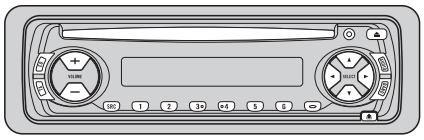
Service Manual

DEH-1330R/X1M/EW



ORDER NO.
CRT2558

HIGH POWER CD PLAYER WITH RDS TUNER

DEH-1330R X1M/EW
DEH-1300R X1M/EW
DEH-1310 X1M/EE

COMPACT disc DIGITAL AUDIO

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

Model No.	Order No.	Mech. Module	Remarks
CX-958	CRT2423	S8.1	CD Mech. Module:Circuit Description, Mech.Description, Disassembly

CONTENTS

PIONEER CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER EUROPE NV Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 253 Alexandra Road, #04-01, Singapore 159936

K-ZZA. OCT. 2000 Printed in Japan

● CD Player Service Precautions

1. For pickup unit(CXX1285) handling, please refer to"Disassembly"(see page 55).
   During replacement, handling precautions shall be taken to prevent an electrostatic discharge(protection by a short pin).
2. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.
3. Please checking the grating after changing the service pickup unit(see page 50).

1. SAFETY INFORMATION

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

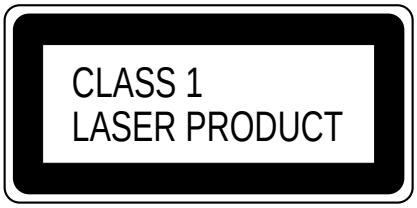
1. Safety Precautions for those who Service this Unit.

- **When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.**

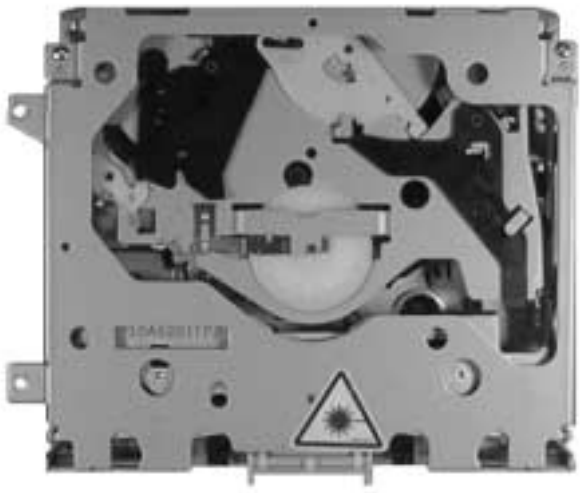
Caution:

1. During repair or tests, minimum distance of 13cm from the focus lens must be kept.
2. During repair or tests, do not view laser beam for 10 seconds or longer.

2. A "CLASS 1 LASER PRODUCT" label is affixed to the bottom of the player.



3. The triangular label is attached to the mechanism unit frame.

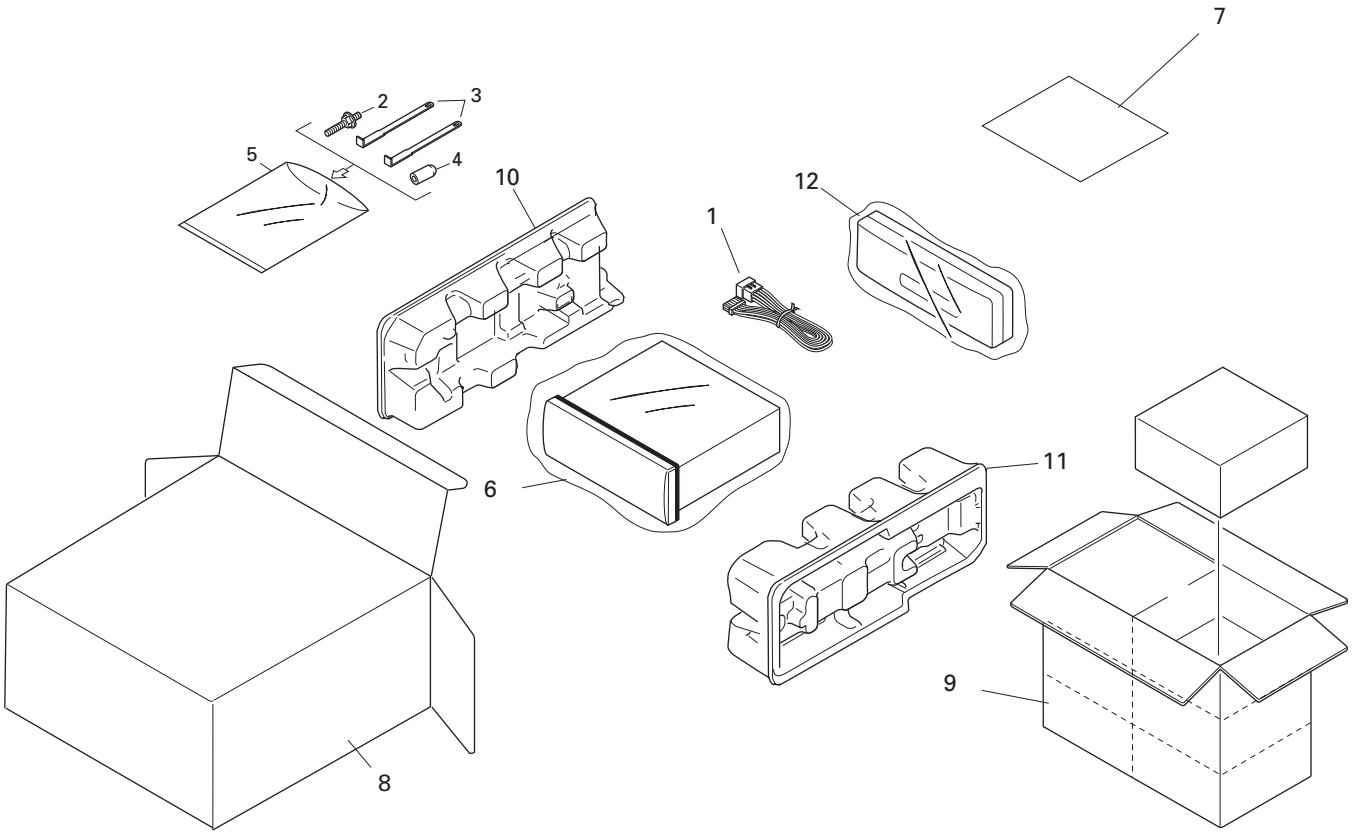


4. Specifications of Laser Diode

Specifications of laser radiation fields to which human access is possible during service.
Wavelength = 800 nanometers

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING



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.

(1) PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Cord Assy	See Contrast table(2)
	2	Screw	CBA1002
	3	Handle	CNC5395
	4	Bush	CNV3930
*	5	Polyethylene Bag	E36-615
	6	Polyethylene Bag	CEG-162
	7-1	•••••	
	7-2	Owner's Manual	See Contrast table(2)
	7-3	Owner's Manual	See Contrast table(2)
	7-4	Installation Manual	See Contrast table(2)
*	7-5	Passport	See Contrast table(2)
*	7-6	Warranty Card	CRY1157
	8	Carton	See Contrast table(2)
	9	Contain Box	See Contrast table(2)
	10	Protector	CHP2346
	11	Protector	CHP2347
	12	Case Assy	CXB3520

(2) CONTRAST TABLE

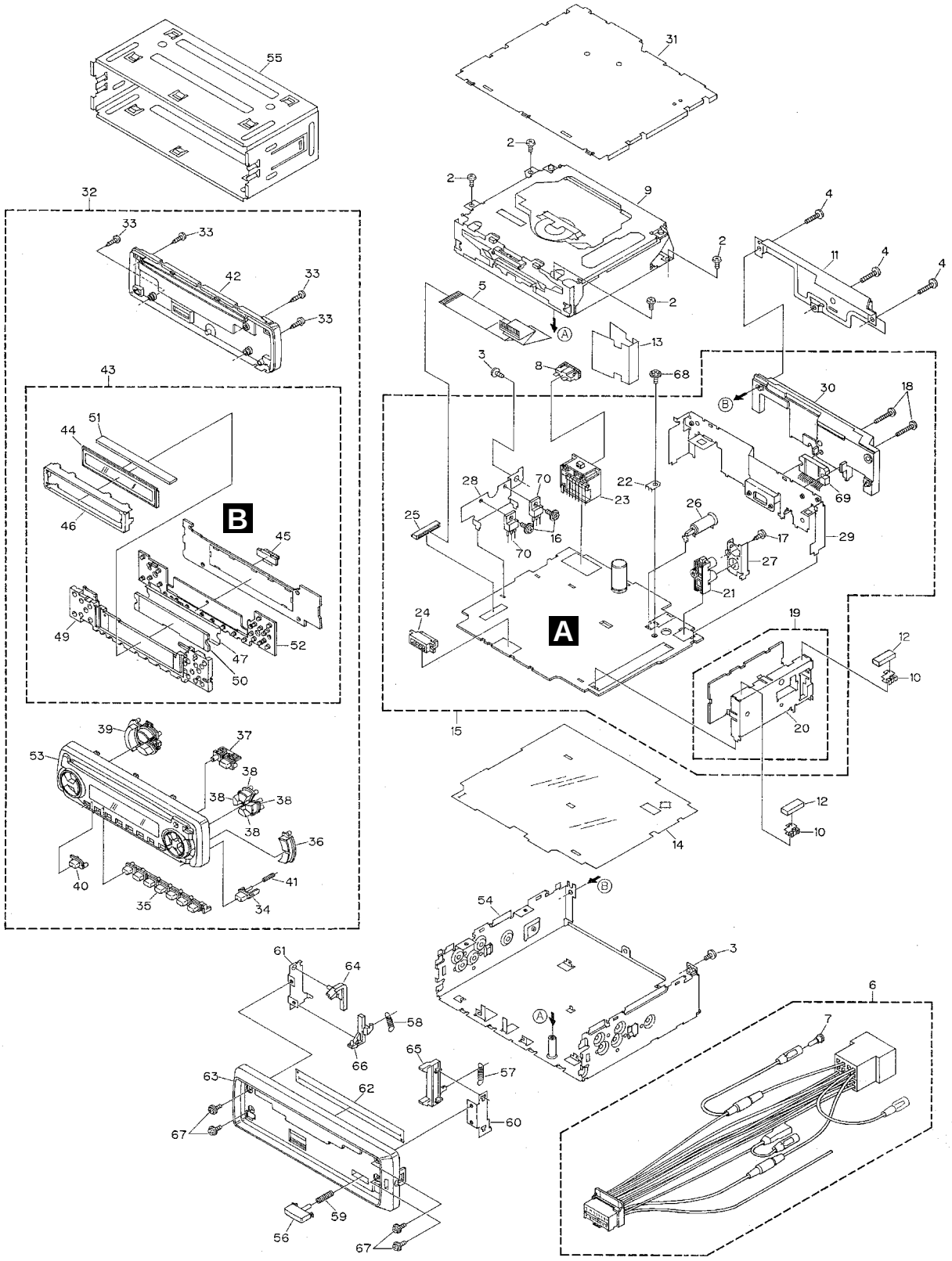
DEH-1330R/X1M/EW, DEH-1300R/X1M/EW and DEH-1310/X1M/EE are constructed the same except for the following:

Mark No.	Symbol and Description	Part No.		
		DEH-1330R/X1M/EW	DEH-1300R/X1M/EW	DEH-1310/X1M/EE
1	Cord Assy	CDE6467	CDE6467	CDE6470
7-2	Owner's Manual	CRD3276	CRD3276	CRD3284
7-3	Owner's Manual	CRD3277	CRD3277	Not used
7-4	Installation Manual	CRD3278	CRD3278	CRD3285
* 7-5	Passport	CRY1013	CRY1013	Not used
8	Carton	CHG4159	CHG4158	CHG4156
9	Contain Box	CHL4159	CHL4158	CHL4156

● **Owner's Manual, Installation Manual**

Model	Part No.	Language
DEH-1330R/X1M/EW	CRD3276	English, Spanish, German
DEH-1300R/X1M/EW	CRD3277	French, Italian, Dutch
	CRD3278	English, Spanish, German, French, Italian, Dutch
DEH-1310/X1M/EE	CRD3284	English, Russian
	CRD3285	English, Russian

2.2 EXTERIOR(DEH-1330R/X1M/EW, DEH-1300R/X1M/EW)



(1) EXTERIOR SECTION PARTS LIST

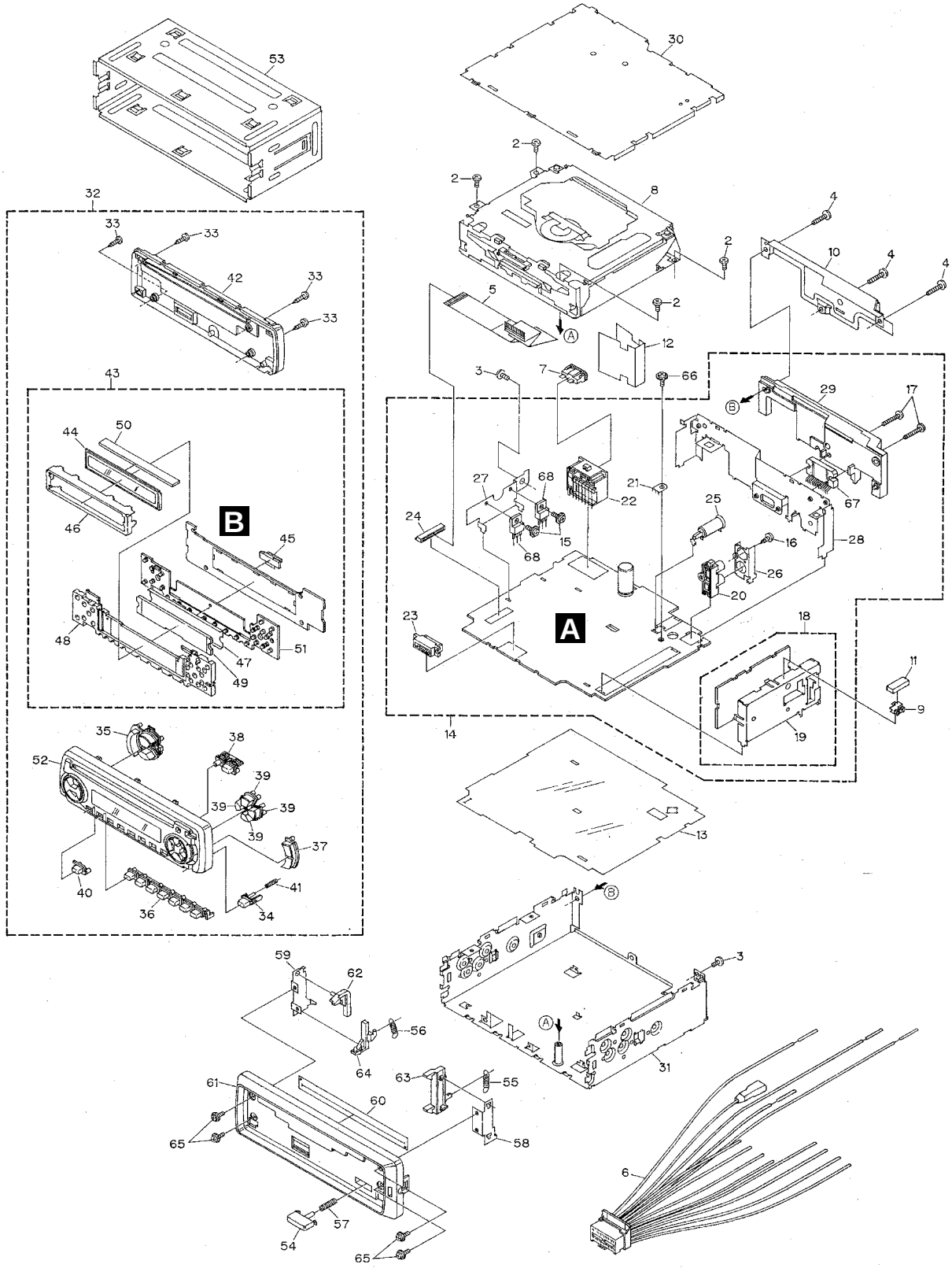
Mark No.	Description	Part No.
1	•••••	
2	Screw	BSZ26P060FMC
3	Screw	BSZ30P060FMC
4	Screw	BSZ30P120FMC
5	Cable	CDE6160
6	Cord Assy	CDE6467
7	Cap	CKX-003
8	Fuse(10A)	CEK1136
9	CD Mechanism Module(S8.1)	CXK5203
10	Holder	CNC5704
11	Cover	CNC9127
12	Cushion	CNM5210
13	Insulator	CNM6224
14	Insulator	CNM6386
15	Tuner Amp Unit	CWM7294
16	Screw	ASZ26P080FMC
17	Screw	BPZ26P080FMC
18	Screw	BSZ26P160FMC
19	FM/AM Tuner Unit	CWE1562
20	Holder	CNC8815
21	Pin Jack(CN301)	CKB1041
22	Terminal(CN403)	CKF1059
23	Plug(CN901)	CKM1330
24	Connector(CN601)	CKS3581
25	Connector(CN605)	CKS3838
26	Antenna Jack(CN402)	CKX1056
27	Holder	CNC8041
28	Holder	CNC8043
29	Holder	CNC9128
30	Heat Sink	CNR1589
31	Case Unit	CXB4033
32	Detach Grille Assy	See Contrast table(2)
33	Screw	BPZ20P100FZK
34	Button(DETACH)	See Contrast table(2)
35	Button(1-6, CLK)	CAC6822
36	Button(A, B)	CAC6823
37	Button(EJECT/BSM)	CAC6824
38	Button(CROSS)	CAC6825
39	Button(+/-, EQ, LD)	CAC6834
40	Button(SOURCE)	CAC6851
41	Spring	CBH2210
42	Cover	See Contrast table(2)
43	Keyboard Unit	See Contrast table(2)
44	LCD	CAW1632
45	Connector(CN1801)	CKS3580
46	Holder	CNC9078
47	Sheet	CNM7057
48	•••••	
49	Lighting Conductor	CNV6475
50	Lighting Conductor	CNV6476
51	Rubber	CNV6477
52	Rubber	CNV6478
53	Grille Unit	See Contrast table(2)
54	Chassis Unit	See Contrast table(2)
55	Holder Unit	CXB6681
56	Button	CAC4836
57	Spring	CBH1835
58	Spring	CBH2208
59	Spring	CBH2367
60	Bracket	CNC6791
61	Holder	CNC8042
62	Cover	CNM6276
63	Panel	See Contrast table(2)
64	Arm	CNV4692
65	Arm	CNV4728
66	Arm	CNV5576
67	Screw	IMS20P030FZK
68	Screw	ISS26P055FUC
69	IC(IC302)	TDA7386
70	Transistor(Q904, 981)	2SD2396

(2) CONTRAST TABLE

DEH-1330R/X1M/EW and DEH-1300R/X1M/EW are constructed the same except for the following:

Mark No.	Symbol and Description	Part No.	
		DEH-1330R/X1M/EW	DEH-1300R/X1M/EW
32	Detach Grille Assy	CXB6148	CXB6147
34	Button(DETACH)	CAC5929	CAC5789
42	Cover	CNS6383	CNS6114
43	Keyboard Unit	CWM7306	CWM7305
53	Grille Unit	CXB7184	CXB7183
54	Chassis Unit	CXB6658	CXB6657
63	Panel	CNS6385	CNS6345

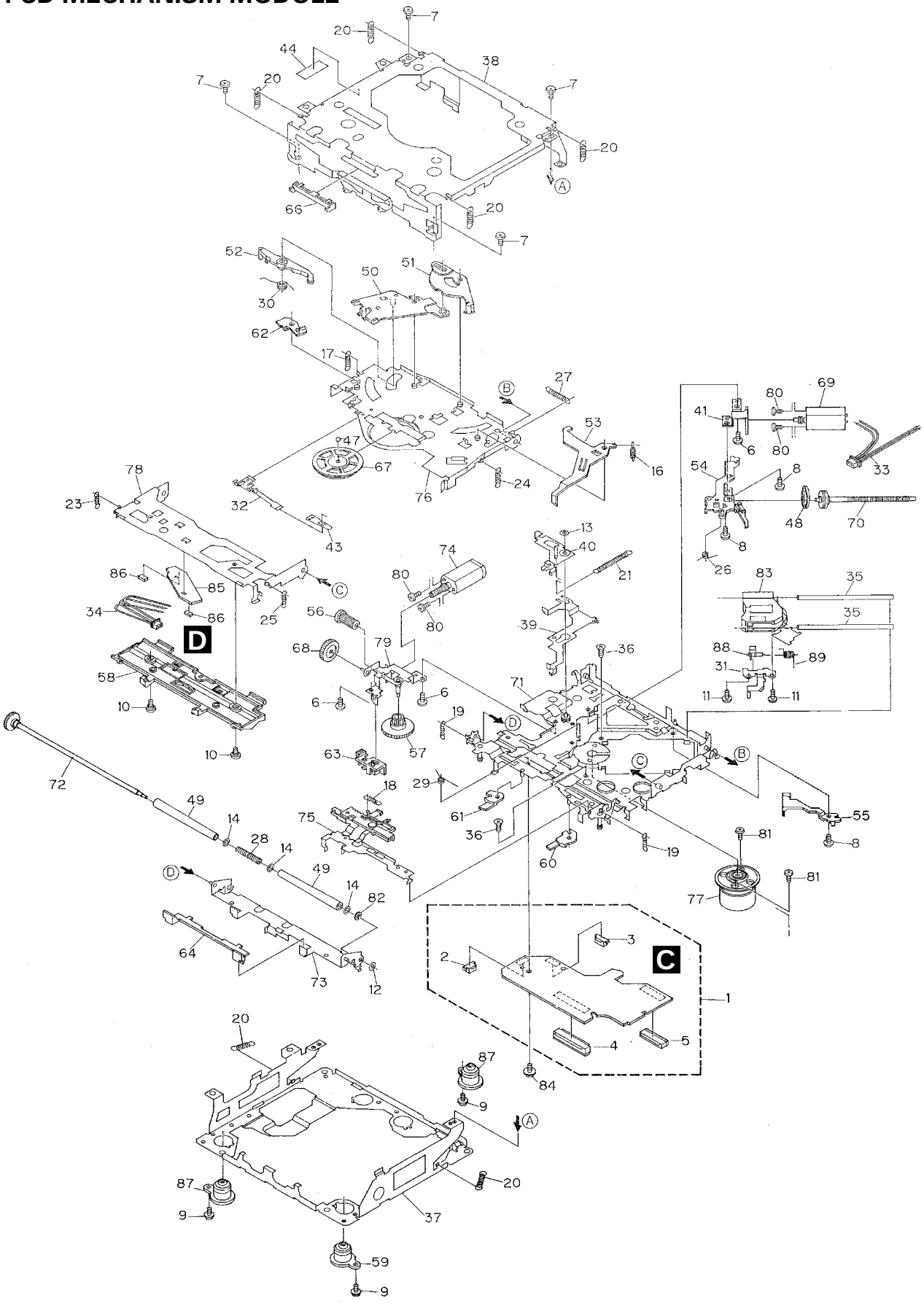
2.3 EXTERIOR(DEH-1310/X1M/EE)



● EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.
1	•••••	
2	Screw	BSZ26P060FMC
3	Screw	BSZ30P060FMC
4	Screw	BSZ30P120FMC
5	Cable	CDE6160
6	Cord Assy	CDE6470
7	Fuse(10A)	CEK1136
8	CD Mechanism Module(S8.1)	CXK5203
9	Holder	CNC5704
10	Cover	CNC9127
11	Cushion	CNM5210
12	Insulator	CNM6224
13	Insulator	CNM6386
14	Tuner Amp Unit	CWM7295
15	Screw	ASZ26P080FMC
16	Screw	BPZ26P080FMC
17	Screw	BSZ26P160FMC
18	FM/AM Tuner Unit	CWE1566
19	Holder	CNC8815
20	Pin Jack(CN301)	CKB1041
21	Terminal(CN403)	CKF1059
22	Plug(CN901)	CKM1330
23	Connector(CN601)	CKS3581
24	Connector(CN605)	CKS3838
25	Antenna Jack(CN402)	CKX1056
26	Holder	CNC8041
27	Holder	CNC8043
28	Holder	CNC9128
29	Heat Sink	CNR1589
30	Case Unit	CXB4033
31	Chassis Unit	CXB4625
32	Detach Grille Assy	CXB6149
33	Screw	BPZ20P100FZK
34	Button(DETACH)	CAC5789
35	Button(+/-, EQ, LD)	CAC6821
36	Button(1-6, CLK)	CAC6822
37	Button(A, B)	CAC6823
38	Button(EJECT/BSM)	CAC6824
39	Button(CROSS)	CAC6825
40	Button(SOURCE)	CAC6851
41	Spring	CBH2210
42	Cover	CNS6114
43	Keyboard Unit	CWM7307
44	LCD	CAW1633
45	Connector(CN1801)	CKS3580
46	Holder	CNC9078
47	Sheet	CNM7057
48	Lighting Conductor	CNV6475
49	Lighting Conductor	CNV6476
50	Rubber	CNV6477
51	Rubber	CNV6478
52	Grille Unit	CXB7185
53	Holder Unit	CXB6681
54	Button	CAC4836
55	Spring	CBH1835
56	Spring	CBH2208
57	Spring	CBH2367
58	Bracket	CNC6791
59	Holder	CNC8042
60	Cover	CNM6276
61	Panel	CNS6345
62	Arm	CNV4692
63	Arm	CNV4728
64	Arm	CNV5576
65	Screw	IMS20P030FZK
66	Screw	ISS26P055FUC
67	IC(IC302)	TDA7386
68	Transistor(Q904, 981)	2SD2396

2.4 CD MECHANISM MODULE

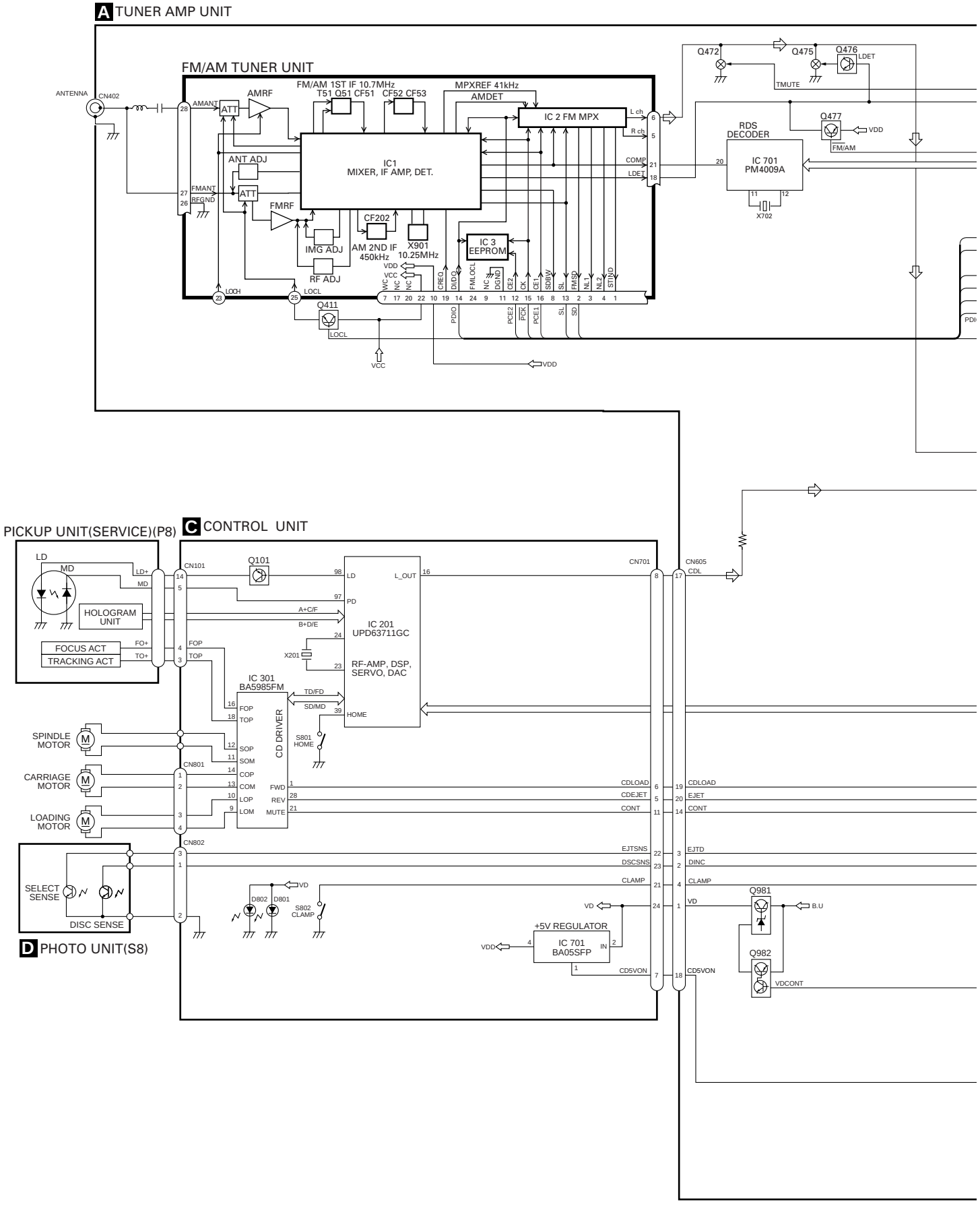


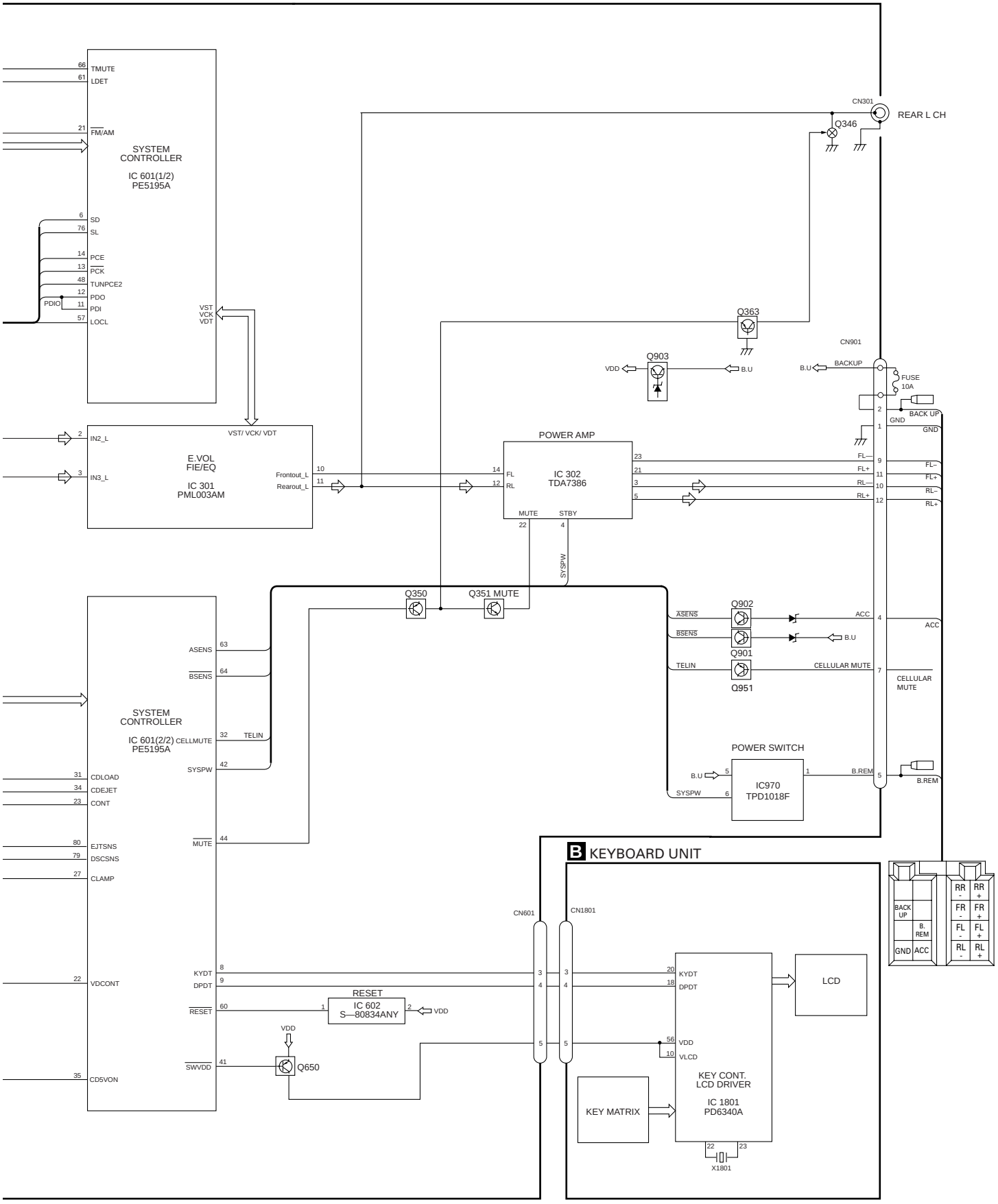
● CD MECHANISM MODULE SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Control Unit	CWX2411
	2	Connector(CN802)	CKS2192
	3	Connector(CN801)	CKS2193
	4	Connector(CN701)	CKS2773
	5	Connector(CN101)	CKS3486
	6	Screw	BMZ20P030FMC
	7	Screw	BSZ20P040FMC
	8	Screw(M2x3)	CBA1077
	9	Screw(M2x5)	EBA1028
	10	Screw	CBA1243
	11	Screw(M2x4)	CBA1362
	12	Washer	CBF1037
	13	Washer	CBF1038
	14	Washer	CBF1060
	15	•••••	
	16	Spring	CBH2079
	17	Spring	CBH2117
	18	Spring	CBH2314
	19	Spring	CBH2110
	20	Spring	CBH2282
	21	Spring	CBH2318
	22	•••••	
	23	Spring	CBH2324
	24	Spring	CBH2118
	25	Spring	CBH2161
	26	Spring	CBH2163
	27	Spring	CBH2189
	28	Spring	CBH2377
	29	Spring	CBH2260
	30	Spring	CBH2262
	31	Bracket	CNC8568
	32	Spring	CBL1369
	33	Connector	CDE5531
	34	Connector	CDE5532
	35	Shaft	CLA3894
	36	Screw(M2.6x6)	CBA1458
	37	Frame	CNC8565
	38	Frame	CNC8749
	39	Lever	CNC9265
	40	Arm	CNC8663
	41	Bracket	CNC8567
	42	•••••	
	43	Spacer	CNM3315
	44	Sheet	CNM6659
	45	•••••	
	46	•••••	
	47	Ball	CNR1189
	48	Belt	CNT1086
	49	Roller	CNV4509
	50	Arm	CNV6037
	51	Arm	CNV5247
	52	Arm	CNV5248
	53	Arm	CNV5249
	54	Guide	CNV5254
	55	Guide	CNV5255
	56	Gear	CNV5257
	57	Gear	CNV5256
	58	Guide	CNV6272
	59	Damper	CNV6174
	60	Arm	CNV6096
	61	Arm	CNV6031
	62	Arm	CNV6211
	63	Guide	CNV6012
	64	Guide	CNV5510
	65	•••••	
	66	Guide	CNV5751
	67	Clamper	CNV6013
	68	Gear	CNV5813
	69	Motor Unit(M1)	CXB2190
	70	Screw Unit	CXB5892
	71	Chassis Unit	CXB4797
	72	Gear Unit	CXB4728
	73	Arm Unit	CXB5753
	74	Motor Unit(M2)	CXB2195
	75	Lever Unit	CXB4730
	76	Arm Unit	CXB4731
	77	Motor Unit(M3)	CXB2562
	78	Arm Unit	CXB4732
	79	Bracket Unit	CXB4795
	80	Screw	JFZ20P025FMC
	81	Screw	JGZ17P025FZK
	82	Washer	YE20FUC
	83	Pickup Unit(Service)(P8)	CXX1285
	84	Screw	IMS26P030FMC
*	85	PCB	CNX2982
	86	Photo-transistor(Q1, 2)	CPT230SX-TU
	87	Damper	CNV6175
	88	Rack	CNV6014
	89	Spring	CBH2315

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

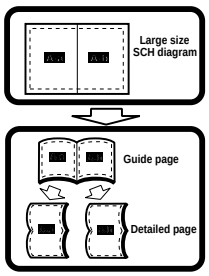


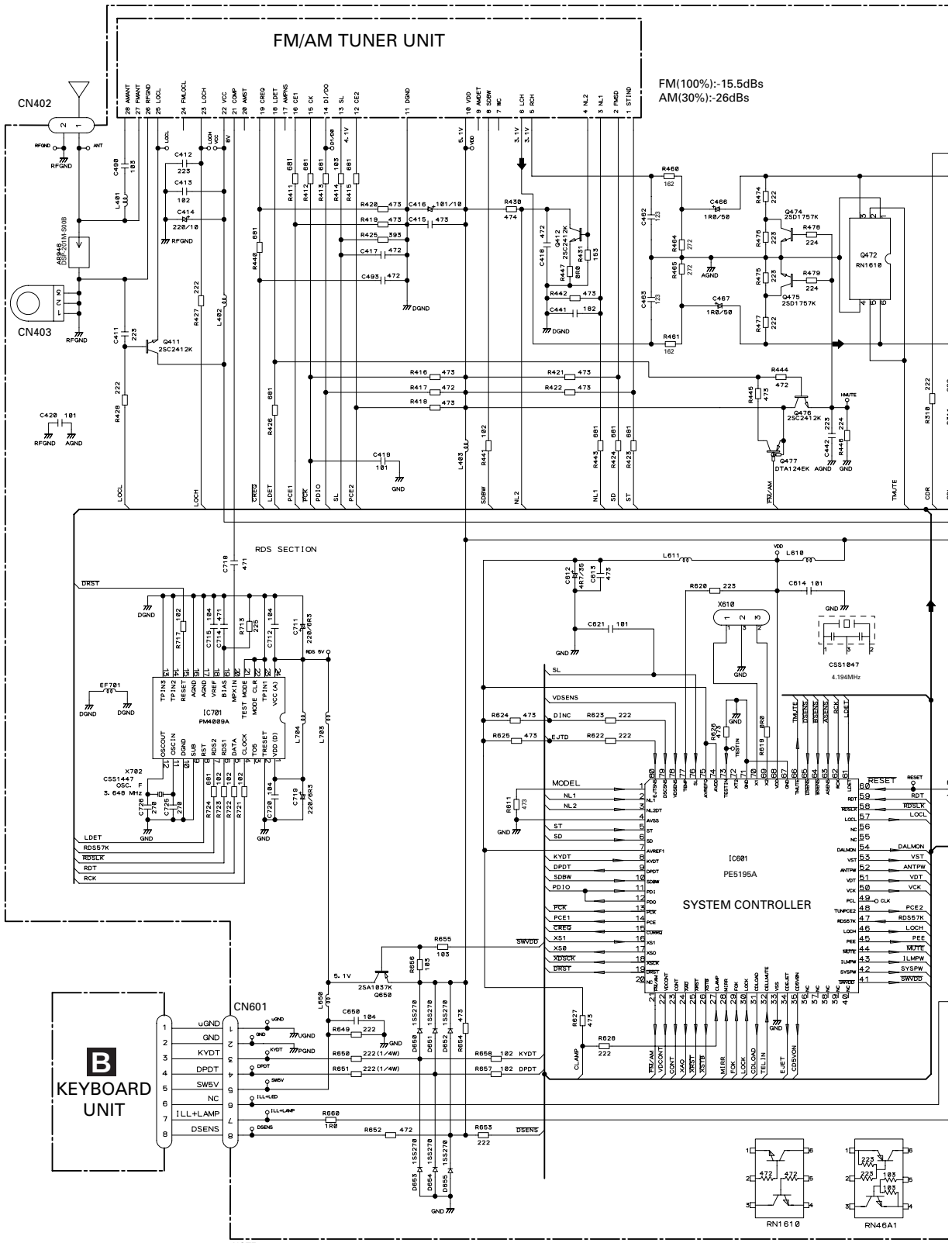

SYSTEM CONTROLLER
IC 601(1/2)
PE5195A
TMUTE
LDET
FM/AM
SD
SL
PCE
PCK
TUNPCE2
PDO
PDI
LOCL
PDIO
VST
VCK
VDT
E.VOL
FIE/EQ
IC 301
PML003AM
IN2_L
IN3_L
VST/ VCK/ VDT
Frontout_L
Rearout_L
POWER AMP
IC 302
TDA7386
FL
RL
MUTE
STBY
SYSPW
Q350
Q351 MUTE
Q363
Q903
VDD
B.U
CN301
REAR L CH
Q346
CN901
BACKUP
FUSE
10A
BACK UP
GND
FL–
FL+
RL–
RL+
ACC
CELLULAR MUTE
B.REM
Q902
Q901
Q951
ASENS
BSENS
TELIN
POWER SWITCH
IC970
TPD1018F
SYSTEM CONTROLLER
IC 601(2/2)
PE5195A
CELLMUTE
CDLOAD
CDEJET
CONT
EJTSNS
DSCSNS
CLAMP
VDCONT
CD5VON
MUTE
KYDT
DPDT
RESET
SWVDD
IC 602
S—80834ANY
Q650
B KEYBOARD UNIT
CN601
CN1801
LCD
KEY MATRIX
KEY CONT.
LCD DRIVER
IC 1801
PD6340A
VLCD
X1801
RR –
RR +
FR –
FR +
FL –
FL +
RL –
RL +

3.2 OVERALL CONNECTION DIAGRAM(GUIDE PAGE) (DEH-1330R/X1M/EW, DEH-1300R/X1M/EW)

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

A TUNER AMP UNIT **A-a**





NOTE :
- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

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.

For resistors and capacitors in the circuit diagrams, their resistance values or capacitance values are expressed in codes:

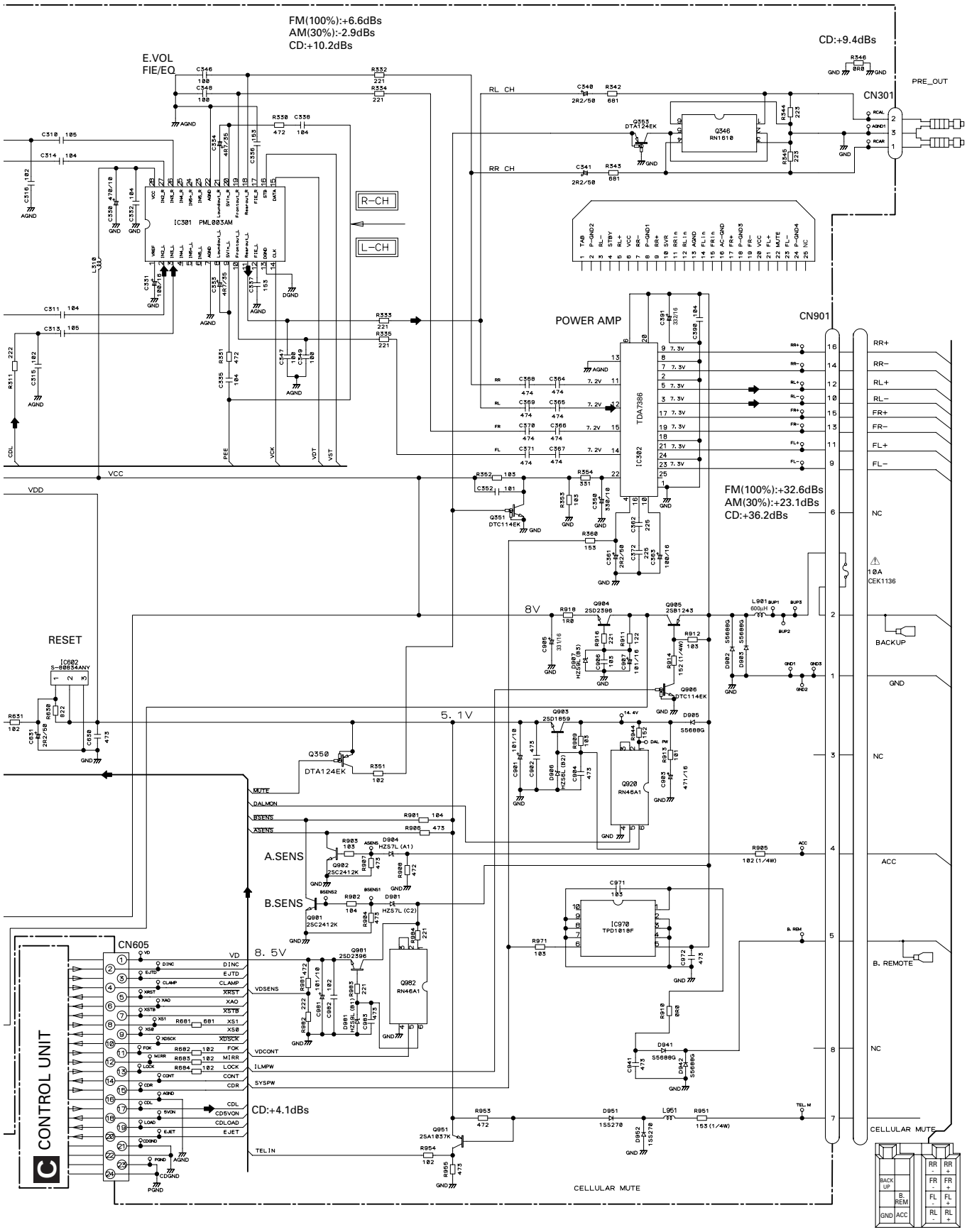
Ex. *Resistors

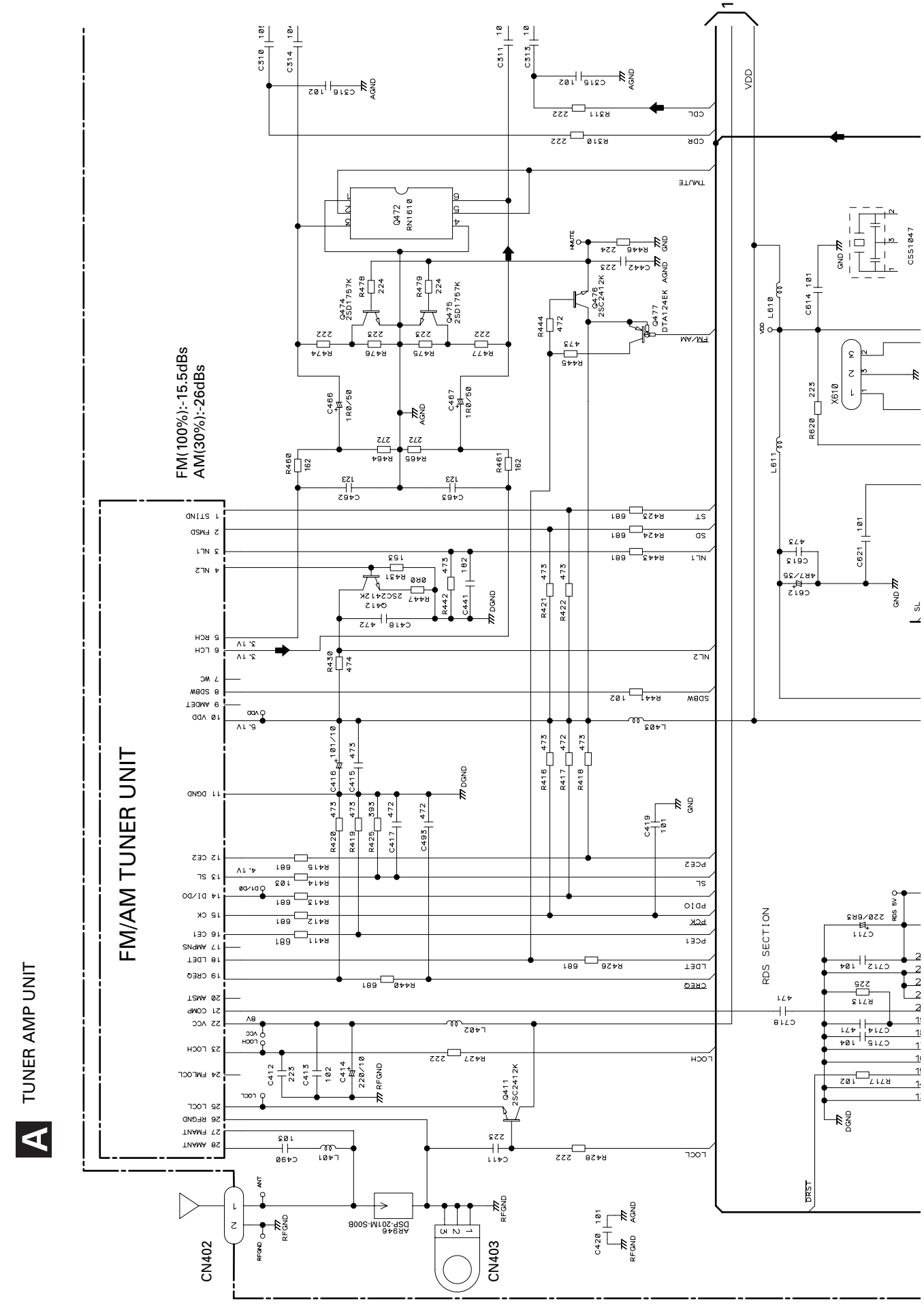
Code	Practical value
123	12k ohms
103	10k ohms

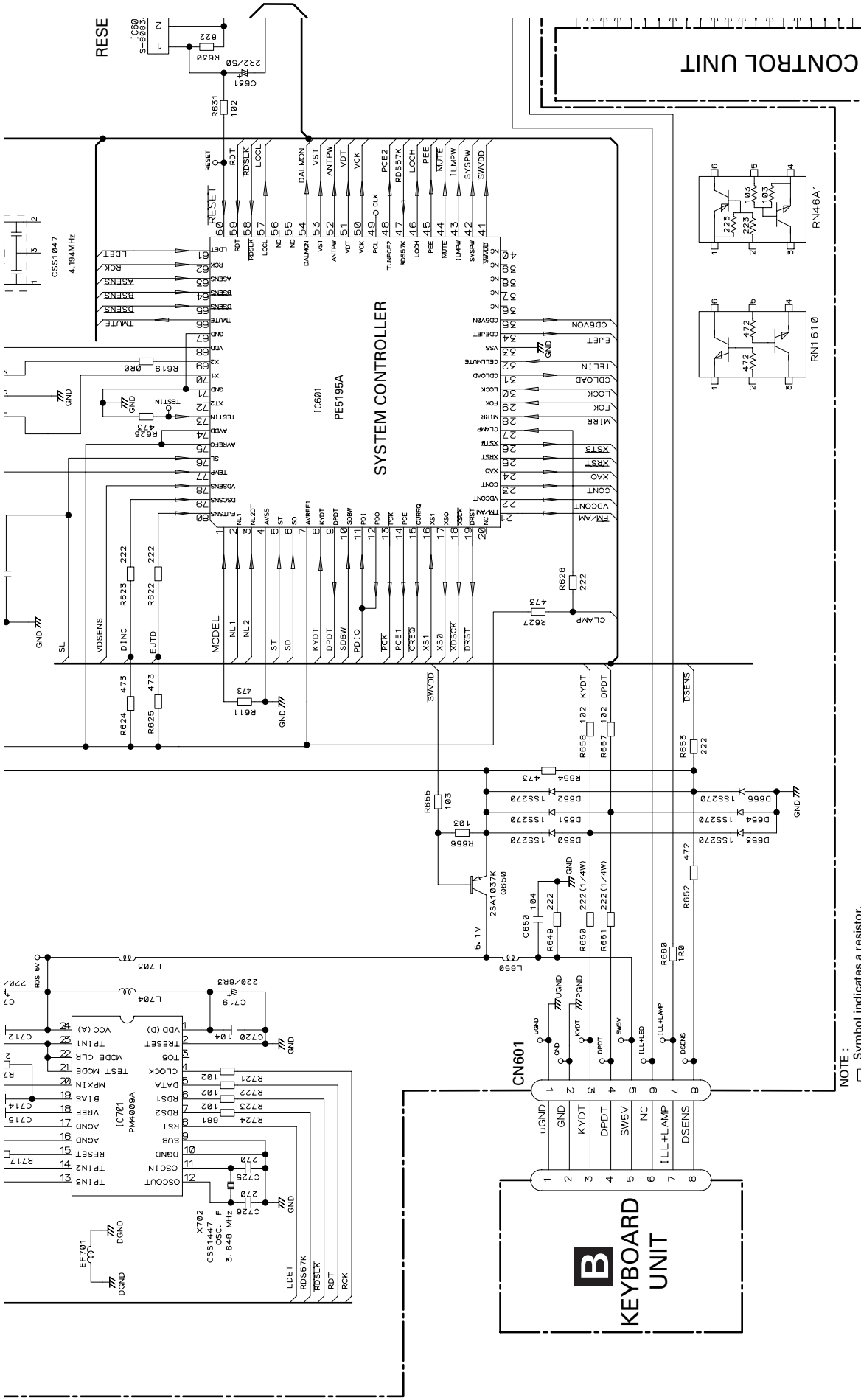
*Capacitors

Code	Practical value
103	0.01μF
101/10	100μF/10V

A-b


FM(100%):+6.6dBs
AM(30%):-2.9dBs
CD:+10.2dBs
E.VOL
FIE/EQ
CD:+9.4dBs
PRE_OUT
CN301
RL CH
RR CH
R-CH
L-CH
IC301 PML003AM
POWER AMP
CN901
IC302 TDA7386
FM(100%):+32.6dBs
AM(30%):+23.1dBs
CD:+36.2dBs
RESET
IC602 S-80834ANY
5.1V
8V
8.5V
A.SENS
B.SENS
CN605
CONTROL UNIT
CD:+4.1dBs
CELLULAR MUTE
BACKUP
GND
ACC
B. REMOTE
NC
RR+
RR−
RL+
RL−
FR+
FR−
FL+
FL−


A-b
A-a
TUNER AMP UNIT
A
FM/AM TUNER UNIT
FM(100%):-15.5dBs
AM(30%):-26dBs
CN402
CN403
DSP-201M-S00B
RDS SECTION
VDD
TMUTE
MUTE
FM/AM
SL
DRST
RFGND
AGND
DGND
GND



For resistors and capacitors in the circuit diagrams, their resistance values or capacitance values are expressed in codes:

Ex. *Resistors

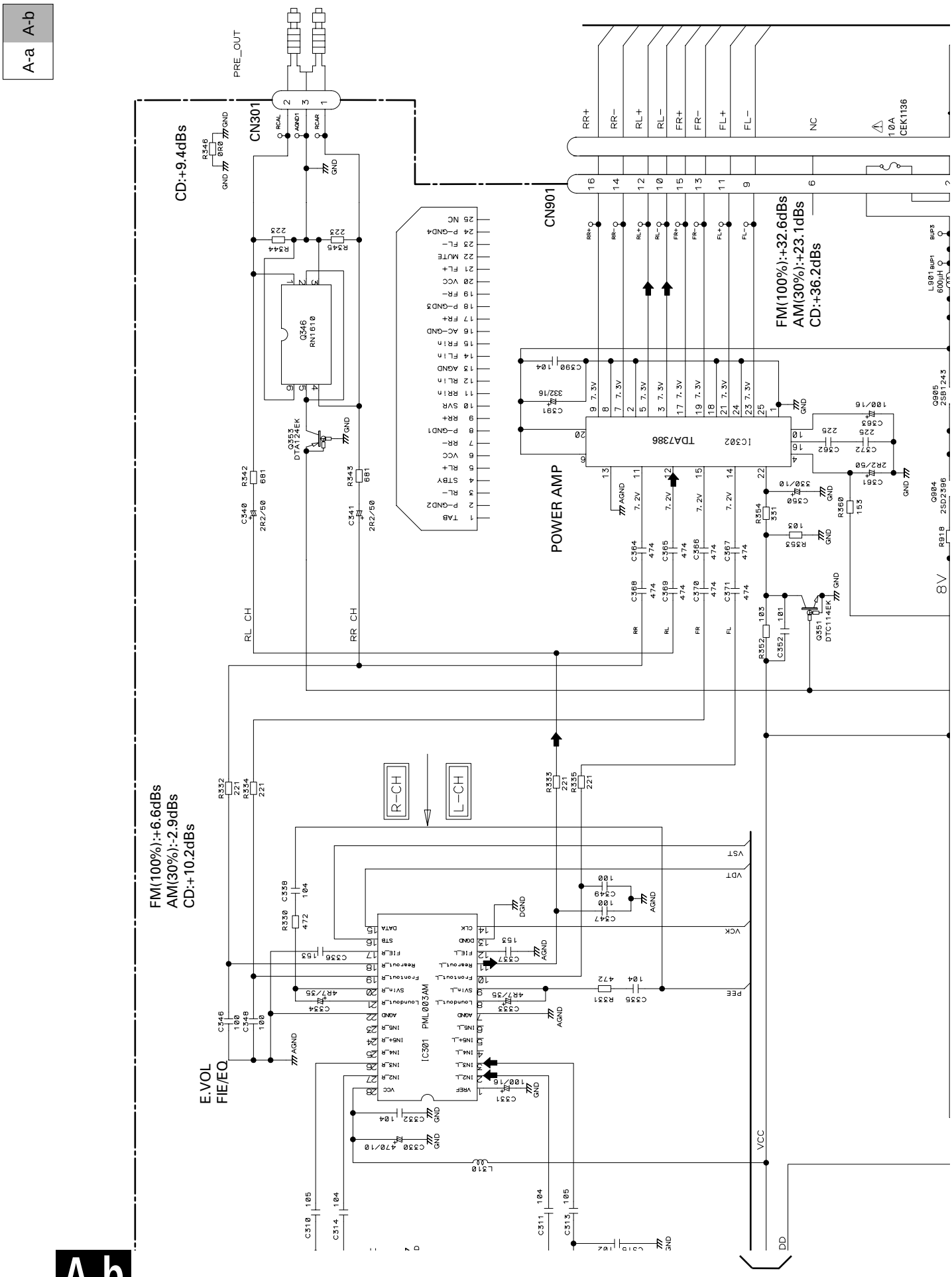
Code	Practical value
123	12k ohms
103	10k ohms

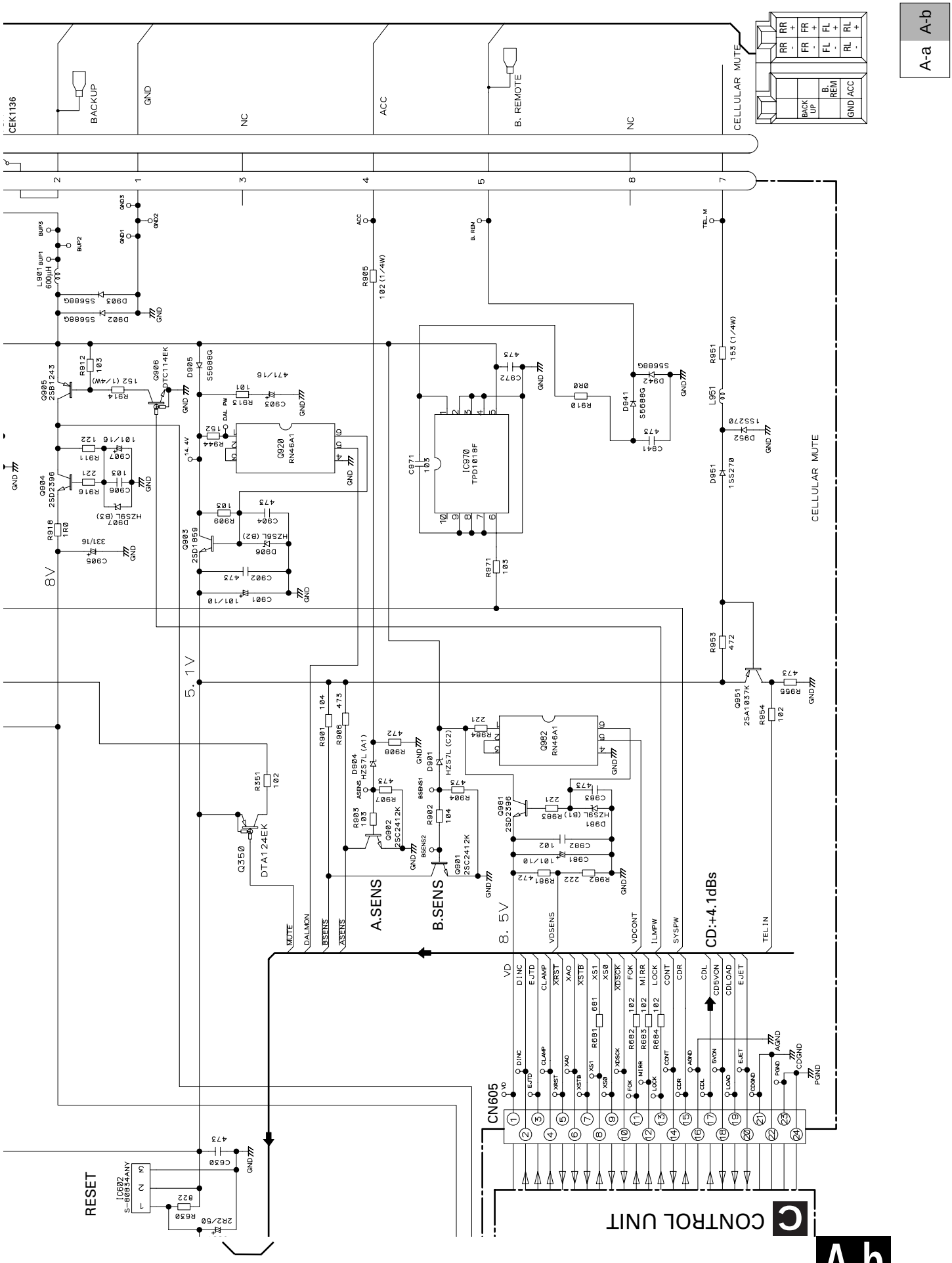
*Capacitors

Code	Practical value
103	0.01µF
101/10	100µF/10V

NOTE :
- ⇨ Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- ⊣⊢ Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

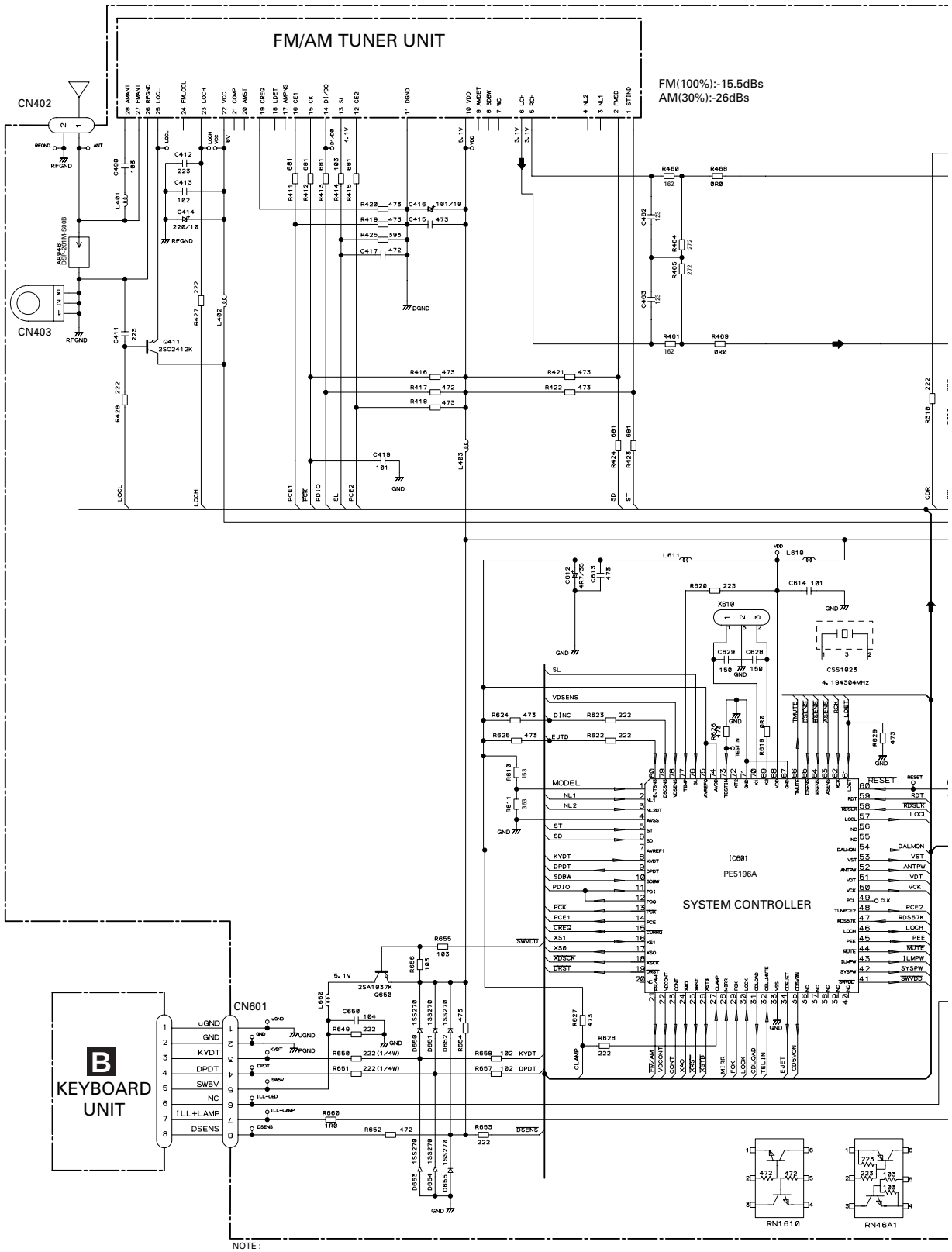
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.


A-a A-b
PRE_OUT
CN301
CN901
RR+
RR−
RL+
RL−
FR+
FR−
FL+
FL−
NC
10A CEK1136
CD:+9.4dBs
FM(100%):+32.6dBs
AM(30%):+23.1dBs
CD:+36.2dBs
POWER AMP
TDA7386
IC302
PML003AM
IC301
R-CH
L-CH
RL CH
RR CH
FM(100%):+6.6dBs
AM(30%):-2.9dBs
CD:+10.2dBs
E.VOL
FIE/EQ
8V
VCC


CEK1136
BACKUP
GND
NC
ACC
B. REMOTE
NC
CELLULAR MUTE
BACK UP
B. REM
GND ACC
RR + RR -
FR + FR -
FL + FL -
RL + RL -
CELLULAR MUTE
8V
5.1V
8.5V
A.SENS
B.SENS
CD:+4.1dBs
CONTROL UNIT
RESET
CN605
IC970 TPD1018F
Q920 RN46A1
Q982 RN46A1
Q902 2SC2412K
Q901 2SC2412K
Q350 DTA124EK
Q905 2SB1243
Q906 DTC114EK
Q904 2SD2396
Q903 2SD1859
Q951 2SA1037K
Q981 2SD2396
D902 S5688G
D903 S5688G
D905 S5688G
D941 S5688G
D944 S5688G
D952 1SS270
D951 1SS270
D907 HZS9L (B3)
D906 HZS6L (B2)
D904 HZS7L (A1)
D901 HZS7L (C2)
D981 HZS9L (B1)
IC602 S-80834ANY
MUTE
DALMON
BSENS
ASENS
VDSENS
VDCONT
LMPW
SYSPW
TEL IN
VD
DINC
EJTD
CLAMP
XRST
XAO
XSTB
XS1
XS0
XDSCK
FOK
MIRR
LOCK
CONT
CDR
CDL
CD5VON
CDLOAD
EJET
AGND
CDGND
PGND

3.3 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)(DEH-1310/X1M/EE)

A TUNER AMP UNIT **A-a**



NOTE :

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

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.

For resistors and capacitors in the circuit diagrams, their resistance values or capacitance values are expressed in codes:

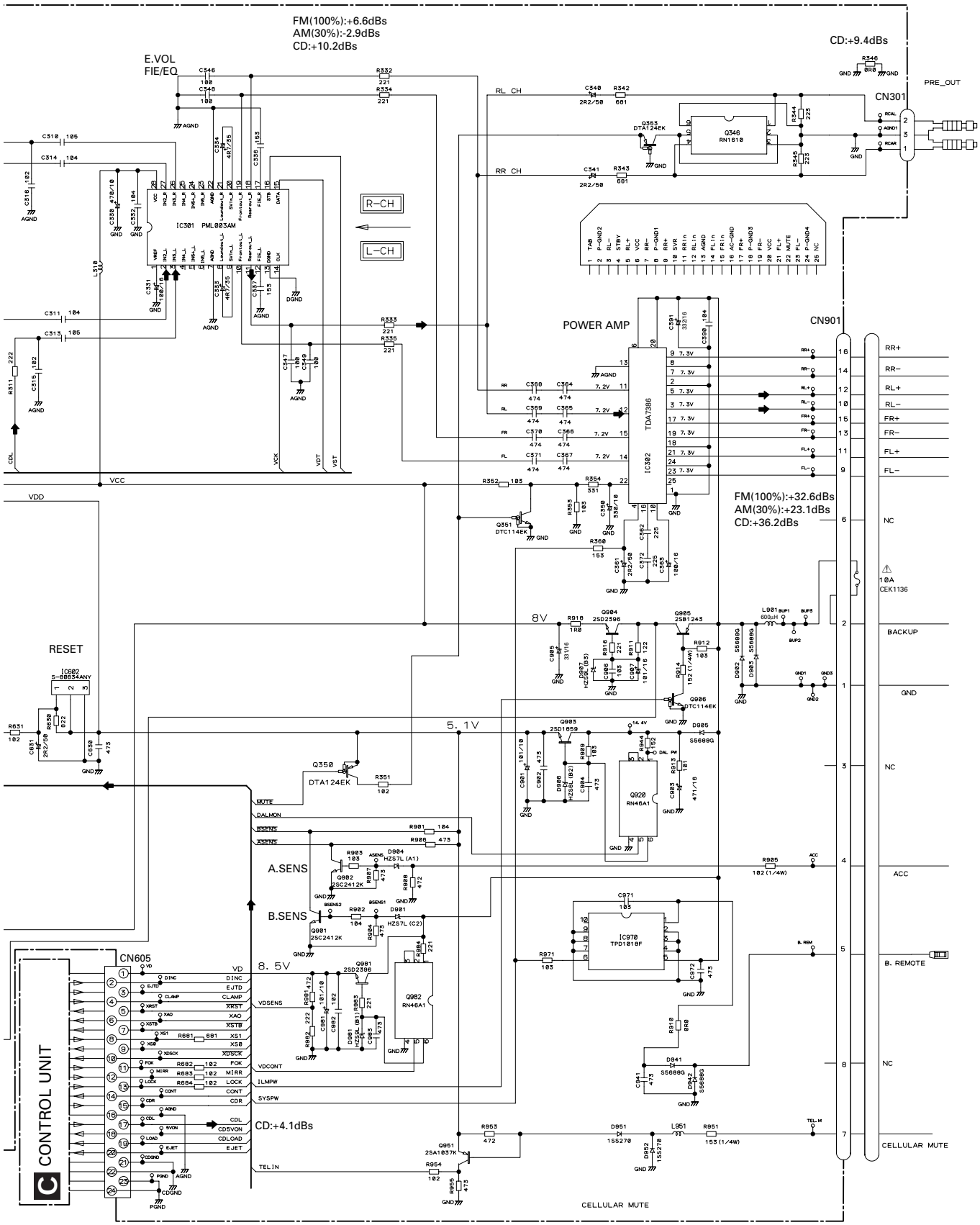
Ex. *Resistors

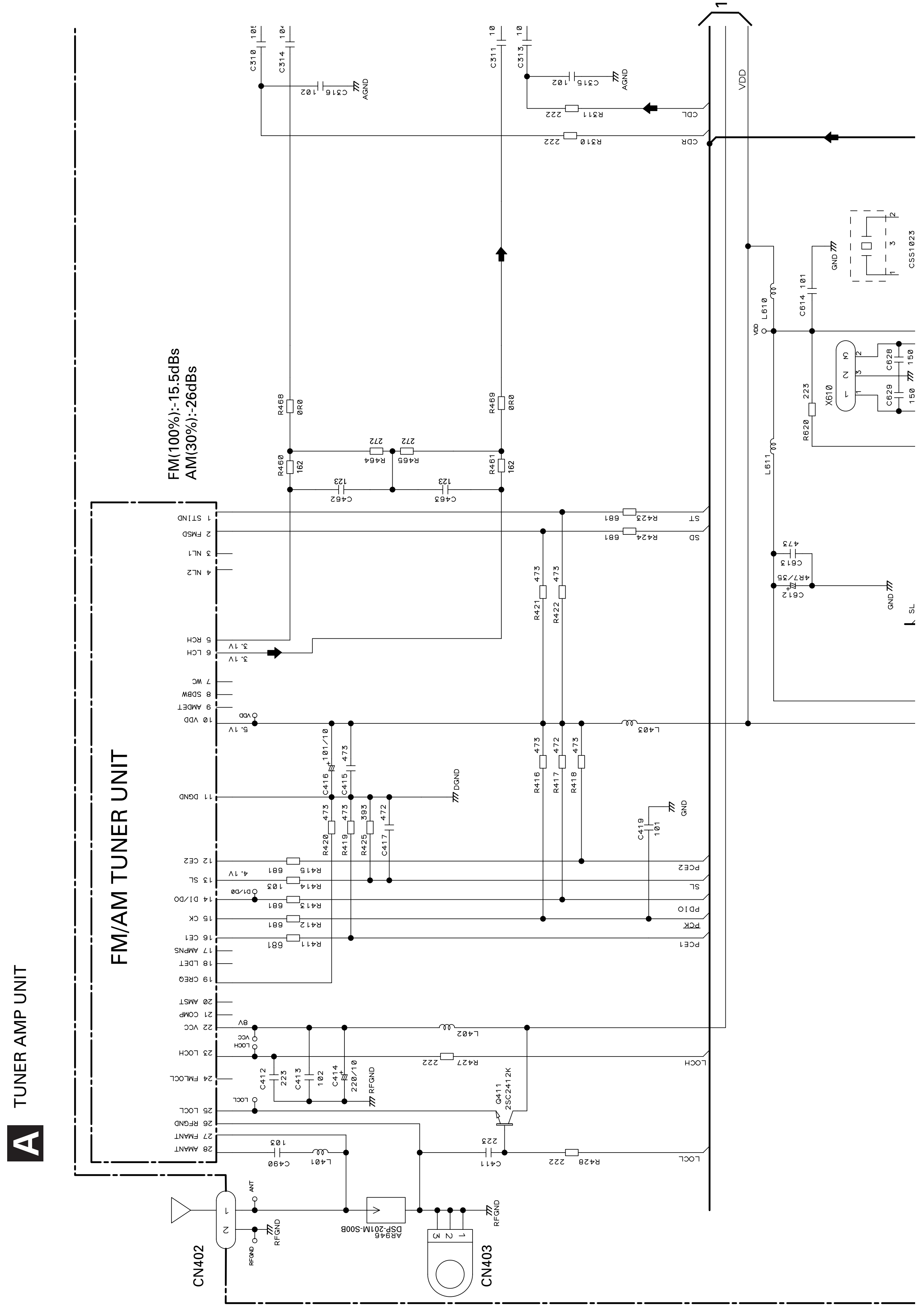
Code	Practical value
123	12k ohms
103	10k ohms

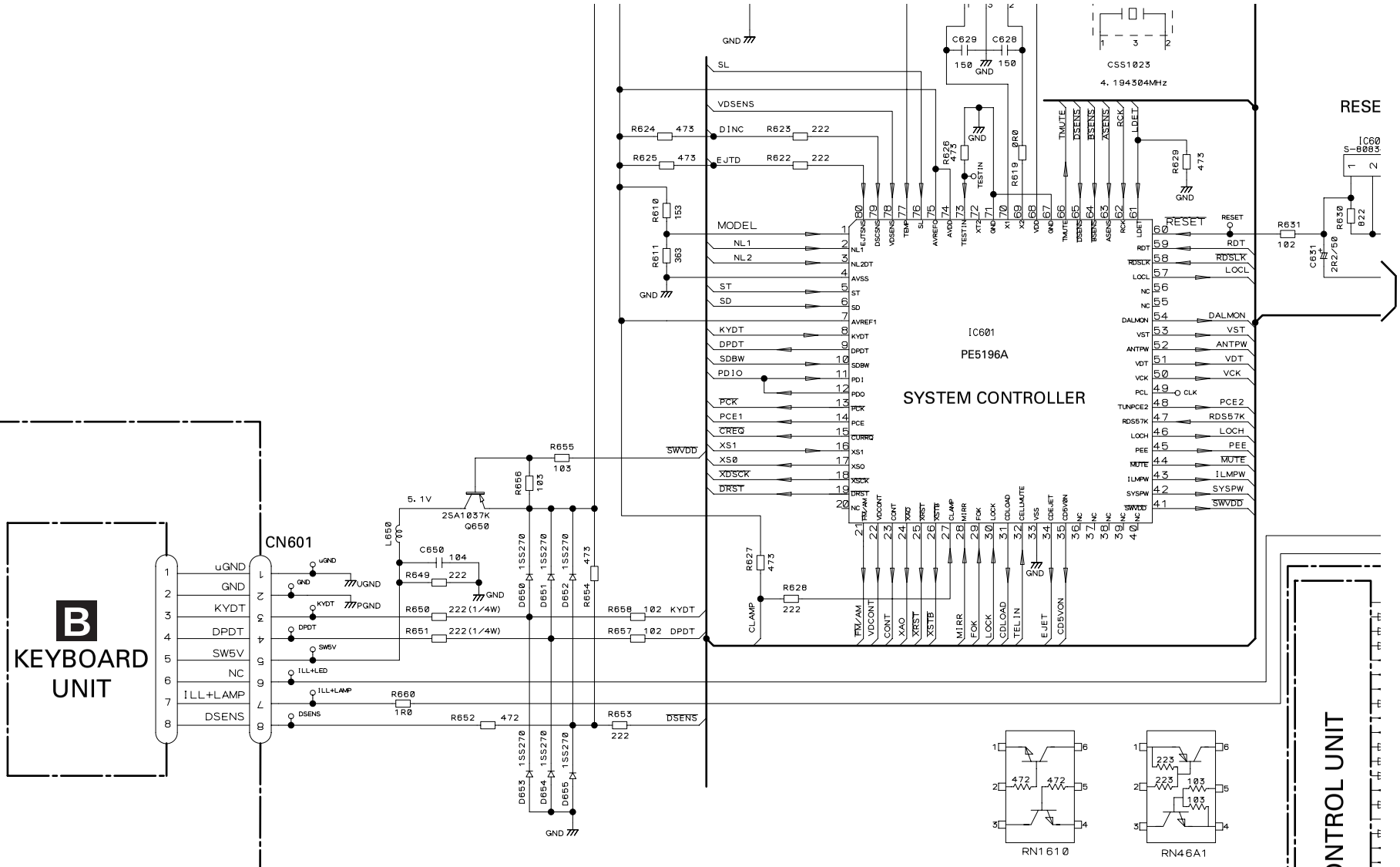
*Capacitors

Code	Practical value
103	0.01μF
101/10	100μF/10V

A-b


FM(100%):+6.6dBs
AM(30%):-2.9dBs
CD:+10.2dBs
E.VOL
FIE/EQ
CD:+9.4dBs
PRE_OUT
CN301
RL CH
RR CH
R-CH
L-CH
IC301 PML003AM
POWER AMP
CN901
IC302 TDA7386
FM(100%):+32.6dBs
AM(30%):+23.1dBs
CD:+36.2dBs
RESET
IC602 S-80854ANY
5.1V
8V
8.5V
A.SENS
B.SENS
CN605
CONTROL UNIT
CD:+4.1dBs
CELLULAR MUTE
BACKUP
GND
ACC
B. REMOTE
NC
RR+
RR−
RL+
RL−
FR+
FR−
FL+
FL−


FM/AM TUNER UNIT
TUNER AMP UNIT
FM(100%):-15.5dBs
AM(30%):-26dBs
CN402
CN403
A



NOTE :

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

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.

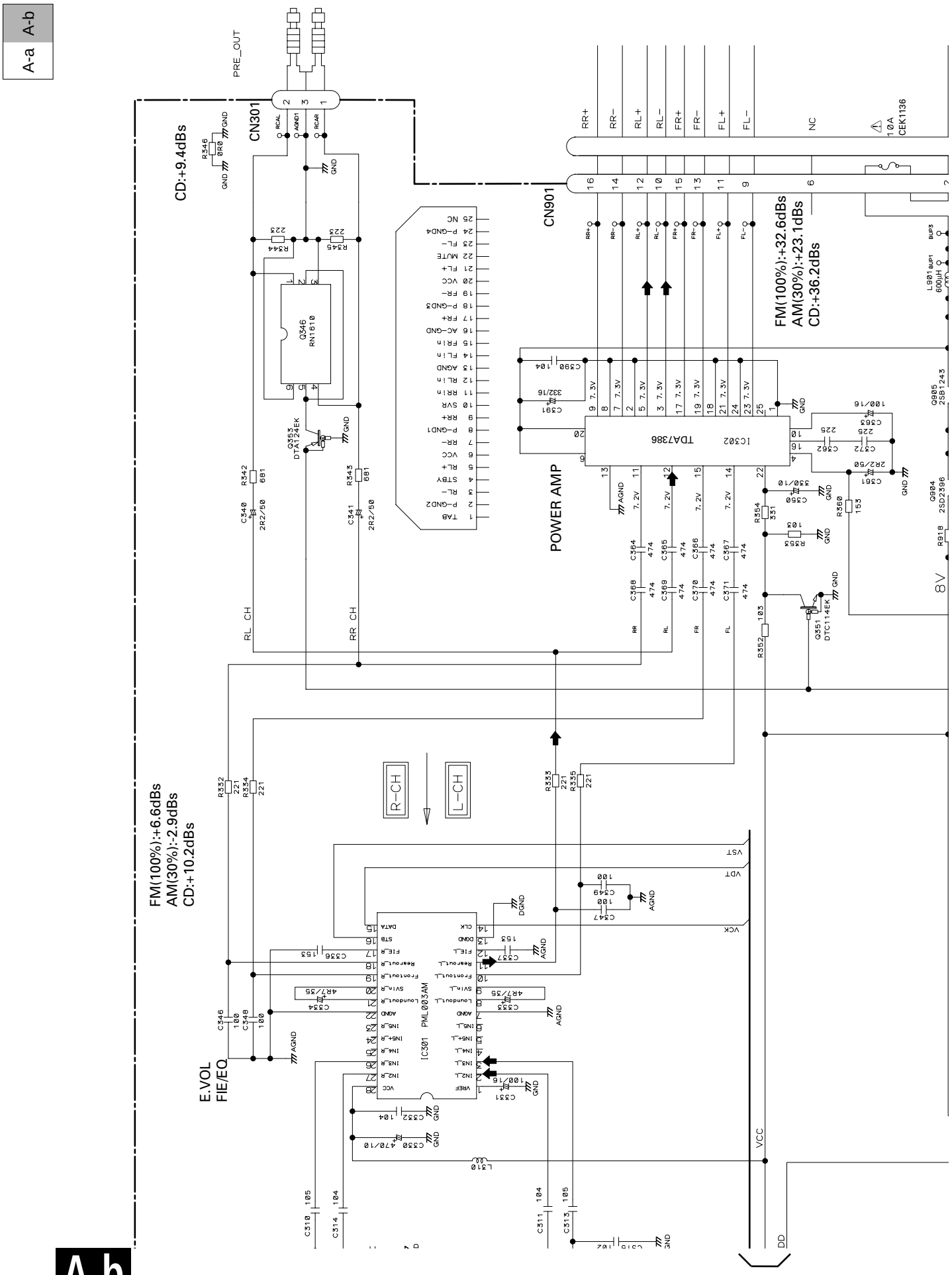
For resistors and capacitors in the circuit diagrams, their resistance values or capacitance values are expressed in codes:

Ex. *Resistors

Code	Practical value
123	12k ohms
103	10k ohms

*Capacitors

Code	Practical value
103	0.01µF
101/10	100µF/10V

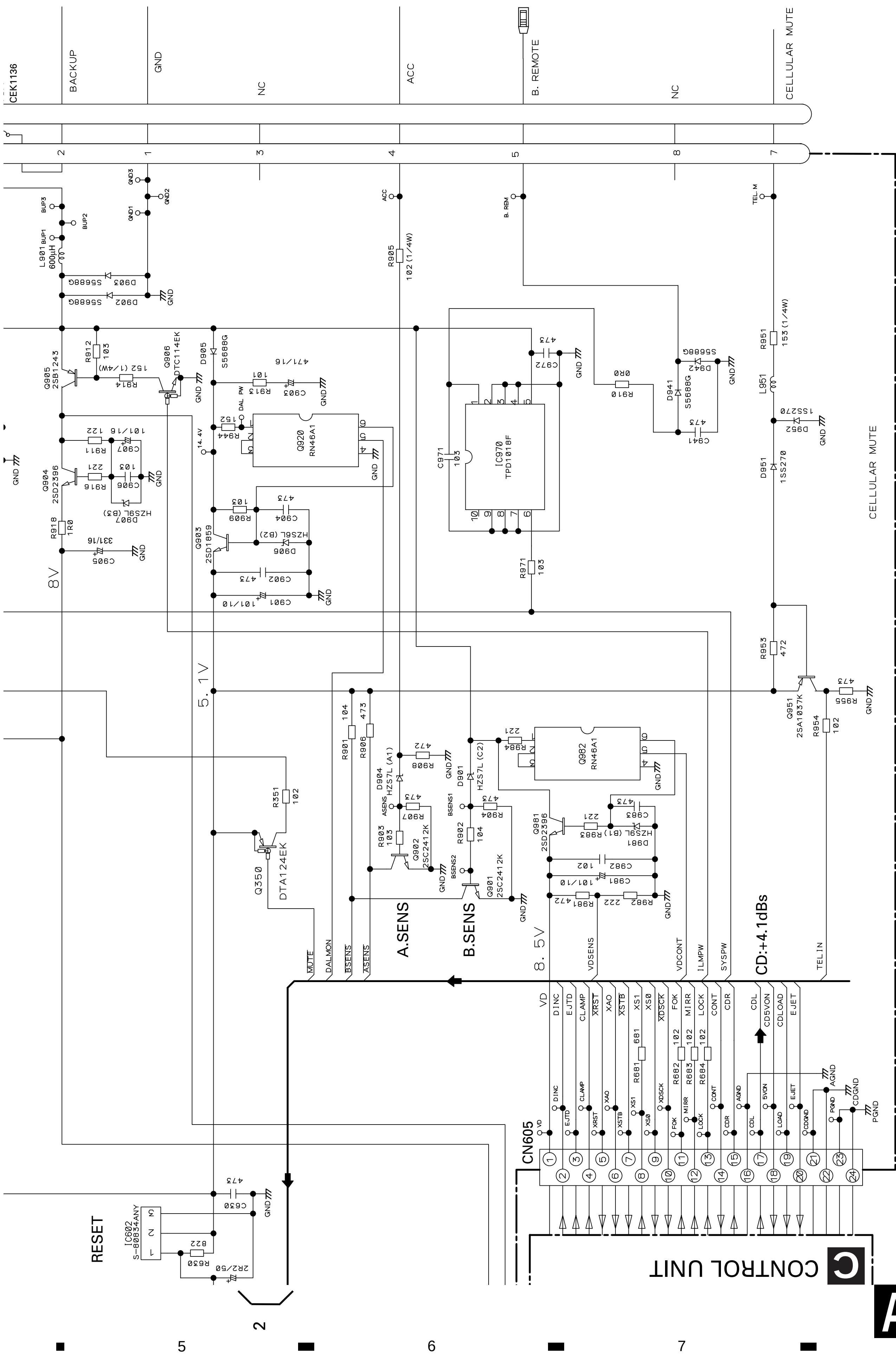

A-a A-b
PRE_OUT
CN301
CD:+9.4dBs
CN901
FM(100%):+32.6dBs
AM(30%):+23.1dBs
CD:+36.2dBs
POWER AMP
IC302 TDA7386
IC301 PML0037AM
FM(100%):+6.6dBs
AM(30%):-2.9dBs
CD:+10.2dBs
E.VOL
FIE/EQ
R-CH
L-CH
RL CH
RR CH
VCC
8V

A

B

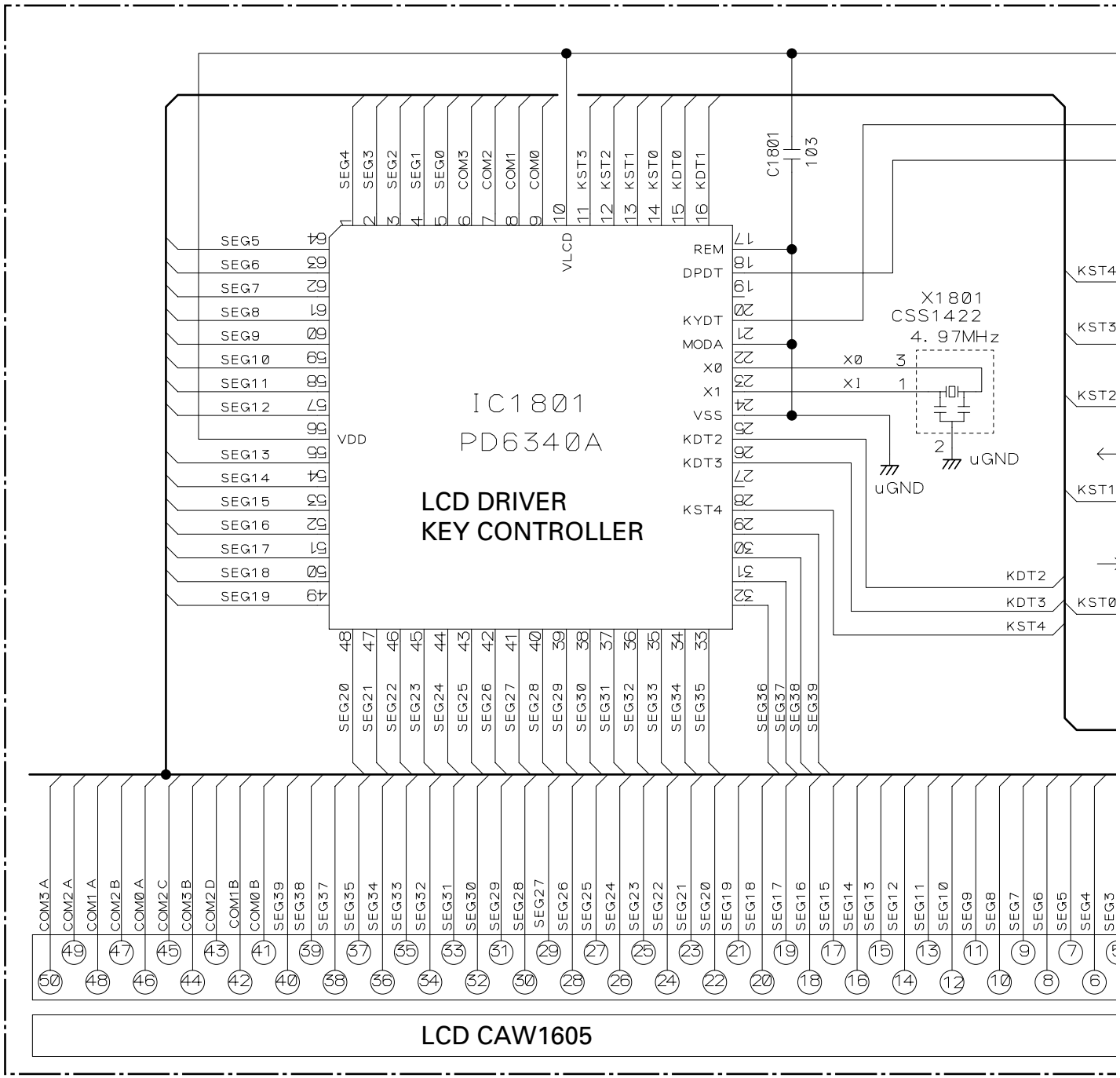
C

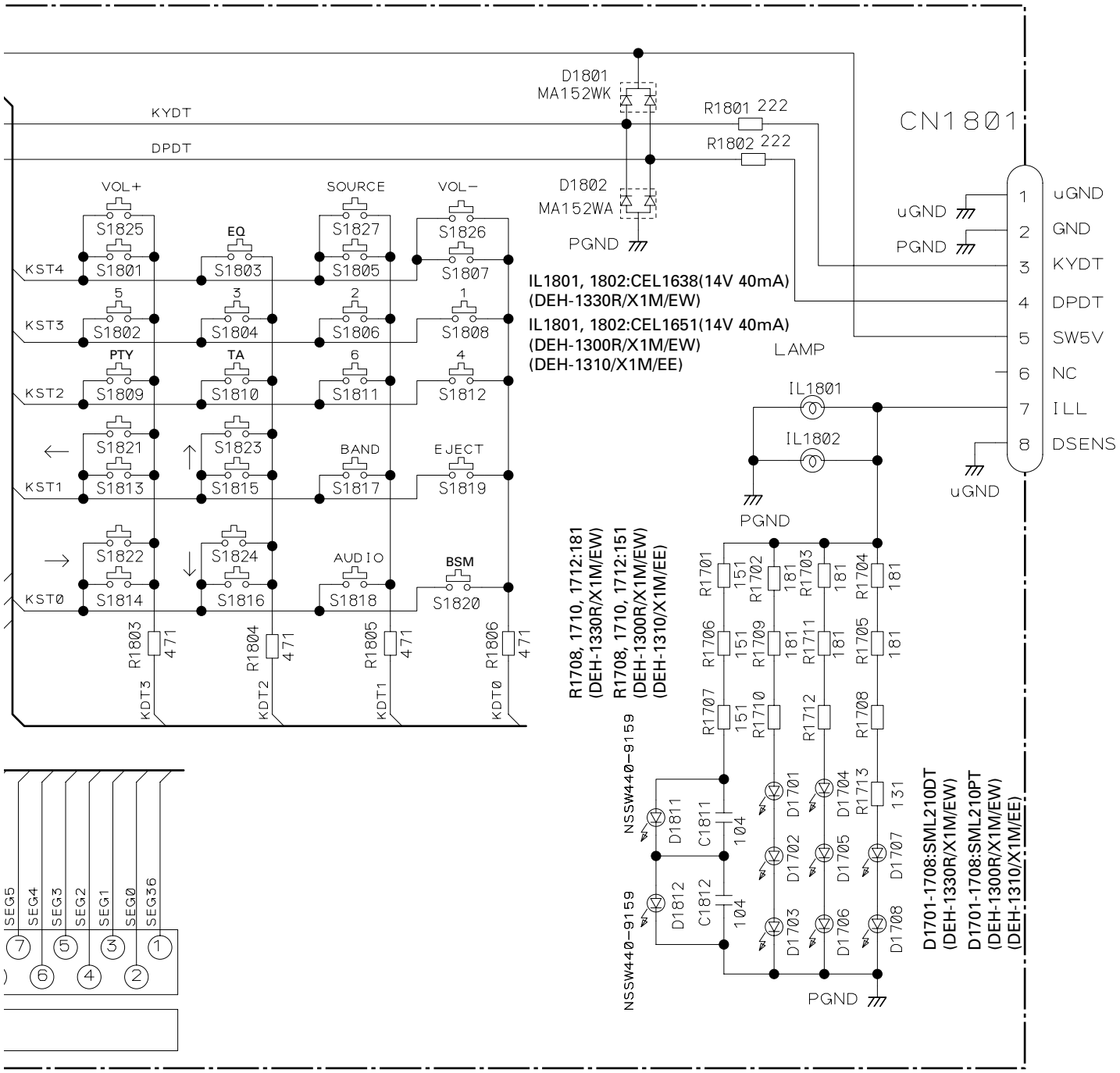
D


CEK1136
BACKUP
GND
NC
ACC
B. REMOTE
CELLULAR MUTE
8V
5.1V
8.5V
A.SENS
B.SENS
CD:+4.1dBs
RESET
IC602 S-80834ANY
Q350 DTA124EK
IC970 TPD1018F
Q920 RN46A1
Q982 RN46A1
Q905 2SB1243
Q906 DTC114EK
Q904 2SD2396
Q903 2SD1859
Q902 2SC2412K
Q901 2SC2412K
Q981 2SD2396
Q951 2SA1037K
CN605
MUTE
DALMON
BSENS
ASENS
VDSENS
VDCONT
ILMPW
SYSPW
TELIN
VD
DINC
EJTD
CLAMP
XRST
XAO
XSTB
XS1
XS0
XDSCK
FOK
MIRR
LOCK
CONT
CDR
CDL
CD5VON
CDLOAD
EJET
AGND
PGND
CDGND
C CONTROL UNIT

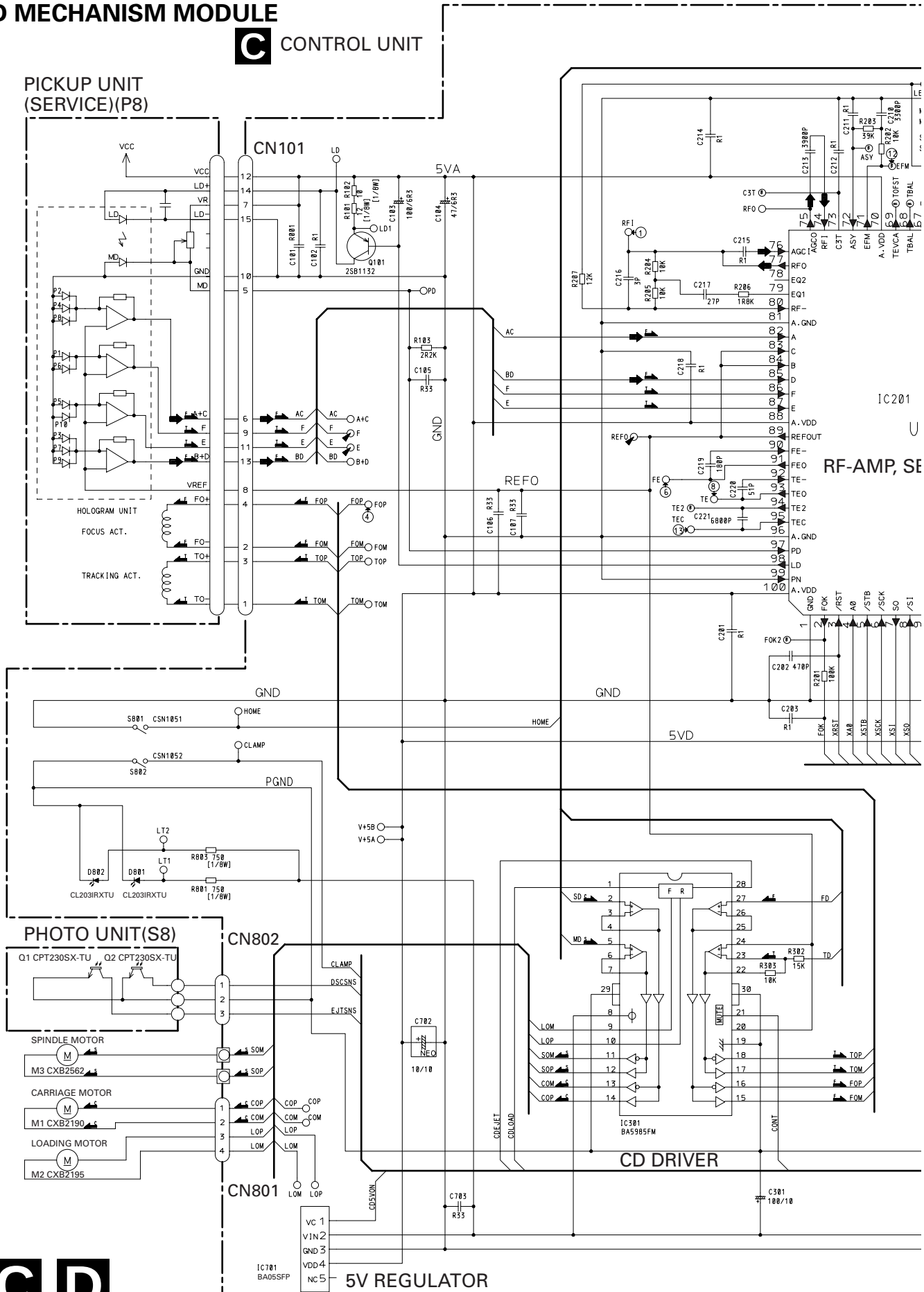
3.4 KEYBOARD UNIT

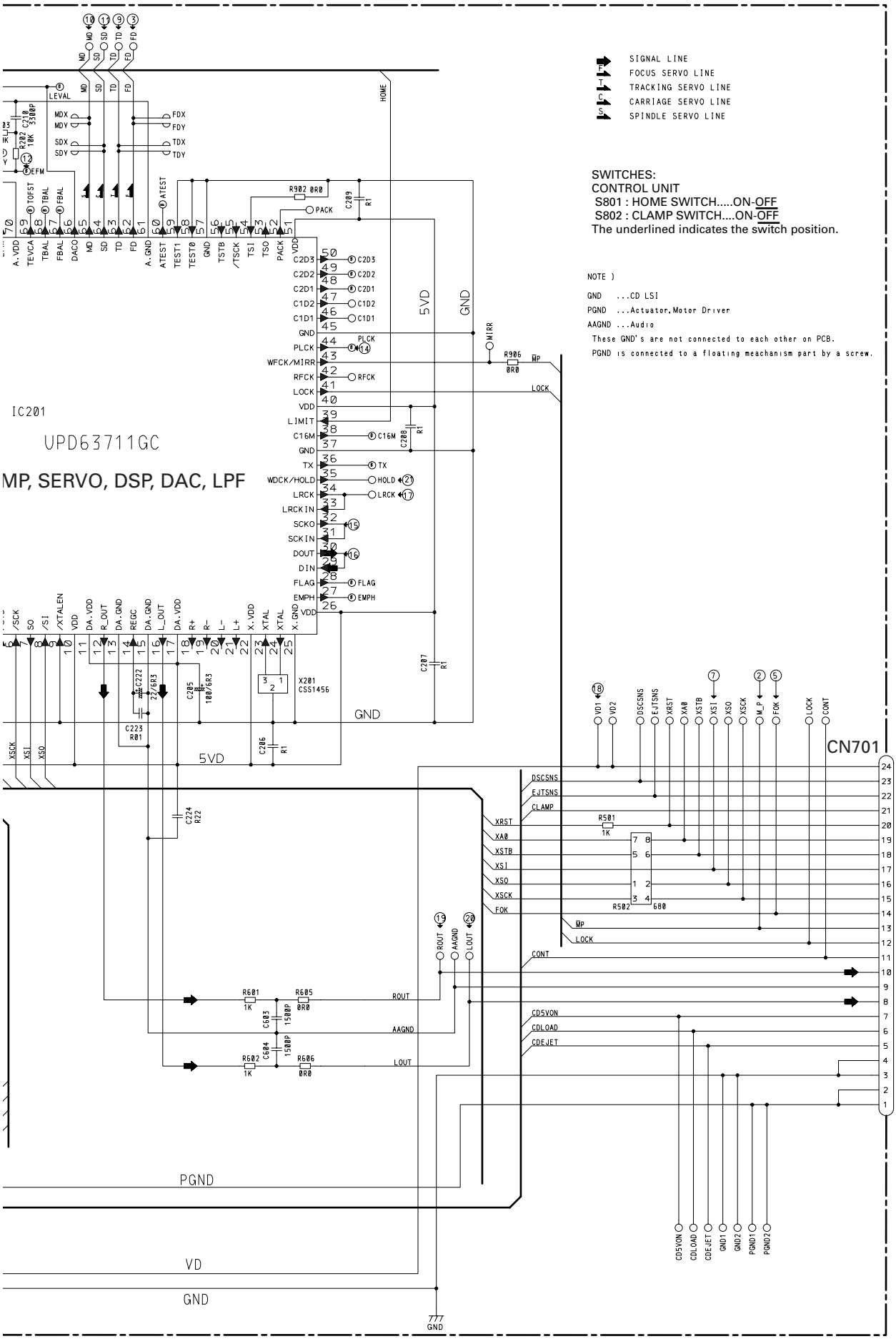
B KEYBOARD UNIT




D1801
MA152WK
R1801 222
R1802 222
KYDT
DPDT
D1802
MA152WA
PGND
CN1801
1 uGND
2 GND
3 KYDT
4 DPDT
5 SW5V
6 NC
7 ILL
8 DSENS
uGND
PGND
A
CN601
IL1801, 1802:CEL1638(14V 40mA)
(DEH-1330R/X1M/EW)
IL1801, 1802:CEL1651(14V 40mA)
(DEH-1300R/X1M/EW)
(DEH-1310/X1M/EE)
LAMP
IL1801
IL1802
VOL+
SOURCE
VOL−
EQ
PTY
TA
BAND
EJECT
AUDIO
BSM
KST4
KST3
KST2
KST1
KST0
S1801
S1802
S1803
S1804
S1805
S1806
S1807
S1808
S1809
S1810
S1811
S1812
S1813
S1814
S1815
S1816
S1817
S1818
S1819
S1820
S1821
S1822
S1823
S1824
S1825
S1826
S1827
R1803 471
R1804 471
R1805 471
R1806 471
KDT3
KDT2
KDT1
KDT0
R1708, 1710, 1712:181
(DEH-1330R/X1M/EW)
R1708, 1710, 1712:151
(DEH-1300R/X1M/EW)
(DEH-1310/X1M/EE)
R1701 151
R1702 181
R1703 181
R1704 181
R1705 181
R1706 151
R1707 151
R1708 181
R1709 181
R1710 151
R1711 181
R1712 181
R1713 131
NSSW440-9159
NSSW440-9159
D1811
D1812
C1811 104
C1812 104
D1701
D1702
D1703
D1704
D1705
D1706
D1707
D1708
PGND
D1701-1708:SML210DT
(DEH-1330R/X1M/EW)
D1701-1708:SML210PT
(DEH-1300R/X1M/EW)
(DEH-1310/X1M/EE)
SEG5
SEG4
SEG3
SEG2
SEG1
SEG0
SEG36
7
6
5
4
3
2
1

3.5 CD MECHANISM MODULE

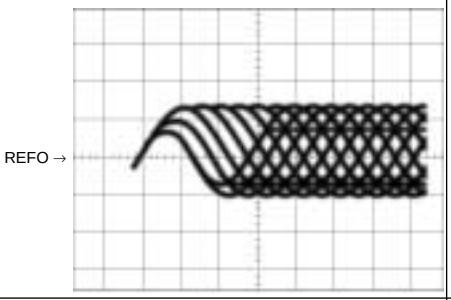



SIGNAL LINE
FOCUS SERVO LINE
TRACKING SERVO LINE
CARRIAGE SERVO LINE
SPINDLE SERVO LINE
SWITCHES:
CONTROL UNIT
S801 : HOME SWITCH.....ON-OFF
S802 : CLAMP SWITCH....ON-OFF
The underlined indicates the switch position.
NOTE)
GND ...CD LSI
PGND ...Actuator, Motor Driver
AAGND ...Audio
These GND's are not connected to each other on PCB.
PGND is connected to a floating meachanism part by a screw.
IC201
UPD63711GC
MP, SERVO, DSP, DAC, LPF
CN701
CN605
5VD
GND
PGND
VD

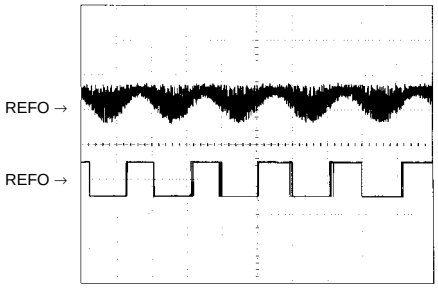
Note:1. The encircled numbers denote measuring pointes in the circuit diagram.
2. Reference voltage
REFO:2.5V

● Waveforms

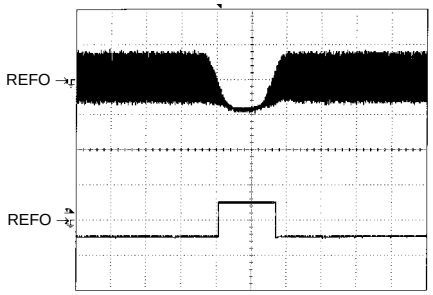
① RFI 0.5V/div. 0.5µs/div.
Normal mode: play



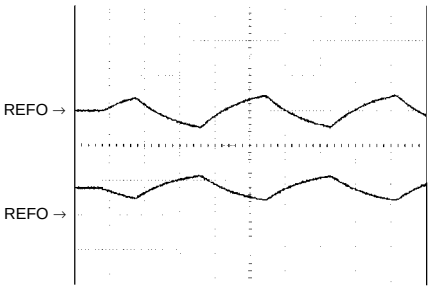
① CH1: RFI 1V/div. 0.5ms/div.
② CH2: MIRR 5V/div.
Test mode: Tracking open



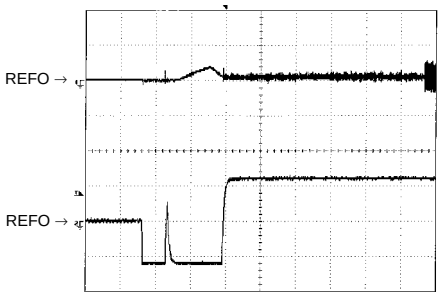
① CH1: RFI 1V/div. 0.5ms/div.
② CH2: MIRR 5V/div.
Normal mode: The defect part passes 800µm



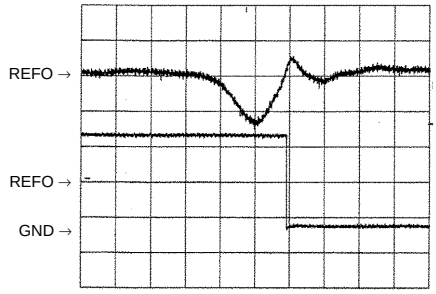
③ CH1: FD 0.5V/div. 0.2s/div.
④ CH2: FO+ 2V/div.
Test mode: No disc, Focus close



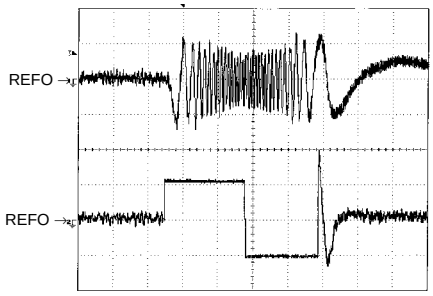
③ CH1: FD 0.5V/div. 0.2s/div.
⑤ CH2: FOK 2V/div.
Normal mode: Focus close



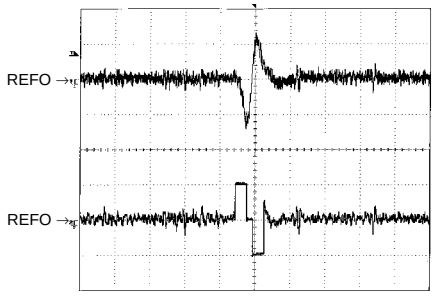
⑥ CH1: FE 0.5V/div. 1ms/div.
⑦ CH2: XSI 2V/div.
Normal mode: Focus close



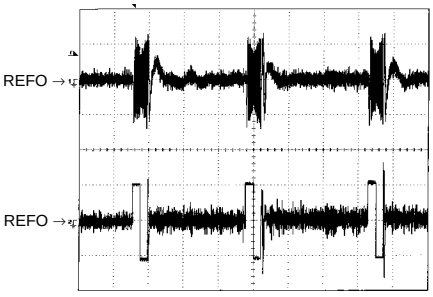
⑧ CH1: TE 0.5V/div. 0.5ms/div.
⑨ CH2: TD 0.5V/div.
Test mode: 32 tracks jump (FWD)



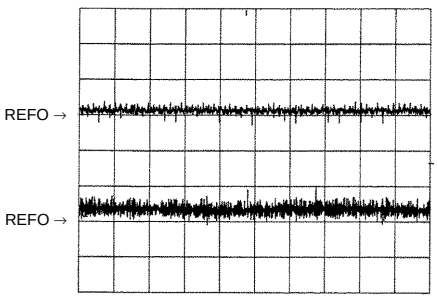
⑧ CH1: TE 0.5V/div. 0.5ms/div.
⑨ CH2: TD 0.5V/div.
Test mode: Single jump (FWD)



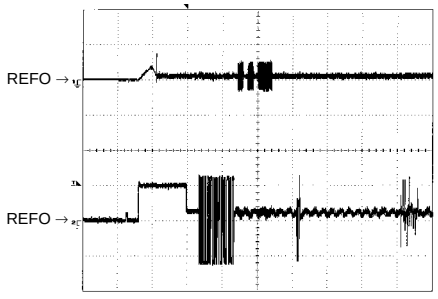
⑧ CH1: TE 0.5V/div. 5ms/div.
⑨ CH2: TD 0.5V/div.
Test mode: 100 tracks jump (FWD)



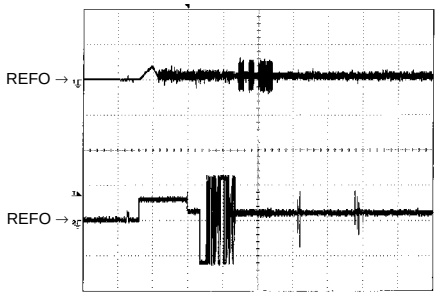
⑥ CH1: FE 0.1V/div. 20ms/div.
③ CH2: FD 0.2V/div.
Normal mode: Play



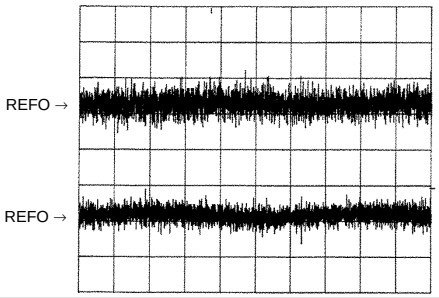
③ CH1: FD 0.5V/div. 0.5s/div.
⑩ CH2: MD 1V/div.
Normal mode: Focus close (12cm)



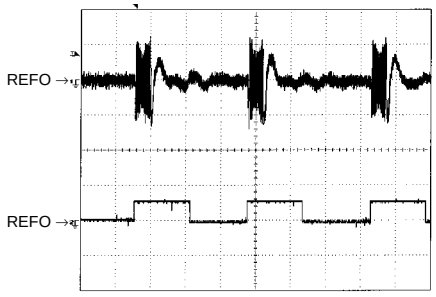
③ CH1: FD 0.5V/div. 0.5s/div.
⑩ CH2: MD 1V/div.
Normal mode: Focus close (8cm)



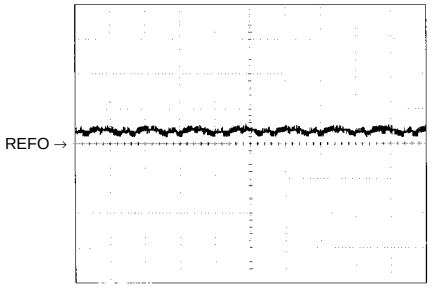
⑧ CH1: TE 0.2V/div. 20ms/div.
⑨ CH2: TD 0.2V/div.
Normal mode: play



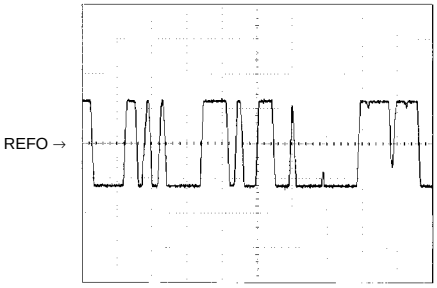
⑧ CH1: TE 0.5V/div. 5ms/div.
⑪ CH2: SD 0.5V/div.
TEST mode: 100 Tracks jump(FWD)



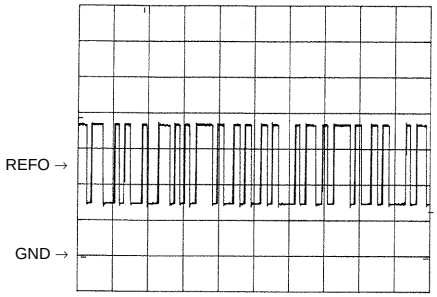
⑩ MD 0.5V/div. 0.1s/div.
Normal mode: Play (12cm)



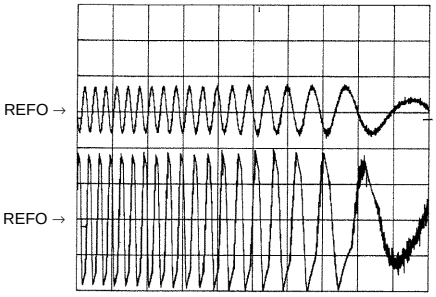
⑩ MD 1V/div. 10ms/div.
Normal mode:
Long Search (12cm)



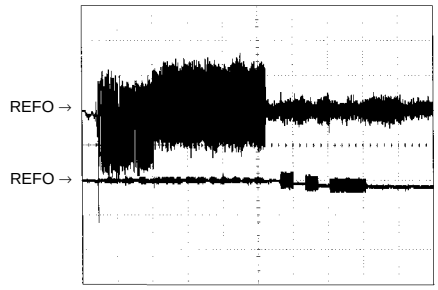
⑫ EFM 1V/div. 5µs/div.
Normal mode: play



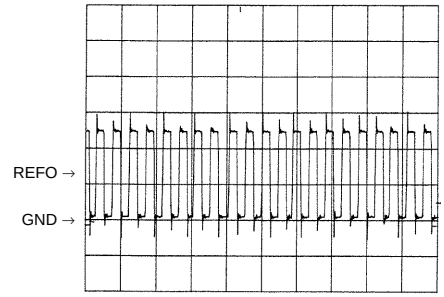
⑧ CH1: TE 1V/div. 2ms/div.
⑬ CH2: TEC 1V/div.
Test mode: Focus close
Tracking open



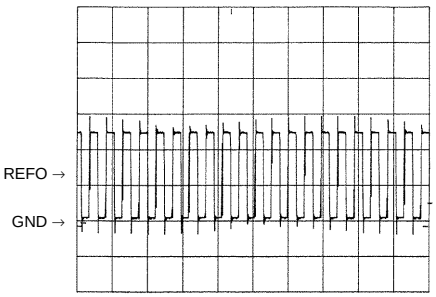
⑧ CH1: TE 0.5V/div. 0.2s/div.
⑥ CH2: FE 0.5V/div.
Normal mode: AGC after focus close



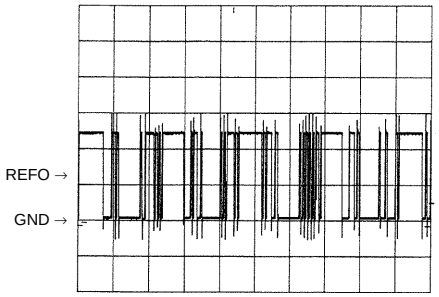
⑭ PLCK 2V/div. 0.5µs/div.
Normal mode: play



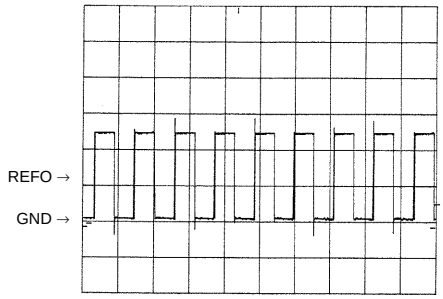
⑮ SCKO 2V/div. 1µs/div.
Normal mode: play



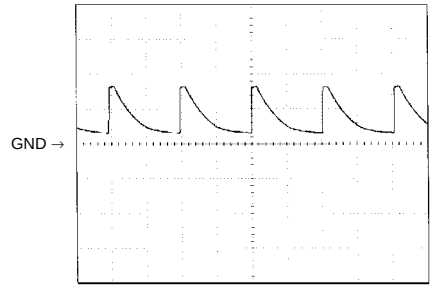
⑯ Dout 2V/div. 10µs/div.
Normal mode: play

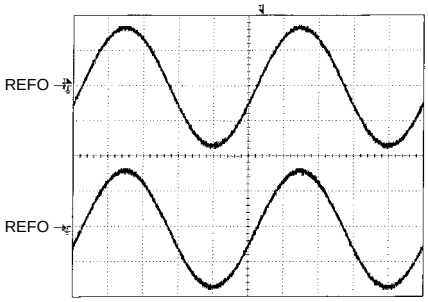
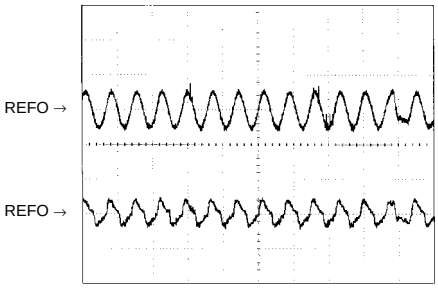
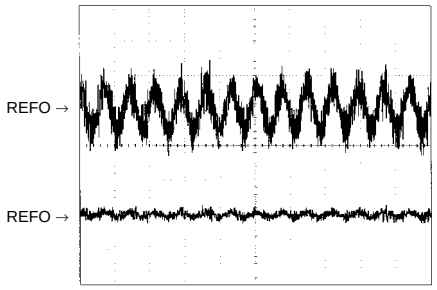
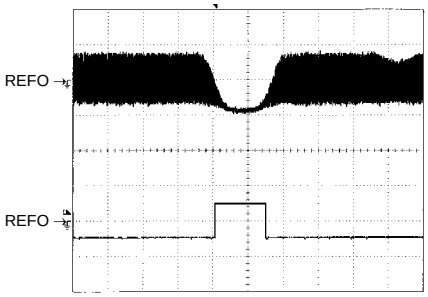
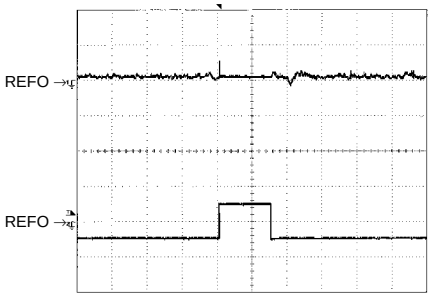
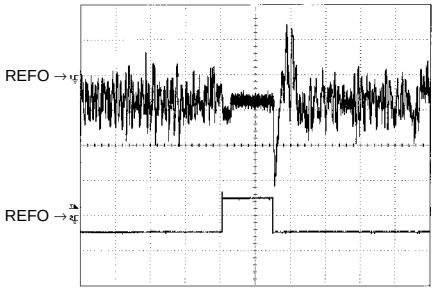


⑰ LRCK 2V/div. 20µs/div.
Normal mode: play



⑱ VD 5V/div. 50ms/div.
Normal mode: No disc



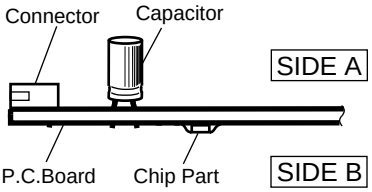
⑲ CH1: R OUT 1V/div. ⑳ CH2: L OUT 1V/div. 0.2ms/div. Normal mode: Play (1kHz 0dB) 	⑥ CH1: FE 0.2V/div. ③ CH2: FD 0.5V/div. 1ms/div. Normal mode: During AGC 	⑧ CH1: TE 0.2V/div. ⑨ CH2: TD 0.5V/div. 1ms/div. Normal mode: During AGC 
① CH1: RFI 1V/div. ㉑ CH2: HOLD 5V/div. 0.5ms/div. Normal mode: The defect part passes 800µm(B.D) 	③ CH1: FD 0.5V/div. ㉑ CH2: HOLD 5V/div. 0.5ms/div. Normal mode: The defect part passes 800µm(B.D) 	⑨ CH1: TD 0.1V/div. ㉑ CH2: HOLD 5V/div. 0.5ms/div. Normal mode: The defect part passes 800µm(B.D) 

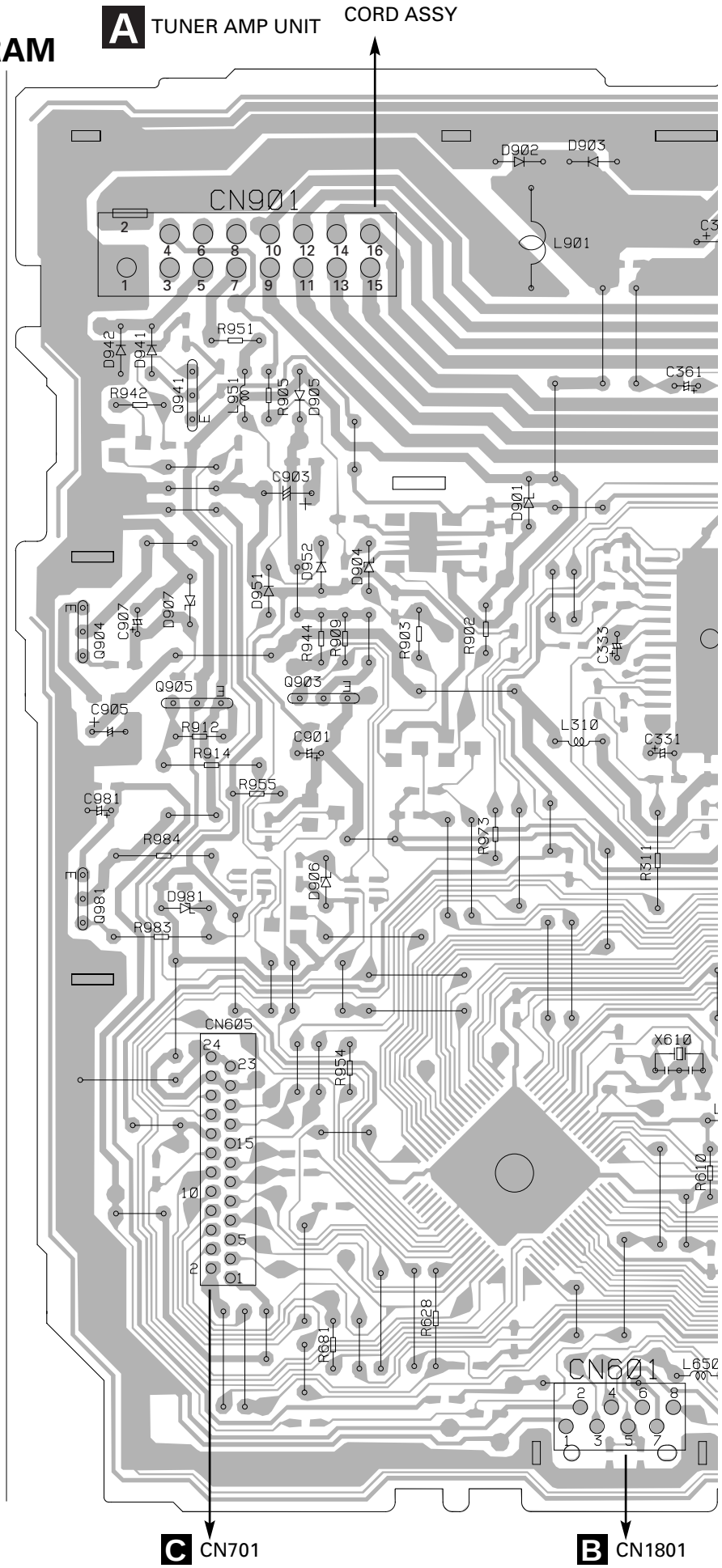
4. PCB CONNECTION DIAGRAM

4.1 TUNER AMP UNIT

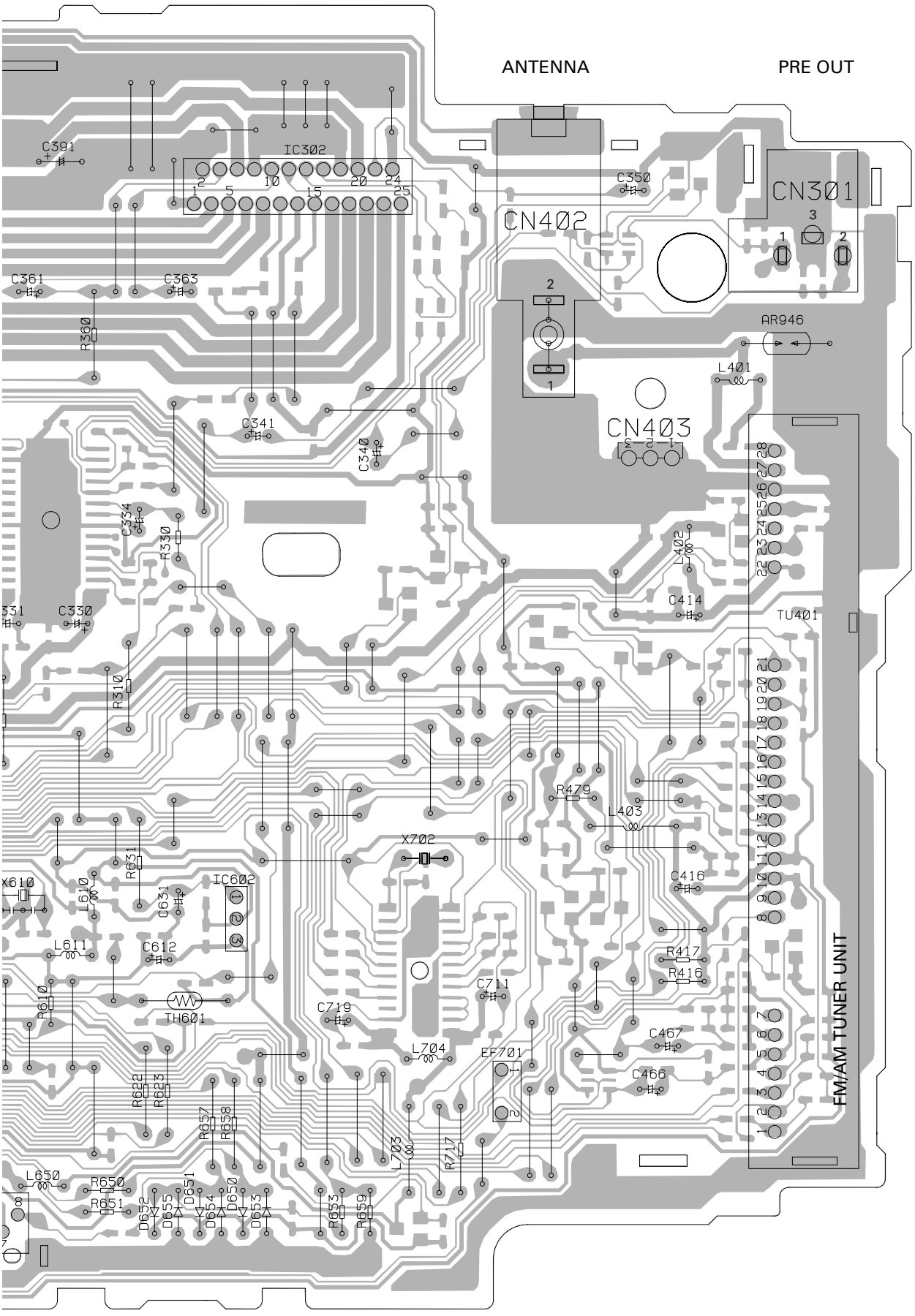
NOTE FOR PCB DIAGRAMS

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

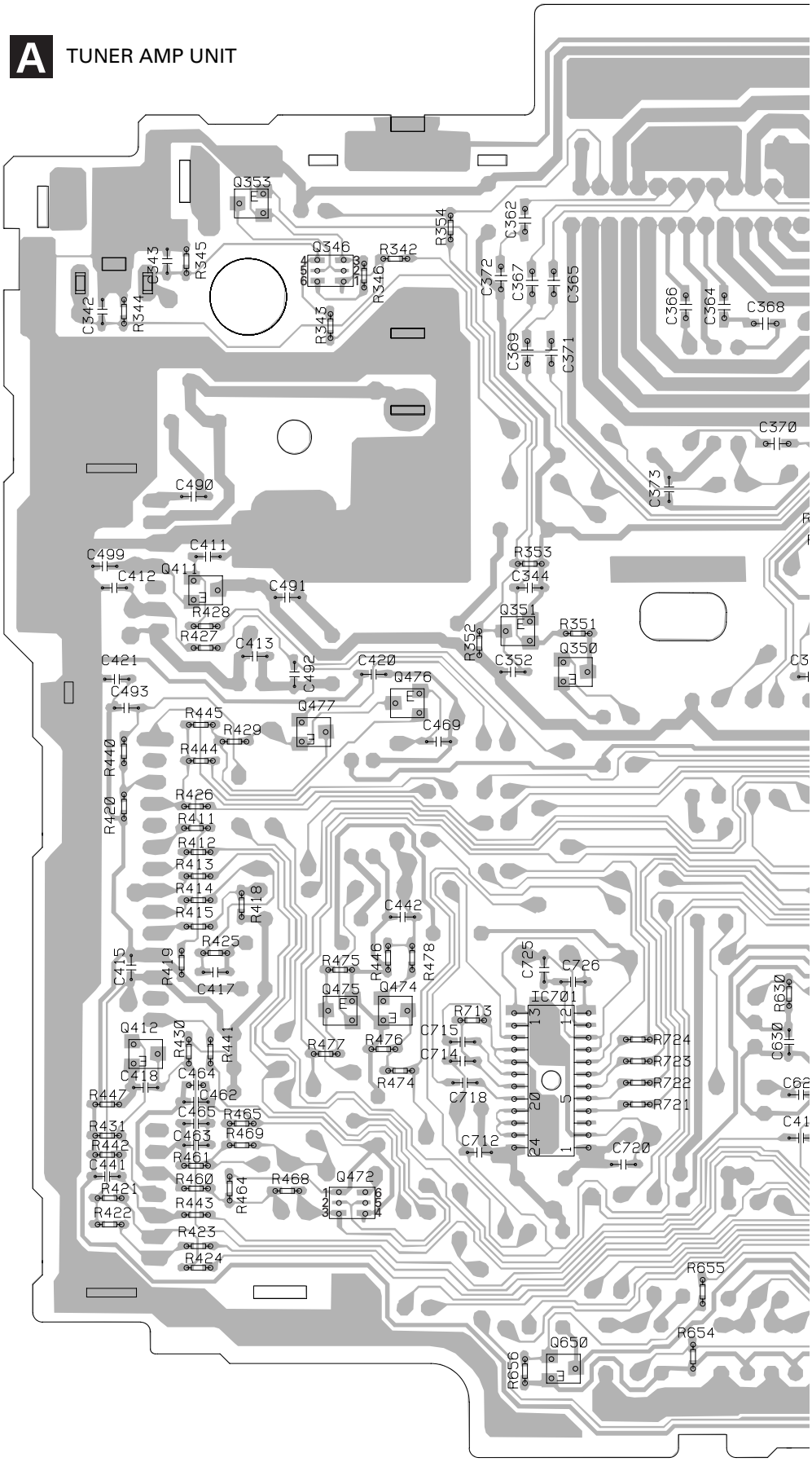




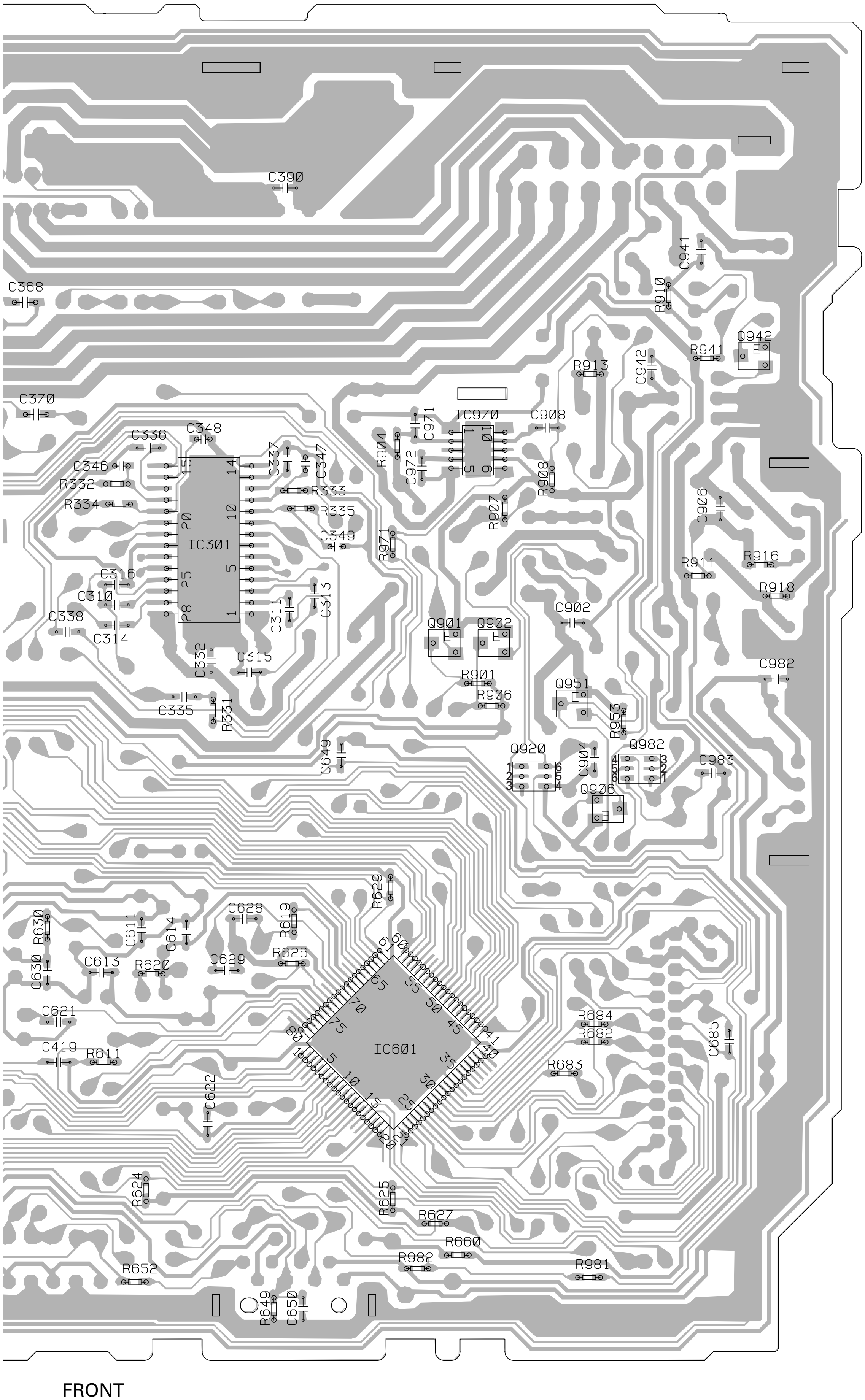
SIDE A


ANTENNA
PRE OUT
FM/AM TUNER UNIT
FRONT
CN301
CN402
CN403
IC302
IC602
TU401
EF701
TH601
X702
X610
AR946
C391
C350
C361
C363
R360
C341
C340
C334
R330
C331
C330
R310
L402
C414
R479
L403
C416
R417
R416
C711
C719
C467
C466
L704
L703
R717
R631
L610
C631
L611
C612
R610
R622
R623
R657
R658
L650
R650
R651
D652
D655
D651
D654
D650
D653
R653
R659
L401

A TUNER AMP UNIT



SIDE B

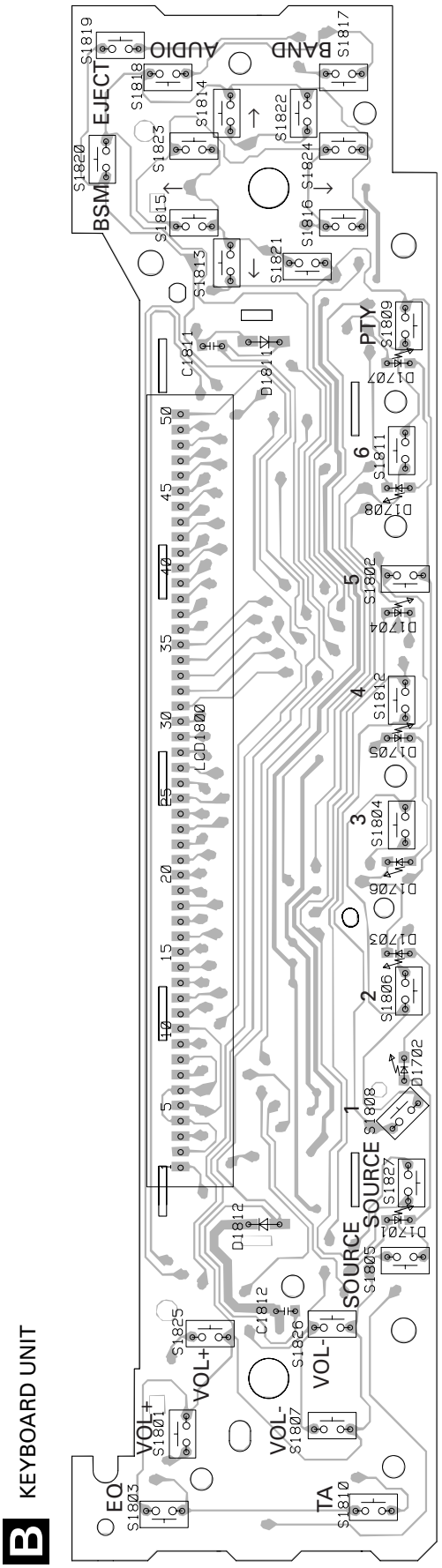


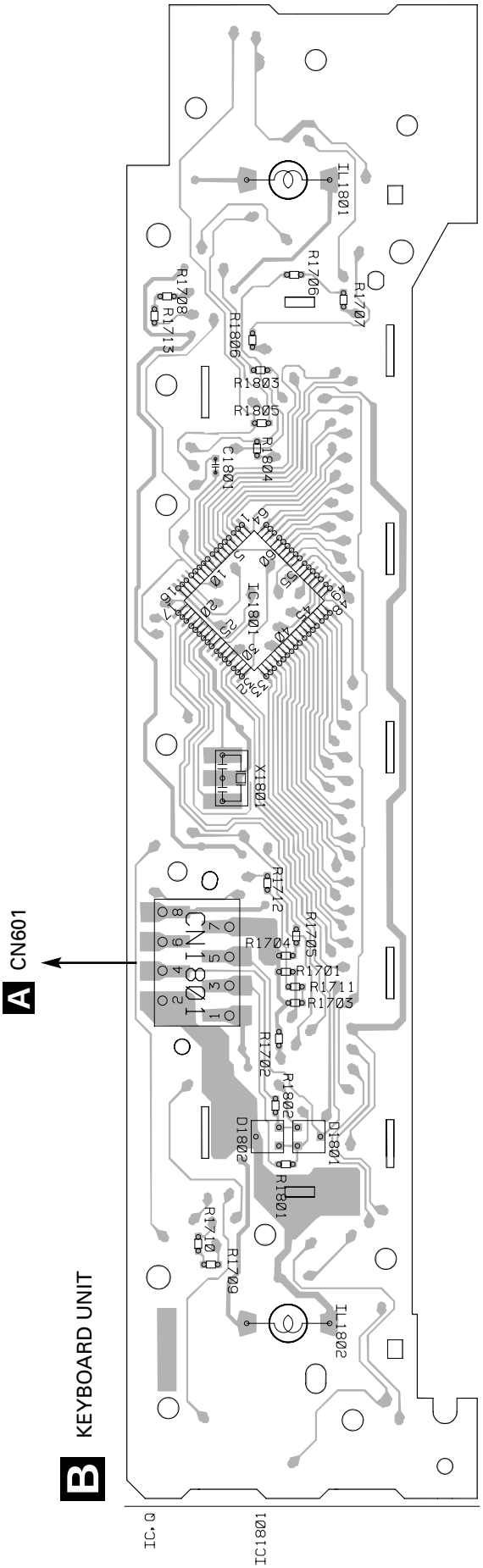
IC, Q	
Q353	
Q346	
Q942	
IC970	
Q411	
IC301	
Q351	
Q350	
Q901	Q902
Q476	
Q477	
Q951	
Q920	Q982
Q906	
Q475	Q474
IC701	
Q412	
IC601	
Q472	
Q650	

A B C D

4.2 KEYBOARD UNIT

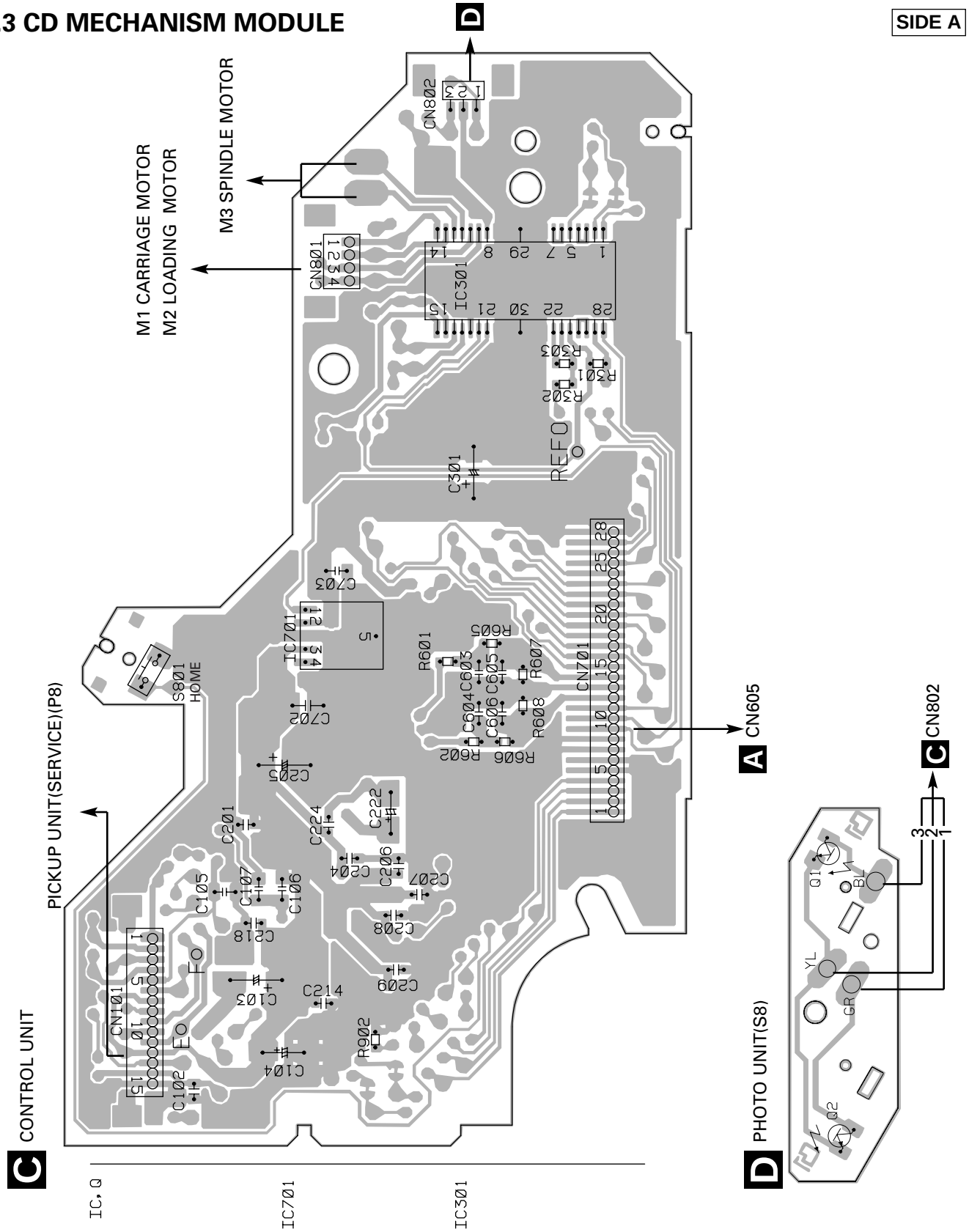
SIDE A



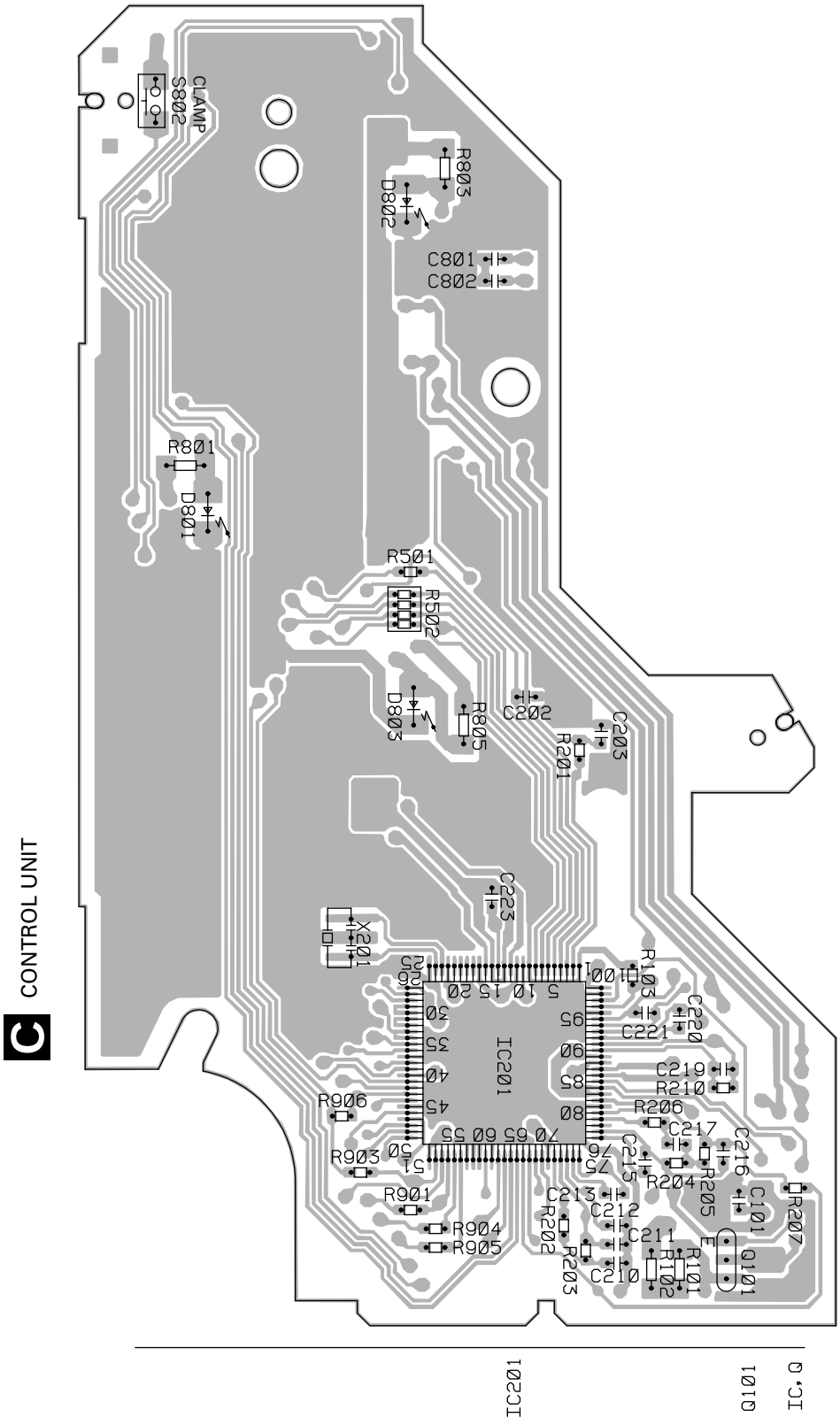

SIDE B
A CN601
B KEYBOARD UNIT
IL1801
IL1802
R1706
R1707
R1708
R1713
R1806
R1803
R1805
R1804
C1801
IC1801
X1801
R1712
R1705
R1704
R1701
R1711
R1703
R1702
R1802
D1802
D1801
R1801
R1710
R1709
CN1801
IC1081

4.3 CD MECHANISM MODULE

SIDE A



SIDE B



C CONTROL 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/○S○○○J,RS1/○○S○○○J

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

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

A Unit Number : CWM7294
(DEH-1330R/X1M/EW, DEH-1300R/X1M/EW)
Unit Name : Tuner Amp Unit

MISCELLANEOUS

=====Circuit Symbol and No.		===Part Name	Part No.
IC	301	IC	PML003AM
IC	302	IC	TDA7386
IC	601	IC	PE5195A
IC	602	IC	S-80834ANY
IC	701	IC	PM4009A
IC	970	IC	TPD1018F
Q	346	Transistor	RN1610
Q	350	Transistor	DTA124EK
Q	351	Transistor	DTC114EK
Q	353	Transistor	DTA124EK
Q	411	Transistor	2SC2412K
Q	412	Transistor	2SC2412K
Q	472	Transistor	RN1610
Q	474	Transistor	2SD1757K
Q	475	Transistor	2SD1757K
Q	476	Transistor	2SC2412K
Q	477	Transistor	DTA124EK
Q	650	Transistor	2SA1037K
Q	901	Transistor	2SC2412K
Q	902	Transistor	2SC2412K
Q	903	Transistor	2SD1859
Q	904	Transistor	2SD2396
Q	905	Transistor	2SB1243
Q	906	Transistor	DTC114EK
Q	920	Transistor	RN46A1
Q	951	Transistor	2SA1037K
Q	981	Transistor	2SD2396
Q	982	Transistor	RN46A1
D	650	Diode	1SS270
D	651	Diode	1SS270
D	652	Diode	1SS270
D	653	Diode	1SS270
D	654	Diode	1SS270
D	655	Diode	1SS270
D	901	Diode	HZS7L(C2)
D	902	Diode	S5688G
D	903	Diode	S5688G
D	904	Diode	HZS7L(A1)
D	905	Diode	S5688G
D	906	Diode	HZS6L(B2)
D	907	Diode	HZS9L(B3)
D	941	Diode	S5688G
D	942	Diode	S5688G
D	951	Diode	1SS270
D	952	Diode	1SS270

=====Circuit Symbol and No.		===Part Name	Part No.
D	981	Diode	HZS9L(B1)
L	310	Ferri-Inductor	LAU1R0M
L	401	Ferri-Inductor	LAU4R7K
L	402	Ferri-Inductor	LAU2R2K
L	403	Inductor	LAU100K
L	610	Ferri-Inductor	LAU101K
L	611	Ferri-Inductor	LAU2R2K
L	650	Ferri-Inductor	LAU2R2K
L	703	Inductor	LAU100K
L	704	Ferri-Inductor	LAU101K
L	901	Choke Coil 600µH	CTH1221
L	951	Ferri-Inductor	LAU2R2K
X	610	Ceramic Resonator 4.194MHz	CSS1047
X	702	Crystal Resonator 3.648MHz	CSS1447
EF	701	Filter	CTF1071
AR	946	Arrester	DSP-201M-S00B
		FM/AM Tuner Unit	CWE1562

RESISTORS

R	310	RD1/4PU222J
R	311	RD1/4PU222J
R	330	RD1/4PU472J
R	331	RS1/16S472J
R	332	RS1/16S221J
R	333	RS1/16S221J
R	334	RS1/16S221J
R	335	RS1/16S221J
R	342	RS1/16S681J
R	343	RS1/16S681J
R	344	RS1/16S223J
R	345	RS1/16S223J
R	346	RS1/16S0R0J
R	351	RS1/16S102J
R	352	RS1/16S103J
R	353	RS1/16S103J
R	354	RS1/16S331J
R	360	RD1/4PU153J
R	411	RS1/16S681J
R	412	RS1/16S681J
R	413	RS1/16S681J
R	414	RS1/16S103J
R	415	RS1/16S681J
R	416	RD1/4PU473J
R	417	RD1/4PU472J
R	418	RS1/16S473J
R	419	RS1/16S473J
R	420	RS1/16S473J
R	421	RS1/16S473J
R	422	RS1/16S473J
R	423	RS1/16S681J
R	424	RS1/16S681J
R	425	RS1/16S393J
R	426	RS1/16S681J
R	427	RS1/16S222J

Circuit Symbol and No.		Part Name	Part No.
R	428		RS1/16S222J
R	430		RS1/16S474J
R	431		RS1/16S153J
R	440		RS1/16S681J
R	441		RS1/16S102J
R	442		RS1/16S473J
R	443		RS1/16S681J
R	444		RS1/16S472J
R	445		RS1/16S473J
R	446		RS1/16S224J
R	447		RS1/16S0R0J
R	460		RS1/16S162J
R	461		RS1/16S162J
R	464		RS1/16S272J
R	465		RS1/16S272J
R	474		RS1/16S222J
R	475		RS1/16S223J
R	476		RS1/16S223J
R	477		RS1/16S222J
R	478		RS1/16S224J
R	479		RD1/4PU224J
R	611		RS1/16S473J
R	619		RS1/16S0R0J
R	620		RS1/16S223J
R	622		RD1/4PU222J
R	623		RD1/4PU222J
R	624		RS1/16S473J
R	625		RS1/16S473J
R	626		RS1/16S473J
R	627		RS1/16S473J
R	628		RD1/4PU222J
R	630		RS1/16S822J
R	631		RD1/4PU102J
R	649		RS1/16S222J
R	650		RD1/4PU222J
R	651		RD1/4PU222J
R	652		RS1/16S472J
R	653		RD1/4PU222J
R	654		RS1/16S473J
R	655		RS1/16S103J
R	656		RS1/16S103J
R	657		RD1/4PU102J
R	658		RD1/4PU102J
R	660		RS1/16S1R0J
R	681		RD1/4PU681J
R	682		RS1/16S102J
R	683		RS1/16S102J
R	684		RS1/16S102J
R	713		RS1/16S225J
R	717		RD1/4PU102J
R	721		RS1/16S102J
R	722		RS1/16S102J
R	723		RS1/16S102J
R	724		RS1/16S681J
R	901		RS1/16S104J
R	902		RD1/4PU104J
R	903		RD1/4PU103J
R	904		RS1/16S473J
R	905		RD1/4PU102J
R	906		RS1/16S473J
R	907		RS1/16S473J
R	908		RS1/16S472J
R	909		RD1/4PU103J
R	910		RS1/16S0R0J
R	911		RS1/16S122J
R	912		RD1/4PU103J
R	913		RS1/16S101J
R	914		RD1/4PU152J
R	916		RS1/16S221J
R	918		RS1/16S1R0J
R	944		RD1/4PU152J
R	951		RD1/4PU153J
R	953		RS1/16S472J
R	954		RD1/4PU102J
R	955		RD1/4PU473J
R	971		RS1/16S103J
R	981		RS1/16S472J
R	982		RS1/16S222J
R	983		RD1/4PU221J
R	984		RD1/4PU221J

CAPACITORS

Circuit Symbol and No.		Part Name	Part No.
C	310		CKSRYB105K6R3
C	311		CKSRYB104K16
C	313		CKSRYB105K6R3
C	314		CKSRYB104K16
C	315		CKSRYB102K50
C	316		CKSRYB102K50
C	330		CEJA470M10
C	331		CEJA100M16
C	332		CKSRYB104K16
C	333		CEJA4R7M35
C	334		CEJA4R7M35
C	335		CKSRYB104K16
C	336		CKSRYB153K25
C	337		CKSRYB153K25
C	338		CKSRYB104K16
C	340		CEAL2R2M50
C	341		CEJA2R2M50
C	346		CCSRCH100D50
C	347		CCSRCH100D50
C	348		CCSRCH100D50
C	349		CCSRCH100D50
C	350		CEJA330M10
C	352		CCSRCH101J50
C	361		CEJA2R2M50
C	362		CKSQYB225K10
C	363		CEJA100M16
C	364		CKSQYB474K16
C	365		CKSQYB474K16
C	366		CKSQYB474K16
C	367		CKSQYB474K16
C	368		CKSQYB474K16
C	369		CKSQYB474K16
C	370		CKSQYB474K16
C	371		CKSQYB474K16
C	372		CKSQYB225K10
C	390		CKSRYB104K16
C	391	3300µF/16V	CCH1368
C	411		CKSRYB223K25
C	412		CKSRYB223K25
C	413		CKSRYB102K50
C	414		CEJA220M10
C	415		CKSRYB473K16
C	416		CEAL101M10
C	417		CKSRYB472K50
C	418		CKSRYB472K50
C	419		CCSRCH101J50
C	420		CCSRCH101J50
C	441		CKSRYB182K50
C	442		CKSRYB223K25
C	462		CKSRYB123K25

=====Circuit Symbol and No.		===Part Name	Part No.
C	463		CKSRYB123K25
C	466		CEJA1R0M50
C	467		CEJA1R0M50
C	490		CKSQYB103K50
C	493		CKSRYB472K50
C	612		CEJA4R7M35
C	613		CKSRYB473K16
C	614		CCSRCH101J50
C	621		CCSRCH101J50
C	630		CKSRYB473K16
C	631		CEAL2R2M50
C	650		CKSRYB104K16
C	711		CEAL220M6R3
C	712		CKSRYB104K16
C	714		CKSRYB471K50
C	715		CKSRYB104K16
C	718		CKSRYB471K50
C	719		CEAL220M6R3
C	720		CKSRYB104K16
C	725		CCSRCH270J50
C	726		CCSRCH270J50
C	901		CEJA101M10
C	902		CKSRYB473K16
C	903	470µF/16V	CCH1331
C	904		CKSRYB473K16
C	905	330µF/16V	CCH1326
C	906		CKSRYB103K50
C	907		CEJA101M16
C	941		CKSRYB473K16
C	971		CKSRYB103K50
C	972		CKSRYB473K16
C	981		CEJA101M10
C	982		CKSRYB102K50
C	983		CKSRYB473K16

A Unit Number : CWM7295 (DEH-1310/X1M/EE) Unit Name : Tuner Amp Unit

MISCELLANEOUS

IC	301	IC	PML003AM
IC	302	IC	TDA7386
IC	601	IC	PE5196A
IC	602	IC	S-80834ANY
IC	970	IC	TPD1018F
Q	346	Transistor	RN1610
Q	350	Transistor	DTA124EK
Q	351	Transistor	DTC114EK
Q	353	Transistor	DTA124EK
Q	411	Transistor	2SC2412K
Q	650	Transistor	2SA1037K
Q	901	Transistor	2SC2412K
Q	902	Transistor	2SC2412K
Q	903	Transistor	2SD1859
Q	904	Transistor	2SD2396
Q	905	Transistor	2SB1243
Q	906	Transistor	DTC114EK
Q	920	Transistor	RN46A1
Q	951	Transistor	2SA1037K
Q	981	Transistor	2SD2396
Q	982	Transistor	RN46A1
D	650	Diode	1SS270
D	651	Diode	1SS270
D	652	Diode	1SS270
D	653	Diode	1SS270

=====Circuit Symbol and No.		===Part Name	Part No.
D	654	Diode	1SS270
D	655	Diode	1SS270
D	901	Diode	HZS7L(C2)
D	902	Diode	S5688G
D	903	Diode	S5688G
D	904	Diode	HZS7L(A1)
D	905	Diode	S5688G
D	906	Diode	HZS6L(B2)
D	907	Diode	HZS9L(B3)
D	941	Diode	S5688G
D	942	Diode	S5688G
D	951	Diode	1SS270
D	952	Diode	1SS270
D	981	Diode	HZS9L(B1)
L	310	Ferri-Inductor	LAU1R0M
L	401	Ferri-Inductor	LAU4R7K
L	402	Ferri-Inductor	LAU2R2K
L	403	Inductor	LAU100K
L	610	Ferri-Inductor	LAU101K
L	611	Ferri-Inductor	LAU2R2K
L	650	Ferri-Inductor	LAU2R2K
L	901	Choke Coil 600µH	CTH1221
L	951	Ferri-Inductor	LAU2R2K
X	610	Crystal Resonator 4.194304MHz	CSS1023
AR	946	Arrester	DSP-201M-S00B
		FM/AM Tuner Unit	CWE1566

RESISTORS

R	310	RD1/4PU222J
R	311	RD1/4PU222J
R	332	RS1/16S221J
R	333	RS1/16S221J
R	334	RS1/16S221J
R	335	RS1/16S221J
R	342	RS1/16S681J
R	343	RS1/16S681J
R	344	RS1/16S223J
R	345	RS1/16S223J
R	346	RS1/16S0R0J
R	351	RS1/16S102J
R	352	RS1/16S103J
R	353	RS1/16S103J
R	354	RS1/16S331J
R	360	RD1/4PU153J
R	411	RS1/16S681J
R	412	RS1/16S681J
R	413	RS1/16S681J
R	414	RS1/16S103J
R	415	RS1/16S681J
R	416	RD1/4PU473J
R	417	RD1/4PU472J
R	418	RS1/16S473J
R	419	RS1/16S473J
R	420	RS1/16S473J
R	421	RS1/16S473J
R	422	RS1/16S473J
R	423	RS1/16S681J
R	424	RS1/16S681J
R	425	RS1/16S393J
R	427	RS1/16S222J
R	428	RS1/16S222J
R	460	RS1/16S162J
R	461	RS1/16S162J
R	464	RS1/16S272J
R	465	RS1/16S272J
R	468	RS1/16S0R0J
R	469	RS1/16S0R0J
R	610	RD1/4PU153J

Circuit Symbol and No.		Part Name	Part No.
R	611		RS1/16S363J
R	619		RS1/16S0R0J
R	620		RS1/16S223J
R	622		RD1/4PU222J
R	623		RD1/4PU222J
R	624		RS1/16S473J
R	625		RS1/16S473J
R	626		RS1/16S473J
R	627		RS1/16S473J
R	628		RD1/4PU222J
R	629		RS1/16S473J
R	630		RS1/16S822J
R	631		RD1/4PU102J
R	649		RS1/16S222J
R	650		RD1/4PU222J
R	651		RD1/4PU222J
R	652		RS1/16S472J
R	653		RD1/4PU222J
R	654		RS1/16S473J
R	655		RS1/16S103J
R	656		RS1/16S103J
R	657		RD1/4PU102J
R	658		RD1/4PU102J
R	660		RS1/16S1R0J
R	681		RD1/4PU681J
R	682		RS1/16S102J
R	683		RS1/16S102J
R	684		RS1/16S102J
R	901		RS1/16S104J
R	902		RD1/4PU104J
R	903		RD1/4PU103J
R	904		RS1/16S473J
R	905		RD1/4PU102J
R	906		RS1/16S473J
R	907		RS1/16S473J
R	908		RS1/16S472J
R	909		RD1/4PU103J
R	910		RS1/16S0R0J
R	911		RS1/16S122J
R	912		RD1/4PU103J
R	913		RS1/16S101J
R	914		RD1/4PU152J
R	916		RS1/16S221J
R	918		RS1/16S1R0J
R	944		RD1/4PU152J
R	951		RD1/4PU153J
R	953		RS1/16S472J
R	954		RD1/4PU102J
R	955		RD1/4PU473J
R	971		RS1/16S103J
R	981		RS1/16S472J
R	982		RS1/16S222J
R	983		RD1/4PU221J
R	984		RD1/4PU221J

CAPACITORS

C	310		CKSRYB105K6R3
C	311		CKSRYB104K16
C	313		CKSRYB105K6R3
C	314		CKSRYB104K16
C	315		CKSRYB102K50
C	316		CKSRYB102K50
C	330		CEJA470M10
C	331		CEJA100M16
C	332		CKSRYB104K16
C	333		CEJA4R7M35
C	334		CEJA4R7M35
C	336		CKSRYB153K25
C	337		CKSRYB153K25
C	340		CEAL2R2M50
C	341		CEJA2R2M50
C	346		CCSRCH100D50
C	347		CCSRCH100D50
C	348		CCSRCH100D50
C	349		CCSRCH100D50
C	350		CEJA330M10
C	361		CEJA2R2M50
C	362		CKSQYB225K10
C	363		CEJA100M16
C	364		CKSQYB474K16
C	365		CKSQYB474K16
C	366		CKSQYB474K16
C	367		CKSQYB474K16
C	368		CKSQYB474K16
C	369		CKSQYB474K16
C	370		CKSQYB474K16
C	371		CKSQYB474K16
C	372		CKSQYB225K10
C	390		CKSRYB104K16
C	391	3300µF/16V	CCH1368
C	411		CKSRYB223K25
C	412		CKSRYB223K25
C	413		CKSRYB102K50
C	414		CEJA220M10
C	415		CKSRYB473K16
C	416		CEAL101M10
C	417		CKSRYB472K50
C	419		CCSRCH101J50
C	462		CKSRYB123K25
C	463		CKSRYB123K25
C	490		CKSQYB103K50
C	612		CEJA4R7M35
C	613		CKSRYB473K16
C	614		CCSRCH101J50
C	628		CCSRCH150J50
C	629		CCSRCH150J50
C	630		CKSRYB473K16
C	631		CEAL2R2M50
C	650		CKSRYB104K16
C	901		CEJA101M10
C	902		CKSRYB473K16
C	903	470µF/16V	CCH1331
C	904		CKSRYB473K16
C	905	330µF/16V	CCH1326
C	906		CKSRYB103K50
C	907		CEJA101M16
C	941		CKSRYB473K16
C	971		CKSRYB103K50
C	972		CKSRYB473K16
C	981		CEJA101M10
C	982		CKSRYB102K50
C	983		CKSRYB473K16

B Unit Number : CWM7306 (DEH-1330R/X1M/EW)
Unit Name : Keyboard Unit

MISCELLANEOUS

IC	1801	IC	PD6340A
D	1701	LED	SML210DT
D	1702	LED	SML210DT
D	1703	LED	SML210DT
D	1704	LED	SML210DT

=====Circuit Symbol and No.		===Part Name	Part No.
D	1705	LED	SML210DT
D	1706	LED	SML210DT
D	1707	LED	SML210DT
D	1708	LED	SML210DT
D	1801	Diode	MA152WK
D	1802	Diode	MA152WA
D	1811	LED	NSSW440-9159
D	1812	LED	NSSW440-9159
X	1801	Ceramic Resonator 4.97MHz	CSS1422
IL	1801	Lamp 14V 40mA	CEL1638
IL	1802	Lamp 14V 40mA	CEL1638
		LCD	CAW1632

RESISTORS

R	1701		RS1/16S151J
R	1702		RS1/16S181J
R	1703		RS1/16S181J
R	1704		RS1/16S181J
R	1705		RS1/16S181J
R	1706		RS1/16S151J
R	1707		RS1/16S151J
R	1708		RS1/16S181J
R	1709		RS1/16S181J
R	1710		RS1/16S181J
R	1711		RS1/16S181J
R	1712		RS1/16S181J
R	1713		RS1/16S131J
R	1801		RS1/16S222J
R	1802		RS1/16S222J
R	1803		RS1/16S471J
R	1804		RS1/16S471J
R	1805		RS1/16S471J
R	1806		RS1/16S471J

CAPACITORS

C	1801		CKSRYB103K50
C	1811		CKSQYF104Z25
C	1812		CKSQYF104Z25

B Unit Number : CWM7305
(DEH-1300R/X1M/EW)
Unit Name : Keyboard Unit

MISCELLANEOUS

IC	1801	IC	PD6340A
D	1701	LED	SML210PT
D	1702	LED	SML210PT
D	1703	LED	SML210PT
D	1704	LED	SML210PT
D	1705	LED	SML210PT
D	1706	LED	SML210PT
D	1707	LED	SML210PT
D	1708	LED	SML210PT
D	1801	Diode	MA152WK
D	1802	Diode	MA152WA
D	1811	LED	NSSW440-9159
D	1812	LED	NSSW440-9159
X	1801	Ceramic Resonator 4.97MHz	CSS1422
IL	1801	Lamp 14V 40mA	CEL1651
IL	1802	Lamp 14V 40mA	CEL1651
		LCD	CAW1632

RESISTORS

R	1701		RS1/16S151J
R	1702		RS1/16S181J
R	1703		RS1/16S181J
R	1704		RS1/16S181J
R	1705		RS1/16S181J
R	1706		RS1/16S151J
R	1707		RS1/16S151J
R	1708		RS1/16S151J
R	1709		RS1/16S181J
R	1710		RS1/16S151J
R	1711		RS1/16S181J
R	1712		RS1/16S151J
R	1713		RS1/16S131J
R	1801		RS1/16S222J
R	1802		RS1/16S222J
R	1803		RS1/16S471J
R	1804		RS1/16S471J
R	1805		RS1/16S471J
R	1806		RS1/16S471J

CAPACITORS

C	1801		CKSRYB103K50
C	1811		CKSQYF104Z25
C	1812		CKSQYF104Z25

B Unit Number : CWM7307
(DEH-1310/X1M/EE)
Unit Name : Keyboard Unit

MISCELLANEOUS

IC	1801	IC	PD6340A
D	1701	LED	SML210PT
D	1702	LED	SML210PT
D	1703	LED	SML210PT
D	1704	LED	SML210PT
D	1705	LED	SML210PT
D	1706	LED	SML210PT
D	1707	LED	SML210PT
D	1708	LED	SML210PT
D	1801	Diode	MA152WK
D	1802	Diode	MA152WA
D	1811	LED	NSSW440-9159
D	1812	LED	NSSW440-9159
X	1801	Ceramic Resonator 4.97MHz	CSS1422
IL	1801	Lamp 14V 40mA	CEL1651
IL	1802	Lamp 14V 40mA	CEL1651
		LCD	CAW1633

RESISTORS

R	1701		RS1/16S151J
R	1702		RS1/16S181J
R	1703		RS1/16S181J
R	1704		RS1/16S181J
R	1705		RS1/16S181J
R	1706		RS1/16S151J
R	1707		RS1/16S151J
R	1708		RS1/16S151J
R	1709		RS1/16S181J
R	1710		RS1/16S151J
R	1711		RS1/16S181J
R	1712		RS1/16S151J
R	1713		RS1/16S131J
R	1801		RS1/16S222J
R	1802		RS1/16S222J
R	1803		RS1/16S471J
R	1804		RS1/16S471J
R	1805		RS1/16S471J
R	1806		RS1/16S471J

CAPACITORS

C	1801		CKSRYB103K50
C	1811		CKSQYF104Z25
C	1812		CKSQYF104Z25

=====Circuit Symbol and No.		===Part Name	Part No.
C Unit Number : CWX2411 Unit Name : Control Unit			
MISCELLANEOUS			
IC	201	IC	UPD63711GC
IC	301	IC	BA5985FM
IC	701	IC	BA05SFP
Q	101	Transistor	2SB1132
D	801	LED	CL203IRXTU
D	802	LED	CL203IRXTU
X	201	Ceramic Oscillator 16.934MHz	CSS1456
S	801	Spring Switch(HOME)	CSN1051
S	802	Spring Switch(CLAMP)	CSN1052
RESISTORS			
R	101		RS1/8S120J
R	102		RS1/8S100J
R	103		RS1/16S222J
R	201		RS1/16S104J
R	202		RS1/16S103J
R	203		RS1/16S393J
R	204		RS1/16S103J
R	205		RS1/16S103J
R	206		RS1/16S182J
R	207		RS1/16S123J
R	302		RS1/16S153J
R	303		RS1/16S103J
R	501		RS1/16S102J
R	502		RA4C681J
R	601		RS1/16S102J
R	602		RS1/16S102J
R	605		RS1/16S0R0J
R	606		RS1/16S0R0J
R	801		RS1/8S751J
R	803		RS1/8S751J
R	902		RS1/16S0R0J
R	906		RS1/16S0R0J
CAPACITORS			
C	101		CKSRYB102K50
C	102		CKSRYB104K16
C	103		CEV101M6R3
C	104		CEV470M6R3
C	105		CKSQYB334K16
C	106		CKSQYB334K16
C	107		CKSQYB334K16
C	201		CKSRYB104K16
C	202		CKSRYB471K50
C	203		CKSRYB104K16
C	205		CEV101M6R3
C	206		CKSRYB104K16
C	207		CKSRYB104K16
C	208		CKSRYB104K16
C	209		CKSRYB104K16
C	210		CKSRYB332K50
C	211		CKSRYB104K16
C	212		CKSRYB104K16
C	213		CKSRYB392K50
C	214		CKSRYB104K16
C	215		CKSRYB104K16
C	216		CCSRCJ3R0C50
C	217		CCSRCH270J50
C	218		CKSRYB104K16
C	219		CCSRCH181J50

=====Circuit Symbol and No.		===Part Name	Part No.
C	220		CCSRCH510J50
C	221		CKSRYB682K25
C	222		CEV220M6R3
C	223		CKSRYB103K25
C	224		CKSRYB224K10
C	301		CEV101M10
C	603		CCSQSL152J50
C	604		CCSQSL152J50
C	702	10µF/10V	CCH1349
C	703		CKSQYB334K16
D Unit Number : Unit Name : Photo Unit(S8)			
Q	1	Photo-transistor	CPT230SX-TU
Q	2	Photo-transistor	CPT230SX-TU
Miscellaneous Parts List			
		Pickup Unit(Service)(P8)	CXX1285
M	1	Motor Unit(CARRIAGE)	CXB2190
M	2	Motor Unit(LOADING)	CXB2195
M	3	Motor Unit(SPINDLE)	CXB2562
		Fuse(10A)	CEK1136

6. ADJUSTMENT

6.1 CD ADJUSTMENT

1) Precautions

- This unit uses a single power supply (+5V) for the regulator. The signal reference potential, therefore, is connected to REFO(approx. 2.5V) instead of GND.
  If REFO 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 REFO and GND together. It is especially important not to connect the channel 1 negative probe of the oscilloscope to REFO 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 REFO 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.

- Disc detection during loading and eject operations is performed by means of a photo transistor in this unit.Consequently, if the inside of the unit is exposed to a strong light source when the outer casing is removed for repairs or adjustment, the following malfunctions may occur.
  *During PLAY, even if the eject button is pressed,the disc will not be ejected and the unit will remain in the PLAY mode.
  *The unit will not load a disc.
  When the unit malfunctions this way, either re-position the light source, move the unit or cover the photo transistor.

2) Test Mode

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

- Test mode starting procedure
  Reset while pressing the **4** and **6** keys together.

- Test mode cancellation
  Switch ACC, back-up OFF.

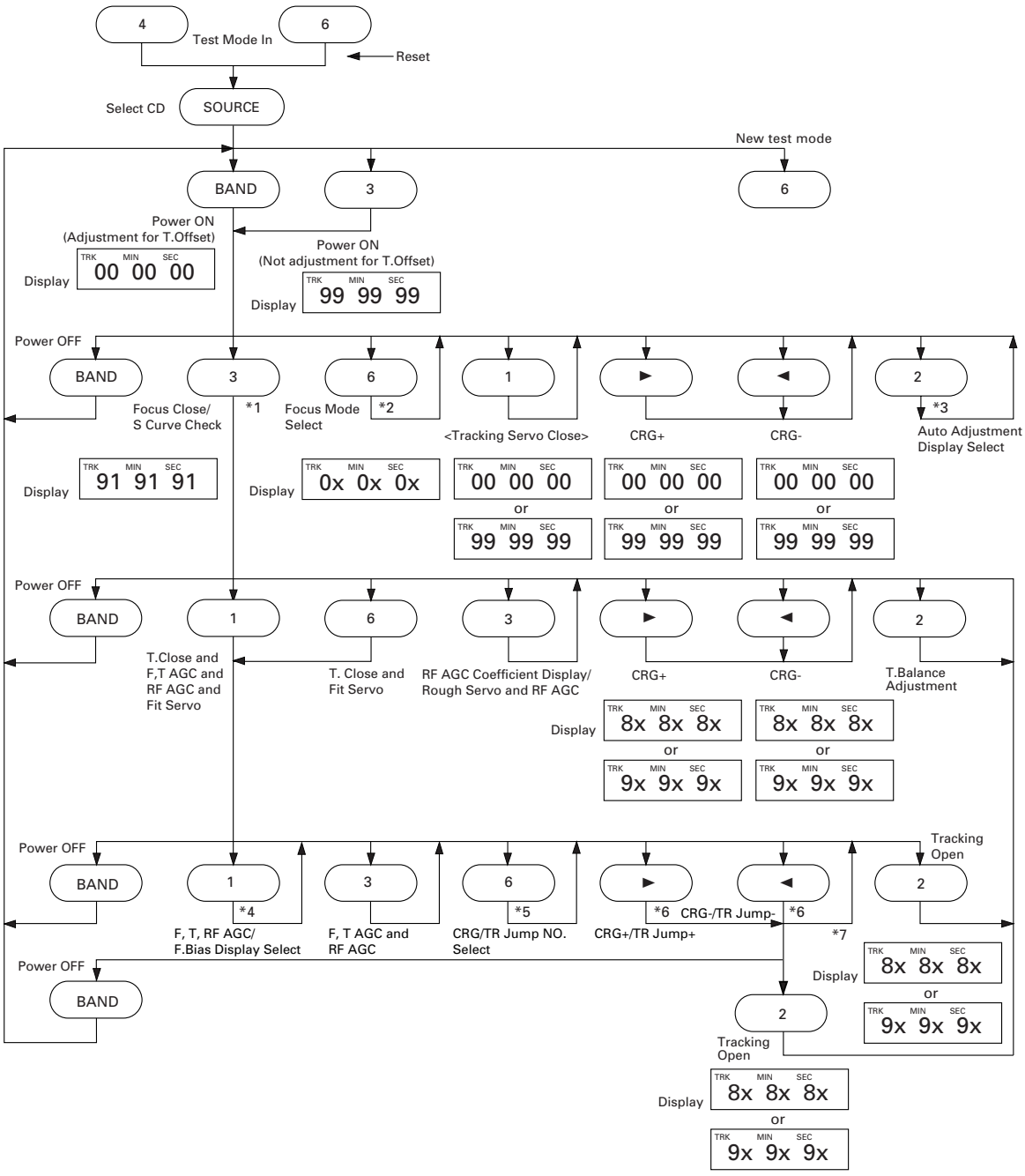
- After pressing the EJECT key, do not press any other key until the disk is completely ejected.

- If the ► or ◄ 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 “1TR”, and the automatic adjustment value to the initial value.

● Flow Chart



*1 "00", "99"→Focus Close / "01"→S.Curve

*2 → Focus Close 00(99) → S.Curve 01 → LD Off 02

*3 → F.Cancel → T.Offset → The original display

*4 → TRK, MIN, SEC → F.AGC Gain → T.AGC Gain → F.Bias

*5 → 1TR 91(81) → 4TR 92(82) → 10TR 93(83) → 32TR 94(84) → 100TR 95(85) → CRG Move 96(86)

*6 1TR/4TR/10TR/32TR/100TR

*7 CRG Move,100TR Jump

6.2 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT

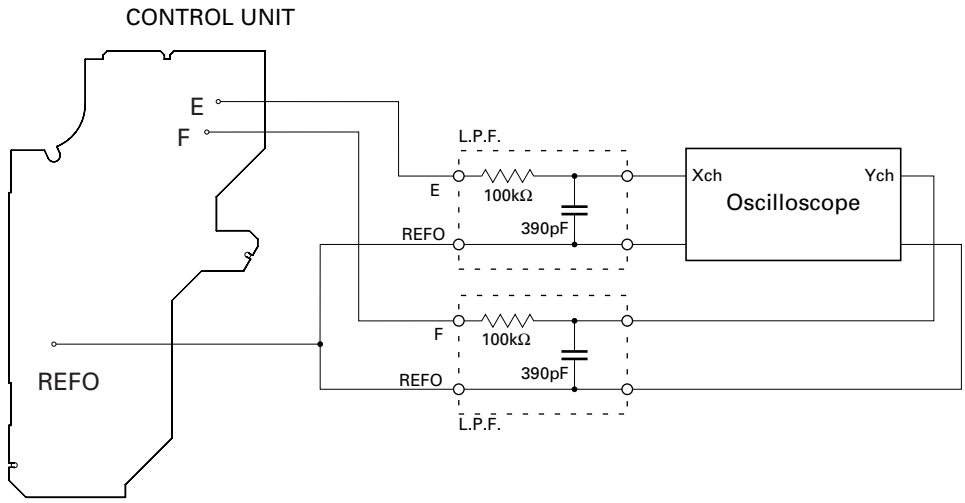
• **Note :**
The grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best 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, REFOUT
• 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 ► and ◄ buttons, move the PU unit to the innermost track.
3. Press key **3** to close focus, the display should read "91". Press key **2** to implement the tracking balance adjustment the display should now read "81". Press key **3** 2 times. 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.

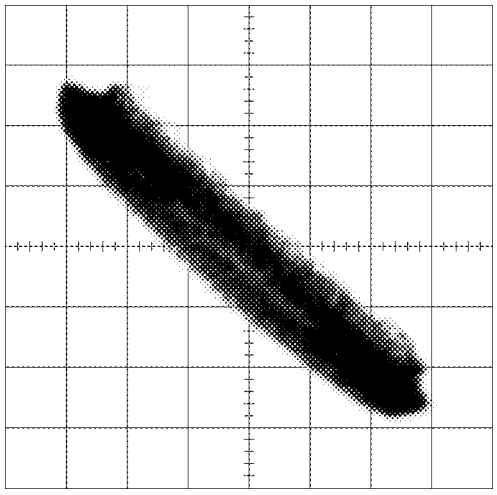
• **Note**
Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

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

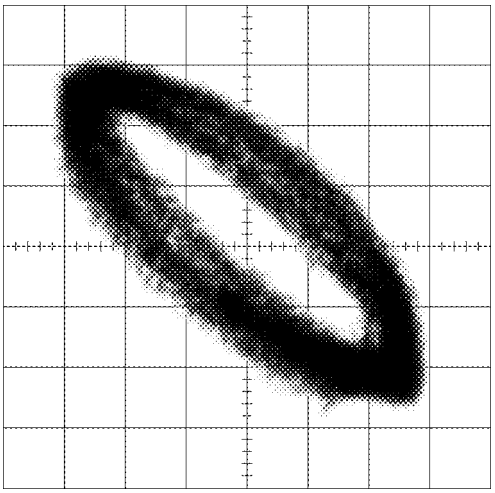
Grating waveform

Ech → Xch 20mV/div, AC
Fch → Ych 20mV/div, AC

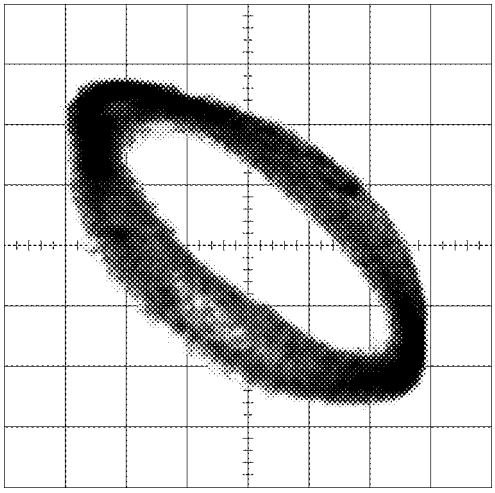
0°



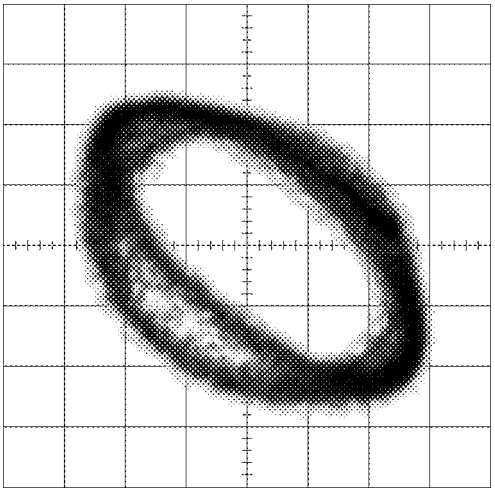
30°



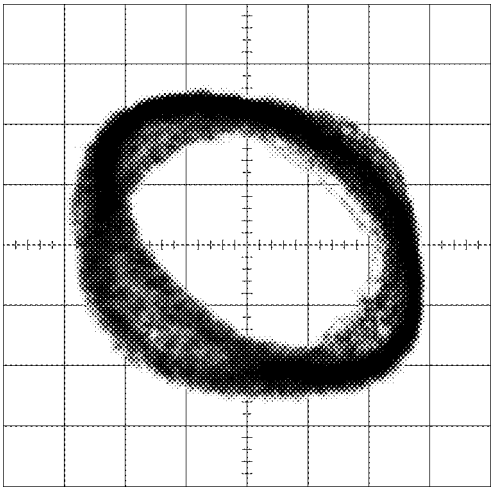
45°



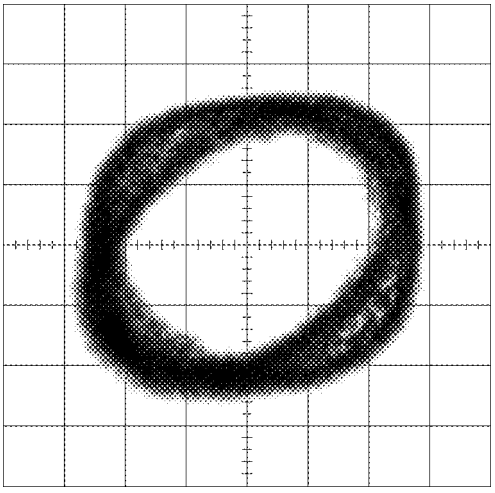
60°



75°



90°



7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 TEST MODE

● Error Messages

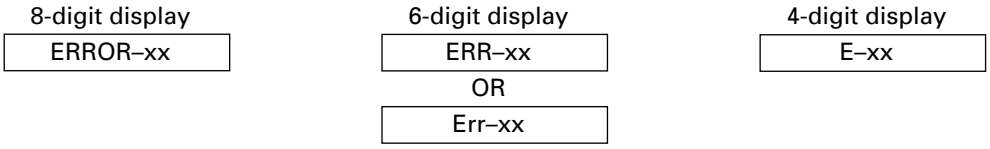
If a CD is not operative or stopped during operation due to an error, the error mode is turned on and cause(s) of the error is indicated with a corresponding number. This arrangement is intended at reducing nonsense calls from the users and also for facilitating trouble analysis and repair work in servicing.

(1) Basic Indication Method

1) 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 examples

Depending on display capability of LCD used, display will vary as shown below. xx contains the error number.



(2) Error Code List

Code	Class	Displayed error code	Description of the code and potential cause(s)
10	Electricity	Carriage Home NG	CRG can't be moved to inner diameter. CRG can't be moved from inner diameter. → Failure on home switch or CRG move mechanism.
11	Electricity	Focus Servo NG	Focusing not available. → Stains on rear side of disc or excessive vibrations on REWRITABLE.
12	Electricity	Spindle Lock NG	Spindle not locked. Sub-code is strange (not readable). → Failure on spindle, stains or damages on disc, or excessive vibrations.
		Subcode NG	A disc not containing CD-R data is found. Turned over disc are found, though rarely. → Failure on home switch or CRG move mechanism.
		RF AMP NG	An appropriate RF AMP gain can't be determined. → CD signal error.
17	Electricity	Setup NG	APC protection doesn't work. Focus can be easily lost. → Damages or stains on disc, or excessive vibrations.
30	Electricity	Search Time Out	Failed to reach target address. → CRG tracking error or damages on disc.
A0	System	Power Supply NG	Power (VD) is ground faulted. → Failure on SW transistor or power supply (failure on connector).

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.

A newly designed head unit must conform to the example given above.

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

1x: Setup relevant errors, 3x: Search 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 (internal RAM: CPOINT) 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 [SOURCE] key, and inserting the disc. Then, press the [Jump Mode Selector] 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 reset start.

* With some products, the new test mode can be reset through the same operations as that employed for shifting to the STBY mode (while maintaining the Acc turned off).

(2) Key Correspondence

Key	Test mode		New test mode	
(Example)	Power Off	Power On	In-play	Error Production
BAND	To power on (offset adjustment performed)	To power off	–	Time/Err.No. switching
►	–	FWD-Kick	FF/TR+	–
◄	–	REV-Kick	REV/TR-	–
1	–	T.Close (AGC performed) /parameter display switching	Scan	–
2	–	T.BAL adjustment /T.Open	Mode	–
3	To power on (offset adjustment not performed)	F.Close/RF AGC/AGC	–	–
6	–	Mode switching /T.Close (no AGC)/Jump switching	Auto/Manu	–

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.	FOK = Low continued for 50 msec. → Damages/stains on disc, vibrations or failure on servo.
42	Electricity	Sub-code unreadable.	Sub-code was unreadable for 50 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.

The error codes should be indicated in the same way as in the normal mode.

(4) Display of Operational Status (CPOINT) during Setup

Status No.	Contents	Protective action
01	Carriage move to home position started.	None
02	Carriage is moving toward inner diameter.	Specified 10 seconds has been passed or failure on home switch.
03	Carriage is moving toward outer diameter.	Specified 10 seconds has been passed or failure on home switch.
05	Carriage outer diameter feed (1 second) in progress.	None
11	Setup started.	None
12	Spindle rotation and focus search started.	None
13	Waiting for focus close (XSI=Low).	Specified focus search time has been passed.
14	Waiting for focus close (FOK=High). (After AGC)	Specified focus search time has been passed.
15	Waiting for focus close (FOK=High). (Before AGC)	Specified focus search time has been passed.
16	Rough AGC in progress.	Off focus.
17	Setup (1/2) before T balance adjustment is started.	Off focus.
18	Setup (2/2) before T balance adjustment is started.	Off focus.
24	T balance adjustment (1/2).	Off focus.
25	T balance adjustment (2/2).	Off focus.
26	Standing by after spindle rough servo is over.	Off focus.
27	Setup before RF AGC (first) is started.	Off focus.
28	RF AGC (first) in progress.	Off focus.
29	Setup before RF AGC (second) is started.	Off focus.
30	RF AGC (second) in progress.	Off focus.
31	Tracking close in progress.	Off focus.
32	Standing by after tracking is closed.	Off focus.
33	Focus AGC started.	Off focus.
34	Focus AGC in progress. Tracking AGC started.	Off focus.
35	Tracking AGC in progress. Spindle processes applicable servo.	Off focus.
36	Check of MIRR and LOCK pin. RF AGC in progress. CRG close in progress. Check of sub-code.	Off focus. Spindle not locked. Sub-code unreadable.

(5) Display Examples

1) During Setup (When status no. = 11)

TRK No.	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

Switch to the following displays (A) and (B) using the [BAND] switch:

(A) Error occurrence timing display in absolute time.

An example: Error occurred in 12th tune at 34'56" in absolute time.

TRK No.	MIN.	SEC.
12	34'	56"

(B) Error No. display

An example: Error #40 (Off focus is detected)

ERROR-40

7.1.2 DISASSEMBLY

● Removing the Case Unit (not shown)

1. Remove the Case Unit.

● Removing the CD Mechanism Module (Fig.1)

1 Remove the four screws.

Disconnect the connector and then remove the CD Mechanism Module (not shown).

● Removing the Panel Assy (not shown)

1. Disconnect the two stoppers and then remove the Panel Assy.

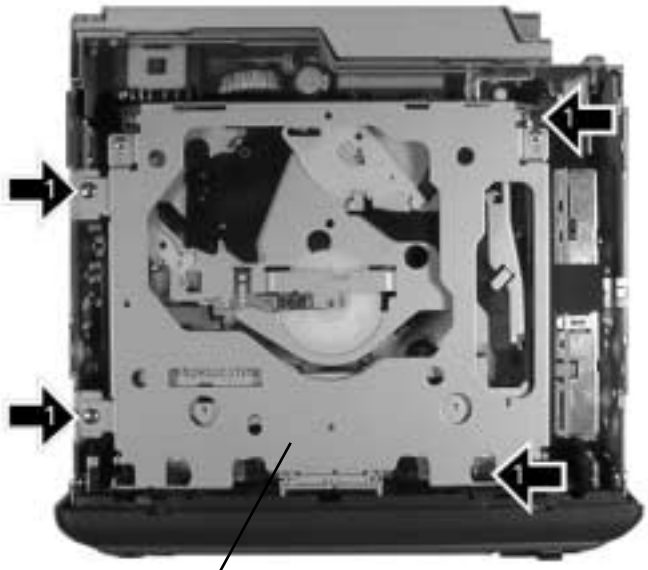


Fig.1

● Removing the Tuner Amp Unit

1 Remove the three screws and then remove the Cover. (Fig.2)

2 Remove the two screws. (Fig.2)

3 Remove the screw. (Fig.3)

4 Straight the tabs at fore locations indicated and then remove the Tuner Amp Unit. (Fig.3)

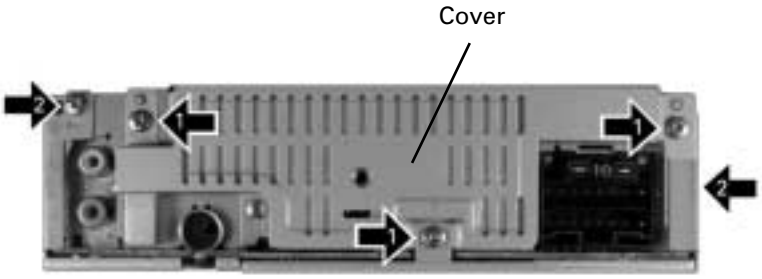


Fig.2

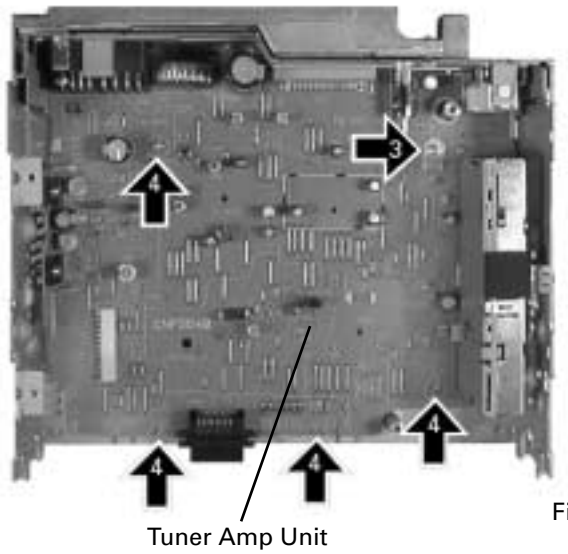
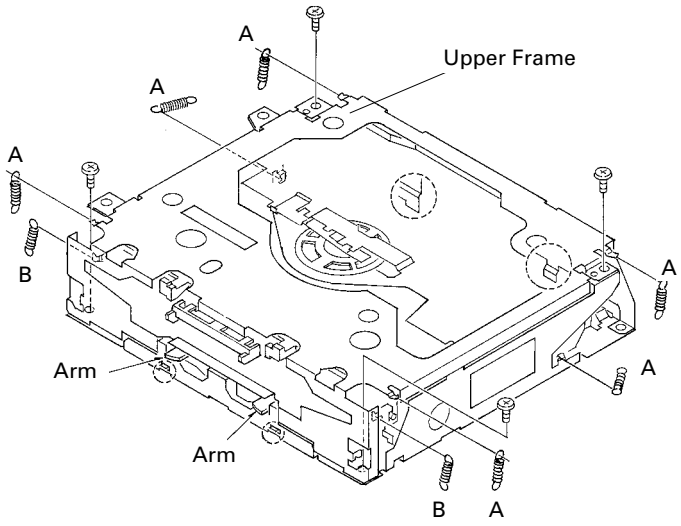


Fig.3

● Removing the Upper Frame

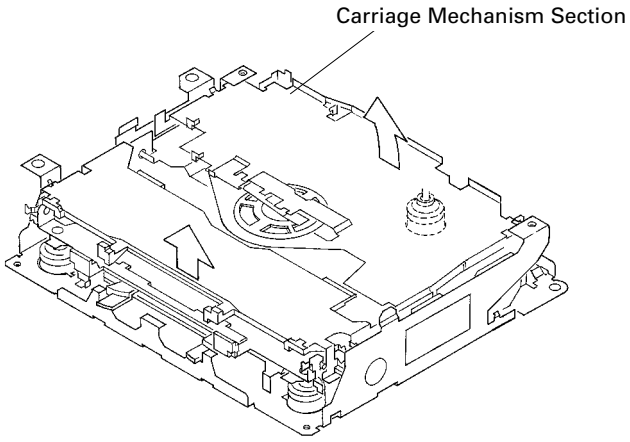
1. Remove six Springs A, two Springs B and four Screws.
2. Remove two Tabs situated on rear side of the Upper Frame, remove two Arms on the front side, then remove two Tabs on the front side.



● Removing the Carriage Mechanism

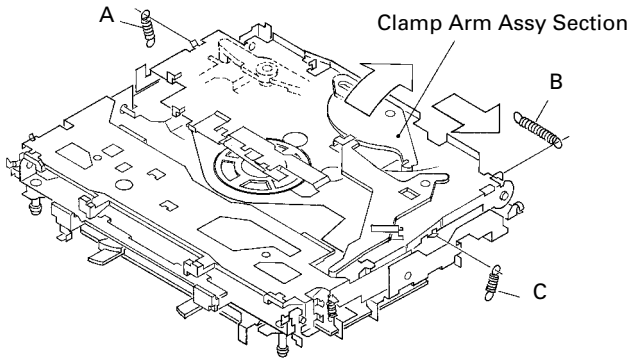
1. Disengage the Carriage Mechanism from the two dampers situated in the front side by driving it up, then disengage and remove the mechanism from the one damper by driving it up aslant into front side direction.

Note : When assembling the Carriage Mechanism, coat the dampers with alcohol prior to the assembly.



● Removing the Clamp Arm Assy

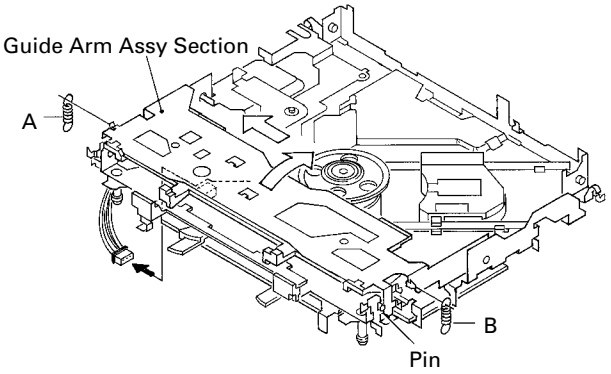
1. Remove a Spring A, a B and a Spring C.
2. Drive the Clamp Arm Assy up into rear side direction, then disengage the arm from its current position Finally, drive the assembly approximately 45 degrees upward, then slide the assembly toward right side to remove it.



● Removing the Guide Arm Assy

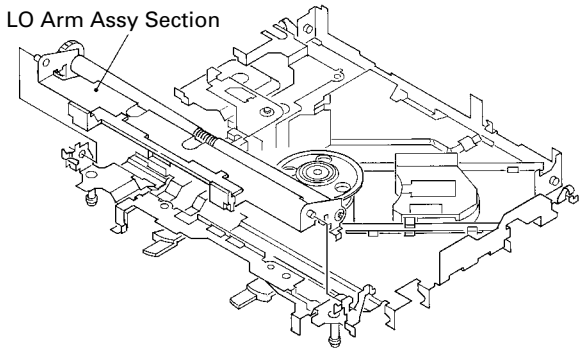
1. Remove a connector, a spring A and B
2. Drive the Guide Arm Assy up aslant into rear side direction, then remove it from a Pin. Finally, drive the assembly approximately 45 degrees upward, then slide the assembly toward left side to remove it.

Note : When assembling the guide arm assembly, route the cord inside the assembly. In this operation, care must be exercised so that cord may be caught by the gear.



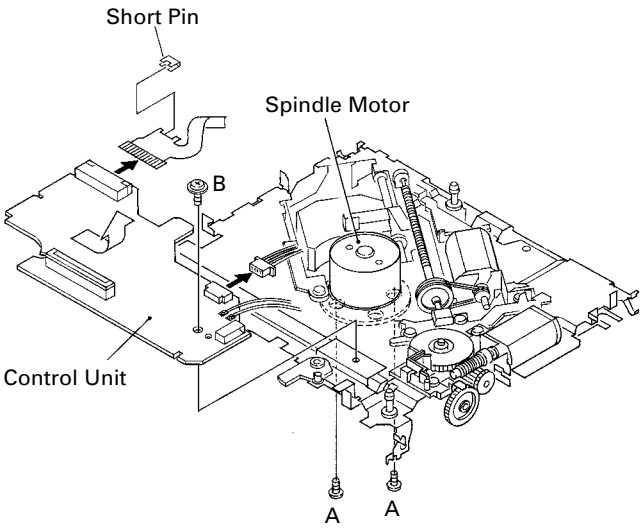
● Removing the LO Arm Assy

1. Remove two Pins to dismount the LO Arm Assy.



● Removing the Control Unit and the Spindle Motor

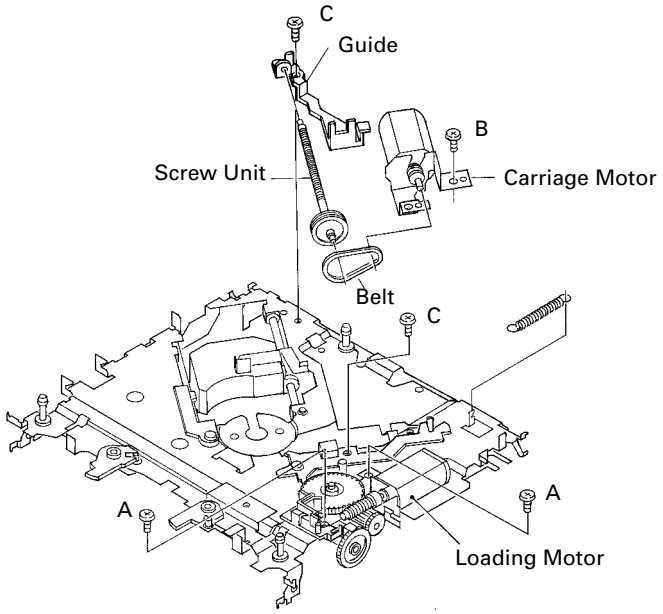
1. Remove from the connector after mounting the short pin on the flexible PCB of the pickup unit.
2. Remove two Soldered joints, then remove two Screws A.
3. Remove two connectors and a Screw B.
4. Disengage the Control Unit from two Tabs, then dismount the unit by sliding it toward left.
5. Dismount the Spindle Motor.



● Removing the Loading Motor and Carriage Motor

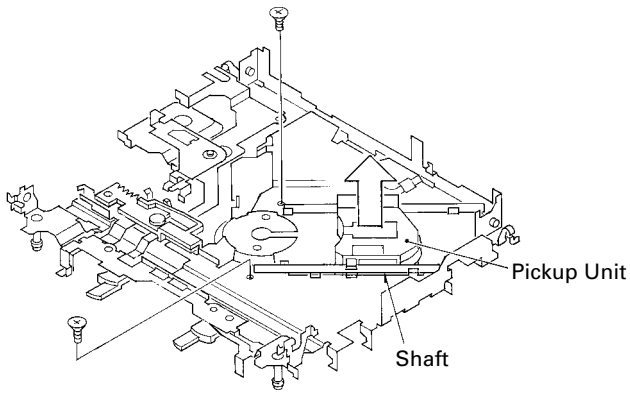
1. Remove the Spring and two Screws A.
2. Dismount the Loading Motor.
3. Remove the Belt, a Screw B, two Screws C, a Guide and a Screw Unit.
4. Dismount the Carriage Motor.

Note : When assembling the Belt, use care so that it may not be contaminated by grease.

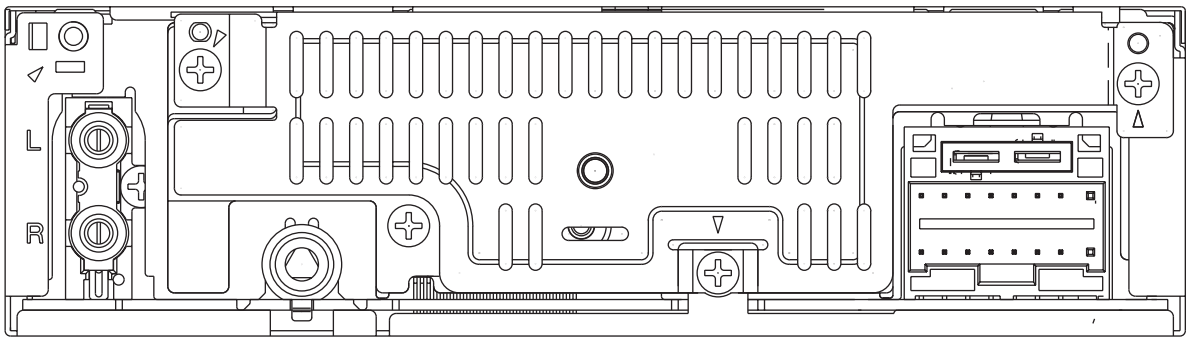


● Removing the Pickup Unit

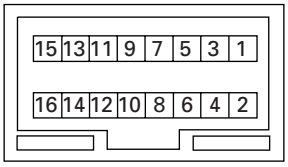
1. Remove two Screws and a Shaft.
2. Dismount the Pickup Unit.



7.1.3 CONNECTOR FUNCTION DESCRIPTION



PRE OUT ANTENNA



1. BACK UP
2. GND
3. NC
4. ACC
5. B.REM
6. NC
7. TEL MUTE
8. NC
9. FL-
10. RL-
11. FL+
12. RL+
13. FR-
14. RR-
15. FR+
16. RR+

7.2 PARTS

7.2.1 IC

● **Pin Functions(PE5195A, PE5196A)**

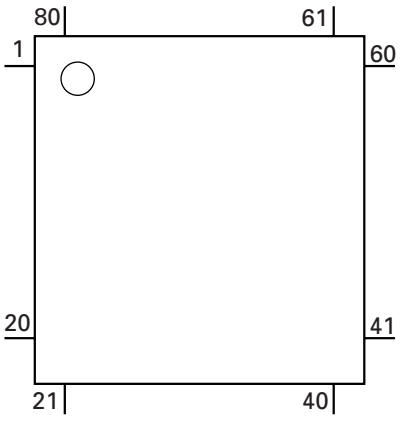
Pin No.	Pin Name	I/O	Format	Function and Operation
1	MODEL1	I		Model select input
2	NL1	I		Noise level input
3	NL2DT	I		Noise level input 2
4	AVSS			AVSS
5	ST	I		Stereo input
6	SD	I		SD signal input
7	AREF1			AVREF1
8	KYDT	I		Key data input
9	DPDT	O	C	Key data output
10	SDBW	I		SDBW input
11	TUNPDI	I		PLL IC data input
12	TUNPDO	O	C	PLL IC data output
13	TUNPCK	O	C	PLL IC clock output
14	TUNPCE	O	C	PLL IC chip enable output
15	$\overline{\text{CURRQ}}$	O	C	Tuner voltage FIX output
16	XSI	I	C	CD LSI serial data input(TSI)
17	XSO	O	C	CD LSI serial data output(TSO)
18	XSCK	O	C	CD LSI serial clock output(TSCK)
19	$\overline{\text{DRST}}$	O	C	RDS decoder reset output
20	ADPW	O	C	A/D converter power output
21	$\overline{\text{FM}}$/AM	O	C	Tuner power supply control output
22	VDCONT	O	C	VD power supply control output
23	CONT	O	C	Servo driver power control output
24	XAO	O	C	CD LSI command / data control output
25	$\overline{\text{XRST}}$	O	C	CD LSI reset control output
26	$\overline{\text{XSTB}}$	O	C	CD LSI strobe output
27	CLAMP	I		Disc clamp sense input
28	MIRR	I		Mirror detection input
29	FOK	I		Focus OK signal input
30	LOCK	I		Spindle lock detector input
31	CDLOAD	O		LOAD motor loading control output
32	TELIN	I		Cellular mute input
33	VSS			VSS
34	CDEJECT	O		LOAD motor eject control output
35	CD5VON	O	C	CD +5V power supply control output
36–39	NC			Not used
40	RECIEVE	O	C	RDS decoder receiving output
41	$\overline{\text{SWVDD}}$	O	C	Grille microcomputer power supply control output
42	SYSPW	O	C	System power supply control output
43	ILMPW	O	C	Illumination power output
44	$\overline{\text{MUTE}}$	O	C	Mute output
45	PEE	O	C	Beep tone output
46	LOCH	O	C	LOCH output
47	RDS57K	I		57kHzBP-OUT sense input
48	TUNPCE2	O	C	EEPROM chip enable output
49	PCL	O	C	Test mode clock adjustment output
50	VCK	O	C	Clock output for electronic volume
51	VDT	O	C	Data output for electronic volume
52	ANTPW	O		Antenna power output
53	VST	O		Strobe pulse output for electronic volume
54	DALMON	O		Stand-by output
55,56	NC			Not used
57	LOCL	O		LOCL output
58	$\overline{\text{RDSLK}}$	I		RDSLK input

Pin No.	Pin Name	I/O	Format	Function and Operation
59	RDT	I		RDS data input
60	$\overline{\text{RESET}}$			Reset
61	LDET	I		PLL lock detection input
62	RCK	I		RDS clock input
63	$\overline{\text{ASENS}}$	I		ACC power sense input
64	$\overline{\text{BSENS}}$	I		Back up power sense input
65	$\overline{\text{DSENS}}$	I		Grille detach sense input
66	TMUTE	O	C	Tuner mute output
67	NC			Not used
68	VDD			VDD
69	X2			Crystal oscillator connection pin
70	X1			Crystal oscillator connection pin
71	IC(VPP)			IC(VPP)
72	NC			Not used
73	TESTIN	I		Test program mode input
74	AVDD			AVDD
75	AVREF0			AVREF0
76	SL	I		Signal level input
77	TEMP	I		Temperature detection input
78	VDSENS	I		VD power supply sense input
79	DINC	I		Disc detection input
80	EJTD	I		Disc eject position detect input

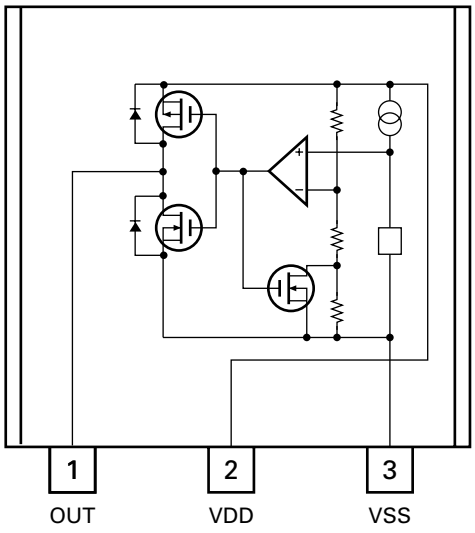
Output Format	Meaning
C	C MOS output

IC's marked by* are MOS type.
Be careful in handing them because they are very liable to be damaged by electrostatic induction.

*PE5195A, PE5196A



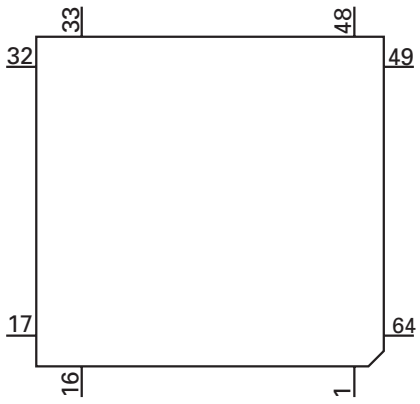
S-80834ANY



● **Pin Functions (PD6340A)**

Pin No.	Pin Name	I/O	Function and Operation
1-5	SEG4-0	O	LCD segment output
6-9	COM3-0	O	LCD common output
10	VLCD		LCD drive power supply
11-14	KST3-0	O	Key strobe output
15,16	KDT0,1	I	Key data input (analogue input)
17	REM	I	Remote control reception
18	DPDT	I	Display data input
19	NC		Not used
20	KYDT	O	Key data output
21	MODA		GND
22	X0		Crystal oscillator connection pin
23	X1		Crystal oscillator connection pin
24	VSS		GND
25,26	KDT2,3	I	Key data input
27	NC		Not used
28	KST4	O	Key strobe output
29-32	NC		Not used
33-55	SEG35-13	O	LCD segment output
56	VDD		Power supply
57-64	SEG12-5	O	LCD segment output

*PD6340A

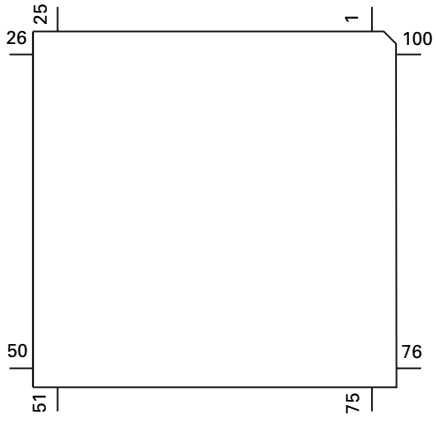


● **Pin Functions (UPD63711GC)**

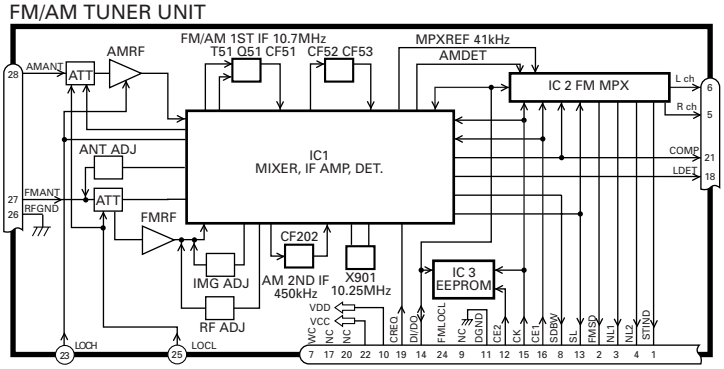
Pin No.	Pin Name	I/O	Function and Operation
1	D.GND		Logic circuit GND
2	RFOK	O	RFOK signal output
3	$\overline{RST}$	I	Reset signal input
4	A0	I	Command/parameter identification signal input
5	$\overline{STB}$	I	Data strobe signal input
6	$\overline{SCK}$	I	Clock signal input for serial data input/output
7	SO	O	Serial data and status signal output
8	SI	I	Serial data input
9	$\overline{XTALEN}$	I	Crystal oscillation control pin
10	D.VDD		Positive power supply terminal to logic circuit
11	DA.VDD		Positive power supply terminal to D/A converter
12	R_OUT	O	Right channel audio output signal
13	DA.GND		D/A converter GND
14	REGC	I	The outside putting capacitor connection pin for SCF regulator
15	DA.GND		D/A converter GND
16	L_OUT	O	Left channel audio output signal
17	DA.VDD		Positive power supply terminal to D/A converter
18	R+	O	Right channel audio data output
19	R-	O	Right channel audio data output
20	L-	O	Left channel audio data output
21	L+	O	Left channel audio data output
22	X.VDD		Positive power supply terminal to crystal oscillation circuit
23	XTAL	I	Crystal oscillator connect pin
24	$\overline{XTAL}$	O	Crystal oscillator connect pin
25	X.GND		Crystal oscillation circuit GND
26	D.VDD		Positive power supply terminal to logic circuit
27	EMPH	O	Output pin for the pre-emphasis data in the sub-Q code
28	FLAG	O	Flag output pin to indicate that audio data currently being output consists of noncorrectable data
29	DIN	I	Serial data input to internal DAC
30	DOUT	O	Serial audio data output
31	SCKIN	I	Serial clock input to internal DAC
32	SCKO	O	Audio data that is output from DOUT changes at rising edge of this clock
33	LRCKIN	I	LRCK signal input to internal DAC
34	LRCK	O	Signals to distinguish the right and left channels of the audio data output from DOUT
35	HOLD	O	Defect detection output
36	TX	O	Digital audio interface data output
37	D.GND		Logic circuit GND
38	C16M	O	Oscillator clock buffering output
39	LIMIT	I	Status of the pin is output at Bit 5 of the status output
40	D.VDD		Positive power supply terminal to logic circuit
41	LOCK	O	EFM synchronous detection signal
42	RFCK	O	Frame synchronous signal of XTAL-system
43	MIRR	O	MIRR output
44	PLCK	O	Monitor pin of bit clock
45	D.GND		Logic circuit GND
46	C1D1	O	Output pin for indicating the C1 error correction results
47	C1D2	O	Output pin for indicating the C1 error correction results
48	C2D1	O	Output pin for indicating the C2 error correction results
49	C2D2	O	Output pin for indicating the C2 error correction results
50	C2D3	O	Output pin for indicating the C2 error correction results
51	D.VDD		Positive power supply terminal to logic circuit
52	PACK	O	CD-TEXT PACK synchronous signal
53	TSO	O	CD-TEXT data serial output
54	TSI	I	CD-TEXT control parameter serial input
55	$\overline{TSCK}$	I	CD-TEXT serial clock input
56	TSTB	I	CD-TEXT parameter strobe signal input
57	D.GND		Logic circuit GND

Pin No.	Pin Name	I/O	Function and Operation
58	TEST0	I	Test pin
59	TEST1	I	Test pin
60	ATEST	O	Test pin
61	A.GND		Analog circuit GND
62	FD	O	Focus drive output
63	TD	O	Tracking drive output
64	SD	O	Sled drive output
65	MD	O	Spindle drive output
66	DAC0	O	DAC output for adjustment
67	DAC1	O	DAC output for adjustment
68	DAC2	O	DAC output for adjustment
69	DAC3	O	DAC output for adjustment
70	A.VDD		Positive power supply terminal to analog circuit
71	EFM	O	EFM signal output
72	ASY	I	EFM comparator reference voltage input
73	C3T		3T detection capacitor additional pin
74	RFI	I	RF signal input for EFM data regulation
75	AGCO	O	RF signal output of after gain adjustment
76	AGCI	I	RF-AGC amplifier input
77	RFO	O	RF summing amplifier output
78	EQ2		RF amplifier equalizer parts additional pin
79	EQ1		RF amplifier equalizer parts additional pin
80	RF-	I	RF summing amplifier inverted input
81	A.GND		Analog circuit GND
82	A	I	Photo detector A input
83	C	I	Photo detector C input
84	B	I	Photo detector B input
85	D	I	Photo detector D input
86	F	I	Photo detector F input
87	E	I	Photo detector E input
88	A.VDD		Positive power supply terminal to analog circuit
89	REFOUT	O	Reference electric potential output
90	FE-	I	Focus error amplifier inverted input
91	FEO	O	Focus error amplifier output
92	TE-	I	Tracking error amplifier inverted input
93	TEO	O	Tracking error amplifier output
94	TE2	O	Tracking error output of after amplification
95	TEC	I	Tracking comparator input
96	A.GND		Analog circuit GND
97	PD	I	PD detection signal input for LD output monitor
98	LD	O	LD control current output
99	PN	I	APC circuit control polarity set pin
100	A.VDD		Positive power supply terminal to analog circuit

*UPD63711GC



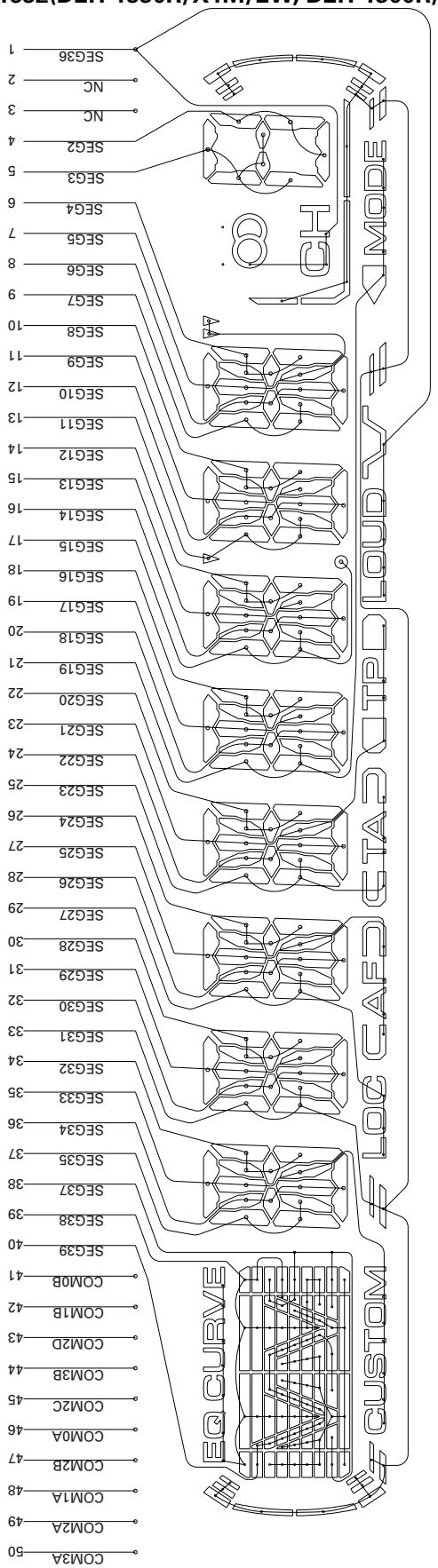
FM/AM TUNER UNIT



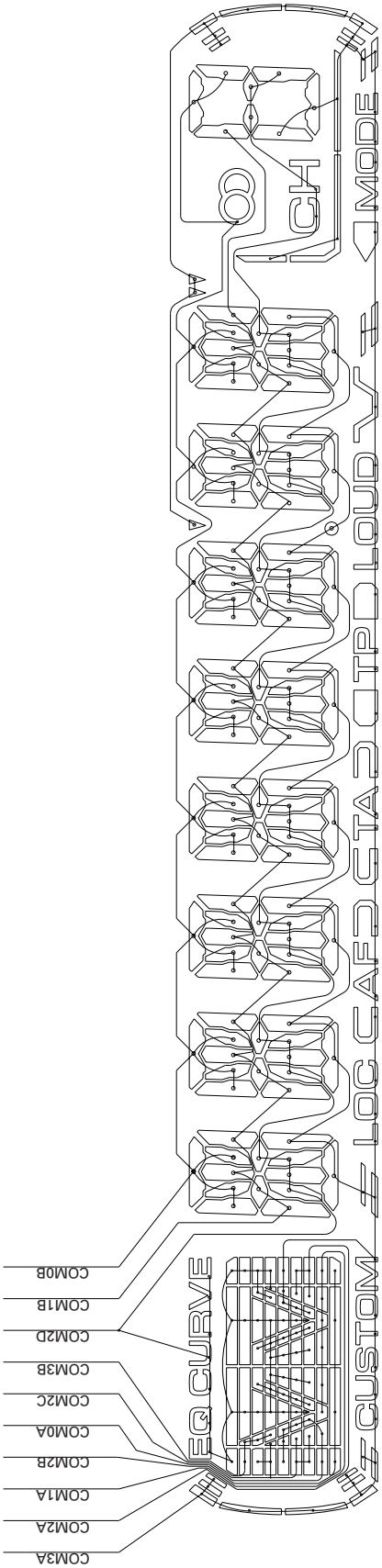
No.	Symbol	I/O	Explain	
1	STIND	O	stereo indicator	"Low" when the FM stereo signals are received. To be pulled up to the "VDD" at 47kΩ.
2	FMSD	O	FM station detector	"High" when signals are received. To be pulled up to the "VDD" at 47kΩ Meanwhile, 10kΩ should be used when taking diver FIX trigger from 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 di-emphasis constant.
6	Lch	O	L channel output	FM stereo "L-ch" signal output or AM audio output. Add the specified di-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	NC			Not used
10	VDD		power supply	Power supply pin for the digital section. D.C. 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	NC			Not used
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	NC			Not used
21	COMP	O	composite signal	FM composite signal output. r out < 100Ω
22	VCC		power supply	Analog section power supply pin.D.C.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. Serge 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

● **CAW1632(DEH-1330R/X1M/EW, DEH-1300R/X1M/EW)**

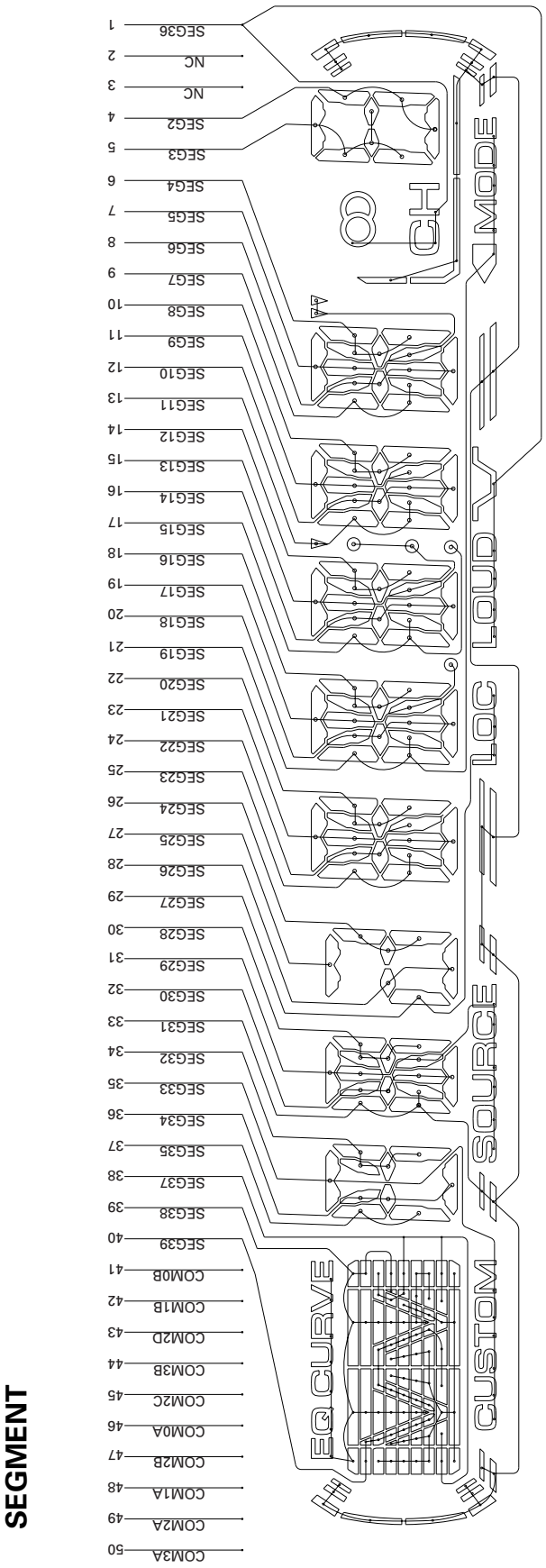


SEGMENT

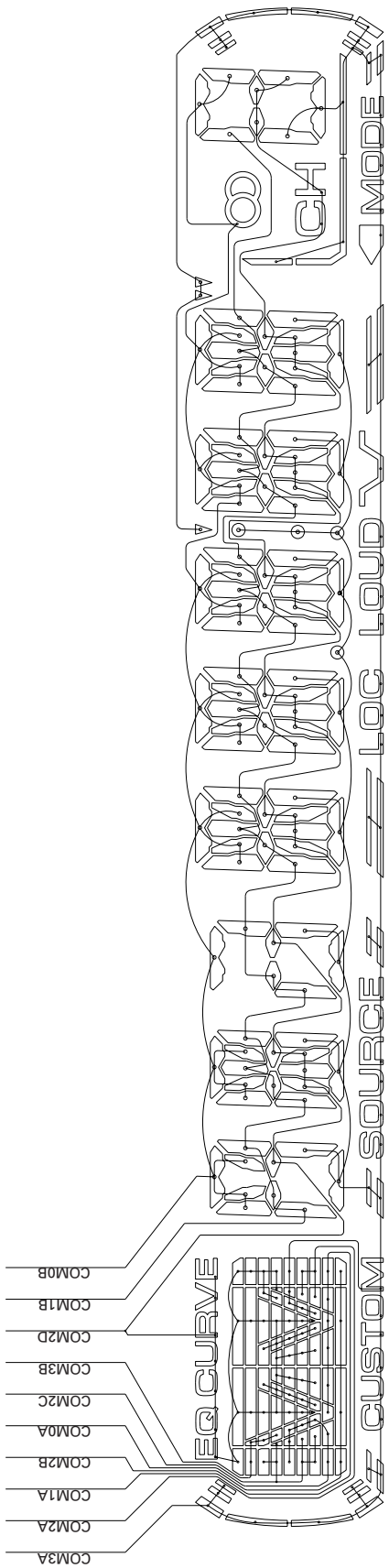


COMMON

● **CAW1633(DEH-1310/X1M/EE)**

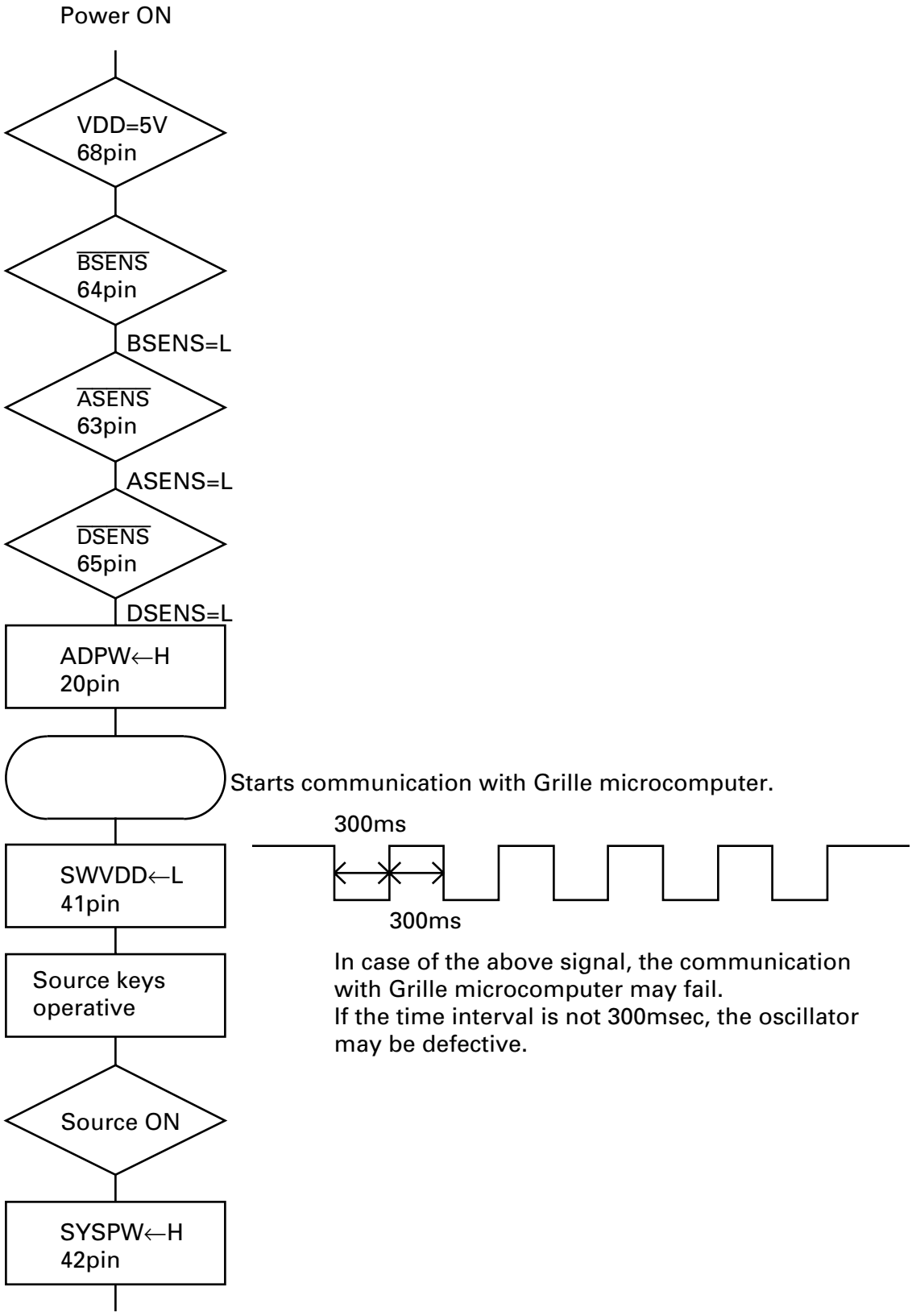


SEGMENT



COMMON

7.3 OPERATIONAL FLOW CHART



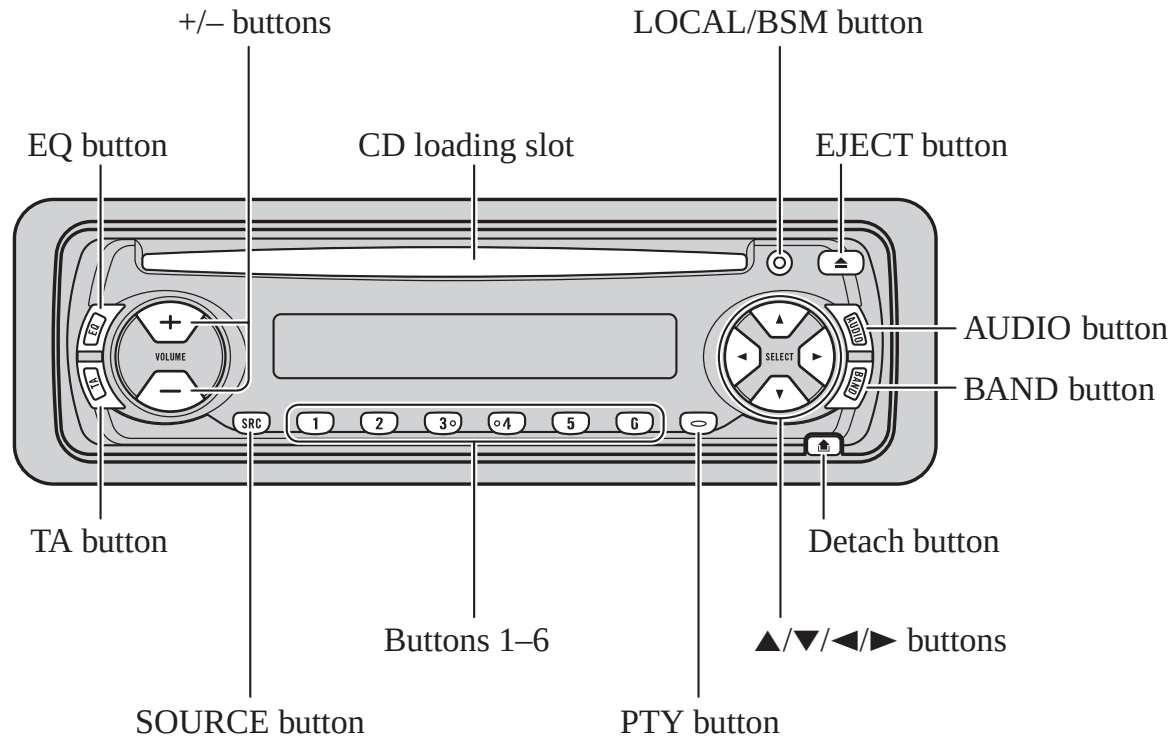
Completes power-on operation.(After that, proceed to each source operation.)

8. OPERATIONS AND SPECIFICATIONS

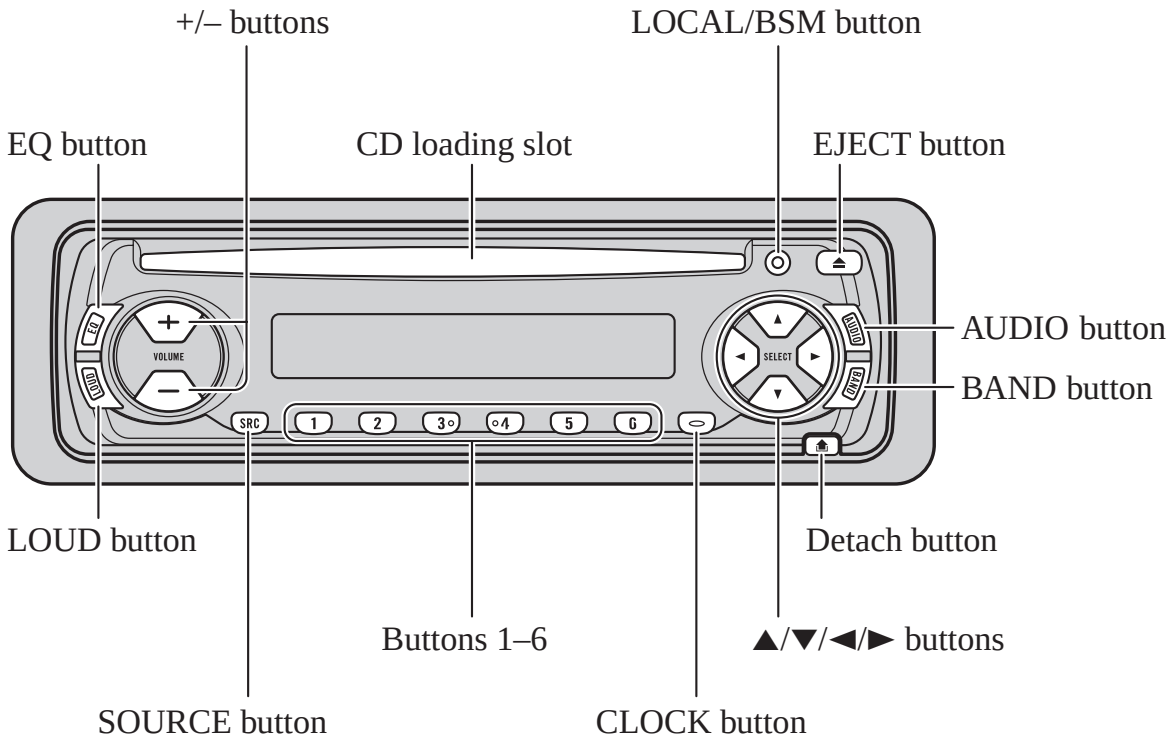
8.1 OPERATIONS

Key Finder

Head Unit (DEH-1330R,1300R)



Head Unit (DEH-1310)

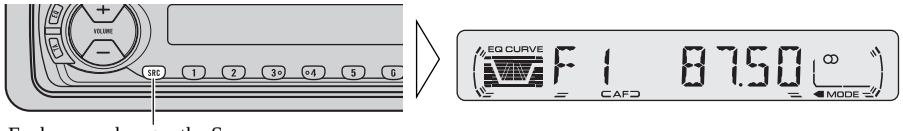


To Listen to Music

The following explains the initial operations required before you can listen to music.

Note:
- Loading a disc in this product.

1. Select the desired source (e.g. Tuner).



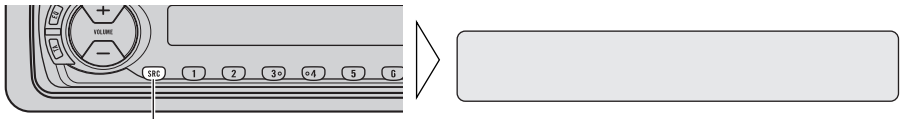
Each press changes the Source ...

Each press of the SOURCE button selects the desired source in the following order:
Built-in CD player → Tuner

Note:
- When no disc is set in this product, built-in CD player source will not change.
- When this product's blue/white lead is connected to the car's Auto-antenna relay control terminal, the car's Auto-antenna extends when this product's source is switched ON. To retract the antenna, switch the source OFF.

2. Raise or lower the volume.

3. Turn the source OFF.



Hold for 1 second

Basic Operation of Tuner

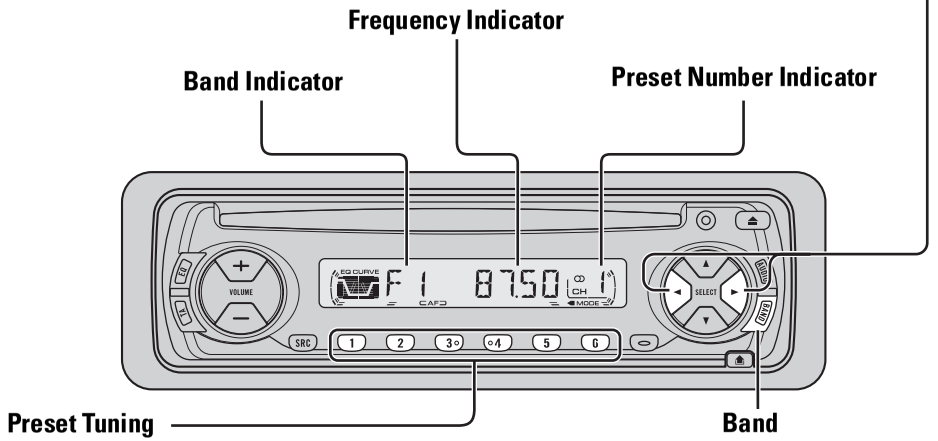
This product's AF function can be switched ON and OFF. AF should be switched OFF for normal tuning operations.

Manual and Seek Tuning

- **You can select the tuning method by changing the length of time you press the ◄/► button.**

Manual Tuning (step by step)	0.5 seconds or less
Seek Tuning	0.5 seconds or more

Note:
- If you continue pressing the button for longer than 0.5 seconds, you can skip broadcast stations. Seek Tuning starts as soon as you release the button.
- Stereo indicator "◌◌" lights when a stereo station is selected.



- **You can memorize broadcast stations in buttons 1 through 6 for easy, one-touch station recall.**

Preset station recall	2 seconds or less
Broadcast station preset memory	2 seconds or more

Note:
- Up to 12 FM stations (6 in F1 (FM1) and F2 (FM2)) and 6 MW/LW stations can be stored in memory.
- You can also use the ▲ or ▼ buttons to recall broadcast stations memorized in buttons 1 through 6.

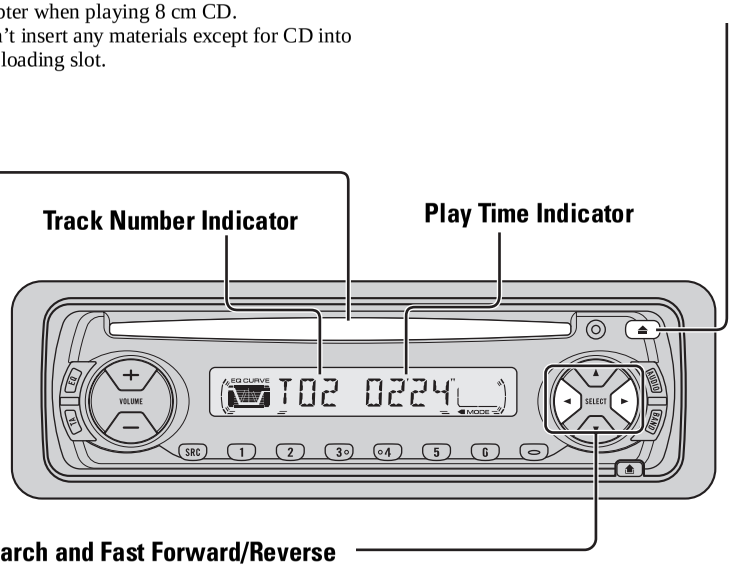
Basic Operation of Built-in CD Player

Eject

CD Loading Slot

Note:
- The built-in CD player plays one standard 12 cm or 8 cm (single) CD at a time. Do not use an adapter when playing 8 cm CD.
- Don't insert any materials except for CD into CD loading slot.

Note:
- The CD function can be turned ON/OFF with the disc remaining in this product.
- A disc left partially inserted after ejection may incur damage or fall out.

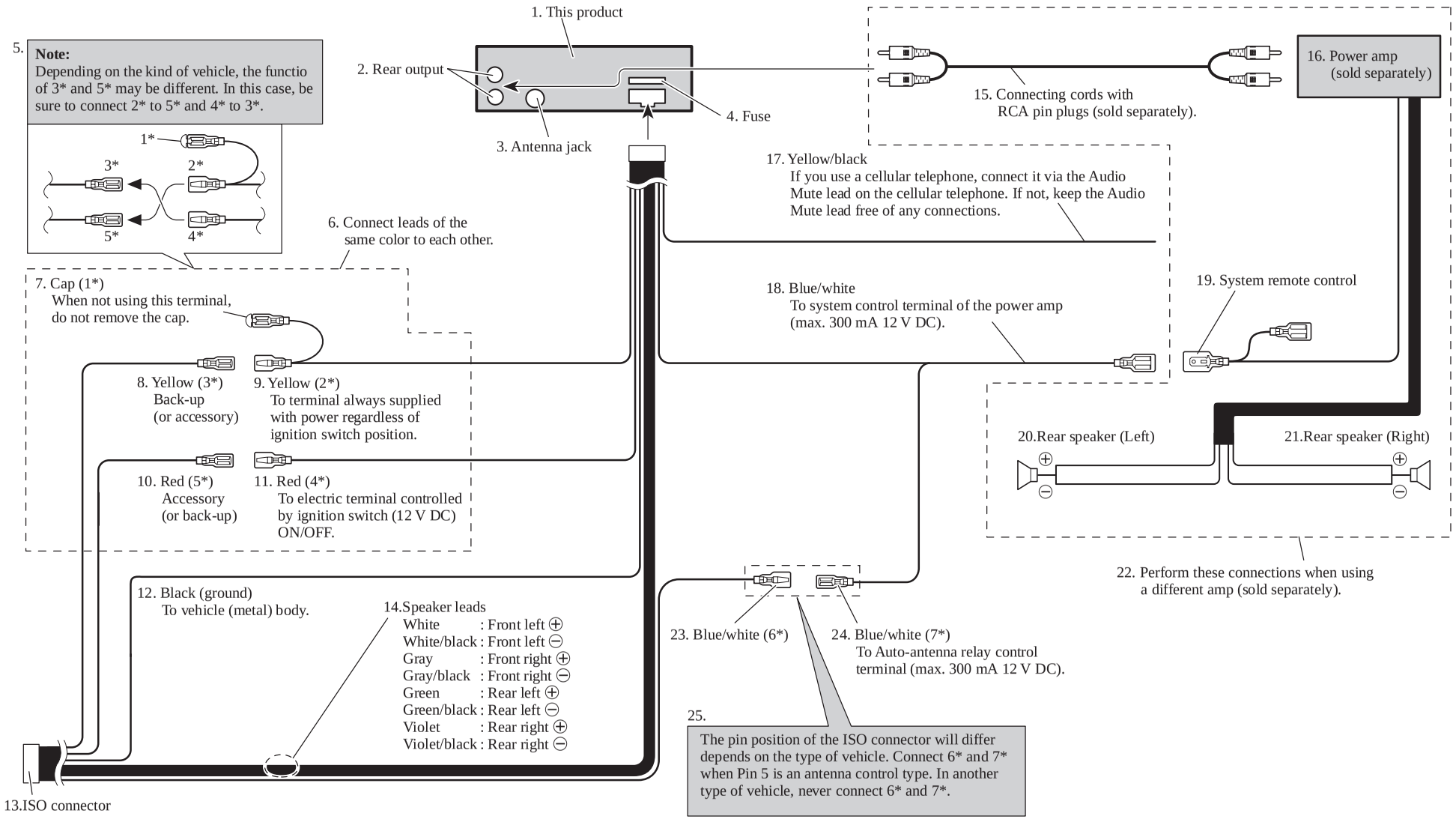


- **You can select between Track Search or Fast Forward/Reverse by pressing the ◄/► button for a different length of time.**

Track Search	0.5 seconds or less
Fast Forward/Reverse	Continue pressing

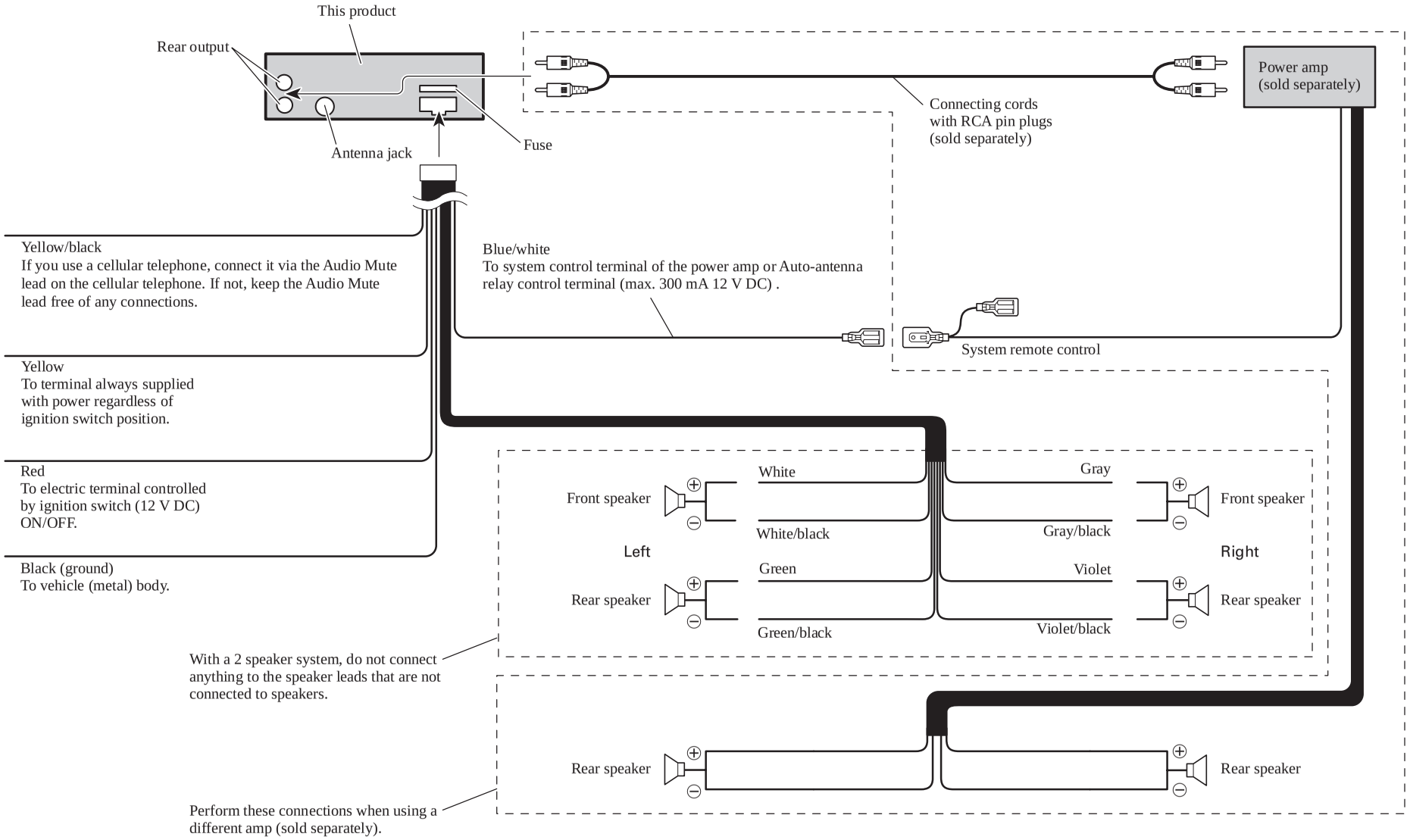
Note:
- If a disc cannot be inserted fully or playback fails, make sure the recorded side is down. Push the EJECT button and check the disc for damage before reinserting it.
- If a disc is inserted with the recorded side up, it will be ejected automatically after a few moments.
- If the built-in CD player cannot operate properly, an error message (such as "ERROR-14") appears on the display. Refer to "Built-in CD Player's Error Message".

Connection Diagram (DEH-1330R,1300R)



Note:
In some vehicles, the ISO connector may be divided into two. In this case, be sure to connect to both connectors.

Connection Diagram (DEH-1310)



8.2 SPECIFICATIONS

● DEH-1330R,1300R

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 10.0 A
Dimensions
(mounting size) ..... 178 (W) × 50 (H) × 159 (D) mm
(front face) ..... 188 (W) × 58 (H) × 19 (D) mm
Weight ..... 1.4 kg
Electrode dark current ..... 6mA or less

Amplifier

Maximum power output ..... 45 W × 4
Continuous power output ..... 25 W × 4
(DIN45324, +B = 14.4 V)
Load impedance ..... 4 Ω (4 – 8 Ω allowable)
Preout maximum output
level/output impedance ..... 2.2 V/1 kΩ
Equalizer (3-Band Equalizer)
(Low) ..... Level: ±12 dB
(Mid) ..... Level: ±12 dB
(High) ..... Level: ±12 dB
Loudness contour
(Low) ..... +3.5 dB (100 Hz), +3 dB (10 kHz)
(Mid) ..... +10 dB (100 Hz), +6.5 dB (10 kHz)
(High) ..... +11 dB (100 Hz), +11 dB (10 kHz)
(volume: –30 dB)

CD player

System ..... Compact disc audio system
Usable discs ..... Compact disc
Signal format..... Sampling frequency: 44.1 kHz
Number of quantization bits: 16; linear
Frequency characteristics..... 5 – 20,000 Hz (±1 dB)
Signal-to-noise ratio ..... 94 dB (1 kHz) (IEC-A network)
Dynamic range ..... 92 dB (1 kHz)
Number of channels ..... 2 (stereo)

FM tuner

Frequency range ..... 87.5 – 108 MHz
Usable sensitivity
..... 9 dBf (0.8 µV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity .... 15 dBf (1.5 µV/75 Ω, mono)
Signal-to-noise ratio ..... 70 dB (IEC-A network)
Distortion ..... 0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)

MW tuner

Frequency range ..... 531 – 1,602 kHz (9 kHz)
Usable sensitivity ..... 18 µV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

LW tuner

Frequency range ..... 153 – 281 kHz
Usable sensitivity ..... 30 µV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.

● DEH-1310

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 10.0 A
Dimensions
(mounting size) ..... 178 (W) × 50 (H) × 159 (D) mm
(front face) ..... 188 (W) × 58 (H) × 19 (D) mm
Weight ..... 1.4 kg
Electrode dark current ..... 6mA or less

Amplifier

Maximum power output ..... 45 W × 4
Continuous power output ..... 25 W × 4
(DIN45324, +B = 14.4 V)
Load impedance ..... 4 Ω (4 – 8 Ω allowable)
Preout maximum output level/
output impedance ..... 2.2 V/1 kΩ
Equalizer (3-Band Equalizer)
(Low) ..... Level: ±12 dB
(Mid) ..... Level: ±12 dB
(High) ..... Level: ±12 dB
Loudness contour
(Low) .....+3.5 dB (100 Hz), +3 dB (10 kHz)
(Mid) .....+10 dB (100 Hz), +6.5 dB (10 kHz)
(High) .....+11 dB (100 Hz), +11 dB (10 kHz)
(volume: –30 dB)

CD player

System ..... Compact disc audio system
Usable discs ..... Compact disc
Signal format ..... Sampling frequency: 44.1 kHz
Number of quantization bits: 16; linear
Frequency characteristics ..... 5 – 20,000 Hz (±1 dB)
Signal-to-noise ratio ..... 94 dB (1 kHz) (IEC-A network)
Dynamic range ..... 92 dB (1 kHz)
Number of channels ..... 2 (stereo)

FM tuner

Frequency range ..... 65 – 74 MHz
87.5 – 108 MHz
Usable sensitivity .....10 dBf
(0.9 µV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity ..... 15 dBf
(1.5 µV/75 Ω, mono)
Signal-to-noise ratio ..... 70 dB (IEC-A network)
Distortion ..... 0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)

MW tuner

Frequency range ..... 531 – 1,602 kHz (9 kHz)
Usable sensitivity ..... 18 µV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

LW tuner

Frequency range ..... 153 – 281 kHz
Usable sensitivity ..... 30 µV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.