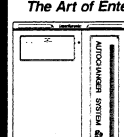
PIONEER®
The Art of Entertainment

Service Manual



ORDER NO.
ARP2611

CD CDV LD AUTOCHANGER

LC-V200
LC-V100

LC-V200 AND LC-V100 HAVE THE FOLLOWING:

Type	Model		Power Requirement	Remarks
	LC-V200	LC-V100		
KUC	○	–	AC120V only	
SEM	–	○	AC110V, 120V, 220 – 230V, 240V (Switchable)	

- **This manual is applicable to the following : LC-V200/KUC; LC-V100/SEM.**
- **Ce manuel pour le service comprend les explications de réglage en français.**
- **Este manual de servicio trata del método ajuste escrito en español.**

CONTENTS

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS SERVICE INC. P.O. Box 1760, Long Beach, California 90801 U.S.A.
PIONEER ELECTRONICS OF CANADA, INC. 300 Allstate Parkway Markham, Ontario L3R 0P2 Canada
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

SI SEPT. 1992 Printed in Japan

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.

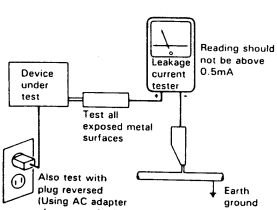
(FOR USA MODEL ONLY)

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 ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose 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.

PIONEER®
The Art of Entertainment

Service Manual

ORDER NO.
RRV1616

CD CDV LD AUTOCHANGER

LC-V100

● Refer to the service manual ARP2611 for LC-V100/SEM.

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

Type	Model	Power Requirement	The voltage can be converted by the following method.
	LC-V100		
SEM8	○	AC110V/120V/220–230V/240V	With the voltage selector

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS SERVICE, INC. P.O. Box 1760, Long Beach, CA 90801-1760, U. S. A.
PIONEER ELECTRONIC (EUROPE) N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 501 Orchard Road, #10-00 Lane Crawford Place, Singapore 0923

T-SZE MAY 1996 Printed in Japan

CONTRAST OF MISCELLANEOUS PARTS

NOTES:

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

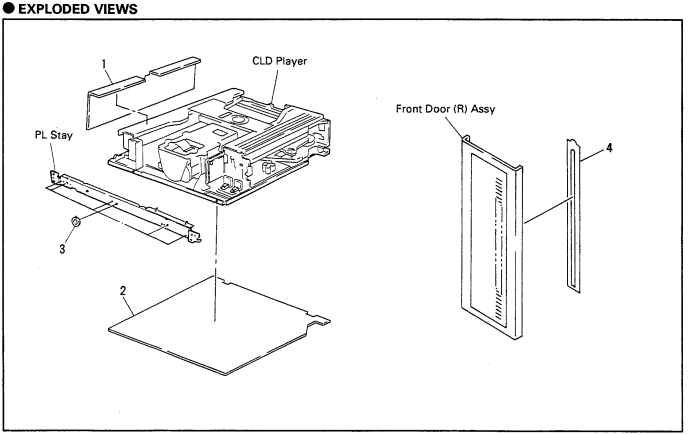
■ CONTRAST OF LC-V100/SEM8 AND LC-V100/SEM

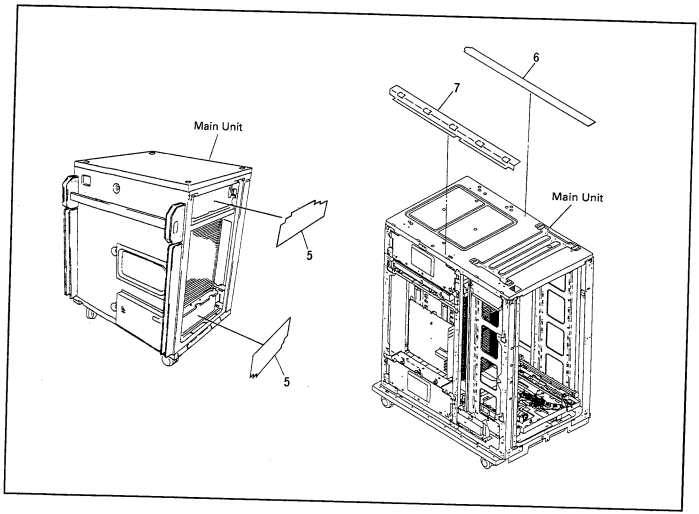
LC-V100/SEM8 and LC-V100/SEM have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		LC-V100/SEM	LC-V100/SEM8	
NSP	Gasket	Not used	DEB1323	
	Shield Sheet A	Not used	DEC1959	∗1 No. 1
	PL Insulation Sheet	Not used	DEC1960	∗1 No. 2
	Shield Sheet C	Not used	DEC1961	∗1 No. 6
	Shield Sheet D	Not used	DEC1962	∗1 No. 7
	Shield Sheet E	Not used	DEC1963	∗1 No. 5
	Shield Sheet F	Not used	DEC1971	∗1 No. 4
	PL Stay	RNE1547	DNH2149	
	PL Lock Holder	RNE1549	DNH2150	
NSP	Ferrite Clamp	Not used	DTH1175	
NSP	CE Mark Label	Not used	RRW1222	
NSP	Ferrite Clamp	Not used	RTH1003	
	Fiber Washer	Not used	VEC1450	∗1 No. 3

∗1 : The numbers in the remarks column correspond to the numbers on the exploded diagram.
Refer to "EXPLODED VIEWS".

● EXPLODED VIEWS





P.S

1. CIOB unit (RWG1010) is made a design change like the following:

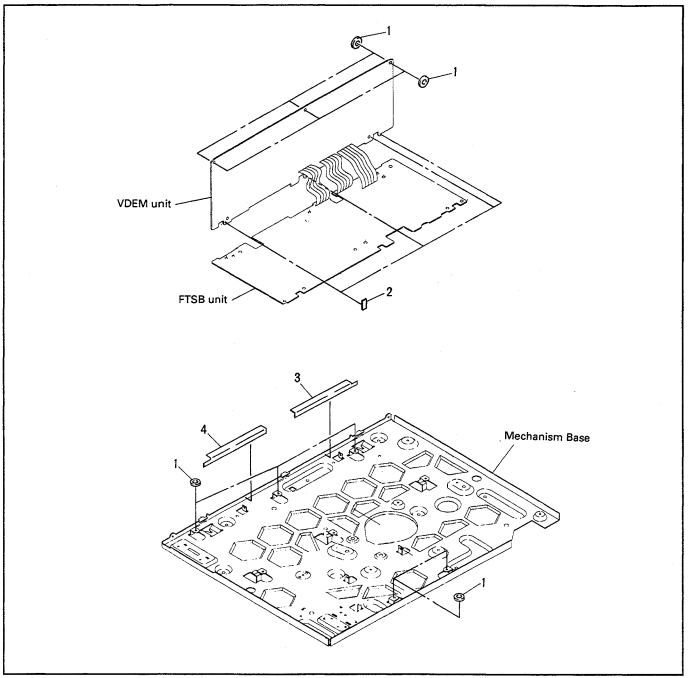
Mark	Symbol & Description	Part No.		Remarks
		OLD	NEW	
⚠	L201–L206	Not used	VTH1020	

2. CLD player unit (RXX1546) is made a design change like the following:

Mark	Symbol & Description	Part No.		Remarks
		OLD	NEW	
	Fiber Washer	Not used	VEC1450	＊1 No. 1
	Spacer (A)	Not used	DEC1968	＊1 No. 2
	Spacer (B)	Not used	DEC1969	＊1 No. 3
	Spacer (C)	Not used	DEC1970	＊1 No. 4

＊1 : The numbers in the remarks column correspond to the numbers on the exploded diagram.
Refer to "EXPLODED VIEWS (CLD PLAYER SECTION)".

● **EXPLODED VIEWS (CLD PLAYER SECTION)**



(FOR EUROPEAN MODEL ONLY)

VARO!
AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

ADVERSEL
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSAETTELSE FOR STRÅLING.

VARNING!
OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.

LASER
Kuva 1
Lasersateilyn varoitusmerkki

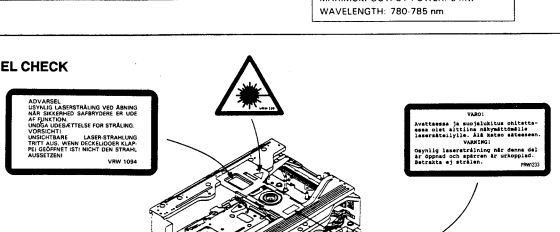
WARNING!
DEVICE INCLUDES LASER DIODE WHICH EMITS INVISIBLE INFRARED RADIATION WHICH IS DANGEROUS TO EYES. THERE IS A WARNING SIGN ACCORDING TO PICTURE 1 INSIDE THE DEVICE CLOSE TO THE LASER DIODE.

LASER
Picture 1
Warning sign for laser radiation

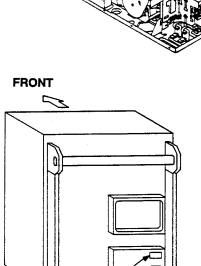
IMPORTANT
THIS PIONEER APPARATUS CONTAINS LASER OF CLASS 1. SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.

LASER DIODE CHARACTERISTICS
MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm

LABEL CHECK



FRONT



Additional Laser Caution

1. The ON/OFF statuses of the side-A/B detection switch (TURN switch on the MECHANISM assembly), slider-position detection switches (PARK 1, 2 and 3 on the MECHANISM assembly) and loading-status detection switches (SW 1, 2 and 3 on MSWB assembly) are detected by the microprocessor (IC751 in the FTSB unit).
   To permit the laser diode to oscillate, it is required to set the side-A/B detection switch for side A (IC751 in the FTSB unit, pin 47 XTURN A=L and pin 48 XTURN B=H) or the slider-position detection switch for the LD ACTIVE status (PARK 1: OFF, PARK 2: OFF, PARK 3: OFF), and to set the loading-status detection switch for clamped state (SW 1: OFF, SW 2: ON, SW 3: ON). As long as these requirements are not satisfied, the laser diode will not oscillate. When the requirements are met in any way, the laser diode can oscillate. The laser diode oscillation will continue if the collector and the base of Q822 in the FTSB unit are shorted to each other (fault condition).
   In test mode (See page 207), the laser diode oscillates when the microprocessor detects a PLAY signal, with the above requirements satisfied.
2. When drawn out from the unit, close viewing through the objective lens with the naked eye will cause exposure to a Class 1 laser beam.

2. MAIN BOARDS AND PARTS ARRANGEMENT DIAGRAMS

2.1 MAIN PARTS ARRANGEMENT DIAGRAM

Note : When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS".

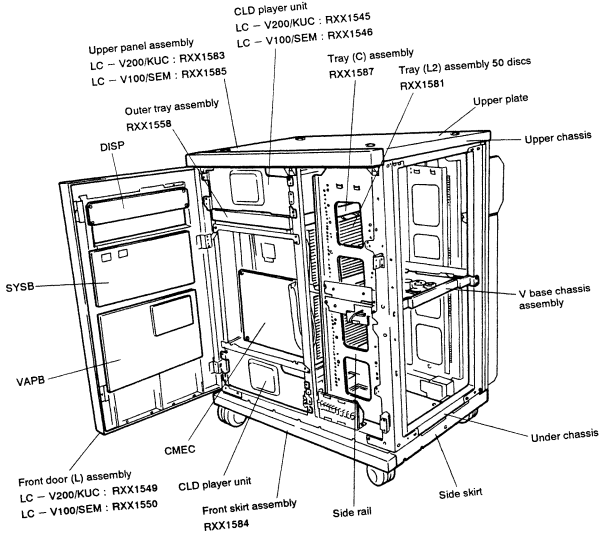


Fig. 1–1.

2.2 MAIN BOARDS ARRANGEMENT DIAGRAM

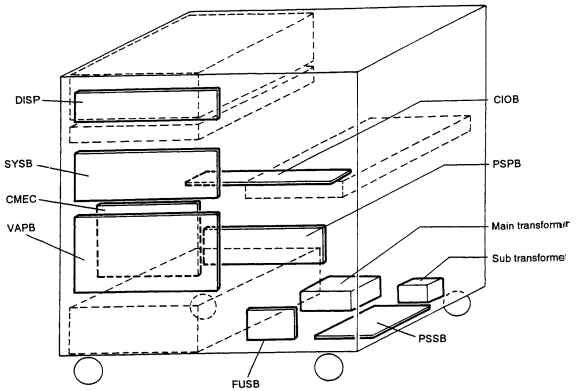


Fig. 1–2.

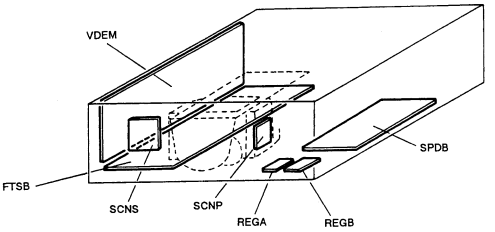
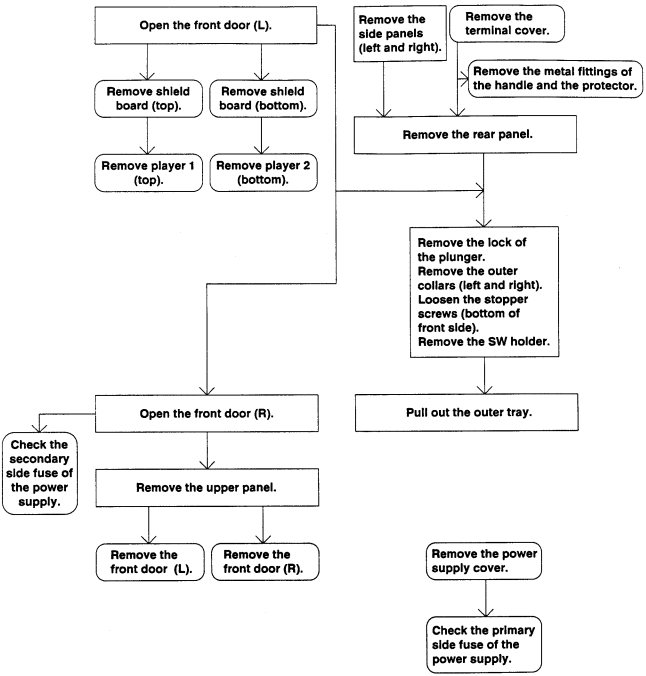


Fig. 1–3.

3. REMOVAL

3.1 OUTLINE OF REMOVAL PROCEDURE



3.2 OPENING OF FRONT DOOR (L)

1) Insert a hexagonal wrench (4 mm across) into the two holes on the front door (L) and loosen the screws inside.

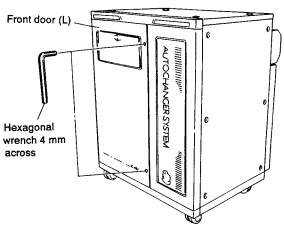


Fig. 1

2) Open the ceiling door. If it is locked, unlock it with the key (a 3 mm across hexagonal wrench can be used as the key).

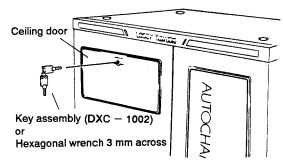


Fig. 2

3) Hold the top right of the ceiling panel and while lifting the door (L) up, open it towards you.

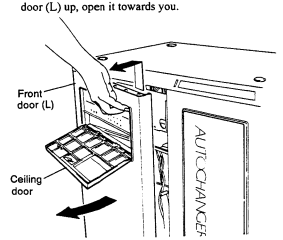


Fig. 3

3.3. REMOVAL OF PLAYER

1) Open the front door (L).
2) Remove the screws at the △ marks on the shield board.
   Upper player:7 screws
   Lower player:8 screws

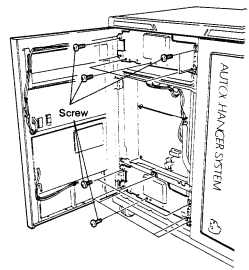


Fig. 4

3) Remove the two screws at the △ marks of the PL stay.
4) Disconnect the connector connected to the relay board of the player from the unit.

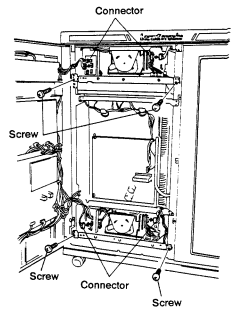


Fig. 5

5) Pull out the player towards you.
At this time, make sure that the connector pulled out does not get caught.
Also, when drawing out the upper player, be careful not to scratch the name plate of the plus – one tray (standard tray).

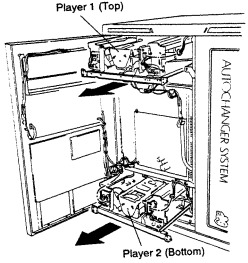


Fig. 6

6) Remove the three screws and PL stay from the player.
Note : As the PL stay of the bottom player has an edge cover, mount it correctly.

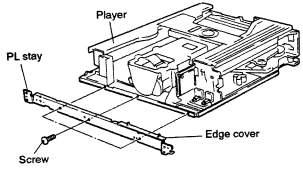


Fig. 7

3.4 OPENING OF FRONT DOOR (R) (CHECKING SECONDARY SIDE FUSE OF POWER SUPPLY)

1) Open the front door (L).
2) Remove the three screws.

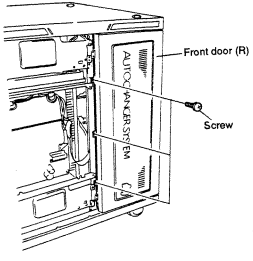


Fig. 8

3) Open it towards you.
Note : Use the service guide (quick reference to error codes, etc.) attached on the inside of the front door (R).
The secondary side fuse of the power supply can also be checked in this condition.

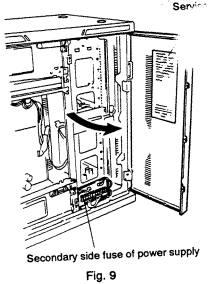


Fig. 9

3.5 REMOVING OF SIDE PANEL

Remove the six screws on the left and right respectively with a hexagonal wrench (3 mm across), and remove the side panel.

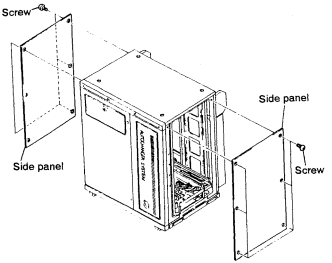


Fig. 10

3.6 REMOVAL OF REAR PANEL

1) Remove the twelve screws (black) securing the metal fittings of the handle and the protector and remove these metal fittings, handle pipe and protector.

Note : As these parts are heavy, be careful not to drop them on you.

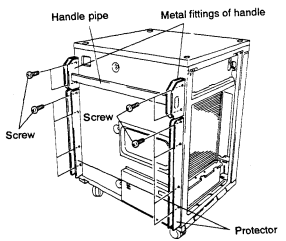
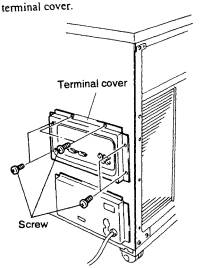


Fig. 11

2) Remove the six screws holding the terminal cover and open it. Pull out the connector, open the cord holder and remove the terminal cover.



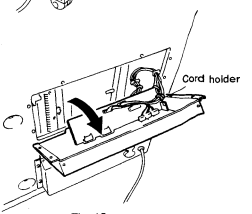


Fig. 12

3) Remove the three screws at the center and remove the rear panel.

Note : Be careful not to bend the hook for temporary securing.

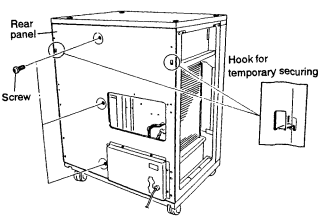


Fig. 13

3.7 REMOVAL OF UPPER PANEL

With the front doors (L), (R) open, remove the three screws securing the upper panel.
The upper panel can be removed by lifting it up.

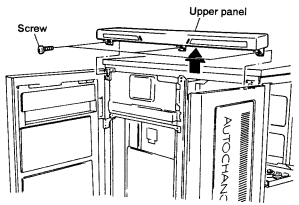


Fig. 14

3.8 REMOVAL OF FRONT DOORS (L), (R)

With the upper panel removed, the doors can be opened by opening them about 90 deg and lifting them up.

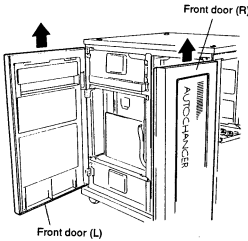


Fig. 15

3.9 CHECKING THE PRIMARY SIDE FUSE OF THE POWER SUPPLY

1) Remove the six screws of the power supply cover.
2) Remove the power supply cover.
* Four claws of the power supply cover (two at the bottom and one at each side) are inserted in the rear panel.

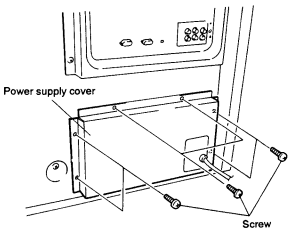


Fig.16

3) The primary side fuse of the power supply can be checked and replaced in this condition.
4) When removing the board, also remove the AC cord holder and the four screws at the top and bottom.

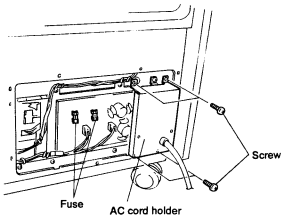


Fig.17

3.10 DRAWING OUT THE OUTER TRAY

When the outer tray does not open even if the power has been supplied, open it as follows.

1) Remove the rear panel.
2) While pressing the plunger in the direction of arrow Ⓐ push the outer tray in the direction of arrow Ⓑ. (The tray at the front will be pushed out slightly in this condition.)
3) Pull out the tray from the front.

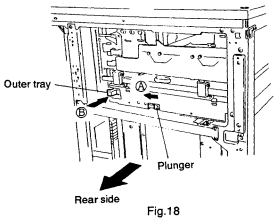


Fig.18

3.11 REMOVAL OF TRAY (L2)

1) Remove the ten screws ① and ② and remove the park stopper plate in the directions of arrows Ⓐ and Ⓒ.

Note : Use a magnetic driver, etc. so that the screws do not drop inside the unit.

2) Remove the tray (L2) in the direction of arrow Ⓑ.

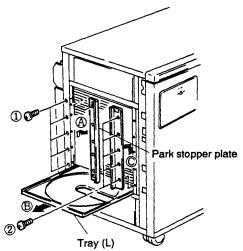


Fig. 19

3.12 CHECKING THE CLD PLAYER

1) Remove the player from the unit as shown in the figure below and place it on the unit.
2) The unit can be operated by removing the relay boards SCNS and SCNP from the player and connecting the connector from the unit.

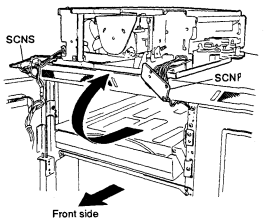


Fig. 20

3) Remove the two screws ① and open the board (VDEM unit).
4) Remove the three screws ② and remove the wiring stopper binding the cables.
5) Pull out the two boards (VDEM, FTSB).

Note : When returning the two boards to their original positions after checking, secure the cables, etc. properly. Also fold the three flat cables between VDEM and FTSB into the product properly.
(To prevent the tray from being hit.)

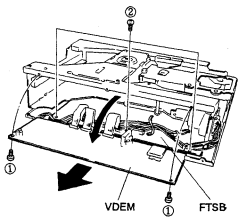


Fig. 21

4. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:

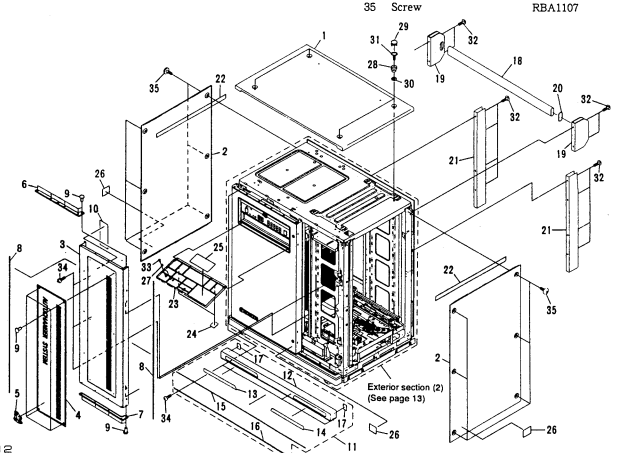
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙"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

4.1 EXTERIOR SECTION (1)

Parts List

Mark	No.	Description	Part No.
	1	Top plate	RMM1005
	2	Side panel	RNA1590
	3	Front door (R) assembly	RXA1494
	4	Graphic plate	RAH2091
	5	Karaoke-bird seal	RAX1005
	6	Door mold (RT)	RAP1016
	7	Door mold (RU)	RAP1017
	8	Packing seal (D)	REB1205
	9	Rivet (plastic)	RBM – 003
	10	Service guide	RRW1107
	11	Upper panel assembly (KUC type)	RXX1583
		Upper panel assembly (SEM type)	RXX1585
NSP	12	Upper panel	RNT1169
	13	Mirror seal (L) (KUC type)	RAX1003
		Gray seal (L) (SEM type)	RAX1007
	14	Mirror seal (R) (KUC type)	RAX1004
		Gray seal (R) (SEM type)	RAX1008
	15	Silver tape (2.5)	RAX1006

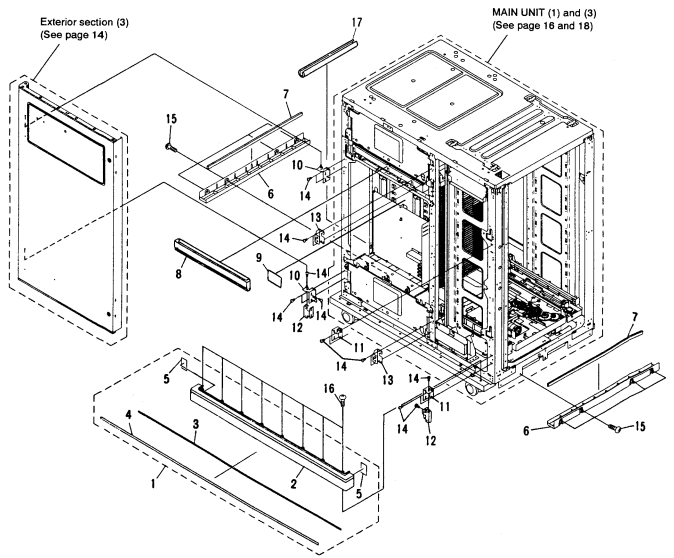
Mark	No.	Description	Part No.
NSP	16	Packing seal (E)	REB1208
NSP	17	Damp sheet	VEX1021
NSP	18	Handle pipe	RLA1178
NSP	19	Metal fittings of handle	RNE1574
NSP	20	Cushion	DEB1016
NSP	21	Protector	RNE1577
NSP	22	Packing seal (B)	REB1203
	23	Sealing door	RNK1842
	24	Plate	REC1179
	25	Guide label	RRW1117
NSP	26	Caution label (KUC type)	VRW – 235
	27	Door lens	RNK1838
NSP	28	Holder A	DMA – 105
NSP	29	Holder B	DMA – 106
	30	Washer	DNH – 104
	31	Screw	BMZ60P140FMC
	32	Screw	AMZ60P100FZK
	33	Screw	BBZ20P060FZK
	34	Screw	BBZ30P080FMC
	35	Screw	RBA1107



4.2 EXTERIOR SECTION (2)

Parts List

Mark	No.	Description	Part No.
	1	Front skirt assembly	RXX1584
NSP	2	Front skirt	RNT1170
NSP	3	Packing seal (E)	REB1208
	4	Silver tape (6.5)	RAX1002
NSP	5	Damp sheet	VEX1021
	6	Side skirt	RNK1840
	7	Packing seal (A)	REB1202
	8	Tray name plate	RNK1841
NSP	9	Label	VRW – 348
NSP	10	Door hinge (L) assembly	RXA1495
NSP	11	Door hinge (R) assembly	RXA1496
NSP	12	Hinge reinforced plate	RNE1542
NSP	13	Door holder assembly	RXA1497
	14	Screw	BBZ30P080FMC
	15	Screw	BBZ40P080FZK
	16	Screw	BMZ40P350FZK
NSP	17	Protect tube	REC1181

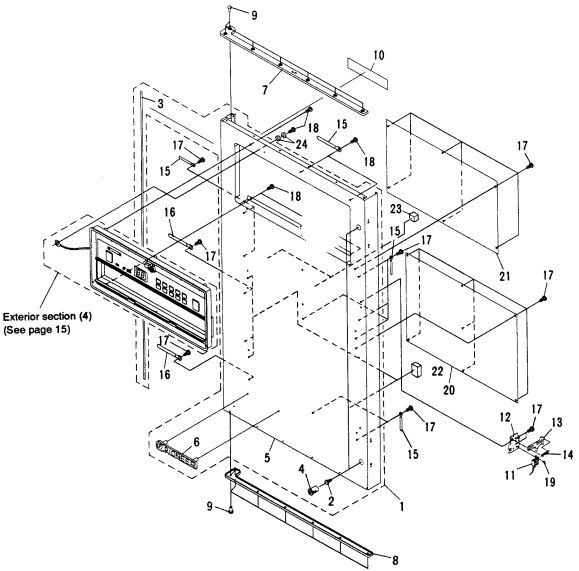


4.3 EXTERIOR SECTION (3)

Parts List

Mark	No.	Description	Part No.
	1	Front door (L) assembly (KUC type)	RXX1549
		Front door (L) assembly (SEM type)	RXX1550
	2	Screw	RBA1103
	3	Packing seal (D)	REB1205
	4	Hole escutcheon	RNK1839
NSP	5	Front door (L) assembly (KUC type)	RXA1493
NSP		Front door (L) assembly (SEM type)	RXA1507
NSP	6	Badge	SAM – 451
	7	Door mold (LT)	RAP1014
	8	Door mold (LU)	RAP1015
	9	Set (plastic)	RBM – 003
NSP	10	Label (KUC type)	ORW1069

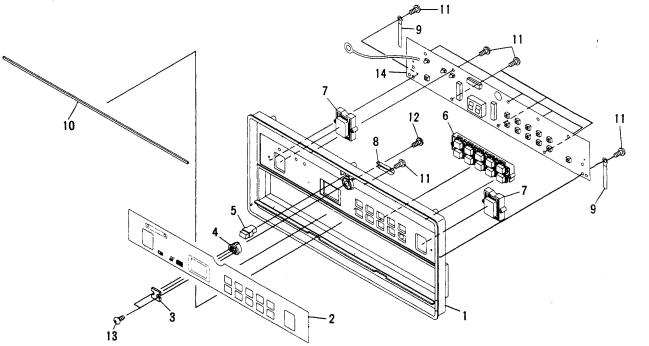
Mark	No.	Description	Part No.
	11	Lever switch	DSK1003
NSP	12	Door switch holder	RNE1550
NSP	13	Door switch arm	RNE1551
	14	Door switch spring	RBH1327
	15	Cord clamper	RNH – 184
NSP	16	Cord clamper	DNF1128
	17	Screw	BPZ30P08JFMC
	18	Screw	BPZ30P08JFCU
	19	Screw	BMZ30P060FMC
⊙	20	VAPB unit (KUC type)	RWG1006
⊙		VAPB unit (SEM type)	RWG1007
⊙	21	SYSB unit	RWZ2769
NSP	22	Rubber spacer (A)	REB1057
NSP	23	Rubber spacer	REB1124
	24	Washer	WB30FMC



4.4 EXTERIOR SECTION (4)

Parts List

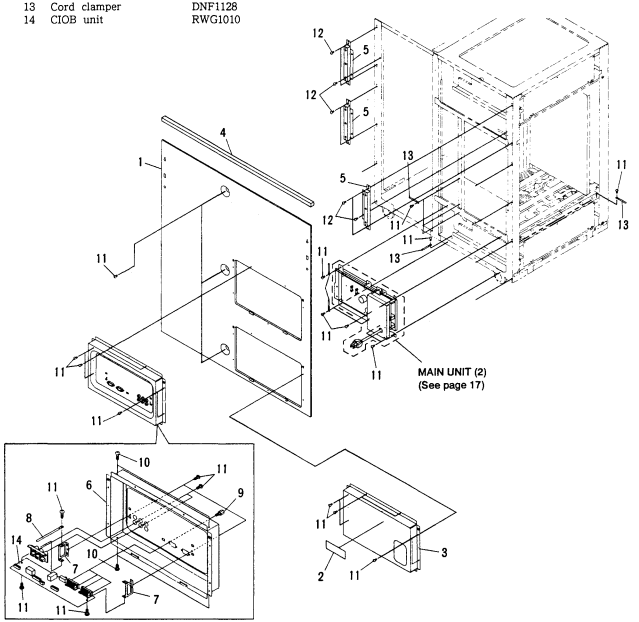
Mark	No.	Description	Part No.
	1	Operation panel	RNT1144
	2	Operation plate	RAH2093
	3	Door lock plate	RNE1564
	4	Door lock holder	RNK1852
	5	Latch	DXA1356
	6	Ten key	RAC1723
	7	One key	RAC1724
	8	Door lock spring	RBK1047
	9	Cord clamper	RNH – 184
	10	Door packing	REB1206
	11	Screw	BPZ30P080FCU
	12	Screw	IPZ30P080FMC
	13	Screw	BBZ20P060FZK
⊙	14	DISP unit	RWZ2770



4.5 MAIN UNIT (1)

Parts List

Mark	No.	Description	Part No.
NSP	1	Rear panel	RNA1591
NSP	2	Caution label (F) (SEM type)	VRW – 328
NSP	3	Power cover (KUC type)	RNA1594
NSP		Powerr cover (SEM type)	RNA1608
NSP	4	Packing seal (C)	REB1204
NSP	5	Rear support	RNE1533
NSP	6	Terminal cover	RNA1593
NSP	7	PCB holder	VNE1741
	8	Cord clamper	RNH – 184
	9	Joint bolt	DBA1038
	10	Screw	BBZ30P060FZK
	11	Screw	BBZ30P080FMC
	12	Screw	BBZ40P080FZK
	13	Cord clamper	DNF1128
⊙	14	CIOB unit	RWG1010

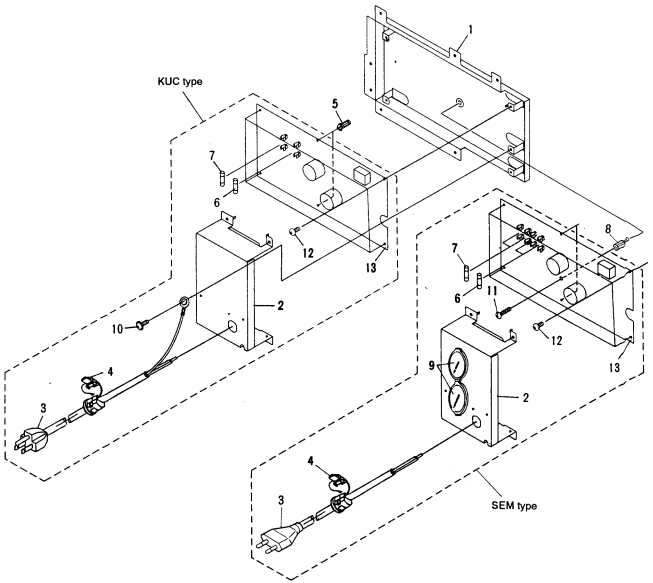


4.6 MAIN UNIT (2)

Parts List

Mark	No.	Description	Part No.
NSP	1	AC board holder	RNE1534
NSP	2	AC cord holder (KUC type)	RNA1592
NSP		AC cord holder (SEM type)	RNA1607
	3	Power cord with plug (KUC type)	DDG1025
		Power cord with plug (SEM type)	RDG1021
	4	AC cord stopper (KUC type)	VEC – 201
		Strain relief (SEM type)	CM – 22B
NSP	5	PCB support	VEC1266

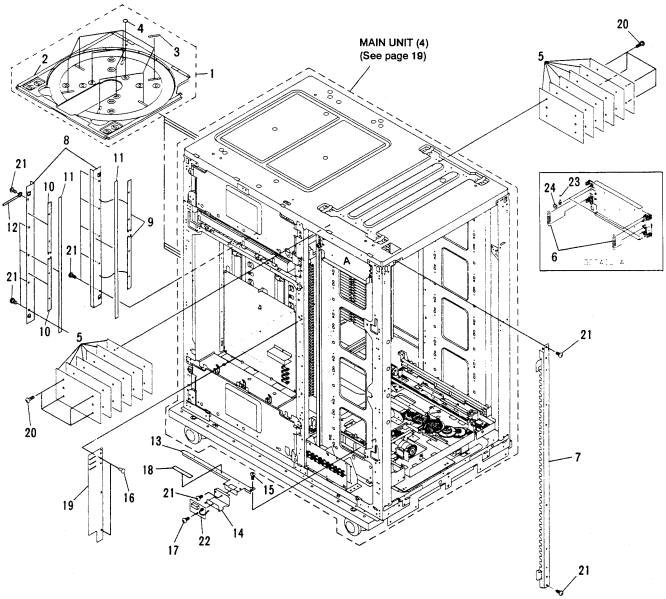
Mark	No.	Description	Part No.
⚠	6	FU101 (500mA) Fuse (KUC type)	REC – 077
⚠		FU101, 102 (T160mA) Fuse (SEM type)	REK – 092
⚠	7	FU103 (1.6A) Fuse (KUC type)	REK – 074
⚠		FU103, 104 (T500mA) Fuse (SEM type)	REK – 097
	8	Screw grommet (SEM type)	DEC1013
	9	Voltage selector (SEM type)	AKX – 507
	10	Screw	PMB40P08FMC
	11	Screw	BPZ30P250FMC
	12	Screw	BBZ30P08FMC
NSP	13	PSPB unit (KUC type)	RWZ2754
NSP		PSPB unit (SEM type)	RWZ2773



4.7 MAIN UNIT (3)

Parts List

Mark	No.	Description	Part No.
	1	Tray (L2) assembly	RXX1581
NSP	2	Tray (L2)	RNK1853
	3	Disc pad	REC1190
	4	LD pad	VEC1472
NSP	5	Balance weight	VNE1692
	6	Wire spring	VBH1171
NSP	7	Encode angle	VNE1689
NSP	8	Park stopper plate	RNE1521
NSP	9	Park spacer	REC1140
	10	Park spacer (F)	REC1177
NSP	11	Park cushion (B)	REB1211
	12	Cord clamper	RNH – 184
NSP	13	Front arm	VNE1720
NSP	14	Indicator bracket	RNE1554
	15	Rivet (plastic)	RBM – 003
	16	Rivet (plastic)	VEC1178
	17	Rivet (plastic)	RBM – 003
NSP	18	Caution label	RRW1115
NSP	19	Cable slit	REC1129
	20	Screw	BBZ30P140FMC
	21	Screw	BBZ30P080FMC
⊙	22	INDB unit	RWZ2764
	23	Wire assembly (C)	RXA1498
	24	Washer	WT26D047D050

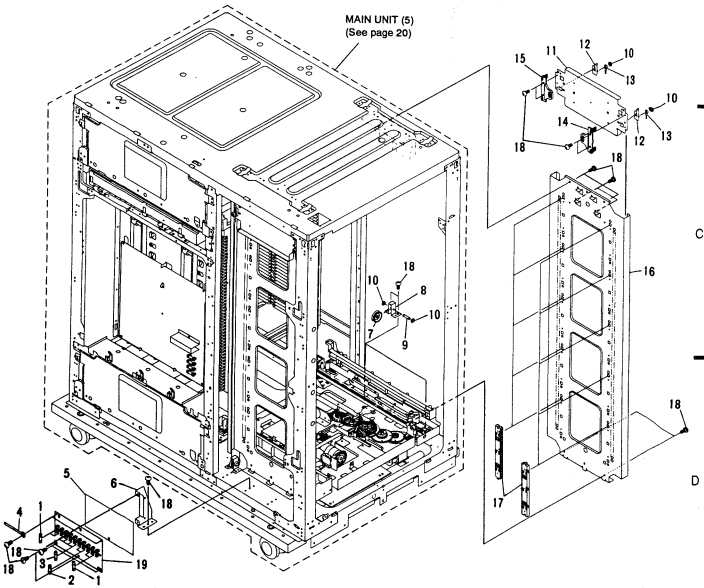


4.8 MAIN UNIT (4)

Parts List

Mark	No.	Description	Part No.
⚠	1	FU105, 106, 109, 110 (1.6A) Fuse (KUC type)	REK – 074
⚠		FU105, 106, 109, 110 (T1.6A) Fuse (SEM type)	REK – 102
⚠	2	FU107, 108 (500mA) Fuse (KUC type)	REK – 077
⚠		FU107, 108 (T500mA) Fuse (SEM type)	REK – 097
⚠	3	FU111 – 114 (3.15A) Fuse (KUC type)	REK – 083
⚠		FU111 – 114 (T3.15A) Fuse (SEM type)	REK – 105
	4	Cord clamper	RNH – 184
NSP	5	Fuse cover	REC1167
NSP	6	Fuse board holder	RNE1529
	7	Wire pulley	VNL1428
NSP	8	Pulley holder	VNE1688
NSP	9	Wire pulley shaft	VLL1412
	10	Washer	WT26D047D050

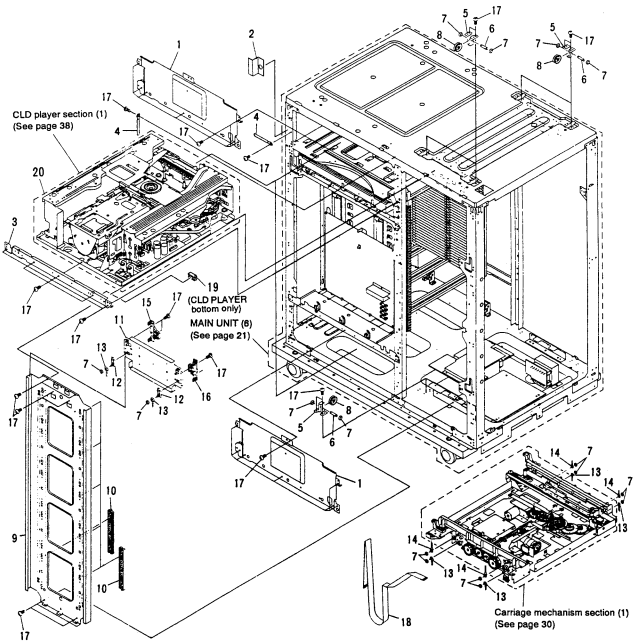
Mark	No.	Description	Part No.
NSP	11	Weight holder assembly	VXA1714
NSP	12	Wire hook assembly	VXA1715
	13	Wire assembly (B)	VXA1717
	14	Balancer guide (L)	VNL1429
	15	Balancer guide (R)	VNL1430
NSP	16	Side rail	VNE1686
	17	Rack plate	VNL1427
	18	Screw	BBZ30P080FMC
NSP	19	FUSB unit (KUC type)	RWZ2779
NSP		FUSB unit (SEM type)	RWZ2778



4.9 MAIN UNIT (5)

Parts List

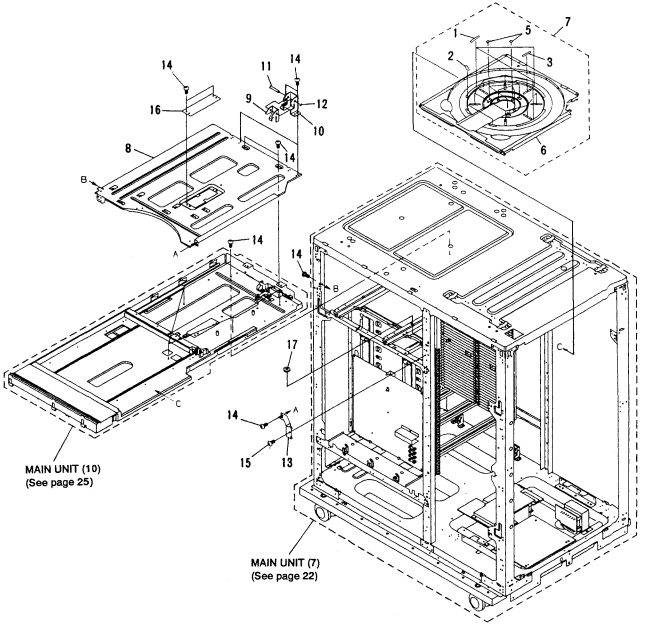
Mark	No.	Description	Part No.
NSP	1	Shield plate	RNE1544
NSP	2	Edge cover	REC1173
NSP	3	PL stay	RNE1547
	4	Cord clamper	RNH – 184
NSP	5	Pulley holder	VNE1688
NSP	6	Wire pulley shaft	VLL1412
	7	Washer	WT26D047D050
	8	Wire pulley	VNL1428
NSP	9	Side rail	VNE1686
	10	Rack plate	VNL1427
NSP	11	Weight holder assembly	VXA1714
NSP	12	Wire hook assembly	VXA1715
	13	Wire asssembly (B)	VXA1717
	14	Wire assembly (C)	RXA1498
	15	Balancer guide (L)	VNL1429
	16	Balancer guide (R)	VNL1430
	17	Screw	BBZ30P080FMC
	18	Lead card (17P)	VDA1383
NSP	19	Edging (B) (CLD PLAYER bottom only)	REC1099
⊙	20	CLD player unit (KUC type)	RXX1545
⊙		CLD player unit (SEM type)	RXX1546



4.10 MAIN UNIT (6)

Parts List

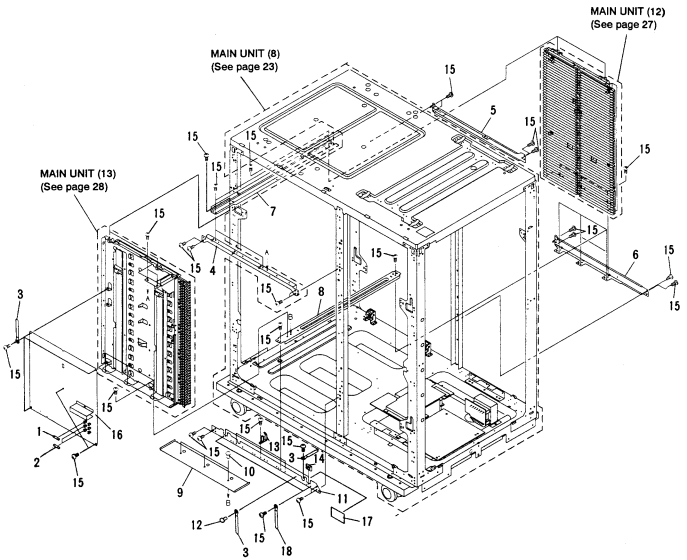
Mark	No.	Description	Part No.
	1	Disc pad (L)	VEC1191
	2	Disc pad (B)	VEC1379
	3	Disc pad (C)	VEC1380
	4	.....	
	5	Rubber sheet (D)	VEB1131
NSP	6	Tray (C)	RNK1821
	7	Tray (C) assembly	RXX1587
NSP	8	PL mount holder	RNE1545
NSP	9	PL lock arm	RNE1548
NSP	10	PL lock holder	RNE1549
NSP	11	PL lock shaft	RLA1181
	12	E ring	YE25FUC
NSP	13	Mechanism support	RNE1546
	14	Screw	BBZ30P060FZK
	15	Screw	BBZ30P080FMC
NSP	16	DSNB unit	RWZ2433
	17	Fiber washer	RBF1045



4.11 MAIN UNIT (7)

Parts List

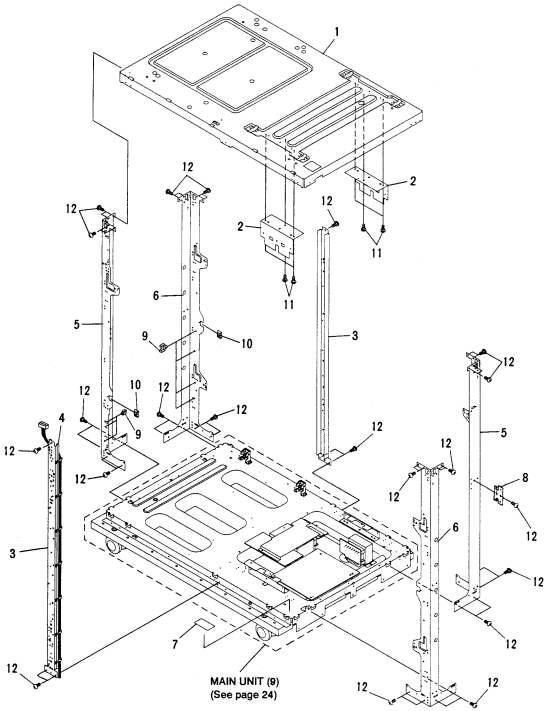
Mark	No.	Description	Part No.
⚠	1	FU115 (2.5A) Fuse (KUC type)	REK – 082
⚠		FU115 (T1.6A) Fuse (SEM type)	REK – 102
⚠	2	FU116, 117 (2.5A) Fuse (KUC type)	REK – 082
⚠		FU116, 117 (T1.6A) Fuse (SEM type)	REK – 102
	3	Cord clamper	RNH – 184
NSP	4	Front stay	VNE1701
NSP	5	Rear stay (U)	VNE1702
NSP	6	Rear stay (L)	VNE1703
NSP	7	Support stay (U)	VNE1706
NSP	8	Support stay (L)	RNE1525
NSP	9	Protect sheet	REC1152
	10	Rivet (plastic)	RBM – 003
NSP	11	Front stay (L)	RNE1532
	12	Rivet (plastic)	VEC – 179
NSP	13	Wire clip	REC1155
NSP	14	Edge guard (B)	DEC1144
	15	Screw	BBZ30P080FMC
⊙	16	CMEC unit (KUC type)	RWG1008
⊙		CMEC unit (SEM type)	RWG1009
NSP	17	Protect sheet (B)	REC1183
	18	Cord clamper	DNF1128



4.12 MAIN UNIT (8)

Parts List

Mark	No.	Description	Part No.
NSP	1	Upper chassis	RNB1078
NSP	2	Upper bracket	RNE1526
NSP	3	Center angle	VNE1700
NSP	4	Edging (F)	REC1176
NSP	5	Corner angle (A)	RNE1530
NSP	6	Corner angle (B)	RNE1531
NSP	7	Fuse caution label (KUC type)	RRW – 111
NSP	8	Stopper plate	RNE1575
NSP	9	Wire clip (B)	VEC1381
NSP	10	Edge guard (B)	DEC1144
	11	Screw	BBZ30P060FZK
	12	Screw	BBZ30P080FMC

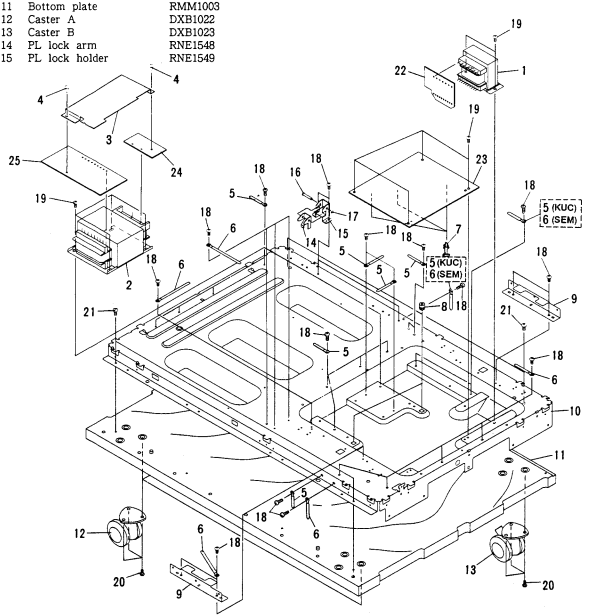


4.13 MAIN UNIT (9)

Parts List

Mark	No.	Description	Part No.
⚠	1	T101 SUB transformer (KUC type)	RTT1210
⚠		T101 SUB transformer (SEM type)	RTT1212
⚠	2	T102 MAIN transformer (KUC type)	RTT1209
⚠		T102 MAIN transformer (SEM type)	RTT1211
NSP	3	Transformer sheet	REC1157
	4	Rivet (plastic)	RBM – 003
	5	Cord clamper	RNH – 184
NSP	6	Cord clamper	DNF1128
NSP	7	Card spacer	REC1156
NSP	8	PCB support	REC1105
NSP	9	Side rail bracket	VNE1687
NSP	10	Under chassis assembly	RXA1492
NSP	11	Bottom plate	RMM1003
	12	Caster A	DXB1022
	13	Caster B	DXB1023
NSP	14	PL lock arm	RNE1548
NSP	15	PL lock holder	RNE1549

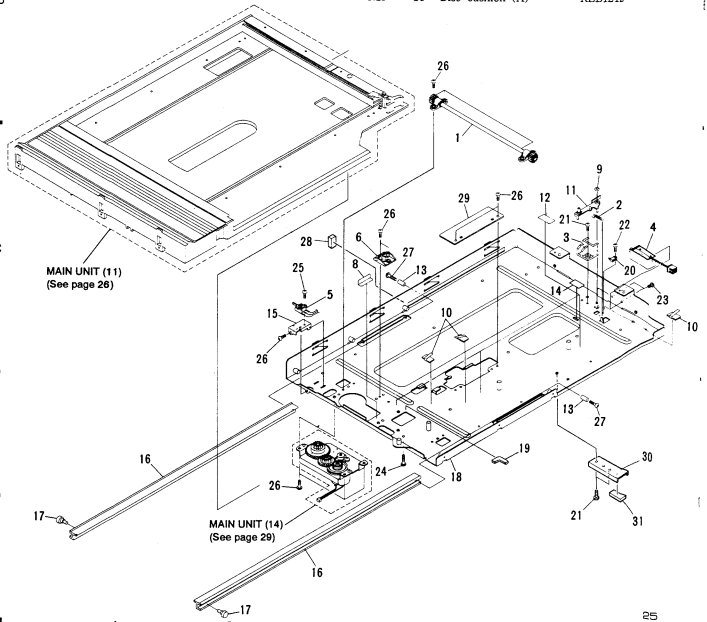
Mark	No.	Description	Part No.
NSP	16	PL lock shaft	RLA1181
	17	E ring	YE25FUC
	18	Screw	BBZ30P080FMC
	19	Screw	BBZ40P080FZK
	20	Screw	PMA60P250FMC
	21	Screw	REA1105
NSP	22	SBTB unit (KUC type)	RWZ2756
NSP		SBTB unit (SEM type)	RWZ2775
⊙	23	PSSB unit (KUC type)	RWZ2755
⊙		PSSB unit (SEM type)	RWZ2774
NSP	24	MTPB unit (KUC type)	RWZ2757
NSP		MTPB unit (SEM type)	RWZ2776
	25	MTSB unit (KUC type)	RWZ2758
		MTSB unit (SEM type)	RWZ2777



4.14 MAIN UNIT (10)

Parts List

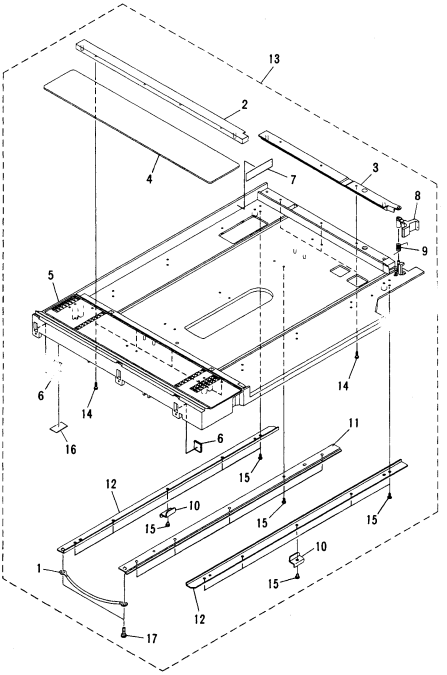
Mark	No.	Description	Part No.
	1	Outer synchro gear assembly	VXA1726
	2	Lock spring	RBH1310
	3	Outer stopper	VNL1474
	4	Solenoid	RXP1018
	5	Lever switch	DSK1003
	6	Outer guide	RNK1797
	7	·····	
	8	Gear cover (C)	REC1132
	9	Washer	WT21D040D050
	10	Cord keep	DNH1285
NSP	11	Outer lock arm assembly	RXA1522
NSP	12	Mechanism sheet	VEX1024
	13	Outer collar	RLP1046
NSP	14	Outer spacer	REC1175
NSP	15	Switch bracket	RNE1495
NSP	16	Slide rail	RNG1053
NSP	17	Rail pin	RLA1175
NSP	18	Outer base assembly	RXA1523
	19	Edge guard	DEC1317
	20	Slide switch	VSK1008
	21	Screw	BBZ30P080FMC
	22	Screw	PMZ20P050FMC
	23	Screw	BMZ26P030FMC
	24	Screw	BCZ30P120FMC
	25	Screw	BBZ26P060FMC
	26	Screw	BBZ30P060FZK
	27	Screw	PMZ30P120FMC
NSP	28	Outer cushion (B)	REC1124
NSP	29	DSNA unit	RWZ2432
NSP	30	Disc guard (A)	RNE1578
NSP	31	Disc cushion (A)	REB1212



4.15 MAIN UNIT (11)

Parts List

Mark	No.	Description	Part No.
NSP	1	Earth lead unit	XDF – 504
	2	Tray cover (F)	RNL1002
	3	Tray cover (R)	RNL1003
	4	Tray caution plate	RAH2105
NSP	5	Outer tray	VNK1883
NSP	6	Outer cushion (C)	REB1196
NSP	7	Outer cushion (D)	REB1210
	8	Outer stopper (R)	VNL1478
	9	Stopper spring (R)	RBH1308
NSP	10	Rail stopper	RNE1505
NSP	11	Guide plate (A)	RNE1494
NSP	12	Guide plate (P)	VNE1744
	13	Outer tray assembly	RXX1558
	14	Screw	BBZ30P080FMC
	15	Screw	BPZ30P060FCU
	16	Mechanism sheet	VEX1024
	17	Screw	BBZ30P080FZK

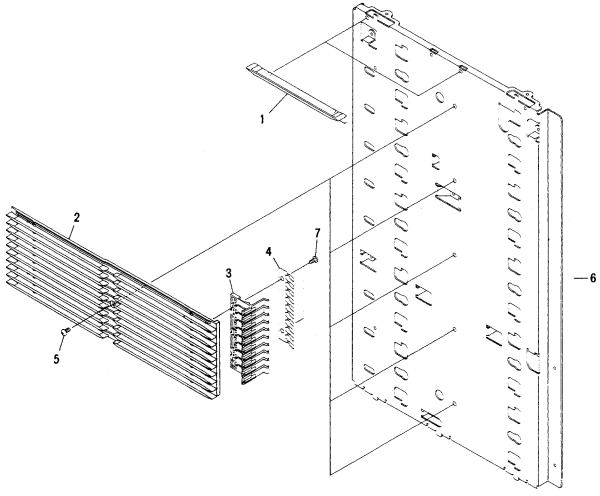


4.16 MAIN UNIT (12)

Parts List

Mark	No.	Description	Part No.
	1	Parts top guide	RNK1752
	2	Parts guide	VNL1418
	3	Parts stopper (R)	VNL1473
	4	Parts stopper spring	RBK1041
	5	.....	

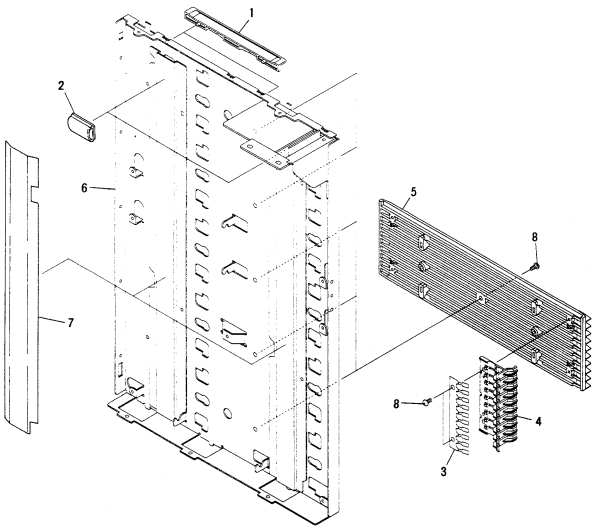
Mark	No.	Description	Part No.
NSP	6	Side plate (R) assembly	RXA1457
	7	Screw	BBZ30P080FMC



4.17 MAIN UNIT (13)

Parts List

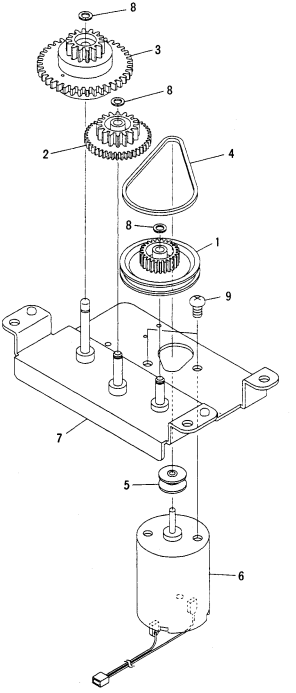
Mark	No.	Description	Part No.
	1	Park top guide	RNK1752
	2	Shell clip	DEC1184
	3	Park stopper spring	RBK1041
	4	Park stopper (F)	VNL1472
	5	Park guide	VNL1418
NSP	6	Side plate (F) assembly	RXA1473
NSP	7	Insulation sheet (B)	REC1121
	8	Screw	BBZ30P080FMC



4.18 MAIN UNIT (14)

Parts List

Mark	No.	Description	Part No.
	1	Outer gear (A)	VNL1475
	2	Outer gear (B)	VNL1476
	3	Outer gear (C)	VNL1477
	4	Belt	PEB1138
	5	Motor pulley	PNW1643
	6	Loading motor	VXM1048
NSP	7	Outer gear plate assembly	RXA1471
	8	Washer	WT26D047D50
	9	Screw	PMZ30P030FMC



4.19 CARRIAGE MECHANISM SECTION (1)

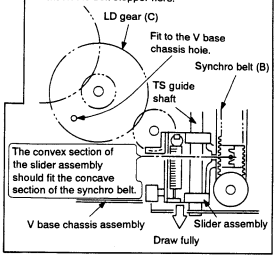
Parts List

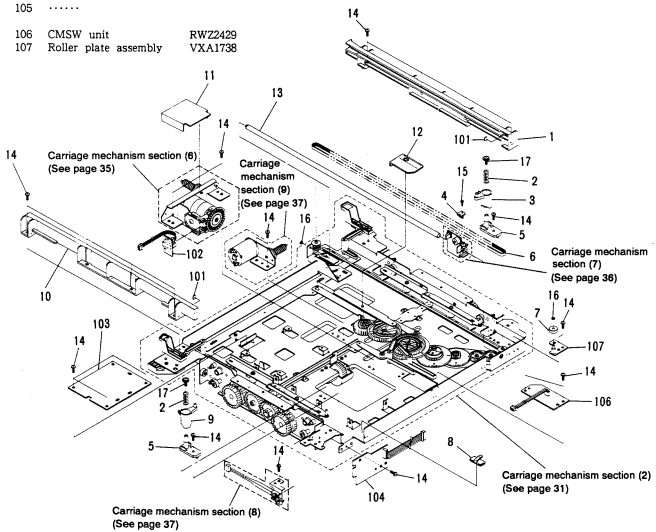
Mark	No.	Description	Part No.
	1	Tray guide (R)	VNL1432
	2	Pull arm spring	VBH1174
	3	Pull arm (R)	VNL1468
	4	Belt stopper	VNL1459
	5	Pull arm base	VNL1466
	6	Synchro belt (B)	VEB1171
	7	Belt roller	RLP1045
	8	Cord keep	REF1001
	9	Pull arm (F)	VNL1467
	10	Tray guide (F)	VNL1431
	11	Gear cover (A)	REC1130
	12	Gear cover (B)	REC1192
	13	TS guide shaft	RLA1168
	14	Screw	BBZ30P080FMC
	15	Screw	BBZ20P060FZK
	16	Washer	WT26D047D050
	17	Screw	IBZ30P080FMC
NSP	101	Tray guide cushion	REC1117
⊙	102	VMFG unit	RWZ2431
⊙	103	CNNB unit	RWZ2427
⊙	104	ENCB unit	RWZ2430
	105	·····	
⊙	106	CMSW unit	RWZ2429
NSP	107	Roller plate assembly	VXA1738

Attaching the Belt Stopper

Attach the belt stopper as follows.

1) Draw the slider assembly in the direction arrow fully.
2) Check that the LD gear (C) fits the hole of the V base chassis assembly.
3) If both steps 1) and 2) above are satisfied, the convex section of the slider assembly should fit the concave section of the synchro belt. Insert the belt stopper here.

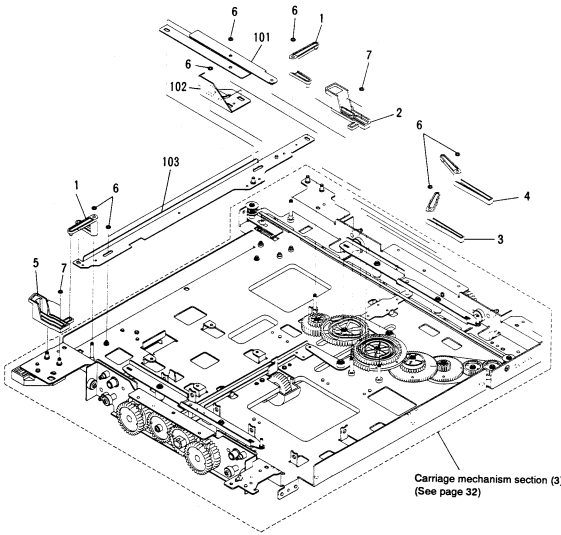




4.20 CARRIAGE MECHANISM SECTION (2)

Parts List

Mark	No.	Description	Part No.
	1	TS lever	VNL1461
	2	TS plate (R)	VNL1463
	3	Switch lever 1	VNL1464
	4	Switch lever 2	VNL1465
	5	TS plate (F)	VNL1462
	6	Washer	WT26D047D050
	7	E ring	YE25FUC
NSP	101	TS cam lever assembly	VXA1736
NSP	102	Slider stopper	VNE1732
NSP	103	TS joint plate assembly	VXA1737

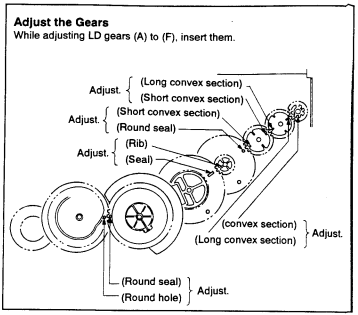


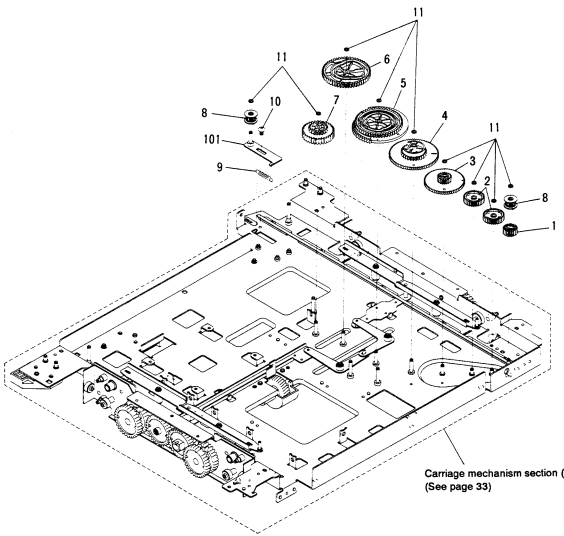
Carriage mechanism section (3)
(See page 32)

4.21 CARRIAGE MECHANISM SECTION (3)

Parts List

Mark	No.	Description	Part No.
	1	LD gear (A)	VNL1451
	2	LD gear (B)	VNL1452
	3	LDgear (C)	VNL1453
	4	LDgear (D)	VNL1454
	5	LDgear (E)	VNL1455
	6	LDgear (F)	VNL1456
	7	LDgear (G)	VNL1457
	8	LD pulley assembly	VXA1729
	9	Pulley base spring	VBH1172
	10	Screw	BBZ30P080FMC
	11	Washer	WT26D047D050
NSP	101	Pulley base assembly	VXA1730



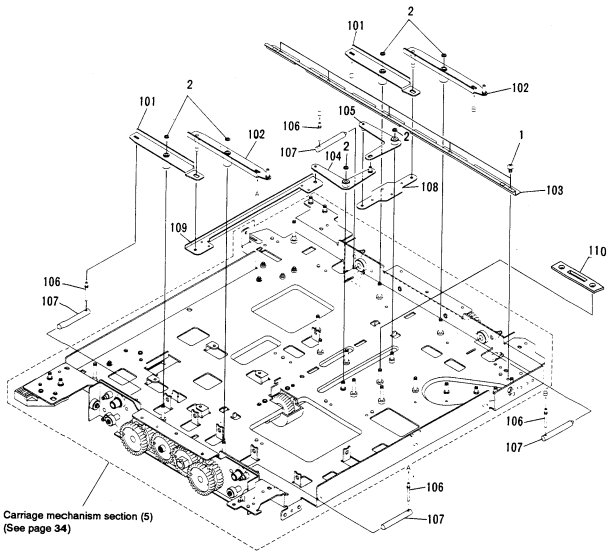


Carriage mechanism section (4)
(See page 33)

4.22 CARRIAGE MECHANISM SECTION (4)

Parts List

Mark	No.	Description	Part No.
	1	Screw	BBZ30P060FZK
	2	Washer	WT26D047D050
NSP	101	SP arm (L) assembly	VXA1734
NSP	102	SP arm (R) assembly	VXA1735
NSP	103	TS guide plate	VNE1722
NSP	104	SP cam lever (F) assembly	VXA1732
NSP	105	SP cam lever (R) assembly	VXA1733
NSP	106	Shaft pin	VLL1416
NSP	107	Lock shaft	VLL1415
NSP	108	SP joint plate (R)	VNE1727
NSP	109	SP joint plate (F)	VNE1726
NSP	110	LD spacer	RNE1582



Carriage mechanism section (5)
(See page 34)

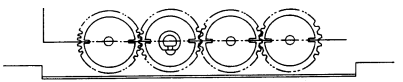
4.23 CARRIAGE MECHANISM SECTION (5)

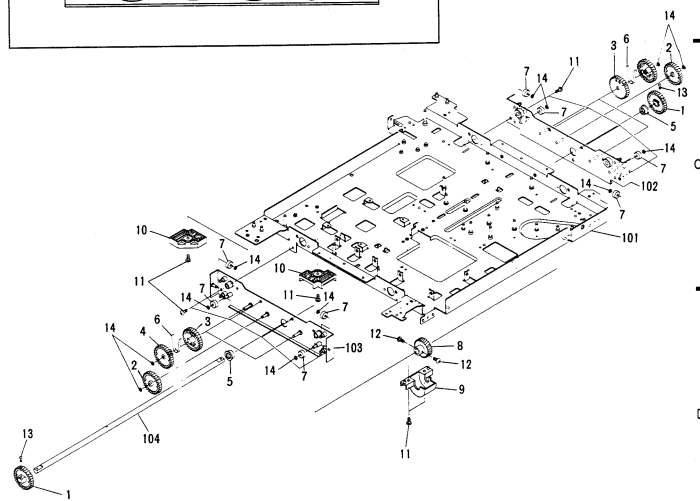
Parts List

Mark	No.	Description	Part No.
	1	UD gear (A)	VNL1446
	2	UD gear (B)	VNL1447
	3	UD gear (C)	VNL1448
	4	UD gear (D)	VNL1449
	5	UD shaft holder	VLL1414
	6	UD spring plate	VBK1030
	7	VB roller	RLP1043
	8	UD worm wheel	VNL1445
	9	UD thrust holder	VNL1441
	10	Cable holder	VNL1440
	11	Screw	BBZ30P080FMC
	12	Screw	PMH20P050FMC
	13	Screw	BMZ20P060FMC
	14	Washer	WT26D047D050
NSP	101	V base chassis assembly	VXA1711
NSP	102	Gear plate (R) assembly	VXA1713
NSP	103	Gear plate (F) assembly	VXA1712
NSP	104	UD synchro shaft	VLL1413

Adjusting the UD Gears

Adjust so that the convex sections inside the UD gears become a horizontal line and insert.



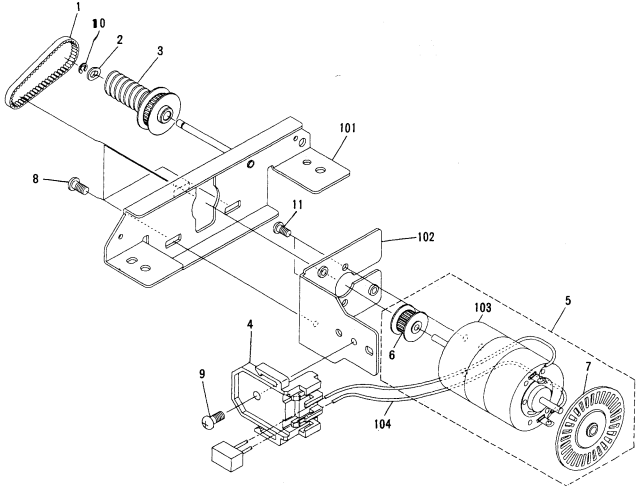


4.24 CARRIAGE MECHANISM SECTION (6)

Parts List

Mark	No.	Description	Part No.
	1	Synchro belt (A)	VEB1170
	2	Stainless washer	RBE1008
	3	Worm pulley assembly	VXA1703
	4	FG sensor holder	VNL1471
	5	UD motor assembly	RXX1438
	6	UDM pulley assembly	VXA1728
	7	UD sensor disc	VNL1444
	8	Screw	BMZ30P060FMC
	9	Screw	BBZ30P080FMC
	10	E ring	YE20FUC
	11	Screw	PMZ26P030FMC

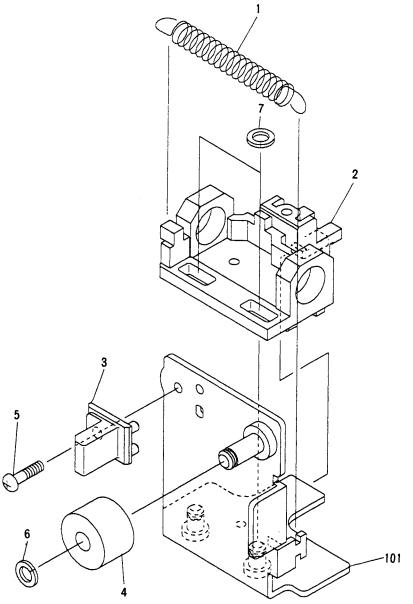
Mark	No.	Description	Part No.
NSP	101	UDM bracket assembly	VXA1718
NSP	102	UDM Plate	VNE1695
NSP	103	UD motor	VXM1047
NSP	104	Connector assembly 2P	RKP1427



4.25 CARRIAGE MECHANISM SECTION (7)

Parts List

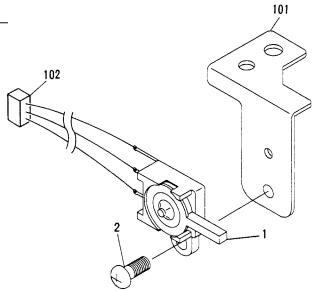
Mark	No.	Description	Part No.
	1	Slider spring	VBH1173
	2	Slide base	VNL1458
	3	Slide hook	VNL1460
	4	Slide roller	RLP1044
	5	Screw	BBZ20P060FZK
	6	Washer	WT26D047D050
	7	Washer	WT21D040D050
NSP	101	Slide plate assembly	VXA1731



4.26 CARRIAGE MECHANISM SECTION (8)

Parts List

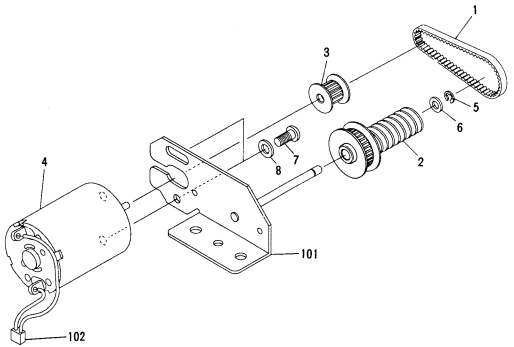
Mark	No.	Description	Part No.
	1	Lever switch	DSK1003
	2	Screw	BMZ26P060FMC
NSP	101	Switch bracket	VNE1735
NSP	102	Connector assembly 3P	RKP1425



4.27 CARRIAGE MECHANISM SECTION (9)

Parts List

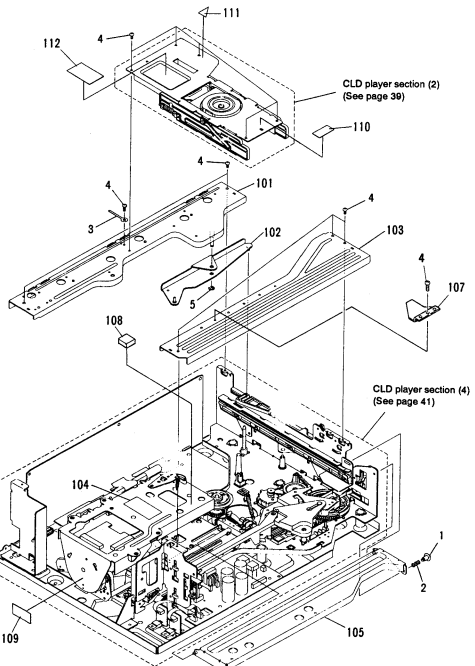
Mark	No.	Description	Part No.
	1	Synchro belt (A)	VEB1170
	2	Worm pulley assembly	VXA1703
	3	Motor pulley	VNL1051
	4	Loading motor	VXM1048
	5	E ring	YE20FUC
	6	Stainless washer	RBE1008
	7	Screw	PMZ30P030FMC
	8	Washer	WB30FMC
NSP	101	LDM bracket assembly	VXA1719
NSP	102	Connector assembly 2P	RKP1426



4.28 CLD PLAYER SECTION (1)

Parts List

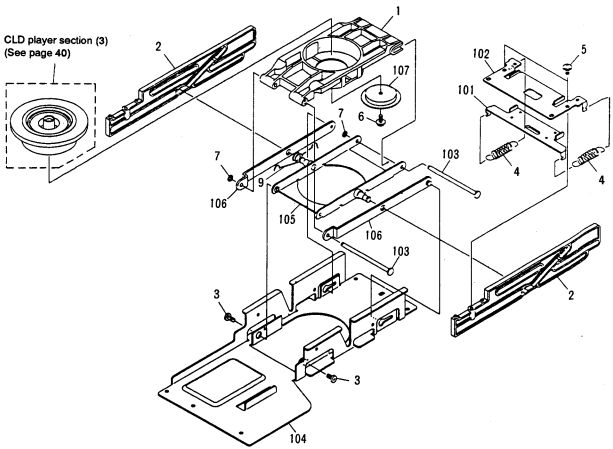
Mark	No.	Description	Part No.
	1	Screw (B)	VBA1008
	2	Arm spring	VBH1093
	3	Cord clamper	VNF – 069
	4	Screw	BBZ30P060FMC
	5	E ring	YE40FUC
NSP	101	Bridge (R) assembly	VXA1722
NSP	102	Clamper arm assembly	VXA1721
NSP	103	Bridge (L)	VNE1708
NSP	104	Caution label	VRW1073
NSP	105	Tray guide assembly	VXA1709
	106	.....	
NSP	107	Dump plate	RNE1590
NSP	108	Dump cushion	VEC1602
NSP	109	Caution label	RRW1104
NSP	110	Caution label HE (SEM type)	PRW1233
NSP	111	Caution label (G) (SEM type)	VRW – 329
NSP	112	Caution label (SEM type)	VRW1094



4.29 CLD PLAYER SECTION (2)

Parts List

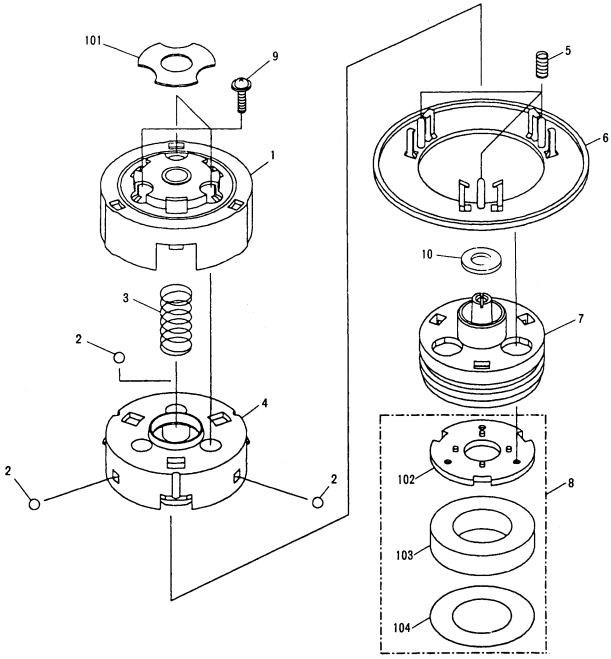
Mark	No.	Description	Part No.
	1	Clamper holder	VNL1305
	2	Clamp cam	VNL1527
	3	Pivot screw	VBA1022
	4	Limiter spring	VBH1168
	5	Screw	IPZ30P060FMC
	6	Screw	IMZ30P060FMC
	7	Washer	WT26D060D050
	8	------	
	9	Clamp torsion	RBH1321
NSP	101	Limiter plate	VNE1551
NSP	102	Slide plate	VNE1556
NSP	103	Clamp shaft	VLL1299
NSP	104	Center plate	VNE1562
NSP	105	Lever (B) assembly	VXA1504
NSP	106	Lever (A) assembly	VXA1503
NSP	107	Clamper head	VNE1546



4.30 CLD PLAYER SECTION (3)

Parts List

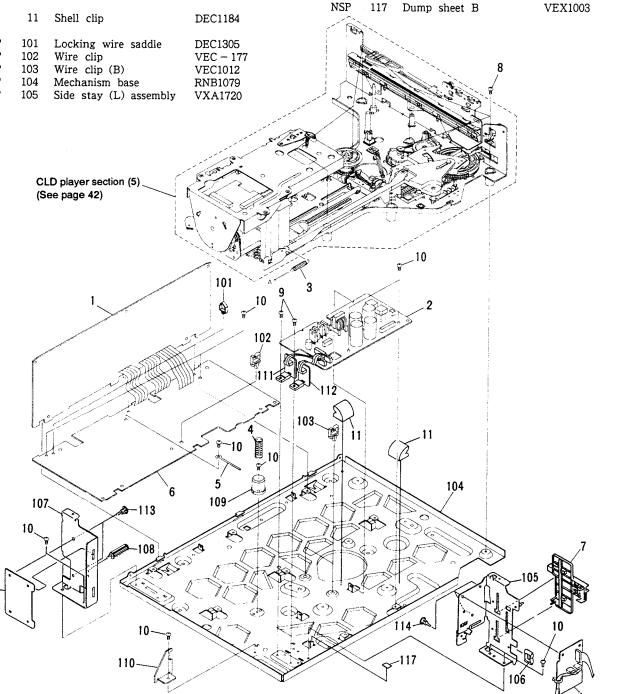
Mark	No.	Description	Part No.
	1	Clamper cover	VNL1363
	2	Steel ball	VNX1006
	3	Centering spring (B)	VBH1130
	4	Clamper base	VNL1364
	5	Clamper spring	VBH1153
	6	Disc clamper	VNL1362
	7	Centering hub (B)	VNL1435
	8	Magnet assembly – S	VXX1475
	9	Screw	AMZ20P040FMC
	10	Washer	WA60F115M160
NSP	101	Rubber cushion (A)	VEB1146
NSP	102	Clamper plate	VNE1549
NSP	103	Magnet	VMG1010
NSP	104	Gap sheet	VEC1561



4.31 CLD PLAYER SECTION (4)

Parts List

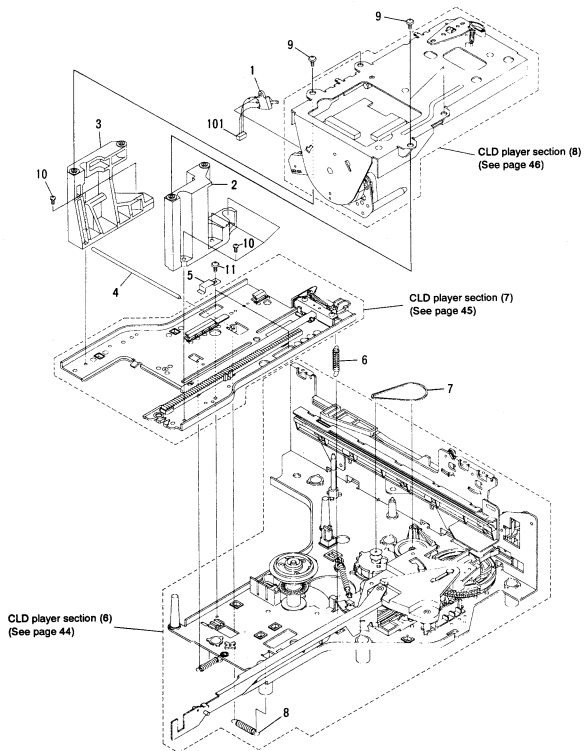
Mark	No.	Description	Part No.
⊙	1	VDEM unit (KUC type)	RWZ2751
⊙		VDEM unit (SEM type)	RWZ2766
NSP	2	SPDB unit	RWZ2745
	3	TB lock spring (C)	VBH1177
	4	Base spring	VBH1145
	5	Cord clamper	DNF1128
⊙	6	FTSB unit (KUC type)	RWZ2750
⊙		FTSB unit (SEM type)	RWZ2765
	7	Slide rail (C)	VNL1424
	8	Screw	IBZ30P080FMC
	9	Screw	BBZ30P080FMC
	10	Screw	BBZ30P060FMC
	11	Shell clip	DEC1184
NSP	101	Locking wire saddle	DEC1305
NSP	102	Wire clip	VEC－177
NSP	103	Wire clip (B)	VEC1012
NSP	104	Mechanism base	RNB1079
NSP	105	Side stay (L) assembly	VXA1720
NSP	106	Edge guard (B)	DEC1144
NSP	107	Side stay (R)	VNE1712
NSP	108	PCB post (29)	DEC1390
NSP	109	Spring guide	VNL1343
NSP	110	TB lock (A)	VNE1713
NSP	111	REGA unit	RWZ2746
NSP	112	REGB unit	RWZ2747
NSP	113	PCB holder	PNW1706
NSP	114	PCB holder	PNW2029
NSP	115	SCNS unit	RWZ2748
NSP	116	SCNP unit	RWZ2749
NSP	117	Dump sheet B	VEX1003



4.32 CLD PLAYER SECTION (5)

Parts List

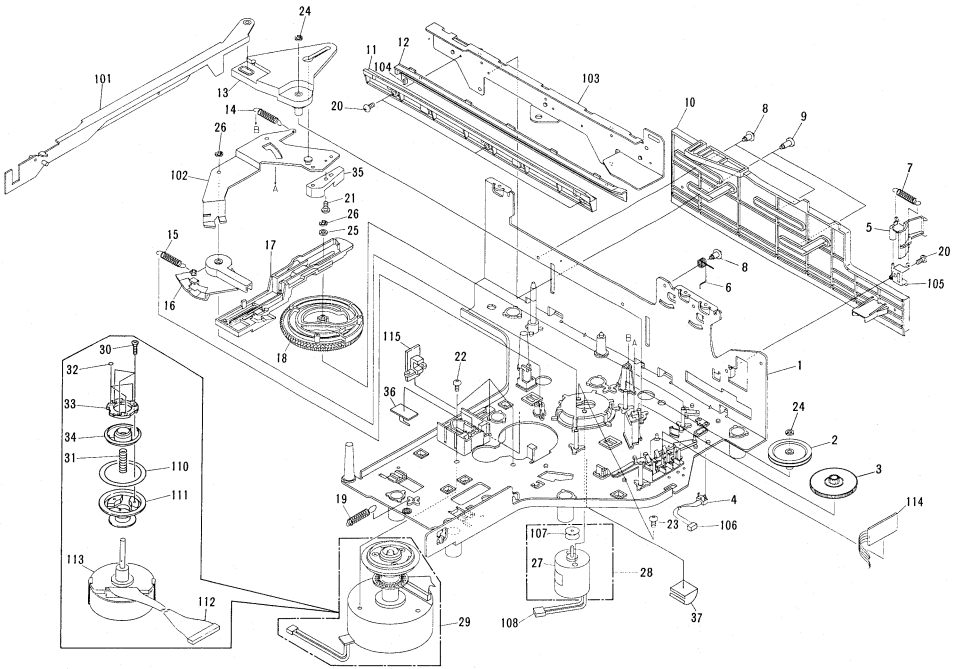
Mark	No.	Description	Part No.
	1	Lever switch	DSK1003
	2	Post (L)	VNL1415
	3	Post (R)	VNL1416
	4	Tilt shaft	VLL1326
	5	Plate spring	VBK1013
	6	Tilt spring	VBH1146
	7	Belt	PEB1013
	8	Thrust spring	VBH1163
	9	Screw	IPZ30P100FCU
	10	Screw	IBZ30P100FMC
	11	Screw	ABZ26P050FMC
NSP	101	Connector assembly 3P	RKP1440



4.33 CLD PLAYER SECTION (6)

Parts List

Mark	No.	Description	Part No.
⊙	1	Chassis assembly	VXA1704
	2	Gear pulley	VNL1249
	3	2 step gear	VNL1326
	4	Push switch	DSG1014
	5	Tray lock (B)	VNL1426
	6	Slide cam spring	VBH1180
	7	Tray lock spring (B)	VBH1175
	8	Screw (B)	VBA1008
	9	Screw (C)	VBA1015
	10	Slide cam	VNL1420
	11	Slide rail (A)	VNL1422
	12	Slide rail (B)	VNL1423
	13	TB lock (D)	VNL1433
	14	TB lockspring (F)	VBH1178
	15	Tilt cam spring	VBH1176
	16	Tilt cam	VNL1421
	17	Spring slanting cam	VNL1316
	18	Cam gear	VNL1350
	19	Radial spring	VBH1164
	20	Screw	BMZ26P060FMC
	21	Screw	BMZ26P040FMC
	22	Screw	PMA30P050FCU
	23	Screw	PMZ30P040FCU
	24	Washer	WT26D047D025
	25	Washer	WA32N080W050
	26	E ring	YE23FUC
	27	Loading motor	VXM1048
	28	Loading motor assembly	RXX1524
	29	Spindle motor assembly	RXX1544
	30	Screw	CBZ20P080FMC
	31	Centering spring	VBH1024
	32	Sheet	VEB1194
	33	Yoke plate A	VNE1835
	34	Centering hub (A)	VNT1020
	35	TB lock (E)	VNL1434
	36	Cord keep	DNH1285
	37	Shell clip	DEC1184
NSP	101	TB lock (C) assembly	VXA1723
NSP	102	TB lock (F) assembly	VXA1724
NSP	103	Slide plate	VNE1717
NSP	104	Slide rail cushion	REC1113
NSP	105	Lock holder assembly	VXA1710
NSP	106	Connector assembly 2P	RKP1438
NSP	107	Motor pulley	VLL1176
NSP	108	Connector assembly 2P	RKP1437
	109	·····	
NSP	110	Rubber sheet	VEB1035
NSP	111	Turn table assembly	RXA1519
NSP	112	Connector assembly 11P	RKP1513
	113	Spindle motor	RXM1056
NSP	114	MSWB unit (KUC type)	RWZ2753
NSP		MSWB unit (SEM type)	RWZ2768
NSP	115	SPFG unit (KUC type)	RWZ2752
NSP		SPFG unit (SEM type)	RWZ2767

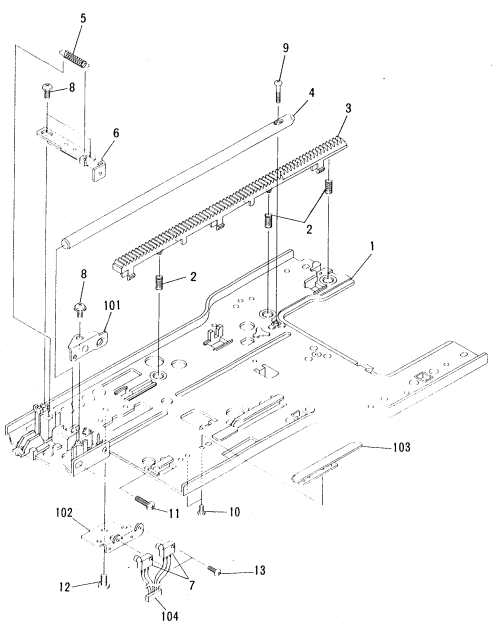


4.34 CLD PLAYER SECTION (7)

Parts List

Mark	No.	Description	Part No.
⊙	1	Tilt base (lower) assembly	VXA1798
	2	Rack spring	VBH1133
	3	Rack gear (lower)	VNL1346
	4	Carriage shaft (lower)	VLL1325
	5	S plate spring	VBH1149
	6	Shaft plate (lower) assembly	VXA1626
	7	Slide switch	OSH1001
	8	Screw	IPZ20P080FMC
	9	Screw	PPZ20P120FMC
	10	Screw	PMZ20P030FMC
	11	Screw	BMZ26P100FMC
	12	Screw	BBZ30P060FCC
	13	Screw	PMZ20P060FMC

Mark	No.	Description	Part No.
NSP	101	S plate clamper	VNE1621
NSP	102	SW holder	VNE1620
NSP	103	Roller shaft holder plate	VNE1666
NSP	104	Connector assembly 4P	RKP1439

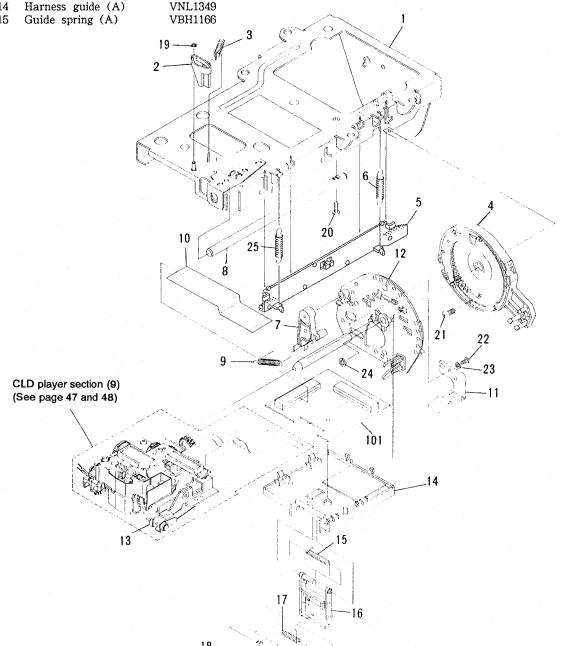


4.35 CLD PLAYER SECTION (8)

Parts List

Mark	No.	Description	Part No.
	1	Tilt base (upper) assembly	VXA1808
	2	SW lever	VNL1359
	3	SW lever spring	VBH1150
	4	Internal gear assembly	VXA1903
	5	Rack gear (upper)	VNL1417
	6	Rack spring (upper)	VBH1179
	7	Lock lever	VNL1351
	8	Carriage shaft (upper)	VLL1324
	9	Lever spring	RBH1323
	10	Flexible cable (22P)	RDD1236
	11	Lock plate	VBK1026
⊙	12	R plate assembly	VXA1579
⊙	13	Carriage assebly	VWT1079
	14	Harness guide (A)	VNL1349
	15	Guide spring (A)	VBH1166

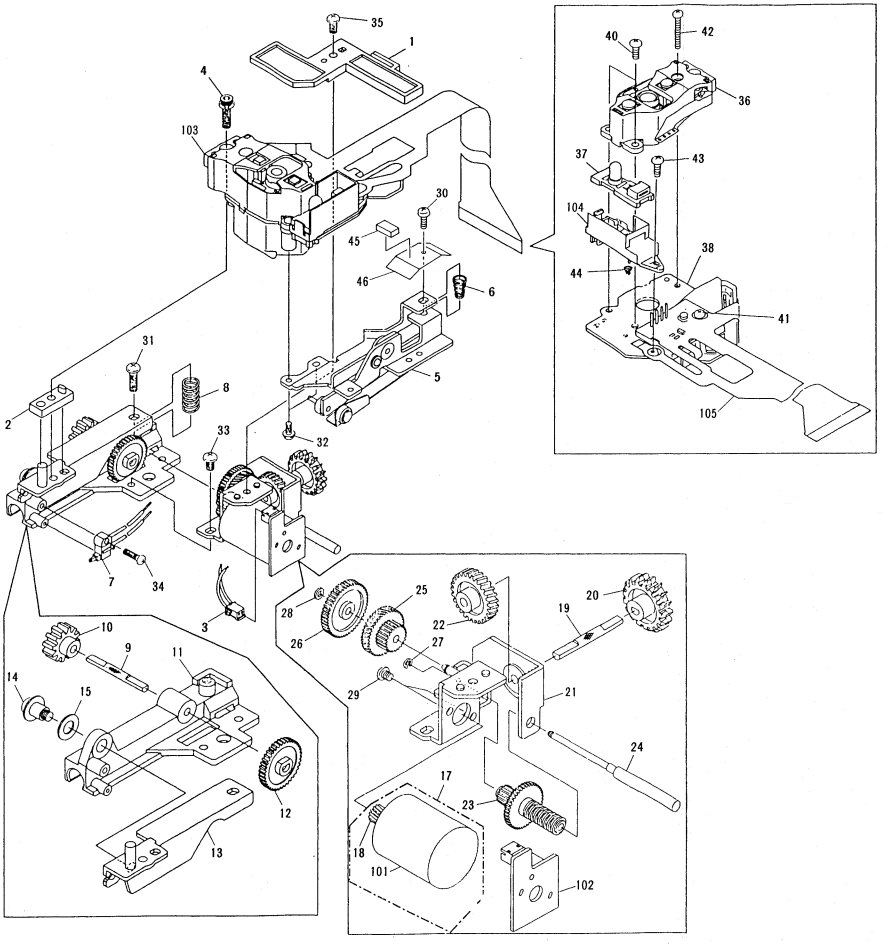
Mark	No.	Description	Part No.
	16	Harness guide (B)	VNL1408
	17	Guide spring (B)	VBH1155
	18	Harness guide (C)	VNL1361
	19	Washer	WT16D032D025
	20	Screw	PMZ20P120FMC
	21	Screw	BBZ26P050FCC
	22	Screw	IBZ20P040FZK
	23	Washer	WB20FMC
	24	Wahser	WT36D072D050
	25	Rack spring (IN)	RBH1322
NSP	101	CNNB assembly	VWG1194



4.36 CLD PLAYER SECTION (9)

Parts List

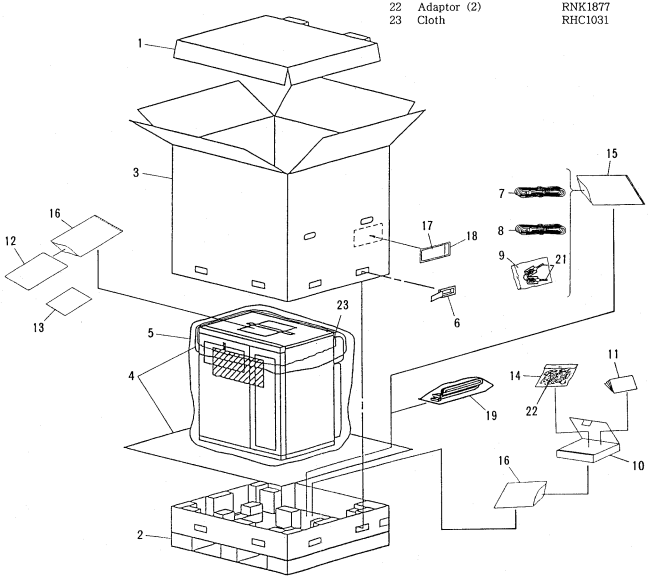
Mark	No.	Description	Part No.
	1	Flexible holder	VNL1358
	2	PU base	VNT1037
	3	Housing assembly (1.5MP2P)	VKP1852
	4	Bolt 2.6x10	VLL1192
	5	TAN base assembly	VXA1752
	6	TAN spring	VBH1151
	7	Slide switch (CD, B INSIDE)	VSK1008
	8	TRKG spring	VBH1204
	9	SL shaft (B)	VLL1334
	10	Gear (F)	VNL1356
	11	Carriage shaft holder	VNT1039
	12	Gear (E)	VNL1355
	13	PU plate assembly	VXA1583
	14	Screw	VLL – 183
	15	Washer	VEF – 027
	16	.....	
	17	Carriage motor assembly-S	VXX1537
	18	SL gear (A)	VNL1250
	19	SL shaft (C)	VLL1289
	20	Gear (G)	VNL1365
	21	Motor holder assembly	VXA1939
	22	Gear (H)	VNL1357
	23	Gear (C)	VNL1353
	24	SL shaft (A)	VLL1333
	25	Gear (B)	VNL1352
	26	Gear (D)	VNL1354
	27	E ring	YE12FUC
	28	Washer	WT17D034D050
	29	Screw	JGZ20P022FMC
	30	Screw	PMZ26P100FMC
	31	Screw	BMZ26P080FMC
	32	Screw	PMA20P040FMC
	33	Screw	PBZ26P040FMC
	34	Screw	PBZ20P070FCC
	35	Screw	BBZ26P050FMC
	36	Actuater assembly	VXX1551
	37	Sensor assembly	VEX1018
	38	Pre-pick up assembly	VXX1554
	39	.....	
	40	Screw	PMA20P060FMC
	41	Screw	PMA20P080FMC
	42	Screw	PMA20P140FMC
	43	Screw	BMZ20P060FMC
	44	Sensor spring	VBH1087
	45	Cushion	VEC1497
	46	Spacer	VEC1496
NSP	101	Slider motor	VXM1027
NSP	102	SLMB assembly	VNP1295
	103	Pick up assembly-S	VXX1679
	104	Sensor stay	VNH1037
NSP	105	HEAD assembly	VWV1178



4.37 PACKING

Parts List

Mark	No.	Description	Part No.
	1	Pad (U)	RHA1097
	2	Pad (L)	RHA1098
	3	Packing case (KUC type)	RHG1391
		Packing case (SEM type)	RHG1400
	4	Mirror mat	RHC1029
	5	Packing bag	RHL1013
	6	PP joint	AHG – 204
	7	Cord with plug (VIDEO)	DDE1014
	8	Cord with plug (AUDIO)	DDE1016
	9	key assembly	DXC1002
	10	Adaptor case	RHF1032
	11	Operating instructions (adaptor)	RRG1004
	12	Operating instructions (English) (KUC type)	RRB1122
		Operating instructions (English, French, German, Italian, Spanish) (SEM type)	RRE1066
	13	Sub instructions	RRG1005
NSP	14	Adaptor (2) assembly	RXA1524
NSP	15	Vinyl bag	ZZ1 – 029
NSP	16	Vinyl bag	VHL – 014
	17	Follow up card (KUC type)	DRY1032
	18	Vinyl bag (KUC type)	DHL1011
	19	9P D – Sub cord	RDE1033
	20	Serial label (KUC type)	RRW1113
	21	Key	DNK1698
	22	Adaptor (2)	RNK1877
	23	Cloth	RHC1031



5. SCHEMATIC AND PCB CONNECTIONS DIAGRAMS

Note: (Type 4)

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS:**
   Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: p:pF or μF unless otherwise noted.
   Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: m:mH or μH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   ⎕ : DC voltage (V) in PLAY mode unless otherwise noted.
   ⇨ mA or ← mA: DC current in PLAY mode unless otherwise noted.
   Value in ( ) is DC current in STOP mode.
7. **OTHERS:**
   - ➡ : Signal route.
   - ⊘ : Adjusting point.
   - ▼ (Red) : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SWITCHES** (Underline indicates switch position):

SYSB unit

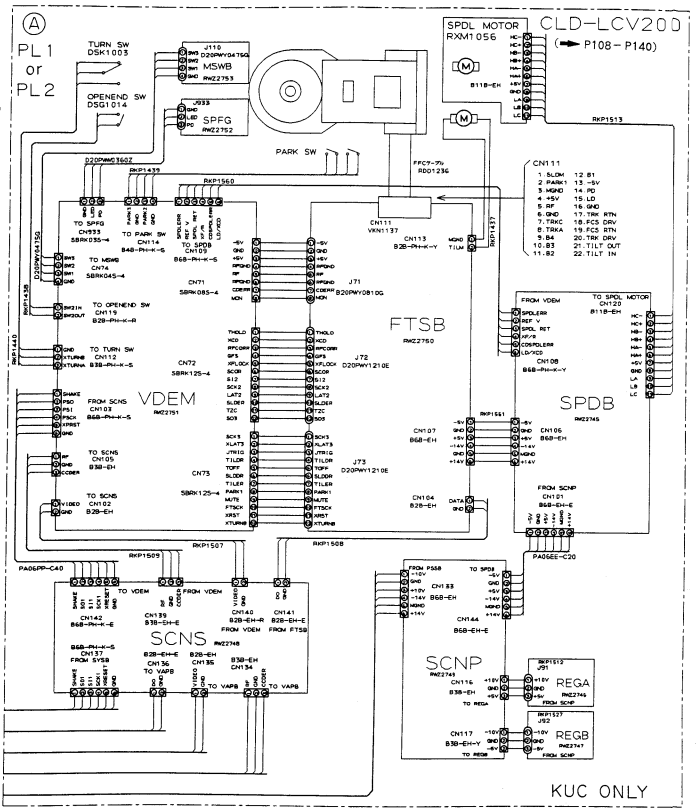
S101 : CURSOR ◀
S102 : CURSOR ▲
S103 : CURSOR ▶
S104 : CURSOR ▼
S105 : MODE –
S106 : MODE +

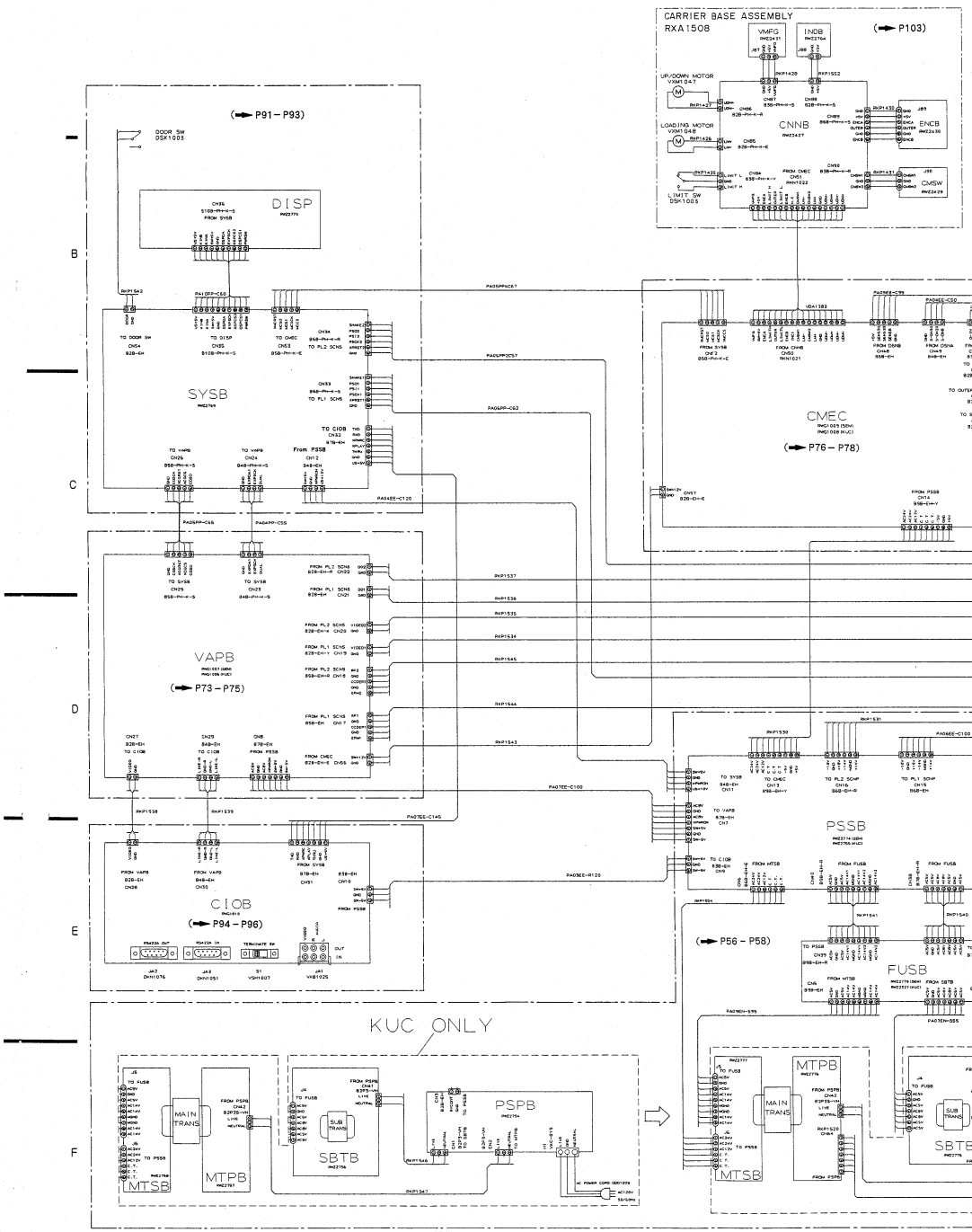
DISP unit

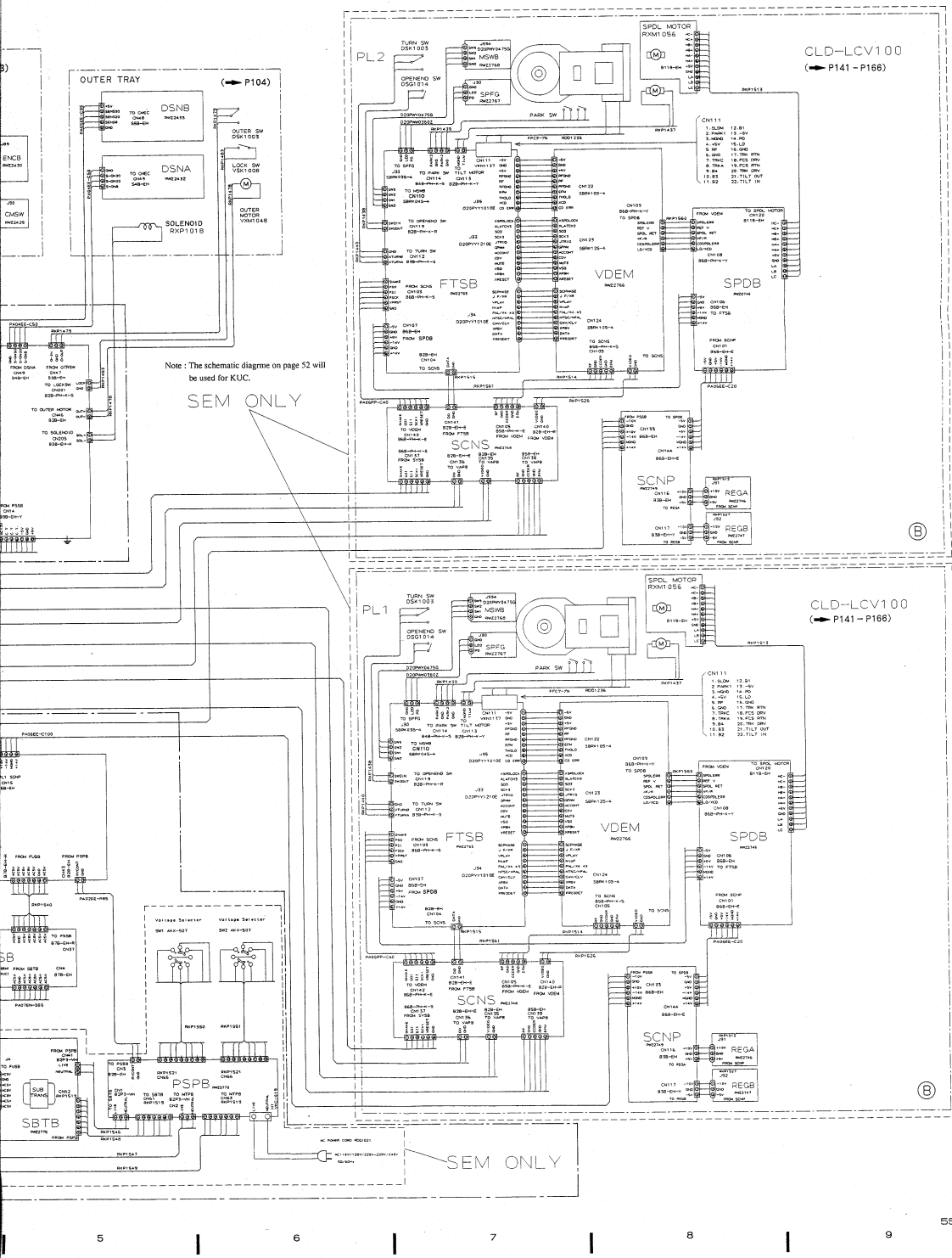
S301 : 1
S302 : 2
S303 : 3
S304 : 4
S305 : 5
S306 : 6
S307 : 7
S308 : 8
S309 : 9
S310 : 10
S311 : OPEN/CLOSE
S312 : STANDBY ON

1. OVERALL WIRING DIAGRAM (MAIN SECTION AND CARRIER BASE SECTION)

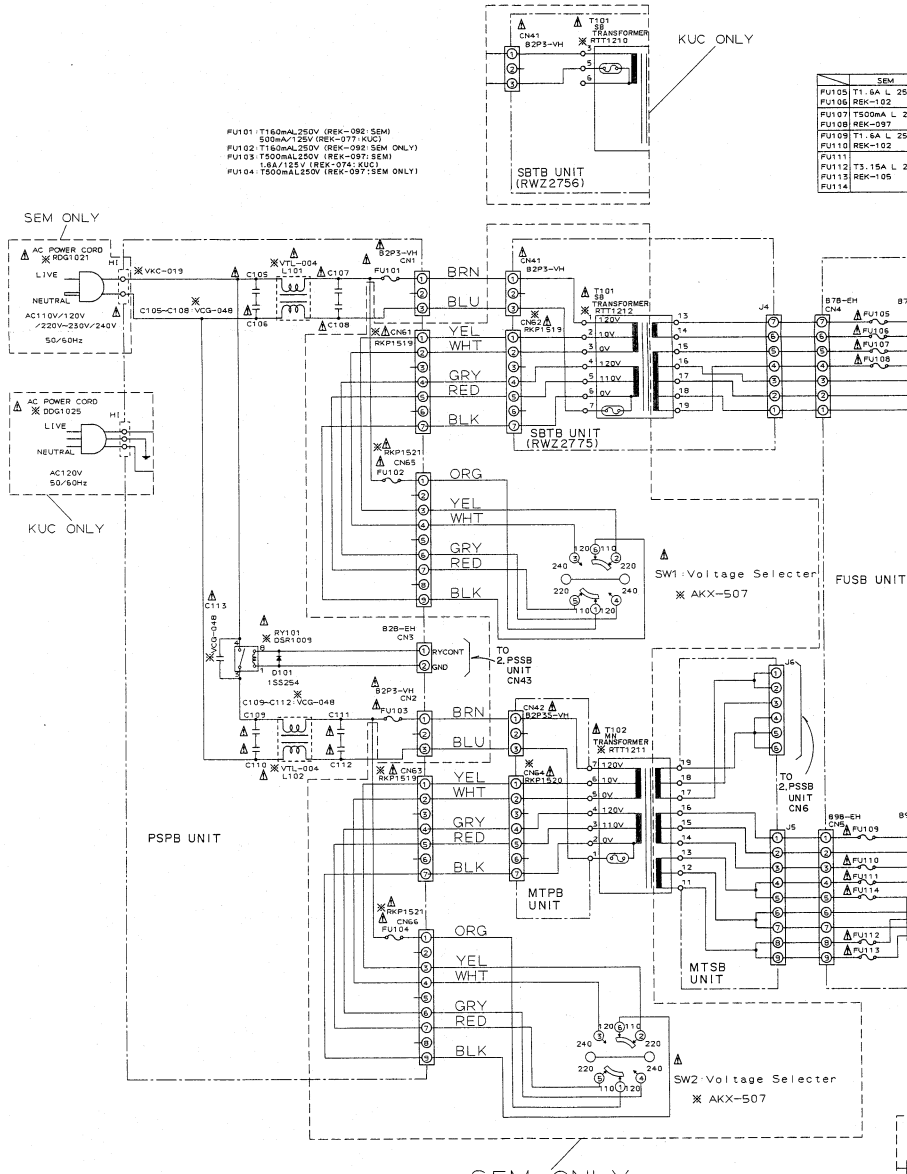
Note : For LC-V200/KUC, the schematic diagram Ⓑ for CLD-LCV100 on page 55 is used instead of the following schematic diagram Ⓐ.



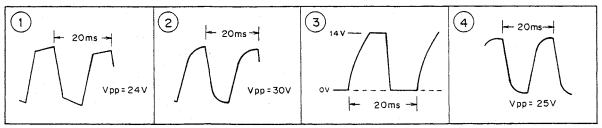

CARRIER BASE ASSEMBLY
RXA1508
(► P103)
VMFG
INDB
UP/DOWN MOTOR
LOADING MOTOR
CNNB
ENCB
LIMIT SW
CMSW
(► P91 – P93)
DOOR SW
DISP
SYSB
CMEC
(► P76 – P78)
VAPB
(► P73 – P75)
PSSB
CIOB
(► P94 – P96)
(► P56 – P58)
FUSB
KUC ONLY
MAIN TRANS
SUB TRANS
MTPB
SBTB
PSPB
MTSB


OUTER TRAY
(➡ P104)
DSNB
DSNA
OUTER SW DSK1003
LOCK SW VSK1008
OUTER MOTOR VXM1048
SOLENOID RXP1018
PL2
TURN SW DSK1003
OPENEND SW DSG1014
MSWB
SPFG
PARK SW
SPDL MOTOR RXM1056
CLD-LCV100
(➡ P141 – P166)
FTSB
VDEM
SPDB
SCNS
SCNP
REGA
REGB
Note : The schematic diagrme on page 52 will be used for KUC.
SEM ONLY
PL1
VSWB
PSPB
SBTB
SEM ONLY

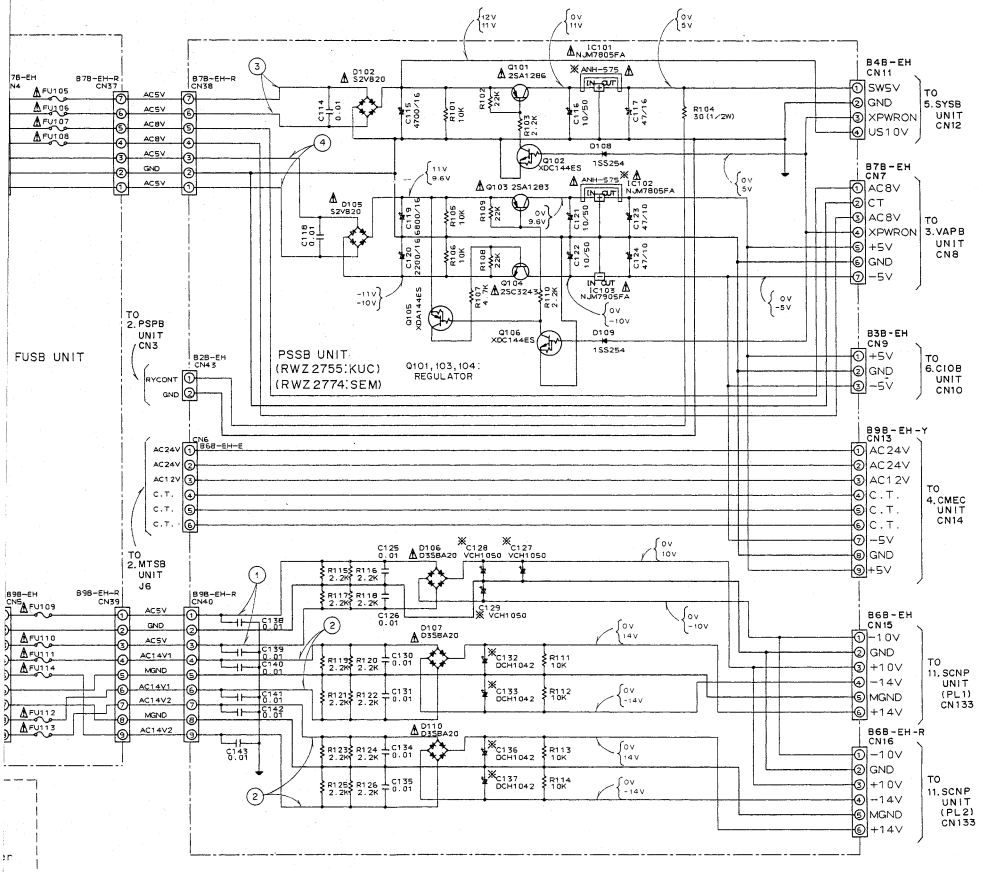
2. PSSB, SBTB, PSPB, MTPB, MTSB, AND FUSB UNIT

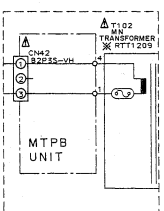


	SBM	KUC
105	T1.6A L 250V	1.6A/125V
106	REK-102	REK-074
107	T500mA L 250V	500mA/125V
108	REK-097	REK-077
109	T1.6A L 250V	1.6A/125V
110	REK-102	REK-074
111		
112	T3.15A L 250V	3.15A/125V
113	REK-105	REK-083
114		



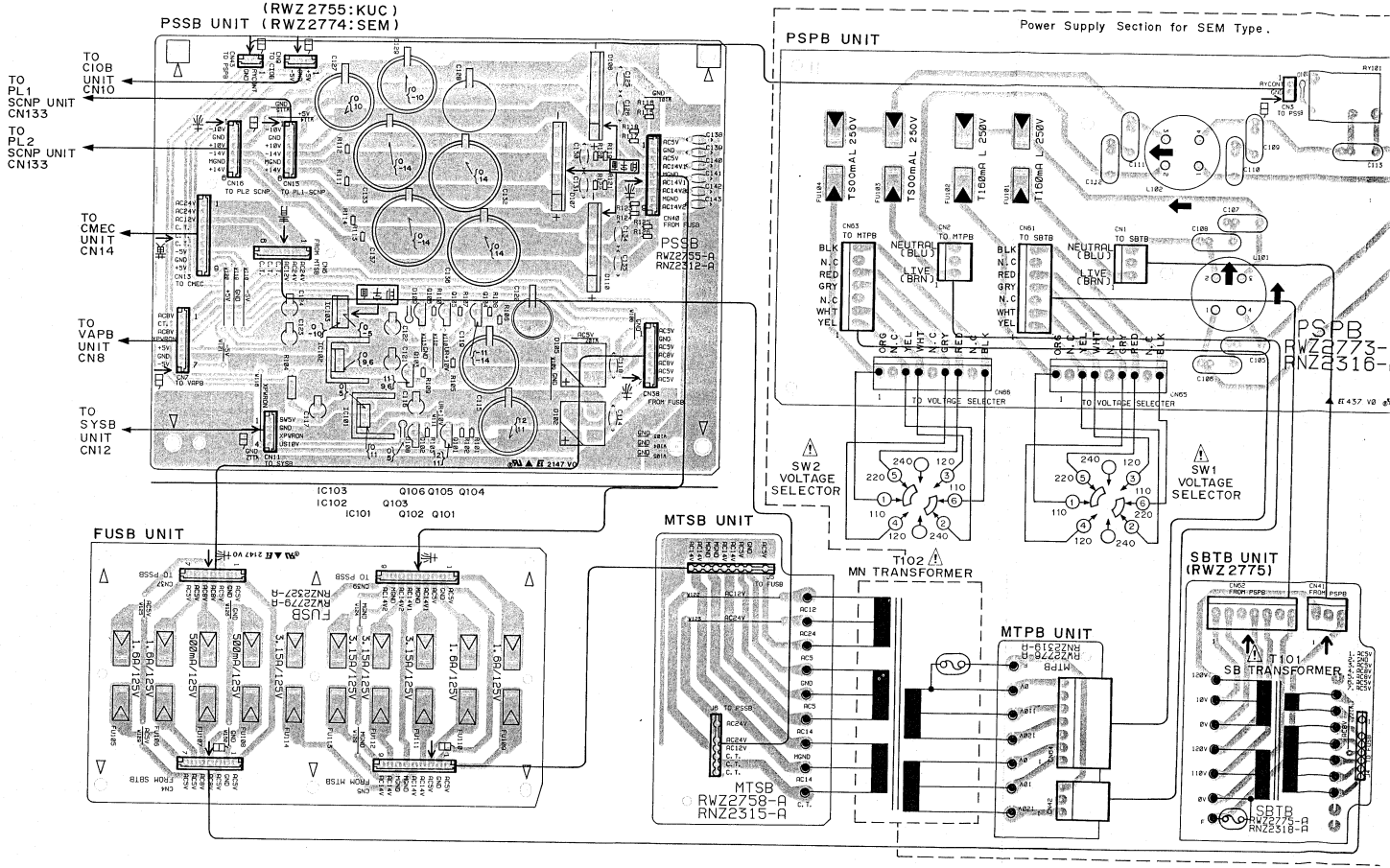
NOTE :
{ D.C. Voltage during STAND BY
{ D.C. Voltage during POWER ON

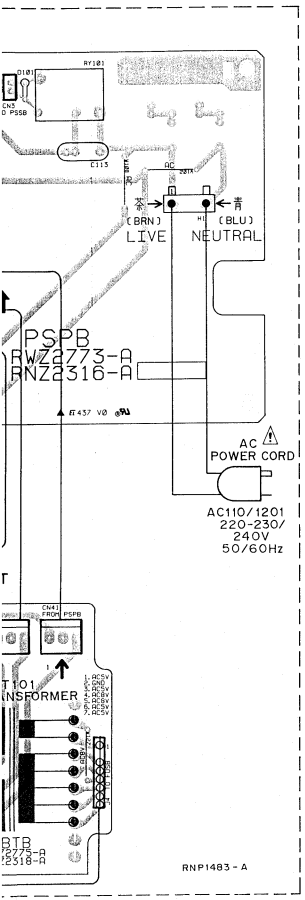


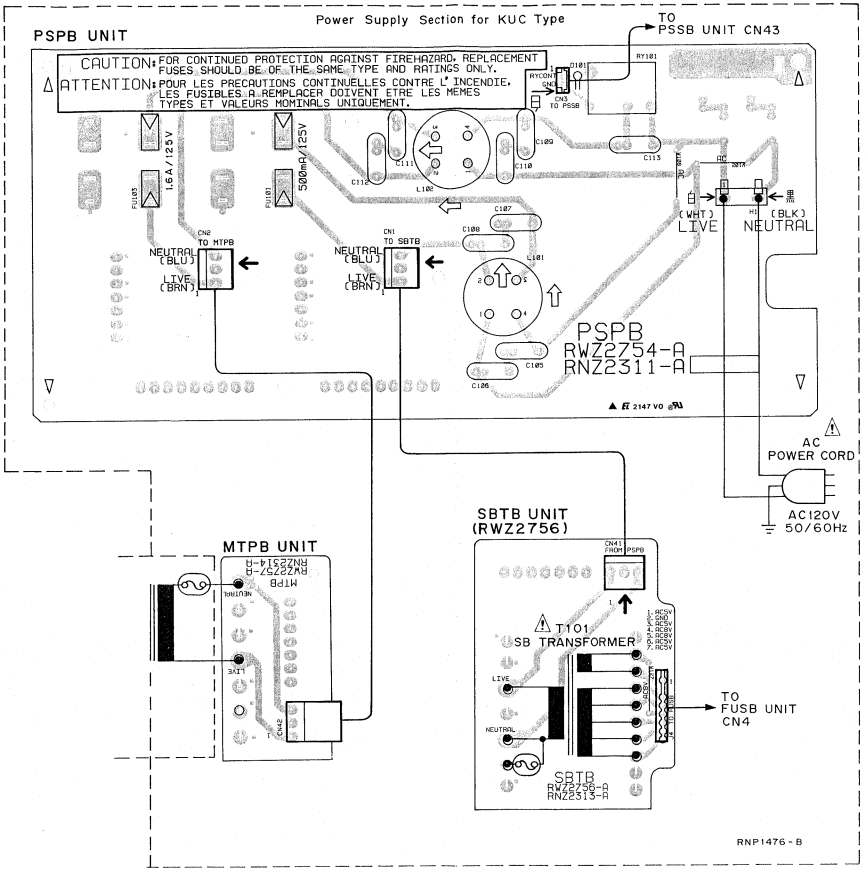


[Note]
1. Capacitors not specified are CKCYF.
2. Resistors not specified are 1/6W.
3. Be sure to use the specified component(components conforming to the safety standard) for parts with ⚠.

• View from component side

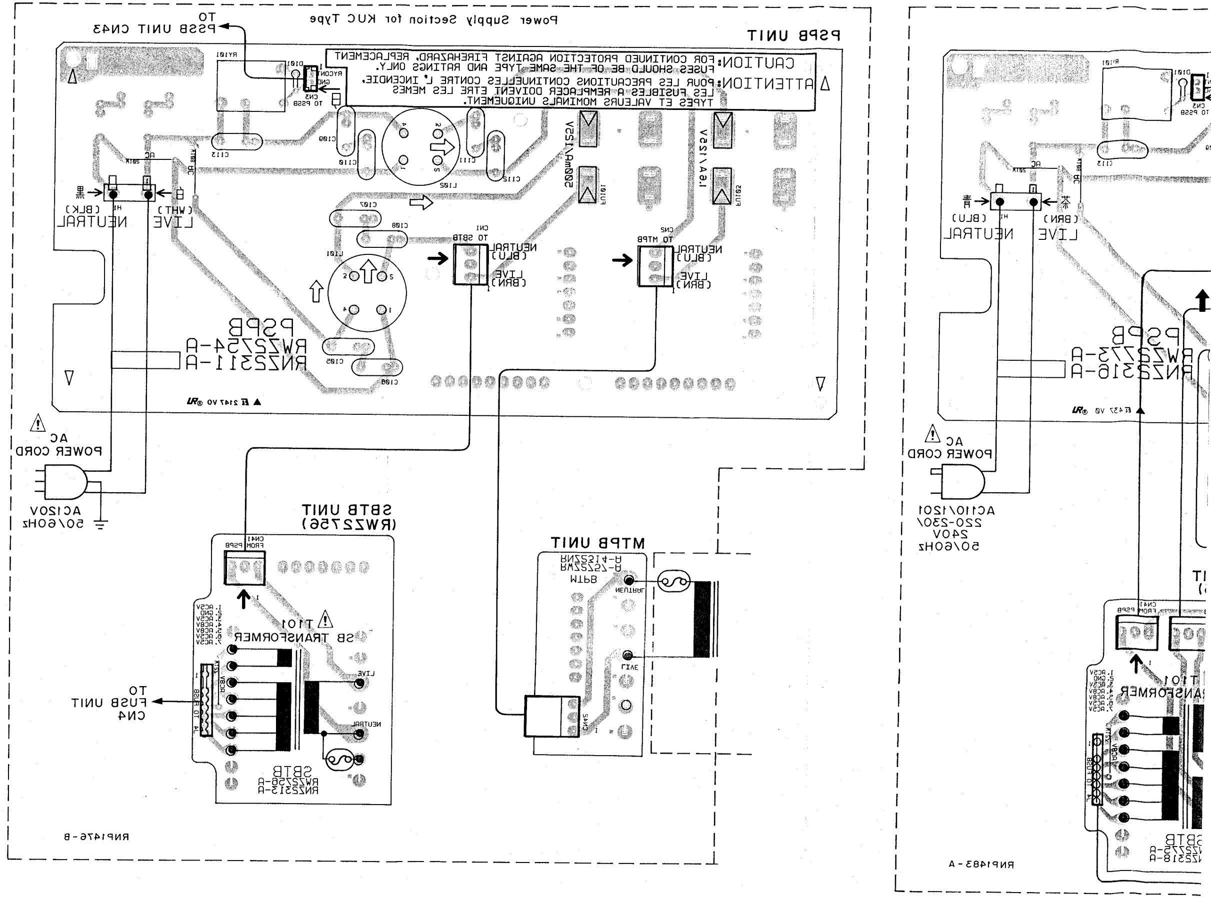






P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor
		FET
		Diode
		Zenner diode
		LED
		Varactor
		Tact switch
		Inductor
		Coil
		Transformer
		Filter
		Ceramic capacitor
		Mylar capacitor
		Styrol capacitor
		Electrolytic capacitor (Non polarized)
		Electrolytic capacitor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


Power Supply Section for KUC Type
PSPB UNIT
CAUTION: FOR CONTINUED PROTECTION AGAINST FIREHAZARD, REPLACEMENT FUSES SHOULD BE OF THE SAME TYPE AND RATINGS ONLY.
ATTENTION: POUR LES PRECAUTIONS CONTINUELLES CONTRE L' INCENDIE, LES FUSIBLES A REMPLACER DOIVENT ETRE LES MEMES TYPES ET VALEURS NOMINALS UNIQUEMENT.
TO PSSB UNIT CN43
NEUTRAL (BLK)
LIVE (WHT)
TO SBTB
TO MTPB
NEUTRAL (BLU)
LIVE (BRN)
PSPB RWZ2754-A RNZ2311-A
AC POWER CORD
AC120V 50/60Hz
SBTB UNIT (RWZ2756)
SB TRANSFORMER
TO FUSB UNIT CN4
SBTB RWZ2756-A RNZ2313-A
MTPB UNIT
RNP1476-B
NEUTRAL (BLU)
LIVE (BRN)
PSPB RWZ2753-A RNZ2316-A
AC POWER CORD
AC110/120/220-230/240V 50/60Hz
RNP1483-A

• View from soldering side

3. VAP8 UNIT

• View from soldering side

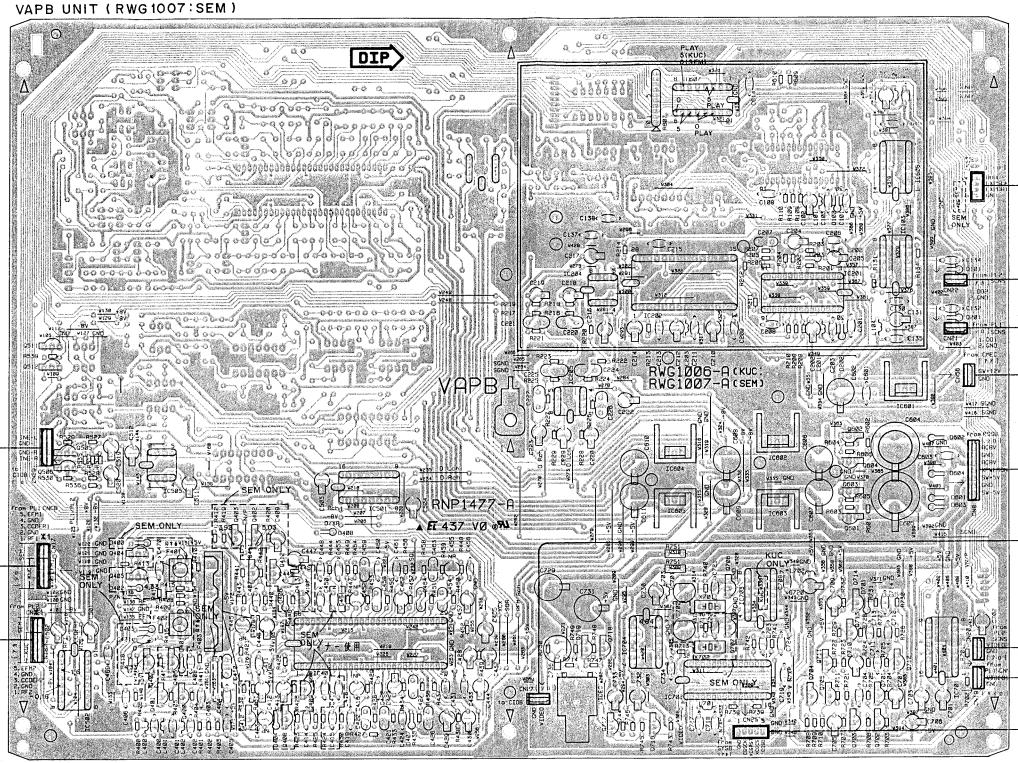
VAP8 UNIT (RWG1007 : SEM)
(RWG1006 : KUC)

CN18 / CN17	3Pin	3Pin
KUC	3Pin	3Pin
SEM	5Pin	5Pin

3. VAPB UNIT

• View from component side

(RWG1006 : KUC)
VAPB UNIT (RWG1007 : SEM)



X1

	CN17	CN18
KUC	3Pin	3Pin
SEM	5Pin	5Pin

IC 701			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	0.39	9	5
2	0	10	5
3	0.43	11	0
4	0.43	12	0.43
5	0	13	0.39
6	0	14	0.43
7	− 5	15	0.39
8	0	16	5

IC 702			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	0	17	0.82
2	4.94	18	4.9
3	4.97	19	2.26
4	2.29	20	2.13
5	2.18	21	0.013
6	4.92	22	0.011
7	4.66	23	0.012
8	2	24	0.012
9	0	25	0.013
10	4.98	26	0.01
11	0	27	4.46
12	0.72	28	1.522
13	1.07	29	2.36
14	0.62	30	3.37
15	1.69	31	5.02
16	0.61	32	4.9

IC 202			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	2.0	15	0
2	3.95	16	0
3	5	17	0
4	5	18	0
5	2.43	19	5
6	0	20	0
7	2.43	21	0
8	0	22	0
9	0	23	1.51
10	0	24	2.34
11	0	25	1.72
12	4.99	26	0
13	0	27	0
14	0	28	1.98

IC 204			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	1.99	5	2.0
2	1.99	6	1.99
3	2.0	7	1.99
4	− 8	8	8

IC 205			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	0	5	0
2	0	6	0
3	0	7	0
4	− 8	8	8

IC 401			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	− 2.82	29	0
2	0	30	0
3	0.01	31	− 2.05
4	− 4.93	32	− 3.04
5	0	33	− 3.06
6	− 2.07	34	5.02
7	0.01	35	0
8	− 2.03	36	0
9	− 1.8	37	0
10	− 1.84	38	− 2.77
11	− 2.1	39	0.08
12	− 2.07	40	− 4.79
13	− 2.75	41	− 3.67
14	0	42	− 2.11
15	− 2.11	43	0
16	− 0.71	44	− 2.76
17	− 4.79	45	− 2.07
18	0.08	46	− 2.65
19	− 2.76	47	− 2.52
20	0	48	− 1.81
21	0	49	− 1.95
22	0	50	0
23	− 3.06	51	− 2.08
24	5.02	52	0
25	0.03	53	− 4.93
26	− 0.06	54	− 0.75
27	− 4.93	55	0
28	0	56	− 2.82

Operation Conditions
During STOP
Blue back
No OSD (Screen display characters)

IC 201			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	0	16	2.0
2	2.38	17	0
3	2.37	18	0.74
4	5	19	0.79
5	4.97	20	0
6	2.37	21	2.44
7	5	22	0
8	4.92	23	2.43
9	0	24	0
10	0	25	0
11	4.05	26	0
12	3.26	27	1.99
13	1.72	28	0
14	3.26	29	1.98
15	5	30	5

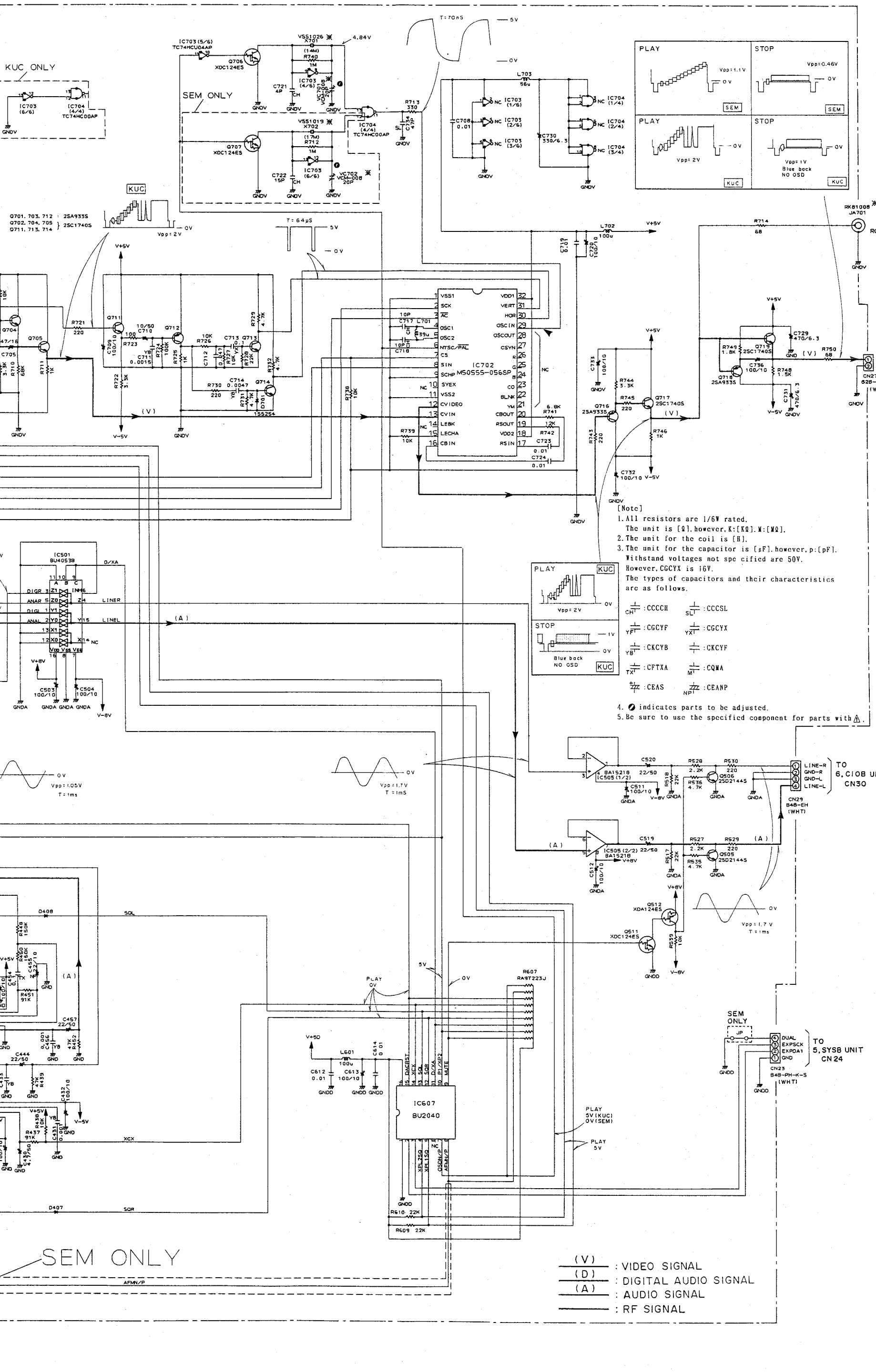
IC 501			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	0	9	4.98
2	0	10	4.98
3	0	11	0
4	0	12	0
5	0	13	0
6	0	14	0
7	− 8	15	0
8	0	16	8

IC 502			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	0.056	9	4.98
2	0.044	10	4.98
3	− 0.036	11	4.98
4	− 0.036	12	0.54
5	− 0.017	13	0.53
6	0	14	0.53
7	− 8	15	0.017
8	0	16	8

IC 505			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	0	5	0
2	0	6	0
3	0	7	0
4	− 8	8	8

IC 607			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	0	9	2.88
2	0.015	10	4.98
3	2.9	11	4.98
4	4.98	12	4.98
5	4.98	13	4.98
6	0.8	14	0.021
7	4.92	15	0.007
8	4.98	16	5

Operation Conditions
During STOP
Blue back
No OSD (Screen display characters)

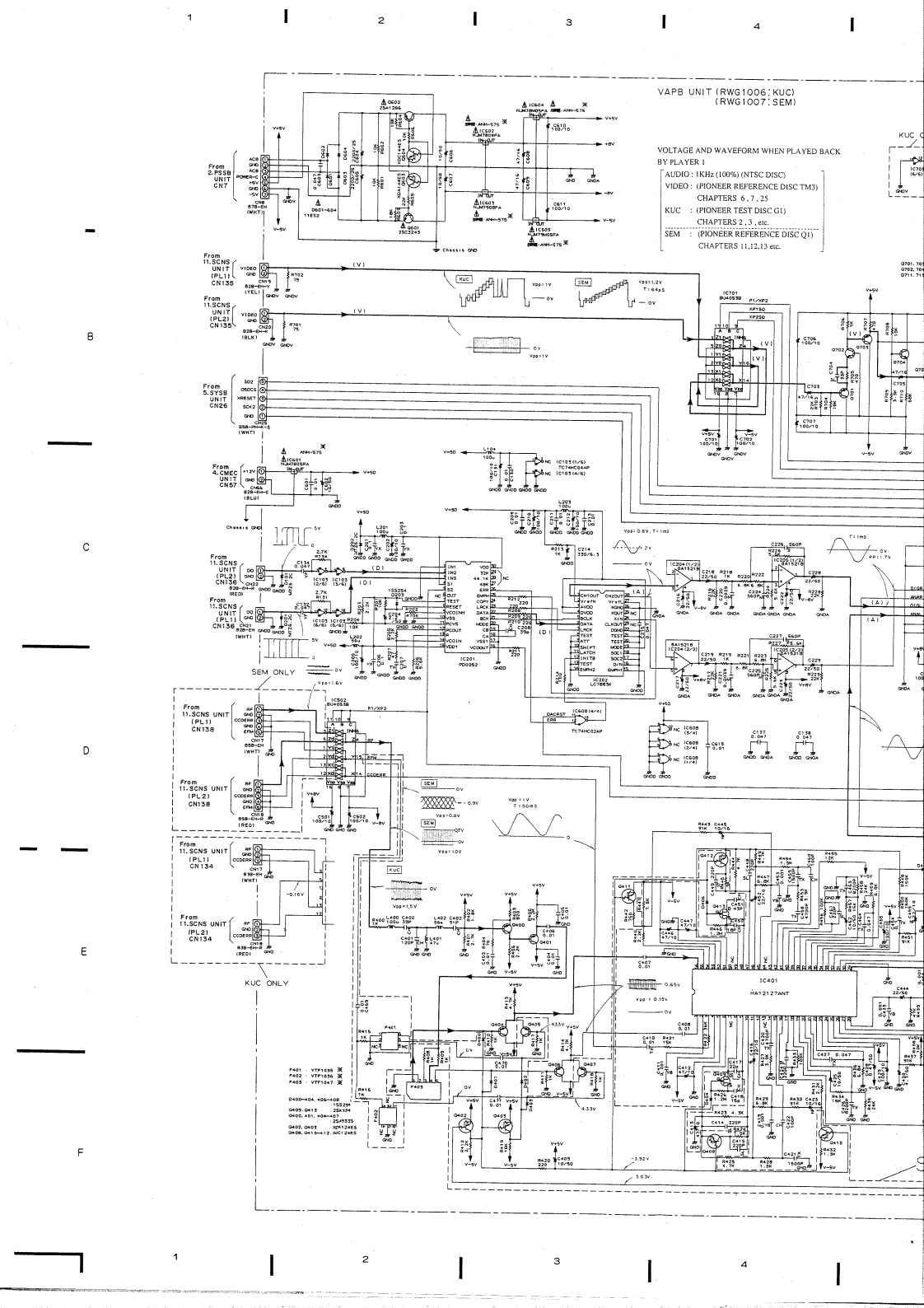


[Note]
1. All resistors are 1/6W rated.
The unit is [Ω], however, K:[kΩ], M:[MΩ].
2. The unit for the coil is [H].
3. The unit for the capacitor is [μF], however, p:[pF].
Withstand voltages not specified are 50V.
However, CGCYX is 16V.
The types of capacitors and their characteristics are as follows.

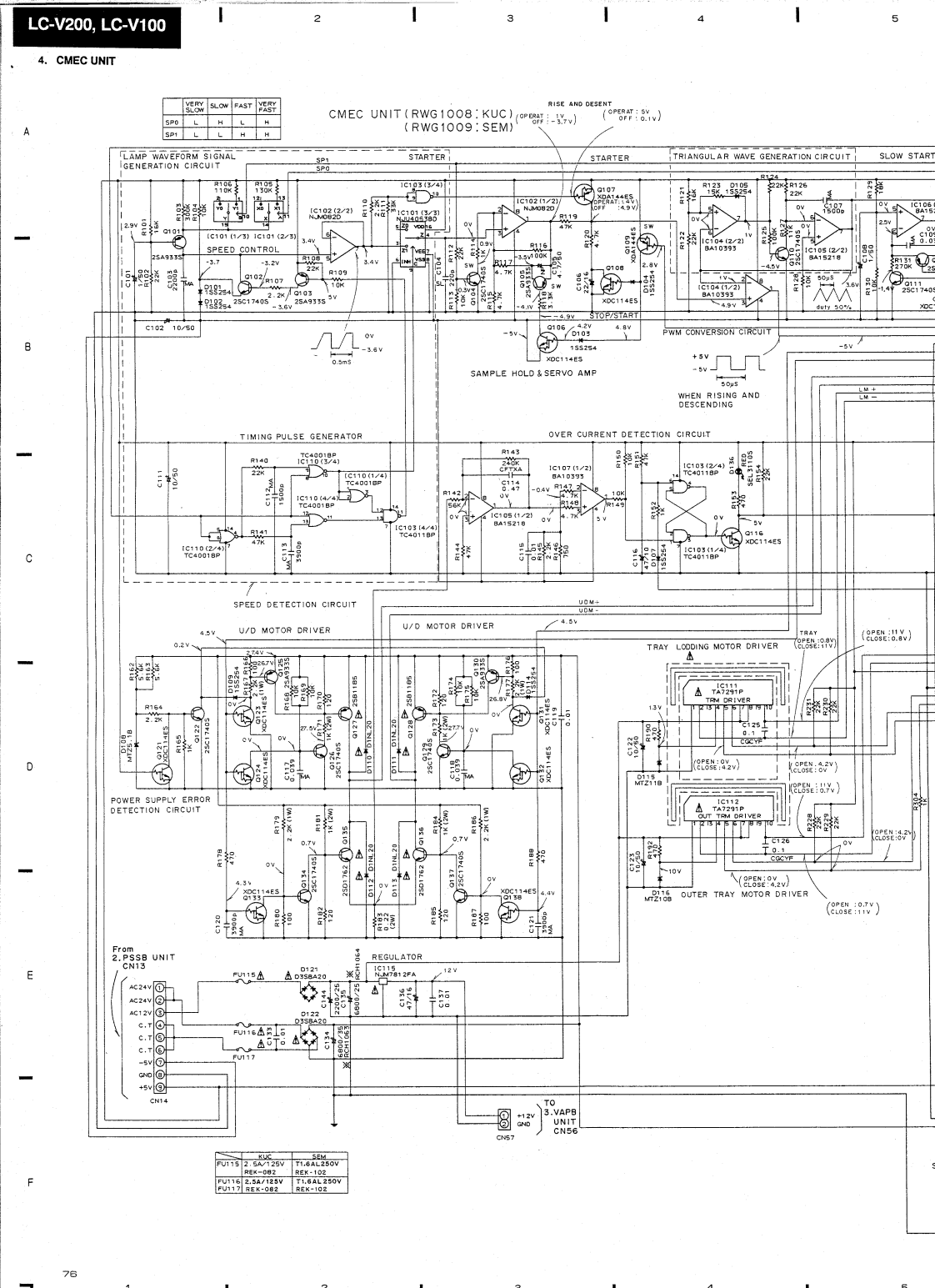
CH: CCCCH, SL: CCCSL, YF: CGCYF, YX: CGCYX, YB: CKCYB, YF: CKCYF, TX: CFTXA, M: CQMA, CEAS, NP: CEANP

4. ◐ indicates parts to be adjusted.
5. Be sure to use the specified component for parts with ⚠.

(V) : VIDEO SIGNAL
(D) : DIGITAL AUDIO SIGNAL
(A) : AUDIO SIGNAL
— : RF SIGNAL

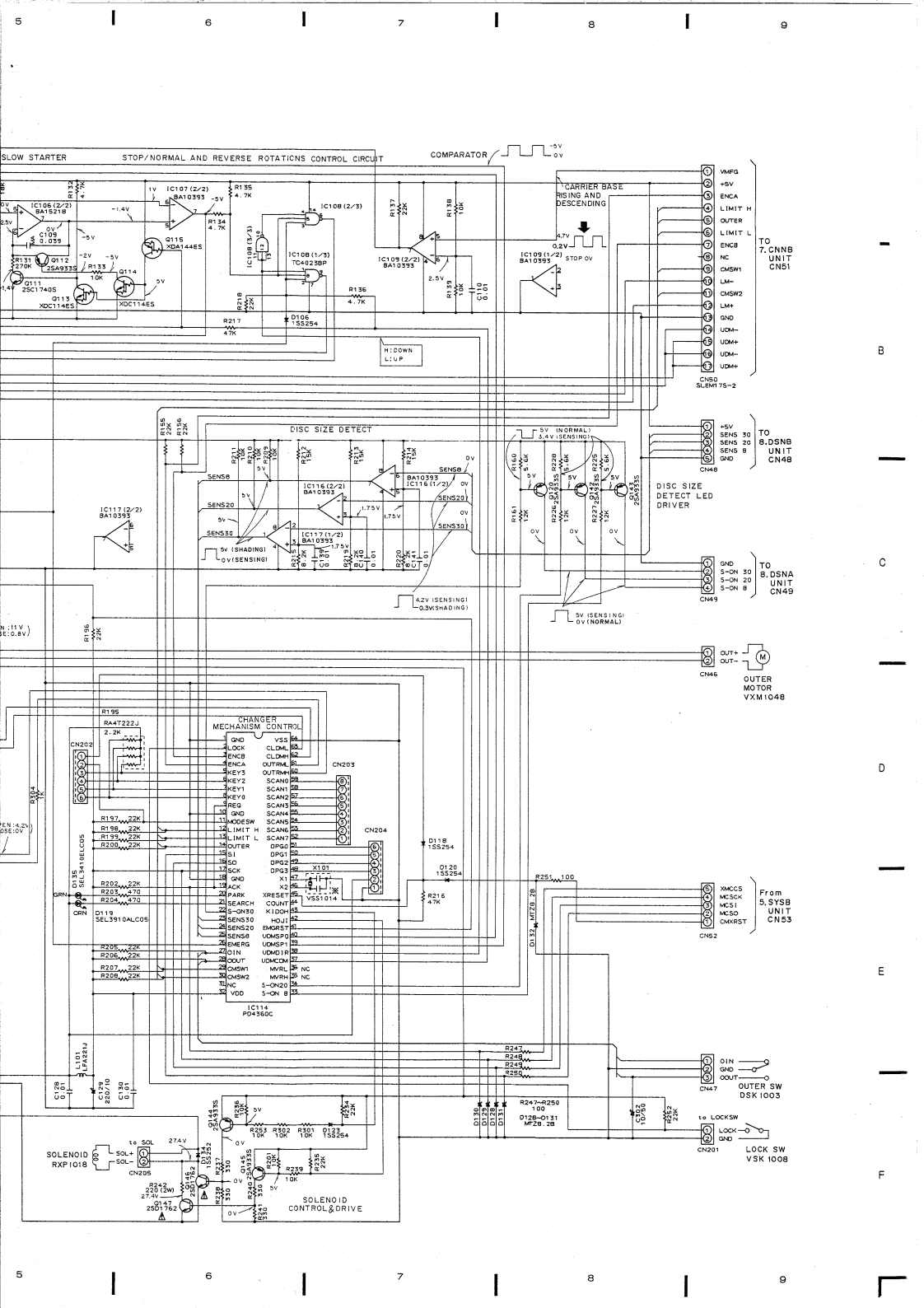

VAPB UNIT (RWG1006:KUC)
(RWG1007:SEM)
VOLTAGE AND WAVEFORM WHEN PLAYED BACK BY PLAYER 1
AUDIO : 1KHz (100%) (NTSC DISC)
VIDEO : (PIONEER REFERENCE DISC TM3) CHAPTERS 6,7,25
KUC : (PIONEER TEST DISC G1) CHAPTERS 2,3, etc.
SEM : (PIONEER REFERENCE DISC Q1) CHAPTERS 11,12,13 etc.
KUC ONLY
SEM ONLY
From 2.PSB UNIT CN7
From 11.SCNS UNIT (PL1) CN135
From 11.SCNS UNIT (PL2) CN136
From 5.SYSB UNIT CN26
From 4.CMEC UNIT CN57
From 11.SCNS UNIT (PL1) CN136
From 11.SCNS UNIT (PL2) CN136
From 11.SCNS UNIT (PL1) CN138
From 11.SCNS UNIT (PL2) CN138
From 11.SCNS UNIT (PL1) CN134
From 11.SCNS UNIT (PL2) CN134
IC401 HA12127ANT

4. CMEC UNIT



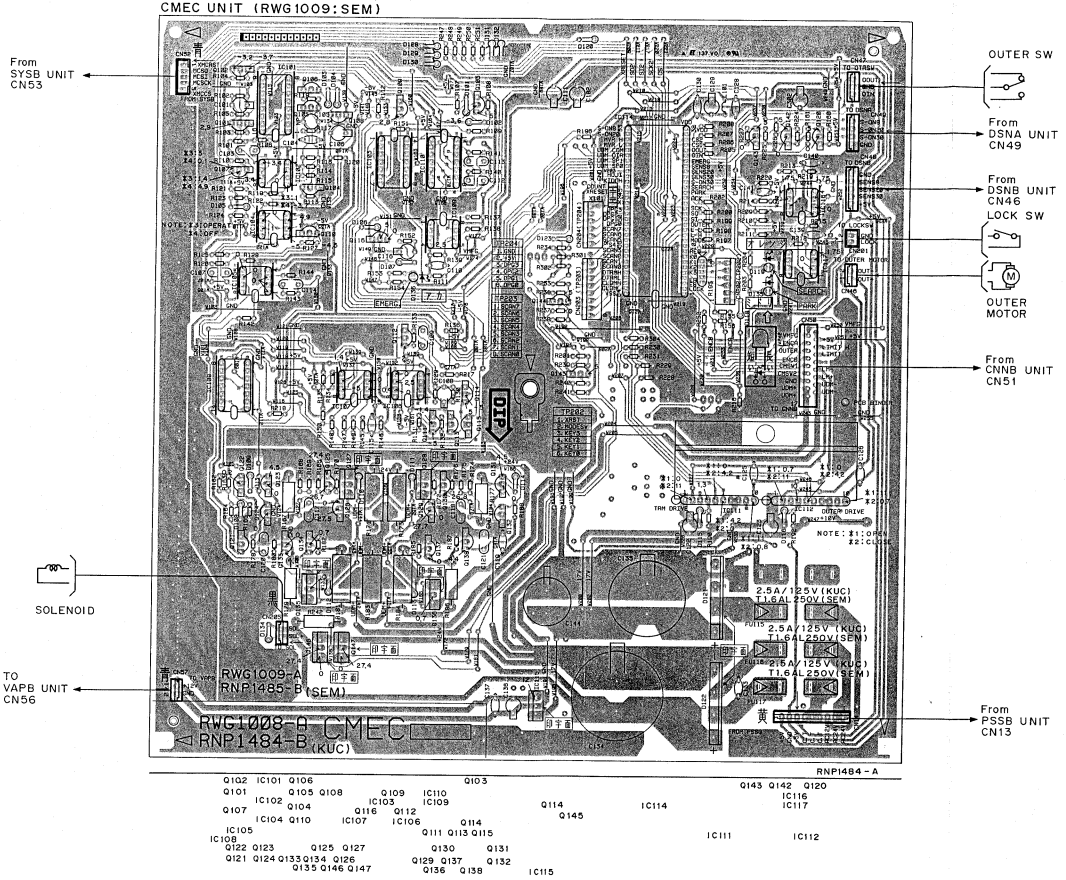
	VERY SLOW	SLOW	FAST	VERY FAST
SP0	L	H	L	H
SP1	L	L	H	H

	KUC	SEM
FU115	2.5A/125V REK-082	T1.6AL250V REK-102
FU116 FU117	2.5A/125V REK-082	T1.6AL250V REK-102


SLOW STARTER
STOP/NORMAL AND REVERSE ROTATIONS CONTROL CIRCUIT
COMPARATOR
CARRIER BASE RISING AND DESCENDING
TO 7.CNNB UNIT CN51
CN50 SLIM17S-2
DISC SIZE DETECT
DISC SIZE DETECT LED DRIVER
TO 8.DSNB UNIT CN48
CN48
TO 8.DSNA UNIT CN49
CN49
OUTER MOTOR VXM1048
CN46
CHANGER MECHANISM CONTROL
IC114 PD4360C
From 5.SYSB UNIT CN53
CN52
OUTER SW DSK1003
CN47
LOCK SW VSK1008
CN201
SOLENOID RXP1018
CN205
SOLENOID CONTROL&DRIVE
H:DOWN
L:UP

• View from component side

(RWG1008 :KUC)
CMEC UNIT (RWG1009: SEM)

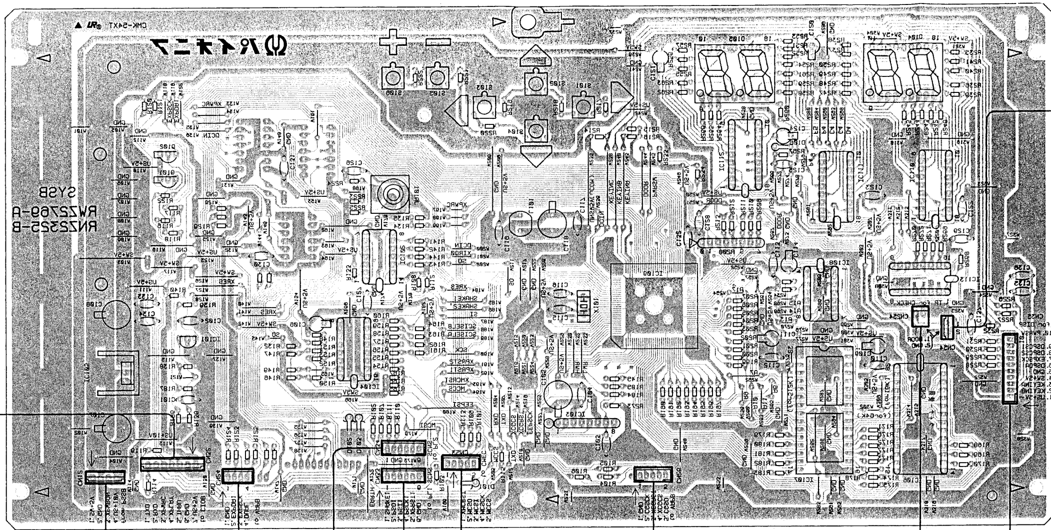


• View from soldering side

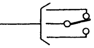
CMEC UNIT (RWG1009:SEM)
(RWG1008:KUC)

• View from soldering side

SYSB UNIT(RWZ2769)



DOOR SW



TO CIOB UNIT CN31

From PSSB UNIT CN11

TO VAPB UNIT CN23

TO PL2 SCNC CN137

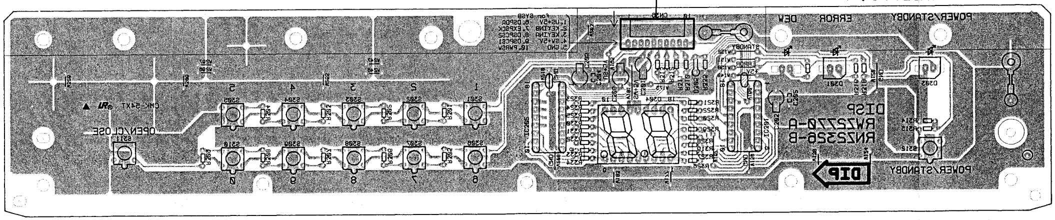
TO PL1 SCNC CN137

TO CMEC UNIT CN52

TO VAPB UNIT CN25

TP for CHECK

DISP UNIT(RWZ2770)

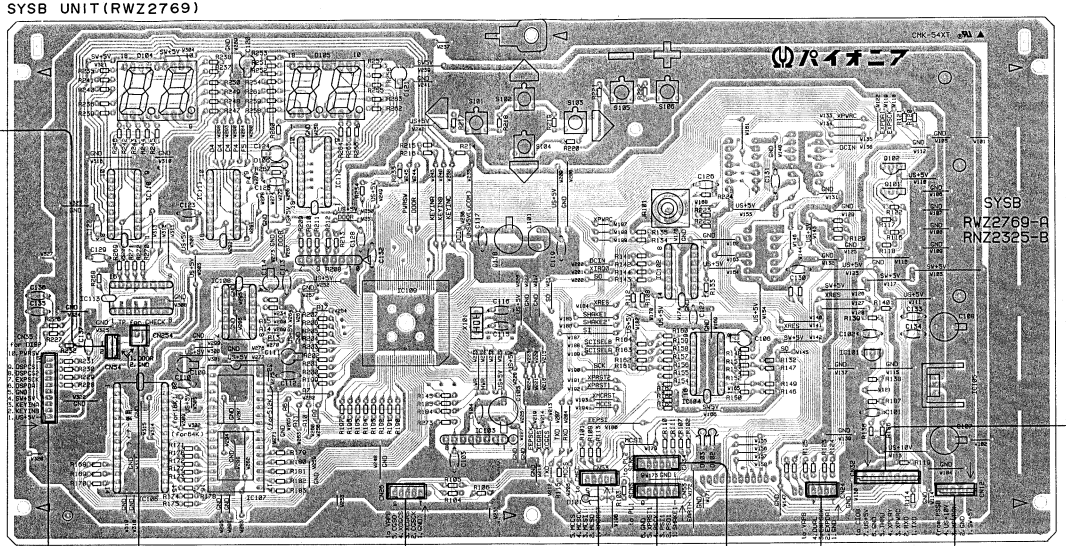


RNP1479-B

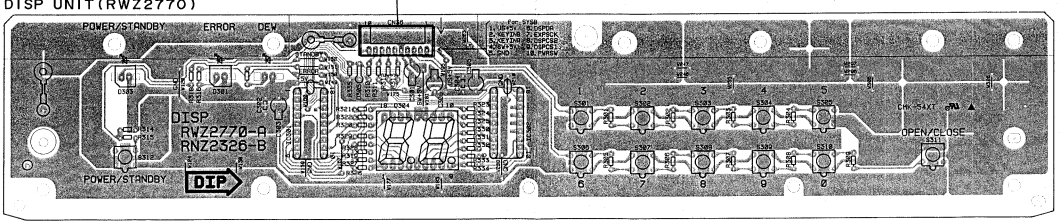
5. SYSB AND DISP UNIT

• View from component side

SYSB UNIT(RWZ2769)



DISP UNIT(RWZ2770)



RNP1479-B

• SYSB unit

Voltages of the pins of IC109 (1/2) (During STANDBY and POWER ON (STOP))

Pin No.	STAND BY	POWER ON
1	4.98V	4.98V
2	GND	GND
3	GND	GND
4	0V	5V
5	0V	②
6	0V	②
7	0V	5V
8	NC	NC
9	NC	NC
10	–	–
11	4.92V	4.92V
12	⑦	⑦
13	⑦	⑦
14	⑦	⑦
15	⑦	⑦
16	⑦	⑦
17	⑦	⑦
18	⑦	⑦
19	⑦	⑦
20	VSS	VSS
21	⑧	⑧
22	⑧	⑧
23	⑧	⑧
24	⑧	⑧
25	⑧	⑧
26	⑧	⑧
27	⑧	⑧
28	⑧	⑧

Pin No.	STAND BY	POWER ON
29	⑧	⑤
30	⑧	⑨
31	⑧	⑧
32	⑧	⑧
33	⑧	⑧
34	⑧	⑧
35	⑧	⑧
36	⑧	⑧
37	GND	GND
38	⑧	⑧
39	NC	NC
40	NC	NC
41	NC	NC
42	NC	NC
43	NC	NC
44	NC	NC
45	NC	NC
46	GND	GND
47	②	②
48	②	②
49	②	②
50	⑥	⑤
51	②	②
52	0V	④
53	0V	⑤
54	NC	NC
55	VCC	VCC
56	4.93V	4.93V

Refer to the waveforms (Page 90) for (No) s in the table.

Voltages of the pins of IC109 (2/2) (During STANDBY and POWER ON (STOP))

Pin No.	STAND BY	POWER ON
57	4.93V	0.015V
58	4.96V	4.96V
59	–	–
60	NC	NC
61	NC	NC
62	NC	NC
63	NC	NC
64	GND	GND
65	NC	NC
66	NC	NC
67	NC	NC
68	NC	NC
69	NC	NC
70	NC	NC
71	4.93V	④
72	4.93V	④
73	–	–
74	–	–
75	5.0V	0.026V
76	NC	NC
77	NC	NC
78	0	5.0V
79	0	5.0V
80	NC	NC
81	GND	GND
82	GND	GND
83	–	–
84	–	–

Pin No.	STAND BY	POWER ON
85	Following table	Following table
86	3.75V	3.75V
87	VCC	VCC
88	VCC	VCC
89	4.93V	4.93V
90	0	②
91	0	②
92	5.0V	②
93	4.46V	4.46V
94	4.95V	4.95V
95	5.0V	①
96	0	①
97	GND	GND
98	–	–
99	–	–
100	GND	GND
101	NC	NC
102	NC	NC
103	NC	NC
104	⑥	⑥
105	⑥	⑥
106	NC	NC
107	NC	NC
108	VCC	VCC
109	VCC	VCC
110	VCC	VCC
111	GND	GND
112	VCC	VCC

Pin No.	Normal	Voltage when the tact switch is pressed					
		Left (S101)	Top (S102)	Right (S103)	Bottom (S104)	– (S105)	+ (S106)
85	4.93V	0.053V	0.927V	1.784V	2.517V	3.313V	4.07V

Refer to the waveforms (Page 90) for (No) s in the table.

The voltage of the input/output terminal of the SYSB unit (RWZ2769)

Connector No.	No.	Signal Name	STAND BY	POWER ON (STOP)
CN53	1	XMCRST	0V	5V
	2	MCSO	0V	Waveform① in next page
	3	MCSI	0V	Waveform④ in next page
	4	MCSCK	0V	Waveform② in next page
	5	MCCS	0V	Waveform② in next page

CN26	1	GND	0V	0V
	2	CGSCK	0V	Waveform② in next page
	3	XCGRST	0V	5V
	4	XCGCS	0V	Waveform② in next page
	5	CGSO	0V	Waveform① in next page

CN33 CN34	1	SHAKE 1	0V	Waveform② in next page
	2	PSO 1	0V	Waveform① in next page
	3	PSI 1	0V	Waveform② in next page
	4	PSCK 1	0V	Waveform② in next page
	5	XPRST 1	0V	5V
	6	GND	0V	0V

CN24	1	GND	0V	0V
	2	EXPDA 1	0V	Waveform④ in next page
	3	EXPSCK	Waveform③ in next page	Waveform⑤ in next page
	4	DUAL	5V for KUC (LC-V200) and 0V for SEM (LC-V100).	

CN32	1	TXD	4.95V	4.95V
	2	RXD	4.46V	4.46V
	3	XPWRC	5.0V	0.026V
	4	XPLAY	4.96V	4.96V
	5	THRU	0.006V	-4.89V
	6	GND	0V	0V
	7	US +5V	5.0V	5.0V

The voltage of the input/output terminal of the SYSB unit (RWZ2769)

Connector No.	No.	Signal Name	STAND BY	POWER ON (STOP)
CN12	1	SW + 5V	0V	5V
	2	GND	0V	0V
	3	XPWRON	0V	5V
	4	US + 10V	12V	12V

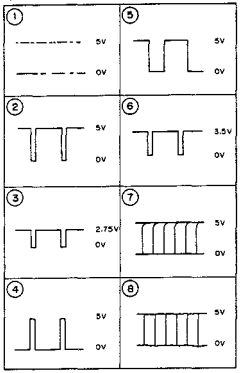
CN35	1	US + 5V	5V	5V
	2	KEY IN B	Following table	Following table
	3	KEY IN A	Following table	Following table
	4	SW + 5V	0V	5V
	5	GND	0V	0V
	6	DSPDA	Waveform⑥ in appendix 1	Waveform⑥ in appendix 1
	7	EXPSCK	Waveform⑤ in appendix 1	Waveform⑤ in appendix 1
	8	DSPCS 2	Waveform② in appendix 1	Waveform② in appendix 1
	9	DSPCS 1	Waveform③ in appendix 1	Waveform③ in appendix 1
	10	PWRSW	0V when the STANDBY/ON key (S312) is ON and 5V when OFF.	

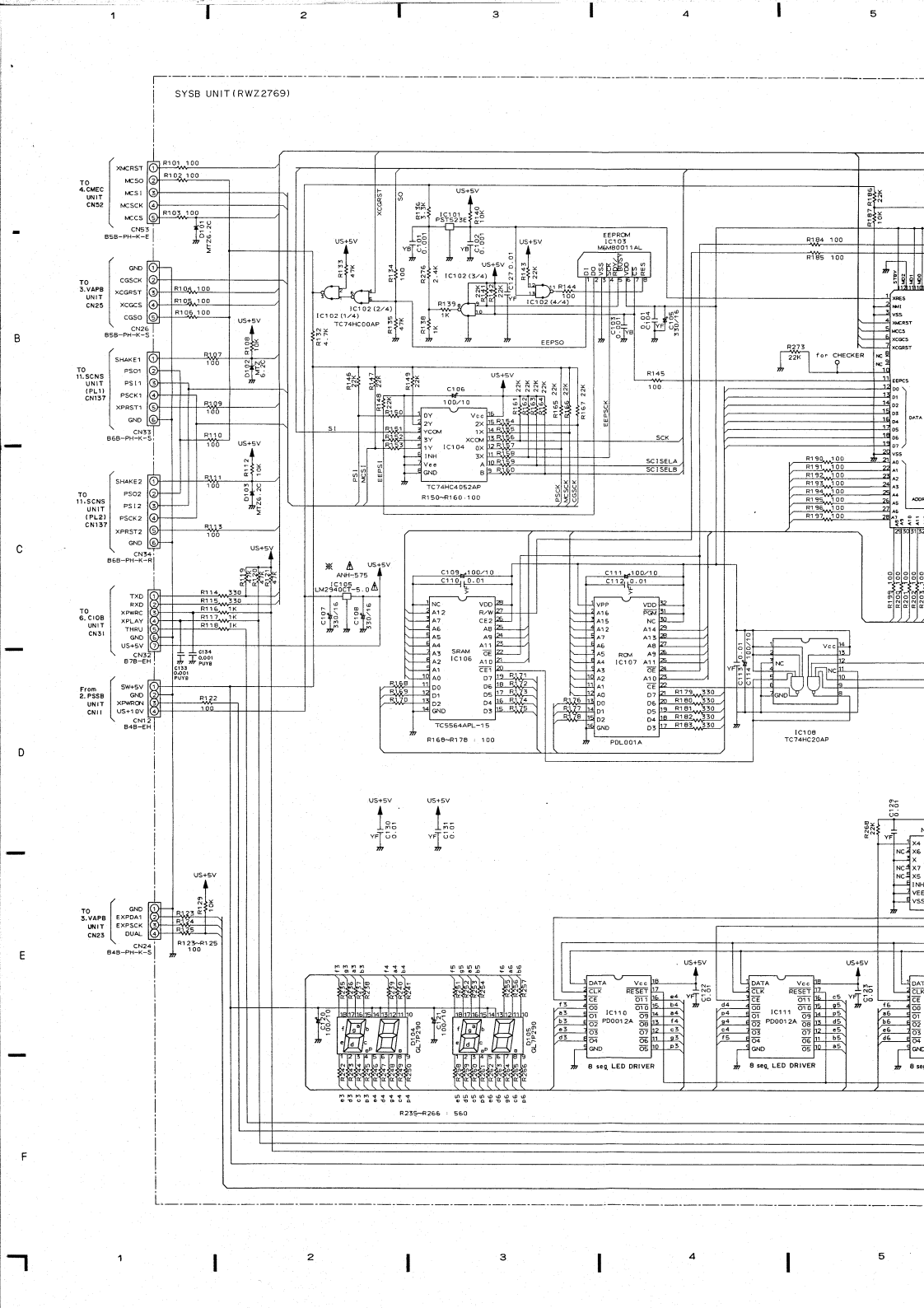
CN54	1	DOOR	0V when the front door is open and 5V when closed.
	2	GND	0V

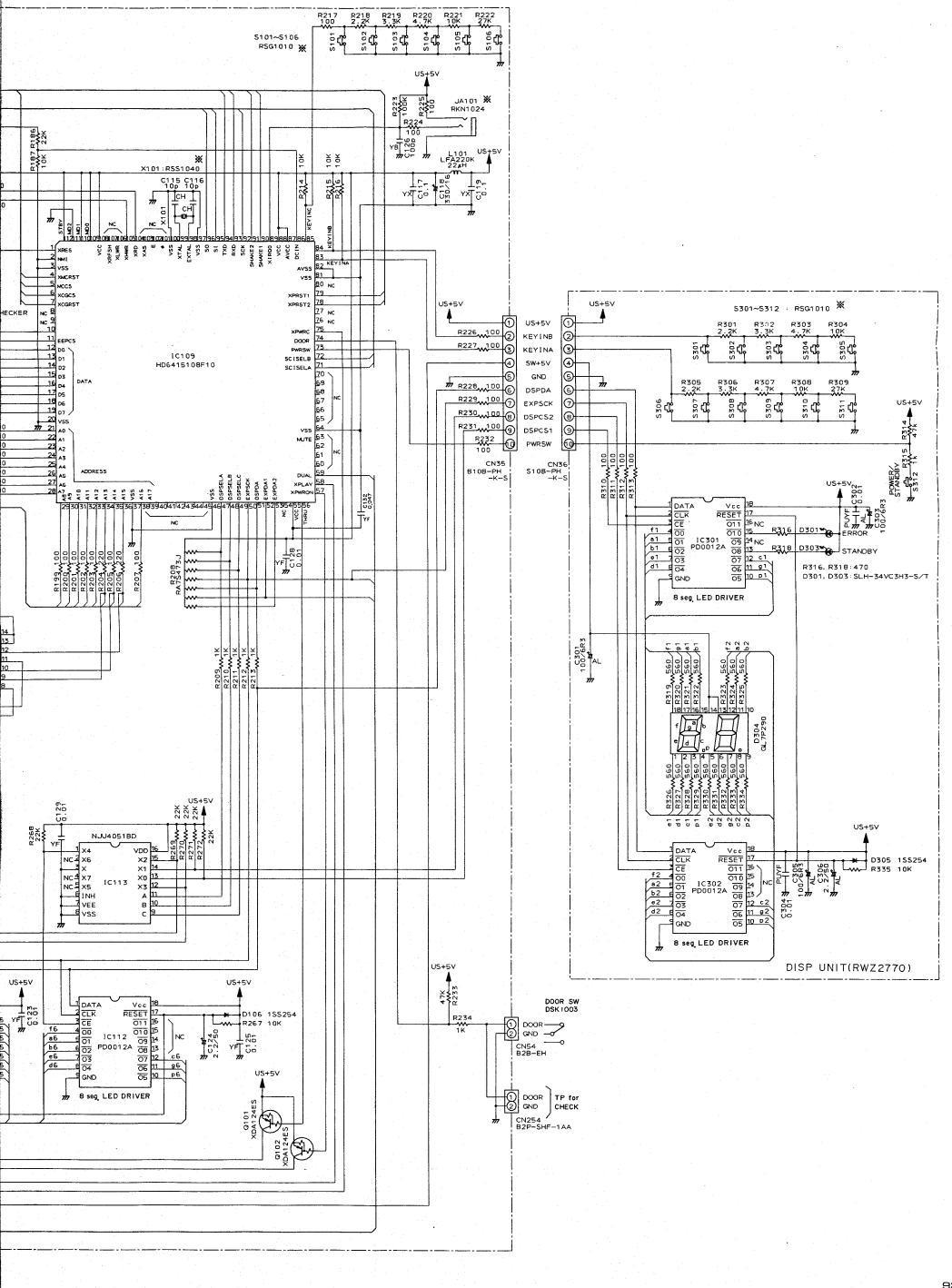
Connector No.	No.	Normal	Voltage when the key is pressed					
CN35	2	5V	1 (S301)	2 (S302)	3 (S303)	4 (S304)	5 (S305)	
			0V	0.89V	1.76V	2.51V	3.33V	
	3	5V	6 (S306)	7 (S307)	8 (S308)	9 (S309)	0 (S310)	OPEN/CLOSE
			0V	0.89V	1.76V	2.51V	3.33V	4.12V

WAVEFORMS OF PNLB UNIT

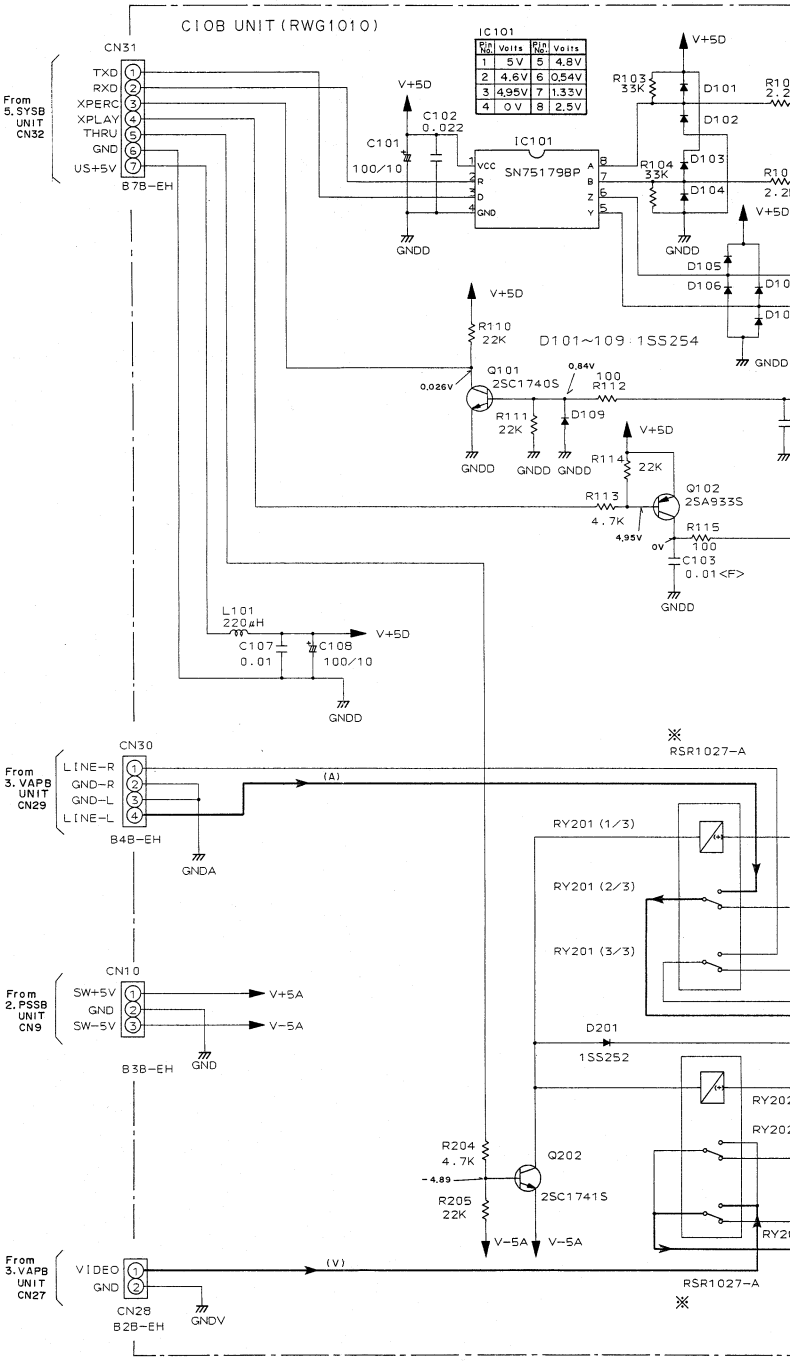
SYSB RWZ2769



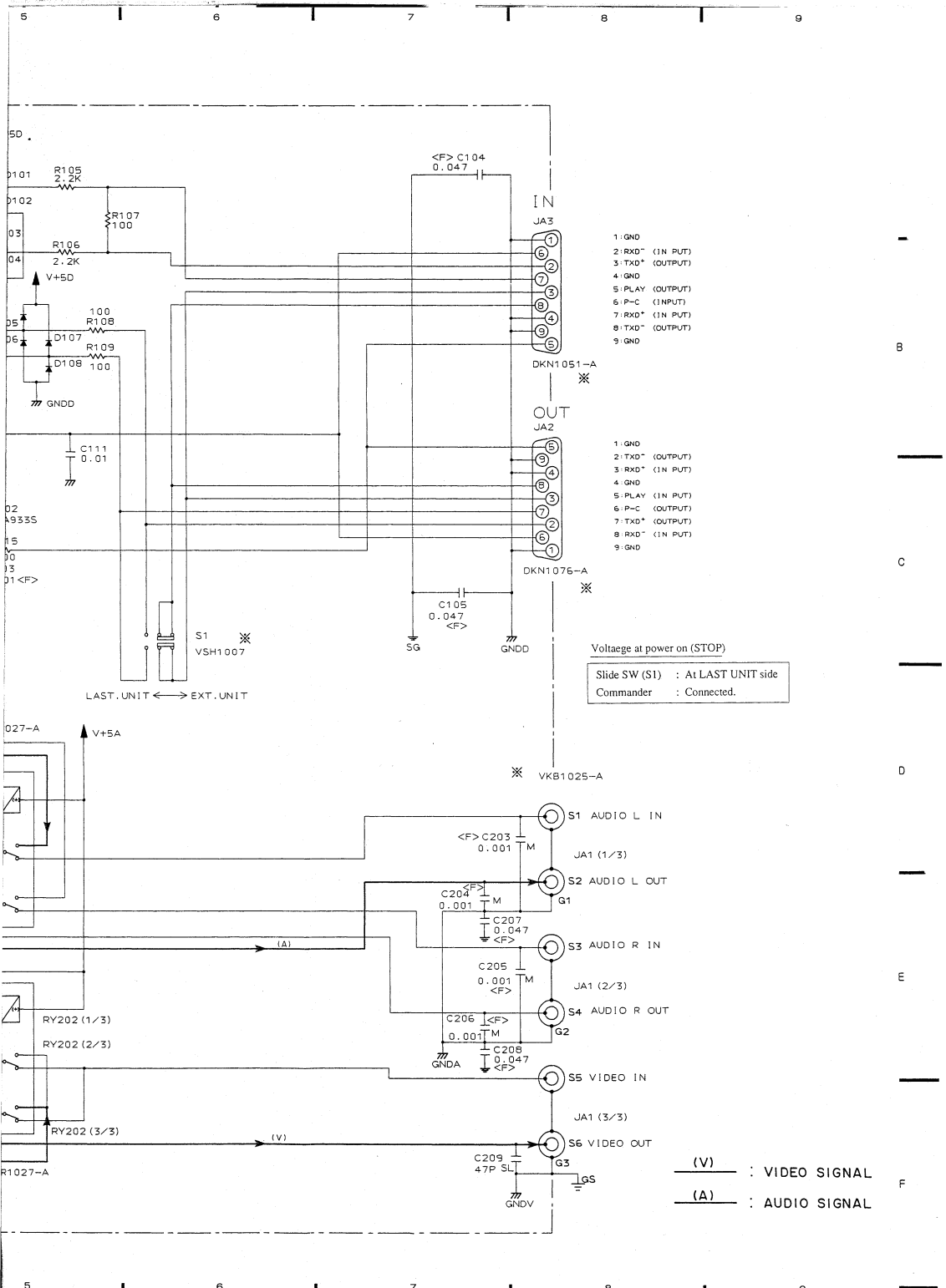

SYSB UNIT (RWZ2769)
TO 4.CMEC UNIT CN52
CN53
BSB-PH-K-E
TO 3.VAPB UNIT CN25
CN26
BSB-PH-K-S
TO 11.SCNS UNIT (FL1) CN137
CN33
B6B-PH-K-S
TO 11.SCNS UNIT (FL2) CN137
CN34
B6B-PH-K-R
TO 6.CIOB UNIT CN31
CN32
B7B-EH
From 2.PSSB UNIT CN11
CN1
B4B-EH
TO 3.VAPB UNIT CN23
CN24
B4B-PH-K-S
XMCRST
MCSO
MCSI
MCSCK
MCCS
GND
CGSCK
XCGRST
XCGCS
CGSO
SHAKE1
PSO1
PSI1
PSCK1
XPRST1
SHAKE2
PSO2
PSI2
PSCK2
XPRST2
TXD
RXD
XPWRC
XPLAY
THRU
SW+5V
XPWRON
US+10V
EXPDA1
EXPSCK
DUAL
US+5V
IC101 PST5236
IC102 (1/4) (2/4) (3/4) (4/4) TC74HC00AP
EEPROM IC103 M6M80011AL
EEPSO
IC104 TC74HC4052AP
R150-R160 100
SCK
SCISELA
SCISELB
ANH-575
IC105 LM2940CT-5.0
IC106 SRAM TC5564APL-15
R168-R178 100
IC107 ROM PDL001A
IC108 TC74HC20AP
IC110 PD0012A
IC111 PD0012A
8 seg LED DRIVER
D104 GL-TP290
D105 GL-TP290
R235-R266 560
for CHECKER


S101~S106
RSG1010
JA101
RKN1024
X101 : RSS1040
IC109
HD6415108F10
IC113
NJU4051BD
IC112
PD0012A
8 seg LED DRIVER
S301~S312 : RSG1010
IC301
PD0012A
IC302
PD0012A
D304
DISP UNIT(RWZ2770)
DOOR SW
DSK1003
CN54
B2B-EH
CN264
B2P-SHF-1AA
TP for
CHECK
CN35
S108-PH
CN36
S108-PH
STANDBY
ERROR

6. CIOB UNIT

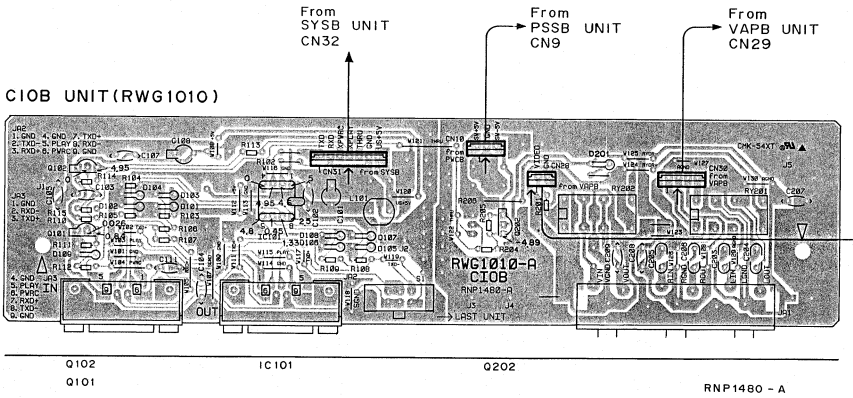


IC101			
Pin No.	Volts	Pin No.	Volts
1	5V	5	4.8V
2	4.6V	6	0.54V
3	4.95V	7	1.33V
4	0V	8	2.5V


R105 2.2K
R107 100
R106 2.2K
V+5D
R108 100
D107
R109 100
D108
GNDD
C111 0.01
<F> C104 0.047
IN
JA3
1:GND
2:RXD⁻ (IN PUT)
3:TXD⁺ (OUTPUT)
4:GND
5:PLAY (OUTPUT)
6:P-C (INPUT)
7:RXD⁺ (IN PUT)
8:TXD⁻ (OUTPUT)
9:GND
DKN1051-A
※
OUT
JA2
1:GND
2:TXD⁻ (OUTPUT)
3:RXD⁻ (IN PUT)
4:GND
5:PLAY (IN PUT)
6:P-C (OUTPUT)
7:TXD⁺ (OUTPUT)
8:RXD⁻ (IN PUT)
9:GND
DKN1076-A
※
C105 0.047 <F>
SG
GNDD
S1 ※ VSH1007
LAST.UNIT ⟷ EXT.UNIT
Voltaege at power on (STOP)
Slide SW (S1) : At LAST UNIT side
Commander : Connected.
※ VKB1025-A
V+5A
S1 AUDIO L IN
<F> C203 0.001 M
JA1 (1/3)
S2 AUDIO L OUT
C204 <F> 0.001 M
G1
C207 0.047 <F>
S3 AUDIO R IN
C205 0.001 M <F>
JA1 (2/3)
S4 AUDIO R OUT
C206 <F> 0.001 M
G2
C208 0.047 <F>
GNDA
S5 VIDEO IN
JA1 (3/3)
S6 VIDEO OUT
C209 47P SL
G3
GS
GNDV
(A)
(V)
RY202 (1/3)
RY202 (2/3)
RY202 (3/3)
(V) : VIDEO SIGNAL
(A) : AUDIO SIGNAL

• View from component side

CIOB UNIT(RWG1010)



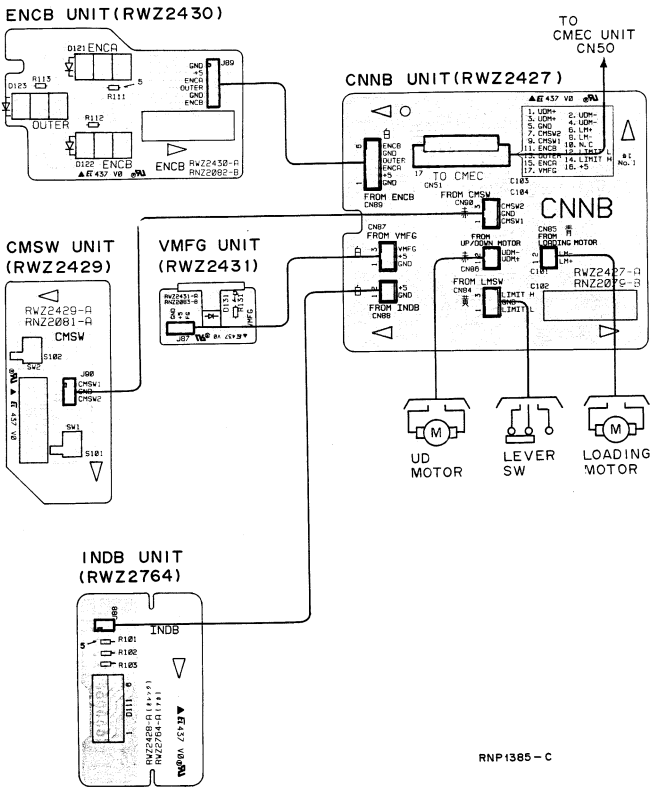
• View from soldering side

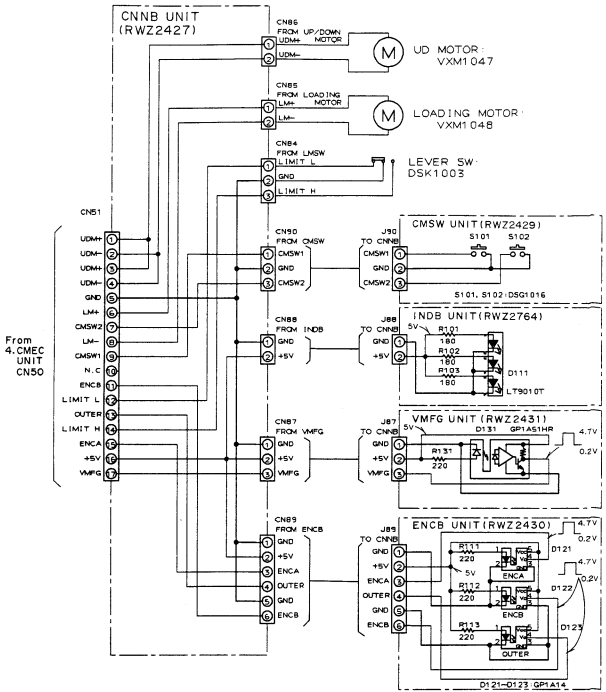
7. CNNB, CMSW, INDB, ENCB AND VMFG UNIT

- View from soldering side

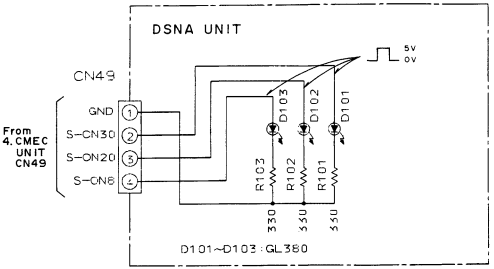
7. CNNB, CMSW, INDB, ENCB AND VMFG UNIT

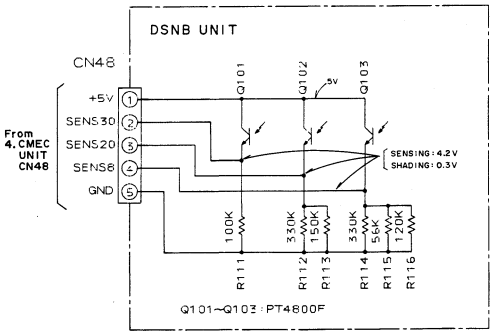
• View from component side




CNNB UNIT
(RWZ2427)
CN86
FROM UP/DOWN MOTOR
UDM+
UDM−
UD MOTOR:
VXM1047
CN85
FROM LOADING MOTOR
LM+
LM−
LOADING MOTOR:
VXM1048
CN84
FROM LMSW
LIMIT L
GND
LIMIT H
LEVER SW:
DSK1003
CN51
From 4.CMEC UNIT CN50
UDM+
UDM−
UDM+
UDM−
GND
LM+
CMSW2
LM−
CMSW1
N.C
ENCB
LIMIT L
OUTER
LIMIT H
ENCA
+5V
VMFG
CN90
FROM CMSW
CMSW1
GND
CMSW2
J90
TO CNNB
CMSW UNIT(RWZ2429)
S101
S102
S101, S102:DSG1016
CN88
FROM INDB
GND
+5V
J88
TO CNNB
INDB UNIT(RWZ2764)
5V
R101
180
R102
180
R103
180
D111
LT9010T
CN87
FROM VMFG
GND
+5V
VMFG
J87
TO CNNB
VMFG UNIT(RWZ2431)
5V
R131
220
D131
GP1A51HR
4.7V
0.2V
CN89
FROM ENCB
GND
+5V
ENCA
OUTER
GND
ENCB
J89
TO CNNB
ENCB UNIT(RWZ2430)
R111
220
R112
220
R113
220
D121
D122
D123
ENCA
ENCB
OUTER
D121–D123:GP1A14

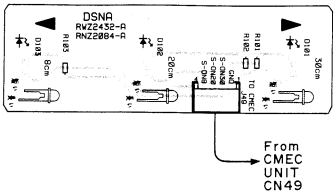
8. DSNA AND DSNB UNIT



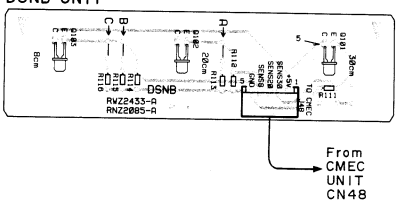


• View from component side

DSNA UNIT



DSNB UNIT



RNP1390-A

• View from soldering side

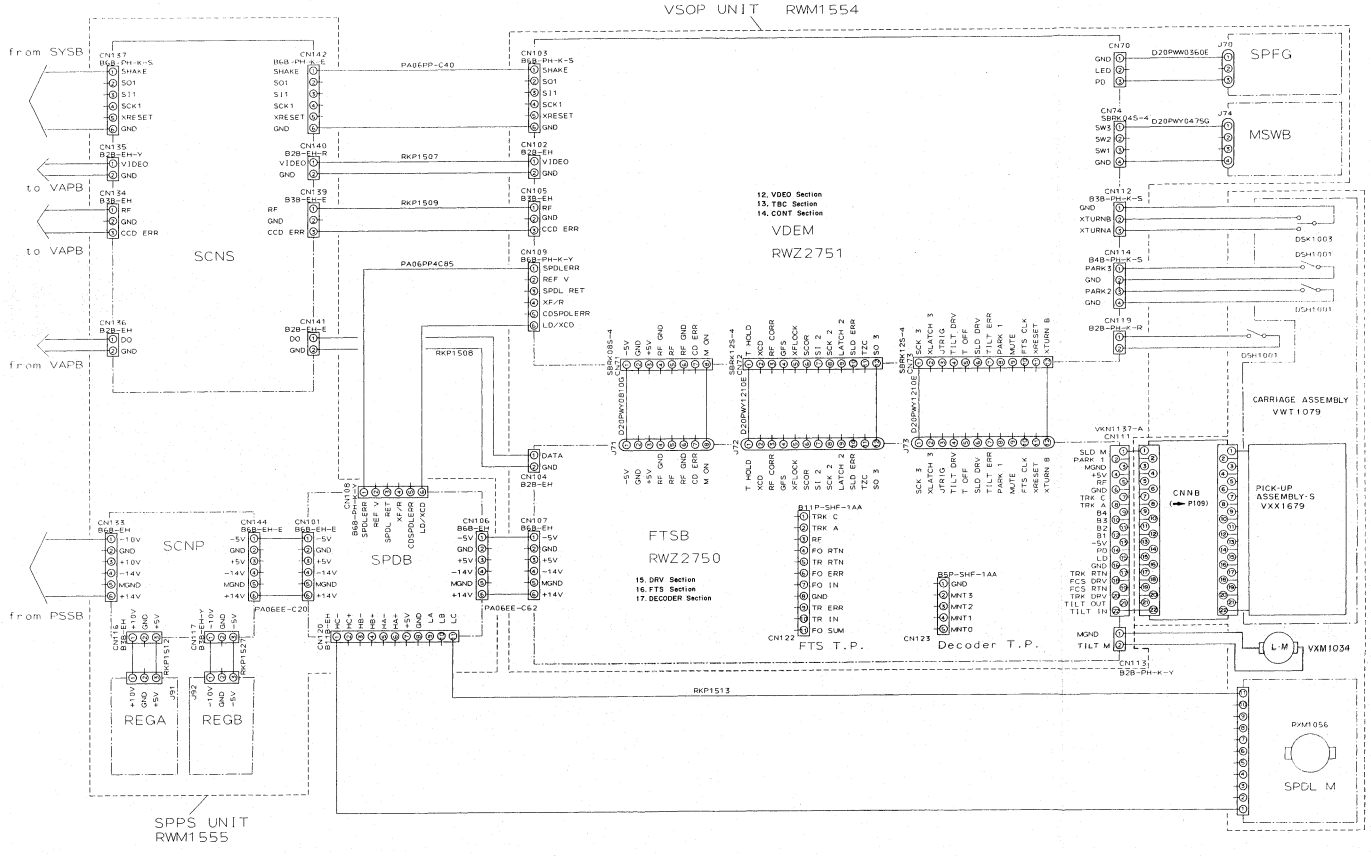
DSNA UNIT

DSNB UNIT

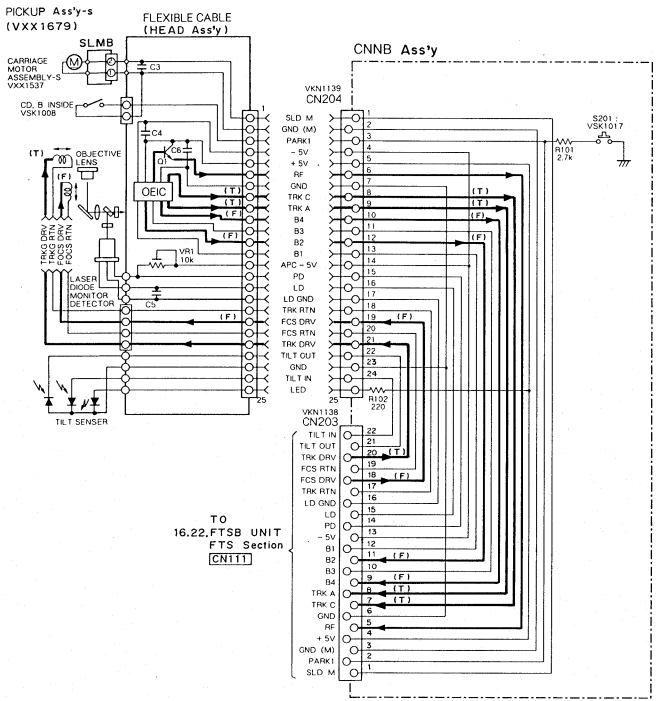
RMP1390-A

9. OVERALL WIRING DIAGRAM (CLD PLAYER SECTION) CLD-LCV200 ONLY

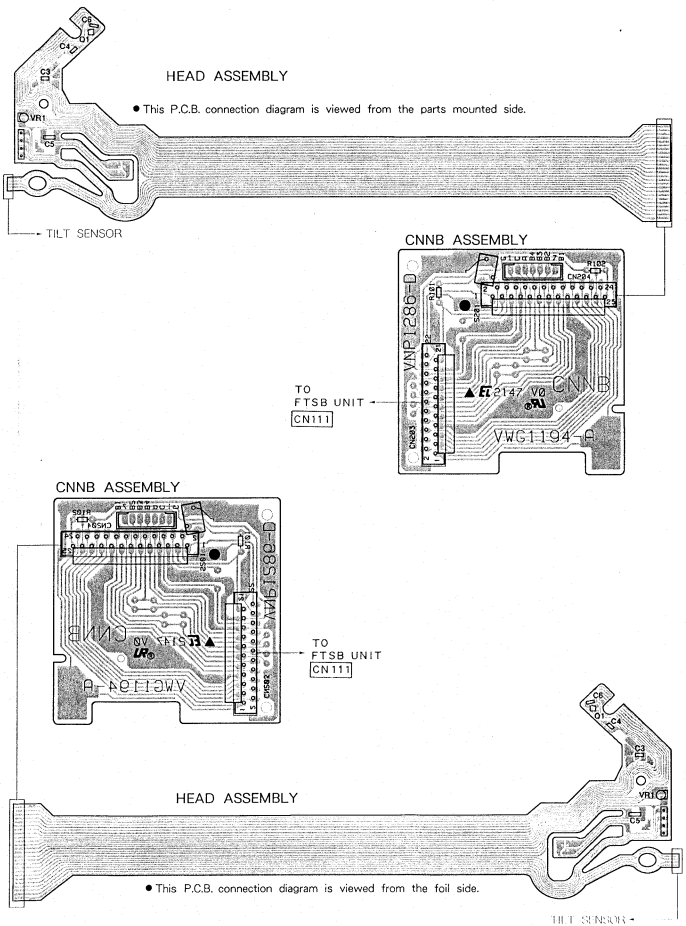
Note : This is the CLD player section for LC-V200/KUC.



10. PICKUP AND CNNB ASSEMBLY



• View from component side



• View from soldering side

SCNS UNIT

From VDEM UNIT CN105

From FTSB UNIT CN104

From VDEM UNIT CN102

TO VAPB UNIT CN21

TO VDEM UNIT CN103

From VDEM UNIT CN105

From SYSB UNIT CN33

TO VAPB UNIT CN19

TO VAPB UNIT CN17

From VAPB UNIT CN17

NOTE:
*1: SEM ONLY
*2: KUC ONLY

SPDB UNIT

From VDEM UNIT CN105

TO FTSB UNIT CN107

TO SPDL MOTOR

From PSSB UNIT CN15

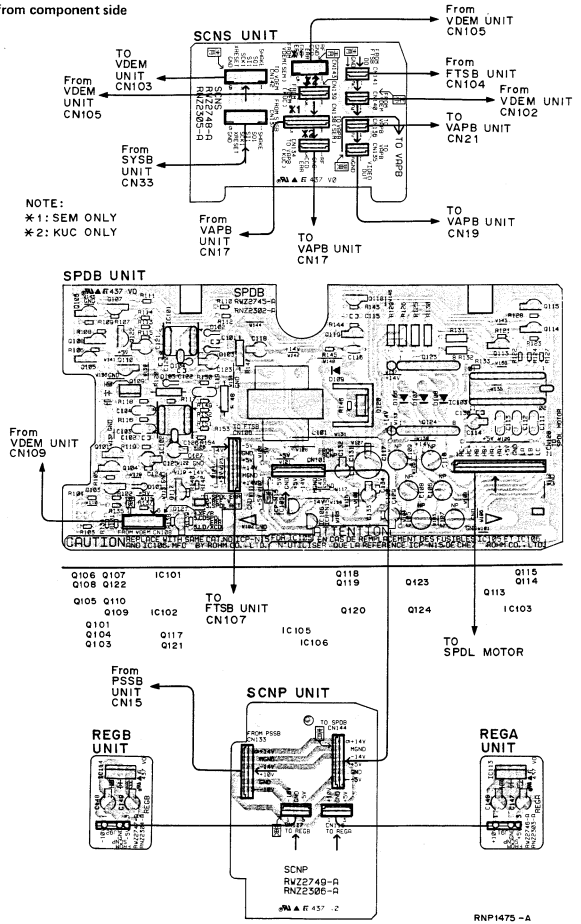
SCNP UNIT

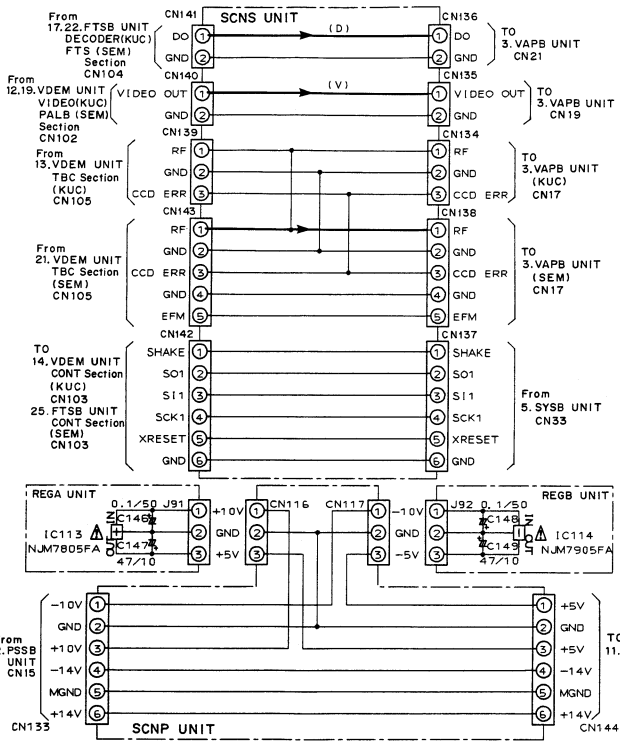
REGA UNIT

REGB UNIT

11. REGA, REGB, SCNS, SCNP AND SPDB UNIT

- View from component side

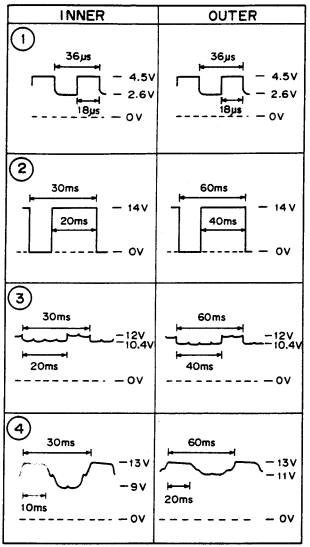



SCNS UNIT
From 17.22.FTSB UNIT DECODER(KUC) FTS (SEM) Section CN104
From 12.19.VDEM UNIT VIDEO(KUC) PALB (SEM) Section CN102
From 13.VDEM UNIT TBC Section (KUC) CN105
From 21.VDEM UNIT TBC Section (SEM) CN105
TO 14.VDEM UNIT CONT Section (KUC) CN103
25.FTSB UNIT CONT Section (SEM) CN103
CN141
CN140
CN139
CN143
CN142
CN136
CN135
CN134
CN138
CN137
DO
GND
VIDEO OUT
RF
CCD ERR
EFM
SHAKE
SO1
SI1
SCK1
XRESET
(D)
(V)
TO 3.VAPB UNIT CN21
TO 3.VAPB UNIT CN19
TO 3.VAPB UNIT (KUC) CN17
TO 3.VAPB UNIT (SEM) CN17
From 5.SYSB UNIT CN33
REGA UNIT
REGB UNIT
IC113 NJM7805FA
IC114 NJM7905FA
C146 0.1/50
C147 47/10
C148 0.1/50
C149 47/10
J91
J92
CN116
CN117
+10V
-10V
+5V
-5V
From 2.PSSB UNIT CN15
TO 11.SPDB UNIT CN101
CN133
CN144
SCNP UNIT
: DIGITAL AUDIO SIGNAL
: VIDEO SIGNAL
: RF SIGNAL

WAVEFORMS OF SPDB UNIT

*1

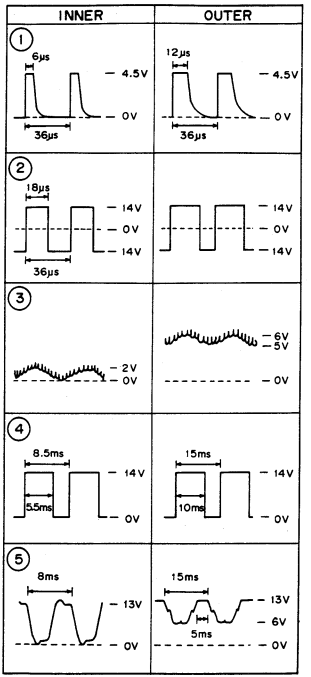
VOLTAGE AND WAVEFORM WHEN PLAYING BACK CD.



Waveform (1) is the same at the inner circumference and the outer circumference.
The periods at the inner and outer circumference of waveforms (2) to (4) change continuously.
Those described here are reference values.

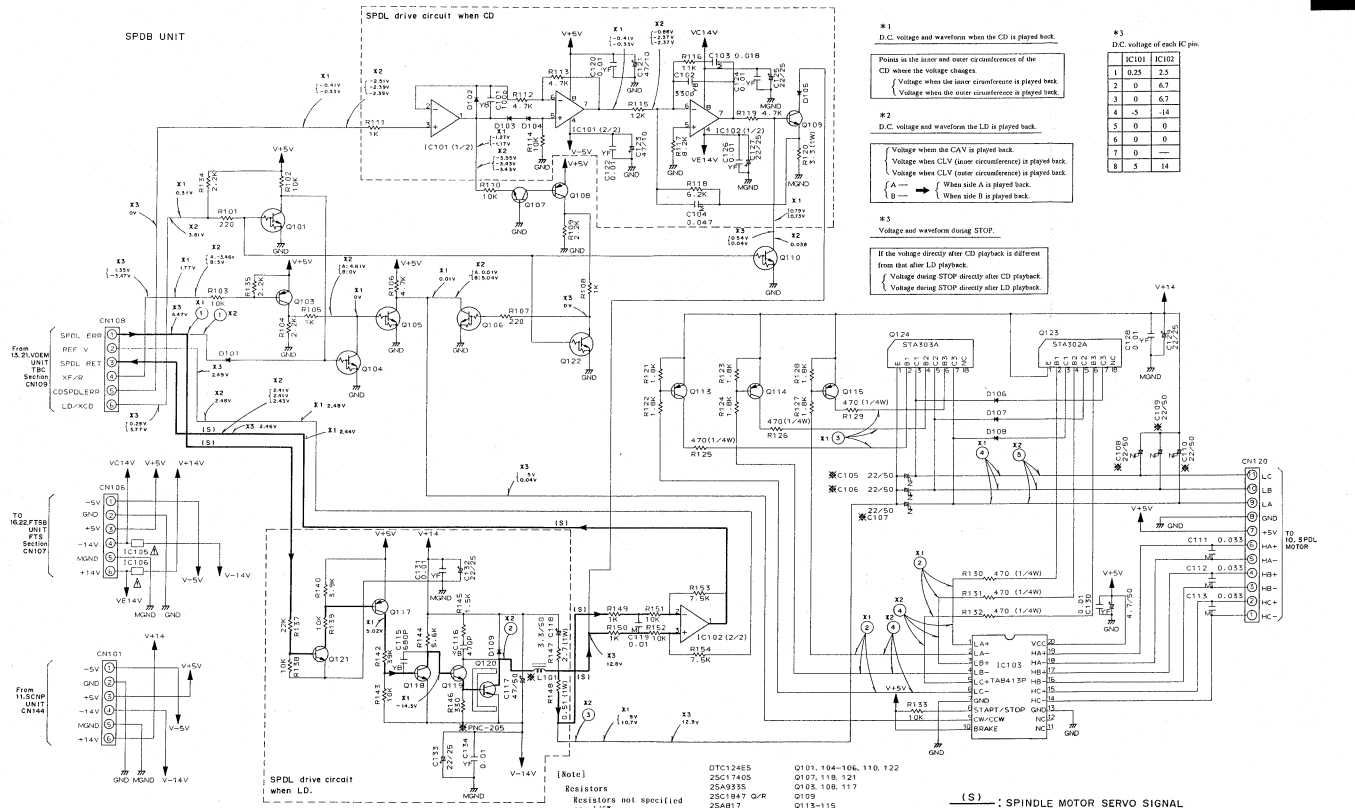
*2

VOLTAGE AND WAVEFORM WHEN PLAYING BACK LD.



*2

VOLTAGE AND WAVEFORM WHEN PLAYING BACK LD.
(The voltage and waveform described here are whem 20cm CLV disc is used.
The waveform for the CAV disc is the same as the inner circumference waveform of the CLV disc above.)



CAUTION FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE NO. ICP-N15, MFD BY ROHM CO., LTD FOR IC105 AND IC106.

[Note]

Resistors
Resistors not specified are 1/8W.

Capacitors
YF : CKPUYF
YB : CKPUYB or CKCYB
M : CQMA

DTC124ES	Q101, 104-106, 110, 122
2SC1740S	Q107, 118, 121
2SA933S	Q103, 108, 117
2SC1847 Q/R	Q109
2SA817	Q113-115
2SC1627 Y	Q119
2SD1267 P/Q	Q120
1SS254	D101-104
11E52	D105
S3V10-4002P7.5	D106-108
S2K20	D109
BA15218	IC101, 102
TAB413P	IC103
ICP-N15	IC105, 106
VCH1091-A-F	C105-110

12. VDEM (1/3) (VIDEO Section)

VDEM UNIT (RWZ2751)
•VIDEO Section

Note : Indicates connection destination of other circuit diagrams.

VIDEO	: 12. VDEM UNIT(1/3)
TBC	: 13. VDEM UNIT(2/3)
CONT	: 14. VDEM UNIT(3/3)

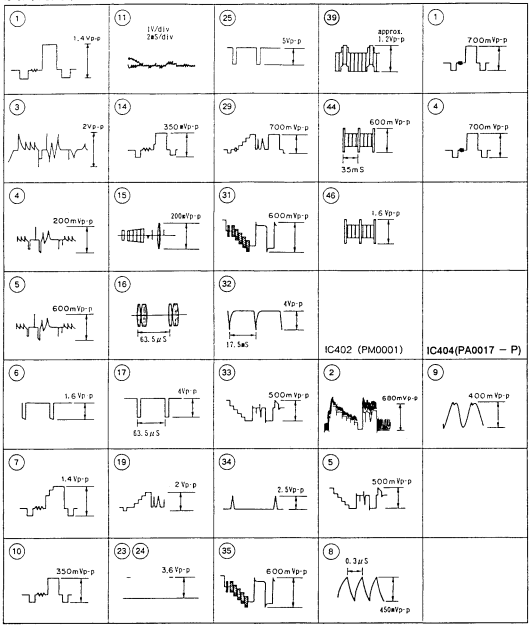
(V) : RF SIGNAL
(S) : VIDEO SIGNAL
SPINDLE MOTOR SERVO

WAVEFORMS OF VDEM UNIT (1/3)

VIDEO Section

IC401 (PA5013A)

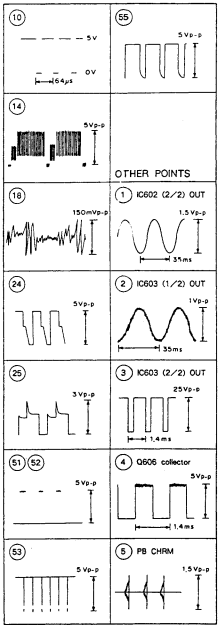
IC403(CXL1009P)



WAVEFORMS OF VDEM UNIT (2/3)

TBC Section

IC601 (PM3002)

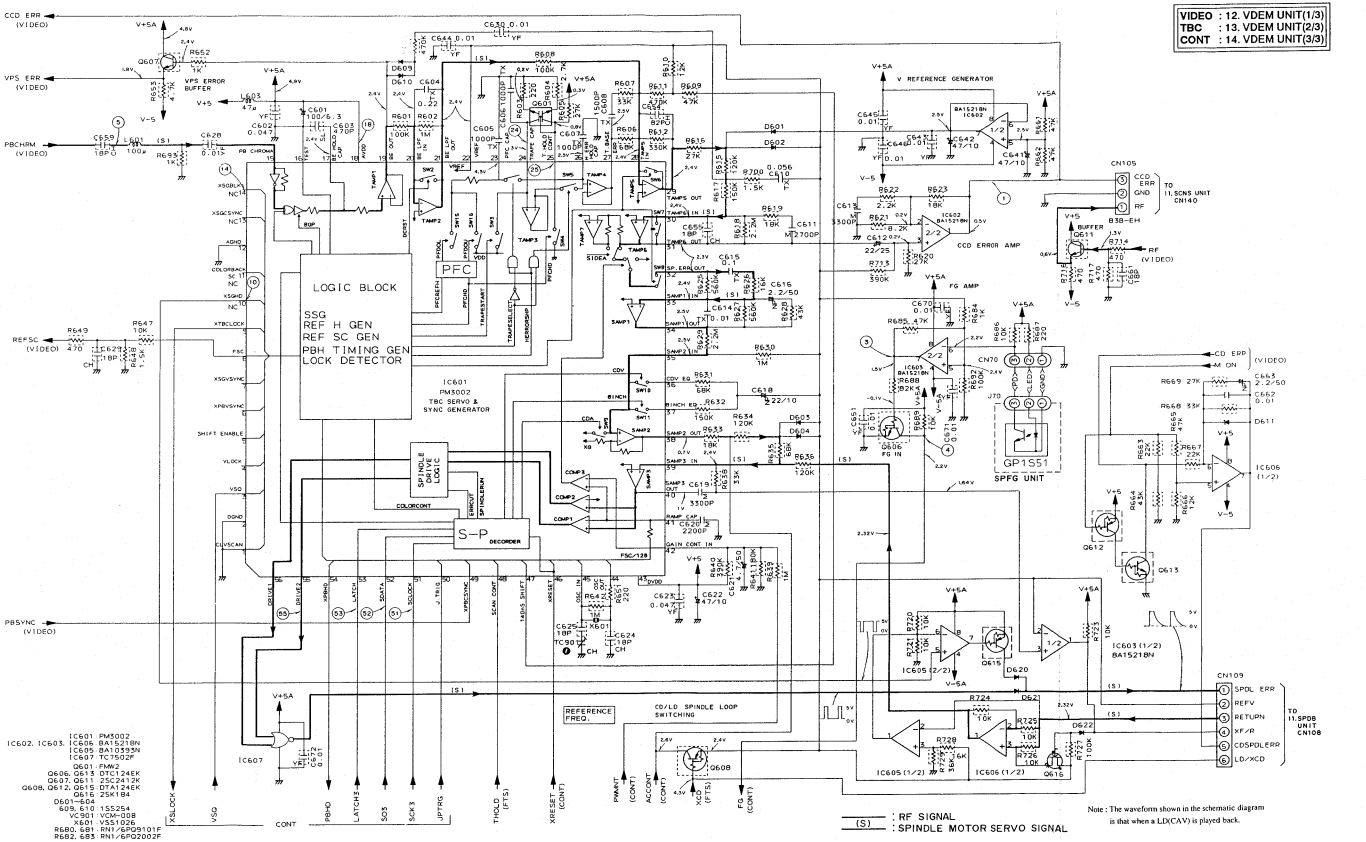


13. VDEM UNIT (2/3) AND SPFG UNIT (TBC Section)

VDEM UNIT(RWZ2751) •TBC Section

Note : Indicats connection destination of other circuit diagrams.

VIDEO	: 12. VDEM UNIT(1/3)
TBC	: 13. VDEM UNIT(2/3)
CONT	: 14. VDEM UNIT(3/3)

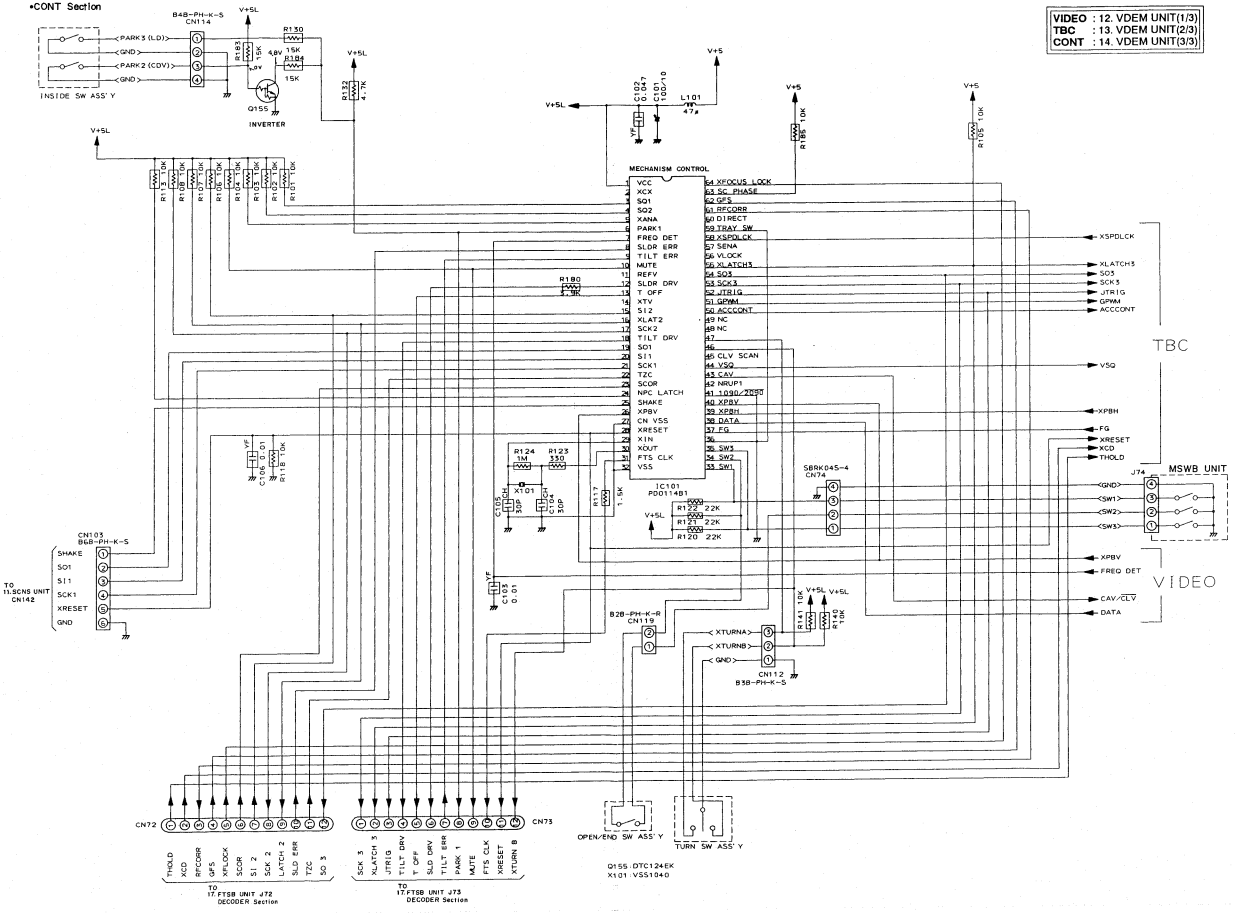


14. VDEM (3/3) AND MSWB UNIT (CONT Section)

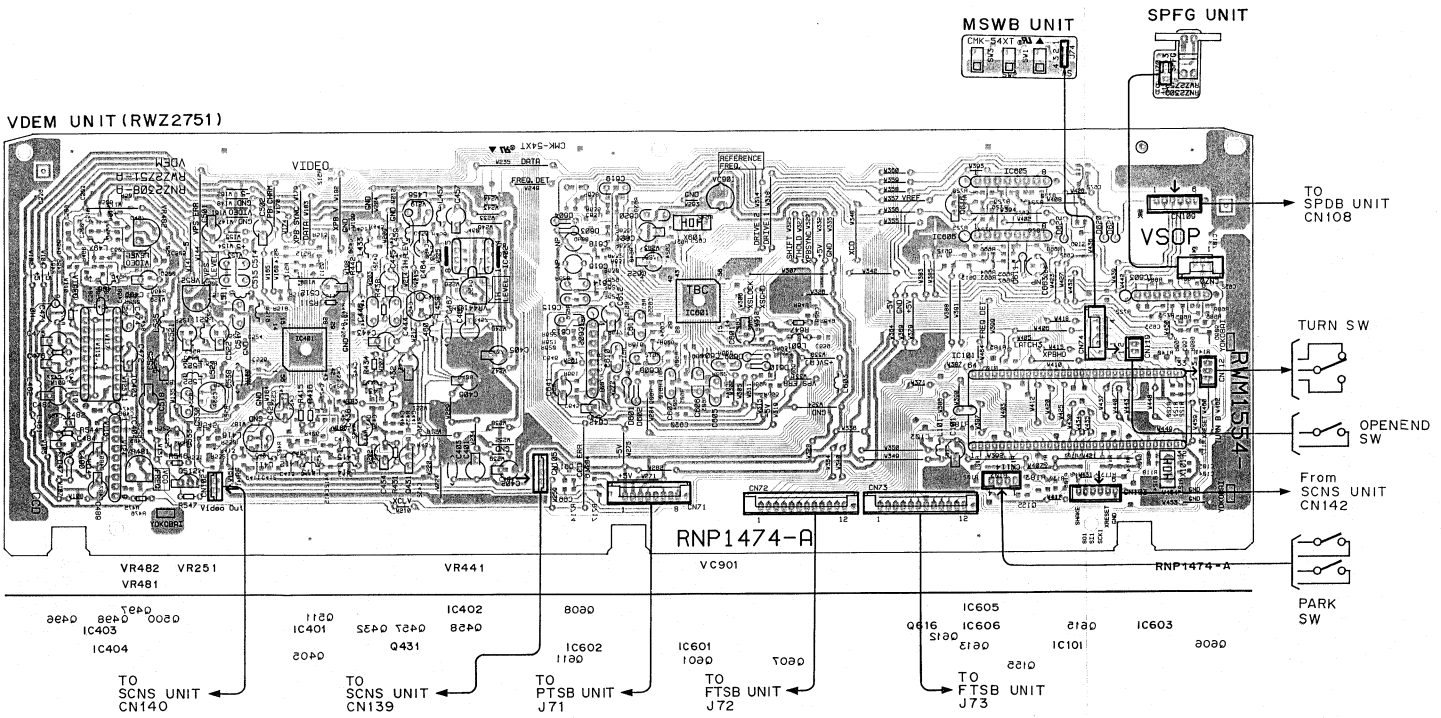
VDEM UNIT (RWZ2751)
•CONT Section

Note : Indicats connection destination of other circuit diagrams.

VIDEO	: 12. VDEM UNIT(1/3)
TBC	: 13. VDEM UNIT(2/3)
CONT	: 14. VDEM UNIT(3/3)



• View from component side

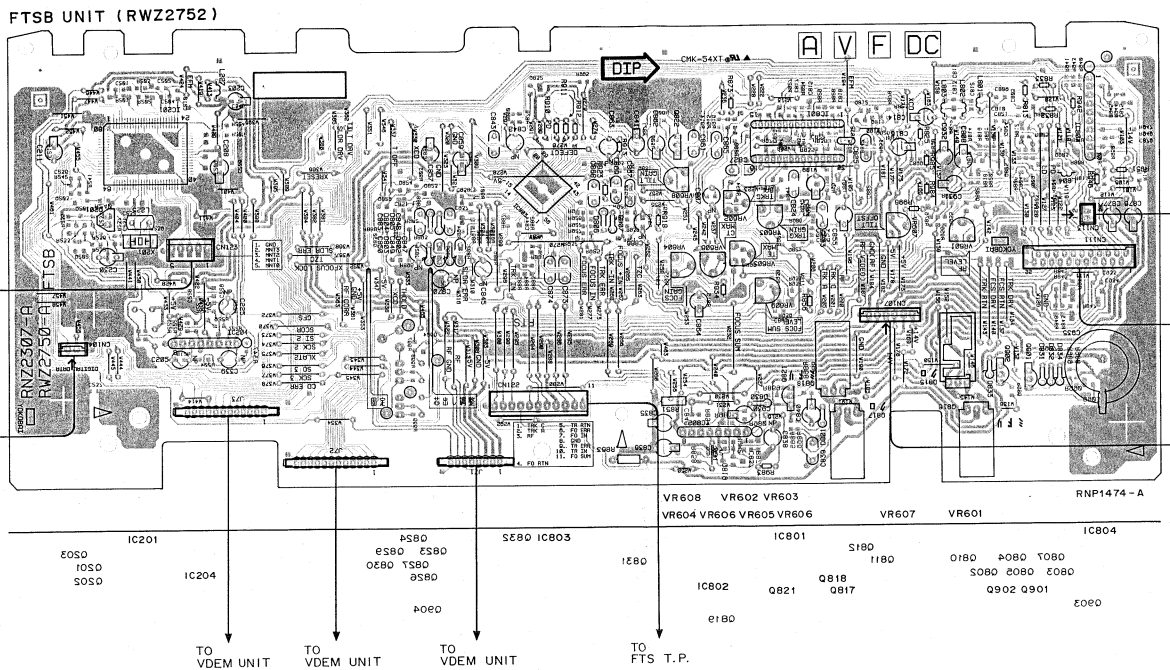


• View from soldering side

• View from soldering side

FTSB UNIT (RWZ275Z)

• View from component side

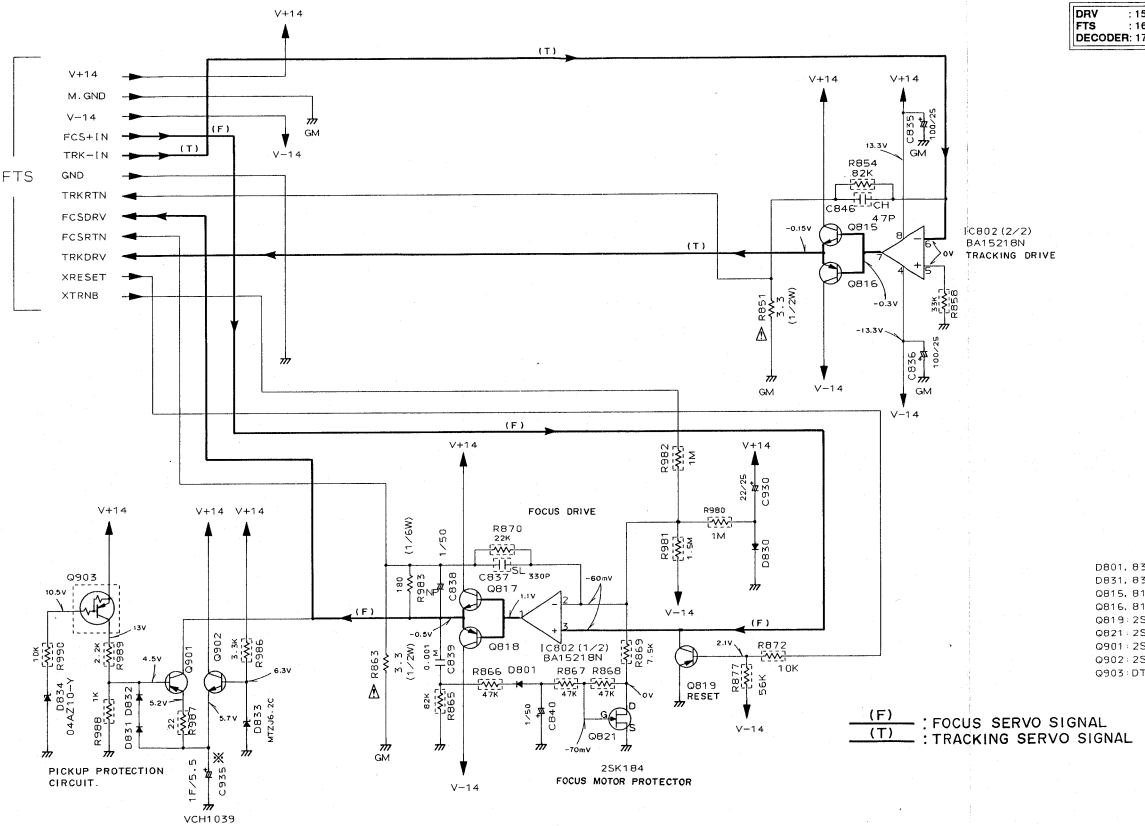


15. FTSB UNIT (1/3) (DRV Section)

FTSB UNIT (RWZ2750)
•DRV Section

Note : Indicats connection destination of other circuit diagrams.

DRV	: 15. FTSB UNIT(1/3)
FTS	: 16. FTSB UNIT(2/3)
DECODER	: 17. FTSB UNIT(3/3)



(F) : FOCUS SERVO SIGNAL
(T) : TRACKING SERVO SIGNAL

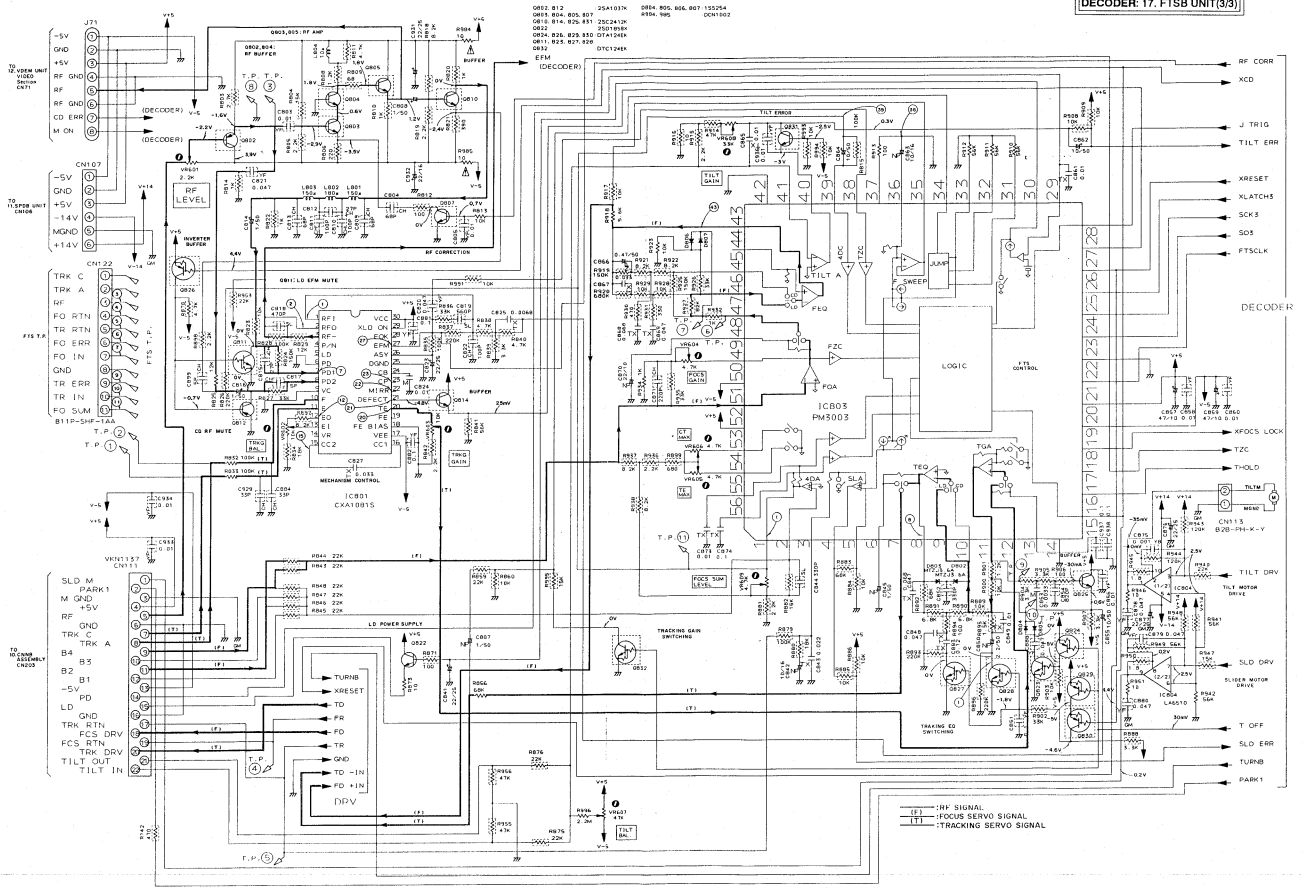
D801, 830
D831, 832 : 1SS254
Q815, 817 : 2SD1762
Q816, 818 : 2SB1185
Q819 : 2SA1037K
Q821 : 2SK184
Q901 : 2SA933S
Q902 : 2SC1740S
Q903 : DTA124EK

16. FTSB UNIT (2/3) (FTS Section)

FTSB UNIT(RWZ275G)
•FTS Section

Note : Indicates connection destination of other circuit diagrams.

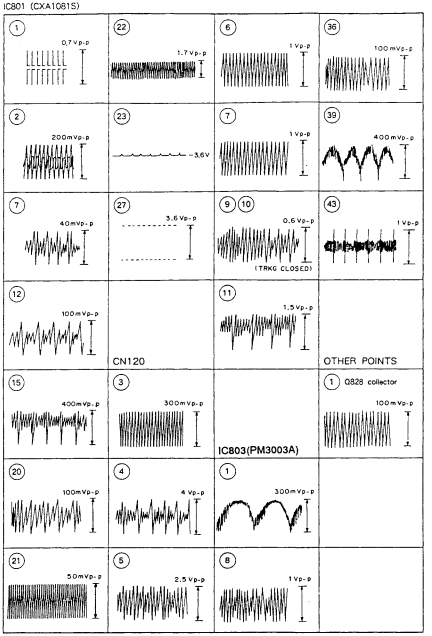
DRV	: 15. FTSB UNIT(1/3)
FTS	: 16. FTSB UNIT(2/3)
DECODER	: 17. FTSB UNIT(3/3)



WAVEFORMS OF FTSB UNIT (2/3)

FTS Section

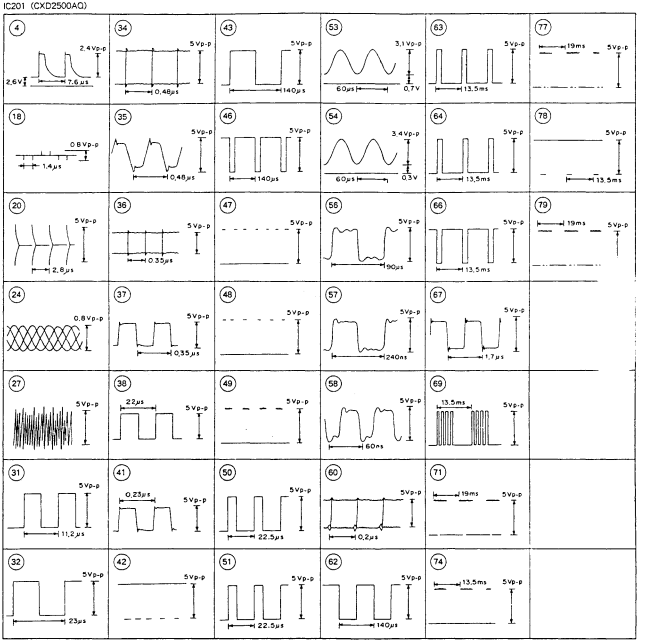
IC801 (CXA1081S)



WAVEFORMS OF FTSB UNIT (3/3)

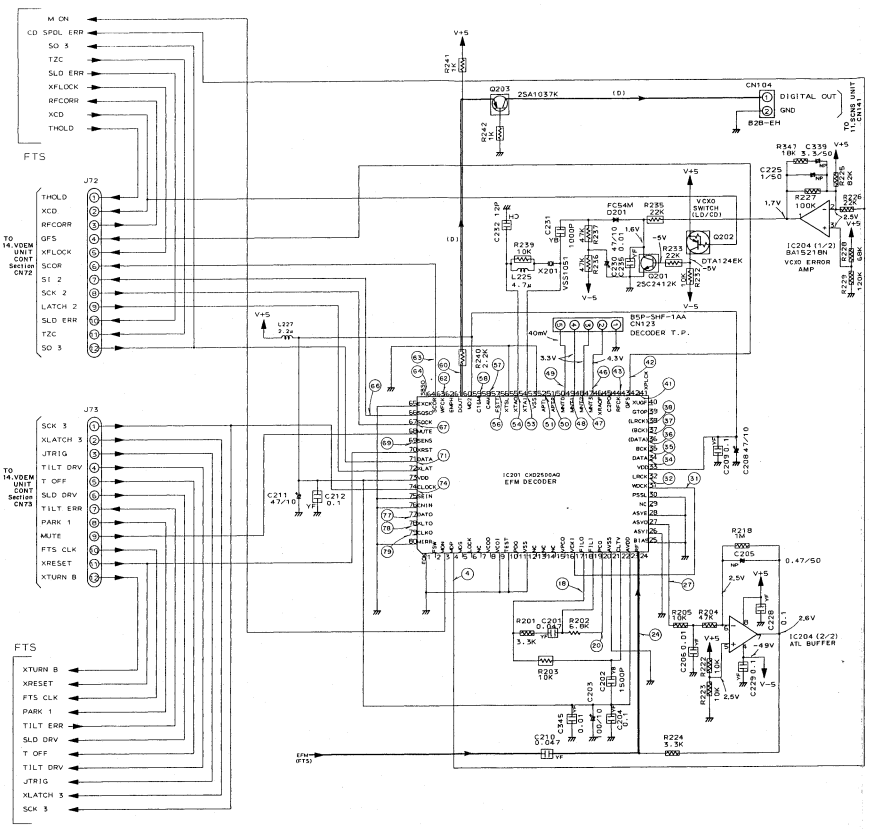
DECODER Section

IC201 (CXD2500AQ)



17. FTSB UNIT (3/3) (DECODER Section)

FTSB UNIT(RWZ2750)
•DECODER Section

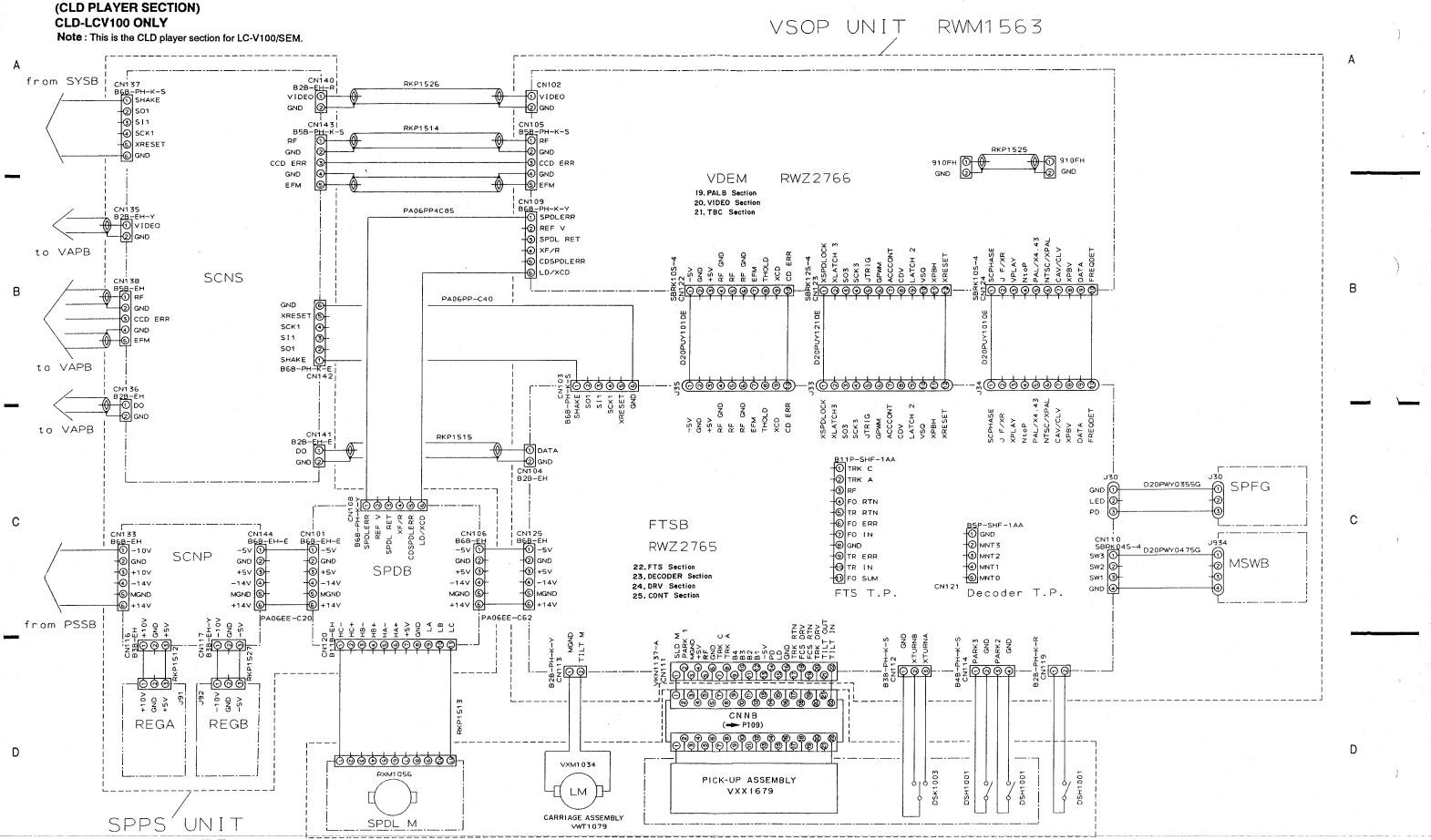


Note : Indicats connection destination of other circuit diagrams.

DRV	: 15. FTSB UNIT(1/3)
FTS	: 16. FTSB UNIT(2/3)
DECODER	: 17. FTSB UNIT(3/3)

18. OVERALL WIRING DIAGRAM (CLD PLAYER SECTION) CLD-LCV100 ONLY

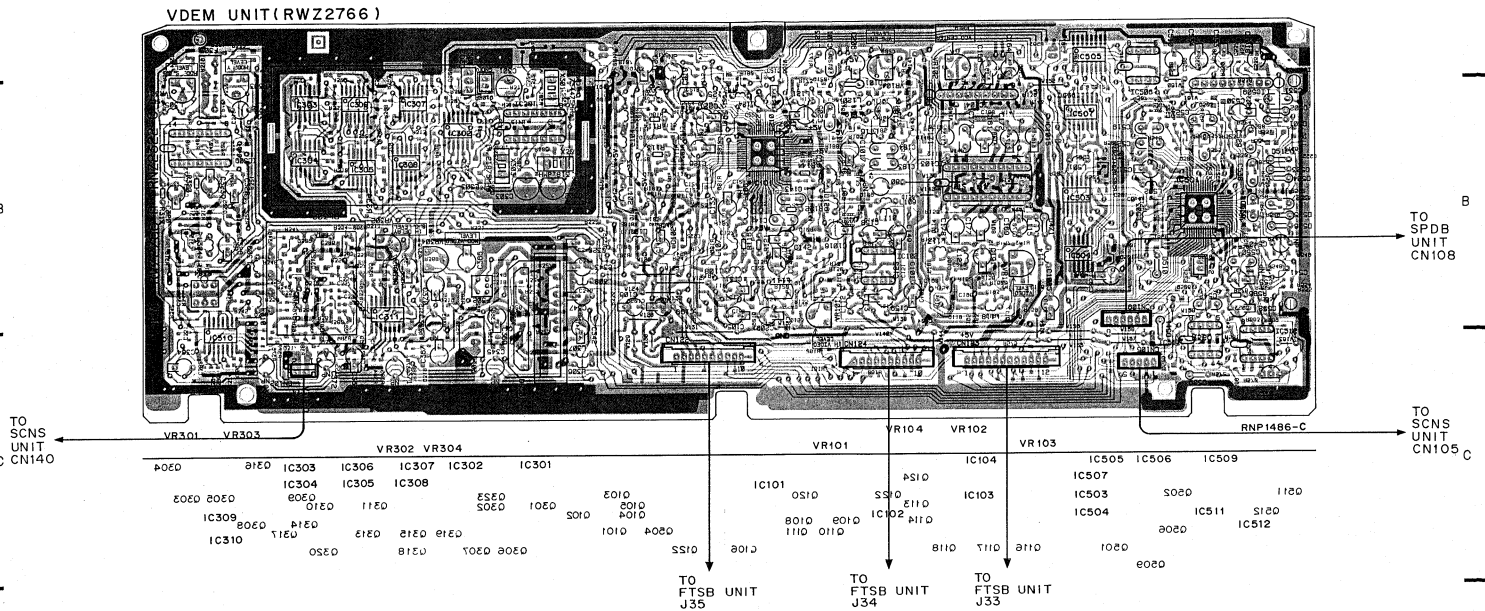
Note : This is the CLD player section for LC-V100/SEM.



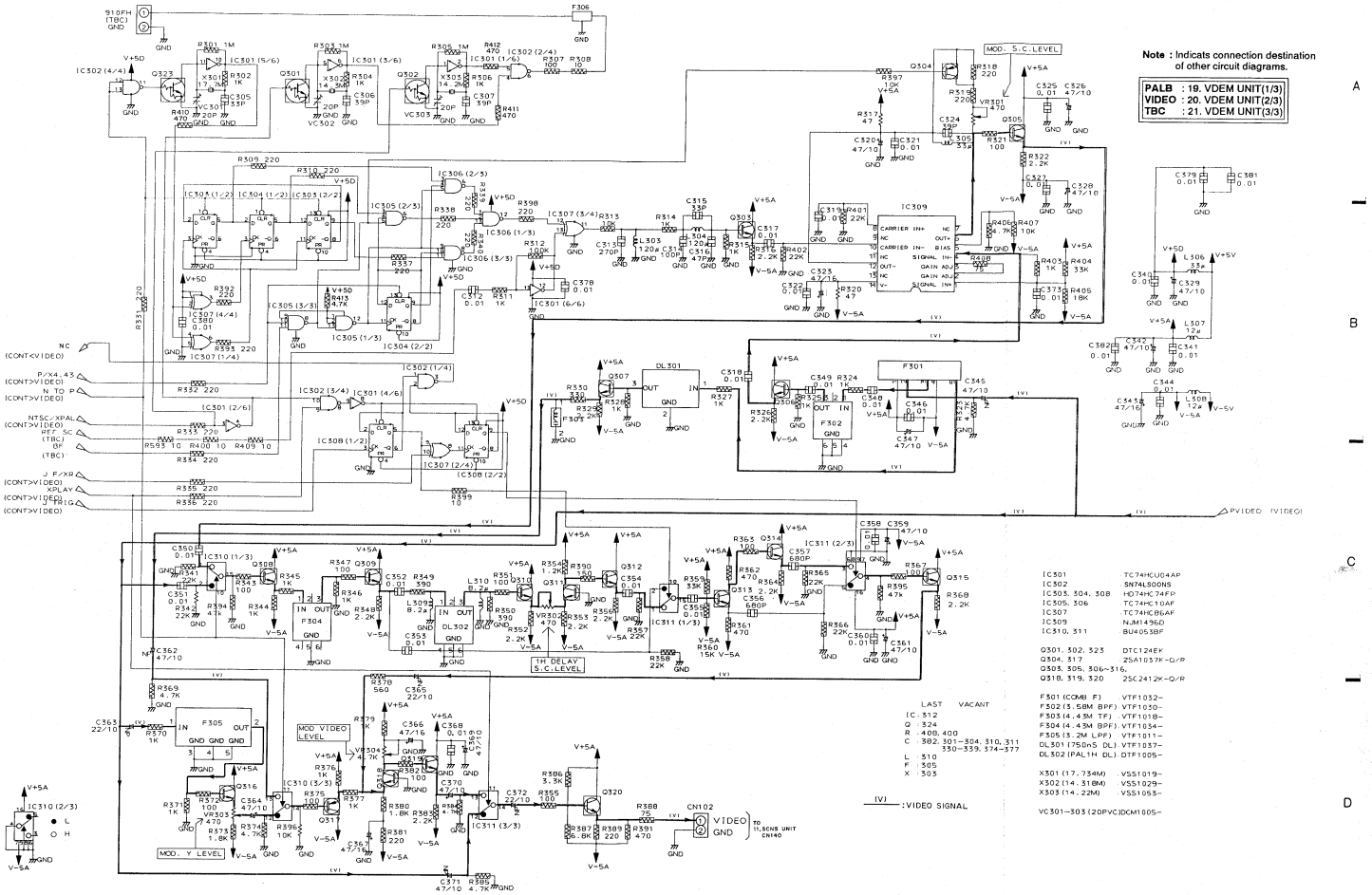
VDEM UNIT

• View from soldering side

• View from component side



19. VDEM UNIT (1/3) (PALB Section)

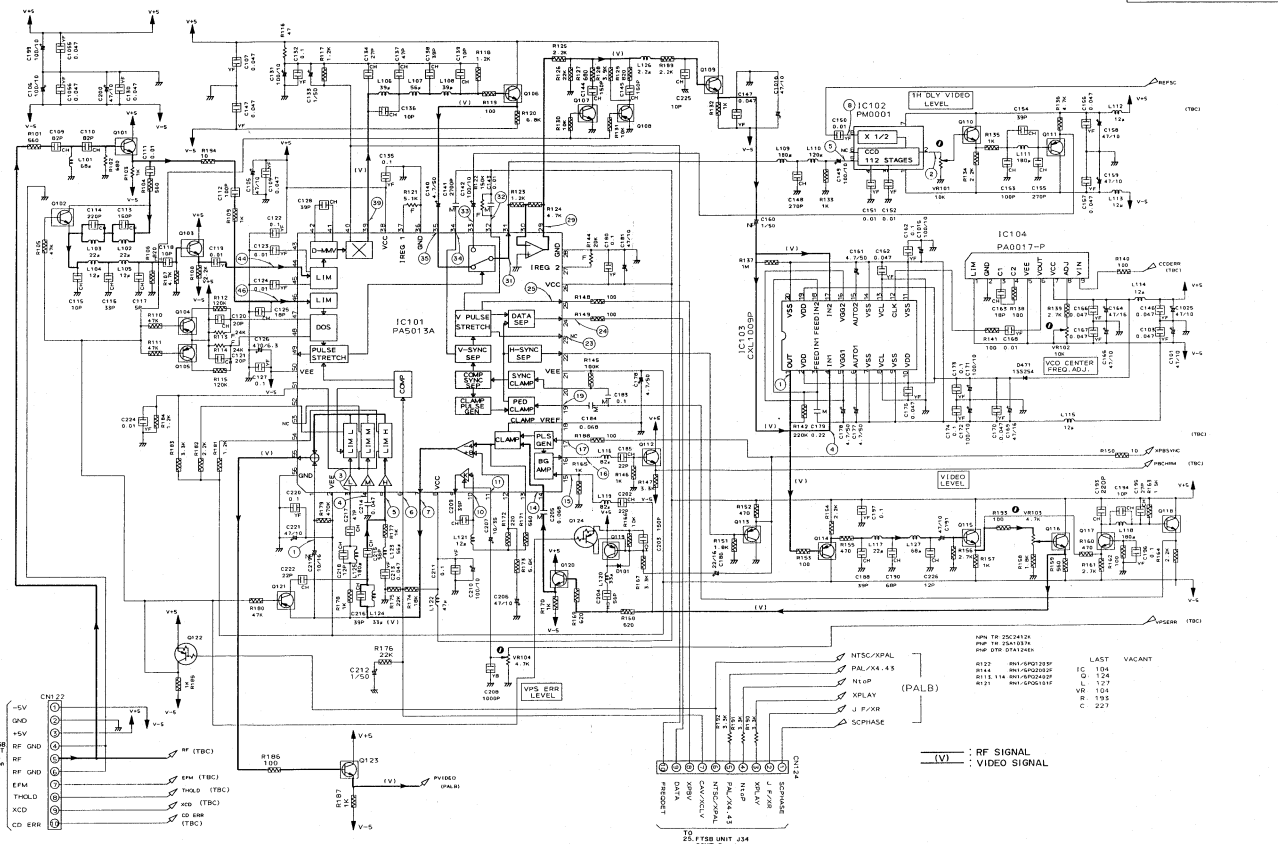


20. VDEM UNIT (2/3) (VIDEO Section)

VDEM UNIT(RWZ2766)
•VIDEO Section

Note : Indicats connection destination of other circuit diagrams.

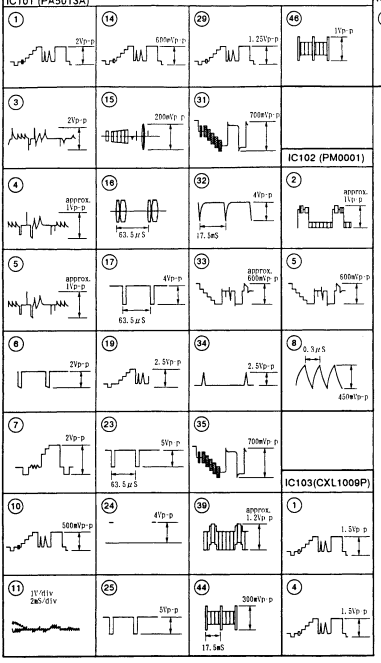
PALB	: 19. VDEM UNIT(1/3)
VIDEO	: 20. VDEM UNIT(2/3)
TBC	: 21. VDEM UNIT(3/3)



VIDEO SECTION

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

IC101 (PA5013A)



IC104 (PA0017-P)

IC102 (PM0001)

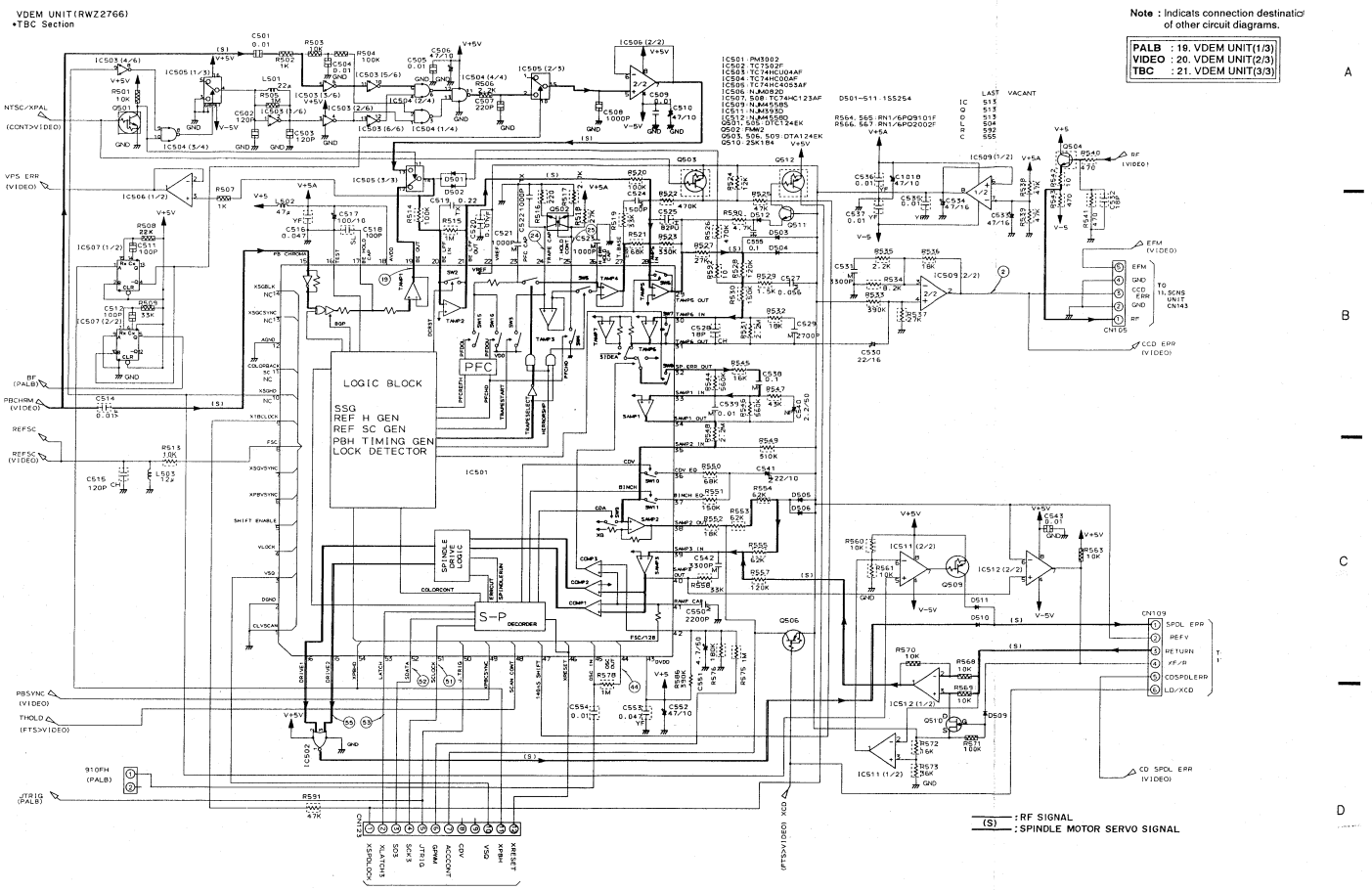
IC103(CXL1009P)

Note : (No) in th ble correspond to the pin No.

TBC SECTION

IC501(PM3002)		IC509(NJM4558S)
(19) 300mVp-p	(51) 5Vp-p, 22.5μs	(2) 14μs, 4Vp-p
(24) 5Vp-p	(52) 100mV, 0V	
(25) 2Vp-p	(53) 5Vp-p	
(44) 4Vp-p	(55) 5Vp-p	

21. VDEM UNIT (3/3) (TBC Section)

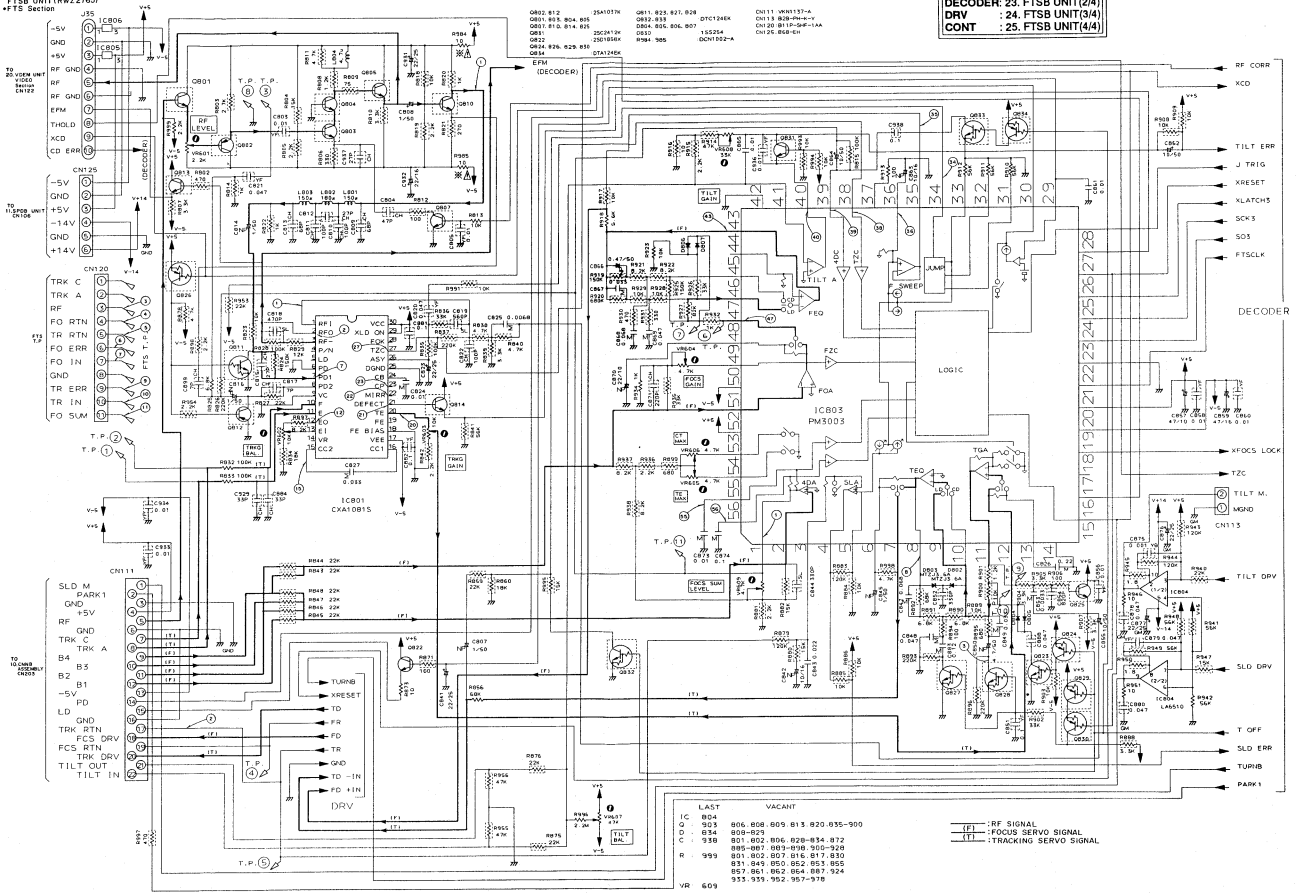


154

22. FTSB UNIT (1/4) (FTS Section)

Note : Indicats connection destination of other circuit diagrams.

FTS	: 22. FTSB UNIT(1/4)
DECODER	: 23. FTSB UNIT(2/4)
DRV	: 24. FTSB UNIT(3/4)
CONT	: 25. FTSB UNIT(4/4)



	LAST	VACANT
IC	804	
Q	903	806.808.809.813.820.835-900
D	834	808-829
C	938	801.802.806.828-834.872
		885-887.889-898.900-928
R	999	801.802.807.816.817.830
		831.849.850.852.853.855
		857.861.862.864.887.924
		933.939.952.957-978
VR	609	

FTS SECTION

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

IC801 (CXA1081S)

(1)


(20)


(2)


(21)


(7)


(22)

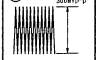

(12)

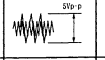

(23)

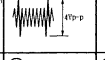

(15)

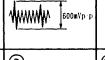

(27)

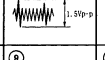

CN120

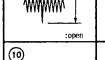
(3)


(4)


(5)


(6)


(7)


(9)


(10)


(11)


IC803 (PM3003A)

(1)


(8)


(34)


(35)


(36)


(38)


(39)


(40)


(43)


(47)


(55)


(58)


Other points

(1) Q810 Collector


(2) CN111 Pin 17


(3) Q828 Collector


(4) CN111 Pin 18


(5) CN111 Pin 19


(6) IC804 Pin 9


DECODER SECTION

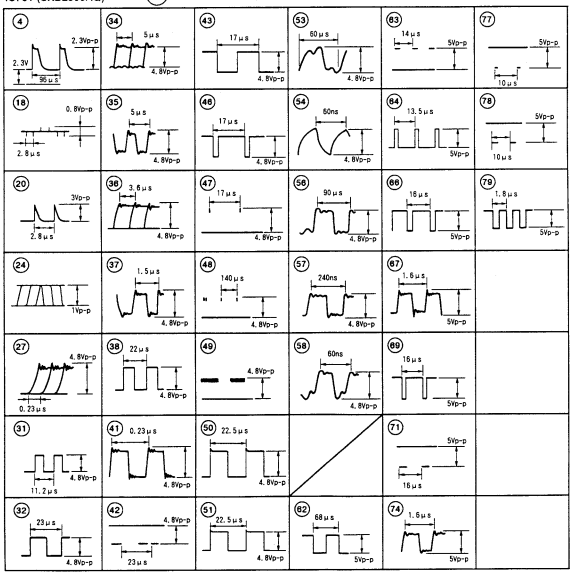
Note: Waveforms and voltages are at the PLAY.

IC701 (CXD2500AQ)

Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage
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

IC701 (CXD2500AQ) Note: (No.) in the table correspond to the pin No.

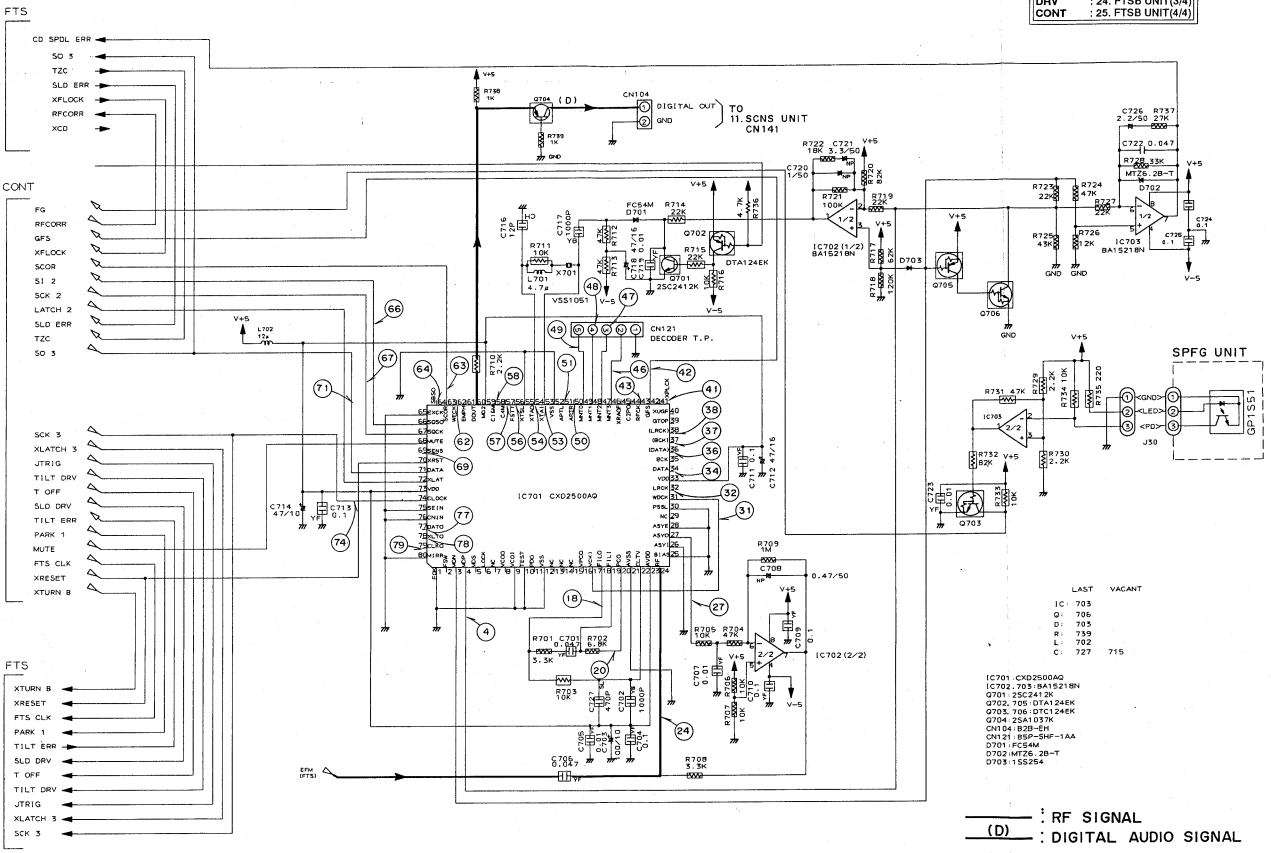


23. FTSB AND SPFG UNIT (2/4) (DECODER Section)

Note : Indicats connection destination of other circuit diagrams.

FTS	: 22. FTSB UNIT(1/4)
DECODER	: 23. FTSB UNIT(2/4)
DRV	: 24. FTSB UNIT(3/4)
CONT	: 25. FTSB UNIT(4/4)

FTSB UNIT(RWZ2765)
•DECODER Section



LAST VACANT

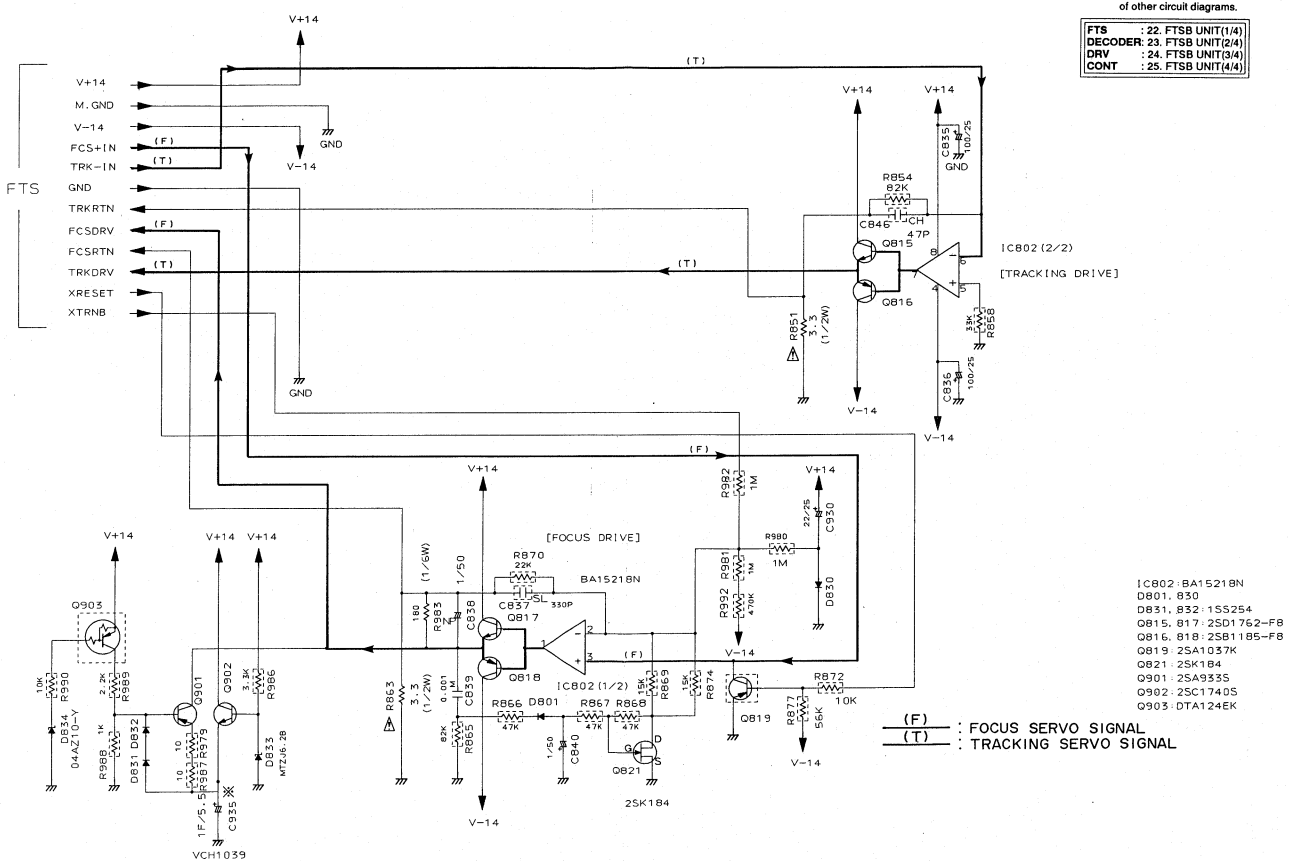
IC : 703
Q : 706
D : 705
R : 759
L : 702
C : 727 715

IC701 :CXD2500AQ
IC702,703 :BA15218N
Q701 :2SC2412K
Q702,705 :DTA124EK
Q703,706 :DTC124EK
Q704 :2SA1037K
CN104 :B2B-EH
CN121 :B5P-SHF-1AA
D701 :FCS4M
D702 :MTZ6.2B-T
D703 :1SS254

——— : RF SIGNAL
(D) : DIGITAL AUDIO SIGNAL

24. FTSB UNIT (3/4) (DRV Section)

FTSB UNIT(RWZ2765)
•DRV Section

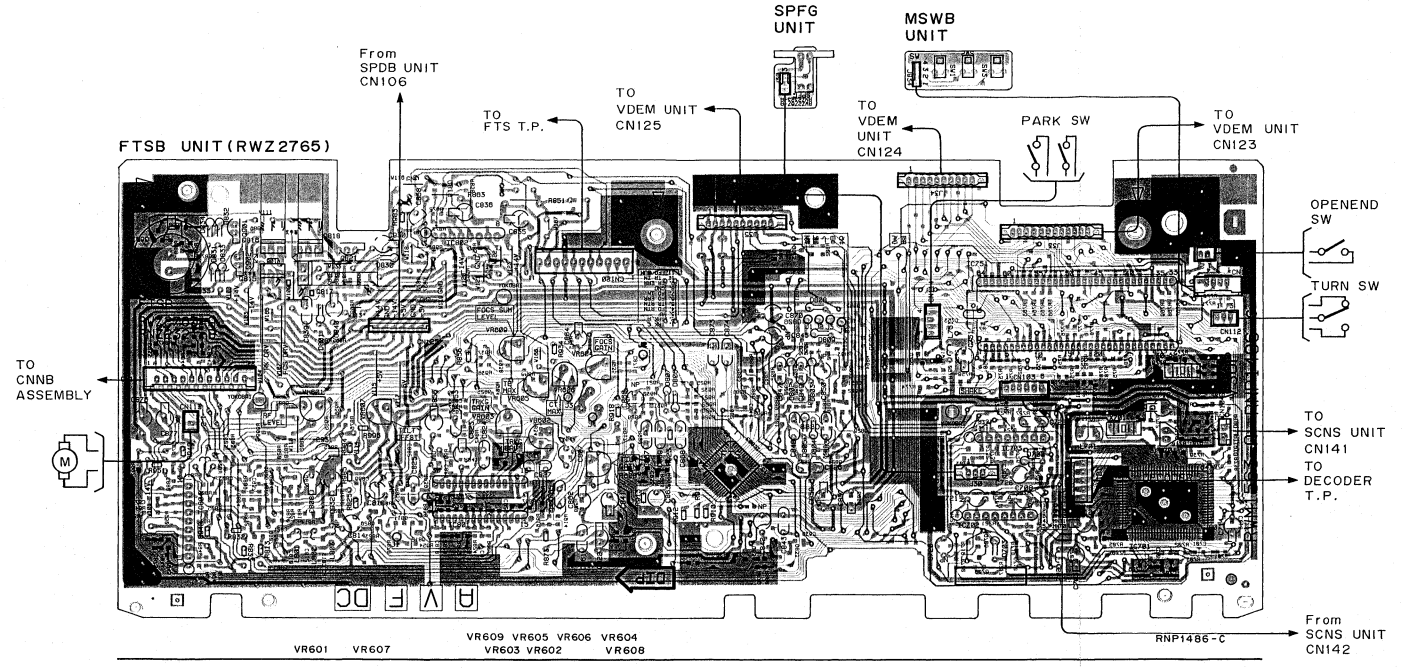


Note : Indicats connection destination of other circuit diagrams.

FTS	: 22. FTSB UNIT(1/4)
DECODER	: 23. FTSB UNIT(2/4)
DRV	: 24. FTSB UNIT(3/4)
CONT	: 25. FTSB UNIT(4/4)

IC802 : BA15218N
D801, 830
D831, 832 : 1SS254
Q815, 817 : 2SD1762-F8
Q816, 818 : 2SB1185-F8
Q819 : 2SA1037K
Q821 : 2SK184
Q901 : 2SA933S
Q902 : 2SC1740S
Q903 : DTA124EK

• View from component side



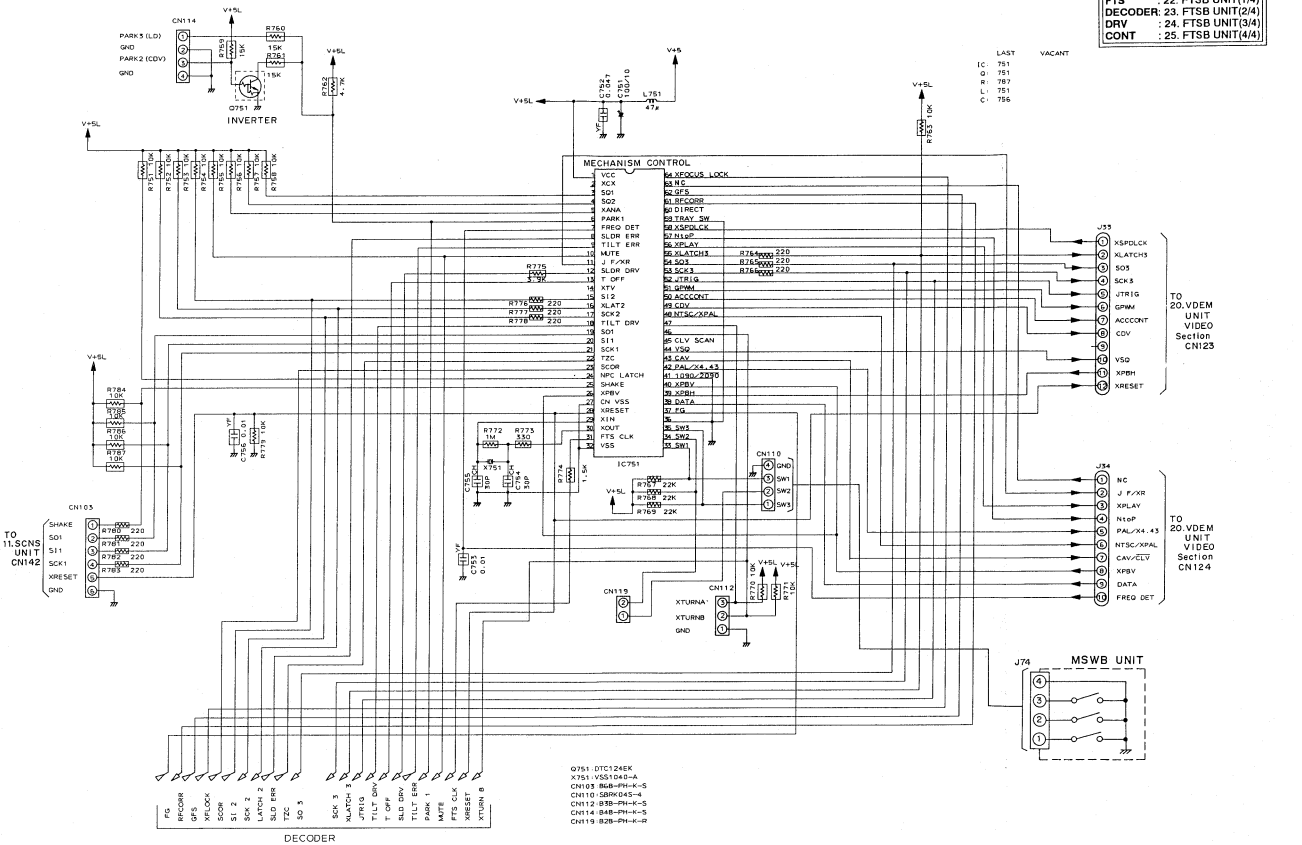
• View from soldering side

25. FTSB AND MSWB UNIT (4/4) (CONT Section)

FTSB UNIT (RWZ2765)
•CONT Section

Note : Indicats connection destination of other circuit diagrams.

FTS	: 22. FTSB UNIT(1/4)
DECODER	: 23. FTSB UNIT(2/4)
DRV	: 24. FTSB UNIT(3/4)
CONT	: 25. FTSB UNIT(4/4)



6. PCB PARTS LIST

NOTES:

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

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

560 Ω → 56 × 10¹ → 561 ····· RD1/8PM [5][6][1] J
47k Ω → 47 × 10³ → 473 ····· RD1/4PS [4][7][3] J
0.5 Ω → 0R5 ····· RN2H [0][R][5] K
1 Ω → 010 ····· RS1P [0][1][0] K

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

5.62k Ω → 562 × 10¹ → 5621 ····· RN1/4PC [5][6][2][1] F

Mark	No.	Description	Part No.
LIST OF ASSEMBLIES			
⊙	VAPB UNIT		RWG1006
			(LC-V200/KUC type)
			RWG1007
			(LC-V100/SEM type)
⊙	CMEC UNIT		RWG1008
			(LC-V200/KUC type)
			RWG1009
			(LC-V100/SEM type)
⊙	CIOB UNIT		RWG1010
⊙	VSOP UNIT		RWM1554
			(LC-V200/KUC type)
			RWM1563
			(LC-V100/SEM type)
⊙	├ FTSB UNIT		RWZ2750
			(LC-V200/KUC type)
			RWZ2765
			(LC-V100/SEM type)
⊙	├ VDEM UNIT		RWZ2751
			(LC-V200/KUC type)
			RWZ2766
			(LC-V100/SEM type)
NSP	├ SPFG UNIT		RWZ2752
			(LC-V200/KUC type)
			RWZ2767
			(LC-V100/SEM type)
NSP	└ MSWB UNIT		RWZ2753
			(LC-V200/KUC type)
			RWZ2768
			(LC-V100/SEM type)
⊙	SPPS UNIT		RWM1555
NSP	├ SPDB UNIT		RWZ2745
NSP	├ REGA UNIT		RWZ2746
NSP	├ REGB UNIT		RWZ2747
NSP	├ SCNS UNIT		RWZ2748
NSP	└ SCNP UNIT		RWZ2749
⊙	MECB UNIT		RWM1562
⊙	├ CNNB UNIT		RWZ2427
⊙	├ CMSW UNIT		RWZ2429
⊙	├ ENCB UNIT		RWZ2430
⊙	├ VMFG UNIT		RWZ2431
⊙	└ INDB UNIT		RWZ2764
NSP	DSNA UNIT		RWZ2432
NSP	DSNB UNIT		RWZ2433
⊙	SYSB UNIT		RWZ2769
⊙	DISP UNIT		RWZ2770
NSP	PSPB UNIT		RWZ2754
			(LC-V200/KUC type)
			RWZ2773
			(LC-V100/SEM type)
⊙	PSSB UNIT		RWZ2755
			(LC-V200/KUC type)
			RWZ2774
			(LC-V100/SEM type)
NSP	SBTB UNIT		RWZ2756
			(LC-V200/KUC type)
			RWZ2775
			(LC-V100/SEM type)
NSP	MTPB UNIT		RWZ2757
			(LC-V200/KUC type)
			RWZ2776
			(LC-V100/SEM type)
NSP	MTSB UNIT		RWZ2758
			(LC-V200/KUC type)
			RWZ2777
			(LC-V100/SEM type)
NSP	FUSB UNIT		RWZ2779
			(LC-V200/KUC type)
			RWZ2778
			(LC-V100/SEM type)
NSP	CNNB ASSEMBLY		VWG1194
NSP	HEAD ASSEMBLY		VWF1178
NSP	SLMB ASSEMBLY		VNP1295
VAPB UNIT			
SEMICONDUCTORS			
	IC204, IC205, IC505		BA15218
	IC607		BU2040
	IC501, IC502, IC701		BU4053B
	IC401		HA12127ANT
	IC202		LC7883K
	IC702		M50555-056SP
⚠	IC601		NJM7805FA
⚠	IC602		NJM7808FA
⚠	IC604		NJM78M05FA
⚠	IC603		NJM7908FA
⚠	IC605		NJM79M05FA
	IC201		PD0052
	IC704		TC74HC00AP
	IC608		TC74HC02AP
	IC103		TC74HC04AP
	IC703		TC74HCU04AP
⚠	Q602		2SA1286
	Q405, Q407		2SA933S
			(LC-V100/SEM only)
	Q400, Q401, Q404, Q701, Q703, Q712, Q716, Q718		2SA933S
	Q702, Q704, Q705, Q711, Q713, Q714, Q717, Q719		2SC1740S
⚠	Q601		2SC3243
	Q505, Q506		2SD2144S
	Q409, Q413		2SK184
			(LC-V100/SEM only)
	Q402, Q403		XDA124ES
			(LC-V100/SEM only)
	Q512		XDA124ES
	Q603		XDA144ES
	Q408, Q410-Q412, Q707		XDC124ES
			(LC-V100/SEM only)
	Q511, Q706, Q707		XDC124ES
	Q604		XDC144ES
⚠	D601-D604		1ES2
	D400-D404, D406		1SS254
			(LC-V100/SEM only)
	D203, D407, D408, D701		1SS254
	D101, D201, D202		MTZ6.2C
COILS/TRANSFORMERS			
	L104, L201, L203, L400, L601, L702		LAU101K
	L701		LAU390J
	L401		LAU470J
	L202, L402, L703		LAU560J
	F401		VTF1035
			(LC-V100/SEM only)
	F402		VTF1036
			(LC-V100/SEM only)
	F403		VTF1047
CAPACITORS			
	C721		CCDCH010C50
	C717, C718		CCCCH100D50
	C422, C460		CCCCH101J50
	C722		CCCCH120J50
			(LC-V100/SEM only)
	C401		CCCCH121J50
	C418		CCCCH150J50
			(LC-V100/SEM only)
	C450		CCCCH180J50
	C417		CCCCH220J50
	C208, C400		CCCCH390J50
	C451		CCCCH430J50
			(LC-V100/SEM only)
	C402		CCCCH910J50
	C415, C449		CCCSL221J50
			(LC-V100/SEM only)
	C414, C424, C448, C461		CCCSL221J50
	C704		CCCSL330J50
	C734		CCCSL470J50
	C423, C445		CEANP100M16
	C416, C452, C455		CEANP220M10
	C409		CEAS100M50
			(LC-V100/SEM only)
	C425, C462, C602, C606, C607, C710		CEAS100M50
	C131, C202, C205, C210, C212, C429, C432, C465, C501-C504, C511, C512, C610, C611, C613, C701, C702, C706, C707, C709, C720, C732, C733, C736		CEAS101M10
	C216-C219, C222, C223, C228, C229, C444, C457, C519, C520		CEAS220M50
	C604, C605		CEAS222M25
	C204		CEAS223M50
	C214, C730		CEAS331M6R3
	C412, C413, C446, C447		CEAS470M10
	C608, C609, C703, C705		CEAS470M16
	C729, C731		CEAS471M6R3
	C430		CEAS4R7M50
	C428		CEASR47M50
	C410		CFTXA103J50
	C207, C454		CFTXA104J50
	C421, C459		CFTXA152J50
	C420, C458		CFTXA472J50
	C427, C464		CFTXA473J50
	C426, C463		CFTXA822J50
	C132, C134		CGCYF473Z50
	C201, C203, C206, C713		CGCYX104M16
	C411, C419, C431, C433, C453, C456		CKCYB102K50
	C711		CKCYB152K50
	C714		CKCYB472K50
	C130, C209, C211, C213, C403-C408, C601, C612, C614, C615, C708, C719, C723, C724		CKCYF103Z50
	C469-C471		CKCYF103Z50
			(LC-V100/SEM only)
	C137, C138, C215, C603, C712		CKCYF473Z50
	C220, C221		CQMA392J50
	C224-C227		CQMA561J50
	VC701(20p)		VCM-008
	VC702(20p)		VCM-008
			(LC-V100/SEM only)
RESISTORS			
	R607		RA9T223J
	R131, R134		RD1/6PM272J
	R412		RD1/6PM222J
			(LC-V100/SEM only)
	R415-R418		RD1/6PM102J
			(LC-V100/SEM only)
	R419		RD1/6PM103J
			(LC-V100/SEM only)
	R420		RD1/6PM221J
			(LC-V100/SEM only)
	R424		RD1/6PM752J
			(LC-V100/SEM only)
	R426, R446		RD1/6PM125J
			(LC-V100/SEM only)

Mark	No.	Description	Part No.
	R432		RD1/6PM132J (LC-V100/SEM only)
	R442		RD1/6PW751J (LC-V100/SEM only)
	R445		RD1/6PM302J (LC-V100/SEM only)
	R712		RD1/6PM105J (LC-V100/SEM only)
	OTHER RESISTORS		RD1/6PM□□□J

OTHERS

	JA701 1P PIN JACK	RKB1008
	X702 CRYSTAL RESONATOR(17.734MHz)	VSS1019 (LC-V100/SEM only)
	X701 CRYSTAL RESONATOR(F=14.31)	VSS1026

CMEC UNIT

SEMICONDUCTORS

	IC104, IC107, IC109, IC116, IC117	BA10393
	IC105, IC106	BA15218
	IC102	NJM082D
⚠	IC115	NJW1812FA
	IC101	NJU4053BD
	IC114	PD4360C
⚠	IC111, IC112	TA7291P
	IC110	TC4001BP
	IC103	TC4011BP
	IC108	TC4023BP
	Q101, Q103, Q105, Q112, Q120, Q125, Q130, Q142, Q143, Q144, Q145	2SA933S
⚠	Q127, Q128	2SB1185
	Q102, Q104, Q110, Q111, Q122, Q126, Q129, Q134, Q137	2SC1740S
⚠	Q135, Q136, Q146, Q147	2SD1762
	Q107, Q109, Q115	XDA144ES
	Q106, Q108, Q113, Q114, Q116, Q123, Q124, Q131-Q133, Q138	XDC114ES
	Q121	XDC144ES
	D134	1SS252
	D101-D107, D109, D114, D118, D120, D123	1SS254
⚠	D110-D113	D1NL20
⚠	D121, D122	D3SBA20
	D116	MTZ10B
	D115	MTZ11B
	D108	MTZ5.1B
	D128-D132	MTZ8.2B
	D136	SEL3110S
	D135	SEL3410ELC05
	D119	SEL3910ALC05

COILS/TRANSFORMERS

	L101	LFA221J

CAPACITORS

	C104	CCCSL221J50
	C105	CEANP4R7M25
	C101, C108	CEAS010M50
	C102, C111, C122, C123, C302	CEAS100M50
	C106	CEAS220M16
	C144	CEAS222M25
	C116	CEAS470M10
	C136	CEAS470M16
	C114	CFTXA474J5I
	C125, C126	CGCYF104Z2S
	C110, C115, C119, C128, C130, C133, C137, C139-C141	CKCYF103Z5(
	C107, C112	CQMA152J50
	C103	CQMA222J50
	C113, C120, C121	CQMA392J50
	C109, C117, C118	CQMA393J50
	C134(6800/35)	RCH1063
	C135(6800/25)	RCH1064
	C129	CEAS221M10

RESISTORS

	R195	RA4T222J
	R167, R177, R179, R186	RS1LF222J
	R171, R173, R181, R184	RS2LF102J
	R183	RS2LFR22J
	R242	RS2PMF221J
	OTHERS RESISTORS	RD1/6PM□□□J

OTHERS

	CN202, CN204 6P TOP POST	B6P-SHF
	CN203 8P TOP POST	B8P-SHF
	CN50 CONNECTOR 17P	SLEM17S
	X101 CERAMIC RESONATOR(F=4.19MHZ)	VSS1014

CIOB UNIT

SEMICONDUCTORS

	IC101	SN75179BP
	Q102	2SA933S
	Q101	2SC1740S
	Q202	2SC1741S
	D201	1SS252
	D101-D109	1SS254

SWITCHI

	S1	VSH1007

RELAYS

	RY201, RY202	RSR1027

COILS/TRANSFORMERS

	L101	LFA221J

CAPACITORS

	C209	CCCSL470J50
	C101, C108	CEAS101M10
	C103, C107, C111	CKCYF103Z50
	C102	CKCYF223Z50
	C104, C105, C207, C208	CKCYF473Z50
	C203-C206	CQMA102J50

RESISTORS

	ALL RESISTORS	RD1/6PM□□□J

OTHERS

	JA3 D-SUB SOCKET 9P	DKN1051
	JA2 D-SUB SOCKET 9P	DKN1076
	JA1 JACK 6P	VKB1025

Mark	No.	Description	Part No.
CNNB UNIT			
OTHERS			
	CN51	CONNECTOR 17P	SLEM17R
CMSW UNIT			
SWITCHES			
	S101, S102		DSG1016
ENCB UNIT			
SEMICONDUCTORS			
	D121-D123		GP1A14
RESISTORS			
	ALL RESISTORS		RD1/6PM□□□J
VMFG UNIT			
SEMICONDUCTORS			
	D131		GP1A51HR
RESISTORS			
	ALL RESISTORS		RD1/6PM□□□J
DSNA UNIT			
SEMICONDUCTORS			
	D101-D103		GL380
RESISTORS			
	ALL RESISTORS		RD1/6PM□□□J
OTHERS			
	SENSOR HOLDER		RNK1795
DSNB UNIT			
SEMICONDUCTORS			
	Q101-Q103		PT4800F
RESISTORS			
	ALL RESISTORS		RD1/6PM□□□J
OTHERS			
	SENSOR HOLDER		RNK1753
SPDB UNIT			
SEMICONDUCTORS			
	IC101, IC102		BA15218
	IC105, IC106		ICP-N15
	IC103		TA8413P
	Q113-Q115		2SA817
	Q103, Q108, Q117		2SA933S
	Q119		2SC1627
	Q107, Q118, Q121		2SC1740S
	Q109		2SC1847
	Q120		2SD1267
	Q101, Q104-Q106, Q110, Q122		DTC124ES
	Q123		STA302A
	Q124		STA303A
	D105		11ES2
	D101-D104		1SS254
	D109		S2K20
	D106-D108		S3V10-4002P7.5
COILS/TRANSFORMERS			
	L101		VTT-070
CAPACITORS			
	C125, C127, C129, C132, C133		CEAS220M25
	C118		CEAS3R3M50
	C121, C123		CEAS470M10
	C117		CEAS470M50
	C114		CEAS4R7M50
	C116		CKCYB471K50
	C101		CKPUYB101K50
	C102		CKPUYB331K50
	C115		CKPUYB681K50
	C120, C122, C124, C126, C128, C130, C131, C134		CKPUYF103Z25
	C119		CQMA103J50
	C103		CQMA183J50
	C111-C113		CQMA333J50
	C104		CQMA473J50
	C105-C110 C= 22, V(DC)= 50,		VCH1091
RESISTORS			
	R125, R126-R132		RD1/4LF□□□J
	R149-R154		RN1/6PQ□□□□F
	R147		RS1LMF2R7J
	R120		RS1LMF3R3J
	R148		RS1LMFR51J
	OTHER RESISTORS		RD1/6PM□□□J
REGA UNIT			
SEMICONDUCTORS			
	IC113		NJM7805FA
CAPACITORS			
	C147		CEAS470M10
	C146		CEASR10M50
REGB UNIT			
SEMICONDUCTORS			
	IC114		NJM7905FA
CAPACITORS			
	C149		CEAS470M10
	C148		CEASR10M50
SCNS UNIT			
There is no supply part in this unit.			
SCNP UNIT			
There is no supply part in this unit.			
INDB UNIT			
SEMICONDUCTORS			
	D111		LT9010T
RESISTORS			
	ALL RESISTORS		RD1/6PM□□□J

Mark	No.	Description	Part No.

FTSB UNIT (LC-V200/KUC type)

SEMICONDUCTORS

	IC204, IC802	BA15218N
	IC801	CXA1081S
	IC201	CXD2500AQ
	IC804	LA6510L
	IC803	PM3003A
	Q203, Q802, Q812, Q819	2SA1037K
	Q901	2SA933S
	Q816, Q818	2SB1185-F8
	Q902	2SC1740S
	Q201, Q803-Q805, Q807, Q810, Q814, Q825, Q831	2SC2412K
	Q815, Q817	2SD1762-F8
	Q822	2SD1858X
	Q821	2SK184
	D834	04AZ10-Y
	D801, D804-D807, D830-D832	1SS254
	D201	FCS4M
	D802, D803	MTZJ3.6A
	D833	MTZJ6.2C

COILS/TRANSFORMERS

	L804	LAU100J
	L801, L803	LAU151J
	L802	LAU181J
	L227	LAU2R2M
	L225	LFA4R7K

CAPACITORS

	C817, C899	CCSQCH050C50
	C810, C811, C822	CCSQCH101J50
	C232	CCSQCH120J50
	C871	CCSQCH221J50
	C812, C815	CCSQCH270J50
	C884, C929	CCSQCH330J50
	C846	CCSQCH470J50
	C804, C809	CCSQCH680J50
	C837, C844, C852	CCSQSL331J50
	C818	CCSQSL471J50
	C819	CCSQSL561J50
	C225, C807, C838, C845	CEANP010M50
	C842, C863	CEANP100M16
	C870	CEANP220M10
	C850	CEANP2R2M50
	C339	CEANP3R3M50
	C205, C866	CEANPR47M50
	C340	CEAS010M50
	C855, C862, C864	CEAS100M50
	C203	CEAS101M10
	C835, C836	CEAS101M25
	C823, C841, C876, C877, C930, C931	CEAS220M25
	C208, C230, C857, C859	CEAS470M10
	C806, C814, C816	CEJA010M50
	C932	CEJA220M16
	C211	CEJA470M10
	C824, C849, C861, C865, C873	CFTNA103J50
	C874	CFTNA104J50
	C883	CFTNA124J50
	C843	CFTNA223J50
	C827, C867	CFTNA333J50
	C848, C859	CFTNA473J50
	C847, C858	CFTNA683J50
	C825	CFTXA682J50
	C231, C875	CKSQYB102K50
	C202	CKSQYB152K50
	C854	CKSQYB821K50
	C206, C235, C237, C345, C803, C805, C856, C858, C860, C933, C934, C936	CKSQYF103Z50
	C204, C209, C212, C228, C229, C851, C881, C882, C937, C938	CKSQYF104Z25
	C201, C210, C820, C821, C878-C880, C888	CKSQYF473Z25
	C839	CQMA102J50
	C853	CQMA332J50
	C935 (1F/5.5)	VCH1039

RESISTORS

⚠	R984, R985	DCN1002
⚠	R851, R863	RD1/2LP□□□J
	R813, R825, R832, R833, R856, R873, R910-R913, R918, R923, R934, R942, R945, R951, R983, R996	RD1/6PM□□□J
	VR602, VR603	VRTB6VS103
	VR601	VRTB6VS222
	VR608	VRTB6VS333
	VR604-VR606, VR609	VRTB6VS472
	VR607	VRTB6VS473
	OTHER RESISTORS	RS1/10S□□□J

OTHERS

	CN123 TOP POST SP	B5P-SHF
	CN111 TOP CONNECTOR 22P	VKN1137
	X201 CRYSTAL RESONATOR(16MHz)	VSS1051

FTSB UNIT (LC-V100/SEM TYPE)

SEMICONDUCTORS

	IC702, IC703, IC802	BA15218N
	IC801	CXA1081S
	IC701	CXD2500AQ
	IC805, IC806	ICP-N15
	IC804	LA6510L
	IC751	PDO162A1
	IC803	PM3003A
	Q704, Q802, Q812, Q819	2SA1037K
	Q901	2SA933S
	Q816, Q818	2SB1185-F8
	Q902	2SC1740S
	Q701, Q801, Q803-Q805, Q807, Q810, Q813, Q814, Q825, Q831	2SC2412K
	Q815, Q817	2SD1762-F8
	Q822	2SD1858X
	Q821	2SK184
	D834	04AZ10-Y
	D703, D801, D804-D809, D830-D832	1SS254
	D701	FCS4M
	D702	MTZ6.2B
	D802, D803	MTZJ3.6A

Mark	No.	Description	Part No.
	D833		MTZJ6.2B
COILS/TRANSFORMERS			
	L801, L803		LAU151J
	L802		LAU181J
	L751		LAU470J
	L804		LAU4R7K
	L702		LFA120K
	L701		LFA4R7K
CAPACITORS			
	C817, C899		CCSQCH0T0D50
	C810, C811, C822		CCSQCH101J50
	C716		CCSQCH120J50
	C871		CCSQCH221J50
	C812, C815, C937		CCSQCH2T0J50
	C754, C755		CCSQCH300J50
	C884, C929		CCSQCH330J50
	C804, C846		CCSQCH470J50
	C809, C813		CCSQCH680J50
	C702, C717, C875		CCSQSL102J50
	C837, C844, C852		CCSQSL331J50
	C727, C818		CCSQSL471J50
	C819		CCSQSL561J50
	C720, C807, C838, C845		CEANP010M50
	C842, C863		CEANP100M16
	C870		CEANP220M10
	C726		CEANP2R2M50
	C721		CEANP3R3M50
	C850		CEANP4R7M50
	C708, C866		CEANPR47M50
	C840		CEAS010M50
	C855, C862		CEAS100M50
	C751		CEAS101M10
	C835, C836		CEAS101M25
	C823, C841, C876, C877, C930, C931		CEAS220M25
	C857		CEAS470M10
	C712, C718, C859		CEAS470M16
	C808		CEJA010M50
	C864		CEJA100M50
	C703		CEJA101M10
	C932		CEJA220M16
	C714		CEJA470M10
	C814, C816		CEJANP010M50
	C722, C824, C861, C865, C873		CFTNA103J50
	C874		CFTNA104J50
	C883		CFTNA124J50
	C843		CFTNA223J50
	C826		CFTNA224J50
	C827, C849, C867		CFTNA333J50
	C848, C869		CFTNA473J50
	C847, C868		CFTNA683J50
	C839		CFTXA102J50
	C825		CFTXA682J50
	C854		CKSQYB821K50
	C705, C707, C719, C723, C753, C756, C803, C805, C856, C858, C860, C933, C934, C936		CKSQYF103Z50

Mark	No.	Description	Part No.
	C704, C709-C711, C713, C724, C725, C851, C881, C882, C938		CKSQYF104Z25
	C701, C706, C752, C820, C821, C878-C880, C888		CKSQYF473Z25
	C853		CQMA332J50
	C935(1F/5.5)		VCH1039
RESISTORS			
⚠	R984, R985		DCN1002
⚠	R851, R863		RD1/2LF□□□J
	R813, R825, R832, R833, R856, R873, R910-R913, R918, R923, R934, R942, R946, R951, R983, R996		RD1/6PM□□□J
	VR602, VR603		VRTB6VS103
	VR601		VRTB6VS222
	VR608		VRTB6VS333
	VR604-VR606, VR609		VRTB6VS472
	VR607		VRTB6VS473
	OTHER RESISTORS		RS1/10S□□□J
OTHERS			
	CN121		B5P-SHF
	CN111		VKN1137
	X751 CERAMIC RESONATOR(F=9.00MHz)		VSS1040
	X701 CRYSTAL RESONATOR		VSS1051

VDEM UNIT (LC-V200/KUC type)

SEMICONDUCTORS			
	IC605		BA10393N
	IC602, IC603, IC606		BA15218N
	IC403		CXL1009P
	IC404		PA0017-P
	IC401		PA5013A
	IC101		PD0162A1
	IC402		PM0001
	IC601		PM3002
	Q457, Q496, Q511		2SA1037K
	Q431, Q512		2SC1740S
	Q405, Q432, Q456, Q497, Q498-Q500, Q607, Q611		2SC2412K
	Q616		2SK184
	Q601		PMW2-TR
	D471, D601-D604, D609, D610, D620-D622		1SS254
	D611		MTZJ6.2C
COILS/TRANSFORMERS			
	L457, L601		LAU101J
	L414, L415, L521		LAU120J
	L523		LAU150J
	L496		LAU180J
	L497		LAU181J
	L412, L413		LAU220J
	L433		LAU270J
	L459-L462		LAU2R2M
	L101, L431, L525, L603		LAU470J
	L432, L522		LAU560J
	L411, L511		LAU820J
	L456, L458, L524		LFA221J
	L416		LFA330J

Mark	No.	Description	Part No.
CAPACITORS			
	C417		CCSQCH050CS0
	C415, C441, C450, C452, C497, C500, C537		CCSQCH100DS0
	C461		CCSQCH101J50
	C438		CCSQCH120J50
	C413, C509, C528, C529		CCSQCH151J50
	C485, C624, C625, C629, C655, C659, C661		CCSQCH180J50
	C423, C424		CCSQCH200J50
	C516		CCSQCH220J50
	C414, C456		CCSQCH221J50
	C437, C451, C510		CCSQCH270J50
	C468		CCSQCH271J50
	C104, C105		CCSQCH300J50
	C416, C439, C447, C462		CCSQCH330J50
	C433, C496, C524		CCSQCH390J50
	C411, C412, C421, C422, C536		CCSQCH470J50
	C498, C654		CCSQCH820J50
	C603		CCSQSL471J50
	C471		CEANP010M50
	C436		CEAS010M50
	C101, C401, C402, C434, C457, C481, C482		CEAS101M10
	C484, C489, C490, C641, C642		CEAS470M10
	C428		CEAS471M6R3
	C475, C476		CEAS4R7M50
	C518		CEJA010M50
	C522		CEJA100M35
	C445, C525, C601		CEJA101M6R3
	C612		CEJA220M25
	C405, C406, C464, C465, C499, C501, C502, C512, C521, C533, C622		CEJA470M10
	C443, C472, C521		CEJA4R7M50
	C618		CEJANP220M10
	C616, C663		CEJANP2R2M50
	C446, C614		CFTNA103J50
	C514, C615		CFTNA104J50
	C530		CFTNA184J50
	C474, C604		CFTNA224J50
	C610		CFTNA563J50
	C515, C517		CFTNA683J50
	C605-C607		CFTXA102J50
	C608		CFTXA152J50
	C403, C497, C538		CGCYX473K25
	C523		CKSQYB102K50
	C102, C106, C418, C425, C426, C458-C460, C486, C535, C628, C630, C643-C646, C651-C653, C670-C672		CKSQYF103Z50
	C404, C427, C429, C435, C442, C479, C480, C503, C505, C506, C508, C511, C513, C526, C531		CKSQYF104Z25
	C102, C407, C408, C431, C432, C448, C449, C466, C473, C477, C478, C483, C487, C488, C504, C507, C527, C534, C602, C623, C662		CKSQYF473Z25
	C620		CQMA222J50
	C444, C611		CQMA272J50
	C613, C619		CQMA332J50

Mark	No.	Description	Part No.
	VC901		VCM-008
RESISTORS			
	R431, R442, R544, R546, R547, R647		RD1/6PM□□□J
	R438, R511, R415, R416, R434		RN1/6PQ□□□□□F
	R109, R548		RS1/10S000J
	R626, R728, R729		RS1/10S□□□F
	VR441, VR481		VRTB6VS103
	VR482, VR521		VRTB6VS472
	OTHER RESISTORS		RS1/10S□□□J
OTHERS			
	X601 CRYSTAL RESONATOR (F=14.31MHz)		VSS1026
	X101 CERAMIC RESONATOR (F=9.00MHZ)		VSS1040

VDEM UNIT (For LC-V100/SEM type)

SEMICONDUCTORS		
	IC511	BA10393
	IC310, IC311	BU4053BF
	IC505	TC74HC4053AF
	IC103	CXL1009P
	IC303, IC304, IC308	HD74HC74FP
	IC506	NJM082D
	IC309	NJM1496D
	IC512	NJM4558D
	IC509	NJM4558S
	IC104	PA0017-P
	IC101	PA5013A
	IC102	PM0001
	IC501	PM3002
	IC302	SN74LS00NS
	IC504	TC74HC00AF
	IC305, IC306	TC74HC10AF
	IC507	TC74HC123AF
	IC307	TC74HC86AF
	IC503	TC74HCU04AF
	IC301	TC74HCU04AP
	Q104, Q105, Q106, Q111, Q113, Q114, Q118, Q121, Q304, Q317	2SA1037K
	Q101-Q103, Q106, Q107, Q109, Q110, Q112, Q115-Q118, Q120, Q123, Q305, Q305-Q316, Q318-Q320, Q504, Q511	2SC2412K
	Q510	2SK184
	Q502	PWP2-TN
	D101, D471, D501-D505, D509-D512	1SS254
COILS/TRANSFORMERS		
	F306	DTH1122
	L104, L105, L112-L115, L121, L307, L308, L503	LAU120J
	L110, L303, L304	LAU121J
	L109, L111, L118, L125	LAU181J
	L102, L103, L117, L501	LAU220J
	L126	LAU2R2J
	L120, L124, L305, L306	LAU330J
	L106, L108	LAU390J
	L122, L502	LAU470J
	L107, L123	LAU560J
	L101, L127	LAU680J

Mark	No.	Description	Part No.
	L116, L119		LAU820J
	L309, L3		LAU8R2J
	F305		VTF1011
	F303		VTF1018
	F302		VTF1030
	F301		VTF1032
	F304		VTF1034
	DL302		DTF1005
	DL301		VTF1037
CAPACITORS			
	C117		CCSQCH050C50
	C115, C118, C136, C139, C194, C225		CCSQCH100D50
	C112, C153, C314, C511, C512, C518		CCSQCH101J50
	C218, C226		CCSQCH120J50
	C502, C503, C515		CCSQCH121J50
	C113, C144, C145, C203		CCSQCH151J50
	C125, C163, C528, C532		CCSQCH180J50
	C120, C121		CCSQCH200J50
	C185, C202, C222		CCSQCH220J50
	C114, C507, C193		CCSQCH221J50
	C134, C195		CCSQCH270J50
	C148, C155, C313		CCSQCH271J50
	C116, C305, C315		CCSQCH330J50
	C128, C138, C154, C188, C209, C216, C306, C307, C324		CCSQCH390J50
	C137, C217, C316		CCSQCH470J50
	C204, C215		CCSQCH560J50
	C190		CCSQCH680J50
	C109, C110, C525		CCSQCH820J50
	C208, C508, C522		CCSQSL102J50
	C356, C357		CCSQSL681J50
	C160		CEANP010M50
	C219		CEANP100M16
	C363, C365, C372		CEANP220M10
	C345		CEANP470M10
	C131		CEAS101M10
	C105, C165, C320, C342, C359, C361, C369, C370, C510		CEAS470M10
	C164, C323, C343, C347, C366, C367, C533, C534		CEAS470M16
	C133, C212		CEJA010M50
	C207		CEJA100M35
	C101, C102, C126, C142, C149, C171, C172, C199, C210, C517, C1025		CEJA101M10
	C186, C530		CEJA220M16
	C106, C158, C159, C181, C191, C200, C206, C221, C326, C328, C329, C364, C506, C552, C1015–C1018		CEJA470M10
	C169		CEJA470M16
	C140, C161, C177, C178, C551		CEJA4R7M50
	C541		CEJANP220M10
	C540		CEJANP2R2M50
	C362, C371		CEJANP470M10
	C143, C539		CFTNA103J50
	C183, C538		CFTNA104J50
	C179, C519		CFTNA224J50
	C527		CFTNA563J50
	C184, C205		CFTNA683J50

Mark	No.	Description	Part No.
	C521, C523		CFTXA102J50
	C524		CFTXA152J50
	C111, C119, C123, C124, C150, C151, C152, C168, C224, C312, C317–C319, C321, C322, C325, C327, C340, C341, C344, C346, C348–C355, C358, C360, C368, C373, C378–C382, C501, C504, C505, C509, C514, C520, C535–C537, C543, C554, C555		CKSQYF104Z25
	C103, C104, C122, C127, C132, C135, C173, C174, C180, C196, C211, C220, C1011, C1012		CKSQYF104Z25
	C107, C129, C130, C146, C147, C156, C157, C162, C166, C167, C170, C175, C213, C214, C516, C553		CKSQYF473Z25
	C550		CQMA222J50
	C141, C529		CQMA272J50
	C132		CKCYF473Z50
	C133, C134		CKPUYB102K50
	C531, C542		CQMA332J50
	VC301-VC303(20p)		DCM1005
RESISTORS			
	R116, R317, R320, R586		RD1/6PM□□□J
	R113, R114, R121, R132, R144		RN1/6PQ□□□□F
	R545, R572, R573		RS1/10S□□□F
	VR101, VR102		VRTB6VS103
	VR301-VR303		VRTB6VS471
	VR103, VR104, VR304		VRTB6VS472
	OTHER RESISTORS		RS1/10S□□□J
OTHERS			
	X301 CRYSTAL RESONATOR(17.734MHz)		VSS1019
	X302 CRYSTAL RESONATOR(14.318MHz)		VSS1029
	X303 CRYSTAL RESONATOR(14.22MHz)		VSS1053
SPFG UNIT			
SEMICONDUCTORS			
	D1		GP1S51
MSWB UNIT			
SWITCHES			
	S1–S3		DSG1015
SYSB UNIT			
SEMICONDUCTORS			
	IC109		HD6415108F10
⚠	IC105		LM2940CT-5.0
	IC103		M6M80011AL
	IC113		NJU4051BD
	IC110–IC112		PD0012A
	IC107		PD6104D
	IC101		PST523E
	IC106		TC5564APL-15
	IC102		TC74HC00AP
	IC108		TC74HC20AP
	IC104		TC74HC4052AP
	Q101, Q102		XDA124ES
	D106		1SS254
	D104, D105		GL7P290
	D101–D103		MTZ6.2C

Mark	No.	Description	Part No.
SWITCHES			
	S101-S106		RSG1010
COILS/TRANSFORMERS			
	L101		LFA220K
CAPACITORS			
	C115, C116		CCCCH100D50
	C108, C109, C111, C114, C120, C121		CEAS101M10
	C124		CEAS2R2M50
	C105, C107, C108, C118		CEAS331M16
	C117, C119		CGCYX104M25
	C126		CKCYB101K50
	C101-C103, C133, C134		CKCYB102K50
	C104, C110, C112, C113, C122, C123, C125, C127-C131		CKCYF103Z50
	C132		CKCYF473Z50
RESISTORS			
	R208		RA7S473J
	OTHER RESISTORS		RD1/6PM□□□J
OTHERS			
	JA101 JACK		RKN1024
	IC SOCKET		QKH1006
	X101 CRYSTAL RESONATOR(F=19.7MHz)		RSS1040

DISP UNIT

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC301, IC302		PD0012A
	D305		1SS254
	D304		GL7P290
	D301		SLH-34VC3H3-S/T
	D303		SLH-34VC3H3-S/T
SWITCHES			
	S301-S312		RSG1010
CAPACITORS			
	C301, C303, C305		CEAL101M6R3
	C306		CEAL2R2M50
	C302, C304		CKFUYF103Z25
RESISTORS			
	ALL RESISTORS		RD1/6PM□□□J

PSPB UNIT

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	D101		1SS254
RELAYS			
⚠	RY101		DSR1009
COILS/TRANSFORMERS			
⚠	L101, L102		VTL-004
CAPACITORS			
⚠	C105-C113 C= 0.01,V(AC)=400/1		VCG-048

PSSB UNIT

Mark	No.	Description	Part No.
SEMICONDUCTORS			
⚠	IC101, IC102		NJM7805FA
⚠	IC103		NJM7905FA
⚠	Q103		2SA1283
⚠	Q101		2SA1286
⚠	Q104		2SC3243
	Q105		XDA144ES
	Q102, Q106		XDC144ES
	D108, D109		1SS254
⚠	D106, D107, D110		D3SBA20
⚠	D102, D105		S2VB20
CAPACITORS			
	C116, C121, C122		CEAS100M50
	C120		CEAS222M16
	C117, C123, C124		CEAS470M16
	C115		CEAS472M16
	C119		CEAS682M16
	C114, C118, C125, C126, C130, C131, C134, C135, C138-C143		CKCYF103Z50
	C132, C133 , C136 , C137 (C=8200, V=25)		DCH1042
	C127-C129 (C=10000)		VCH1050
RESISTORS			
	R104		RD1/2LF□□□J
	OTHER RESISTORS		RD1/6PM□□□J

SBTB UNIT

There is no supply part in this unit.

MTPB UNIT

Mark	No.	Description	Part No.
OTHERS			
⚠	CN42		B2P3S-VH

MTSB UNIT

There is no supply part in this unit.

FUSB UNIT

There is no supply part in this unit.

CNNB ASSEMBLY

Mark	No.	Description	Part No.
SWITCHES			
	S201		VSK1017
RESISTORS			
	ALL RESISTORS		RD1/6PM□□□J
OTHERS			
	CN203		VKN1138
	CN204		VKN1139

HEAD ASSEMBLY

Mark	No.	Description	Part No.
CAPACITORS			
	C4		CKSQYF104Z25
	C6		CKSQYF104Z25
	C3		CKSQYF223Z50
	C5		CKSYF105Z16

SLMB ASSEMBLY

There is no supply part in this assembly.

7. ADJUSTMENTS

7.1 ADJUSTMENT OF LD PLAYER SECTION

7.1.1 Preparations • Precautions

1. Test Mode

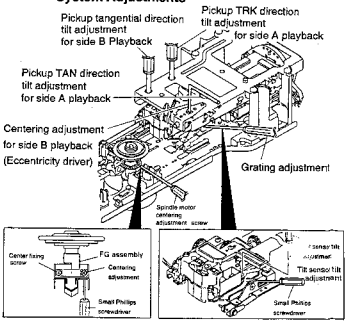
1) How to start up the test mode

Ground the test mode pin [pin 13 of the system control IC (KUC: IC101/VDEM unit, SEM: IC751/FTSB unit)] when the mechanism is not operating while the power is on.

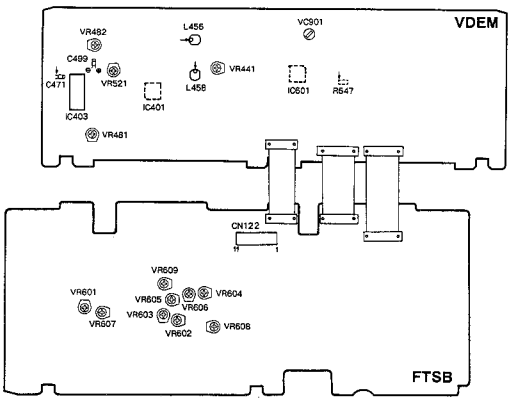
2) Test mode functions used in this adjustment

— Function —	Keys used
TRKG servo open/close	▶ (toggle)
Tilt servo off (–/+)	◀◀ / ▶▶
Focus balance	♭ key (*)

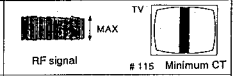
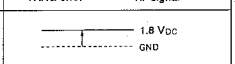
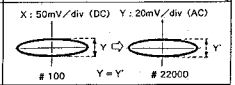
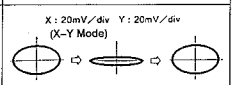
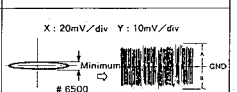
3. Positions for Inserting Driver in Mechanical System Adjustments



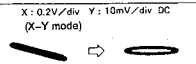
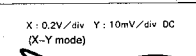
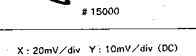
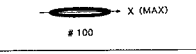
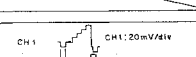
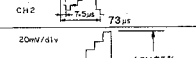
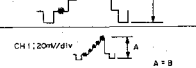
2. Unit Adjustment Diagram (LC-V200/KUC)



7.1.2 Adjusting Specifications Table

No.	Adjusting Method	Adjusting Point	Type of Measuring Equipment and Connecting Section	Condition of Player	Adjusting Method	Waveform
FTSB (FTS section) UNIT						
1	Tilt servo gain adjustment	• VR608	(Measuring equipment is not used.)	• Power supply switch OFF	• Adjust VR608 as follows, according to the mark at the side of the tilt sensor Red …Rotate VR608 in the clockwise direction fully. None…Adjust VR608 to the mechanical center. Blue …Rotate VR608 in the counterclockwise direction fully.	
2	Tilt off set adjustment	• VR607 (TILT OFST)	• TV monitor Test mode display	Test mode Stop	• Adjust VR607 so that tilt the error display becomes "7"	
3	• Grating coarse adjustment • TRKG balance adjustment	• Grating • VR602 (TRKG BAL.)	• Oscilloscope • FTSB unit CN122–9 (TR ERR)	• Test mode • TRKG servo open	• Adjust to TRKG servo open in the vicinity of #6500. • TRKG error waveform: Null point → Counterclockwise direction, maximum error level • Adjust VR602 so that the positive and negative amplitudes of the TRKG error waveform become equal.	
4	• Slider shaft horizontal adjustment	(In the test mode condition) Press the ▶▶I/I◀◀ key.	• Oscilloscope • FTSB unit CN122–4 (FO RTN) • Low pass filter (47 kΩ , 1 μF)	• Test mode • TRKG servo open • Tilt servo OFF	• Adjust to still condition at #9800 and #25000, measure the FOCS RTN voltage at each section, and adjust the voltage difference to within 0 ± 20 mV.	
5	• Pickup (TAN/TRK) tilt adjustment	• TAN/TRK tilt adjustment screw	• Oscilloscope • FTSB unit CN122–3 (RF)	• Test mode • #115 still • Tilt servo OFF	• Adjust the pickup TAN/TRK direction tilt adjustment screw so that the RF waveform level becomes maximum. Check that there is no crosstalk at #115.	
6	• FOCS balance adjustment	• VR605 (TE MAX) • VR606 (CT MAX)	• Oscilloscope • FTSB unit CN122–3 (RF) • CN122–9 (TR ERR)	• Test mode • TRKG servo close/open • Tilt servo OFF	• Adjust VR605 so that the TRKG error waveform becomes maximum. (TRKG servo open) • Adjust the RF waveform level to maximum using VR606. (TRKG servo close)	
7	• FOCS SUM level adjustment	• VR609 (FOCS SUM LEVEL)	• Oscilloscope • FTSB unit • CN122–11 (FO SUM)	• Test mode • TRKG servo close • Tilt servo OFF	• Adjust VR609 so that the FOCS SUM level becomes 1.8VDC.	
8	• Tilt sensor tilt adjustment • Tilt balance adjustment	• Tilt sensor tilt adjustment screw • VR607 (TILT OFST)	TV Monitor Test mode display	• Test mode #19,000/#115 still • TRKG servo loop close • Tilt servo OFF	• Still at #19,000 • Adjust VR607 to the center. Adjust the tilt adjustment screw so that the tilt error display becomes 6 to 8. Still at #115 • Adjust VR607 so that the tilt error display becomes 7.	
9	• Spindle motor centering check	• Check the resurge waveform with an oscilloscope	• Oscilloscope CH1: CN122–9 (TR ERR) CH2: CN122–1, 2 Each creates TRK A+C via a 10 kΩ resistor.	• Test mode • TRKG servo open • Tilt servo ON	• Adjust to TRKG servo open in the vicinities of #100 and #22000, and check that the shapes of the resurge waveforms become equal.	
10	• Spindle motor centering adjustment	• Spindle motor centering adjustment screw	• Oscilloscope CH1: CN122–9 (TR ERR) CH2: CN122–1, 2 Each creates TRK A+C via a 10 kΩ resistor.	• Test mode • TRKG servo open • Tilt servo ON	• Adjust the spindle motor centering adjustment screw to TRKG servo open in the vicinities of #100 and #22000, and adjust so that the shapes of the resurge waveforms become equal.	
11	• Grating fine adjustment • TRKG balance adjustment	• Grating • VR602	• Oscilloscope CH1: CN122–9 (TR ERR) CH2: CN122–1, 2 (TRK A+C) Each creates TRK A+C via a 10 kΩ resistor.	• Test mode • TRKG servo open • Tilt servo ON	• Adjust to TRKG servo open in the vicinity of #6,500. • Minimize the amplitude of the resurge waveform in the Y direction. • Adjust so that the negative and positive levels of the TRKG error waveform become equal.	

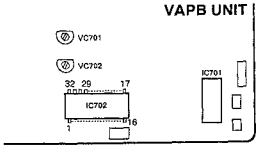
Note: The connector number for CLD–LCV200 (LC–V200) has been specified as CN122 in "Type of Measuring Equipment and Connecting Section". Take note that the connector number for CLD–LCV100 (LC–V100) is CN120.

No.	Adjusting Method	Adjusting Point	Type of Measuring Equipment and Connecting Section	Condition of Player	Adjusting Method	Waveform
12	RF gain adjustment	VR601 (RF LEVEL)	• Oscilloscope CH1: CN122–3 (RF)	• Test mode • #15000 still • TRKG servo close • Tilt servo ON	• Adjust VR601 so that the amplitude of the RF signal becomes 300 mV ± 50 mV.	
13	FOCS servo loop gain adjustment	VR604 (FOCS GAIN)	• Oscilloscope CH1: CN122–6 (FO ERR) CH2: CN122–7 (FO IN) • CH1 is connected via a 47 kΩ resistor.	• Test mode • #15000 still • TRKG servo close • OSC. 1.7 kHz/6 Vp–p • Tilt servo ON	• Adjust VR604 so that the resurge waveforms in the X and Y directions become symmetrical (horizontal).	
14	TRKG servo loop gain adjustment	VR603 (TRKG GAIN)	• Oscilloscope CH1: CN122–9 (TR ERR) CH2: CN122–10 (TR IN) • CH1 is connected via a 47 kΩ resistor.	• Test mode • #15000 still • TRKG servo close • OSC. 3.0 kHz/6 Vp–p • Tilt servo ON	• Adjust VR603 so that the resurge waveforms in the X and Y directions become symmetrical (horizontal).	
15	Side B playback start position check Side B playback centering adjustment	Side B centering adjustment screw	• Oscilloscope CH1: CN122–9 (TR ERR) CH2: CN122–1,2 (TRK A+C) Each creates TRK A+C via a 10 kΩ resistor.	• Test mode • Side B • TRKG servo open	• Adjust to TRKG servo open in the vicinity of #100, and adjust the side B centering adjustment screw so that the amplitude of the resurge waveform in the Y direction is minimum.	
16	Side B playback pickup tangential direction tilt adjustment	Pickup tangential direction tilt adjustment screw	TV monitor	• Side B • #115 still	• Adjust the pickup tangential direction tilt adjustment screw so that the crosstalk becomes minimum.	
17	Side B playback centering fine adjustment	Side B centering adjustment screw	• Oscilloscope CH1: CN122–9 (TR ERR) CH2: CN122–1, 2 (TRK A+C) Each creates TRK A+C via a 10 kΩ resistor.	• Test mode • Side B • TRKG servo open	• Adjust to TRKG servo open in the vicinity of #100, and adjust the side B centering adjustment screw so that the amplitude of the resurge waveform in the X direction becomes maximum.	
VDEM (TBC section) UNIT (LC – 200/KUC only)						
18	Standard frequency adjustment	VC901 (REFFERENCE FREQ.)	• Frequency counter End of R647	• Stop mode	• Adjust VC901 so that the frequency becomes 3.579545 MHz.	
VDEM (VIDEO section) UNIT (LC – 200/KUC only)						
19	VCO center frequency adjustment	VR481 (VCO FREQ.)	• Oscilloscope CH1: C471 lead wire CH2: C499 +Side lead wire (Delay line)	• #5100 still	• Adjust VR481 so that the video signal of CH1 is delayed 73 µs in respect to the video signal of CH2.	
20	Output video level adjustment	VR482 (VIDEO LEVEL)	• Oscilloscope Video output terminal	• #19900 still	• Adjust VR482 so that the level from the sync chip of the video signal to the white peak becomes 1V ± 5%.	
21	1H delay video level adjustment	VR441 (1H LEVEL)	• Oscilloscope CH2: L458 lead wire (1H delay line) CH1: L456 lead wire	• #3800 still	• Adjust VR441 so that the 1H delay video signal level of CH2 becomes equal to the main video signal level of CH1.	
22	Hue error signal level adjustment	VR521 (VPS LEVEL)	TV monitor	• #8000 still	• Adjust VR521 so that the color irregularity of the magenta display becomes minimum.	

7.1.3 VAPB UNIT ADJUSTMENT

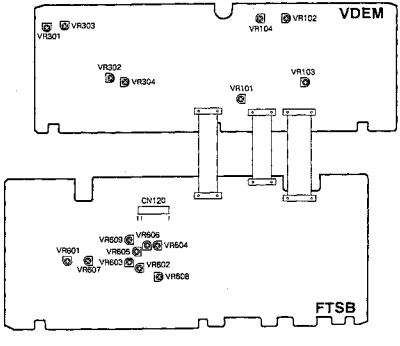
No.	Adjustment	Adjusting Point	Adjusting Specifications	Inspection Standard	Remarks
	VAPB UNIT				
1	Character generator clock adjustment	VC701	Adjust VC701 for 14.31818MHz at pin 29 IC702.	14.31818MHz ± 500Hz	(*1)
		VC702	Adjust VC702 for 17.73447MHz at pin 29 IC702.	17.73447MHz ± 500Hz	SEM type only

(*1): When performing this adjustment on the SEM model, switch the[2] (S302) SW on the DISP UNIT from PAL to NTSC.
(It will be set to PAL (17M) when the TEST MODE is started up. For details, refer to "Table 4" on page 209.)



Adjusting point

● **Unit Adjustment Diagram (LC-V100/SEM)**



7.2 ELECTRICAL ADJUSTMENTS (LC-V100/SEM only)

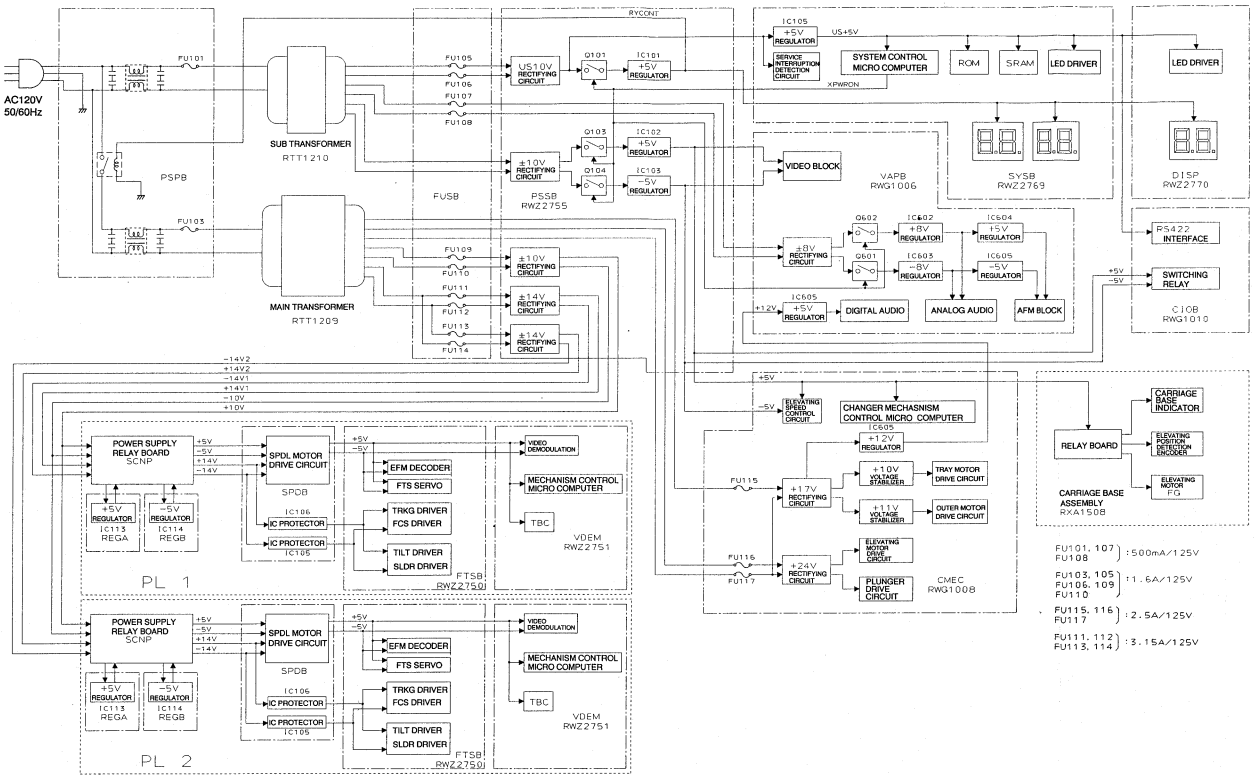
Note: This unit automatically switches between the NTSC and PAL systems by reading the Phillips code on the test disc. Use the GGV-145 PAL disc for the items marked for PAL mode in the Remarks column and the GGV1003 NTSC disc for the items marked for NTSC mode.

No.	Adjustment	Adjusting Point	Adjusting Specifications	Inspection Standard	Remarks
VDEM (PALB section) UNIT					
1	Sync-generator Clock Adjustment	VC301	Adjust VC301 for 17.734475MHz at pin 3 IC307.	17.734475MHz ± 100Hz	PAL mode
2	NTSC REF Clock adjustment	VC302	Adjust VC302 for 14.31818MHz at pin 6 IC302.	14.31818MHz ± 100Hz	NTSC mode
3	REF Clock Adjustment	VC303	Adjust VC303 for 3.5546875MHz at pin 8 IC501.	3.5546875MHz ± 25Hz	PAL mode
VDEM (VIDEO section) UNIT					
4	VCO Center Frequency Adjustment	VR102	 Adjust VR102 so that the time lag between CCD input video (Q109 emitter) and the CCD output video (Q114 emitter) becomes 70 μsec (1H + 6 μsec). For this adjustment, connect pin 9 of IC104 to GND.	70 μsec ± 1.4 μsec	PAL mode
5	Video Level Adjustment	VR103	 Adjust the 100 % white video level to 2 Vp-p at VIDEO OUT (Q123 emitter).	2Vp-p ± 5%	PAL mode
6	1H Delay Video Level Adjustment	VR101	Adjust VR101 so that the level of the 1H-delay video at pin 33 of IC101 becomes the same as that of the main-line video pin 35.	Main-line video ± 3%	PAL mode
7	VPS ERR Level Adjustment	VR104	While observing the magenta screen on a vector scope, minimize the jitter at VIDEO OUT (pin 1 CN102).		PAL mode
VDEM (PALB section) UNIT.					
8	MOD Video Level Adjustment	VR304	Adjust VR304 so that the luminance level of the MOD video at pin 13 of IC311 becomes the same as that of the through video at pin 12.	± 3%	PAL mode
9	1H Delay S.C. Level Adjustment	VR302	While observing color bars in still mode on a vector scope, minimize the gain variation at VIDEO OUT (Pin 1 CN102).		PAL mode
10	MOD Y Level adjustment	VR303	Adjust VR303 so that the luminance level at pin 13 of IC310 (passed through the comb filter) becomes equal to that at pin 12 of IC 310 (passed through the 3.2M L. P. F.).	± 3%	NTSC converter mode
11	MOD SC Level adjustment	VR301	Adjust VR301 so that the converter chroma level at IC310 pin 1 becomes the same as the main chroma level at IC310 pin 2.		NTSC converter mode

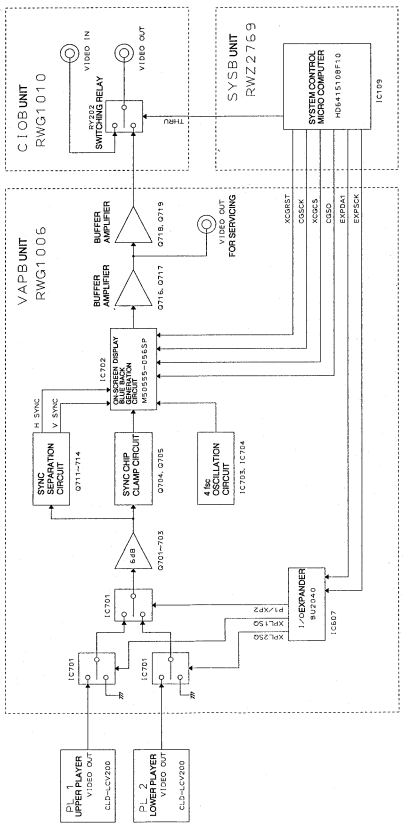
8. BLOCK DIAGRAMS

8.1 LC-V200/KUC type

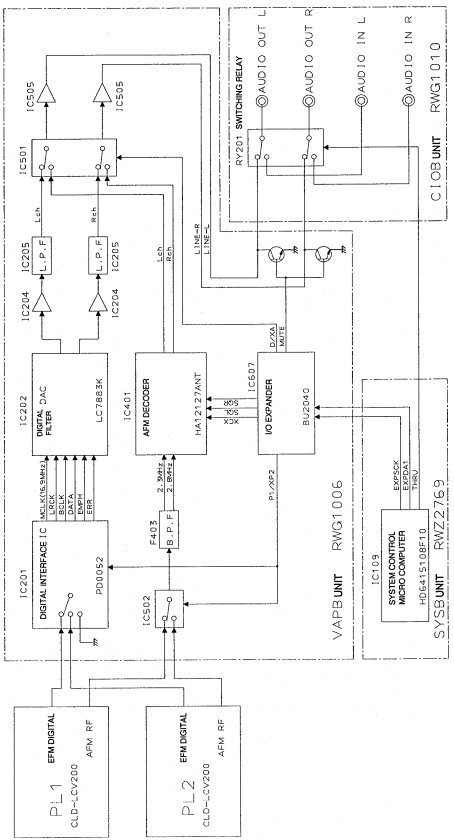
● **POWER SUPPLY BLOCK DIAGRAM**



● VIDEO BLOCK DIAGRAM

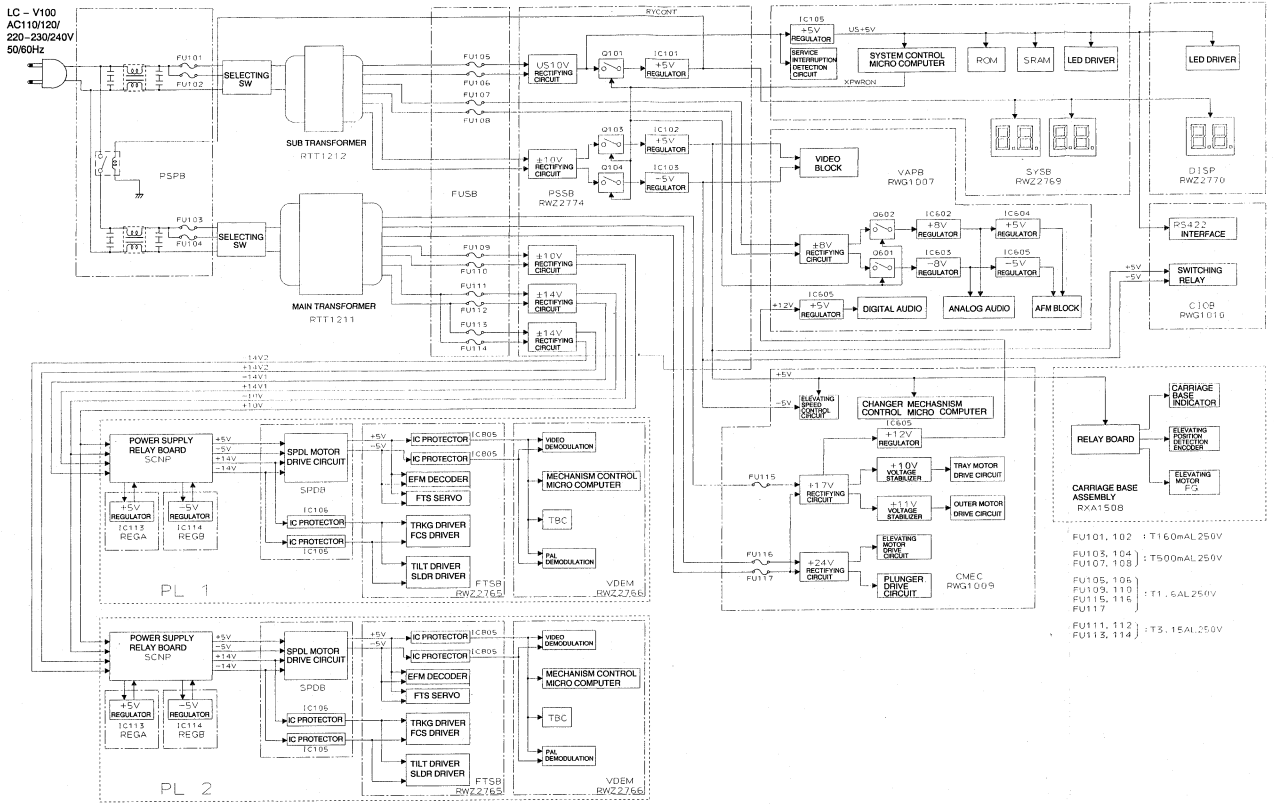


● AUDIO BLOCK DIAGRAM

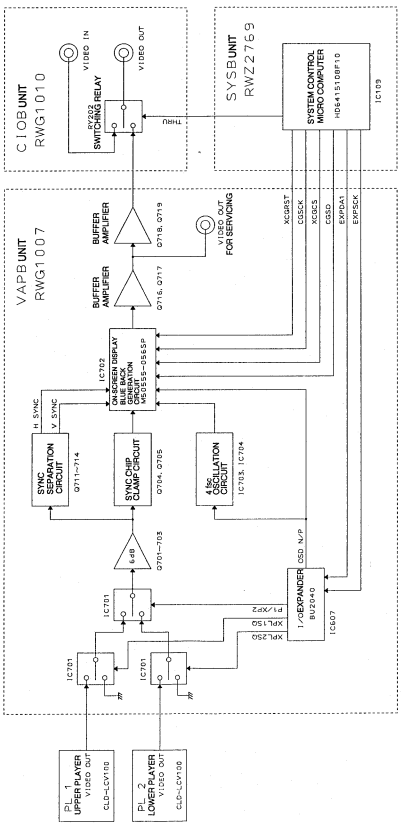


8.2 LC-V100/SEM type

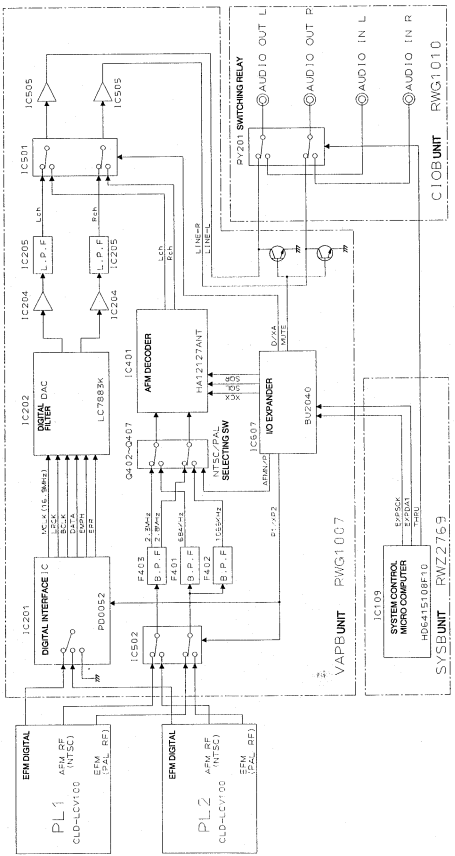
● POWER SUPPLY BLOCK DIAGRAM



● VIDEO BLOCK DIAGRAM



● AUDIO BLOCK DIAGRAM



9. TEST MODE

9.1. MODE TRANSITION DIAGRAM

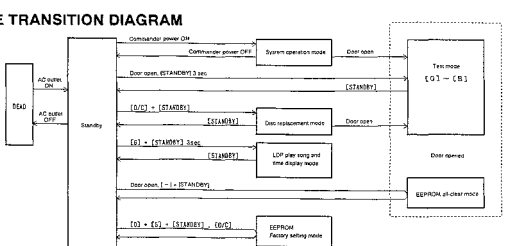


Fig. 1

9.2. MODE

(1) System operation mode

(2) Disc replacement mode

(3) Address setting mode

Refer to the instruction manual.

(4) LDP play song and time display mode

The song number played by the built-in player and time are displayed on the OSD. For details of displays, refer to the description for test mode 9.

[Displaying]

① In the standby state, while pressing the [6] key, continue pressing the [STANDBY/ON] key for approximately 3 seconds.

② Turn on the power of the commander. (Displayed on the monitor connected via the commander.)

○ Press the [STANDBY/ON] key to end. (Returns to the standby state.)

(5) EEPROM Factory Setting Mode

Clears error record, player information, song number played/time, address setting, LDP operation setting. (However, information on disc presence/absence and on mechanism position will not be cleared.)

[Setting]

① In the standby mode, while pressing the [0] and [5] keys together, press the [STANDBY/ON] key. [CC] will blink for approximately 3 seconds.

② Press the [OPEN/CLOSE] key while [CC] is blinking. ([CC] will lights up for approximately 8 seconds.)

(6) EEPROM All-Clear Mode

Clears error record, player information, song number played/time, address setting, LDP operation setting, as well as information on mechanism position and on disc presence/absence.

Note: As data on the number of the tray in the player and outer will be cleared, be sure to initialize the mechanism first before clearing.If all-clear is executed before initializing the mechanism, the mechanism will not be initialized properly in the future.

[Setting]

① In the standby state, open the front door.

② While pressing the [-] key inside the door, press the [STANDBY/ON] key.

([AC] display ····· After blinking for approximately 3 seconds, lights up for approximately 3 seconds.)

(7) LDP Operation Setting Mode

When the LDP cannot operate, it displays error messages and at the same time, automatically switches to the operations of one LDP and operates one player.

Set "only one LDP" when it is clear that the LDP has broken down and is to be removed from the main unit for repair. This prevents error messages from being displayed and error records from being repeated.

[Setting]

In the standby state, while pressing the following keys, press the [STANDBY/ON] key.

[8] ····Operates both LDP1 and LDP2.
[P.A]will be displayed for approximately 3 seconds.

[9] ····Operates only LDP1.
[P.1] will be displayed for approximately 3 seconds.

[0] ····Operates only LDP2.
[P.2] will be displayed for approximately 3 seconds.

- **The following are information required for diagnosing faults when errors have occurred.**

Error code (Refer to Table 5 on page 209.) ..... The error code generated currently is displayed blinking inside the front operating panel.

Disc No.
Changer mechanism mode (Refer to Tables 7 and 8 on page 210.)
Vertical address
..... Detailed data accompanying the error code. Displayed on the OSD and the LED inside the door in test mode 6. (Refer to page 213.)

- **Other than errors, there are also information such as reasons why the player cannot play by itself, etc.**

PL information code (Refer to Table 6 on page 210.)
Disc No.
..... Displayed on the OSD and the LED inside the door in test mode 5. (Refer to page 213.)

9.3 TEST MODE SPECIFICATIONS

9.3.1 SETTING AND RELEASING TEST MODES

[SETTING]
Open the front door during standby, and press the standby/on key for a few seconds to turn on the power supply. Or, open the front door while the power is on.

[RELEASING]
Press the standby/on key to set the unit into standby.

9.3.2 LIST OF FUNCTIONS

Mode	Function	Operations and Displays				
		+/−	↑	↓	←	→
1	PL1	[−]	Disc selection −	Disc selection +	Disc returns/stop	Disc setting/playback
2	PL2					
3	Changer (Manual)	↑	Carrier rises	Carrier descends	Rack direction	Carrier direction
4	Changer (Initial)		Carrier rises	Carrier descends	Operation stops	Initial operation
5	PL information		Address −	Address +	————	Disc no.
6	Error record				Operation mode	Disc no.
7	Error clear				Error record clear	PL information clear
8	Display/Key		All those inside light up	All those outside light up	Those inside light up in order	Those outside light up in order
9	No. of songs played back, Time	↓	Menu selection −	Menu selection +	PL1 clear	PL2 clear
A	Communication Monitor				————	————
B	Auto Test	[+]			Operation stops	Operations start

Table. 1

● FRONT PANEL OPERATIONS

(DURING NORMAL MODE/STANDBY)

Function		Operation	Display
Disc setting/replacement		[0/C] + [STANDBY/ON]	01 blinks
Address setting	1	[1] + [STANDBY/ON]	A.1
	2	[2] + [STANDBY/ON]	A.2
	3	[3] + [STANDBY/ON]	A.3
	4	[4] + [STANDBY/ON]	A.4
Player operation	AUTO/one side	[8] + [STANDBY/ON]	P.A
	Only PL1	[9] + [STANDBY/ON]	P.1
	Only PL2	[0] + [STANDBY/ON]	P.2
Test Mode		Door opens [STANDBY/ON] 3 sec.	————

* [n] + [STANDBY/ON] : Press [STANDBY/ON] key while pressing [n] key.
n : Numerical key

Table. 2

(DURING NORMAL MODE/POWER ON)

Function	Operation	Inside the front operating panel display
When error occurs		Error code
	[7]	Error code (Multi error)
	[8]	Error code (Multi error)
	[9]	Error code (Multi error)
Test Mode	Door opens	———

Table. 3

* The following operations can be carried out using the numerical keys when test mode 8 (display/key) is not set.

Operating Key	Function		Default
[1]	Rear output	ON/OFF	OFF
[2]	OSD display mode	NTSC/PAL	PAL
[3]	During NTSC disc playback	Pseudo PAL	Pseudo PAL
[4]	During NTSC disc playback	4.43NTSC	
[5]	During NTSC disc playback	3.58NTSC	

For LC-V200, only the rear output can be switched.

Table. 4

【ERROR CODE LIST】

No.		Contents
– –		No error
02		Mis-count of vertical address
04		Faulty vertical operations
07		Time over of vertical operations
08		Excessive vertical motor load
09		Time over of outer tray operations
12		Faulty EEPROM
27		Time over of horizontal operations
28		Time over of lock pin operation of carrier base
41		Communication error (System microprocessor ⟷ Changer mechanism microprocessor)
42		Communication error (System microprocessor ⟷ Player 1 microprocessor)
43		Communication error (System microprocessor ⟷ Player 2 microprocessor)
44		Faulty changer mechanism microprocessor
45		Faulty disc sensor
46		Player 1 cannot play back (Only test mode B)
47		Player 2 cannot play back (Only test mode B)
PL1	PL2	
96	D6	Time over of clamp release
97	D7	Time over of clamp operations
A7	E7	Time over of Side A/Side B switching operations
A8	E8	Time over of Side A slider operations
A9	E9	Time over of Side B slider operations
B3	F3	Time over of clamp release of player when power turned on

Table. 5

【PL Information Table】

PL1		PL2		Contents
Side A	Side B	Side A	Side B	
80	88	C0	C8	TRANSIT SW has been detected.
81	89	C1	C9	Cannot focus, when determined as no discs
83	8B	C3	CB	Read-out occurred when search attempted
84	8C	C4	CC	No chapter when search attempted
85	8D	C5	CD	Spindle cannot lock when start up
86		C6		Different side from command played back (Disc reversed)
87	8F	C7	CF	Time over of disc start up operations
90	98	D0	D8	Mis-clamp
92	9A	D2	DA	Focus lost when start up
B0	B8	F0	F8	Time over of search operations
B5	BD	F5	FD	Cannot continue playback
B6	BE	F6	FE	Time over of TOC read operations

Table. 6

【OPERATION MODE】

(1) Operations of changer mechanism (When error codes are other than 12.)

Mechanism Mode (Upper digits)		Carrier Mode (Lower digits)	
0	Not used	0	Data standby
1	Mechanism initial	1	Carrier base upper initial
2	Sets disc in player	2	Carrier base lower initial
3	Returns disc from player	3	Horizontal direction initial
4	Replaces disc (Extracts)	4	Transfers to player 1
5	Replaces disc (Storage)	5	Transfers to player 2
6	Replaces disc (Stands by for outer tray)	6	Transfers to outer position
7	Carrier base standby	7	Transfers to rack (No.1 to 50)
8	Test mode	8	Pulls tray out onto carrier base
9	Not used	9	Sets tray on carrier base

* The operation mode is displayed in 2 digits. The upper digit displays the mechanism mode, the lower digit the carrier mode.

Table. 7

(2) When error code is 12 (EEPROM is faulty)

Indicates which data was being accessed when the error occurred.

1	Tray position writing (1)	9	Player 2 play song number writing
2	Tray position writing (2)	10	Play song number writing
3	Tray position writing (3)	11	Player 1 play time writing
4	Mechanism error writing	12	Player 2 play time writing
5	Player information writing	13	Player total play time writing
6	Disc presence/absence writing	14	Motor cooling timer writing
7	Address/player operations writing	80	Reading at initial stage
8	Player 1 play song number writing		

Table. 8

9.3.3 TEST MODE

(1) Operations

During the test mode, the switches on the board inside the front door are mainly used for operating.

Expandibility has been attained using the keys and the remote control unit for service in the ceiling panel.

(2) Selections

Selections are made using the + and − keys inside the front door. The test mode number is displayed at the top digit of the 7 segment 4 digits nearby.

a : Test mode number
b : Address, etc.
c, d : Data, etc.

9.3.4 PLAYER 1 (UPPER PLAYER) MODE (Display a:1)

9.3.5 PLAYER 2 (LOWER PLAYER) MODE (Display a:2)

(1) Select the disc to be played back (tray number) using the ↑ and ↓ keys. (Display c, d:00 to 50)

(2) Start the automatic setting in the player/playback of the disc using the → key.

(3) Stop the disc being played back, and return to the rack using the ← key.

* The unit can be operated normally by setting a disc in the player, and connecting the service remote control unit to the jack (JA101) of the SYSB unit by wiring.
PLAY, STOP, PAUSE, SKIP, SCAN, STILL, STEP, SEARCH, SIDE, etc.

Press the → key.

- If there are no disc (tray) in the player, sets the discs selected by the ↑ and ↓ keys in the player.
- If the player contains the disc (tray), sets the player into the playback mode.

Press the ← key.

- If the player is in the playback mode, stops the disc.
- If the disc (tray) in the player is during stop, returns the disc (tray) to the rack.

1. 2 3
a b c d

a : Test mode number (1) or (2)
b : —
c, d : Disc number (blinks during selection)
(↑ , ↓ keys: For selecting disc no.)

```
TEST 1        Player 1

①DISC      --         NTSC
②SIDE      A          CLV
③CHAP      00
④FR/TIME      0. 00
⑤AUDIO     Digital   stereo
⑥TV. sys   NTSC

⑦STOP
```

Fig. 2

① DISC (Disc number set in the player)

− −	: No discs
00	: Disc in standard tray
01 to 50	: Disc in changer tray

② SIDE (Disc side during playback)
[During stop and initial, side A]

A	: Side A
B	: Side B
A▶B	: Turning from side A to side B (During play)
B◀A	: Turning from side B to side A (During play)

③ CHAP (chapter/track during playback)
[00 during stop and initial]

LD	CHAP	: Chapter no. (00 to 79)
		: No chapter (− −)
CD/CDV	TRK	: Track no. (01 to 99)

④ FR/TIME (frame/time during playback) [00 during stop]

LD (CAV)	FRAME	: Frame no. (00001 to 54000)
LD (CLV)	TIME	: Time [with seconds] (h:mm. ss)
	TIME	: Time [No seconds.] (h:mm)
CD/CDV	TIME	: Time (h:mm ss)

⑤ AUDIO (Audio switching)

Digital	: Digital audio
cx on	: Analog audio (CX on)
cx off	: Analog audio (CX off)
Stereo	: Stereo
1/L	: Audio 1/left
2/R	: Audio 2/right

⑥ TV sys (TV system) [Only LC-V100]

	NTSC During disc	PAL During disc
NTSC	NTSC	PAL
4.43 NTSC	4.43NTSC	PAL
M. PAL (Pseudo PAL)	M. PAL	PAL

The disc discrimination is displayed only during playback.

NTSC	: NTSC system disc
PAL	: PAL system disc
CAV	: Standard disc
CLV	: Extended-time disc

⑦ Operation mode display

STOP
PLAY (Including operations which transfer the mode to "PLAY")
PAUSE
STILL (Only CAV disc)
SEARCH 12 34. 56 (Chapter/track or frame/time during search)

Press the [ESC] key and then the [TEST] key of the test remote control unit to set the test mode of the player.
Only the remote control unit is valid during the test mode.

```
TEST 2          Player2
  ◀PL. test mode▶

①0162A          ④A  ⑤K-7F
②T-4:N              ⑥M-0
③TRK-OFF            ⑦S-LD
                    ⑧F-0
⑨MODE-00:00
                  :remote:
```

Fig. 3

①0162A
Player servo mechanism controller (microprocessor) version
Displays frame or time during playback

②T Tilt
- 0 to C : Position of tilt
- N : Neutral
- ON : on
- OFF : off

③TRK Tracking on/off

④A Disc side
- A : Side A
- B : Side B

⑤K Remote control unit key input
(Refer to Table. 10: Page 217)
- 7F : No key input

⑥M Loading position (0 to 9)
- 0 : OPEN
- 1 : LOADING
- 2 : STANDBY
- 3 : CLAMP
- 4 : Not used
- 5 : TILT −
- 6 : Not used
- 7 : TILT+
- 8 : LIMIT
- 9 : B CLAMP

⑦S Slider position
- IN
- CD
- CDV
- LD

⑧F Focus balance mode
- 0 : During normal playback
- 1 : During jump

⑨MODE Operation internal mode and step
(Refer to Table. 11–17: Page 217–220)

9.3.6 CHANGER (MANUAL) MODE (Display a:3)

(1) Select a vertical address (tray number) using the ↑ and ↓ keys. (Display c, d:00 to 50)
(2) Set the tray in the carrier using the → key.
(3) Return the tray on the carrier to the rack using the ← key.

[TEST 3]

a : Test mode number (3)
b : —
c, d : Vertical address (blinks during selection)

```
TEST 3          Changer

①PL1    disc:  --
②PL2    disc:  --
③TRAY   disc:  00   :closed⑦
④CARR   disc:  --
⑤V. POS      :  20
⑥mode        :  80

                    ⑧PD4360C
```

Fig. 4

①PL1 disc (Tray no. in player 1)
②PL2 disc (Tray no. in player 2)
③TRAY disc (Tray no. in the outer position)
④CARR disc (Tray no. on the carrier)
- −− : Non
- 00 : Standard tray
- 01 to 50 : Changer tray

⑤V. POS (Vertical position)
- P1 : Position of player 1
- 00 : Outer position
- 01 to 50 : Position of rack
- P2 : Position of player 2
- −− : Irregular

⑥mode (Mechanism operation mode)
(Refer to Table. 7: Page 210)

⑦closed (Outer tray operations)
- closed : Has closed
- closing : Closing
- opened : Has opened
- opening : Opening
- stop : Stopped halfway

⑧PD4360C
Changer mechanism microprocessor version

9.3.7 CHANGER (INITIAL) MODE (Display a:4)

(1) Perform the vertical direction initial using the ↑ and ↓ keys.
(2) Start initial operations using the → key.
(Clears the current error, and performs initial operations.)
(3) Stop initial operations using the ← key.

[TEST 4]

a : Test mode number (4)
b : —
c, d : Vertical address

```
TEST  4          Changer init

PL1    disc:  --
PL2    disc:  --
OUTR   disc:  00   :closed
CARR   disc:  --
V. POS      :  20
mode        :  80

                          PD4360C
```

Fig. 5

The contents of the display are the same as Fig. 4.

9.3.8 PLAYER INFORMATION MODE (Display a:5)

(1) Select the address using the ↑ and ↓ keys. The player information will be displayed.
(Display b : address, Display c, d : player information)
(2) The disc no. (tray no.) is displayed while the → key is pressed.

[TEST 5]

a : Test mode number (5)
b : Address of player information (↑ and ↓ keys)
c, d : Information code (→ key : Disc no.)

```
TEST  5        PL info.
     code  disc
 1.  83    05
 2.  90    10
 3.  C5    00
 4.  --
 5.  --
 6.  --
 7.  --
 8.  --
```

Fig. 6

code : Information code (Refer to Table. 6: Page 210)
disc : Current disc no.

--	No disc
00	Disc in standard tray
01 to 50	Disc in changer tray

9.3.9 ERROR RECORD (Display a:6)

(1) Select the address using the ↑ and ↓ keys. The error information will be displayed.
(Display b:address, display c, d:error information)
(2) The disc no. (tray no.) is displayed while the → key is pressed.
(Display b:address, display c, d:tray no.)
(3) The operation mode is displayed while the ← key is pressed.
(Display b:address, Display c, d:operation mode information)

[TEST 6]

a : Test mode number (6)
b : Address of error record (↑ and ↓ keys)
c, d : Error code
(→ key:Disc no.)
(← key:Operation mode)

```
TEST  6        Error history
   ①code②disc③mode④posi
 1.  08    25      05     03
 2.  27    39      10     10
 3.  A8    05
 4.  28    --      12     P1
 5.  06    12
 6.  --
 7.  --
 8.  --
```

Fig. 7

① code:Error code (Refer to Table. 5: Page 209)

② disc : Current disc or tray no. in the player when player error has occurred or that during operations when mechanism error has occurred.

--	: No disc
00 to 50	: Disc no. (tray no.)

③ mode : Current operation mode (Refer to Table. 7: Page 210) (None during player error.)

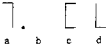
④ posi : Current vertical position (None during player error)

P1	: Position of player 1
00	: Outer position
01 to 50	: Position of rack
P2	: Position of player 2
--	: Irregular

9.3.10 ERROR/INFORMATION CLEAR (Display a:7)

(1) Select the address using the + / − keys.
The error information will be displayed.
(2) Clear all information on the player using the → key.
(3) Clear all errors using the ← key.

[TEST 7]



a : Test mode (7)
b : —
c, d : (→ key : Clears player information)
(← key : Clears the error mode)
When the key is pressed, CL blinks for 3 sec., clears and then lights up for 2 sec.

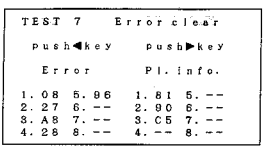


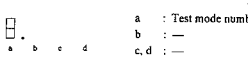
Fig. 8

When the key to be cleared is pressed, all corresponding data will be cleared (--).

9.3.11 DISPLAY/KEY TEST (Display a:8)

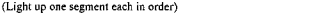
(1) Light up all 7 segment 4 digit LEDs inside the door using the ↑ key.
(2) Light up all 7 segment 2 digit LEDs inside the ceiling panel using the ↓ key.
(3) Light up the 7 segment 4 digit LEDs inside the door in order using the ← key.
(4) Light up the 7 segment 2 digit LEDs inside the ceiling panel in order using the → key.
(5) Display the number input at the 7 segment 2 digit LEDs inside the ceiling panel using the numerical keys.

[TEST 8]



a : Test mode number (8)
b : —
c, d : —

↑ key 

↓ key 

→ key − − − −
(Lights up one segment each in order)

← key − −
(Light up one segment each in order)

1 key

2 key 

3 key 

0 key 

O/C key 

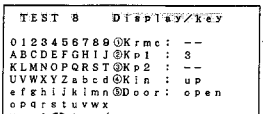


Fig. 9

0 to 9, A to Z, a to z, and □ to / are the test outputs of the data for screen displays.

① Krmc Remote control unit key data (Service remote control unit connected to SYSB unit)
The data code is displayed when the A8 (Pioneer commercial LD) code is input.
− −: (No input)

② Kp1 When upper keys inside the ceiling panel are pressed, the corresponding key name is displayed.
1, 2, 3, 4, 5
− −: (Not pressed)

③ Kp2 When lower keys inside the ceiling panel are pressed, the corresponding key name is displayed.
6, 7, 8, 9, 0
O/C (Open/Close key)
− (Not pressed)

④ Kin When keys on the board inside the front panel are pressed, the corresponding key name is displayed.
up, down, left, right, mode −, mode+
− −: (Not pressed)

⑤ Door The condition of the door is displayed in connection with the door switch.
open, close

9.3.12 NUMBER OF SONGS PLAYED BACK, PLAYBACK TIME DISPLAY (Display a:9)

```
TEST 9          Songs/Hours

①•Songs
      PL1    :  0123456
      PL2    :  0212345
      TOTAL  :  0335801
②•Hours
      PL1    :  001357  h
      PL2    :  002468  h
      TOTAL  :  003825  h
```

Fig. 10

① Songs (No. of songs played back)
PL1 (No. of songs played back by player 1)
PL2 (No. of songs played back by player 2)
TOTAL (Total no. of songs played back by players 1 and 2)
No. of playbacks : When each player switches from stop to playback or stop to standby. (No counting in the test mode (including aging))

② Hours (Playback time)
PL1 (Playback time of player 1)
PL2 (Playback time of player 2)
TOTAL (Total playback time of players 1 and 2)
Playback time : When each player is not in the clamp off condition. (No counting in the test mode (including aging))

When the [←] key is pressed for 3 sec. in this mode, the no. of songs played back by player 1 and the playback time will be cleared. When the [→] key is pressed, those of player 2 will be cleared.

* The total no. of songs played back and the total playback time cannot be cleared. Regarding the playback time, as the internal counter counts within the hour, the total may not be the total of PL1 and PL2 in some cases.

9.3.13 COMMUNICATION MONITOR (Display a : A) : Design planning mod

[TEST A]

a : Test mode number (A)
b : Communication monitor of the changer microprocessor and system controller (OK : C lights up, NG : Blank)
c : Communication monitor of player 1 and the system controller (OK : 1 lights up, NG : Blank)

d : Communication monitor of player 2 and the system controller (OK : 2 lights up, NG : Blank)

[Communication Monitor Mode]

```
TEST A          Monitor  12MC
                         ①②③④
0100A000000000040070002A
0100A000FFFF0000208000FE
 •  •  •  •  •  •  •  •  •  •
0100A000000000040070002A
0100A000FFFF0000208000FE
 •  •  •  •  •  •  •  •  •  •
14300000A   AAA6A1A0A4FFFF
14521300    FFFFFFFFFFFFFF
```

Fig. 11

* When the power supply for the commander is turned on with test A selected, the unit operates in the normal mode. However, the display will be shown constantly and other test modes cannot be set.

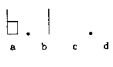
Monitors communication with the servo mechanism controller of player 1 and that with the servo mechanism controller, changer mechanism microprocessor and commander of player 2. Errors will be displayed when communication error occurs.

① 1 : "1" is displayed when the communication with player 1 is carried out normally.
② 2 : "2" is displayed when the communication with player 2 is carried out normally.
③ M : "M" is displayed when the communication with the changer mechanism microprocessor is carried out normally.
④ C : "C" is displayed when the communication with the commander is carried out normally.
* " – " is displayed when an error has occurred.

9.3.14 AUTO TEST/AGING

(1) Select the menu no. using the ↑ and ↓ keys.
(2) Set the menu no. using the → key.
(3) Start the operations using the → key.
(4) Stop the operations and perform initialization using the ← key.

[TEST B]



a : Test mode number (B)
b : Menu no. (↑ and ↓ keys)
c : • blinks while operating
d : —

```
 TEST B          Test/aging
      ①no. :  01
②PL1  disc :  14    A01
③PL2  disc :  15    A00
④TRAY disc :  00   :closed®
⑤CARR disc :  --
⑥V. POS    :  20
⑦mode      :  80

⑧CYCLES    :  001234
```

Fig. 12

① no. (Aging menu no.) (Refer to Table. 9)

② PL1 disc (Tray no. in player 1.)
During play : Its side and chapter no.
– – : indicates disc without chapter

③ PL2 disc (Tray no. in player 2.)
During play:Its side and chapter no.
– – : indicates disc without chapter

④ TRAY disc (Tray no. inside the outer position)

⑤ CARR disc (Tray no. on the carrier)
– – : None
00 : Standard tray
01 to 50 : Changer tray

⑥ V. POS (Vertical position)
P1 : Position of player 1
00 : Outer position
01 to 50 : Position of rack
P2 : Position of player 2
– – : Irregular

⑦ mode (Mechanism operation mode)
(Refer to Table. 7: Page 210)

⑧ closed (Operations of outer tray)
closed : Has closed
closing : Closing
opened : Has opened
opening : Opening
stop : Stopped halfway

⑨ CYCLES (No. of cycles) : 6 digits

【Aging Menu】

Menu No.	Operations
0	Aging for checks before shipping Plays discs 0 and 1 to 50 in players 1 and 2 for approx. 10 sec. each. The outer tray is regularly opened and closed. No retries when operation errors occur. One cycle for 0 to 50. (Initial 1 at start)
1	Aging for checks before shipping (Operations are the same as Menu no. 0) The no. of retries when errors occur is one for the player and zero for the mechanism.
2	Aging for checks before shipping (Operations are the same as Menu no. 0) The no. of retries when errors occur is one for both the player and the mechanism.
3	Aging for checks before shipping (Operations are the same as Menu no. 0) The no. of retries when errors occur is one to two for the player and four for the mechanism. (Same as no. of retries carried out normally.)
7	Plays discs 10 to 12 in players 1 and 2 for approx. 5 sec. each. The outer tray is regularly opened and closed. The no. of retries when errors occur is the same as that normally carried out. One cycle for 10 to 12. (Initial 1 at start)
8	To and fro operations horizontally at no. 20. If the player contains discs, plays sides A and B alternately for approx. 5 sec. The no. of retries when errors occur is the same as that normally carried out. The cycle no. is counted for each horizontal one way path. (Accumulation count)
9	Plays discs 1 to 50 in players 1 and 2 for approx. 45 sec. each. During this time, the carrier carries out to and fro operations vertically. The no. of retries when errors occur is the same as that normally carried out. One cycle for 0 to 50. (Initial 0, accumulation count)

Table. 9

Note:

- Using discs usually not sold, such as aluminum lined 20 cm LD and 30 cm single plates, for aging will cause errors.
- Aging cannot be carried out if two players have not been set.
- Retries will not be carried out for outer tray and communication errors.

• TABLE OF KEYS AND CORRESPONDING CODES

FUNCTION	HEX CODE
0	00
1	01
2	02
3	03
4	04
5	05
6	06
7	07
8	08
9	09
DIG/ANA	0C
CX	0E
TV/LDP	0F
SCAN ▶▶	10
SCAN ◀◀	11
CHP/TIM	13
■/▲	16
PLAY ▶	17
PAUSE ▮▮	18
A. MON	1E
+ 10	1F
CHAP	40
FRM/TIM	41
SEARCH	42
DISP	43
REP. B	44
CLEAR	45
SPEED −	46
SPEED +	47
REP. A	48
STEREO	4A
SIDE A	4D
SIDE B	4E
STLL STEP ◀|	50
× 3 ▶	51
CHAPTER SKIP ▶▶|	52
CHAPTER SKIP |◀◀	53
STLL STEP |▶	54
P. RUN	56
◀ × 3	59
TEST	5E
ESC	5F

Table. 10

• VARIOUS OPERATION MODES OF PLAYER

OPEN MODE 1

Step	Process		
0	Internal register clear, spindle stop set, focus off standby		
1	Models with both sides		
	Side B	Side A	During "alpha turning"
	Tilt up starts		Tilt down starts
2	Stands by for tilt up Slider B outside shift starts		
3	Stands by for spindle stop		
4	Stands by for slider B outside shift		
5	Clamp switching B→A starts		
6	Stands by for clamp switching B→A		
7	Tilt down starts		
8	Stands by for tilt down		
9	Shift to slider LD sensing position starts		
A	Stands by for spindle stop		
B	Stands by for shift to slider LD sensing position		
C	Unload starts		
D	Unloads until out SW is set		
E	Sets 100 msec. timer		
F	Waits for 100 msec.		
	End		

Table. 11

STANDBY MODE 2

Step	Process		
0	Internal register clear, spindle stop set, focus off standby		
1	Models with both sides		
	Side B	Side A	During "alpha turning"
	Tilt up starts		Tilt down starts
2	Stands by for tilt up Slider B outside shift starts		
3	Stands by for spindle stop		
4	Stands by for slider B outside shift		
5	Clamp switching B→A starts		
6	Stands by for clamp switching B→A		
7	Tilt down starts		
8	Stands by for tilt down		
9	Shift to slider LD sensing position starts		
A	Stands by for spindle stop		
B	Stands by for shift to slider LD sensing position		
C	Tilt neutral starts		
D	Stands by for tilt neutral		
	End		

Table. 12

STOP MODE 3

Step	Process
0	Internal register clear, spindle stop set, focus off standby
1	Models with both sides
	Side B / Side A / During "alpha turning"
	Tilt up starts / Tilt down starts
2	Stands by for tilt up Slider B outside shift starts
3	Stands by for spindle stop
4	Stands by for slider B outside shift
5	Clamp switching B→A starts
6	Stands by for clamp switching B→A
7	Tilt down starts
8	Stands by for tilt down
9	Shift to slider LD sensing position starts
A	Stands by for spindle stop
B	Stands by for shift to slider LD sensing position
C	Tilt neutral starts
D	↓
E	Stands by for tilt neutral
	End

Table. 13

DISC SENSING MODE 4

Step	Process
0	Stands by for tilt neutral
	Models with both sides
	Side A / Side B
	Normal / CD direct mode
	↓ / LD Side B sensing
	LD sensing / CD sensing
1	Shift to slider LD sensing position starts Focus try counter clears
2	Stands by for shift to slider LD sensing position
3	Focus try
	Focus unlock / Focus lock
	LD presence fixed, ends
	↓
4	Focus off
5	Shift to slider CD sensing position starts
6	Stands by for shift to slider CD sensing position
7	Focus try
	Focus unlock / Focus lock
	CD presence fixed, ends
8	Focus off
9	Shift to slider LD sensing position starts Focus try counter clears
A	Shift to slider LD sensing position starts
B	CD direct mode discrimination
	CD direct mode / Normal
C	Focus try
	Focus unlock / Focus lock
	Focus lock / LD presence fixed, ends
D	Focus off
E	Disc absence fixed, ends
F	Shift to slider B inside position starts
10	Stands by for shift to slider B inside position
11	Focus try
	Focus unlock / Focus lock
12	Focus off / Side B presence fixed, ends
13	Side B disk absence fixed
	End

Table. 14

SETUP MODE 5

Step	Process
0	Tilt neutral standby, slider target position setting
	CD / LD Side A / LD Side B
	Shift to CD TOC position starts / Shift to LD TOC position starts / Shift to LD Side B inside position starts
1	Focus check (including disc overload error (LD + CD))
	Focus lock (OK) / Focus unlock (NG)
	Stands by for shift to slider target position / LD / CD
	Focus error, ends / If unsuccessful after three tries, ends in focus error
2	Spindle setting
	CD set / CDV set / LD set
	60 sec. timer set, spindle RUN starts
3	Focus check
	Focus lock (OK) / Focus unlock (NG)
	Stands by for spindle lock while performing mis-clamp check / Time over Spindle error, ends / Clamp error, ends
	60 sec. timer set
4	LD / CD, CDV
	CAV/CLV discrimination
	Not determined / Determined
5	Focus check
	Focus lock (OK) / Focus unlock (NG)
	Stands by for code reading / Timer over / Focus error, ends
	Slider is moved slowly along the outer and inner circumference until the codes in the PGM area are read. Sets 60 sec. timer after they are read, and returns to step 4. / Code error, ends
6	End

Table. 15

TOC READ MODE 6

Step	Process
0	Divided according to disc types
	LD / CD, CDV
1	1st address clear, sets 15 sec. timer
2	Shifts to read-in (and focus time check)
	24 bits code has been read / Can not be read
	Read-in / PGM area read-out
	↓ / 32 tracks REV jump / Play
3	Shifts to PGM area (and focus time check)
	24 bits code has been read / Can not be read
	PGM area / Read-in
	↓ / 16 tracks FWD jump / Play
4	Shifts to read-in (and focus time check)
	24 bits code has been read / Can not be read
	Read-in / PGM area
	↓ / 4 tracks REV jump / Play
5	Plays to PGM area (and focus time check)
	24 bits code has been read / Can not be read
	PGM area / Read-in
	Sets 0.5 sec. timer ↓ / Play
6	Records 1st address (CH, time) (and focus check)
	After 0.5 sec., presence/absence of CH and sec. determined
	Sets 0.5 sec. timer ↓
7	TOC (sub code) presence/absence determined (and focus check)
	TOC present ↓ / TOC absence disc fixed and ends if sub code not read for 0.5 sec.
8	Sets 15 sec. timer
9	Stands by for TOC reading / Time over / TOC reading ends
	PGM area / Read-in sub code NG / TOC error set ends / End
	↓ / Play
A	Sub code OK (+ focus check) NG
	32 tracks REV jump / Play
	↓
B	Sub code OK (+ focus check) NG
	32 tracks REV jump / Play
	↓
C	Sub code OK (+ focus check) NG
	32 tracks REV jump / Play
	↓
D	Sub code OK (+ focus check) NG
	32 tracks REV jump / Play
	↓
E	To step 9

Table. 16

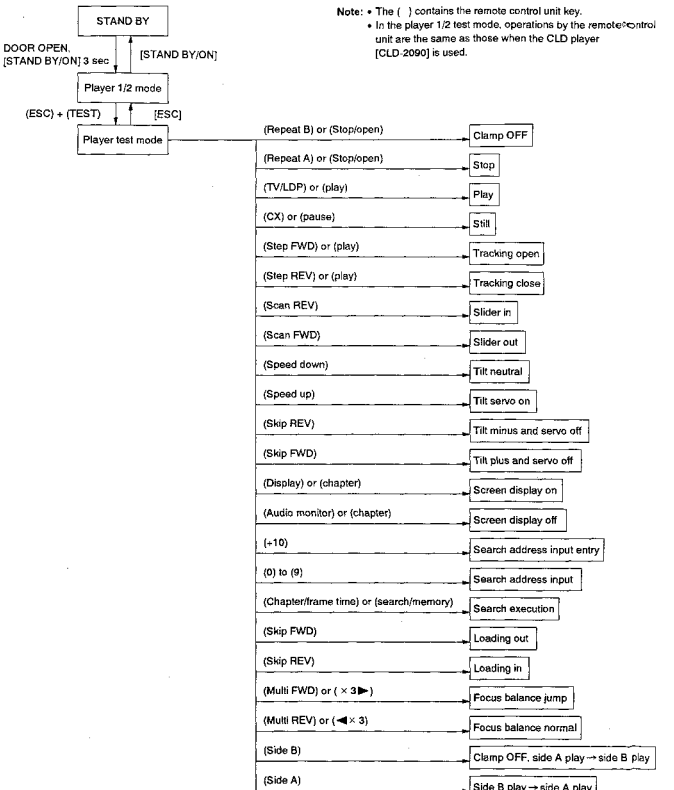
SEARCH MODE 8

Step	Process
0	Focus on / Focus off
	Sets 15 sec. timer / Recover error, ends
	Divided according to type of disc search target
	CDV / CD / LD
	Track search / (Waits for absolute time)
	A ↔ V / A ↔ V, V ↔ A
	↓
1	Focus try counter clears, spindle stop starts, slider shift starts
	To A → V CDV TOC position / To V → A CD TOC position
2	Stands by for slider shift
	Spindle stop standby → Disc overload (clamp) error occurs if does not stop even after 1.6 seconds, ends
	Focus lock (sets 15 sec. timer set) / Focus try
	A, CD spindle set / V, CDV spindle set / If unsuccessful after 4 tries, recover error occurs, ends
3	Stands by for spindle lock
	Stands by for sub code reading ↓
4	Sets track count 10 times
5	Slider shifts while performing track count
	Difference from target address above approximately 1 min. / Approaching within approximately 1 min.
6	Slider shifts
7	Slider shifts until target address is crossed (H SCAN)
8	Slider shifts until target address is crossed (L SCAN)
	↓
9	32 tracks jump until target address is crossed
A	4 tracks jump until target address is crossed Sets 5 sec. timer
B	4 tracks jump until near target address / Timer check NG → Search error, ends
C	Play until target address reached
	Time out / Reached
	LD, CDV-V / CD, CDV-A / LD, CDV-V / CD, CDV-A
	Search error, ends / Spindle lock / Unlock / REV 1 jump
	Ends / LD / CDV-V
	To step B / REV jump
D	4 tracks jump until near target address Time check NG → search error, ends
E	Plays until target address reached
F	When new search target input during searching, returns to step 0 after spindle locks.

Table. 17

9.4 PLAYER TEST MODE

(PLAYER TEST MODE OPERATIONS OUTLINE DIAGRAM)



Note: • The ( ) contains the remote control unit key.
• In the player 1/2 test mode, operations by the remote control unit are the same as those when the CLD player [CLD-2090] is used.

Controlling the Test Mode of the Player

● Setting the test mode of the player

In test mode 1/2 (player 1/2 mode), press [ESC] and [TEST] keys in order. The test mode of the player will be set.

Note: Be sure to load the test disc in the player beforehand.
The video/audio function automatically switches to the player to be tested.

(1) Clamp OFF (Open)
a. Press the [repeat B] key (44H) of the remote control unit.
b. Or, in the stop state, press the [stop/open (■ / ▲)] key of the remote control unit.

(2) Stop
a. Press the [repeat A] key (48H) of the remote control unit.
b. Or, in the play state, press the [stop/open (■ / ▲)] key of the remote control unit.
c. Or, in the clamp OFF state, press the [play (▶)] key (17H) of the remote control unit.

(3) Play (spindle start up)
a. Press the [TV/LDP] key (0FH) of the remote control unit.
b. Or, in the stop state (clamp state), press the [play (▶)] key of the remote control unit.

- Tracking will be started up in the open state.
- The tilt in the initial state is neutral.
- According to the position of the slider during start up, the disc type is discriminated.

(4) Still
a. Press the [CX] key (0EH) of the remote control unit in the play state.
b. Or in the play state, press the [pause (▮▮)] key (18H) of the remote control unit. Each time it is pressed, play/still switches alternately.

(5) Tracking open
a. In the play state, press the [step FWD] key (54H) of the remote control unit.
b. Or in the play state, press the [play (▶)] key (17H) of the remote control unit. Each time either key is pressed, open/close switches alternately.

(6) Tracking close
a. In the play state, press the [step REV] key (50H) of the remote control unit.
b. In the play state, press the [play (▶)] key (17H) of the remote control unit. Each time either key is pressed, open/close switches alternately.

(7) Slider in
a. Press the [scan REV] key (11H) of the remote control unit.

(8) Slider out
a. Press the [scan FWD] key (10H) of the remote control unit.

(9) Tilt neutral
a. Press the [speed down] key (46H) of the remote control unit.
- The tilt in the initial state is neutral.

(10) servo on
a. Press the [speed up] key (47H) of the remote control unit.

(11) Tilt minus and servo off
a. Press the [skip REV] key (53H) of the remote control unit in states other than "clamp open".

(12) Tilt plus and servo off
a. Press the [skip FWD] key (52H) of the remote control unit in states other than "clamp open".

(13) Screen display on
a. Press the [display] key (43H) of the remote control unit
b. Or press the [chapter] key (40H) of the remote control unit. Each time it is pressed, the display turns on/off alternately.

- The screen display is on in the initial state.

(14) Screen display off
a. Press the [audio monitor] key (1EH) of the remote control unit.
b. Or press the [chapter] key (40H) of the remote control unit. Each time it is pressed, the display turns on/off alternately.

(15) Search address input entry
a. In the play state, press the [+10] key (1FH) of the remote control unit.

- The address searched previously is displayed as the initial state. When search is executed at this time, previous addresses can be searched.

(16) Search address input
a. Press the [0] to [9] keys of the remote control unit.
- When the number key is to be input for the first time, clear the input address before inputting.

(17) Search execution
a. Press the [chapter/frame time] key (13H) of the remote control unit.
b. Or press the [search/memory] key (42H) of the remote control unit.

(18) Loading out
a. In the open state, press the [skip FWD] key (53H) of the remote control unit.

(19) Loading in
a. In the open state, press the [skip REV] key (52H) of the remote control unit.

(20) Focus balance jump

a. During play, press the [Multi FWD] key (58H) ([× 3 ▶] key of the LD remote control unit for service) of the remote control unit.

b. Or during play, press the [highlight/intro.] key (5AH) or the [frame/time] key (41H) of the remote control unit. Each time either key is pressed, jump/normal switches alternately.

(21) Focus balance normal

a. During play, press the [Multi REV] key (55H) ([◀× 3] key for the service remote control unit) of the remote control unit.

b. Or during play, press the [highlight/intro.] key (5AH), the [frame/time] key (41H) of the remote control unit. Each time either key is pressed, jump/normal switches alternately.

(22) Clamp OFF, side A play → side B play

a. In clamp OFF or side A play state, press the [side B] key (4EH) of the remote control unit.

(23) Side B play → side A play

a. In the side B play state, press the [side A] key (4DH) of the remote control unit.

9.5 Mechanism Error Codes

Error Code	Contents	Retry Operations	Possible Causes	To Recover
02	Incorrect counting of vertical addresses (Mis-count)	Positioning after vertical initialization in reverse direction	• Faulty vertical encoder input of changer controller • Foreign particles in vertical address slit	• Turn off and then on the power or perform the automatic recovery of test 4 • Carry out the vertical operations of test 3 and check that the vertical addresses are being counted correctly
04	Error in vertical operations (Vertical limit SW is on)	Positioning after vertical initialization in reverse direction	• Because of faulty elevating motor control, the motor could not stop and has hit against something • Faulty limit SW input	• Turn off and then on the power or perform the automatic recovery of test 4 • Carry out the vertical operations of test 3 and check that the motor does not hit against anything
07	Time-over of vertical operations • Time-over of the vertical operations of the changer controller Time-out instead of overloading of the elevating motor • Difference in vertical positions Difference between the target position after completing operations and current position • Time-out of the system controller in vertical operations Time-out at the system controller without errors occurring in the changer controller	Positioning after vertical initialization in the reverse direction or in the direction near the vertical address	• Elevating motor does not operate • Caught due to foreign particles, etc. in the vertical direction • The carrier base is not tilting correctly • The changer controller is not operating (Related to power supply) • Vertical time-out retry was repeated several times continuously and the elevating motor has over-heated (Elevating motor cooling standby mode)	• Turn off and then on the power or perform the automatic recovery of test 4 • Carry out the vertical operations of test 3 and check if operations are normal • After more than 10 minutes, turn the power on However, the automatic recovery of test 4 can be performed immediately
08	Overload of vertical motor • Overload during vertical operations • Noise was received during horizontal operations, and overload was detected	Positioning after vertical initialization in the reverse direction Horizontal operations in reverse direction → vertical initialization → positioning → original horizontal operations	• Caught due to foreign particles, etc. in the vertical direction, and overload was detected • Noise was received during horizontal operations and overload detected	• Turn off and then on the power or perform the automatic recovery of test 4 • Perform the vertical operations/horizontal operations of test 3, and check if operations are normal
09	Error in outer tray operations • Outer stopped halfway • Power on operations ended abnormally	Usually reversal operations are performed four times Reversal operations are not performed in aging operations Not performed From here, only the power key is accepted	• Caught in the outer • Mechanism load of the outer is excessive • Faulty outer motor operations • Faulty outer plunger operations • The standard tray is not in the outer even though the unit was started up normally • The standard tray is in the outer even though the unit was started up after the disc had been replaced.	• Operate open/close key • Turn power off and then on

Error Code	Contents	Retry Operations	Possible Causes	To Recover
12	Abnormal EEPROM	Not performed	• Damaged by static electricity, etc. • Affected by noises, etc. while reading or writing	• Replace EEPROM Before replacing... (1) Initialize mechanism with the automatic recovery of test 4 (2) Fill in the player's service record label with the songs played and play time of the player After replacing (1) Perform the all-clear of the EEPROM (2) As all disc information has been cleared, replace discs (1 to 50) and reset disc presence/absence
27	Horizontal operation time-over • Time-over of the horizontal operations of the changer controller • Difference in the status of the carrier base when operations were completed • Time-out of the system controller of horizontal operations Time-out at the system controller without errors occurring in the changer controller	Horizontal operations in the reverse direction → vertical initial → positioning → original horizontal operations	• The vertical positions of the carrier base, player, outer tray and rack are displaced • Mechanism load in the horizontal direction is excessive • Loading motor is not operating • Changer controller is not operating (related to power supply) • Trying to place tray where there is already a tray • Claws holding the tray in place have broken off	• Turn off and then on the power or perform the automatic recovery of test 4 • Perform the horizontal operations of test 3 and check if operations are normal
28	Time-over in the carrier base lock pin operations	Positioning after vertical initialization in the reverse direction or direction near the vertical address	• When the carrier base is elevating without carrying any tray, the lock pin does not come off or does not go into the pin hole • The loading motor is not operating • The changer controller is not operating (related to power supply)	• Turn off and then on the power or perform the automatic recovery of test 4 • Perform the vertical operations of test 3 and check if operations are normal
41	Error in the communication with the changer controller	• After the changer controller is reset from L to H, stands by for communication recovery for 1 second. This is performed four times. If the communication does not recover, it is taken as communication error. • If it recovers, mechanism retry is performed. If vertical operations are performed when a communication error has been generated, positioning is carried out after vertical initialization in the reverse direction or direction near the vertical address If horizontal operations are performed when a communication error has been generated, horizontal operations in the reverse direction are performed, positioning is carried out after vertical initialization, and then the original horizontal operations are performed	• Faulty communication line connection • Communication line is fixed to H, L • Noise on the communication line • The changer controller is not operating (related to power supply)	• Turn off and then on the power or perform the automatic recovery of test 4

Error Code	Contents	Retry Operations	Possible Causes	To Recover
42 43	Error in the communication with the player mechanism controller 42: Player 1 43: Player 2	• The servo mechanism controller is reset from L → H. After this, communication is checked if it has been successful or not for approximately 3 continuous seconds. • Stop after recovery → clamp off	• Faulty communication line connection • Communication line is fixed to H, L • Noise on the communication line • The servo mechanism controller is not operating (related to power supply)	• Turn off and then on the power or perform the automatic recovery of test 4
44	Error in changer controller operations • "Operations not possible" has been received in respect to the command issued from the changer controller • The system controller has detected mechanism overrun	• Not performed • The same retry operations as error 41 are performed	• The horizontal operations status was generated when vertical operations were started • The vertical operations status was generated when horizontal operations were started • Difference between the operations of the changer controller and that of the system controller	• Turn off and then on the power or perform the automatic recovery of test 4
45	Faulty disc sensor	Not performed	• Faulty connection • Faulty element	• Turn off and then on the power or perform the automatic recovery of test 4
46 47	Aging of test mode B The player cannot play during operations 46: Player 1 47: Player 2	• Retry operations are not performed at B-0 Retry operations are performed once at B-1, 2 Normal retry operations are performed at B-3 • Mis-clamp generation: Start-up operations are performed again after clamp off • The spindle could not be locked at start up "Unfocused" at start-up Time-over of search operations Time-over of TOC read operations Time-over when disc was started up Start-up operations again after stop • No search chapter: Read-out when search was attempted Determined as "no disc" because could not focus No retry	• Although a disc judged as containing discs was played, the player was stopped or clamped off, and the play could not be carried out • Player mechanism error or player communication error has occurred • Disc is scratched or dirty	• Perform the automatic recovery of test 4

Table. 18

9.6 LC–V200/100 CLD PLAYER ERROR CODES

Error Code PL1	Error Code PL2	Item	Description
96	D6	Meaning Retry Operation Generation Possible Causes	Time-over of clamp release If player operations do not end within approximately 10 seconds after clamp release operations were started, the clamp release operations are started again after re-clamping once If clamp release operations do not end even after retry operations have been repeated twice (1) The loading system mechanism has malfunctioned or is caught (2) Malfunction of loading/tilt motor, or motor drive circuit (3) Disconnection/faulty connection in the route between [TILT DRV terminal] of PD0162A1, motor driver, and loading/tilt motor (4) Malfunction of SW1, SW2, or SW3 (5) Disconnection/faulty connection in the route between each terminal [SW1], [SW2], [SW3] of PD0162A1 and SW1, SW2, SW3
97	D7	Meaning Retry Operation Generation Possible Causes	Time-over of clamp operation If player operations do not end within approximately 10 seconds after clamp operations were started, the clamp operations are started again after re-clamping once If clamp release operations do not end even after retry operations have been repeated twice Same as "Time-over of clamp release"
A7	E7	Meaning Retry Operation Generation Possible Causes	Time-over of side A/B switching operations If player operations do not end within 10 seconds after side A/B switching operations were started, side A/B switching operations are started again If side A/B switching operations do not end even after retry operations have been repeated twice (1) The alpha turn mechanism has malfunctioned or is caught (2) Malfunction of slider motor, or motor drive circuit (3) Disconnection/faulty connection in the route between [SLD DRV terminal] of PD0162A1, motor driver and slider motor (4) Malfunction of PARK1, PARK2, or PARK3 switch (5) Disconnection/faulty connection in the route between [PARK1] terminal of PD0162A1 and PARK1, PARK2, PARK3 switches
A8	E8	Meaning Retry Operation Generation Possible Causes	Time-over of side A slider operations If player operations do not end within 10 seconds after slider transfer operations were started when side A of the disc is started up, slider transfer operations are started again after stopping once If clamp release operations do not end even after retry operations have been repeated twice Same as "Time-out of side A/B switching operations"
A9	E9	Meaning Retry Operation Generation Possible Causes	Time-over of side B slider operations If player operations do not end within 10 seconds after slider transfer operations were started when side B of the disc is started up, slider transfer operations are started again after stopping once If clamp release operations do not end even after retry operations have been repeated twice Same as "Time-out of side A/B switching operations"
B3	E3	Meaning Retry Operation Generation Possible Causes	Time-over of the clamp release of the player at power supply on If player operations do not end within 10 seconds after clamp release operations were started during mechanism initialization operations at power supply on, clamp release operations are started again after re-clamping once If clamp release operations do not end even after retry operations have been repeated twice Same as "Time-over of clamp release"
42	43	Meaning Retry Operation Generation Possible Causes	Communication error with player 1/2 Resets the player (Approx. 0.4 seconds) (1) If there is no communication request from the player for approximately 3 continuous seconds (2) There is communication request from the player, but communication was unsuccessful for approximately 3 continuous seconds due to noise, etc. (1) Disconnection/faulty connection in the route between [SHAKE], [SI1], [SO1], and [SCK1] terminals of PD0162A1 and communication terminal of system controller (2) Noise on the above communication line (3) PD0162A1 is not operating (Malfunction/power not supplied/clock not supplied, etc.)

Table. 19

• LC-V200/100 CLD PLAYER Information Codes

Information Code				Item	Description
PL1		PL2			
Side A	Side B	Side A	Side B		
80	88	C0	C8	Meaning Retry Operation Generation Possible Causes	TRANSIT SW Detection None The "TRANSIT SW detection" code has been transmitted from the player mechanism microprocessor PD0162A1 at times other than power on initialization (1) Loading system mechanism is no longer in the "clamp off" condition when it should be. (2) SW1, SW2, and SW3 faults. (3) The input voltage level of the "PARK1" pin of PD0162A1 is due to some reason in a period (1.05 to 2.43V) above 300 msec. (4) Fault of the SWs for detecting the slider position-PARK1, PARK2, and PARK3. (5) Disconnection/faulty connection of the route between the PARK1 pin of PD0162A1 and each SW-PARK1, PARK2, and PARK3.
81	89	C1	C9	Meaning Retry Operation Generation Possible Causes	Could not focus and determined as no disc None When could not focus in operations detecting the presence/absence of a disc with it is started up (1) Attempted to start up tray number with no disc (2) Disc so dirty or scratched that could not focus (3) Disc so displaced or tilted due to mis-clamp that could not focus (4) Malfunction/faulty connection of focus system (pickup, circuit)
83	8B	C3	CB	Meaning Retry Operation Generation Possible Causes	Read-out occurred when search was attempted None When the read-out area is entered while searching (1) Chapter not recorded on a disc without TOC has been specified (2) While searching, the phillips code recorded on the disc could not be read (scratches, dirt) and the search target was passed
84	8C	C4	CC	Meaning Retry Operation Generation Possible Causes	Chapter to be searched does not exist None When a chapter not recorded on a disc has been specified (1) A chapter not recorded on a disc with TOC (including CD, CDV) has been specified (2) Songs on side B of the CD, CDV, or 8 inch LD have been specified (3) A chapter not recorded on the disc has been specified, without returning the disc once (soon) from the same side (final song known) of the disc which became the above "Read-out occurred when search was attempted".
85	8D	C5	CD	Meaning Retry Operation Generation Possible Causes	The spindle could not be locked at start up After the player is stopped once (with clamp on), startup operations are re-started When spindle cannot be locked even when retry operations have been carried out (once) (1) The phillips code and sub code recorded on the disc cannot be read (causes related to the disc such as scratches, dirt, etc. can be considered) (2) The built-in phillips decoder circuit of PD0162A1 or PD0162A1 has broken down and the phillips code cannot be read (3) Malfunction/faulty connections of spindle system (motor driver, servo circuit)
86		C6		Meaning Retry Operation Generation Possible Causes	A side different from the commander has been played None (the chapter specified will be played) In respect to the side specified, the phillips code information of the disc side started up is on the opposite side (1) The disc has been set inside out (2) The phillips code information recorded on the disc started up is incorrect (3) The built-in phillips decoder circuit of PD0162A1 or PD0162A1 has broken down (4) In respect to the CD, CDV, 8 inch LD, side B has been specified in test mode B (aging) (At this time, side A is played.)

Information Code				Item	Description
PL1		PL2			
Side A	Side B	Side A	Side B		
87	8F	C7	CF	Meaning Retry Operation Generation Possible Causes	Time-over of disc startup operations After stopping the player once (with clamp on), start-up operations are started again When the disc is not played even after errors have not been detected for approximately 1 minute during disc start-up in the clamp off state The focus system, spindle system, phillips decoder system, EFM decoder system, loading/tilt drive system (SW, mechanism, circuit), slider drive system (SW, mechanism, circuit) have been over-used and operations cannot end normally
90	98	D0	D8	Meaning Retry Operation Generation Possible Causes	Mis-clamp After releasing the clamp of the player once, start-up operations are started again When the same mis-clamp has been detected even after retry operations have been repeated twice (1) Error in clamp mechanism (loose, faulty, etc.) (2) Noise in the [TZC] terminal of PD0162A1 or the connection of this line is faulty
92	9A	D2	DA	Meaning Retry Operation Generation Possible Causes	"Unfocused" at start up After stopping the player once (with clamp on), start-up operations are started again Focus cannot be locked even after retry operations (once) have been performed (1) Disc is so dirty or scratched that could not focus (2) Due to incomplete clamp, the disc has tilted, and "unfocused" at start up (3) Malfunction/faulty disconnection of focus system (pickup, circuit)
B0	B8	F0	F8	Meaning Retry Operation Generation Possible Causes	Time-over of search operations After stopping the player once (with clamp on), search operations are re-started When search operations do not end even after retry operations (once) have been performed. (1) Due to causes related to the disc such as scratches, dirt, malfunction of PD0162A1 and CX2500AQ, faulty connection of [DATA] terminal of PD0162A1, or noise, the phillips code or sub code recorded on the disc cannot be read and the search target was not reached (2) The phillips code could not be properly read because of noise on the [DATA] terminal of PD0162A1 or faulty connection of the line (3) CXD2500AQ is faulty and the sub codes cannot be read
B5	BD	F5	FD	Meaning Retry Operation Generation Possible Causes	Play cannot be continued After stopping the player once (with clamp on), search operations are started again to the point determined as where play cannot be continued When determining that play cannot be continued again after performing retry operations (once) Errors in the focus system, spindle system, phillips decoder system, or EFM decoder system have occurred (sometimes the disc may be the cause)
B6	BE	F6	FE	Meaning Retry Operation Generation Possible Causes	Time-over of TOC read operations After stopping the player once (with clamp on), TOC read operations are started again When TOC read operations do not end even after retry operations have been performed (once) (1) The sub codes recorded on the disc cannot be read (causes related to the disc such as scratches, dirt, etc. can be considered) (2) "Unfocused" after TOC read operations were started

Table. 20

9.7 Initialization of Changer Mechanism

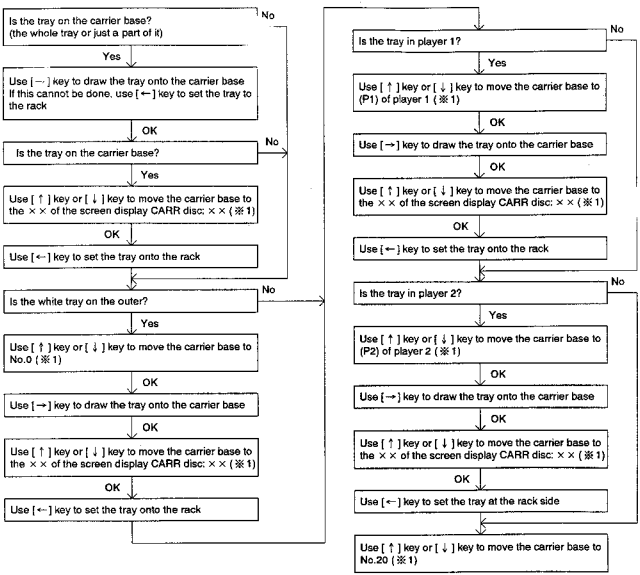
What is initialization of the changer mechanism
- No trays in players 1 and 2
- Standard tray (black) in the outer
- No tray in the carrier base and locked at "home" position (No.20)

To initialize the changer mechanism, carry out automatic recovery by using the [→] key of test mode 4. Errors will be cleared and the mechanism will automatically be initialized. Normally, it is initialized by this mode.

If the changer mechanism cannot be initialized by automatic recovery, mechanical or electrical causes can be suspected. Correct the problem and carry out the automatic recovery again.

[Initialization of the changer mechanism by manual operations of test mode 3]

When initializing the changer mechanism using manual operations of test mode 3 instead of automatic recovery, perform the following.
Observe the OSD display at this time. Basically, automatic recovery operations are performed manually.
To clear error displays after mechanism initialization has been completed properly, carry out the automatic recovery of test mode 4.



※1: When the position of the carrier base is not fixed, the carrier base may perform vertical initial operations (moves to player 1 or 2 at low speed).
In this case, it will move to the target position after vertical initial operations have completed.

9.8 SYSB UNIT TEST MODE SPECIFICATIONS

1. Preparations/Connections

The following preparations are necessary to operate the TEST mode.

Name	Connected to
Power supply +10V	CN12 ④
+5V	①
GND	②
For STEP transmission SW	CN54 ①
GND	②
For TEST	IC109 ⑩

* In the TEST mode, do not connect other units as almost all ports will be switched to the output port.

2. Checking STEP

[STEP-1 Entering TEST mode]

- The TEST terminal for checking the unit is connected to UNSW5V, and +10V and +5V are started up together.

TEST terminal

IC109 ⑩ HD6415108F10 ← Check (H) only immediately after the power supply

10K

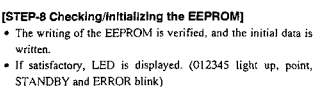
[STEP-2 Checking the RAM]

- The writing of the external RAM is verified.
  Address E002 to fe50
  Data 55, aa
- If satisfactory, execute STEP-3.

[STEPS-3, 4, 5, 6, 7 Checking terminals]

- When the door SW is pressed, the step mode moves onto STEPS 4, 5, 6, 7, and 8 in order.

	3 4 5 6 7		3 4 5 6 7
CN53		CN35/36	
① XMCRST	○ ○ L L L	① UNSW+5V	
② MCSO	● ● L L L	② KEYINB	
③ MCSI	H H H ○ H	③ KEYINA	
④ MCSCK	L H H ● H	④ SW5V	
⑤ MCCS	● ● L L L	⑤ GND	
CN25		⑥ DSPDATA	○ ○ L L L
② OSDSCK	H H H H ●	⑦ EXPSCK	● ○ L L L
③ XOSDRST	● ● L L L	⑧ DSPCS2	H H H H H
④ XOSDCS	○ ○ L L L	⑨ DSPCS1	H H L L L
⑤ OSDSO	● ● L L L	⑩ POWERSW	○ L L L L
CN33			
① SHAKE1	● L ○ ○ ○	(08)	○
② LDPSO	● ● L L L	(09)	●
③ LDPSI	H L ○ H H	(10) TEST	(H H H H H)
④ LDPSCK	H L ● H H	(55)	●
⑤ XP1RST	○ ○ L L L		
CN34		(60)	○
① SHAKE2	○ L ● ● ●	(61)	●
② LDPSO	● ● L L L	(62)	○
③ LDPSI	H L ○ H H	(63)	●
④ LDPSCK	H L ● H H		
⑤ XP2RST	● ● L L L	(65)	○
CN32		(66)	●
① TXD	● ● L L L	(67)	○
② RXD	○ ○ L L L	(68)	●
③ XPOW	○ ○ H H H	(69)	○
④ XPLAY	○ ○ L L L	(70)	●
⑤ THROUGH	● ● H H H		
CN12		(76)	○
③ XPCONT	○ ○ H H H	(77)	●
CN24			
② EXP1DATA	● ● L L L		
③ EXPSCK	● ○ L L L		
④ NTSC/PAL	● ● L L L		
REMCON	○ ○ L L L		



[STEP-8 Checking/initializing the EEPROM]

- The writing of the EEPROM is verified, and the initial data is written.
- If satisfactory, LED is displayed. (012345 light up, point, STANDBY and ERROR blink)
- When S301 is pressed, the test mode moves onto STEP-9.

[STEP-9 Checking keys/displays]

- When the door SW is pressed, the test mode moves onto STEP-10.
- The following are displayed when S301 to S107 are pressed. (Multiple pressing causes errors.)

	D301	D105	D104	D303	D302
Nothing pressed	-	-	-	-	-		
S301	1	2	3	4	5	6	
S302	2	3	4	5	6	7	
S303	3	4	5	6	7	8	
S304	4	5	6	7	8	9	
S305	5	6	7	8	9	0	
S306	6	7	8	9	0	1	
S307	7	8	9	0	1	2	
S308	8	9	0	1	2	3	
S309	9	0	1	2	3	4	
S310	0	1	2	3	4	5	
S311	1	2	3	4	5	6	
S312	2	3	4	5	6	7	
S101	8.					•	•
S102	8.	8.				•	•
S103	8.	8.				•	•
S104	8.	8.	8.	8.		•	•
S105	8.	8.	8.	8.	8.	•	•
S106	8.	8.	8.	8.	8.	8.	•	•

[STEP-10 End Display]

- The segments of points will blink alternately (approx. 500 msec.)

[When errors occur, error codes]

- Errors detected at each step are displayed blinking at D304 and the test mode is stopped.
- Some cannot be displayed due to hardware restrictions.

50: External RAM verify error
51:
52:
53:
54:
55: EEPROM : BUSY error
56: : ECC error
57: : Verify error
58: : Cannot initialize and write
59: : Initialization data verify error
60: SW of KEYA is pressed
61: SW of KEYB is pressed
62: SW of KEYC is pressed
63: S312 is pressed
64: Door SW is pressed
65:
66:
67:
68:

10. IC INFORMATION

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

10.1 HD6415108F10 (IC109)
SYSTEM MICROPROCESSOR

● Pin Function Table

Pin No.	Name	Function	Pin No.	Name	Function
1	XRES	Reset input	31	A10	Address output
2	NMI	GND	32	A11	Address output
3	VSS	GND	33	A12	Address output
4	XMCRST	Reset output of changer mechanism controller	34	A13	Address output
5	XMCCS	Communication chip select output of changer mechanism controller	35	A14	Address output
6	XCGCS	Communication chip select output of OSD IC	36	A15	Address output
7	XCGRST	Reset output of OSD IC	37	VSS	GND
8	–	–	38	A16	Address output
9	–	–	39	A17	–
10	–	(Pin for checker) pull down	40	A18	–
11	EEPCS	Communication chip select output of EEPROM	41	A19	–
12	D0	Data input/output	42	A20	–
13	D1	Data input/output	43	A21	–
14	D2	Data input/output	44	A22	–
15	D3	Data input/output	45	A23	–
16	D4	Data input/output	46	VSS	GND
17	D5	Data input/output	47	DSPSELA	PD0012A select A output
18	D6	Data input/output	48	DSPSELB	PD0012A select B output
19	D7	Data input/output	49	DSPSELC	PD0012A select C output
20	VSS	GND	50	EXPSCK	Clock output of communication with AV expansion IC
21	A0	Address output	51	DSPDATA	Data output of communication with PD0012A
22	A1	Address output	52	EXPDATA1	Data 1 output of communication with AV expansion IC
23	A2	Address output	53	EXPDATA2	Data 2 output of communication with AV expansion IC
24	A3	Address output	54	–	–
25	A4	Address output	55	VCC	Power supply
26	A5	Address output	56	THRU	AV signal output through switching
27	A6	Address output	57	XPWRON	Power control
28	A7	Address output	58	XPLAY	Play discrimination signal to commander
29	A8	Address output	59	NTSC/PAL	NTSC/PAL switching
30	A9	Address output	60	XREQ	Not used

Pin No.	Name	Function	Pin No.	Name	Function
61	XRST0	Not used	87	AVCC	Power supply
62	XR/W	Not used	88	VCC	Power supply
63	MUTE	Not used	89	XIRQ0	Test mode remote control unit input
64	VSS	GND	90	SHAKE1	Player 1 communication shake
65	DATA0	Not used	91	SHAKE2	Player 2 communication shake
66	DATA1	Not used	92	SCK	Player communication clock
67	DATA2	Not used	93	RXD	Commander communication (RS422) reception
68	DATA3	Not used	94	TXD	Commander communication (RS422) transmission
69	–	–	95	SI	communication data input
70	XEXIST	Not used	96	SO	communication data output
71	SCISELA	Communication select A	97	VSS	GND
72	SCISELB	Communication select B	98	EXTAL	Clock input
73	PWRSW	Standby/On switch input	99	XTAL	Clock input
74	DOOR	Door switch input	100	VSS	GND
75	XPWRC	Power on input	101	Φ	–
76	XP1CDET	Not used	102	E	–
77	XP2CDET	Not used	103	XAS	–
78	XPRST2	PLayer 2 reset output	104	XRD	External memory reading control output
79	XPRST1	PLayer 1 reset output	105	XHWR	External memory writing control output
80	–	–	106	XLWR	External memory writing control output
81	VSS	GND	107	XFRSH	–
82	AVSS	GND	108	VCC	Power supply
83	KEYINA	Key input A	109	MD0	Mode setting
84	KEYINB	Key input B	110	MD1	Mode setting
85	KEYINC	Key input C	111	MD2	Mode setting
86	DCIN	DC power supply input	112	STBY	Power supply connection

* AV: AUDIO, VIDEO

The system microprocessor (HD6415108F10) accesses the external RAM and ROM and mainly performs the following operations at a period of approximately 40 msec. when the power is turned on.

Operation	Details
Key inputs	Analyzes key inputs (analog data)
Remote control unit inputs	Analyzes wired remote control unit key inputs for the player test mode
Communication with commander	Transmits/receives commands/status (RS422) in asynchronous format
Changer mechanism control	Communicates with the mechanism microprocessor PD4360 and performs the communication which controls the changer mechanism at a period of approximately 40 msec.
EEPROM read/write	Writes/reads the disc presence/absence information, play information, mechanism condition, error, etc. in the EEPROM
On screen displays (OSD)	Transmits the screen display data to the OSD – IC (1 line/40 msec., the real time data during play is on – time)
Player control	Controls the two players Communication is carried out according to the following period for each player During Stop : Every 24 msec. During CD play : Every 13.3 msec. (sync) During LD, CDV (V) play : Every 16.5 msec. (sync) for NTSC : Every 20 msec. (sync) for PAL During SCAN : Every sync reading
Audio, video input/output control	Switches the input/output of audio and video
LED displays	Outputs indicator, 7 segment LED displays

● COMMUNICATIONS AROUND THE SYSTEM MICROPROCESSOR

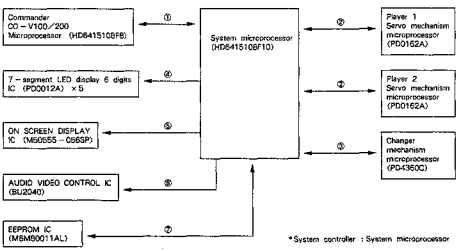


Fig 1

① Reservation and playback, etc. commands are transmitted and received from the commander, and status from the system controller.

② Player playback and stop commands are transmitted and received from the system controller, and status and disc information from the player.

③ Disc carrier, outer tray open/close commands are transmitted and received from the system controller, and status (vertical address, etc.) from the changer mechanism microprocessor.

④ The 7-segment LED display data is transmitted from the system controller.

⑤ The display data is transmitted from the system controller to the onscreen (screen display) IC.

⑥ The data is transmitted from the system controller to the expansion IC (BU2040) to switch the audio and video signals.

⑦ To memorize information during operations and the playback data of the player, the system controller transmits data to and receives data from the EEPROM IC (nonvolatile memory).

• Example of communication waveform
(All signals are 0 to 5V, 5V/div)

① System controller ⟷ Commander

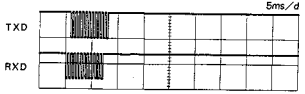


Fig 2

The TXD signal is behind the RXD by approximately 1 msec.
The communication byte number differs according to the communication contents.

② System Microprocessor ⟷ Player Servo Mechanism Microprocessor

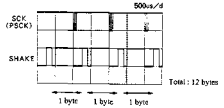


Fig 3

The communication byte number is 12 bytes.

③ System Microprocessor ⟷ Changer Mechanism Microprocessor

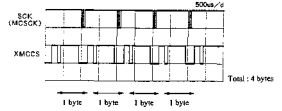


Fig 4

The communication byte number is 4 bytes.

⑤ System Microprocessor ⟷ OSDIC

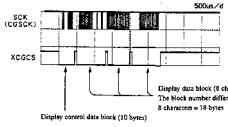


Fig 5

④, ⑥ System Microprocessor → BU2040
→ PD0012A

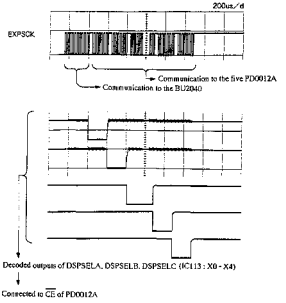


Fig 6

⑦ System Microprocessor ⟷ EEPROM IC (M6M80011AL)
Data writing Data reading

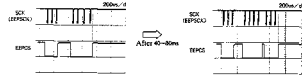


Fig 7

EEPROM data reading when outlet is on (64 words)
Outlet on

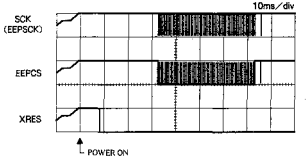
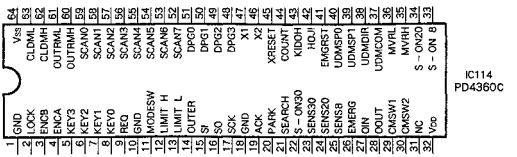


Fig 8

10.2 PD4360C (IC114)
CHANGER MECHANISM MICROPROCESSOR

● Pin Connection Diagram



● Pin Function Table

Pin No.	Pin Name	I/O	Pin Function
1	–	I	GND connection
2	LOCK	I	Outer tray LOCK SW input
3	ENCB	I	Elevation count encoder sensor B input
4	ENCA	I	Elevation count encoder sensor A input
5	KEY3	I	For checks during manufacture
6	KEY2	I	For checks
7	KEY1	I	For checks
8	KEY0	I	For checks
9	REQ	I	Communication request input from system controller
10	–	I	GND connection
11	MODESW	I	Manual mode discrimination input for checks
12	LIMIT H	I	Elevation upper limit SW input (TOP)
13	LIMIT L	I	Elevation lower limit SW input (BOTTOM)
14	OUTER	I	Elevation count check sensor input
15	SI	I	System controller communication serial data input
16	SO	O	System controller communication serial data output
17	SCK	I	System controller communication serial clock input
18	–	I	GND connection
19	ACK	O	Communication ACK output to system controller
20	PARK	O	Mode display indicator (park)
21	SEARCH	O	Mode display indicator (search)
22	S – ON30	O	Disc sensor emitting output (30 cm)
23	SENS30	I	Disc sensor sensing input (30 cm)
24	SENS20	I	Disc sensor sensing input (20 cm)
25	SENS8	I	Disc sensor sensing input (8 cm)

Pin No.	Pin Name	I/O	Pin Function
26	EMERG	I	Elevation motor over current detection input
27	OIN	I	Outer tray IN SW input
28	OOUT	I	Outer tray OUT SW input
29	CMSW1	I	Carrier base SW1 input (elevation possible)
30	CMSW2	I	Carrier base SW2 input (tray exists)
31	N.C.	–	–
32	VDD	–	Power supply +5V
33	S – ON8	O	Disc sensor emitting output (8 cm)
34	S – ON20	O	Disc sensor emitting output (20 cm)
35	MVR H	O	Main volume H output
36	MVR L	O	Main volume L output
37	UDMCOM	O	Elevation motor ON/OFF output
38	UDMDIR	O	Elevation motor up/down direction output (UP/DOWN)
39	UDMSP1	O	Elevation motor speed 1 output
40	UDMSP0	O	Elevation motor speed 0 output
41	EMGRST	O	Elevation motor over current circuit reset output
42	HOJI	O	Outer tray lock release mechanism hold output
43	KIDOH	O	Outer tray lock release mechanism start up output
44	COUNT	O	Mechanism check/main loop output
45	XRESET	I	Microprocessor reset input from system controller
46	X2	–	Microprocessor clock input 4.194304 MHz
47	X1		
48	DPG3	O	For checks during manufacture
49	DPG2	O	For checks
50	DPG1	O	For checks
51	DPG0	O	For checks
52	SCAN7	O	For checks
53	SCAN6	O	For checks
54	SCAN5	O	For checks
55	SCAN4	O	For checks
56	SCAN3	O	For checks
57	SCAN2	O	For checks
58	SCAN1	O	For checks
59	SCAN0	O	For checks
60	OUTRMH	O	Outer tray motor H output
61	OUTRML	O	Outer tray motor L output
62	CLDMH	O	Carrier base tray closing motor H output
63	CLDML	O	Carrier base tray closing motor L output
64	VSS	–	Power supply GND

The timing for executing the program of this microprocessor can be monitored at Pin 44 (COUNT).
"L" is output when the program is being executed and "H" during communication or program standby.

In addition, the PARK-LED (green) and SEARCH-LED (orange) on the CMEC unit are points at which the execution of this microprocessor can be monitored.
These two points blink according to mechanism operations carried out by commands.

- When initializing is not carried out (when the position is not fixed), both "green" and "orange" LEDs light up.
- When the operation mode is not set after initializing, only the "green" LED lights up.
- When the operation mode has been set and mechanism operations are carried out, only the "orange" LED lights up.

In addition, the EMERG-LED (red) on the CMEC unit lights up when over current has been detected out during elevation operations of the carrier base.

● Timing of tray closing operations on the carrier base

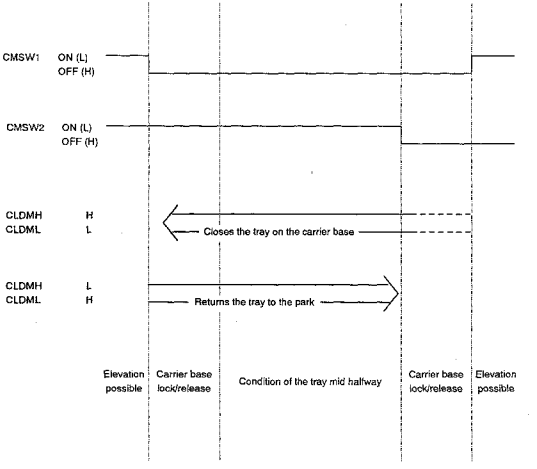


Fig 9

● COUNT TIMING DURING CARRIER BASE ELEVATION AND PIN INPUTS TIMING CHART OF ENCA, ENCB, OUTER (Parity check)

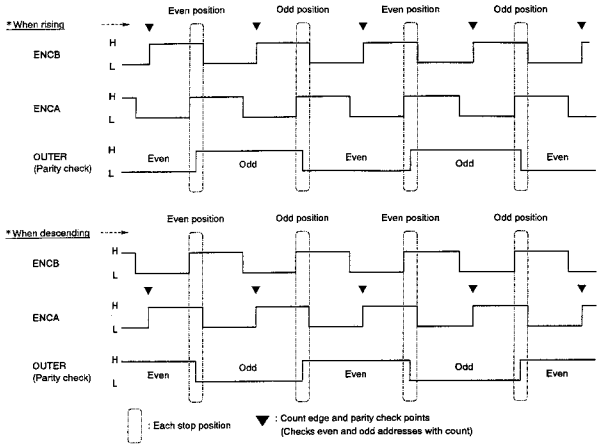


Fig 10

● Elevation initial speed setting and deceleration setting when carrier base is elevating (during search)

Elevation speed	UDM SP1	UDM SP0	Setting Speed
4th speed (VERY FAST)	1	1	128.4mm/sec
3rd speed (FAST)	1	0	83.4mm/sec
2nd speed (SLOW)	0	1	82.7mm/sec
1st speed (VERY SLOW)	0	0	28.8mm/sec

● Elevation initial speed setting

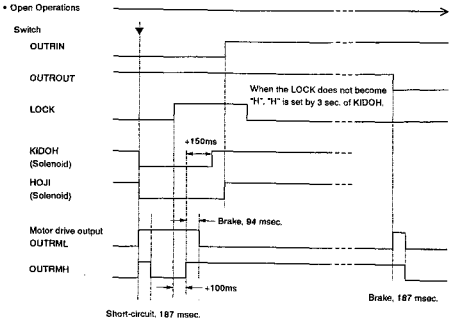
Difference from target address	Setting elevation speed
Above 16	4th speed
12 to 15	3rd speed
6 to 11	2nd speed
Below 5	1st speed

● Deceleration Setting

Difference from target address	Setting elevation speed
7 to 12	3rd speed
4 to 6	2nd speed
Below 3	1st speed

(* No acceleration)

● Outer Tray Open/Close Timing (1)



Close operations are carried out for a fixed period of time so that the tray can be unlocked easily.

Fig 11

● Outer Tray Open/Close Timing (2)

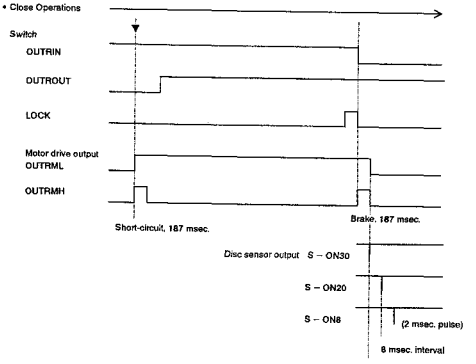
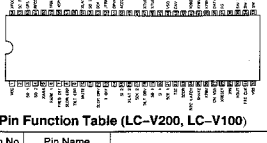


Fig 12

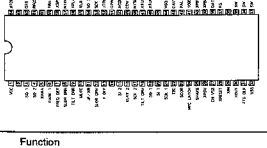
10.3 PD0162A1(IC751/FTSB unit):LC-V100/SEM, PD0114B1(IC101/VDEM unit):LC-V200/KUC PLAYER SERVO MECHANISM MICRO PROCESSOR

● Pin Connection Diagram

● LC-V200/KUC type



● LC-V100/SEM type



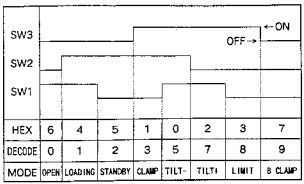
● Pin Function Table (LC-V200, LC-V100)

Pin No.	Pin Name	Function
1	VCC	Power supply connection pin.
2	N.C.	–
3	SQ1	Analog audio switching signal output pin, 1/L. Squelch H. During digital audio, performed by EFM decoder IC:CXD2500AQ control.
4	SQ2	Analog audio switching signal output pin, 2/R, Squelch: H.
5	XANA	Digital/analog audio switching signal output pin. "H"=Digital, "L"=Analog. Signals output to the LINE OUT are switched by this signal.
6	PARK 1	Pickup position detection switch input pin (analog signal). Divides the resistance of each switch, reads the values of the A/D input and detects the position.
7	FREQ DET	RF detection signal input pin (analog signal), Voltage and frequency are proportionate, A/D – inputs the RF detection output to use for the spindle rough servo.
8	SLDR ERR	Slider error signal input pin (analog signal). A/D-converts this signal and takes it as the control input of the slider servo.
9	TILT ERR	Tilt sensor output signal input pin (analog signal). A/D – converts this signal and takes it as the control input of the tilt servo. Controls the tilt motor so that this signal becomes 2.5V.
10	MUTE	Audio system audio mute control signal output pin, "H"=MUTE ON, "L"=MUTE OFF.
11	N.C.	–
	* J F/XR	JUMP FWD signal output pin for PAL.
12	SLDR DRV	Slider control signal output pin. Period 910 μ sec. Tertiary control H, L, Z. PWM-outputs the slider drive to use for the slider servo.
13	T OFF	Tracking operation control signal output pin. "H"=OFF, "L"=ON. Backups the ON/OFF of the tracking servo operation with this signal.
14	N.C.	–
15	SI2	EFM decoder CXD2500AQ sub code input pin. Reads the sub codes with SCK2 and this signal.
16	XLAT2	EFM decoder CXD2500AQ control latch signal output pin. Transmits the control command using SCK3 of the EFM decoder IC.
17	SCK2	EFM decoder CXD2500AQ sub code reading clock signal output pin. Outputs the 96 clocks to read the sub codes.
18	TILT DRV	Tilt control signal output pin. PWM-outputs the tilt drive to use for the tilt servo.
19	SO1	Data input pin from the system controller IC. Serial front to mechanism.
20	SI1	Serial data output to the system controller. Serial mechanism to front.
21	SCK1	Serial communication clock with system controller. Becomes the input mode when not communicating with the system controller.
22	TZC	Tracking error zero cross signal input pin. Signal which compares the tracking error signal. During track count search, counts this signal and controls the slider motor.
23	SCOR	Sub code sync signal input pin. Inputs the sub code signal from the EFM decoder IC:CXD2500AQ when this signal is "H". Also monitors the playback condition of the disc according to the presence/absence of this signal.
24	NPC LATCH	Not used.
25	SHAKE	Handshake signal pin for data communication with the system controller IC. This pin is a two way data line and transmits the data transmission timing by switching the output/input mode with the respective microprocessors.
26	XPBV	LD/CDV playback vertical sync signal input pin. This IC basically operates by synchronizing with this signal. (falling edge)
27	CN VSS	A/D conversion GND
28	XRESET	Reset signal input pin, "L"=Reset, "H"=Reset release. Controlled by the system controller.

Pin No.	Pin Name	Function
29	XIN	9 MHz clock oscillating input pin
30	XOUT	9 MHz clock oscillating output pin
31	FTS CLK	Φ external clock output pin 2.25 MHz. Outputs the clock which is the master clock (9 MHz) divided into four for FTS IC:PM3003. Does not output if FTS ICs other than the PM3003 are used.
32	VSS	GND
33	SW1	Switch input pin for loading/tilt position detection
34	SW2	Switch input pin for loading/tilt position detection
35	SW3	Switch input pin for loading/tilt position detection
36	–	Not used. Grounded as it is only for input.
37	FG	Spindle motor FG signal input pin. 24 clocks in one rotation. Frequency divided into three inside the microprocessor and used.
38	DATA	Input pin for Phillips code decoder with built-in mechanism controller
39	XPBH	For playback H-SYNC input Phillips code decoding
40	XPBV	For playback V-SYNC input Phillips code decoding
41	1080/2080	One side/both sides play switching signal pin, Grounded.
42	N.C.	–
	* PAL/X4.43	PAL/4.43 NTSC switching output pin.
43	CAV	CAV/CLV switching signal output pin, "H":CAV, "L"=CLV Connected to Pin 6 of PA5013, and used as a video NR switching signal
44	VSQ	Switching signal output pin of video output, "H"=Squeich, "L"=PLayback video
45	N.C.	–
46	XTURNB	α turn position detection signal input pin, "L"=Side B, "H"=Side A, during turn
47	XTURNA	α turn position detection signal input pin, "L"=Side A, "H"=Side B, during turn
48	N.C.	–
	* NTSC/XPAL	PAL/NTSC signal output pin, L:PAL, H:NTSC.
49	N.C.	–
	* CDV	CDV control pin. Not used.
50	ACC CONT	Spindle acceleration/deceleration signal output pin. H=Acceleration, L=Deceleration, Z=CD, stop, play
51	GPWM	Duty pulse signal output pin for spindle gain switching. CLV inner circumference:L, External circumference:H, CAV:L, CDV:H
52	J TRIG	Track jump signal output pin. Width of "H": Approximately 20 μ sec. For 1 track jump, Beginning of jump:H, Others:L
53	SCK3	Serial 3 clock signal output pin. Rising edge reading, "H" period 2 μ sec., "L" period 20 μ sec.
54	SO3	Serial 3 data signal output pin, LSB first.
55	XLATCH3	Latch signal output pin for spindle servo IC
56	N.C.	–
	* XPLAY	Play signal output pin for PAL, L:Play, H:not play.
57	N.C.	–
	* NtoP	Conversion control pin from NTSC to PAL.
58	XSPDLCK	Spindle lock signal input pin, Lock:L, Unlock:H
59	TRAY SW	CD direct tray position detection switch input pin, Grounded.
60	N.C.	–
61	RFCORR	RF correction switching signal output pin, H=Gain up. Increases gain at CAV inner circumference. #8000, #8100
62	GFS	CD (EFM signal) frame lock signal input pin. Connected to Pin 12 of EFM decoder IC CXD2500AQ. "H"=Lock, "L"=Unlock. GFS means the good frame sync.
63	SC PHASE	Trick play pin when PAL, Not used, Pull – up. (LC-V200)
	N.C.	–
64	XFOCUS LOCK	Focus servo lock signal input pin. Used for lock detection of focus servo. "L"=Lock, "H"=Unlock

* LC-V100/SEM Type.

● Loading/Tilt Position
(Descriptions of Pins SW1, SW2, SW3)



HEX	6	4	5	1	0	2	3	7
DECODE	0	1	2	3	5	7	8	9
MODE	OPEN	LOADING	STANDBY	CLAMP	TILT-	TILT+	LIMIT	B CLAMP

Fig 13

● Slider Position
(Descriptions of the PARK1, XTURNA pin)

	CD Inside	CD Active	CDV Active	LD Active	B Side Inside
XTURNA	ON	ON	ON	ON	OFF
PARK1 SW	ON	OFF	OFF	OFF	ON
PARK2 SW	ON	ON	OFF	OFF	OFF
PARK3 SW	ON	ON	ON	OFF	OFF
SLD POS.	0	3.1	3.8	5	0

Fig 14

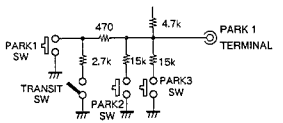


Fig 15

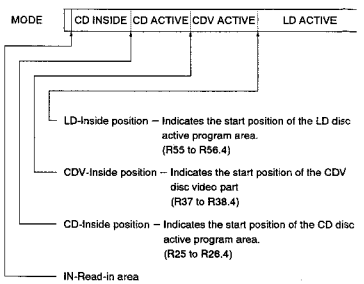


Fig 16

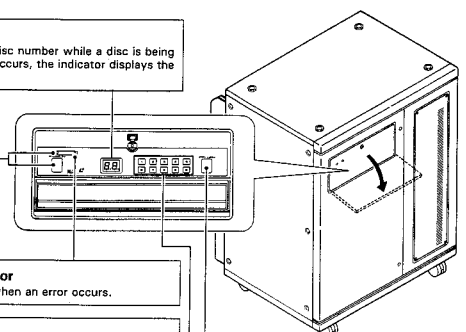
11. PANEL FACILITIES

Front Panel

STANDBY/ON switch/indicator
Press this switch to turn the power on or off. Also, you can enter the AutoChanger address setting mode or disc replacement mode by pressing the STANDBY/ON switch while holding down a digit button or the OPEN/CLOSE button while the power supply is switched off.

Indicator
Displays shows the disc number while a disc is being replaced. If an error occurs, the indicator displays the error code.

The buttons/switches inside the sealing panel are used when loading or exchanging discs in the tray, or when entering a new address for an AutoChanger.

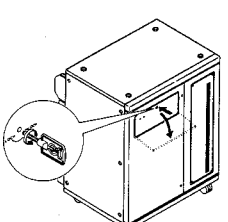


ERR (error) indicator
This indicator blinks when an error occurs.

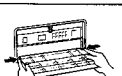
Digit buttons
Specify the disc number to be replaced by using the digit buttons in the disc replacement mode.

OPEN/CLOSE button
Opens/closes the changer tray or the standard tray when replacing a disc.

[How to open the door]
①To unlock the door, insert the supplied key and turn it 90 degrees counterclockwise.
②Press the door to open it.
③To lock the door, shut it and then insert the key and turn it 90 degrees clockwise.

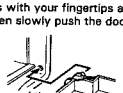


To remove the door.



Press in with your fingertips at the left and right hook sections and then slowly pull the door towards you.

To install the door.
Press the hook sections with your fingertips as explained in the removal step. Then slowly push the door into position.



Insert the boss of the hook into this hole.

● LC-V200/KUC type

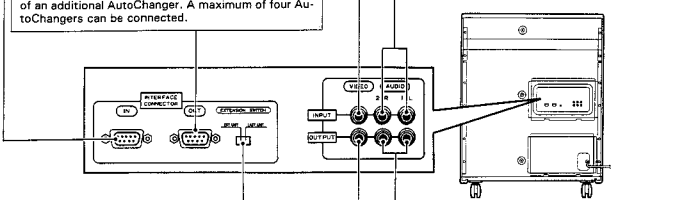
Rear Panel

INTERFACE CONNECTOR IN terminal (9-pin D-sub connector)
Connect to the AutoChanger control of the CO-V200 (use the supplied Interface connector cable).

INTERFACE CONNECTOR OUT terminal (9-pin D-sub connector)
Connect to the INTERFACE CONNECTOR IN terminal of an additional AutoChanger. A maximum of four AutoChangers can be connected.

VIDEO INPUT terminal (RCA jack)
Connect to the VIDEO OUTPUT terminal of an additional AutoChanger.

AUDIO INPUT terminal (RCA jack)
Connect to the AUDIO OUTPUT terminal of an additional AutoChanger.



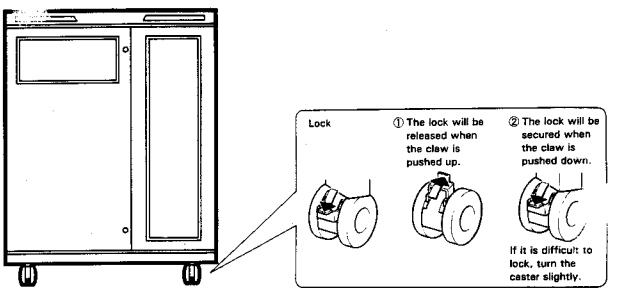
EXTENSION SWITCH
Use this switch when installing additional AutoChangers. If this unit is the last unit, shift the EXTENSION SWITCH to " LAST UNIT ". If another unit is further connected for the extension, shift the EXTENSION SWITCH to " EXT. UNIT ".

AUDIO OUTPUT terminal (RCA jack)
Connect to the AutoChanger AUDIO INPUT of the CO-V200 (use the supplied audio cable).

VIDEO OUTPUT terminal (RCA jack)
Connect to the AutoChanger VIDEO INPUT of the CO-V200 (use the supplied video cable).

CASTER LOCK

The front ca: are provided with a locking mechanism.
Lock as sh the diagram.



● **LC-V100/SEM type**

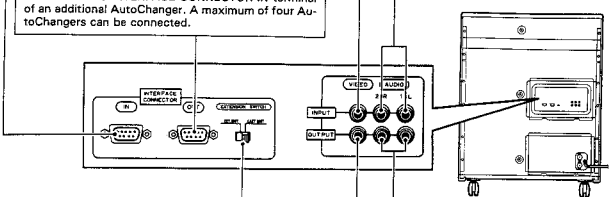
Rear Panel

INTERFACE CONNECTOR IN terminal (9-pin D-sub connector)
Connect to the AutoChanger control of the CO-V100 (use the supplied Interface connector cable).

INTERFACE CONNECTOR OUT terminal (9-pin D-sub connector)
Connect to the INTERFACE CONNECTOR IN terminal of an additional AutoChanger. A maximum of four AutoChangers can be connected.

VIDEO INPUT terminal (RCA jack)
Connect to the VIDEO OUTPUT terminal of an additional AutoChanger.

AUDIO INPUT terminal (RCA jack)
Connect to the AUDIO OUTPUT terminal of an additional AutoChanger.



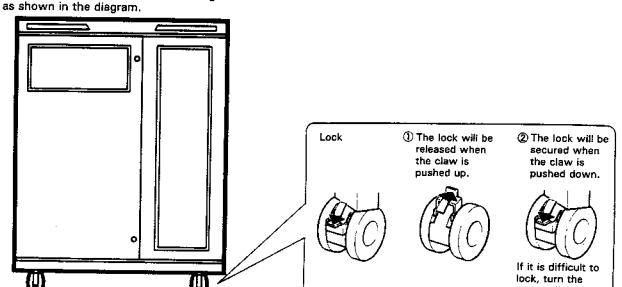
EXTENSION SWITCH
Use this switch when installing additional AutoChangers. If this unit is the last unit, shift the EXTENSION SWITCH to " LAST UNIT ". If another unit is further connected for the extension, shift the EXTENSION SWITCH to " EXT. UNIT ".

AUDIO OUTPUT terminal (RCA jack)
Connect to the AutoChanger AUDIO INPUT of the CO-V100 (use the supplied audio cable).

VIDEO OUTPUT terminal (RCA jack)
Connect to the AutoChanger VIDEO INPUT of the CO-V100 (use the supplied video cable).

CASTER LOCK

The front casters are provided with a locking mechanism.
Lock as shown in the diagram.



12. SPECIFICATIONS

● LC-V200/KUC type

1. General

System
··· LaserDisc system and Compact Disc digital audio system
Laser ····· Semiconductor laser wavelength 780 nm
Power requirements ····· AC 120 V, 50/60 Hz
Power consumption ····· 160 W
Weight (without package) ····· 93 kg (205 lbs)
Dimensions ····· 702 (W) x 593 (D) x 896 (H) mm
27-5/8 (W) x 23-3/8 (D) x 35-1/4 (H) in
Operating temperature ··· +5°C to 35°C (41°F to 95°F)
Operating humidity ····· 5% to 85% (no condensation)

2. Disc

LaserDiscs

* Maximum playing times
12-inch standard play disc ····· 1 hour/both sides
12-inch extended play disc ····· 2 hour/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 inches, 3 inches
Thickness: 1.2 mm
Rotation direction (pickup side) ····· Counterclockwise
Liner speed ····· 1.2 to 1.4 m/sec
* Maximum playing times ····· 74 min, 5-inch discs
20 min, 3-inch discs
(For stereo playback)

NOTE:
Playback of 3-inch discs can only be performed when using the standard tray.

Compact Disc with Video

DISC ····· Diameter: 5 inches, Thickness: 1.2 mm
Rotation direction (pickup side) ····· Counterclockwise
Liner speed ····· Audio portion: 1.2 to 1.4 m/sec
Video portion: 11 to 12 m/sec
* Maximum playing times
····· Audio portion: 20 min (digital)
Video portion: 5 min (CLV)

** Actual playback time differs for each disc.*

3. Video characteristics

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

4. Audio characteristics

Output level
During analog audio output ····· 500 mVrms
(1 kHz, 100%)
During digital audio output ····· 2 Vrms
(1 kHz, 0 dB)
Jacks ····· Both RCA jacks
Number of channels ····· 2

5. Other terminals

Interface connector terminal ··· 9-pin D-SUB connector

6. Functions

Disc capacity ····· Max. 50
CX noise reduction ····· Automatic switching

7. Accessories

Video cable ····· 1
Audio cable ····· 1
Door key ····· 2
Control cable ····· 1
Operating instructions ····· 1

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

● LC-V100/SEM type

1. General

System
··· LaserDisc system and Compact Disc digital audio system
Laser ····· Semiconductor laser wavelength 780 nm
Power requirements
····· AC 110 V/120 V/220 – 230 V/240 V (Switchable), 50/60 Hz
Power consumption ····· 160 W
Weight (without package) ····· 93 kg
Dimensions ····· 702 (W) x 593 (D) x 896 (H) mm
Operating temperature ··· +5°C to 35°C
Operating humidity ····· 5% to 85% (no condensation)

2. Disc

LaserDiscs

PAL disc
* Maximum playing times
30 cm active play disc ····· 72 min/both sides
30 cm long play disc ····· 2 hour/both sides
20 cm active play disc ····· 28 min/both sides
14 min/one side
20 cm long play disc ····· 40 min/both sides
20 min/one side

Spindle motor speed
Active play disc ····· 1,500 rpm
Long play disc ····· 1,500 rpm (inner circumference) to 570 rpm (outer circumference)
(For a 30 cm disc)

NTSC disc
* Maximum playing times
30 cm standard play disc ····· 1 hour/both sides
30 cm extended play disc ····· 2 hour/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 30 cm disc)

Compact Discs

DISC ····· Diameter: 12 cm, 8 cm
Thickness: 1.2 mm
Rotation direction (pickup side) ····· Counterclockwise
Liner speed ····· 1.2 to 1.4 m/sec
* Maximum playing times ····· 74 min, 12 cm discs
20 min, 8 cm discs
(For stereo playback)

NOTE:
Playback of 8 cm discs can only be performed when using the standard tray.

Compact Disc with Video

DISC ····· Diameter: 12 cm, Thickness: 1.2 mm
Rotation direction (pickup side) ····· Counterclockwise
Liner speed ····· Audio portion: 1.2 to 1.4 m/sec
Video portion: 11 to 12 m/sec
* Maximum playing times
····· Audio portion: 20 min (digital)
Video portion: 5 min (CLV)

** Actual playback time differs for each disc.*

3. Video characteristics

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

4. Audio characteristics

Output level
During analog audio output ····· 500 mVrms (1 kHz, 100%)
During digital audio output ····· 2 Vrms (1 kHz, 0 dB)
Jacks ····· Both RCA jacks
Number of channels ····· 2

5. Other terminals

Interface connector terminal ··· 9-pin D-SUB connector

6. Functions

Disc capacity ····· Max. 50
CX noise reduction ····· Automatic switching

7. Accessories

Video cable ····· 1
Audio cable ····· 1
Door key ····· 2
Control cable ····· 1
Operating instructions ····· 1

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

CX is a trademark of CBS Inc.
This autochanger meets the CX EXPANDING SPECIFICATION.