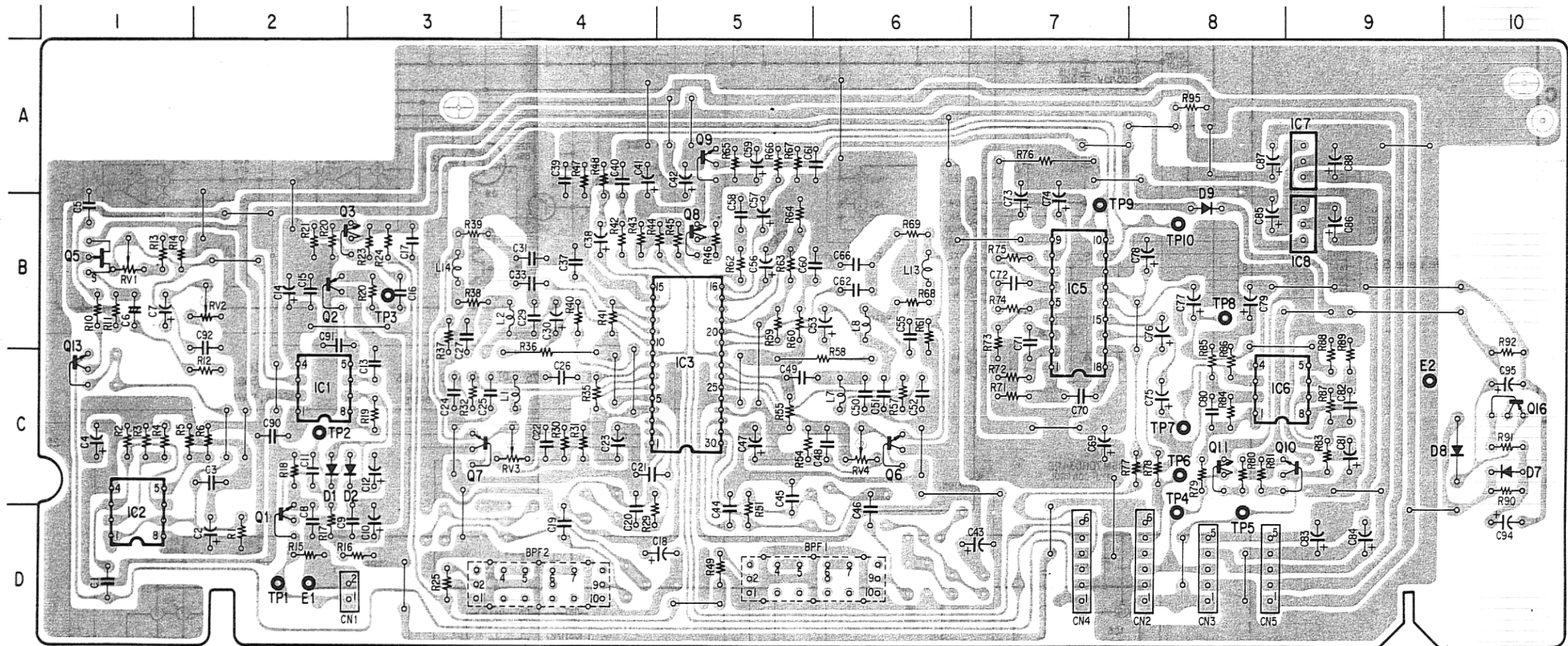
- — ○ : indicates a lead wire mounted on the component side.
- — ● : indicates a lead wire mounted on the printed side.



HP-25 BOARD



AU-73 BOARD

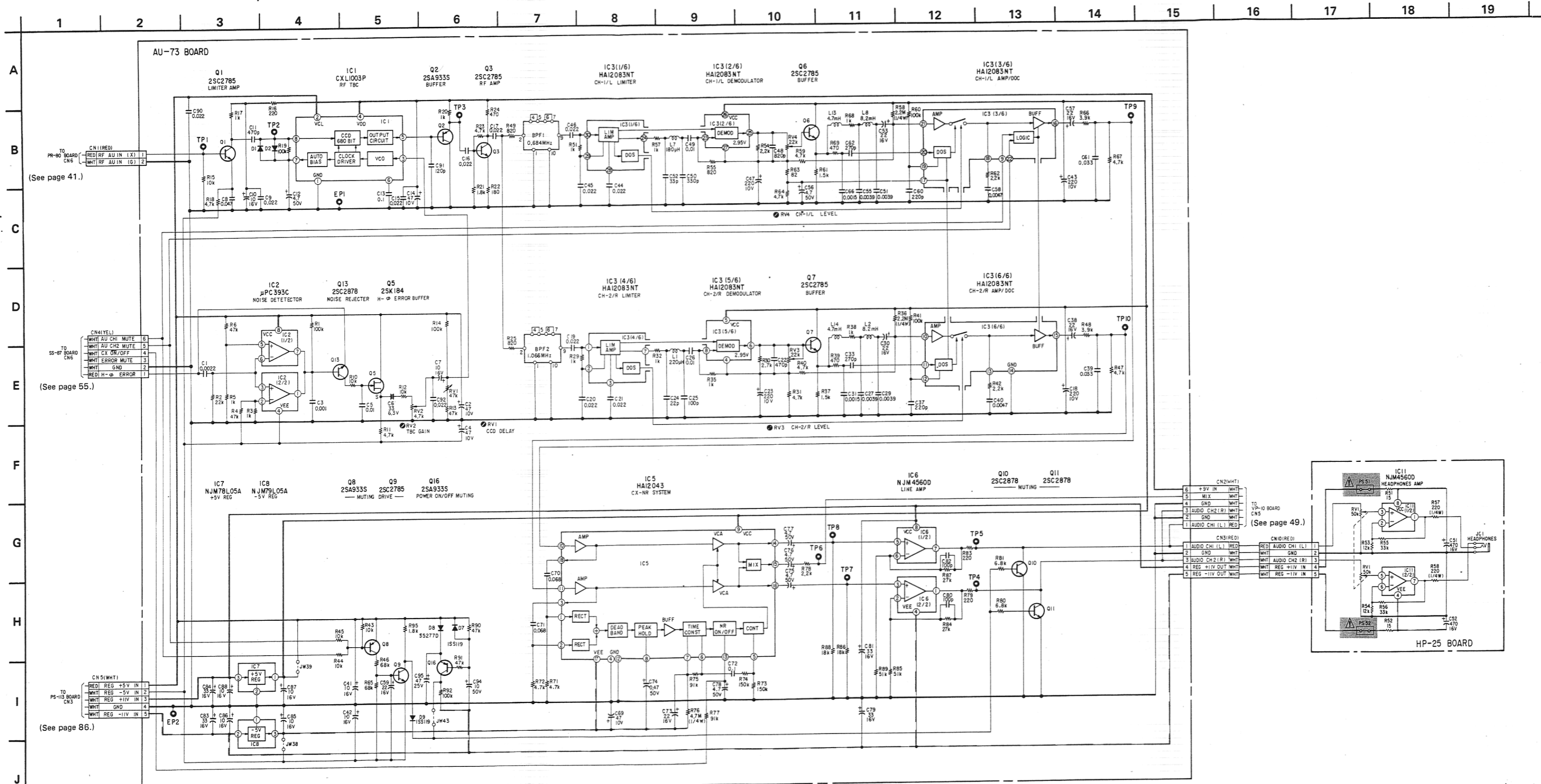


CN1	D-3	Q1	D-2
CN2	D-8	Q2	B-2
CN3	D-8	Q3	B-2
CN4	D-7	Q5	B-1
CN5	D-8	Q6	C-6
		Q7	C-3
D1	C-2	Q8	B-5
D2	C-3	Q9	A-5
D7	C-10	Q10	C-9
D8	C-10	Q11	C-8
D9	A-7	Q13	C-1
		Q16	C-10
E1	D-2	RV1	B-1
E2	C-9	RV2	B-2
IC1	C-2	RV3	C-4
IC2	D-1	RV4	C-6
IC3	C-5		
IC5	B-7	TP1	D-2
IC6	C-8	TP2	C-2
IC7	A-9	TP3	B-3
IC8	B-9	TP4	C-8
		TP5	D-8
		TP6	C-8
		TP7	C-8
		TP8	B-8
		TP9	B-7
		TP10	B-8

AU-73 (AUDIO SYSTEM), HP-25 (HEADPHONES) SCHEMATIC DIAGRAM

— Ref. No. AU-73 BOARD: 8,000 series, HP-25 BOARD: 2,500 series —

AUDIO AUDIO



- Note:
- All resistors are in ohms, 1/4W unless otherwise noted. kΩ: 1000Ω, MΩ: 1000kΩ.
  - All capacitors are in μF unless otherwise noted. pF: μμF 50V or less are not indicated except for electrolytics and tantalums.
  - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
  - □ : panel designation.
  - — : B+ line.
  - - - - : B- line.
  - Voltages are dc between measurement point and ground unless otherwise noted.
  - Readings are taken with a playback color-bar signal of Alignment disc.
  - Readings are taken with a digital multimeter (DC10MΩ).
  - Voltage variations may be noted due to normal production tolerances.

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

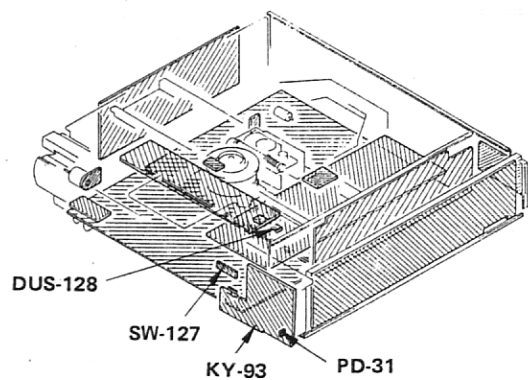
Note: Les composants identifiés par un trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

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

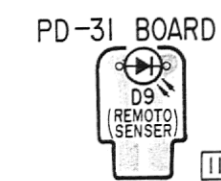
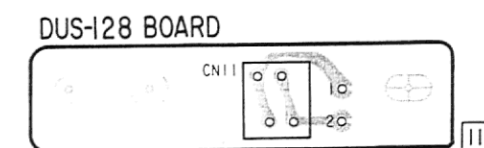
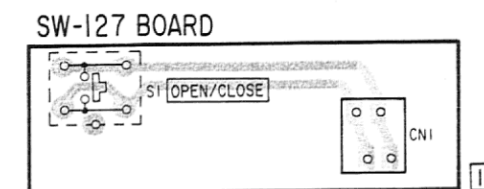
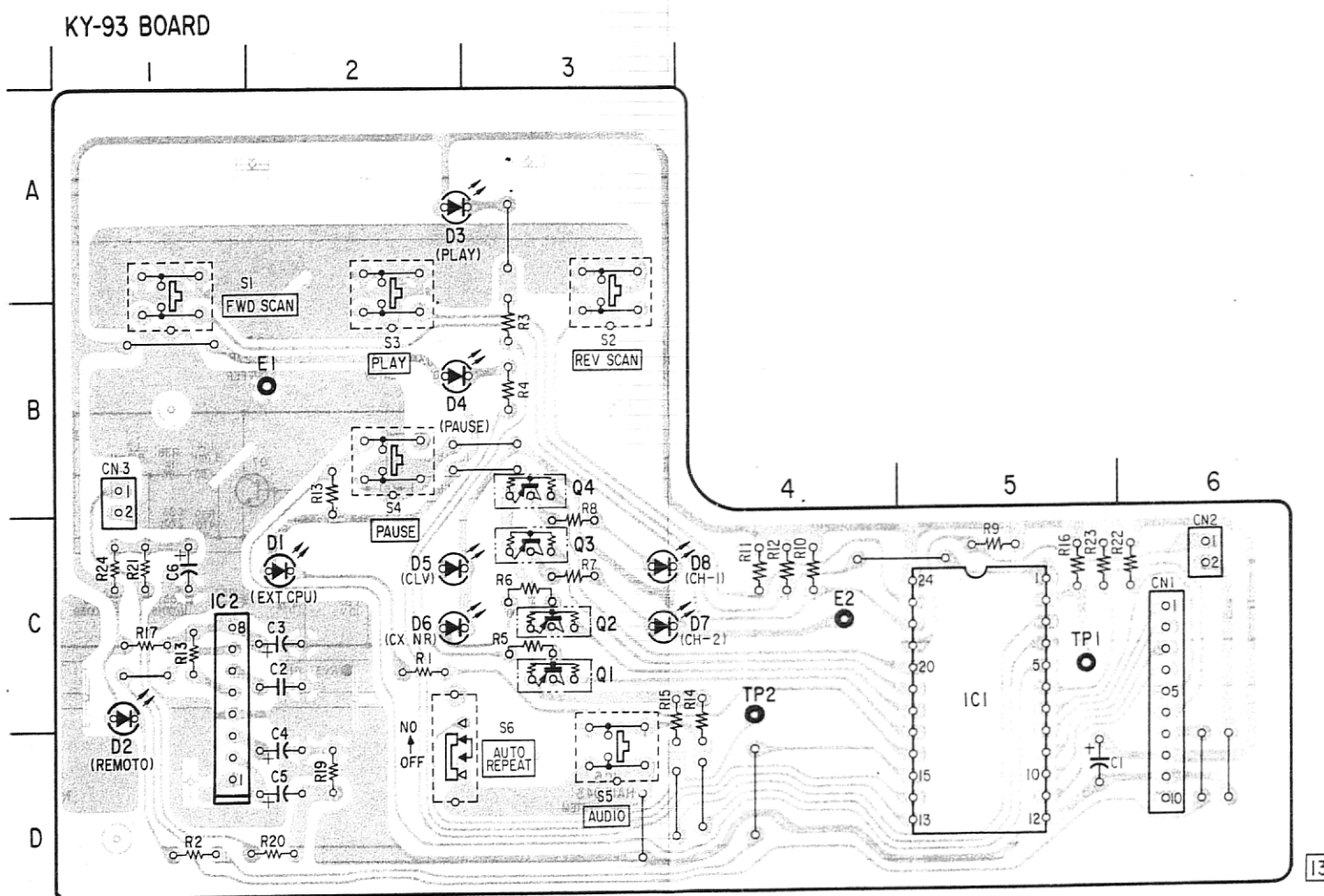
**FRONT/KEY      FRONT/KEY**

**4-8. KY-93 (CONTROL PANEL), SW-127 (OPEN/CLOSE BUTTON), DUS-128 (RELAY), PD-31 (REMOTE RECEIVER) PRINTED WIRING BOARDS**  
 - Ref. No. KY-93 BOARD: 5,000 series, SW-127, DUS-128, PD-31 BOARDS: 5,200 series -

**Note:**  
 • ○ : indicates a lead wire mounted on the component side.  
 • ● : indicates a lead wire mounted on the printed side.



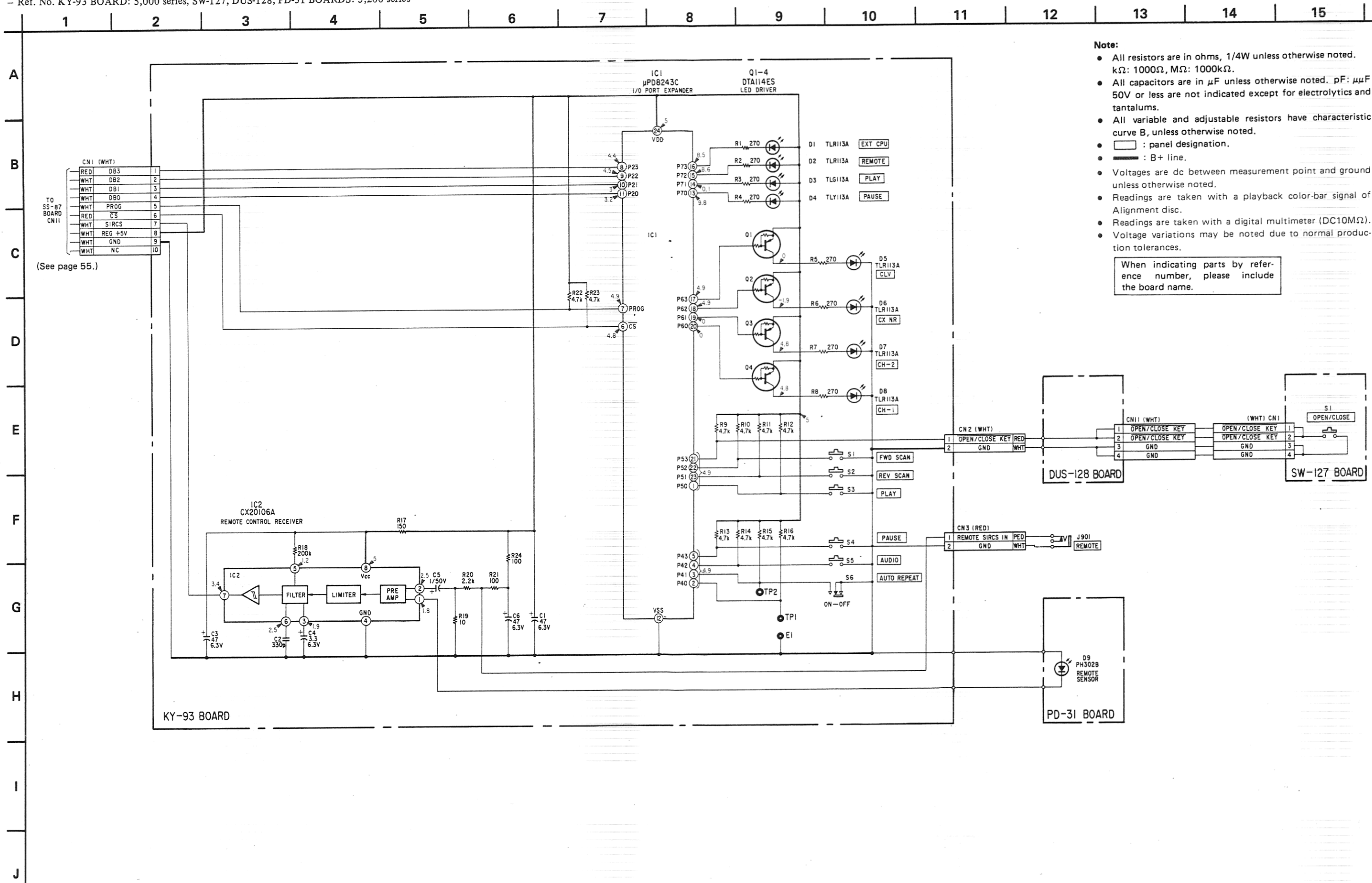
CN1	C-6	IC1	C-5
CN2	C-6	IC2	C-1
CN3	B-1	Q1	C-3
D1	C-2	Q2	C-3
D2	D-2	Q3	C-3
D3	A-2	Q4	B-3
D4	B-2	TP1	C-5
D5	C-2	TP2	C-4
D6	C-2		
D7	C-4		
D8	C-4		
E1	B-2		
E2	C-4		



# LDP-1550P FRONT/KEY

KY-93 (CONTROL PANEL), SW-127 (OPEN/CLOSE BUTTON), DUS-128 (RELAY), PD-31 (REMOTE RECEIVER) SCHEMATIC DIAGRAM

- Ref. No. KY-93 BOARD: 5,000 series, SW-127, DUS-128, PD-31 BOARDS: 5,200 series -



- Note:**
- All resistors are in ohms, 1/4W unless otherwise noted. kΩ: 1000Ω, MΩ: 1000kΩ.
  - All capacitors are in μF unless otherwise noted. pF: μμF 50V or less are not indicated except for electrolytics and tantalums.
  - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
  - □ : panel designation.
  - — : B+ line.
  - Voltages are dc between measurement point and ground unless otherwise noted.
  - Readings are taken with a playback color-bar signal of Alignment disc.
  - Readings are taken with a digital multimeter (DC10MΩ).
  - Voltage variations may be noted due to normal production tolerances.

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



# LDP-1550P INTERFACE, POWER

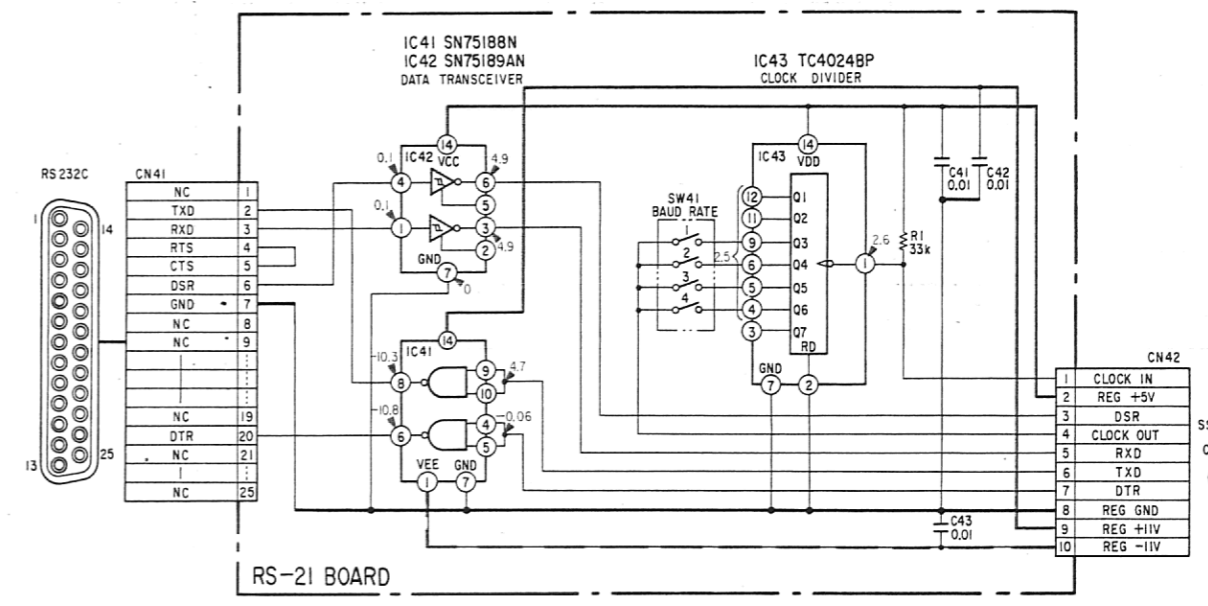
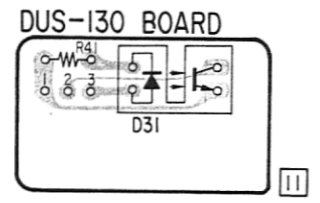
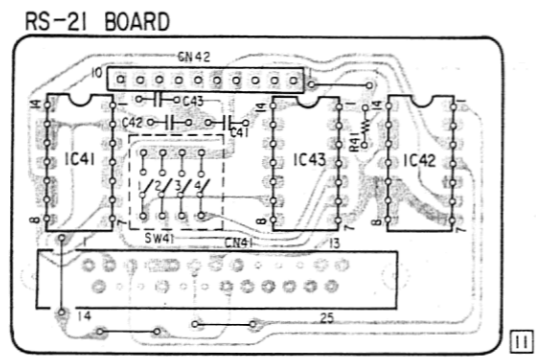
## 4.9. RS-21 (RS-232C INTERFACE), PS-113 (POWER SUPPLY), DUS-130 (CHUCK SENSOR) PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

— Ref. No. RS-21 BOARD: 6,100 series, PS-113 BOARD: 6,200 series, DUS-130 BOARD: 6,500 series —

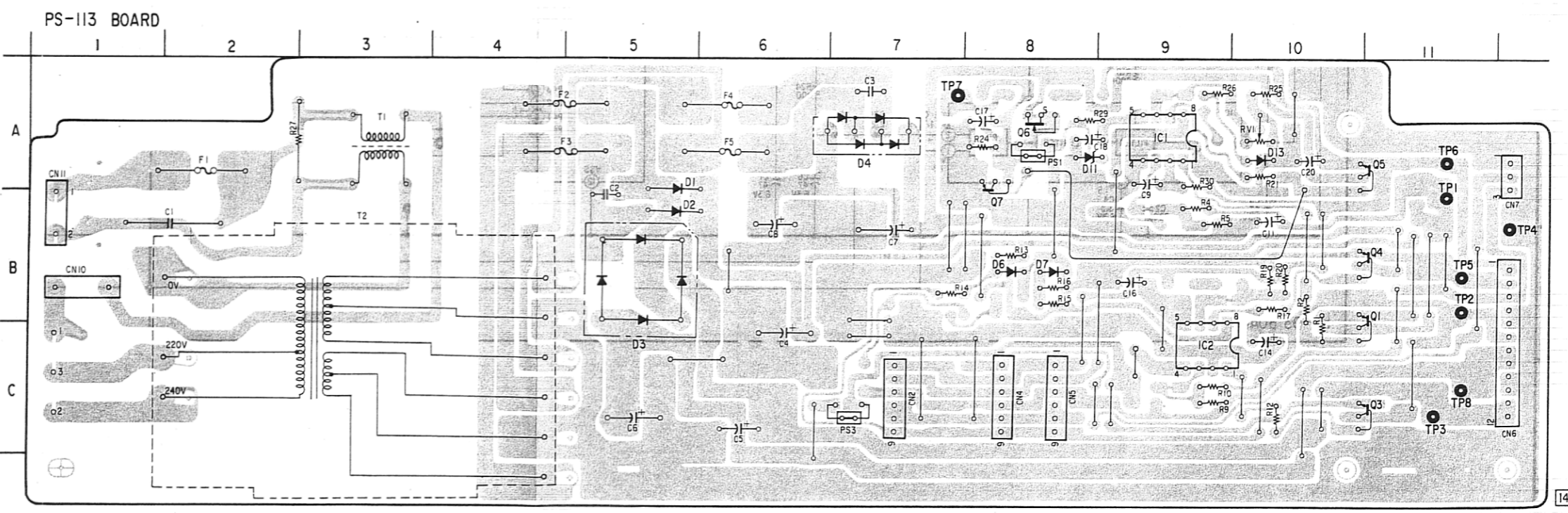
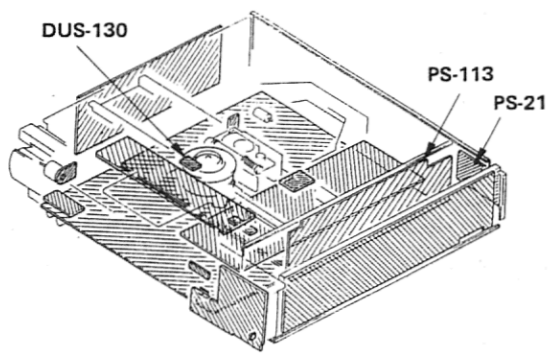
1      2      3      4      5      6      7      8      9      10      11      12      13      14      15

- Note:**
- All resistors are in ohms, 1/4W unless otherwise noted. kΩ: 1000Ω, MΩ: 1000kΩ.
  - All capacitors are in μF unless otherwise noted. pF: μμF 50V or less are not indicated except for electrolytics and tantalums.
  - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
  - : nonflammable resistor.
  - : B+ line.
  - : B- line.
  - Voltages are dc between measurement point and ground unless otherwise noted.
  - Readings are taken with a playback color-bar signal of Alignment disc.
  - Readings are taken with a digital multimeter (DC10MΩ).
  - Voltage variations may be noted due to normal production tolerances.

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



SS-32  
CN3  
(See page 55.)



CN2	C-7	Q1	B-11
CN3	C-7	Q3	C-11
CN4	C-8	Q4	B-11
CN5	C-8	Q5	A-11
CN6	C-11	Q6	A-8
CN7	A-11	Q7	B-8
CN10	B-1		
CN11	A-1	RV1	A-10
D1	A-5	TP1	B-11
D2	B-5	TP2	B-11
D3	C-5	TP4	B-11
D4	A-7	TP5	B-11
D6	B-8	TP6	A-11
D7	B-8	TP7	A-7
D11	A-8	TP8	C-11
D13	A-10		
IC1	A-9		
IC2	C-9		







# LDP-1550P

4-10. OPTICAL BLOCK (KSS-141B): PP-21, SKS-1, SKS-2, AP-13, C MOTOR SCHEMATIC DIAGRAM

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

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

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

When the optical block is defective, replace as a block. Cannot replace as a part.

A

B

C

D

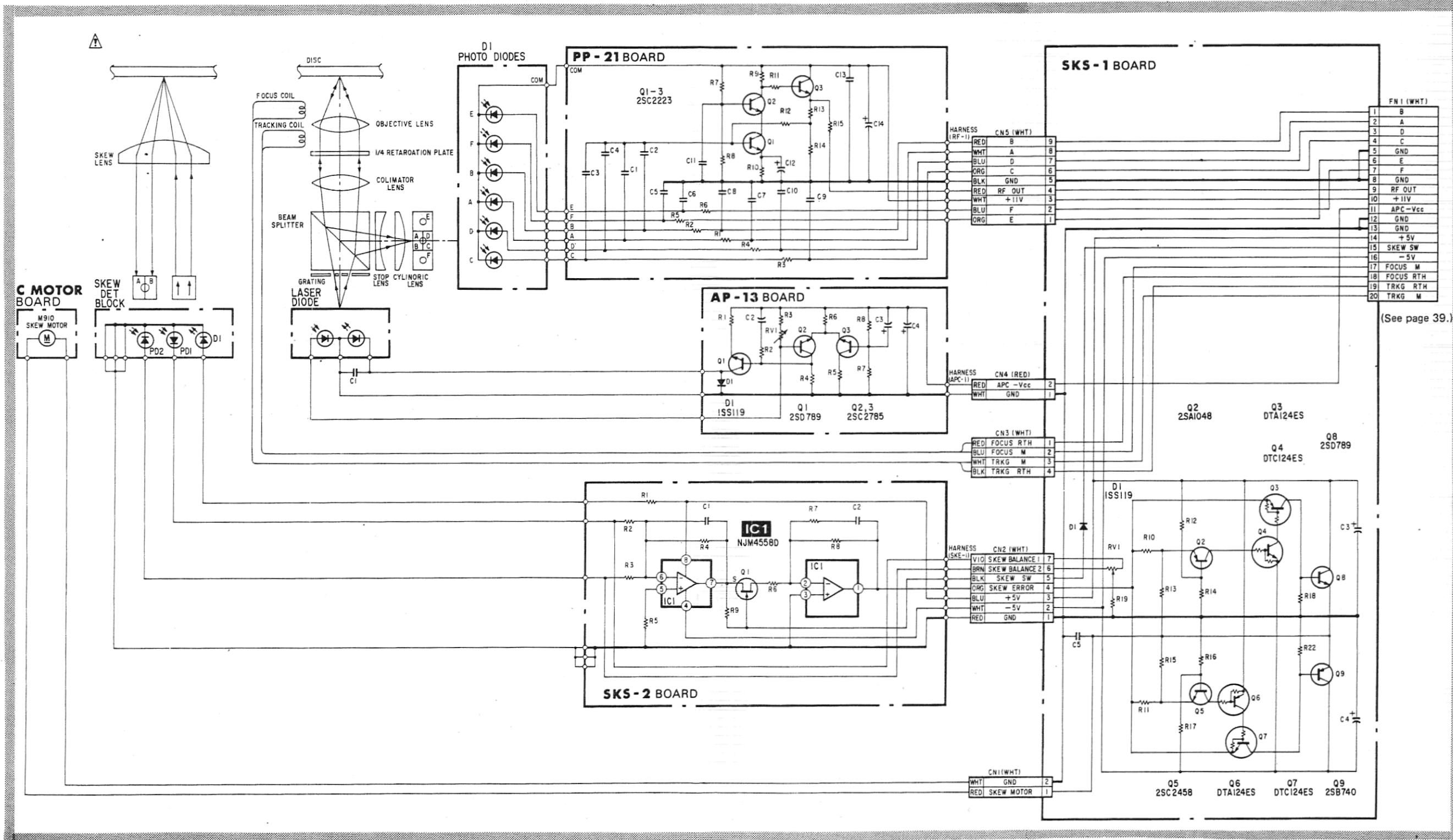
E

F

G

H

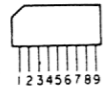
I



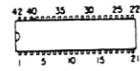
(See page 39.)

4-11. SEMICONDUCTORS

BA7021  
TC5081AP

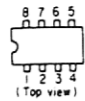


CXA1018S

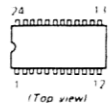


(Top view)

CXL1003P  
CXL5003P  
NJM2043D-D  
NJM2903D  
NJM4560D  
 $\mu$ PC358C  
 $\mu$ PC393C  
 $\mu$ PC4558C

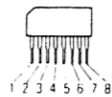


CXL1004P  
TC9015P  
 $\mu$ PD8243C

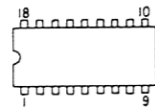


(Top view)

CX20061  
CX20106A

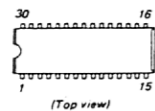


HA12043



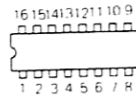
(Top view)

HA12083NT



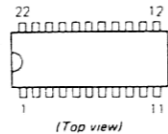
(Top view)

HD14538BP  
PA0009  
PA9003  
SN74LS123N  
SN74LS221N  
TC4040BP  
TC4053BP  
TC74HC221P  
TC74HC273P



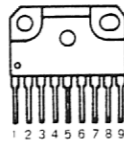
(Top view)

M51481P  
PD0011

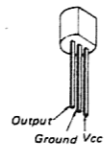


(Top view)

M54543L

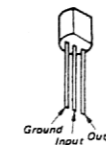


NJM78L05A  
TA78L009AP



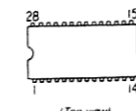
Output  
Ground Vcc

NJM79L05A



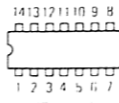
Ground  
Input Output

PM4001  
UM3002A



(Top view)

SN7510BN  
SN75188N  
SN75189AN  
TC40H004P  
TC40H004P  
TC4011BP  
TC4025BP  
TC4066BP  
TC4068BP  
TC4069UBP  
TC4081BP  
TC504013BP



(Top view)

TA7060AP



1 2 3 4 5

TA78L009AP



Output  
Ground Vcc

2SA1048-GR  
2SC634SP  
DTA114ES  
DTA124ES  
DTA144ES  
DTC124ES  
DTC124XS  
DTC144ES



E C B

2SA1175  
2SC2785



letter side  
E C B

2SA1206  
2SC2901



E C B

2SB1133-R  
2SC2562  
2SD1666-R



E C B

2SB740  
2SC2878  
2SC2878-B  
2SD789



E C B

2SB1142S  
2SD1682-S



E C B

2SD773-4  
2SD774



E C B

2SK184  
2SK184-GR



S G D

2SK523-L2



D S G

1SS119  
RD10ESB1  
RD2.4ESB  
RD4.3ESB1  
RD5.1ESB1  
RD9.1ESB2



cathode  
anode

4D4B44



1 2 3 4

6D4B42-LC1



1 2 3 4

EE-SF5-B



A B C  
K E

ERC24-06S



cathode  
anode

FC52M-5



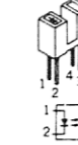
cathode anode

GL-5NG24



long short  
anode cathode

GP-1S04



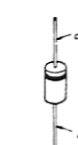
1 2 3 4

PH302B



anode cathode

S5277D-LC7-10



cathode  
anode

TLY113A



long short  
anode cathode

TLR113A



cathode anode

## SECTION 5 EXPLODED VIEWS

### NOTE:

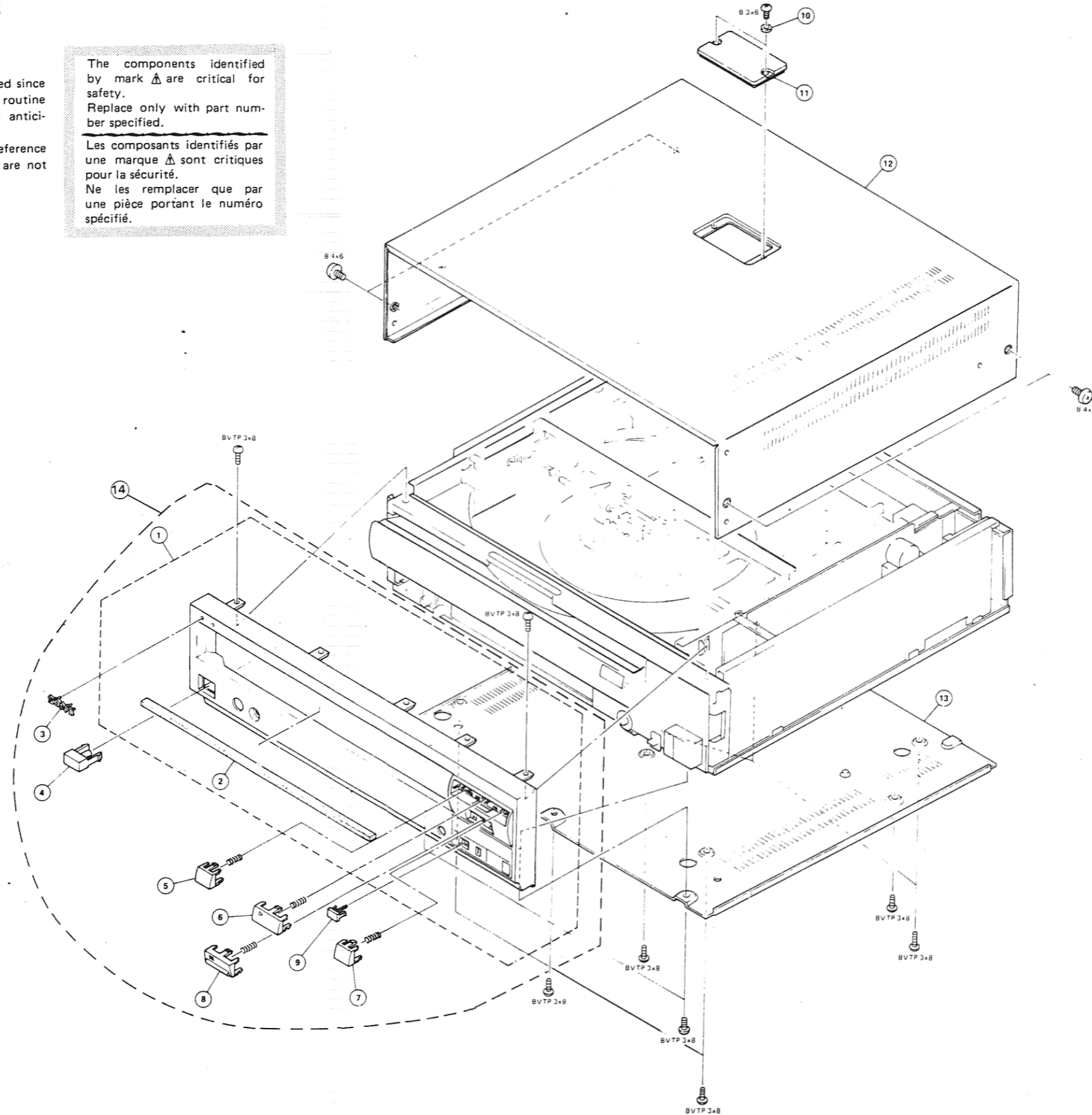
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "\*" are not stocked since they are seldom required for routine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

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

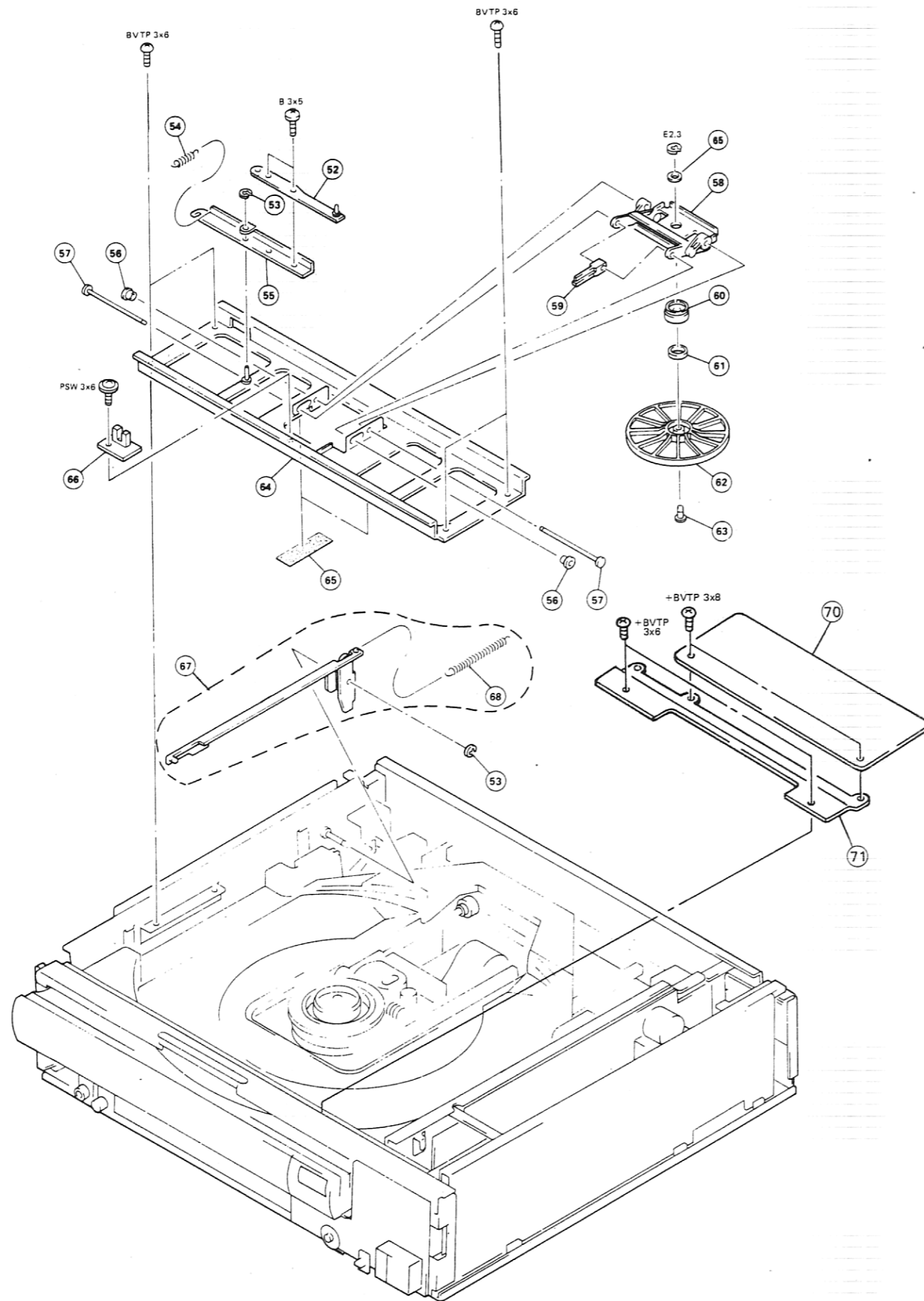
Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

### 5-1. ORNAMENTAL PANEL

No.	Part No.	Description	Remark
1	X-3688-260-1	PANEL ASSY, FRONT	2
2	9-911-815-01	CUSHION	
3	*3-566-707-21	EMBLEM, SONY	
4	3-688-293-01	BUTTON, POWER	
5	3-694-988-12	KEY TOP (REV)	
6	X-3694-842-2	KEY TOP (PLAY) ASSY	
7	3-694-990-12	KEY TOP (FWD)	
8	X-3694-843-2	KEY TOP (PAUSE) ASSY	
9	3-694-995-01	BUTTON, AU	
10	3-669-596-00	WASHER (2.3), STOPPER	
11	3-694-986-02	COVER, WINDOW	
12	3-710-310-02	CASE, UPPER	
13	*X-3694-849-1	PLATE ASSY, BOTTOM	
14	A-6408-095-A	PANEL ASSY, FRONT	1-9

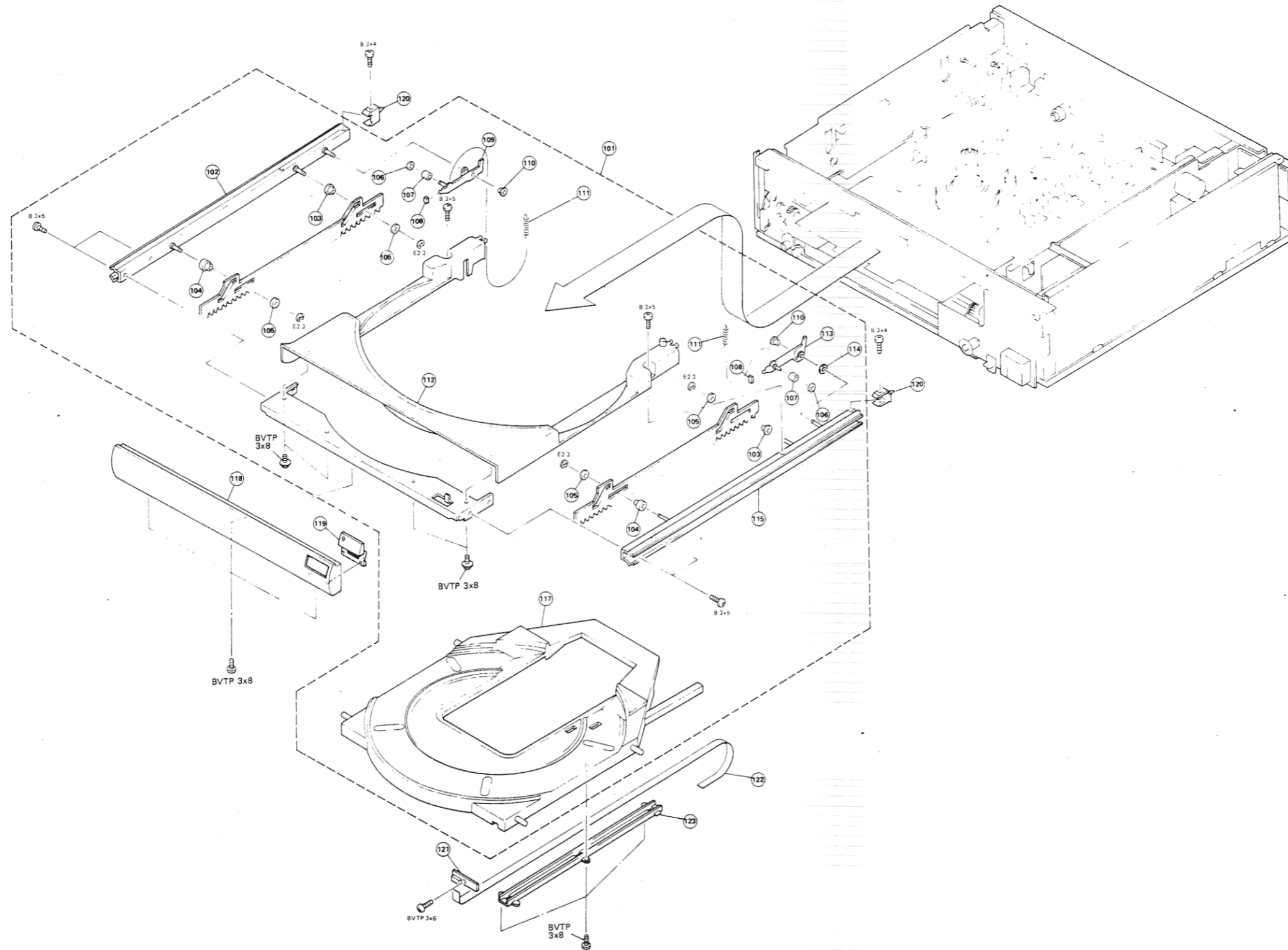


5-2: CHUCK ASS'Y



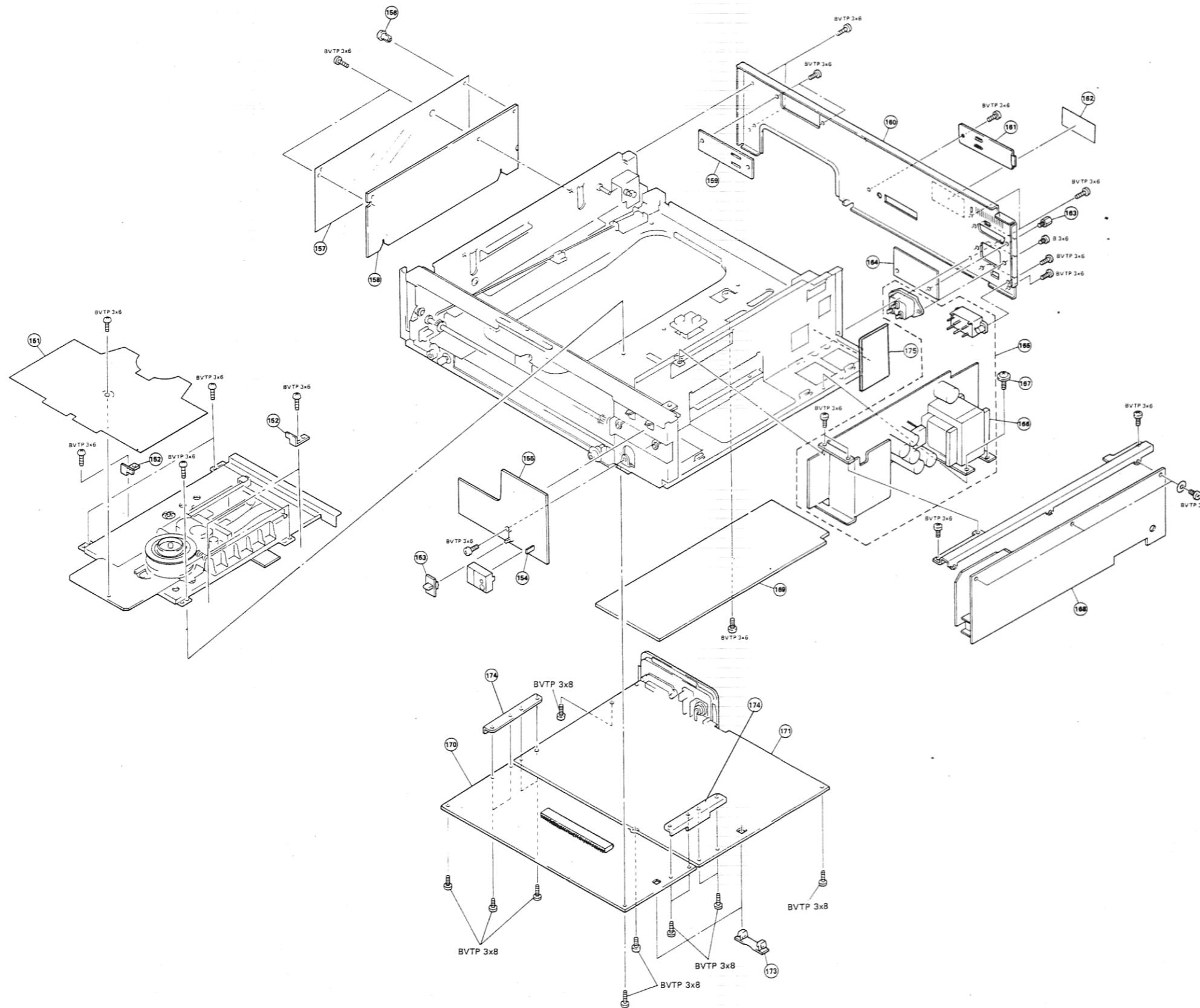
No.	Part No.	Description	Remark
52	*X-3688-210-3	PLATE ASSY, ADJUSTMENT	
53	3-669-596-00	WASHER (2.3), STOPPER	
54	3-639-381-XX	SPRING, TENSION	
55	*3-688-233-01	LINK (3)	
56	3-703-074-00	CAP 3, SHAFT	
57	*3-694-818-01	JOINT	
58	*X-3688-208-2	HOLDER ASSY, C	
59	3-694-817-02	JOINT	
60	*3-688-229-02	HOLDER, B	
61	3-694-820-01	BEARING (NO FLANGE), BALL	
62	3-688-232-01	CHUCK	
63	*3-694-816-01	PIN (S)	
64	*X-3694-810-3	BASE ASSY, CHUCK	
65	9-911-844-XX	CUSHION (C)	
66	*1-618-841-11	DUS-130 BOARD	
67	*X-3694-803-3	ARM ASSY, C	68
68	3-542-821-00	SPRING, TENSION	
69	3-701-439-21	WASHER	
70	*A-6421-196-A	SV-32 BOARD, COMPLETE	
71	*3-698-689-01	BRACKET, PC BOARD FITTING	

5-3. FRONT LOADING



No.	Part No.	Description	Remark
101	*A-6415-114-B	F.L. ASSY	102-115, 117
102	*X-3694-817-1	RAIL (LEFT) ASSY, GUIDE	
103	3-694-841-01	ROLLER (R1)	
104	3-694-843-01	ROLLER (S)	
105	3-694-842-01	ROLLER (R2)	
106	3-669-596-00	WASHER (2.3), STOPPER	
107	3-688-207-01	ROLLER, STOPPER	
108	*3-676-143-00	STOPPER, ARM	
109	*X-3694-806-1	ARM (LEFT) ASSY, LOCK	
110	3-703-074-00	CAP 3, SHAFT	
111	3-535-558-00	SPRING, TENSION	
112	*3-694-849-21	COVER, UPPER	
113	*X-3694-807-1	ARM (RIGHT) ASSY, LOCK	
114	3-694-927-01	ROLLER (SW)	
115	*X-3694-818-1	RAIL (RIGHT) ASSY, GUIDE	
117	*X-3694-819-3	TRAY ASSY	
118	3-710-306-01	COVER, FRONT	
119	3-694-987-11	KEY TOP (OPEN/CLOSE)	
120	3-694-844-01	STOPPER	
121	*1-618-830-11	SW-127 BOARD	
122	1-558-057-11	WIRE, FLEXIBLE CARD 4P	
123	3-694-845-01	GUIDE, HARNESS	

5-4. CHASSIS (1)



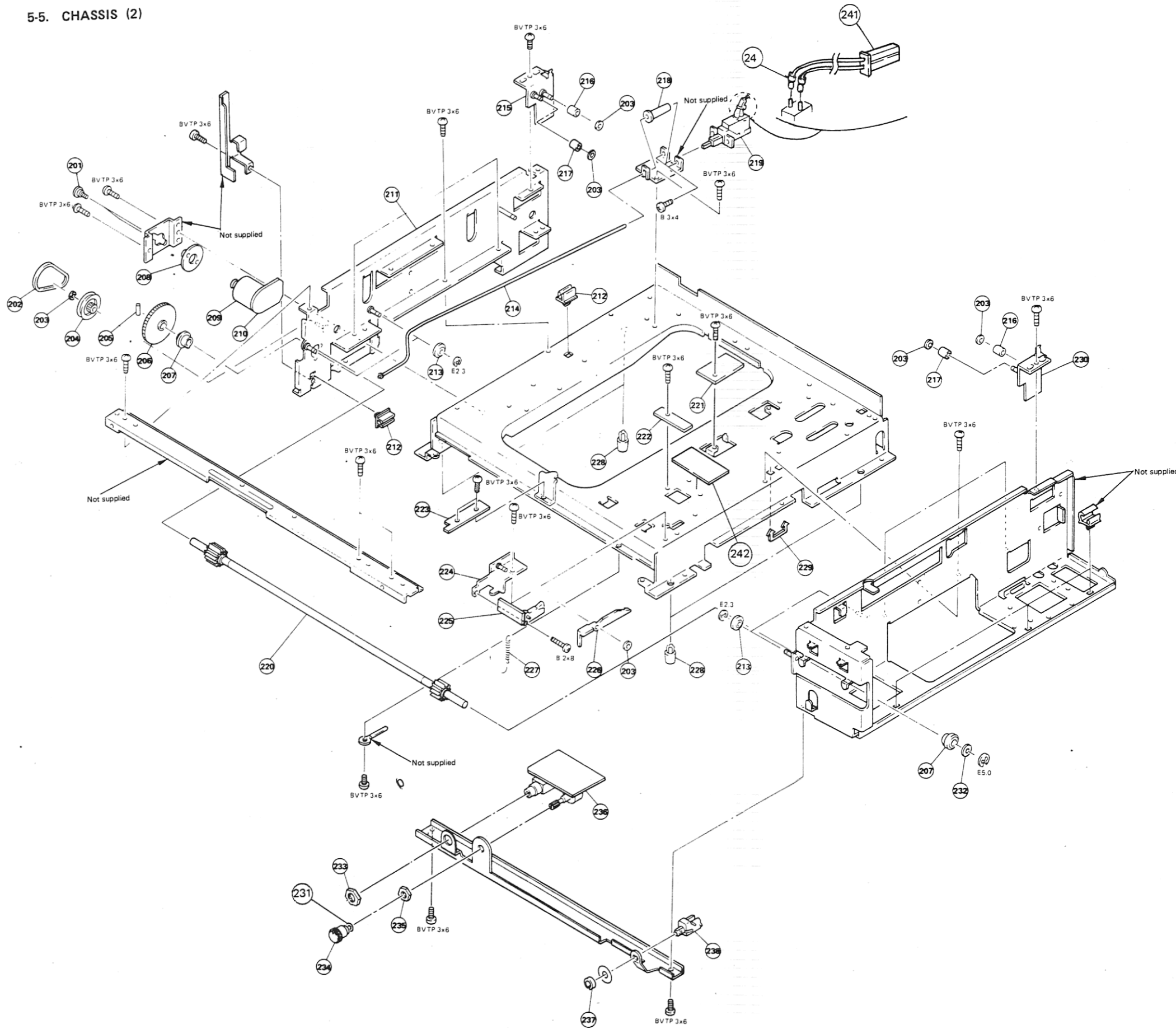
No.	Part No.	Description	Remark
151	*3-694-885-02	PLATE, BLIND	
152	*3-694-812-01	STOPPER, MECHANICAL BASE	
153	3-694-996-01	COVER, SW	
154	*1-618-837-11	PD-31 BOARD	
155	*1-618-836-11	KY-93 BOARD	
156	4-812-134-21	RIVET NYLON, 3.5	
157	*3-694-886-03	SHEET, INSULATING, AA	
158	*A-6421-079-A	AU-73 BOARD, COMPLETE	
159	*3-694-980-01	PLATE, BLIND	
160	*3-710-305-11	PANEL (P), REAR	
161	*3-694-979-01	LID, REAR PANEL	
162	*4-885-838-00	LABEL, CLASS 1	
163	*3-694-981-01	SCREW (INCH), D SUB	
164	*1-618-835-11	RS-21 BOARD	
165	*A-6421-083-A	PS-113 BOARD, COMPLETE	
166	△ 1-448-443-11	TRANSFORMER, POWER (T2)	
167	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
168	*A-6421-198-A	SV-29 BOARD, COMPLETE	
169	*A-6421-078-A	PR-80 BOARD, COMPLETE	
170	*A-6421-197-A	SS-87 BOARD, COMPLETE	
171	*A-6421-203-A	VP-10 BOARD, COMPLETE	
173	*3-694-919-01	HINGE, CHASSIS	
174	*3-694-873-02	BRACKET, PC BOARD	
175	*3-710-337-21	PLATE (F), SHIELD	

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

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



5-5. CHASSIS (2)

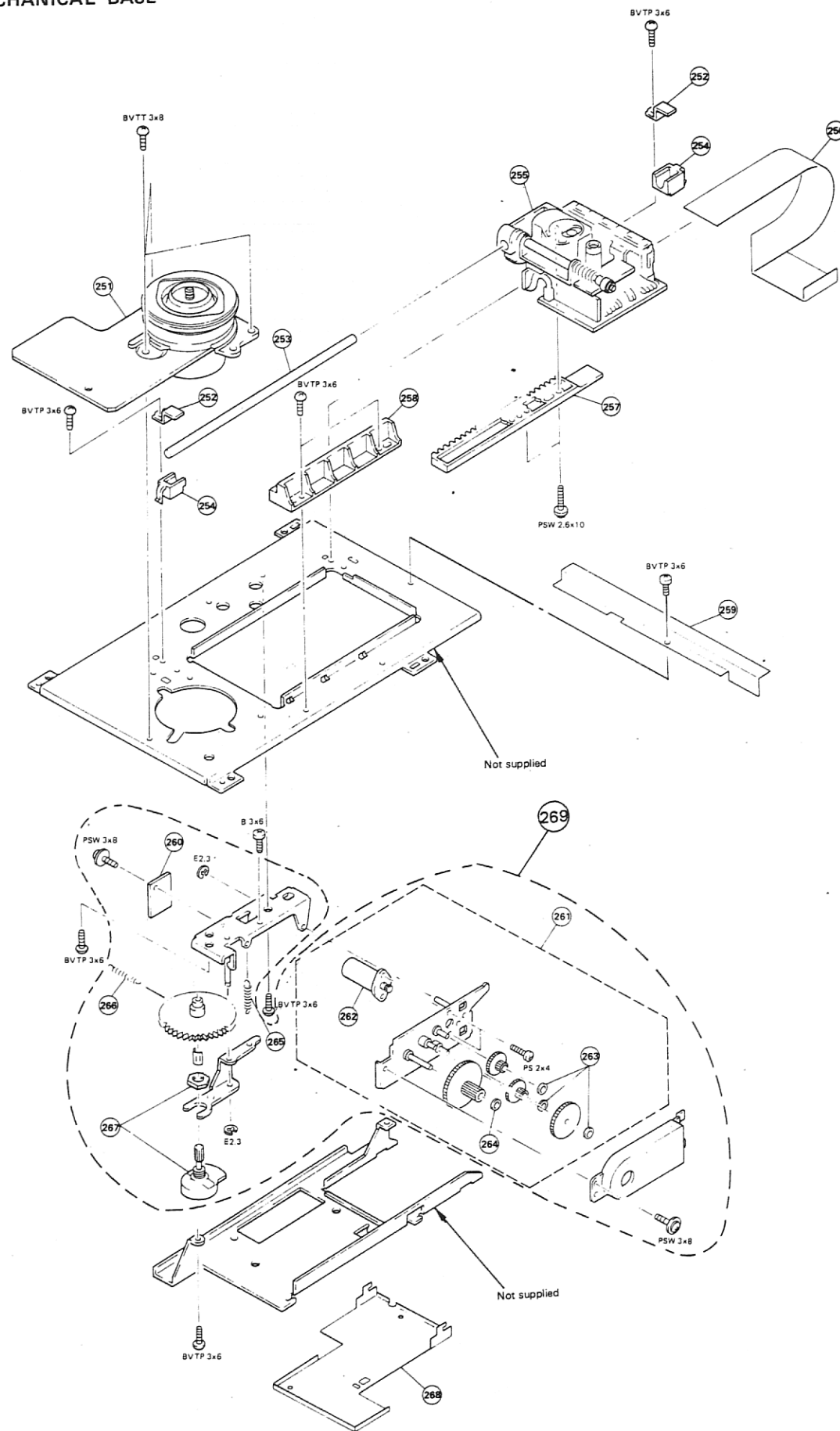


No.	Part No.	Description	Remark
201	3-694-825-01	SCREW (M3) (STEP), SPECIAL HEAD	
202	3-534-779-00	BELT, DRIVE	
203	3-669-596-00	WASHER (2.3), STOPPER	
204	3-694-829-02	PULLEY (G)	
205	3-703-358-03	PIN, PARALLEL (DIA. 2X8)	
206	3-694-832-01	GEAR (D)	
207	3-694-830-01	BEARING	
208	3-694-827-01	RUBBER, VIBRATION PROOF	
209	X-3694-872-1	MOTOR ASSY (LOADING) (M902)	
210	*1-618-838-11	DUS-127 BOARD	
211	*X-3694-815-4	PLATE ASSY, SIDE, LEFT	
212	*3-304-638-00	HOLDER, CHASSIS	
213	3-688-256-01	ROLLER (A), GUIDE	
214	*3-694-999-01	WIRE, SW	
215	*X-3694-845-1	STOPPER (LEFT) ASSY	
216	3-688-207-01	ROLLER, STOPPER	
217	*3-694-928-01	COLLAR, CUSHION	
218	*3-688-205-01	HOLDER, W	
219	Δ 1-553-318-00	SWITCH, PUSH (AC POWER)(1 KEY) (S901)	
220	*X-3694-855-1	SHAFT ASSY, DRIVE	
221	*1-618-840-11	DUS-129 BOARD	
222	*1-618-839-11	DUS-128 BOARD	
223	*3-710-313-01	PLATE, FRONT	
224	*X-3694-805-2	BRACKET ASSY, S	
225	*1-618-844-11	SW-138 BOARD	
226	3-694-824-01	PLATE, S	
227	3-630-566-00	SPRING (LOADING)	
228	3-694-479-01	FOOT	
229	*3-667-211-00	RETAINER, WIRE, FLUX	
230	*X-3694-850-1	STOPPER (RIGHT) ASSY	
231	*3-322-413-11	SPACER, INSULATING	
232	3-701-444-21	WASHER, 6	
233	3-684-465-01	NUT, HEXAGON	
234	4-902-067-41	KNOB, CONTROL	
235	3-703-078-01	NUT	
236	*1-618-843-11	HP-25 BOARD	
237	*3-667-512-00	SPACER, REMOTE JACK	
238	1-507-195-21	SPECIAL REMOTE CONTROL JACK (J901)	
240	Δ 1-509-898-00	RECEPTACLE	
241	Δ 1-509-910-00	HOUSING, CONNECTOR (2P)	
242	*3-710-337-21	PLATE (F), SHIELD	

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

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

5-6. MECHANICAL BASE



No.	Part No.	Description	Remark
251	8-835-171-01	MOTOR, DC BHF-3401A (SPINDLE) (M903)	
252	*3-694-811-01	RETAINER, SHAFT, FEED	
253	*3-688-322-02	SHAFT, GUIDE	
254	*3-694-810-01	HOLDER, FEED SHAFT	
255	8-848-053-01	PICKUP, OPTICS KSS-141B	
256	1-558-058-11	WIRE, FLEXIBLE CARD 20P	
257	3-694-911-01	RACK	
258	*3-694-910-02	TABLE, ROLLER	
259	*3-710-304-01	GUARD, HARNESS	
260	*1-626-679-11	SM-3 BOARD	
261	A-6491-025-A	GEAR BLOCK ASSY, FEED	262-264
262	1-541-503-11	MOTOR, DC (MNR-8400A) (SLIDER) (M901)	
263	3-669-465-00	WASHER (1.5), STOPPER	
264	3-669-596-00	WASHER (2.3), STOPPER	
265	*3-657-248-00	SPRING, TENSION	
266	3-507-111-00	SPRING, TENSION	
267	1-228-139-21	RES, VAR, CARBON 10K	
268	*3-694-879-02	SHIELD (B), FLEXIBLE	260-267
269	A-6491-032-A	MOTOR ASSY, SLIDE	

● HARDWARE LIST

SCREW

7-621-772-40	SCREW +B	2X8
7-628-253-00	SCREW +PS	2X4
7-628-254-30	+PSW,	2.6X10
7-682-545-09	SCREW +B	3X4
7-682-546-09	SCREW +B	3X5
7-682-547-04	SCREW +B	3X6
7-682-547-09	SCREW +B	3X6
7-682-548-04	SCREW +BVTT	3X8 (S)
7-682-560-04	SCREW +B	4X6
7-682-647-09	SCREW +PSW	3X6
7-682-648-09	SCREW +PSW	3X8
7-682-904-01	SCREW +PWH	4X6
7-685-645-79	SCREW +BVTP	3X6 TYPE2 IT-3
7-685-645-79	SCREW +BVTP	3X6 TYPE2
7-685-646-79	SCREW +BVTP	3X8 TYPE2 IT-3
7-685-646-79	SCREW +BVTP	3X8 TYPE2
7-685-647-79	SCREW +BVTP	3X10 TYPE2 IT-3
7-685-647-79	SCREW +BVTP	3X10 TYPE2

STOP RING

7-624-105-04	STOP RING 2.3, TYPE -E
7-624-109-04	STOP RING 5.0, TYPE -E

SPRING PIN

7-626-301-31	SPRING PIN 2X10
--------------	-----------------



## SECTION 6

### ELECTRICAL PARTS LIST

# PR-80

**NOTE:**

The components identified by mark **A** are critical for safety.

Replace only with part number specified.

Les composants identifiés par une marque **A** sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifié.

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.
- **RESISTORS**  
All resistors are in ohms  
METAL: Metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F: nonflammable
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- **SEMICONDUCTORS**  
In each case, U:  $\mu$ , for example:  
UA...:  $\mu$ A..., UPA...:  $\mu$ PA...,  
UPB...:  $\mu$ PB..., UPC...:  $\mu$ PC...,  
UPD...:  $\mu$ PD...
- **CAPACITORS**  
MF:  $\mu$ F, PF:  $\mu$ MF
- **COILS**  
MMH: mH, UH:  $\mu$ H

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
	*A-6421-078-A	PR-80 BOARD, COMPLETE *****		C128	1-123-333-00	ELECT 100MF	20% 16V
<u>CAPACITOR</u>				C129	1-162-201-31	CERAMIC 12PF	5% 50V
C1	1-124-270-11	ELECT 0.47MF	20% 50V	C130	1-162-211-31	CERAMIC 33PF	5% 50V
C2	1-123-379-00	ELECT 0.47MF	20% 50V	C131	1-162-205-31	CERAMIC 18PF	5% 50V
C3	1-161-379-00	CERAMIC 0.01MF	30% 16V	C132	1-162-192-31	CERAMIC 2.7PF	10% 50V
C4	1-161-379-00	CERAMIC 0.01MF	30% 16V	C133	1-102-976-00	CERAMIC 180PF	5% 50V
C5	1-161-379-00	CERAMIC 0.01MF	30% 16V	C134	1-123-333-00	ELECT 100MF	20% 16V
C6	1-124-283-00	ELECT 4.7MF	20% 16V	C135	1-162-217-31	CERAMIC 56PF	5% 50V
C7	1-162-282-31	CERAMIC 100PF	10% 50V	C136	1-123-356-00	ELECT 10MF	20% 16V
C8	1-124-270-11	ELECT 0.47MF	20% 50V	<u>CONNECTOR</u>			
C9	1-162-217-31	CERAMIC 56PF	5% 50V	CN2	*1-560-893-00	PIN, CONNECTOR 5P	
C10	1-162-217-31	CERAMIC 56PF	5% 50V	CN3	*1-560-893-00	PIN, CONNECTOR 5P	
C11	1-130-480-00	MYLAR 0.0056MF	5% 50V	CN6	*1-560-890-00	PIN, CONNECTOR 2P	
C13	1-123-332-00	ELECT 47MF	20% 16V	CN7	*1-560-891-00	PIN, CONNECTOR 3P	
C16	1-161-379-00	CERAMIC 0.01MF	30% 16V	CN8	*1-564-035-11	PIN, CONNECTOR 10P	
C17	1-161-379-00	CERAMIC 0.01MF	30% 16V	<u>DIODE</u>			
C20	1-161-379-00	CERAMIC 0.01MF	30% 16V	D1	8-719-911-19	DIODE 1SS119	
C21	1-161-379-00	CERAMIC 0.01MF	30% 16V	D2	8-719-911-19	DIODE 1SS119	
C22	1-130-477-00	MYLAR 0.0033MF	5% 50V	D3	8-719-109-84	DIODE RD5.1ES-B1	
C23	1-130-476-00	MYLAR 0.0027MF	5% 50V	D101	8-719-110-16	DIODE RD10ESB1	
C012	1-162-215-31	CERAMIC 47PF	5% 50V	<u>CONNECTOR SOCKET</u>			
C014	1-124-462-00	ELECT 10MF	20% 16V	FN1	*1-562-883-11	SOCKET, CONNECTOR 20P	
C015	1-123-356-00	ELECT 10MF	20% 16V	<u>IC</u>			
C018	1-124-462-00	ELECT 10MF	20% 16V	IC1	8-759-729-03	IC NJM2903D	
C019	1-124-462-00	ELECT 10MF	20% 16V	IC2	8-759-145-58	IC UPC4558C	
C101	1-123-380-00	ELECT 1MF	20% 50V	IC3	8-759-145-58	IC UPC4558C	
C102	1-161-379-00	CERAMIC 0.01MF	30% 16V	IC4	8-759-145-58	IC UPC4558C	
C103	1-102-976-00	CERAMIC 180PF	5% 50V	IC5	8-759-145-58	IC UPC4558C	
C104	1-123-356-00	ELECT 10MF	20% 16V	IC6	8-759-145-58	IC UPC4558C	
C105	1-162-284-31	CERAMIC 150PF	10% 50V	IC7	8-759-145-58	IC UPC4558C	
C106	1-162-288-31	CERAMIC 330PF	10% 50V	IC101	8-759-600-99	IC M51481P	
C107	1-162-284-31	CERAMIC 150PF	10% 50V	<u>COIL</u>			
C108	1-123-356-00	ELECT 10MF	20% 16V	L101	1-408-420-00	INDUCTOR 82UH	
C109	1-123-380-00	ELECT 1MF	20% 50V	L102	1-408-420-00	INDUCTOR 82UH	
C110	1-130-491-00	MYLAR 0.047MF	5% 50V	L103	1-408-411-00	INDUCTOR 15UH	
C111	1-162-198-31	CERAMIC 8.2PF	10% 50V	L104	1-408-422-00	INDUCTOR 120UH	
C112	1-162-198-31	CERAMIC 8.2PF	10% 50V	L105	1-408-417-00	INDUCTOR 47UH	
C113	1-162-290-31	CERAMIC 470PF	10% 50V	L106	1-408-421-00	INDUCTOR 100UH	
C114	1-162-290-31	CERAMIC 470PF	10% 50V	L107	1-408-421-00	INDUCTOR 100UH	
C116	1-162-282-31	CERAMIC 100PF	10% 50V	L108	1-408-419-00	INDUCTOR 68UH	
C117	1-101-005-00	CERAMIC 0.022MF	5% 50V	L109	1-408-419-00	INDUCTOR 68UH	
C118	1-162-284-31	CERAMIC 150PF	10% 50V	L110	1-408-414-00	INDUCTOR 27UH	
C119	1-162-215-31	CERAMIC 47PF	5% 50V	L111	1-408-409-00	INDUCTOR 10UH	
C120	1-130-476-00	MYLAR 0.0027MF	5% 50V	L112	1-408-421-00	INDUCTOR 100UH	
C121	1-123-356-00	ELECT 10MF	20% 16V	<u>IC LINK</u>			
C122	1-161-379-00	CERAMIC 0.01MF	30% 16V	PS001A	1-532-727-11	LINK, IC	
C123	1-161-379-00	CERAMIC 0.01MF	30% 16V				
C124	1-161-379-00	CERAMIC 0.01MF	30% 16V				
C125	1-162-215-31	CERAMIC 47PF	5% 50V				
C126	1-123-332-00	ELECT 47MF	20% 16V				
C127	1-123-332-00	ELECT 47MF	20% 16V				

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
<u>TRANSISTOR</u>							
Q1	8-729-178-54	TRANSISTOR 2SC2785		R33	1-249-435-11	CARBON 33K 5%	1/4W
Q2	8-729-204-84	TRANSISTOR 2SA1048-GR		R34	1-249-434-11	CARBON 27K 5%	1/4W
Q3	8-729-204-84	TRANSISTOR 2SA1048-GR		R35	1-249-405-11	CARBON 100 5%	1/4W
Q4	8-729-804-86	TRANSISTOR 2SB1142-S		R36	1-249-428-11	CARBON 8.2K 5%	1/4W
Q5	8-729-204-84	TRANSISTOR 2SA1048-GR		R37	1-249-428-11	CARBON 8.2K 5%	1/4W
Q6	8-729-178-54	TRANSISTOR 2SC2785		R38	1-249-437-11	CARBON 47K 5%	1/4W
Q7	8-729-900-63	TRANSISTOR DTA124ES		R39	1-249-429-11	CARBON 10K 5%	1/4W
Q8	8-729-178-54	TRANSISTOR 2SC2785		R40	1-249-434-11	CARBON 27K 5%	1/4W
Q101	8-729-218-42	TRANSISTOR 2SK184		R41	1-249-437-11	CARBON 47K 5%	1/4W
Q102	8-729-178-54	TRANSISTOR 2SC2785		R42	1-249-429-11	CARBON 10K 5%	1/4W
Q103	8-729-178-54	TRANSISTOR 2SC2785		R43	1-249-429-11	CARBON 10K 5%	1/4W
Q104	8-729-178-54	TRANSISTOR 2SC2785		R44	1-249-434-11	CARBON 27K 5%	1/4W
Q105	8-729-178-54	TRANSISTOR 2SC2785		R45	1-249-429-11	CARBON 10K 5%	1/4W
Q106	8-729-178-54	TRANSISTOR 2SC2785		R46	1-249-437-11	CARBON 47K 5%	1/4W
Q107	8-729-178-54	TRANSISTOR 2SC2785		R47	1-249-435-11	CARBON 33K 5%	1/4W
Q108	8-729-178-54	TRANSISTOR 2SC2785		R48	1-249-437-11	CARBON 47K 5%	1/4W
Q109	8-729-204-83	TRANSISTOR 2SA1048-GR		R49	1-249-437-11	CARBON 47K 5%	1/4W
<u>RESISTOR</u>							
R1	1-249-411-11	CARBON 330 5%	1/4W	R50	1-249-405-11	CARBON 100 5%	1/4W
R2	1-249-425-11	CARBON 4.7K 5%	1/4W	R51	1-249-429-11	CARBON 10K 5%	1/4W
R3	1-249-408-11	CARBON 180 5%	1/4W	R52	1-249-428-11	CARBON 8.2K 5%	1/4W
R4	1-249-425-11	CARBON 4.7K 5%	1/4W	R53	1-249-423-11	CARBON 3.3K 5%	1/4W
R5	1-249-416-11	CARBON 820 5%	1/4W	R54	1-249-434-11	CARBON 27K 5%	1/4W
R6	1-249-418-11	CARBON 1.2K 5%	1/4W	R55	1-249-414-11	CARBON 560 5%	1/4W
R7	1-249-427-11	CARBON 6.8K 5%	1/4W	R56	1-249-418-11	CARBON 1.2K 5%	1/4W
R8	1-249-432-11	CARBON 18K 5%	1/4W	R57	1-249-423-11	CARBON 3.3K 5%	1/4W
R9	1-249-429-11	CARBON 10K 5%	1/4W	R58	1-249-431-11	CARBON 15K 5%	1/4W
R10	1-249-435-11	CARBON 33K 5%	1/4W	R59	1-249-441-11	CARBON 100K 5%	1/4W
R11	1-249-435-11	CARBON 33K 5%	1/4W	R60	1-249-423-11	CARBON 3.3K 5%	1/4W
R12	1-249-425-11	CARBON 4.7K 5%	1/4W	R61	1-249-441-11	CARBON 100K 5%	1/4W
R13	1-210-828-00	CARBON 4.7M 5%	1/4W	R62	1-249-437-11	CARBON 47K 5%	1/4W
R14	1-249-429-11	CARBON 10K 5%	1/4W	R63	1-249-429-11	CARBON 10K 5%	1/4W
R15	1-249-429-11	CARBON 10K 5%	1/4W	R64	1-249-418-11	CARBON 1.2K 5%	1/4W
R16	1-249-418-11	CARBON 1.2K 5%	1/4W	R65	1-249-430-11	CARBON 12K 5%	1/4W
R17	1-249-413-11	CARBON 470 5%	1/4W	R66	1-249-433-11	CARBON 22K 5%	1/4W
R18	1-249-429-11	CARBON 10K 5%	1/4W	R67	1-249-429-11	CARBON 10K 5%	1/4W
R19	1-210-828-00	CARBON 4.7M 5%	1/4W	R68	1-249-429-11	CARBON 10K 5%	1/4W
R20	1-249-429-11	CARBON 10K 5%	1/4W	R72	1-249-437-11	CARBON 47K 5%	1/4W
R21	1-249-425-11	CARBON 4.7K 5%	1/4W	R73	1-249-430-11	CARBON 12K 5%	1/4W
R22	1-249-425-11	CARBON 4.7K 5%	1/4W	R74	1-215-489-00	CARBON 680K 5%	1/4W
R23	1-249-425-11	CARBON 4.7K 5%	1/4W	R75	1-215-479-00	CARBON 270K 5%	1/4W
R24	1-249-425-11	CARBON 4.7K 5%	1/4W	R76	1-249-437-11	CARBON 47K 5%	1/4W
R25	1-249-433-11	CARBON 22K 5%	1/4W	R102	1-249-425-11	CARBON 4.7K 5%	1/4W
R26	1-249-433-11	CARBON 22K 5%	1/4W	R103	1-249-429-11	CARBON 10K 5%	1/4W
R27	1-249-429-11	CARBON 10K 5%	1/4W	R104	1-249-421-11	CARBON 2.2K 5%	1/4W
R28	1-249-429-11	CARBON 10K 5%	1/4W	R105	1-249-416-11	CARBON 820 5%	1/4W
R29	1-247-885-00	CARBON 180K 5%	1/4W	R106	1-249-409-11	CARBON 220 5%	1/4W
R30	1-249-429-11	CARBON 10K 5%	1/4W	R107	1-249-413-11	CARBON 470 5%	1/4W
R31	1-249-429-11	CARBON 10K 5%	1/4W	R108	1-249-415-11	CARBON 680 5%	1/4W
R32	1-249-434-11	CARBON 27K 5%	1/4W	R109	1-249-417-11	CARBON 1K 5%	1/4W
				R110	1-249-413-11	CARBON 470 5%	1/4W
				R111	1-215-394-00	CARBON 75 5%	1/4W
				R112	1-249-417-11	CARBON 1K 5%	1/4W
				R113	1-249-426-11	CARBON 5.6K 5%	1/4W

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

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Ref.No	Part No.	Description	Remark
R114	1-249-418-11	CARBON 1.2K 5% 1/4W	
R115	1-249-417-11	CARBON 1K 5% 1/4W	
R116	1-249-414-11	CARBON 560 5% 1/4W	
R117	1-249-405-11	CARBON 100 5% 1/4W	
R118	1-249-417-11	CARBON 1K 5% 1/4W	
R119	1-249-401-11	CARBON 47 5% 1/4W	
R120	1-249-417-11	CARBON 1K 5% 1/4W	
R121	1-249-433-11	CARBON 22K 5% 1/4W	
R122	1-249-418-11	CARBON 1.2K 5% 1/4W	
R123	1-249-417-11	CARBON 1K 5% 1/4W	
R124	1-249-417-11	CARBON 1K 5% 1/4W	
R125	1-249-419-11	CARBON 1.5K 5% 1/4W	
R126	1-249-421-11	CARBON 2.2K 5% 1/4W	
R127	1-249-417-11	CARBON 1K 5% 1/4W	
R128	1-249-419-11	CARBON 1.5K 5% 1/4W	
R129	1-249-414-11	CARBON 560 5% 1/4W	
R130	1-249-436-11	CARBON 39K 5% 1/4W	
R131	1-249-432-11	CARBON 18K 5% 1/4W	
R132	1-249-417-11	CARBON 1K 5% 1/4W	
R133	1-249-416-11	CARBON 820 5% 1/4W	
R134	1-249-418-11	CARBON 1.2K 5% 1/4W	
R135	1-249-421-11	CARBON 2.2K 5% 1/4W	
<u>VARIABLE RESISTOR</u>			
RV1	1-228-994-00	RES, ADJ, CARBON 10K	
RV2	1-228-995-00	RES, ADJ, CARBON 22K	
RV3	1-228-994-00	RES, ADJ, CARBON 10K	
RV4	1-228-996-00	RES, ADJ, CARBON 47K	
RV5	1-228-990-00	RES, ADJ, CARBON 1K	
RV6	1-228-996-00	RES, ADJ, CARBON 47K	
<u>VARIABLE RESISTOR</u>			
RV007	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV101	1-228-990-00	RES, ADJ, CARBON 1K	
RV102	1-228-993-00	RES, ADJ, CARBON 4.7K	
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*A-6421-079-A AU-73 BOARD, COMPLETE			
*****			
<u>BAND PASS FILTER</u>			
BPF1	1-235-805-11	FILTER, BAND PASS	
BPF2	1-235-806-11	FILTER, BAND PASS	
<u>CAPACITOR</u>			
C1	1-130-475-00	MYLAR 0.0022MF 5% 50V	
C2	1-123-306-00	ELECT 47MF 20% 10V	
C3	1-162-294-31	CERAMIC 0.001MF 10% 50V	
C4	1-123-306-00	ELECT 47MF 20% 10V	
C5	1-161-379-00	CERAMIC 0.01MF 30% 16V	
C6	1-124-292-00	ELECT 33MF 20% 6.3V	
C7	1-123-356-00	ELECT 10MF 20% 16V	

Ref.No	Part No.	Description	Remark
C8	1-161-021-11	CERAMIC 0.047MF 10% 25V	
C9	1-161-494-00	CERAMIC 0.022MF 25V	
C10	1-123-356-00	ELECT 10MF 20% 16V	
C11	1-162-290-31	CERAMIC 470PF 10% 50V	
C12	1-123-369-00	ELECT 4.7MF 20% 50V	
C13	1-130-495-00	MYLAR 0.1MF 5% 50V	
C14	1-123-306-00	ELECT 47MF 20% 10V	
C15	1-161-494-00	CERAMIC 0.022MF 25V	
C16	1-161-494-00	CERAMIC 0.022MF 25V	
C17	1-161-494-00	CERAMIC 0.022MF 25V	
C18	1-124-124-00	ELECT 220MF 20% 10V	
C19	1-161-494-00	CERAMIC 0.022MF 25V	
C20	1-161-494-00	CERAMIC 0.022MF 25V	
C21	1-161-494-00	CERAMIC 0.022MF 25V	
C22	1-162-290-31	CERAMIC 470PF 10% 50V	
C23	1-124-124-00	ELECT 220MF 20% 10V	
C24	1-162-207-31	CERAMIC 22PF 5% 50V	
C25	1-162-282-31	CERAMIC 100PF 10% 50V	
C26	1-161-379-00	CERAMIC 0.01MF 30% 16V	
C27	1-130-478-00	MYLAR 0.0039MF 5% 50V	
C29	1-130-478-00	MYLAR 0.0039MF 5% 50V	
C30	1-123-330-00	ELECT 22MF 20% 16V	
C31	1-130-473-00	MYLAR 0.0015MF 5% 50V	
C33	1-162-287-31	CERAMIC 270PF 10% 50V	
C37	1-162-286-31	CERAMIC 220PF 10% 50V	
C38	1-123-330-00	ELECT 22MF 20% 16V	
C39	1-130-489-00	MYLAR 0.033MF 5% 50V	
C40	1-161-377-00	CERAMIC 0.0047MF 30% 16V	
C41	1-123-356-00	ELECT 10MF 20% 16V	
C42	1-123-356-00	ELECT 10MF 20% 16V	
C43	1-124-124-00	ELECT 220MF 20% 10V	
C44	1-161-494-00	CERAMIC 0.022MF 25V	
C45	1-161-494-00	CERAMIC 0.022MF 25V	
C46	1-161-494-00	CERAMIC 0.022MF 25V	
C47	1-124-124-00	ELECT 220MF 20% 10V	
C48	1-162-293-31	CERAMIC 820PF 10% 50V	
C49	1-161-379-00	CERAMIC 0.01MF 30% 16V	
C50	1-162-288-31	CERAMIC 330PF 10% 50V	
C51	1-130-478-00	MYLAR 0.0039MF 5% 50V	
C52	1-162-211-31	CERAMIC 33PF 5% 50V	
C53	1-123-330-00	ELECT 22MF 20% 16V	
C55	1-130-478-00	MYLAR 0.0039MF 5% 50V	
C56	1-123-369-00	ELECT 4.7MF 20% 50V	
C57	1-123-330-00	ELECT 22MF 20% 16V	
C58	1-161-377-00	CERAMIC 0.0047MF 30% 16V	
C59	1-123-330-00	ELECT 22MF 20% 16V	
C60	1-162-286-31	CERAMIC 220PF 10% 50V	
C61	1-130-489-00	MYLAR 0.033MF 5% 50V	
C62	1-162-287-31	CERAMIC 270PF 10% 50V	
C66	1-130-473-00	MYLAR 0.0015MF 5% 50V	
C69	1-123-306-00	ELECT 47MF 20% 10V	
C70	1-130-493-00	MYLAR 0.068MF 5% 50V	
C71	1-130-493-00	MYLAR 0.068MF 5% 50V	

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



Ref.No	Part No.	Description	Remark
R46	1-249-439-11	CARBON 68K 5%	1/4W
R47	1-249-425-11	CARBON 4.7K 5%	1/4W
R48	1-249-424-11	CARBON 3.9K 5%	1/4W
R49	1-249-416-11	CARBON 820 5%	1/4W
R51	1-249-417-11	CARBON 1K 5%	1/4W
R54	1-249-421-11	CARBON 2.2K 5%	1/4W
R55	1-249-416-11	CARBON 820 5%	1/4W
R57	1-249-417-11	CARBON 1K 5%	1/4W
R58	1-210-821-00	CARBON 2.2M 5%	1/4W
R59	1-249-425-11	CARBON 4.7K 5%	1/4W
R60	1-249-441-11	CARBON 100K 5%	1/4W
R61	1-249-419-11	CARBON 1.5K 5%	1/4W
R62	1-249-421-11	CARBON 2.2K 5%	1/4W
R63	1-215-395-00	METAL 82 1%	1/6W
R64	1-215-437-00	METAL 4.7K 1%	1/6W
R65	1-249-439-11	CARBON 68K 5%	1/4W
R66	1-249-424-11	CARBON 3.9K 5%	1/4W
R67	1-249-425-11	CARBON 4.7K 5%	1/4W
R68	1-249-417-11	CARBON 1K 5%	1/4W
R69	1-249-413-11	CARBON 470 5%	1/4W
R71	1-249-425-11	CARBON 4.7K 5%	1/4W
R72	1-249-425-11	CARBON 4.7K 5%	1/4W
R73	1-247-883-00	CARBON 150K 5%	1/4W
R74	1-247-883-00	CARBON 150K 5%	1/4W
R75	1-215-468-00	METAL 91K 1%	1/6W
R76	1-210-828-00	CARBON 4.7M 5%	1/4W
R77	1-215-468-00	METAL 91K 1%	1/6W
R78	1-249-421-11	CARBON 2.2K 5%	1/4W
R79	1-249-409-11	CARBON 220 5%	1/4W
R80	1-249-427-11	CARBON 6.8K 5%	1/4W
R81	1-249-427-11	CARBON 6.8K 5%	1/4W
R83	1-249-409-11	CARBON 220 5%	1/4W
R84	1-249-434-11	CARBON 27K 5%	1/4W
R85	1-215-462-00	METAL 51K 1%	1/6W
R86	1-249-432-11	CARBON 18K 5%	1/4W
R87	1-249-434-11	CARBON 27K 5%	1/4W
R88	1-249-432-11	CARBON 18K 5%	1/4W
R89	1-215-462-00	METAL 51K 1%	1/6W
R90	1-249-437-11	CARBON 47K 5%	1/4W
R91	1-249-437-11	CARBON 47K 5%	1/4W
R92	1-249-441-11	CARBON 100K 5%	1/4W
R95	1-249-420-11	CARBON 1.8K 5%	1/4W
<u>VARIABLE RESISTOR</u>			
RV1	1-228-996-00	RES, ADJ, CARBON 47K	
RV2	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV3	1-228-995-00	RES, ADJ, CARBON 22K	
RV4	1-228-995-00	RES, ADJ, CARBON 22K	

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Ref.No	Part No.	Description	Remark
*A-6421-083-A PS-113 BOARD, COMPLETE *****			
△	1-509-546-00	3P INLET	
	1-533-162-00	HOLDER, FUSE	
	1-535-512-11	TERMINAL, DIP	
△	1-570-173-11	SWITCH, VOLTAGE CHANGE (220V/240V)	
	3-645-566-00	BAND, BINDING	
<u>CAPACITOR</u>			
C2	1-101-006-00	CERAMIC 0.047MF	50V
C3	1-101-006-00	CERAMIC 0.047MF	50V
C4	1-124-772-11	ELECT 10000MF	20% 25V
C6	1-124-771-00	ELECT 6800MF	20% 25V
C8	1-124-763-00	ELECT 10000MF	20% 10V
C9	1-123-356-00	ELECT 10MF	20% 50V
C11	1-124-120-11	ELECT 220MF	20% 16V
C14	1-124-120-11	ELECT 220MF	20% 16V
C18	1-123-380-00	ELECT 1MF	20% 50V
C001	△ 1-136-472-11	FILM 0.1MF	20% 250V
C005	1-124-564-11	ELECT 4700MF	20% 25V
C007	1-126-091-11	ELECT 15000MF	20% 10V
C016	1-124-444-00	ELECT 220MF	20% 10V
C017	1-124-444-00	ELECT 220MF	20% 10V
C020	1-124-444-00	ELECT 220MF	20% 10V
<u>CONNECTOR</u>			
CN2	*1-560-894-00	PIN, CONNECTOR 6P	
CN3	*1-560-893-00	PIN, CONNECTOR 5P	
CN4	*1-560-894-00	PIN, CONNECTOR 6P	
CN5	*1-560-894-00	PIN, CONNECTOR 6P	
CN6	*1-560-900-00	PIN, CONNECTOR 12P	
CN7	*1-560-891-00	PIN, CONNECTOR 3P	
CN10	△ 1-506-371-00	2P PLUG (L)	
<u>DIODE</u>			
D1	8-719-801-73	DIODE S5277D-LC7-10	
D2	8-719-801-73	DIODE S5277D-LC7-10	
D3	8-719-801-72	DIODE 6D4B42-LC1	
D4	8-719-801-74	DIODE 4D4B44	
D6	8-719-911-19	DIODE 1SS119	
D7	8-719-911-19	DIODE 1SS119	
D11	8-719-109-55	DIODE RD2.4ESB	
D13	8-719-911-19	DIODE 1SS119	
<u>FUSE</u>			
F001	△ 1-532-284-00	FUSE, TIME-LAG	
F002	△ 1-532-237-00	FUSE, TIME-LAG	
F003	△ 1-532-237-00	FUSE, TIME-LAG	
F004	△ 1-532-259-00	FUSE, TIME-LAG	
F005	△ 1-532-259-00	FUSE, TIME-LAG	
<u>IC</u>			
IC1	8-759-135-80	IC UPC358C	

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

Les composants identifiés par une marque △ sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifié.

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

**PS-113****SV-32**

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
IC2	8-759-135-80	IC UPC358C		*A-6421-196-A		SV-32 BOARD, COMPLETE *****	
<u>IC LINK</u>				<u>CAPACITOR</u>			
PS001 <sup>Δ</sup>	1-532-605-00	LINK, IC		C001	1-162-286-31	CERAMIC 220PF	10% 50V
PS003 <sup>Δ</sup>	1-532-605-00	LINK, IC		C002	1-130-471-00	MYLAR 0.001MF	5% 50V
<u>TRANSISTOR</u>				C004	1-130-471-00	MYLAR 0.001MF	5% 50V
Q1	8-729-804-67	TRANSISTOR 2SB1133-R		C005	1-130-474-00	MYLAR 0.0018MF	5% 50V
Q3	8-729-804-17	TRANSISTOR 2SD1666-R		C006	1-130-475-00	MYLAR 0.0022MF	5% 50V
Q4	8-729-804-67	TRANSISTOR 2SB1133-R		C007	1-130-482-00	MYLAR 0.0082MF	5% 50V
Q5	8-729-804-17	TRANSISTOR 2SD1666-R		C008	1-124-245-00	ELECT 4.7MF	20% 16V
Q6	8-729-105-73	TRANSISTOR 2SK523-L2		C009	1-127-474-51	ELECT(SOLID) 0.15MF	5% 25V
Q7	8-729-177-33	TRANSISTOR 2SD773-4		C011	1-130-483-00	MYLAR 0.01MF	5% 50V
<u>RESISTOR</u>				C012	1-136-166-00	MYLAR 0.12MF	5% 50V
R1	1-249-421-11	CARBON 2.2K 5%	1/4W	C013	1-130-474-00	MYLAR 0.0018MF	5% 50V
R2	1-249-413-11	CARBON 470 5%	1/4W	C101	1-161-379-00	CERAMIC 0.01MF	30% 16V
R4	1-215-447-00	METAL 12K 1%	1/6W	C102	1-161-379-00	CERAMIC 0.01MF	30% 16V
R5	1-215-445-00	METAL 10K 1%	1/6W	C103	1-161-379-00	CERAMIC 0.01MF	30% 16V
R9	1-215-461-00	METAL 47K 1%	1/6W	C104	1-161-379-00	CERAMIC 0.01MF	30% 16V
R10	1-215-461-00	METAL 47K 1%	1/6W	C105	1-161-379-00	CERAMIC 0.01MF	30% 16V
R12	1-249-415-11	CARBON 680 5%	1/4W	C106	1-161-379-00	CERAMIC 0.01MF	30% 16V
R14	1-249-431-11	CARBON 15K 5%	1/4W	C107	1-161-379-00	CERAMIC 0.01MF	30% 16V
R15	1-249-430-11	CARBON 12K 5%	1/4W	C108	1-161-379-00	CERAMIC 0.01MF	30% 16V
R16	1-249-428-11	CARBON 8.2K 5%	1/4W	C109	1-161-379-00	CERAMIC 0.01MF	30% 16V
R17	1-249-411-11	CARBON 330 5%	1/4W	C110	1-161-379-00	CERAMIC 0.01MF	30% 16V
R19	1-215-445-00	METAL 10K 1%	1/6W	C111	1-161-379-00	CERAMIC 0.01MF	30% 16V
R20	1-215-445-00	METAL 10K 1%	1/6W	C112	1-124-584-00	ELECT 100MF	20% 10V
R21	1-249-408-11	CARBON 180 5%	1/4W	C113	1-161-379-00	CERAMIC 0.01MF	30% 16V
R25	1-249-416-11	CARBON 820 5%	1/4W	C114	1-124-584-00	ELECT 100MF	20% 10V
R26	1-249-417-11	CARBON 1K 5%	1/4W	C115	1-161-379-00	CERAMIC 0.01MF	30% 16V
R27	1-202-663-51	SOLID 5.6M 20%	1/2W	<u>CONNECTOR</u>			
RO13	1-249-430-11	CARBON 12K 5%	1/4W	CN001	*1-564-035-11	PIN, CONNECTOR 10P	
RO24	1-249-429-11	CARBON 10K 5%	1/4W	CN002	*1-564-028-00	PIN, CONNECTOR 3P	
RO29	1-249-429-11	CARBON 10K 5%	1/4W	<u>DIODE</u>			
RO30	1-249-429-11	CARBON 10K 5%	1/4W	D001	8-719-911-19	DIODE 1SS119	
R205	1-249-402-11	CARBON 56 5%	1/4W	D002	8-719-911-19	DIODE 1SS119	
R205	1-249-403-11	CARBON 68 5%	1/4W	D003	8-719-911-19	DIODE 1SS119	
R205	1-249-404-00	CARBON 82 5%	1/4W	<u>IC</u>			
R205	1-249-405-11	CARBON 100 5%	1/4W	IC001	8-759-729-03	IC NJM2903D	
<u>VARIABLE RESISTOR</u>				IC002	8-759-972-44	IC MSM70H034RS	
RV1	1-228-990-00	RES, ADJ, CARBON 1K		IC003	8-759-203-08	IC TC74HC221P	
<u>TRANSFORMER</u>				IC004	8-759-145-58	IC UPC4558C	
T001	Δ.1-421-771-11	FILTER, LINE		IC005	8-759-345-38	IC HD14538EP	
*****				IC006	8-759-145-58	IC UPC4558C	
				IC007	8-759-240-66	IC TC4066BP	
				<u>TRANSISTOR</u>			
				Q001	8-729-117-54	TRANSISTOR 2SA1175	

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



# SS-87

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C302	1-130-471-00	MYLAR 0.001MF	5%				
C303	1-123-369-00	ELECT 4.7MF	20%				
C304	1-162-286-31	CERAMIC 220PF	10%				
C305	1-130-483-00	MYLAR 0.01MF	5%				
C306	1-161-379-00	CERAMIC 0.01MF	30%				
C307	1-123-379-00	ELECT 0.47MF	20%				
<u>CONNECTOR</u>							
CN10	*1-560-900-41	PIN, CONNECTOR 12P					
CN001	*1-560-894-00	PIN, CONNECTOR 6P					
CN002	*1-560-900-00	PIN, CONNECTOR 12P					
CN003	*1-560-898-00	PIN, CONNECTOR 10P					
CN004	*1-560-894-00	PIN, CONNECTOR 6P					
CN005	*1-560-890-00	PIN, CONNECTOR 2P					
CN006	*1-560-894-00	PIN, CONNECTOR 6P					
CN007	*1-560-890-00	PIN, CONNECTOR 2P					
CN009	*1-560-892-00	PIN, CONNECTOR 4P					
CN012	*1-560-898-00	PIN, CONNECTOR 10P					
<u>TRIMAR</u>							
CV001	1-141-260-00	TRIMAR, CERAMIC					
<u>DIODE</u>							
D001	8-719-109-74	DIODE RD4.3ES-B1					
D201	8-719-911-19	DIODE 1SS119					
D202	8-719-911-19	DIODE 1SS119					
D204	8-719-911-19	DIODE 1SS119					
D205	8-719-911-19	DIODE 1SS119					
D206	8-719-911-19	DIODE 1SS119					
D208	8-719-911-19	DIODE 1SS119					
D209	8-719-911-19	DIODE 1SS119					
D210	8-719-911-19	DIODE 1SS119					
D211	8-719-911-19	DIODE 1SS119					
D301	8-719-911-19	DIODE 1SS119					
D302	8-719-911-19	DIODE 1SS119					
D303	8-719-911-19	DIODE 1SS119					
D304	8-719-911-19	DIODE 1SS119					
<u>IC</u>							
IC002	8-759-912-72	IC PD0011					
IC003	8-759-912-69	IC PD0010					
IC004	8-759-600-24	IC M54543L					
IC005	8-759-203-21	IC TC74HC273P					
IC201	8-759-912-59	IC UM3002A					
IC203	8-759-250-81	IC TC5081AP					
IC204	8-759-345-38	IC HD14538BP					
IC205	8-759-145-58	IC UPC4558C					
IC206	8-759-240-24	IC TC4024BP					
IC207	8-759-901-23	IC SN74LS123N					
IC301	8-759-240-81	IC TC4081BP					
IC302	8-759-729-03	IC NJM2903D					
				<u>IC SOCKET</u>			
ICS001	1-526-830-11	SOCKET, IC 64P					
<u>COIL</u>							
L001	1-408-425-00	INDUCTOR 220UH					
L002	1-408-425-00	INDUCTOR 220UH					
<u>TRANSISTOR</u>							
Q001	8-729-600-27	TRANSISTOR 2SC634SP					
Q002	8-729-600-27	TRANSISTOR 2SC634SP					
Q203	8-729-218-42	TRANSISTOR 2SK184					
Q211	8-729-600-27	TRANSISTOR 2SC634SP					
Q212	8-729-204-83	TRANSISTOR 2SA1048-GR					
Q213	8-729-218-42	TRANSISTOR 2SK184					
Q214	8-729-600-27	TRANSISTOR 2SC634SP					
Q215	8-729-900-83	TRANSISTOR DTC124XS					
Q303	8-729-600-27	TRANSISTOR 2SC634SP					
Q304	8-729-600-27	TRANSISTOR 2SC634SP					
Q305	8-729-204-83	TRANSISTOR 2SA1048-GR					
Q306	8-729-600-27	TRANSISTOR 2SC634SP					
Q307	8-729-204-83	TRANSISTOR 2SA1048-GR					
Q308	8-729-201-04	TRANSISTOR 2SC2878					
Q309	8-729-600-27	TRANSISTOR 2SC634SP					
Q310	8-729-204-83	TRANSISTOR 2SA1048-GR					
Q311	8-729-600-27	TRANSISTOR 2SC634SP					
<u>RESISTOR</u>							
R001	1-249-410-11	CARBON 270 5%	1/4W				
R002	1-249-413-11	CARBON 470 5%	1/4W				
R003	1-249-441-11	CARBON 100K 5%	1/4W				
R004	1-249-441-11	CARBON 100K 5%	1/4W				
R007	1-249-423-11	CARBON 3.3K 5%	1/4W				
R008	1-249-413-11	CARBON 470 5%	1/4W				
R009	1-215-493-00	CARBON 1M 5%	1/4W				
R010	1-249-441-11	CARBON 100K 5%	1/4W				
R012	1-249-417-11	CARBON 1K 5%	1/4W				
R013	1-249-435-11	CARBON 33K 5%	1/4W				
R014	1-249-435-11	CARBON 33K 5%	1/4W				
R015	1-249-417-11	CARBON 1K 5%	1/4W				
R016	1-249-435-11	CARBON 33K 5%	1/4W				
R017	1-249-421-11	CARBON 2.2K 5%	1/4W				
R201	1-249-435-11	CARBON 33K 5%	1/4W				
R202	1-249-435-11	CARBON 33K 5%	1/4W				
R203	1-249-441-11	CARBON 100K 5%	1/4W				
R204	1-249-431-11	CARBON 15K 5%	1/4W				
R205	1-247-887-00	CARBON 220K 5%	1/4W				
R206	1-215-483-00	CARBON 390K 5%	1/4W				
R207	1-249-413-11	CARBON 470 5%	1/4W				
R208	1-249-431-11	CARBON 15K 5%	1/4W				
R209	1-247-887-00	CARBON 220K 5%	1/4W				
R210	1-215-487-00	CARBON 560K 5%	1/4W				
R211	1-249-431-11	CARBON 15K 5%	1/4W				

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



Ref.No	Part No.	Description	Remark
R225	1-249-435-11	CARBON	33K 5% 1/4W
R226	1-249-435-11	CARBON	33K 5% 1/4W
R227	1-249-429-11	CARBON	10K 5% 1/4W
R228	1-249-421-11	CARBON	2.2K 5% 1/4W
R229	1-249-436-11	CARBON	39K 5% 1/4W
R230	1-249-425-11	CARBON	4.7K 5% 1/4W
R233	1-247-887-00	CARBON	220K 5% 1/4W
R234	1-249-436-11	CARBON	39K 5% 1/4W
R235	1-249-433-11	CARBON	22K 5% 1/4W
R236	1-249-429-11	CARBON	10K 5% 1/4W
R237	1-249-441-11	CARBON	100K 5% 1/4W
R238	1-247-881-00	CARBON	120K 5% 1/4W
R239	1-249-440-11	CARBON	82K 5% 1/4W
R240	1-249-437-11	CARBON	47K 5% 1/4W
R241	1-247-887-00	CARBON	220K 5% 1/4W
R242	1-247-887-00	CARBON	220K 5% 1/4W
R243	1-247-887-00	CARBON	220K 5% 1/4W
R244	1-249-405-11	CARBON	100 5% 1/4W
R245	1-247-895-00	CARBON	470K 5% 1/4W
R246	1-215-483-00	CARBON	390K 5% 1/4W
R247	1-249-437-11	CARBON	47K 5% 1/4W
R248	1-249-441-11	CARBON	100K 5% 1/4W
R249	1-249-439-11	CARBON	68K 5% 1/4W
R250	1-215-458-00	CARBON	36K 5% 1/4W
R251	1-249-435-11	CARBON	33K 5% 1/4W
R252	1-249-425-11	CARBON	4.7K 5% 1/4W
R253	1-249-435-11	CARBON	33K 5% 1/4W
R254	1-215-452-00	METAL	20K 1% 1/6W
R255	1-215-469-00	METAL	100K 1% 1/6W
R256	1-249-422-11	CARBON	2.7K 5% 1/4W
R257	1-249-429-11	CARBON	10K 5% 1/4W
R258	1-249-433-11	CARBON	22K 5% 1/4W
R259	1-249-434-11	CARBON	27K 5% 1/4W
R260	1-215-446-00	CARBON	11K 5% 1/4W
R261	1-249-417-11	CARBON	1K 5% 1/4W
R262	1-249-429-11	CARBON	10K 5% 1/4W
R263	1-249-432-11	CARBON	18K 5% 1/4W
R264	1-249-421-11	CARBON	2.2K 5% 1/4W
R265	1-249-423-11	CARBON	3.3K 5% 1/4W
R266	1-249-435-11	CARBON	33K 5% 1/4W
R267	1-249-429-11	CARBON	10K 5% 1/4W
R268	1-249-425-11	CARBON	4.7K 5% 1/4W
R269	1-249-437-11	CARBON	47K 5% 1/4W
R270	1-249-431-11	CARBON	15K 5% 1/4W
R271	1-215-466-00	CARBON	75K 5% 1/4W
R273	1-249-440-11	CARBON	82K 5% 1/4W
R274	1-249-417-11	CARBON	1K 5% 1/4W
R275	1-249-441-11	CARBON	100K 5% 1/4W
R301	1-249-433-11	CARBON	22K 5% 1/4W
R302	1-249-437-11	CARBON	47K 5% 1/4W
R303	1-249-436-11	CARBON	39K 5% 1/4W
R304	1-247-883-00	CARBON	150K 5% 1/4W
R307	1-249-425-11	CARBON	4.7K 5% 1/4W

Ref.No	Part No.	Description	Remark
R308	1-249-433-11	CARBON	22K 5% 1/4W
R309	1-247-883-00	CARBON	150K 5% 1/4W
R310	1-249-405-11	CARBON	100 5% 1/4W
R311	1-249-437-11	CARBON	47K 5% 1/4W
R312	1-249-433-11	CARBON	22K 5% 1/4W
R313	1-249-433-11	CARBON	22K 5% 1/4W
R314	1-249-433-11	CARBON	22K 5% 1/4W
R315	1-247-895-00	CARBON	470K 5% 1/4W
R316	1-247-895-00	CARBON	470K 5% 1/4W
R317	1-249-425-11	CARBON	4.7K 5% 1/4W
R318	1-249-425-11	CARBON	4.7K 5% 1/4W
R319	1-249-432-11	CARBON	18K 5% 1/4W
R320	1-249-429-11	CARBON	10K 5% 1/4W
R321	1-249-425-11	CARBON	4.7K 5% 1/4W
R322	1-249-413-11	CARBON	470 5% 1/4W
R323	1-249-433-11	CARBON	22K 5% 1/4W
R324	1-249-437-11	CARBON	47K 5% 1/4W
R325	1-249-429-11	CARBON	10K 5% 1/4W
R326	1-249-425-11	CARBON	4.7K 5% 1/4W
R327	1-249-429-11	CARBON	10K 5% 1/4W
R328	1-249-429-11	CARBON	10K 5% 1/4W
R329	1-249-431-11	CARBON	15K 5% 1/4W
R330	1-249-429-11	CARBON	10K 5% 1/4W

COMPOSITION CIRCUIT BLOCK

RB001	1-233-026-11	COMPOSITION CIRCUIT BLOCK
RB002	1-233-026-11	COMPOSITION CIRCUIT BLOCK
RB003	1-233-026-11	COMPOSITION CIRCUIT BLOCK
RB004	1-233-026-11	COMPOSITION CIRCUIT BLOCK

TIMMER

TM001	1-548-119-21	CLOCK
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CERAMIC

X001	1-567-133-00	VIBLATOR, CERAMIC
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\*A-6421-198-A SV-29 BOARD, COMPLETE  
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\*4-363-146-00 HEAT SINK, V.OUT

7-682-647-09	SCREW +PS 3X6
7-685-645-79	SCREW +BVTP 3X6 TYPE2 IT-3
7-685-645-79	SCREW +BVTP 3X6 TYPE2
7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3
7-685-647-79	SCREW +BVTP 3X10 TYPE2

CAPACITOR

C001	1-123-380-00	ELECT	1MF	20%	50V
C002	1-161-379-00	CERAMIC	0.01MF	30%	16V
C003	1-161-379-00	CERAMIC	0.01MF	30%	16V
C004	1-123-306-00	ELECT	47MF	20%	10V
C005	1-124-499-11	ELECT	1MF	20%	50V

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



Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
Q007	8-729-218-42	TRANSISTOR 2SK184		R027	1-249-401-11	CARBON	47 5% 1/4W
Q008	8-729-218-42	TRANSISTOR 2SK184		R028	1-249-401-11	CARBON	47 5% 1/4W
Q009	8-729-218-42	TRANSISTOR 2SK184		R031	1-249-429-11	CARBON	10K 5% 1/4W
Q010	8-729-804-17	TRANSISTOR 2SD1666-R		R032	1-249-441-11	CARBON	100K 5% 1/4W
Q011	8-729-804-67	TRANSISTOR 2SB1133-R		R033	1-249-427-11	CARBON	6.8K 5% 1/4W
Q012	8-729-804-91	TRANSISTOR 2SD1682-S		R034	1-247-887-00	CARBON	220K 5% 1/4W
Q013	8-729-204-83	TRANSISTOR 2SA1048-GR		R035	1-215-487-00	CARBON	560K 5% 1/4W
Q014	8-729-804-91	TRANSISTOR 2SD1682-S		R036	1-249-429-11	CARBON	10K 5% 1/4W
Q015	8-729-804-86	TRANSISTOR 2SB1142-S		R037	1-249-429-11	CARBON	10K 5% 1/4W
Q016	8-729-900-63	TRANSISTOR DTA124ES		R038	1-249-430-11	CARBON	12K 5% 1/4W
Q017	8-729-600-27	TRANSISTOR 2SC634SP		R039	1-249-438-11	CARBON	56K 5% 1/4W
Q018	8-729-600-27	TRANSISTOR 2SC634SP		R040	1-247-883-00	CARBON	150K 5% 1/4W
Q019	8-729-218-42	TRANSISTOR 2SK184		R041	1-247-881-00	CARBON	120K 5% 1/4W
Q101	8-729-600-27	TRANSISTOR 2SC634SP		R042	1-249-438-11	CARBON	56K 5% 1/4W
Q102	8-729-600-27	TRANSISTOR 2SC634SP		R043	1-249-418-11	CARBON	1.2K 5% 1/4W
Q103	8-729-600-27	TRANSISTOR 2SC634SP		R044	1-249-423-11	CARBON	3.3K 5% 1/4W
Q104	8-729-600-27	TRANSISTOR 2SC634SP		R045	1-249-441-11	CARBON	100K 5% 1/4W
Q105	8-729-200-28	TRANSISTOR 2SA1048TP-Y		R046	1-249-420-11	CARBON	1.8K 5% 1/4W
Q106	8-729-177-43	TRANSISTOR 2SD774		R047	1-249-441-11	CARBON	100K 5% 1/4W
Q107	8-729-201-54	TRANSISTOR 2SC2562-0		R048	1-249-435-11	CARBON	33K 5% 1/4W
Q108	8-729-600-27	TRANSISTOR 2SC634SP		R049	1-249-425-11	CARBON	4.7K 5% 1/4W
Q109	8-729-804-86	TRANSISTOR 2SB1142-S		R050	1-249-431-11	CARBON	15K 5% 1/4W
Q110	8-729-600-27	TRANSISTOR 2SC634SP		R051	1-249-435-11	CARBON	33K 5% 1/4W
Q111	8-729-600-27	TRANSISTOR 2SC634SP		R052	1-249-441-11	CARBON	100K 5% 1/4W
Q112	8-729-900-63	TRANSISTOR DTA124ES		R053	1-249-441-11	CARBON	100K 5% 1/4W
Q113	8-729-200-28	TRANSISTOR 2SA1048TP-Y		R054	1-249-428-11	CARBON	8.2K 5% 1/4W
<u>RESISTOR</u>				R055	1-249-429-11	CARBON	10K 5% 1/4W
R001	1-249-417-11	CARBON	1K 5% 1/4W	R056	1-249-429-11	CARBON	10K 5% 1/4W
R002	1-215-491-00	CARBON	820K 5% 1/4W	R057	1-249-441-11	CARBON	100K 5% 1/4W
R003	1-249-435-11	CARBON	33K 5% 1/4W	R058	1-249-441-11	CARBON	100K 5% 1/4W
R004	1-249-429-11	CARBON	10K 5% 1/4W	R059	1-249-429-11	CARBON	10K 5% 1/4W
R005	1-249-439-11	CARBON	68K 5% 1/4W	R060	1-247-887-00	CARBON	220K 5% 1/4W
R006	1-249-434-11	CARBON	27K 5% 1/4W	R061	1-247-887-00	CARBON	220K 5% 1/4W
R007	1-249-417-11	CARBON	1K 5% 1/4W	R062	1-249-433-11	CARBON	22K 5% 1/4W
R008	1-249-421-11	CARBON	2.2K 5% 1/4W	R063	1-249-418-11	CARBON	1.2K 5% 1/4W
R010	1-249-405-11	CARBON	100 5% 1/4W	R064	1-249-419-11	CARBON	1.5K 5% 1/4W
R011	1-249-432-11	CARBON	18K 5% 1/4W	R065	1-249-429-11	CARBON	10K 5% 1/4W
R012	1-247-895-00	CARBON	470K 5% 1/4W	R066	1-249-441-11	CARBON	100K 5% 1/4W
R013	1-249-431-11	CARBON	15K 5% 1/4W	R067	1-249-429-11	CARBON	10K 5% 1/4W
R014	1-249-433-11	CARBON	22K 5% 1/4W	R068	1-249-437-11	CARBON	47K 5% 1/4W
R015	1-249-438-11	CARBON	56K 5% 1/4W	R069	1-247-895-00	CARBON	470K 5% 1/4W
R016	1-249-433-11	CARBON	22K 5% 1/4W	R070	1-249-429-11	CARBON	10K 5% 1/4W
R017	1-249-419-11	CARBON	1.5K 5% 1/4W	R071	1-249-429-11	CARBON	10K 5% 1/4W
R018	1-249-424-11	CARBON	3.9K 5% 1/4W	R072	1-249-417-11	CARBON	1K 5% 1/4W
R019	1-249-437-11	CARBON	47K 5% 1/4W	R073	1-249-435-11	CARBON	33K 5% 1/4W
R020	1-249-427-11	CARBON	6.8K 5% 1/4W	R074	1-249-401-11	CARBON	47 5% 1/4W
R021	1-249-436-11	CARBON	39K 5% 1/4W	R077	1-249-425-11	CARBON	4.7K 5% 1/4W
R022	1-249-429-11	CARBON	10K 5% 1/4W	R078	1-249-426-11	CARBON	5.6K 5% 1/4W
R023	1-247-885-00	CARBON	180K 5% 1/4W	R079	1-249-401-11	CARBON	47 5% 1/4W
R024	1-249-433-11	CARBON	22K 5% 1/4W	R080	1-249-428-11	CARBON	8.2K 5% 1/4W
R025	1-215-487-00	CARBON	560K 5% 1/4W	R083	1-249-405-11	CARBON	100 5% 1/4W
R026	1-249-401-11	CARBON	47 5% 1/4W	R084 $\Delta$	1-216-371-00	METAL OXIDE	1.5 5% 2W F
				R085	1-249-417-11	CARBON	1K 5% 1/4W

The components identified by mark  $\Delta$  are critical for safety.

Replace only with part number specified.

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifié.

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

**SV-29****VP-10**

Ref.No	Part No.	Description			Remark	Ref.No	Part No.	Description			Remark
R086	1-249-401-11	CARBON	47	5%	1/4W						
R087	1-249-435-11	CARBON	33K	5%	1/4W						
R090	1-249-425-11	CARBON	4.7K	5%	1/4W						
R091	1-249-405-11	CARBON	100	5%	1/4W						
R092	△ 1-216-369-00	METAL OXIDE	1	5%	2W	F					
R093	1-249-432-11	CARBON	18K	5%	1/4W						
R098	1-249-413-11	CARBON	470	5%	1/4W						
R099	1-249-427-11	CARBON	6.8K	5%	1/4W						
R101	1-249-436-11	CARBON	39K	5%	1/4W						
R102	1-247-883-00	CARBON	150K	5%	1/4W						
R103	1-249-433-11	CARBON	.22K	5%	1/4W						
R104	1-249-427-11	CARBON	6.8K	5%	1/4W						
R105	1-249-420-11	CARBON	1.8K	5%	1/4W						
R106	1-249-430-11	CARBON	12K	5%	1/4W						
R107	1-249-429-11	CARBON	10K	5%	1/4W						
R108	1-249-417-11	CARBON	1K	5%	1/4W						
R109	1-249-417-11	CARBON	1K	5%	1/4W						
R110	1-249-417-11	CARBON	1K	5%	1/4W						
R111	1-249-429-11	CARBON	10K	5%	1/4W						
R112	1-249-430-11	CARBON	12K	5%	1/4W						
R113	1-249-428-11	CARBON	8.2K	5%	1/4W						
R114	1-249-429-11	CARBON	10K	5%	1/4W						
R115	1-249-429-11	CARBON	10K	5%	1/4W						
R116	1-249-397-11	CARBON	22	5%	1/4W						
R117	1-249-441-11	CARBON	100K	5%	1/4W						
R118	1-247-881-00	CARBON	120K	5%	1/4W						
R119	1-247-881-00	CARBON	120K	5%	1/4W						
R120	1-249-429-11	CARBON	10K	5%	1/4W						
R121	1-249-439-11	CARBON	68K	5%	1/4W						
R122	1-249-430-11	CARBON	12K	5%	1/4W						
R123	1-249-436-11	CARBON	39K	5%	1/4W						
R124	1-249-429-11	CARBON	10K	5%	1/4W						
R125	1-249-423-11	CARBON	3.3K	5%	1/4W						
R126	1-249-413-11	CARBON	470	5%	1/4W						
R127	1-249-420-11	CARBON	1.8K	5%	1/4W						
R128	1-249-405-11	CARBON	100	5%	1/4W						
R129	△ 1-216-390-11	METAL OXIDE	1.2	5%	3W	F					
R130	1-215-453-00	METAL	22K	1%	1/6W						
R131	1-215-453-00	METAL	22K	1%	1/6W						
R132	1-215-451-00	METAL	18K	1%	1/6W						
R133	1-215-451-00	METAL	18K	1%	1/6W						
R134	1-249-429-11	CARBON	10K	5%	1/4W						
R135	1-249-409-11	CARBON	220	5%	1/4W						
R136	1-249-419-11	CARBON	1.5K	5%	1/4W						
R137	1-249-433-11	CARBON	22K	5%	1/4W						
R138	1-249-429-11	CARBON	10K	5%	1/4W						
R139	1-249-431-11	CARBON	15K	5%	1/4W						
R140	1-249-436-11	CARBON	39K	5%	1/4W						
R141	1-249-439-11	CARBON	68K	5%	1/4W						
R142	1-247-895-00	CARBON	470K	5%	1/4W						
R150	1-249-387-11	CARBON	3.3	5%	1/4W						
R151	1-249-387-11	CARBON	3.3	5%	1/4W						
R152	1-249-421-11	CARBON	2.2K	5%	1/4W						
								VARIABLE RESISTOR			
								RV001 1-230-498-11	RES, ADJ, CARBON 47K		
								RV002 1-230-720-11	RES, ADJ, CARBON 4.7K		
								RV101 1-228-995-00	RES, ADJ, CARBON 22K		
								*****			
								*A-6421-203-A	VP-10 BOARD, COMPLETE		
								*****			
								*1-561-724-00	SOCKET, CONNECTOR 2P		
								*3-710-317-01	PLATE, GROUND		
								*3-710-318-01	CASE (VP), SHIELD		
									JACK BOARD		
								A401 1-536-985-11	JACK BOARD (P)		
									CAPACITOR		
								C001 1-123-332-00	ELECT 47MF	20%	16V
								C002 1-123-356-00	ELECT 10MF	20%	16V
								C003 1-162-211-31	CERAMIC 33PF	5%	50V
								C004 1-130-495-00	MYLAR 0.1MF	5%	50V
								C005 1-161-379-00	CERAMIC 0.01MF	20%	16V
								C006 1-124-463-00	ELECT 0.1MF	20%	50V
								C007 1-123-356-00	ELECT 10MF	20%	16V
								C008 1-123-332-00	ELECT 47MF	20%	16V
								C009 1-162-201-31	CERAMIC 12PF	5%	50V
								C010 1-162-201-31	CERAMIC 12PF	5%	50V
								C011 1-124-462-00	ELECT 10MF	20%	16V
								C012 1-123-356-00	ELECT 10MF	20%	16V
								C013 1-123-332-00	ELECT 47MF	20%	16V
								C014 1-162-215-31	CERAMIC 47PF	5%	50V
								C015 1-102-978-00	CERAMIC 220PF	5%	50V
								C016 1-161-375-00	CERAMIC 0.0022MF	30%	16V
								C017 1-102-978-00	CERAMIC 220PF	5%	50V
								C018 1-124-462-00	ELECT 10MF	20%	16V
								C019 1-123-356-00	ELECT 10MF	20%	16V
								C020 1-162-215-31	CERAMIC 47PF	5%	50V
								C021 1-162-286-31	CERAMIC 220PF	10%	50V
								C022 1-130-485-00	MYLAR 0.015MF	5%	50V
								C023 1-124-465-00	ELECT 0.47MF	20%	50V
								C024 1-123-306-00	ELECT 47MF	20%	10V
								C025 1-123-306-00	ELECT 47MF	20%	10V
								C026 1-162-292-31	CERAMIC 680PF	10%	50V
								C027 1-130-494-11	MYLAR 0.082MF	5%	50V
								C028 1-162-288-31	CERAMIC 330PF	10%	50V
								C029 1-162-288-31	CERAMIC 330PF	10%	50V
								C030 1-124-124-00	ELECT 220MF	20%	6.3V
								C031 1-124-499-11	ELECT 1MF	20%	50V
								C032 1-126-101-11	ELECT 100MF	20%	10V
								C033 1-123-332-00	ELECT 47MF	20%	16V
								C034 1-123-332-00	ELECT 47MF	20%	16V
								C035 1-161-379-00	CERAMIC 0.01MF	20%	16V

The components identified by mark △ are critical for safety.

Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifié.

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

# VP-10

Ref.No	Part No.	Description		Remark	Ref.No	Part No.	Description		Remark		
C036	1-126-101-11	ELECT	100MF	20%	10V	C113	1-161-379-00	CERAMIC	0.01MF	20%	16V
C037	1-126-101-11	ELECT	100MF	20%	10V	C114	1-162-196-31	CERAMIC	5.6PF	10%	50V
C038	1-161-021-11	CERAMIC	0.047MF	10%	25V	C115	1-162-282-31	CERAMIC	100PF	10%	50V
C039	1-123-306-00	ELECT	47MF	20%	10V	C116	1-162-290-31	CERAMIC	470PF	10%	50V
C040	1-161-021-11	CERAMIC	0.047MF	10%	25V	C117	1-162-282-31	CERAMIC	100PF	10%	50V
C041	1-101-004-00	CERAMIC	0.01MF		50V	C118	1-161-379-00	CERAMIC	0.01MF	20%	16V
C042	1-123-356-00	ELECT	10MF	20%	16V	C119	1-161-379-00	CERAMIC	0.01MF	20%	16V
C043	1-101-005-00	CERAMIC	0.022MF		50V	C120	1-161-379-00	CERAMIC	0.01MF	20%	16V
C044	1-107-206-00	MICA	15PF	5%	500V	C121	1-161-379-00	CERAMIC	0.01MF	20%	16V
C045	1-107-210-00	MICA	22PF	5%	500V	C122	1-162-290-31	CERAMIC	470PF	10%	50V
C047	1-161-055-00	CERAMIC	0.022MF	10%	25V	C123	1-161-379-00	CERAMIC	0.01MF	20%	16V
C048	1-123-306-00	ELECT	47MF	20%	10V	C124	1-161-379-00	CERAMIC	0.01MF	20%	16V
C049	1-162-280-31	CERAMIC	82PF	10%	50V	C125	1-162-203-31	CERAMIC	15PF	5%	50V
C050	1-162-219-31	CERAMIC	68PF	5%	50V	C126	1-162-219-31	CERAMIC	68PF	5%	50V
C051	1-123-330-00	ELECT	22MF	20%	16V	C127	1-162-209-31	CERAMIC	27PF	5%	50V
C052	1-162-198-31	CERAMIC	8.2PF	10%	50V	C128	1-162-219-31	CERAMIC	68PF	5%	50V
C053	1-162-215-31	CERAMIC	47PF	5%	50V	C129	1-162-209-31	CERAMIC	27PF	5%	50V
C054	1-162-207-31	CERAMIC	22PF	5%	50V	C130	1-162-201-31	CERAMIC	12PF	5%	50V
C055	1-162-196-31	CERAMIC	5.6PF	10%	50V	C131	1-162-209-31	CERAMIC	27PF	5%	50V
C056	1-124-236-00	ELECT	47MF	20%	10V	C132	1-162-207-31	CERAMIC	22PF	5%	50V
C057	1-124-224-00	ELECT	47MF	20%	6.3V	C133	1-162-282-31	CERAMIC	100PF	10%	50V
C058	1-123-306-00	ELECT	47MF	20%	10V	C134	1-162-211-31	CERAMIC	33PF	5%	50V
C059	1-124-463-00	ELECT	0.1MF	20%	50V	C135	1-123-306-00	ELECT	47MF	20%	10V
C060	1-124-255-00	ELECT	1MF	20%	50V	C136	1-123-332-00	ELECT	47MF	20%	16V
C061	1-162-282-31	CERAMIC	100PF	10%	50V	C137	1-123-306-00	ELECT	47MF	20%	10V
C062	1-162-288-31	CERAMIC	330PF	10%	50V	C138	1-162-282-31	CERAMIC	100PF	10%	50V
C064	1-124-270-11	ELECT	0.47MF	20%	50V	C139	1-162-280-31	CERAMIC	82PF	10%	50V
C065	1-124-236-00	ELECT	47MF	20%	10V	C140	1-161-379-00	CERAMIC	0.01MF	20%	16V
C066	1-126-101-11	ELECT	100MF	20%	10V	C142	1-123-380-00	ELECT	1MF	20%	50V
C067	1-162-280-31	CERAMIC	82PF	10%	50V	C143	1-130-499-00	MYLAR	0.22MF	5%	50V
C068	1-162-211-31	CERAMIC	33PF	5%	50V	C144	1-123-380-00	ELECT	1MF	20%	50V
C069	1-162-211-31	CERAMIC	33PF	5%	50V	C145	1-123-306-00	ELECT	47MF	20%	10V
C070	1-162-203-31	CERAMIC	15PF	5%	50V	C146	1-123-332-00	ELECT	47MF	20%	16V
C071	1-162-290-31	CERAMIC	470PF	10%	50V	C147	1-162-211-31	CERAMIC	33PF	5%	50V
C080	1-161-021-11	CERAMIC	0.047MF	10%	25V	C148	1-123-306-00	ELECT	47MF	20%	10V
C081	1-161-021-11	CERAMIC	0.047MF	10%	25V	C149	1-124-443-00	ELECT	100MF	20%	6.3V
C082	1-161-021-11	CERAMIC	0.047MF	10%	25V	C150	1-124-443-00	ELECT	100MF	20%	6.3V
C083	1-161-021-11	CERAMIC	0.047MF	10%	25V	C151	1-162-291-31	CERAMIC	560PF	10%	50V
C084	1-161-021-11	CERAMIC	0.047MF	10%	25V	C152	1-123-356-00	ELECT	10MF	20%	16V
C085	1-161-021-11	CERAMIC	0.047MF	10%	25V	C153	1-123-306-00	ELECT	47MF	20%	10V
C090	1-123-332-00	ELECT	47MF	20%	16V	C154	1-124-442-00	ELECT	330MF	20%	6.3V
C101	1-123-332-00	ELECT	47MF	20%	16V	C156	1-124-442-00	ELECT	330MF	20%	6.3V
C102	1-123-306-00	ELECT	47MF	20%	10V	C157	1-162-193-31	CERAMIC	3.3PF	10%	50V
C103	1-162-282-31	CERAMIC	100PF	10%	50V	C158	1-162-196-31	CERAMIC	5.6PF	10%	50V
C104	1-101-005-00	CERAMIC	0.022MF		50V	C159	1-162-203-31	CERAMIC	15PF	5%	50V
C105	1-162-283-31	CERAMIC	120PF	10%	50V	C160	1-124-443-00	ELECT	100MF	20%	6.3V
C106	1-123-306-00	ELECT	47MF	20%	10V	C161	1-123-306-00	ELECT	47MF	20%	10V
C107	1-101-005-00	CERAMIC	0.022MF		50V	C201	1-124-224-00	ELECT	47MF	20%	6.3V
C108	1-130-495-00	MYLAR	0.1MF	5%	50V	C202	1-130-479-00	MYLAR	0.0047MF	5%	50V
C109	1-101-005-00	CERAMIC	0.022MF		50V	C203	1-162-291-31	CERAMIC	560PF	10%	50V
C110	1-124-463-00	ELECT	0.1MF	20%	50V	C204	1-130-495-00	MYLAR	0.1MF	5%	50V
C111	1-161-379-00	CERAMIC	0.01MF	20%	16V	C205	1-124-462-00	ELECT	10MF	20%	16V
C112	1-123-306-00	ELECT	47MF	20%	10V	C206	1-161-379-00	CERAMIC	0.01MF	20%	16V

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

# VP-10

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark	
C207	1-162-215-31	CERAMIC	47PF 5%	50V				
C208	1-162-215-31	CERAMIC	47PF 5%	50V				
C209	1-124-224-00	ELECT	47MF 20%	6.3V				
C210	1-130-483-00	MYLAR	0.01MF 5%	50V				
C211	1-130-483-00	MYLAR	0.01MF 5%	50V				
C212	1-124-224-00	ELECT	47MF 20%	6.3V				
C213	1-130-483-00	MYLAR	0.01MF 5%	50V				
C214	1-130-477-00	MYLAR	0.0033MF 5%	50V				
C216	1-130-483-00	MYLAR	0.01MF 5%	50V				
C217	1-124-224-00	ELECT	47MF 20%	6.3V				
C218	1-124-224-00	ELECT	47MF 20%	6.3V				
C219	1-101-004-00	CERAMIC	0.01MF 5%	50V				
C220	1-162-282-31	CERAMIC	100PF 10%	50V				
C221	1-162-286-31	CERAMIC	220PF 10%	50V				
C222	1-162-286-31	CERAMIC	220PF 10%	50V				
C223	1-162-282-31	CERAMIC	100PF 10%	50V				
C224	1-130-477-00	MYLAR	0.0033MF 5%	50V				
C225	1-130-471-00	MYLAR	0.001MF 5%	50V				
C226	1-161-021-11	CERAMIC	0.047MF 10%	25V				
C227	1-131-381-00	TANTALUM	47MF 20%	6.3V				
C401	1-107-157-00	MICA	27PF 5%	500V				
C402	1-107-204-00	MICA	12PF 5%	500V				
C403	1-130-487-00	MYLAR	0.022MF 5%	50V				
C404	1-130-467-00	MYLAR	470PF 5%	50V				
C405	1-107-159-00	MICA	33PF 5%	500V				
C406	1-107-077-00	MICA	47PF 5%	50V				
C407	1-162-207-31	CERAMIC	22PF 5%	50V				
C408	1-162-289-31	CERAMIC	390PF 10%	50V				
C409	1-130-491-00	MYLAR	0.047MF 5%	50V				
C410	1-123-332-00	ELECT	47MF 20%	16V				
C414	1-130-471-00	MYLAR	0.001MF 5%	50V				
C415	1-130-471-00	FILM	0.001MF 5%	50V				
C416	1-130-471-00	FILM	0.001MF 5%	50V				
C417	1-123-356-00	ELECT	10MF 20%	16V				
C418	1-123-356-00	ELECT	10MF 20%	16V				
C419	1-161-379-00	CERAMIC	0.01MF 20%	16V				
C421	1-161-379-00	CERAMIC	0.01MF 20%	16V				
C422	1-107-211-00	MICA	24PF 5%	500V				
C423	1-107-167-00	MICA	75PF 5%	50V				
C424	1-161-379-00	CERAMIC	0.01MF 20%	16V				
C425	1-123-369-00	ELECT	4.7MF 20%	25V				
<u>FILTER</u>								
CF001	1-567-657-11	FILTER, CERAMIC (SFS-MA TYPE)						
<u>CONNECTOR</u>								
CN001	*1-560-894-00	PIN, CONNECTOR 6P						
CN002	*1-560-891-00	PIN, CONNECTOR 3P						
CN005	*1-560-894-00	PIN, CONNECTOR 6P						
CN007	*1-560-898-00	PIN, CONNECTOR 10P						
CN009	*1-560-896-00	PIN, CONNECTOR 8P						
						<u>TRIMMER</u>		
CV401	1-141-227-00	CAP, CERAMIC TRIMMER						
						<u>DIODE</u>		
D003	8-719-921-19	DIODE 1SS119TG						
D401	8-719-907-19	DIODE FC52M-5						
D402	8-719-921-19	DIODE 1SS119TG						
						<u>IC</u>		
IC001	8-752-321-89	IC CXL5003P						
IC002	8-752-006-10	IC CX20061						
IC003	8-759-912-64	IC PA0009						
IC004	8-752-320-31	IC CXL1004P						
IC005	8-759-950-07	IC SN751078N						
IC006	8-759-912-67	IC PA9003						
IC007	8-759-220-00	IC TC40H000P						
IC008	8-759-220-04	IC TC40H004P						
IC101	8-752-321-89	IC CXL5003P						
IC102	8-759-927-56	IC BA7021						
IC103	8-759-200-60	IC TA7060AP						
IC201	8-752-030-44	IC CXA1018S						
IC202	8-759-902-21	IC SN74LS221N						
IC401	8-759-207-28	IC TC9015P						
IC403	8-759-902-21	IC SN74LS221N						
IC404	8-759-902-21	IC SN74LS221N						
IC409	8-759-240-11	IC TC40118P						
IC410	8-759-240-53	IC TC40538P						
IC411	8-759-278-09	IC TA78L009AP						
IC412	8-759-938-56	IC MB88201H-523M						
						<u>COIL</u>		
L001	1-410-364-41	INDUCTOR				39UH		
L002	1-410-336-11	INDUCTOR				220UH		
L003	1-408-422-00	INDUCTOR				120UH		
L004	1-410-328-11	INDUCTOR				10UH		
L005	1-410-328-11	INDUCTOR				10UH		
L006	1-410-328-11	INDUCTOR				10UH		
L007	1-410-316-11	INDUCTOR				1UH		
L008	1-410-334-11	INDUCTOR				100UH		
L009	1-410-328-11	INDUCTOR				10UH		
L010	1-410-328-11	INDUCTOR				10UH		
L011	1-410-364-41	INDUCTOR				39UH		
L012	1-408-414-00	INDUCTOR				27UH		
L013	1-408-418-00	INDUCTOR				56UH		
L014	1-410-328-11	INDUCTOR				10UH		
L015	1-410-328-11	INDUCTOR				10UH		
L016	1-408-412-00	INDUCTOR				18UH		
L017	1-410-328-11	INDUCTOR				10UH		
L018	1-410-328-11	INDUCTOR				10UH		
L019	1-410-328-11	INDUCTOR				10UH		
L020	1-410-328-11	INDUCTOR				10UH		
L021	1-410-328-11	INDUCTOR				10UH		

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





# VP-10

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R029	1-249-438-11	CARBON	56K 5% 1/4W	R118	1-249-419-11	CARBON	1.5K 5% 1/4W
R030	1-249-437-11	CARBON	47K 5% 1/4W	R119	1-249-417-11	CARBON	1K 5% 1/4W
R031	1-249-417-11	CARBON	1K 5% 1/4W	R120	1-249-417-11	CARBON	1K 5% 1/4W
R032	1-249-417-11	CARBON	1K 5% 1/4W	R121	1-249-421-11	CARBON	2.2K 5% 1/4W
R033	1-249-417-11	CARBON	1K 5% 1/4W	R122	1-249-429-11	CARBON	10K 5% 1/4W
R034	1-215-493-00	CARBON	1M 5% 1/4W	R123	1-249-417-11	CARBON	1K 5% 1/4W
R035	1-249-421-11	CARBON	2.2K 5% 1/4W	R124	1-249-417-11	CARBON	1K 5% 1/4W
R037	1-249-411-11	CARBON	330 5% 1/4W	R125	1-249-429-11	CARBON	10K 5% 1/4W
R038	1-249-421-11	CARBON	2.2K 5% 1/4W	R126	1-249-430-11	CARBON	12K 5% 1/4W
R039	1-249-413-11	CARBON	470 5% 1/4W	R127	1-249-425-11	CARBON	4.7K 5% 1/4W
R040	1-249-423-11	CARBON	3.3K 5% 1/4W	R128	1-249-431-11	CARBON	15K 5% 1/4W
R041	1-249-423-11	CARBON	3.3K 5% 1/4W	R129	1-249-417-11	CARBON	1K 5% 1/4W
R042	1-249-417-11	CARBON	1K 5% 1/4W	R132	1-249-421-11	CARBON	2.2K 5% 1/4W
R043	1-249-419-11	CARBON	1.5K 5% 1/4W	R133	1-249-413-11	CARBON	470 5% 1/4W
R044	1-249-417-11	CARBON	1K 5% 1/4W	R134	1-249-413-11	CARBON	470 5% 1/4W
R045	1-249-415-11	CARBON	680 5% 1/4W	R135	1-249-417-11	CARBON	1K 5% 1/4W
R046	1-249-425-11	CARBON	4.7K 5% 1/4W	R136	1-249-417-11	CARBON	1K 5% 1/4W
R047	1-249-417-11	CARBON	1K 5% 1/4W	R137	1-249-417-11	CARBON	1K 5% 1/4W
R048	1-249-418-11	CARBON	1.2K 5% 1/4W	R138	1-249-425-11	CARBON	4.7K 5% 1/4W
R049	1-249-417-11	CARBON	1K 5% 1/4W	R139	1-249-417-11	CARBON	1K 5% 1/4W
R050	1-249-425-11	CARBON	4.7K 5% 1/4W	R141	1-249-421-11	CARBON	2.2K 5% 1/4W
R051	1-249-417-11	CARBON	1K 5% 1/4W	R145	1-249-429-11	CARBON	10K 5% 1/4W
R052	1-249-421-11	CARBON	2.2K 5% 1/4W	R146	1-249-417-11	CARBON	1K 5% 1/4W
R053	1-249-429-11	CARBON	10K 5% 1/4W	R147	1-249-418-11	CARBON	1.2K 5% 1/4W
R054	1-249-429-11	CARBON	10K 5% 1/4W	R148	1-249-427-11	CARBON	6.8K 5% 1/4W
R055	1-249-441-11	CARBON	100K 5% 1/4W	R149	1-249-417-11	CARBON	1K 5% 1/4W
R056	1-249-405-11	CARBON	100 5% 1/4W	R150	1-249-417-11	CARBON	1K 5% 1/4W
R057	1-249-417-11	CARBON	1K 5% 1/4W	R151	1-249-415-11	CARBON	680 5% 1/4W
R058	1-249-417-11	CARBON	1K 5% 1/4W	R152	1-249-417-11	CARBON	1K 5% 1/4W
R059	1-249-417-11	CARBON	1K 5% 1/4W	R153	1-249-417-11	CARBON	1K 5% 1/4W
R060	1-249-421-11	CARBON	2.2K 5% 1/4W	R154	1-249-418-11	CARBON	1.2K 5% 1/4W
R062	1-249-417-11	CARBON	1K 5% 1/4W	R155	1-249-419-11	CARBON	1.5K 5% 1/4W
R063	1-249-417-11	CARBON	1K 5% 1/4W	R156	1-249-413-11	CARBON	470 5% 1/4W
R064	1-249-405-11	CARBON	100 5% 1/4W	R157	1-249-415-11	CARBON	680 5% 1/4W
R065	1-249-424-11	CARBON	3.9K 5% 1/4W	R158	1-249-419-11	CARBON	1.5K 5% 1/4W
R066	1-249-417-11	CARBON	1K 5% 1/4W	R159	1-249-419-11	CARBON	1.5K 5% 1/4W
R067	1-249-417-11	CARBON	1K 5% 1/4W	R160	1-249-419-11	CARBON	1.5K 5% 1/4W
R101	1-249-417-11	CARBON	1K 5% 1/4W	R161	1-249-417-11	CARBON	1K 5% 1/4W
R102	1-249-417-11	CARBON	1K 5% 1/4W	R162	1-249-417-11	CARBON	1K 5% 1/4W
R103	1-249-421-11	CARBON	2.2K 5% 1/4W	R163	1-249-417-11	CARBON	1K 5% 1/4W
R104	1-215-493-00	CARBON	1M 5% 1/4W	R164	1-249-404-00	CARBON	82 5% 1/4W
R105	1-249-429-11	CARBON	10K 5% 1/4W	R165	1-249-405-11	CARBON	100 5% 1/4W
R107	1-249-426-11	CARBON	5.6K 5% 1/4W	R166	1-249-401-11	CARBON	47 5% 1/4W
R108	1-249-417-11	CARBON	1K 5% 1/4W	R167	1-249-425-11	CARBON	4.7K 5% 1/4W
R109	1-249-417-11	CARBON	1K 5% 1/4W	R168	1-249-413-11	CARBON	470 5% 1/4W
R110	1-249-425-11	CARBON	4.7K 5% 1/4W	R169	1-249-413-11	CARBON	470 5% 1/4W
R111	1-249-422-11	CARBON	2.7K 5% 1/4W	R170	1-249-429-11	CARBON	10K 5% 1/4W
R112	1-249-413-11	CARBON	470 5% 1/4W	R171	1-249-418-11	CARBON	1.2K 5% 1/4W
R113	1-249-419-11	CARBON	1.5K 5% 1/4W	R172	1-249-417-11	CARBON	1K 5% 1/4W
R114	1-249-417-11	CARBON	1K 5% 1/4W	R173	1-249-429-11	CARBON	10K 5% 1/4W
R115	1-249-417-11	CARBON	1K 5% 1/4W	R174	1-249-425-11	CARBON	4.7K 5% 1/4W
R116	1-249-421-11	CARBON	2.2K 5% 1/4W	R176	1-249-417-11	CARBON	1K 5% 1/4W
R117	1-249-413-11	CARBON	470 5% 1/4W	R177	1-249-417-11	CARBON	1K 5% 1/4W

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

Ref.No	Part No.	Description				Remark
R178	1-249-405-11	CARBON	100	5%	1/4W	
R179	1-249-405-11	CARBON	100	5%	1/4W	
R180	1-215-394-00	CARBON	75	5%	1/4W	
R181	1-249-429-11	CARBON	10K	5%	1/4W	
R185	1-249-414-11	CARBON	560	5%	1/4W	
R186	1-249-417-11	CARBON	1K	5%	1/4W	
R187	1-249-417-11	CARBON	1K	5%	1/4W	
R188	1-249-418-11	CARBON	1.2K	5%	1/4W	
R189	1-249-417-11	CARBON	1K	5%	1/4W	
R190	1-249-413-11	CARBON	470	5%	1/4W	
R201	1-247-881-00	CARBON	120K	5%	1/4W	
R202	1-247-895-00	CARBON	470K	5%	1/4W	
R203	1-249-430-11	CARBON	12K	5%	1/4W	
R204	1-249-437-11	CARBON	47K	5%	1/4W	
R205	1-249-441-11	CARBON	100K	5%	1/4W	
R206	1-249-436-11	CARBON	39K	5%	1/4W	
R207	1-249-441-11	CARBON	100K	5%	1/4W	
R208	1-249-440-11	CARBON	82K	5%	1/4W	
R209	1-247-895-00	CARBON	470K	5%	1/4W	
R210	1-249-421-11	CARBON	2.2K	5%	1/4W	
R211	1-249-441-11	CARBON	100K	5%	1/4W	
R212	1-247-895-00	CARBON	470K	5%	1/4W	
R213	1-249-434-11	CARBON	27K	5%	1/4W	
R214	1-249-434-11	CARBON	27K	5%	1/4W	
R215	1-249-441-11	CARBON	100K	5%	1/4W	
R216	1-249-437-11	CARBON	47K	5%	1/4W	
R217	1-247-895-00	CARBON	470K	5%	1/4W	
R218	1-249-417-11	CARBON	1K	5%	1/4W	
R220	1-249-435-11	CARBON	33K	5%	1/4W	
R221	1-249-438-11	CARBON	56K	5%	1/4W	
R222	1-249-417-11	CARBON	1K	5%	1/4W	
R223	1-249-441-11	CARBON	100K	5%	1/4W	
R224	1-249-441-11	CARBON	100K	5%	1/4W	
R225	1-249-436-11	CARBON	39K	5%	1/4W	
R229	1-249-417-11	CARBON	1K	5%	1/4W	
R230	1-249-404-00	CARBON	82	5%	1/4W	
R232	1-249-417-11	CARBON	1K	5%	1/4W	
R233	1-249-425-11	CARBON	4.7K	5%	1/4W	
R234	1-249-431-11	CARBON	15K	5%	1/4W	
R240	1-215-473-00	METAL	150K	1%	1/6W	
R241	1-249-428-11	CARBON	8.2K	5%	1/4W	
R242	1-215-468-00	METAL	91K	1%	1/6W	
R243	1-249-405-11	CARBON	100	5%	1/4W	
R244	1-215-429-00	METAL	2.2K	1%	1/6W	
R245	1-249-431-11	CARBON	15K	5%	1/4W	
R246	1-247-891-00	CARBON	330K	5%	1/4W	
R401	1-215-493-00	CARBON	1M	5%	1/4W	
R402	1-249-438-11	CARBON	56K	5%	1/4W	
R403	1-249-441-11	CARBON	100K	5%	1/4W	
R404	1-215-493-00	CARBON	1M	5%	1/4W	
R405	1-249-412-11	CARBON	390	5%	1/4W	
R406	1-249-418-11	CARBON	1.2K	5%	1/4W	
R407	1-249-414-11	CARBON	560	5%	1/4W	

Ref.No	Part No.	Description				Remark
R408	1-249-417-11	CARBON	1K	5%	1/4W	
R409	1-249-424-11	CARBON	3.9K	5%	1/4W	
R410	1-249-421-11	CARBON	2.2K	5%	1/4W	
R411	1-249-418-11	CARBON	1.2K	5%	1/4W	
R412	1-249-434-11	CARBON	27K	5%	1/4W	
R417	1-249-438-11	CARBON	56K	5%	1/4W	
R418	1-215-445-00	METAL	10K	1%	1/6W	
R419	1-215-457-00	METAL	33K	1%	1/6W	
R420	1-249-433-11	CARBON	22K	5%	1/4W	
R421	1-249-433-11	CARBON	22K	5%	1/4W	
R422	1-249-430-11	CARBON	12K	5%	1/4W	
R423	1-249-422-11	CARBON	2.7K	5%	1/4W	
R450	1-249-409-11	CARBON	220	5%	1/4W	
R451	1-215-394-00	CARBON	75	5%	1/4W	
R452	1-249-417-11	CARBON	1K	5%	1/4W	
R453	1-249-417-11	CARBON	1K	5%	1/4W	
R454	1-249-422-11	CARBON	2.7K	5%	1/4W	
R455	1-249-422-11	CARBON	2.7K	5%	1/4W	
<u>VARIABLE RESISTOR</u>						
RV001	1-228-991-00	RES, ADJ, CARBON	2.2K			
RV002	1-228-990-00	RES, ADJ, CARBON	1K			
RV003	1-228-991-00	RES, ADJ, CARBON	2.2K			
RV004	1-228-990-00	RES, ADJ, CARBON	1K			
RV011	1-228-996-00	RES, ADJ, CARBON	47K			
RV012	1-228-996-00	RES, ADJ, CARBON	47K			
RV101	1-228-993-00	RES, ADJ, CARBON	4.7K			
RV102	1-228-990-00	RES, ADJ, CARBON	1K			
RV103	1-228-989-00	RES, ADJ, CARBON	470			
RV104	1-228-989-00	RES, ADJ, CARBON	470			
RV401	1-228-995-00	RES, ADJ, METAL GLAZE	22K			
RV402	1-228-995-00	RES, ADJ, METAL GLAZE	22K			
<u>SWITCH</u>						
SW401	1-560-914-00	POST, CONNECTOR	2P			
<u>CRYSTAL</u>						
X001	1-567-652-11	VIBRATOR, CRYSTAL				
X401	1-567-344-21	VIBRATOR, CRYSTAL (VCO)				
*****						
*1-618-835-11 RS-21 BOARD *****						
<u>CAPACITOR</u>						
C041	1-161-379-00	CERAMIC	0.01MF	30%	16V	
C042	1-161-379-00	CERAMIC	0.01MF	30%	16V	
C043	1-161-379-00	CERAMIC	0.01MF	30%	16V	
<u>CONNECTOR</u>						
CN41	1-563-228-11	CONNECTOR, D-SUB	25P			

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

**RS-21**

**KY-93**

**PD-31**

**DUS-128**

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
<u>IC</u>							
IC41	8-759-951-88	IC SN75188N					
IC42	8-759-951-89	IC SN75189AN					
IC43	8-759-240-24	IC TC4024BP					
<u>RESISTOR</u>							
R041	1-249-435-11	CARBON	33K 5% 1/4W				
<u>SWITCH</u>							
SW041	1-570-598-11	SWITCH, DIP					
*****							
	*1-618-836-11	KY-93 BOARD	*****				
	*3-694-850-02	CASE, SHIELD, FP-18					
	*3-694-997-01	BLIND, RAY CATCHER					
<u>CAPACITOR</u>							
C1	1-124-224-00	ELECT	47MF 20% 6.3V				
C2	1-162-288-31	CERAMIC	330PF 10% 50V				
C3	1-124-224-00	ELECT	47MF 20% 6.3V				
C4	1-124-258-00	ELECT	3.3MF 20% 50V				
C5	1-123-611-00	ELECT	1MF 20% 50V				
C6	1-124-224-00	ELECT	47MF 20% 6.3V				
<u>CONNECTOR</u>							
CN1	*1-564-035-11	PIN, CONNECTOR 10P					
CN2	*1-564-027-00	PIN, CONNECTOR 2P					
CN3	*1-564-027-00	PIN, CONNECTOR 2P					
<u>DIODE</u>							
D1	8-719-821-13	DIODE TLR113A					
D2	8-719-821-13	DIODE TLR113A					
D3	8-719-906-57	DIODE GL-5NG24					
D4	8-719-801-30	DIODE TLY113A					
D5	8-719-821-13	DIODE TLR113A					
D6	8-719-821-13	DIODE TLR113A					
D7	8-719-821-13	DIODE TLR113A					
D8	8-719-821-13	DIODE TLR113A					
<u>IC</u>							
IC1	8-759-182-43	IC UPD8243C(M)					
IC2	8-759-602-54	IC CX20106A					
<u>TRANSISTOR</u>							
Q1	8-729-900-61	TRANSISTOR DTA114ES					
Q2	8-729-900-61	TRANSISTOR DTA114ES					
Q3	8-729-900-61	TRANSISTOR DTA114ES					
Q4	8-729-900-61	TRANSISTOR DTA114ES					
				<u>RESISTOR</u>			
R1	1-249-410-11	CARBON	270 5% 1/4W				
R2	1-249-410-11	CARBON	270 5% 1/4W				
R3	1-249-410-11	CARBON	270 5% 1/4W				
R4	1-249-410-11	CARBON	270 5% 1/4W				
R5	1-249-410-11	CARBON	270 5% 1/4W				
R6	1-249-410-11	CARBON	270 5% 1/4W				
R7	1-249-410-11	CARBON	270 5% 1/4W				
R8	1-249-410-11	CARBON	270 5% 1/4W				
R9	1-249-425-11	CARBON	4.7K 5% 1/4W				
R10	1-249-425-11	CARBON	4.7K 5% 1/4W				
R11	1-249-425-11	CARBON	4.7K 5% 1/4W				
R12	1-249-425-11	CARBON	4.7K 5% 1/4W				
R13	1-249-425-11	CARBON	4.7K 5% 1/4W				
R14	1-249-425-11	CARBON	4.7K 5% 1/4W				
R15	1-249-425-11	CARBON	4.7K 5% 1/4W				
R16	1-249-425-11	CARBON	4.7K 5% 1/4W				
R17	1-249-407-11	CARBON	150 5% 1/4W				
R18	1-215-476-00	METAL	200K 1% 1/6W				
R19	1-249-393-11	CARBON	10 5% 1/4W				
R20	1-249-421-11	CARBON	2.2K 5% 1/4W				
R21	1-249-405-11	CARBON	100 5% 1/4W				
R22	1-249-425-11	CARBON	4.7K 5% 1/4W				
R23	1-249-425-11	CARBON	4.7K 5% 1/4W				
R24	1-249-405-11	CARBON	100 5% 1/4W				
				<u>SWITCH</u>			
S1	1-554-174-00	SWITCH, KEY BOARD (FWD SCAN)					
S2	1-554-174-00	SWITCH, KEY BOARD (REV SCAN)					
S3	1-554-174-00	SWITCH, KEY BOARD (PLAY)					
S4	1-554-174-00	SWITCH, KEY BOARD (PAUSE)					
S5	1-554-174-00	SWITCH, KEY BOARD (AUDIO)					
S6	1-554-377-51	SWITCH, SLIDE (AUTO REPEAT)					
*****							
	*1-618-837-11	PD-31 BOARD	*****				
				<u>DIODE</u>			
D11	8-719-110-32	DIODE PH302B					
*****							
	*1-618-839-11	DUS-128 BOARD	*****				
				<u>CONNECTOR</u>			
CN11	*1-562-884-11	CONNECTOR, F.P.C 4P					
*****							

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



DUS-129

DUS-130

SW-127

SW-138

DUS-127

HP-25

SM-3

Ref.No	Part No.	Description	Remark
	*1-618-840-11	DUS-129 BOARD *****	
		<u>DIODE</u>	
D21	8-719-920-74	EE-SF5-D	
D22	8-719-920-74	EE-SF5-B	
		<u>RESISTOR</u>	
R31	1-249-408-11	CARBON 180 5% 1/4W	
R32	1-249-408-11	CARBON 180 5% 1/4W	
*****			
	*1-618-841-11	DUS-130 BOARD *****	
		<u>DIODE</u>	
D31	8-719-918-74	DIODE GP-1S04	
		<u>RESISTOR</u>	
R41	1-249-415-11	CARBON 680 5% 1/4W	
*****			
	*1-618-830-11	SW-127 BOARD *****	
		<u>CONNECTOR</u>	
CN1	*1-562-884-11	CONNECTOR, F.P.C 4P	
		<u>SWITCH</u>	
S1	1-554-174-00	SWITCH, KEY BOARD (OPEN/CLOSE)	
*****			
	*1-618-844-11	SW-138 BOARD *****	
		<u>SWITCH</u>	
S11	1-554-241-00	SWITCH, LEVER	
*****			
	*1-618-838-11	DUS-127 BOARD *****	
		<u>CAPACITOR</u>	
C11	1-101-006-00	CERAMIC 0.047MF 50V	
*****			

Ref.No	Part No.	Description	Remark
	*1-618-843-11	HP-25 BOARD *****	
		<u>CAPACITOR</u>	
C51	1-126-103-11	ELECT 470MF 20% 16V	
C52	1-126-103-11	ELECT 470MF 20% 16V	
		<u>IC</u>	
IC11	8-759-745-60	IC NJM4560D	
		<u>JACK</u>	
JC1	1-507-659-00	JACK, LAREG TYPE	
		<u>IC LINK</u>	
PS051	1-532-727-11	LINK, IC	
PS052	1-532-727-11	LINK, IC	
		<u>RESISTOR</u>	
R51	1-249-395-11	CARBON 15 5% 1/4W	
R52	1-249-395-11	CARBON 15 5% 1/4W	
R53	1-249-430-11	CARBON 12K 5% 1/4W	
R54	1-249-430-11	CARBON 12K 5% 1/4W	
R55	1-249-435-11	CARBON 33K 5% 1/4W	
R56	1-249-435-11	CARBON 33K 5% 1/4W	
R57	1-246-457-00	CARBON 220 5% 1/4W	
R58	1-246-457-00	CARBON 220 5% 1/4W	
		<u>VARIABLE RESISTOR</u>	
RV1	1-237-199-21	RES, VAR, CARBON 50K/50K	
*****			
	*1-626-679-11	SM-3 BOARD *****	
		<u>CONNECTOR</u>	
CN021	*1-564-030-00	PIN, CONNECTOR 5P	
		<u>FILTER</u>	
FLO21	1-235-056-00	FILTER, LINE	
FLO22	1-235-056-00	FILTER, LINE	
*****			

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

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

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

<u>Ref.No</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
MISCELLANEOUS *****			
	1-228-139-21	RES, VAR, CARBON 10K	
	△.1-509-898-00	RECEPTACLE	
	△.1-509-910-00	HOUSING, CONNECTOR (2P)	
	1-558-057-11	WIRE, FLEXIBLE CARD 4P	
	1-558-058-11	WIRE, FLEXIBLE CARD 20P	
	8-848-053-01	PICKUP, OPTICS KSS-141B	
J901	1-507-195-21	SPECIAL REMOTE CONTROL JACK	
M901	1-541-503-11	MOTOR, DC (MNR-8400A) (SLIDER)	
M902	X-3694-872-1	MOTOR ASSY (LOADING)	
M903	8-835-171-01	MOTOR, DC BHF-3401A (SPINDLE)	
S901	△.1-553-318-00	SWITCH, PUSH (AC POWER) (1 KEY)	
T2	△.1-448-443-11	TRANSFORMER, POWER	

\*\*\*\*\*

ACCESSORIES AND PACKING MATERIALS  
\*\*\*\*\*

<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
△.1-556-760-11	CORD, POWER (3 CORE)	
*3-694-922-01	SHEET, PROTECTION	
*3-694-950-01	CUSHION (UPPER)	
*3-694-951-01	CUSHION (LOWER)	
*3-694-973-11	INDIVIDUAL CARTON	
△.3-769-820-11	MANUAL, INSTRUCTION	

\*\*\*\*\*

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

Les composants identifiés par une marque △ sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifié.

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

## SECTION 7 MECHANICAL ADJUSTMENT

### PERIODIC CHECKS AND MAINTENANCE

For full display of the functions and performance of the set and for the longest service life of the machine, execution of the following maintenance and periodic checks is recommended.

#### ● PERIODIC CHECK ITEMS

Carry out periodic checks on the items in separated paragraphs according to the length of time used.

#### ● MAINTENANCE AFTER PERIODIC CHECKS OR REPAIRING OF THE SET

Execute cleaning of the following positions after periodic checks or set-repairing irrespective of the length of the time of use.

- (1) Object Lens/Skew Lens  
Remove video disc and blow off the dust on the object lens and SKEW lens with the blower-brush or sweep them with soft cloth.
- (2) Disc Tray Section  
Remove video disc and sweep the tray of the disc with soft cloth.
- (3) Sweeping Clean the Disc Surface  
When there seems dust on the disc, sweep the disc surface with soft cloth, no alcohol or no other chemicals should be used.

#### ● MAINTENANCE TIME FOR KEY PARTS (SAMPLE)

	5,000H	10,000H
OPTICAL BLOCK	—	◆
SPINDLE MOTOR	◆	◆
SLIDE MOTOR	◆	◆
LOADING MOTOR	◇	◇

◆ : replace   ◇ : check

#### Fixture Required

Reference Disc (F1): J-6160-570-A

### 7-1. PHOTO INTERRUPTOR POSITION ADJUSTMENT

1. Insert the reference disc.
2. Turn on the POWER switch and press the OPEN/CLOSE button and then perform loading.
3. After the chucking, turn off the POWER switch.
4. Adjust the position of DUS-130 board in the direction shown by the arrow in Fig. 7-1 so that the space A meets 1 to 1.5 mm.
5. Tighten the fixing screw.
6. Perform loading with the reference disc, and confirm that there is no wobble.

**Note:** When the disc is not chucking normally, the centering guide on the spindle motor may not be operated. Following check is required.

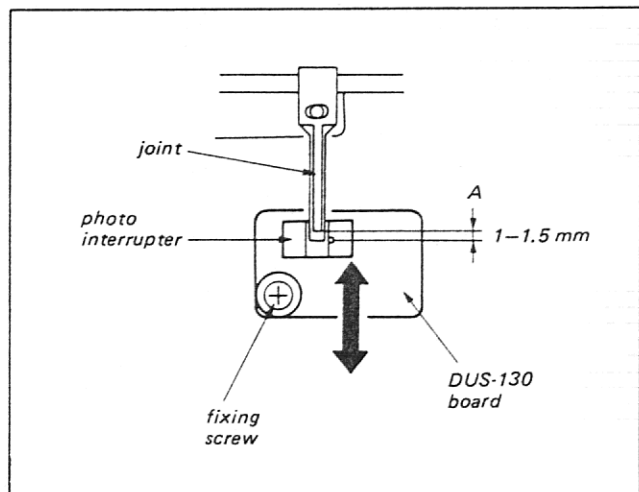


Fig. 7-1

When pressing the centering guide with the finger, confirm that the centering guide is lowered smoothly. If centering guide is not lowered smoothly, lubricate the shaft (A) portion in Fig. 7-2 with an extremely small amount of grease.

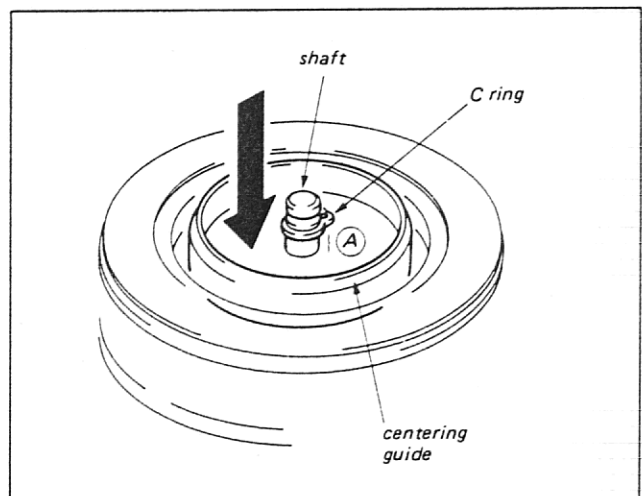


Fig. 7-2

## 7-2. CHUCK ASS'Y PRESSING ADJUSTMENT

1. Insert the reference disc.
2. Turn on the POWER switch and press the OPEN/CLOSE button and then perform loading.
3. After the chucking, turn off the POWER switch.
4. Adjust the adjustment hole as shown in Fig. 7-3 so that the hole of the C arm ass'y and the space (A) of the link (3) meets 0.6 to 1.5 mm.
5. Tighten the fixing screws.

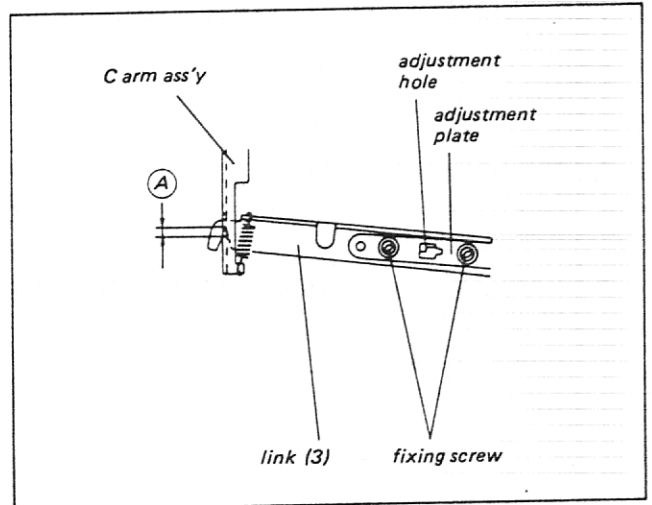


Fig. 7-3

## 7-3. LOADING SWITCH POSITION ADJUSTMENT

1. Put the 0.3 mm spacer between the S plate and the S retainer as shown in Fig. 7-4.
2. Adjust the position of the switch so that the switch is turned on status.
3. Tighten the fixing screw and apply the screw lock.

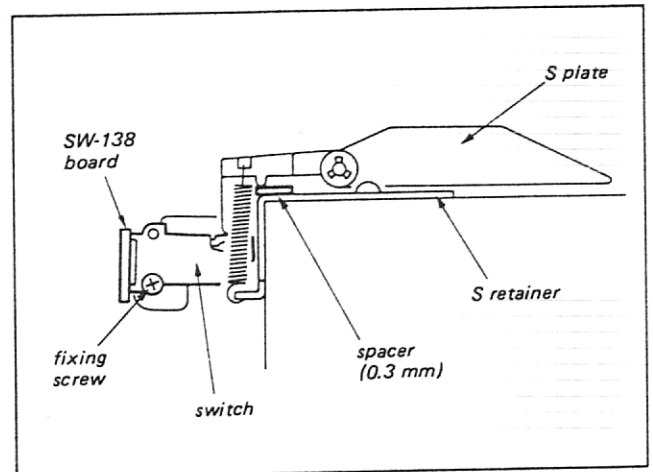


Fig. 7-4

## 7-4. POSITION GEAR FIXING ADJUSTMENT

1. Turn the variable resistor in the direction shown by the arrow fully.
2. Attach the position gear to the shaft so that the slit in the shaft matches the projection on the gear as shown in Fig. 7-5.

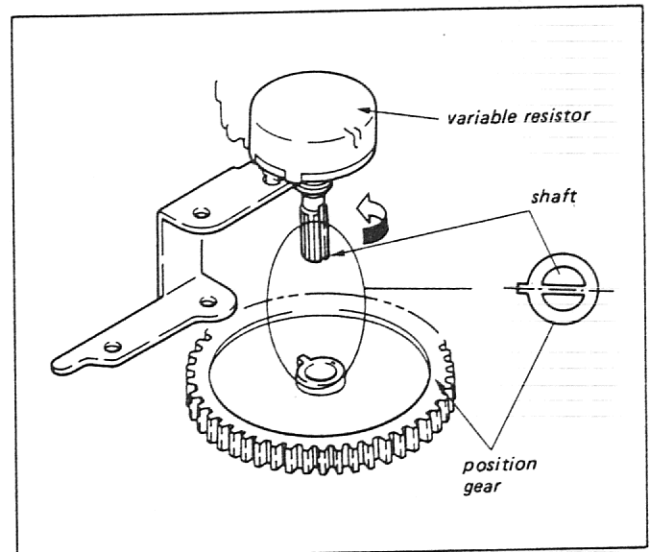


Fig. 7-5



## 7-5. POSITION GEAR PHASE ADJUSTMENT

After replacing the optical block ass'y, the sled block ass'y (slide gear block, PM lever block), this adjustment is required.

1. Remove the fixing screw.
2. Push the slide gear block in the hole (A) to the direction shown by the arrow (B).
3. Move the optical block ass'y to the direction shown by the arrow (C).
4. Adjust the position of the gear in the direction shown by the arrow (D) so that the projection of the gear fits in the hole of the mark.
5. Tighten the fixing screw.

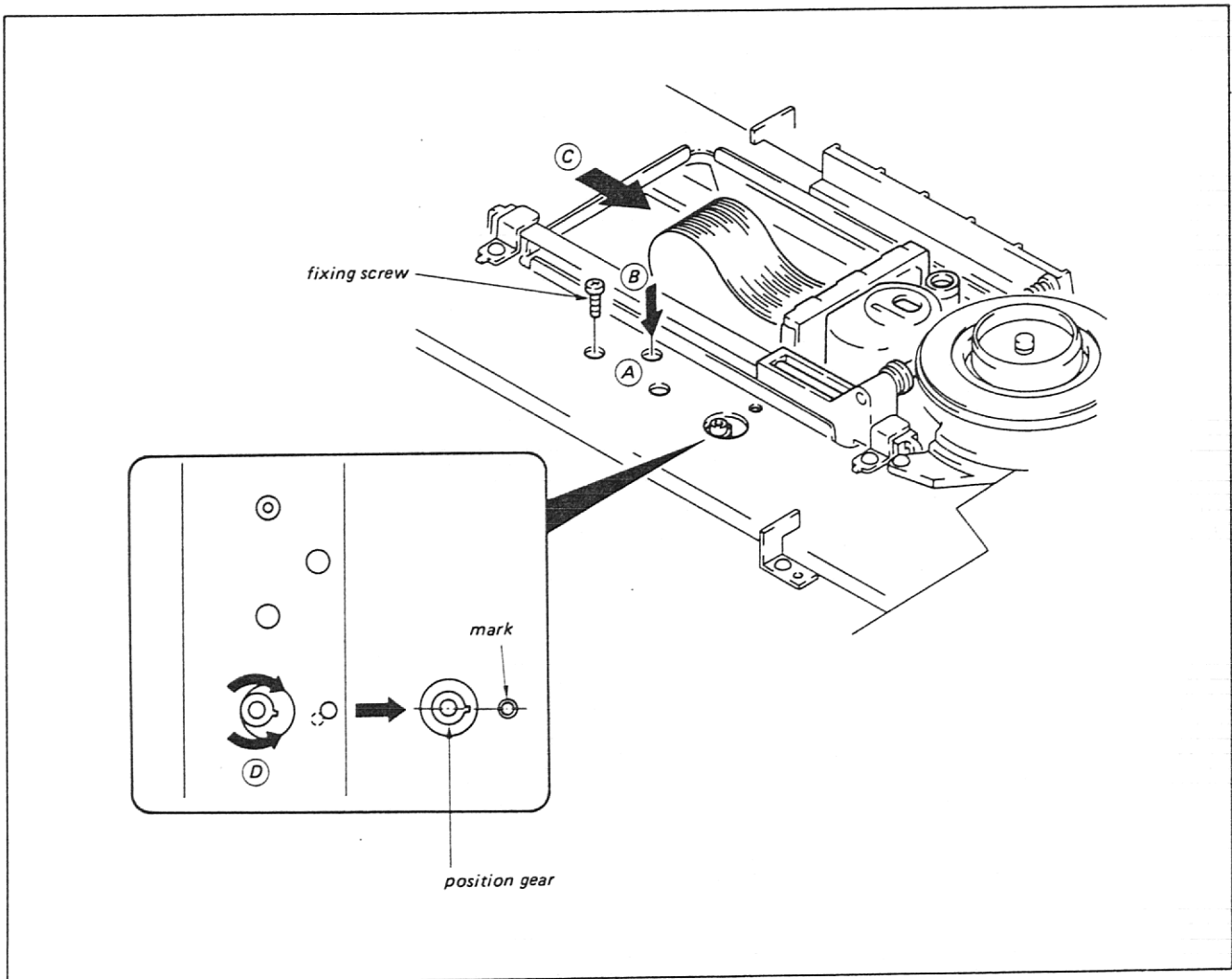


Fig. 7-6

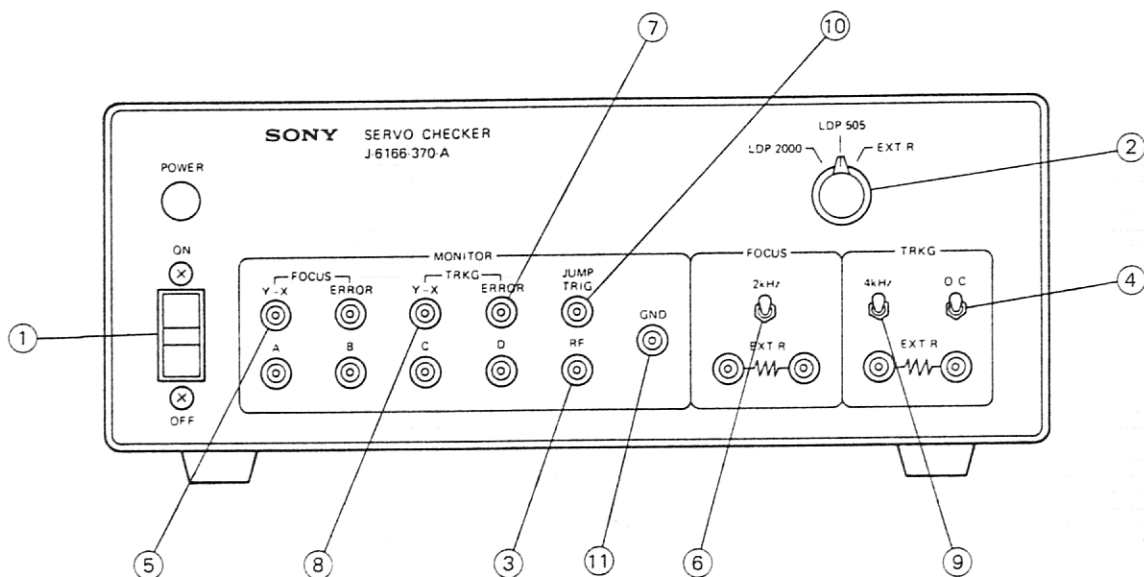
## SECTION 8 ELECTRICAL ADJUSTMENT

### Equipment Required

DC Voltmeter  
 Frequency Counter  
 Oscilloscope Dual Trace  
 Remote Control Unit, RM-2001  
 Signal Generator (Sweep Generator) ~ 5.5 MHz  
 Vectorscope  
 Audio Level Meter  
 Wow-flutter Meter  
 Picture Monitor

### Fixture Required

Reference Disc (J1) ; J-6160-700-A  
 Servo Checker ; J-6166-370-A  
 Connecting Cable ; J-6166-380-A  
 Adjustment Driver ; J-6080-909-A  
 (for SKEW adjustment)



- ① POWER switch
- ② MODE SELECTOR
- ③ RF terminal
- ④ TRKG O/C switch
- ⑤ FOCUS Y-X terminal
- ⑥ FOCUS 2 kHz switch
- ⑦ TRKG ERROR terminal
- ⑧ TRKG Y-X terminal
- ⑨ TRKG 4 kHz switch
- ⑩ JUMP TRIG terminal
- ⑪ GND

## 8-1. MISCELLANEOUS ADJUSTMENT

### 8-1-1. DC Power Regulator Adjustment

Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>POWER on state</li> </ul>	TP6/PS-113 $+5.0 \pm 0.05$ V dc	RV1/PS-113

### 8-1-2. Spindle PWM Ref 2H Adjustment

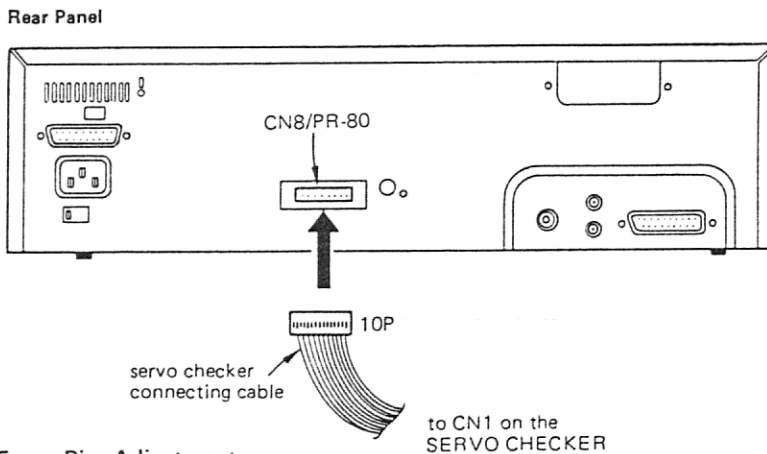
Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>POWER on state</li> </ul>	Q101- $\text{\textcircled{C}}$ /SV-29 $31,250 \pm 10$ Hz	RV101/SV-29

### 8-1-3. Decoder Clock Adjustment


Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>Connect SS-87 board TP12 and GND                              (Remove the connection between SS-87 board TP12 and GND after completing adjustment.)</li> <li>POWER on state</li> </ul>	TP1/SS-87 $3.0 \pm 0.03$ MHz	CV1/SS-87

## 8-2. FOCUS SERVO ADJUSTMENT

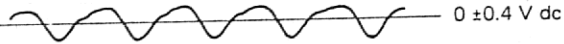
Remove the blind lid on the rear panel, and connect the SERVO CHECKER to CN8/PR-80 board.



### 8-2-1. Focus Bias Adjustment

Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>Search for frame 35,000 of a REF. disc.</li> <li>Set the switches on the SERVO CHECKER as follows.                              POWER : <u>ON</u>                              MODE SELECTOR : <u>LDP-505</u>                              FOCUS 2kHz : <u>OFF</u>                              TRKG 4kHz : <u>OFF</u>                              TRKG O/C : <u>OFF</u> </li> </ul>	RF terminal on the SERVO CHECKER  Maximize the amplitude.	RV4/PR-80

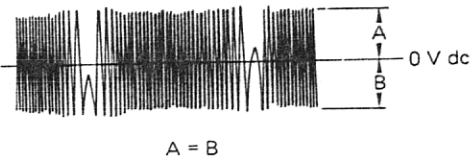
### 8-2-2. Focus Gain Adjustment

Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>● Search for frame 35,000 of a REF. disc.</li> <li>● Set the switches on the SERVO CHECKER as follows.            POWER : <u>ON</u>            MODE SELECTOR : <u>LDP-505</u>            FOCUS 2kHz : <u>ON</u>            TRKG 4kHz : <u>OFF</u>            TRKG O/C : <u>OFF</u> </li> </ul>	Focus Y-X terminal on the SERVO CHECKER 	RV5/PR-80

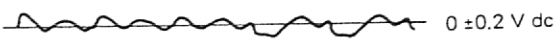
## 8-3. TRACKING SERVO ADJUSTMENT

Remove the blind lid on the rear panel, and connect the SERVO CHECKER to CN8/PR-80 board.


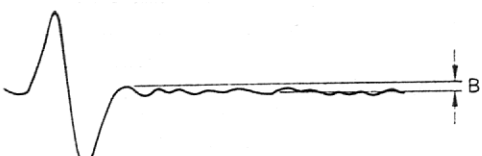
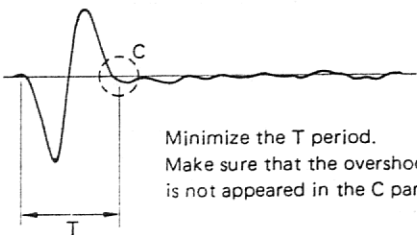
### 8-3-1. Tracking Bias Adjustment

Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>● Search for frame 35,000 of a REF. disc.</li> <li>● Set the switches on the SERVO CHECKER as follows.            POWER : <u>ON</u>            MODE SELECTOR : <u>LDP-505</u>            FOCUS 2kHz : <u>OFF</u>            TRKG 4kHz : <u>OFF</u>            TRKG O/C : <u>ON</u> </li> </ul>	TRKG ERROR terminal on the SERVO CHECKER 	RV6/PR-80

### 8-3-2. Tracking Gain Adjustment

Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>● Search for frame 35,000 of a REF. disc.</li> <li>● Set the switches on the SERVO CHECKER as follows.            POWER : <u>ON</u>            MODE SELECTOR : <u>LDP-505</u>            FOCUS 2kHz : <u>OFF</u>            TRKG 4kHz : <u>ON</u>            TRKG O/C : <u>OFF</u> </li> </ul>	TRKG Y-X terminal on the SERVO CHECKER 	RV7/PR-80

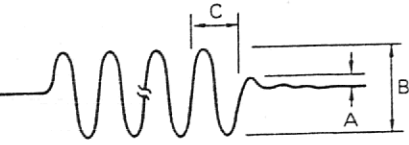
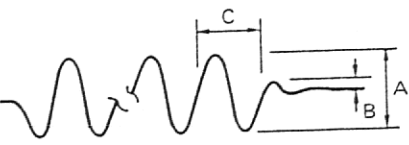
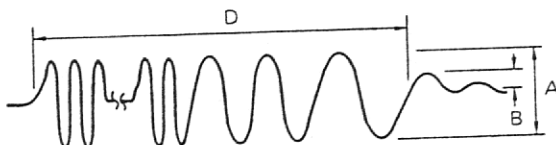
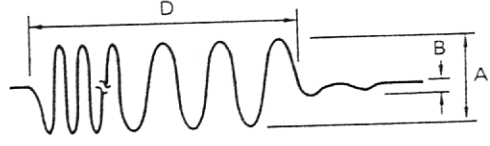
### 8-3-3. Track Jump Adjustment

Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>• Search for frame 35,000 of a REF. disc. (STILL mode)</li> <li>• Playing back a REF. disc at a FWD x3 speed mode.</li> </ul>	<p>TRKG ERROR terminal on the SERVO CHECKER (STILL)</p>  <p>(FWD x3)</p>  <p>A = B</p>	RV1/SV-29
<ul style="list-style-type: none"> <li>• Search for frame 35,000 of a REF. disc. (STILL mode)</li> </ul>	<p>TRKG ERROR terminal on the SERVO CHECKER</p>  <p>Minimize the T period. Make sure that the overshoot is not appeared in the C part.</p>	RV2/SV-29

### 8-3-4. Multi Track Jump Adjustment

Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>• Playing back a REF. disc.</li> <li>• Short TP1 to E1 on the KY-93 board.</li> <li>• Some key on the Remote Control Unit (RM2001, RM2001A, RM1002) work as following. CH1 ; Fwd. Multi Track Jump CH2 ; Rev. Multi Track Jump STOP ; Repeat Multi Track Jump SKIP ; Repeat Multi Track Jump</li> </ul>		<ul style="list-style-type: none"> <li>• Display INDEX by INDEX key.</li> <li>• Search 1000 Frame.</li> <li>• Set FWD 200 Track Jump (CH1, 2, 0, 0, ENTER) Repeat FWD 200 Track Jump by STOP or SKIP key.</li> <li>• Confirm displayed picture No. is incremented by 200.</li> </ul>
<ul style="list-style-type: none"> <li>• POWER on state</li> </ul>	D3-anode/SV-32 +0.65 ±0.01 V	RV1/SV-32



Conditions	Specifications	Adjustment
<p>● Playing back a REF. disc.</p> <p>1. Carry out FWD 10 Track Jump.</p> <p>2. Carry out REV 10 Track Jump.</p> <p>3. Carry out FWD 200 Track Jump.</p> <p>4. Carry out REV 200 Track Jump.</p>	<p>TP1/SV-32 EXT TRIG: TP2/SV-32 (Trigger slope: -)</p>  <p>Confirm that <math>B \leq \frac{A}{2}</math>.</p> <p>Repeat FWD 10 Track Jump several times. If <math>B &gt; \frac{A}{2}</math>, adjust RV1 so that <math>C=25</math> msec. If convergence of portion B is <math>C &gt; 25</math>, perform this adjustment after "Tracking gain adjustment".</p>  <p>Confirm in the same way as step 1.</p>  <p>Confirm in the same way as step 1. When <math>D &gt; 14</math> msec, adjust RV1 so that the width of the portion D shorten (12-13 msec) and confirm in the same way as step 1.</p>  <p>Confirm in the same way as step 3.</p>	<p>RV1/SV-32</p>

## 8-4. IN/OUT LIMIT POSITION ADJUSTMENT

### 8-4-1. IN Limit Adjustment

Conditions	Adjustment
<ul style="list-style-type: none"> <li>• Playing back a REF. disc.</li> <li>• Short TP1 to E1 on the KY-93 board.</li> <li>• Press the S2 ( ◀◀ REV) button and the S3 ( ▶▶ PLAY) button on the KY-93 board simultaneously.</li> </ul>	Adjust RV3 on the PR-80 board so that the blinking D5 (CLV) lamp is extinguished. Be careful not to turn the RV3 excessively.
<ul style="list-style-type: none"> <li>• Press the S2 button and the S4 (    PAUSE) button simultaneously at above conditions.</li> </ul>	When the D5 lamp is blinked, make sure that the monitor picture displays following time.  <div style="border: 1px solid black; display: inline-block; padding: 2px;">00 : 59 : 40 : 00</div> to <div style="border: 1px solid black; display: inline-block; padding: 2px;">00 : 59 : 49 : 24</div>

### 8-4-2. 12 inch Disc Out Limit Adjustment

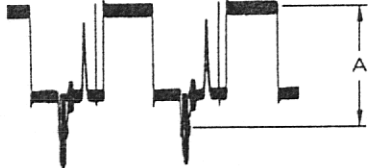
Conditions	Adjustment
<ul style="list-style-type: none"> <li>• Playing back a REF. disc.</li> <li>• Short TP1 to E1 on the KY-93 board.</li> <li>• Turn the S6 (AUTO REPEAT) switch off.</li> <li>• Press the S1 ( ▶▶ FWD) button and the S3 ( ▶▶ PLAY) button on the KY-93 board simultaneously.</li> </ul>	Adjust RV1 on the PR-80 board so that the blinking D5 (CLV) lamp is extinguished. Be careful not to turn the RV1 excessively.
<ul style="list-style-type: none"> <li>• Press the S1 button and the S4 (    PAUSE) button simultaneously at above conditions.</li> </ul>	When the D5 lamp is blinked, make sure that the monitor picture displays following time.  <div style="border: 1px solid black; display: inline-block; padding: 2px;">1 : 36 : 10 : 00</div> to <div style="border: 1px solid black; display: inline-block; padding: 2px;">1 : 36 : 19 : 24</div>

### 8-4-3. 8 inch Disc Out Limit Adjustment

Conditions	Adjustment
<ul style="list-style-type: none"> <li>• Playing back a REF. disc.</li> <li>• Short TP1 to E1 on the KY-93 board.</li> <li>• Turn the S6 (AUTO REPEAT) switch on.</li> <li>• Press the S1 ( ▶▶ FWD) button and the S3 ( ▶▶ PLAY) button on the KY-93 board simultaneously.</li> </ul>	Adjust RV2 on the PR-80 board so that the blinking D5 (CLV) lamp is extinguished. Be careful not to turn the RV2 excessively.
<ul style="list-style-type: none"> <li>• Press the S1 button and the S4 (    PAUSE) button simultaneously at above conditions.</li> </ul>	When the D5 lamp is blinked, make sure that the monitor picture displays following frame number.  <div style="border: 1px solid black; display: inline-block; padding: 2px;">24850</div> to <div style="border: 1px solid black; display: inline-block; padding: 2px;">25099</div>

## 8-5. VIDEO SYSTEM ADJUSTMENT

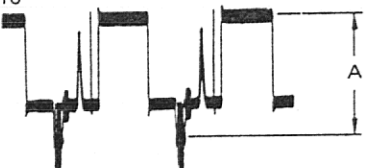
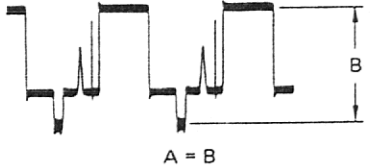
### 8-5-1. Demodulator Video Level Adjustment

Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>Search for chapter 15 of a REF. disc.</li> </ul>	TP102/PR-80  $A = 2.0 \pm 0.1 \text{ V}$	RV101/PR-80

### 8-5-2. Dropout Sensitivity Adjustment

Conditions	Specifications	Adjustment						
<ul style="list-style-type: none"> <li>Turn the POWER on without a disc.</li> <li>Disconnect the FN1 on the PR-80 board (refer to 2-4).</li> <li>Connect the 5.5 MHz and/or 5.0 MHz 300 mVp-p signal to the TP101 on the PR-80 board.</li> </ul>	<table border="1"> <thead> <tr> <th>Frequency</th> <th>TP105/PR-80</th> </tr> </thead> <tbody> <tr> <td>5.5 MHz</td> <td>0 V dc (Low level)</td> </tr> <tr> <td>5.0 MHz</td> <td>5 V dc (High level)</td> </tr> </tbody> </table>	Frequency	TP105/PR-80	5.5 MHz	0 V dc (Low level)	5.0 MHz	5 V dc (High level)	RV102/PR-80
Frequency	TP105/PR-80							
5.5 MHz	0 V dc (Low level)							
5.0 MHz	5 V dc (High level)							


### 8-5-3. DOC Video Level Adjustment

Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>Search for chapter 15 of a REF. disc.</li> </ul>	TP1/VP-10  TP2/VP-10  $A = B$	RV1/VP-10

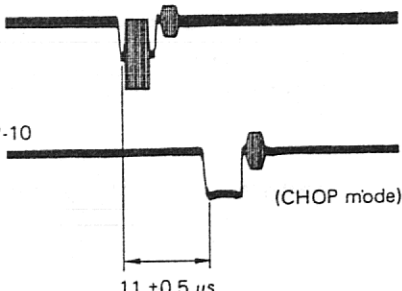
### 8-5-4. CCD Bias Adjustment

Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>Turn the POWER on without a disc.</li> <li>Disconnect the CN2 on the VP-18 board.</li> </ul>	Q21-Ⓔ/VP-10 $2.0 \pm 0.1 \text{ V dc}$	RV2/VP-10

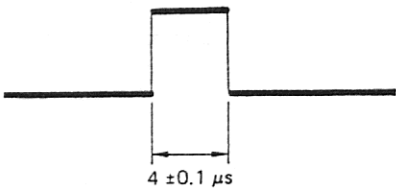
### 8-5-5. Video Out Level Adjustment

Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>Search for chapter 15 of a REF. disc.</li> </ul>	VIDEO OUT connector (VIDEO OUT connector should be terminated by 75 Ω.)   $A = 1.0 \pm 0.02 \text{ V}$	RV3/VP-10

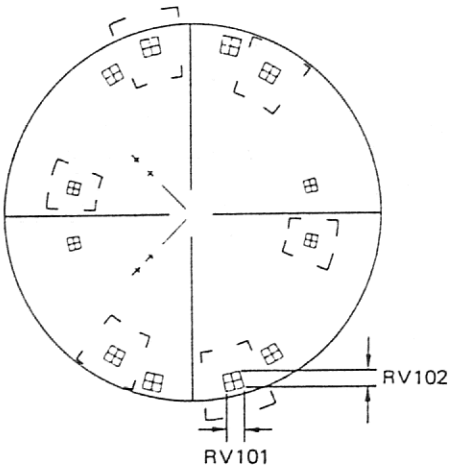
### 8-5-6. TBC Centering Adjustment

Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>Search for chapter 16 of a REF. disc.</li> <li>Short TP202 to TP203 on the VP-10 board.</li> </ul>	TP1/VP-10   $11 \pm 0.5 \mu\text{s}$	RV4/VP-10


### 8-5-7. TBC 1/2H Rejecter Adjustment

Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>Playing back a REF. disc.</li> </ul>	TP204/VP-10   $4 \pm 0.1 \mu\text{s}$	RV12/VP-10

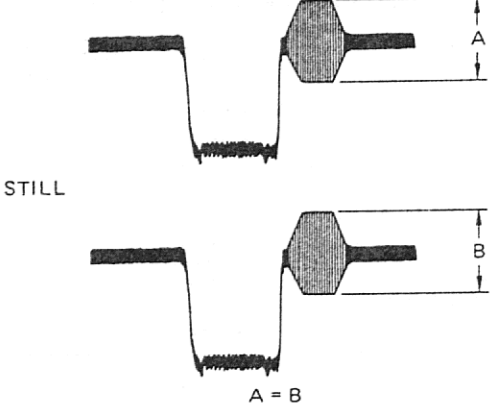
### 8-5-8. CF U/V Separator Adjustment

Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>Search for chapter 22 of a REF. disc. (STILL mode)</li> <li>Connect a vectorscope to the VIDEO OUT connector.</li> </ul>	VIDEO OUT connector (VIDEO OUT connector should be terminated by 75 Ω.)   Minimize the each bright spot's spread.	RV101/VP-10 RV102/VP-10

### 8-5-9. CF Video Level Adjustment

Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>Search for chapter 15 of a REF. disc. (STILL mode)</li> </ul>	VIDEO OUT connector (VIDEO OUT connector should be terminated by 75 Ω.)  $A = 1.0 \pm 0.02 \text{ V}$	RV103/VP-10

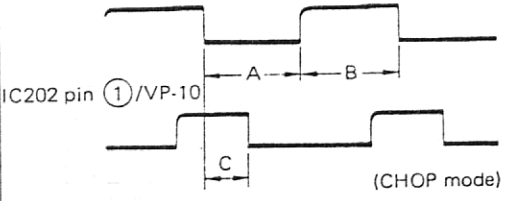
### 8-5-10. CF Chroma Level Adjustment

Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>Playing back the chapter 15 of a REF. disc at a FWD normal speed mode and/or STILL mode.</li> </ul>	VIDEO OUT connector (VIDEO OUT connector should be terminated by 75 Ω.) NORMAL FWD  $A = B$	RV104/VP-10

### 8-5-11. B.B SC Adjustment

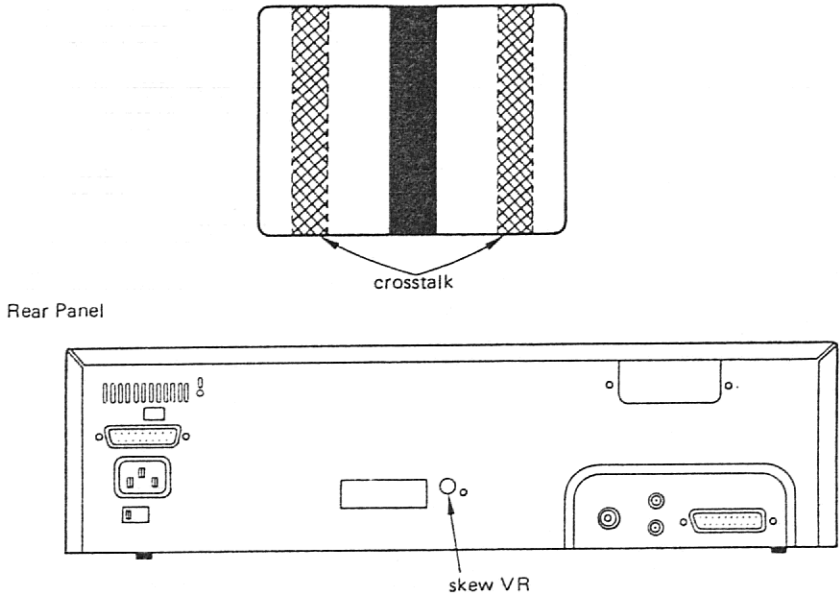
Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>POWER on state</li> </ul>	TP401/VP-10 4,433,619 ±5 Hz	CV401/VP-10

### 8-5-12. B.B H Sync Adjustment

Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>POWER on state</li> </ul>	IC410 pin ⑭/VP-10  IC202 pin ①/VP-10 (CHOP mode) $A = B$ $C = 14 \pm 2 \mu\text{s}$	Duty Adjustment RV402/VP-10 Phase Adjustment RV401/VP-10

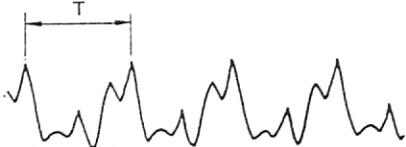


### 8-5-13. Skew Servo Adjustment

Conditions	Adjustment
<ul style="list-style-type: none"> <li>Search for frame 17.264 of a REF. disc. (STILL mode)</li> </ul>	<p>Remove the blind lid on the rear panel, and adjust a skew VR on the optical block ass'y so that the left and right sides crosstalk is not appeared on the monitor picture.</p>  <p>The diagram consists of two parts. The top part is a rectangular frame representing a monitor screen, showing a central vertical black bar. On either side of this bar are vertical regions with a cross-hatch pattern, labeled 'crosstalk' with arrows pointing to them. The bottom part is a perspective drawing of the rear panel of a device. It shows various ports and a small circular adjustment point labeled 'skew VR' with an arrow pointing to it.</p>

## 8-6. AUDIO SYSTEM ADJUSTMENT

### 8-6-1. TBC Centering Adjustment

Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>Turn the POWER on without a disc.</li> </ul>	<p>TP3/AU-73</p>  <p>The diagram shows a periodic waveform with a period labeled 'T'. Below the waveform, the text reads 'T = 90 ± 5 ns'.</p>	RV1/AU-73

### 8-6-2. TBC Gain Adjustment

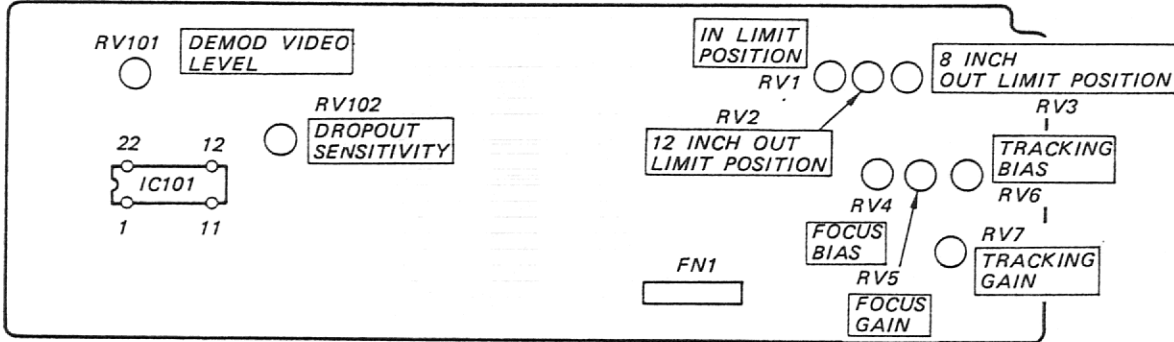
Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>Playing back the chapter 1 of a REF. disc.</li> <li>Connect a wow-flutter meter to the LINE OUT jack.</li> </ul>	<p>LINE OUT jack (CH-1/L or CH-2/R)</p> <p>Minimize the reading of a wow-flutter meter.</p>	RV2/AU-73

### 8-6-3. LINE OUT Level Adjustment

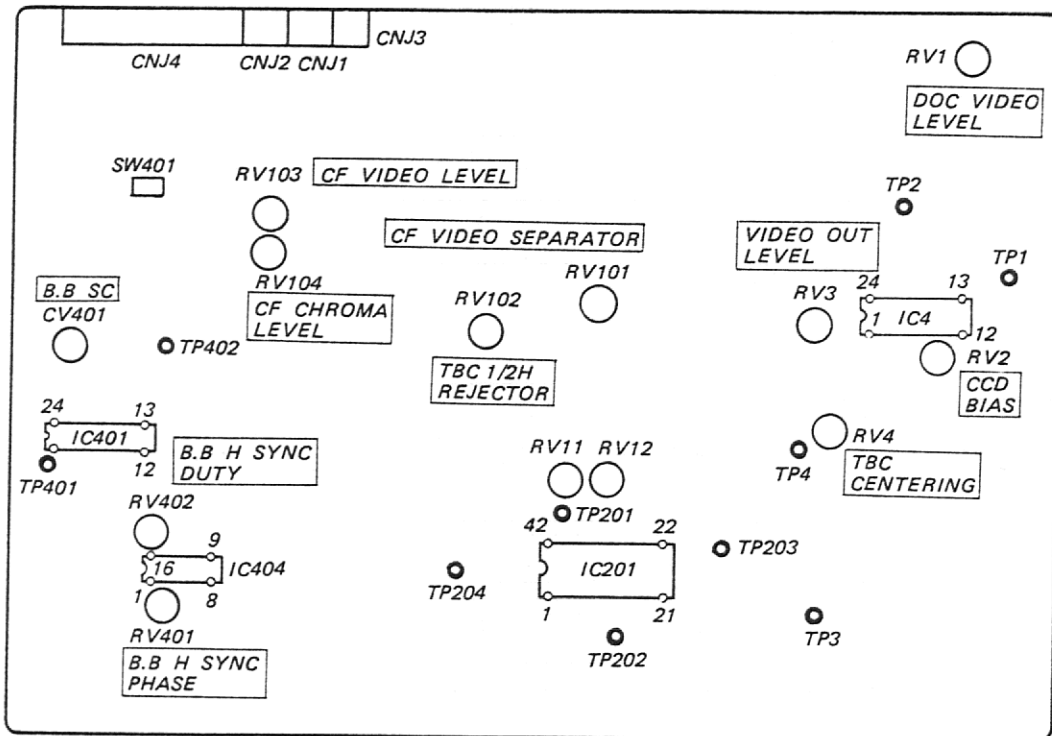
Conditions	Specifications	Adjustment
<ul style="list-style-type: none"> <li>Playing back the chapter 1 of a REF. disc at a FWD normal speed mode.</li> <li>Connect a audio level meter to the LINE OUT jack.</li> </ul>	<p>LINE OUT jack (CH-1/L)</p> <p>2.2 ± 0.5 dBs</p>	RV4/AU-73
	<p>LINE OUT jack (CH-2/R)</p> <p>2.2 ± 0.5 dBs</p> <p>Note: LINE OUT connectors should be terminated by 47 kΩ.</p>	RV3/AU-73

### 8-7. PARTS ARRANGEMENT DIAGRAM FOR ADJUSTMENTS

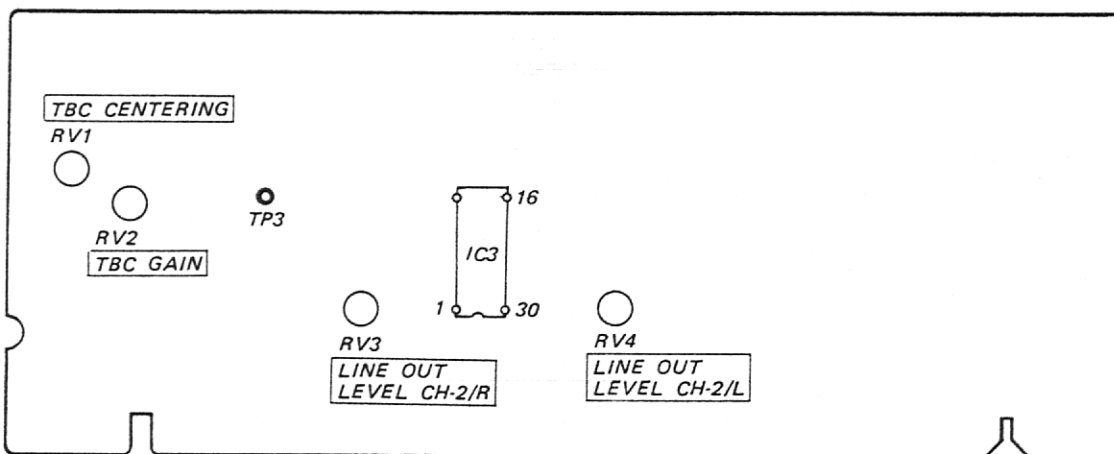
RP-80 BOARD (Component Side)



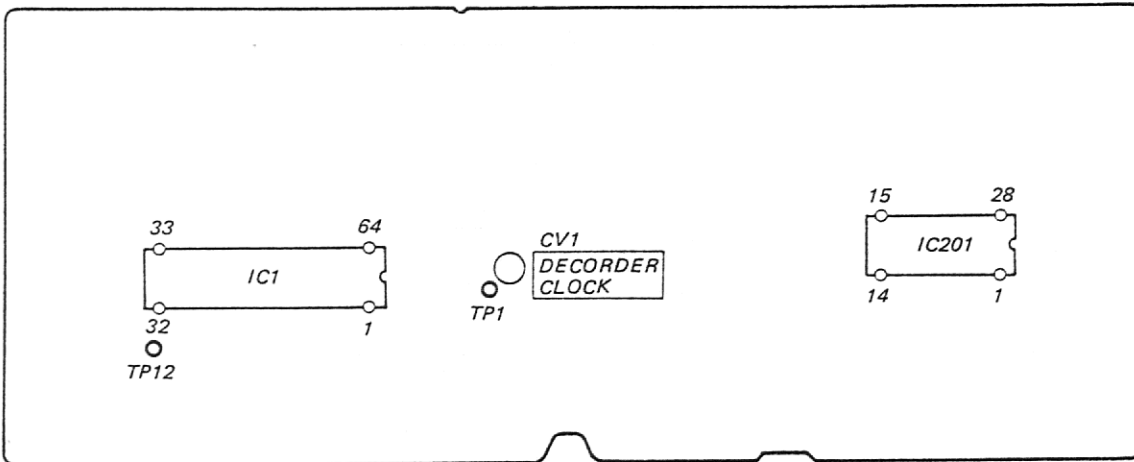
VP-10 BOARD (Component Side)



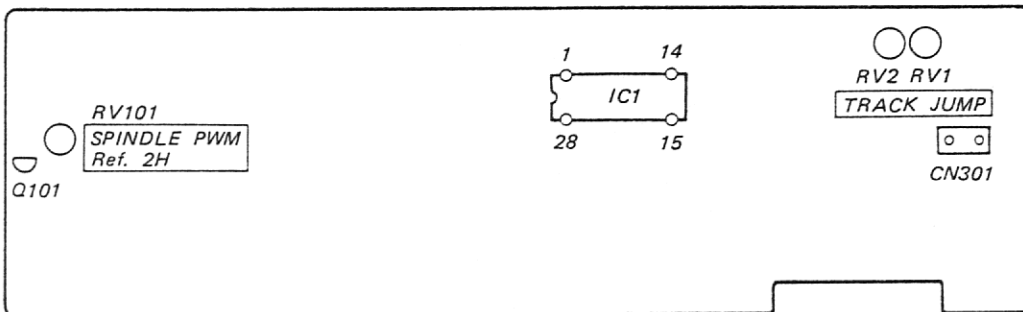
AU-73 BOARD (Conductor Side)



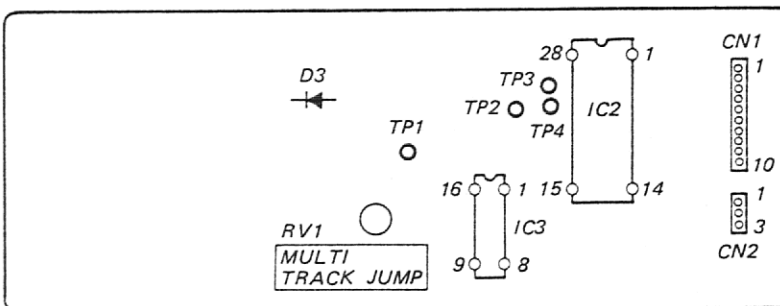
SS-87 BOARD (Conductor Side)



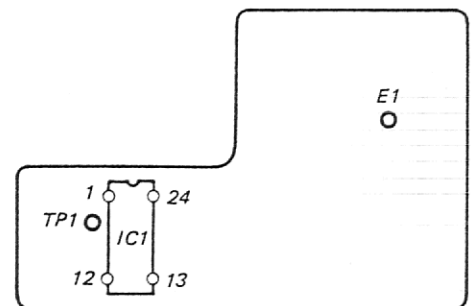
SV-29 BOARD (Conductor Side)



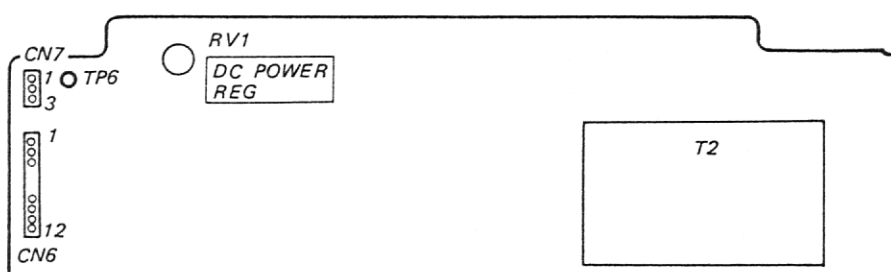
SV-32 BOARD (Conductor Side)



KY-93 BOARD (Component Side)



PS-113 BOARD (Component Side)



**LDP-1550P**