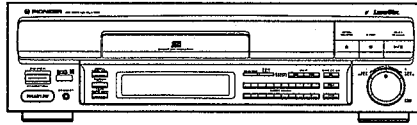


Service Manual

PIONEER
The Art of Entertainment



ORDER NO.
ARP2465

CD CDV LD PLAYER

CLD-S201

CLD-S250

CLD-S201 AND CLD-S250 HAVE THE FOLLOWING:

Type	Model		Power Requirement	Remarks
	CLD-S201	CLD-S250		
KUC	○	-	AC120V only	
KUC/CA	○	-	AC120V only	
SD	-	○	AC110V, 120-127V, 220V, 240V (switchable)	

- This manual is applicable to the following: CLD-S201/KUC and KUC/CA; CLD-S250/SD.
- For CLD-S201/KUC/CA and CLD-S250/SD, refer to page 59.
- For the circuit and mechanism descriptions, refer to the service manual ARP2528 for CLD-S201 and CLD-S250.

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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.

1. SAFETY INFORMATION

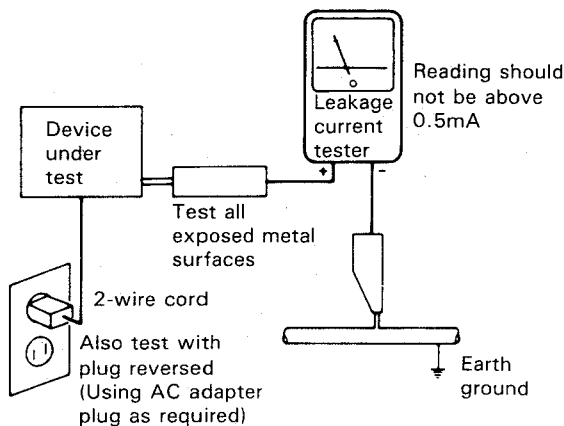
(FOR USA MODEL ONLY)

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 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.

2. EXPLODED VIEWS, PACKING AND PARTS LIST

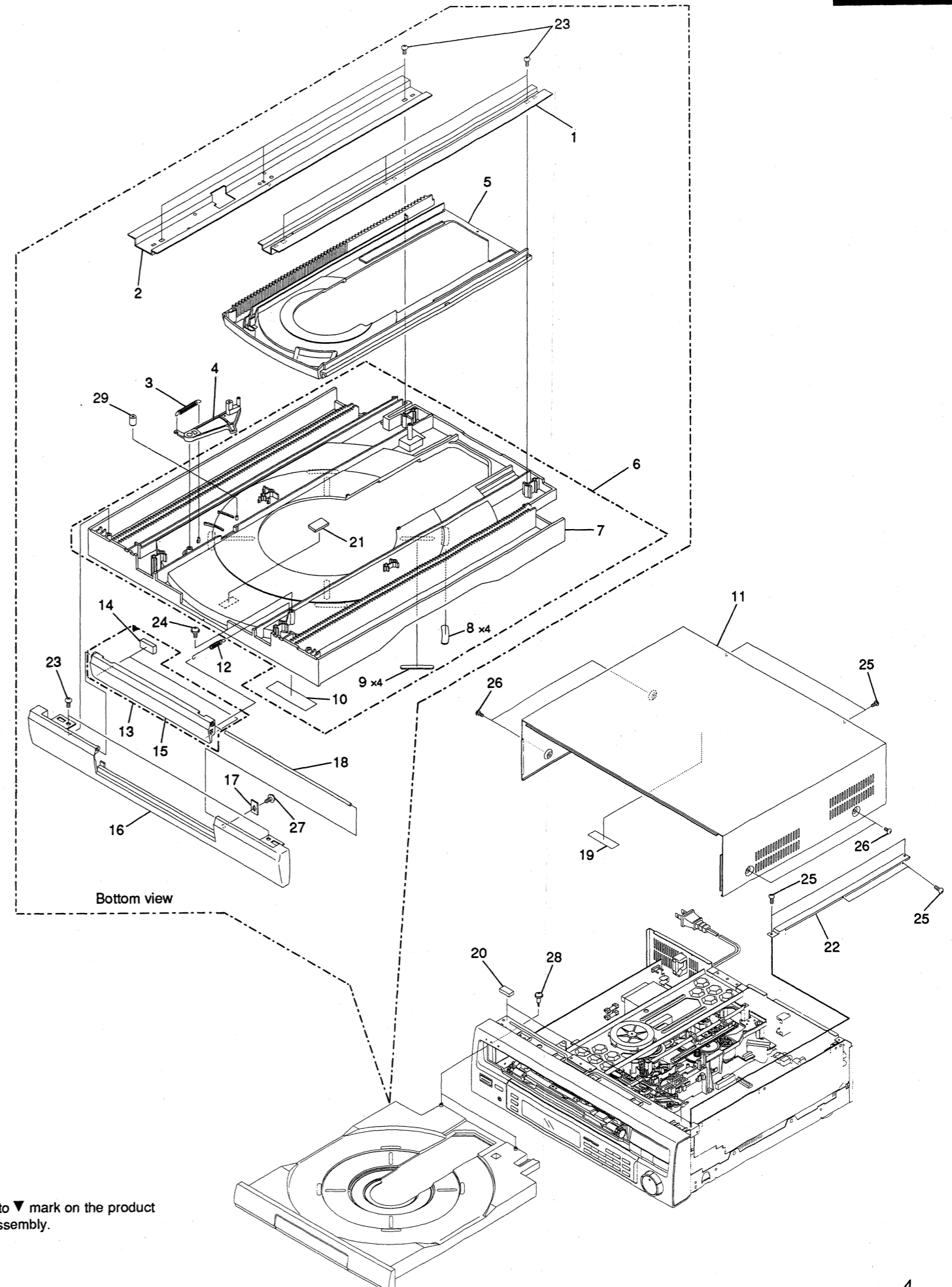
NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The \triangle 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	VNK2032
2	Guide plate (R)	VNE1806	17	Door holder	VNE1812
3	Lock plate spring	VBH1188	18	Door shaft	VLL1441
4	Lock plate	VNL1513	NSP 19	65 lable	ORW1069
5	CD tray	VNK1992	NSP 20	Spacer	VEC1585
6	Tray ASS'Y S	VXX1729	NSP 21	Damp cushion	VEC1110
NSP 7	LD tray	VNK1991	NSP 22	PCB holder	VNE1830
8	Disc pad	VEC1191	23	Screw	BPZ30P060FCU
9	Disc pad (C)	VEC1380	24	Screw	IPZ26P060FMC
NSP 10	Lable (plastic)	VRW1274	25	Screw	BBZ30P080FCC
11	Bonnet case S	VXX1726	26	Screw	BCZ40P060FZK
12	Door spring	VBH1202	27	Screw	IPZ20P050FMC
13	CD door ASS'Y S	VXX1728	28	Screw	VBA1032
14	Cushion	VEC1578	29	Tray rubber	VEB1091
NSP 15	CD door	VNK2033			

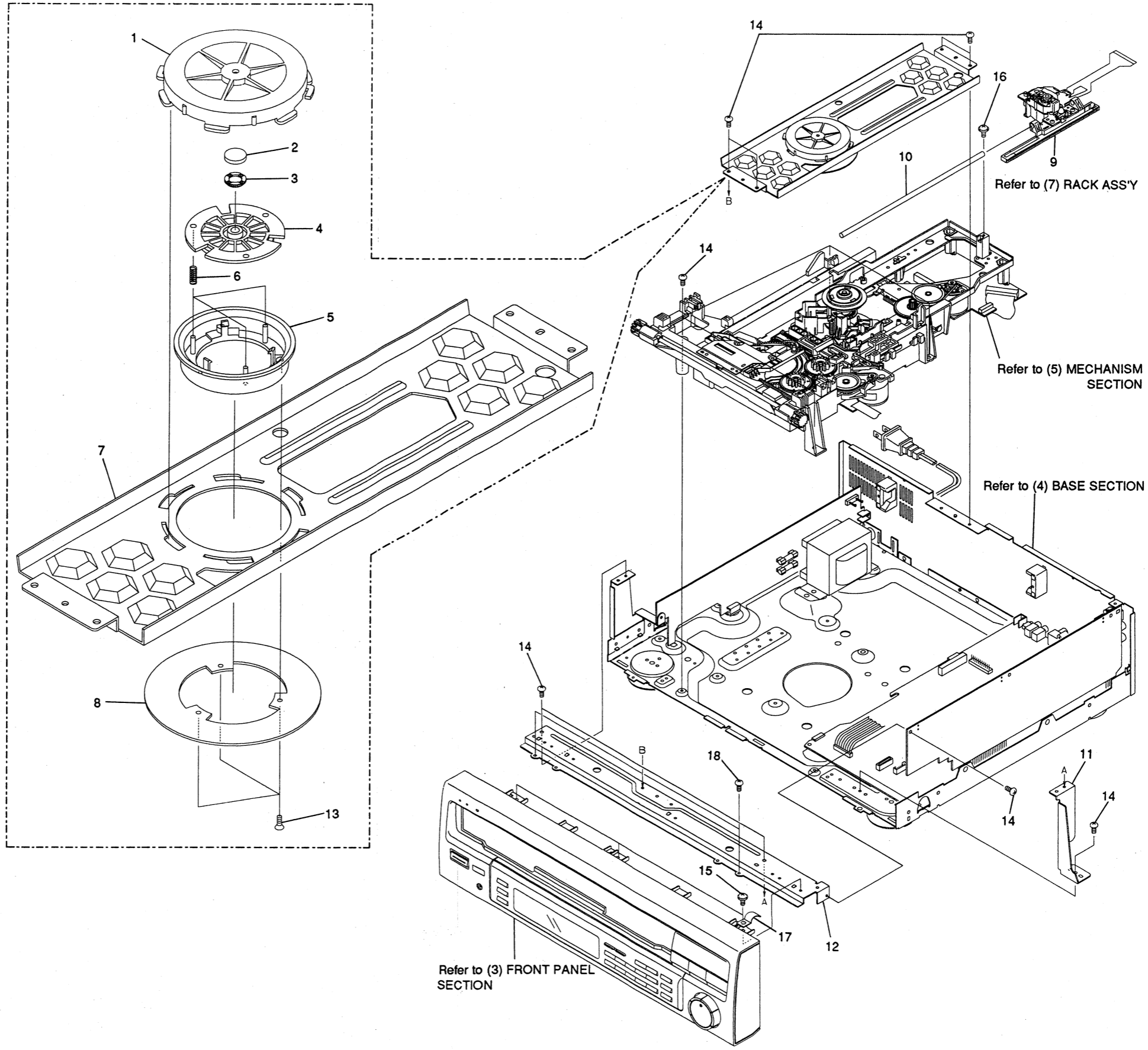


NOTE: Screws adjacent to ▼ mark on the product are used for disassembly.

(2) TOP VIEW SECTION

Parts List

Mark	No.	Description	Part No.
	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
NSP	9	Rack ASS'Y	VWT1080
	10	Slider shaft	VLL1434
NSP	11	Side stay (R)	VNE1810
NSP	12	Front angle	VNE1808
	13	Screw	CPZ20P050FMC
	14	Screw	BBZ30P080FCC
	15	Screw	IBZ30P060FCC
	16	Screw	IPZ30P060FMC
NSP	17	Earth plate	VNE1518
	18	Screw	PCZ30P060FMC



Refer to (3) FRONT PANEL SECTION

Refer to (7) RACK ASSY

Refer to (5) MECHANISM SECTION

Refer to (4) BASE SECTION

(3) FRONT PANEL SECTION

Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
NSP	1	PSWB ASS'Y	VWG1315	9	Shuttle knob	VNK2039	
	2	PW button	VNK2002	10	Sub panel	VNK2034	
	3	Mode key	VNK2037				
NSP	4	FLKY ASS'Y	VWG1314	NSP	11	Center panel	VNK2031
	5	CD button	VNK2038	12	FL lens	VEC1568	
	6	10key	VNK2036	13	FL filter	VNK1659	
	7	Main key	VNK2035	14	Center panel ASS'Y S	VXX1727	
	8	Front panel ASS'Y	VXA1845	15	Screw	BPZ26P060FCU	

B

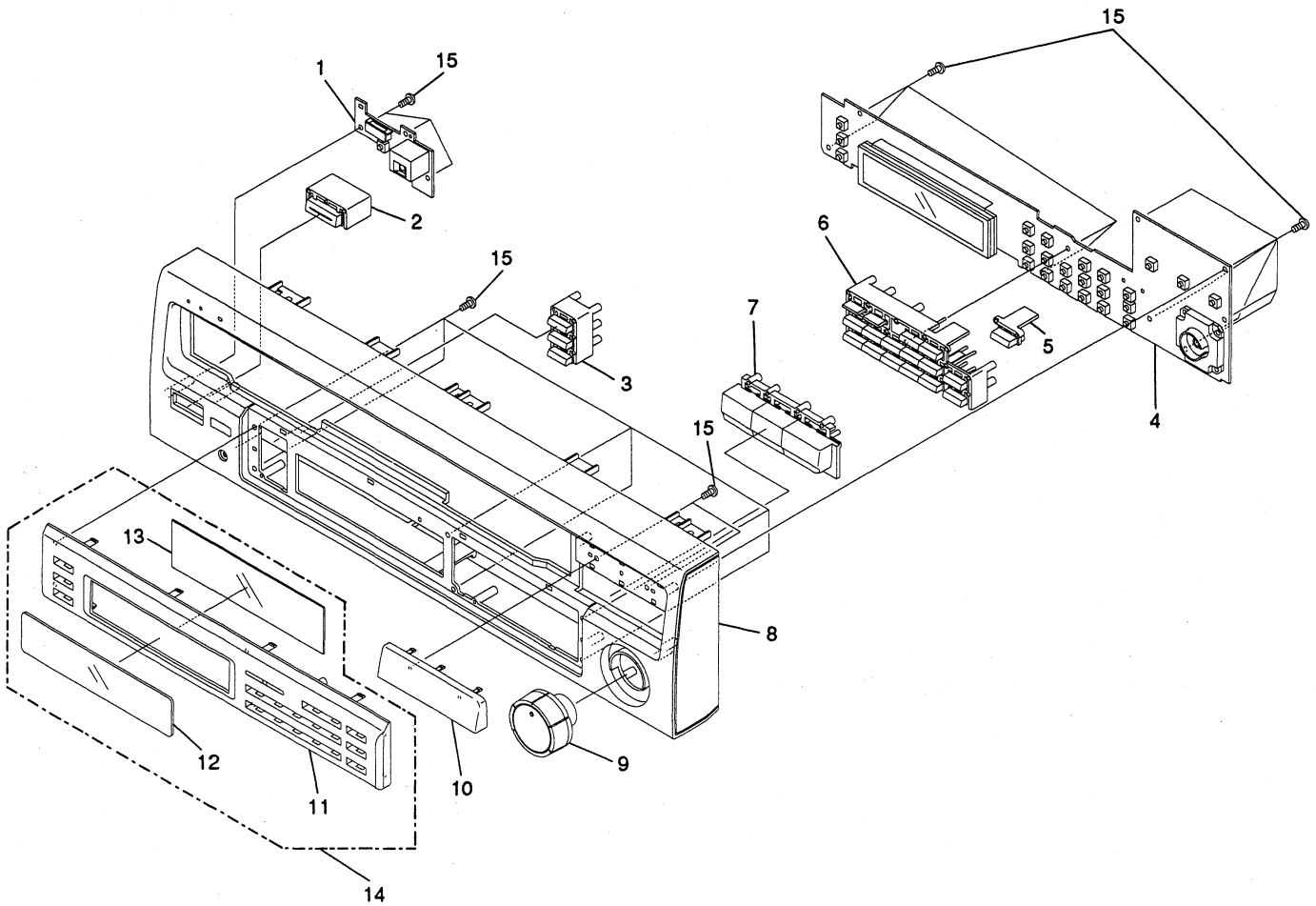
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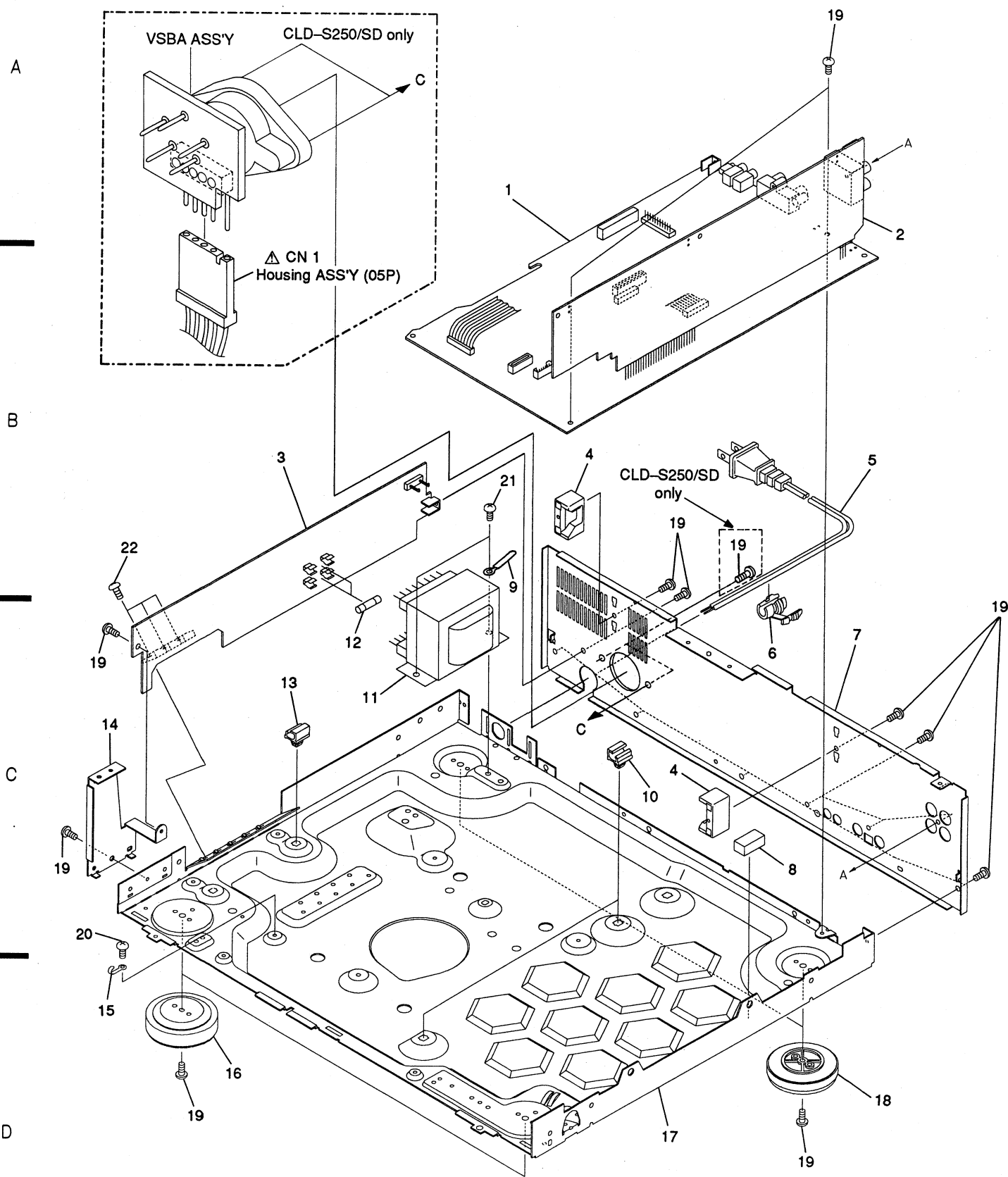
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(4) BASE SECTION

Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	MAIN ASS'Y	VWX1102	△	12	Fuse (3A/125V)	VEK-018
NSP	2	AUDIO ASS'Y	VWX1103	NSP	13	P.plate holder	PNY-405
⊙	3	SYPS ASS'Y	VWR1122	NSP	14	Side stay (L)	VNE1809
	4	Tray stopper	VNL1519		15	Cord clamper	VNF-069
△	5	AC power cord	PDG1015		16	Insulator	PNW1912
△	6	Cord stopper	CM-22C	NSP	17	Base ASS'Y	VNA1255
NSP	7	Rear panel	VNA1256		18	Insulator ASS'Y	VXA1881
	8	PCB cushion	VEC1573		19	Screw	BBZ30P080FCC
NSP	9	Cord clamper	VNF-005		20	Screw	BBZ30P040FMC
NSP	10	PCB holder	VEC1174		21	Screw	BCZ40P060FZK
△	11	Power transformer	VTT1110		22	Screw	BCZ30P080FMC



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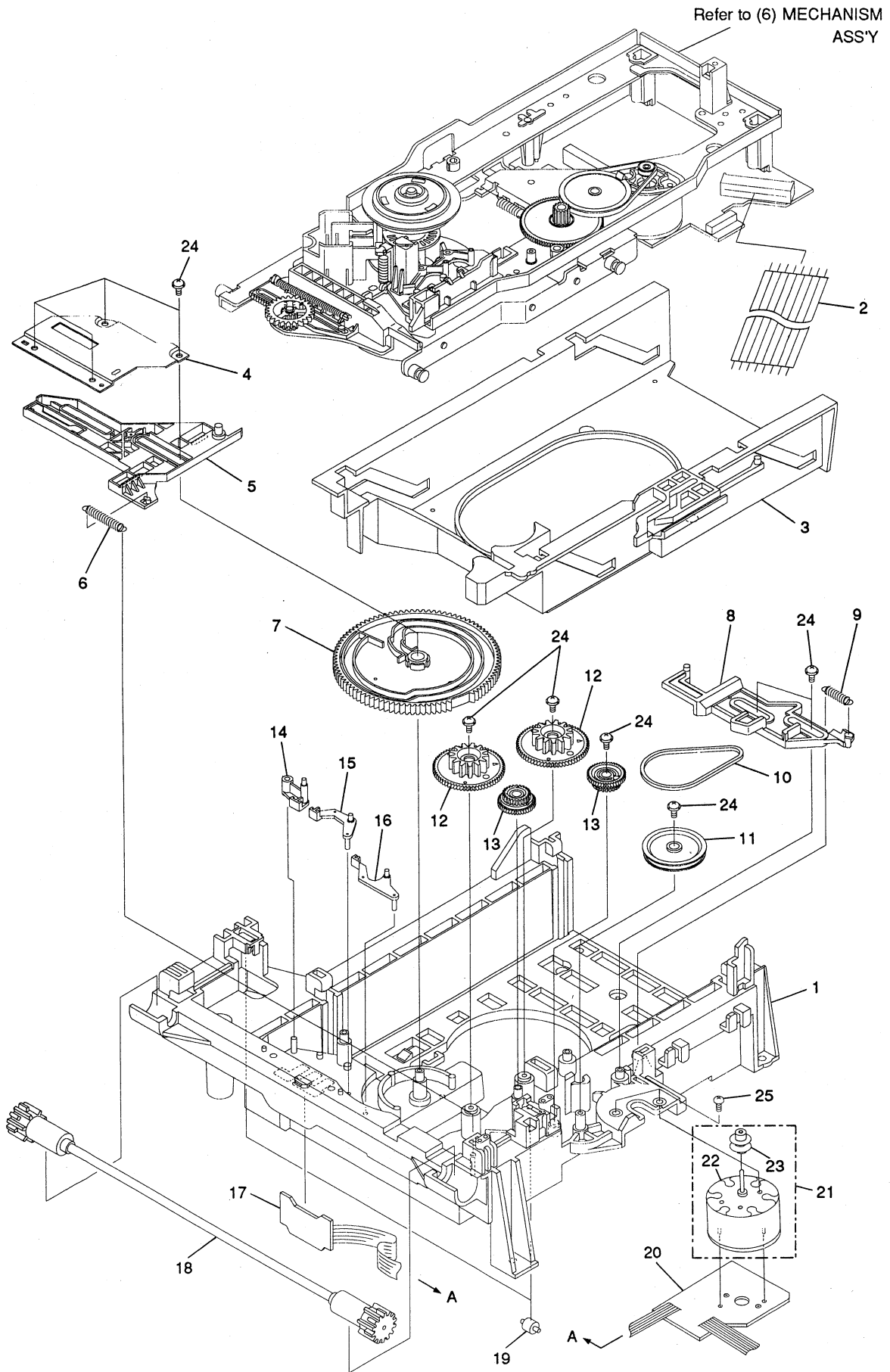
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(5) MECHANISM SECTION

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		17	LOSB ASS'Y	VWG1307
	5	Cam plate	VNL1511	NSP	18	Synchro gear ASS'Y	VXA1822
	6	CAS spring	VBH1190		19	Roller	VNL1042
	7	Cam gear	VNL1507	NSP	20	LOMB ASS'Y	VWG1308
	8	CD plate	VNL1512		21	Loading motor ASS'Y	VXX1712
	9	CDP spring	VBH1191		22	Slider motor	VXM1033
	10	Rubber belt	VEB1184	NSP	23	Motor pulley	PNW1643
	11	Gear pulley	VNL1510		24	Screw	Z39-019
	12	Twin gear	VNL1508		25	Screw	BMZ26P040FMC
	13	Center gear	VNL1509				



(6) MECHANISM ASS'Y

Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	CA belt	VEB1077		16	Y gear	VNL1501
	2	CA pulley	VNL1496		17	Tilt cam spring	VBH1189
	3	CA gear	VNL1497		18	Tilt cam	VNL1502
	4	Tilt base	VNL1499		19	Spindle motor ASS'Y	VXA1825
	5	CA-SW lever	VNL1498		20	Centering hab	VNL1174
NSP	6	CAMB ASS'Y	VWG1306		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	VPF1002
NSP	10	PKSB ASS'Y	VWG1305	NSP	25	Spindle motor	VXM1050
	11	Radial spring	VBH1201		26	Motor base	VNE1803
	12	Thrust spring	VBH1200		27	Screw	BMZ26P040FMC
	13	Tilt tension	VBH1187		28	Screw	ABZ30P300FMC
NSP	14	FG ASS'Y	VWG1304		29	Screw	PMA30P050FMC
	15	FG base	VNL1503		30	Washer	WT26D060D025

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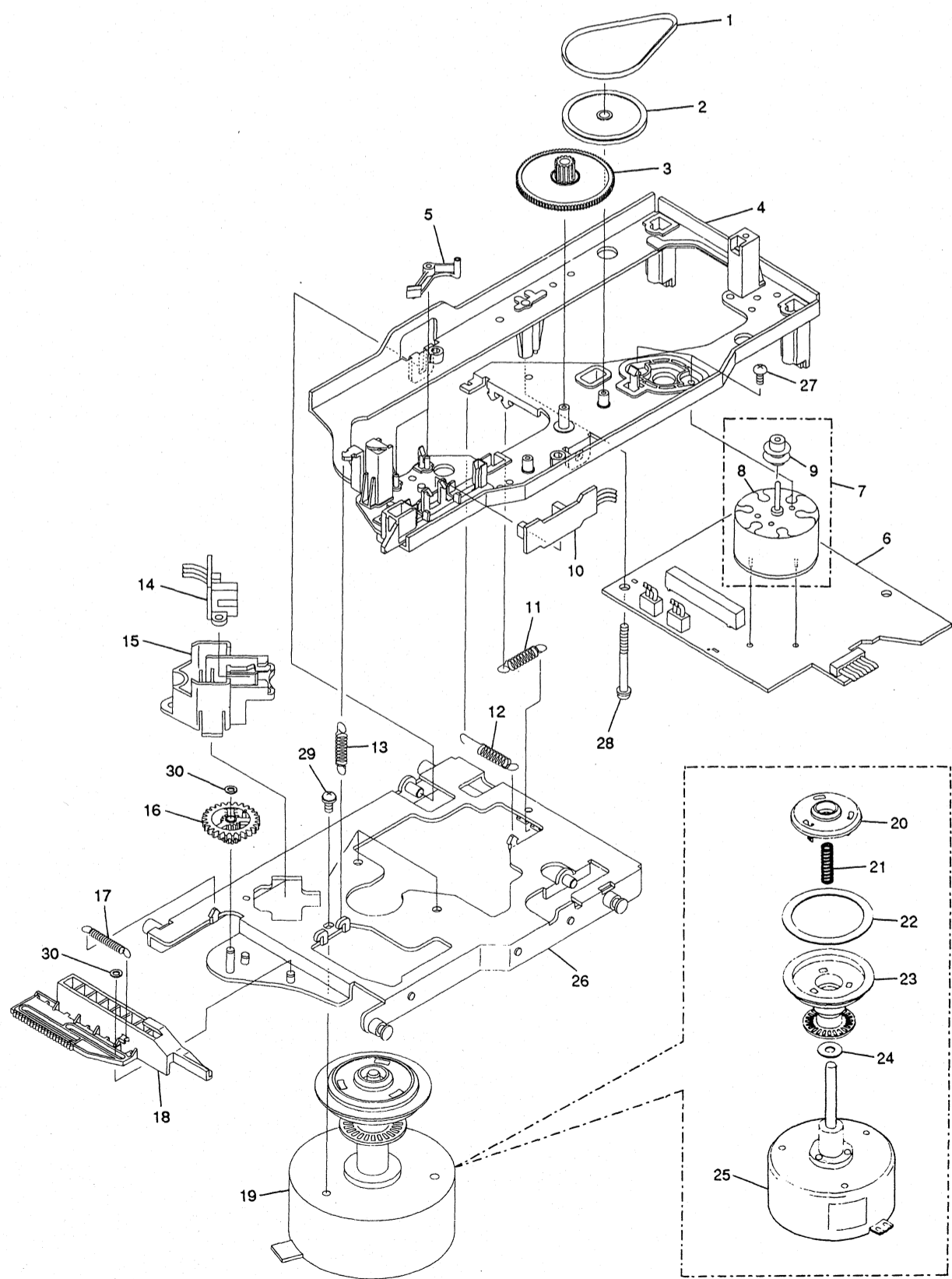
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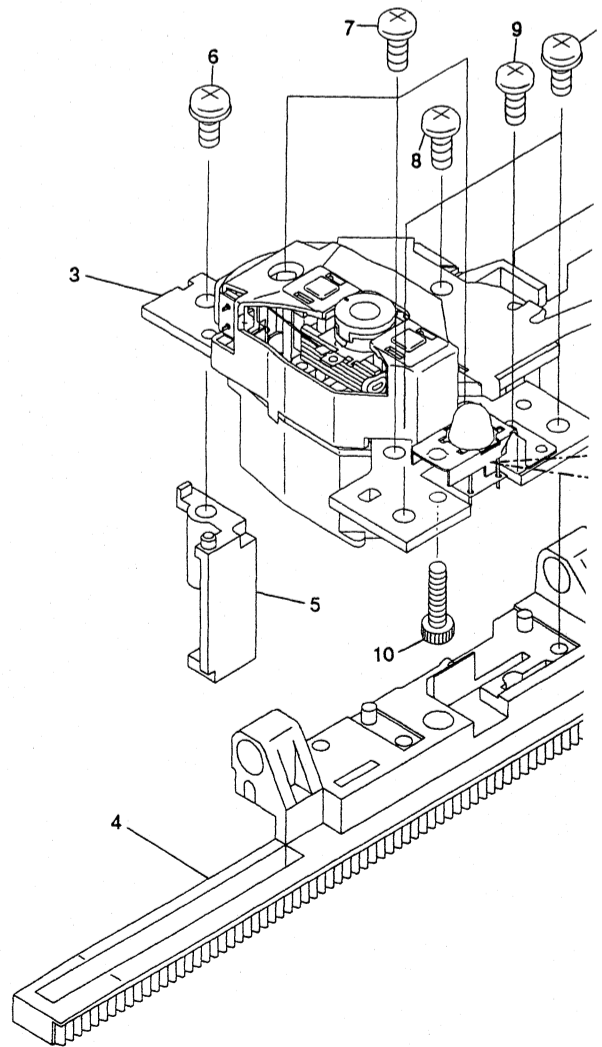
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(7) RACK ASS'Y

Parts List

Mark No.	Description	Part No.
NSP 1	Sensor stay	VBK1036
NSP 2	Tilt sensor	SG-302
NSP 3	Pick up 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



5 6 7 8 9

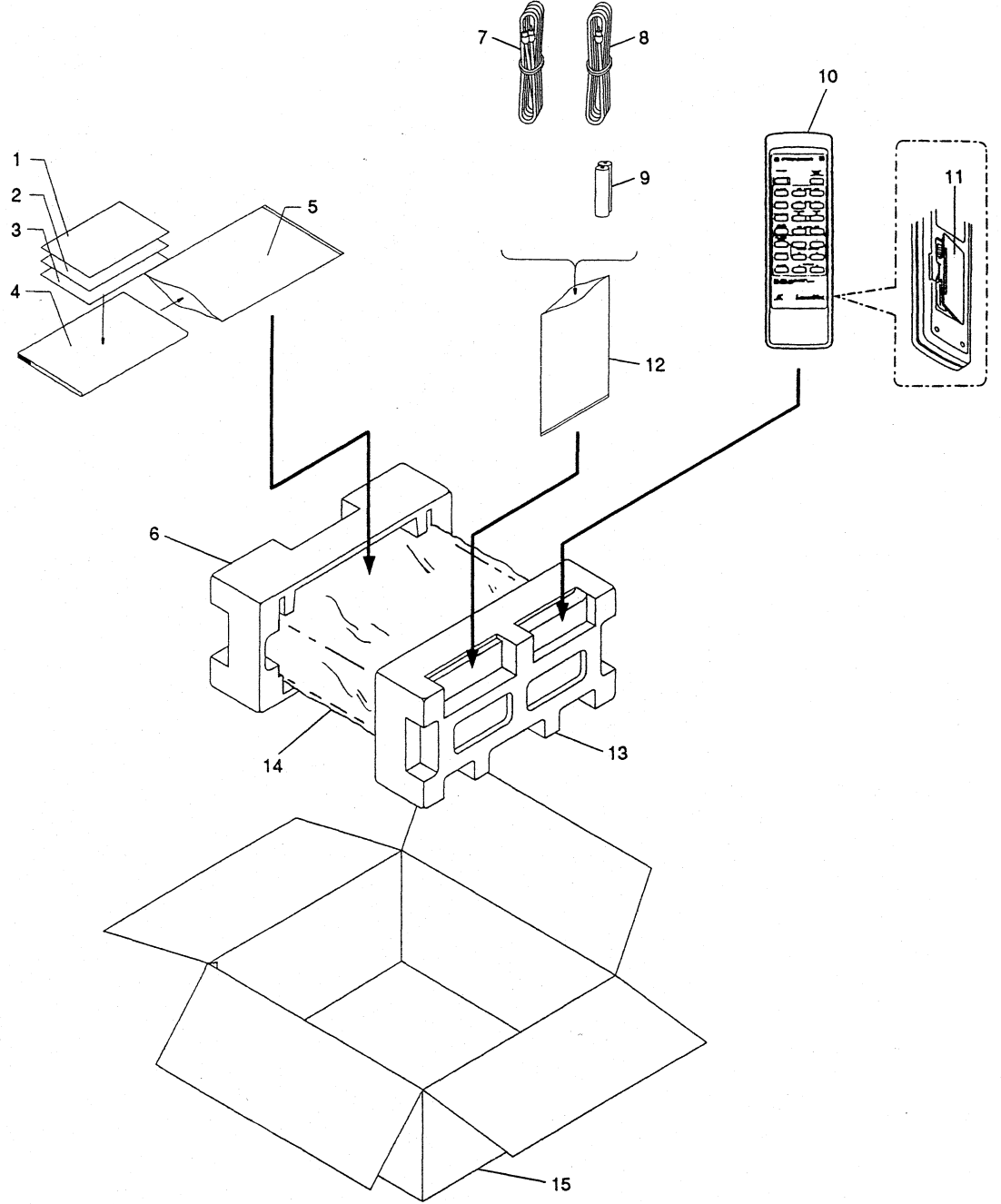
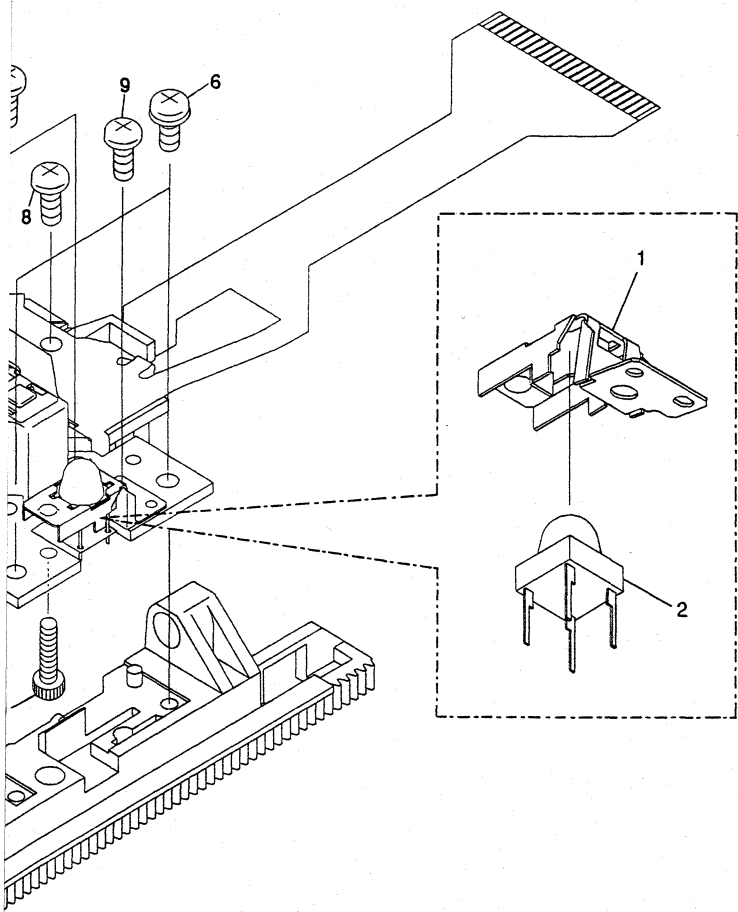
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(8) PACKING

Parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
NSP 1	Warranty card	ARY1044	NSP 9	Battery (R03, AAA)	VEM-022
NSP 2	Caution card (UC)	VRM1026	NSP 10	Remote control unit (CU-CLD067)	VXX1732
NSP 3	Caution card	VRR1009	NSP 11	Battery cover	PZN1010
NSP 4	Operating Instructions (English)	VRB1066	NSP 12	Vinyl bag	Z21-029
NSP 5	Vinyl bag	VHL-014	NSP 13	Pad (F)	VHA1105
NSP 6	Pad (R)	VHA1106	NSP 14	Mirror mat sheet	VHL1006
NSP 7	Cord with plug	VDE-055	NSP 15	Packing case	VHG1207
NSP 8	Cord with plug	VDE-056			

Part No.
K1036
302
Y1030
L1495
L1494
326P080FMC
A20P060FMC
A20P080FMC
H20P040FMC
Z20H100FZK

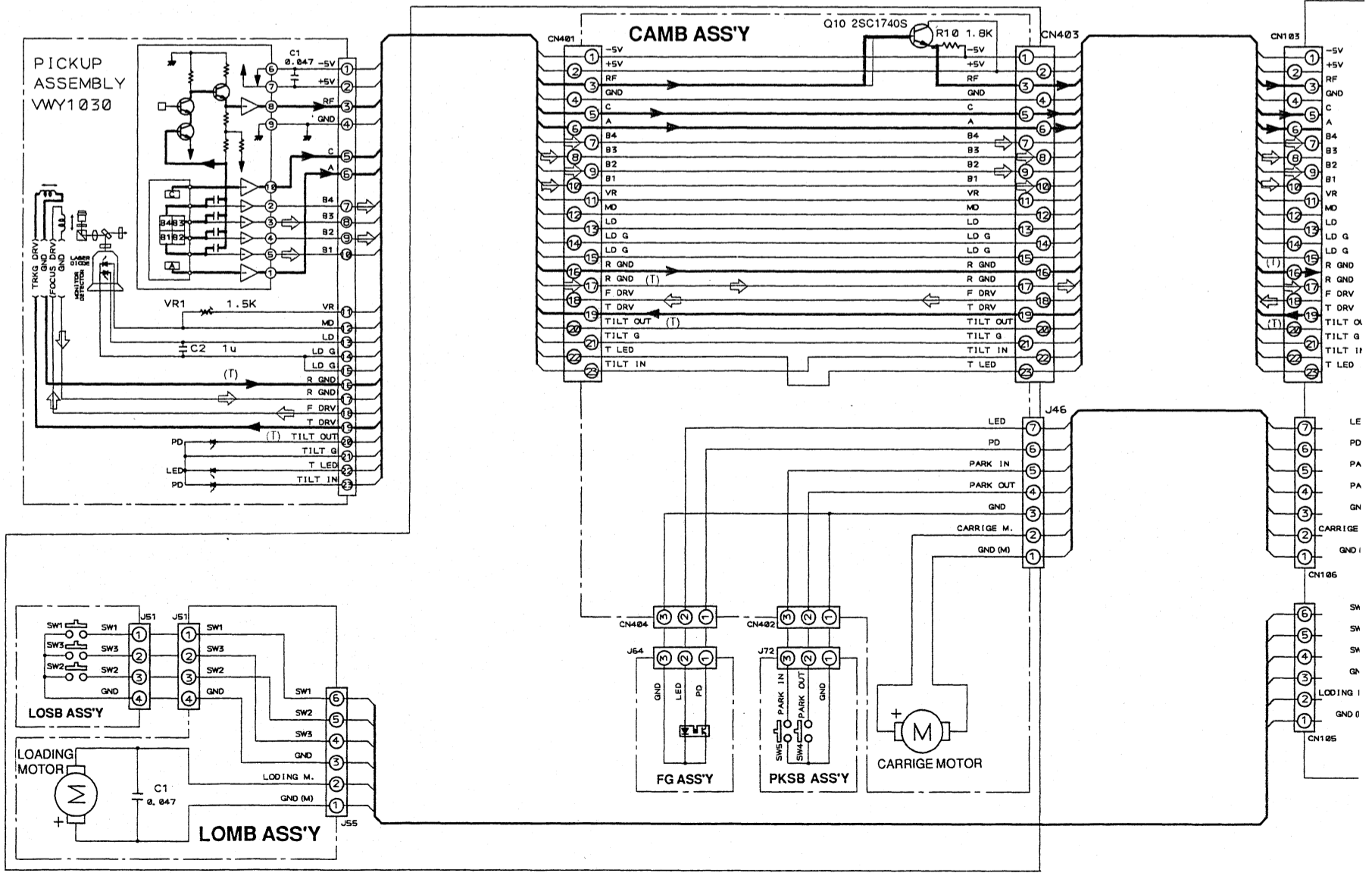
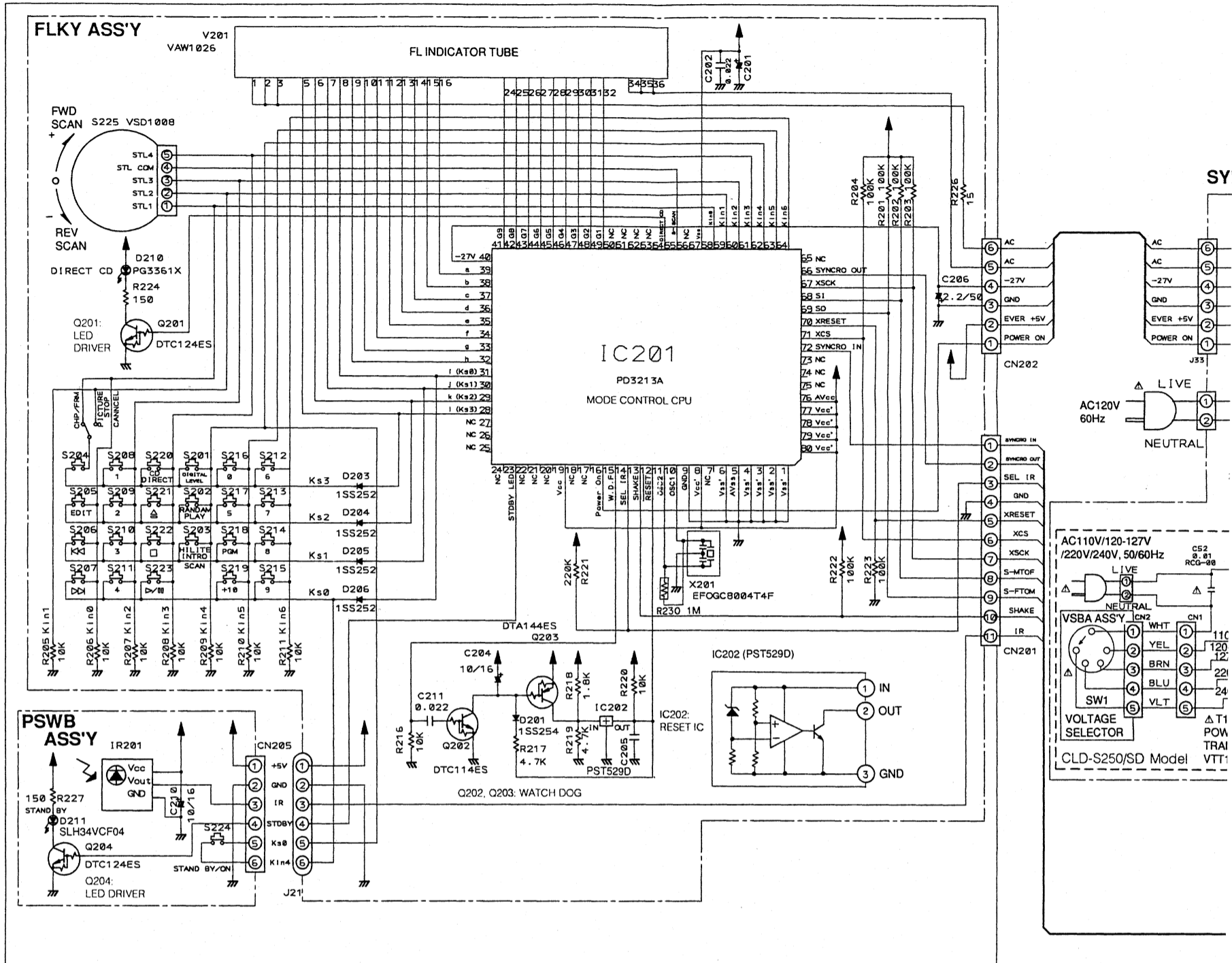


5 6 7 8 9 15

3. SCHEMATIC AND PCB CONNECTIONS DIAGRAMS

3.1 FLKY, PSWB, SYPS, CAMB, LOSB, LOMB, FG, PKSB ASSEMBLIES AND OVERALL WIRING DIAGRAM

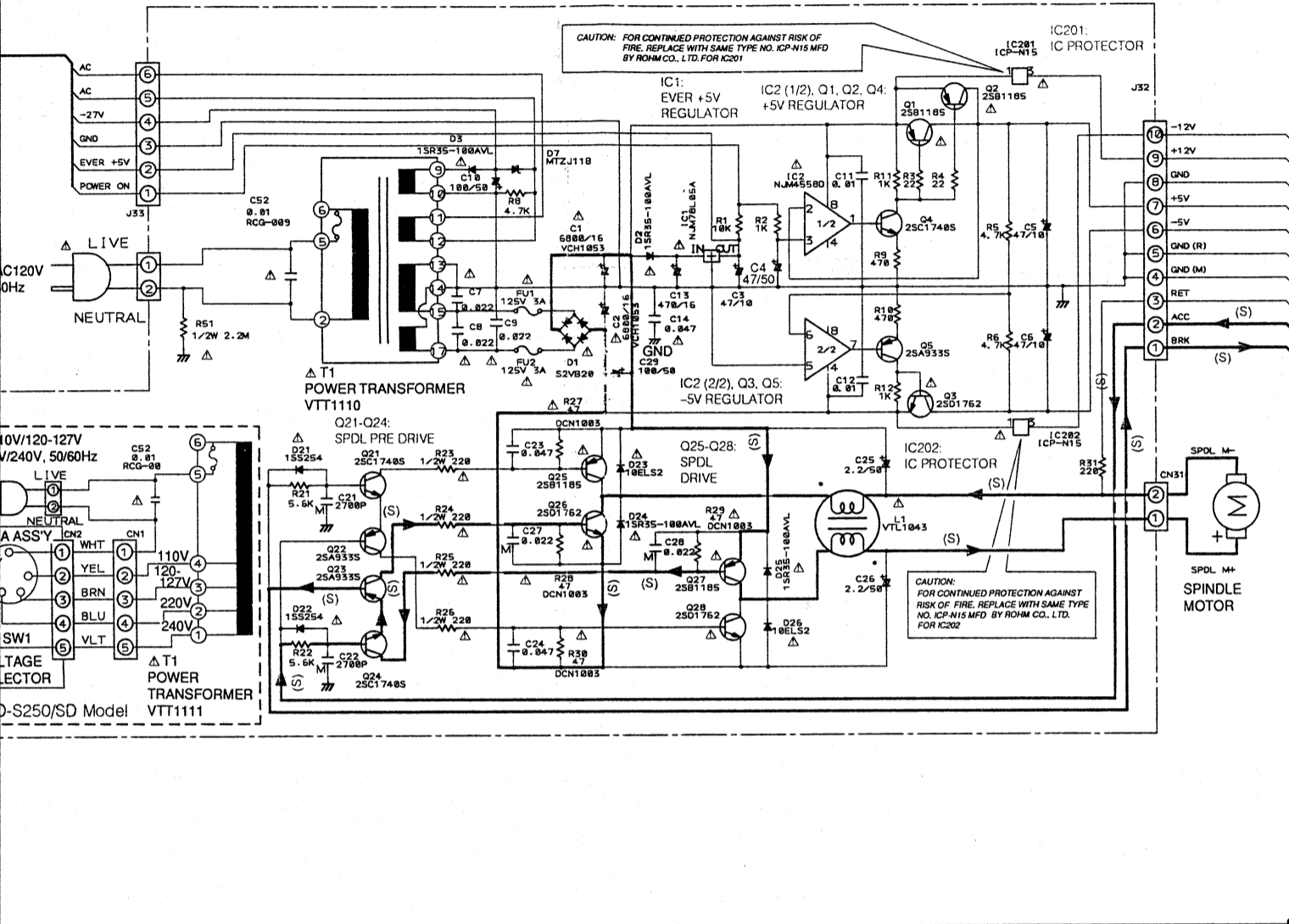
FLKB ASS'Y (VWM 1248)



MACB ASS'Y (VWM 1250)

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE.
REPLACE ONLY WITH SAME TYPE AND RATINGS ONLY.

SYPS ASS'Y (CLD-S201/KUC: VWR1122, CLD-S250/SD: VWM1267)



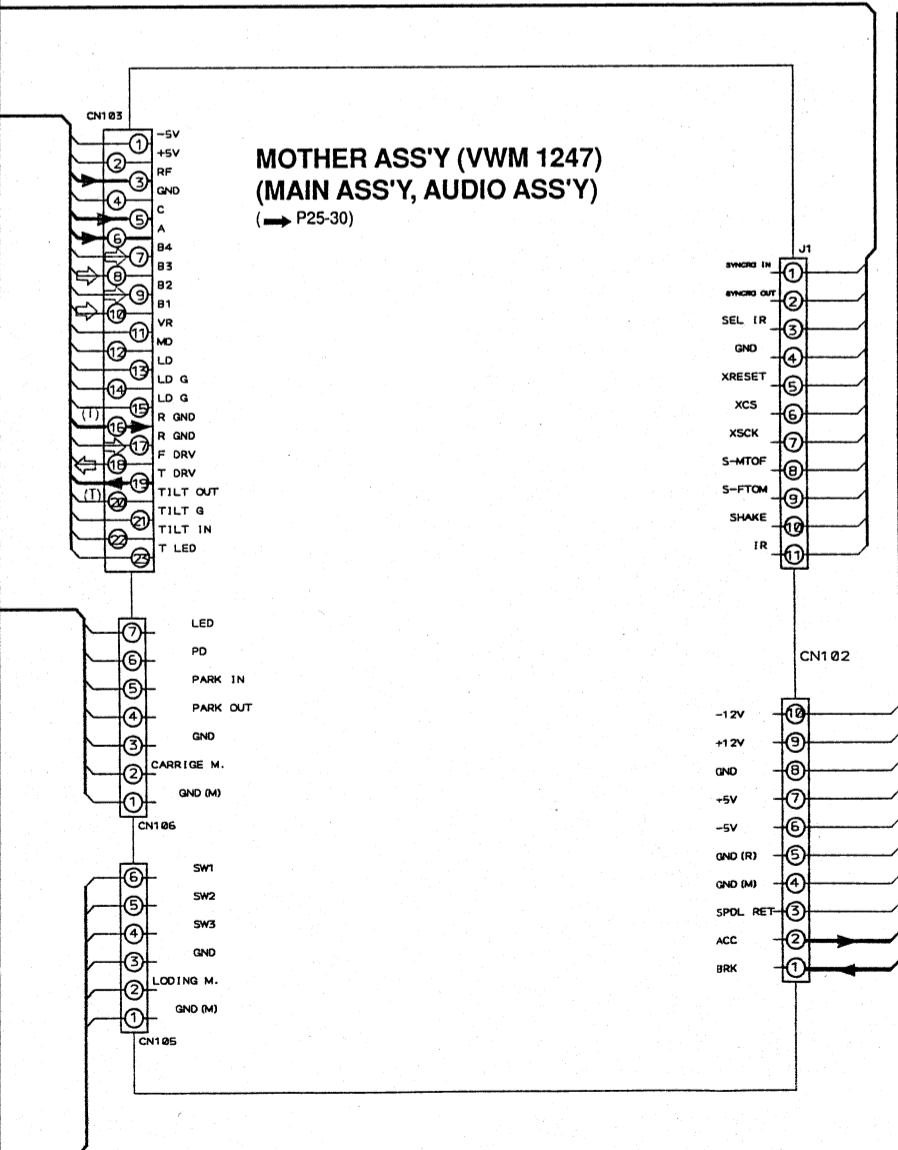
- (S) — : RF Signal Line
- (T) — : SPDL Servo Loop Line
- (T) — : TRKG Servo Loop Line
- ⇐ : FCUS Servo Loop Line

1. RESISTORS:
Indicated in Ω, 1/4W, 1/8W, 1/8W and 1/10W, ± 5% tolerance unless otherwise noted; k Ω, M Ω, (F); ± 1%, (G); ± 2%, (K); ± 10%, (M); ± 20% tolerance.
2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noted; p, pF. Indication without voltage is 50V except electrolytic capacitor.
3. VOLTAGE, CURRENT:
□ : DC voltage (V) at play state.
⊖ : DC current at play state.
□ : Value in () is DC current at stop state.
4. OTHERS:
▶ (Red): Measurement point
→ : Signal route.
⊙ : Adjusting point.
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.
※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

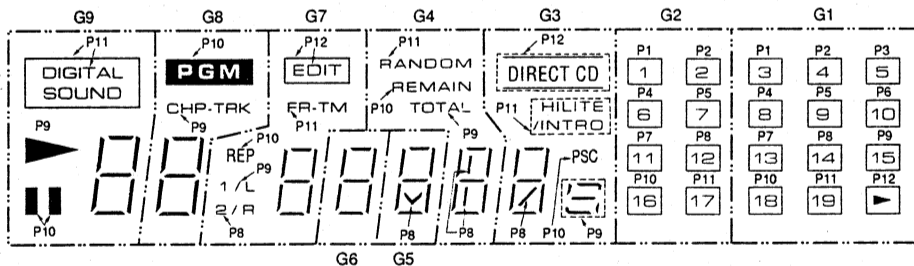
5. SWITCHES
- | | |
|-------------------------|----------------------|
| FLKY ASS'Y | PSWB ASS'Y |
| S201: DIGITAL LEVEL | S224: STANDBY/ON |
| S202: RANDOM PLAY | PKSB ASS'Y |
| S203: HILITE INTRO SCAN | S4 : PARK OUT |
| S204: CHP/TIME | S5 : PARK IN |
| S205: EDIT | LOSB ASS'Y |
| S206: ◀ | S1 : TILT, LOADING 1 |
| S207: ▶ | S2 : TILT, LOADING 2 |
| S208: 1 | S3 : TILT, LOADING 3 |
| S209: 2 | |
| S210: 3 | |
| S211: 4 | |
| S212: 6 | |
| S213: 7 | |
| S214: 8 | |
| S215: 9 | |
| S216: 0 | |
| S217: 5 | |
| S218: PGM | |
| S219: +10 | |
| S220: CD DIRECT | |
| S221: ▲ | |
| S222: ■ | |
| S223: ▶/ | |
| S225: ROTARY ENCODER | |

MOTHER ASS'Y (VWM 1247)
(MAIN ASS'Y, AUDIO ASS'Y)
(→ P25-30)



FL Display (V201: VAW 1026)

• ANODE GRID ASSIGNMENT



• ANODE GRID ASSIGNMENT & PIN ASSIGNMENT

	G9	G8	G7	G6	G5	G4	G3	G2	G1
P1	P1	P1	P1	P1	P1	P1	P1	1	3
P2	P2	P2	P2	P2	P2	P2	P2	2	4
P3	P3	P3	P3	P3	P3	P3	P3	/	5
P4	P4	P4	P4	P4	P4	P4	P4	6	8
P5	P5	P5	P5	P5	P5	P5	P5	7	9
P6	P6	P6	P6	P6	P6	P6	P6	/	10
P7	P7	P7	P7	P7	P7	P7	P7	11	13
P8	/	/	/	/	/	/	/	12	14
P9	▶	CHP-TRK	1 / L	/	/	TOTAL	/	/	15
P10		PGM	REP	/	/	REMAIN	PSC	16	18
P11	DIGITAL SOUND	/	FR-TM	/	/	RANDOM	HILITE / INTRO	17	19
P12	/	/	EDIT	/	/	/	DIRECT CD	/	▶

• 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	G9	G8	G7	G6	G5	G4	G3	G2	G1	NP	F	F	F

F: Filament G1-G9: Grid P1-P12: Anode NP: No pin

A

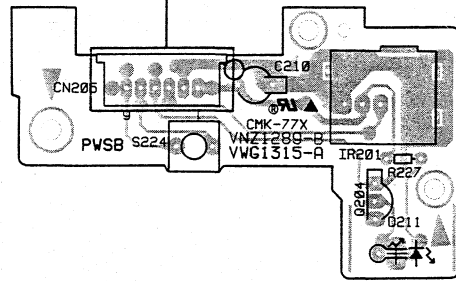
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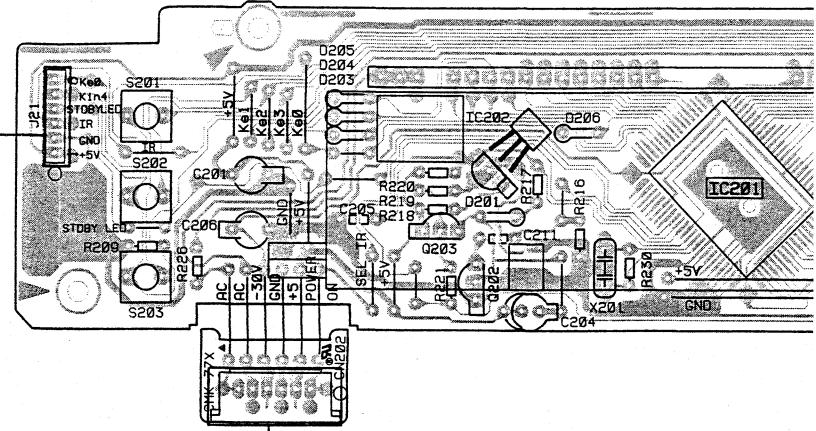
PCB pattern diagram indication	Corresponding part symbol	Part name	PCB pattern diagram indication	Corresponding part symbol	Part name
		Transistor			Ceramic capacitor
		FET			Mylar capacitor
		Diode			Styrol capacitor
		Zener diode			Electrolytic capacitor (Non polarized)
		LED			Electrolytic capacitor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

1. This PCB 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.

PSWB ASS'Y

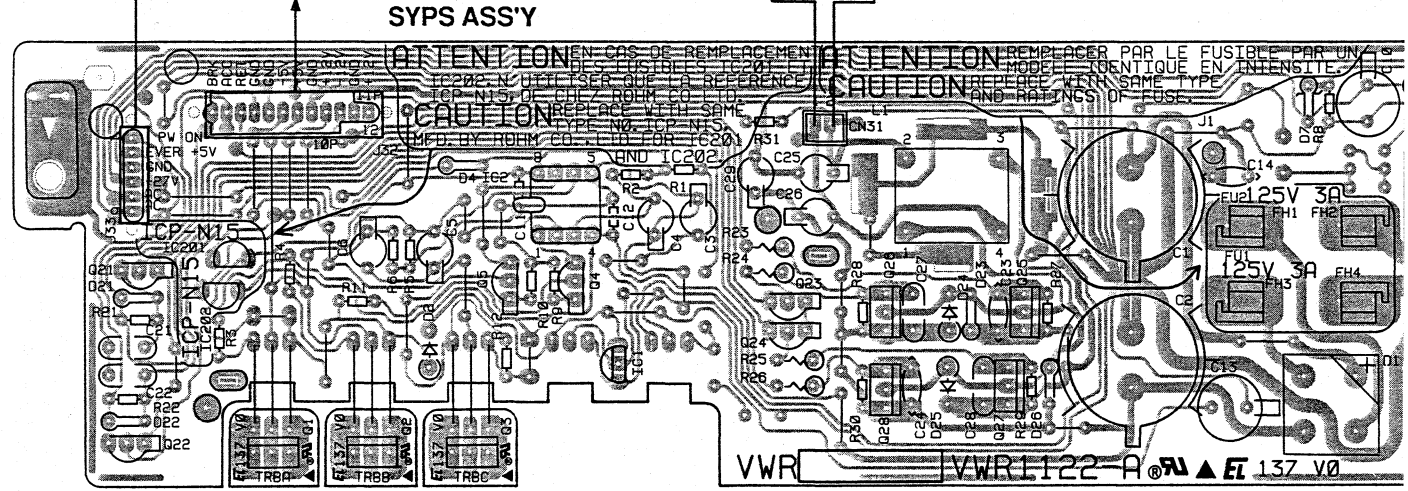


FLKY ASS'Y



TO MAIN ASS'Y
CN102

SYPS ASS'Y



SPINDLE MOTOR

Q21 IC201, IC202
Q22

IC2 Q5 Q4 IC1

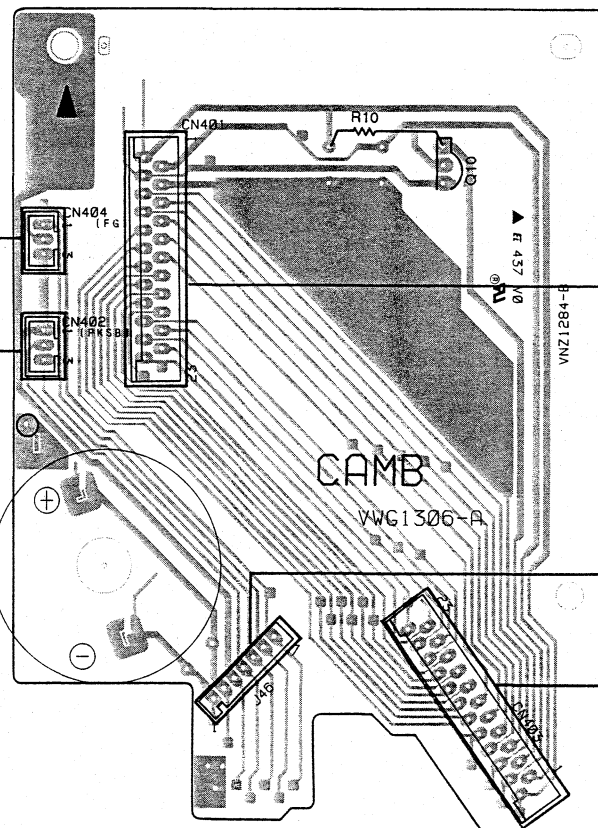
Q24 Q23 Q26 Q27 Q25
Q28

D

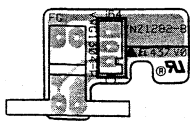
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CAMB ASS'Y

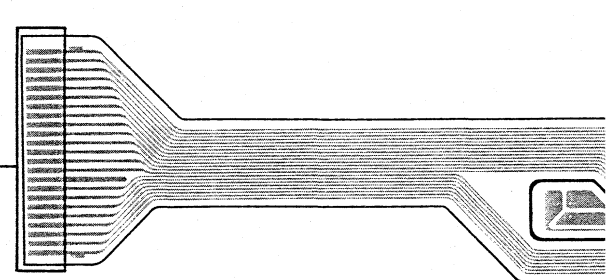


FG ASS'Y



PKSB ASS'Y

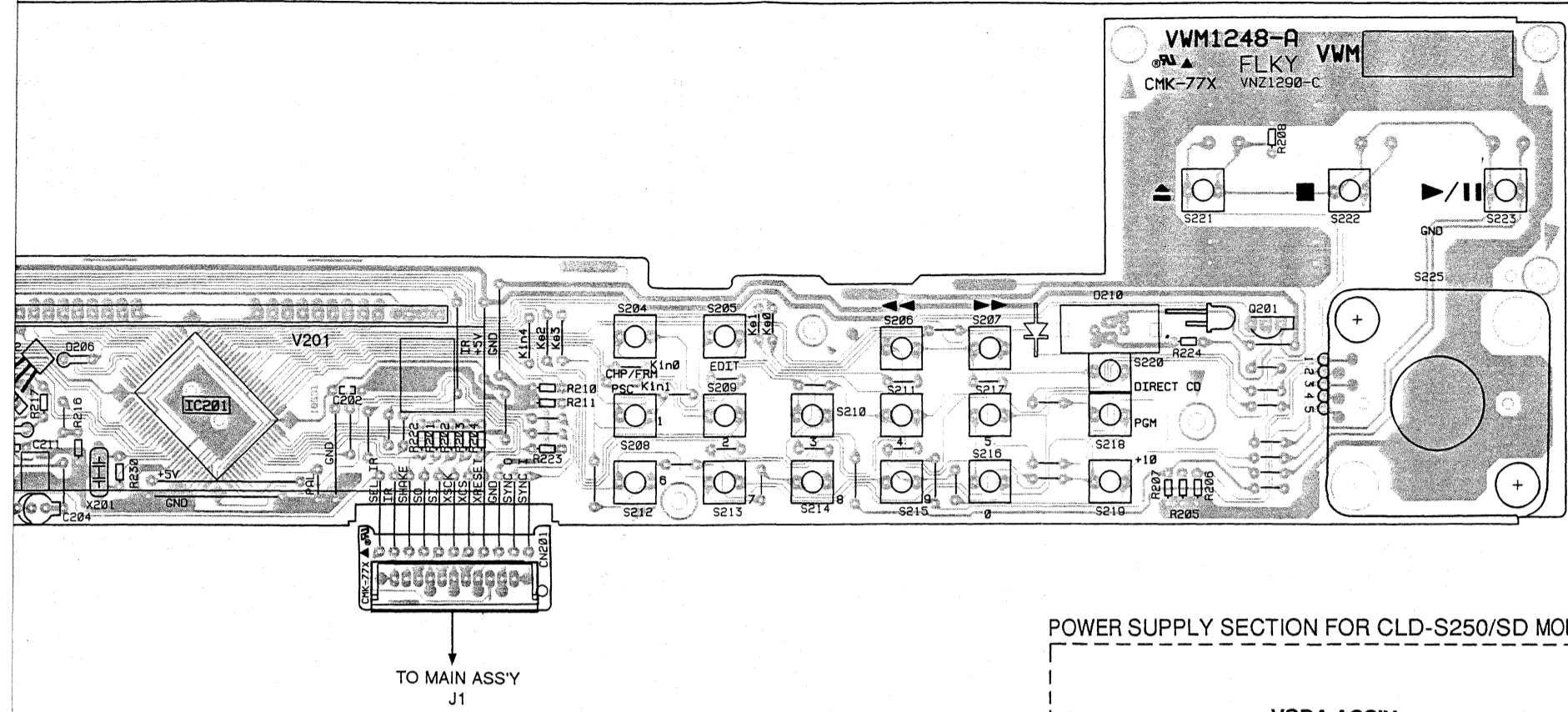
HEAD ASS'Y



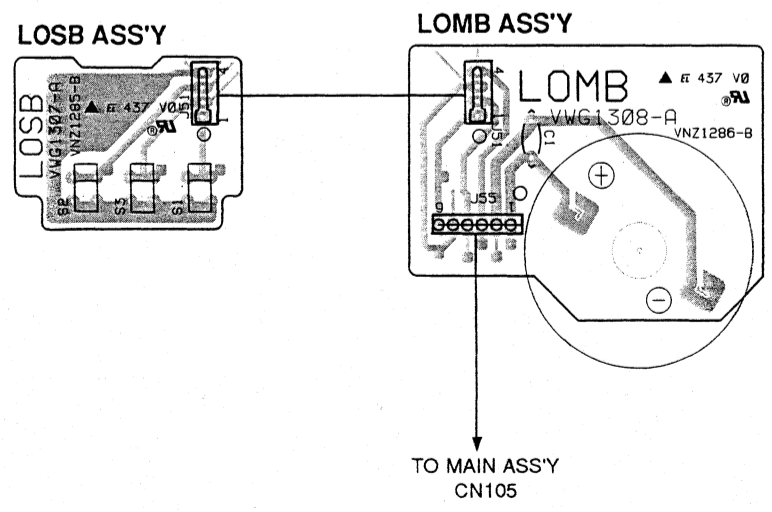
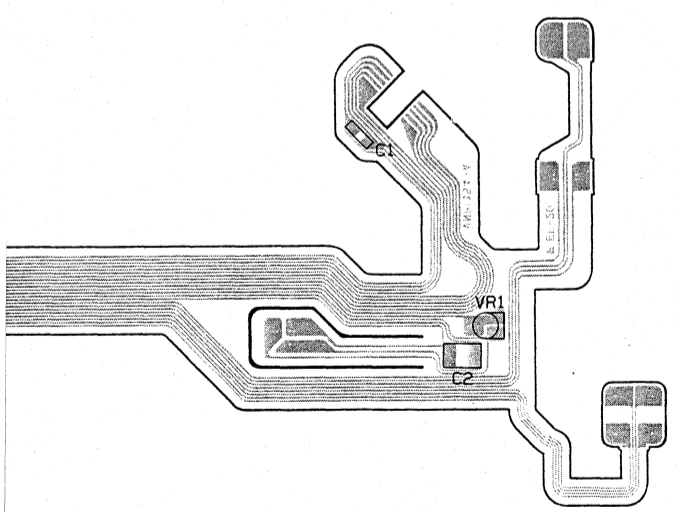
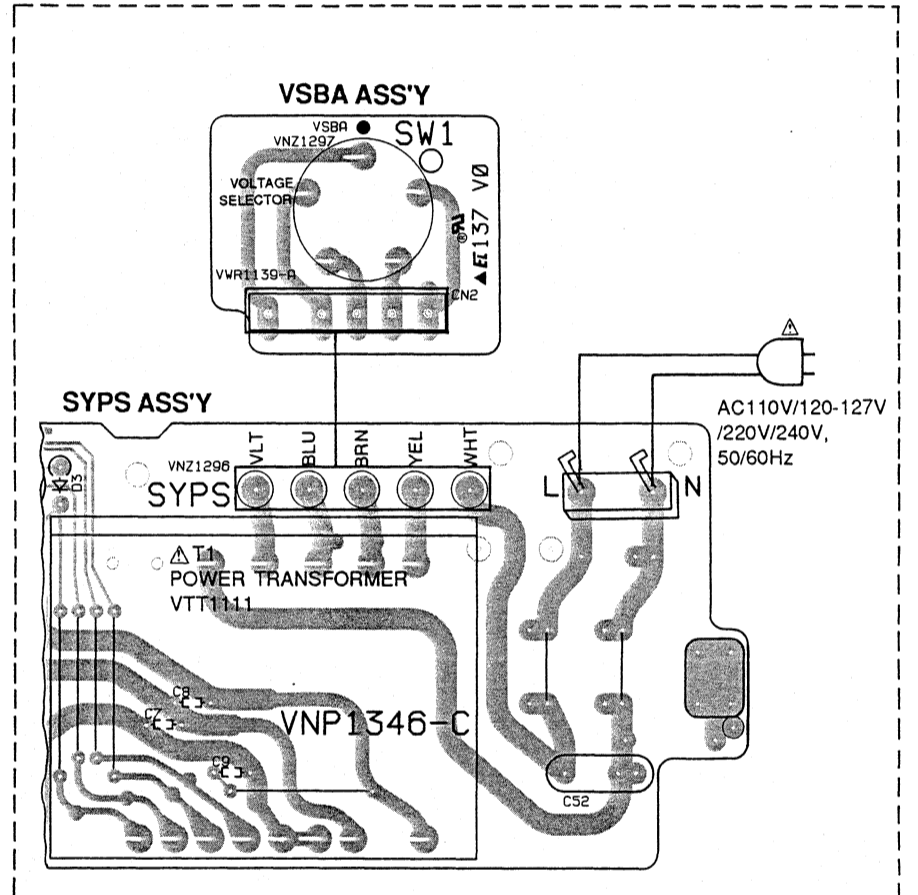
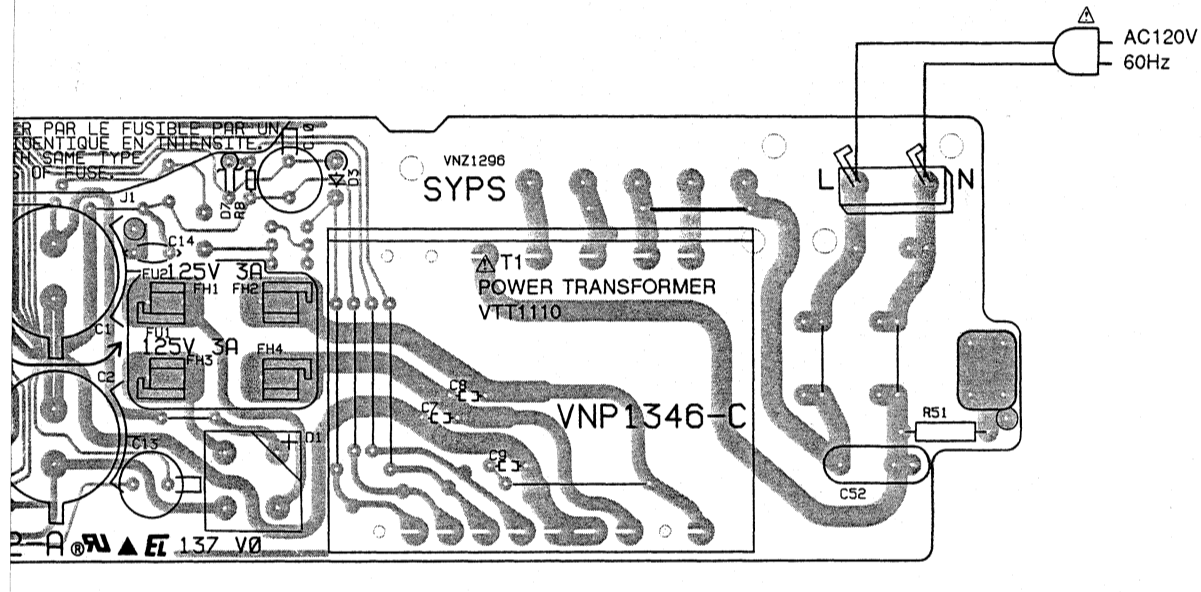
TO MAIN ASS'Y
CN106

TO MAIN ASS'Y
CN103

Q201



POWER SUPPLY SECTION FOR CLD-S250/SD MODEL

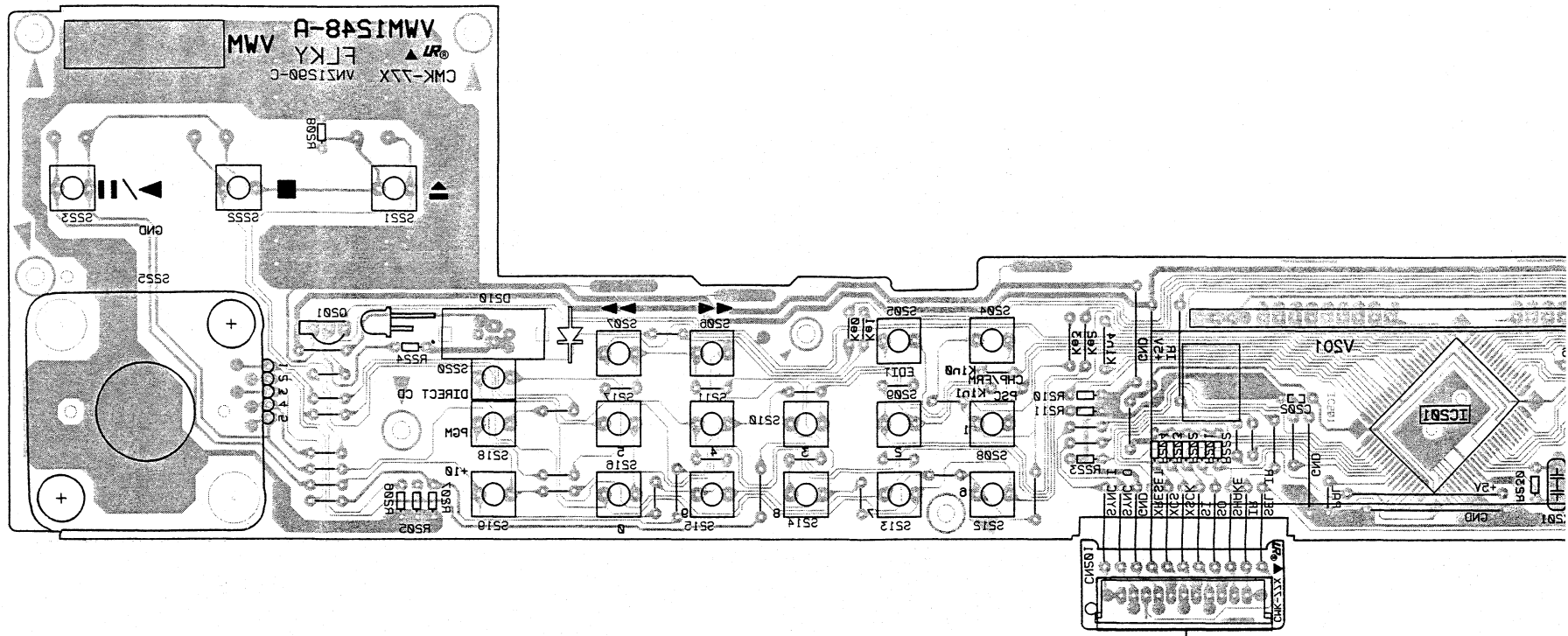


Connection diagram is viewed from parts mounted side.

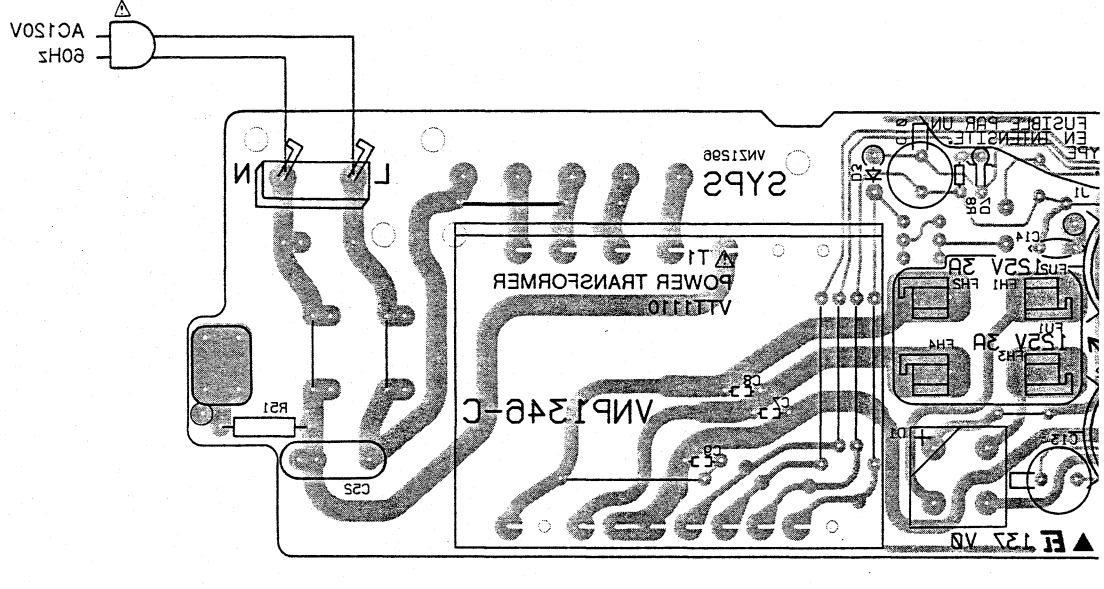
Q501

A

B



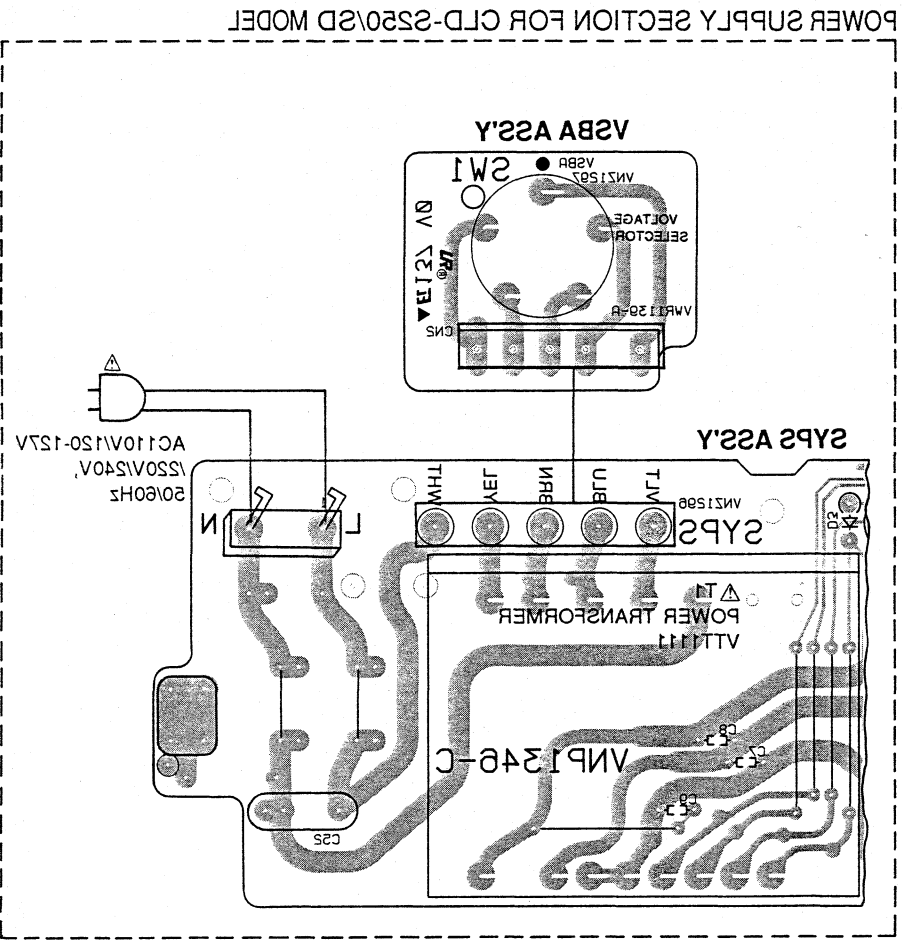
TO MAIN ASSY
J1



POWER SUPPLY SECTION FOR CLD-2501/2D MODEL

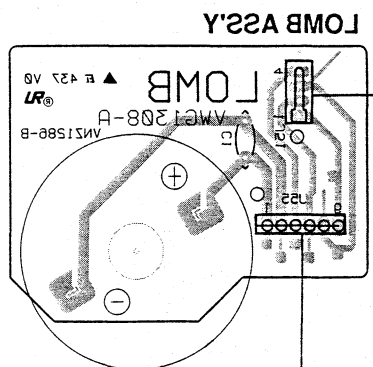
C

D

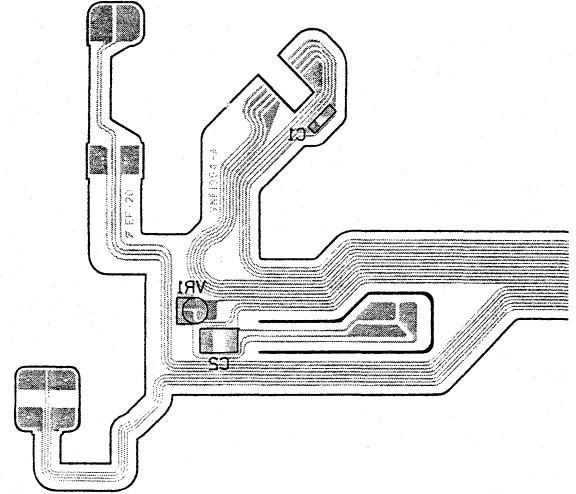
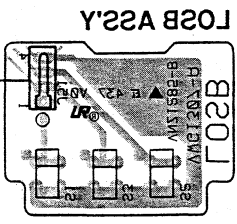


E

F



TO MAIN ASSY
CN105



This PCB connection diagram is viewed from

1 2 3 4 5

A B C D E F

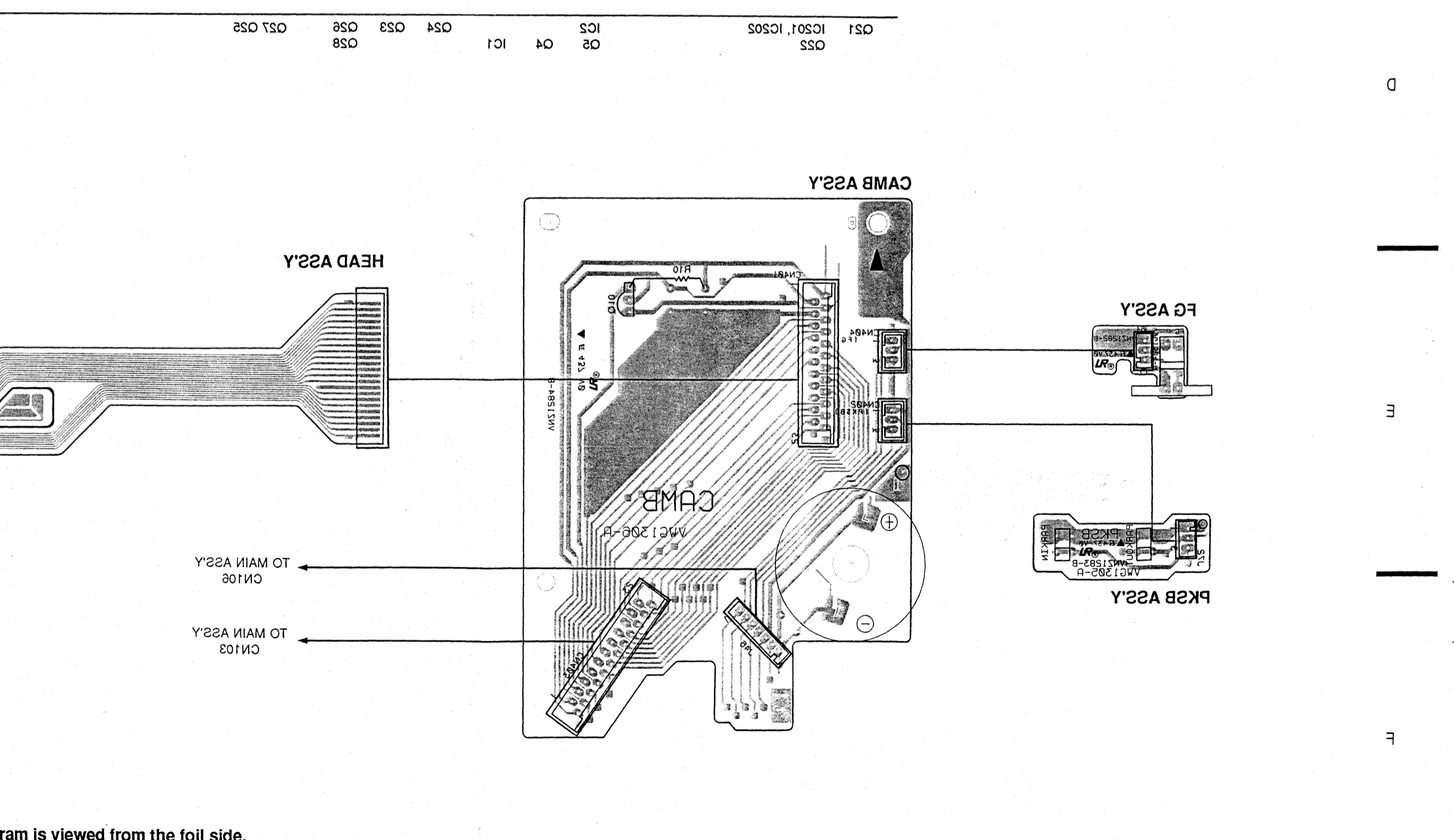
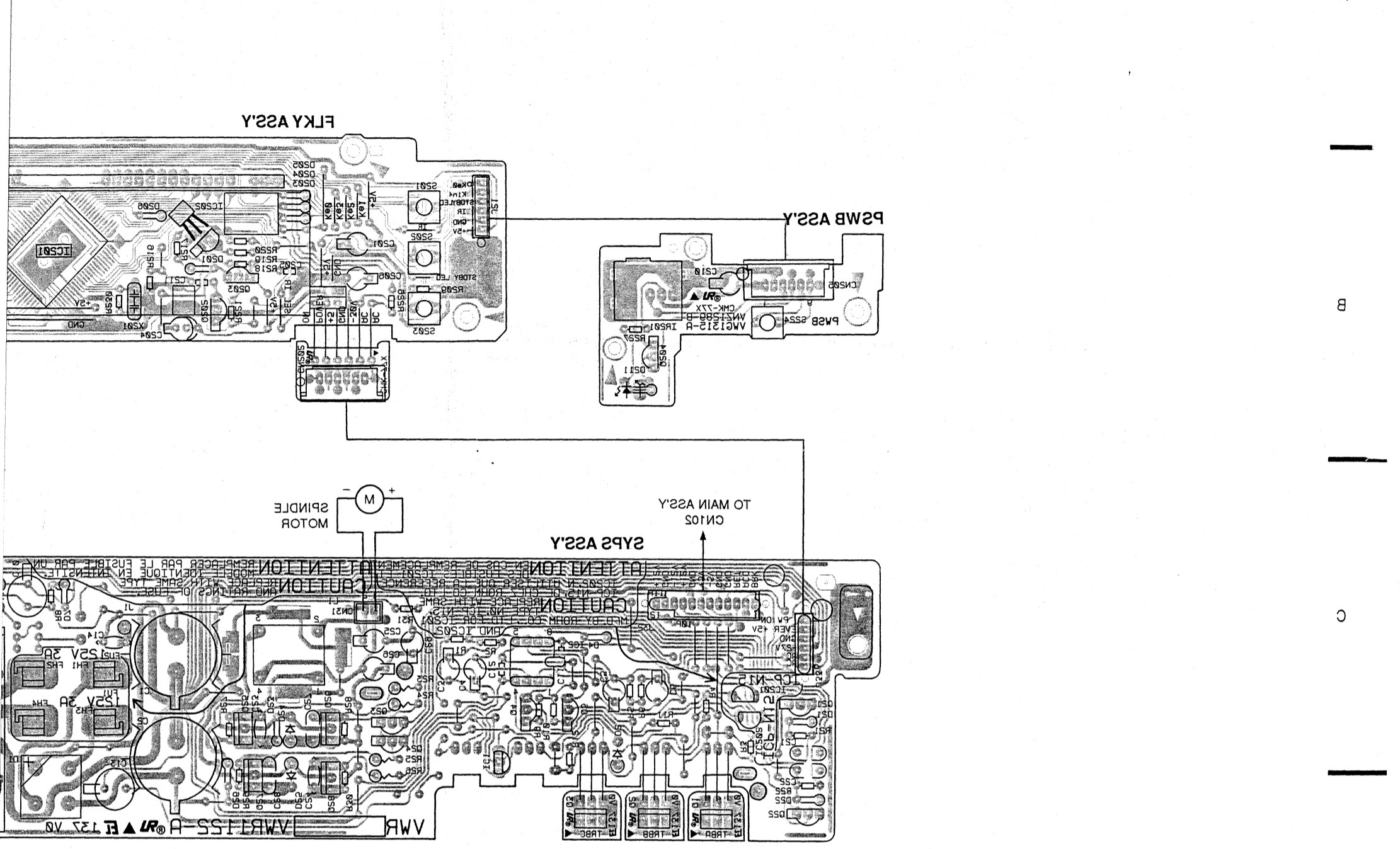
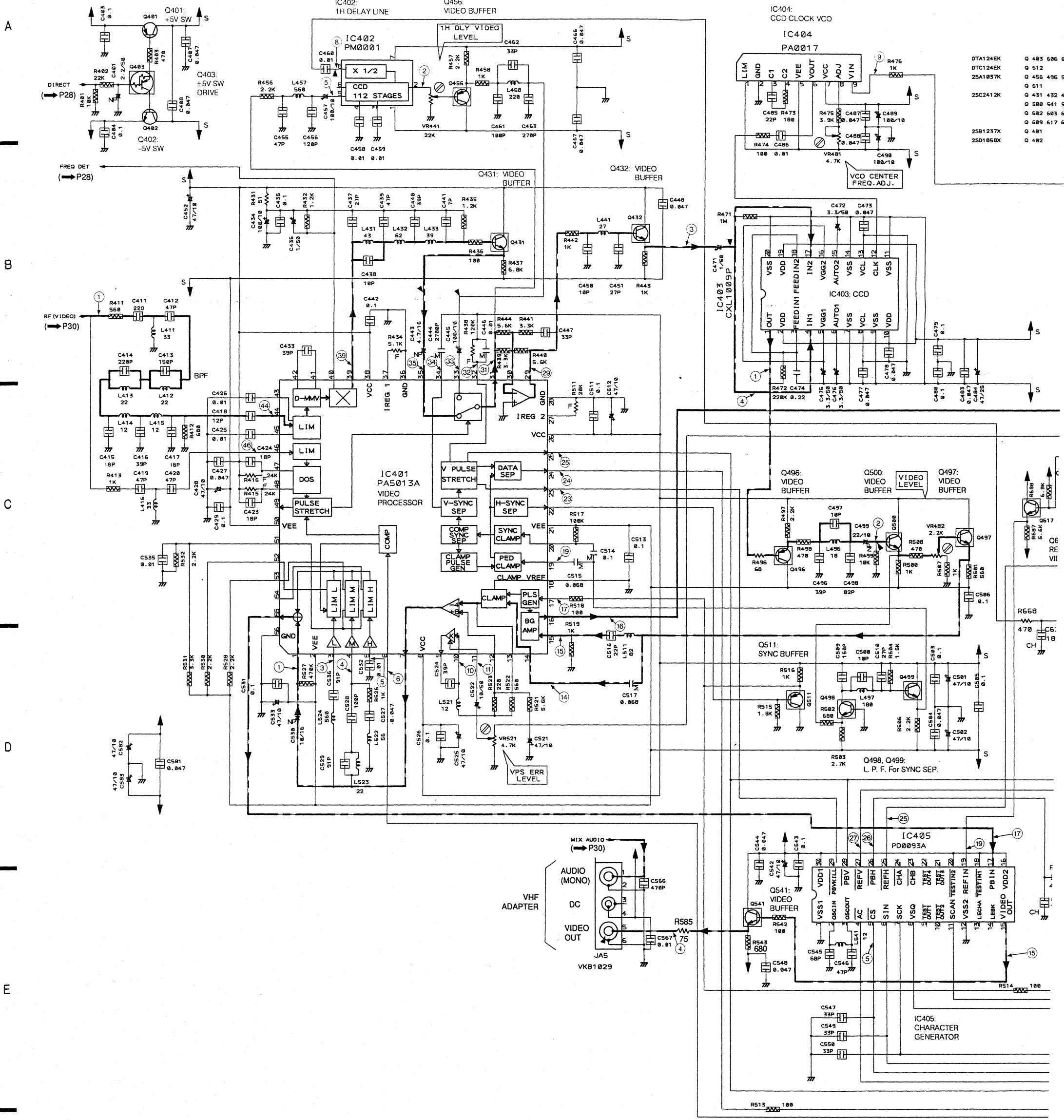


Diagram is viewed from the foil side.

1 2 3 4 5

3.2 MAIN ASS'Y (1/2)
 VIDEO AND TBC SECTION



- DTA124EK Q 483 586 6
- DTC124EK Q 612
- 25A1037K Q 456 496 5
- Q 611
- 25C2412K Q 431 432 4
- Q 500 541 5
- Q 582 583 5
- Q 589 517 6
- 25D1237K Q 481
- 25D1858K Q 482

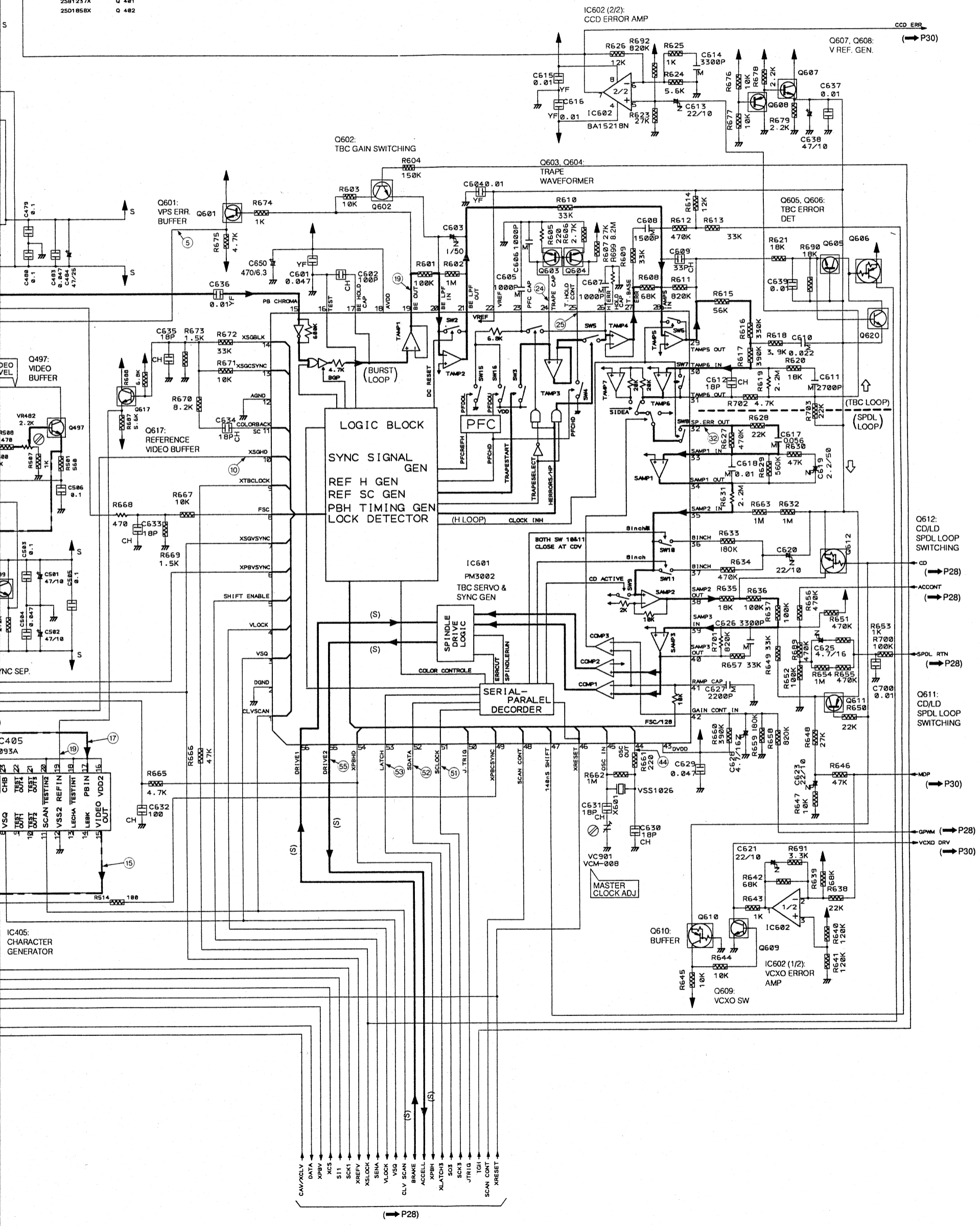
- Q496: VIDEO BUFFER
- Q500: VIDEO BUFFER
- Q497: VIDEO BUFFER
- Q511: SYNC BUFFER
- Q498, Q499: L.P.F. For SYNC SEP.

- IC405: CHARACTER GENERATOR
- Q541: VIDEO BUFFER
- Q542: VIDEO BUFFER
- Q543: VIDEO BUFFER
- Q544: VIDEO BUFFER
- Q545: VIDEO BUFFER
- Q546: VIDEO BUFFER
- Q547: VIDEO BUFFER
- Q548: VIDEO BUFFER
- Q549: VIDEO BUFFER
- Q550: VIDEO BUFFER

- R585: 75
- R586: 75
- R587: 75
- R588: 75
- R589: 75
- R590: 75
- R591: 75
- R592: 75
- R593: 75
- R594: 75
- R595: 75

DTA124EK	Q 403	606	610	559	
DTA124EK	Q 512				
2SA1037K	Q 456	496	511	600	
	Q 511				
2SC2412K	Q 431	432	497	498	499
	Q 500	541	503	601	
	Q 602	603	604	605	607
	Q 609	617	620		
25B1237X	Q 401				
25D1858X	Q 402				

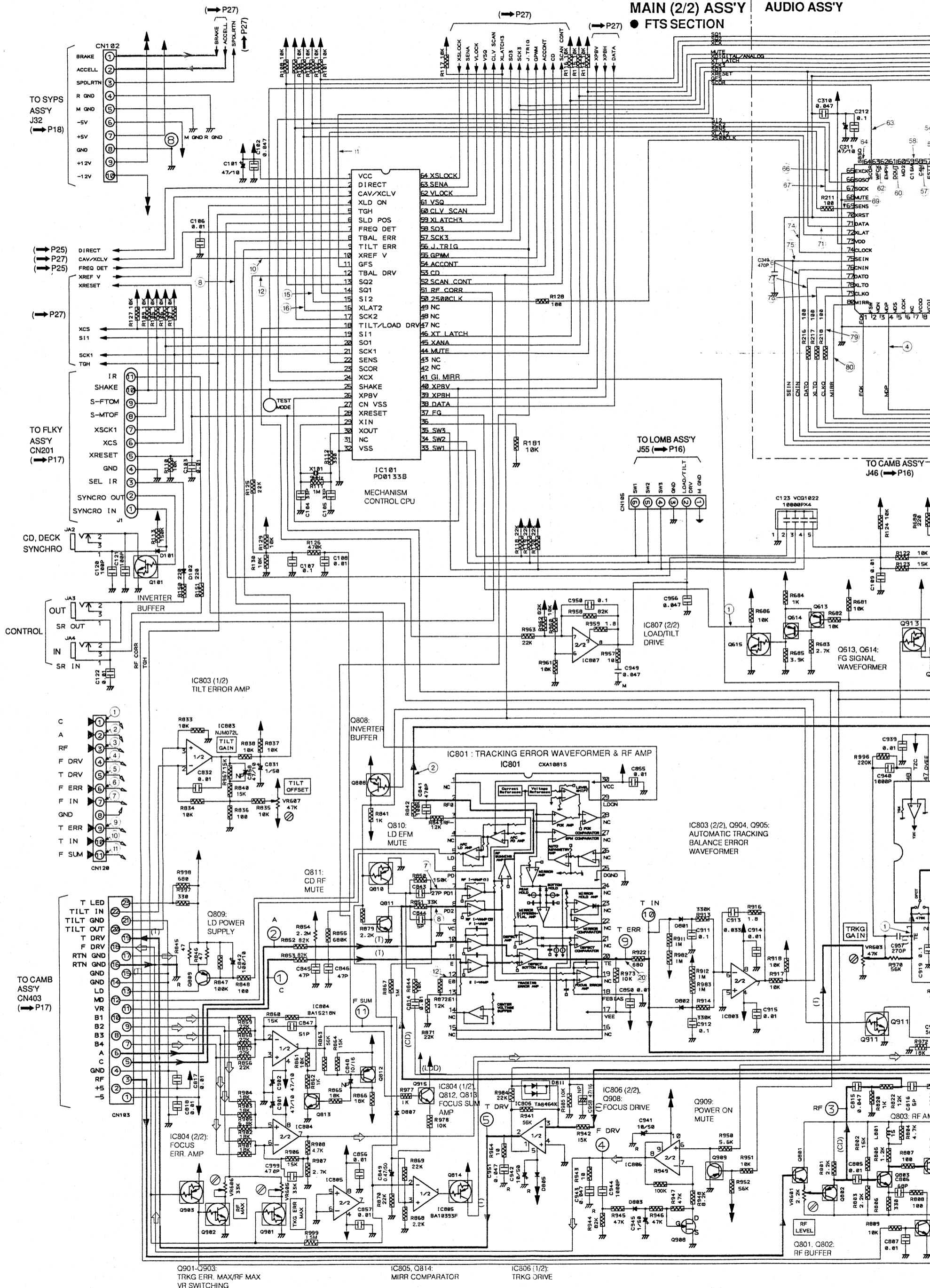
— : RF Signal Line
 — (S) — : Video Signal Line
 — : SPDL Servo Loop Line

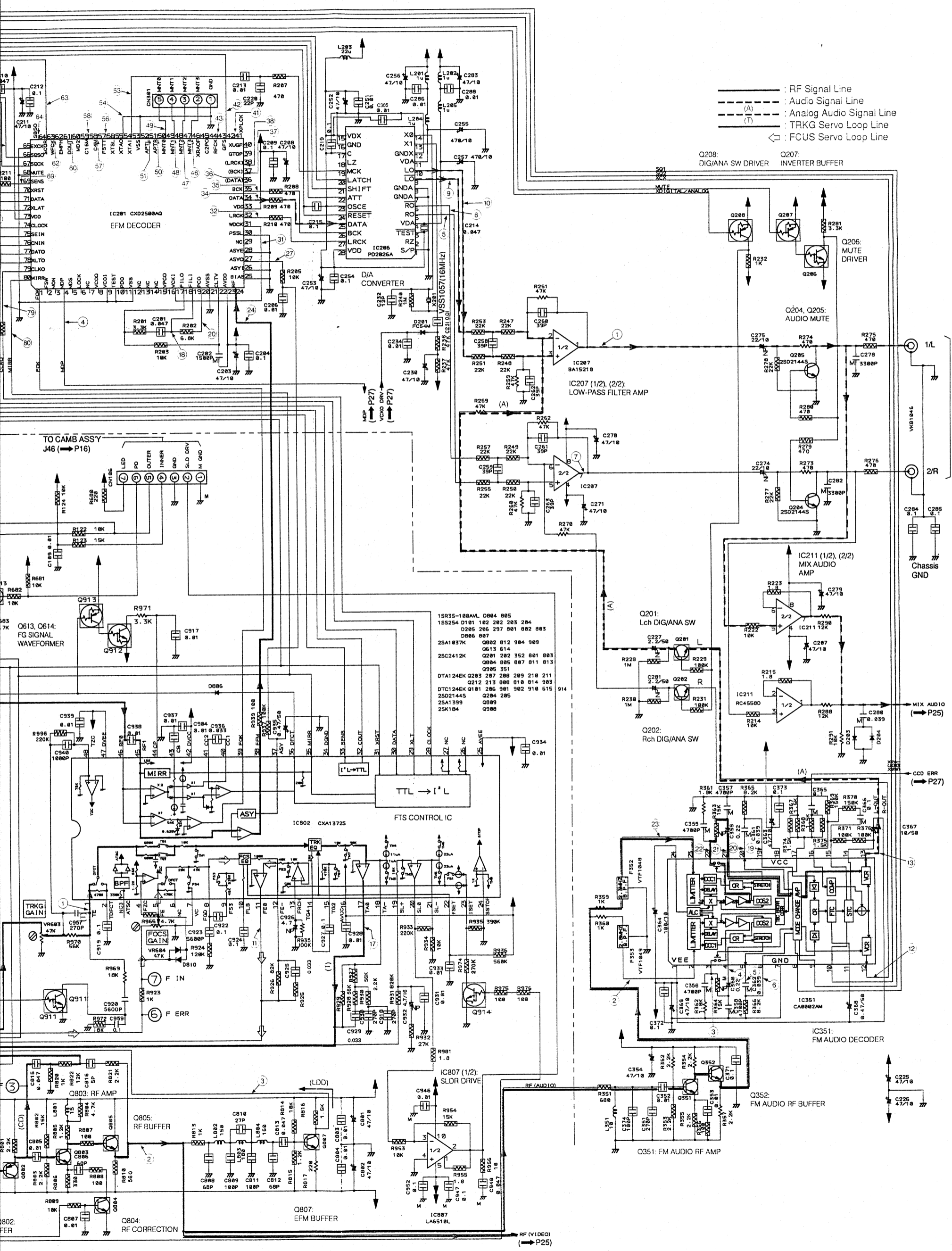


A
 B
 C
 D
 E
 F

3.3 MAIN ASS'Y (2/2) AND AUDIO ASS'Y

MAIN (2/2) ASS'Y AUDIO ASS'Y
● FTS SECTION





A

B

C

D

E

F

**WAVEFORMS AND VOLTAGES
VIDEO AND TBC SECTION**

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

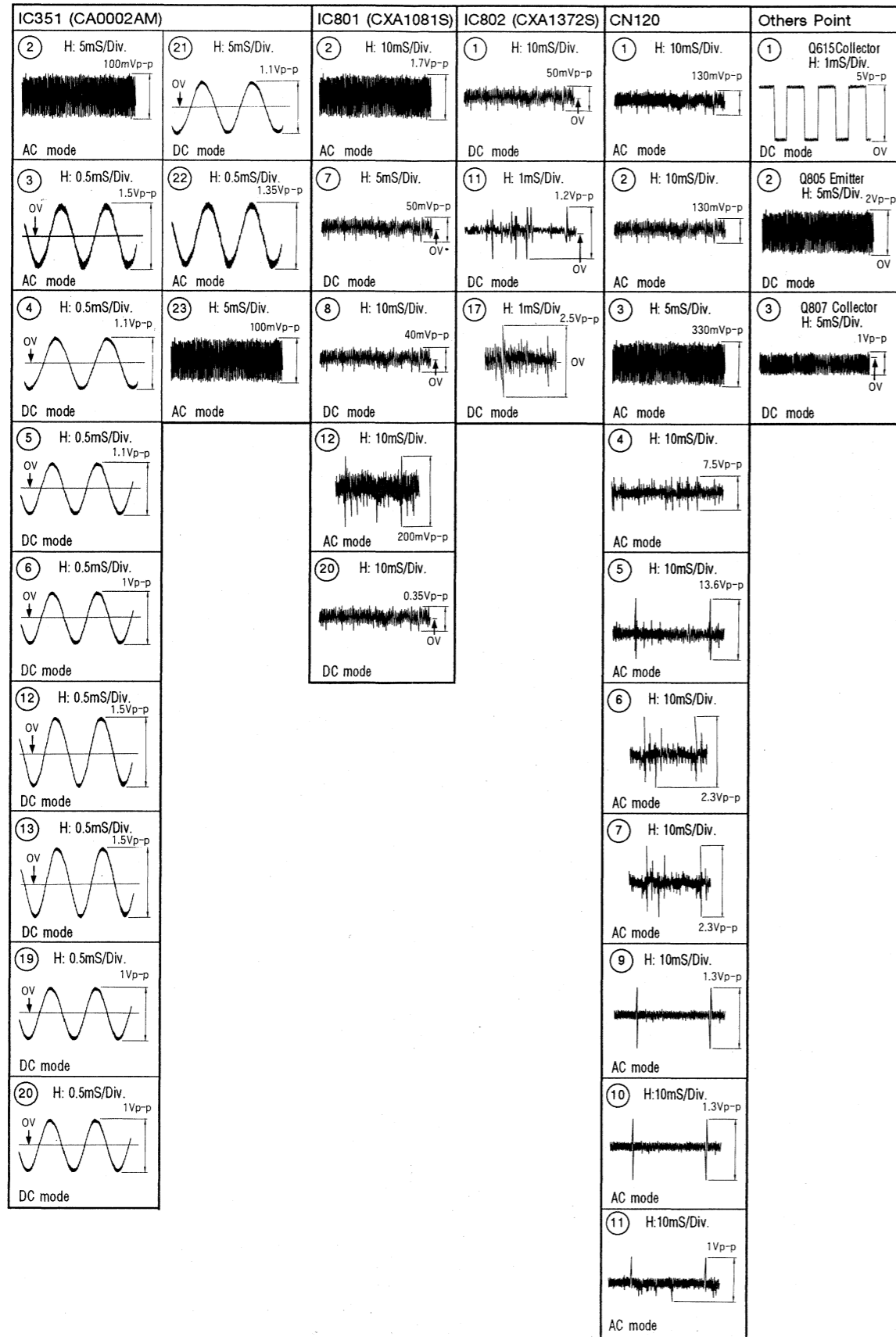
IC401 (PA5013A)			IC402 (PM0001)	IC405 (PD0093A)	IC601 (PM3002)	Others Point
①	⑬	③③	②	⑤	⑩	① RF (Between R411 and R413) Range approx. 2mS/div 2Vp-p
③	⑰	③④	⑤	⑮	⑲	② Lead wire of C499 1.25Vp-p
④	⑲	③⑤	⑧	⑰	⑳	③ Q432 Emitter 1.25Vp-p
⑤	⑳	③⑨	IC403 (CXL1009P)		⑲	④ VIDEO OUT terminal (75Ω terminated) 1.0Vp-p
⑥	⑳	④④	①	⑳	③②	⑤ Q601 Emitter 300mVp-p
⑩	⑳	④⑥	④	⑳	④④	
⑪	⑳		IC404 (PA0017)		⑤①	
⑭	③①		⑨		⑤②	
⑮	③②				⑤③	
					⑤⑤	

FTS AND AUDIO SECTION

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

IC101 (PD0133B)		IC201 (CXD2500AQ)				IC206 (PD2026A)
⑧	④	③⑥	④⑨	⑥②	⑦⑥	⑤ ⑩
⑩	⑰	③⑦	⑤①	⑥③	⑦⑦	⑥ ⑨
⑪	⑳	③⑧	⑤①	⑥④	⑦⑧	
⑫	⑳	④①	⑤③	⑥⑥	⑦⑨	① ⑦
⑮	⑳	④②	⑤④	⑥⑦	⑧①	
⑰	③①	④③	⑤⑥	⑥⑨		
	③②	④⑥	⑤⑦	⑦①		
	③④	④⑦	⑤⑧	⑦④		
	③⑤	④⑧	⑤⑩	⑦⑤		

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



Note: Waveforms and voltages are at the PLAY mode.
IC201 (CXD2500AQ)

Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage
1	4.8	15	0	29	0	43	*	57	*	61	*
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)

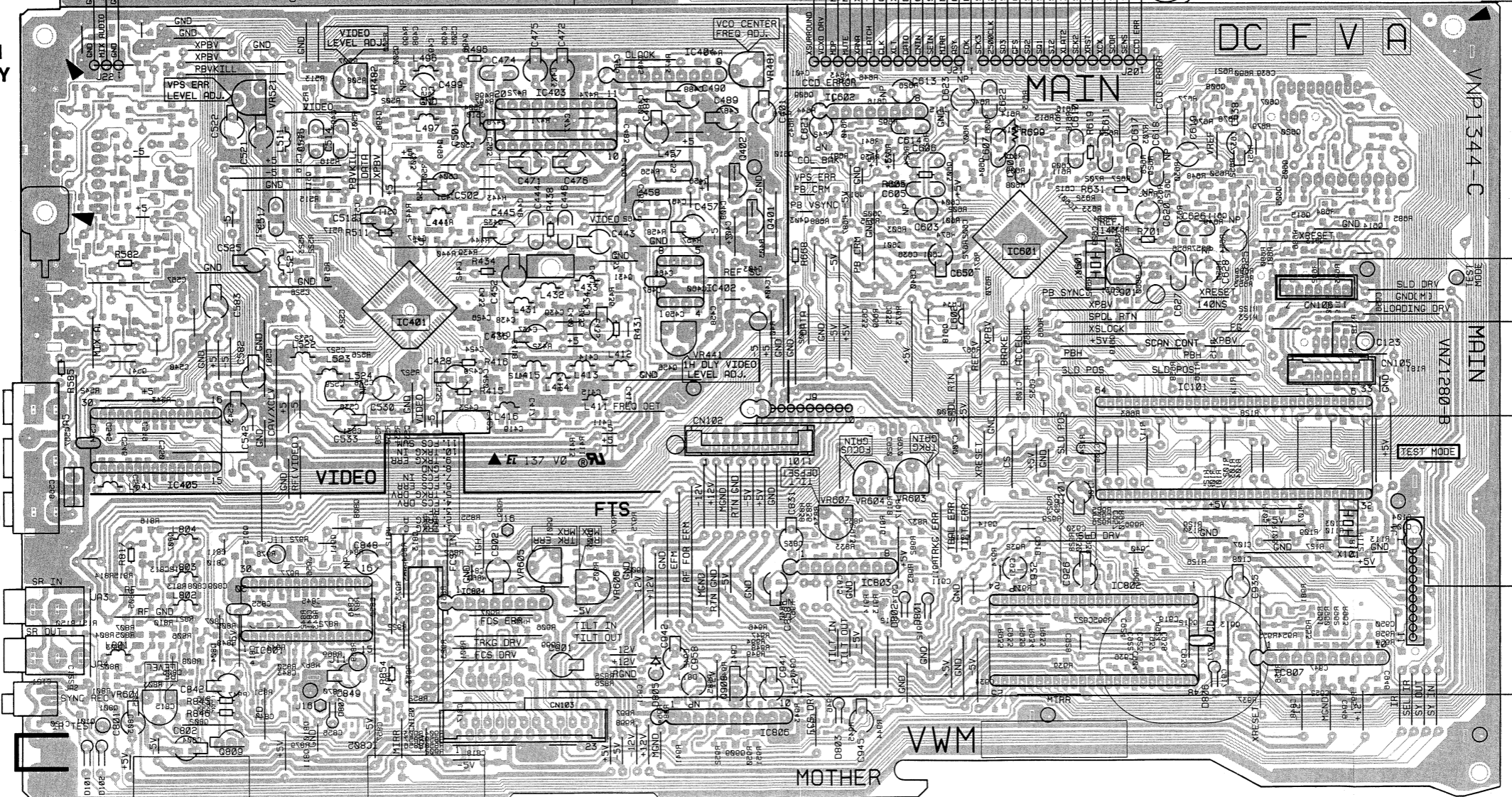
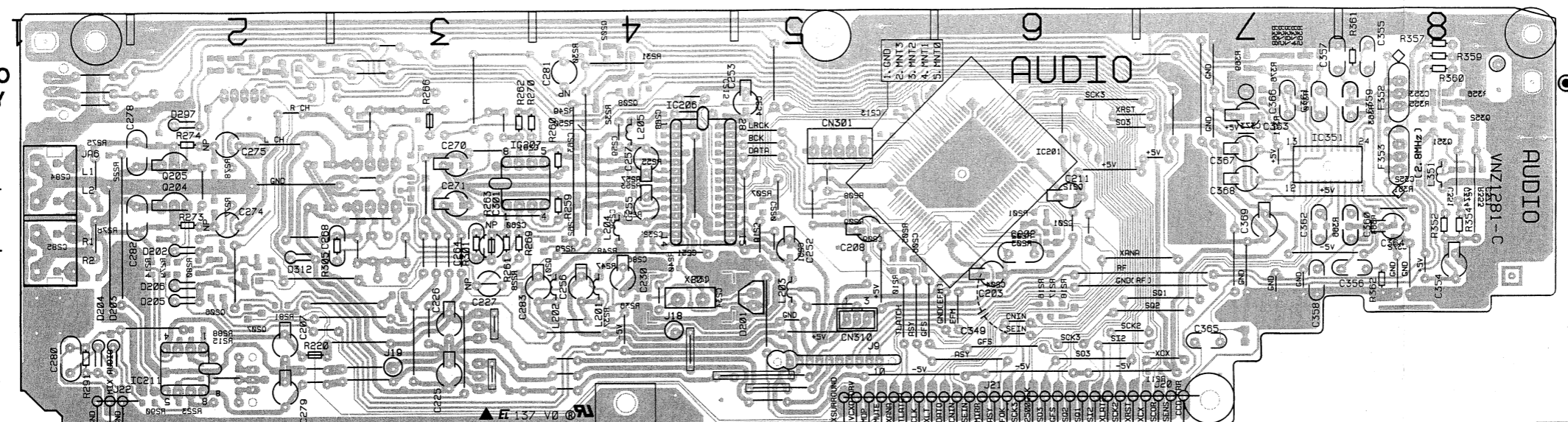
Pin No.	Voltage	Pin No.	Voltage
1	-5	13	*
2	*	14	-0.6
3	*	15	-0.6
4	*	16	0
5	*	17	0
6	*	18	+5
7	0	19	*
8	0	20	*
9	0	21	*
10	+5	22	*
11	+2	23	*
12	*	24	-2.2

*: Refer to waveform

This PCB connection diagram is viewed from parts mounted side.

1 2 3 4 5 6

IC211 Q204 Q205 Q301 Q313 Q308 Q309 Q307 Q305 Q306 Q308 Q309 Q307 Q305 Q306 IC207 IC206 IC201 IC351 Q325



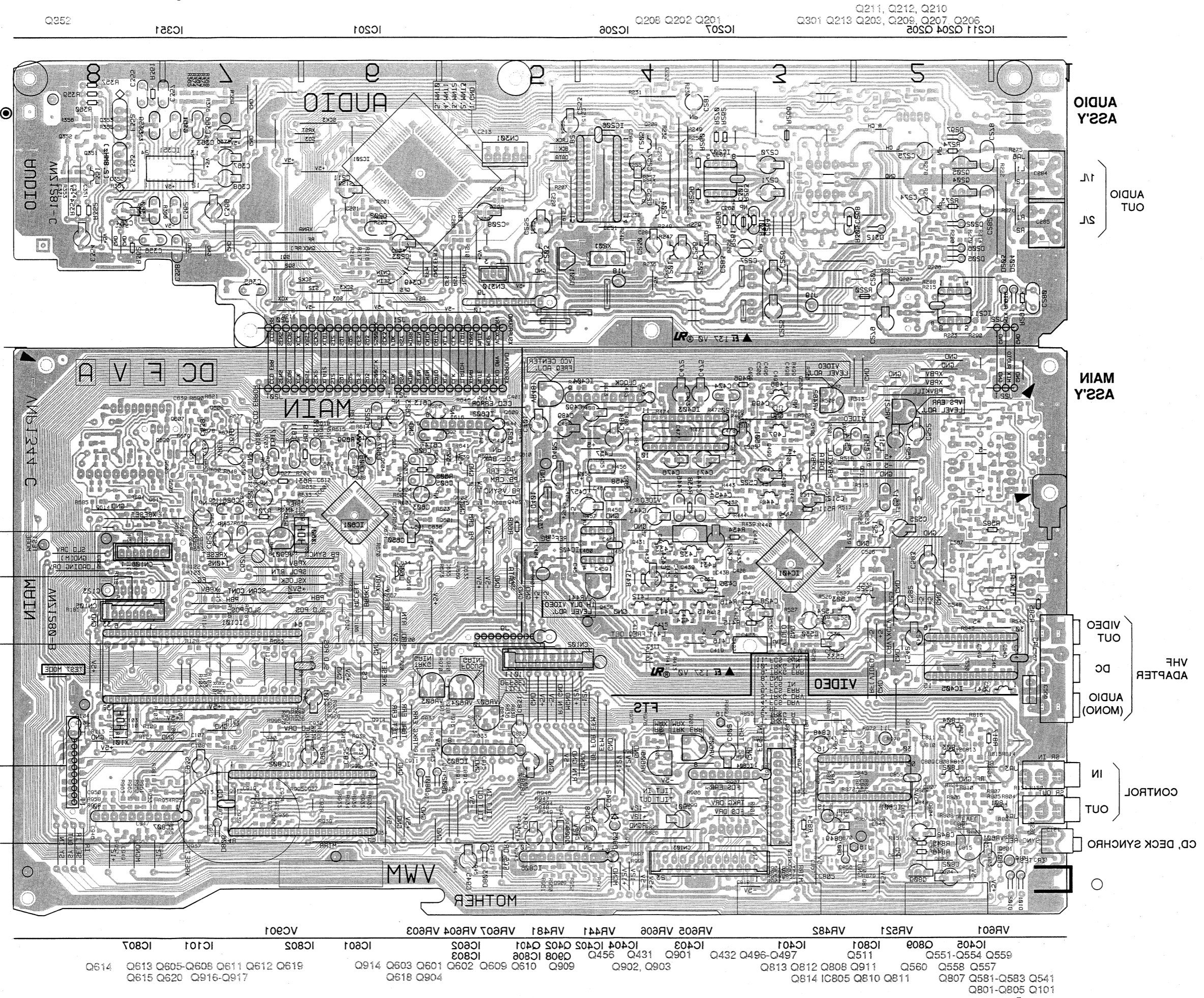
VR601 VR521 VR482 VR605 VR606 VR441 VR481 VR607 VR604 VR603 VC901

IC405 Q809 IC801 IC401 IC403 IC404 IC402 Q402 Q401 IC602 IC601 IC802 IC101 IC807

Q221-Q224 Q221 Q211 Q210 Q209 Q208 Q207 Q206 Q205 Q204 Q203 Q202 Q201 Q200 Q199 Q198 Q197 Q196 Q195 Q194 Q193 Q192 Q191 Q190 Q189 Q188 Q187 Q186 Q185 Q184 Q183 Q182 Q181 Q180 Q179 Q178 Q177 Q176 Q175 Q174 Q173 Q172 Q171 Q170 Q169 Q168 Q167 Q166 Q165 Q164 Q163 Q162 Q161 Q160 Q159 Q158 Q157 Q156 Q155 Q154 Q153 Q152 Q151 Q150 Q149 Q148 Q147 Q146 Q145 Q144 Q143 Q142 Q141 Q140 Q139 Q138 Q137 Q136 Q135 Q134 Q133 Q132 Q131 Q130 Q129 Q128 Q127 Q126 Q125 Q124 Q123 Q122 Q121 Q120 Q119 Q118 Q117 Q116 Q115 Q114 Q113 Q112 Q111 Q110 Q109 Q108 Q107 Q106 Q105 Q104 Q103 Q102 Q101 Q100 Q99 Q98 Q97 Q96 Q95 Q94 Q93 Q92 Q91 Q90 Q89 Q88 Q87 Q86 Q85 Q84 Q83 Q82 Q81 Q80 Q79 Q78 Q77 Q76 Q75 Q74 Q73 Q72 Q71 Q70 Q69 Q68 Q67 Q66 Q65 Q64 Q63 Q62 Q61 Q60 Q59 Q58 Q57 Q56 Q55 Q54 Q53 Q52 Q51 Q50 Q49 Q48 Q47 Q46 Q45 Q44 Q43 Q42 Q41 Q40 Q39 Q38 Q37 Q36 Q35 Q34 Q33 Q32 Q31 Q30 Q29 Q28 Q27 Q26 Q25 Q24 Q23 Q22 Q21 Q20 Q19 Q18 Q17 Q16 Q15 Q14 Q13 Q12 Q11 Q10 Q9 Q8 Q7 Q6 Q5 Q4 Q3 Q2 Q1 Q0

1 2 3 4 5 6

This PCB connection diagram is viewed from the foil side.



TO CMB ASSY 716
 TO LMB ASSY 722
 TO SPS ASSY 735
 TO FLKY ASSY C1501
 TO CMB ASSY C1403

AUDIO ASSY
 AUDIO TUO
 MAIN ASSY
 VHF ADAPTER
 (MONO) AUDIO DC VIDEO
 CONTROL IN
 CONTROL OUT
 CD DECK SYNCHRO

Q552 IC391 IC301 IC508 IC507 IC504 IC503 Q211, Q212, Q210 Q301 Q213 Q203, Q209, Q207, Q206 IC511 Q504 Q508

Q614 Q613 Q605 Q608 Q611 Q612 Q619 Q914 Q603 Q601 Q602 Q609 Q610 Q909 Q902, Q903 Q431 Q901 Q432 Q496 Q497 IC403 IC404 IC405 Q401 IC803 IC802 IC801 IC701 IC700 IC601 IC600 IC501 IC500 IC401 IC400 IC301 IC300 IC201 IC200 IC101 IC100 Q551-Q554 Q559 Q558 Q557 Q807 Q581-Q583 Q541 Q801-Q805 Q101 VR601 VR602 VR603 VR604 VR605 VR606 VR441 VR481 VR482 VR483 VR521 VR522 VR523 VR524 VR525 VR526 VR527 VR528 VR529 VR530 VR531 VR532 VR533 VR534 VR535 VR536 VR537 VR538 VR539 VR540 VR541 VR542 VR543 VR544 VR545 VR546 VR547 VR548 VR549 VR550 VR551 VR552 VR553 VR554 VR555 VR556 VR557 VR558 VR559 VR560 VR561 VR562 VR563 VR564 VR565 VR566 VR567 VR568 VR569 VR570 VR571 VR572 VR573 VR574 VR575 VR576 VR577 VR578 VR579 VR580 VR581 VR582 VR583 VR584 VR585 VR586 VR587 VR588 VR589 VR590 VR591 VR592 VR593 VR594 VR595 VR596 VR597 VR598 VR599 VR600 VR601 VR602 VR603 VR604 VR605 VR606 VR607 VR608 VR609 VR610 VR611 VR612 VR613 VR614 VR615 VR616 VR617 VR618 VR619 VR620 VR621 VR622 VR623 VR624 VR625 VR626 VR627 VR628 VR629 VR630 VR631 VR632 VR633 VR634 VR635 VR636 VR637 VR638 VR639 VR640 VR641 VR642 VR643 VR644 VR645 VR646 VR647 VR648 VR649 VR650 VR651 VR652 VR653 VR654 VR655 VR656 VR657 VR658 VR659 VR660 VR661 VR662 VR663 VR664 VR665 VR666 VR667 VR668 VR669 VR670 VR671 VR672 VR673 VR674 VR675 VR676 VR677 VR678 VR679 VR680 VR681 VR682 VR683 VR684 VR685 VR686 VR687 VR688 VR689 VR690 VR691 VR692 VR693 VR694 VR695 VR696 VR697 VR698 VR699 VR700 VR701 VR702 VR703 VR704 VR705 VR706 VR707 VR708 VR709 VR710 VR711 VR712 VR713 VR714 VR715 VR716 VR717 VR718 VR719 VR720 VR721 VR722 VR723 VR724 VR725 VR726 VR727 VR728 VR729 VR730 VR731 VR732 VR733 VR734 VR735 VR736 VR737 VR738 VR739 VR740 VR741 VR742 VR743 VR744 VR745 VR746 VR747 VR748 VR749 VR750 VR751 VR752 VR753 VR754 VR755 VR756 VR757 VR758 VR759 VR760 VR761 VR762 VR763 VR764 VR765 VR766 VR767 VR768 VR769 VR770 VR771 VR772 VR773 VR774 VR775 VR776 VR777 VR778 VR779 VR780 VR781 VR782 VR783 VR784 VR785 VR786 VR787 VR788 VR789 VR790 VR791 VR792 VR793 VR794 VR795 VR796 VR797 VR798 VR799 VR800 VR801 VR802 VR803 VR804 VR805 VR806 VR807 VR808 VR809 VR810 VR811 VR812 VR813 VR814 VR815 VR816 VR817 VR818 VR819 VR820 VR821 VR822 VR823 VR824 VR825 VR826 VR827 VR828 VR829 VR830 VR831 VR832 VR833 VR834 VR835 VR836 VR837 VR838 VR839 VR840 VR841 VR842 VR843 VR844 VR845 VR846 VR847 VR848 VR849 VR850 VR851 VR852 VR853 VR854 VR855 VR856 VR857 VR858 VR859 VR860 VR861 VR862 VR863 VR864 VR865 VR866 VR867 VR868 VR869 VR870 VR871 VR872 VR873 VR874 VR875 VR876 VR877 VR878 VR879 VR880 VR881 VR882 VR883 VR884 VR885 VR886 VR887 VR888 VR889 VR890 VR891 VR892 VR893 VR894 VR895 VR896 VR897 VR898 VR899 VR900 VR901 VR902 VR903 VR904 VR905 VR906 VR907 VR908 VR909 VR910 VR911 VR912 VR913 VR914 VR915 VR916 VR917 VR918 VR919 VR920 VR921 VR922 VR923 VR924 VR925 VR926 VR927 VR928 VR929 VR930 VR931 VR932 VR933 VR934 VR935 VR936 VR937 VR938 VR939 VR940 VR941 VR942 VR943 VR944 VR945 VR946 VR947 VR948 VR949 VR950 VR951 VR952 VR953 VR954 VR955 VR956 VR957 VR958 VR959 VR960 VR961 VR962 VR963 VR964 VR965 VR966 VR967 VR968 VR969 VR970 VR971 VR972 VR973 VR974 VR975 VR976 VR977 VR978 VR979 VR980 VR981 VR982 VR983 VR984 VR985 VR986 VR987 VR988 VR989 VR990 VR991 VR992 VR993 VR994 VR995 VR996 VR997 VR998 VR999 VR1000

4. 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 \rightarrow 56 \times 10¹ \rightarrow 561 RD1/8PM $\text{\textcircled{5}}$ $\text{\textcircled{6}}$ $\text{\textcircled{1}}$ J
 47k Ω \rightarrow 47 \times 10³ \rightarrow 473 RD1/4PS $\text{\textcircled{4}}$ $\text{\textcircled{7}}$ $\text{\textcircled{3}}$ J
 0.5 Ω \rightarrow 0R5 RN2H $\text{\textcircled{0}}$ $\text{\textcircled{5}}$ K
 1 Ω \rightarrow 010 RS1P $\text{\textcircled{0}}$ $\text{\textcircled{1}}$ K

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

5.62k Ω \rightarrow 562 \times 10¹ \rightarrow 5621 RN1/4PC $\text{\textcircled{5}}$ $\text{\textcircled{6}}$ $\text{\textcircled{2}}$ $\text{\textcircled{1}}$ F

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
LIST OF ASSEMBLIES				Q609		CHIP TRANSISTOR	2SC2412K
©		MOTHER ASS'Y	VWM1247	Q610		DIGITAL TRANSISTOR	DTA124EK
NSP	└	MAIN ASS'Y	VWX1102	Q611		CHIP TRANSISTOR	2SA1037K
NSP	└	AUDIO ASS'Y	VWX1103	Q612		DIGITAL TRANSISTOR	DTC124EK
©		FLKB ASS'Y	VWM1248	Q613,614		CHIP TRANSISTOR	2SA1037K
NSP	└	FLKY ASS'Y	VWG1314	Q615		DIGITAL TRANSISTOR	DTC124EK
NSP	└	PSWB ASS'Y	VWG1315	Q617,620		CHIP TRANSISTOR	2SC2412K
©		SYPS ASS'Y	VWR1122	Q801		CHIP TRANSISTOR	2SC2412K
©		MACB ASS'Y	VWM1250	Q802		CHIP TRANSISTOR	2SA1037K
NSP	└	FG ASS'Y	VWG1304	Q803-805		CHIP TRANSISTOR	2SC2412K
NSP	└	PKSB ASS'Y	VWG1305	Q807		CHIP TRANSISTOR	2SC2412K
NSP	└	CAMB ASS'Y	VWG1306	Q808		DIGITAL TRANSISTOR	DTA124EK
NSP	└	LOSB ASS'Y	VWG1307	Q809		TRANSISTOR	2SA1399
NSP	└	LOMB ASS'Y	VWG1308	Q810		DIGITAL TRANSISTOR	DTA124EK
				Q811		CHIP TRANSISTOR	2SC2412K
				Q812		CHIP TRANSISTOR	2SA1037K
				Q813		CHIP TRANSISTOR	2SC2412K
				Q814,901		DIGITAL TRANSISTOR	DTA124EK
				Q902,903		DIGITAL TRANSISTOR	DTC124EK
				Q908		N-FET	2SK184
				Q909		CHIP TRANSISTOR	2SA1037K
				Q911,912		DIGITAL TRANSISTOR	DTC124EK
				Q913		DIGITAL TRANSISTOR	DTA124EK
				Q914		DIGITAL TRANSISTOR	DTC124EK
				Q915		CHIP TRANSISTOR	2SC2412K
				D101,102		DIODE	1SS254
				D801-803		DIODE	1SS254
				D805		DIODE	1SR35-100AVL
				D806,807		DIODE	1SS254
				D810,811		DIODE	DA204K
MAIN ASS'Y				COILS			
SEMICONDUCTORS				L411		AXIAL INDUCTOR	LAU330J
IC101		MECHANISM CONT. MCU	PD0133B	L412,413		AXIAL INDUCTOR	LAU220J
IC401		VIDEO IC	PA5013A	L414,415		AXIAL INDUCTOR	LAU120J
IC402		CCD DELAY LINE	PM0001	L416		AXIAL INDUCTOR	LAU330J
IC403		IC	CXL1009P	L431		AXIAL INDUCTOR	LAU430J
IC404		IC	PA0017	L432		AXIAL INDUCTOR	LAU620J
IC405		CHARACTER GENE IC	PD0093A	L433		AXIAL INDUCTOR	LAU390J
IC601		TBC IC	PM3002	L441		AXIAL INDUCTOR	LAU270J
IC602		IC	BA15218N	L457		RADIAL INDUCTOR	LFA561J
IC801		PRE AMP IC	CXA1081S	L458		RADIAL INDUCTOR	LFA221J
IC802		SERVO IC	CXA1372S	L496		AXIAL INDUCTOR	LAU180J
IC803		OP AMP IC	NJM072L	L497		AXIAL INDUCTOR	LAU181J
IC804		IC	BA15218N	L511		AXIAL INDUCTOR	LAU820J
IC805		COMPARATOR	BA10393F	L521		AXIAL INDUCTOR	LAU120J
IC806		POWER OP AMP	TA8464K	L522		AXIAL INDUCTOR	LAU560J
IC807		POWER OP AMP	LA6510L				
Q101		DIGITAL TRANSISTOR	DTC124EK				
Q401		TRANSISTOR	2SB1237X				
Q402		TRANSISTOR	2SD1858X				
Q403		DIGITAL TRANSISTOR	DTA124EK				
Q431,432		CHIP TRANSISTOR	2SC2412K				
Q456,496		CHIP TRANSISTOR	2SA1037K				
Q497-500		CHIP TRANSISTOR	2SC2412K				
Q511		CHIP TRANSISTOR	2SA1037K				
Q541		CHIP TRANSISTOR	2SC2412K				
Q560		DIGITAL TRANSISTOR	DTC124EK				
Q601-603		CHIP TRANSISTOR	2SC2412K				
Q604,605		CHIP TRANSISTOR	2SC2412K				
Q606		DIGITAL TRANSISTOR	DTA124EK				
Q607		CHIP TRANSISTOR	2SC2412K				
Q608		CHIP TRANSISTOR	2SA1037K				

Mark	No.	Description	Part No.
	L523	AXIAL INDUCTOR	LAU220J
	L524	RADIAL INDUCTOR	LFA561J
	L541	AXIAL INDUCTOR	LAU120J
	L801	AXIAL INDUCTOR	LAU150J
	L802	AXIAL INDUCTOR	LAU151J
	L803	AXIAL INDUCTOR	LAU181J
	L804	AXIAL INDUCTOR	LAU151J

CAPACITORS

	C101	ELECTR. CAPACITOR	CEAS470M10
	C102	CERAMIC CAPACITOR	CKSQYF473Z25
	C103	CHIP CAPACITOR	CKSQYF103Z50
	C104,105	CHIP CAPACITOR	CCSQCH330J50
	C106	CHIP CAPACITOR	CKSQYF103Z50
	C107	CERAMIC CAPACITOR	CKSQYF104Z25
	C108,109	CHIP CAPACITOR	CKSQYF103Z50
	C120,121	CHIP CAPACITOR	CCSQCH101J50
	C122	CHIP CAPACITOR	CKSQYF103Z50
	C123	CAPACITOR ARRAY	VCG1022
	C401	ELECTR. CAPACITOR	CEANP2R2M50
	C403,404	CERAMIC CAPACITOR	CKSQYF104Z25
	C407,408	CERAMIC CAPACITOR	CKSQYF473Z25
	C411	CHIP CAPACITOR	CCSQCH221J50
	C412	CHIP CAPACITOR	CCSQCH470J50
	C413	CHIP CAPACITOR	CCSQCH151J50
	C414	CHIP CERAMIC	CCSQCH221J50
	C415,417	CHIP CAPACITOR	CCSQCH180J50
	C416	CHIP CAPACITOR	CCSQCH390J50
	C418	CHIP CAPACITOR	CCSQCH120J50
	C419,420	CHIP CAPACITOR	CCSQCH470J50
	C423,424	CHIP CAPACITOR	CCSQCH180J50
	C425,426	CHIP CAPACITOR	CKSQYF103Z50
	C427	CERAMIC CAPACITOR	CKSQYF473Z25
	C428	ELECTR. CAPACITOR	CEAS470M10
	C429	CERAMIC CAPACITOR	CKSQYF104Z25
	C433	CHIP CAPACITOR	CCSQCH390J50
	C434	ELECTR. CAPACITOR	CEAS101M10
	C435	CERAMIC CAPACITOR	CKSQYF104Z25
	C436	ELECTR. CAPACITOR	CEAS010M50
	C437	CHIP CAPACITOR	CCSQCH270J50
	C438	CHIP CAPACITOR	CCSQCH100D50
	C439	CHIP CAPACITOR	CCSQCH470J50
	C440	CHIP CAPACITOR	CCSQCH390J50
	C441	CHIP CAPACITOR	CCSQCH070D50
	C442	CERAMIC CAPACITOR	CKSQYF104Z25
	C443	ELECTR. CAPACITOR	CEJANP4R7M16
	C444	MYLAR FILM CAPACITOR	CQMA272J50
	C445	ELECTR. CAPACITOR	CEAS101M10
	C446	MYLAR FILM CAPACITOR	CQMA103J50
	C447	CHIP CAPACITOR	CCSQCH330J50
	C448	CERAMIC CAPACITOR	CKSQYF473Z25
	C450	CHIP CAPACITOR	CCSQCH100D50
	C451	CHIP CAPACITOR	CCSQCH270J50
	C452	ELECTR. CAPACITOR	CEAS470M10
	C455	CHIP CAPACITOR	CCSQCH470J50
	C456	CHIP CAPACITOR	CCSQCH121J50
	C457	ELECTR. CAPACITOR	CEAS101M10
	C458-460	CHIP CAPACITOR	CKSQYF103Z50
	C461	CHIP CAPACITOR	CCSQCH101J50
	C462	CHIP CAPACITOR	CCSQCH330J50
	C463	CHIP CERAMIC CAPACITOR	CCSQCH271J50
	C466,467	CERAMIC CAPACITOR	CKSQYF473Z25
	C471	ELECTR. CAPACITOR	CEAS010M50
	C472	ELECTR. CAPACITOR	CEAS3R3M50

Mark	No.	Description	Part No.
	C473	CERAMIC CAPACITOR	CKSQYF473Z25
	C474	AUDIO FILM CAPACITOR	CFTXA224J50
	C475,476	ELECTR. CAPACITOR	CEAS3R3M50
	C477,478	CERAMIC CAPACITOR	CKSQYF473Z25
	C479,480	CERAMIC CAPACITOR	CKSQYF104Z25
	C483	CERAMIC CAPACITOR	CKSQYF473Z25
	C484	ELECTR. CAPACITOR	CEAS470M25
	C485	CHIP CERAMIC CAPACITOR	CCSQCH220J50
	C486	CHIP CAPACITOR	CKSQYF103Z50
	C487,488	CERAMIC CAPACITOR	CKSQYF473Z25
	C489,490	ELECTR. CAPACITOR	CEAS101M10
	C496	CHIP CAPACITOR	CCSQCH390J50
	C497	CHIP CAPACITOR	CCSQCH100D50
	C498	CHIP CAPACITOR	CCSQCH820J50
	C499	ELECTR. CAPACITOR	CEANP220M10
	C500	CHIP CAPACITOR	CCSQCH100D50
	C501,502	ELECTR. CAPACITOR	CEAS470M10
	C503	CERAMIC CAPACITOR	CKSQYF104Z25
	C504	CERAMIC CAPACITOR	CKSQYF473Z25
	C505,506	CERAMIC CAPACITOR	CKSQYF104Z25
	C509	CHIP CAPACITOR	CCSQCH151J50
	C510	CHIP CAPACITOR	CCSQCH270J50
	C511	CERAMIC CAPACITOR	CKSQYF104Z25
	C512	ELECTR. CAPACITOR	CEAS470M10
	C513	CERAMIC CAPACITOR	CKSQYF104Z25
	C514	AUDIO FILM CAPACITOR	CFTXA104J50
	C515	AUDIO FILM CAPACITOR	CFTXA683J50
	C516	CHIP CERAMIC CAPACITOR	CCSQCH220J50
	C517	AUDIO FILM CAPACITOR	CFTXA683J50
	C521	ELECTR. CAPACITOR	CEAS470M10
	C522	ELECTR. CAPACITOR	CEHAQ100M50
	C524	CHIP CAPACITOR	CCSQCH390J50
	C525	ELECTR. CAPACITOR	CEAS470M10
	C526	CERAMIC CAPACITOR	CKSQYF104Z25
	C527	CERAMIC CAPACITOR	CKSQYF473Z25
	C528	CHIP CAPACITOR	CCSQCH101J50
	C529	CHIP CAPACITOR	CCSQCH910J50
	C530	ELECTR. CAPACITOR	CEANP100M16
	C531	CERAMIC CAPACITOR	CKSQYF104Z25
	C532	CHIP CAPACITOR	CKSQYF103Z50
	C533	ELECTR. CAPACITOR	CEAS470M10
	C535	CHIP CAPACITOR	CKSQYF103Z50
	C536	CHIP CAPACITOR	CCSQCH910J50
	C542	ELECTR. CAPACITOR	CEAS470M10
	C543	CERAMIC CAPACITOR	CKSQYF104Z25
	C544	CERAMIC CAPACITOR	CKSQYF473Z25
	C545	CHIP CAPACITOR	CCSQCH680J50
	C546	CHIP CAPACITOR	CCSQCH470J50
	C547	CHIP CAPACITOR	CCSQCH330J50
	C548	CERAMIC CAPACITOR	CKSQYF473Z25
	C549,550	CHIP CAPACITOR	CCSQCH330J50
	C566	CHIP CERAMIC CAPACITOR	CCSQCH471J50
	C567	CHIP CAPACITOR	CKSQYF103Z50
	C581	CERAMIC CAPACITOR	CKSQYF473Z25
	C582,583	ELECTR. CAPACITOR	CEAS470M10
	C601	CERAMIC CAPACITOR	CKSQYF473Z25
	C602	CHIP CAPACITOR	CCSQCH101J50
	C603	ELECTR. CAPACITOR	CEANP010M50
	C604	CHIP CAPACITOR	CKSQYF103Z50
	C605,606	AUDIO FILM CAPACITOR	CFTXA102J50
	C607	MYLAR FILM CAPACITOR	CQMA102J50
	C608	AUDIO FILM CAPACITOR	CFTXA152J50
	C609	CHIP CAPACITOR	CCSQCH330J50
	C610	MYLAR FILM CAPACITOR	CQMA223J50
	C611	MYLAR FILM CAPACITOR	CQMA272J50

Mark No. Description Part No.

AUDIO ASS'Y

SEMICONDUCTORS

IC201	EFM DEMODULATION IC	CXD2500AQ
IC206	D/A CONVERTER,IC	PD2026A
IC207	OP-AMP IC	BA15218
IC211	OP-AMP IC	RC4558D
IC351	AUDIO IC	CA0002AM
Q201,202	CHIP TRANSISTOR	2SC2412K
Q204,205	TRANSISTOR	2SD2144S
Q206	DIGITAL TRANSISTOR	DTC124EK
Q207,208	DIGITAL TRANSISTOR	DTA124EK
Q351,352	CHIP TRANSISTOR	2SC2412K

D201	VARI-CAP	FC54M
D203,204	DIODE	1SS254

COILS AND FILTERS

L201,202	AXIAL INDUCTOR	LAU010K
L203	AXIAL INDUCTOR	LAU220J
L204,205	AXIAL INDUCTOR	LAU010K
L351	AXIAL INDUCTOR	LAU100J

F352	SIF(2.30MHZ)	VTF1048
F353	SIF(2.80MHZ)	VTF1049

CAPACITORS

C201	CERAMIC CAPACITOR	CKSQYF473Z25
C202	AUDIO FILM CAPACITOR	CFTXA152J50
C203	ELECTR. CAPACITOR	CEAS470M10
C204	CERAMIC CAPACITOR	CKSQYF104Z25
C206	CHIP CAPACITOR	CKSQYF103Z50

C207,208	ELECTR. CAPACITOR	CEAS470M10
C209	CERAMIC CAPACITOR	CKSQYF104Z25
C211	ELECTR. CAPACITOR	CEAS470M10
C212	CERAMIC CAPACITOR	CKSQYF104Z25
C213	CHIP CAPACITOR	CKSQYF103Z50

C214	CERAMIC CAPACITOR	CKSQYF473Z25
C215,219	CERAMIC CAPACITOR	CKSQYF104Z25
C220	CHIP CERAMIC CAPACITOR	CCSQCH220J50
C225,226	ELECTR. CAPACITOR	CEAS470M10
C227	ELECTR. CAPACITOR	CEANP2R2M50

C230	ELECTR. CAPACITOR	CEAS470M10
C231	CHIP CAPACITOR	CKSQYF103Z50
C232	CHIP CAPACITOR	CCSQCH120J50
C234,251	CHIP CAPACITOR	CKSQYF103Z50
C252,253	ELECTR. CAPACITOR	CEAS470M10

C254	CERAMIC CAPACITOR	CKSQYF104Z25
C255	ELECTR. CAPACITOR	CEAS471M6R3
C256	ELECTR. CAPACITOR	CEAS470M10
C257	ELECTR. CAPACITOR	CEAS471M6R3
C258-263	CHIP CAPACITOR	CCSQCH390J50

C270,271	ELECTR. CAPACITOR	CEAS470M10
C274,275	ELECTR. CAPACITOR	CEANP220M10
C278	AUDIO FILM CAPACITOR	CFTXA332J50
C279	ELECTR. CAPACITOR	CEAS470M10
C280	AUDIO FILM CAPACITOR	CFTXA393J50

C281	ELECTR. CAPACITOR	CEANP2R2M50
C282	AUDIO FILM CAPACITOR	CFTXA332J50
C283	ELECTR. CAPACITOR	CEAS470M10
C284,285	CERAMIC CAPACITOR	CKSQYF104Z25
C286,288	CHIP CAPACITOR	CKSQYF103Z50

C305	CERAMIC CAPACITOR	CKSQYF104Z25
C310	CERAMIC CAPACITOR	CKSQYF473Z25
C349	CERAMIC CAPACITOR	CKPUYB471K50
C351	CHIP CERAMIC CAPACITOR	CCSQCH271J50
C352,353	CHIP CAPACITOR	CKSQYF103Z50

C354	ELECTR. CAPACITOR	CEAS470M10
C355-358	MYLAR FILM CAPACITOR	CQMA472J50
C359,360	AUDIO FILM CAPACITOR	CFTXA224J50

Mark No. Description Part No.

C361,362	AUDIO FILM CAPACITOR	CFTXA393J50
C363	ELECTR. CAPACITOR	CEAS470M10
C364	ELECTR. CAPACITOR	CEAS101M10
C365,366	AUDIO FILM CAPACITOR	CFTXA104J50
C367	ELECTR. CAPACITOR	CEAS100M50

C368	ELECTR. CAPACITOR	CEJAR47M50
C369	ELECTR. CAPACITOR	CEAS470M10
C371-373	CERAMIC CAPACITOR	CKSQYF104Z25
C374	CHIP CAPACITOR	CCSQCH101J50

RESISTORS

R259-262	CARBON FILM RESISTOR	RD1/6PM473J
R269,270	CARBON FILM RESISTOR	RD1/6PM473J
R273,274	CARBON FILM RESISTOR	RD1/6PM471J
R291	CARBON FILM RESISTOR	RD1/6PM103J
R352,354	CARBON FILM RESISTOR	RD1/6PM222J

R357	CARBON FILM RESISTOR	RD1/6PM222J
R359,360	CARBON FILM RESISTOR	RD1/6PM102J
R361,362	CARBON FILM RESISTOR	RD1/6PM182J
	OTHER RESISTORS	RS1/10S □□□ J

OTHERS

CN301	CONNECTOR(5P)	B5P-SHF-1AA
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JA6	JACK	VKB1050
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X201	CRYSTAL RESONATOR (16MHZ)	VSS1057
	SCREW TERMINAL	VNE1841

FLKY ASS'Y

SEMICONDUCTORS

IC201	MODE CONTROL MCU	PD3213A
IC202	RESET IC	PST529D



Q201	TRANSISTOR	DTC124ES
Q202	TRANSISTOR	DTC114EL
Q203	TRANSISTOR	DTA144EL

D201	DIODE	1SS254
D203-206	DIODE	1SS252
D210	LED	PG3361X

SWITCHES





S201	SWITCH (DIGITAL LEVEL)	RSG1030
S202	SWITCH(RANDOM PLAY)	RSG1030
S203	SWITCH	RSG1030

S204	(HILITE INTRO SCAN) SWITCH(CHKP/TIME)	RSG1030
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S205	SWITCH(EDIT)	RSG1030
S206	SWITCH()	RSG1030
S207	SWITCH()	RSG1030
S208	SWITCH(1)	RSG1030
S209	SWITCH(2)	RSG1030

S210	SWITCH(3)	RSG1030
S211	SWITCH(4)	RSG1030
S212	SWITCH(6)	RSG1030
S213	SWITCH(7)	RSG1030
S214	SWITCH(8)	RSG1030

S215	SWITCH(9)	RSG1030
S216	SWITCH(0)	RSG1030
S217	SWITCH(5)	RSG1030
S218	SWITCH(PGM)	RSG1030
S219	SWITCH(+10)	RSG1030

S220	SWITCH(CD DIRECT)	RSG1030
S221	SWITCH()	RSG1030
S222	SWITCH()	RSG1030
S223	SWITCH( / )	RSG1030
S225	SWITCH (ROTARY ENCODER)	VSD1008

Mark No.	Description	Part No.
CAPACITORS		
C201	ELECTR. CAPACITOR	CEAL101M6R3
C202	CERAMIC CAPACITOR	CKPUYF223Z25
C204	ELECTR. CAPACITOR	CEAL100M16
C205	CERAMIC CAPACITOR	CKPUYF103Z25
C206	ELECTR. CAPACITOR	CEAL2R2M50
C211	CERAMIC CAPACITOR	CKPUYF223Z25
RESISTORS		
	ALL RESISTORS	RD1/6PM □□□ J
OTHERS		
V201	FL INDICATOR TUBE	VAW1026
X201	CERAMIC RESONATOR FL SPACER LED HOLDER	EFOGC8004T4 VEB1125 VNL1522
PSWB ASS'Y		
SEMICONDUCTORS		
Q204	TRANSISTOR	DTC124ES
D211	LED	SLH34VCF04
SWITCH		
S224	SWITCH (STANDBY/ON)	RSG1030
CAPACITOR		
C210	ELECTR. CAPACITOR	CEAS100M16
RESISTOR		
R227	CARBON FILM RESISTOR	RD1/6PM151J
OTHER		
	REMOTE SENSOR	GP1U58X
SYPS ASS'Y		
SEMICONDUCTORS		
△ IC1	REGULATOR IC	NJM78L05A
△ IC2	LINEAR IC	NJM4558D
△ IC201,202	IC PROTECTOR	ICP-N15
△ Q1,2	TRANSISTOR	2SB1185
△ Q3	TRANSISTOR	2SD1762
Q4	TRANSISTOR	2SC1740S
Q5	TRANSISTOR	2SA933S
Q21	TRANSISTOR	2SC1740S
Q22,23	TRANSISTOR	2SA933S
Q24	TRANSISTOR	2SC1740S
△ Q25	TRANSISTOR	2SB1185
△ Q26	TRANSISTOR	2SD1762
△ Q27	TRANSISTOR	2SB1185
△ Q28	TRANSISTOR	2SD1762
△ D1	BRIDGE STACK	S2VB20
△ D2,3	DIODE	1SR35-100AVL
D7	ZENER DIODE	MTZJ11B
△ D21,22	DIODE	1SS254
△ D23	DIODE	10ELS2
△ D24,25	DIODE	1SR35-100AVL
△ D26	DIODE	10ELS2
COIL		
△ L1	SPDL CHOKE COIL	VTL1043

Mark No.	Description	Part No.
CAPACITORS		
△ C1,2	ELECTR. CAPACITOR (6800μ/16V)	VCH1053
C3	ELECTR. CAPACITOR	CEAS470M10
C4	ELECTR. CAPACITOR	CEAS470M10
C5	ELECTR. CAPACITOR	CEAS470M10
C6	ELECTR. CAPACITOR	CEAS470M10
△ C7-9	CERAMIC CAPACITOR	CKPUYF223Z25
C10	ELECTR. CAPACITOR	CEAS101M50
C11,12	CERAMIC CAPACITOR	CKPUYF103Z25
C13	ELECTR. CAPACITOR	CEAS471M16
△ C14	CERAMIC CAPACITOR	CGCYX473M25
C21,22	MYLAR FILM CAPACITOR	CQMA272J50
C23,24	CERAMIC CAPACITOR	CGCYX473M25
C25,26	ELECTR. CAPACITOR	CEAS2R2M50
C27,28	MYLAR FILM CAPACITOR	CQMA223J50
C29	ELECTR. CAPACITOR	CEAS101M50
△ C52	CERAMIC CAPACITOR (0.01μF)	RCG-009
RESISTORS		
△ R23-26	CARBON FILM RESISTOR	RD1/2VM221J
△ R27-30	RESISTOR(47 ohms)	DCN1003
△ R51	CARBON FILM RESISTOR	RD1/2PM225J
	OTHER RESISTORS	RD1/6PM □□□ J
OTHERS		
△ J32	LEAD WIRE(10P)	VDA1410
△ J33	LEAD WIRE(6P)	D20PDY0620G
△	PCB BINDER	VEF1040
△	FUSE HOLDER	VKR1001
△	P.S. TERMINAL	VKC-019
△	SCREW TERMINAL	VNE1841
△	PCB, SYPS	VNP1346
FG ASS'Y		
SEMICONDUCTOR		
D1	PHOTO INTERRUPTER	GP1S51
PKSB ASS'Y		
SWITCHES		
S4	PUSH SWITCH	DSG1015
S5	PUSH SWITCH	DSG1015
CAMB ASS'Y		
SEMICONDUCTOR		
Q10		2SC1740S
RESISTOR		
R10		RD1/6PM182J
OTHERS		
CN401	CONNECTOR(23P)	VKN1073
CN403	CONNECTOR	HLEM23R-1
LOSB ASS'Y		
SWITCHES		
S1-S3	PUSH SWITCH	DSG1015
LOMB ASS'Y		
CAPACITOR		
C1	CERAMIC CAPACITOR	CGCYX473M25

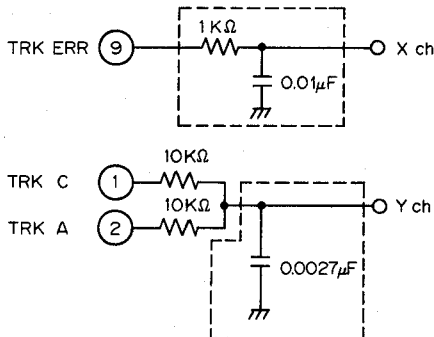
5. ADJUSTMENTS

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.



● ADJUSTMENT LOCATIONS

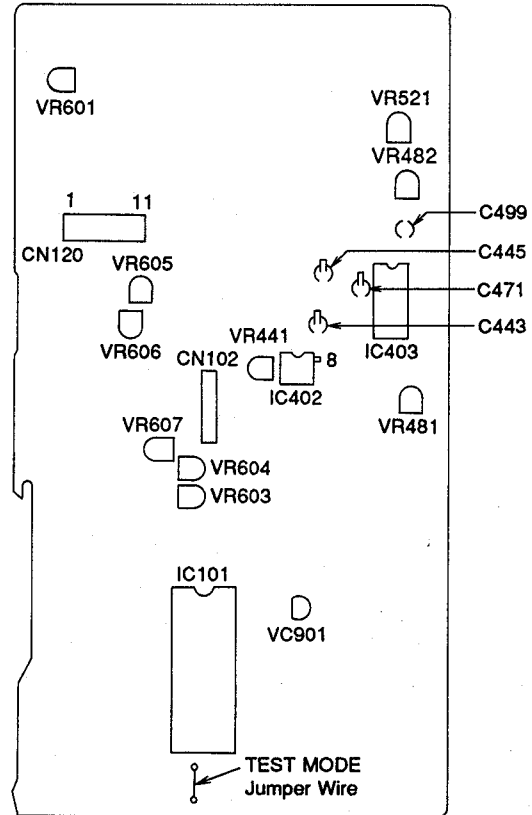


Fig. 2 MAIN assembly section

● RACK ASSEMBLY DURING CENTERING ADJUSTMENT

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

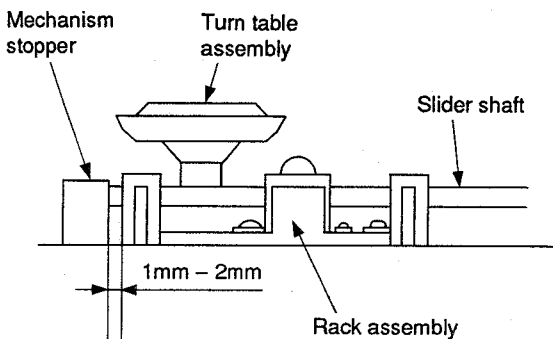
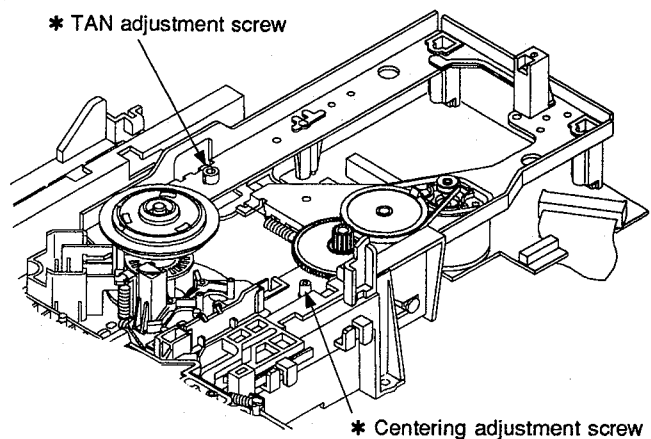


Fig. 1 Right side view



* : 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.

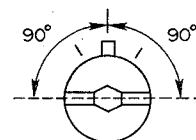


Fig. 3 TILT base section

● 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: center; gap: 10px;"> <div style="border: 1px solid black; padding: 2px; display: inline-block;">0</div> to <div style="border: 1px solid black; padding: 2px; display: inline-block;">9</div> </div> ↓ <div style="border: 1px solid black; padding: 2px; display: inline-block;">▶ PLAY</div> </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.	

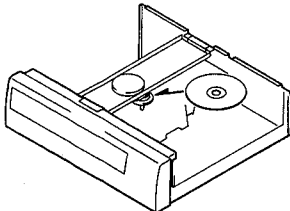
Note 1 : Press SKIP (⏪ / ⏩) Keys after the tray is set to open state by pressing Open (▲) key. Because, in tray open state, pressing PLAY (▶) key causes it to set to TILT control state and SKIP (⏪ / ⏩) keys can not function properly.

● 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.

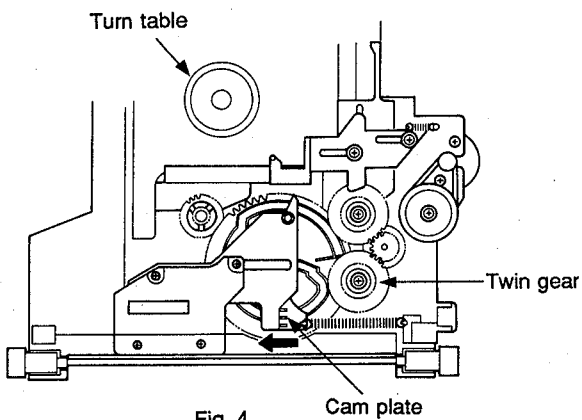
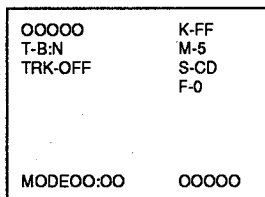


Fig. 4

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

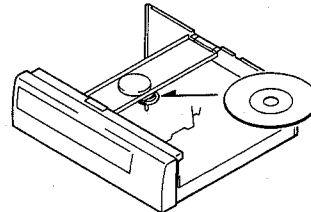


TV screen display

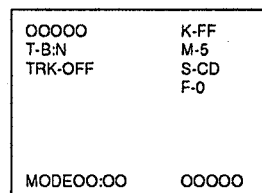
- ⑤ Press the PLAY (▶) key twice, disc will be normally playbacked.

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

	Adjustment name	Adjustment point	Measuring equipment and jigs	Measurement point	Player condition	Adjustment procedure	Waveform and connection diagram
9	TRK Servo loop gain adjustment	MAIN assembly VR603	<ul style="list-style-type: none"> Oscilloscope GGV1003 AF Oscillator Resistor (47 kΩ) 	CN120 X: ⑩ Pin (TRK IN) Y: ⑨ Pin (TRK ERR)	<ul style="list-style-type: none"> Test mode Stop mode or TRK Servo Close Tilt servo ON GGV1003 # 15,000 STILL 	<ol style="list-style-type: none"> Xch: Connect the 47 kΩ resistor to channel and connect to TRK IN. Ych: Connect to TRK ERR. 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. Search for address 15,000 of GGV1003 and still the address. 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. 	<p>X: 20mV/div Y: 10mV/div DC mode</p> <p>Adjust until the Lissajous' figure is symmetrical.</p>
10	RF level adjustment	MAIN assembly VR601	<ul style="list-style-type: none"> Oscilloscope GGV1003 	CN120 ③ Pin (RF)	<ul style="list-style-type: none"> Test mode TRK Servo Close Tilt servo ON GGV1003 # 15,000 STILL 	<ol style="list-style-type: none"> Search for address 15,000 of GGV1003 and still the address. Observe RF at CH1 of the oscilloscope. Adjust VR601 until the RF amplitude is 300 mV ±50 mV p-p. 	<p>V: 10mV/div H: 2msec/div AC mode</p>
11	REF-H adjustment	VC901	Frequency counter	IC 402 (PM0001) ⑧ Pin	<ul style="list-style-type: none"> Power ON Stop mode 	Adjust FSC (3.579545 MHz) by ±10 Hz.	
12	Video level adjustment	VR482	<ul style="list-style-type: none"> TV monitor Oscilloscope GGV1003 	Video output terminal	<ul style="list-style-type: none"> Normal mode GGV1003 # 19,900 STILL 	Connect a 75Ω resistor to the VIDEO output terminal (possibly by connecting to the monitor) and adjust until the sync chip to 100% white level is 1 Vp-p ±5% at the composite TEST signal.	<p>Oscilloscope range V: 20mV/div 10μs/div (Trigger) AC mode</p>
13	IH DLY video level adjustment	VR441	<ul style="list-style-type: none"> Oscilloscope GGV1003 	CH1: C443 lead wire CH2: C445 lead wire	<ul style="list-style-type: none"> Normal mode GGV1003 # 19,900 STILL 	Adjust until the sync chip to 100% white level at the composite TEST signal is the same as in CH1 and CH2.	<p>V: 20mV/div (CH1) 20mV/div (CH2) H: 10μsec/div AC mode</p>
14	VCO center frequency adjustment	VR481	<ul style="list-style-type: none"> Oscilloscope GGV1003 	CH1: C471 lead wire CH2: C499 lead wire	<ul style="list-style-type: none"> Normal mode GGV1003 # 5,100 STILL 	Place a trigger in CH1 and adjust until the center of the CH2 video signal jitter is 76 μsec (1H + 12.5 μsec) ±2 μsec compared to the CH1 video signal.	<p>V: 20mV/div (CH1) 20mV/div (CH2) H: 10μsec/div (Trigger) AC mode</p>
15	VPS error level adjustment	VR521	<ul style="list-style-type: none"> TV monitor GGV1003 	TV monitor	<ul style="list-style-type: none"> Normal mode GGV1003 # 8,000 STILL (Magenta screen) 	Adjust until the color irregularity on the magenta screen is minimized.	<p>Color irregularity on the magenta screen is minimized.</p>
16	FCS SUM level check	—	<ul style="list-style-type: none"> Oscilloscope GGV1003 	CN120 ⑪ Pin (FCS SUM)	<ul style="list-style-type: none"> Normal mode GGV1003 PLAY 	+1.8 V, ±0.2 V DC at the CN120 ⑪ pin	<p>V: 50mV/div H: 5msec/div DC mode</p>

6. IC INFORMATION

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

● IC101 (PD0133B)

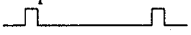
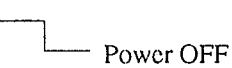
MECHANISM CONTROL IC

No.	Pin name	I/O	Function
1	VCC	–	Power supply connection pin. Set to 5 V \pm 10%.
2	DIRECT	O	CD DIRECT video system power OFF signal output pin "H" = video system power OFF, "L" = ON
3	CAV/XCLV	O	CAV/CLV switching signal output pin "H" = CAV, "L" = CLV Connected to Pin 6 of PA5013A and used as a VIDEO NR switching signal.
4	XLD ON	O	Laser video ON/OFF switching signal output L: ON, H: OFF
5	TGH	O	Tracking operation control signal output pin The control signal supports ON/OFF of the tracking servo-mechanism operation. "H" = OFF, "L" = ON
6	SLDR POS	I	Pick-up position detection switch input pin (analog signal) Divides the resistance among the switches, reads the value of the A/D input, and detects the position.
7	FREQ DET	I	RF detection signal input pin (analog signal) Inputs the A/D conversion of the RF detection output and is used in the spindle luff servo-mechanism. Voltage and frequency are proportional.
8	TBAL ERR	I	Tracking balance error signal input pin (analog signal) Signal is A/D converted and is input as the tracking offset control.
9	TILT ERR	I	Tilt sensor output signal input pin (analog signal) Inputs (0 to 5 V) the tilt sensor output amplified to a 40 to 50 dB signal. The signal is A/D converted and is input as the tilt sensor control. Controls the tilt motor until the signal is 2.5 V.
10	XREF-V	I	Clear scan reference V-SYNC signal input pin
11	GFS	I	CD (EFM signal) frame lock signal input pin Connected to Pin 12 of the EFM decoder IC: CXD2500AQ. "H" = Lock, "L" = Unlock GFS is an abbreviation for Good Frame Sync.
12	TBAL DRV	O	Tracking offset control signal output pin Outputs the tracking offset after PWM and is used in auto tracking offset. Cycle: 910 μ sec; 3-value control H, L, Z.
13	SQ2	O	Analog audio switching signal output pin 2/R Squelch: H
14	SQ1	O	Analog audio switching signal output pin 1/L Squelch: H When in digital audio mode, the signal is output through the control of the EFM decoder IC: CXD2500AQ.
15	SI2	I	EFM decoder IC: CXD2500AQ subcode input pin Reads the subcodes of SCK2 and the signal.
16	XLAT2	O	EFM decoder IC: CXD2500AQ control latch signal output pin Sends the control command using SO3 and 2500CLK.
17	SCK2	O	EFM decoder IC: CXD2500AQ subcode read clock signal output pin Sets the clock to 96 and reads the subcode.

No.	Pin name	I/O	Function
18	TILT/ LOAD DRV	O	Loading and tilt control signal output pin Outputs the tilt drive after PWM and is used in loading and tilt servo-mechanism.
19	S-FTOM	I	Input pin of data from the mode control IC Serial Used with the data signal to the carriage generating IC.
20	S-MTOF	O	Serial data output to the mode control IC Serial
21	SCK1	I/O	Clock for serial communication with the mode control IC In the input mode except during serial communication with the mode control IC Used with the clock signal to the carriage generating IC
22	SENS	I	SENS signal input pin All of the following signals from 2500 are switched and are output to the signal: SEIN, FZC, A.S, TZC, XBUSY, FOK, GFS, COMP, COUT, and OV64.
23	SCOR	I	Subcode SYNC signal input pin Inputs the subcode signal from the EFM decoder IC: CXD2500AQ when the signal is "H." Supervises the disc playback depending on the presence of the signal.
24	XCX	O	Analog audio CX noise reduction switching signal output pin ON: L, OFF: H
25	SHAKE	I/O	Pin of hand shake signal for data communication with the mode control IC This pin is a bi-directional data path which sends the data transfer timing through the I/O mode switching of the respective microcomputers.
26	XPBV	I	LD/CDV playback V-SYNC signal input pin IC basically operates in sync hronization (rising and leading edges) with the signal. Setting the signal as standard in the special CAV playback mode, generates jump timing. "L"= V-SYNC ongoing
27	CN VSS	-	GND for A/D conversion
28	XRESET	I	Reset signal input pin "L" = Reset, "H" = Cancel reset
29	XTAL IN	I	9 MHz clock generation input pin
30	XTAL OUT	O	9 MHz clock generation output pin
31	N. C.	O	Not used
32	VSS	-	GND
33	SW1	I	Loading/tilt position detection switch input pin
34	SW2	I	Loading/tilt position detection switch input pin
35	SW3	I	Loading/tilt position detection switch input pin
36	N.C.	I	Not used Processing needed when used for input
37	FG	I	Spindle motor-FG signal input pin 24 pulses per signal Divided into thirds and used inside the microcomputer.
38	DATA	I	Input pin for Philips code decoder in the mechanism controller
39	XPBH	I	Playback H-SYNC input for Philips code decoder
40	XPBV	I	Playback V-SYNC input for Philips code decoder

No.	Pin name	I/O	Function
41	GI. MIRR	O	False MIRR signal output pin to jump 1 track for LD.
42	N.C.	-	Not used
43	N.C.	-	Not used
44	MUTE	O	Audio system audio mute control output pin "H" = MUTE ON, "L" = MUTE OFF
45	XANA	O	Digital/analog audio switching signal output pin "H" = digital, "L" = analog Signals output by the line out and headphone are switched by the signal.
46	XT LATCH	O	DAC & Digital PD2026 serial control latch signal output pin
47	N.C.	-	Not used
48	N.C.	-	Not used
49	N.C.	-	Not used
50	2500CLK	O	2500 command clock signal output pin The commands for 2500 are the following: 2500CLK; SO3 and XLAT2.
51	RFCORR	O	RF correction switching signal output pin "H" = gain up. Increases gain (#8000 to #8100) within the CAV.
52	SCAN CONT	O	TBC control signal output pin H: multi-track jump ongoing, L: others
53	CD	O	CD/LD switching signal output pin H: CD, CDV-A, L: LD, CDV-V
54	ACC CONT	O	Spindle acceleration signal output pin H= acceleration, L= deceleration, Z= CD, stop, and play
55	GPWM	O	Spindle gain switching duty pulse signal output pin CLV inner circumference: L, outer circumference: H, CAV: L, CDV: H
56	J.TRIG	O	Track jump signal output pin Used for single track jump H: start of track, L: others, Width of "H": approx. 20 μ sec
57	SCK3	O	Serial 3 clock signal output pin Reads the leading edge "H" = within 2 μ sec, "L" = within 20 μ sec
58	SO3	O	Serial 3 data signal output pin With the serial signal as the common signal, divides the signals into three types of latch signals (XLAT3, XLAT2, and XT LATCH). LSB first
59	XLATCH3	O	Spindle servo-mechanism IC latch signal output pin
60	CLV SCAN	O	CLV V-SYNC scan mode signal output pin
61	VSQ	O	Video output switching signal output pin "H" = squelch, "L" = playback video
62	VLOCK	I	V-SYNC lock detection signal input pin. Is used in CLV clear scan and is set to "H" for a period of time if the REF-V is in phase with PBV.
63	SENA	O	Shift enable signal output pin. Is used in CLV clear scan. Thinning out H, is set to "H" while REF-V approaches PBV.
64	XSLOCK	I	Spindle lock signal input pin L: lock, H: unlock

● IC201 (PD3213A)
MODE CONTROL IC

Pin	Pin name	Signal name	I/O	Function
1	P04/AN4	NC	I	Not used
2	P05/AN5	NC	I	Not used
3	P06/AN6	NC	I	Not used
4	P07/AN7	NC	I	Not used
5	AVss	AVss	-	Connected to standard power supply (Vss) for A/D conversion
6	TEST	TEST	I	Test pin Connected to Vss
7	X2	X2	O	Subclock Release
8	X1	X1	I	Subclock Connected to Vcc
9	Vss	Vss	-	Ground
10	OSC1	OSC1	I	System clock Connects 8 MHz ceramic lock
11	OSC2	OSC2	O	System clock Connects 8 MHz ceramic lock
12	$\overline{\text{RESET}}$	$\overline{\text{RESET}}$	I	Reset
13	P10/ $\overline{\text{IRQ0}}$	SHAKE	I/O	Communication timing clock with mechanism control
14	P11/ $\overline{\text{IRP1}}$	SEL IR	I	Remote control signal (including SR)
15	P12/ $\overline{\text{IRQ2}}$	W.D.F	O	For watchdog timer Pulse output 
16	P13/ $\overline{\text{IRQ3}}$	POWER On	O	Power ON  Power OFF
17	P14/ $\overline{\text{IRQ4}}$	NC	O	Not used
18	P15/ $\overline{\text{IRQ5}}$	NC	O	Not used
19	P16/ $\overline{\text{EVENT}}$	NC	I	Not used
20	P33/FS27	NC	O	Not used
21	P32/FS26	NC	O	Not used
22	P31/FS25	NC	O	Not used
23	P30/FS24	STANBY LED	O	Standby LED drive output
24	P47/FS23	NC	O	Not used
25	P46/FS22	NC	O	Not used
26	P45/FS21	NC	O	Not used

Pin	Pin name	Signal name	I/O	Function
27	P44/FS20	NC	O	Not used
28	P43/FS19	seg 1 / KS3	O	FL segment 1 output and key scan 3 output
29	P42/FS18	seg k / KS2	O	FL segment k output and key scan 2 output
30	P41/FS17	seg j / KS1	O	FL segment j output and key scan 1 output
31	P40/FS16	seg i / KS0	O	FL segment i output and key scan 0 output
32	P50/FS15	seg h	O	FL segment h output
33	P51/FS14	seg g	O	FL segment g output
34	P52/FS13	seg f	O	FL segment f output
35	P53/FS12	seg e	O	FL segment e output
36	P54/FS11	seg d	O	FL segment d output
37	P55/FS10	seg c	O	FL segment c output
38	P56/FS9	seg b	O	FL segment b output
39	P57/FS8	seg a	O	FL segment a output
40	P17/Vdisp	-30V	-	FL drive power supply
41	P60/FD0/FS7	G9	O	FL grid 9 output
42	P61/FD1/FS6	G8	O	FL grid 8 output
43	P62/FD2/FS5	G7	O	FL grid 7 output
44	P63/FD3/FS4	G6	O	FL grid 6 output
45	P64/FD4/FS3	G5	O	FL grid 5 output
46	P65/FD5/FS2	G4	O	FL grid 4 output
47	P66/FD6/FS1	G3	O	FL grid 3 output
48	P67/FD7/FS0	G2	O	FL grid 2 output
49	P70/FD8	G1	O	FL grid 1 output
50	P71/FD9	NC	O	Not used
51	P72/FD10	NC	O	Not used
52	P73/FD11	NC	O	Not used
53	P74/FD12	NC	O	Not used
54	P75/FD13	D.CD LED	O	DIRECT CD LED drive output
55	P76/FD14	S-SCAN	I/O	SHUTTER SCAN output
56	P77/FS15	NC	O	Not used
57	Vcc	Vcc	-	Power supply
58	P80	KIN0	I	Key input 0
59	P81	KIN1	I	Key input 1
60	P82	KIN2	I	Key input 2
61	P83	KIN3	I	Key input 3
62	P84	KIN4	I	Key input 4

Pin	Pin name	Signal name	I/O	Function
63	P85	KIN5	I	Key input 5
64	P86	KIN6	I	Key input 6
65	P87	NC	-	Not used
66	P90/PWM	SYNCRO OUT	O	SYNCHRO REC output
67	P91/SCK1	XSCK	I/O	Communication clock with mechanism control/OSD
68	P92/SI1	SI	I	Receive data from mechanism control
69	P93/SO1	SO	O	Send data to mechanism control/OSD
70	P94/SCK2	XRESET	O	RESET output from other than mechanism control/OSD
71	P95/SI2/CS	XCS	O	OSD chip select
72	P96/SO2	SYNCRO IN	I	SYNCHRO REC input
73	P97/UD	NC	O	Not used
74	PA0	NC	O	Not used
75	PA1	NC	O	Not used
76	AVcc	AVcc	-	Connection to Vcc of standard power supply for A/D conversion
77	P00/AN0	NC	O	Not used
78	P01/AN1	NC	O	Not used
79	P02/AN2	NC	O	Not used
80	P03/AN3	NC	O	Not used

● IC351 (CA0002AM)

AUDIO IC

No.	Pin name	Function
1	VEE	Power supply pin
2	VINR	FM signal input pin
3	DOCR	Drop-out correction switch output pin
4	SWIR	Mode switching amplifier input pin
5	SWOR	Mode switching amplifier output pin
6	CXINR	CX control signal input pin
7	GND	GND pin
8	L	Mode switching pin (L)
9	R	Mode switching pin (R)
10	CX	CX control pin
11	FTC	FTC capacitor connection pin
12	ROUT	R channel output pin
13	LOUT	L channel output pin
14	STC2	STC pin (2)
15	STC1	STC pin (1)
16	CONP	Compensator pin
17	TBC	TBC error signal input pin
18	VCC	Power supply pin
19	CXINL	CX control signal input pin
20	SWOL	Mode switching amplifier output pin
21	SWIL	Mode switching amplifier input pin
22	DOCL	Drop-out correction switch output pin
23	VINL	FM signal input pin
24	ALC	ALC capacitor pin

● IC802 (CXA1372S)

FTS CONTROL

No.	Pin name	I/O	Function	No.	Pin name	I/O	Function
1	TE		Tracking error input	27	LOCK		Sled protection circuit is worked at "L". (with 47kohms pull-up resistor)
2	TDFCT		Capacitor connect pin for time constant at the defect.	28	CLK		Serial data transfer clock input from the CPU. (Pull-up resistor is nothing.)
3	ATSC		Window comparator input for ATSC detection.	29	XLT	I	Latch input from the CPU. (Pull-up resistor is nothing.)
4	FZC		Focus and zerocross comparator input.	30	DATA		Serial data input from the CPU. (Pull-up resistor is nothing.)
5	FE		Focus error input.	31	XRST		Reset input (reset at "L"). (Pull-up resistor is nothing.)
6	FDFCT		Capacitor connect pin for time-constant at the defect.	32	C.OUT		Signal output for count the track
7	VC	I	Center voltage input. (GND at two power supply, (Vcc+GND) / 2 at single power supply)	33	SENS	O	FZC,AS,TZC and SSTOP outputs from the CPU.
8	FGD		Connect a capacitor between FGD (pin 8) and ATSC (pin 3) when high-pass gain of focus servo is dropped.	34	D GND	—	Digital GND
9	FS3		Switching the high-frequency gain of the focus servo by ON/OFF of FS3.	35	MIRR		MIRR comparator output. (DC voltage : connect 10kohms load resistor)
10	FLB		Time constant connect pin for boosts low of focus servo.	36	DFCT	O	DEFECT comparator output. (DC voltage : connect 10kohms load resistor)
11	FEO	O	Focus drive output	37	ASY	I	Auto asymmetrical control input
12	FE-		Inverting input of focus amplifier	38	EFM		EFM comparator output. (DC voltage : connect 10kohms load resistor)
13	SRCH	I	Time constant connect pin for making the focus search waveform.	39	FOK	O	Focus OK comparator output. (DC voltage : connect 10kohms load resistor)
14	TGU		Time constant connect pin for switching the tracking high-frequency gain.	40	CC1	I	DEFECT bottom hold output
15	TG2			41	CC2	O	Input pin so that DEFECT bottom hold output signal is input by coupling capacitor.
16	AVCC	—	Analog +5V power supply	42	DVCC	—	Digital +5V power supply
17	TAO	O	Tracking drive output	43	CB		Capacitor connect pin for the DEFECT bottom hold.
18	TA -		Inverting input of tracking amplifier.	44	CP	I	Capacitor connect pin, for the MIRR hold. Non-inverting input of the MIRR comparator.
19	SL +		Non-inverting input of sled amplifier.	45	RFI		Input terminal so that RF summing amplifier output signal is input by coupling capacitor.
20	SLO	O	Sled drive output	46	RFO	O	RF summing amplifier output. Check point of the eye pattern.
21	SL-		Inverting input of sled amplifier	47	DVEE	—	Digital -5V power supply
22	FSET		Pin for peak setting of phase compensation of the focus tracking.	48	TZC	I	Tracking zerocross comparator input.
23	ISET	I	Current flows for set the height of focus search, track jump and sled kick.				
24	SSTOP		Pin for detect ON/OFF signal of the limit switch for detecting inner side of the disc.				
25	AVEE	—	Analog -5V power supply				
26	DIRC	I	Use at one track jump. (With 47kohms pull-up resistor)				

7. FOR CLD-S201/KUC /CA AND CLD-S250/SD

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.

7.1 CONTRAST OF MISCELLANEOUS PARTS

CLD-S201/KUC/CA, CLD-S250/SD and CLD-S201/KUC have the same construction except for the following:

Mark	Symbol & Description	Parts No.			Remarks
		CLD-S201/KUC	CLD-S201/KUC/CA	CLD-S250/SD	
●	SYPS ASS'Y	VWR1122	VWR1122	-----	
●	PWSB ASS'Y	-----	-----	VWM1267	
NSP	SYPS ASS'Y	-----	-----	VWR1128	
NSP	VSBA ASS'Y	-----	-----	VWR1139	
NSP	Front panel ASS'Y	VXA1845	VXA1845	VXA1858	
	Rear panel	VNA1256	VNA1256	VNA1271	
Δ	Cord stopper	CM-22C	CM-22C	CM-22B	
Δ	AC power cord	PDG1015	PDG1015	PDG1013	
Δ	Power transformer (AC 120V)	VTT1110	VTT1110	-----	
Δ	Power transformer (AC 110/120-127/220/240V)	-----	-----	VTT1111	
NSP	Packing case	VHG1207	VHG1207	VHG1223	
NSP	Warranty card	ARY1044	ARY1044	ARW1020	
NSP	65 label	ORW1069	ORW1069	-----	
	Operating instructions (French)	-----	VRC1012	-----	
	Operating instructions (Chinese)	-----	-----	VRC1009	
	Operating instructions (Spanish)	-----	-----	VRK1004	

LIST OF ASSEMBLIES

PWSB ASS'Y
 └─ SYPS ASS'Y
 └─ VSBA ASS'Y

SYPS ASS'Y

SYPS ASS'Y (VWR1128) and SYPS ASS'Y (VWR1122) have the same construction except for the following:

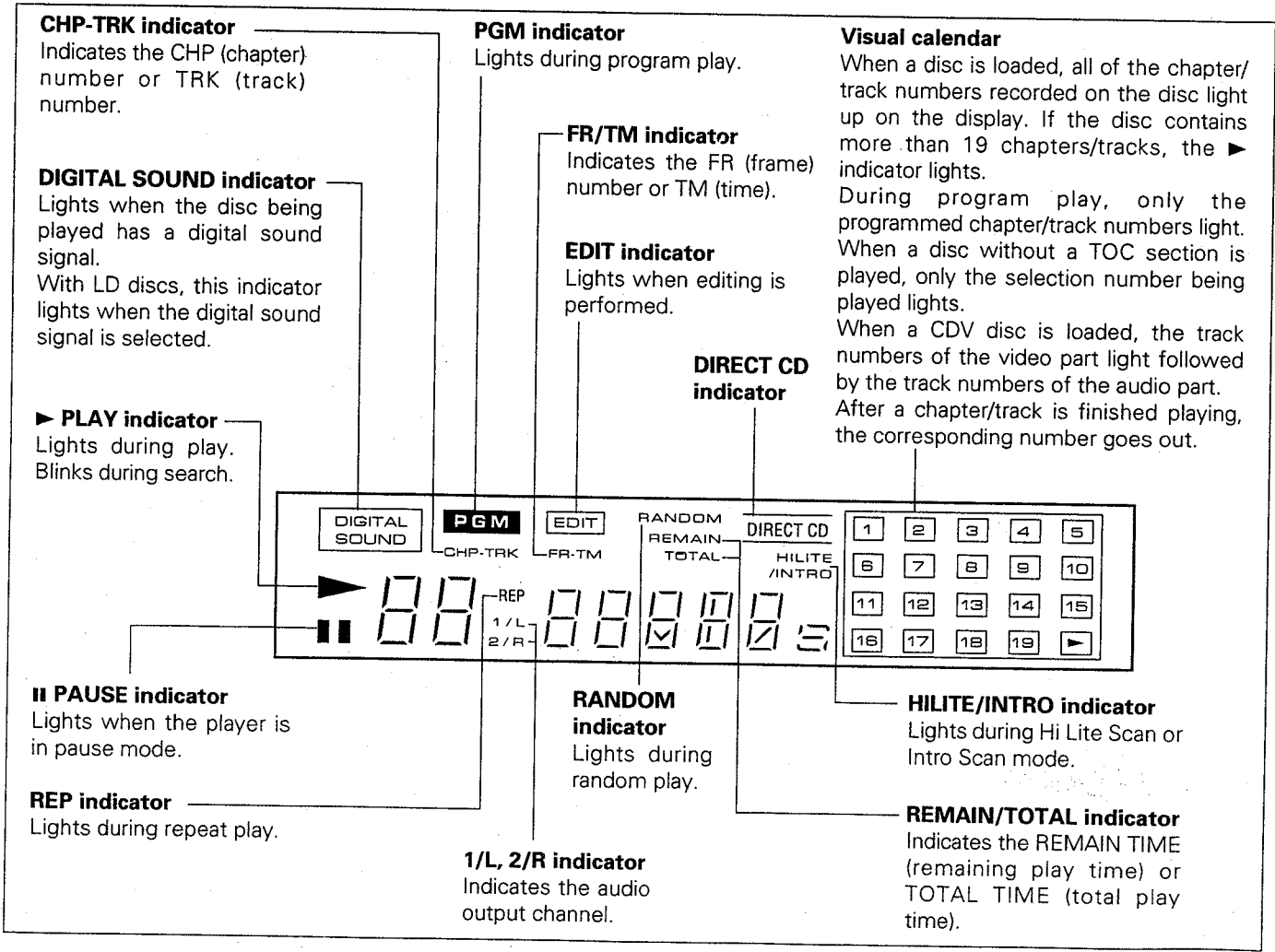
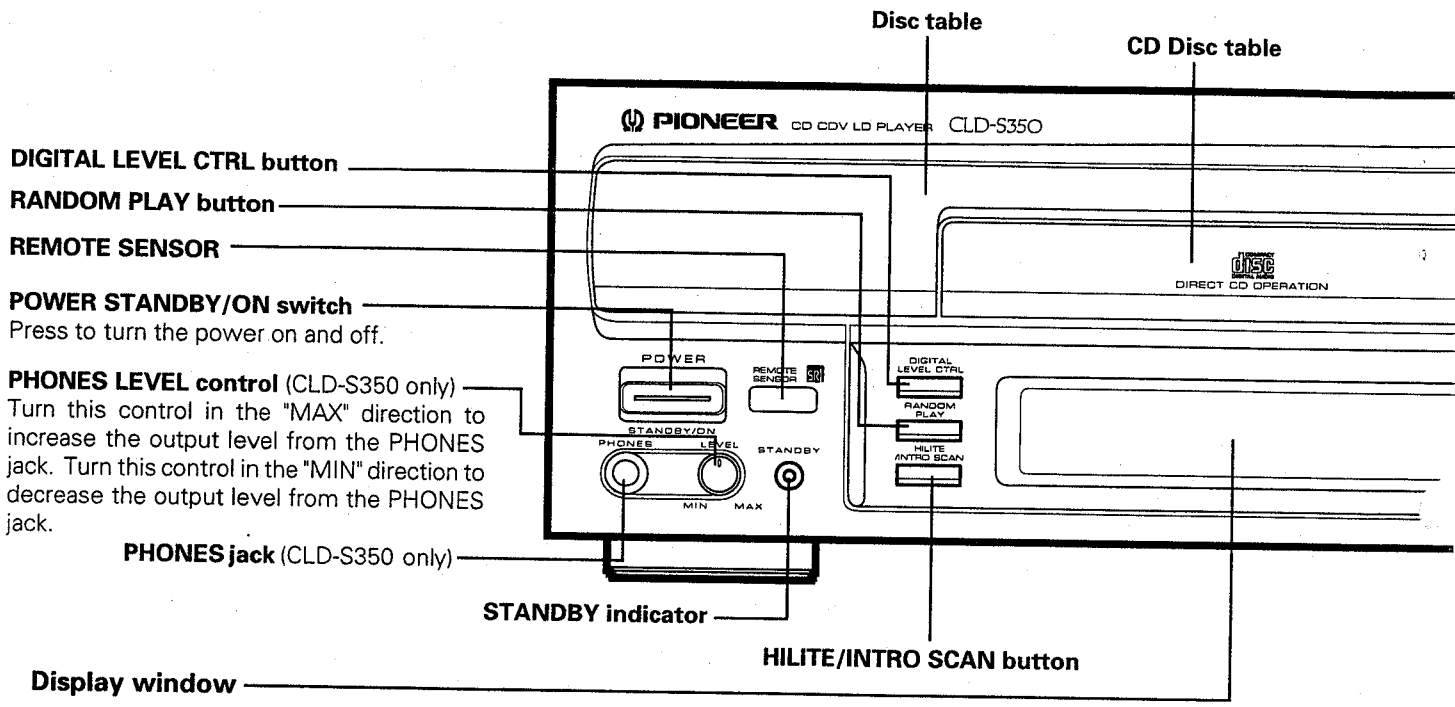
Mark	Symbol & Description	Parts No.		Remarks
		VWR1122	VWR1128	
Δ	R51 Screw terminal	RD1/2PM225J	-----	
Δ	CN1 Housing ASS'Y (05P)	VNE1841 -----	VKP1953	

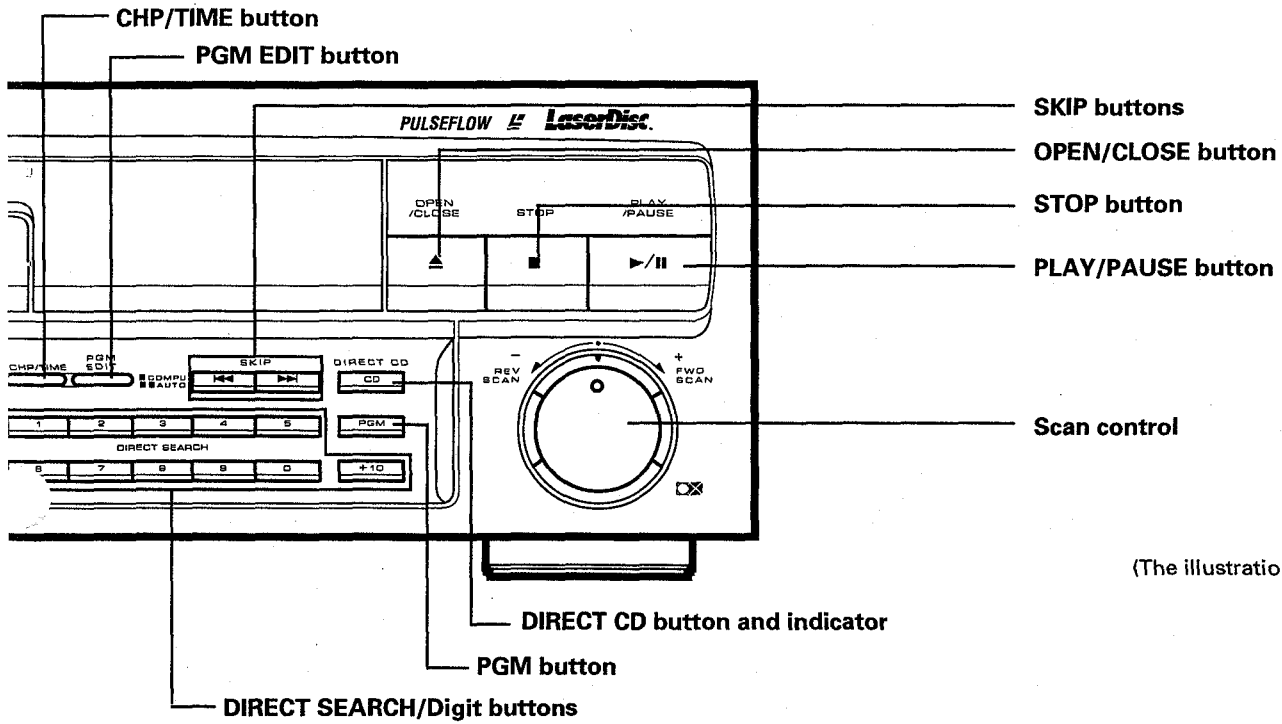
7.2 PCB PARTS LIST

VSBA ASS'Y

Mark	No.	Description	Parts No.
Δ	SW1	Switch (voltage selector)	VSB1007

8. PANEL FACILITIES





(The illustration shows CLD-S350.)

CLD-S350

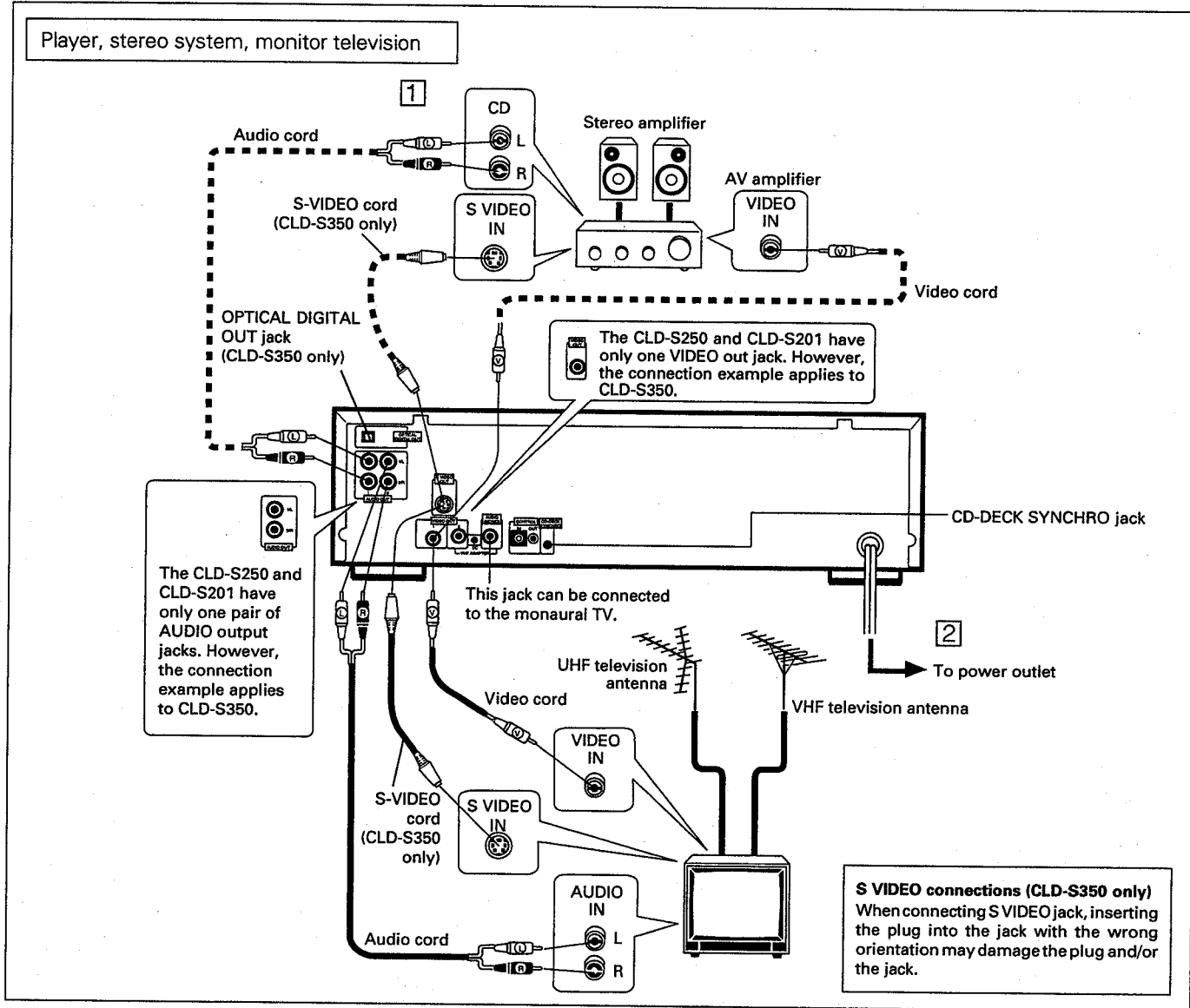
CLD-S250/CLD-S201

- ① **POWER button**
Press to turn the power on and off.
- ② **AUDIO button**
- ③ **DISPLAY button**
- ④ **PGM button**
- ⑤ **EDIT button**
- ⑥ **CHP/TM button**
- ⑦ **HILITE/INTRO button**
- ⑧ **PAUSE button**
- ⑨ **SCAN buttons**
- ⑩ **D-LEVEL CTRL button**
- ⑪ **REPEAT A/B buttons**
- ⑫ **EJECT button**
- ⑬ **D/A/CX button**
- ⑭ **CLEAR button**
Used to clear the repeat mode, program mode, random play mode or hi-lite scan/intro scan mode. This button is also for use in correcting input digits.
- ⑮ **Digit buttons**
- ⑯ **MULTI-SPEED buttons**
- ⑰ **STEP buttons.**
- ⑱ **PLAY button**
- ⑲ **SKIP buttons**
- ⑳ **Scan control**
- ㉑ **RANDOM button**

Remote control buttons with the same names or marks as buttons on the front panel of the player control the same operations as the corresponding front panel buttons.

9. CONNECTIONS

USING TELEVISION WITH AUDIO AND VIDEO JACKS



- Connect the VIDEO OUT jack of the player to the video input jack of the monitor television.
- Connect the AUDIO OUT jacks to the stereo amplifier AUX, CD, LD, VDP or other jacks, except the PHONO input jacks. The television speakers can also be used by connecting the television audio input jacks and the player AUDIO OUT jacks. However, connection to a stereo amplifier is recommended to obtain superior audio playback quality for Compact Discs and LaserDiscs. Do not change the television antenna and VCR connections.
- Connect the power cord to an AC wall outlet.
- Combined system control is possible when a Pioneer television and audio/video stereo receiver are connected.

- When making connections to stereo amplifier equipped with a built-in D/A converter and an optical digital jack, refer to the connection instructions (CLD-S350 only).

CD-DECK synchro function

If you have a Pioneer cassette deck provided with the CD-Deck synchro function, connect the CD-DECK SYNCHRO jacks of the player and cassette deck. With this function, synchro recording can be carried out between player and deck.

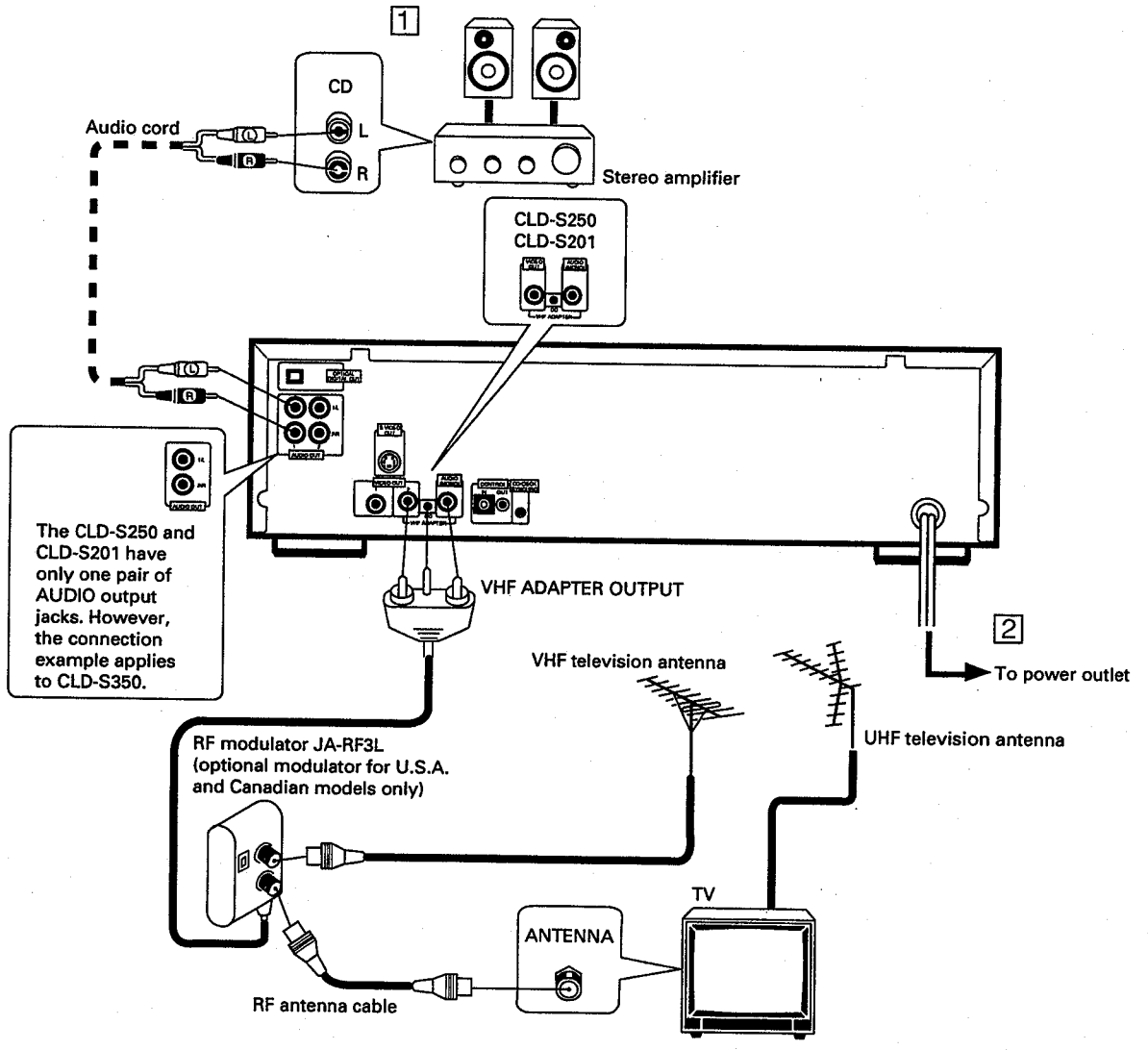
- With CD as well as CDV and LD, the CD-Deck synchro recording can be carried out.
- For details on connections and operation, refer to the instruction manual supplied with the cassette deck.

USING TELEVISION WITHOUT AUDIO AND VIDEO JACKS (WITH RF MODULATOR JA-RF3L)

Player, regular television, stereo system

The numbers are explained on the next page. Make the connections in this order.

- To watch a TV broadcast, turn off the power of this player.
- When the power of this player is turned on, LD playback can be seen on the screen.



1. Detach the VHF antenna cable from the VHF antenna terminal of your TV set, and connect the cable to the VHF IN terminal of the RF modulator JA-RF3L (optional modulator for U.S.A. and Canadian models only).
2. Connect the VHF OUT terminal of the RF modulator to the VHF antenna terminal of your TV set with the supplied RF cable.
3. Connect the socket (3-pin) of the RF modulator to the VHF ADAPTER OUTPUT jacks.

NOTE:
Push the plug in firmly. If the plug is not properly inserted, it may result in snow or noise on the screen.

When the sound from a LaserDisc or Compact Disc is output from a television speaker it becomes monaural sound. (This is the same as stereo television).

NOTES:

- Stripe patterns may appear when a LaserDisc is played on a television. Move the antenna cable away from the power cord to avoid this.
- Be sure to turn off the power of this player when you watch a TV broadcast.
- With some televisions, when CD is played in Direct CD mode, no sound will be heard. Therefore, when using television speakers, turn off DIRECT CD.

10. SPECIFICATIONS

1. General

System LaserVision Disc system and Compact Disc digital audio system
 Laser Semiconductor laser wavelength 780 nm
 Power requirements
 U.S. and Canadian models AC 120V, 60 Hz
 Multi-voltage model AC 110V/120-127V/220V/240V (Switchable), 50/60 Hz
 Power consumption
 CLD-S350 41 W
 CLD-S250/CLD-S201 39 W
 Weight
 CLD-S350 7.4 kg (16 lbs 5 oz)
 CLD-S250 7.3 kg (16 lbs 1 oz)
 CLD-S201 7.2 kg (15 lbs 14 oz)
 Dimensions 420 (W) x 390 (D) x 122 (H) mm
 16-9/16 (W) x 15-3/8 (D) x 4-13/16 (H) in
 Operating temperature +5°C ~ +35°C (41°F - 95°F)
 Operating humidity 5% ~ 90%
 (There should be no condensation of moisture.)

2. Disc

LaserVision Discs

*Maximum playing times
 12-inch standard play disc 1 hour/both sides
 12-inch extended play disc 2 hours/both sides
 8-inch standard play disc 28 min/both sides
 14 min/one side
 8-inch extended play disc 40 min/both sides
 20 min/one side
 Spindle motor speed
 Standard play disc 1,800 rpm
 Extended play disc 1,800 rpm (inner circumference)
 to 600 rpm (outer circumference)
 (For a 12-inch disc)

Compact Discs

DISC Diameter: 5-inch, 3-inch, Thickness: 1.2 mm
 Rotation direction (pickup side) Counterclockwise
 Linear speed 1.2 ~ 1.4m/sec
 *Maximum playing time
 74 min. 5-inch discs
 20 min. 3-inch discs
 (For stereo playback)

Compact Discs with Video

Disc Diameter: 5-inch, Thickness: 1.2 mm
 Rotation direction (pickup side) Counterclockwise
 Linear speed Audio portion: 1.2 ~ 1.4m/sec
 Video portion: 11 ~ 12m/sec
 *Maximum playing time Video portion: 5 min. (CLV)
 Audio portion: 20 min. (Digital)

* Actual playback time differs for each disc.

3. Video characteristics (CLD-S350: two pairs, CLD-S250/CLD-S201: one pair)

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

4. S-Video output (CLD-S350 only)

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

5. Audio characteristics (CLD-S350: two pairs, CLD-S250/CLD-S201: one pair)

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

Digital Audio Characteristics

Frequency response	4 Hz - 20 kHz
SN ratio	(CLD-S350) 112 dB (EIAJ) (CLD-S250/CLD-S201) 102 dB (EIAJ)
Dynamic range	(CLD-S350) 98 dB (EIAJ) (CLD-S250/CLD-S201) 96 dB (EIAJ)
Total harmonic distortion	(CLD-S350) 0.0025% (EIAJ) (CLD-S250/CLD-S201) 0.003% (EIAJ)
Wow and flutter	Limit of measurement (EIAJ)

6. Other Terminals

Control input/output Both miniature jacks
 CD-DECK synchro Miniature jack
 VHF adapter output (Video/Audio) Both RCA jacks
 with DC jack
 Optical digital output (CLD-S350 only) Optical digital jack

7. Accessories


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

8. Functions

Remote control unit operations

	Function	Standard play Disc (CAV)	Extended play Disc (CLV)	Compact Disc with Video	Compact Disc
Basic Functions	Single-side play Pause Stop	YES YES YES	YES YES YES	YES YES YES	YES YES YES
Search	Fast forward (forward and reverse) Chapter/Track skip Direct chapter/Track number search Frame number search Time number search Absolute time search	YES YES YES YES NO NO	YES YES YES NO YES NO	YES YES YES NO YES NO	YES YES YES NO YES YES
Program	Chapter/Track program play Program correction	YES YES	YES YES	YES YES	YES YES
Repeat	Repeat between 2 points Memory repeat Chapter/Track repeat One-side repeat Program repeat Random repeat Program random repeat	YES YES YES YES YES YES*1 YES	YES YES YES YES YES YES*1 YES	YES YES YES YES YES YES YES	YES YES YES YES YES YES YES
Trick play	Still/Step Multi-speed (Forward/reverse 9-level variable)	YES YES	NO NO	NO NO	NO NO
Time display	Elapsed time display Absolute time display Remaining track time display Remaining total time display Total number of selections, total time display	NO YES*1 NO YES*1 YES*1	YES NO NO YES*1 YES*1	YES NO YES YES YES	YES YES YES YES YES
Others	Hi-Lite scan Intro scan Digital level control CX system ON/OFF AUTO DIGITAL/ANALOG switch Audio channel selection (Stereo, 1/L, 2/R)	NO YES YES*3 YES*2 YES*3 YES	NO YES YES*3 YES*2 YES*3 YES	YES*4 YES*5 YES — — YES	YES NO YES — — YES

*1 Only discs with TOC

*2 Valid for analog sound playing a disc with the  mark.

*3 Can only be used with discs with digital sound tracks.

*4 Audio part only

*5 Video part only

NOTE:

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

PLAYER FUNCTIONS

- Display, Visual Calendar Display
- Intro Scan, Hi-Lite Scan, Direct CD, Digital Level Control, Random Playback, Program Random Playback and Compu Program/Auto Program Edit
- Digital Sound for LaserVision Discs
- Last Memory