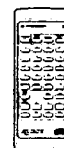
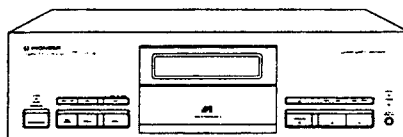


Service Manual



ORDER NO.
RRV1284

COMPACT DISC PLAYER

PD-S904 PD-S904-G

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

Type	Model		Power Requirement	The voltage can be converted by following method.
	PD-S904	PD-S904-G		
HBW	○	—	AC220 – 230V	AC230 – 240V, *
HEM	○	○	AC220 – 230V	AC230 – 240V, *
HL	○	—	AC220 – 230V/230 – 240V	With the voltage selector
SD	○	—	AC110V/120 – 127V/220V/240V	With the voltage selector

* : Alter the wiring of the Power-supply block at the primary winding of power transformer referring to the "Line Voltage Selection" described in Service Manual.

CONTENTS

1. SAFETY INFORMATION	2
2. EXPLODED VIEWS, PACKING AND PARTS LIST ..	4
3. DISASSEMBLY	10
4. SCHEMATIC AND PCB CONNECTION DIAGRAMS	11
5. PCB PARTS LIST	25
6. IC INFORMATION	28
7. FL INFORMATION	30
8. ADJUSTMENTS	31
9. FOR PD-S904/HEM, HL, SD AND PD-S904-G/HEM	36
10. PANEL FACILITIES	38
11. SPECIFICATIONS	39

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).

When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols  (fast operating fuse) and/or  (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible  (fusible de type rapide) et/ou  (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

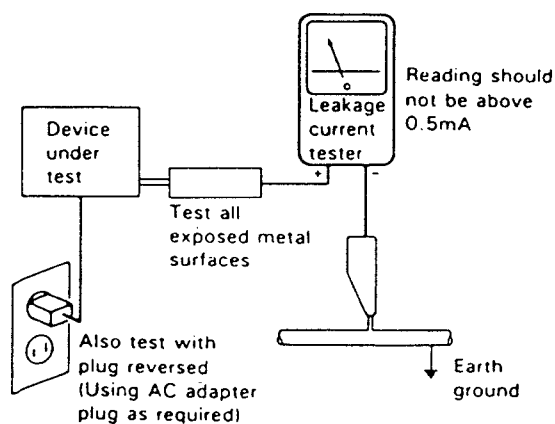
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a Δ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

(FOR EUROPEAN MODEL ONLY)

VARO!

AVATTAESSA JA SUOJALUKITUS
OHITETTAESSA OLET ALTTIINA
NAKYMÄTTÖMÄLLE LASERSATEILYLLE.
ÄLÄ KATSO SÄTEESEEN.



LASER
Kuva 1
Lasersateilyn
varoituserkki

WARNING!

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



LASER
Picture 1
Warning sign for
laser radiation

ADVERSEL:

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

VARNING!

OSYNLIG LASERSTRÅLING NÅR DENNA
DEL ÄR ÖPPNAD OCH SPÄRREN
ÄR URKOPPLAD. BETRÄKTA EJ STRÅLEN.

IMPORTANT

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

LASER DIODE CHARACTERISTICS

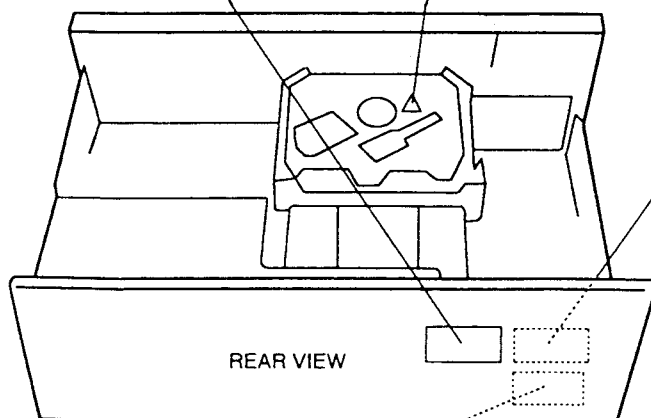
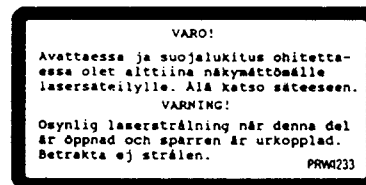
MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm

LABEL CHECK

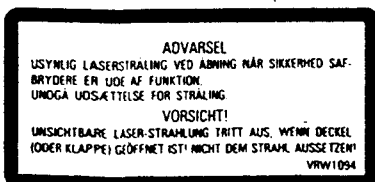
HBW, HL and HEM types



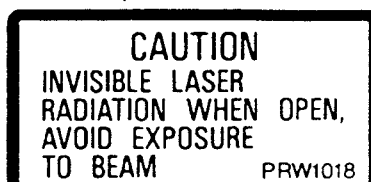
HEM type



REAR VIEW



HEM type



HBW and HL types

Additional Laser Caution

1. Laser Interlock Mechanism

The position of the switch (S601) for detecting loading completion is detected by the system microprocessor, and the design prevents laser diode oscillation when the switch (S601) is not CLMP terminal side (when CLMP signal is OFF, that is, high level).

Thus, the interlock will no longer function if the switch (S601) is deliberately set to CLMP terminal side (if CLMP signal is low level).

In the test mode *, the interlock mechanism will not function.

Laser diode oscillation will continue, if pin 1 of M51593FP (IC101) on the preamplifier board loaded or pickup assembly are connected to GND, or pin 19 is connected to low level (ON), or else the terminals of Q101 are shorted to each other (fault condition).

2. When the cover is opened with the servo mechanism block removed to be turned over, close viewing of the objective lens with the naked eye will cause exposure to a Class 1 laser beam.

* : Refer to page 32.

2. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:

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

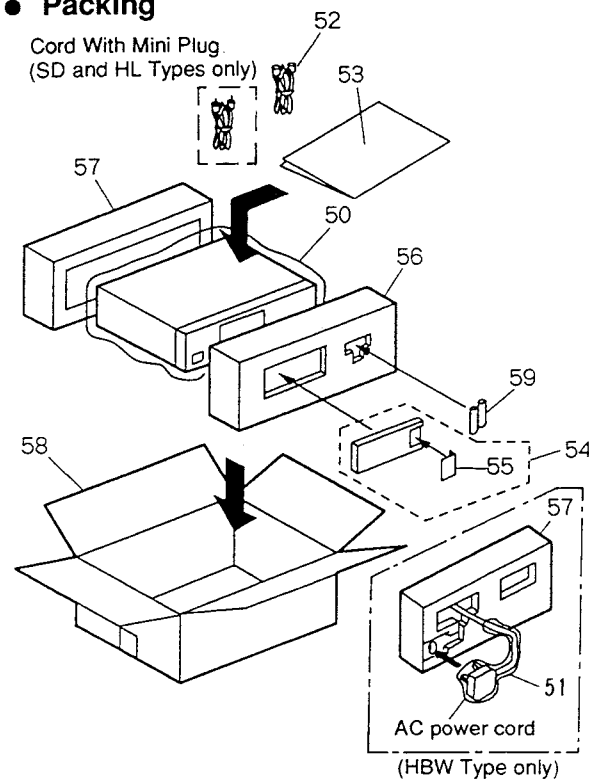
2.1 EXTERIOR SECTION AND PACKING (For PD-S904/HBW)

Parts List

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	Front panel 9	PAN1320		46	.....	
	2	Name plate	VAM1032		47	.....	
	3	Function panel 9	PNW2586		48	.....	
	4	Display window	PAM1668		49	Cord clumper	RNH-184
	5	LED lens	PNW2019		50	Mirror mat sheet	Z23-007
	6	Power button 9	PAC1810		51	Vinyl bag	Z21-013
	7	AUDIO TRANS	PWZ2993		52	Cord with plug	PDE1248
		BOARD ASSY			53	Operating instructions	PRB1228
	8	Function button 78	PAC1744			(English)	
NSP	9	SW BOARD ASSY	PWZ3007		54	Remote control unit	PWW1093
	10	Screw	PPZ30P150FMC		55	Battery cover	PZN1012
NSP	11	FUNCTION BOARD ASSY	PWZ3003		56	Protector F	PHA1243
	12	Tray panel	PAN1321		57	Protector R	PHA1253
	13	Screw	IBZ30P060FCC		58	CD packing case E9	PHG2136
	14	Screw	BBT30P080FCC	NSP	59	Battery (R03, AAA)	VEM-022
	15	Caution label	PRW1018		60	Earth spring A	PBH1213
	16	SERVO TRANS	PWZ2921		61	Earth spring B	PBK1138
		BOARD ASSY			62	Name plate holder	PNW2591
	17	Screw	IBZ30P080FCC		63	Tray holder	PNW2592
	18	Insulator	PNW2020		64	FL sheet white 9	PAM1682
	19	Screw	IBZ30P150FCC		65	Display panel	PAN1309
	20	Screw	IBZ30P060FCC				
NSP	21	LOADING MECHANISM	PXA1521	NSP	66	Under cover	PNB1536
		ASSY TT			67	Getter label	PRW1410
	22	Output button	PAC1661		68	Binder	ZCA-SKB90BK
	23	Screw	BBZ30P080FCC		69	Earth plate	PBK1090
	24	Indicator lens	PEA1206		70	Rivet	RBM-003
	25	.....			71	Cushion	VEC1013
NSP	26	Under base	PNA1973		72	Caution label	VRW-329
	27	.....					
NSP	28	COAXIAL OUTPUT	PWZ2986				
		BOARD ASSY					
	29	Screw	FBT40P080FZK				
	30	.....					
NSP	31	Bonnet	PYY1175				
	32	Audio angle	PNA1968				
Δ	33	Fuse (T5A)	PEK1003				
Δ	34	Power transformer (AC220-230V)	PTT1242				
Δ	35	Power transformer (AC220-230V)	PTT1245				
	36	Stopper	PNM1134				
	37	PCB spacer	PNY-404				
	38	MAIN BOARD ASSY	PWZ2964				
NSP	39	Cushion (3.5)	PEB1110				
NSP	40	PCB holder	PNW2100				
	41	AUDIO BOARD ASSY	PWZ2917				
Δ	42	AC power cord	PDG1055				
Δ	43	Cord stopper	CM-22B				
	44	Rear base B9	PNA2222				
	45	.....					

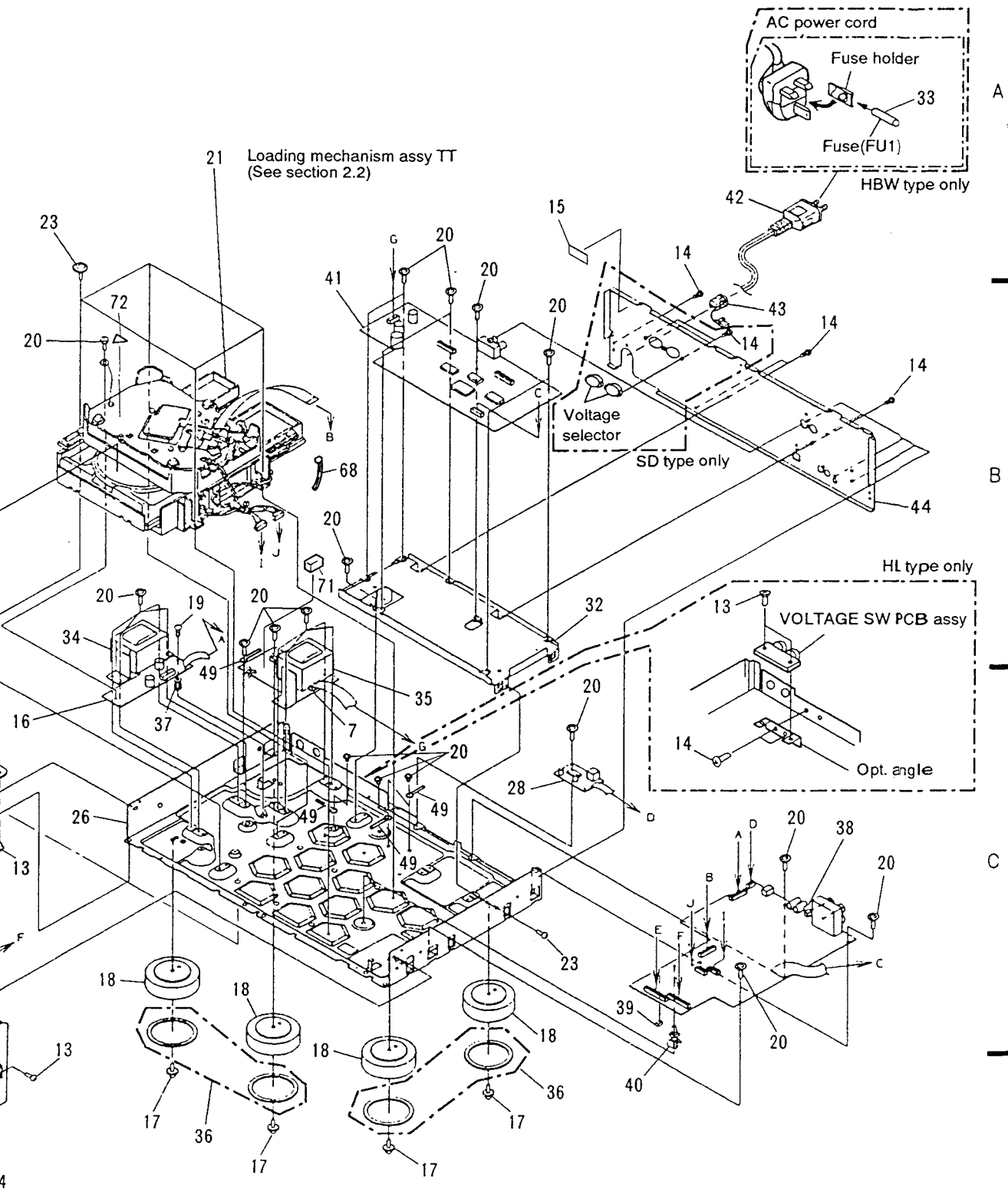
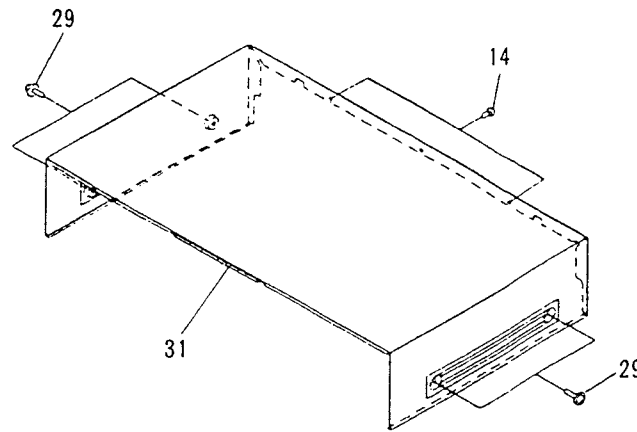
● Packing

Cord With Mini Plug
(SD and HL Types only)

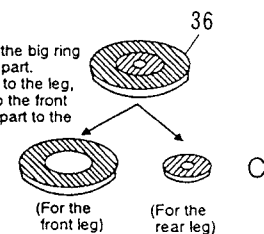


● Exterior Section

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



Note : The stopper consist of the big ring part and the small ring part.
If you stick the stopper to the leg, stick the big ring part to the front leg, and the small ring part to the rear leg.



A

B

C

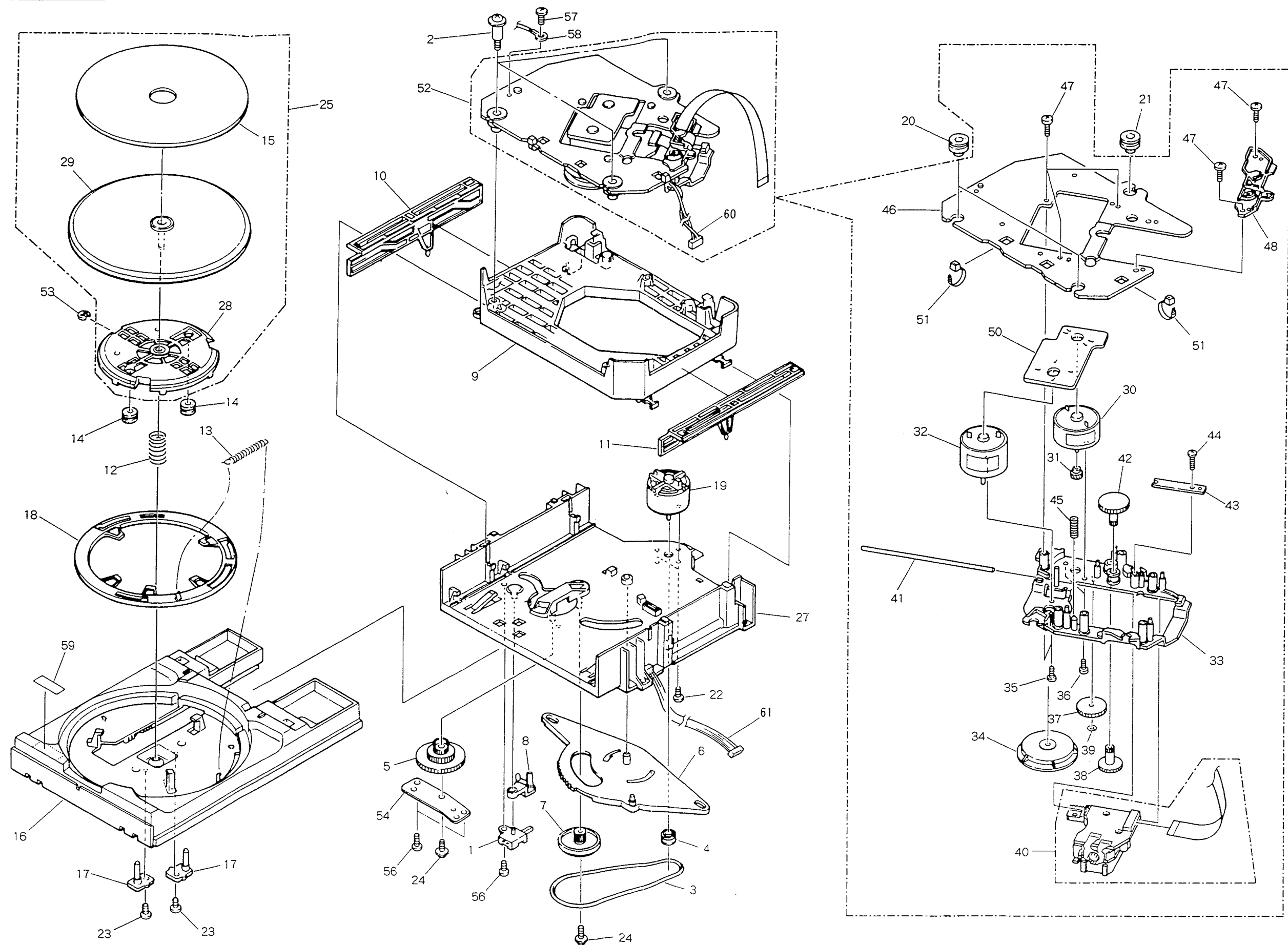
D

A

B

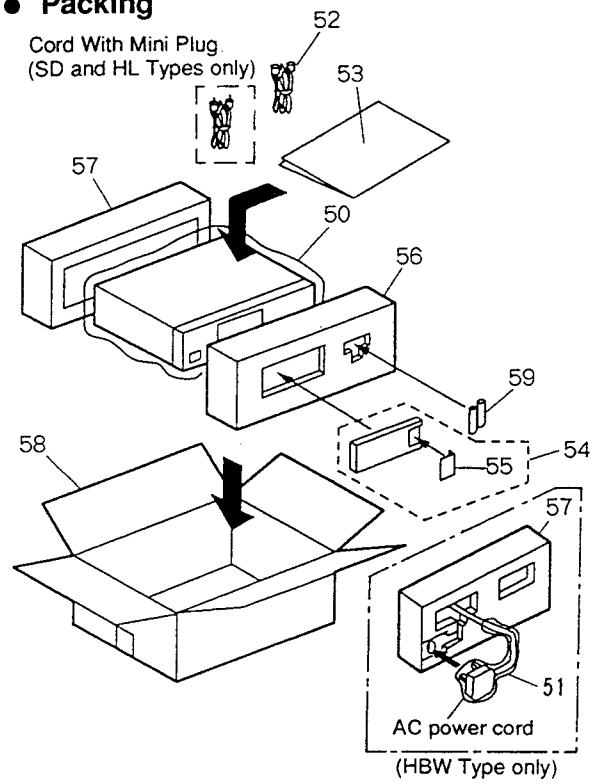
C

D



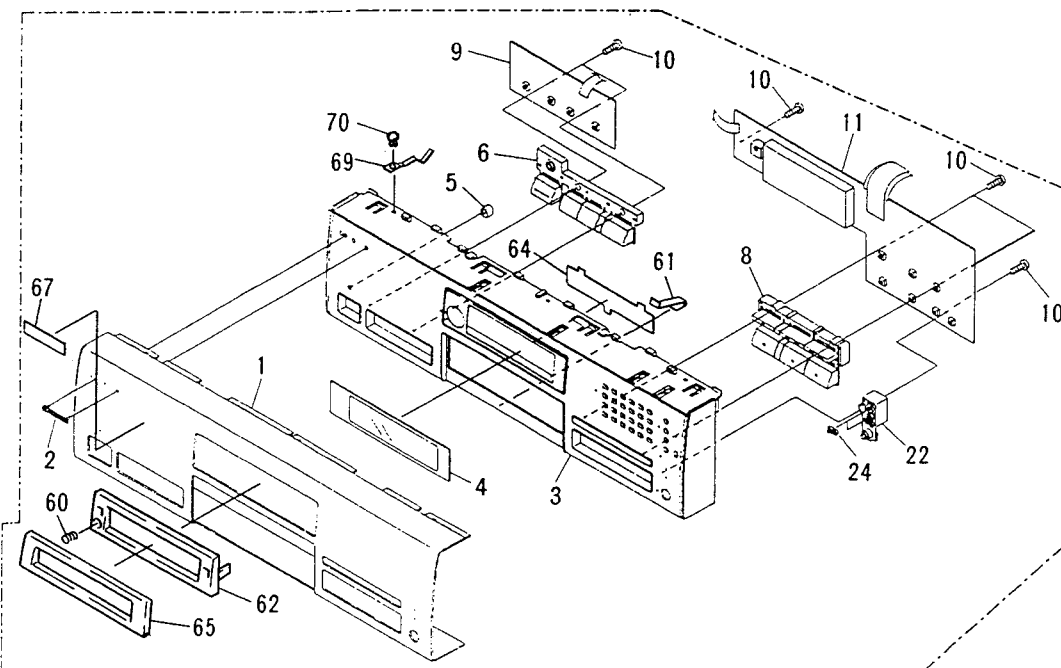
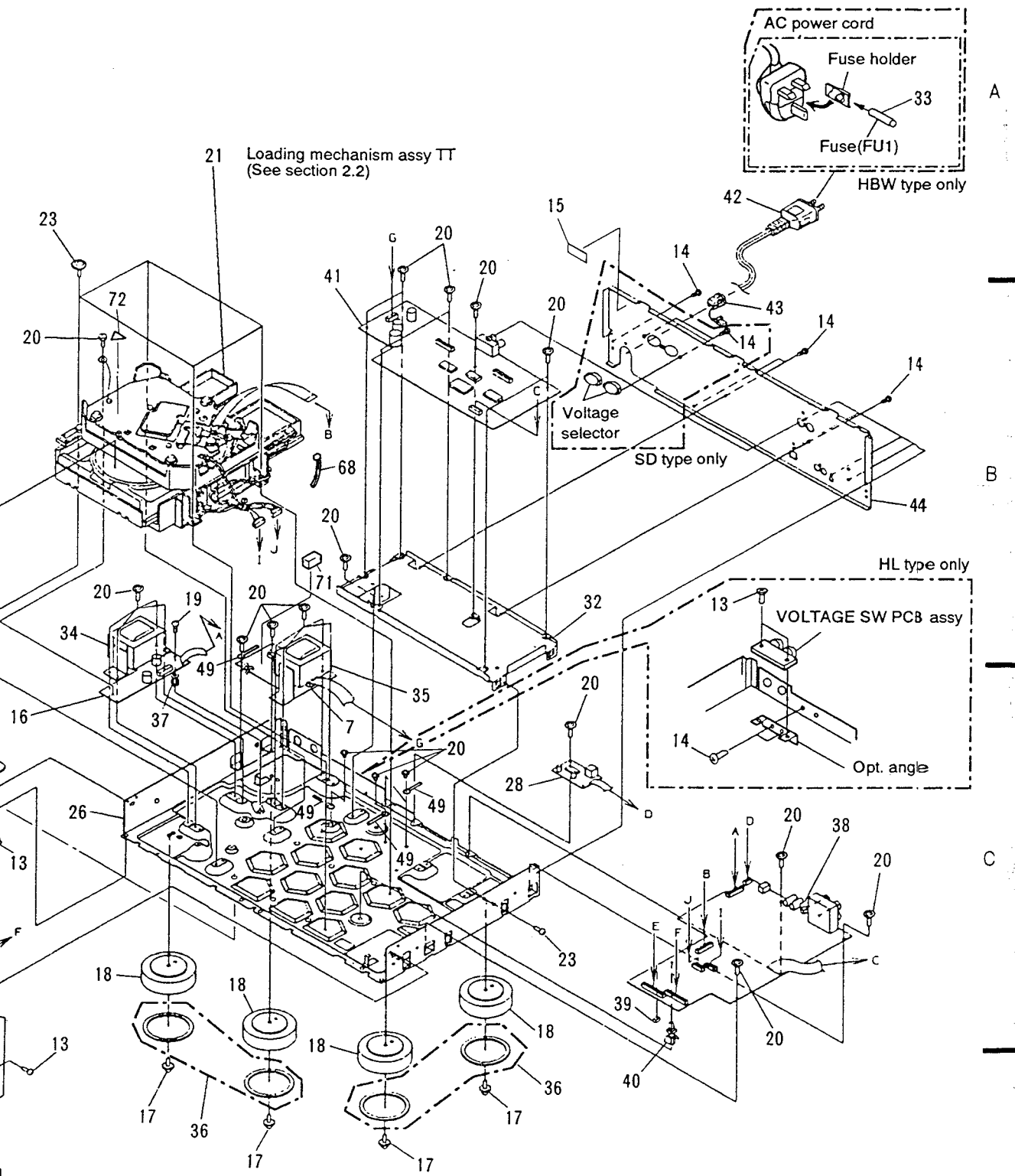
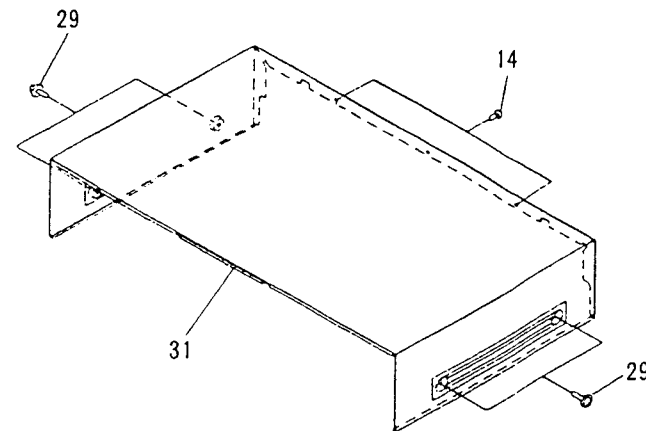
● Packing

Cord With Mini Plug
(SD and HL Types only)

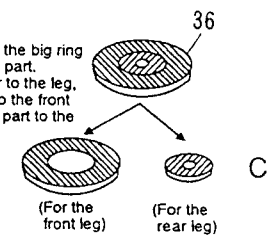


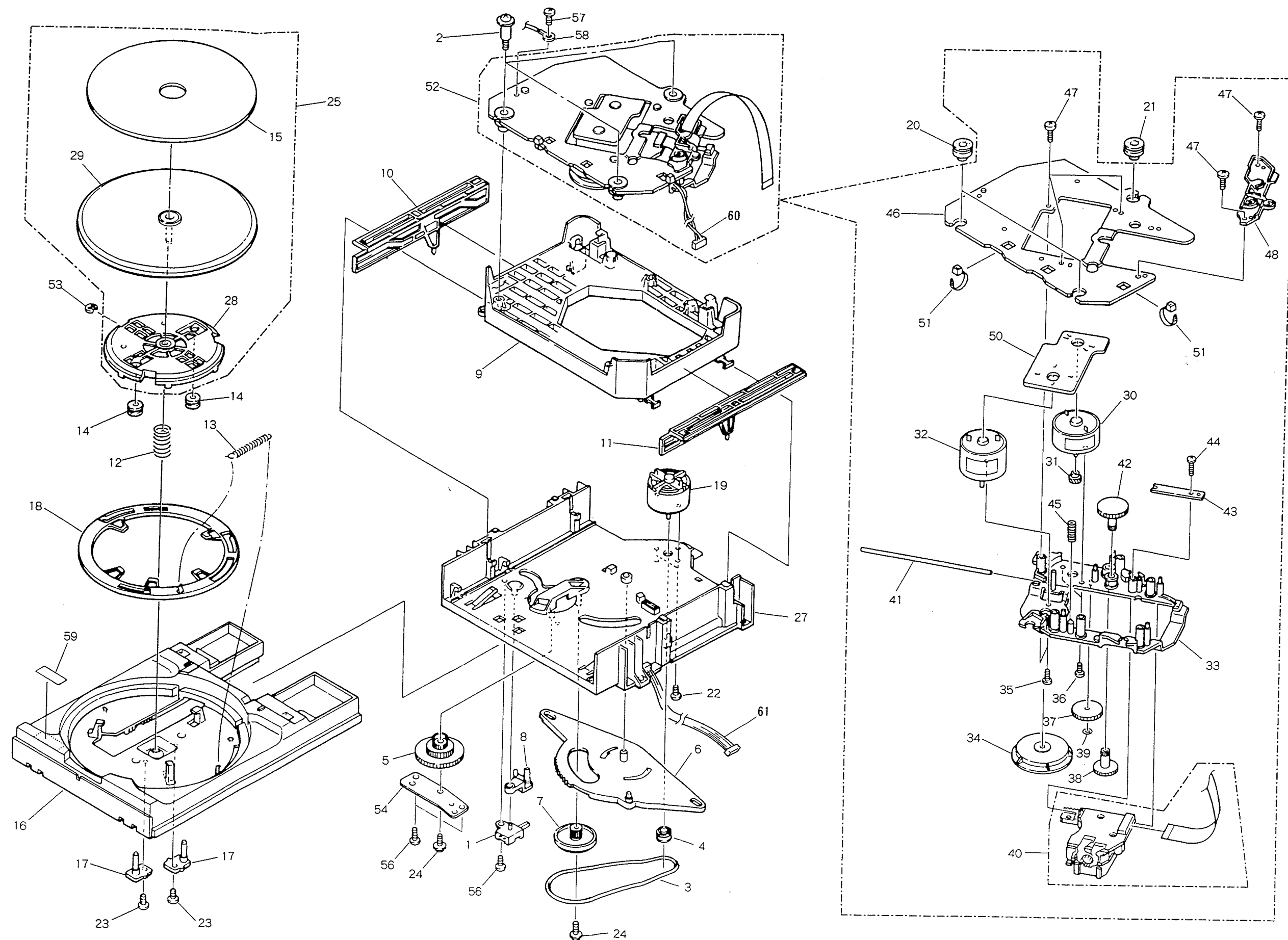
● Exterior Section

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



Note : The stopper consist of the big ring part and the small ring part.
If you stick the stopper to the leg, stick the big ring part to the front leg, and the small ring part to the rear leg.





2.2 LOADING MECHANISM ASSY TT

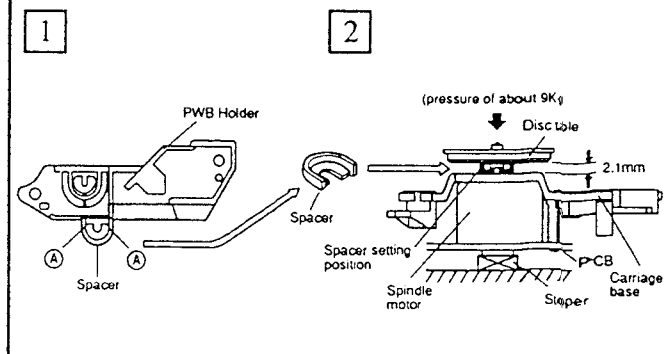
Parts List

Mark	No.	Description	Parts No.
	1	Lever switch (S601)	DSK1003
	2	Float screw	PBA1027
	3	Rubber belt	PEB1186
	4	Motor pulley	PNW1634
	5	Driving gear	PNW1196
	6	Synchronized lever	PNW2168
	7	Gear pulley	PNW1198
	8	SW head	PNW1999
	9	Float base	PNW2000
	10	Left cam	PNW2001
	11	Right cam	PNW2002
	12	Float spring	PBH1120
	13	Lock spring	PBH1121
	14	Float rubber	PEB1014
	15	Table rubber sheet	PEB1181
	16	Tray	PNW2003
	17	Table guide	PNW2004
	18	Lock plate	PNW2005
	19	D.C. motor (0.75W, LOADING)	PXM1010
	20	Float rubber	PEB1031
	21	Float rubber	PEB1170
	22	Screw	BMZ26P040FMC
	23	Screw	IPZ26P060FCU
	24	Screw	IPZ20P080FMC
	25	Turn table assy	PEA1165
	26	.....	
NSP	27	Loading base	PNW1995
NSP	28	Table shaft holder	PXA1383
	29	Turn table (AL)	PNR1035
	30	Carriage D.C. motor (0.3W)	PXM1027
	31	Pinion gear	PNW2005
	32	D.C motor assy (SPINDLE, with oil)	PEA1236
	33	Carriage base	PNW2445
	34	Disc table	PNW1067
	35	Screw	JF20P030FNI
	36	Screw	JFZ17P025FZK
	37	Gear 3	PNW2054
	38	Gear 2	PNW2053
	39	Washer	WT12D032D025
	40	Pickup assy	PEA1179
	41	Guide bar	PLA1094
	42	Gear 1	PNW2052
	43	Gear stopper	PNB1303
	44	Screw	BPZ20P060FMC
	45	Earth spring	PBH1132
NSP	46	Mechanism base TT	PNB1431
	47	Screw	BPZ26P100FMC
	48	PWB holder	PNW2057
	49	.....	
	50	Mechanism board assy	PWX1192

Mark	No.	Description	Parts No.
	51	Binder	PEC-107
NSP	52	Servo mechanism assy TT92	PXA1479
	53	Stop ring	YE20S
	54	Shaft holder	PNB1382
	55	.....	
	56	Screw	BPZ26P060FMC
	57	Screw	BBZ26P060FMC
NSP	58	Earth lead	PDF1148
	59	Caution label	PRW1244
	60	Connector assy 4P	PDE1238
	61	Connector assy 5P	PDE1243

• How to install the disc table

- 1 Use nippers or other tool to cut the two sections marked (A) in figure 1. Then remove the spacer.
- 2 While supporting the spindle motor shaft with the stopper, put the spacer on top of the carriage base and stick the disc table on top (takes about 9Kg pressure). Take off the spacer.



3. DISASSEMBLY

3.1 REMOVE THE TRAY PANEL

Hold the tray panel with your hands as shown in Fig. 1, and grasp the tray with your thumbs and then lift the tray panel up while pulling it toward you with the other fingers. (Fig. 2)

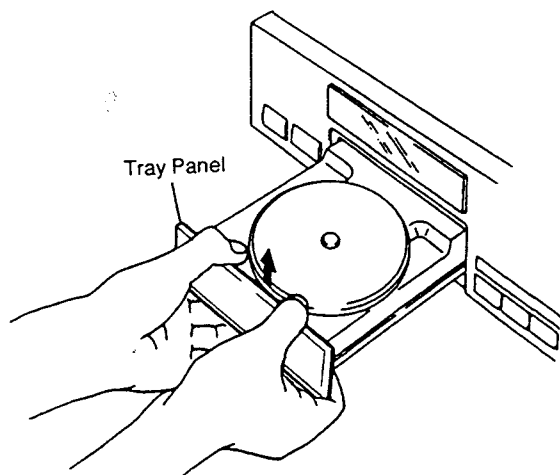


Fig. 1

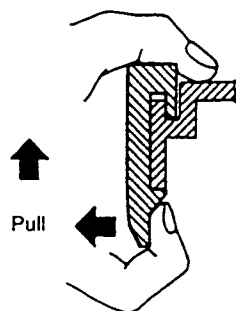


Fig. 2

3.2 INSTALL THE TRAY PANEL

Align the tray panel with the grooves located at both edges of the tray. And then press it down till it stops. (Fig. 3)

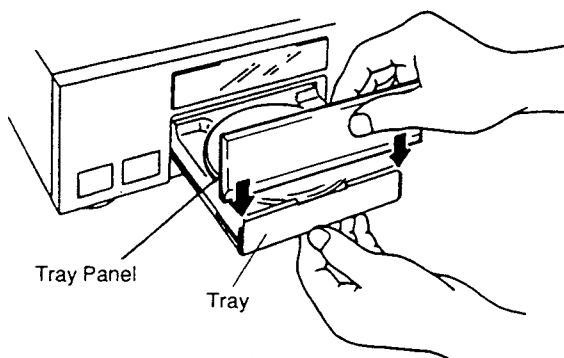


Fig. 3

4. SCHEMATIC AND PCB CONNECTION DIAGRAMS

NOTE FOR SCHEMATIC DIAGRAMS (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: k Ω , M: M Ω , or Ω unless otherwise noted.
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
Tolerance: (F): $\pm 1\%$, (G): $\pm 2\%$, (K): $\pm 10\%$, (M): $\pm 20\%$ or $\pm 5\%$ unless otherwise noted.

4. CAPACITORS:
Unit: p: pF or μ F unless otherwise noted.
Ratings: capacitor (μ F)/ voltage (V) unless otherwise noted.
Rated voltage: 50V except for electrolytic capacitors.

5. COILS:
Unit: m: mH or μ H unless otherwise noted.

6. VOLTAGE AND CURRENT:
 or $-V$:
DC voltage (V) in PLAY mode unless otherwise noted.
 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  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):

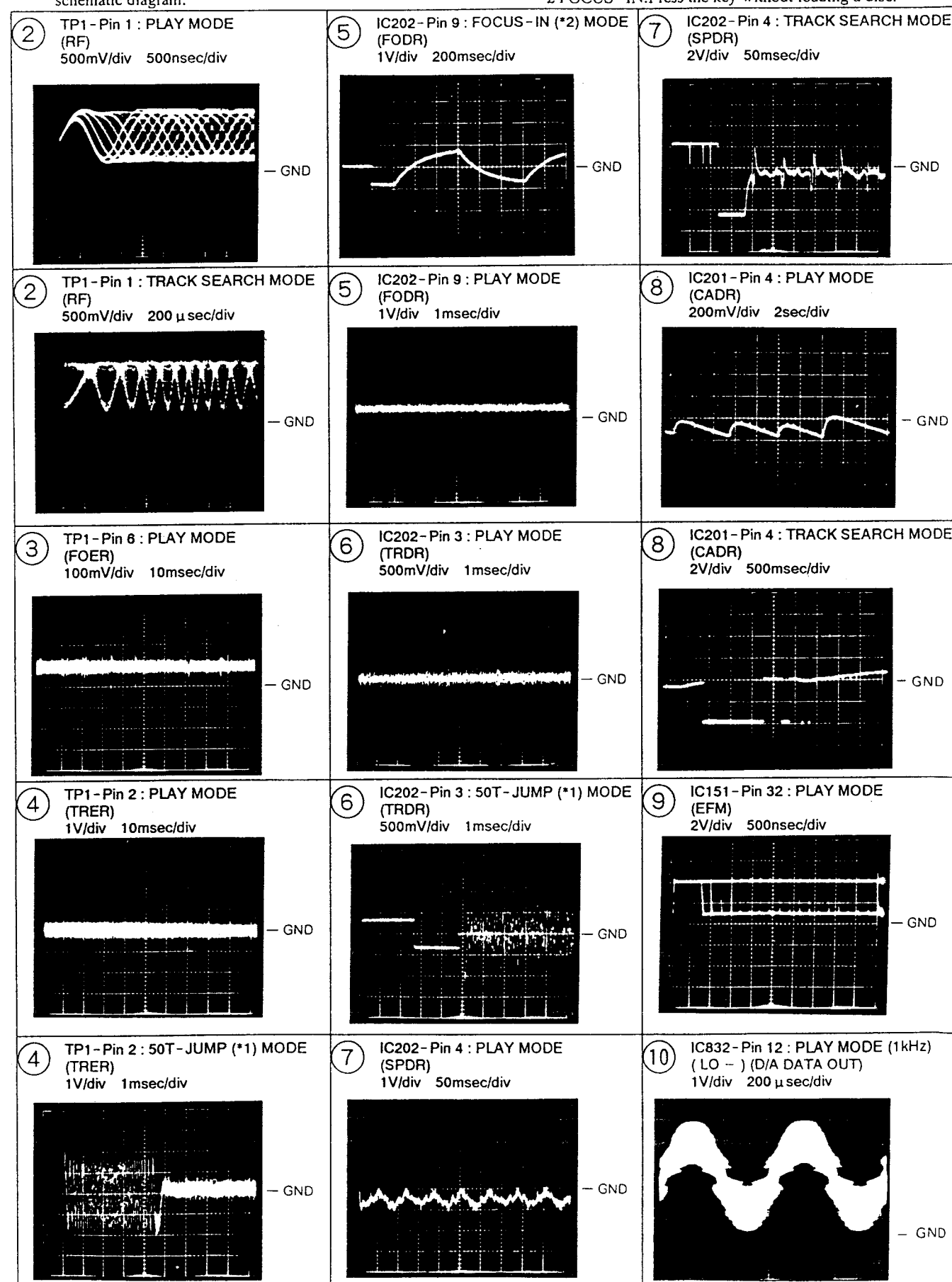
FUNCTION BOARD ASSY
S701: TIME
S702: REPEAT
S703: RANDOM
S704: POWER STANDBY/ON
S705: DISPLAY OFF
S706: EDIT
S707: PEAK SEARCH

SW BOARD ASSY
S751: OUTPUT. SL
S752: 
S753: 
S754: 
S755: 
S756: 
S757: 

WAVEFORMS

Note: The encircled numbers denote measuring points in the schematic diagram.

*1 50T-JUMP: After switching to the pause mode, press the manual search key.
*2 FOCUS-IN: Press the key without loading a disc.



WAVEFORMS

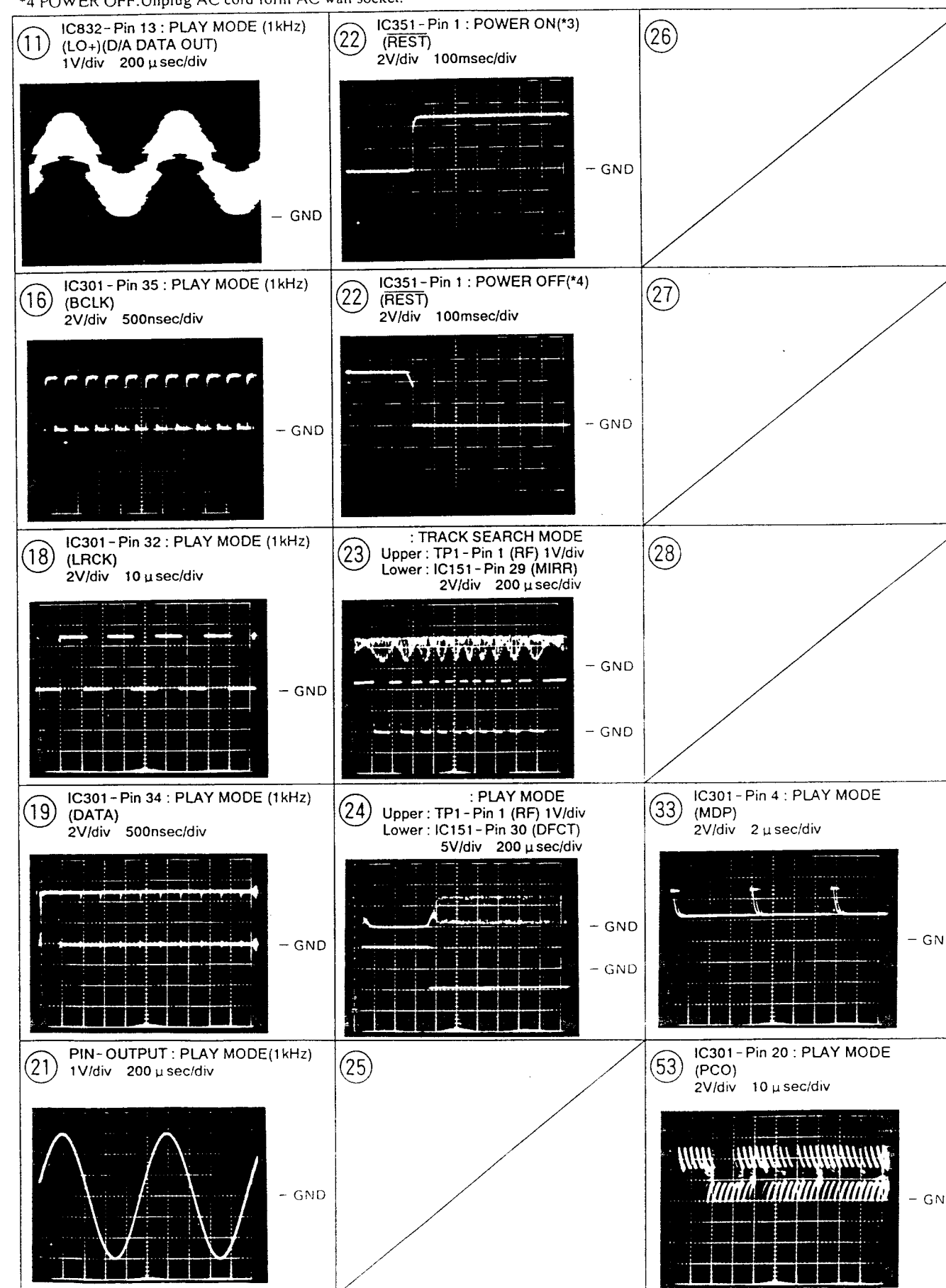
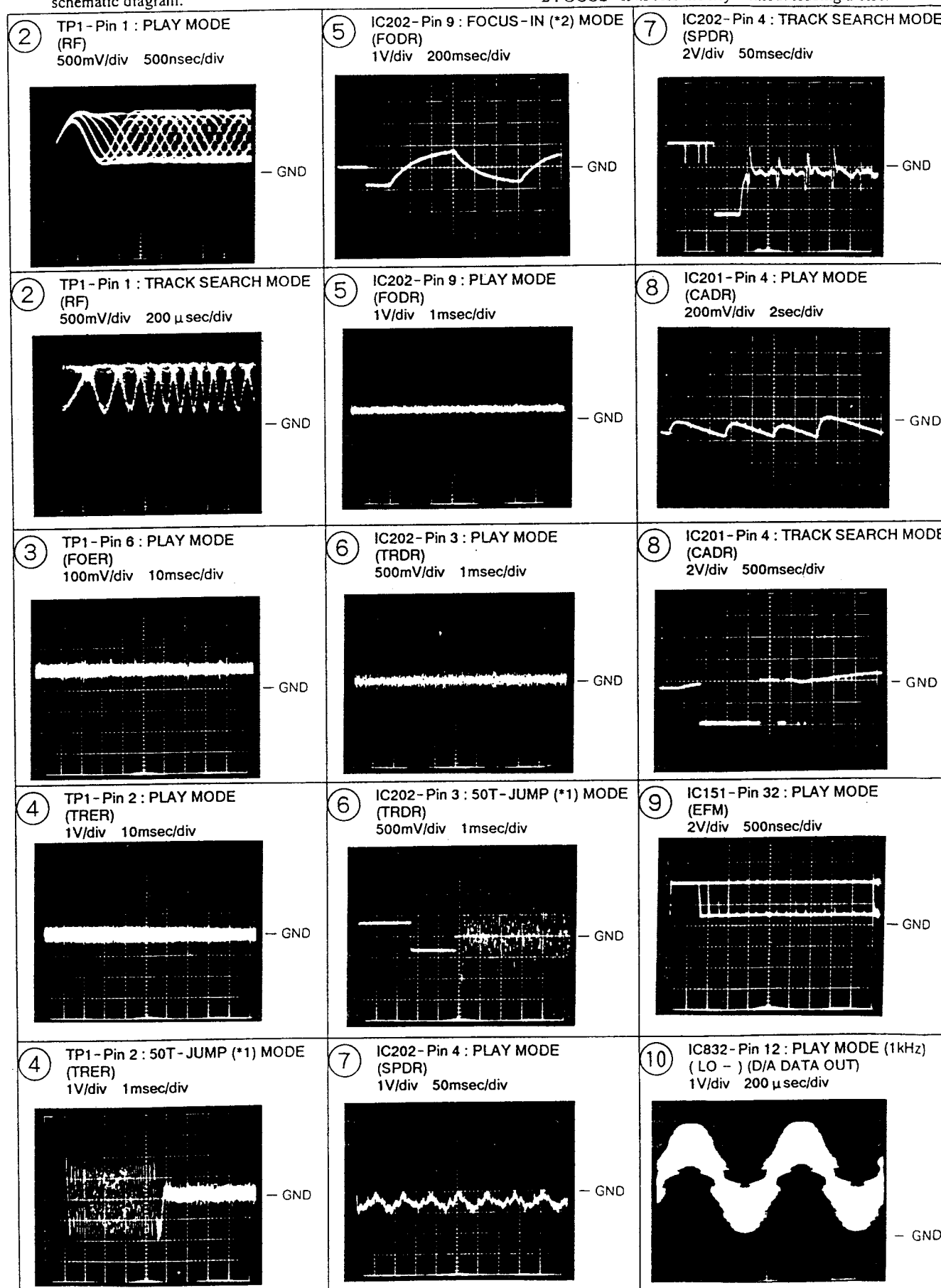
Note: The encircled numbers denote measuring points in the schematic diagram.

*1 50T-JUMP: After switching to the pause mode, press the manual search key.

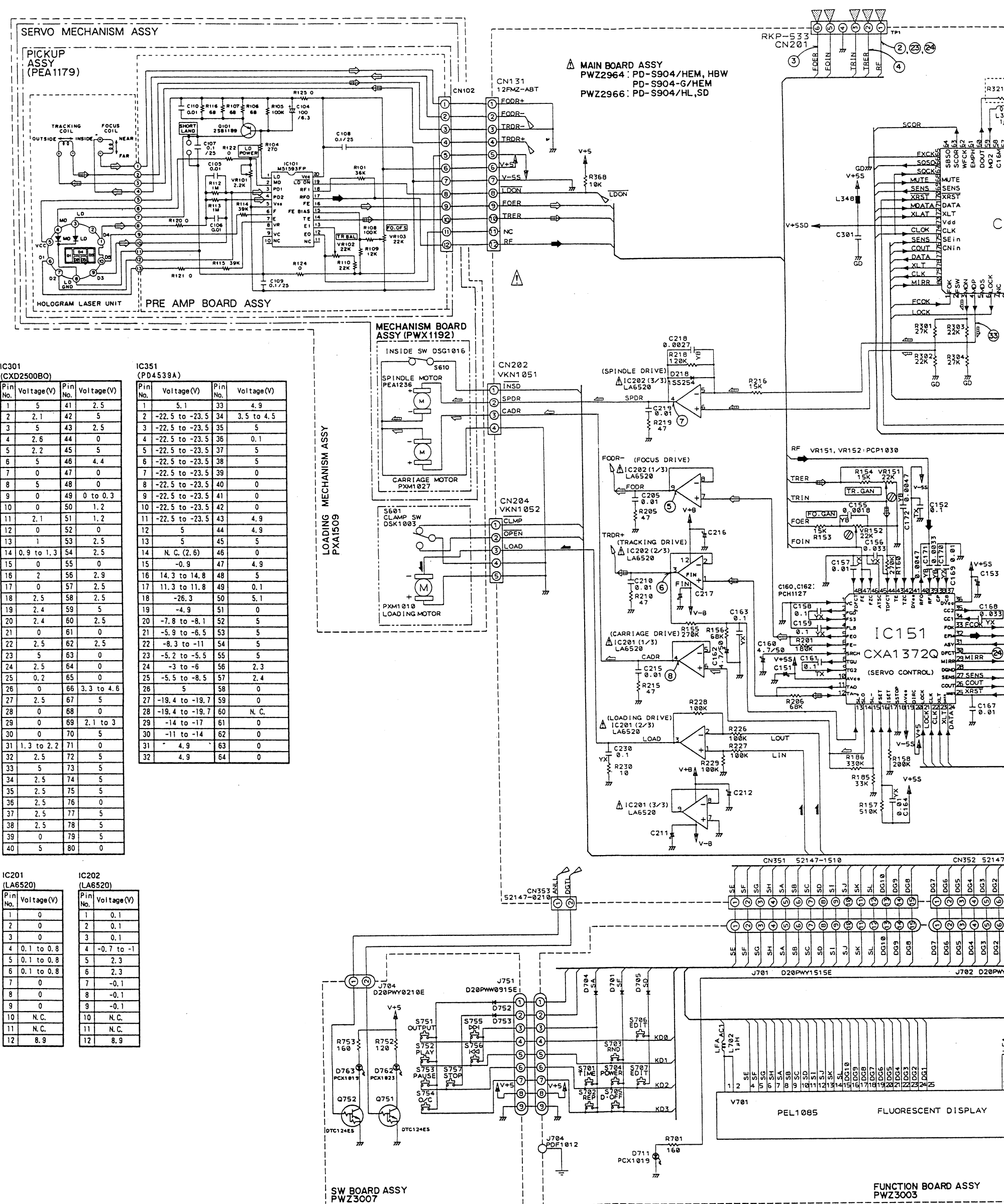
*2 FOCUS-IN: Press the key without loading a disc.

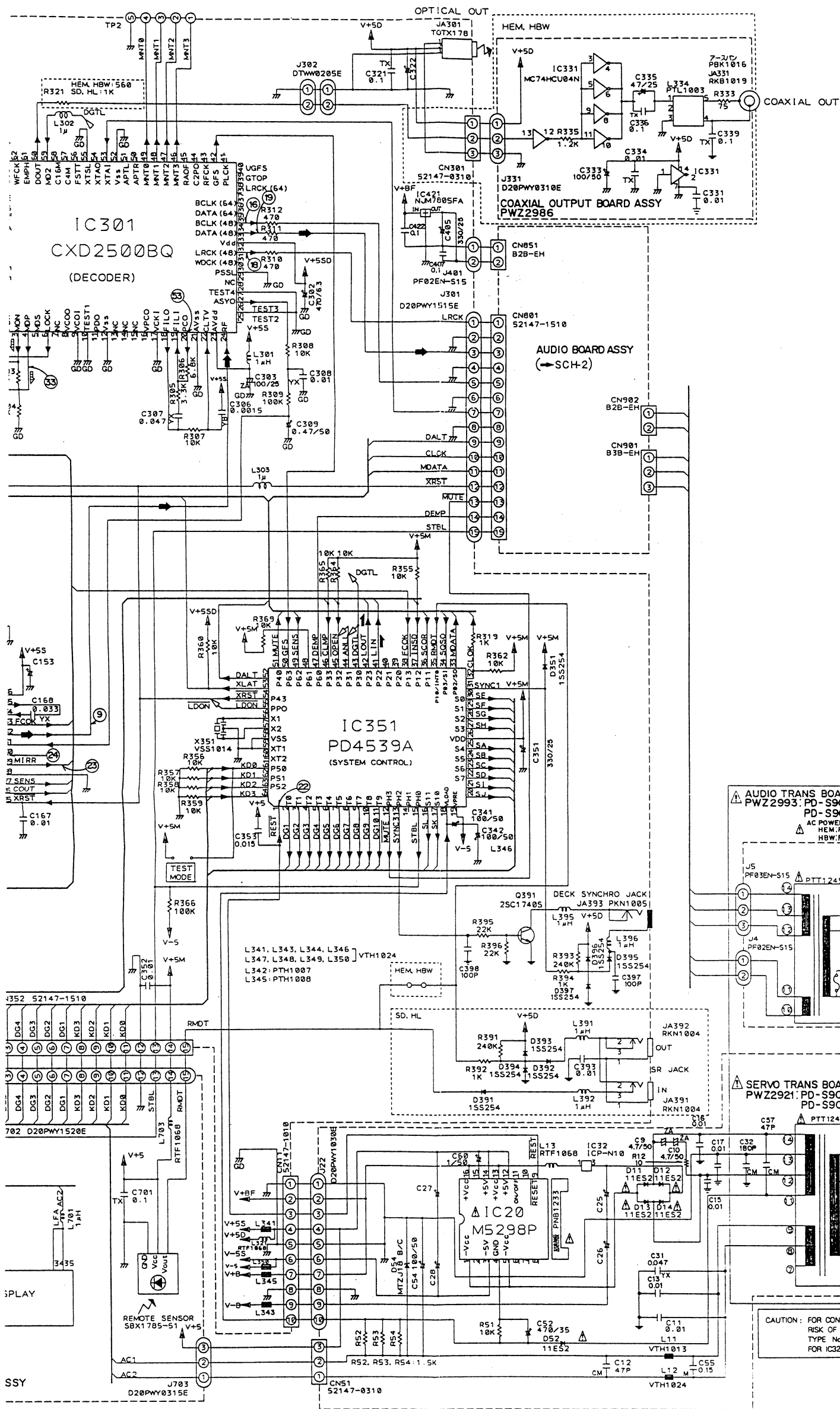
*3 POWER ON: Plug AC cord into AC wall socket.

*4 POWER OFF: Unplug AC cord from AC wall socket.



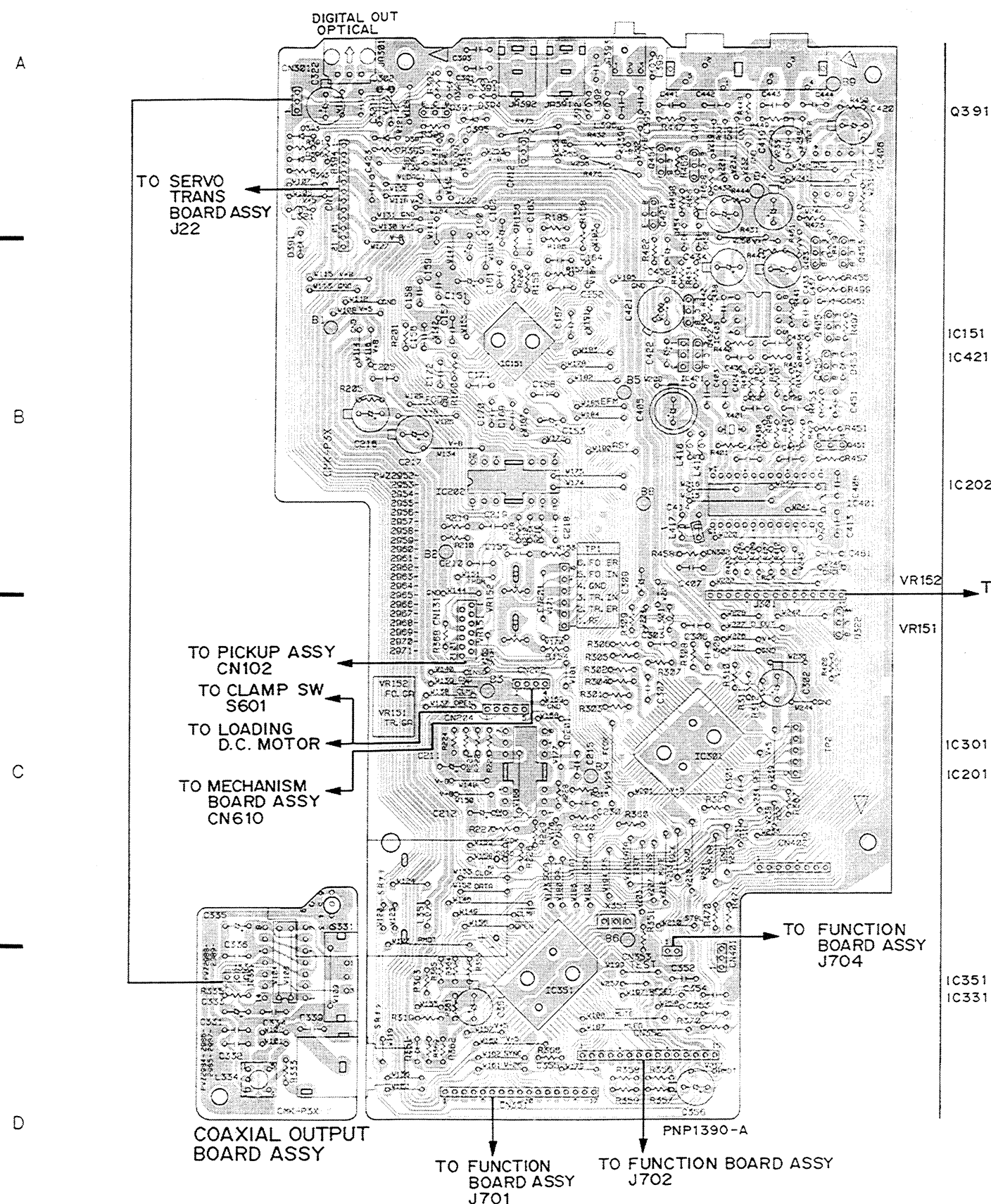
4.1 MAIN BOARD, SW BOARD, FUNCTION BOARD, COAXIAL OUTPUT BOARD, AUDIO TRANS BOARD, SERVO TRANS BOARD, AND PICKUP ASSY





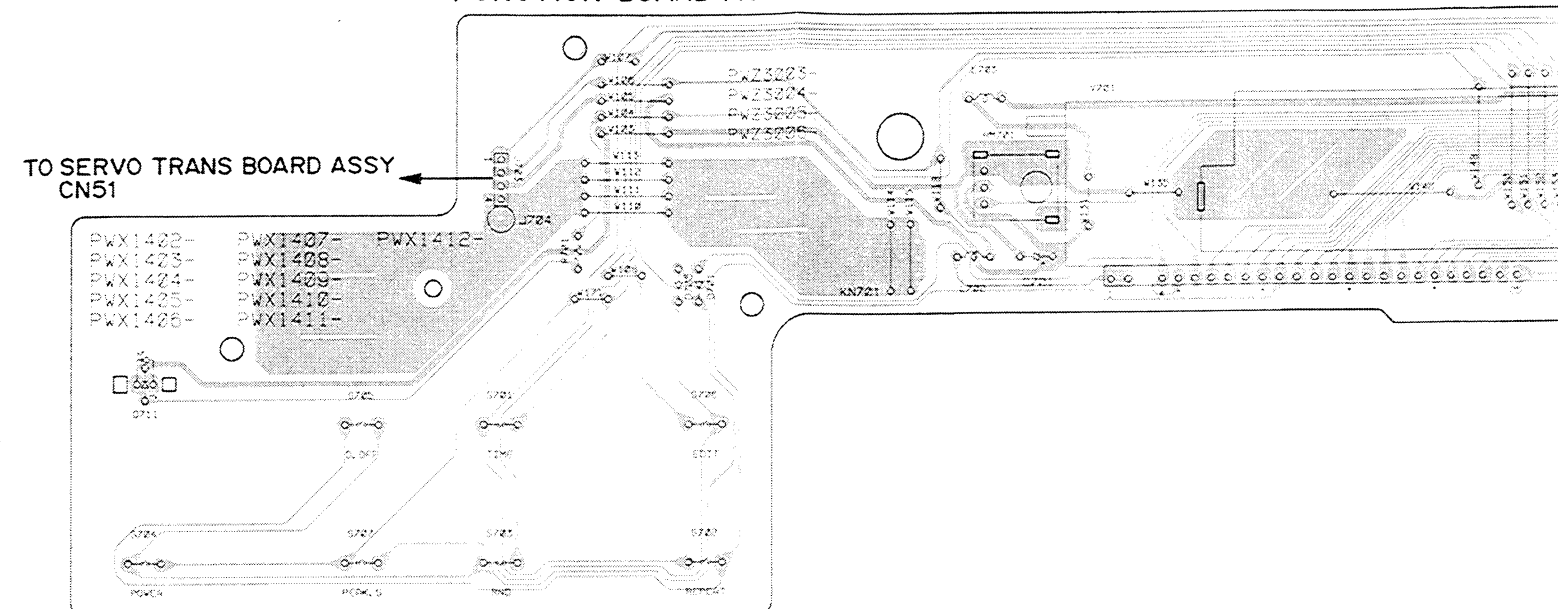
● This diagram is viewed from the mounted parts side.

MAIN BOARD ASSY

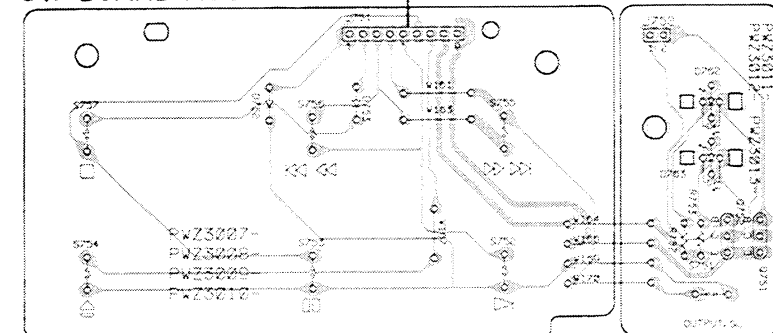


• The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

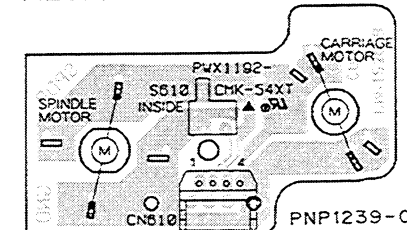
FUNCTION BOARD ASSY



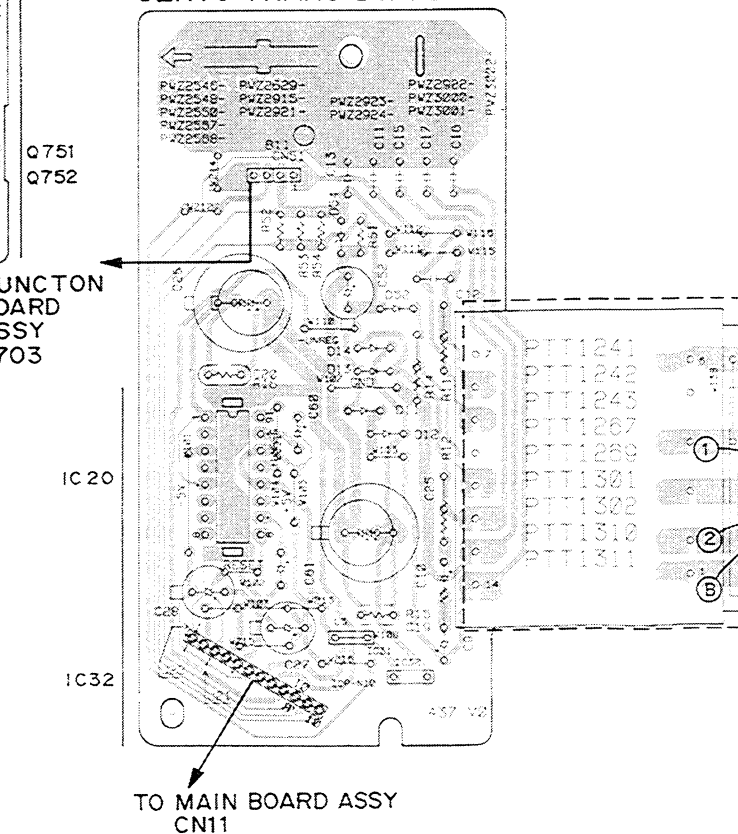
SW BOARD ASSY



MECHANISM BOARD ASSY

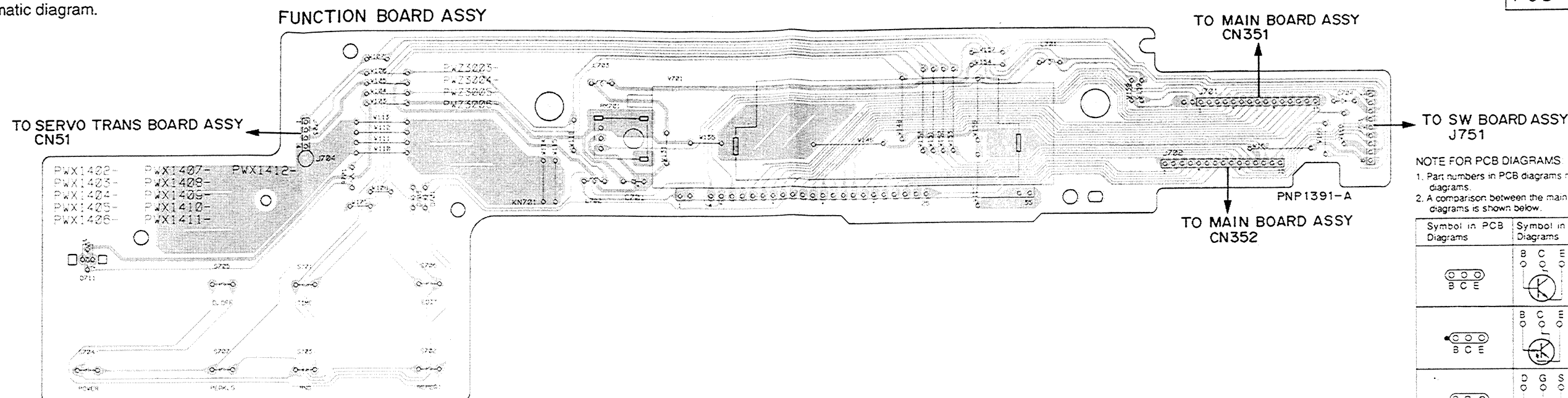


SERVO TRANS BOARD ASSY



PCB-1

- 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.



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

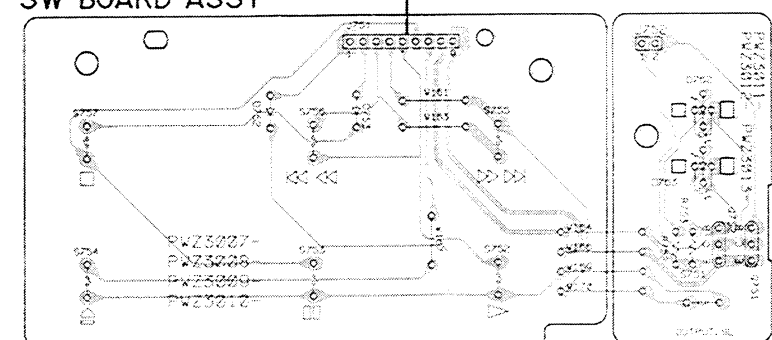
TO FUNCTION BOARD ASSY J751

SW BOARD ASSY

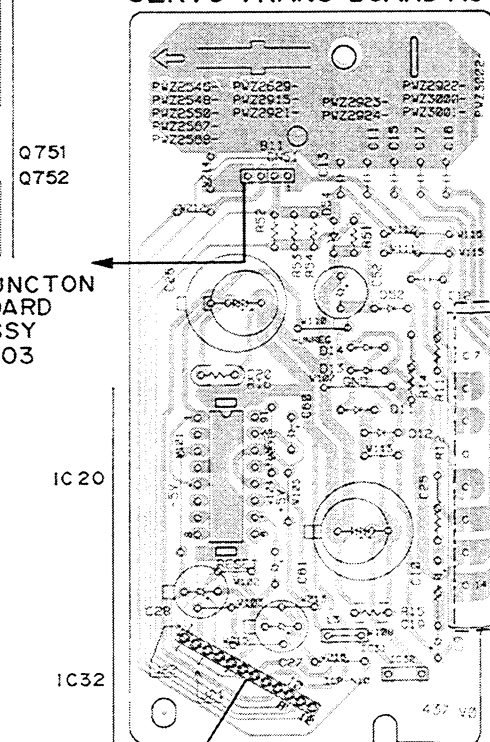
TO AUDIO BOARD ASSY CN801

VR152
VR151

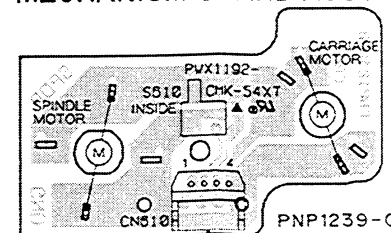
IC301
IC201



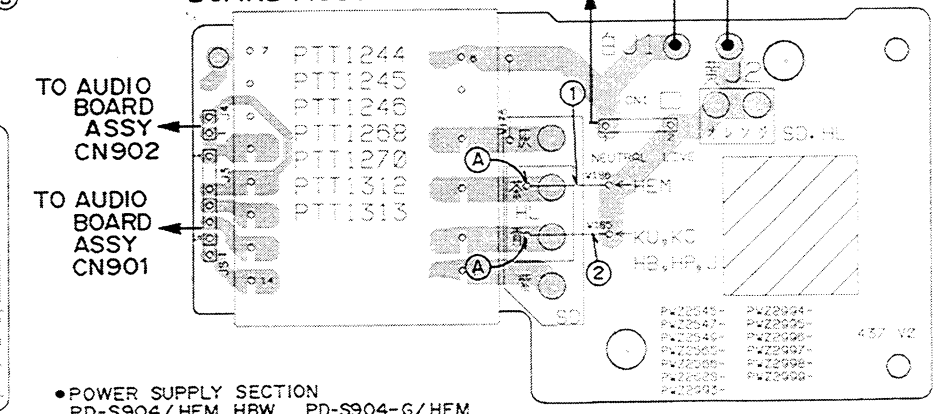
SERVO TRANS BOARD ASSY



MECHANISM BOARD ASSY



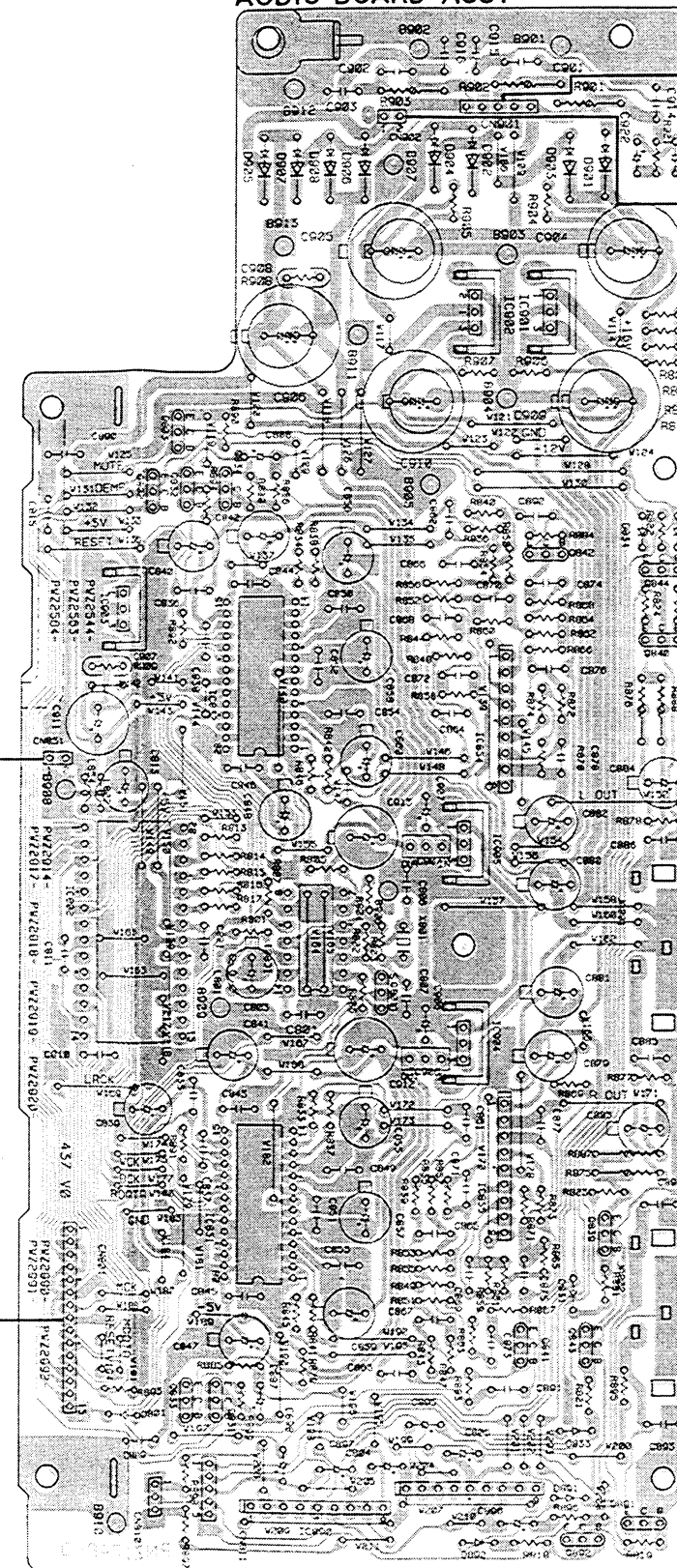
AUDIO TRANS BOARD ASSY



4.2 AUDIO BOARD ASSY

PCB-2

AUDIO BOARD ASSY



TO AUDIO TRANS BOARD ASSY
J5

TO AUDIO TRANS BOARD ASSY
J4

TO MAIN BOARD ASSY
J401

TO MAIN BOARD ASSY
J301

PNP1329-D

- 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.

A

B

C

D

A

B

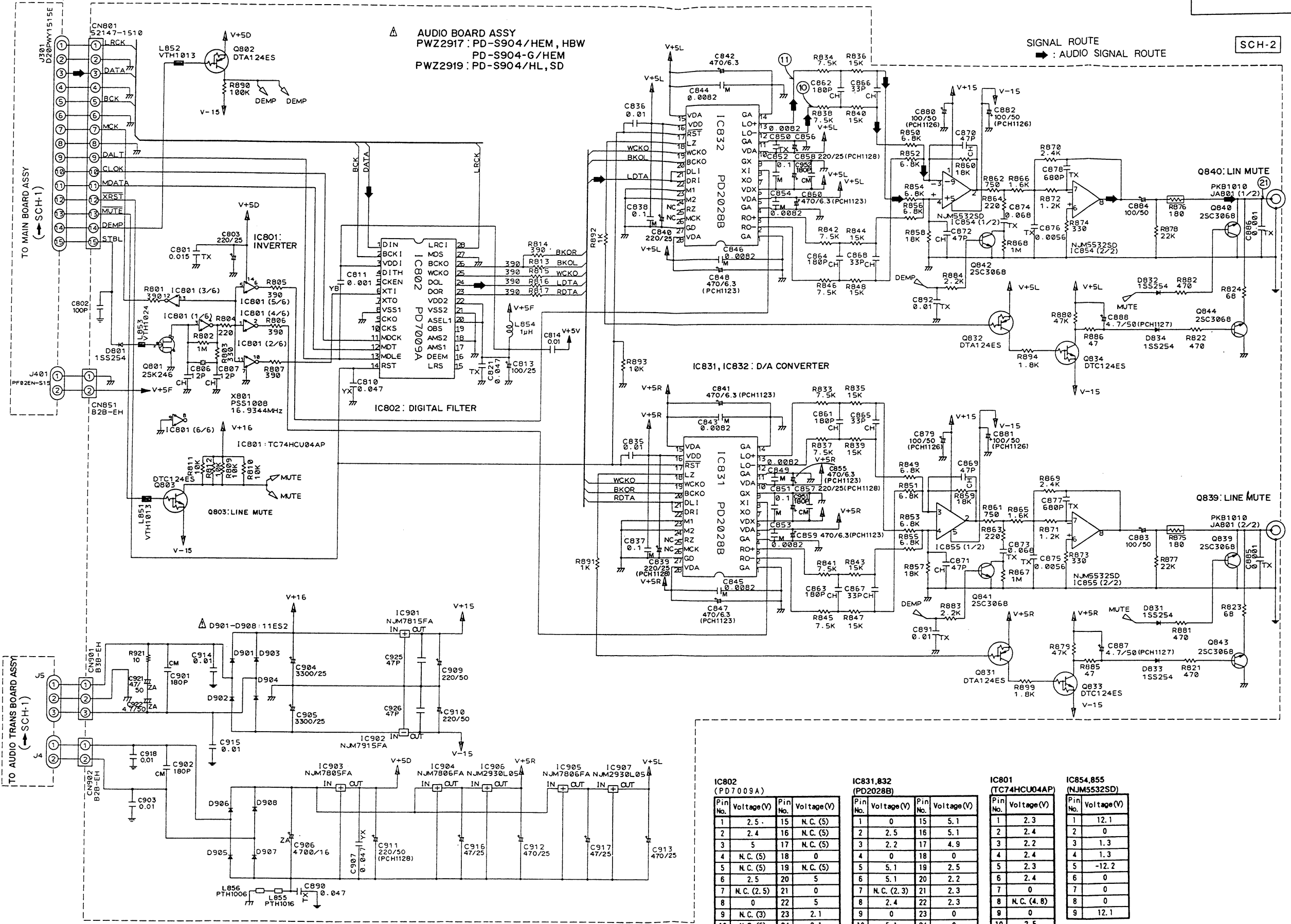
C

D

AUDIO BOARD ASSY
PWZ2917: PD-S904/HBM, HBW
PD-S904-G/HBM
PWZ2919: PD-S904/HL, SD

SIGNAL ROUTE
➡: AUDIO SIGNAL ROUTE

SCH-2



SCH-2

SCH-2

IC802 (PD7009A)			IC831,832 (PD2028B)			IC801 (TC74HCU04AP)			IC854,855 (NJM5532SD)		
Pin No.	Voltage(V)	Pin No.	Voltage(V)	Pin No.	Voltage(V)	Pin No.	Voltage(V)	Pin No.	Voltage(V)	Pin No.	Voltage(V)
1	2.5	15	N.C.(S)	1	0	15	5.1	1	2.3	1	12.1
2	2.4	16	N.C.(S)	2	2.5	16	5.1	2	2.4	2	0
3	5	17	N.C.(S)	3	2.2	17	4.9	3	2.2	3	1.3
4	N.C.(S)	18	0	4	0	18	0	4	2.4	4	1.3
5	N.C.(S)	19	N.C.(S)	5	5.1	19	2.5	5	2.3	5	-12.2
6	2.5	20	5	6	5.1	20	2.2	6	2.4	6	0
7	N.C.(2.5)	21	0	7	N.C.(2.3)	21	2.3	7	0	7	0
8	0	22	5	8	2.4	22	2.3	8	N.C.(4.8)	8	0
9	N.C.(3)	23	2.1	9	0	23	0	9	0	9	0
10	N.C.(S)	24	2.1	10	5.1	24	0	10	2.5	10	2.5
11	4.9	25	2.5	11	0	25	N.C.(0)	11	2.3	11	2.3
12	4.9	26	2.3	12	2.2	26	N.C.(3.4)	12	2.5	12	2.5
13	4.9	27	0	13	2.5	27	0	13	2.3	13	2.3
14	4.9	28	2.5	14	0	28	5.1	14	4.8		

AUDIO BOARD ASSY

AUDIO BOARD ASSY

5. 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 $\times 10^1 \rightarrow$ 561 RD1/8PM $\boxed{561}$ J
- 47k Ω $\rightarrow$ 47 $\times 10^3 \rightarrow$ 473 RD1/4PS $\boxed{473}$ J
- 0.5 Ω $\rightarrow$ 0R5 RN2H $\boxed{0R5}$ K
- 1 Ω $\rightarrow$ 010 RS1P $\boxed{010}$ K
- Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).
- 5.62k Ω $\rightarrow$ 562 $\times 10^1 \rightarrow$ 5621 RN1/4PC $\boxed{5621}$ F

LIST OF WHOLE PCB ASSEMBLES

Mark	Symbol & Description	Part No.					Remarks
		PD-S904/ HBW	PD-S904/ HEM	PD-S904/ HL	PD-S904/ SD	PD-S904-G/ HEM	
NSP	ANALOG BOARD └AUDIO BOARD ASSY └SERVO TRANS BOARD ASSY └AUDIO TRANS BOARD ASSY └VOLTAGE SW BOARD ASSY	PWM1920 PWZ2917 PWZ2921 PWZ2993 Not Used	PWM1920 PWZ2917 PWZ2921 PWZ2993 Not Used	PWM1922 PWZ2919 PWZ2923 PWZ2995 PWZ2630	PWM1923 PWZ2919 PWZ2924 PWZ2996 Not Used	PWM1920 PWZ2917 PWZ2921 PWZ2993 Not Used	
NSP	MOTHER BOARD ASSY └MAIN BOARD ASSY	PWM1959 PWZ2964	PWM1959 PWZ2964	PWZ1961 PWZ2966	PWM1961 PWZ2966	PWM1959 PWZ2964	
NSP	└COAXIAL OUTPUT BOARD ASSY	PWZ2986	PWZ2986	Not Used	Not Used	PWZ2986	
NSP	SUB BOARD ASSY └FUNCTION BOARD ASSY	PWX1402 PWZ3003	PWX1402 PWZ3003	PWX1402 PWZ3003	PWX1402 PWZ3003	PWX1402 PWZ3003	
NSP	└SW BOARD ASSY	PWZ3007	PWZ3007	PWZ3007	PWZ3007	PWZ3007	
NSP	LOADING MECHANISM ASSY TT	PXA1521	PXA1521	PXA1521	PXA1521	PXA1521	
NSP	└SERVO MECHANISM ASSY TT92	PXA1479	PXA1479	PXA1479	PXA1479	PXA1479	
NSP	└MECHANISM BOARD ASSY	PWX1192	PWX1192	PWX1192	PWX1192	PWX1192	

■ PARTS LIST FOR PD-S904/HBW

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
AUDIO BOARD ASSY							
SEMICONDUCTORS	IC906, IC907		NJM2930L05	Δ	Q803, Q833, Q834		DTC124ES
	IC854, IC855		NJM5532SD		D901-D908		11ES2
	IC903		NJM7805FA		D801, D831-D834		ISS254
	IC904, IC905		NJM7806FA				
	IC901		NJM7815FA	COILS AND FILTERS			
					L854		LAU010J
	IC902		NJM7915FA		L856		PTH1006
	IC831, IC832		PD2028B		L855		PTH1016
	IC802		PD7009A		L851, L852		VTH1013
	IC801		TC74HCU04AP		L853		VTH1024
CAPACITORS							
	Q839-Q844		2SC3068		C806, C807		CCCCH120J50
					C861-C864		CCCCH181J50
	Q801		2SK246		C865-C868		CCCCH330J50
	Q802, Q831, Q832		DTA124ES		C869-C872, C925, C926		CCCCH470J50
					C802		CCCSL101J50

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	C883, C884		CEGA101M50	CAPACITORS			
	C909, C910		CEGA221M50		C60		CEAS010M50
	C916, C917		CEGA470M25		C54		CEAS101M50
	C813		CEZA101M25		C52		CEAS471M35
	C803		CEZA221M25		C10, C9		CEZA4R7M50
					C31		CGCYX473K25
	C912, C913		CEZA471M25		C11, C13, C15, C16, C17		CKCYF103Z50
	C906		CEZA472M16		C32		CMA181J500
	C921, C922		CEZA4R7M50		C12, C57		CMA470J500
	C891, C892		CFTXA103J50		C55		CQMA154J50
	C821, C890		CFTXA473J50		C25, C26 (4700 μ F/16V)		PCH1119
	C875, C876		CFTXA562J50		C27, C28 (220 μ F/25V)		PCH1128
	C877, C878		CFTXA681J50				
	C873, C874		CFTXA683J50				
	C810, C907		CGCYX473K25				
	C811		CKCYB102K50	RESISTORS			
					R55		RD1/2PM3R3J
					Other Resistors		RD1/6PM□□□J
	C814, C815, C835, C836, C903		CKCYF103Z50				
	C914, C915, C918		CKCYF103Z50				
	C901, C902, C951, C952		CMA181J500				
	C837, C838, C851, C852		CQMA104J50	OTHERS			
	C843-C846, C849, C850		CQMA822J50		CN51 3P JUMPER CONNECTOR		52147-0310
				Δ	HEAT SINK		PNB1233
					PCB BINDER		VEF1008
					EARTH PLATE		VNF-091
	C853, C854		CQMA822J50	MAIN BOARD ASSY			
	C885, C886		CQPA102J100				
	C801		CQPA153J100				
	C841, C842, C847, C848 (470 μ F/6.3V)		PCH1123				
	C855, C856, C859, C860 (470 μ F/6.3V)		PCH1123				
	C904, C905 (3300/25)		PCH1125				
	C879-C882 (100/50)		PCH1126	SEMICONDUCTORS			
	C887, C888 (4.7/50)		PCH1127		IC151		CXA1372Q
	C839, C840, C857, C858, C911, (220/25)		PCH1128		IC301		CXD2500BQ
				Δ	IC201, IC202		LA6520
					IC421		NJM7805FA
					IC351		PD4539A
					Q391		2SC1740S
					D218, D351, D395-D397		1SS254
ESISTORS							
	R875, R876		RDR1/4PM181J				
	Other Resistors		RD1/6PM□□□J				
THERS							
	CN801 15P JAMPER CONNECTOR		52147-1510	COILS AND FILTERS			
	CN851, CN902 2P TOP POST		B2B-EH		L301-L303, L395, L396		LAU010J
	CN901 3P TOP POST		B3B-EH		L345		PTH1008
	JA801 JACK		PKB1010		L321 (0.15mH)		RTF1068
	X801 XTAL RES(16.9344MHz)		PSS1008		L341, L343, L349, L350		VTH1024
	PCB BINDER		VEF1008	CAPACITORS			
	EARTH PLATE		VNF-091				

Mark	No.	Description	Parts No.
	C167, C205, C210, C215, C219		CKCYF103Z50
	C353		CQPA153J100
	C218		CQPA272J100
	C211 (1000 μ F/16V)		PCH1122
	C151, C153, C302, C322 (470 μ F/6.3V)		PCH1123
	C160, C162 (4.7 μ F/50V)		PCH1127
	C212 (220 μ F/25V)		PCH1128

RESISTORS

VR151, VR152 (22k Ω /0.1W)	PCP1030
Other Resistors	RD1/6PM□□□J

OTHERS

CN131 12P CONNECTOR	12FMZ-ABT
CN202 4P CONNECTOR	173981-4
CN204 5P CONNECTOR	173981-5
CN353 2P JUMPER CONNECTOR	52147-0210
CN301 3P JUMPER CONNECTOR	52147-0310
CN11 10P JUMPER CONNECTOR	52147-1010
CN351 15P JUMPER CONNECTOR, CN352	52147-1510
J401 CONNECTOR	PF02EN-S15
JA393 MINI JACK	PKN1005
CN201 6P CONNECTOR	RKP-533
JA301 OPTICAL OUTPUT JACK	TOTX178
PCB BINDER	VEF1008
X351 CERAMIC RESONATOR(4.19MHz)	VSS1014

COAXIAL OUTPUT BOARD ASSY

SEMICONDUCTORS

IC331	MC74HCU04N
-------	------------

COILS AND FILTERS

L334	PTL1003
------	---------

CAPACITORS

C335	CEAS470M25
C334	CFTXA103J50
C336, C339	CFTXA104J50
C331	CKCYF103Z50
C333 (100 μ F/50V)	PCH1126

RESISTORS

All Resistors	RD1/6PM□□□J
---------------	-------------

OTHERS

JA331 1P JACK	RKB1019
---------------	---------

AUDIO TRANS BOARD ASSY

OTHERS

J4 CONNECTOR	PF02EN-S15
J5 CONNECTOR	PF03EN-S15
△ TERMINAL	RKC-061

Mark	No.	Description	Parts No.
------	-----	-------------	-----------

FUNCTION BOARD ASSY

SEMICONDUCTORS

D701, D704, D705	1SS254
D711	PCX1019

COILS AND FILTERS

L701, L702	LFA010K
L703 (0.15mH)	RTF1068

SWITCHES AND RELAYS

S701-S707	PSG1006
-----------	---------

CAPACITORS

C701	CFTXA104J50
------	-------------

RESISTORS

All Resistors	RD1/6PM□□□J
---------------	-------------

OTHERS

V701 (FL INDICATOR TUBE)	PEL1085
REMOTE SENSOR	SBX1785-51

SWITCH BOARD ASSY

SEMICONDUCTORS

Q751-Q752	DTC124ES
D763	PCX1019
D762	PCX1023

SWITCHES AND RELAYS

S751-S757	PSG1006
-----------	---------

RESISTORS

All Resistors	RD1/6PM□□□J
---------------	-------------

OTHER

D752, D753 DIODE	1SS254
------------------	--------

MECHANISM BOARD ASSY

SWITCHES AND RELAYS

S610	DSG1016
------	---------

OTHERS

CN610 MT CONNECTOR 4P	173979-4
-----------------------	----------

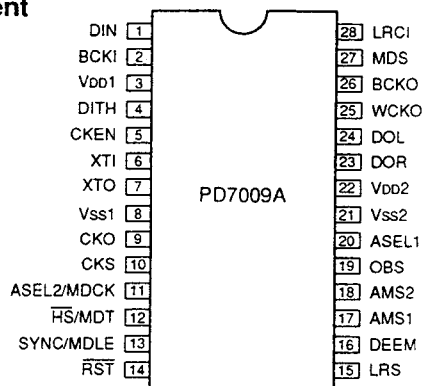
6. IC INFORMATION

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

■ PD7009A (AUDIO BOARD ASSY, IC802)

DIGITAL FILTER

● Pin Arrangement (Top View)



● Pin Function

Pin No.	Name	i/o	Function																	
1	DIN	ip	Data input																	
2	BCKI	ip	Bit clock input																	
3	Vdd1	/	+5V power supply pin 1																	
4	DITH	ip	Dither ON/OFF selection		H : ON, L : OFF															
5	CKEN	ip	Operation control of the crystal oscillation circuit		H : Oscillation, L : Stop															
6	XTI	i	Crystal oscillation circuit input or external clock input																	
7	XTO	o	Crystal oscillation circuit output																	
8	Vss1	/	GND pin 1																	
9	CKO	o	Master clock output																	
10	CKS	ip	XTI (master clock) input frequency selection		H : 384 fs, L : 512 fs															
11	ASEL2/MDCK	ip	Operation mode selection 2 when the pin control. (For logic, refer to the attached table.) Clock input for microcomputer data when the microcomputer control.																	
12	HS/MDT	ip	Normal speed/double speed selection when the pin control. H : Normal speed, L : Double speed. Data input for microcomputer data when the microcomputer control.																	
13	SYNC/MDLE	ip	Sync mode selection when the pin control. H : Jitter free, L : Forced sync. Latch enable signal input for microcomputer data when the microcomputer control.																	
14	RST	ip	System reset		H : Normal operation, L : Reset															
15	LRS	ip	LR clock polarity selection <table border="1"><tr><td>LRS</td><td colspan="2">LRCK</td></tr><tr><td></td><td>H</td><td>L</td></tr><tr><td>H</td><td>Lch</td><td>Rch</td></tr><tr><td>L</td><td>Rch</td><td>Lch</td></tr></table>			LRS	LRCK			H	L	H	Lch	Rch	L	Rch	Lch			
LRS	LRCK																			
	H	L																		
H	Lch	Rch																		
L	Rch	Lch																		
16	DEEM	ip	De-emphasis signal		H : ON, L : OFF															
17	AMS1	ip	Attenuation amount selection 1.		<table border="1"><tr><td colspan="2"></td><td colspan="2">AMS1</td></tr><tr><td colspan="2"></td><td>H</td><td>L</td></tr><tr><td rowspan="2">AMS2</td><td>H</td><td>- 2.05dB</td><td>- 1.0dB</td></tr><tr><td>L</td><td>- 0.1dB</td><td>- 2.55dB</td></tr></table>			AMS1				H	L	AMS2	H	- 2.05dB	- 1.0dB	L	- 0.1dB	- 2.55dB
		AMS1																		
		H	L																	
AMS2	H	- 2.05dB	- 1.0dB																	
	L	- 0.1dB	- 2.55dB																	
18	AMS2	ip	Attenuation amount selection 2.																	

Pin No.	Name	i/o	Function
19	OBS	ip	Output data bit length selection. H : 24-bit parallel output L : 20-bit parallel output
20	ASEL1	ip	Operation mode selection 1. (For logic, refer to the attached table.)
21	VSS2	/	GND pin 2
22	VDD2	/	+5V power supply pin 2
23	DOR	O	Rch data output
24	DOL	O	Lch data output
25	WCKO	O	Word clock output
26	BCKO	O	Bit clock output for output data
27	MDS	ip	Mode setting method selection H : Pin control L : Microcomputer control
28	LRCI	ip	LR clock input

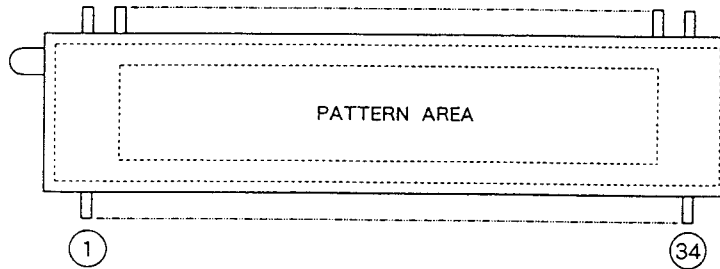
(*) ip stands for an input pin with a pull-up resistor.

[Attached table] Operation mode select table

Mode select setting			Operation mode			Mode when microcomputer control reset
HS	ASEL1	ASEL2	Operating speed	Characteristics	Output route	
H	H	H	Normal speed	Output added with high band	8 fs	○
		L		Only high band is output.		
	L	H		Normal DF mode		
		L		LLC mode		
L	H	H	Double speed	Normal DF mode	8 fs	
		L			4 fs	
	L	H		LLC mode	8 fs	
		L			4 fs	

7. FL INFORMATION

■ PEL1085 (V701)

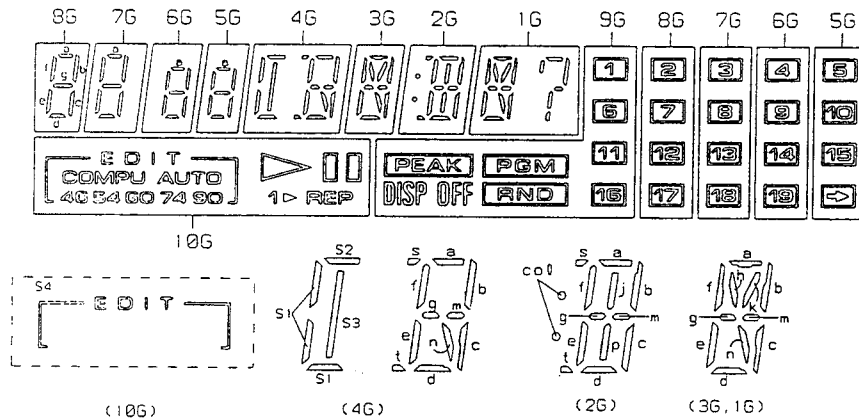


Pin Connection

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
CONNECTION	F	F	N	P	P	P	P	P	P	P	P	P	P	P	1	0	9	8	7	6	5	4	3	2	1	N	N	N	N	N	N	N	N	F
	1	2	P	1	2	3	4	5	6	7	8	9	0	1	2	G	G	G	G	G	G	G	G	G	G	X	X	X	X	X	X	P	X	2

NOTE 1) F1, F2.....Filament
 2) NP.....No pin
 3) NX.....No extend pin
 4) DL.....Datum Line
 5) 1G - 10G.....Grid

Grid Assignment



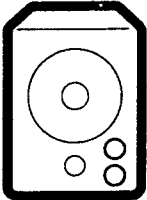
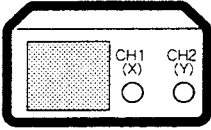
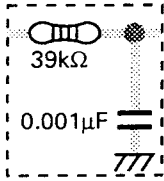
Anode Connection

	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	4B	RND	e	e	e	e	e	e	e	e
P2	54	PGM	f	f	f	f	f	f	f	f
P3	60	PEAK	g	g	g	g	g, m	g, m	g, m	g
P4	1>	DISP OFF	-	-	-	-	s, t	-	s, t	m
P5	74	-	a	a	a	a	a	a	a	a
P6	90	-	b	b	b	b	b	b	b	b
P7	AUTO	-	c	c	c	c	c	c	c	c
P8	COMPU	-	d	d	d	d	d	d	d	d
P9	S4	1	2	3	4	5	S2	h	col	h
P10	▶	6	7	8	9	10	S3	k	j, p	k
P11	||	11	12	13	14	15	n	n	-	n
P12	REP	16	17	18	19	20	S1	-	-	?

8. ADJUSTMENTS

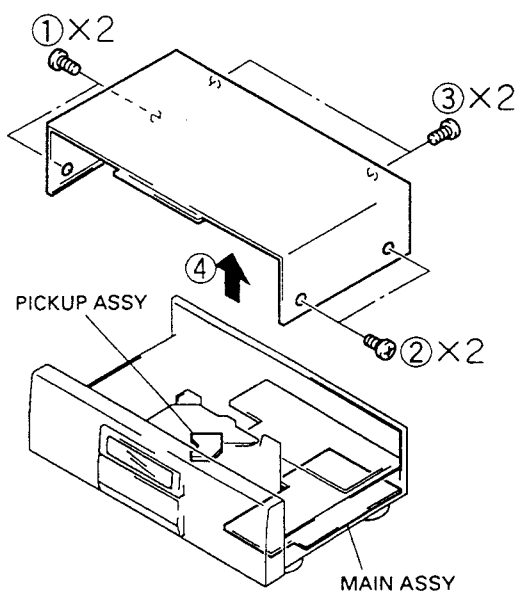
8.1 PREPARATIONS

1. Jigs and Measuring Instruments

			
CD TEST DISC (YEDS-7)	⊖ Precise screwdriver	⊖ screwdriver (small)	⊕ screwdriver (medium)
			
⊕ screwdriver (large)	Low-frequency oscillator	Dual-trace oscilloscope (10 : 1 probe)	Low pass filter (39kΩ + 0.001μF)

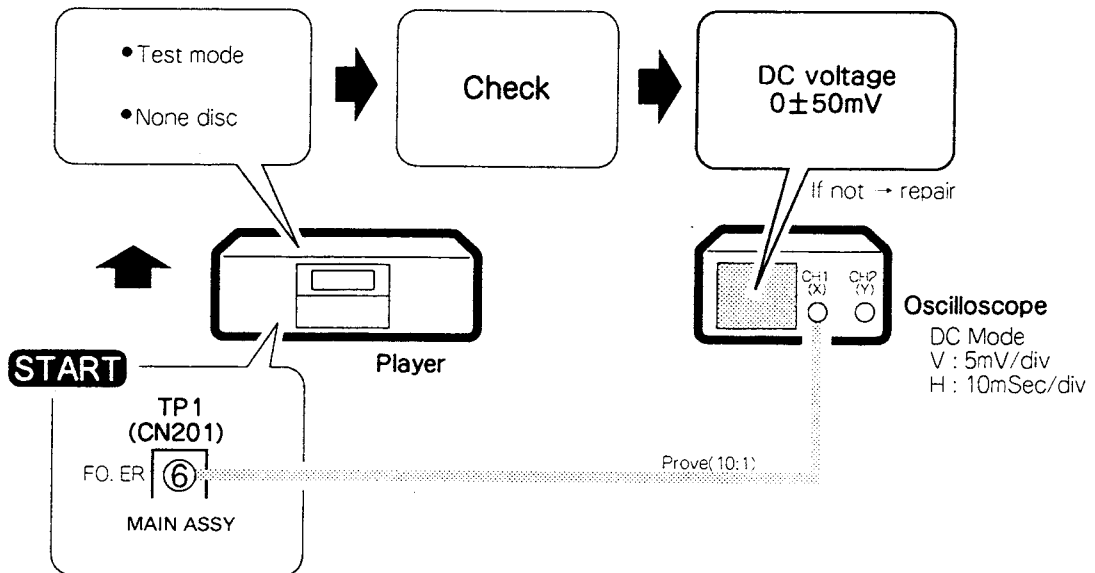
2. Disassembly / Assembly

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

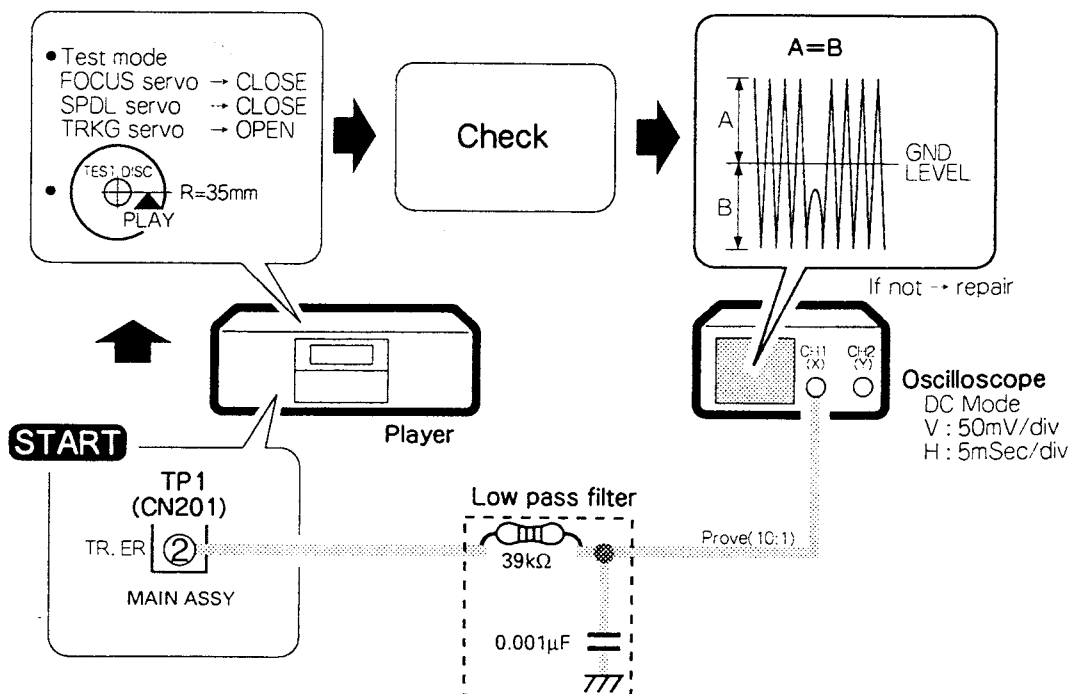


4. Check and Adjustment

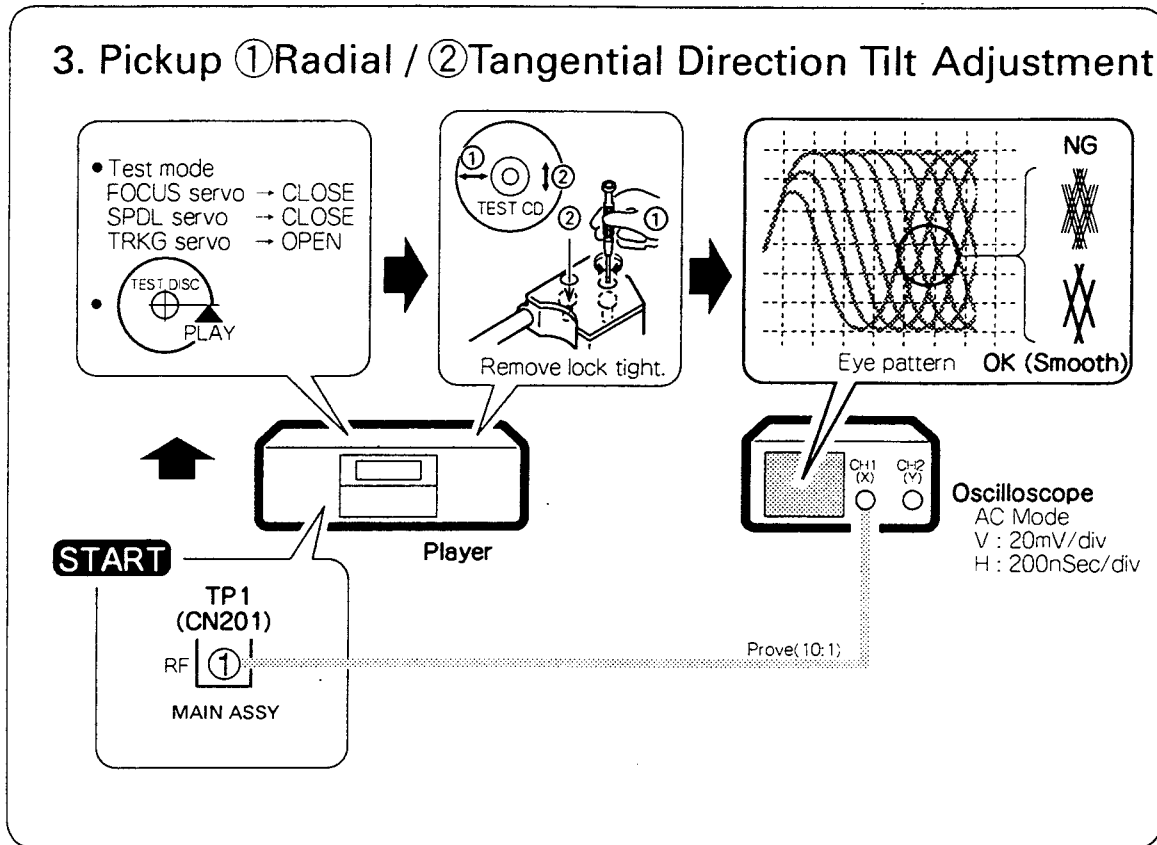
1. Focus Offset Check



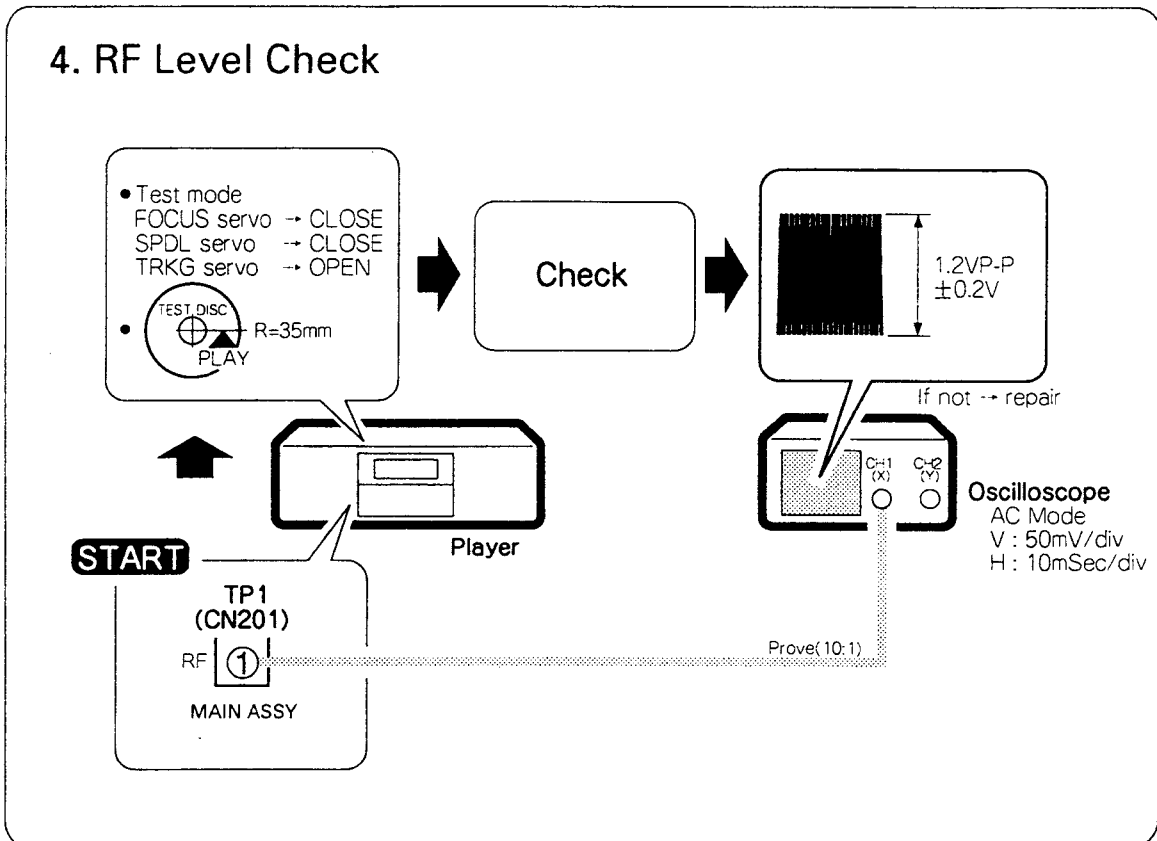
2. Tracking Error Balance Check



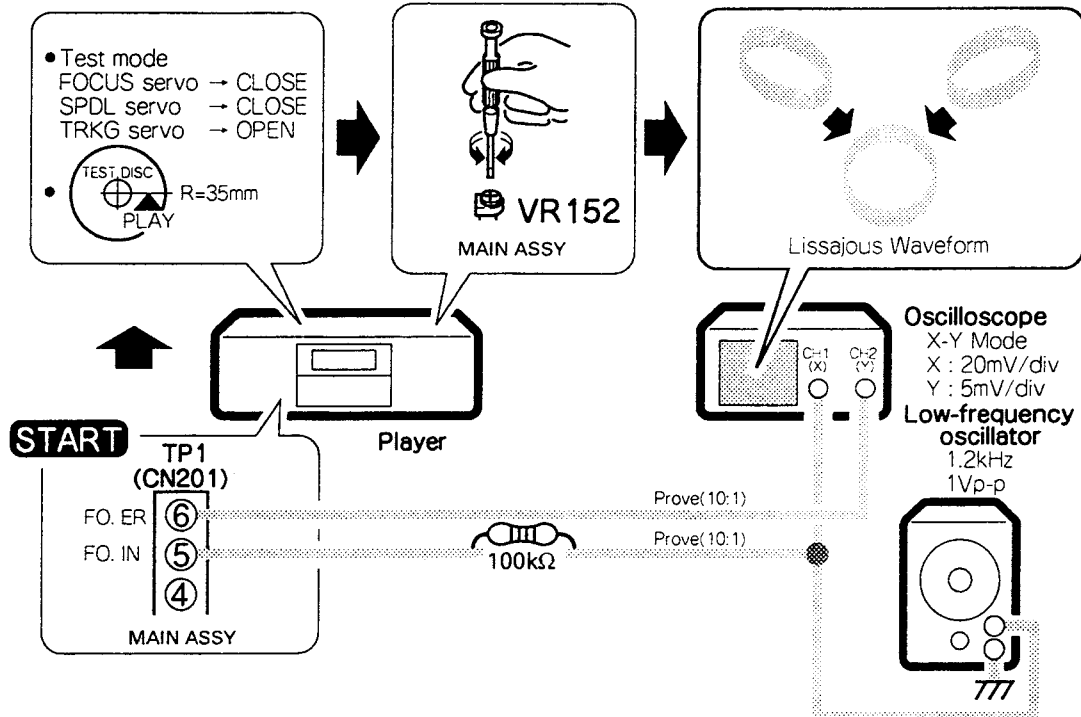
3. Pickup ①Radial / ②Tangential Direction Tilt Adjustment



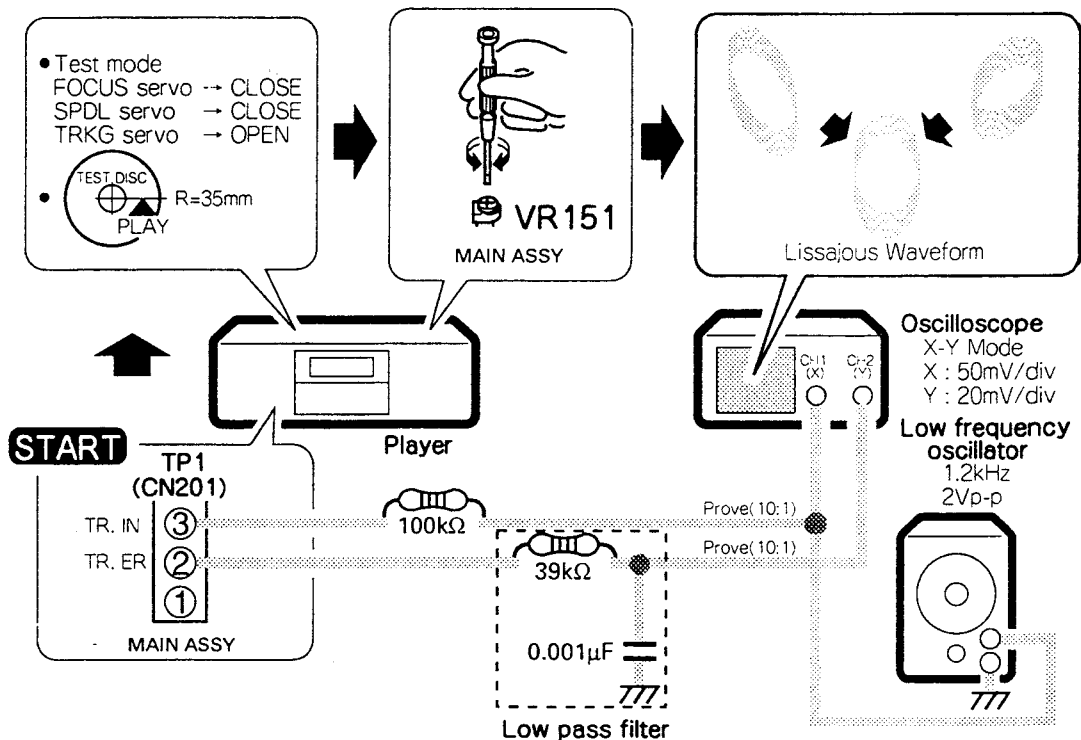
4. RF Level Check



5. Focus Servo Loop Gain Adjustment



6. Tracking Servo Loop Gain Adjustment



9. FOR PD-S904/HEM, HL, SD AND PD-S904-G/HEM TYPES

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.

■ CONTRAST OF PD-S904/HEM, HL, SD, PD-S904-G/HEM AND PD-S904/HEW

PD-S904/HEM, HL, SD, PD-S904-G/HEM and PD-S904/HEW have the same construction except for the following :

Mark	Symbol & Description	Part No.					Remarks
		PD-S904/ HEW	PD-S904/ HEM	PD-S904/ HL	PD-S904/ SD	PD-S904-G/ HEM	
	AUDIO BOARD ASSY	PWZ2917	PWZ2917	PWZ2919	PWZ2919	PWZ2917	
	SERVO TRANS BOARD ASSY	PWZ2921	PWZ2921	PWZ2923	PWZ2924	PWZ2921	
	VOLTAGE SW BOARD ASSY	Not Used	Not Used	PWZ2630	Not Used	Not Used	
	AUDIO TRANS BOARD ASSY	PWZ2993	PWZ2993	PWZ2995	PWZ2996	PWZ2993	
	MAIN BOARD ASSY	PWZ2964	PWZ2964	PWZ2966	PWZ2966	PWZ2964	
NSP	COAXIAL OUTPUT BOARD ASSY	PWZ2986	PWZ2986	Not Used	Not Used	PWZ2986	
Δ	AC power cord	PDG1055	PDG1003	PDG1003	PDG1056	PDG1003	
Δ	Fuse (T5A)	PEK1003	Not Used	Not Used	Not Used	Not Used	
NSP	Rear base	PNA2222	PNA2221	PNA2224	PNA2223	PNA2225	
Δ	Power transformer (AC220 - 230V/230 - 240V)	PTT1245	PTT1245	PTT1245	Not Used	PTT1245	
Δ	Power transformer (AC110V/120 - 127V/220V/240V)	Not Used	Not Used	Not Used	PTT1246	Not Used	
Δ	Power transformer/11W (AC220 - 230V/230 - 240V)	PTT1242	PTT1242	PTT1242	Not Used	PTT1242	
Δ	Power transformer/12W (AC110V/120 - 127V/220V/240V)	Not Used	Not Used	Not Used	PTT1243	Not Used	
Δ	Voltage selector (AC110V/120 - 127V/220V/240V)	Not Used	Not Used	Not Used	PSB1002	Not Used	
	Output button	PAC1661	PAC1661	PAC1661	PAC1661	PAC1677	
	Function button	PAC1744	PAC1744	PAC1744	PAC1744	PAC1751	
	Power button	PAC1810	PAC1810	PAC1810	PAC1810	PAC1809	
	Display panel	PAN1309	PAN1309	PAN1309	PAN1309	PAC1303	
	Front panel	PAN1320	PAN1320	PAN1320	PAN1320	PAN1318	
	Tray panel	PAN1321	PAN1321	PAN1321	PAN1321	PAN1319	
	Bonnet	PYY1175	PYY1175	PYY1175	PYY1175	PYY1176	
	Function panel	PNW2586	PNW2586	PNW2586	PNW2586	PNW2585	
	Name plate	VAM1032	VAM1032	VAM1032	VAM1032	VAM1051	
	Holder	PNW2591	PNW2591	PNW2591	PNW2591	PNW2560	
	Tray holder	PNW2592	PNW2592	PNW2592	PNW2592	PNW2561	
	FL sheet white 9	PAM1682	PAM1682	Not Used	Not Used	PNW1682	
	FL sheet orange 9	Not Used	Not Used	PAM1683	PAM1683	Not Used	
NSP	OPT. angle	Not Used	Not Used	PNB1190	Not Used	Not Used	
	Caution label	PRW1018	Not Used	PRW1018	Not Used	Not Used	
	Caution label HE	Not Used	PRW1233	Not Used	Not Used	PRW1233	Refer to Page 3.
	Caution label	Not Used	VRW1094	Not Used	Not Used	VRW1094	Refer to Page 3.
	Caution label (G)	VRW - 329	VRW - 329	VRW - 329	Not Used	VRW - 329	
	Operating instructions (English)	PRB1228	Not Used	Not Used	Not Used	Not Used	
	Operating instructions (English/French/German/Italian/ Dutch/Swedish/Spanish/Portuguese)	Not Used	PRE1219	Not Used	Not Used	PRE1219	
	Operating instructions (English/Spanish/Chinese)	Not Used	Not Used	PRE1220	PRE1220	Not Used	
	Cord with mini plug	Not Used	Not Used	PDE1247	PDE1247	Not Used	
	Packing case	PHG2136	PHG2136	PHG2138	PHG2138	PHG2139	
	Protector R	PHA1253	PHA1245	PHA1245	PHA1245	PHA1245	
	Remote control unit	PWW1093	PWW1093	PWW1093	PWW1093	PWW1094	
	Vinyl bag	Z21 - 013	Not Used	Not Used	Not Used	Not Used	

■ MAIN BOARD ASSY

PWZ2966 and PWZ2964 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		PWZ2964	PWZ2966	
	C341, C342 C393 R321 R391 R392 D391 – D394 L391, L392 JA391, J392 Jack CN301 3P Jumper connector	CEAS101M50 Not Used RD1/6PM561J Not Used Not Used Not Used Not Used Not Used 52147 – 0310	Not Used CKCYF103Z50 RD1/6PM102J PD1/6PM244J RD1/6PM102J 1SS254 LAU010J RKN1004 Not Used	

■ AUDIO BOARD ASSY

PWZ2919 and PWZ2917 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		PWZ2917	PWZ2919	
	C951, C952 C957	CMA181J500 CMA470J500	Not Used Not Used	

■ SERVO TRANS BOARD ASSY

PWZ2923, PWZ2924 and PWZ2921 have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		PWZ2921	PWZ2923	PWZ2924	
	C1 C55 C57	CMA181J500 CQMA154J50 CMA470J500	Not Used Not Used Not Used	Not Used Not Used Not Used	

■ AUDIO TRANS BOARD ASSY

Although PWZ2995, PWZ2996 and PWZ2993 are different in part number, they have the same service parts.

■ VOLTAGE SW BOARD ASSY

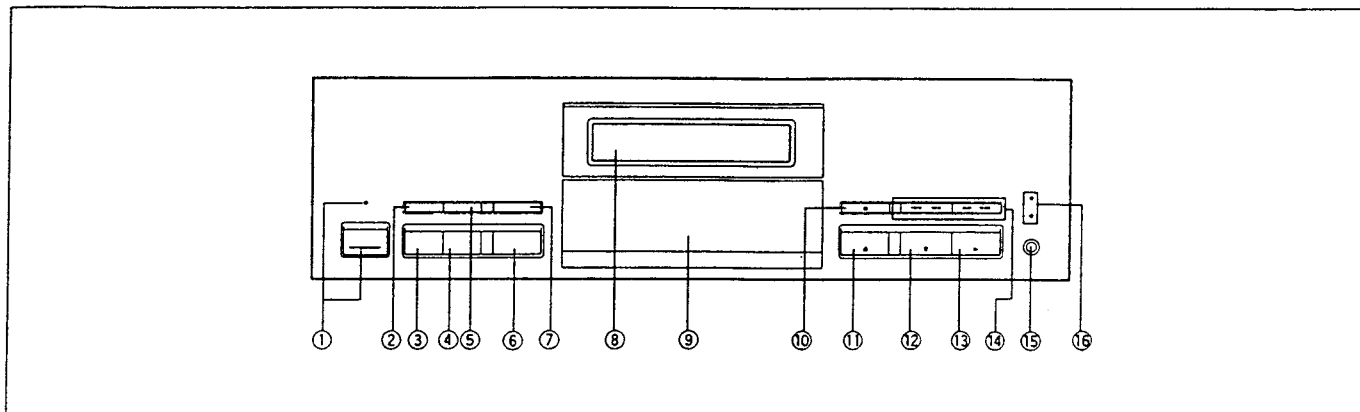
● Parts List

Mark	No.	Description	Parts No.
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SWITCHES

△	S5, S6	Voltage selector	PSB1006
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10. PANEL FACIFICATIONS



FRONT PANEL

- | | |
|---|--|
| ① POWER STANDBY/ON switch and STANDBY indicator | ⑨ Disc tray |
| ② DISPLAY OFF button | ⑩ Stop button (■) |
| ③ PEAK SEARCH button | ⑪ OPEN/CLOSE button (▲) |
| ④ RANDOM button | ⑫ Pause button (II) |
| ⑤ TIME button | ⑬ Play button (▶) |
| ⑥ REPEAT button | ⑭ Track/Manual search buttons (◀◀/▶▶) |
| ⑦ •COMPU/•AUTO EDIT button | ⑮ OUTPUT SELECTOR button |
| ⑧ Remote sensor
Receives the signal from the remote control unit. | ⑯ DIGITAL/ANALOG output indicators |

11. SPECIFICATIONS

1. General

Type Compact disc digital audio system
 Power requirements AC 220 - 230 V, 50/60 Hz
 Power consumption 21 W
 Operating temperature +5°C - +35°C
 Weight 5.0 kg
 External dimensions 420(W) x 286(D) x 131(H) mm

2. Audio section

Frequency response 2 Hz - 20 kHz
 S/N ratio 112 dB or more (EIAJ)
 Dynamic range 98 dB or more (EIAJ)
 Harmonic distortion 0.0021% or less (EIAJ)
 Output voltage 2.0 V
 Wow and flutter Limit of measurement
 (±0.001% W.PEAK) or less (EIAJ)
 Channels 2-channel (stereo)

3. Output terminal

Audio line output jacks
 Optical digital output jack
 Coaxial digital output jack
 CD-DECK SYNCHRO jack

4. Functions

Basic operation buttons

- PLAY, PAUSE, STOP

Search function

- Direct play
- Track search
- Manual search
- Index search

Programming

- Maximum 24 steps
- Pause
- Program check/correction
- Program clear (single track or all tracks)

Repeat functions

- 1 track repeat
- All tracks repeat
- Program play repeat
- Random play repeat

Random play (repeat also available)

Switching display

Time consumed, remaining time (track/disc), and total time

Display off function

Timer start

Peak search

Compu/Auto program editing

Selects the tracks within the specified time.

5. Accessories

- Remote control unit 1
- AAA/R03 dry cell batteries 2
- Output cable 1
- Operating instructions 1

NOTE:

Specifications and design subject to possible modification without notice, due to improvements.

