

Service Manual

TOYOTA

ORDER NO.
CRT3000

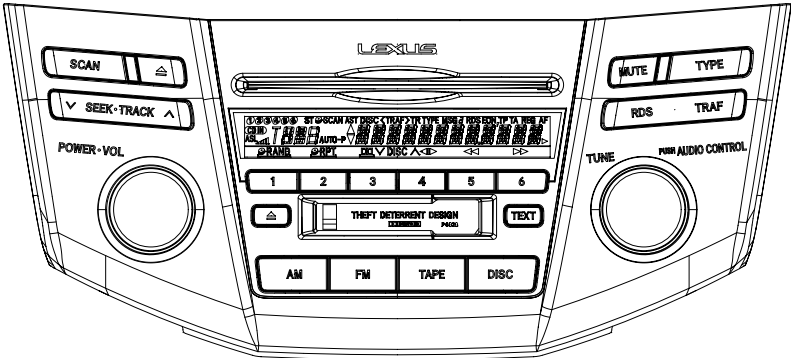
LEXUS RX330 **AUDIO SYSTEM** **HEAD UNIT**

VEHICLE	DESTINATION	PRODUCED AFTER	TOYOTA PART No.	ID No.	PIONEER MODEL No.
LEXUS RX330	U.S.A., CANADA	February 2003	86120-48170	P6828	FX-M8427ZT/UC
LEXUS RX330	U.S.A., CANADA	February 2003	86120-48310	P6828	FX-M8427ZT-91/UC



For details, refer to "Important symbols for good services".

FX-M8472ZT/UC(P6828)



● This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech. Module	Remarks
CX-977	CRT2624	S9	CD Mech. Module:Circuit Description, Mech.Description, Disassembly
CX-1011	CRT2406	3L	Cassette Mech. Module:Mech.Description, Disassembly

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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.

● CD section precaution



1. Before disassembling the unit, be sure to turn off the power. Unplugging and plugging the connectors during power-on mode may damage the ICs inside the unit.
2. To protect the pickup unit from electrostatic discharge during servicing, take an appropriate treatment (shorting-solder) by referring to "the DISASSEMBLY" on page 69.
3. After replacing the pickup unit, be sure to check the grating. (See p.59.)

[Important symbols for good services]

In this manual, the symbols shown-below indicate that adjustments, settings or cleaning should be made securely. When you find the procedures bearing any of the symbols, be sure to fulfill them:

1. Product safety



You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

2. Adjustments



To keep the original performances of the product, optimum adjustments or specification confirmation is indispensable. In accordance with the procedures or instructions described in this manual, adjustments should be performed.

3. Cleaning



For optical pickups, tape-deck heads, lenses and mirrors used in projection monitors, and other parts requiring cleaning, proper cleaning should be performed to restore their performances.

4. Shipping mode and shipping screws



To protect the product from damages or failures that may be caused during transit, the shipping mode should be set or the shipping screws should be installed before shipping out in accordance with this manual, if necessary.

5. Lubricants, glues, and replacement parts



Appropriately applying grease or glue can maintain the product performances. But improper lubrication or applying glue may lead to failures or troubles in the product. By following the instructions in this manual, be sure to apply the prescribed grease or glue to proper portions by the appropriate amount. For replacement parts or tools, the prescribed ones should be used.

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1. SPECIFICATIONS

General

Power source	13.2V(10.5V-16.0V allowable) DC
Grounding system	Negative type
Backup current	0.3mA or less
Dimensions	319(W) x144(H) x174(D)mm
Weight	2.3kg

Cassette player

Tape	Compact cassette tape(C30-C90)
Tape speed	4.76cm/sec.(+0.14cm/sec., -0.05cm/sec.)
Wow and flutter	0.2% or less(WRMS)
Crosstalk	40dB or less
Stereo Separation	30dB or more
S/N	40dB or more
Distortion	3% or less

CD player

System	Compact disc audio system
Usable discs	Compact disc
Signal format	Sampling frequency : 44.1kHz Number of quantization : 16; linear
S/N	65dB or more
Distortion	0.3% or less

FM tuner

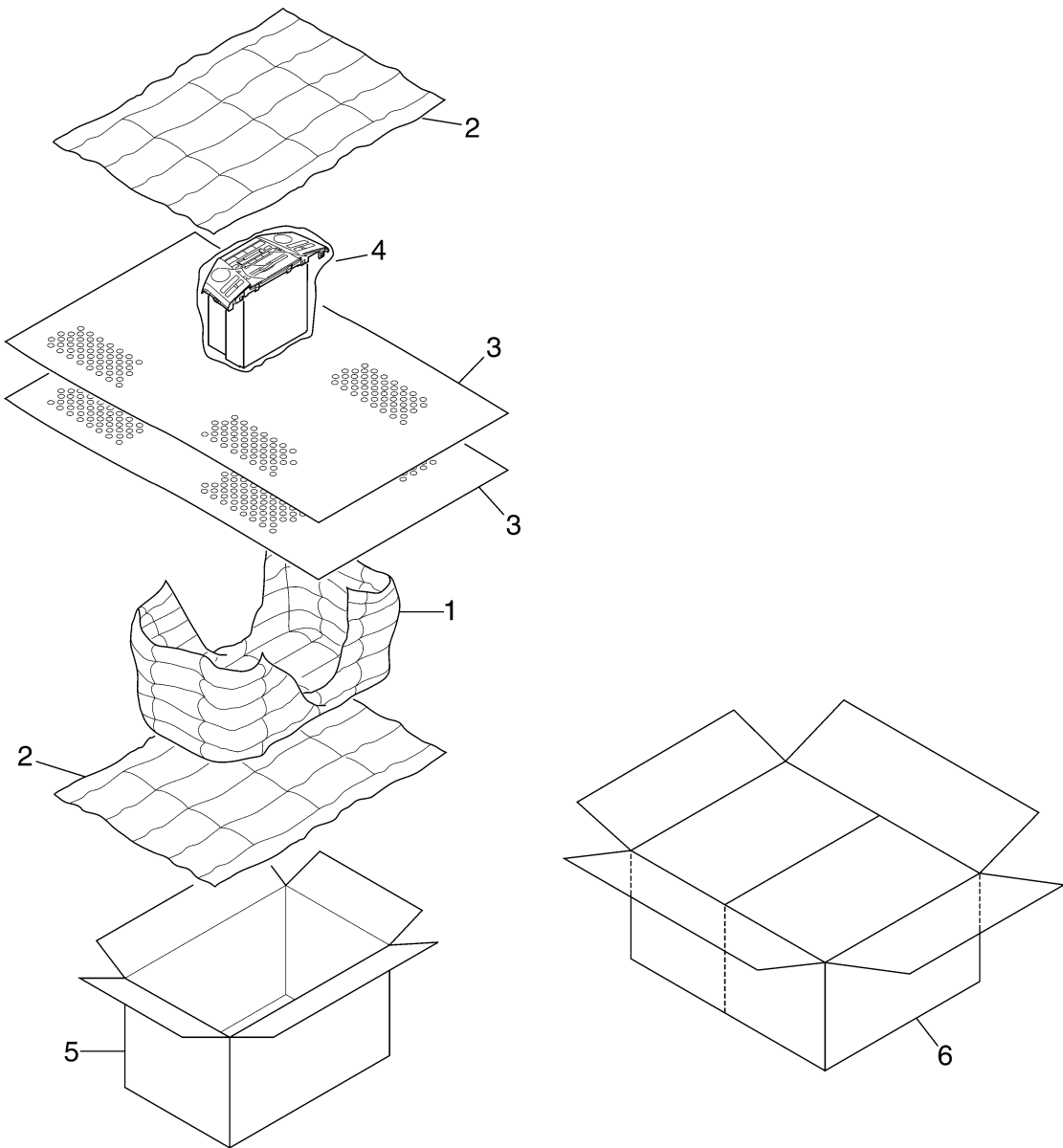
Frequency range	87.75, 87.9–107.9 MHz
S/N	46dB or more(54dBμ input)
Distortion	1.5% or less
IF interference	80dB or more
Image interference	35dB or more
Stereo Separation	25dB or more(1kHz)

AM tuner

Frequency range	530-1,710 kHz
S/N 20dB usable sensibility	34dBμ or less
S/N	42dB or more
Distortion	1.5% or less
IF interference	55dB or more
Image interference	45dB or more

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING(FX-M8427ZT-91/UC)



NOTE:

- Parts marked by “*” are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ▽ mark on the product are used for disassembly.
- For the applying amount of lubricants or glue, follow the instructions in this manual.
(In the case of no amount instructions, apply as you think it appropriate.)

● PACKING(FX-M8427ZT-91/UC) SECTION PARTS LIST

Mark	No.	Description	Part No.
*	1	Air Cap	CHW1945
*	2	Air Cap	CHW1948
	3	Cover	CEG1045
	4	Polyethylene Bag	CEG1174
	5	Carton	CHG4861
	6	Contain Box	CHL4861

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FX-M8427ZT/UC

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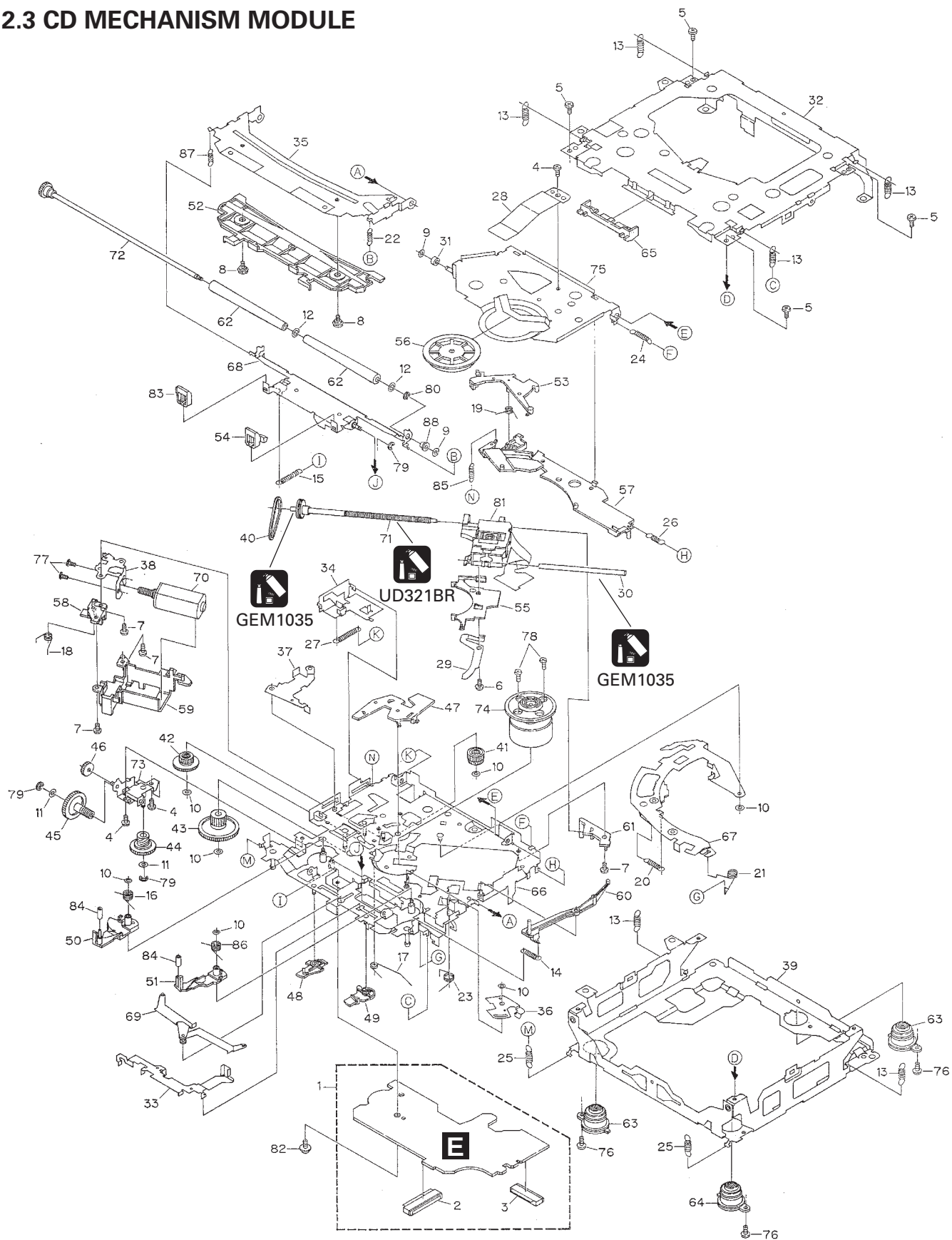
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● EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
1	Cassette Mechanism Module	EXK4295	51	Button(1)	CAC7599	
2	Screw	BSZ26P060FTC	52	Button(2)	CAC7600	
3	Screw	BSZ30P060FTC	53	Button(3)	CAC7601	
4	Connector	CDE7248	54	Button(4)	CAC7602	
5	Connector	CDE7260	55	Button(5)	CAC7603	
6	CD Mechanism Module(S9T)	CXK5521	56	Button(6)	CAC7604	
7	Chassis	CNA2466	57	Button(AM)	CAC7605	
8	Case	CNB2880	58	Button(FM)	CAC7606	
9	Holder	CND1792	59	Button(TAPE)	CAC7607	
10	Frame	CND1789	60	Button(DISC)	CAC7608	B
11	Chassis Unit	CXC1820	61	Button(TAPE EJECT)	CAC7609	
12	Screw	ISS26P060FTC	62	Button(TEXT)	CAC7610	
13	90467-10203	CNV5641	63	Button(SEEK,TRACK)	CAC7611	
14	Guide	CNV7306	64	Button(RDS,TRAF)	CAC7612	
15	Main Unit	CWM8384	65	Button(CD EJECT)	CAC7613	
16	Screw	BMZ30P060FTC	66	Button(TYPE)	CAC7615	
17	Screw(M3x6)	CBA1393	67	Button(SCAN)	CAC7616	
18	Connector(CN801)	CKM1322	68	Button(MUTE)	CAC7637	
19	Connector(CN473)	CKM1350	69	Door	CAT2351	
20	Connector(CN472)	CKM1351	70	Spring	CBH2663	C
21	Connector(CN353)	CKS3568	71	Lighting Conductor	CNV7251	
22	Connector(CN351)	CKS3835	72	Lighting Conductor	CNV7252	
23	Connector(CN804)	CKS4361	73	Lighting Conductor	CNV7253	
24	Connector(CN501)	CKX1064	74	Holder	CNV7256	
25	Holder	CNC9591	75	Holder	CNV7257	
26	Holder	CND1588	76	Holder	CNV7258	
27	FM/AM Tuner Unit	CWE1630	77	Holder	CNV7259	
28	Holder	CNC8855	78	Holder	CNV7260	
29	Terminal(CN802,CN803)	VNF1084	79	Holder	CNV7261	
30	Transistor(Q809,811,812)	2SB1185	80	Holder	CNV7316	
31	Screw	BPZ20P080FTC	81	Holder	CNV7317	D
32	Keyboard Unit	CWS1364	82	Lighting Conductor	CNV7319	
33	LCD	CAW1722	83	Lighting Conductor	CNV7320	
34	Connector(CN901)	CKS4361	84	Lighting Conductor	CNV7321	
35	Connector(CN904)	CKS4591	85	Lighting Conductor	CNV7330	
36	Connector(CN905)	CKS4591	86	Lighting Conductor	CNV7467	
37	Connector(CN902)	CKS4592	87	Lighting Conductor	CNV7469	
38	Connector(CN903)	CKS4592	88	Holder	CNV7472	
39	Holder	CND1788	89	Holder Unit	CXB8886	
40	Sheet	CNM7958	90	Grille Unit	CXB9134	
41	Seal	CNM7970	91	Knob Unit	CXB9458	E
42	Seal	CNM7971	92	Screw	BMZ50P080FTC	
43	Seal	CNM8261		(FX-M8427ZT/UC)		
44	Connector	CNV7249	93	86211-48030-A	CND1247	
45	Lighting Conductor	CNV7250		(FX-M8427ZT/UC)		
46	Rubber	CNV7323	94	Screw	IMS26P060FTC	
47	Rubber	CNV7324	95	86212-48030-A	CND1248	
48	Rubber	CNV7325		(FX-M8427ZT/UC)		
49	Screw	IMS26P060FTC	96	Grille Assy	CXC2064	
50	Sheet	CNM8435	97	Screw	BPZ20P080FTC	

2.3 CD MECHANISM MODULE



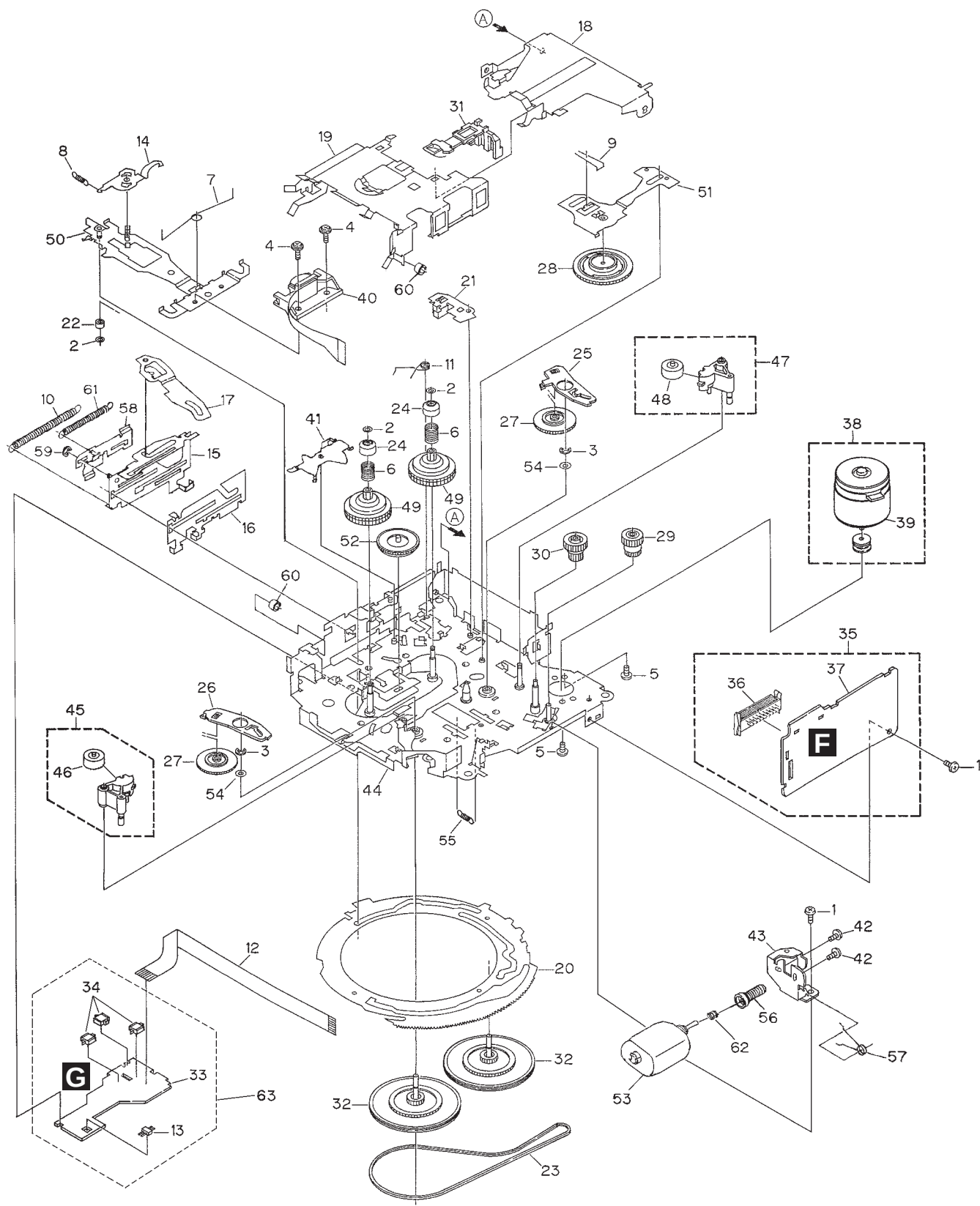
● CD MECHANISM MODULE SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Control Unit	CWX2608	46	Gear	CNV6320
2	Connector(CN701)	CKS1959	47	Arm	CNV6322
3	Connector(CN101)	CKS3486	48	Arm	CNV6323
4	Screw	BMZ20P025FMC	49	Arm	CNV6324
5	Screw	BSZ20P040FMC	50	Arm	CNV6888
6	Screw(M2x4)	CBA1362	51	Arm	CNV6889
7	Screw(M2x3)	CBA1527	52	Guide	CNV6327
8	Screw	CBA1545	53	Arm	CNV6924
9	Washer	CBF1037	54	Guide	CNV6921
10	Washer	CBF1038	55	Rack	CNV6923
11	Washer	CBF1039	56	Clamper	CNV6331
12	Washer	CBF1060	57	Arm	CNV6332
13	Spring	CBH2378	58	Guide	CNV6333
14	Spring	CBH2379	59	Cover	CNV6334
15	Spring	CBH2514	60	Arm	CNV6335
16	Spring	CBH2533	61	Guide	CNV6336
17	Spring	CBH2382	62	Roller	CNV6338
18	Spring	CBH2383	63	Damper	CNV6175
19	Spring	CBH2384	64	Damper	CNV6662
20	Spring	CBH2527	65	Guide	CNV6925
21	Spring	CBH2386	66	Chassis Unit	CXB7980
22	Spring	CBH2537	* 67	Arm Unit	CXB7983
23	Spring	CBH2390	68	Arm Unit	CXB7984
24	Spring	CBH2391	69	Arm Unit	CXB7985
25	Spring	CBH2523	70	Motor Unit(M2)	CXB8284
26	Spring	CBH2426	71	Screw Unit	CXB5904
27	Spring	CBH2444	72	Gear Unit	CXB8076
28	Spring	CBL1561	73	Bracket Unit	CXB7982
29	Spring	CBL1553	74	Motor Unit(M1)	CXB6007
30	Shaft	CLA3845	75	Arm Unit	CXB8504
31	Roller	CLA3910	76	Screw(M2x5)	EBA1028
32	Frame	CNC9654	77	Screw	JFZ20P020FMC
33	Lever	CNC9664	78	Screw	JGZ17P020FZK
34	Lever	CNC8949	79	Washer	YE15FUC
35	Arm	CNC9661	80	Washer	YE20FUC
36	Arm	CNC9016	81	Pickup Unit(Service)(P9)	CXX1482
37	Arm	CNC9017	82	Screw	IMS26P030FMC
38	Bracket	CNC9123	83	Guide	CNV6922
39	Frame	CNC8947	84	Roller	CNV6887
40	Belt	CNT1086	85	Spring	CBH2509
41	Gear	CNV6886	86	Spring	CBH2512
42	Gear	CNV6316	87	Spring	CBH2536
43	Gear	CNV6317	88	Collar	CNV6906
44	Gear	CNV6318			
45	Gear	CNV6319			

2.4 CASSETTE MECHANISM MODULE



For grease application, refer to the service manual for CX-1011 (CRT2406).

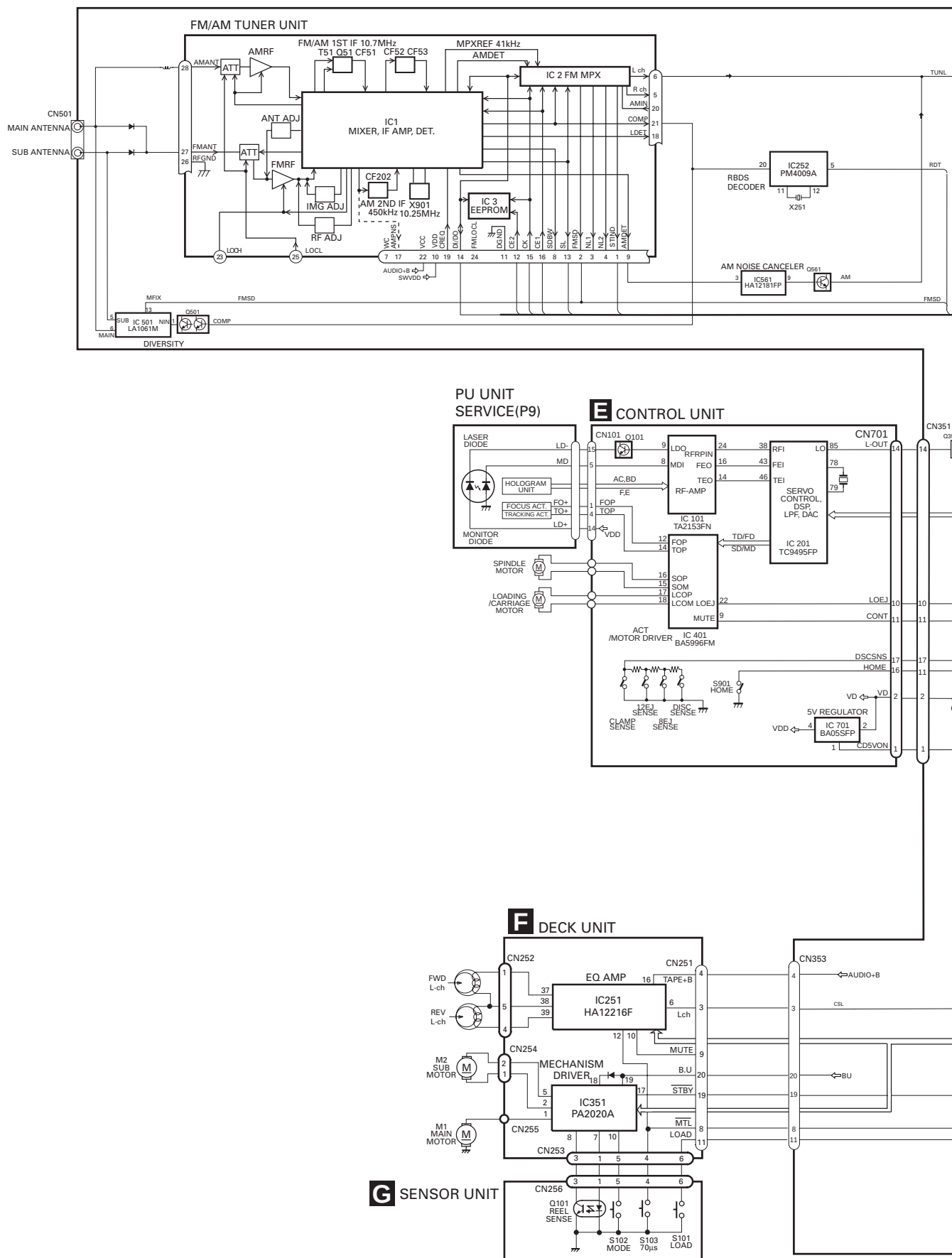


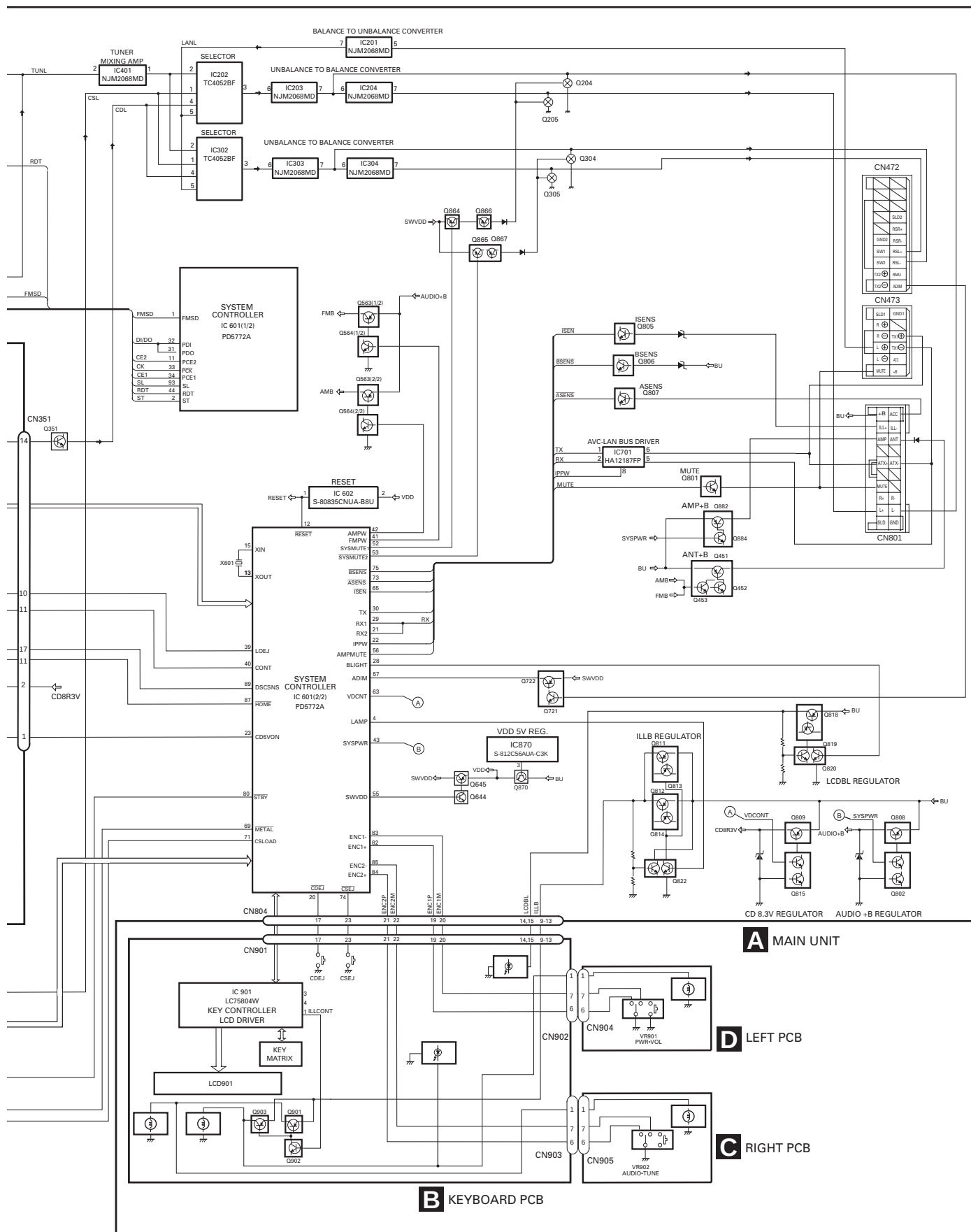
● CASSETTE MECHANISM MODULE SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
1	Screw	BSZ20P040FMC	46	Pinch Roller	ENV1518	
2	Washer	CBF1037	47	Pinch Holder Unit	EXA1607	
3	Washer	CBG1003	48	Pinch Roller	ENV1518	
4	Screw	EBA1028	49	Reel Unit	EXA1625	
5	Screw	CBA1037	50	Head Base Unit	EXA1611	
6	Spring	EBH1653	51	Lever Unit	EXA1587	
7	Spring	EBH1642	52	Gear Unit	EXA1596	
8	Spring	EBH1641	53	Motor Unit(M2)	EXA1623	
9	Spring	EBH1626	54	Washer	HBH-179	
10	Spring	EBH1627	55	Spring	EBH1537	
11	Spring	EBH1648	56	Worm Gear	ENV1564	
12	Cord	EDD1024	57	Spring	EBH1655	
13	Photo-reflector(Q101)	EGN1004	58	Lever	ENC1548	
14	Arm	ENC1526	59	Washer	YE15FUC	
15	Lever Unit	EXA1610	60	Tube	ENM1039	
16	Lever	ENC1543	61	Spring	EBH1645	
17	Arm	ENC1532	62	Spring	EBH1545	
18	Frame	ENC1533	63	Sensor Unit	EWM1041	
19	Holder	ENC1547				
20	Gear	ENC1535				
21	Arm	ENC1550				
22	Roller	ENR1040				
23	Belt	ENT1027				
24	Collar	ENV1508				
25	Arm	ENV1539				
26	Arm	ENV1540				
27	Gear	ENV1569				
28	Gear	ENV1547				
29	Gear	ENR1044				
30	Worm Wheel	ENV1559				
31	Lever	ENV1551				
32	Flywheel	ENV1554				
33	Gathering PCB	ENX1073				
34	Switch(S101,S102,S103)	ESG1007				
35	Deck Unit	EWM1043				
36	Plug(CN251)	CKS3540				
37	Gathering PCB	ENX1076				
38	Motor Unit(M1)	EXA1618				
39	Motor	EXM1035				
40	Head Assy(HD1)	EXA1594				
41	Arm	ENC1537				
42	Screw	JGZ20P025FNI				
43	Bracket	ENC1559				
44	Chassis Unit	EXA1636				
45	Pinch Holder Unit	EXA1608				

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

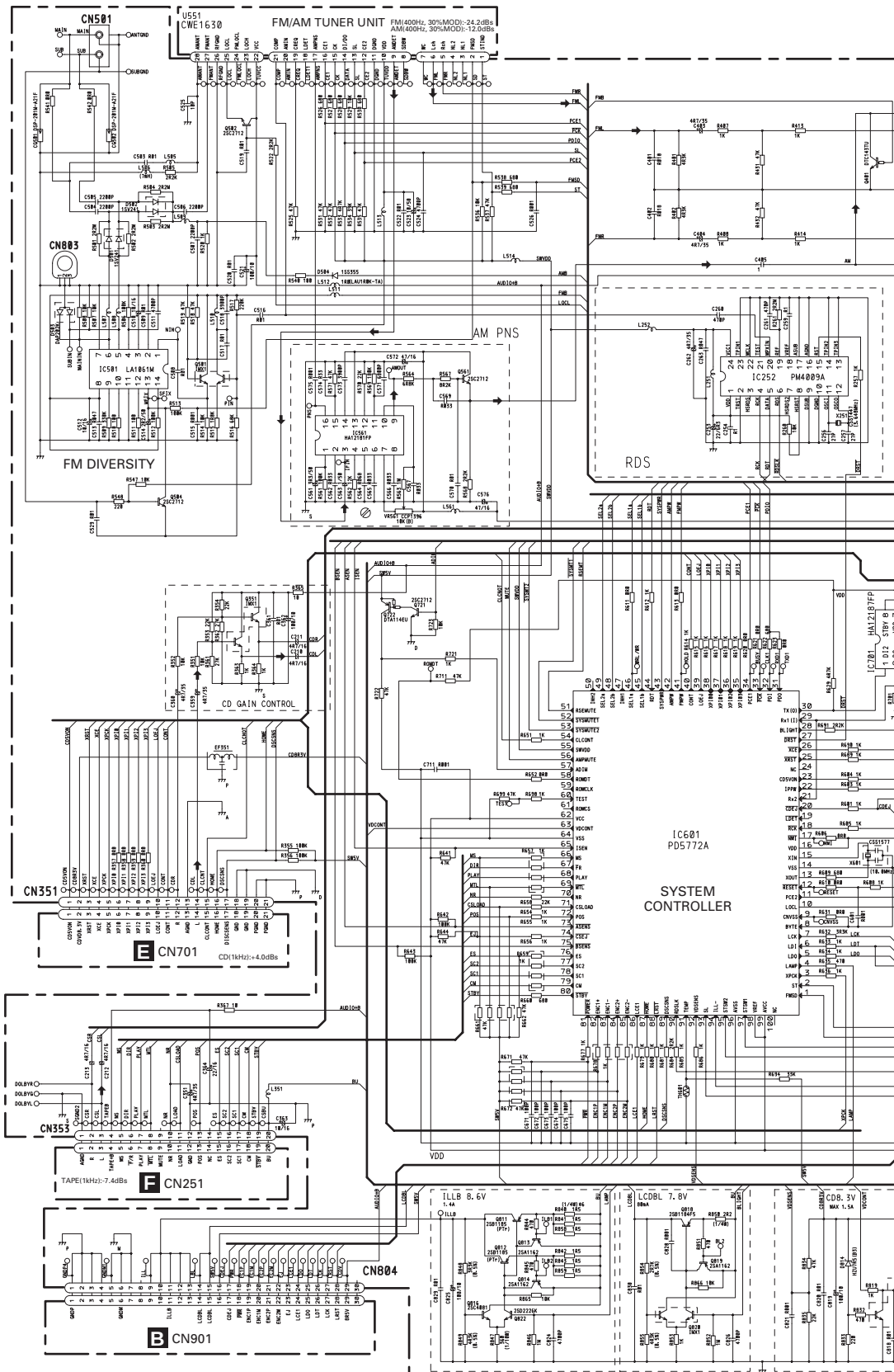
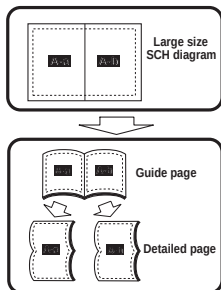




3.2 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

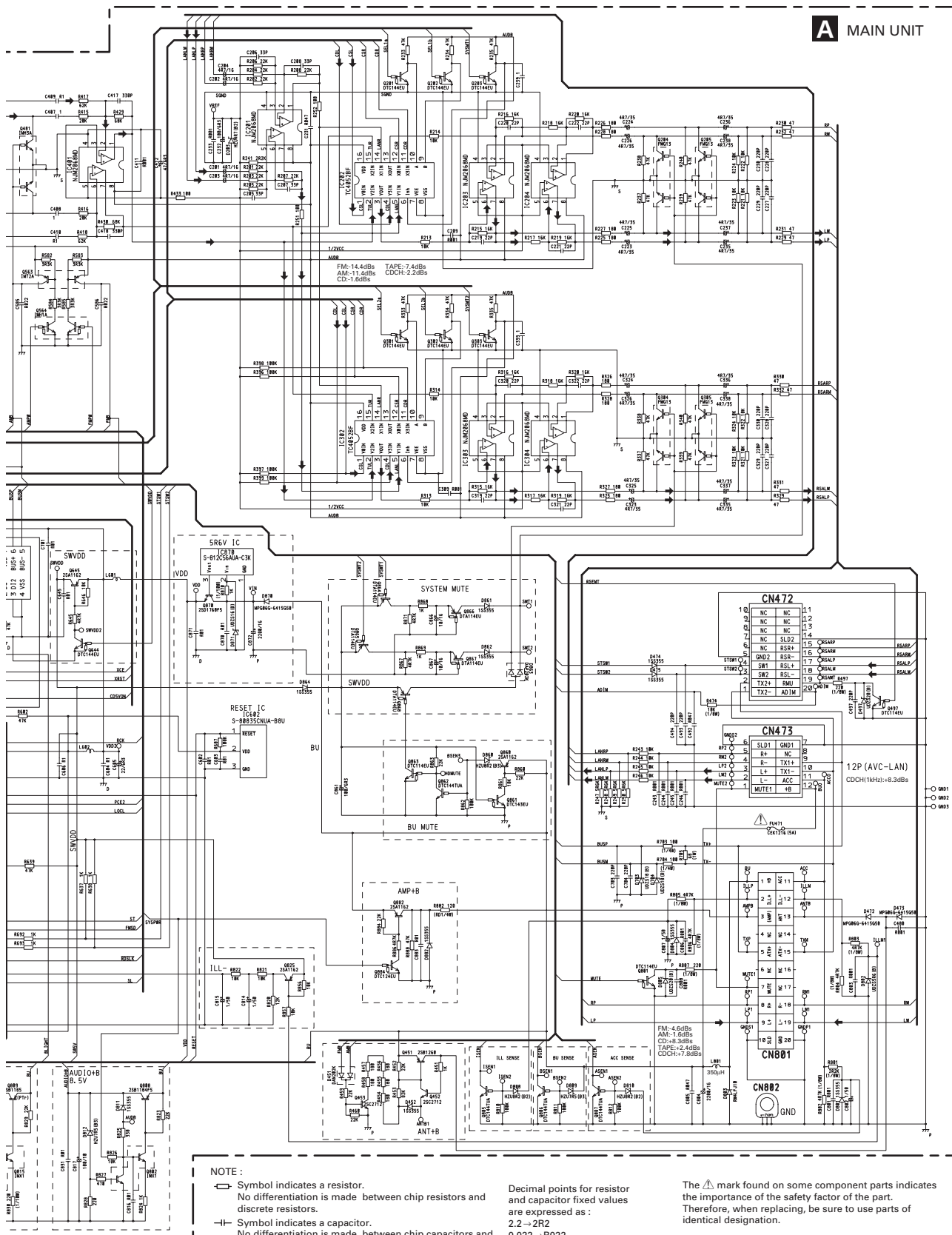
Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".

A-a



A-b

A MAIN UNIT



A-b

A

B

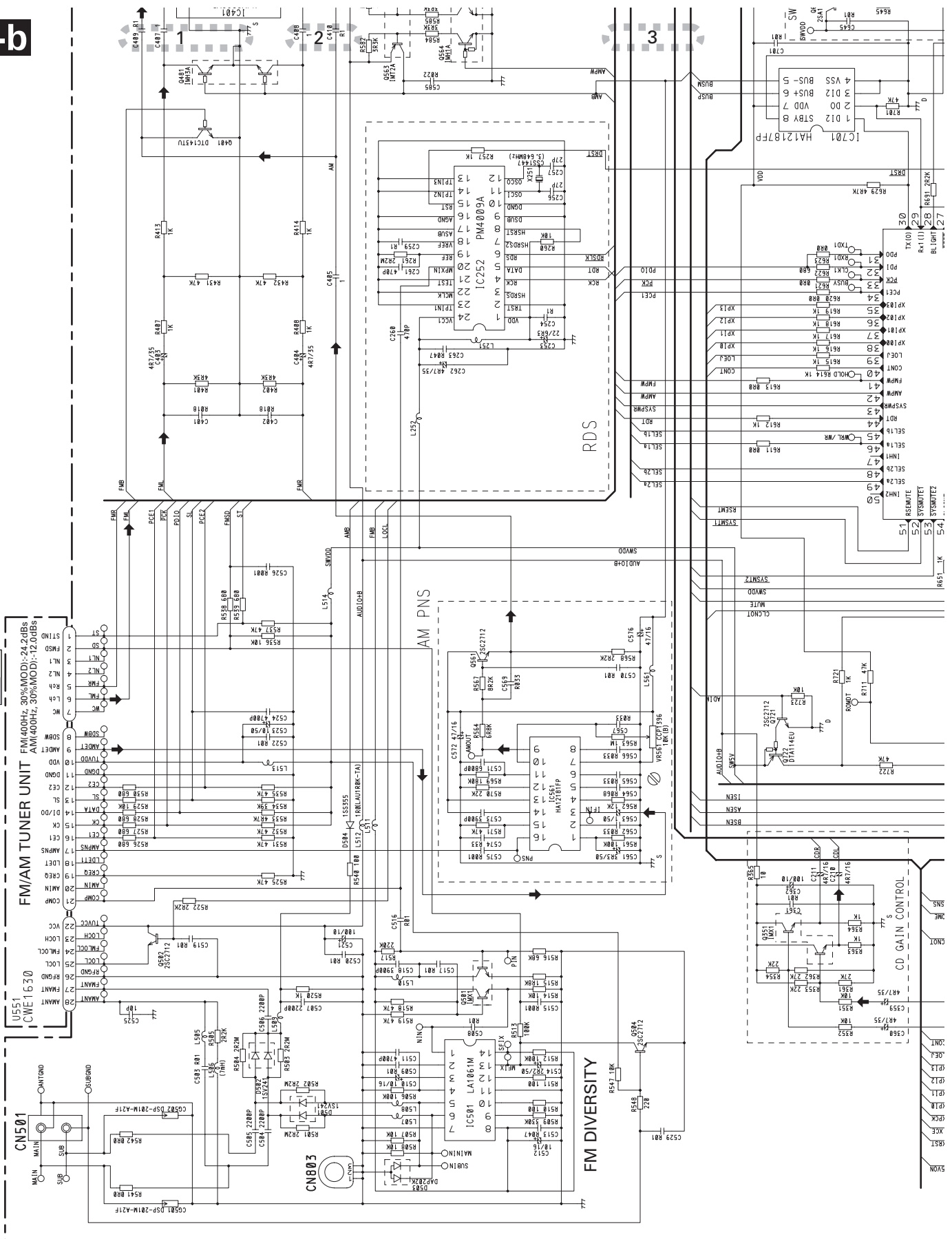
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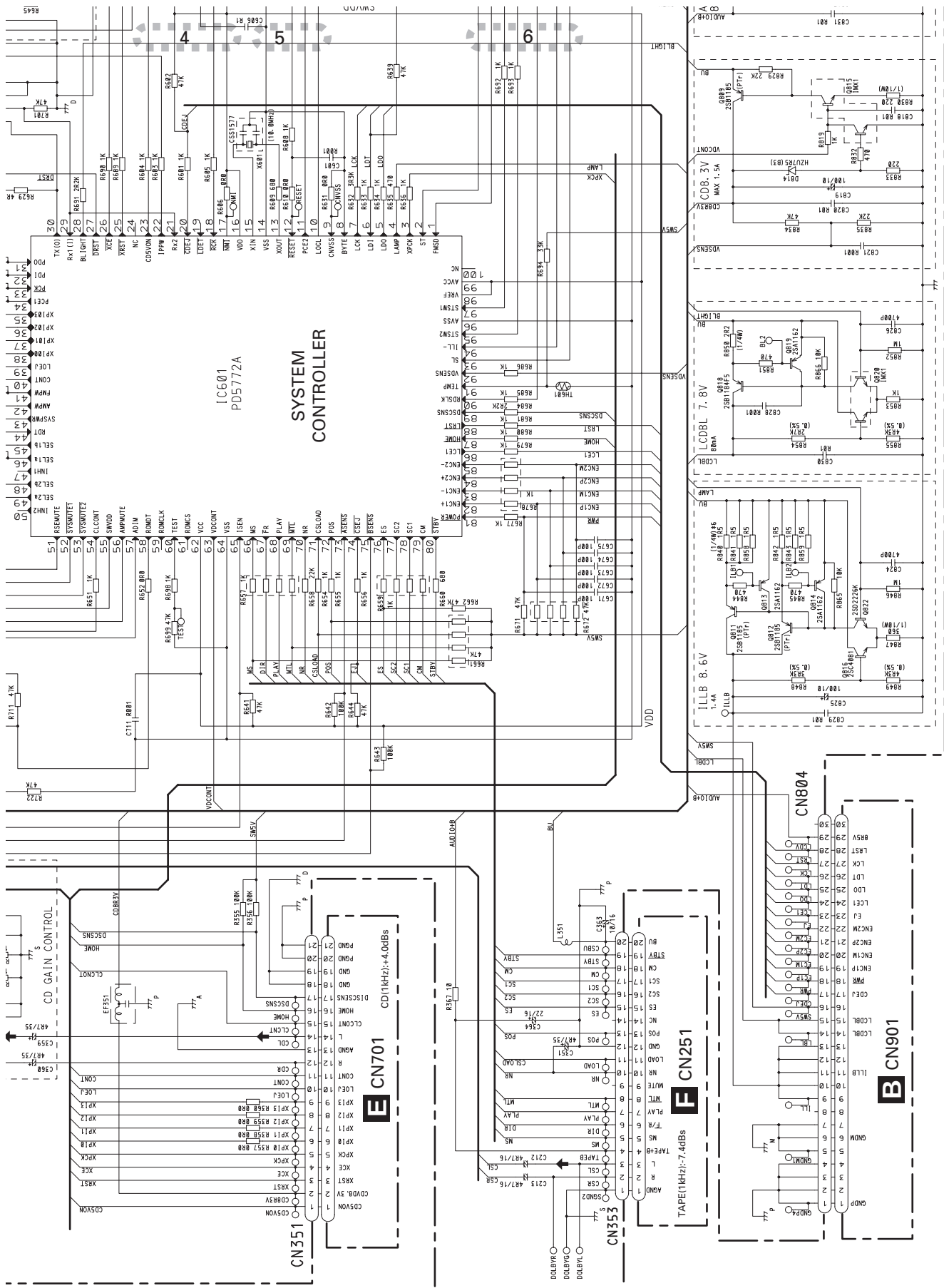
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F

A-a A-b



A-a

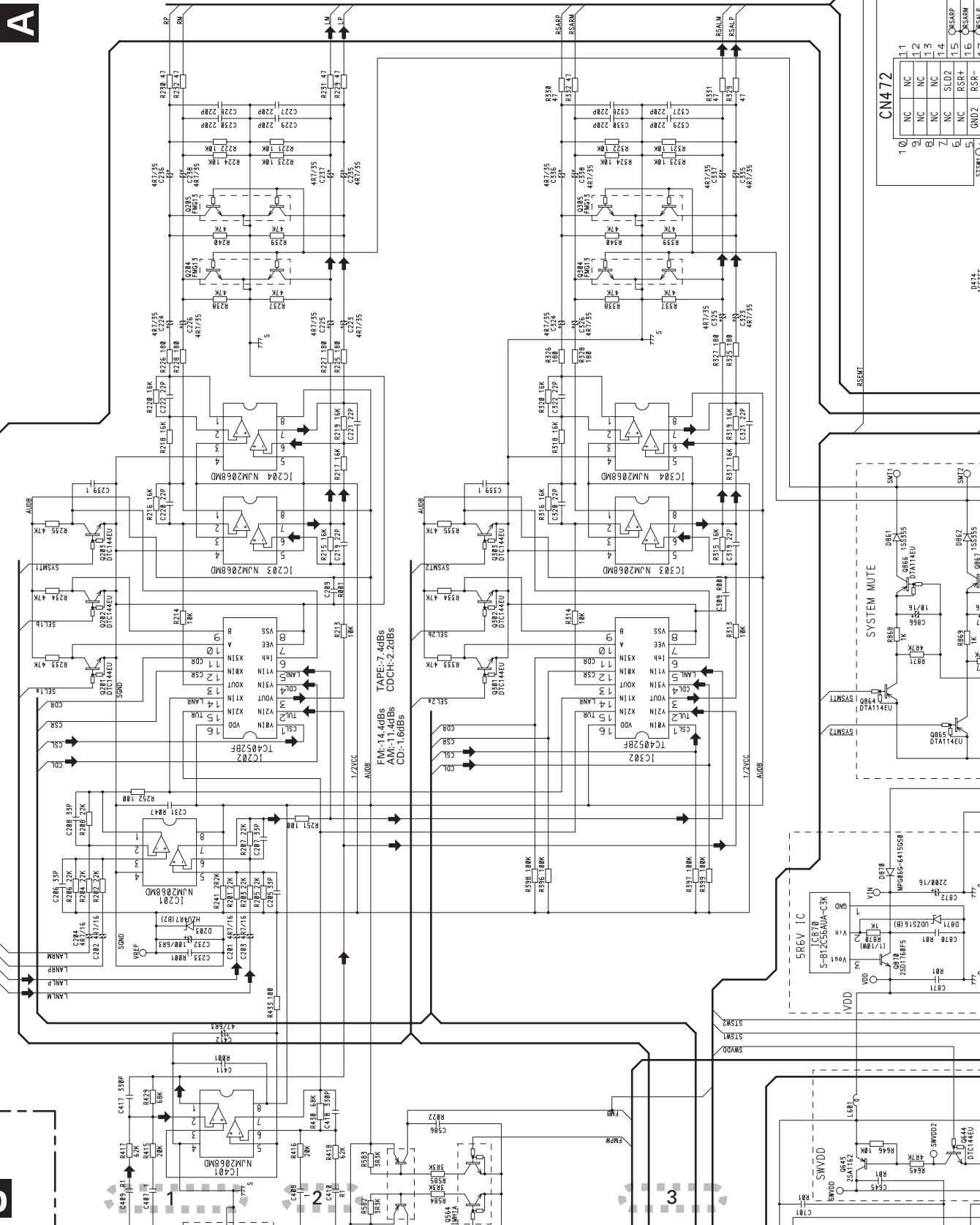


A-b

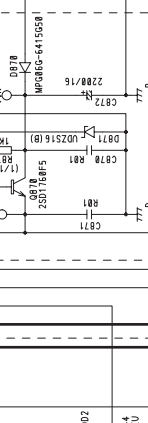
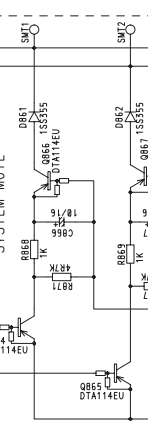
A-a

A-a

MAIN UNIT



Pin	Signal	Level
1	NC	NC
2	NC	NC
3	NC	NC
4	NC	NC
5	SLD2	1.5
6	NC	NC
7	RSR+	1.5
8	RSR-	1.5
9	GND2	GND



A-b



Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

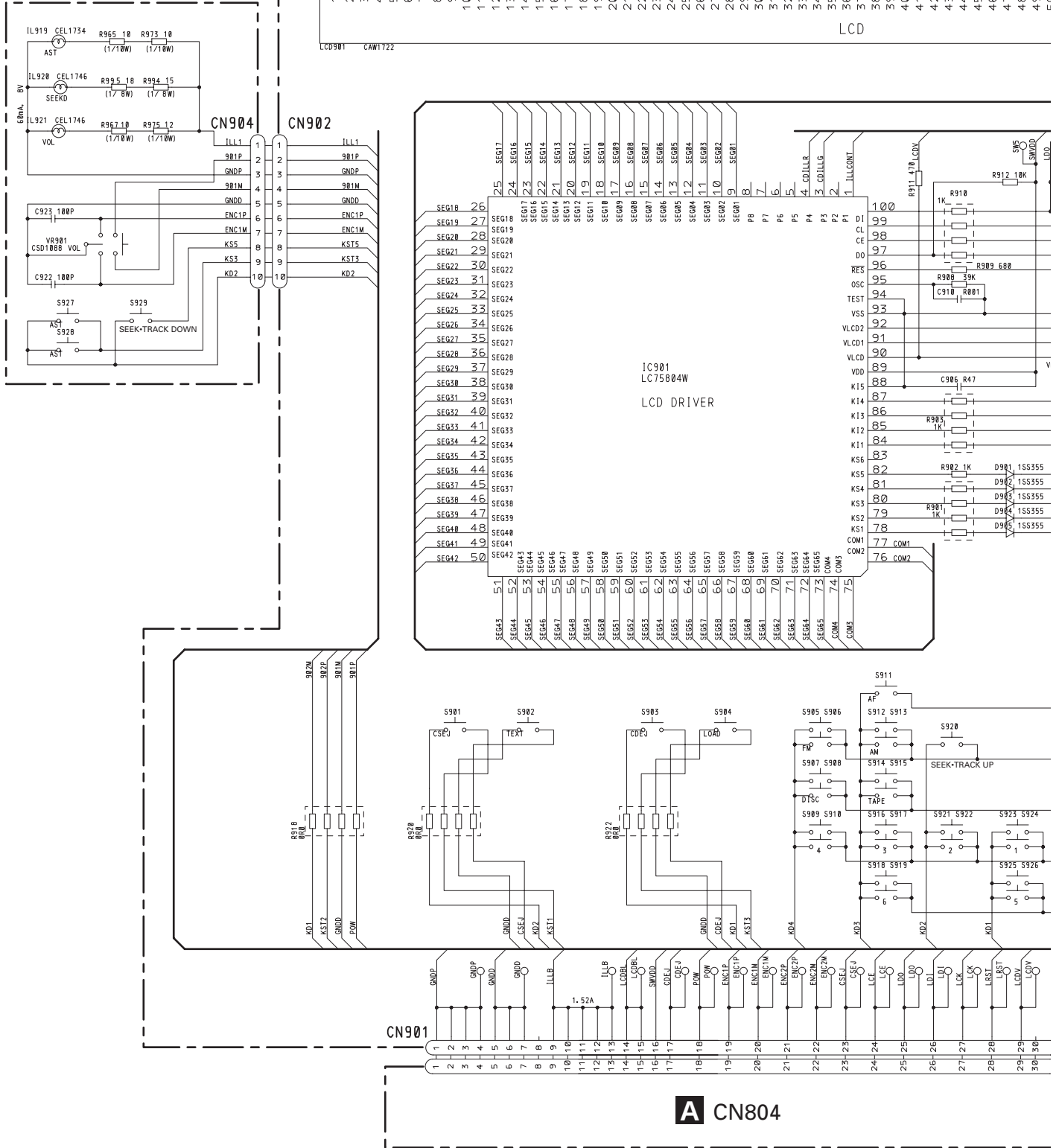
$$0.022 \rightarrow R022$$

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.

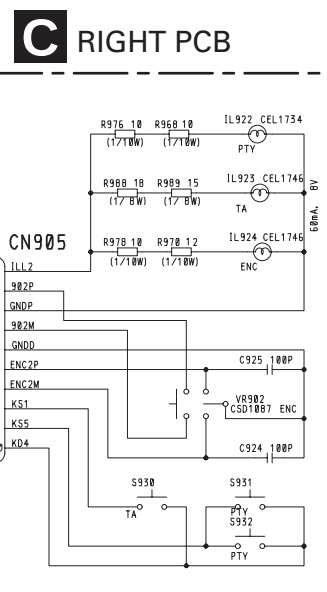
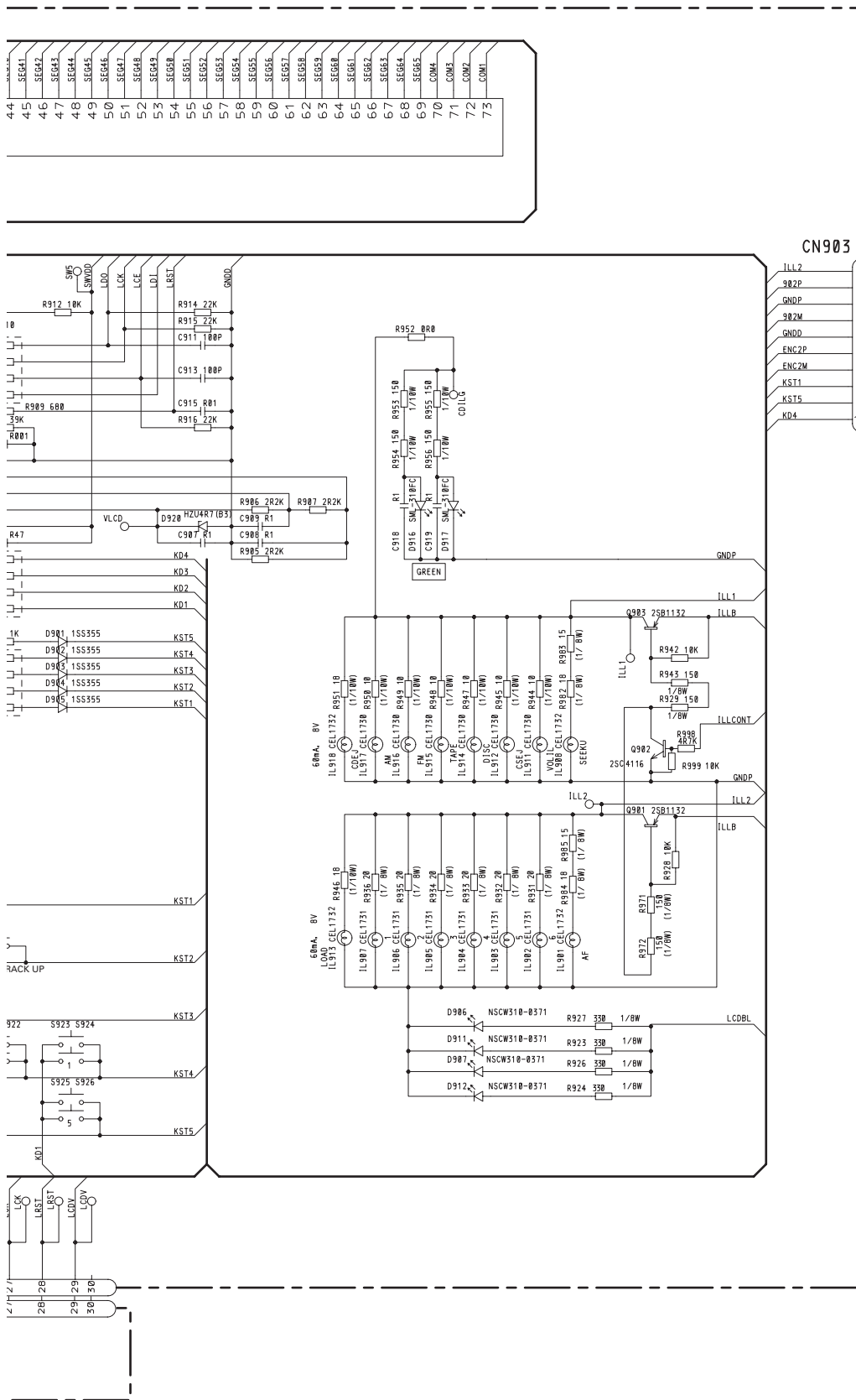
3.3 KEYBOARD UNIT

B KEYBOARD PCB

D LEFT PCB



B D



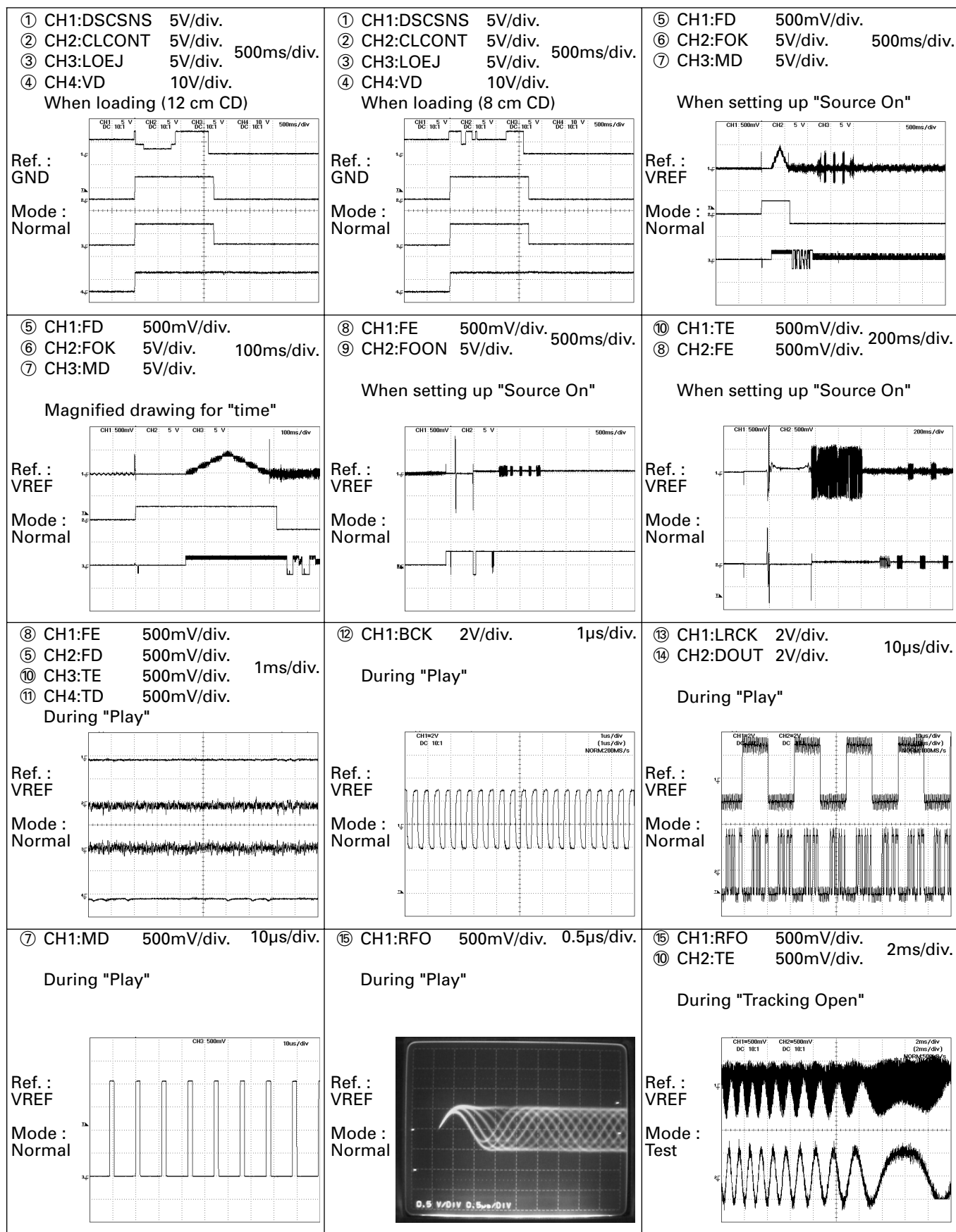
KEYBOARD UNIT
Consists of
KEYBOARD PCB
RIGHT PCB
LEFT PCB

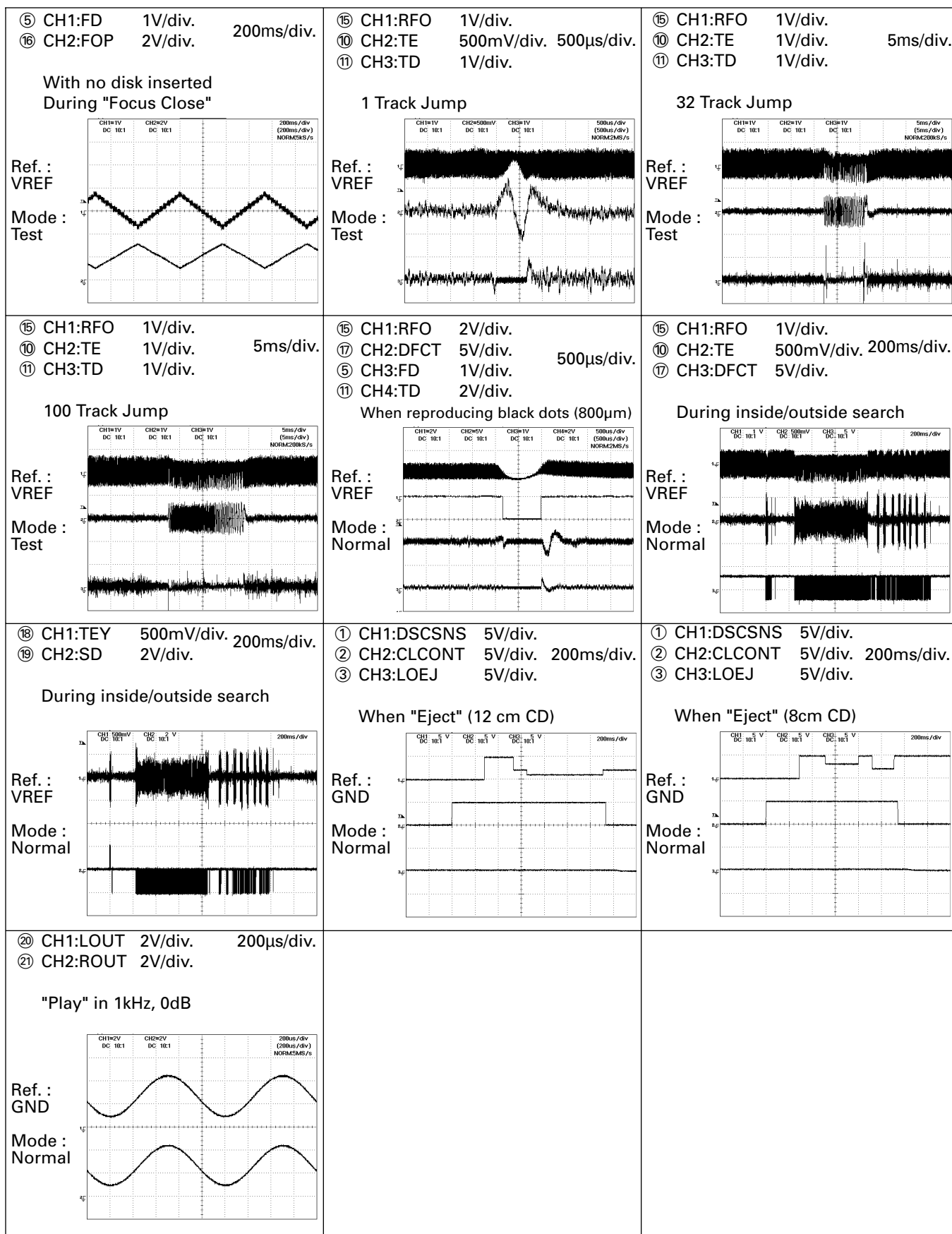
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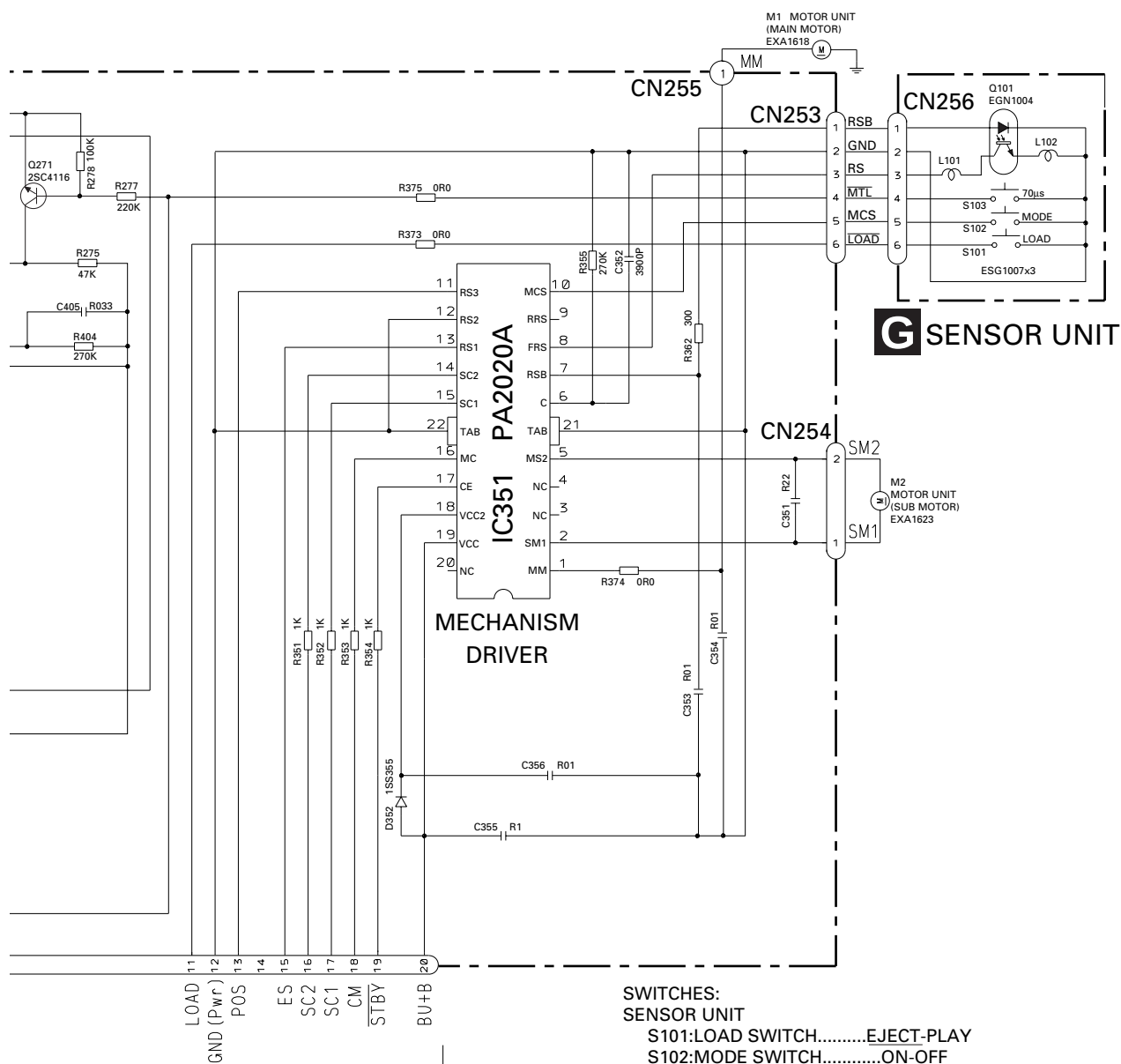


Note:1. The encircled numbers denote measuring points in the circuit diagram.
2. Reference voltage
VREF:2.1V

● Waveforms







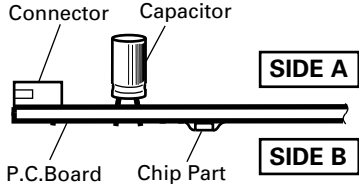
4. PCB CONNECTION DIAGRAM

4.1 MAIN UNIT

NOTE FOR PCB DIAGRAMS

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

2.Viewpoint of PCB diagrams

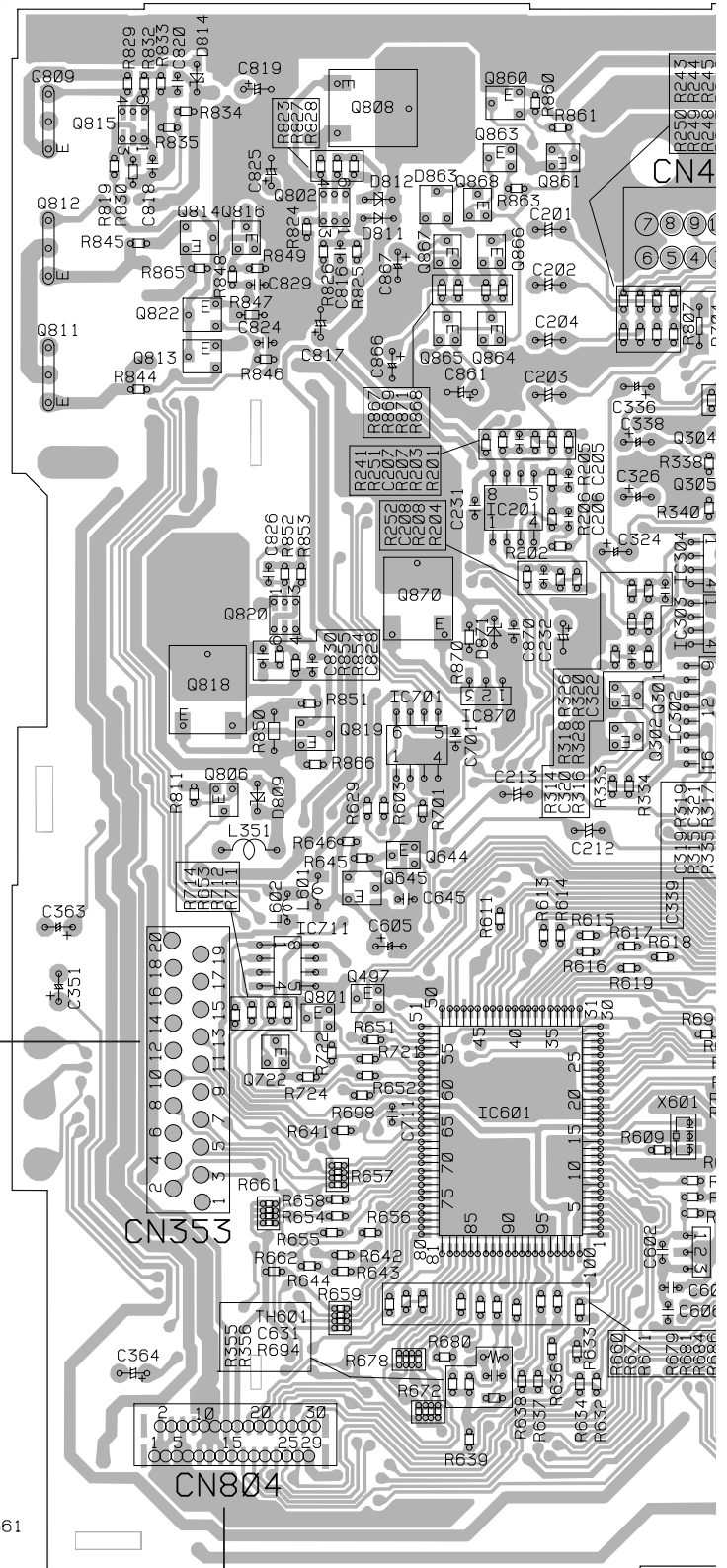


A MAIN UNIT

IC, Q	ADJ
Q809 Q860	
Q808	
Q815	
Q863	
Q802 Q868 Q861	
Q812 Q814 Q816	
Q866	
Q867	
Q811 Q822	
Q813 Q865 Q864	
Q304 Q807 Q805	
Q305	
IC201 Q204	
Q205	
Q870 IC304	
Q820	
IC303 IC204 Q884	
Q818	
IC701 Q301	
Q819 IC870 IC203	
IC302 Q303 Q882	
Q302 Q806 Q201	
Q451 IC501	
Q202 IC202 Q203	
Q563	
Q644	
Q645 Q452	
IC711 Q825 Q453	
IC401 Q564	
Q497 Q501	
Q801	

F CN251

Q722	
IC601 Q481	
IC252	
IC602	
IC561	
Q351	VR561



A

A

A MAIN UNIT

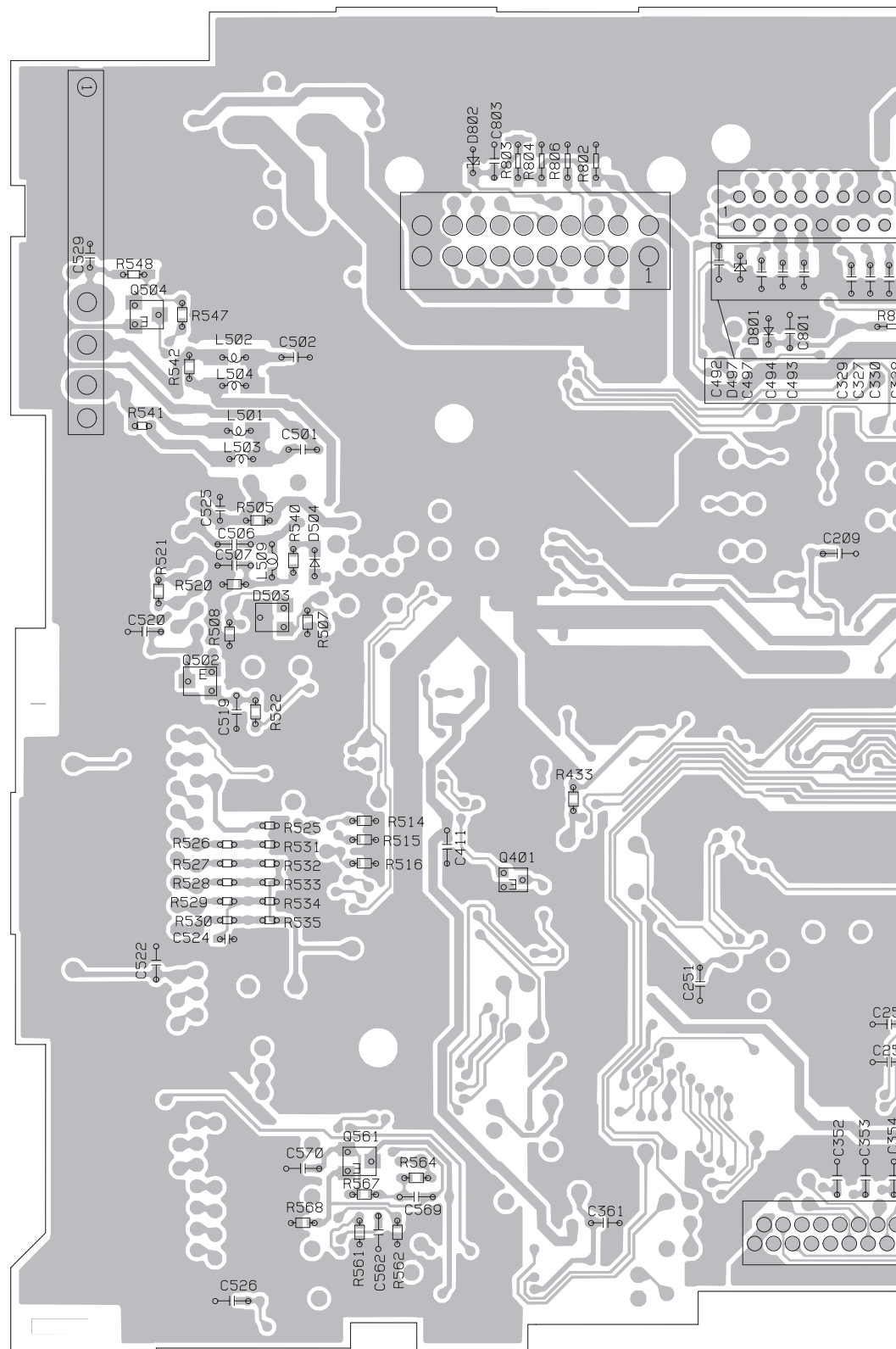
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C

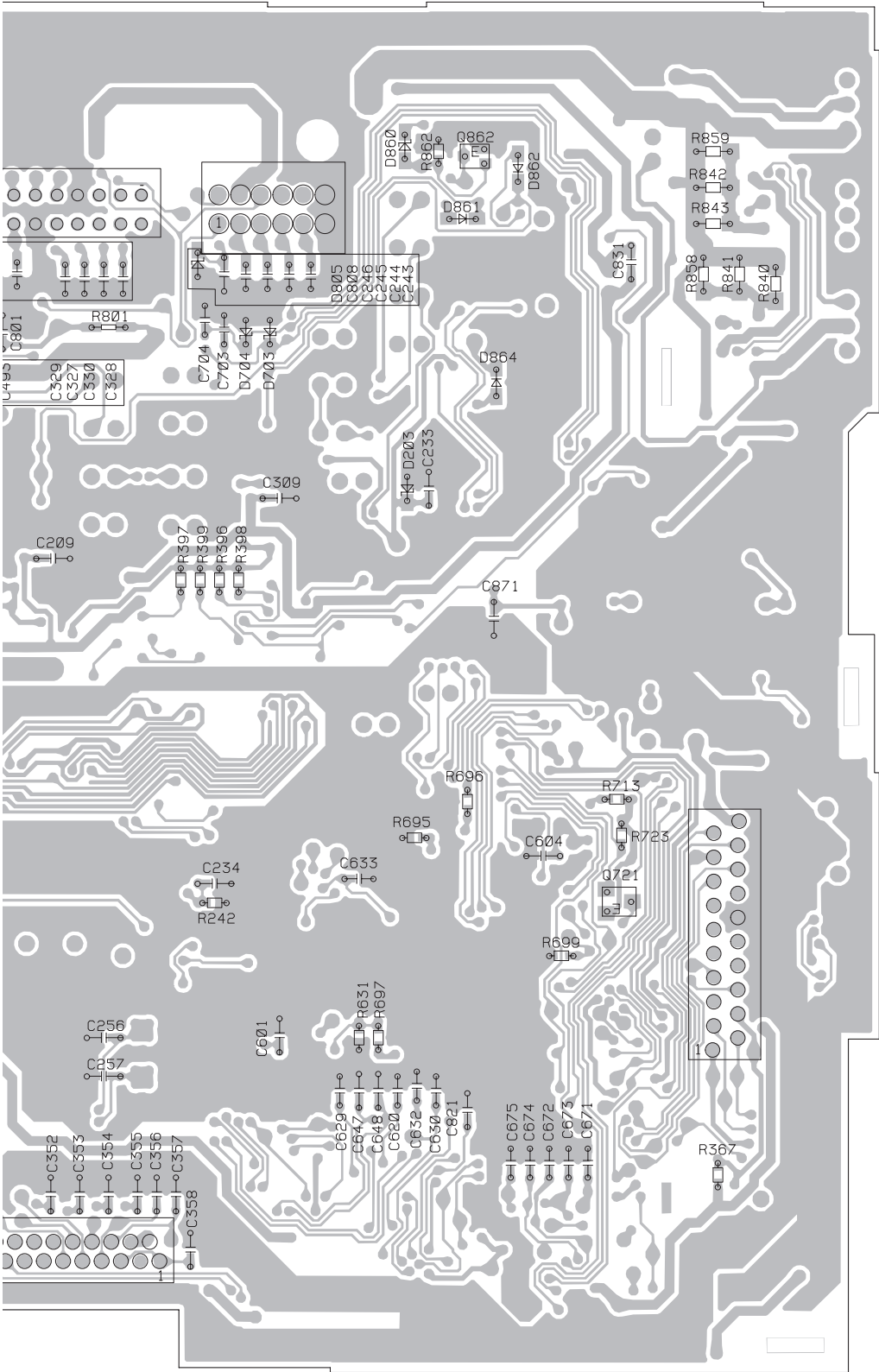
D

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SIDE B



IC, Q

Q862

Q504

Q502

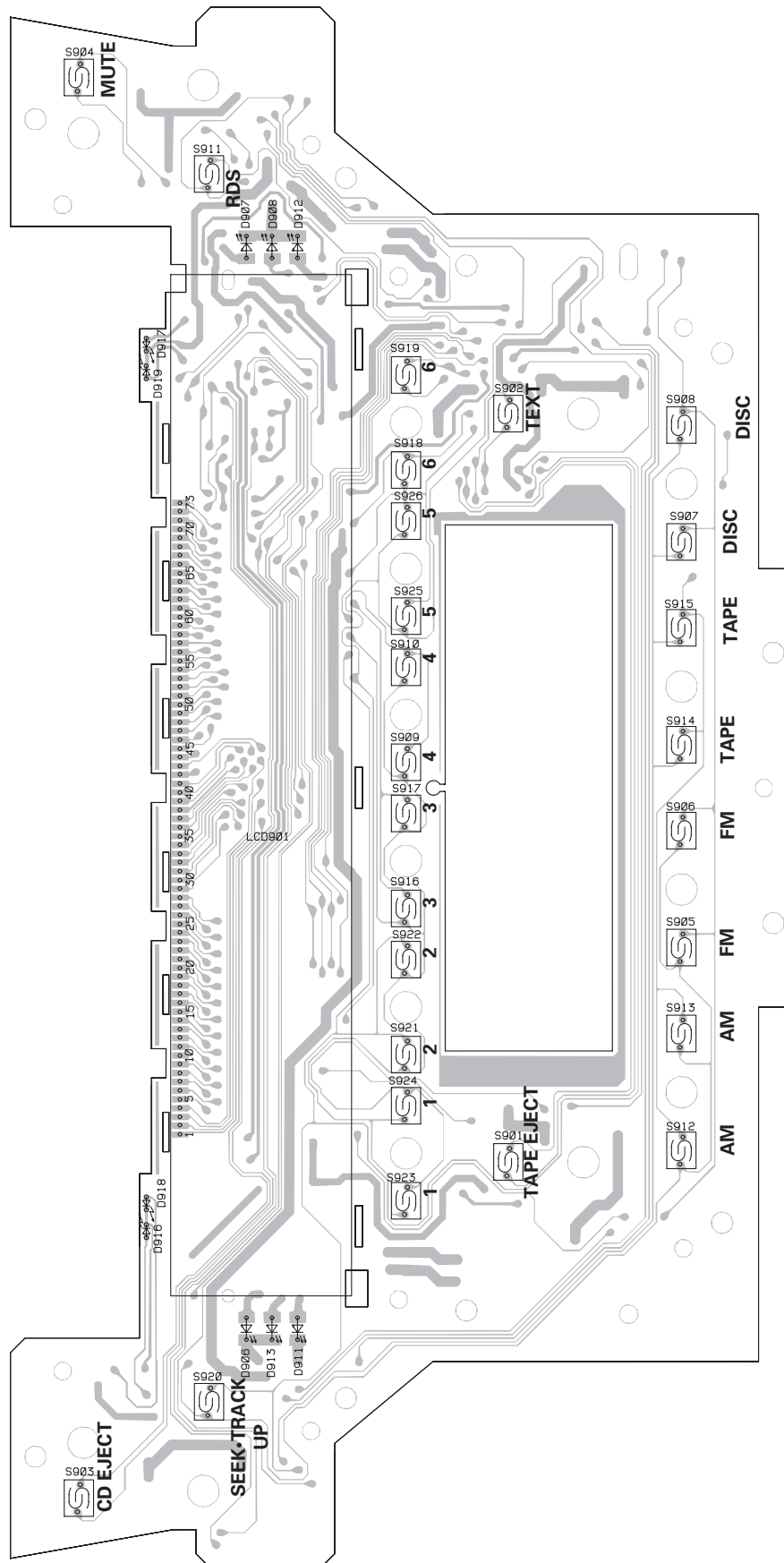
Q401
Q721

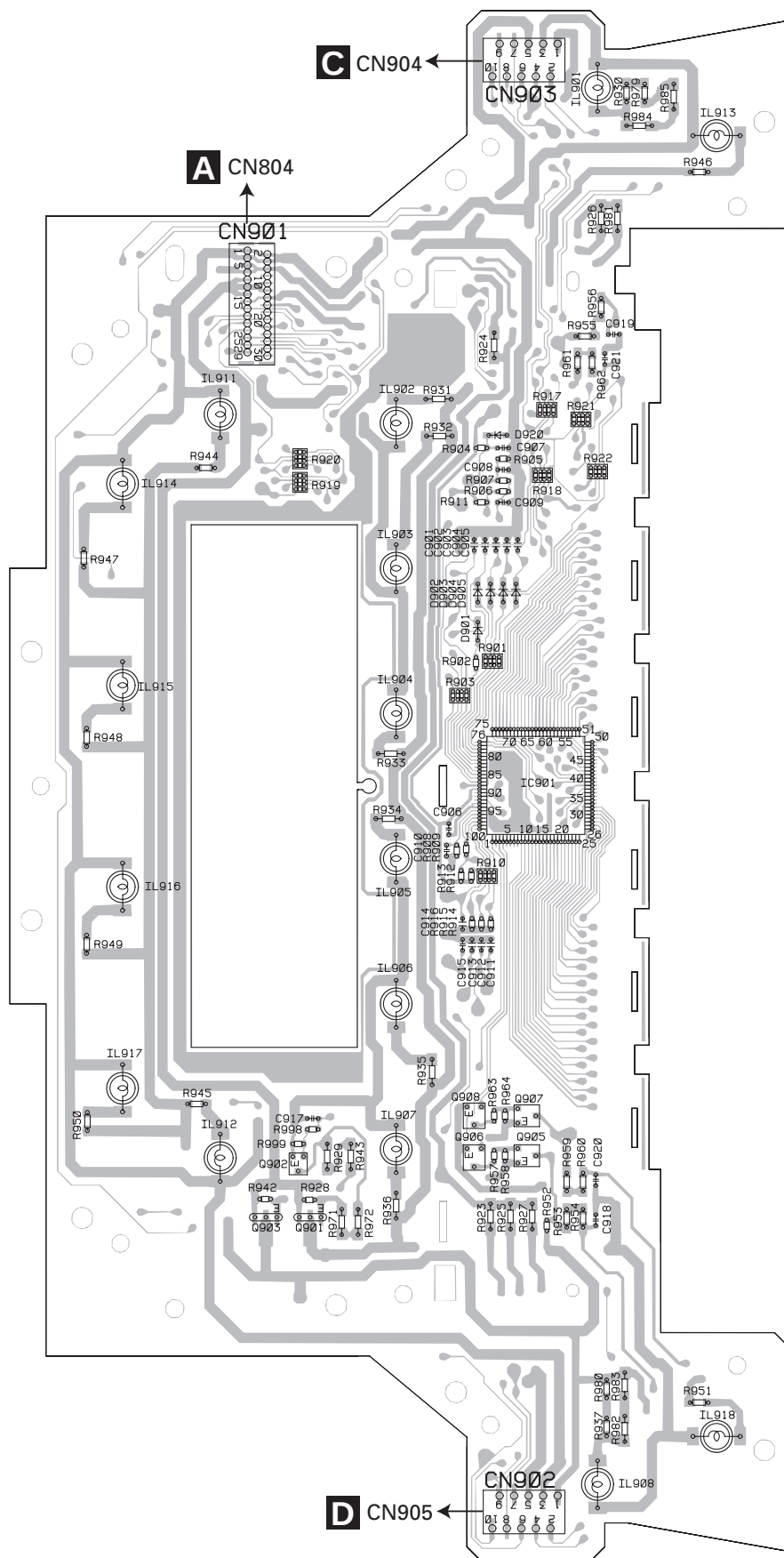
Q561

4.2 KEYBOARD UNIT

B KEYBOARD PCB

SIDE A





IC. Q

IC901

Q908 Q907

Q906 Q905

Q902

Q903 Q901

D CN905

C CN904

A CN804

CN901

CN902

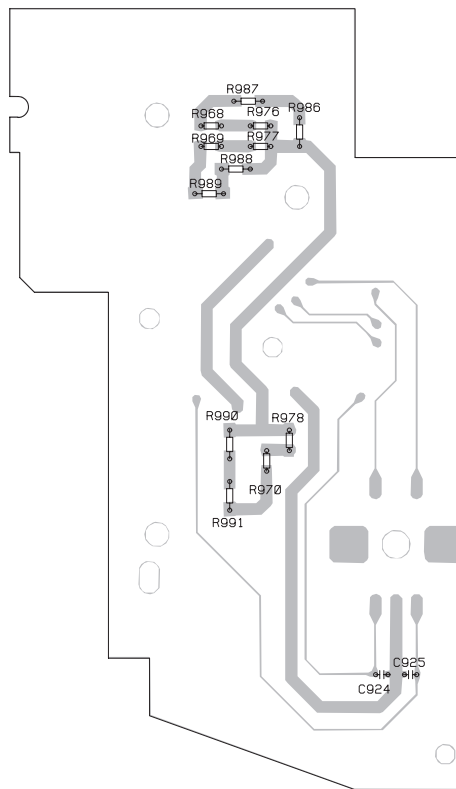
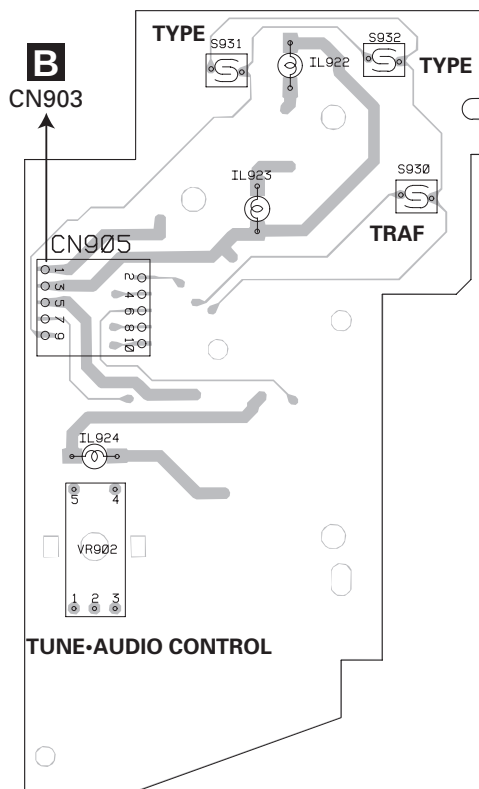
CN903

C RIGHT PCB

SIDE A

C RIGHTT PCB

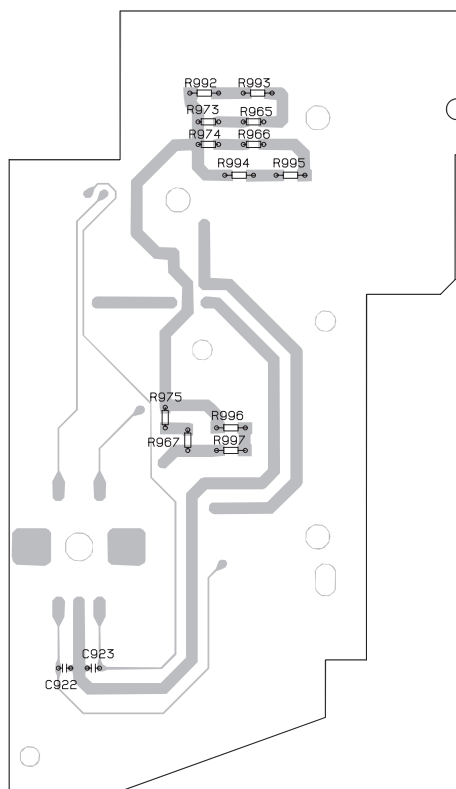
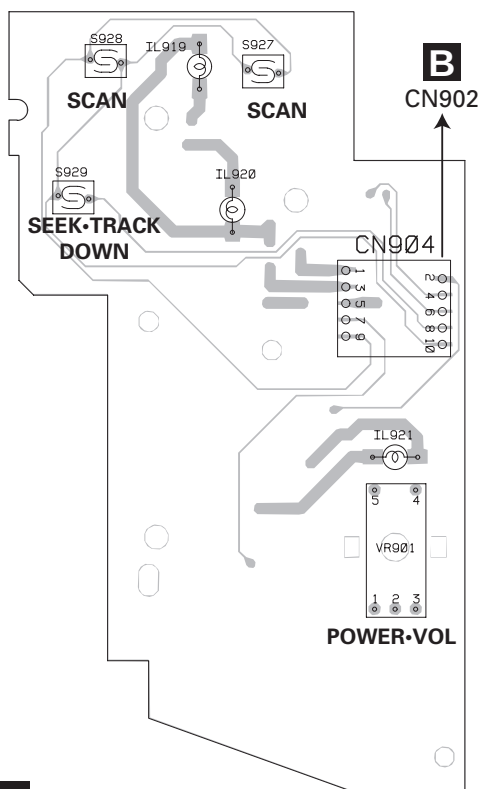
SIDE B

**D** LEFT PCB

SIDE A

D LEFT PCB

SIDE B





5



6



7



8



A



B



C



D



E



F



5



6



7



8

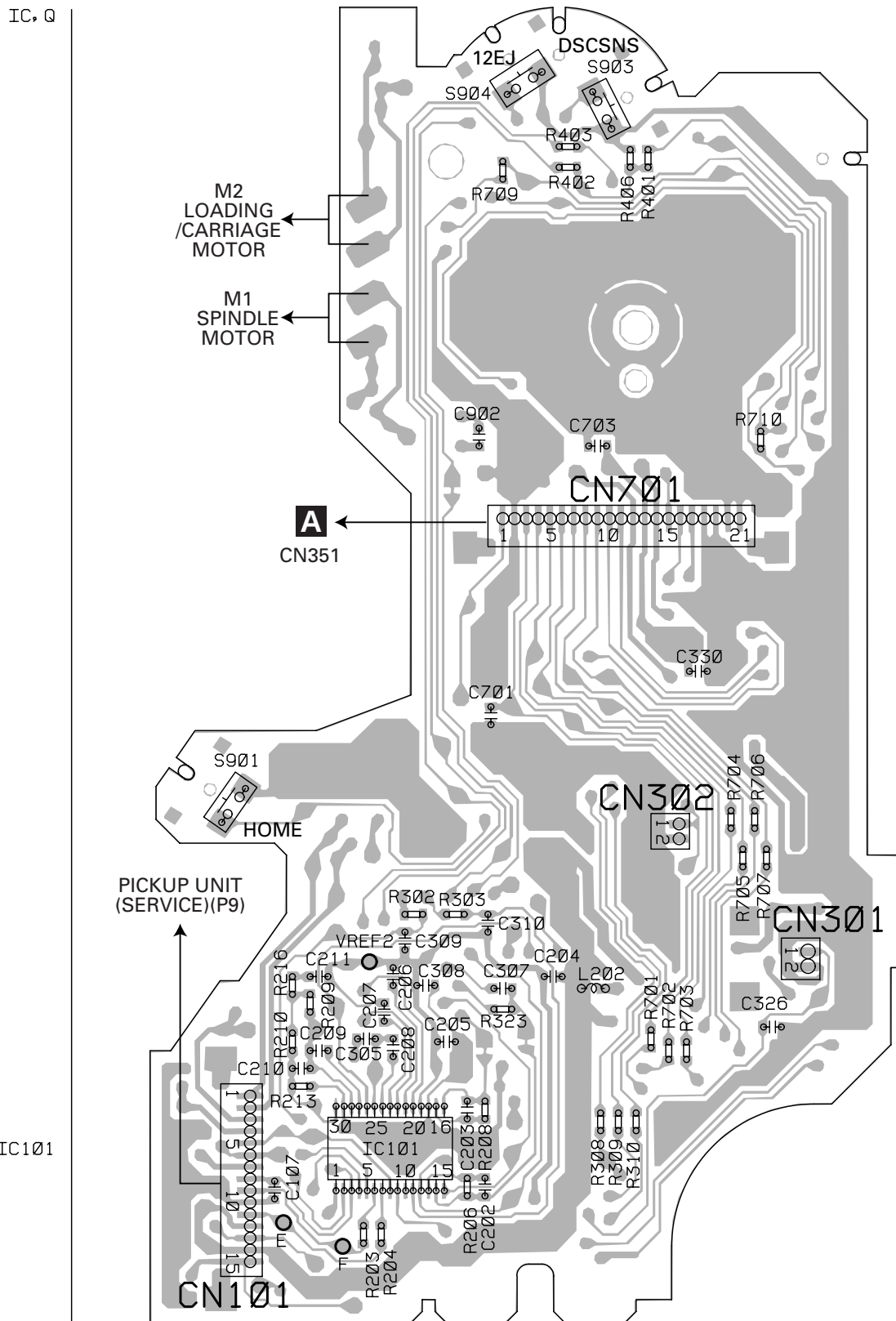


4.3 CD MECHANISM MODULE

E CONTROL UNIT

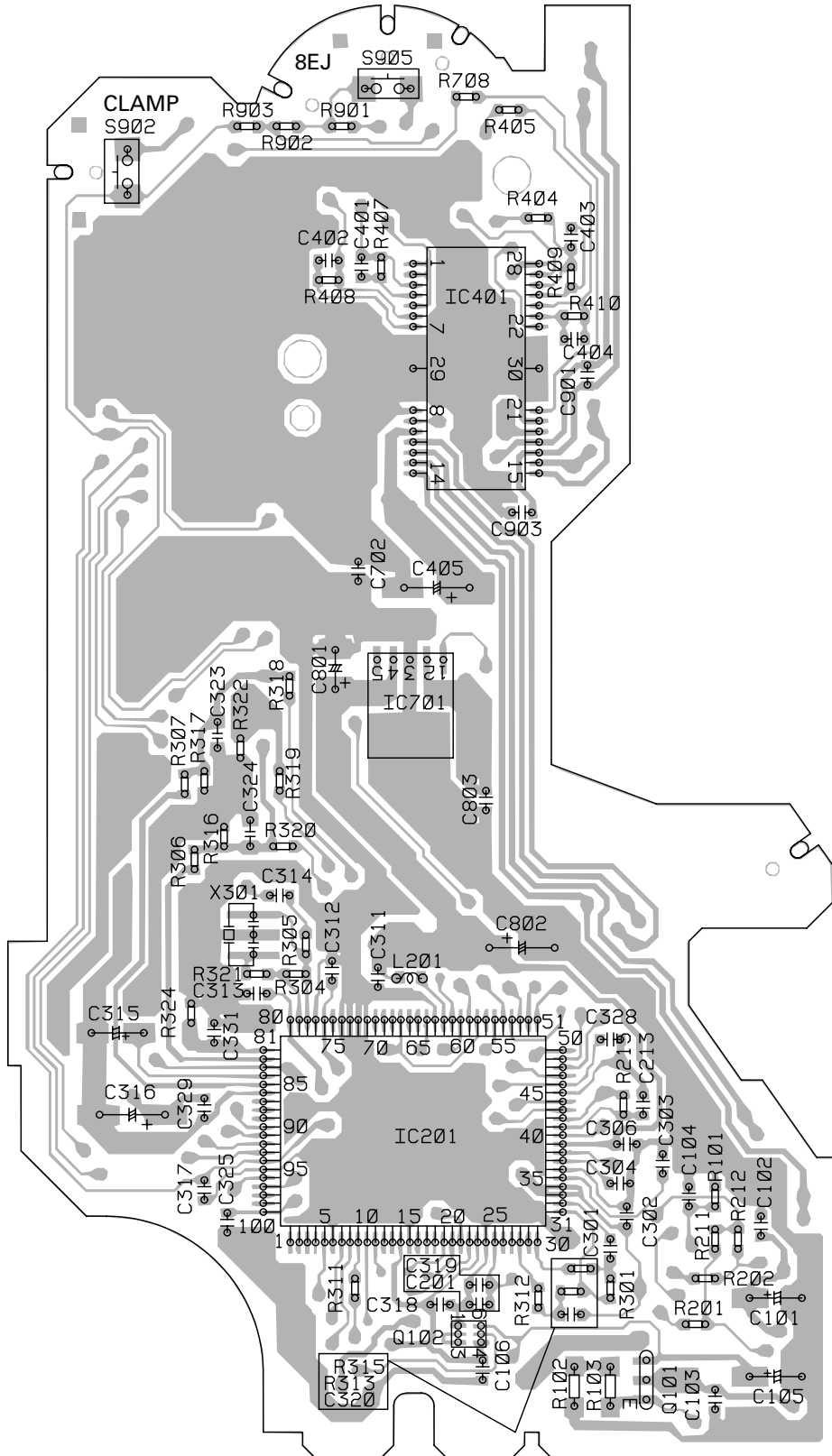
SIDE A

IC, Q



E CONTROL UNIT

SIDE B



IC, Q

IC401

IC701

IC201

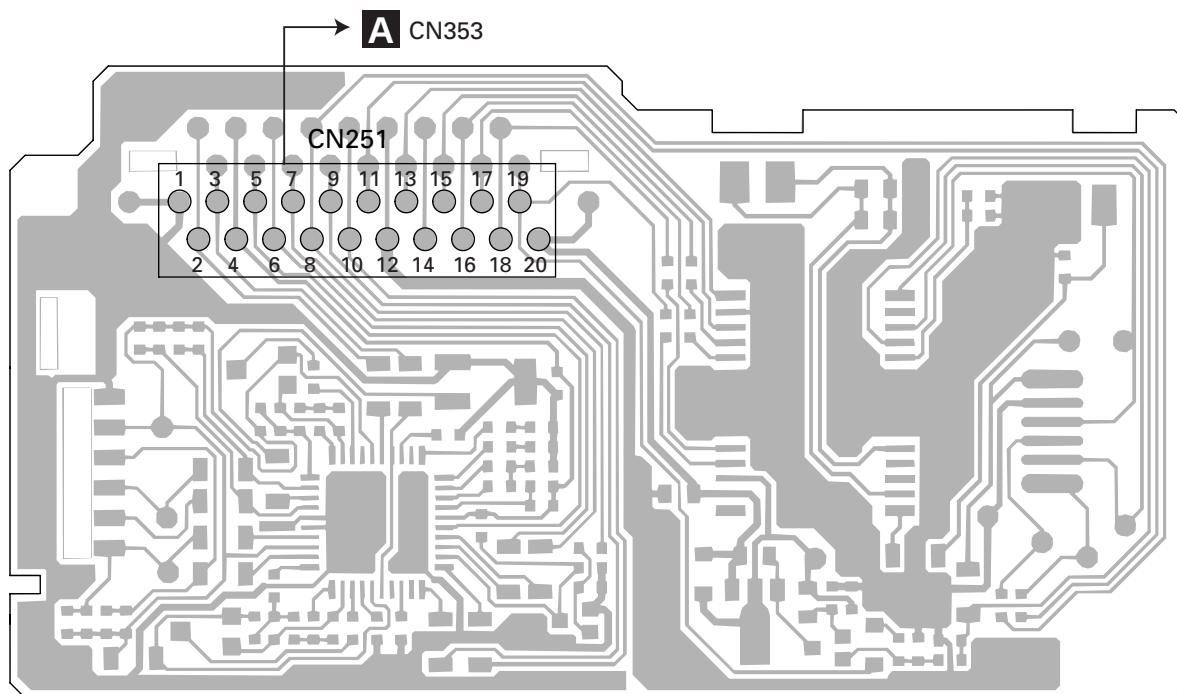
Q102

Q101

4.4 CASSETTE MECHANISM MODULE

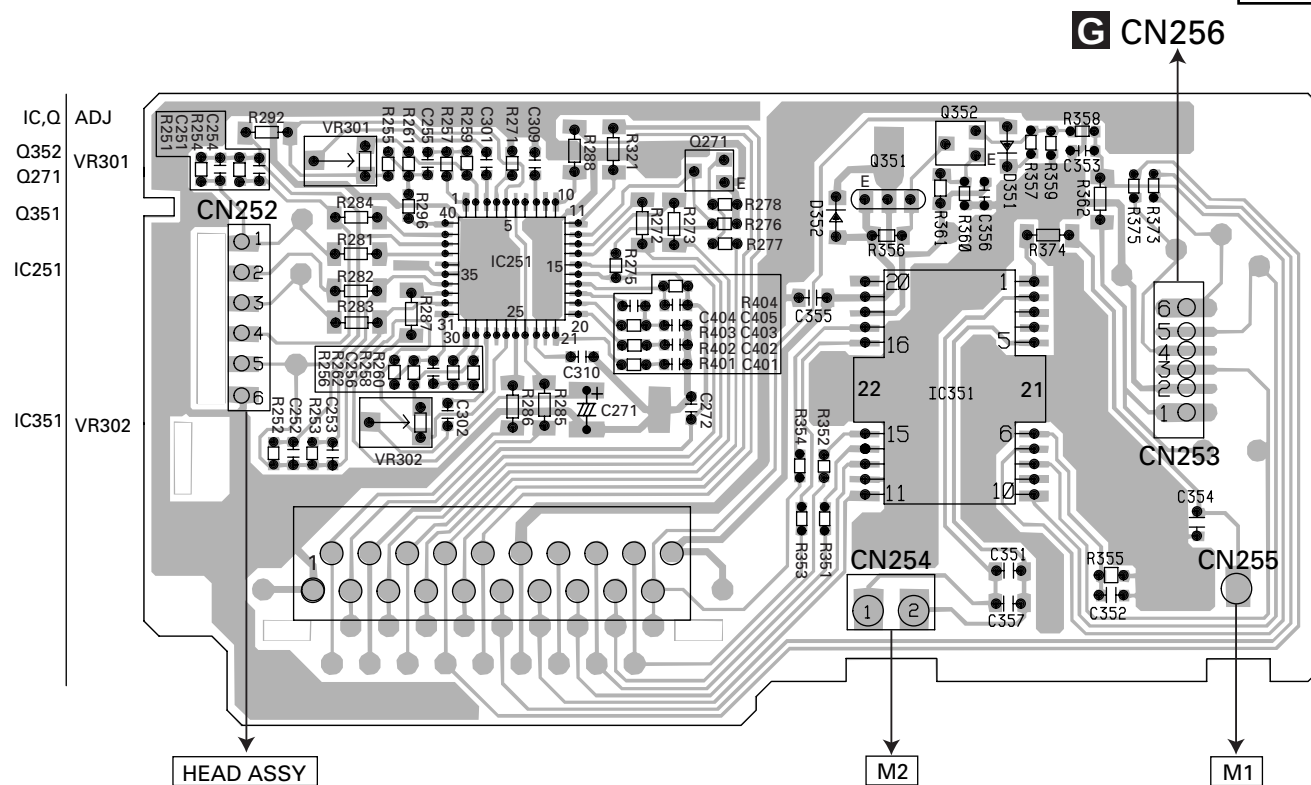
F DECK UNIT

SIDE A



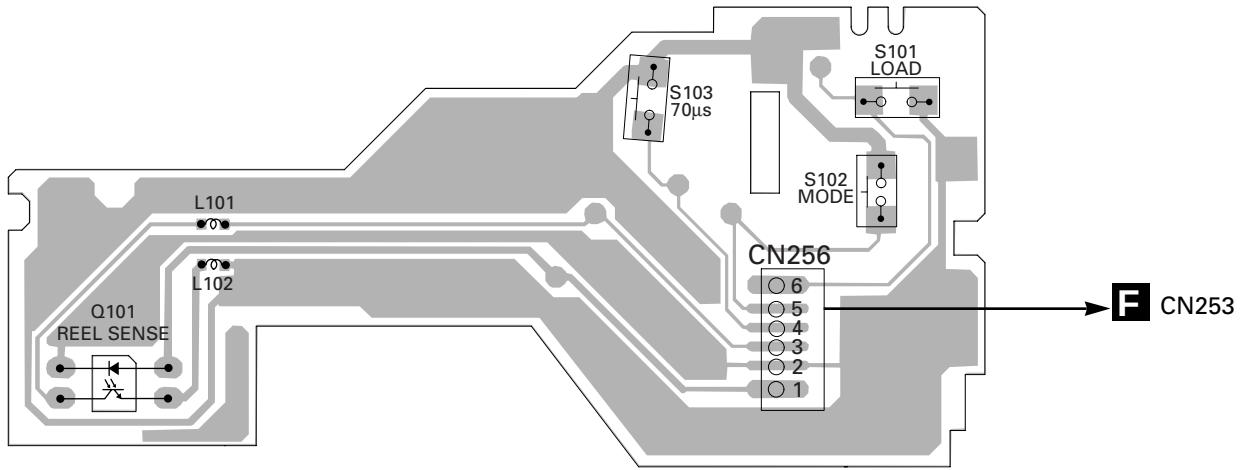
F DECK UNIT

SIDE B



F
40

G SENSOR UNIT



5. ELECTRICAL PARTS LIST

NOTES:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/OSOOOJ,RS1/OOSOOOJ

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
A Unit Number : CWM8384 Unit Name : Main Unit		Q 811 Transistor	2SB1185
		Q 812 Transistor	2SB1185
MISCELLANEOUS		Q 813 Transistor	2SA1162
		Q 814 Transistor	2SA1162
IC 201 IC	NJM2068MD	Q 815 Transistor	IMX1
IC 202 IC	TC4052BF	Q 816 Transistor	2SC4081
IC 203 IC	NJM2068MD		
IC 204 IC	NJM2068MD	Q 818 Transistor	2SB1184F5
IC 252 IC	PM4009A	Q 819 Transistor	2SA1162
		Q 820 Transistor	IMX1
IC 302 IC	TC4052BF	Q 822 Transistor	2SD2226K
IC 303 IC	NJM2068MD	Q 825 Transistor	2SA1162
IC 304 IC	NJM2068MD		
IC 401 IC	NJM2068MD	Q 860 Transistor	2SA1162
IC 501 IC	LA1061M	Q 861 Transistor	DTC143EU
		Q 862 Transistor	DTC144TUA
IC 561 IC	HA12181FP	Q 863 Transistor	DTC114EU
IC 601 IC	PD5772A	Q 864 Transistor	DTA114EU
IC 602 IC	S-80835CNUA-B8U		
IC 701 IC	HA12187FP	Q 865 Transistor	DTA114EU
IC 870 IC	S-812C56AUA-C3K	Q 866 Transistor	DTA114EU
		Q 867 Transistor	DTA114EU
		Q 868 Transistor	DTA114EU
Q 201 Transistor	DTC144EU	Q 870 Transistor	2SD1760F5
Q 202 Transistor	DTC144EU		
Q 203 Transistor	DTC144EU	Q 882 Transistor	2SA1162
Q 204 Transistor	FMG13	Q 884 Transistor	DTC124EU
Q 205 Transistor	FMG13	D 203 Diode	HZU4R7(B2)
		D 451 Diode	DAN202K
Q 301 Transistor	DTC144EU	D 452 Diode	1SS355
Q 302 Transistor	DTC144EU		
Q 303 Transistor	DTC144EU	D 472 Diode	MPG06G-6415G50
Q 304 Transistor	FMG13	D 473 Diode	MPG06G-6415G50
Q 305 Transistor	FMG13	D 474 Diode	1SS355
		D 475 Diode	1SS355
Q 351 Transistor	IMX1	D 497 Diode	UDZS20(B)
Q 401 Transistor	DTC143TU		
Q 451 Transistor	2SB1260	D 501 Diode	1SV241
Q 452 Transistor	2SC2712	D 502 Diode	1SV241
Q 453 Transistor	2SC2712	D 503 Diode	DAP202K
		D 504 Diode	1SS355
Q 481 Transistor	IMH3A	D 703 Diode	UDZS18(B)
Q 497 Transistor	DTC114EU		
Q 501 Transistor	IMX1	D 704 Diode	UDZS18(B)
Q 502 Transistor	2SC2712	D 801 Diode	1SS355
Q 504 Transistor	2SC2712	D 802 Diode	UDZS5R6(B)
		D 803 Diode	RM4LFJ10
Q 561 Transistor	2SC2712	D 804 Diode	1SS355
Q 563 Transistor	IMT2A		
Q 564 Transistor	IMH1A	D 805 Diode	UDZS20(B)
Q 644 Transistor	DTC144EU	D 808 Diode	HZU8R2(B2)
Q 645 Transistor	2SA1162	D 809 Diode	HZU7R5(B3)
		D 810 Diode	HZU8R2(B2)
Q 721 Transistor	2SC2712	D 811 Diode	1SS355
Q 722 Transistor	DTA114EU		
Q 801 Transistor	DTC114EU	D 812 Diode	HZU7R5(B3)
Q 802 Transistor	IMX1	D 814 Diode	HZU7R5(B3)
Q 805 Transistor	DTC144TUA	D 860 Diode	HZU8R2(B3)
		D 861 Diode	1SS355
Q 806 Transistor	DTC144TUA	D 862 Diode	1SS355
Q 807 Transistor	DTC144TUA		
Q 808 Transistor	2SB1184F5	D 863 Diode	DAP202K
Q 809 Transistor	2SB1185		

====Circuit Symbol and No.===Part Name			Part No.	====Circuit Symbol and No.===Part Name			Part No.	A
D	864	Diode	1SS355					
D	870	Diode	MPG06G-6415G50	R	241		RS1/16S222J	
D	871	Diode	UDZS16(B)	R	243		RS1/16S103J	
D	882	Diode	1SS355	R	244		RS1/16S103J	
				R	245		RS1/16S103J	
				R	246		RS1/16S103J	
L	251	Ferri-Inductor	LAU101K					
L	252	Ferri-Inductor	LAU100K					
L	351	Inductor	LFEA4R7J	R	247		RS1/16S562J	
L	505	Ferri-Inductor	LAU4R7K	R	248		RS1/16S562J	
L	506	Coil	CTB1112	R	249		RS1/16S562J	
				R	250		RS1/16S562J	
				R	251		RS1/16S101J	
L	507	Inductor	LCTC6R8K3216					
L	508	Inductor	LCTC6R8K3216					
L	509	Inductor	LCTC6R8K3216	R	252		RS1/16S101J	
L	510	Inductor	LCTA561J4532	R	257		RS1/16S102J	
L	511	Ferri-Inductor	LAU4R7K	R	260		RS1/16S103J	
				R	261		RS1/16S225J	
				R	313		RS1/16S103J	
L	512	Inductor	LAU1R0K					
L	513	Inductor	LAU1R0K					
L	514	Inductor	LAU1R0K	R	314		RS1/16S103J	
L	561	Ferri-Inductor	LAU4R7K	R	315		RS1/16S163J	
L	601	Inductor	LCTA100J3225	R	316		RS1/16S163J	
				R	317		RS1/16S163J	
				R	318		RS1/16S163J	
L	602	Inductor	LCYA150J2520					
L	801	Coil 350μH	CTH1276					
CG	501	Surge Protector	DSP-201M-A21F	R	319		RS1/16S163J	
CG	502	Surge Protector	DSP-201M-A21F	R	320		RS1/16S163J	
TH	601	Thermistor	CCX1015	R	321		RS1/16S103J	
				R	322		RS1/16S103J	
				R	323		RS1/16S103J	
X	251	Crystal Resonator 3.648MHz	CSS1447					
X	601	Radiator 10.0MHz	CSS1577					
VR	561	Semi-Fixed 10kΩ(B)	CCP1396	R	324		RS1/16S103J	
FU	471	Fuse 5A	CEK1216	R	325		RS1/16S181J	
		FM/AM Tuner Unit	CWE1630	R	326		RS1/16S181J	
				R	327		RS1/16S181J	
EF	351	EMI Filter	CCG1163	R	328		RS1/16S181J	
RESISTORS				R	329		RS1/10S470J	
				R	330		RS1/10S470J	
R	201		RS1/16S223J	R	331		RS1/10S470J	
R	202		RS1/16S223J	R	332		RS1/10S470J	
R	203		RS1/16S223J	R	333		RS1/16S473J	
R	204		RS1/16S223J					
R	205		RS1/16S223J	R	334		RS1/16S473J	
				R	335		RS1/16S473J	
R	206		RS1/16S223J	R	337		RS1/16S473J	
R	207		RS1/16S223J	R	338		RS1/16S473J	
R	208		RS1/16S223J	R	339		RS1/16S473J	
R	213		RS1/16S103J					
R	214		RS1/16S103J	R	340		RS1/16S473J	
				R	351		RS1/16S103J	
R	215		RS1/16S163J	R	352		RS1/16S103J	
R	216		RS1/16S163J	R	353		RS1/16S223J	
R	217		RS1/16S163J	R	354		RS1/16S223J	
R	218		RS1/16S163J					
R	219		RS1/16S163J	R	355		RS1/16S104J	
				R	356		RS1/16S104J	
R	220		RS1/16S163J	R	357		RS1/16S0R0J	
R	221		RS1/16S103J	R	358		RS1/16S0R0J	
R	222		RS1/16S103J	R	359		RS1/16S0R0J	
R	223		RS1/16S103J					
R	224		RS1/16S103J	R	360		RS1/16S0R0J	
				R	361		RS1/16S273J	
R	225		RS1/16S181J	R	362		RS1/16S273J	
R	226		RS1/16S181J	R	363		RS1/16S102J	
R	227		RS1/16S181J	R	364		RS1/16S102J	
R	228		RS1/16S181J					
R	229		RS1/10S470J	R	365		RS1/16S100J	
				R	367		RS1/16S100J	
R	230		RS1/10S470J	R	396		RS1/16S104J	
R	231		RS1/10S470J	R	397		RS1/16S104J	
R	232		RS1/10S470J	R	398		RS1/16S104J	
R	233		RS1/16S473J					
R	234		RS1/16S473J	R	399		RS1/16S104J	
				R	401		RS1/16S432J	
R	235		RS1/16S473J	R	402		RS1/16S432J	
R	237		RS1/16S473J	R	407		RS1/16S102J	
R	238		RS1/16S473J	R	408		RS1/16S102J	
R	239		RS1/16S473J					
R	240		RS1/16S473J	R	413		RS1/16S102J	

A	====Circuit Symbol and No.==Part Name		Part No.	====Circuit Symbol and No.==Part Name		Part No.
	R	414	RS1/16S102J	R	567	RS1/16S822J
	R	415	RS1/16S203J	R	568	RS1/16S222J
	R	416	RS1/16S203J			
	R	417	RS1/16S623J	R	569	RS1/16S184J
				R	570	RS1/16S223J
	R	418	RS1/16S623J	R	571	RS1/16S473J
	R	429	RS1/16S683J	R	582	RS1/16S332J
	R	430	RS1/16S683J	R	583	RS1/16S332J
	R	431	RS1/16S473J			
	R	432	RS1/16S473J	R	584	RS1/16S332J
B				R	585	RS1/16S332J
	R	433	RS1/16S101J	R	601	RS1/16S102J
	R	451	RS1/16S102J	R	602	RS1/16S473J
	R	452	RS1/16S223J	R	603	RS1/16S102J
	R	453	RS1/16S823J			
	R	454	RS1/16S181J	R	604	RS1/16S102J
				R	605	RS1/16S102J
	R	455	RS1/16S181J	R	606	RS1/16S0R0J
	R	456	RS1/16S181J	R	607	RS1/16S104J
	R	457	RS1/16S181J	R	608	RS1/16S102J
	R	458	RS1/16S181J			
	R	459	RS1/16S223J	R	609	RS1/16S681J
				R	610	RS1/16S0R0J
	R	460	RS1/16S223J	R	611	RS1/16S0R0J
	R	474	RS1/8S103J	R	612	RS1/16S102J
	R	497	RS1/8S221J	R	613	RS1/16S0R0J
	R	501	RS1/16S225J			
	R	502	RS1/16S225J	R	614	RS1/16S102J
				R	615	RS1/16S102J
	R	503	RS1/16S225J	R	616	RS1/16S102J
C	R	504	RS1/16S225J	R	617	RS1/16S102J
	R	505	RS1/16S222J	R	618	RS1/16S102J
	R	506	RS1/16S104J			
	R	507	RS1/16S103J	R	619	RS1/16S102J
				R	620	RS1/16S0R0J
	R	508	RS1/16S103J	R	621	RS1/16S0R0J
	R	509	RS1/16S334J	R	622	RS1/16S681J
	R	510	RS1/16S101J	R	623	RS1/16S0R0J
	R	511	RS1/16S101J			
	R	512	RS1/16S104J	R	629	RS1/16S472J
				R	631	RS1/16S0R0J
	R	513	RS1/16S104J	R	632	RS1/16S332J
	R	514	RS1/16S103J	R	633	RS1/16S102J
	R	515	RS1/16S182J	R	634	RS1/16S102J
	R	516	RS1/16S683J			
	R	517	RS1/16S224J	R	635	RS1/16S471J
				R	636	RS1/16S102J
	R	518	RS1/16S473J	R	637	RS1/16S102J
	R	519	RS1/16S473J	R	638	RS1/16S102J
	R	520	RS1/16S102J	R	639	RS1/16S473J
D	R	522	RS1/16S222J			
	R	525	RS1/16S473J	R	641	RS1/16S473J
				R	642	RS1/16S104J
	R	526	RS1/16S681J	R	643	RS1/16S104J
	R	527	RS1/16S681J	R	644	RS1/16S473J
	R	528	RS1/16S681J	R	645	RS1/16S472J
	R	529	RS1/16S103J			
	R	530	RS1/16S681J	R	646	RS1/16S103J
				R	651	RS1/16S102J
	R	531	RS1/16S473J	R	652	RS1/16S0R0J
E	R	532	RS1/16S473J	R	654	RS1/16S102J
	R	533	RS1/16S472J	R	655	RS1/16S102J
	R	534	RS1/16S393J			
	R	535	RS1/16S473J	R	656	RS1/16S102J
				R	657	RAB4CQ102J
	R	536	RS1/16S103J	R	658	RS1/16S223J
	R	537	RS1/16S473J	R	659	RAB4CQ102J
	R	538	RS1/16S681J	R	660	RS1/16S681J
	R	539	RS1/16S681J			
	R	540	RS1/16S101J	R	661	RAB4CQ473J
				R	662	RS1/16S473J
	R	541	RS1/16S0R0J	R	671	RS1/16S473J
	R	542	RS1/16S0R0J	R	672	RAB4CQ473J
	R	547	RS1/16S103J	R	677	RS1/16S102J
	R	548	RS1/10S221J			
	R	561	RS1/16S104J	R	678	RAB4CQ102J
				R	679	RS1/16S102J
	R	562	RS1/16S123J	R	680	RS1/16S102J
	R	563	RS1/16S105J	R	681	RS1/16S102J
	R	564	RS1/16S682J	R	684	RS1/16S222J
F						

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.	A
R 685	RS1/16S102J	R 862	RS1/16S104J	
R 686	RS1/16S102J	R 863	RS1/16S223J	
R 689	RS1/16S102J	R 865	RS1/16S103J	
R 690	RS1/16S102J	R 866	RS1/16S103J	
R 691	RS1/16S222J			
		R 867	RS1/16S472J	
R 692	RS1/16S102J	R 868	RS1/16S102J	
R 693	RS1/16S102J	R 869	RS1/16S102J	
R 694	RS1/16S3302D	R 870	RS1/10S102J	
R 698	RS1/16S102J	R 871	RS1/16S472J	
R 699	RS1/16S473J			
		R 882	RD1/4PU121J	
R 701	RS1/16S473J	R 884	RS1/16S223J	
R 703	RS1/4S101J	R 886	RS1/16S472J	
R 704	RS1/4S101J	R 888	RS1/16S473J	B
R 705	RS1PMF680J			
R 711	RS1/16S473J			
		CAPACITORS		
R 721	RS1/16S102J	C 201	CEALNP4R7M16	
R 722	RS1/16S473J	C 202	CEALNP4R7M16	
R 723	RS1/16S103J	C 203	CEALNP4R7M16	
R 801	RS1/8S222J	C 204	CEALNP4R7M16	
R 802	RS1/8S472J	C 205	CCSRCH330J50	
R 803	RS1/8S472J	C 206	CCSRCH330J50	
R 804	RS1/8S472J	C 207	CCSRCH330J50	
R 805	RS1/8S472J	C 208	CCSRCH330J50	
R 806	RS1/8S472J	C 209	CKSRYB102K50	
R 807	RS1/8S221J	C 210	CEALNP4R7M16	
R 810	RS1/16S104J	C 211	CEALNP4R7M16	C
R 811	RS1/16S104J	C 212	CEALNP4R7M16	
R 812	RS1/16S104J	C 213	CEALNP4R7M16	
R 819	RS1/16S102J	C 219	CCSRCH220J50	
R 820	RS1/16S123J	C 220	CCSRCH220J50	
R 821	RS1/16S103J	C 221	CCSRCH220J50	
R 822	RS1/16S103J	C 222	CCSRCH220J50	
R 823	RS1/16S223J	C 223	CCH1016	
R 824	RS1/16S102J	C 224	CCH1016	
R 825	RS1/16S331J	C 225	CCH1016	
R 826	RS1/16S103J	C 226	CCH1016	
R 827	RS1/16S471J	C 227	CCSRCH221J50	
R 828	RS1/16S221J	C 228	CCSRCH221J50	
R 829	RS1/16S223J	C 229	CCSRCH221J50	
R 830	RS1/10S221J	C 230	CCSRCH221J50	D
R 832	RS1/16S471J	C 231	CKSRYB473K50	
R 833	RS1/16S221J	C 232	CEAL101M6R3	
R 834	RS1/16S473J	C 233	CKSRYB102K50	
R 835	RS1/16S223J	C 235	CCH1016	
R 840	RS1/4S1R5J	C 236	CCH1016	
R 841	RS1/4S1R5J	C 237	CCH1016	
R 842	RS1/4S1R5J	C 238	CCH1016	
R 843	RS1/4S1R5J	C 239	CKSRYB105K10	
R 844	RS1/16S471J	C 243	CKSQYB102K50	
R 845	RS1/16S471J	C 244	CKSQYB102K50	
R 846	RS1/16S105J	C 245	CKSQYB102K50	
R 847	RS1/10S361J	C 246	CKSQYB102K50	
R 848	RS1/16S3301D	C 253	CEAL220M6R3	E
R 849	RS1/16S4301D	C 254	CKSRYB104K16	
R 850	RS1/4S2R2J	C 256	CCSRCH270J50	
R 851	RS1/16S471J	C 257	CCSRCH270J50	
R 852	RS1/16S105J	C 259	CKSRYB104K16	
R 853	RS1/16S102J	C 260	CCSRCH471J50	
R 854	RS1/16S2701D	C 261	CCSRCH471J50	
R 855	RS1/16S4301D	C 262	CEAL4R7M35	
R 856	RS1/16S103J	C 263	CKSRYB473K50	
R 857	RS1/16S103J	C 309	CKSRYB102K50	
R 858	RS1/4S1R5J	C 319	CCSRCH220J50	
R 859	RS1/4S1R5J	C 320	CCSRCH220J50	
R 860	RS1/16S223J	C 321	CCSRCH220J50	
R 861	RS1/16S103J	C 322	CCSRCH220J50	F
		C 323	CCH1016	

A	====Circuit Symbol and No.====Part Name			Part No.	====Circuit Symbol and No.====Part Name			Part No.
	C	324	4.7μF/35V	CCH1016	C	566		CQMA333J50
	C	325	4.7μF/35V	CCH1016				
	C	326	4.7μF/35V	CCH1016	C	567		CQMA333J50
					C	569		CKSRYB333K16
	C	327		CCSRCH221J50	C	570		CKSRYB103K50
	C	328		CCSRCH221J50	C	571		CKSRYB682K50
	C	329		CCSRCH221J50	C	572		CEAL470M16
	C	330		CCSRCH221J50				
	C	335	4.7μF/35V	CCH1016	C	573		CKSRYB392K50
					C	574		CKSRYB334K10
	C	336	4.7μF/35V	CCH1016	C	575		CKSRYB102K50
	C	337	4.7μF/35V	CCH1016	C	576		CEAL470M16
	C	338	4.7μF/35V	CCH1016	C	585		CKSRYB223K50
	C	339		CKSRYB105K10				
B	C	351		CEAL4R7M35	C	586		CKSRYB223K50
					C	601		CKSRYB102K50
	C	359	4.7μF/35V	CCH1016	C	602		CKSRYB103K50
	C	360	4.7μF/35V	CCH1016	C	603		CKSRYB103K50
	C	361		CKSRYB103K50	C	604		CKSRYB104K16
	C	362		CEAL101M10				
	C	363		CEAL100M16	C	605		CEAL220M6R3
					C	606		CKSRYB104K16
	C	364		CEAL220M16	C	645		CKSRYB103K50
	C	401		CKSRYB183K50	C	671		CCSRCH101J50
	C	402		CKSRYB183K50	C	672		CCSRCH101J50
	C	403	4.7μF/35V	CCH1016				
	C	404	4.7μF/35V	CCH1016	C	673		CCSRCH101J50
					C	674		CCSRCH101J50
	C	405		CKSRYB105K10	C	675		CCSRCH101J50
	C	407		CKSRYB105K10	C	701		CKSRYB103K50
C	C	408		CKSRYB105K10	C	703		CCSRCH221J50
	C	409		CKSRYB104K16				
	C	410		CKSRYB104K16	C	704		CCSRCH221J50
					C	711		CKSRYB102K50
	C	411		CKSRYB102K50	C	801		CKSRYB102K50
	C	412		CEAL470M6R3	C	802		CEAL1R0M50
	C	417		CKSRYB331K50	C	803		CKSRYB102K50
	C	418		CKSRYB331K50				
	C	480		CKSQYB102K50	C	804	2200μF/16V	CCH1186
					C	805		CKSQYB473K50
	C	492		CKSRYB473K50	C	806		CKSRYB102K50
	C	493		CCSQCH221J50	C	807		CEAL1R0M50
	C	494		CCSQCH221J50	C	808		CKSRYB102K50
	C	497		CCSRCH221J50				
	C	503		CKSQYB103K50	C	814		CEAL1R0M50
					C	815		CEAL1R0M50
D	C	504		CKSRYB222K50	C	816	100μF/10V	CKSRYB103K50
	C	505		CKSRYB222K50	C	817		CCH1402
	C	506		CKSRYB222K50	C	818		CKSRYB103K50
	C	507		CKSRYB222K50				
	C	508		CKSRYB103K50	C	819	100μF/10V	CCH1402
					C	820		CKSRYB103K50
	C	509		CKSRYB103K50	C	821		CKSRYB102K50
	C	510		CEAL100M16	C	824	100μF/10V	CKSRYB472K50
	C	511		CKSRYB472K50	C	825		CCH1402
	C	512		CEAL100M16				
	C	513		CKSRYB473K50	C	826		CKSRYB472K50
					C	828		CKSRYB102K50
	C	514		CEAL2R2M50	C	829		CKSRYB103K50
	C	515		CKSRYB102K50	C	830		CKSRYB103K50
	C	516		CKSRYB103K50	C	831		CKSRYB103K50
	C	517		CKSRYB103K50				
E	C	518		CKSRYB392K50	C	861		CEAL101M6R3
					C	866		CEAL100M16
	C	519		CKSRYB103K50	C	867		CEAL100M16
	C	520		CKSRYB103K50	C	870		CKSRYB103K50
	C	521		CEAT101M10	C	871		CKSRYB103K50
	C	522		CKSRYB103K50				
	C	523		CEAT100M50	C	872	2200μF/16V	CCH1186
					C	883		CKSRYB103K50
	C	524		CKSRYB472K50				
	C	525		CCSQCH100J50				
	C	526		CKSRYB102K50				
	C	529		CKSQYB103K50				
	C	561		CEAL3R3M50				
	C	562		CKSRYB333K16				
	C	563		CEALNP1R0M50				
F	C	564		CQMA683J50				
	C	565		CQMA333J50				

====Circuit Symbol and No.==Part Name

Part No.

====Circuit Symbol and No.==Part Name

Part No.



KEYBOARD UNIT
Consists of
KEYBOARD PCB
RIGHT PCB
LEFT PCB

Unit Number : CWS1364
Unit Name : Keyboard Unit

MISCELLANEOUS

IC	901	IC	LC75804W
Q	901	Transistor	2SB1132
Q	902	Transistor	2SC4116
Q	903	Transistor	2SB1132
D	901	Diode	1SS355
D	902	Diode	1SS355
D	903	Diode	1SS355
D	904	Diode	1SS355
D	905	Diode	1SS355
D	906	Chip LED	NSCW310-0371
D	907	Chip LED	NSCW310-0371
D	911	Chip LED	NSCW310-0371
D	912	Chip LED	NSCW310-0371
D	916	LED	SML-310FC
D	917	LED	SML-310FC
D	920	Diode	HZU4R7(B3)
IL	901	Lamp 8V 60mA	CEL1732
IL	902	Lamp 8V 60mA	CEL1731
IL	903	Lamp 8V 60mA	CEL1731
IL	904	Lamp 8V 60mA	CEL1731
IL	905	Lamp 8V 60mA	CEL1731
IL	906	Lamp 8V 60mA	CEL1731
IL	907	Lamp 8V 60mA	CEL1731
IL	908	Lamp 8V 60mA	CEL1732
IL	911	Lamp 8V 60mA	CEL1730
IL	912	Lamp 8V 60mA	CEL1730
IL	913	Lamp 8V 60mA	CEL1732
IL	914	Lamp 8V 60mA	CEL1730
IL	915	Lamp 8V 60mA	CEL1730
IL	916	Lamp 8V 60mA	CEL1730
IL	917	Lamp 8V 60mA	CEL1730
IL	918	Lamp 8V 60mA	CEL1732
IL	919	Lamp 8V 60mA	CEL1734
IL	920	Lamp 8V 60mA	CEL1746
IL	921	Lamp 8V 60mA	CEL1746
IL	922	Lamp 8V 60mA	CEL1734
IL	923	Lamp 8V 60mA	CEL1746
IL	924	Lamp 8V 60mA	CEL1746
VR	901	Encoder(POWER/VOL)	CSD1088
VR	902	Encoder(TUNE/AUDIO CONTROL)	CSD1087

LCD

CAW1722

RESISTORS

R	901	RAB4CQ102J
R	902	RS1/16S102J
R	903	RAB4CQ102J
R	905	RS1/16S222J
R	906	RS1/16S222J
R	907	RS1/16S222J
R	908	RS1/16S393J
R	909	RS1/16S681J
R	910	RAB4CQ102J
R	911	RS1/16S471J
R	912	RS1/16S103J
R	914	RS1/16S223J

R	915	RS1/16S223J
R	916	RS1/16S223J
R	918	RAB4CQ0R0J
R	920	RAB4CQ0R0J
R	922	RAB4CQ0R0J
R	923	RS1/10S331J
R	924	RS1/10S331J
R	926	RS1/10S331J
R	927	RS1/10S331J
R	928	RS1/16S103J
R	929	RS1/8S151J
R	931	RS1/16S200J
R	932	RS1/16S200J
R	933	RS1/16S200J
R	934	RS1/16S200J
R	935	RS1/16S200J
R	936	RS1/16S200J
R	942	RS1/16S103J
R	943	RS1/8S151J
R	944	RS1/10S100J
R	945	RS1/10S100J
R	946	RS1/10S180J
R	947	RS1/10S100J
R	948	RS1/10S100J
R	949	RS1/10S100J
R	950	RS1/10S100J
R	951	RS1/10S180J
R	952	RS1/16S0R0J
R	953	RS1/10S151J
R	954	RS1/10S151J
R	955	RS1/10S151J
R	956	RS1/10S151J
R	965	RS1/10S100J
R	967	RS1/10S100J
R	968	RS1/10S100J
R	970	RS1/10S120J
R	971	RS1/8S151J
R	972	RS1/8S151J
R	973	RS1/10S100J
R	975	RS1/10S120J
R	976	RS1/10S100J
R	978	RS1/10S100J
R	982	RS1/8S180J
R	983	RS1/8S150J
R	984	RS1/8S180J
R	985	RS1/8S150J
R	988	RS1/8S180J
R	989	RS1/8S150J
R	994	RS1/8S150J
R	995	RS1/8S180J
R	998	RS1/16S472J
R	999	RS1/16S103J

CAPACITORS

C	906	CKSRYB474K10
C	907	CKSRYB104K25
C	908	CKSRYB104K25
C	909	CKSRYB104K25
C	910	CCSRCH102J50
C	911	CCSRCH101J50
C	913	CCSRCH101J50
C	915	CKSRYB103K50
C	918	CKSRYB104K25
C	919	CKSRYB104K25
C	922	CCSRCH101J50
C	923	CCSRCH101J50
C	924	CCSRCH101J50

A

====Circuit Symbol and No.====Part Name

Part No.

====Circuit Symbol and No.====Part Name

Part No.

C 925

CCSRCH101J50

E Unit Number : CWX2608
Unit Name : Control Unit

MISCELLANEOUS

IC 101	IC	TA2153FN
IC 201	IC	TC9495FP
IC 401	IC	BA5996FM
IC 701	IC	BA05SFP
Q 101	Transistor	2SD1664

R 709
R 710
R 901
R 902
R 903

RS1/16S102J
RS1/16S102J
RS1/16S104J
RS1/16S473J
RS1/16S273J

CAPACITORS

C 101
C 102
C 103
C 104
C 105

CEV470M6R3
CKSRYB102K50
CKSRYB104K16
CKSRYB224K16
CEV470M6R3

B

Q 102	Transistor	UMD2N
L 201	Inductor	CTF1546
L 202	Inductor	CTF1546
X 301	Ceramic Resonator 16.934MHz	CSS1525
S 901	Spring Switch(HOME)	CSN1051

C 106
C 107
C 201
C 202
C 204

CKSRYB104K16
CKSRYB105K6R3
CKSRYB104K16
CCSRCH560J50
CKSRYB224K16

S 902	Spring Switch(CLAMP)	CSN1052
S 903	Spring Switch(DSCSNS)	CSN1051
S 904	Spring Switch(12EJ)	CSN1052
S 905	Spring Switch(8EJ)	CSN1051

C 205
C 206
C 207
C 208
C 209

CKSRYB224K16
CKSRYB273K25
CKSRYB273K25
CKSRYB104K16
CKSRYB104K16

RESISTORS

R 101	RS1/16S222J
R 102	RS1/8S120J
R 103	RS1/8S100J
R 201	RS1/16S513J
R 202	RS1/16S513J

C 210
C 211
C 301
C 302
C 303

CCSRCK2R0C50
CCSRCH220J50
CKSRYB153K25
CKSRYB104K16
CKSRYB103K50

C

R 203	RS1/16S9102D
R 204	RS1/16S9102D
R 206	RS1/16S8202D
R 208	RS1/16S124J
R 209	RS1/16S183J

C 304
C 305
C 306
C 307
C 308

CKSRYB103K50
CKSRYB104K16
CKSRYB104K16
CKSRYB333K16
CKSRYB104K16

R 210	RS1/16S153J
R 211	RS1/16S103J
R 212	RS1/16S103J
R 213	RS1/16S124J
R 215	RS1/16S0R0J

C 309
C 310
C 311
C 312
C 315

CKSRYB473K16
CKSRYB473K16
CKSRYB104K16
CKSRYB104K16
CEV220M6R3

D

R 216	RS1/16S471J
R 301	RS1/16S333J
R 302	RS1/16S332J
R 303	RS1/16S332J
R 304	RS1/16S514J

C 317
C 318
C 319
C 320
C 325

CKSRYB104K16
CKSRYB104K16
CKSRYB104K16
CCSRCH470J50
CKSRYB471K50

R 306	RS1/16S102J
R 307	RS1/16S102J
R 312	RS1/16S103J
R 313	RS1/16S473J
R 315	RS1/16S334J

C 328
C 329
C 330
C 331
C 401

CKSRYB472K50
CKSRYB104K16
CKSRYB104K16
CKSRYB104K16
CKSRYB221K50

R 321	RS1/16S331J
R 322	RS1/16S0R0J
R 323	RS1/16S332J
R 401	RS1/16S684J
R 402	RS1/16S103J

C 402
C 403
C 404
C 405
C 702

CKSRYB221K50
CKSRYB153K25
CKSRYB103K50
CEV101M10
CKSRYB104K16

E

R 403	RS1/16S103J
R 404	RS1/16S183J
R 405	RS1/16S123J
R 407	RS1/16S622J
R 408	RS1/16S622J

C 703
C 801
C 802
C 803

10μF/10V

CKSRYB104K16
CCH1349
CEV101M10
CKSRYB224K16
Unit Number

R 409	RS1/16S113J
R 410	RS1/16S752J
R 701	RS1/16S102J
R 702	RS1/16S221J
R 703	RS1/16S221J

F Unit Number : EWM1043
Unit Name : Deck Unit

MISCELLANEOUS

IC 251	IC	HA12216F
IC 351	IC	PA2020A
Q 271	Transistor	2SC4116
D 352	Diode	1SS355
VR 301	Semi-fixed 33kΩ(B)	CCP1280

HA12216F
PA2020A
2SC4116
1SS355
CCP1280

F

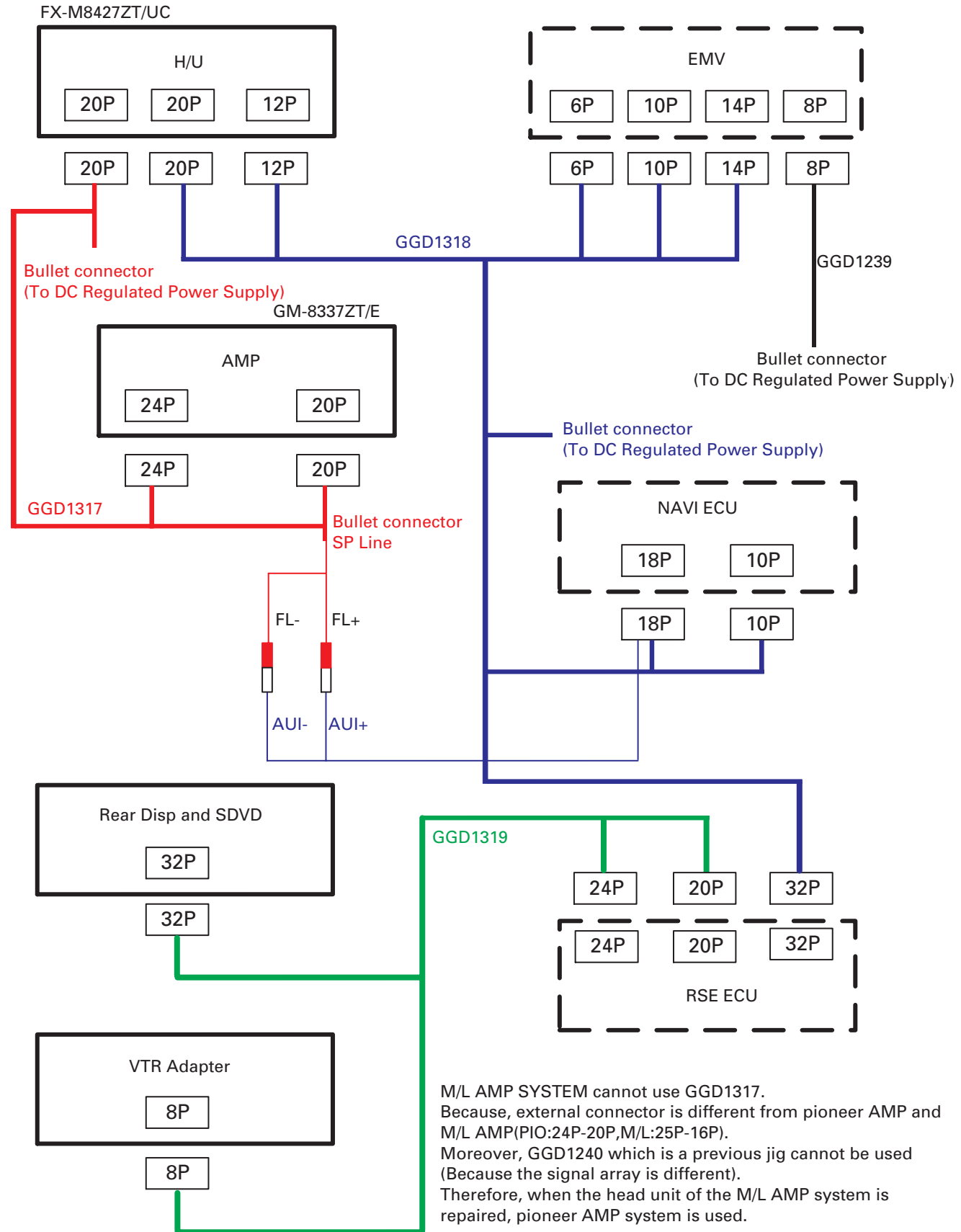
R 704	RS1/16S221J
R 705	RS1/16S221J
R 706	RS1/16S221J
R 707	RS1/16S221J
R 708	RS1/16S102J

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.	
VR 302 Semi-fixed 33kΩ(B)	CCP1280	C 405	CKSRYB333K16	A
RESISTORS		G Unit Number : EWM1041 Unit Name : Sensor Unit		
		MISCELLANEOUS		
R 255	RS1/16S181J	L 101 Inductor	CTF1546	
R 256	RS1/16S181J	L 102 Inductor	CTF1546	
R 257	RS1/16S183J	S 101 Switch(LOAD)	ESG1007	
R 258	RS1/16S183J	S 102 Switch(MODE)	ESG1007	
R 259	RS1/16S133J	S 103 Switch(70μS)	ESG1007	
R 260	RS1/16S133J	Q 101 Photo-reflector	EGN1004	B
R 261	RS1/16S274J	Miscellaneous Parts List		
R 262	RS1/16S274J	M 1 Motor Unit(SPINDLE)	CXB6007	
R 271	RS1/16S183J	M 2 Motor Unit(LOADING/CARRIAGE)	CXB8284	
R 272	RS1/8S0R0J	Pickup Unit(Service)(P9)	CXX1482	
R 273	RS1/8S0R0J	M 1 Motor Unit(MAIN)	EXA1618	
R 275	RS1/16S473J	M 2 Motor Unit(SUB)	EXA1623	
R 276	RS1/16S104J	HD 1 Head Assy	EXA1594	
R 277	RS1/16S224J			
R 278	RS1/16S104J			
R 281	RS1/8S0R0J			
R 282	RS1/8S0R0J			
R 283	RS1/8S0R0J			
R 284	RS1/8S0R0J			
R 285	RS1/8S0R0J			
R 286	RS1/8S0R0J			
R 287	RS1/8S0R0J			
R 288	RS1/8S0R0J			C
R 292	RS1/8S0R0J			
R 296	RS1/16S0R0J			
R 321	RS1/8S0R0J			
R 351	RS1/16S102J			
R 352	RS1/16S102J			
R 353	RS1/16S102J			
R 354	RS1/16S102J			
R 355	RS1/16S274J			
R 362	RS1/8S301J			
R 373	RS1/16S0R0J			
R 374	RS1/8S0R0J			
R 375	RS1/16S0R0J			
R 401	RS1/16S153J			D
R 402	RS1/16S332J			
R 403	RS1/16S911J			
R 404	RS1/16S274J			
CAPACITORS				
C 251	CKSRYB391K50			
C 252	CKSRYB391K50			
C 253	CKSRYB391K50			
C 254	CKSRYB391K50			
C 255	CKSRYB103K50			
C 256	CKSRYB103K50			
C 271	CEH1ROM50			
C 272	CKSRYB104K16			
C 301	CKSRYB104K16			E
C 302	CKSRYB104K16			
C 309	CKSRYB104K16			
C 310	CKSRYB104K16			
C 351	CKSQYB224K25			
C 352	CKSRYB392K50			
C 353	CKSRYB103K50			
C 354	CKSRYB103K50			
C 355	CKSQYB104K50			
C 356	CKSRYB103K50			
C 401	CKSRYB392K50			
C 402	CKSRYB334K10			
C 403	CKSRYB223K25			F
C 404	CKSRYB103K50			

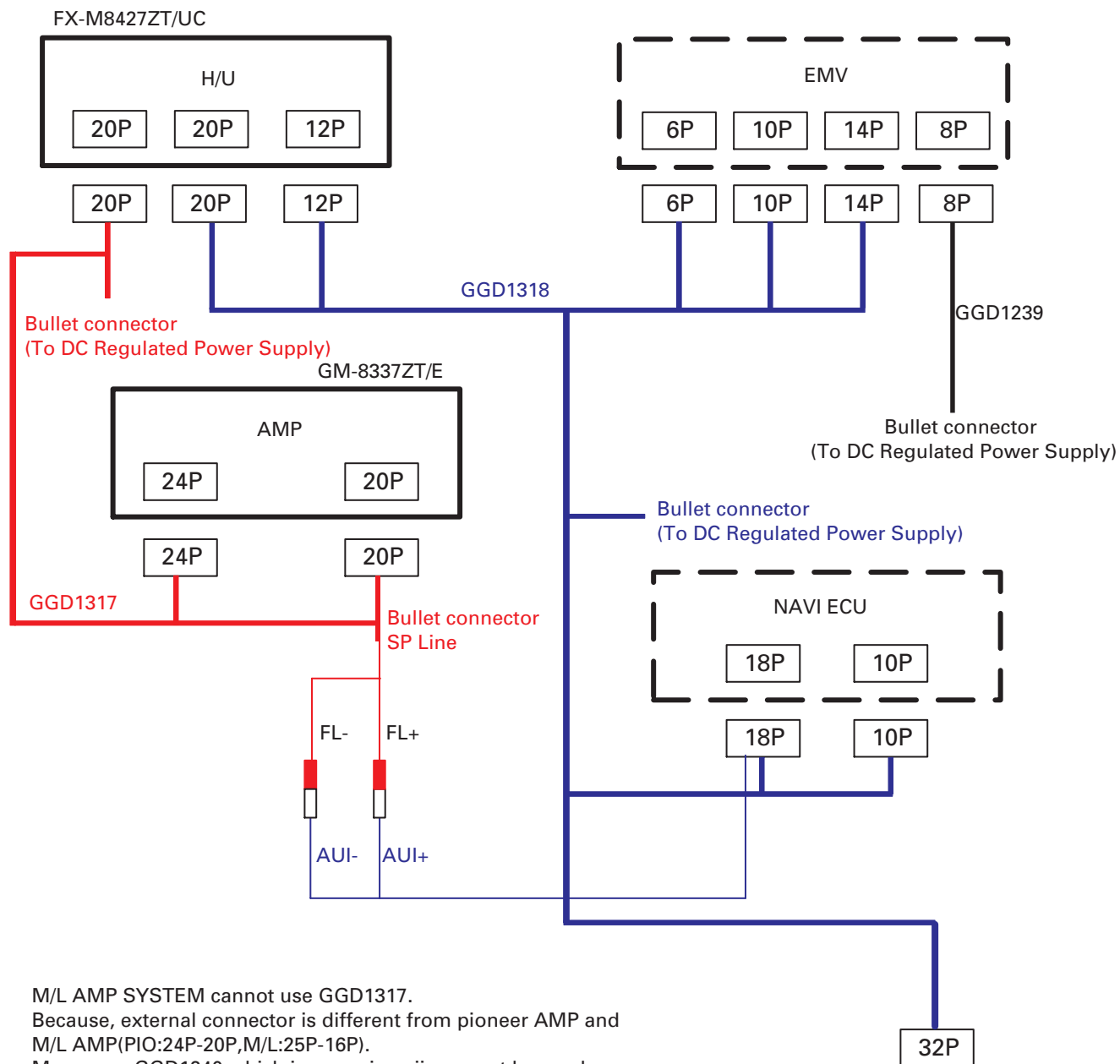
6. ADJUSTMENT

6.1 CONNECTION DIAGRAM

● EMV/RSE/NAVI SYSTEM

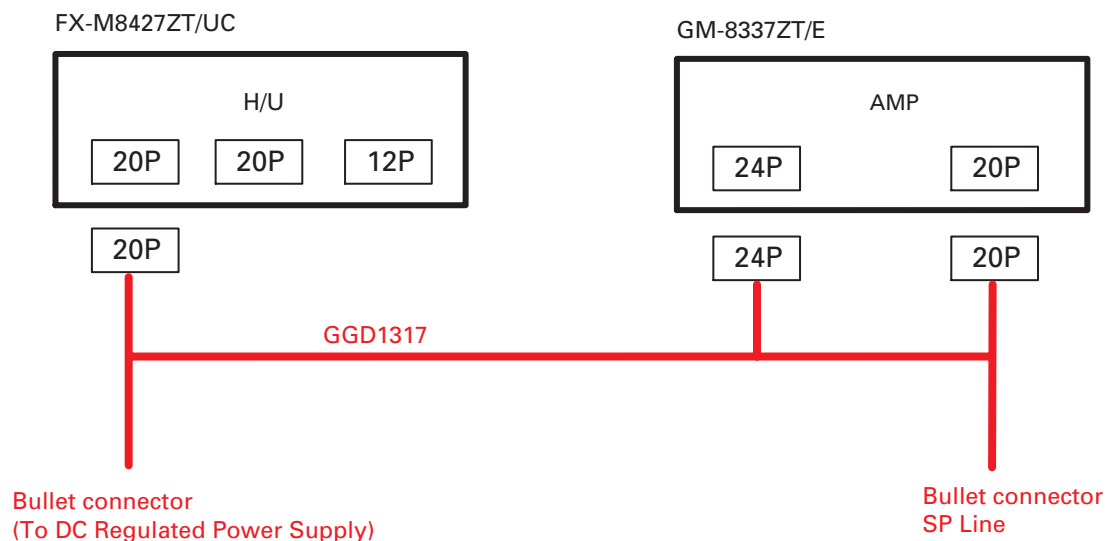


● EMV/NAVI SYSTEM



M/L AMP SYSTEM cannot use GGD1317.
 Because, external connector is different from pioneer AMP and
 M/L AMP(PIO:24P-20P,M/L:25P-16P).
 Moreover, GGD1240 which is a previous jig cannot be used
 (Because the signal array is different).
 Therefore, when the head unit of the M/L AMP system is
 repaired, pioneer AMP system is used.

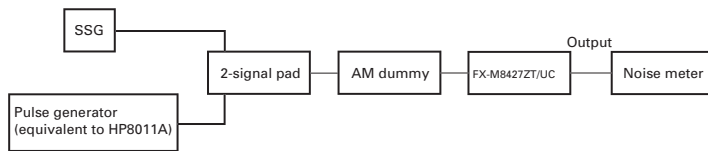
● STANDARD SYSTEM



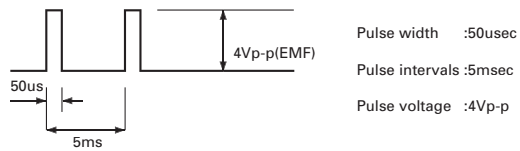
M/L AMP SYSTEM cannot use GGD1317.
 Because, external connector is different from pioneer AMP and
 M/L AMP(PIO:24P-20P,M/L:25P-16P).
 Moreover, GGD1240 which is a previous jig cannot be used
 (Because the signal array is different).
 Therefore, when the head unit of the M/L AMP system is
 repaired, pioneer AMP system is used.

AM NOISE CANCELER ADJUSTMENT

Connection:



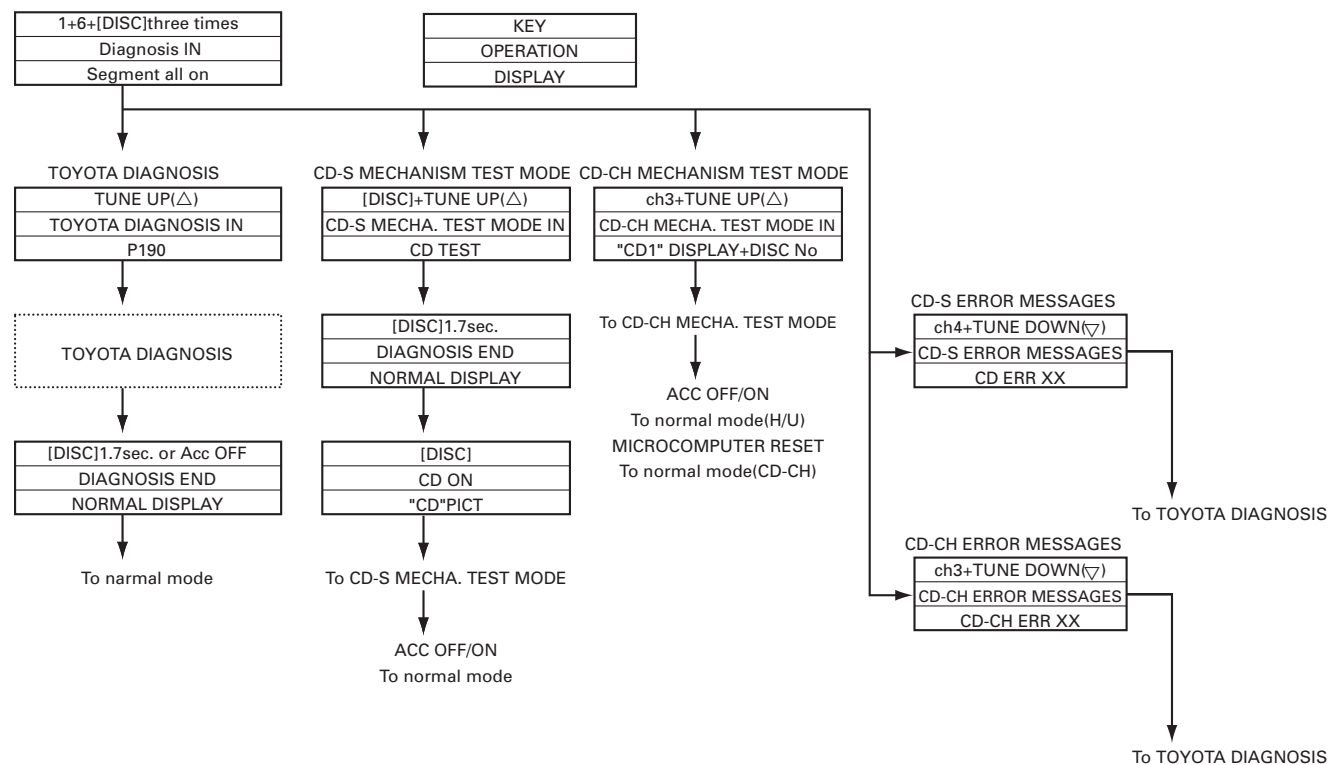
Setting of the pulse generator (setting of superimposed pulse)



Adjustment:

1. Setting of SSG
 - Receiving frequency : 1,000 kHz
 - Percentage modulation : 30%
 - Modulation frequency : 400 Hz
 - Antenna input : 74 dBuV (EMF)
 2. Tune a RADIO to the "1,000 kHz" with 1' condition.
 3. Mix signal with the above-mentioned pulse and SSG' modulation OFF.
 4. Variable resistance adjust noise level to a minimum.
- Adjustment point : VR561

6.3 TEST MODE



OPERATION	KEY OPERATION
To diagnosis	ch.1+ch.6+DISC(three times)
CDS error messages	CH.4 + TUNE DOWN on diagnosis
To CDS test mode	DISC + TUNE UP on diagnosis
CDCH error messages	CH.3 + TUNE DOWN on diagnosis
To CDCH test mode	CH.3 + TUNE UP on diagnosis

6.4 CD ADJUSTMENT

1) Precautions

- This unit uses a single power supply (+5V) for the regulator. The signal reference potential, therefore, is connected to VREF(approx. 2.1V) instead of GND. If VREF and GND are connected to each other by mistake during adjustments, not only will it be impossible to measure the potential correctly, but the servo will malfunction and a severe shock will be applied to the pick-up. To avoid this, take special note of the following.
Do not connect the negative probe of the measuring equipment to VREF and GND together. It is especially important not to connect the channel 1 negative probe of the oscilloscope to VREF with the channel 2 negative probe connected to GND.
Since the frame of the measuring instrument is usually at the same potential as the negative probe, change the frame of the measuring instrument to floating status.
If by accident VREF comes in contact with GND, immediately switch the regulator or power OFF.
- Always make sure the regulator is OFF when connecting and disconnecting the various filters and wiring required for measurements.
- Before proceeding to further adjustments and measurements after switching regulator ON, let the player run for about one minute to allow the circuits to stabilize.
- Since the protective systems in the unit's software are rendered inoperative in test mode, be very careful to avoid mechanical and /or electrical shocks to the system when making adjustment.
- The RFI and RFO signals are easy to oscillate because of a wide band. When observing them, insert a resistor of about 1 k Ω to the series.
- This equipment will not guarantee the load ejection operation when the mechanical unit is turned upside down. In particular, if the ejection operation is incorrectly performed and recovery is disabled, the recovery is enabled by resetting a product or turning ACC off to on.

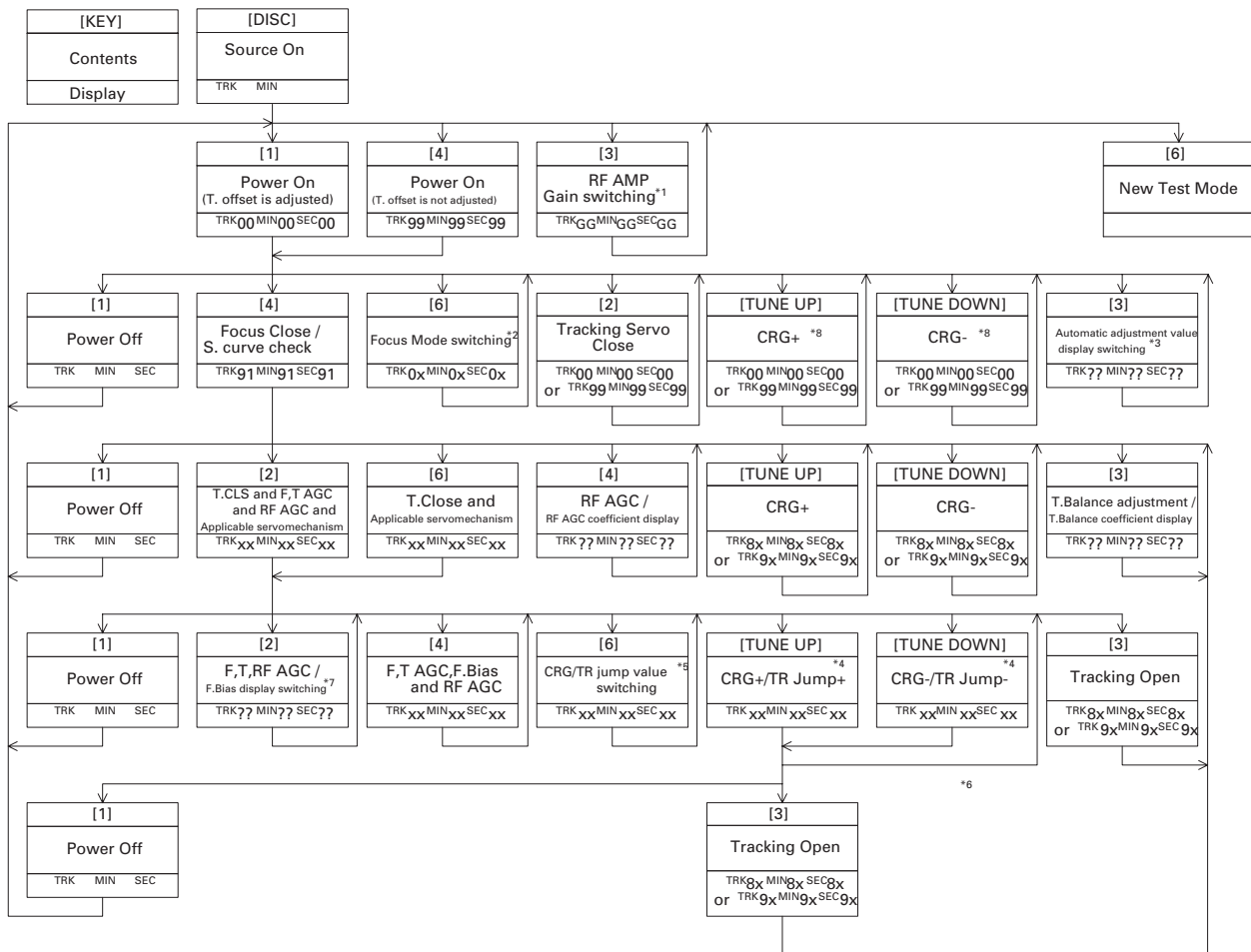
2) Test Mode

This mode is used for adjusting the CD mechanism module of the device.

- After pressing the EJECT key, do not press any other key until the disk is completely ejected.
- If the TUNE UP or TUNE DOWN key is pressed while focus search is in progress, immediately turn the power off (otherwise the actuator may be damaged due to adhesion of the lenses).
- Jump operation of TRs other than 100TR continues after releasing the key. CRG move and 100TR jump operations are brought into the "Tracking close" status when the key is released.
- Powering Off/On resets the jump mode to "Single TR(91)", the RF AMP gain setting to 0 dB, and the automatic adjustment value to the initial value.

A

Flow Chart



C

D

- *1) TYP → +12dB
TRK MIN SEC → TRK 12 MIN 12 SEC 12
- *2) Focus Close setting
TRK 00 MIN 00 SEC 00 → S. curve check setting
TRK 01 MIN 01 SEC 01 → F. EQ measurement setting
TRK 02 MIN 02 SEC 02
- *3) F.Offset Display → T.Offset Display → Switch to the order of the original display
- *4) 1TR/32TR/100TR
- *5) Single TR
TRK 91 MIN 91 SEC 91 → 32TR
TRK 92 MIN 92 SEC 92 → 100TR
TRK 93 MIN 93 SEC 93 → CRG Move
TRK 94 MIN 94 SEC 94
or TRK 81 MIN 81 SEC 81 or TRK 82 MIN 82 SEC 82 or TRK 83 MIN 83 SEC 83 or TRK 84 MIN 84 SEC 84
- *6) Only at the time of CRG move or 100TR jump
- *7) TRK/MIN/SEC → F.AGC Gain → T.AGC Gain → F.Bias → RF AGC Gain
- *8) CRG motor voltage = 2 [V]

E

[Key]	Operation	
	Test Mode	New Test Mode
[1]	Power On/Off	Error occurrence time/cause display switching
[TUNE UP]	CRG +/TR Jump+ (Direction of the external surface)	-
[TUNE DOWN]	CRG -/TR Jump- (Direction of the internal surface)	-
[2]	T.CLS and AGC and Applicable servomechanism/AGC,AGC display switching	-
[3]	RF Gain switching/Offset adjustment display/T.Balance adjustment/T.OPN	-
[4]	F.CLS,S.Curve/Rough Servo and RF AGC/F,T,RF AGC	Error occurrence time/cause display switching
-	SPDL 1X/2X switching (Double-speed compatibility only)	-
-	Error rate measurement	-
[6]	F.Mode switching/T.CLS/CRG,TR Jump switching	-

F

6.5 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT



• Note :

The grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

• Purpose :

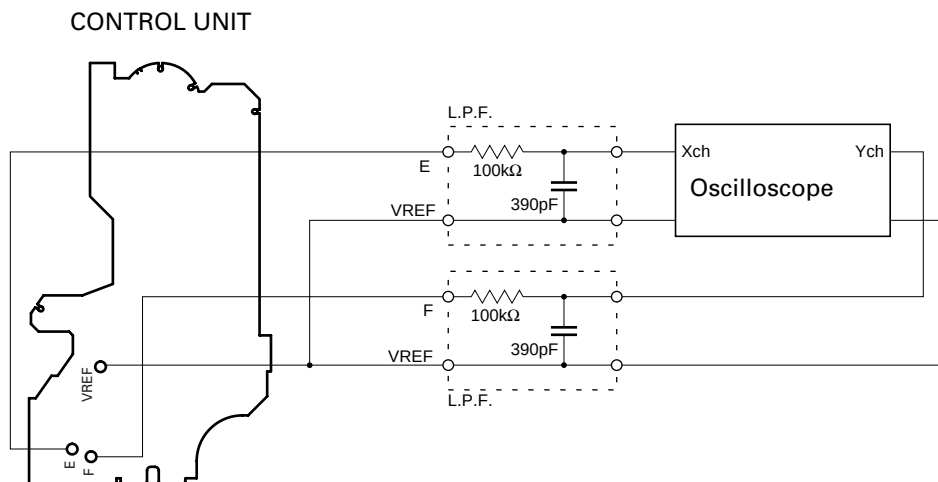
To check that the grating is within an acceptable range when the PU unit is changed.

• Symptoms of Mal-adjustment :

If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or taking a long time for track searching.

• Method :

- | | |
|-----------------------|----------------------------|
| • Measuring Equipment | • Oscilloscope, Two L.P.F. |
| • Measuring Points | • E, F, VREF |
| • Disc | • ABEX TCD-784 |
| • Mode | • TEST MODE |



• Checking Procedure

1. In test mode, load the disc and switch the 5V regulator on.
2. Using the TUNE UP and TUNE DOWN buttons, move the PU unit to the innermost track.
3. Press key **4** to close focus, the display should read "91". Press key **3** to implement the tracking balance adjustment the display should now read "81". Press key **4**. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75° . Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75° try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75° then the mechanism should be judged to be at fault.

• Note

Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

• Hint

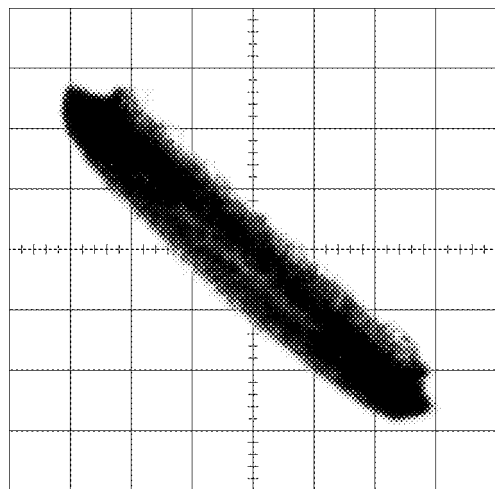
Reloading the disc changes the clamp position and may decrease the "wobble".

Grating waveform

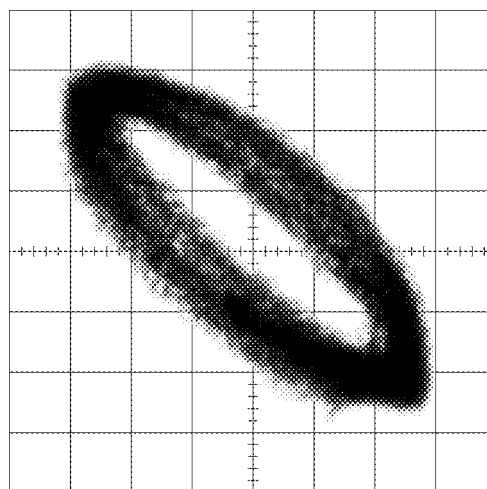
Ech → Xch 20mV/div, AC

Fch → Ych 20mV/div, AC

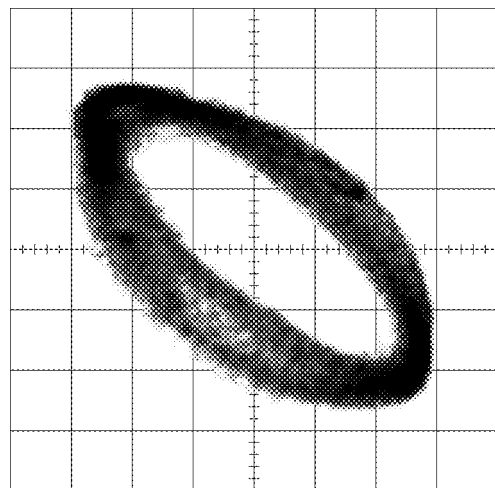
0°



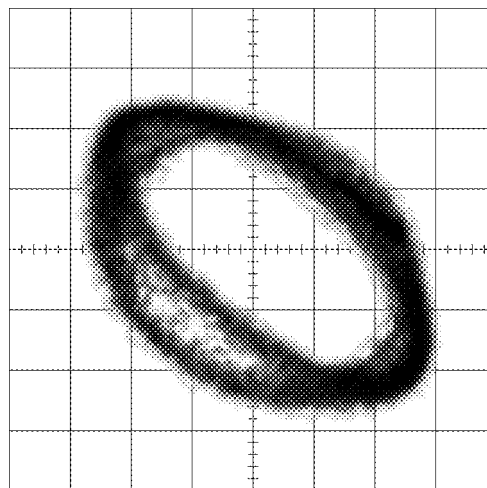
30°



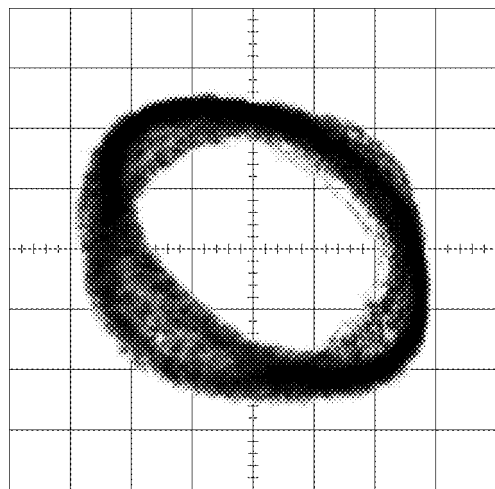
45°



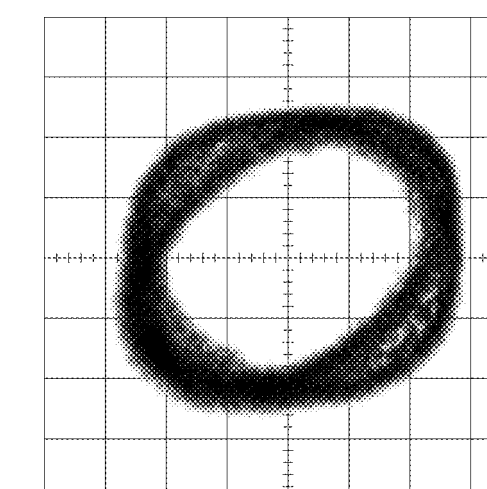
60°



75°



90°



6.6 ERROR CODE

● Error Messages

If a CD is not operative or stopped during operation due to an error, the error mode is turned on and cause(s) of the error is indicated with a corresponding number. This arrangement is intended at reducing nonsense calls from the users and also for facilitating trouble analysis and repair work in servicing.

(1) Basic Indication Method

When SERRORM is selected for the CSMOD (CD mode area for the system), error codes are written to DMIN (minutes display area) and DSEC (seconds display area). The same data is written to DMIN and DSEC. DTNO remains in blank as before.

2) Head unit display

ERROR x

(2) Error Code List

Error code	CD-SINGLE		
Error code	Error code	Details	Error
[ERROR1] (Failure on disc)	11:Focus search NG 12:Spindle lock NG 14:Mirror NG 17:Set up NG 19:Set up NG 30:Search time out 44:ALL SKIP	Focus error Spindle not lock CD-R not recoding AGC protection error Tracking error Don't search RW only	Display Display Display Display Display Display Unconformity
[ERROR2] (No magazine)	CD-CH only	CD-CH only	Display Merit on match model
[ERROR3]	10:CRG home error	Mechanical error	Display
[ERROR4]	A0:System error	A over electric current	Display
[ERROR5]	No match		
[ERROR6]	No match		
[CD OPEN]	CD-CH only	CD-CH only	Display Merit on match model
[WAIT]	High temperature detection	Condition of high temperature	Display

Priority level of error display.

Remarks: Mechanical errors are not displayed (because a CD is turned off in these errors).

Unreadable TOC does not constitute an error. An intended operation continues in this case.

Upper digits of an error code are subdivided as shown below:

1x: Setup relevant errors, 3x: Search relevant errors, Ax: Other errors.

● New Test Mode

S-CD plays the same way as before.

If an error such as off focus, spindle unlocking, unreadable sub-code, or sound skipping occurs after setup, its cause and time occurred (in absolute time) are displayed.

During setup, operational status of the control software is displayed.

These displays and functions are prepared for enhancing aging in the servicing and efficiency of trouble analysis.

(1) Shifting to the New Test Mode

- ① Turn on the current test mode by starting the reset from the key.
- ② Select S-CD for the source through the specified procedure including use of the [CD]key,[DISC]key, and inserting the disc. Then, press the [6] key while maintaining the regulator turned off.
- ③ After the above operations, the new test mode remains on irrespective of whether the S-CD is turned on or off.
You can reset the new test mode by turning on the ACC On/Off.

(2) Key Correspondence

Key	New test mode	
	In-play	Error Production
1	RANDOM	—
—	—	—
TUNE UP	TRACK UP	—
TUNE DOWN	TRACK DOWN	—
4	—	Time/Err.No. switching
REW	REV	—
FF	FF	—
—	—	—
—	—	—

Note: Eject and CD on/off is performed in the same procedure as that for the normal mode.

(3) Cause of Error and Error Code

Code	Class	Contents	Description and cause
40	Electricity	Off focus detected.	FOK goes low. → Damages/stains on disc, vibrations or failure on servo.
41	Electricity	Spindle unlocked.	LOCK = Low continued for 150 msec. → Damages/stains on disc, vibrations or failure on servo.
42	Electricity	Sub-code unreadable.	Sub-code was unreadable for 500 msec. → Damages/stains on disc, vibrations or failure on servo.
43	Electricity	Sound skipping detected.	Last address memory function was activated. → Damages/stains on disc, vibrations or failure on servo.

Note: Mechanical errors during aging are not displayed.

(4) Display of Operational Status during Setup

Status No.	Contents	Protective action
21	Focus search start	Focus search timeout.
22	Focus search 2	Focus search timeout.
23	Focus search 3	Focus search timeout.
24	Focus search 4	Focus search timeout.
25	Focus search(Setup protection)	Focus slips off.
26	Focus search(Fast recovery)	Focus slips off.
27	RF detection	Focus slips off.
28	Spindle rough servocontrol	Focus slips off.
29	Tracking balance adjustment start	Focus slips off.
30	Tracking balance adjustment 2	Focus slips off.
31	Tracking balance adjustment 3	Focus slips off.
32	Tracking close start(Spindle stationary servocontrol setting)	Focus slips off.
33	Tracking close 2	Focus slips off.
34	Tracking close 3	Focus slips off.
35	Focus/Tracking AGC start	Focus slips off.
36	Focus/Tracking AGC 2	Focus slips off.
37	Focus/Tracking AGC 3	Focus slips off.
38	Focus/Tracking AGC 4	Focus slips off.
39	Focus/Tracking AGC 5	Focus slips off.
40	Focus/Tracking AGC 6	Focus slips off.
41	Focus/Tracking AGC 7	Focus slips off.
42	Focus/Tracking AGC 8	Focus slips off.
43	FE bias start	Focus slips off.
44	FE bias 2	Focus slips off.
45	RF AGC start	Focus slips off.
46	RF AGC 2	Focus slips off.
47	Lock check start	Focus slips off.
48	Lock is being checked	Focus slips off.
49	Subcode check start	Focus slips off, spindle lock is not performed.
50	Subcode is being checked	Focus slips off, no subcode can be read.

(5) Display Examples

1) During Setup

TNO. Min Sec

11 11' 11"

2) During Operation (TOC read, TRK search, Play, FF and REV)

The same as in the normal mode.

3) When a Protection Error Occurred

(A) Error display ((A)←→(B) : 4 key)

display

xx xx' xx"

example

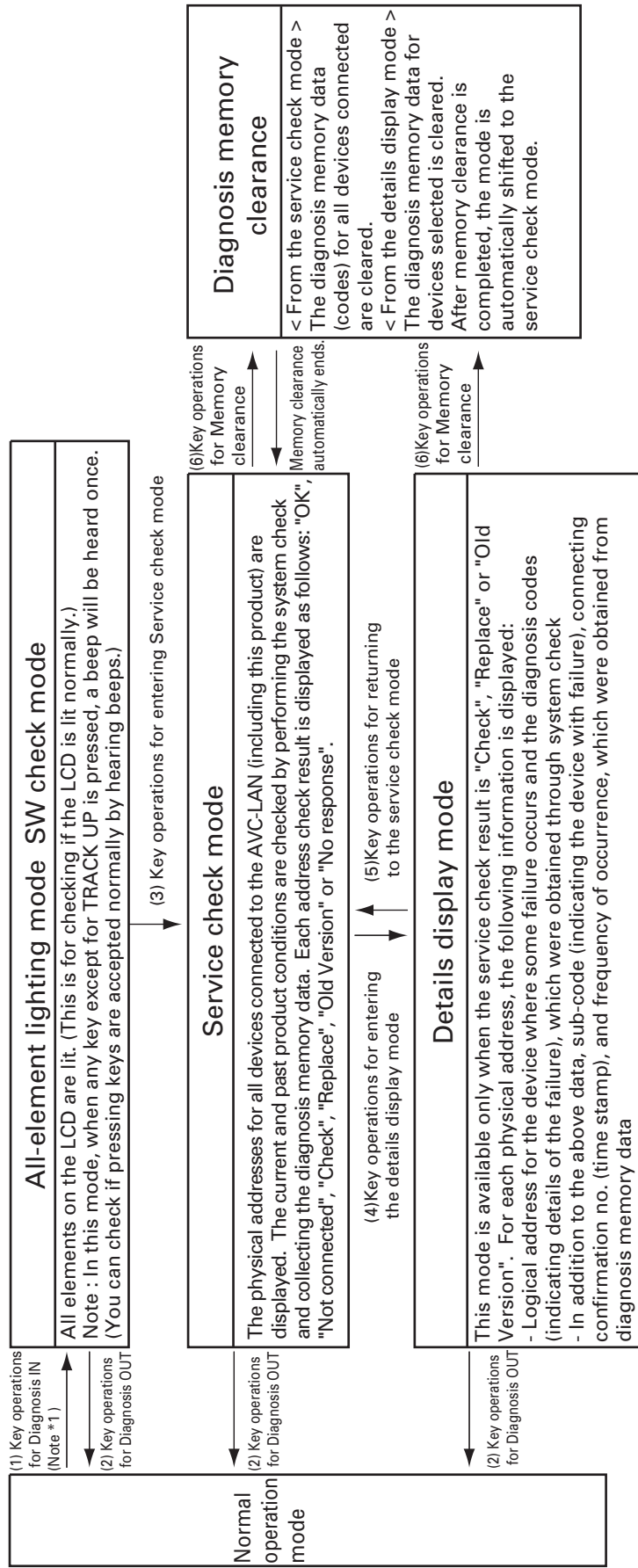
43 43' 43"

(B) Error occurrence timing display in track No. and Error occurrence timing display in absolute time.

TNO. Min Sec

10 40' 05"

●AVC-LAN DIAGNOSIS MODE
●Operations and functions



●Key operations

(1) Diagnosis IN With three times of beep sound, the mode change operation completes.	While pressing the CH1 and CH6 buttons simultaneously, press the DISC button three times.
(2) Diagnosis OUT	Keep the DISC button pressed for 1.7 seconds or more and turn the ACC switch OFF.
(3) Entering the Service check mode. With a beep sound, the mode change completes.	Press the TRACK UP button.
(4) Entering the Details display mode.	Press the CH2 button.
(5) Returning to the service check mode.	Press the CH3 button.
(6) Clearing the Memory data	Keep the CH5 button pressed for 1.7 seconds or more.
Change the display (forward)	Press the TRACK UP button.
Change the display (backward)	Press the TRACK DOWN button.

Note *1: To enter the diagnosis IN mode, use the buttons on the head unit.

Service check mode	Details display mode (only in case of "Replace", "Check", or "Old Version")
After system check completes, the check results for the devices connected to the AVC-LAN are displayed in turn in order of physical address number as follows: ◆ "Physical address" ...The smallest physical address number is displayed first, whose check result will follow it. Ex. P190 Physical address number (radio cassette) The physical address is displayed. ◆ "Check result" ...The check result is displayed. Ex. good Normal (OK) Replace CHECK Old Version Details display mode ◆ "Physical address" ...The next physical address number is displayed. ◆ "Connecting confirmation no. (current)" ...The AVC-LAN time stamp is displayed. Ex. no01 The connecting confirmation number is displayed. The current connecting confirmation number (expressed in the hexadecimal number system by using 00 to FF) The number increases by one each time one minute passes. When 256 minutes pass, the indication returns to 00.	This mode is available only when the service check result is "Replace", "Check" or "Old Version". To select this mode, press the CH2 key. ◆ "Physical address (for selected devices)" The physical address number is displayed, whose check result details will follow it. Ex. P360 Physical address number (CD-CH) Diagnosis data source" ◆ "Diagnosis data source" The detailed items depend on the data source. Ex. Sys The data was obtained from system check. "Logical address" The logical address number for the device with failure is displayed. Ex. 1L_63 Logical address number (CD-CH) The logical address is displayed. Serial number ◆ "Diagnosis code" The diagnosis code indicates what problem occurs. Ex. 1d_45 Diagnosis code (abnormal EJECT) The diagnosis code is displayed. ◆ "Connecting confirmation number (when some failure occurs)" ... AVC-LAN time stamp Ex. no01 The connecting confirmation number (expressed in the hexadecimal number system by using 00 to FF) The connecting confirmation number is displayed. ◆ "Frequency of occurrence" ...The frequency of failures occurred Ex. 1c_15 The frequency of occurrence expressed in the decimal number system. The frequency of occurrence is displayed. If there are two or more diagnosis codes, the diagnosis data display will continue.

Physical address allocation

③	②	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
①	1	M.DISP computer	New EMV	New device with AV	New MM ECU	device with AV				Audio ECU	Audio H/U	DVD-P	Rear TV	Rear Control SW	Multi-CD decoder	CD-CH commander	AMP controlled radio tuner
	0																
	2																
	4												1-DIN Navigation	Europe GW ECU	Simple LCD	Consolidated SW	
	6													Consolidated inside panel	Gateway ECU		RSE-M
	8		New 1-DIN TV			Europe navigation DISP.M/U		Rear TV with movie mode	Navigation with controls				DISPLAY with SW	FM multiplex DISPLAY	Fr controlled SW	MD-CH commander	
	C								MONET ECU					Steering SW	Navigation remote controller	Body computer	
	E								Vehicle Information ECU								
	1,3,5,7,9-B,D,F																

Display
P①②③
Ex.P190
Physical address

③	②	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
①	2	Navigation computer	ATIS	VICS	TV tuner	H/W CD-CH	H/W DVD-CH	TEL information ECU		Camera controller							
	0																
	8																
	1-7,9-F																

③	②	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
①	3	Radio		Cassette	Radio cassette with no CH controller	CD-P		1DIN CD-CH		MD-P		MD-CH		DAT		DCC	
	0																
	8																TEL ECU
	1-7,9-F																

③	②	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
①	4	Equalizer				DSP				H/W AMP							
	0																
	1-F																

③	②	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
①	5	GPS receiver	ATIS decoder	FM multiplex decoder		CD-CH		MD-CH		CD-ROM -CH		MD-ROM -CH		TEL information			
	0			Radio wave beacon										May Day			
	8			Optical beacon													
	C																
	1-7,9-B,D,F																

③	②	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
①	6	A/C computer								Body computer							
	0																
	1-F																

Diagnosis code table

Logical address name	Logical address	Diagnosis code	Diagnosis details
Communication control	01H	00	No diagnosis
		01	Abnormal reset
		10	Abnormal +B
		11	Abnormal ACC
		12	Abnormal MUTE
		13	Fuse broken
		20	Microcomputer - abnormal
		21	ROM - abnormal
		22	RAM - abnormal
		23	Bus - abnormal
		24	F-ROM - abnormal
		25	V-RAM - abnormal
		26	Gate delay abnormal
		27	Paint controller abnormal
		28	Backup memory abnormal
		29	Voice output controller abnormal
		2A	Internal power supply abnormal
		30	Sync signal abnormal (input)
		31	Sync signal abnormal (output)
		D0	ECU not connected
		D1	Transmission abnormal
		D2	Connecting confirmation: abnormal
		D4	Connecting confirmation: no response
		D5	Registered device data missing (History of registered devices)
		D6	Master unavailable
		D7	Connecting confirmation: abnormal
		D8	Connecting confirmation: no response
		DA	Last mode abnormal
		DB	Command/order: no response
		DC	Mode status abnormal
		DD	Transmission fault
		DE	Master reset
		DF	Slave reset
		E0	Registration completion
		E1	acknowledgement error
		E2	Voice processor ON abnormal
		E3	ON/OFF command or parameter abnormal
		E4	Registration command transmission Multiple frames intermit.
		FF	Diagnosis - no response

Logical address name	Logical address	Diagnosis code	Diagnosis details
Radio	60H	10	AM tuner PLL unlocked
		11	FM tuner PLL unlocked
		40	No antenna connected
		41	Antenna power supply abnormal
		42	Tuner power supply abnormal
		43	AM tuner abnormal
		44	FM tuner abnormal
		45	SW tuner abnormal
TV tuner	40H	10	TV tuner PLL unlocked
		11	FRONTEND abnormal
		40	TV divergence shifting error
		41	TV - no reception
		42	VNR screen error
		43	No antenna connected
		44	Antenna power supply abnormal
		45	SEL +B current - small
		46	SEL +B current - large
Cassette tape	61H	10	Belt broken
		40	Mechanical failure or cassette broken
		41	EJECT failure
		42	TAPE jamming
		43	Dirty head
		44	Mech power supply abnormal
CD	43H	10	CD Mech abnormal
		11	CD loading/unloading abnormal
		12	CD lead-in abnormal
		40	No disc loaded
		41	Incorrect disc
CD-P	62H	42	Disc unreadable
		43	CD-ROM abnormal
		44	CD abnormal
		45	EJECT abnormal
		46	Scratches or non-recorded side
CD-CH	63H	47	CD high temperature detected
		48	Excessive current detected
		50	Tray IN/OUT abnormal
		51	Elevator abnormal
		52	Clamp abnormal
MD	64H 65H	10	MD mech abnormal
		11	MD IN/OUT abnormal
		12	MD lead-in abnormal
		40	No disc loaded
		41	Incorrect disc
		42	Disc unreadable
		43	MD-ROM abnormal
		44	MD abnormal
		45	EJECT error
		46	Scratches or non-recorded side
		47	MD high temperature detected
		48	Excessive current detected
		50	Tray IN/OUT abnormal
		51	Elevator abnormal
		52	Clamp abnormal

Logical address name	Logical address	Diagnosis code	Diagnosis details
Navigation /GPS	58H 80H	10	Gyroscope abnormal
		11	GPS receiver abnormal
		12	RTC abnormal
		13	SS section abnormal
		14	No Time updating
		15	TCXO abnormal
		16	PLL lock abnormal
		40	GPS antenna abnormal
		41	GPS antenna power supply abnormal
		42	Map disc reading abnormal
		43	SPD signal abnormal
		44	Player abnormal
		45	High temperature abnormal
		5A	Antenna power supply abnormal
		84H	Radio wave beacon - no antenna connected
		5BH	Optical beacon - no antenna connected
	83H 82H 9AH	47	No FM antenna connected
		4A	FM receiver abnormal
		4B	Radio wave beacon abnormal
		4C	Optical beacon abnormal
		85H	Voice control activation SW abnormal
		40	Voice-control Microphone abnormal
		40	Multi-CD-CH (optical cable) abnormal
		41	Multi-CD-CH (optical cable) not connected
		42	Multi-CD-CH (CarNet) abnormal
		43	Multi-CD-CH (CarNet) not connected
		50	HIT64 communication not connected
		51	HIT64 communication abnormal
	02H	52	HIT64 BRQ disconnection
		53	HIT64 BRQ short-circuit
		54	HIT64 disconnection
		55	CarNet communication not connected
		56	CarNet communication abnormal
		57	CarNet periodical communication abnormal
	32H 34H	10	Video circuit abnormal
		11	Back light abnormal (with no current)
		12	Back light abnormal (with excessive current)
		13	Panel open/close mechanical operation abnormal
		40	Front seat monitor abnormal
		41	Heater abnormal
	21H 23H 24H 25H	10	Panel SW abnormal
		11	Touch SW failure

7. GENERAL INFORMATION

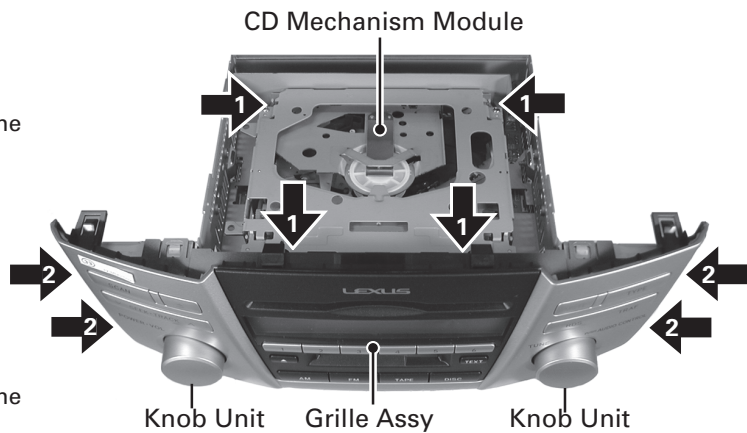
7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

● Removing the CD Mechanism Module (Fig.1)

- ➡ 1 Remove the four screws.

Disconnect the connector and then remove the CD Mechanism Module.



● Removing the Grille Assy (Fig.1)

- ➡ 2 Remove the four screws.

Disconnect the connector and then remove the Grille Assy.

When reassembling:

While putting Knob units back on each place, steady each PCB behind (Right PCB, Left PCB) with your other hand because the PCB is fragile.

Fig.1

● Removing the Frame (Fig.2)

- ➡ 1 Remove the five screws and then remove the Frame.

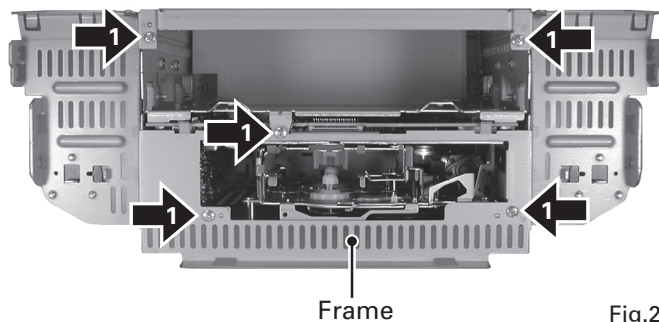


Fig.2

● Removing Chassis (Fig.3)

- ➡ 1 Remove the ten screws and then remove the Chassis.

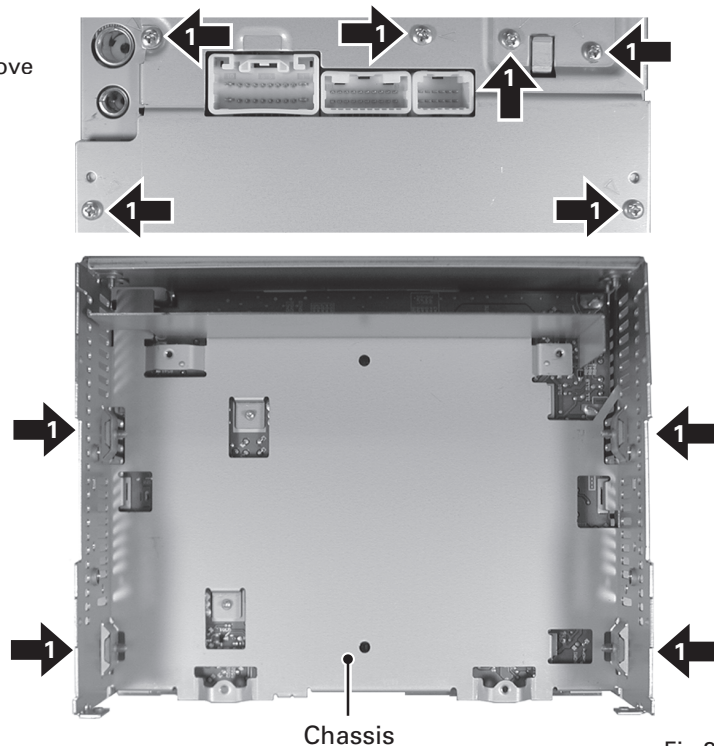


Fig.3

A

● Removing the Cassette Mechanism Module (Fig.4)

- ➡ **1** Remove the four screws and then remove the Cassette Mechanism Module.

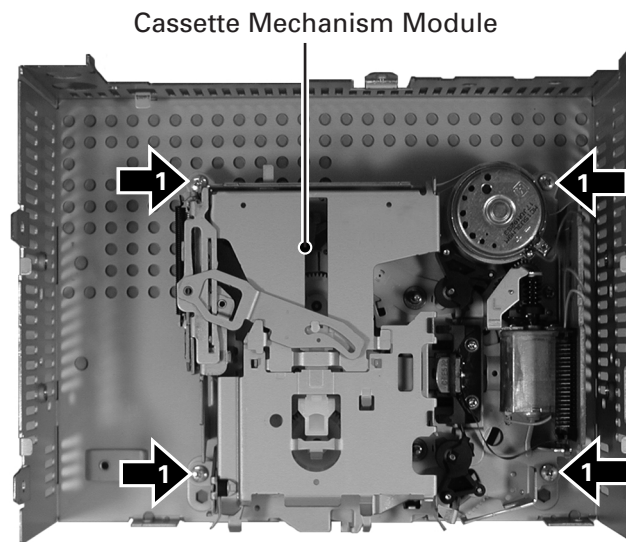


Fig.4

B

C

● Removing the Main Unit (Fig.5)

- ➡ **1** Straight the tabs at three locations indicated.
- ➡ **2** Remove the two screws and then remove the Main Unit.

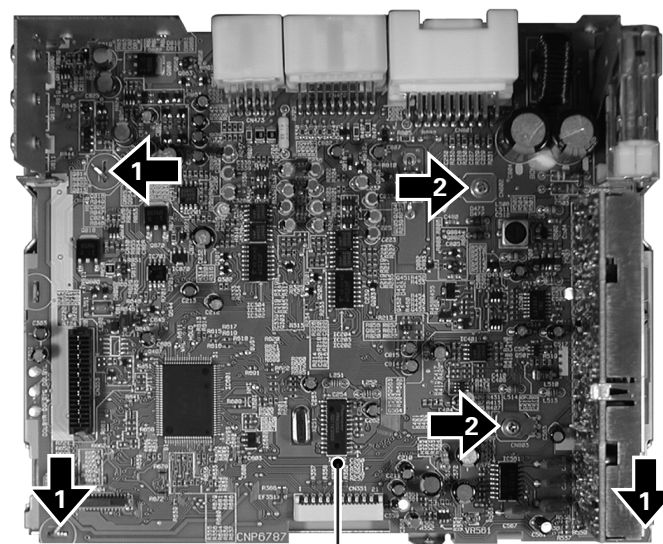


Fig.5

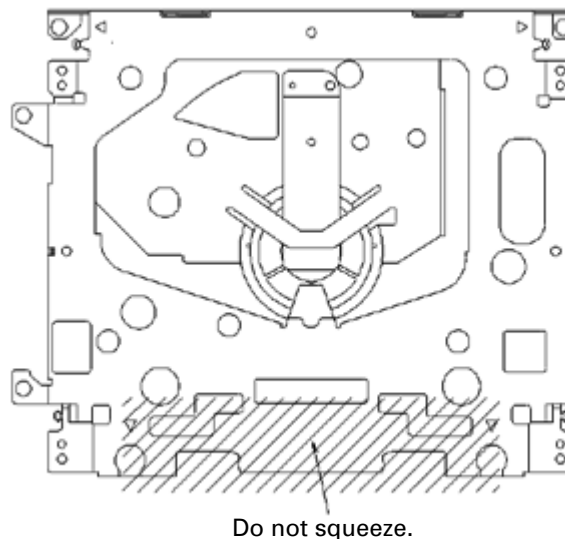
D

E

F

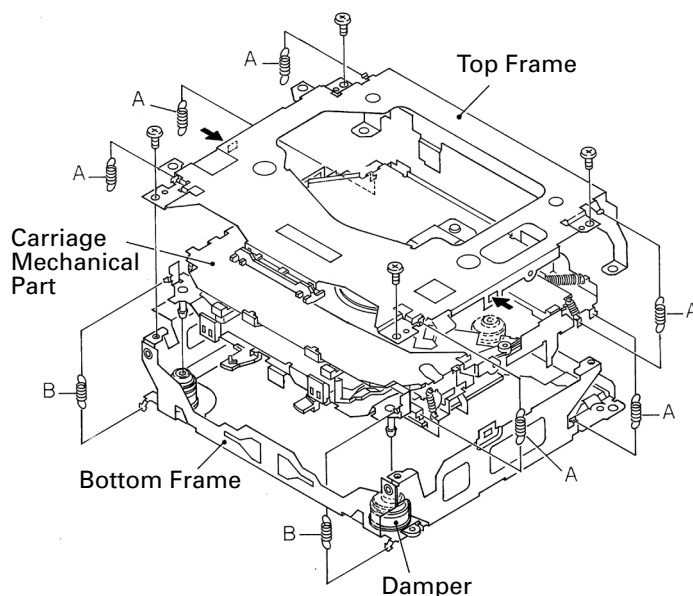
● How to hold the Mechanism Unit

1. Hold the top and bottom frame.
2. Do not squeeze top frame's front portion too tight, because it is fragile.



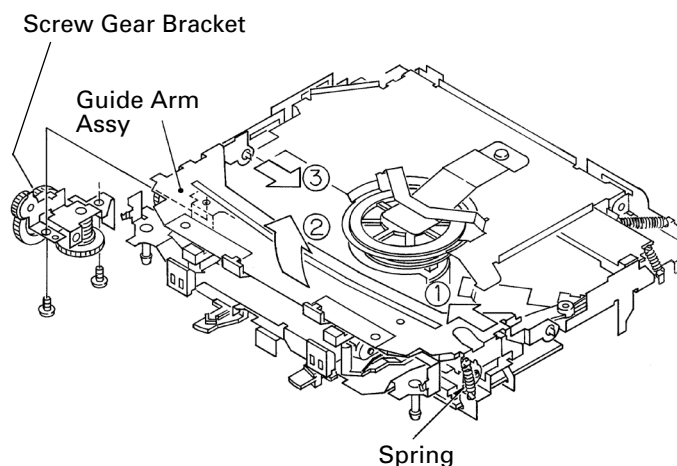
● How to remove the Top and Bottom Frame

1. When the disk is "clamp" state, unlock Spring A (6 pieces) and Spring B (2 pieces), and unscrew screws (4 pieces).
2. Unlock each 1 of pawl at the both side of the frame, then remove the top frame.
3. Remove the Carriage Mechanical part in such way that; you remove the mechanical part from 3 pieces of Damper while slowly pulling up the part.
4. Now, the top frame has been removed, and under this state, fix the genuine Connector again, and eject the disk.
(Caution)
When you reassemble the Carriage Mechanical part, apply a bit of alcohol to Dampers.



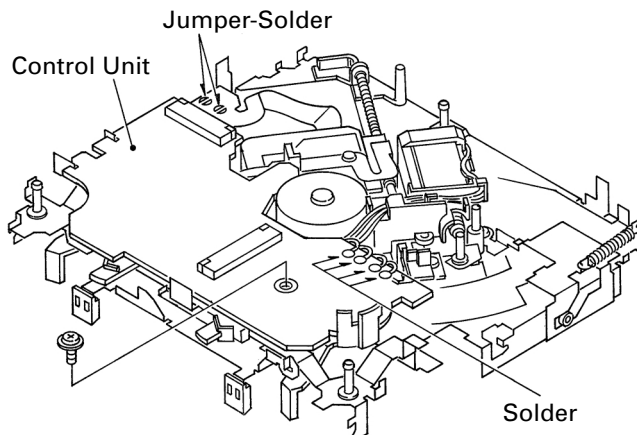
● How to remove the Guide Arm Assy

1. Unlock the spring (1 piece) at the right side of the assembly.
2. Unscrew screws (2 pieces), then remove the Screw Gear Bracket.
3. Shift the Guide Arm Assy to the left and slowly rotate it to the upper direction.
4. When the Guide Arm Assy rotates approximately 45 degree, shift the Assy to the right side direction and remove it.



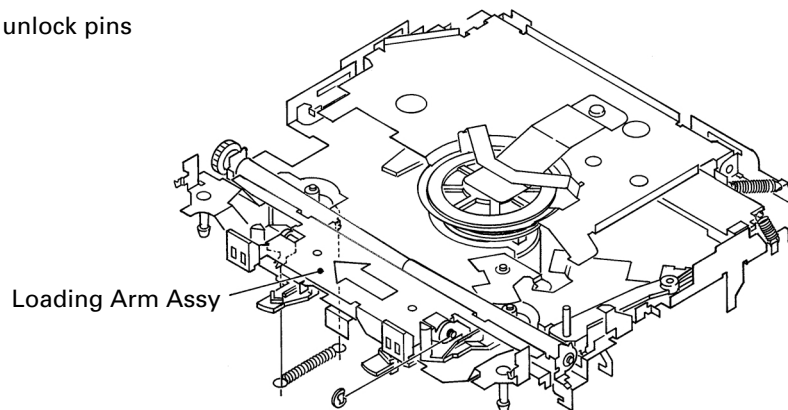
● How to remove the Control Unit

1. Give jumper-solder treatment to the Flexible Wire of the Pickup unit, then remove the wire from the Connector.
2. Remove all 4 points of solder-treatment on the Lead Wire. Also, unscrew the screw (1 piece).
3. Then, Remove the Control unit.
(Caution)
Be careful not to damage SW when you reassemble the Control Unit into the device.



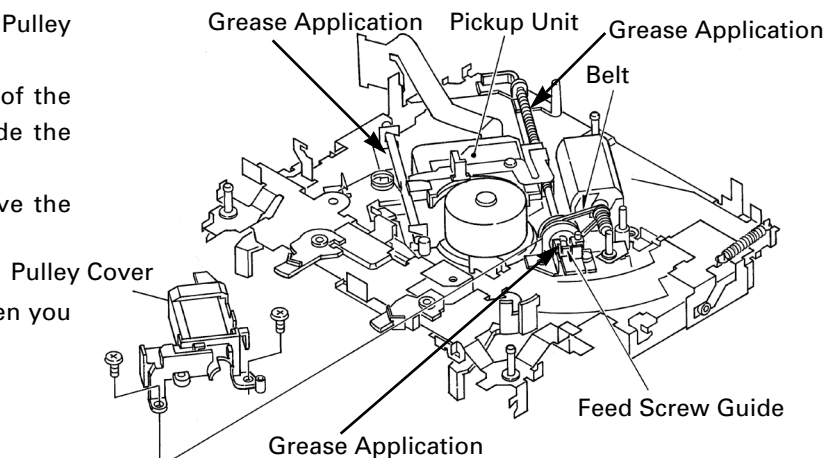
● How to remove the Loading Arm Assy

1. Unlock the spring (1 piece) and remove the E ring (1 piece) of the Fulcrum Shaft.
2. Shift the arm to the left side direction and unlock pins (2 pieces).



● How to remove the Pickup Unit

1. Unscrew 2 pieces of screws, then remove the Pulley Cover.
2. Remove the Feed Screw unit from the pawl of the Feed Screw Guide (The pawl is located inside the guide).
3. Remove the belt from the Pulley, then remove the Pickup unit.
(Caution)
Make sure not to stain the belt with grease when you fix the belt.



7.2 PARTS

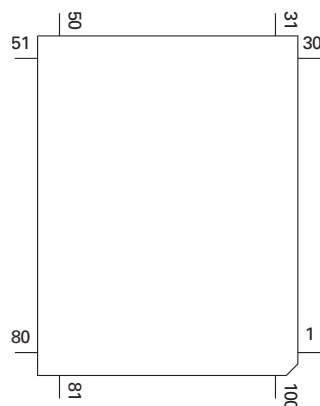
7.2.1 IC

Pin Functions (PD5772A)

Pin No.	Pin Name	I/O	Function and Operation
1	FMSD	I	Tuner : FM SD input
2	ST	I	Tuner : FM stereo indicator input
3	XRCK	O	CD LSI clock output
4	LAMP	O	Lamp power supply control output
5	LDO	O	LCD driver : Data output
6	LDI	I	LCD driver : Data input
7	LCK	O	LCD driver : Clock output
8	BYTE	I	Connect to ground
9	CNVSS	I	Ground
10	LOCL	O	Tuner : Local L output
11	PCE2	O	Tuner : EEPROM chip enable output
12	RESET	I	Reset Input
13	XOUT	O	Crystal oscillating element connection terminal
14	VSS		GND
15	XIN	I	Crystal oscillating element connection terminal
16	VDD		Power supply terminal
17	NMI	I	Connect to VDD
18	RCK	I	RDS : Clock input
19	NC		Not used
20	CDEJ	I	CD EJECT key sense input
21	RX2	I	IP-BUS : Data input
22	IPPW	O	IP-BUS : Driver power supply output
23	CD5VON	O	CD+5V power supply control output
24	NC		Not used
25	XRST	O	CD LSI reset output
26	XCE	O	CD LSI chip enable output
27	DRST	O	RDS : Decoder reset output
28	BLIGHT	O	Back Light ON/OFF output
29	RX1	I	IP-BUS : Data input
30	TX	O	IP-BUS : Data output
31	PDO	O	Tuner : PLL IC data output
32	PDI	I	Tuner : PLL IC data input
33	PCK	O	Tuner : PLL IC clock output
34	PCE1	O	Tuner : PLL IC chip select output
35	XPIO3	I/O	CD LSI data input/output
36	XPIO2	I/O	CD LSI data input/output
37	XPIO1	I/O	CD LSI data input/output
38	XPIO0	I/O	CD LSI data input/output
39	LOEJ	O	Load/Eject control output
40	CONT	O	Servo driver power supply control output
41	FMPW	O	FM power supply control output
42	AMPW	O	AM power supply control output
43	SYSPWR	O	System power control output
44	RDT	I	RDS : Data input
45	SEL1b	O	Amp output select b output
46	SEL1a	O	Amp output select a output
47	INH1	O	Amp output inhibit output (Not used)
48	SEL2b	O	RSE output select b output
49	SEL2a	O	RSE output select a output
50	INH2	O	RSE output inhibit output (Not used)
51	RSEMUTE	O	RSE mute output
52	SYSMUTE1	O	System mute output
53	SYSMUTE2	O	RSE system mute output
54	CLCONT	O	Driver input select output
55	SWVDD	O	Keyboard unit power supply control output
56	AMPMUTE	O	AVC-LAN mute output
57	ADIM	I	ADIM information input

Pin No.	Pin Name	I/O	Function and Operation
58	ROMDT	I/O	ROM correction data input/output (Not used)
59	ROMCLK	O	ROM correction clock output (Not used)
60	TEST	I	Test mode input
61	ROMCS	O	ROM correction chip select output (Not used)
62	VCC		Power supply terminal
63	VDCONT	O	VD power supply control
64	VSS		Ground
65	ISEN	I	Illumination power supply sense input
66	MS	I	Cassette mechanism : Music search sense input
67	FR	O	Cassette mechanism : Head forward/reverse select output
68	PLAY	O	Cassette mechanism : MS gain select output
69	MTL	I	Cassette mechanism : 70 μ s equalizer select input
70	NR	O	Cassette mechanism : Dolby NR ON/OFF select output
71	CSLOAD	I	Cassette mechanism : Tape loading sense input
72	POS	I	Cassette mechanism : Position sense input
73	ASENS	I	ACC power supply sense input
74	CSEJ	I	Tape eject sense input
75	BSSENS	I	Back up power supply sense input
76	ES	I	Tape end sense input
77	SC2	O	Cassette mechanism : Sub motor control 2 output
78	SC1	O	Cassette mechanism : Sub motor control 1 output
79	CM	O	Cassette mechanism : Capstan motor control output
80	STBY	O	Cassette mechanism : Driver stand-by output
81	POWER	I	POWER key input
82	ENC1+	I	VOL encoder (+) input
83	ENC1-	I	VOL encoder (-) input
84	ENC2+	I	AUD encoder (+) input
85	ENC2-	I	AUD encoder (-) input
86	LCE1	O	LCD driver 1 chip enable output
87	HOME	I	Home SW sense
88	LRST	O	LCD driver reset output
89	DSCSNS	I	Mechanism SW sense input
90	RDSLK		RDS : LK signal input
91	TEMP	I	Temperature sense input
92	VDSENS	I	VD power supply sense
93	SL	I	Tuner : Signal level input
94	ILL-	I	Rheostat signal input
95	STSW2	I	Steering switch 1 input
96	AVSS		A/D converter ground terminal
97	STSW1	I	Steering switch 1 input
98	VREF		A/D converter reference voltage terminal
99	AVCC		A/D converter power supply terminal
100	NC		Not used

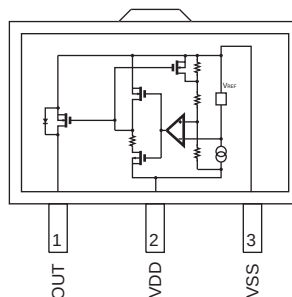
* PD5772A



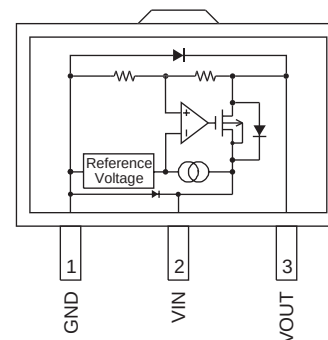
IC's marked by * are MOS type.

Be careful in handling them because they are very liable to be damaged by electrostatic induction.

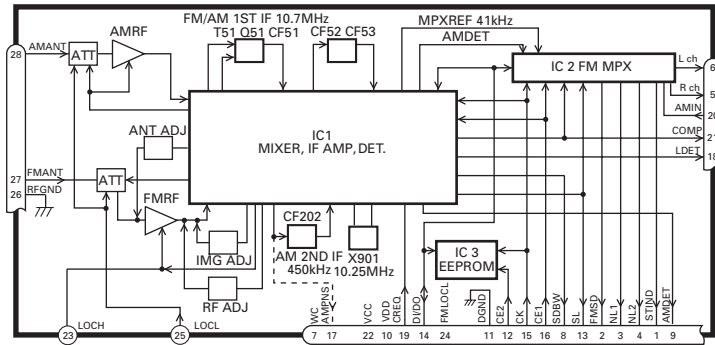
* S-80835CNUA-B8U



* S-812C56AUA-C3K



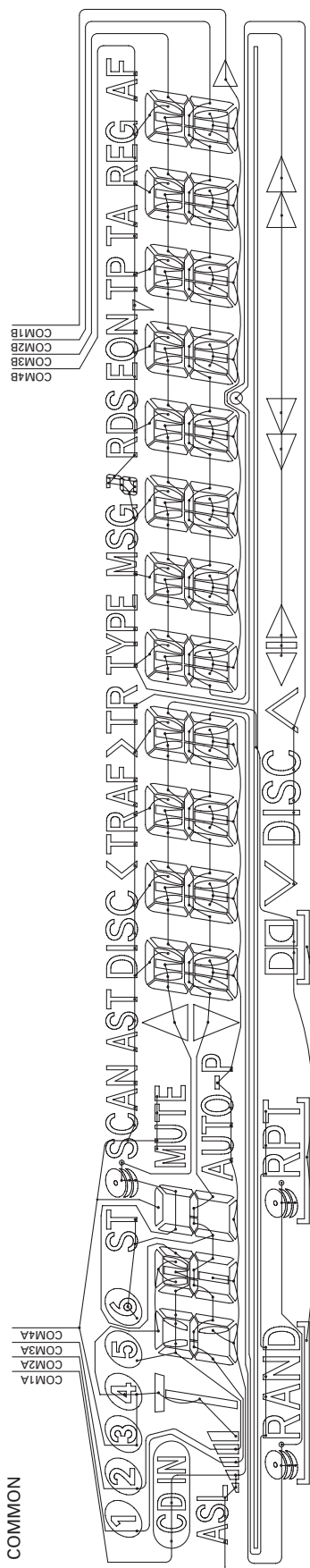
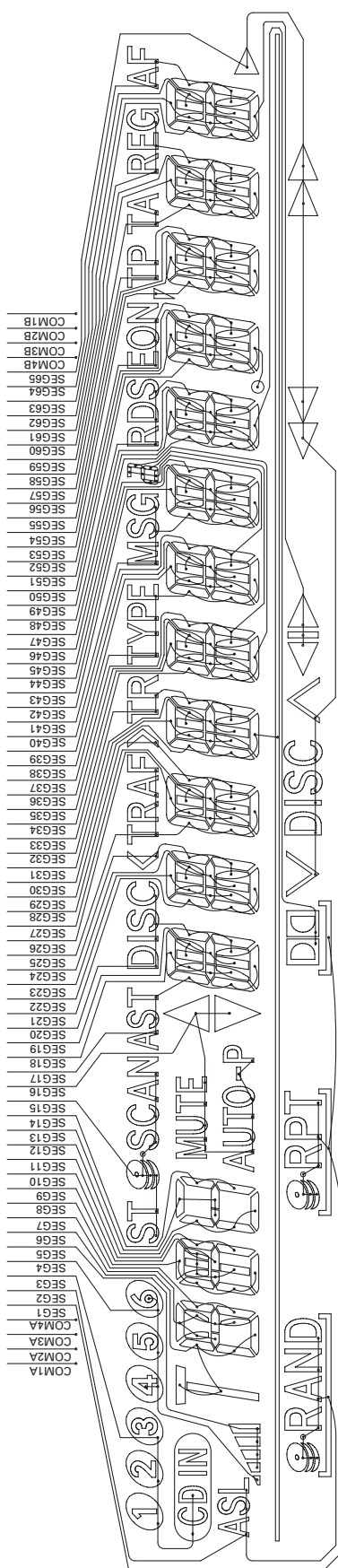
● FM/AM Tuner Unit



No.	Symbol	I/O	Explain
1	STIND	O	stereo indicator "Low" when the FM stereo signals are received. To be pulled up to the "VDD" at 47kΩ.
2	FMSD	O	FM station detector "High" when signals are received. To be pulled up to the "VDD" at 47kΩ Meanwhile, 10kΩ should be used when taking diver FIX trigger from here and "High: 0.9VDD or more" and "Low: 250mV or less". (Should satisfy the diver IC specifications)
3	NL1	O	noise level-1 "High" when noise is received. Output for the RDS. GND at 47kΩ//1,800pF.
4	NL2	O	noise level-2 "High" when noise is received. Output for the RDS. GND at 36kΩ//330pF.
5	Rch	O	R channel output FM stereo "R-ch" signal output or AM audio output. Add the specified de-emphasis constant.
6	Lch	O	L channel output FM stereo "L-ch" signal output or AM audio output. Add the specified de-emphasis constant.
7	WC		write control EEPROM write control. Writing permissible at "Low". Normally open.
8	SDBW	O	SD bandwidth SD bandwidth signal output. For detection of detuning data for the RDS.
9	AMDET	O	AM detector output AM detector output. r out < 100Ω
10	VDD		power supply Power supply pin for the digital section. DC 5V +/- 0.25V. Be careful about overlapping noise in the logic section.
11	DGND		digital ground Grounding for the digital section.
12	CE2	I	chip enable-2 EEPROM chip enable. Active a "Low" To be pulled up to the "VDD" at 47kΩ
13	SL	I/O	signal level Received FM/AM signal level (strength) output. Connect the specified load resistor and capacitor (10k Ω+ 39k Ω//4,700pF)
14	DI/DO	I/O	data input/ data output Data input/Data output To be pulled up to the "VDD" at 47kΩ
15	CK	I	clock Clock input To be pulled up to the "VDD" at 47kΩ
16	CE1	I	chip enable-1 AF-RF chip enable. Active at "High" To be grounded at 47kΩ
17	AMPNS	O	AM PNS IF signal IF signal output for AM PNS circuit.
18	LDET	O	lock detector Active at "Low". To be pulled up to the "VDD" at 47kΩ
19	CREQ	I	current request Active at "Low". To be grounded at 47kΩ
20	AMINI		AM audio input The frequency response and the level are set by connecting an external CR network with terminal AMIN as terminal AMDET. r in = 50kΩ
21	COMP	O	composite signal FM composite signal output. r out < 100Ω
22	VCC		power supply Analog section power supply pin. DC 8.4V +/- 0.3V
23	LOCH	I	local high FM local high pin. When seeking local high, apply 5V together with "LOCL".
24	FMLOCL	I	FM local low FM local low pin. When seeking local low, apply 5V to the base of the NPN transistor with which the specified resistor is being connected to the emitter. Keep it open in case of ordinary marketed models.
25	LOCL	I	local low FM/AM local low pin. When seeking local low, apply 5V to the base of the NPN transistor. Since this pin is exclusive for AM when the FMLOCL is in use, do not drive it under FM.
26	RFGND		RF ground Grounding for the antenna section.
27	FMANT	I	FM antenna input FM antenna input. 75Ω. Surge absorber (DSP-201M-S00B) is necessary.
28	AMANT	I	AM antenna input AM antenna input. High impedance. Connect to the antenna through an L (LAU type) of 4.7μH. To cope with the power transmission line hums, insert a series circuit consisting of an L (a coil of about 100mH) + R (a resistor of 470 Ω to 2.2kΩ) between the GND.

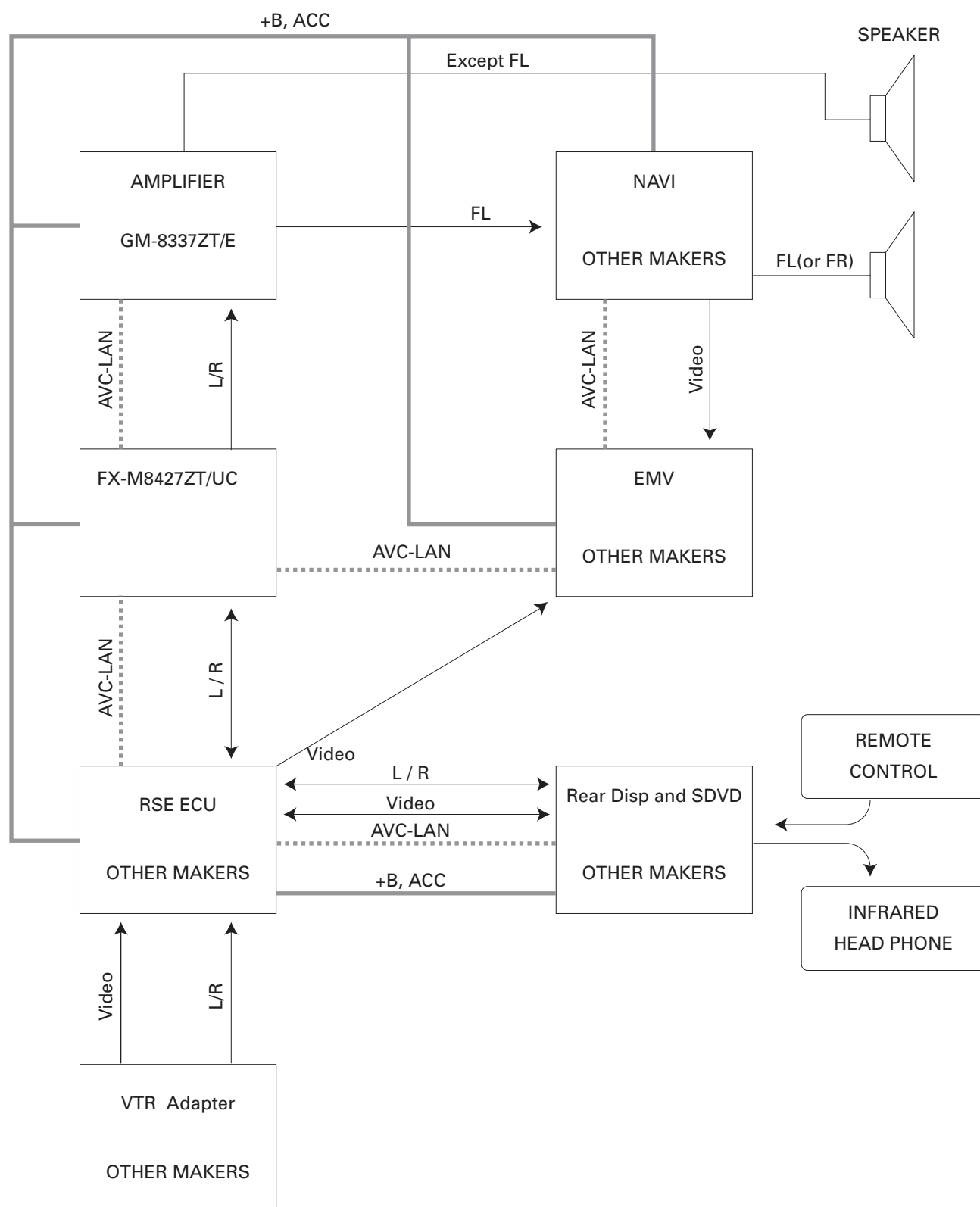
7.2.2 DISPLAY

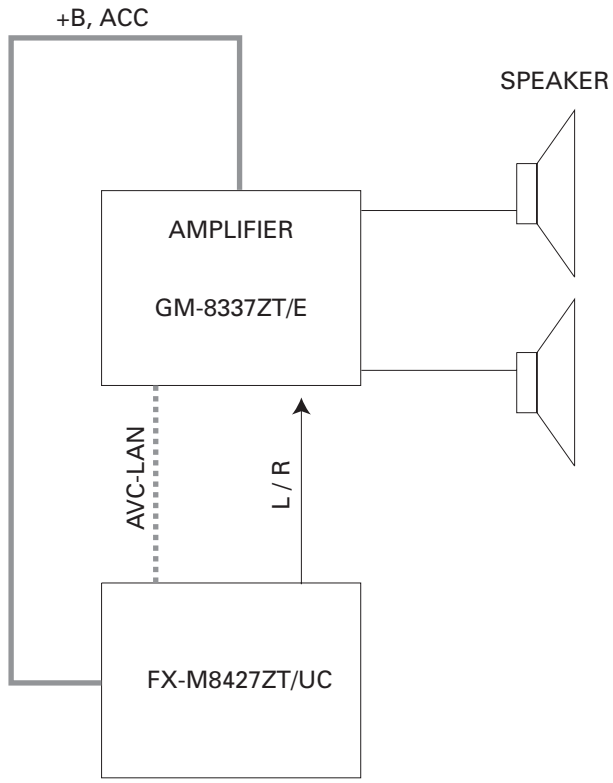
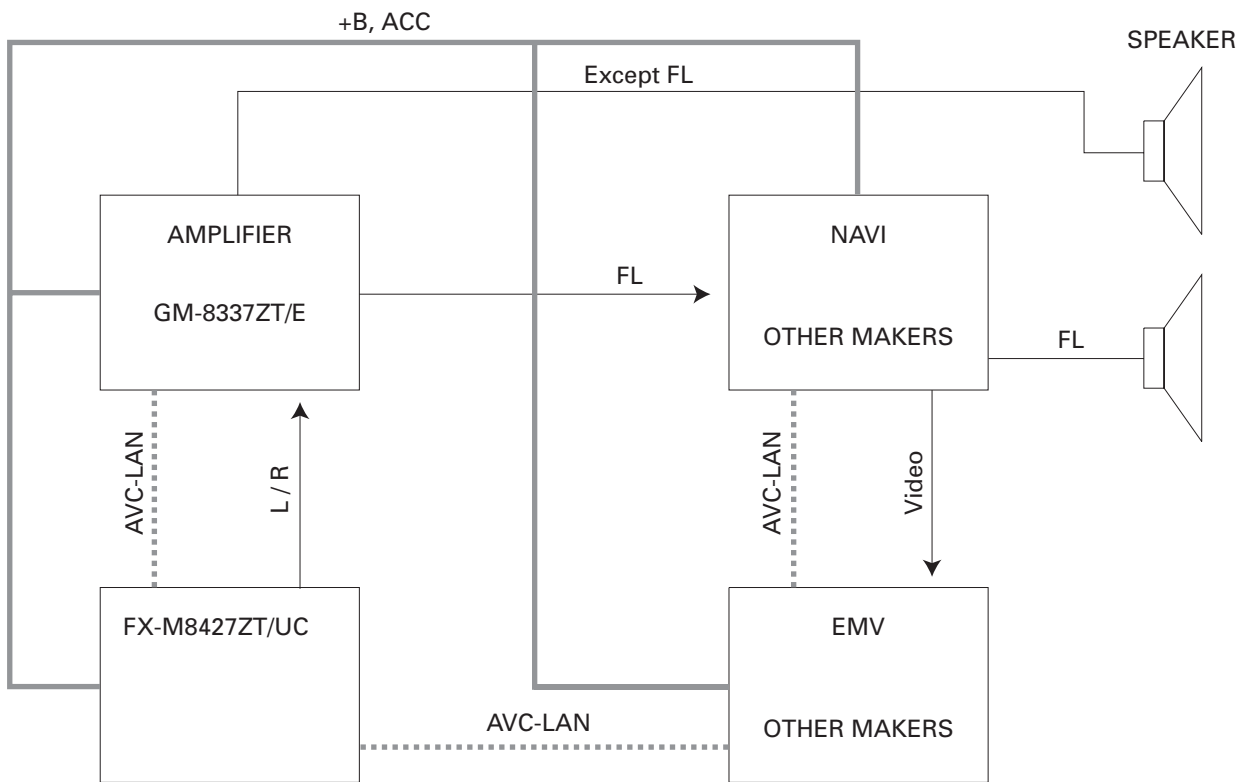
● LCD(CAW1722)



7.3 EXPLANATION

7.3.1 SYSTEM BLOCK DIAGRAM





A

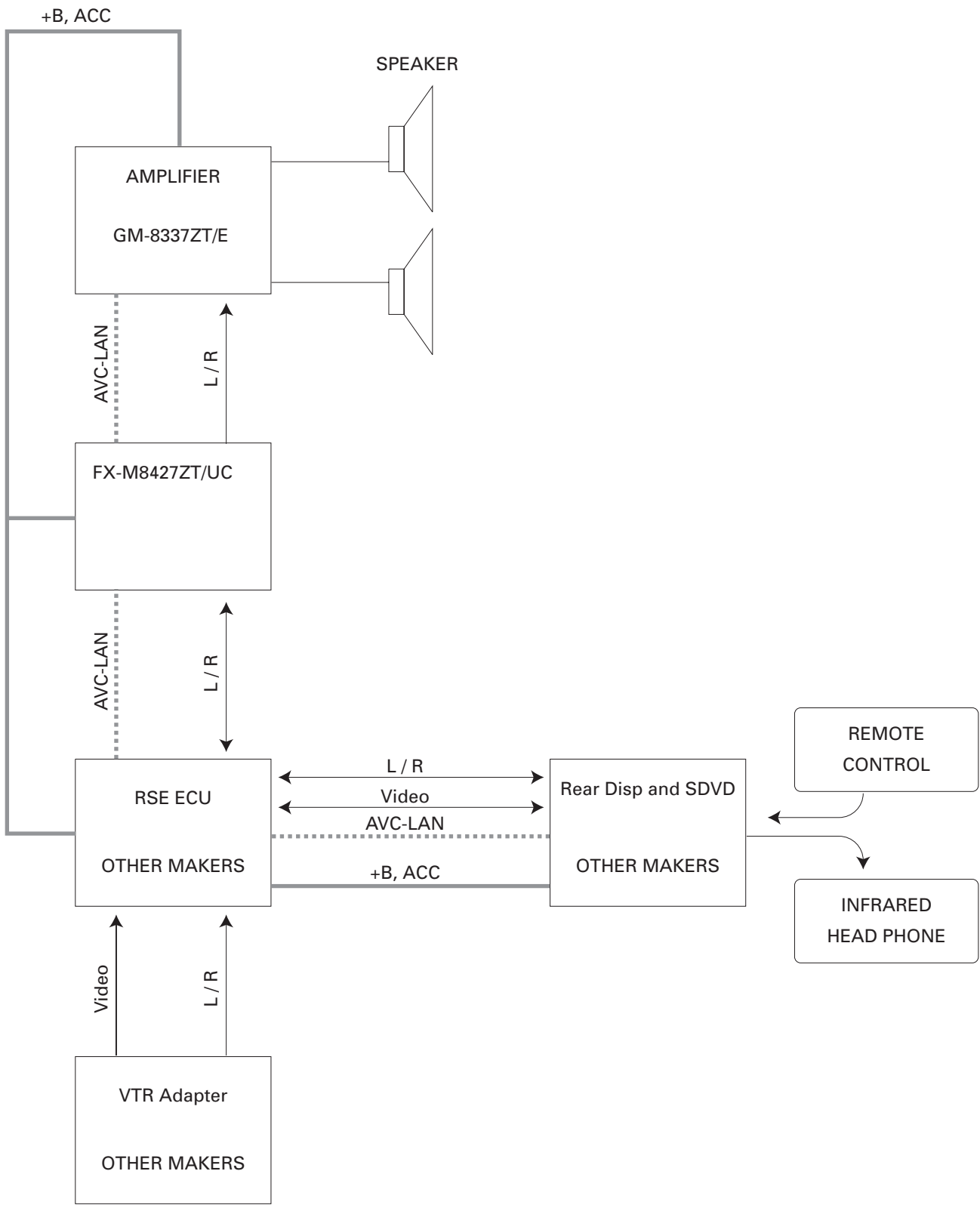
B

C

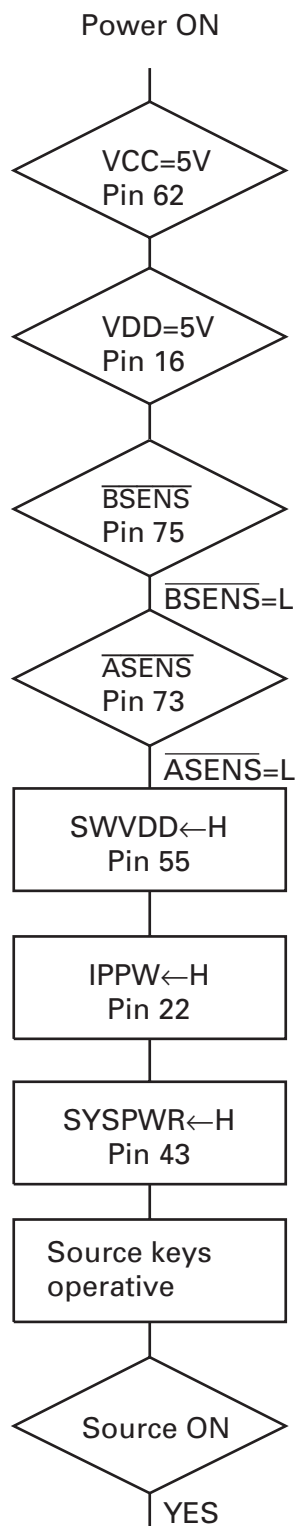
D

E

F



7.3.2 OPERATIONAL FLOW CHART



A

7.4 CLEANING



Before shipping out the product, be sure to clean the following portions by using the prescribed cleaning tools:

Portions to be cleaned	Cleaning tools
CD pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

B

Portions to be cleaned	Cleaning tools
Cassette heads Pinch rollers Capstans	Cleaning paper : GED-008

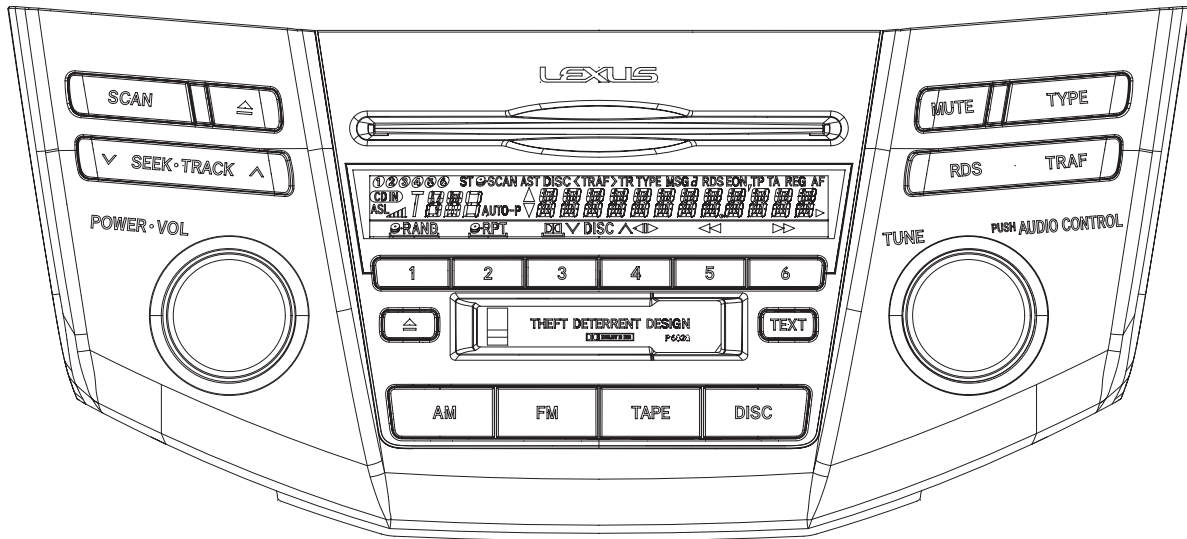
C

D

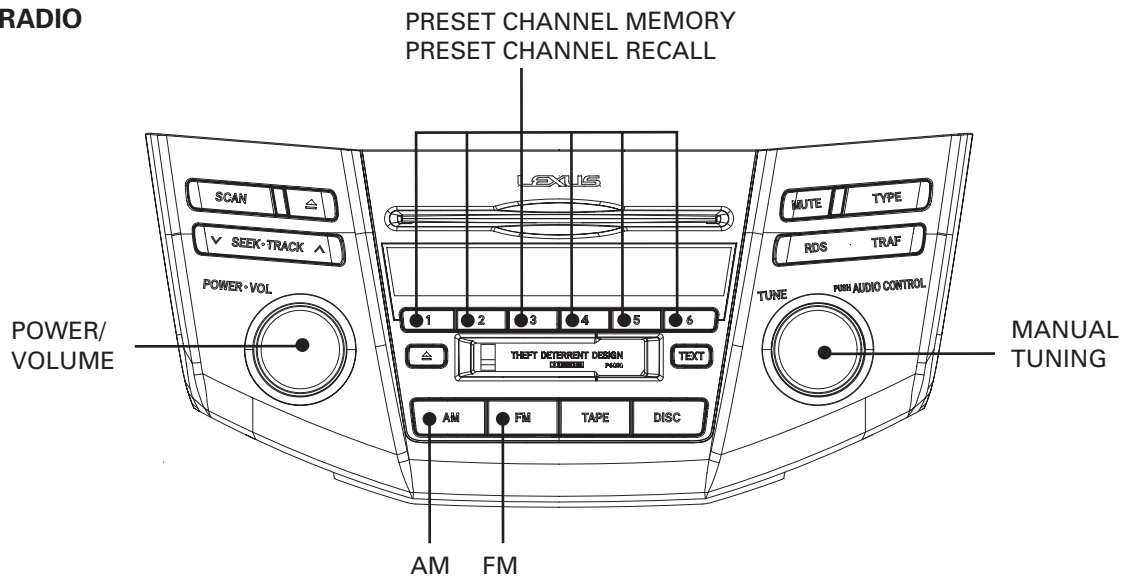
E

F

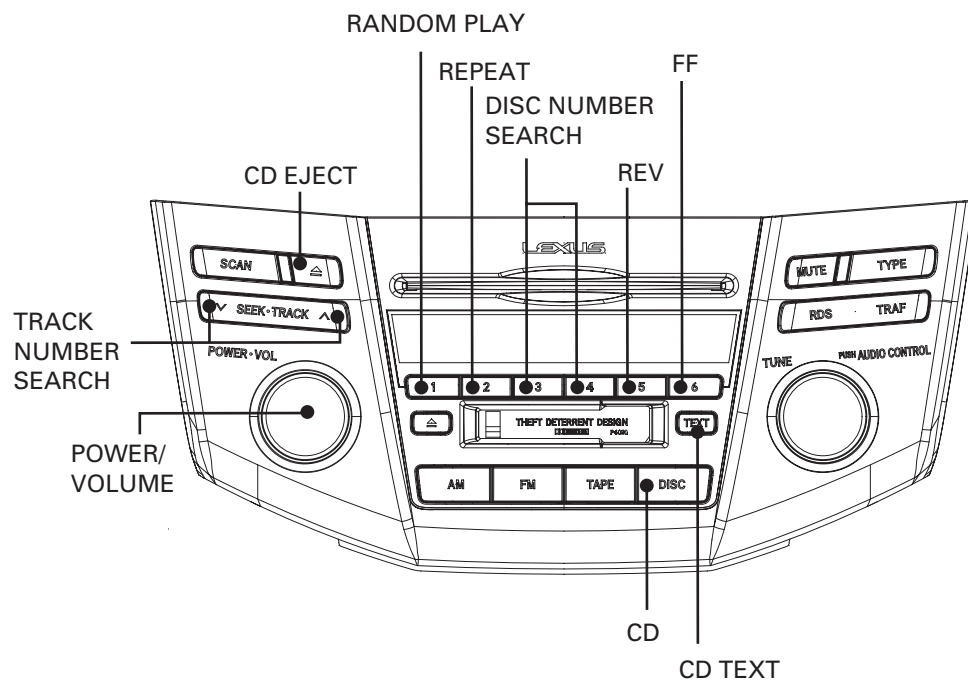
8. OPERATIONS



● RADIO



● CD



● TAPE

