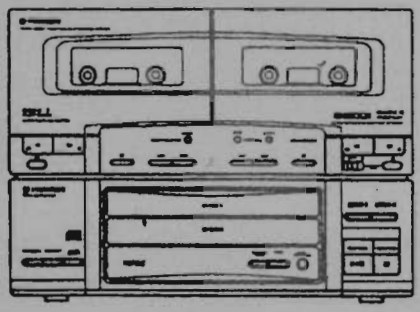
PIONEER
The Art of Entertainment

Service Manual



ORDER NO.
ARP2647

CASSETTE DECK TWIN CD

PDC-P630T
PDC-P530T

PDC-P630T AND PDC-P530T HAVE THE FOLLOWING :

Type	Model		Power Requirement	Remarks
	PDC-P630T	PDC-P530T		
AEBM	O	–	AC power supplied from power transformer's secondary of other system component	
AD	O	–		
ADL	–	O		

- This manual is applicable to the following: PDC-P630T/AEBM and AD; PDC-P530T/ADL.
- For the following: PDC-P630T/AD and PDC-P530T/ADL, refer to page 49.
- These products are systems components.
  Each of these products does not function properly when independent; to avoid malfunctions, be sure to connect it to the prescribed system component (s), otherwise damage may result.
  These products' instructions are contained within the instruction manual of the related system component (s).
  The manual is packed with those component (s).
  These products' accessories etc. are packed with their related component (s).

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PIONEER ELECTRONICS OF CANADA, INC. 300 Allstate Parkway Markham, Ontario L3R 0P2 Canada
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL [03] 580-9911

IFN JAN. 1993 Printed in Japan

2. DISASSEMBLY

● Checking the CD player operations

1. Remove the Bonnet.
2. Remove screws Ⓐ which hold the front panel and the binder which holds lead wires. (See Fig. 2 - 1.)
3. Pull the front panel towards you. (See Fig. 2 - 1.)

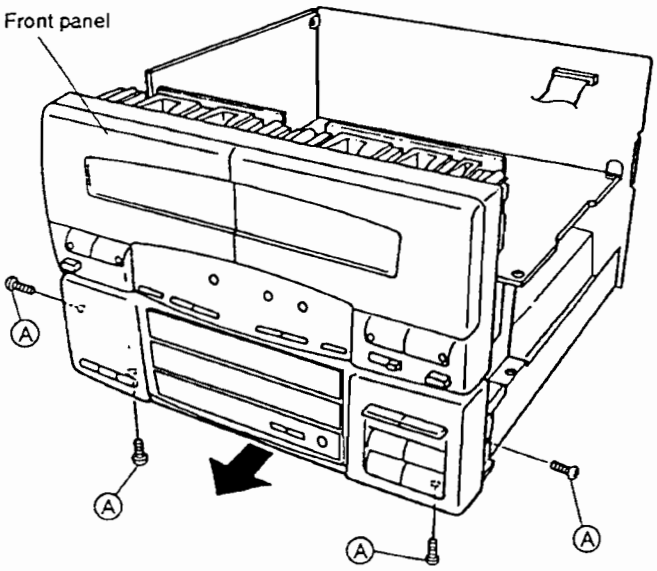


Fig. 2 - 1

4. Turn the front panel to the left. (See Fig. 2 - 2.)
5. Remove screws Ⓑ which hold the MAIN unit. (See Fig. 2 - 2.)

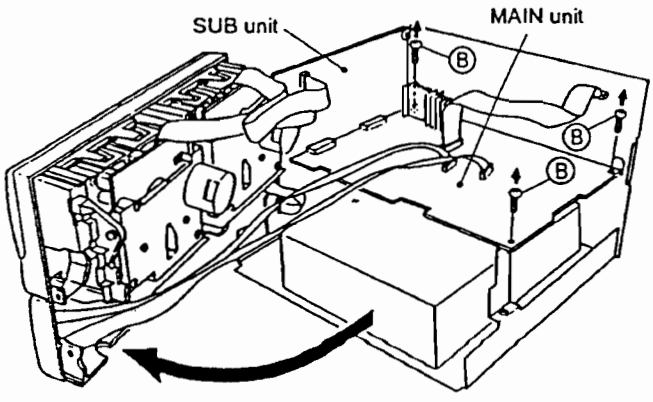


Fig. 2 - 2

6. Remove the MAIN unit from the SUB unit and set it on its edge. (See Fig. 2 - 3.)
7. In this status check the operations of the CD player.

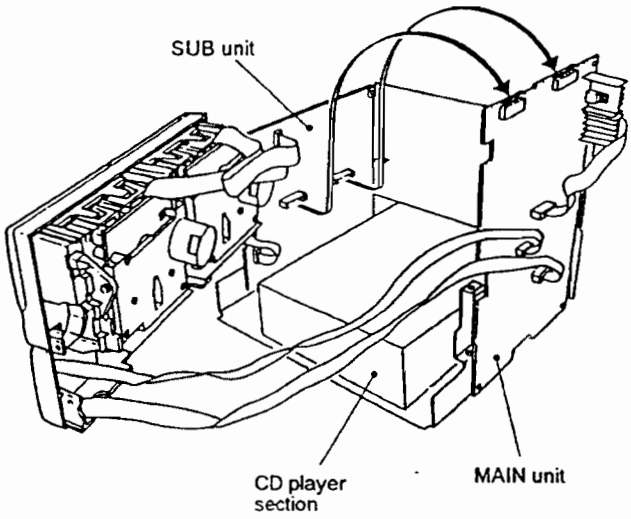


Fig. 2 - 3

3. EXPLODED VIEWS, PACKING AND PARTS LIST

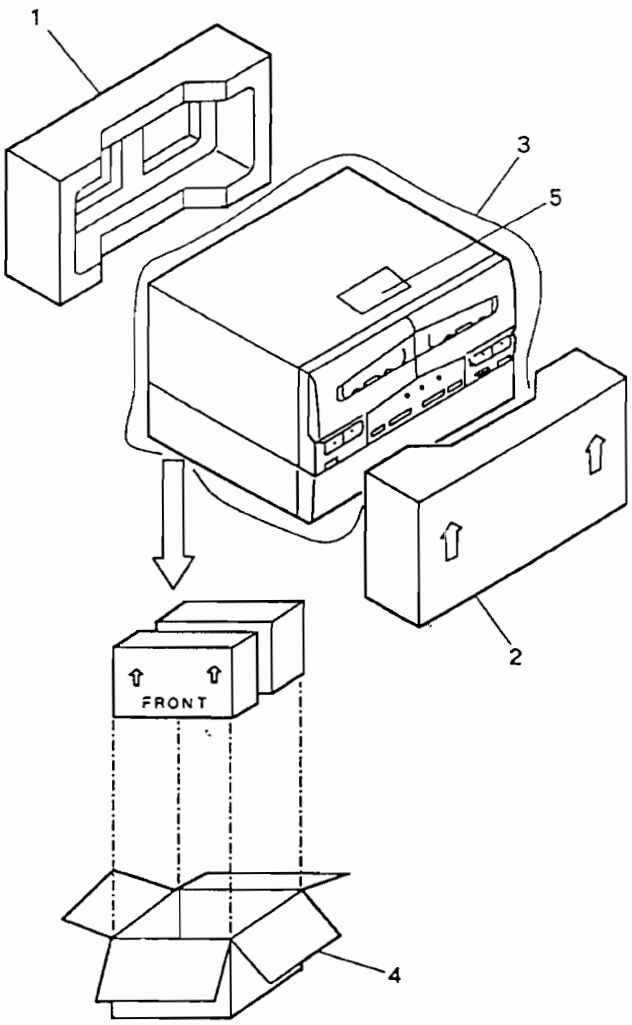
NOTES:

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

3.1 PACKING

Parts List

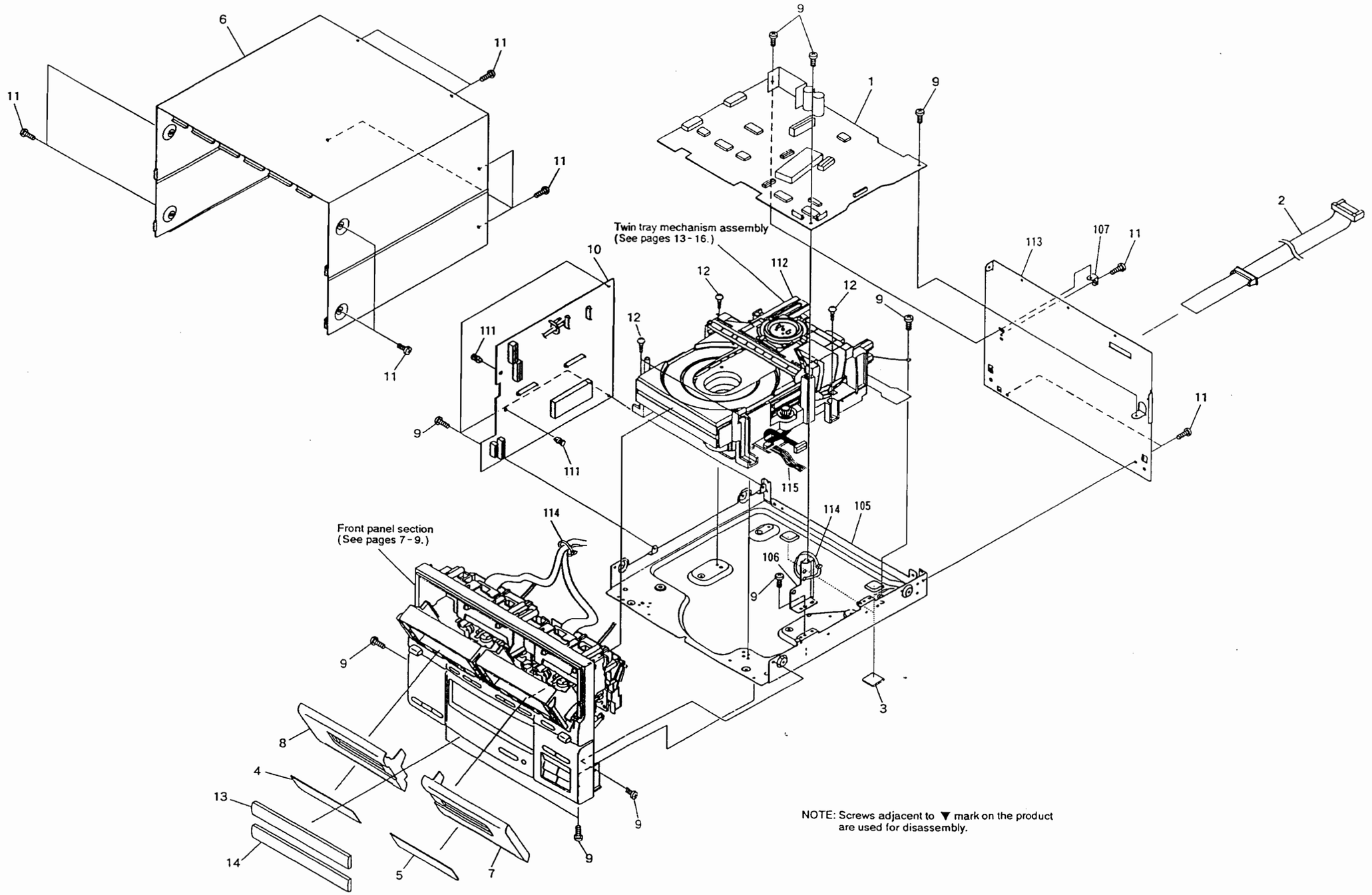
Mark	No.	Description	Part No.
	1	Pad R	RHA1122
	2	Pad F	RHA1121
	3	Packing sheet	RHC1021
	4	Packing case	RHG1412
	5	Caution card	RRN1001



3.2 EXTERIOR

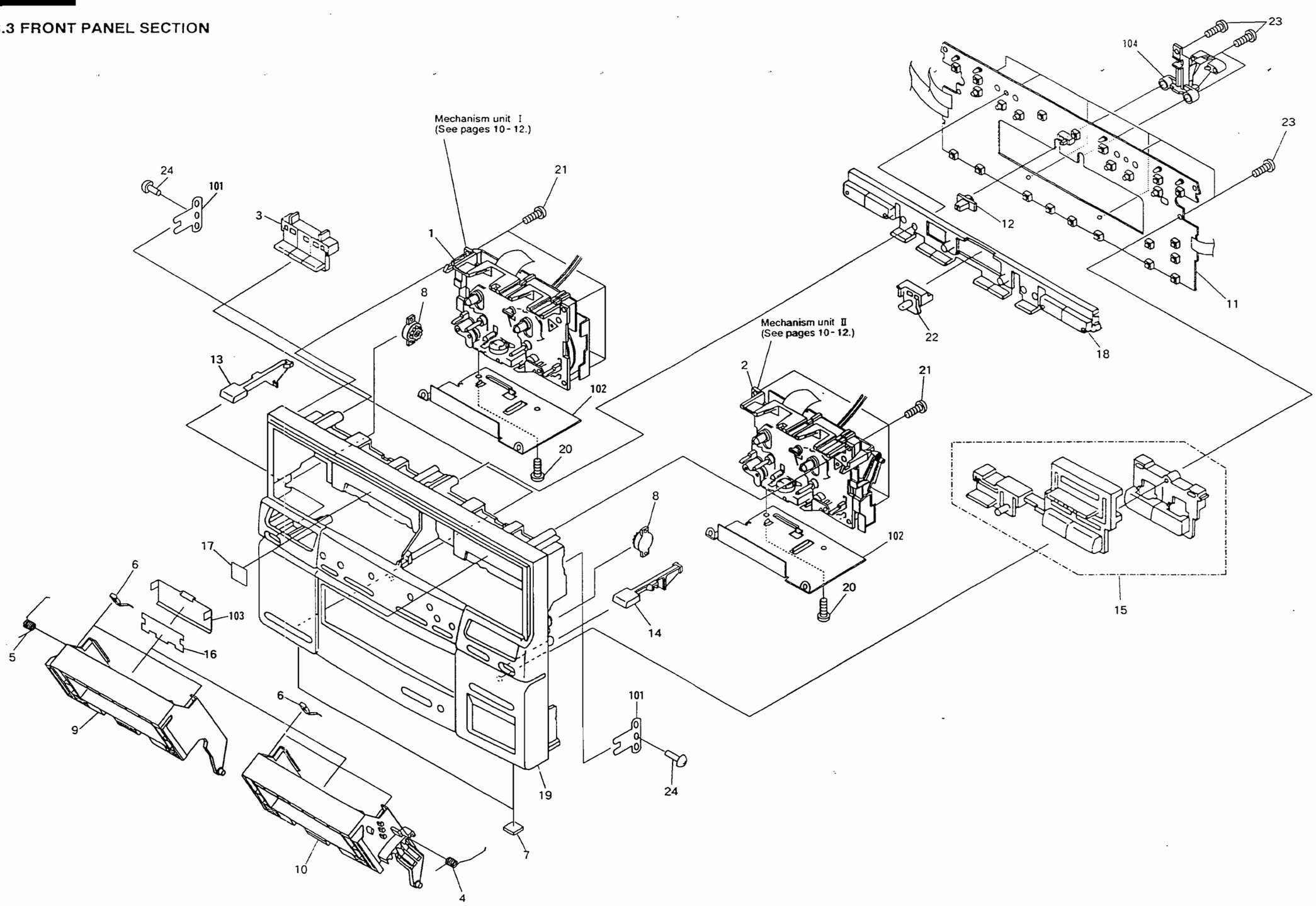
Parts List

Mark	No.	Description	Part No.
	1	MAIN UNIT	RWZ2858
	2	Connector assembly(17P)	RKP1504
	3	Cushion	REB1004
	4	Door lens L	RAH2145
	5	Door lens R	RAH2146
	6	Bonnet	REA1046
	7	Door panel R	REA1044
	8	Door panel L	REA1043
	9	Screw	BBZ30P060FMC
	10	SUB UNIT	RWZ2859
	11	Screw	BBZ30P080FZK
	12	Screw	BBZ30P080FMC
	13	Tray name plate 1	RAH2157
	14	Tray name plate 2	RAH2158
	101	• • • • •	
	102	• • • • •	
	103	• • • • •	
	104	• • • • •	
NSP	105	Chassis	RNB1071
NSP	106	Angle	RNE1497
NSP	107	Bracket	RNE1498
	108	• • • • •	
	109	• • • • •	
	110	• • • • •	
NSP	111	PC support B	VEC1179
NSP	112	Twin tray mechanism assembly	PXA1481
NSP	113	Rear panel	RNA1638
NSP	114	Binder	PEC-107
NSP	115	Wire(5P)	D20PYY0520E



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

3.3 FRONT PANEL SECTION



Parts List

Mark	No.	Description	Part No.
◉	1	Mechanism unit I	RYM1189
◉	2	Mechanism unit II	RYM1190
	3	CD knob T	RAC1759
	4	Eject spring R	RBH1332
	5	Eject spring L	RBH1331
	6	Half pressure spring	RBK1004
	7	Cushion	REB1004
	8	Damper assembly	VXA1153
	9	Door pocket L	RNK1878
	10	Door pocket R	RNK1879
	11	CONT UNIT	RWZ2868
	12	Slide knob	RAC1641
	13	Eject knob L(▲)	RAC1754
	14	Eject knob R(▲)	RAC1755
	15	Play knob	RAC1761
	16	DIND UNIT	RWZ2865
	17	Indicator	REE-113
	18	Deck knob assembly	RXA1529
	19	Front panel	RNT1162
	20	Screw	BBZ26P050FMC
	21	Screw	BBZ30P080FMC
	22	REC knob	RAC1760
	23	Screw	BPZ30P100FMC
	24	Screw	BBZ30P080FZK

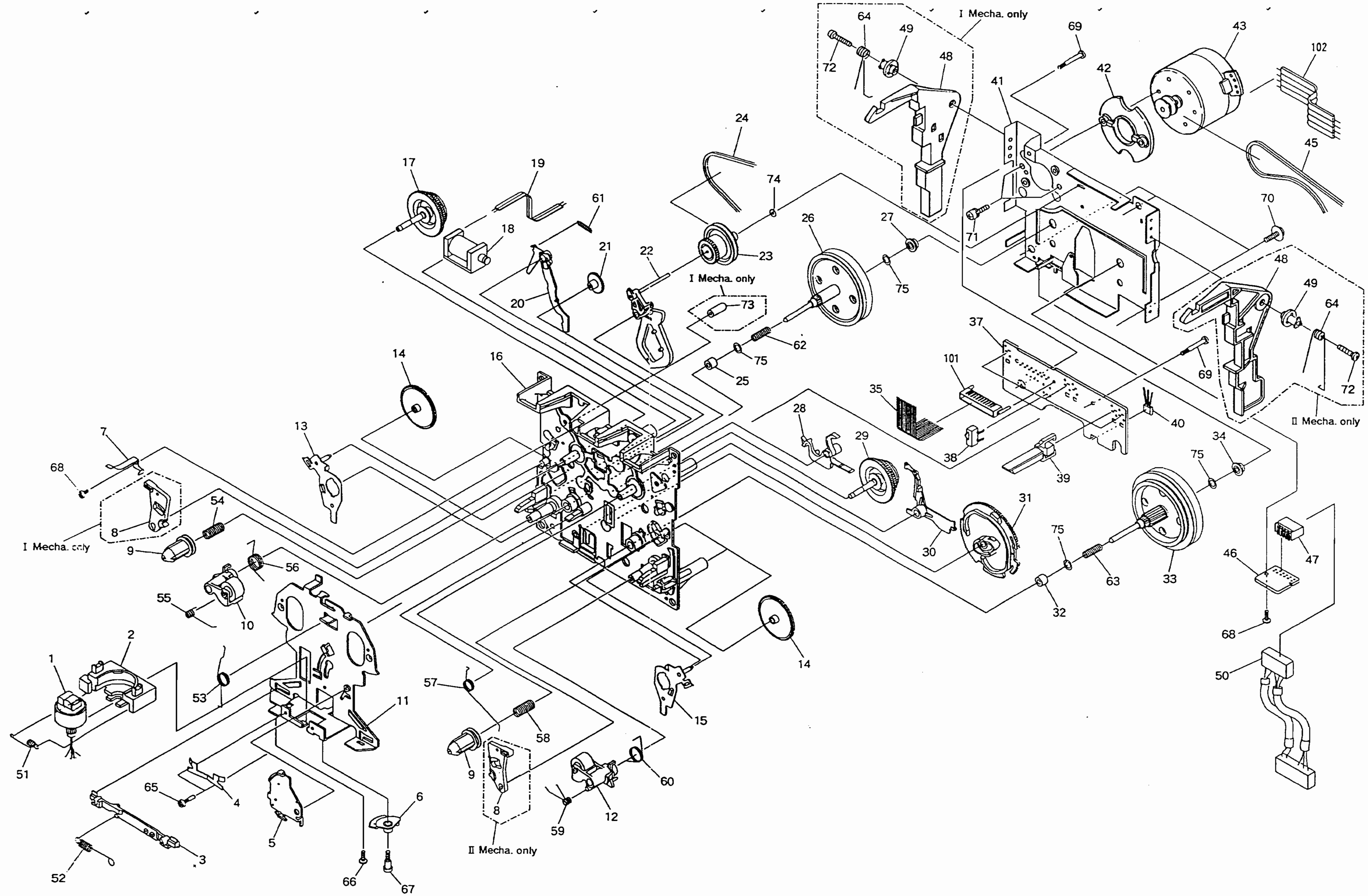
Mark	No.	Description	Part No.
NSP	101	Bonnet stay	RNE1587
NSP	102	Mechanism shield plate	RNE1586
NSP	103	Spot lens	RNK1880
NSP	104	Center bracket	RNK1881

3.4 DECK SECTION

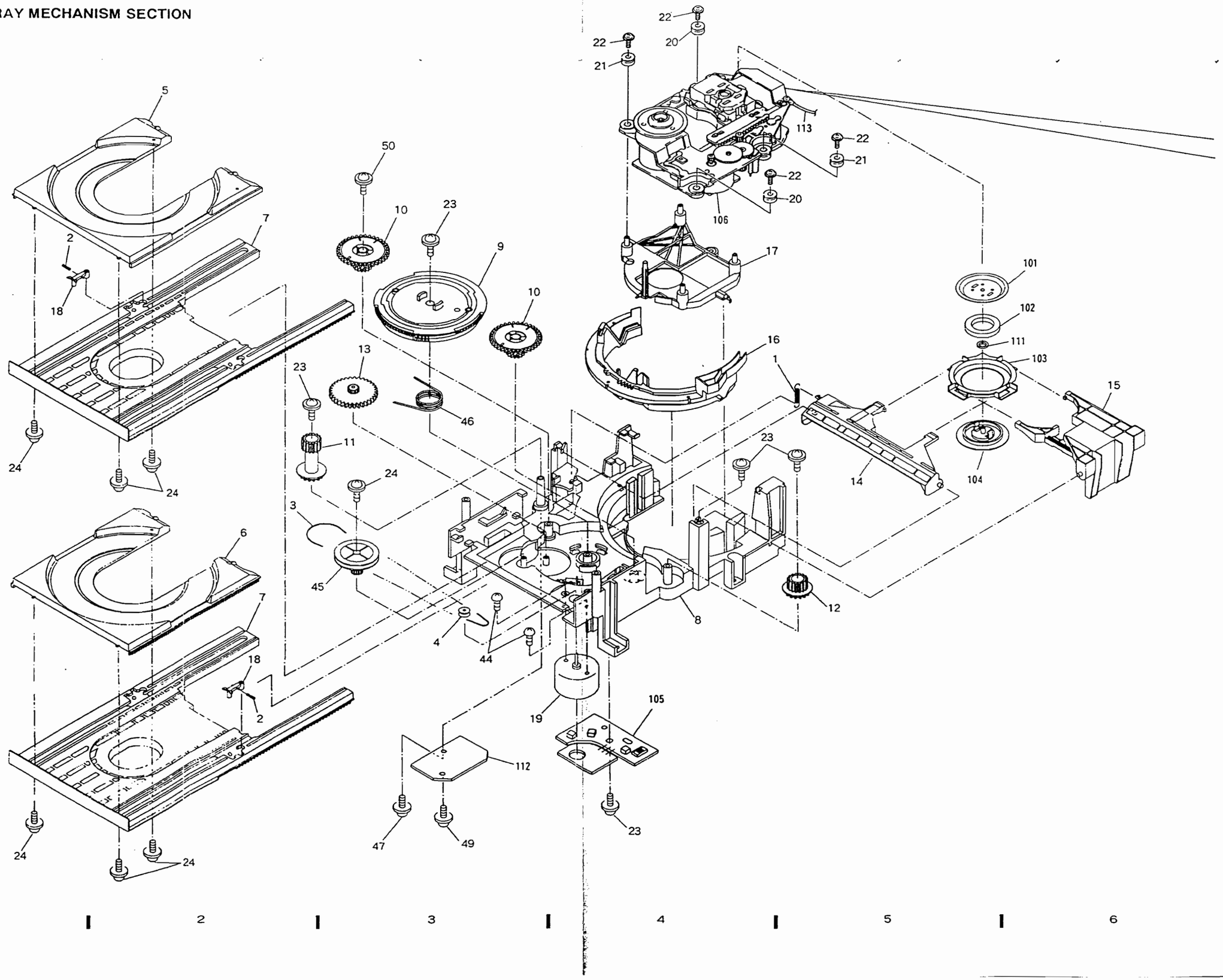
MECHANISM UNIT I (RYM1189), II (RYM1190)

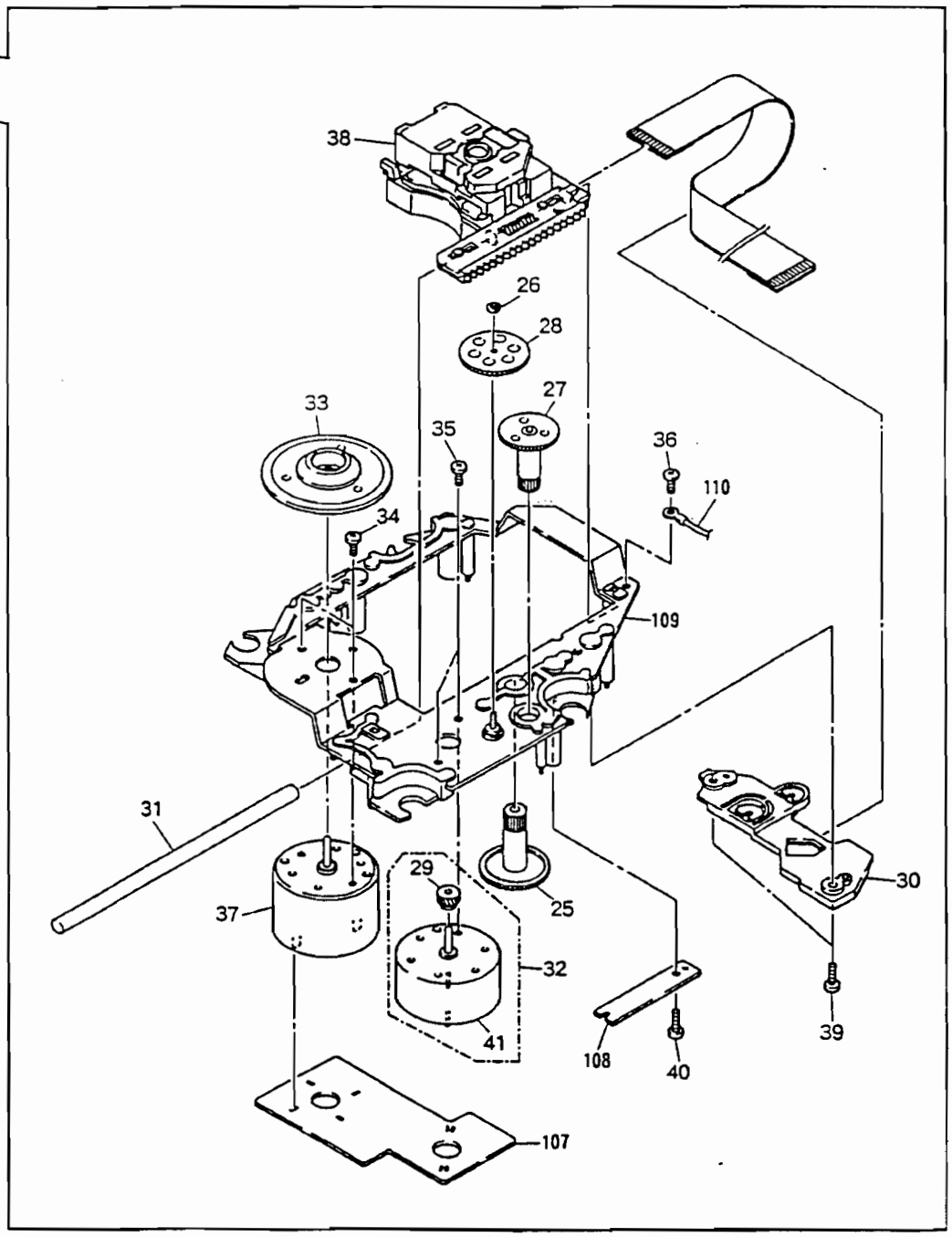
Parts List

Mark	No.	Description	Part No.
	1	Head holder assembly (I Mecha. only)	RXA1500
	1	Head holder assembly (II Mecha. only)	RXA1477
	2	Head frame	RNK1715
	3	Head lever	RNK1716
	4	Azimuth spring	RBK1006
	5	Assist arm assembly	RXA1401
	6	Head arm gear	RNK1717
	7	Cassette spring	RBK1039
	8	Eject lock	RNK1718
	9	Reel cap	RNK1719
	10	Arm pinch assembly L	RXA1403
	11	Head base	RNE1437
	12	Arm pinch assembly R	RXA1404
	13	Play arm assembly L	RXA1866
	14	Play gear	RNK1867
	15	Play arm assembly R	RXA1868
	16	OS chassis	RXA1411
	17	Sub reel assembly L	RXA1407
	18	Solenoid	RXP1020
	19	Wire	RDC1006
	20	RVS arm	RNK1721
	21	FF gear	RNK1723
	22	FR arm assembly	RXA1412
	23	FR pulley assembly	RXA1413
	24	FR belt	REB1158
	25	Shaft holder	RNG1048
	26	Flywheel assembly L	RXA1423
	27	Shaft holder	RNG1005
	28	Brake arm	RNK1724
	29	Sub reel assembly R	RXA1408
	30	Trigger arm	RNK1722
	31	Cam gear	RNK1725
	32	Shaft holder	RNG1049
	33	Flywheel assembly R	RXA1424
	34	Shaft holder	RNG1004
	35	Wire(14P) (I Mecha. only)	RDD1247
	35	Wire(14P) (II Mecha. only)	RDD1217
	36	• • • • •	
	37	PC board	RNP1430
	38	Mode switch	RSN1022
	39	Leaf switch	RSN1019
	40	Hole IC	DN6851A
	41	FW bracket	RNE1438
	42	Spacer	RNK1822
	43	Motor assembly	RXM1062
	44	• • • • •	
	45	Main belt	REB1159
	46	PC board	RNP1348
	47	Housing (I Mecha. only)	RKP1396
	47	Housing (II Mecha. only)	RKP1397
	48	Eject lever L (I Mecha. only)	RNK1831
	48	Eject lever R (II Mecha. only)	RNK1811
	49	Collar	RNK1704
	50	Head wire (I Mecha. only)	RKP1499
	50	Head wire (II Mecha. only)	RKP1500
	51	Spring	RBH1282
	52	Spring	RBH1283
	53	Spring	RBH1284
	54	Spring	RBH1286
	55	Spring	RBH1288
	56	Spring	RBH1291
	57	Spring	RBH1285
	58	Spring	RBH1287
	59	Spring	RBH1289
	60	Spring	RBH1290
	61	Spring	RBH1292
	62	FWR spring	RBH1061
	63	FWF spring	RBH1325
	64	Spring(L) (I Mecha. only)	RBH1319
	64	Spring(R) (II Mecha. only)	RBH1320
	65	Azimuth screw	RBA1023
	66	U bind screw	RBA1027
	67	Screw	RBA1030
	68	Screw	PCZ20P040FMC
	69	Screw	RBA1093
	70	Screw	RBA1094
	71	Screw	RBA1100
	72	Screw	RBA1095
	73	Spacer	RNK1905
	74	Washer	RBF1046
	75	Washer	WA26D047D013
NSP	101	Wire holder	RNK1683
NSP	102	Jumper	RDD1012


I Mecha. only
II Mecha. only
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 35 37 38 39 40 41 42 43 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 101 102

3.5 TWIN TRAY MECHANISM SECTION

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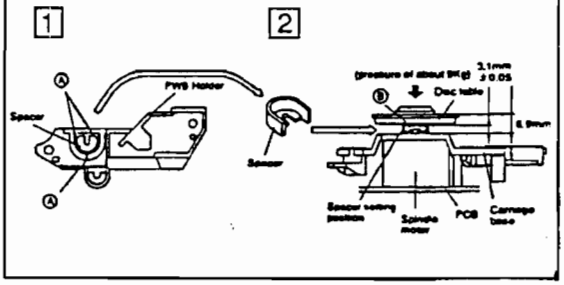
Parts List

Mark	No.	Description	Part No.
	1	Clamp spring	PBH1103
	2	Lever spring	PBH1104
	3	Belt	PEB1106
	4	Motor pulley	PNW1634
	5	Tray 1	PNW1839
	6	Tray 2	PNW1840
	7	Sub tray	PNW1841
	8	Loading base	PNW1842
	9	Main cam	PNW1843
	10	Follow gear	PNW1844
	11	Gear 1	PNW1845
	12	Gear 2	PNW1846
	13	Idler gear	PNW1847
	14	Clamper arm U	PNW1850
	15	Clamper arm B	PNW1851
	16	Clamp cam	PNW1852
	17	Float base	PNW2041
	18	Lock lever	PNW1854
	19	D.C. motor(LOADING)	PXM1010
	20	Floating rubber	PEB1014
	21	Floating rubber	PEB1132
	22	Screw	PBA1048
	23	Screw	IPZ30P080FMC
	24	Screw	IPZ20P080FMC
	25	Gear 1	PNW2052
	26	Washer	WT12D032D025
	27	Gear 2	PNW2053
	28	Gear 3	PNW2054
	29	Pinion gear	PNW2055
	30	PWB holder	PNW2057
	31	Guide bar	PLA1094
	32	D.C. motor assembly (CARRIAGE)	PEA1246
	33	Disc holder	PNW1608
	34	Screw	JFZ20P030FNI
	35	Screw	JFZ17P025FZK
	36	Screw	BBZ26P060FMC
	37	D.C. motor assembly (with oil)(SPINDLE)	PEA1235
	38	Pickup assembly	PEA1179
	39	Screw	BPZ26P100FMC
	40	Screw	BBZ20P060FMC
	41	D.C. motor(CARRIAGE)	PXM1027
	42	• • • • •	
	43	• • • • •	
	44	Screw	PMZ26P040FMC
	45	Gear pulley	PNW1848
	46	Push spring	PBH1105
	47	Screw	IPZ30P200FMC
	48	• • • • •	
	49	Screw	IBZ30P100FMC
	50	Screw	IBZ30P050FZK
NSP	101	Yoke	PNB1216
NSP	102	Clamp magnet	PMF1014
NSP	103	Clamper holder	PNW1849
NSP	104	Clamper S	PNW1609
NSP	105	Mechanism PCB assembly	PWX1162
NSP	106	Servo mechanism assembly	PXA1478
NSP	107	Mechanism board assembly	PWX1192
NSP	108	Gear stopper	PNB1303
NSP	109	Carriage base	PNW2058
NSP	110	Earth lead unit	XDF-502
NSP	111	H spacer	PEB1249
NSP	112	Sub plate	PNB1287
NSP	113	Earth lead unit	PDF1104

• How to install the disc table

[1] Use nipper or other tool to cut the three sections marked Ⓐ figure [1]. Then remove the spacer.

[2] While supporting the spindle motor shaft with the stopper, put spacer on top of the motor base (angled so it doesn't touch section Ⓑ),and stick the disc table on top (takes about 9Kg pressure). Take off the spacer.



4. SCHEMATIC AND PCB CONNECTION DIAGRAMS

● SCHEMATIC DIAGRAM

Note: (Type 4)

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

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

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

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

5. **COILS:**
   Unit: m:mH or μH unless otherwise noted.

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

7. **OTHERS:**
   - ➡ : Signal route.
   - ⊘ : Adjusting point.
   - ▼(Red) : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.

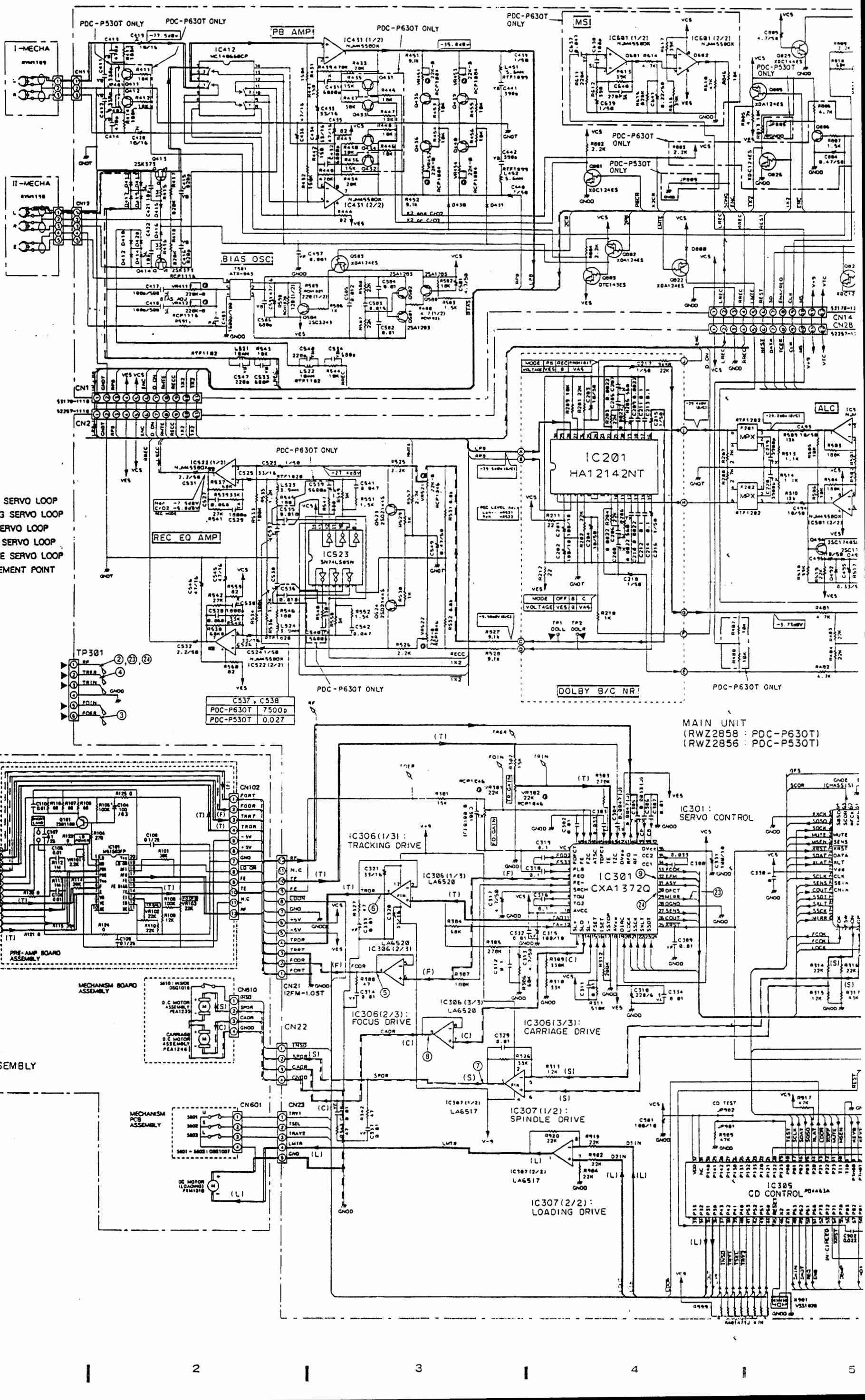
8. **SWITCHES** (Underline indicates switch position):

MECHANISM BOARD ASSEMBLY
S610 :INSIDE

MECHANISM PCB ASSEMBLY
S601 :U
S602 :S
S603 :L

CONT UNIT
S1001 :DOLBY NR
S1002 :▶
S1003 :◀
S1004 :■
S1005 :▶▶
S1006 :◀◀
S1007 :ASES
S1008 :▶
S1009 :◀
S1010 :■
S1011 :▶▶
S1012 :◀◀
S1013 :● II
S1014 :COPY
S1101 :▶/II
S1102 :▶▶|・▶▶
S1103 :PGM
S1104 :AUTO EJECT
S1105 :■
S1106 :◀◀・|◀◀
S1108 :RANDOM
S1110 :OPEN/CLOSE II
S1120 :DISC CHANGE
S1121 :REPEAT
S1122 :COMPU PGM
S1124 :OPEN/CLOSE I

4.1 SCHEMATIC DIAGRAM



SUB UNIT
(RWZ2859 : PDC-P630T)
(RWZ2857 : PDC-P530T)

JP801	R837	MODEL
JUMPER	OPEN	PDC-P630T
OPEN	22k	PDC-P530T

IC801
PD3284A

IC801 : TC CONTROL

PDC-P630T ONLY

PDC-P530T ONLY

I-MECHA
RYM1189

II-MECHA
RYM1190

CONT UNIT
(RWZ2868 : PDC-P630T)
(RWZ2867 : PDC-P530T)

S1002 S1014
RSG1033

S1101~1106, 1108, 1110, 1120~1122, 1124
: RSG1033

CN01

To the prescribed system component.

ALC

Q481, 482:
LINE MUTE

IC302
CXD2500BQ
DECODER

IC701 : 1bit DAC

IC702 :
LOW PASS FILTER

DIND UNIT
(RWZ2865)

IC101, 102, 104:
REGULATOR

[NOTES]

1. Resistors
Indicated in Ω, 1/6W, ±5% tolerance unless otherwise noted k kΩ, M MΩ, F ±1% tolerance.

2. Capacitors
Indicated in pF/voltage unless otherwise noted μF. Indication without voltage is 50V except electrolyte capacitors.

3. Inductors
Indicated in μH.

4. If the parts are not identified in the diagram the followings are used.

NPN 2SC1740S PNP 2SA933S = 1SS254

5. The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

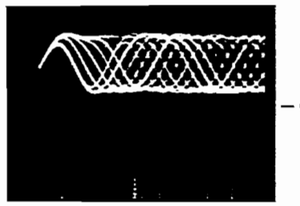
4.2 WAVEFORMS

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

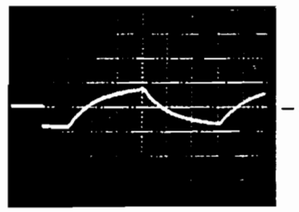
*1 50T - JUMP: After switching to the pause mode, press the manual search key.

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

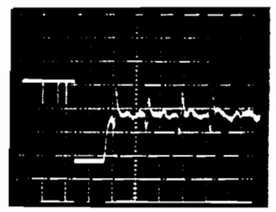
(2) TP301 - Pin 1 : PLAY MODE
(RF)
500mV/div 500nsec/div



(5) IC306 - Pin 4 : FOCUS - IN (*2) MODE
(FODR)
1V/div 200msec/div

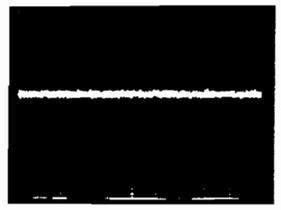


(7) IC307 - Pin 3 : TRACK SEARCH MODE
(SPDR)
2V/div 50msec/div

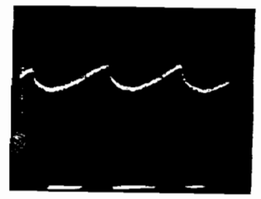


(2) TP301 - Pin 1 : TRACK SEARCH MODE
(RF)
500mV/div 200 μ sec/div

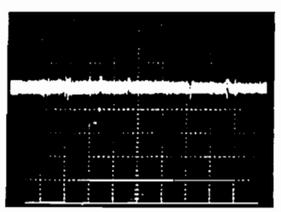
(5) IC306 - Pin 4 : PLAY MODE
(FODR)
1V/div 1msec/div



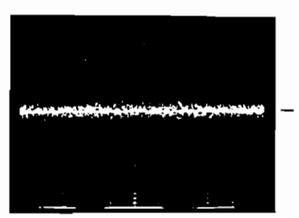
(8) IC306 - Pin 9 : PLAY MODE
(CADR)
0.2V/div 2sec/div



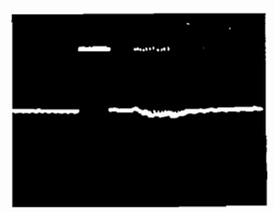
(3) TP301 - Pin 6 : PLAY MODE
(FOER)
100mV/div 10msec/div



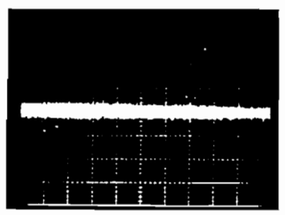
(6) IC306 - Pin 3 : PLAY MODE
(TRDR)
500mV/div 1msec/div



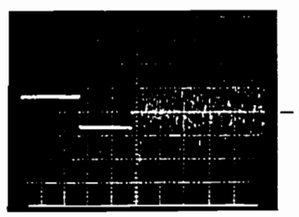
(8) IC306 - Pin 9 : TRACK SEARCH MODE
(CADR)
2V/div 500msec/div



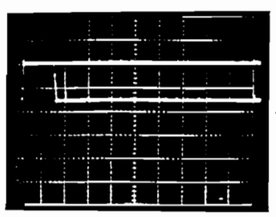
(4) TP301 - Pin 2 : PLAY MODE
(TRER)
1V/div 10msec/div



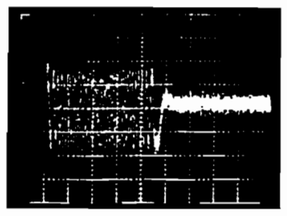
(6) IC306 - Pin 3 : 50T - JUMP (*1) MODE
(TRDR)
500mV/div 1msec/div



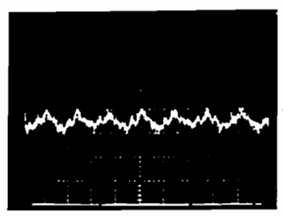
(9) IC301 - Pin 32 : PLAY MODE
(EFM)
2V/div 500nsec/div



(4) TP301 - Pin 2 : 50T - JUMP (*1) MODE
(TRER)
1V/div 1msec/div

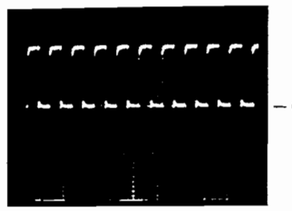


(7) IC307 - Pin 3 : PLAY MODE
(SPDR)
1V/div 50msec/div



(10)

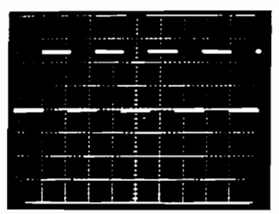
(16) IC302 - Pin 35 : PLAY MODE (1kHz)
(BCLK)
2V/div 500nsec/div



(22)

(26)

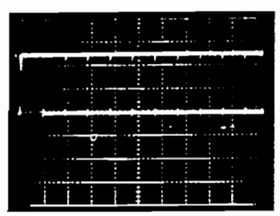
(18) IC302 - Pin 32 : PLAY MODE (1kHz)
(LRCK)
2V/div 10 μ sec/div



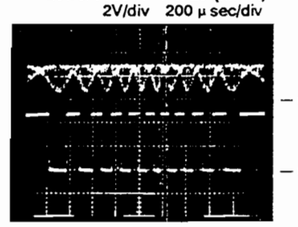
(22)

(27)

(19) IC302 - Pin 34 : PLAY MODE (1kHz)
(DATA)
2V/div 500nsec/div



(23) : TRACK SEARCH MODE
Upper : TP301 - Pin 1 (RF) 1V/div
Lower : IC301 - Pin 29 (MIRR)
2V/div 200 μ sec/div

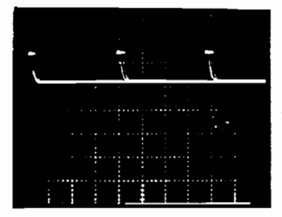


(28)

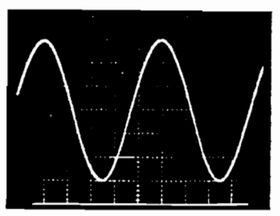
(20)

(24) : PLAY MODE
Upper : TP301 - Pin 1 (RF) 1V/div
Lower : IC301 - Pin 30 (DFCT)
5V/div 200 μ sec/div

(33) IC302 - Pin 4 : PLAY MODE
(MDP)
2V/div 2 μ sec/div

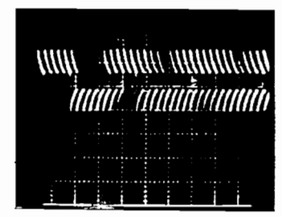


(21) CN01 - Pin 13 : PLAY MODE (1kHz)
(Lch OUTPUT)
1V/div 200 μ sec/div



(25)

(53) IC302 - Pin 20 : PLAY MODE
(PCO)
2V/div 10 μ sec/div



4.3 VOLTAGE TABLE

SUB UNIT

IC601 (PD3204A)

Pin No.	Voltage(V)	Pin No.	Voltage(V)
1	N. C.	33	5
2	4.3	34	5
3	0	35	5
4	0	36	5
5	N. C.	37	2.4
6	4.9	38	0
7	N. C.	39	0
8	0	40	5
9	1.9	41	0
10	2.5	42	0
11	0	43	0
12	4.3	44	0
13	2.5	45	5
14	0	46	5
15	N. C.	47	5
16	0	48	5
17	0	49	0
18	5	50	5
19	5	51	2.2 (CLOCK)
20	5	52	2.1 (CLOCK)
21	4.8	53	0
22	5	54	0
23	0	55	N. C.
24	5	56	0
25	5	57	0
26	5	58	5
27	5	59	N. C.
28	0.1	60	N. C.
29	5	61	N. C.
30	5	62	4.3
31	5	63	0
32	5	64	N. C.

MAIN UNIT

IC301 (CXA1372Q)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	25	4.9
2	0	26	0.05
3	0	27	0.05
4	0	28	0
5	0	29	0
6	0	30	N. C.
7	0.3	31	2.5
8	0	32	2.5
9	0	33	0.1
10	5	34	1.3
11	0	35	-1
12	0	36	5
13	0	37	0
14	0	38	-3.5
15	0	39	0
16	-4	40	0
17	1.3	41	-4.9
18	0	42	0
19	-4.9	43	0
20	5	44	0
21	0	45	0
22	5	46	0
23	5	47	0
24	0	48	0

IC302 (CXD2500BQ)

Pin No.	Voltage(V)	Pin No.	Voltage(V)
1	0.1	41	N. C.
2	N. C.	42	0
3	0	43	N. C.
4	0	44	N. C.
5	N. C.	45	N. C.
6	0	46	4.4
7	N. C.	47	3.3
8	N. C.	48	3.3
9	0	49	0
10	0	50	N. C.
11	N. C.	51	N. C.
12	0	52	0
13	N. C.	53	2.5
14	N. C.	54	N. C.
15	N. C.	55	0
16	N. C.	56	N. C.
17	0	57	N. C.
18	3.2	58	N. C.
19	2.4	59	0
20	2.4	60	N. C.
21	0	61	N. C.
22	3.2	62	N. C.
23	5	63	0
24	2.5	64	N. C.
25	N. C.	65	0
26	0	66	0
27	2.5	67	5
28	0	68	5
29	N. C.	69	0
30	0	70	4.9
31	N. C.	71	0
32	2.5	72	5
33	5	73	5
34	0	74	5
35	2.2	75	0.05
36	N. C.	76	0.05
37	N. C.	77	0
38	N. C.	78	5
39	N. C.	79	5
40	N. C.	80	0

IC305 (PD4463A)

Pin No.	Voltage(V)	Pin No.	Voltage(V)
1	0.1	33	N. C.
2	0	34	N. C.
3	0	35	N. C.
4	5	36	N. C.
5	5	37	0
6	5	38	5
7	5	39	0
8	5	40	0
9	0	41	N. C.
10	0	42	N. C.
11	5	43	N. C.
12	5	44	N. C.
13	5	45	5
14	5	46	2.7 (CLOCK)
15	0	47	2.5 (CLOCK)
16	0(PULSE)	48	5
17	5	49	0
18	0	50	5
19	0(PULSE)	51	0
20	2.7(PULSE)	52	N. C.
21	N. C.	53	N. C.
22	N. C.	54	0
23	N. C.	55	5
24	N. C.	56	N. C.
25	N. C.	57	N. C.
26	N. C.	58	N. C.
27	N. C.	59	N. C.
28	N. C.	60	N. C.
29	N. C.	61	N. C.
30	N. C.	62	N. C.
31	5	63	N. C.
32	5	64	0

IC701 (SM5871AS)

Pin No.	Voltage(V)	Pin No.	Voltage(V)
1	2.9(CLOCK)	15	0
2	0	16	5
3	0	17	5
4	2.6(PALSE)	18	2.5(PALSE)
5	5	19	0
6	0	20	2.5(PALSE)
7	5	21	5
8	2.4(PALSE)	22	5
9	2.4(PALSE)	23	2.5(PALSE)
10	0	24	0
11	5	25	2.5(PALSE)
12	0	26	5
13	N. C.	27	5
14	4.9	28	2.5(CLOCK)

IC201 (HA12142NT)

Pin No.	Voltage(V)	Pin No.	Voltage(V)
1	0	16	0
2	4.8	17	-2
3	0	18	OFF -0.5
4	0		B -1.8
5	OFF -3.5		C -2
	B 0	19	0
	C 4.6	20	0
6	0	21	0
7	0	22	0
8	0	23	0
9	0	24	0
10	0	25	0
11	0	26	-0.3
12	0	27	-4.4
13	OFF -0.4	28	0
	B -1.8	29	-4.6
	C -2	30	0
14	-2		
15	0		

IC306 (LA6520)

Pin No.	Voltage(V)
1	0
2	0
3	0
4	0
5	0
	0
7	0
8	0
9	0
10	0
11	0
12	11.2
13	-11.9

IC307 (LA6517)

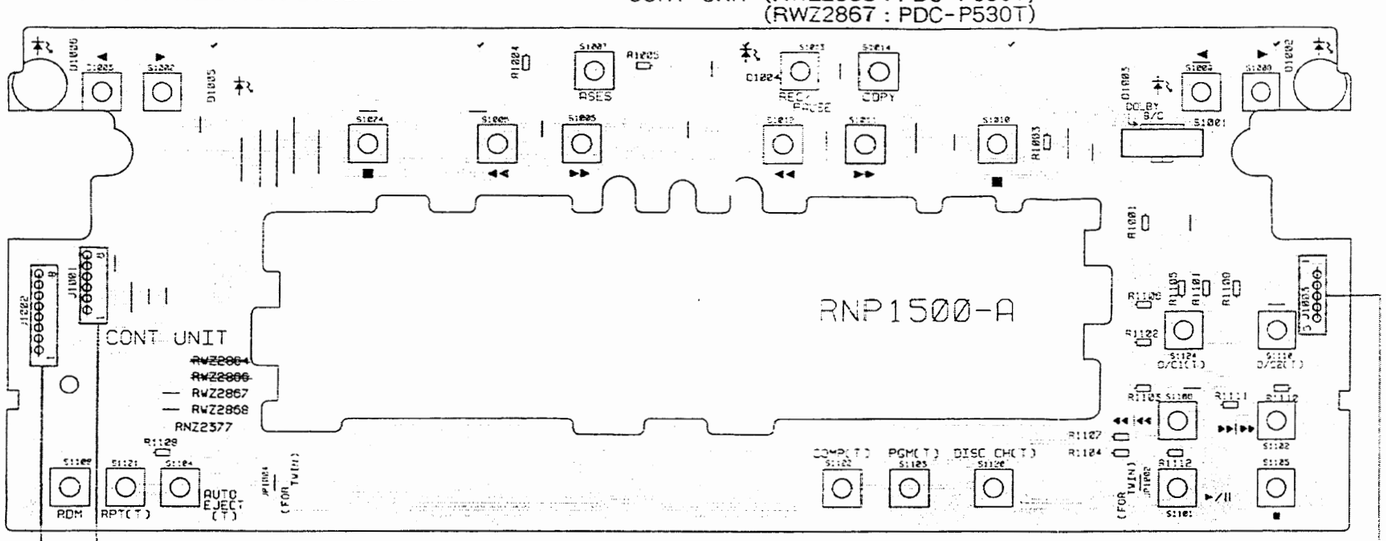
Pin No.	Voltage(V)
1	0
2	11.2
3	0
4	-11.9
5	0
6	0
7	0
8	0

Point	Signal name	Mode	Voltage (V)
Ⓐ	×2 and CrO_2 *	STOP	0
		×2, $ICrO_2$	4
Ⓑ	×2 or CrO_2	STOP	0
		1-CrO_2	4
		2-CrO_2	4
		1-Nor	0
		2-Nor	0
		×1COPY	0
		×2COPY *	3.5
Ⓒ	$\overline{2PB}$	1PB	2.5
		2PB	-5
		×2COPY *	2
		×1COPY	2
Ⓓ	×2PB *	1PB	3
		×1COPY	3
		×2COPY *	0
Ⓔ	2PB	1PB	-5
		2PB	5
		×2COPY *	-5
		×1COPY	-5
Ⓖ	RMUTE	STOP etc.	2.4
		R/P	0
Ⓗ	2CR	CR	5
		Nor	0
Ⓘ	1×2 *	Double speed	4.2
		Normal speed	0
Ⓙ	$\overline{1\times2}$ *	Double speed	0
		Normal speed	5
Ⓚ	Dolby	OFF	-4
		B	0
		C	4.5
Ⓛ	ENCODE	STOP	-0.5
		REC	-0.5
		PB	-4.5

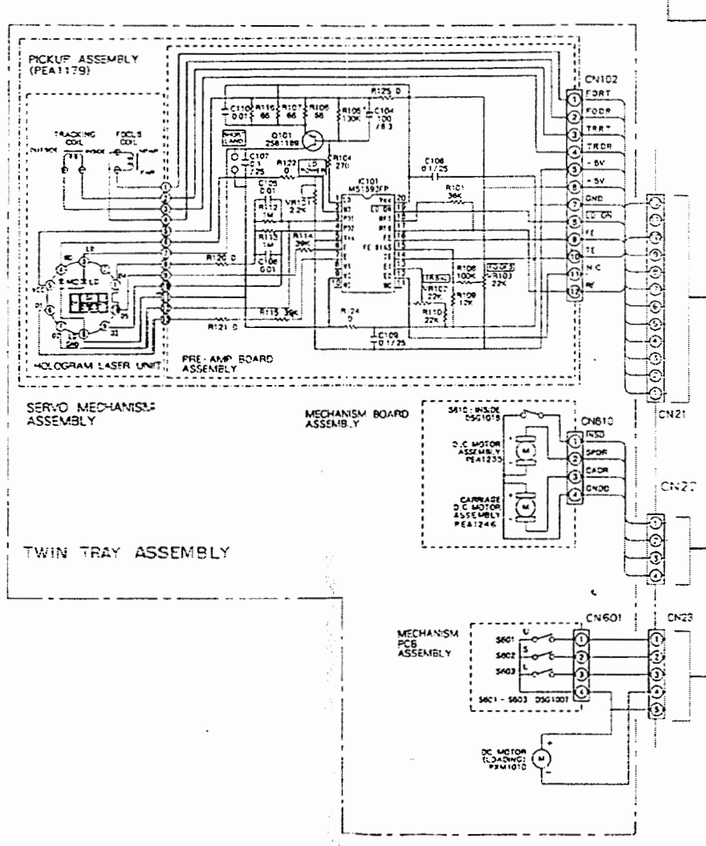
Note : * mark only for the PDC – P630T.

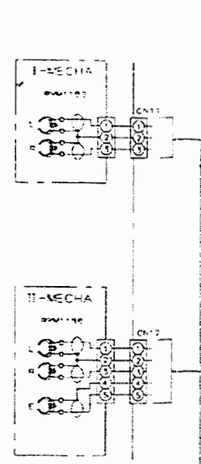
4.4 PCB CONNECTION DIAGRAM

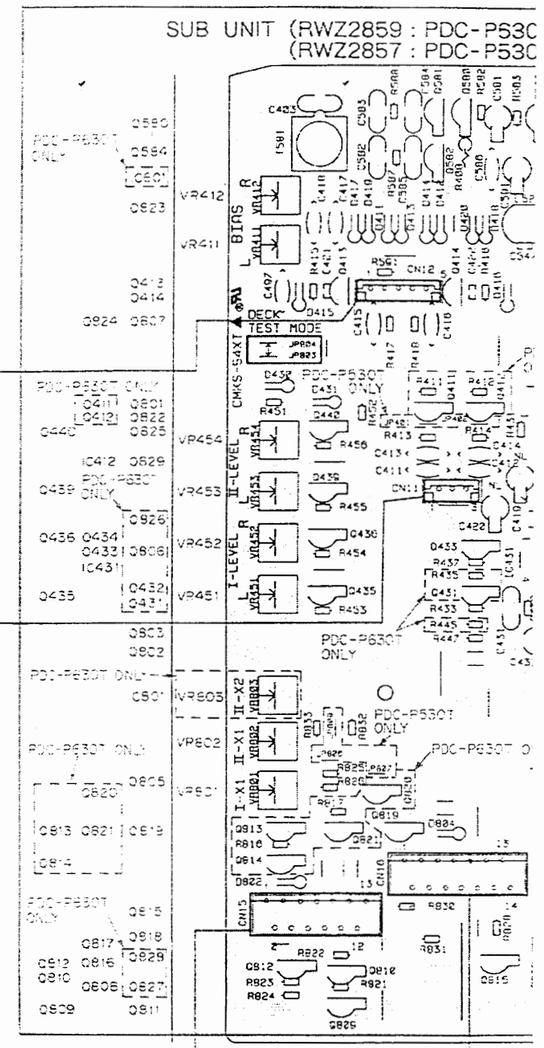
CONT UNIT (RWZ2868 : PDC-P630T)
(RWZ2867 : PDC-P530T)

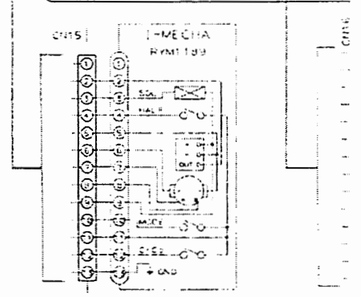


This P. C. B. connection diagram is viewed from the parts mounted side.

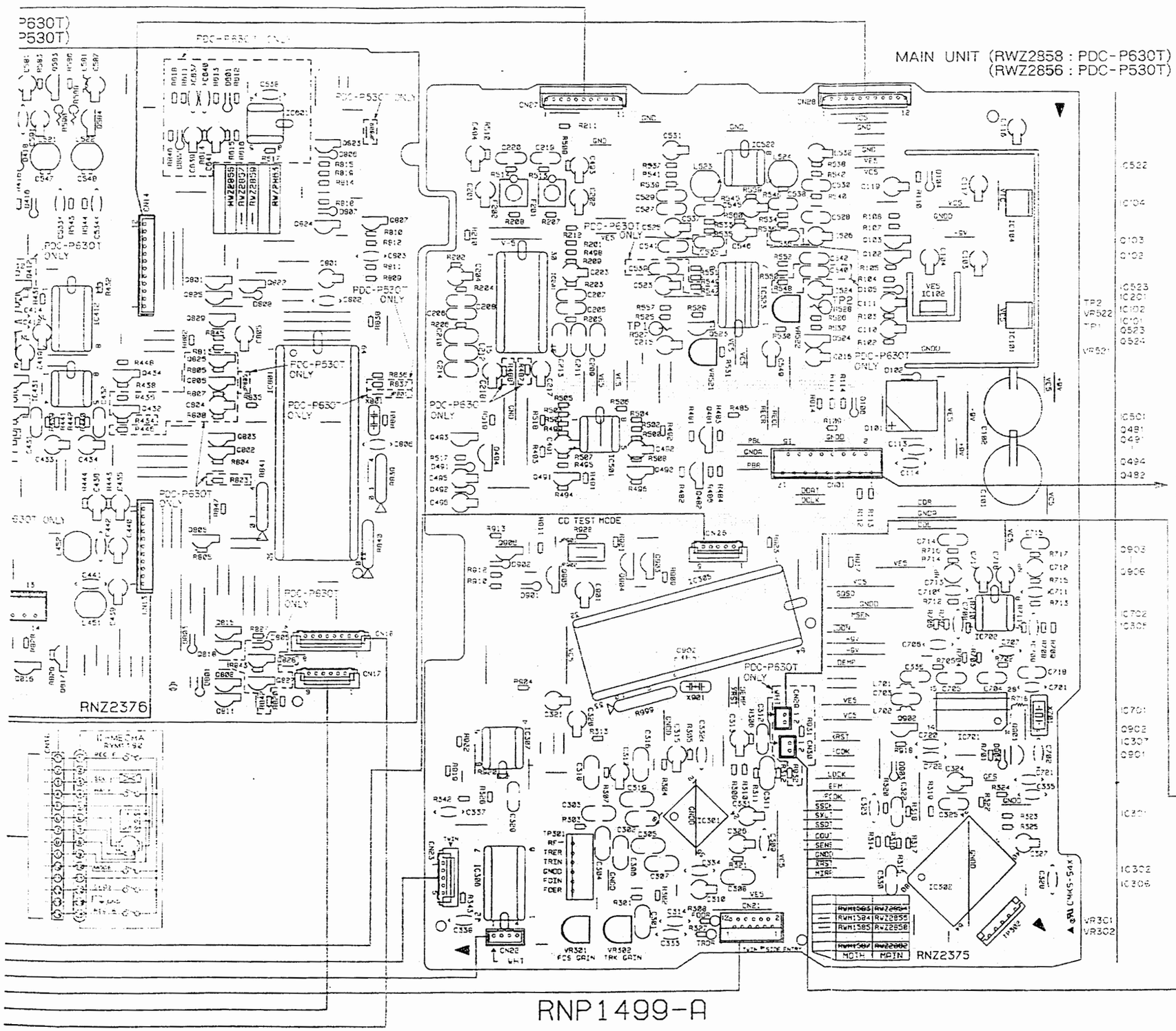








MAIN UNIT (RWZ2858 : PDC-P630T)
(RWZ2856 : PDC-P530T)



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

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked with ○ shows cathode side.
5. The transistor terminal marked with ▭ shows emitter.

5. PCB PARTS LIST

NOTES:

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

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

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

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

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

Mark	No.	Description	Part No.
	LIST OF ASSEMBLIES		
		MAIN UNIT	RWZ2858
		SUB UNIT	RWZ2859
		DIND UNIT	RWZ2865
		CONT UNIT	RWZ2868
NSP		MECHANISM PCB ASSEMBLY	PWX1162
NSP		MECHANISM BOARD ASSEMBLY	PWX1192
	MAIN UNIT		
	SEMICONDUCTORS		
	IC301		CXA1372Q
	IC302		CXD2500BQ
	IC201		HA12142NT
	IC307		LA6517
	IC306		LA6520
⚠	IC101		LM2940CT-5.0
	IC501, IC522, IC702		NJM4558DX
⚠	IC104		NJM7912FA
⚠	IC102		NJM79M05FA
	IC305		PD4463A
	IC701		SM5871AS
	IC523		SN74LS05N
	Q102		2SA933S
	Q491, Q492		2SC1740S
	Q493, Q494		2SC1740SLN
	Q481, Q482, Q523, Q524		2SD2144S
	Q901		2SK246
	Q902		XDA124ES
	Q103, Q903-Q906		XDC124ES
⚠	D102		1SS254
	D104-D106, D491, D492, D901-D904		1SS254
⚠	D101		S2VB20
	COILS AND FILTERS		
	L701, L702		LAU010K
	L523, L524 (3.9mH)		RTF1020
	F201, F202		RTF1202
	CAPACITORS		
	C706, C707		CCCCH221J50
	C701		CCCCH120J50

Mark	No.	Description	Part No.
	C702		CCCCH220J50
	C708-C711		CCCCH820J50
	C721		CCCSL101J50
	C712, C713		CEANP4R7M35
	C215-C218, C491, C492, C523, C524		CEAS010M50
	C111, C203, C204, C493, C494, C496		CEAS100M50
	C103, C104, C119, C201, C202, C315, C324, C327, C331, C901		CEAS101M10
	C310		CEAS221M6R3
⚠	C101, C102		CEAS222M16
	C531, C532		CEASR2M50
	C116, C320, C321, C525, C526, C716, C717		CEAS330M16
	C117		CEAS330M35
	C545, C546		CEAS470M16
	C110		CEAS470M25
	C313, C317		CEAS4R7M50
	C495		CEASR33M50
	C326, C549		CEASR47M50
	C714, C715		CFTXA152J50
	C301, C529, C530		CFTXA182J50
	C205-C210		CFTXA222J50
	C306		CFTXA332J50
	C219, C220		CFTXA392J50
	C304, C305		CFTXA472J50
	C539, C540		CFTXA562J50
	C302, C307, C311, C325, C329		CFTYA103J50
	C211-C214, C312, C316, C318, C319, C330, C336, C703-C705, C718		CFTYA104J50
	C535, C536		CFTYA183J50
	C303, C308		CFTYA333J50
	C322, C541, C542		CFTYA473J50
	C527, C528		CFTYA683J50
	C328		CGCYX473K25
	C335, C722		CKCY3102K50
	C323		CKCY3152K50
	C309, C314, C332-C334, C337, C338, C720		CKCY3103Z50
⚠	C113, C114		CKDY3103Z50
	C537, C538		CQMA752J50
	C902		CKCY3223Z50

Mark	No.	Description	Part No.
RESISTORS			
	VR301, VR302, VR521, VR522 (22kΩ)		RCP1046
	R999 (47kΩ)		RA8T473
	R527, R528 (9.1kΩ)		RCN1060
	OTHER RESISTORS		RD1/6PM□□□J
OTHERS			
	CN21	CONNECTOR(12P)	12FM-1.0ST
	CN27	CONNECTOR	52257-1110
	CN28	CONNECTOR	52257-1210
	X701	X'TAL RESONATOR (16.9344MHz)	PSS1006
	X901	CERAMIC RESONATOR (4.19MHz)	VSS1028
SUB UNIT			
SEMICONDUCTORS			
	IC412		MC14066BCP
	IC431, IC601		NJM4558DX
	IC801		PD3204A
	Q580-Q582, Q810, Q817		2SA1283
	Q807		2SA933S
	Q411, Q412, Q431-Q436, Q439, Q440, Q806		2SC1740S
	Q584, Q812, Q819		2SC3243
	Q413, Q414		2SK373
	Q803		DTC143ES
	Q827, Q828		XDA114ES
	Q583, Q802, Q805, Q808, Q811, Q815, Q818, Q822		XDA124ES
	Q813, Q820		XDA144ES
	Q801, Q809, Q814, Q816, Q821, Q823-Q826		XDC124ES
	Q829		XDC144ES
	D802, D804		1SS252
	D411-D420, D430, D431, D601, D602, D801, D803, D805-D808		1SS254
COILS AND TRANSFORMER			
	L451, L452		RTF1099
	L521, L522		RTF1102
	T581		ATX-043
CAPACITORS			
	C638		CCCSL101J50
	C417, C418		CCCSL101K500
	C640		CCCSL271J50
	C421, C422		CCPUSL100J50
	C419, C420		CEANL100M16
	C439, C440, C639		CEAS010M50
	C801		CEAS100M50
	C433, C434		CEAS330M16
	C435, C436, C591		CEAS470M16
	C581, C805		CEAS4R7M50
	C641		CEASR22M50
	C804		CEASR47M50
	C431, C432		CFTXA682J50
	C582, C584		CFTYA103J50
	C585		CFTYA123J50
	C583		CFTYA153J50
	C803		CKCYB152K50
	C411, C412		CKCYB331K50
	C441, C442		CKCYB391K50
	C413, C414		CKCYB471K50
	C533, C534, C586		CKCYB681K50
	C415, C416		CKCYB821K50
	C497		CKCYF102Z50
	C806		CKCYF103Z50
	C637, C802		CKCYF473Z50
	C547, C548		CKPUYB221K50
	C403		CQPA162J100
RESISTORS			
	VR451-VR454 (22kΩ)		RCP1084
	VR803 (4.7kΩ)		RCP1114
	VR801, VR802 (10kΩ)		RCP1115
	VR411, VR412 (220Ω)		RCP1116
	R590 (120Ω)		RCN1020
	R589 (220Ω)		RCN1021
	R408 (4.7Ω)		RCN1022
	R839-R841 (22Ω)		RCX1041
	R832		RN1/6PQ1102F
	R825		RN1/6PQ1302F
	R826, R833		RN1/6PQ6801F
	OTHER RESISTORS		RD1/6PM□□□J
OTHERS			
	CN13	CONNECTOR	53178-1110
	CN14	CONNECTOR	53178-1210
	X801	CERAMIC RESONATOR (4.19MHz)	VSS1028
DIND UNIT			
SEMICONDUCTORS			
	DI -D4		SEL6410G
CONT UNIT			
SEMICONDUCTORS			
	D1002, D1003, D1005, D1006		SEL6410G
	D1004		SEL6C10R
SWITCHES			
	S1002-S1014, S1101-S1106, S1108, S1110, S1120-S1122, S1124		RSG1033
	S1001		RSH1030
RESISTORS			
	OTHER RESISTORS		RD1/6PM□□□J
MECHANISM PCB ASSEMBLY			
SWITCHES			
	S601-S603		DSG1017
MECHANISM BOARD ASSEMBLY			
SWITCH			
	S610		DSG1016

6. ADJUSTMENTS

6.1 DECK SECTION

Perform these adjustments in test mode.

- To activate the test mode : Turn on power while short-circuiting JP803 and JP804 in the SUB unit. Use the GGF1148 power control jig and the GGF1171 connection adapter for servicing.

6.1.1 Mechanism Section

1. Adjustment and verification of the tape speed

No.	Deck	Mode	Test tape	Adjustment point	Standard value (playback frequency)	Remarks
1	I	Normal-speed playback	STD-301E (3kHz)	Press the FF (REV) key after playing the tape for 1 minute. *1		
2		Double-speed playback		Verification	6000Hz ± 600Hz (Pins 14 or 15 of CN01)	
3		Normal-speed playback		Press the FF (REV) key after verification.		
4	II			Press the FF (REV) key after playing the tape for 1 minute. *1		
5		Double-speed playback		VR803	± 10Hz with respect to the value verified in Step 2 (DECK I).	
6		Normal-speed playback		Press the FF (REV) key after verification.		
7				VR802	3000Hz ± 5Hz (Pins 14 or 15 of CN01)	
8	I			VR801	± 5Hz with respect to the value verified in Step 7 (DECK II).	

*1 : The tape runs at the double speed while the FF (REV) key is pressed during playback.
Note : Porform steps 7 and 8 only for the PDC-P530T.

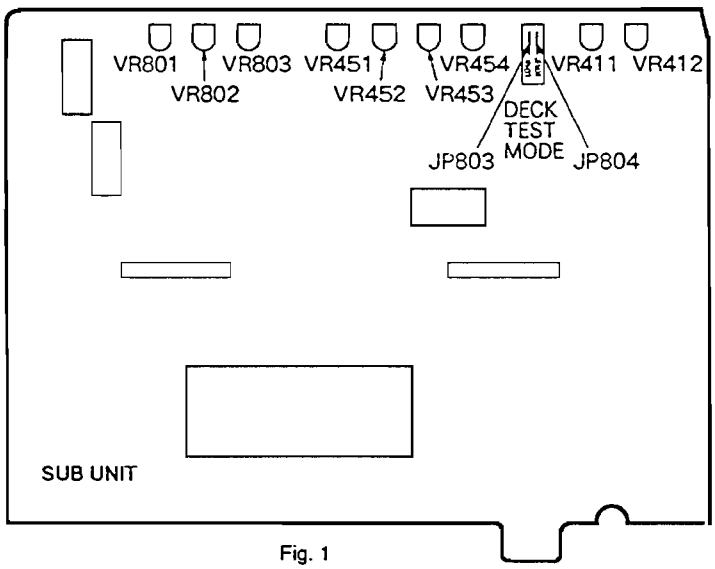


Fig. 1

● Verification and adjustment of the door damper

1. Attach the door spring to the position (a) shown in Fig. 2 and stand the front panel assembly vertically as shown in Fig. 3.
2. Open the doors of DECK I and DECK II simultaneously. When one of the doors fully opens, check that the difference in position from the other door is within 15 mm.
3. If the requirement mentioned in Step 2 is not satisfied, change and adjust the attaching position of the door spring as follows.
   - If the door of DECK I opens more slowly than that of DECK II :
     Change the position of the door spring for DECK I to (b).
   - If the door of DECK I opens faster than that of DECK II :
     Change the position of the door spring for DECK II to (b).

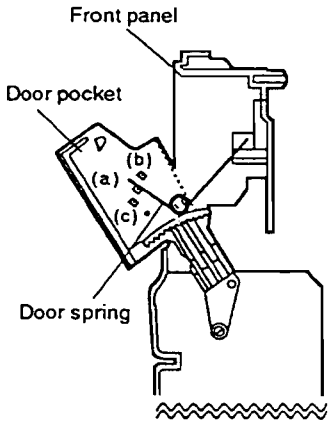


Fig. 2

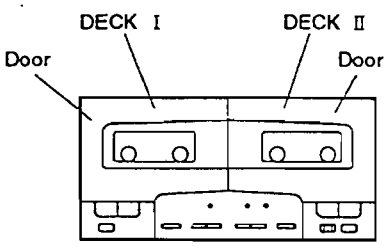


Fig. 3

6.1.2 Electrical Adjustment

Requirements for adjustments

1. Mechanical adjustments have been completed.
2. The heads have been cleaned and demagnetized.
3. Wait for a few minutes before making the adjustments.
4. The signal level must be 0 dBV = 1 Vrms.
5. Connect a load resistance of 50k ohms (47 to 52k ohms accepted) to the line output connectors. (*1)
6. Set the DOLBY NR switch to OFF unless otherwise specified

Test tapes

For adjustments of the playback system:
STD-331E (Fig. 4)
NORMAL blank tape: STD-631
CrO2 blank tape: STD-621

Note: The reference recording level of the STD-331E is 250 nwb/m, which is 4 dB higher than that of STD-331B (160 nwb/m) in recording. Be sure to check the tape type before adjustment.

- Playback system

1. Head angle adjustment
2. Playback level adjustment

- Recording system

1. Recording bias adjustment
2. Recording level adjustment

The automatic tape selector mechanism is incorporated.

Note *1: •Connect about 60k ohms when the GGF1148 jig is used.
•The load resistance is not necessary when the prescribed system component is connected.

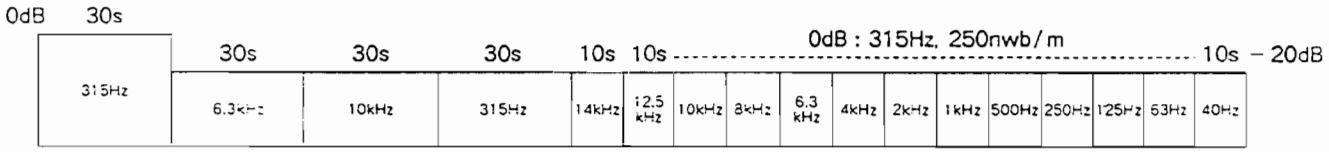


Fig. 4 Test tape STD-331E

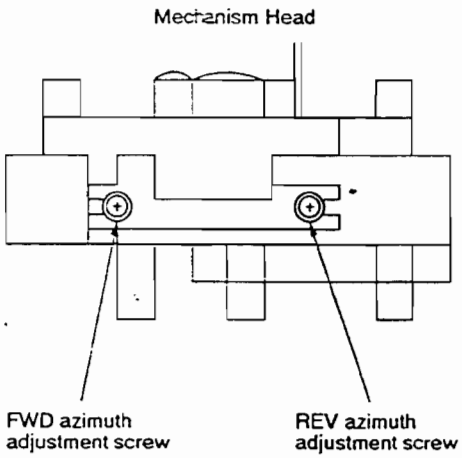


Fig. 5 Head angle adjustment

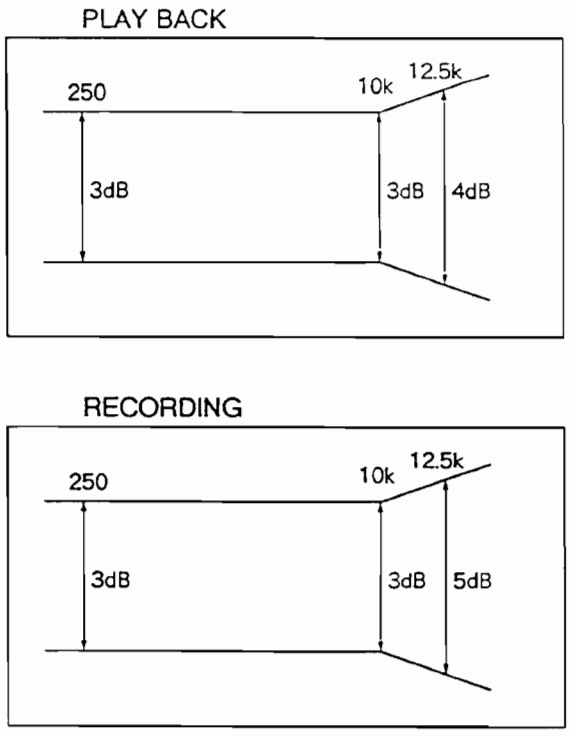


Fig. 6 Frequency response

Playback system

1. Head angle adjustment

No.	Mode	Input signal/test tape	Adjusting point	Measuring point	Adjustment value	Remarks
1	PLAY	Play 10 kHz/-20 dB of the STD-331E test tape.	Head-azimuth adjustment screw (Fig. 5)	Pins 14 or 15 of CN01	Maximum playback signal level	
2	STOP	When the adjustment is completed, apply adhesive to secure the screws.				

2. Playback level adjustment

No.	Mode	Input signal/test tape	Adjusting point		Measuring point	Adjustment value	Remarks
1	PLAY	Play 315 Hz/0 dB of the STD-331E test tape.	DECK I	VR451 (L ch)	TP1 (L ch) TP2 (R ch)	- 9.5dBV	This adjustment must be accurate, as it determines the DOLBY level.
				VR452 (R ch)			
			DECK II	VR453 (L ch)			
				VR454 (R ch)			

Note: TP1 and TP2 are located in the MAIN unit. See Fig. 1 - Adjusting points in "6.2 CD section."

Recording system

1. Recording bias adjustment

No.	Mode	Input signal/test tape	Adjusting point		Measuring point	Adjustment value	Remarks
1	REC/ PAUSE	Apply a signal to the line input from an external oscillator and adjust the oscillator so that the line output is 315 Hz/-30 dBV. Then load the STD-631 (NORM) tape.	The output level control of the oscillator		Pins 14 or 15 of CN01	——	Line input: CN01-16 or 17 pin Line output: CN01-15 or 16 pin
2	REC → PLAY	Record the 315 Hz and 6.3 kHz signals at the above-mentioned level and reproduce the recorded signals.	DECK II	VR411 (L ch)		Repeat the recording and playback operations for compensation until the playback level of the 6.3 kHz signal is +0.5 dB ± 0.5 dB with respect to that of the 315 Hz signal.	
				VR412 (R ch)			
3	When the adjustment is completed, check the distortion to eliminate underbiasing.						

2. Recording level adjustment

- Set the DOLBY NR switch to ON.

No.	Mode	Input signal/test tape	Adjusting point		Measuring point	Adjustment value	Remarks
1	REC/ PAUSE	Load the STD-631 (NORM) tape and apply a signal to the line input from an external oscillator. Gradually increase the input level so that the line output is 315 Hz/-13.5 dBV.	The output level control of the oscillator		TP1 (L ch) TP2 (R ch)	——	Line input: CN01-16 or 17 pin Line output: CN01-15 or 16 pin
2	REC → PLAY	Record the above-mentioned input signal and reproduce the recorded signal.	DECK II	VR521 (L ch)		Repeat the recording and playback operations for compensation until the playback level is -13.5 dBV.	
				VR522 (R ch)			
3	REC → PLAY	Record the above-mentioned input signal on the STD-621 (CrO_2) tape and reproduce the recorded signal.	Verification			- 13.5dBV ± 1.5dB	

Note: VR521 and VR522 are located in the MAIN unit. See Fig. 1 - Adjusting points in "6.2 CD section."

6.2 CD SECTION

Adjustment Methods

If a disc player is adjusted incorrectly or inadequately, it may malfunction or not work at all even though there is nothing at all wrong with the pickup or the circuitry. Adjust correctly following the adjustment procedure.

● Adjustment Items/Verification Items and Order

If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in steps 1 − 4, the pickup block may be defective.

Step	Item	Test Point	Adjustment Location
1	Focus offset verification	TP301, Pin 6 (FCS. ERR)	None
2	Tracking error balance verification	TP301, Pin 2 (TRK. ERR)	None
3	Pickup radial/tangential direction tilt adjustment	TP301, Pin 1 (RF)	Radial tilt adjustment screw, Tangential tilt adjustment screw
4	RF level verification	TP301, Pin 1 (RF)	None
5	Focus servo loop gain adjustment	TP301, Pin 5 (FCS. IN) TP301, Pin 6 (FCS. ERR)	VR152 (FCS. GAN)
6	Tracking servo loop gain adjustment	TP301, Pin 3 (TRK. IN) TP301, Pin 2 (TRK. ERR)	VR151 (TRK. GAN)

● **Abbreviation table**

FCS. ERR :Focus Error
TRK. ERR :Tracking Error
FCS GAN :Focus Gain
TRK GAN :Tracking Gain
FCS. IN :Focus In
TRK. IN :Tracking In

● Measuring Instruments and Tools

1. Dual trace oscilloscope (10:1 probe)
2. Low-frequency oscillator
3. Test disc (YEDS-7)
4. 8-cm disc (with about 20 minutes of recording)
5. Low pass filter (39kΩ +0.001 μF)
6. Resistor (100 kΩ)
7. Ball point hexagon wrench (size:1.5mm) GGK1002
8. Standard tools

● Test Point and Adjustment Variable Resistor Positions

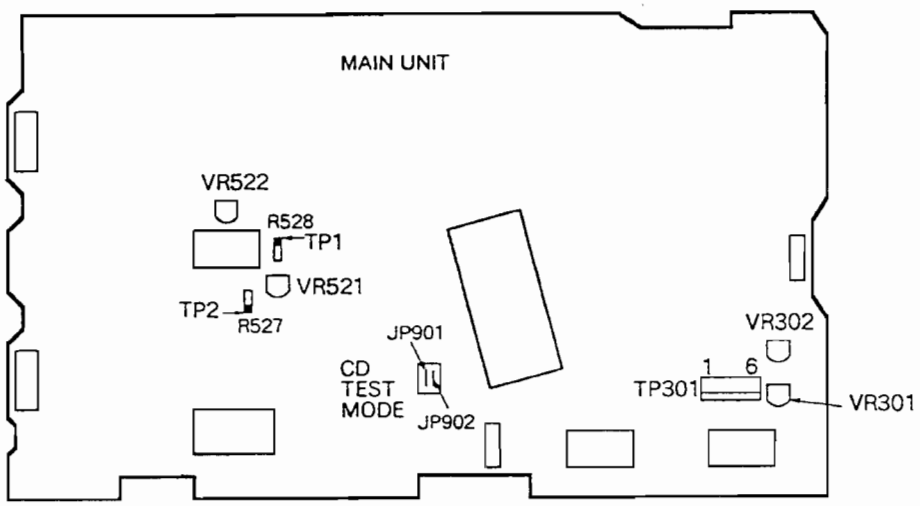


Figure 1. Adjustment Locations

● Notes

1. Use a 10:1 probe for the oscilloscope.
2. All the knob positions (settings) for the oscilloscope in the adjustment procedures are for when a 10:1 probe is used.

● Test Mode

These models have a test mode so that the adjustments and checks required for service can be carried out easily. When these models are in test mode, the keys on the front panel work differently from normal. Adjustments and checks can be carried out by operating these keys with the correct procedure. For these models, all adjustments are carried out in test mode.

[Setting these models to test mode]

How to set this model into test mode.

1. Turn off the power switch.
2. Press the TEST mode switch (JP901 and JP902). (See Figure 1.)
3. Turn on the power switch.

When the test mode is set correctly, the display is different from what it usually is when the power is turned on. If the display is still the same as usual, test mode has not been set correctly, so repeat Steps 1 – 3.

[Release from test mode]

Here is the procedure for releasing the test mode:

1. Press the STOP key and stop all operations.
2. Turn off the power switch on the front panel.

[Operations of the keys in test mode]

Code	Key Name	Function in Test Mode	Explanation
PROGRAM	PROGRAM	Focus servo close	The laser diode is lit up and the focus actuator is lifted up, then lowered slowly and the focus servo is closed at the point where the objective lens is focused on the disc. With the player in this state, if you lightly rotate the stopped disc by hand, you can hear the sound the focus servo. If you can hear this sound, the focus servo is operating correctly. If you press this key with no disc mounted, the laser diode lights up, the focus actuator is pulled up, then the actuator is lowered and raised three times and returned to its original position.
▷/□□	PLAY /BACK	Spindle servo ON	Starts the spindle motor in the clockwise direction and when the disc rotation reaches the prescribed speed (about 500 rpm at the inner periphery), sets the spindle servo in a closed loop. Be careful. Pressing this key when there is no disc mounted makes the spindle motor run at the maximum speed. If the focus servo does not go correctly into a closed loop or the laser light shines on the mirror section at the outermost periphery of the disc, the same symptom is occurred.
		Tracking servo close/open	Pressing this key when the focus servo and spindle servo are operating correctly in closed loops puts the tracking servo into a closed loop, displays the track number being played back and the elapsed time on the front panel, and outputs the playback signal. If the elapsed time is not displayed or not counted correctly or the audio is not played back correctly, it may be that the laser is shining on the section with no sound recorded at the outer edge of the disc, that something is out of adjustment, or that there is some other problem. This key is a toggle key and open/close the tracking servo alternately. This key has no effect if no disc is mounted.

Code	Key Name	Function in Test Mode	Explanation
⏮ (◁◁)	MANUAL SEARCH REV	Carriage reverse (inwards)	Moves the pickup position toward the inner diameter of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the motor does not automatically stop at the mechanical end point in test mode, be careful with this operation.
⏭ (▷▷)	MANUAL SEARCH FWD	Carriage forward (outwards)	Moves the pickup position toward the outer diameter of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the motor does not automatically stop at the mechanical end point in test mode, be careful with this operation.
□	STOP	Stop	Initializes and the disc rotation stops. The pickup and disc remain where they are when this key is pressed.
⏏	OPEN /CLOSE DISC 1	Disc tray open/close	Open/close the disc tray. This key is a toggle key and open/close tray alternately.
REPEAT	REPEAT	Carriage movement (to the middle of the disc)	The carriage moves to the middle (R=35 mm) of a 12-cm disc. When this key is pressed in focus-in and spindle-servo ON status, the carriage returns to the inner periphery and subsequently moves to the middle of a 12-cm disc.

[How to play back a disc in test mode]

In test mode, since the servos operate independently, playing back a disc requires that you operate the keys in the correct order to close the servos.
Here is the key operation sequence for playing back a disc in test mode.

PGM(PROGRAM)	Lights up the laser diode and closes the focus servo.
⇩	
PLAY/PAUSE ▷/ ▯▯	Starts the spindle motor and closes the spindle servo.
⇩	
PLAY/PAUSE ▷/ ▯▯	Closes the tracking servo.

Wait at least 2-3 seconds between each of these operations.

Note : After the tracking servo is once closed, it opens and closes repeatedly each time the ▷/ ▯▯ keyi s pressed.

1. Focus Offset Verification

● Objective ● Symptom when out of adjustment	Verify the DC offset for the focus error amp. The model does not focus in and the RF signal is dirty.		
● Measurement instrument connections	Connect the oscilloscope to TP301, Pin 6 (FCS. ERR) [Settings] 5 mV/division 10 ms/division DC mode	● Player state ● Adjustment location ● Disc	Test mode, stopped (just the Power switch on) None None needed
[Procedure] Verify the DC voltage at TP301, Pin 6 (FCS. ERR) is 0 ± 50 mV.			

Note : If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in adjustment items 1 – 4, the pickup block may be defective.

2. Tracking Error Balance Verification

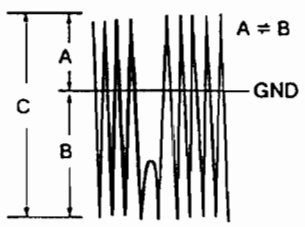
● Objective ● Symptom when out of adjustment	To verify that there is no variation in the sensitivity of the tracking photo diode. Play does not start or track search is impossible.		
● Measurement instrument connections	Connect the oscilloscope to TP301, Pin 2 (TRK. ERR). This connection may be via a low pass filter. [Settings] 50 mV/division 5 ms/division DC mode	● Player state ● Adjustment location ● Disc	Test mode, focus and spindle servos closed and tracking servo open None YEDS-7

[Procedure]

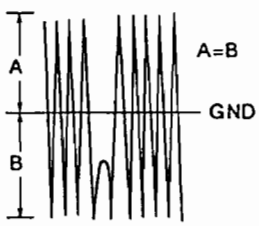
1. Move the pickup to midway across the disc (R=35 mm) with the FWD ▷▷ or REV ◁◁ key.
2. Press the PGM (PROGRAM) key, then the PLAY/PAUSE ▷/ ▯▯ key in that order to close the focus servo then the spindle servo.
3. Line up the bright line (ground) at the center of the oscilloscope screen and put the oscilloscope into DC mode.
4. Supposing that the positive amplitude of the tracking error signal at TP301, pin 2 (TRK ERR) is (A) and the negative amplitude is (B), the following expression is satisfied.

When $A \geqq B$, $\frac{A-B}{C} \times \frac{1}{2} \leqq 0.1$

When $A < B$, $\frac{B-A}{C} \times \frac{1}{2} \leqq 0.1$



When there is a DC component



When there is no DC component

3. Pickup Radial/Tangential Tilt Adjustment

● Objective	To adjust the angle of the pickup relative to the disc so that the laser beams are shone straight down into the disc for the best read out of the RF signals.		
● Symptom when out of adjustment	Sound broken;some discs can be played but not others.		
● Measurement instrument connections	Connect the oscilloscope to TP301, Pin 1 (RF). [Settings] 20 mV/division 200 ns/division AC mode	● Player state ● Adjustment location ● Disc	Test mode, play Pickup radial tilt adjustment screw and tangential tilt adjustment screw 8-cm disc (with about 20 minutes of recording)

[Procedure]

1. Press the FWD ▷▷ or REV ◁◁ key to move the pickup position toward the outer periphery of the disc.
   Press the PGM (PROGRAM) key, the PLAY/PAUSE ▷/ ⏸ key twice in that order to close the respective servos and put the player into play mode.
2. First, adjust the radial tilt adjustment screw with the hexagon wrench GGK1002 so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly.
3. Next, adjust the tangential tilt adjustment screw with the hexagon wrench GGK1002 so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly (Figure 3).
   Note : A standard hexagon wrench can not be used as the disc hinders adjustment.
4. Adjust the radial tilt adjustment screw and the tangential tilt adjustment screw again so that the eye pattern can be seen the most clearly. As necessary, adjust the two screws alternately so that the eye pattern can be seen the most clearly.
5. When the adjustment is completed, lock the radial and tangential adjustment screw.
   Note:Radial and tangential mean the directions relative to the disc shown in Figure 2.

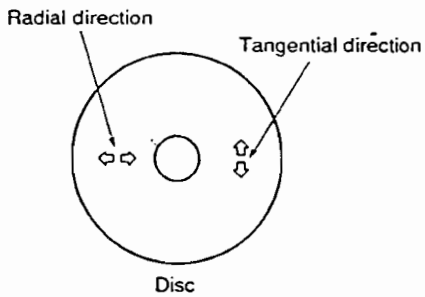
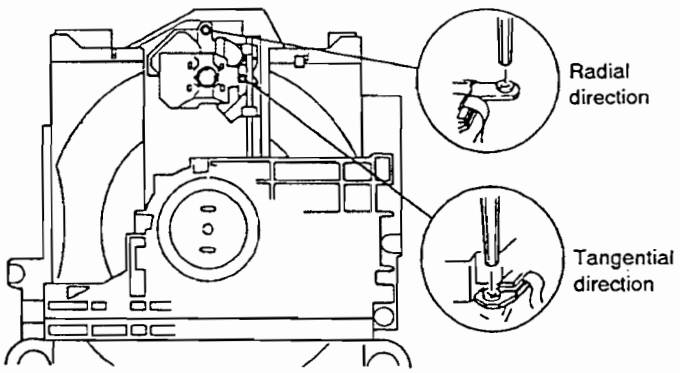


Figure 2



Adjustment locations

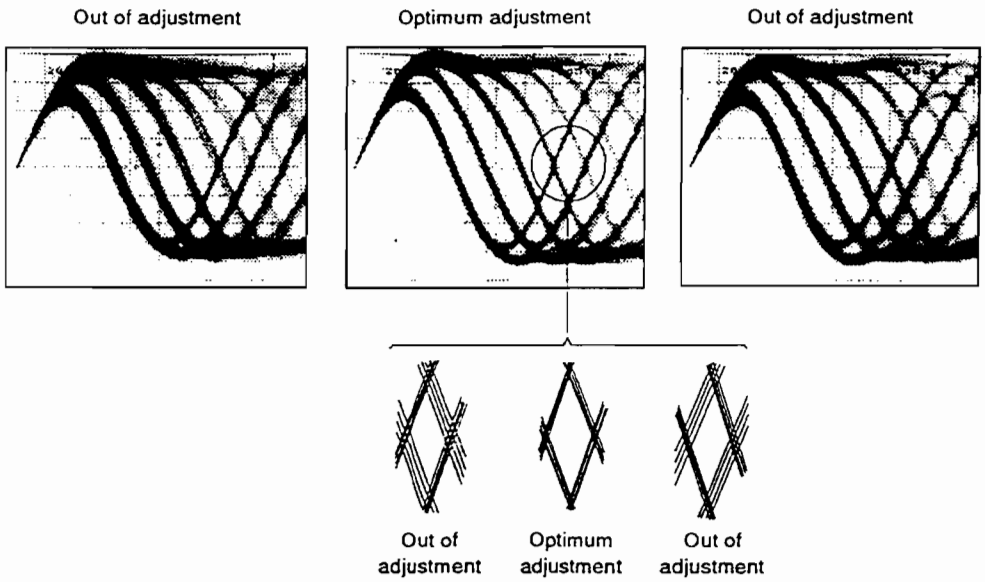


Figure 3 Eye pattern

4. RF Level Verification

● Objective	To verify the playback RF signal amplitude		
● Symptom when out of adjustment	No play or no search		
● Measurement instrument connections	Connect the oscilloscope to TP301, Pin 1 (RF). [Settings] 50 mV/division 10 ms/division AC mode	● Player state ● Adjustment location ● Disc	Test mode, play None YEDS-7

[Procedure]

1. Move the pickup to midway across the disc (R=35 mm) with the FWD ▷▷ or REV ◁◁ key, then press the PGM (PROGRAM) key, the PLAY/PAUSE ▷/ ⏸ key twice in that order to close the respective servos and put the player into play mode.
2. Verify the RF signal amplitude is 1.2 Vp-p ± 0.2 V.

5. Focus Servo Loop Gain Adjustment

● Objective ● Symptom when out of adjustment	To optimize the focus servo loop gain. Playback does not start or focus actuator noisy.		
● Measurement instrument connections	See figure 4. [Settings] CH1 CH2 20 mV/division 5 mV/division X-Y mode	● Player state ● Adjustment location ● Disc	Test mode, play VR301 (FCS. GAN) YEDS-7

[Procedure]

1. Set the AF generator output to 1.2 kHz and 1 Vp-p.
2. Press the FWD ▷▷ or REV ◁◁ key to move the pickup to halfway across the disc (R=35 mm), then press the PGM (PROGRAM) key, the PLAY/PAUSE ▷/ ▯▯ key twice in that order to close the corresponding servos and put the player into play mode.
3. Adjust VR301 (FCS. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.

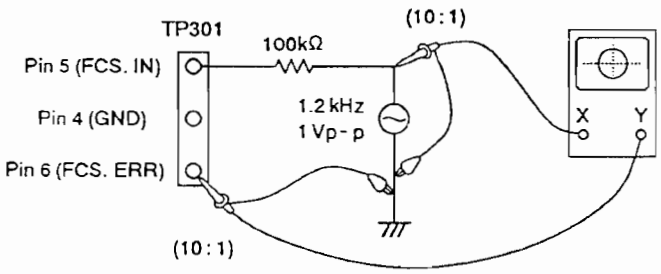
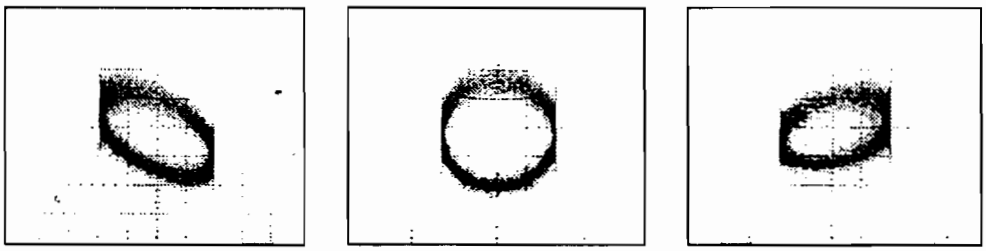


Figure 4

Focus Gain Adjustment



Higher gain | Optimum gain | Lower gain

6. Tracking Servo Loop Gain Adjustment

● Objective	To optimize the tracking servo loop gain.		
● Symptom when out of adjustment	Playback does not start, during searches the actuator is noisy, or tracks are skipped.		
● Measurement instrument connections	See Figure 5. [Settings] CH1 CH2 50 mV/division 20 mV/division X - Y mode	● Player state ● Adjustment location ● Disc	Test mode, play VR302 (TRK. GAN) YEDS-7

[Procedure]

1. Set the AF generator output to 1.2 kHz and 2 Vp-p.
2. Press the FWD ▷▷ or REV ◁◁ key to move the pickup to halfway across the disc (R=35 mm), then press the PGM (PROGRAM) key, the PLAY/PAUSE ▷/ ▯▯ key twice in that order to close the corresponding servos and put the player into play mode.
3. Adjust VR302 (TRK. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.

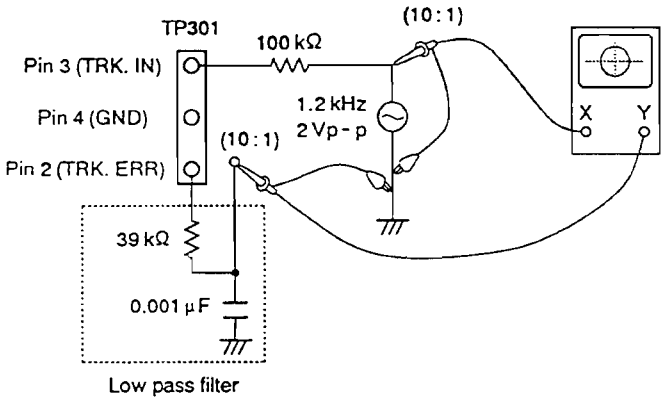
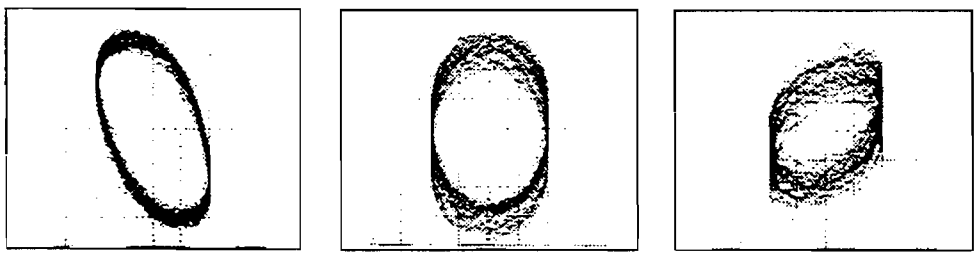


Figure 5

Tracking Gain Adjustment



Higher gain | Optimum gain | Lower gain

7. IC INFORMATION

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

■ SM5871AS (IC701)

• 1bit DAC

● Pin Function

No.	Pin Name	I/O	Function
1	XTO	O	Output terminal of oscillation section.
2	XVss	–	GND (0V) for X'tal section.
3	DS	I	Normal/Double speed playback mode section . (DS=L : Nomal playback mode) (DS=H : Double speed playback mode)
4	CKO	O	Output clock of oscillation section . (DS=L : 384fs as same as XTI input frequency) (DS=H : 192fs as same as XTI input frequency)
5	TSTN	I	Test terminal : Normally fix to H level.
6	MODN	I	Mode control terminal.
7	ATTN	I	Soft mute control terminal.
8	LRCI	I	Sample rate (fs) clock of input data : H=L ch L=R ch
9	BCKI	I	Bit clock of input data.
10	DIN	I	Input data.
11	DFS1	I	Deemphasis control terminal 1.
12	DFS2	I	Deemphasis control terminal 2.
13	MUTEO	O	Infinity • zero detection output.
14	RSTN	I	System reset : H=Normal operation L=System reset
15	DVss	–	Digital GND terminal (0V).
16	DVDD	–	Digital VDD terminal (5V).
17	AVDD1	–	Analog VDD terminal 1 (5V).
18	LO	O	L ch PWM output (+).
19	AVSS1	–	Analog GND terminal 1 (0V).
20	LON	O	L ch PWM output (-).
21	AVDD2	–	Analog VDD terminal 2 (5V).
22	AVDD3	–	Analog VDD terminal 3 (5V).
23	RON	O	R ch PWM ôutput (-).
24	AVSS2	–	Analog GND terminal 2 (0V).
25	RO	O	R ch PWM output (+).
26	AVDD4	–	Analog VDD terminal 4 (5V).
27	XVDD	–	VDD terminal (5V) for X'tal section.
28	XTI	I	Input terminal of oscillation section. (384fs : DS=L) (192fs : DS=H)

ATTN

Selection	MODN H	MODN L
H	Release the soft mute operation	Hold (fix) the soft mute operation
L	Soft mute operation	

DFS2

Selection	DFS1 L	DFS1 H
L	Deemphasis ON 44.1kHz	Deemphasis OFF
H	Deemphasis ON 48.0kHz	Deemphasis ON 32.0kHz

8. FOR PDC - P630T/AD AND PDC - P530T/ADL

NOTES:

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

CONTRAST OF MISCELLANEOUS PARTS

PDC - P630T/AD, PDC - P530T/ADL and PDC - P630T/AEBM have the same construction except for the following :

Mark	Symbol & Description	Part No.			Remarks
		PDC - P630T/AEBM	PDC - P630T/AD	PDC - P530T/ADL	
	MAIN UNIT	RWZ2858	RWZ2858	RWZ2856	
	SUB UNIT	RWZ2859	RWZ2859	RWZ2857	
	DIND UNIT	RWZ2865	RWZ2865	• • • • •	
	CONT UNIT	RWZ2868	RWZ2868	RWZ2867	
	Door panel L	REA1043	REA1043	REA1041	
	Door panel R	REA1044	REA1044	REA1042	
	Packing case	RHG1412	RHG1485	RHG1411	
	Spot lens	RNK1880	RNK1880	• • • • •	
	Front panel	RNT1162	RNT1162	RNT1161	
NSP	Rear panel	RNA1638	RNA1712	RNA1711	

MAIN UNIT

RWZ2856 and RWZ2858 have the same construction except for the following :

Mark	Symbol & Description		Part No.		Remarks
			RWZ2858	RWZ2856	
	C535, C536		CFTYA183J50	• • • • •	
	C537, C538		CQMA752J50	CFTYA273J50	
	C539, C540		CFTXA562J50	• • • • •	
	R487, R488		RD1/6PM103J	• • • • •	
	R547, R548		RD1/6PM331J	• • • • •	
	R931, R932		RD1/6PM750J	• • • • •	
NSP	CN29, CN30	Connector	B2B-PH-K-S	• • • • •	
NSP		Heat sink	PNC-205	• • • • •	

SUB UNIT

RWZ2857 and RWZ2859 have the same construction except for the following :

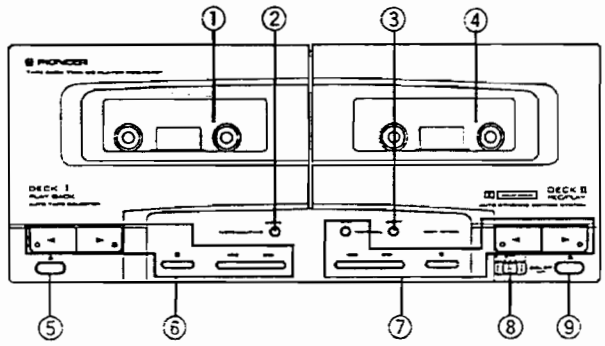
Mark	Symbol & Description	Part No.		Remarks
		RWZ2859	RWZ2857	
	IC601	NJM4558DX	• • • • •	
	Q411, Q412, Q431, Q432, Q806	2SC1740S	• • • • •	
	Q813, Q820	XDA144ES	• • • • •	
	Q814, Q821, Q826	XDC124ES	• • • • •	
	Q827, Q828	XDA114ES	• • • • •	
	D601, D602, D805	1SS254	• • • • •	
	C637	CKCYF473Z50	• • • • •	
	C638	CCCSL101J50	• • • • •	
	C639	CEAS010M50	• • • • •	
	C640	CCCSL271J50	• • • • •	
	C641	CEASR22M50	• • • • •	
	C804	CEASR47M50	• • • • •	
	R411, R412, R445, R446, R846	RD1/6PM103J	• • • • •	
	R435, R436	RD1/6PM153J	• • • • •	
	R611	RD1/6PM224J	• • • • •	
	R612	RD1/6PM391J	• • • • •	
	R613, R616, R617	RD1/6PM393J	• • • • •	
	R614	RD1/6PM472J	• • • • •	
	R615	RD1/6PM824J	• • • • •	
	R618	RD1/6PM473J	• • • • •	
	R803	RD1/6PM222J	• • • • •	
	R806	RD1/6PM472J	• • • • •	
	R807	RD1/6PM152J	• • • • •	
	R808	RD1/6PM561J	• • • • •	
	R816, R817	RD1/6PM124J	• • • • •	
	R832	RN1/6PQ1102F	RN1/6PQ1302F	
	R837	• • • • •	RD1/6PM223J	
	R842, R843	RD1/6PM223J	• • • • •	
	VR803	RCP1114	• • • • •	

CONT UNIT

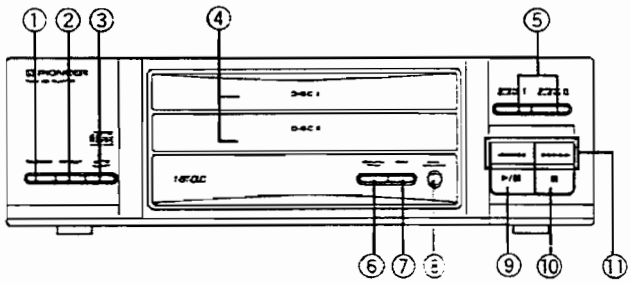
Although RWZ2867 and RWZ2868 are different in part number, they have the same service parts.

9. PANEL FACILITIES

TAPE DECK



CD PLAYER



TAPE DECK

① Deck I cassette door
② ASES (Auto Synchro Editing System) NORMAL/FINE button (p. 16, 17)
③ COPY NORMAL/HIGH SPEED button (p. 15)
④ Deck II cassette door
⑤ Deck I eject button (▲) (p. 12)
⑥ Deck I operation buttons (Play ◄ ►, Stop ■, Fast ◄◄ ►►) (p. 12, 13)
⑦ Deck II operation buttons (Play ◄ ►, Stop ■, Fast ◄◄ ►►, Rec Pause ● II) (p. 12, 13, 14)
⑧ DOLBY* NR switch (p. 12)
⑨ Deck II eject button (▲) (p. 12, 14)

CD PLAYER

① RANDOM button (p. 9)
② REPEAT button (p. 9)
③ AUTO EJECT button (p. 9)
④ Disc trays (DISC I, DISC II)
⑤ OPEN/CLOSE I, II buttons (p. 6)
⑥ COMPU PGM button (p. 17)
⑦ PGM (Program) button (p. 10)
⑧ DISC CHANGE button (p. 6, 7)
⑨ Play/Pause button (►/II) (p. 6)
⑩ Stop button (■) (p. 6)
⑪ Manual/Track search buttons (◄◄•|◄◄, ►►|•►►) (p. 7, 8)

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.

10. SPECIFICATIONS

Cassette Deck Section

Systems ..... 4 track, 2-channel stereo
Heads ..... Recording/playback head x 1
Playback head x 1
Erasing head x 1
Motor ..... DC servo motor x 2
Wow and Flutter ..... No more than 0.09 % (WRMS)
Frequency Response (–20 dB recording):
TYPE II (HIGH/CrO_2) tape ..... 35 Hz to 15,000 Hz ±6 dB
TYPE I (Normal) tape ..... 35 Hz to 14,000 Hz ±6 dB
Signal-to-Noise Ratio ..... 56 dB
(peak recording level, audible compensation)
Noise Reduction Effect
With Dolby B-type NR ON ..... More than 10 dB
(at 5 kHz)
With Dolby C-type NR ON ..... More than 19 dB
(at 5 kHz)

CD Section

Type ..... Compact disc digital audio system
Frequency Response ..... 4 Hz to 20 kHz
Signal to Noise Ratio ..... 96 dB or more (EIAJ)

Miscellaneous

Dimensions ..... 260 (W) x 180 (H) x 271 (D) mm
Weight (without package) ..... 3.9 kg

Accessories

Operating Instructions 1

NOTE:
Specifications and design subject to possible modification without notice due to improvement.