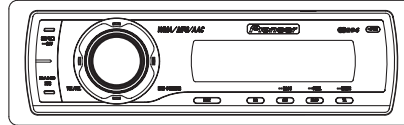


Service Manual



DEH-P6900IB/XN/EW5

ORDER NO.
CRT3852

CD RDS RECEIVER

DEH-P6900IB /XN/EW5

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

Model No.	Order No.	Mech.Module	Remarks
CX-3195	CRT3815	S10.5COMP2	CD Mech. Module : Circuit Descriptions, Mech. Descriptions, Disassembly



For details, refer to "Important Check Points for Good Servicing".

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.

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

CAUTION:
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

CAUTION

This product contains a laser diode of higher class than 1. To ensure continued safety, do not remove any covers or attempt to gain access to the inside of the product.

Refer all servicing to qualified personnel.

The following caution label appears on your unit.



En

WARNING!

The AEL (accessible emission level) of the laser power output is less than CLASS 1 but the laser component is capable of emitting radiation exceeding the limit for CLASS 1.

A specially instructed person should do servicing operation of the apparatus.

Laser diode characteristics

Wave length : 785 nm to 814 nm

Maximum output : 1 190 μ W(Emitting period : unlimited)

Additional Laser Caution

Transistors Q101 in PCB drive the laser diodes.

When Q101 is shorted between their terminals, the laser diodes will radiate beam.

If the top cover is removed with no disc loaded while such short-circuit is continued, the naked eyes may be exposed to the laser beam.

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replaced only with the same or equivalent type recommended by the manufacture.
Discord used batteries according to the manufacture's instructions.

● Service Precaution



1. You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.
2. Before disassembling the unit, be sure to turn off the power. Unplugging and plugging the connectors during power-on mode may damage the ICs inside the unit.
3. To protect the pickup unit from electrostatic discharge during servicing, take an appropriate treatment (shorting-solder) by referring to "the DISASSEMBLY".
4. After replacing the pickup unit, be sure to check the grating.
5. Be careful in handling ICs. Some ICs such as MOS type are so fragile that they can be damaged by electrostatic induction.



[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol. Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification (addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris. Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs. In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages. If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries. Please pay attention to your surroundings and repair safely.

2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification. Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance. Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

CONTENTS

SAFETY INFORMATION.....	2
1. SPECIFICATIONS	6
2. EXPLODED VIEWS AND PARTS LIST	8
2.1 PACKING	8
2.2 EXTERIOR	10
2.3 CD MECHANISM MODULE	12
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM	14
3.1 BLOCK DIAGRAM	14
3.2 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)	16
3.3 KEYBOARD UNIT	22
3.4 CD MECHANISM MODULE(GUIDE PAGE)	24
4. PCB CONNECTION DIAGRAM	32
4.1 TUNER AMP UNIT	32
4.2 KEYBOARD UNIT	36
4.3 PANEL UNIT	37
4.4 CD CORE UNIT(S10.5COMP2)	38
5. ELECTRICAL PARTS LIST	40
6. ADJUSTMENT	46
6.1 CD ADJUSTMENT	46
6.2 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT	48
6.3 ERROR MODE	50
6.4 IPOD TEST MODE	51
6.5 SYSTEM MICROCOMPUTER TEST PROGRAM	52
7. GENERAL INFORMATION	53
7.1 DIAGNOSIS	53
7.1.1 DISASSEMBLY	53
7.1.2 CONNECTOR FUNCTION DESCRIPTION	56
7.2 IC	57
7.3 OPERATIONAL FLOW CHART	67
8. OPERATIONS	68

1. SPECIFICATIONS

General

Power source	14.4 V DC (10.8 V to 15.1 V allowable)
Grounding system	Negative type
Max. current consumption	10.0 A
Backup current	5 mA or less

Dimensions (W × H × D):

DIN

Chassis	178 × 50 × 162 mm
Nose	188 × 58 × 15 mm

D

Chassis	178 × 50 × 162 mm
Nose	170 × 46 × 15 mm

Weight 1.5 kg

Audio

Maximum power output	50 W × 4 50 W × 2/4 Ω + 70 W × 1/2 Ω (for subwoofer)
Continuous power output	22 W × 4 (50 Hz to 15 000 Hz, 5% THD, 4 Ω load, both channels driven)
Load impedance	4 Ω to 8 Ω × 4 4 Ω to 8 Ω × 2 + 2 Ω × 1

Preout max output level/output impedance 4 V/100Ω

Equalizer (7-Band Graphic Equalizer):

Frequency	50/125/315/800/2k/5k/12.5k Hz
Gain	±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)

HPF:

Frequency	50/63/80/100/125 Hz
Slope	-12 dB/oct

Subwoofer (mono):

Frequency	50/63/80/100/125 Hz
Slope	-18 dB/oct
Gain	+6 dB to -24 dB
Phase	Normal/Reverse

Bass boost:

Gain	+12 dB to 0 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 Hz to 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)

MP3 decoding format MPEG-1 & 2 Audio Layer 3

WMA decoding format Ver. 7, 7.1, 8, 9, 10 (2ch audio)
(Windows Media Player)

AAC decoding format MPEG-4 AAC (iTunes® encoded only)

WAV signal format Linear PCM & MS ADPCM

FM tuner

Frequency range	87.5 MHz to 108.0 MHz
Usable sensitivity	8 dBf (0.7 μV/75 Ω, mono, S/N: 30 dB)

Signal-to-noise ratio 75 dB (IEC-A network)

Distortion 0.3 % (at 65 dBf, 1 kHz, stereo)
0.1 % (at 65 dBf, 1 kHz, mono)

Frequency response 30 Hz to 15 000 Hz (±3 dB)

Stereo separation 45 dB (at 65 dBf, 1 kHz)

MW tuner

Frequency range	531 kHz to 1 602 kHz (9 kHz)
Usable sensitivity	18 μV (S/N: 20 dB)
Signal-to-noise ratio	65 dB (IEC-A network)

LW tuner

Frequency range	153 kHz to 281 kHz
Usable sensitivity	30 μV (S/N: 20 dB)
Signal-to-noise ratio	65 dB (IEC-A network)



Note

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



5



6



7



8



A



B



C



D



E



F



5



6

DEH-P6900IB/XN/EW5



7





8

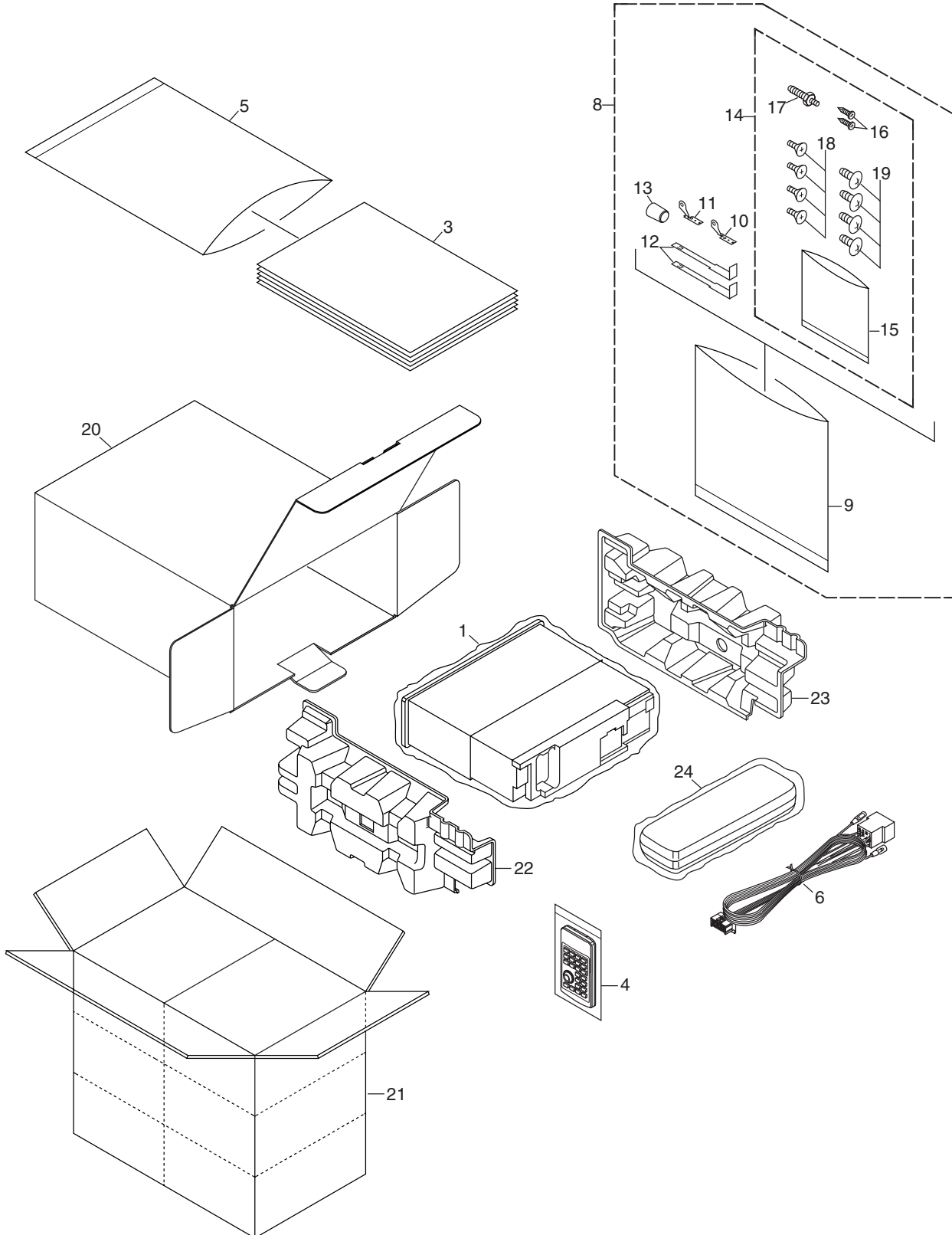
7



2. EXPLODED VIEWS AND PARTS LIST

NOTES : • Parts marked by " * " are generally unavailable because they are not in our Master Spare Parts List.
 • The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 • Screw adjacent to  mark on the product are used for disassembly.
 • For the applying amount of lubricants or glue, follow the instructions in this manual.
 (In the case of no amount instructions, apply as you think it appropriate.)

2.1 PACKING



PACKING SECTION PARTS LIST

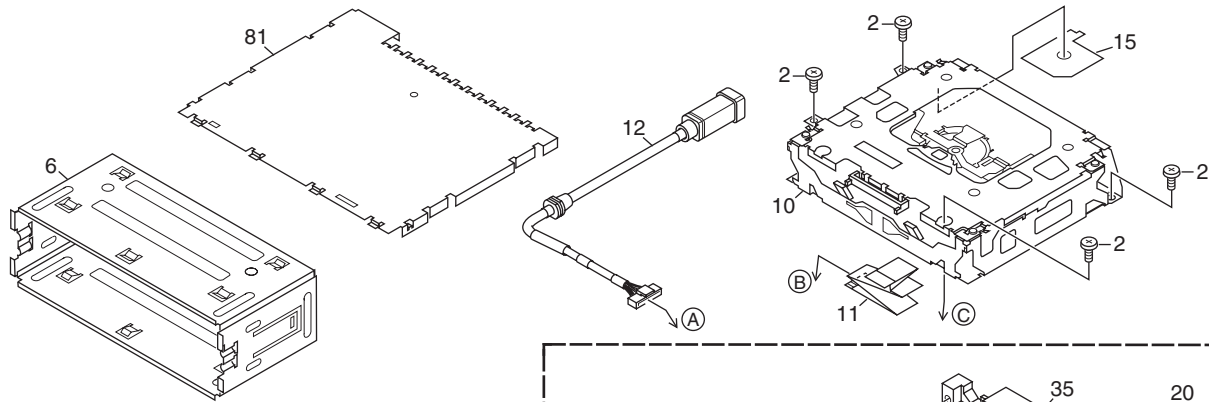
<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	Polyethylene Bag	CEG-162	10	Holder	CND1249
2	*****		11	Holder	CND1250
* 3-1	Caution Card	CRP1335	12	Handle	CND3707
* 3-2	Warranty Card	CRY1157	13	Bush	CNV3930
3-3	Owner's Manual	XRB7039	14	Screw Assy	CEA5317
3-4	Owner's Manual	XRD7136	* 15	Polyethylene Bag	CEG-127
3-5	Owner's Manual	XRD7137	16	Screw	BPZ20P060FTB
3-6	Owner's Manual	XRD7138	17	Screw	CBA1650
3-7	Installation Manual	XRD7139	18	Screw	CRZ50P090FTC
4	Remote Control Unit	CXC5717	19	Screw	TRZ50P080FTC
5	Polyethylene Bag	CEG1116	20	Unit Box	XHG7135
6	Cord Assy	XDP7003	21	Contain Box	XHL7135
7	*****		22	Protector	YHP5009
8	Accessory Assy	XEA7011	23	Protector	YHP5008
9	Polyethylene Bag	CEG1160	24	Case Assy	XXA7417

Owner's Manual,Installation Manual

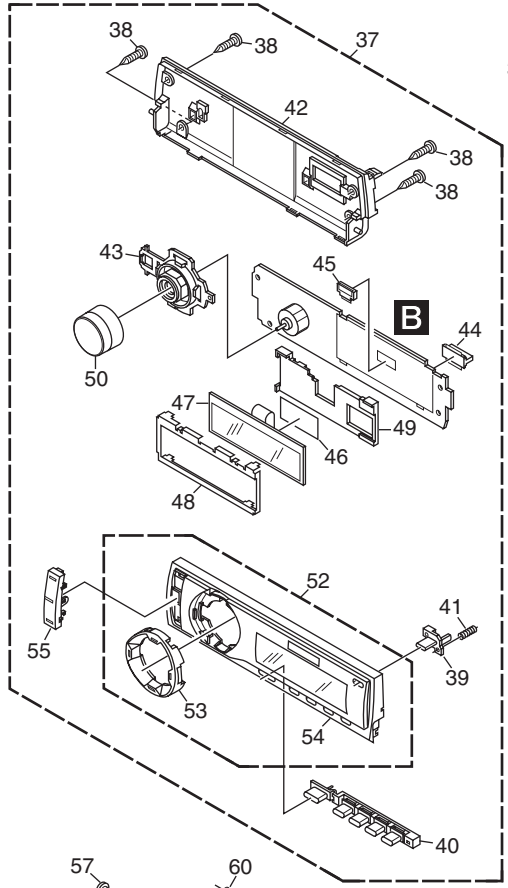
Part No.	Language
XRD7136	English, Spanish
XRD7137	German, French
XRD7138	Italian, Dutch
XRB7039	Russian
XRD7139	English, Spanish, German, French, Italian, Dutch, Russian

2.2 EXTERIOR

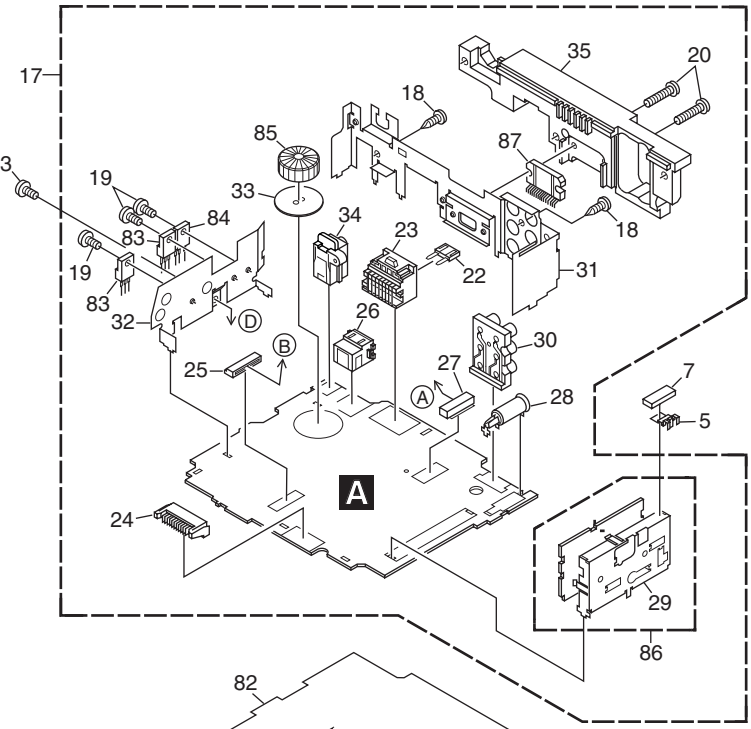
A



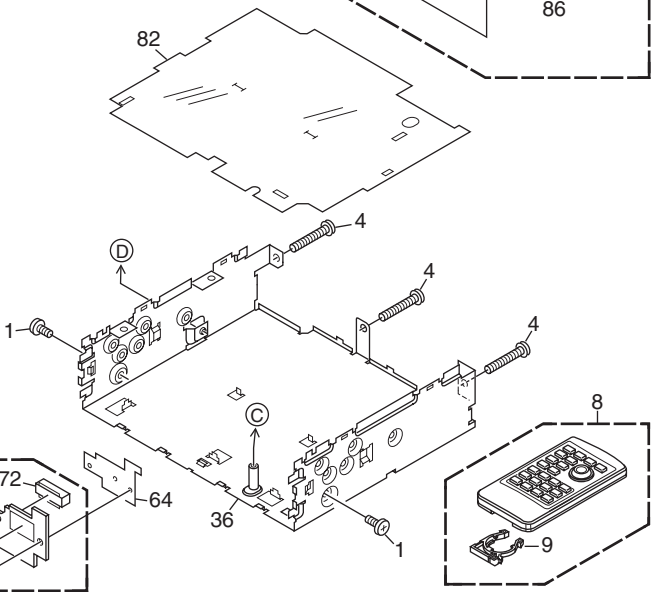
B



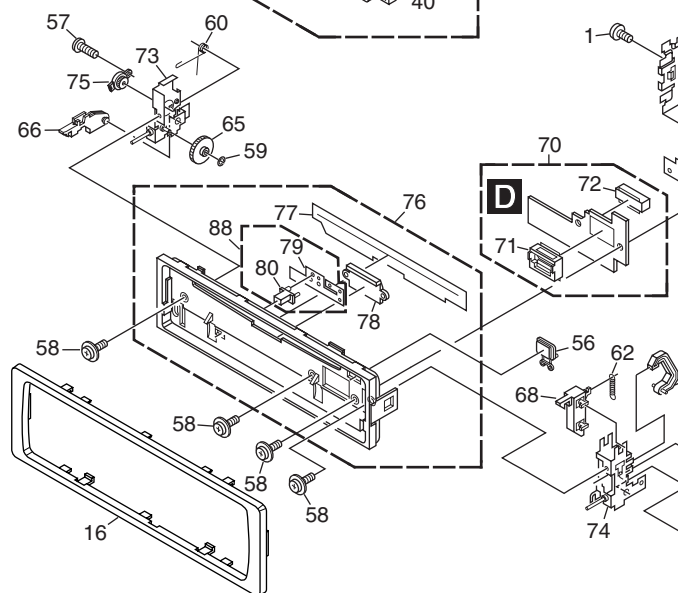
C



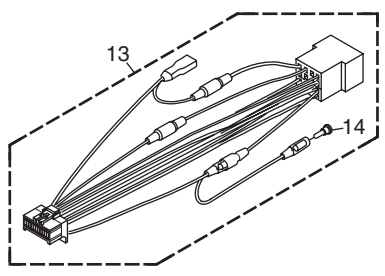
D



E



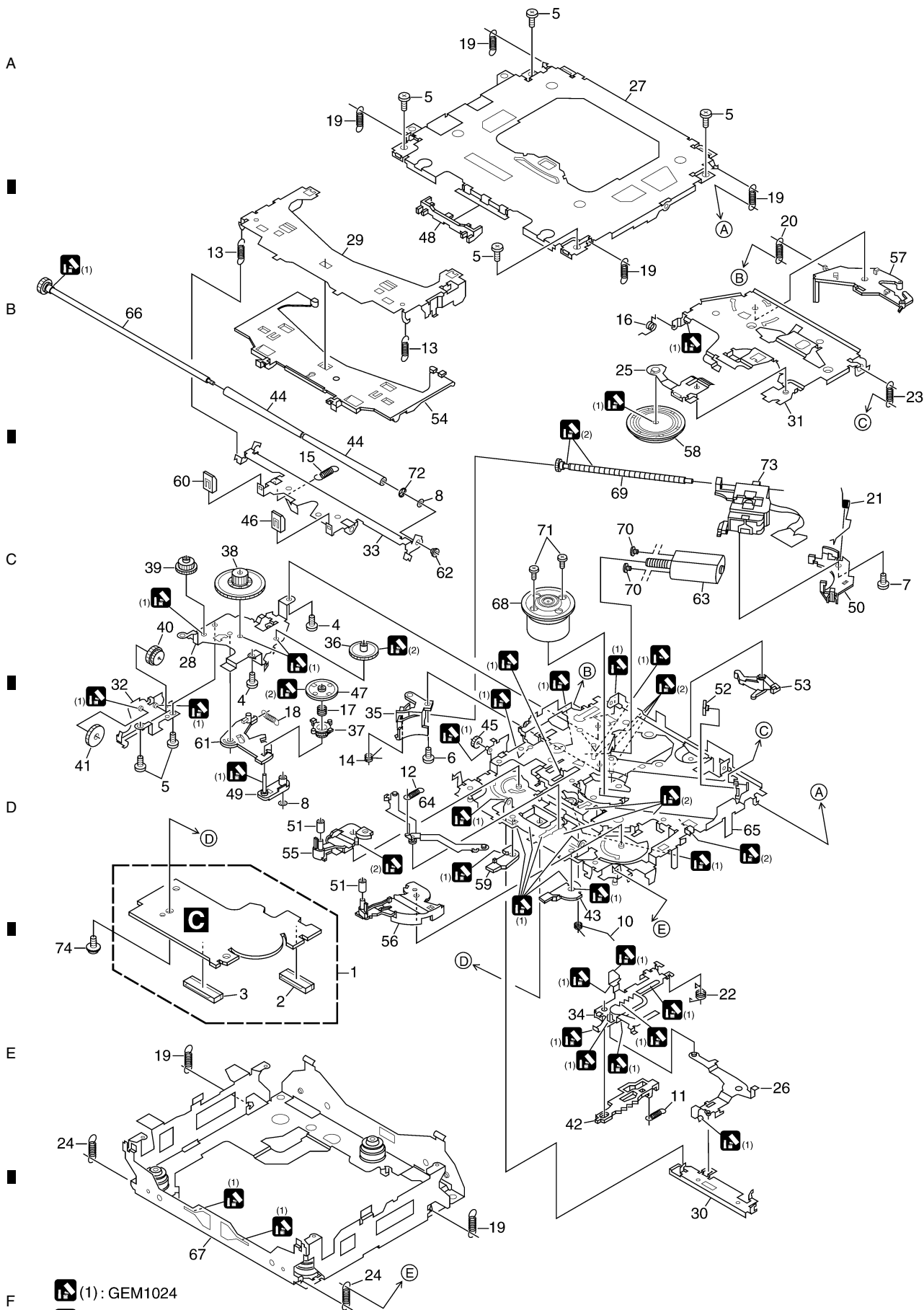
F



EXTERIOR SECTION PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	Screw	BMZ30P040FTB	50	Knob Unit	XXA7493
2	Screw	BSZ26P060FTC			
3	Screw	BSZ30P060FTC	51	*****	
4	Screw	BSZ30P200FTC	52	Sub Grille Assy	XXA7501
5	Earth Plate	CNC8915	53	Plate	XNS7196
			54	Grille Unit	XXA7505
6	Holder	CND3598	55	Button Unit	XXA7508
7	Cushion	CNM8890			
8	Remote Control Unit	CXC5717	56	Button	CAC7752
9	Cover	CZN5357	57	Screw(M2 x 4)	CBA1649
10	CD Mechanism Module(S10.5)	CXK5763	58	Screw	CBA1925
			59	Washer	CBF1038
11	Cable	XDE7022	60	Spring	CBH2650
12	Cord Assy	XDE7026			
13	Cord Assy	XDP7003	61	Spring	CBH2651
14	Cap	CKX-003	62	Spring	CBH2652
15	Insulator	XNM7106	63	Spring	CBH2653
			64	Holder	CND1254
16	Panel	XNS7201	65	Gear	CNV5997
17	Tuner Amp Unit	XWM7163			
18	Screw	BPZ26P070FTC	66	Arm	CNV7400
19	Screw	BSZ26P060FTC	67	Arm	CNV7401
20	Screw	BSZ26P200FTC	68	Arm	CNV7402
			69	Arm	CNV7403
21	*****		70	Panel Unit	CWM9835
⚠ 22	Fuse(10 A)	CEK1208			
23	Plug(CN901)	CKM1376	71	Connector(CN1951)	CKS4806
24	Plug(CN801)	CKS3537	72	Connector(CN1950)	CKS5192
25	Connector(CN651)	CKS3829	73	Holder Unit	CXB9501
			74	Holder Unit	CXB9502
26	Connector(CN101)	CKS5271	75	Damper Unit	CXB9503
27	Connector(CN701)	CKS5691			
28	Antenna Jack(CN401)	CKX1056	76	Sub Panel Assy	XXA7511
29	Holder	CND1054	77	Cover	CNM6854
30	Pin Jack(CN352)	XKB7001	78	Lighting Conductor	CNV6487
			79	Spring	CBL1512
31	Holder	XNC7026	80	Pin	CNV6486
32	Holder	XNC7030			
33	Insulator	XNM7031	81	Case	YNB5014
34	Jack(CN171)	XKS7005	82	Insulator	YNM5062
35	Heat Sink	YNR5031	83	Transistor(Q650,911)	2SD2396
			84	IC(IC901)	NJM2388F84
36	Chassis Unit	XXA7507	85	Choke Coil(L901)	CTH1280
37	Detachable Assy	XXA7519			
38	Screw	BPZ20P080FTB	86	FM/AM Tuner Unit	CWE1951
39	Button	XAC7149	87	IC(IC301)	PAL007C
40	Button	XAC7155	88	Sub Spring Assy	XXA7363
41	Spring	XBH7001			
42	Cover	XNS7180			
43	Lighting Conductor	XNV7035			
44	Connector(CN1801)	CKS5207			
45	Connector(CN1802)	CKS5545			
46	Double side Tape	CNM8673			
47	OEL Unit	MXS8231			
48	Holder	XNC7009			
49	Holder	XNV7029			

2.3 CD MECHANISM MODULE



(1): GEM1024
 (2): GEM1045

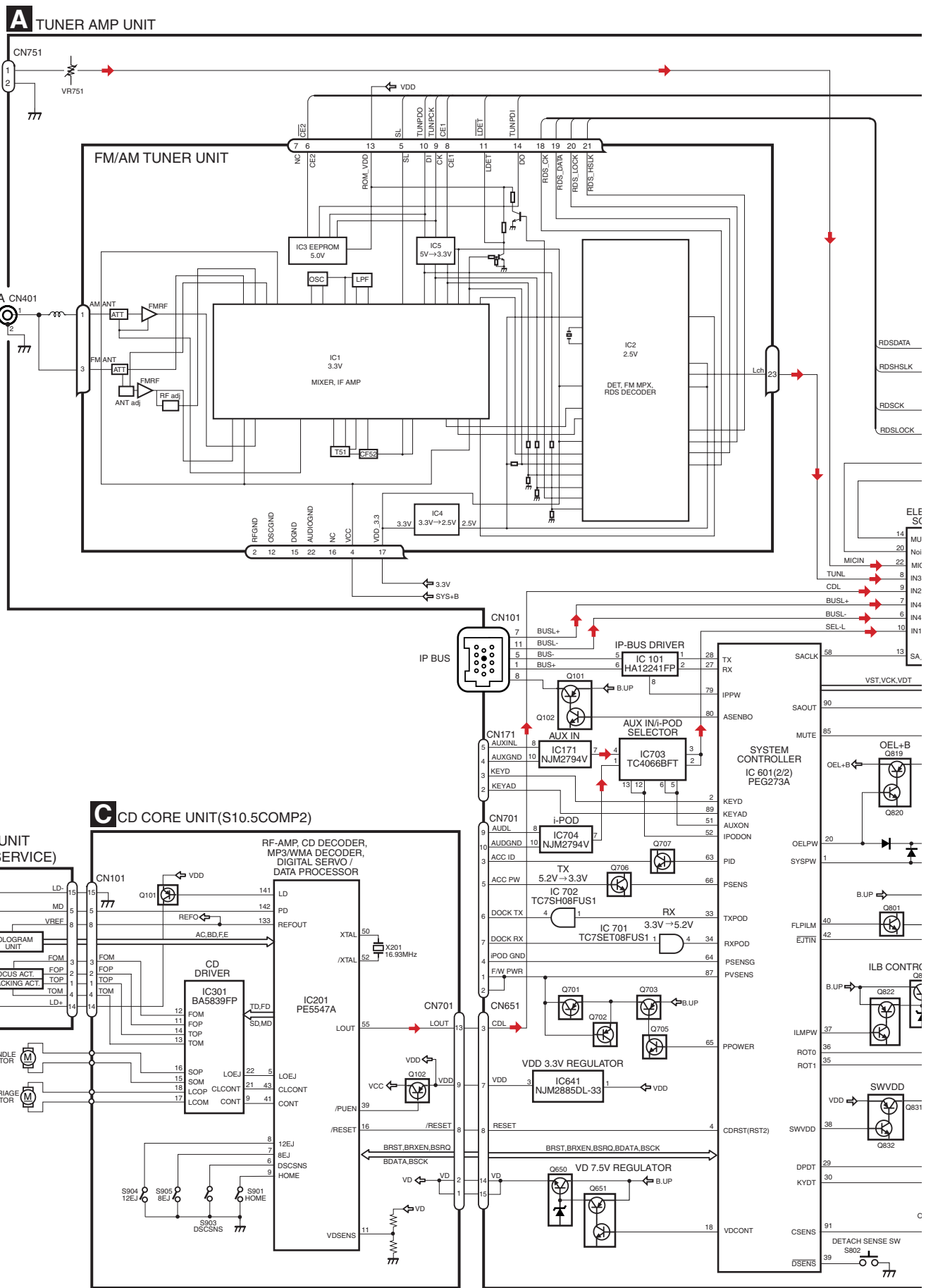
CD MECHANISM MODULE SECTION PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	CD Core Unit(S10.5COMP2)	CWX3514	50	Rack	CNV8342
2	Connector(CN101)	CKS4182			
3	Connector(CN701)	CKS4808	51	Roller	CNV8343
4	Screw	BMZ20P025FTC	52	Holder	CNV8344
5	Screw	BSZ20P040FTC	53	Arm	CNV8345
			54	Guide	CNV8347
6	Screw(M2 x 3)	CBA1511	55	Arm	CNV8348
7	Screw(M2 x 4)	CBA1835			
8	Washer	CBF1038	56	Arm	CNV8349
9		57	Arm	CNV8350
10	Spring	CBH2609	58	Clamper	CNV8365
			59	Arm	CNV8386
11	Spring	CBH2612	60	Guide	CNV8396
12	Spring	CBH2614			
13	Spring	CBH2616	61	Arm	CNV8413
14	Spring	CBH2617	62	Collar	CNV8938
15	Spring	CBH2620	63	Motor Unit(M2)	CXC4026
			64	Arm Unit	CXC4027
16	Spring	CBH2855	65	Chassis Unit	CXC4028
17	Spring	CBH2937			
18	Spring	CBH2735	66	Gear Unit	CXC4029
19	Spring	CBH2854	67	Frame Unit	CXC4031
20	Spring	CBH2642	68	Motor Unit(M1)	CXC7134
			69	Screw Unit	CXC6359
21	Spring	CBH2856	70	Screw	JFZ20P020FTC
22	Spring	CBH2857			
23	Spring	CBH2860	71	Screw	JGZ17P022FTC
24	Spring	CBH2861	72	Washer	YE20FTC
25	Spring	CBL1686	73	Pickup Unit(P10.5)(Service)	CXX1942
			74	Screw	IMS26P030FTC
26	Arm	CND1909			
27	Frame	CND2582			
28	Bracket	CND2583			
29	Arm	CND2584			
30	Lever	CND2585			
31	Arm	CND2586			
32	Bracket	CND2587			
33	Arm	CND2588			
34	Lever	CND2589			
35	Holder	CNV7201			
36	Gear	CNV7207			
37	Gear	CNV7208			
38	Gear	CNV7209			
39	Gear	CNV7210			
40	Gear	CNV7211			
41	Gear	CNV7212			
42	Rack	CNV7214			
43	Arm	CNV7216			
44	Roller	CNV7218			
45	Gear	CNV7219			
46	Guide	CNV7361			
47	Gear	CNV7595			
48	Guide	CNV7799			
49	Arm	CNV7805			

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

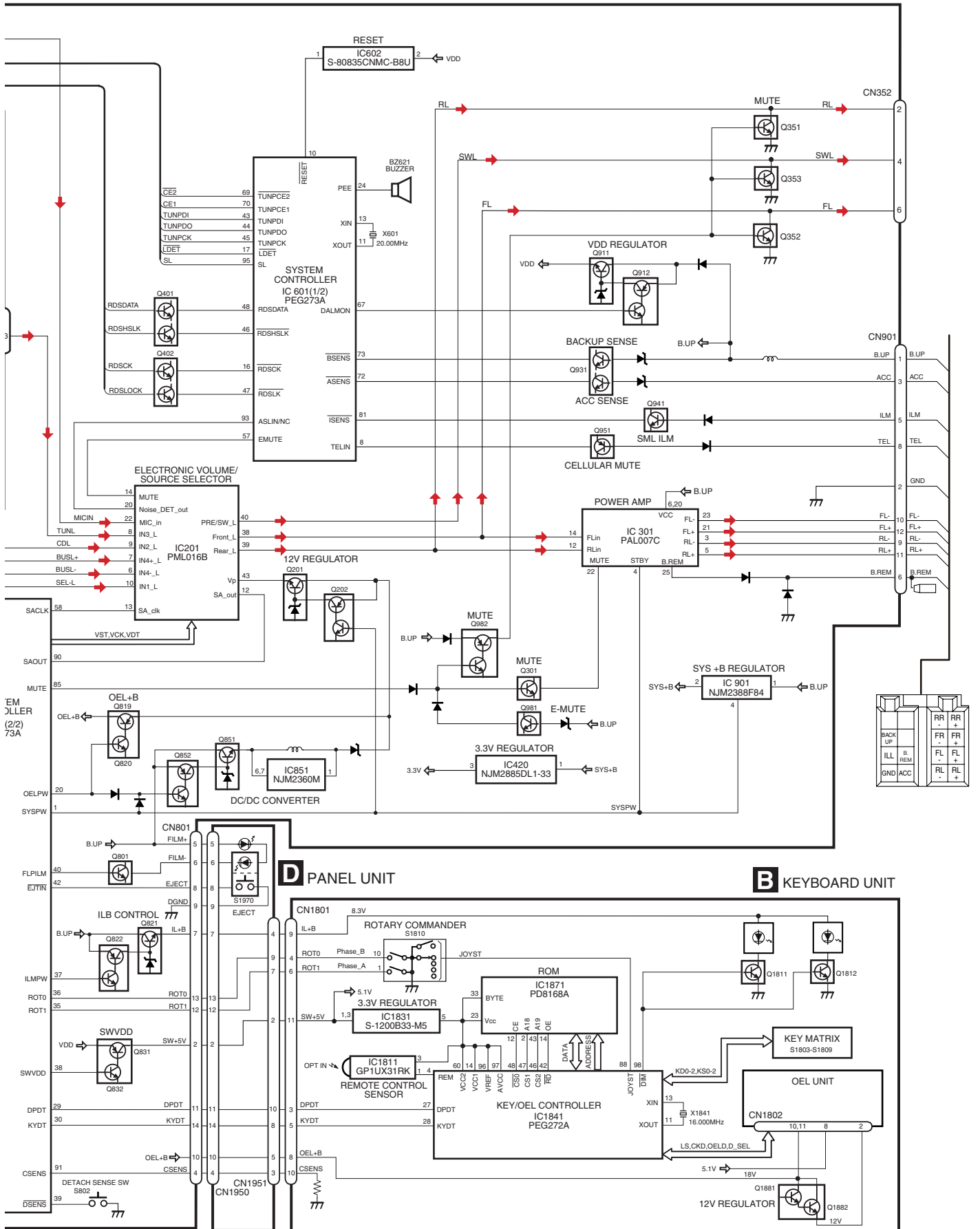
A
B
C
D
E
F



14

1 2 3 4

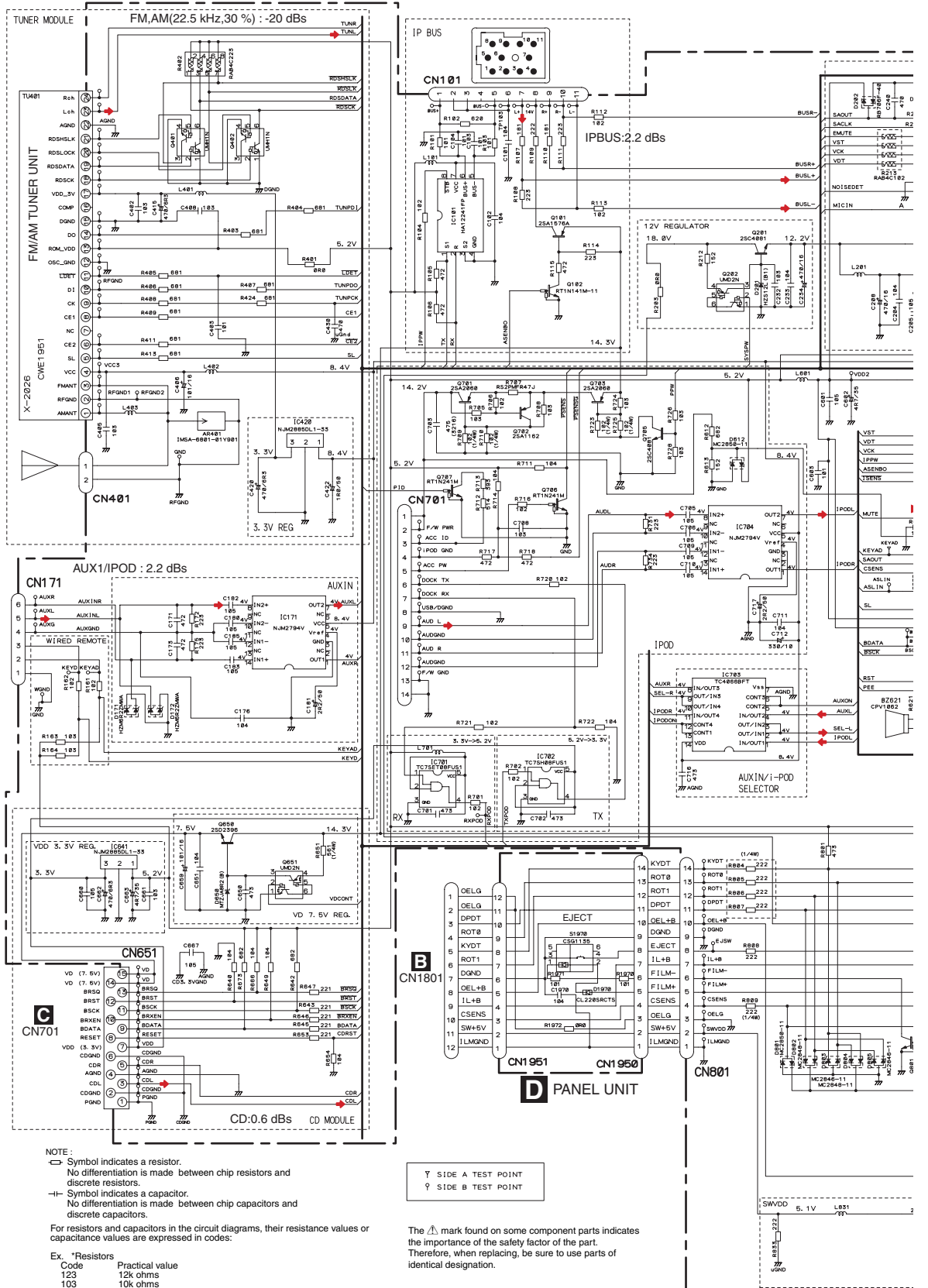
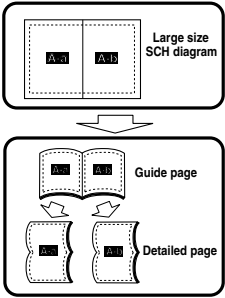
A
B
C
D
E
F



3.2 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

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

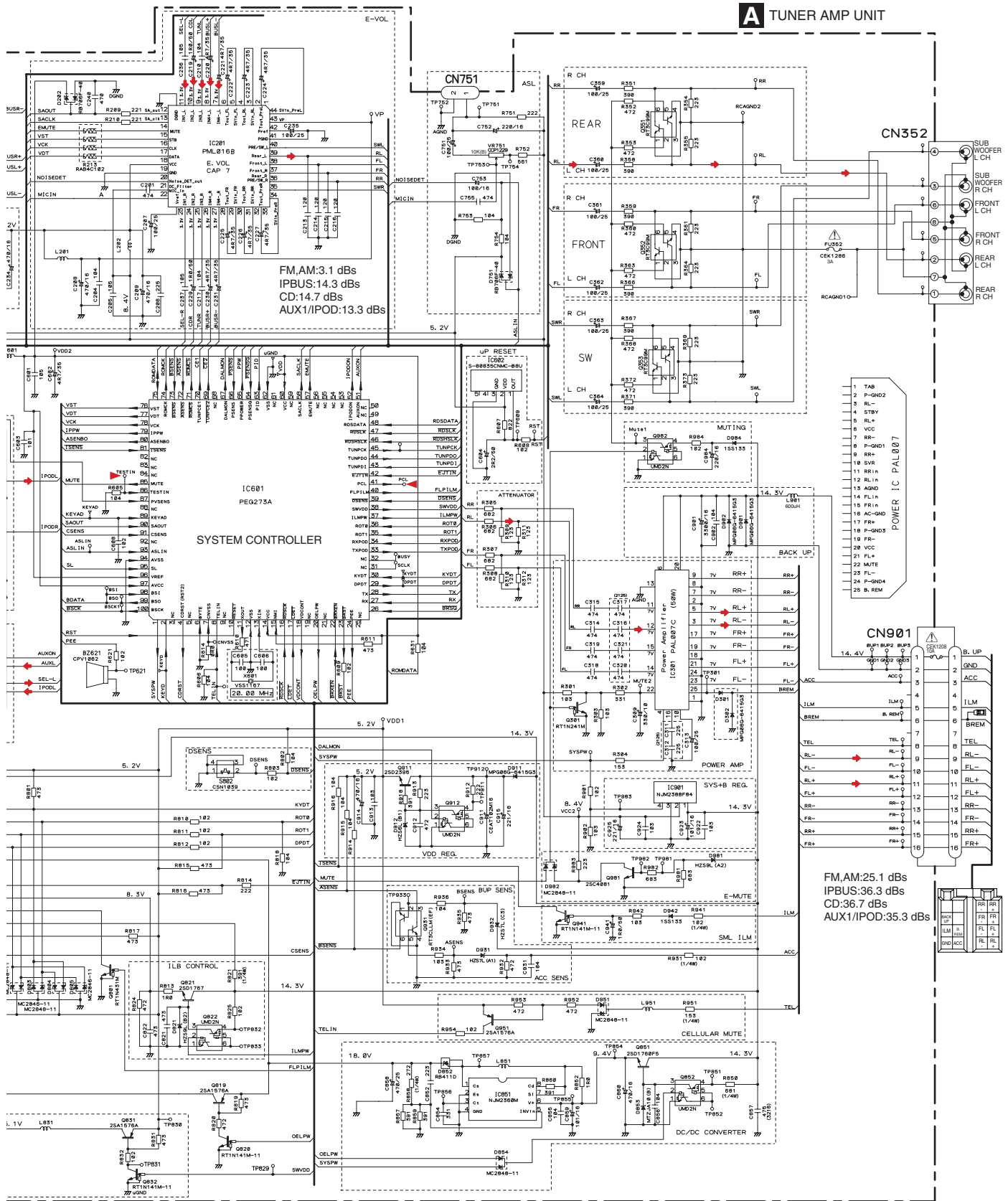
A-a

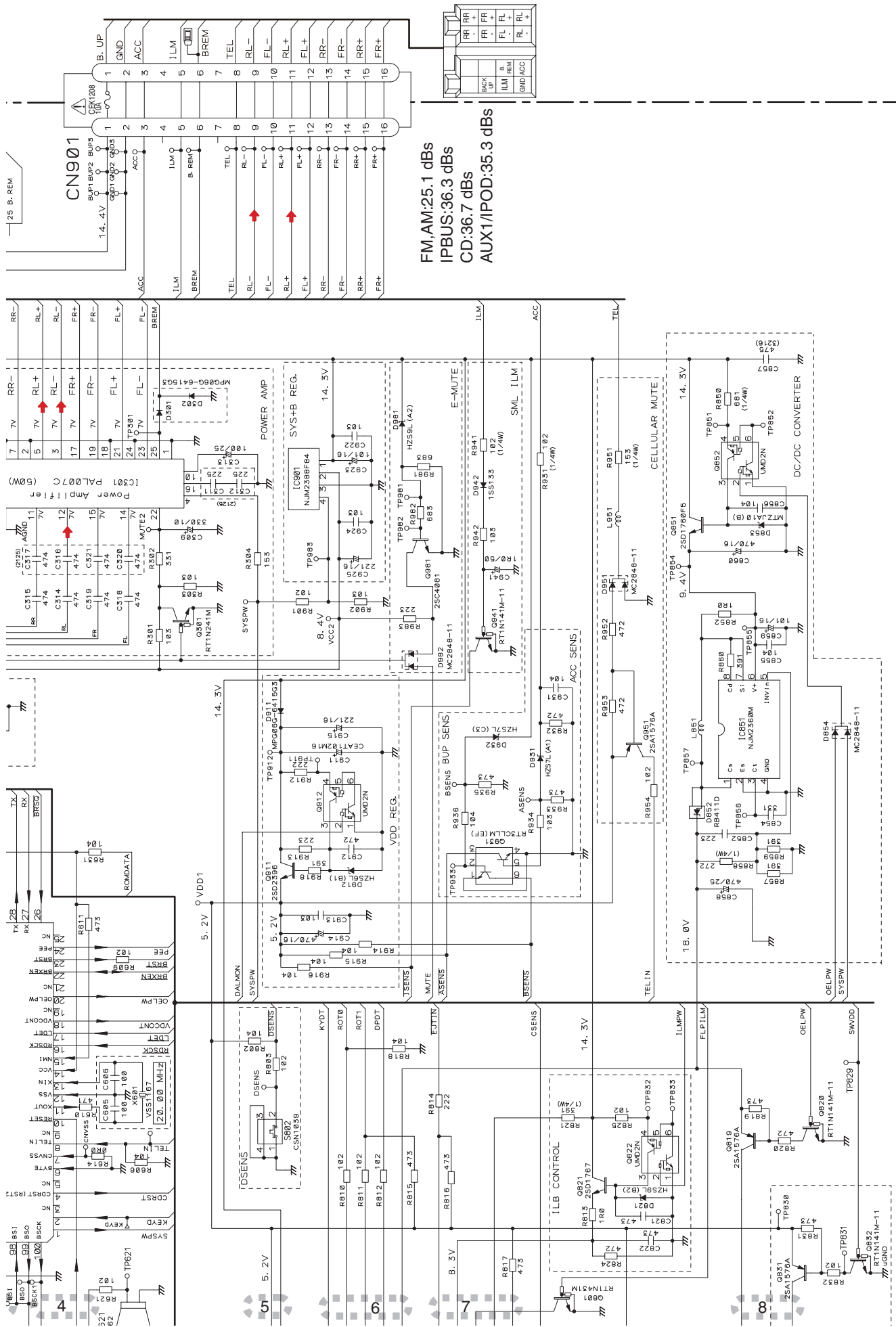


A D

A-b

A TUNER AMP UNIT





FM:AM:25.1 dBs
 IPBUS:36.3 dBs
 CD:36.7 dBs
 AUX1/IPOD:35.3 dBs

A-a

A-b

A-b

B

C

A-a A-b

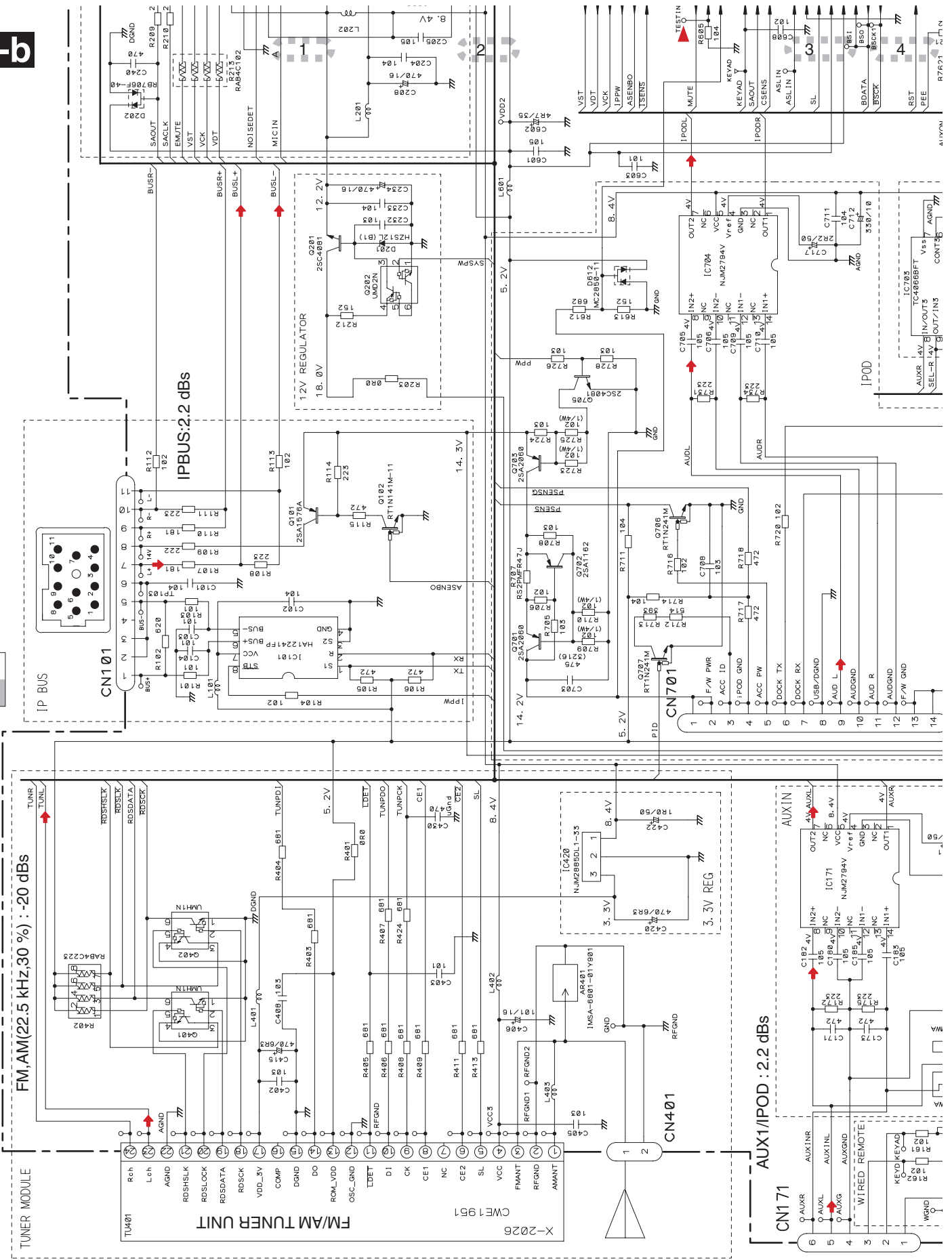
D

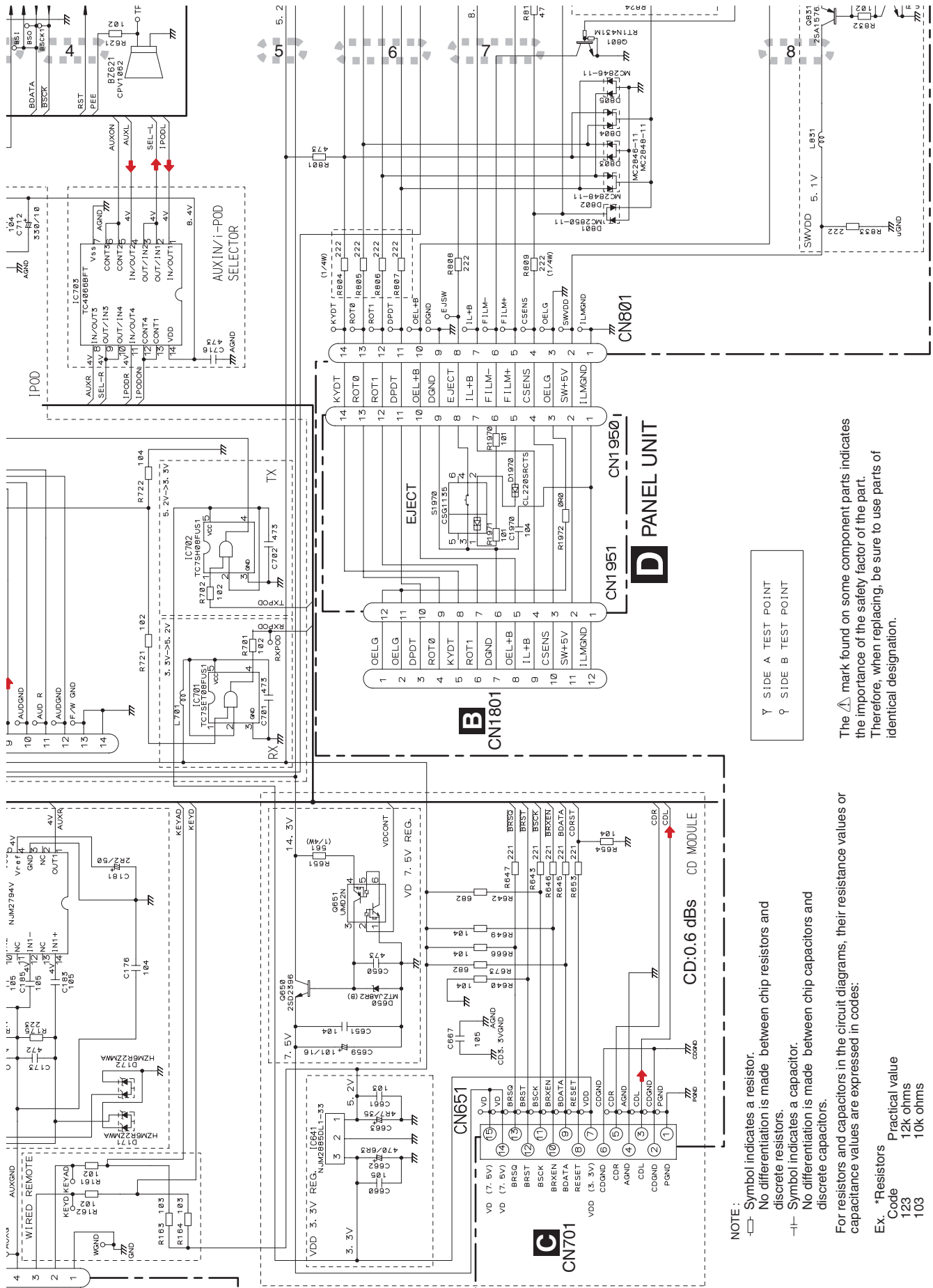
E

F

A-a

DEH-P6900IB/XN/EW5





Y SIDE A TEST POINT
 P SIDE B TEST POINT

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

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.

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 | 0.01uF |
| 101/10 | 100uF/10V |

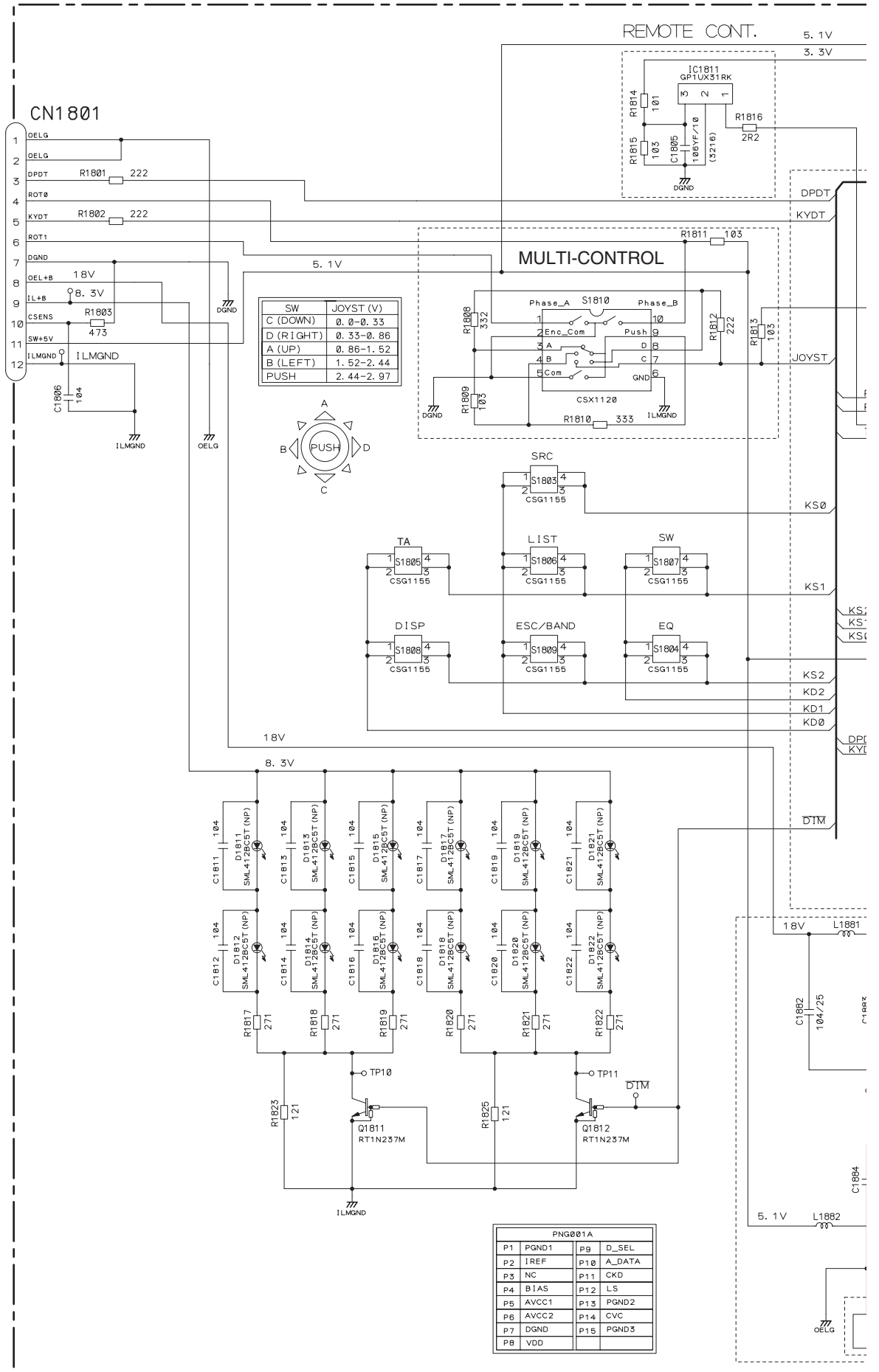
A-b

A B C D E F

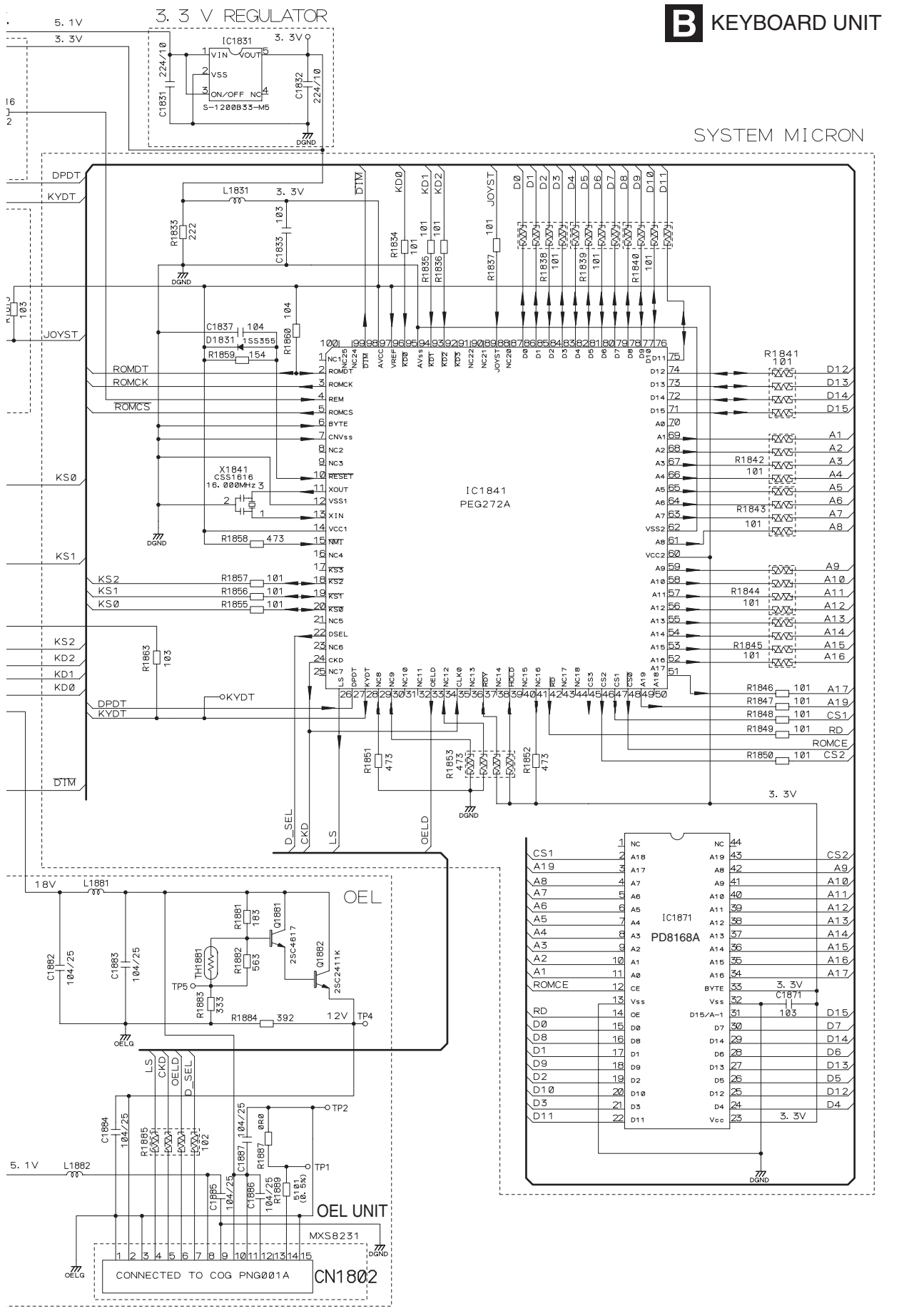
D A-a

3.3 KEYBOARD UNIT

D
CN1951



B KEYBOARD UNIT



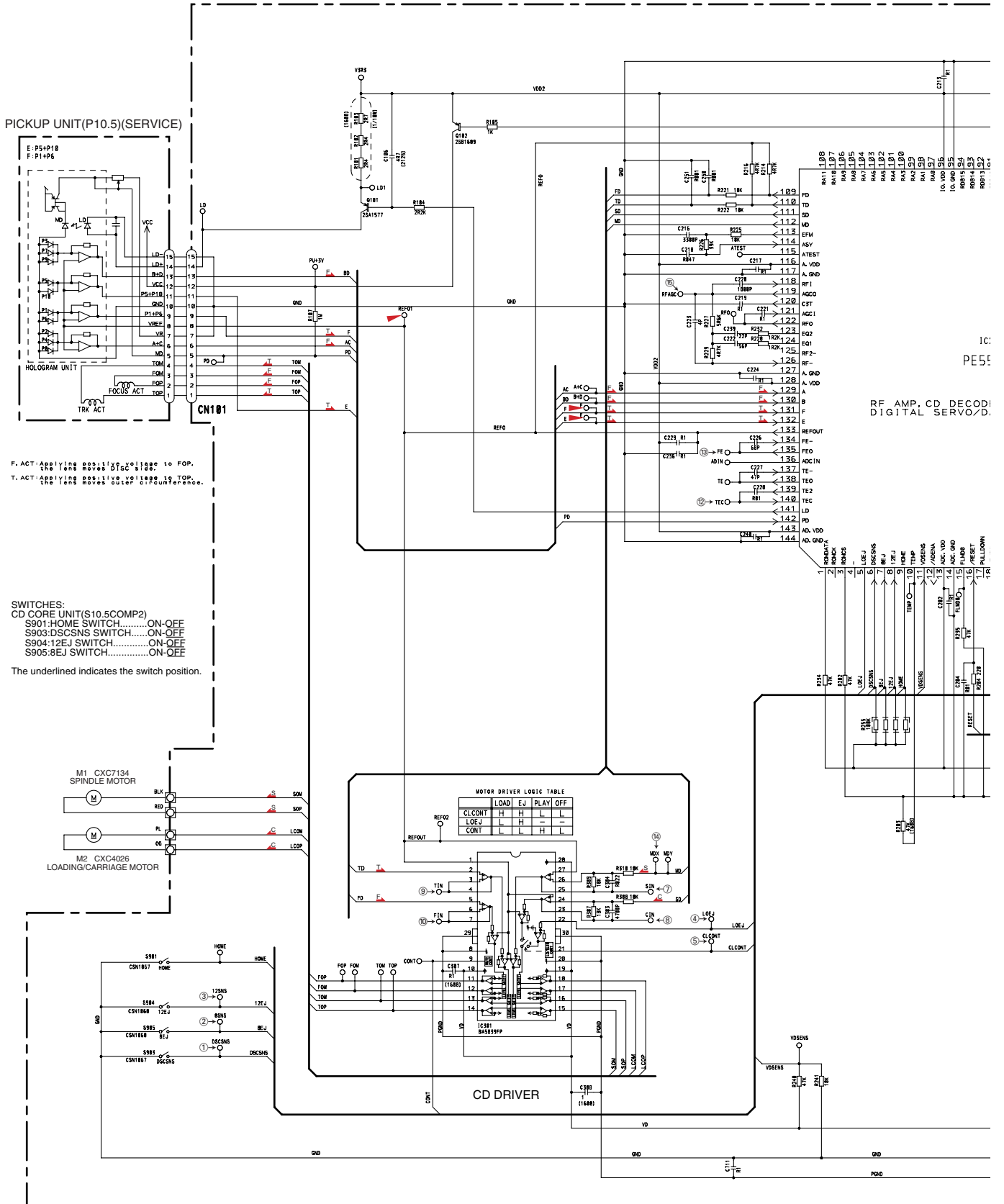
SYSTEM MICRON

A
B
C
D
E
F



3.4 CD MECHANISM MODULE(GUIDE PAGE)

C-a



F. ACT: Applying positive voltage to FOP.
 T. ACT: Applying positive voltage to TOP.

SWITCHES:
 CD CORE UNIT(S10.5COMP2)
 S901:HOME SWITCH.....ON-OFF
 S903:DSCSNS SWITCH.....ON-OFF
 S904:12EJ SWITCH.....ON-OFF
 S905:8EJ SWITCH.....ON-OFF

The underlined indicates the switch position.

	LOAD	EJ	PLAY	OFF
CLCONT	H	H	L	L
LOEJ	L	H	L	-
CONT	L	L	H	L

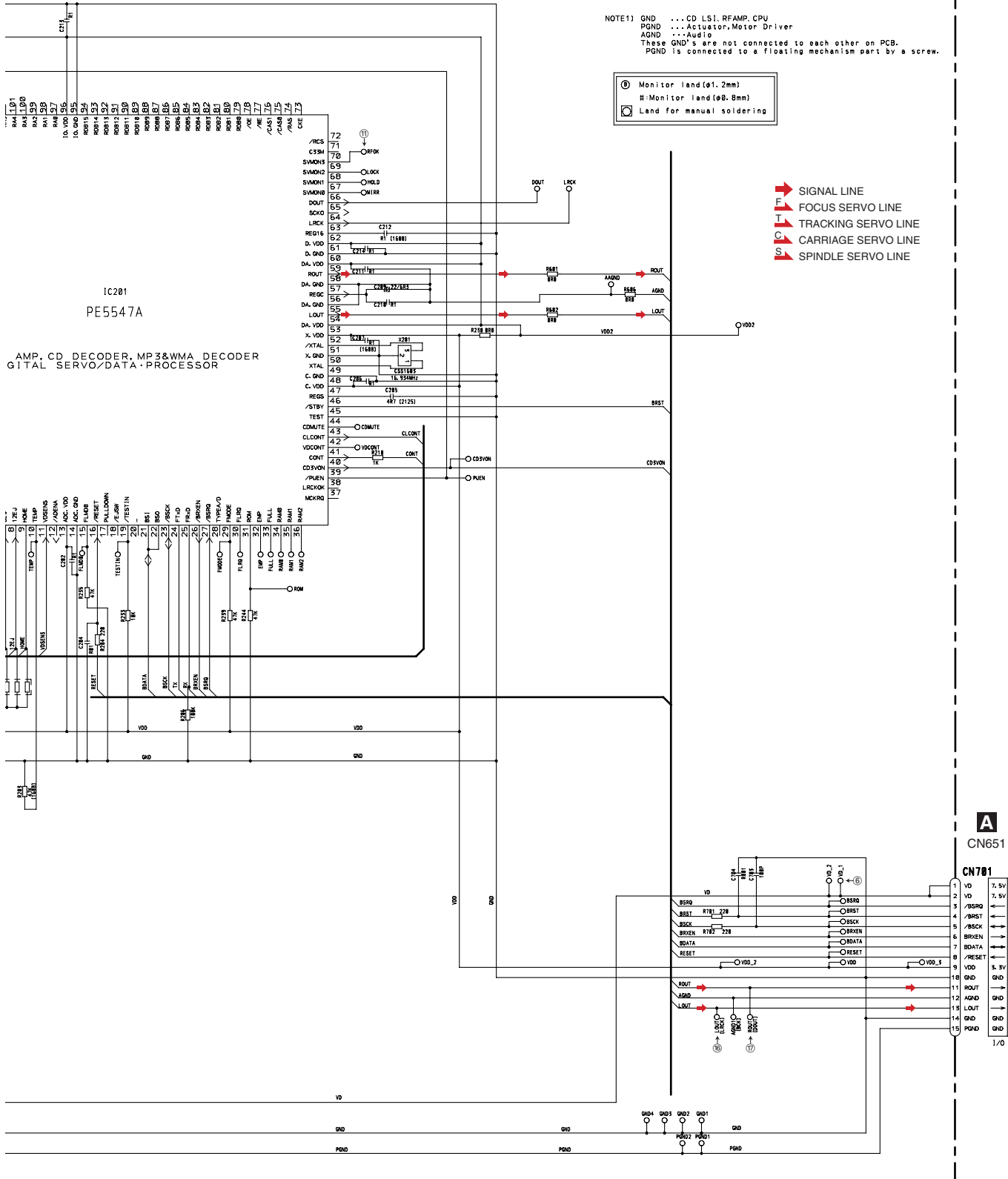
C-b

C CD CORE UNIT(S10.5COMP2)

NOTE1) GND ... CD LSI, RFAMP, CPU
 PGND ... Actuator, Motor Driver
 AGND ... Audio
 These GND's are not connected to each other on PCB.
 PGND is connected to a floating mechanism part by a screw.

- ⊙ Monitor land(φ1.2mm)
- # Monitor land(φ0.8mm)
- Land for manual soldering

- ➔ SIGNAL LINE
- F FOCUS SERVO LINE
- T TRACKING SERVO LINE
- C CARRIAGE SERVO LINE
- S SPINDLE SERVO LINE



A
B
C
D
E
F

C

C-a C-b

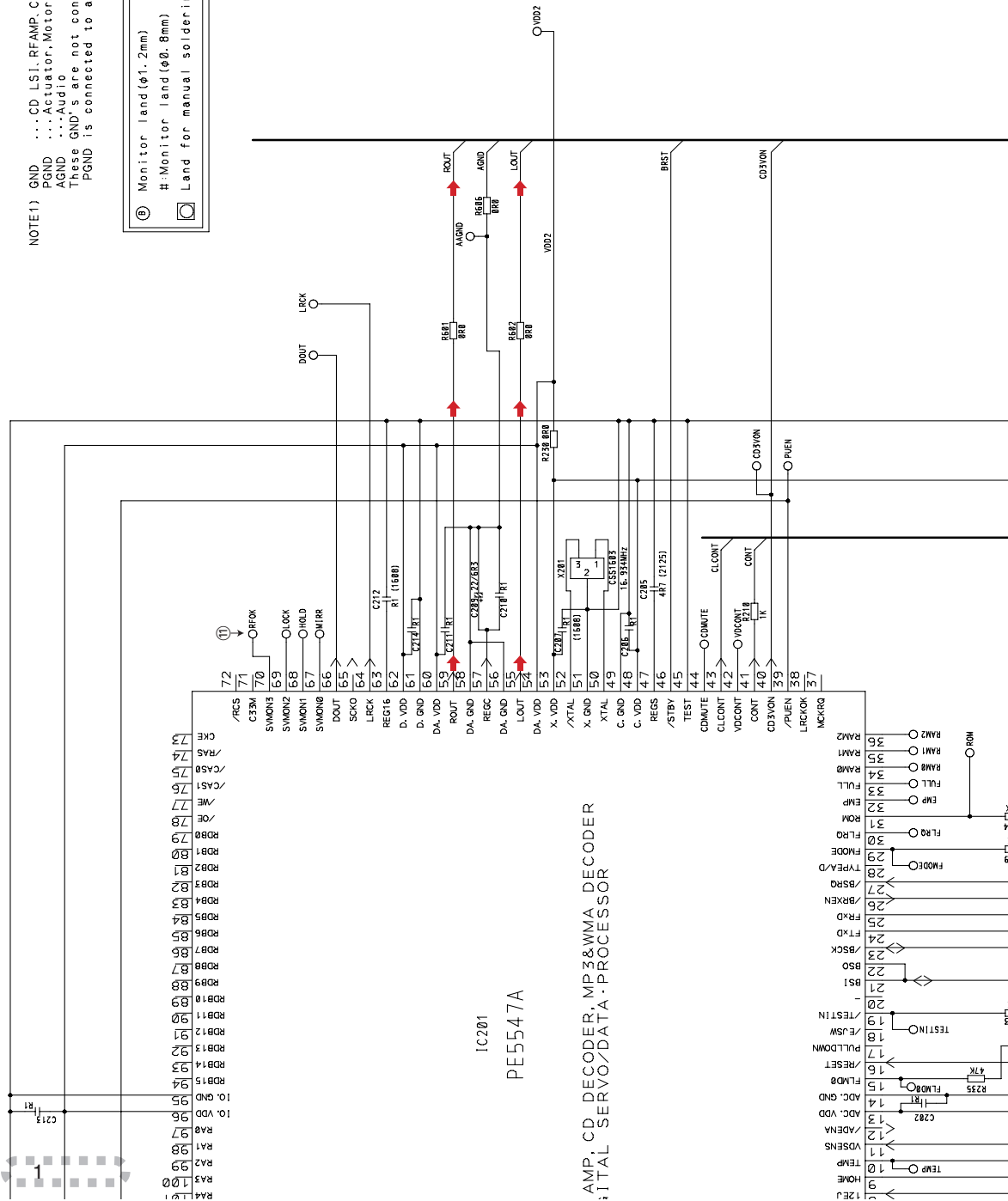
C-b

CD CORE UNIT(S10.5COMP2)

NOTE1) GND ...CD LSI, RFAMP, CPU
 PGND ...Actuator, Motor Driver
 AGND ...Audio
 These GND's are not connected to each other on PCB.
 PGND is connected to a floating mechanism part by a screw.

- ④ Monitor land (φ1.2mm)
- #: Monitor land (φ0.8mm)
- Land for manual soldering

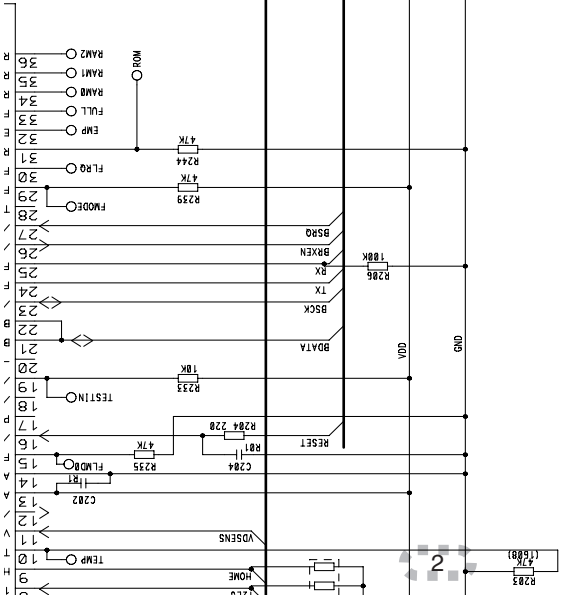
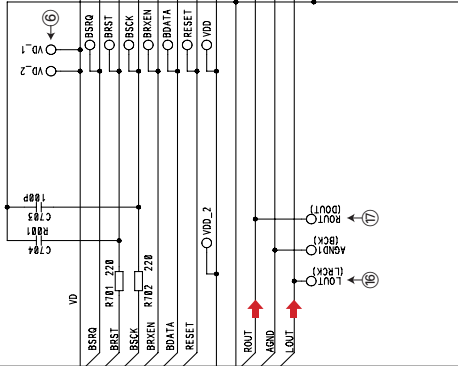
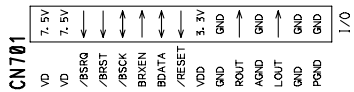
↑ SIGNAL LINE
 ↑ FOCUS SERVO LINE
 ↑ TRACKING SERVO LINE
 ↑ CARRIAGE SERVO LINE
 ↑ SPINDLE SERVO LINE



DEH-P6900IB/XN/EW5

A

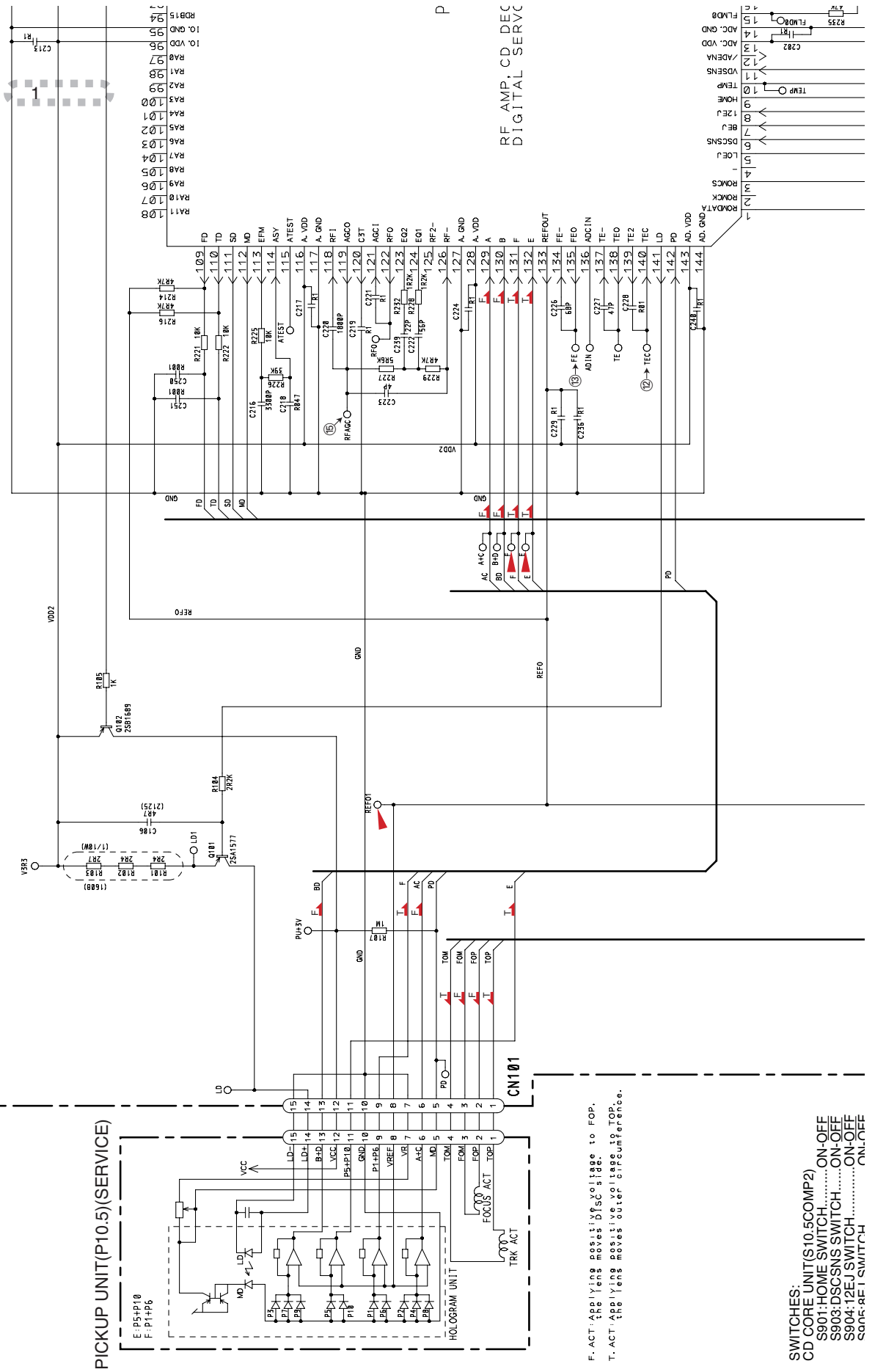
CN651



DEH-P6900IB/XN/EW5

C-a C-b

C-b



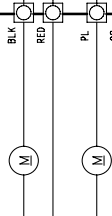
F. ACT: Applying power of FOCUS to FOP.
 T. ACT: Applying power of TRK to TOP.

- SWITCHES:
- CD CORE UNIT(S10.5COMP2) ON-OFF
 - S901:HOME SWITCH ON-OFF
 - S903:DSCSNS SWITCH ON-OFF
 - S904:12EJ SWITCH ON-OFF
 - S905:RF1 SWITCH ON-OFF

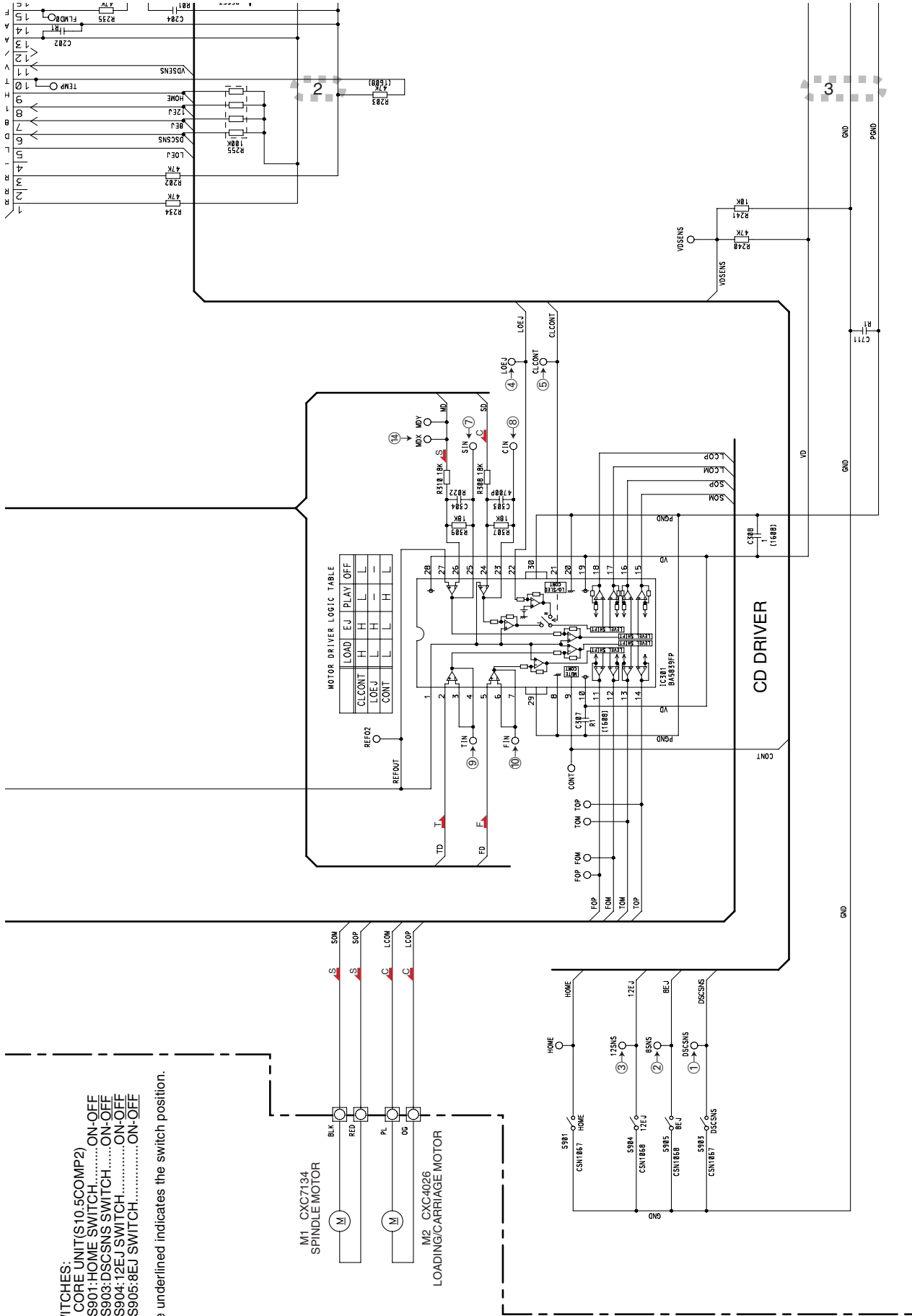
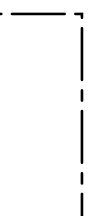
SWITCHES:
 CD CORE UNIT(S10.5COMP2)
 S901:HOME SWITCH.....ON-OFF
 S903:DSCSNS SWITCH.....ON-OFF
 S904:12EJ SWITCH.....ON-OFF
 S905:8EJ SWITCH.....ON-OFF

The underlined indicates the switch position.

M1 CXC7134
 SPINDLE MOTOR



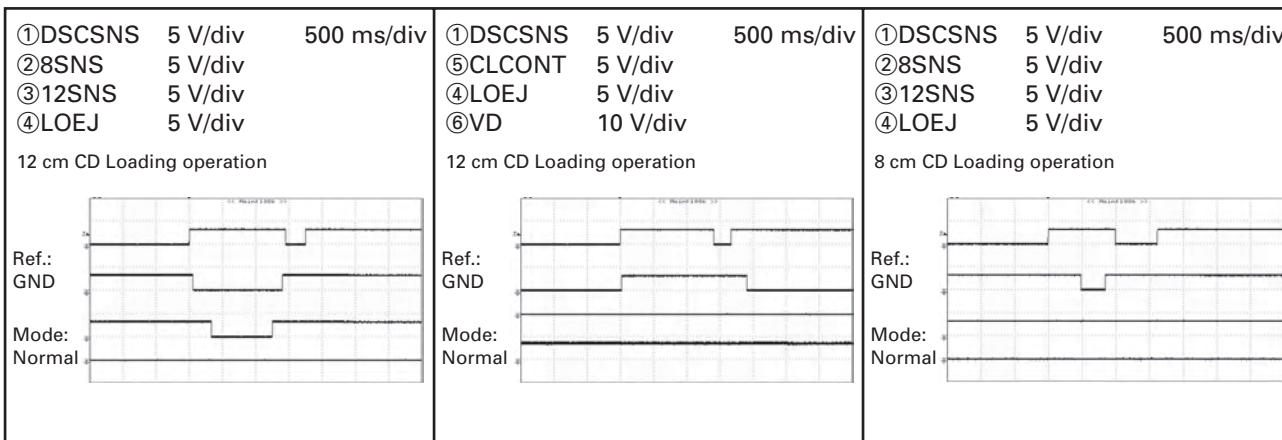
M2 CXC4026
 LOADING/CARRIAGE MOTOR



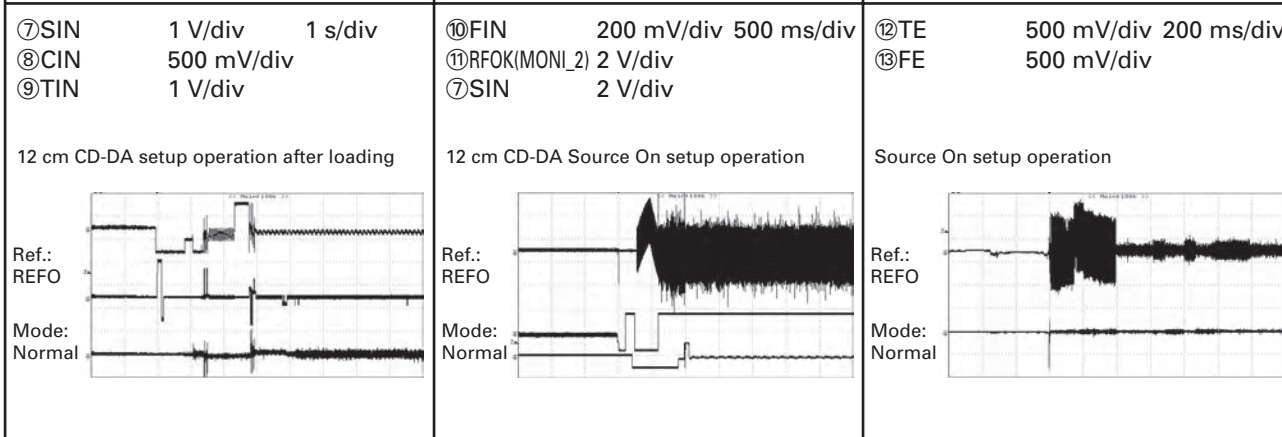
● Waveforms

Note : 1. The encircled numbers denote measuring points in the circuit diagram.
2. Reference voltage REFO1(1.65 V)

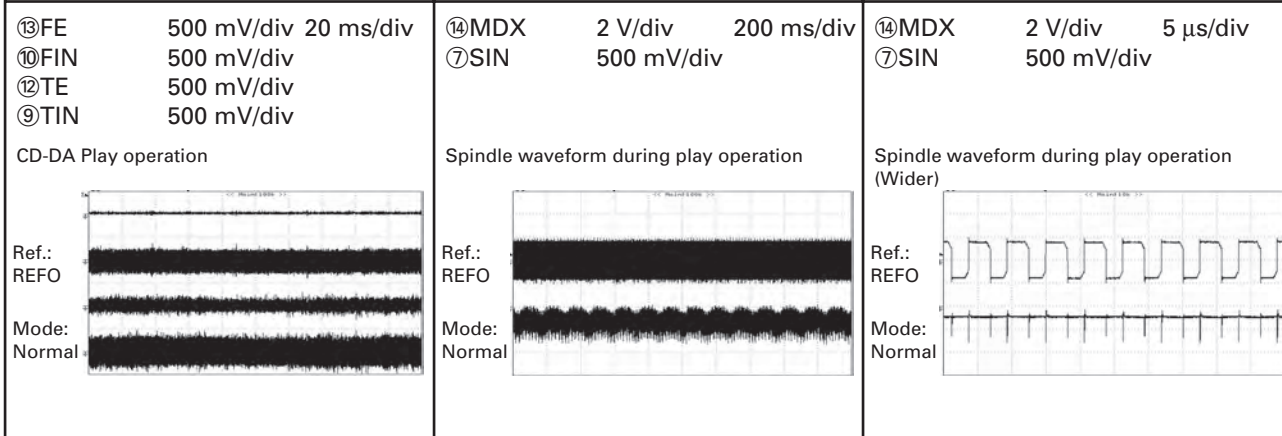
A



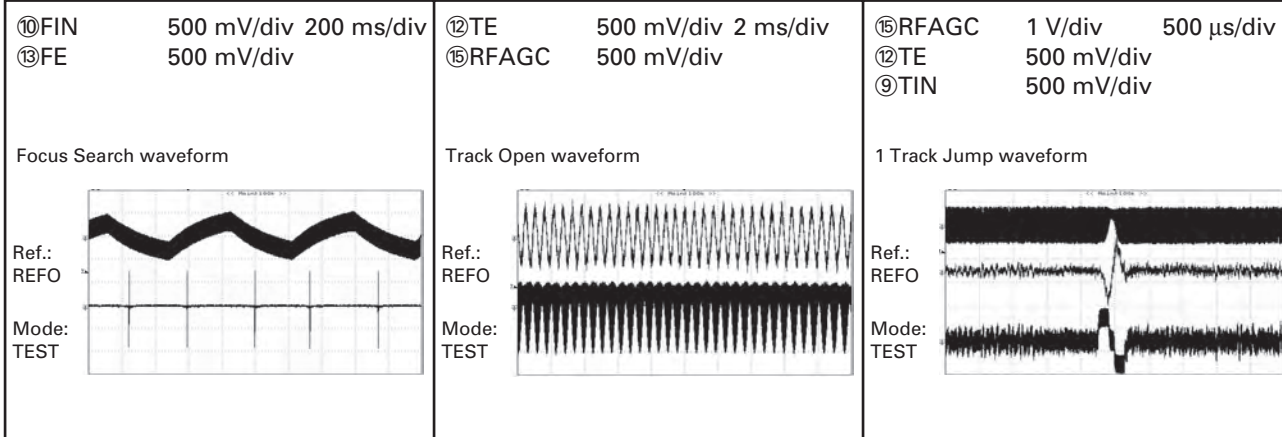
B



C

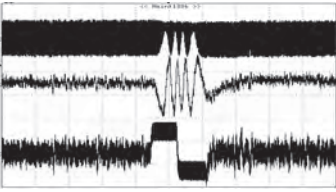
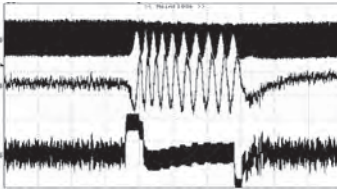
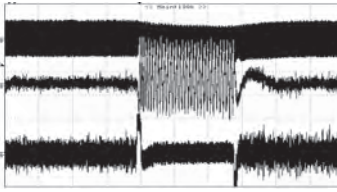
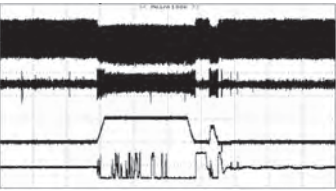
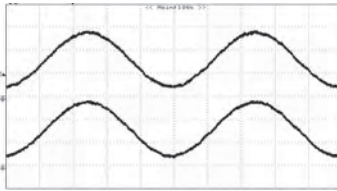
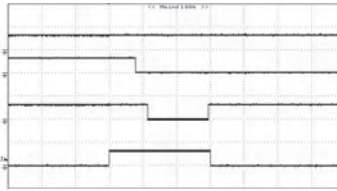
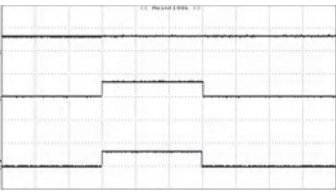
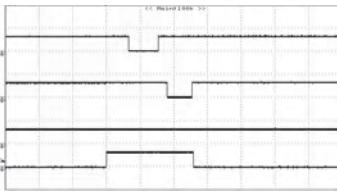
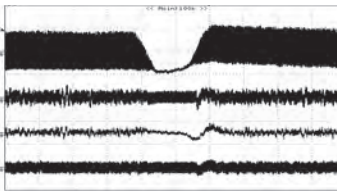


D



E

F

<p>⑮RFAGC 1 V/div 500 μs/div ⑫TE 500 mV/div ⑨TIN 500 mV/div</p> <p>4 Tracks Jump waveform</p> 	<p>⑮RFAGC 1 V/div 500 μs/div ⑫TE 500 mV/div ⑨TIN 500 mV/div</p> <p>10 Tracks Jump waveform</p> 	<p>⑮RFAGC 1 V/div 2 ms/div ⑫TE 500 mV/div ⑨TIN 500 mV/div</p> <p>32 Tracks Jump waveform</p> 
<p>⑮RFAGC 1 V/div 200 ms/div ⑫TE 1 V/div ⑧CIN 1 V/div ⑦SIN 2 V/div</p> <p>Search operation(Outer to Inner)</p> 	<p>⑯LOUT 1 V/div 200 μs/div ⑰ROUT 1 V/div</p> <p>Analog audio waveform</p> 	<p>①DSCSNS 5 V/div 500 ms/div ②8SNS 5 V/div ③12SNS 5 V/div ④LOEJ 5 V/div</p> <p>12 cm CD Eject operation</p> 
<p>①DSCSNS 5 V/div 500 ms/div ⑤CLCONT 5 V/div ④LOEJ 5 V/div</p> <p>12 cm CD Eject operation</p> 	<p>①DSCSNS 5 V/div 500 ms/div ②8SNS 5 V/div ③12SNS 5 V/div ④LOEJ 5 V/div</p> <p>8 cm CD Eject operation</p> 	<p>⑮RFAGC 1 V/div 500 μs/div ⑨TIN 1 V/div ⑫TE 1 V/div ⑩FIN 1 V/div</p> <p>Black dot(800 μm) during play</p> 

A
B
C
D
E
F

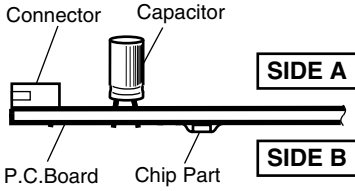
4. PCB CONNECTION DIAGRAM

4.1 TUNER AMP UNIT

NOTE FOR PCB DIAGRAMS

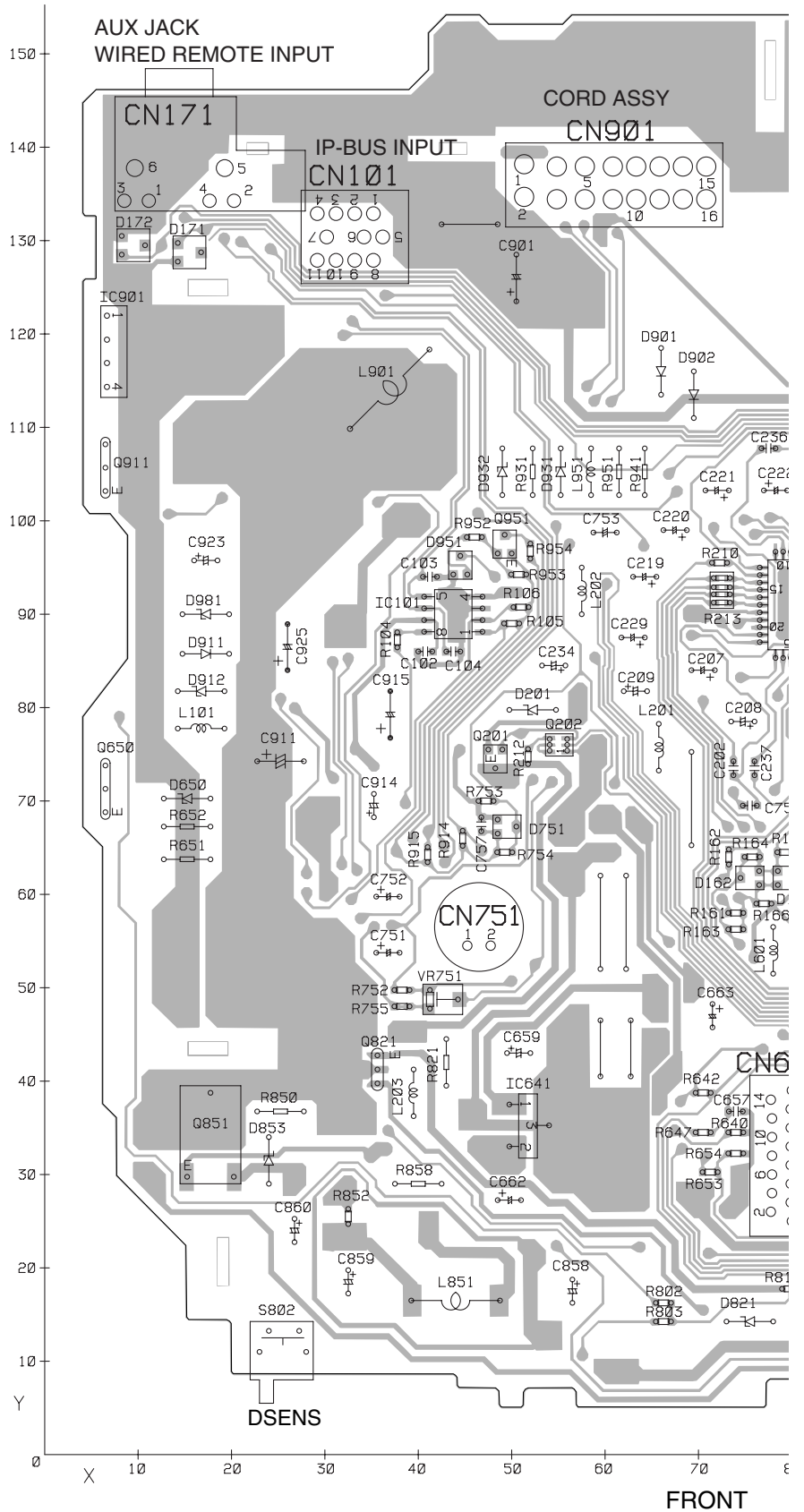
1. The parts mounted on this PCB include all necessary parts for several destination.
For further information for respective destinations, be sure to check with the schematic diagram.

2. Viewpoint of PCB diagrams



A TUNER AMP UNIT

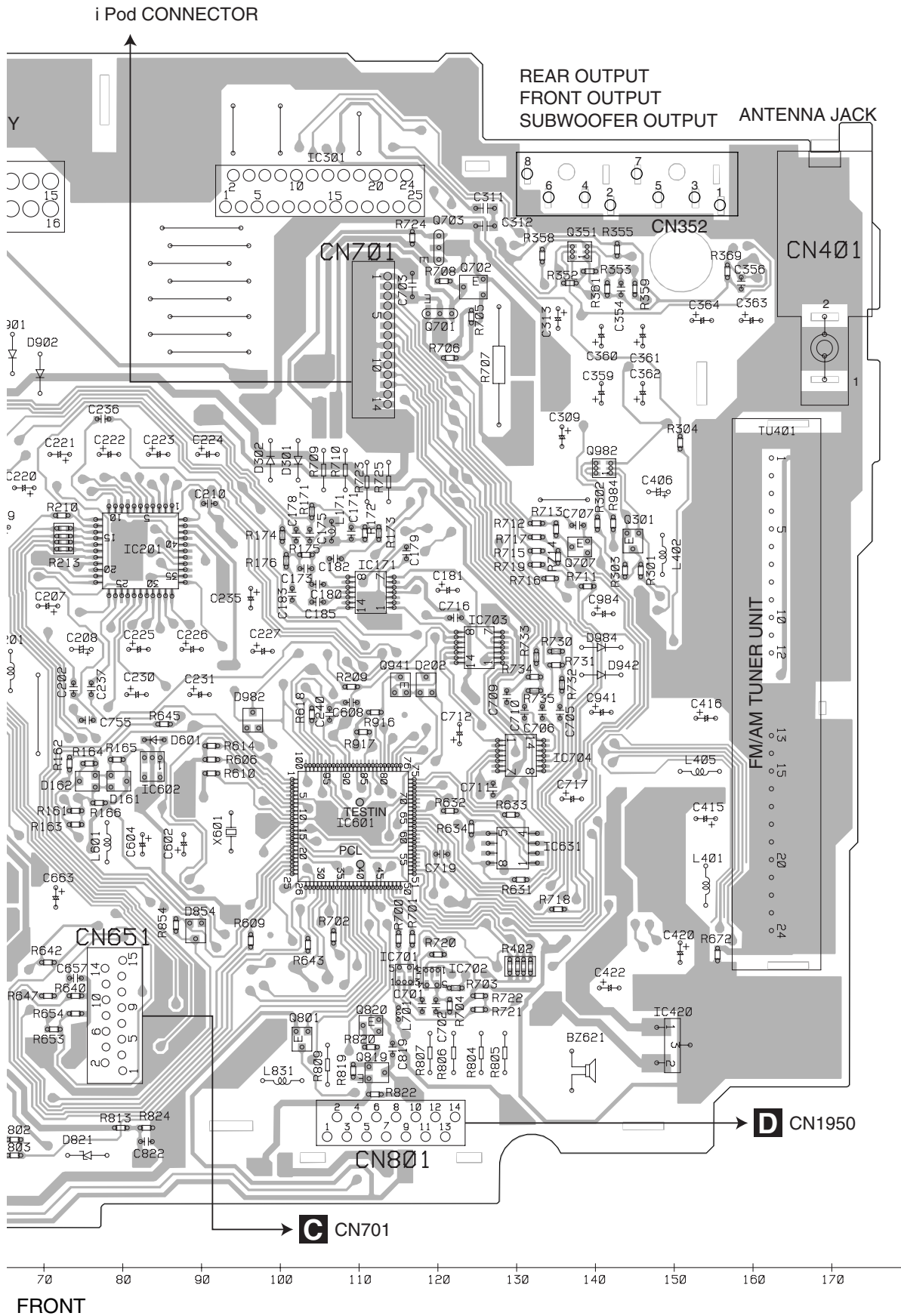
iPc



A

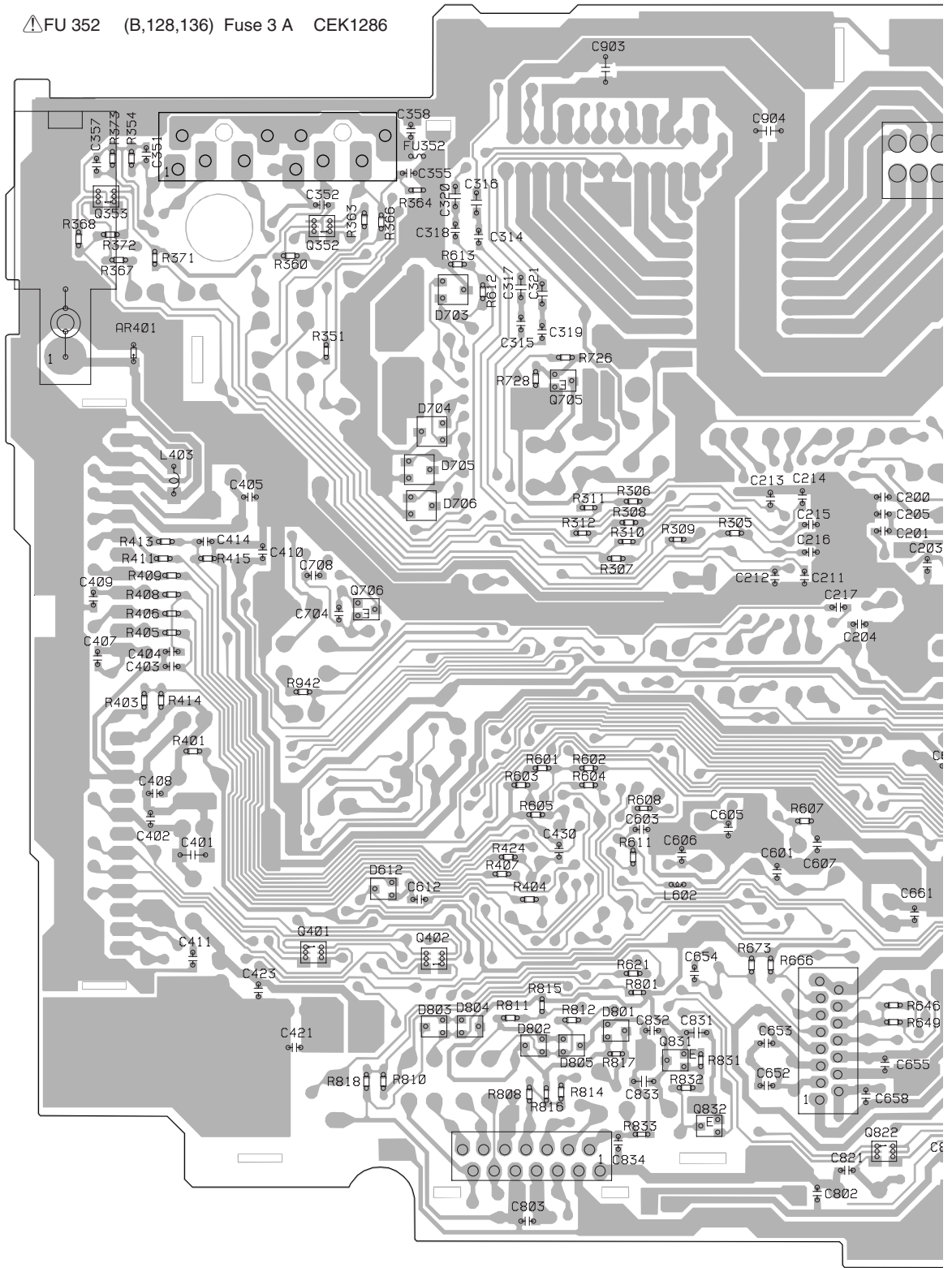
A
B
C
D
E
F

SIDE A



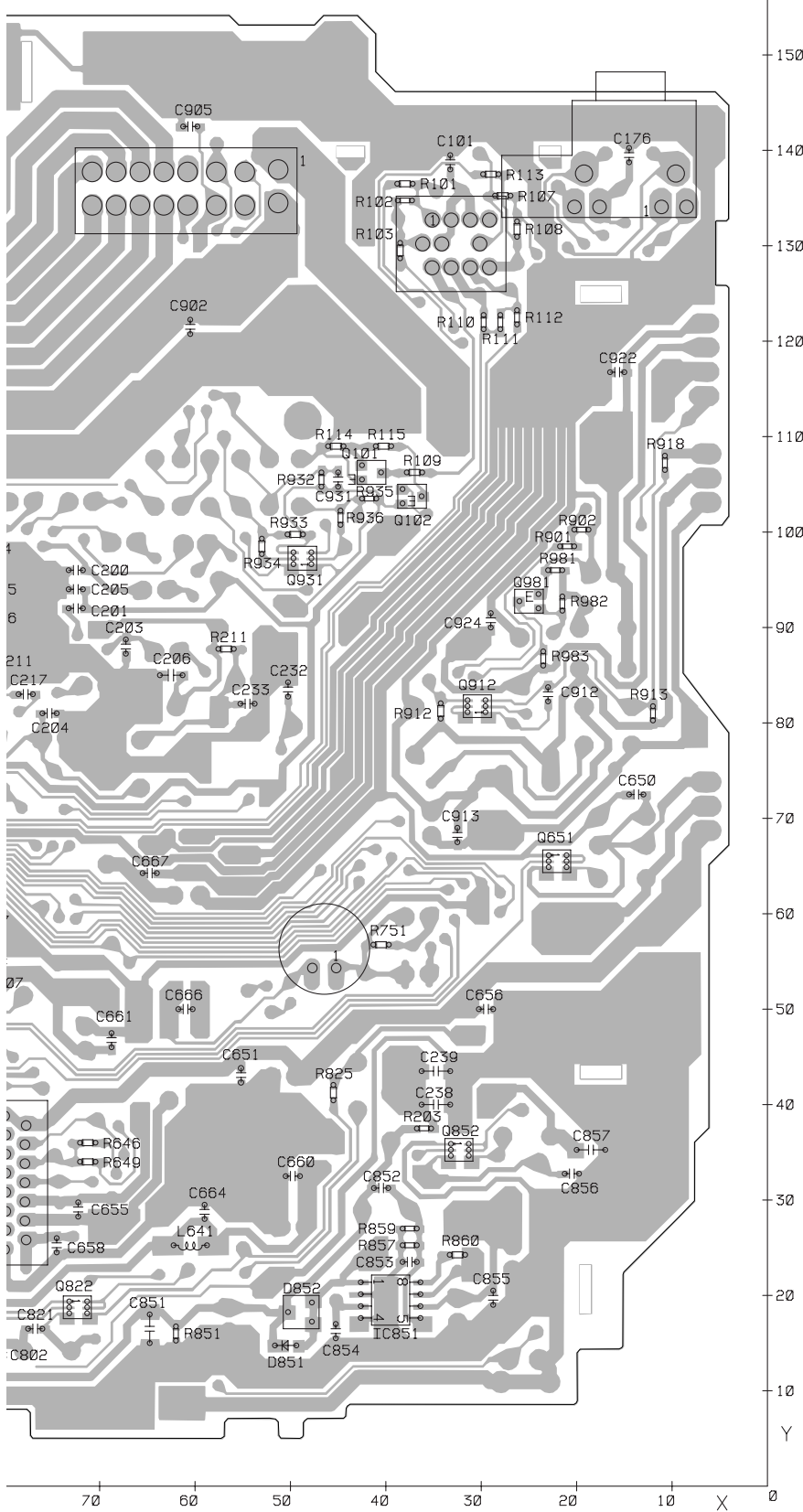
A TUNER AMP UNIT

⚠ FU 352 (B,128,136) Fuse 3 A CEK1286



170 160 150 140 130 120 110 100 90 80 70

SIDE B



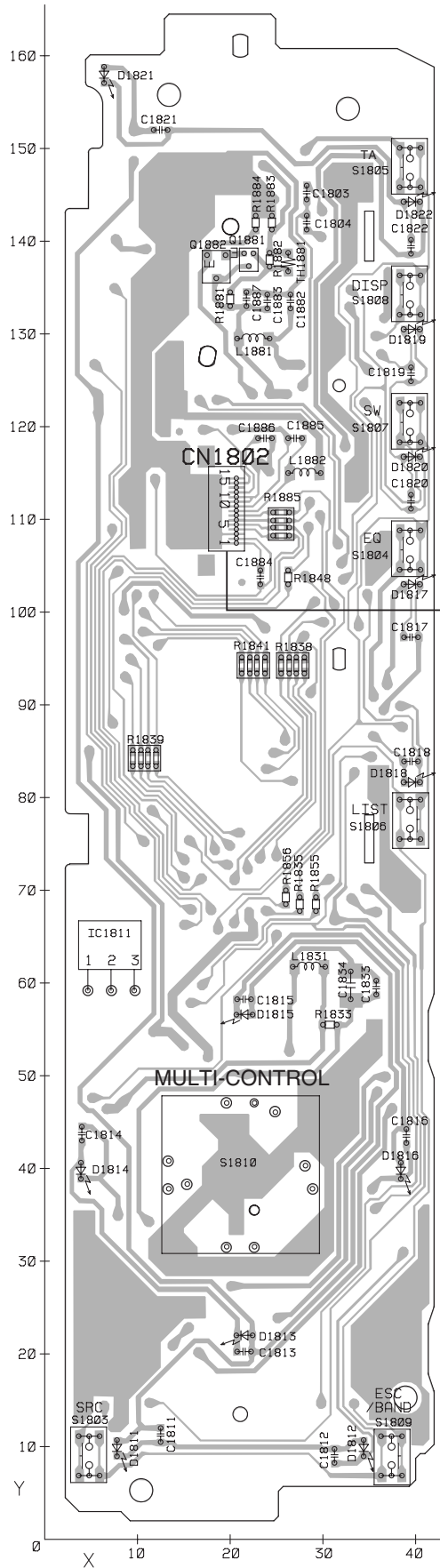
4.2 KEYBOARD UNIT

B KEYBOARD UNIT

SIDE A

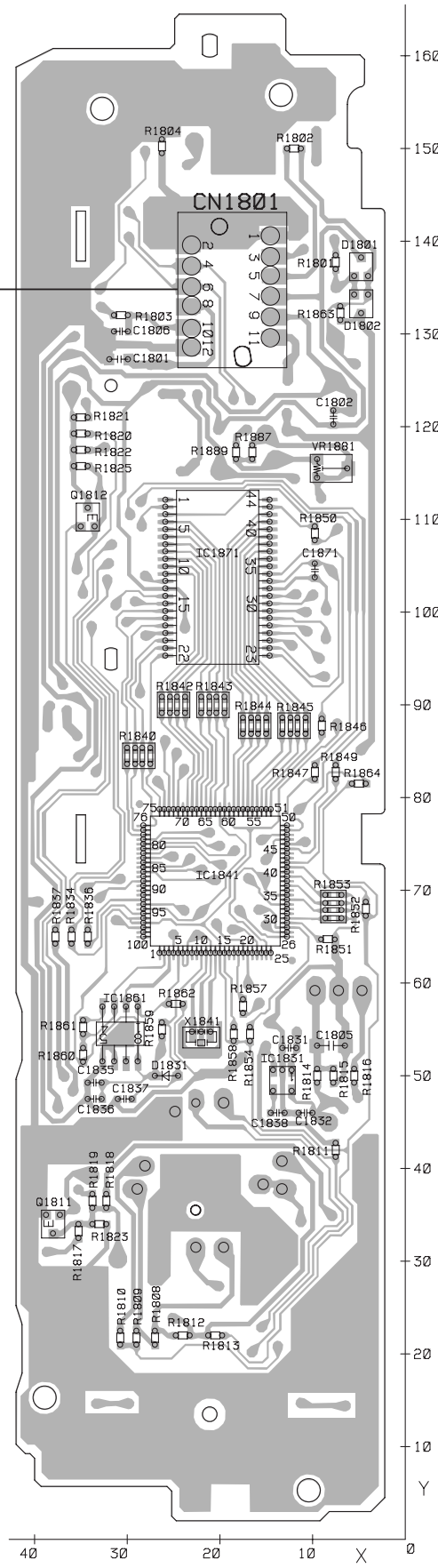
B KEYBOARD UNIT

SIDE B



D CN1951

OEL UNIT

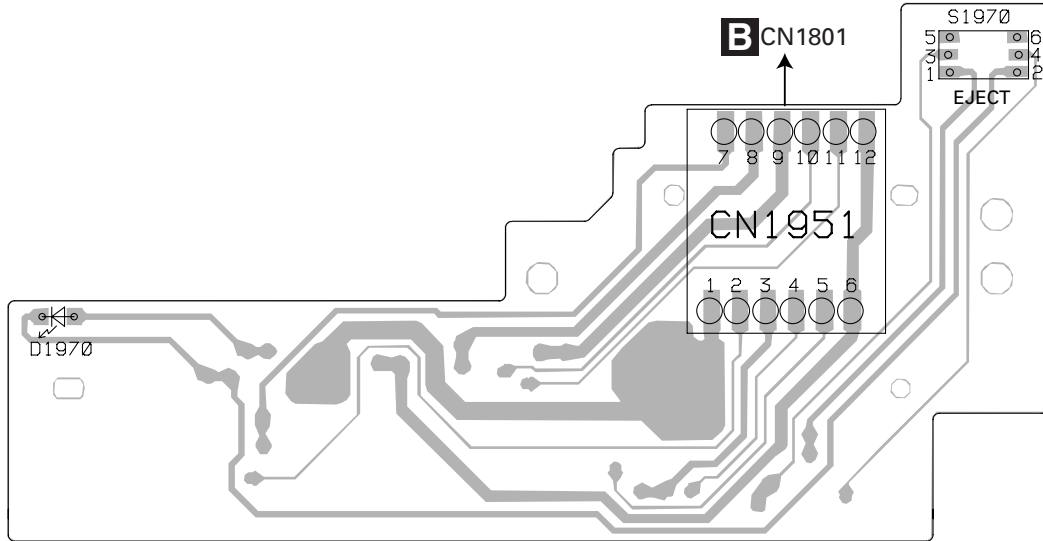


B

4.3 PANEL UNIT

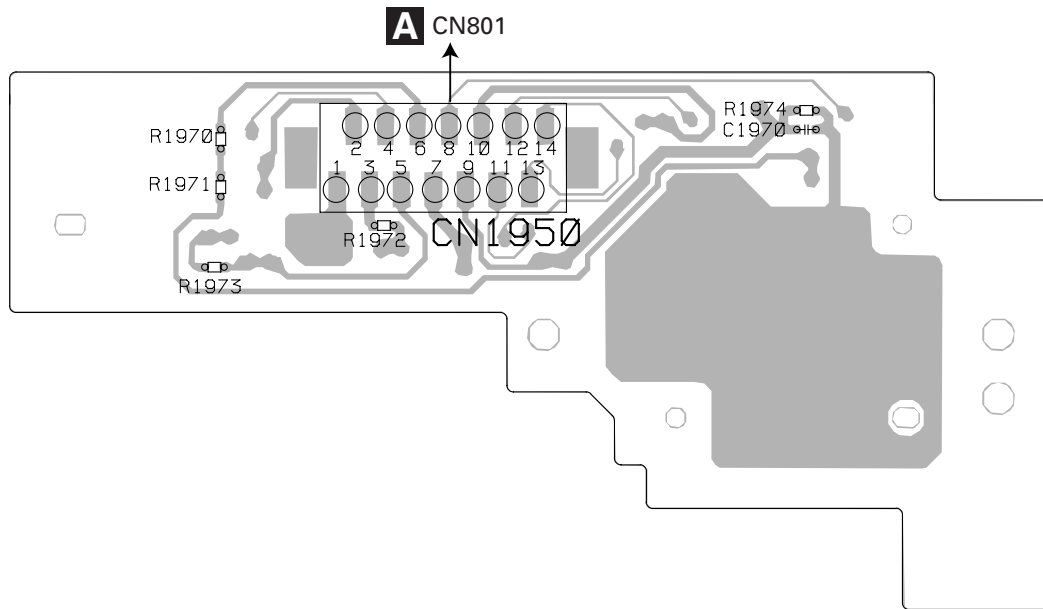
D PANEL UNIT

SIDE A



D PANEL UNIT

SIDE B

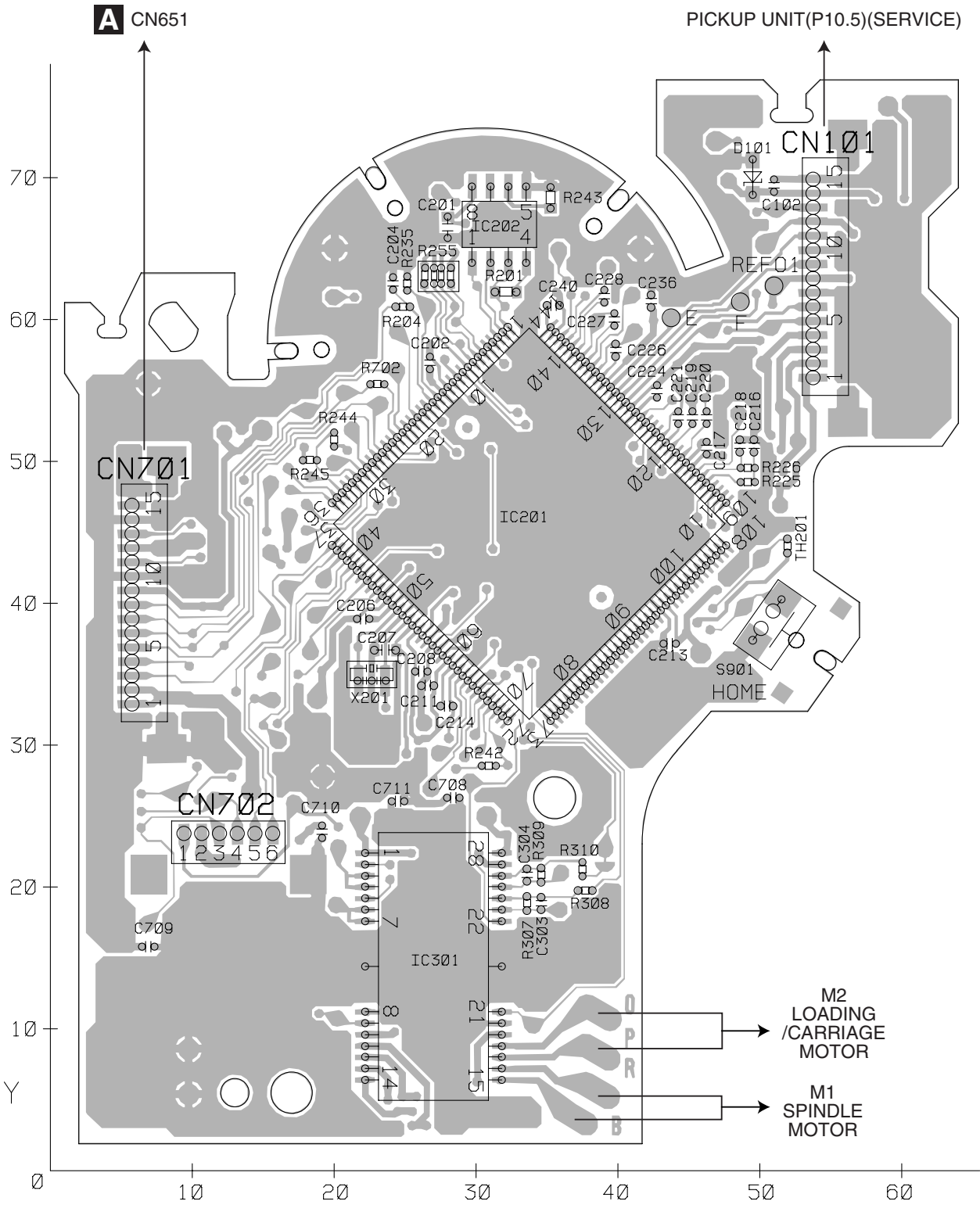


4.4 CD CORE UNIT(S10.5COMP2)

C CD CORE UNIT(S10.5COMP2)

SIDE A

A
B
C
D
E
F

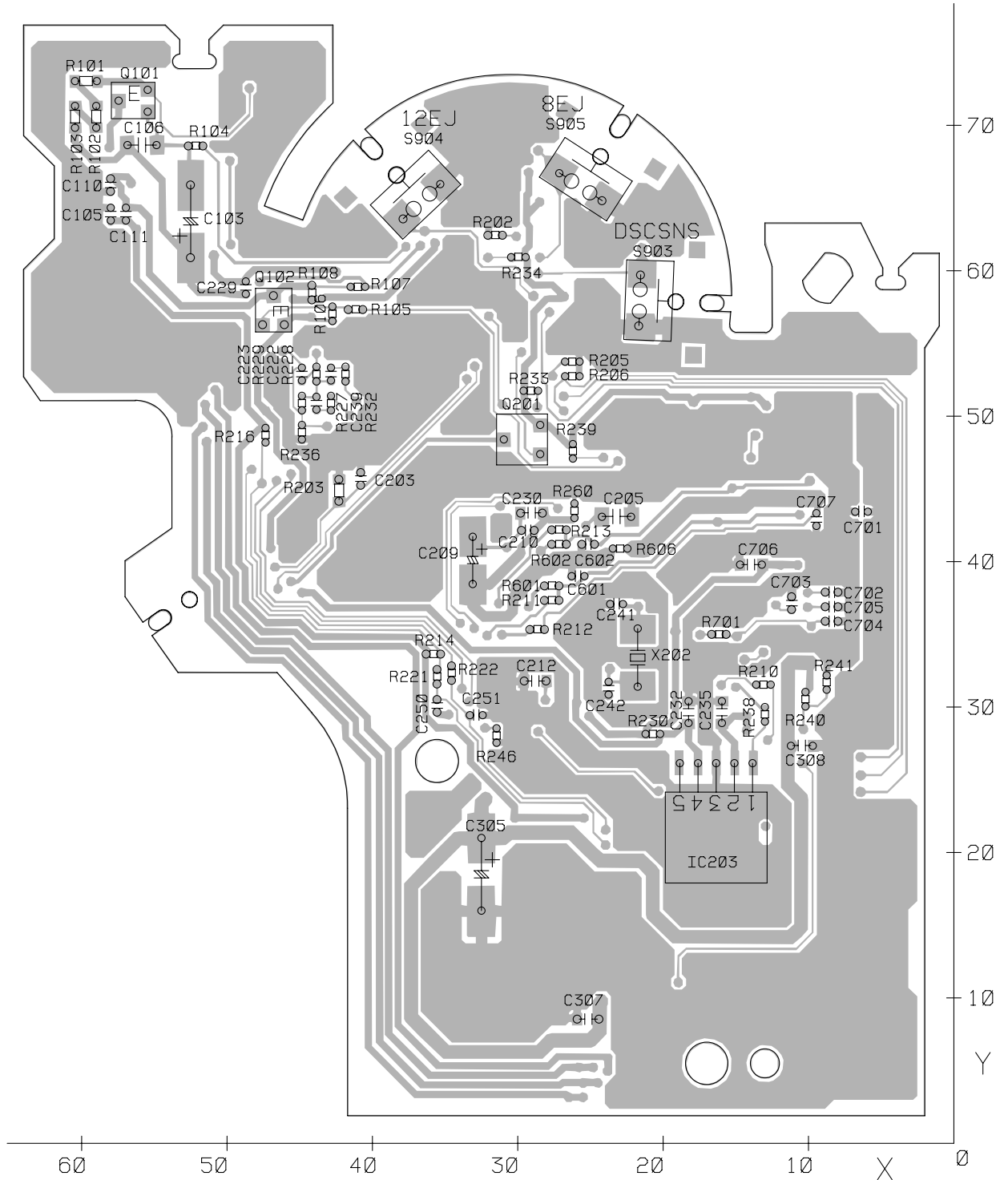


C

C CD CORE UNIT(S10.5COMP2)

SIDE B

A
B
C
D
E
F



C

5. ELECTRICAL PARTS LIST

NOTE:

- 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.....

- The \triangle 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.
- Meaning of the figures and others in the parentheses in the parts list.

Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

IC 301 (A, 91, 111) IC NJM2068V

<u>Circuit Symbol and No.</u>	<u>Part No.</u>	<u>Circuit Symbol and No.</u>	<u>Part No.</u>
-------------------------------	-----------------	-------------------------------	-----------------

Unit Number: XWM7163

Unit Name : Tuner Amp Unit

Unit Number:

Unit Name : Keyboard Unit

Unit Number: CWX3514

Unit Name : CD Core

Unit(S10.5COMP2)

Unit Number: CWM8758

Unit Name : Panel Unit

A
Unit Number: XWM7163
Unit Name : Tuner Amp Unit

MISCELLANEOUS

IC 101	(A,44,90) IC	HA12241FP	Q 352	(B,139,128) Transistor	RT3C99M
IC 171	(A,112,86) IC	NJM2794V	Q 353	(B,164,132) Transistor	RT3C99M
IC 201	(A,82,91) IC	PML016B	Q 401	(B,140,42) Transistor	UMH1N
IC 301	(A,93,135) IC	PAL007C	Q 402	(B,126,42) Transistor	UMH1N
IC 420	(A,152,28) IC	NJM2885DL1-33	Q 650	(A,7,69) Transistor	2SD2396
IC 601	(A,109,56) IC	PEG273A	Q 651	(B,22,66) Transistor	UMD2N
IC 602	(A,84,64) IC	S-80835CNMC-B8U	Q 701	(A,120,120) Transistor	2SA2060
IC 641	(A,54,35) IC	NJM2885DL1-33	Q 702	(A,125,125) Transistor	2SA1162
IC 701	(A,116,37) IC	TC7SET08FUS1	Q 703	(A,122,130) Transistor	2SA2060
IC 702	(A,119,37) IC	TC7SH08FUS1	Q 705	(B,110,110) Transistor	2SC4081
IC 703	(A,125,79) IC	TC4066BFT	Q 706	(B,134,83) Transistor	RT1N241M
IC 704	(A,131,65) IC	NJM2794V	Q 707	(A,138,92) Transistor	RT1N241M
IC 851	(B,40,20) IC	NJM2360M	Q 801	(A,103,29) Transistor	RT1N431M
IC 901	(A,7,122) IC	NJM2388F84	Q 819	(A,112,25) Transistor	2SA1576A
Q 101	(B,42,106) Transistor	2SA1576A	Q 820	(A,112,31) Transistor	RT1N141M-11
Q 102	(B,37,104) Transistor	RT1N141M-11	Q 821	(A,34,41) Transistor	2SD1767
Q 201	(A,48,75) Transistor	2SC4081	Q 822	(B,72,19) Transistor	UMD2N
Q 202	(A,55,76) Transistor	UMD2N	Q 831	(B,97,30) Transistor	2SA1576A
Q 301	(A,145,92) Transistor	RT1N241M	Q 832	(B,93,22) Transistor	RT1N141M-11
Q 351	(A,138,129) Transistor	RT3C99M	Q 851	(A,18,34) Transistor	2SD1760F5
			Q 852	(B,32,35) Transistor	UMD2N
			Q 911	(A,7,103) Transistor	2SD2396
			Q 912	(B,31,82) Transistor	UMD2N
			Q 931	(B,49,97) Transistor	RT3CLLM
			Q 941	(A,115,74) Transistor	RT1N141M-11
			Q 951	(A,49,98) Transistor	2SA1576A
			Q 981	(B,25,93) Transistor	2SC4081
			Q 982	(A,141,102) Transistor	UMD2N
			D 171	(A,16,129) Diode	HZM6R2ZMWA
			D 172	(A,10,130) Diode	HZM6R2ZMWA
			D 201	(A,55,80) Diode	HZS12L(B1)
			D 202	(A,119,74) Diode	RB706F-40
			D 301	(A,102,105) Diode	MPG06G-6415G3
			D 302	(A,99,100) Diode	MPG06G-6415G3
			D 612	(B,132,50) Diode	MC2850-11
			D 650	(A,18,70) Diode	MTZJA8R2(B)
			D 751	(A,50,67) Diode	RB706F-40
			D 801	(B,104,33) Diode	MC2850-11
			D 802	(B,114,31) Diode	MC2848-11
			D 803	(B,126,34) Diode	MC2846-11

5		6		7		8	
<u>Circuit Symbol and No.</u>		<u>Part No.</u>		<u>Circuit Symbol and No.</u>		<u>Part No.</u>	
D 804	(B,121,34) Diode	MC2848-11	R 175	(A,103,91)	RS1/16S223J		
D 805	(B,109,31) Diode	MC2846-11	R 203	(B,36,38)	RS1/16S0R0J		
D 821	(A,78,14) Diode	HZS9L(B2)	R 209	(A,109,74)	RS1/16S221J		A
D 852	(B,49,18) Diode	RB411D	R 210	(A,72,96)	RS1/16S221J		
D 853	(A,24,29)	MTZJA10(B)	R 212	(A,52,75)	RS1/16S152J		
D 854	(A,89,43) Diode	MC2848-11	R 213	(A,73,93)	RAB4C102J		
D 901	(A,66,119) Diode	MPG06G-6415G3	R 301	(A,146,89)	RS1/16S103J		
D 902	(A,70,116) Diode	MPG06G-6415G3	R 302	(A,140,95)	RS1/16S331J		
D 911	(A,15,86) Diode	MPG06G-6415G3	R 303	(A,144,89)	RS1/16S103J		
D 912	(A,19,82) Diode	HZS6L(B1)	R 304	(A,151,105)	RS1/16S153J		
D 931	(A,55,103) Diode	HZS7L(A1)	R 305	(B,90,92)	RS1/16S682J		
D 932	(A,49,103) Diode	HZS7L(C3)	R 306	(B,102,96)	RS1/16S682J		
D 942	(A,138,75) Diode	1SS133	R 307	(B,104,89)	RS1/16S682J		
D 951	(A,45,95) Diode	MC2848-11	R 308	(B,103,93)	RS1/16S682J		B
D 981	(A,20,90) Diode	HZS9L(A2)	R 309	(B,97,91)	RS1/16S123J		
D 982	(A,97,70) Diode	MC2848-11	R 310	(B,103,91)	RS1/16S123J		
D 984	(A,138,79) Diode	1SS133	R 311	(B,107,95)	RS1/16S123J		
L 101	(A,14,78) Inductor	LAU2R2K	R 312	(B,108,92)	RS1/16S123J		
L 201	(A,66,78) Ferri-Inductor	LAU4R7K	R 351	(B,138,113)	RS1/16S390J		
L 202	(A,58,95) Ferri-Inductor	LAU100K	R 352	(A,137,125)	RS1/16S472J		
L 401	(A,154,51) Inductor	LAU1R0K	R 353	(A,139,127)	RS1/16S472J		
L 402	(A,149,93) Inductor	LAU1R0K	R 354	(B,161,136)	RS1/16S223J		
L 403	(B,156,98) Chip Coil	LCTAW4R7J2520	R 355	(A,143,129)	RS1/16S223J		
L 601	(A,78,57) Ferri-Inductor	LAU100K	R 358	(A,133,129)	RS1/16S390J		
L 701	(A,115,32) Inductor	CTF1382	R 359	(A,145,124)	RS1/16S390J		C
L 831	(A,103,24) Ferri-Inductor	LAU100K	R 360	(B,143,125)	RS1/16S472J		
L 851	(A,44,17) Inductor	CTF1660	R 361	(A,142,124)	RS1/16S223J		
L 901	(A,32,109) Choke Coil 600 μ H	CTH1280	R 363	(B,134,129)	RS1/16S472J		
L 951	(A,59,103) Inductor	LAU2R2K	R 364	(B,128,132)	RS1/16S223J		
X 601	(A,94,58) Crystal 20.00 MHz	VSS1167	R 366	(B,132,129)	RS1/16S390J		
S 802	(A,23,11) Switch(DSENS)	CSN1039	R 367	(B,163,124)	RS1/16S390J		
VR751	(A,43,49) Semi-fixed 10 k Ω (B)	CCP1229	R 368	(B,168,127)	RS1/16S472J		
Δ FU352	(B,128,136) Fuse 3 A	CEK1286	R 369	(A,157,127)	RS1/16S223J		
TU401	(A,162,103) FM/AM Tuner Unit	CWE1951	R 371	(B,159,124)	RS1/16S390J		
BZ621	(A,137,25) Buzzer	CPV1062	R 372	(B,164,127)	RS1/16S472J		
AR401	(B,161,113) Surge Protector	IMSA-6801-01Y901	R 373	(B,164,136)	RS1/16S223J		D
Δ	Fuse 10 A	CEK1208	R 401	(B,154,66)	RS1/16S0R0J		
			R 402	(A,131,38)	RAB4C223J		
			R 403	(B,160,72)	RS1/16S681J		
			R 404	(B,114,49)	RS1/16S681J		
RESISTORS							
R 101	(B,38,137)	RS1/16S101J					
R 102	(B,38,135)	RS1/16S620J	R 405	(B,157,80)	RS1/16S681J		
R 103	(B,39,130)	RS1/16S101J	R 406	(B,157,82)	RS1/16S681J		
R 104	(A,38,87)	RS1/16S102J	R 407	(B,118,52)	RS1/16S681J		
R 105	(A,50,89)	RS1/16S472J	R 408	(B,157,85)	RS1/16S681J		
			R 409	(B,157,87)	RS1/16S681J		
R 106	(A,51,91)	RS1/16S472J					
R 107	(B,28,135)	RS1/16S181J	R 411	(B,158,89)	RS1/16S681J		E
R 108	(B,26,132)	RS1/16S223J	R 413	(B,157,91)	RS1/16S681J		
R 109	(B,37,106)	RS1/16S222J	R 424	(B,117,54)	RS1/16S681J		
R 110	(B,30,122)	RS1/16S181J	R 605	(B,114,59)	RS1/16S104J		
			R 606	(A,91,65)	RS1/16S104J		
R 111	(B,28,122)	RS1/16S223J					
R 112	(B,26,123)	RS1/16S102J	R 607	(B,82,58)	RS1/16S822J		
R 113	(B,29,138)	RS1/16S102J	R 608	(B,101,59)	RS1/16S102J		
R 114	(B,45,109)	RS1/16S223J	R 609	(A,96,42)	RS1/16S102J		
R 115	(B,40,109)	RS1/16S472J	R 610	(A,91,63)	RS1/16S471J		
			R 611	(B,102,54)	RS1/16S473J		
R 161	(A,74,58)	RS1/16S102J					
R 162	(A,73,64)	RS1/16S102J	R 612	(B,120,120)	RS1/16S682J		
R 163	(A,74,56)	RS1/16S103J	R 613	(B,123,124)	RS1/16S152J		F
R 164	(A,76,64)	RS1/16S103J	R 614	(A,91,66)	RS1/16S0R0J		
R 172	(A,111,93)	RS1/16S223J	R 621	(B,102,40)	RS1/16S102J		
			R 631	(A,131,49)	RS1/16S104J		

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

	R 640	(A,74,35)	RS1/16S104J	R 820	(A,112,28)	RS1/16S472J
	R 642	(A,71,39)	RS1/16S682J	R 821	(A,43,45)	RD1/4PU391J
	R 643	(A,104,41)	RS1/16S221J	R 824	(A,83,18)	RS1/16S472J
A	R 645	(A,85,69)	RS1/16S221J	R 825	(B,46,41)	RS1/16S102J
	R 646	(B,71,36)	RS1/16S221J	R 831	(B,94,30)	RS1/16S473J
	R 647	(A,71,35)	RS1/16S221J	R 832	(B,96,26)	RS1/16S102J
	R 649	(B,71,34)	RS1/16S104J	R 833	(B,101,21)	RS1/16S222J
	R 651	(A,18,64)	RD1/4PU561J	R 850	(A,28,37)	RD1/4PU681J
	R 653	(A,71,30)	RS1/16S221J	R 852	(A,33,26)	RS1/16S1R0J
	R 654	(A,74,32)	RS1/16S104J	R 857	(B,38,25)	RS1/16S391J
	R 666	(B,86,41)	RS1/16S104J	R 858	(A,38,29)	RD1/4PU272J
	R 673	(B,88,41)	RS1/16S682J	R 859	(B,38,27)	RS1/16S391J
	R 701	(A,117,42)	RS1/16S102J	R 860	(B,33,24)	RS1/16S391J
	R 702	(A,107,42)	RS1/16S102J	R 901	(B,21,99)	RS1/16S102J
B	R 705	(A,124,121)	RS1/16S103J	R 902	(B,20,100)	RS1/16S103J
	R 706	(A,122,116)	RS1/16S102J	R 912	(B,34,81)	RS1/16S222J
	R 707	(A,128,115)	RS2PMFR47J	R 913	(B,12,81)	RS1/16S223J
	R 708	(A,121,125)	RS1/16S103J	R 914	(A,45,66)	RS1/16S104J
	R 709	(A,106,99)	RD1/4PU102J	R 915	(A,41,64)	RS1/16S104J
	R 710	(A,108,99)	RD1/4PU102J	R 916	(A,112,71)	RS1/16S104J
	R 711	(A,139,87)	RS1/16S104J	R 918	(B,11,107)	RS1/16S391J
	R 712	(A,133,95)	RS1/16S514J	R 931	(A,52,103)	RD1/4PU102J
	R 713	(A,135,94)	RS1/16S393J	R 932	(B,47,106)	RS1/16S472J
	R 714	(A,135,90)	RS1/16S104J	R 933	(B,50,100)	RS1/16S473J
C	R 716	(A,134,88)	RS1/16S102J	R 934	(B,53,99)	RS1/16S103J
	R 717	(A,133,93)	RS1/16S472J	R 935	(B,42,104)	RS1/16S473J
	R 718	(A,135,46)	RS1/16S472J	R 936	(B,45,102)	RS1/16S104J
	R 720	(A,120,40)	RS1/16S102J	R 941	(A,64,103)	RD1/4PU102J
	R 721	(A,125,33)	RS1/16S102J	R 942	(B,141,73)	RS1/16S103J
	R 722	(A,125,35)	RS1/16S104J	R 951	(A,62,103)	RD1/4PU153J
	R 723	(A,111,102)	RD1/4PU102J	R 952	(A,46,98)	RS1/16S472J
	R 724	(A,117,131)	RS1/16S103J	R 953	(A,51,94)	RS1/16S472J
	R 725	(A,114,102)	RD1/4PU102J	R 954	(A,52,97)	RS1/16S102J
	R 726	(B,110,113)	RS1/16S103J	R 981	(B,22,96)	RS1/16S683J
	R 728	(B,114,110)	RS1/16S103J	R 982	(B,22,93)	RS1/16S683J
D	R 731	(A,135,77)	RS1/16S223J	R 983	(B,24,87)	RS1/16S223J
	R 734	(A,132,75)	RS1/16S223J	R 984	(A,142,95)	RS1/16S102J
	R 751	(B,41,57)	RS1/16S222J			
	R 752	(A,38,50)	RS1/16S561J			
	R 753	(A,47,70)	RS1/16S104J			
	R 754	(A,49,65)	RS1/16S104J			
	R 801	(B,102,38)	RS1/16S473J			
	R 802	(A,66,16)	RS1/16S104J			
	R 803	(A,66,14)	RS1/16S102J			
	R 804	(A,126,25)	RD1/4PU222J			
E	R 805	(A,129,25)	RD1/4PU222J			
	R 806	(A,122,25)	RD1/4PU222J			
	R 807	(A,119,25)	RD1/4PU222J			
	R 808	(B,114,26)	RS1/16S222J			
	R 809	(A,106,23)	RD1/4PU222J			
	R 810	(B,132,27)	RS1/16S102J			
	R 811	(B,117,35)	RS1/16S102J			
	R 812	(B,109,34)	RS1/16S102J			
	R 813	(A,80,18)	RS1/16S1R0J			
	R 814	(B,111,26)	RS1/16S222J			
	R 815	(B,113,36)	RS1/16S473J			
F	R 816	(B,112,26)	RS1/16S473J			
	R 817	(B,104,30)	RS1/16S473J			
	R 818	(B,134,27)	RS1/16S104J			
	R 819	(A,109,25)	RS1/16S473J			

CAPACITORS

C 101	(B,33,139)	CKSRYB104K16
C 102	(A,41,86)	CKSRYB104K16
C 103	(A,41,94)	CCSRCH101J50
C 104	(A,44,86)	CCSRCH101J50
C 171	(A,109,93)	CKSRYB472K50
C 173	(A,103,89)	CKSRYB472K50
C 176	(B,15,140)	CKSRYB104K16
C 180	(A,105,87)	CKSRYB105K10
C 181	(A,120,86)	CEJQ2R2M50
C 182	(A,107,90)	CKSRYB105K10
C 183	(A,102,86)	CKSRYB105K10
C 185	(A,105,85)	CKSRYB105K10
C 201	(B,73,92)	CKSRYB474K10
C 204	(B,75,81)	CKSRYB104K16
C 205	(B,73,94)	CKSRYB105K10
C 206	(B,63,85)	CKSQYB225K10
C 207	(A,72,84)	CEJQ100M25
C 208	(A,76,79)	CEJQ470M16
C 209	(A,62,82)	CEJQ470M16
C 210	(A,91,97)	CKSRYB104K16

5		6		7		8	
<u>Circuit Symbol and No.</u>		<u>Part No.</u>		<u>Circuit Symbol and No.</u>		<u>Part No.</u>	
C 213	(B,86,96)	CCSRCH120J50		C 659	(A,50,43)	CEJQ101M16	
C 214	(B,82,96)	CCSRCH120J50		C 660	(B,50,33)	CKSRYB105K10	
C 215	(B,81,93)	CCSRCH120J50		C 661	(B,69,47)	CKSRYB103K50	
C 216	(B,81,90)	CCSRCH120J50		C 662	(A,49,27)	CEJQ470M6R3	A
C 217	(B,78,83)	CKSRYB104K16		C 663	(A,72,48)	CEJQ4R7M35	
C 219	(A,66,94)	CEJQ1R0M50		C 667	(B,65,64)	CKSRYB105K10	
C 220	(A,69,99)	CEJQ4R7M35		C 701	(A,118,33)	CKSRYB473K50	
C 221	(A,73,103)	CEJQ4R7M35		C 702	(A,120,33)	CKSRYB473K50	
C 222	(A,77,103)	CEJQ4R7M35		C 703	(A,117,125)	CKSYB475K16	
C 223	(A,83,103)	CEJQ4R7M35		C 705	(A,136,71)	CKSRYB105K10	
C 224	(A,90,103)	CEJQ4R7M35		C 706	(A,133,71)	CKSRYB105K10	
C 225	(A,81,79)	CEJQ4R7M35		C 708	(B,140,87)	CKSRYB103K50	
C 226	(A,88,79)	CEJQ4R7M35		C 709	(A,129,73)	CKSRYB105K10	
C 227	(A,97,78)	CEJQ4R7M35		C 710	(A,131,71)	CKSRYB105K10	
C 229	(A,64,88)	CEJQ1R0M50		C 711	(A,127,61)	CKSRYB104K16	B
C 230	(A,81,73)	CEJQ4R7M35		C 712	(A,123,67)	CEJQ330M10	
C 231	(A,89,73)	CEJQ4R7M35		C 716	(A,122,83)	CKSRYB473K50	
C 232	(B,50,84)	CKSRYB103K50		C 717	(A,136,60)	CEJQ2R2M50	
C 233	(B,55,82)	CKSRYB104K16		C 751	(A,36,54)	CEJQ100M25	
C 234	(A,56,85)	CEJQ470M16		C 752	(A,36,60)	CEJQ220M16	
C 235	(A,96,86)	CEJQ100M25		C 753	(A,61,99)	CEJQNP100M16	
C 236	(A,78,108)	CKSRYB105K10		C 755	(A,76,70)	CKSRYB474K10	
C 237	(A,76,74)	CKSRYB105K10		C 821	(B,77,17)	CKSRYB473K50	
C 240	(A,106,70)	CCSRCH470J50		C 822	(A,83,16)	CKSRYB473K50	
C 309	(A,136,107)	CEJQ330M10		C 852	(B,41,31)	CKSRYB223K50	C
C 311	(A,126,135)	CKSQYB225K10		C 854	(B,45,16)	CCSRCH331J50	
C 312	(A,126,132)	CKSQYB225K10		C 855	(B,29,20)	CKSRYB104K16	
C 313	(A,135,122)	CEJQ100M25		C 856	(B,21,33)	CKSRYB104K16	
C 314	(B,120,127)	CKSRYB474K10		C 857	(B,19,35)	CKSYB475K16	
C 315	(B,115,117)	CKSRYB474K10		C 858	(A,57,19)	CEJQ470M25	
C 316	(B,121,131)	CKSQYB474K25		C 859	(A,33,20)	CEJQ101M16	
C 317	(B,115,121)	CKSQYB474K25		C 860	(A,27,25)	CEJQ470M16	
C 318	(B,123,128)	CKSRYB474K10		C 901	(A,51,124) 3 300 µF/16 V	CCH1486	
C 319	(B,113,116)	CKSRYB474K10		C 902	(B,61,122)	CKSRYB104K16	
C 320	(B,123,132)	CKSQYB474K25		C 911	(A,25,74)	CEAT102M16	
C 321	(B,113,120)	CKSQYB474K25		C 912	(B,23,83)	CKSRYB472K50	D
C 359	(A,141,110)	CEJQ100M25		C 913	(B,33,68)	CKSRYB103K50	
C 360	(A,141,117)	CEJQ100M25		C 914	(A,35,68)	CEJQ470M16	
C 361	(A,146,117)	CEJQ100M25		C 915	(A,37,77)	CEJQ221M16	
C 362	(A,146,110)	CEJQ100M25		C 922	(B,16,117)	CKSRYB103K50	
C 363	(A,159,120)	CEJQ100M25		C 923	(A,16,96)	CEJQ101M16	
C 364	(A,152,120)	CEJQ100M25		C 924	(B,29,91)	CKSRYB103K50	
C 402	(B,159,58)	CKSRYB103K50		C 925	(A,26,84)	CEJQ221M16	
C 403	(B,157,76)	CCSRCH101J50		C 931	(B,45,106)	CKSRYB104K16	
C 405	(B,147,96)	CKSRYB103K50		C 941	(A,140,71)	CEJQ1R0M50	
C 406	(A,149,99)	CEJQ101M16		C 984	(A,140,83)	CEJQ220M16	E
C 408	(B,159,61)	CKSRYB103K50					
C 415	(A,155,57)	CEJQ470M6R3					
C 420	(A,151,41)	CEJQ470M6R3					
C 422	(A,141,36)	CEJQ1R0M50					
C 430	(B,111,54)	CCSRCH470J50					
C 601	(B,85,52)	CKSRYB105K10					
C 602	(A,88,53)	CEJQ4R7M35					
C 603	(B,101,57)	CCSRCH101J50					
C 604	(A,83,55)	CEJQ2R2M50					
C 605	(B,91,57)	CCSRCH100D50					
C 606	(B,96,54)	CCSRCH100D50					
C 608	(A,109,72)	CKSRYB102K50					
C 650	(B,14,73)	CKSRYB473K50					
C 651	(B,55,43)	CKSRYB104K16					

B
Unit Number :
Unit Name : Keyboard Unit

MISCELLANEOUS

IC 1811	(A,5,59) IC	GP1UX31RK
IC 1831	(B,13,50) IC	S-1200B33-M5
IC 1841	(B,21,71) IC	PEG272A
IC 1871	(B,20,104) IC	PD8168A
Q 1811	(B,38,34) Transistor	RT1N237M
Q 1812	(B,34,110) Transistor	RT1N237M
Q 1881	(A,22,138) Transistor	2SC4617

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

Q 1882	(A,19,137) Transistor	2SC2411K
D 1811	(A,8,10) LED	SML412BC5T(NP)
D 1812	(A,34,10) LED	SML412BC5T(NP)
D 1813	(A,22,22) LED	SML412BC5T(NP)
D 1814	(A,4,40) LED	SML412BC5T(NP)
D 1815	(A,22,57) LED	SML412BC5T(NP)
D 1816	(A,38,40) LED	SML412BC5T(NP)
D 1817	(A,40,103) LED	SML412BC5T(NP)

R 1843	(B,21,90)	RAB4C101J
R 1844	(B,16,88)	RAB4C101J
R 1845	(B,12,88)	RAB4C101J
R 1846	(B,9,88)	RS1/16S101J
R 1847	(B,10,83)	RS1/16S101J
R 1848	(A,26,104)	RS1/16S101J
R 1849	(B,8,83)	RS1/16S101J
R 1850	(B,10,109)	RS1/16S101J
R 1851	(B,8,65)	RS1/16S473J
R 1852	(B,4,68)	RS1/16S473J

D 1818	(A,40,82) LED	SML412BC5T(NP)
D 1819	(A,40,131) LED	SML412BC5T(NP)
D 1820	(A,40,117) LED	SML412BC5T(NP)
D 1821	(A,6,158) LED	SML412BC5T(NP)
D 1822	(A,40,144) LED	SML412BC5T(NP)

R 1853	(B,8,68)	RAB4C473J
R 1855	(A,29,69)	RS1/16S101J
R 1856	(A,26,69)	RS1/16S101J
R 1857	(B,18,58)	RS1/16S101J
R 1858	(B,19,55)	RS1/16S473J

D 1831	(B,26,50) Diode	1SS355
L 1831	(A,29,62) Inductor	CTF1617
L 1881	(A,23,130) Inductor	CTF1617
L 1882	(A,28,115) Inductor	CTF1617
TH1881	(A,26,138) Thermistor	CCX1037

R 1859	(B,26,55)	RS1/16S154J
R 1860	(B,35,52)	RS1/16S104J
R 1863	(B,7,132)	RS1/16S103J
R 1881	(A,20,134)	RS1/16S183J
R 1882	(A,24,138)	RS1/16S563J

X 1841	(B,22,55) Ceramic Resonator 16.000 MHz	CSS1616
S 1803	(A,5,9) Push Switch	CSG1155
S 1804	(A,39,107) Push Switch	CSG1155
S 1805	(A,39,148) Push Switch	CSG1155
S 1806	(A,39,78) Push Switch	CSG1155

R 1883	(A,25,142)	RS1/16S333J
R 1884	(A,23,142)	RS1/16S392J
R 1885	(A,26,110)	RAB4C102J
R 1887	(B,17,117)	RS1/16S0R0J
R 1889	(B,18,117)	RS1/16S5101D

S 1807	(A,39,120) Push Switch	CSG1155
S 1808	(A,39,134) Push Switch	CSG1155
S 1809	(A,37,9) Push Switch	CSG1155
S 1810	(A,21,39) Switch(MULTI-CONTROL)	CSX1120

CAPACITORS

C 1805	(B,8,53)	CKSYF106Z10
C 1806	(B,31,130)	CKSRYB104K16
C 1811	(A,13,11)	CKSRYF104Z50
C 1812	(A,31,9)	CKSRYF104Z50
C 1813	(A,22,20)	CKSRYF104Z50

C 1814	(A,4,44)	CKSRYF104Z50
C 1815	(A,22,58)	CKSRYF104Z50
C 1816	(A,39,44)	CKSRYF104Z50
C 1817	(A,40,97)	CKSRYF104Z50
C 1818	(A,40,84)	CKSRYF104Z50

C 1819	(A,40,126)	CKSRYF104Z50
C 1820	(A,40,112)	CKSRYF104Z50
C 1821	(A,13,152)	CKSRYF104Z50
C 1822	(A,40,139)	CKSRYF104Z50
C 1831	(B,13,53)	CKSRYB224K10

C 1832	(B,11,46)	CKSRYB224K10
C 1833	(A,36,60)	CKSRYB103K50
C 1837	(B,30,48)	CKSRYB104K16
C 1871	(B,10,105)	CKSRYB103K50
C 1882	(A,27,134)	CKSRYB104K25

C 1883	(A,24,134)	CKSRYB104K25
C 1884	(A,23,104)	CKSRYB104K25
C 1885	(A,27,119)	CKSRYB104K25
C 1886	(A,24,119)	CKSRYB104K25
C 1887	(A,22,134)	CKSRYB104K25

**Unit Number : CWX3514****Unit Name : CD Core****Unit(S10.5COMP2)****MISCELLANEOUS****RESISTORS**

R 1801	(B,8,138)	RS1/16S222J
R 1802	(B,12,150)	RS1/16S222J
R 1803	(B,31,132)	RS1/16S473J
R 1808	(B,27,22)	RS1/16S332J
R 1809	(B,29,22)	RS1/16S103J

R 1810	(B,31,22)	RS1/16S333J
R 1811	(B,8,42)	RS1/16S103J
R 1812	(B,24,22)	RS1/16S222J
R 1813	(B,21,22)	RS1/16S103J
R 1814	(B,10,50)	RS1/16S101J

R 1815	(B,8,50)	RS1/16S103J
R 1816	(B,6,50)	RS1/16S2R2J
R 1817	(B,35,33)	RS1/16S271J
R 1818	(B,32,37)	RS1/16S271J
R 1819	(B,34,37)	RS1/16S271J

R 1820	(B,35,119)	RS1/16S271J
R 1821	(B,35,121)	RS1/16S271J
R 1822	(B,35,118)	RS1/16S271J
R 1823	(B,33,34)	RS1/16S121J
R 1825	(B,35,116)	RS1/16S121J

R 1833	(A,31,56)	RS1/16S222J
R 1834	(B,36,65)	RS1/16S101J
R 1835	(A,28,69)	RS1/16S101J
R 1836	(B,34,65)	RS1/16S101J
R 1837	(B,38,65)	RS1/16S101J

R 1838	(A,27,94)	RAB4C101J
R 1839	(A,11,84)	RAB4C101J
R 1840	(B,29,85)	RAB4C101J
R 1841	(A,23,94)	RAB4C101J
R 1842	(B,25,90)	RAB4C101J

<u>Circuit Symbol and No.</u>		<u>Part No.</u>
IC 201	(A,34,46) IC	PE5547A
IC 301	(A,27,14) IC	BA5839FP
Q 101	(B,56,72) Transistor	2SA1577
Q 102	(B,47,57) Transistor	2SB1689
X 201	(A,23,35) Ceramic Resonator 16.934 MHz	CSS1603
S 901	(A,53,37) Switch(HOME)	CSN1067
S 903	(B,19,58) Switch(DSCSNS)	CSN1067
S 904	(B,38,67) Switch(12EJ)	CSN1068
S 905	(B,24,68) Switch(8EJ)	CSN1068

RESISTORS

R 101	(B,60,73)	RS1/10SR2R4J
R 102	(B,59,71)	RS1/10SR2R4J
R 103	(B,60,71)	RS1/10SR2R7J
R 104	(B,52,69)	RS1/16SS222J
R 105	(B,41,57)	RS1/16SS102J
R 107	(B,41,59)	RS1/16SS105J
R 202	(B,32,62)	RS1/16SS473J
R 203	(B,42,45)	RS1/16S473J
R 204	(A,25,61)	RS1/16SS221J
R 206	(B,26,53)	RS1/16SS104J
R 210	(B,13,32)	RS1/16SS102J
R 214	(B,36,34)	RS1/16SS472J
R 216	(B,47,49)	RS1/16SS472J
R 221	(B,36,32)	RS1/16SS103J
R 222	(B,35,32)	RS1/16SS103J
R 225	(A,49,49)	RS1/16SS103J
R 226	(A,49,50)	RS1/16SS393J
R 227	(B,45,51)	RS1/16SS562J
R 228	(B,42,53)	RS1/16SS122J
R 229	(B,44,53)	RS1/16SS472J
R 230	(B,21,28)	RS1/16SS0R0J
R 232	(B,43,51)	RS1/16SS122J
R 233	(B,29,52)	RS1/16SS103J
R 234	(B,30,61)	RS1/16SS473J
R 235	(A,25,63)	RS1/16SS473J
R 239	(B,26,48)	RS1/16SS473J
R 240	(B,10,31)	RS1/16SS473J
R 241	(B,9,32)	RS1/16SS103J
R 244	(A,20,52)	RS1/16SS473J
R 255	(A,27,63)	RAB4CQ104J
R 307	(A,34,19)	RS1/16SS183J
R 308	(A,38,20)	RS1/16SS183J
R 309	(A,35,21)	RS1/16SS183J
R 310	(A,38,21)	RS1/16SS183J
R 601	(B,28,38)	RS1/16SS0R0J
R 602	(B,27,41)	RS1/16SS0R0J
R 606	(B,23,41)	RS1/16SS0R0J
R 701	(B,16,35)	RS1/16SS221J
R 702	(A,23,55)	RS1/16SS221J

CAPACITORS

C 106	(B,56,69)	CKSQYB475K6R3
C 202	(A,27,57)	CKSSYB104K10
C 204	(A,24,63)	CKSSYB103K16
C 205	(B,23,43)	CKSQYB475K6R3
C 206	(A,22,39)	CKSSYB104K10
C 207	(A,24,37)	CKSRYB104K16
C 209	(B,33,40)	CEVW220M6R3

Circuit Symbol and No.**Part No.**

C 210	(B,29,42)	CKSSYB104K10
C 211	(A,27,34)	CKSSYB104K10
C 212	(B,29,32)	CKSRYB104K16
C 213	(A,44,37)	CKSSYB104K10
C 214	(A,28,33)	CKSSYB104K10
C 216	(A,50,51)	CKSSYB332K50
C 217	(A,46,51)	CKSSYB104K10
C 218	(A,49,51)	CKSSYB473K10
C 219	(A,45,53)	CKSSYB104K10
C 220	(A,46,53)	CKSSYB182K50
C 221	(A,44,53)	CKSSYB104K10
C 222	(B,43,53)	CCSSCH560J50
C 223	(B,45,53)	CCSSCH4R0C50
C 224	(A,43,55)	CKSSYB104K10
C 226	(A,40,58)	CCSSCH680J50
C 227	(A,40,60)	CCSSCH470J50
C 228	(A,39,62)	CKSSYB103K16
C 229	(B,49,59)	CKSSYB104K10
C 236	(A,42,61)	CKSSYB104K10
C 239	(B,44,51)	CCSSCH220J50
C 240	(A,35,61)	CKSSYB104K10
C 250	(B,36,30)	CKSSYB102K50
C 251	(B,33,29)	CKSSYB102K50
C 303	(A,35,19)	CKSSYB472K25
C 304	(A,34,21)	CKSSYB223K16
C 307	(B,25,9)	CKSRYB104K16
C 308	(B,10,27)	CKSRYB105K10
C 703	(B,11,37)	CCSSCH101J50
C 704	(B,8,36)	CKSSYB102K50
C 711	(A,25,26)	CKSSYB104K10

D

Unit Number : CWM8758

Unit Name : Panel Unit

MISCELLANEOUS

D 1970	LED	CL220PGC
S 1970	Push Switch(EJECT)	CSG1112

RESISTORS

R 1970	RS1/16S101J
R 1971	RS1/16S101J
R 1972	RS1/16S0R0J

CAPACITORS

C 1970	CKSRYB104K16
--------	--------------

Miscellaneous Parts List

M 1	Pickup Unit(P10.5)(Service)	CXX1942
M 1	Motor Unit(SPINDELE)	CXC7134
M 2	Motor Unit(LOADING/CARRIAGE)	CXC4026

1

2

3

4

6. ADJUSTMENT

6.1 CD ADJUSTMENT

A

1) Cautions on adjustments

- In this product the single voltage (3.3 V) is used for the regulator. The reference voltage is the REFO1 (1.65 V) instead of the GND.

If you should mistakenly short the REFO1 with the GND during adjustment, accurate voltage will not be obtained, and the servo's misoperation will apply excessive shock to the pickup. To avoid such problems:

a. Do not mix up the REFO1 with the GND when connecting the (-) probe of measuring instruments.

Especially on an oscilloscope, avoid connecting the (-) probe for CH1 to the GND.

b. In many cases, measuring instruments have the same potential as that for the (-) probe. Be sure to set the measuring instruments to the floating state.

c. If you have mistakenly connected the REFO1 to the GND, turn off the regulator or the power immediately.

- Before mounting and removing filters or leads for adjustment, be sure to turn off the regulator.

- For stable circuit operation, keep the mechanism operating for about one minute or more after the regulator is turned on.

- In the test mode, any software protections will not work. Avoid applying any mechanical or electrical shock to the mechanism during adjustment.

- The RFI and RFO signals with a wide frequency range are easy to oscillate. When observing the signals, insert a resistor of 1 k ohms in series.

- The load and eject operation is not guaranteed with the mechanism upside down. If the mechanism is blocked due to mistaken eject operation, reset the product or turn off and on the ACC to restore it.

2) Test mode

This mode is used to adjust the CD mechanism module.

- To enter the test mode.

While pressing the LIST and TA/NEWS keys at the same time, reset.

- To exit from the test mode.

Turn off the ACC or back up.

Notes:

a. During ejection, do not press any other keys than the EJECT key until the loaded disc is ejected.

b. If you have pressed the (→) key or (←) key during focus search, turn off the power immediately to protect the actuator from damage caused by the lens stuck.

c. For the TR jump modes except 100TR, the track jump operation will continue even if the key is released.

d. For the CRG move and 100TR jump modes, the tracking loop will be closed at the same time when the key is released.

e. When the power is turned off and on, the jump mode is reset to the single TR (91), the RF amp gain is set to 0 dB, and the auto-adjustment values are reset to the default settings.

B

C

D

E

F

46

1

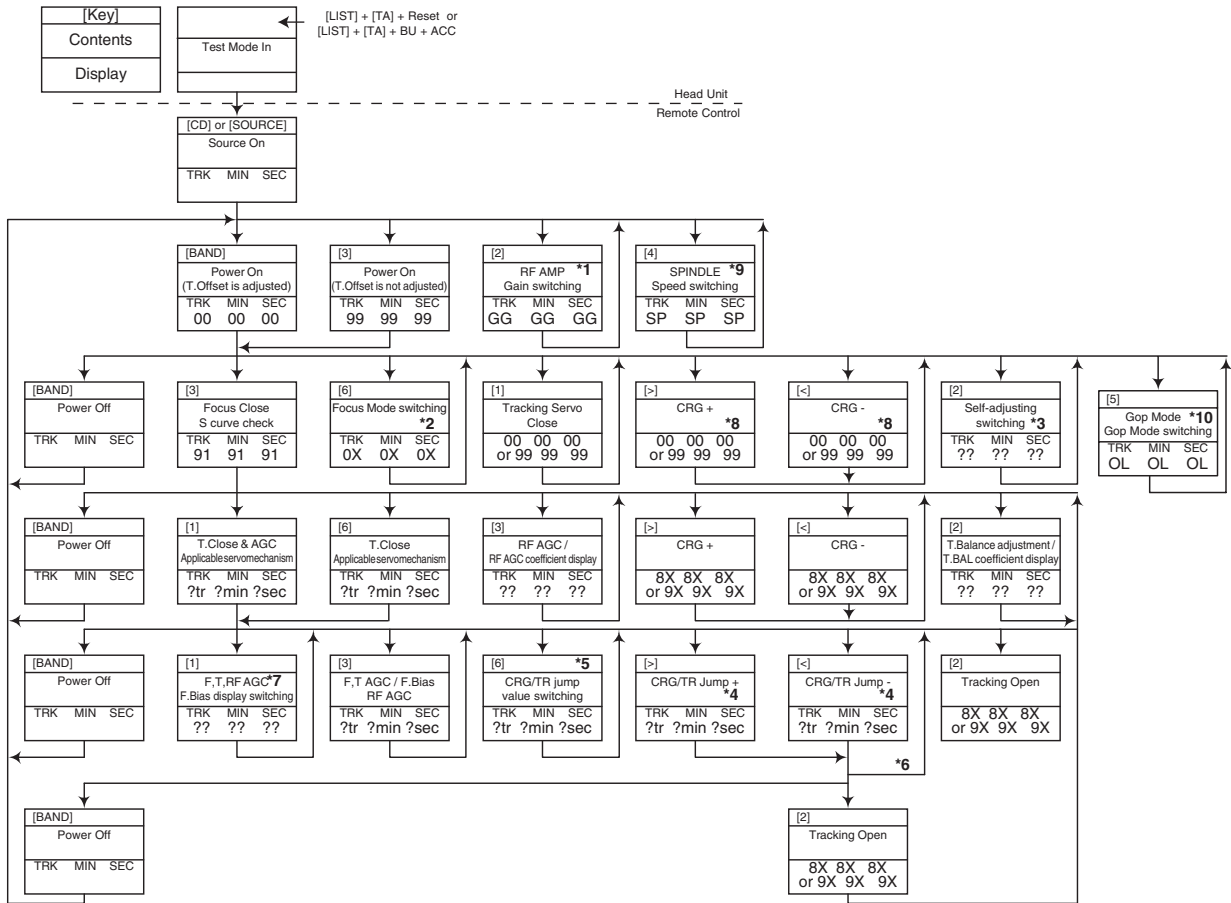
2

3

4

DEH-P6900IB/XN/EW5

Flow Chart



- *1)

TYP	→	+ 6 dB	→	+ 12 dB
TRK MIN SEC		TRK ₀₆ MIN ₀₆ SEC ₀₆		TRK ₁₂ MIN ₁₂ SEC ₁₂
- *2) Focus Close → S Curve check setting → F EQ measurement setting

TRK ₀₀ MIN ₀₀ SEC ₀₀	→	TRK ₀₁ MIN ₀₁ SEC ₀₁	→	TRK ₀₂ MIN ₀₂ SEC ₀₂
(TRK ₉₉ MIN ₉₉ SEC ₉₉)				
- *3) F.Offset Display → RF.Offset → T.Offset Display → Switch to the order of the original display
- *4) 1TR/4TR/10TR/32TR/100TR
- *5) Single → 4TR → 10TR → 32TR → 100TR → CRG Move

9x(8x):91(81)	92(82)	93(83)	94(84)	95(85)	96(86)
---------------	--------	--------	--------	--------	--------
- *6) Only at the time of CRG move, 100TR jump
- *7) TRK/MIN/SEC → F.AGC → T.AGC Gain → F.Bias → RF AGC
- *8) CRG motor voltage = 2 [V]
- *9)

TYP (1X)	→	2X	→	1X
TRK MIN SEC		TRK ₂₂ MIN ₂₂ SEC ₂₂		TRK ₁₁ MIN ₁₁ SEC ₁₁
- *10)

OFF(TYP)	→	FORCUS	→	TRACKING
TRK MIN SEC		TRK ₇₀ MIN ₇₀ SEC ₇₀		TRK ₇₁ MIN ₇₁ SEC ₇₁

• As for the double speed (2x), audio output cannot be supported

- *1) • After the [Eject] key is pressed keys other than the [Eject] key should not be pressed, until disc ejection is complete.
- When the key [2] or [3] is pressed during the Focus Search, the power supply should be immediately turned off (otherwise the lens sticks to Wall, causing the actuator to be damaged).
- In the case of TR jump other than to 100TR, the function shall continue to be processed even if the TR jump key is released. As for the CRG Move and 100TR Jump, the mechanism shall be set to the Tracking Close mode when the key is released.
- When the power is turned on/off the jump mode is reset to the Single TR (91) while the gain of the RFAMP is reset to 0 dB. At the same time all the self-adjusting values shall return to the default setting.

[Key]	Operation Test Mode
[BAND]	Power On/Off
[>]	CRG + / TR Jump + (Direction of the external surface)
[<]	CRG - / TR Jump - (Direction of the internal surface)
[1]	T. CLS & AGC & Applicable servomechanism / AGC,AGC display setting
[2]	RF Gain switching / Offset adjustment display / T.Balance adjustment / T. Open
[3]	F. Close,S Curve / Rough Servo and RF AGC / F,T,RF AGC
[4]	SPDL 1X/2X switching As for the double speed(2x), audio output <u>cannot</u> be supported.
[5]	Error Rate measurement ON : ERR 30Counts Start BER display data[%]
[6]	F. Mode switching / Tracking Close / CRG*TR Jump Switching

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 :

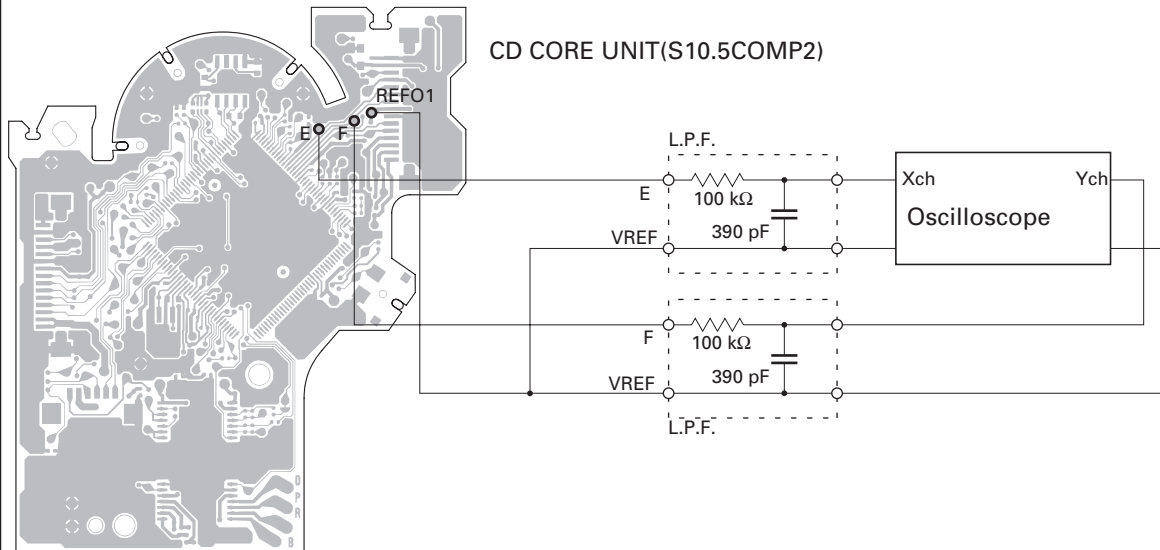
To check that the grating is within an acceptable range when the PU unit is changed.

• 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, REFO1 |
| • Disc | • TCD-782 |
| • Mode | • TEST MODE |



• Checking Procedure

1. In test mode, load the disc and switch the 3 V 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. 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

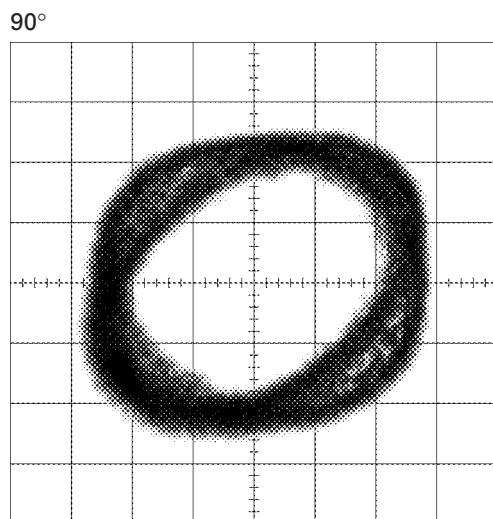
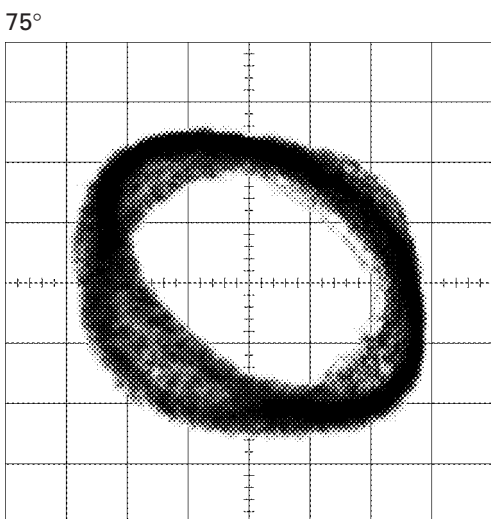
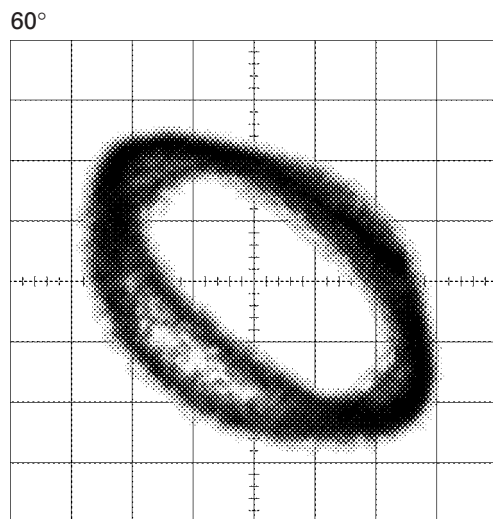
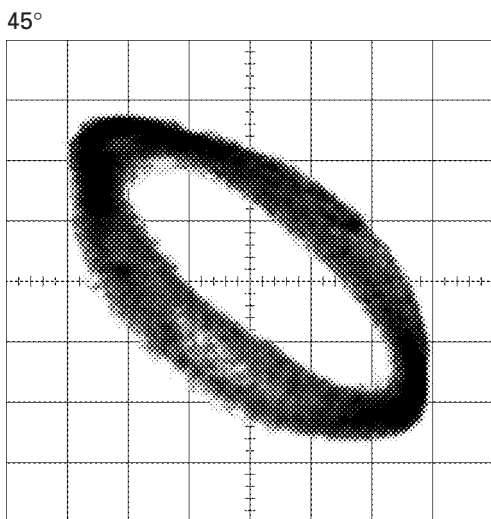
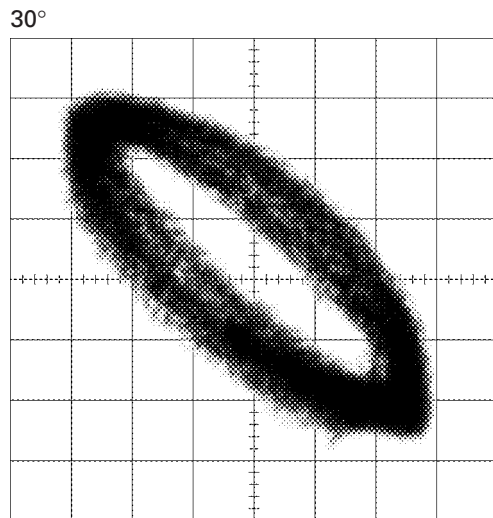
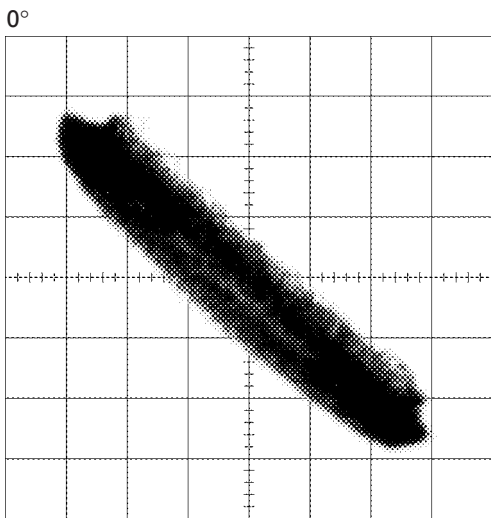
Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

• Hint

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

Grating waveform

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



A
B
C
D
E
F

6.3 ERROR 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.

8-digit display	6-digit display	4-digit display
ERROR-xx	ERR-xx	E-xx

(2) Error Code List

Code	Class	Displayed error code	Description of the code and potential cause(s)
10	Electricity	Carriage Home NG SERVO LSI Com- munication Error	CRG can't be moved to inner diameter. CRG can't be moved from inner diameter. → Failure on home switch or CRG move mechanism. Communication error between microcomputer and SERVO LSI.
11	Electricity	Focus Servo NG	Focusing not available. → Stains on rear side of disc or excessive vibrations on REWRITABLE.
12	Electricity	Spindle Lock NG Subcode NG	Spindle not locked. Sub-code is strange (not readable). → Failure on spindle, stains or damages on disc, or excessive vibrations. A disc not containing CD-R data is found. Turned over disc are found, though rarely. CD signal error.
17	Electricity	Setup NG	AGC protection doesn't work. Focus can be easily lost. → Damages or stains on disc, or excessive vibrations on REWRITABLE.
30	Electricity	Search Time Out	Failed to reach target address. → CRG tracking error or damages on disc.
44	Electricity	ALL Skip	Skip setting for all track. (CD-R/RW)
50	Mechanism	CD On Mech Error	Mechanical error during CD ON. → Defective loading motor, mechanical lock and mechanical sensor.
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.

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

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

6.4 IPOD TEST MODE

[Built-in iPod Test Mode Specification (Test mode for service representatives)]

[Purpose of this test mode]

This is a specialized mode that aims to check malfunction condition of H/U and measure the product performance.

[Features of this test mode]

Enables switching at any time to the iPod source
Disables communication with iPod
Disables indication of logos (Pioneer) on iPod
Functions regardless of connection of the iPod body to H/U

[How to shift to test mode]

The following describes how to enter and display the test mode.

- ① Disconnect the iPod body from H/U.
↓ [Background]
↓ If you try to start the test mode without disconnecting iPod, initial communication will start between iPod and H/U before you can enter the test mode. This will disable the iPod operation from the iPod body.
↓ To enable the iPod operation during the test mode from the iPod body, make sure to disconnect the iPod body from H/U.
↓
- ② Press [LIST] and [TA] together to reset and start the test mode.
↓
- ③ Press such as the [SOURCE] key to switch to the iPod source.
↓
- ④ Connect the iPod body to H/U as need.

[Cancellation of test mode]

The test mode is cancelled by executing any of the following.

ACC_OFF *This applies to the case that the test mode is set to be cancelled with ACC_OFF.

B. Up_OFF

Pressing the H/U reset button

[Operational specifications for test mode]

The following specifies the key allocation and the actions.

Key	Action	Default	Remarks
→	Switches ON/OFF the charging circuit to iPod.	OFF	

[On-screen image]

The following are the on-screen display images.

The following are displayed as title information.

i P o d - - - 9

ON/OFF state of charging circuit (1: ON, 0: OFF)

6.5 SYSTEM MICROCOMPUTER TEST PROGRAM



A

● PCL Output

In the normal operation mode (with the detachable panel installed, the ACC switched ON, the standby mode cancelled), shift the TESTIN IC601(Pin 86) terminal to H.

The clock signal is output from the PCL terminal IC601(Pin 41).

The frequency of the clock signal is 625 kHz that is one 32th of the fundamental frequency.

The clock signal should be 625 kHz(±25 Hz).

If the clock signal is out of the range, the X'tal (X601) should be replaced with new one.

B

C

D

E

F

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

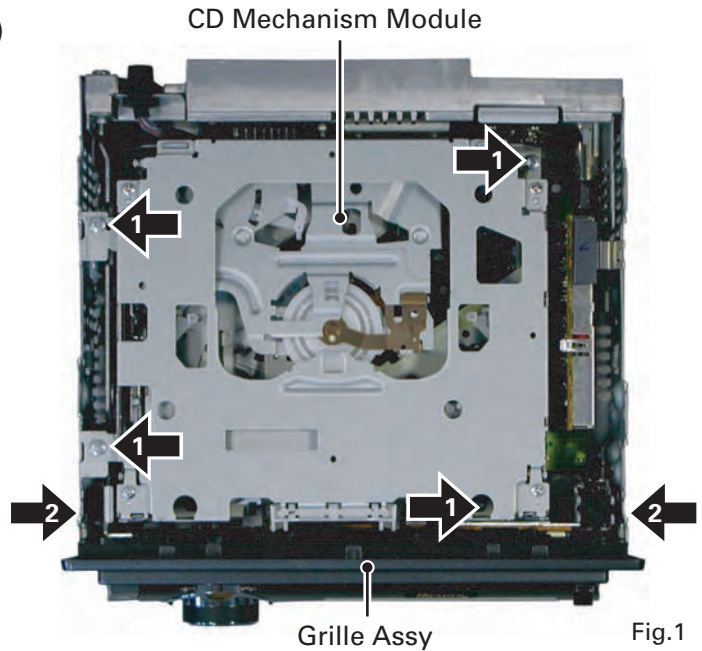
● Removing the Case (not shown)

1. Remove the Case.

● Removing the CD Mechanism Module (Fig.1)

- 1 Remove the four screws.

Disconnect the connector and then remove the CD Mechanism Module.

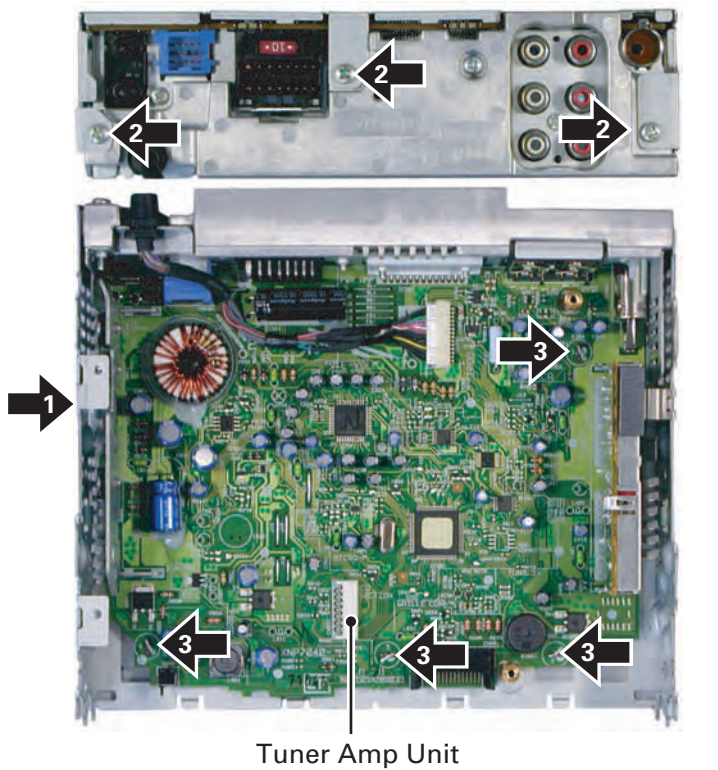


● Removing the Grille Assy (Fig.1)

- 2 Remove the two screws and then remove the Grille Assy.

● Removing the Tuner Amp Unit (Fig.2)

- 1 Remove the screw.
- 2 Remove the three screws.
- 3 Straighten the tabs at four locations indicated and then remove the Tuner Amp Unit.

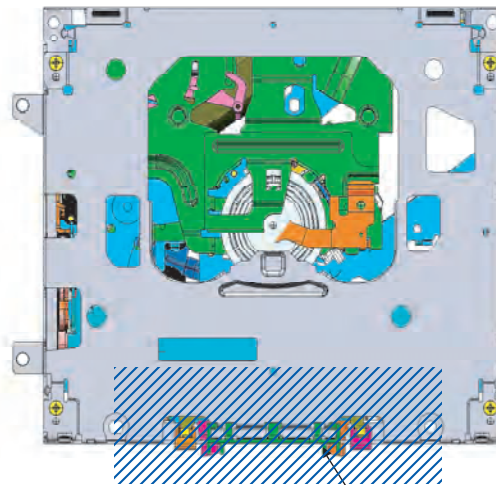


● **How to hold the Mechanism Unit**

- 1. Hold the Upper and Lower Frames.
- 2. Do not hold the front portion of the Upper Frame, because it is not very solid.

A

B



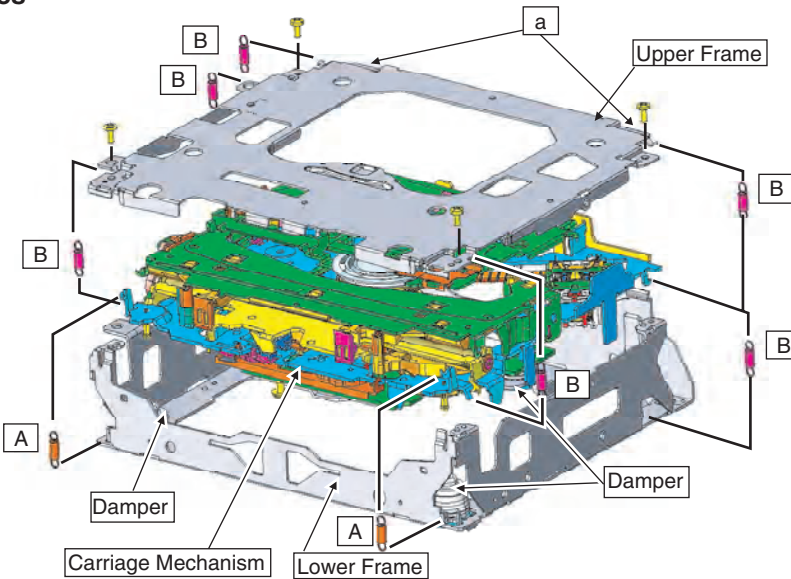
Do not squeeze this area.

● **Removing the Upper and Lower Frames**

- 1. With a disc inserted and clamped in the mechanism, remove the two Springs (A), the six Springs (B), and the four Screws.
 - 2. Turn the Upper Frame using the part "a" as a pivot, and remove the Upper Frame.
 - 3. While lifting the Carriage Mechanism, remove it from the three Dampers.
- Caution: When assembling, be sure to apply some alcohol to the Dampers and assemble the mechanism in a clamped state.

C

D



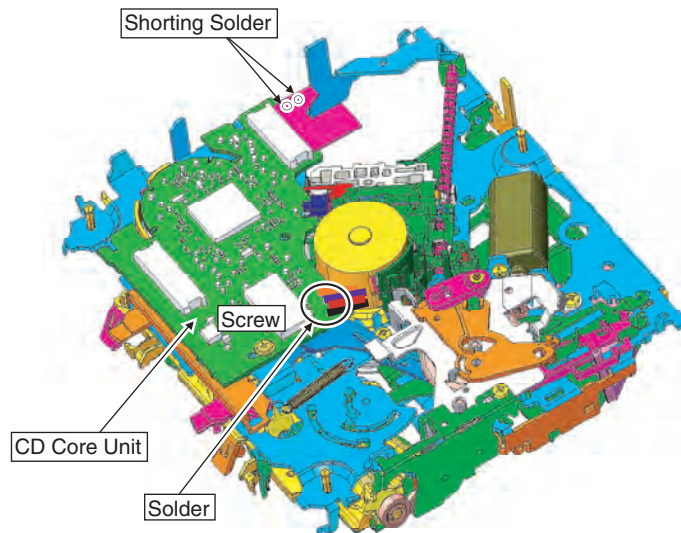
E

F

● How to remove the CD Core Unit

1. Apply Shorting Solder to the flexible cable of the Pickup, and disconnect it from the connector.
2. Unsolder the four leads, and loosen the Screw.
3. Remove the CD Core Unit.

Caution: When assembling the CD Core Unit, assemble it with the SW in a clamped state so as not to damage it.

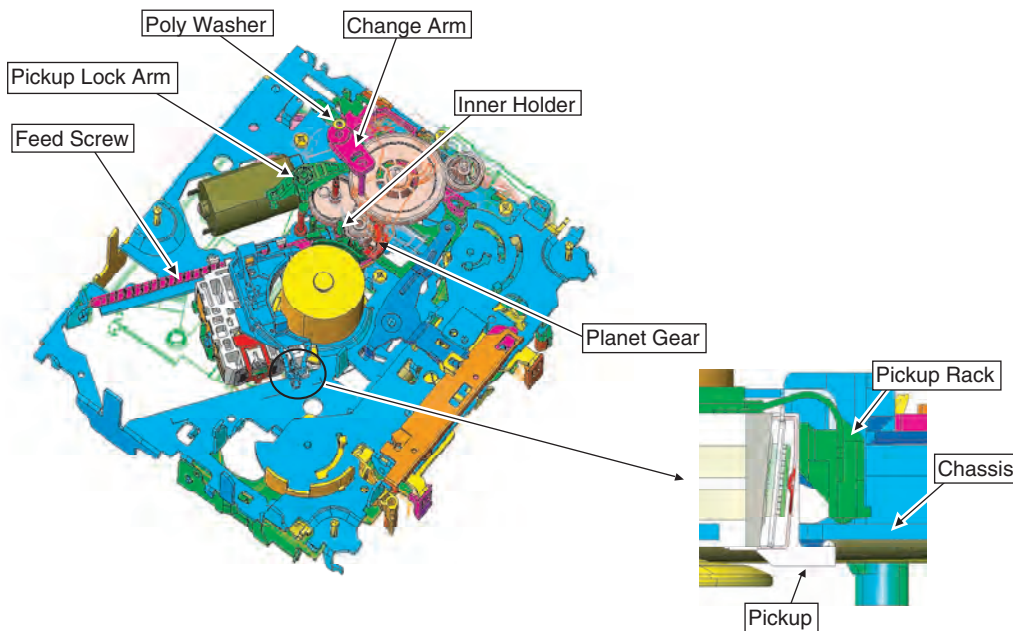


● How to remove the Pickup Unit

1. Make the system in the carriage mechanism mode, and have it clamped.
2. Remove the CD Core Unit and remove the leads from the Inner Holder.
3. Remove the Poly Washer, Change Arm, and Pickup Lock Arm.
4. While releasing from the hook of the Inner Holder, lift the end of the Feed Screw.

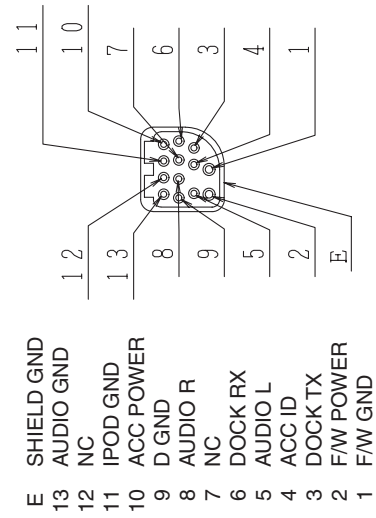
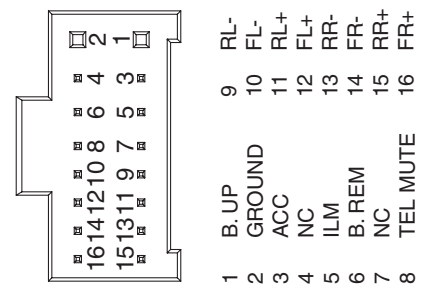
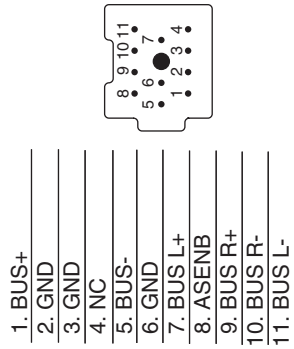
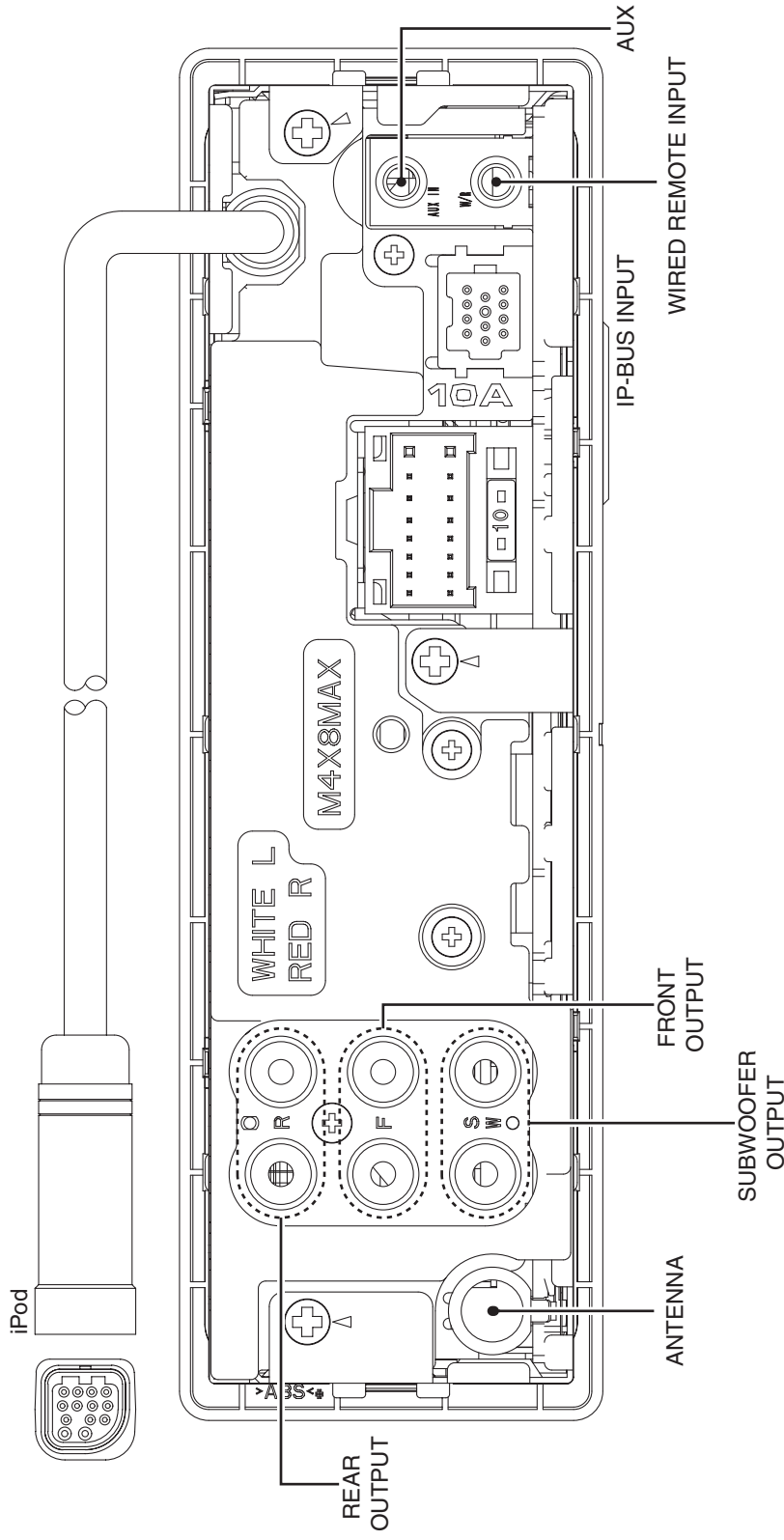
Caution: When assembling, move the Planet Gear to the load/eject position before setting the Feed Screw in the Inner Holder.

Assemble the sub unit side of the Pickup, taking the plate (Chassis) in-between. When treating the leads of the Load Carriage Motor Assy, do not make them loose over the Feed Screw.



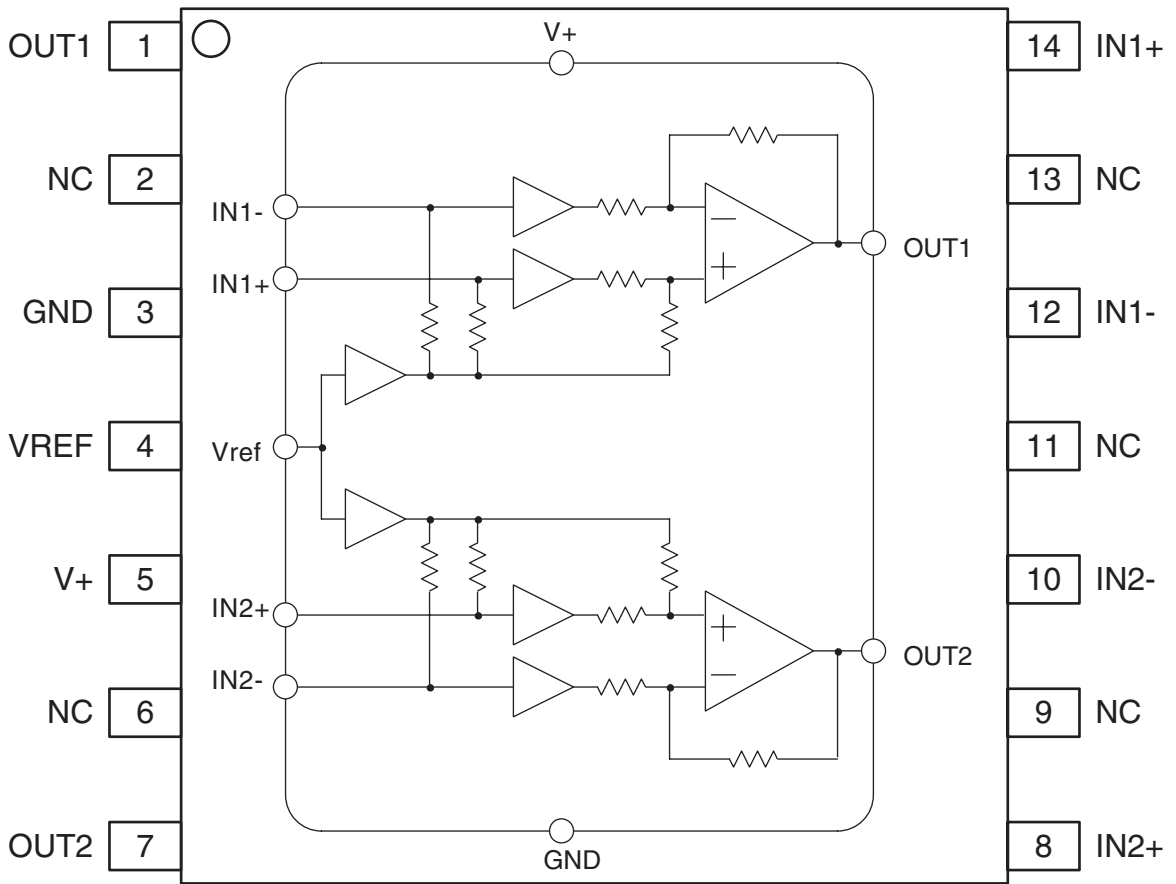
7.1.2 CONNECTOR FUNCTION DESCRIPTION

A
B
C
D
E
F



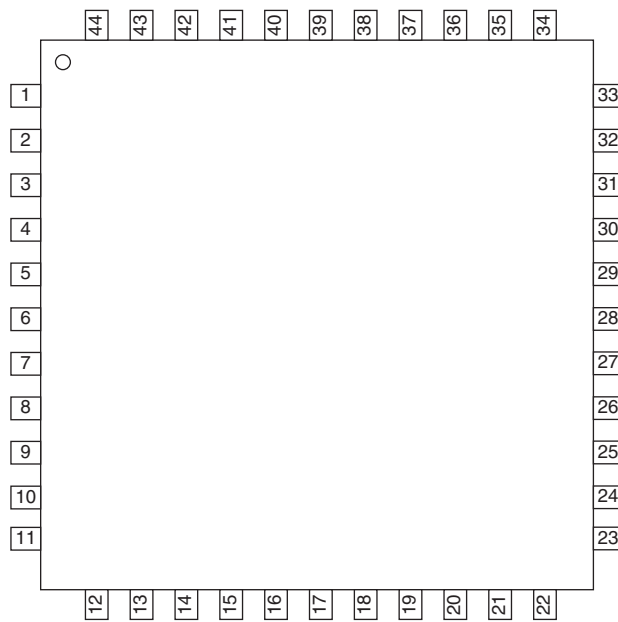
7.2 IC

NJM2794V

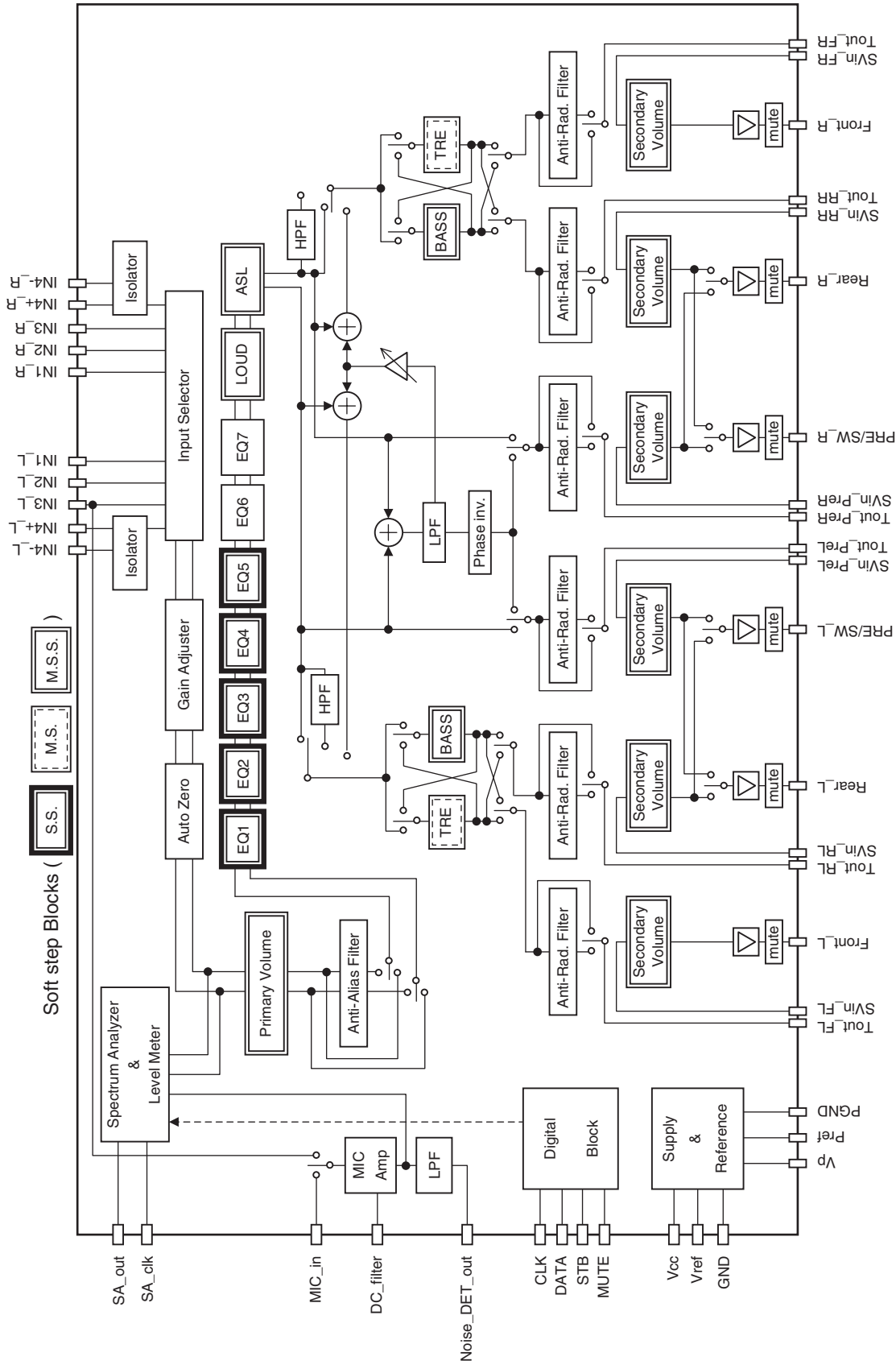


PML016B

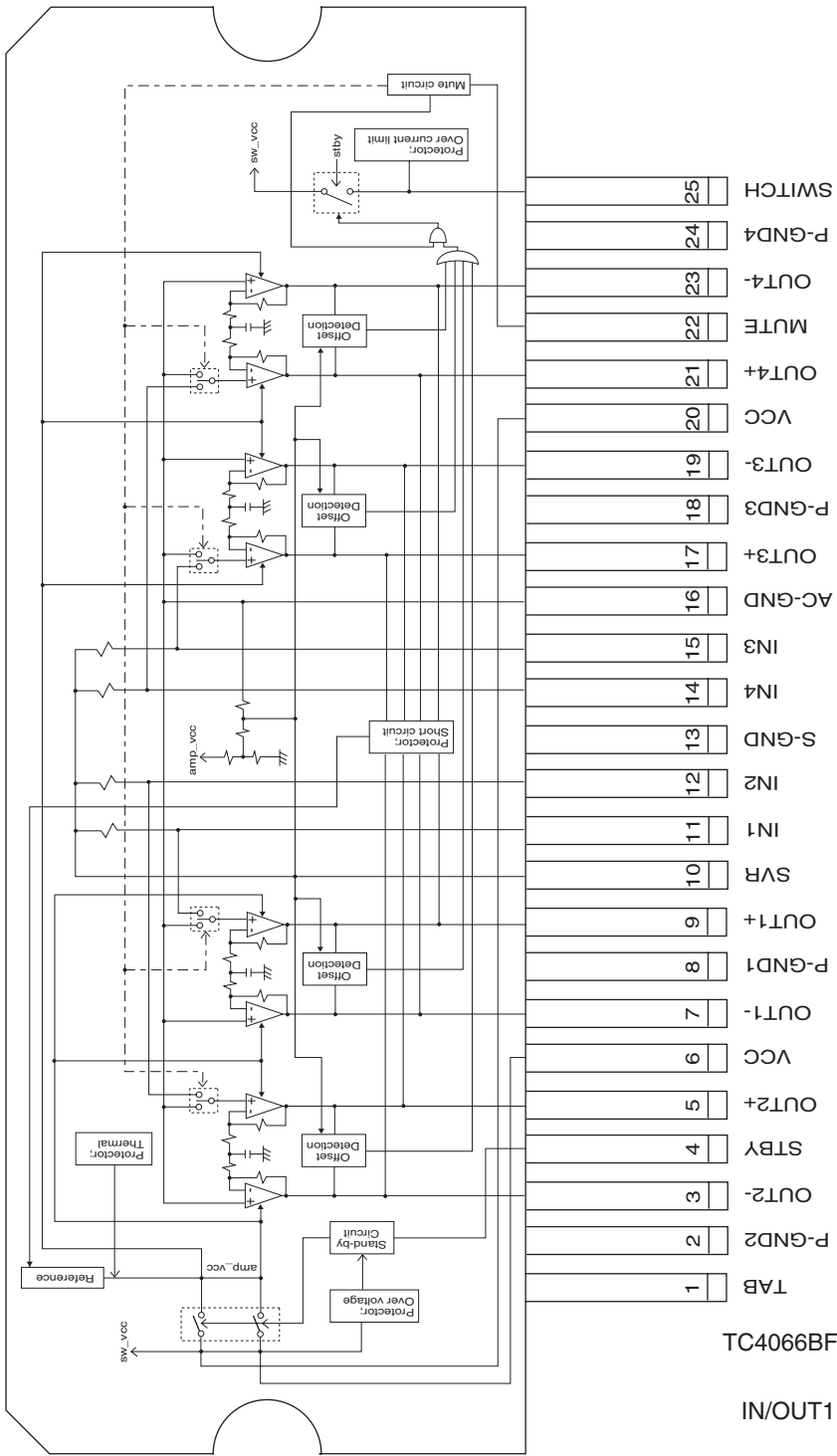
● Pin Layout



Block Diagram

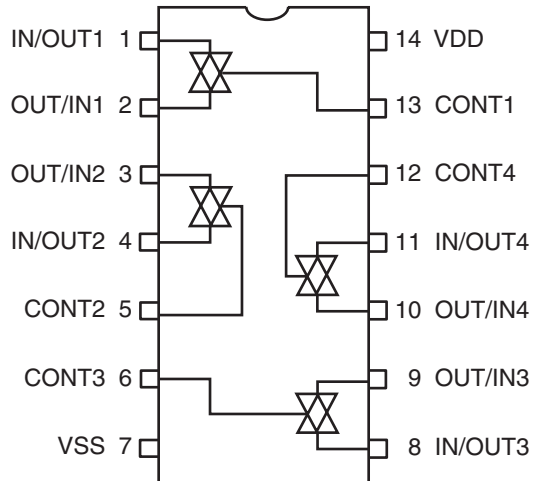


A
B
C
D
E
F



SWITCH	25
P-GND4	24
OUT4-	23
MUTE	22
OUT4+	21
VCC	20
OUT3-	19
P-GND3	18
OUT3+	17
AC-GND	16
IN3	15
IN4	14
S-GND	13
IN2	12
IN1	11
SVR	10
OUT1+	9
P-GND1	8
OUT1-	7
VCC	6
OUT2+	5
STBY	4
OUT2-	3
P-GND2	2
TAB	1

TC4066BFT

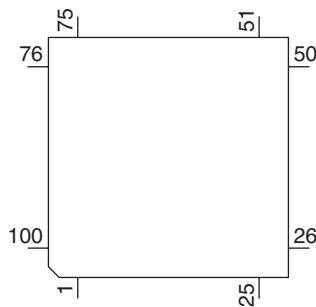


● Pin Functions (PEG273A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	SYSPW	O	C	System power control output
2	KEYD	I		Wired remote control key input
3	NC			Not used
4	CDRST(RST2)	O	C	CD mechanism reset output
5	NC			Not used
6	BYTE	I		External data bus width change input
7	CNVSS	I		Processor mode change input
8	TELIN	I	C	TEL mute input
9	NC			Not used
10	RESET	I		Reset input
11	XOUT	O		Main clock output
12	VSS	I		GND
13	XIN	I		Main clock input
14	VCC1	I		Power supply input
15	NMI	I		NMI input
16	RCK	I		RDS : CLK input
17	LDET	I		RDS : PLL lock detection input
18	VDCONT	O	C	CD mechanism power supply output
19	NC			Not used
20	OELPW	O	C	OEL power supply control
21	NC			Not used
22	BRXEN	I/O	C	P-BUS : Reception enable input/output
23	BRST	O	C	P-BUS : Reset output
24	PEE	O	C	BEEP sound output
25	NC			Not used
26	BRSQ	I		P-BUS : Service request input
27	RX			IPBUS : Input
28	TX		N	IPBUS : Output
29	DPDT		C	OEL display microcomputer communication data output
30	KYDT			OEL display microcomputer communication data input
31,32	NC			Not used
33	TXPOD		C	iPod data output
34	RXPOD			iPod data input
35,36	ROT1,0	I		Rotary encoder pulse input 1,0
37	ILMPW	O	C	Illumination power output
38	SWVDD	O	C	Display microcomputer chip enable output
39	DSENS	I		Detach sense input
40	FLPILM	O	C	Flap illumination output
41	PCL	O	C	Output for clock adjustment
42	EJTIN	I		Eject key input
43	TUNPDI	I		TUNER : Data input(PLL)
44	TUNPDO	O		TUNER : Data output(PLL)
45	TUNPCK	O	C	TUNER : Clock output(PLL)
46	RDS57K	I		RDS : 57 kHz pulse count input
47	RDSLK	I		RDS : Lock signal input
48	RDT	I		RDS : Data input
49,50	NC			Not used
51	AUXON	O	C	EVOL : Source select SW(AUX)
52	IPODON	O	C	EVOL : Source select SW(iPod)
53-56	NC			Not used
57	EMUTE	O	C	EVOL : Mute
58	SACLK	O	C	Level indicator clock output
59	NC			Not used
60	VCC2	I		Power supply input
61	NC			Not used

Pin No.	Pin Name	I/O	Format	Function and Operation
62	VSS	I		GND
63	PID	O	C	Communication mode(UART) notification output
64	PSENSG	I		Connection sense input
65	PPOWER	O	C	Power supply control output
66	PSENS	I		Connection sense input
67	DALMON	O	C	For consumption current reduction output
68	NC			Not used
69	TUNPCE2	O	C	TUNER : Chip enable output(EEPROM)
70	TUNPCE1	O	C	TUNER : Chip enable output(PLL)
71	ROMCS	O	C	ROM correction chip select output
72	ASENS	I		ACC sense input
73	BSENS	I		Backup sense input
74	ROMCK	O	C	ROM correction clock output
75	ROMDATA	I/O	C	ROM correction data input/output
76	VST	O	C	EVOL : Strobe output
77	VDT	O	C	EVOL : Data output
78	VCK	O	C	EVOL : Clock output
79	IPPW	O	C	IPBUS : Driver power supply control output
80	ASENBO	O	C	IPBUS : Slave ACC sense output
81	ISENS	I		Illumination sense
82-84	NC			Not used
85	MUTE	O	C	System mute output
86	TESTIN	I		Test program input
87	PVSENS			iPod short circuit sense
88	NC			Not used
89	KEYAD			Wired remote control AD input
90	SAOUT			Level indicator input
91	CSENS			Detach sense input
92	NC			Not used
93	ASLIN			ASL input
94	AVSS	I		Analog GND
95	SL			Signal level input(Field intensity)
96	VREF	I		Reference voltage input
97	AVCC	I		Analog power supply input
98	BSI/TESTDI			P-BUS : Input/Chip test program data input
99	BSO/TESTDO		C	PBUS : Output/Chip test program data output
100	BSCK/TESTCLK		C	P-BUS : Clock output/Chip test program data clock

PEG273A



Format	Meaning
C	CMOS
N	Nch open drain

● Pin Functions (PE5547A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	ROMDATA	I/O	/C	E2PROM : Data input/output
2	ROMCK	O	C	E2PROM : Clock output
3	ROMCS	O	C	E2PROM : Chip select output
4	NC			Not used
5	LOEJ	O	C	LOAD/EJECT direction switching output
6	DSCSNS	I		Disc sense input
7	8SNS	I		8 cm disc detection input
8	12SNS	I		12 cm disc detection input
9	HOME	I		HOME SW sense input
10	TEMP			Temperature information sense input
11	VDSENS			VD power supply short circuit/earth fault sense input
12	ADENA	O	C	A/D reference voltage supply control output
13	ADC.VDD			Power supply for A/D converter
14	ADC.GND			Ground for A/D converter
15	FLMD0	I		Flash writing control terminal
16	RESET	I		Internal microcomputer reset terminal
17	PULLDOWN	O	C	Pull-down
18	NC			Not used
19	TESTIN	I		Chip check, test program start-up input
20	NC			Not used
21	BSI	I	N	P-BUS : Serial data input
22	BSO	O	N	P-BUS : Serial data output
23	B \overline{S} CK	I/O	N	P-BUS : Serial clock input/output
24	FTxD	O	N	Tx for flash rewriting
25	FRxD	I		Rx for flash rewriting
26	BRXEN	I/O	/C	P-BUS : Reception enable input/output
27	B \overline{S} RQ	I/O	/C	P-BUS : Service request input
28	NC			Not used
29	FMODE	I		Flash self-rewriting mode start-up input
30	FLRQ	O	C	Flash self-rewriting reset voltage control
31	ROM	I		Open(EMPH)
32-36	NC			Not used
37	MCKRQ	O	N	CLOCK request
38	LRCKOK	O	N	LRCK reference enable
39	PUEN	O	C	Pickup hologram power supply control output
40	CD3VON	O	C	CD + 3.3 V power supply control output
41	CONT	O	C	Servo driver power supply control output
42	VDCONT	O	C	VD power supply control output
43	CLCONT	O	C	CRG/LOAD-EJECT switching control output
44	CDMUTE	O	C	CD mute control output
45	TEST	I		Test terminal
46	BRST	I		P-BUS : Communication reset input
47	REGS			Capacitor connection for standby
48	C.VDD			Power supply for internal microcomputer
49	C.GND			Ground for internal microcomputer
50	XTAL	I		Connected to the crystal oscillator
51	X.GND			Ground for the crystal oscillator
52	XTAL	O		Connected to the crystal oscillator
53	X.VDD			Power supply for the crystal oscillator
54	DA.VDD			Power supply for DAC
55	LOUT	O		Output of audio for the left channel
56	DA.GND			Ground for DAC
57	REGC			Connected to the capacitor for band gap
58	DA.GND			Ground for DAC
59	ROUT	O		Output of audio for the right channel

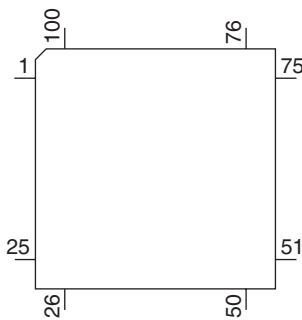
Pin No.	Pin Name	I/O	Format	Function and Operation
60	DA.VDD			Power supply for DAC
61	D.GND			Ground for digital circuits
62	D.VDD			Power supply for digital circuits
63	REG16			Capacitor connection for 1.6 V regulator
64	LRCK	O	C	3-wire audio LR clock output
65	SCKO	O	C	3-wire audio serial I/F clock output
66	DOUT	O	C	3-wire audio serial I/F data output
67-69	SVMON0-2	I/O	/C	Servo monitor input/output 0-2
70	SVMON3	I/O	/C	Servo monitor input/output 3(Ext MCK IN)
71	C33M	O	C	DRAM CLOCK
72	(RCS)	O	C	DRAM CS
73	(CKE)	O	C	DRAM CKE output
74	RAS	O	C	Output of DRAM RAS
75	CAS0(LDQM)	O	C	DRAM Lower CAS(LDQM) output
76	CAS1(UDQM)	O	C	DRAM Upper CAS(UDQM) output
77	WE	O	C	Output of DRAM WE
78	OE(CAS)	O	C	DRAM OE(CAS) output
79-94	RDB0-15	I/O	/C	Input/output of DRAM data 0-15
95	IO.GND			Ground for I/O terminal
96	IO.VDD			Power supply for I/O terminal
97-108	RA0-11	O	C	Output of DRAM address 0-11
109	FD	O	C	Output of focus drive PWM
110	TD	O	C	Output of tracking drive PWM
111	SD	O	C	Output of thread drive PWM
112	MD	O	C	Output of spindle drive PWM
113	EFM	O		Output of EFM signals
114	ASY	I		Asymmetry input
115	ATEST	O		Analog tests
116	A.VDD			Power supply for the analog system
117	A.GND			Ground for the analog system
118	RFI	I		Input of RF
119	AGCO	O		Output of RF
120	C3T			Connection to the capacitor for detecting 3T
121	AGCI	I		Input of AGC
122	RFO	O		Output of RF(AGC)
123,124	EQ2,1	I		Equalizer 2, 1
125	RF2-	I		Reversal input of RF2
126	RF-	I		Reversal input of RF
127	A.GND			Ground for the analog system
128	A.VDD			Power supply for the analog system
129	A	I		Input of A
130	B	I		Input of B
131	F	I		Input of F
132	E	I		Input of E
133	REFOUT	O		Output of reference voltage
134	FE-	I		Reversal input of FE
135	FEO	O		Output of FE
136	ADCIN	I		FE,TE A/D converter input
137	TE-	I		Reversal input of TE
138	TEO	O		Output of TE
139	TE2	O		TE2
140	TEC	I		TEC
141	LD	O		Output of LD
142	PD	I		Input of PD
143	AD.VDD			Power supply for servo ADC
144	AD.GND			Ground for servo ADC

● Pin Functions (PEG272A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	NC			Not used
2	ROMDT	I/O	C	ROM correction data input/output
3	ROMCK	O	C	ROM correction clock output
4	REM	I		Remote control input
5	ROMCS	O	C	ROM correction chip select output
6	BYTE	I		External data bus width change input(VSS)
7	CNVSS	I		Processor mode change input
8,9	NC			Not used
10	RESET	I		Reset input
11	XOUT	O		Clock output
12	VSS1			GND
13	XIN	I		Clock input
14	VCC1			Power supply input
15	NMI	I		NMI input
16	NC			Not used
17	KS3	O	C	Key strobe 3(Not used)
18-20	KS2-0	I/O	C	Key strobe 2-0
21	NC			Not used
22	DSEL	O	C	OEL driver : Display data select
23	NC			Not used
24	CKD	O	C	OEL driver : Data transfer and driver clock frequency
25	NC			Not used
26	LS	O	C	OEL driver : Line sync signal
27	DPDT	I	N	System controller communication : Display data input
28	KYDT	O	N	System controller communication : Key data output
29-32	NC			Not used
33	OELD	O	C	OEL driver : Display data
34	NC			Not used
35	CLK0	I	C	OEL driver : Clock input for UART0
36	NC			Not used
37	RDY	I	C	RDY signal input
38	NC			Not used
39	HOLD	I	C	HOLD signal input
40,41	NC			Not used
42	RD	O	C	Image ROM : Read strobe
43-45	NC			Not used
46,47	CS2,1	O	C	Image ROM : Bank address 1,0
48	CS0	O	C	External extended ROM chip select(image ROM)
49	A19	O	C	Image ROM : Address bus 19 bit
50	A18	O	C	Non connection
51	A17	O	C	Image ROM : Address bus 17 bit
52	A16	O	C	Image ROM : Address bus 16 bit
53	A15	O	C	Image ROM : Address bus 15 bit
54	A14	O	C	Image ROM : Address bus 14 bit
55	A13	O	C	Image ROM : Address bus 13 bit
56	A12	O	C	Image ROM : Address bus 12 bit
57	A11	O	C	Image ROM : Address bus 11 bit
58	A10	O	C	Image ROM : Address bus 10 bit
59	A9	O	C	Image ROM : Address bus 9 bit
60	VCC2			Power supply input
61	A8	O	C	Image ROM : Address bus 8 bit
62	VSS2			GND
63	A7	O	C	Image ROM : Address bus 7 bit
64	A6	O	C	Image ROM : Address bus 6 bit
65	A5	O	C	Image ROM : Address bus 5 bit

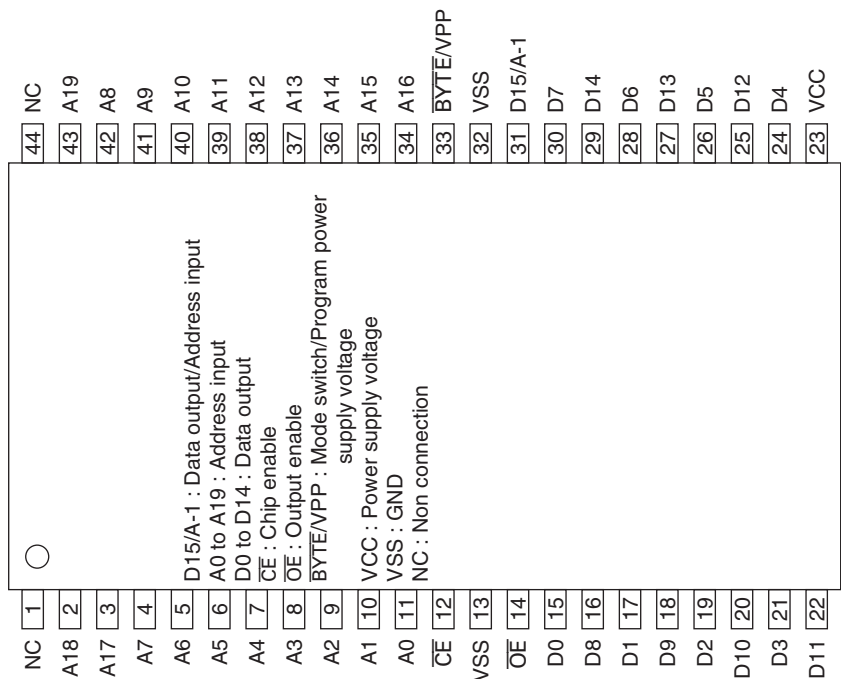
Pin No.	Pin Name	I/O	Format	Function and Operation
66	A4	O	C	Image ROM : Address bus 4 bit
67	A3	O	C	Image ROM : Address bus 3 bit
68	A2	O	C	Image ROM : Address bus 2 bit
69	A1	O	C	Image ROM : Address bus 1 bit
70	A0	O	C	Non connection
71	D15	I	C	Image ROM : Data bus 15 bit
72	D14	I	C	Image ROM : Data bus 14 bit
73	D13	I	C	Image ROM : Data bus 13 bit
74	D12	I	C	Image ROM : Data bus 12 bit
75	D11	I	C	Image ROM : Data bus 11 bit
76	D10	I	C	Image ROM : Data bus 10 bit
77	D9	I	C	Image ROM : Data bus 9 bit
78	D8	I	C	Image ROM : Data bus 8 bit
79	D7	I	C	Image ROM : Data bus 7 bit
80	D6	I	C	Image ROM : Data bus 6 bit
81	D5	I	C	Image ROM : Data bus 5 bit
82	D4	I	C	Image ROM : Data bus 4 bit
83	D3	I	C	Image ROM : Data bus 3 bit
84	D2	I	C	Image ROM : Data bus 2 bit
85	D1	I	C	Image ROM : Data bus 1 bit
86	D0	I	C	Image ROM : Data bus 0 bit
87	NC			Not used
88	JOYST	I	C	Rotary commander AD input terminal
89,90	NC			Not used
91	KD3	O	C	Key data 3(Not used)
92,93	KD2,1	I	C	Key data 2,1
94	AVSS			Analog GND
95	KD0	I	C	Key data 0
96	VREF	I		Reference voltage input
97	AVCC			Analog power supply input
98	DIM	O	C	Terminal for Dimmer control
99,100	NC			Not used

PEG272A

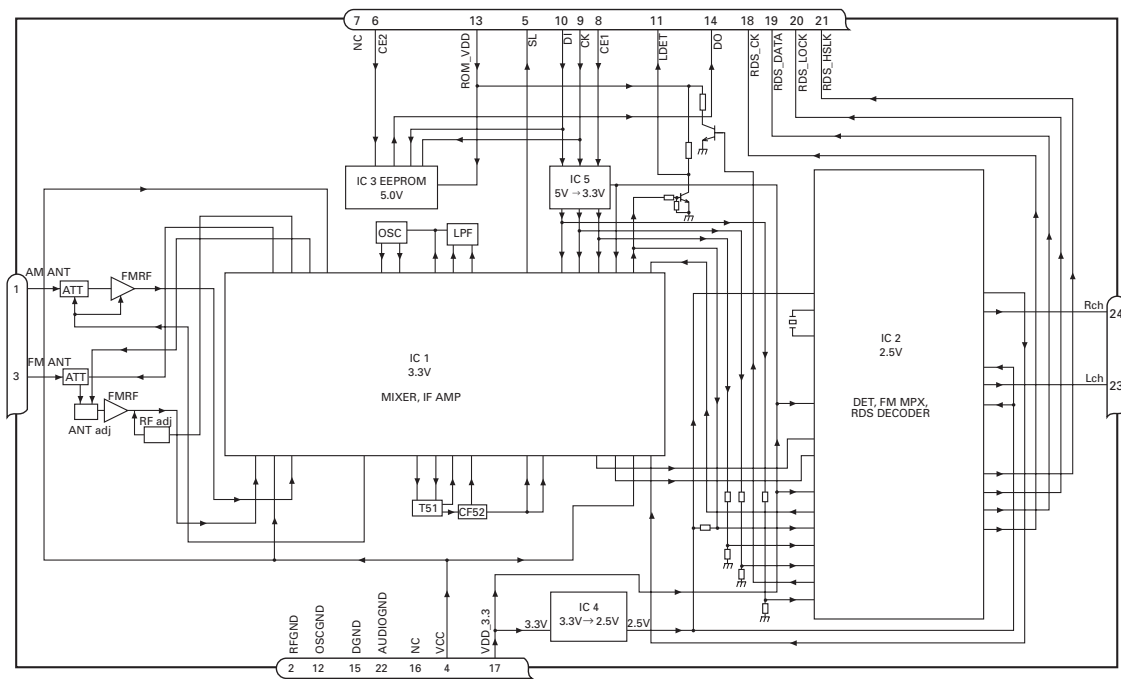


Format	Meaning
C	CMOS
N	Nch open drain

PD8168A(P5900IB)

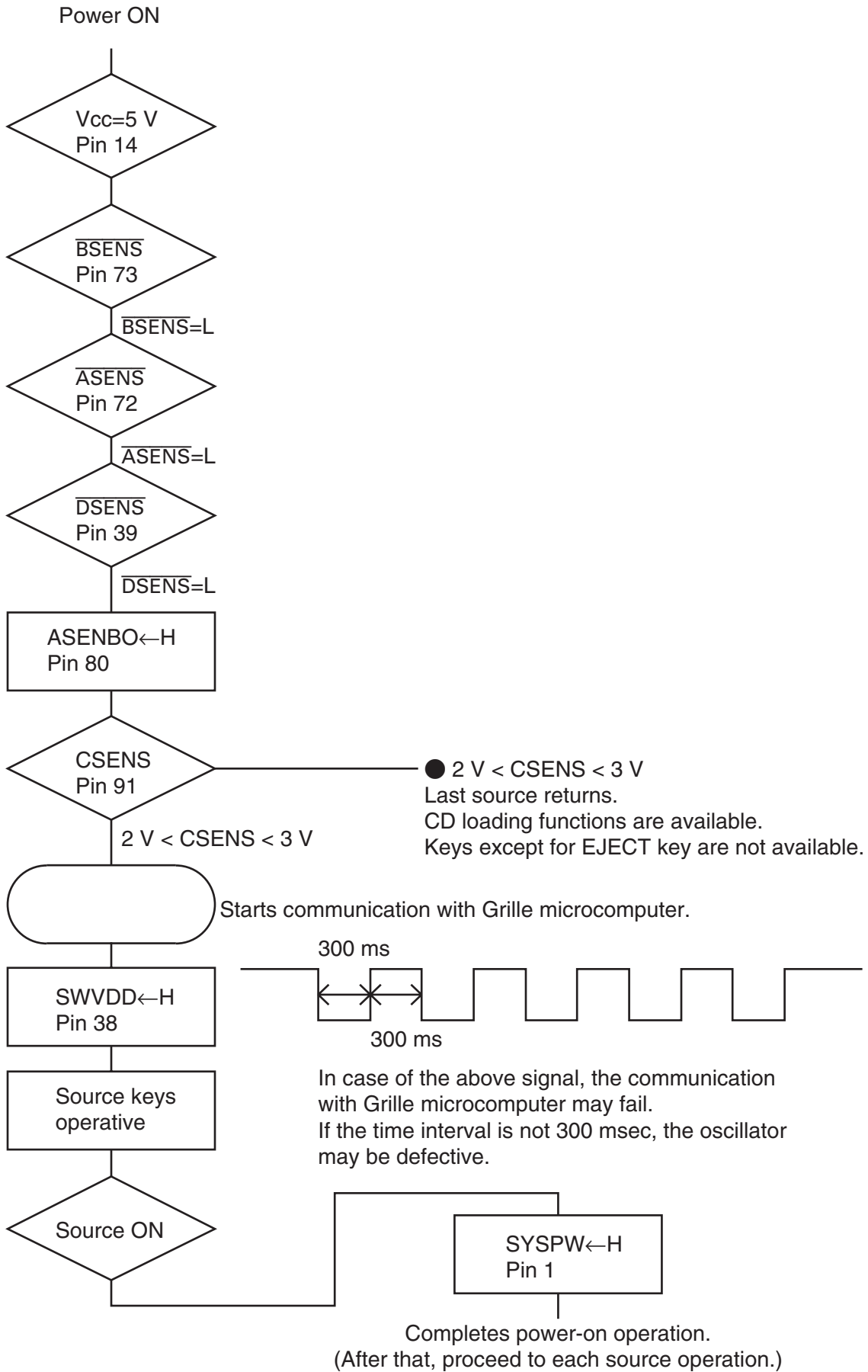


FM/AM Tuner Unit

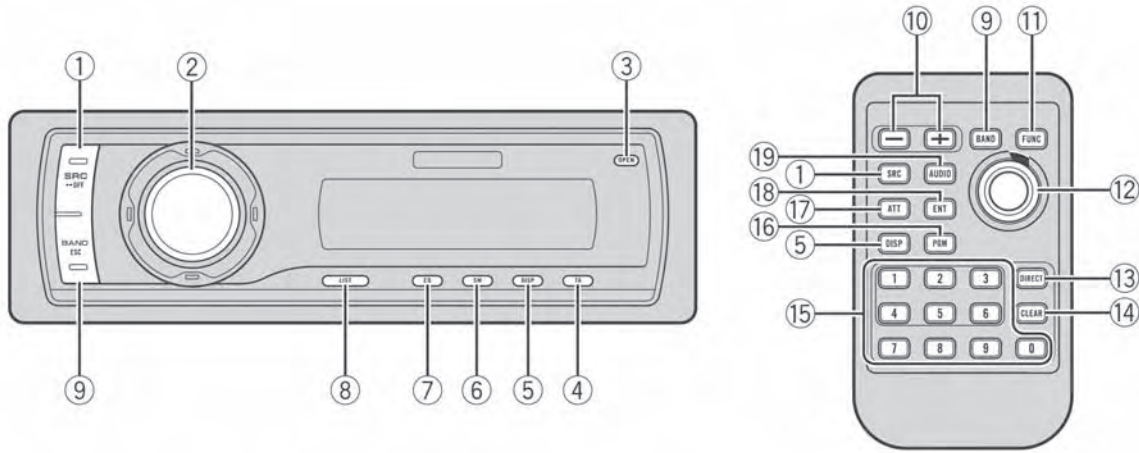


No.	Symbol	I/O	Explain	
1	AMANT	I	AM antenna input	AM antenna input high impedance AMANT pin is connected with an all antenna by way of 4.7 μ H. (LAU type inductor) A series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the hum of power transmission line.
2	RFGND		RF ground	Ground of antenna block
3	FMANT	I	FM antenna input	Input of FM antenna 75 Ω Surge absorber(DSP-201M-S00B)is necessary.
4	VCC		power supply	The power supply for analog block. D.C 8.4 V \pm 0.3 V
5	SL	O	signal level	Output of FM/AM signals level
6	CE2	I	chip enable-2	Chip enable for EEPROM "Low" active
7	NC		non connection	Not used
8	CE1	I	chip enable-1	Chip enable for AF*RF "High" active
9	CK	I	clock	Clock
10	DI	I	data in	Data input
11	LDET	O	lock detector	"Low" active
12	OSCGND		osc ground	Ground of oscillator block
13	ROM_VDD		power supply	Power supply for EEPROM pin 13 is connected with a power supply of micro computer.
14	DO	O	data out	Data output
15	DGND		digital ground	Ground of digital block
16	NC		non connection	Not used
17	VDD_3.3		power supply	The power supply for digital block. 3.3 V \pm 0.2 V
18	RDS_CK	O	RDS clock	Output of RDS clock(2.5 V)
19	RDS_DATA	O	RDS data	Output of RDS data(2.5 V)
20	RDS_LOCK	O	RDS lock	Output unit "High" active(2.5 V) (RDS_LOCK turns over by the external transistor. "Low" active)
21	RDS_HSLK	O	RDS high speed lock	Output unit "High" active(2.5 V)(RDS_HSLK turns over by the external transistor. "Low" active)
22	AUDIOGND		audio ground	Ground of audio block
23	L ch	O	L channel output	FM stereo "L-ch" signal output or AM audio output
24	R ch	O	R channel output	FM stereo "R-ch" signal output or AM audio output

7.3 OPERATIONAL FLOW CHART



8. OPERATIONS



What's What

Head unit

- ① **SOURCE button**
This unit is turned on by selecting a source. Press to cycle through all the available sources.
- ② **MULTI-CONTROL**
Move to perform manual seek tuning, fast forward, reverse and track search controls. Also used for controlling functions. Turn to increase or decrease the volume.
- ③ **OPEN button**
Press to open the front panel.
- ④ **TA/NEWS button**
Press to turn TA function on or off. Press and hold to turn NEWS function on or off.
- ⑤ **DISPLAY button**
Press to select different displays.
- ⑥ **SW button**
Press to select the subwoofer setting menu. Press and hold to select the bass boost setting menu.
- ⑦ **EQ button**
Press to select various equalizer curves.

- ⑧ **LIST button**
Press to display the disc title list, track title list, folder list, file list or preset channel list depending on the source.
- ⑨ **BAND button**
Press to select among three FM bands and MW/LW bands and to cancel the control mode of functions.

Remote control

Operation is the same as when using the buttons on the head unit.

- ⑩ **VOLUME buttons**
Press to increase or decrease the volume.
- ⑪ **FUNCTION button**
Press to select functions.
- ⑫ **Joystick**
Move to perform manual seek tuning, fast forward, reverse and track search controls. Also used for controlling functions. Functions are the same as **MULTI-CONTROL** except for volume control.
- ⑬ **DIRECT button**
Press to directly select the desired track.

⑭ CLEAR button

Press to cancel the input number when **0** to **9** are used.

⑮ 0 to 9 buttons

Press to directly select the desired track, preset tuning or disc. Buttons **1** to **6** can operate the preset tuning for the tuner or disc number search for the multi-CD player.

⑯ PGM button

Press to operate the preprogrammed functions for each source.


⑰ ATT button

Press to quickly lower the volume level, by about 90%. Press once more to return to the original volume level.

⑱ ENTERTAINMENT button

Press to change to the entertainment display.

⑲ AUDIO button

Press to select various sound quality controls. 

A

B

C

D

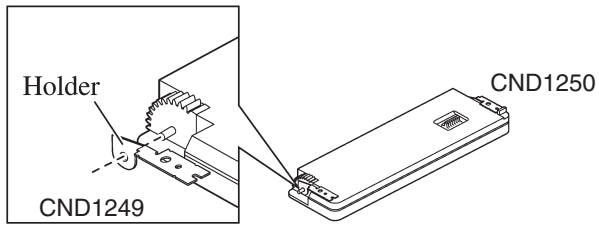
E

F

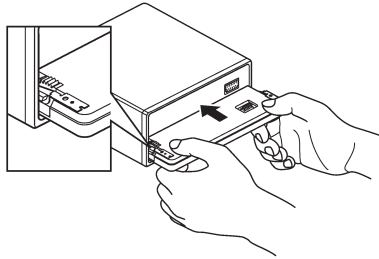
Fastening the front panel

If you do not plan to detach the front panel, the front panel can be fastened with supplied screws and holders.

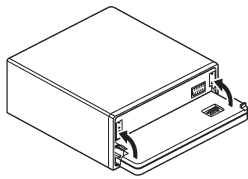
1. Attach the holders to both sides of the front panel.



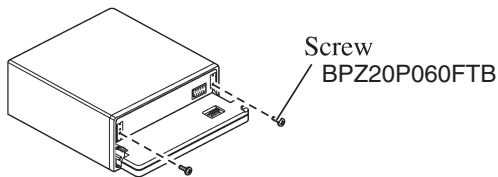
2. Replace the front panel to the unit.



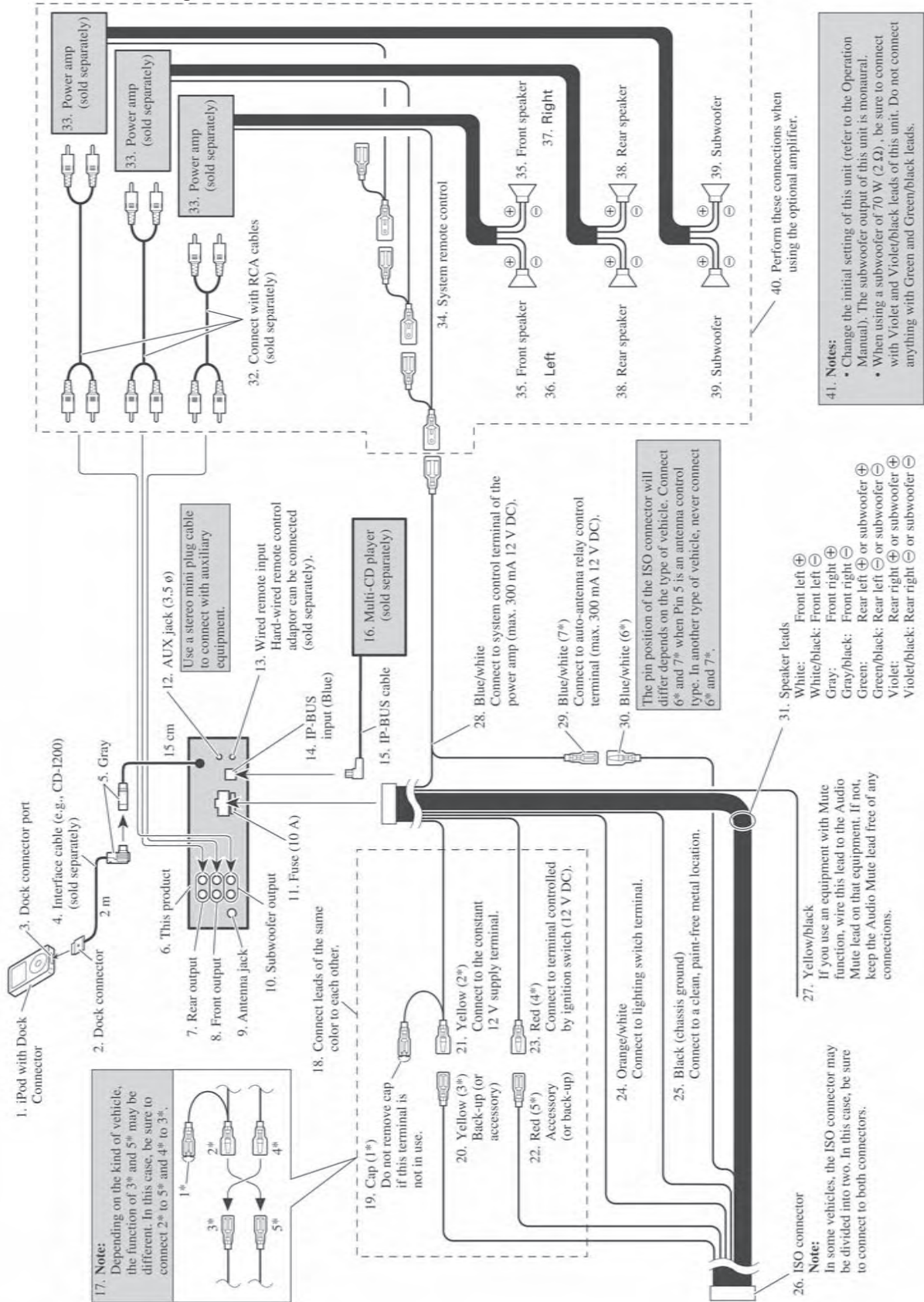
3. Flip the holders into upright positions.



4. Fix the front panel to the unit using screws.



Connection Diagram



● Jigs List

Name	Jig No.	Remarks
Test Disc	TCD-782	Checking the grating
L.P.F.		Checking the grating (Two pieces)

● Grease List

Name	Grease No.	Remarks
Grease	GEM1024	CD Mechanism Module
Grease	GEM1045	CD Mechanism Module



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

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