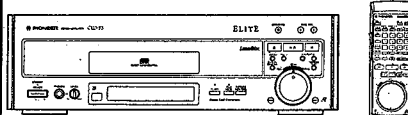


Service Manual



ORDER NO.
RRV1088

The chapter 1 of this Service Manual will not be reprinted. On your additional orders, we may supply only the chapter 2. For the chapter 1, please make copies and attach to the chapter 2 at your side if necessary.

CD CDV LD PLAYER

CLD-53

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
KU/CA	CLD-53	AC 120 V	

• For the circuit and mechanism descriptions, refer to the service guide RRV1066 for CLD-D703.

CONTENTS

CHAPTER 1

1.1 SAFETY INFORMATION	1-2
1.2 IC INFORMATION	1-3
1.3 PANEL FACILITIES.....	1-6
1.4 SPECIFICATIONS	1-6
1.5 ERROR CODE TABLE	1-8
1.6 ADJUSTMENTS.....	1-10
1.7 PARTS LIST FOR PACKING AND EXPLODED VIEWS	1-21
1.8 PCB PARTS LIST	1-24

CHAPTER 2

2.1 PACKING AND EXPLODED VIEWS ...	2-3
2.2 SCHEMATIC AND PCB CONNECTION DIAGRAMS.....	2-12

CHAPTER 1

1.1 SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.



WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).

When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.



NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols  (fast operating fuse) and/or  (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible  (fusible de type rapide) et/ou  (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

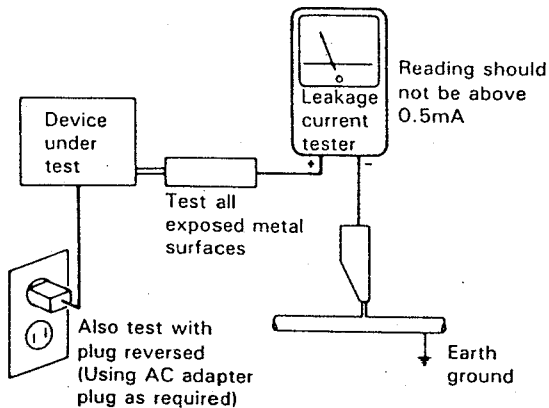
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a Δ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

1.2 IC INFORMATION

■ PD3277A (FLKY ASS'Y IC100)

● Mode control IC

● Pin function

No.	Pin name	I/O	Function
1	VCC	I	Power supply (+5V)
2	NC	O	NC
3	XSCK	I/O	Serial communication clock
4	S-MTOF	I	Serial communication data input
5	S-FTOM	O	Serial communication data output
6	XRESET (OUT)	O	Mother board reset output
7	XCS	O	Chara. Gen. (PD0154A) communication request
8	SYNCR0 IN	I	CD deck synchro input
9	SYNCR0 OUT	O	CD deck synchro output
10	AVCC	I	+5V
11	JOG2	I	Jog dial data input
12	JOG1	I	Jog dial data input
13	KIN0	I	Key data input
14	KIN1		
15	KIN2		
16	KIN3		
17	KIN4		
18		I	Not used (GND)
19	AV _{ss}	I	GND
20	TEST	I	GND
21	X2	O	Not used (N. C)
22	X1	I	+5V
23	V _{ss}	I	GND
24	OSC1	I	Oscillator (8MHz)
25	OSC2	O	
26	XRESET (IN)	I	CPU Reset (L:reset)
27	SHAKE (ACK)	I/O	Mechanism control communication request (Mode control acknowledge output)
28	SEL IR	I	Remote control input
29	P. ON	O	Mother board power supply switching output
30	LED1	O	LED OUT : theater mode
31	(OEMNO1)	I	OEM Select port (L:PIONNER, H:MARANTZ)
32	NC	O	NC
33	LED5	O	LEDOUT : FL OFF
34	LED4	O	LED OUT : Direct CD
35	NC	O	NC
36	S-SCAN	O	Shuttle scan output
37	K	O	Display segment output

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

No.	Pin name	I/O	Function
38	J	O	Display segment output
39	I	O	Display segment output
40	H (Ks0)	O	Display segment output/ Key scan output
41	G (Ks1)	O	Display segment output/ Key scan output
42	F (Ks2)	O	Display segment output/ Key scan output
43	E (Ks3)	O	Display segment output/ Key scan output
44	D	O	Display segment output
45	C	O	Display segment output
46	B	O	Display segment output
47	A	O	Display segment output
48	Vdisp	I	FL Power supply (-27V)
49		O	Not used (N. C)
50		O	Not used (N. C)
51	G10	O	Display grid output
52	G9		
53	G8		
54	G7		
55	G6		
56	G5		
57	G4		
58	G3		
59	G2		
60	G1		
61	LED0	O	LED OUT : Standby
62	J/E	I	Destination select power (L : Japan H : north America)
63	W.D.F	O	Pulse output for watchdog timer
64	NC	I	NC

■ PD0197A (VSOP ASSY IC101)

● Mechanism control IC

● Pin function

No.	Pin name	I/O	Function
1	+5V	I	Power connection pin Impresses 5V±10%.
2	FBA2	O	Focus balance control 1: TEMAX 0: RFMAX
3	XANA	O	Digital/analog audio switch signal output pin "H" = digital, "L" = analog
4	RF CORR	O	RF collection switch signal output pin H = gain up, CAV inner circuit gain up
5	NC	O	Not used
6	SLD POS	I	Pick up position detection switch input pin (A/D input port)
7	SLD ERR	I	Slider error signal input pin (A/D input port)
8	TILT ERR	I	Tilt sensor output signal input pin (A/D input port)
9	TABL ERR	I	Tracking balance error signal input pin (A/D input port)
10	FSEQ	I	Sub-code sync conformity detection signal input pin Conformity: H Other: L
11	WRQ	I	Sub-code Q reading OK signal input pin OK: H NG:L
12	TBAL DRV	O	Tracking Off-set control signal output pin
13	RWC	O	DSP reading/writing command signal output pin READ: L WRITE: H
14	XCD	O	LD/CD switching signal output pin LD: H CD: L
15	SQOUT	I	DSP reading command data input pin. SUBQ is read out.
16	COIN	O	DSP writing command data output pin
17	CQCK	O	DSP reading/writing command clock output pin. Start-up reading.
18	SLD DRV	O	Slider control signal output pin A-side 5V-FWD, 0V-REV (B-side is opposite), 2.5V-STOP
19	SI1	I	Input pin for data from mode control IC
20	SO1	O	Serial data output to mode control IC
21	SCK1	O	Clock for serial communication with mode control IC
22	TZC	I	Tracking error zero cross signal input pin
23	SHAKE	I/O	Handshake signal pin for data communication with mode control IC
24	MUTE	O	Audio line sound mute control signal output pin MUTE: H MUTE CANCEL: L
25	PVCLATCH	O	Latch output of serial control for digital filter IC PD0116A. Latches at falling edge.
26	XPBV	I	LD/CDV play vertical synchronous signal input pin vertical synchronous: L
27	GND	I	GND grounding for A/D conversion
28	XRESET	I	Reset signal input pin "L" = reset "H" = reset cancel
29	XIN	I	9MHz clock oscillation input pin
30	XOUT	O	9MHz clock oscillation output pin
31	NC	O	Not used. Since it is for only ϕ output, it cannot be used for anything else.
32	GND	I	GND grounding
33	DETAMP	I	Spindle overcurrent detection signal input pin overcurrent: L normal: H
34	XFOK	I	Focus servo lock signal input pin lock: L unlock: H
35	MEMORY	I	Memory yes/no determination input pin memory yes: H memory no: L
36	TBCH	I	Input pin for reference H-SYNC signal from DVP
37	FG	I	Spindle motor FG signal input pin 24 outputs per rotation. Used after dividing by 3 in microcomputer.
38	DATA	I	Input pin for Phillips code decoder with built in mechanism controller
39	XPBH	I	Play H-SYNC input for Phillips code decoder
40	XPBV	I	Play V-SYNC input for Phillips code decoder
41	NC	O	Not used
42	DIRECT	O	CD direct video line power off signal output pin Video PWOFF: H normal: L
43	T HOLD	I	Track jump accelerating/decelerating signal input pin accelerating/decelerating: H other: L

No.	Pin name	I/O	Function
44	XPLAY	O	Outputs mode of spindle. 0: in servo 1: other
45	XCX	O	Analog sound CX noise reduction switching signal output pin. ON: L OFF: H
46	SQ2	O	Analog voice switching signal output pin 2/R squelch: H
47	SQ1	O	Analog voice switching signal output pin 1/L squelch: H
48	DVPLATCH	O	PD0146 serial latch signal output pin. Latches at falling edge.
49	TBCLOCK	I	Spindle lock signal input pin. Lock: H Unlock: L
50	XCLV	O	CAV/CLV switching signal output pin. "H" = CAV, "L" = CLV
51	DATA INH	O	Output pin that carries out Phillips code data inhibit. H: normal L: inhibit
52	NR OFF	O	Noise reduction control by VDEM (Output pin) 0: normal 1: no NR
53	NC	I	Not used
54	SO3	O	Serial 3 data signal output pin
55	SCK3	O	Serial 3 clock signal output pin
56	MCNTLATCH	O	PD3212 serial latch signal output pin. Latches at falling edge.
57	XSHARP	O	Selection output pins for picture adjustment L: SHARP H: Other
58	SOFT	O	Selection output pins for picture adjustment H: SOFT L: Other
59	SW1	I	Switch input pin for loading/tilt position detection
60	SW2	I	Switch input pin for loading/tilt position detection
61	SW3	I	Switch input pin for loading/tilt position detection
62	TILT DRV	O	Load/tilt control output pin 0.5V - tray IN, OUT/tilt DOWN, UP 2.5V - STOP
63	XTURNB	I	γ turn position detection signal input pin "L" = B-side "H" = A-side, turning
64	XTURNA	I	γ turn position detection signal input pin "L" = A-side "H" = B-side, turning

1.3 PANEL FACILITIES

A detailed description is provided on the indicated page(s).

PHONES LEVEL control

Turn this control in the "MAX" direction to increase the output level from the PHONES jack. Turn this control in the "MIN" direction to decrease the output level from the PHONES jack.

PHONES jack

STANDBY indicator

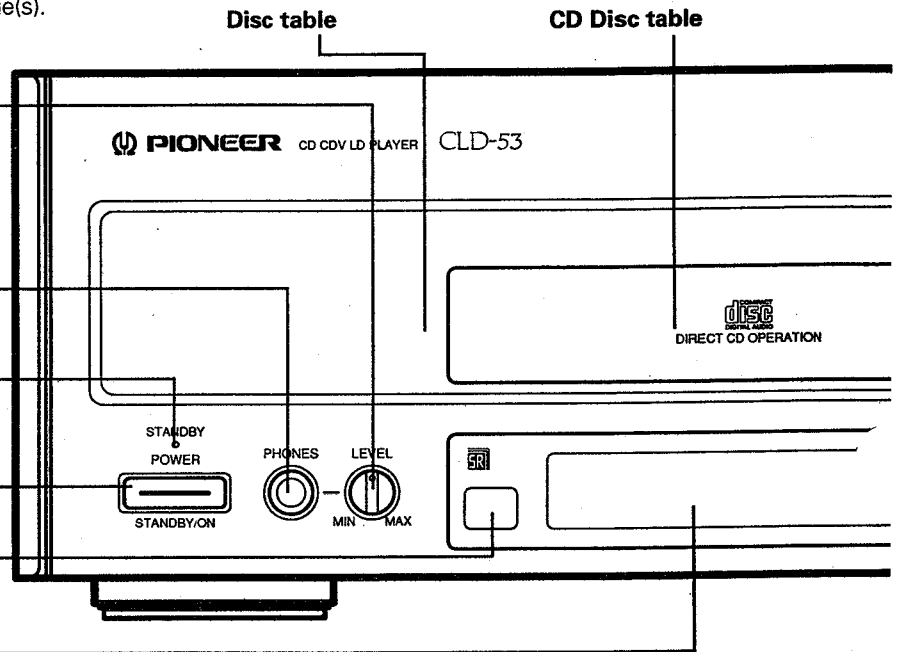
This indicator lights when the power is set to standby and goes out when the power is turned on.

POWER STANDBY/ON switch

Press to turn the power on and off.

Remote sensor

Display window



1.4 SPECIFICATIONS

General

- System LaserVision Disc system and Compact Disc digital audio system
- Laser Semiconductor laser wavelength 780 nm
- Power requirements AC 120 V, 60 Hz
- Power consumption 45 W
- Weight 8.3 kg (18 lbs 5 oz)
- Dimensions 440 (W) x 434 (D) x 140 (H) mm
17-5/16 (W) x 17-1/16 (D) x 5-1/2 (H) in
- Operating temperature +5 °C ~ +35 °C
(41 °F ~ 95 °F)
- Operating humidity 5 % ~ 85 %
(There should be no condensation of moisture.)

Video characteristics (two pairs)

- Format NTSC specifications
- Video output
 - Level 1 Vp-p nominal, sync. negative, terminated
 - Impedance 75 Ω unbalanced
 - Jacks Both RCA jacks

S-Video output (two pairs)

- Y (luminance) - Output level 1 Vp-p (75 Ω)
- C (color) - Output level 286 mVp-p (75 Ω)
- Jacks S-VIDEO jacks

Audio characteristics (two pairs)

- Output level
 - During analog audio output 200 mVrms
(1 kHz, 40 %)
 - During digital audio output 200 mVrms
(1 kHz, -20 dB)
- Jacks Both RCA jacks
- Number of channels 2 (Stereo)

Digital Audio Characteristics

Frequency response	4 Hz - 20 kHz (EIAJ)
SN ratio	116 dB (EIAJ)
Dynamic range	99 dB (EIAJ)
Total harmonic distortion	0.0017 % (EIAJ)
Wow and flutter	Limit of measurement (EIAJ)

Other terminals

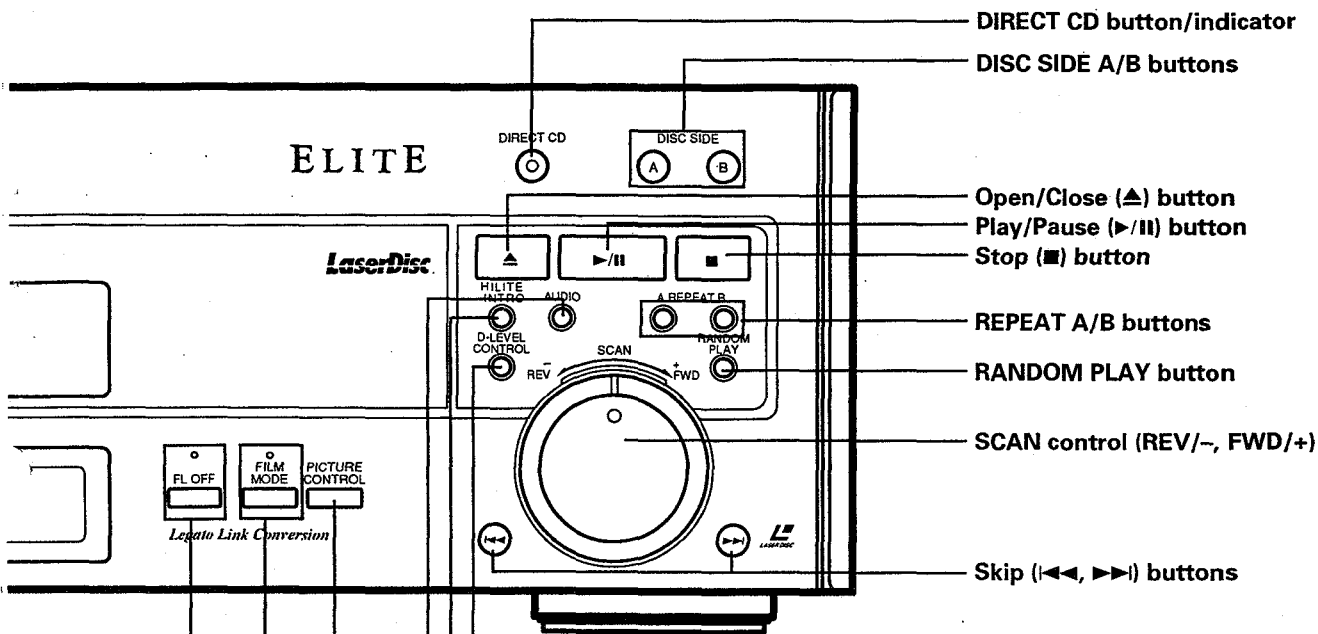
- Control input/output Both miniature jacks
- CD-DECK synchro Miniature jack
- Optical digital output Optical digital jack
- Coaxial digital output RCA jack

Accessories

- Remote control unit 1
- Size "AAA" (IEC R03) dry cell batteries 2
- Video cord 1
- S-video cable 1
- Audio cord 1
- Operating instructions 1
- Warranty card 1

NOTE:

The specifications and design of this product are subject to change without notice, due to improvement.



DIRECT CD button/indicator
DISC SIDE A/B buttons

Open/Close (▲) button
Play/Pause (▶/⏸) button
Stop (■) button

REPEAT A/B buttons

RANDOM PLAY button

SCAN control (REV/-, FWD/+)

Skip (◀◀, ▶▶) buttons

Digital level control button (D-LEVEL CONTROL)

HILITE/INTRO button

AUDIO button

PICTURE CONTROL button

FILM MODE button/indicator

Set to ON in accordance with your tastes, particularly when viewing movie discs.

FL OFF button/indicator

Pressing this button turns off the display in the front panel display window and causes the FL OFF indicator to light. Press the button again to cause the display to return. Turning off the display prevents low levels of noise from adversely affecting sound quality.

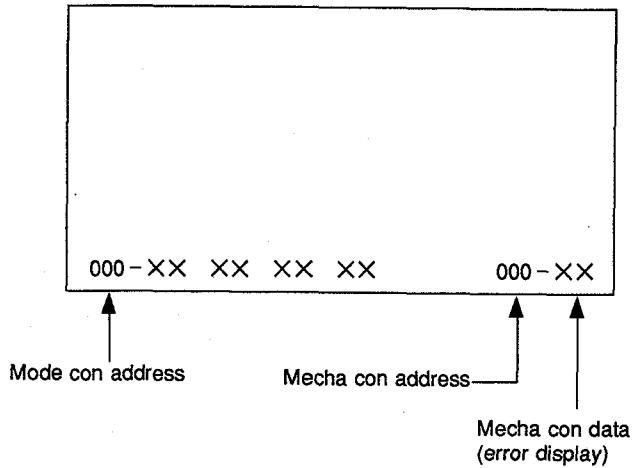
1.5 ERROR CODE TABLE

1) RAM DSP Functions

The interior RAM contents of the Mode Control Microcomputer (hereafter: mode con) and the Mechacontrol Microcomputer (hereafter: mecha con) can be output on a TV screen and error content can be determined. (RAM DSP function)

2) Starting RAM DSP Function

The screen shown below appears if the **ESC** and **DISPLAY** keys on the test mode remote control (GGF1067) are pressed in order.



Contents of mode con are displayed in 4byte units and contents of mecha con are displayed in 1byte units. In this condition, 1 is added to the display address if the TV/LDP key is pressed and 1 is subtracted if the CX key is pressed. Also, the mode con/mecha con address control switching is toggle displayed with the **DISPLAY** key.

Initial setting is set to 14C by pressing 3-digit display of mecha con address with **TV/LDP** key (or **CX** key). By doing so, error code appears as 2-digit mecha con data.

Explanation of information when analyzing the causes of CLD player errors.

Error	Contents	Conditions	Following Processes
00	no error	This is normal condition	
E0	undefined		
E1	undefined		
E2	undefined		
E3	undefined		
E4	spindle overcurrent detection error	When overcurrent to spindle motor is detected in play. When monitor starts and overcurrent port is "L" for 4 seconds after spindle of play or special play is slower than play for 5 seconds.	Spindle stops in free run. Play cannot be done. No recovery as long as set is not unplugged.
E5	FG abnormality error	① When frequency (5 seconds from spindle run) measured from FG is below 15 rpm when LD is started. ② When there is no 1/8 revolution even after 5 seconds have passed from acceleration finish when CD is started. ③ When frequency measured from FG is below 15 rpm even though CD: subcode/LD: Phillips code is readable or spindle is locked during play/search. In other cases, it is assumed that the above conditions appear in the FG sensor and an accurate frequency cannot be measured.	Spindle stops in free run. Free run is 90 sec. for LD and 15 sec. for CD/CDV. Play cannot be done after that. No recovery as long as set is not unplugged.
E6	partial short error	① When 1200 rpm cannot be reached even after a specific time (8 sec.) passes from spindle run when LD is started. ② When a specific frequency (416 rpm) cannot be reached even after 6 seconds pass from spindle acceleration finish when CD is started.	Spindle stops in free run. Normal operation resumes after that.
E7	undefined		
E8	undefined		
E9	undefined		
EA	undefined		
EB	undefined		
EC	undefined		
ED	undefined		

Error	Contents	Conditions	Following Processes
EE	undefined		
EF	undefined		
F0	undefined		
F1	picture stop detection	When Phillips code is decoded and picture stop is read.	Still (still at mecha con detection)
F2	undefined		
F3	segment play finish	When a designated address is reached.	Still or pause
F4	no TOC	When it is determined by sub code that there is no video TOC after lead address is read by LD.	Function or control of indication is carried out.
F5	tray push	When tray is pushed when in open position.	Target goes to TOC lead
F6	no PH code	When Phillips code cannot be read when LD is started even if slider is moved FWD or REV slowly for 5 seconds.	Search, special play, and function are not carried out. When starting, play is carried out without initial search.
	PRD	When program area sub done can be read, but TOC section subcode cannot be read when CD is started.	Treated as CD-R segment recording disc. After initial search, only play is possible. Scanning and search are not possible.
F7	laser active error	When play inhibit or professional use is read from user's code and data track is read from sub code by LD, laser active disc is determined and play is suppressed.	Indicates "LD-ROM" on screen and stops. Play cannot be carried out unless disc is opened.
F8	loading error	① When loading operation goes over time (approx. 10 sec.). ② When assist at disc sense entry ends and is not tilt neutral. ③ When assist at set up entry ends and is not tilt neutral.	Reverses in loading direction once. Even then, if the time limit has been passed, loading is stopped.
F9	slider error	When slide assist goes over time (track count search 20 sec. forced movement 10 sec.).	Power is on, but slider does not move at all. In this situation, push power key to immediately turn power off.
FA	misclasp error	① When NG results from misclasp during set up. (Track loss often) ② When focus is not clear at time of spindle lock waiting. ③ When the spindle is stopped once before CDV A \leftrightarrow V area change, but stop is not carried out within 1.6 seconds, it is determined that there are two discs on each other and clasp error is set.	Open (stops at B-side)
FB	spindle error	① When spindle is not locked within 60 seconds from spindle run start during set up. ② When CAV/CLV determination is not finished within 60 seconds from spindle lock. ③ When code cannot be read for 10 - 15 continuous seconds with LD or 7 - 10 continuous seconds with CD/CDV. ④ When FG does not enter for 4 seconds and when not in recover mode at time of CD set up. At this time, it is stopped at free run.	Stop
FC	focus error	① When ND at set up entry and FLAG is standing. ② When LD is out of focus when slider is moved to starting position during set up. In case of CD/CDV is NG even after three focus tries.	Open (stops at B-side)
FD	search error	① At search entry, LD is in sub code search or CD/CDV is in Phillips code search. ② When search does not end in determined time (CLV with TOC: 30 sec. others: 15 sec.) ③ In recover mode, spindle is locked, code is read and RCVCOUNT is 0.	Search is canceled and play carried out.
FE	TOC lead error	When TOC lead does not end within 15 seconds.	LD: no TOC CD: stop
FF	emergency	When recover mode is entered and return is read but cannot be carried out.	Stop

1.6 ADJUSTMENTS

1.6.1 TEST MODE

1) How to start test mode

With the VSOP ASSY test mode TP dropped to GND, the test mode is started by putting the power switch ON. (Fig. 1) After confirming that all FL indicators are lit, remove test mode TP and GND connection. Or, with power switch ON, press test mode remote control (GGF1067) ESC key and TEST key in order.

2) How to cancel test mode

Turn power switch OFF. Or, press test mode remote control ESC key.

3) Functions and key control when in test mode

Note: For keys not on player or on accompanying remote control, use test mode remote control (GGF1067)

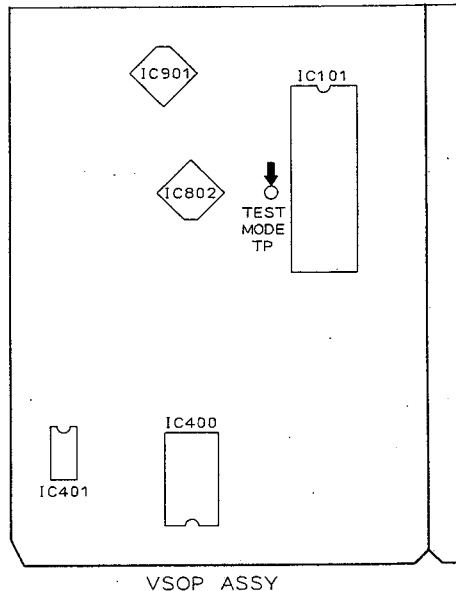


Fig. 1

• Key operation in the Test mode

Player Status	Key Operation	Function	Remarks
Tray Open	⏪/⏩ SKIP (Refer to Note 1)	⏪: Shifts the tray in the closed direction and also raises the turn table while pressing the key. ⏩: Shifts the tray in the open direction and also lowers the turn table while pressing the key.	
Tray Open	▶ PLAY	Clamps	
Clamp	▶ PLAY	Turns the disc through TRK Servo OFF	TRK-OFF
TRK Servo OFF	▶ PLAY	TRK Servo ON	TRK-ON
TRK Servo ON	▶ PLAY	TRK Servo OFF	TRK-OFF
TRK Servo ON	◀||/||▶ (STEP)	FOCS balance select	F-0/F-1
TILT Neutral	+ MULTI-SPEED	TILT Servo ON	T-□ : ON
TILT ON	- MULTI-SPEED	TILT Neutral	T-□ : N
TILT Neutral or ON	⏪/⏩ SKIP	Setting TILT Servo to OFF, can force TILT to move.	T-1 to T-E
Clamp	⏪/⏩ SCAN	Can force the slider to move	S-LD S-CDV S-CD S-IN
Play	⏸ PAUSE	Still	
Play	■ STOP	Stop	
Stop	▲ OPEN	Open	
Play	<div style="text-align: center;"> +10 ↓ 0 to 9 ↓ ▶ PLAY </div>	Sets to SEARCH Lead Address Input mode. Designates the SEARCH lead address through keys 0 to 9. Press the CLEAR C key if the designated address is incorrect. Searches the designated address upon pressing the PLAY key.	

Note 1: Press SKIP (⏪/⏩) Keys after the tray is set to open state by pressing Open (▲) key. Because, in tray open state, pressing PLAY (▶) key causes it to set to clamp state and SKIP (⏪/⏩) keys can not function properly.

Table 1

● **Player Operation in the Test Mode**

Operate the player by selecting a test mode function with the keys on the player or on the remote control unit.

· **CD PLAYBACK**

- ① Place the CD disc on the turn table.

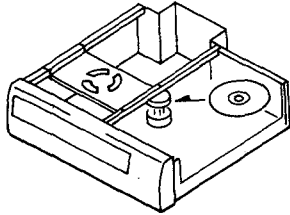


Fig. 2

- ② Press the PLAY (▶) key once.
(Twin gear starts to move.)
- ③ Push the cam plate (Fig. 3) in the direction of the arrow and wait until the CD disc is clamped.

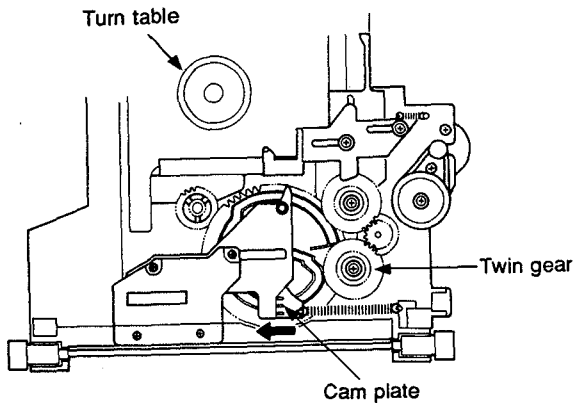


Fig. 3

- ④ Press the ◀◀ or ▶▶ keys to appear "S-CD" on the TV screen display.

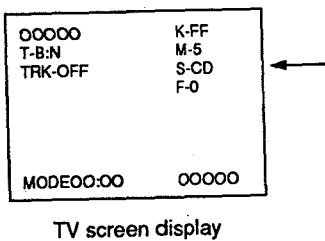


Fig. 4

- ⑤ After pressing the PLAY (▶) key once to clamp the disc, press the PLAY (▶) key twice, disc will be normally playbacked.

· **LD PLAYBACK**

- ① Place the LD disc on the turn table.

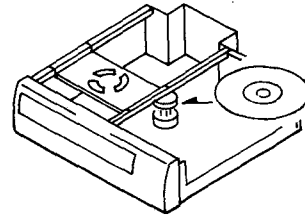
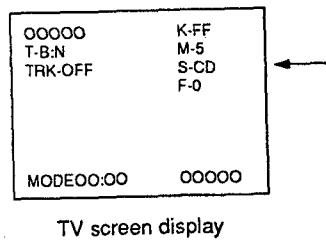


Fig. 5

- ② Press the PLAY (▶) key once.
(Twin gear starts to move.)
- ③ Press the SKIP REV (◀◀) key to raise the turn table (spindle motor section) while pressing the cam plate (Fig. 3) in the direction of the arrow. Raise it to the position where the LD disc can be easily placed on the turn table. If the turn table is raised too high, lower it with the SKIP FWD (▶▶) key.
- ④ Place the LD disc on the turn table and press the PLAY (▶) key once to clamp the disc.
- ⑤ Press the ◀◀ or ▶▶ keys to appear "S-LD" on the TV screen display.



TV screen display

Fig. 6

- ⑥ After pressing the PLAY (▶) key once to clamp the disc, press the PLAY (▶) key twice, disc will be normally playbacked.

1.6.2 ADJUSTMENT PRECAUTIONS

● Equipment and jigs needed for adjustment

- CD test disc (STD-901 or STD-902)
- LD test disc (GGV1003)
- Medium-sized blade screwdriver
- Small blade screwdriver
- Hexagonal wrench (straight type, size: 3mm)
- Resistor (10KΩ × 2, 47KΩ × 1)
- Large Phillips screwdriver
- Large blade screwdriver
- Medium-sized Phillips screwdriver
- Two-channel oscilloscope (with delay)
- AF oscillator
- Frequency counter
- Digital voltmeter
- TV monitor
- Low pass filter

● Preparation for adjustment

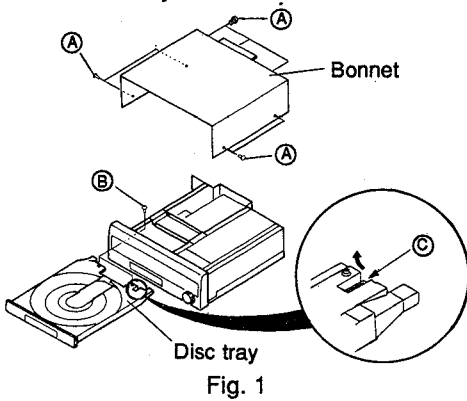


Fig. 1

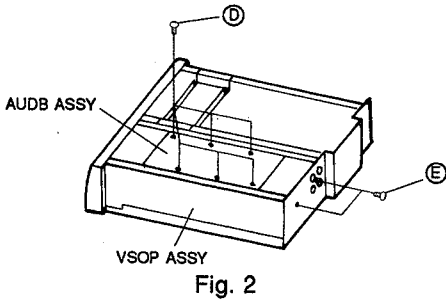


Fig. 2

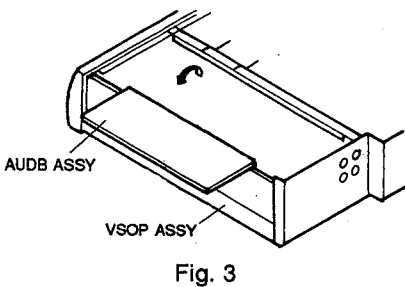


Fig. 3

1. Remove the 7 screws **A** that stabilize the bonnet and take off the bonnet. (Fig. 1)
2. Remove the 2 tray stopper screws **B** and press the OPEN/CLOSE button to put the tray unit in the open position. (Fig. 1)
3. While pushing the hook on the right rear of the disc tray **C** to the left, pull out the tray unit. (Fig. 1)
4. Remove the 6 screws **D** that stabilize the AUDB ASSY. (Fig. 2)
5. Remove the 2 screws **E** on the rear side. (Fig. 2)
6. Put AUDB ASSY in open position. (Fig. 3)

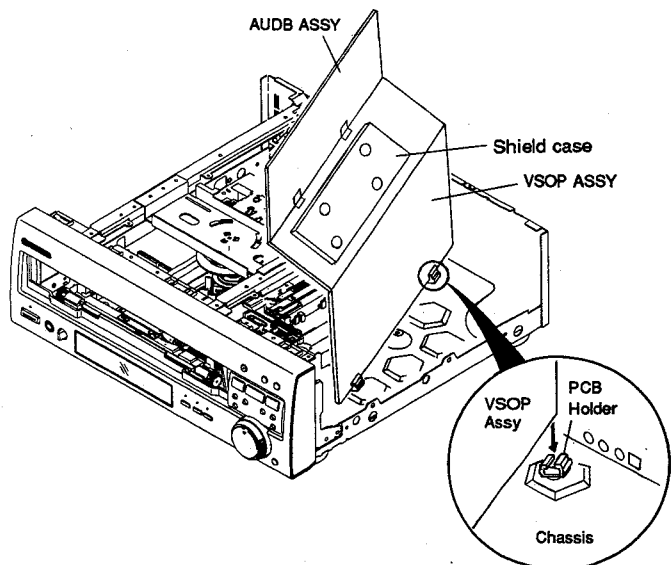


Fig. 4

● As shown in Fig. 4, fit VSOP assy into PCB holder on the chassis and by standing it against the inside of the chassis, the back side of the board (pattern side) can be diagnosed.

● Before adjusting mechanism system

Note: Be careful not to turn centering adjustment screw and TAN adjustment screw past their adjustment range.

— Adjustment Range of Centering Adjustment Screw —

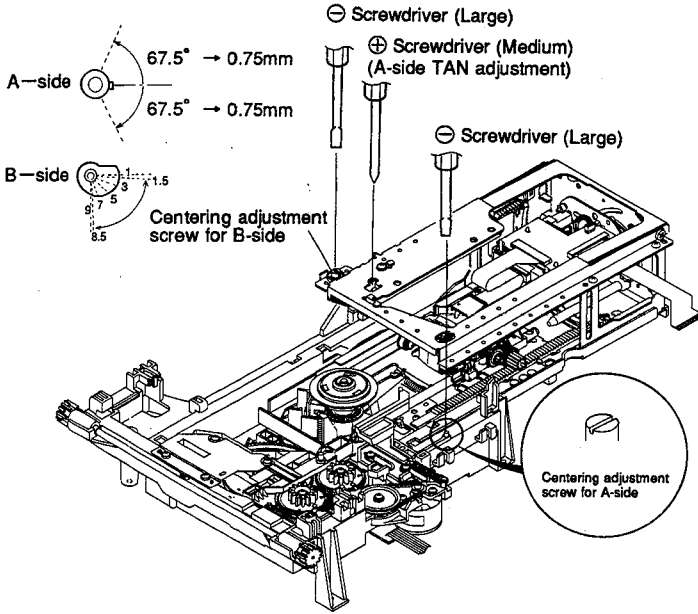


Fig. 5 Mechanism Assy Adjustment

— Adjustment Range of TAN Adjustment Screw —

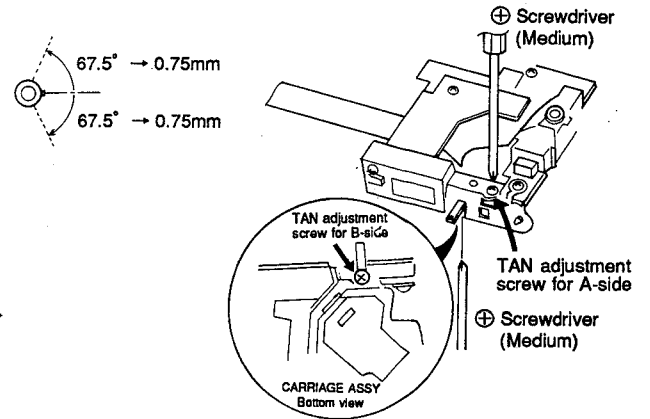


Fig. 6 Carriage Assy Adjustment

● Notes When Adjusting Centering

For both A-side and B-side, if the amplitude of the error waveform of the disc's innermost and outermost tracks at TRK — OFF are about the same, then course adjustment is not necessary.

If waveform S/N is bad and difficult to observe in "2. Coarse centering adjustment for A-Side play" and "6. Fine centering adjustment for A-Side play" use the low pass filter in diagram.

● Rack Assy Position When Adjusting Centering

When moving slider to inner position to adjust the innermost track of disc during centering adjustment, be careful not to keep the mechanism stopper and RACK Assy from bumping each other. (Fig. 7)

● Notes When Adjusting Pickup Assy

Please clean lens first when readjusting the PICKUP Assy that is on this product. Also, when changing PICKUP Assy, change whole CARRIAGE Assy (VWT1100).

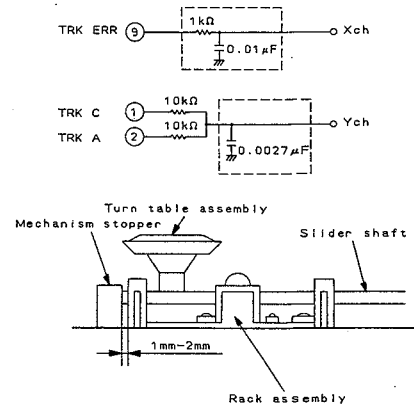
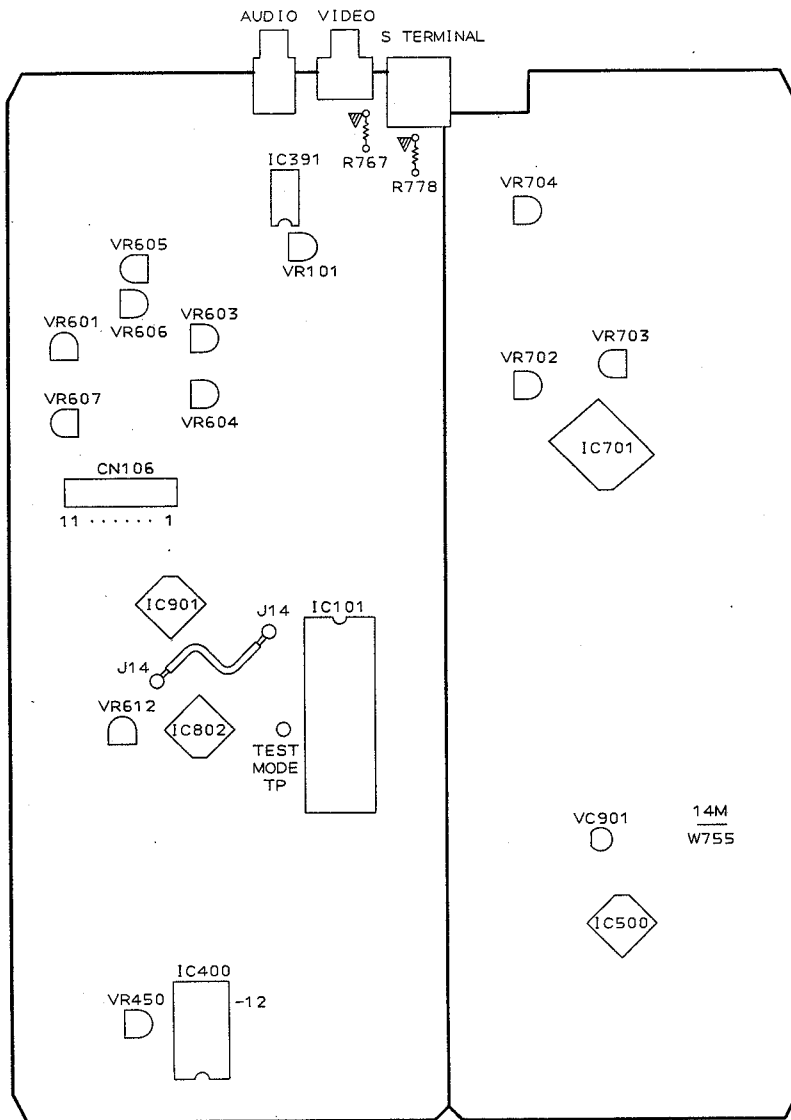


Fig.7

1.6.3 VSOP ASSY ADJUSTMENT LOCATION

● VSOP ASSY



- VR607 : Tilt offset adjustment
 - VR605 : FCS Balance adjustment (TRK error max)
 - VR606 : FCS Balance adjustment (RF level max)
 - VR604 : FCS Servo loop gain adjustment
 - VR603 : TRKG Servo loop gain adjustment
 - VR601 : RF Level adjustment
 - VR612 : PLL Offset adjustment
 - VR101 : PHASE Adjustment
 - VC901 : Master clock adjustment
 - VR450 : Video level before A/D adjustment
 - VR702 : Y OUT Level adjustment
 - VR704 : S-C SYNC Level adjustment
 - VR703 : C OUT Level adjustment
- (Order in adjustment)

Fig. 1 Adjustment diagram of VSOP ASSY

1.7 PARTS LIST FOR PACKING AND EXPLODED VIEWS

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

1.7.1 PACKING

Mark	No.	Description	Parts No.
	1	Caution (UC)	VRR1020
	2	.....
	3	Operating instructions (English)	VRB1112
	4	.....
	5	.....
NSP	6	Polyethylene bag	VHL-014
	7	Battery cover	DNK2286
	8	Remote control unit	VXX2044
NSP	9	Battery (R03, AAA)	VEM-022
	10	Video cable	VDE-056
	11	Connection cord	VDE-055
NSP	12	Polyethylene bag	Z21-029
	13	Pad L	VHA1126
	14	Pad R	VHA1127
	15	Mirror mat	VHL1012
	16	Packing case	VHG1349
NSP	17	Warranty card	ARY1026
	18	.....
	19	Case (lower)	VNK2062
	20	Case (upper)	VNK2683
	21	Filter	VNK2063
	22	4P mini DIN cable	DDE1040
	23	Caution label	VRM1044

1.7.2 EXTERIOR AND DISC TRAY

Mark	No.	Description	Parts No.
	1	Bonnet S	VXX1932
	2	Screw	BCZ40P060FZK
	3	Screw	BBT30P060FCC
NSP	4	Damp cushion	VEC1602
	5	Screw	PBA1071
	6	Side panel R	VNK2681
	7	Side rubber	VEB1217
NSP	8	Side spacer	VEB1192
	9	Side panel L	VNK2680
	10	Screw	BPZ30P060FCU
	11	Disc pad (L)	VEC1657
	12	Disc pad (C)	VEC1658
NSP	13	Carry label	VRW1289
	14	.....
	15	Tray stopper screw	VBA1032
	16	Guide plate (R)	VNE1806
	17	Guide plate (L)	VNE1805
	18	CD tray	VNK2395
	19	Lock plate spring	VBH1188
	20	Lock plate	VNL1513

Mark	No.	Description	Parts No.
	21	Stop ring	VEB1091
	22	LD tray ASSY	VXA2085
NSP	23	Cushion	VEC1660
NSP	24	LD tray (ABS)	VNK2394
NSP	25	Damp cushion	VEC1110
	26	Door spring (FE)	VBH1223
	27	Door shaft	VLL1441
	28	Screw	BPZ20P040FZK
	29	Door holder	VNE1905
	30	CD door (ABS)	VNK2320
	31	Damper ASSY	VXA1999
NSP	32	Laser disc badge	VAM1022
NSP	33	Tray panel (ABS)	VNK2319
	34	Screw	BPZ30P080FCU
	35	Tray ASSY-S	VXX2035
	36	Tray panel ASSY-S	VXX2046
	37	.....
	38	65 label	ORW1069
	39	T back	VNE1946

1.7.3 UPPER SECTION

Mark	No.	Description	Parts No.
	1	.....
	2	Center angle	VNE1897
	3	PCB holder	VNE1895
	4	Housing ASSY	VKP2026
	5	Damper plate	VBK1045
NSP	6	P plate holder	PNY-405
NSP	7	Mini clamp	VEC1597
	8	AUDB ASSY	VWV1365
	9	Housing ASSY	VKP2032
	10	Housing ASSY	VKP2019
	11	Screw	BBT30P080FCC
	12	Screw	BBZ30P060FCC
	13	Screw	IBZ30P080FCC
NSP	14	Earth plate	VNE1518

1.7.4 FRONT PANEL SECTION

Mark	No.	Description	Parts No.
NSP	1	Front panel	VNK2645
	2	.....
	3	LED lens	PNW2019
	4	PW button	VNK2329
NSP	5	HEPB ASSY	VWV1361

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
NSP 6	Jack holder	VNE1609	△ 6	Power supply ASSY	VWR1200
7	Snap plate	VNE1102	△ 7	AC power cord	PDG1015
8	Headphone knob	PAC1707	8	Cord stopper	CM-22C
9	.....		9	Rear panel	VNA1404
10	LED lens (O)	VNK1755	10	Tray stopper	VNL1600
11	L key (B)	VNK2361	11	VSOP ASSY	VWS1137
12	Name plate	RAN1008	12	Cord Clamp L	DEC1578
13	FL lens	VEC1674	13	Carriage stopper	VNE1919
14	.....		NSP 14	Damp cushion	VEC1602
15	Shuttle knob	VNK2321	15	Screw	BBZ30P080FMC
16	Sub panel	VNK2362	16	Screw	BBT30P080FCC
17	Screw	BPZ26P080FCU	17	Screw	BPZ30P140FMC
18	Skip key R	VNK2323	18	Screw	BBZ30P040FMC
19	Skip key L	VNK2322	NSP 19	Cord holder	Z09-061
20	Main key	VNK2679	20	Front angle	VNE1894
21	.....		21	Screw	BBZ30P060FCC
22	L key (A)	VNK2360	22	Side stay	VNE1896
23	LED lens B	VNK2316	NSP 23	Side stay (R)	VNE1810
24	FLKY ASSY	VWG1522	NSP 24	Side stay (L)	VNE1809
NSP 25	PONS ASSY	VWG1519	25	AC cord tube	VEC1651
NSP 26	Damp cushion	VEC1110	26	Cord keep	VNC1004
27	Front panel ASSY - S	VXX2047	27	Screw	IBZ30P080FCC
28	Screw	BPZ26P060FCU	NSP 28	HM spacer	VEB1215
NSP 29	Rubber spacer	PEB1216	29	.....
30	Cushion L	VEC1331	30	Model label	VRW1403

1.7.5 DISC CLAMPER SECTION

Mark No.	Description	Parts No.
1	Ball holder	VNL1616
2	Ball	VNX1013
3	LD hub	VNT1047
4	Ball cover	VNL1602
5	Cover spring	VBH1234
6	LD spring	VBH1240
7	Clamper head	VNL1603
8	Clamper	VNL1604
9	Clamp	VBH1239
10	Rubber sheet	VEB1114
11	Ball holder	VNL1289
12	Center plate	VNE1898
13	Clamper holder	VNL1605
14	Stabilizer	VNE1906
15	Screw	CPZ20P060FMC

1.7.6 BOTTOM SECTION

Mark No.	Description	Parts No.
NSP 1	Base chassis	VNA1347
2	Insulator ASSY	VXA1996
3	Board spacer	VEC1623
NSP 4	PCB spacer	PNY-404
NSP 5	PCB stay	VEC1174

31	.....
32	ICP caution label	VRW1401
33	Clip finger	VNE1930
34	.....
NSP 35	Fuse caution label	VRW-548

1.7.7 MECHANISM SECTION

Mark No.	Description	Parts No.
1	Mechanism base	VNK1990
2	Clamp cam	VNL1621
3	Cam gear	VNL1507
4	CD plate	VNL1576
5	Cam sand	VNL1511
NSP 6	Carriage motor	VXM1033
7	Roller	VNL1042
8	Motor pulley	PNW1643
9	L-SW lever	VNL1504
10	C-SW lever	VNL1505
11	R-SW lever	VNL1506
12	Center gear	VNL1509
13	Twin gear	VNL1508
14	Gear pully	VNL1510
15	CDP spring	VBH1191
16	CAS spring	VBH1190
17	Shaft holder	VNE1817
18	Rubber belt	VEB1184
19	Synchro gear ASSY	VXA2093
NSP 20	LOSB ASSY	VWG1471
21	Screw	BMZ26P040FMC
22	Screw	Z39-019
NSP 23	LOMB ASSY	VWG1470

1.7.8 MECHANISM ASSY

Mark	No.	Description	Parts No.
	1	Tilt base (Upper)	VNB1027
	2	Rack (Upper)	VNL1560
	3	Rack spring (Upper)	VBH1213
	4	CA shaft (Upper)	VLL1446
	5	Screw	PMZ20P070FMC
	6	Shaft support	VNL1563
	7	support spring	VBH1236
	8	Screw	IPZ30P060FMC
	9	B cam spring	VBH1233
	10	B cam	VNL1564
	11	Lever spring	VBH1214
	12	Lever SW	DSK1003
	13	R plate ASSY	VNL1566
	14	Screw	BBZ26P060FMC
	15	TM Rack	VNL1556
	16	Screw	CBZ26P060FMC
	17	Turn gear	VNL1565
	18	TM support	VNE1888
	19	Washer	YE20FUC
	20	Washer	WA32D080D050
NSP	21	Head lock	VNL1580
	22	CNNB ASSY	VWG1469
	23	TAN guide	VNE1887
	24	Rack (lower)	VNL1567
	25	Rack spring (lower)	VBH1215
	26	Screw	BBZ30P060FMC
	27	SW base	VNE1886
	28	Screw	PBZ26P060FMC
	29	Slide SW	OSH1001
	30	Screw	PMZ20P060FMC
	31	.....
	32	Thrust spring	VBH1235
	33	Tilt spring	VBH1218
	34	Key lock	VBK1044
	35	CB holder	VNL1618
△	36	Spindle motor ASSY	VXA1986
	37	Screw	PMA30P050FMC
	38	Y gear	VNL1501
	39	Washer	WT26D060D025
	40	Tilt cam spring	VBH1189
NSP	41	FG base	VNL1577
	42	FG ASSY	VWG1472
	43	Tilt base (lower)	VNL1555
	44	MK flexible	VNP1439
	45	Screw	ABZ30P060FMC
	46	TM guide	VNL1558
	47	Screw	PPZ20P080FMC
	48	CA shaft (lower)	VLL1447
NSP	49	Spindle motor	VXM1053
NSP	50	Oil stopper washer	VBF1002
NSP	51	Turn table ASSY	VXA1760
NSP	52	Rubber sheet	VEB1135
	53	Centering spring	VBH1024
	54	PRC hub	VNL1612
	55	PRC table	VNL1613

Mark	No.	Description	Parts No.
	56	Screw	CPZ20P060FMC
	57	Lock lever	VNL1562
	58	Tilt cam	VNL1559
	59	Spacer	VEB1020
NSP	60	Earth lead unit	VDA1455
	61	Screw	Z39-019
	62	Washer	WA32D080D025
	63	Carriage ASSY	VWT1100
	64	Motor base	VNE1889
NSP	65	Stop cushion	VEC1605
	66	Screw	CPZ26P080FMC
	67	Housing ASSY	VKP2011
	68	Housing ASSY	VKP2025
	69	Housing ASSY	VKP2020

1.7.9 CARRIAGE ASSY

Mark	No.	Description	Parts No.
	1	TAN plate ASSY	VXA1981
	2	Screw	BMZ20P080FMC
	3	TAN spring (B)	VBH1217
	4	TAN lever (B)	VNL1569
	5	.....
	6	TAN lever (A)	VNL1568
	7	TAN spring (A)	VBH1237
	8	Screw (S)	VBA1016
	9	Screw	PBB26P080FMC
NSP	10	Shaft holder	VNT1042
	11	Limit SW	OSH1001
	12	Screw	PMZ20P060FMC
	13	Screw	BBZ26P060FZK
	14	Screw	BPZ26P060FMC
	15	Flexible holder	VNL1579
	16	Screw	PPZ20P060FZK
	17	Washer	WT17D034D050
NSP	18	Gear (C)	VNL1572
	19	Gear (B)	VNL1571
	20	Screw	PMA20P040FMC
NSP	21	Motor holder	VNL1584
	22	Gear (E)	VNL1574
	23	Gear (F)	VNL1575
	24	.....
NSP	25	Gear (D)	VNL1573
NSP	26	Gear shaft	VLL1448
NSP	27	PCB board	VNP1425
NSP	28	ZH connector	B2B-ZR
NSP	29	Slider motor	VXM1027
	30	Gear (A)	VNL1570
	31	Box cover	VNL1578
	32	Housing ASSY	VKP1852
NSP	33	PICKUP ASSY	VWY1037
	34	Motor holder ASSY-S	VXX2015
	35	Slider motor ASSY	VXX2014

1.8 PCB PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560 Ω	→	56 × 10 ¹	→	561	.....	RD1/8PM	5 6 1 J
47k Ω	→	47 × 10 ³	→	473	.....	RD1/4PS	4 7 3 J
0.5 Ω	→	0R5	.....			RN2H	0 R 5 K
1 Ω	→	010	.....			RSIP	0 1 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	→	562 × 10 ¹	→	5621	RN1/4PC	5 6 2 1 F
----------------	---	-----------------------	---	------	-------	---------	---

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
----------	-------------	-----------	----------	-------------	-----------

LIST OF ASSEMBLIES

NSP	FLKB ASSY	VWM1469
	└─ FLKY ASSY	VWG1522
NSP	└─ PONS ASSY	VWG1519
NSP	└─ HEPB ASSY	VWV1361

VSOP ASSY	VWS1137
AUDB ASSY	VWV1365

NSP	MACB ASSY	VWM1420
NSP	└─ CNNB ASSY	VWG1469
NSP	└─ LOMB ASSY	VWG1470
NSP	└─ LOSB ASSY	VWG1471
NSP	└─ FG ASSY	VWG1472

Δ	POWER SUPPLY ASSY	VWR1200
----------	-------------------	---------

MACB ASSY

OTHERS		
	PCB(MACB)	VNP1429

CNNB ASSY

RESISTORS		
	Other Resistors	RD1/6PM J

OTHERS

CN205	KR Connector	B3B-PH-K
CN203	24P Connector	SLEM24S
CN204	25P Side connector	VKN1139

LOMB ASSY

OTHERS		
	4P Cable holder	51048-0400

LOSB ASSY

SWITCHES AND RELAYS		
	S1-S3	DSG1015

FG ASSY

SEMICONDUCTORS		
	D1 Photo interrupter	GP1S51V

OTHERS

J64	Housing ASS'Y(3P)	VKP2024
-----	-------------------	---------

FLKB ASSY

OTHERS		
	PCB(FLKB)	VNP1419

PONS ASSY

SEMICONDUCTORS		
	D200	SLH34VCF04

SWITCHES AND RELAYS		
	S200	RSG1030

RESISTORS

	Other Resistors	RD1/6PM J
--	-----------------	---

FLKY ASSY

SEMICONDUCTORS		
	IC100	PD3277A
	IC101	S-806D
	Q101	DTA144ES
	Q100	DTC114ES
	Q102,Q104,Q105,Q107	DTC124ES

	D103-D106	1SS252
	D100-D102	1SS254
	D107,D110	SEL3410ELC05
	D109	VEL1017

COILS AND FILTERS

	L100,L101	LAU220J
--	-----------	---------

SWITCHES AND RELAYS

	S100-S102,S112-S116	RSG1030
	S103-S111	RSG1034
	S117 Rotary encoder	VSD1008

CAPACITORS

	C101	CEAL100M16
	C104	CEAL101M6R3
	C105	CEA S221M6R3
	C106	CKPUYB101K50
	C102,C103,C108	CKPUYF223Z25

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
C100,C107		CKPUYX472M16	Q152,Q803,Q804		2SC3802K
RESISTORS			Q402		2SD1858X
R101		RA5T103J	Q962		2SK184
R100	Other Resistors	RA6S104J	Q302,Q497,Q916,Q991		DTA124EK
		RD1/6PM□□□J	Q103,Q104,Q303,Q461		DTC124EK
OTHERS			D101,D102,D903,D904, D906,D907,D963,D964, D992,D993		1SS254
	4P Cable holder	51048-0400	D450		DAN202K
	Remote sensor	GP1U78R	D991		MTZJ10B
V100	FL Tube	VAW1032			
	FL Holder (FE)	VNF1082	D994		MTZJ6.2A
X100	Ceramic resonator	VSS1031			
HEPB ASSY			COILS AND FILTERS		
COILS AND FILTERS			L413		LAU100J
L302,L304		VTH1020	L394		LAU101J
L305		VTH1024	L391,L414		LAU120J
			L802-L804		LAU121J
			L412,L461,L710-L713		LAU220J
CAPACITORS			L411,L470,L471,L571		LAU270J
C301,C302		CKPUYB102K50	L410		LAU330J
C300		CKPUYF223Z25	L420,L421		LAU390J
			L770		LAU470J
RESISTORS			L430,L462		LAU560J
VR300 (0.5KB)		VCS1015			
OTHERS			L460		LFA561J
CN300	3P Jumper connector (2MMP)	52151-0310	F580		VTF1054
JA300	Headphone jack	RKN1002	L392		VTL1042
VSOP ASSY			CAPACITORS		
SEMICONDUCTORS			C562		CCSQCH050D50
IC804,IC903		BA4560F	C747,C761		CCSQCH060D50
IC701		CXD2023Q	C420,C428,C434,C436,C438, C475		CCSQCH070D50
IC410,IC411		ICP-N5	C159,C393,C552,C796,C809, C811		CCSQCH100D50
IC803		LA6510	C120,C121,C163,C414,C464, C798		CCSQCH101J50
IC802		LC78681E	C437		CCSQCH120J50
			C416,C814,C846,C848		CCSQCH121J50
IC401		PA0023AD	C474,C777		CCSQCH150J50
IC400		PA0058A	C161,C810		CCSQCH151J50
IC801		PAC002A	C477		CCSQCH180J50
IC901		PAC003A	C452,C540,C542,C554,C579, C746,C749,C760,C763		CCSQCH220J50
IC500		PD0146A	C162,C417,C421,C544,C591, C812,C935		CCSQCH221J50
			C419,C433		CCSQCH270J50
IC603		PD0154A	C106,C107,C435,C563,C813		CCSQCH330J50
IC101		PD0197A	C418,C931		CCSQCH390J50
IC770		TA7302P	C301,C409,C415,C478,C543, C580,C764,C963		CCSQCH470J50
IC902		TA8464K	C476,C748,C762		CCSQCH560J50
IC702		TC74HC4053AP	C430,C448,C449,C553,C561, C806		CCSQCH680J50
			C462,C463		CCSQCH910J50
IC391		TC74HCU04AP	C302		CCSQL102J50
Q102,Q154,Q400,Q474,Q580, Q712,Q713,Q770,Q780,Q790, Q793,Q802,Q912,Q963,Q992 Q401,Q834		2SA1037K			
		2SB1237X			
Q781,Q782,Q786,Q794,Q795, Q993		2SC1740S			
Q301,Q410,Q411,Q442-Q444, Q460,Q475,Q710,Q711, Q791,Q792,Q801,Q805, Q903-Q905,Q907-Q909,Q911, Q913,Q917,Q919		2SC2412K			

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
C440,C442,C450 C410,C412,C422,C424,C431, C445,C470,C484,C491 C871 C985		CEAL101M6R3 CEAL470M6R3	C921 C837,C930 C103,C465,C808,C815,C847, C875,C877,C911,C912, C924,C925,C964,C971, C983,C984		CKSQYF223Z50 CKSQYF333Z25 CKSQYF473Z25
C972 C926 C403,C838 C986 C904		CEANP100M25 CEANP101M10	C934 C903,C909 C991 (1F/5.5) VC901 Variable capacitor		CQMA122J50 CQMA222J50 VCH1039 VCM-008
C745,C902 C534,C535 C493 C770,C922,C976,C987 C391,C550,C585,C895		CEAS100M50 CEAS101M10 CEAS102M10 CEAS220M25 CEAS221M6R3	RESISTORS R766,R795 R425 R192,R193,R440,R441 R139,R534,R559,R640,R641 R405 R717 R492 R775 R767,R768,R778,R779, R796,R797		RD1/6PM101J RD1/6PM122J RD1/6PM220J RD1/6PM221J RD1/6PM331J RD1/6PM392J RD1/6PM4R7J RD1/6PM681J RD1/6PM750J
C101,C530,C538,C588,C640, C703,C705,C706,C711,C713, C717,C720,C730,C735,C755, C757,C780,C782,C790,C792, C801,C803,C833,C836,C842, C844,C893,C927,C933		CEAS470M10	R396 R173,R174 R784 R459,R484 R171,R172,R175,R178		RD1/6PM910J RN1/6PQ1002F RN1/6PQ1801F RN1/6PQ2002F RN1/6PQ3302F
C845 C913 C970 C967,C968 C191		CEAS4R7M50 CEASR47M50 CEHAQ010M50 CEHAQ100M50 CFTYA103J50	R786 VR606 VR601,VR704 VR450 VR605		RN1/6PQ8201F VRTB6VS153 VRTB6VS222 VRTB6VS332 VRTB6VS333
C482,C483,C908,C910,C920 C923 C905 C479 C701,C891,C914,C936,C969		CFTYA104J50 CFTYA124J50 CFTYA224J50 CFTYA683J50 CKSQYB102K50	VR101 VR603,VR702,VR703 VR604,VR607,VR612		VRTB6VS471 VRTB6VS472 VRTB6VS473
C110,C907 C919 C888 C105,C122,C156-C158, C394,C395,C426,C427,C454, C496,C570-C573,C577,C578, C581,C773-C775,C807, C834,C835,C843,C872,C876, C894,C929,C937,C961,C962		CKSQYB222K50 CKSQYB332K50 CKSQYB472K50 CKSQYF103Z50	Other Resistors		RS1/10S□□□J
C102,C151,C155,C196-C198, C392,C404,C406,C411,C413, C423,C425,C432,C441,C443, C446,C451,C453,C460,C461, C471,C481,C485,C492, C494,C495,C531-C533,C539, C541,C551,C574,C575,C582, C589,C590,C592,C593,C641, C702,C712,C714-C716,C719, C723,C725-C729,C734, C736-C738,C740,C742,C752, C754,C759,C765-C768, C771,C772,C776,C781,C783, C789,C791,C793,C802,C804, C831,C832,C840,C841, C873,C874,C892,C896,C901, C915,C928,C932,C981,C988		CKSQYF104Z25	OTHERS 4P Cable holder 6P Cable holder 8P Cable holder 13P Cable holder 11P Top post CN106 CN104 Connector post CN125 3P Top post CN126 Connector post CN107 Connector post CN121 Connector post CN110 5P Top post J1 11P Jumper wire JA3,JA4 Jack/12V CN105 2mm Pitch jumper connector CN103 24P Connector JA8 Optical output jack PCB Binder JA15 1P Jack JA14 2P Jack 64P Shrink IC socket		51048-0400 51048-0600 51048-0800 51048-1300 B11P-SHF-1AA B3B-PH-K-S B3P-SHF-1AA B4B-PH-K-R B4B-PH-K-S B5B-PH-K-R B5B-EH D2OPDY1120G PKN1004 SBRK06S-4 SLEM24S-2 TOTX178 VEF1040 VKB1052 VKB1061 VKH1004

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
JA11	S Terminal (8P)	VKN1134	C279		CEAS221M6R3
JA2	Mini jack	VKN1165	C206,C215,C228,C236,C268,		CEAS470M10
	Screw terminal	VNE1841	C276,C318,C331,C340,C341		
	Shield case A(FE)	VNE1902	C205,C208,C251,C253,C291,		CEAS471M10
	Shield case B(FE)	VNE1903	C293		
	Shield case C(FE)	VNE1904	C336		CEASR47M50
	IC Heat sink (AL)	VNE1921	C211		CEYA101M10
	Earth plate	VNF-091	C218		CEYA221M10
X550	Crystal resonator	VSS1026	C222,C223,C241,C242,		CFTXA471J50
X101	Ceramic resonator	VSS1040	C262,C263,C281,C282		
AUDB ASSY			C250,C290		CFTXA562J50
SEMICONDUCTORS			C252,C292		CFTXA681J50
IC381		BA10393F	C322		CFTYA104J50
IC209		CA0002AM	C316,C333		CFTYA224J50
IC210		M5218AL	C317,C335		CFTYA393J50
IC206,IC208		NJM5532SD			
IC201		NJM78L09A	C255,C257,C295,C297		CKSQYB331K50
			C370,C371		CKSQYB683K25
IC202		NJM79L09A	C375		CKSQYF102Z50
IC203		PD0116A	C213,C214		CKSQYF103Z50
IC205,IC207		SAA7350GP	C210,C217,C256,C258,C296,		CKSQYF104Z25
IC204		TC74HCU04AP	C298,C319,C321,C330,C342,		
Q203,Q206		2SA1037K	C381		
			C225,C227,C229,C231,C233,		CKSQYF473Z50
Q213,Q222		2SA1435	C235,C238,C265,C267,C269,		
Q201,Q204		2SB1185--F8	C271,C273,C275,C278		
Q212,Q215,Q221,Q223		2SC2412K	C314,C315,C332,C334		CQMA472J50
Q372,Q373		2SD2114K	C201 (330/35)		VCH1121
Q210,Q214,Q220,Q224,Q371		DTA124EK			
			C254,C294 (47/16)		VCH1122
Q202,Q205,Q211		DTC124EK			
D201		11EQS06	RESISTORS		
D202		FC54M	R260,R300		RD1/6PM101J
COILS AND FILTERS			R242-R245,R250-R253,		RD1/6PM103J
L201,L203		LAU100J	R282-R285,R290-R293		
L202		LAU120J	R259,R299		RD1/6PM122J
L211		LAU181J	R254,R255,R294,R295		RD1/6PM153J
L210		LAU220J			
CAPACITORS			R257,R297		RD1/6PM162J
C219		CCCCH080D50	R258,R298		RD1/6PM202J
C221,C224,C240,C243,C261,		CCCCH390J50	R239,R279,R360,R361		RD1/6PM220J
C264,C280,C283			R204,R218,R219		RD1/6PM221J
C244,C245,C284,C285		CCCSL221J50	R261,R301		RD1/6PM223J
C204,C207,C310		CCSQCHI01J50			
C311		CCSQCHI51J50	R236,R237,R240,R241,		RD1/6PM303J
C324		CCSQCHI80J50	R276,R277,R280,R281		
C216,C9211,C9213		CCSQCH220J50	R354,R359		RD1/6PM390J
C325		CCSQCH270J50	R262,R263,R302,R303		RD1/6PM471J
C326		CCSQCH330J50	R256,R296		RD1/6PM751J
C313		CCSQCH390J50	R201,R205		RS2LMF560J
C327		CCSQCH680J50			
C312		CCSQCH820J50	Other Resistors		RS1/10S□□□J
C323		CEAS100M50			
C226,C230,C232,C234,C266		CEAS101M10	OTHERS		
			3P Cable holder		51048-0300
C270,C272,C274,C337		CEAS101M10	KR Connector		B4B-PH-K-R
C352,C353		CEAS101M16	CN226		B5B-PH-K-R
C202,C203		CEAS221M10	CN201		SBRK06S-4
C350,C351		CEAS221M16	CN203		VEF1040
C220,C237,C239,C260,C277		CEAS221M6R3	2mm Pitch jumper connector 6P		
			PCB Binder		
			JA201	4P Jack	VKB1062
			X201	Crystal resonator	VSS1051

Mark No.	Description	Parts No.
-----------------	--------------------	------------------

POWER SUPPLY ASSY

SEMICONDUCTORS

IC21	UPC358C
Q27,Q30,Q32,Q34,Q36	2SA933S
Q20,Q22	2SB1134
Q24	2SB1331
Q25,Q29,Q31	2SC1740S
Q21,Q23	2SD1667
Q26	2SD2007
Q35	DTA114ES
Q28	DTA114TS
Q33	DTC114ES
Q37,Q38	DTC114TS
D25-D27,D30,D31	AG01Z-V0
D28	MTZJ39B/C
D29	MTZJ7.5A
D23	RK46
D24	S2LA20
D21,D22	S3L20U
THY20	3P4J

COILS AND FILTERS

L20	VTL1008
-----	---------

RESISTORS

R22-R25 (47Ω, 1/6W)	VCN1033
R56 (15Ω, 1/4W)	VCN1034
R61 (4.7Ω, 1/2W)	VCN1035

Service Manual

ORDER NO.
RRZ1088

The chapter 1 of this Service Manual will not be reprinted. On your additional orders, we may supply only the chapter 2. For the chapter 1, please make copies and attach to the chapter 2 at your side if necessary.

CD CDV LD PLAYER

CLD-53

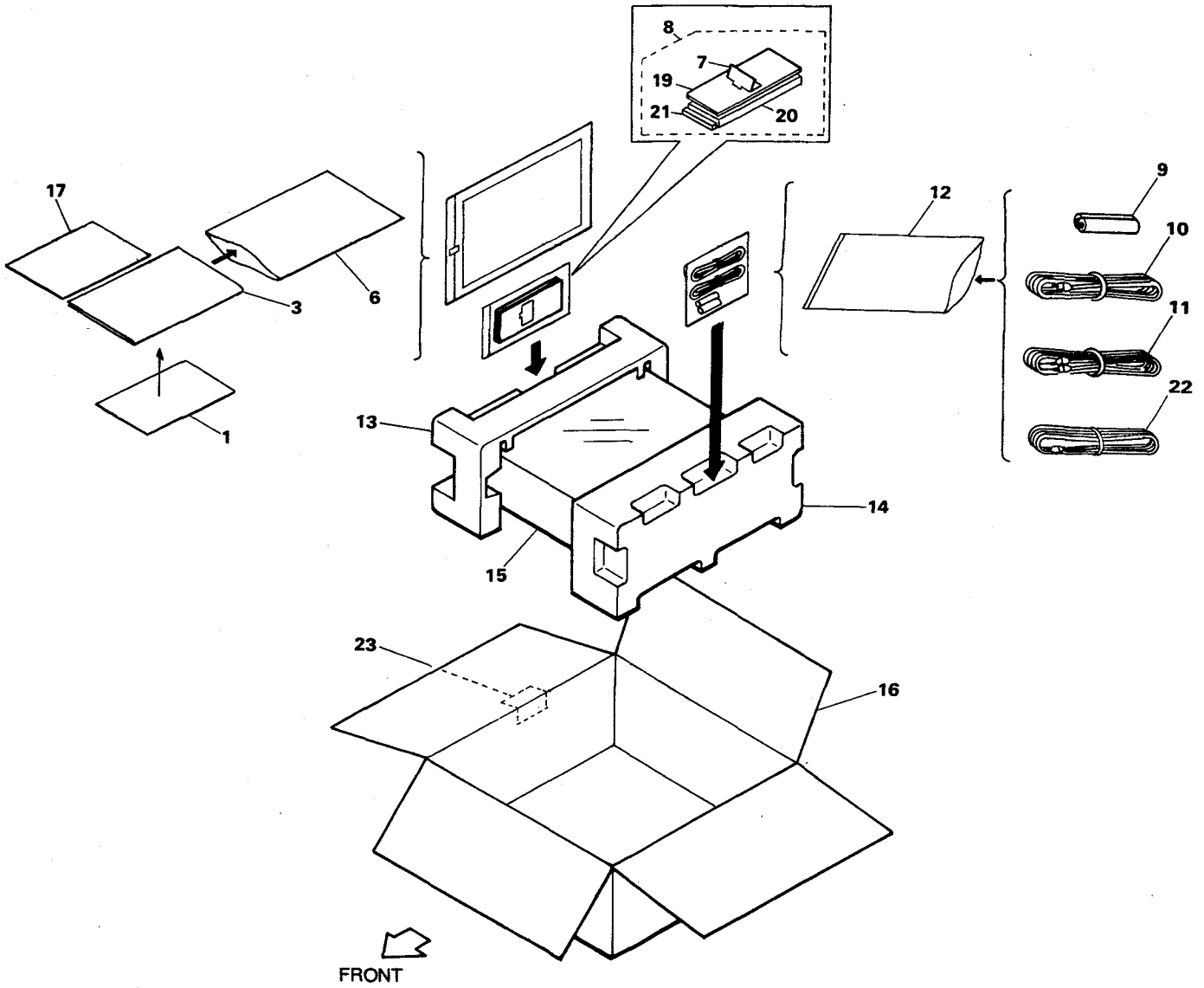
CHAPTER 2

CONTENTS

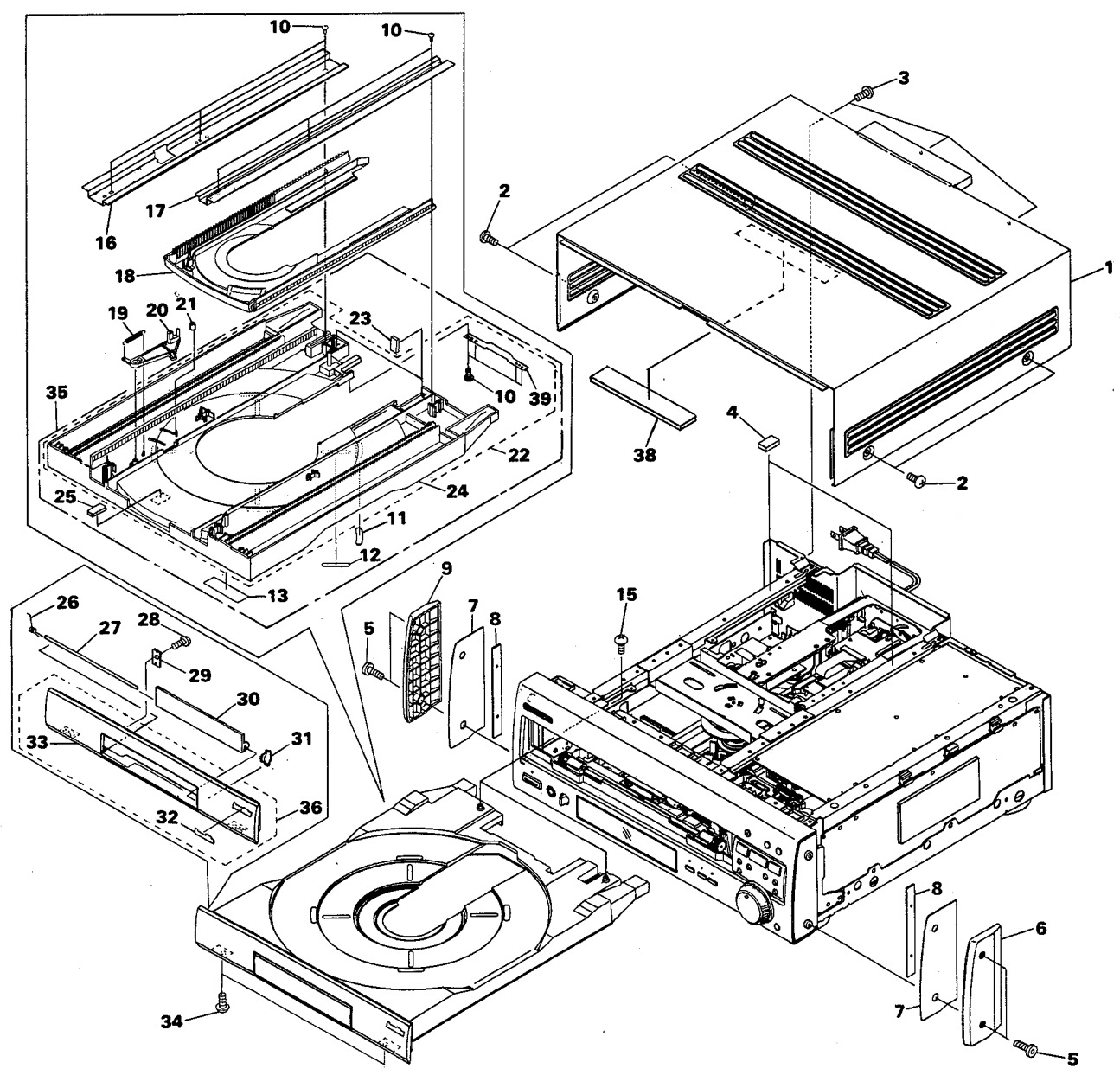
CHAPTER 2	
2.1 PACKING AND EXPLODED VIEWS ...	2-3
2.2 SCHEMATIC AND PCB CONNECTION DIAGRAMS.....	2-12

2.1 PACKING AND EXPLODED VIEWS

2.1.1 PACKING



2.1.2 EXTERIOR AND DISC TRAY



NOTE : Screws adjacent to ▼ mark on product are used for disassembly.

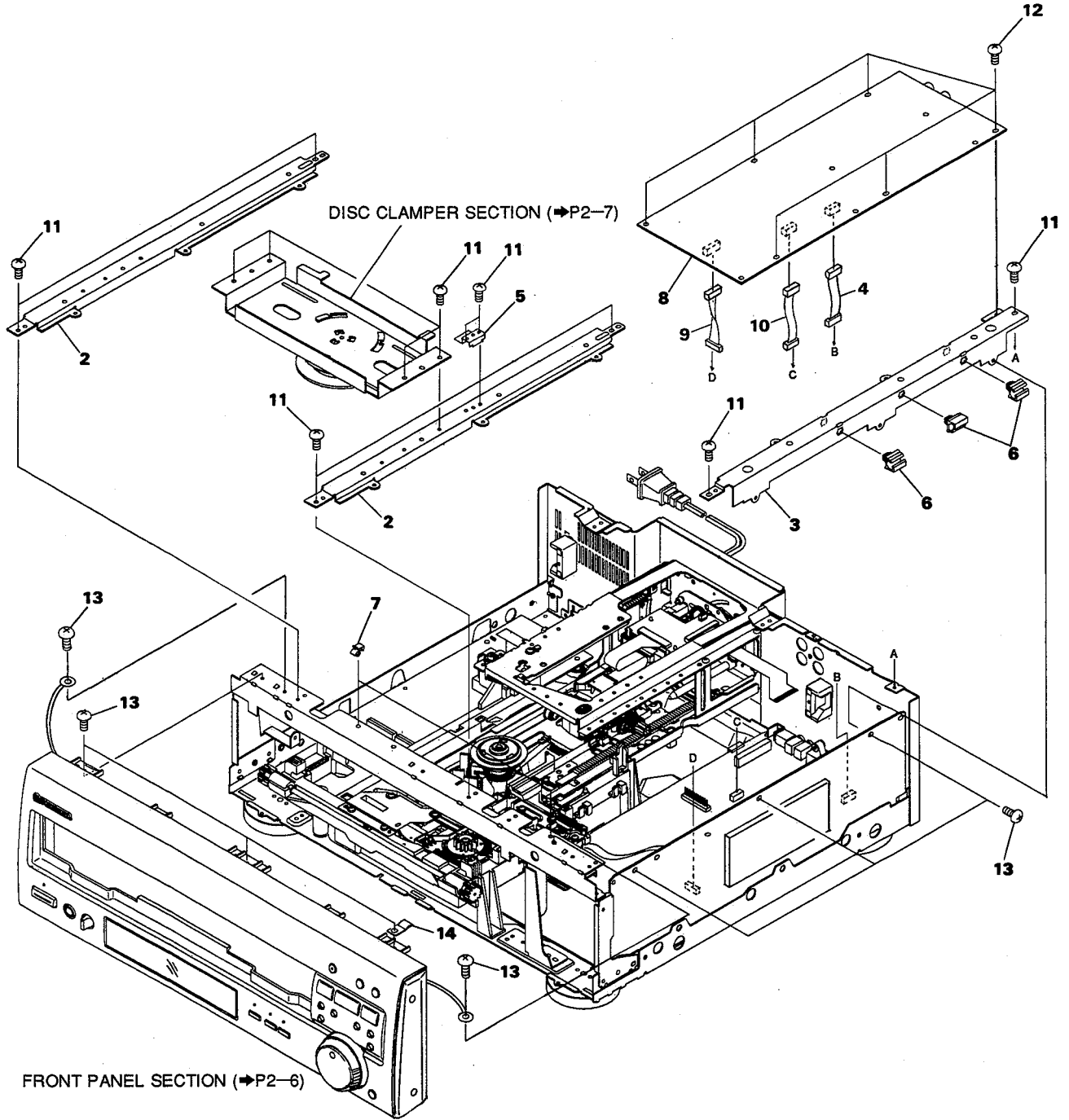
2.1.3 UPPER SECTION

A

B

C

D



2.1.4 FRONT PANEL SECTION

A

A

B

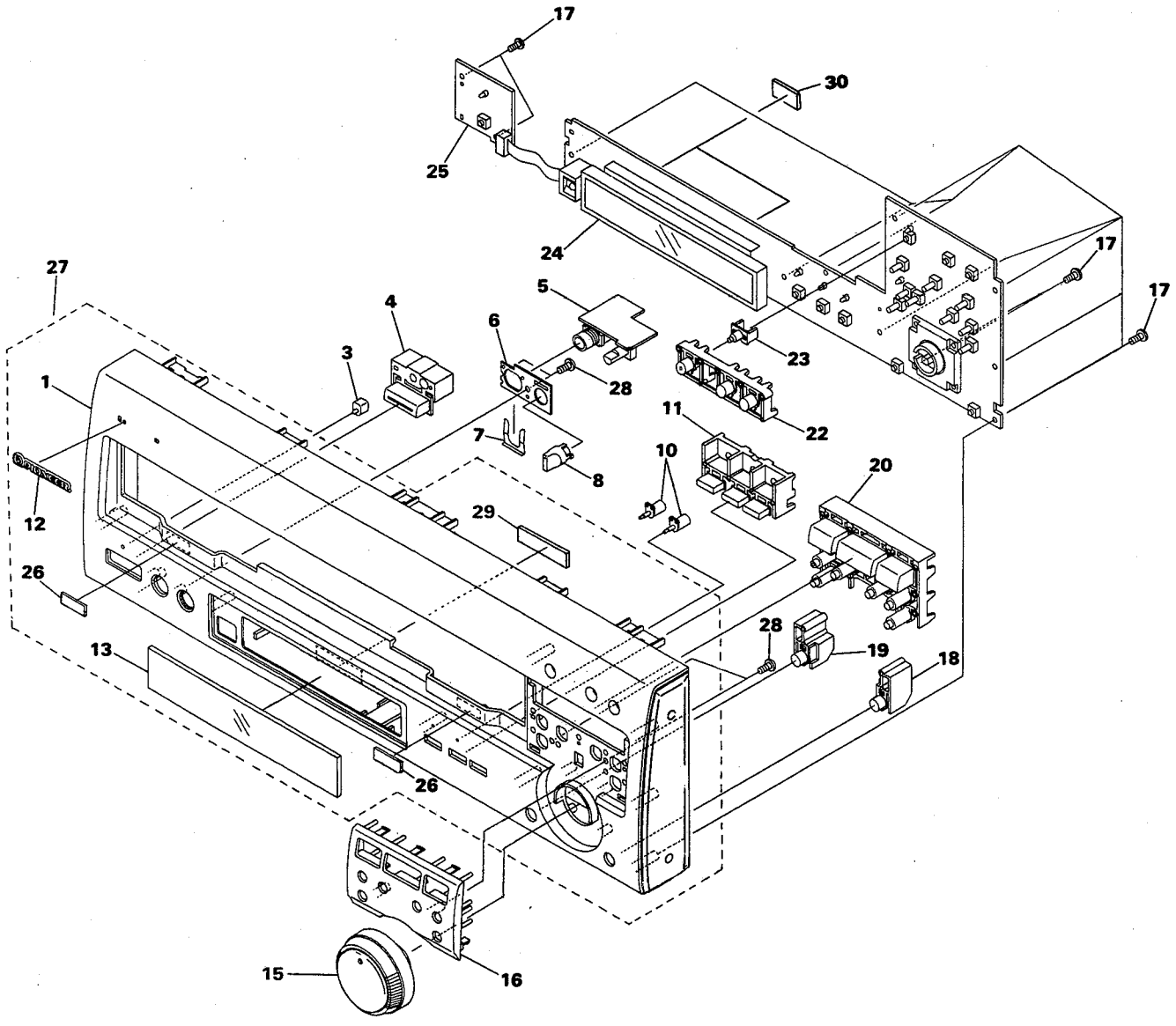
B

C

C

D

D



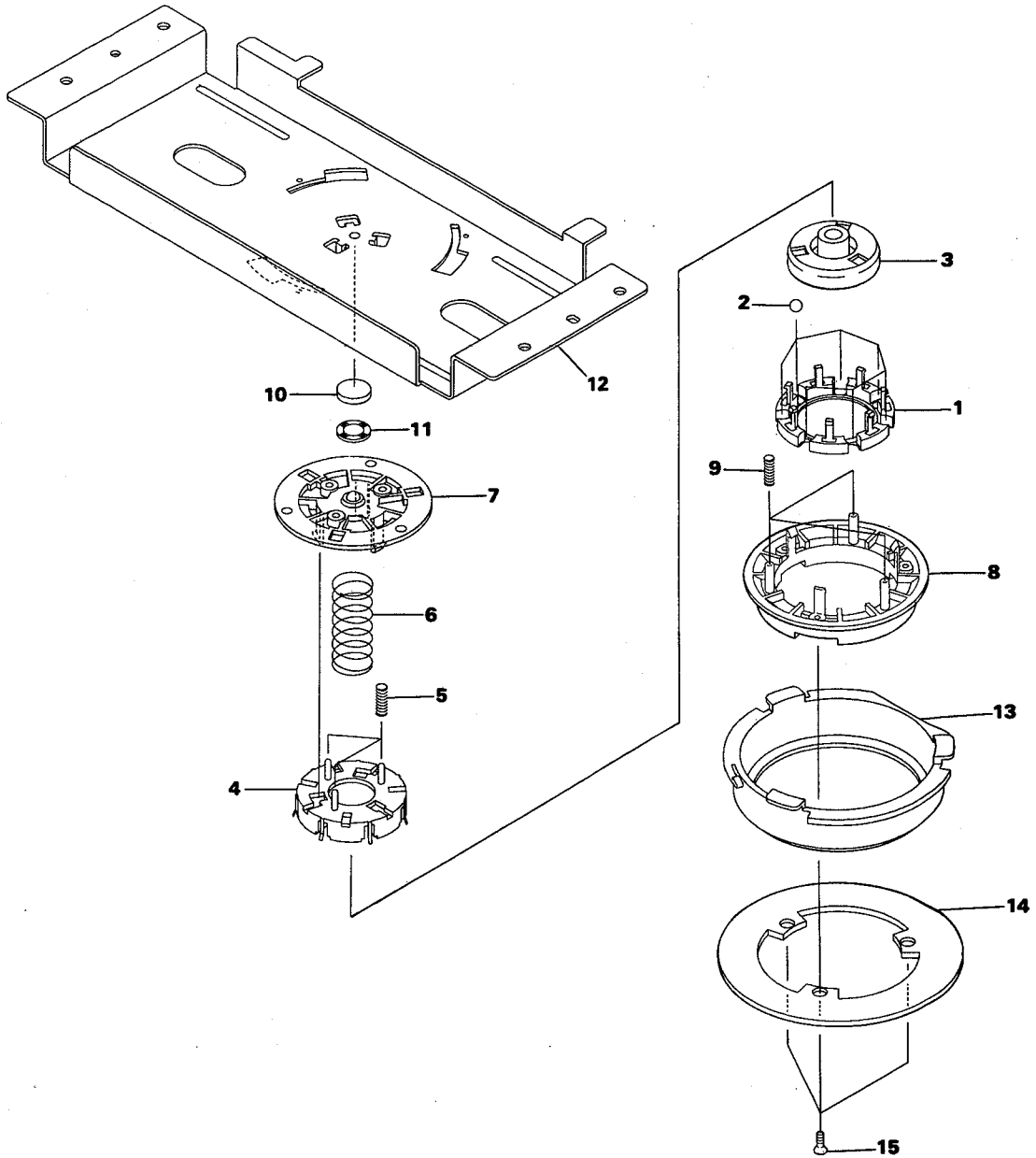
2.1.5 DISC CLAMPER SECTION

A

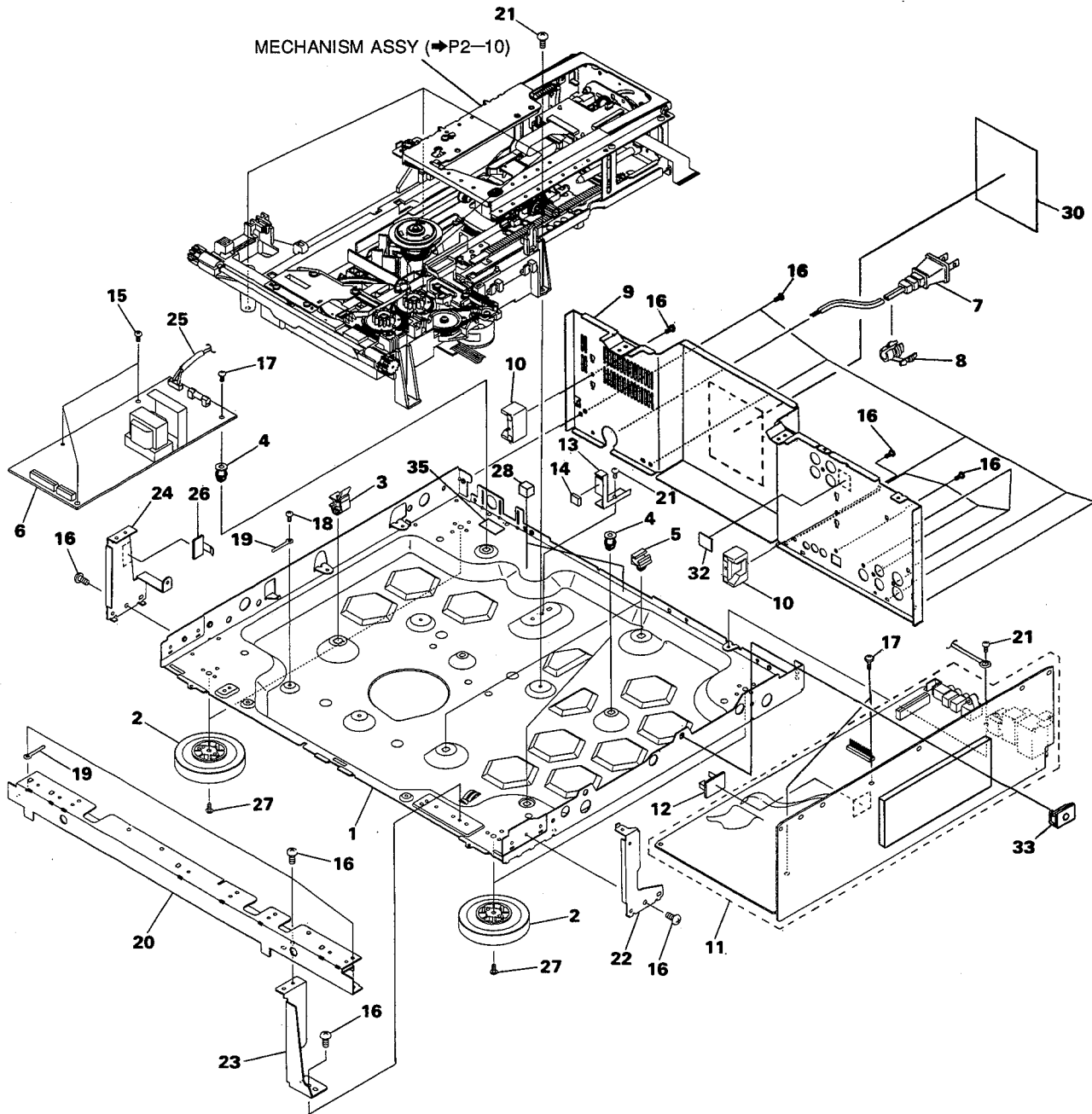
B

C

D



2.1.6 BOTTOM SECTION



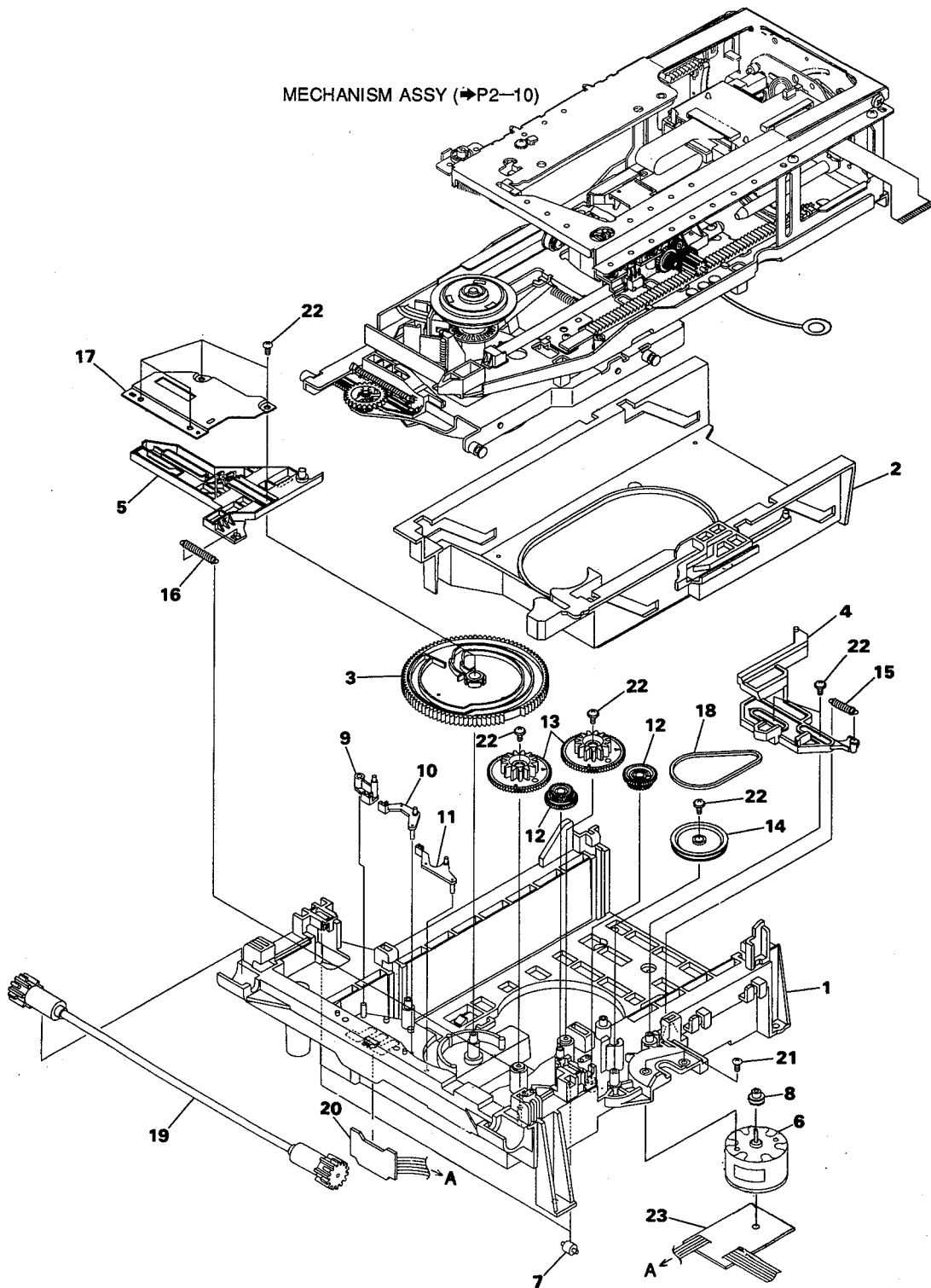
A

B

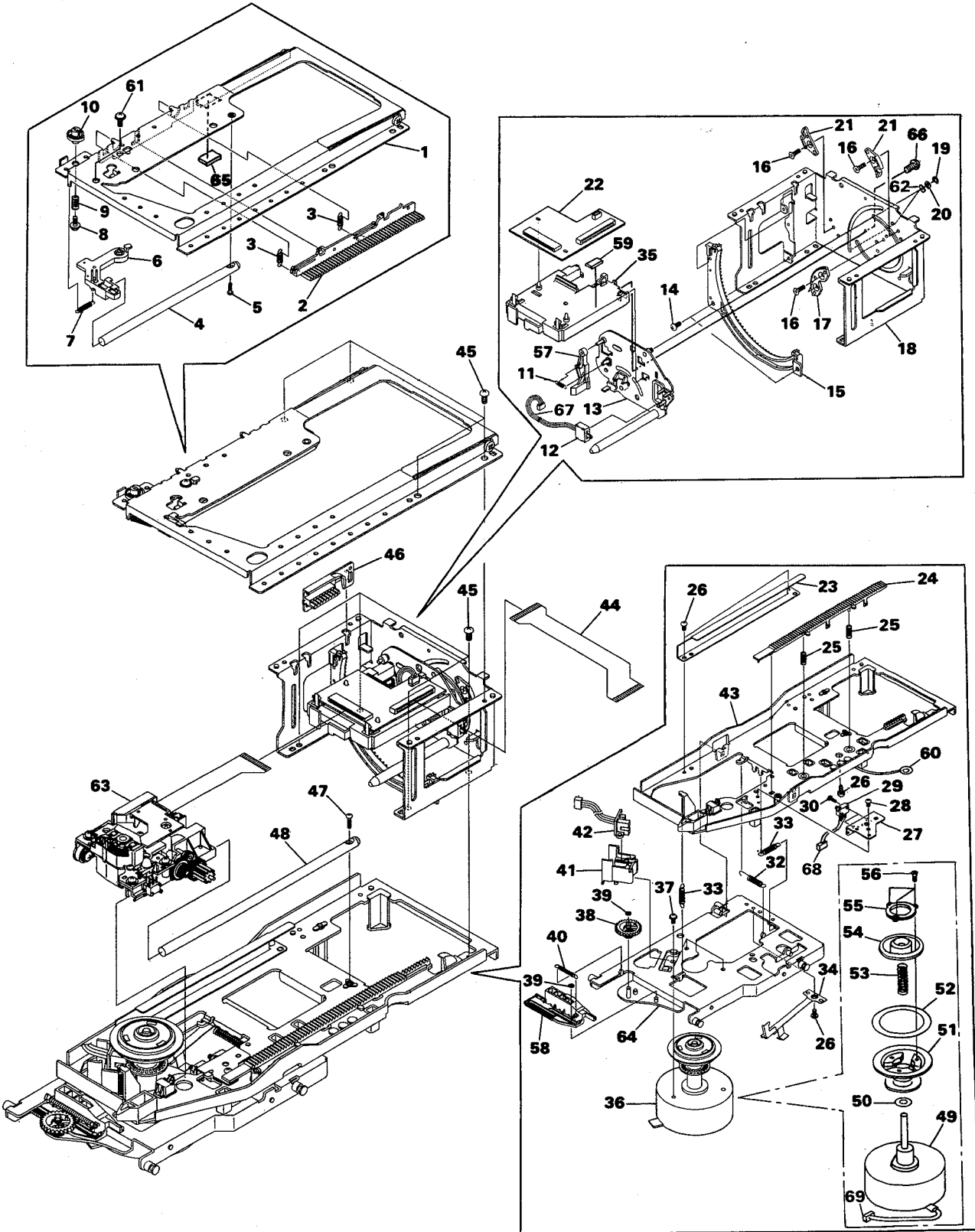
C

D

2.1.7 MECHANISM SECTION



2.1.8 MECHANISM ASSY



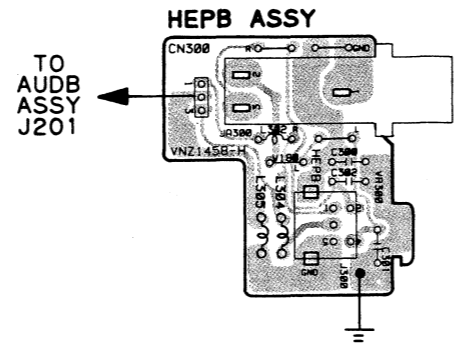
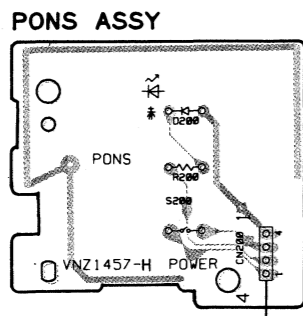
A

B

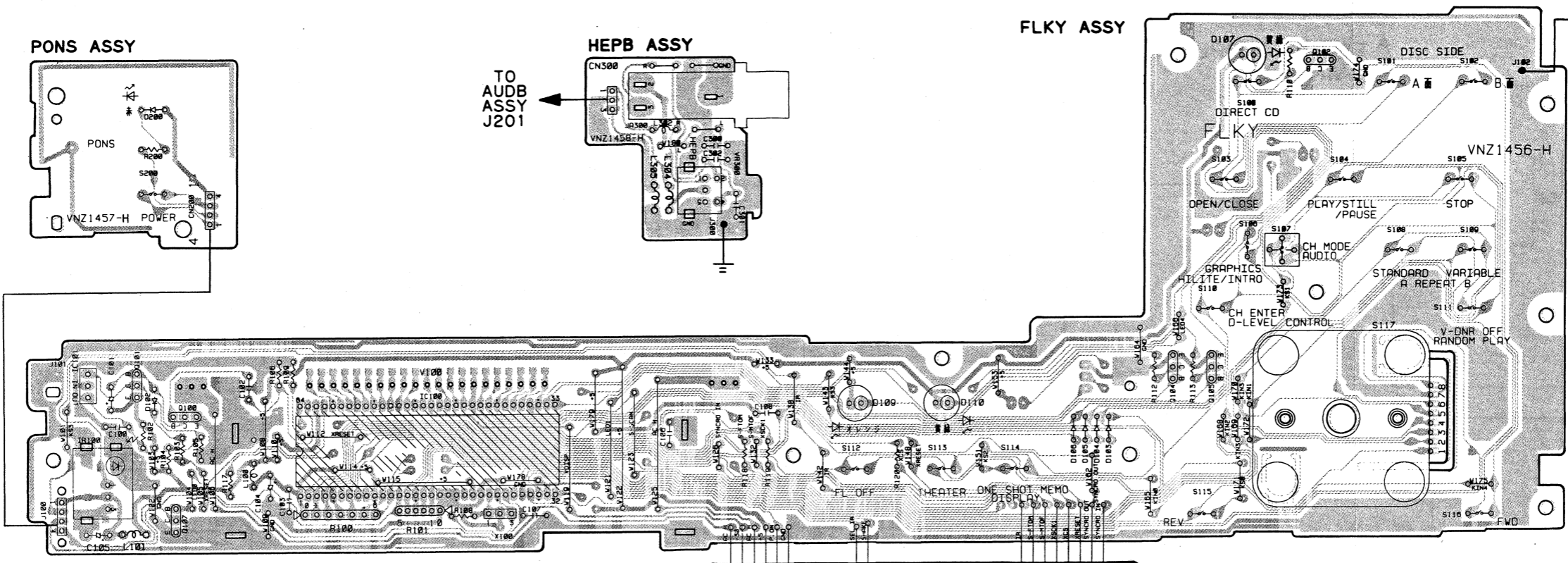
C

D

A



FLKY ASSY



B

TO POWER SUPPLY ASSY CN22

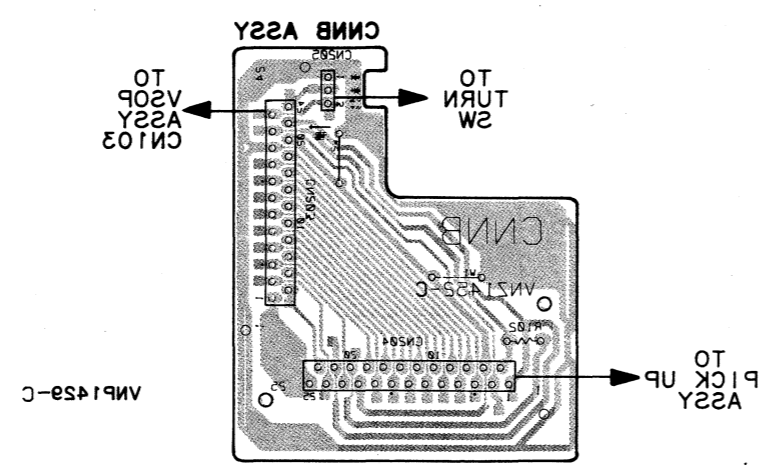
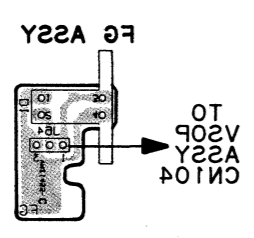
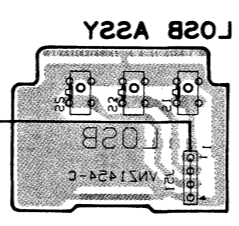
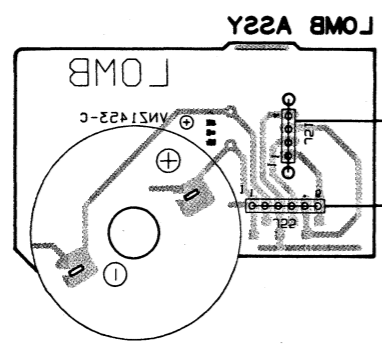
TO VSOP ASSY J1

VNP1419-H

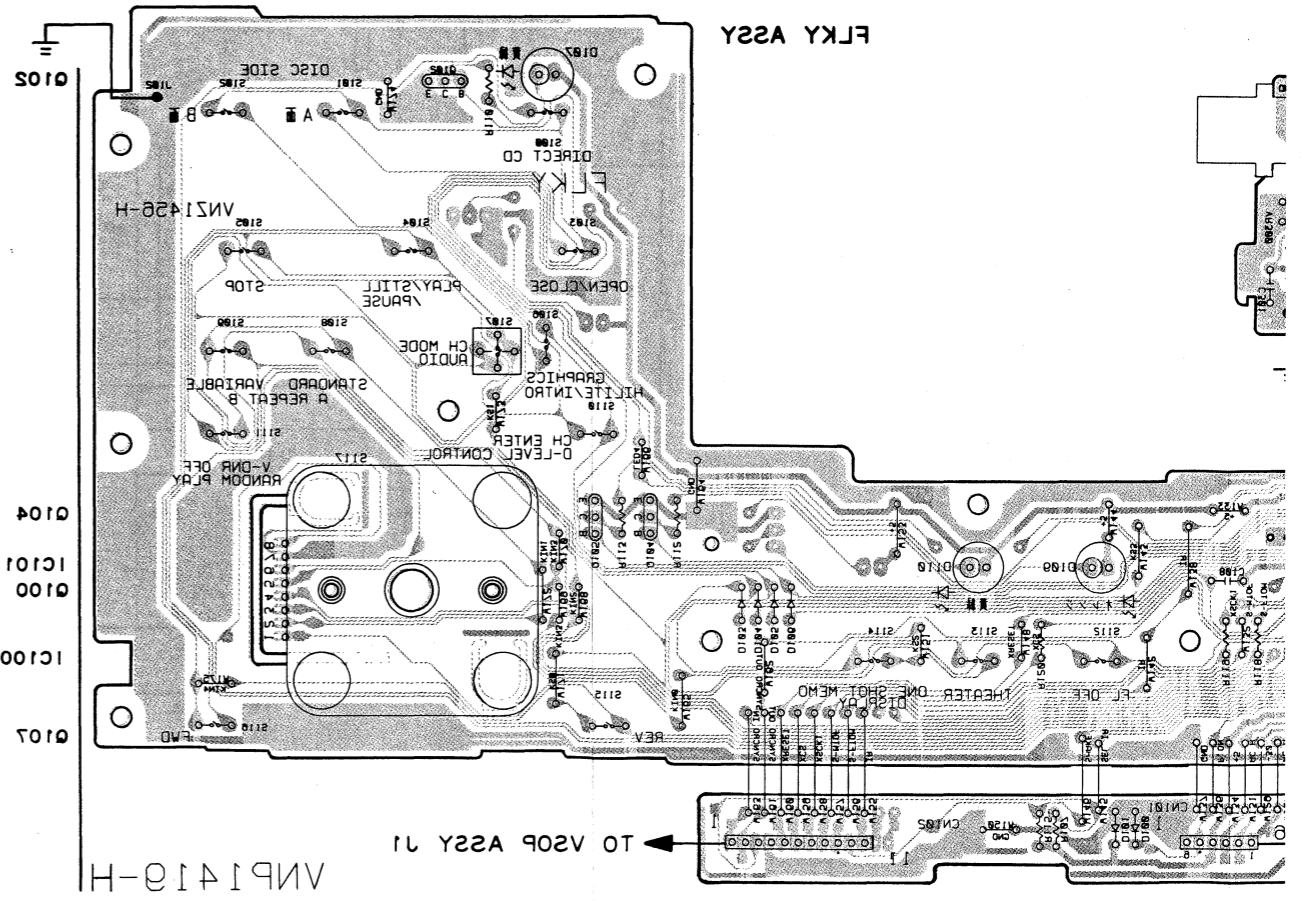
TO PICK UP ASSY

C

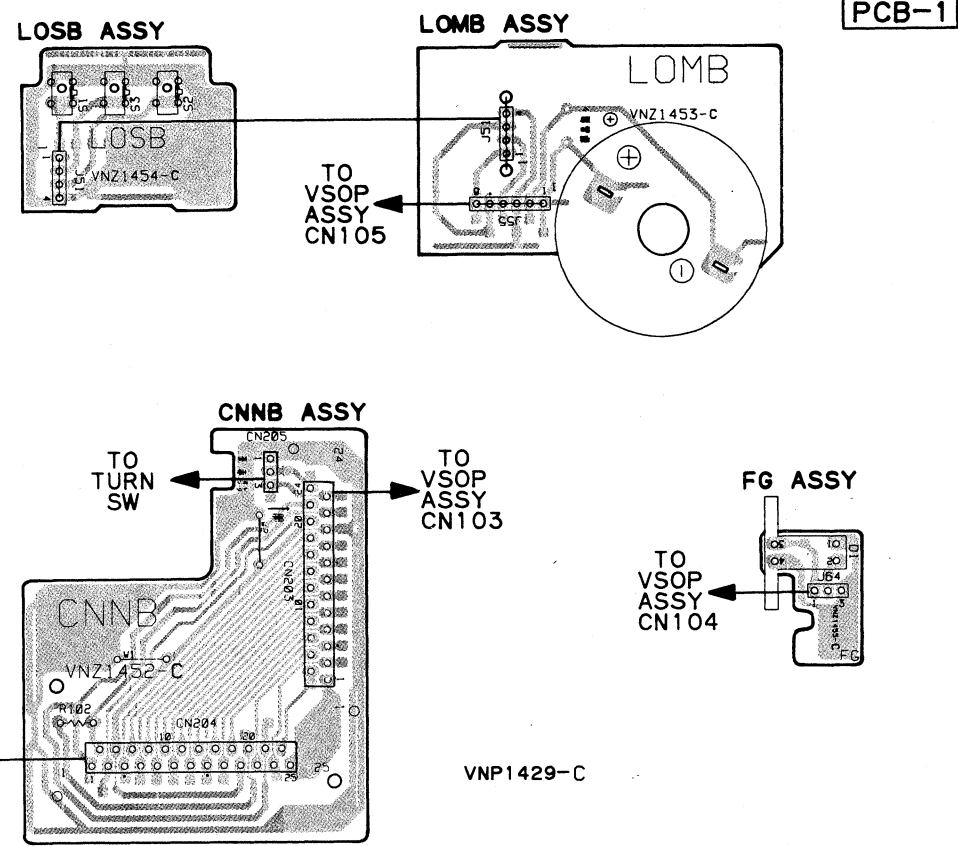
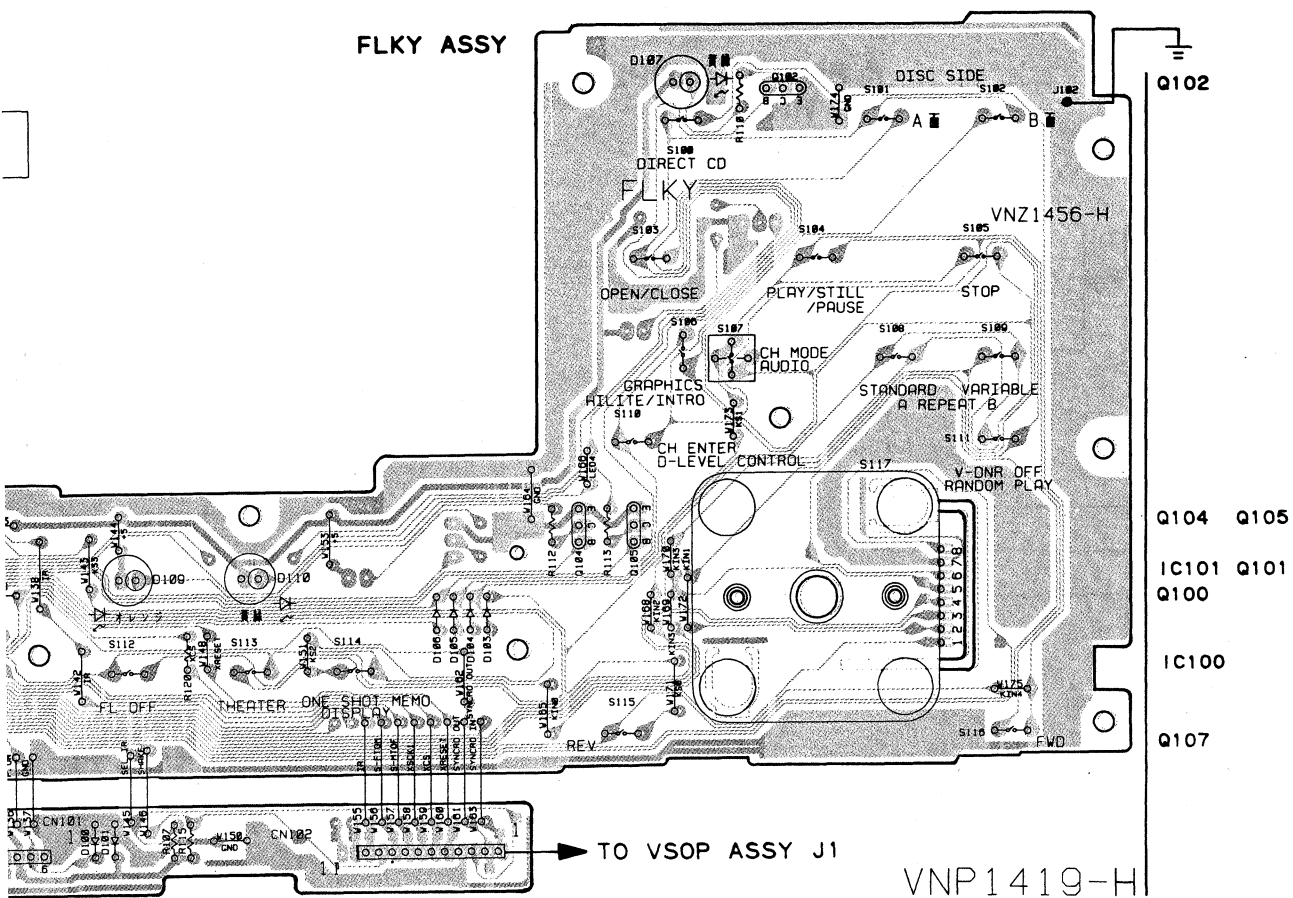
PCB-1



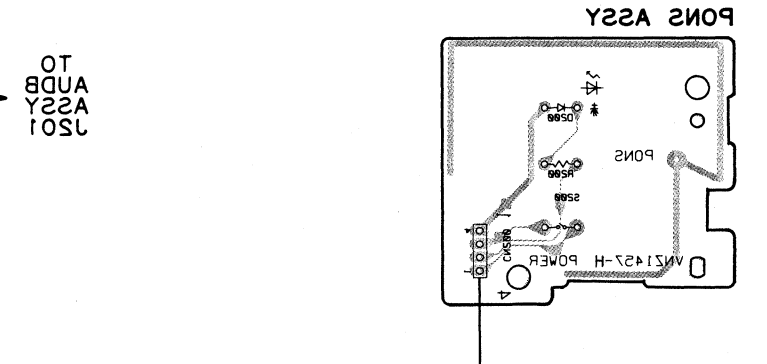
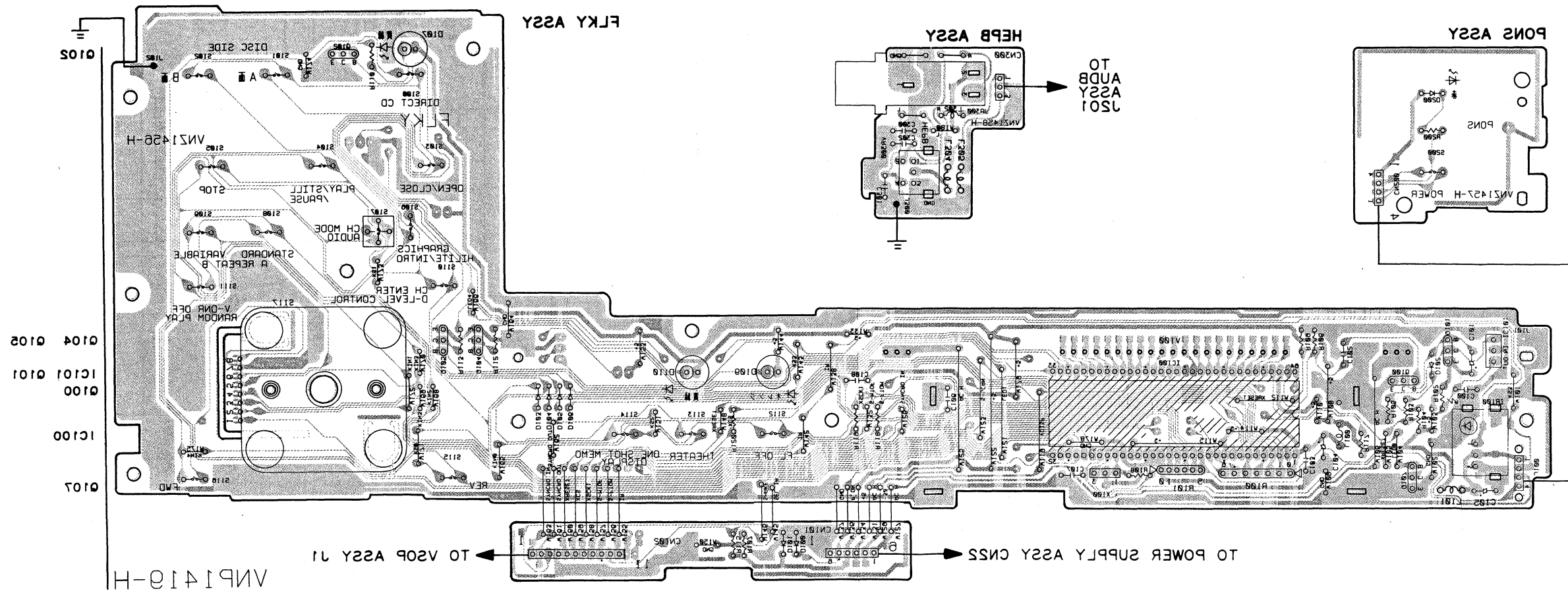
D



• This diagram is viewed from the mounted parts side.



• This diagram is viewed from the foil side.



2.2.2 POWER SUPPLY ASSY

● Power assembly warnings

For this power assy, over current is detected by resistance and transistor. The ±14V wiring is short by the thyristor and all output generation is stopped.

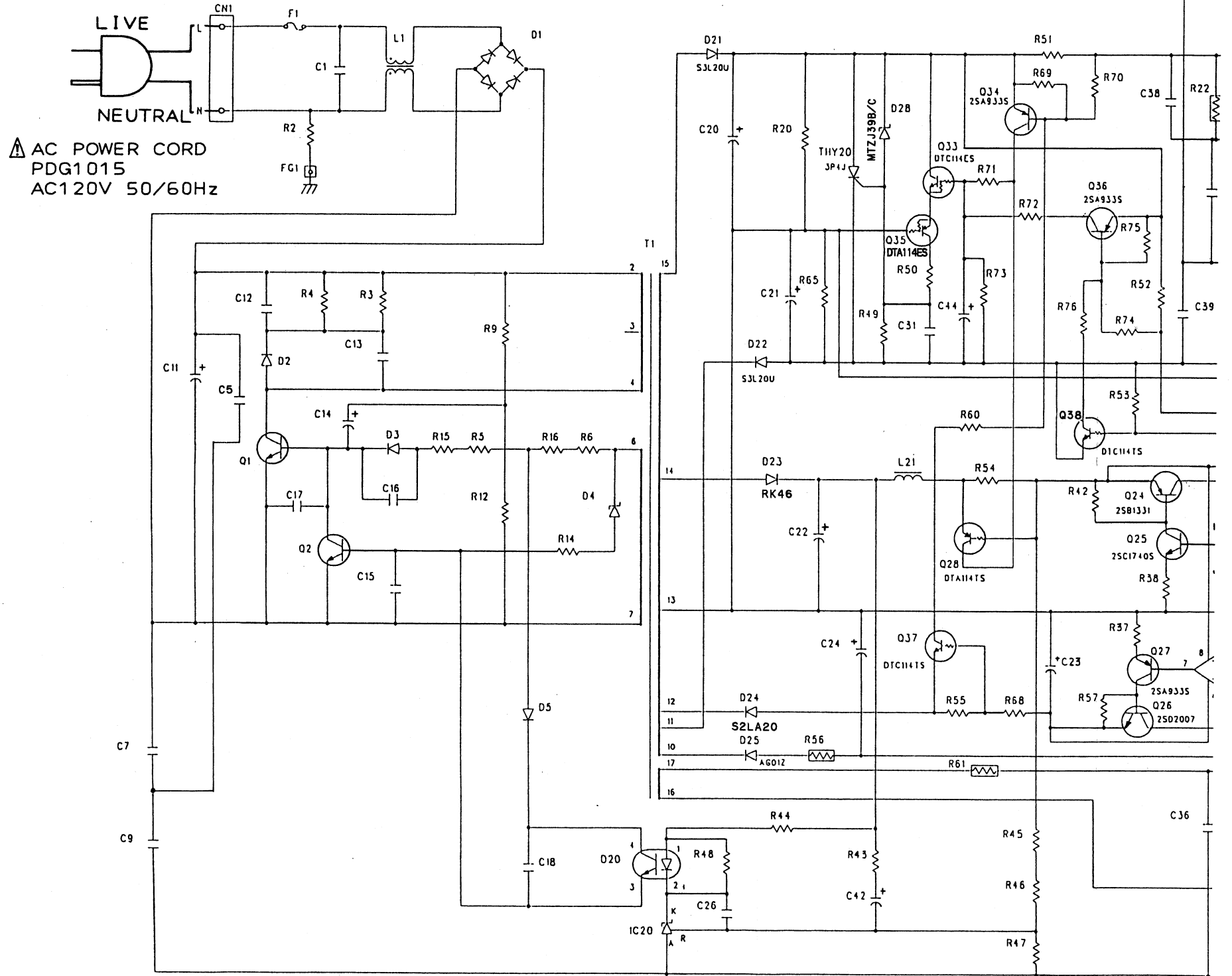
* When the circuit is short and the power goes OFF, unplug the unit and let it discharge for 10—30 seconds and then plug it again and turn on power.

* When output is stopped, a 120V charge remains for about one minute. Be careful not to touch anything.

—Detection circuit (reference)—

- For SPDL use +14V...Q34, R51
- +14V...Q36, R52
- 14V...Q38, R53
- +5V...Q28, R54
- 5V...Q37, R55
- thyristor...THY20

POWER SUPPLY ASSY (VWR1200)



A

B

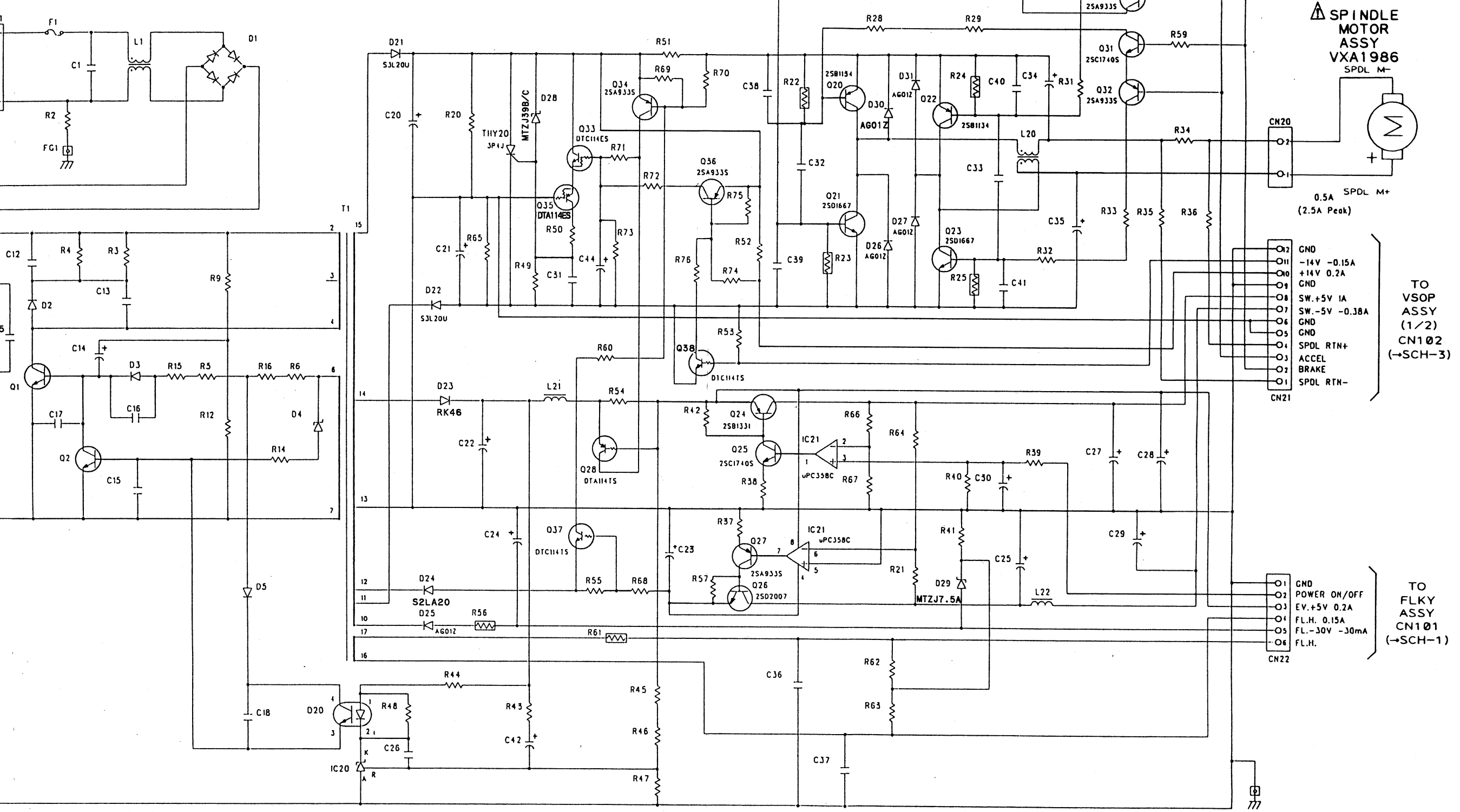
C

D

SCH-2 POWER SUPPLY ASSY

POWER SUPPLY ASSY (VWR1200)

SCH-2



SPINDLE MOTOR ASSY VXA1986
SPDL M+

0.5A SPDL M+
(2.5A Peak)

- O2 GND
- O11 -14V -0.15A
- O10 +14V 0.2A
- O9 GND
- O8 SW.+5V 1A
- O7 SW.-5V -0.38A
- O6 GND
- O5 GND
- O4 SPDL RTN+
- O3 ACCEL
- O2 BRAKE
- O1 SPDL RTN-

TO VSOP ASSY (1/2)
CN102 (-SCH-3)

- O1 GND
- O2 POWER ON/OFF
- O3 EV.+5V 0.2A
- O4 FL.H. 0.15A
- O5 FL.-30V -30mA
- O6 FL.H.

TO FLKY ASSY
CN101 (-SCH-1)

POWER SUPPLY ASSY

SCH-2

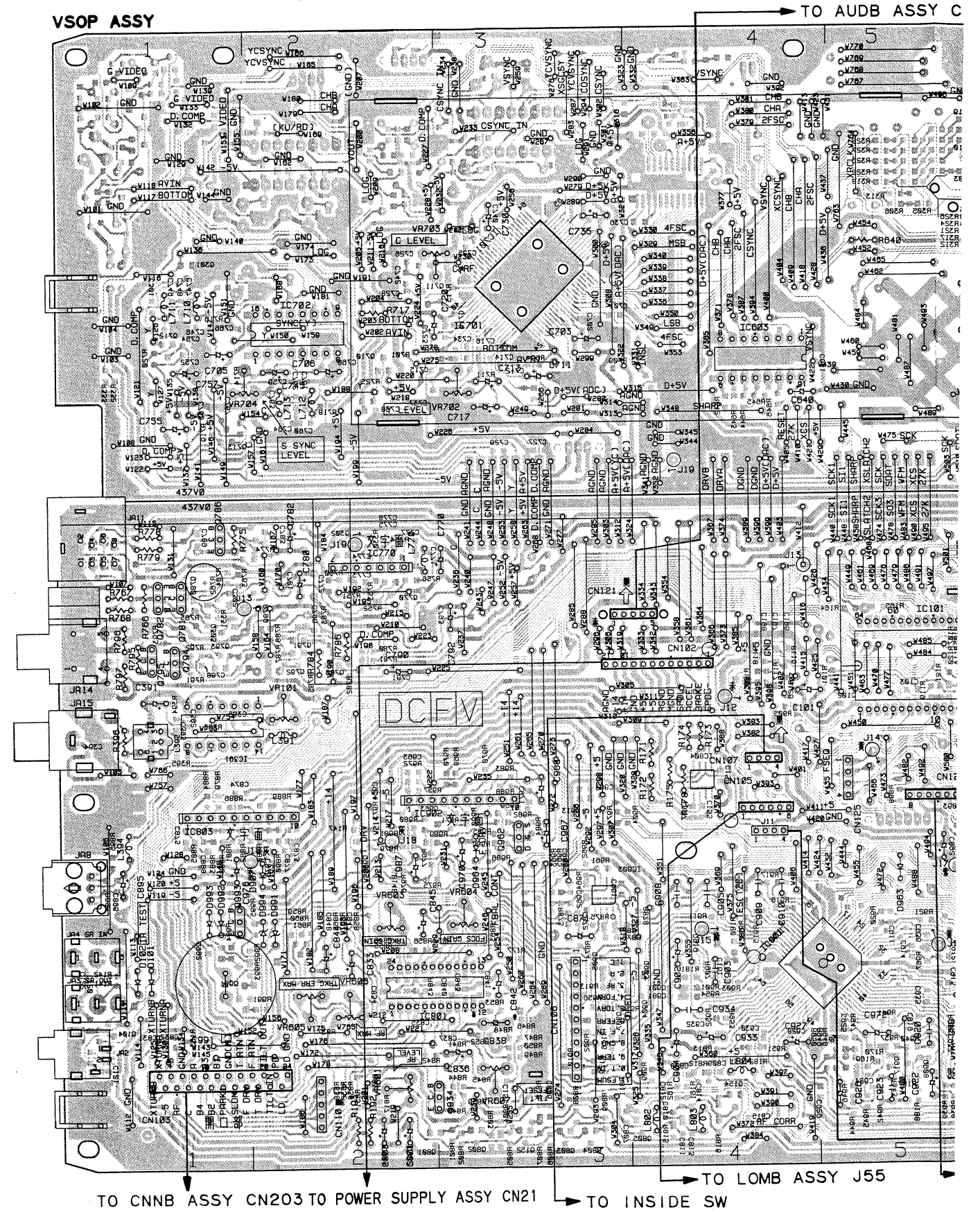
WAVEFORMS AND VOLTAGE FTS AND CONT SECTION

Note: (No.) in the table correspond to the pin number.

Measurement condition: In case when (D.audio) is written, at time when disc that has digital audio recording is played.

IC801(PAC002A)	IC802(LC78681E)	IC803(LA6510)	IC901(PAC003A)	CN106	IC101 (PD0197A)
②, ③ 1mS/Div. 16mVp-p AC mode	② 0.1μS/Div. 4.3Vp-p AC mode(D.audio)	① 2mS/Div. 1.8Vp-p DC mode	② 0.2mS/Div. 74mVp-p DC mode	①, ② 5mS/Div. 65mVp-p DC mode	⑦ 1V/Div 5mS/Div #01.2V DC mode (Slr err)
⑦, ⑧ 1mS/Div. 67mVp-p DC mode	③③ 10μS/Div. 4.2Vp-p AC mode(D.audio)		⑦ 0.2mS/Div. 74mVp-p DC mode	③ 0.5mS/Div. 300mVp-p AC mode	
⑨ 5mS/Div. 0.1Vp-p DC mode	③⑤ 0.2μS/Div. 4.4Vp-p AC mode(D.audio)		①⑥ 0.2mS/Div. 0.61Vp-p DC mode	④ 5mS/Div. 15Vp-p DC mode	
	③⑥ 0.2μS/Div. 4.5Vp-p AC mode(D.audio)		④⑧ 50μS/Div. 6.2Vp-p DC mode	⑤ 5mS/Div. 5.8Vp-p DC mode	
	④③ 0.1μS/Div. 4.5Vp-p AC mode(D.audio)		⑤② 0.2μS/Div. 2.1Vp-p AC mode	⑥ 5mS/Div. 3.5Vp-p DC mode	
	⑤⑨ 0.1μS/Div. 2Vp-p AC mode(D.audio)		⑤⑦ 1mS/Div. 0.53Vp-p DC mode	⑨ 5mS/Div. 1.25Vp-p DC mode	
			⑤⑧ 0.2mS/Div. 0.32Vp-p DC mode	⑪ 10mS/Div. 1.7Vp-p DC mode	

VSOP ASSY



• This diagram is viewed from the foil side.

PCB-3

TO ADB ASSY CNS03

TO ADB ASSY CNS2

TO ADB ASSY CNS01

V209 ASSY

A

B

C

D

Q301
IC500 IC701

VR303

Q711

VC901

Q712 IC305

IC803

Q580 Q710

VR305

Q713

VR305

Q302 Q788

VR101

IC370

Q770 Q785

Q303 IC101

Q790 Q793

Q794 IC401

Q400 Q405

IC301 Q401

Q474 Q475 IC804

Q913 IC305

Q963 IC400

Q965 IC802

Q916

Q460 IC903

Q461 IC901

Q443 Q919

Q497 Q903

Q442 Q444

Q904 IC801

Q104 Q107

Q908 Q917

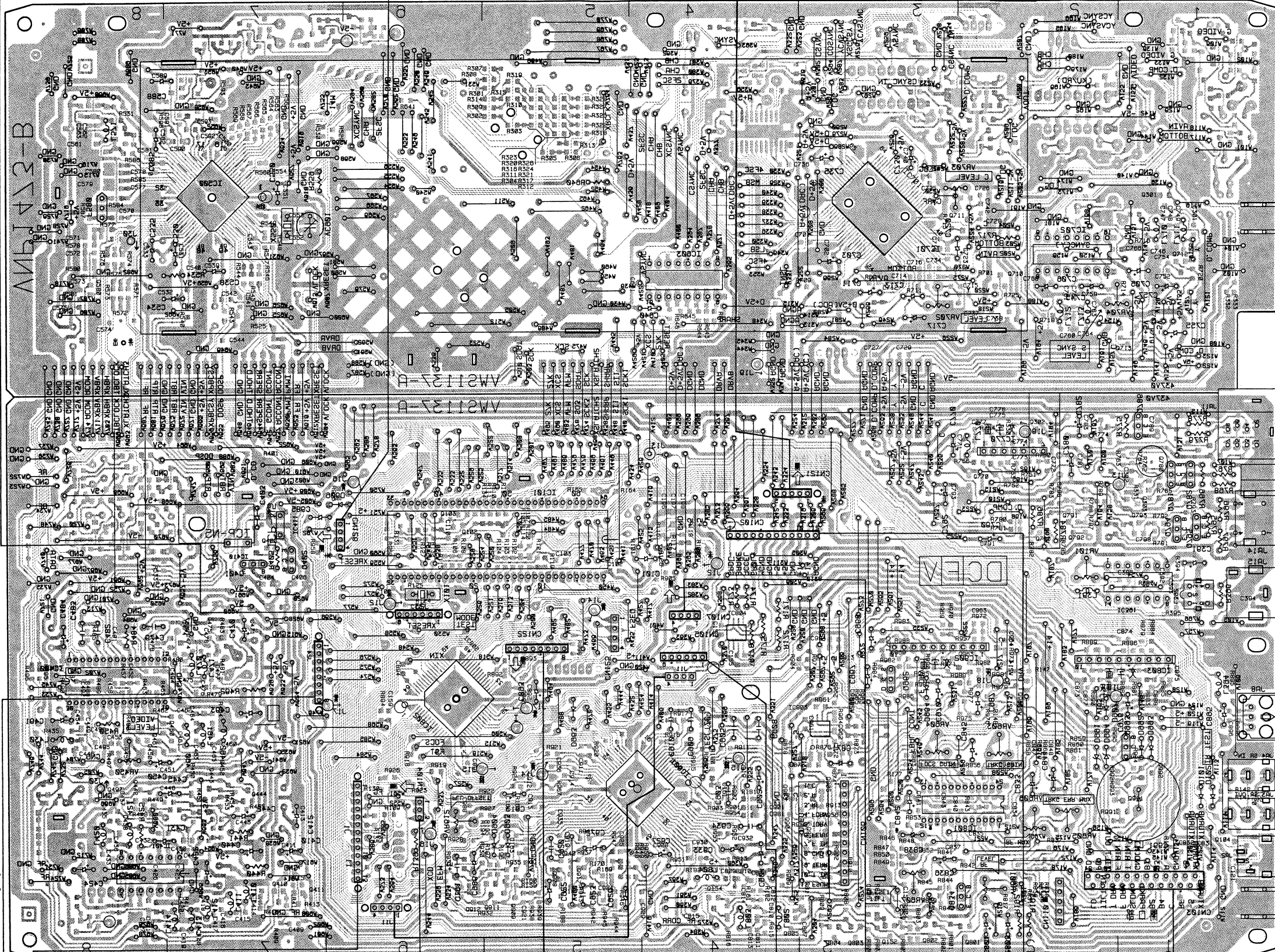
IC401 IC901

Q410 Q411

Q909 Q914

Q605 Q804

Q804 Q805



TO ADB ASSY CNS04

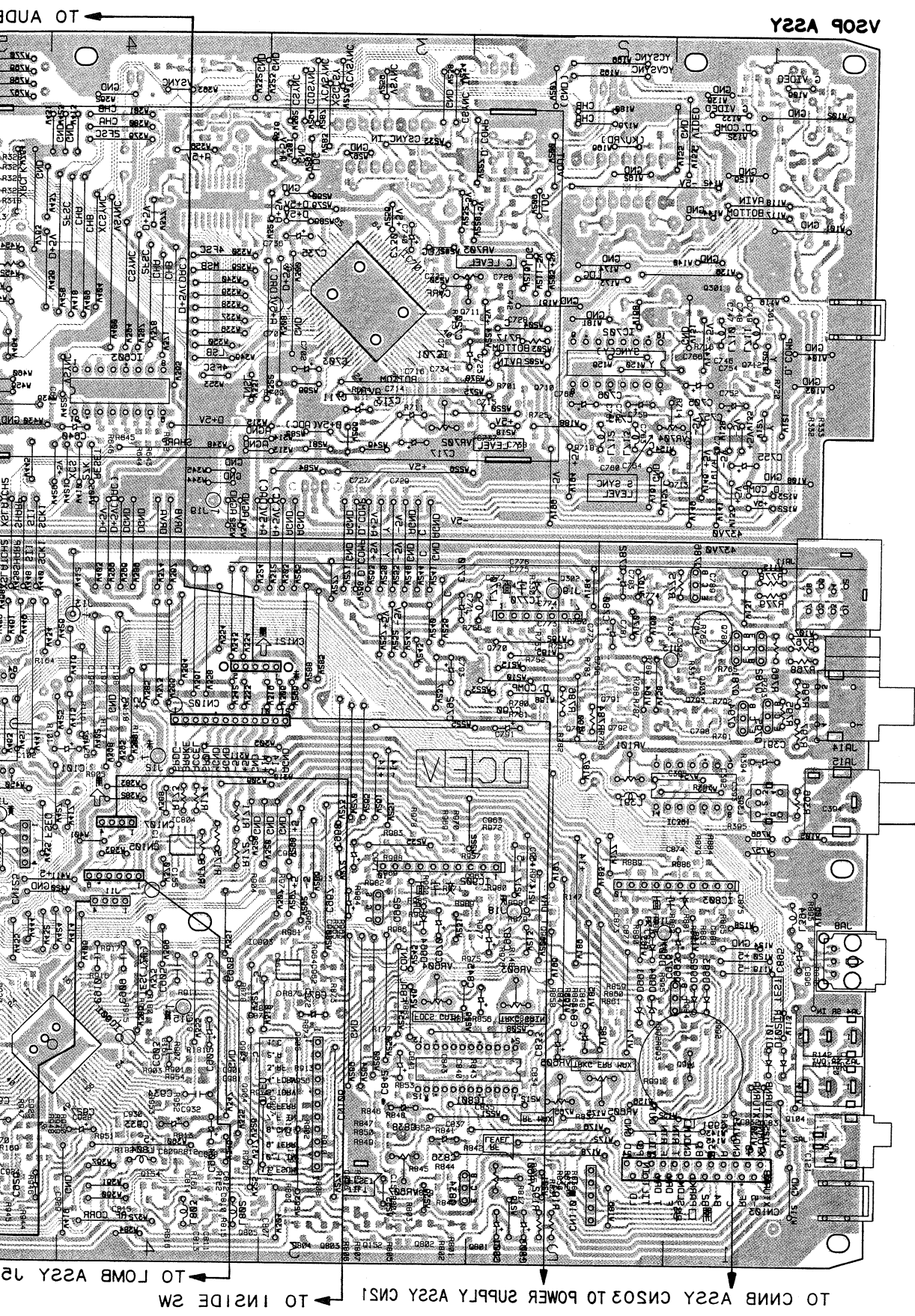
TO FG ASSY 164

TO ADB ASSY CNS05

TO LMB ASSY 125

TO INSIDE SW




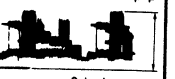
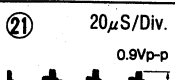
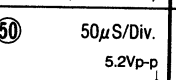
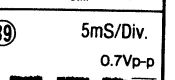
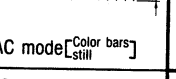
TO CNB ASSY CNS03 TO POWER SUPPLY ASSY CNS1



WAVEFORMS AND VOLTAGE VIDEO SECTION

Note: (No.) in the table correspond to the pin number.

Measurement condition: Where (Color bars) is written, at time when color bar screen of disc is being played. Where (Still) is written, at time of still.

IC400(PA0058A)	IC401(PA0023AD)	IC500(PD0146A)	IC701(CXD2023Q)
(14) 20 μ S/Div. 0.9Vp-p  AC mode(Color bars)	(10) 20 μ S/Div. 0.24Vp-p  AC mode(Color bars)	(47) 20 μ S/Div. 1.7Vp-p  AC mode(Color bars)	(31) 10 μ S/Div. 2.1Vp-p  AC mode[Color bars] Still
(21) 20 μ S/Div. 0.9Vp-p  AC mode(Color bars)		(50) 50 μ S/Div. 5.2Vp-p  AC mode[Color bars] Still	(39) 5mS/Div. 0.7Vp-p  AC mode[Color bars] Still
		(54) 50 μ S/Div. 2.5Vp-p  AC mode[Color bars] Still	

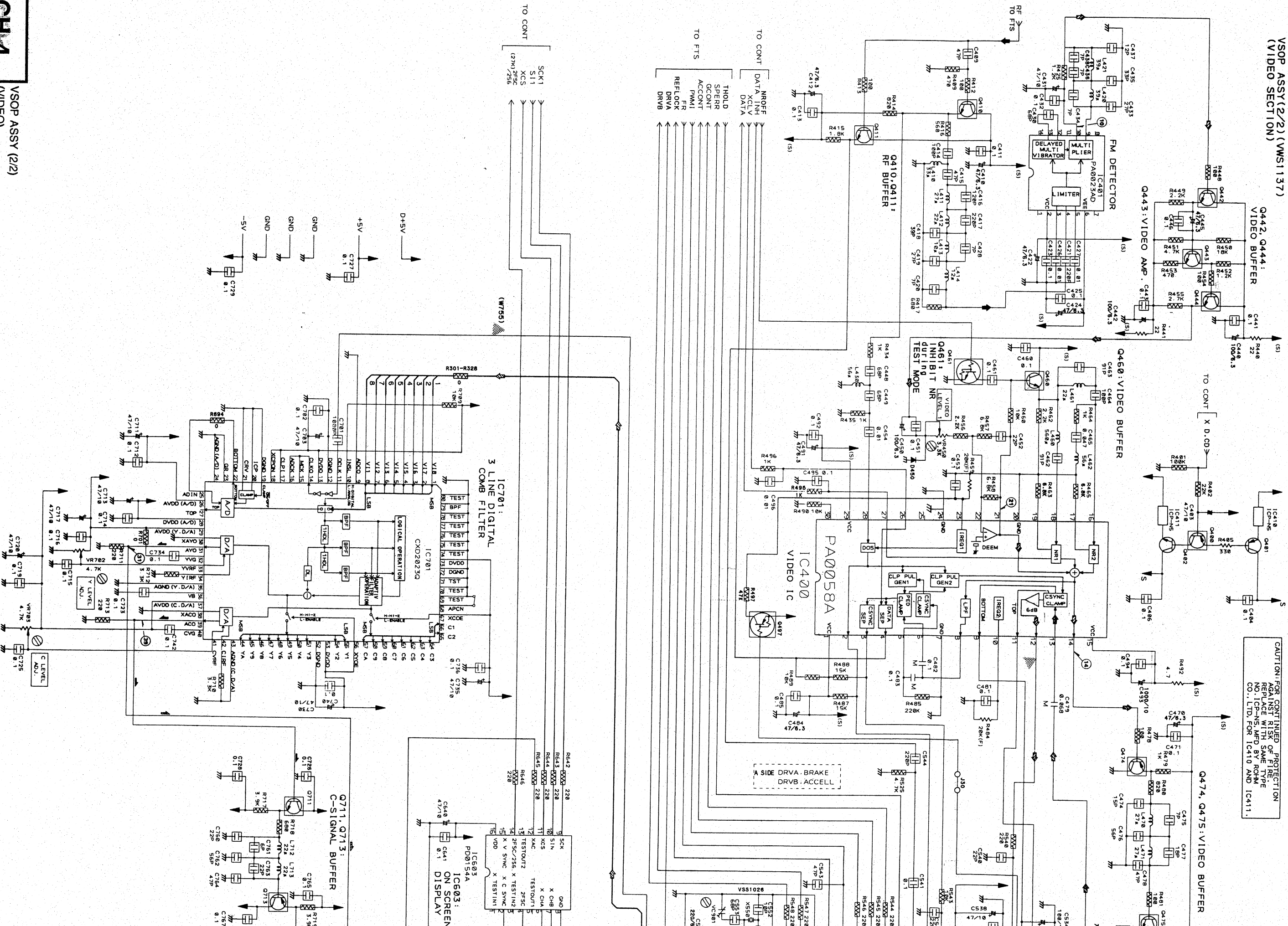
A

B

C

D

VSOP ASSY(2/2) (W5S1137)
(VIDEO SECTION)



CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE WITH SAME TYPE NO. ICP-N5 MFD BY ROHM CO., LTD. FOR IC410 AND IC411.

SCH-4

VSOP ASSY (2/2)
(VIDEO)

1

2

3

4

5

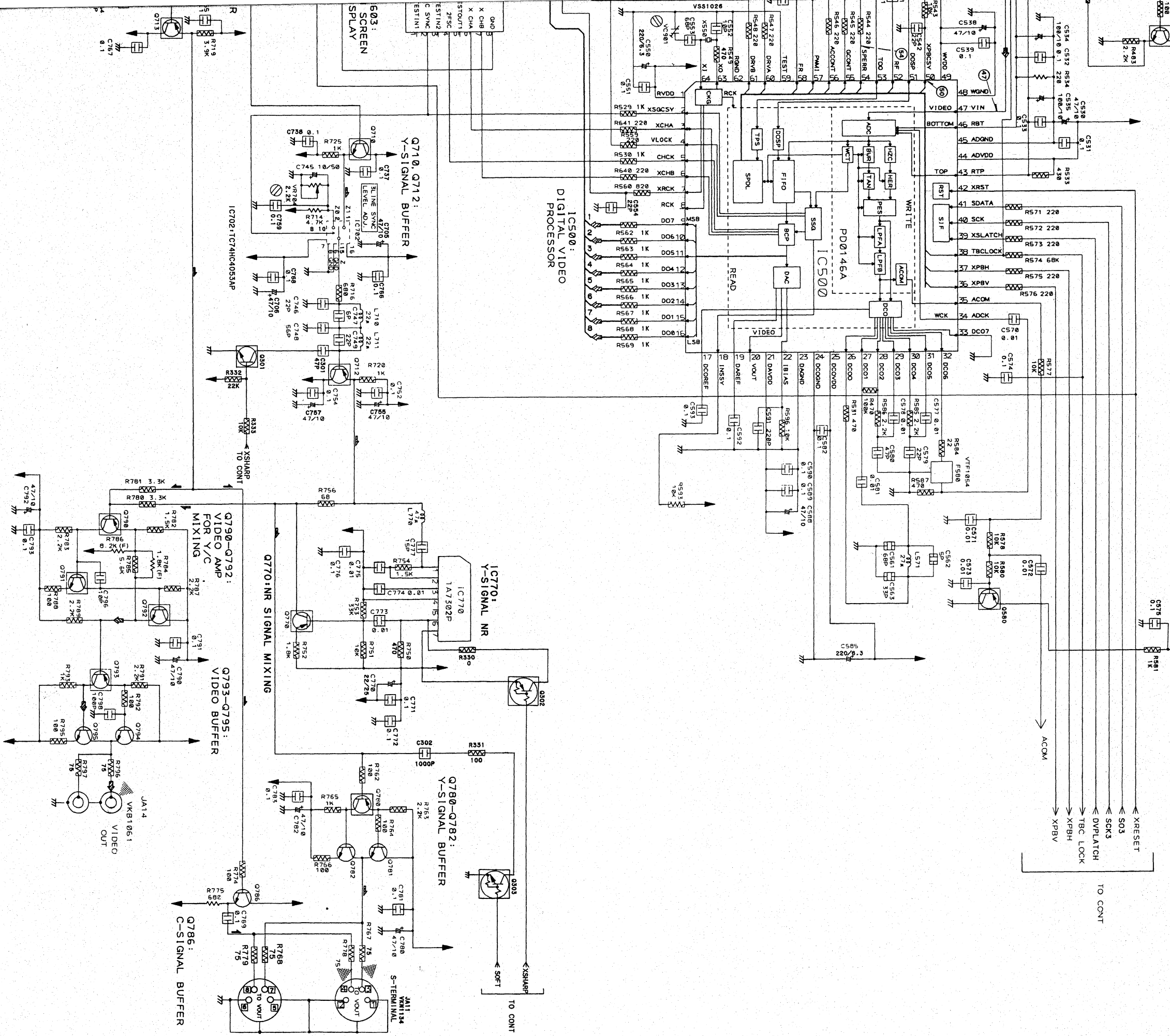
Note: Indicates connection destination of schematic diagrams.

FTS : SCH-3
CONT : SCH-3

SCH-4

- RF SIGNAL LINE
- VIDEO SIGNAL LINE
- C SIGNAL LINE
- Y SIGNAL LINE

25A1037K	Q400	474	580	790	793	712	713	770	780
25C2412K	Q410	411	475	442	443	444	460	301	
25C1740S	Q781	782	786	794	795				
DTC124EK	Q461	303							
25B1237X	Q401								
25D1959X	Q402								
DTA124EK	Q497	302							
DAN202K	D450								



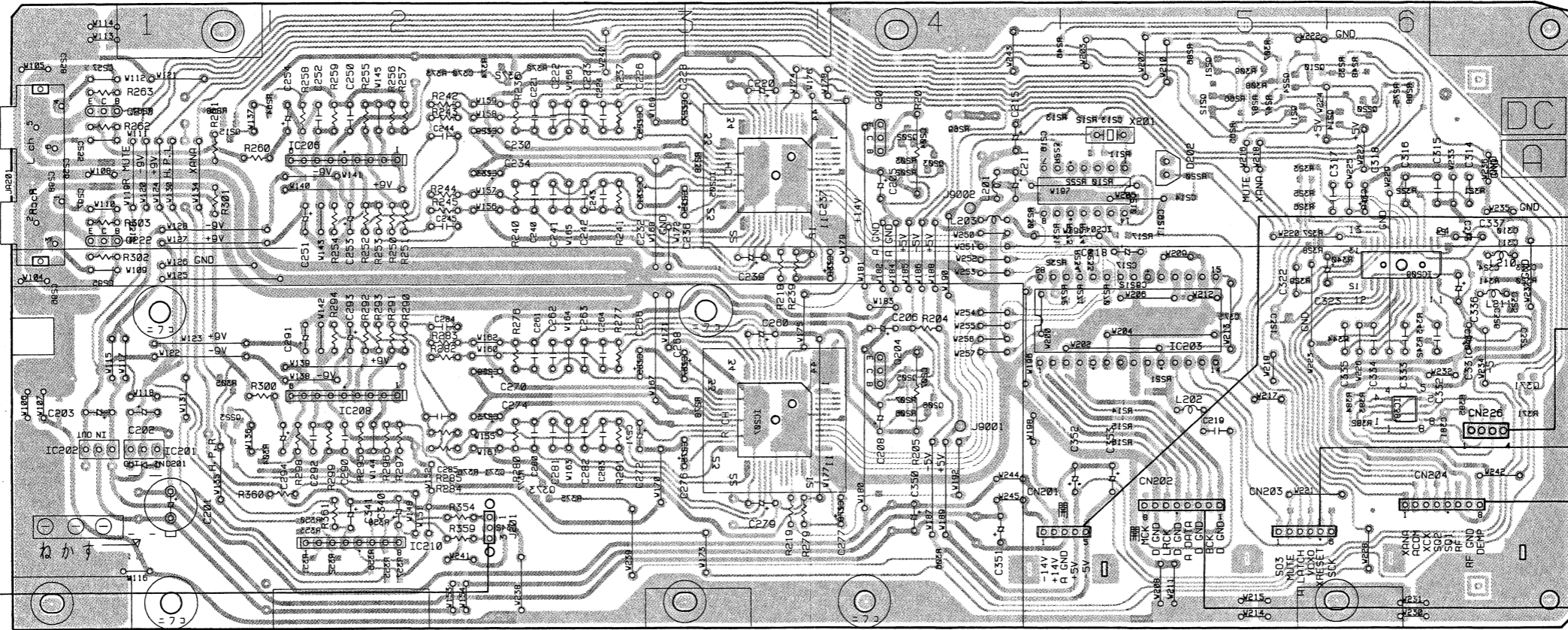
VSOP ASSY (2/2)
(VIDEO) SCH-4

• This diagram is viewed from the mounted parts side.

Q213	Q222	IC202	IC201	Q512	Q513	Q514	Q515	Q516	Q517	Q518	Q519	Q520	Q521	Q522	Q523	Q524	Q525	Q526	Q527	Q528	Q529	Q530	Q531	Q532	Q533	Q534	Q535	Q536	Q537	Q538	Q539	Q540	Q541	Q542	Q543	Q544	Q545	Q546	Q547	Q548	Q549	Q550	Q551	Q552	Q553	Q554	Q555	Q556	Q557	Q558	Q559	Q560	Q561	Q562	Q563	Q564	Q565	Q566	Q567	Q568	Q569	Q570	Q571	Q572	Q573	Q574	Q575	Q576	Q577	Q578	Q579	Q580	Q581	Q582	Q583	Q584	Q585	Q586	Q587	Q588	Q589	Q590	Q591	Q592	Q593	Q594	Q595	Q596	Q597	Q598	Q599	Q600	Q601	Q602	Q603	Q604	Q605	Q606	Q607	Q608	Q609	Q610	Q611	Q612	Q613	Q614	Q615	Q616	Q617	Q618	Q619	Q620	Q621	Q622	Q623	Q624	Q625	Q626	Q627	Q628	Q629	Q630	Q631	Q632	Q633	Q634	Q635	Q636	Q637	Q638	Q639	Q640	Q641	Q642	Q643	Q644	Q645	Q646	Q647	Q648	Q649	Q650	Q651	Q652	Q653	Q654	Q655	Q656	Q657	Q658	Q659	Q660	Q661	Q662	Q663	Q664	Q665	Q666	Q667	Q668	Q669	Q670	Q671	Q672	Q673	Q674	Q675	Q676	Q677	Q678	Q679	Q680	Q681	Q682	Q683	Q684	Q685	Q686	Q687	Q688	Q689	Q690	Q691	Q692	Q693	Q694	Q695	Q696	Q697	Q698	Q699	Q700	Q701	Q702	Q703	Q704	Q705	Q706	Q707	Q708	Q709	Q710	Q711	Q712	Q713	Q714	Q715	Q716	Q717	Q718	Q719	Q720	Q721	Q722	Q723	Q724	Q725	Q726	Q727	Q728	Q729	Q730	Q731	Q732	Q733	Q734	Q735	Q736	Q737	Q738	Q739	Q740	Q741	Q742	Q743	Q744	Q745	Q746	Q747	Q748	Q749	Q750	Q751	Q752	Q753	Q754	Q755	Q756	Q757	Q758	Q759	Q760	Q761	Q762	Q763	Q764	Q765	Q766	Q767	Q768	Q769	Q770	Q771	Q772	Q773	Q774	Q775	Q776	Q777	Q778	Q779	Q780	Q781	Q782	Q783	Q784	Q785	Q786	Q787	Q788	Q789	Q790	Q791	Q792	Q793	Q794	Q795	Q796	Q797	Q798	Q799	Q800	Q801	Q802	Q803	Q804	Q805	Q806	Q807	Q808	Q809	Q810	Q811	Q812	Q813	Q814	Q815	Q816	Q817	Q818	Q819	Q820	Q821	Q822	Q823	Q824	Q825	Q826	Q827	Q828	Q829	Q830	Q831	Q832	Q833	Q834	Q835	Q836	Q837	Q838	Q839	Q840	Q841	Q842	Q843	Q844	Q845	Q846	Q847	Q848	Q849	Q850	Q851	Q852	Q853	Q854	Q855	Q856	Q857	Q858	Q859	Q860	Q861	Q862	Q863	Q864	Q865	Q866	Q867	Q868	Q869	Q870	Q871	Q872	Q873	Q874	Q875	Q876	Q877	Q878	Q879	Q880	Q881	Q882	Q883	Q884	Q885	Q886	Q887	Q888	Q889	Q890	Q891	Q892	Q893	Q894	Q895	Q896	Q897	Q898	Q899	Q900	Q901	Q902	Q903	Q904	Q905	Q906	Q907	Q908	Q909	Q910	Q911	Q912	Q913	Q914	Q915	Q916	Q917	Q918	Q919	Q920	Q921	Q922	Q923	Q924	Q925	Q926	Q927	Q928	Q929	Q930	Q931	Q932	Q933	Q934	Q935	Q936	Q937	Q938	Q939	Q940	Q941	Q942	Q943	Q944	Q945	Q946	Q947	Q948	Q949	Q950	Q951	Q952	Q953	Q954	Q955	Q956	Q957	Q958	Q959	Q960	Q961	Q962	Q963	Q964	Q965	Q966	Q967	Q968	Q969	Q970	Q971	Q972	Q973	Q974	Q975	Q976	Q977	Q978	Q979	Q980	Q981	Q982	Q983	Q984	Q985	Q986	Q987	Q988	Q989	Q990	Q991	Q992	Q993	Q994	Q995	Q996	Q997	Q998	Q999	Q1000
------	------	-------	-------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------

PCB-4

AUDB ASSY



● This diagram is viewed from the foil side.

A

PCB-4

Q371	Q220	Q210	Q224	Q221	Q203	Q202	Q201	Q200	Q205	Q372	Q215	Q150
IC381	IC209	Q214	Q211	Q212	IC304	Q206	Q205	Q204	IC207	Q373	Q223	Q153
					IC303	Q207	Q205	Q204	IC207		IC101	IC101

Y22A 8DUA

TO V20P ASSY
CN151

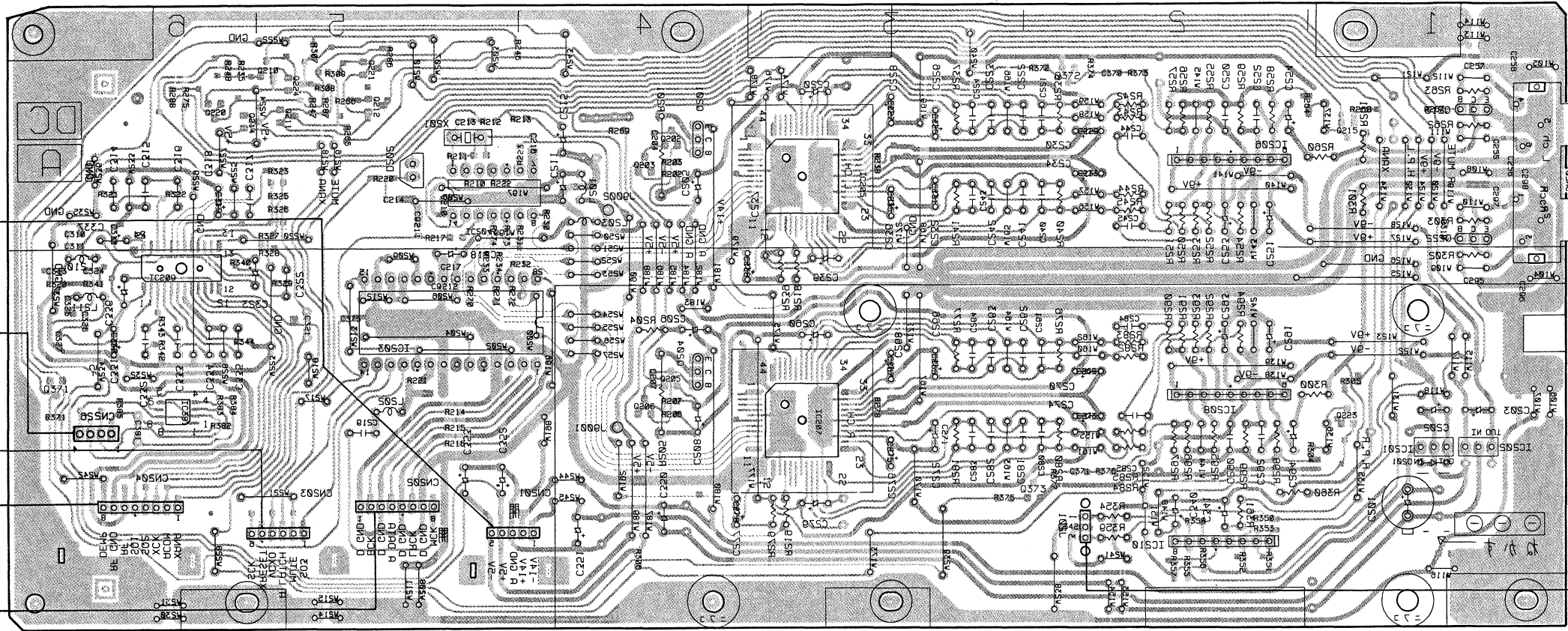
TO V20P ASSY
CN152

TO V20P ASSY
J33

TO V20P ASSY
J34

TO V20P ASSY
CN153

TO HEPP ASSY
CN300



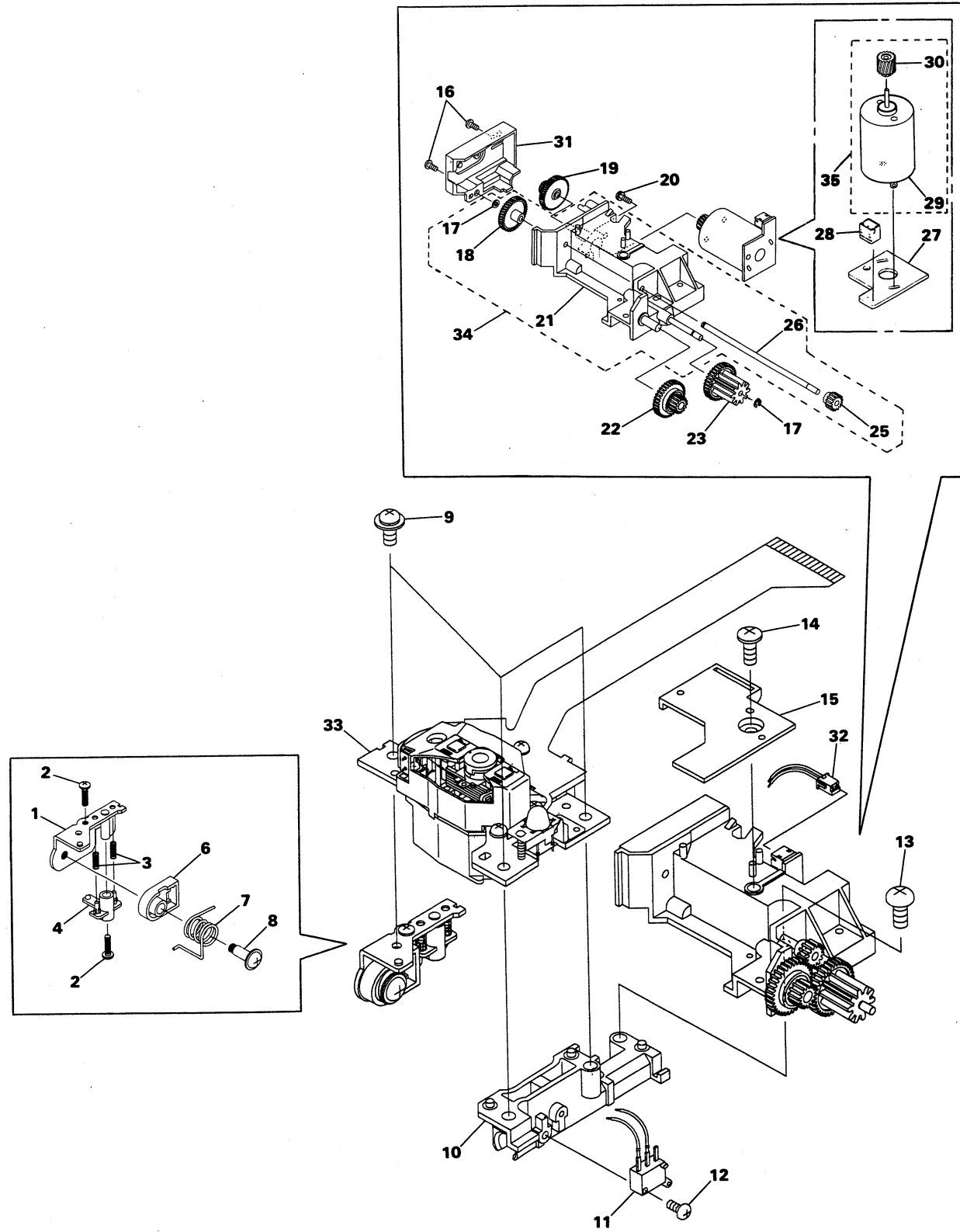
V141-D

B

C

D

2.1.9 CARRIAGE ASSY



2.2 SCHEMATIC AND PCB CONNECTION DIAGRAMS

NOTE FOR SCHEMATIC DIAGRAMS (Type 4A)

1. When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".

2. Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.

3. RESISTORS:
Unit: k: kΩ, M: MΩ, or Ω unless otherwise noted.
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.

4. CAPACITORS:
Unit: p: pF or μF unless otherwise noted.
Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.
Rated voltage: 50V except for electrolytic capacitors.

5. COILS:
Unit: m: mH or μH unless otherwise noted.

6. VOLTAGE AND CURRENT:
□ or - V : DC voltage (V) in PLAY mode unless otherwise noted.
↔ mA or - mA : DC current in PLAY mode unless otherwise noted.
Value in () is DC current in STOP mode.

7. OTHERS:
● or ○ : Adjusting point.
◀ : Measurement point.
The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.

8. SCH-□ ON THE SCHEMATIC DIAGRAM:
• SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)

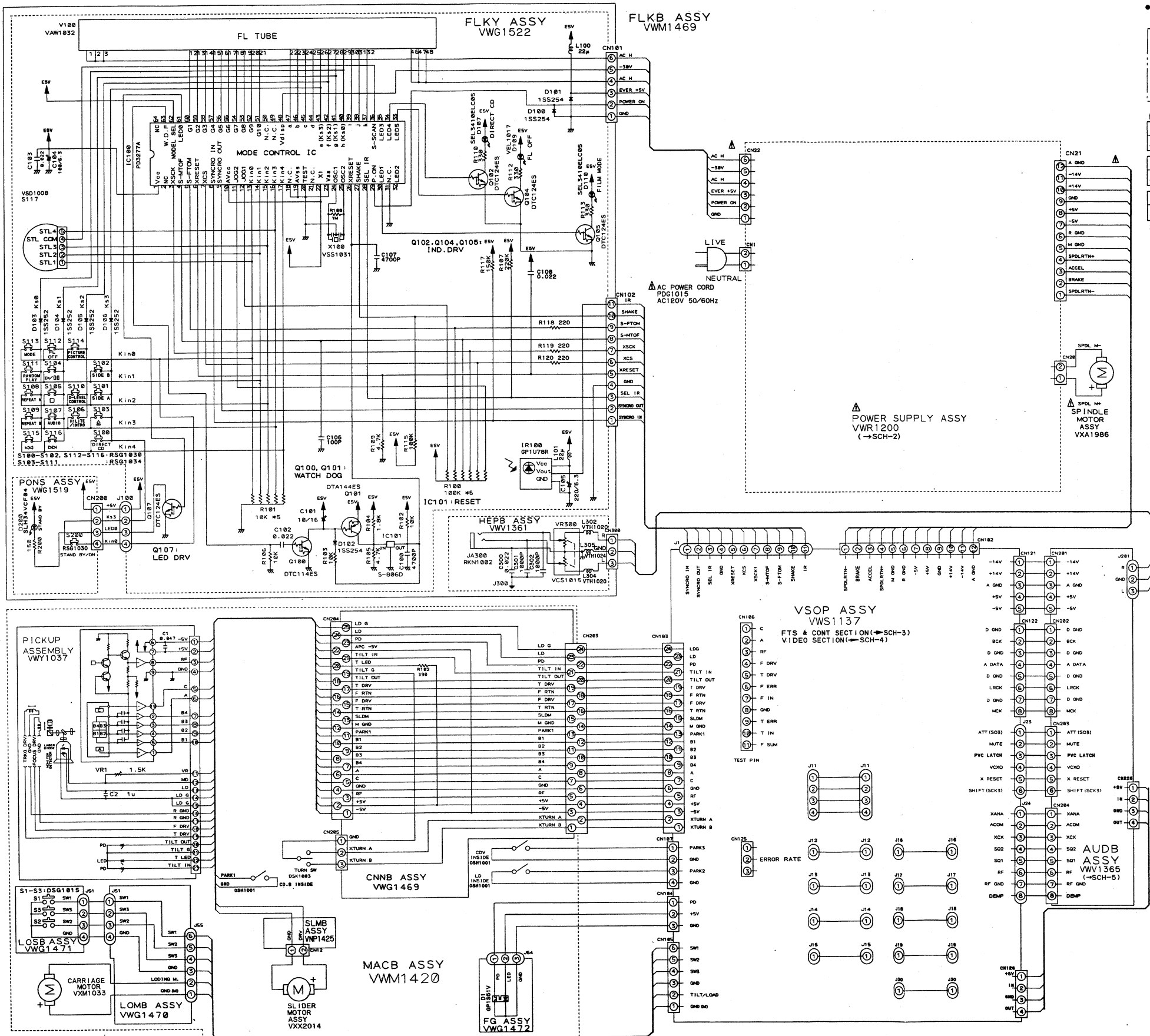
9. SWITCHES (Underline indicates switch position):
FLKY ASSY PONS ASSY
S100 : DIRECT CD S200 : STANDBY/ON
S101 : SIDE A
S102 : SIDE B
S103 : ▲
S104 : ▶/||
S105 : ■
S106 : HILITE/INTRO
S107 : AUDIO
S108 : REPEAT A
S109 : REPEAT B
S110 : D-LEVEL CONTROL
S111 : RANDOM PLAY
S112 : FL OFF
S113 : MODE
S114 : PICTURE CONTROL
S115 : ◀◀
S116 : ▶▶

NOTE FOR PCB DIAGRAMS:

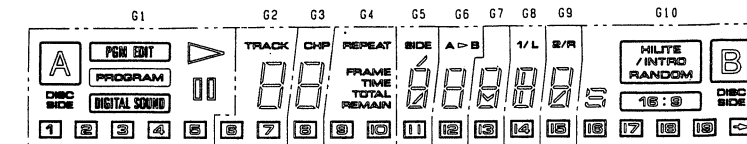
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

2.2.1 OVERALL CONNECTIONS, FLKY, HEPB, PONS, CNNB, LOMB, LOSB, FG, PICKUP AND SLMB ASSY



FL DISPLAY INFORMATION (V100;VAW1032)



PIN ASSIGNMENT

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Assignment	F	F	F	NP	NP	NP	NP	NP	NP	NP	NP	G1	G2	G3	G4	G5
Pin No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Assignment	G6	G7	G8	G9	G10	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11
Pin No.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Assignment	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	F	F	F

F: Filament G1-G12: Grid a-1: Anode NP: No pin

	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10
P1	A	a	a	FRAME	a	a	a	a	a	B
P2	PSW ENT	b	b	TIME	b	b	b	b	b	MUTE/INTRO
P3	PROGRAM	c	c	TOTAL	c	c	c	c	c	RANDOM
P4	DIGITAL SOUND	d	d	REMAIN	d	d	d	d	d	
P5	▶	e	e		e	e	e	e	e	16:0
P6	⏸	f	f		f	f	f	f	f	
P7	1	g	g		g	g	g	g	g	16
P8	2	TRACK	CHP	REPEAT	SIDE	A	✓			17
P9	3				(UPPER)	▶		1/L	2/R	18
P10	4	6	9		(LOWER)	B				19
P11	5	7	8	10	11	12	13	14	15	▶

SCH-1

OVERALL FLKY ASSY, HEPB ASSY, PONS ASSY, CNNB ASSY, LOMB ASSY, LOSB ASSY, FG ASSY, PICKUP ASSY, SLMB ASSY

OVERALL FLKY ASSY, HEPB ASSY, PONS ASSY, CNNB ASSY, LOMB ASSY, LOSB ASSY, FG ASSY, PICKUP ASSY, SLMB ASSY

SCH-1