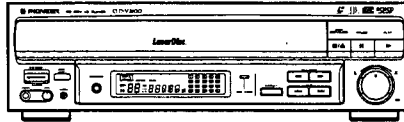


# Service Manual

**PIONEER®**  
The Art of Entertainment



ORDER NO.  
ARP2778

CD CDV LD PLAYER

# CLD-V2600

CLD-V2600 HAVE THE FOLLOWING:

Type	Power Requirement	Remarks
KUC	AC 120V only	

● This manual is applicable to CLD-V2600/KUC.

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# 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.

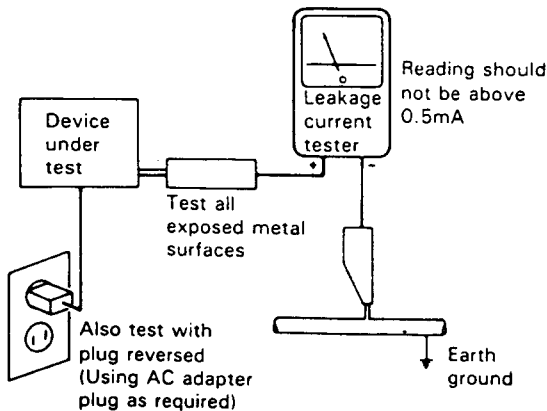
(FOR USA MODEL ONLY)

## 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.



AC Leakage Test

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  $\Delta$  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.

## 2. EXPLODED VIEWS, PACKING AND PARTS LIST

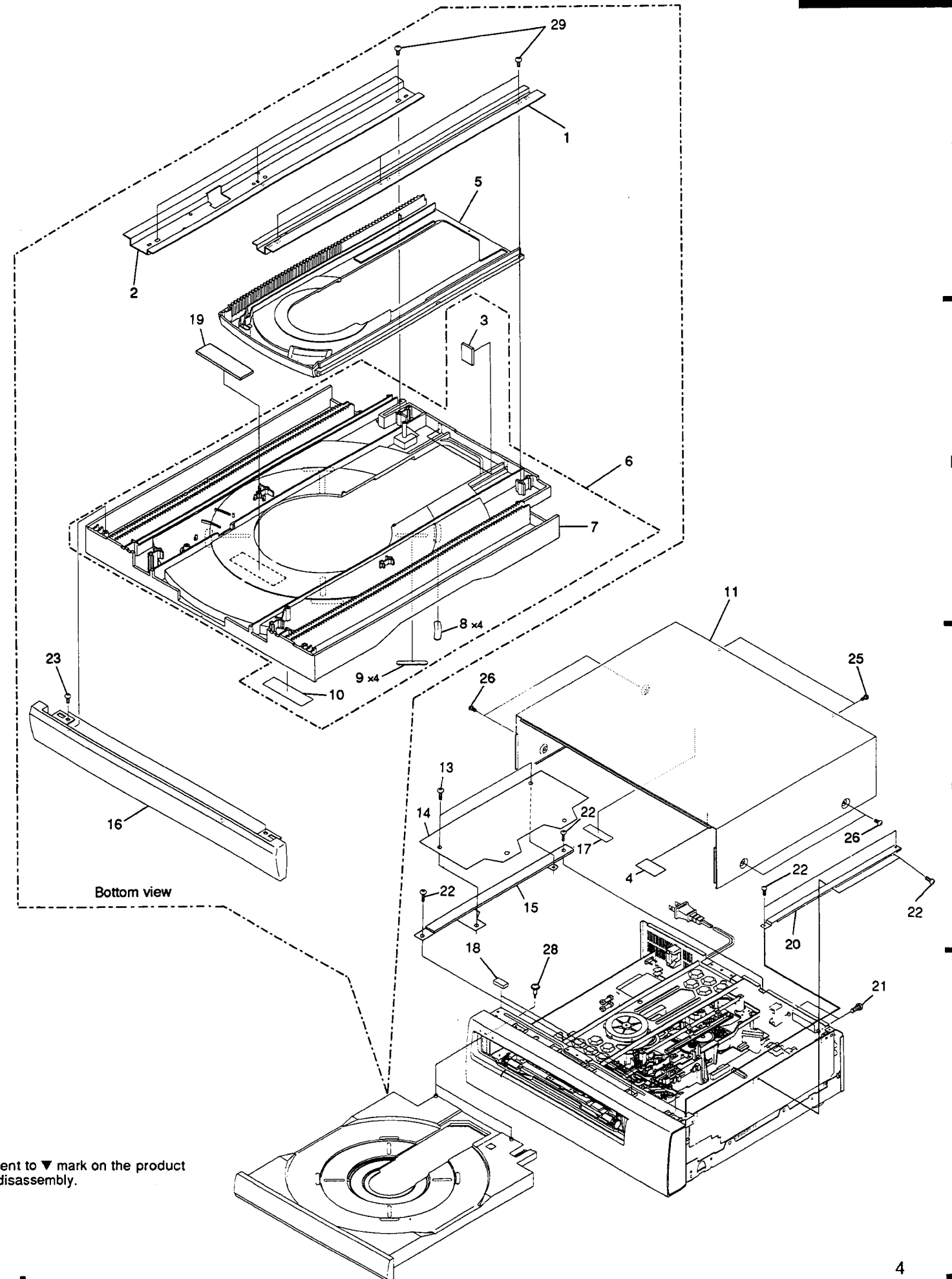
**NOTES:**

- A • Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  $\Delta$  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) EXTERIOR SECTION

**Parts List**

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Guide plate (L)	VNE1805	16	Tray panel	DNK2757
2	Guide plate (R)	VNE1806	NSP 17	65 lable	ORW1069
NSP 3	Cushion	VEC1618	NSP 18	Spacer	VEC1585
NSP 4	Label	VRW-348	NSP 19	Damper rubber	DEB1070
5	CD tray	VNK1992	NSP 20	PCB holder	VNE1830
6	Tray Ass'y S	DXX2131	21	Screw	DBA1038
B NSP 7	LD tray	DNK2797	22	Screw	BBZ30P060FMC
8	Disc pad	VEC1191	23	Screw	BPZ30P080FZK
9	Disc pad (C)	VEC1380	24	.....	
NSP 10	Lable (plastic)	VRW1289	25	Screw	BBT30P080FZK
11	Bonnet S	DXX2129	26	Screw	FBT40P080FZK
12	.....		27	.....	
13	Plastic rivet	DEC1713	28	Screw	VBA1032
14	MDRB Ass'y	DWG1379	29	Screw	BPZ30P060FZK
15	PCB stay	DND1142			

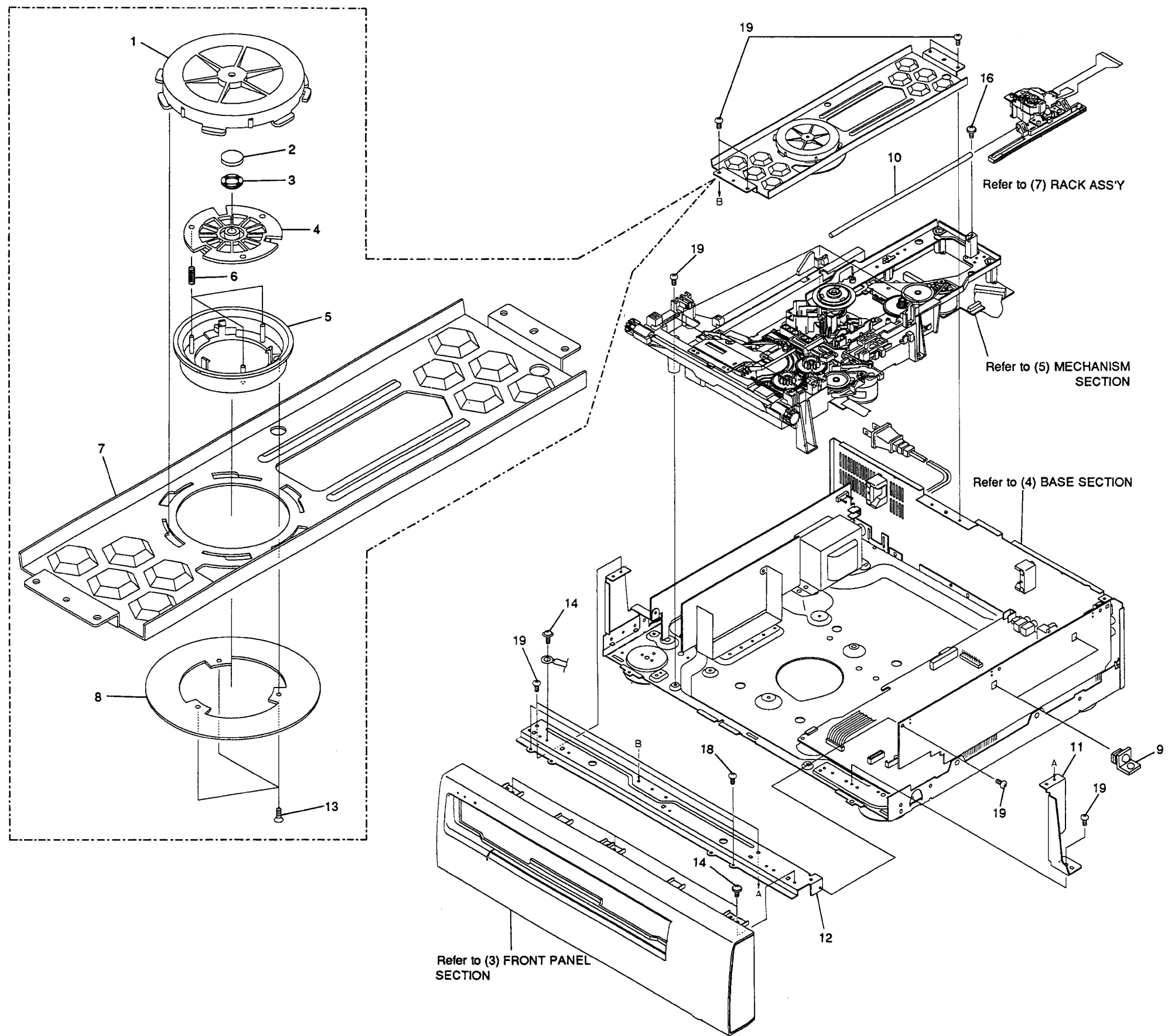


NOTE: Screws adjacent to ▼ mark on the product are used for disassembly.

**(2) TOP VIEW SECTION**

**Parts List**

Mark	No.	Description	Part No.
A	1	Clamper holder	VNL1514
	2	Rubber sheat	VEB1114
	3	Thrust holder	VNL1289
	4	Clamper head	VNL1516
	5	Clamper	VNL1515
	6	Clamp spring	VBH1192
	7	Clamper arm	VNE1804
	8	Stabilizer	VNE1807
	9	Pierce hold	DEC1678
	10	Slider shaft	VLL1434
NSP	11	Side stay (R)	VNE1810
NSP	12	Front angle	VNE1808
	13	Screw	CPZ20P050FMC
	14	Screw	IBZ30P080FMC
B	15	.....	
	16	Screw	IPZ30P060FMC
	17	.....	
	18	Screw	PCZ30P060FMC
	19	Screw	BBZ30P060FMC



(3) FRONT PANEL SECTION

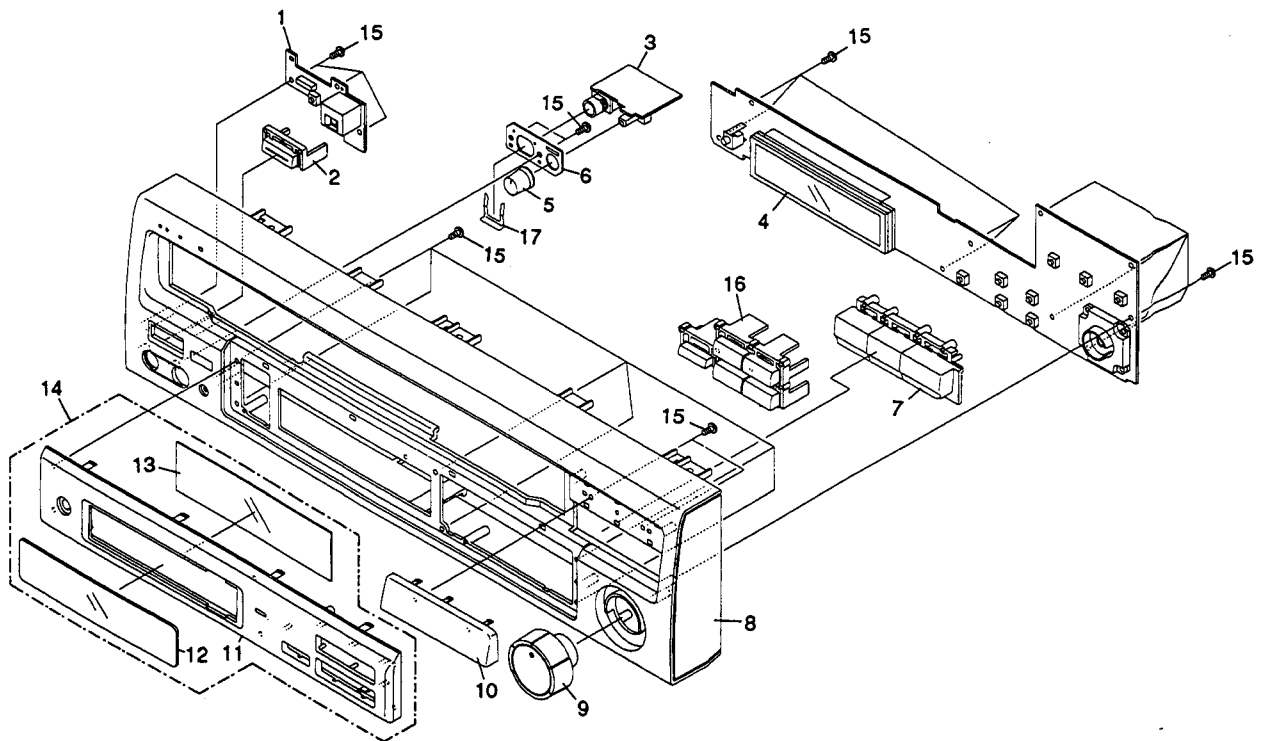
Parts List

A	Mark No.	Description	Part No.	Mark No.	Description	Part No.
NSP	1	PSWB Ass'y	DWX1356	11	Center panel Ass'y	DXA1652
	2	PW button	VNK2002	12	FL lens	VEC1568
	3	HEPB Ass'y	DWX1355	13	FL filter	VNK1659
	4	FLKY Ass'y	DWG1380	14	Center panel Ass'y S	DXX2130
	5	Volume knob	VNK2003	15	Screw	BPZ26P060FZK
	6	Jack holder	VNE1811	16	Sub key	DNK2756
	7	Main key	DNK2760	17	Snap plate	VNE1102
	8	Front panel Ass'y	DXA1630			
	9	Shuttle knob	VNK2039			
	10	Sub panel	DNK2759			

B

C

D



**(4) BASE SECTION**

**Parts List**

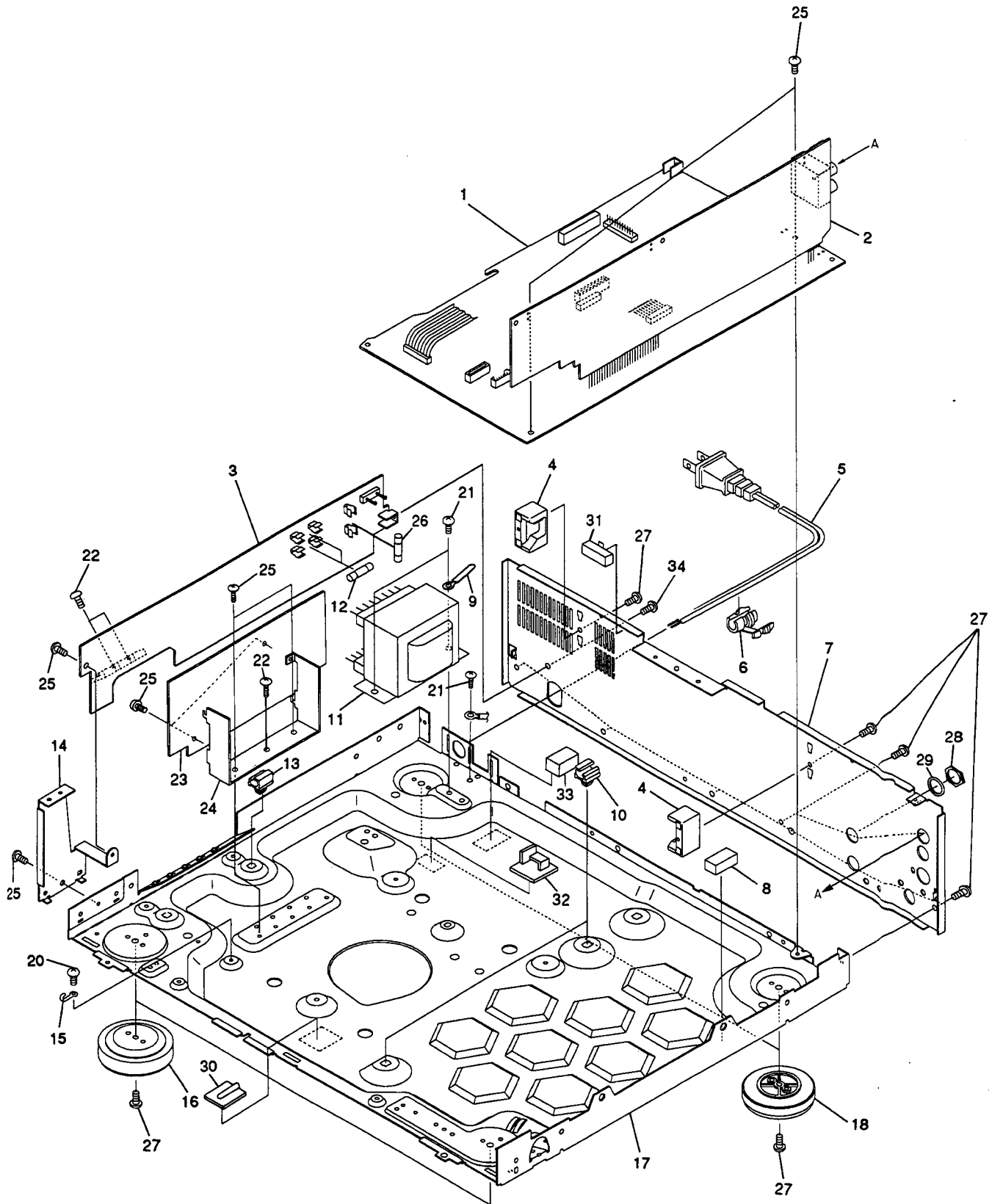
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	MAIN Ass'y	DWX1353		18	Insulator Ass'y	DXA1491
	2	AUDIO Ass'y	DWX1354		19	Screw	BBZ30P080FCC
	3	SYPS Ass'y	DWR1157		20	Screw	BBZ30P040FZK
	4	Tray stopper	VNL1519				
△	5	AC power cord	DDG1049		21	Screw	BCZ40P060FMC
					22	Screw	BCZ30P080FMC
△	6	Cord stopper	VEC-201		23	SSVB Ass'y	DWS1193
NSP	7	Rear panel	DNA1129		24	PCB holder	DNE1212
	8	PCB cushion	VEC1573		25	Screw	BBZ30P060FMC
NSP	9	Cord clamper	Z09-060				
NSP	10	PCB holder	VEC1174	△	26	Fuse (1.25A) FU101	VEK1016
					27	Screw	BBT30P080FZK
△	11	Power transformer	DTT1088		28	F-nut	VLL-082
△	12	Fuse (3A/125V) FU102, FU103	VEK1021		29	F-washer	VNE-270
					30	Cord keep.	DEF1006
NSP	13	P plate holder	PNY-405	NSP	31	Support cushion	VEC1601
NSP	14	Side stay (L)	VNE1809	NSP	32	Cord clamp L	DEC1578
	15	Cord clamper	VNF-069	NSP	33	Rubber space	DEB1150
					34	Screw	BCZ30P060FZK
	16	Insulator Ass'y	DXA1490				
NSP	17	Base chassis	VNA1255				

A

B

C

D



**(5) MECHANISM SECTION**

**Parts List**

<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>
	1	Mechanism base	VNK1990		14	L-SW lever	VNL1504
	2	Flexible cable	VDA1409		15	C-SW lever	VNL1505
	3	Clamp cam	VNL1500		16	R-SW lever	VNL1506
	4	Shaft holder	VNE1817	NSP	17	LOSB Ass'y	DWX1360
	5	Cam plate	VNL1511		18	Synchro gear Ass'y	VXA1822
	6	CAS spring	VBH1190		19	Roller	VNL1042
	7	Cam gear	VNL1507	NSP	20	LOMB Ass'y	DWX1361
	8	.....			21	Loading motor Ass'y	VXX1712
	9	.....		NSP	22	Slider motor	VXM1033
	10	Rubber belt	VEB1184		23	Motor pulley	PNW1643
	11	Gear pulley	VNL1510		24	Screw	Z39-019
	12	Twin gear	VNL1508		25	Screw	BMZ26P040FMC
	13	Center gear	VNL1509				



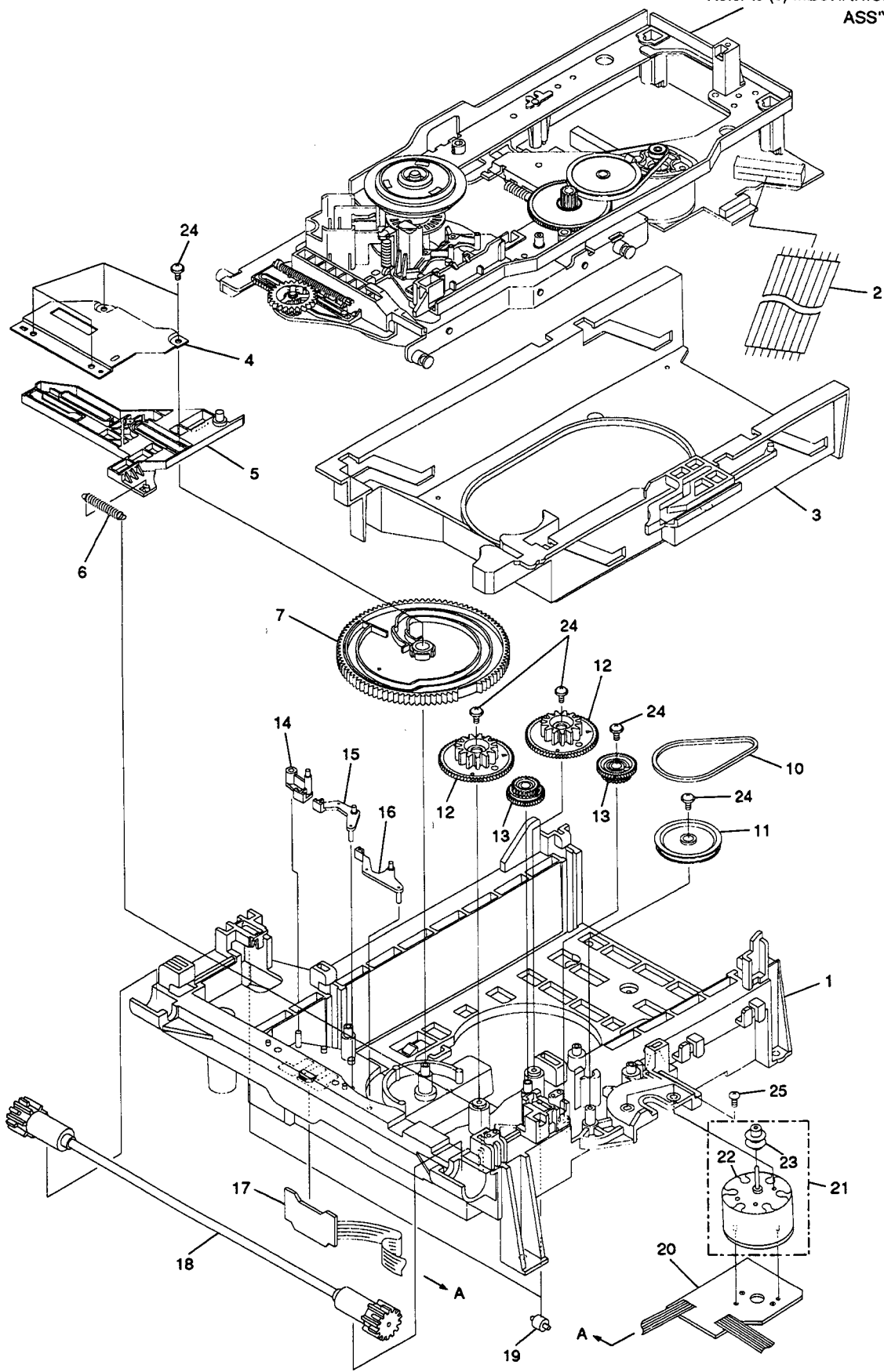
Refer to (6) MECHANISM ASSY

A

B

C

D



**(6) MECHANISM ASS'Y**

**Parts List**

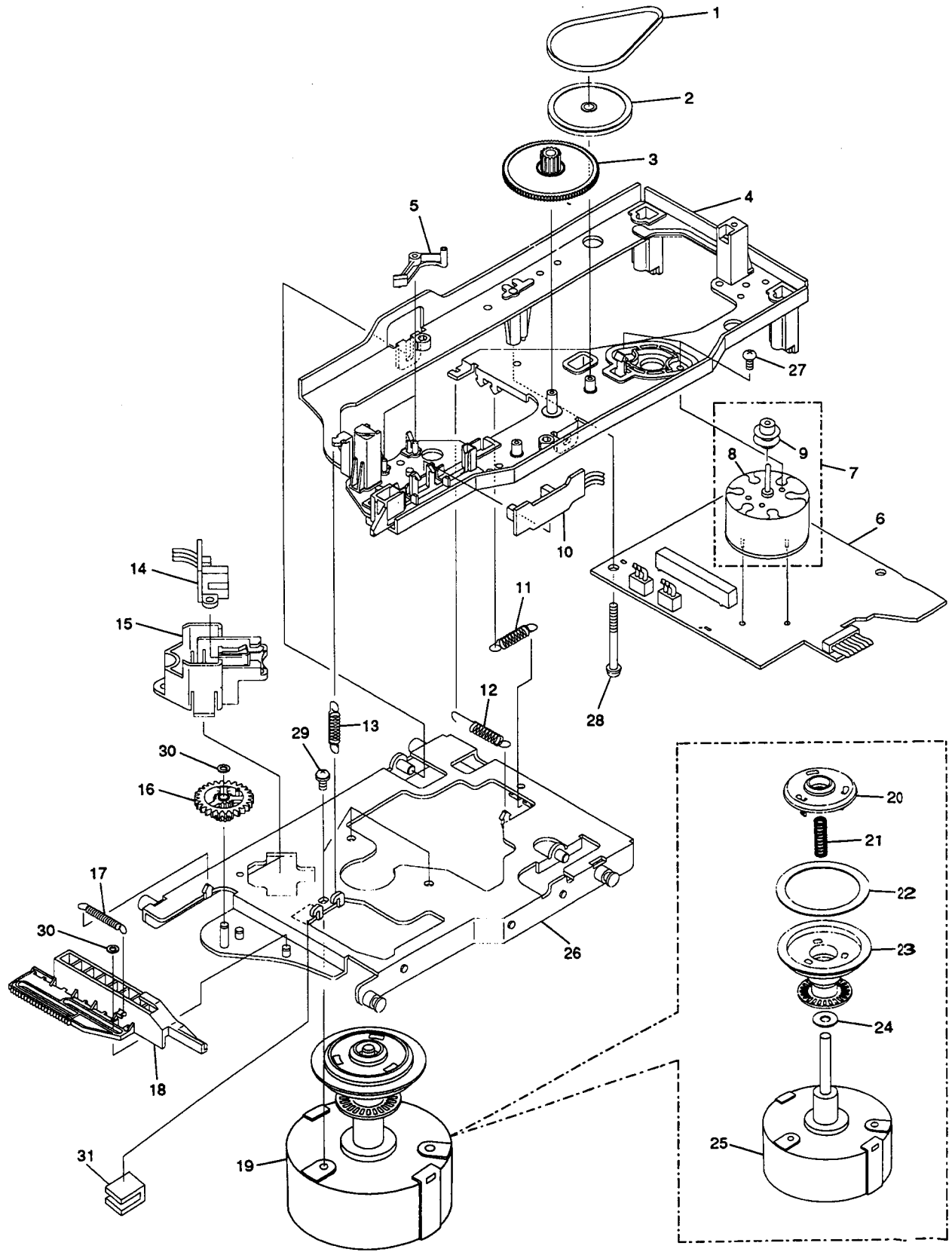
<b>Mark</b>	<b>No.</b>	<b>Description</b>	<b>Part No.</b>	<b>Mark</b>	<b>No.</b>	<b>Description</b>	<b>Part No.</b>
	1	CA belt	VEB1077		16	Y gear	VNL1501
	2	CA pulley (2)	VNL1496		17	Tilt cam spring	VBH1189
	3	CA gear	VNL1497		18	Tilt cam	VNL1502
	4	Tilt base	VNL1499		19	Spindle motor Ass'y	DXA1637
	5	CA-SW lever	VNL1498		20	Centering hab	VNL1174
NSP	6	CAMB Ass'y	DWX1359		21	Centering spring	VBH1083
	7	CRG motor Ass'y	VXX1261	NSP	22	Rubber sheet	VEB1103
NSP	8	Slider motor	VXM1033	NSP	23	Turn table Ass'y	VXA1283
	9	CA pulley (1)	VNL1197	NSP	24	Oil stopper washer	VBF1002
NSP	10	PKSB Ass'y	DWX1358	NSP	25	Spindle motor	DXM1057
	11	Radial spring	VBH1201		26	Motor base	VNE1803
	12	Thrust spring	VBH1200		27	Screw	BMZ26P040FMC
	13	Tilt tension spring	VBH1187		28	Screw	ABZ30P300FMC
NSP	14	FG Ass'y	DWX1357		29	Screw	PMA30P050FMC
	15	FG base	VNL1503		30	Washer	WT26D060D025
					31	Mini clamp	DEC1679

A

B

C

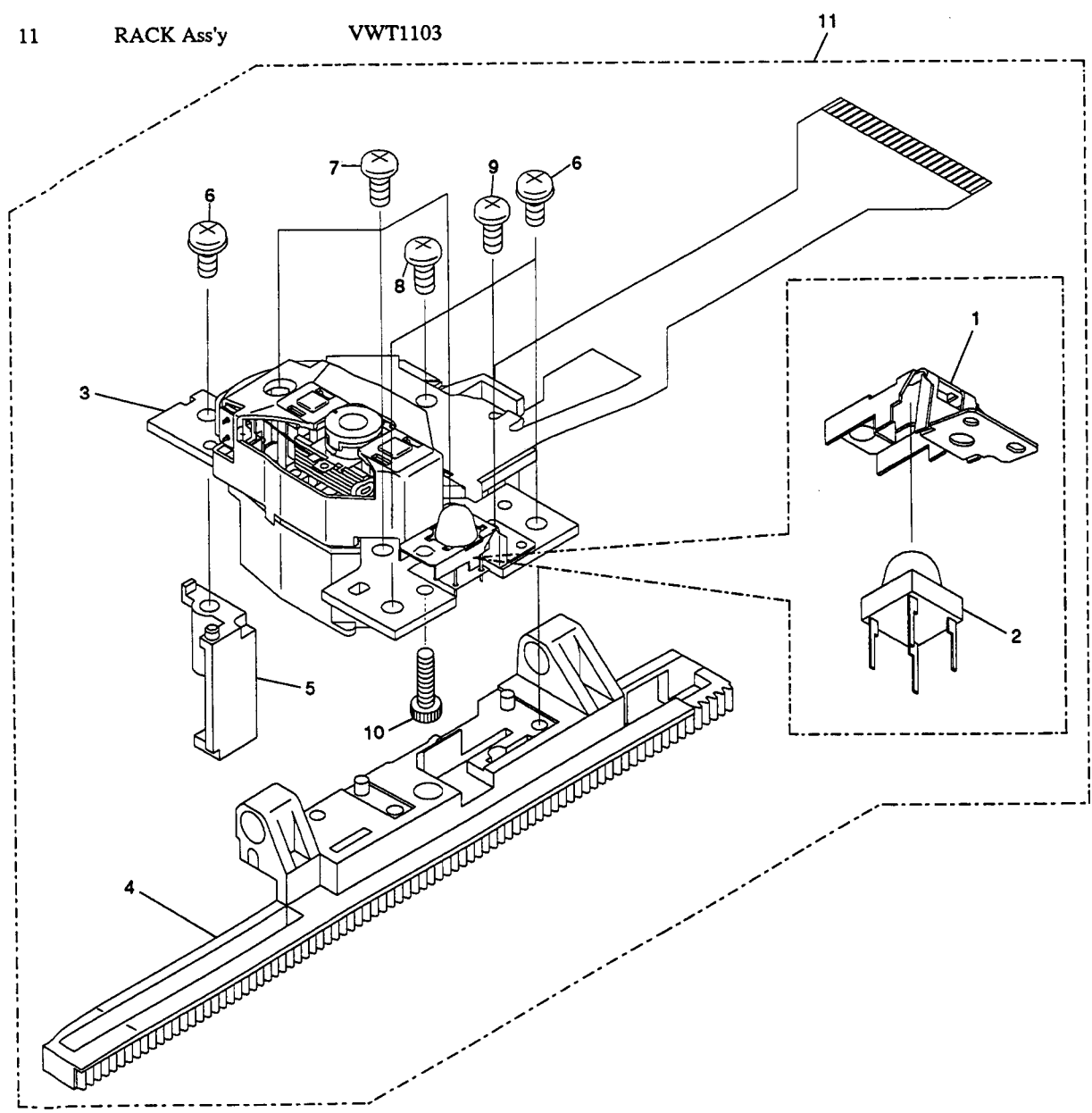
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**(7) RACK ASS'Y**

**Parts List**

Mark No.	Description	Part No.
NSP 1	Sensor stay	VBK1036
NSP 2	Tilt sensor	SG-302
NSP 3	Pickup Ass'y	VWY1030
4	Rack	VNL1495
5	Tan. base	VNL1494
6	Screw	PBB26P080FMC
7	Screw	PMA20P060FMC
8	Screw	PMA20P080FMC
9	Screw	PMH20P040FMC
10	Screw	SMZ20H100FZK
11	RACK Ass'y	VWT1103



A

B

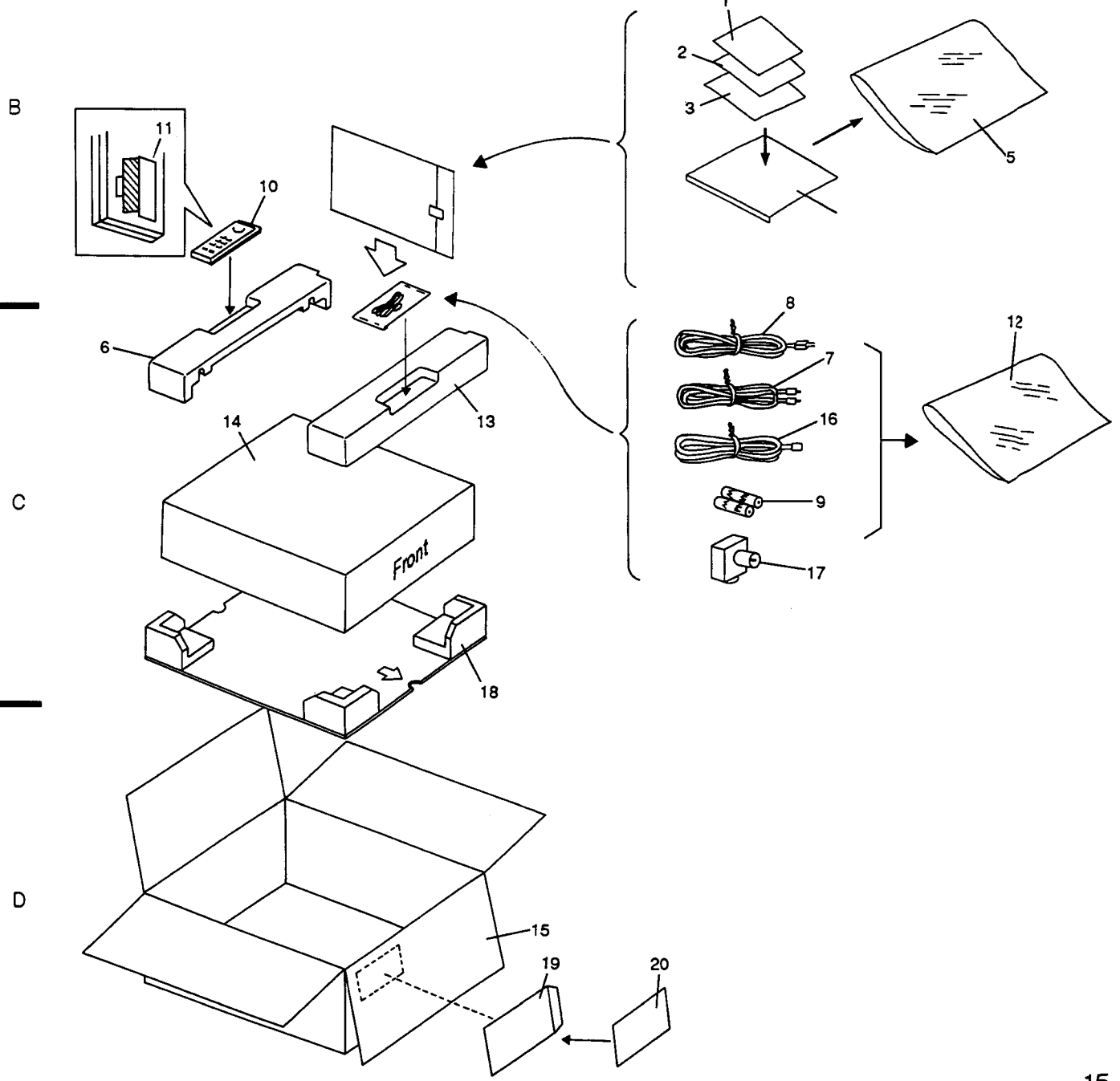
C

D

(8) PACKING

Parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
NSP 1	Bar cord sheet	DRY1129	11	Battery cover	DNK1958
NSP 2	Caution card (UC)	VRM1026	NSP 12	Vinyl bag	Z21-029
NSP 3	Caution card	VRR1009	13	Top pad (F)	DHA1265
4	Operating Instructions (English)	DRB1145	14	Mirror mat	VHL1006
NSP 5	Vinyl bag	VHL-014	15	Packing case	DHG1516
6	Top pad (R)	DHA1266	16	RF antenna cable	VDE1001
7	Cord with plug	VDE-055	17	Antenna adaptor	VKX-020
8	Video cable	VDE-056	18	Under pad	DHA1258
NSP 9	Battery (R03, AAA)	VEM-013	NSP 19	Follow card bag	DHL1011
10	Remote control unit	DXR1006	NSP 20	Follow up card	DRY1032



### 3. 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):

- LOSB Ass'y  
 SW1 :LOADING POS SW1  
 SW2 :LOADING POS SW2  
 SW3 :LOADING POS SW3
- PKSB Ass'y  
 SW4 :PARK OUT  
 SW5 :PARK IN
- FLKY Ass'y  
 S202:PLAY  
 S203:PAUSE  
 S204:STOP OPEN/CLOSE  
 S205:STEP FWD  
 S206:DISPLAY  
 S207:SKIP REV  
 S208:STEP REV  
 S209:SKIP FWD
- PSWB Ass'y  
 S201:POWER ON/OFF
- MDRB Ass'y  
 S301: FUNCTION SWITCH  
 1:AUTO START SELECT  
   ON : AUTO START ON  
   OFF: AUTO START OFF  
 2:BAUD RATE SELECT  
   ON : 1.2kbps  
   OFF: 4.8kbps  
 3:BACKGROUND VIDEO SELECT  
   ON : SQ BLACK  
   OFF: SQ BLUE  
 4:NC

### NOTE FOR PCB CONNECTION DIAGRAM

P.C.B. pattern diagram indication	Corresponding part symbol	Part name	P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor			Ceramic capacitor
		FET			Mylar capacitor
		Diode			Styrol capacitor
		Zener diode			Electrolytic capacitor (Non polarized)
		LED			Electrolytic capacitor (Nonleak)
		Varactor			Electrolytic capacitor (Polarized)
		Tact switch			Electrolytic capacitor (Polarized)
		Inductor			Power capacitor
		Coil			Semi-fixed resistor
		Transformer			Resistor array
		Filter			Resistor
		Resonator			Thermistor

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with □ shows negative terminal.
4. The diode marked with ○ shows cathode side.
5. The transistor terminal marked with □ shows emitter.

3.1 OVERALL WIRING DIAGRAM

A

B

C

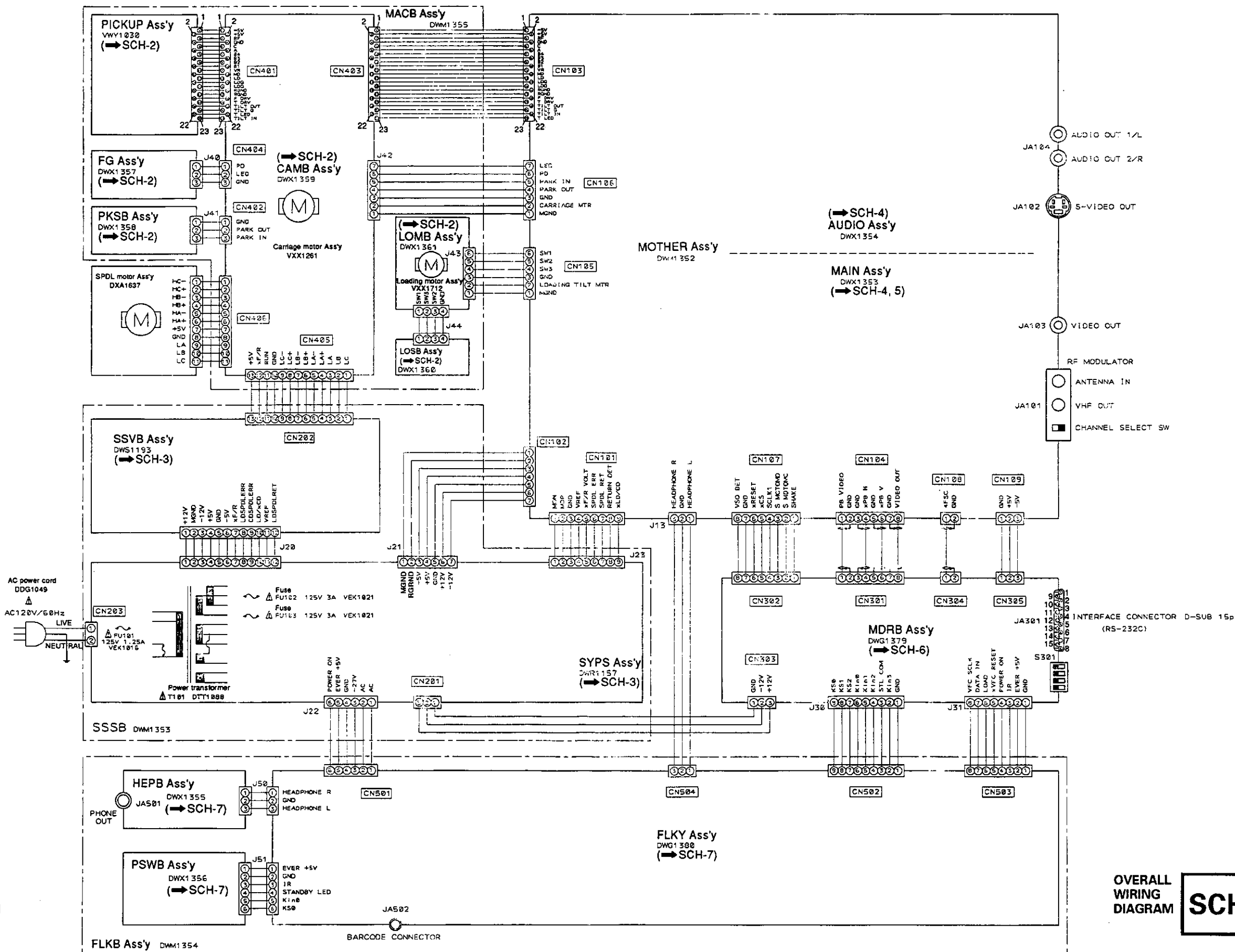
D

A

B

C

D



**SCH-1** OVERALL WIRING DIAGRAM

OVERALL WIRING DIAGRAM **SCH-1**

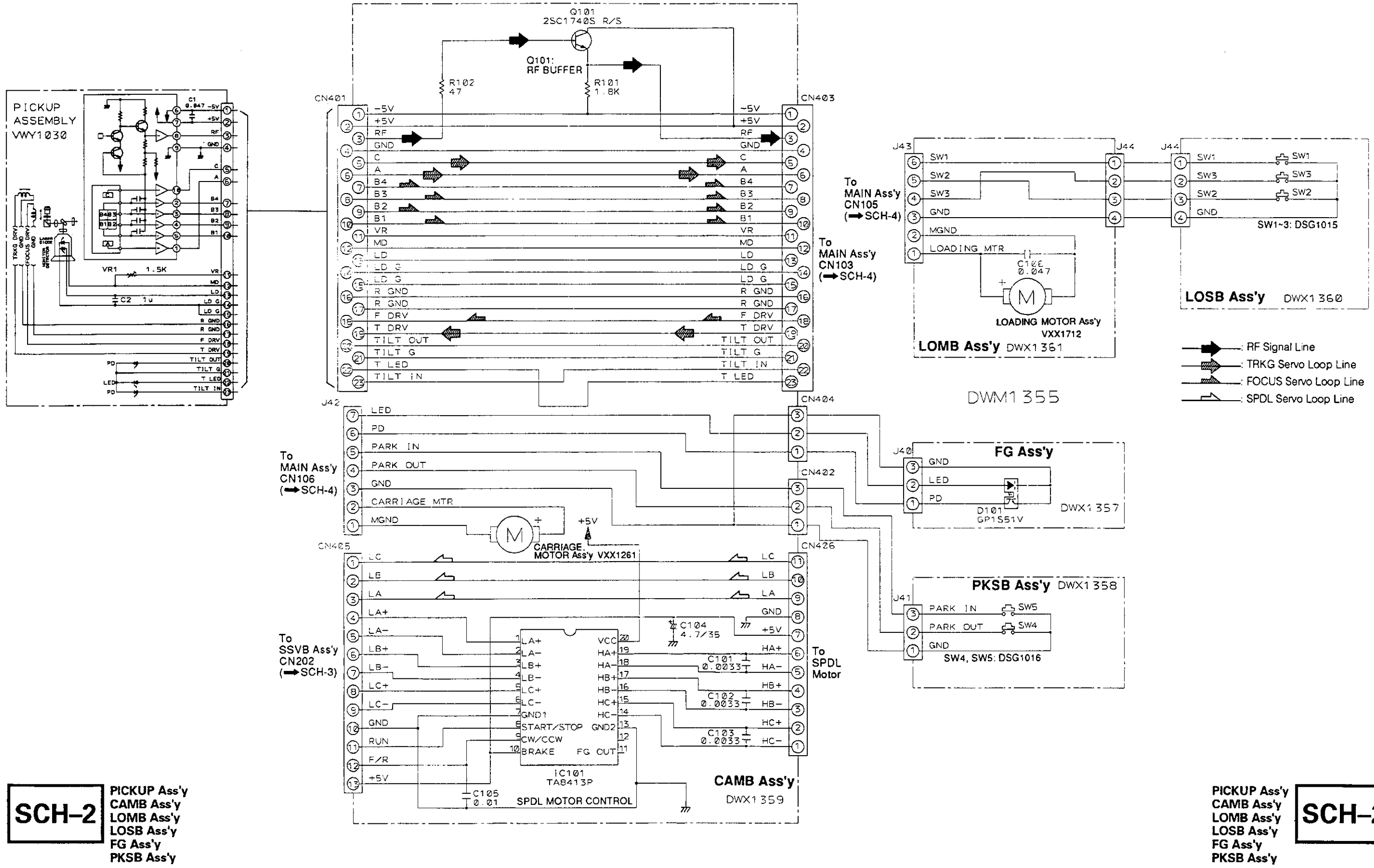
3.2 PICKUP, CAMB, LOMB, LOSB, FG and PKSB ASS'Y

A

B

C

D



A

B

C

D

**SCH-2**  
 PICKUP Ass'y  
 CAMB Ass'y  
 LOMB Ass'y  
 LOSB Ass'y  
 FG Ass'y  
 PKSB Ass'y

**SCH-2**  
 PICKUP Ass'y  
 CAMB Ass'y  
 LOMB Ass'y  
 LOSB Ass'y  
 FG Ass'y  
 PKSB Ass'y



A

A

B

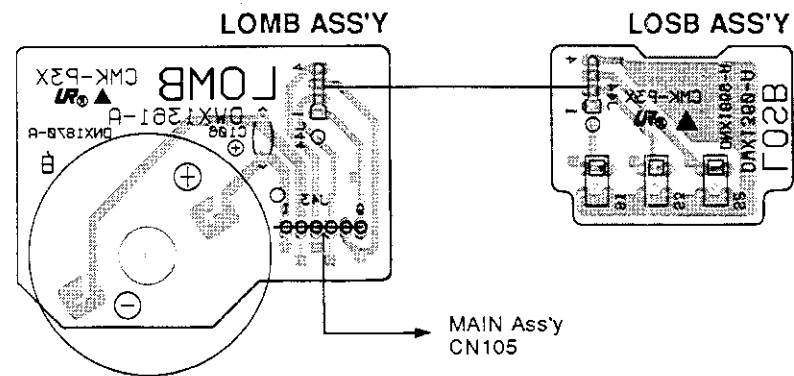
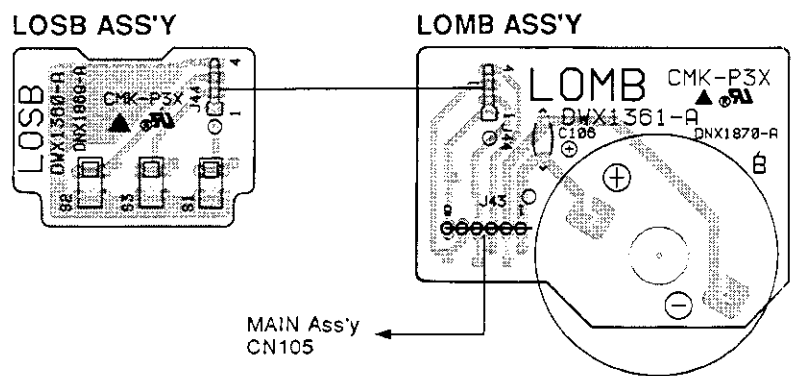
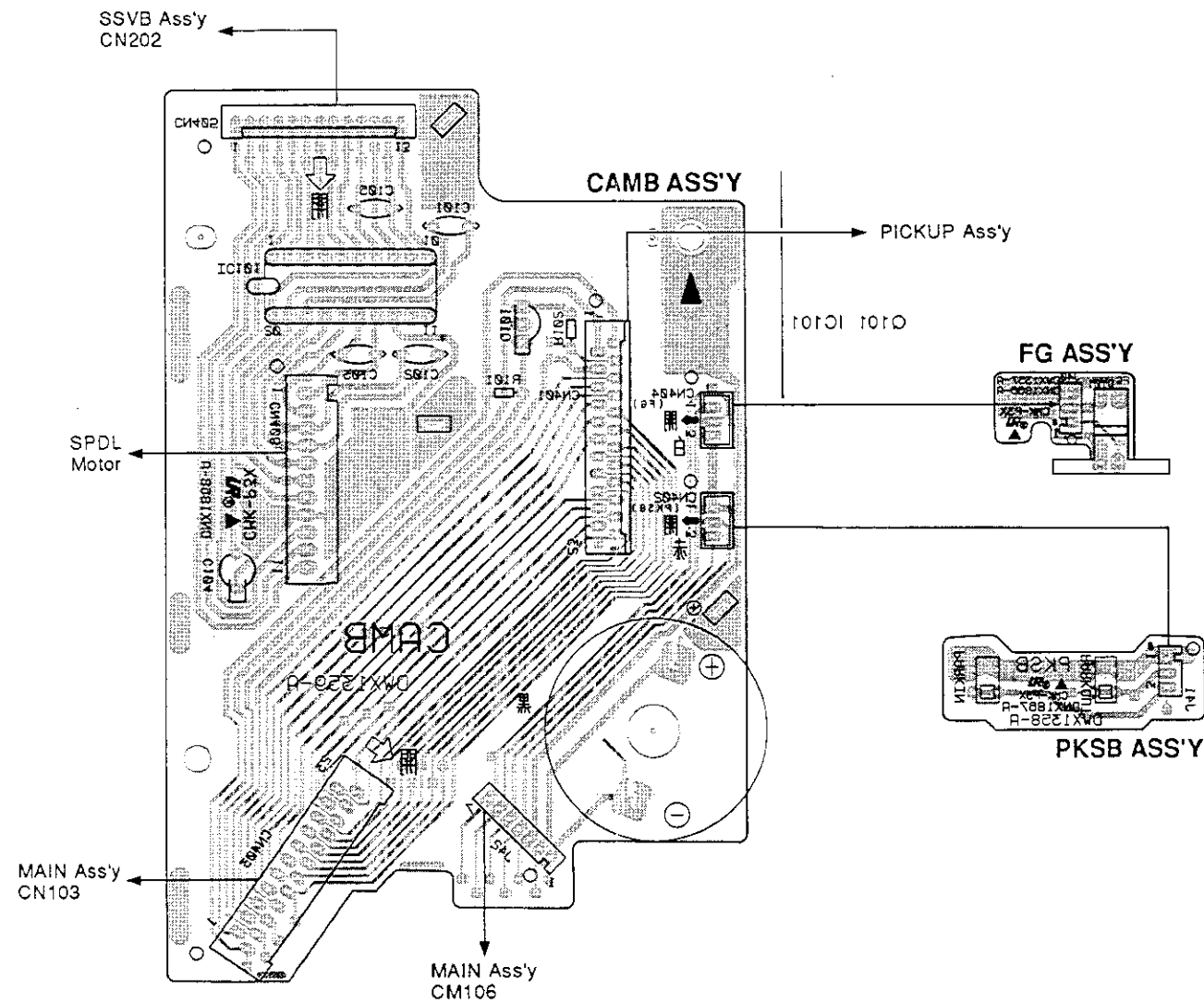
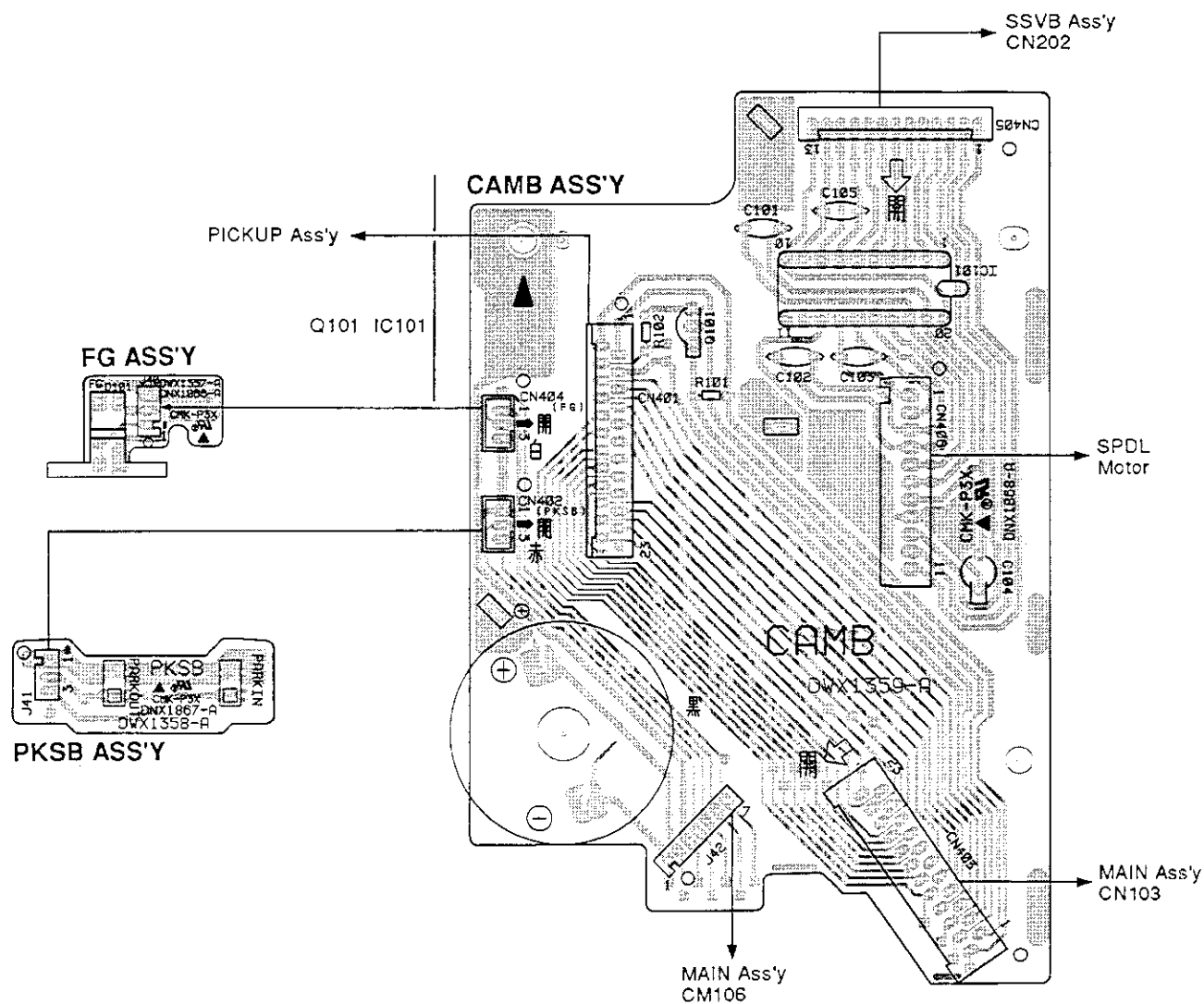
B

C

C

D

D



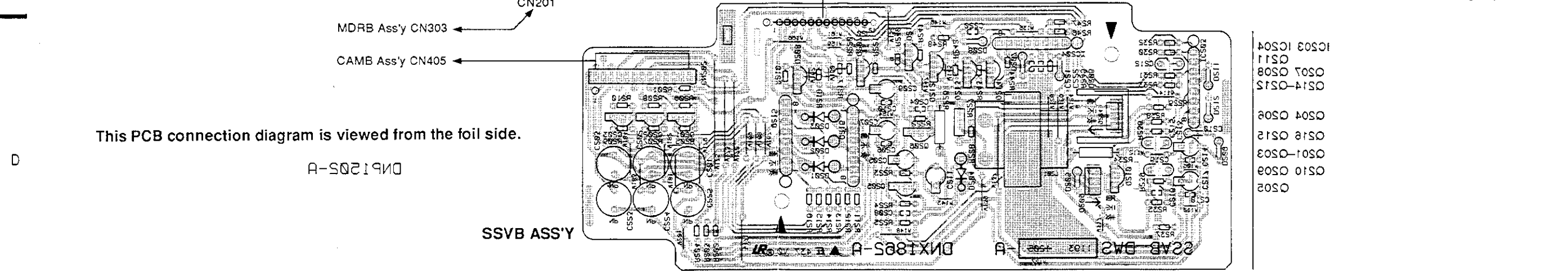
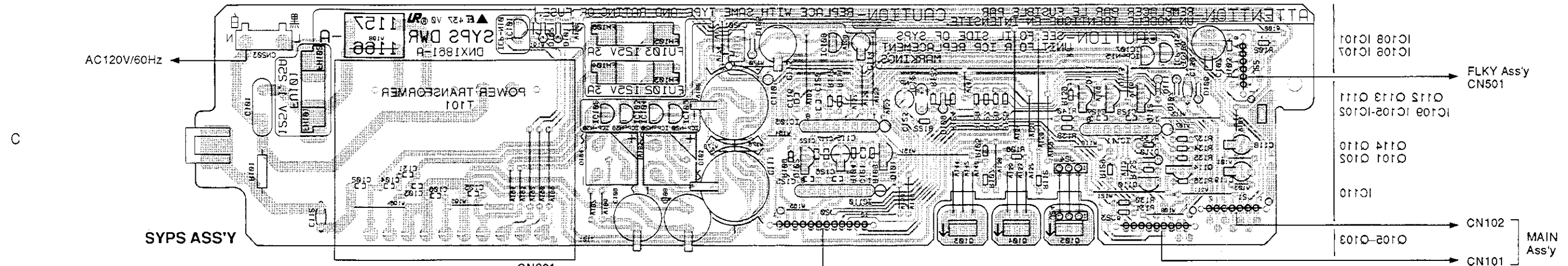
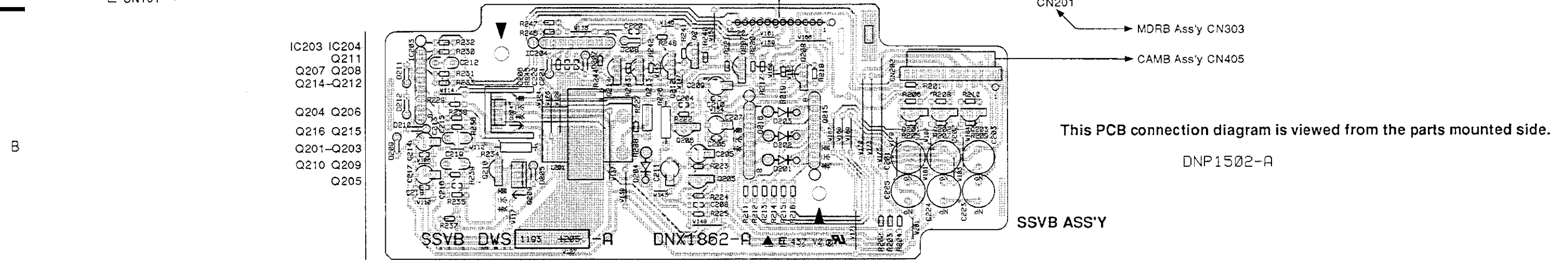
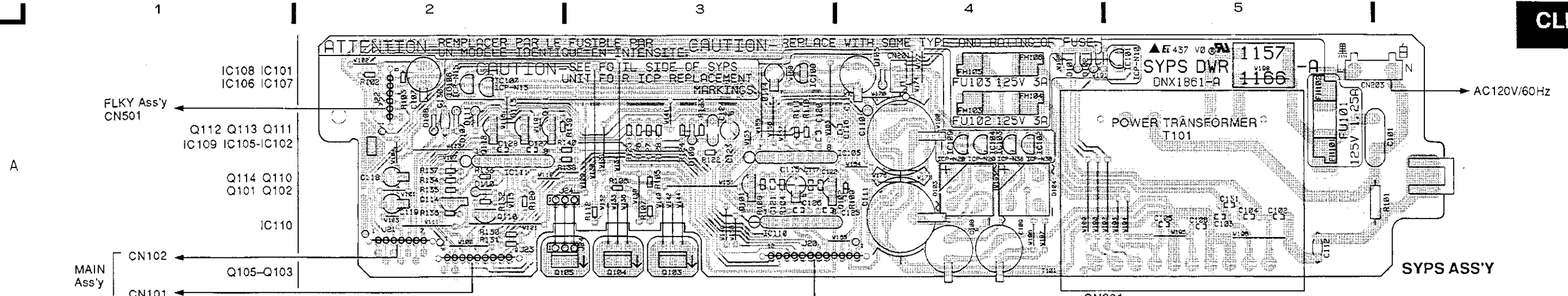
DNP1504-A

DNP1504-A

This PCB connection diagram is viewed from the parts mounted side.

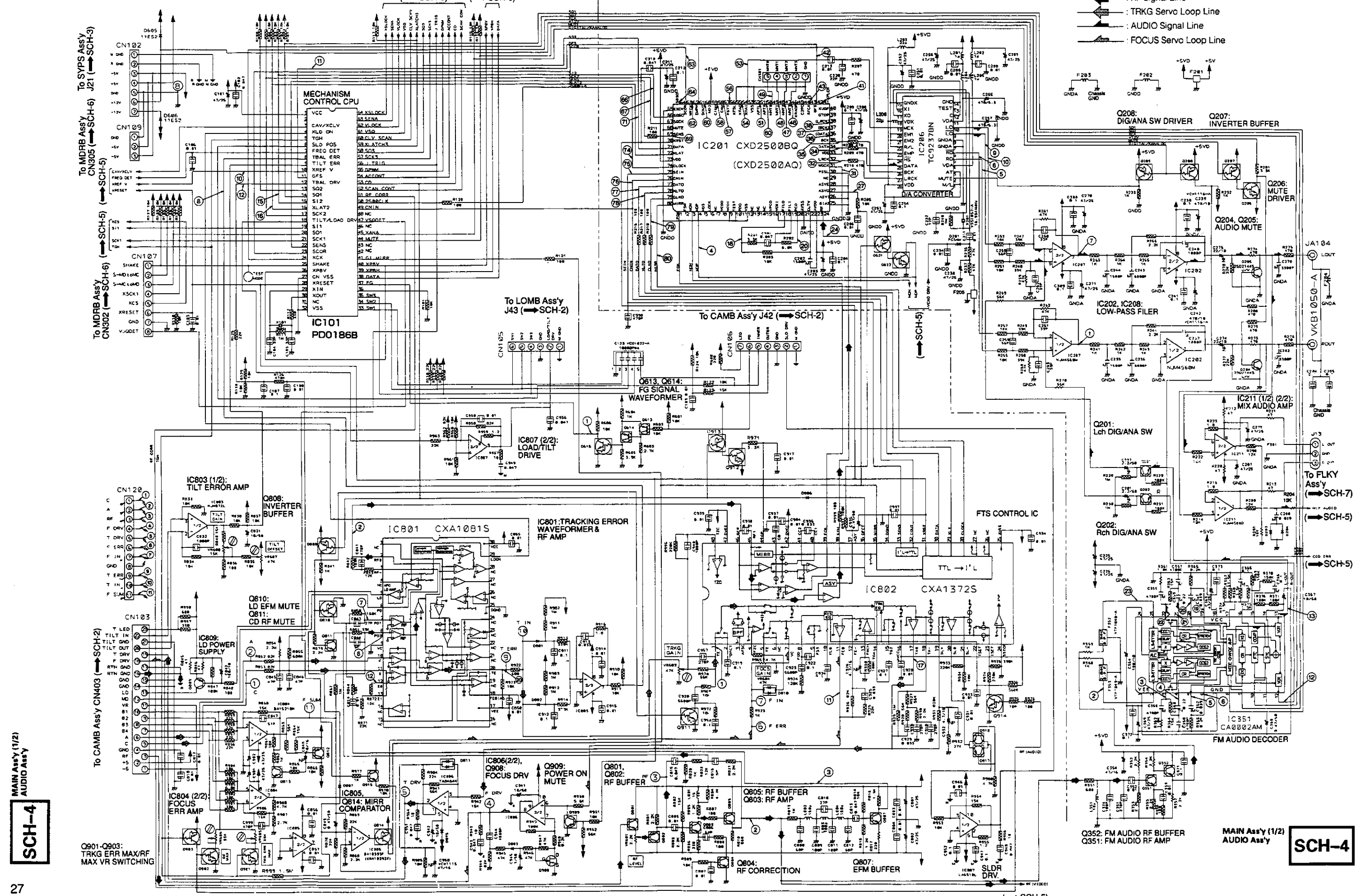
This PCB connection diagram is viewed from the foil side.





3.4 MAIN ASS'Y (1/2; FTS and CONT section) and AUDIO ASS'Y MAIN Ass'y (1/2) ← → Audio Ass'y DWX1353 DWX1354

- RF Signal Line
- TRKG Servo Loop Line
- AUDIO Signal Line
- FOCUS Servo Loop Line



MAIN Ass'y (1/2) AUDIO Ass'y SCH-4

MAIN Ass'y (1/2) AUDIO Ass'y SCH-4



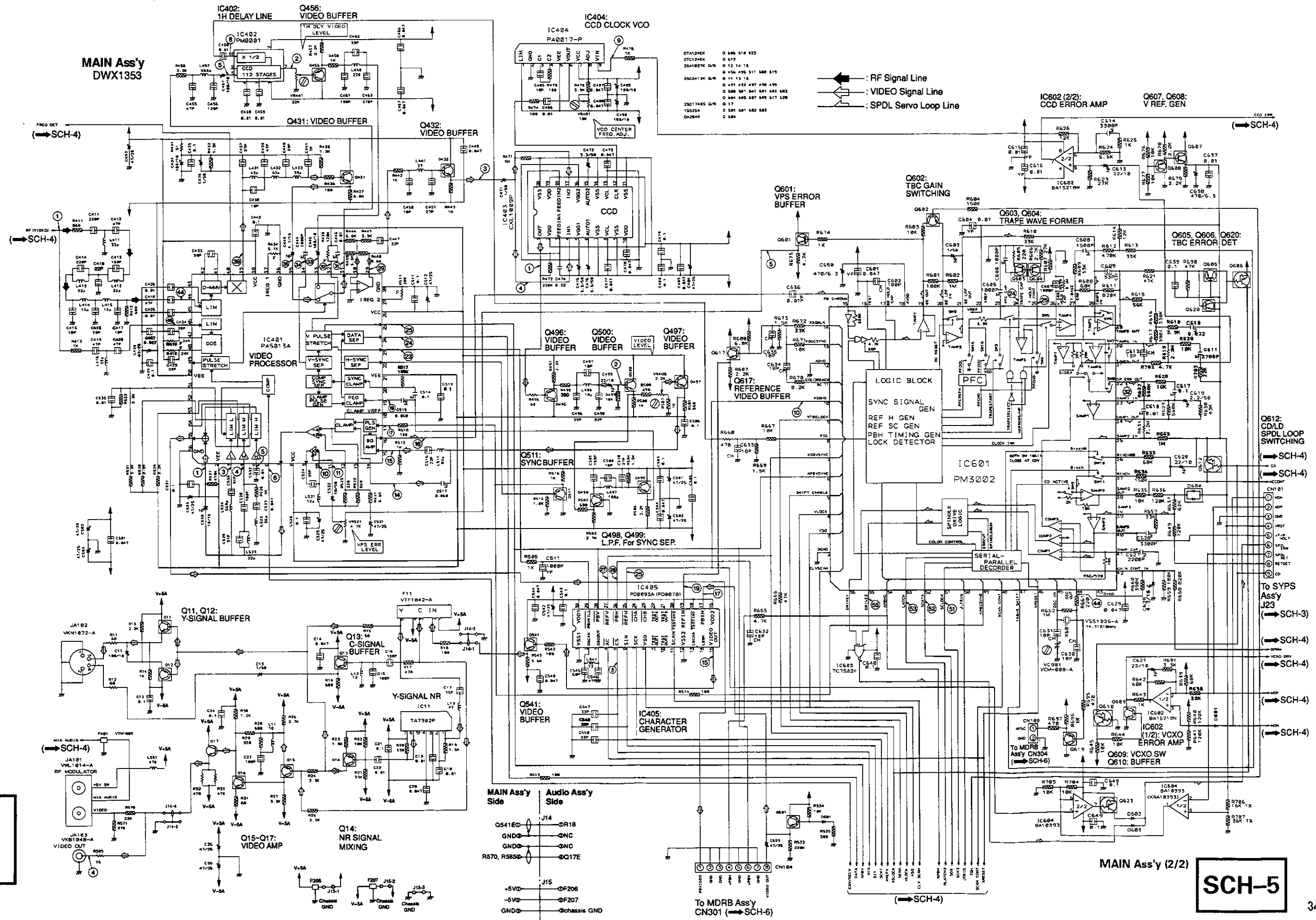








3.5 MAIN ASS'Y (2/2; VIDEO and TBC section)



MAIN Ass'y (2/2)  
SCH-5

MAIN Ass'y (2/2)  
SCH-5



**WAVEFORMS AND VOLTAGES  
VIDEO AND TBC SECTION**

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

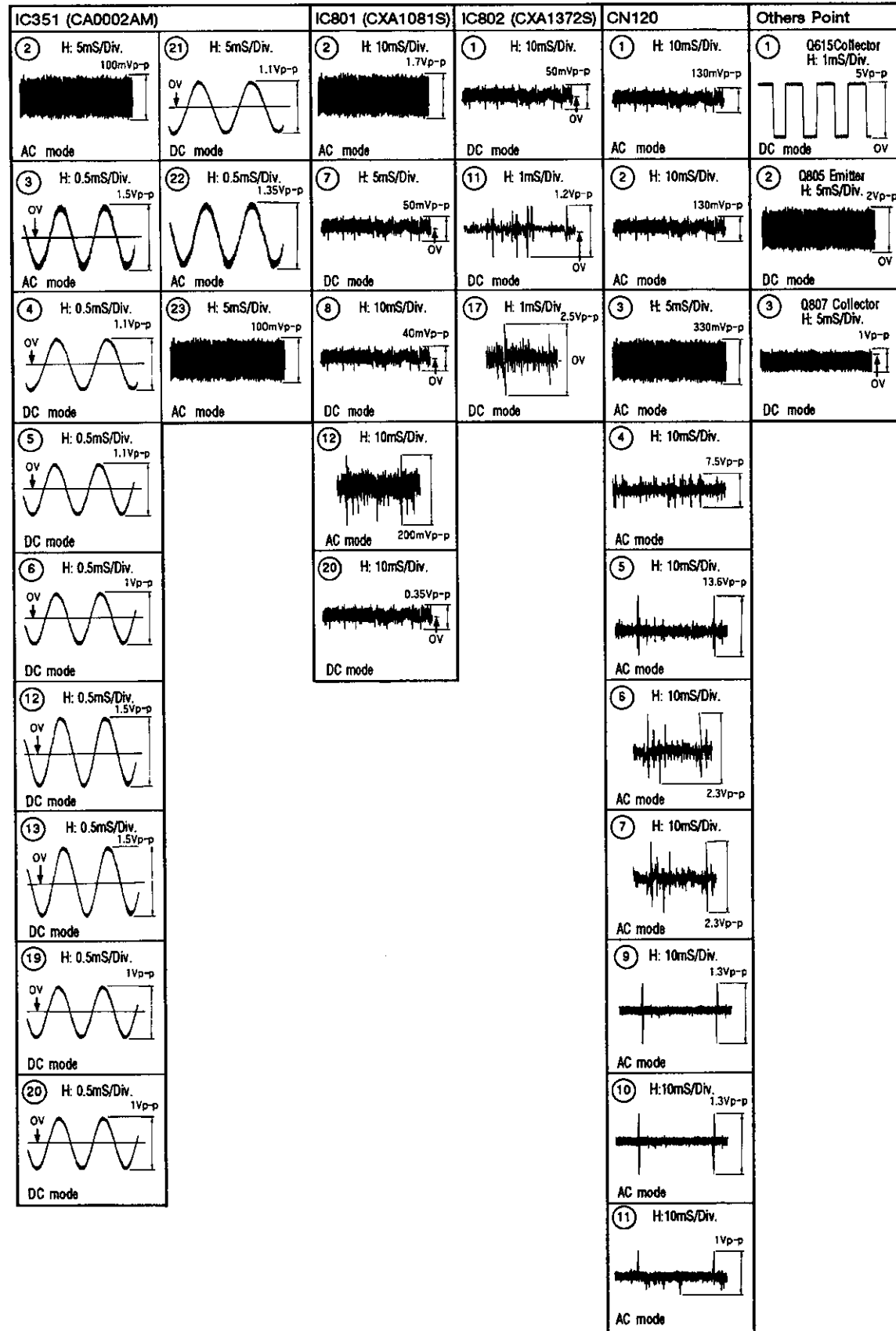
IC401 (PA5013A)			IC402 (PM0001)	IC405 (PD0093A)	IC601 (PM3002)	Others Point
①	⑬	③③	②	⑤	⑩	① RF (Between R411 and R413) Range approx. H: 2mS/div 2Vp-p
③	⑰	③④	⑤	⑮	⑲	② Lead wire of C499 1.25Vp-p
④	⑲	③⑤	⑧	⑰	⑳	③ Q432 Emitter 1.25Vp-p
⑤	⑳	③⑨	⑱	⑲	㉕	④ VIDEO OUT terminal (75Ω terminated) 1.0Vp-p
⑥	㉔	④④	IC403 (CXL1009P)			⑤ O601 Emitter 300mVp-p
⑩	㉕	④⑥	①	㉕	③②	
⑪	㉙		④	㉖	④④	
⑭	③①		IC404 (PA0017-P)			
⑮	③②		⑨		⑤②	
					⑤③	
					⑤⑤	

**FTS AND AUDIO SECTION**

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

IC101 (PD0186B)		IC201 (CXD2500BC)				IC206 (TC9237BN)	
⑧	④	③⑥	④⑨	⑥②	⑦⑥	⑤, ⑩	
⑩	⑱	③⑦	⑤①	⑥③	⑦⑦	⑥, ⑨	
⑪	㉒	③⑧	⑤①	⑥④	⑦⑧		
⑫	㉔	④①	⑤③	⑥⑥	⑦⑨	①, ⑦	
⑮	㉗	④②	⑤④	⑥⑦	⑧①		
⑮	③①	④③	⑤⑥	⑥⑧			
	③②	④⑥	⑤⑦	⑥⑨			
	③④	④⑦	⑤⑧	⑥⑩			
	③⑤	④⑧	⑤⑩	⑥⑮			

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



Note: Waveforms and voltages are at the PLAY mode.  
IC201 (CXD2500BQ)

Pin No.	Voltage [V]	Pin No.	Voltage [V]	Pin No.	Voltage [V]	Pin No.	Voltage [V]	Pin No.	Voltage [V]	Pin No.	Voltage [V]
1	4.8	15	0	29	0	43	*	57	*	71	*
2	0	16	4.8	30	0	44	0	58	*	72	5
3	0	17	0	31	*	45	4.8	59	5	73	5
4	*	18	*	32	*	46	*	60	*	74	*
5	0	19	2.4	33	4.8	47	*	61	5	75	*
6	4.8	20	*	34	*	48	*	62	*	76	*
7	—	21	0	35	*	49	*	63	*	77	*
8	4.8	22	2.3	36	*	50	*	64	*	78	*
9	0	23	4.8	37	*	51	*	65	0	79	*
10	0	24	*	38	*	52	0	66	*	80	*
11	0	25	0	39	0	53	*	67	*		
12	0	26	0	40	4.8	54	*	68	0		
13	0	27	*	41	*	55	0	69	*		
14	0	28	0	42	*	56	*	70	5		

\*: Refer to waveforms

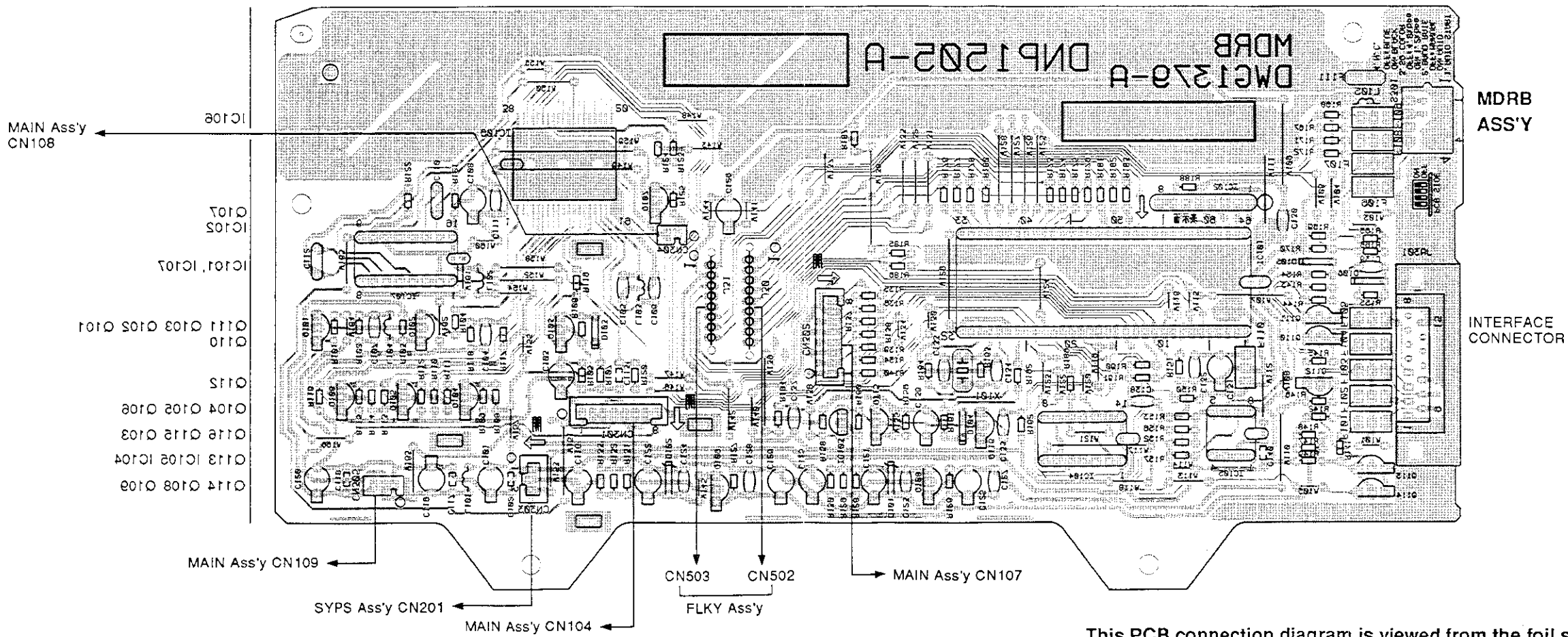
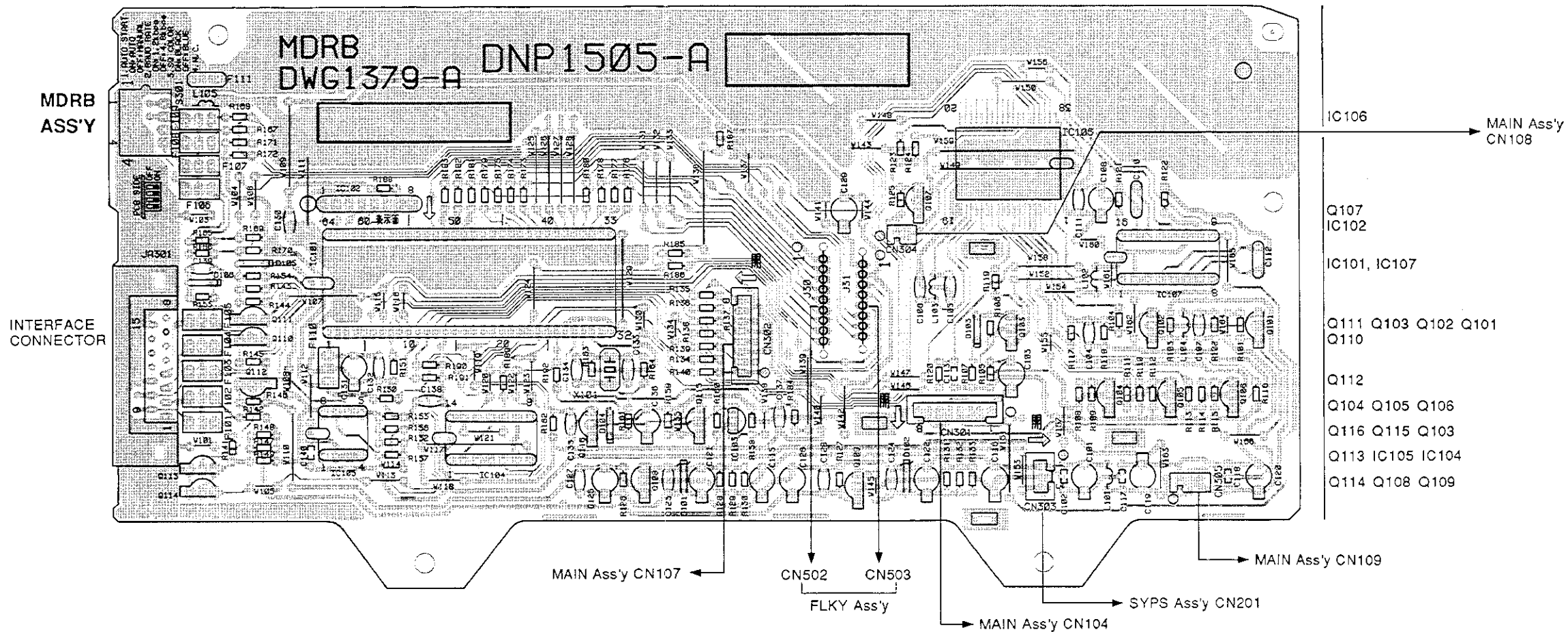
Note: Waveforms and voltages are at the PLAY mode.  
IC351 (CA0002AM)

Pin No.	Voltage [V]	Pin No.	Voltage [V]
1	-5	13	*
2	*	14	-0.6
3	*	15	-0.6
4	*	16	0
5	*	17	0
6	*	18	+5
7	0	19	*
8	0	20	*
9	0	21	*
10	+5	22	*
11	+2	23	*
12	*	24	-2.2

\*: Refer to waveform



This PCB connection diagram is viewed from the parts mounted side.

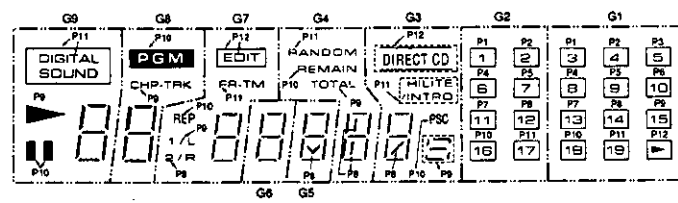


This PCB connection diagram is viewed from the foil side.

3.7 FLKY, HEPB and PSWB ASS'Y

FL Display (V201: VAW 1026)

\* ANODE GRID ASSIGNMENT



\* PIN ASSIGNMENT

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Assignment	F	F	F	NP	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	NP	NP
Pin No.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Assignment	NP	NP	NP	NP	NP	G6	G6	G7	G6	G5	G4	G3	G2	G1	NP	F	F	F

F: Filament G1-G6: Grid P1-P12: Anode NP: No pin

\* ANODE GRID ASSIGNMENT AND PIN ASSIGNMENT

	G6	G6	G7	G4	G5	G4	G3	G2	G1
P1	P1	P1	P1	P1	P1	P1	P1	1	9
P2	P2	P2	P2	P2	P2	P2	P2	2	8
P3	P3	P3	P3	P3	P3	P3	P3	3	7
P4	P4	P4	P4	P4	P4	P4	P4	4	6
P5	P5	P5	P5	P5	P5	P5	P5	5	5
P6	P6	P6	P6	P6	P6	P6	P6	6	4
P7	P7	P7	P7	P7	P7	P7	P7	7	3
P8	P8	P8	P8	P8	P8	P8	P8	8	2
P9								9	1
P10									
P11									
P12									

A

A

B

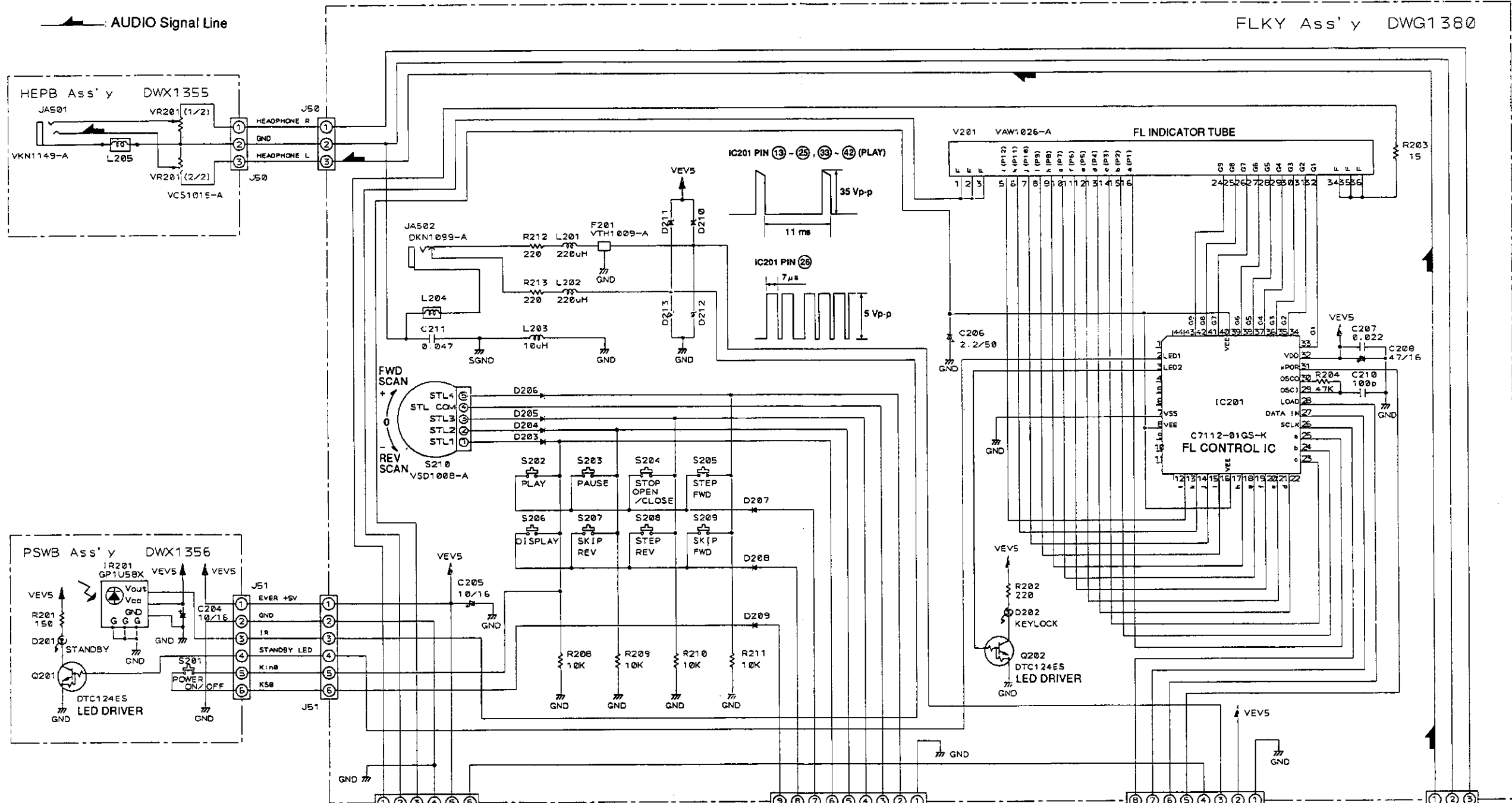
B

C

C

D

D



**SCH-7**  
FLKY Ass'y  
HEPB Ass'y  
PSWB Ass'y

FLKY Ass'y  
HEPB Ass'y  
PSWB Ass'y  
**SCH-7**

CNS01 AC AC -27V GND EVER +5V POWER ON  
To SYPS Ass'y J22 (→SCH-3)

D203-209 1SS254  
D210-213 HZ55-GE82  
S201-209 RSG1030-B  
D201, SLH-340CF04  
D202 SLH-56DC3H-S/T  
L204, L205 VTH1024-A

To MDRB Ass'y J30 (→SCH-6)

CNS02 K50 K51 K52 K1n0 K1n1 K1n2 K1n3 GND

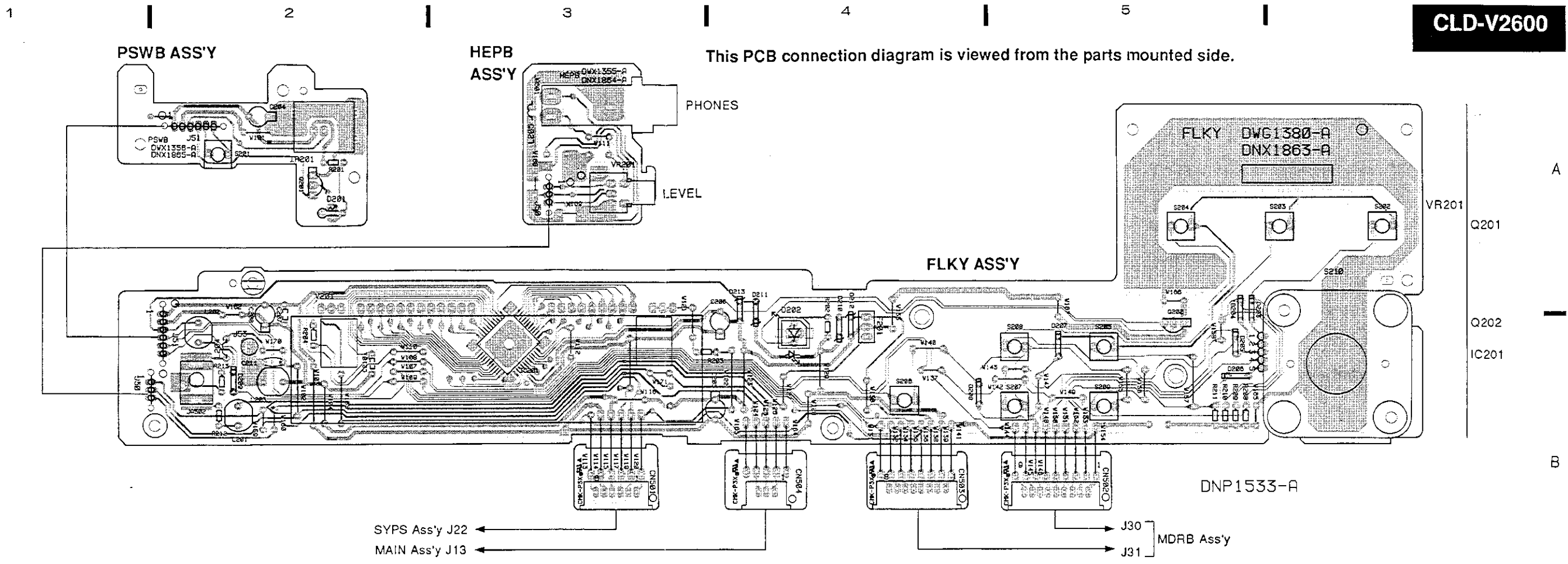
To MDRB Ass'y J31 (→SCH-6)

CNS03 VFC SCLK DATA IN LOAD VFC RESET POWER ON IR EVER +5V GND

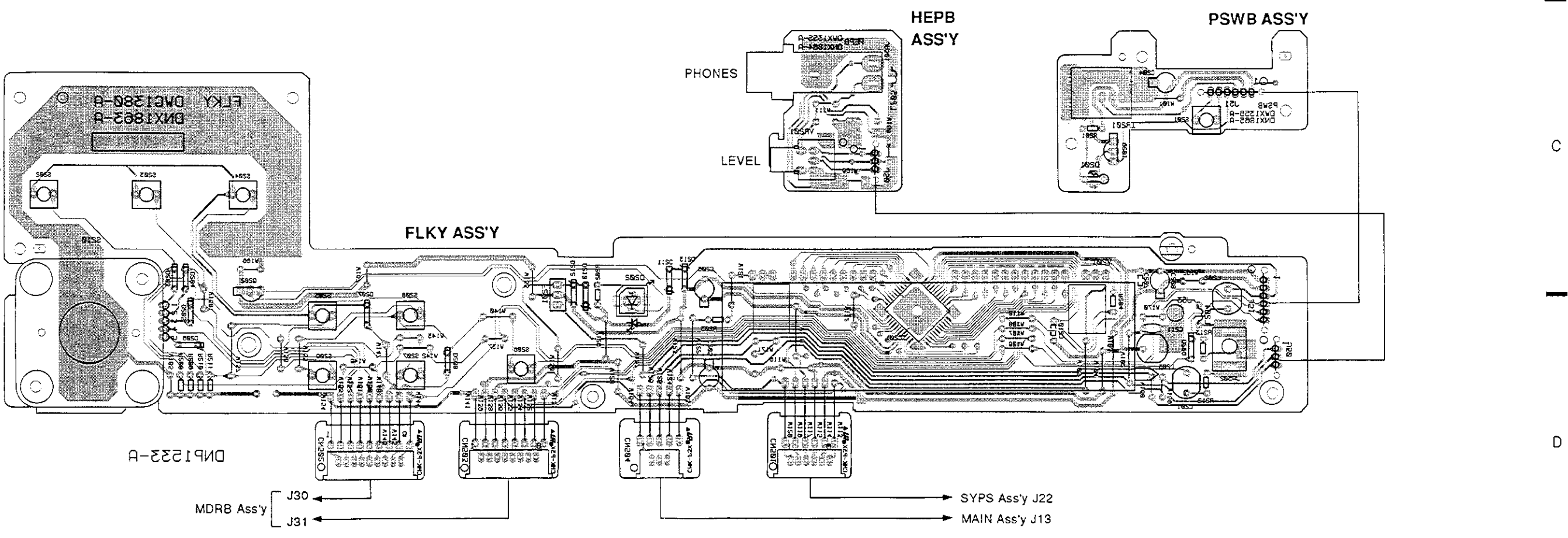
CNS04 HEADPHONE L GND HEADPHONE R

To MAIN Ass'y J13 (→SCH-4)

This PCB connection diagram is viewed from the parts mounted side.



This PCB connection diagram is viewed from the foil side.





### 4. PCB PARTS LIST

**NOTES:**

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  $\Delta$  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%).

560Ω → 56 × 10<sup>1</sup> → 561..... RD1/8PM  $\Delta$   $\Delta$   $\Delta$  J

47kΩ → 47 × 10<sup>3</sup> → 473..... RD1/4PS  $\Delta$   $\Delta$   $\Delta$  J

0.5Ω → 0R5..... RN2H  $\Delta$   $\Delta$   $\Delta$  K

1Ω → 010..... RS1P  $\Delta$   $\Delta$   $\Delta$  K

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

5.62kΩ → 562 × 10<sup>1</sup> → 5621..... RN1/4PC  $\Delta$   $\Delta$   $\Delta$  F

Mark No.	Description	Part No.	Mark No.	Description	Part No.
<b>LIST OF PCB ASSEMBLIES</b>					
NSP	MDRB Ass'y	DWG1379	L104	LAU220J	
	MOTHER Ass'y	DWM1352	L105	VTH1024	
	—MAIN Ass'y	DWX1353	F101-F109	VTH1009	
	—AUDIO Ass'y	DWX1354	F110	DTH1157	
			F111	DTF1003	
NSP	SSSB Ass'y	DWM1353	<b>SWITCH</b>		
	—SYPS Ass'y	DWR1157	S301	DSX1035	
	—SSVB Ass'y	DWS1193	<b>CAPACITORS</b>		
NSP	FLKB Ass'y	DWM1354	C101,C103,C116,C119,C120,C122	CEAL470M16	
NSP	—FLKY Ass'y	DWG1380	C102,C117,C118,C132,C140	CKPUYF103Z25	
NSP	—HEPB Ass'y	DWX1355	C104,C123,C124,C127,C128,C138	CKCYF103Z50	
NSP	—PSWB Ass'y	DWX1356	C105	CCCCH220J50	
	MACB Ass'y	DWM1355	C106,C133,C134	CCCCH180J50	
NSP	—FG Ass'y	DWX1357	C107	CCCCH060D50	
NSP	—PKSB Ass'y	DWX1358	C108,C115,C121,C125,C126,C131	CEAS470M25	
NSP	—CAMB Ass'y	DWX1359	C110	CQMA182J50	
NSP	—LOSB Ass'y	DWX1360	C111	CKCYF223Z50	
NSP	—LOMB Ass'y	DWX1361	C112	CQMA102J50	
			C113	CKPUYB101K50	
			C129	CEAS101M10	
			C130	CKCYF473Z50	
			C135	CKPUYF223Z25	
			C136	CEAS100M16	
			C137	CGCYX104M16	
			C139	CCCCH680J50	
			<b>RESISTORS</b>		
			All Resistors	RD1/6PM $\Delta$ $\Delta$ $\Delta$ J	
			<b>OTHERS</b>		
			CN301	8P CONNECTOR	B8B-PH-K
			CN302	8P CONNECTOR	B8B-PH-K
			CN303	3P CONNECTOR	B3B-PH-K
			CN304	CONNECTOR Ass'y	DKP2638
			CN305	CONNECTOR Ass'y	DKP2639
			J30	9P JUMPER WIRE	D20PDY0940G
			J31	8P JUMPER WIRE	D20PDY0840G
			JA301	D-SUB SOCKET 15P	DKN1052
			X101	CRYSTAL RESONATOR	DSS1010
				8P CABLE HOLDER	51048-0800
				9P CABLE HOLDER	51048-0900
				PCB BINDER	VEF1040
				SOCKET	VKH-029

**COILS AND FILTERS**

L101	LAU100J
L102	LAU101J
L103	LAU8R2J

Mark No.	Description	Part No.	Mark No.	Description	Part No.
<b>MAIN Ass'y SEMICONDUCTORS</b>					
IC101		PD0186B	C103,C106,C108,C109,C425,C426,C458-C460,C486,C532,C535,C604,C615,C616,C636,C637,C803-C805,C807,C814,C817,C818,C850,C855,C856,C857,C904,C914,C915,C917,C928,C931,C933,C934,C937-C939,C946,C950,C997		CKSQYF103Z50
IC401		PA5013A			
IC402		PM0001			
IC403		CXL1009P			
IC404		PA0017-P			
IC405		PD0093A	C104,C105,C447,C462,C547,C549,C550,C609		CCSQCH330J50
IC601		PM3002			
IC602,IC804		BA15218N	C107,C429,C435,C442,C479,C480,C503,C505,C506,C511,C513,C526,C531,C543,C639,C640,C648,C649,C911,C912,C919,C922,C924,C927,C947,C952,C959		CKSQYF104Z25
IC603		TC7S02F			
IC604		BA10393			
IC801		CXA1081S			
IC802		CXA1372S			
IC803		NJM072L			
IC805		BA10393F	C123 (10000pF)		VCG1022
IC806		TA8464K	C410,C516		CCSQCH220J50
			C411,C414		CCSQCH221J50
			C412,C418-C420,C439,C455,C546,C845,C846		CCSQCH470J50
IC807		LA6510L			
			C413,C509		CCSQCH151J50
			C415,C417,C485,C612,C630,C631,C633-C635		CCSQCH180J50
			C416,C433,C440,C496,C524		CCSQCH390J50
			C423,C424		CCSQCH200J50
Q431,Q432,Q497-Q501,Q541,Q601-Q605,Q607,Q609,Q617,Q620,Q801,Q803-Q805,Q807,Q811,Q813,Q915,Q918		2SC2412K			
Q456,Q496,Q511,Q608,Q613,Q614,Q619,Q802,Q812,Q909,Q917		2SA1037K	C434,C445,C457,C489,C490,C842		CEAS101M10
			C436,C471,C945		CEAS010M50
			C437,C451,C510,C810,C843		CCSQCH270J50
			C438,C450,C497,C500,C632		CCSQCH100D50
			C441		CCSQCH070D50
			C443,C628,C926,C932		CEJANP4R7M16
			C444,C605,C606		CFTXA102J50
			C446,C618		CQMA103J50
			C456		CCSQCH121J50
			C461,C528,C602,C809,C811		CCSQCH101J50
Q809		2SA1399			
Q908		2SK184			
D501,D601-D603,D801-D803,D806,D807		1SS254	C463,C918,C930,C957		CCSQCH271J50
D604,D810,D811		DA204K	C472,C475,C476		CEAS3R3M50
D605,D606,D805		11ES2	C474		CFTXA224J50
			C498		CCSQCH820J50
			C499,C613,C620,C621		CEANP220M10
<b>COILS AND FILTERS</b>					
L411,L416		LAU330J	C514,C617		CFTXA104J50
L412,L413,L523		LAU220J	C515,C517		CFTXA683J50
L414,L415,L521,L541		LAU120J	C522,C831,C941,C942		CEHAQ100M50
L431		LAU430J	C529,C536		CCSQCH910J50
L432		LAU620J	C530,C848		CEANP100M16
L433		LAU390J			
L441		LAU270J	C541		CKSQYF102Z50
L457,L524		LFA561J	C545,C806,C808,C812		CCSQCH680J50
L458		LFA221J	C551		CEAS102M10
L496		LAU180J	C553		CKSQYF223Z50
			C603		CEANP010M50
L497,L803		LAU181J			
L511		LAU820J	C607,C832,C940,C944		CKSQYB102K50
L522		LAU560J	C608		CFTXA152J50
L551		LFA471J	C610		CQMA223J50
L801		LAU150J	C611		CQMA272J50
			C614,C626		CFTXA332J50
L802,L804		LAU151J			
F401		VTH1009	C619		CEANP2R2M50
F206,F207		VTH-005	C627		CQMA222J50
			C638,C650		CEAS471M6R3
			C816,C844		CCSQCH050C50
			C841,C998,C999		CCSQCH471J50
<b>CAPACITORS</b>					
C101,C428,C452,C484,C501,C502,C512,C521,C523,C525,C533,C542,C582,C583,C801,C802,C901,C902		CEAS470M25	C847		CCSQCH510J50
			C849,C935		CEJAR47M50
			C913,C925,C929,C936		CKSQYB333K25
			C920,C923		CKSQYB562K50
			C958 (47μF)		VCH1115
C102,C427,C448,C466,C467,C473,C477,C478,C483,C487,C488,C504,C527,C544,C548,C581,C601,C629,C813,C815,C943,C948,C949,C951,C956		CKSQYF473Z25			
			VC901 (20pF)		VCM-008

Mark No.	Description	Part No.
<b>RESISTORS</b>		
R415,R416		RN1/6PQ2402F
R431		RD1/6PM510J
R434		RN1/6PQ5101F
R438		RN1/6PQ1203F
R496		RD1/6PM680J
R511		RN1/6PQ2002F
R585		RD1/6PM750J
R605,R817		RD1/6PM221J
R619,R631,R854		RD1/6PM225J
R668		RD1/6PM471J
R699		RD1/6PM825J
R845,R846		RD1/6PM470J
VR481		VRTB6VS103
VR608		VRTB6VS153
VR482,VR601		VRTB6VS222
VR441		VRTB6VS223
VR605,VR606		VRTB6VS333
VR521		VRTB6VS472
VR603,VR604,VR607		VRTB6VS473
Other Resistors		RS1/10S□□□□

**OTHERS**

CN101	9P JUMPER CONNECTOR	SBRK09S
CN102	7P JUMPER CONNECTOR	SBRK07S
CN103	23P CONNECTOR	HLEM23S
CN104	CONNECTOR Ass'y	DKP2637
CN105	6P JUMPER CONNECTOR	SBRK06S
CN106	7P CONNECTOR	B7B-PH-K
CN107	CONNECTOR Ass'y	DKP2636
CN108	2P CONNECTOR	B2B-PH-K
CN109	3P CONNECTOR	B3B-PH-K
CN120	11P TOP POST	B11P-SHF-1AA
CN121	5P TOP POST	B5B-EH
J10	9P JUMPER WIRE	D20PDD0915G
J14	CONNECTOR Ass'y	DKP2633
JA103	1P JACK	VKB1048
X101	CERAMIC RESONATOR (9.00MHz)	VSS1040
J15	CONNECTOR Ass'y	DKP2779
X601	CRYSTAL RESONATOR (14.31MHz)	VSS1026
	RF MODULATOR Ass'y	VWL1014
	9P CABLE HOLDER	51048-0900
	PCB BINDER	VEF1040
	SOCKET	VKH-029
	SCREW TERMINAL	VNE1841
	EARTH PLATE	VNF-091

**AUDIO Ass'y  
SEMICONDUCTORS**

IC11	TA7302P
IC201	CXD2500BQ
IC202,IC207	NJM4560M
IC206	TC9237BN
IC211	NJM4580D
IC351	CA0002AM
Q11,Q13,Q16,Q201,Q202,Q351,Q352	2SC2412K
Q12,Q14,Q15	2SA1037K
Q17	2SC1740S
Q204,Q205	2SD2144S
Q206	DTC124EK
Q207-Q209	DTA124EK
D201	FC54M
D203,D204	1SS254

Mark No.	Description	Part No.
<b>COILS AND FILTERS</b>		
L11		LAU180J
L12		LAU120J
L13		LAU470J
L201,L202,L204,L205		LAU010K
L203,L206		LAU220J
L351		LAU100J
F11		VTF1042
F201,F205-F207		VTH-005
F352		VTF1048
F353		VTF1049

**CAPACITORS**

C11		CEAS101M10
C12,C21,C24,C204,C209,C212,C238, C241,C254,C284,C285,C308,C309, C371-C373		CKSQYF104Z25
C13		CEAS010M50
C14,C20,C201,C310		CKSQYF473Z25
C15,C23,C374		CCSQCH101J50
C16		CCSQCH181J50
C17		CCSQCH150J50
C18,C19,C22,C206,C213,C234		CKSQYF103Z50
C25,C26,C203,C207,C208,C211, C225,C226,C230,C252,C253,C256, C270,C271,C279,C283,C363,C369 C251,C286,C288,C352,C353		CEAS470M25
C202,C235,C244		CKSQYF103Z50
C220		CFTXA152J50
C227,C281		CCSQCH220J50
C232		CEANP2R2M50
C236,C243		CCSQCH120J50
C237,C240		CFTXA682J50
C239,C242 (470µF/10V)		CFTXA102J50
C255,C257		VCH1116
C258,C259		CEAS471M6R3
C260-C263		CCSQCH560J50
C274,C275		CCSQCH390J50
C278,C282		CEANP220M10
C280,C361,C362		CFTXA332J50
C351		CFTXA393J50
C354		CCSQCH271J50
C355-C358		CEAL470M16
C359,C360		CQMA472J50
C364		CFTXA224J50
C365,C366		CEJA101M10
C367		CFTXA104J50
C368		CEHAQ100M50
		CEJAR47M50

**RESISTORS**

R32,R33		RD1/6PM471J
R212,R213,R220,R221		RD1/6PM470J
R259-R262		RD1/6PM473J
R269,R270		RD1/6PM563J
R273,R274		RD1/6PM471J
R11,R12		RD1/6PM680J
R291		RD1/6PM103J
R352,R354,R357		RD1/6PM222J
R359,R360		RD1/6PM102J
R361,R362		RD1/6PM182J
Other Resistors		RS1/10S□□□□

**OTHERS**

CN301	5P TOP POST	B5P-SHF
L205	FERRITE BEAD	VTH1024
J13	3P JUMPER WIRE	D20PDY0355G
JA102	4P SOCKET	VKN1072
JA104	2P JACK	VKB1050



Mark No.	Description	Part No.
X201	CRYSTAL RESONATOR (16MHz)	VSS1057
	3P CABLE HOLDER	51048-0300
	9P CABLE HOLDER	51048-0900
	PCB BINDER	VEF1040
	SCREW TERMINAL	VNE1841

**SYPS Ass'y  
SEMICONDUCTORS**

△	IC101	ICP-N10
△	IC102,IC103	ICP-N38
△	IC104,IC109	ICP-N20
△	IC105,IC110,IC111	BA15218N
△	IC106,IC107	ICP-N15
△	IC108	NJM78L05A
	Q101	2SC1740S
	Q102,Q114	2SA933S
△	Q103,Q104	2SB1185
△	Q105	2SD1762
	Q110	2SK184
	Q111-Q113	DTC124ES
△	D101,D105-D107	11ES2
	D102	MTZJ11B
△	D103,D104	S2VB20-F1
	D109	MTZ6.2B
	D110,D111	1SS254

**CAPACITORS**

△	C101 (10000pF)	RCG-009
	C102-C106,C120-C122,C131	CKPUYF223Z25
	C107	CEAS101M50
△	C108,C109 (3300μF/16V)	DCH1057
△	C110,C111 (4700μF/25V)	DCH1056
	C112	CGCYX473M25
	C113	CEAS102M16
	C114,C118,C119	CEJA470M10
	C115	CEJA101M10
	C116,C117,C125-C128	CKPUYF103Z25
	C123	CEANP2R2M50
	C124	CFTYA103J50
	C130	CKCYF223Z50

**RESISTORS**

△	R101	RD1/2PM225J
	Other Resistors	RD1/6PM□□□J

**OTHERS**

△	J20	12P JUMPER WIRE	D20PDD1210G
△	J21	7P JUMPER WIRE	D20PDY0750G
△	J22	6P JUMPER WIRE	D20PDY0630G
△	J23	9P JUMPER WIRE	D20PDY0950G
△	J24	PARALLEL CORD	DXWW0320E
	6P CABLE HOLDER	51048-0600	
	7P CABLE HOLDER	51048-0700	
	9P CABLE HOLDER	51048-0900	
	12P CABLE HOLDER	51048-1200	
△	CONNECTOR Ass'y	DKP2634	
	PCB BINDER	VEF1040	
△	P.S. TERMINAL	VKC-019	
△	FUSE HOLDER	VKR1001	
△	SCREW TERMINAL	VNE1646	

**SSVB Ass'y  
SEMICONDUCTORS**

	IC203,IC204	BA15218N
	Q201-Q203	2SA1048
	Q204,Q209	2SD1267
	Q205	2SC1627
	Q206,Q208,Q214	2SC1740S
	Q207,Q213	2SA933S
	Q210-Q212	DTC124ES
	Q215	STA303A
	Q216	STA302A
	D201-D203	S3V10-4002P7.5
	D204	S2K20
	D205	11ES2
	D206-D212	1SS254

**COIL**

L201 (1.2μH)	VTT1016
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**CAPACITORS**

C201-C203,C223-C225	CEANP220M50
C204	CKPUYB681K50
C205	CEAS470M50
C206,C210,C214,C218,C221,C222	CKPUYF103Z25
C207,C209,C213,C217	CEAS220M25
C208	CKPUYB471K50
C211	CEAS3R3M50
C212	CQMA103J50
C215	CQMA183J50
C216	CKPUYB331K50
C219	CQMA473J50
C220	CKPUYB101K50

**RESISTORS**

R226	RS1LMF2R7J
R227 (0.47Ω)	DCN1013
R228,R229	RN1/6PQ1001F
R230-R233	RN1/6PQ7501F
R234	RS1LMF3R3J
Other Resistors	RD1/6PM□□□J

**OTHERS**

12P CABLE HOLDER	51048-1200
CONNECTOR Ass'y	DKP2635

**FLKY Ass'y  
SEMICONDUCTORS**

IC201	C7112-01GS-K
Q202	DTC124ES
D203-D209	1SS254
D202	SLH-56DC3H-S/T
D210-D213	HZS5.6EB2

**COILS AND FILTER**

L201,L202	LFA221J
L203	LFA100K
L204	VTH1024
F201	VTH1009

**SWITCHES**

S202-S209	RSG1030
S210	VSD1008

Mark No.	Description	Part No.
<b>CAPACITORS</b>		
C205		CEAL100M16
C206		CEAL2R2M50
C207		CKPUYF223Z25
C208		CEJA470M16
C210		CKPUYB101K50
C211		CGCYX473K25
<b>RESISTORS</b>		
All Resistors		RD1/6PM□□□J
<b>OTHERS</b>		
CN501	6P JUMPER CONNECTOR	52151-0610
CN502	3P JUMPER CONNECTOR	52151-0910
CN503	6P JUMPER CONNECTOR	52151-0810
CN504	3P JUMPER CONNECTOR	52151-0310
JA502	MINIATURE JACK	DKN1099
V201	FL TUBE 3P CABLE HOLDER 6P CABLE HOLDER EARTH LUG Ass'y FL SPACER	VAW1026 51048-0300 51048-0600 DDA1034 VEB1125
<b>HEPB Ass'y</b>		
<b>COIL</b>		
L205		VTH1024
<b>RESISTOR</b>		
VR201 (0.5KB)		VCS1015
<b>OTHERS</b>		
J50	3P JUMPER WIRE	DDD1078
JA501	JACK	VKN1149
	3P CABLE HOLDER	51048-0300
<b>PSWB Ass'y</b>		
<b>SEMICONDUCTORS</b>		
Q201		DTC124ES
D201		SLH-34DCF04
<b>SWITCH</b>		
S201		RSG1030
<b>CAPACITOR</b>		
C204		CEAS100M16
<b>RESISTORS</b>		
All Resistors		RD1/6PM□□□J
<b>OTHERS</b>		
J51	6P JUMPER WIRE 6P CABLE HOLDER REMOTE SENSOR	D20PDD0610G 51048-0600 GP1U58X
<b>FG Ass'y</b>		
<b>SEMICONDUCTOR</b>		
D101		GP1S51V
<b>OTHER</b>		
	HOUSING Ass'y	VKP1950

Mark No.	Description	Part No.
<b>PKSB Ass'y</b>		
<b>SWITCH</b>		
S4,S5		DSG1015
<b>OTHER</b>		
	HOUSING Ass'y	VKP1951
<b>CAMB Ass'y</b>		
<b>SEMICONDUCTORS</b>		
IC101		TA8413P
Q101		2SC1740S
<b>CAPACITORS</b>		
C101-C103		CKCYB332K50
C104		CEAL4R7M35
C105		CKCYF103Z50
<b>RESISTORS</b>		
All Resistors		RD1/6PM□□□J
<b>OTHERS</b>		
CN401	2P TOP CONNECTOR	VKN1073
CN402	3P CONNECTOR	B3B-PH-K
CN403	FFC CONNECTOR	HLEM23R
CN404	3P CONNECTOR	B3B-PH-K
CN405	15P CONNECTOR	B13B-PH
	CONNECTOR Ass'y	DKP2564
	PCB BINDER	VEF1040
	HOUSING Ass'y	VKP1949
<b>LOSB Ass'y</b>		
<b>SWITCHES</b>		
S1-S3		DSG1015
<b>LOMB Ass'y</b>		
<b>CAPACITPOR</b>		
C106		CGCYX473M25
<b>OTHERS</b>		
J43	6P JUMPER WIRE	D20PWY0615G
J44	4P JUMPER WIRE	D20PWW0415G

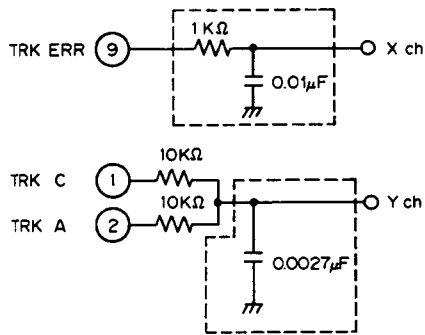
# 5. ADJUSTMENTS

## 5.1 PRELIMINARIES

### ● JIGS FOR ADJUSTMENT

- CD test disc (STD-901 or STD-902)
- LD test disc (GGV1003)
- (-) Screwdriver (medium)
- (-) Screwdriver (small)
- Hexagonal wrench driver (straight type, size: 3 mm)
- Resistors (10 kΩ × 2, 47 kΩ)
- Dual-trace oscilloscope (with delay)
- AF oscillator
- Frequency counter
- Digital voltmeter
- TV monitor
- Low-pass filter

Use the low-pass filters below in the coarse centering adjustment 2. and fine centering adjustment 6. when the S/N of the waveform is hard to observe.



### ● RACK ASSEMBLY DURING CENTERING ADJUSTMENT

The S-IN position (without hitting the mechanism stopper) of the rack assembly during centering adjustment is indicated below.

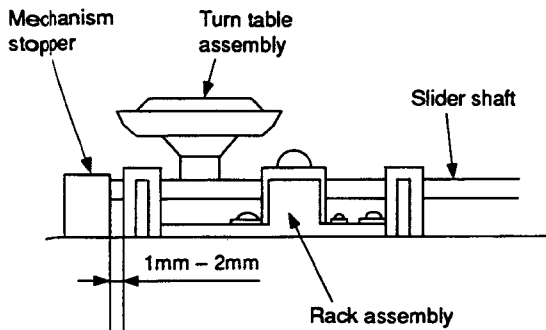


Fig. 1 Right side view

### ● ADJUSTMENT LOCATIONS

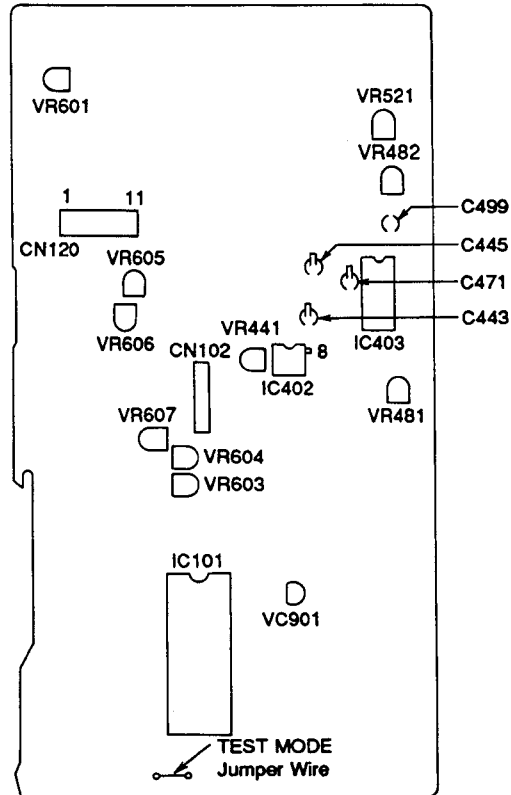
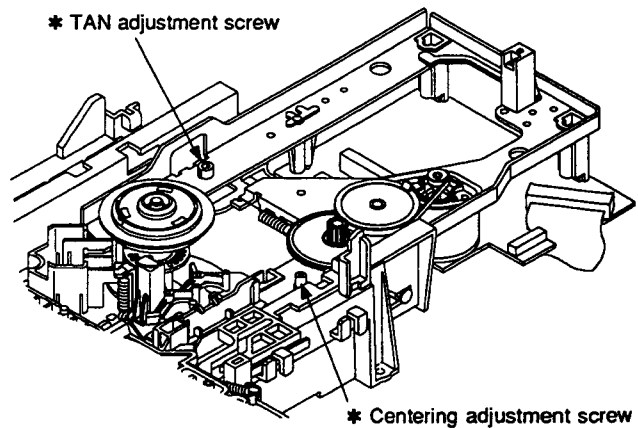


Fig. 2 MAIN assembly section



\* : As the adjustment range of both the TAN and centering adjustment screws is only ±90° from the center, do not turn the screws beyond this range.

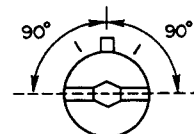


Fig. 3 TILT base section

● TEST MODE

1) Activating the Test Mode

1. While power is ON, connect the Test mode jumper wire (Fig. 2) to the GND for about one second.
2. After checking whether the FL display device is fully lit, disconnect the Test mode jumper wire from GND.

2) Canceling the Test Mode

1. Turn the power OFF.

● 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 Open	TRK- OFF
TRK Servo Open	▶ PLAY	TRK Servo Close	TRK- ON
TILT Neutral	+ MULTI-SPEED	TILT Servo Close	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;"> <div style="border: 1px solid black; padding: 2px; display: inline-block;">+10</div>  ↓  <div style="display: flex; justify-content: space-around; width: 100px;"> <span style="border: 1px solid black; padding: 2px;">0</span> to <span style="border: 1px solid black; padding: 2px;">9</span> </div>  ↓  <div style="border: 1px solid black; padding: 2px; display: inline-block;">▶ PLAY</div> </div>	<p>Sets to SEARCH Lead Address Input mode.</p> <p>Designates the SEARCH lead address through keys 0 to 9.</p> <p>Press the CLEAR <span style="border: 1px solid black; padding: 0 2px;">C</span> key if the designated address is incorrect.</p> <p>Searches the designated address upon pressing the PLAY key.</p>	

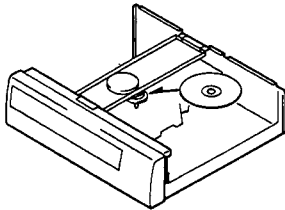
Note 1 : Press SKIP ( ⏪ / ⏩ ) Keys after the tray is set to open state by pressing Open ( ▲ ) key. Because, in tray open state, pressing PLAY ( ▶ ) key causes it to set to TILT control state and SKIP ( ⏪ / ⏩ ) keys can not function properly.

● **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.



- ② Press the **PLAY (▶)** key once. (Twin gear starts to move.)
- ③ Push the cam plate (Fig. 4) in the direction of the arrow and wait until the CD disc is clamped.

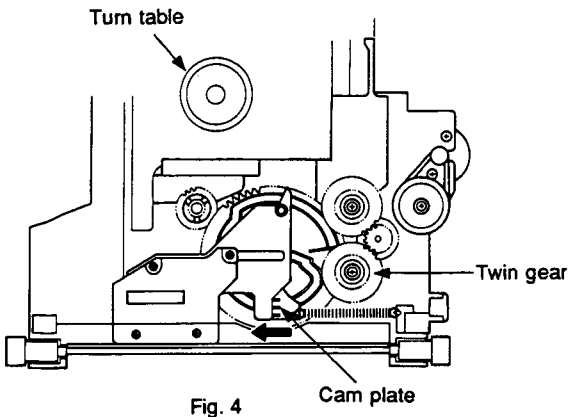
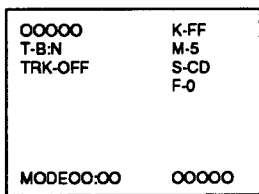


Fig. 4

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

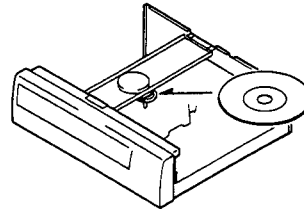


TV screen display

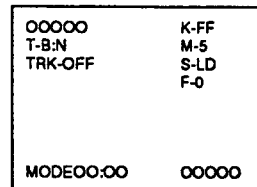
- ⑤ Press the **PLAY (▶)** key twice, disc will be normally playbacked.

• **LD PLAYBACK**

- ① Place the LD disc on the turn table.



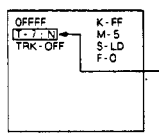
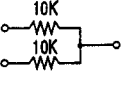
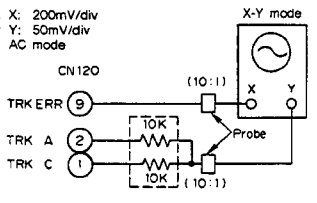
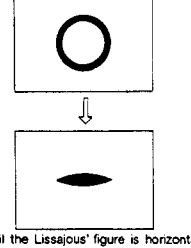
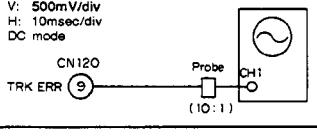
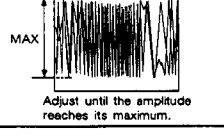
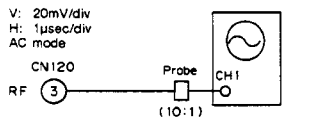
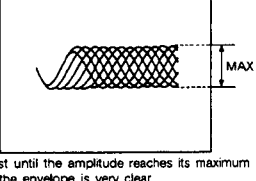
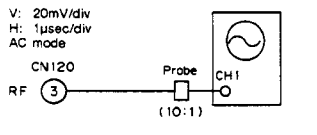
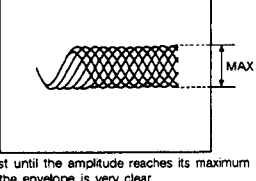
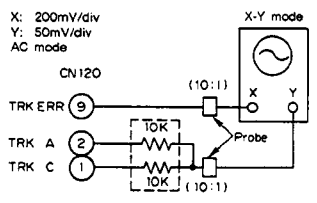
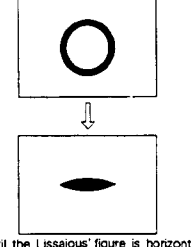
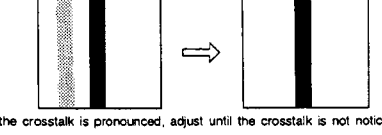
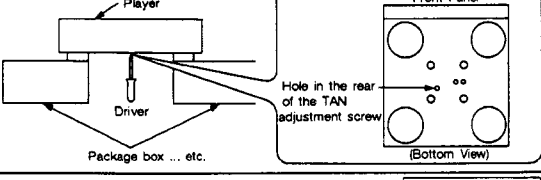
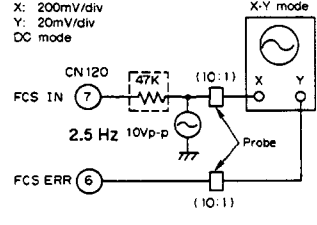
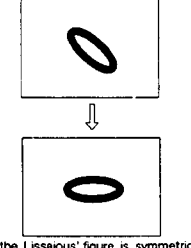
- ② Press the **PLAY (▶)** key once. (Twin gear starts to move.)
- ③ Press the **SKIP REV (⏮)** key to raise the turn table (spindle motor section) while pressing the cam plate (Fig. 4) in the direction of the arrow. Raise it to the position where the LD disc can be easily placed on the turn table. If 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

- ⑥ Press the **PLAY (▶)** key twice, disc will be normally playbacked.

5.2 ADJUSTMENT TABLE

	Adjustment name	Adjustment point	Measuring equipment and jigs	Measurement point	Player condition	Adjustment procedure	Waveform and connection diagram
1	Tilt Offset Check and Adjustment	VR607	TV monitor	Tilt indication on Test mode screen	<ul style="list-style-type: none"> <li>Power ON</li> <li>Test mode</li> <li>Disc not installed</li> </ul>	<ol style="list-style-type: none"> <li>Check if the tilt indication on the Test mode screen is at T-6 to T-8.</li> <li>If the tilt indication is not at T-6 to T-8, adjust VR607 until the tilt indication reaches T-6 to T-8.</li> </ol>	
2	Coarse centering adjustment	Tilt base Centering adjustment screw	<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>STD-901 or STD-902</li> <li>MIX resistor</li> </ul> 	CN120 X: ⑨ Pin (TRK ERR) Y: ① + ② Pin (TRK SUM)	<ul style="list-style-type: none"> <li>Test mode</li> <li>TRK Servo Open</li> <li>Tilt servo ON</li> <li>Innermost track of STD-901 or STD-902 which does not come in contact with the mechanical stopper.</li> </ul>	<ol style="list-style-type: none"> <li>Move the slider until it does not come in contact with the mechanical stopper at the slider position indication S-IN.</li> <li>Observe TRK ERR (Xch) and TRK SUM (Ych) at the X-Y mode during TRK Servo Open.</li> <li>Turn the centering adjustment screw until the Lissajous' figure is horizontal.</li> </ol>	 
3	FCS balance adjustment (1) TRK ERR MAX	VR605	<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>STD-901 or STD-902</li> </ul>	CN120 ⑨ Pin (TRK ERR)	<ul style="list-style-type: none"> <li>Test mode</li> <li>TRK Servo Open</li> <li>Tilt servo ON</li> <li>Inner track of STD-901 or STD-902</li> </ul>	<ol style="list-style-type: none"> <li>Observe TRK ERR at CH1 of the oscilloscope during TRK Servo Open.</li> <li>Adjust VR605 until the amplitude of the waveform reaches its maximum.</li> </ol>	 
4	FCS balance adjustment (2) RF MAX	VR606	<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>STD-901 or STD-902</li> </ul>	CN120 ③ Pin (RF)	<ul style="list-style-type: none"> <li>Test mode</li> <li>TRK Servo Close</li> <li>Tilt servo ON</li> <li>Inner track of</li> </ul>	<ol style="list-style-type: none"> <li>Close the TRK Servo and observe RF at CH1 of the oscilloscope.</li> <li>Adjust VR606 until the amplitude of the waveform reaches its maximum and the envelope is very clear.</li> </ol>	 
5	Tangential direction angle adjustment	Tilt base TAN adjustment screw	<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>STD-901 or STD-902</li> </ul>	CN120 ③ Pin (RF)	<ul style="list-style-type: none"> <li>Test mode</li> <li>TRK Servo Close</li> <li>Tilt servo ON</li> <li>Inner track of STD-901 or STD-902</li> </ul>	<ol style="list-style-type: none"> <li>Observe RF at CH1 of the oscilloscope during TRK Servo Close.</li> <li>Adjust the TAN adjustment screw until the amplitude of the waveform reaches its maximum and the envelope is very clear.</li> </ol>	 
6	Fine centering adjustment	Tilt base Centering adjustment screw	<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>STD-901 or STD-902</li> </ul>	CN120 X: ⑨ Pin (TRK ERR) Y: ① + ② Pin (TRK SUM)	<ul style="list-style-type: none"> <li>Test mode</li> <li>TRK Servo Open</li> <li>Tilt servo ON</li> <li>Innermost track of STD-901 or STD-902 which does not come in contact with the mechanical stopper.</li> </ul>	Perform fine centering adjustment by following the same procedure as in "Coarse centering adjustment" (2).	 
7	Crosstalk check and Tilt offset adjustment	VR607	<ul style="list-style-type: none"> <li>TV monitor</li> <li>GGV1003</li> </ul>	Crosstalk check screen	<ul style="list-style-type: none"> <li>Test mode</li> <li>TRK Servo Close</li> <li>Tilt servo ON</li> <li>GGV1003</li> <li>#115 STILL</li> </ul>	<ol style="list-style-type: none"> <li>Search for address 115 of GGV1003 and still the address.</li> <li>Check the crosstalk. If the crosstalk is pronounced, adjust VR607 until the crosstalk is not noticeable.</li> </ol>	
	When the crosstalk is still noticeable in spite of the adjustment in (7), use a hexagonal wrench driver (straight type, size: 3 mm) to adjust the TAN adjustment screw on the bottom side of the player through the GGV1003 # 115 STILL screen. Afterwards, perform the adjustment procedures from (6).						
8	FCS Servo loop gain adjustment	VR604	<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>GGV1003</li> <li>AF Oscillator</li> <li>Resistor (47 kΩ)</li> </ul>	CN120 X: ⑦ Pin (FCS IN) Y: ⑥ Pin (FCS ERR)	<ul style="list-style-type: none"> <li>Test mode</li> <li>TRK Servo Close</li> <li>Tilt servo ON</li> <li>GGV1003</li> <li># 15,000 STILL</li> </ul>	<ol style="list-style-type: none"> <li>Search for address 15,000 of GGV1003 and still the address.</li> <li>Xch: Connect the resistor (47 kΩ) to the channel and connect to FCS IN. Ych: Connect to FCS ERR.</li> <li>Connect the AF oscillator between Xch and the 47 kΩ resistor, and adjust VR604 until the Lissajous' figure is symmetrical.</li> </ol>	 

Adjustment name	Adjustment point	Measuring equipment and jigs	Measurement point	Player condition	Adjustment procedure	Waveform and connection diagram
9 TRK Servo loop gain adjustment	VR603	<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>GGV1003</li> <li>AF Oscillator</li> <li>Resistor (47 kΩ)</li> </ul>	CN120 X: ⑩ Pin (TRK IN) Y: ⑨ Pin (TRK ERR)	<ul style="list-style-type: none"> <li>Test mode</li> <li>Stop mode or TRK Servo Close</li> <li>Tilt servo ON</li> <li>GGV1003</li> <li># 15,000 STILL</li> </ul>	<ol style="list-style-type: none"> <li>Xch: Connect the 47 kΩ resistor to channel and connect to TRK IN. Ych: Connect to TRK ERR.</li> <li>Connect the AF oscillator between Xch and the 47kΩ resistor and note the tilt angle against the horizon with the disc in the stopped state.</li> <li>Search for address 15,000 of GGV1003 and still the address.</li> <li>Set the disc in PLAY mode. (TRK servo closed, TILT on). Adjust VR603 so that the tilt angle of the waveform will be the same as the tilt angle noted in step 3.</li> </ol>	<p>Adjust until the Lissajous' figure is symmetrical.</p>
10 RF level adjustment	VR601	<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>GGV1003</li> </ul>	CN120 ③ Pin (RF)	<ul style="list-style-type: none"> <li>Test mode</li> <li>TRK Servo Close</li> <li>Tilt servo ON</li> <li>GGV1003</li> <li># 15,000 STILL</li> </ul>	<ol style="list-style-type: none"> <li>Search for address 15,000 of GGV1003 and still the address. Observe RF at CH1 of the oscilloscope.</li> <li>Adjust VR601 until the RF amplitude is 300 mV ±50 mV p-p.</li> </ol>	
11 REF-H adjustment	VC901	Frequency counter	IC 402 (PM0001) ⑧ Pin	<ul style="list-style-type: none"> <li>Power ON</li> <li>Stop mode</li> </ul>	Adjust VC901 so that the frequency of IC402-8pin become 3.579545 MHz ±10 Hz.	
12 Video level adjustment	VR482	<ul style="list-style-type: none"> <li>TV monitor</li> <li>Oscilloscope</li> <li>GGV1003</li> </ul>	Video output terminal	<ul style="list-style-type: none"> <li>Normal mode</li> <li>GGV1003</li> <li># 19,900 STILL</li> </ul>	Connect a 75 Ω resistor to the VIDEO output terminal (possibly by connecting to the monitor) and adjust VR482 until the sync tip to 100 % white level is 1 Vp-p ±5 % at the composite TEST signal.	
13 IH DLY video level adjustment	VR441	<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>GGV1003</li> </ul>	CH1: C443 lead wire CH2: C445 lead wire	<ul style="list-style-type: none"> <li>Normal mode</li> <li>GGV1003</li> <li># 19,900 STILL</li> </ul>	Adjust VR441 until the sync tip to 100 % white level at the composite TEST signal is the same as in CH1 and CH2.	
14 VCO center frequency adjustment	VR481	<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>GGV1003</li> </ul>	CH1: C471 lead wire CH2: C499 lead wire	<ul style="list-style-type: none"> <li>Normal mode</li> <li>GGV1003</li> <li># 5,100 STILL</li> </ul>	Place a trigger in CH1 and adjust VR481 until the center of the CH2 video signal jitter is 74.5µsec (1H + 11 µsec) +3.5/-0.5 µsec compared to the CH1 video signal.	
15 VPS error level adjustment	VR521	<ul style="list-style-type: none"> <li>TV monitor</li> <li>GGV1003</li> </ul>	TV monitor	<ul style="list-style-type: none"> <li>Normal mode</li> <li>GGV1003</li> <li># 8,000 STILL (Magenta screen)</li> </ul>	Adjust VR521 until the color irregularity on the magenta screen is minimized.	
16 FCS SUM level check	—	<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>GGV1003</li> </ul>	CN120 ⑪ Pin (FCS SUM)	<ul style="list-style-type: none"> <li>Normal mode</li> <li>GGV1003</li> <li>PLAY</li> </ul>	Check that the CN120-11 pin is +1.8 V ±0.2 VDC.	

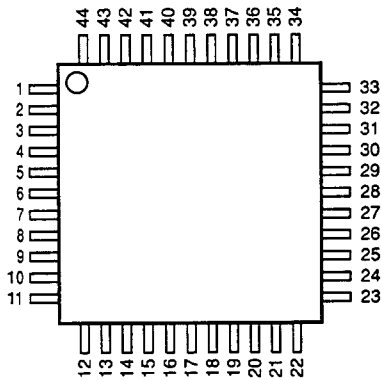
## 6. IC INFORMATION

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

### ■ IC201 (C7112-01GS-K)

#### VF DISPLAY CONTROLLER

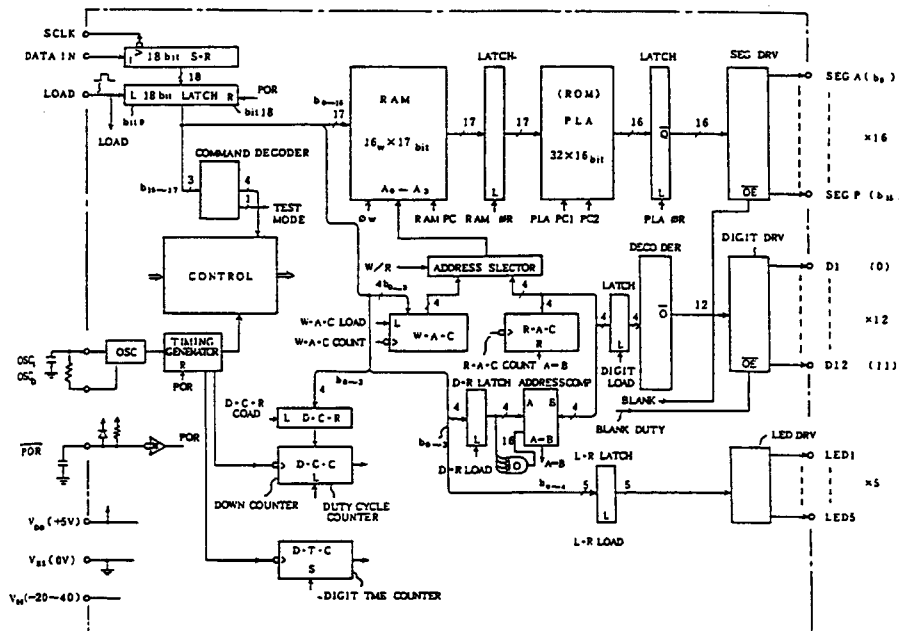
- Pin Assignment (Top View)



- Pin Function

PIN No.	Function	PIN No.	Function	PIN No.	Function	PIN No.	Function
1	D12	12	SEGM	23	SEGC	34	D2
2	LED1	13	SEGL	24	SEGB	35	D3
3	LED2	14	SE GK	25	SEGA	36	D4
4	LED3	15	SE GJ	26	SCLK	37	D5
5	LED4	16	SEGI	27	DATA IN	38	D6
6	LED5	17	VEE	28	LOAD	39	VEE
7	Vss	18	SEGH	29	OSCI	40	D7
8	VEE	19	SEGG	30	OSCO	41	D8
9	SEGP	20	SEGF	31	POR	42	D9
10	SEGO	21	SEGE	32	VDD	43	D10
11	SEGN	22	SEGD	33	D1	44	D11

- Block Diagram





## 7. PANEL FACILITIES

### Front panel

#### STOP OPEN/CLOSE ( ■/▲ ) button

This button is used to open and close the disc table. Setting a disc on the disc table then pressing this button retracts the disc table into the player. Pressing this button during play stops playback. When pressed again, the table will come out from the player.

#### Display window

#### Door/Disc table

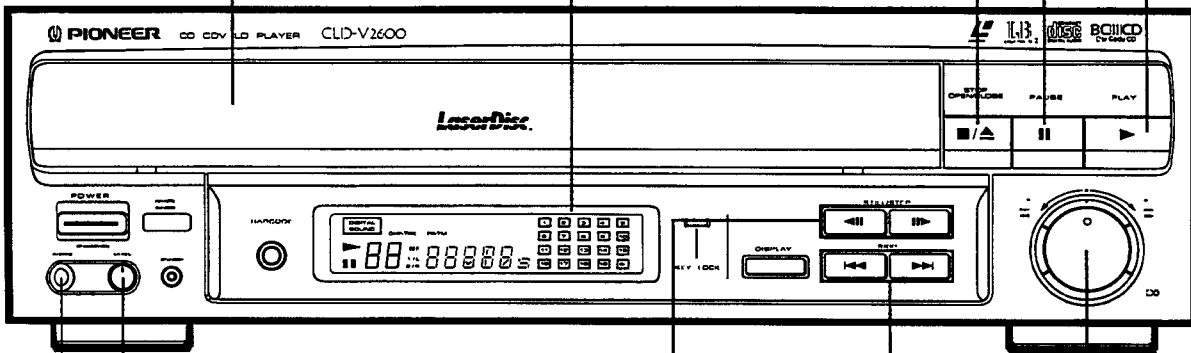
Press the STOP OPEN/CLOSE button to open the door and eject the disc table to the specified position. Place a disc on the disc table.

#### PAUSE ( || ) button

During playback, pressing this button stops playback temporarily. To resume playback, press the PLAY button in the pause mode.

#### PLAY button ( ▶ )

Used to start playback or to return to ordinary playback from still image or pause.



#### PHONES jack

Plug headphones into the PHONES jack.

#### PHONES LEVEL control

Turn this control to the right to increase the output level at the PHONES jack. Turn this control to the left to decrease the output level at the PHONES jack.

#### STILL/STEP ( ◀||, ||▶ ) buttons

Functions only during CAV disc playback. When either of the buttons is pressed, the unit will enter frame-by-frame playback. Then, when the ||▶ button is pressed, the picture will advance forward frame-by-frame. When the ◀|| button is pressed, the picture will reverse frame-by-frame.

#### NOTE:

If this button is pressed during CLV disc playback, "CLV" appears on the screen and the button does not function.

#### Scan control

FWD ▶▶ : For fast-forward scan  
REV ◀◀ : For fast-reverse scan

#### SKIP buttons

The SKIP buttons function only when one of the following buttons have been pressed:

- ◀◀: Pressing this button once will return the player to the beginning of the current chapter or track. Pressing this button continuously before pictures are displayed will return the player to the previous chapter or track to start playback.
- ▶▶: The player advances to the next chapter or track and starts playback every time this button is pressed.

With CAV disc of LD, the unit enters still mode after searching.

**REMOTE SENSOR window**

When using the remote control unit or LaserBarcode reader in the wireless format, the infrared commands from the unit are received here.

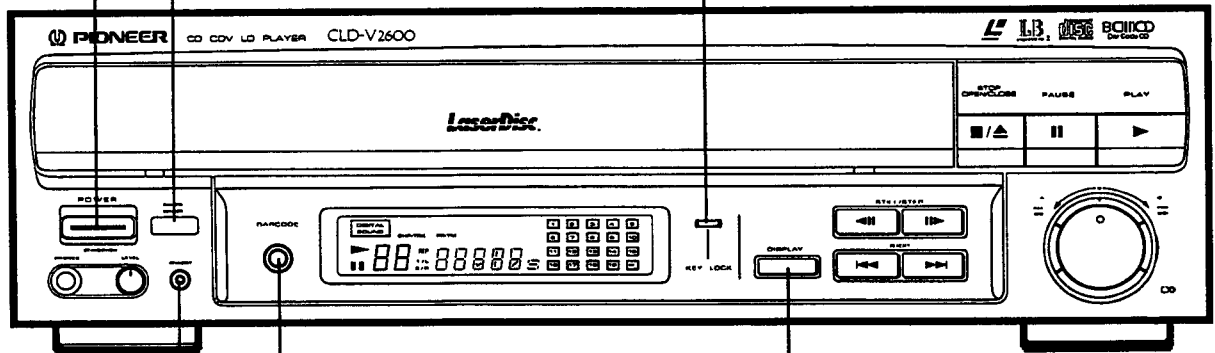
**POWER STANDBY/ON switch**

Press this button to turn the power on and off.

**KEY LOCK indicator**

Lights when the KEY LOCK command is entered from the external control unit.

When this indicator is lit, entries are not accepted from operation buttons other than the power switch. Also, entries are not accepted from the operation button of the remote control unit or optional LaserBarcode reader.



**STANDBY indicator**

Lights up when the power is off.

**BARCODE jack**

Connect the LaserBarcode reader.

**DISPLAY button**

This button is used to display or erase chapter number and frame numbers on the TV screen.

**NOTES:**

- During CLV disc playback, elapsed time numbers will be displayed in place of frame numbers.
- When only the DISPLAY button is pressed, the display appears and disappears alternately each time the button is pressed.
- With CDs and CDVs, the track index and elapsed time will be displayed when this button is pressed while the absolute time is displayed.



**7. Other Terminals**


- BARCODE (front panel) ..... Stereo miniature phone jack
- Headphone jack (front panel) ..... 1/4 inch stereo jack
- INTERFACE CONNECTOR (rear panel) ..... 15 pin, D-SUB connector


**8. Accessories**

- Operating instructions ..... 1
- Audio connecting cord ..... 1
- Video connecting cord ..... 1
- RF antenna cable with F type plug ..... 1
- Antenna adaptor ..... 1
- Remote control unit (CU-V113) ..... 1
- Size "AA" (IEC R6) dry cell batteries ..... 2

**NOTE:**

*Specifications and design subject to possible modifications without notice, due to improvements.*

	<p>This equipment accepts softwares with the LaserBarcode mark or the LaserBarcode 2 mark.</p>
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	<p>This mark expresses compatibility with Bar Code CD systems. Please use only bar codes displaying this mark.</p>
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