



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.




**L** VIDEODISC PLAYER  
LaserVision  
**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.

## TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
1.	GENERAL		5.	EXPLODED VIEWS	
1-1.	Features . . . . .	5	5-1.	Ornamental Panel . . . . .	91
1-2.	Precautions . . . . .	5	5-2.	Chuck Ass'y . . . . .	93
1-3.	Notes on Handling Videodiscs . . . . .	6	5-3.	Front Loading . . . . .	95
1-4.	Parts Identification . . . . .	6	5-4.	Chassis (1) . . . . .	97
1-5.	To Play Back a Videodisc . . . . .	8	5-5.	Chassis (2) . . . . .	99
1-6.	Various Playback Modes . . . . .	8	5-6.	Mechanical Base . . . . .	101
1-7.	Search and Repeat Operations . . . . .	8		HARDWARE LIST . . . . .	102
1-8.	Notes on Operation with the RM-2001 Remote Control Unit . . . . .	9	6.	ELECTRICAL PARTS LIST . . . . .	103
1-9.	Connection with an External Computer . . . . .	9	7.	MECHANICAL ADJUSTMENT	
1-10.	Notes on Installing the Player in a Rack . . . . .	9	7-1.	Photo Interruptor Position Adjustment . . . . .	123
1-11.	Troubleshooting . . . . .	10	7-2.	Chuck Ass'y Pressing Adjustment . . . . .	124
2.	DISASSEMBLY		7-3.	Loading Switch Position Adjustment . . . . .	124
2-1.	Removal of Cabinet . . . . .	11	7-4.	Position Gear Fixing Adjustment . . . . .	124
2-2.	Opening of SS-87 and VP-10 Board . . . . .	12	7-5.	Position Gear Phase Adjustment . . . . .	125
2-3.	Removal of Loading Motor . . . . .	12	8.	ELECTRICAL ADJUSTMENT	
2-4.	Removal of Flexible Card Wire . . . . .	13	8-1.	Miscellaneous Adjustment . . . . .	127
2-5.	Removal of PR-80 Board . . . . .	13	8-1-1.	DC Power Regulator Adjustment . . . . .	127
2-6.	Removal of the Sled Block . . . . .	14	8-1-2.	Spindle PWM Ref 2H Adjustment . . . . .	127
2-7.	Disassembly of Sled Block . . . . .	14	8-1-3.	Decoder Clock Adjustment . . . . .	127
2-8.	Removal of SV-32 Board and Chuck Block . . . . .	15	8-2.	Focus Servo Adjustment . . . . .	127
2-9.	Removal of F.L Block . . . . .	16	8-2-1.	Focus Bias Adjustment . . . . .	127
2-10.	Removal of Spindle Motor and Optical Block Ass'y . . . . .	17	8-2-2.	Focus Gain Adjustment . . . . .	128
	Note for Handling of Optical Block Ass'y (KSS-141B) . . . . .	18	8-3.	Tracking Servo Adjustment . . . . .	128
3.	DIAGRAMS		8-3-1.	Tracking Bias Adjustment . . . . .	128
3-1.	Location of the Printed Circuit Boards . . . . .	19	8-3-2.	Tracking Gain Adjustment . . . . .	128
3-2.	Overall Block Diagram . . . . .	20	8-3-3.	Track Jump Adjustment . . . . .	129
3-3.	Video System Block Diagram . . . . .	22	8-3-4.	Multi Track Jump Adjustment . . . . .	129
3-4.	Focus, Tracking, Slide Servo System Block Diagram . . . . .	25	8-4.	In/Out Limit Position Adjustment . . . . .	131
3-5.	Spindle Servo Block Diagram . . . . .	27	8-4-1.	In Limit Adjustment . . . . .	131
3-6.	Multi Track Jump Control Block Diagram . . . . .	29	8-4-2.	12 inch Disc Out Limit Adjustment . . . . .	131
3-7.	Audio System Block Diagram . . . . .	31	8-4-3.	8 inch Disc Out Limit Adjustment . . . . .	131
4.	PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM		8-5.	Video System Adjustment . . . . .	132
4-1.	Frame Schematic Diagram . . . . .	33	8-5-1.	Demodulator Video Level Adjustment . . . . .	132
4-2.	PR-80 and SM-3 Boards . . . . .	36	8-5-2.	Dropout Sensitivity Adjustment . . . . .	132
4-3.	VP-10 Board . . . . .	42	8-5-3.	DOC Video Level Adjustment . . . . .	132
4-4.	SS-87, SW-138, DUS-127 and DUS-129 Boards . . . . .	50	8-5-4.	CCD Bias Adjustment . . . . .	132
4-5.	SV-29 Board . . . . .	60	8-5-5.	Video Out Level Adjustment . . . . .	133
4-6.	SV-32 Board . . . . .	68	8-5-6.	TBC Centering Adjustment . . . . .	133
4-7.	AU-73 and HP-25 Boards . . . . .	73	8-5-7.	TBC 1/2H Rejecter Adjustment . . . . .	133
4-8.	KY-93, SW-127, DUS-128 and PD-31 Boards . . . . .	79	8-5-8.	CF U/V Separator Adjustment . . . . .	133
4-9.	RS-21, PS-113 and DUS-130 Boards . . . . .	83	8-5-9.	CF Video Level Adjustment . . . . .	134
4-10.	Optical Block (KSS-141B) . . . . .	87	8-5-10.	CF Chroma Level Adjustment . . . . .	134
4-11.	Semiconductors . . . . .	89	8-5-11.	B.B SC Adjustment . . . . .	134
			8-5-12.	B.B H Sync Adjustment . . . . .	134
			8-5-13.	Skew Servo Adjustment . . . . .	135
			8-6.	Audio System Adjustment . . . . .	135
			8-6-1.	TBC Centering Adjustment . . . . .	135
			8-6-2.	TBC Gain Adjustment . . . . .	135
			8-6-3.	LINE OUT Level Adjustment . . . . .	135
			8-7.	Parts Arrangement Diagram for Adjustments . . . . .	136



## 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

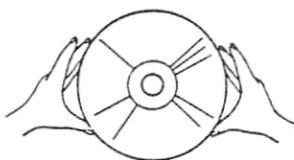
Clean the cabinet, panel and controls with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzene, which may damage the finish.

#### 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.

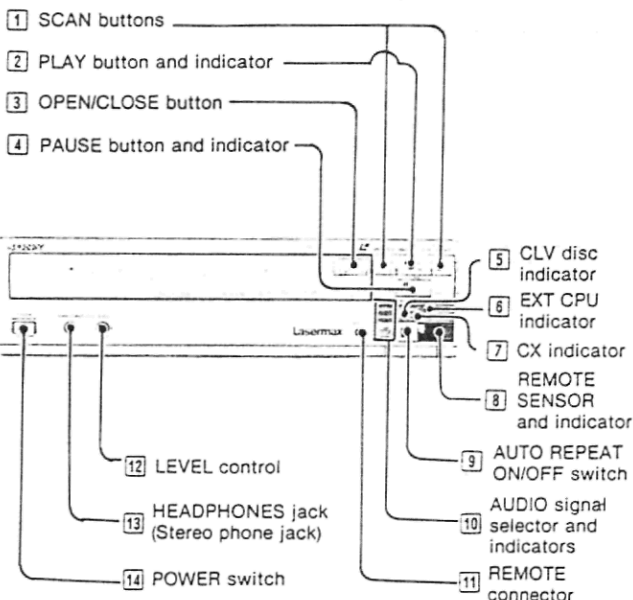
Before playing, clean the disc with a soft cloth.

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.

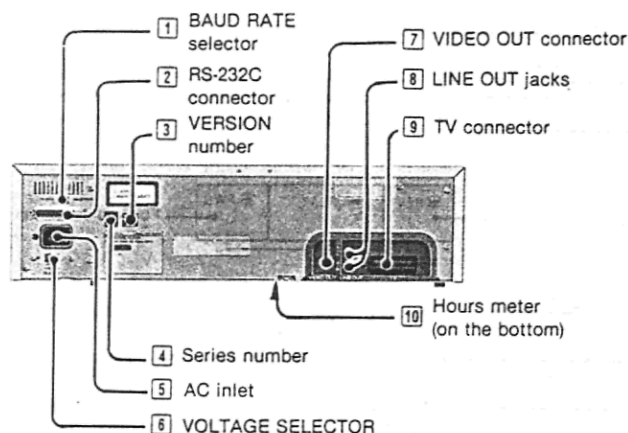
#### 14 POWER switch

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

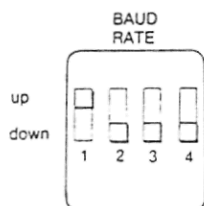
This system is employed to improve the signal-noise ratio and enlarge the dynamic range of audio signals recorded on video discs. CX is a trademark of CBS.

## 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.



Switch setting				Baud rate
1	2	3	4	
u	d	d	d	1,200
d	u	d	d	2,400
d	d	u	d	4,800
d	d	d	u	9,600

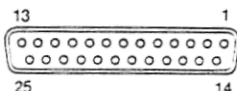
u: up  
d: down

### 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



Pin No.	Signal
1	FG (Frame ground)
2	TxD (Transmit data)
3	RxD (Receive data)
4	RTS (Request to send)
5	CTS (Clear to send)
6	DSR (Data set ready)
7	GND
20	DTR (Data terminal ready)

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.

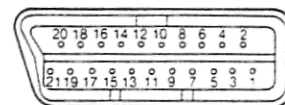
The audio signals of channel 1 (CH-1) are output from the 1/L jack, and the signals of channel 2 are output from the 2/R jack.

### 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.

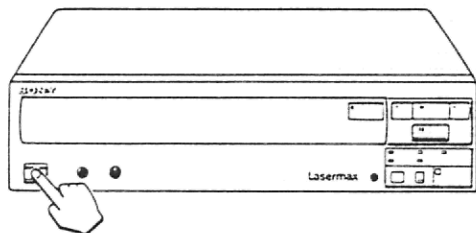
## 1-5. TO PLAY BACK A VIDEODISC

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.

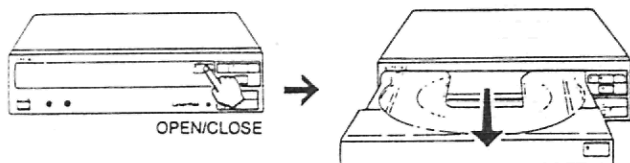
Before starting the operation, keep in mind the following precautions.

- 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.

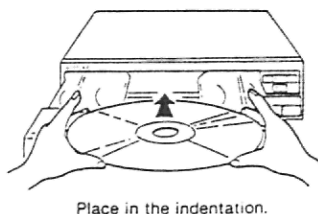
1. Turn on the power of the videodisc player by depressing the POWER switch.



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



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



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.

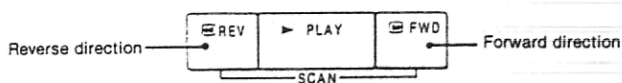
### Notes

- 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

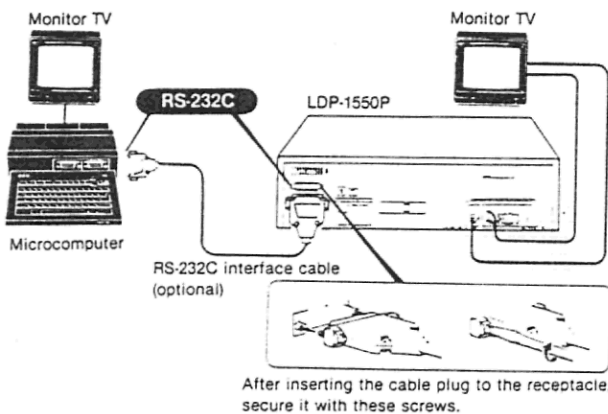
Pressing this button starts playback from the beginning of the program area.

### 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

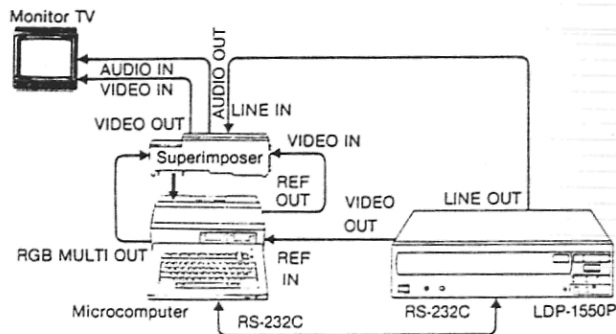


For details on connecting with an external computer, refer to operating manual of the computer, and for operation, refer to the LDM-1550 interface manual.

## 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

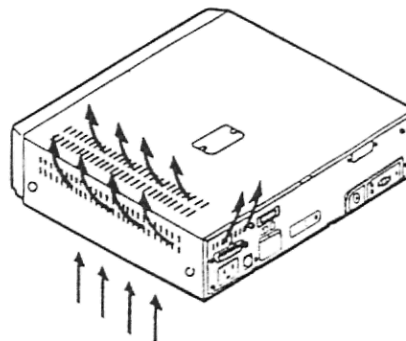


**Note:** The superimposing output signal may interfere while the track jump function is operating, according to the superimposer being used.

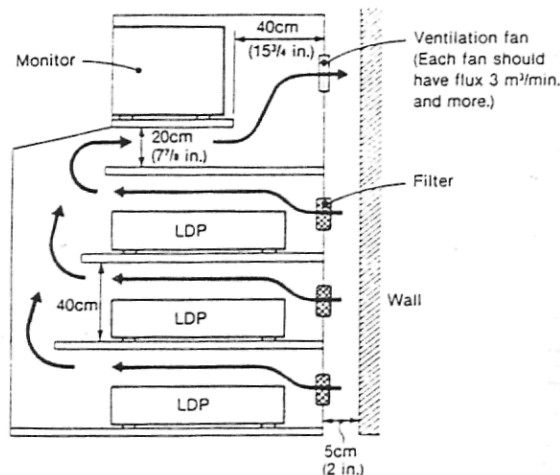
## 1-10. NOTES ON INSTALLING THE PLAYER IN A RACK

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>

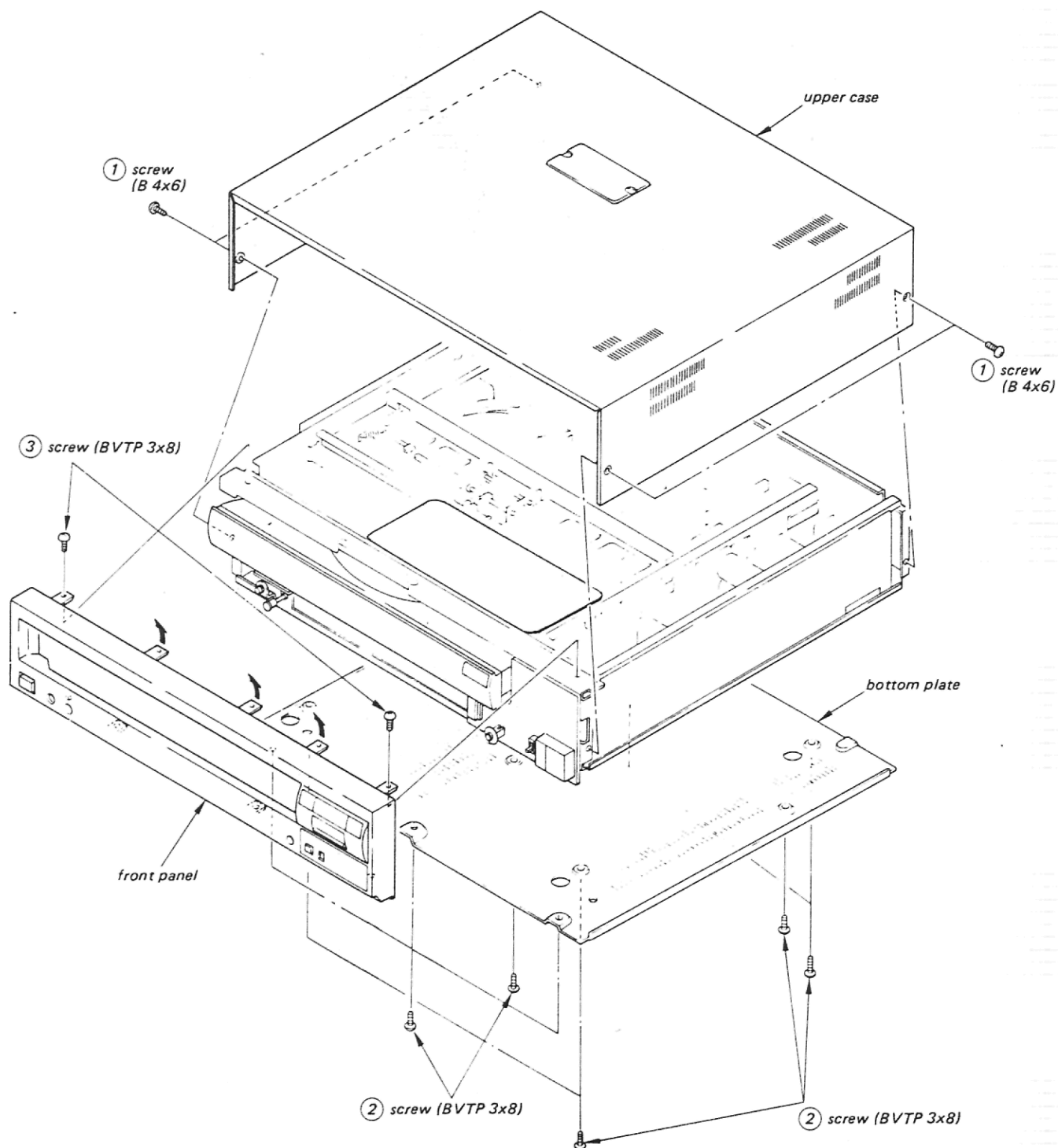
Poor picture quality	<ul style="list-style-type: none"> <li>• Connection of the monitor TV is not correct.</li> <li>• An equipment is near the player to transmit noise and affect the picture quality of the videodisc.</li> <li>• The disc to be played back has a scratch or dirt on the surface.</li> <li>• 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>
Fast forward or reverse playback is not possible.	<ul style="list-style-type: none"> <li>• A CLV disc is used.</li> </ul>

The picture is muted and the PLAY indicator is not lit.

## SECTION 2 DISASSEMBLY

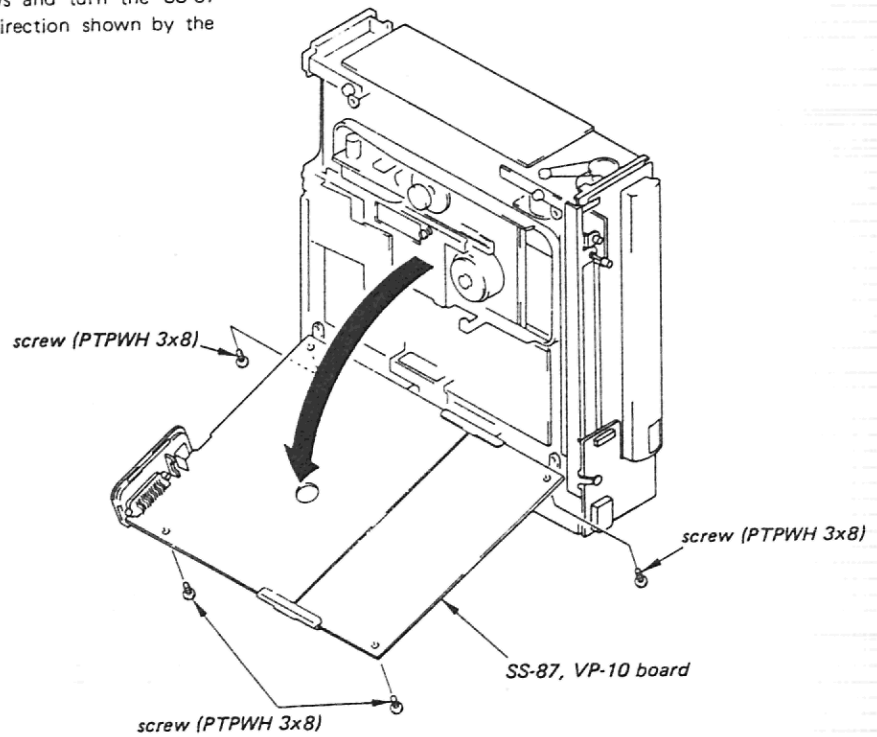
### 2-1. REMOVAL OF CABINET

- 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.)



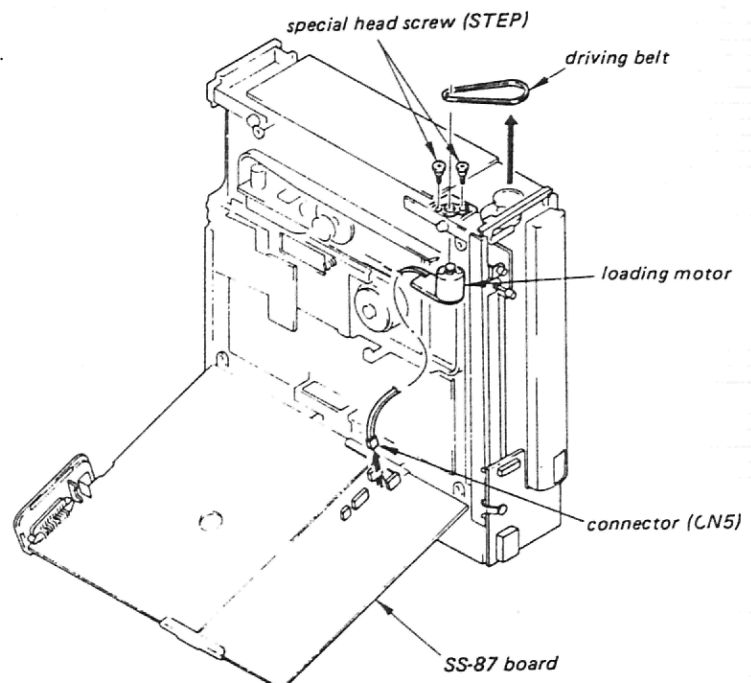
## 2-2. OPENING OF SS-87 AND VP-10 BOARD

- 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

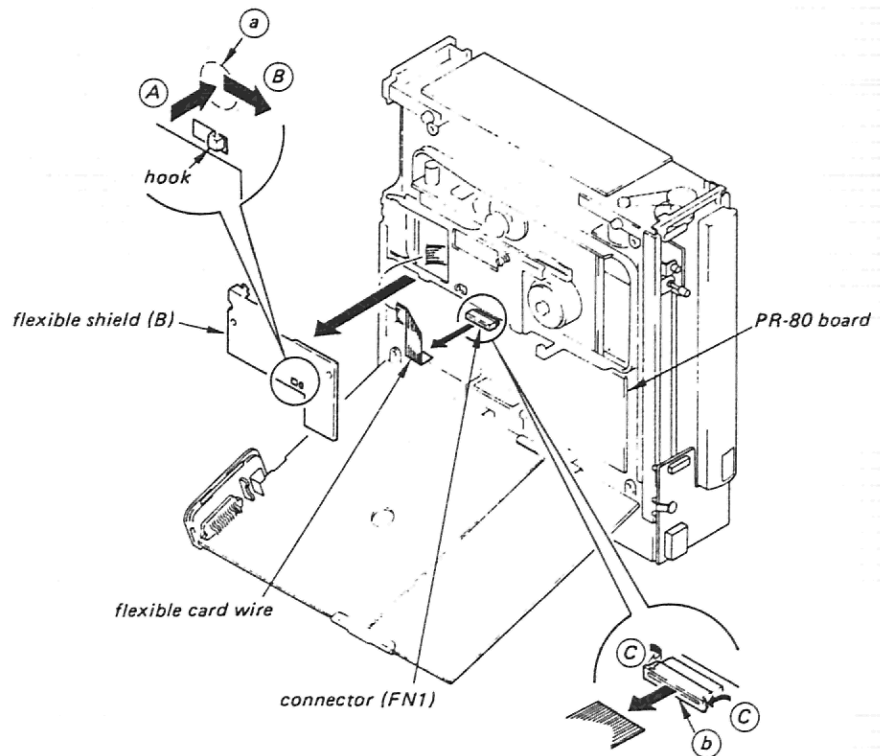
- 1) Take off the driving belt.
- 2) Remove the two special head screws (STEP) to take off the loading motor.
- 3) Disconnect the CN5 connector on the SS-87 board.





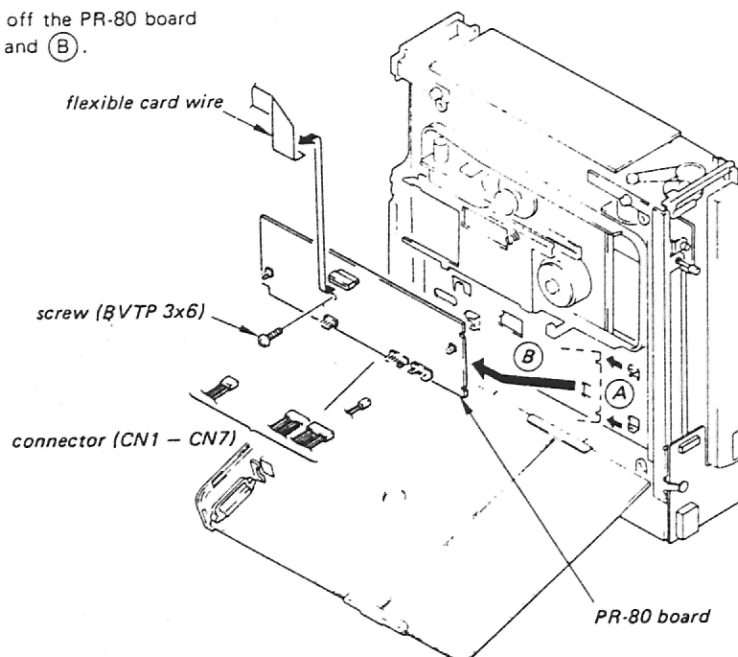
## 2-4. REMOVAL OF FLEXIBLE CARD WIRE

- 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.



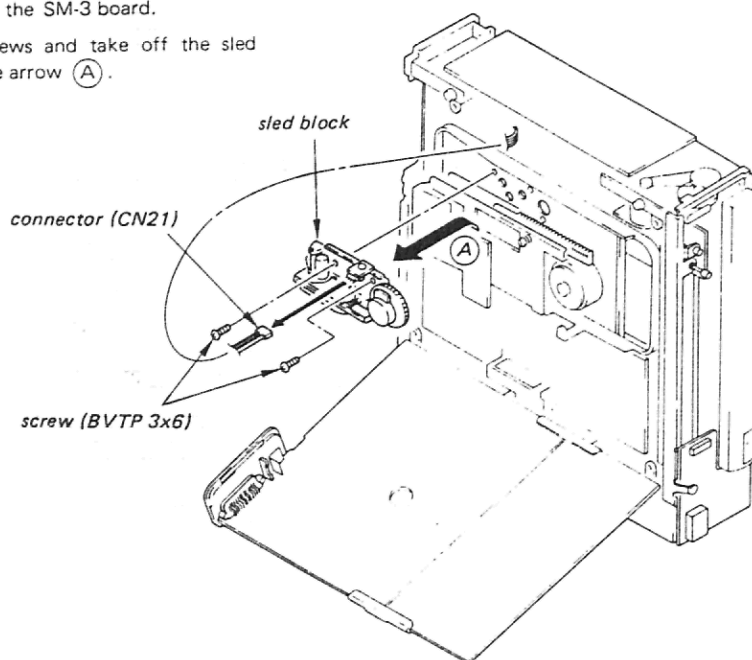
## 2-5. REMOVAL OF PR-80 BOARD

- 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).



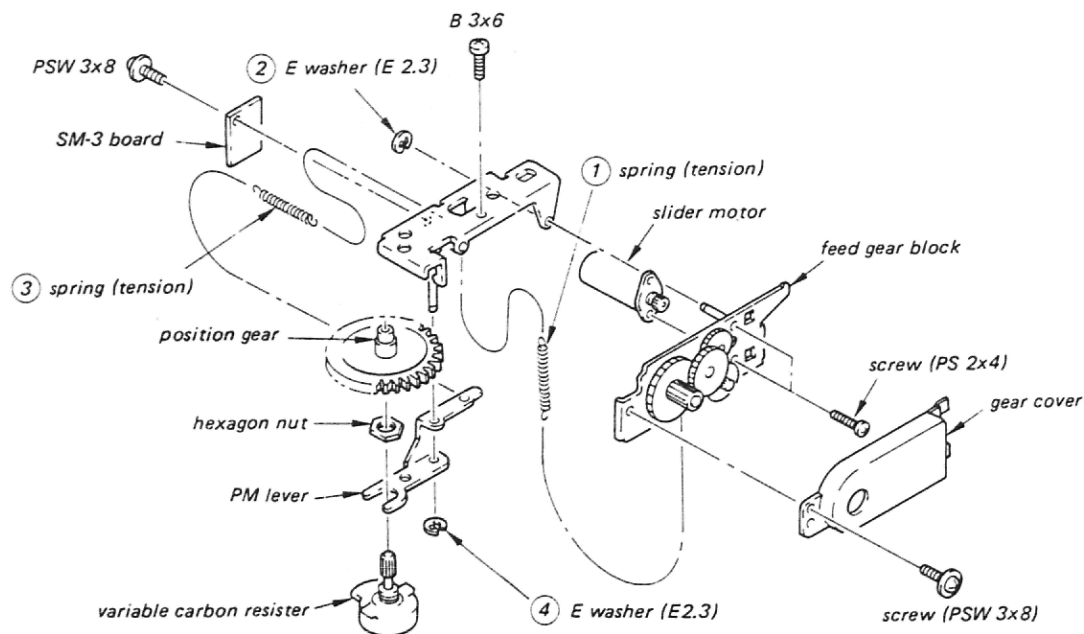
## 2-7. DISASSEMBLY OF SLED BLOCK

### (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.

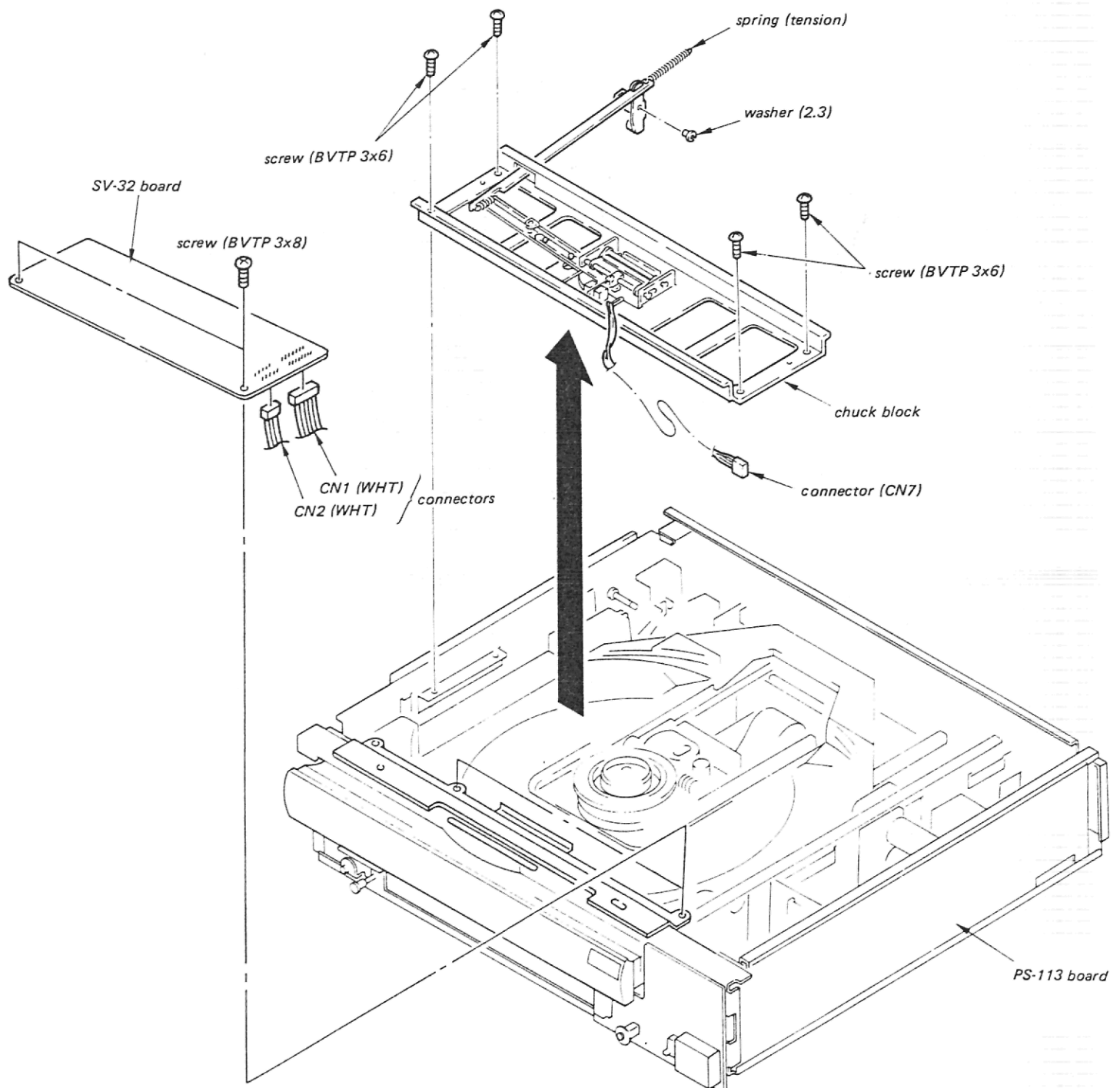
### (PM Lever Block Ass'y)

- 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.



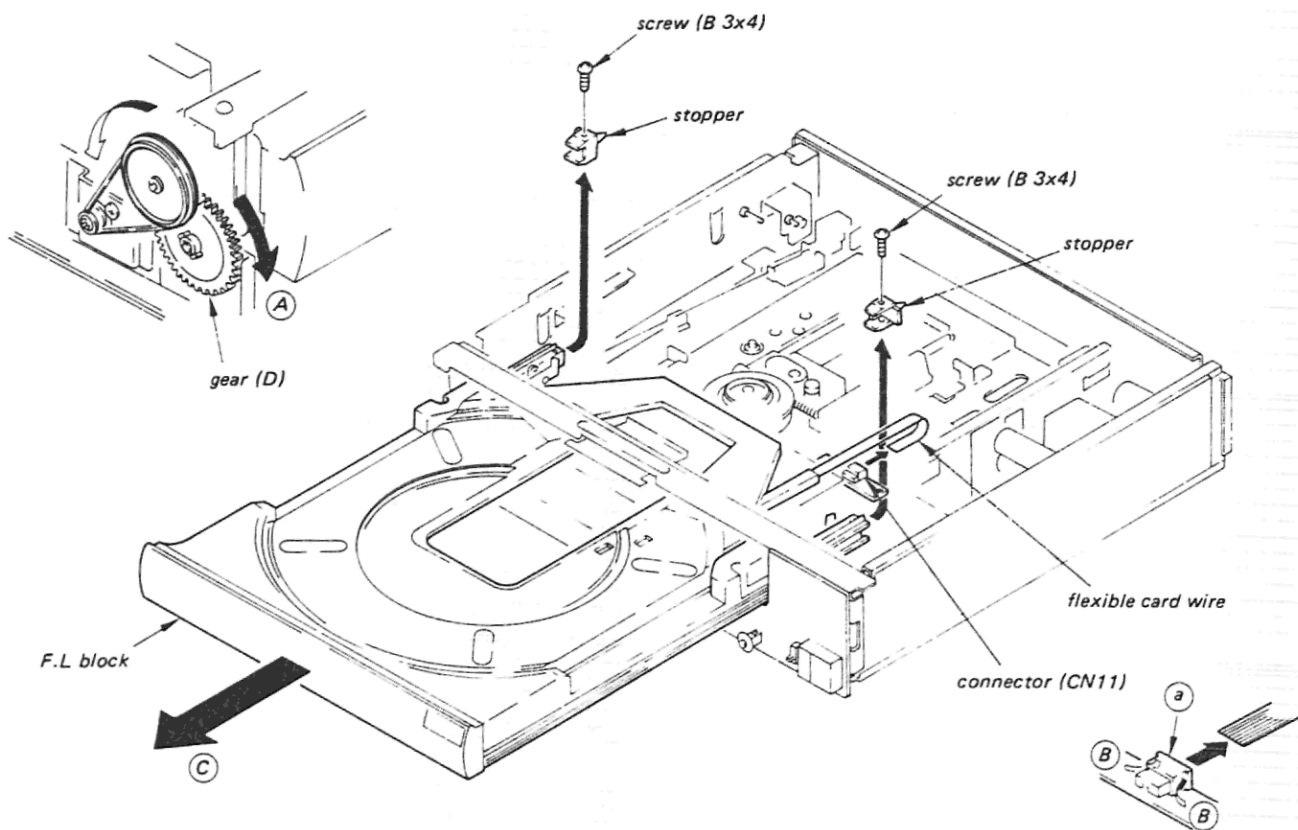
## 2-8. REMOVAL OF SV-32 BOARD AND CHUCK BLOCK

- 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.



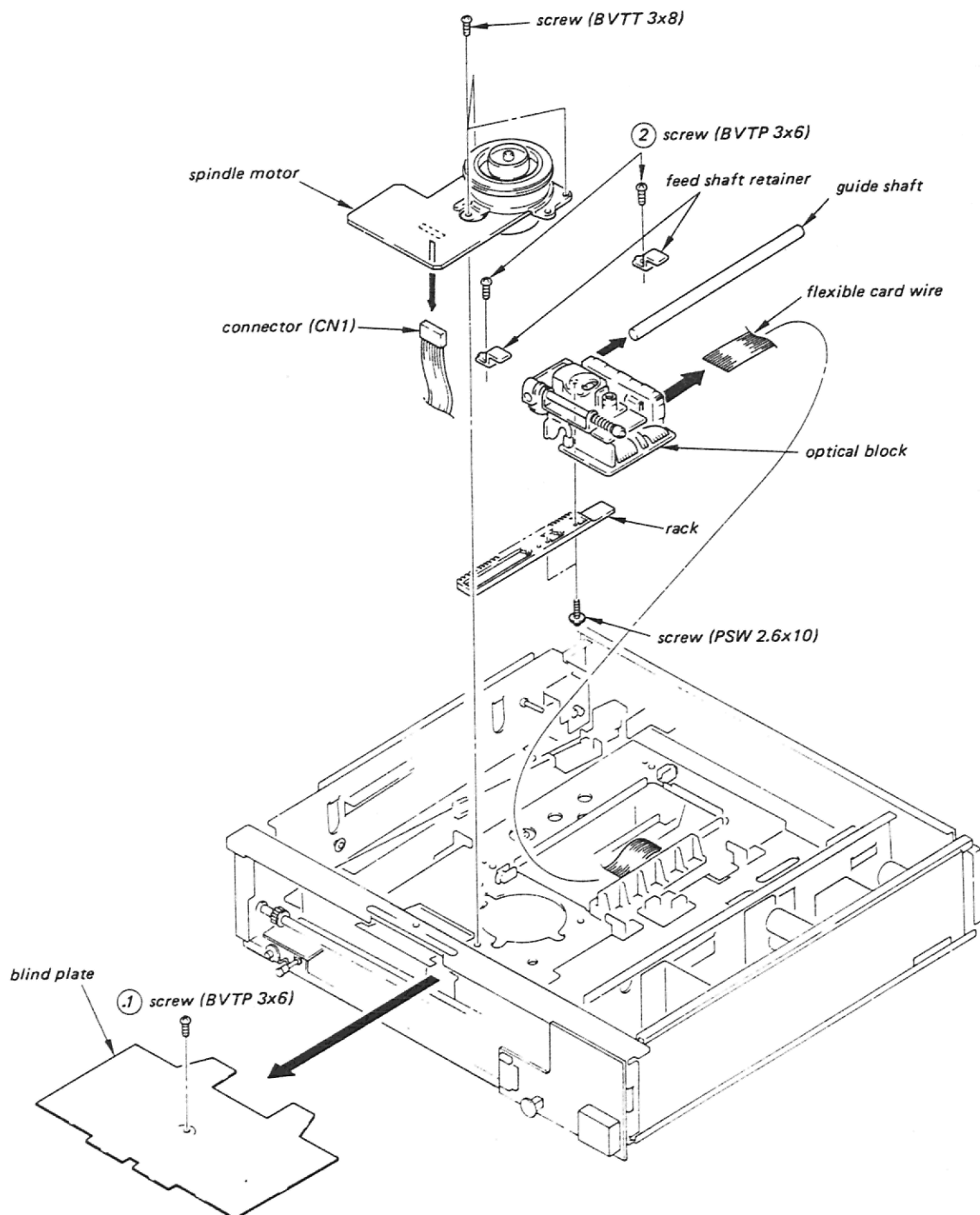
## 2-9. REMOVAL OF F.L BLOCK

- 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)

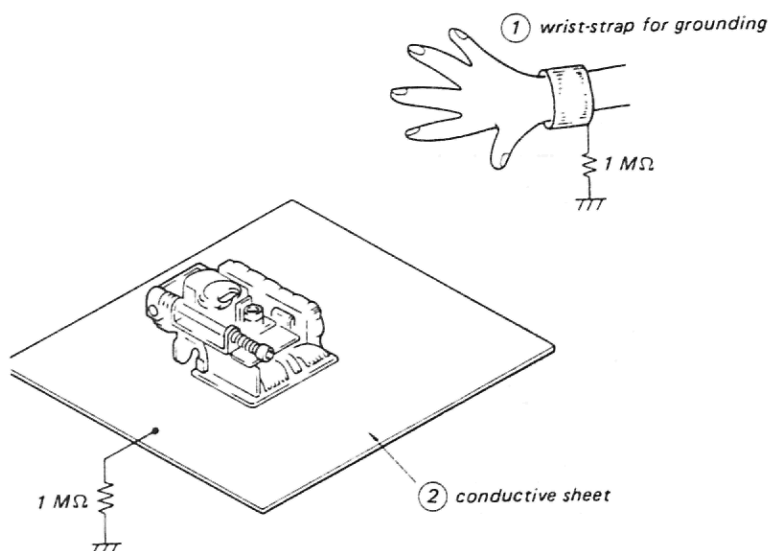
- Sometimes electrostatic breakdown of the laser diode in the optical block ass'y is caused by potential difference between the electrostatic charge of the block and the one of clothes or a human body.  
Be careful to the following notes for preventing the diode from the breakdown.

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.

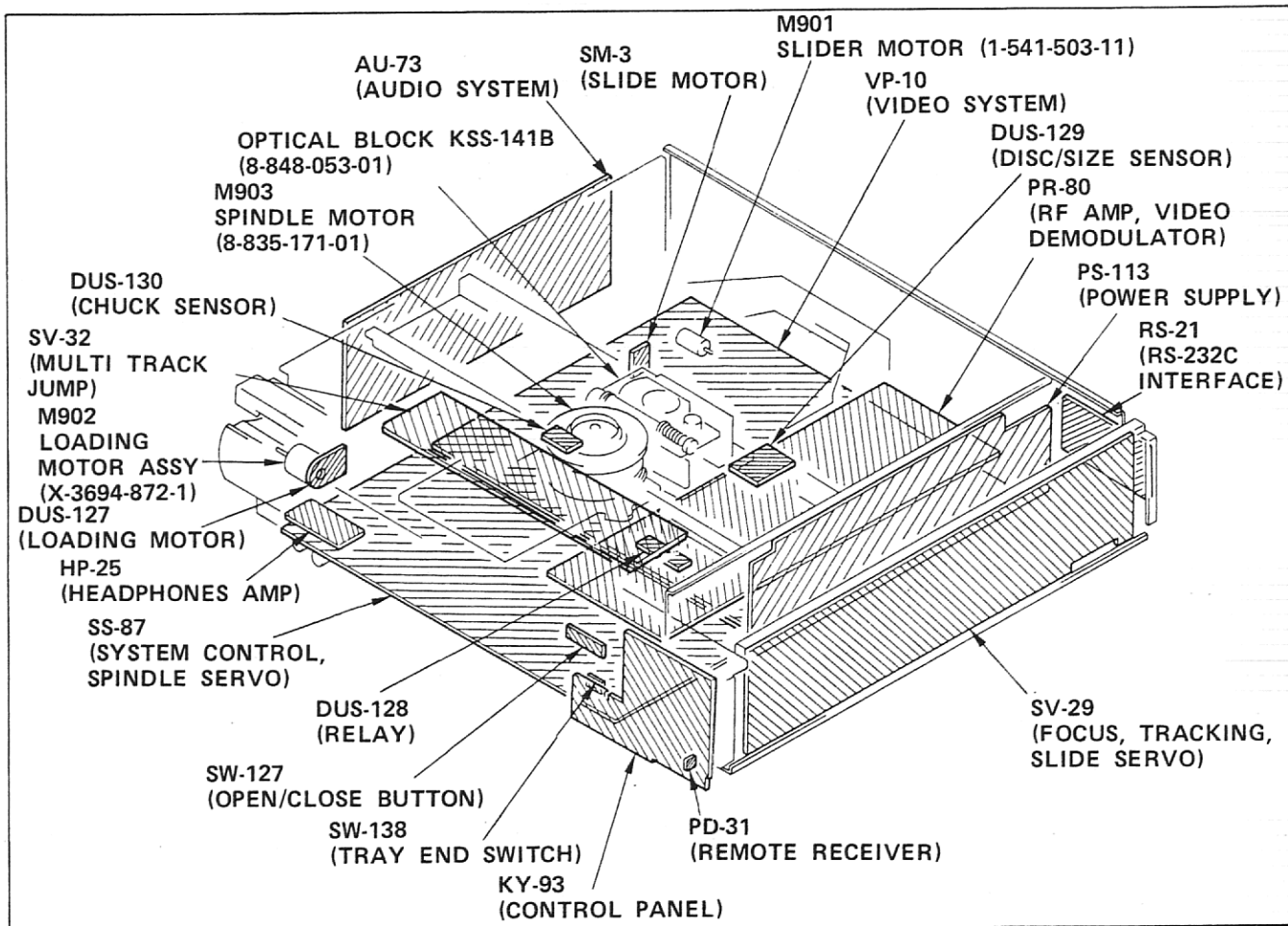
1. Grounding for the human body  
Be sure to put on a wrist-strap for grounding (with impedance lower than  $10^6 \Omega$ ) whose other end is grounded. The strap works to drain away the static electricity build-up on the human body.
2. Grounding for the work table  
Be sure to lay on the table a conductive 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.

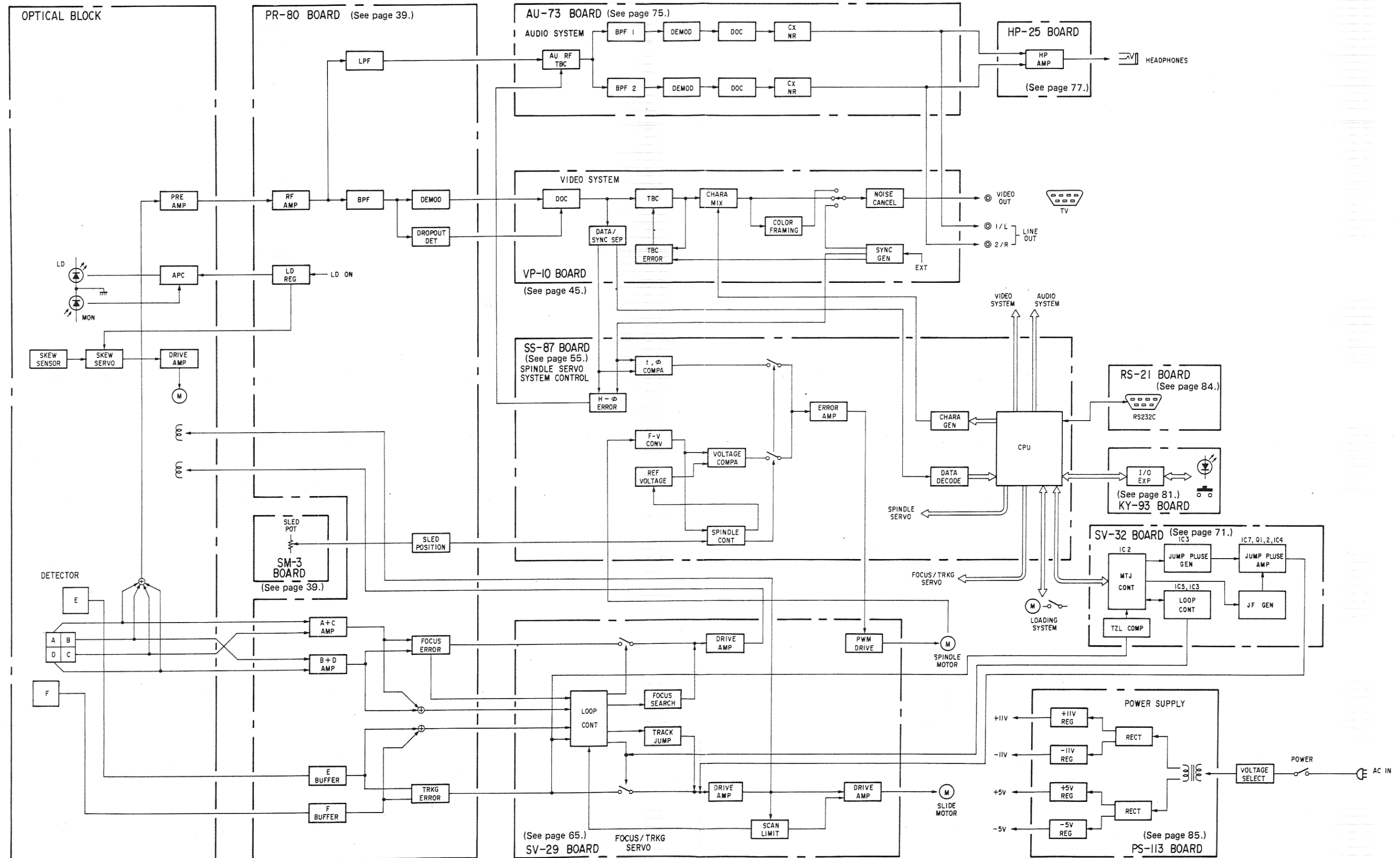
## SECTION 3 DIAGRAMS

### 3-1. LOCATION OF THE PRINTED CIRCUIT BOARDS



# LDP-1550P

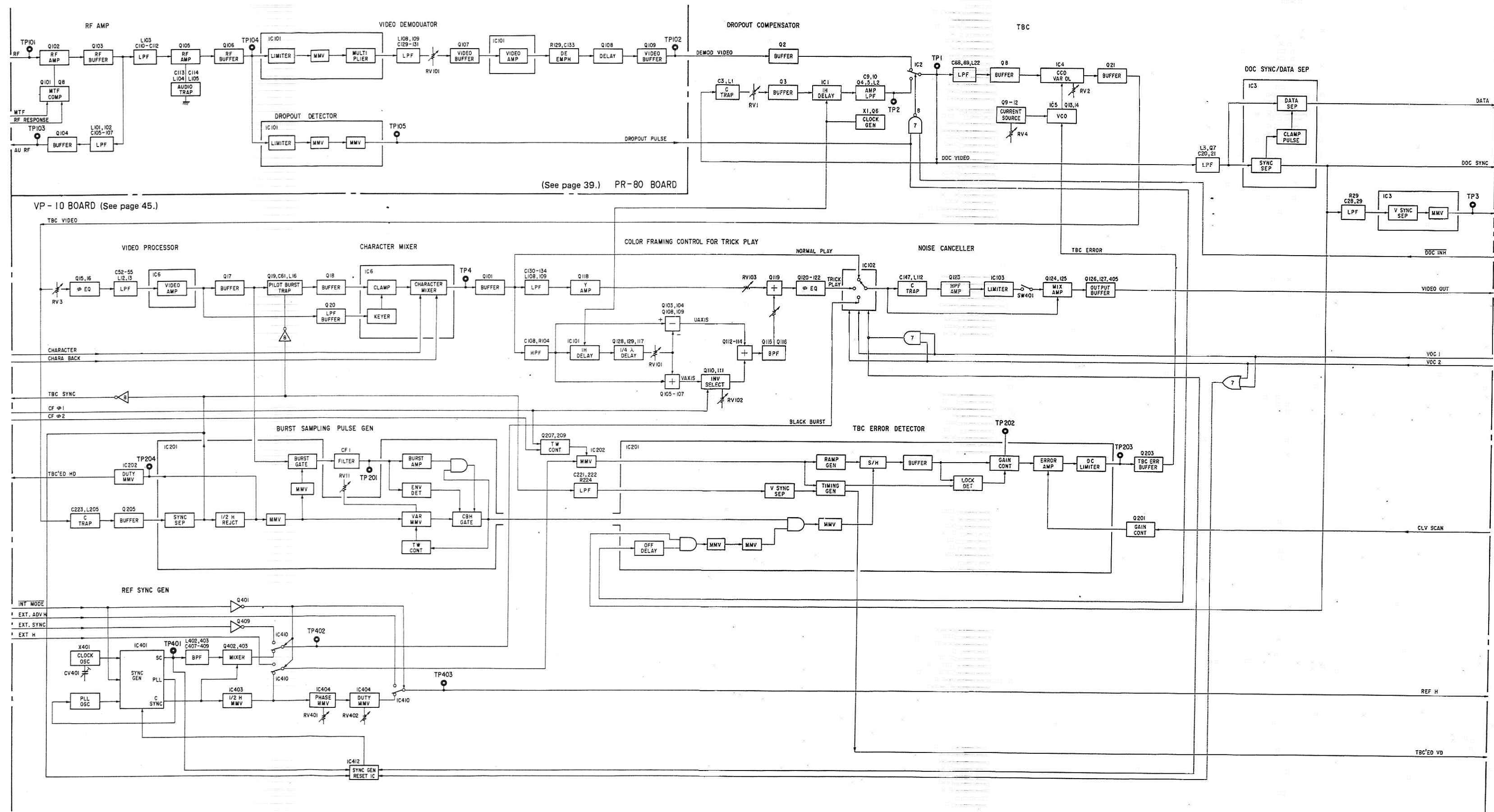
## 3-2. OVERALL BLOCK DIAGRAM





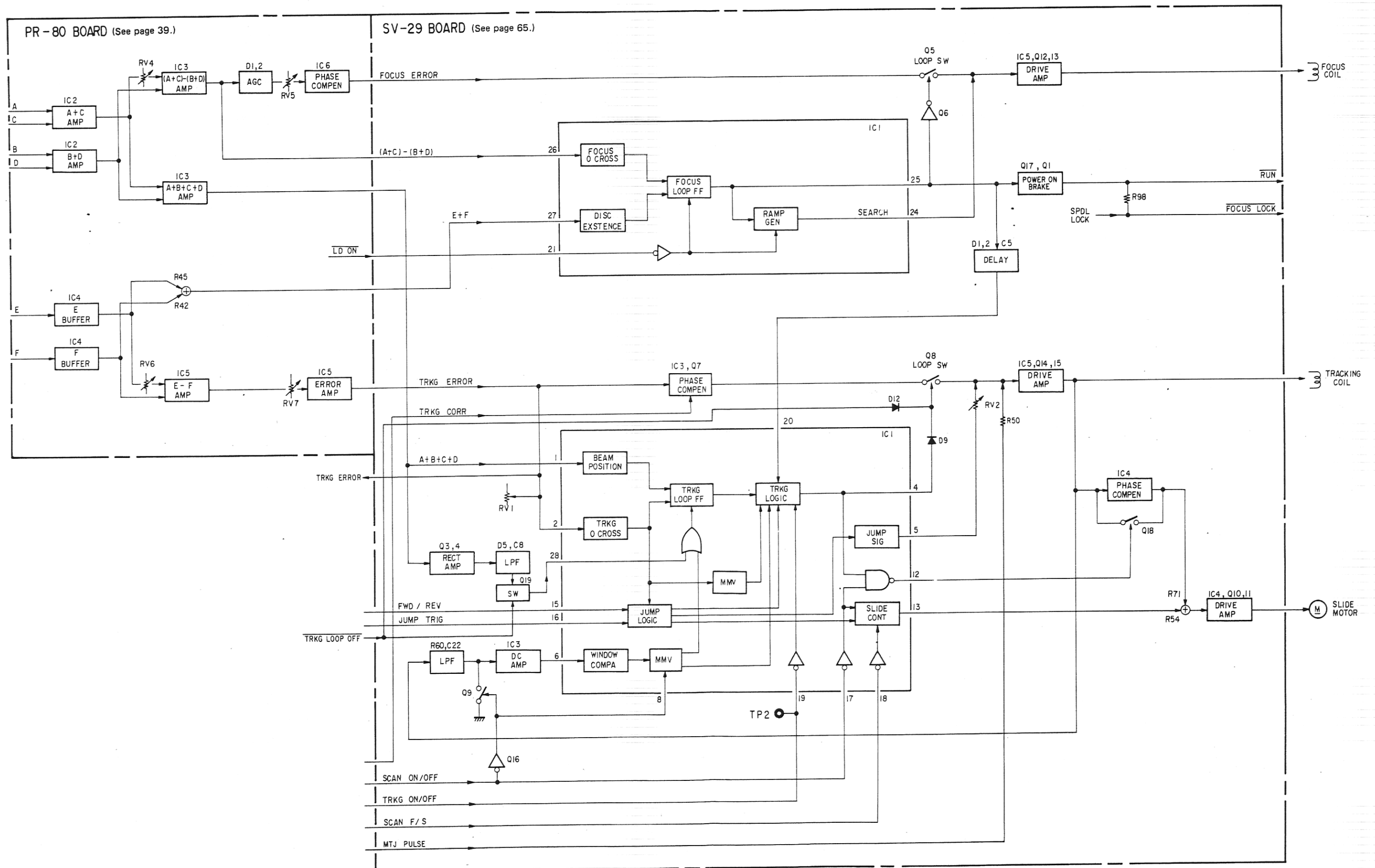
**LDP-1550P**

### 3-3. VIDEO SYSTEM BLOCK DIAGRAM



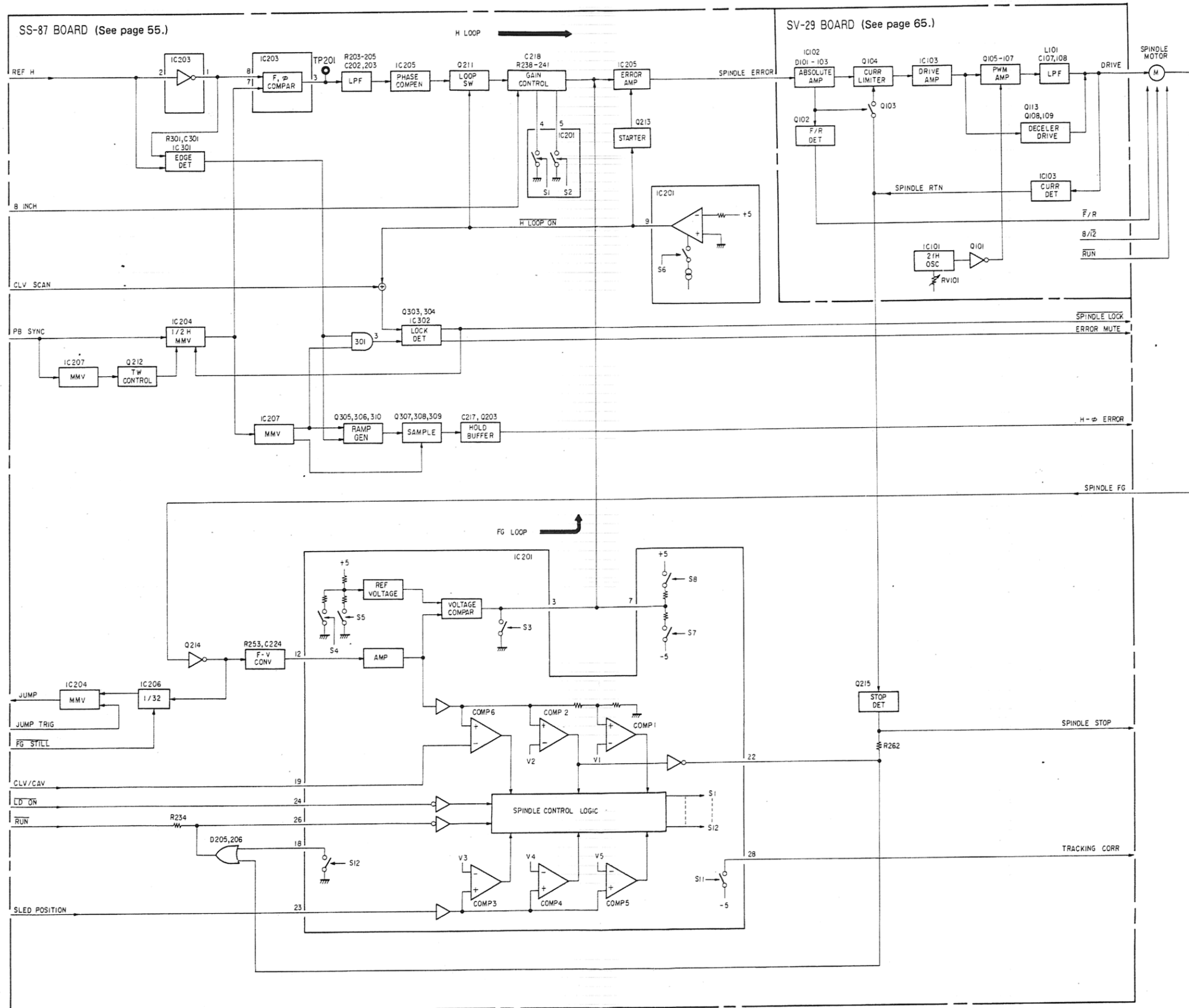
# LDP-1550P

3-4. FOCUS, TRACKING, SLIDE SERVO SYSTEM BLOCK DIAGRAM

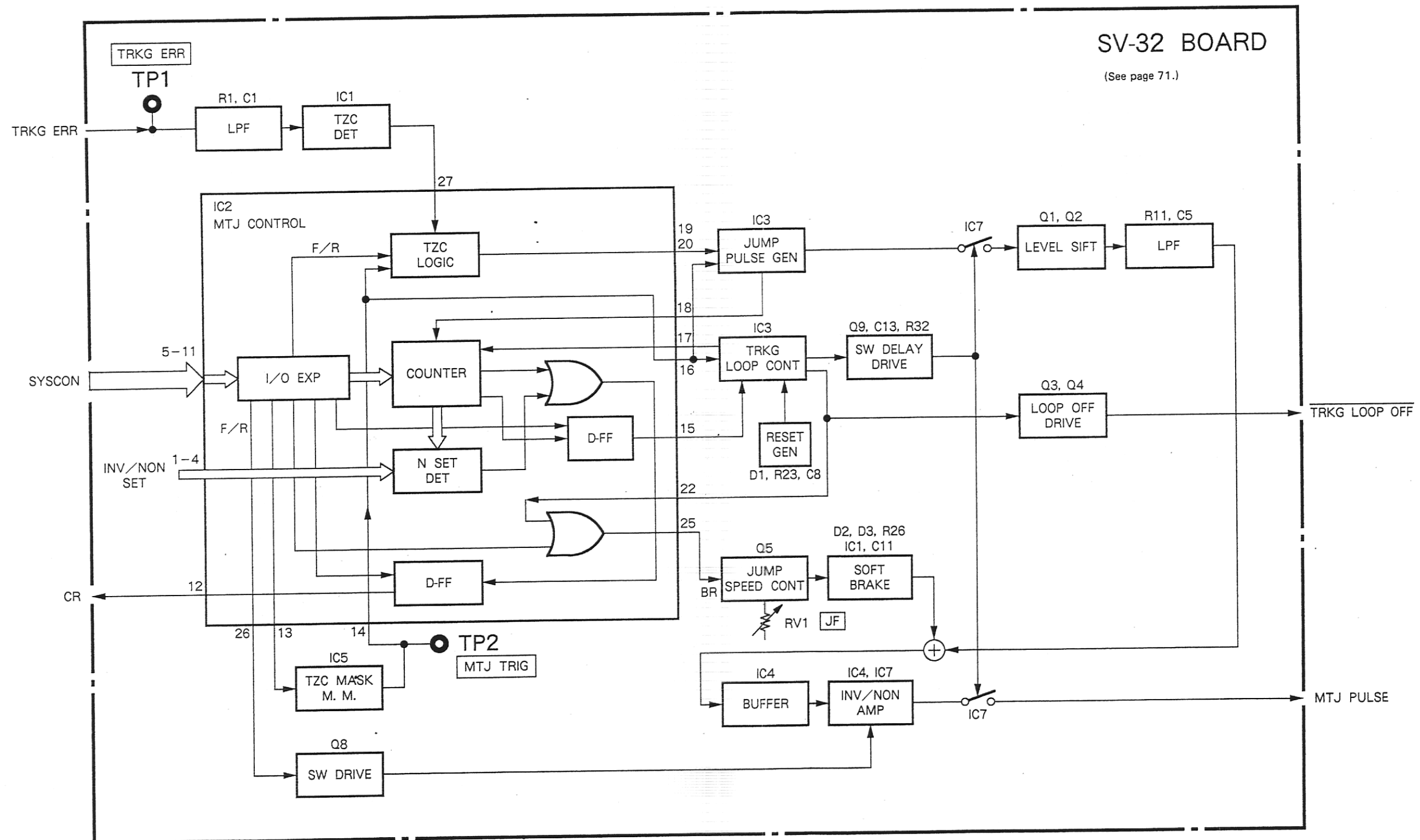


# LDP-1550P

## 3-5. SPINDLE SERVO BLOCK DIAGRAM

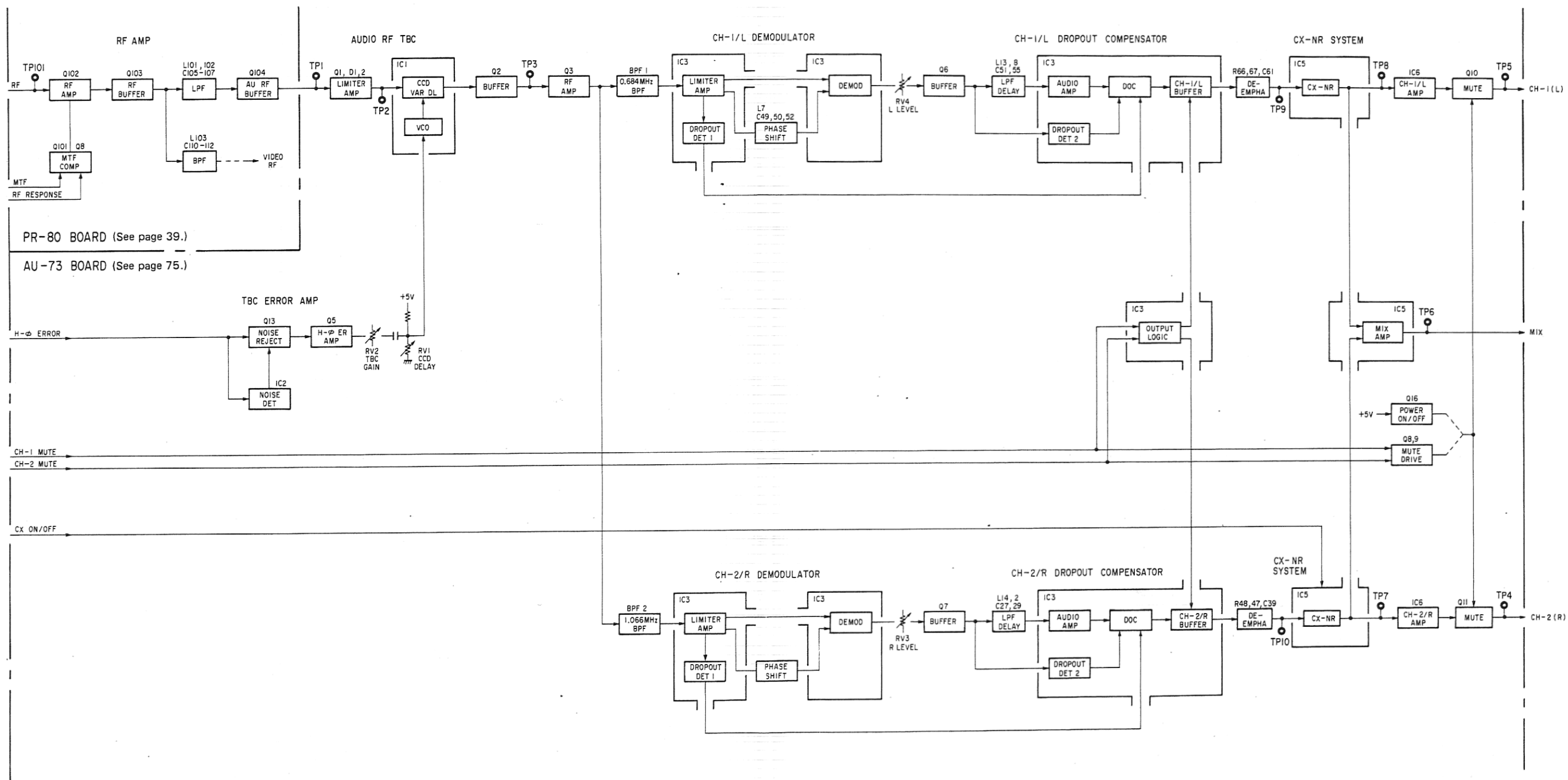


3-6. MULTI TRACK JUMP CONTROL BLOCK DIAGRAM



# LDP-1550P

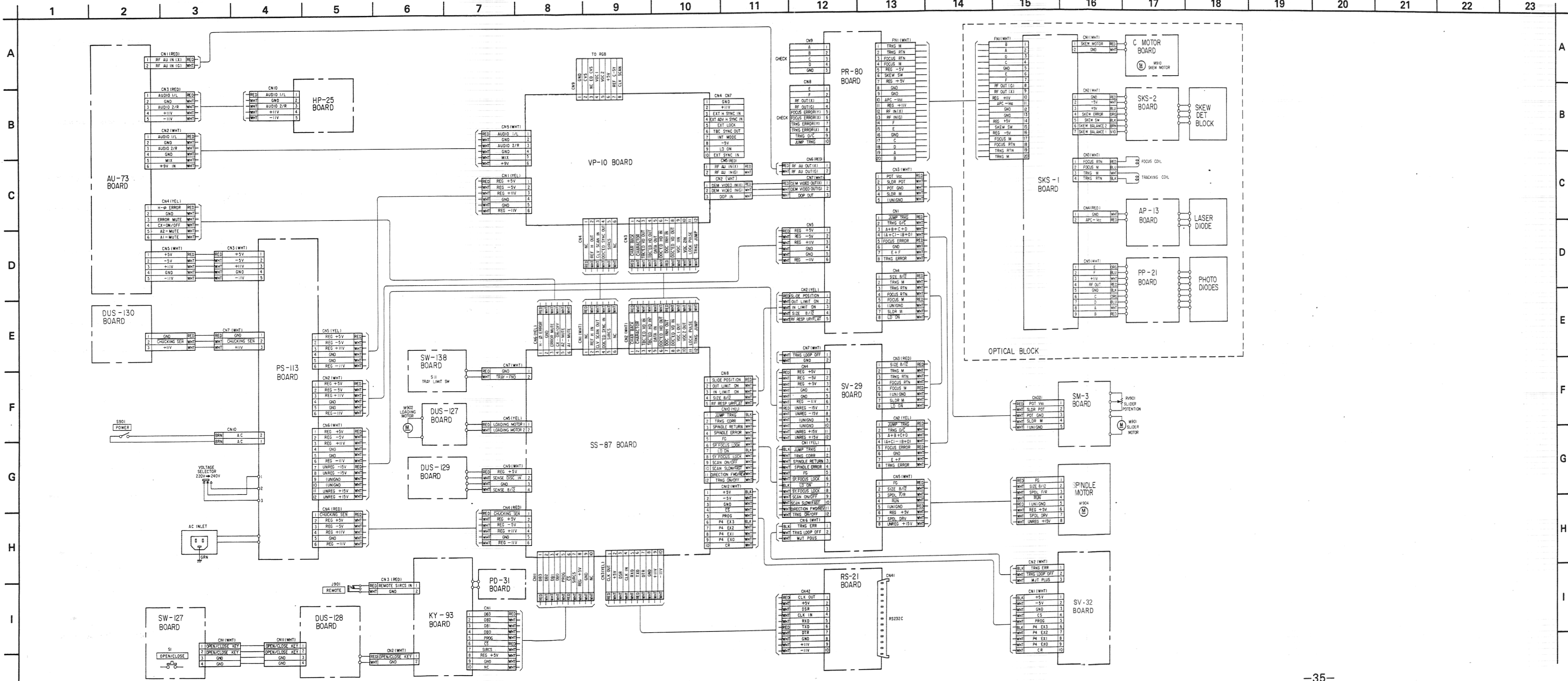
## 3-7. AUDIO SYSTEM BLOCK DIAGRAM



SECTION 4

PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

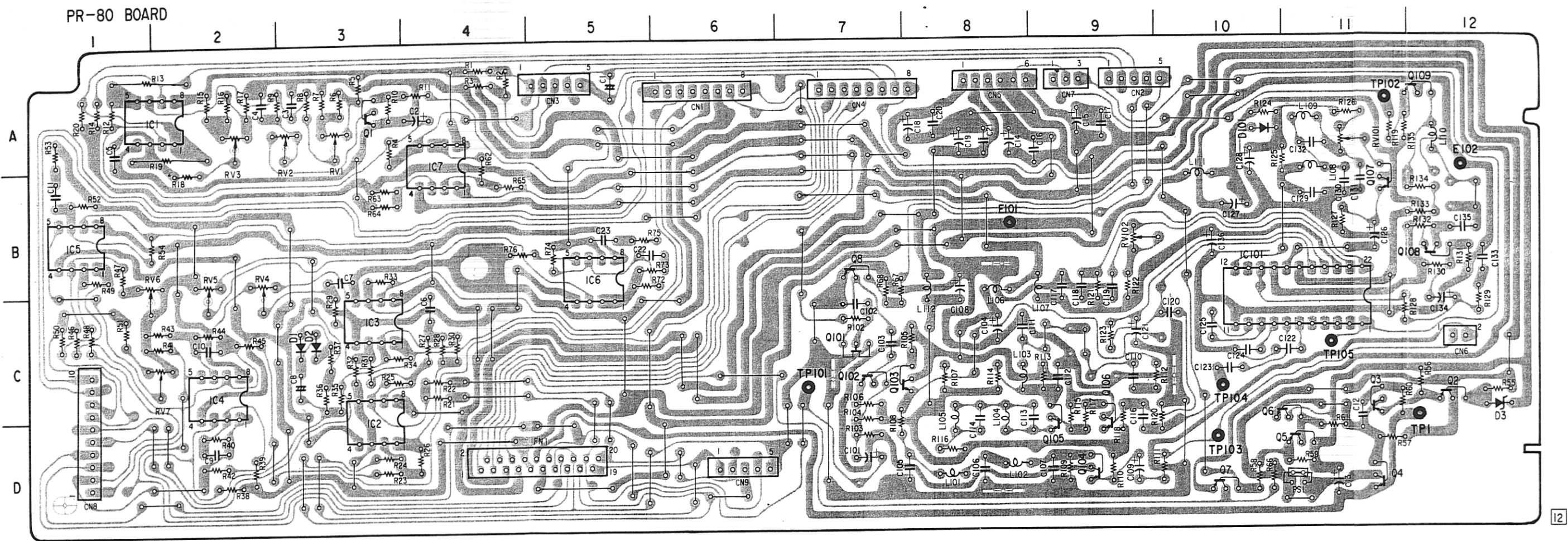
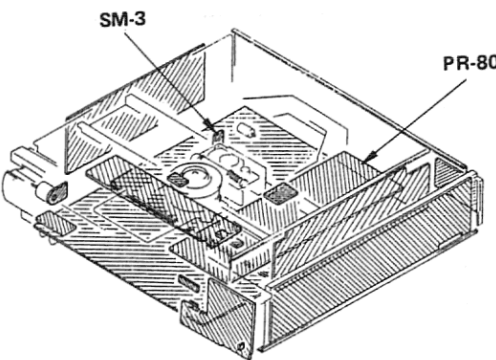
4-1. FRAME SCHEMATIC DIAGRAM





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 -

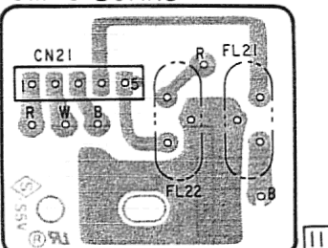


CN1	A-6	IC1	A-2	Q7	D-10	RV4	B-2
CN2	A-9	IC2	D-3	Q8	C-7	RV5	B-2
CN3	A-5	IC3	C-3	Q101	C-7	RV6	B-1
CN4	A-7	IC4	C-2	Q102	C-7	RV7	C-2
CN5	A-8	IC5	B-1	Q103	C-7	RV101	A-11
CN6	C-12	IC6	B-5	Q104	D-9	RV102	B-9
CN7	A-9	IC6	B-5	Q105	D-9		
CN8	D-8	D-1	B-4	Q106	C-9	TP1	D-12
CN9	D-6	IC101	B-10	Q107	B-11	TP101	C-7
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		

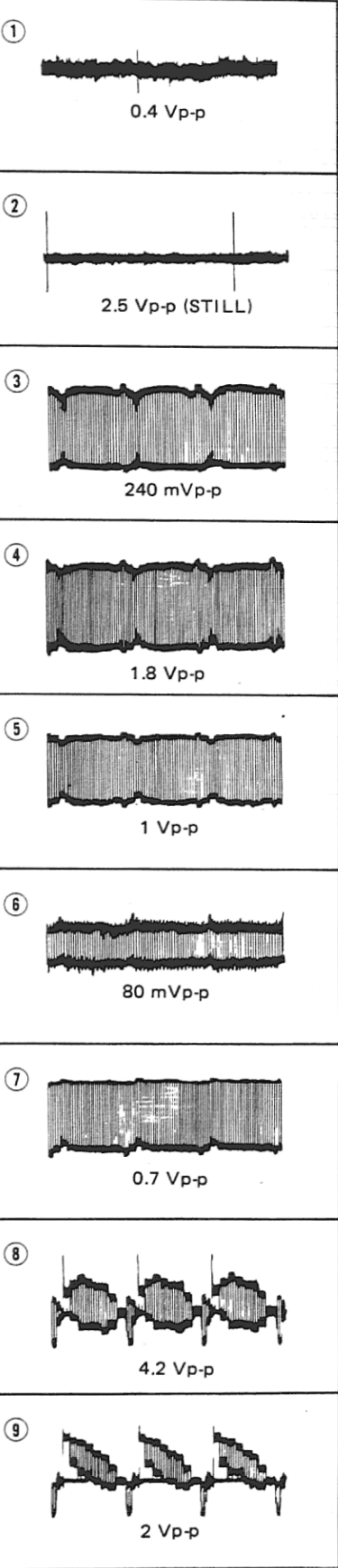
RF AMP RF AMP

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



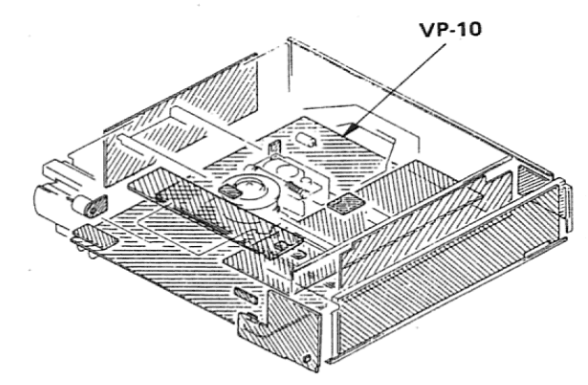




LDP-1550P

4-3. VP-10 (VIDEO SYSTEM) PRINTED WIRING BOARD  
- Ref. No. VP-10 BOARD: 2,000 series -

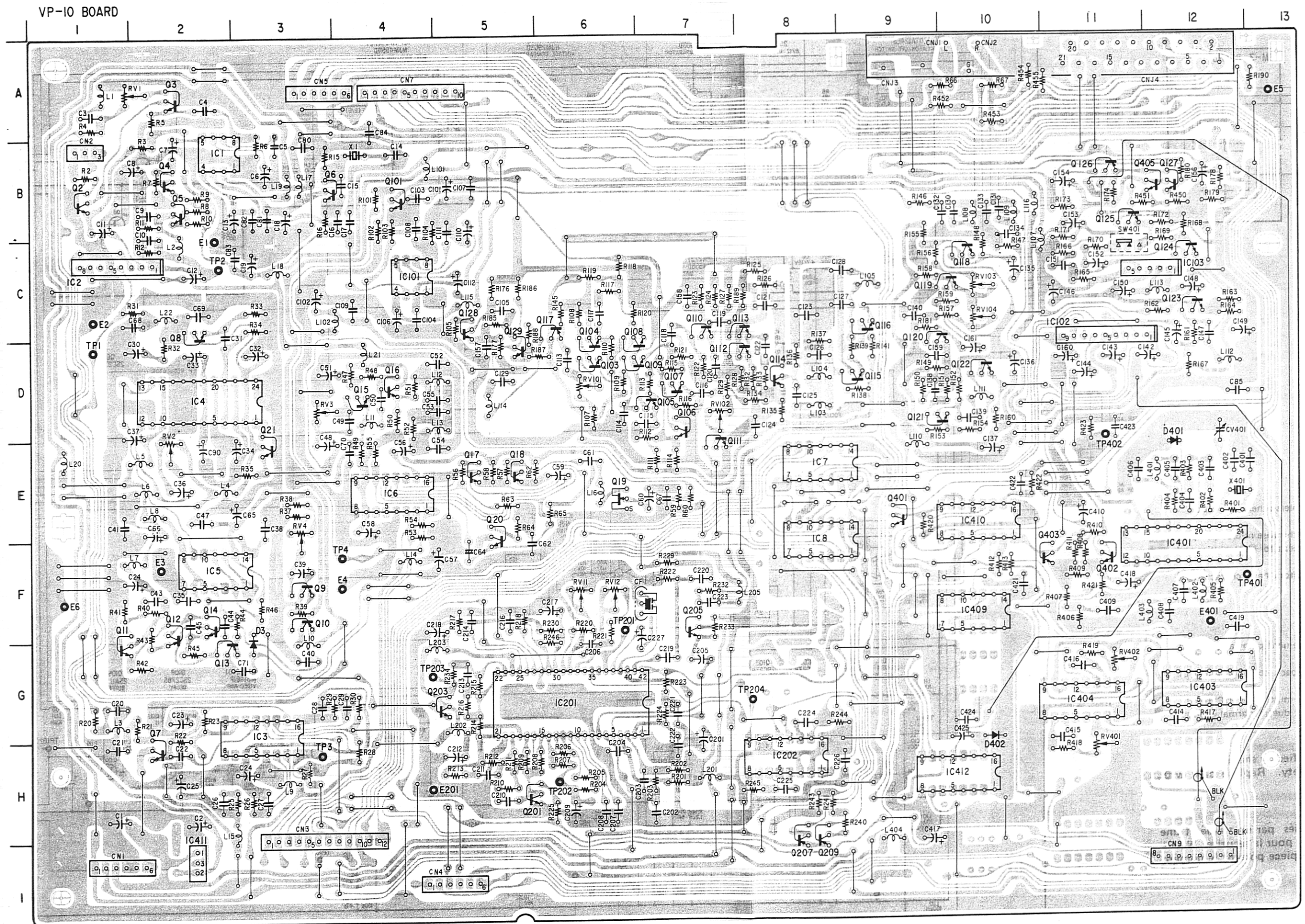
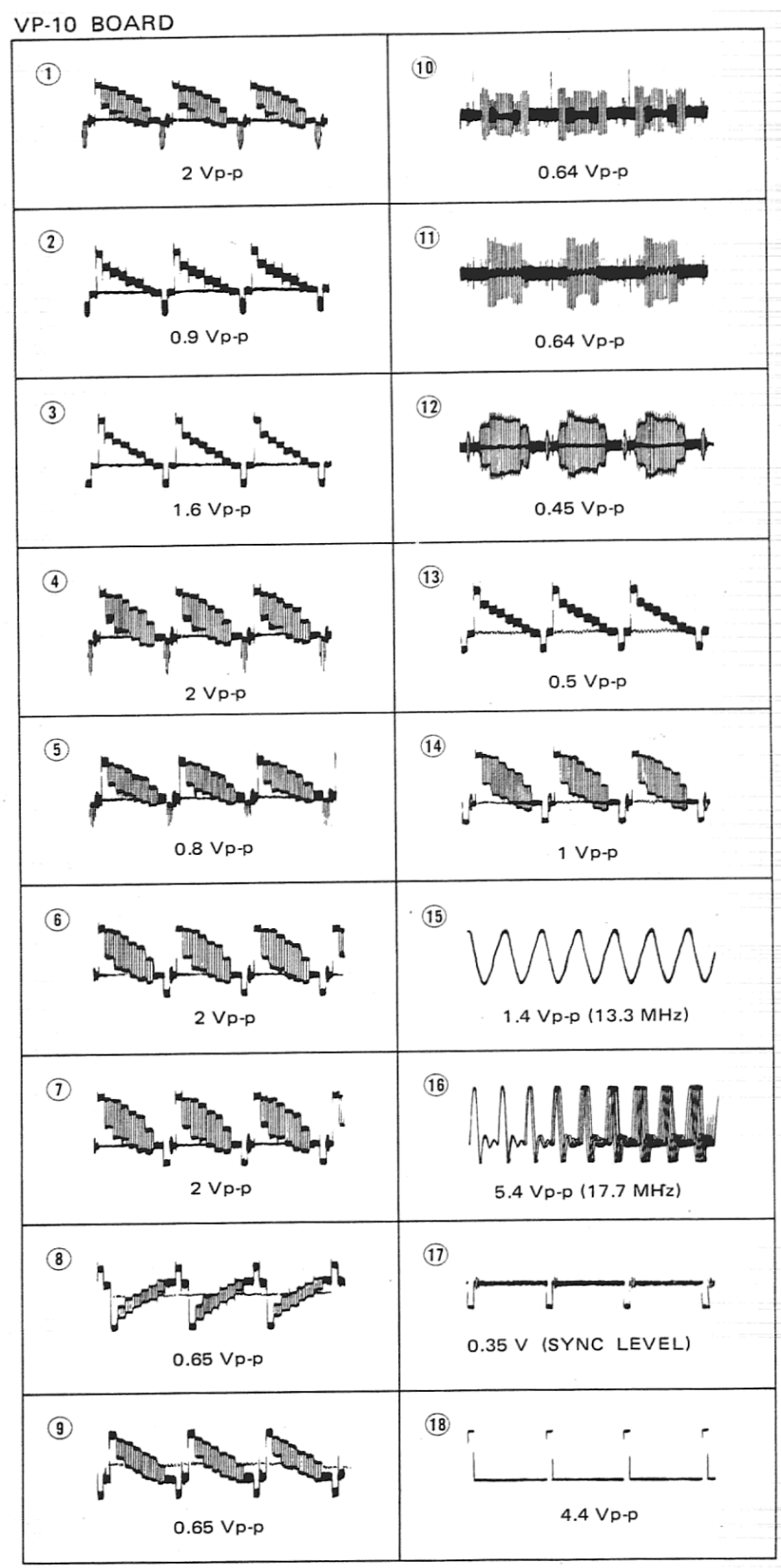
Note on Printed Wiring Board:  
○ : indicates a lead wire mounted on the component side.  
● : indicates a lead wire mounted on the printed side.



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.



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
CN9	A-4	Q401	E-9
	I-12	Q402	F-11
		Q403	F-11
		Q405	B-12
CV401	E-12	RV1	A-2
D3	G-3	RV2	E-2
D401	E-12	RV3	D-3
D402	H-10	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	H-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-5		
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	G-1		
Q12	F-2		
Q13	G-2		
Q14	F-2		
Q15	D-4		
Q16	D-4		
Q17	E-5		
Q18	E-5		
Q19	E-6		
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		



