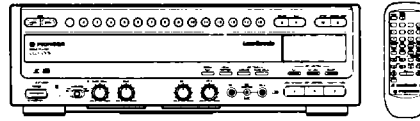


Service Manual

PIONEER®
The Art of Entertainment



ORDER NO.
RRV 1638

CD/LD PLAYER

CLD-100K

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

Type	Model	Power Requirement	Remarks
	CLD-100K		
TD	O	AC110 - 240V	
TL	O	AC110 - 240V	



CONTENTS

1. SAFETY INFORMATION	2
2. PACKING, EXPLODED VIEWS AND PARTS LIST	3
3. SCHEMATIC AND PCB CONNECTION DIAGRAMS	16
4. PCB PARTS LIST	33
5. ADJUSTMENTS	37
6. SELF-DIAGNOSTIC FUNCTIONS	48
7. AGEING MODE	50
8. DISASSEMBLY/ASSEMBLY	51
9. IC INFORMATION	52
10. BLOCK DIAGRAM	54
11. PANEL FACILITIES	56
12. SPECIFICATIONS	57

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PIONEER ELECTRONICS SERVICE, INC. P.O.Box 1760, Long Beach, CA 90801-1760, U.S.A.
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PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 501 Orchard Road, #10-00 Lane Crawford Place, Singapore 0923

T-FFB JUNE 1996 Printed in Japan

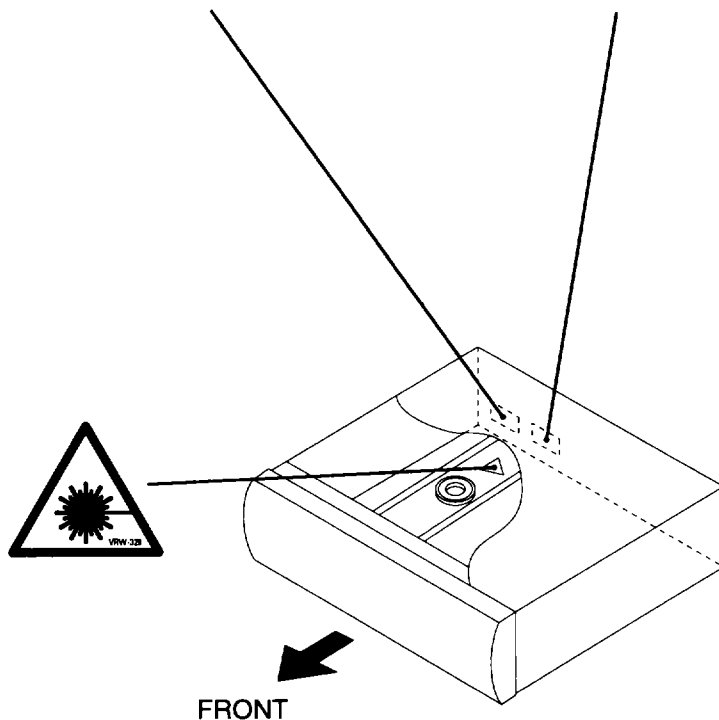
1. SAFETY INFORMATION

<p>VARO! AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.</p>	 LASER Kuva 1 Lasersäteilyn varoitusmerkki	<p>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.</p>	 LASER Picture 1 Warning sign for laser radiation
<p>ADVERSEL: USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UDGÅ UDSAETTELSE FOR STRÅLING.</p>	<p>IMPORTANT THIS PIONEER APPARATUS CONTAINS LASER OF CLASS 1. SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.</p>		
<p>VARNING! OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÅRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.</p>	<p>LASER DIODE CHARACTERISTICS MAXIMUM OUTPUT POWER: 5 mw WAVELENGTH: 780-785 nm</p>		

LABEL CHECK (for TL type)

CAUTION
INVISIBLE LASER RADIATION WHEN OPEN, AVOID EXPOSURE TO BEAM
PRW1018

CLASS 1 LASER PRODUCT
VRW-328



Additional Laser Caution

1. The ON/OFF statuses of the slider position detection switches (PARK INNER, PARK OUTER on the PKSB assy), and loading-status detection switches (SW 1, 2 and 3 on the LMSB assy) are detected by the microprocessor (IC101 in the MOTHER assy). To permit the laser diode to oscillate, it is required to set the slider-position detection switches for the LDACTIVE status (PARK INNER : OFF, PARK OUTER : OFF), and to set the loading-status detection switches for tilt neutral state (SW1 : OFF, SW2 : OFF, SW3 : 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 pin 13 of IC801 is shorted to GND or the emitter and collector of Q834 are shorted each other (fault condition) in MOTHER assy.
In the test mode *, the laser diode oscillates when the microprocessor detects a PLAY signal, or when the PLAY key is pressed (S102 ON in the FLKB assy), with the above requirements satisfied.
2. When the cover is open, close viewing through the objective lens with the naked eye will cause exposure to a Class 1 laser beam.

* : Refer to pages 39 and 40.

2. PACKING, EXPLODED VIEWS AND PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- Parts list without notice are common for CLD-100K/TD and CLD-100K/TL.

2.1 PACKING

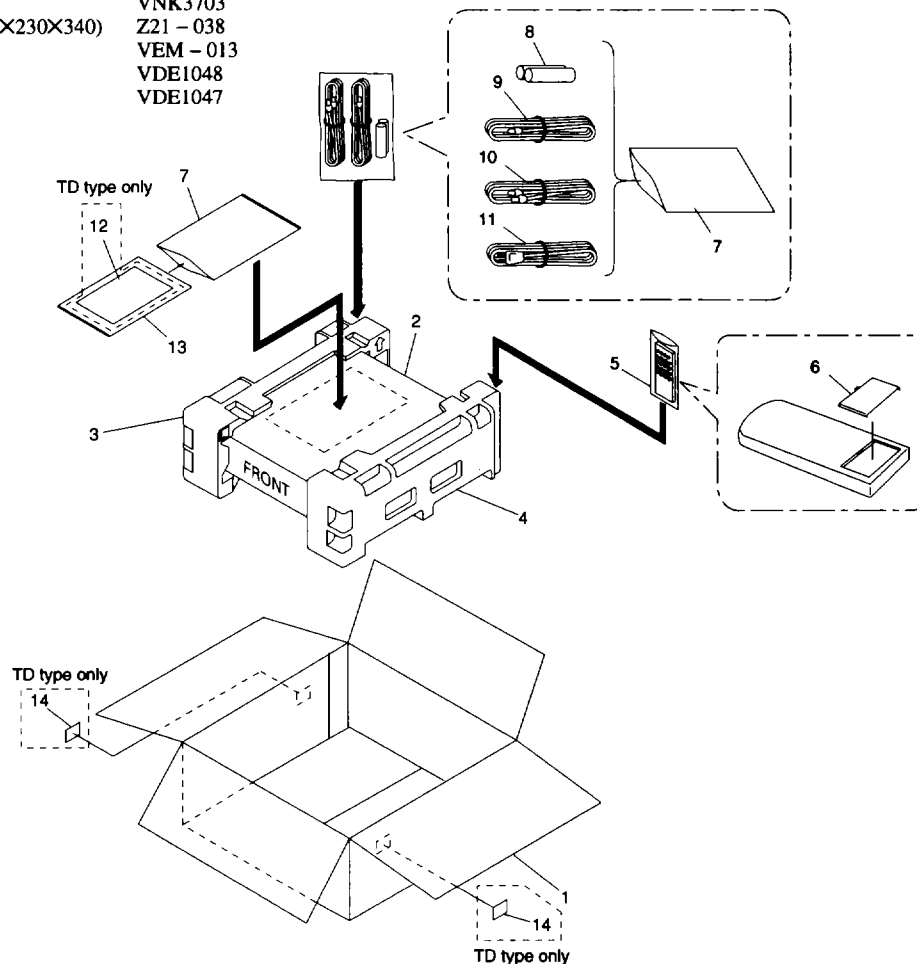
(1) CONTRAST OF CLD-100K/TD AND TL

CLD-100K/TL and TD have the same construction except for the following:

Mark	No.	Symbol & Description	Part No.		Remarks
			TD type	TL type	
\triangle NSP	11	AC Power Cord	ADG1158	ADG1154	
	12	Warranty card	ARW1020	Not used	
	13	Operating Instructions (English/Spanish/Chinese)	VRE1049	Not used	
	13	Operating Instructions (English/Chinese)	Not used	VRE1052	
	14	TD Label	VRW1606	Not used	

(2) PARTS LIST FOR CLD-100K/TD

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	Packing Case	VHG1584	\triangle	11	AC Power Code	ADG1158
	2	Mirror Mat Sheet	DHL1006	NSP	12	Warranty Card	ARW1020
	3	Pad L	VHA1177		13	Operating Instructions (English/Spanish/Chinese)	VRE1049
	4	Pad R	VHA1178		14	TD Label	VRW1606
	5	Remote Control Unit(CU - CLD137)	VXX2452				
	6	Battery Cover	VNK3703				
	7	Polyethylene Bag(0.03×230×340)	Z21 - 038				
NSP	8	Battery (R6P, AA)	VEM - 013				
	9	Video Cord	VDE1048				
	10	Audio Cord	VDE1047				

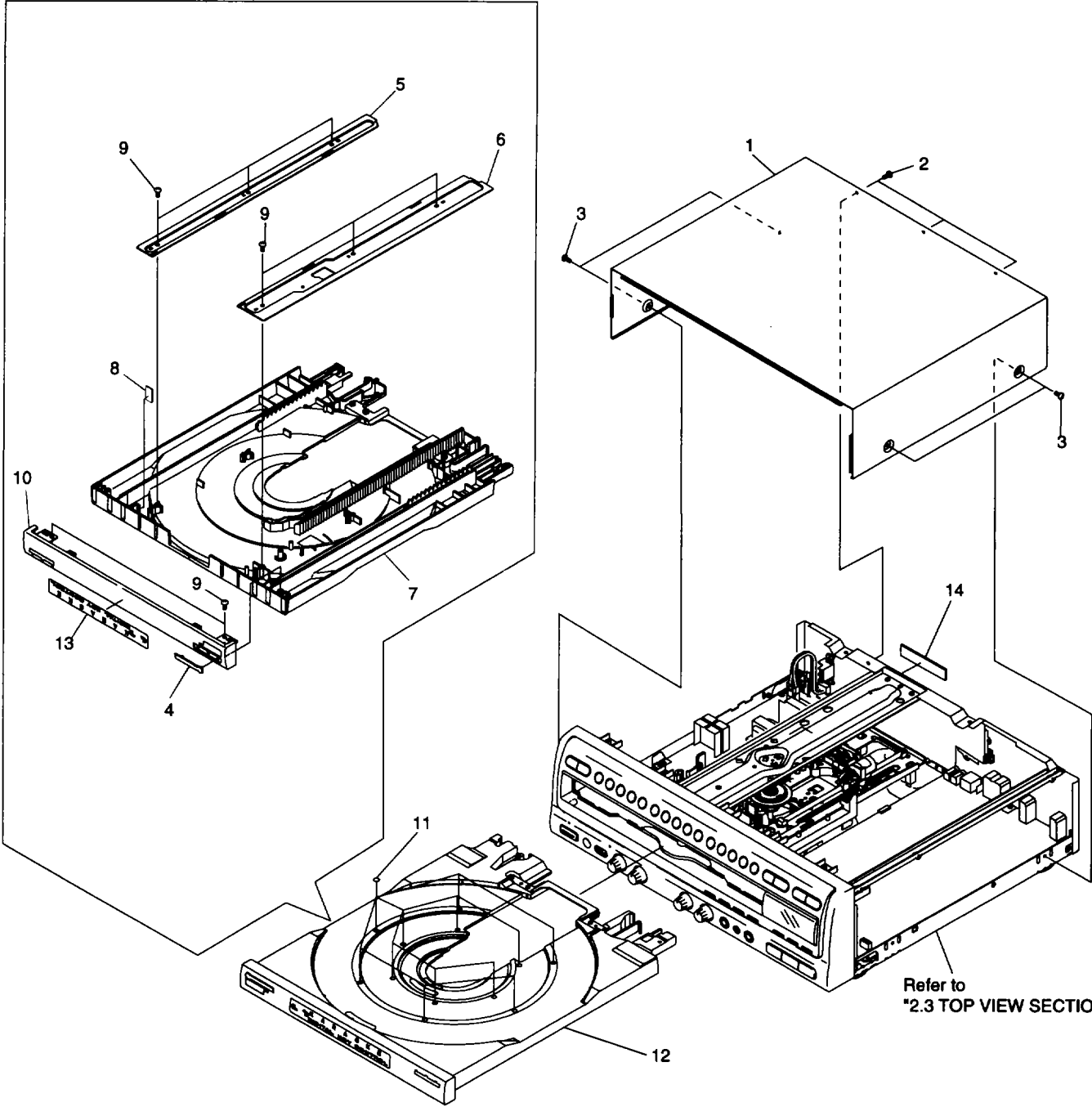


CLD-100K

2.2 EXTERIOR AND DISC TRAY SECTION

Parts List

<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Parts No.</u>	<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Parts No.</u>
	1	Bonnet Case – S	VXX2252		11	Cushion	VEC1682
	2	Screw	BBZ30P080FMC		12	Tray Assy – S	VXX2433
	3	Screw	BCZ40P060FZK	NSP	13	Getter	VRW1588
	4	Name Plate	PAM1704	NSP	14	Rear Spacer	VEC1866
	5	Guide Plate (R)	VNE1939				
	6	Guide Plate (L)	VNE1938				
NSP	7	Tray	VNK3780				
	8	Damp Cushion	VEC1683				
	9	Screw	BBZ30P080FMC				
	10	Tray Panel	VNK3726				



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

CLD-100K

2.3 TOP VIEW SECTION

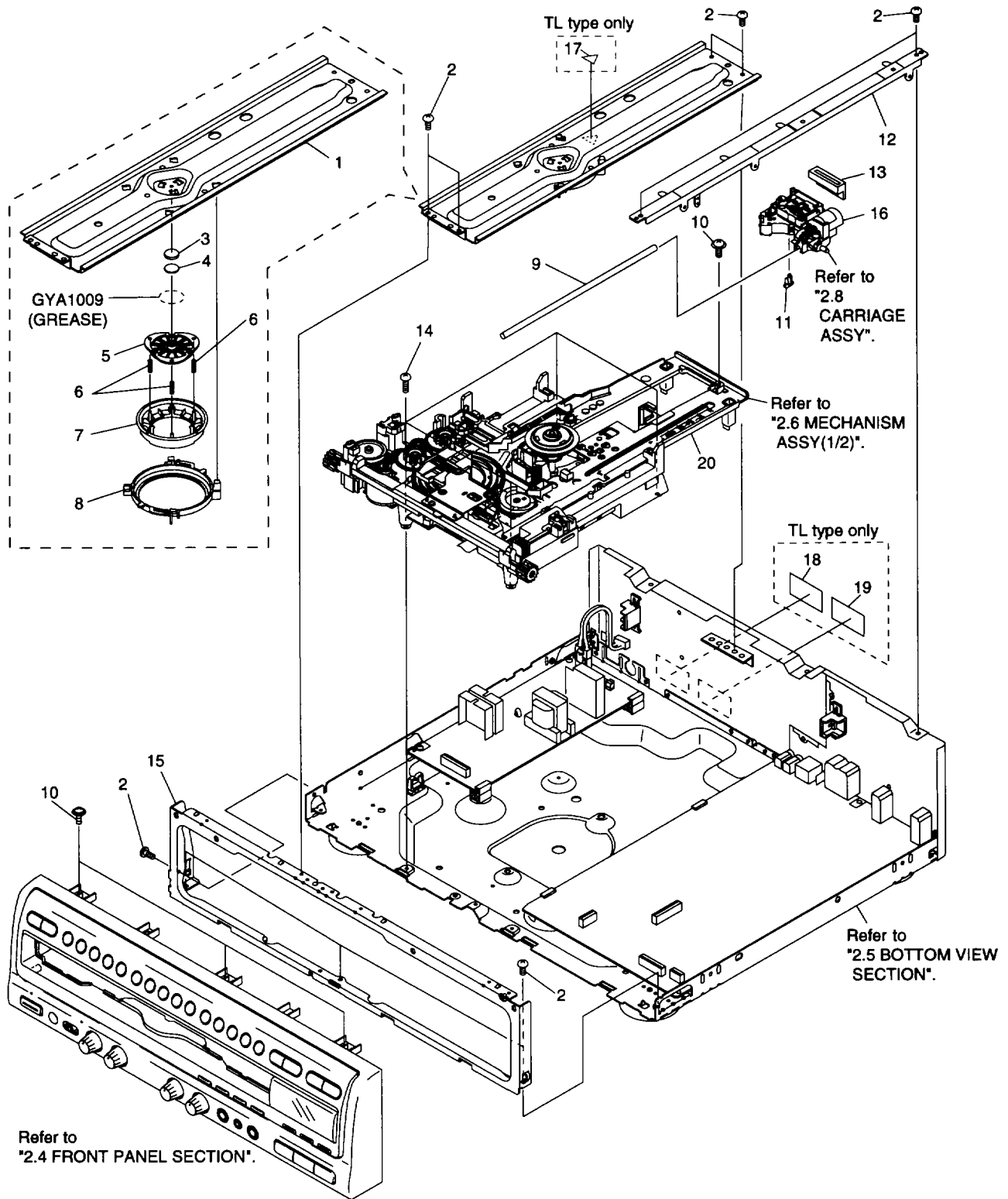
(1) CONTRAST OF CLD-100K/TD AND TL

CLD-100K/TL and TD have the same construction except for the following:

Mark	No.	Symbol & Description	Part No.		Remarks
			TD type	TL type	
NSP	17	Caution Label (G)	Not used	VRW – 329	
	18	Caution Label	Not used	PRW1018	
	19	Caution Label (F)	Not used	VRW – 328	

(2) PARTS LIST FOR CLD-100K/TD

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	Clamper Arm	VNE2022		11	CA Hook	VNL1698
	2	Screw	BBZ30P080FMC	NSP	12	PCB Holder	VNE1964
	3	Rubber Mat	VEB1114		13	FFC Holder	VNL1706
	4	Thrust Holder	VNL1663		14	Screw	BBZ30P100FMC
	5	Clamper Head	VNL1649	NSP	15	Panel Holder	VNA1507
	6	Clamp Spring	VBH1192		16	Carriage Assy	VWT1110
	7	Clamper	VNL1648		17	
	8	Clamper Holder	VNL1636		18	
	9	Shaft	VLL1481		19	
	10	Screw	IBZ30P080FMC	NSP	20	Mechanism Assy	VWT1109

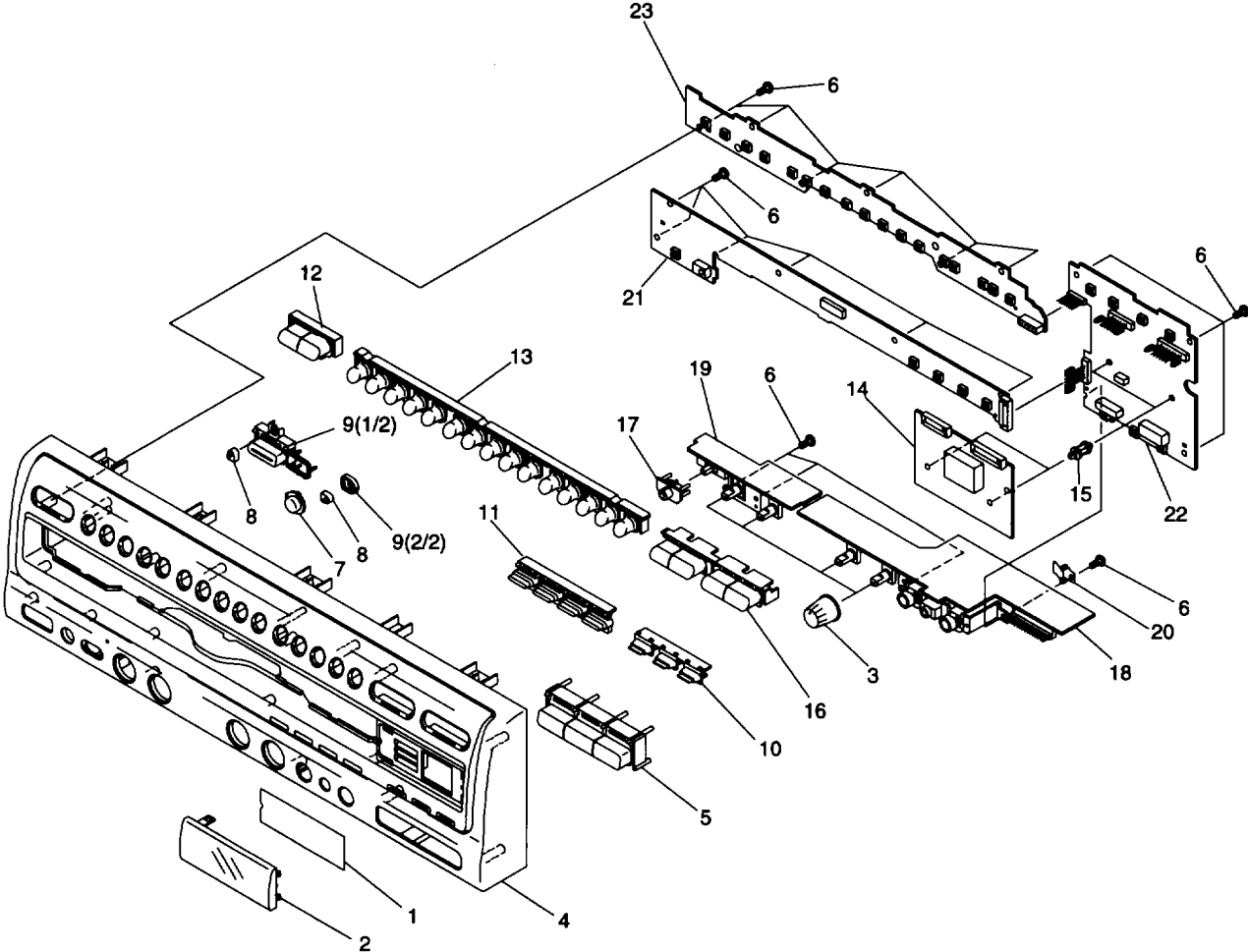


CLD-100K

2.4 FRONT PANEL SECTION

Parts List

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	Display Sheet	VEC1872		16	Play Button	VNK3728
	2	Sub Panel	VNK3727		17	Slide Knob	VNK3187
	3	VR Knob	VNK3677		18	JACB Assy	VWV1500
	4	Front Panel	VNK3725	NSP	19	VRSB Assy	VWG1775
	5	Key Control Button	VNK3674		20	Earth Plate	VNE2027
	6	Screw	BBZ30P080FMC	NSP	21	KALB Assy	VWG1776
	7	IR Window	VNK2246		22	MOCB Assy	VWG1773
	8	LED Lens	PNW2019	NSP	23	DIKB Assy	VWG1777
	9	Power Button	VNK3179				
	10	LED Lens	VNK3730				
	11	L Key A	VNK3688				
	12	Skip Button	VNK3775				
	13	15 Key	VNK3771				
NSP	14	LEDB Assy	VWG1774				
	15	PC Support	DEC1044				



CLD-100K

2.5 BOTTOM VIEW SECTION

(1) CONTRAST OF CLD-100K/TD AND TL

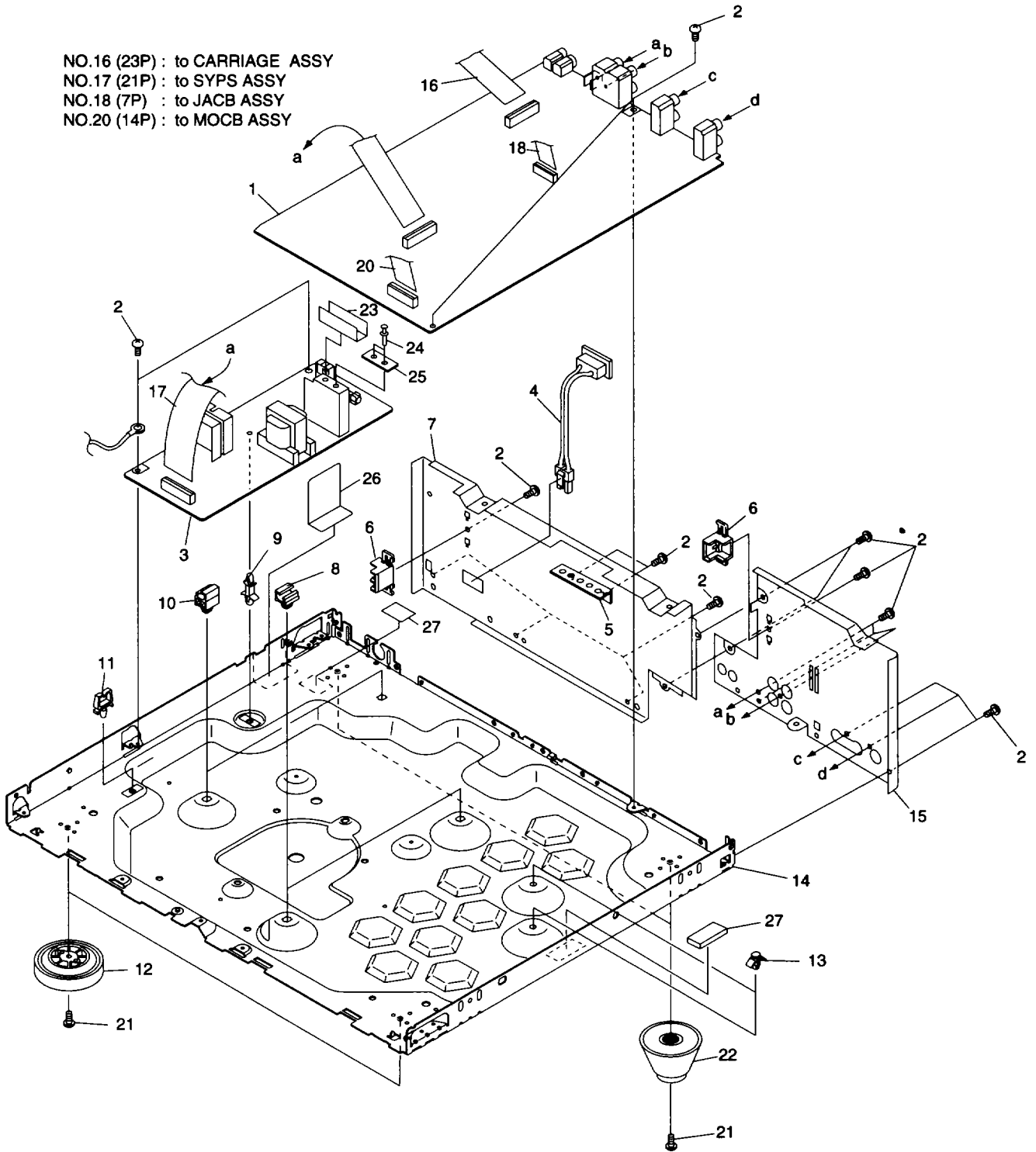
CLD-100K/TL and TD have the same construction except for the following:

Mark	No.	Symbol & Description	Part No.	
			TD type	TL type
	7	Rear Panel R	VNA1750	VNA1789

(2) PARTS LIST FOR CLD-100K/TD

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	Mother Assy	VWS1254		16	Flexible Cable (23P)	VDA1464
	2	Screw	BBZ30P080FMC		17	Flexible Cable (21P)	VDA1465
△	3	SYPS Assy	VWR1233		18	Flexible Cable (7P)	VDA1555
△	4	AC Inlet Assy	VKP2116		19	
	5	Rear Angle	VNE2024		20	Flexible Cable (14P)	VDA1554
	6	Tray Stopper	VNL1657		21	Screw	BBZ30P100FMC
	7	Rear Panel R	VNA1750		22	Insulator Assy	VXA2295
NSP	8	P Plate Holder	PNY - 405		23	Barrier Sheet	VEC1877
NSP	9	PC Support	VEC - 269		24	Rivet	DEC - 176
NSP	10	PCB Hinge	VEC1174		25	Barrier Sheet	VEC1878
NSP	11	Wire Clip (H)	VEC1181	NSP	26	Barrier Sheet	VEC1869
	12	Insulator	PNW1912		27	Spacer	PEB1275
	13	Card Spacer	VEC1708				
NSP	14	Chassis	VNA1461				
	15	Rear Panel L	VNA1776				

NO.16 (23P) : to CARRIAGE ASSY
 NO.17 (21P) : to SYPS ASSY
 NO.18 (7P) : to JACB ASSY
 NO.20 (14P) : to MOCB ASSY

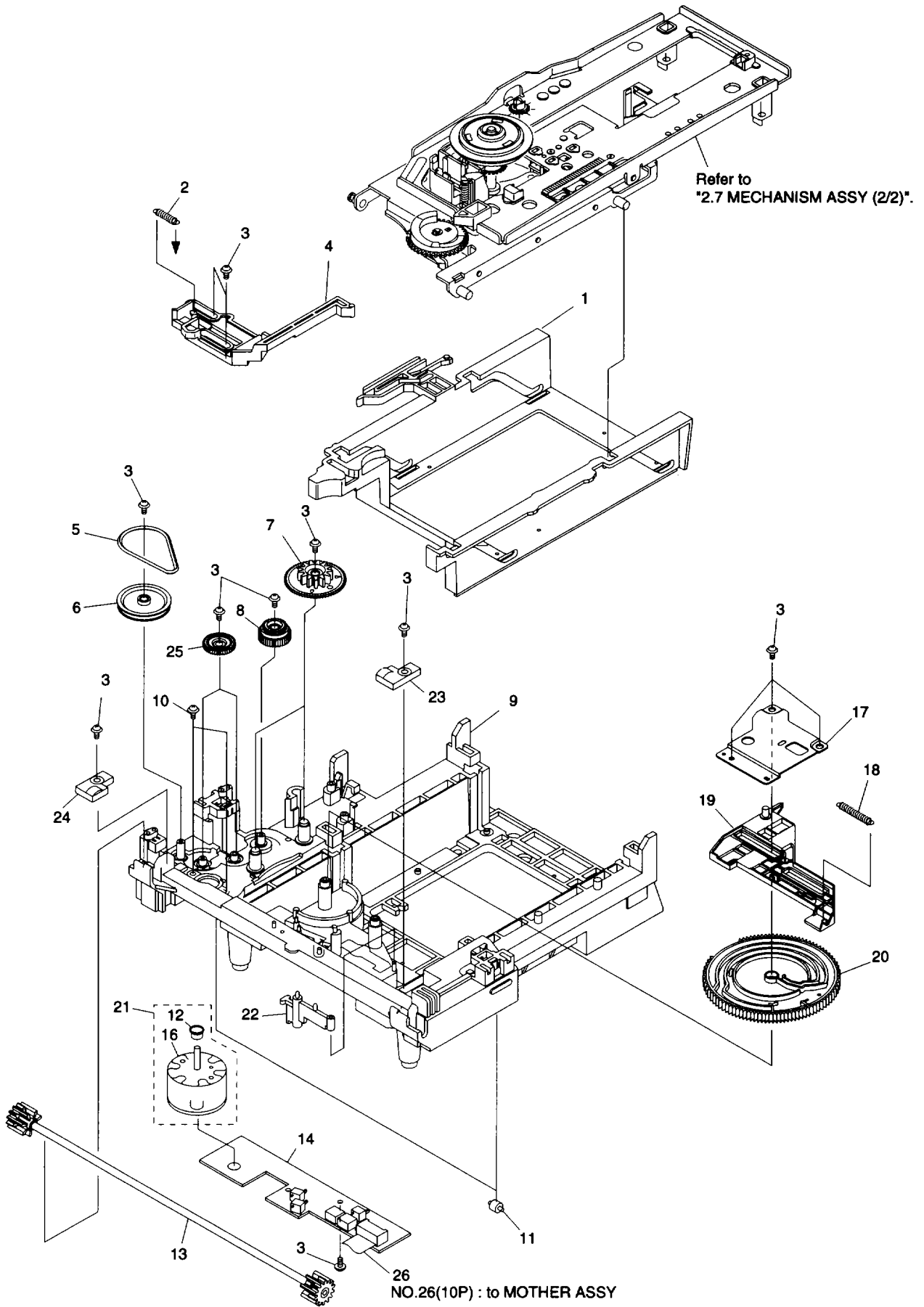


CLD-100K

2.6 MECHANISM ASSY (1/2)

Parts List

<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Parts No.</u>	<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Parts No.</u>
	1	Clamp Cam	VNL1633	NSP	16	Carriage Motor	VXM1033
	2	CDP Spring	VBH1191		17	Shaft Holder	VNE1942
	3	Screw	Z39 - 019		18	CAS Spring	VBH1190
	4	CD Plate	VNL1632		19	Cam Plate	VNL1631
	5	Rubber Belt	VEB1184		20	Cam Gear	VNL1625
	6	Gear Pulley	VNL1662		21	Loading Motor Assy	VXX2045
	7	Twin Gear	VNL1626		22	MB - Switch Lever	VNL1664
	8	Center Gear	VNL1660		23	Slider (R)	VNL1666
	9	Mechanism Base	VNK3239		24	Slider (L)	VNL1665
	10	Screw	BMZ26P040FMC		25	Double Gear	VNL1661
	11	Roller	VNL1042		26	Flexible Cable (10P)	VDA1466
NSP	12	Motor Pulley	VNL1630				
	13	Synchro Gear Assy	VXA2105				
NSP	14	LMSB Assy	VWG1554				
	15					

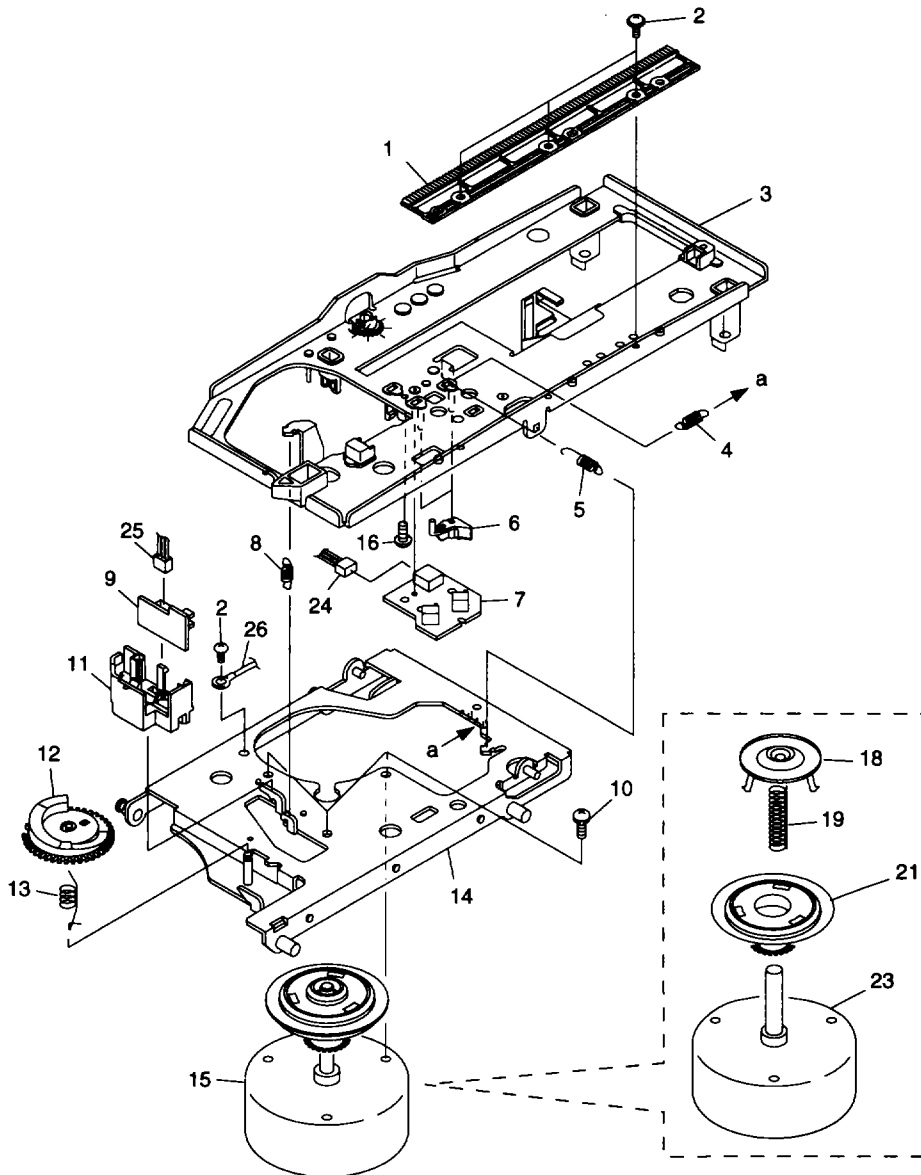


CLD-100K

2.7 MECHANISM ASSY (2/2)

Parts List

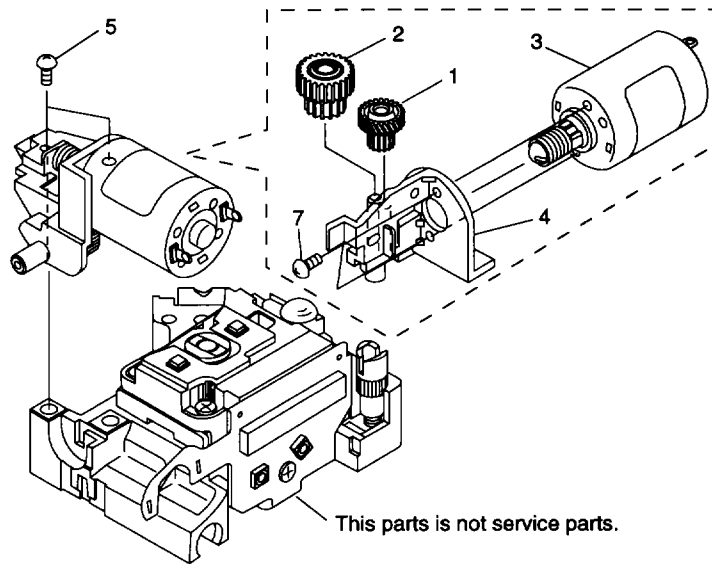
Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	CA Rack	VNL1647	16	Screw	IBZ26P120FMC	
	2	Screw	IBZ26P060FMC	17		
	3	Tilt Base	VNL1642	18	Centering Hab	VNL1623	
	4	Radial Spring	VBH1246	19	Centering Spring	VBH1083	
	5	Thrust Spring	VBH1245	20		
	6	CA - Switch Lever	VNL1644	NSP	21	R - Turn Table Assy	VXA2216
NSP	7	PKSB Assy	VWG1555	22		
	8	Tilt Tension Spring	VBH1244	NSP	23	Spindle Motor	VXM1057
NSP	9	FG Assy	VWG1556	24	Housing ASSY(3P:blue)	VKP2045	
10	10	Screw	PMA30P050FMC	25	Housing ASSY(3P:yellow)	VKP2046	
	11	FG Base	VNL1645	NSP	26	Earth Lead Unit	XDF - 507
	12	Tilt Cam	VNL1643				
	13	Tilt Cam Spring	VBH1243				
	14	Motor Base	VNE1941				
	15	Spindle Motor Assy	VXA2125				



2.8 CARRIAGE ASSY

Parts List

Mark	No.	Description	Parts No.
	1	CA Gear (A)	VNL1638
	2	CA Gear (B)	VNL1639
	3	Slider Motor Assy	VXX2082
	4	Motor Holder	VNL1700
	5	Screw	PBZ20P050FMC
	6	
	7	Screw	PMZ20P030FMC



3. SCHEMATIC AND PCB CONNECTION DIAGRAMS

NOTE FOR SCHEMATIC DIAGRAMS (Type 4A)

- When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".
- Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.
- 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.
- CAPACITORS:**
Unit: p:pF or μF unless otherwise noted.
Ratings: capacitor (μF)/voltage(V) unless otherwise noted.
Rated voltage: 50V except for electrolytic capacitors.
- COILS:**
Unit: m:mH or μH unless otherwise noted.
- VOLTAGE AND CURRENT:**
□ or ← V:
DC voltage (V) in PLAY mode unless otherwise noted.
↻ mA or ← mA:
DC current in PLAY mode unless otherwise noted.
Value in () is DC current in STOP mode.
- OTHERS:**
 - ⊙ or ⊗ : Adjusting point.
 - ◀ : Measurement point.
 - The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
- SCH-□ ON THE SCHEMATIC DIAGRAM:**
 - SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
- SWITCHES** (Underline indicates switch position):

LMSB ASSY	KALB ASSY	DIKB ASSY
S101: SW1	S201: POWER ON	S301: ←
S102: SW2	S206: SINGLE PLAY	S302: →
S103: SW3	S207: VOCAL PARTNER	S303: 1
PKSB ASSY	S208: ONE TOUCH KARAOKE	S304: 2
S104: OUTER	S209: GUIDE VOCAL	S305: 3
S105: INNER	VRSB ASSY	S306: 4
MOCB ASSY	S601: MODE SELECTION	S307: 5
S101: PAUSE		S308: 6
S102: PLAY		S309: 7
S103: STOP		S310: 8
S104: OPEN/CLOSE		S311: 9
S105: FLAT		S312: 10
S106: NATURAL		S313: 11
S107: SHARP		S314: 12
		S315: 13
		S316: 14
		S317: 15

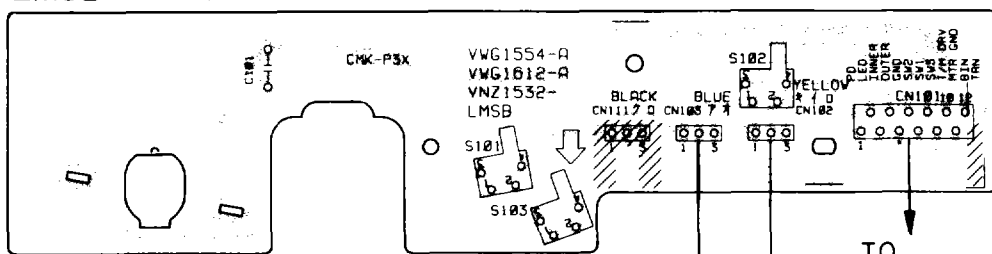
NOTE FOR PCB DIAGRAMS

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

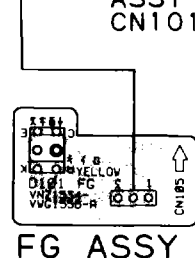
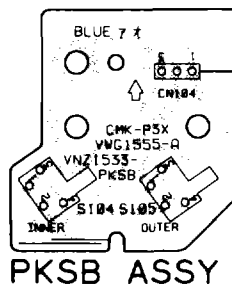
Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

- This diagram is viewed from the mounted parts side.
 - The parts mounted on this PCB include all necessary parts for several destinations.
- For further information for respective destinations, be sure to check with the schematic diagram.

LMSB ASSY



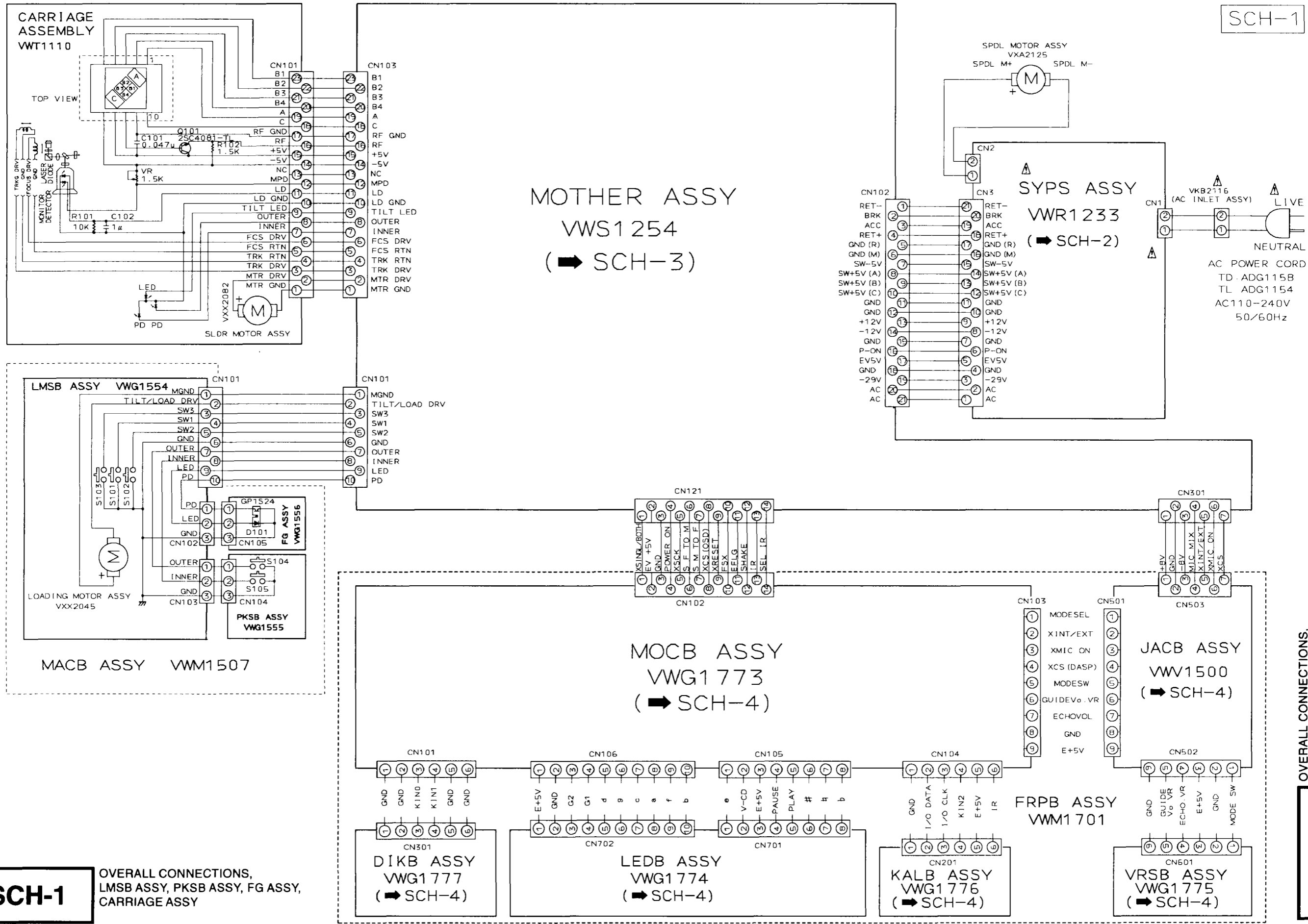
PCB-1



TO MOTHER ASSY
CN101

VNP1479-E

3.1 OVERALL CONNECTIONS, LMSB, PKSB, FG AND CARRIAGE ASSEMBLIES



SCH-1

MOTHER ASSY
VWS1254
(➔ SCH-3)

MOCB ASSY
VWG1773
(➔ SCH-4)

SYPS ASSY
VWR1233
(➔ SCH-2)

LMSB ASSY
VWG1554

MACB ASSY
VWM1507

JACB ASSY
VWV1500
(➔ SCH-4)

FRPB ASSY
VWM1701

DIKB ASSY
VWG1777
(➔ SCH-4)

LEDB ASSY
VWG1774
(➔ SCH-4)

KALB ASSY
VWG1776
(➔ SCH-4)

VRSB ASSY
VWG1775
(➔ SCH-4)

OVERALL CONNECTIONS,
LMSB ASSY, PKSB ASSY, FG ASSY,
CARRIAGE ASSY

SCH-1

SCH-1

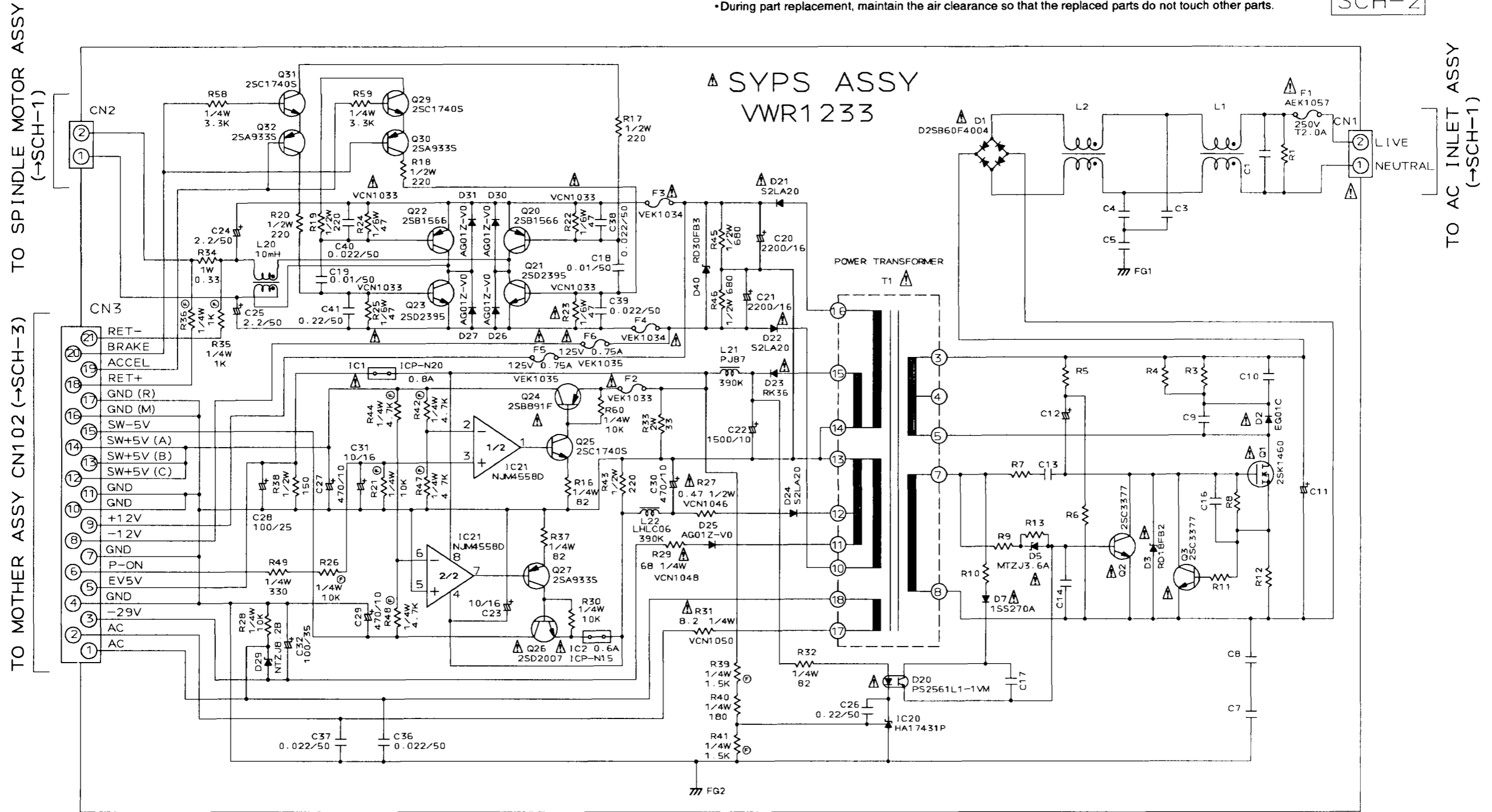
OVERALL CONNECTIONS,
LMSB ASSY, PKSB ASSY, FG ASSY,
CARRIAGE ASSY

3.2 SYPS ASSEMBLY

⚠️ **Caution on repair the primary side parts of the SYPS assy**

- During repair, those other than the specified parts cannot be used to prevent the occurrence of an accident.
- Mark ✓ must be written in red on the board when the primary part of the power block is repaired.
- During part replacement, maintain the air clearance so that the replaced parts do not touch other parts.

SCH-2



● NOTE FOR FUSE REPLACEMENT

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE NO. ICP-N20, MFD BY ROHM CO., LTD, FOR IC1.

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE NO. ICP-N15, MFD BY ROHM CO., LTD, FOR IC2.

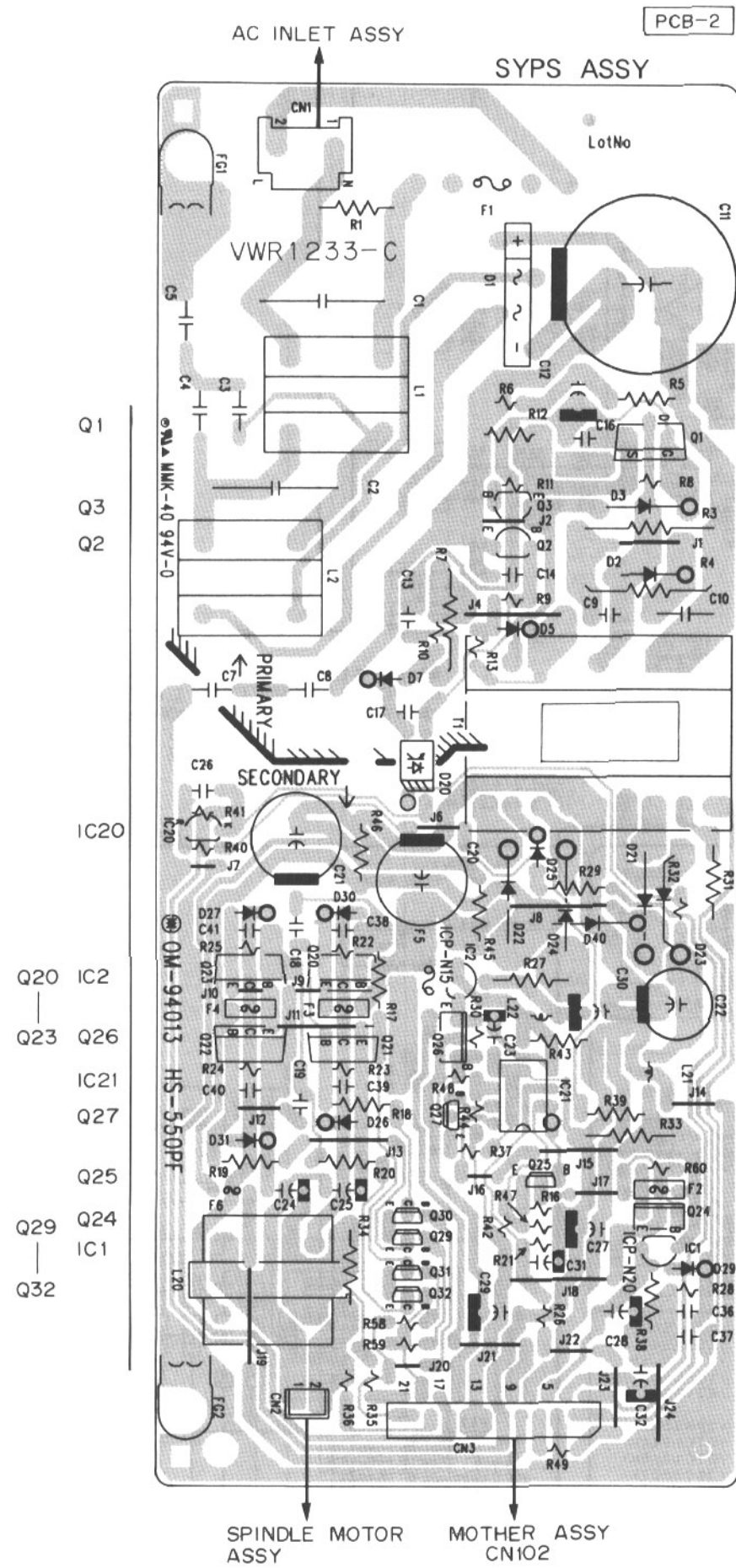
CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE AND RATINGS ONLY.

SCH-2

SYPS ASSY

SYPS ASSY

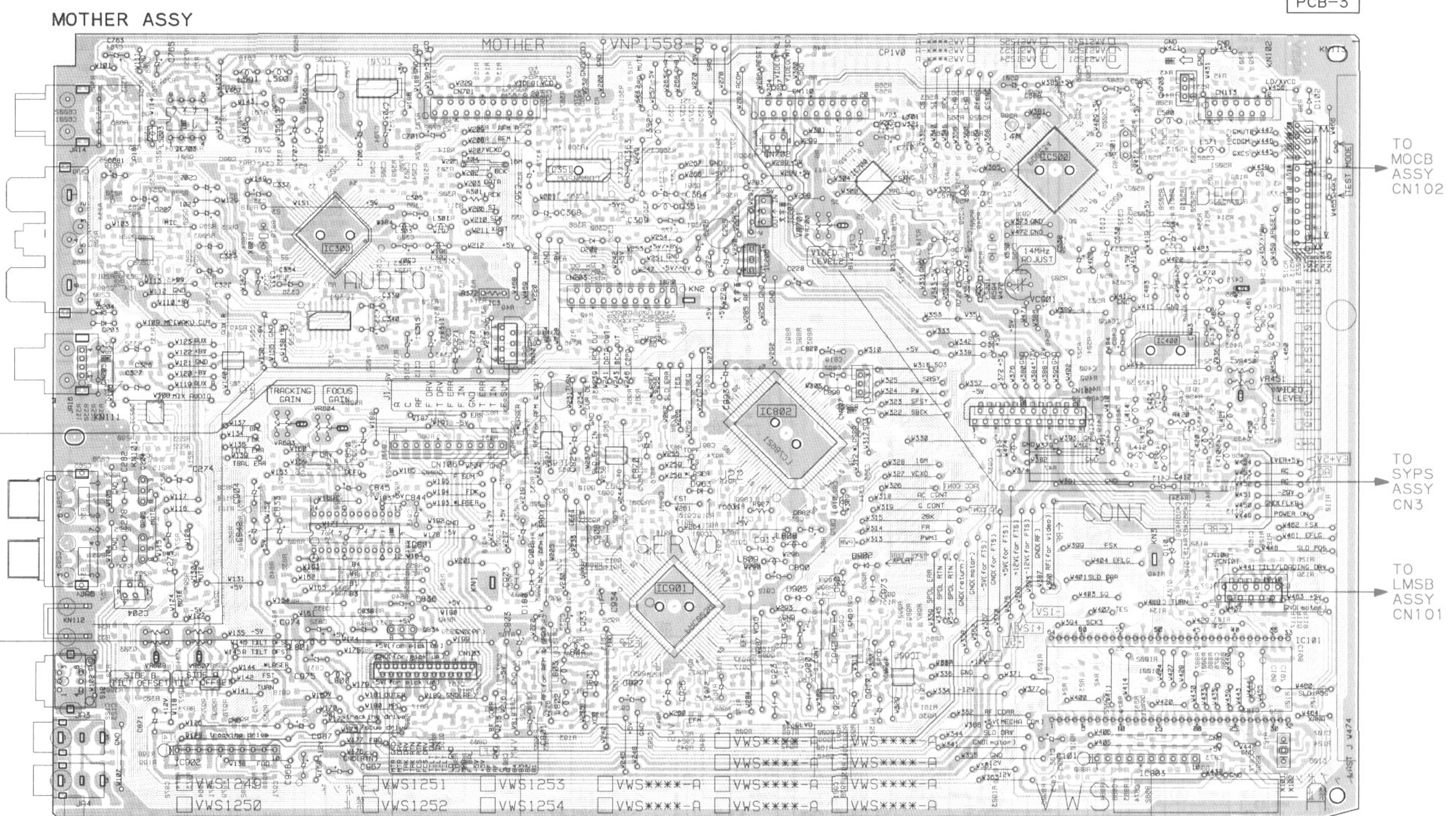
SCH-2



3.3 MOTHER ASSEMBLY

● This diagram is viewed from the mounted parts side.

● The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.



TO JACB ASSY
CN503

TO CARRIAGE ASSY
CN101

TO MOCB ASSY
CN102

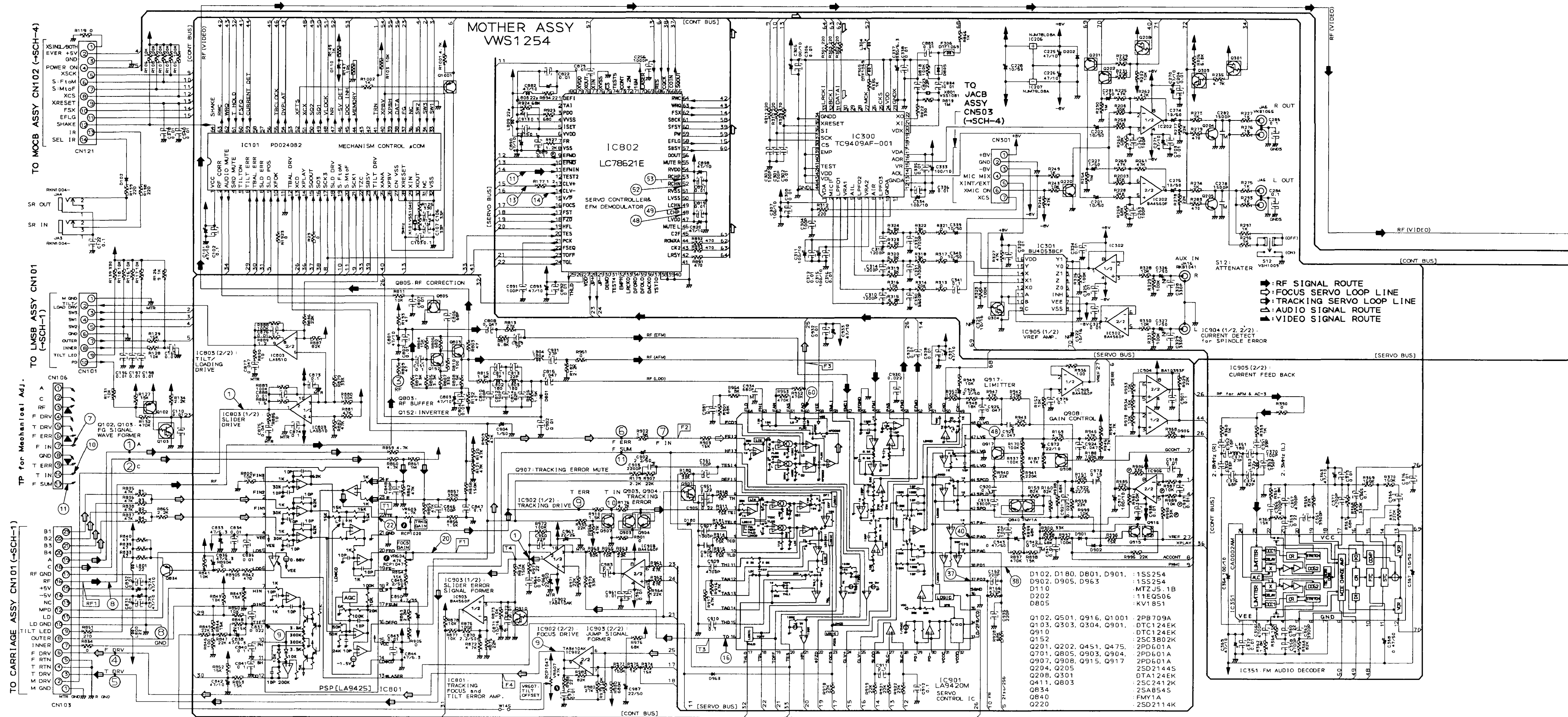
TO SYPS ASSY
CN3

TO LMSB ASSY
CN101

VR608	VR607	VR603	VR604	IC801	IC3000	IC3	IC207	VR701	VR700	VC901	IC803	VR450	VR451
Q204	IC703	IC203	IC700	IC3005	IC801	S0000	IC207	IC805	VR700	VC901	IC803	VR450	VR451
Q205	IC902	IC305	IC305	IC3005	Q834	S0000	IC206	IC805	VR700	VC901	IC803	VR450	VR451
S030	IC300	IC300	IC300	IC300	S0000	S0000	IC206	IC805	VR700	VC901	IC803	VR450	VR451
S030	IC300	IC300	IC300	IC300	S0000	S0000	IC206	IC805	VR700	VC901	IC803	VR450	VR451
S030	IC300	IC300	IC300	IC300	S0000	S0000	IC206	IC805	VR700	VC901	IC803	VR450	VR451
S030	IC300	IC300	IC300	IC300	S0000	S0000	IC206	IC805	VR700	VC901	IC803	VR450	VR451
S030	IC300	IC300	IC300	IC300	S0000	S0000	IC206	IC805	VR700	VC901	IC803	VR450	VR451
S030	IC300	IC300	IC300	IC300	S0000	S0000	IC206	IC805	VR700	VC901	IC803	VR450	VR451
S030	IC300	IC300	IC300	IC300	S0000	S0000	IC206	IC805	VR700	VC901	IC803	VR450	VR451
S030	IC300	IC300	IC300	IC300	S0000	S0000	IC206	IC805	VR700	VC901	IC803	VR450	VR451
S030	IC300	IC300	IC300	IC300	S0000	S0000	IC206	IC805	VR700	VC901	IC803	VR450	VR451
S030	IC300	IC300	IC300	IC300	S0000	S0000	IC206	IC805	VR700	VC901	IC803	VR450	VR451

VNP1558-B

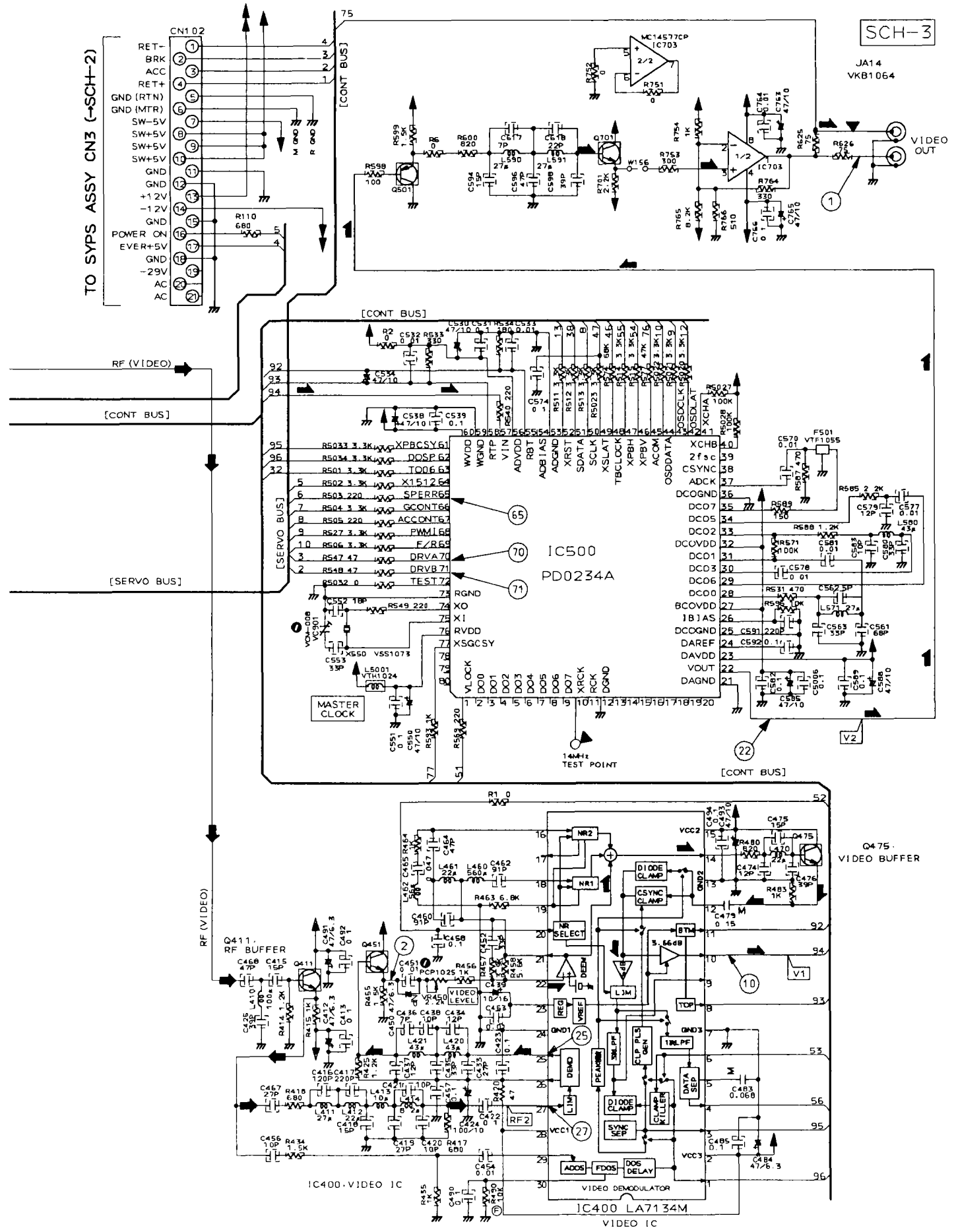
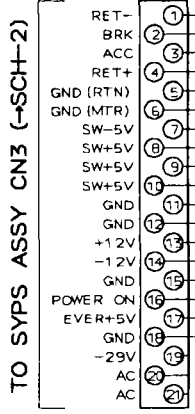
● This diagram is viewed from the mounted parts side.
● The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.



- TO CARRIAGE ASSY CN101 (-SCH-1)
- TP for Mechanical Adj.
- TO LMSB ASSY CN101 (-SCH-1)
- TO MOCB ASSY CN102 (-SCH-4)

- D102, D180, D801, D901, : 1SS254
 D902, D905, D963 : 1SS254
 D110 : MTZJ5.1B
 D202 : 11EQS06
 D805 : KV1851
- Q102, Q501, Q916, Q1001 : 2PB709A
 Q103, Q303, Q304, Q901, : DTC124EK
 Q910 : DTC124EK
 Q152 : 2SC3802K
 Q201, Q202, Q451, Q475, : 2P0601A
 Q701, Q805, Q903, Q904, : 2P0601A
 Q907, Q908, Q915, Q917 : 2P0601A
 Q204, Q205 : 2SD2144S
 Q208, Q301 : DTA124EK
 Q411, Q803 : 2SC2412K
 Q834 : 2SA854S
 Q840 : FMY1A
 Q220 : 2SD2114K

- ▶: RF SIGNAL ROUTE
- ⬇: FOCUS SERVO LOOP LINE
- ⬆: TRACKING SERVO LOOP LINE
- ▷: AUDIO SIGNAL ROUTE
- ▲: VIDEO SIGNAL ROUTE

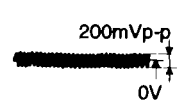
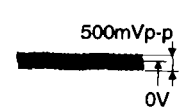
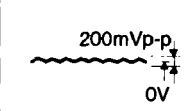



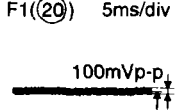
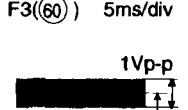
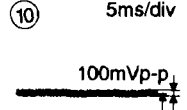
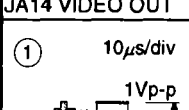
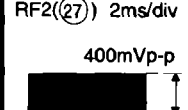
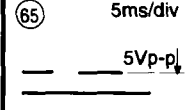
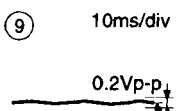
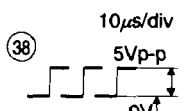
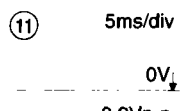
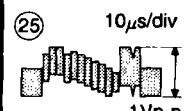
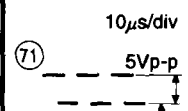
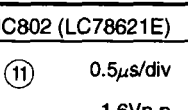
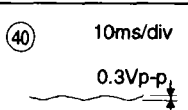
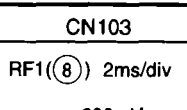
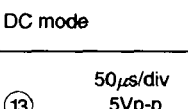
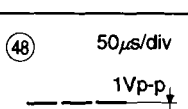
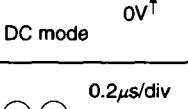
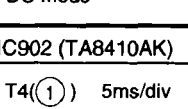

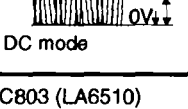
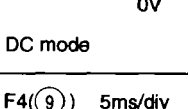


WAVEFORMS AND VOLTAGE

MOTHER ASSEMBLY

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

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

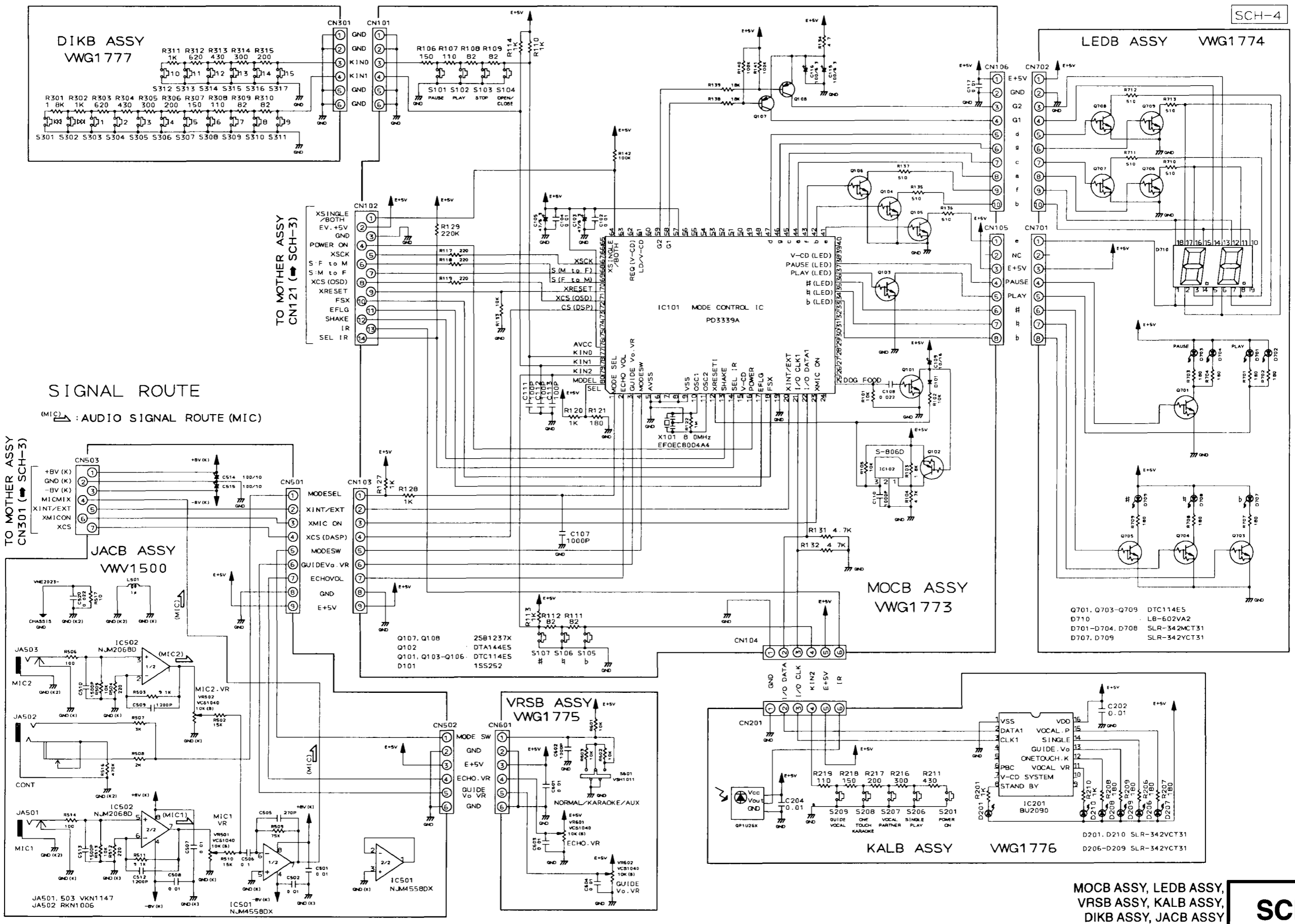
MOTHER ASSY					
IC801 (LA9425)	IC901 (LA9420M)	CN106	Q451 Emitter	IC400 (LA7134M)	IC500 (PD0234A)
T1((22)) 5ms/div  DC mode	T3((16)) 5ms/div  DC mode	(7) (F2) 5ms/div  DC mode	(2) 10μs/div  AC mode	V1((10)) 10μs/div  DC mode 0V↑	V2((22)) 10μs/div  DC mode
F1((20)) 5ms/div  DC mode	F3((60)) 5ms/div  DC mode	(10) 5ms/div  DC mode	JA14 VIDEO OUT (1) 10μs/div  (75Ω termination) 0V DC mode	RF2((27)) 2ms/div  AC mode	(65) 5ms/div  DC mode
(9) 10ms/div  DC mode	(38) 10μs/div  (37) 0V↑ DC mode	(11) 5ms/div  DC mode	(25) 10μs/div  DC mode		(71) 10μs/div  (70) 0V↑ DC mode
IC802 (LC78621E) (11) 0.5μs/div  DC mode	(40) 10ms/div  DC mode	CN103 RF1((8)) 2ms/div  AC mode			
(13) 50μs/div  DC mode	(48) 50μs/div  DC mode				
(48), (53) 0.2μs/div  DC mode	(49), (52) 5Vp-p  DC mode	IC902 (TA8410AK) T4((1)) 5ms/div  DC mode			
IC803 (LA6510) (1) 2ms/div  DC mode	F4((9)) 5ms/div  DC mode				

MOTHER ASSY

SCH-3

3.4 MOCB, LEDB, VRSB, KALB, DIKB AND JACB ASSEMBLIES

SCH-4



SIGNAL ROUTE

(MIC) : AUDIO SIGNAL ROUTE (MIC)

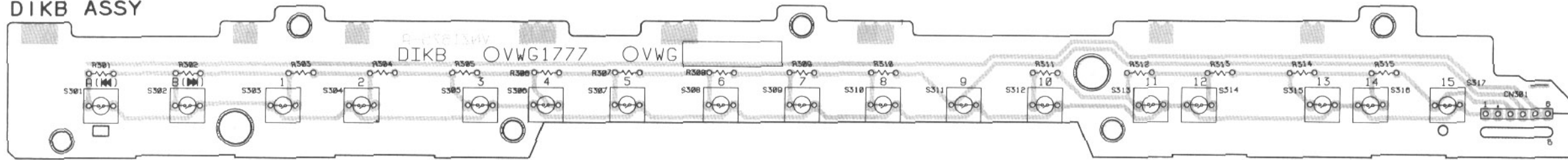
MOCB ASSY, LEDB ASSY, VRSB ASSY, KALB ASSY, DIKB ASSY, JACB ASSY

SCH-4

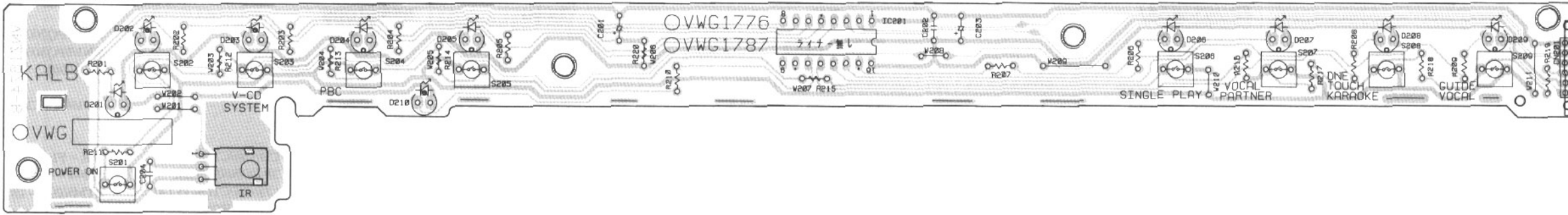
MOCB ASSY, LEDB ASSY, VRSB ASSY, KALB ASSY, DIKB ASSY, JACB ASSY

SCH-4

DIKB ASSY

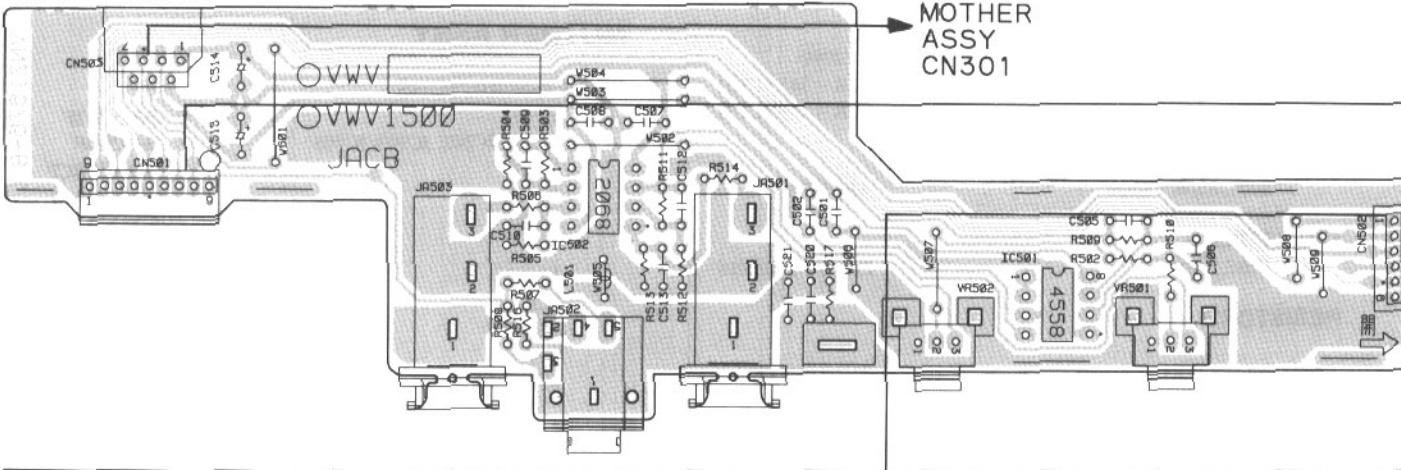


KALB ASSY



IC201

JACB ASSY

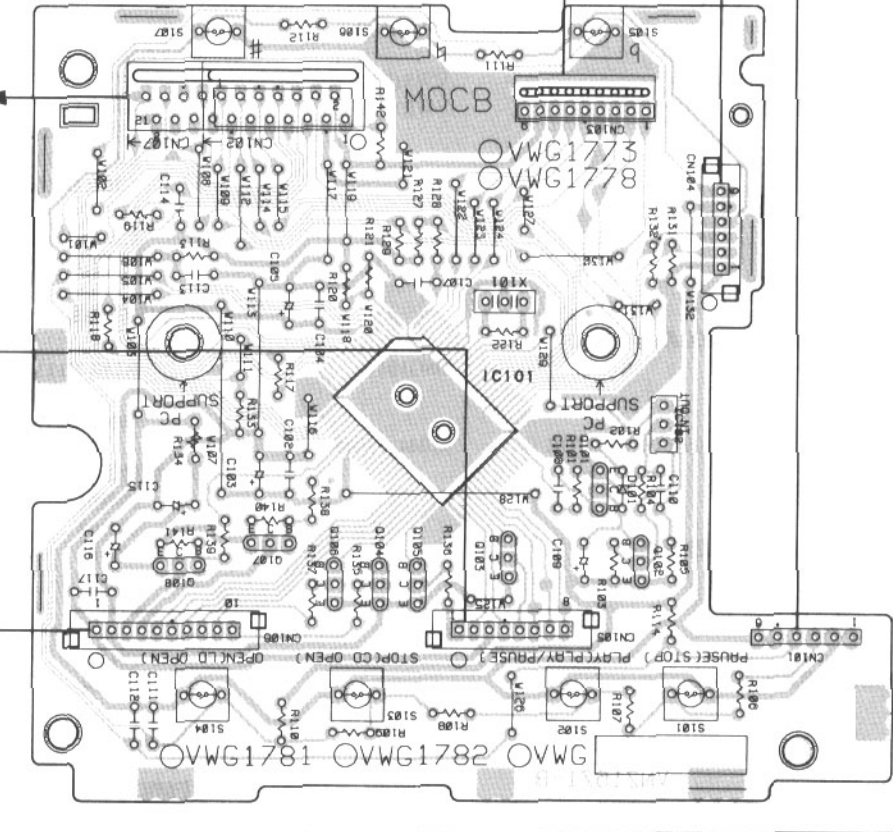


TO MOTHER ASSY CN301

IC502

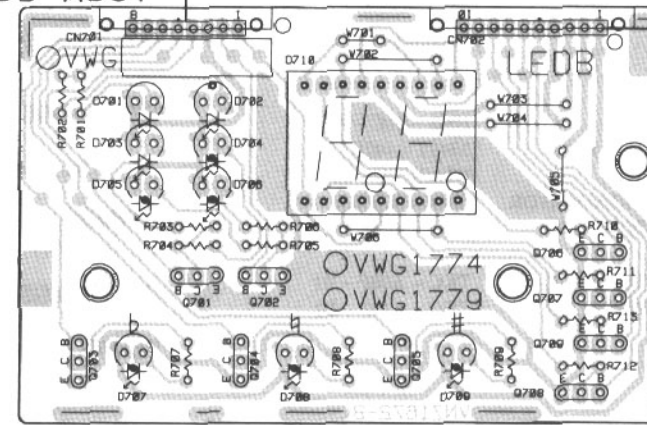
IC501

MOCB ASSY



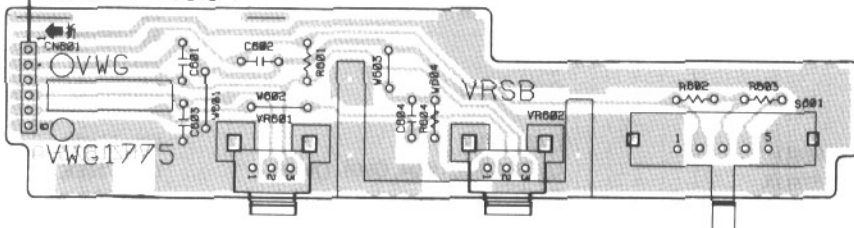
TO MOTHER ASSY CN121

LEDB ASSY



Q703 Q701 Q702 Q705 Q706 Q707
Q704 Q709 Q708

VRSB ASSY



Q108 Q107 Q106 IC101 Q103 Q101 IC102
Q104 Q105 Q102

- This diagram is viewed from the mounted parts side.
- The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

4. PCB PARTS LIST

NOTES:

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

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

560 Ω	→	56 × 10 ¹	→	561	RD1/4PU	561J
47k Ω	→	47 × 10 ³	→	473	RD1/4PU	473J
0.5 Ω	→	0R5			RN2H	0R5K
1 Ω	→	1R0			RS1P	1R0K

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

5.62k Ω	→	562 × 10 ¹	→	5621	RN1/4PC	5621F
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Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
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LIST OF ASSEMBLIES

NSP	MACB ASSY	VWM1507
NSP	└ LMSB ASSY	VWG1554
NSP	└ PKSB ASSY	VWG1555
NSP	└ FG ASSY	VWG1556
NSP	FRPB ASSY	VWM1701
	└ MOCB ASSY	VWG1773
NSP	└ LEDB ASSY	VWG1774
NSP	└ VRSB ASSY	VWG1775
NSP	└ KALB ASSY	VWG1776
NSP	└ DIKB ASSY	VWG1777
	└ JACB ASSY	VWV1500
	MOTHER ASSY	VWS1254
Δ	SYPS ASSY	VWR1233

MACB ASSY

OTHERS

PCB(MACB)	VNP1479
-----------	---------

LMSB ASSY

SWITCHES AND RELAYS

S101 - S103	DSG1017
-------------	---------

OTHERS

CN101 10P CONNECTOR	52044 - 1045
---------------------	--------------

PKSB ASSY

SWITCHES AND RELAYS

S104, S105	DSG1017
------------	---------

FG ASSY

SEMICONDUCTORS

D101	GPIS24
------	--------

FRPB ASSY

OTHERS

PCB(FRPB)	VNP1562
-----------	---------

MOCB ASSY

SEMICONDUCTORS

IC101	PD3339A
IC102	S - 806D
Q107, Q108	2SB1237X
Q102	DTA144ES
Q101, Q103 - Q106	DTC114ES

D101	1SS252
------	--------

SWITCHES AND RELAYS

S101 - S107	ASG1034
-------------	---------

CAPACITORS

C109	CEAL100M16
C115, C116	CEAL101M6R3
C103, C105	CEAL470M6R3
C111 - C113	CKPUYB101K50
C107, C110	CKPUYB102K50

C108	CKPUYF223Z25
C102, C104, C117	CKPUYY103N16

RESISTORS

R134	RFA1/6PU4R7J
R110, R113, R114, R127	RN1/6PQ1001F

Other Resistors	RD1/4PU□□□J
-----------------	-------------

OTHERS

CN101	PIN HEADER	1068 - 06C - PP
CN102	CONNECTOR 14P	52492 - 1420
CN103	CONNECTOR	BTMK09S - 1S
X101	CERAMIC RESONATOR	EFOEC8004A4
CN104	CONNECTOR PLUG	TKC - A06P - C1
CN105	CONNECTOR PLUG	TKC - A08P - B1
CN106	CONNECTOR PLUG	TKC - A10P - B1

LEDB ASSY

SEMICONDUCTORS

Q701, Q703 - Q709	DTC114ES
D710	LB - 602VA2
D701 - D704, D708	SLR - 342MCT31
D707, D709	SLR - 342YCT31

Mark No.	Description	Parts No.
RESISTORS		
	All Resistors	RD1/4PU□□□J
OTHERS		
CN701	CONNECTOR	TKC - A08X - B1
CN702	CONNECTOR	TKC - A10X - B1
VRSB ASSY		
SWITCHES AND RELAYS		
S601		VSH1011
CAPACITORS		
C602		CKPUYB102K50
C601, C603, C604		CKPUYY103N16
RESISTORS		
VR601, VR602 (10kΩ • B)		VCS1040
Other Resistors		RD1/4PU□□□J
OTHERS		
CN601	CONNECTOR 6P PCB HOLDER(FE)	06P - FJ VNE2026
KALB ASSY		
SEMICONDUCTORS		
IC201		BU2090
D201, D210		SLR - 342VCT31
D206 - D209		SLR - 342YCT31
SWITCHES AND RELAYS		
S201, S206 - S209		ASG1034
CAPACITORS		
C202, C204		CKPUYY103N16
RESISTORS		
All Resistors		RD1/4PU□□□J
OTHERS		
CN201	REMOTE RECEIVER UNIT CONNECTOR	GP1U26X TKC - A06X - B1
DIKB ASSY		
SWITCHES AND RELAYS		
S301 - S317		ASG1034
RESISTORS		
All Resistors		RD1/4PU□□□J
OTHERS		
CN301	CONNECTOR 6P	9133S - 06A
JACB ASSY		
SEMICONDUCTORS		
IC502		NJM2068D
IC501		NJM4558DX
COILS AND FILTERS		
L501		LFA010J

Mark No.	Description	Parts No.
CAPACITORS		
C514, C515		CEJA101M10
C505		CKPUYB271K50
C520		CKPUYF223Z25
C509, C512		CKPUYX122M16
C510, C513		CKPUYX152M16
C501, C502, C507, C508		CKPUYY103N16
C506		CQMA104J50
RESISTORS		
R508		RN1/6PQ2001F
R507		RN1/6PQ3001F
VR501, VR502 (10kΩ • B)		VCS1040
Other Resistors		RD1/4PU□□□J
OTHERS		
CN502	CONNECTOR 6P	06R - FJ
CN503	7P CONNECTOR	52044 - 0745
CN501	CONNECTOR PLUG	BTMK09P - 1R
JA502	HEADPHONE JACK	RKN1006
JA501, JA503	MIC JACK	VKN1147
	SNAP PLATE	VNE1102
	JACK HOLDER	VNE2054
MOTHER ASSY		
SEMICONDUCTORS		
IC904		BA10393F
IC202, IC302, IC903, IC905		BA4560F
IC301		BU4053BCF
IC351		CA0002AM
IC803		LA6510
IC400		LA7134M
IC901		LA9420M
IC801		LA9425
IC802		LC78621E
IC703		MC14577CP
IC206		NJM78L08A
IC207		NJM79L08A
IC500		PD0234A
IC101		PD0240B2
IC902		TA8410AK
IC300		TC9409AF - 001
Q1001, Q102, Q501, Q916		2PB709A
Q201, Q202, Q451, Q475, Q701		2PD601A
Q805, Q903, Q904, Q907, Q908		2PD601A
Q915, Q917		2PD601A
Q834		2SA854S
Q411, Q803		2SC2412K
Q152		2SC3802K
Q220		2SD2114K
Q204, Q205		2SD2144S
Q208, Q301		DTA124EK
Q103, Q303, Q304, Q901, Q910		DTC124EK
Q840		FMY1A
D202		11EQS06
D102, D180, D801, D901, D902		1SS254

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
D905, D963		ISS254	C922, C967		CEAS220M25
D805		KV1851	C845, C870, C902, C926		CEAS2R2M50
D110		MTZJ5.1B	C337		CEAS331M6R3
			C101, C225, C226, C363		CEAS470M10
			C369, C493, C530, C534, C538		CEAS470M10
SWITCHES AND RELAYS					
S12	SLIDE SWITCH	VSH1009			
COILS AND FILTERS					
F305, F306	CHIP BEAD	DTF1069	C550, C585, C588, C763, C765		CEAS470M10
L413		LAU100J	C801, C803, C820, C842, C882		CEAS470M10
L410		LAU101J	C890, C893, C898, C927, C933		CEAS470M10
L351, L802 – L804		LAU181J	C974, C975		CEAS470M10
L352, L412, L461, L470		LAU220J	C368, C943		CEASR47M50
L800, L801, L808, L809		LAU220J	C968, C987		CEHAQ220M50
L411, L571, L590, L591		LAU270J	C270, C271		CEJA470M10
L420, L421, L580		LAU430J	C850		CEJA4R7M35
L304		LAU4R7J	C256, C490, C907		CKSQYB102K50
L462		LAU560J	C203, C204, C308, C320, C321		CKSQYB103K50
L414		LAU8R2J	C324, C325		CKSQYB103K50
L460		LFA561J	C335, C336, C338, C879		CKSQYB103K50
F501	14.3MHz FILTER	VTF1055	C341, C915, C981		CKSQYB104K25
L5001	FERRITE BEAD	VTH1024	C310, C314, C318		CKSQYB122K50
			C919		CKSQYB332K50
CAPACITORS					
C562		CCSQCH050C50	C361, C362		CKSQYB392K50
C436, C617, C809, C811		CCSQCH070D50	C331, C332, C355 – C358, C377		CKSQYB472K50
C420, C421, C438, C456, C583		CCSQCH100D50	C909		CKSQYB472K50
C262, C263, C301, C303, C304		CCSQCH101J50	C330		CKSQYB562K50
C370, C810, C846, C848, C891		CCSQCH101J50	C110, C122, C160, C196 – C198		CKSQYF103Z50
C944		CCSQCH101J50	C302, C306, C312, C316		CKSQYF103Z50
C434, C437, C474, C579		CCSQCH120J50	C372, C373, C376, C378, C451		CKSQYF103Z50
C416		CCSQCH121J50	C454, C532, C533, C540, C570		CKSQYF103Z50
C415, C418, C475, C594		CCSQCH150J50	C577, C578, C581, C802, C804		CKSQYF103Z50
C161, C353, C812		CCSQCH151J50	C807, C819, C822, C831, C832		CKSQYF103Z50
C352, C552		CCSQCH180J50	C834, C835, C843, C872, C876		CKSQYF103Z50
C618, C813, C823, C950		CCSQCH220J50	C883, C884, C888, C889, C892		CKSQYF103Z50
C162, C417, C591, C935		CCSQCH221J50	C897, C918, C928, C929, C932		CKSQYF103Z50
C371, C419, C433, C467, C931		CCSQCH270J50	C937, C938, C941, C961, C962		CKSQYF103Z50
C106, C107, C354, C435, C452		CCSQCH330J50	C964, C971, C982		CKSQYF103Z50
C553, C563, C580		CCSQCH330J50	C102, C103, C151, C284, C285		CKSQYF104Z25
C328, C329		CCSQCH331J50	C365, C366, C413, C422, C423		CKSQYF104Z25
C351, C425, C476, C598		CCSQCH390J50	C453, C457, C458, C485, C492		CKSQYF104Z25
C464, C468, C596		CCSQCH470J50	C494, C5006, C531, C539, C551		CKSQYF104Z25
C375, C561, C806		CCSQCH680J50	C574, C582, C589, C592, C764		CKSQYF104Z25
C374, C814		CCSQCH820J50	C766, C840, C841, C847		CKSQYF104Z25
C460, C462		CCSQCH910J50	C873, C874, C901, C910 – C912		CKSQYF104Z25
C439		CEAL100M16	C976, C983		CKSQYF104Z25
C412, C484, C491, C833, C836		CEAL470M6R3	C837, C921, C930		CKSQYF223Z50
C844		CEAL470M6R3	C359, C360, C905, C951		CKSQYF224Z25
C838		CEALNP470M6R3	C465, C808, C815, C875, C877		CKSQYF473Z25
C326, C327		CEANP010M50	C924, C925		CKSQYF473Z25
C322, C323		CEANP100M16	C942		CQMA103J50
C972		CEANP220M10	C913, C920		CQMA104J50
C450		CEANP470M6R3	C278, C282		CQMA152J50
C227, C281, C904		CEAS010M50	C479, C908, C973		CQMA154J50
C201, C202, C228, C274, C275		CEAS100M50	C903		CQMA222J50
C339, C340, C367		CEAS100M50	C923		CQMA473J50
C305, C307, C311, C315		CEAS101M10	C934		CQMA681J50
C333, C334, C364, C424, C917		CEAS101M10	C483		CQMA683J50
			C871	(10µF/16V)	VCH1152
			VC901	(20pF)	VCM – 008

CLD-100K

Mark No.	Description	Parts No.
RESISTORS		
R927		RD1/4PU122J
R301		RD1/4PU221J
R420		RD1/4PU470J
R490, R987, R989		RN1/10SE103D
R880, R883		RN1/10SE104D
R879, R986, R990		RN1/10SE333D
R881, R882		RN1/10SE473D
VR450	(2.2k Ω , 0.1W)	PCP1025
VR603	(4.7k Ω , 0.1W)	RCP1020
VR604, VR607	(47k Ω , 0.1W)	RCP1047
Other Resistors		RS1/10S□□□J

Mark No.	Description	Parts No.
OTHERS		
CN301	7P CONNECTOR	52045 - 0745
CN101	10P CONNECTOR	52045 - 1045
CN121	14P CONNECTOR	52045 - 1445
CN102	21P CONNECTOR	52045 - 2145
CN103	23P CONNECTOR	52233 - 2310
CN106	11P CONNECTOR	B11P - SHF - 1AA
JA16	JACK	RKB1041
JA3, JA4	JACK	RKN1004
	PCB BINDER	VEF1040
JA14	JACK	VKB1064
JA6	JACK	VKB1065
	SCREW PLATE	VNE1948
KN101, KN102	EARTH METAL FITTING	VNF1084
X101	CERAMIC RESONATOR (9.00MHz)	VSS1040
X550	CRYSTAL RESONATOR (14.31818MHz)	VSS1073
X801	CRYSTAL RESONATOR (16MHz)	VSS1081

SYPS ASSY

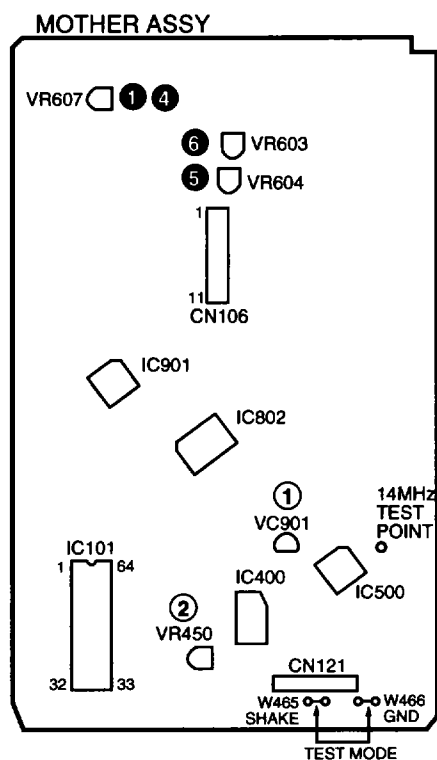
Mark No.	Description	Parts No.
SEMICONDUCTORS		
IC20		HA17431P
△ IC2		ICP - N15
△ IC1		ICP - N20
IC21		NJM4558D
Q27, Q30, Q32		SA933S
Q20, Q22		2SB1566
△ Q24		2SB891F
Q25, Q29, Q31		2SC1740S
△ Q2, Q3		2SC3377
△ Q26		2SD2007
Q21, Q23		2SD2395
△ Q1		2SK1460
D25 - D27, D30, D31		AG01Z - VO
△ D1		D2SB60F4004
△ D2		EG01C
△ D5		MTZJ3.6A
D29		MTZJ8.2B
△ D20		PS2561L1 - 1VM
△ D3		RD18FB2
D40		RD30FB3

Mark No.	Description	Parts No.
D23		RK36
D21, D22, D24		S2LA20
△ D7		1SS270A
RESISTORS		
△ R22 - R25	(47 Ω , 1/6W)	VCN1033
△ R27	(0.47 Ω , 1/2W)	VCN1046
△ R29	(68 Ω , 1/4W)	VCN1048
△ R31	(8.2 Ω , 1/4W)	VCN1050
OTHERS		
△ F1	FUSE(T2A, 250V)	AEK1057
△ F2	FUSE	VEK1033
△ F3, F4	FUSE	VEK1034
△ F5, F6	FUSE	VEK1035

5. ADJUSTMENTS (調整方法)

5.1 ADJUSTMENT ITEMS AND LOCATION (調整項目と調整位置)

■ Adjustment Points (PCB Part)



■ Adjustment Items

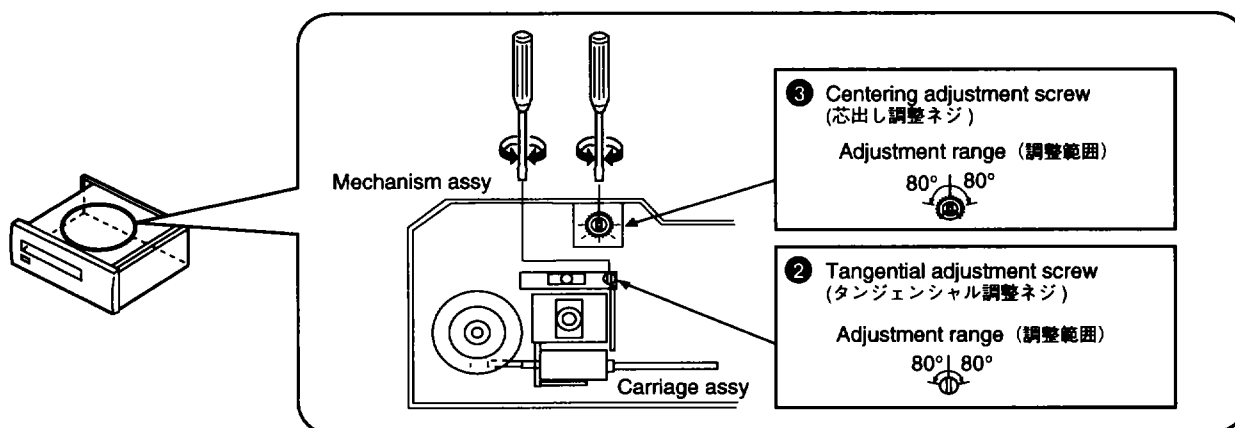
[Mechanical Part]

- ① Tilt Offset Adjustment (チルトオフセット調整)
- ② Tangential Direction Angle Adjustment (タンジェンシャル傾き調整)
- ③ Spindle Motor Centering Adjustment (スピンドル芯出し調整)
- ④ Crosstalk Check and Fine Tilt Offset Adjustment for Side A (クロストーク確認及び、チルトオフセット微調)
- ⑤ Focus Servo Loop Gain Adjustment (フォーカスサーボループゲイン調整)
- ⑥ Tracking Servo Loop Gain Adjustment (トラッキングサーボループゲイン調整)
- ⑦ RF Level Check (RFレベル確認)






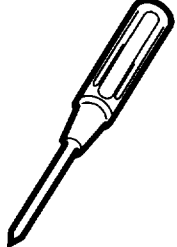

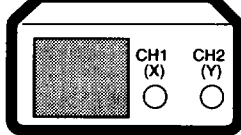
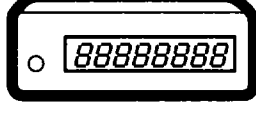
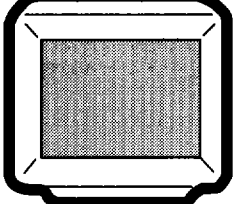
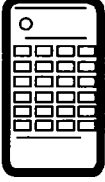
[Electrical Part]

- ① Master Clock Adjustment (マスタークロック調整)
- ② Output Video Level Adjustment (出力ビデオレベル調整)

■ Adjustment Points (Mechanism Part)

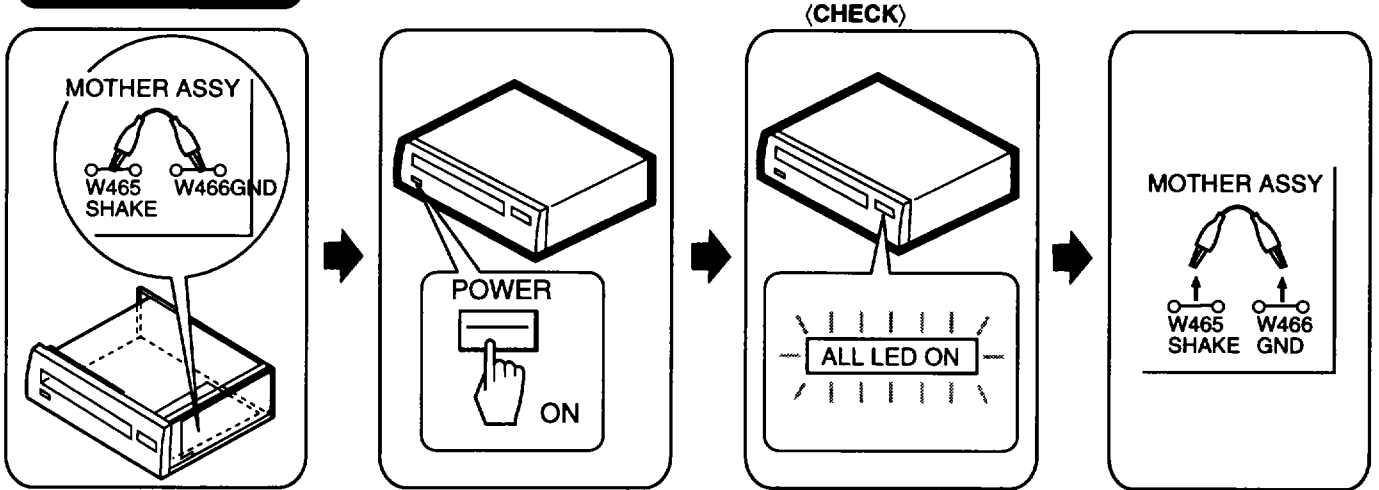


5.2 JIGS AND MEASURING INSTRUMENTS (調整に必要な治工具類)

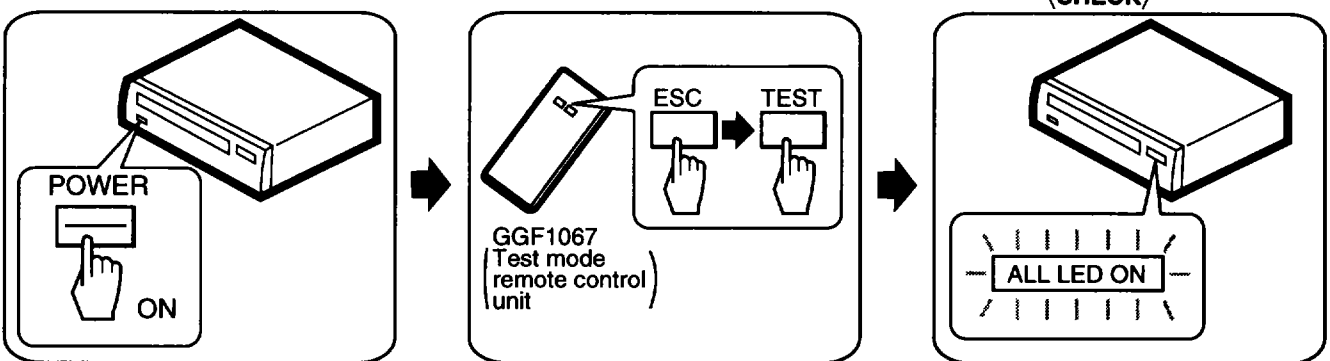
 <p>CD test disc (YEDS-7)</p>	 <p>LD test disc (GGV1012)</p>	 <p>⊖ Screwdriver (medium)</p>	 <p>⊖ Screwdriver (small)</p>
 <p>⊖ Precise screwdriver</p>	 <p>⊕ Screwdriver (large)</p>	 <p>⊕ Screwdriver (medium)</p>	 <p>Dual-trace oscilloscope (with delay) Frequency band $\geq 40\text{MHz}$</p>
 <p>Frequency counter Display digit $\geq 8\text{-digit}$</p>	 <p>TV monitor</p>	 <p>Test mode remote control unit (GGF1067)</p>	

5.3 TEST MODE (テストモード)

TEST MODE: ON

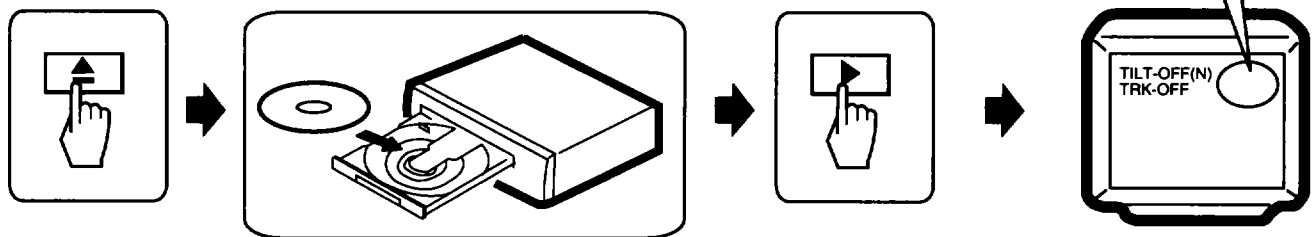


OR

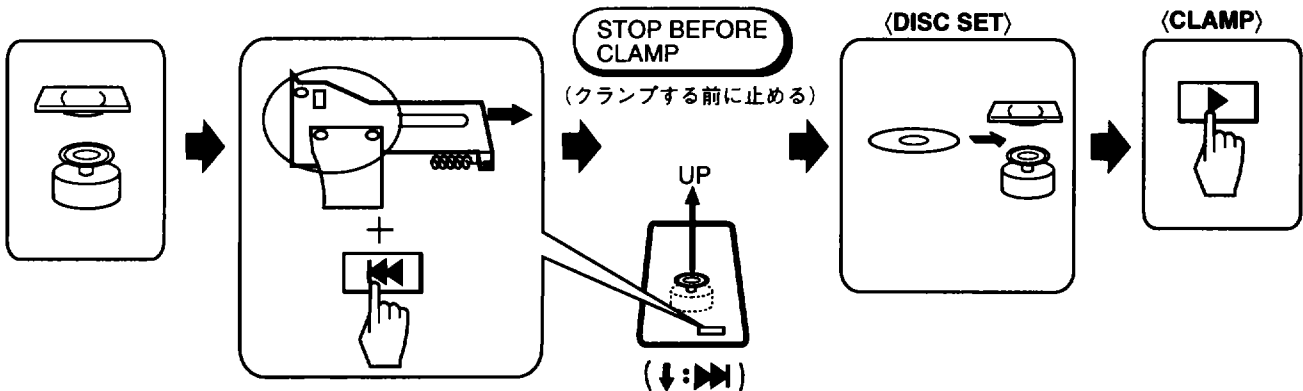


TEST MODE: DISC SET

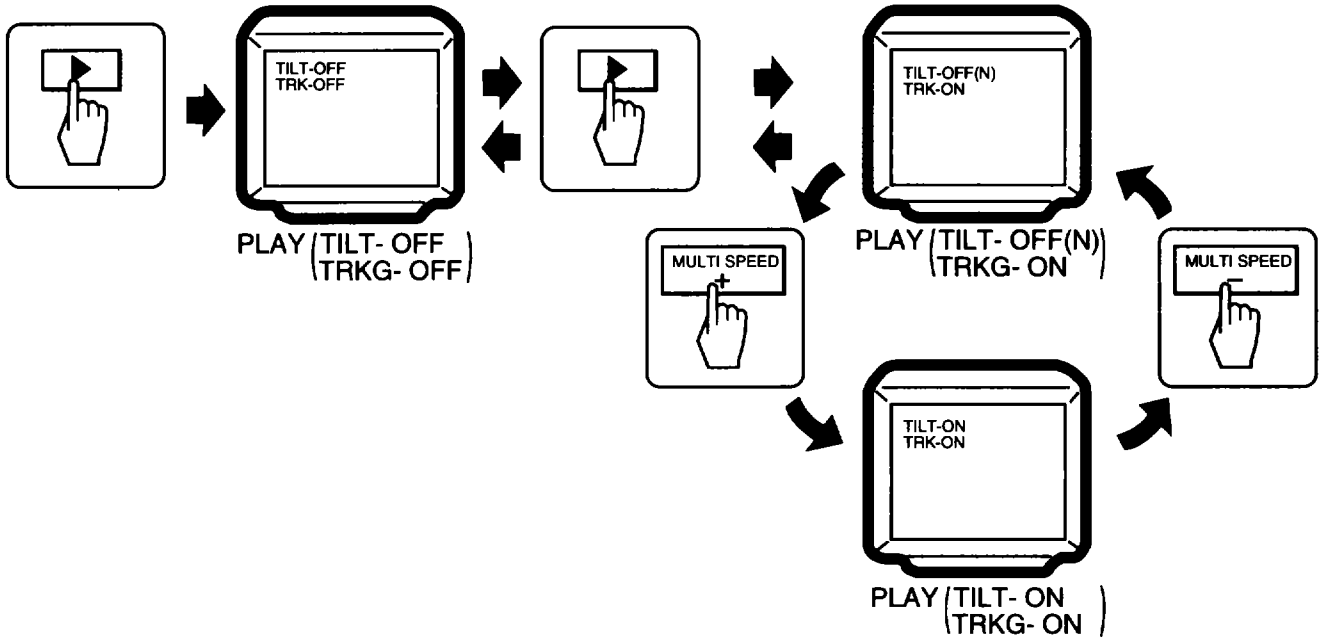
• With TRAY (トレイ有りの場合)



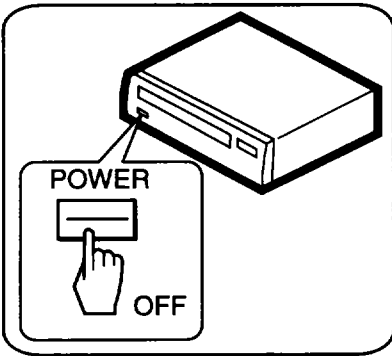
• No TRAY (トレイ無しの場合)



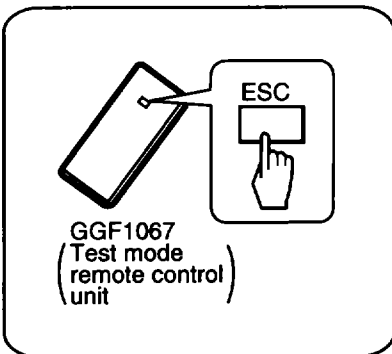
TEST MODE: PLAY



TEST MODE: OFF



OR



5.4 NECESSARY ADJUSTMENT POINTS (必要な調整項目)

When (このような時)

Adjustment Points

■ EXCHANGE MECHANISM ASSY PARTS
(メカASSY部品を交換したとき)

Exchange pickup
(ピックアップを交換したとき)



Mechanical point ①, ②, ③, ④, ⑤, ⑥, ⑦

Electric point _____

Exchange spindle motor
(スピンドルモータを交換したとき)



Mechanical point ③

Electric point _____

■ EXCHANGE PCB ASSY
(PCB ASSYを交換したとき)

Exchange board
MOTHER ASSY
(マザーボードを交換したとき)



Mechanical point ①, ④, ⑤, ⑥

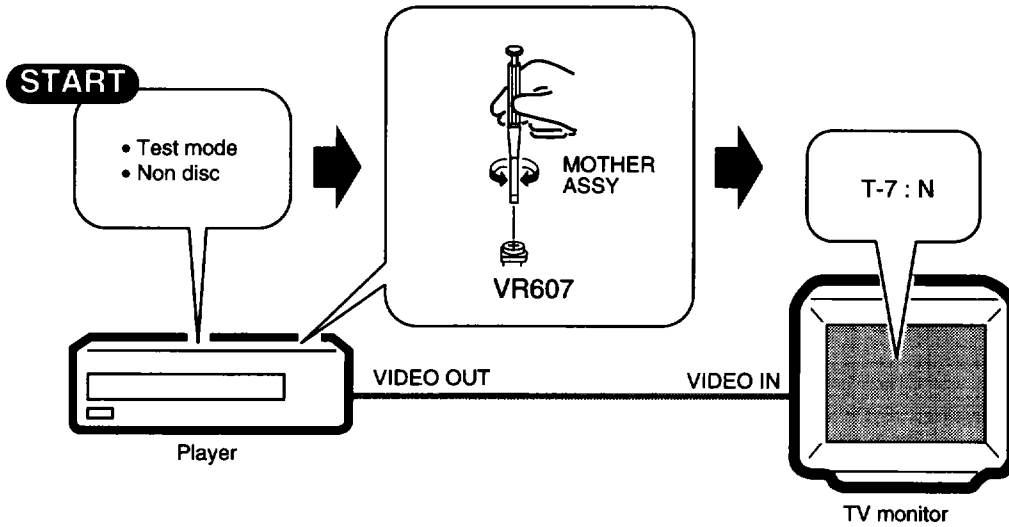
Electric point _____

Note : ① and ② are adjusted already. (①,②は調整済)

5.5 MECHANICAL ADJUSTMENT (機構系の調整)

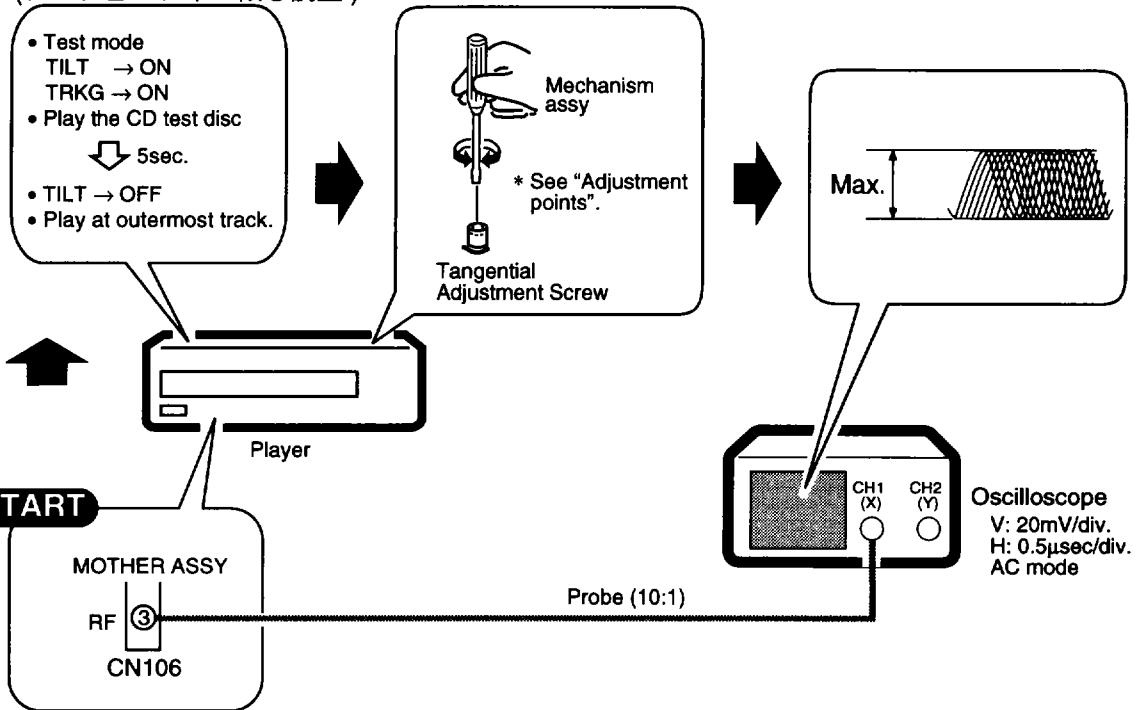
1 Tilt Offset Adjustment

(チルトオフセット調整)



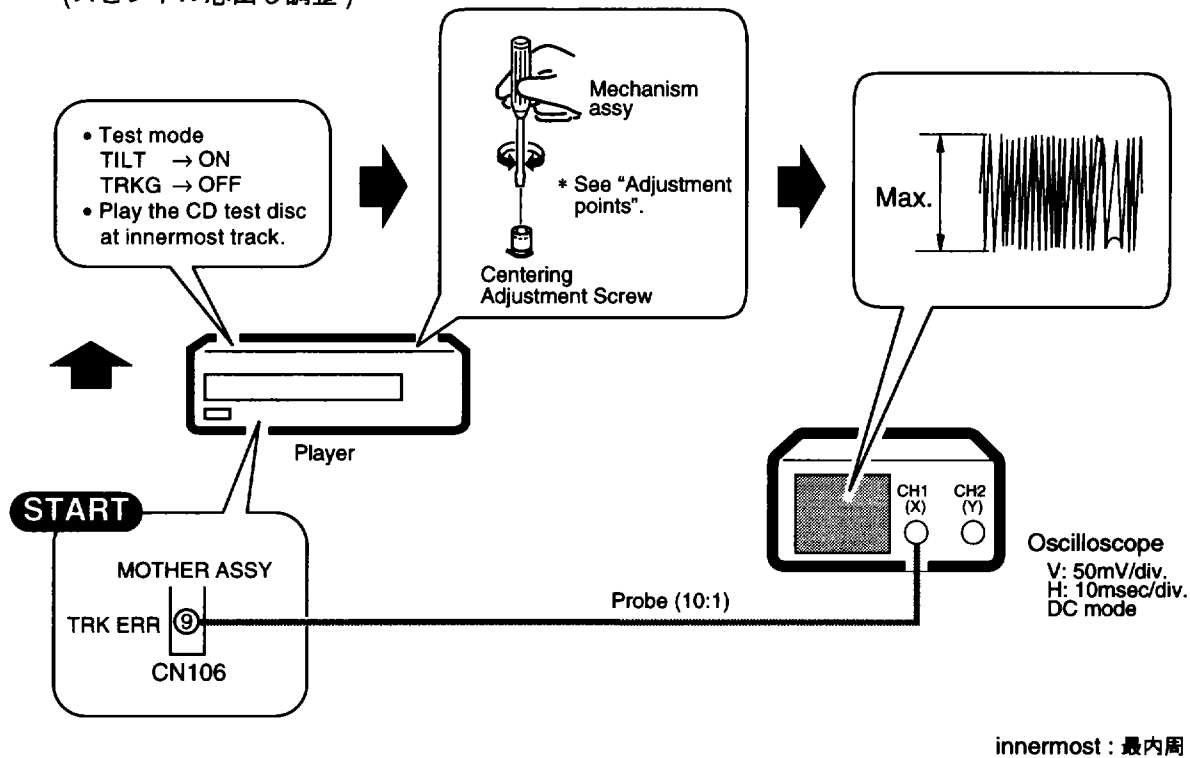
2 Tangential Direction Angle Adjustment

(タンジェンシャル傾き調整)

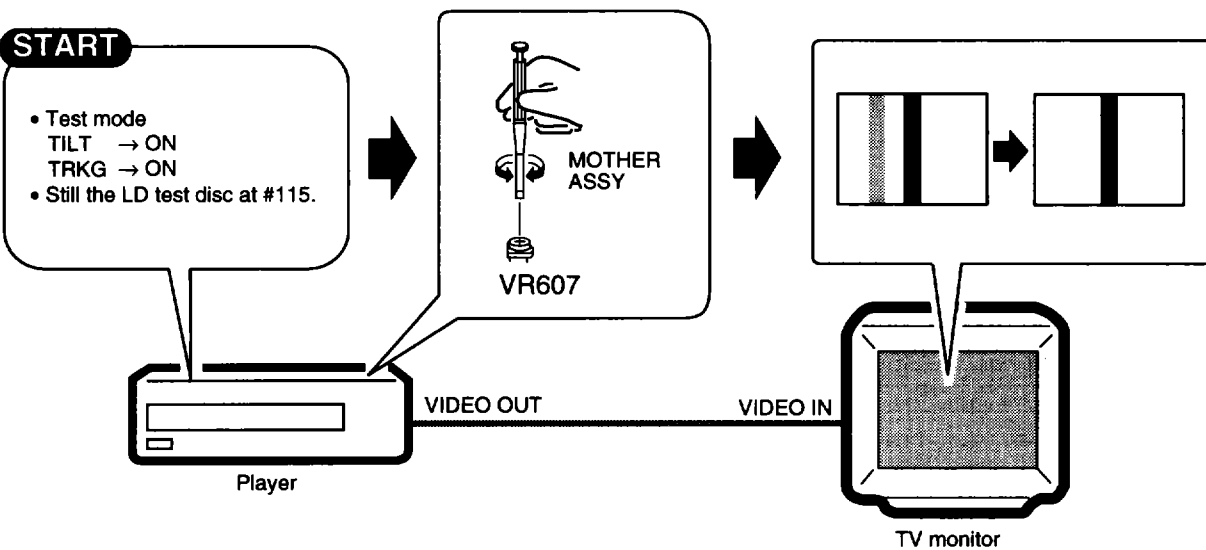


outermost : 最外周

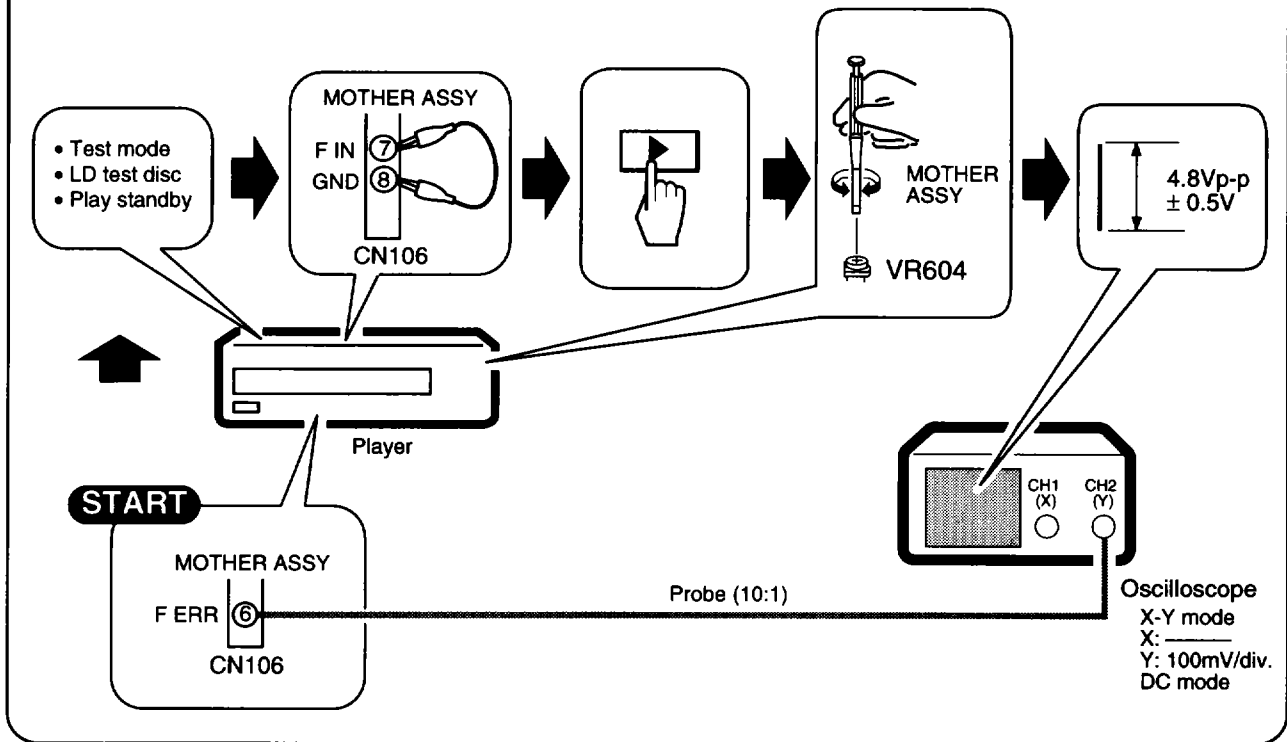
3 Spindle Motor Centering Adjustment (スピンドル芯出し調整)



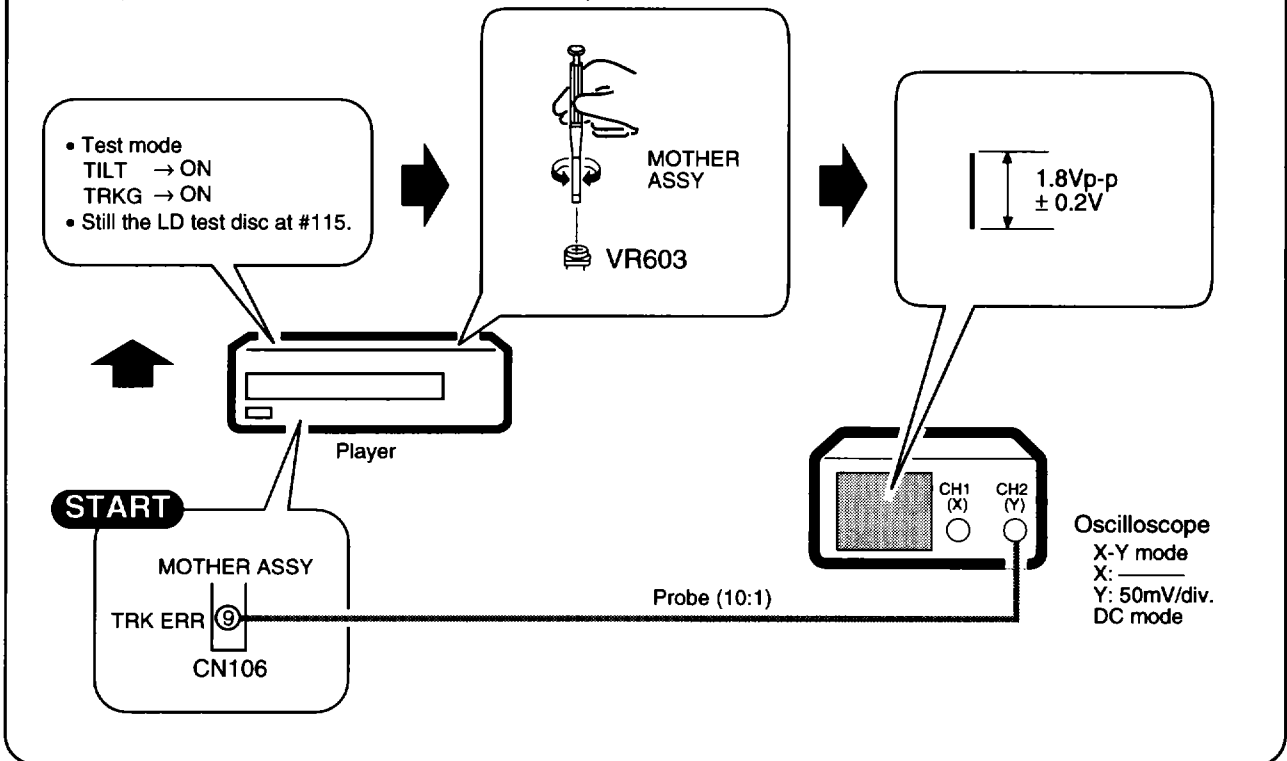
4 Crosstalk Check and Fine Tilt Offset Adjustment (クロストーク確認及び、チルトオフセット微調)



5 Focus Servo Loop Gain Adjustment (フォーカスサーボループゲイン調整)

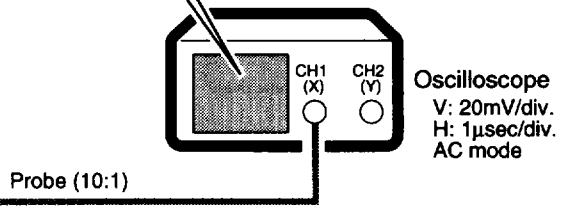
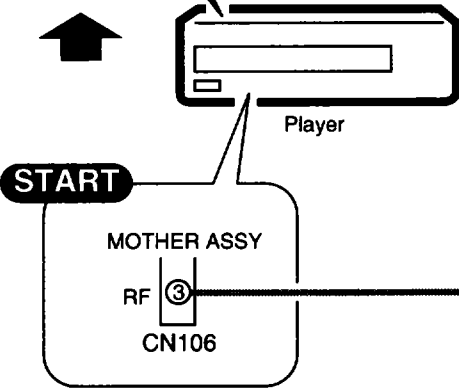
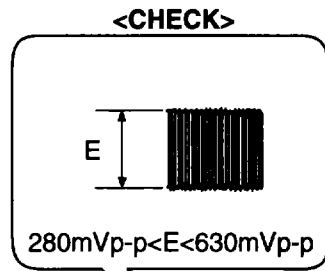


6 Tracking Servo Loop Gain Adjustment (トラッキングサーボループゲイン調整)



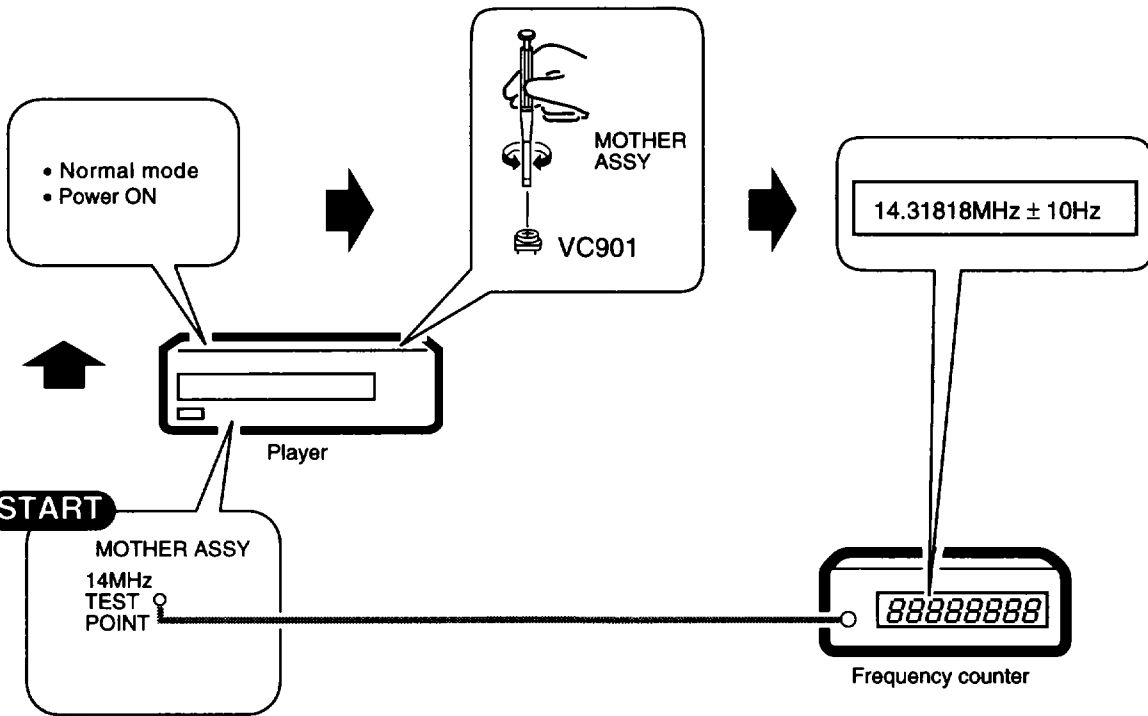
7 RF Level Check
(RFレベル確認)

- Test mode
TILT → ON
TRKG → ON
- Still the LD test disc at #115.

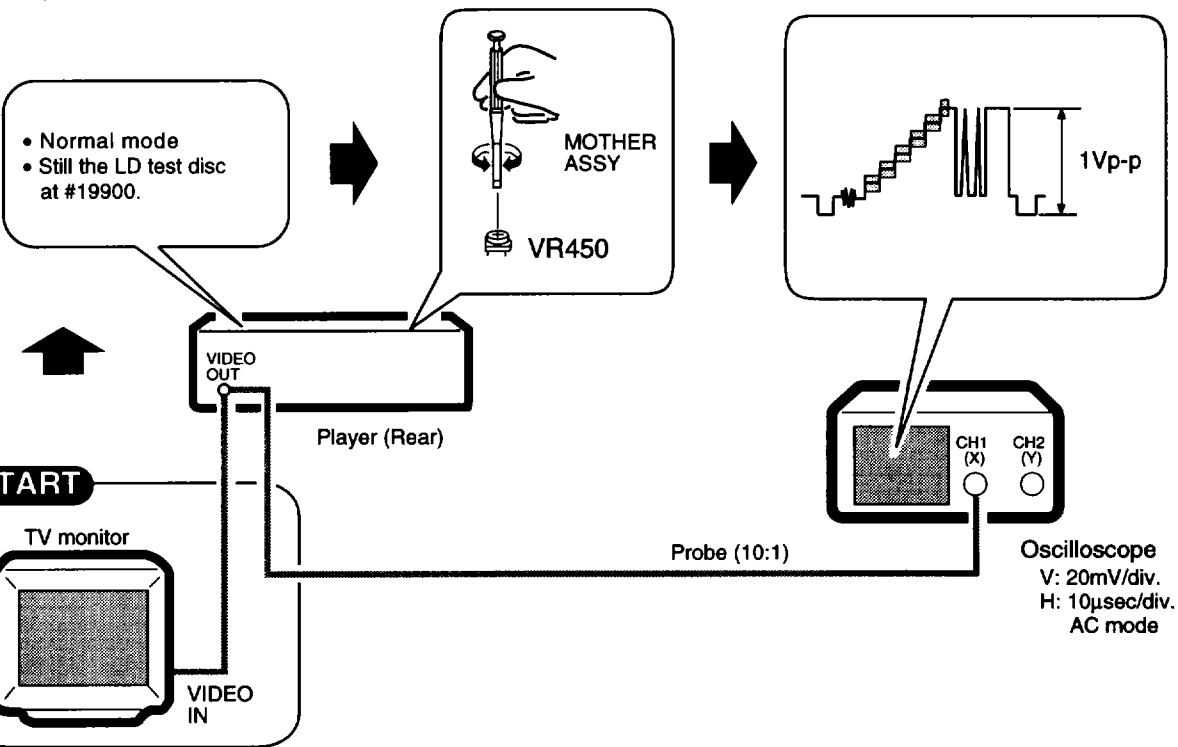


5.6 ELECTRICAL ADJUSTMENT (電気系の調整)

① Master Clock Adjustment
(マスタークロック調整)

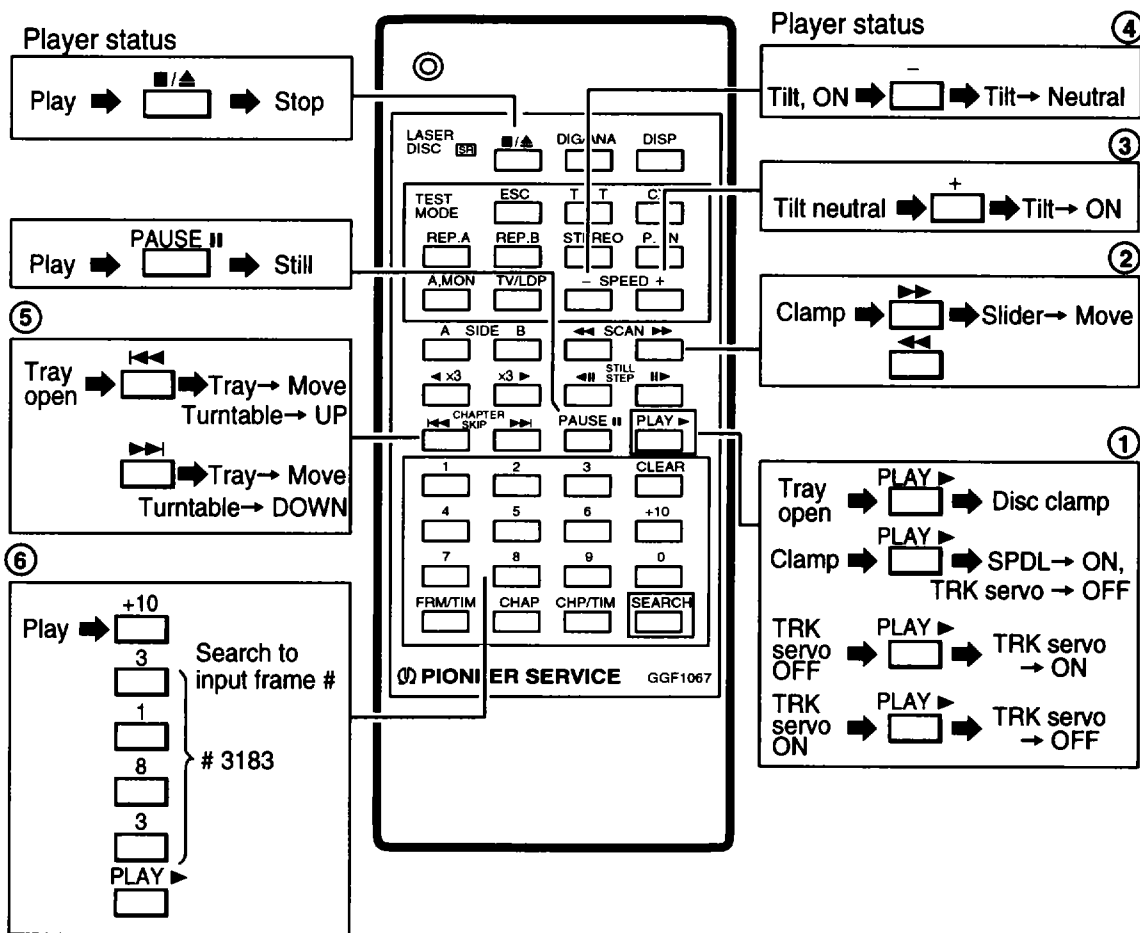


② Output Video Level Adjustment
(出力ビデオレベル調整)

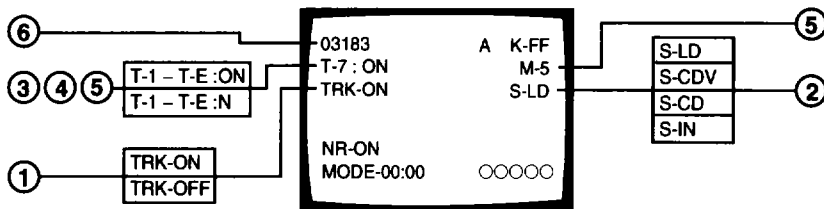


5.7 OPERATIONS IN THE TEST MODE (テストモード時のサービス用リモコン操作方法)

■ Test Mode Remote Control Unit (GGF1067)



■ TV Monitor Display



6. SELF-DIAGNOSTIC FUNCTIONS

The self-diagnostic functions automatically display an error code on the TV screen and front panel fluorescent display section when there is an error. The customer checks the error code and conveys it to the service personnel to make repairs more efficient.

After an error occurs, even if the error code goes off, you can display the error code again by holding down the **CLEAR** key for 5 seconds (except a loading error **L *** display). At that time, partial error is displayed with the mechanism switch information. However, if the power cord is unplugged, the error code information is lost.

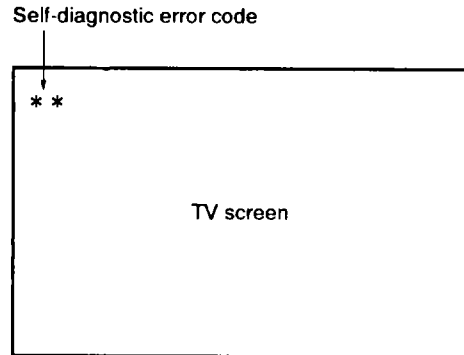


Fig. 1 TV screen display

This table explains the information for analyzing the cause when an error occurs with the CLD player.

Self-diagnostic error code	Contents	Conditions	Probable cause
H0	Spindle overcurrent detection error.	In the play state, overcurrent was detected in the spindle motor. Monitoring starts 5 seconds after the start of play or special playback mode, this error is detected if the overcurrent port is "L" for 4 seconds.	<ul style="list-style-type: none"> • Motor NG • Clamper rubbing
U0	FG abnormality error	<ol style="list-style-type: none"> ① At LD start-up, the rate of rotation calculated from the FG was less than 15 rpm for 5 consecutive seconds from the spindle run command. ② At CD start-up, there was less than 1/8th rotation even after 5 seconds had passed since the end of acceleration. ③ During play search, CD : subcodes are being read/LD : Phillips codes are being read and the spindle is locked, but a state in which the rate of rotation calculated from the FG was less than 15 rpm continued for 5 seconds or more. In the above case, it is judged that an abnormality has occurred in the FG sensor and that accurate rotation rate calculation has become impossible. 	<ul style="list-style-type: none"> • FG sensor abnormality, FG signal not coming to mechanism controller • FG sensor clogged • Rubbing between FG sensor and slit • Turntable dropped • FG slit deposition NG
H1	Partial short error	<ol style="list-style-type: none"> ① At LD start-up, the speed did not reach 1200 rpm within a certain time (12 seconds) after the spindle run command. ② At CD start-up, a certain speed (313 rpm) was not reached within 6 seconds from the end of spindle acceleration. 	<ul style="list-style-type: none"> • Spindle motor NG • Commutator NG • Bearing too tight • Power supply NG
H2 A0	Power supply abnormality error	– 5V power supply abnormality detected. The power supply abnormality port is constantly monitored and if its signal stays high for about 1 second consecutively, the power supply is judged to be abnormal.	<ul style="list-style-type: none"> • – 5V not fed from POWER SUPPLY assy • Parts shorted
L *	Loading error	<ol style="list-style-type: none"> ① When loading operation goes over time (approx. 10 sec.). ② When assist at disc sense entry ends and is not tilt neutral. ③ When assist at set up entry ends and is not tilt neutral. 	<ul style="list-style-type: none"> • Tilt switch 1, 2, 3 abnormal, so tilt/loading state not read in correctly • Tilt/loading mechanism mechanically locked • Drive IC NG • Power supply NG
E *	Slider error	During slider movement, a time over-run occurred (track count search 20 seconds, mandatory movement 10 seconds)	<ul style="list-style-type: none"> • Slider ceased being able to run • The slider mechanism is mechanically locked and can no longer move to its target. • Slider position switch NG • Flexible cable pulled out • Drive IC NG • Power supply abnormal
U1	Miss clamp error	<ol style="list-style-type: none"> ① During LD setup, after 1/8th rotation, the track count during 1/8 rotation exceeded 511. ② During start-up, the focus was lost once and refocusing was attempted, but the focus could not be locked. ③ Two FG pulses did not come within 800 ms from from the start of LD start-up. ④ The disc clamp operation did not end within 5 seconds. 	<ul style="list-style-type: none"> • Disc sandwiched • Disc shifted • Spindle motor NG • Disc scratched or dirty defocused during start-up • Two discs loaded • PU actuator NG • Tilt sensor NG • Tilt neutral NG (tilt base NG)

Self-diagnostic error code	Contents	Conditions	Probable cause
P *	Spindle error	① During TOC reading with an LD, the spindle servo was not locked within 60 seconds from the start of the spindle run. ② When CAV/CLV determination is not finished within 60 seconds from spindle servo lock. ③ The codes could not be read for 10 – 15 seconds consecutively for an LD or 7 – 10 seconds for a CD/CDV and the spindle servo was not locked. ④ The speed exceeded 2100 rpm during LD start up.	P0 :•PH code, SUB-Q code can not be read •VCO, PLL offset out of adjustment •Disc defect P5:•PAL disc, mirror disc, etc. PLAY •No RF P6:•Spindle servo does not lock •Spindle motor NG
F *	Focus error	① "In the "no disc" state, a setup command was received from the mode controller. ② When LD is out of focus when slider is moved to starting position during set up. In case of CD/CDV is NG even after three focus tries. ③ During start-up, the maximum slider servo duty continued for 3 loops or more.	F5 :•CD, LD on top of each other •LD scratched or dirty defocused during slider movement •Disc NG •Slider position switch NG F6 :•Inner edge of disc scratched or dirty •Slider ran into inner edge mechanical stopper

* Besides the above errors, there is the "U2" communications error (the mode controller could not communicate normally with the mechanism controller)
 * The probable cause is a defective mechanism controller, disconnected cable, etc..

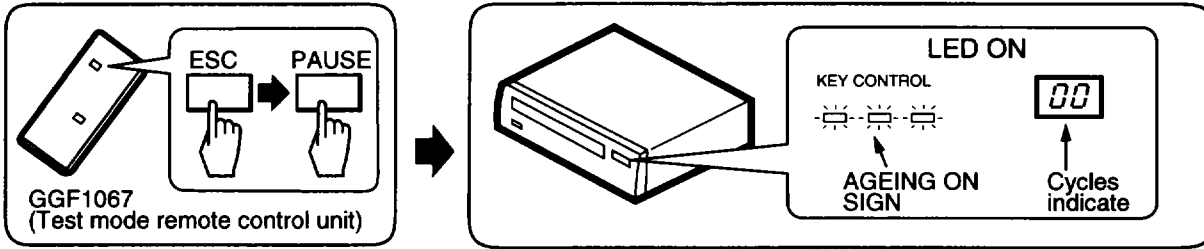
Mechanism mode contents (meanig of * for L * etc.)
 0 : Play 5 : Setup (rotation start)
 1 : Open 6 : TOC read
 2 : Standby 7 : Play
 3 : Clamp 8 : Search
 4 : Disc sense F : Recovery mode

* 0 : Normal playing
 7 : Moving to play operation

7. AGEING MODE (エージングモード)

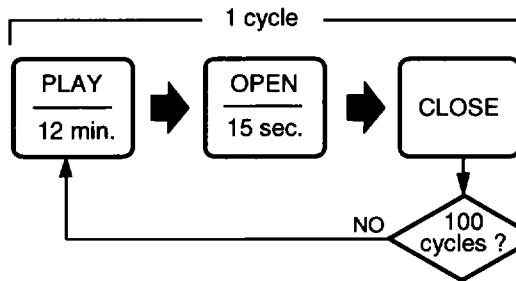
AGEING MODE: ON

•Note for KARAOKE model : Set the SINGLE PLAY (一曲停止) mode to OFF.

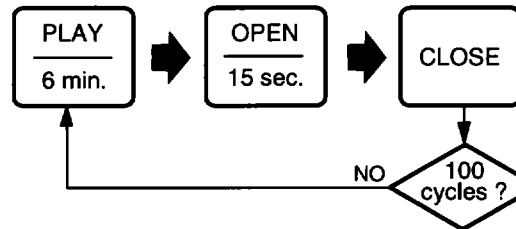


AGEING

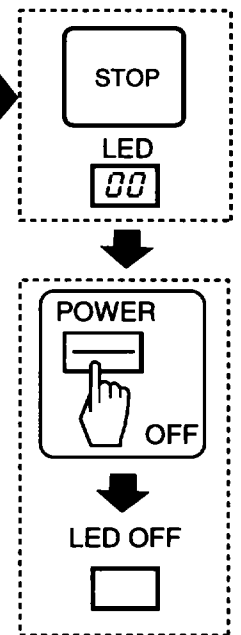
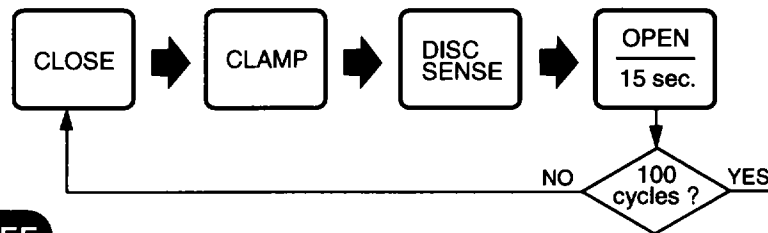
- LD



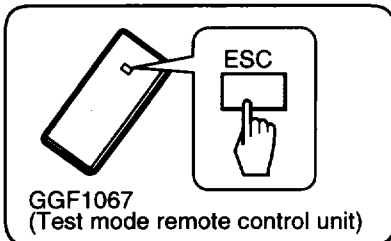
- CD, CDV



- NO DISC

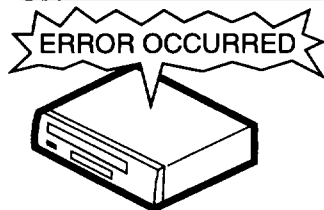


AGEING MODE: OFF



ERROR OCCURRED

ERROR OCCURED : エラー発生



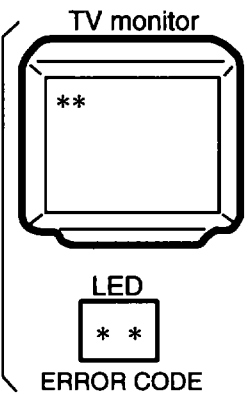
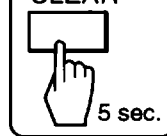
AUTOMATIC



LED



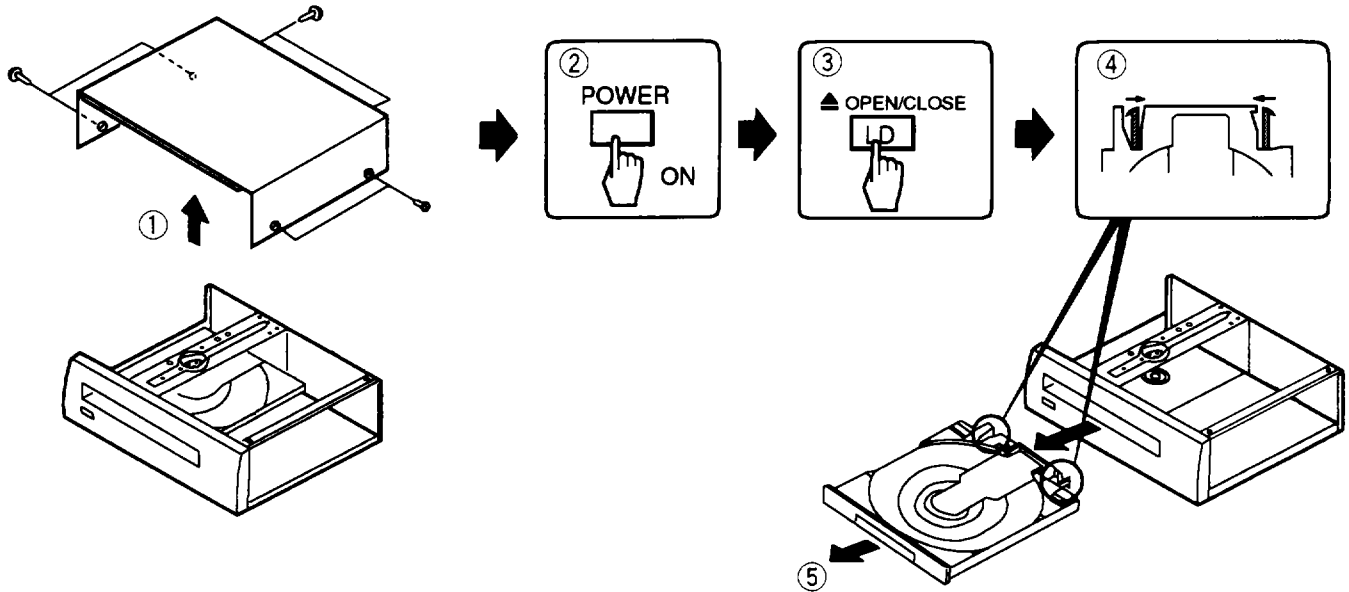
CLEAR



8. DISASSEMBLY/ASSEMBLY (分解/組立の手順)

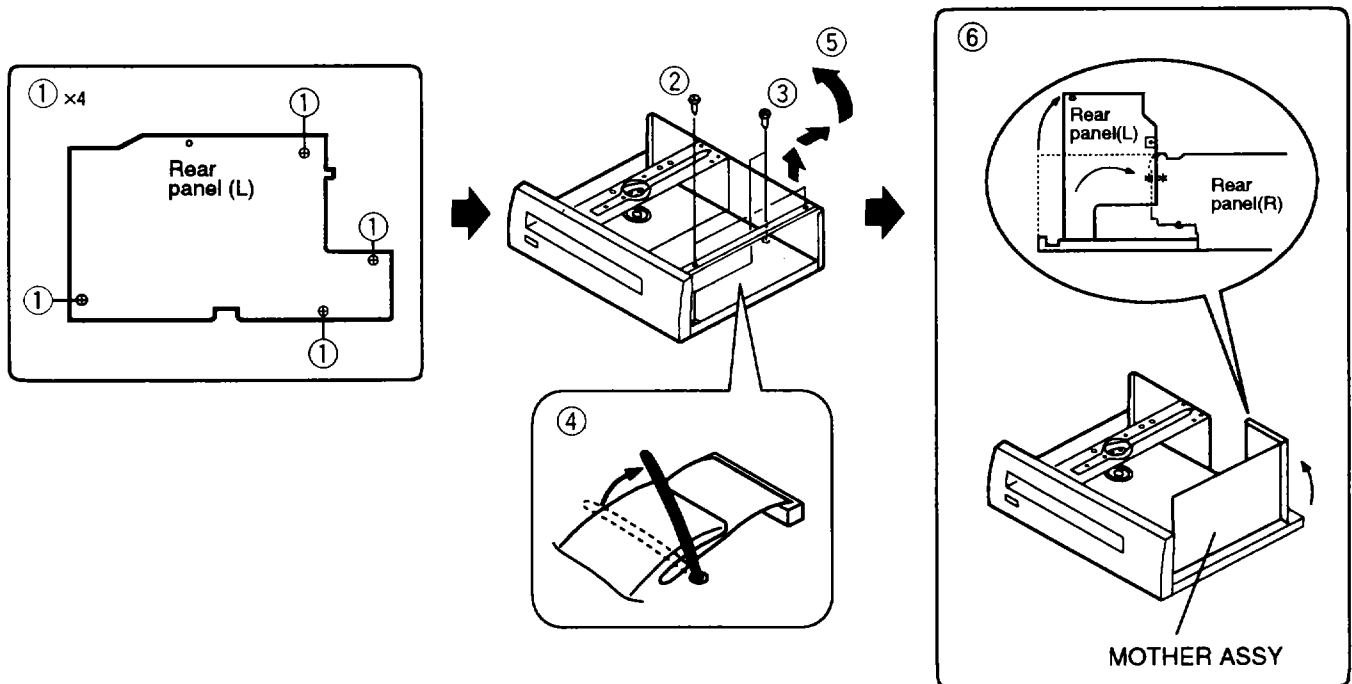
8.1 DISC TRAY

- Disassembly : ①→②→③→④→⑤
- Assembly : ⑤→①



8.2 MOTHER ASSY

- Disassembly : ①→②→③→④→⑤→⑥
- Assembly : ⑥→⑤→④→③→②→①



9. IC INFORMATION

■ PD3339A (MOCB ASSY : IC101) · MODE CONTROL IC

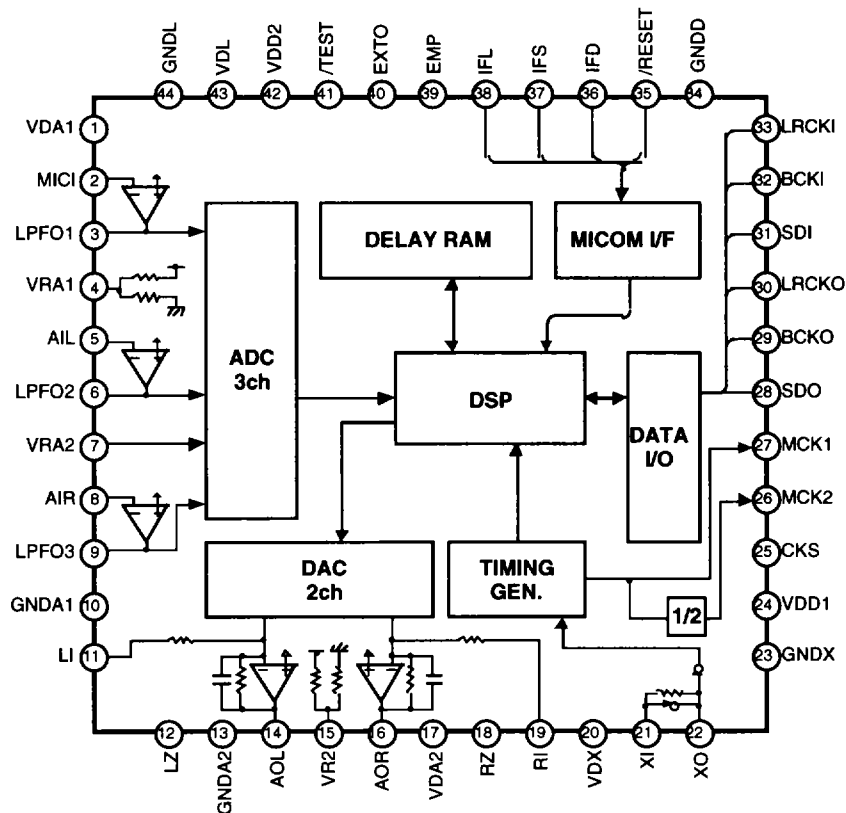
- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

•Pin Function

No.	Mark	Pin Name	I/O	Function	No.	Mark	Pin Name	I/O	Function	
1	P04	MODE SEL	I	MIC switch input	41	P60	e	O	7 seg. segment e	
2	P05	ECHO VOL	I	Echo audio volume input	42	P61	b	O	7 seg. segment b	
3	P06	ONTA BAL	I	Guide vocal audio volume input	43	P62	f	O	7 seg. segment f	
4	P07	MODE SW	I	Standard/Karaoke/External input switching input	44	P63	a	O	7 seg. segment a	
5	AVSS	—	I	GND	45	P64	c	O	7 seg. segment c	
6	TEST	Not used	I	GND	46	P65	g	O	7 seg. segment g	
7	X2	Not used	O	NC	47	P66	d	O	7 seg. segment d	
8	X1	Not used	I	GND	48	P67	Not used	O	NC	
9	VSS	GND	I	GND	49	P70	Not used			
10	OSC1	—	I	Main system clock oscillation (8MHz)	50	P71	Not used			
11	OSC2	—	O		51	P72	Not used			
12	xRST	XRESET IN	I	CPU reset input (Reset for L)	52	P73	Not used			
13	IRQ0	SHAKE	I	Mechanism controller serial communication request	53	P74	Not used			
14	IRQ1	SEL IR	I	Remote control input	54	P75	Not used			
15	P12	Not used	O	NC	55	P76	Not used			
16	P13	POWER	O	Mother board power supply switching output (Power ON for H)	56	P77	Not used			
17	P14	EFLG	I	For error rate measurement	57	VCC	—			I
18	P15	FSX	I	For error rate measurement	58	P80	DIGIT1	O	7 seg. digit 1	
19	P16	Not used	I	GND	59	P81	DIGIT2	O	7 seg. digit 2	
20	P33	XINT/EXT	O	Internal/External audio selection	60	P82	Not used	O	NC	
21	P32	I/O CLKI	O	Clock output for I/O expander	61	P83	Not used			
22	P31	I/O DATA	O	Data output for I/O expander	62	P84	Not used			
23	P30	XMIC ON	O	Mic audio input switching output (Output ON for L)	63	P85	Not used			
24	P47	Not used	O	NC	64	P86	WSIDE SEL	I	Single side/Double sided model switch port (L : Single side model)	
25	P46	DOG FOOD	O	Pulse output for Watchdog	65	P87	Not used	O	NC	
26	P45	Not used	O	NC	66	P90	Not used	O		
27	P44	Not used	O		67	SCKI	S-LOCK	I/O	Serial communication clock (Mech. controller, OSD and DSP)	
28	P43	Not used	O		68	SII	S-MTOF	I	Serial communication data input (Mech. controller)	
29	P42	Not used	O		69	SOI	S-FTOM	O	Serial communication data output (Mech. controller, OSD and DSP)	
30	P41	Not used	O		70	P94	XRESET OUT	O	Mother board reset output (Reset for L)	
31	P40	Not used	O		71	P95	XOSDCS	O	CS output of OSD IC	
32	P50	Not used	O		72	P96	XDSPCS	O	CS output of DISP IC	
33	P51	Not used	O		73	P97	Not used	O	NC	
34	P52	LED (b)	O		Key control flat LED (Lights for H)	74	PAO			Not used
35	P53	LED (NTL)	O		Key control natural LED (Lights for H)	75	PAI			Not used
36	P54	LED (#)	O	Key control sharp LED (Lights for H)	76	AVCC	—	I	+5V	
37	P55	LED (PLAY)	O	PLAY LED (Lights for H)	77	ANO	KIN0	I	adc input : A/D key input 0 (0 to 5V)	
38	P56	LED (PAUSE)	O	PAUSE LED (Lights for H)	78	ANI	KIN1	I	adc input : A/D key input 1 (0 to 5V)	
39	P57	Not used	O	NC	79	PO2	KIN2	I	adc input : A/D key input 2 (0 to 5V)	
40	P17	Not used	I	NC	80	PO3	MODEL SEL	I	adc input : Model switch port	

■TC9409AF-001 (MOTHER ASSY : IC300)
 · DIGITAL AUDIO SIGNAL PROCESSOR

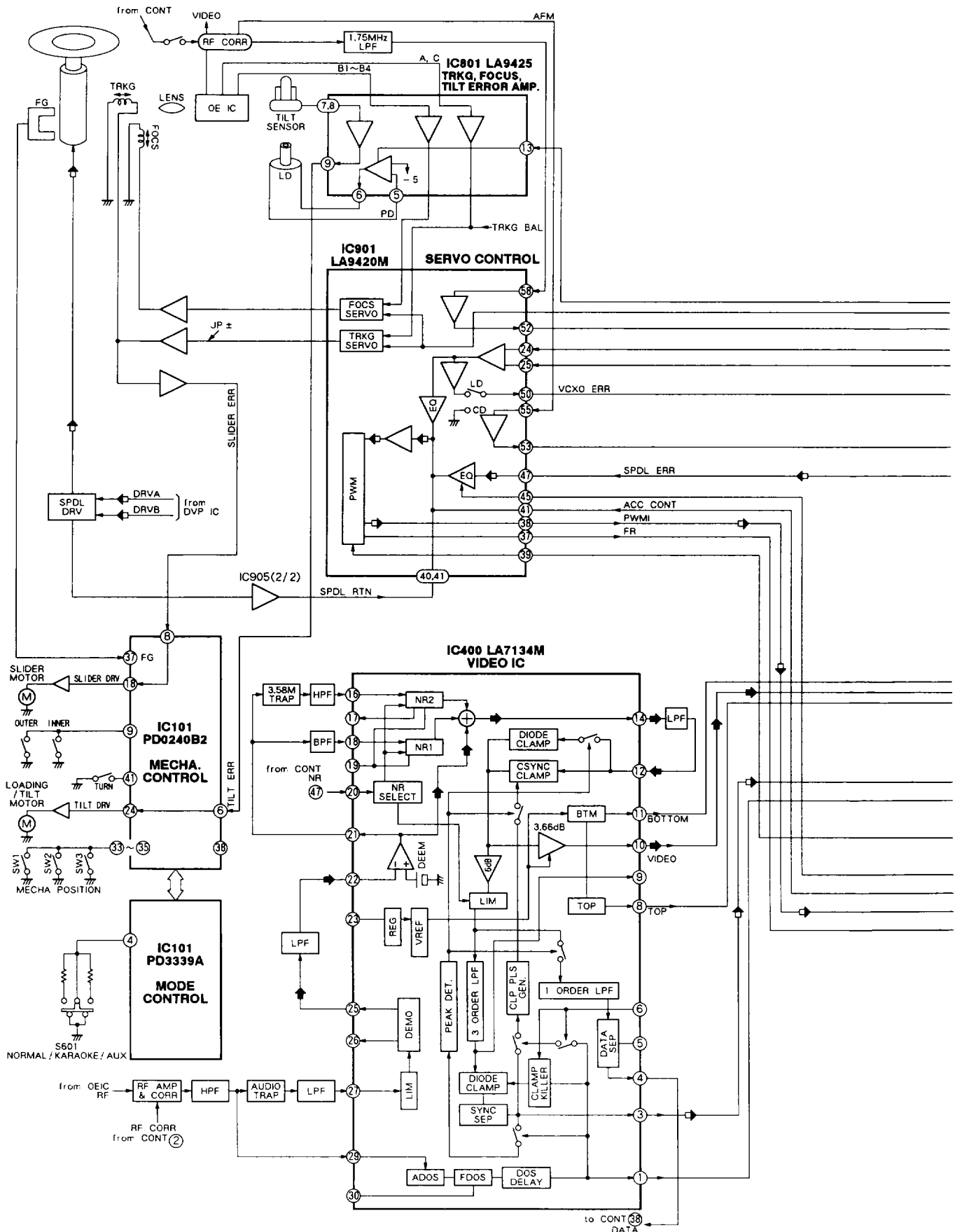
●Block Diagram

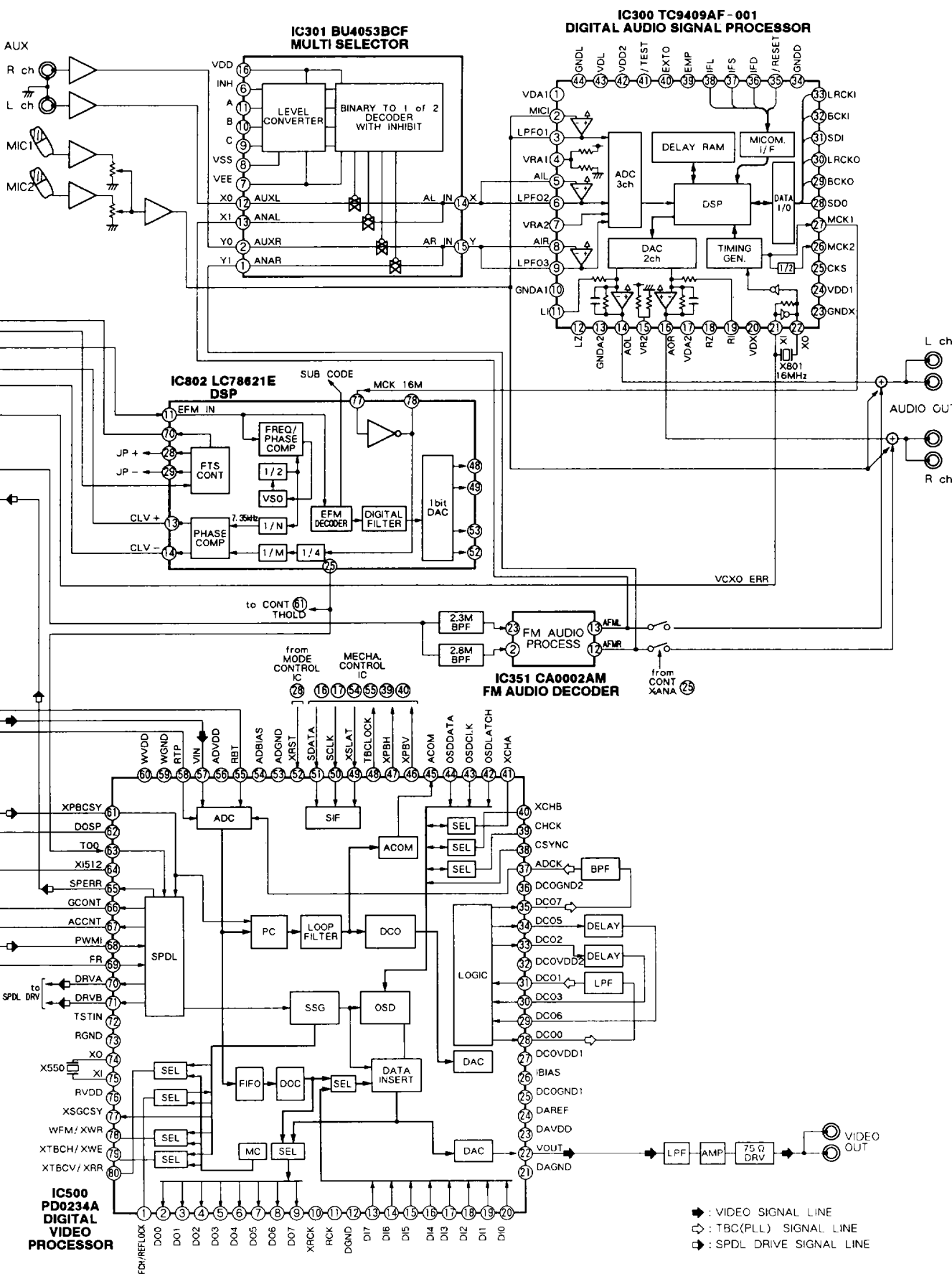


●Pin Function

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
1	VDA1	—	ADC power supply	23	GNDX	—	Ground for oscillation section
2	MIC1	I(A)	LPF input for MIC input	24	VDD1	—	Digital power supply
3	LPFO1	O(A)	LPF output for MIC input	25	CKS	I	Master clock selection (H : 256/384fs, L : 512/768fs)
4	VRA1	—	ADC reference voltage	26	MCK2	O	Oscillation clock output for frequency divided by 2
5	AIL	I(A)	LPF input for L ch line input	27	MCK1	O	Oscillation clock output
6	LPFO2	O(A)	LPF output for L ch line input	28	SDO	O	Digital audio data output
7	VRA2	—	Reference power supply for ADC	29	BCKO	O	Bit clock output
8	AIR	I(A)	LPF input for R ch line input	30	LRCKO	O	Channel clock output
9	LPFO3	O(A)	LPF output for R ch line input	31	SDI	I	Digital audio data input
10	GND A1	—	ADC ground	32	BCKI	I	Bit clock input
11	LI	I	L ch analog adder input	33	LRCKI	I	Channel clock input
12	LZ	O	L ch digital input zero detection	34	GND D	—	Digital ground
13	GND A2	—	DAC ground	35	/RESET	I(UP)	Reset (Reset for L)
14	AOL	O(A)	L ch DAC output	36	IFD	I	Microcomputer I/F data input
15	VR2	—	DAC reference voltage	37	IFS	I	Microcomputer I/F data shift clock input
16	AOR	O(A)	R ch DAC output	38	IFL	I	Microcomputer I/F latch pulse input
17	VDA2	—	DAC power supply	39	EMP	I	Deemphasis setting (Deemphasis ON for H)
18	RZ	O	R ch digital input zero detection	40	EXTO	O	Expansion output
19	RI	I	R ch analog adder input	41	/TEST	I(UP)	Test mode setting (Normally, fixed for H)
20	VDX	—	Power supply for oscillation section	42	VDD2	—	Digital power supply
21	XI	I	Connect a oscillator	43	VDL	—	Digital power supply for DRAM
22	XO	O	(any of 256, 384, 512 or 768fs)	44	GND L	—	Digital ground for DRAM

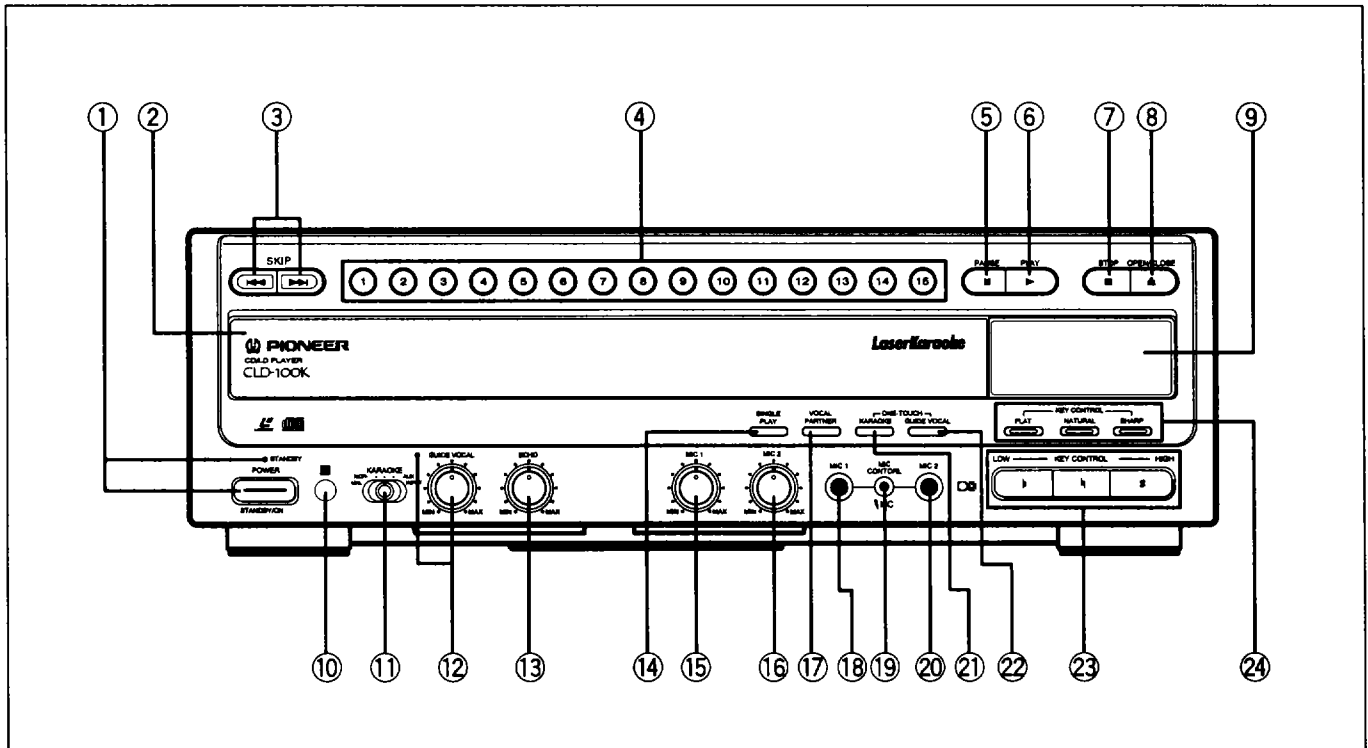
10. BLOCK DIAGRAM





◆ : VIDEO SIGNAL LINE
 ⊕ : TBC(PLL) SIGNAL LINE
 ⊖ : SPDL DRIVE SIGNAL LINE

11. PANEL FACILITIES



- | | |
|---|--|
| <ul style="list-style-type: none"> ① POWER STANDBY/ON switch and STANDBY indicator
Press to turn the power on and off. ② CD/LD Disc table ③ SKIP buttons ④ Direct music search buttons ⑤ PAUSE () button ⑥ PLAY (▶) button ⑦ STOP (■) button ⑧ OPEN/CLOSE (▲) button ⑨ Display window ⑩ Remote sensor ⑪ NORMAL/KARAOKE/AUX INPUT selector | <ul style="list-style-type: none"> ⑫ GUIDE VOCAL level control/indicator ⑬ ECHO level control ⑭ SINGLE PLAY button/indicator ⑮ MIC 1 level control ⑯ MIC 2 level control ⑰ VOCAL PARTNER button/indicator ⑱ MIC 1 jack ⑲ MIC CONTROL jack ⑳ MIC 2 jack ㉑ ONE-TOUCH KARAOKE button/indicator ㉒ ONE-TOUCH GUIDE VOCAL button/indicator ㉓ KEY CONTROL buttons ㉔ KEY CONTROL indicator |
|---|--|

12. SPECIFICATIONS

General

System	LaserVision Disc system and Compact Disc digital audio system
Laser	Semiconductor laser wavelength 780 nm
Power requirements	AC 110 - 240 V, 50/60 Hz
Power consumption	31 W
Weight	5.9 kg
Dimensions	420 (W) x 390 (D) x 132 (H) mm
Operating temperature	+5 °C ~ +35 °C
Operating humidity	5 % ~ 85 % (There should be no condensation of moisture.)

Video characteristics (two pairs)

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

Audio characteristics (two pairs)

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

Other terminals

Control input/output	Both miniature jacks
AUX	RCA jacks

Accessories

Remote control unit	1
Size "AA" (IEC R6P) dry cell batteries	2
Video cord	1
Audio cord	1
Power cord	1
Operating instructions	1
Warranty card	1

NOTE:

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