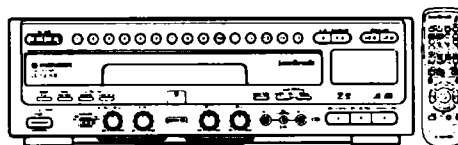


Service Manual



ORDER NO.
RRV1543

CD/LD PLAYER

CLD-2760K



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

Type	Model	Power Requirement	Remarks
	CLD-2760K		
TD	○	AC110-240V	
TL	○	AC110-240V	

CONTENTS

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		11. SPECIFICATIONS.....	77


1. SAFETY INFORMATION

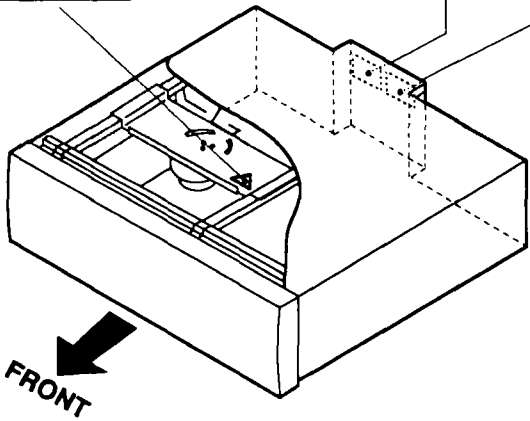
<p>VARO! AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NAKYMATTOMALLE LASERSATEILYLLE. ALA KATSO SATEESEEN.</p>		<p>WARNING! DEVICE INCLUDES LASER DIODE WHICH EMITS INVISIBLE INFRARED RADIATION WHICH IS DANGEROUS TO EYES. THERE IS A WARNING SIGN ACCORDING TO PICTURE 1 INSIDE THE DEVICE CLOSE TO THE LASER DIODE.</p>	
<p>ADVERSEL: USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSAETTELSE FOR STRÅLING.</p>	<p>LASER Kuva 1 Lasersateilyn varoituserkki</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>LASER Picture 1 Warning sign for laser radiation</p>
<p>VARNING! OSYNLIG LASERSTRÅLNING NÅR DENNA DEL AR OPPNAD OCH SPÅRREN AR 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





FRONT

Additional Laser Caution

- The ON/OFF statuses of the side-A/B detection switch (TURN switch on the TNSB assy), slider-position detection switches (INNER and 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 side-A/B detection switch for side A status (TRN : OFF) and the slider-position detection switches for the LD ACTIVE status (INNER : OFF, 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.
- 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 45 and 46.

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 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.
- Parts list without notice are common for CLD-2760K/TD and TL.

2.1 PACKING

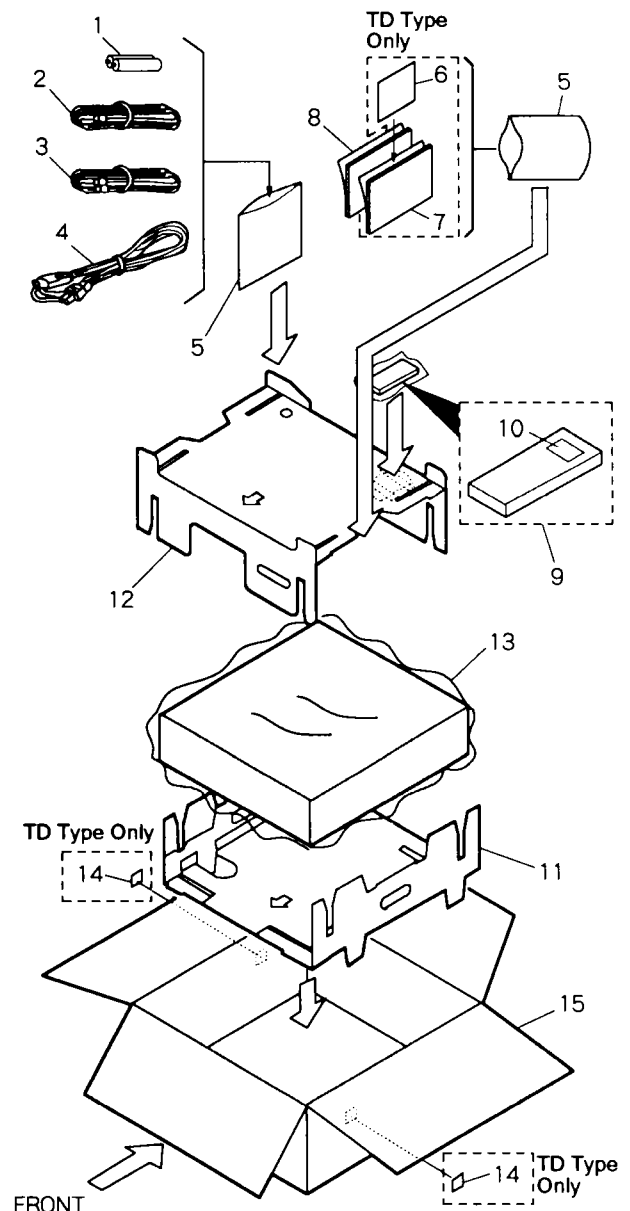
(1) CONTRAST OF CLD-2760K/TD AND TL.

CLD-2760K/TD and TL have the same construction except for the following:

Mark	No.	Symbol & Description	Part No.		Remarks
			CLD-2760K/TD	CLD-2760K/TL	
Δ NSP	4	AC Power cord	ADG1158	ADG1154	
	6	Warranty Card	ARW1020	Not used	
	7	Operating Instructions (Spanish)	VRC1048	Not used	
	14	TD Label	VRW1606	Not used	

(2) PARTS LIST FOR CLD-2760K/TD

Mark	No.	Description	Part No.
NSP	1	Dry Cell Battery (R03, AAA)	VEM-022
	2	Video Cord	VDE1048
	3	Audio Cord	VDE1047
Δ	4	AC Power Cord	ADG1158
	5	Polyethylene Bag (230 × 340 × 0.03)	Z21-038
NSP	6	Warranty Card	ARW1020
	7	Operating Instructions (Spanish)	VRC1048
	8	Operating Instructions (English/Chinese)	VRE1048
	9	Remote Control Unit	VXX2278
	10	Battery Cover	VNK2805
	11	Protector (Lower)	VHB1041
	12	Protector (Upper)	VHB1042
	13	Mirror Mat	DHL1006
	14	TD Label	VRW1606
	15	Packing Case	VHG1550



CLD - 2760K

2.2 EXTERIOR AND DISC TRAY SECTION

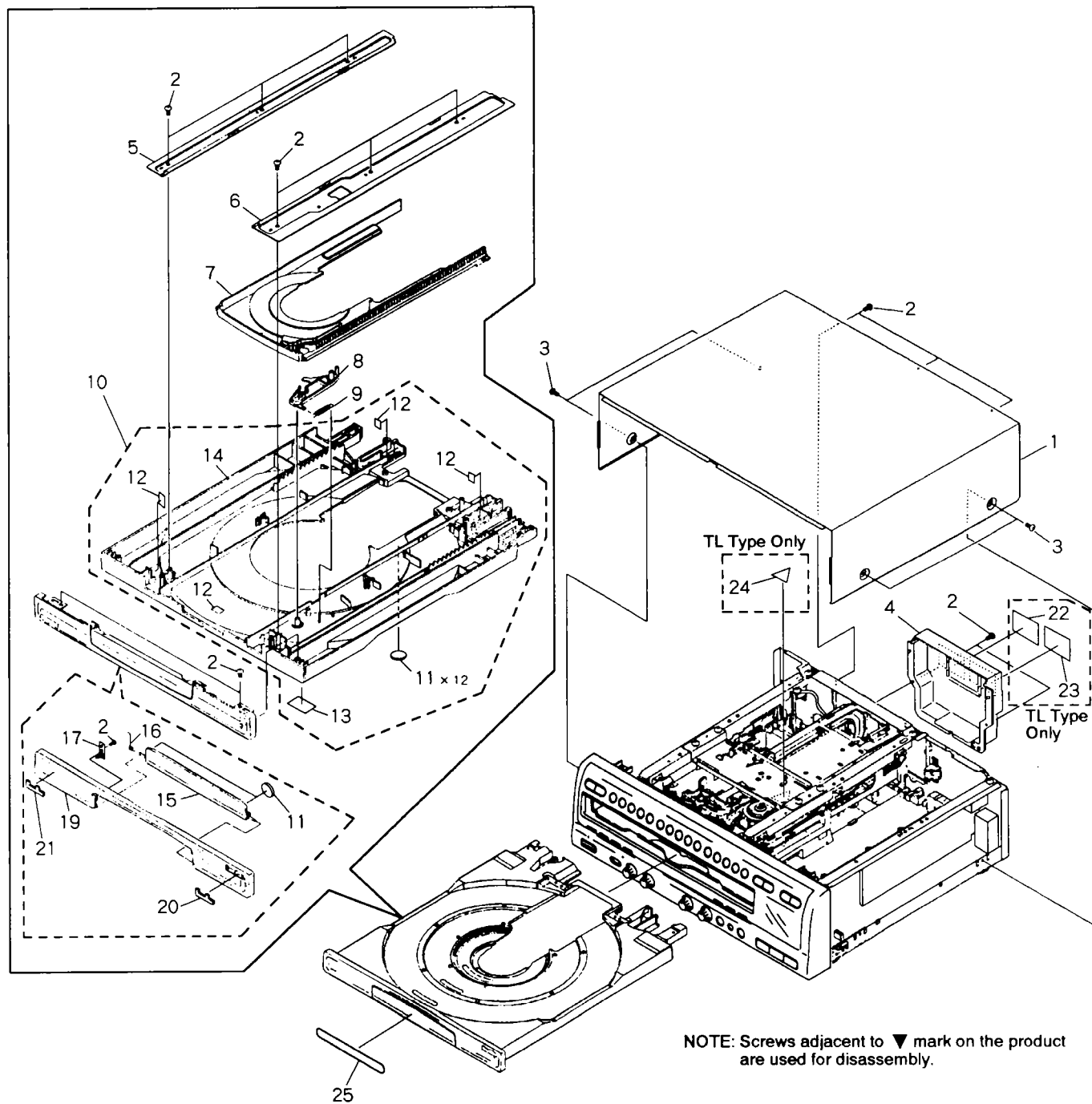
(1) CONTRAST OF CLD - 2760K/TD AND TL.

CLD - 2760K/TD and TL have the same construction except for the following:

Mark	No.	Symbol & Description	Part No.		Remarks
			CLD - 2760K/TD	CLD - 2760K/TL	
NSP	4	Rear Cover	VNK3704	VNK3801	
	22	Caution Label	Not used	PRW1018	
	23	Caution Label	Not used	VRW - 328	
	24	Caution Label	Not used	VRW - 329	

(2) PARTS LIST FOR CLD - 2760K/TD

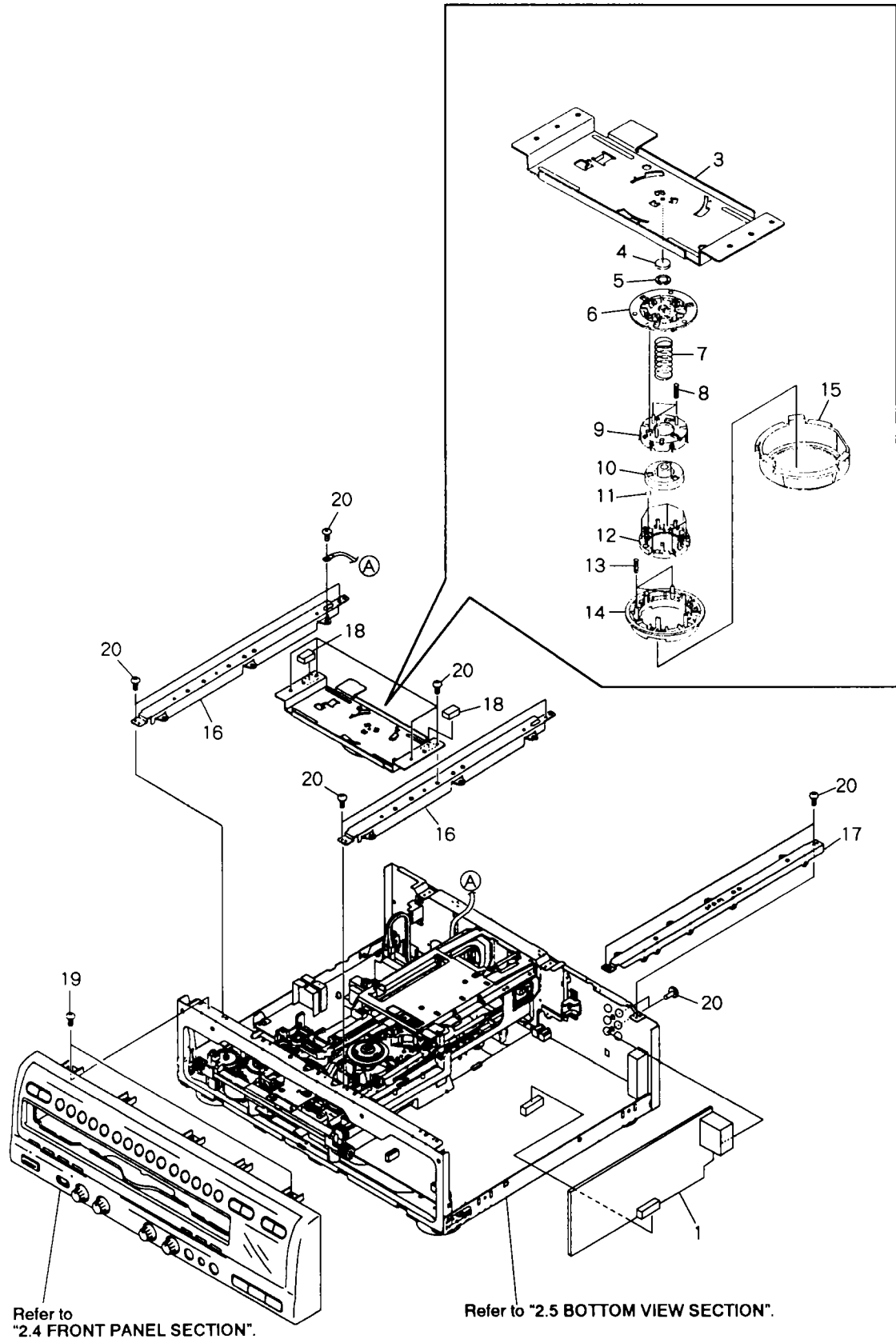
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Bonnet S	VXX2252		11	Cushion	VEC1682
	2	Screw	BBZ30P080FMC		12	Damp Cushion	VEC1683
	3	Screw	BCZ40P060FZK	NSP	13	Label	VRW1289
	4	Rear Cover	VNK3704		14	LD Tray Assy	VXA2173
	5	Guide Plate (R)	VNE1939		15	CD Door Assy	VXA2286
	6	Guide Plate (L)	VNE1938		16	Door Spring	VBH1248
	7	CD Tray	VNK3007		17	Door Holder	VNL1704
	8	Lock Plate	VNL1703		18	•••••	
	9	Lock Plate Spring	VBH1188		19	Tray Panel	VNK3671
	10	Tray Assy - S	VXX2307		20	Karaoke Plate	VAM1055
					21	Name Plate	PAM1704
					22	•••••	
					23	•••••	
					24	•••••	
				NSP	25	Getter	VRW1587



2.3 TOP VIEW SECTION

Parts List

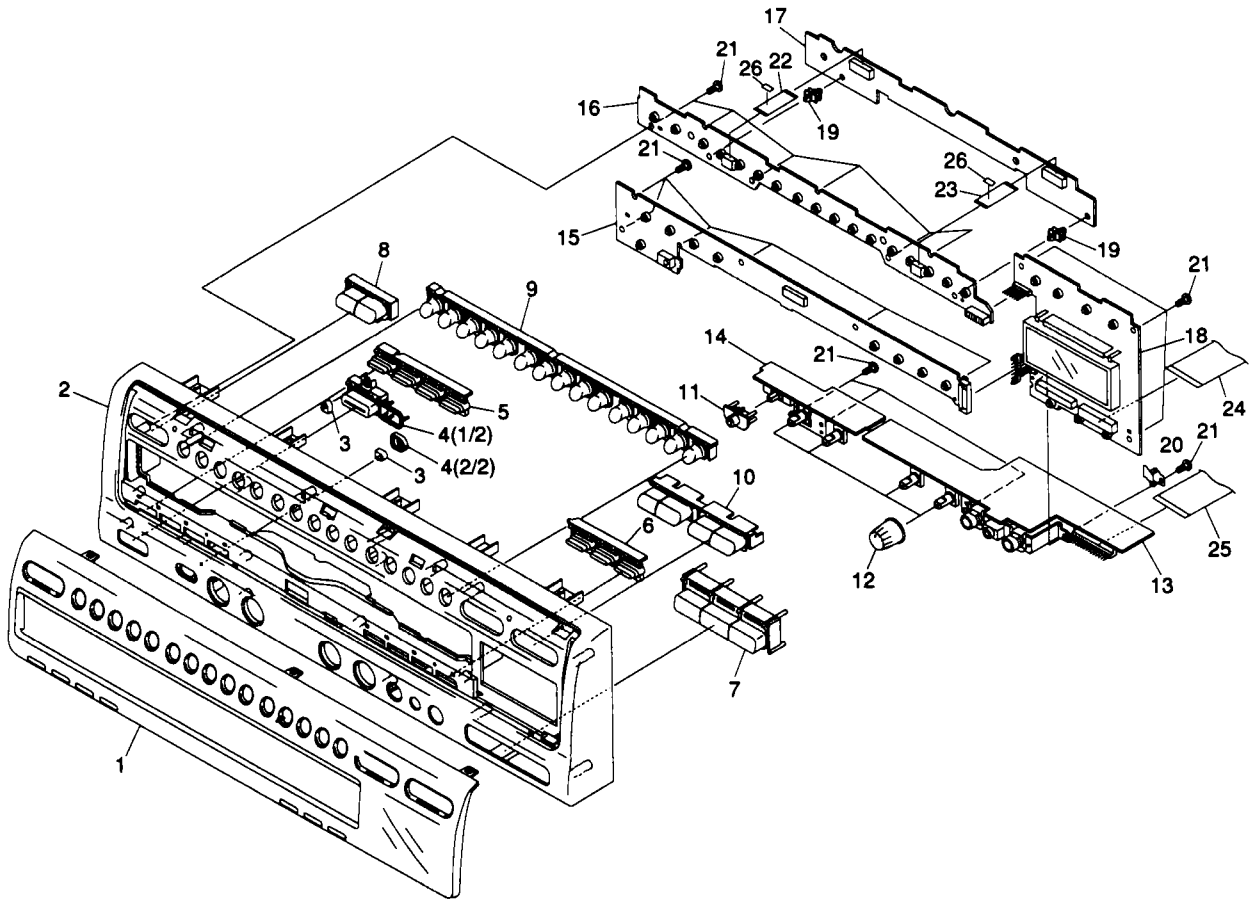
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	KRAB Assy	VWV1491		11	Steel Ball	VNX1013
	2	•••••			12	Ball Guide	VNL1616
	3	Center Plate	VNE1971		13	Clamp Spring	VBH1239
	4	Rubber Mat	VEB1114		14	Clamper	VNL1604
	5	Thrust Holder	VNL1663		15	Clamper Holder	VNL1680
	6	Clamper Head	VNL1603		16	Center Angle	VNE1965
	7	LD Spring	VBH1240	NSP	17	PCB Holder	VNE1964
	8	Cover Spring	VBH1234	NSP	18	Damp Cushion	VEC1602
	9	Ball Cover	VNL1602		19	Screw	IBZ30P080FMC
	10	LD Hab	VNT1047		20	Screw	BBZ30P080FMC



2.4 FRONT PANEL SECTION

Parts List

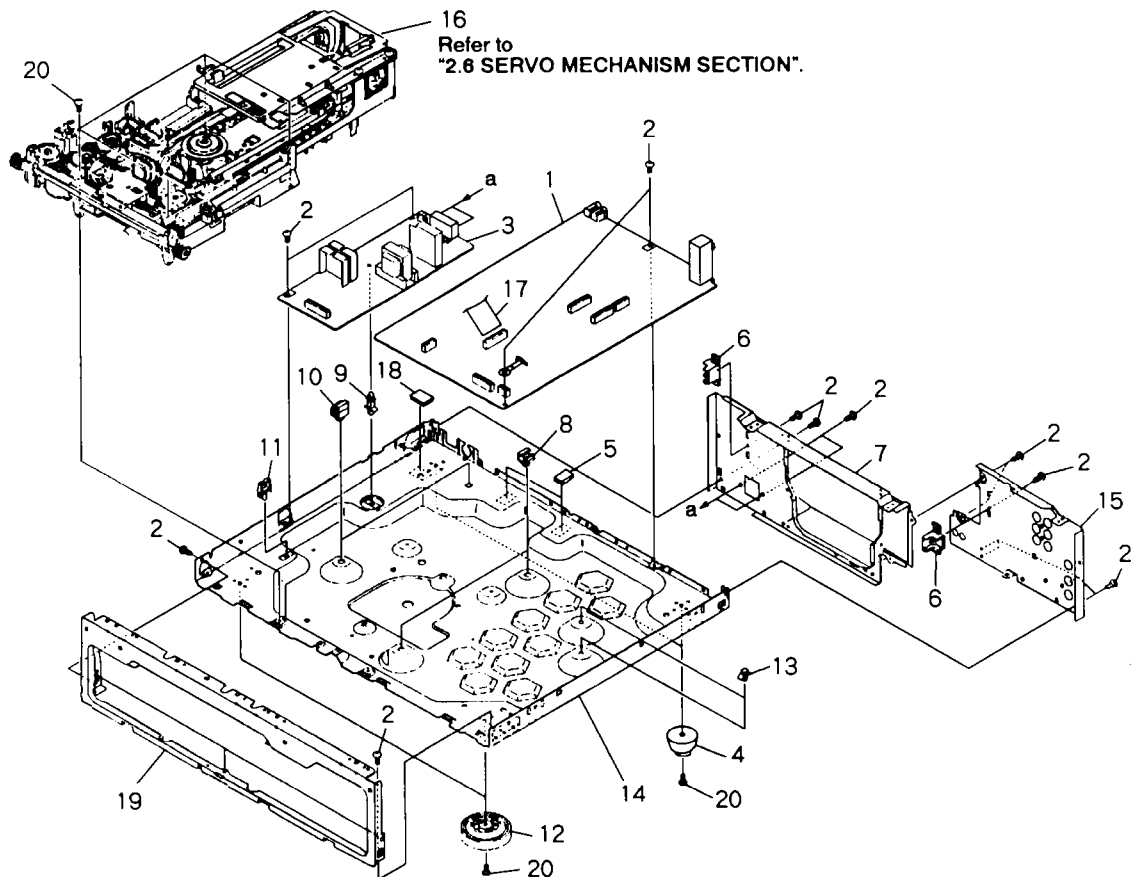
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Center Panel	VNK3670	NSP	16	DIKB Assy	VWG1763
	2	Front Panel	VNK3669	NSP	17	IOEB Assy	VWG1764
	3	LED Lens	PNW2019		18	FLKB Assy	VWG1760
	4	PW Button	VNK3179	NSP	19	PC Support (B)	VEC1244
	5	L Key A	VNK3688		20	Earth Plate	VNE2027
	6	L Key B	VNK3794		21	Screw	BBZ30P080FMC
	7	Key Con. Button	VNK3674		22	Flexible Cable (10P) (DIKB CN303 – IOEB CN702)	VDA1557
	8	A/B Button	VNK3678		23	Flexible Cable (10P) (DIKB CN302 – IOEB CN701)	VDA1557
	9	15 Key	VNK3673		24	Flexible Cable (22P) (FLKB CN102 – MOTHER CN107)	VDA1551
	10	Play Button	VNK3676		25	Flexible Cable (19P) (JACB CN501 – KRAB CN102)	VDA1552
	11	Slide Knob	VNK3187		26	Spacer	VEC1894
NSP	12	VR Knob	VNK3677				
NSP	13	JACB Assy	VWV1492				
NSP	14	VRSB Assy	VWG1761				
NSP	15	KALB Assy	VWG1762				



2.5 BOTTOM VIEW SECTION

Parts List

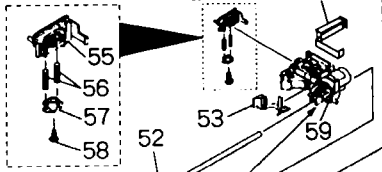
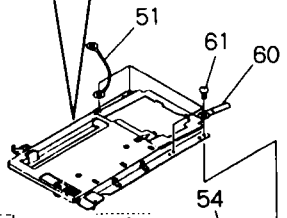
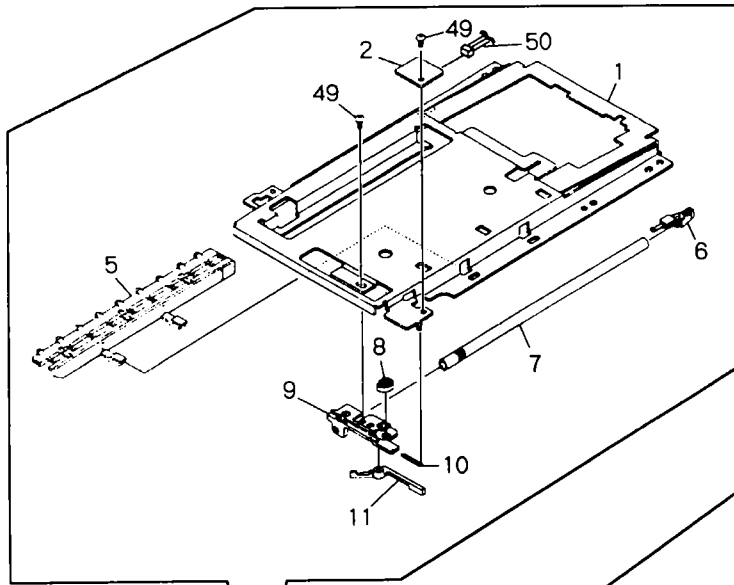
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	MOTHER Assy	VWS1250	NSP	11	Wire Clip (H)	VEC1181
	2	Screw	BBZ30P080FMC		12	Insulator	PNW1912
△	3	POWER SUPPLY Assy	VWR1270		13	Card Spacer A	VEC1708
	4	Insulator Assy	VXA2295	NSP	14	Chassis	VNA1564
NSP	5	Rubber Spacer	VEB1252		15	Rear Panel (L)	VNA1726
	6	Tray Stopper	VNL1657	NSP	16	Mechanism Assy	VWT1131
	7	Rear Panel (R)	VNA1734		17	Flexible Cable (21P) (MOTHER CN102 - POWER SUPPLY CN202)	VDA1465
NSP	8	P Plate Holder	PNY-405		18	Spacer	PEB1275
NSP	9	PC Support	VEC-269	NSP	19	Panel Holder	VNA1507
NSP	10	PCB Hinge	VEC1174		20	Screw	BBZ30P100FMC



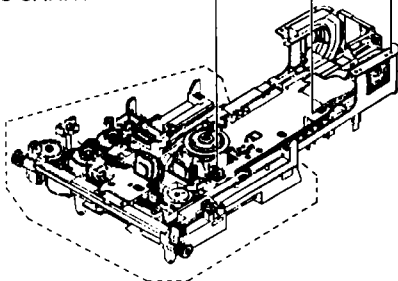
2.6 SERVO MECHANISM SECTION

Parts List

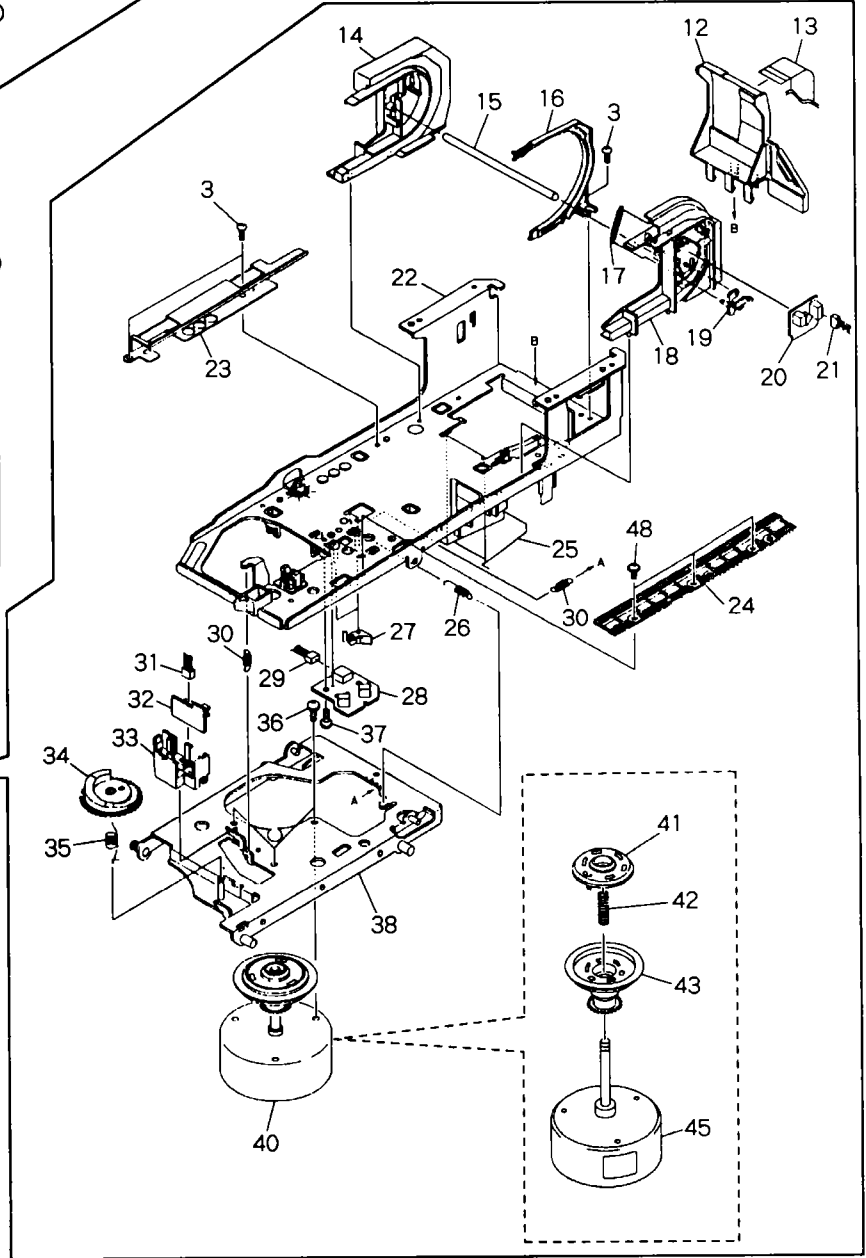
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
NSP	1	Tilt Base (upper)	VNE1969	NSP	31	Housing Assy (3P, Yellow)	VKP2046
	2	BISB Assy	VWG1558		32	FG Assy	VWG1556
	3	Screw	BBZ30P060FMC		33	FG Base	VNL1645
	4	•••••			34	Tilt Cam	VNL1643
	5	Rack (Upper)	VNL1679		35	Tilt Cam Spring	VBH1243
	6	Shaft Stay	VNL1671		36	Screw	PMA30P050FMC
	7	Carriage Shaft (upper)	VLL1478		37	Screw	IBZ26P120FMC
	8	B Cam	VNL1673		38	Motor Base	VNE1941
	9	Shaft Support	VNL1672		39	•••••	
	10	Support Spring	VBH1265		40	Spindle Motor Assy	VXA2271
	11	SW Lever (B)	VNL1678		41	PRC Hub	VNL1684
	12	Large hill	VNL1682		42	Centering Spring	VBH1269
	13	Flexible Cable (23P)	VDA1528		NSP 43	R Turn Table Assy	VXA2225
	14	Turn Guide	VNL1701		44	•••••	
	15	FFC Style Shaft	VLL1474		NSP 45	Spindle Motor	VXM1057
NSP	16	Guide	VNL1674	46	•••••		
	17	Lever Spring	VBH1266	47	•••••		
	18	Turn Gear	VNL1702	48	Screw	IBZ26P060FMC	
	19	SW Lever (T)	VNL1695	49	Screw	BPZ20P040FZK	
	20	TNSB Assy	VWG1557	50	Housing Assy (2P, Red)	VKP2060	
	21	Housing Assy (3P, Black)	VKP2059	NSP 51	Earth Lead Unit	DE007VF0	
	22	Tilt Base (Under)	VNL1670	52	Carriage Shaft (Under)	VLL1493	
	23	TAN Guide	VNE1973	53	Body Guard	VNL1681	
	24	CA Rack	VNL1647	54	FFC Holder	VNL1706	
	25	FFC Style Spring	VBH1270	55	CA Guide	VNL1668	
NSP	26	Thrust Spring	VBH1245	56	TAN Spring (B)	VBH1264	
	27	CA - SW Lever	VNL1644	57	TAN Lever (B)	VNL1669	
	28	PKSB Assy	VWG1555	58	Screw	PMZ20P060FZK	
	29	Housing Assy (3P, Blue)	VKP2045	59	Carriage Assy	VWT1110	
	30	Tilt Spring	VBH1263	NSP 60	Cord Binder	ZCB-069Z	
				61	Screw	BBZ30P080FMC	



Refer to "2.8 CARRIAGE ASSY".



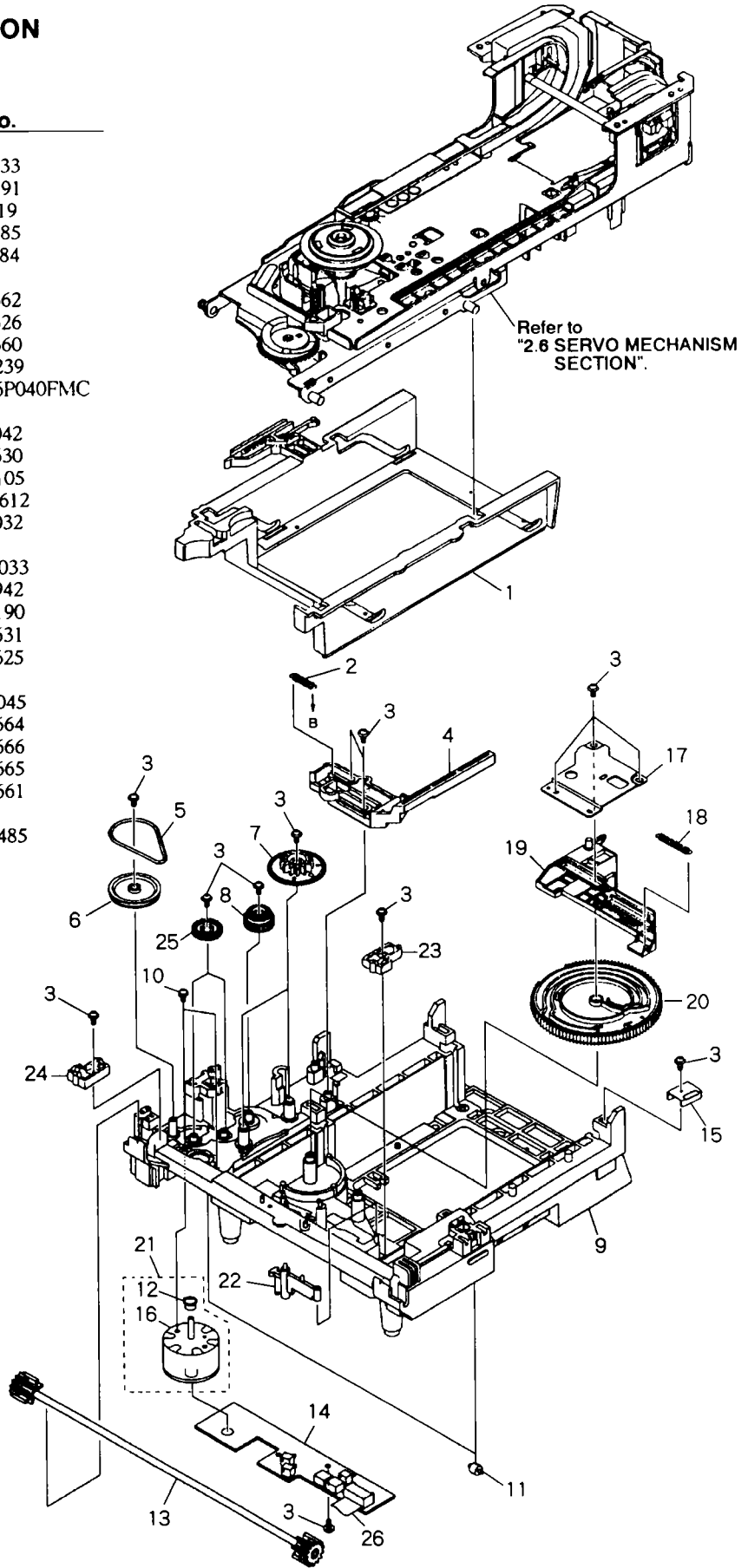
Refer to "2.7 LOADING MECHANISM SECTION".



2.7 LOADING MECHANISM SECTION

Parts List

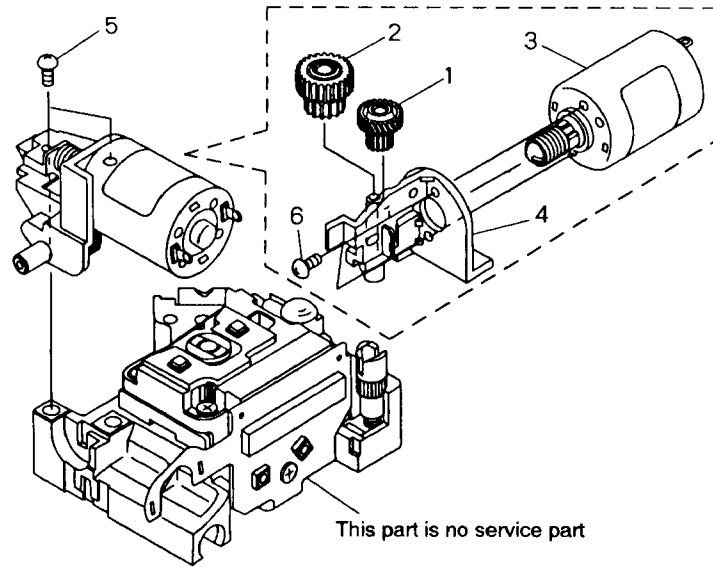
Mark	No.	Description	Part No.
	1	Clamp Cam	VNL1633
	2	CDP Spring	VBH1191
	3	Screw	Z39-019
	4	CD Plate	VNL1685
	5	Rubber Belt	VEB1184
	6	Gear Pulley	VNL1662
	7	Twin Gear	VNL1626
	8	Center Gear	VNL1660
	9	Mechanism Base	VNK3239
	10	Screw	BMZ26P040FMC
	11	Roller	VNL1042
NSP	12	Motor Pulley	VNL1630
	13	Synchro Gear Assy	VXA2105
NSP	14	LMSB Assy	VWG1612
	15	Cam Holder	VNE2032
NSP	16	Carriage Motor	VXM1033
	17	Shaft Holder	VNE1942
	18	CAS Spring	VBH1190
	19	Cam Plate	VNL1631
	20	Cam Gear	VNL1625
	21	Loading Motor Assy	VXX2045
	22	MB-SW Lever	VNL1664
	23	Slider (R)	VNL1666
	24	Slider (L)	VNL1665
	25	Double Gear	VNL1661
	26	Flexible Cable (12P)	VDA1485



2.8 CARRIAGE ASSY

Parts List

Mark	No.	Description	Part No.
	1	CA Gear (A)	VNL1638
	2	CA Gear (B)	VNL1639
	3	Slider Motor Assy	VXX2082
	4	M Holder	VNL1700
	5	Screw	PBZ20P060FMC
	6	Screw	PMZ20P030FMC

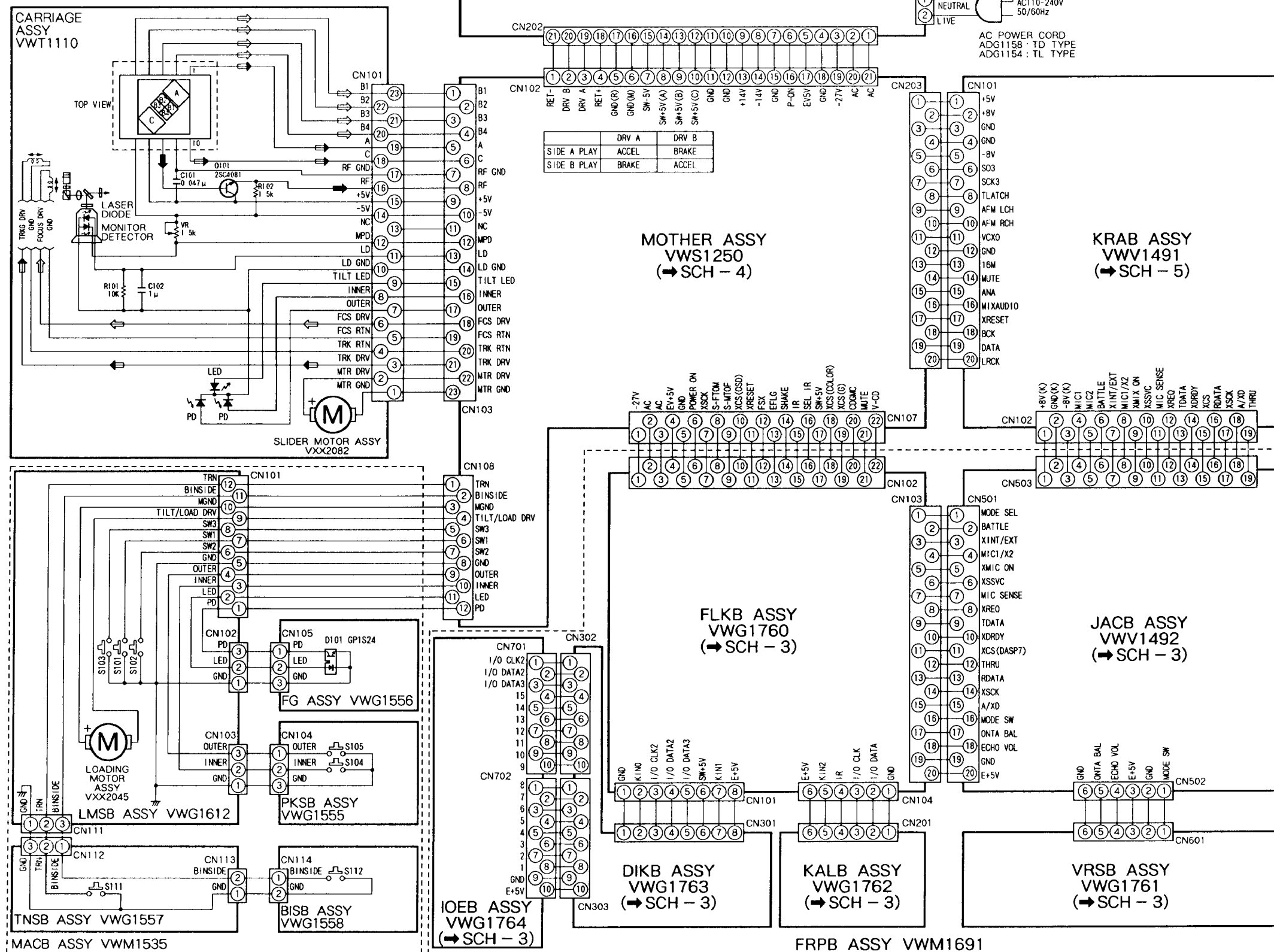


3. SCHEMATIC AND PCB CONNECTION DIAGRAMS

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

SCH-1

→: RF SIGNAL ROUTE
 ⇨: FOCUS SERVO LOOP LINE
 ⇩: TRACKING SERVO LOOP LINE



NOTE FOR SCHEMATIC DIAGRAM (Type 4A)

1. When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".

2. Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.

3. RESISTORS:
 Unit: k: kΩ, M: MΩ, or Ω unless otherwise noted.
 Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
 Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.

4. CAPACITORS:
 Unit: p: pF or μ: 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 μ: μH unless otherwise noted

6. VOLTAGE AND CURRENT:
 □ or ← V: DC voltage (V) in PLAY mode unless otherwise noted
 ← mA or ← mA: DC current in PLAY mode unless otherwise noted
 Value in () is DC current in STOP mode.

7. OTHERS:
 ● or ○: Adjusting point.
 ●: Measurement point
 ● The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.

8. SCH - □ ON THE SCHEMATIC DIAGRAM:
 ● SCH - □ indicates the drawing number of the schematic diagram (SCH stands for schematic diagram.)

9. SWITCHES (Underline indicates switch position):

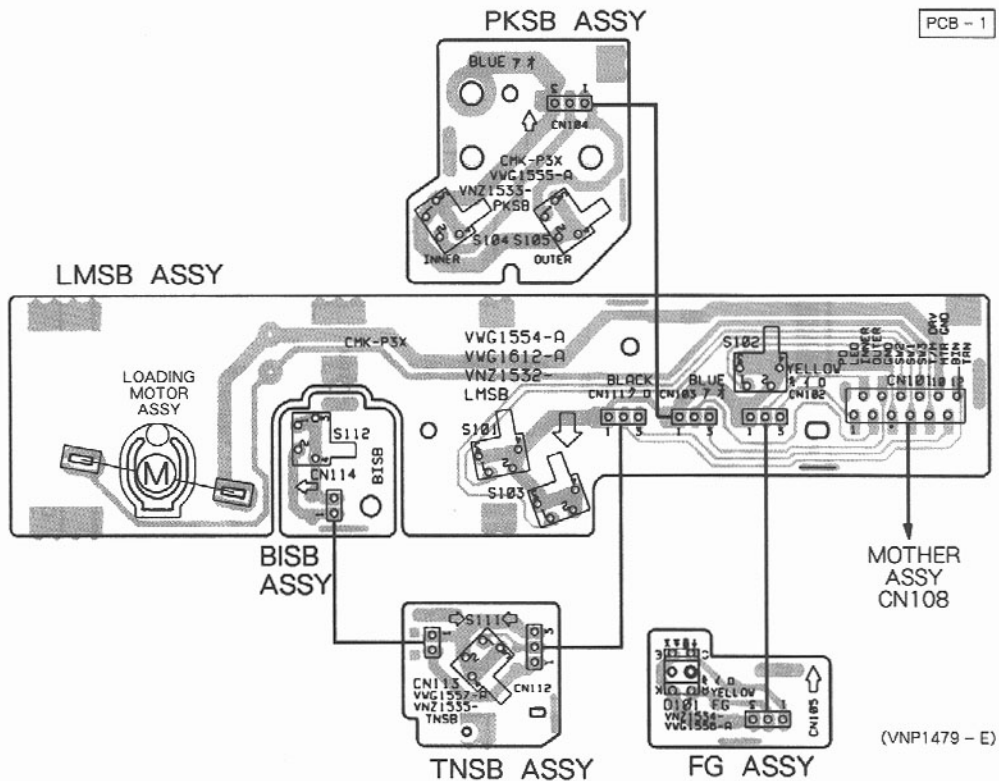
- | | |
|--|--|
| LMSB ASSY
S101: SW1
S102: SW2
S103: SW3 | BISB ASSY
S112: B INSIDE |
| PKSB ASSY
S104: INNER
S105: OUTER | TNSB ASSY
S111: TURN |
| FLKB ASSY
S101: STOP (■)
S102: PLAY/PAUSE (▶ /)
S103: OPEN/CLOSE (CD ▲)
S104: OPEN/CLOSE (LD ▲)
S105: ♪
S106: #
S107: ♪ | DIKB ASSY
S301: A
S302: B
S303: 1
S304: 2
S305: 3
S306: 4
S307: 5
S308: 6
S309: 7
S310: 8
S311: 9
S312: 10
S313: 11
S314: 12
S315: 13
S316: 14
S317: 15 |
| VRSB ASSY
S601: NORMAL/KARAOKE/AUX INPUT | KRAB ASSY
S301: ATTENUATOR |
| KALB ASSY
S201: POWER STANDBY/ON
S202: SINGLE PLAY
S203: VOCAL PARTNER
S204: ONE-TOUCH KARAOKE
S205: ONE-TOUCH GUIDE VOCAL
S206: Not used
S207: QUICK TURN
S208: COMPETITION
S209: NORMAL | SCORING |

SCH-1

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

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

SCH-1



● This diagram is viewed from the mounted parts side.

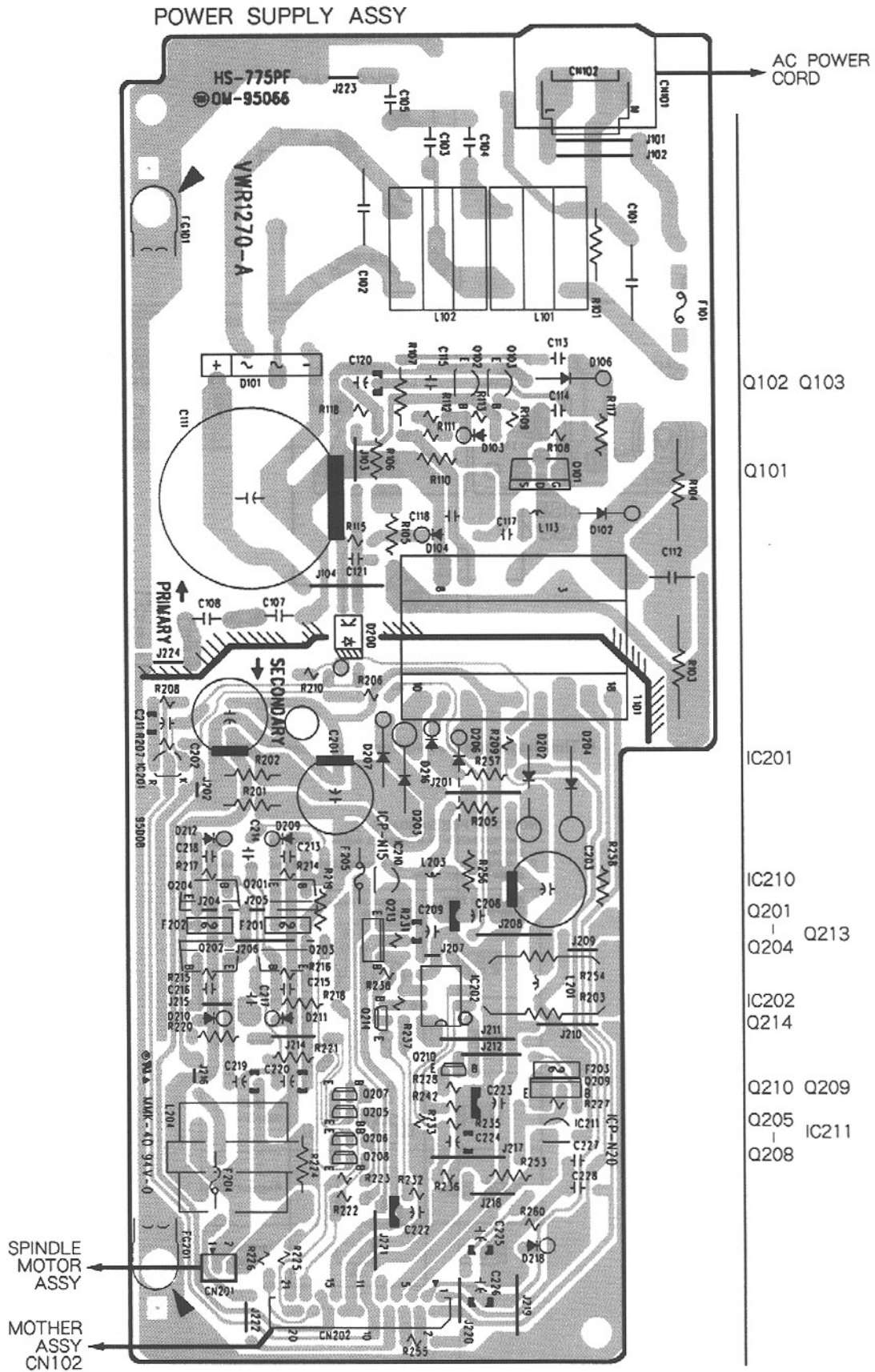
NOTE FOR PCB DIAGRAMS:

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. 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

3.2 POWER SUPPLY ASSY

PCB - 2



△ POWER SUPPLY ASSY (VWR1270)

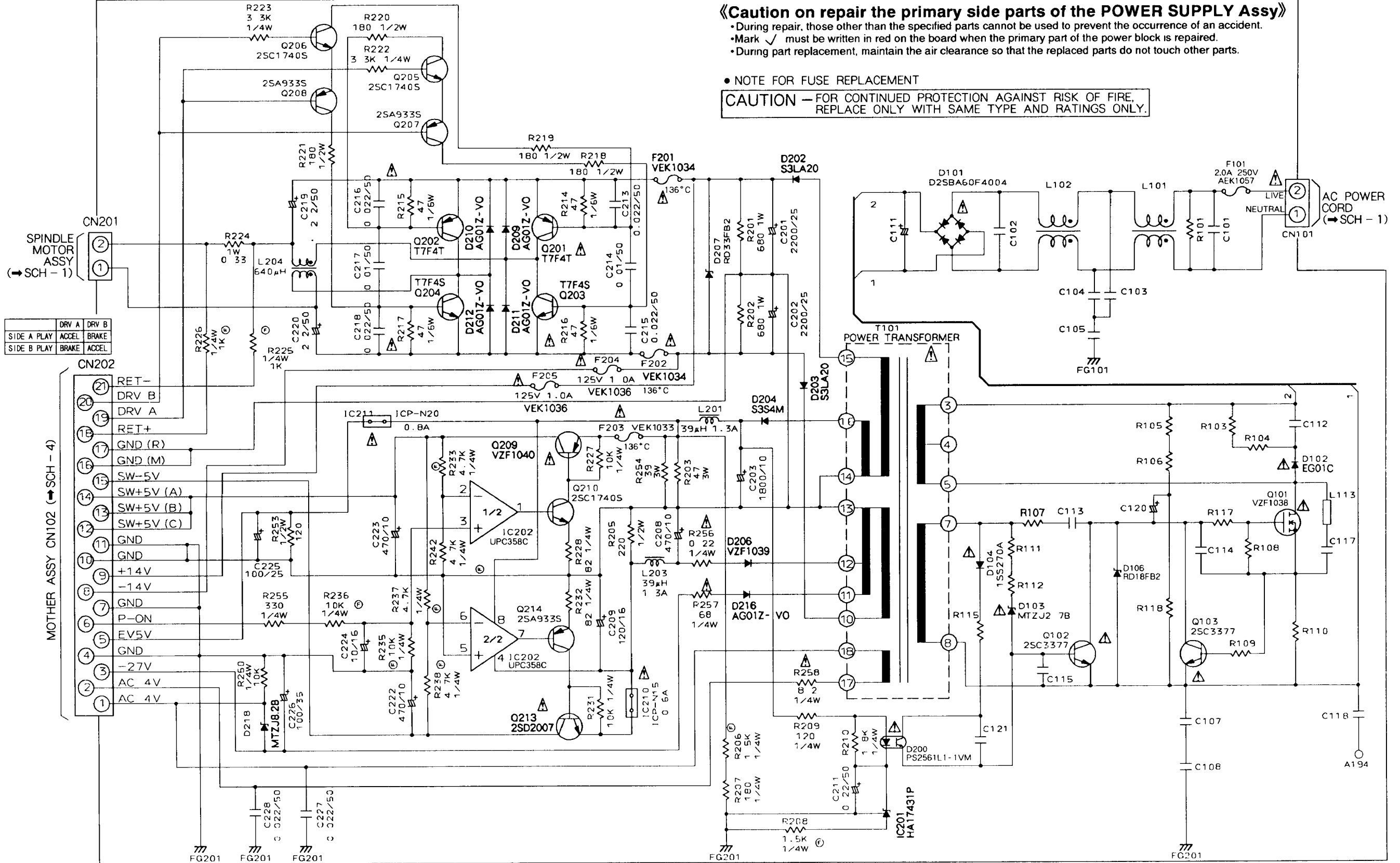
SCH-2

«Caution on repair the primary side parts of the POWER SUPPLY 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.

• NOTE FOR FUSE REPLACEMENT

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



DRV A	DRV B
SIDE A PLAY	ACCEL
SIDE B PLAY	BRAKE
	ACCEL

MOTHER ASSY CN102 (SCH-4)

- 21 RET-
- 20 DRV B
- 19 DRV A
- 18 RET+
- 17 GND (R)
- 16 GND (M)
- 15 SW-5V
- 14 SW+5V (A)
- 13 SW+5V (B)
- 12 SW+5V (C)
- 11 GND
- 10 +14V
- 9 -14V
- 8 GND
- 7 P-ON
- 6 EV5V
- 5 GND
- 4 -27V
- 3 AC 4V
- 2 AC 4V
- 1

SCH-2 POWER SUPPLY ASSY

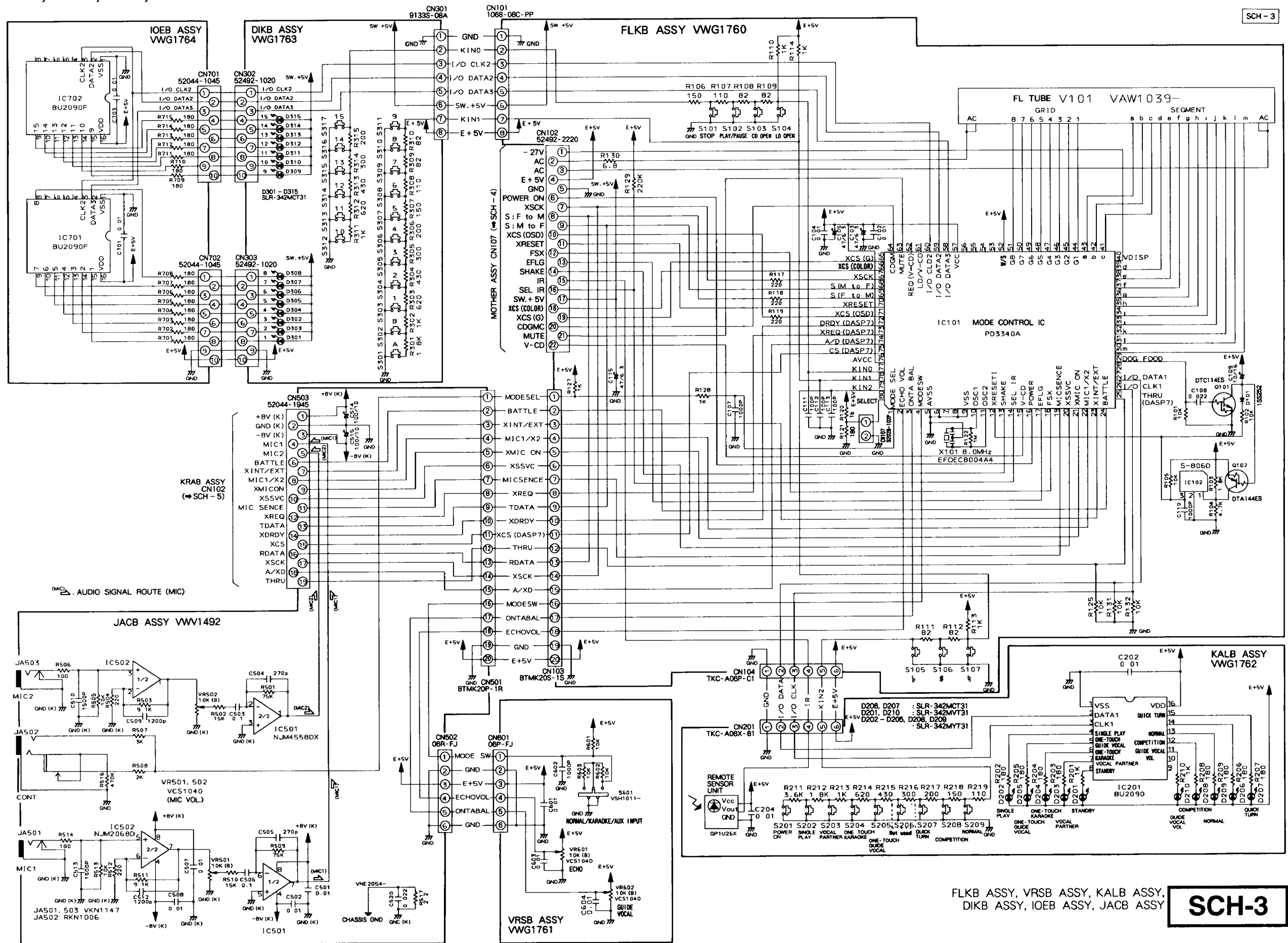
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE NO. ICP-N20, MFD BY ROHM CO., LTD FOR IC211.

CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE NO. ICP-N15, MFD BY ROHM CO., LTD FOR IC210.

POWER SUPPLY ASSY SCH-2

3.3 FLKB, VRSB, KALB, DIKB, IOEB AND JACB ASSEMBLIES

SCH-3



FLKB ASSY, VRSB ASSY, KALB ASSY, DIKB ASSY, IOEB ASSY, JACB ASSY

SCH-3

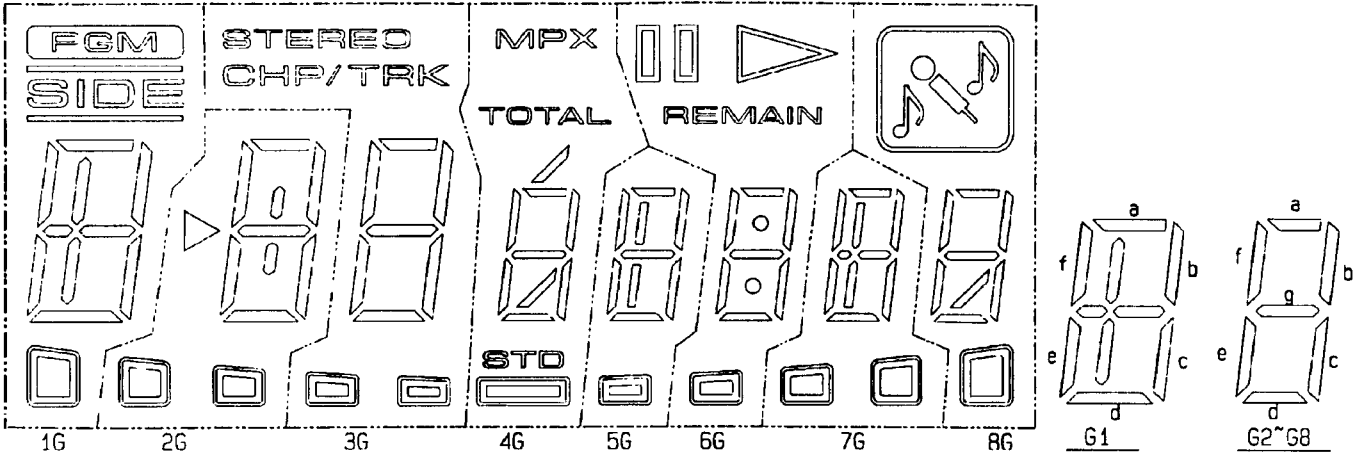
FLKB ASSY, VRSB ASSY, KALB ASSY, DIKB ASSY, IOEB ASSY, JACB ASSY

SCH-3

■ VAW1039 (FLKB ASSY : V101)

• FL TUBE

● ANODE GRID ASSIGNMENT & PIN ASSIGNMENT



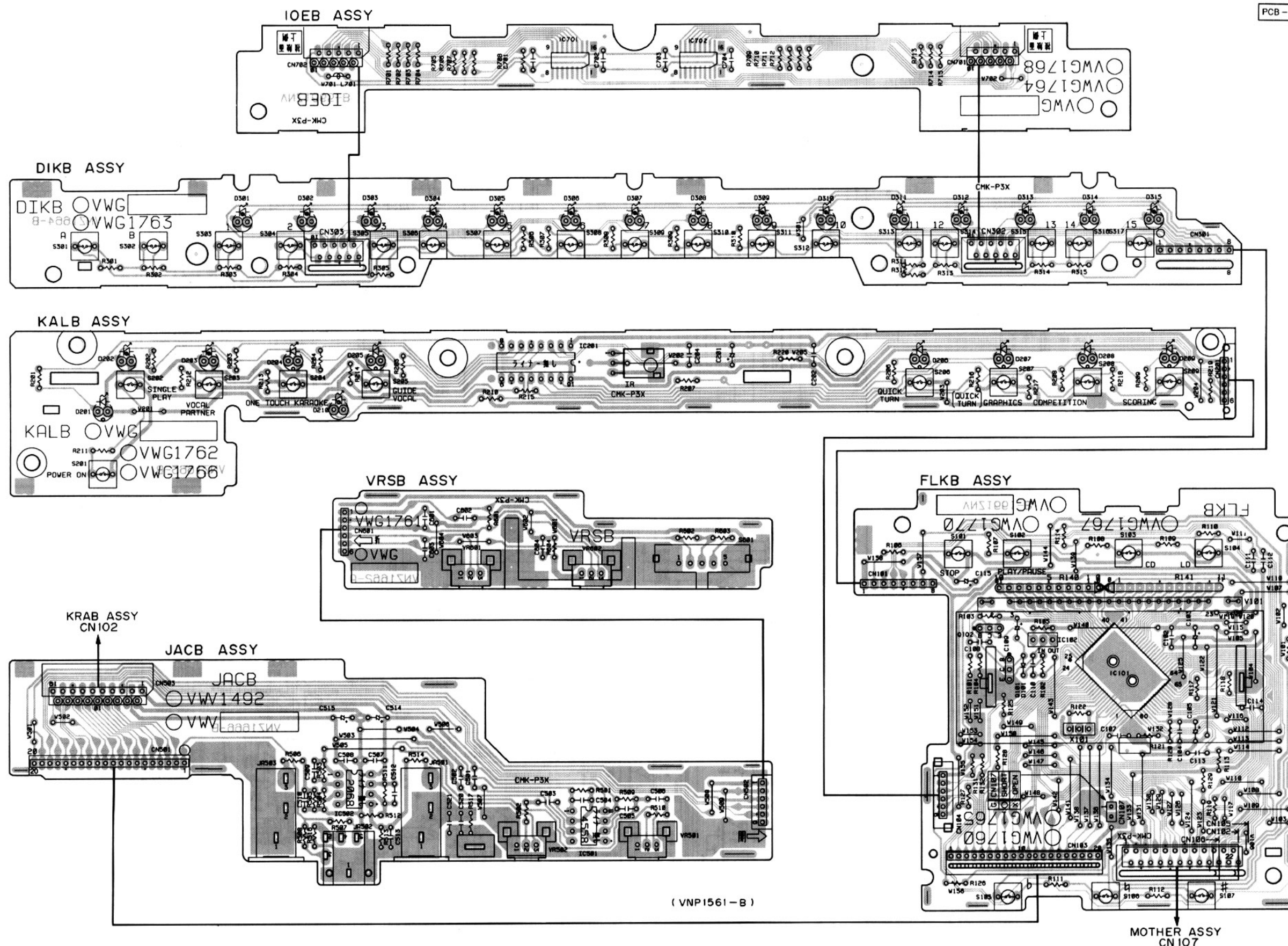
● ANODE GRID ASSIGNMENT

	G1	G2	G3	G4	G5	G6	G7	G8
S1	a	a	a	a	a	a	a	a
S2	b	b	b	b	b	b	b	b
S3	c	c	c	c	c	c	c	c
S4	d	d	d	d	d	d	d	d
S5	e	e	e	e	e	e	e	e
S6	f	f	f	f	f	f	f	f
S7	-	g	g	g	g	g	•	g
S8	-	:	STEREO (上) /	/	:	:	-	/
S9	/	>	CHP/TRK (下) /	/	/		/	
S10		(右)	(右)	MPX	/		(右)	/
S11		(左)	(左)	TOTAL	/	REMAIN	(左)	/
S12		(右)	(右)	STD			(右)	
S13		(左)	(左)				(左)	

● PIN ASSIGNMENT

Pin No.	1	2	3	4	5	6	7	8	9	10
Assignment	F	F	NP	S13	S12	S11	S10	S9	S8	S7
Pin No.	11	12	13	14	15	16	17	18	19	20
Assignment	S6	S5	S4	S3	S2	S1	G1	G2	G3	G4
Pin No.	21	22	23	24	25	26	27			
Assignment	G5	G6	G7	G8	NP	F	F			

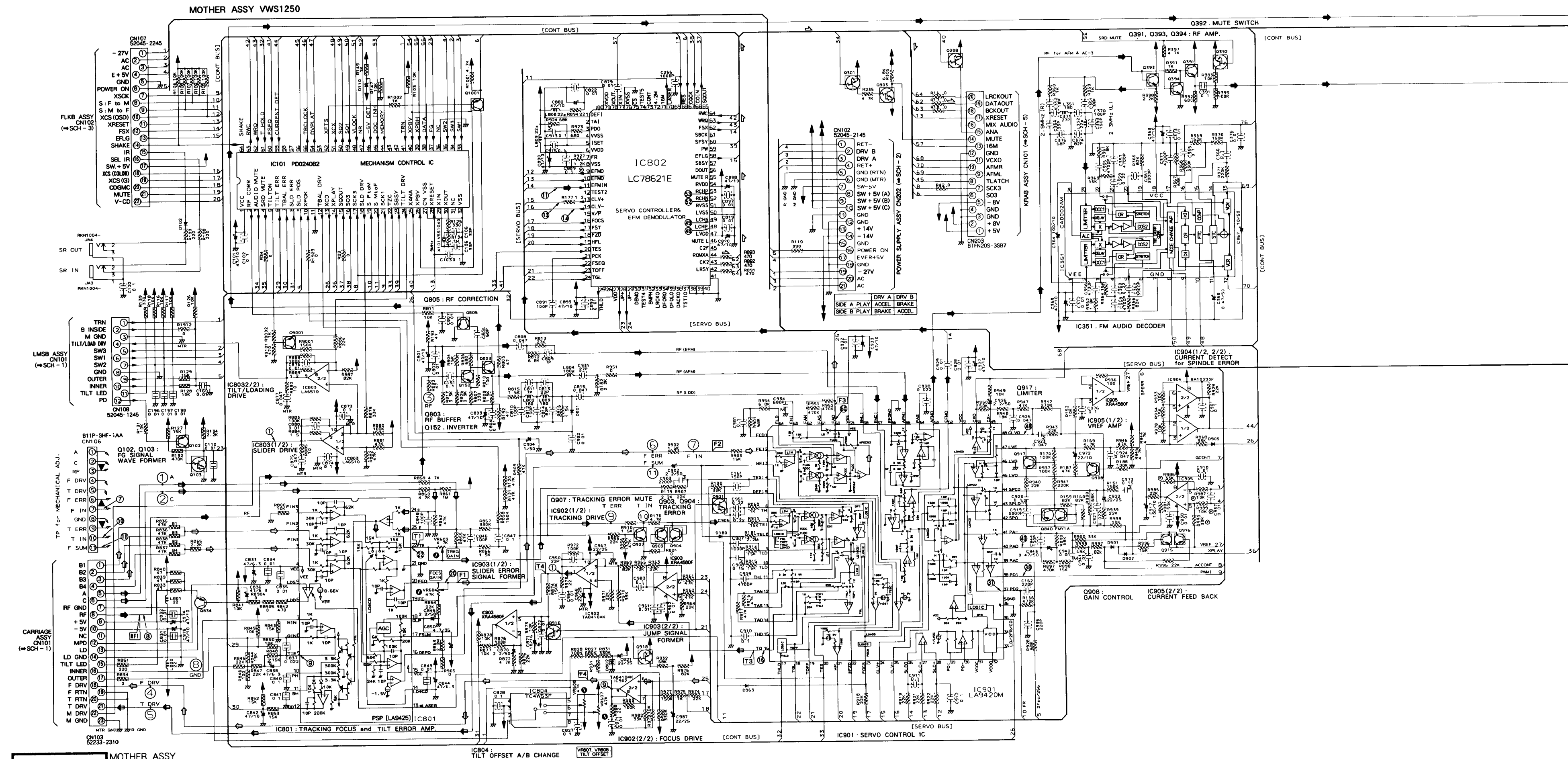
F:Filament G1~G8:Grid S1~S13:Anode NP:No pin



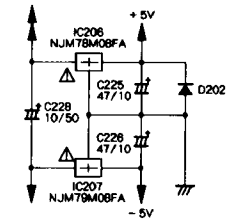
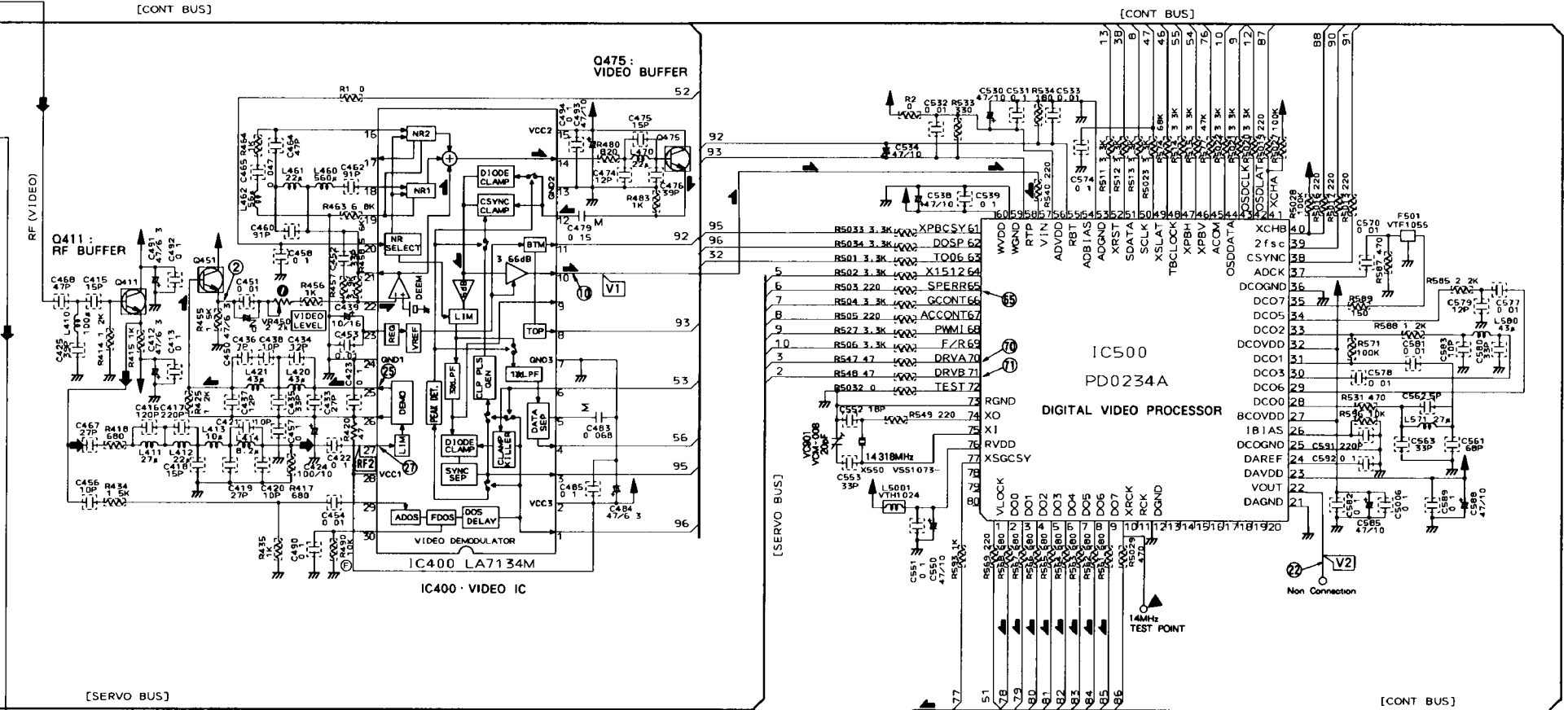
• This diagram is viewed from the mounted parts side.

• 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.

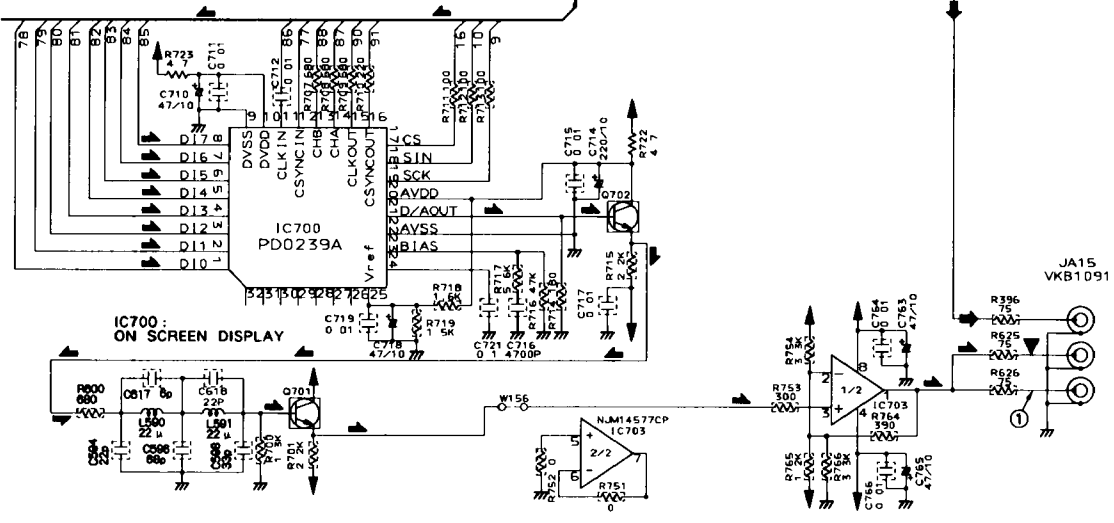
3.4 MOTHER ASSY



SCH-4 MOTHER ASSY



- | | |
|---------------------------------------|-----------|
| 01001, 0102, 0916 | 2P8709A |
| 0381, 0383, 0384, 0451, 0475, 2P8601A | |
| 0701, 0702, 0805, 09001, | |
| 0903, 0904, 0907, 0908, 0915, | |
| 0917 | |
| 0834 | 2S4854S |
| 0411, 0803 | 2SC2412K |
| 0152 | 2SC3802K |
| 0208, 0301, 0392 | DTA124EX |
| 0103, 0303, 0901, 0910, 0918 | DTC124EX |
| 0840 | FM11A |
| D202 | 11EG506 |
| 0102, 0180, 0801, 0901, 0902, | 1SS254 |
| 0905, 0963 | |
| 0802 | 1SS355 |
| 0110 | MTZ.S. 18 |



- RF SIGNAL ROUTE
- - - VIDEO SIGNAL ROUTE
- · · SERVO LOOP LINE
- · - CONT BUS
- ▲ AUDIO SIGNAL ROUTE
- ▲ VIDEO SIGNAL ROUTE
- TRACKING SERVO LOOP LINE

MOTHER ASSY

SCH-4

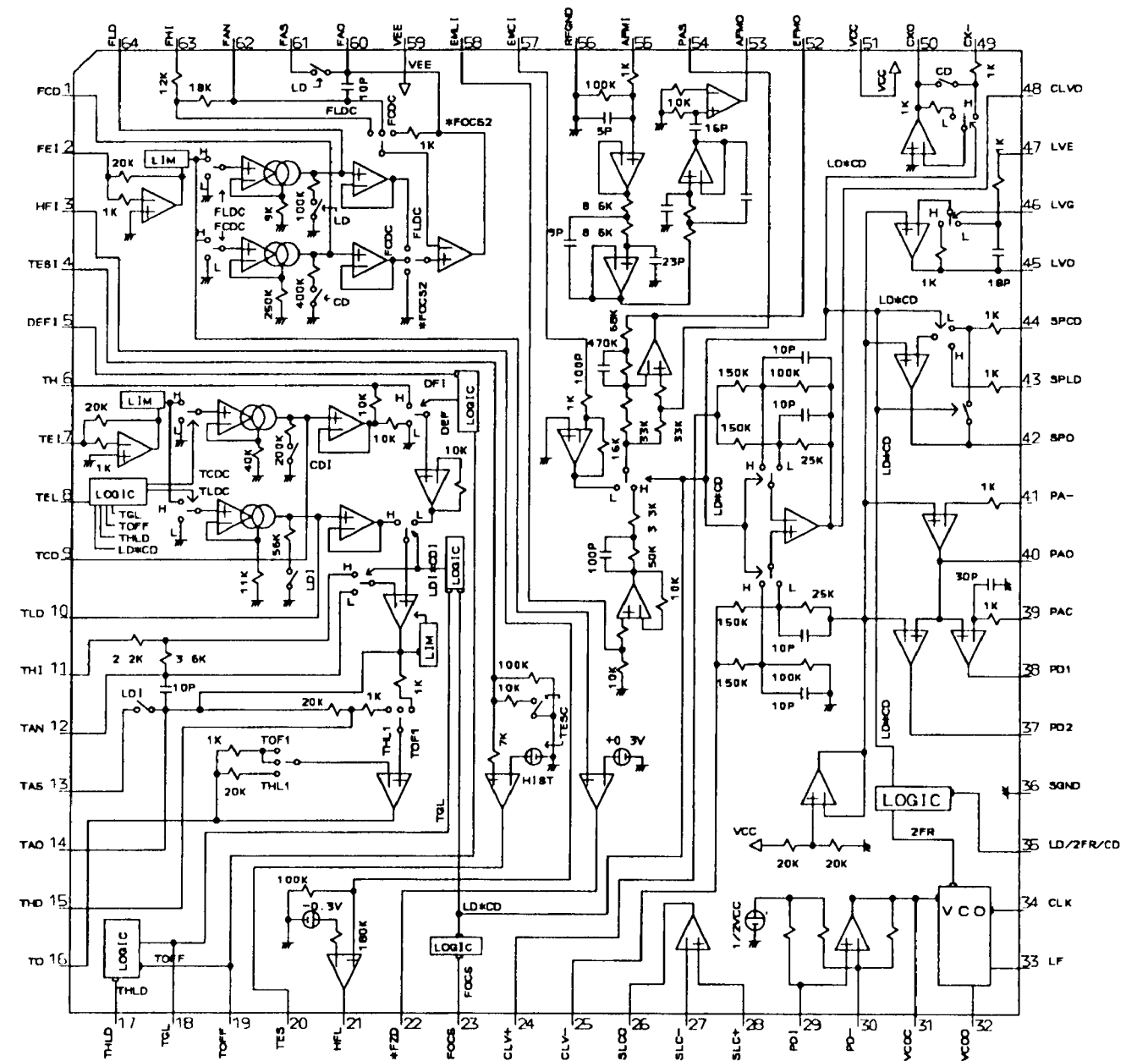
**WAVEFORMS AND VOLTAGE
MOTHER ASSY**

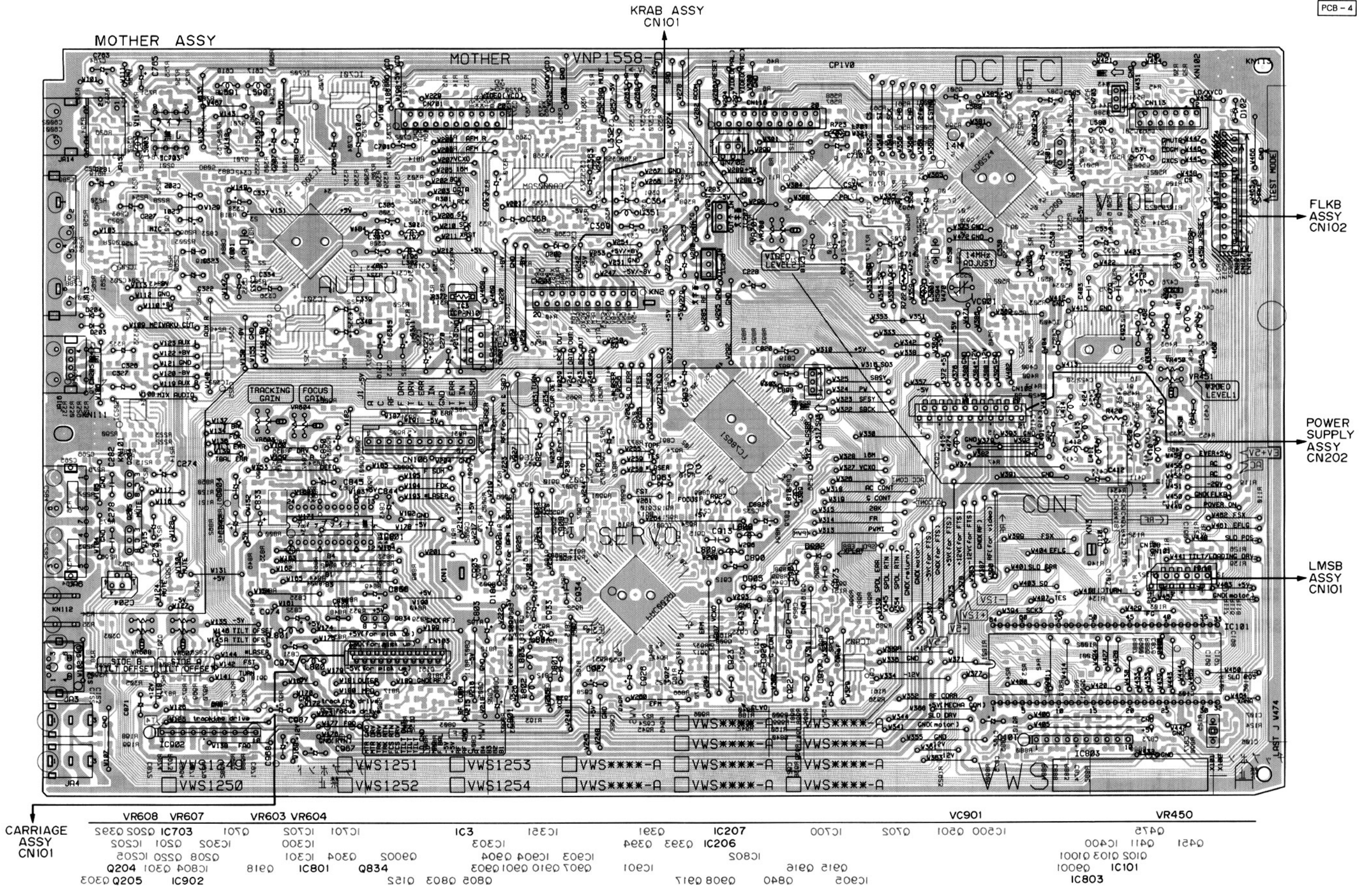
Note : (No) in the table correspond to the pin number.

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 (27) 5ms/div 200mVp-p 0V DC mode	T3 (16) 5ms/div 500mVp-p 0V DC mode	7 (F2) 5ms/div 200mVp-p 0V DC mode	2 10μs/div 400mVp-p 0V AC mode	V1 (10) 10μs/div 1.6Vp-p 0V DC mode	V2 (27) 10μs/div 1Vp-p 0V DC mode
F1 (20) 5ms/div 100mVp-p 0V DC mode	F3 (10) 5ms/div 1Vp-p 0V DC mode	10 5ms/div 100mVp-p 0V DC mode	JA15 VIDEO OUT 1 10μs/div 1Vp-p (75Ω termination) 0V DC mode	RF2 (27) 2ms/div 400mVp-p 0V AC mode	65 5ms/div 5Vp-p 0V DC mode
9 10ms/div 0.2Vp-p 0V DC mode	38 10μs/div 5Vp-p 0V DC mode	11 5ms/div 0V 0.2Vp-p DC mode		25 10μs/div 1Vp-p 0V DC mode	71 5ms/div 5Vp-p 0V DC mode
IC802 (LC78621E)	40 10ms/div 0.3Vp-p 0V DC mode	CN103 RF1 (8) 2ms/div 600mVp-p AC mode			
11 0.5μs/div 1.6Vp-p 0V DC mode	48 50μs/div 1Vp-p 0V DC mode				
13 50μs/div 5Vp-p 0V DC mode					
14 50μs/div 5Vp-p 0V DC mode					
	IC902 (TA8410AK)				
48, 53 0.2μs/div 5Vp-p 0V DC mode	T4 (1) 5ms/div 2Vp-p 0V DC mode				
49, 52 0.2μs/div 5Vp-p 0V DC mode					
IC803 (LA6510)	F4 (9) 5ms/div 5Vp-p 0V DC mode				
1 2ms/div 1.8Vp-p 0V DC mode					

● The Inside Block Diagram of IC901 (LA9420M)

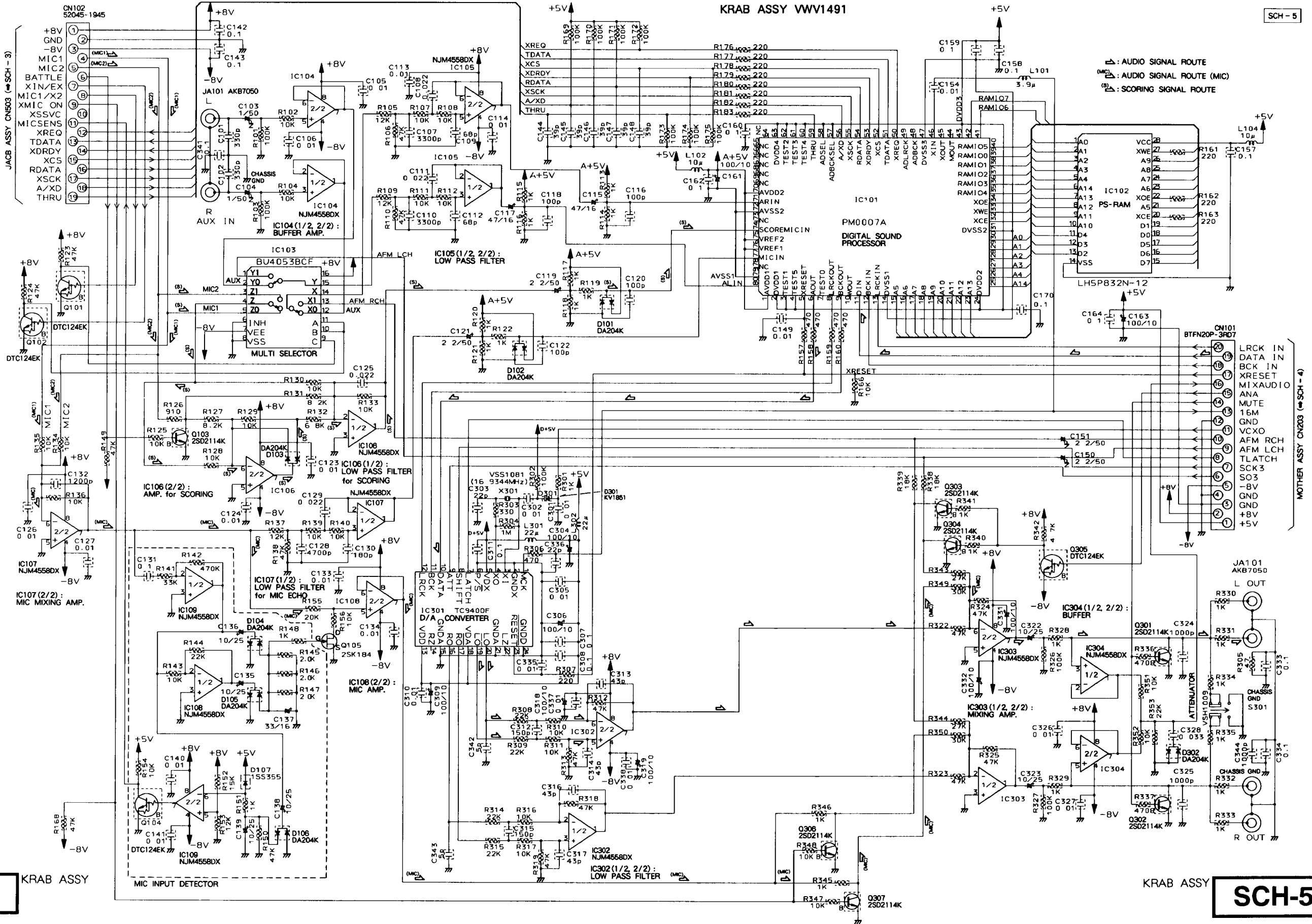




3.5 KRAB ASSY

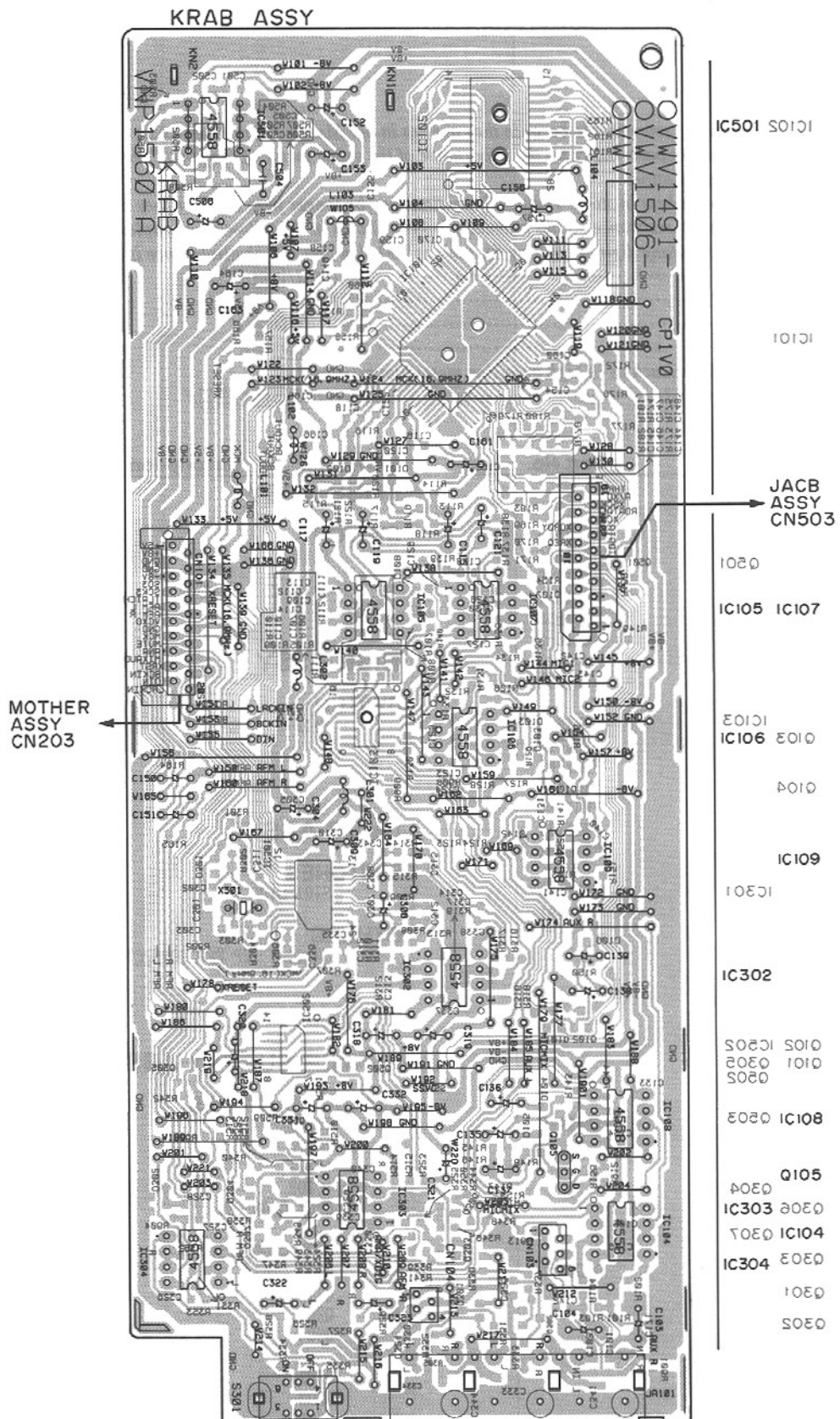
KRAB ASSY VWV1491

SCH-5



SCH-5

SCH-5



- 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 \rightarrow 56 \times 10¹ \rightarrow 561..... RD1/4PU $\overline{561}$ J
 47k Ω \rightarrow 47 \times 10³ \rightarrow 473..... RD1/4PU $\overline{473}$ J
 0.5 Ω \rightarrow 0R5..... RN2H $\overline{0R5}$ K
 1 Ω \rightarrow 1R0..... RS1P $\overline{1R0}$ K
- Ex.2 When there are 3 effective digits(such as in high precision metal film resistors).
- 5.62k Ω \rightarrow 562 \times 10¹ \rightarrow 5621..... RN1/4PC $\overline{5621}$ F

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
LIST OF ASSEMBLIES				TNSB ASSY			
NSP		MACB ASSY	VWM1535	SWITCH			
NSP	├	PKSB ASSY	VWG1555		S111		DSG1017
NSP	├	FG ASSY	VWG1556	BISB ASSY			
NSP	├	TNSB ASSY	VWG1557	SWITCH			
NSP	├	BISB ASSY	VWG1558		S112		DSG1017
NSP	└	LMSB ASSY	VWG1612	LMSB ASSY			
Δ		POWER SUPPLY ASSY	VWR1270	SWITCHES			
NSP		FRPB ASSY	VWM1691		S101-S103		DSG1017
NSP	├	FLKB ASSY	VWG1760	OTHERS			
NSP	├	VRSB ASSY	VWG1761		CN101	12P FFC CONNECTOR	52044-1245
NSP	├	KALB ASSY	VWG1762	POWER SUPPLY ASSY			
NSP	├	DIKB ASSY	VWG1763	SEMICONDUCTORS			
NSP	├	IOEB ASSY	VWG1764	Δ	IC201		HA17431P
NSP	└	JACB ASSY	VWV1492	Δ	IC210		ICP-N15
		MOTHER ASSY	VWS1250	Δ	IC211		ICP-N20
		KRAB ASSY	VWV1491		IC202		UPC358C
					Q207, Q208, Q214		2SA933S
					Q205, Q206, Q210		2SC1740S
				Δ	Q102, Q103		2SC3377
				Δ	Q213		2SD2007
				Δ	Q203		T7F4S
					Q204		T7F4S
				Δ	Q201		T7F4T
					Q202		T7F4T
				Δ	Q101		VZF1038
				Δ	Q209		VZF1040
					D206		VZF1039

MACB ASSY

OTHERS			
	PC Board MACB	VNP1479	

PKSB ASSY

SWITCHES			
	S104, S105	DSG1017	

FG ASSY

SEMICONDUCTOR			
	D101	GP1S24	

Mark	No.	Description	Part No.
△	D104		ISS270A
	D209-D212, D216		AG01Z-V0
△	D101		D2SB60F4004
△	D102		EG01C
△	D103		MTZJ2. 7B
	D218		MTZJ8. 2B
△	D200		PS2561L1-1VM
△	D106		RD18FB2
	D207		RD33FB2
	D202, D203		S3LA20
	D204		S3S4M

RESISTORS

△	R257	(68Ω, 1/4W)	VCN1048
△	R258	(8.2Ω, 1/4W)	VCN1050
△	R256	(0.22Ω, 1/2W)	VCN1055

OTHERS

△	F101	FUSE(T2A/250V)	AEK1057
△	F203	FUSE(136°C)	VEK1033
△	F201, F202	FUSE(136°C)	VEK1034
△	F204, F205	FUSE(1A/125V)	VEK1036

FRPB ASSY

OTHERS

PC Board FRPB	VNP1561
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FLKB ASSY

SEMICONDUCTORS

IC101	PD3340A
IC102	S-806D
Q102	DTA144ES
Q101	DTC114ES
D101	ISS252

SWITCHES

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

CAPACITORS

C109	CEAL100M16
C103, C105, C115	CEAL470M6R3
C111-C113	CKPUYB101K50
C107, C110	CKPUYB102K50
C108	CKPUYF223Z25
C102, C104	CKPUYY103N16

RESISTORS

R110, R113, R114, R127	RN1/6PQ1001F
Other Resistors	RD1/4PU□□□J

Mark	No.	Description	Part No.
------	-----	-------------	----------

OTHERS

CN101	2.5mm PITCH PIN HEADER	1068-08C-PP
CN102	FFC BOTTOM CONNECTOR 22P	52492-2220
CN107	2.54mm PITCH PIN HEADER	9202B-1-02P
CN103	20P CONNECTOR	BTMK20S-1S
X101	CERAMIC RESONATOR(8MHz)	EFOEC8004A4

CN104	2mm PITCH CONNECTOR PLUG	TKC-A06P-C1
V101	FL TUBE	VAW1039
	SPACER	VEC1599
	FL HOLDER	VNF1091

VRSB ASSY

SWITCH

S601	VSH1011
------	---------

CAPACITORS

C602	CKPUYB102K50
C601, C603, C604	CKPUYY103N16

RESISTORS

VR601, VR602 (10kΩ)	VCS1040
Other Resistors	RD1/4PU□□□J

OTHERS

CN601	FJ CONNECTOR 6P	06P-FJ
	PCB HOLDER	VNE2026

KALB ASSY

SEMICONDUCTORS

IC201	BU2090
D206, D207	SLR-342MCT31
D201, D210	SLR-342VCT31
D202-D205, D208, D209	SLR-342YCT31

SWITCHES

S201-S209	ASG1034
-----------	---------

CAPACITORS

C202, C204	CKPUYY103N16
------------	--------------

RESISTORS

All Resistors	RD1/4PU□□□J
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OTHERS

	REMOTE SENSOR UNIT	GPIU26X
CN201	2mm PITCH B TO B CONNECTOR	TKC-A06X-B1

CLD-2760K

Mark No.	Description	Part No.
DIKB ASSY		
SEMICONDUCTORS		
D301-D315		SLR-342MCT31
SWITCHES		
S301-S317		ASG1034
RESISTORS		
All Resistors		RD1/4PU□□□J
OTHERS		
CN302, CN303		52492-1020
CN301	FFC BOTTOM CONNECTOR 10P	9133S-08A
	BOARD TO BOARD CONNECTOR 8P	
IOEB ASSY		
SEMICONDUCTORS		
IC701, IC702		BU2090F
CAPACITORS		
C701, C703		CKPUY103N16
RESISTORS		
All Resistors		RD1/4PU□□□J
OTHERS		
CN701, CN702	10P FFC CONNECTOR	52044-1045
JACB ASSY		
SEMICONDUCTORS		
IC502		NJM2068D
IC501		NJM4558DX
CAPACITORS		
C514, C515		CEJA101M10
C504, C505		CKPUYB271K50
C520		CKPUYF223Z25
C509, C512		CKPUYX122M16
C510, C513		CKPUYX152M16
C501, C502, C507, C508		CKPUY103N16
C503, C506		CQMA104J50
RESISTORS		
R508		RN1/6PQ2001F
R507		RN1/6PQ3001F
VR501, VR502 (10kΩ)		VCS1040
Other Resistors		RD1/4PU□□□J
OTHERS		
CN502	FJ CONNECTOR 6P	06R-FJ
CN503	19P FFC CONNECTOR	52044-1945
CN501	20P CONNECTOR	BTMK20P-1R
JA502	HEADPHONES JACK	RKN1006
JA501, JA503	MICROPHONE JACK	VKN1147
	SNAP PLATE	VNE1102
	JACK HOLDER	VNE2054

Mark No.	Description	Part No.
MOTHER ASSY		
SEMICONDUCTORS		
	IC904	BA10393F
	IC351	CA0002AM
	IC803	LA6510
	IC400	LA7134M
	IC901	LA9420M
	IC801	LA9425
	IC802	LC78621E
	IC703	MC14577CP
△	IC206	NJM78M08FA
△	IC207	NJM79M08FA
	IC500	PD0234A
	IC700	PD0239A
	IC101	PD0240B2
	IC902	TA8410AK
	IC804	TC4W53F
	IC903, IC905	XRA4560F
	Q1001, Q102, Q916	2PB709A
	Q391, Q393, Q394, Q451, Q475	2PD601A
	Q701, Q702, Q805, Q9001	2PD601A
	Q903, Q904, Q907, Q908, Q915	2PD601A
	Q917	2PD601A
	Q834	2SA854S
	Q411, Q803	2SC2412K
	Q152	2SC3802K
	Q208, Q301, Q392	DTA124EK
	Q103, Q303, Q901, Q910, Q918	DTC124EK
	Q840	FMY1A
	D202	11EQS06
	D102, D180, D801, D901, D902	1SS254
	D905, D963	1SS254
	D802	1SS355
	D110	MTZJ5. 1B
COILS AND FILTER		
	L413	LAU100J
	L410	LAU101J
	L351, L802-L804	LAU181J
	L352, L412, L461, L470	LAU220J
	L590, L591, L800, L801	LAU220J
	L808, L809	LAU220J
	L411, L571	LAU270J
	L420, L421, L580	LAU430J
	L462	LAU560J
	L414	LAU8R2J
	L460	LFA561J
	F501	VTF1055
	L5001	VTH1024
CAPACITORS		
	C562	CCSQCH050C50
	C617	CCSQCH060D50
	C436, C809, C811	CCSQCH070D50
	C420, C421, C438, C456, C583	CCSQCH100D50
	C370, C810, C846, C848, C891	CCSQCH101J50

Mark	No.	Description	Part No.
	C944		CCSQCH101J50
	C434, C437, C474, C579		CCSQCH120J50
	C416		CCSQCH121J50
	C415, C418, C475		CCSQCH150J50
	C161, C353, C812		CCSQCH151J50
	C352, C552		CCSQCH180J50
	C594, C618, C813, C950		CCSQCH220J50
	C162, C417, C591, C935		CCSQCH221J50
	C371, C419, C433, C467, C931		CCSQCH270J50
	C106, C107, C354, C435, C452		CCSQCH330J50
	C553, C563, C580, C598		CCSQCH330J50
	C351, C425, C476		CCSQCH390J50
	C464, C468		CCSQCH470J50
	C375, C561, C596, C806		CCSQCH680J50
	C374, C814		CCSQCH820J50
	C460, C462		CCSQCH910J50
	C439		CEAL100M16
	C412, C484, C491, C833, C836		CEAL470M6R3
	C844		CEAL470M6R3
	C838		CEALNP470M6R3
	C871		CEANP100M16
	C972		CEANP220M10
	C450		CEANP470M6R3
	C904		CEAS010M50
	C228, C367		CEAS100M50
	C364, C424, C917		CEAS101M10
	C821, C922, C967, C968, C987		CEAS220M25
	C714		CEAS221M10
	C845, C870, C902, C926		CEAS2R2M50
	C101, C225, C226, C363, C369		CEAS470M10
	C493, C530, C534, C538, C550		CEAS470M10
	C585, C588, C710, C718, C763		CEAS470M10
	C765, C801, C803, C820, C842		CEAS470M10
	C882, C890, C893, C898, C927		CEAS470M10
	C933, C974, C975		CEAS470M10
	C368, C943		CEASR47M50
	C850		CEJA4R7M35
	C256, C490, C907		CKSQYB102K50
	C879		CKSQYB103K50
	C915, C981		CKSQYB104K25
	C919		CKSQYB332K50
	C361, C362		CKSQYB392K50
	C355-C358, C377, C716, C909		CKSQYB472K50
	C110, C122, C160, C196-C198		CKSQYF103Z50
	C372, C373, C376, C451, C454		CKSQYF103Z50
	C532, C533, C570, C577, C578		CKSQYF103Z50
	C581, C802, C804, C807, C819		CKSQYF103Z50
	C822, C831, C832, C834, C835		CKSQYF103Z50
	C843, C872, C876, C888, C889		CKSQYF103Z50
	C892, C897, C918, C928, C929		CKSQYF103Z50
	C932, C937, C938, C941		CKSQYF103Z50
	C961, C962, C964, C971, C982		CKSQYF103Z50
	C102, C103, C151, C365, C366		CKSQYF104Z25
	C391, C413, C422, C423, C453		CKSQYF104Z25
	C457, C458, C485, C492, C494		CKSQYF104Z25

Mark	No.	Description	Part No.
	C5006, C531, C539, C551, C574		CKSQYF104Z25
	C582, C589, C592, C711, C712		CKSQYF104Z25
	C715, C717, C719, C721, C764		CKSQYF104Z25
	C766, C827, C828, C840, C841		CKSQYF104Z25
	C847, C873, C874, C901		CKSQYF104Z25
	C910-C912, C976, C983		CKSQYF104Z25
	C837, C921, C930		CKSQYF223Z50
	C359, C360, C905, C951		CKSQYF224Z25
	C465, C808, C815, C875, C877		CKSQYF473Z25
	C924, C925		CKSQYF473Z25
	C942		CQMA103J50
	C913, C920		CQMA104J50
	C479, C908, C973		CQMA154J50
	C903		CQMA222J50
	C923		CQMA473J50
	C934		CQMA681J50
	C483		CQMA683J50
	VC901 (20pF)		VCM-008

RESISTORS

R927		RD1/4PU122J
R420		RD1/4PU470J
R722, R723		RFAL/6PU4R7J
R490, R987, R989		RN1/10SE103D
R880, R883		RN1/10SE104D
R879, R986, R990		RN1/10SE333D
R881, R882		RN1/10SE473D
VR450 (2.2kΩ)		PCP1025
VR603 (4.7kΩ)		RCP1020
VR604, VR607, VR608 (47kΩ)		RCP1047

Other Resistors

RS1/10S□□□J

OTHERS

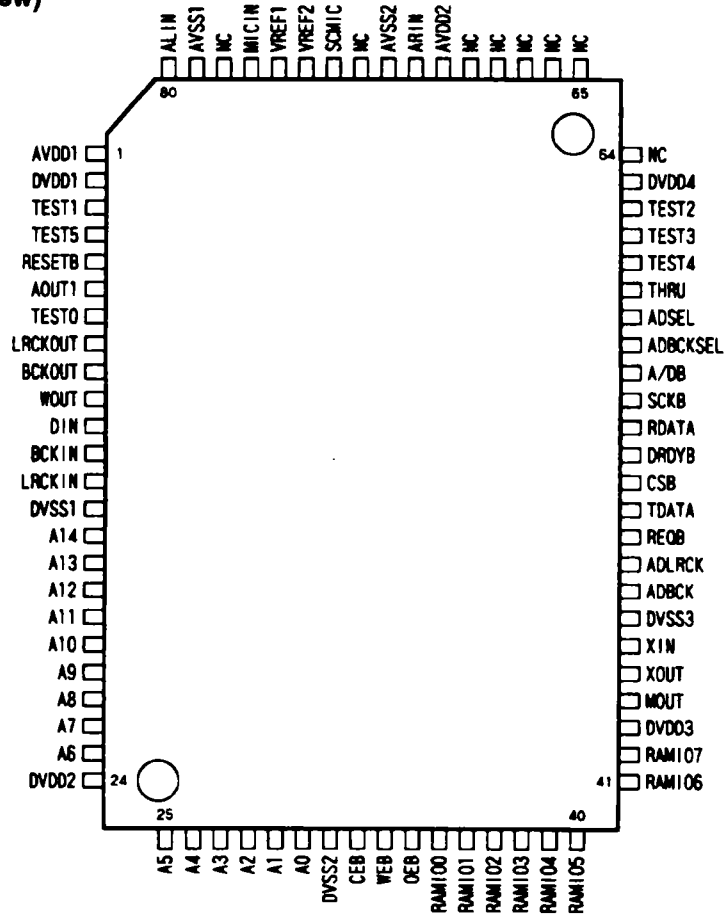
CN108	12P FFC CONNECTOR	52045-1245
CN102	21P FFC CONNECTOR	52045-2145
CN107	22P FFC CONNECTOR	52045-2245
CN103	23P FFC CONNECTOR	52233-2310
CN106	11P TOP POST	B11P-SHF-1AA
CN203	B TO B CONNECTOR 20P	BTFN20S-3SB7
JA3, JA4	REMOTE CONTROL JACK	RKN1004
	PCB BINDER	VEF1040
JA15	3P PIN JACK	VKB1091
	SCREW TERMINAL	VNE1948
	EARTH METAL	VNF1084
X101	CERAMIC RESONATOR(9.00MHz)	VSS1040
X550	CRYSTAL RESONATOR(14.318MHz)	VSS1073

No.	Pin Name	I/O	Function
27	VDD		Power supply for digital system Normally, 5V.
28	JP+	O	Output pin for track jump When JP+ is "H", Acceleration in the outer direction jump or Deceleration in the inner direction jump.
29	JP-		When JP- is "H": Acceleration in the Inner direction jump or deceleration in the outer direction jump. Tristate output is able to output with the bcommand.
30	DEMO	I	Sound output function input for the player adjustment with pull-down resistor
31	TEST4	I	Test input pin with pull-down resistor
32	EMPH	O	Deemphasis monitor output H: during playback the deemphasis disc
33	LRCKO	O	Word clock output
34	DFORO		R ch data output
35	DFOLO		L ch data output
36	DACKO		Bit clock output
37	TST10	O	Test output pin Open (Normally, output "L")
38	USDACK	I	Bit clock input
39	USDFIN		L ch and R ch data
40	USDFIR		Test input pin Normally, "L".
41	USLRCK	I	Antishock correspondence Input word clock input ("L" at not used)
42	LRSY	O	L/R clock output
43	CK2		Bit clock output DACLK (at RES) Polarity inversion (CK2COK mode)
44	ROMXA		Data output Data (complement) (at RES) ROMOUT (ROMXA mode)
45	C2F		C2 flag output
46	MUTEL	O	Mute output
47	L VDD		Power supply for L ch Normally, 5V.
48	LCHP		L ch P output
49	LCHN		L ch N output
50	LVSS		Ground for L ch Normally, 0V.
51	RVSS		Ground for R ch Normally, 0V.
52	RCHN		R ch N output
53	RCHP		R ch P output
54	RVDD		Power supply for R ch Normally, 5V.
55	MUTER		Mute output
56	DOUT	O	Digital OUT output
57	SBSY	O	Perion signal output of subcode block
58	EFLG	O	Correction monitor output of C1, C2, single and double
59	PW	O	Subcode P, Q, R, S, T, U and W output
60	SFSY	O	Period signal output of subcode frame Rise down when the subcode is stndbyed.
61	SBCK	I	Subcode reading clock input (schmitt input)
62	FSX	O	7.35kHz sync. signal output which is divided the frequency from the crystal resonator.
63	WRQ	O	Standby output of subcode Q output
64	RWC	I	Read / Write control input
65	SQOUT	O	Subcode Q output
66	COIN	I	Command input from the microcomputer
67	CQCK	I	Command input take in clock or subcode take out clock input from SQOUT (schmitt input)
68	RES	I	Chip reset Input Once turn to "L" at the power ON
69	TST11	O	Test input pin Open (Normally, output "L")
70	LASER	O	Laser ON/OFF output Control with the serial data command from the microcomputer
71	16M	O	16.9344MHz output However, output 33.8688MHz in the fourfold speed playback mode.
72	4.2M	O	4.2336MHz output
73	CONT	O	Auxiliary output Control with the serial data command from the microcomputer.
74	TEST5	I	Test input pin with pull-down resistor
75	CS	I	Chip select Input with pull-down resistor
76	XVSS		Ground for the crystal resonator Normally, 0V.
77	XIN	I	Connect the 16.9344MHz crystal resonator.
78	XOUT	O	Connect the 33.8688MHz crystal resonator in the fourfold speed playback system.
79	XVDD		Power supply for the crystal resonator Normally, 5V.
80	TEST1	I	Test input pin with pull-down resistor

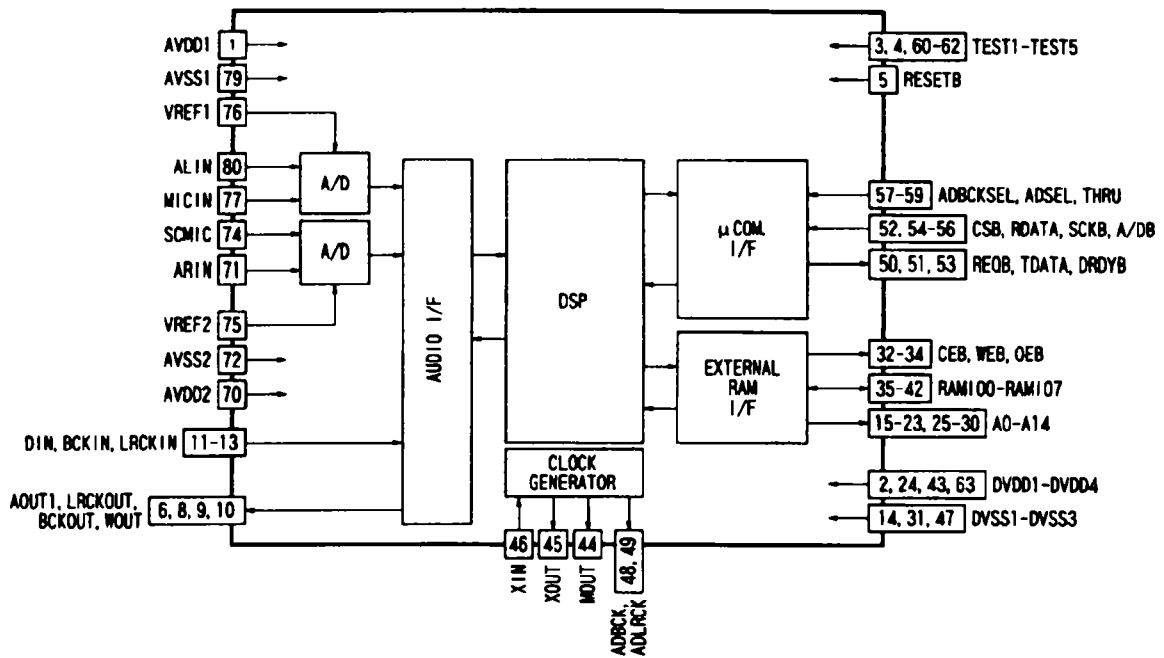
■ PM0007A (KRAB ASSY : IC101)

• DASP IC

• Pin Arrangement (Top View)



• Block Diagram



•Pin Function

No.	Name	I/O	Function	No.	Name	I/O	Function
1	AVDD1	—	Power supply pin for A/D converter 1	41	RAMIO6	IOD	Data input/output pins for external Pseudo-SRAM
2	DVDD1	—	Power supply pin 1 for logical block	42	RAMIO7		
3	TEST1	IC	Selection Input pin for test mode Normally fixed at "H".	43	DVDD3	—	Power supply pin 3 for logical block
4	TEST5			44	MOUT	OC	Master clock output pin
5	RESETB	IS	Reset input pin. Reset when "L"	45	XOUT	OCX	Crystal oscillator connection pin
6	AOUT	OC	Audio serial data output pin 1	46	XIN	ICX	
7	TEST0	OC	Test data output pin	47	DVSS3	—	Ground pin 3 for logical block
8	LRCKOUT	OC	LR clock output pin "H" : Lch, "L" : Rch	48	ADBCK	IC	Bit clock output pin for external A/D converter
9	BCKOUT	OC	Bit clock output pin Outputs 32fs	49	ADLRCK	IC	LR clock output pin for external A/D converter
10	WOUT	OC	Word clock output pin	50	REQB	OT	Data transfer request output pin for microcomputer.
11	DIN	IC	Digital audio input pin	51	TDATA	OT	Data output pin for microcomputer
12	BCKIN	IC	Bit clock Input pin	52	CSB	IC	Chip select input pin for microcomputer interface
13	LRCKIN	IC	LR clock input pin	53	DRDYB	OT	Signal receive condition output pin for microcomputer.
14	DVSS1	—	Ground pin 1 for logical block	54	RDATA	IC	Serial data input pin from microcomputer
15	A14	OC	Address output pins for external Pseudo - SRAM	55	SCKB	IC	Serial clock input pin for receiving data from microcomputer
16	A13			56	A/DB	IC	Address/data judgement pin for data from microcomputer
17	A12			57	ADBCKSEL	IC	Output selection input pin for ADBCK pin 32fs/64fs
18	A11			58	ADSEL	IC	Digital/Analog audio selection input pin
19	A10			59	THRU	IC	Setting pin for through mode. Normally fixed at "L"
20	A9			IC	Selection input pins for test mode. Normally fixed at "H"	60	TEST4
21	A8					61	TEST3
22	A7					62	TEST2
23	A6			63	DVDD4	—	Power supply pin 4 logical block
24	DVDD2	—	Power supply pin 2 for logical block.	64	NC	Not connected	
25	A5	OC	Address output pins for external Pseudo - SRAM.	65	NC		
26	A4			66	NC		
27	A3			67	NC		
28	A2			68	NC		
29	A1			69	NC		
30	A0			70	AVDD2	—	Power supply pin for A/D converter 2
31	DVSS2	—	Ground pin 2 for logical block	71	ARIN	IA	Rch input pin of analog audio
32	CEB	OC	Chip enable pin for external Pseudo-SRAM	72	AVSS2	—	Ground pin for A/D converter 2
33	WEB	OC	Write enable pin for external Pseudo-SRAM	73	NC	—	Not connected
34	OEB	OC	Output enable pin for external Pseudo-SRAM	74	SCMIC	IA	Score microphone input pin
35	RAMIO0	IOD	Data input/output pins for external Pseudo-SRAM	75	VREF2	IAR	Reference voltage input pin for A/D converter 2
36	RAMIO1			76	VREF1	IAR	Reference voltage input pin for A/D converter 1
37	RAMIO2			77	MICIN	IA	Microphone input pin
38	RAMIO3			78	NC	—	Not connected
39	RAMIO4			79	AVSS1	—	Ground pin for A/D converter 1
40	RAMIO5			80	ALIN	IA	Lh input pin of analog audio

Note
IC : CMOS Input
IOD : TTL Input, CMOS output, Built-in pull-down resistor
IAR : Analog Input, Reference voltage input
OCX : Oscillator, CMOS output
IS : Schmidt Input

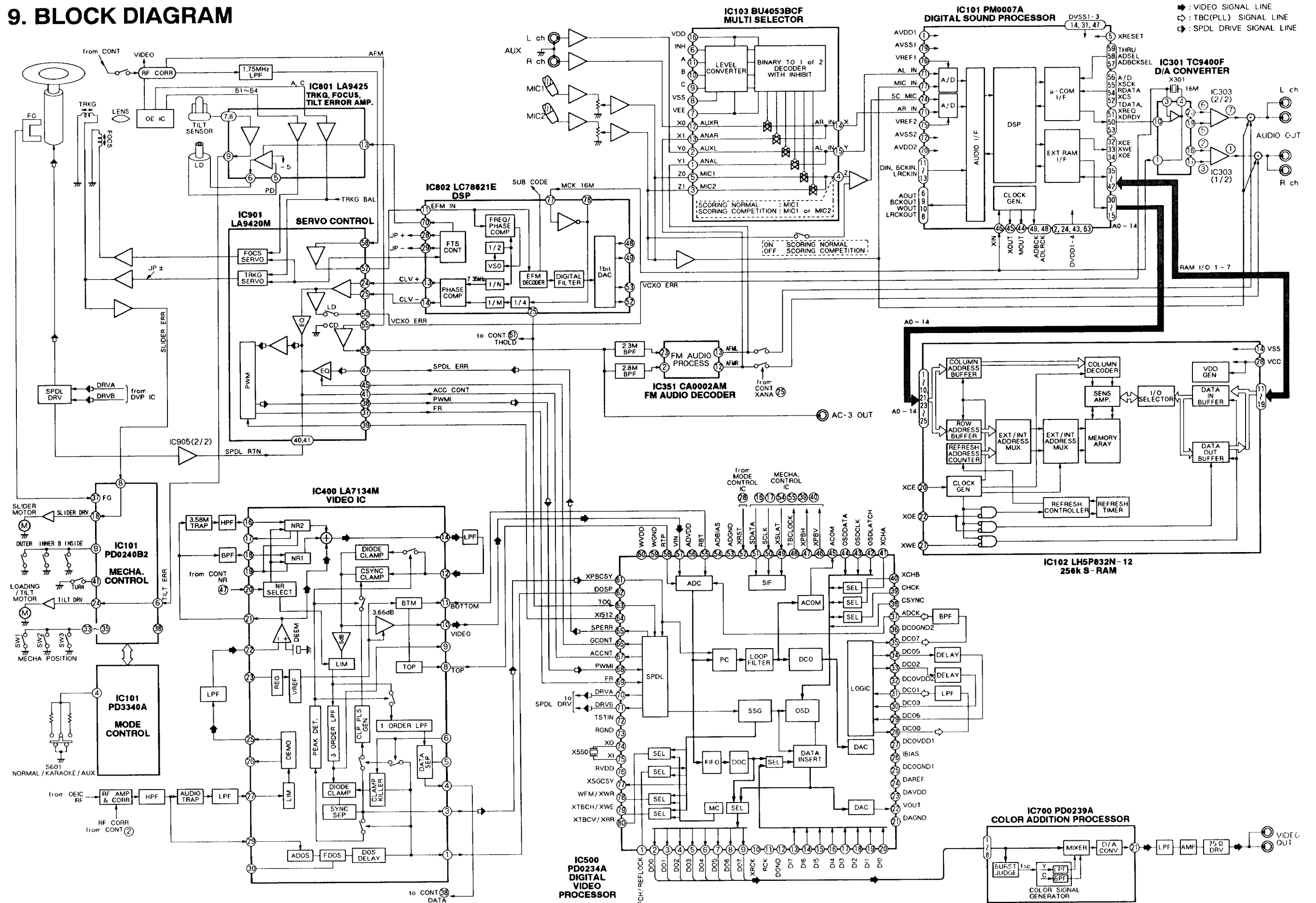
IO : TTL Input, CMOS output
IA : Analog Input
ICX : Oscillator, CMOS Input
OT : Tri-state output
OC : CMOS output

■ PD3340A (FLKB ASSY : IC101)
 · MODE CONTROL IC

• Pin Function

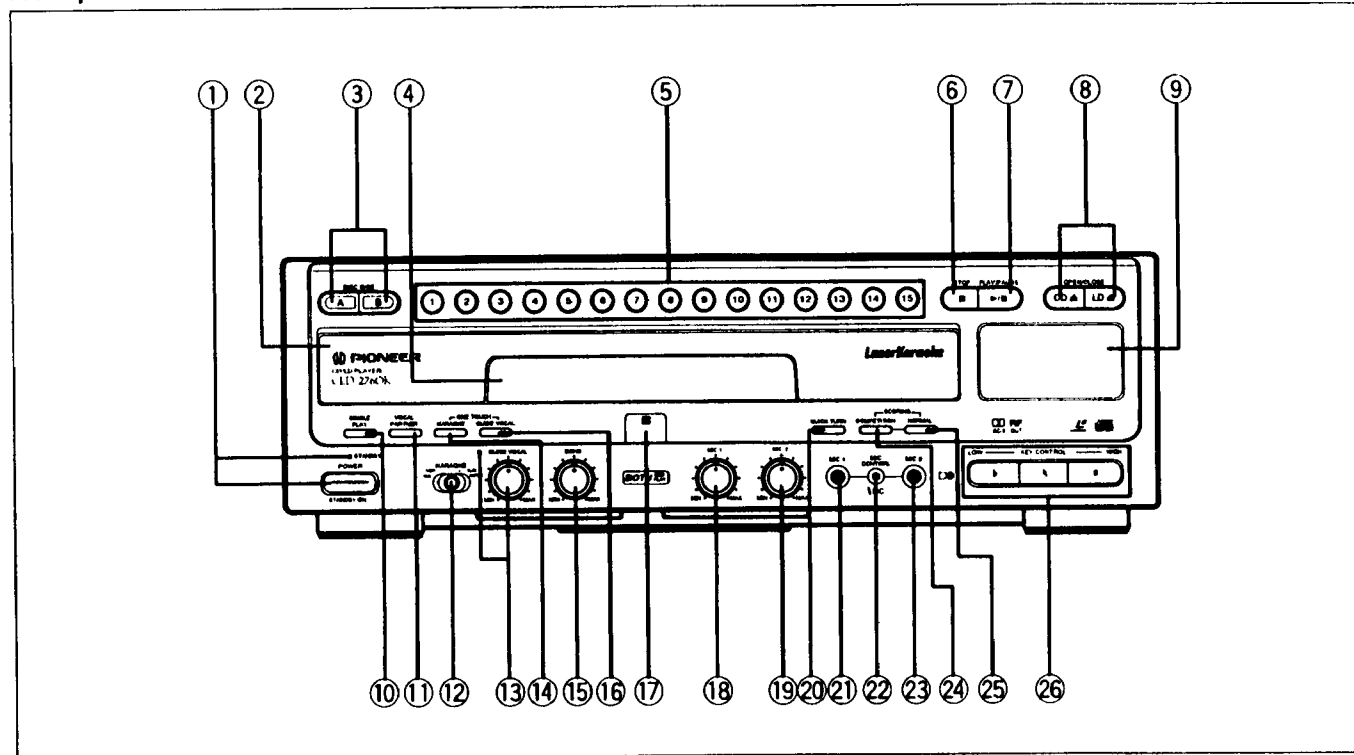
No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
1	MODESEL	I	MIC control input (AD input)	41	c	O	Display segment output
2	ECHO VOL	I	Echo volume data value (AD input)	42	b		
3	ONTA BAL	I	Vocal volume data value (AD input)	43	a		
4	MODE SW	I	Mode switch (Normal, Karaoke, External) (AD input)	44	G1	O	Display grid output
5	AVss	I	GND	45	G2		
6	—	I	Not used (GND)	46	G3		
7	N.C.	O	Not used (N.C)	47	G4		
8	—	I	Not used (GND)	48	G5		
9	Vss	I	GND	49	G6		
10	OSC1	I	Oscillator (8MHz)	50	G7		
11	OSC2	O		51	G8		
12	XRESET IN	I	CPU reset (L : reset)	52	Double sided /XSingle sided	I	Connect to power supply (+5V)
13	SHAKE	I/O	Mech. control communication requirement input (mode control communication permission output)	53	N.C.	O	Not used (N.C)
14	SEL IR	I	Remote control input	54	N.C.		
15	V-CD	O	Not used	55	N.C.		
16	POWER	O	Mother board power supply switching output	56	N.C.		
17	EFLG	I	For measuring error rate	57	VCC	I	Power supply (+5V)
18	FSX	I	For measuring error rate	58	I/O DATA3	O	I/O expander data output
19	MICSENSE	I	MIC input	59	I/O DATA2	O	I/O expander data output
20	XSSVC	O	Not used	60	I/O CLK2	O	I/O expander clock output
21	XMICON	O	Mic line switch (L : ON, H : OFF)	61	N.C.	O	Not used (N.C)
22	MIC1/X2	O	MIC input switch (L : MIC1, H : MIC2)	62	N.C.		
23	XINT/EXT	O	Analog audio switch (L : player, H : External input)	63	MUTE	O	Not used
24	BATTLE	O	Scoring MIC switch (L : at normal, H : at competition)	64	CDGM	O	Not used
25	THRU (DASP7)	I	H : through the digital audio L : DSP input of the digital audio	65	XCS(G)	O	Not used
26	I/O CLK1	O	I/O expander clock output	66	XCS (COLOR)	O	Not used
27	I/O DATA1	O	I/O expander data output	67	XSCK	I/O	Serial communication clock
28	N.C.	O	Not used (N.C)	68	S-MTOF	I	Serial communication data input
29	DOG FOOD	O	Pulse output for WATCH DOG	69	S-FTOM	O	Serial communication data output
30	m	O	Display segment output	70	XRESET	O	Mother board reset output
31	l			71	XCS (OSD)	O	Communication requirement output of character generator
32	k			72	DRDY (DASP7)	I	DSP (PM0007A) L : data reception OK
33	j			73	XREQ (DASP7)	I	DSP (PM0007A) L : data transmission OK
34	i			74	A/D (DASP7)	O	Transmission data switch of DSP (PM0007A) (H : address, L : data)
35	h			75	CS (DASP7)	O	DSP (PM0007A) communication requirement output
36	g			76	AVcc	I	Power supply (+5V)
37	f			77	KIN0	I	Key data input (AD input)
38	e			78	KIN1		
39	d			79	KIN2		
40	VDISP	I	FL power supply (-27V)	80	Model select	I	Connect to model select switch

9. BLOCK DIAGRAM



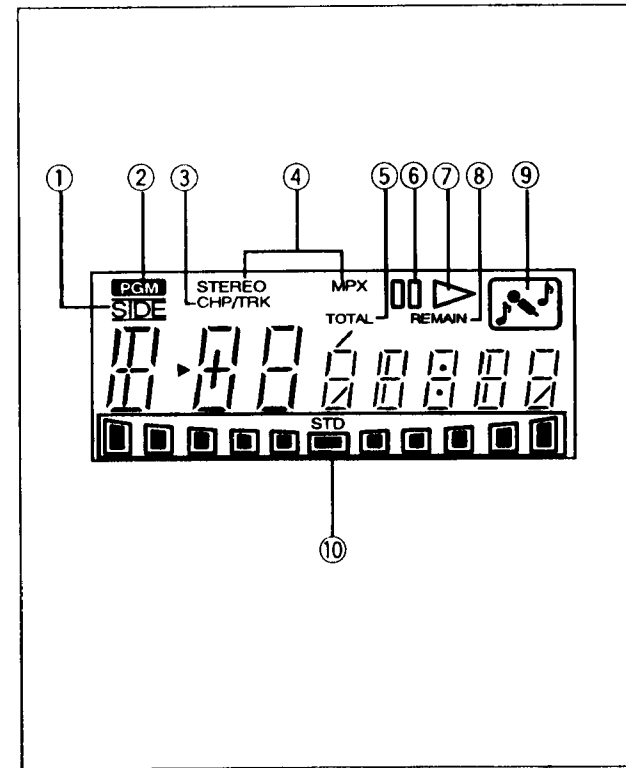
10. PANEL FACILITIES

Front panel:



- | | |
|--|--|
| <ul style="list-style-type: none"> ① POWER STANDBY/ON switch and STANDBY indicator
Press to turn the power on and off. ② Disc table ③ DISC SIDE A/SIDE B buttons ④ CD Disc table ⑤ Direct music search buttons ⑥ STOP (■) button ⑦ PLAY/PAUSE (▶/⏸) button ⑧ OPEN/CLOSE (CD ▲/LD △) buttons ⑨ Display window ⑩ SINGLE PLAY button/indicator ⑪ VOCAL PARTNER button/indicator ⑫ NORMAL/KARAOKE/AUX INPUT selector ⑬ GUIDE VOCAL level control/indicator | <ul style="list-style-type: none"> ⑭ ONE-TOUCH KARAOKE button/indicator ⑮ ECHO level control ⑯ ONE-TOUCH GUIDE VOCAL button/indicator ⑰ Remote sensor ⑱ MIC 1 level control ⑲ MIC 2 level control ⑳ QUICK TURN ON/OFF button/indicator ㉑ MIC 1 jack ㉒ MIC CONTROL jack ㉓ MIC 2 jack ㉔ SCORING COMPETITION button ㉕ SCORING NORMAL button ㉖ KEY CONTROL buttons |
|--|--|

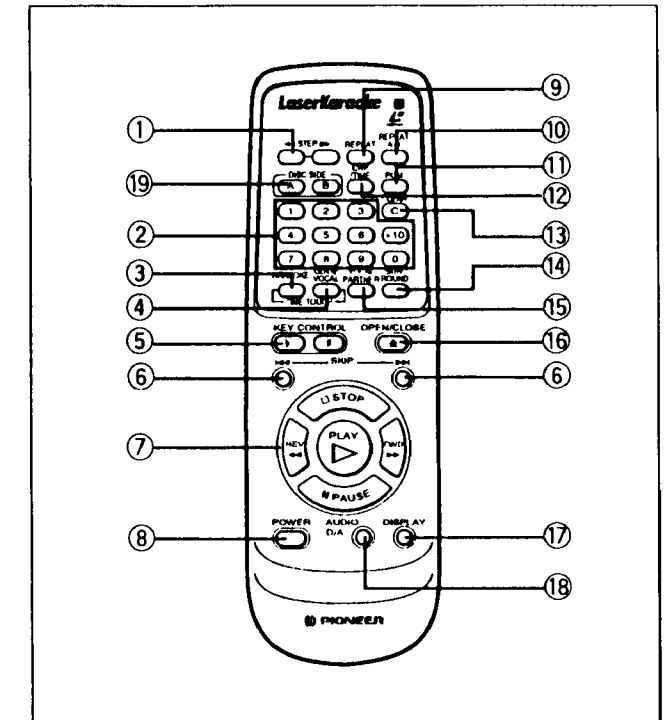
Display window



- ① **SIDE indicator**
- ② **PGM (Program) indicator**
- ③ **Chapter number/Track number indicator**
- ④ **Audio mode indicators**
Display the type of the played audio signal when the KARAOKE or AUX input is selected.
- ⑤ **TOTAL indicator**
- ⑥ **|| Pause indicator**
- ⑦ **▶ Play indicator**
- ⑧ **REMAIN indicator**
- ⑨ **KARAOKE indicator**
- ⑩ **Key control indicator**

Remote control unit:

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



- ① **STEP (◀||▶) buttons**
- ② **Digit buttons**
- ③ **ONE-TOUCH KARAOKE button**
- ④ **ONE-TOUCH GUIDE VOCAL button**
- ⑤ **KEY CONTROL buttons**
- ⑥ **SKIP buttons**
- ⑦ **Operation buttons**
■ : STOP button
▶ : PLAY button
|| : PAUSE button
◀/▶ : Scan buttons
- ⑧ **POWER button**
- ⑨ **REPEAT button**
- ⑩ **REPEAT A-B button**
- ⑪ **PGM (Program) button**
- ⑫ **CHP/TIME (Chapter/Time) button**
- ⑬ **CLEAR button**
- ⑭ **SURROUND button**
- ⑮ **VOCAL PARTNER button**
- ⑯ **OPEN/CLOSE (▲) button**
- ⑰ **DISPLAY button**
- ⑱ **AUDIO D/A button**
- ⑲ **DISC SIDE A/B buttons**

11. 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	38 W
Weight	6.7 kg
Dimensions	420 (W) x 412 (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
AC-3 · RF OUT PUT	RCA jack

Accessories

Remote control unit	1
Size 'AAA' (IEC R03) 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.

CLD - 2760K

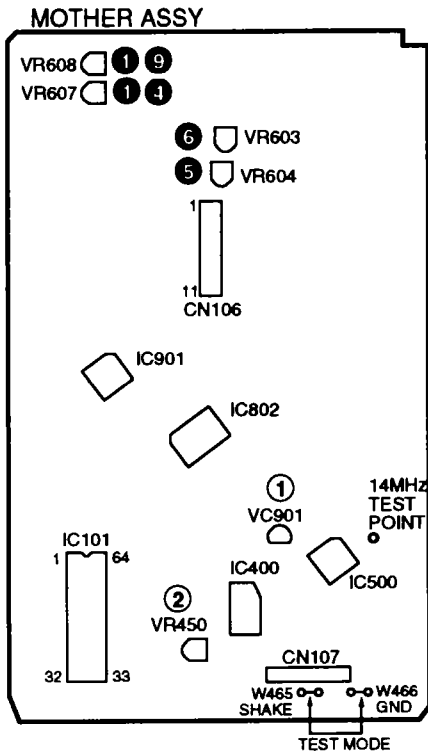
Mark No.	Description	Part No.
KRAB ASSY		
SEMICONDUCTORS		
IC103		BU4053BCF
IC102		LH5P832N-12
IC104-IC109, IC302-IC304		NJM4558DX
IC101		PM0007A
IC301		TC9400F
Q103, Q301-Q304, Q306, Q307		2SD2114K
Q105		2SK184
Q101, Q102, Q104, Q305		DTC124EK
D107		ISS355
D101-D106, D302		DA204K
D301		KV1851
COILS		
L102, L104		LFA100J
L301, L302		LFA220J
L101		LFA3R9J
SWITCH		
S301		VSH1009
CAPACITORS		
C342, C343		CCSQCH050C50
C116, C118, C120, C122		CCSQCH101J50
C312, C315		CCSQCH151J50
C130		CCSQCH181J50
C303, C336		CCSQCH220J50
C144-C148		CCSQCH390J50
C313, C314, C316, C317		CCSQCH430J50
C109, C112		CCSQCH680J50
C324, C325, C344		CCSQSL102J50
C101, C102		CCSQSL331J50
C103, C104		CEANP010M50
C150, C151		CEANP2R2M50
C135, C136, C138, C139		CEAS100M25
C322, C323		CEAS100M25
C161, C163, C304, C306, C309		CEAS101M10
C318, C319, C331, C332		CEAS101M10
C119, C121		CEAS2R2M50
C137		CEAS330M16
C115, C117		CEAS470M16
C149, C154, C302		CKSQYB103K50
C131		CKSQYB104K25
C132		CKSQYB122K50
C108, C111, C125, C129		CKSQYB223K50
C107, C110		CKSQYB332K50
C328		CKSQYB333K50
C128		CKSQYB472K50
C105, C106, C113, C114		CKSQYF103Z50
C123, C124, C126, C127		CKSQYF103Z50
C133, C134, C140, C141, C301		CKSQYF103Z50
C305, C310, C326, C327, C335		CKSQYF103Z50
C337, C338		CKSQYF103Z50
C142, C143, C157-C160, C162		CKSQYF104Z25
C164, C170, C307, C308, C311		CKSQYF104Z25
C333, C334, C341		CKSQYF104Z25

Mark No.	Description	Part No.
RESISTORS		
R113-R116		RN1/10SE102D
R312, R313, R318, R319		RN1/10SE473D
R322-R325		RN1/10SE473D
Other Resistors		RS1/10S□□□J
OTHERS		
CN102	19P FFC CONNECTOR	52045-1945
JA101	6P PIN JACK	AKB7050
CN101	B TO B CONNECTOR 20P	BTFN20P-3RD7
	PCB BINDER	VEF1040
X301	CRYSTAL RESONATOR (16.9344MHz)	VSS1081

5. ADJUSTMENTS (調整方法)

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

■ Adjustment Points (PCB Part)



■ Adjustment Items

[Mechanical Part]

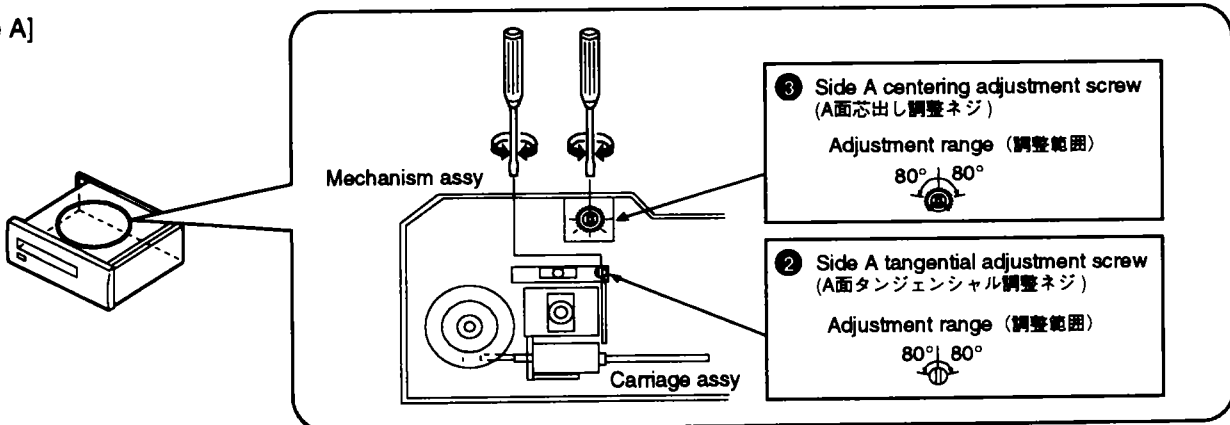
- ① Tilt Offset Adjustment (チルトオフセット調整)
- ② Tangential Direction Angle Adjustment for Side A (A面タンジェンシャル傾き調整)
- ③ Spindle Motor Centering Adjustment for Side A (A面スピンドル芯出し調整)
- ④ Crosstalk Check and Fine Tilt Offset Adjustment for Side A (A面クロストーク確認及び、チルトオフセット微調)
- ⑤ Focus Servo Loop Gain Adjustment (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 Tangential Direction Angle Adjustment for Side B (B面タンジェンシャル傾き調整)
- ⑧ Spindle Motor Centering Adjustment for Side B (B面スピンドル芯出し調整)
- ⑨ Crosstalk Check and Fine Tilt Offset Adjustment for Side B (B面クロストーク確認及び、チルトオフセット微調)

[Electrical Part]

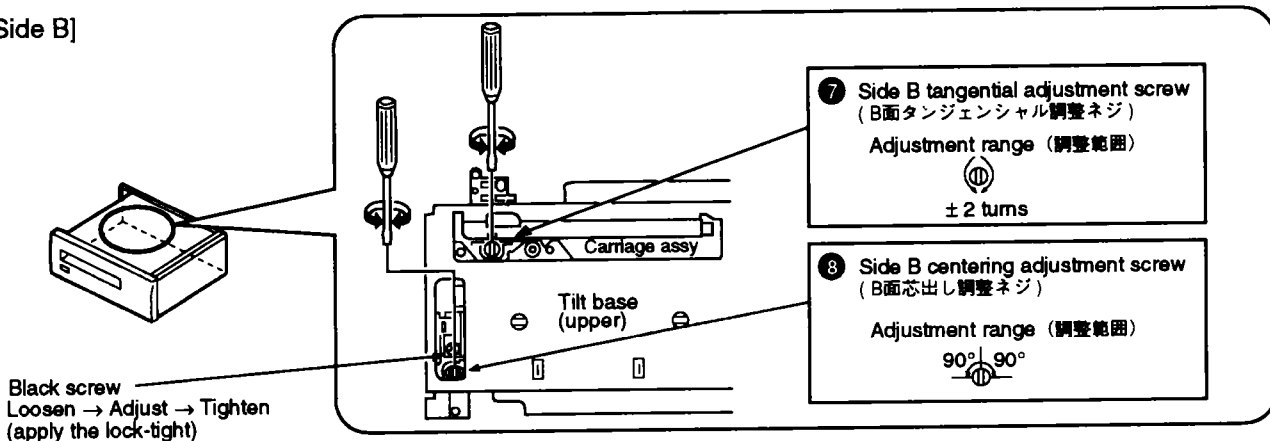
- ① Master Clock Adjustment (マスタークロック調整)
- ② Output Video Level Adjustment (出力ビデオレベル調整)

■ Adjustment Points (Mechanism Part)








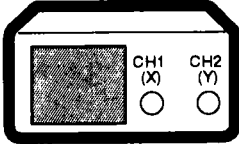

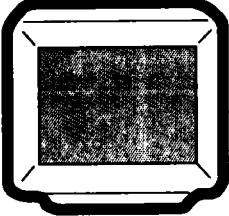
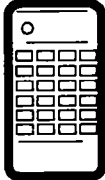
[Side A]



[Side B]

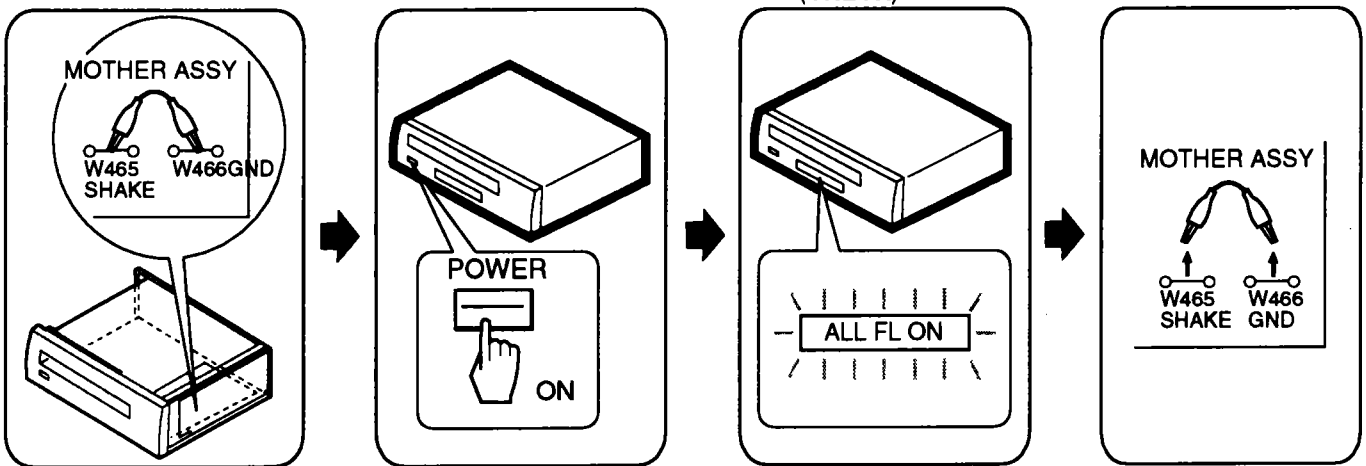


2. JIGS AND MEASURING INSTRUMENTS (調整に必要な治工具類)

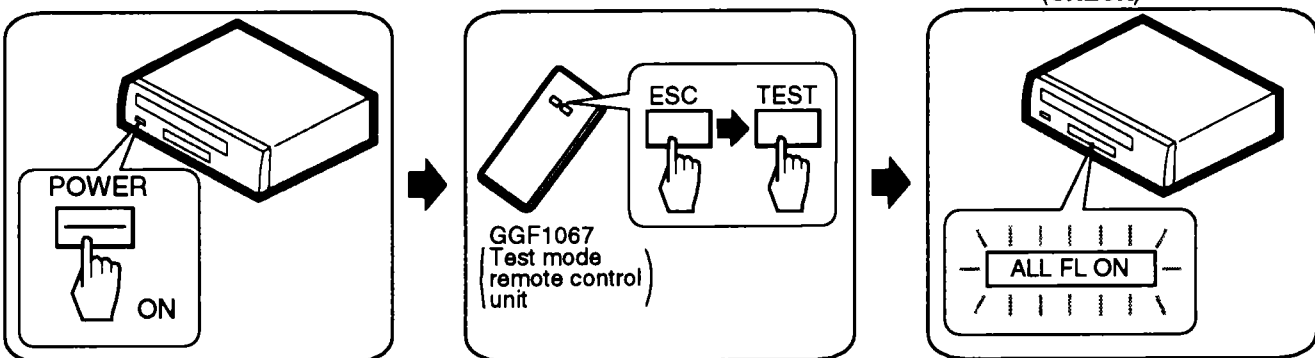
 <p>CD test disc (YEDS-7)</p>	 <p>LD test disc (GGV1012)</p>	 <p>⊖ Screwdriver (medium)</p>	 <p>⊖ Screwdriver (small)</p>
 <p>⊖ Precise screwdriver</p>	 <p>⊕ Screwdriver (large)</p>	 <p>⊕ Screwdriver (medium)</p>	 <p>Dual-trace oscilloscope (with delay) Frequency band $\geq 40\text{MHz}$</p>
 <p>Frequency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

3. TEST MODE (テストモード)

TEST MODE: ON

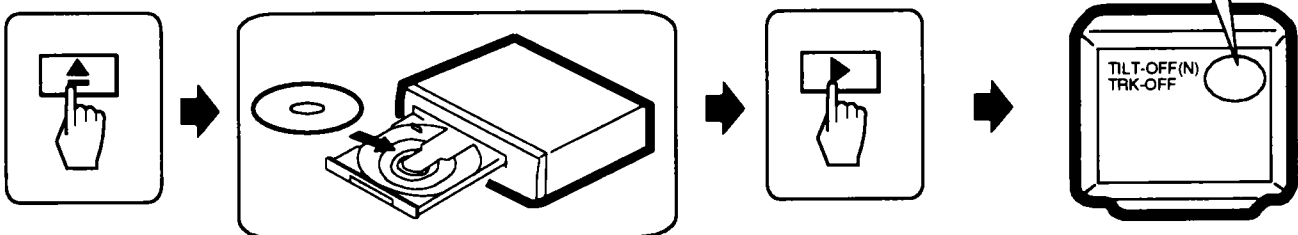


OR

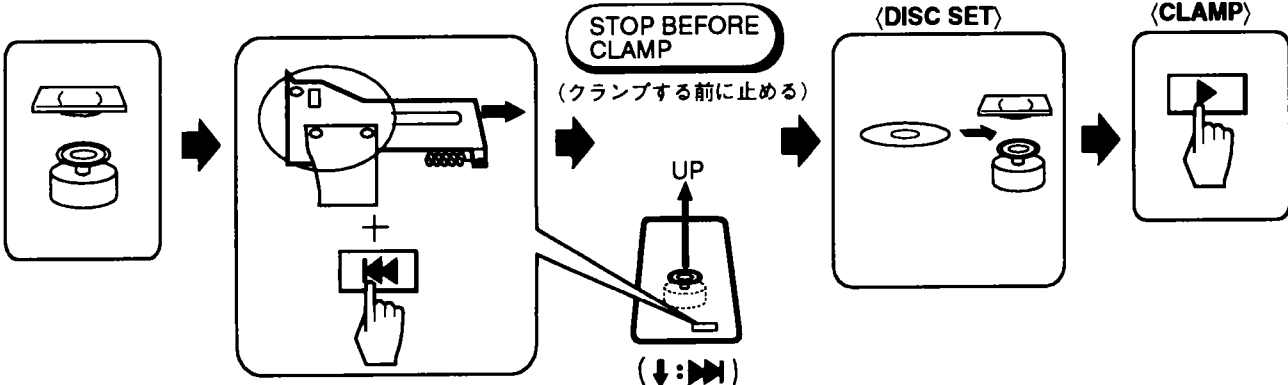


TEST MODE: DISC SET

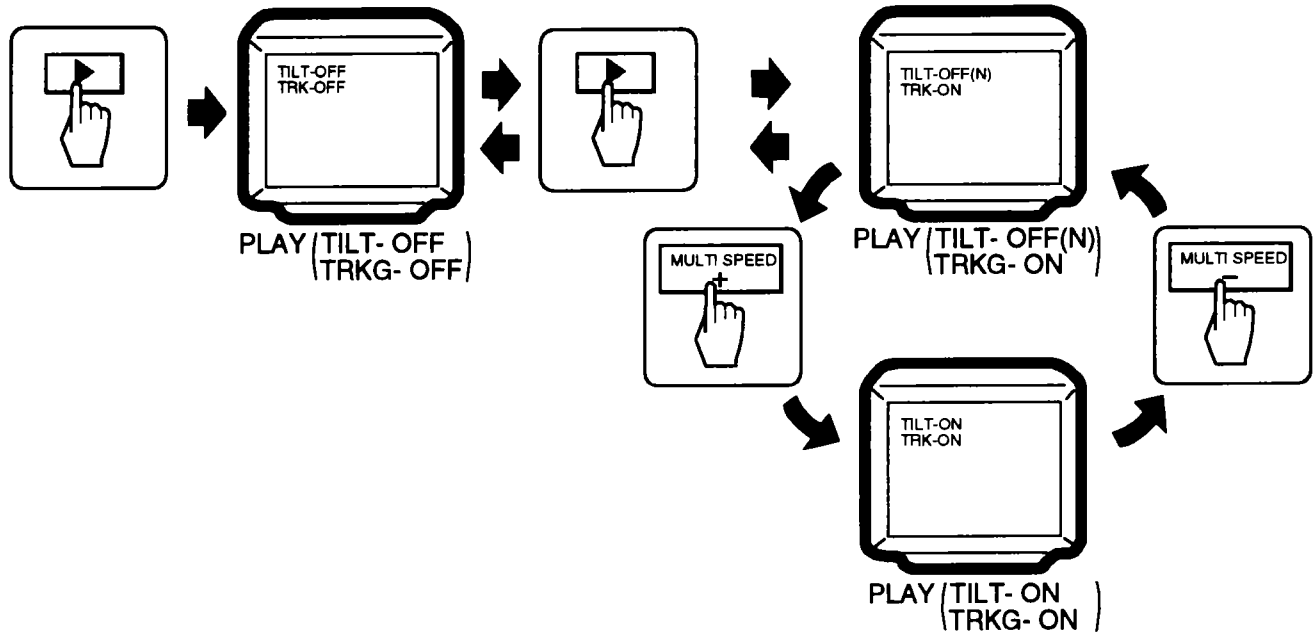
• With TRAY (トレイ有りの場合)



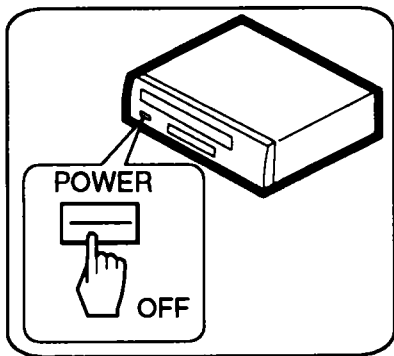
• No TRAY (トレイ無しの場合)



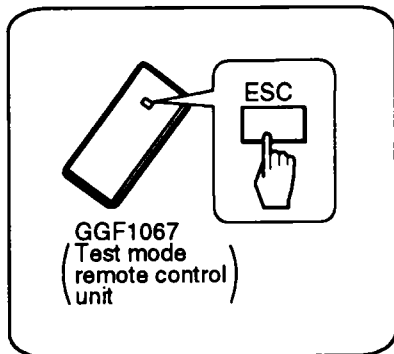
TEST MODE: PLAY



TEST MODE: OFF



OR



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, ⑧, ⑨
Electric point	_____

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



Mechanical point	③, ⑧
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)



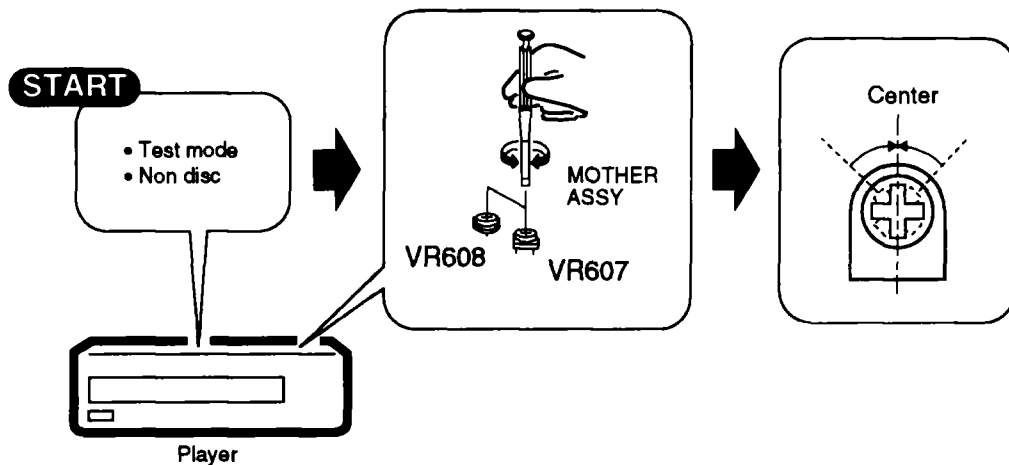
Mechanical point	①, ④, ⑤, ⑥, ⑨
Electric point	_____

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

5. MECHANICAL ADJUSTMENT (機構系の調整)

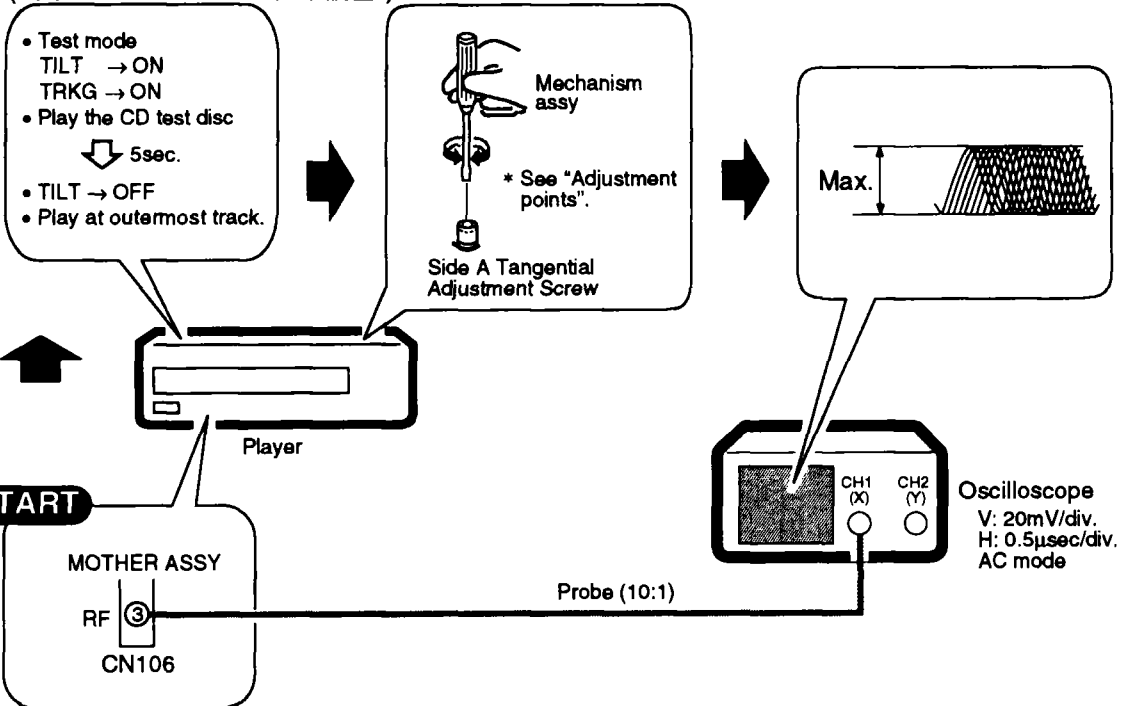
1 Tilt Offset Adjustment

(チルトオフセット調整)



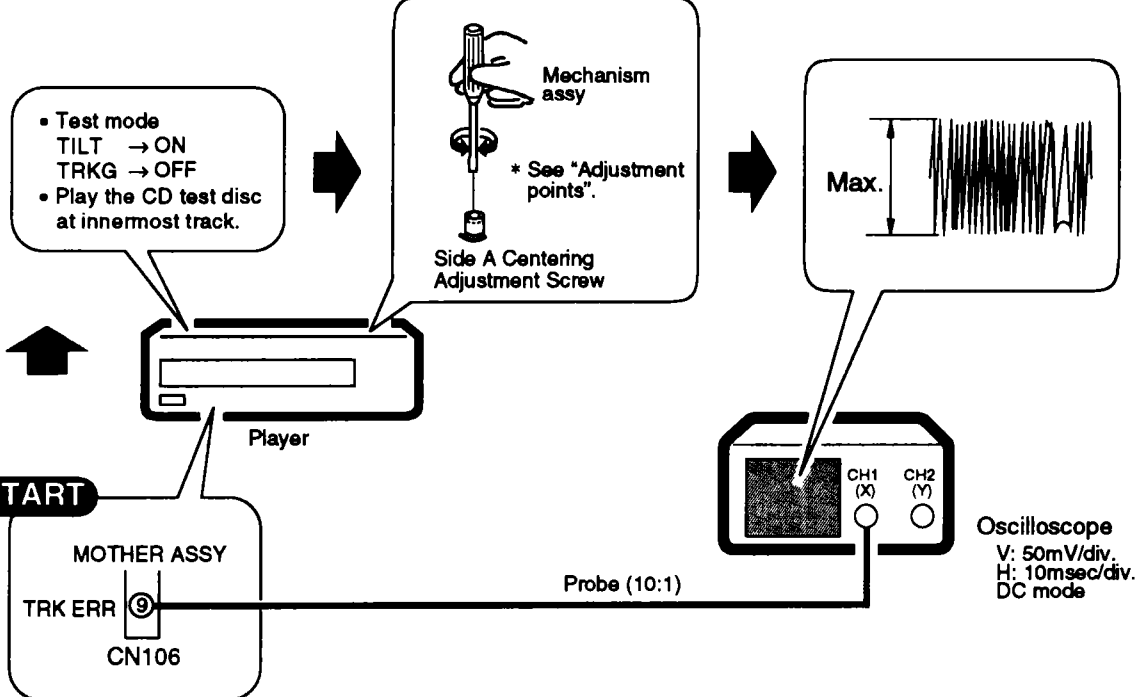
2 Tangential Direction Angle Adjustment for Side A

(A面タンジェンシャル傾き調整)



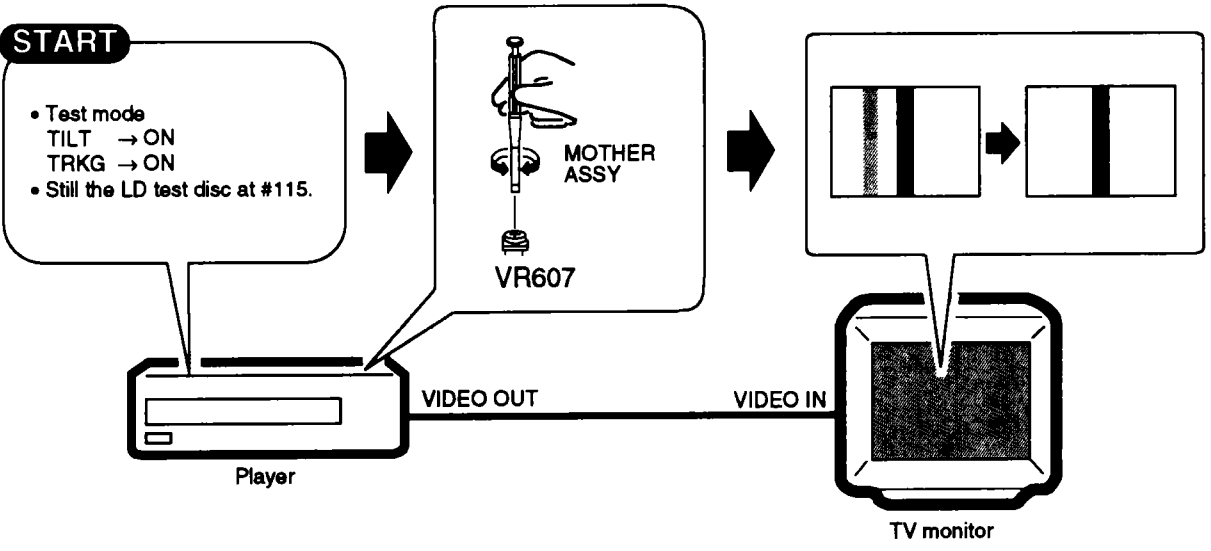
outermost : 最外周

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

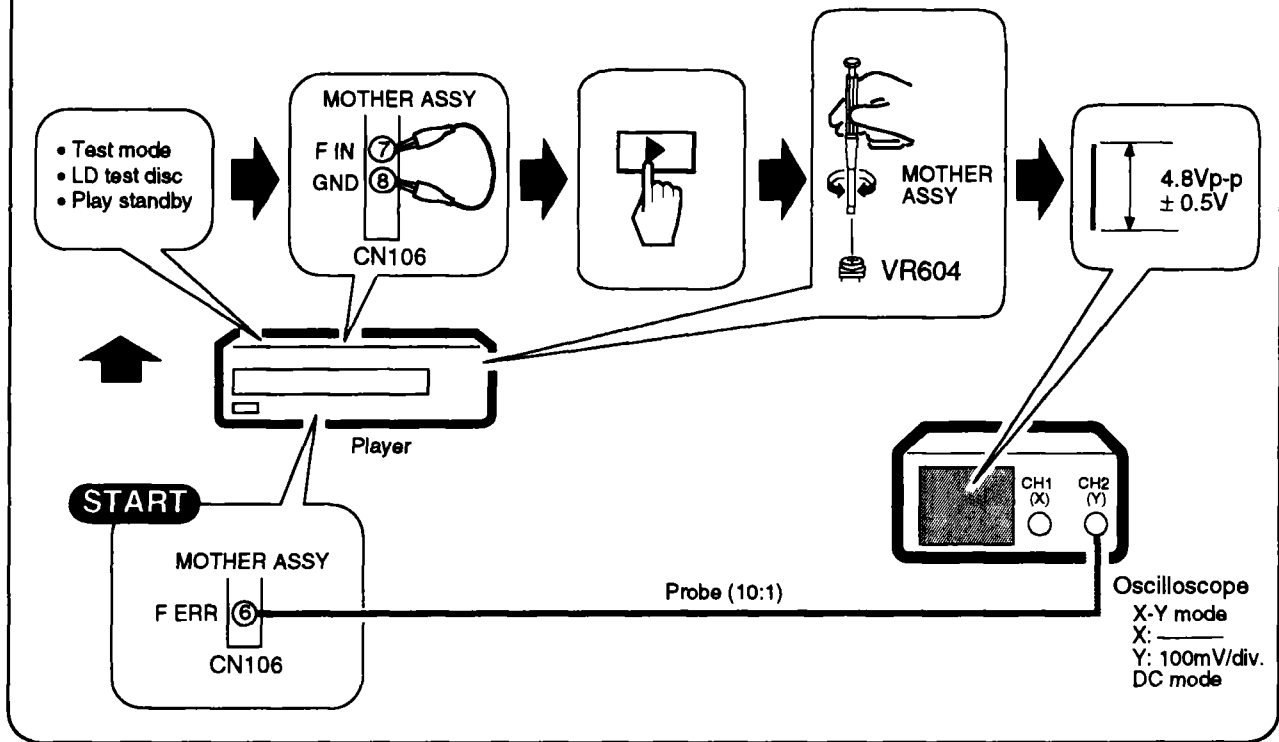


innermost : 最内周

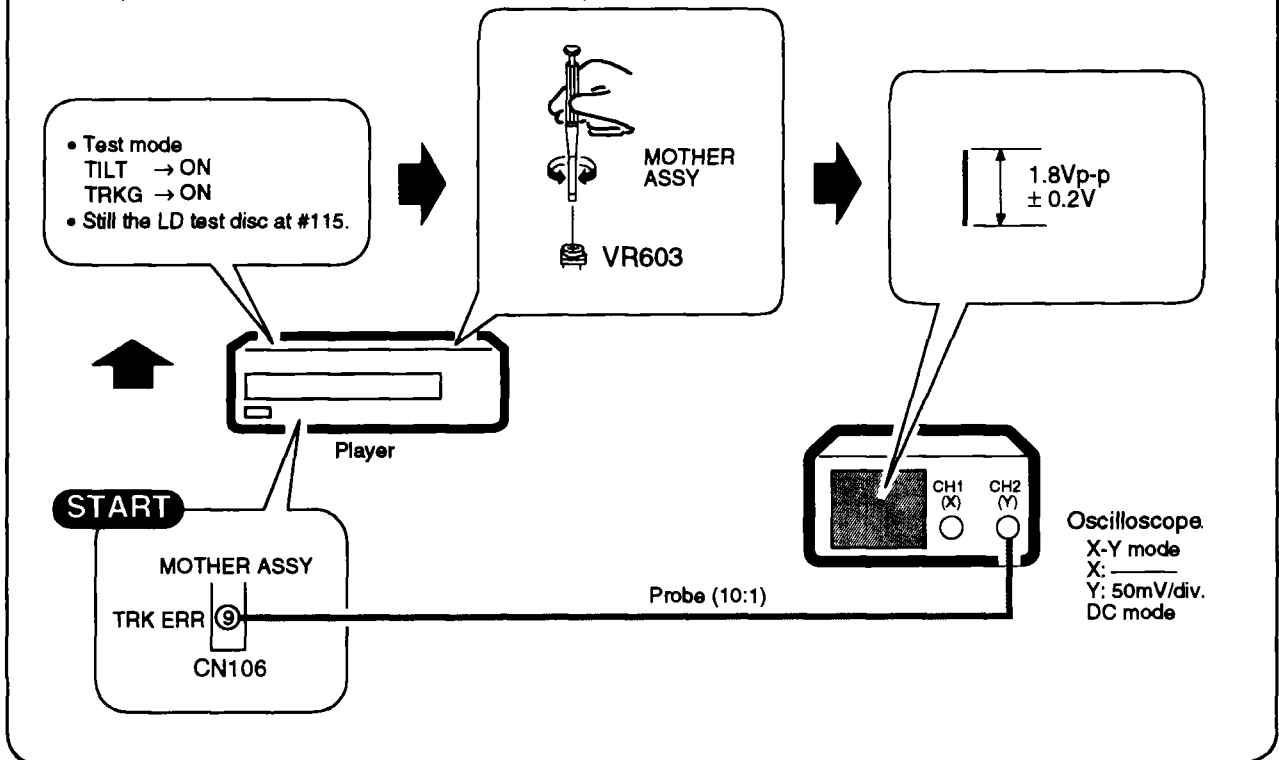
4 Crosstalk Check and Fine Tilt Offset Adjustment for Side A (A面クロストーク確認及び、チルトオフセット微調)



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



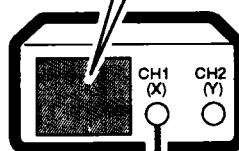
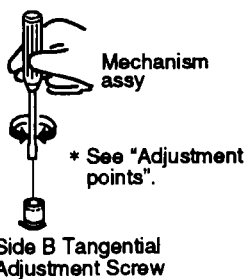
6 Tracking Servo Loop Gain Adjustment (トラッキングサーボループゲイン調整)



7 Tangential Direction Angle Adjustment for Side B

(B面タンジェンシャル傾き調整)

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



Oscilloscope
V: 20mV/div.
H: 1μsec/div.
AC mode

START

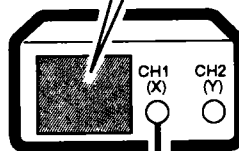
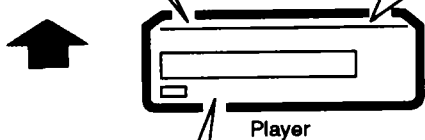
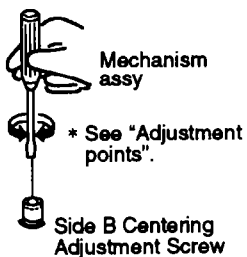
MOTHER ASSY
RF ③
CN106

Probe (10:1)

8 Spindle Motor Centering Adjustment for Side B

(B面スピンドル芯出し調整)

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



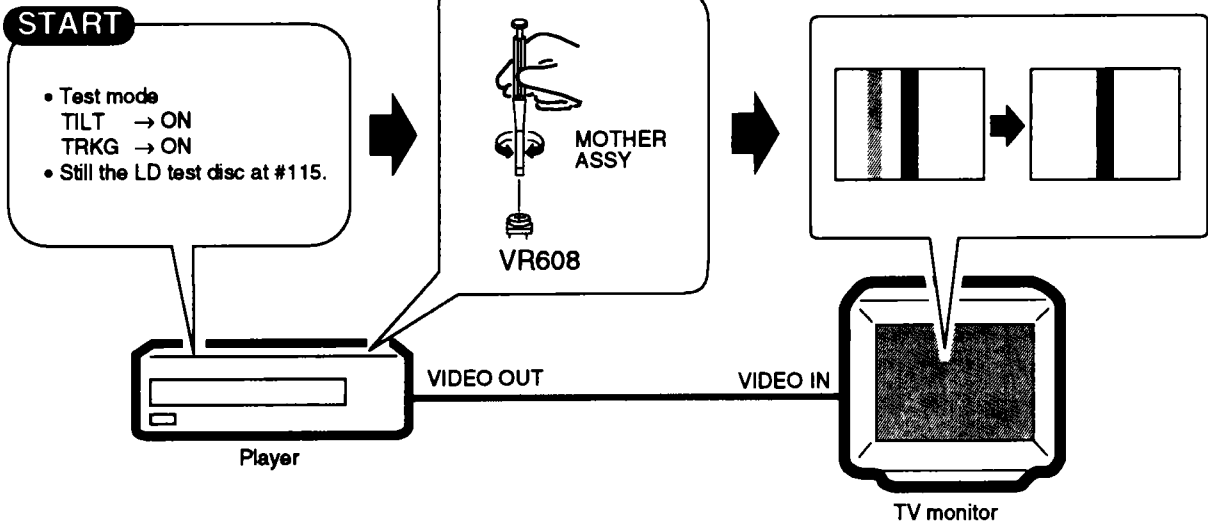
Oscilloscope
V: 50mV/div.
H: 10msec/div.
DC mode

START

MOTHER ASSY
TRK ERR ⑨
CN106

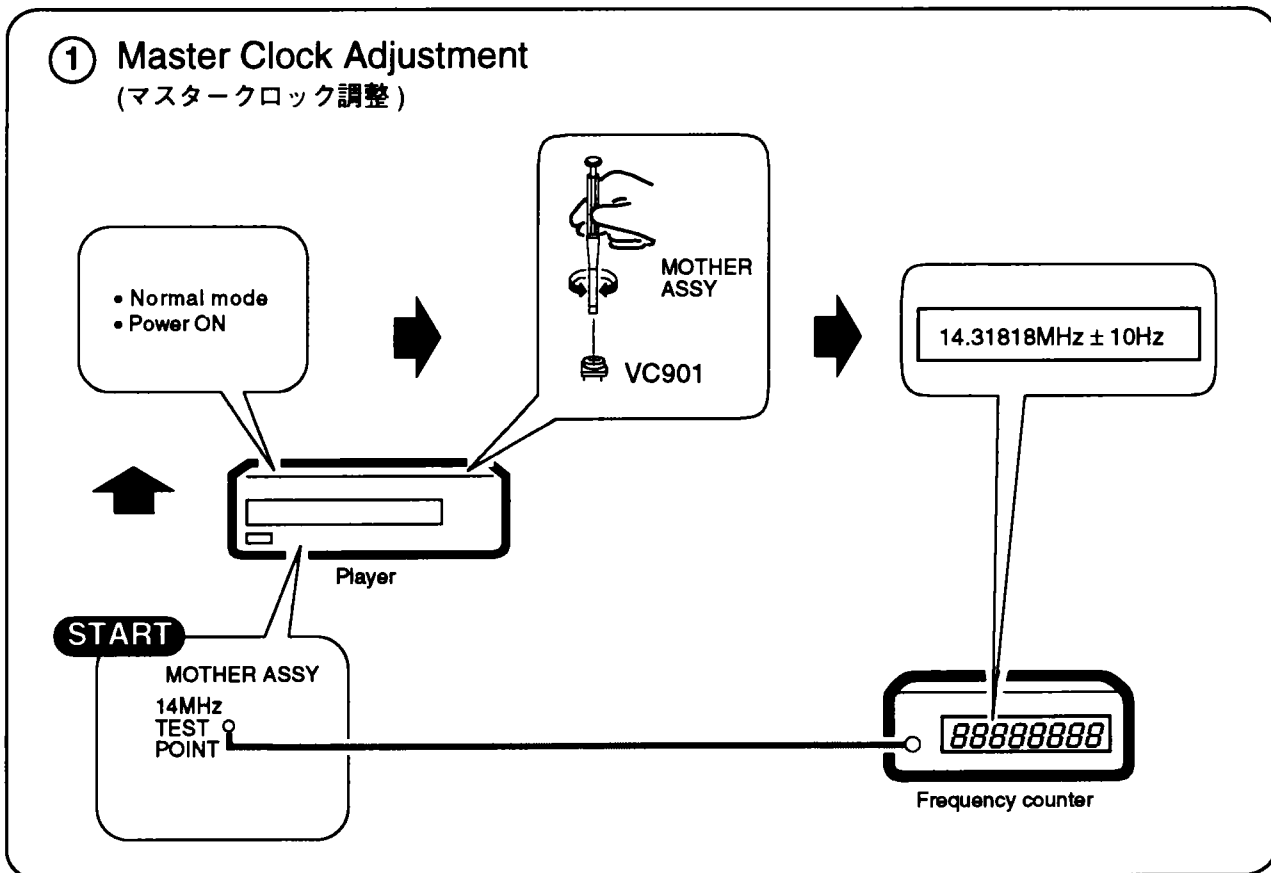
Probe (10:1)

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

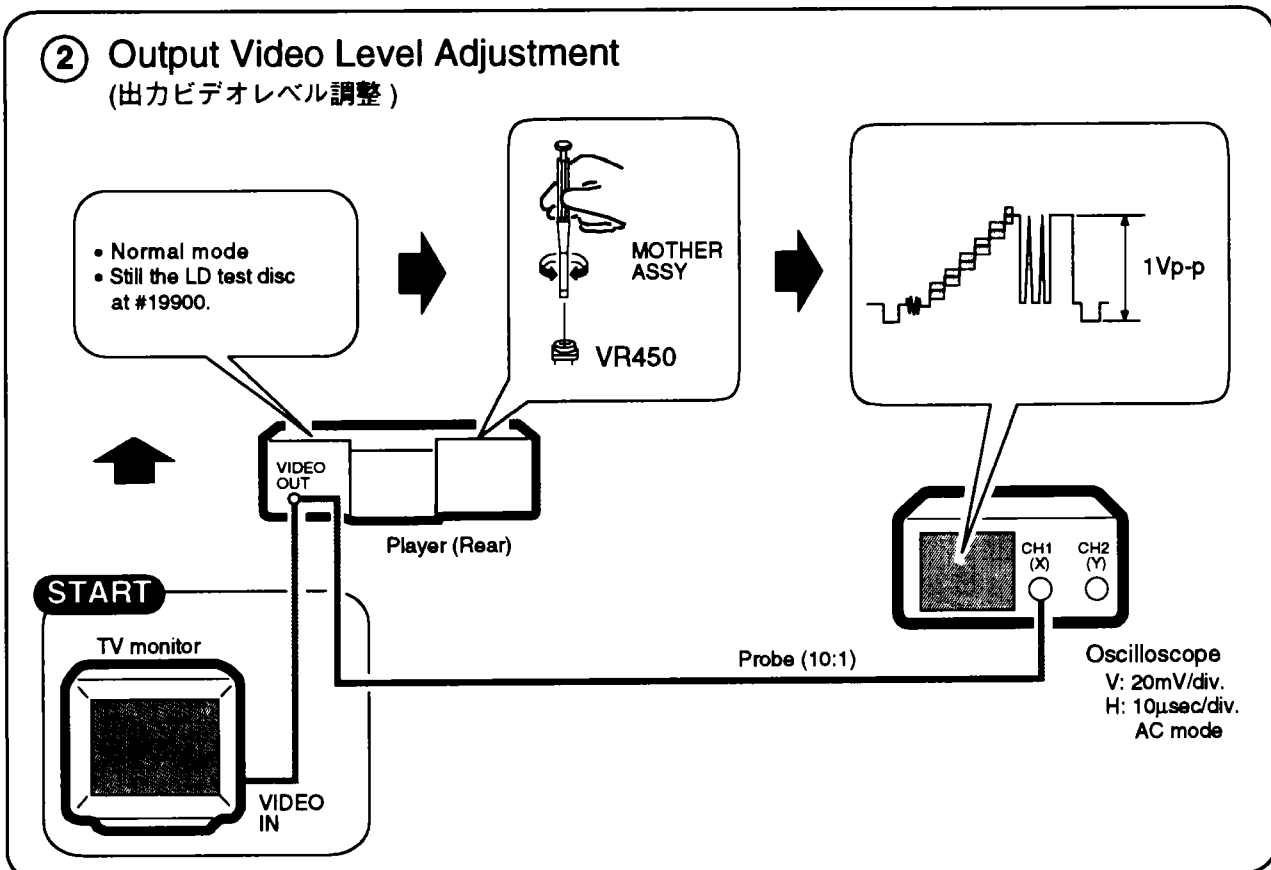


6. ELECTRICAL ADJUSTMENT (電気系の調整)

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

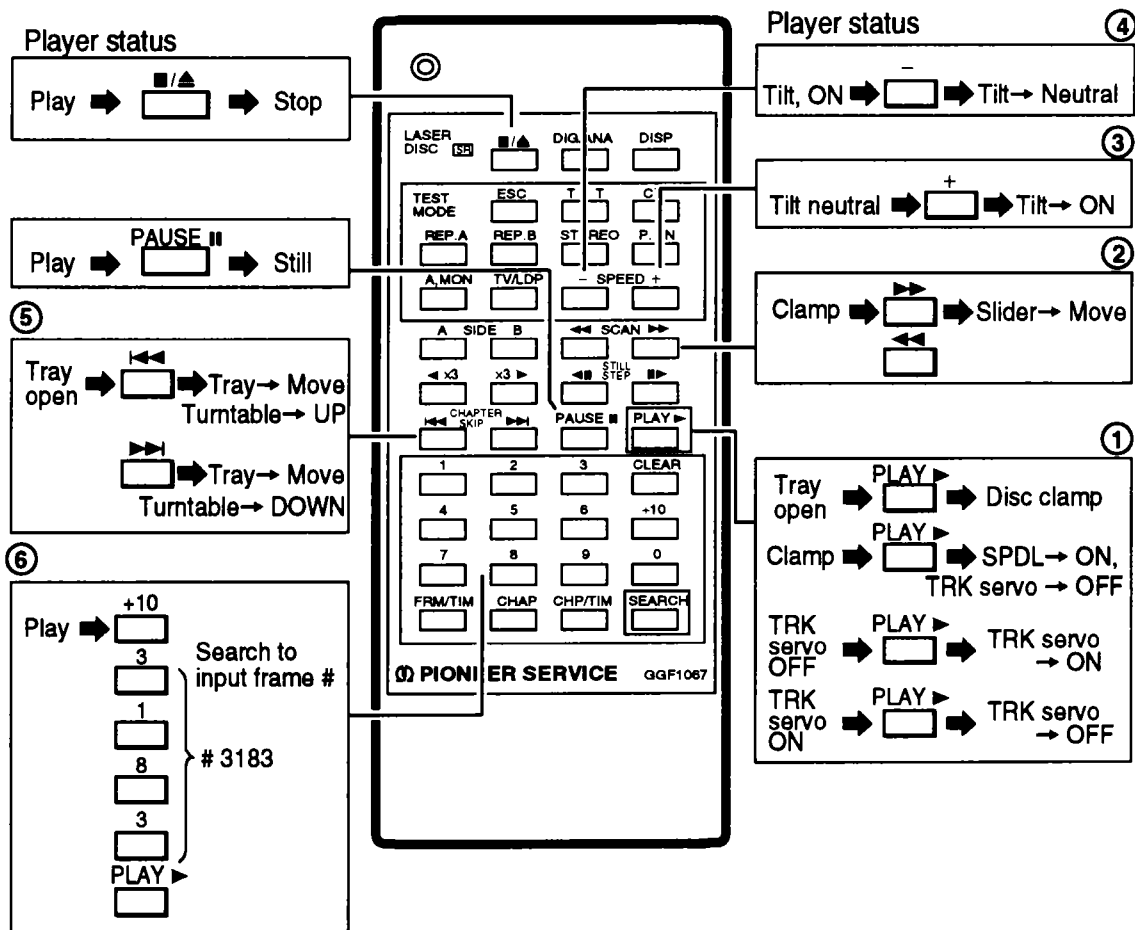


② Output Video Level Adjustment
(出力ビデオレベル調整)

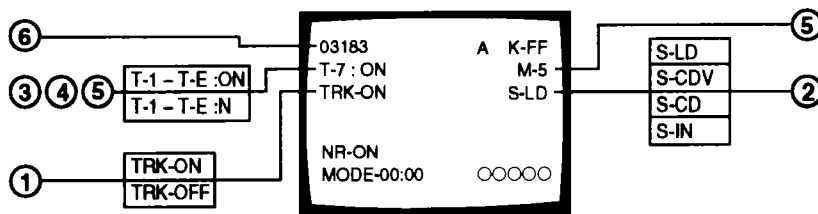


7. OPERATIONS IN THE TEST MODE (テストモード時のサービス用リモコン操作方法)

■ Test Mode Remote Control Unit (GGF1067)



■ TV Monitor Display



6. SELF-DIAGNOSTIC FUNCTIONS

6.1 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.

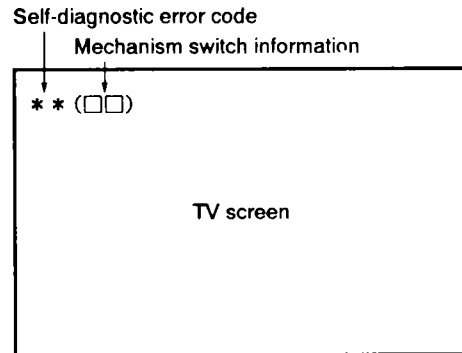


Fig. 1 TV screen display

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	<p>– 5V power supply abnormality detected.</p> <p>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.</p>	<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 (meaning of * for L * etc.)

- | | | |
|----------------|----------------------------|---------------------|
| 0 : Play | 5 : Setup (rotation start) | 9 : Side A → Side B |
| 1 : Open | 6 : TOC read | A : Side B → Side A |
| 2 : Standby | 7 : Play | |
| 3 : Clamp | 8 : Search | |
| 4 : Disc sense | | |

6.2 FORMAT OF THE MECHANISM SWITCH INFORMATION WHICH IS TRANSMITTED TO THE MODE CONTROL IN THE ERROR OCCURRENCE

● Mechanism switch information (1 7)

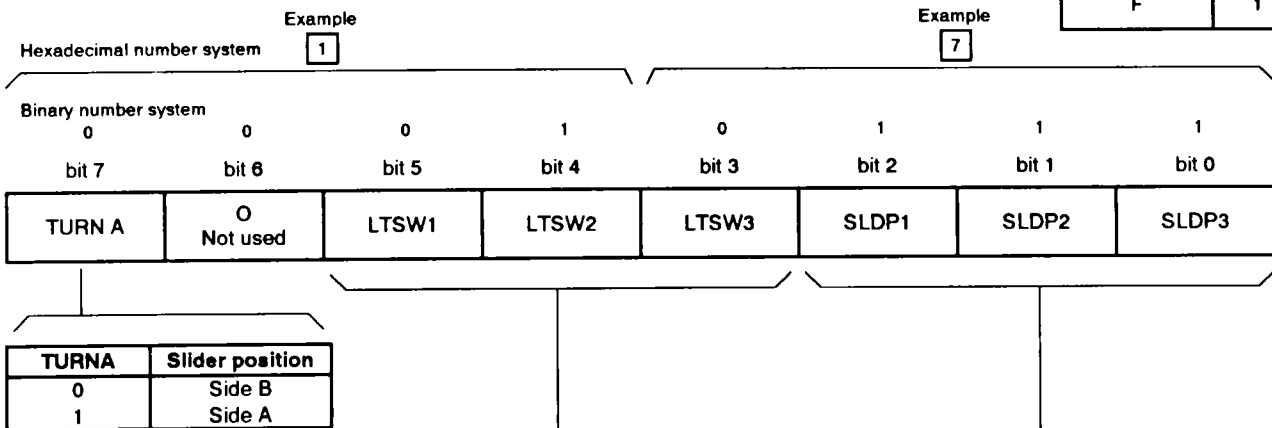
Mechanism control → Mode control

Communication byte address 5 (COMBUF5)

(Mode control displays this value as it is.)

Hexadecimal number system	Binary number system
0	0 0 0 0
1	0 0 0 1
2	0 0 1 0
3	0 0 1 1
4	0 1 0 0
5	0 1 0 1
6	0 1 1 0
7	0 1 1 1
8	1 0 0 0
9	1 0 0 1
A	1 0 1 0
B	1 0 1 1
C	1 1 0 0
D	1 1 0 1
E	1 1 1 0
F	1 1 1 1

Example



Example of 17 is indicated as follows.

- (Slider : Side B
- Tilt : Tilt +
- Position : B - INSIDE

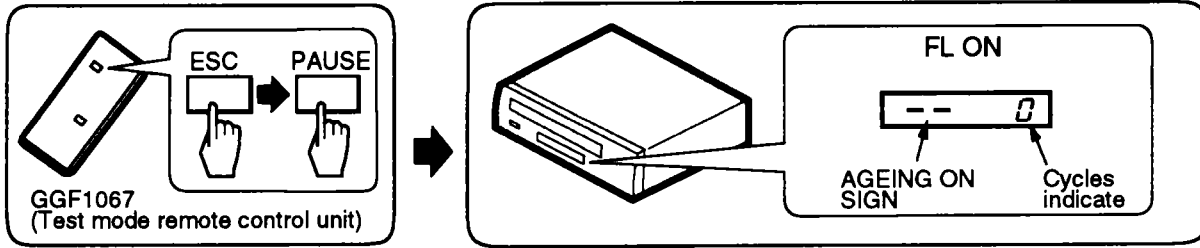
LTSW			Loading/tilt position
1	2	3	
0	1	1	Open (Tray open state)
0	0	1	Loading (During move the tray horizontally)
1	0	1	Standby (Tray close & spindle down state)
1	0	0	Clamp (Durring spindle up or down)
0	0	0	Tilt - (Clamp state)
0	1	0	Tilt + (Clamp state)
1	1	0	Tilt limit (Clamp state)

SLDP			Slider position
1	2	3	
1	0	0	CD active position
1	0	1	CDV active position
1	1	0	LD active position
0	1	1	CD inside position
1	1	1	Side B inside position

6.3 AGEING MODE (エージングモード)

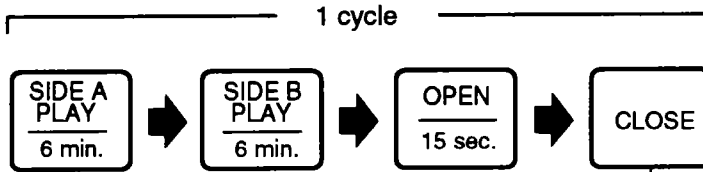
AGEING MODE: ON

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

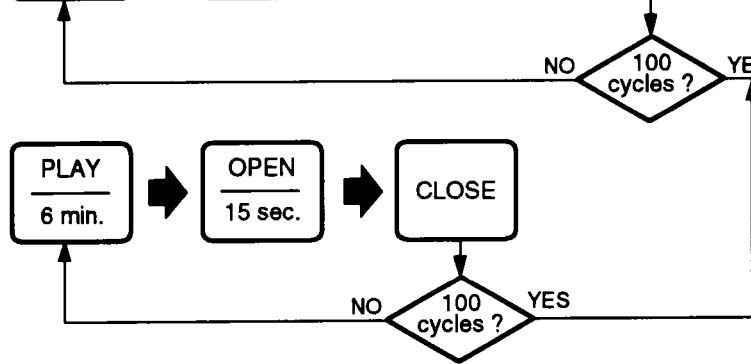


AGEING

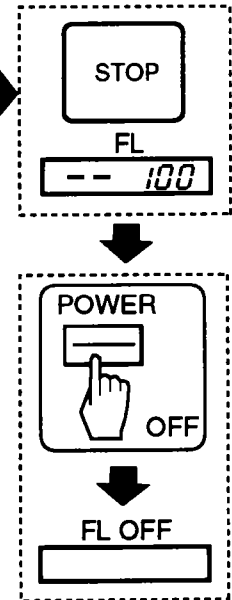
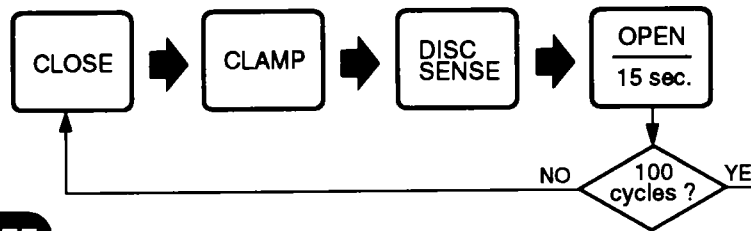
• LD



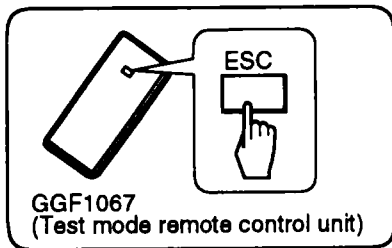
• CD, CDV



• NO DISC

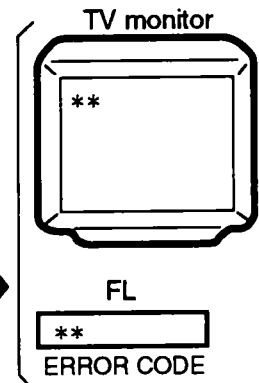
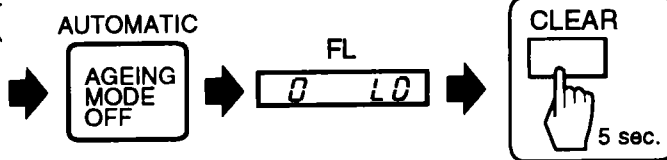
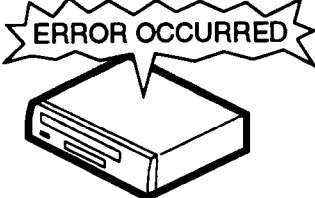


AGEING MODE: OFF



ERROR OCCURRED

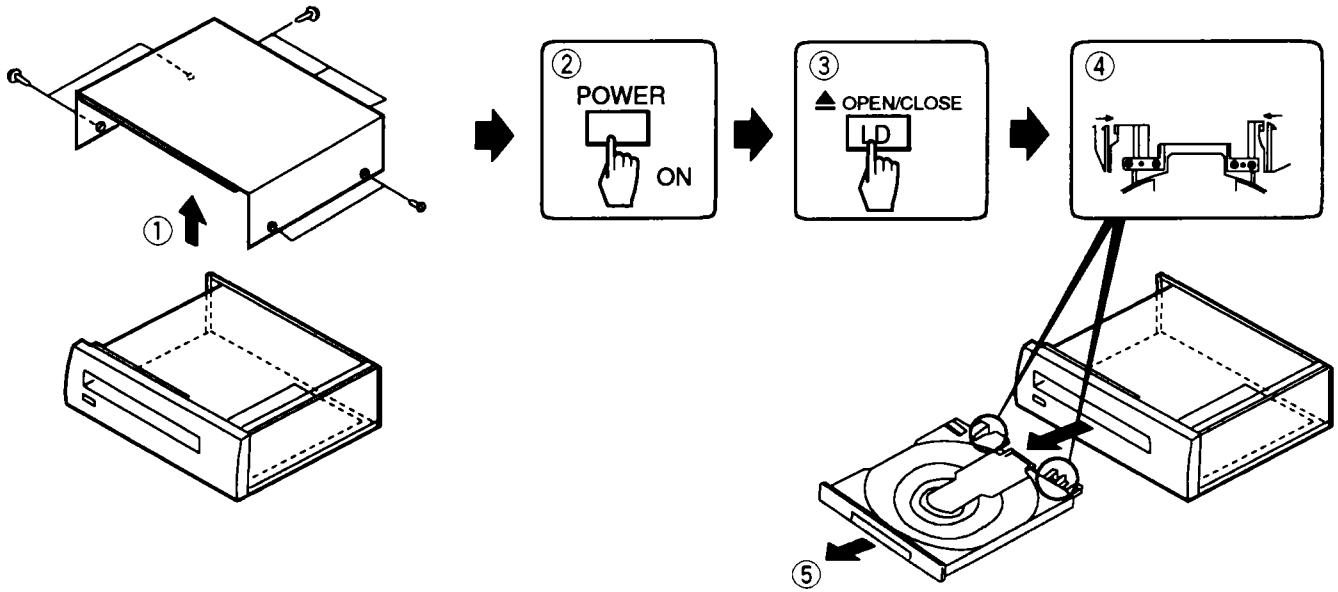
ERROR OCCURED : エラー発生



7. DISASSEMBLY/ASSEMBLY (分解/組立の手順)

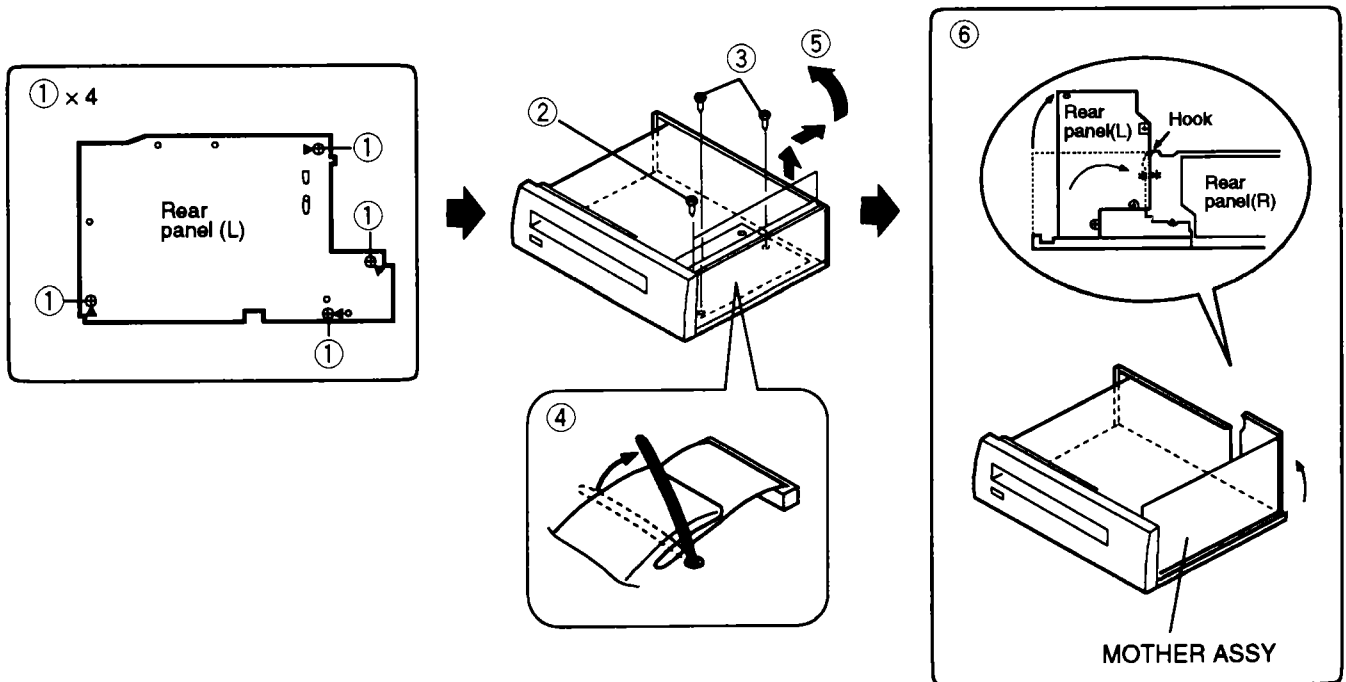
7.1 DISC TRAY

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



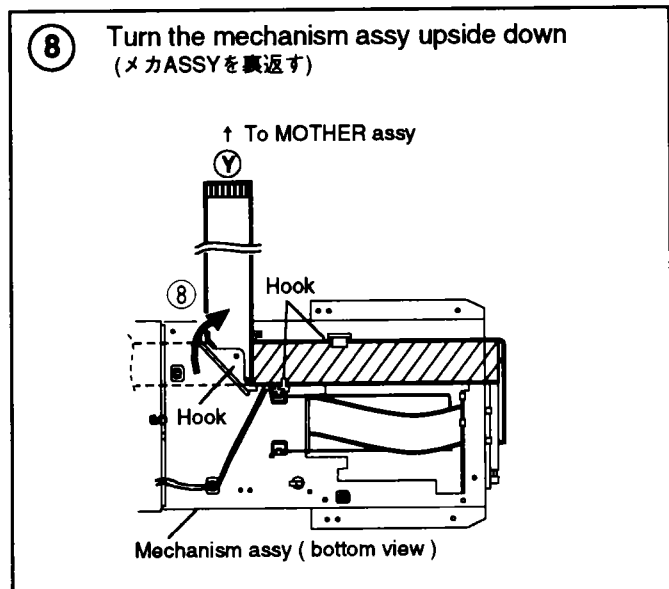
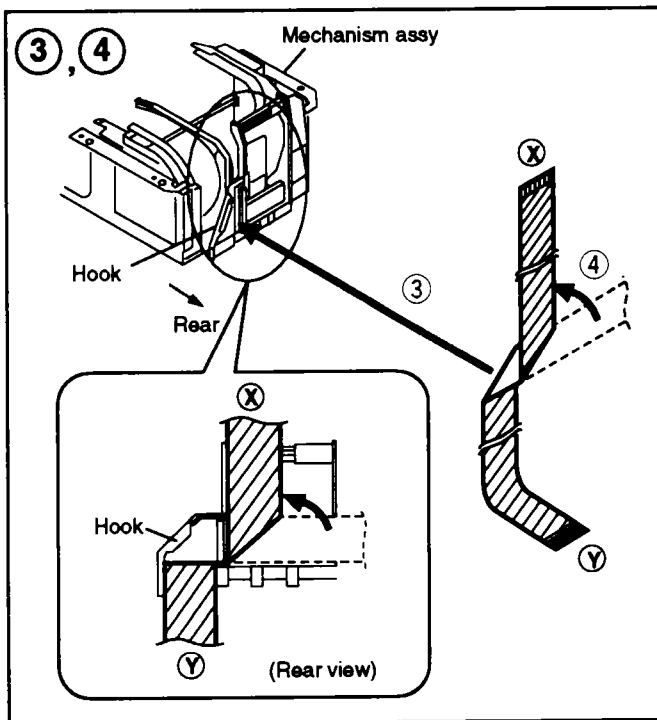
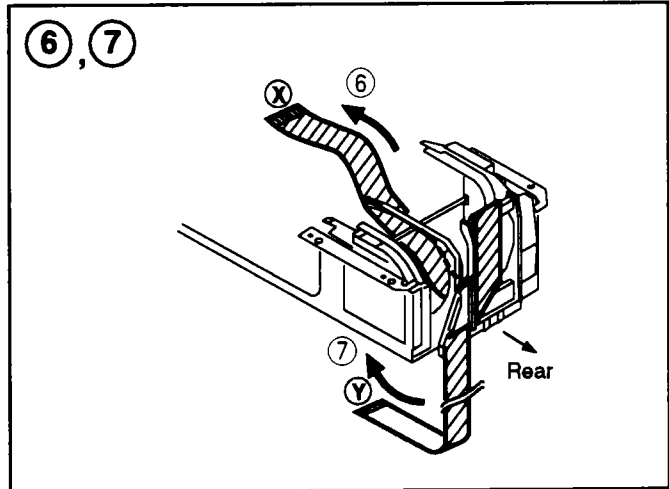
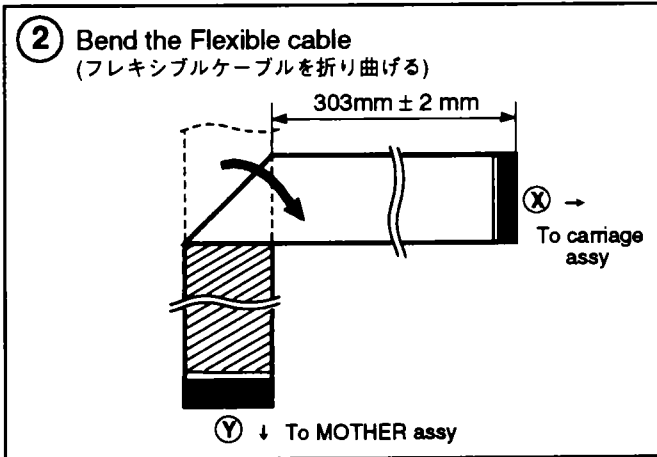
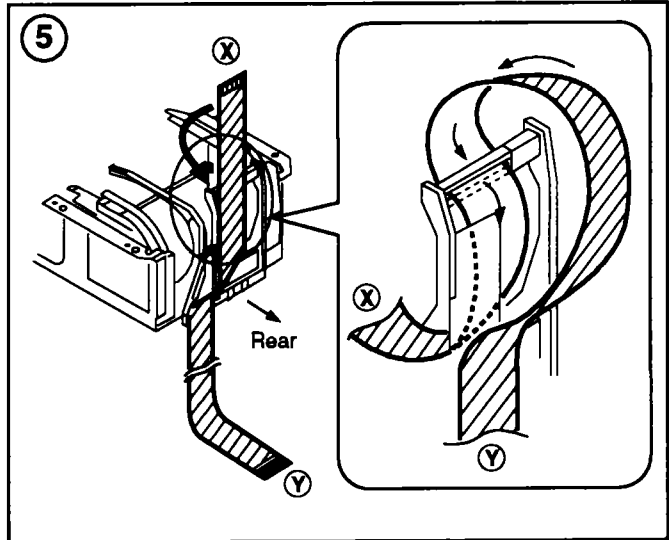
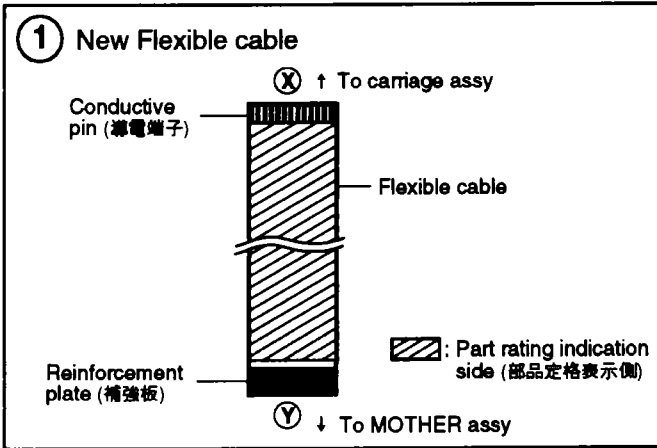
7.2 MOTHER ASSY

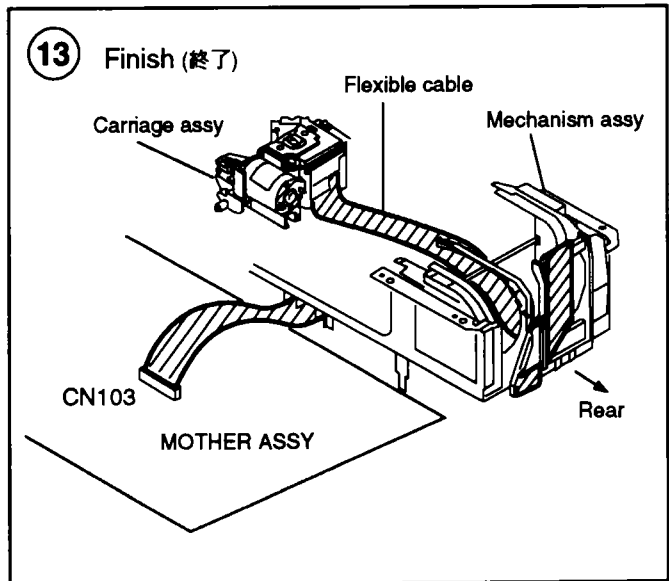
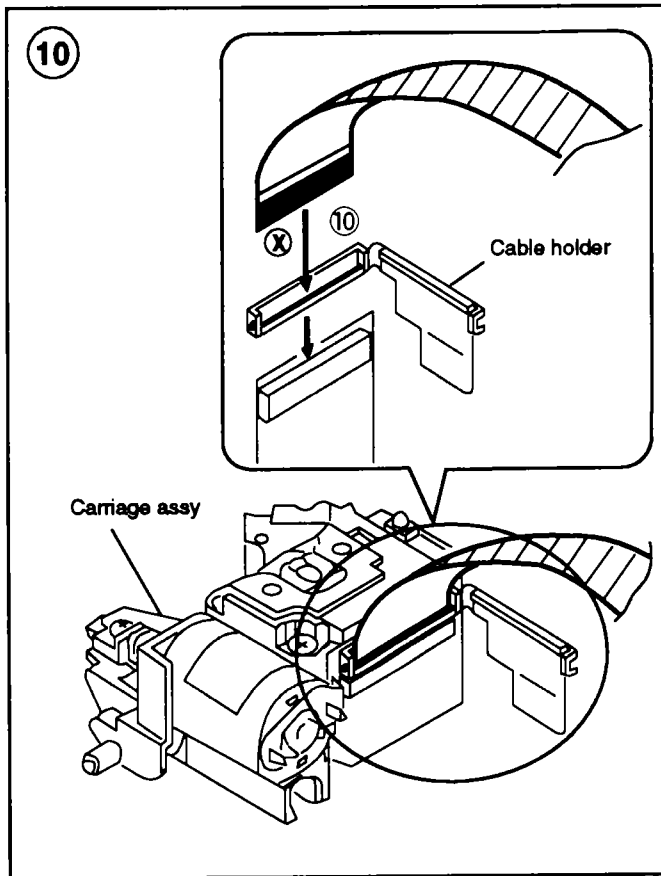
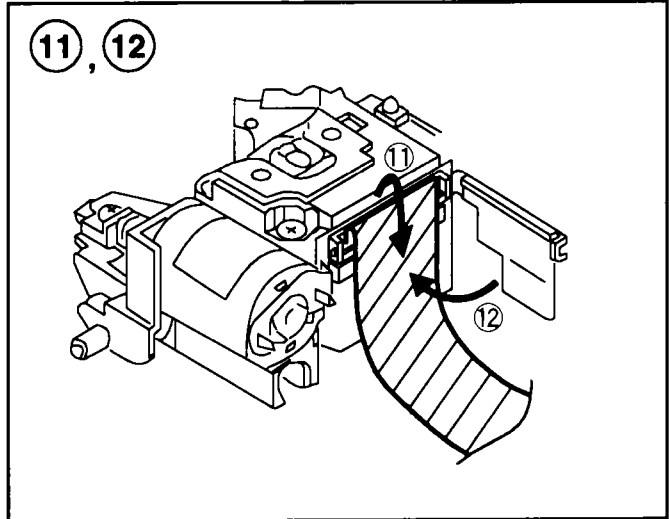
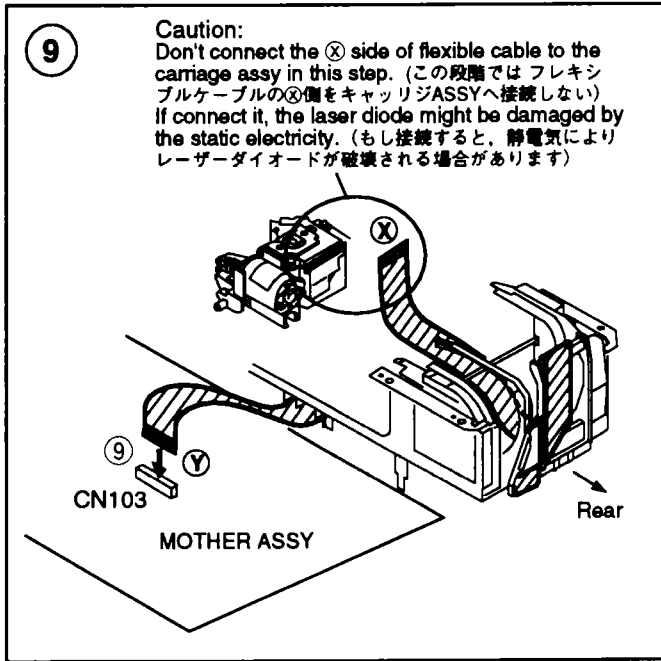
- Disassembly : ① → ② → ③ → ④ → ⑤ → ⑥
- Assembly : ⑥ → ⑤ → ④ → ③ → ② → ①



7.3 HOW TO INSTALL THE FLEXIBLE CABLE FOR CARRIAGE ASSY

(キャリッジASSY用フレキシブルケーブルの取付方法)





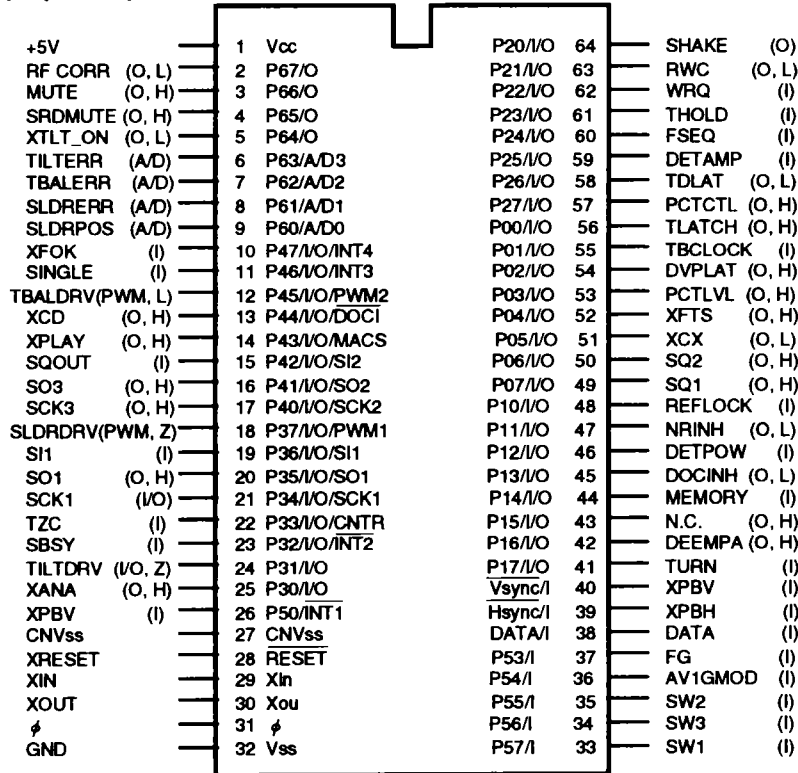
8. IC INFORMATION

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

■PD0240B2 (MOTHER ASSY : IC101)

• MECHANISM CONTROL IC

•Pin Arrangement (Top View)



•Pin Function

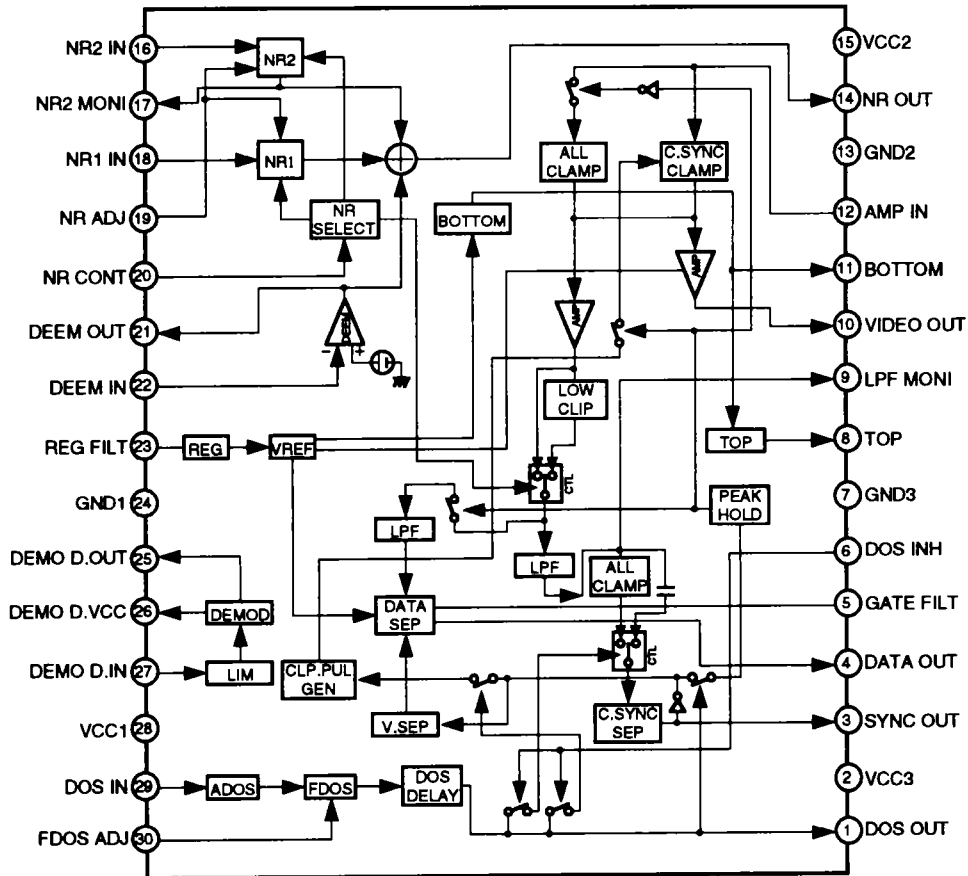
No.	Pin Name	I/O	Function
1	VCC	I	Power supply pin Apply 5V±10%
2	RFCORR	O	RF correction switch signal output H : Gain UP CD, CDV-A : Low, CAV inner circuit gain up, others are High
3	MUTE	O	Audio mute control signal output of audio system L : Release MUTE H : MUTE
4	SRDMUTE	O	Mute control signal output for AC3 Release MUTE during playback. L : Release MUTE H : MUTE
5	XTLT_ON	O	Tilt operation information L : During operation In the OPEN/CLOSE, the voltage will up about 10% by using this port.
6	TILTERR	I A/D	This signal is A/D converted as the tilt servo control input. Control the tilt motor so that this signal becomes 2.5V.
7	TBALERR	I A/D	Tracking balance error signal input This signal is A/D converted as the tracking offset control input.
8	SLDERERR	I A/D	This signal is A/D converted as the slider servo control input. Control the tilt motor so that this signal becomes 2.5V.
9	SLDPOS	I A/D	Pickup position detection switch Input Detect the position by reading A/D input value which each switches are resistance divided.
10	XFOK	I	Focus servo lock signal Input L : Lock H : Unlock Use for lock detection of focus servo.
11	SINGLE	I	ATT-SW of rear panel use for the single mode This information transmit to mode control by communication. L : Single H : Normal
12	TBALDRV	O PWM	Output the tracking offset signal to PWM output, then use for auto tracking offset. 910 μ sec period, tri-state control H, L, Z
13	XCD	O	LD/CD switch signal output L : CD H : LD
14	XPLAY	O	Signal output during spindle servo L : During servo H : During acceleration, brake and stop
15	SQOUT	I	Command data input from DSP Read out SUBQ
16	SO3	O	Serial 3 data signals output Serial signals are common used and signal distinguishes from the latch signals (DVPLAT and TLAT).
17	SCK3	O	Serial 3 clock signals output
18	SLDRV	O PWM	Slider control signal output 5V=FWD, 0V=REV, 2.5V=STOP 910 μ sec period, tri-state control H, L, Z

CLD-2760K

No.	Pin Name	I/O	Function
19	SI1	I	Data input from the mode control IC
20	SQ1	O	Serial data output to the mode control IC
21	SCK1	I/O	Clock for serial communication with the mode control IC Becomes input mode without communicate with the mode control IC
22	TZC	I INT	Tracking error zero cross signal input Monitor this signal when searching track count in the miss clamp detection.
23	SBSY	I	Interrupt input for reading sub-code from DSP
24	TILTDRV	I/O	LOAD/TILT control output 0.5V-Tray IN, OUT/Tilt DOWN, UP 2.5V-STOP Use for tilt servo that tilt drive is PWM output.
25	XANA	O	Digital/Analog audio switch signal output L : Analog H : Digital
26	XPBV	I	Playback vertical sync. signal input of LD/CDV L : During vertical sync.
27	CNVss	I	Ground for A/D conversion
28	XRESET	I	Reset signal input L : Reset H : Release reset Mode control is controlled.
29	XIN	I	9MHz clock oscillation input
30	XOUT	O	9MHz clock oscillation output
31	N.C.	O	Not used
32	GND	I	Ground
33	SW1	I	Switch input for Loading/Tilt position detection
34	SW2		
35	SW3		
36	AV1GMOD	I	AV1 gijutu mode When this port set to H, anti-shock control will be effective by Address C-bit2 from the mode control.
37	FG	I	Spindle motor FG signal input 16 outputs per rotation Used after dividing by 2 in microprocessor
38	DATA	I	Input pin for Phillips code decoder with built in mechanism controller
39	XPBH	I	Playback H-SYNC input for Phillips code decoder
40	XPBV	I	Playback V-SYNC input for Phillips code decoder
41	TURN	I	Turn switch input H : side A L : side B
42	DEEMPA	O	DSP deemphasis control L : OFF H : ON
43	N.C.	O	Not used
44	MEMORY	I	Memory model discrimination H : Memory model L : Non-memory model
45	DOCINH	O	Control the clamp pulse and clamp killer by tri-state value
46	DETPOW	I	Use for power abnormal signal input port. L : Normal H : Abnormal
47	NRINH	O	Control output of the noise reduction switch signal output L : NR ON H : NR OFF
48	REFLOCK	I	Reference signal input from DVP L : Phase not aligned H : Phase aligned (Non-memory)
49	SQ1	O	Analog audio switch signal output 1/L L : Squelch OFF H : Squelch ON
50	SQ2	O	Analog audio switch signal output 2/R L : Squelch OFF H : Squelch ON
51	XCX	O	Analog audio CX noise reduction switch switch signal output L : CX ON H : CX OFF
52	XFTS	O	Serial command output switch signal output of DSP/others L : DSP H : others
53	PCTLVL	O	Signal output for the picture quality adjustment L : SHARP2 (strong) H : SHARP1 (weak)
54	DVPLAT	O	PD0234A serial latch signal output Latches at falling edge.
55	TBCLK	I	Spindle lock signal input L : Unlock H : Lock
56	TLATCH	O	DAC & digital filter PD2026B serial control latch signal output Latches at falling edge.
57	PCTCTL	O	Outline correction signal output L : Correction OFF H : Correction ON
58	TDLAT	O	Latch signal for three-dimensional IC control Latches at falling edge.
59	DETAMP	I	Spindle over-current detection signal input L : Over current H : Normal
60	FSEQ	I	Subcode sync. conformity detection signal input L : Not conformity H : Conformity
61	THOLD	I	Track jump accelerating / decelerating signal input L : other H : accelerating / decelerating
62	WRQ	I	Subcode Q reading OK signal input L : NG H : OK This pin will be H when Subcode Q data passed by CRC check.
63	RWC	O	DSP read / write command signal output L : Read H : Write
64	SHAKE	I/O	Handshake signal for data communication with the mode control IC This pin is the bilateral data line and each microprocessor control the Input / Output.

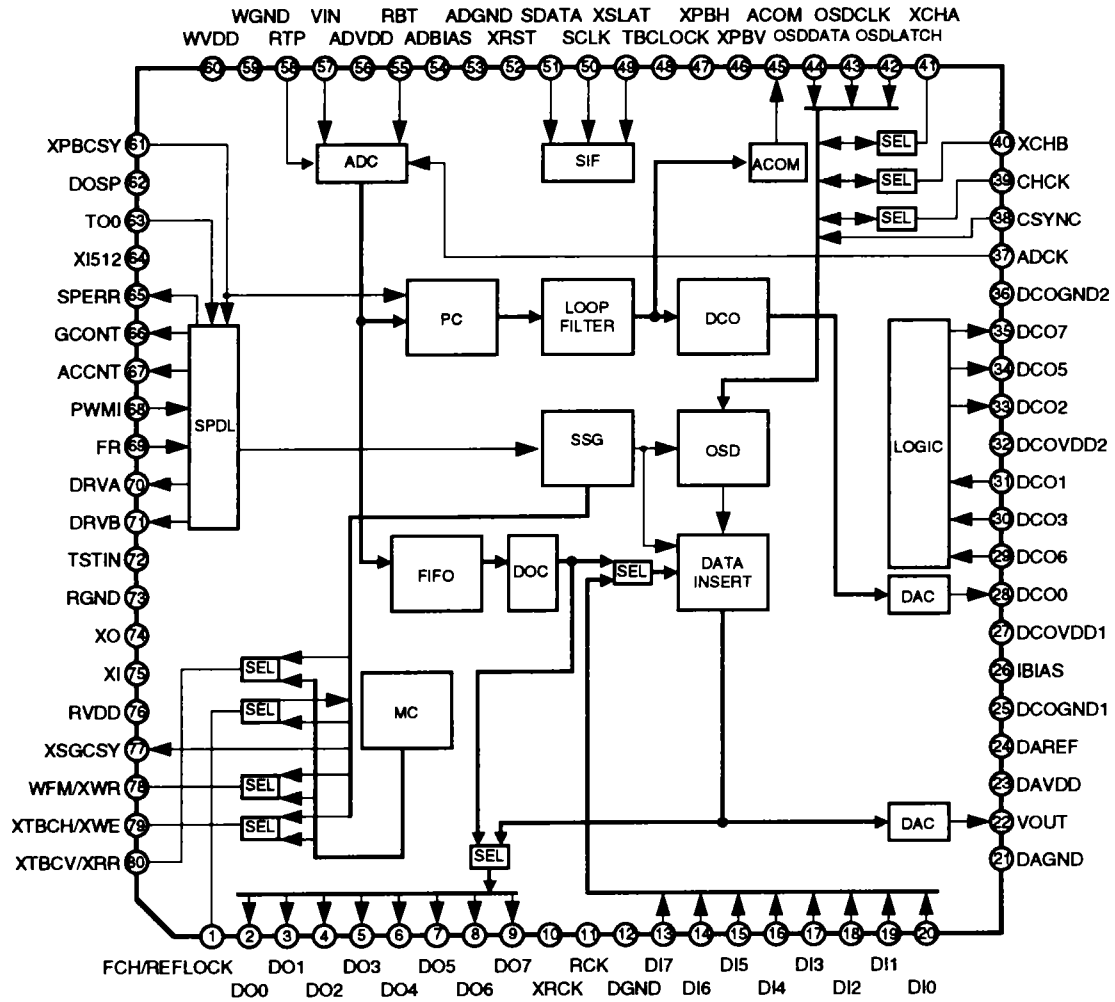
■ LA7134M (MOTHER ASSY : IC400)
 • VIDEO IC

• Block Diagram



■ PD0234A (MOTHER ASSY : IC500)
 • DVP

• Block Diagram



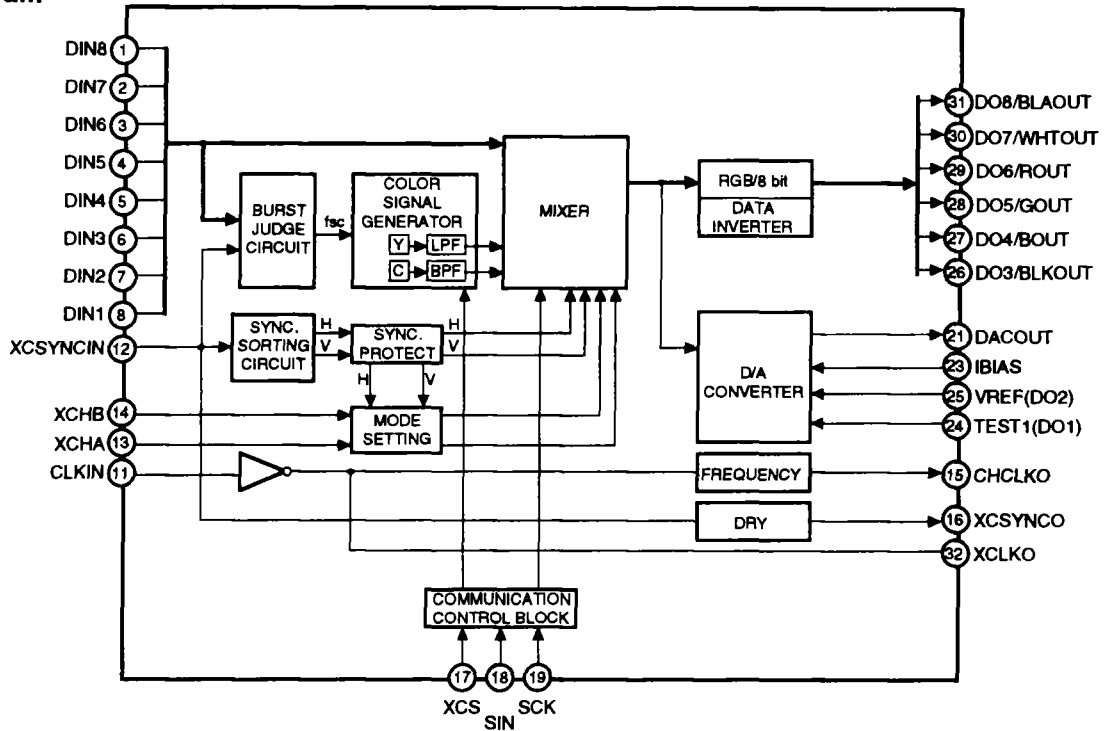
•Pin Function

No.	Pin Name	IO	Function	
1	FCH	I	MEMSYS:1	Switch the field of SSG by "H"
	REFLOCK	O	MEMSYS:0	Outputs "H" when the phase difference of H/V sync. signal associated with the time-base-corrected video signal and those associated with SSG is small enough.
2	DO0	O		Outputs the digital data of the time-base-corrected video signal for the memory system. When using the internal memory controller (MEMSYS:1 & EXTMC:0), output for field memory and external output are common used. Perform the data output setting with the serial command. DO7 : MSB , DO0 : LSB
3	DO1			
4	DO2			
5	DO3			
6	DO4			
7	DO5			
8	DO6			
9	DO7			
10	XRCK	O	Inverting outputs the CLK of the reading system. When using the internal memory controller (MEMSYS:1 & EXTMC:0), phase is able to control with the serial command.	
11	RCK	O	Outputs the CLK of the reading system. When using the internal memory controller (MEMSYS:1 & EXTMC:0), phase is able to control with the serial command.	
12	DGND	—	Ground of digital system Connect to GND.	
13	DI7	I		Digital video signal input Outputs the field memory when using the internal memory controller (MEMSYS:1 & EXTMC:0) and inputs the external signal when using the external A/D. DI7 : MSB , DI0 : LSB
14	DI6			
15	DI5			
16	DI4			
17	DI3			
18	DI2			
19	DI1			
20	DI0			
21	DAGND	—	Ground for DAC Connect to GND.	
22	VOUT	O	DAC output of the time-base-corrected video signal	
23	DAVDD	—	Power supply for DAC Connect to GND.	
24	DAREF	—	Reference pin for DAC Normally, decoupling to the DAGND through the 0.1 μ F laminated ceramic capacitor.	
25	DCOGND1	—	Ground for DCO Connect to GND.	
26	IBIAS	—	Current setting pin of the bias circuit Normally, connect to DAGND through the 10k Ω resistor.	
27	DCOVDD1	—	Power supply for DCO Connect to +5V.	
28	DCO0	O	DCO output pin Outputs a fsc in synchronization with the input video signal. This signal is multiplied by 4 to produce CLK of writing system.	
29	DCO6	I	Waveform shaping input pin 6 Inputs a signal obtained by delaying the DCO5 output signal by 35 ns. (to be self biased)	
30	DCO3	I	Waveform shaping input pin 3 Inputs a signal obtained by delaying the DCO5 output signal by 70 ns. (to be self biased)	
31	DCO1	I	Waveform shaping input pin 1 Inputs a DCO0 output signal via the fsc BPF. (to be self biased)	
32	DCOVDD2	—	Power supply for output multiplied by 4 Connect to +5V.	
33	DCO2	O	Waveform shaping input pin 2 Outputs a signal obtained through waveform shaping of the DCO0 output signal.	
34	DCO5	O	Waveform shaping input pin 5 Outputs a signal multiplied by 2.	
35	DCO7	O	Waveform shaping input pin 7 Outputs a signal multiplied by 4.	
36	DCOGND2	—	Ground for output multiplied by 4 Connect to GND.	
37	ADCK	I	CLK input for writing system Inputs DCO7 output signal via a 4fsc BPF. (to be self biased)	
38	CSYNC	I	Composite sync. input for character generator When using the OSD for single (EXTMIX:1), input the composite sync. for generating the character.	
39	CHCK	I	EXTMIX :1	CLK input for character generator Inputs 2fsc.
	CHCK	O	EXTMIX :0	CLK output for character generator Outputs 2fsc.
40	XCHB	O	EXTMIX :1	Blanking signal output
	XCHB	I	EXTMIX :0	Blanking signal input Inputs "L" when inserting the blanking signal.
41	XCHA	O	EXTMIX :1	Character signal output
	XCHA	I	EXTMIX :0	Character signal input Inputs "L" when inserting the character signal.
42	OSDLATCH	I	Latch input for OSD Serial transmission of the OSD control data is able to accept by this pin set to "L".	
43	OSDCLK	I	CLK input for reading the OSD data	

No.	Pin Name	I/O	Function
44	OSDDATA	I	Control data input for OSD Read the data in synchronization with CLK which input to OSDCLK pin.
45	ACOM	O	Jitter correction signal output for analog audio Use for cancelling the jitter element of analog audio.
46	XPBV	O	PB system V sync. output Outputs the signal obtained by separating V sync. signal from the signal at pin 61 (XPBCSY) with negative logic.
47	XPBH	O	PB system H sync. output Outputs the signal obtained by separating H sync. signal from the signal at pin 61 (XPBCSY) with negative logic.
48	TBCLOCK	O	PLL lock detection signal output Outputs "H" when the spindle loop and the TBC loop are locked.
49	XSLAT	I	Serial interface latch input Gives the latch timing for data applied to the serial interface. Latches at "L".
50	SCLK	I	CLK input for the serial interface SDATA value will be read at the rising edge.
51	SDATA	I	Data input pin for the serial interface
52	XRST	I	System reset input Input for initializing the internal register of IC with negative logic.
53	ADGND	—	Ground for ADC Connect to GND.
54	ADBIAS	—	NC or connect to ADGND.
55	RBT	I	ADC bottom reference input Gives the bottom reference voltage of ADC.
56	ADVDD	—	Power supply for ADC Connect to +5V.
57	VIN	I	ADC input Inputs the composite video signal.
58	RTP	I	ADC top reference input Gives the top reference voltage of ADC.
59	WGND	—	Ground for writing system Connect to GND.
60	WVDD	—	Power supply for writing system Connect to +5V.
61	XPBCSY	I	Inputs the composite sync. signal of PB system with negative logic.
62	DOSP	I	Inputs the dropout detection pulse with positive logic.
63	TOO	I	Inputs the tracking-servo open signal with positive logic.
64	XI512	O	Outputs a 1/512th division of the CLK of reading system.
65	SPERR	O	PFD error output of the spindle error It outputs the result of comparison (PFD) between PBH and reading system H in tristate.
66	GCONT	O	Spindle gain control output Outputs a PWM signal according to the serial-command specified value.
67	ACCNT	O	Acceleration control output Tristate output of the acceleration/deceleration signal, which depends either on the forced acceleration/deceleration signal, the error detection by serial command or error detection by H sync. signal.
68	PWMI	I	Spindle error PWM input Inputs a signal obtained through the voltage comparison between the spindle error signal which has passed through a loop filter and the chopping wave.
69	FR	I	Spindle error direction element input Inputs a signal obtained through the voltage comparison between the spindle error which has passed through a loop filter and the destination voltage.
70	DRVA	O	Output for driving the spindle motor driver It is applicable to either a brush or brushless motor, selection of which is by a serial command.
71	DRVB		
72	TSTIN	I	Input for IC test Fixed to "L".
73	RGND	—	Ground for reference system Connect to GND.
74	XO	O	Connect the X'tal. Connect the 8fsc when using the internal memory controller (MEMSYS:1 & EXTMC:0) and the 4fsc is at others.
75	XI	I	
76	RVDD	—	Power supply for reference system Connect to +5V.
77	XSGCSY	O	Internal SSG composite sync. output Outputs the composite sync. signal of the internal SSG with negative logic. It can be delayed by a serial command with a specified delay duration.
78	WFM	O	MEMSYS:1 & EXTMC:1 Field monitor output of write system Outputs "H" for the odd field.
	XWR	O	MEMSYS:1 & EXTMC:0 Write reset output Outputs a signal to initializing the writing address of field memory. Outputs "L" pulse for 1CLK on every field of write system. Connect to XWRST input of field memory.
79	XTBCH	O	MEMSYS:1 & EXTMC:1 TBC H sync. output Outputs the time-base-corrected H sync. signal with negative logic.
	XWE	O	MEMSYS:1 & EXTMC:0 Write enable output Control the writing operation of field memory. "L" for enable and "H" for disable. Connect to XWE input of field memory.
80	XTBCV	O	MEMSYS:1 & EXTMC:1 TBC V sync output Outputs the time-base-correcter V sync. signal with negative logic.
	XRR	O	MEMSYS:1 & EXTMC:0 Read reset output Outputs a signal to initializing the reading address of field memory. Outputs "L" pulse for 1CLK on every each field of read system. Connect to XRRST input of field memory.

■ PD0239A (MOTHER ASSY : IC700)
 · COLOR ADDITION PROCESSOR

•Block Diagram



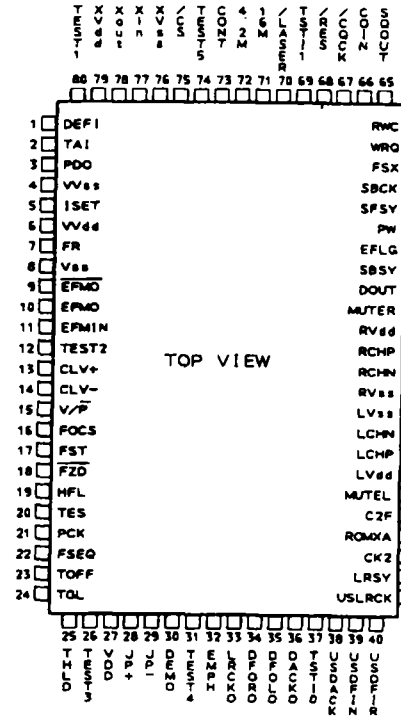
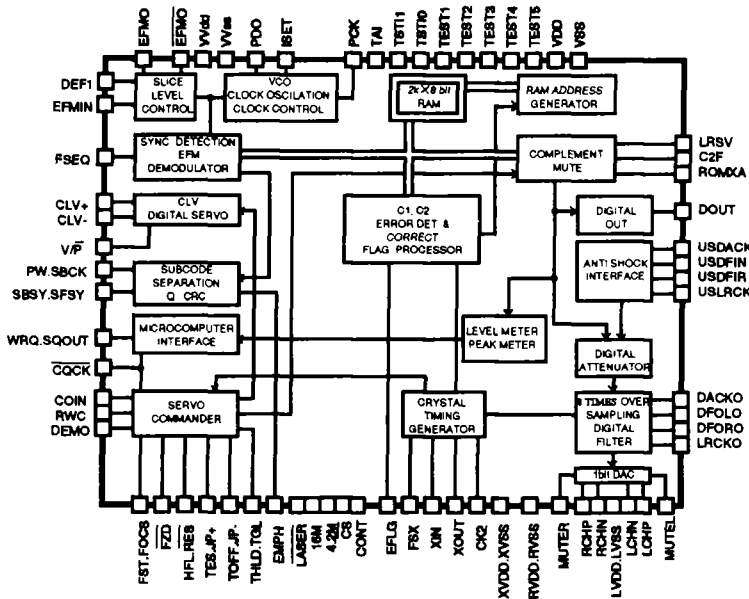
•Pin Function

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
1	DIN8	I	(MSB) Composite video data input	17	XCS	I	Chip select input Serial data conyotol input
2	DIN7	I		18	SIN	I	Serial data input
3	DIN6	I		19	SCK	I	Clock input for serial data input
4	DIN5	I		20	AVDD	—	Analog section power supply for DAC (+5V)
5	DIN4	I		21	DACOUT	O	Composite video signal output (DAC output)
6	DIN3	I		22	AVss	—	Analog section GND for DAC
7	DIN2	I		23	IBIAS	I	Connect a resistor for DAC reference current setting
8	DIN1	I		(LSB)	24	TEST1/DO1	I/O
9	DVss	—	GND for digital section	25	TEST2/DO2	I/O	Reference voltage input for DAC/composite video data output
10	DVDD	—	+5V power supply for digital section	26	BLKO/DO3	O	OSD timing (blanking) signal output/composite video data output
11	CLKIN	I	Master clock input LD : 14.31818MHz, VIDEO CD : 13.5MHz	27	BOUT/DO4	O	OSD B signal output/composite video data output
12	XCSYNCIN	I	Composite sync.signal Input	28	GOUT/DO5	O	OSD G signal output/composite video data output
13	XCHA	I	OSD character data input	29	ROUT/DO6	O	OSD R signal output/composite video data output
14	XCHB	I	OSD framing data input	30	WHTOUT/DO7	O	OSD white signal output/composite video data output
15	CHCLKO	O	DOT clock output System clock output for OSD (Outputs a clock (CLKIN) divided by 2)	31	BLAOUT/DO8	O	OSD black signal output/composite video data output
16	XCSYNCO	O	Composite sync. signal output for OSD	32	XCLKO	O	Inversion master clock (CLKIN) output

LC78621E (MOTHER ASSY : IC802)
• SERVO CONTROLLER & EFM DEMODULATOR

•Block Diagram

•Pin Arrangement (Top View)



•Pin Function

No.	Pin Name	I/O	Function	
1	DE-FI	I	Defect detection signal (DEF) input pin ("L" at not used)	
2	TAI	I	For PLL	
3	PDO	O		Test input pin with pull-down resistor
4	V Vss	—		Phase comparison output for controlling the external VCO
5	ISET	AI		Power supply for PLL and internal VCO Normally, 0V.
6	V VDD	—		Connect a resistor for current adjustment of PDO output
7	FR	AI		Ground for internal VCO Normally, 5V.
8	Vss	—		For VCO frequency range adjustment
9	EFMO	O	Ground for digital system Normally, 0V.	
10	EFMO	O		EFM signal inversion output
11	EFMIN	I		EFM signal output
12	TEST2	I	EFM signal input	
13	CLV+	O	Test input pin with pull-down resistor	
14	CLV-	O	Output pin for controlling the spindle servo Acceleration for CLV+ is "H" and Deceleration for CLV- is "H".	
15	V/P	O	Tristate output is able to output with command	
16	FOCS	O	Automatic switching monitor output of rough servo/phase control H : Rough servo , L : Phase control mode	
17	FST	O	Output pin for focus servo ON/OFF Focus servo ON for "L"	
18	F2D	I	Focus start pulse output (open drain output)	
19	HFL	I	Focus error zerocross signal input ("L" at not used)	
20	TES	I	Track detection signal input (schmitt input)	
21	PCK	O	Tracking error signal input (schmitt input)	
22	FSEQ	O	Clock monitor output for EFM data playback (4.3218MHz at phase clock)	
23	TOFF	O	Sync. signal detection output Becomes "H" when the sync. signals between the detected sync. signal from EFM signal and internal generated sync. signal are aligned.	
24	TGL	O	Tracking OFF output	
25	THLD	O	Output pin for output tracking gain switch Gain up for "L".	
26	TEST3	I	Tracking hold output	
			Test input pin with pull-down resistor	