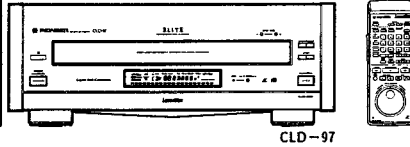


Service Manual

PIONEER®
The Art of Entertainment



ORDER NO.
ARP2743

CD CDV LD PLAYER

CLD - 97

CLD - 98

CLD - 97 AND CLD - 98 HAVE THE FOLLOWING :

Type	Model		Power Requirement	Remarks
	CLD - 97	CLD - 98		
KU/CA	○	—	AC120V only	
SD	—	○	AC110V, 120V-127V, 220V, 240V (switchable)	

- This manual is applicable to CLD - 97/KU/CA and CLD - 98/SD.

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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.

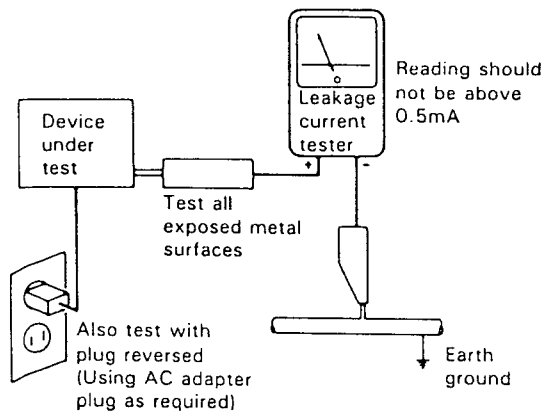
(FOR USA MODEL ONLY)

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 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

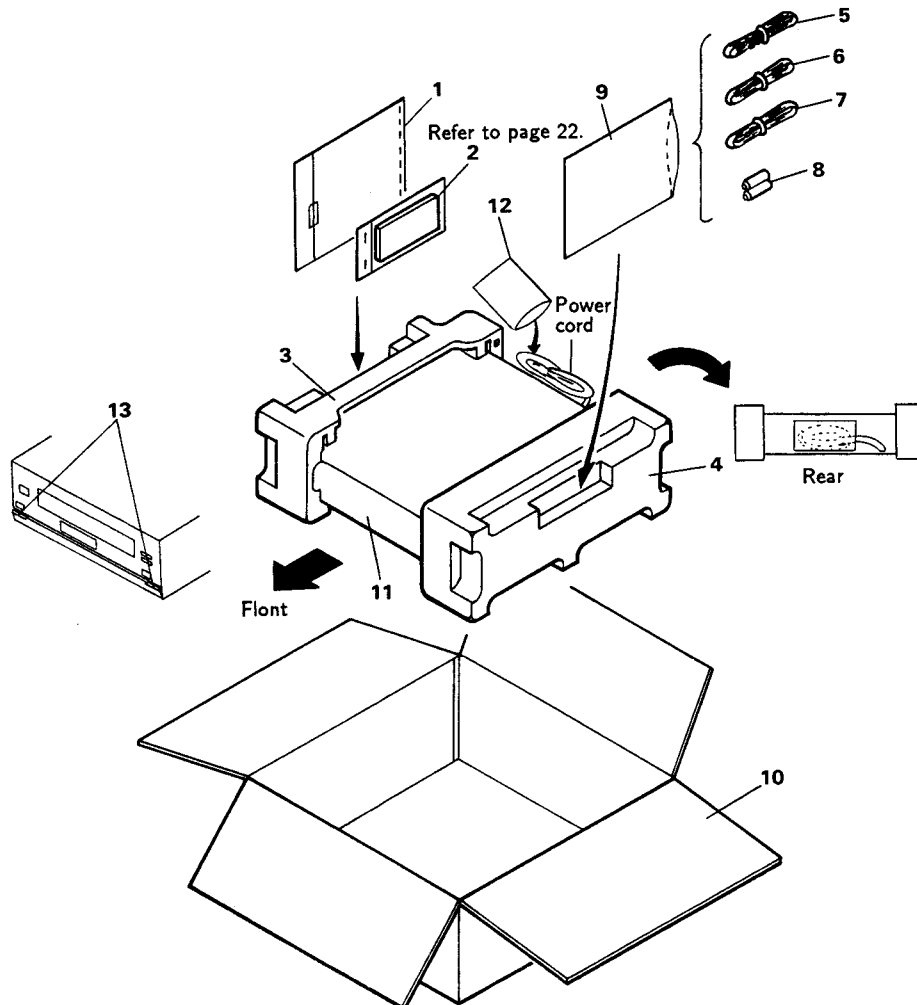
NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The 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.

2.1 PACKING AND PARTS LIST

Parts List

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
1	Operating instructions (CLD-97, English)	VRB1087	NSP 9	Polyethylene bag	Z21-029
1	Operating instructions (CLD-98, English)	VRB1088	10	Carton case (CLD-97)	VHG1275
2	Remote control unit (CU-CLD090, CLD-97)	VXX1850	10	Carton case (CLD-98)	VHG1276
2	Remote control unit (CU-CLD062, CLD-98)	VXX1672	11	Mirror mat	VHL1018
3	Pad(L)	VHA1101	12	Mirror mat bag	VHL1004
4	Pad(R)	VHA1102	13	Mirror mat sheet	VHL1021
5	Cord with plug	PDE1003			
6	Video cable	VDE1003			
7	S Video cable	VDE1013			
NSP 8	Battery (R03, AAA)	VEM-022			



2.2 EXTERIOR SECTION

Parts List

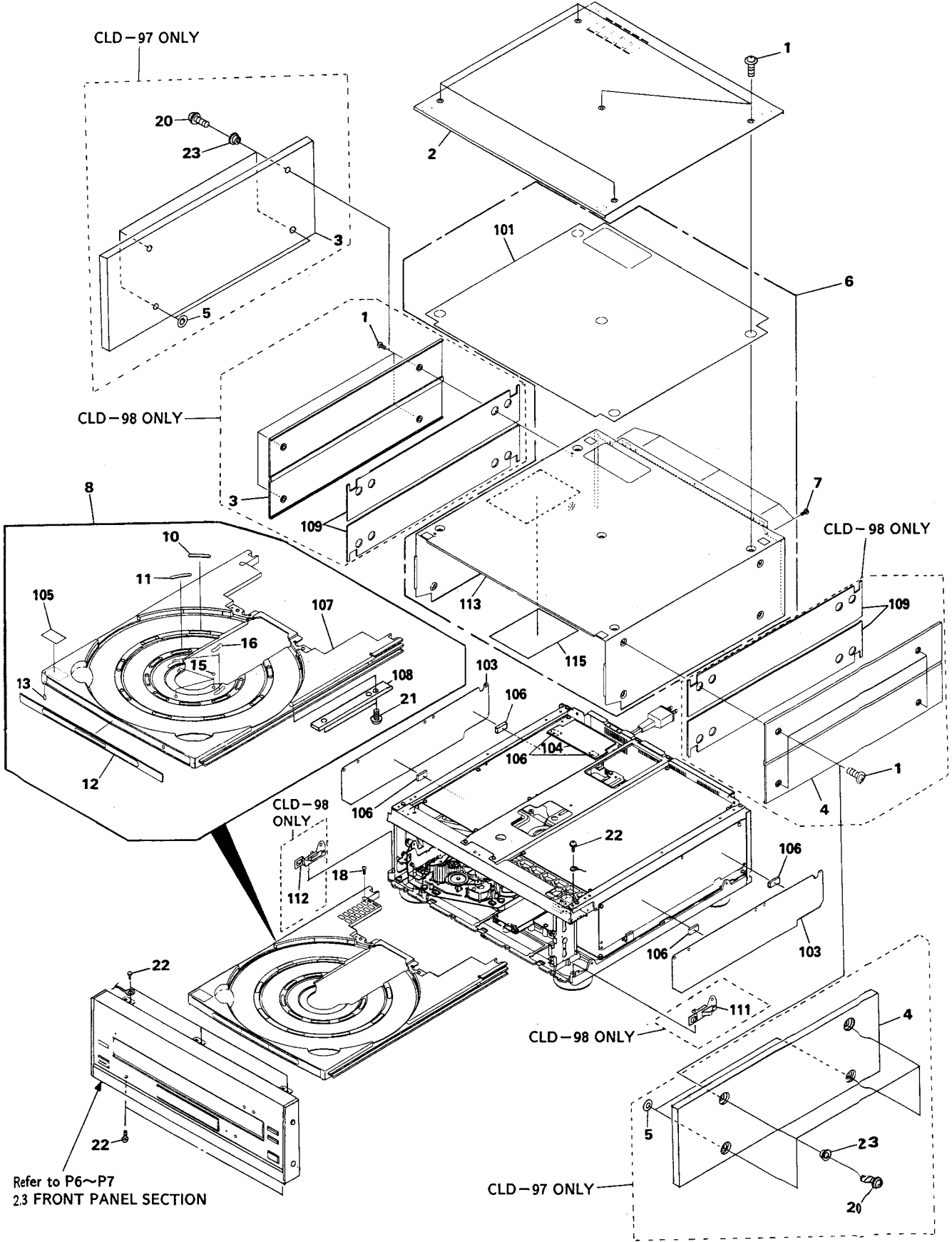
<u>Mark No.</u>	<u>Description</u>	<u>Parts No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Parts No.</u>
1	SH screw(FE) (CLD-97)	VBA1036	NSP 101	Damp cushion	VEC1533
1	SH screw(FE) (CLD-98)	VBA1037	102	.....
2	Top cover(AL) (CLD-97)	VAH1174	NSP 103	Insulation sheet	VEC1303
2	Top cover(AL) (CLD-98)	VAH1154	104	Insulation sheet D	VEC1556
3	Side wood(L) (CLD-97)	VAP1022	NSP 105	Carry label	VRW1289
3	Side cover(AL)(L) (CLD-98)	VAH1151	NSP 106	Insulation cushion	VEC1295
4	Side wood(R) (CLD-97)	VAP1023	NSP 107	Carry assembly (CLD-97)	VXA1634
4	Side cover(AL)(R) (CLD-98)	VAH1152	NSP 107	Carry assembly (CLD-98)	VXA1552
5	Side spacer (CLD-97 ONLY)	VEC1442	NSP 108	Tray reinforced plate	VNE1585
6	Bonnet assembly-S (CLD-97)	VXX1863	NSP 109	Side cushion (CLD-98 ONLY)	VEC1546
6	Bonnet assembly-S (CLD-98)	VXX1874	110	.....
7	Screw	BBT30P060FCC	NSP 111	Earth plate(R) (CLD-98 ONLY)	VNE1784
8	Carry assembly-S (CLD-97)	VXX1557	NSP 112	Earth plate(L) (CLD-98 ONLY)	VNE1783
8	Carry assembly-S (CLD-98)	VXX1873	NSP 113	Bonnet (CLD-97)	VNA1320
9	.....		NSP 113	Bonnet (CLD-98)	VNA1240
10	Disc pad(L) (CLD-97)	VEC1462	114	.....
10	Disc pad(L) (CLD-98)	VEC1409	NSP 115	Bonnet sheet	VEC1572
11	Disc pad(S) (CLD-97)	VEC1463			
11	Disc pad(S) (CLD-98)	VEC1410			
12	Carry rubber (CLD-97)	VEB1158			
12	Carry rubber (CLD-98)	VEB1145			
13	Stopper rubber	VEB1119			
14	.....			
15	Rubber Sheet D (CLD-97)	VEB1131			
15	Rubber Sheet F (CLD-98)	VEB1153			
16	Rubber Sheet C (CLD-97)	VEB1130			
16	Rubber Sheet E (CLD-98)	VEB1152			
17	.....			
18	Screw	BPZ30P120FMC			
19	.....			
20	Screw(CLD-97 ONLY)	IBZ40P200FZK			
21	Screw	IPZ30P060FCU			
22	Screw	IBZ30P060FCC			
23	Wood collar (CLD-97 ONLY)	PNW1238			

A

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Refer to P6~P7
2.3 FRONT PANEL SECTION

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

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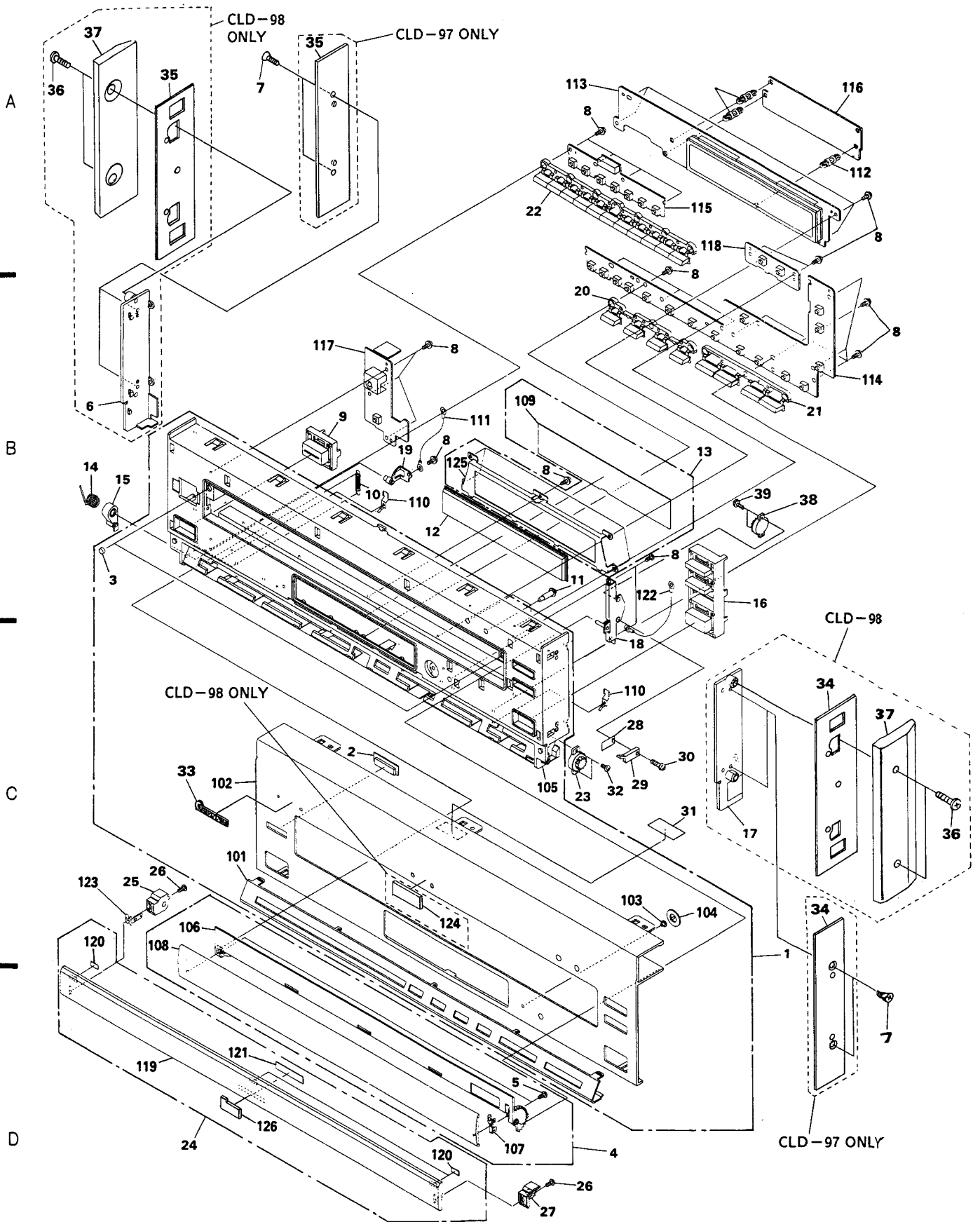
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2.3 FRONT PANEL SECTION

Parts List

<u>Mark No.</u>	<u>Description</u>	<u>Parts No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Parts No.</u>
1	Front panel assembly-S (CLD-97)	VXX1866	33	Name plate(CLD-98)	RAN1011
1	Front panel assembly-S (CLD-98)	VXX1872	34	Side mole(R)(CLD-97)	VAH1178
2	Sensor acrylic	VNK1566	34	Side mole(R)(CLD-98)	VEB1178
3	Door rubber(CLD-97)	VEB1157	35	Side mole(L)(CLD-97)	VAH1177
3	Door rubber(CLD-98)	VEB1144	35	Side mole(L)(CLD-98)	VEB1188
4	Door assembly-S(CLD-97)	VXX1864	36	Screw(CLD-98 ONLY)	VBA1028
4	Door assembly-S(CLD-98)	VXX1827	37	Side pole(CLD-98 ONLY)	VAH1153
5	Screw(CLD-97)	BMZ20P030FZK	38	Damper assembly	VXA1053
5	Screw(CLD-98)	BMZ20P030FNI	39	Screw	PMZ20P040FCU
6	Side panel(L)(CLD-98 ONLY)	VNK2177	NSP 101	Under plate(CLD-97)	VAH1175
7	Screw(CLD-97)	CPZ26P060FMC	NSP 101	Under plate(CLD-98)	VAH1170
7	Screw(CLD-98)	IPZ26P080FMC	NSP 102	Front aluminum assembly (CLD-97)	VXA1957
8	Screw	IPZ26P060FCU	NSP 102	Front aluminum assembly (CLD-98)	VXA1958
9	Power button(CLD-97)	VNK1712	NSP 103	LED collar	VNK1583
9	Power button(CLD-98)	VNK2169	NSP 104	LED lens	VNK1582
10	Door spring	VBH1196	NSP 105	Front panel(CLD-97)	VNK1708
11	Gold button	VLL1313	NSP 105	Front panel(CLD-98)	VNK2175
12	FL panel	VEC1562	NSP 106	Door holder assembly(CLD-97)	VXA1622
13	Back plate assembly-S(CLD-97)	VXX1575	NSP 106	Door holder assembly(CLD-98)	VXA1917
13	Back plate assembly-S(CLD-98)	VXX1489	NSP 107	Door earth	VNE1582
14	Pocket spring	VBH1141	NSP 108	Door aluminum(CLD-97)	VAH1176
15	Pocket lock	VNL1339	NSP 108	Door aluminum(CLD-98)	VAH1168
16	Operate key(CLD-97)	VNK1713	NSP 109	FL filter(CLD-97)	VEC1459
16	Operate key(CLD-98)	VNK2170	NSP 109	FL filter(CLD-98)	VEC1393
17	Side panel(R)(CLD-98 ONLY)	VNK2176	NSP 110	Under earth	VNE1583
18	Damper plate assembly(CLD-97)	VXA1623	NSP 111	Earth lug assembly	VDA1394
18	Damper plate assembly(CLD-98)	VXA1545	NSP 112	PC support	VEC1133
19	Pocket holder assembly	VXA1536	NSP 113	FLDB assembly	VWG1265
20	Mode key(CLD-97)	VNK1710	NSP 114	OPEB assembly	VWG1266
20	Mode key(CLD-98)	VNK2180	NSP 115	KEYB assembly	VWG1268
21	Search key(CLD-97)	VNK1711	NSP 116	MODE assembly(CLD-97)	VWG1444
21	Search key(CLD-98)	VNK2179	NSP 116	MODE assembly(CLD-98)	VWG1390
22	Ten key(CLD-97)	VNK1709	NSP 117	IRKB assembly	VWG1267
22	Ten key(CLD-98)	VNK2178	NSP 118	SIDE assembly	VWG1269
23	Damper assembly	REC1013	NSP 119	Pocket aluminum(CLD-97)	VAH1173
24	Pocket assembly-S(CLD-97)	VXX1865	NSP 119	Pocket aluminum(CLD-98)	VAH1169
24	Pocket assembly-S(CLD-98)	VXX1828	NSP 120	Pocket cushion(CLD-97)	VEC1460
25	Pocket arm(L)(CLD-97)	VNK1714	NSP 120	Pocket cushion(CLD-98)	VEC1412
25	Pocket arm(L)(CLD-98)	VNK2171	NSP 121	Pocket spacer(CLD-97)	VEC1461
26	Screw	PMA26P060FMC	NSP 121	Pocket spacer(CLD-98)	VEC1413
27	Pocket arm(R)(CLD-97)	VNK1715	NSP 122	Earth lug assembly	VDA1393
27	Pocket arm(R)(CLD-98)	VNK2172	NSP 123	Pocket earth	VNE1584
28	Insulation sheet	DEC1238	NSP 124	Regato badge(CLD-98 ONLY)	VAM1030
29	Door switch	VSK1014	NSP 125	Back plate	VNE1579
30	Screw	PMZ20P060FMC	NSP 126	Laser disc badge(CLD-97)	VAM1022
31	Case sheet	VEC1072	NSP 126	Laser disc badge(CLD-98)	VAM1028
32	Screw	BPZ20P060FCU			
33	Name plate(CLD-97)	RAN1008			



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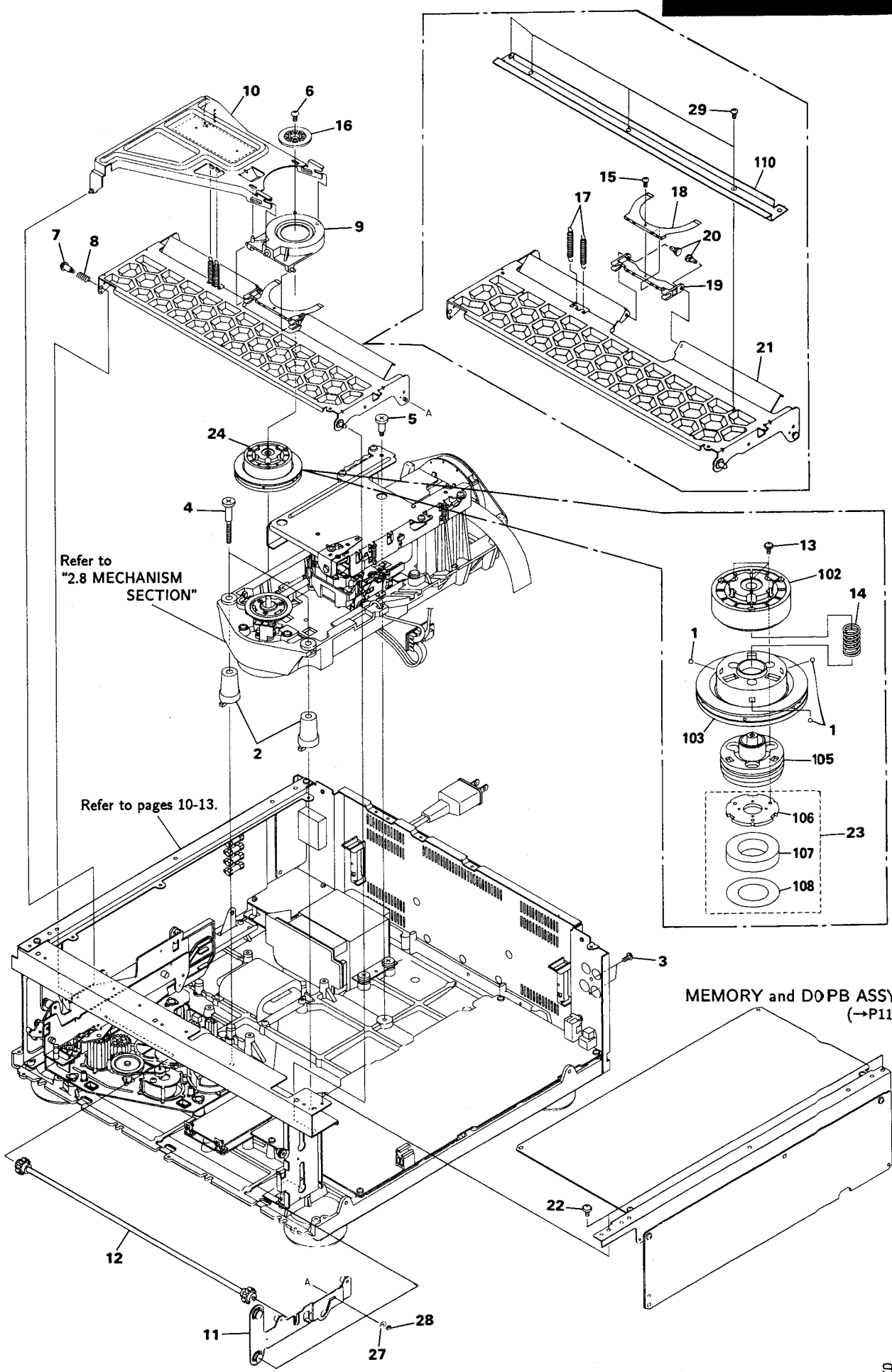
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2.4 CLAMPER SECTION

Parts List

<u>Mark No.</u>	<u>Description</u>	<u>Parts No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Parts No.</u>
1	Steel ball	VNX1006	101	.....
2	Mech. support	VNL1237	NSP 102	Clamper cover	VNL1225
3	Screw	BPZ30P080FCU	NSP 103	Disc Clamper assembly	VXA1338
4	Floating screw A	VBA1010	104	.....
5	Floating screw B	VBA1013	NSP 105	Centering hub(B)	VNT1034
6	Screw	PMB30P080FCU	NSP 106	Yoke plate(B)	VNE1347
7	Screw(B)	VBA1008	NSP 107	Magnet	VMG1010
8	Arm spring	VBH1093	NSP 108	Gap Sheet	VEC1561
9	Clamper holder assembly	VXA1344	109	.....
10	Clamper arm (B) assembly	VXA1415	NSP 110	Arm reinforced plate	VNE1457
11	Roller plate(R) assembly	VXA1326			
12	Synchro gear assembly	VXA1329			
13	Screw	AMZ20P040FMC			
14	Centering spring(B)	VBH1097			
15	Screw	BPZ20P040FZK			
16	Clamper head	VNL1223			
17	Arm spring	VBH1099			
18	Plate spring	VNE1361			
19	Parallel link	VNL1246			
20	Plastic rivet	VEC1302			
21	Clamper arm(A) assembly	VXA1424			
22	Screw	IBZ30P060FCC			
23	Magnet assembly - S	VXX1333			
24	Clamper assembly - S	VXX1508			
25	.....			
26	.....			
27	Washer	WA32N080W050			
28	E ring	YE25FUC			
29	Screw	BBZ26P060FMC			



Refer to
"2.8 MECHANISM
SECTION"

Refer to pages 10-13.

MEMORY and D0PB ASSY
(→P11)

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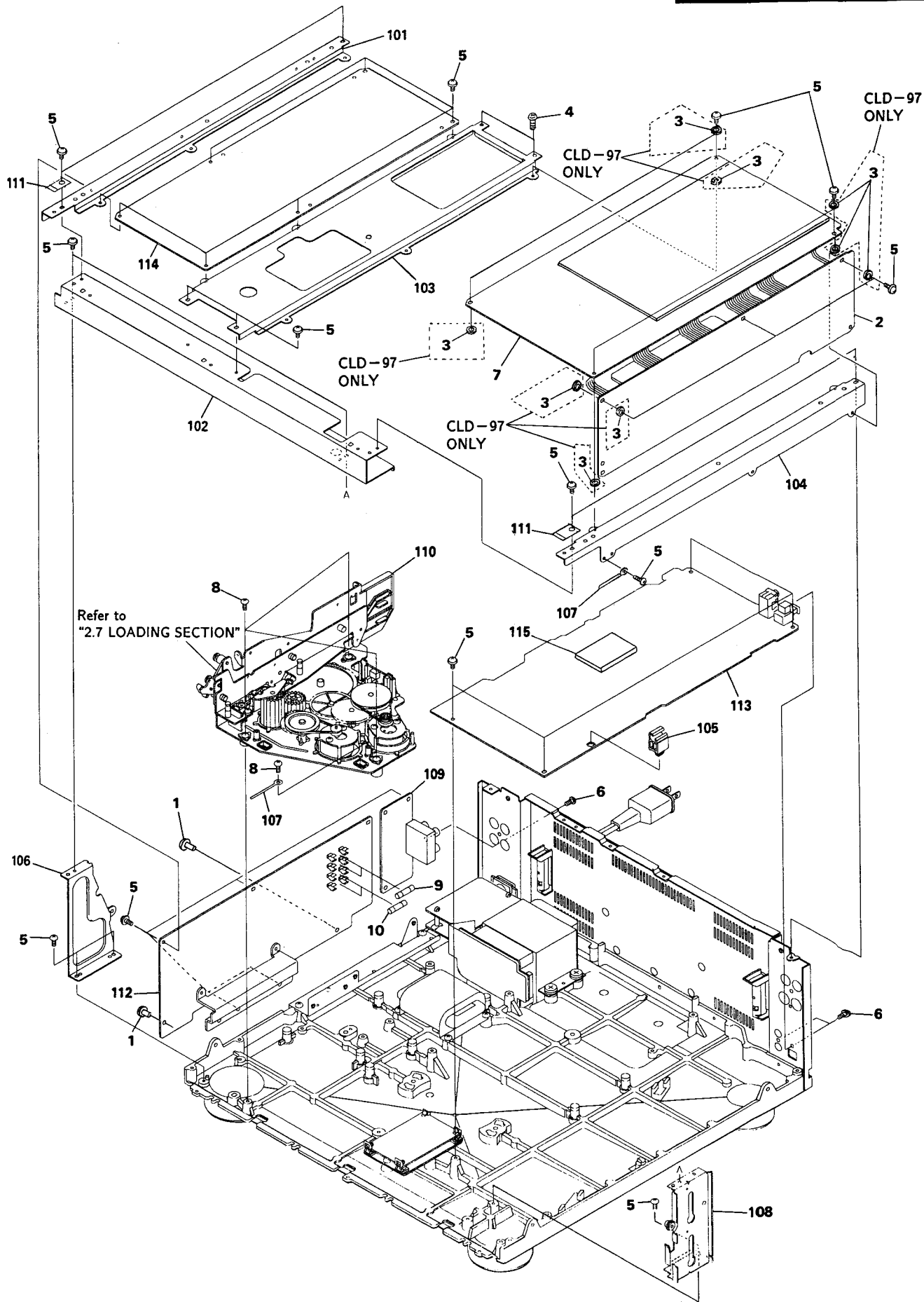
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2.5 TOP SECTION

Parts List

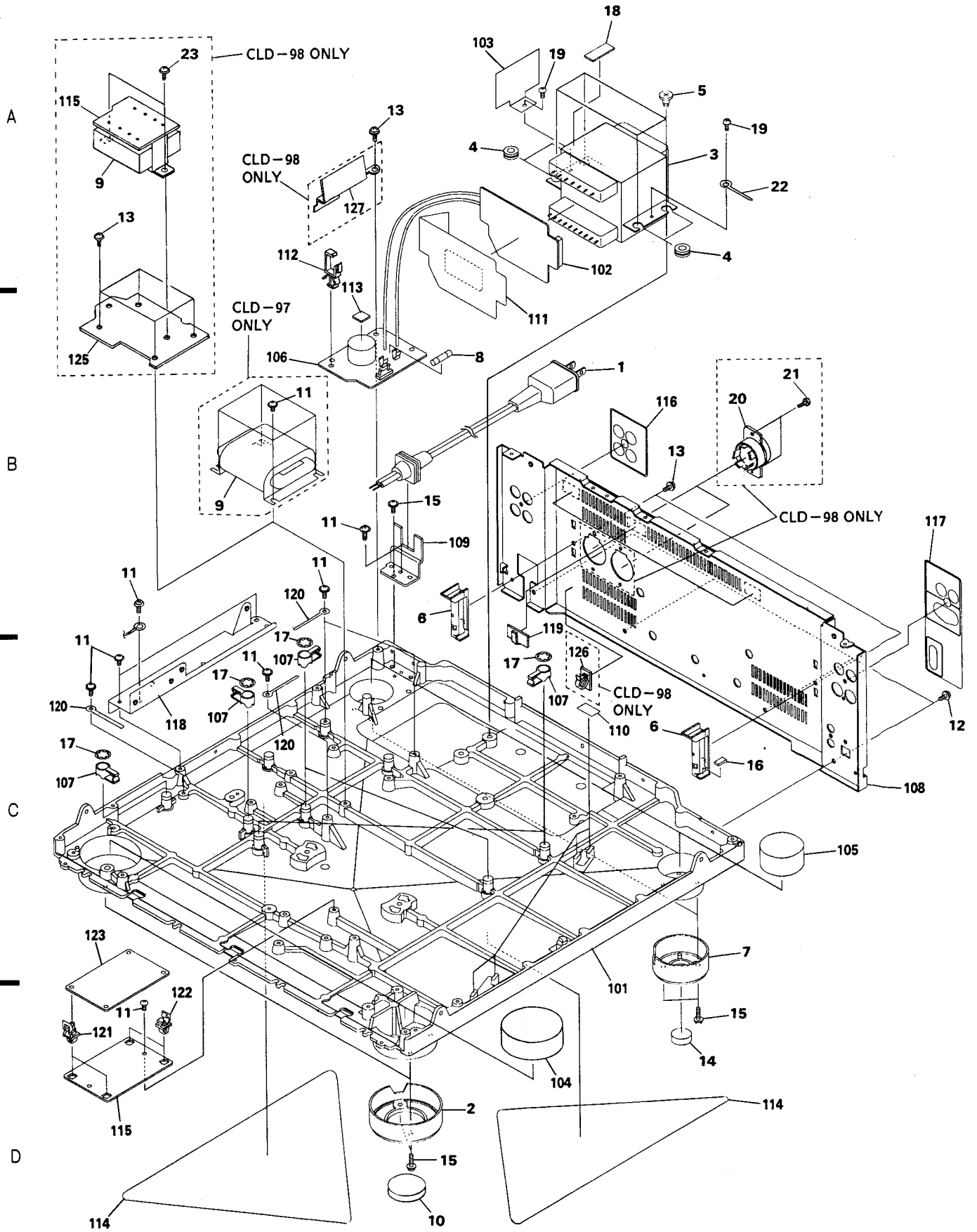
Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	Plastic rivet	VEC-143	NSP	101	Angle(L)	VNE1755
◎	2	DOPB assembly	VWV1240	NSP	102	Front angle	VNE1754
	3	Spacer (CLD-97 ONLY)	VEC1575	NSP	103	Center holder	VNE1757
	4	Screw	CBZ30P080FCC	NSP	104	PCB holder	VNE1756
	5	Screw	IBZ30P060FCC	NSP	105	PCB hinge	VEC1175
	6	Screw	BPZ30P080FCU	NSP	106	Side stay(L)	VNE1586
◎	7	MEMORY assembly	VWS1113	NSP	107	Cord holder	VNF-069
	8	Screw	BBZ30P080FCC	NSP	108	Stay (R) assembly	VXA1550
△	9	Fuse(3A)(FU3, FU4)(CLD-97)	VEK1021	NSP	109	PJAC assembly(CLD-97)	VWG1433
△	9	Fuse(T2.5A)(FU3, FU4)(CLD-98)	REK-104	NSP	109	PJAC assembly(CLD-98)	VWG1481
△	10	Fuse(2A)(FU1, FU2)(CLD-97)	VEK1019	NSP	110	Loading assembly	VWT1053
△	10	Fuse(T1.6A)(FU1, FU2)(CLD-98)	REK-102	NSP	111	Earth plate	VNE1518
				NSP	112	SYPS assembly(CLD-97)	VWR1113
				NSP	112	SYPS assembly(CLD-98)	VWR1202
				NSP	113	MAIN assembly(CLD-97)	VWX1155
				NSP	113	MAIN assembly(CLD-98)	VWX1201
				NSP	114	AUDB assembly(CLD-97)	VWG1445
				NSP	114	AUDB assembly(CLD-98)	VWG1480
				NSP	115	COMP assembly	VWV1247



2.6 BASE SECTION

Parts List

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
△	1	Power cord(CLD-97)	VDG1046	NSP	101	Under base	VNT1040
△	1	Power cord(CLD-98)	VDG1047	NSP	102	TRSB assembly (CLD-97)	VWR1112
	2	Cap(F)(CLD-97)	VNK1593	NSP	102	TRSB assembly(CLD-98)	VWR1184
	2	Cap(F)(CLD-98)	VNK2173	NSP	103	Insulation sheet(C)	VEC1548
△	3	Power transformer(AC 120V, MAIN) (CLD-97)	VTT1126	NSP	104	Pad(F)	VEC1436
△	3	Power transformer(AC 120V, MAIN) (CLD-98)	VTT1127	NSP	105	Pad(R)	VEC1437
	4	Transformer rubber	VEB1100	NSP	106	LSFB assembly(CLD-97)	VWR1189
	5	Transformer screw	VBA1011	NSP	106	LSFB assembly(CLD-98)	VWR1190
	6	Tray stopper	VNL1202	NSP	107	Wire clip	VEC1541
	7	Cap(R)(CLD-97)	VNK1594	NSP	108	Rear panel(CLD-97)	VNA1322
	7	Cap(R)(CLD-98)	VNK2174	NSP	108	Rear panel(CLD-98)	VNA1326
△	8	Fuse(2A) FU5 (CLD-97)	VEK1019	NSP	109	Cord holder	VNE1589
△	8	Fuse(T1.6A) FU5 (CLD-98)	REK-102	NSP	110	Damp sheet	VEX1021
△	9	Power transformer(AUDIO) (CLD-97)	VTT1128	NSP	111	Insulation sheet(A)	VEC1540
△	9	Power transformer(AUDIO) (CLD-98)	VTT1129	NSP	112	Wire clip	VEC1626
	10	Cushion(F)	VEC1440	NSP	113	Filter cushion	VEC1287
	11	Screw	IBZ30P060FCC	NSP	114	Sheet	VRW1193
	12	Screw	BBT30P060FCC	NSP	115	TRSA assembly	VWR1186
	13	Screw	IBZ30P080FCC	NSP	116	Label(L)	VRW1321
	14	Cushion(R)	VEC1401	NSP	117	Label(R)	VRW1322
	15	Screw	BBZ30P080FCC	NSP	118	Side Stay	VNE1774
	16	Door damp rubber	VEB1033	NSP	119	Wire clump(B)	VNE1298
	17	CS stop ring	YS80FBT	NSP	120	Cord holder	VNF-005
	18	Transformer cushion	VEC1445	NSP	121	Card edge spacer	VEC1535
	19	Screw (CLD-97)	BCZ30P050FMC	NSP	122	Pierce hold	VEC1536
	19	Screw (CLD-98)	BCZ30P040FMC	NSP	123	BLMB assembly (CLD-97)	VWS1103
	20	Voltage selector (CLD-98 ONLY)	VSB1002	NSP	123	BLMB assembly (CLD-98)	VWS1114
	21	Screw	BBZ30P080FZK	NSP	124	.....
	22	Cord clamber(CLD-98 ONLY)	VNF-069	NSP	125	Transformer holder(AL) (CLD-98 ONLY)	VNE1877
	23	Screw(CLD-98 ONLY)	PMB40P080FMC	NSP	126	Wire clamp(CLD-98 ONLY)	VEC1273
				NSP	127	Guard plate(FE) (CLD-98 ONLY)	VNE1866



2.7 LOADING SECTION

Parts List

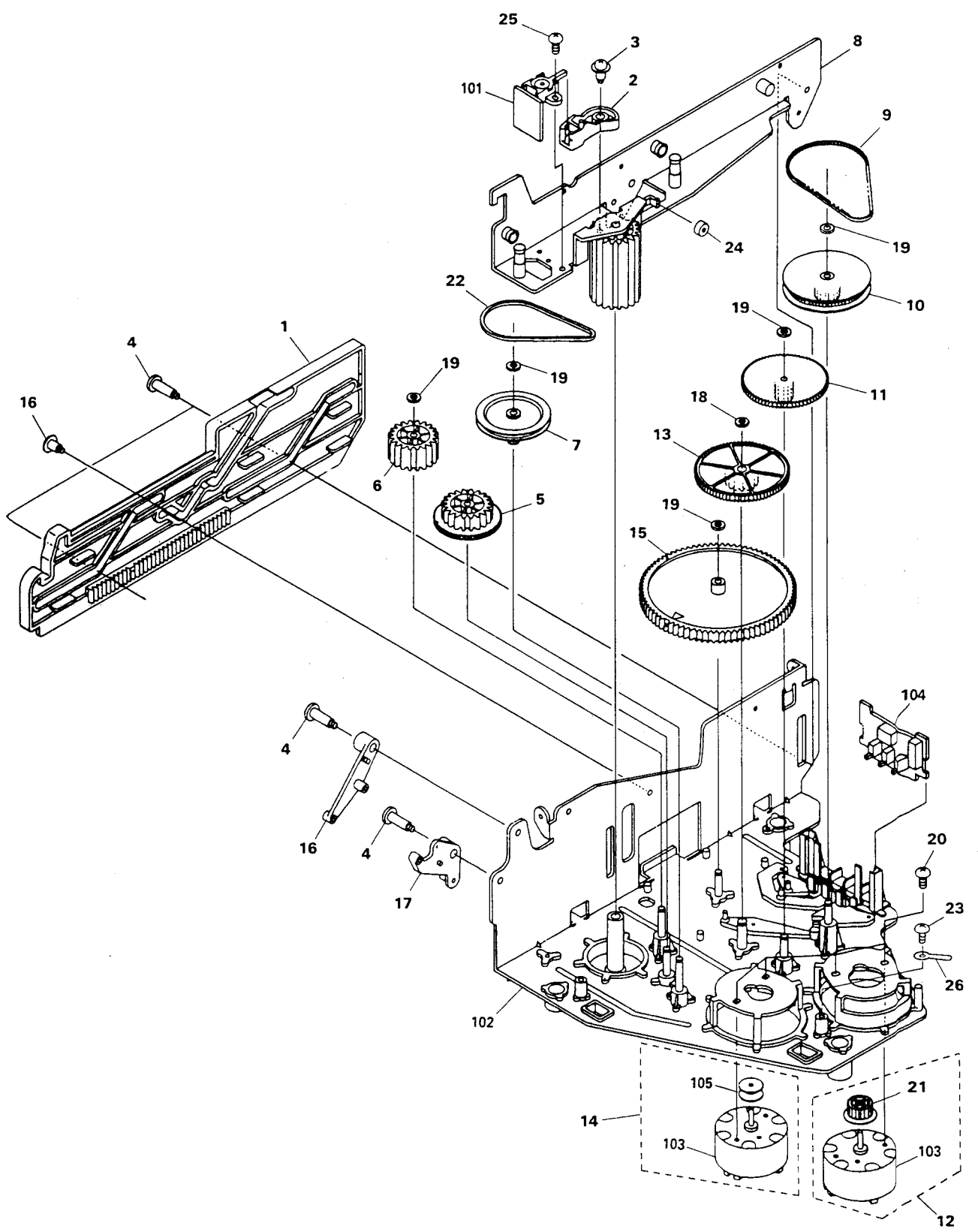
<u>Mark No. Description</u>	<u>Parts No.</u>	<u>Mark No. Description</u>	<u>Parts No.</u>
1 Slide cam	VNL1231	NSP 101 LHSB assembly	VWG1077
2 SW lever	VNL1239	NSP 102 Loading base assembly	VXA1324
3 Screw(B)	VBA1008	NSP 103 Carriage motor	VXM1033
4 Screw(C)	VBA1014	NSP 104 LVSB assembly	VWG1078
5 Gear(B)	VNL1229	NSP 105 Motor pulley	VLL1176
6 Follow gear	VNL1230		
7 Gear pulley	VNL1249		
8 Roller plate(L)assembly	VXA1532		
9 Synchro belt	VEB1069		
10 Timing pulley assembly	VXA1263		
11 Gear(D)	VNL1280		
12 Loading motor V assembly-S	VXX1324		
13 Gear(A)	VNL1141		
14 Loading motor H assembly-S	VXX1328		
15 Cam gear	VNL1228		
16 Lock arm	VNL1290		
17 Lever OC	VNL1247		
18 Washer	WT34D060D050		
19 Washer	WT26D047D025		
20 Screw	BMZ26P040FCU		
21 Motor pulley	VNL1148		
22 Belt	PEB1013		
23 Screw	BBZ30P080FMC		
24 Stop ring	VEB1091		
25 Screw	BMZ26P040FMC		
26 Binder	VEC-067		

A

B

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D

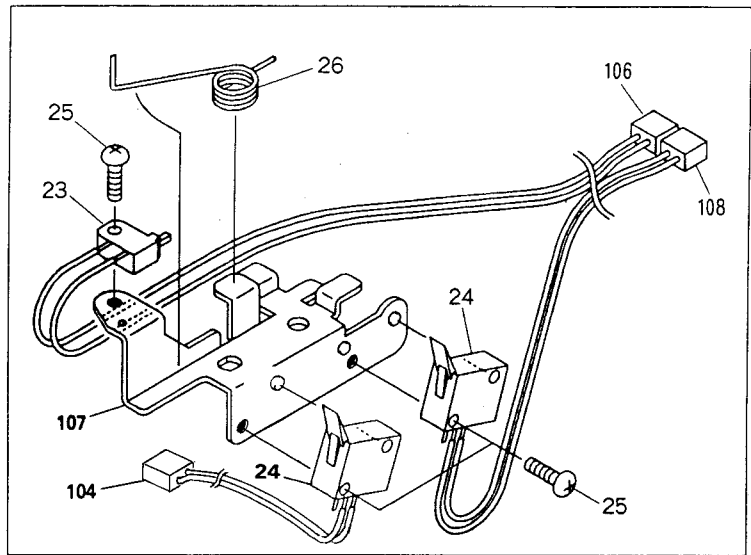


2.8 MECHANISM SECTION

Parts List

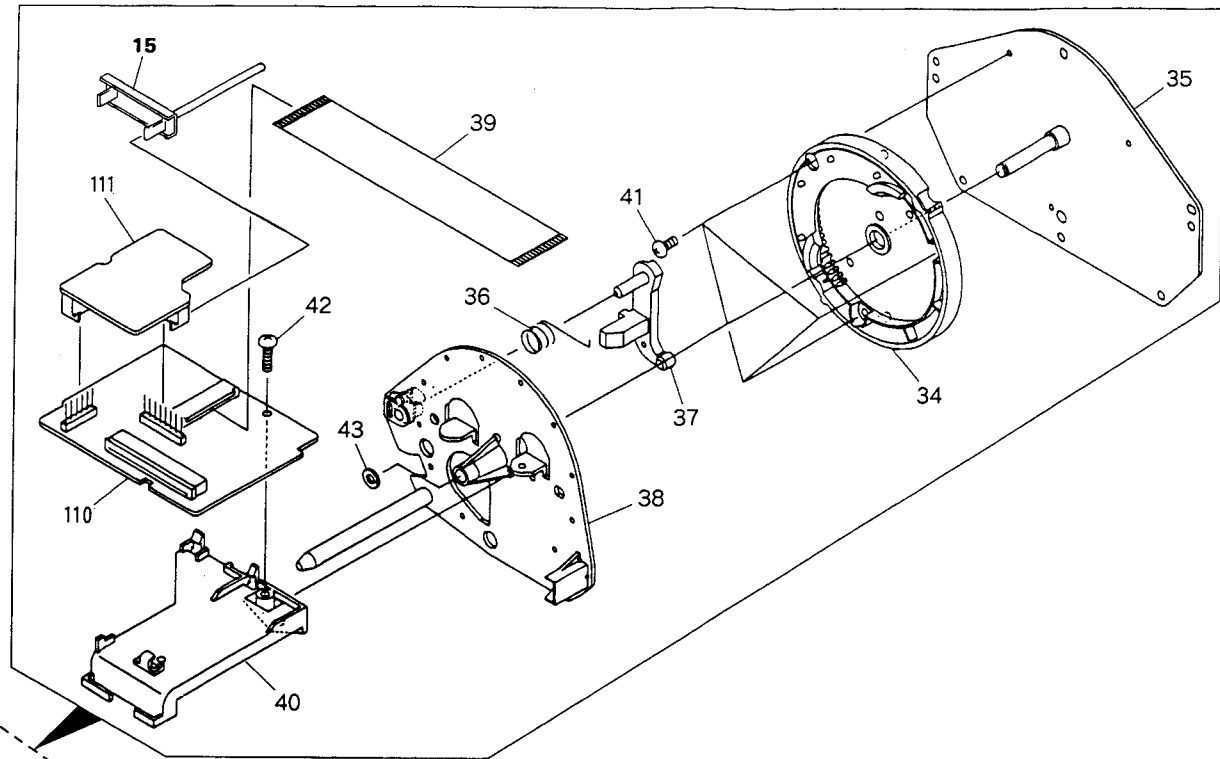
<u>Mark No. Description</u>	<u>Parts No.</u>	<u>Mark No. Description</u>	<u>Parts No.</u>
1 Spindle motor	VXM1049	NSP 101 Mech. chassis(B)	VNK1600
2 Floating rubber A	VEB1095	NSP 102 FGSB assembly	VWV1227
3 Plastic rivet	VEC1298	NSP 103 CNNB assembly	VWV1226
4		NSP 104 Housing assembly	VKP1894
5 Damper	VEB1094	NSP 105 Rubber sheet	VEB1035
		NSP 106 Housing assembly	VKP1931
6 Holder assembly	VXA1345		
7 Holder spring A	VBH1098	NSP 107 SW holder	VNE1510
8 Carriage shaft(B)	VLL1202	NSP 108 Housing assembly	VKP1930
9 Rack spring(B)	VBH1057	NSP 109 Caution label	VRW1073
● 10 Carriage assembly	VWT1054	NSP 110 PREB assembly	VWV1224
		NSP 111 PRET assembly	VWV1225
11 Sheet	VEC1332		
12 Yoke plate A	VNE1360	NSP 112 Turntable assembly	VXA1677
13 Centering hub(A)	VNT1033		
14 Centering spring	VBH1024		
15 Cord guide	DNK2085		
16 Screw	ZMD30H050FBT		
17 Screw	BMZ30P160FCU		
18 Screw	PMB30P200FCU		
19 Screw	PMZ26P130FMC		
20 Screw	BPZ30P100FCU		
21 Screw	IPZ30P100FCU		
22 Screw	CBZ20P080FMC		
23 Push switch(CD INSIDE)(S2)	DSG1012		
24 Slide switch(CDV INSIDE) (CDV,LD A INSIDE)(S3)	VSK1003		
25 Screw	PMZ20P070FCU		
26 Holder spring B	VBH1104		
27 Carriage shaft(U)	VLL1201		
28 Rack Gear(U)	VNL1153		
29 Mech. chassis assembly(U)	VXA1334		
30 Rack spring(U)	VBH1058		
31 Screw	PMZ20P160FMC		
32 Screw	PMZ20P080FMC		
33 Slide switch(LD B INSIDE) (S4)	VSK1003		
34 Internal gear assembly	VXA1335		
35 G plate assembly	VXA1333		
36 Lever spring	VBH1072		
37 Lock lever	VNL1234		
38 R plate assembly	VXA1332		
39 Parallel cord(FFC)	VDA1207		
40 Harness guide	VNL1235		
41 Screw	BBZ26P060FCC		
42 Screw	BBZ30P140FCC		
43 Washer	WT36D072D050		
44 Rack Gear(B)	VNL1238		
45 Turntable assembly-S	DXX1759		
46 Cord clamper	VNF-069		

A



A

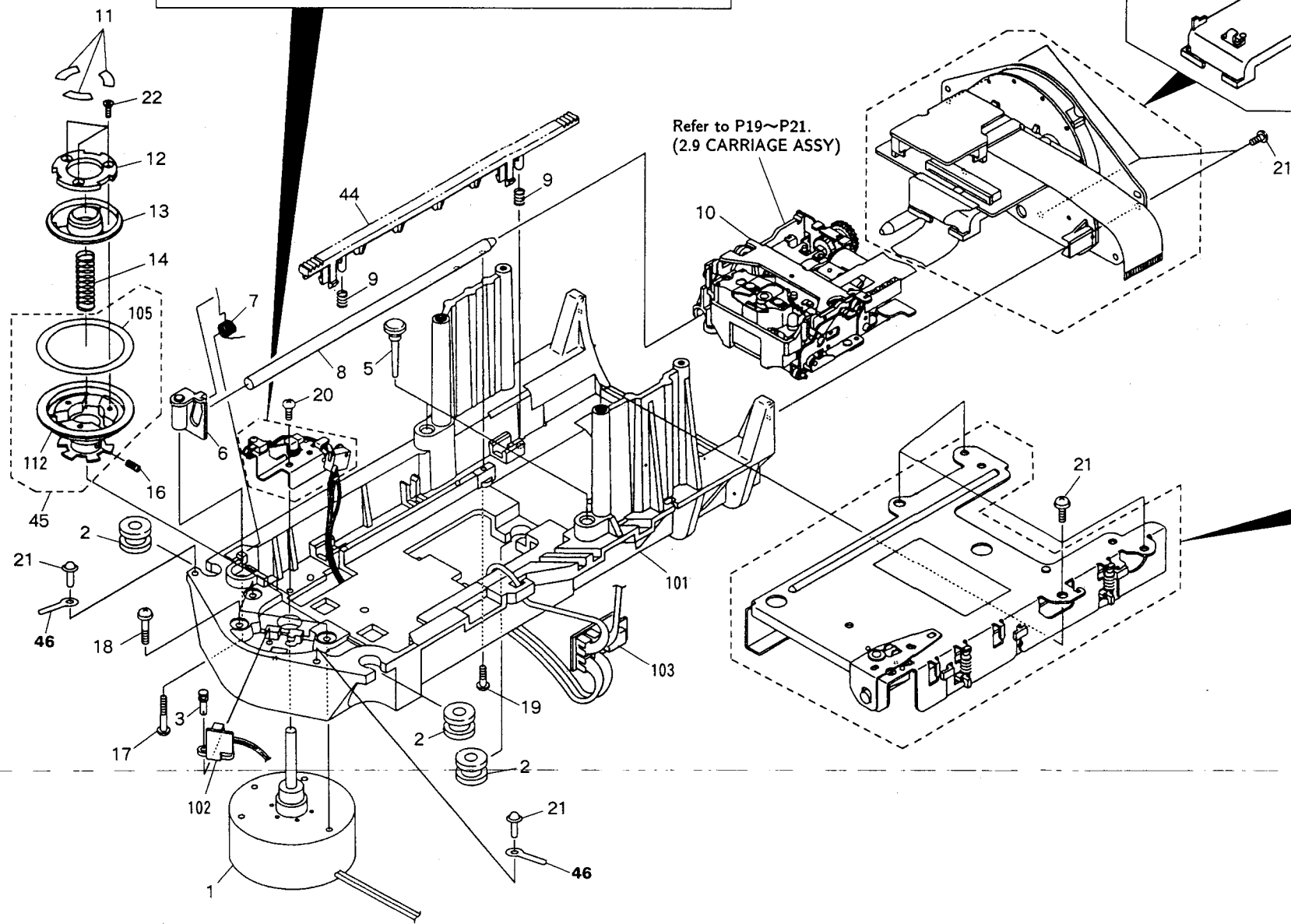
B



B

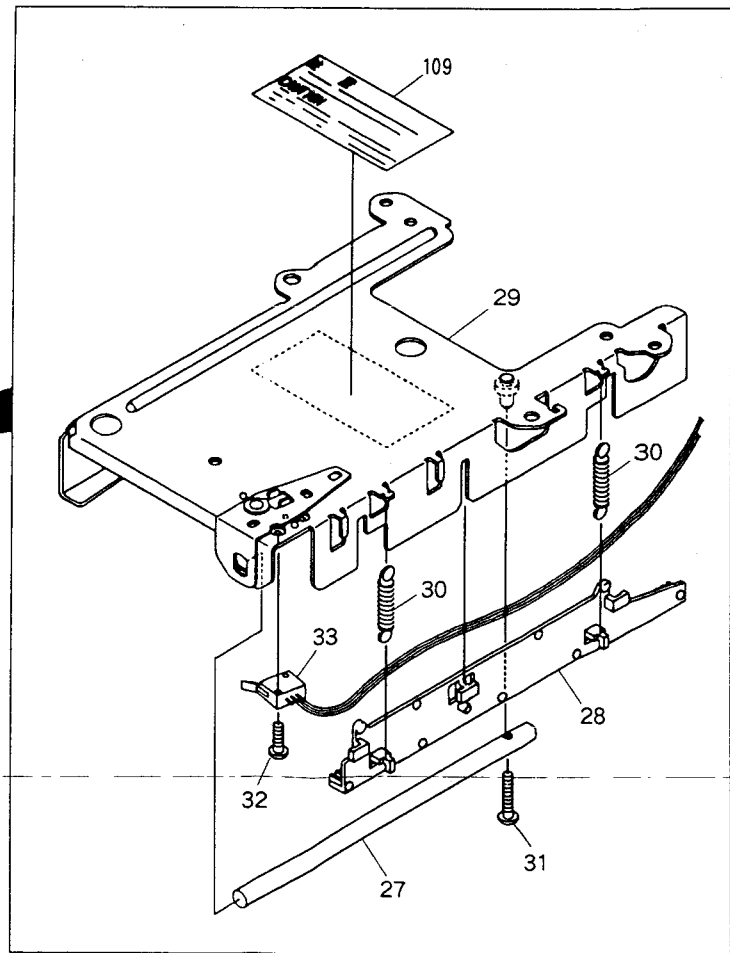
C

Refer to P19~P21.
(2.9 CARRIAGE ASSY)



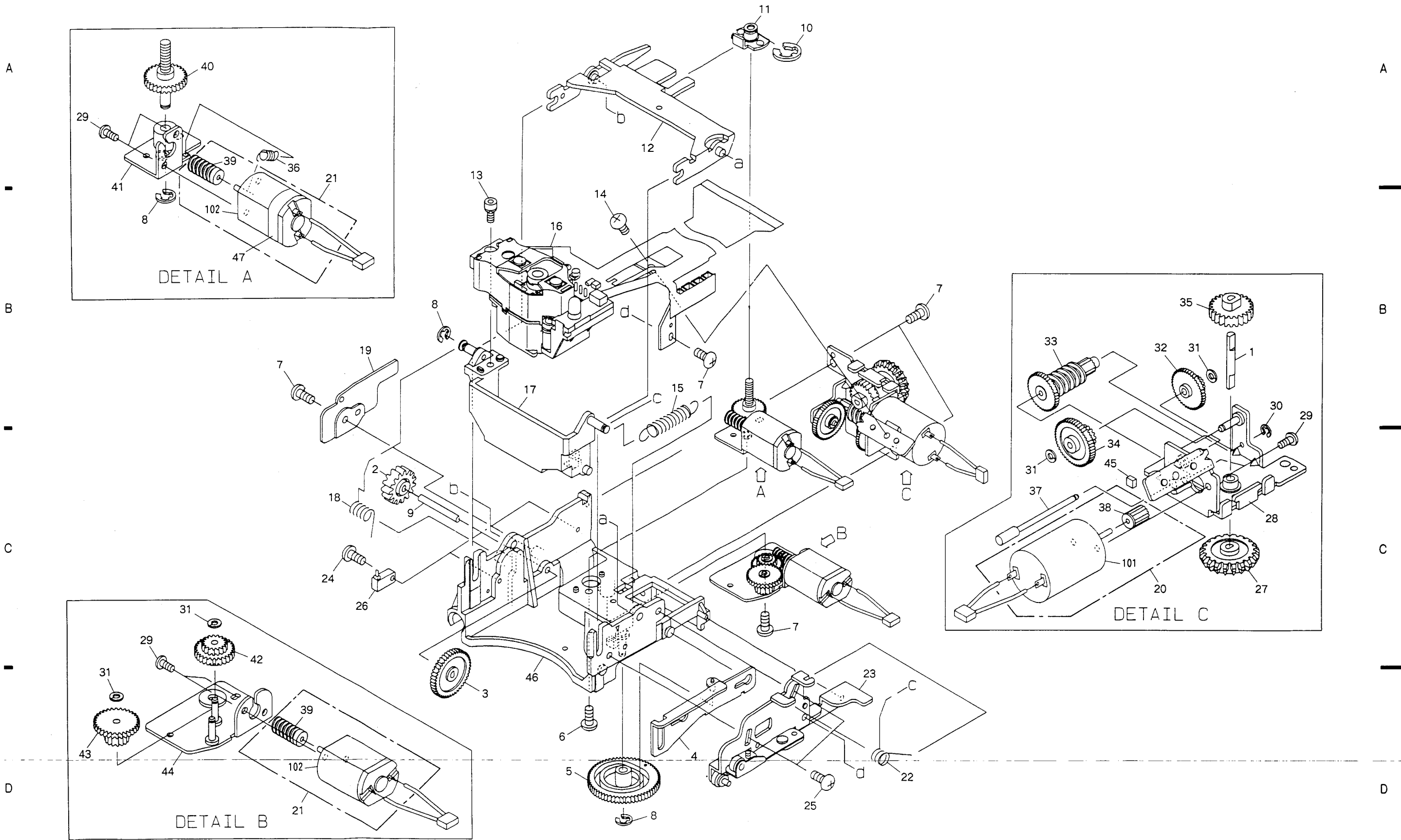
C

D



D

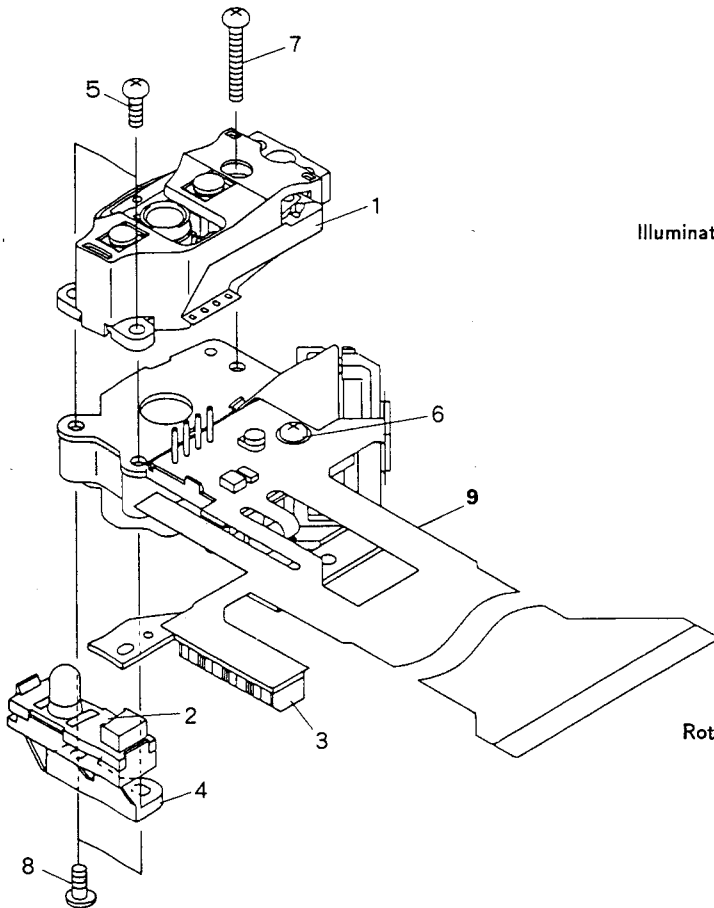
2.9 Carriage assembly



Parts List		Parts No.		Mark No. Description		Parts No.	
Mark	No. Description						
	1 SL shaft(B)	VLL1152		NSP	101	Slider motor	VXM1027
	2 SL gear(F)	VNL1158		NSP	102	Tilt motor	VXM1028
	3 SL gear(E)	VNL1253					
	4 Slide plate assembly	VXA1243					
	5 TL cam gear	VNL1166					
	6 Screw	PMA26P050FMC					
	7 Screw	BBZ26P050FCC					
	8 E ring	YE20FUC					
	9 SL shaft(C)	VLL1270					
	10 Stop ring	YE40FUC					
	11 AF plate assembly	VXA1259					
	12 AF arm assembly	VXA1246					
	13 Bolt 2.6×6	VLL1107					
	14 Screw	PBZ26P040FCC					
	15 Tilt spring	VBH1063					
	16 Pickup assembly	VWY1019					
	17 PU holder assembly	VXA1336					
	18 AF spring(L)	VBH1061					
	19 AF Stopper	VNE1284					
	20 Slider motor assembly-S	VXX1329					
	21 Tilt (height)motor assembly-S	VXX1227					
	22 AF spring(R)	VBH1088					
	23 TAN base assembly	VXA1331					
	24 Screw	PBZ20P070FCC					
	25 Screw	PMB26P050FCU					
	26 Slide switch(S5) (HEIGHT UP, DOWN)	VSK1009					
	27 SL gear(H)	VNL1163					
	28 SL base assembly	VXA1241					
	29 Screw	JGZ20P022FMC					
	30 Stop ring	YE12FUC					
	31 Washer	WT17D034D050					
	32 SL gear(B)	VNL1251					
	33 SL gear(C)	VNL1137					
	34 SL gear(D)	VNL1252					
	35 SL gear(G)	VNL1159					
	36 M spring	VBH1122					
	37 SL shaft(A)	VLL1151					
	38 SL gear(A)	VNL1250					
	39 AF worm	VNL1138					
	40 AF gear assembly	VXA1244					
	41 AF holder assembly	VXA1245					
	42 TL gear(A)	VNL1164					
	43 TL gear(B)	VNL1165					
	44 TL base assembly	VXA1242					
	45 Damp rubber	VEB1108					
	46 Carriage assembly	VXA1219					
	47 Damp Sheet	VEC1193					

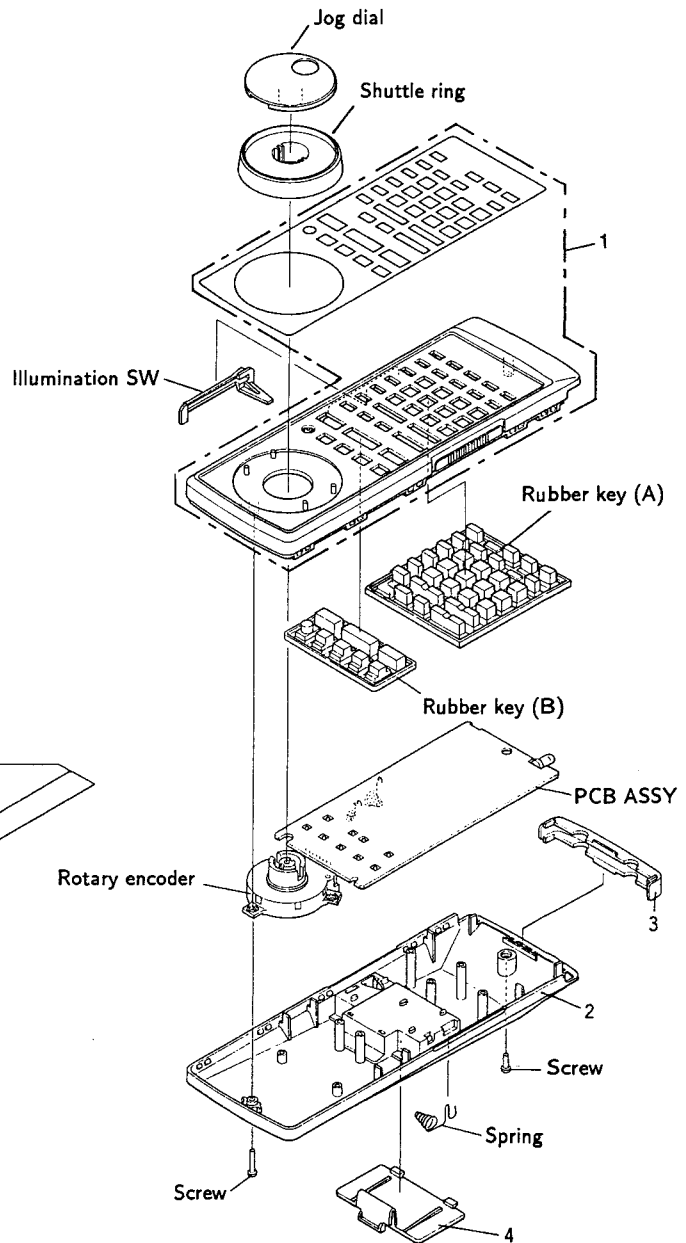
2.10 PICKUP ASSEMBLY

Parts List		Parts No.
Mark	No. Description	
	1 Actuator assembly	VXX1552
	2 Sensor assembly	VEX1018
	3 Pre Pickup assembly	VXX1332
	4 Sensor Stay	VNH1020
	5 Screw	PMA20P060FMC
	6 Screw	PMA20P080FMC
	7 Screw	PMA20P160FMC
	8 Screw	PMB20P050FMC
NSP	9 HEAD assembly	VWV1089



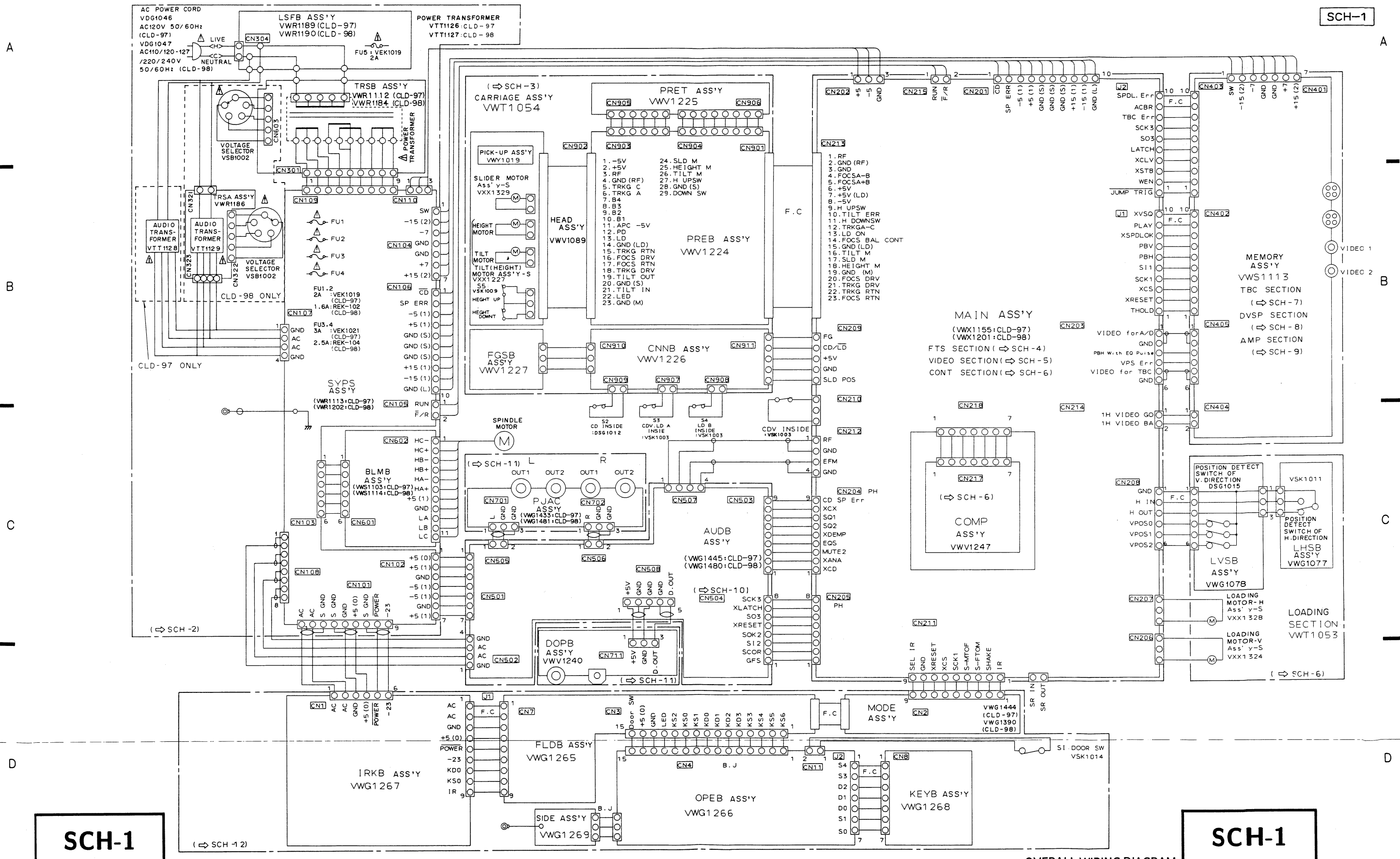
2.11 REMOTE CONTROL UNIT

Parts List		Parts No.
Mark	No. Description	
	1 Case(U)(CLD-97)	VNK2269
	1 Case(U)(CLD-98)	VNK2115
	2 Case(L)(CLD-97)	VNK2062
	2 Case(L)(CLD-98)	VNK2117
	3 Filter	VNK2063
	4 Battery cover(CLD-97)	VNK2286
	4 Battery cover(CLD-98)	VNK1964



3. SCHEMATIC AND PCB CONNECTION DIAGRAMS

3.1 OVERALL WIRING DIAGRAM



SCH-1

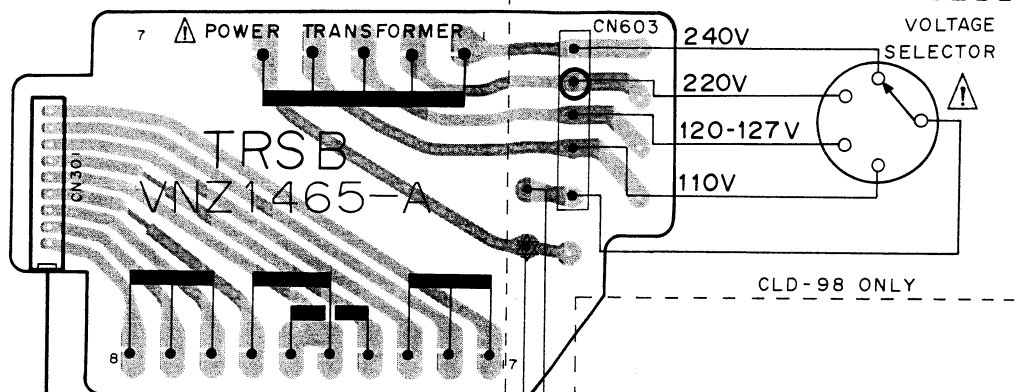
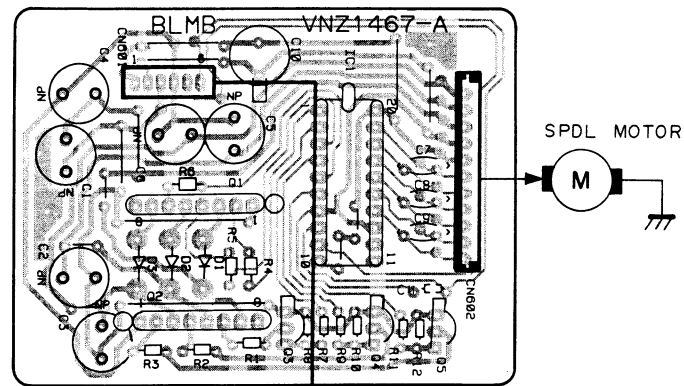
SCH-1

OVERALL WIRING DIAGRAM

OVERALL WIRING DIAGRAM

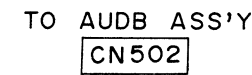
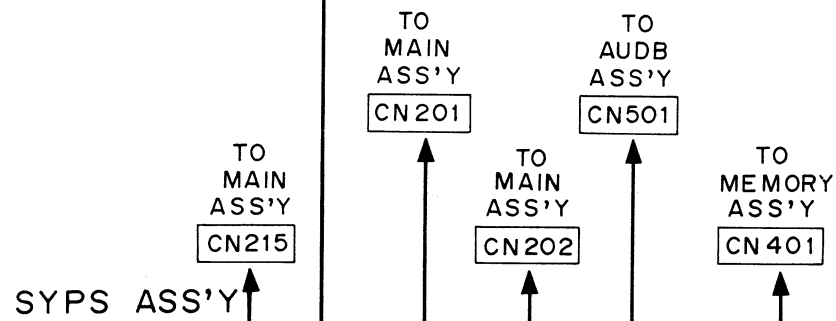
BLMB ASS'Y

TRSB ASS'Y

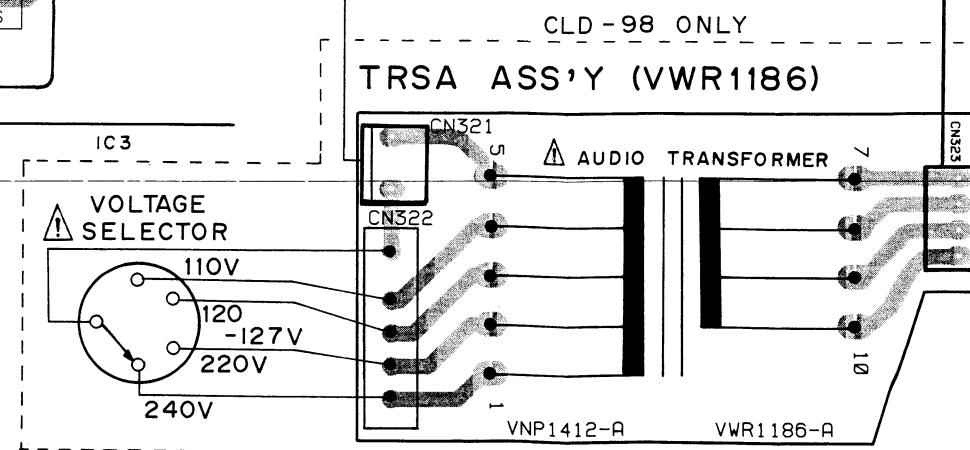
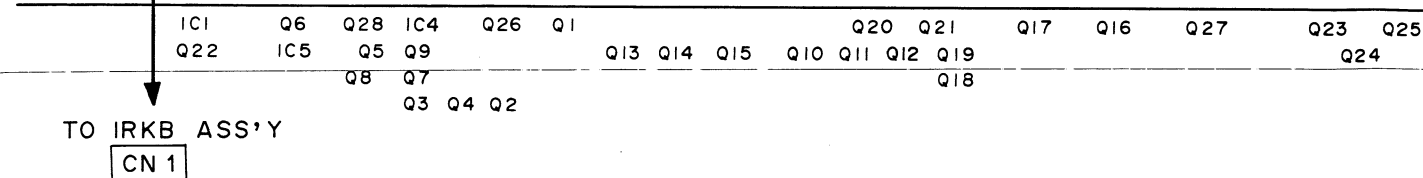
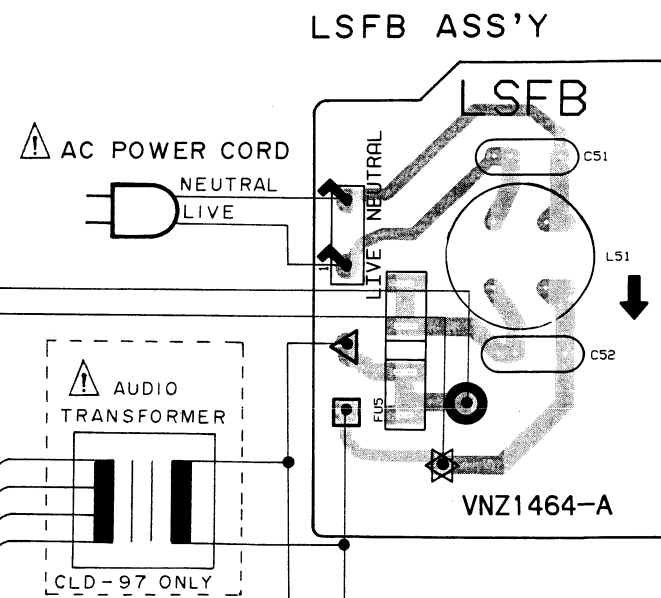
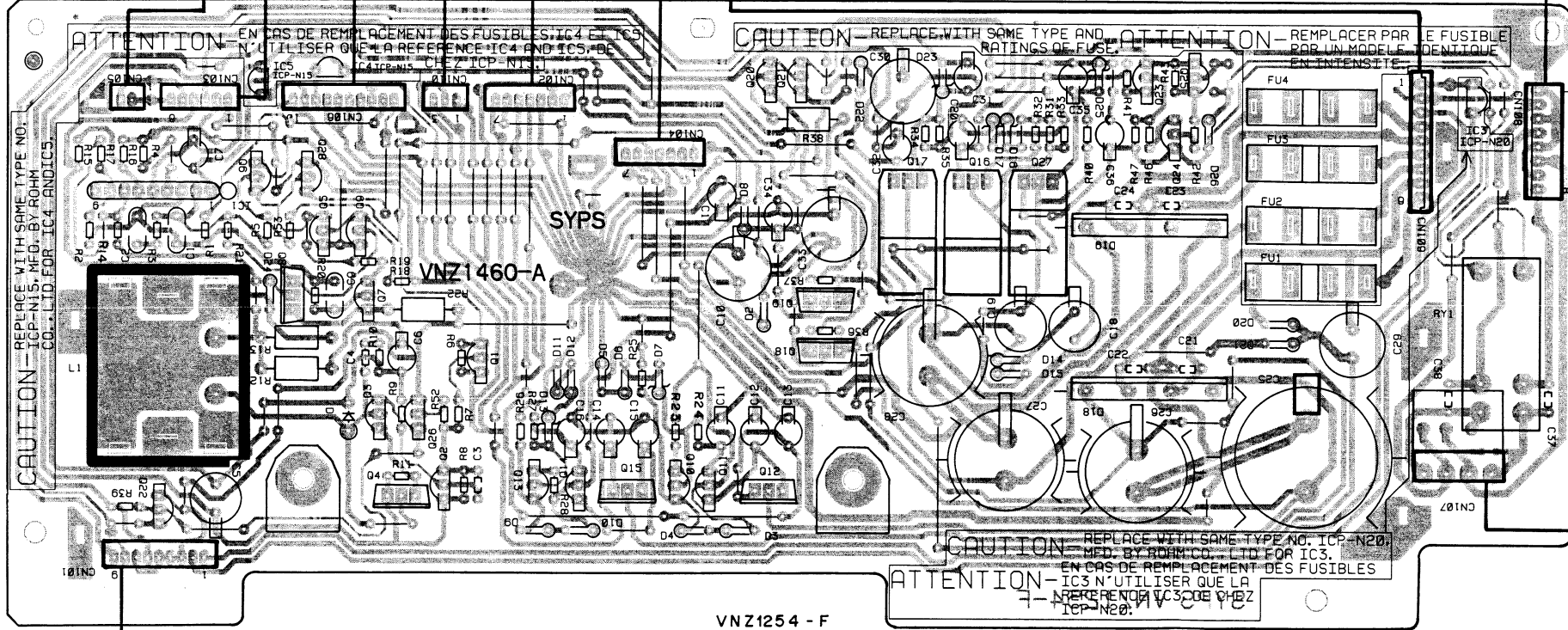


P.C.B. pattern diagram indication	Corresponding part symbol	Part name	P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor			Ceramic capacitor
		FET			Mylar capacitor
		Diode			Styrol capacitor
		Zener diode			Electrolytic capacitor (Non polarized)
		LED			Electrolytic capacitor (Noiseless)
		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.



SYPS ASS'Y



This P.C.B. connection diagram is viewed from the parts mounted side.

3.3 PICKUP, PRET, FBG, AND CNB ASSEMBLIES

This P.C.B. connection diagram is viewed from the foil side.

PCB-5

PREB ASSY

PRET ASSY

CNB ASSY

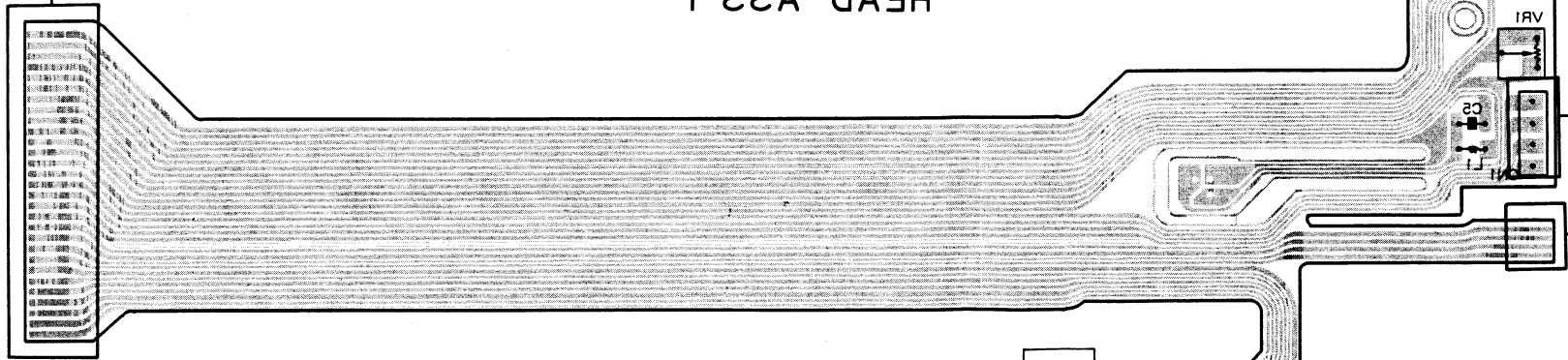
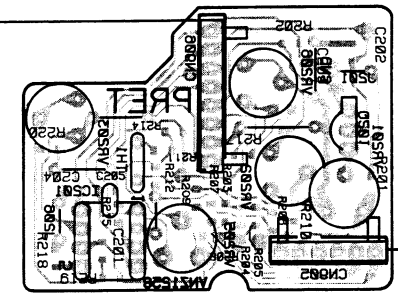
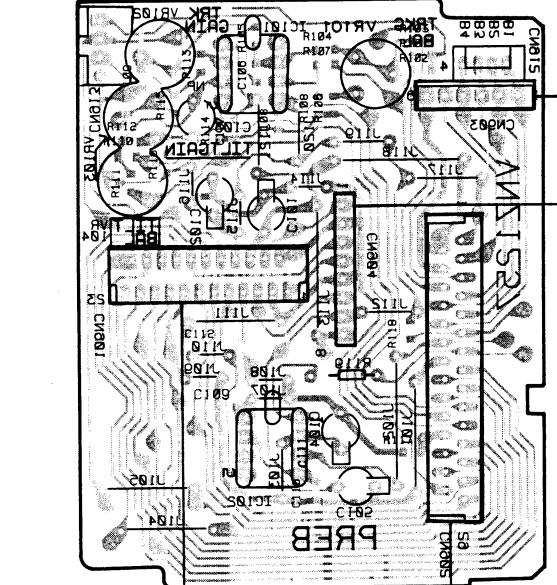
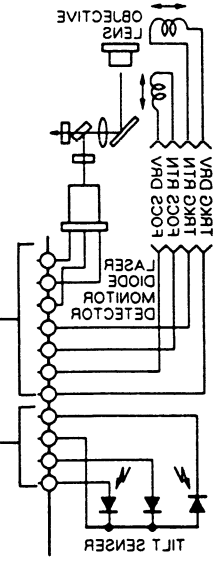
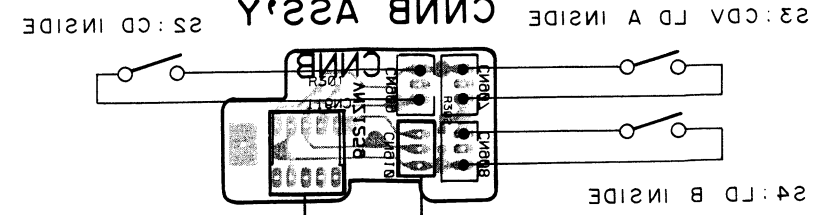
FBG ASSY

PICKUP ASSY (WYIOIA)

HEAD ASSY

ASSY-2 MOTOR HEIGHT TILT
SLIDER MOTOR HEIGHT TILT
ROTOR MOTOR HEIGHT TILT
MOTOR TILT

HEIGHT DOWN
HEIGHT UP



TO MAIN ASSY
CN13

TO MAIN ASSY
CN50

A

B

C

D

A

B

C

D

e

2

4

3

5

e

2

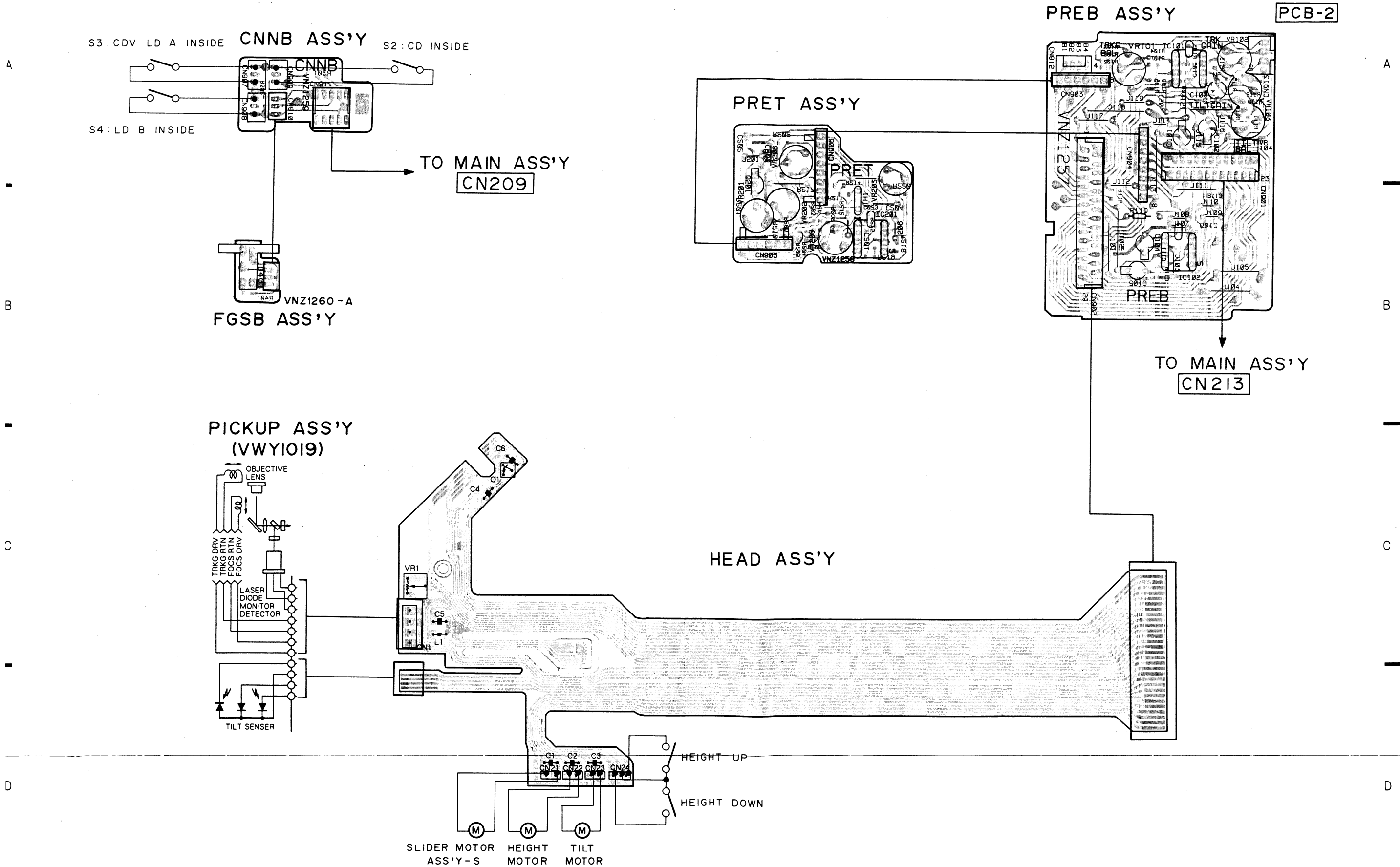
4

3

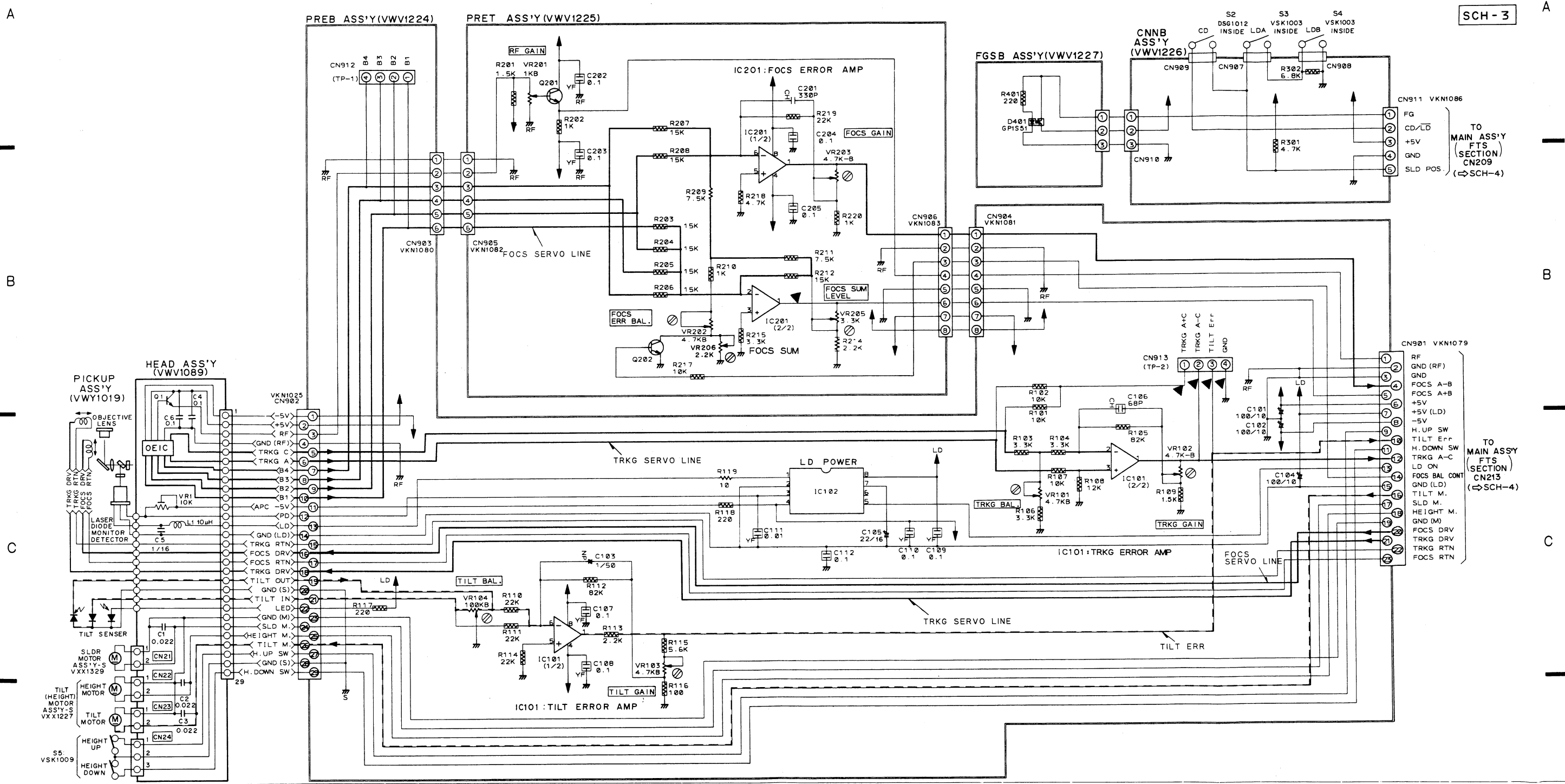
5

3.3 PICKUP, PRET, PREB, FGSB, AND CNNB ASSEMBLIES

This P.C.B. connection diagram is viewed from the parts mounted side.



SCH-3



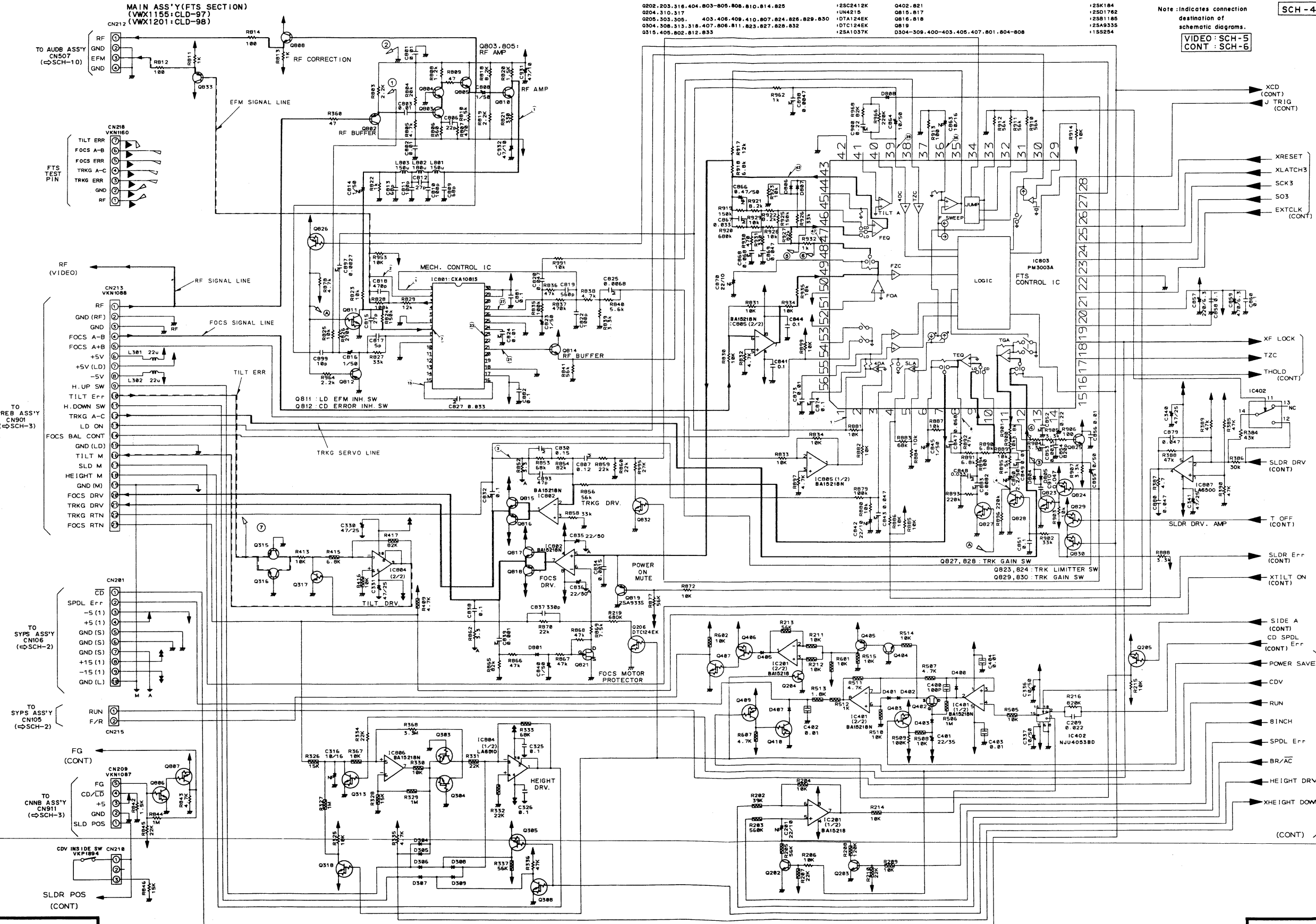
- IC 101, 201 : BA1521B
- IC 102 : IR3C82A
- D 401 : GP1551
- Q 201 : 2SC1740S
- Q 202 : 2SC2412K

SCH-3 PICKUP, PRET,
PREB, FGSB,
CNNB ASSY

PICKUP, PRET,
PREB, FGSB,
CNNB ASSY **SCH-3**

3.4 MAIN ASSEMBLY (1/3) (FTS section)

MAIN ASS'Y(FTS SECTION)
(VWX1155:CLD-97)
(VWX1201:CLD-98)



- Q202, 203, 316, 404, 803-805, 806, 810, 814, 825
- Q204, 310, 317
- Q205, 303, 305
- Q304, 308, 313, 318, 407, 806, 811, 825, 827, 828, 832
- Q315, 405, 802, 812, 833
- 25C2412K
- UN4215
- DTA124EK
- DTC124EK
- 25A1037K
- Q402, 821
- Q815, 816
- Q818, 818
- Q819
- D504-309, 400-403, 405, 407, 801, 804-808
- 25K184
- 2501762
- 25B1185
- 25B4335
- 155254

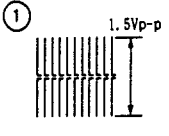
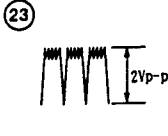
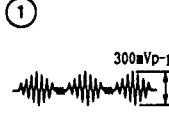
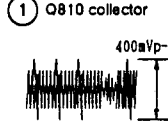
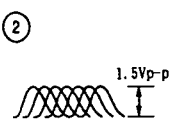
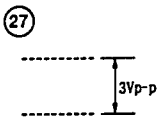
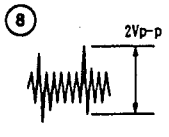
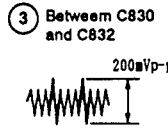
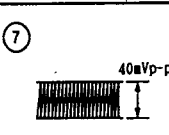
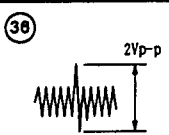
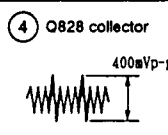
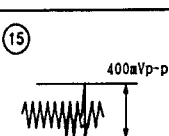
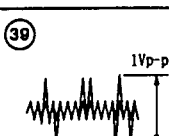
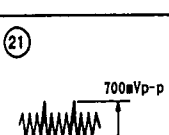
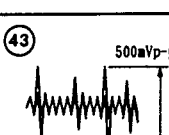
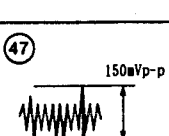
Note: indicates connection destination of schematic diagrams.
 VIDEO: SCH-5
 CONT: SCH-6

SCH-4 MAIN ASSY (1/3) (FTS)

MAIN ASSY (1/3) SCH-4 (FTS)

Waveforms of FTS Section

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

IC801 (CXA1081S)		IC803 (PM3003A)	Other Points
(1) 	(23) 	(1) 	(1) Q810 collector 
(2) 	(27) 	(8) 	(3) Between C830 and C832 
(7) 		(38) 	(4) Q828 collector 
(15) 		(39) 	
(21) 		(43) 	
		(47) 	

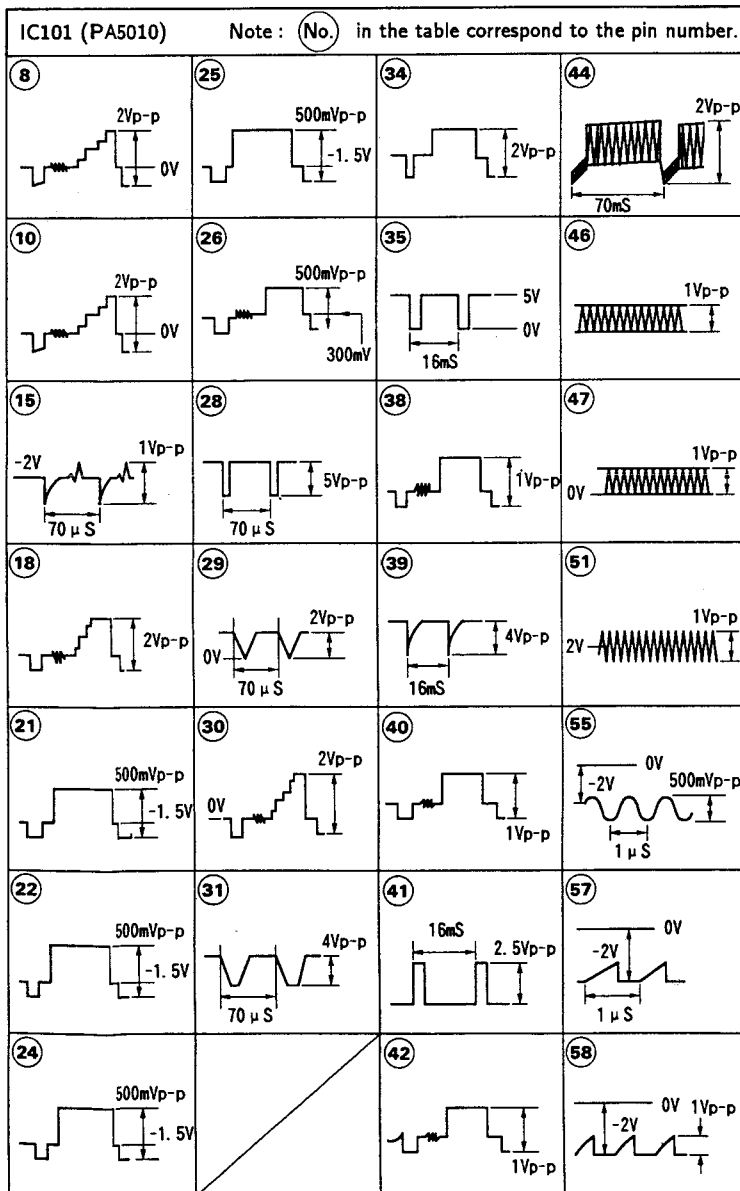
Waveforms and Voltages of VIDEO Section

IC101 < PA5010 >

* : Refer to waveforms

Pin No.	Voltage [V]	Pin No.	Voltage [V]	Pin No.	Voltage [V]	Pin No.	Voltage [V]
1	-1.2	17	0	33	*	49	-1.7
2	5	18	*	34	*	50	-1.7
3	-1	19	5	35	*	51	*
4	5	20	1	36	1	52	0
5	1	21	*	37	5	53	-2
6	5	22	*	38	*	54	5
7	5	23	-2.5	39	*	55	*
8	*	24	*	40	*	56	-2
9	5	25	*	41	*	57	*
10	*	26	*	42	*	58	*
11	5	27	0.5	43	0	59	5
12	-5	28	*	44	*	60	3.8
13	-5	29	*	45	5	61	-5
14	0	30	*	46	*	62	-3.2
15	*	31	*	47	*	63	5
16	-2	32	-5	48	-1.7	64	

Note : Waveforms and voltages are at the PLAY mode.



3.5 MAIN ASSEMBLY (2/3) (VIDEO section)

MAIN ASS'Y (VIDEO SECTION)
(VWX1155:CLD-97)
(VWX1201:CLD-98)

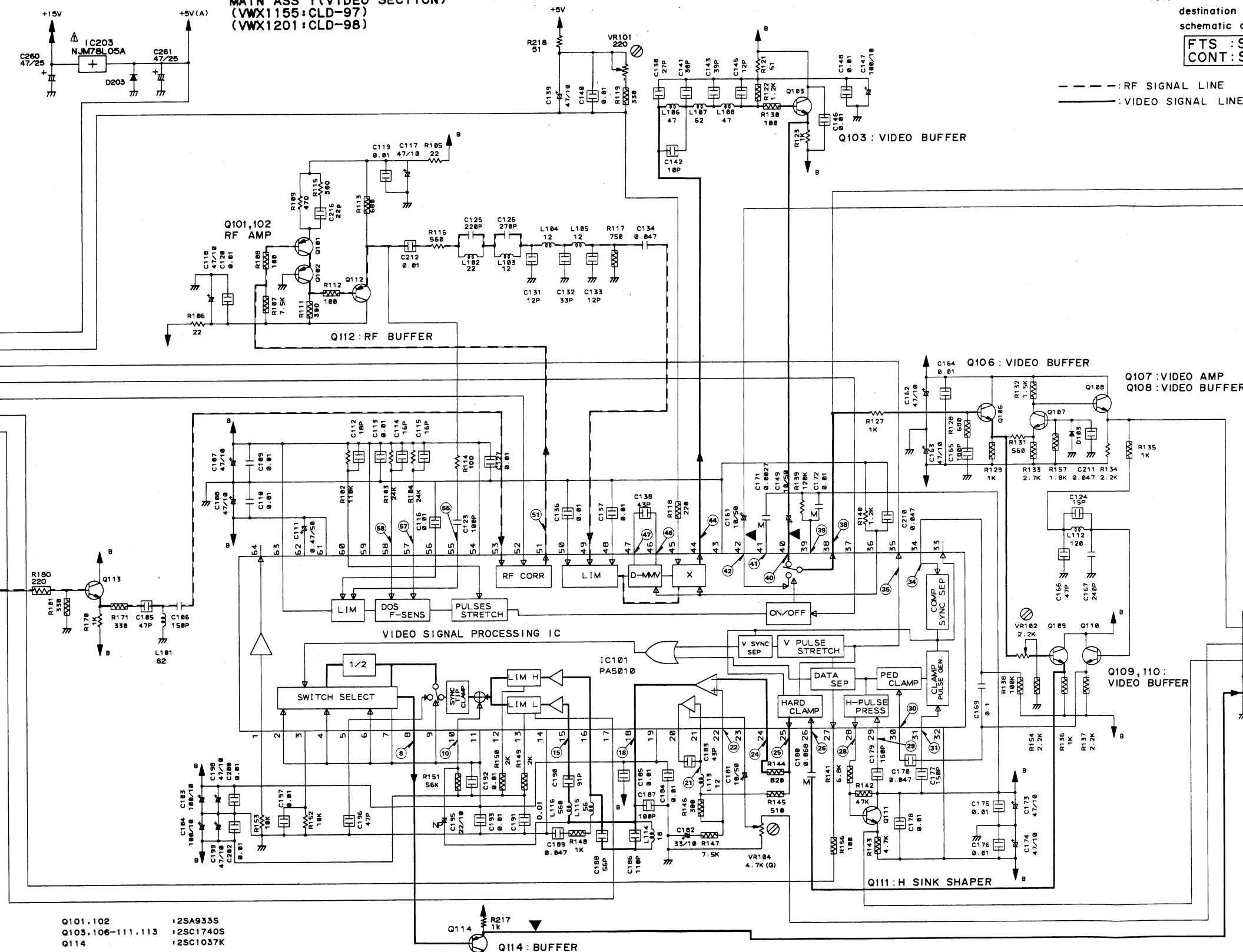
Note: Indicates connection destination of schematic diagrams.
FTS : SCH-4
CONT : SCH-6

SCH-5

---: RF SIGNAL LINE
—: VIDEO SIGNAL LINE

TO MEMORY ASS'Y (AMP SECTION) (CN404) (SCH-9)

TO MEMORY ASS'Y (TBC SECTION) (CN405) (SCH-7)



(CONT)

- +5V(A)
- FREQDET
- PBV
- DOC INH
- XRF CORR
- DATA
- XCLV

- TO SYSPS ASS'Y (CN110) (SCH-2)
- +5V
 - 5V
 - GND

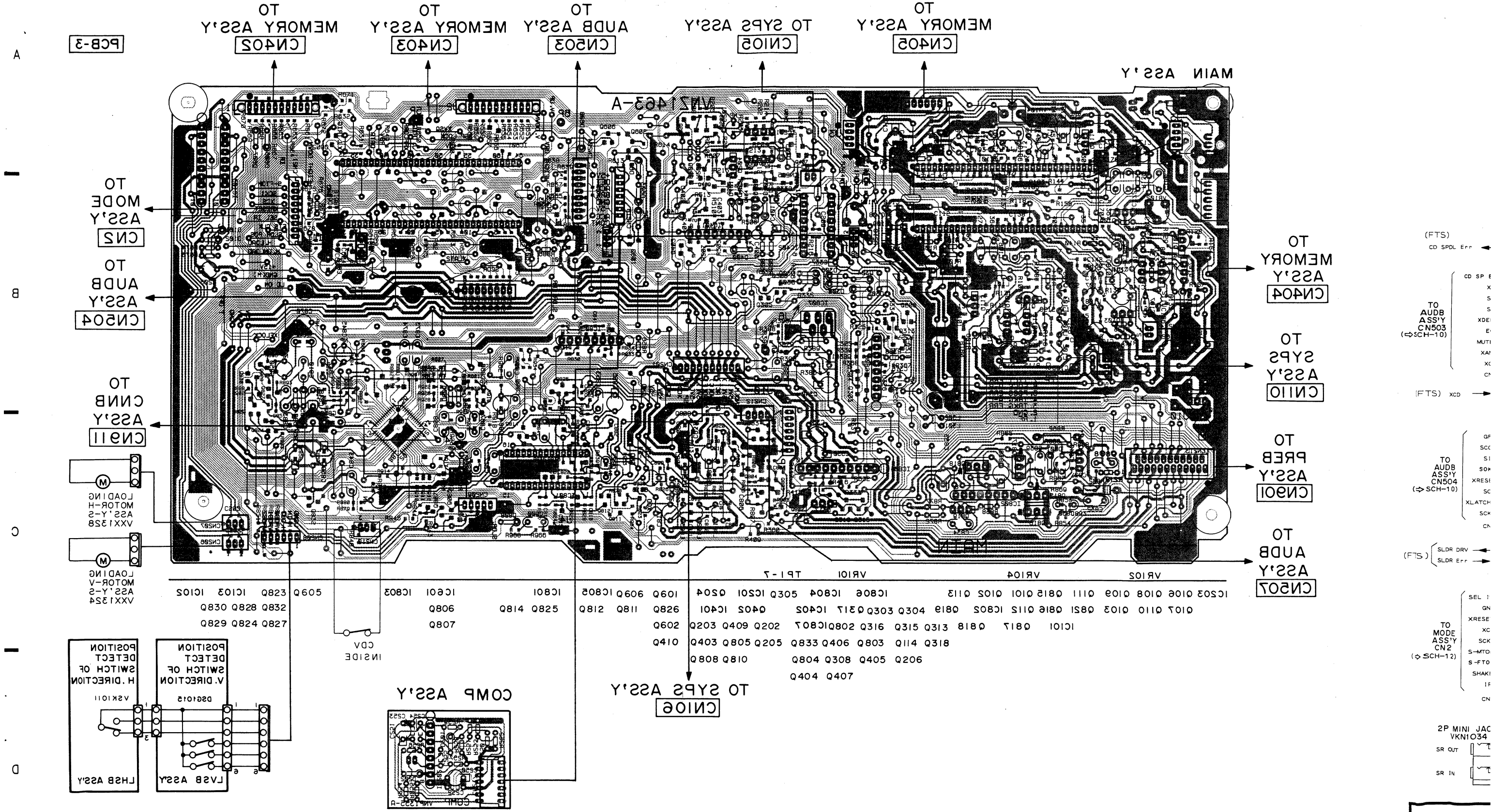
MAIN ASSY (2/3) (VIDEO)

MAIN ASSY (2/3) (VIDEO)

SCH-5

SCH-5

- | | |
|------------------|-------------|
| Q101,102 | :2SA933S |
| Q103,106-111,113 | :2SC1740S |
| Q114 | :2SC1037K |
| D103 | :1SS254 |
| D203 | :ERA83-006 |
| VR102 | :VRTB6VS222 |
| VR104 | :VRTG6HS472 |

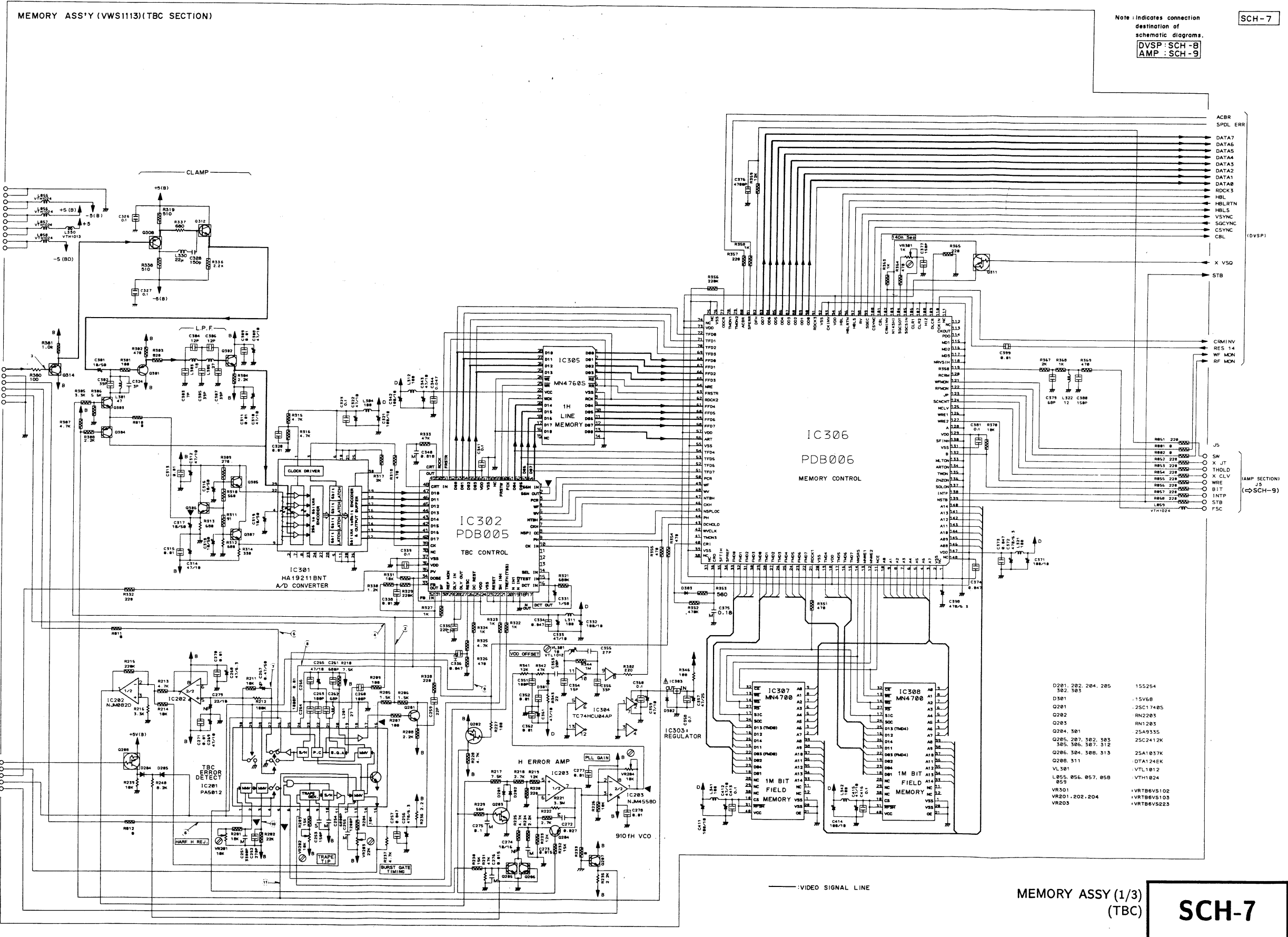


- (F.T.S.) CD SPDL Err
- TO AUB ASS'Y (CN504) (SCH-10)
- (F.T.S.) xcd
- TO AUB ASS'Y (CN504) (SCH-10)
- (F.T.S.) SLDR DRV, SLDR Err
- SEL 1
- GN
- XRESE
- XC
- SK
- S-MTO
- S-FTO
- SHAKI
- IF
- CN
- 2P MINI JAC VKN1034
- SR OUT
- SR IN

SCH

This P.C.B. connection diagram is viewed from the foil side.

3.7 MEMORY ASSEMBLY (1/3) (TBC section)



MEMORY ASSY (1/3) (TBC)

SCH-7

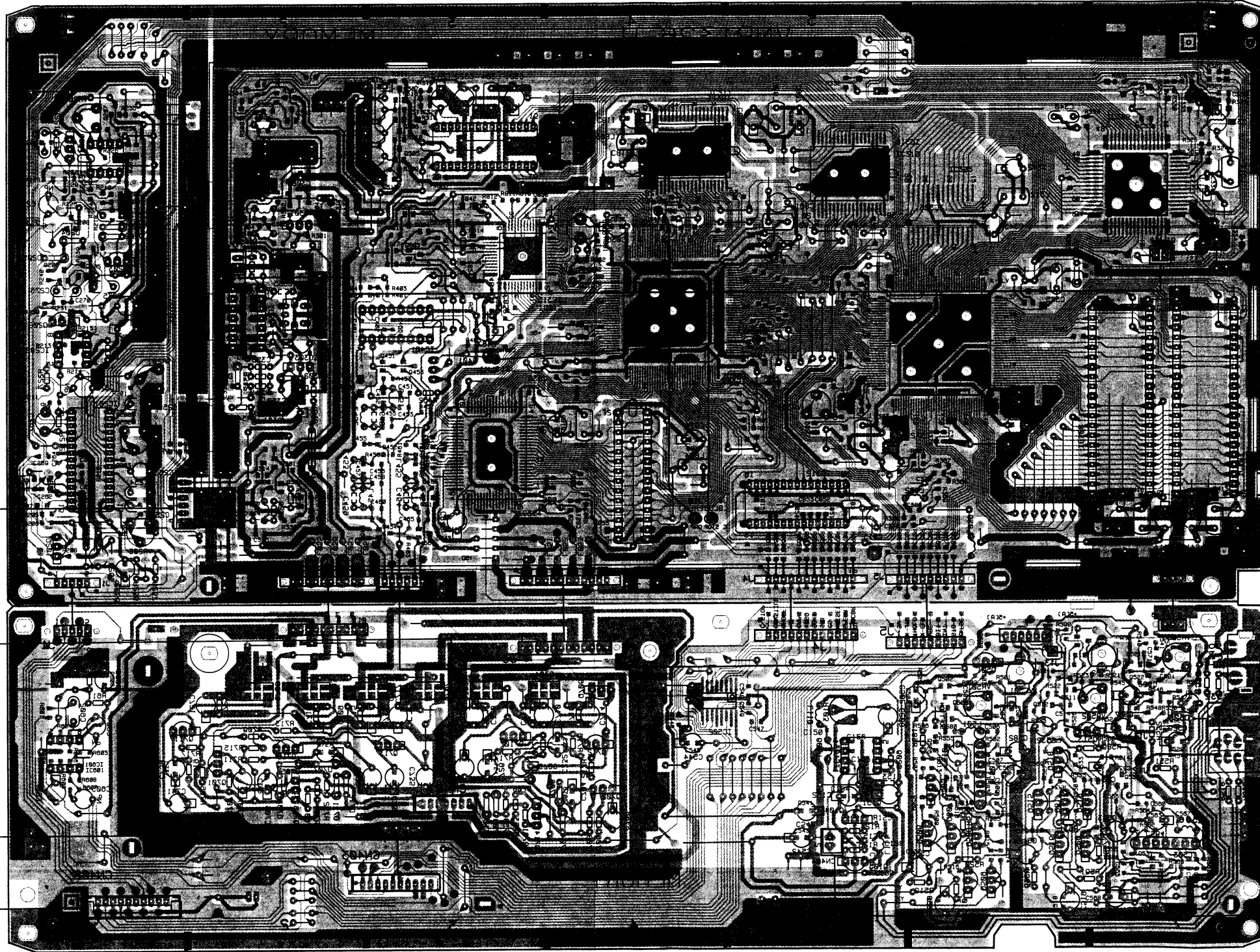
MEMORY ASSY (1/3) (TBC)

SCH-7

D281, 282, 284, 285	155254
382, 383	
D381	15V6B
Q281	2SC1748S
Q282	9N2283
Q283	9N1283
Q284, 381	2SA933S
Q285, 287, 382, 383	2SC2412K
385, 386, 387, 312	
Q286, 384, 388, 313	2SA1037K
Q288, 311	DTA124K
VL381	VT11012
L855, 856, 857, 858	VT11024
859	
VR301	VRTB6V5102
VR201, 202, 204	VRTB6V5103
VR203	VRTB6V5223

MEMORY ASSY (VW2113)

PCB-4



IC307	Q213	Q511	Q212	Q512	Q218	Q520	Q219	Q521	Q523
IC308	Q215	Q513	Q216	Q514	Q217	Q515	Q218	Q516	Q524
IC309	Q217	Q517	Q218	Q518	Q219	Q519	Q220	Q520	Q525
IC310	Q219	Q521	Q220	Q522	Q221	Q523	Q222	Q524	Q526
IC311	Q221	Q525	Q222	Q526	Q223	Q527	Q224	Q528	Q530
IC312	Q223	Q529	Q224	Q530	Q225	Q531	Q226	Q532	Q533
IC313	Q225	Q533	Q226	Q534	Q227	Q535	Q228	Q536	Q537
IC314	Q227	Q537	Q228	Q538	Q229	Q539	Q230	Q540	Q541
IC315	Q229	Q541	Q230	Q542	Q231	Q543	Q232	Q544	Q545
IC316	Q231	Q545	Q232	Q546	Q233	Q547	Q234	Q548	Q549
IC317	Q233	Q549	Q234	Q550	Q235	Q551	Q236	Q552	Q553
IC318	Q235	Q553	Q236	Q554	Q237	Q555	Q238	Q556	Q557
IC319	Q237	Q557	Q238	Q558	Q239	Q559	Q240	Q560	Q561
IC320	Q239	Q561	Q240	Q562	Q241	Q563	Q242	Q564	Q565
IC321	Q241	Q565	Q242	Q566	Q243	Q567	Q244	Q568	Q569
IC322	Q243	Q569	Q244	Q570	Q245	Q571	Q246	Q572	Q573
IC323	Q245	Q573	Q246	Q574	Q247	Q575	Q248	Q576	Q577
IC324	Q247	Q577	Q248	Q578	Q249	Q579	Q250	Q580	Q581
IC325	Q249	Q581	Q250	Q582	Q251	Q583	Q252	Q584	Q585
IC326	Q251	Q585	Q252	Q586	Q253	Q587	Q254	Q588	Q589
IC327	Q253	Q589	Q254	Q590	Q255	Q591	Q256	Q592	Q593
IC328	Q255	Q593	Q256	Q594	Q257	Q595	Q258	Q596	Q597
IC329	Q257	Q597	Q258	Q598	Q259	Q599	Q260	Q600	Q601
IC330	Q259	Q601	Q260	Q602	Q261	Q603	Q262	Q604	Q605
IC331	Q261	Q605	Q262	Q606	Q263	Q607	Q264	Q608	Q609
IC332	Q263	Q609	Q264	Q610	Q265	Q611	Q266	Q612	Q613
IC333	Q265	Q613	Q266	Q614	Q267	Q615	Q268	Q616	Q617
IC334	Q267	Q617	Q268	Q618	Q269	Q619	Q270	Q620	Q621
IC335	Q269	Q621	Q270	Q622	Q271	Q623	Q272	Q624	Q625
IC336	Q271	Q625	Q272	Q626	Q273	Q627	Q274	Q628	Q629
IC337	Q273	Q629	Q274	Q630	Q275	Q631	Q276	Q632	Q633
IC338	Q275	Q633	Q276	Q634	Q277	Q635	Q278	Q636	Q637
IC339	Q277	Q637	Q278	Q638	Q279	Q639	Q280	Q640	Q641
IC340	Q279	Q641	Q280	Q642	Q281	Q643	Q282	Q644	Q645
IC341	Q281	Q645	Q282	Q646	Q283	Q647	Q284	Q648	Q649
IC342	Q283	Q649	Q284	Q650	Q285	Q651	Q286	Q652	Q653
IC343	Q285	Q653	Q286	Q654	Q287	Q655	Q288	Q656	Q657
IC344	Q287	Q657	Q288	Q658	Q289	Q659	Q290	Q660	Q661
IC345	Q289	Q661	Q290	Q662	Q291	Q663	Q292	Q664	Q665
IC346	Q291	Q665	Q292	Q666	Q293	Q667	Q294	Q668	Q669
IC347	Q293	Q669	Q294	Q670	Q295	Q671	Q296	Q672	Q673
IC348	Q295	Q673	Q296	Q674	Q297	Q675	Q298	Q676	Q677
IC349	Q297	Q677	Q298	Q678	Q299	Q679	Q300	Q680	Q681
IC350	Q299	Q681	Q300	Q682	Q301	Q683	Q302	Q684	Q685
IC351	Q301	Q685	Q302	Q686	Q303	Q687	Q304	Q688	Q689
IC352	Q303	Q689	Q304	Q690	Q305	Q691	Q306	Q692	Q693
IC353	Q305	Q693	Q306	Q694	Q307	Q695	Q308	Q696	Q697
IC354	Q307	Q697	Q308	Q698	Q309	Q699	Q310	Q700	Q701
IC355	Q309	Q701	Q310	Q702	Q311	Q703	Q312	Q704	Q705
IC356	Q311	Q705	Q312	Q706	Q313	Q707	Q314	Q708	Q709
IC357	Q313	Q709	Q314	Q710	Q315	Q711	Q316	Q712	Q713
IC358	Q315	Q713	Q316	Q714	Q317	Q715	Q318	Q716	Q717
IC359	Q317	Q717	Q318	Q718	Q319	Q719	Q320	Q720	Q721
IC360	Q319	Q721	Q320	Q722	Q321	Q723	Q322	Q724	Q725
IC361	Q321	Q725	Q322	Q726	Q323	Q727	Q324	Q728	Q729
IC362	Q323	Q729	Q324	Q730	Q325	Q731	Q326	Q732	Q733
IC363	Q325	Q733	Q326	Q734	Q327	Q735	Q328	Q736	Q737
IC364	Q327	Q737	Q328	Q738	Q329	Q739	Q330	Q740	Q741
IC365	Q329	Q741	Q330	Q742	Q331	Q743	Q332	Q744	Q745
IC366	Q331	Q745	Q332	Q746	Q333	Q747	Q334	Q748	Q749
IC367	Q333	Q749	Q334	Q750	Q335	Q751	Q336	Q752	Q753
IC368	Q335	Q753	Q336	Q754	Q337	Q755	Q338	Q756	Q757
IC369	Q337	Q757	Q338	Q758	Q339	Q759	Q340	Q760	Q761
IC370	Q339	Q761	Q340	Q762	Q341	Q763	Q342	Q764	Q765
IC371	Q341	Q765	Q342	Q766	Q343	Q767	Q344	Q768	Q769
IC372	Q343	Q769	Q344	Q770	Q345	Q771	Q346	Q772	Q773
IC373	Q345	Q773	Q346	Q774	Q347	Q775	Q348	Q776	Q777
IC374	Q347	Q777	Q348	Q778	Q349	Q779	Q350	Q780	Q781
IC375	Q349	Q781	Q350	Q782	Q351	Q783	Q352	Q784	Q785
IC376	Q351	Q785	Q352	Q786	Q353	Q787	Q354	Q788	Q789
IC377	Q353	Q789	Q354	Q790	Q355	Q791	Q356	Q792	Q793
IC378	Q355	Q793	Q356	Q794	Q357	Q795	Q358	Q796	Q797
IC379	Q357	Q797	Q358	Q798	Q359	Q799	Q360	Q800	Q801
IC380	Q359	Q801	Q360	Q802	Q361	Q803	Q362	Q804	Q805

This P.C.B. connection diagram is viewed from the foil side.

MEMORY ASSY (DVSP)

SCH-8

A

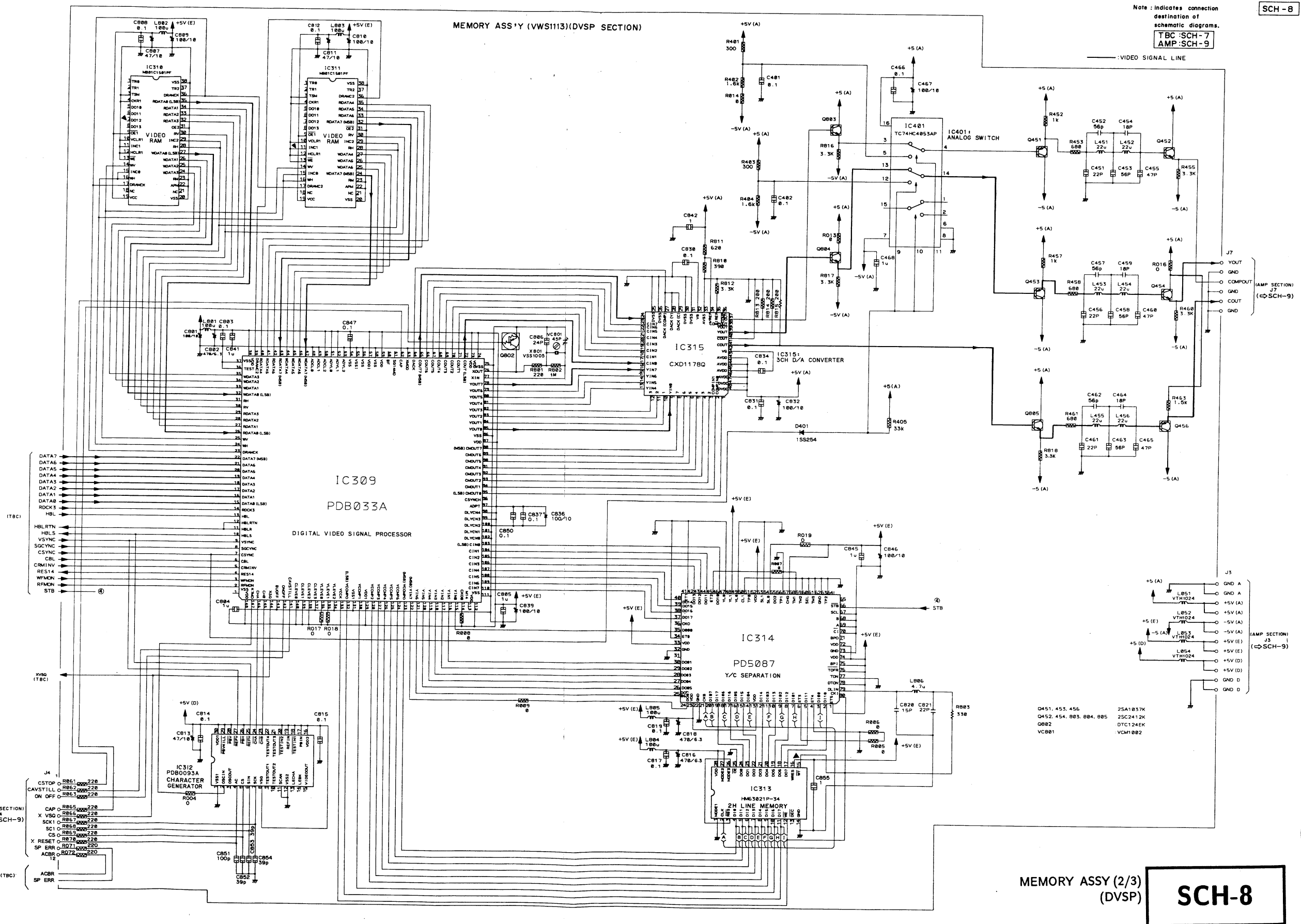
B

C

D

3.8 MEMORY ASSEMBLY (2/3) (DVSP section)

SCH-8



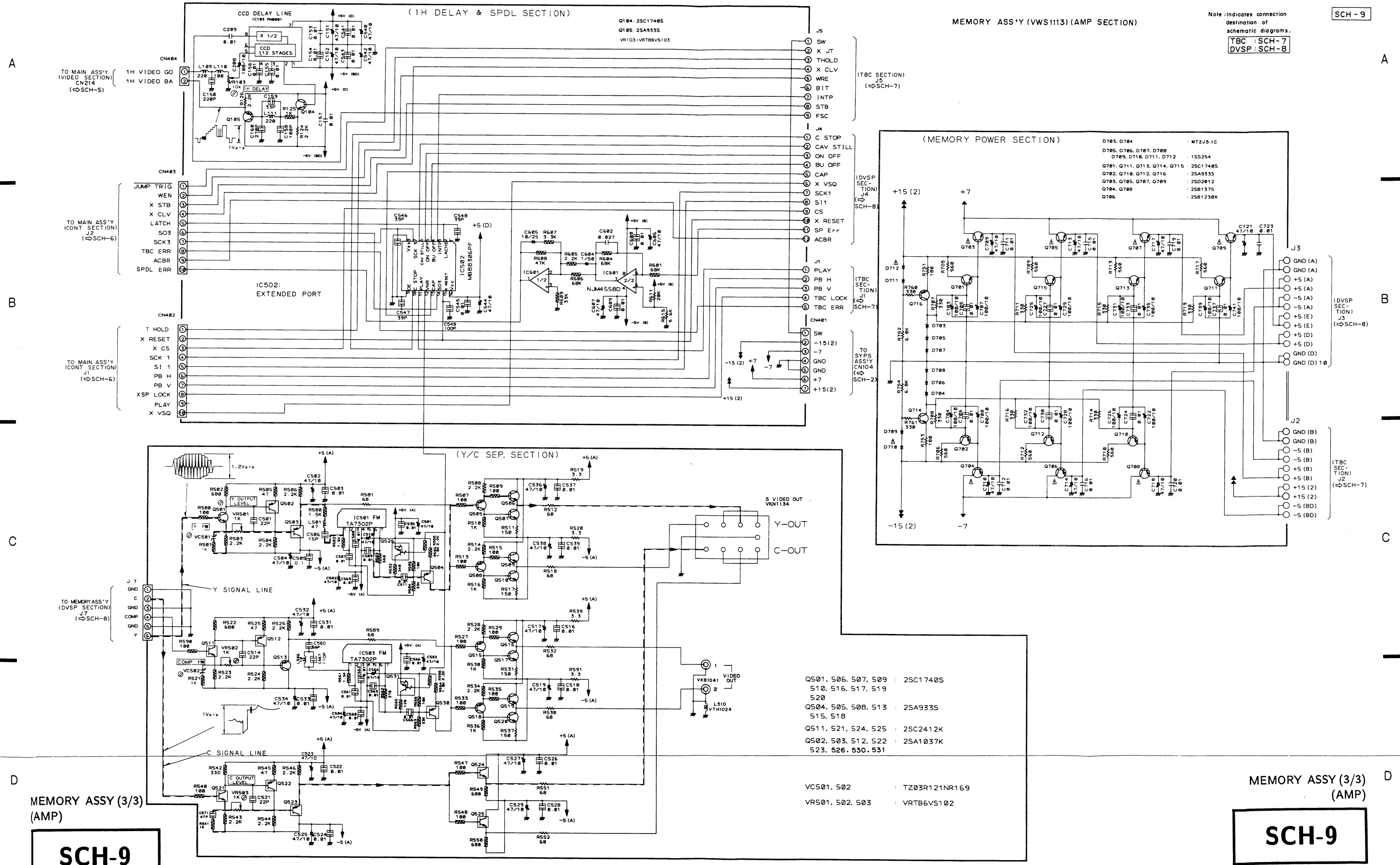
MEMORY ASSY (2/3) (DVSP)

MEMORY ASSY (2/3) (DVSP)

SCH-8

SCH-8

3.9 MEMORY ASSEMBLY (3/3) (AMP section)



MEMORY ASSY (3/3) (AMP)

SCH-9

MEMORY ASSY (3/3) (AMP)

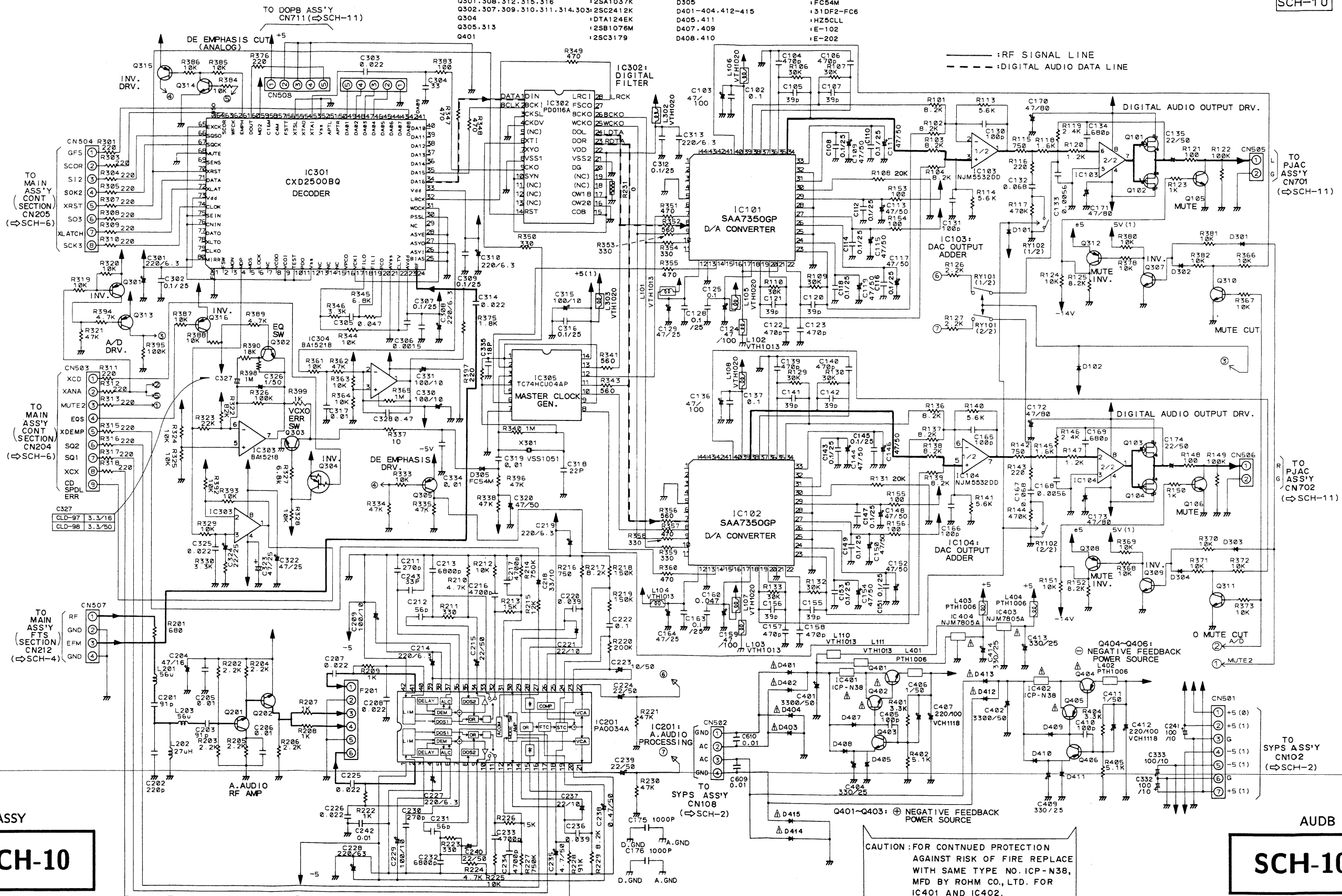
SCH-9

3.10 AUSB, PJAC, AND DOPB ASSEMBLIES

AUSB ASS'Y
(VWG1445:CLD-97)
(VWG1480:CLD-98)

SCH-10

Q101.103	:25K364	Q402.403	:2SC1740LN
Q102.104	:25J104	Q404	:2SA1262
Q105.106	:25D2144S	Q405.406	:2SA933LN
Q201	:25C2786		
Q202	:25C1740S	D101.102.301-304	:1SS254
Q301.308.312.315.316	:25A1037K	D305	:FC54M
Q302.307.309.310.311.314.303	:25C2412K	D401-404.412-415	:31DF2-FC6
Q304	:DTA124EK	D405.411	:HZ5CLL
Q305.313	:25B1076M	D407.409	:E-102
Q401	:25C3179	D408.410	:E-202



AUSB ASSY
SCH-10

AUSB ASSY
SCH-10

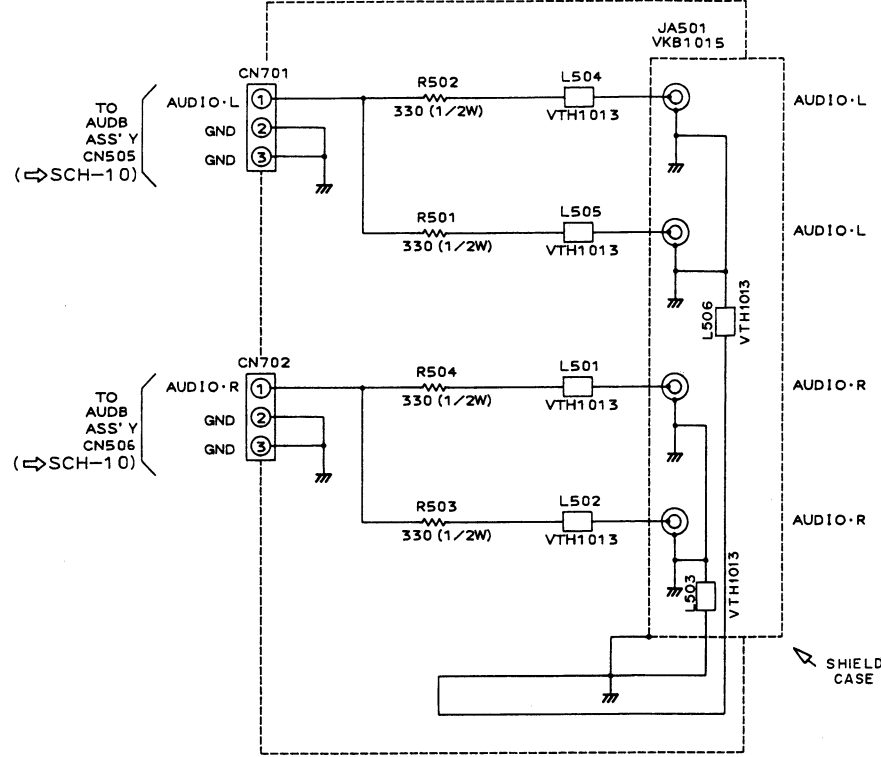
CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE REPLACE WITH SAME TYPE NO. ICP-N38, MFD BY ROHM CO., LTD. FOR IC401 AND IC402.

PJAC ASS'Y (VWG1433:CLD-97)
(VWG1481:CLD-98)

SCH-11

Waveforms and Voltages of AUDB Ass'y

Note : Waveforms and voltages are at the PLAY mode.



IC301 (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	0	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	0
6	4.8	20	*	34	*	48	*	62	*	76	0
7	0	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	0
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

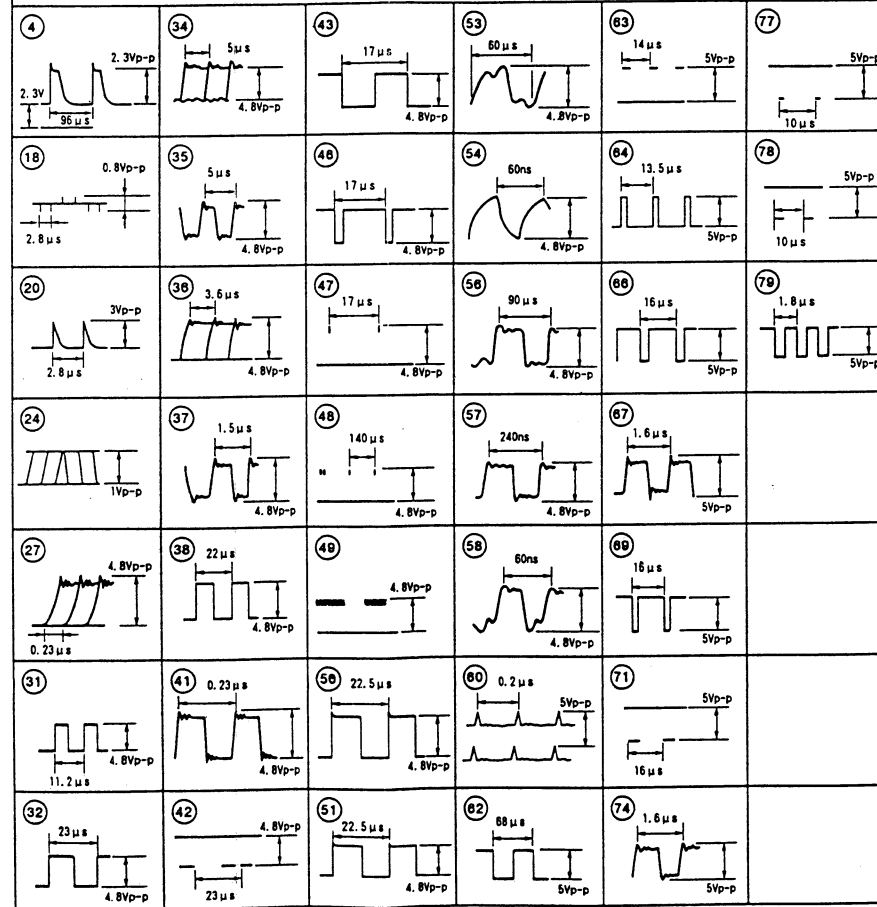
IC201 (PA0034A)

Pin No.	Voltage [V]	Pin No.	Voltage [V]	Pin No.	Voltage [V]
1	-5V	15	*	29	*
2	*	16	*	30	*
3	*	17	*	31	*
4	*	18	*	32	*
5	*	19	*	33	*
6	*	20	0	34	*
7	*	21	*	35	*
8	*	22	*	36	*
9	*	23	*	37	*
10	*	24	0	38	*
11	*	25	5V	39	*
12	*	26	0	40	*
13	*	27	0	41	*
14	*	28	*	42	-5V

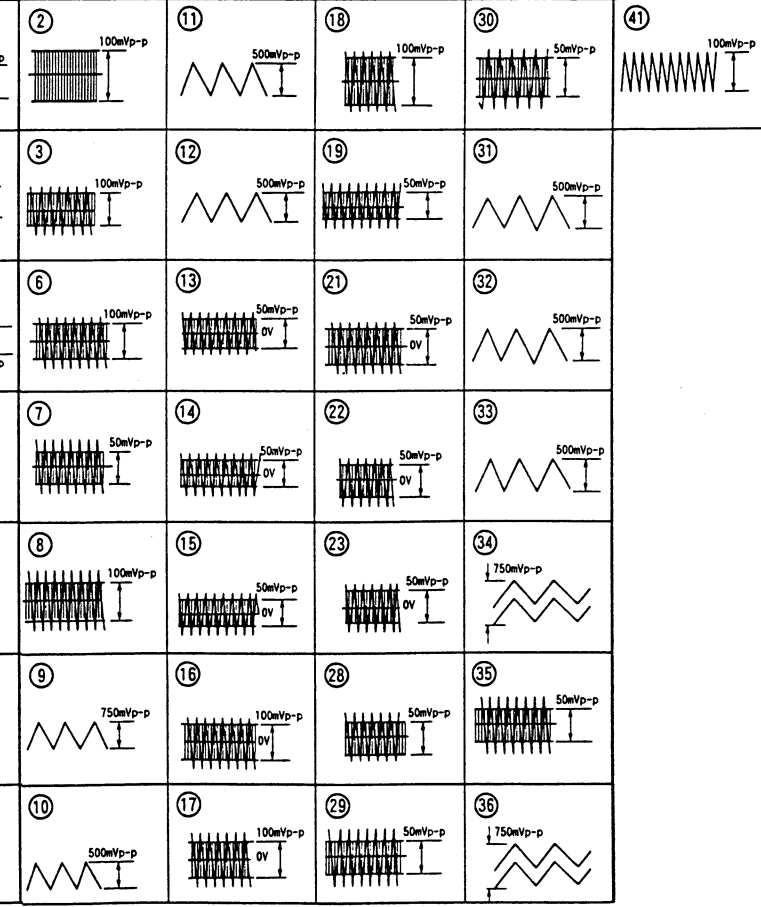
* : Refer to waveforms

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

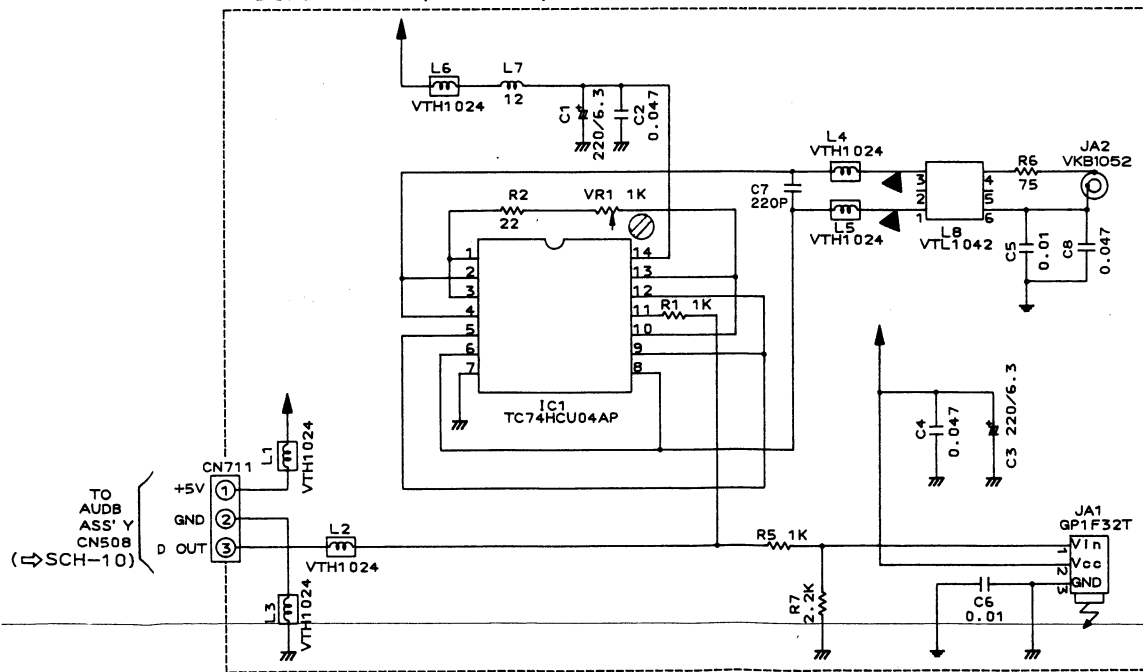
IC301 (CXD2500BQ)



IC201 (PA0034A)



DOPB ASS'Y (VW1240)



SCH-11

PJAC, DOPB ASSY

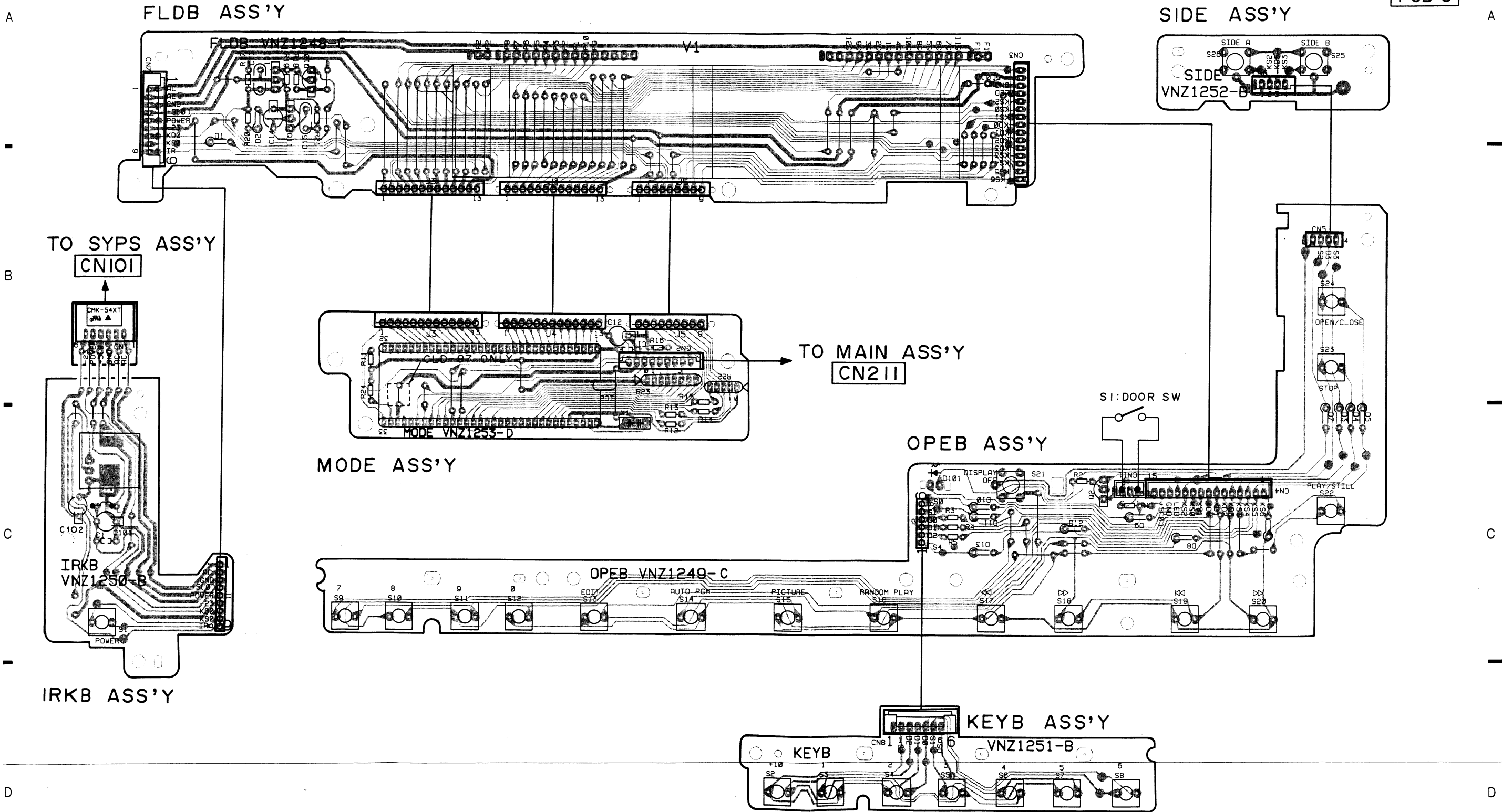
PJAC, DOPB ASSY

SCH-11

3.11 IRKB, MODE, FLDB, KEYB, SIDE, AND OPEB ASSEMBLIES

This P.C.B. connection diagram is viewed from the parts mounted side.

PCB-6



TO SYPS ASS'Y CN101 (SCH-2)

IRKB ASS' Y (VWG1267)

+5 (0)

FLDB ASS' Y (VWG1265)

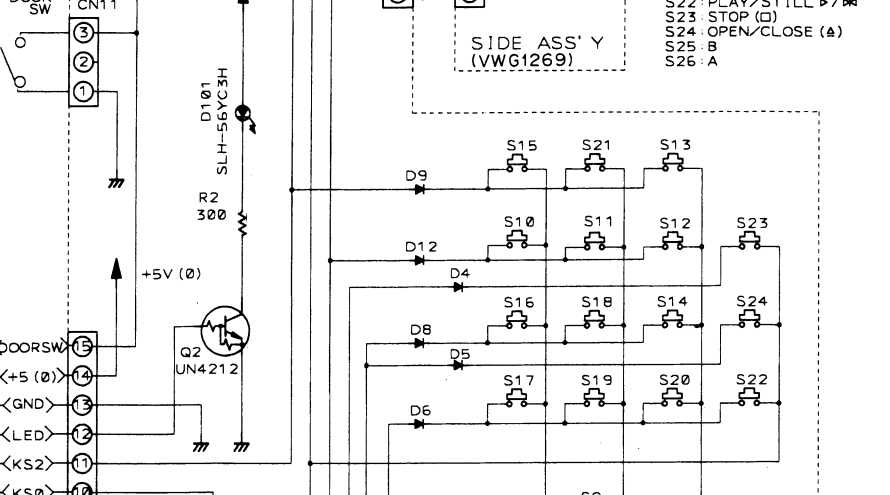
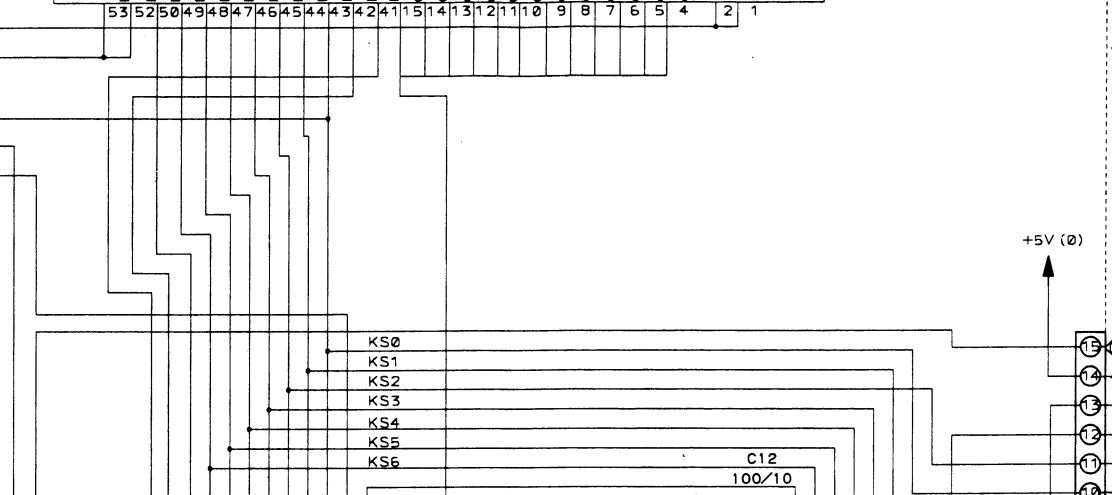
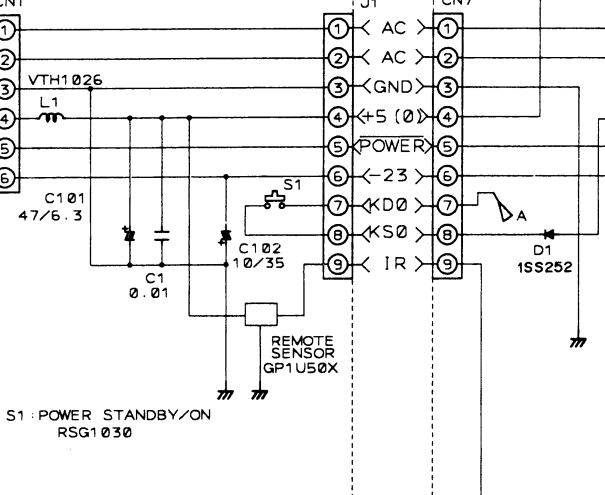
+5V (0)

+5V (0)

SIDE ASS' Y (VWG1269)

- S13: PGM
- S14: AUTO PGM EDIT
- S15: VIDEO NR DNR (CLD-97) PSC (CLD-98)
- S16: RANDOM PLAY
- S17: SCAN
- S18: SKIP
- S19: SKIP
- S20: SKIP
- S21: DISPLAY OFF
- S22: PLAY/STILL
- S23: STOP
- S24: OPEN/CLOSE (A)
- S25: B
- S26: A

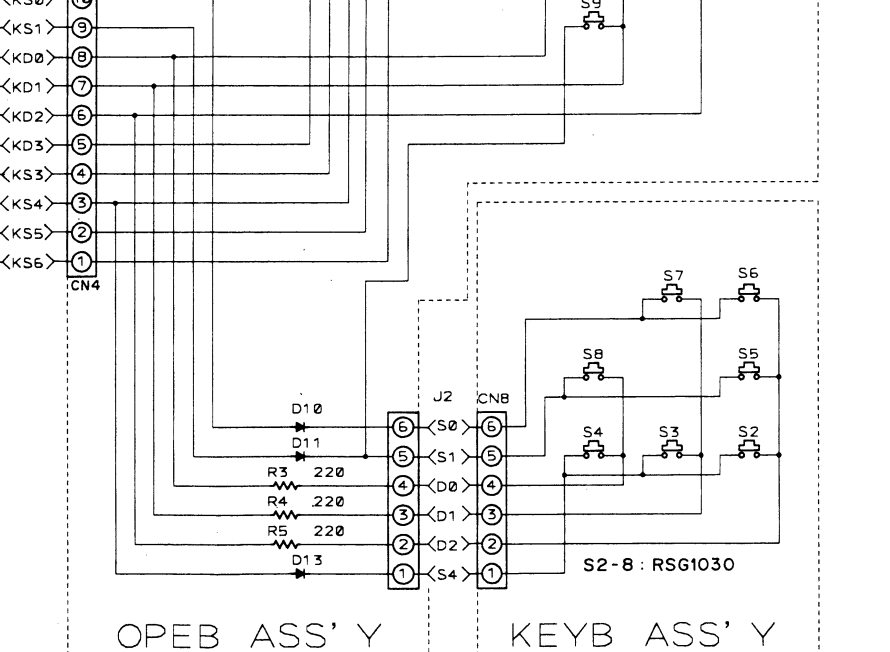
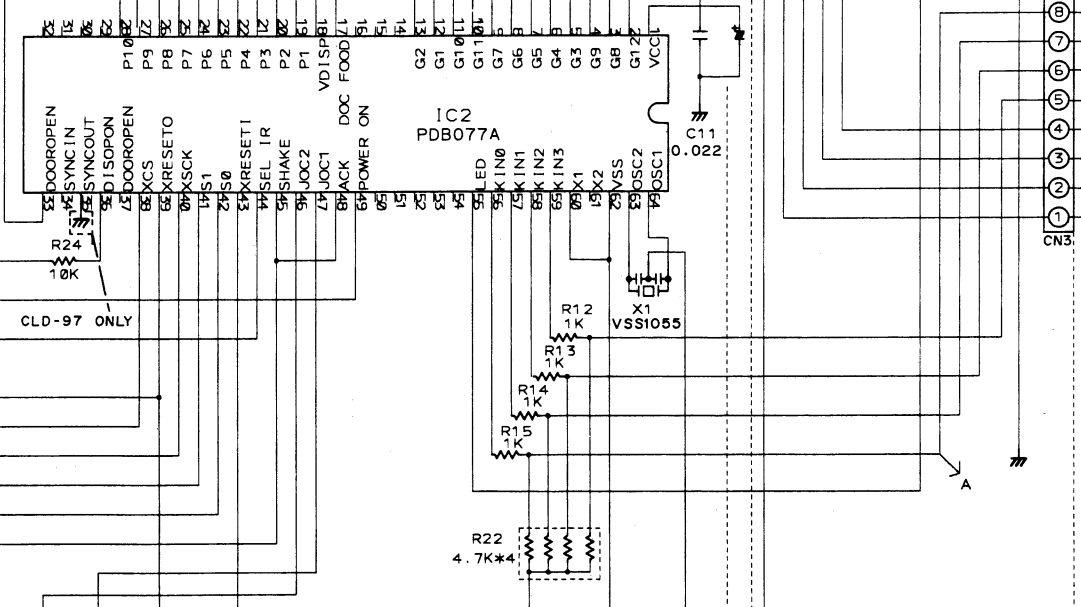
AC AC GND +5 (0) POWER -23



TO MAIN ASS'Y (CONT SECTION) CN211 (SCH-6)

SEL IR GND XRESET SCKI S-MTOF S-FMOM SHAKE IR

MODE ASS' Y (VWG1444:CLD-97) (VWG1390:CLD-98)



OPEB ASS' Y (VWG1266)

KEYB ASS' Y (VWG1268)

- D3-13: 1SS252
- S9-20: RSG1030
- S22-24: RSG1030
- S21, 25, 26: VSC-010

- S2: +10
 - S3: 1
 - S4: 2
 - S5: 3
 - S6: 4
 - S7: 5
 - S8: 6
 - S9: 7
 - S10: 8
 - S11: 9
 - S12: 0
- DIRECT SEARCH
- S2-12: RSG1030

IRKB, MODE, FLDB, KEYB, SIDE, OPEB ASSY

FLKKB ASS' Y

IRKB, MODE, FLDB, KEYB, SIDE, OPEB ASSY

3. 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%).
 $560\Omega \rightarrow 56 \times 10^1 \rightarrow 561$ RD1/8PM $\overline{561}$ J
 $47k\Omega \rightarrow 47 \times 10^3 \rightarrow 473$ RD1/4PS $\overline{473}$ J
 $0.5\Omega \rightarrow 0R5$ RN2H $\overline{0R5}$ K
 $1\Omega \rightarrow 010$ RS1P $\overline{010}$ K

- Ex.2* When there are 3 effective digits (such as in high precision metal film resistors).
 $5.62k\Omega \rightarrow 562 \times 10^1 \rightarrow 5621$ RN1/4PC $\overline{5621}$ F

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
LIST OF ASSEMBLIES					
⊙	FLKB ASSY (CLD-97)	VWM1393	⊙	LSWB ASSY	VWM1049
NSP	FLDB ASSY	VWG1265	NSP	LHSB ASSY	VWG1077
NSP	OPEB ASSY	VWG1266	NSP	LVSb ASSY	VWG1078
NSP	IRKB ASSY	VWG1267	⊙	MACB ASSY	VWM1213
NSP	KEYB ASSY	VWG1268	NSP	PREB ASSY	VWV1224
NSP	SIDE ASSY	VWG1269	NSP	PRET ASSY	VWV1225
NSP	MODE ASSY (*1)	VWG1444	NSP	CNNB ASSY	VWV1226
			NSP	FGSB ASSY	VWV1227
⊙	FLKB ASSY (CLD-98)	VWM1333	⊙	TRSA ASSY (CLD-98/SD ONLY)	VWR1186
NSP	FLDB ASSY	VWG1265	NSP	HEAD ASSY	VWV1089
NSP	OPEB ASSY	VWG1266			
NSP	IRKB ASSY	VWG1267			
NSP	KEYB ASSY	VWG1268			
NSP	SIDE ASSY	VWG1269			
NSP	MODE ASSY (*1)	VWG1390			
⊙	MEMORY ASSY	VWS1113			
⊙	DOPB ASSY	VWV1240			
⊙	MOTHER ASSY (CLD-97)	VWM1413			
NSP	LSFB ASSY (*2)	VWR1189			
NSP	TRSB ASSY (*3)	VWR1112			
NSP	BLMB ASSY (*4)	VWS1103			
NSP	MAIN ASSY	VWX1155			
NSP	COMP ASSY	VWV1247			
⊙	MOTHER ASSY (CLD-98)	VWM1433			
NSP	LSFB ASSY (*2)	VWR1190			
NSP	TRSB ASSY (*3)	VWR1184			
NSP	BLMB ASSY (*4)	VWS1114			
NSP	MAIN ASSY	VWX1201			
NSP	COMP ASSY	VWV1247			
⊙	SYAB ASSY (CLD-97)	VWM1394			
NSP	PJAC ASSY (*5)	VWG1433			
NSP	AUDB ASSY	VWG1445			
NSP	SYPS ASSY (*6)	VWR1113			
⊙	SYAB ASSY (CLD-98)	VWM1432			
NSP	PJAC ASSY (*5)	VWG1481			
NSP	AUDB ASSY	VWG1480			
NSP	SYPS ASSY (*6)	VWR1202			

- *1 Although VWG1390 and VWG1444 are different in part number, they have the same service parts.
- *2 Although VWR1190 and VWR1189 are different in part number, they have the same service parts.
- *3 Although VWR1184 and VWR1112 are different in part number, they have the same service parts.
- *4 Although VWS1114 and VWS1103 are different in part number, they have the same service parts.
- *5 Although VWG1481 and VWG1433 are different in part number, they have the same service parts.
- *6 Although VWR1202 and VWR1113 are different in part number, they have the same service parts.

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
FLDB ASSY			MODE ASSY			Δ	D201,D20:	
SEMICONDUCTORS			SEMICONDUCTOR				D401,D70:	
	IC1	PST529C		IC2	PDB077A		D301	
	Q10	DTA144ES					D703,D70:	
	Q11	DTC114ES		CAPACITORS				
	D1,D2	1SS252		C12	CEAS101M10			
CAPACITORS				C11	CKPUYF223Z25			
	C14	CEJA100M16		RESISTORS				
	C13	CKPUYB102K50		R22	(4.7K)			
	C15	CKPUYF223Z25		R23	(100K1/10W)			
RESISTORS					Other Resistors			
	All Resistors	RD1/6PM $\square\square\square$ J		OTHER				
OTHER				X1	CERAMIC RESONATOR (5.50MHz)		VSS1055	
V1	FL DISPLAY TUBE	VAW1016		MEMORY ASSY				
OPEB ASSY			SEMICONDUCTORS					
SEMICONDUCTORS				IC315	CXD1178Q			
	Q2	UN4212		IC301	HA19211BNT			
	D3-D13	1SS252		IC313	HM63021P-34			
	D101	SLH-56YC3H		IC310,IC311	MB81C1501PF			
SWITCHES				IC502	MB88306PF			
	S9-S20,S22-S24	RSG1030						
	S21	VSC-010		IC307,IC308	MN4700			
RESISTORS				IC305	MN4760S			
	All Resistors	RD1/6PM $\square\square\square$ J		IC202	NJM082D			
IRKB ASSY				IC203,IC601	NJM4558D			
SWITCH				IC303	NJM78L05A			
	S1	RSG1030						
COIL				IC201	PA5012			
	L1	VTH1026		IC312	PD0093A			
CAPACITORS				IC314	PD5087			
	C102	CEJA100M35		IC302	PDB005			
	C101	CEJA470M6R3		IC306	PDB006			
	C1	CKPUYY103N16						
OTHERS				IC309	PDB033A			
	REMOTE SENSOR	GP1U50X		IC103	PM0001			
KEYB ASSY				IC501,IC503	TA7302P			
SWITCHES				IC401	TC74HC4053AP			
	S2-S8	RSG1030		IC304	TC74HCU04AP			
SIDE ASSY								
	S25,S26	VSC-010		Q206,Q304,Q308,Q314,Q451,Q453,Q456,	2SA1037K			
SWITCHES				Q456,Q502-Q504,Q512,Q522,Q523,				
				Q526,Q530,Q531				
				Q105,Q204,Q301,Q505,Q508,Q513,Q515,	2SA933S			
				Q518,Q702,Q710,Q712,Q716				
				Q706	2SB1238X			
				Q704,Q708	2SB1375			
				Q104,Q201,Q501,Q506,Q507,Q509,Q510,	2SC1740S			
				Q516,Q517,Q519,Q520,Q701,Q711,				
				Q713-Q715				
				Q205,Q207,Q302,Q303,Q305-Q307,	2SC2412K			
				Q312,Q452,Q454,Q511,Q521,				
				Q524,Q525,Q803-Q805				
				Q703,Q705,Q707,Q709	2SD2012			
				Q208,Q311	DTA124EK			
				Q802	DTC124EK			
				Q203	RN1203			
				Q202	RN2203			

- Δ D201,D20:
- D401,D70:
- D301
- D703,D70:
- COILS, FILTE**
- VL301
- L110
- L322
- L303,L506
- L330,L451
- L201,L305
- L301,L501
- L806
- L109,L111
- L350
- L51-L59
- L304,L311
- L341,L342

- CAPACITORS**
- VC801
- VC501,VC
- C454,C45
- C353
- C355
- C324
- C452,C45
- C303
- C158,C26
- C567
- C304,C30
- C354,C50
- C377,C38
- C259,C33
- C514,C52
- C150
- C806
- C160,C25
- C159,C35
- C302,C30
- C852-C8
- C455,C46
- C453,C45
- C262,C37
- C261
- C267
- C604
- C274
- C605
- C279
- C331
- C301,C31
- C208,C32
- C467,C70
- C726,C72
- C741,C8C
- C846

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
FLDB ASSY			MODE ASSY		
SEMICONDUCTORS			SEMICONDUCTOR		
IC1		PST529C	IC2		PDB077A
Q10		DTA144ES	CAPACITORS		
Q11		DTC114ES	C12		CEAS101M10
D1,D2		1SS252	C11		CKPUYF223Z25
CAPACITORS			RESISTORS		
C14		CEJA100M16	R22	(4.7K)	RA4T472J
C13		CKPUYB102K50	R23	(100K1/10W)	RA7T104J
C15		CKPUYF223Z25	Other Resistors		
RESISTORS			OTHER		
All Resistors			X1	CERAMIC RESONATOR	VSS1055
				(5.50MHz)	
OTHER			MEMORY ASSY		
V1	FL DISPLAY TUBE	VAW1016	SEMICONDUCTORS		
OPEB ASSY			IC315		CXD1178Q
SEMICONDUCTORS			IC301		HA19211BNT
Q2		UN4212	IC313		HM63021P-34
D3-D13		1SS252	IC310,IC311		MB81C1501PF
D101		SLH-56YC3H	IC502		MB88306PF
SWITCHES			IC307,IC308		MN4700
S9-S20,S22-S24		RSG1030	IC305		MN4760S
S21		VSC-010	IC202		NJM082D
RESISTORS			IC203,IC601		NJM4558D
All Resistors			IC303		NJM78L05A
IRKB ASSY			IC201		PA5012
SWITCH			IC312		PD0093A
S1		RSG1030	IC314		PD5087
COIL			IC302		PDB005
L1		VTH1026	IC306		PDB006
CAPACITORS			IC309		PDB033A
C102		CEJA100M35	IC103		PM0001
C101		CEJA470M6R3	IC501,IC503		TA7302P
C1		CKPUYU103N16	IC401		TC74HC4053AP
OTHERS			IC304		TC74HCU04AP
REMOTE SENSOR			Q206,Q304,Q308,Q314,Q451,Q453,Q456,		2SA1037K
			Q456,Q502-Q504,Q512,Q522,Q523,		
			Q526,Q530,Q531		
			Q105,Q204,Q301,Q505,Q508,Q513,Q515,		2SA933S
			Q518,Q702,Q710,Q712,Q716		
KEYB ASSY			Q706		2SB1238X
SWITCHES			Q704,Q708		2SB1375
S2-S8		RSG1030	Q104,Q201,Q501,Q506,Q507,Q509,Q510,		2SC1740S
			Q516,Q517,Q519,Q520,Q701,Q711,		
			Q713-Q715		
SIDE ASSY			Q205,Q207,Q302,Q303,Q305-Q307,		2SC2412K
SWITCHES			Q312,Q452,Q454,Q511,Q521,		
S25,S26		VSC-010	Q524,Q525,Q803-Q805		
			Q703,Q705,Q707,Q709		2SD2012
			Q208,Q311		DTA124EK
			Q802		DTC124EK
			Q203		RN1203
			Q202		RN2203

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
△	D201,D202,D204,D205,D302,D303, D401,D705-D712	1SS254	C151,C152,C265,C268,C269,C308,C310, C312,C314,C322,C333,C343,C359,C361, C412,C415,C502,C504,C510,C517,C519, C523,C525,C527,C529,C532,C534,C536, C538,C540,C542,C544,C564,C581-C584, C606,C607,C709,C710,C713,C714,C717,	CEAS470M10	
	D301	1SV68	C718,C721,C807,C811,C813	CEAS470M10	
	D703,D704	MTZJ5.1C	C357	CEAS470M25	
COILS, FILTERS			C256,C372,C398,C802,C816,C818	CEAS471M6R3	
VL301	(10UH)	VTL1012	C275	CFTXA104J50	
L110		LAU101J	C340	CFTXA183J50	
L322		LAU120J	C375	CFTXA184J50	
L303,L506		LAU180J	C602	CFTXA273J50	
L330,L451-L456		LAU220J	C328	CKPUYB151K50	
L201,L305		LAU270J	C153,C157,C209,C711,C712,C715, C716,C719,C720,C723	CKPUYU103N16	
L301,L501		LAU470J	C264	CKSQYB102K50	
L806		LAU4R7K	C376	CKSQYB472K50	
L109,L111		LFA221J	C154-C156,C266,C270,C271, C277,C278,C309,C311,C313,C315,C320, C338,C352,C362,C399,C507-C509, C511,C516,C518,C522,C524,C526,C528, C531,C533,C535,C537,C539,C541,C543, C545,C561-C563,C565,C566,C568, C569,C608,C609,C705,C706,C724,C727, C730,C733,C737	CKSQYF103Z50	
L350		VTH1013	C323,C326,C327,C339,C341,C358,C360, C381,C401,C402,C413,C416,C466,C503, C505,C803,C808,C812,C814,C815,C817, C819,C830,C831,C834,C837,C847 C257,C334,C336,C344,C373,C374	CKSQYF473Z25	
L51-L59,L510		VTH1024	C468,C804,C805,C841,C842,C845, C850,C855	CKSYF105Z16	
L304,L311,L312,L321, L341,L342,L801-L805 (100UH)		VTL1006	C255	CQMA122J50	
CAPACITORS			C273,C276	CQMA153J50	
VC801	(45P)	VCM1002	C272	CQMA273J50	
VC501,VC502		VCM1004	C251	CQMA332J50	
	(50P NR)		C254	CQMA682J50	
C454,C459,C464		CCPUCH180J50	C253	VCE1022	
C353		CCPUCH200J50	RESISTORS		
C355		CCPUUJ270J50	VR103,VR301,VR501-VR503 (1K)	VRTB6VS102	
C324		CCSQCH030C50	VR201,VR202,VR204	VRTB6VS103	
C452,C457,C462		CCSQCH060D50	VR203	VRTB6VS223	
C303		CCSQCH070D50	R611	RN1/6PQ2002F	
C158,C260,C263,C351,C549,C851		CCSQCH101J50	R615	RN1/6PQ5601F	
C567		CCSQCH111J50	R236	VCN1022	
C304,C306		CCSQCH120J50	(2.2, 1/4W) Chip Resistors Other Resistors		
C354,C506,C820		CCSQCH150J50	OTHERS		
C377,C380		CCSQCH151J50	X801	JACK(2P)	
C259,C335,C451,C456,C461,C501, C514,C521,C821		CCSQCH220J50		S TERMINAL (8P)	
C150		CCSQCH221J50		CRYSTAL RESONATOR	
C806		CCSQCH240J50		(14.3MHz)	
C160,C252		CCSQCH271J50		VKB1041	
C159,C356		CCSQCH330J50		VKN1134	
C302,C305,C307,C546-C548, C852-C854		CCSQCH390J50		VSS1005	
C455,C460,C465,C571		CCSQCH470J50			
C453,C458,C463,C560		CCSQCH560J50			
C262,C379		CCSQCH680J50			
C261		CCSQSL681J50			
C267		CEALNPR47M50			
C604		CEANP010M50			
C274		CEANP100M16			
C605		CEANP100M25			
C279		CEANP220M10			
C331		CEAS010M50			
C301,C316-C319		CEAS100M50			
C208,C321,C332,C342,C371,C411,C414, C467,C703,C704,C707,C708,C722,C725, C726,C728,C729,C731,C732,C735,C739, C741,C801,C809,C810,C832,C836,C839, C846		CEAS101M10			

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
DOPB ASSY			△	IC203	NJM78L05A
SEMICONDUCTOR				IC402	NJU4053BD
IC1		TC74HCU04AP		IC101	PA5010
COILS				IC601	PD0158B1
L7		LAU120J		IC803	PM3003A
L1-L6		VTH1024		IC102,IC103	TA7291P
L8		VTL1042		Q114,Q315,Q405,Q802,Q812,Q833	2SA1037K
CAPACITORS				Q101,Q102,Q112,Q819	2SA933S
C7		CCDSL221J50		Q816,Q818	2SB1185
C1,C3		CEAS221M6R3		Q103,Q106-Q111,Q113	2SC1740S
C2,C4		CGCYX473M25		Q202,Q203,Q316,Q404,Q803-Q805,	2SC2412K
C8		CGDYX473M25		Q808,Q810,Q814,Q825	
C5,C6		CKCYB103K50		Q815,Q817	2SD1762
RESISTORS				Q402,Q821	2SK184
VR1		VRTG6VS102		Q205,Q303,Q305,Q403,Q406,Q409,Q410,	DTA124EK
	Other Resistors	RD1/6PM□□□J		Q601,Q602,Q606,Q807,Q824,Q826,Q829,	
OTHERS				Q830	
JA1	OPTICAL OUTPUT JACK	GPIF32T		Q206,Q304,Q308,Q313,Q318,Q407,Q605,	DTC124EK
JA2	JACK	VKB1052		Q806,Q811,Q823,Q827,Q828,Q832	
LSFB ASSY				Q204,Q317	UN4215
COIL				D103,D304-D309,D400-D403,	1SS254
△ L51		VTL-004		D405,D407,D601-D603	
CAPACITORS				D606-D608,D801,D804-D808	
△ C51,C52 (0.01/400)		RCG-009		D203	ERA83-006
TRSB ASSY				D101	HZS6.2NB2
TRSB assembly has no service parts.				D102	HZS8.2NB2
BLMB ASSY				COILS	
SEMICONDUCTORS				L103-L105,L113	LAU120J
IC1		TA8413P		L112	LAU121J
Q3-Q5		2SA817		L801,L803	LAU151J
Q1		STA302A		L114	LAU180J
Q2		STA303A		L802	LAU181J
D1-D3		S3V10-4002P7.5		L102,L301,L302	LAU220J
CAPACITORS				L106,L108,L601	LAU470J
C1-C6		CEANP220M50		L115	LAU560J
C10		CEAS4R7M50		L101,L107	LAU620J
C11		CKPUYF103Z25		L116	LFA561K
C7-C9		CQMA333J50		CAPACITORS	
RESISTORS				C123	CCCCH101J50
R1-R6		RD1/2PM471J		C106	CCCCH151J50
	Other Resistors	RD1/6PM□□□J		C167	CCCSL241J50
MAIN ASSY				C817	CCSQCH050C50
SEMICONDUCTORS				C142,C899	CCSQCH100D50
IC201		BA15218		C187,C400,C810,C811,C822	CCSQCH101J50
IC401,IC802,IC805,IC806		BA15218N		C186	CCSQCH111J50
IC801		CXA1081S		C131,C133,C145	CCSQCH120J50
IC807		LA6500		C124	CCSQCH150J50
IC804		LA6510		C177,C179	CCSQCH151J50
				C114,C115	CCSQCH160J50
				C112	CCSQCH180J50
				C165	CCSQCH181J50
				C216,C806	CCSQCH220J50
				C125	CCSQCH221J50
				C130,C812,C815	CCSQCH270J50
				C126	CCSQCH271J50
				C132,C603,C604	CCSQCH330J50
				C837	CCSQCH331J50
				C141	CCSQCH360J50

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
C143		CCSQCH390J50	RESISTORS	VR101	VRTB6VS221
C138,C183		CCSQCH430J50		VR102 (2.2K)	VRTB6VS222
C105,C166,C196,C893		CCSQCH470J50		VR104	VRTG6HS472
C188		CCSQCH560J50		R152	RN1/6PQ1002F
C809,C813		CCSQCH680J50		R102	RN1/6PQ1103F
C190		CCSQCH910J50			
C818		CCSQSL471J50		R140	RN1/6PQ1201F
C819		CCSQSL561J50		R139	RN1/6PQ1203F
C182		CEAL330M10		R103,R104	RN1/6PQ2402F
C814,C845		CEANP010M50		R108,R112,R130,R156,R812,R814, R894,R906R906	RS1/10S101J
C316,C863		CEANP100M16			
C195,C201,C842,C870		CEANP220M10	R129,R135,R136,R148,R217,R512, R811,R813,R822,R932,R962	RS1/10S102J	
C850		CEANP2R2M50			
C866		CEANPR47M50			
C808,C816,C823,C840		CEAS010M50	R153,R204,R211,R212,R214,R215,R325, R330,R330,R367,R413,R416,R505,R510, R514,R515,R601,R602,R614,R618-R631, R649,R650,R823,R830,R831,R833,R834, R880-R882,R884,R885,R887,R889, R899,R900,R903,R914,R923,R928, R929,R934,R935,R953,R991	RS1/10S103J	
C149,C161,C181,C336,C337,C855,C864		CEAS100M50			
C103,C104,C147,C601,C611		CEAS101M10			
C401		CEAS220M35			
C857		CEAS221M6R3			
C107,C108,C117,C118,C139,C162,C163, C173,C174,C198,C199,C931,C932		CEAS470M10			
C203,C260,C261		CEAS470M25	R138,R828,R835,R879	RS1/10S104J	
C859		CEAS471M6R3	R327,R329,R506,R616,R844	RS1/10S105J	
C111		CEASR47M50	R122,R808	RS1/10S122J	
C835,C836		CEHAQ220M50	R829,R917	RS1/10S123J	
C330,C331,C340,C341		CEHAQ470M25	R208	RS1/10S124J	
C610		CEJA101M10	R132,R617,R810,R820,R842,R895	RS1/10S152J	
C830 (CLD-97)		CFTNA154J50	R326,R846	RS1/10S153J	
C830 (CLD-98)		CFTYA154J50	R824,R919,R925	RS1/10S154J	
C852,C900 (CLD-97)		CFTNA224J50	R157,R513,R901	RS1/10S182J	
C852,C900 (CLD-98)		CFTYA224J50	R149,R150	RS1/10S202J	
C824,C849,C873		CFTXA103J50			
C169,C832,C838,C874		CFTXA104J50	R804	RS1/10S203J	
C807		CFTXA124J50	R118,R180,R633-R635,R637-R648, R651-R661,R663-R672,R675-R678	RS1/10S221J	
C827,C848,C867		CFTXA333J50	R137,R154,R803,R819,R849,R964	RS1/10S222J	
C843,C869,C880,C910		CFTXA473J50	R207,R210,R331,R332,R334,R613,R845, R859,R860,R870	RS1/10S223J	
C825		CFTXA682J50	R893,R896,R966	RS1/10S224J	
C180,C847,C868		CFTXA683J50	R133	RS1/10S272J	
C883		CFTXA823J50	R995	RS1/10S273J	
C109,C110		CKPUYY103N16	R826	RS1/10S274J	
C854		CKSQYB821K50	R146	RS1/10S301J	
C113,C116,C119,C120,C127,C136,C137, C140,C146,C148,C164,C175,C176,C178, C184,C185,C191-C193,C197,C200, C202,C212,C402-C404,C605,C607, C801-C803,C856		CKSQYF103Z50	R386	RS1/10S303J	
			R101,R171,R615,R821,R931	RS1/10S331J	
			R839,R851,R888,R904,R905,R907	RS1/10S332J	
			R827,R902,R926	RS1/10S333J	
			R368	RS1/10S335J	
C204,C205,C325,C326,C841,C844,C851, C858,C860,C881,C882		CKSQYF104Z25			
C209		CKSQYF223Z50	R111	RS1/10S391J	
C170,C189,C210,C211,C602,C820,C879		CKSQYF473Z25	R202	RS1/10S393J	
C839		CQMA102J50	R384	RS1/10S433J	
			R360,R809	RS1/10S470J	
			R807,R930	RS1/10S471J	
C172		CQMA103J50			
C834		CQMA152J50	R143,R335,R409,R507,R511,R607,R632, R805,R832,R838,R843,R847,R850,R878, R897	RS1/10S472J	
C171,C897		CQMA272J50			
C853		CQMA332J50	R142,R336,R385,R388-R390,R836, R866-R868,R892	RS1/10S473J	
C898		CQMA472J50			
C134		CQMA473J50	R837	RS1/10S474J	

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
R387		RS1/10S4R7J	AUDB ASSY		
R145		RS1/10S511J	SEMICONDUCTORS		
R116,R806		RS1/10S561J	IC303,IC304		BA15218
R840		RS1/10S562J	IC301		CXD2500BQ
R151,R205,R213,R337,R841, R910-R912		RS1/10S563J	△ IC401,IC402		ICP-N38
R203		RS1/10S564J	△ IC103,IC104		NJM5532DD
R113,R128		RS1/10S681J	△ IC403,IC404		NJM7805A
R141,R415,R848,R890,R891,R918		RS1/10S682J	IC201		PA0034A
R333,R853,R883		RS1/10S683J	IC101,IC102		SAA7350GP
R920		RS1/10S684J	IC302		PD0116A
R117		RS1/10S751J	IC305		TC74HCU04AP
R107,R147,R869		RS1/10S752J	△ Q405,Q406		2SA933LN
R144		RS1/10S821J	△ Q301,Q308,Q312,Q315,Q316		2SA1037K
R818,R921,R922		RS1/10S822J	△ Q404		2SA1262
R417,R854,R865,R927,R968		RS1/10S823J	△ Q305,Q313		2SB1076M
R216		RS1/10S824J	△ Q402,Q403		2SC1740LN
R852,R862	Other Resistors	RS1LMF3R3J	Q202		2SC1740S
		RD1/6PM□□□J	Q302,Q303,Q307,Q309-Q311,Q314		2SC2412K
OTHERS			Q201		2SC2786
CN218 (7P)		5428-07A	△ Q401		2SC3179
CN209 (5P)		VKN1087	Q105,Q106		2SD2144S
CN213 CONNECTOR(23P)		VKN1088	Q102,Q104		2SJ104
		VKN1034	Q101,Q103		2SK364
X601 CERAMIC RESONATOR (9.00MHz)		VSS1040	Q304		DTA124EK
			D101,D102,D301-D304		1SS254
			△ D401-D404,D412-D415		31DF2-FC6
COMP ASSY			D407,D409		E-102
SEMICONDUCTORS			D408,D410		E-202
IC202		BA10393N	D305		FC54M/456
D201,D202		1SS254	D405,D411		HZ5CLL
CAPACITORS			RELAYS		
C250,C251		CEAS470M10	RY101,RY102		VSR-005
C252-C255		CKPUYY103N16	COILS, FILTERS		
RESISTORS			L202		LAU270J
R251		RN1/6PQ1002F	L201,L203		LAU560J
R253		RN1/6PQ1502F	L401-L404		PTH1006
R250		RN1/6PQ4301F	L101-L104,L110,L111		VTH1013
R252		RN1/6PQ9101F	L105-L108,L302,L303		VTH1020
Other Resistors		RD1/6PM□□□J	F201 (2.30,2.81MHz)		VTF1047
OTHER			CAPACITORS		
CN217 (7P)		5420-07APB	C335		CCSQCH180J50
PJAC ASSY			C318		CCSQCH220J50
COILS, FILTERS			C202		CCSQCH221J50
L501-L506		VTH1013	C211,C230		CCSQCH271J50
RESISTORS			C243,C304		CCSQCH330J50
R501-R504		RDM1/2P331J	C105,C107,C120,C121,C141,C142, C155,C156		CCSQCH390J50
OTHER			C212,C231		CCSQCH560J50
JA501 JACK(4P)		VKB1015	C201,C203		CCSQCH910J50
			C326		CEANP010M50
			C221,C237		CEANP220M10
			C218		CEANP330M10
			C327 (CLD-97)		CEANP3R3M16
			C327 (CLD-98)		CEANP3R3M50
			C223		CEAS100M50
			C209,C229,C241,C315,C330-C333		CEAS101M10

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
C324		CEAS220M25	R124,R151,R212,R225,R319,R320,R324,		RS1/10S103J
C215,C224,C239,C240		CEAS220M50	R325,R328,R329,R333,R344,R361,R363,		
C214,C219,C227,C228,C301,C308,		CEAS221M6R3	R364,R366 - R373,R378,R380 - R382,		
C310,C313			R384,R386 - R388,R392,R393		
C204		CEAS470M16	R326,R395		RS1/10S104J
C322,C323		CEAS470M25	R340,R365,R398		RS1/10S105J
C320		CEAS470M50	R215		RS1/10S123J
C235		CEAS4R7M50	R213,R226	RS1/10S153J	
C238		CEASR47M50	R218,R219	RS1/10S154J	
C129,C164		CENA470M25	R375		RS1/10S182J
C109,C111,C113,C115,C117,C119,C144,		CENA470M50	R390		RS1/10S183J
C146,C148,C150,C152,C154			R220		RS1/10S204J
C404,C409,C413,C414		CEYA331M25	△ R301,R303 - R305,R307 - R313,		RS1/10S221J
C102,C125,C137,C160,C222		CFTXA104J50	R315 - R318,R376,R397		
C406,C411		CFTXA105J50	R126,R127,R202 - R206		RS1/10S222J
C325		CFTXA223J50	R323		RS1/10S223J
C220,C236		CFTXA393J50	R211,R223,R350,R353,R354,R358,R359		RS1/10S331J
C104,C106,C122,C123,C139,C140,		CFTXA471J50	R330,R346		RS1/10S332J
C157,C158			R347 - R349,R351,R355,R357,R360		RS1/10S471J
C328		CFTXA474J50	R210,R224,R389,R394		RS1/10S472J
C205,C206,C242,C317,C319,C334,C609,		CKSQYB103K50	R221,R230,R321,R334,R335,R338,		RS1/10S473J
C610			R362,R396		
C306		CKSQYB152K50	R341,R343,R352,R356		RS1/10S561J
C216,C217,C233,C234		CKSQYB472K50	R201		RS1/10S681J
C213,C232		CKSQYB682K50	R327,R345		RS1/10S682J
C108,C110,C112,C114,C116,C118,		CKSQYF104Z25	R216		RS1/10S751J
C128,C143,C145,C147,C149,C151,			R214,R227		RS1/10S754J
C153,C163,C302,C307,C309,C312,			R125,R152,R217,R229		RS1/10S822J
C316			R322		RS1/10S823J
C207,C208,C225,C226,C303,C314		CKSQYF223Z50	R228		RS1/10S913J
C305		CKSQYF473Z25		Other Resistors	RD1/6PM□□□□
C175,C176		CQMA102J50			
C130,C131,C165,C166,C405,C410		CQSF101J50		OTHERS	
C134,C169		CQSF681J50		CN502	TOP POST (4P)(NH) B4P - SHF
C133,C168 (5600P)		VCE1008		X301	CRYSTAL RESONATOR VSS1051
					(16MHz)
C132,C167 (0.068MF)		VCE1025			
C135,C174 (22/50NP)		VCH1038		SYPS ASSY	
C170 - C173		VCH1071			
(47/80)				SEMICONDUCTORS	
C103,C124,C136,C159		VCH1085		△ IC4,IC5	ICP - N15
(47μ/100V)				△ IC3	ICP - N20
C401 (3300/50)		VCH1105		IC1	NJM4558S
				Q25	2SA817
C402 (3300/50)		VCH1112		△ Q1,Q10,Q14,Q23	2SA933S
C407,C412 (220/100)		VCH1118		△ Q18	2SB1185
				△ Q16,Q27	2SB1185 - F8
RESISTORS				△ Q15	2SB1375
R121,R148		RDM1/2P101J		△ Q3	2SC1627
R122,R149		RDM1/2P104J		△ Q2,Q7,Q11,Q13,Q24	2SC1740S
R120,R147		RDM1/2P122J			
R118,R145		RDM1/2P162J		Q8	2SC1847
R116,R143		RDM1/2P221J		Q4	2SD1267
				△ Q19	2SD1667
R119,R146		RDM1/2P242J		△ Q17	2SD1762 - F8
R117,R144		RDM1/2P474J		△ Q12	2SD2012
R113,R114,R140,R141		RDM1/2P562J			
R115,R142		RDM1/2P751J		Q20,Q26,Q28	UN4112
R153 - R156		RDR1/4PM101J		Q5,Q6,Q9,Q21,Q22	UN4212
				△ D2,D8,D14,D15,D20 - D22,D24	1SR139 - 100
R231		RS1/10S000J		△ D3 - D6,D9 - D12,D26	1SS254
R337		RS1/10S100J		△ D19	D3SBA20
R383		RS1/10S101J			
R123,R150,R207 - R209,R222,R399		RS1/10S102J			

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
	D13	HZS5.1NB1	CAPACITORS		
	D7	HZS5.1NB2	C106		CCSQCH680J50
	D25	HZS5.6NB1	C105		CEAL220M16
	D23	HZS5.6NB2	C104		CEAS101M10
	D16	MTZJ20A	C101,C102		CEJA101M10
			C103		CEJANP010M50
	D17	MTZJ27C	C111		CKSQYF103Z50
△	D18	RBA-406B	C107-C110,C112		CKSQYF104Z25
	D1	S2K20			
RELAY			RESISTORS		
	RY1	VSR1005	VR104 (100k)		VRTB6VS104
COIL			VR101-VR103 (4.7K)		VRTB6VS472
	L1	VTT1109	R119	Other Resistors	RD1/4PM100J
CAPACITORS					RS1/10S□□□J
	C7,C13,C14,C32,C35	CEAS100M50	OTHERS		
	C18,C19	CEAS101M50	CN913	TOP POST(4P)(NH)	B4P-SHF
	C29	CEAS102M16	CN902	CONNECTOR(29P)	VKN1025
	C27,C28	CEAS222M25	CN901	CONNECTOR(23P)	VKN1079
	C6	CEAS3R3M50	CN903	(6P)	VKN1080
			CN904	(8P)	VKN1081
	C11,C12,C15,C16,C31,C36	CEAS470M16	PRET ASSY		
	C17,C20,C34	CEAS470M25	SEMICONDUCTORS		
	C5	CEAS470M50	IC201		BA15218
	C10,C30,C33	CEAS471M25	Q201		2SC1740S
	C4	CKPUYB471K50	Q202		2SC2412K
	C3	CKPUYB681K50	CAPACITORS		
	C21-C24,C37,C38	CKPUYF103Z25	C201		CCSQSL331J50
	C2	CQMA183J50	C202-C205		CKSQYF104Z25
	C1	CQMA332J50	RESISTORS		
	C9	CQMA472J50	VR201 (1K)		VRTB6VS102
	C25 (18000/16)	VCH1110	VR206 (2.2K)		VRTB6VS222
	C26 (4700/16)	VCH1111	VR205 (3.3K)		VRTB6VS332
RESISTORS			VR202,VR203 (47K)		VRTB6VS472
	R14,R15	RN1/6PQ1002F	Other Resistors		RS1/10S□□□J
	R16,R17	RN1/6PQ2202F	OTHERS		
	R38	RS1LMF222J	CN905	CONNECTOR (6P)	VKN1082
	R12	RS1LMF2R7J	CN906	CONNECTOR (8P)	VKN1083
	R22	RS1LMF3R3J	CNNB ASSY		
	R13	RS1LMFR51J	RESISTORS		
	Other Resistors	RD1/6PM□□□J	R301		RS1/10S 472J
			R302		RS1/10S 682J
OTHER			OTHER		
	CN108	TOP POST(8P)(NH)	CN911	CONNECTOR(5P)	VKN1086
LHSB ASSY			FGSB ASSY		
SWITCH			SEMICONDUCTORS		
	LEAF SWITCH	VSK1011	D401		GP1S5I
LVSb ASSY			RESISTOR		
	PUSH SWITCH	DSG1015	R401		RS1/10S221J
PREB ASSY			SEMICONDUCTORS		
			IC101		BA15218
			IC102		IR3C02A

Mark No. Description Parts No.

TRSA ASSY

TRSA assembly has no service part.

HEAD ASSY

COIL

L1

VTL1019

CAPACITORS

C4,C6

C1-C3

C5

CKSQYF104Z25

CKSQYF223Z50

CKSYF105Z16

RESISTORS

VR1

VCP1025

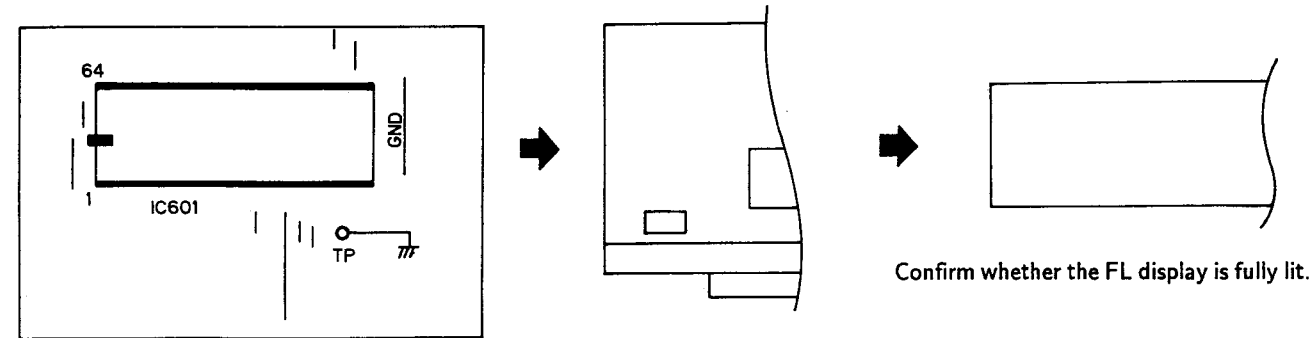
5. ADJUSTMENTS

5.1 TEST MODE

● Test Mode Initiation

1. Connect the TEST TP in CONT section of the MAIN assembly to GND. Then turn on the power switch.
2. Confirm whether the FL display is fully lit.
3. Disconnect the TEST TP from GND.

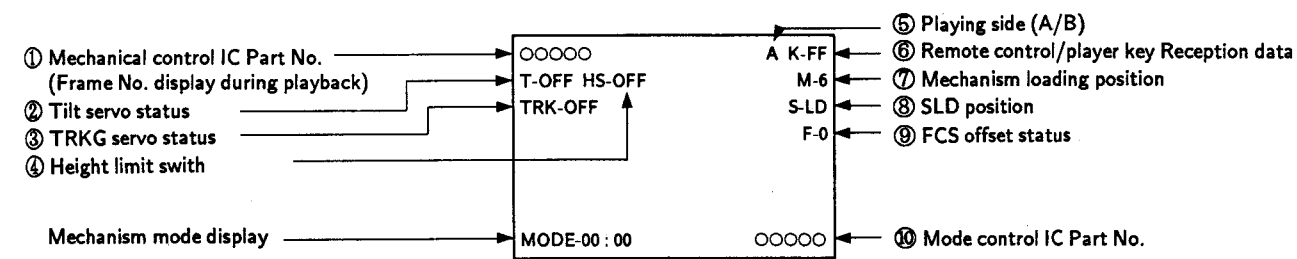
NOTE: When using the remote control unit (GGF 1067) for the test mode: Press the **TEST** key after pressing the **ESC** key while power is ON.



Connect TEST TP in the MAIN assembly and GND.

Turn on the power switch.

● Displays in the Test Mode



① The Mechanical Control IC Part No. will be Displayed.

② Tilt Servo Status Display - Key operation -
 ON ... Tilt servo ON RAND PLAY, Speed +
 OFF ... Tilt servo OFF Skip F.R, Speed -

③ TRKG Servo Status Display - Key operation -
 ON ... TRKG servo ON Step REV
 OFF ... TRKG servo OFF Step FWD
 Key Operation : ▶ (PLAY)
 TRKG servo ON/OFF alternately.

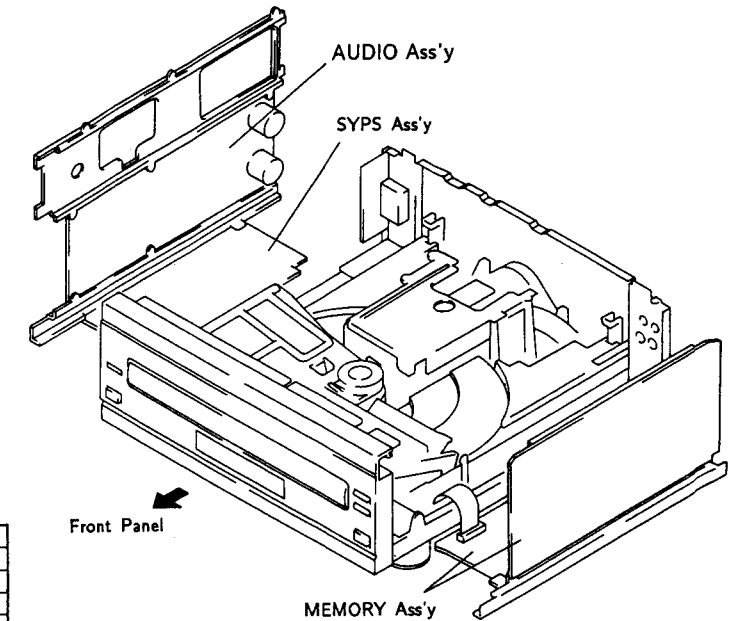
④ Height Limit Switch Display
 ON ... Height limit switch ON
 (On at the bottom end)
 OFF ... Height limit switch OFF
 Key Operation : Durling Side A is clamped state :
 CH SKIP + ... Height down
 CH SKIP - ... Height up

⑤ Playing Side
 A ... Durling playback Side A
 B ... Durling playback Side B
 Key Operation : SIDE A ... Side A Playback
 SIDE B ... Side B Playback

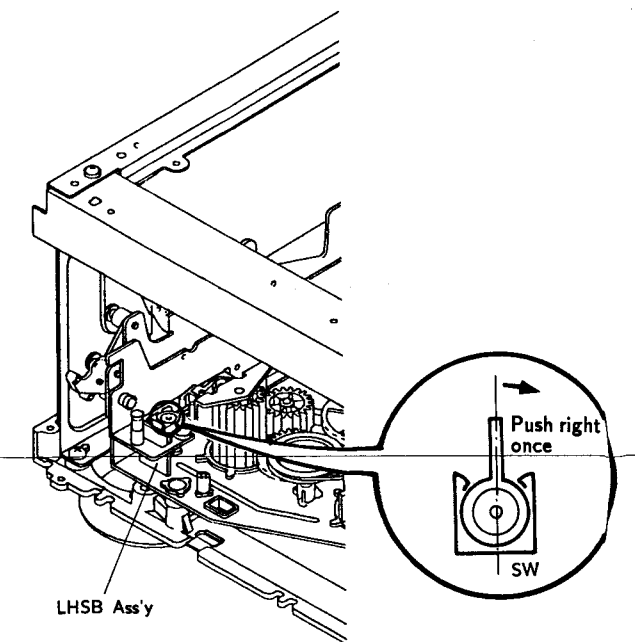
⑥ Remote Control/Player Key Reception Code No.

Code	Function	Code	Function	Code	Function	Code	Function
00	0	20	FJOG0	40	(CHAP/TRK)	60	
01	1	21	FJOG1	41	(FRAM/TIM)	61	
02	2	22	FJOG2	42	(SEARCH)	62	
03	3	23	FJOG3	43	DISPLAY	63	
04	4	24	RJOG0	44	REPEAT B	64	
05	5	25	RJOG1	45	CLEAR	65	
06	6	26	RJOG2	46	SPEED-	66	
07	7	27	RJOG3	47	SPEED+	67	
08	8	28	FSHTL0	48	REPEAT A	68	
09	9	29	FSHTL1	49	(2/R)	69	
0A		2A	FSHTL2	4A	(STEREO)	6A	
0B		2B	FSHTL3	4B	(1/L)	6B	
0C	DGT/ANL	2C	RSHTL0	4C	PROGRAM	6C	
0D		2D	RSHTL1	4D	SIDE A	6D	PLAY/PAUSE
0E	CX ON/OFF	2E	RSHTL2	4E	SIDE B	6E	STOP
0F		2F	RSHTL3	4F		6F	OPEN/CLOSE
10	F-SCAN	30		50	F-STEP	70	
11	R-SCAN	31		51		71	
12		32		52	F-SKIP	72	
13	CHAP/FRME	33		53	R-SKIP	73	
14		34		54	R-STEP	74	
15	SIDE	35		55	R-MULT	75	PICTURE SOFT
16	STOP/OPEN	36		56		76	
17	PLAY/SEARCH	37		57		77	
18	PAUSE	38		58	F-MULT	78	FL DISPLAY
19		39		59		79	
1A	(POW ON)	3A		5A	INTRO	7A	
1B	(POW OFF)	3B		5B	STROBO	7B	
1C	POW ON/OFF	3C		5C		7C	
1D	EDIT	3D		5D	ONE SHOT	7D	
1E	AUDIO	3E		5E	RANDOM(TST)	7E	
1F	+10	3F		5F	(ESC)	7F	

● Player Settings for Adjustment
 Adjustment should be performed with AUDIO, SYPS and MEMORY assemblies are opened as shown in figure below.

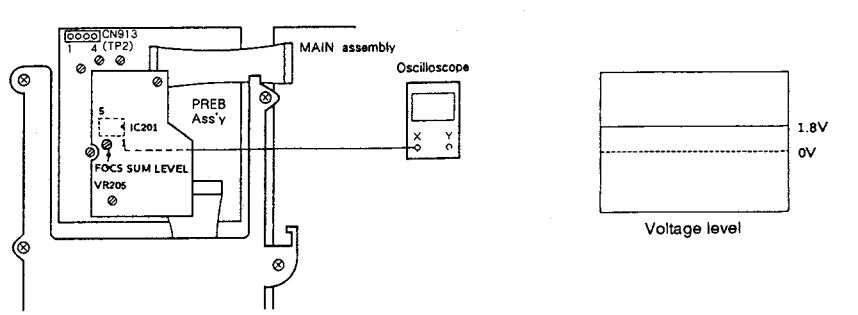
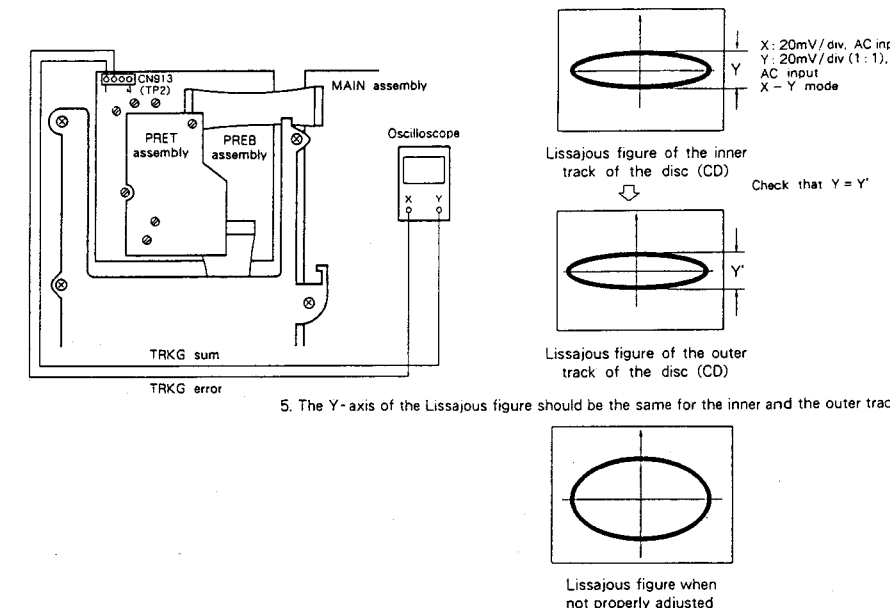
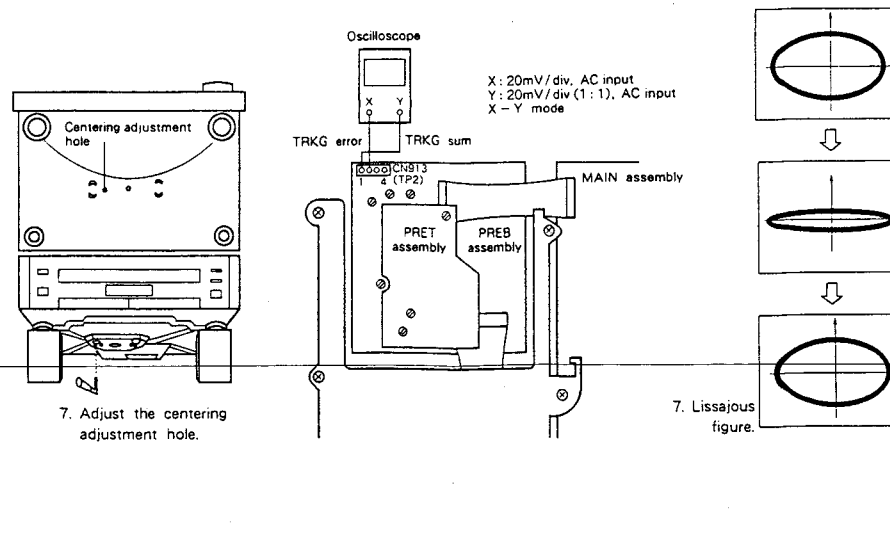


● Playing the disc without disc tray
 After pressing the PLAY key, push right the lever SW in the LHSB assembly once.

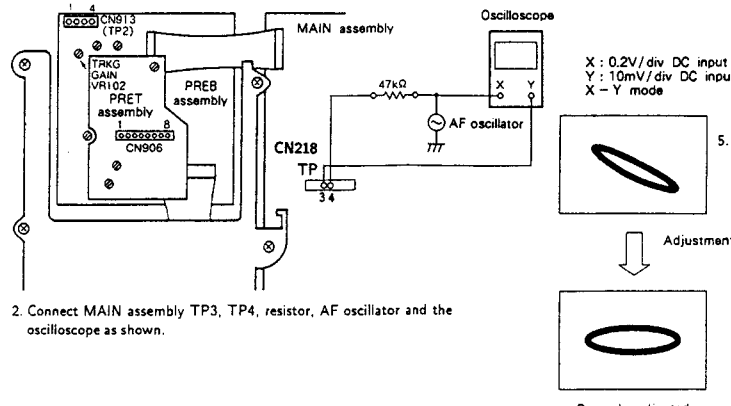
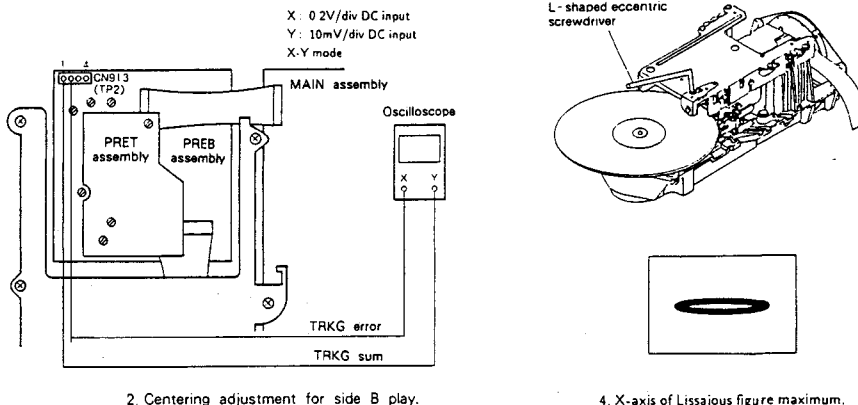
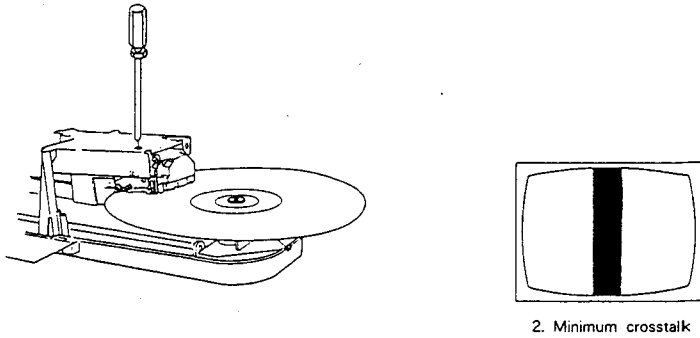


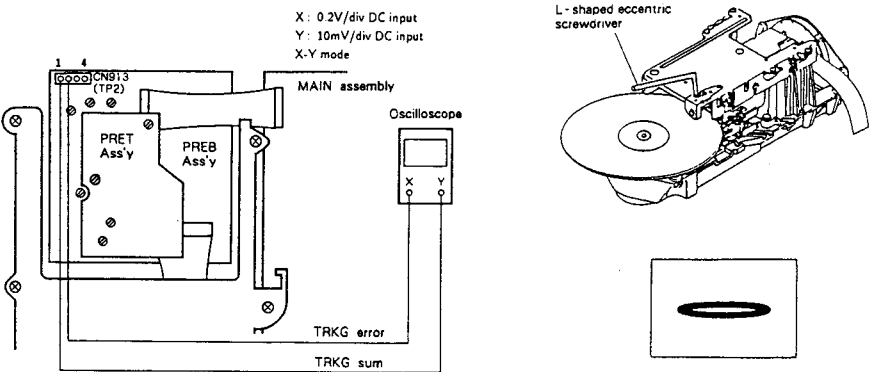
5.2 MECHANICAL ADJUSTMENT

Adjustment name	Adjustment point	Measuring equipment and jigs	Measurement point	Player condition	Adjustment procedure	Waveform and connection diagram
1 Coarse grating and Tracking (TRKG) Balance Adjustment	<ul style="list-style-type: none"> Grating adjustment hole Coarse grating PREB assembly VR101 (TRKG balance) 	<ul style="list-style-type: none"> Small Θ screwdriver (flat blade) Oscilloscope GGV1003 	PREB assembly TP2-2 (TRKG error)	<ul style="list-style-type: none"> Test mode (TRKG servo OFF) The carriage assembly should be in the forward state. #6,500 still 	<p><Coarse Grating Adjustment></p> <ol style="list-style-type: none"> Play the LD test disc. Move the pickup to frame #6,500 by scanning or searching. OFF the TRKG servo. Connect an oscilloscope to TP2-2 in the PREB assembly and observe the waveform. Insert the small Θ screwdriver into grating adjustment hole. Turning the grating will allow you to vary the amplitude of the TRKG error waveform. Find the position where the waveform amplitude becomes minimum with a smooth envelope. (This indicates that the 3-way split laser beams are directed onto the track. This is called the "on-track" position.) Slowly turn the grating counterclockwise from the on track position until the waveform amplitude becomes maximum. ON the TRKG servo and check that a normal picture is displayed on the TV screen. <p><TRKG Balance Adjustment></p> <ol style="list-style-type: none"> Align the oscilloscope GND so that it comes to the center of the oscilloscope screen. Adjust VR101 in the PREB assembly so that the positive and negative amplitude of the TRKG error waveform become equal. <p>Note: If the tracking is so bad that it cannot be adjusted, set the PREB assembly's VR104 to the mechanical center. Then adjust the tracking.</p>	<p>Waveform and connection diagram</p> <p>4. Connect an oscilloscope to TP2-2 in the PREB assembly.</p> <p>5. On-track position</p> <p>6. Maximum amplitude A = B</p>
2 (1) Crosstalk adjustment(1) Tilt Gain adj. Tilt servo balance adj. Pickup tangential inclination adj.	<ul style="list-style-type: none"> PREB assembly VR103 (TILT GAIN) PREB assembly VR104 (TILT BAL.) Pickup tangential direction angle adjustment screw 	<ul style="list-style-type: none"> Oscilloscope TV monitor GGV1003 L-shaped eccentric screwdriver TV monitor GGV1003 	<ul style="list-style-type: none"> Dot marking on the tilt sensor MAIN assembly TP1(RF) (CN218) MAIN assembly TP1(RF) (CN218) 	<ul style="list-style-type: none"> Power OFF #2,701still (#115still) TRKG servo ON #2,701still (#115still) TRKG servo ON 	<p><TILT GAIN ADJUSTMENT></p> <ol style="list-style-type: none"> Check the color of the dot marked on the top of the tilt sensor, at the side of the post. Some players have red and blue dots. According to the color of the dot, adjust the PREB assembly VR103 as follows: Red dot: Turn VR103 fully counterclockwise. Blue dot: Turn VR103 fully clockwise. No dot: Set VR103 to the center position. <p><TILT SERVO BALANCE ADJUSTMENT> (Pickup TRKG directional angle adjustment)</p> <ol style="list-style-type: none"> Make sure the TILT servo is ON. Set the TILT servo balance adjustment VR(VR104) to the mechanical center. Search for #2,701 and look at the RF waveform. Adjust VR104 on the PREB assembly to maximize the waveform's amplitude. Turn VR104 slowly to allow the TILT servo to keep pace. (When VR104 is adjusted, the pickup assembly's TRKG directional angle will change.) Search for #115 and make sure there is no conspicuous crosstalk on the TV monitor. <p>7. If the crosstalk on the TV monitor is conspicuous, do the following tangential adjustment.</p> <p><PICKUP TANGENTIAL DIRECTION ANGLE ADJUSTMENT></p> <ol style="list-style-type: none"> Loosen the two screws as shown in the connection diagram. Search for #2,701 and look at the RF waveform. Insert an L-shaped eccentric screwdriver into the pickup tangential direction angle adjustment hole. While referring to the RF waveform, adjust the tangential direction to maximize the waveform's amplitude. Search for #115 and make sure there is no conspicuous crosstalk on the TV monitor. After completing the adjustment, tighten the two screws. <p>Note: If the pickup tangential direction angle has been changed on the side A playback side, be sure to execute the following: "4. Spindle Motor Centering Check," "10. Centering Adjustment for Side B Play," and "11. Pickup Tangential Direction Angle Adjustment for Side B Play."</p>	<p>8. Loosen two screws.</p> <p>11. RF waveform</p> <p>10mV/div 5mS/div AC input</p> <p>6. 12. Minimum crosstalk on the screen</p>
2 (2) Crosstalk adjustment(2) TRKG error level max adjustment LD FOCS error balance adjustment (RF level max adjustment)	<ul style="list-style-type: none"> PRET assembly VR202 PRET assembly VR206 	<ul style="list-style-type: none"> Oscilloscope GGV1003 Oscilloscope TV monitor GGV1003 	<ul style="list-style-type: none"> PREB assembly TP2-2 MAIN assembly TP1 	<ul style="list-style-type: none"> #6,500still TRKG servo ON #2,701still #115still TRKG servo ON 	<p><TRKG ERROR LEVEL MAX ADJUSTMENT></p> <ol style="list-style-type: none"> Connect PREB assembly TP2-2 to an oscilloscope. Search for #6,500 and OFF the TRKG servo. Adjust VR202 to maximize the TRKG error waveform's amplitude. <p><LD FOCS ERROR BALANCE ADJUSTMENT></p> <ol style="list-style-type: none"> Connect TP1 to an oscilloscope. Search for #2,701 and look at the RF waveform. Adjust VR206 on the PRET assembly to maximize the waveform's amplitude. Search for #115 and make sure there is minimal crosstalk on the TV monitor. If the crosstalk still exceeds the allowable amount even after VR206 is adjusted, execute "Pickup tangential direction angle adjustment" and "TILT servo balance adjustment." <p>Note: Adjustment of VR206 must be performed after VR202 has adjusted.</p>	<p>3. RF waveform</p> <p>10mV/div 5mS/div AC input</p> <p>Crosstalk generated on the screen</p> <p>Minimum crosstalk</p> <p>3. Adjust VR202 in the PRET assembly for minimum crosstalk.</p> <p>4. Adjust so that the crosstalk on the screen is minimum.</p>

Adjustment name	Adjustment point	Measuring equipment and jgs	Measurement point	Player condition	Adjustment procedure	Waveform and connection diagram
3 FOCS SUM level adjustment	• PRET assembly VR205	• Oscilloscope • GGV1003	• PRET assembly IC201 1pin	• #15,000 still • TRKG servo ON	<ol style="list-style-type: none"> 1. Connect IC201 - 1 of PRET assembly to an oscilloscope. 2. Search for #15,000 and observe the voltage level. 3. Adjust VR205 so that the voltage level becomes 1.8Vp - p ± 0.1V. 	<p>Waveform and connection diagram</p>  <p>3. Adjust VR205 in PRET Ass'y so that the voltage level becomes 1.8Vp-p±0.1V.</p>
4 Spindle motor centering check	Check the lissajous figure	• Oscilloscope • GGV1003 • YEDS-7	• PREB assembly TP2-2 (TRKG error) TP2-1 (TRKG SUM)	<ul style="list-style-type: none"> • Test mode (TRKG servo OFF) • The carriage assembly should be in the forward state. • #22,000 still • #100 still 	<p>Note: LD test disc F2 is not suitable for this adjustment because the recorded portion with a track pitch of 1.52μm is present only around inner tracks #1 to #500.</p> <ol style="list-style-type: none"> 1. Play the 8-inch LD test disc. 2. Move the pickup to frame #22,000 by scanning or searching, then OFF the TRKG servo. 3. Connect TP2-2 in the PREB assembly to the X-input(CH-1) of the oscilloscope and TP2-1 to the Y-input(CH-2). Set the oscilloscope to the X-Y mode and observe the Lissajous figures of the TRKG error signal and the TRKG sum signal. 4. Write down the Y-axis amplitudes of the Lissajous figures. 5. ON the TRKG servo and search frame #100, then OFF the TRKG servo again to observe the Lissajous figure. At this time, check that the Y-axis amplitude of the Lissajous figure is the same as that noted in step 4. 	 <p>5. The Y-axis of the Lissajous figure should be the same for the inner and the outer tracks.</p>
5 Spindle motor centering adjustment	Spindle motor centering adjustment hole	• L-shaped phillips screwdriver • Oscilloscope • GGV1003 • YEDS-7	• PREB assembly TP2-2 (TRKG error) TP2-1 (TRKG SUM)	<ul style="list-style-type: none"> • Test mode (TRKG servo ON/OFF) • The carriage assembly should be in the forward state. • #22,000 still • #100 still 	<p>Note 1: Before making the adjustment, remove the rear panel.</p> <p>Note 2: The LD test disc F2 is not suitable for this adjustment.</p> <ol style="list-style-type: none"> 1. Connect TP2-2 in the PREB assembly to the X-input(CH-1) of the oscilloscope and TP2-1 to the Y-input(CH-2). 2. Play the 8-inch LD test disc and search frame #22,000. 3. OFF the TRKG servo and observe the Lissajous figures of the TRKG error signal and the TRKG sum signal. 4. Fine-adjust the grating so that the Y-axis amplitude of the Lissajous figure is minimized. 5. ON the TRKG servo and search frame #100. 6. OFF the TRKG servo again and observe the Lissajous figure and write the Y-axis amplitude. 7. Insert the L-shaped Phillips screwdriver into the adjusting hole from the left bottom of the unit, and turn slowly so that the Y-axis amplitude of the Lissajous figure is reduced. 8. After the Y-axis amplitude of the Lissajous figure is minimized, turn the adjusting screw further until the amplitude becomes the same shape as that observed in procedure 6. 9. ON the TRKG servo, and move the pickup assembly to the outer track of the disc(#22,000). 10. OFF the TRKG servo again and observe the Lissajous figure to check that the Y-axis amplitude is minimum. If the Y-axis amplitude of the Lissajous figure is larger than specified, repeat the adjustment procedures from steps 3 to 8. 11. After adjustment is complete, perform the adjustment in "4. Spindle Motor Centering Check" item 6. 	 <p>7. Adjust the centering adjustment hole.</p> <p>7. Lissajous figure.</p>

Adjustment name	Adjustment point	Measuring equipment and jigs	Measurement point	Player condition	Adjustment procedure	Waveform and connection diagram
6 Fine grating adjustment	Grating adjustment hole	<ul style="list-style-type: none"> Small Θ screwdriver Oscilloscope GGV1003 	<ul style="list-style-type: none"> PREB assembly TP2-2 (TRKG error) TP2-1 (TRKG SUM) 	<ul style="list-style-type: none"> Test mode (TRKG servo OFF) The carriage assembly should be in the forward state. #6,500 still 	<ol style="list-style-type: none"> Play the LD test disc and search frame #6,500, then OFF the TRKG servo. Connect TP2-2 in the PREB assembly to the X-input(CH-1) of the oscilloscope and TP2-1 to the Y-input(CH-2). Set the oscilloscope to the X-Y mode and observe the Lissajous figures of the TRKG error signal and the TRKG sum signal. Insert the small Θ screwdriver into the grating adjustment hole, and fine-adjust the grating so that the Y-axis amplitude of the Lissajous figures is minimized. If the grating is turned too much and the optimum position can no longer be found, repeat the "Coarse Grating Adjustment". Select the oscilloscope's X-input(CH-1) and check that the positive and negative amplitudes of the TRKG error signal are equal. If they are not, repeat the "Tracking Balance Adjustment". ON the TRKG servo and check that the picture (image) on the TV screen is normal. 	<p>3. Insert the small Θ screwdriver into the grating adjustment hole to fine adjust it.</p> <p>3. Y-axis amplitude of Lissajous figure becomes minimum.</p> <p>4. The positive and negative amplitude are equal.</p>
7 RF gain adjustment	PRET assembly VR201(RF gain)	<ul style="list-style-type: none"> Oscilloscope GGV1003 	<ul style="list-style-type: none"> MAIN assembly TP1 (RF signal) (CN218) 	<ul style="list-style-type: none"> The carriage assembly should be in the forward state. #15,000 still (TRKG servo ON) 	<ol style="list-style-type: none"> Play the LD test disc and search frame #15,000. Connect an oscilloscope to MAIN assembly TP1(RF signal) and observe the RF signal. Adjust PRET assembly VR201 so that the amplitude of the RF signal becomes $500\text{mV} \pm 50\text{mV}$. 	<p>2. Connect MAIN assembly TP1 to an oscilloscope.</p>
8 FOCS servo loop gain adjustment	PRET assembly VR203	<ul style="list-style-type: none"> Oscilloscope AF oscillator Resistor(47kΩ) GGV1003 	<ul style="list-style-type: none"> MAIN assembly (CN218) TP5 (FOCS error) TP6 (FOCS gain) 	<ul style="list-style-type: none"> The FOCS motor protection circuit is disabled. The carriage assembly should be in the forward state. #15,000 still (TRKG servo ON) 	<ol style="list-style-type: none"> Ground the Q821 gate of the MAIN assembly to stop the function of the focus motor protection circuit. Connect MAIN assembly TP6 to the oscilloscope's X-input(CH-1) via the resistor and AF oscillator, and TP5 to the Y-input(CH-2), as shown in the diagram. Set the AF oscillator output to $1.7\text{kHz}/6\text{Vp-p}$ for GGV1003. (according to the test disc used.) Play the 8-inch LD test disc and search frame #15,000(#15,000). Set the oscilloscope to the X-Y mode and observe the Lissajous figure. Adjust VR203 in the PRET assembly so that the Lissajous figure is symmetrical on both the X-axis and Y-axis of the oscilloscope. Release the grounding from Q821 in the MAIN assembly. <p>Note: If the AF oscillator output does not exceed 6Vp-p, reduce the value of the resistor (47k ohms) in the diagram, for easier observation of the Lissajous figure (not below 33k ohms).</p>	<p>1. Ground the gate of MAIN assembly Q302</p> <p>2. Connect MAIN assembly TP5, TP6, resistor, AF oscillator, and the oscilloscope as shown.</p> <p>6. The X-axis and Y-axis of the Lissajous figure are symmetrical.</p>

Adjustment name	Adjustment point	Measuring equipment and jigs	Measurement point	Player condition	Adjustment procedure	Waveform and connection diagram
9 TRKG servo loop gain adjustment	PREB assembly VR102	<ul style="list-style-type: none"> Oscilloscope AF oscillator Resistor(47kΩ) GGV1003 	<ul style="list-style-type: none"> MAIN assembly (CN218) TP3 (TRKG error) TP4 (TRKG gain) 	<ul style="list-style-type: none"> The carriage assembly should be in the forward state. #15,000 still (TRKG servo ON) 	<ol style="list-style-type: none"> Play the LD test disc and search frame #15,000. Connect MAIN assembly TP4 to the oscilloscope's X-input(CH-1) via the resistor and AF oscillator, and TP3 to the Y-input(CH-2), as shown in the diagram. Set the AF oscillator output to 3.0kHz/6Vp-p for GGV1003. (according to the test disc used.) Set the oscilloscope to the X-Y mode and observe the Lissajous figure. Adjust VR102 in the PREB assembly so that the Lissajous figure is symmetrical on both the X-axis and Y-axis of the oscilloscope. <p>Note: If the AF oscillator output does not exceed 6Vp-p, reduce the value of the resistor (47k ohms) in the diagram, for easier observation of the Lissajous figure (not below 33k ohms).</p>	<p>Waveform and connection diagram</p>  <p>2. Connect MAIN assembly TP3, TP4, resistor, AF oscillator and the oscilloscope as shown.</p> <p>5. The X-axis and Y-axis of the Lissajous figure are symmetrical.</p> <p>Adjustment not complete</p> <p>Properly adjusted</p>
10 Centering adjustment for side B play	Centering adjustment hole for side B play	<ul style="list-style-type: none"> L-shaped eccentric screwdriver (GGV-129) Oscilloscope GGV1003 	<ul style="list-style-type: none"> PREB assembly TP2-2 (TRKG error) TP2-1 (TRKG SUM) 	<ul style="list-style-type: none"> Play Test mode #100 still (TRKG servo ON/OFF) The carriage assembly should be in the reverse state. 	<ol style="list-style-type: none"> Turn the LD test disc upside-down (change from side A to side B). Set the oscilloscope to the X-Y mode, and connect PREB assembly TP2-2 (TRKG error) to the oscilloscope's X-input(CH-1) and TP2-1 (TRKG sum) to the Y-input(CH-2). Play the LD test disc and search frame #100 then OFF the tracking servo. <p>Note: If the center is too eccentric on side B of the disc, since searching will be impossible on side B, OFF the TRKG servo when the carriage assembly moves to the side B play position and searches around frame #100.</p> <p>4. While observing the Lissajous figure on the oscilloscope, insert the eccentric screwdriver into the centering adjustment hole for side B and adjust it so that the X-axis amplitude of the Lissajous figure is minimized (on-track position). Then turn the eccentric screwdriver clockwise further until the X-axis amplitude of the Lissajous figure becomes maximum.</p> <p>Note: When "2 (1) Tangential Direction Angle Adjustment" is performed with the pickup in the forward state, perform "11. Pickup Tangential Direction Angle Adjustment for Side B Play" and "Centering Adjustment for Side B play".</p>	 <p>2. Centering adjustment for side B play.</p> <p>4. X-axis of Lissajous figure maximum.</p>
11 Pickup tangential direction angle adjustment for side B play	Pickup tangential direction angle adjustment screw	<ul style="list-style-type: none"> TV monitor Small philips screwdriver GGV1003 	<ul style="list-style-type: none"> Monitor screen 	<ul style="list-style-type: none"> The carriage assembly should be in the reverse state. #115 still 	<ol style="list-style-type: none"> Play the LD test disc and search frame #115. Check if crosstalk appears on the screen of the TV monitor, and adjust the pickup tangential direction angle adjustment screw to that the crosstalk is minimized. After steps 1 and 2 have been completed, perform "10. Centering Adjustment for Side B Play" again. <p>Note: When the pickup tangential direction angle for side B play is varied by this adjustment, the center of the disc for side B may be shifted slightly. As a countermeasure, perform the centering adjustment again.</p>	 <p>2. Minimum crosstalk</p>

	Adjustment name	Adjustment point	Measuring equipment and jigs	Measurement point	Player condition	Adjustment procedure	Waveform and connection diagram
12	Fine centering adjustment for side B play	Centering adjustment hole for side B	<ul style="list-style-type: none"> • L-shaped eccentric screwdriver (GGV-129) • Oscilloscope • GGV1003 	<ul style="list-style-type: none"> • PREB assembly TP2-2 (TRKG error) • TP2-1 (TRKG SUM) 	<ul style="list-style-type: none"> • Test mode (TRKG servo) OFF • The carriage assembly should be in the reverse state. • #100 still 	<ol style="list-style-type: none"> 1. Set the oscilloscope to the X-Y mode, and connect PREB assembly TP2-2 (TRKG error) to the oscilloscope's X-input (CH-1) and TP2-1 (TRKG sum) to the Y-input (CH-2). 2. Play the LD test disc and search frame #100. 3. OFF the TRKG servo. 4. While observing the Lissajous figure on the oscilloscope, insert the eccentric screwdriver into the centering adjustment hole for side B and adjust it so that the X-axis amplitude of the Lissajous figure becomes maximum. 	<p style="text-align: center;">Waveform and connection diagram</p>  <p style="text-align: center;">4. Centering adjustment for side B play.</p> <p style="text-align: center;">4. X-axis of Lissajous figure maximum.</p>

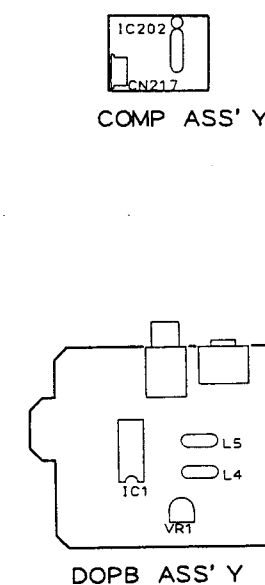
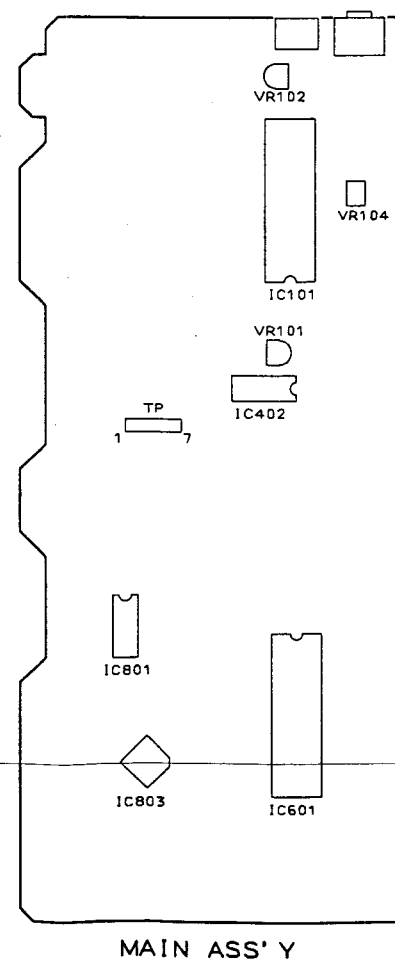
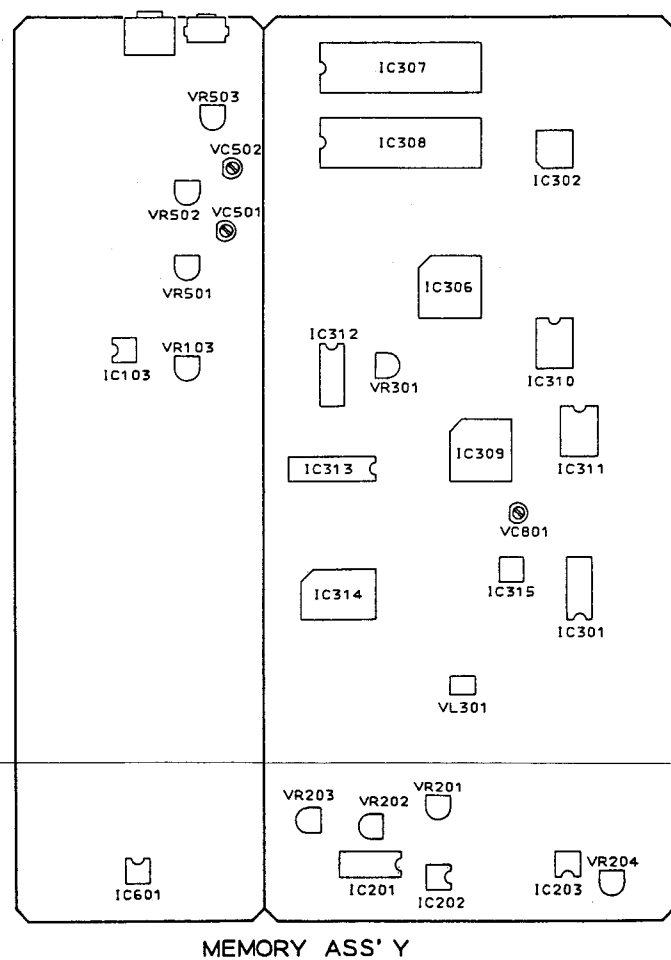
5.3 ELECTRICAL ADJUSTMENT

Assembly Adjustment Name	Adjustment Point	Oscilloscope	Measurement Point	Player Condition	Adjustment Description	Waveform and connection diagram
1 Master clock adjustment	MEMORY ASSY(2/3) VC801	Frequency counter	MEMORY assembly (2/3) IC313 pin 15	Power ON	With the player's power ON, adjust VC801 so that IC313 pin 15 on the MEMORY assembly becomes 14.3181818MHz ±200Hz.	
2 VCO offset adjustment	MEMORY ASSY(1/3) VL301		MEMORY assembly (1/3) IC203 pin 1	LD disc playback	During LD disc playback, adjust VL301 so that IC203 pin 1's DC level becomes 0 ±100mV.	0±100mV
3 Half H rejection adjustment	MEMORY ASSY(1/3) VR201	X: 2V/div Y: 10µsec/div	MEMORY assembly (1/3) IC201 pin 3	LD disc playback	During LD disc playback, adjust VR201 so that the pulse width of IC201 pin 3 becomes 52 ±2 µsec.	
4 Burst gate timing adjustment	MEMORY ASSY(1/3) VR203		MEMORY assembly (1/3) Q306 EMITTER IC201 pin 16	LD disc playback	During LD disc playback (SPDL Lock state : pin4 of IC201 is L), adjust VR203 so that the timing of IC 201 pin 16's pulse rising edge is the same as the timing of the first wave of Q306 Emitter video signal burst.	CH1 Q306 Emitter CH2 IC201 16pin
5 Detection level adjustment	MAIN ASSY(2/3) VR101		COMP assembly IC202 pin 5 IC202 pin 6	Playback of #4,801 on LD test disc	During the playback of #4,801 on the LD test disc, adjust VR101 so that the voltage of IC202 pin 5 becomes pin 6's voltage of +218 mV ±20 mV.	Pin 5 voltage = Pin 6 voltage + 218 mV ±20 mV
6 Trapezoid inclination adjustment	MEMORY ASSY(1/3) VR202		MEMORY assembly (1/3) IC302 pin 1 IC201 pin 5	Memory WRITE PLL LOCK DC reset mode	While C279 is shorted, adjust VR202 so that the trailing point of IC201 pin 5 (PB-H) is in the center of IC302 pin 1's H section.	
7 PLL gain adjustment	MEMORY ASSY(1/3) VR204	10mV/div 5msec/div	Audio output terminals (L and R channels)	Cover the disc's center hole with cellophane tape to make the disc eccentric. Playback #2,701	<ul style="list-style-type: none"> During the playback of #2,701 on an eccentric LD test disc, adjust VR204 to minimize the amplitude of the audio output terminal's waveform and to minimize the L and R level difference. To make the LD DISC eccentric, cover the disc's center hole with cellophane tape. 	
8 Video level adjustment	MAIN ASSY(2/3) VR102	20mV/div 10µsec/div	MAIN assembly(2/3) Q114 EMITTER	#19,801 still	During still playback of #19,801 on the LD test disc, refer to the video signal waveform and adjust VR102 so that the 100% white amplitude from the pedestal becomes 1.5 Vp-p ±5%.	
9 1H delay video level adjustment	MEMORY ASSY(3/3) VR103	CH1: 20mV/div CH2: 20mV/div 10µsec/div(Trigger)	MAIN assembly (2/3) IC101 pins 40 and 42	#19,801 still	During still playback of LD test disc frame #19,801, adjust VR103 to equalize the amplitude from the video signal sync tip to the white peak of IC101 pins 40 and 42.	IC101 40pin IC101 42pin a=b
10 COMP output level	MEMORY ASSY(3/3) VR502	20mV/div 10µsec/div(Trigger)	Video output terminal	#19,801 play 75Ω terminated	During still playback of #19,801 on the LD test disc refer to the VIDEO signal waveform at the VIDEO output terminal and adjust VR502 so that the white amplitude from the pedestal becomes 0.75Vp-p ±5% (75Ω terminated)	100% White peak 0.75Vp-p ±5% Pedestal level
11 Y output level	MEMORY ASSY(3/3) VR501	20mV/div 10µsec/div(Trigger)	S video output terminal (Y output)	#19,801 still 75Ω terminated	During still playback of #19,801 on the LD test disc refer to the VIDEO signal waveform at S terminal output and adjust VR501 so that the white amplitude from the pedestal becomes 0.75Vp-p ±5% (75Ω terminated)	0.75Vp-p ±5% Pedestal level
12 C output level	MEMORY ASSY(3/3) VR503	20mV/div 10µsec/div(Trigger)	S video output terminal (C output)	#19,801 still	During still playback of #19,801 on the LD test disc refer to the VIDEO signal waveform at S terminal output and adjust VR503 so that the white amplitude from the pedestal becomes 0.75Vp-p ±5% (75Ω terminated)	0.260Vp-p +10% -15%

: Use all the Oscilloscope's probes at 10 : 1

Assembly Adjustment Name	Adjustment Point	Oscilloscope	Measurement Point	Player Condition	Adjustment Description	Waveform and connection diagram
13 VPS error level adjustment	MAIN ASSY(2/3) VR104		Monitor screen	#7,201 still	During still playback (magenta screen) of LD test disc frame #7,201, adjust VR104 to minimize the color irregularity on the screen.	
14 140 nsec adjustment	MEMORY ASSY(1/3) VR301		MEMORY ASSY(2/3) IC311 pin 11 IC310 pin 7	#7,201 still	Look at the waveforms for IC311 pin 11 and IC310 pin 7 and adjust VR301 so that t2 in the diagram becomes 140 nsec ±5 nsec for IC311 pin 11's trailing edge.	
15 COMP freq. response adjustment	MEMORY ASSY(1/3) VC502	50mV/div	Video output terminal	#19,801 still	During still playback of LD test disc frame #19,801, terminate a video output terminal of two at 75 ohm. Look at the composite video signal on the oscilloscope and adjust VC502 so that the white level of the diagram right is 90 to 95 % (0.675 to 0.712Vp-p) within 100% white level.	
16 Y freq. response adjustment	MEMORY ASSY(3/3) VC501	50mV/div	S video output terminal (Y output)	#19,801 still	During still playback of LD test disc frame #19,801, terminate a S video output terminal of two at 75 ohm. Look at the composite video signal on the oscilloscope and adjust VC501 so that the white level of the diagram right is 90 to 95 % (0.675 to 0.712Vp-p) within 100% white level.	
17 Digital audio output data adjustment	DOPB ASSY VR1		DOPB assembly foots of L4 and L5	CD(LDD)playback	Playback CD (LDD) disc. Connect L4 of DOPB to the CH-1 of the oscilloscope and L5 to the CH-2. (Connect further side foot of L4 and L5 from IC1.) Adjust VR1 so that the phase of CH-1 and CH-2 are identical when CH-2 set to invert mode.	

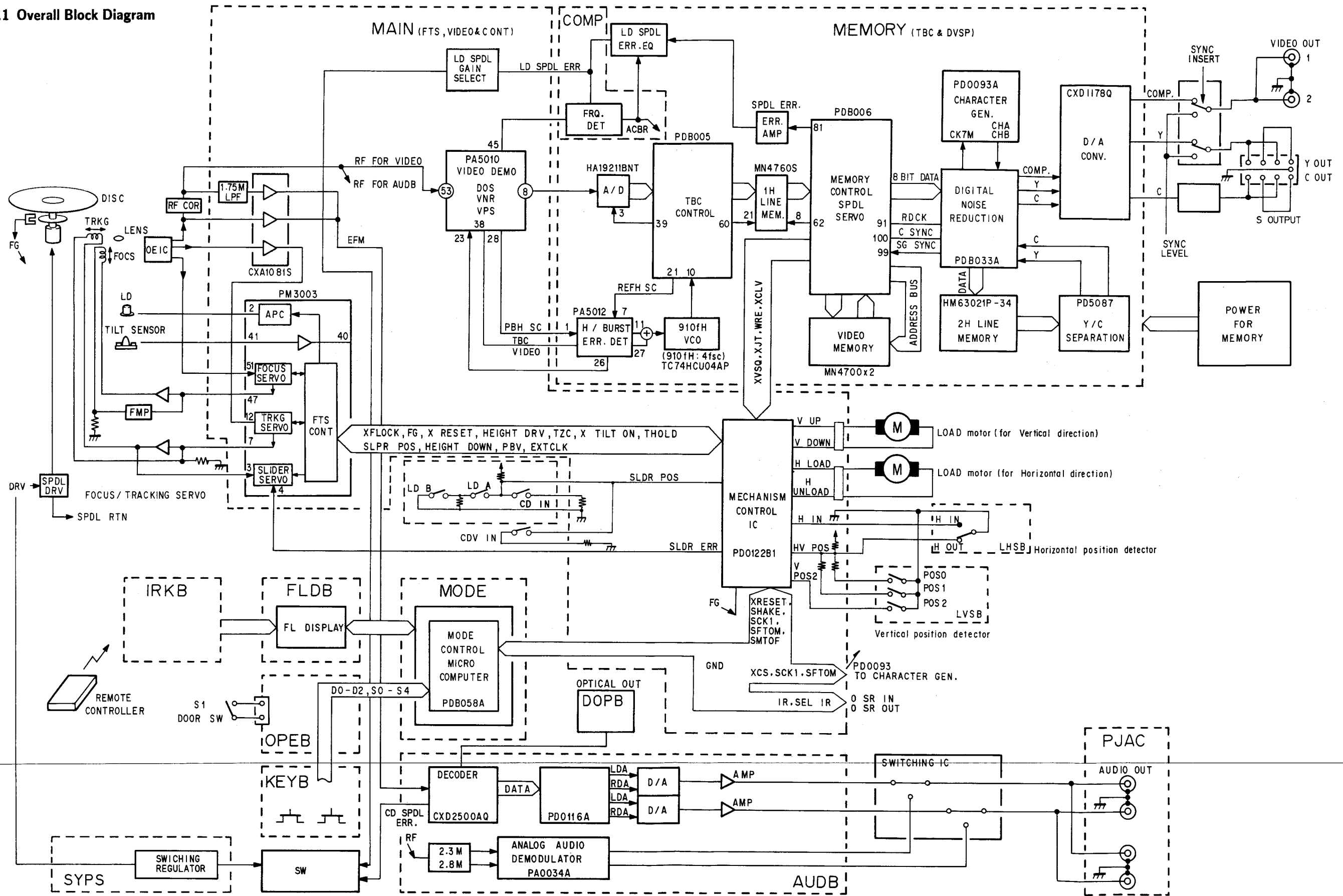
● ADJUSTMENT POINTS



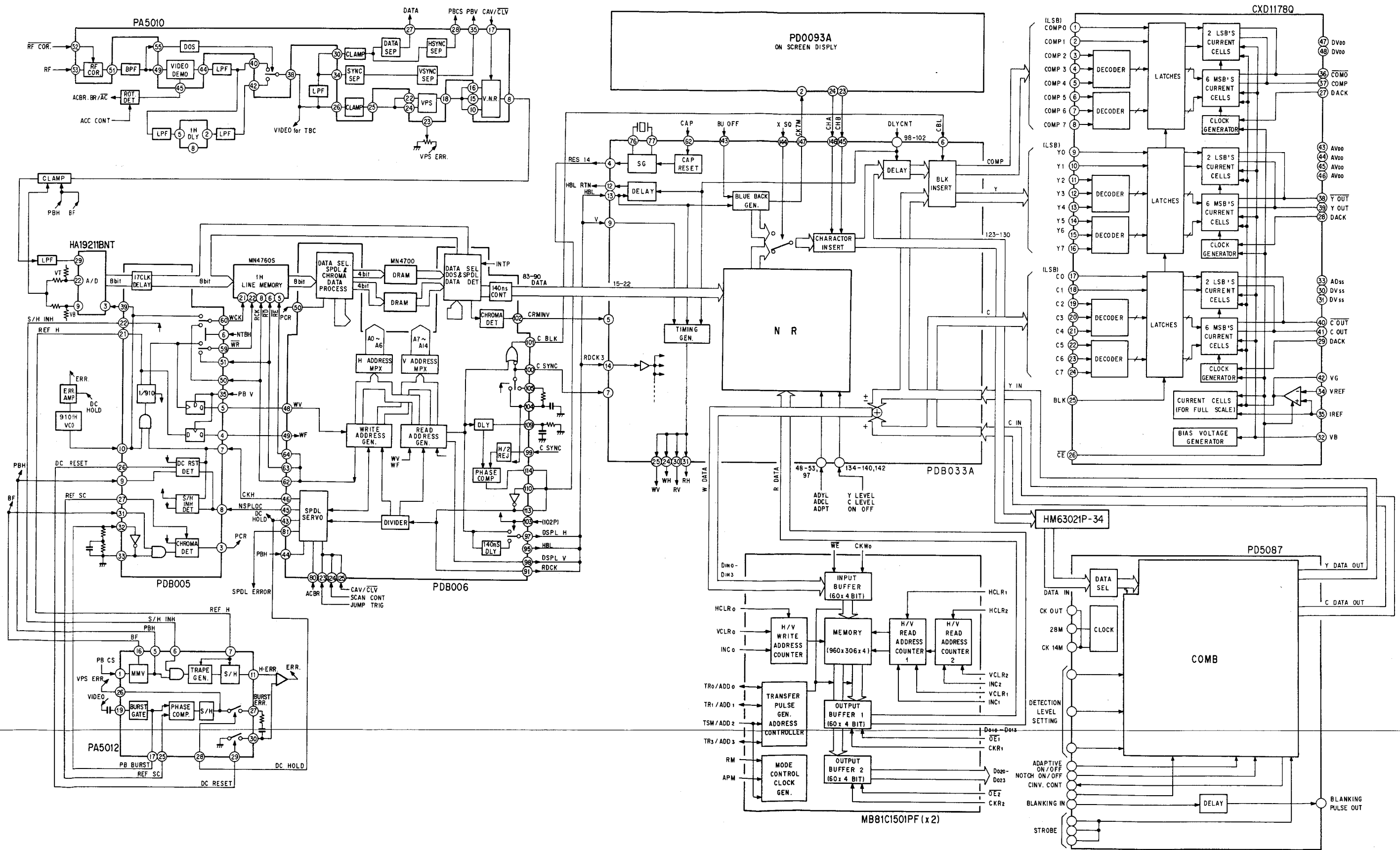
6. CIRCUIT DESCRIPTION

6.1 BLOCK DIAGRAM

6.1.1 Overall Block Diagram



6.1.2 Video Block Diagram



6.2 VIDEO NOISE REDUCTION SECTION

An advantage of digital processing of video signals is that an FIR filter can be used to obtain flat phase characteristics. And because S/N does not deteriorate even after processing several times, it is advantageous after A/D conversion of video signals with digital TBC to carry out processing as much as possible digitally and to lessen analog processing after D/A conversion to obtain better picture quality.

This unit employs the PDB033A as a high-quality field coefficient DVSP (Digital Video Signal Processor) in the last stage of the digital TBC system. This is directly connected to PD5087, a 3-line direct matrix digital Y/C separator IC. The DVSP acts as the core of this system. Because video signal processing as well as character displays is carried out digitally, it is possible to greatly reduce analog circuits. The D/A converter is a single chip 3 channel D/A converter which carries out D/A conversion of the Y and C signals as well as the composite signal. The analog circuits after D/A conversion are basically limited to the amplifier.

Description of the Video Noise Reduction Block Diagram

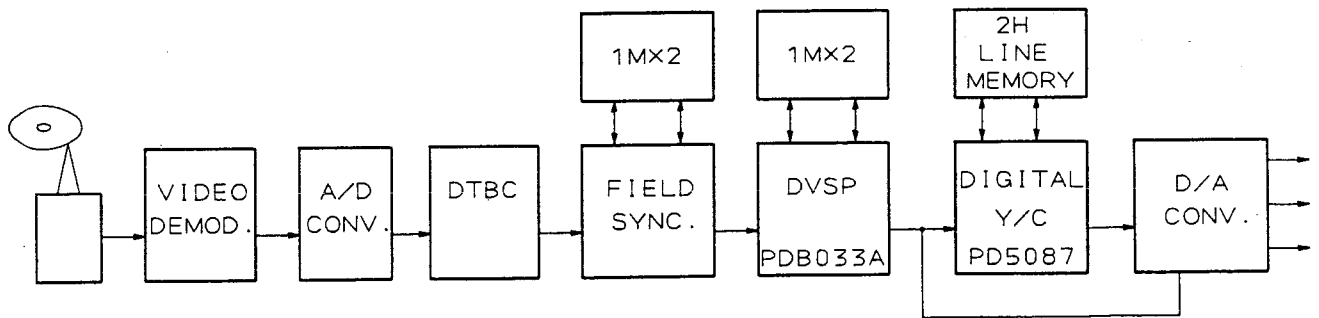
The 8 bits of video data output from pins 83 through 90 of PDB006 are input to the NR block via pins 15 through 22 of PD0093A. CHA and CHB from PD0093A cause the video data with characters to be output as YCCOMP data from pins 123 through 130 of PDB033A. This is input to the 2 H line memory and PD5087. A 1 H delay signal and 2 H delay signal are read from the 2 H line memory. These are both input to PD 5087 where 3-line correlated Y/C separation takes place.

The separated Y data and C data is input again to PDB033A where it is divided into two systems.

After the Y and C data is added, the data is input to MB81C1501PF (an 1 M DRAM) and written to the required address. The address of this DRAM is reset by WV and incremented one line at a time by WH. Reading of the data from the DRAM is done by incrementing the addresses in succession by RV and RH.

This is then input to the NR block.

Blanking is inserted in the Y data of the COMP data and the Y data of the Y/C data and these are both input to the D/A converter. The Y and COMP signals emerging from the D/A converter undergo sync-insert to complete processing.



Video Signal Processing Summary

6.3 DESCRIPTION OF PDB033A

6.3.1 Summary

PDB033A is an IC whose core is a noise reduction device for processing 8 bits of 4 fsc video data. It includes the following circuits :

1. SG circuit
2. Black back generation circuit
3. Character insertion circuit
4. Caption circuit

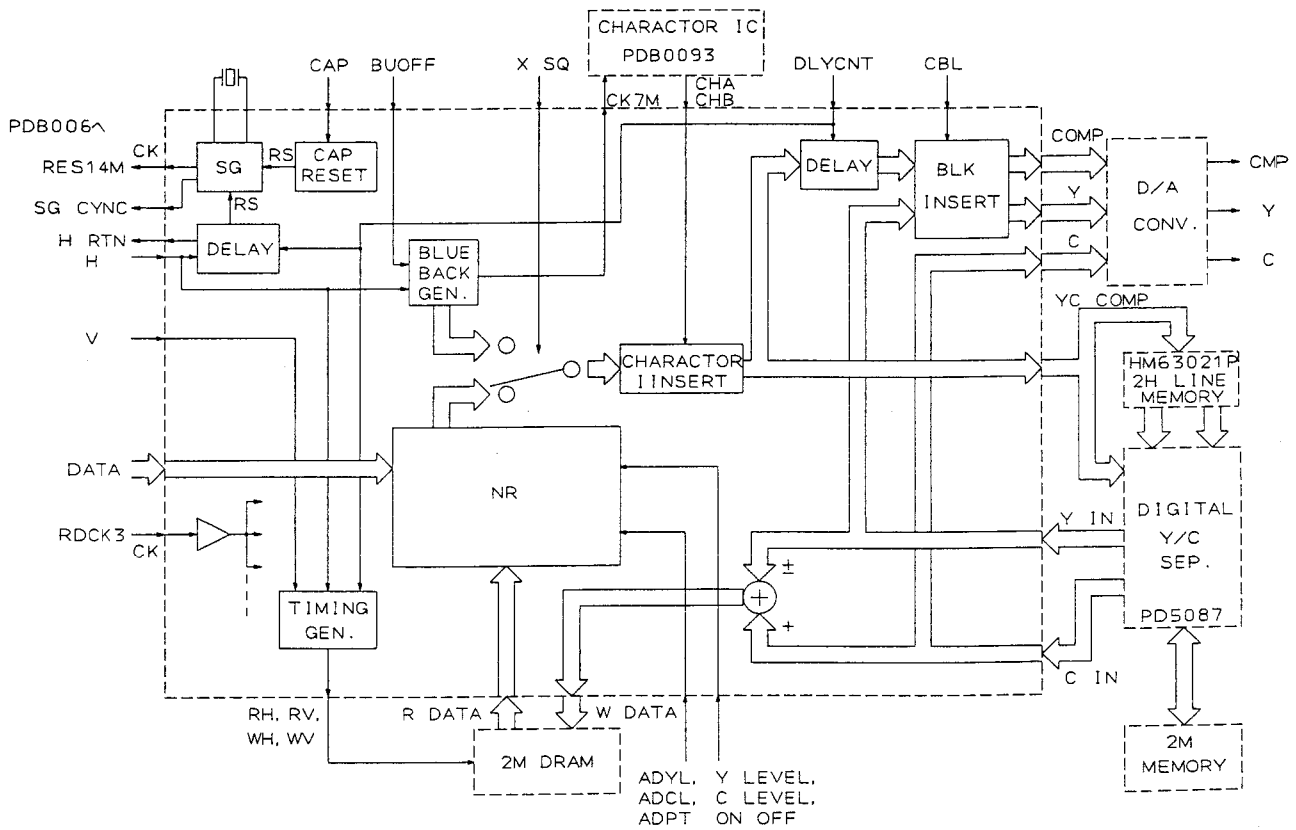
6.3.2 Functions

1) Digital Noise Reduction

It is possible with the Y signal and C signal to set independent reduction levels (limiter levels).

2) Sync-Insert

By inputting the CBL signal of PDB006, the pedestal level is inserted inside PDB033A as digital data during blanking.

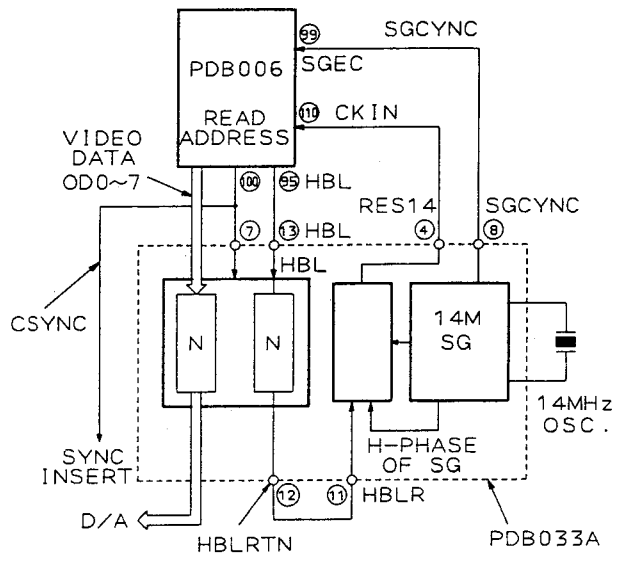


PDB033A block diagram

3) SG Circuit

With the original 14 M digital TBC the SG block was composed of a separately attached TC9015 and a sync-insert phase synchronizing circuit. With the PDB033A, this is included inside the IC. The 14 MHz oscillation circuit set on the SG block becomes the standard frequency for all blocks. The SGCYNC created by that block becomes the standard for reading of video data. The SGCYNC operates the read address counter inside the PDB006.

An HBL indicating the position of the H-SYNC is output from this address counter and the output data from PDB006 is output synchronously with this. Because the output data undergoes N clock delay in the NR block, the HBL also undergoes delay for the same number of steps and is sent to the SG block. The RES 14 clock is stopped until the phase of H from HBLR and SGCYNC agree with each other. This controls the read address counter and matches the phase of C-SYNC of SG and the video data.



SG block

4) Black Back

For the black back screen, a counter reset with the HBL (13 pin) is used to set the pedestal, burst and luminance period. The 3.58 MHz reset with the HLS (10 pins) is used to change the setting value of the burst and luminance.



Black back data

5) Character Insert

Digital character insert is made possible by connecting the CHB and CHA outputs of PD0093A and PDB033A and supplying CK 7 Mφ for the dot counter.

6) Clock Stop

With this unit, when "CD" and "FL & DISP are OFF", the unit goes to the CD Hi-Fi mode and the video clock goes off. This is done at memory substrate Q802 by shunting the oscillation circuit PDB033A. As a result, all the clocks of the reference 14 MHz (standard frequency system) go to a stop state.

7) Caption Reset

At PDB006, the field of the sync for insertion and the field of the video signal for reading are determined and output as WFMON and RFMON. If the sync and video field are different according to this information, PDB033A emits a field reversal command to the SG to constantly match the field of the sync and video signal. This function operates when CAP is H. Caption decode is possible due to this function. (However, it can only be used for composite output.)

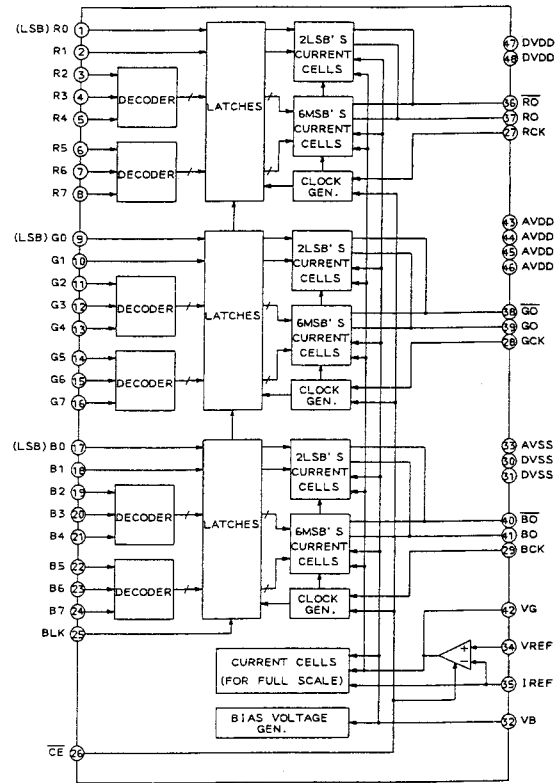
6.4 DESCRIPTION OF CXD1178Q

CXD1178Q is an 8-bit high-speed D/A converter for the video band. It includes input/output of 3 channels: Y,C and COMP.

It has the following features :

- 8-bit resolution
- Maximum conversion speed of 40 MSPS
- RBG (Y,C,COMP on this unit)
- 3-channel input/output
- 48 pin silicon gate CMOS

CXD1178Q block diagram



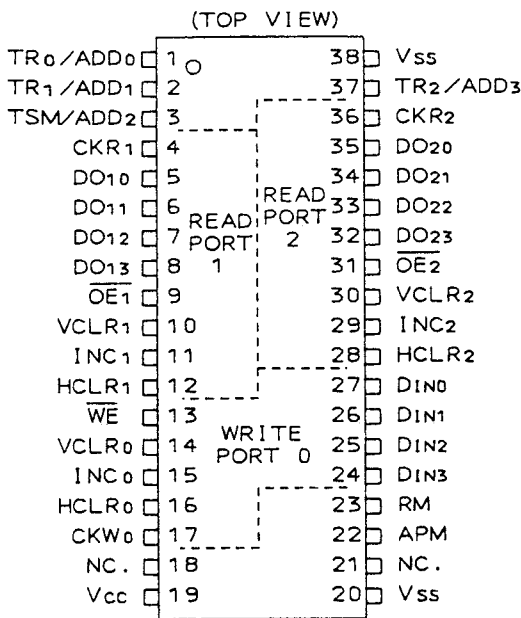
6.5 DESCRIPTION OF MB81C1501PF

The MB81C1501PF is a 3-port type 1 M bit field memory.

It has the following features :

- 293 x 760 word x 4 bits composition (serial write board)
- 293 x 760 word x 4 bits composition (serial read board)
- Silicon gate 3-layer CMOS

● Pin Assignment



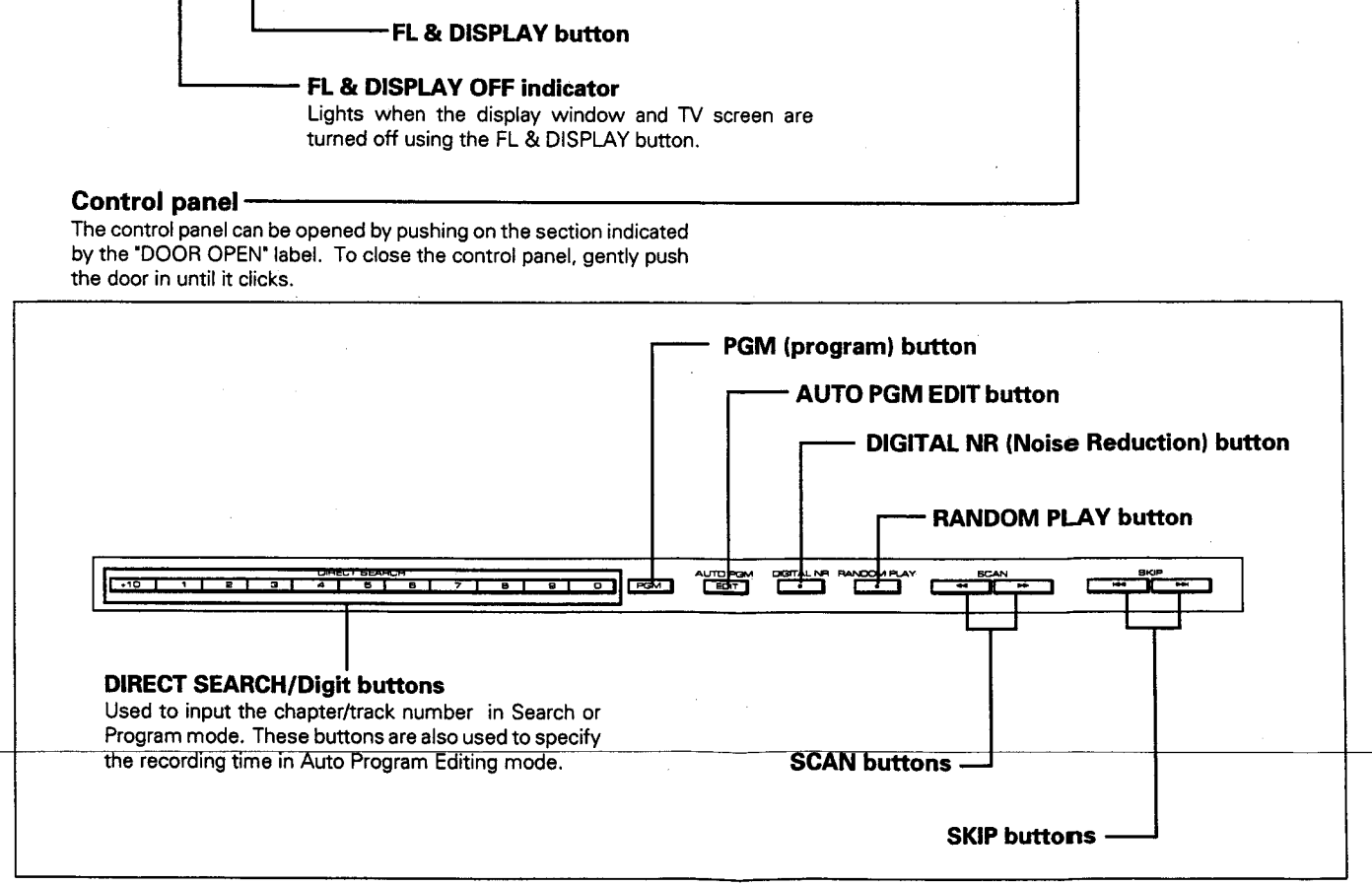
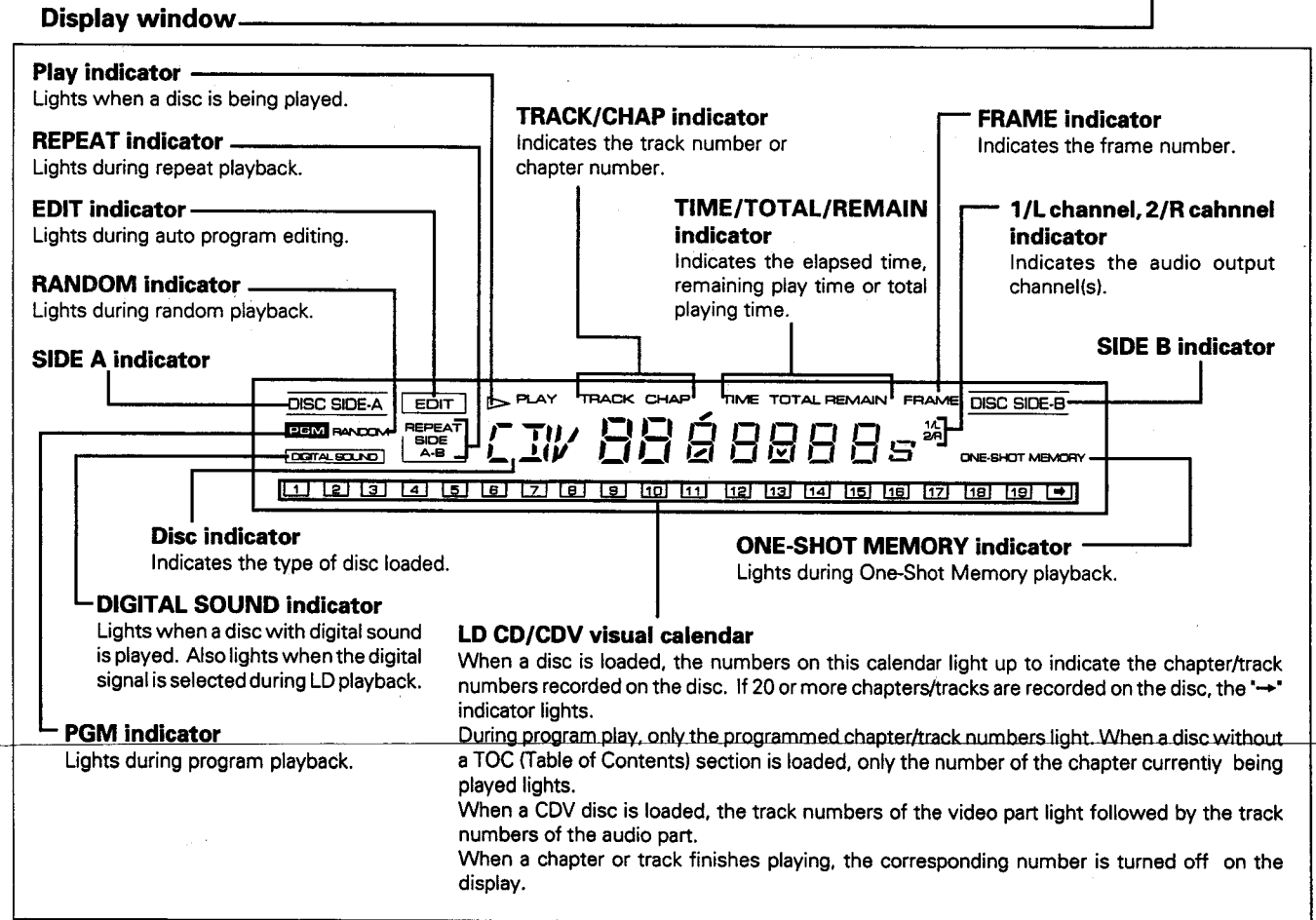
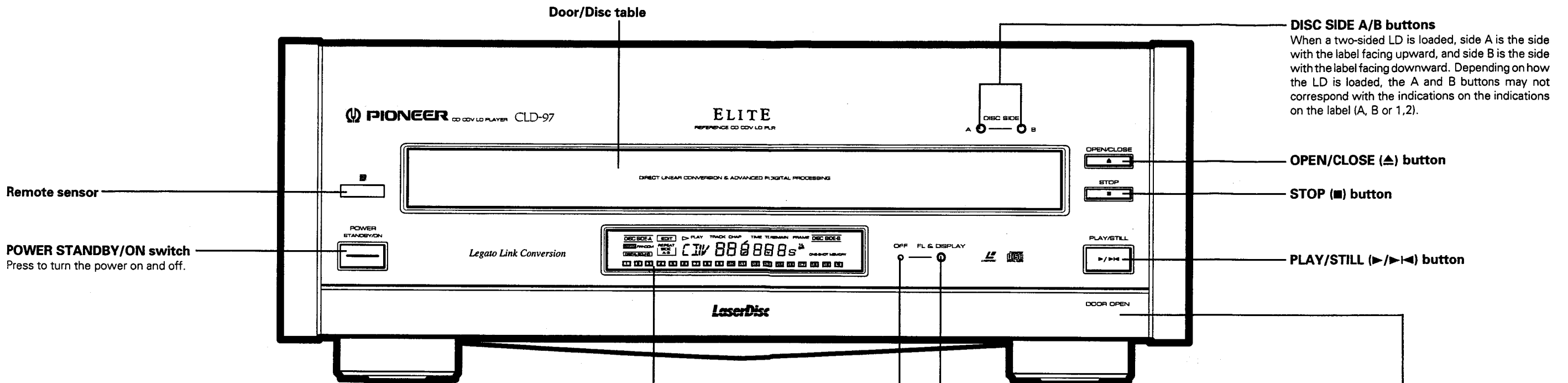
MB81C1501PF Pin assignment

● Pin Function

Code	Pin Name	I/O
RM	Recursive mode enable	I
APM	Address preset mode enable	I
TSM	Transfer synchronous mode	I
TR ₀	Write port 0: Transfer synchronization signal	I/O
TR ₁	Read port 1: Transfer synchronization signal	I/O
TR ₂	Read port 2: Transfer synchronization signal	I/O
ADD ₀ - ADD ₂	Address input	I
CKW ₀	Port 0: Shift signal	I
VCLR ₀	Port 0: Vertical clear signal	I
HCLR ₀	Port 0: Horizontal clear signal	I
INC ₀	Port 0: Line increment signal	I
WE	Port 0: Write enable	I
D _{IN0} - D _{IN3}	Port 0: Data input	I
CKR ₁	Port 1: Shift signal	I
VCLR ₁	Port 1: Vertical clear signal	I
HCLR ₁	Port 1: Horizontal clear signal	I
INC ₁	Port 1: Line increment signal	I
OE ₁	Port 1: Output enable	I
D _{O10} - D _{O13}	Port 1: Data output	O
CKR ₂	Port 2: Shift signal	I
VCLR ₂	Port 2: Vertical clear signal	I
HCLR ₂	Port 2: Horizontal clear signal	I
INC ₂	Port 2: Line increment signal	I
OE ₂	Port 2: Output enable	I
D _{O20} - D _{O23}	Port 2: Data output	O
V _{CC}	Power supply (+5 V)	
V _{SS}	Power supply (0 V)	
NC	No connection	

MB81C1501PF Pin function

7. PANEL FACILITIES



8. SPECIFICATIONS

● CLD-97

1. General

System LaserVision Disc system and Compact Disc digital audio system
 Laser Semiconductor laser wavelength 780 nm
 Power requirements AC 120 V, 60 Hz
 Power consumption 58 W
 Weight 17.0 kg (37 lbs 8 oz)
 Dimensions 459 (W) x 452 (D) x 174 (H) mm
 18-1/16 (W) x 17-13/16 (D) x 6-7/8 (H) in
 Operating temperature +5°C ~ +35°C
 (41°F - 95°F)
 Operating humidity 5% ~ 85%
 (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

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

4. S-Video output

Y (luminance) - Output level 1 Vp-p (75 Ω)
 C (color) - Output level 286 mVp-p (75 Ω)
 Jacks S-VIDEO jacks
 Number of channels 2

5. Audio characteristics

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	117 dB (EIAJ)
Dynamic range	99 dB (EIAJ)
Total harmonic distortion	0.0017% (EIAJ)
Wow and flutter	Limit of measurement (0.001% W.PEAK) or less (EIAJ)

6. Other Terminals

Control input/output Both miniature jacks
 Digital audio output Optical digital jack
 and RCA jack (COAXIAL)

7. Accessories

Remote control unit (CU-CLD090) 1
 "AAA" (IEC R03) dry cell batteries 2
 Video cord 1
 Audio cord 1
 S-video cable 1
 Operating instructions 1
 Warranty card 1

● CLD-98

1. General

System LaserVision Disc system and Compact Disc digital audio system
 Laser Semiconductor laser wavelength 780 nm
 Power requirements 110/120~127/220/240 V AC
 (switchable), 50/60 Hz
 Power consumption 58 W
 Weight 16.5 kg
 Dimensions 440 (W) x 452 (D) x 173 (H) mm
 Operating temperature +5°C ~ +35°C
 Operating humidity 5% ~ 85%
 (There should be no condensation of moisture.)

2. Disc

LaserVision Discs

*Maximum playing times
 30 cm standard play disc 1 hour/both sides
 30 cm extended play disc 2 hours/both sides
 20 cm standard play disc 28 min/both sides
 14 min/one side
 20 cm 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: 12 cm, 8 cm, 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: 12 cm, 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

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

4. S-Video output

Y (luminance) - Output level 1 Vp-p (75 Ω)
 C (color) - Output level 286 mVp-p (75 Ω)
 Jacks Both S-VIDEO jacks
 Number of channels 2

5. Audio characteristics

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	117 dB (EIAJ)
Dynamic range	99 dB (EIAJ)
Total harmonic distortion	0.0017% (EIAJ)
Wow and flutter	Limit of measurement (0.001% W.PEAK) or less (EIAJ)

6. Other Terminals

Control input/output Both miniature jacks
 Digital audio output Optical digital jack
 and RCA jack (COAXIAL)

7. Accessories

Remote control unit (CU-CLD062) 1
 "AAA" (IEC R03) dry cell batteries 2
 S-video cable 1
 Video cord 1
 Audio cord 1
 Operating instructions 1
 Warranty card 1