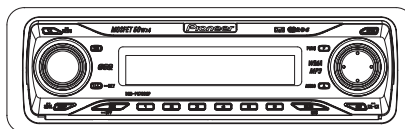


Service Manual



DEH-P6700MP/XM/EW

ORDER NO.
CRT3435

MULTI-CD CONTROL HIGH POWER CD/MP3/WMA PLAYER WITH RDS TUNER

DEH-P6700MP /XM/EW

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

Model No.	Order No.	Mech.Module	Remarks
CX-3158	CRT3394	S10.1AAC	CD Mech. Module : Circuit Description, Mech. Description, 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.

1. Safety Precautions for those who Service this Unit.

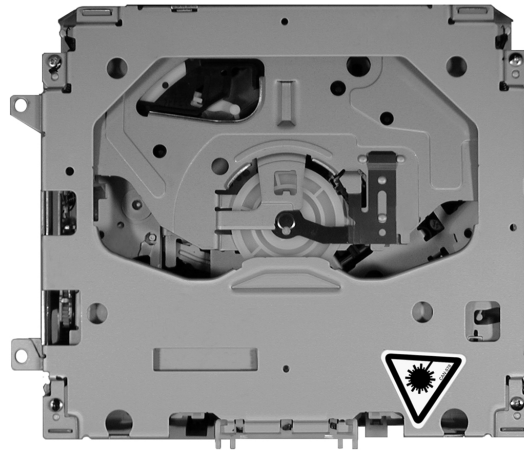
- When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.

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

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.

[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.

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D

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F

1. SPECIFICATIONS

General

Power source	14.4 V DC (10.8 – 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 × 157 mm
Nose	188 × 58 × 20 mm
D	
Chassis	178 × 50 × 162 mm
Nose	170 × 46 × 15 mm
Weight	1.4 kg

Audio

Maximum power output	50 W × 4
	50 W × 2/4 Ω + 70 W × 1/2 Ω (for subwoofer)
Continuous power output ...	27 W × 4 (DIN 45324, +B=14.4 V)
Load impedance	4 Ω (4 – 8 Ω allowable)
Preout max output level/output impedance	2.2 V/1 kΩ
Equalizer (3-Band Parametric Equalizer):	
Low	
Frequency	40/80/100/160 Hz
Q Factor	0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain	±12dB
Mid	
Frequency	200/500/1k/2k Hz
Q Factor	0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain	±12dB
High	
Frequency	3.15k/8k/10k/12.5k Hz
Q Factor	0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain	±12dB
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)

Tone controls:

Bass	
Frequency	40/63/100/160 Hz
Gain	±12dB
Treble	
Frequency	2.5k/4k/6.3k/10k Hz
Gain	±12dB

HPF:

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

Subwoofer:

Frequency	50/80/125 Hz
Slope	-18 dB/oct
Gain	±12dB
Phase	Normal/Reverse

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)
MP3 decoding format	MPEG-1 & 2 Audio Layer 3
WMA decoding format	Ver. 7, 8 & 9
WAV signal format	Linear PCM & MS ADPCM

FM tuner

Frequency range	87.5 – 108.0 MHz
Usable sensitivity	8 dBf (0.7 μV/75 Ω mono, S/N: 30 dB)
50 dB quieting sensitivity	10 dBf (0.9 μV/75 Ω mono)
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 – 15,000 Hz (±3 dB)
Stereo separation	45 dB (at 65 dBf, 1 kHz)
Selectivity	80 dB (±200 kHz)

MW tuner

Frequency range	531 – 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 – 281 kHz
Usable sensitivity	30 μV (S/N: 20 dB)
Signal-to-noise ratio	65 dB (IEC-A network)



Note

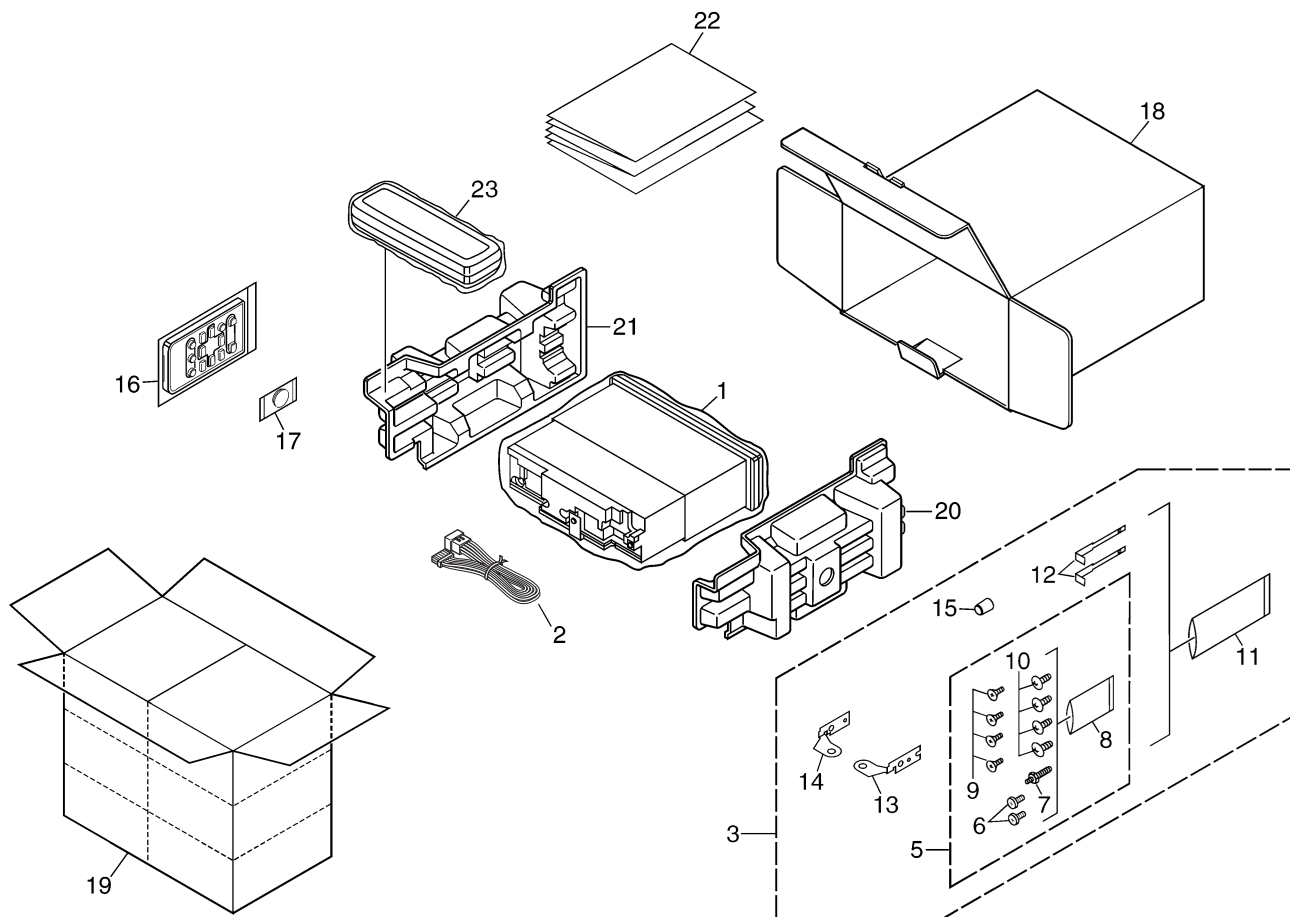
Specifications and the design are subject to possible modifications without notice due to improvements. □

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



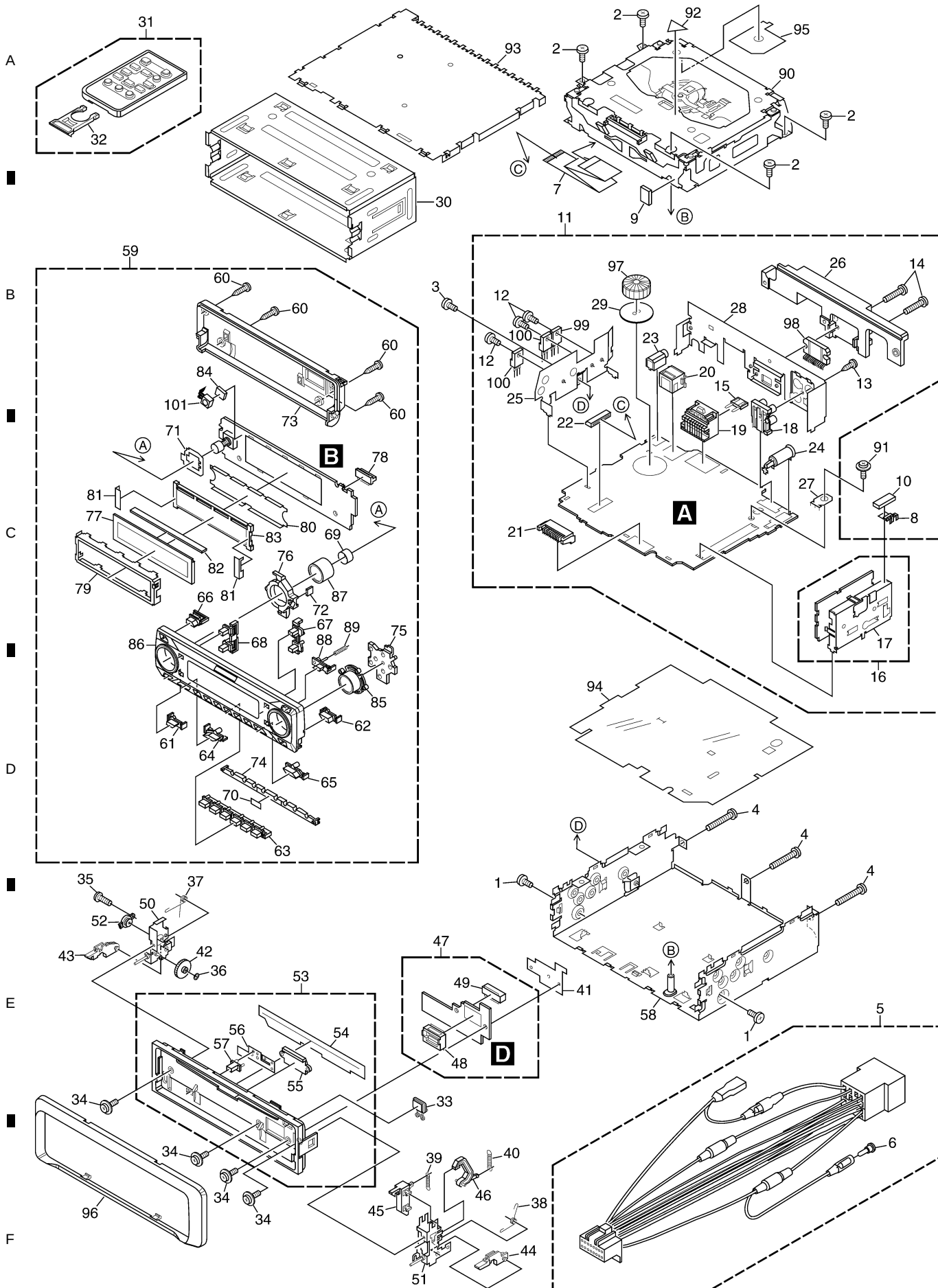
PACKING SECTION PARTS LIST

<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			
2	Cord Assy	CDE7059	16	Remote Control Unit	CXC3173
3	Accessory Assy	CEA4993	*	17 Battery	CEX1065
4	*****		18	Carton	CHG5476
5	Screw Assy	CEA3848	19	Contain Box	CHL5476
			20	Protector	XHP7003
6	Fixing Screw	BPZ20P060FZK	21	Protector	XHP7004
7	Screw	CBA1650	22-1	Owner's Manual	CRD3959
* 8	Polyethylene Bag	CEG-127	22-2	Owner's Manual	CRD3960
9	Screw	CRZ50P090FTC	22-3	Owner's Manual	CRD3961
10	Screw	TRZ50P080FTC	22-4	Installation Manual	CRD3962
* 11	Polyethylene Bag	CEG-158			
12	Handle	CNC5395	*	22-5 Passport	CRY1013
13	Holder	CND1249	*	22-6 Warranty Card	CRY1157
14	Holder	CND1250	23	Case Assy	CXB3520
15	Bush	CNV3930			

Owner's Manual,Installation Manual

Part No.	Language
CRD3959	English, Spanish
CRD3960	German, French
CRD3961	Italian, Dutch
CRD3962	English, Spanish, German, French, Italian, Dutch

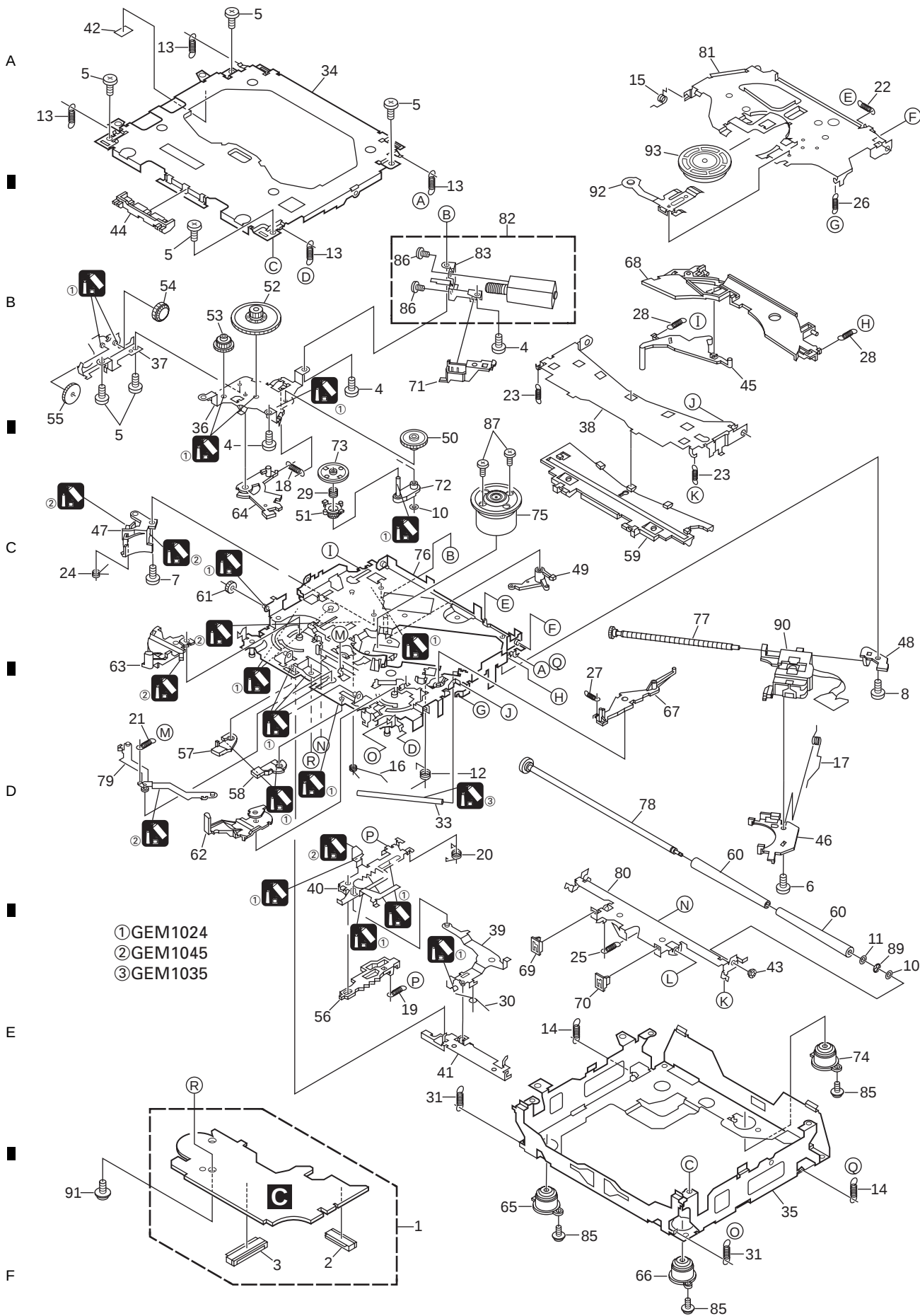
2.2 EXTERIOR



EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
1	Screw	BMZ30P040FZK	52	Damper Unit	CXB9503	
2	Screw	BSZ26P060FTC	53	Sub Panel Unit	XXA7361	A
3	Screw	BSZ30P060FTC	54	Cover	CNM6854	
4	Screw	BSZ30P200FTC	55	Lighting Conductor	CNV6487	
5	Cord Assy	CDE7059				
			56	Spring	CBL1512	
6	Cap	CKX-003	57	Pin	CNV6486	
7	Cable	CDE7189	58	Chassis Unit	CXC4063	
8	Earth Plate	CNC8915	59	Detach Grille Assy	CXC4175	
9	Insulator	CNM7682	60	Screw	BPZ20P100FZK	
10	Cushion	CNM8890				
			61	Button(DISPLAY)	CAC9036	
11	Tuner Amp Unit	CWM9790	62	Button(SW)	CAC9037	
12	Screw	ASZ26P060FTC	63	Button(1-6)	CAC9038	B
13	Screw	BPZ26P080FTC	64	Button(SOURCE)	CAC9039	
14	Screw	BSZ26P160FTC	65	Button(BAND)	CAC9040	
⚠ 15	Fuse(10A)	CEK1208				
			66	Button(TA)	CAC9041	
16	FM/AM Tuner Unit	CWE1645	67	Button(FUNCTION, AUDIO)	CAC9042	
17	Holder	CND1054	68	Button(EQ, ILLUMINATION)	CAC9043	
18	Pin Jack(CN351)	CKB1054	69	Spring	CBL1470	
19	Plug(CN981)	CKM1376	70	Sheet	CNM9482	
20	Connector(CN101)	CKS3408				
			71	Sheet	CNM9560	
21	Plug(CN831)	CKS3537	72	Sheet	CNM9561	C
22	Connector(CN721)	CKS3837	73	Cover	CNS8149	
23	Connector(CN671)	CKS4124	74	Lighting Conductor	CNV8361	
24	Antenna Jack(CN401)	CKX1056	75	Lighting Conductor	CNV8362	
25	Holder	CND1352				
			76	Lighting Conductor	CNV8363	
26	Heat Sink	CNR1668	77	LCD(LCD1)	CAW1865	
27	Terminal(CN402)	VNF1084	78	Connector(CN1)	CKS5207	
28	Holder	XNC7003	79	Holder	CND2510	
29	Insulator	XNM7031	80	Sheet	CNM9366	
30	Holder Unit	CXB6681				
			81	Sheet	CNM9367	D
31	Remote Control Unit	CXC3173	82	Connector	CNV8275	
32	Cover	CNS7068	83	Lighting Conductor	CNV8360	
33	Button(EJECT)	CAC7752	84	Cushion	XNM7049	
34	Screw(M2x4.5)	CBA1647	85	Sub Button Assy(UP, DOWN, LEFT, RIGHT)	CXC4242	
35	Screw(M2x4)	CBA1649				
			86	Sub Grille Assy	CXC4243	
36	Washer	CBF1038	87	Knob(VOLUME)	XAA7021	
37	Spring	CBH2650	88	Button(OPEN)	XAC7065	
38	Spring	CBH2651	89	Spring	XBH7001	
39	Spring	CBH2652	90	CD Mechanism Module(S10.1AACA)	CXK5668	
40	Spring	CBH2653				
			91	Screw	ISS26P055FTC	E
41	Holder	CND1254	92	Label	VRW-329	
42	Gear	CNV5997	93	Case	XNB7002	
43	Arm	CNV7400	94	Insulator	XNM7100	
44	Arm	CNV7401	95	Insulator	XNM7106	
45	Arm	CNV7402				
			96	Panel	XNS7089	
46	Arm	CNV7403	97	Choke Coil(L981)	CTH1291	
47	Panel Unit	CWM9781	98	IC(IC301)	PAL007A	
48	Connector(CN1951)	CKS4806	99	IC(IC911)	NJM2388F84	
49	Connector(CN1950)	CKS5192	100	Transistor(Q751, 901)	2SD2396	F
50	Holder Unit	CXB9501				
			101	IC(IC3)	TSOP4840SB1	
51	Holder Unit	CXB9502				

2.3 CD MECHANISM MODULE

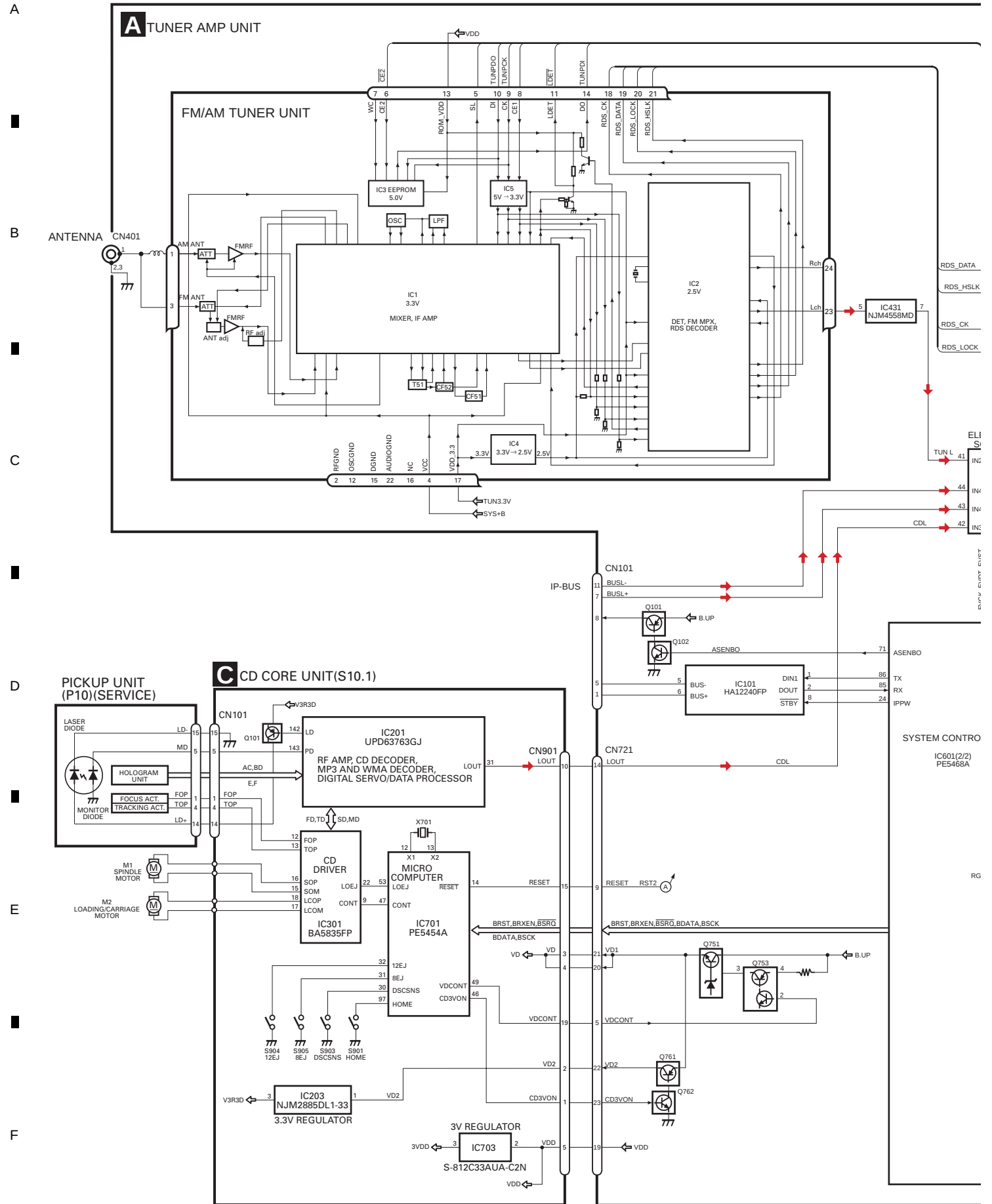


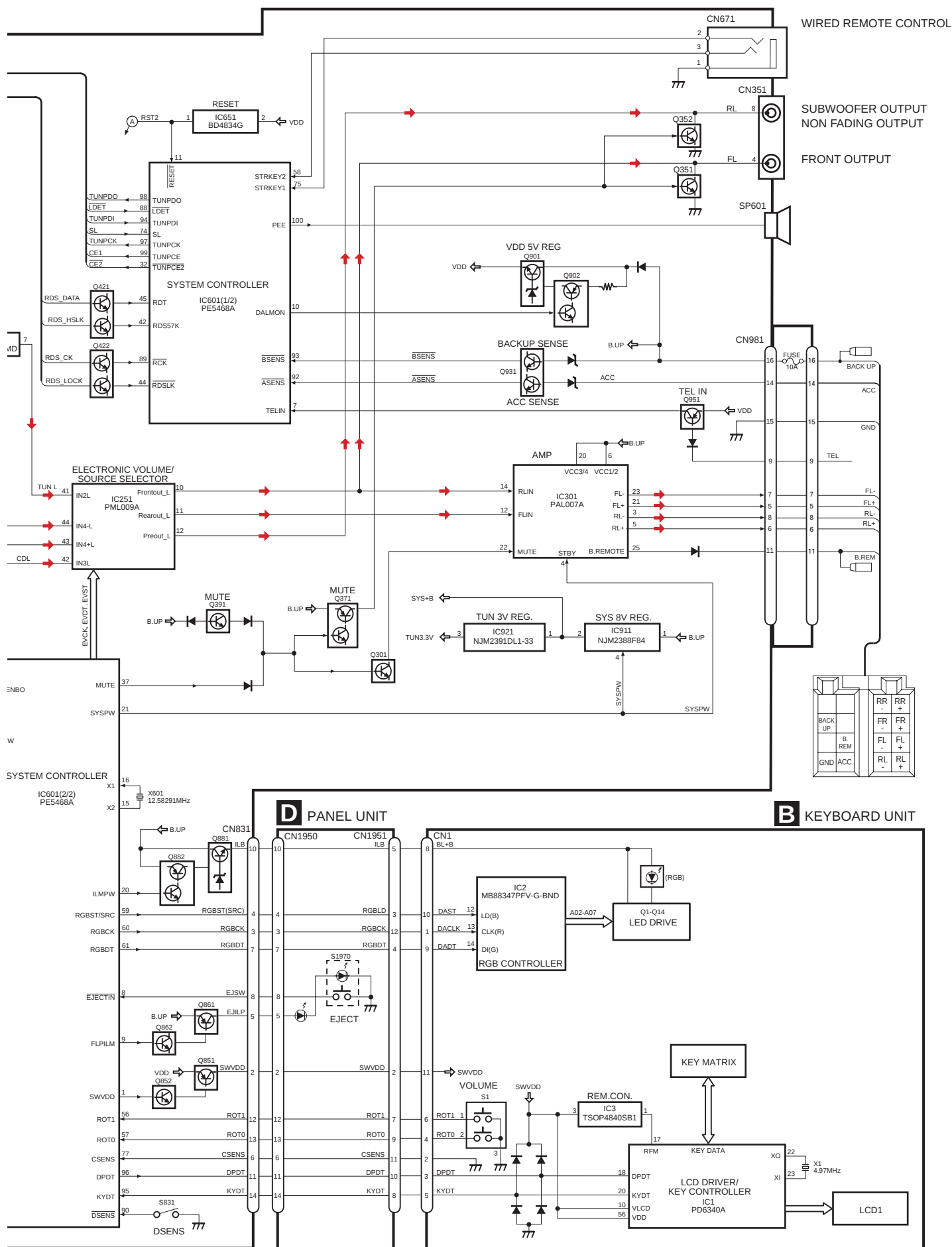
CD MECHANISM MODULE SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
1	CD Core Unit(S10.1)	CWX3096	50	Gear	CNV8379	
2	Connector(CN101)	CKS4182				A
3	Connector(CN901)	CKS4017	51	Gear	CNV8380	
4	Screw	BMZ20P035FTC	52	Gear	CNV8381	
5	Screw	BSZ20P040FTC	53	Gear	CNV8382	
			54	Gear	CNV8383	
6	Screw(M2x4)	CBA1362	55	Gear	CNV8384	
7	Screw(M2x3)	CBA1824				
8	Screw(M2x3)	CBA1825	56	Rack	CNV8385	
9			57	Arm	CNV8386	
10	Washer	CBF1038	58	Arm	CNV8387	
			59	Guide	CNV8388	
11	Washer	CBF1060	60	Roller	CNV7218	B
12	Spring	CBH2390				
13	Spring	CBH2606	61	Gear	CNV8389	
14	Spring	CBH2607	62	Arm	CNV8391	
15	Spring	CBH2608	63	Arm	CNV8390	
			64	Arm	CNV8392	
16	Spring	CBH2609	65	Damper	CNV7313	
17	Spring	CBH2610				
18	Spring	CBH2735	66	Damper	CNV7314	
19	Spring	CBH2612	67	Arm	CNV8394	
20	Spring	CBH2613	68	Arm	CNV8395	
			69	Guide	CNV8396	C
21	Spring	CBH2614	70	Guide	CNV8397	
22	Spring	CBH2615				
23	Spring	CBH2616	71	Holder	CNV8398	
24	Spring	CBH2617	72	Arm	CNV8402	
25	Spring	CBH2620	73	Gear	CNV8400	
			74	Damper	CNV7618	
26	Spring	CBH2621	75	Motor Unit(M1)	CXC4440	
27	Spring	CBH2641				
28	Spring	CBH2642	76	Chassis Unit	CXC2318	
29	Spring	CBH2643	77	Screw Unit	CXB8729	
30	Spring	CBH2659	78	Gear Unit	CXC2397	D
			79	Arm Unit	CXC2316	
31	Spring	CBH2688	80	Arm	CND1896	
32						
33	Shaft	CLA4441	81	Arm	CND1894	
34	Frame	CNC9962	82	Motor Unit(M2)	CXB8933	
35	Frame	CNC9963	83	Bracket	CNC9985	
			84			
36	Bracket	CND2712	85	Screw(M2x5)	EBA1028	
37	Bracket	CND1895				
38	Arm	CNC9968	86	Screw	JFZ20P020FTC	E
39	Arm	CND1909	87	Screw	JGZ17P022FTC	
40	Lever	CND2032	88			
			89	Washer	YE20FTC	
41	Lever	CNC9984	90	Pickup Unit(P10)(Service)	CXX1641	
42	Sheet	CNM8134				
43	Collar	CNV7798	91	Screw	IMS26P030FTC	
44	Guide	CNV7799	92	Spring	CBL1635	
45	Arm	CNV8403	93	Clamper	CNV8372	
46	Rack	CNV8374				
47	Holder	CNV8376				F
48	Holder	CNV8377				
49	Arm	CNV8378				

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

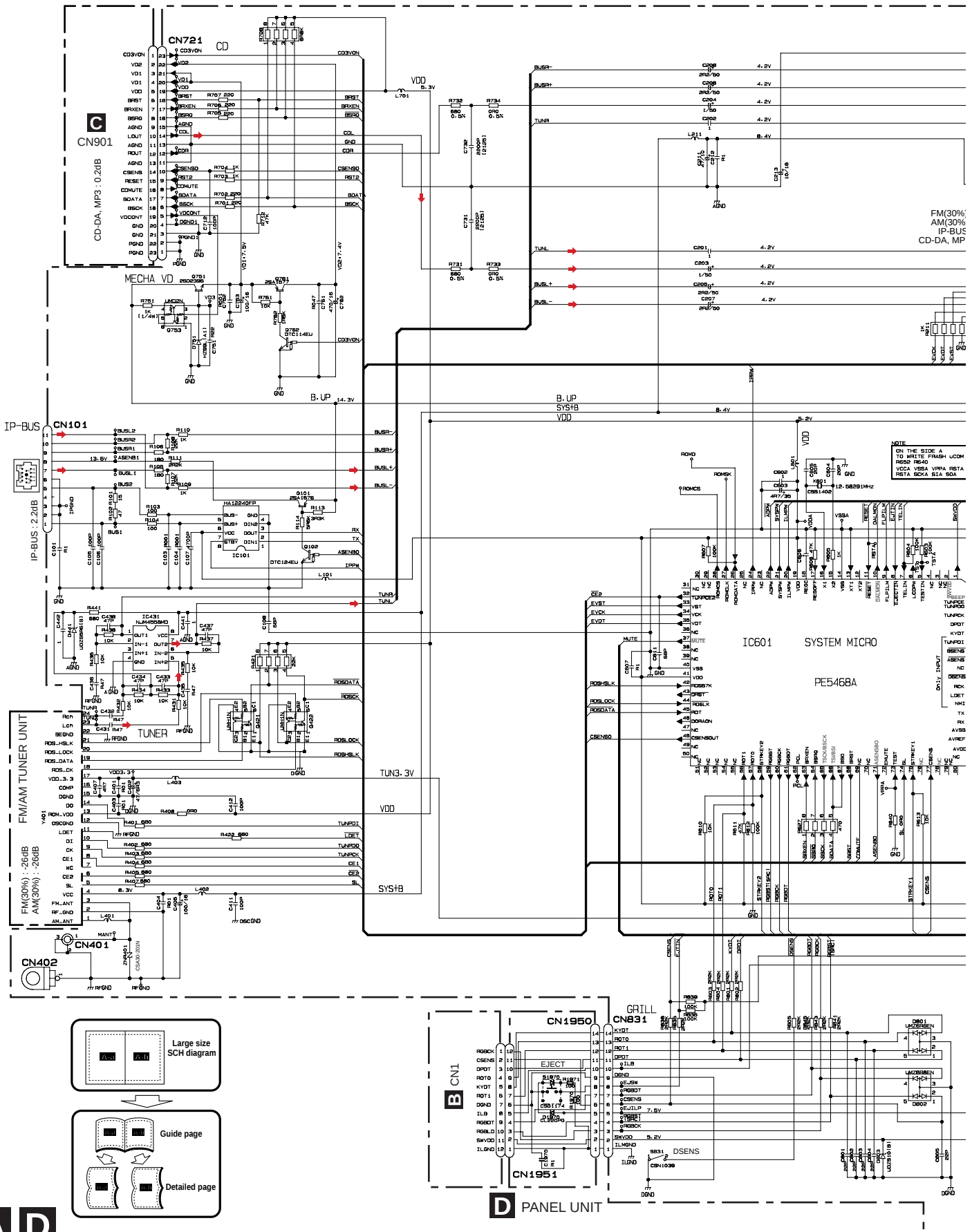




3.2 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

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

A-a



A



C

□

E

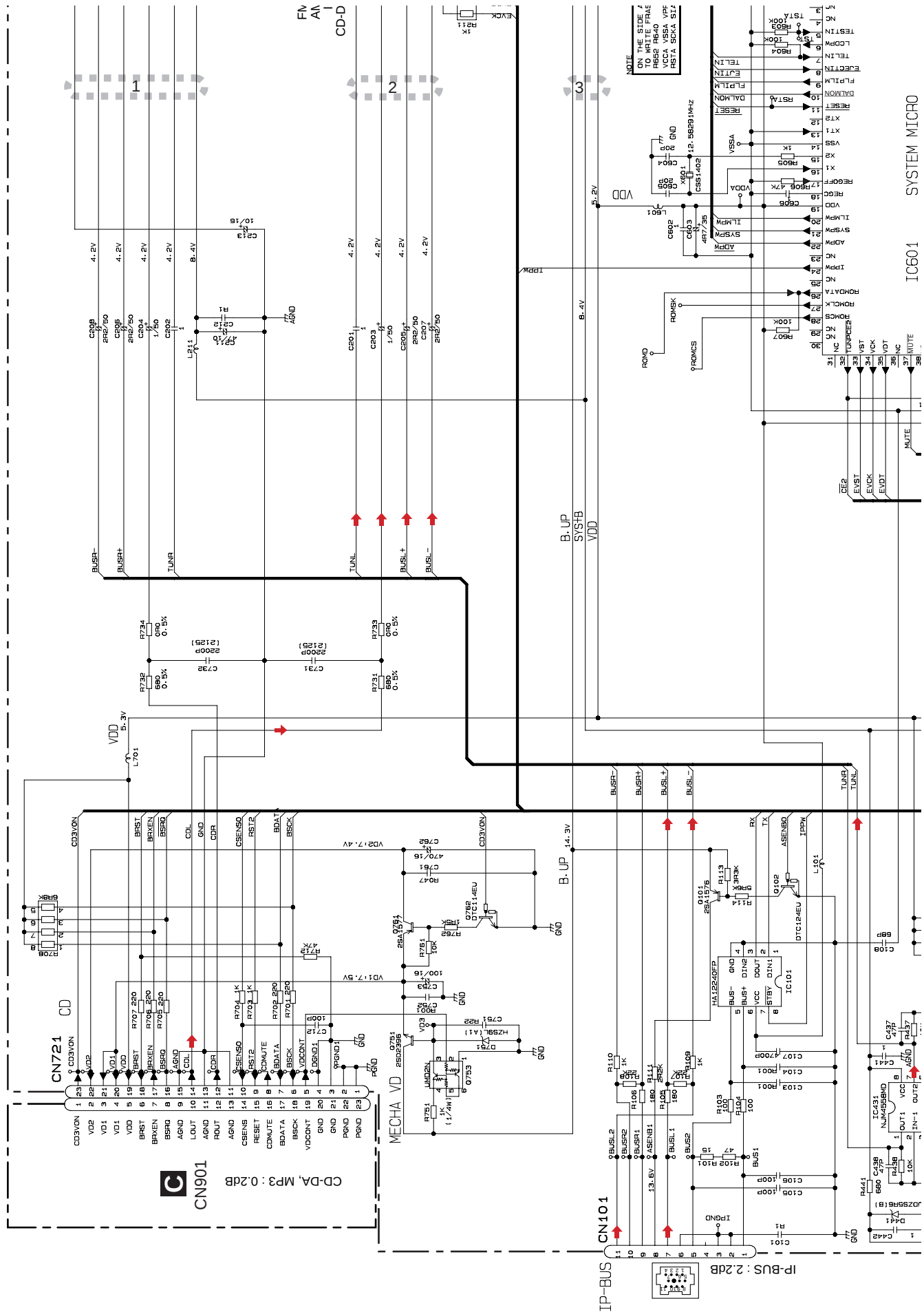
P

		RR	RR
		-	+
BACK		FR	FR
UP		-	+
	B. REM	FL	FL
		-	+
GND	ACC	RL	RL
		-	+

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.

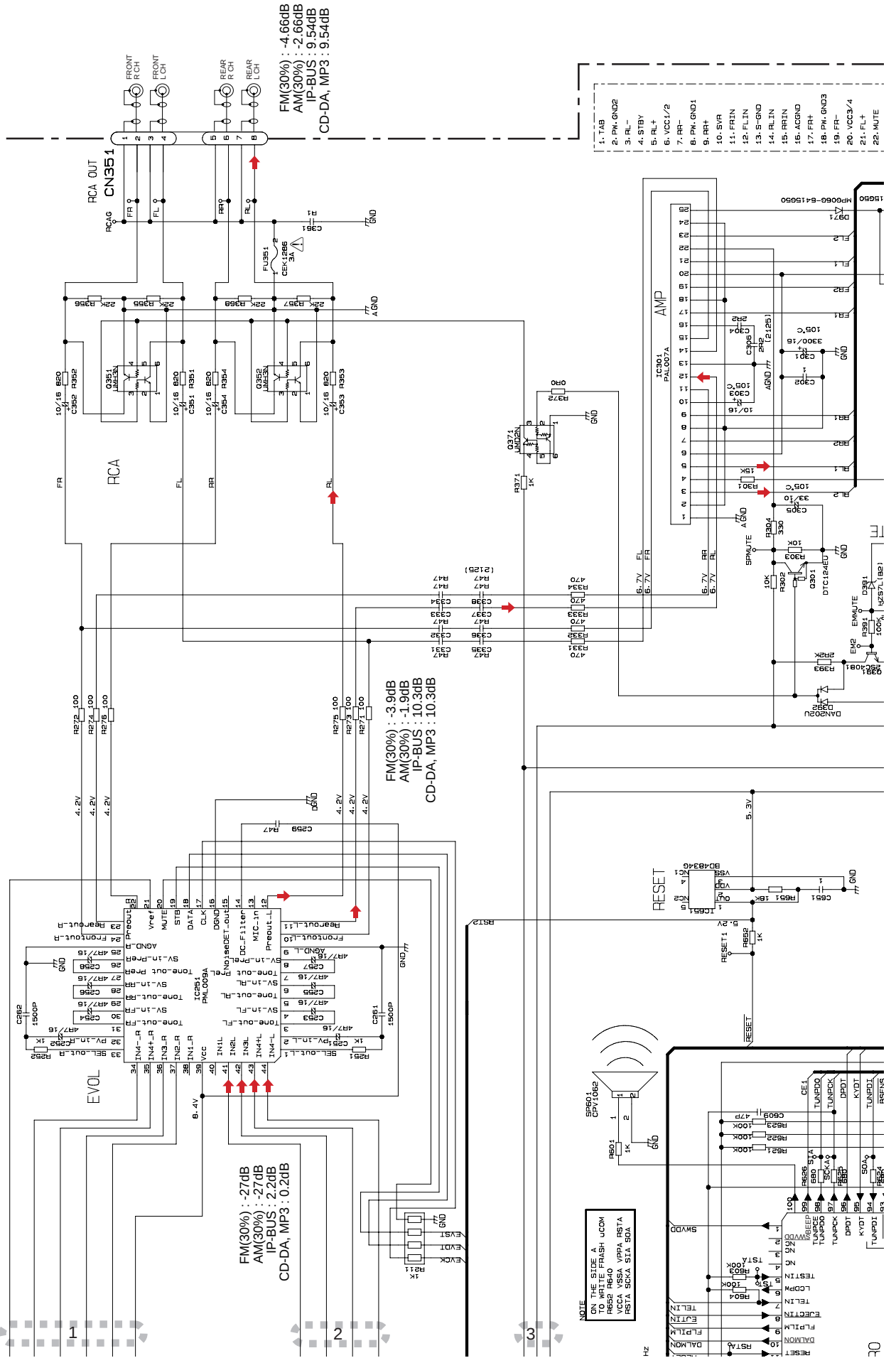
DEH-P6700MP/XM/EW

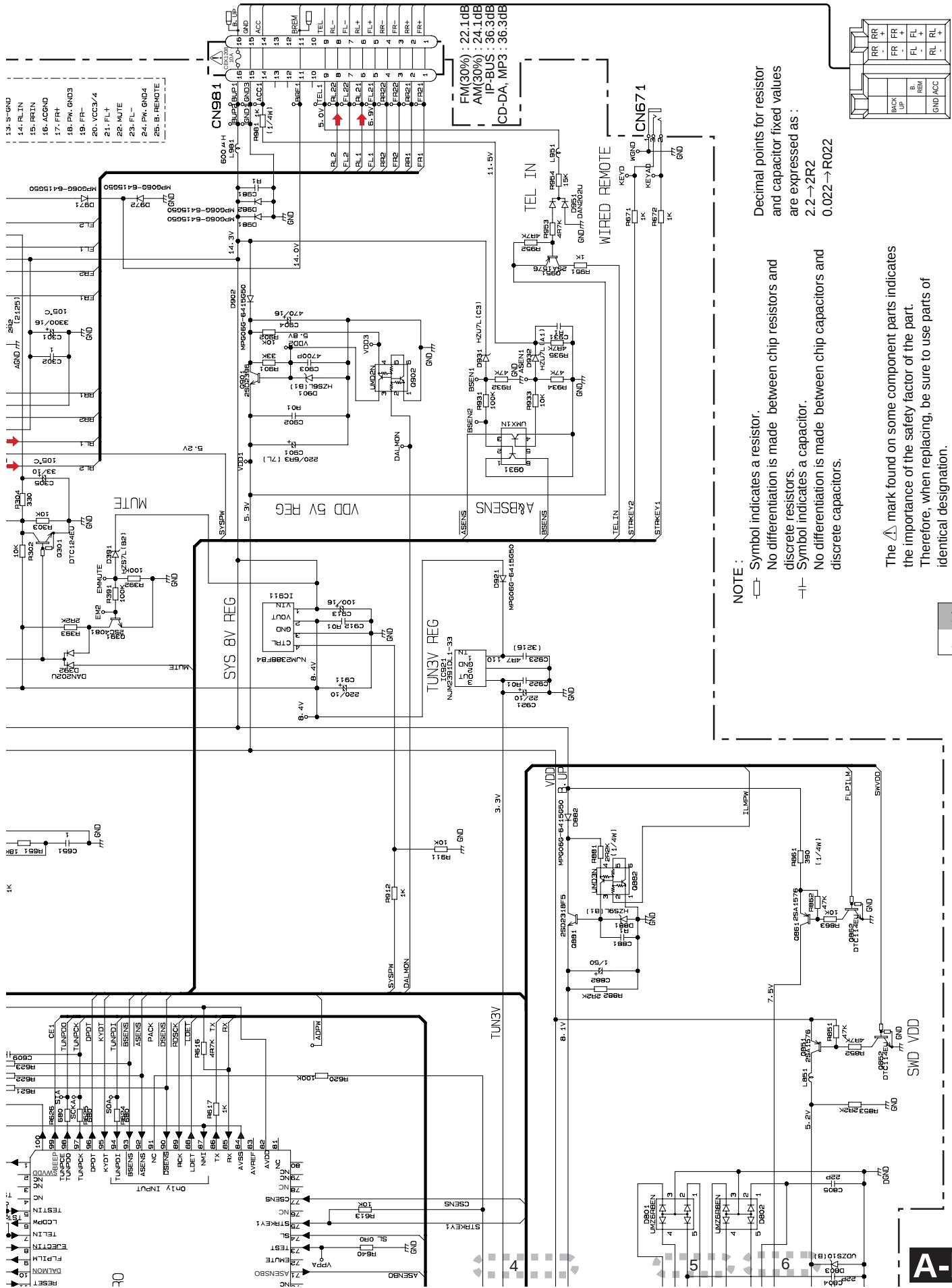
A-a	A-b
-----	-----





A TUNERAMP UNIT





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.

Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022

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.

A-a A-b

3.3 KEYBOARD UNIT

A

B

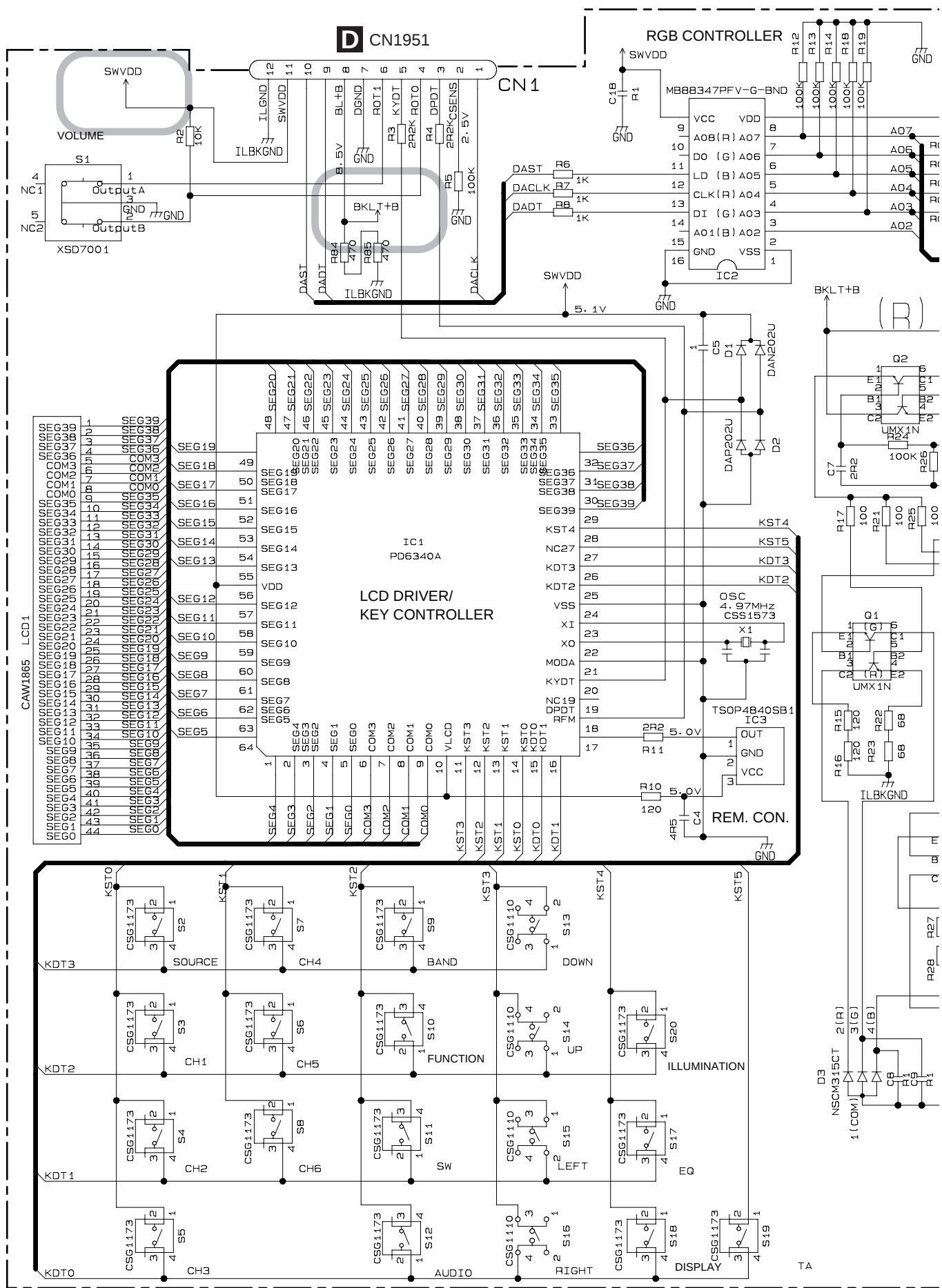
C

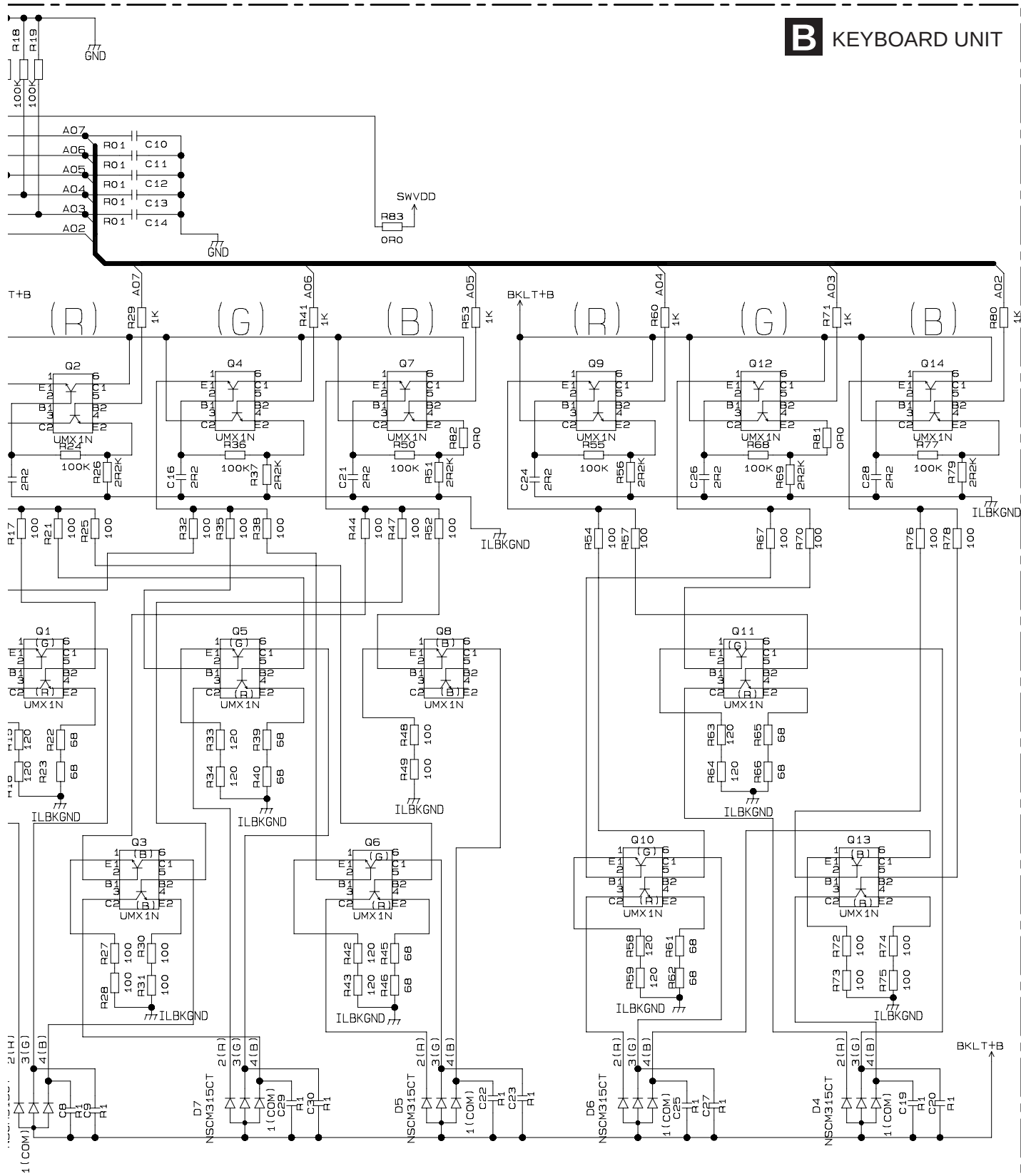
D

E

F

B

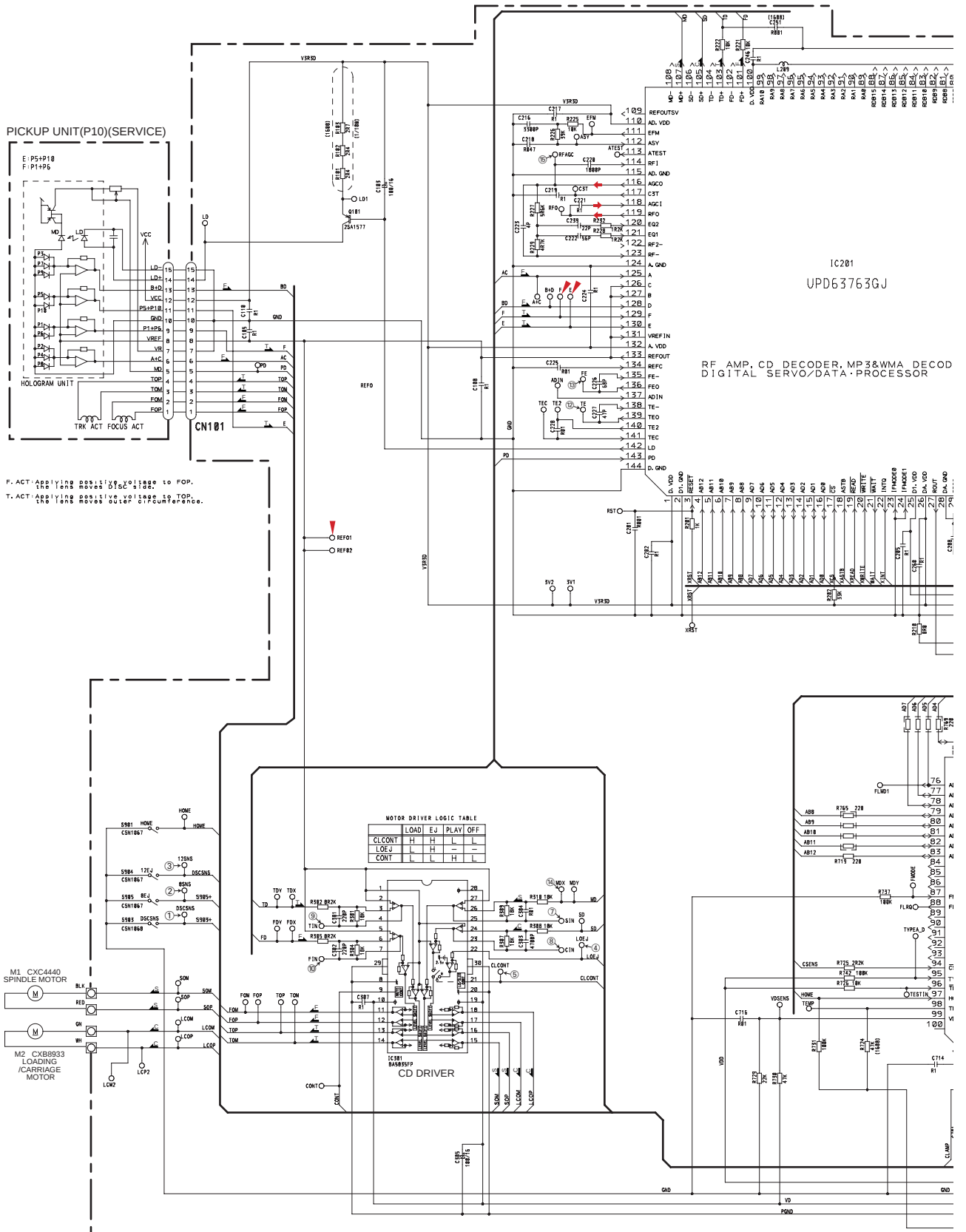




 : The power supply is shown with the marked box.

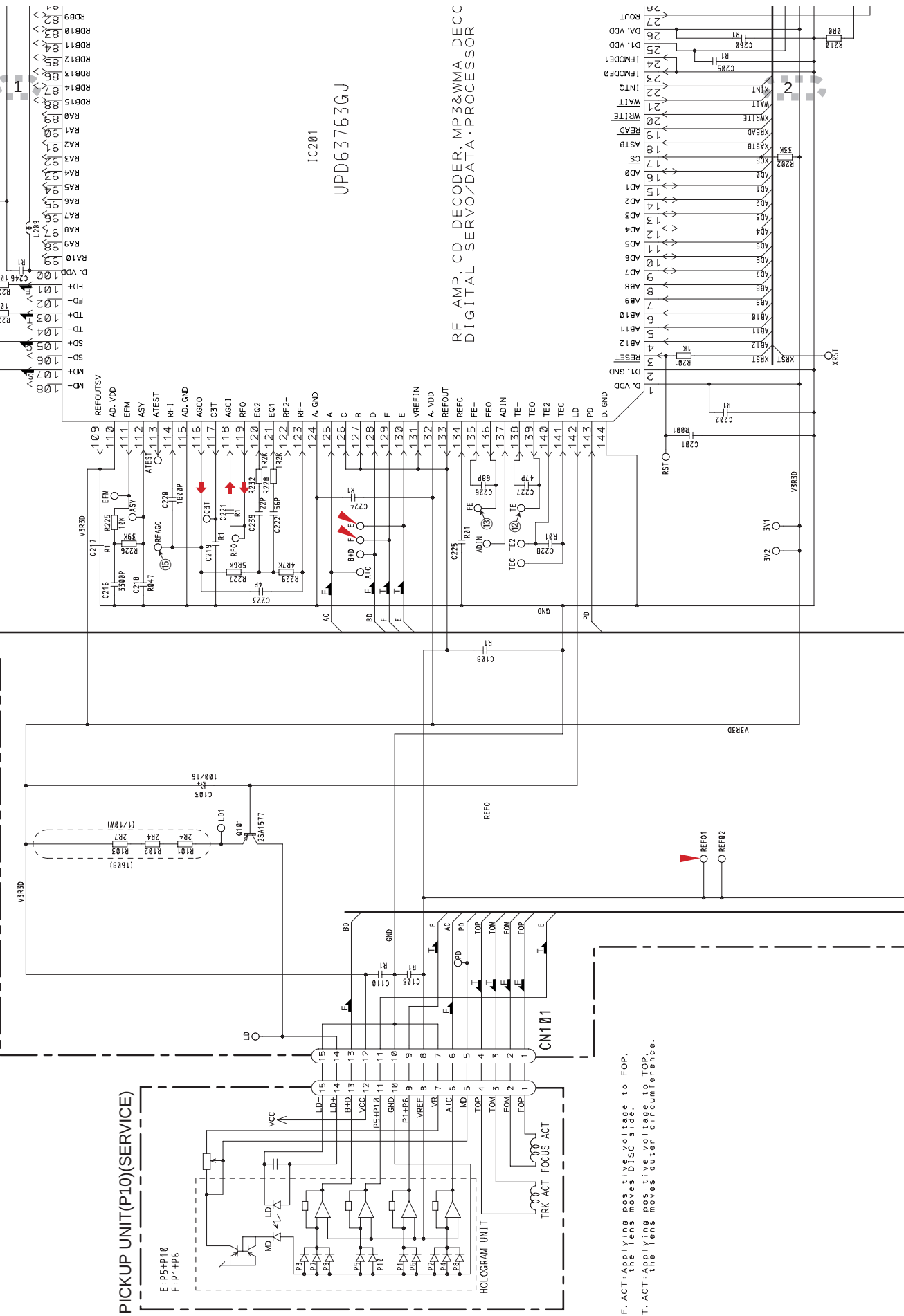
3.4 CD MECHANISM MODULE(GUIDE PAGE)

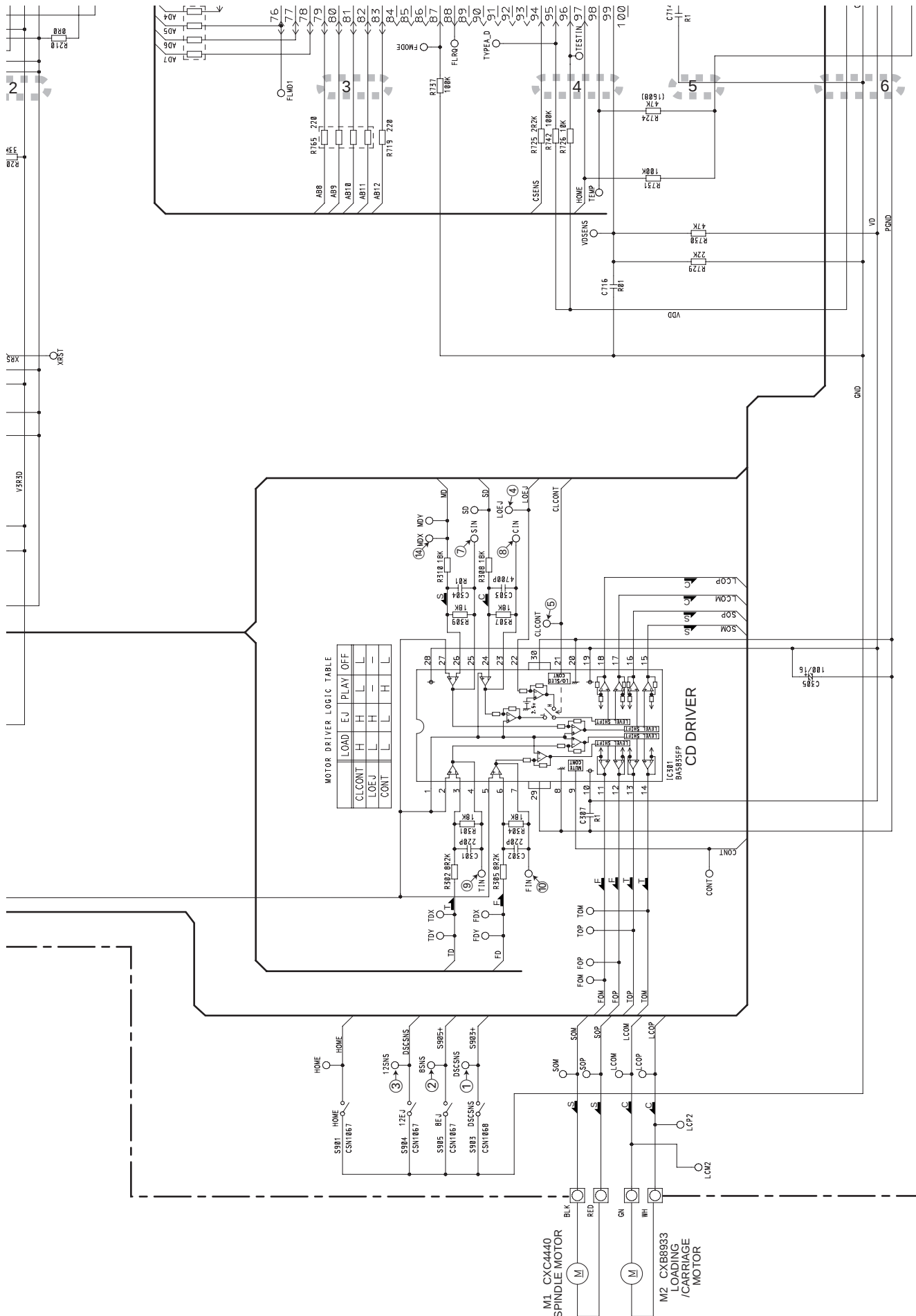
C-a



B







C-a

C-a C-b

C-b

A B C D E F

A

B

C

D

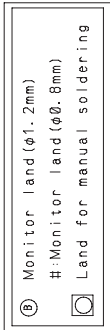
E

F

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.

C-a C-b

C-b



SWITCHES:
CD CORE UNIT(S10.1)
S901:HOME SWITCH.....ON-OFF
S903:DSCSNS SWITCH.....ON-OFF
S904:12E1 SWITCH.....ON-OFF
S905:8EJ SWITCH.....ON-OFF

The underlined indicates the switch position.

↑ SIGNAL LINE

F1 FOCUS SERVO LINE

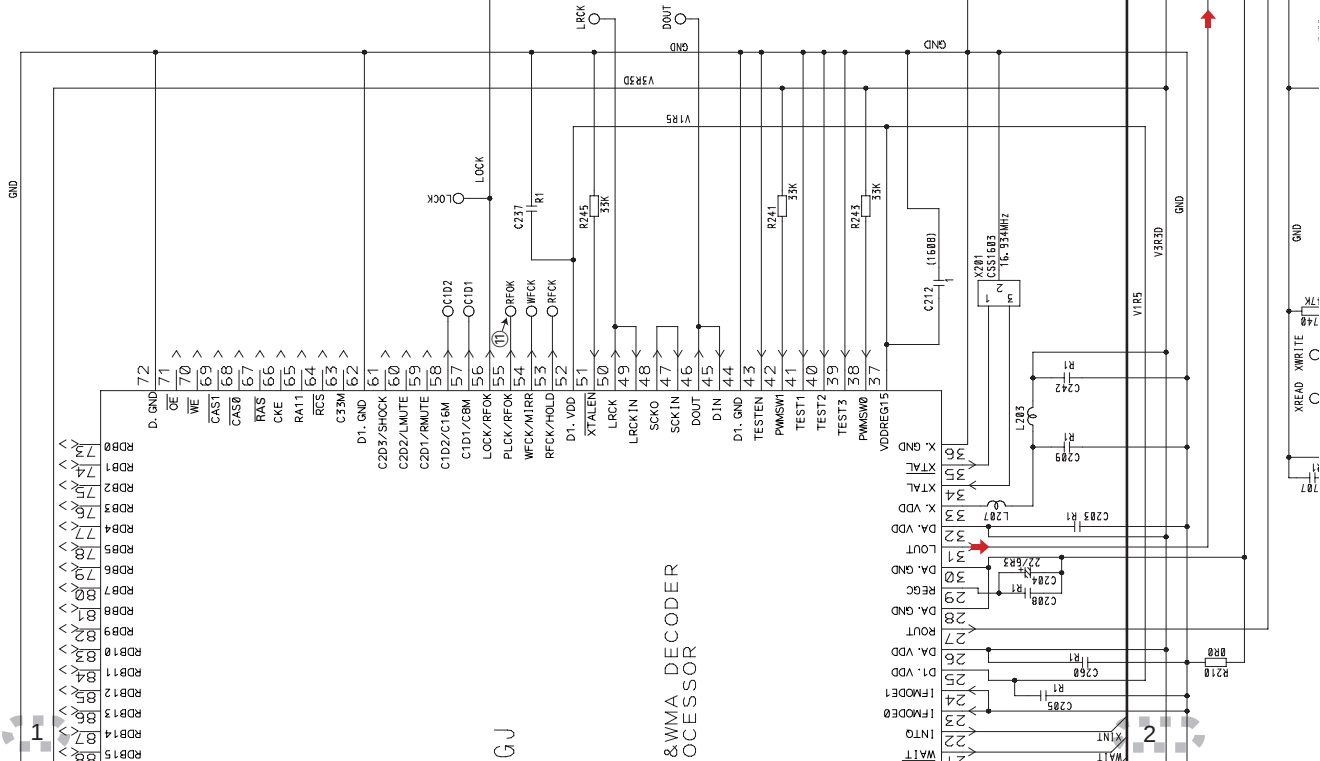
T1 TRACKING SERVO LINE

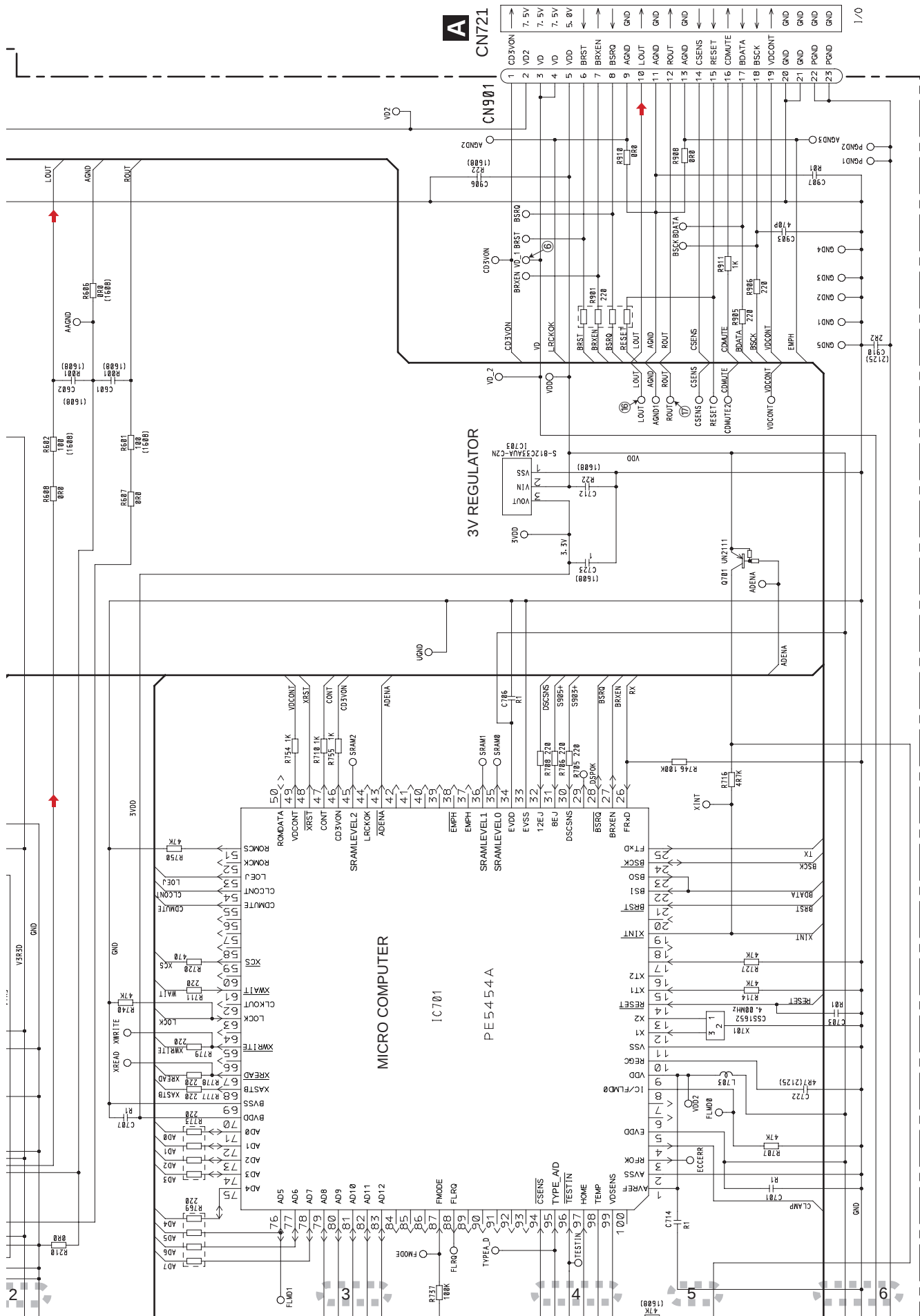
C1 CARRIAGE SERVO LINE

S1 SPINDLE SERVO LINE

CD CORE UNIT(S10.1)

3.3V REGULATOR





C-a C-b

C-b

A B C D E F

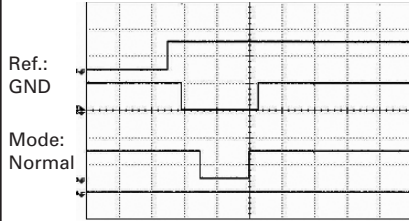
Waveforms

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

A

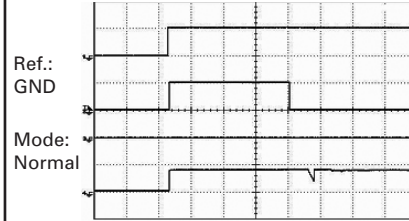
① DSCSNS 5V/div 500ms/div
② 8SNS 5V/div
③ 12SNS 5V/div
④ LOEJ 5V/div

12 cm CD Loading operation



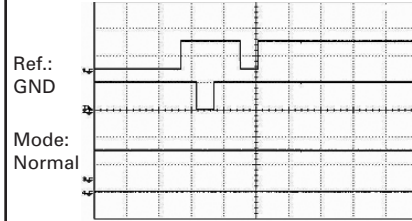
① DSCSNS 5V/div 500ms/div
⑤ CLCONT 5V/div
④ LOEJ 5V/div
⑥ VD 10V/div

12 cm CD Loading operation



① DSCSNS 5V/div 500ms/div
② 8SNS 5V/div
③ 12SNS 5V/div
④ LOEJ 5V/div

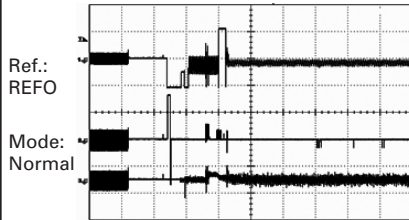
8 cm CD Loading operation



B

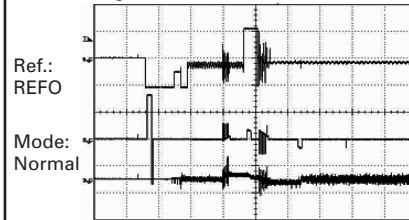
⑦ SIN 1V/div 2s/div
⑧ CIN 500mV/div
⑨ TIN 500mV/div

12 cm CD-DA setup operation after loading



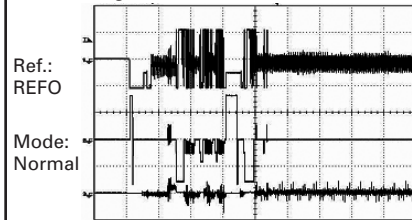
⑦ SIN 1V/div 1s/div
⑧ CIN 500mV/div
⑨ TIN 500mV/div

12 cm CD-ROM(1 session) setup operation after loading



⑦ SIN 1V/div 2s/div
⑧ CIN 500mV/div
⑨ TIN 500mV/div

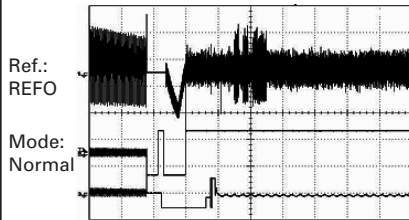
12 cm CD-ROM(3 sessions) setup operation after loading



C

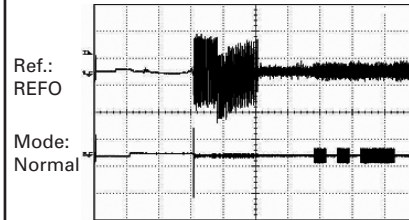
⑩ FIN 200mV/div 500ms/div
⑪ RFOK 2V/div
⑦ SIN 2V/div

12 cm CD-DA Source On setup operation



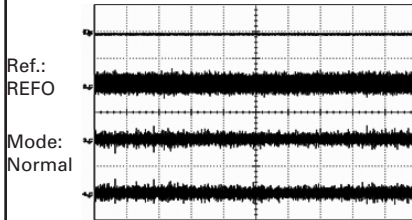
⑫ TE 500mV/div 200ms/div
⑬ FE 500mV/div

Source On setup operation



⑬ FE 500mV/div 20ms/div
⑩ FIN 500mV/div
⑫ TE 500mV/div
⑨ TIN 500mV/div

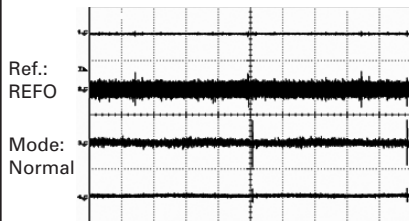
CD-DA Play operation



D

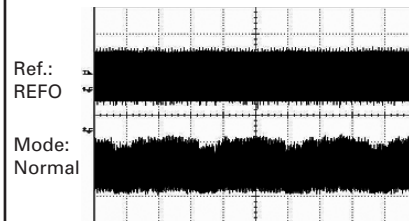
⑬ FE 500mV/div 20ms/div
⑩ FIN 500mV/div
⑫ TE 500mV/div
⑨ TIN 500mV/div

CD-ROM play operation(Regular track Jump)



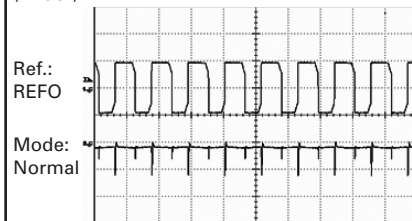
⑭ MDX 1V/div 50ms/div
⑦ SIN 200mV/div

Spindle waveform during play operation



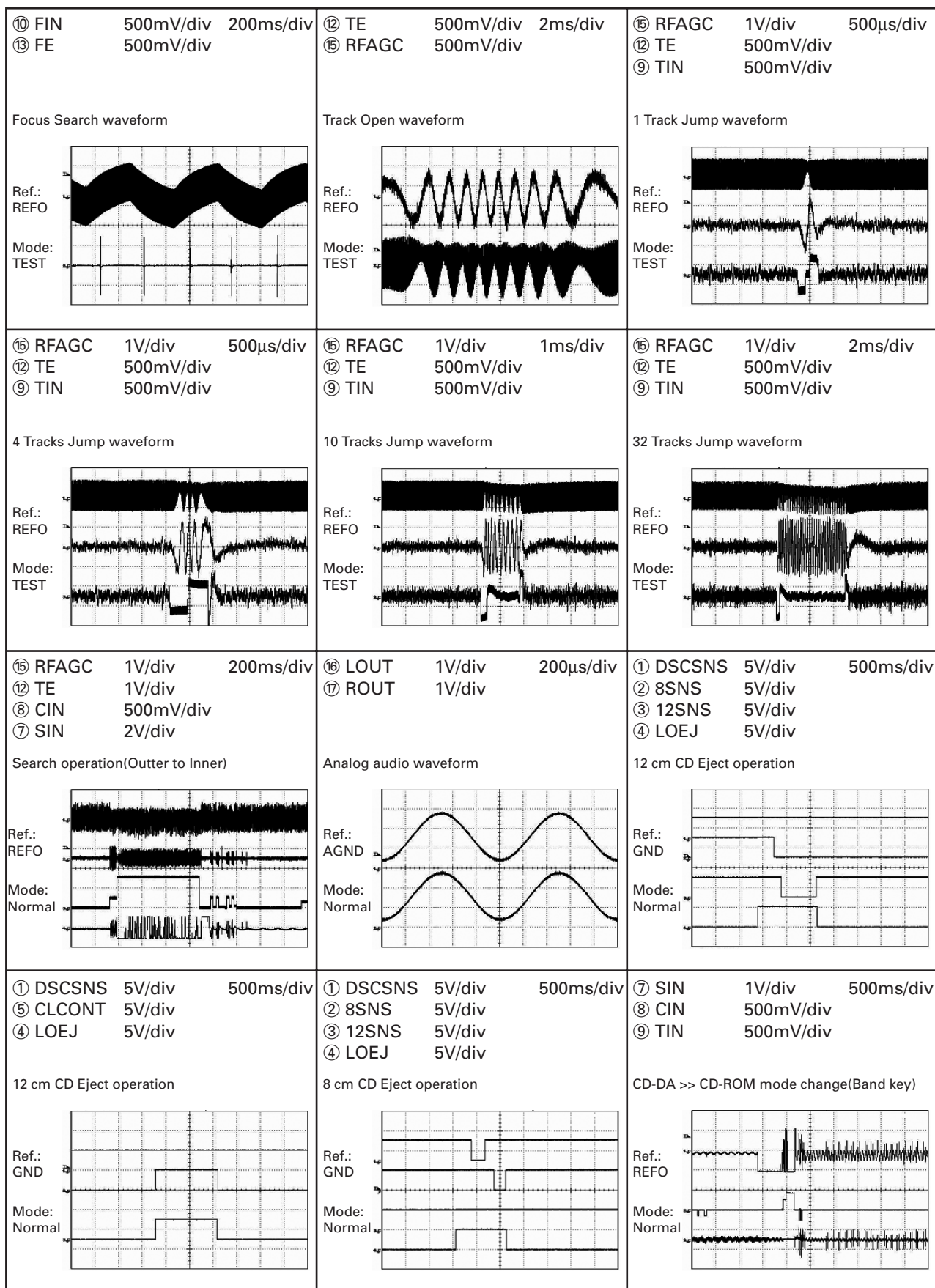
⑭ MDX 2V/div 5μs/div
⑦ SIN 1V/div

Spindle waveform during play operation (Wider)



E

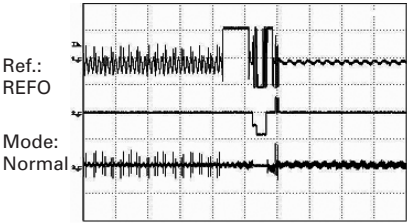
F



A

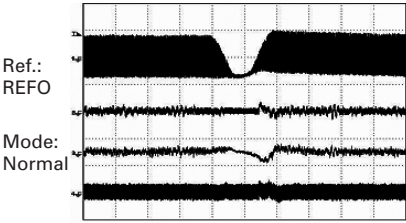
⑦ SIN 1V/div 500ms/div
⑧ CIN 500mV/div
⑨ TIN 500mV/div

CD-ROM >> CD-DA mode change(Band key)



⑮ RFAGC 1V/div 500μs/div
⑨ TIN 1V/div
⑫ TE 1V/div
⑩ FIN 1V/div

Black dot(800μm) during play



B

C

D

E

F

■

5

■

6

■

7

■

8

■

A

■

B

■

C

■

D

■

E

■

F

■

5

■

6

DEH-P6700MP/XM/EW

■

7

■

8

■

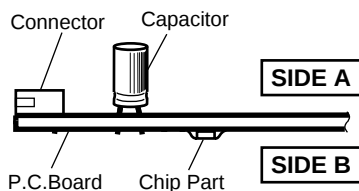
4. PCB CONNECTION DIAGRAM

4.1 TUNER AMP UNIT

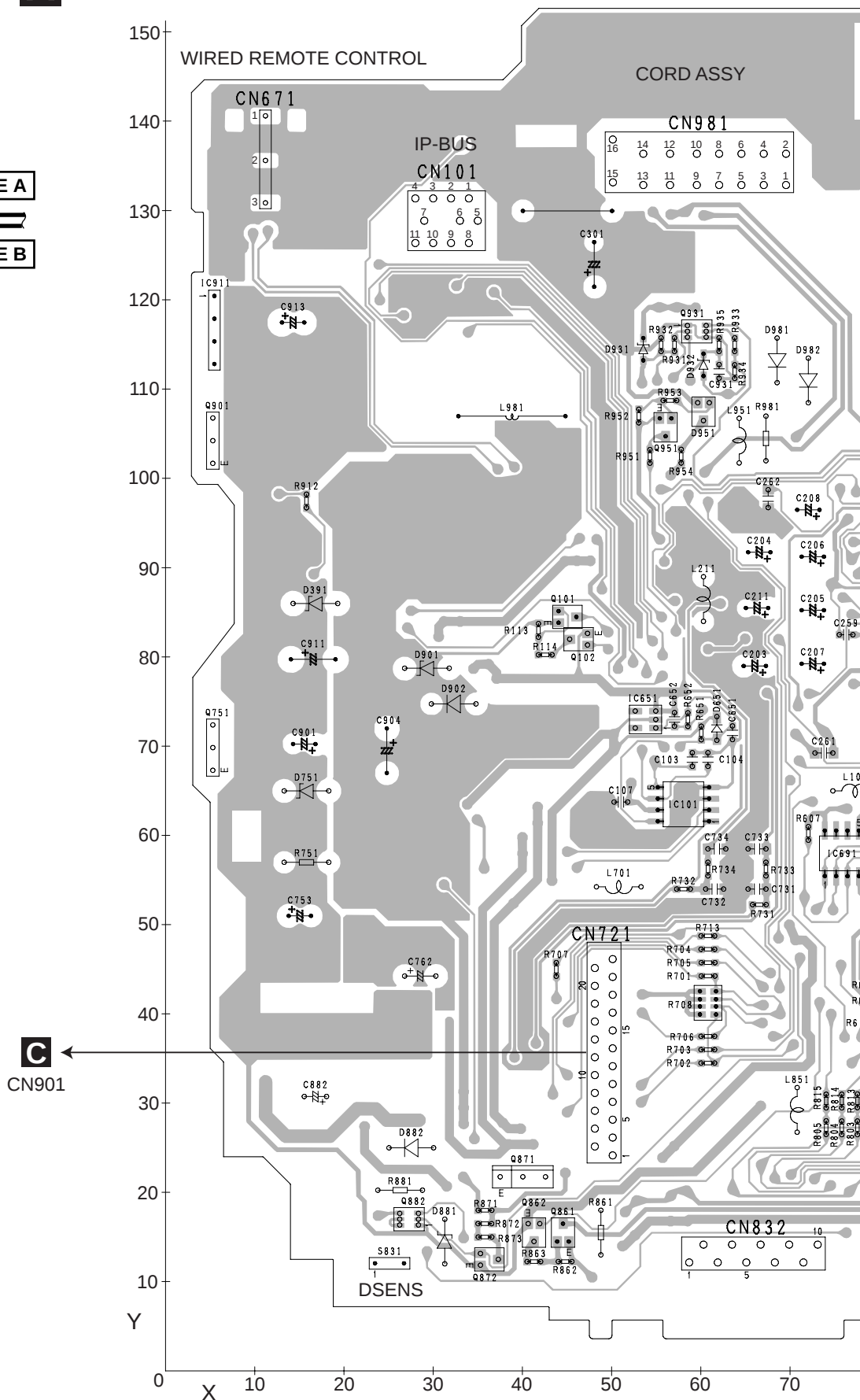
NOTE FOR PCB DIAGRAMS

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.

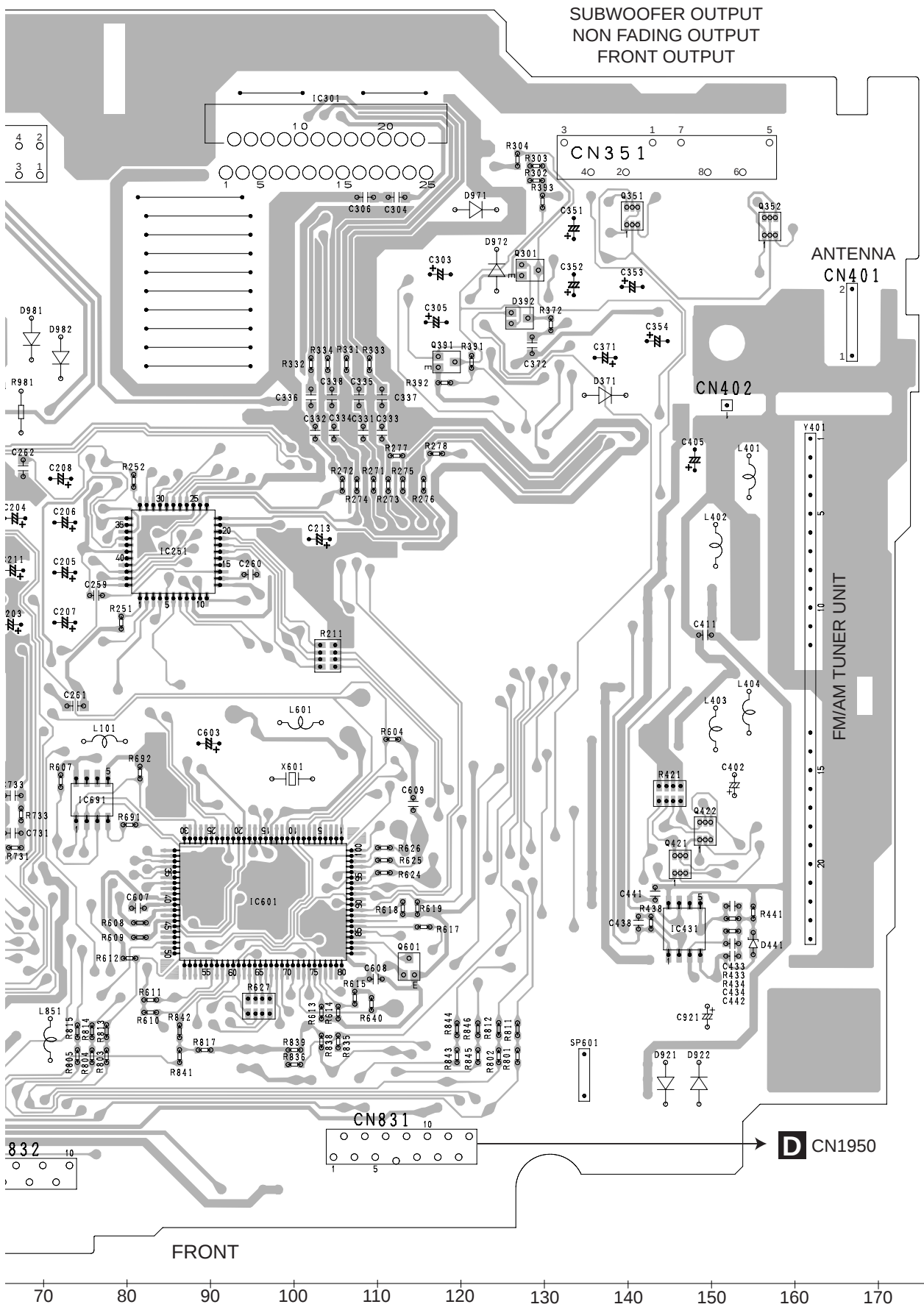
2. Viewpoint of PCB diagrams



A TUNER AMP UNIT



A



A

A TUNER AMP UNIT

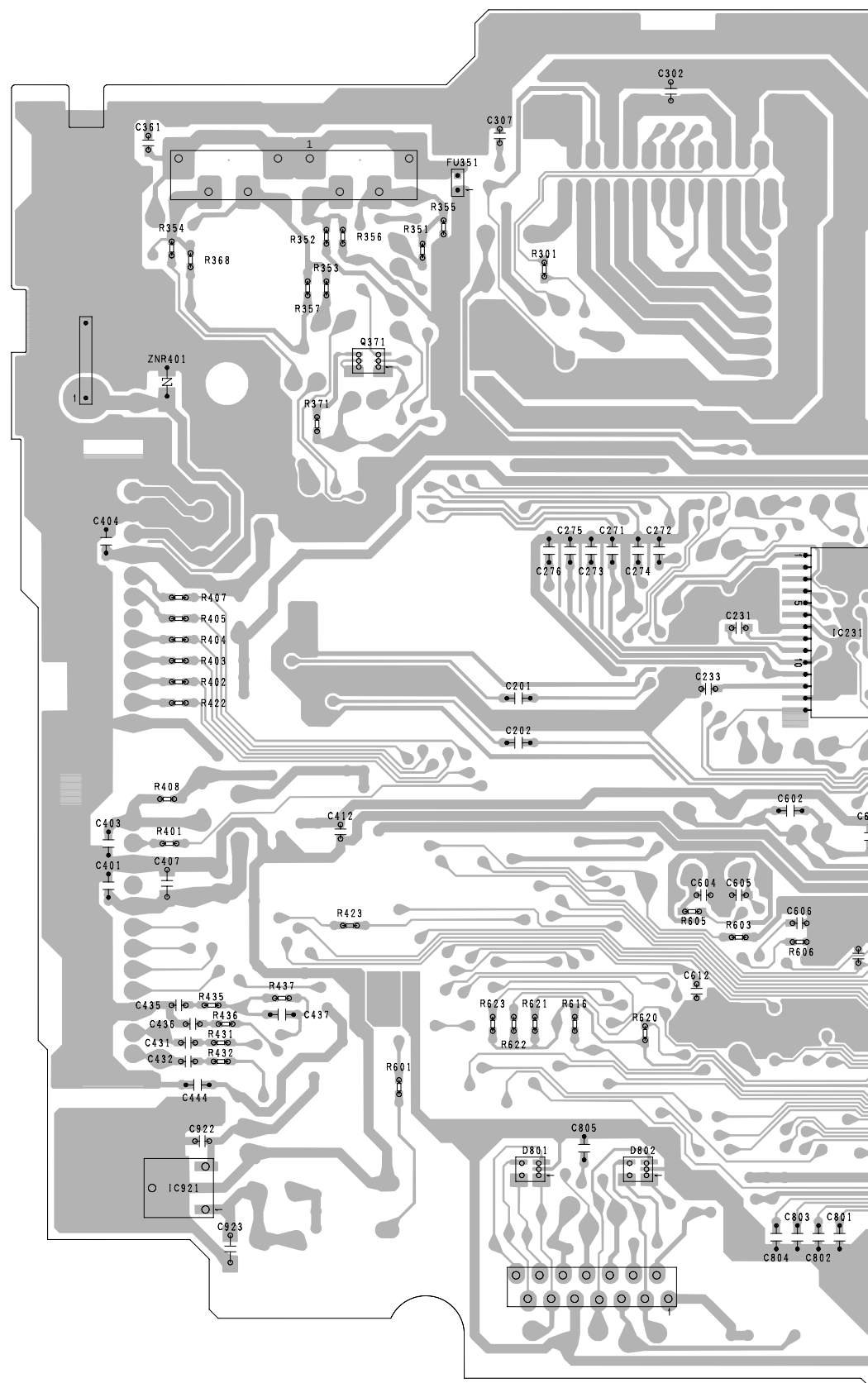
B

C

D

E

F



SIDE B

A

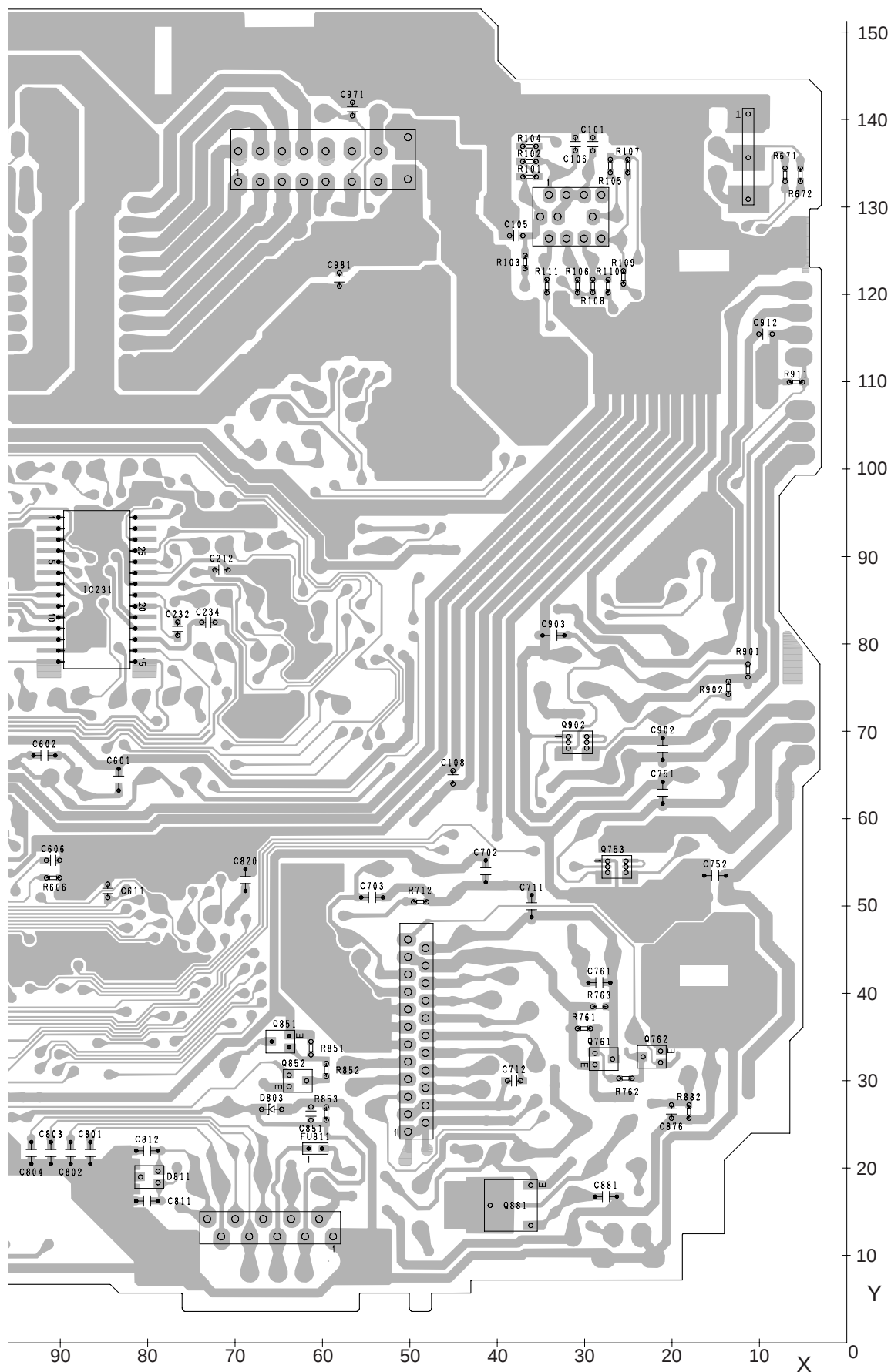
B

C

D

E

F



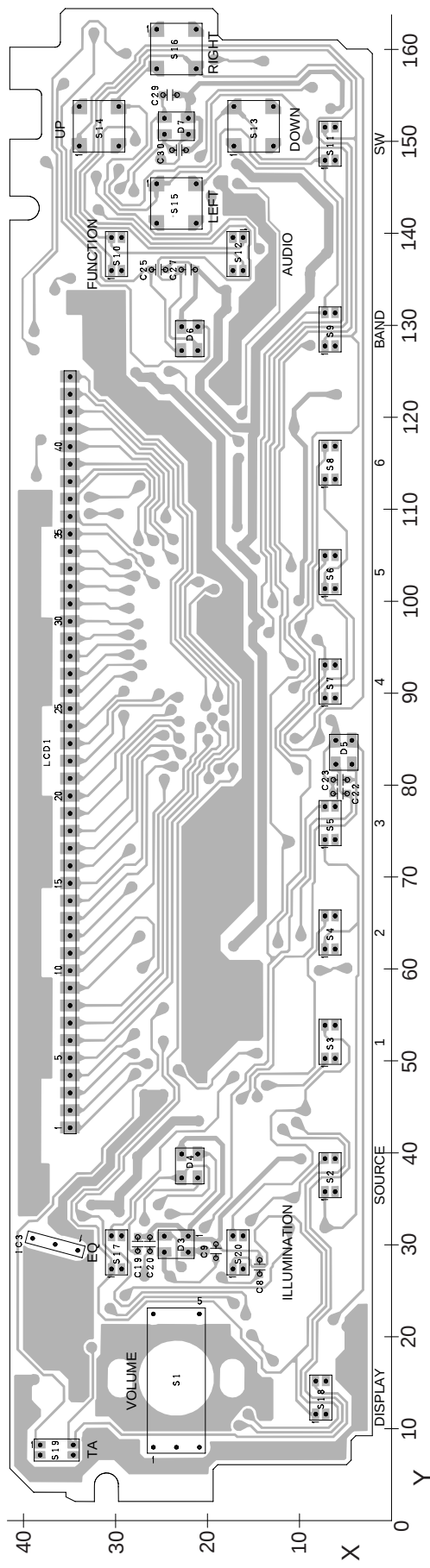
DEH-P6700MP/XM/EW

A

4.2 KEYBOARD UNIT

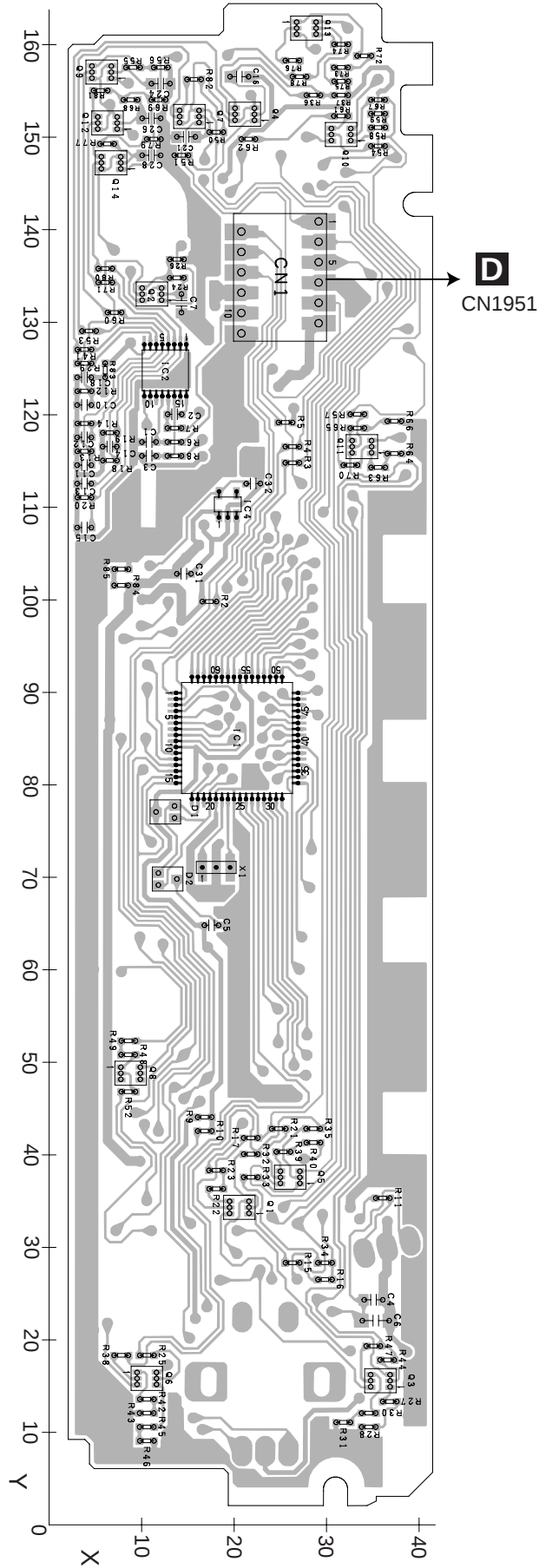
B KEYBOARD UNIT

SIDE A



B KEYBOARD UNIT

SIDE B



4.3 CD CORE UNIT(S10.1)

C CD CORE UNIT(S10.1)

SIDE A

A

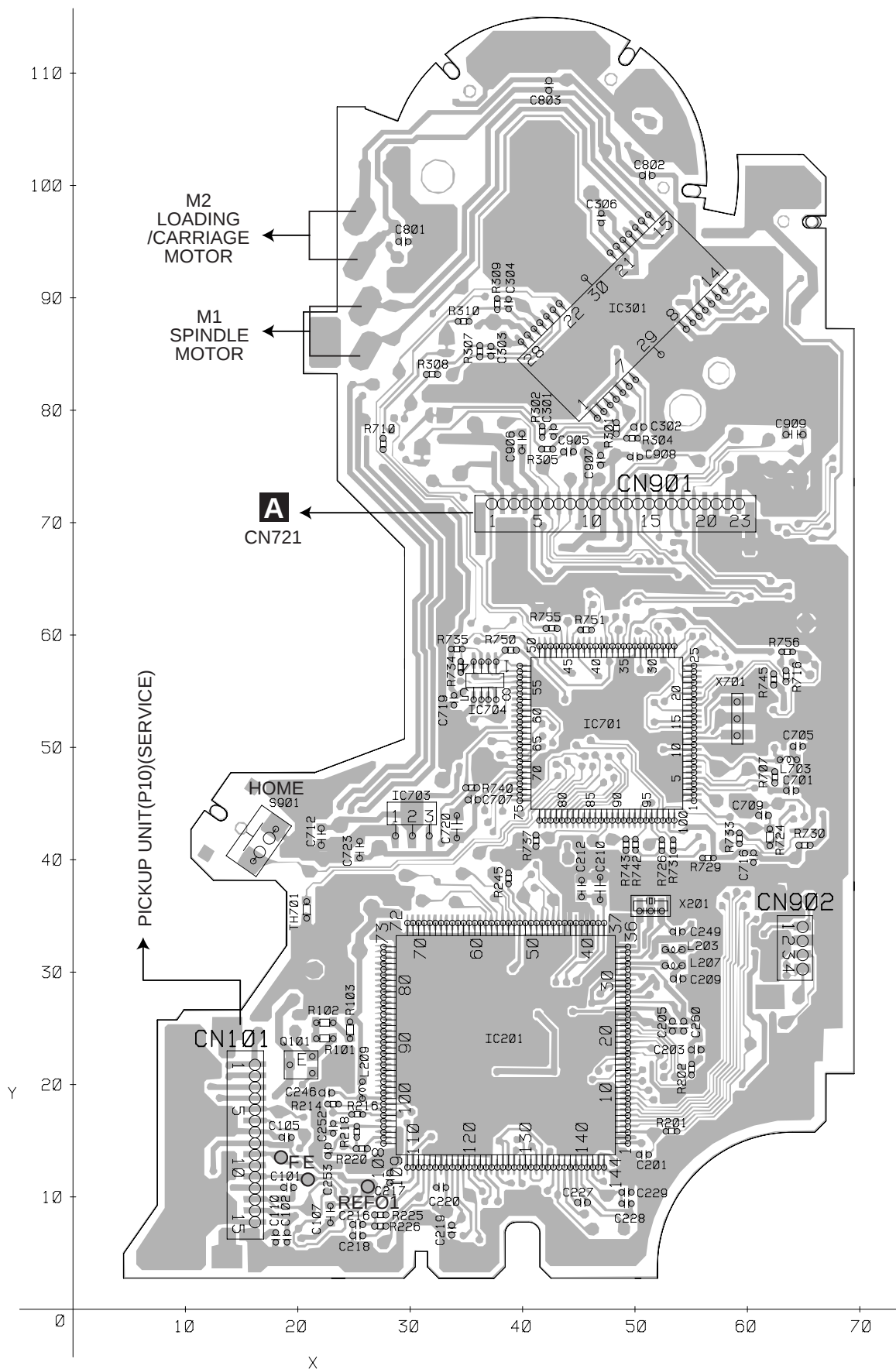
B

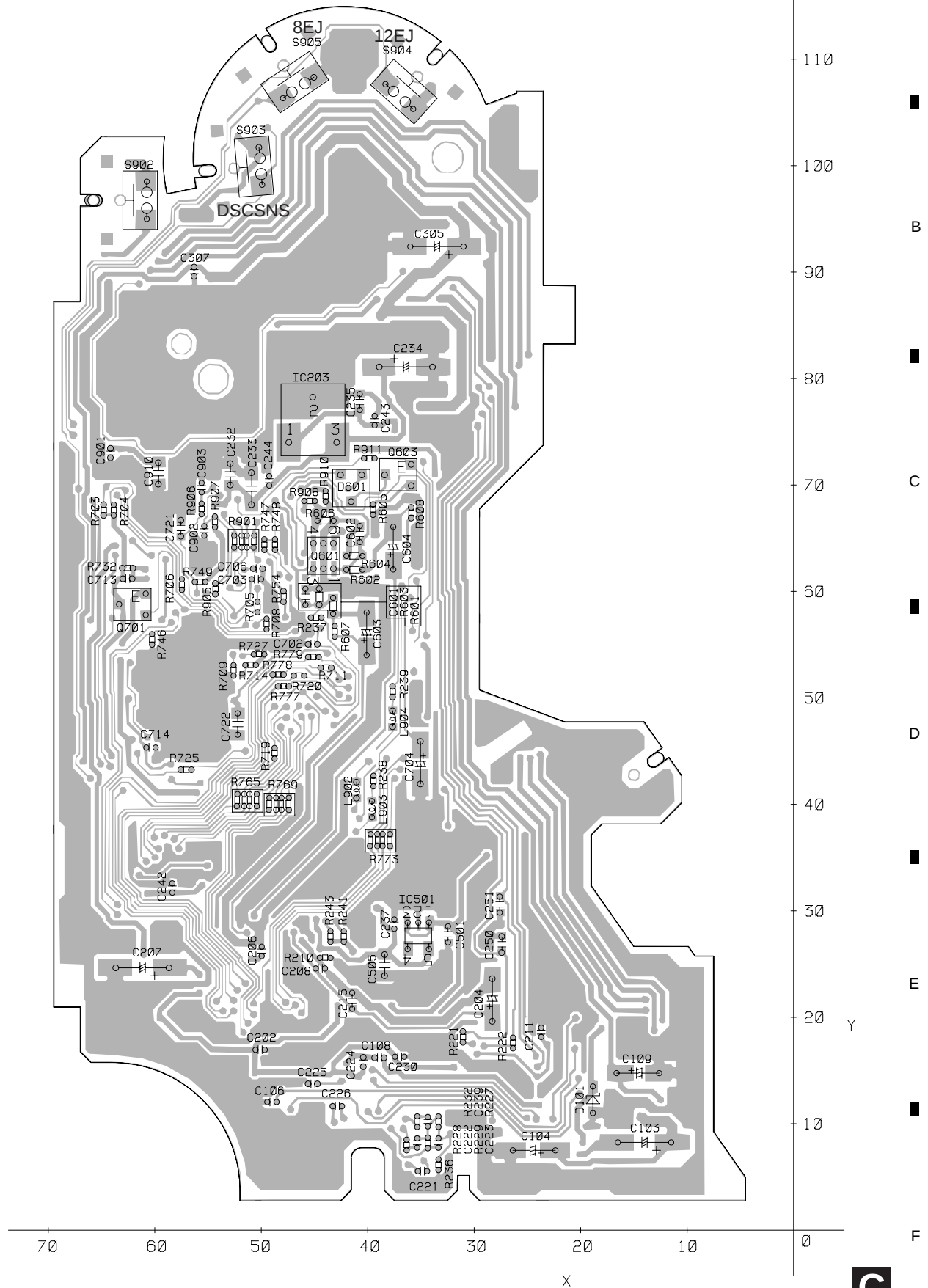
C

D

E

F





1 2 3 4

4.4 PANEL UNIT

A

D PANEL UNIT

SIDE A

D PANEL UNIT

SIDE B

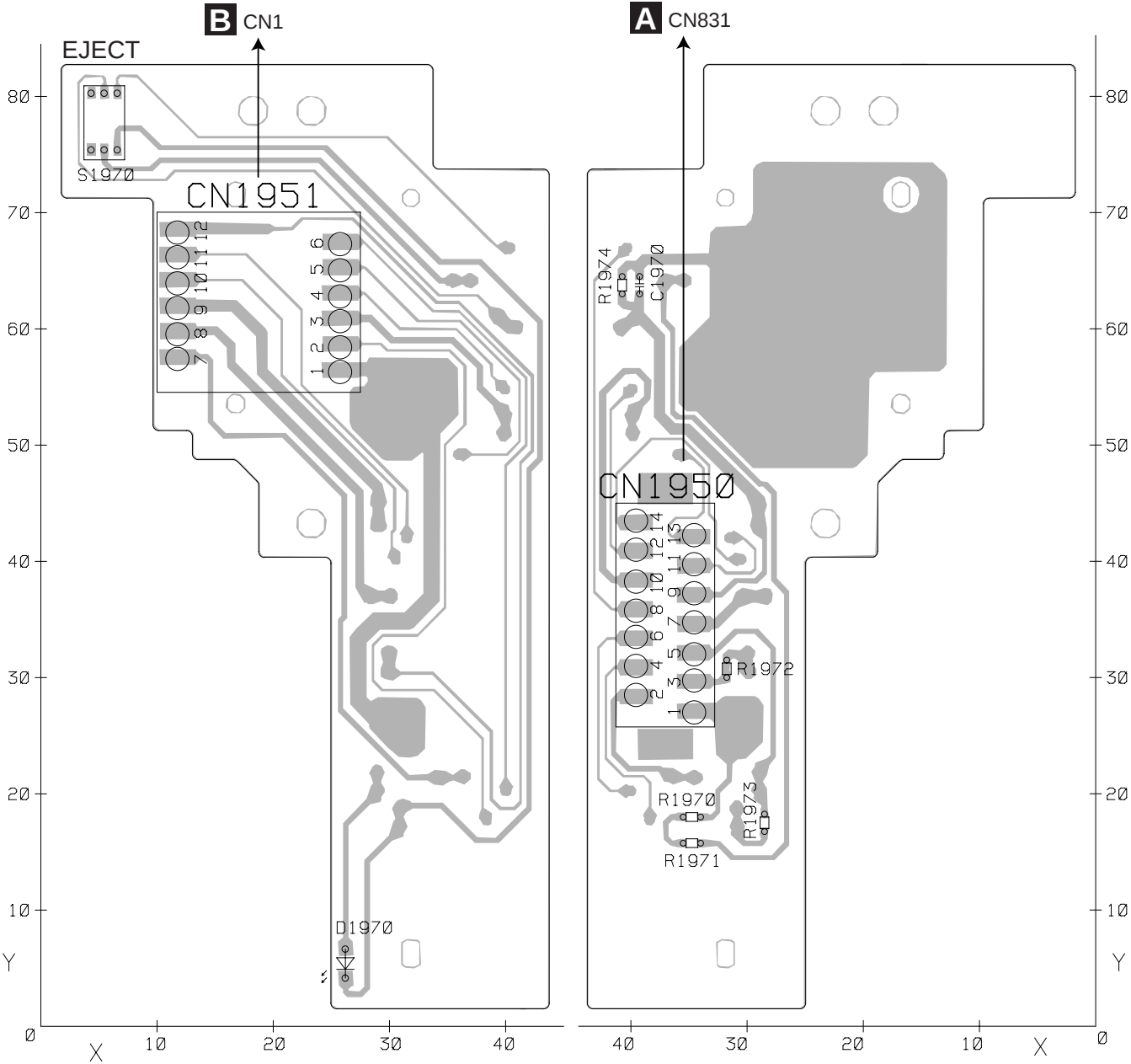
B

C

D

E

F



D

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  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

Circuit Symbol and No.			Part No.	Circuit Symbol and No.			Part No.
DEH-P6700MP/XM/EW				Q 902	(B,31,69) Transistor		UMD2N
Tuner Amp Unit : CWM9790				Q 931	(A,60,117) Transistor		UMX1N
Keyboard Unit : NSP				Q 951	(A,56,106) Transistor		2SA1576
Panel Unit : CWM9781				D 391	(A,17,86) Diode		HZS7L(B2)
CD Core Unit(S10.1) : CWX3096				D 392	(A,127,116) Diode		DAN202U
				D 441	(A,155,41) Diode		UDZS5R6(B)
				D 751	(A,16,65) Diode		HZS9L(A1)
				D 801	(B,120,29) Diode		UMZ6R8EN
				D 802	(B,108,29) Diode		UMZ6R8EN
				D 803	(B,66,27) Diode		UDZS10(B)
				D 881	(A,31,15) Diode		HZS9L(B1)
				D 882	(A,28,25) Diode		MPG06G-6415G50
				D 901	(A,29,79) Diode		HZS6L(B1)
				D 902	(A,32,75) Diode		MPG06G-6415G50
				D 921	(A,145,24) Diode		MPG06G-6415G50
				D 931	(A,54,115) Diode		HZU7L(C3)
				D 932	(A,60,113) Diode		HZU7L(A1)
				D 951	(A,60,108) Diode		DAN202U
				D 971	(A,122,129) Diode		MPG06G-6415G50
				D 972	(A,124,122) Diode		MPG06G-6415G50
				D 981	(A,69,113) Diode		MPG06G-6415G50
				D 982	(A,72,111) Diode		MPG06G-6415G50
				ZNR401	(B,158,113) Surge Protector		CSA30-201N
				L 101	(A,77,65) Inductor		LAU2R2K
				L 211	(A,60,87) Inductor		LAU2R2K
				L 401	(A,155,97) Ferri-Inductor		LAU4R7K
				L 402	(A,151,89) Inductor		LAU1R0K
				L 403	(A,151,67) Inductor		LAU1R0K
				L 601	(A,101,67) Inductor		LAU2R2K
				L 701	(A,51,54) Inductor		LAU2R2K
				L 851	(A,71,29) Inductor		LAU2R2K
				L 951	(A,64,104) Inductor		LAU2R2K
				L 981	(A,32,107) Choke Coil 600μH		CTH1291
				X 601	(A,100,61) Radiator 12.58291MHz		CSS1402
				S 831	(A,25,10) Switch(DSENS)		CSN1039
				 FU351	(B,127,134) Fuse 3A		CEK1286
				SP601	(A,135,25) Buzzer		CPV1062
				Y 401	(A,162,101) FM/AM Tuner Unit		CWE1645
					Fuse 10A		CEK1208
				RESISTORS			

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

A	R 101	(B,36,134)	RS1/16S150J	R 441	(A,155,45)	RS1/16S681J
	R 102	(B,36,135)	RS1/16S470J	R 601	(B,134,38)	RS1/16S102J
	R 103	(B,37,124)	RS1/16S101J	R 603	(B,97,54)	RS1/16S104J
	R 104	(B,36,137)	RS1/16S101J	R 604	(A,112,65)	RS1/16S104J
	R 105	(B,27,135)	RS1/16S181J	R 605	(B,102,57)	RS1/16S102J
	R 106	(B,31,121)	RS1/16S181J	R 606	(B,91,53)	RS1/16S473J
	R 107	(B,25,135)	RS1/16S223J	R 607	(A,72,60)	RS1/16S104J
	R 108	(B,29,121)	RS1/16S223J	R 610	(A,83,33)	RS1/16S103J
	R 109	(B,26,122)	RS1/16S102J	R 611	(A,83,34)	RS1/16S473J
	R 110	(B,27,121)	RS1/16S102J	R 612	(A,80,39)	RS1/16S104J
B	R 111	(B,34,121)	RS1/16S222J	R 613	(A,103,33)	RS1/16S103J
	R 113	(A,42,83)	RS1/16S332J	R 616	(B,115,45)	RS1/16S472J
	R 114	(A,43,80)	RS1/16S562J	R 617	(A,116,43)	RS1/16S102J
	R 211	(A,104,75)	RAB4C102J	R 620	(B,107,44)	RS1/16S104J
	R 251	(A,79,79)	RS1/16S102J	R 621	(B,119,45)	RS1/16S104J
	R 252	(A,81,96)	RS1/16S102J	R 622	(B,121,45)	RS1/16S104J
	R 271	(A,110,96)	RS1/16S101J	R 623	(B,124,45)	RS1/16S104J
	R 272	(A,106,96)	RS1/16S101J	R 624	(A,111,49)	RS1/16S681J
	R 273	(A,111,96)	RS1/16S101J	R 625	(A,111,51)	RS1/16S681J
	R 274	(A,108,96)	RS1/16S101J	R 626	(A,111,52)	RS1/16S681J
C	R 275	(A,113,96)	RS1/16S101J	R 627	(A,96,33)	RAB4C471J
	R 276	(A,116,96)	RS1/16S101J	R 640	(A,109,34)	RS1/16S0R0J
	R 301	(B,118,125)	RS1/16S153J	R 651	(A,60,72)	RS1/16S183J
	R 302	(A,129,132)	RS1/16S103J	R 652	(A,59,73)	RS1/16S102J
	R 303	(A,129,134)	RS1/16S103J	R 671	(B,7,134)	RS1/16S102J
	R 304	(A,127,135)	RS1/16S331J	R 672	(B,5,134)	RS1/16S102J
	R 331	(A,106,110)	RSK1/16S471J	R 701	(A,61,44)	RS1/16S221J
	R 332	(A,102,110)	RSK1/16S471J	R 702	(A,61,35)	RS1/16S221J
	R 333	(A,109,110)	RSK1/16S471J	R 703	(A,61,36)	RS1/16S102J
	R 334	(A,104,110)	RSK1/16S471J	R 704	(A,61,47)	RS1/16S102J
D	R 351	(B,131,127)	RS1/16S821J	R 705	(A,61,46)	RS1/16S221J
	R 352	(B,141,129)	RS1/16S821J	R 706	(A,61,38)	RS1/16S221J
	R 353	(B,141,123)	RS1/16S821J	R 707	(A,44,45)	RS1/16S221J
	R 354	(B,158,127)	RS1/16S821J	R 708	(A,61,41)	RAB4C682J
	R 355	(B,129,130)	RS1/16S223J	R 712	(B,49,51)	RS1/16S473J
	R 356	(B,140,129)	RS1/16S223J	R 731	(A,67,52)	RS1/16S6800D
	R 357	(B,143,123)	RS1/16S223J	R 732	(A,58,54)	RS1/16S6800D
	R 368	(B,156,126)	RS1/16S223J	R 733	(A,67,56)	RS1/16S0R0J
	R 371	(B,142,109)	RS1/16S102J	R 734	(A,61,56)	RS1/16S0R0J
	R 372	(A,131,115)	RS1/16S0R0J	R 751	(A,16,57)	RD1/4PU102J
E	R 391	(A,121,111)	RS1/16S104J	R 761	(B,30,36)	RS1/16S103J
	R 392	(A,118,108)	RS1/16S104J	R 762	(B,25,30)	RS1/16S152J
	R 393	(A,130,130)	RS1/16S222J	R 801	(A,127,27)	RS1/16S222J
	R 401	(B,158,64)	RS1/16S681J	R 802	(A,125,27)	RS1/16S222J
	R 402	(B,157,81)	RS1/16S681J	R 803	(A,78,27)	RS1/16S222J
	R 403	(B,157,83)	RS1/16S681J	R 804	(A,76,27)	RS1/16S222J
	R 404	(B,157,86)	RS1/16S681J	R 805	(A,74,27)	RS1/16S222J
	R 405	(B,157,88)	RS1/16S681J	R 835	(A,105,29)	RS1/16S222J
	R 407	(B,157,90)	RS1/16S681J	R 836	(A,100,26)	RS1/16S104J
	R 408	(B,158,69)	RS1/16S0R0J	R 838	(A,103,29)	RS1/16S222J
F	R 421	(A,145,59)	RAB4C223J	R 839	(A,100,28)	RS1/16S104J
	R 422	(B,157,79)	RS1/16S681J	R 841	(A,86,27)	RS1/16S222J
	R 431	(B,153,43)	RS1/16S103J	R 843	(A,120,27)	RS1/16S222J
	R 432	(B,153,41)	RS1/16S103J	R 845	(A,122,27)	RS1/16S222J
	R 433	(A,153,44)	RS1/16S103J	R 851	(B,61,34)	RS1/16S473J
	R 434	(A,153,42)	RS1/16S103J	R 852	(B,60,31)	RS1/16S472J
	R 435	(B,154,47)	RS1/16S103J	R 853	(B,60,26)	RS1/16S222J
	R 436	(B,152,45)	RS1/16S103J	R 861	(A,49,16)	RD1/4PU391J
	R 437	(B,146,47)	RS1/16S103J	R 862	(A,45,12)	RS1/16S473J
	R 438	(A,143,43)	RS1/16S103J	R 863	(A,41,12)	RS1/16S103J

5		6		7		8	
Circuit Symbol and No.		Part No.		Circuit Symbol and No.		Part No.	
R 881	(A,26,20)	RD1/4PU222J		C 336	(A,102,106)	CKSQYB474K16	
R 882	(B,18,27)	RS1/16S222J		C 337	(A,111,106)	CKSQYB474K16	
R 901	(B,11,77)	RS1/16S333J		C 338	(A,105,106)	CKSQYB474K16	A
R 902	(B,14,75)	RS1/16S103J		C 351	(A,134,127)	CEJQ100M16	
R 911	(B,6,110)	RS1/16S103J		C 352	(A,134,120)	CEJQ100M16	
R 912	(A,16,98)	RS1/16S102J		C 353	(A,141,120)	CEJQ100M16	
R 931	(A,57,115)	RS1/16S104J		C 354	(A,144,113)	CEJQ100M16	
R 932	(A,56,115)	RS1/16S473J		C 361	(B,160,139)	CKSRYB104K25	
R 933	(A,64,115)	RS1/16S103J		C 401	(B,165,59)	CKSRYB103K50	
R 934	(A,64,112)	RS1/16S473J		C 402	(A,153,60)	CEJQ470M6R3	
R 935	(A,62,115)	RS1/16S472J		C 403	(B,165,64)	CKSRYB103K50	
R 951	(A,54,103)	RS1/16S102J		C 404	(B,165,96)	CKSRYB103K50	
R 952	(A,53,107)	RS1/16S472J		C 405	(A,148,99)	CEJQ101M16	
R 953	(A,57,109)	RS1/16S472J		C 407	(B,158,60)	CKSYB475K10	
R 954	(A,58,103)	RS1/16S153J		C 411	(A,149,78)	CCSRCH101J50	B
R 981	(A,67,105)	RD1/4PU102J		C 412	(B,140,65)	CCSRCH101J50	
CAPACITORS				C 431	(B,156,43)	CKSRYB474K10	
C 101	(B,29,137)	CKSRYB104K25		C 432	(B,156,41)	CKSRYB474K10	
C 103	(A,59,69)	CKSRYB102K50		C 433	(A,153,45)	CCSRCH470J50	
C 104	(A,61,69)	CKSRYB102K50		C 434	(A,153,41)	CCSRCH470J50	
C 105	(B,38,127)	CCSRCH101J50		C 435	(B,157,47)	CKSRYB474K10	
C 106	(B,31,137)	CCSRCH101J50		C 436	(B,156,45)	CKSRYB474K10	
C 107	(A,51,64)	CKSRYB472K50		C 437	(B,146,46)	CCSRCH470J50	
C 108	(B,45,65)	CCSRCH680J50		C 438	(A,141,43)	CCSRCH470J50	
C 201	(B,121,79)	CKSRYB105K10		C 441	(A,143,47)	CKSRYB105K10	C
C 202	(B,121,75)	CKSRYB105K10		C 442	(A,153,39)	CKSRYB105K10	
C 203	(A,66,79) 1μF/50V	CCH1510		C 602	(B,92,67)	CKSRYB105K10	
C 204	(A,67,92) 1μF/50V	CCH1510		C 603	(A,90,65)	CEJQ4R7M35	
C 205	(A,73,85)	CEJQ2R2M50		C 604	(B,101,58)	CCSRCH200J50	
C 206	(A,73,91)	CEJQ2R2M50		C 605	(B,97,58)	CCSRCH200J50	
C 207	(A,73,79)	CEJQ2R2M50		C 606	(B,91,55)	CKSRYB105K10	
C 208	(A,72,97)	CEJQ2R2M50		C 607	(A,81,45)	CKSRYB104K25	
C 211	(A,66,86) 47μF/10V	CCH1558		C 609	(A,114,58)	CCSRCH470J50	
C 212	(B,72,89)	CKSRYB104K25		C 611	(B,85,52)	CCSRCH680J50	
C 213	(A,103,89)	CEJQ100M16		C 651	(A,64,72)	CKSRYB105K10	
C 251	(A,76,74)	CEJQNP4R7M16		C 712	(B,38,30)	CCSRCH101J50	D
C 252	(A,81,100)	CEJQNP4R7M16		C 731	(A,66,54)	CCSQCH222J50	
C 253	(A,82,74)	CEJQNP4R7M16		C 732	(A,62,54)	CCSQCH222J50	
C 254	(A,87,100)	CEJQNP4R7M16		C 751	(B,21,63)	CKSRYB224K10	
C 255	(A,89,74)	CEJQNP4R7M16		C 752	(B,15,54)	CKSRYB102K50	
C 256	(A,95,100)	CEJQNP4R7M16		C 753	(A,15,51)	CEJQ101M16	
C 257	(A,95,73)	CEJQNP4R7M16		C 761	(B,28,41)	CKSRYB473K50	
C 258	(A,99,95)	CEJQNP4R7M16		C 762	(A,29,44)	CEAT471M16	
C 259	(A,76,83)	CKSRYB474K10		C 801	(B,87,22)	CCSRCH220J50	
C 261	(A,74,69)	CCSQCH152J50		C 802	(B,89,22)	CCSRCH220J50	
C 262	(A,68,98)	CCSQCH152J50		C 803	(B,91,22)	CCSRCH220J50	E
C 301	(A,48,124) 3300μF/16V	CCH1486		C 804	(B,93,22)	CCSRCH220J50	
C 302	(B,105,144)	CKSQYB105K16		C 805	(B,114,31)	CCSRCH220J50	
C 303	(A,118,121)	CEHAR100M16		C 881	(B,28,17)	CKSRYB104K25	
C 304	(A,112,130)	CKSQYB225K10		C 882	(A,17,31)	CEJQ1R0M50	
C 305	(A,117,115)	CEHAR330M10		C 901	(A,16,70)	CEJQ221M6R3	
C 306	(A,109,130)	CKSQYB225K10		C 902	(B,21,68)	CKSRYB103K50	
C 331	(A,108,102)	CKSRYB474K10		C 903	(B,34,81)	CKSRYB472K50	
C 332	(A,103,102)	CKSRYB474K10		C 904	(A,25,70) 470μF/16V	CCH1331	
C 333	(A,111,102)	CKSRYB474K10		C 911	(A,17,80)	CEJQ221M10	
C 334	(A,105,102)	CKSRYB474K10		C 912	(B,9,116)	CKSRYB103K50	
C 335	(A,108,106)	CKSQYB474K16		C 913	(A,14,118)	CEJQ101M16	F
				C 921	(A,150,32)	CEJQ220M10	
				C 922	(B,155,32)	CKSRYB103K50	
				C 923	(B,152,21)	CKSYB475K10	

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

C 931 (A,62,112) CKSRYB104K25
C 981 (B,58,122) CKSRYB104K25

R 5 (B,119,26) RS1/16S104J
R 6 (B,117,14) RS1/16S102J

B
Unit Number:
Unit Name:Keyboard Unit

R 7 (B,119,14) RS1/16S102J
R 8 (B,116,14) RS1/16S102J
R 10 (B,43,17) RS1/16S121J
R 11 (B,35,36) RS1/16S2R2J
R 12 (B,123,4) RS1/16S104J

MISCELLANEOUS

R 13 (B,116,4) RS1/16S104J
R 14 (B,119,4) RS1/16S104J
R 15 (B,28,26) RS1/16S121J
R 16 (B,27,30) RS1/16S121J
R 17 (B,42,22) RS1/16S101J

IC 1 (B,85,20) IC PD6340A
IC 2 (B,125,13) IC MB88347PFV-G-BND
IC 3 (A,30,37) IC TSOP4840SB1
Q 1 (B,34,21) Transistor UMX1N
Q 2 (B,133,11) Transistor UMX1N

R 18 (B,115,7) RS1/16S104J
R 19 (B,118,7) RS1/16S104J
R 21 (B,43,25) RS1/16S101J
R 22 (B,36,18) RS1/16S680J
R 23 (B,38,18) RS1/16S680J

Q 3 (B,16,36) Transistor UMX1N
Q 4 (B,153,21) Transistor UMX1N
Q 5 (B,38,26) Transistor UMX1N
Q 6 (B,16,11) Transistor UMX1N
Q 7 (B,152,15) Transistor UMX1N

R 24 (B,135,14) RS1/16S104J
R 25 (B,18,11) RS1/16S101J
R 26 (B,137,14) RS1/16S222J
R 27 (B,13,37) RS1/16S101J
R 28 (B,11,35) RS1/16S101J

Q 8 (B,49,9) Transistor UMX1N
Q 9 (B,157,6) Transistor UMX1N
Q 10 (B,150,32) Transistor UMX1N
Q 11 (B,117,34) Transistor UMX1N
Q 12 (B,152,6) Transistor UMX1N

R 29 (B,126,4) RS1/16S102J
R 30 (B,12,35) RS1/16S101J
R 31 (B,11,32) RS1/16S101J
R 32 (B,40,22) RS1/16S101J
R 33 (B,38,22) RS1/16S121J

Q 13 (B,162,28) Transistor UMX1N
Q 14 (B,147,7) Transistor UMX1N
D 1 (B,77,13) Diode DAN202U
D 2 (B,70,13) Diode DAP202U
D 3 (A,30,23) Chip LED NSCM315CT

R 34 (B,28,30) RS1/16S121J
R 35 (B,43,29) RS1/16S101J
R 36 (B,155,29) RS1/16S104J
R 37 (B,155,32) RS1/16S222J
R 38 (B,18,8) RS1/16S101J

D 4 (A,39,22) Chip LED NSCM315CT
D 5 (A,84,5) Chip LED NSCM315CT
D 6 (A,129,22) Chip LED NSCM315CT
D 7 (A,152,23) Chip LED NSCM315CT
X 1 (B,71,18) Ceramic Resonator 4.97MHz CSS1573

R 39 (B,40,25) RS1/16S680J
R 40 (B,41,29) RS1/16S680J
R 41 (B,127,4) RS1/16S102J
R 42 (B,14,11) RS1/16S121J
R 43 (B,12,11) RS1/16S121J

S 1 (A,15,23) Encoder(VOLUME) XSD7001
S 2 (A,38,7) Push Switch CSG1173
S 3 (A,52,7) Push Switch CSG1173
S 4 (A,64,7) Push Switch CSG1173
S 5 (A,76,7) Push Switch CSG1173

R 44 (B,18,37) RS1/16S101J
R 45 (B,11,11) RS1/16S680J
R 46 (B,9,11) RS1/16S680J
R 47 (B,19,35) RS1/16S101J
R 48 (B,51,9) RS1/16S101J

S 6 (A,103,7) Push Switch CSG1173
S 7 (A,91,7) Push Switch CSG1173
S 8 (A,115,7) Push Switch CSG1173
S 9 (A,130,7) Push Switch CSG1173
S 10 (A,138,30) Push Switch CSG1173

R 49 (B,52,9) RS1/16S101J
R 50 (B,151,18) RS1/16S104J
R 51 (B,148,14) RS1/16S222J
R 52 (B,47,9) RS1/16S101J
R 53 (B,129,4) RS1/16S102J

S 11 (A,150,7) Push Switch CSG1173
S 12 (A,138,17) Push Switch CSG1173
S 13 (A,152,15) Switch CSG1110
S 14 (A,152,32) Switch CSG1110
S 15 (A,143,23) Switch CSG1110

R 54 (B,149,36) RS1/16S101J
R 55 (B,158,9) RS1/16S104J
R 56 (B,158,12) RS1/16S222J
R 57 (B,120,33) RS1/16S101J
R 58 (B,151,36) RS1/16S121J

S 16 (A,160,23) Switch CSG1110
S 17 (A,29,30) Push Switch CSG1173
S 18 (A,13,8) Push Switch CSG1173
S 19 (A,8,36) Push Switch CSG1173
S 20 (A,29,17) Push Switch CSG1173

R 59 (B,153,36) RS1/16S121J
R 60 (B,131,7) RS1/16S102J
R 61 (B,152,32) RS1/16S680J
R 62 (B,150,22) RS1/16S680J
R 63 (B,114,36) RS1/16S121J

LCD1 (A,84,24) LCD CAW1865

RESISTORS

R 2 (B,100,17) RS1/16S103J
R 3 (B,115,26) RS1/16S222J
R 4 (B,117,26) RS1/16S222J

R 64 (B,116,37) RS1/16S121J
R 65 (B,119,33) RS1/16S680J
R 66 (B,119,37) RS1/16S680J

5			6			7			8		
Circuit Symbol and No.			Part No.			Circuit Symbol and No.			Part No.		
R 67	(B,154,36)		RS1/16S101J			CAPACITORS					
R 68	(B,154,9)		RS1/16S104J			C 1970	(B,39,64)		CKSRYB104K16		A
R 69	(B,154,12)		RS1/16S222J			C Unit Number:CWX3096 Unit Name:CD Core Unit(S10.1)					
R 70	(B,115,33)		RS1/16S101J								
R 71	(B,134,6)		RS1/16S102J								
R 72	(B,159,34)		RS1/16S101J			MISCELLANEOUS					
R 73	(B,158,32)		RS1/16S101J			IC 201	(A,39,24) IC		UPD63763GJ		
R 74	(B,160,32)		RS1/16S101J			IC 203	(B,45,78) IC		NJM2885DL1-33		
R 75	(B,156,32)		RS1/16S101J			IC 301	(A,49,88) IC		BA5835FP		
R 76	(B,158,26)		RS1/16S104J			IC 701	(A,48,51) IC		PE5454A		B
R 77	(B,149,6)		RS1/16S101J			IC 703	(A,30,44) IC		S-812C33AUA-C2N		
R 79	(B,150,11)		RS1/16S222J			Q 101	(A,20,22) Transistor		2SA1577		
R 80	(B,136,6)		RS1/16S102J			Q 701	(B,62,59) Transistor		UN2111		
R 81	(B,155,6)		RS1/16S0R0J			L 203	(A,53,32) Inductor		CTF1389		
R 82	(B,156,16)		RS1/16S0R0J			L 207	(A,53,31) Inductor		CTF1389		
R 83	(B,125,6)		RS1/16S0R0J			L 209	(A,26,20) Inductor		CTF1389		
R 84	(B,102,8)		RS1/16S471J			L 703	(A,64,49) Inductor		CTF1389		
R 85	(B,103,8)		RS1/16S471J			X 201	(A,51,35) Ceramic Resonator 16.934MHz		CSS1603		
CAPACITORS						X 701	(A,59,53) Ceramic Resonator 4.00MHz		CSS1652		
C 4	(B,24,35)		CKSQYB475K6R3			S 901	(A,15,43) Switch(HOME)		CSN1067		
C 5	(B,65,18)		CKSRYB105K10			S 903	(B,53,100) Switch(DSCSNS)		CSN1068		C
C 7	(B,132,14)		CKSQYB225K10			S 904	(B,35,108) Switch(12EJ)		CSN1067		
C 8	(A,28,14)		CKSRYF104Z25			S 905	(B,48,109) Switch(8EJ)		CSN1067		
C 9	(A,29,19)		CKSRYF104Z25			RESISTORS					
C 10	(B,121,4)		CKSRYB103K50			R 101	(A,22,24)		RS1/10SR2R4J		
C 11	(B,115,4)		CKSRYB103K50			R 102	(A,22,26)		RS1/10SR2R4J		
C 12	(B,118,4)		CKSRYB103K50			R 103	(A,25,25)		RS1/10SR2R7J		
C 13	(B,113,4)		CKSRYB103K50			R 201	(A,53,16)		RS1/16SS102J		
C 14	(B,117,7)		CKSRYB103K50			R 202	(A,55,21)		RS1/16SS333J		
C 16	(B,157,21)		CKSQYB225K10			R 221	(B,31,18)		RS1/16SS103J		D
C 18	(B,124,4)		CKSRYB104K25			R 222	(B,26,18)		RS1/16SS103J		
C 19	(A,30,28)		CKSRYF104Z25			R 225	(A,27,8)		RS1/16SS103J		
C 20	(A,30,26)		CKSRYF104Z25			R 226	(A,27,7)		RS1/16SS393J		
C 21	(B,150,15)		CKSQYB225K10			R 227	(B,33,10)		RS1/16SS562J		
C 22	(A,79,6)		CKSRYF104Z25			R 228	(B,36,8)		RS1/16SS122J		
C 23	(A,81,6)		CKSRYF104Z25			R 229	(B,34,8)		RS1/16SS472J		
C 24	(B,156,12)		CKSQYB225K10			R 232	(B,35,10)		RS1/16SS122J		
C 25	(A,136,25)		CKSRYF104Z25			R 241	(B,42,28)		RS1/16SS333J		
C 26	(B,152,11)		CKSQYB225K10			R 243	(B,44,28)		RS1/16SS333J		
C 27	(A,136,22)		CKSRYF104Z25			R 245	(A,39,38)		RS1/16SS333J		
C 28	(B,148,11)		CKSQYB225K10			R 301	(A,48,78)		RS1/16SS183J		E
C 29	(A,155,24)		CKSRYF104Z25			R 302	(A,42,78)		RS1/16SS822J		
C 30	(A,149,23)		CKSRYF104Z25			R 304	(A,50,78)		RS1/16SS183J		
D Unit Number:CWM9781 Unit Name:Panel Unit						R 305	(A,42,77)		RS1/16SS822J		
						R 307	(A,36,85)		RS1/16SS183J		
						R 308	(A,32,83)		RS1/16SS183J		
MISCELLANEOUS						R 309	(A,38,89)		RS1/16SS183J		
D 1970	(A,26,5) LED	CL220PGC				R 310	(A,35,88)		RS1/16SS183J		
S 1970	(A,5,78) Push Switch(EJECT)	CSG1174				R 601	(B,43,59)		RS1/16S101J		
RESISTORS						R 602	(B,41,62)		RS1/16S101J		
R 1970	(B,35,18)	RS1/16S101J				R 606	(B,44,67)		RS1/16S0R0J		
R 1971	(B,35,16)	RS1/16S101J				R 607	(B,43,56)		RS1/16SS0R0J		F
						R 608	(B,36,67)		RS1/16SS0R0J		
						R 705	(B,50,59)		RS1/16SS221J		

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

A	R 706	(B,57,61)	RS1/16SS221J	C 227	(A,45,10)	CCSSCH470J50
	R 707	(A,62,47)	RS1/16SS473J	C 228	(A,49,9)	CKSSYB103K16
	R 708	(B,50,57)	RS1/16SS221J			
	R 710	(A,28,77)	RS1/16SS102J	C 234	(B,36,81)	CEVW221M4
	R 711	(B,44,53)	RS1/16SS221J	C 237	(B,38,29)	CKSSYB104K10
	R 714	(B,51,53)	RS1/16SS473J	C 239	(B,34,10)	CCSSCH220J50
	R 716	(A,63,56)	RS1/16SS472J	C 242	(B,58,32)	CKSSYB104K10
	R 719	(B,49,45)	RS1/16SS221J	C 243	(B,39,76)	CKSSYB104K10
	R 720	(B,46,52)	RS1/16SS471J			
	R 724	(A,62,42)	RS1/16S473J	C 244	(B,49,70)	CKSSYB104K10
B	R 725	(B,57,43)	RS1/16SS222J	C 246	(A,23,19)	CKSSYB104K10
	R 726	(A,52,41)	RS1/16SS103J	C 251	(B,28,31)	CKSRYB102K50
	R 727	(B,50,54)	RS1/16SS473J	C 260	(A,54,25)	CKSSYB104K10
	R 729	(A,57,40)	RS1/16SS223J	C 301	(A,43,78)	CKSSYB221K50
	R 730	(A,65,41)	RS1/16SS473J			
	R 731	(A,53,41)	RS1/16SS104J	C 302	(A,50,79)	CKSSYB221K50
	R 737	(A,41,42)	RS1/16SS104J	C 303	(A,37,85)	CKSSYB472K25
	R 740	(A,35,46)	RS1/16SS473J	C 304	(A,39,89)	CKSSYB103K16
	R 742	(A,50,41)	RS1/16SS104J	C 305	(B,34,92)	CEVW101M16
	R 746	(B,60,56)	RS1/16SS104J	C 307	(B,56,90)	CKSSYB104K10
C	R 750	(A,39,59)	RS1/16SS473J			
	R 754	(B,48,60)	RS1/16SS102J	C 601	(B,46,60)	CCSRCH102J50
	R 755	(A,43,61)	RS1/16SS102J	C 602	(B,41,65)	CCSRCH102J50
	R 765	(B,51,40)	RAB4CQ221J	C 701	(A,64,46)	CKSSYB104K10
	R 769	(B,48,40)	RAB4CQ221J	C 703	(B,50,61)	CKSSYB103K16
	R 773	(B,39,37)	RAB4CQ221J	C 706	(B,50,62)	CKSSYB104K10
	R 777	(B,48,51)	RS1/16SS221J			
	R 778	(B,48,52)	RS1/16SS221J	C 707	(A,36,45)	CKSSYB104K10
	R 779	(B,45,54)	RS1/16SS221J	C 712	(A,22,42)	CKSRYB224K16
	R 901	(B,52,65)	RAB4CQ221J	C 714	(B,60,45)	CKSSYB104K10
D	R 905	(B,54,60)	RS1/16SS221J	C 716	(A,61,40)	CKSSYB103K16
	R 906	(B,56,68)	RS1/16SS221J	C 722	(B,52,48)	CKSQYB475K6R3
	R 908	(B,45,69)	RS1/16SS0R0J			
	R 910	(B,44,69)	RS1/16SS0R0J	C 723	(A,26,41)	CKSRYB105K10
	R 911	(B,40,73)	RS1/16SS102J	C 903	(B,56,70)	CKSSYB471K50
				C 906	(A,40,77)	CKSRYB224K16
				C 907	(A,47,76)	CKSSYB103K16
				C 910	(B,60,71)	CKSQYB225K10

Miscellaneous Parts List

	Pickup Unit(P10)(Service)	CXX1641
M 1	Motor Unit(SPINDLE)	CXC4440
M 2	Motor Unit(LOADING/CARRIAGE)	CXB8933

CAPACITORS

E	C 103	(B,14,8) 100μF/16V	CCH1504
	C 105	(A,19,15)	CKSSYB104K10
	C 108	(B,39,16)	CKSSYB104K10
	C 110	(A,18,6)	CKSSYB104K10
	C 201	(A,51,14)	CKSSYB102K50
	C 202	(B,50,17)	CKSSYB104K10
	C 203	(A,55,23)	CKSSYB104K10
	C 204	(B,28,22)	CEVW220M6R3
	C 205	(A,53,25)	CKSSYB104K10
	C 208	(B,44,25)	CKSSYB104K10
F	C 209	(A,54,29)	CKSSYB104K10
	C 212	(A,45,37)	CKSRYB105K10
	C 216	(A,25,8)	CKSSYB332K50
	C 217	(A,28,12)	CKSSYB104K10
	C 218	(A,25,7)	CKSSYB473K10
	C 219	(A,34,7)	CKSSYB104K10
	C 220	(A,33,11)	CKSSYB182K50
	C 221	(B,35,6)	CKSSYB104K10
	C 222	(B,35,8)	CCSSCH560J50
	C 223	(B,33,8)	CCSSCH4R0C50
	C 224	(B,40,16)	CKSSYB104K10
	C 225	(B,45,14)	CKSSYB103K16
	C 226	(B,43,12)	CCSSCH680J50

6. ADJUSTMENT

6.1 CD ADJUSTMENT

1) Cautions on adjustments

- In this product the single voltage (3.3V) is used for the regulator. The reference voltage is the REFO1 (1.65V) 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 1k 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 4 and 6 keys at the same time, reset.

- To exit from the test mode.

Turn off the ACC and 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 0dB, and the auto-adjustment values are reset to the default settings.

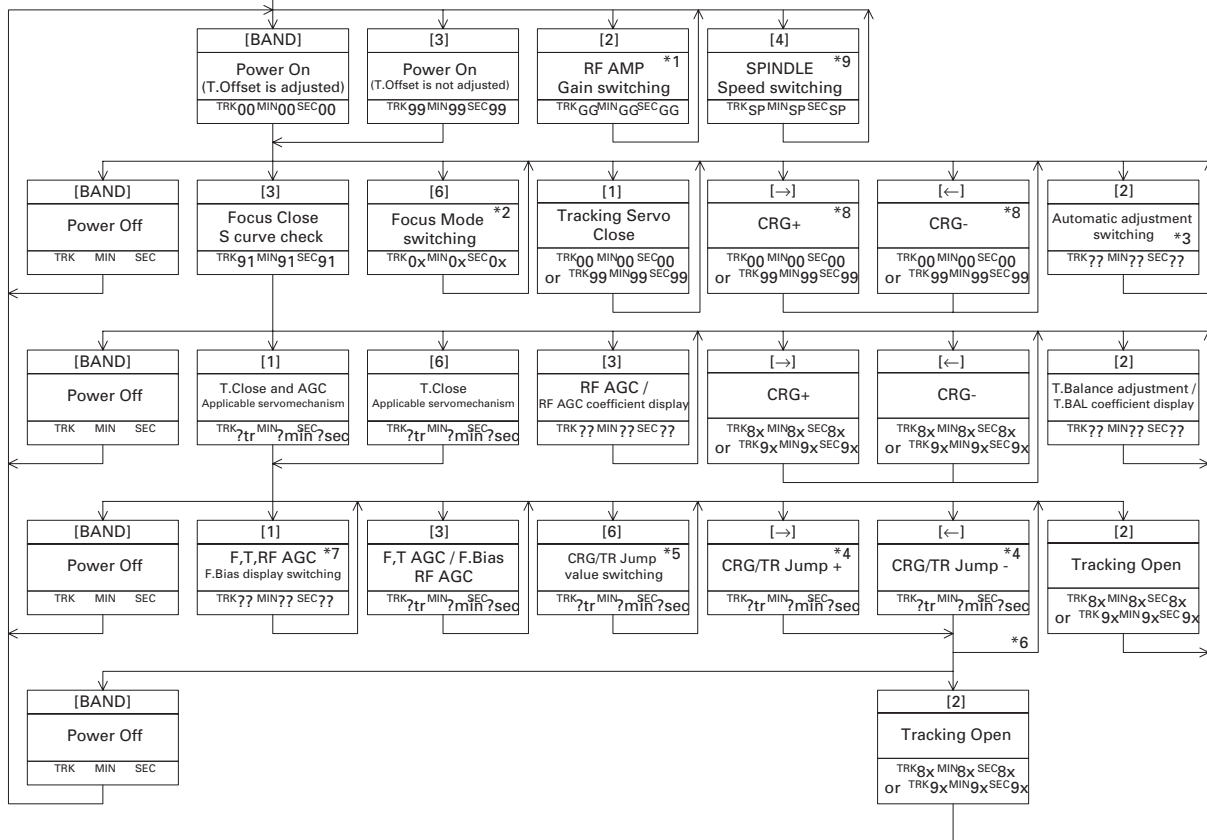
Flow Chart

A

[KEY]	[4]+[6]+Reset or [4]+[6]+BU+ACC
Contents	Test Mode In
Display	

[CD]or[SOURCE]
Source On
TRK MIN SEC

B



C

D

E

- *1) TYP → -6dB → -12dB
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 → T.Offset Display → Switch to the order of the original display
- *4) 1TR / 32TR / 100TR
- *5) Single TR → 32TR → 100TR → CRG Move
9x(8x) : 91(81) 92(82) 93(83) 94(84)
- *6) Only at the time of CRG move, 100TR jump
- *7) TRK/MIN/SEC → F.AGC → T.AGC → F.Bias → RF AGC
- *8) CRG motor voltage = 2[V]

F

- *9) Applicability : A, B, C, D, E, F
TYP(1X) → 2X → 1X
TRK MIN SEC TRK 22 MIN 22 SEC 22 TRK 11 MIN 11 SEC 11
- As for the double speed (2x), audio output cannot be supported

- Applicability : G
TYP(2X) → 1X → 2X
TRK MIN SEC TRK 11 MIN 11 SEC 11 TRK 22 MIN 22 SEC 22

[Key]	Operation
[BAND]	Power On / Off
[→]	CRG + / TR Jump + (Direction of the external surface)
[←]	CRG - / TR Jump - (Direction of the internal surface)
[1]	U.CLS and AGC and Applicable servomechanism / AGC, AGC display setting
[2]	RF Gain switching / Offset adjustment display / T.Balance adjustment / T.Open
[3]	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 cannot be supported.
[5]	Error Rate measurement 1st - ON : ERR count Beginning (30Sec) 2nd - ON : 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 :

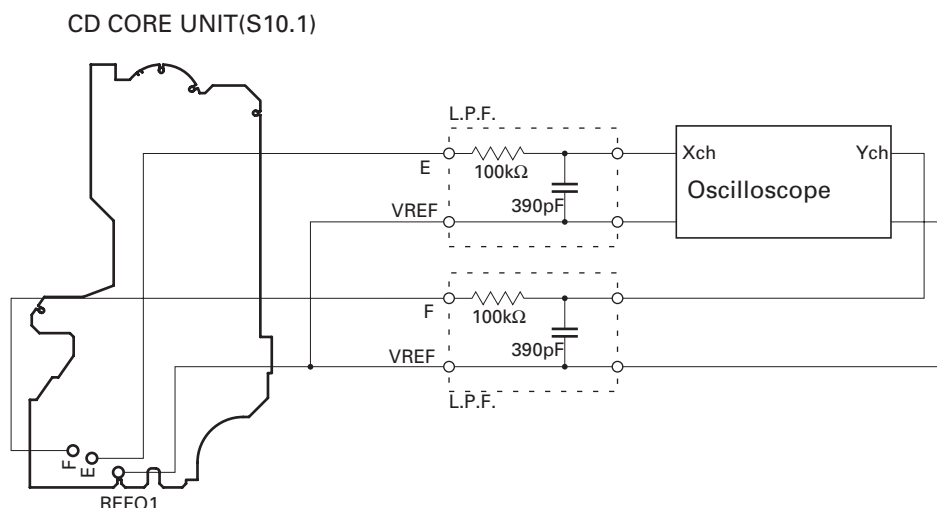
To check that the grating is within an acceptable range when the PU unit is changed.

• 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 3V 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".

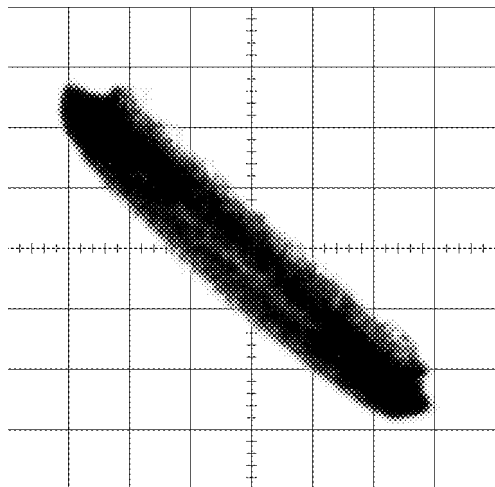
Grating waveform

Ech → Xch 20mV/div, AC

Fch → Ych 20mV/div, AC

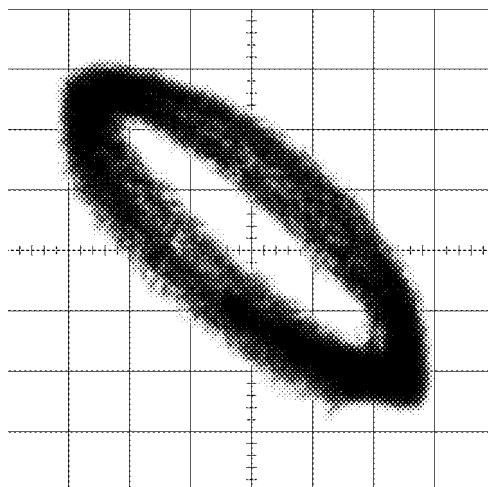
A

0°



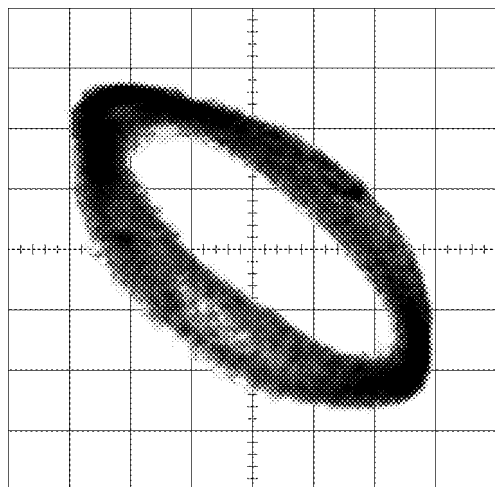
B

30°



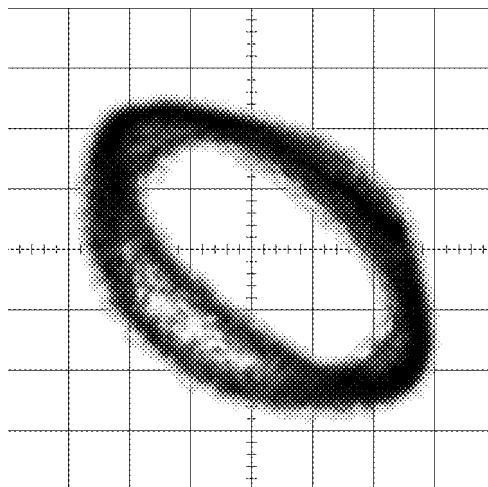
C

45°



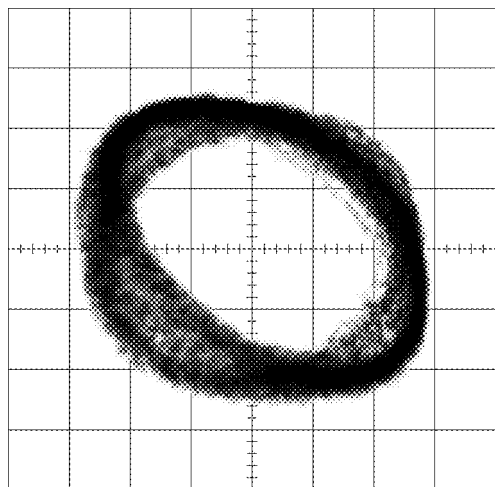
D

60°



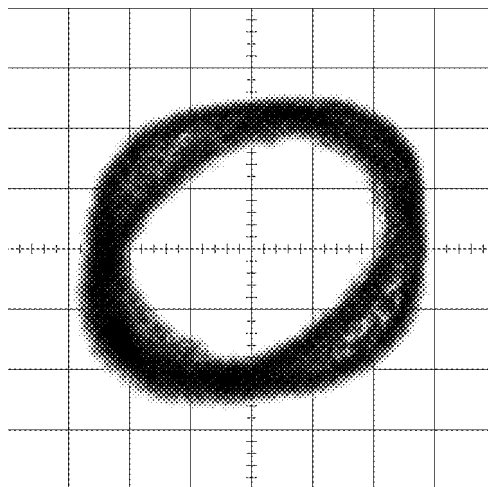
E

75°



F

90°



6.3 ERROR MODE

● Error Messages

Error is displayed with number for Error cause when CD is inoperative or stops with Error during operation. The purpose is to reduce nonsense calls from users as well as to assist all related analysis and repair for defects at service station.

(1) Basic Display Method

1) When CSMOD (CD mode area for system) is SERRORM, Error code will be written in DMIN (minutes area for display), DSEC (seconds area for display). The same data shall be written in DMIN and DSEC. DTNO is blank as usual.

2) Display Example of Head Unit

The following is about LCD display ability. xx is Error number.

8 digits	6 digits	4 digits
ERROR-xx	ERR-xx	E-xx
	OR	
	Err-xx	

(2) Error Code List

No.	Classification	Contents	Details • Cause
10	Electricity	Carriage Home NG	CRG can't move to the inner. CRG can't move from the inner. → HOME SW failure, CRG movement failure.
11	Electricity	Focus Search NG	Focus can't be caught. → Back of Disc / Severe dirt and vibration.
12	Electricity	Spindle Lock NG Subcode NG RF-amp NG	Not spindle, lock. Wrong subcode (can't read). → Defective Spindle. Scratch and dirt on Disc. Intense vibration. The appropriate gain of the RF amp cannot be obtained. → Defective spindle. → Scratched or dirty disc. Severe vibration. Abnormal CD signals. → Blanc CD-R disc. Disc inserted upside down.
17	Electricity	Setup NG	AGC protection doesn't work, out of Focus soon. → Scratch on Disc/Severe dirt and vibration.
22	Disc	Impossible to play	There is no playable MP3 or WMA file present in a disc. → No MP3 or WMA file exists in a CD-ROM disc inserted.
23	Disc	File Format NG	Contents are stored in an incompatible file format. → The contents in a CD-ROM disc inserted are recorded in a file format other than ISO9660 Level-1 and 2.
30	Electricity	Search Time Out	Can't reach the target address. → Defective CRG/tracking, or scratch on Disc.
44	Disc	Impossible to play	There is no playable TRK No. present in a disc. → All TRK Nos. In a disc inserted are specified as a track which should be skipped, in the track skip information.
50	Mecha	Disc Load / Eject NG	Disc loading/ejection cannot be complete. → Foreign objects entered into the mechanism. Disc caught in between during loading/ejection.
A0	System	Power NG	Power supply (VD) isn't connected to the ground. → Defective SW transistor. Abnormal power (failed connector)

Note : Error doesn't display in mechanism only. (CD off causes mechanism off)

If TOC can't be read, error wouldn't occur, but mechanism still continues its operation.

The upper digits of error code is mainly classified by 3 kinds as follows:

1x: Setup related error, 3x: Search related error, Ax: Other errors.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

● Removing the Case (not shown)

1. Remove the Case.

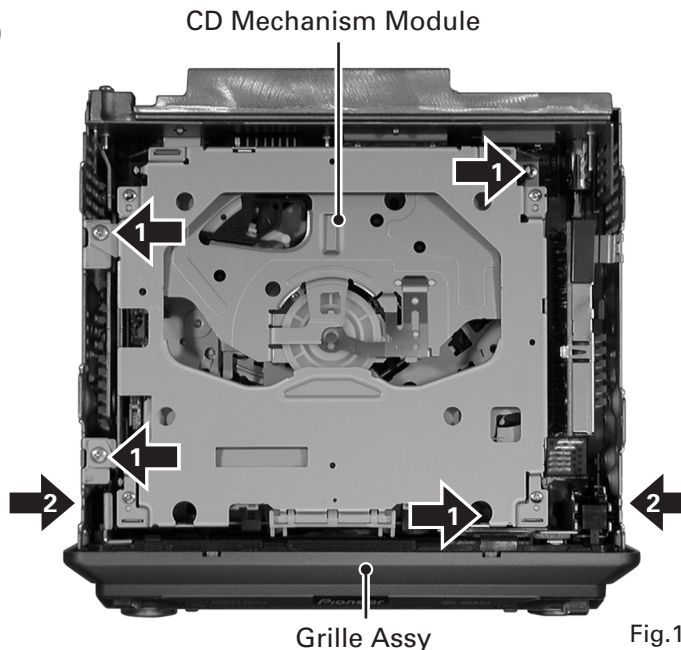
● Removing the CD Mechanism Module (Fig.1)

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.



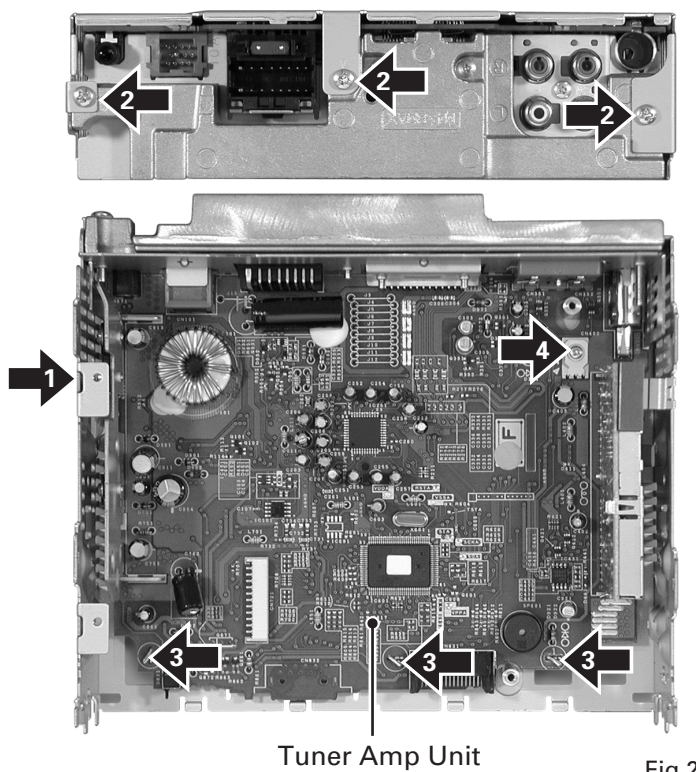
● Removing the Tuner Amp Unit (Fig.2)

1 Remove the screw.

2 Remove the three screws.

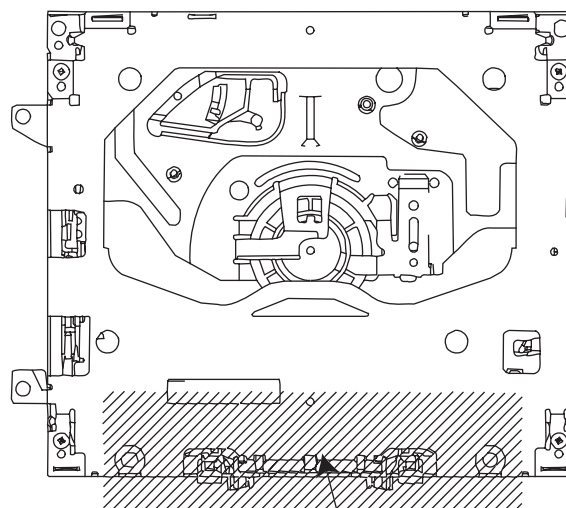
3 Straighten the tabs at three locations indicated.

4 Remove the screw and then remove the Tuner Amp Unit.



● How to hold the Mechanism Unit

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

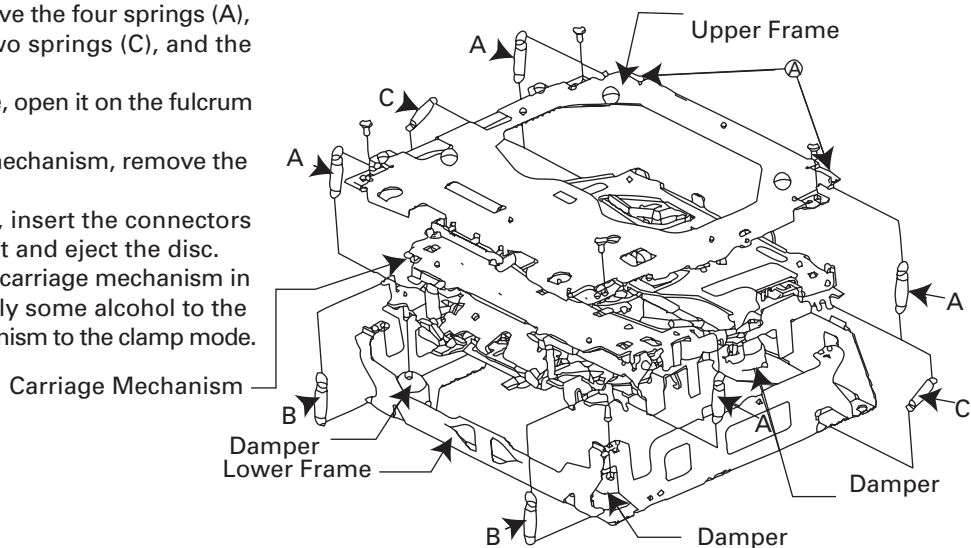


Do not squeeze.

● Removing the Upper and Lower Frames

1. With a disc clamped, remove the four springs (A), the two springs (B), the two springs (C), and the four screws.
2. To remove the upper frame, open it on the fulcrum A.
3. While lifting the carriage mechanism, remove the three dampers.
4. With the frames removed, insert the connectors coming from the main unit and eject the disc.

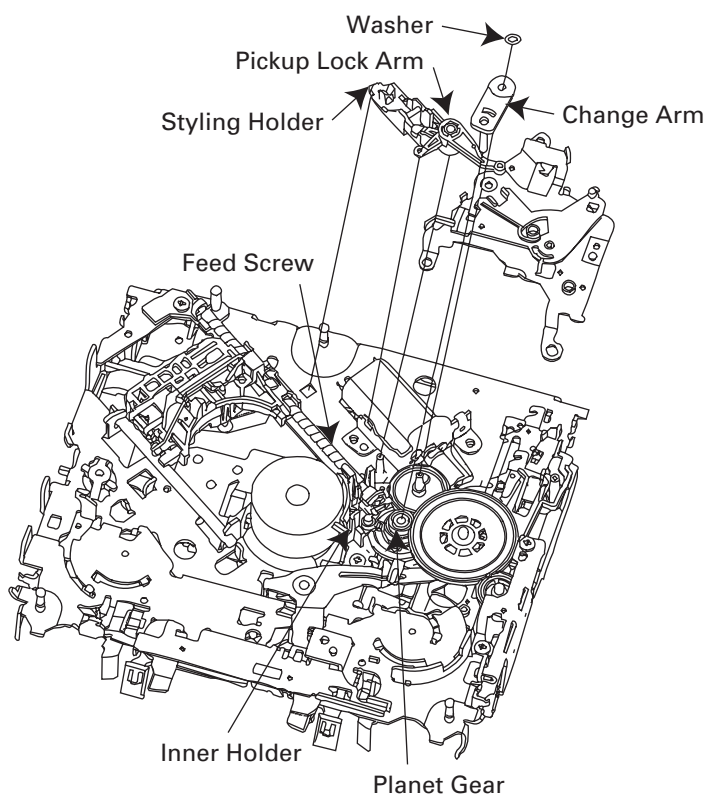
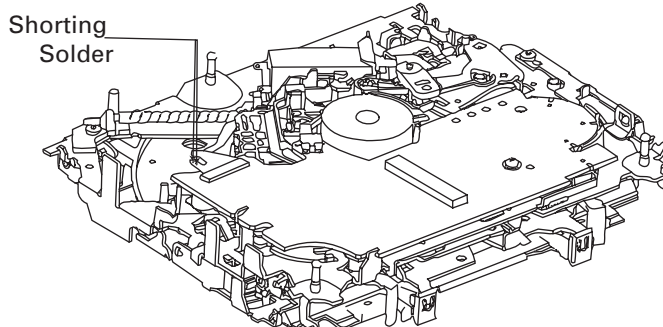
Caution: Before installing the carriage mechanism in the frames, be sure to apply some alcohol to the dampers and set the mechanism to the clamp mode.



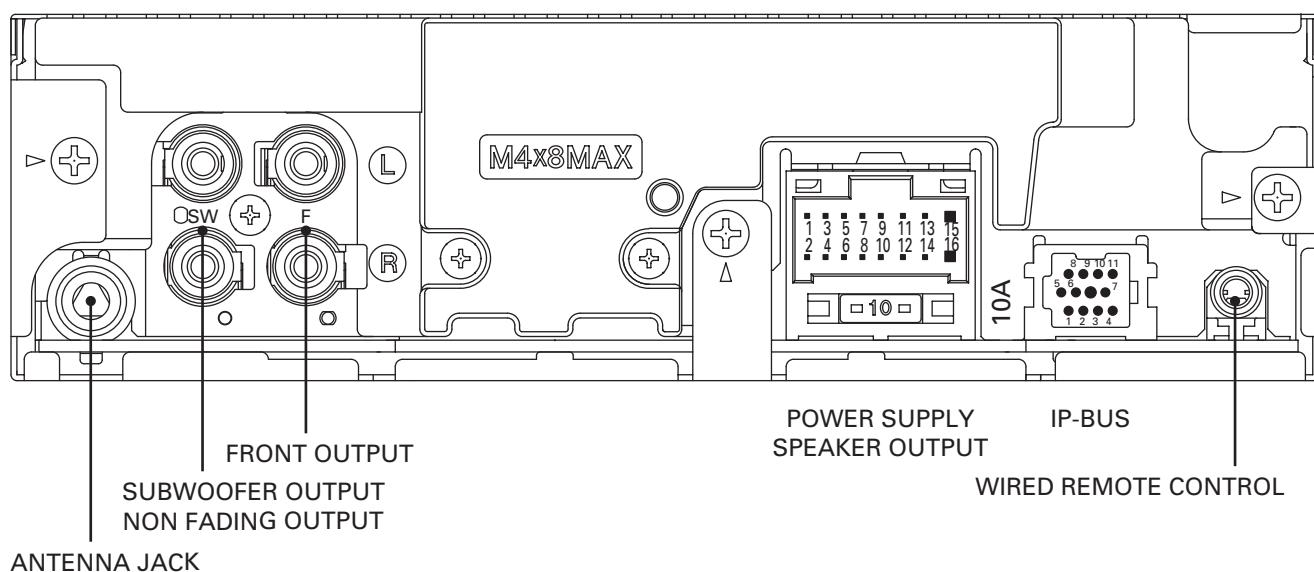
● Removing the Pickup Unit

1. Apply shorting solder to the Pickup flexible cable.
Disconnect the cable.
2. Set the mechanism to the clamp mode.
3. Remove the lead wires from the inner holder.
4. Remove the washer, styling holder, change arm, and pickup lock arm.
5. While releasing from the hook of the inner holder, lift the end of the feed screw.

Caution: In assembling, move the planet gear to the load/eject position before setting the feed screw in the inner holder.



7.1.2 CONNECTOR FUNCTION DESCRIPTION



POWER SUPPLY, SPEAKER OUTPUT

Pin No.		Pin No.	
1	FR+	9	NC
2	RR+	10	NC
3	FR-	11	B.REM
4	RR-	12	NC
5	FL+	13	NC
6	RL+	14	ACC
7	FL-	15	GND
8	RL-	16	B.UP

IP-BUS

Pin No.		Pin No.	
1	BUS+	7	BUS L+ INPUT
2	GND	8	ASENB
3	GND	9	BUS R+ INPUT
4	NC	10	BUS R- INPUT
5	BUS-	11	BUS L- INPUT
6	GND		

7.2 PARTS

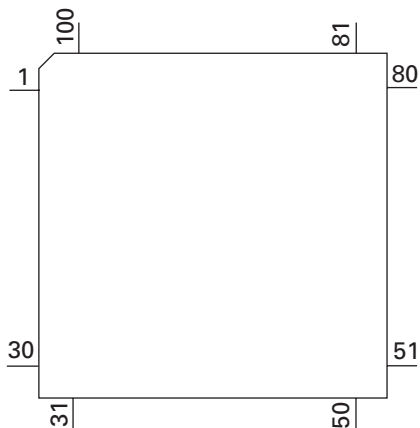
7.2.1 IC

● Pin Functions (PE5468A)

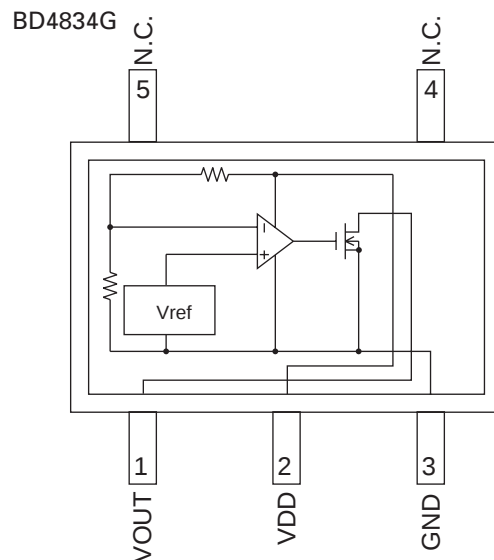
Pin No.	Pin Name	I/O	Function and Operation
1	SWVDD	O	Grille : Chip enable output
2-4	NC		Not used
5	TESTIN	I	Test program mode input
6	LCDPW	O	Not used
7	TELIN	I	Telephone mute input
8	EJECTIN	I	Eject sense input
9	FLPILM	O	Flap illumination output
10	DALMON	O	For consumption low-current output
11	RESET	I	Reset input
12	XT2		Not used
13	XT1	I	Clock connection pin
14	VSS		GND
15	X2		Crystal oscillator connection pin
16	X1	I	Crystal oscillator connection pin
17	REGOFF	I	Regulator operation specification signal input
18	REGC		Capacitor for regulator connect pin
19	VDD		Power supply
20	ILMPW	O	Illumination power supply control output
21	SYSPW	O	System power control output
22	ADPW	O	A/D converter power supply control output
23	NC		Not used
24	IPPW	O	Power supply control output for IP BUS interface IC
25	NC		Not used
26	ROMDATA	I/O	ROM correction data input/output
27	ROMCLK	O	Not used
28	ROMCS	O	Not used
29-31	NC		Not used
32	TUNPCE2	O	PLL chip enable output2
33	VST	O	E.VOL : Strobe output
34	VCK	O	E.VOL : Clock output
35	VDI	O	E.VOL : Data output
36	NC		Not used
37	MUTE	O	System mute output
38,39	NC		Not used
40	VSS		GND
41	VDD		Power supply
42	RDS57K	I	RDS : 57kHz pulse count input
43	DRST	O	RDS : Decoder reset output
44	RDSLK	I	RDS : LOCK input L : RDS signal ON
45	RDT	I	RDS : Data input
46	DORAON	O	Not used
47	NC		Not used
48	CSENSOUT	O	CSENS state output
49-55	NC		Not used
56,57	ROT1,0	I	Rotary encoder pulse input 1,0
58	STRKEY2	I	Steering remote controller input
59	RGBST	O	RGB strobe output
60	RGBCK	O	RGB clock output
61	RGBDI	O	RGB data output
62	PCL	O	Clock adjustment output
63	BRXEN	I/O	P-BUS : Reception enable input/output
64	BSRQ	I	P-BUS : Service request input
65	TSCK/BSCK	O	P-BUS : Serial clock output
66	TSI/BSI	I	P-BUS : Serial data input
67	BSO	O	P-BUS : Serial data output
68	BRST	O	P-BUS : Reset output
69,70	NC		Not used

Pin No.	Pin Name	I/O	Function and Operation
71	ASENSBO	O	IP-BUS : Slave power supply control output
72	EMUTE		Not used
73	TEST	I	GND
74	SL	I	TUNER : Signal level input
75	STRKEY1	I	Steering remote controller input
76	NC		Not used
77	CSENS	I	Flap close sense input
78-81	NC		Not used
82	AVDD		A/D converter power supply terminal
83	AVREF		A/D converter reference voltage terminal
84	AVSS	O	GND
85	RX	I	IP-BUS : Data input
86	TX	O	IP-BUS : Data output
87	NMI	I	GND
88	LDET	O	RDS : PLL lock detection output
89	RCK	I	RDS : RDS clock input
90	DSENS	I	Grille detach sense input
91	NC		Not used
92	ASENS	I	ACC power sense input
93	BSENS	I	Back up power sense input
94	TUNPDI	I	PLL IC data input
95	KYDT	I	Grille data input
96	DPDT	O	Grille data output
97	TUNPCK	O	PLL clock output
98	TUNPDO	O	PLL data output
99	TUNPCE	O	PLL chip enable output
100	BEEP	O	Beep tone output

* PE5468A



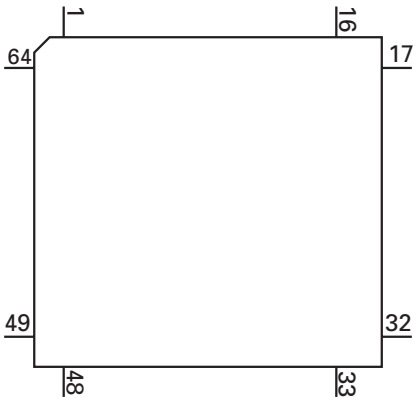
IC's marked by * are MOS type.
Be careful in handling them because they are very liable to be damaged by electrostatic induction.



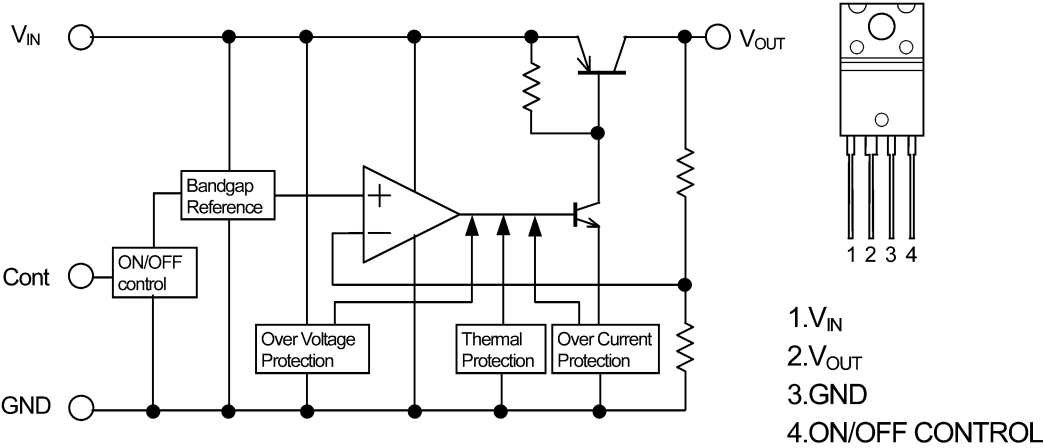
● Pin Functions(PD6340A)

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	REW	I	Remote control reception input
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



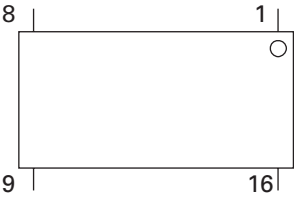
NJM2388F84



● Pin Functions (MB88347PFV-G-BND)

Pin No.	Pin Name	I/O	Function and Operation
1	VSS		GND
2-7	AO2-7	O	8-bit resolution D/A converter output
8	VDD		DC power supply
9	VCC		+5 V DC power supply
10	AO8	O	8-bit resolution D/A converter output
11	DO	O	Serial address/data output
12	LD	I	Load strobe input
13	CLK	I	Shift clock input
14	DI	I	Serial address/data input
15	AO1	O	8-bit resolution D/A converter output
16	GND		GND

* MB88347PFV-G-BND

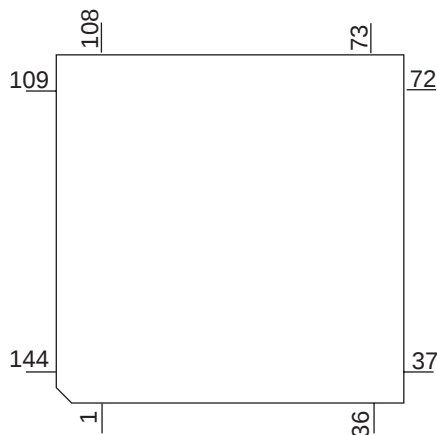


● Pin Functions(UPD63763GJ)

Pin No.	Pin Name	I/O	Function and Operation
1	D.VDD		Power supply for digital circuits
2	D1.GND		GND for 1.6V digital circuits
3	RESET	I	Input of reset
4-8	AB12-8	I	Address bus 12-8 from the microcomputer
9-16	AD7-0	I/O	Address/data bus 7-0 to the microcomputer
17	$\overline{CS}$	I	Chip selection
18	ASTB	I	Address strobe
19	READ	I	Control signals(read)
20	WRITE	I	Control signals(write)
21	WAIT	O	Control signals(wait)
22	INTQ	O	Interruption signals to the external microcomputer
23, 24	IFMODE0, 1	I	Switching the microcomputer I/F 0, 1
25	D1.VDD		Power supply for 1.6V digital circuits
26	DA.VDD		Power supply for DAC
27	ROUT	O	Output of audio for the right channel
28	DA.GND		GND for DAC
29	REGC		Connected to the capacitor for band gap
30	DA.GND		GND for DAC
31	LOUT	O	Output of audio for the left channel
32	DA.VDD		Power supply for DAC
33	X.VDD		Power supply for the crystal oscillator
34	XTAL	I	Connected to the crystal oscillator(16.9344MHz)
35	XTAL	O	Connected to the crystal oscillator(16.9344MHz)
36	X.GND		Ground for the crystal oscillator
37	VDDREG15		Control of 1.6V regulator
38	PWMSW0	I	Setup 0 for PWM output(SD, MD)
39-41	TEST3-1	I	Connected to GND
42	PWMSW1	I	Setup 1 for PWM output(FD, TD)
43	TESTEN	I	Connected to GND
44	D1.GND		GND for 1.6V digital circuits
45	DIN	I	Input of audio data
46	DOUT	O	Output of audio data
47	SCKIN	I	Clock input for audio data
48	SCKO	O	Clock output for audio data
49	LRCKIN	I	Input of LRCK for audio data
50	LRCK	O	Output LRCK for audio data
51	$\overline{XTALEN}$	I	Permission to oscillate 16.9344MHz
52	D1.VDD		Power supply for 1.6V digital circuits
53	RFCK/HOLD	O	Output of RFCK/HOLD signal
54	WFCK/MIRR	O	Output of WFCK/MIRR signal
55	PLCK/RFOK	O	Output of PLCK/Output of RFOK
56	LOCK/RFOK	O	Output of LRCK/Output of RFOK
57	C1D1/C8M	O	Information on error correction/C8M : 8MHz
58	C1D2/C16M	O	Information on error correction/C16M : 16MHz
59	C2D1/RMUTE	O	Information on error correction/Mute for Rch
60	C2D2/LMUTE	O	Information on error correction/Mute for Lch
61	C2D3/SHOCK	O	Information on error correction/Detection of vibration
62	D1.GND		GND for 1.6V digital circuits
63	C33M	O	Output of 33.8688MHz(CLK for SDRAM)
64	(RCS)	O	DRAM $\overline{CS}$
65	RA11	O	Output of DRAM address 11
66	(CKE)	O	Output of DRAM CKE
67	RAS	O	Output of DRAM $\overline{RAS}$
68	$\overline{CAS0}$ (LDQM)	O	Output of DRAM lower $\overline{CAS}$ (LDQM)
69	$\overline{CAS1}$ (UDQM)	O	Output of DRAM upper $\overline{CAS}$ (UDQM)
70	$\overline{WE}$	O	Output of DRAM $\overline{WE}$
71	OE(CAS)	O	Output of DRAM OE(CAS)
72	D.GND		Ground for digital circuits
73-88	RDB0-15	I/O	Input/output of DRAM data0-15
89-99	RA0-10	O	Output of DRAM address0-10

Pin No.	Pin Name	I/O	Function and Operation
100	D.VDD		Power supply for digital circuits
101	FD+	O	Output of focus drive PWM +
102	FD-	O	Output of focus drive PWM -
103	TD+	O	Output of tracking drive PWM +
104	TD-	O	Output of tracking drive PWM -
105	SD+	O	Output of thread drive PWM +
106	SD-	O	Output of thread drive PWM -
107	MD+	O	Output of spindle drive PWM +
108	MD-	O	Output of spindle drive PWM -
109	REFOUTSV	O	REFOUT for servo
110	AD.VDD		Power supply for ADC
111	EFM	O	Output of EFM signals
112	ASY	I	Input of asymmetry
113	ATEST	O	Analog tests
114	RFI	I	Input of RF
115	AD.GND		Ground for the analog system
116	AGCO	O	Output of RF
117	C3T	O	Connection to the capacitor for detecting 3T
118	AGCI	I	Input of AGC
119	RFO	O	Output of RF(AGC)
120, 121	EQ2, 1	I	Equalizer 2, 1
122	RF2-	I	Reversal input of RF2
123	RF-	I	Reversal input of RF
124	A.GND		Ground for the analog system
125	A	I	Input of A
126	C	I	Input of C
127	B	I	Input of B
128	D	I	Input of D
129	F	I	Input of F
130	E	I	Input of E
131	VREFIN	I	Input of reference voltage
132	A.VDD		Power supply for the analog system
133	REFOUT	O	Output of reference voltage
134	REFC	I	Connected to the capacitor for output of REFOUT
135	FE-	I	Reversal input of FE
136	FEO	O	Output of FE
137	ADIN	I	Input of FE, TE A/D converter
138	TE-	I	Reversal input of TE
139	TEO	O	Output of TE
140	TE2	O	TE2
141	TEC	I	TEC
142	LD	O	Output of LD
143	PD	I	Input of PD
144	D.GND		Ground for digital circuits

* UPD63763GJ

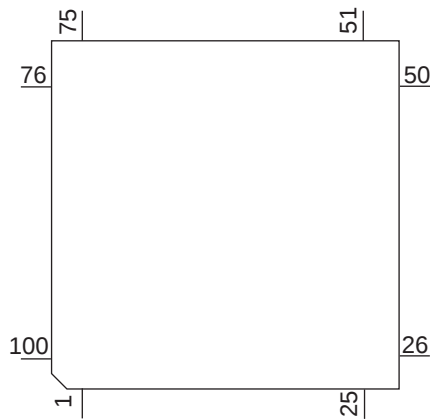


Pin Functions(PE5454A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	AVREF			A power supply Positive power supply(5V)
2	AVSS			A power supply GND
3	RFOK	O	C	Output of state of RFOK
4	NC			Not used
5	EVDD			E power supply Positive power supply
6, 7	NC			Not used
8	IC/FLMD0			IC : VSS direct connection/FLMOD0 : Pull-down
9	VDD			Positive power supply(5V)
10	REGC			Connected to the capacity stabilizing output of the regulator
11	VSS			GND
12	X1	I		Oscillator connection for mainclock
13	X2			Oscillator connection for mainclock
14	RESET	I		System reset input
15	XT1	I		Connected to the oscillator for subclock (connected to VSS via the resistor)
16	XT2			Connected to the oscillator for subclock(Open)
17	NC			Connected to EVDD or EVSS via the resistor
18	NC			Not used
19	XINT		C	CD LSI interruption signal input
20	NC			Connected to VSS via the resistor
21	BRST	I		P-Bus reset input
22	BSI	I		P-Bus serial data input
23	BSO	O	C	P-Bus serial data output
24	BSCK	I/O	/C	P-Bus serial clock input/output
25	FTXD	O	C	For flash rewriting(transmitted signal)
26	FRXD	I		For flash rewriting(received signal)
27	BRXEN	I/O	/C	It is possible to receive P-Bus
28	BSRQ	I/O	/C	P-Bus service request demand
29	NC			Not used
30	DSCSNS	I		Disc state sense input
31	8EJ(S905)	I		Input of detection of 8 cm disc ejection
32	12EJ(S904)	I		Input of detection of 12 cm disc ejection
33	EVSS			E power supply GND
34	EVDD			E power supply Positive power supply
35, 36	SRAMLEVEL0, 1	O	C	SRAM level meter output
37	EMPH	O	C	Emphasis information output
38	EMPH	O	C	Emphasis information output
39-42	NC			Not used
43	ADENA	O	C	A/D reference voltage supply control output
44	LRCKOK	O	C	(DOUT mute output)
45	SRAMLEVEL2	O	C	SRAM level meter output
46	CD3VON	O	C	CD +3.3V power supply control output
47	CONT	O	C	Servo driver power supply control output
48	XRST	O	C	CD LSI reset control output
49	VDCONT	O	C	VD power supply control output
50	ROMDATA	I/O	/C	E2PROM data input/output
51	ROMCS	O	C	E2PROM chip selection output
52	ROMCK	O	C	E2PROM clock output
53	LOEJ	O	C	The direction change output of LOAD/EJECT
54	CLCONT	O	C	Driver input change output
55	CDMUTE	O	C	CD mute control output
56-58	NC			Not used
59	XCS	O	C	CD LSI chip selection output
60	NC			Not used
61	XWAIT	I		CD LSI write control signal output
62	CLKOUT	O	C	Internal system clock output(Open)
63	LOCK	I		Spindle lock input
64	NC			Not used
65	XWRITE	O		CD LSI write control signal output
66	NC			Not used

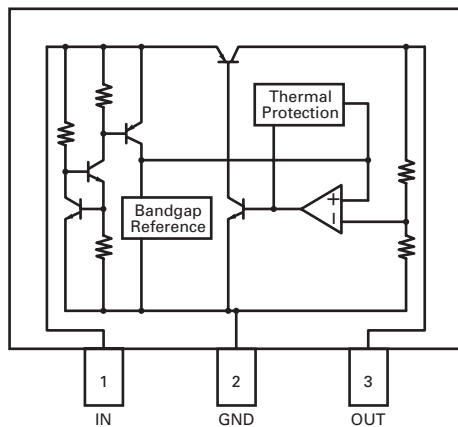
Pin No.	Pin Name	I/O	Format	Function and Operation
67	XREAD	O		CD LSI read control signal output
68	XASTB	O		CD LSI address strobe output
69	BVSS			B power supply GND
70	BVDD			B power supply Positive power supply
71-83	AD0-12	I/O	/C	Address/data Bus 0-12
84-86	NC			Not used
87	FMODE	I		For flash rewriting Connected to VSS via the resistor
88	FLRQ	O	C	For flash rewriting
89-93	NC			Not used
94	CSENS	I		Flap closing sense input
95	TYPE_A/D	I		CD-DA analog/digital output change setup
96	TESTIN	I		Chip check test program starting input
97	HOME	I		Home SW sense input
98	TEMP			Temperature information sense input
99	VDSSENS			VD power supply short sense input
100	NC			Not used

* PE5454A

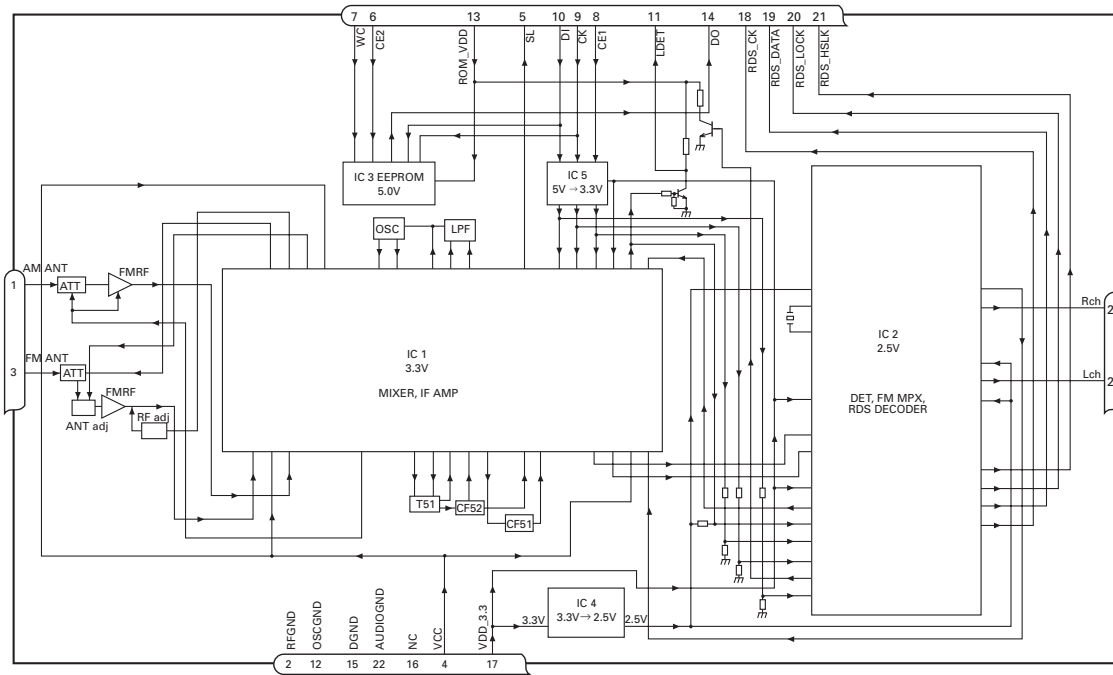


Format	Meaning
C	CMOS

NJM2885DL1-33



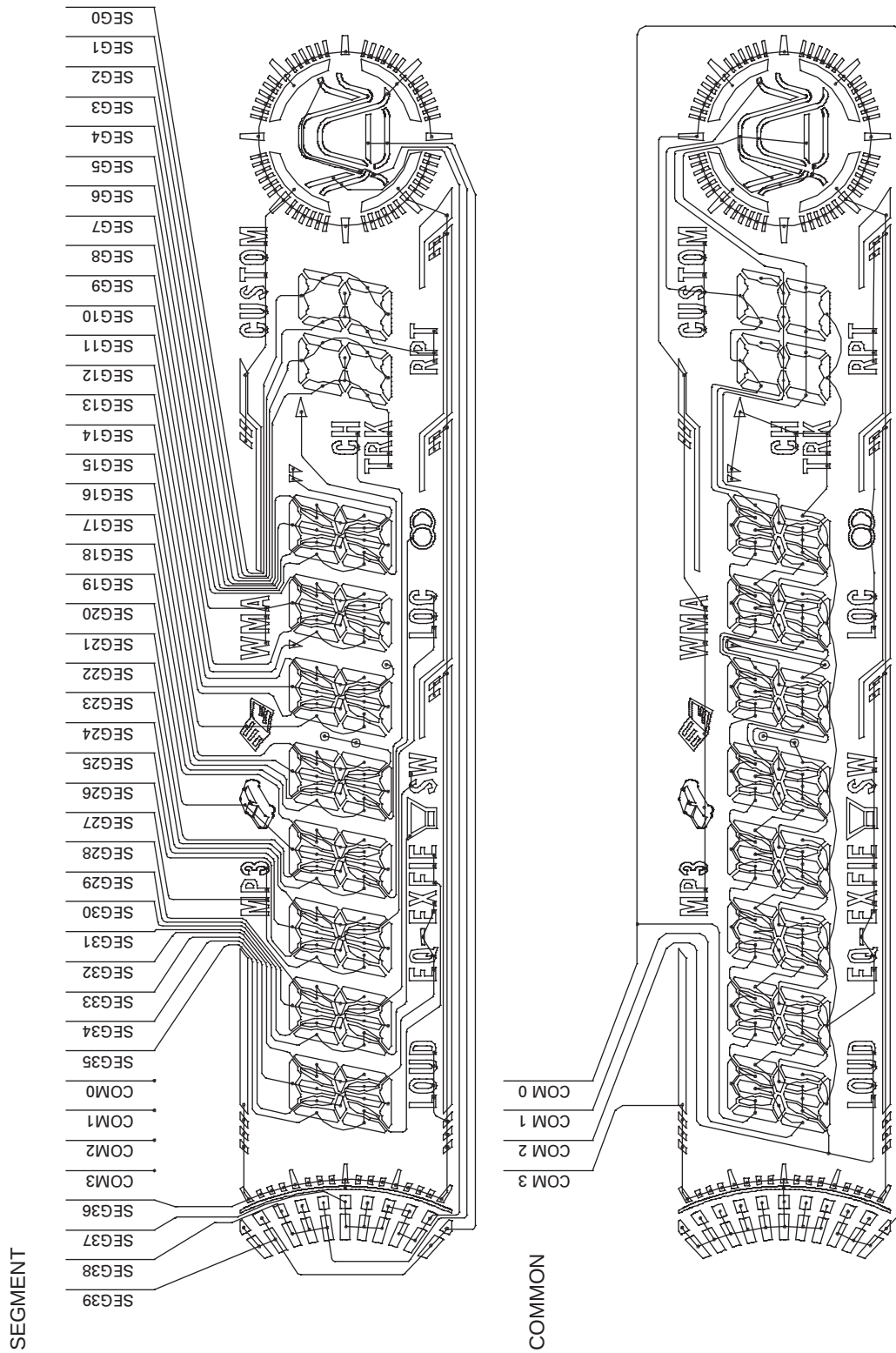
● FM/AM Tuner Unit



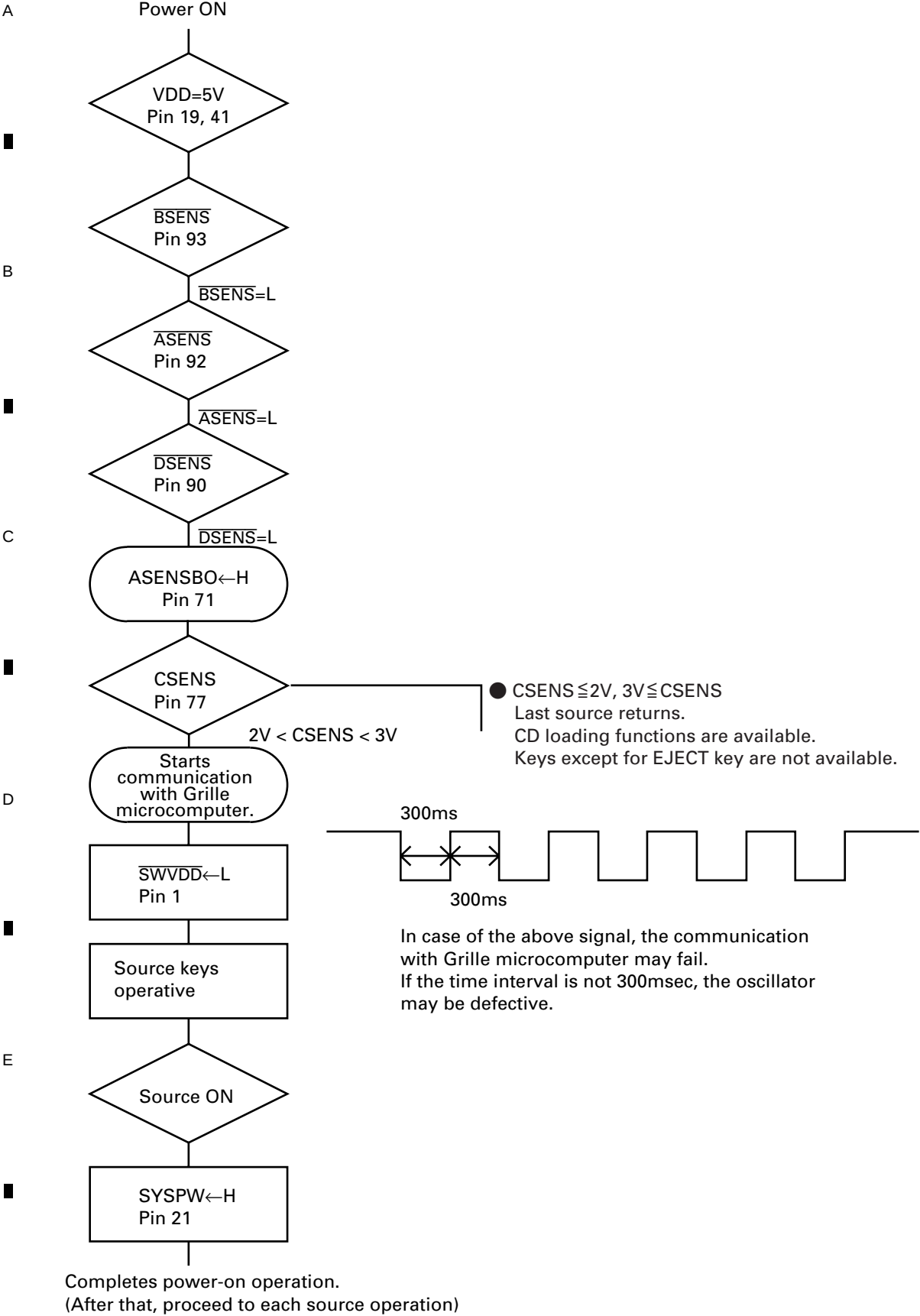
No.	Symbol	I/O	Explain	
1	AMANT	I	AM antenna input	AM antenna input high impedance AMANT pin is connected with an all antenna by way of 4.7μH. (LAU type inductor) A series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the hum of power transmission line.
2	RFGND		RF ground	Ground of antenna block
3	FMANT	I	FM antenna input	Input of FM antenna 75Ω Surge absorber(DSP-201M-S00B) is necessary.
4	VCC		power supply	The power supply for analog block. D.C 8.4V ± 0.3V
5	SL	O	signal level	Output of FM/AM signals level
6	CE2	I	chip enable-2	Chip enable for EEPROM "Low" active
7	WC	I	write control	You can write EEPROM, when EEPROM write control is "Low". Ordinary non connection
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. 3.3V ± 0.2V
18	RDS_CK	O	RDS clock	Output of RDS clock(2.5V)
19	RDS_DATA	O	RDS data	Output of RDS data(2.5V)
20	RDS_LOCK	O	RDS lock	Output unit "High" active(2.5V) (RDS_LOCK turns over by the external transistor. "Low" active)
21	RDS_HSLK	O	RDS high speed lock	Output unit "High" active(2.5V)(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

7.2.2 DISPLAY

● LCD(CAW1865)



7.3 OPERATIONAL FLOW CHART



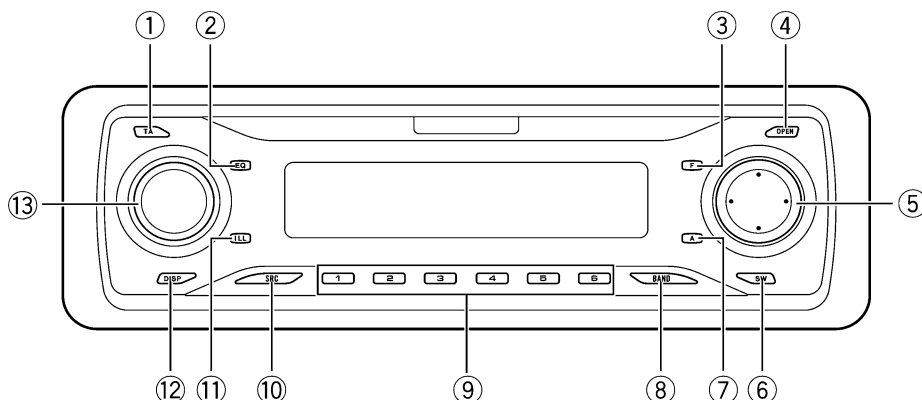
7.4 CLEANING



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

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

8. OPERATIONS



Head unit

① TA button

Press to turn traffic announcements function on or off.
Press and hold to turn NEWS function on or off.

② EQ button

Press to select various equalizer curves.

③ FUNCTION button

Press to select functions.

④ OPEN button

Press to open the front panel.

⑤ ▲/▼/◀/▶ buttons

Press to do manual seek tuning, fast forward, reverse and track search controls. Also used for controlling functions.

⑥ SW button

Press to directly select subwoofer setting menu. Press and hold to select EQ-EX setting menu.

⑦ AUDIO button

Press to select various sound quality controls.

⑧ BAND button

Press to select among three FM bands and MW/LW bands and to cancel the control mode of functions.

⑨ 1-6 buttons

Press for preset tuning and disc number search when using a multi-CD player.

⑩ SOURCE button

This unit is turned on by selecting a source. Press to cycle through all the available sources.

⑪ ILLUMINATION button

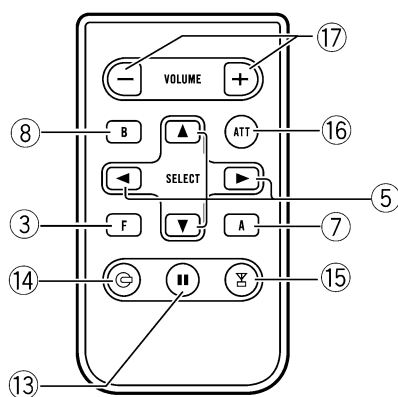
Press to change the button illumination and the display illumination.

⑫ DISPLAY button

Press to select different displays.

⑬ VOLUME

When you press **VOLUME**, it extends outward so that it becomes easier to turn. To retract **VOLUME**, press it again. Rotate it to increase or decrease the volume. 



Remote control

Operation is the same as when using the buttons on the head unit. See the explanation of the head unit about the operation of each button with the exception of **ATT**, which is explained below.

⑬ PAUSE button

Press to turn pause on or off.

⑭ CD button

Press to select the built-in or multi-CD player as the source.

⑮ TUNER button

Press to select the tuner as the source.

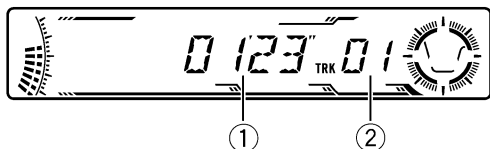
⑯ ATT button

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

⑰ VOLUME button

Press to increase or decrease the volume. 

Playing a CD



These are the basic steps necessary to play a CD with your built-in CD player. More advanced CD operation is explained starting on the next page.

① Play time indicator

Shows the elapsed playing time of the current track.

② Track number indicator

Shows the track currently playing.

1 Press OPEN to open the front panel.

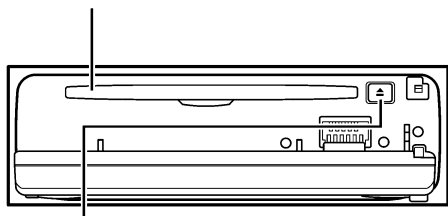
CD loading slot appears.

- After a CD has been inserted, press **SOURCE** to select the built-in CD player.

2 Insert a CD into the CD loading slot.

Playback will automatically start.

CD loading slot



EJECT button

- You can eject a CD by pressing **EJECT**.
- To avoid a malfunction, make sure that no metal object comes into contact with the terminals when the front panel is open.

3 Close the front panel.

4 Use VOLUME to adjust the sound level.

Rotate it to increase or decrease the volume.

5 To perform fast forward or reverse, press and hold ◀ or ▶.

- If you select **ROUGH**, pressing and holding ◀ or ▶ enables you to search every 10 tracks in the current disc.

6 To skip back or forward to another track, press ◀ or ▶.

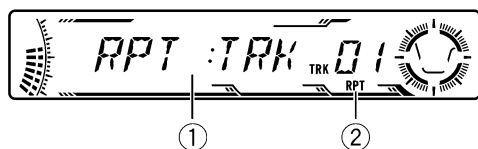
Pressing ▶ skips to the start of the next track. Pressing ◀ once skips to the start of the current track. Pressing again will skip to the previous track.



Notes

- 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 CDs.
- Do not insert anything other than a CD into the CD loading slot.
- If you cannot insert a disc completely or if after you insert a disc the disc does not play, check that the label side of the disc is up. Press **EJECT** to eject the disc, and check the disc for damage before inserting it again.
- If an error message such as **ERROR-11** is displayed.
- When a CD TEXT disc is inserted, the disc and track titles begin to scroll to the left automatically. ■

Introduction of advanced built-in CD player operation



① Function display

Shows the function status.

② RPT indicator

Shows when repeat play is turned on.

● Press FUNCTION to display the function names.

Press **FUNCTION** repeatedly to switch between the following functions:

RPT (repeat play)—**RDM** (random play)—**SCAN** (scan play)—**PAUSE** (pause)—**COMP** (compression and BMX)—**FF/REV** (search method)

- To return to the playback display, press **BAND**.

Note

If you do not operate the function within about 30 seconds, the display is automatically returned to the playback display. ■

Repeating play

Repeat play lets you hear the same track or disc over again.

1 Press FUNCTION to select RPT.

Press **FUNCTION** until **RPT** appears in the display.

2 Press ◀ or ▶ to select the repeat range.

This switches you to the selected setting.

- **RPT:DSC** – Repeat the current disc
- **RPT:TRK** – Repeat just the current track

Note

If you perform track search or fast forward/reverse during **TRK**, the repeat play range changes to **DSC**. ■

Playing tracks in a random order

Random play lets you play back tracks on the CD in a random order.

1 Press FUNCTION to select RDM.

Press **FUNCTION** until **RDM** appears in the display.

2 Press ▲ to turn random play on.

RDM:ON appears in the display. Tracks will play in a random order.

3 Press ▼ to turn random play off.

RDM:OFF appears in the display. Tracks will continue to play in order. ■

Scanning tracks of a CD

Scan play lets you hear the first 10 seconds of each track on the CD.

1 Press FUNCTION to select SCAN.

Press **FUNCTION** until **SCAN** appears in the display.

2 Press ▲ to turn scan play on.

SCAN:ON appears in the display. The first 10 seconds of each track is played.

3 When you find the desired track press ▼ to turn scan play off.

SCAN:OFF appears in the display. The track will continue to play.

- If the display has automatically returned to the playback display, select **SCAN** again by pressing **FUNCTION**.



Note

After scanning of a CD is finished, normal playback of the tracks will begin again. 

Pausing CD playback

Pause lets you temporarily stop playback of the CD.

1 Press **FUNCTION** to select **PAUSE**.

Press **FUNCTION** until **PAUSE** appears in the display.

2 Press ▲ to turn pause on.

PAUSE:ON appears in the display. Play of the current track pauses.

3 Press ▼ to turn pause off.

PAUSE:OFF appears in the display. Play will resume at the same point that you turned pause on.



Note

You can also turn pause on or off by pressing **PAUSE**. 

Using compression and BMX

Using the COMP (compression) and BMX functions let you adjust the sound playback quality of this player. Each of the functions have a two-step adjustment. The COMP func-

tion balances the output of louder and softer sounds at higher volumes. BMX controls sound reverberations to give playback a fuller sound. Listen to each of the effects as you select through them and use the one that best enhances the playback of the track or CD that you are listening to.

1 Press **FUNCTION** to select **COMP**.

Press **FUNCTION** until **COMP** appears in the display.

2 Press ▲ or ▼ to select your favorite setting.

Press ▲ or ▼ repeatedly to switch between the following settings:

**COMP OFF—COMP 1—COMP 2—
COMP OFF—BMX 1—BMX 2** 

Selecting the search method

You can switch the search method between fast forward/reverse and searching every 10 tracks.

1 Press **FUNCTION** to select **FF/REV**.

Press **FUNCTION** until **FF/REV** appears in the display.

- If the search method **ROUGH** has been previously selected, **ROUGH** will be displayed.

2 Press ◀ or ▶ to select the search method.

Press ◀ or ▶ until the desired search method appears in the display.

- **FF/REV** – Fast forward and reverse
- **ROUGH** – Searching every 10 tracks 

Searching every 10 tracks in the current disc

If a disc contains over 10 tracks, you can search every 10 tracks. When a disc contains a lot of tracks, you can roughly search for the track you want to play.

1 Select the search method ROUGH.

Refer to *Selecting the search method* on the previous page.

2 Press and hold ◀ or ▶ to search every 10 tracks on a disc.

- If a disc contains less than 10 tracks, pressing and holding ▶ recalls the last track of the disc. Also, if the remaining number of tracks after searching every 10 tracks is less than 10, pressing and holding ▶ recalls the last track of the disc.
- If a disc contains less than 10 tracks, pressing and holding ◀ recalls the first track of the disc. Also, if the remaining number of tracks after searching every 10 tracks is less than 10, pressing and holding ◀ recalls the first track of the disc. ■

Using disc title functions

You can input CD titles and display the title. The next time you insert a CD for which you have entered a title, the title of that CD will be displayed.

Entering disc titles

Use the disc title input feature to store up to 48 CD titles in the unit. Each title can be up to 8 characters long.

1 Play the CD that you want to enter a title for.

2 Press FUNCTION and hold until TITLE IN appears in the display.

- When playing a CD TEXT disc, you cannot switch to **TITLE IN**. The disc title will have already been recorded on a CD TEXT disc.

3 Press ▲ or ▼ to select a letter of the alphabet.

Each press of ▲ will display a letter of the alphabet in **A B C ... X Y Z**, numbers and symbols in **1 2 3 ... > []** order. Each press of ▼ will display a letter in the reverse order, such as **Z Y X ... C B A** order.



4 Press ▶ to move the cursor to the next character position.

When the letter you want is displayed, press ▶ to move the cursor to the next position and then select the next letter. Press ◀ to move backwards in the display.

5 Move the cursor to the last position by pressing ▶ after entering the title.

When you press ▶ one more time, the entered title is stored in memory.

6 Press BAND to return to the playback display.



Notes

- Titles remain in memory, even after the disc has been removed from the unit, and are recalled when the disc is reinserted.
- After data for 48 discs has been stored in memory, data for a new disc will overwrite the oldest one.
- If you connect a multi-CD player, you can input disc titles for up to 100 discs.

Displaying disc titles

You can display the title of any disc that has had a disc title entered.

● Press **DISPLAY**.

Press **DISPLAY** repeatedly to switch between the following settings:

Play time—**DISC TTL** (disc title)

When you select **DISC TTL**, the title of the currently playing disc is shown in the display.

■ If no title has been entered for the currently playing disc, **NO TITLE** is displayed. 

● Press **DISPLAY** and hold until the title begins to scroll to the left.

The rest of the title will appear in the display. 

Using CD TEXT functions

Some discs have certain information encoded on the disc during manufacture. These discs may contain such information as the CD title, track title, artist's name and playback time and are called CD TEXT discs. Only these specially encoded CD TEXT discs support the functions listed below.

Displaying titles on CD TEXT discs

● Press **DISPLAY**.

Press **DISPLAY** repeatedly to switch between the following settings:

Play time—**DISC TTL** (disc title)—**ART NAME**

(disc artist name)—**TRK TTL** (track title)

—**ART NAME** (track artist name)

■ If specific information has not been recorded on a CD TEXT disc, **NO XXXX** will be displayed (e.g., **NO T-TTL**).

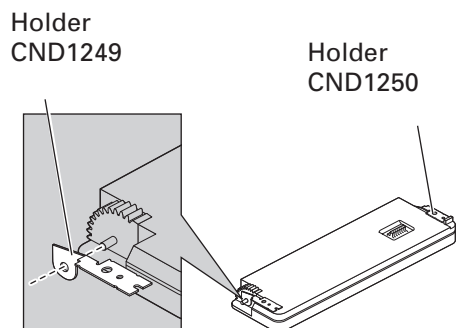
Scrolling titles in the display

This unit can display the first 8 letters only of **DISC TTL**, **ART NAME**, **TRK TTL** and **ART NAME**. When the recorded information is longer than 8 letters, you can scroll the text to the left so that the rest of the title can be seen.

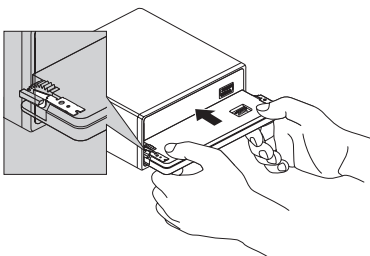
Fixing the front panel

If you do not operate the removing and attaching the front panel function, use the supplied fixing screws and holders to fix the front panel to this unit.

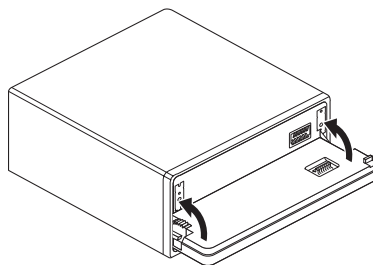
1. Attach the holders to both sides of the front panel.



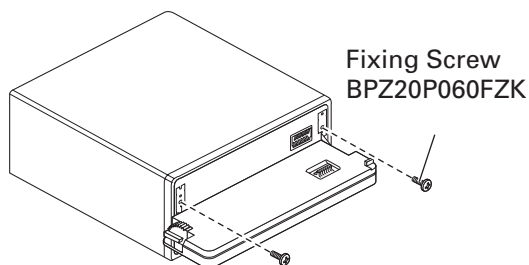
2. Replace the front panel to the unit.



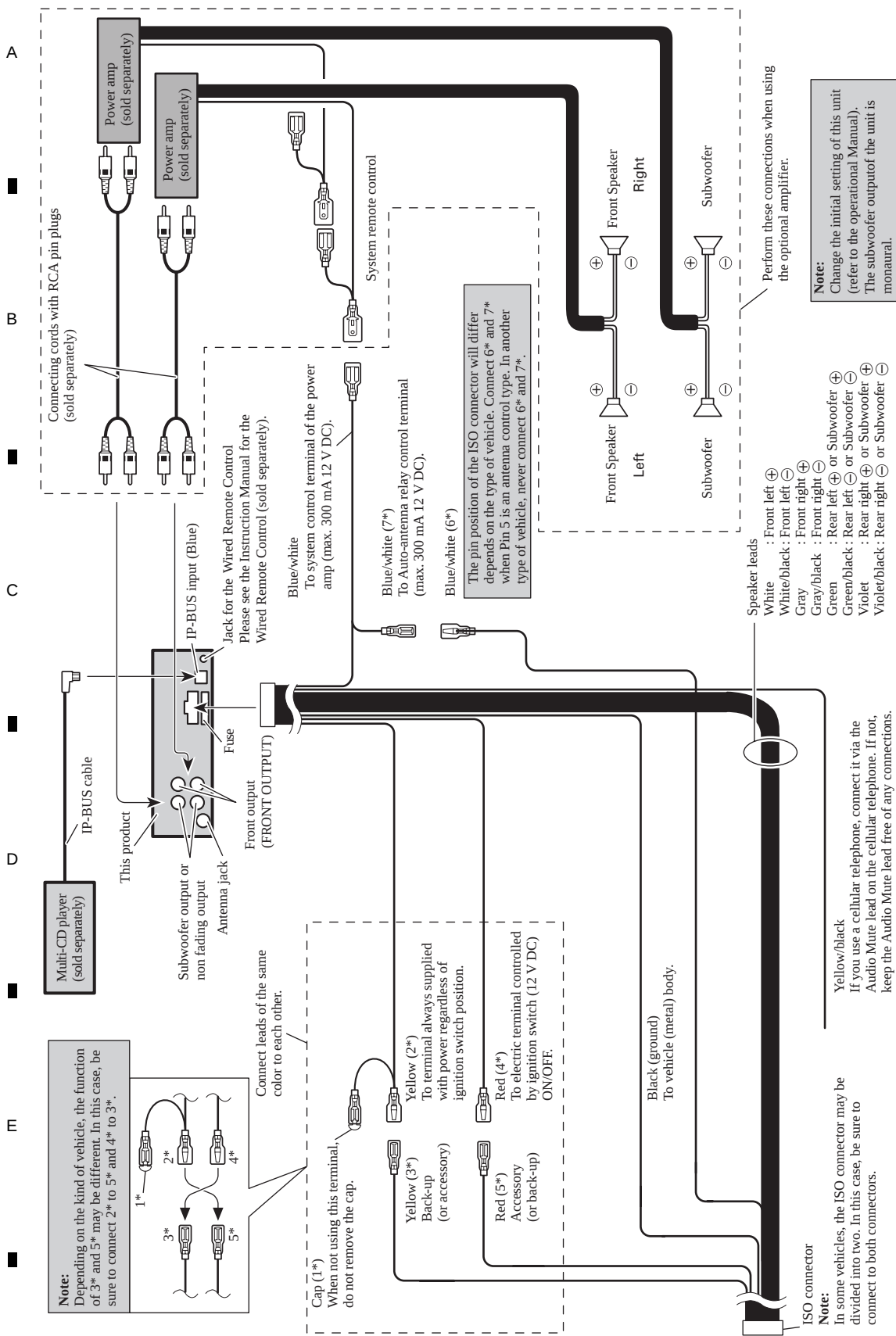
3. Flip the holders into upright positions.



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



● Connection Diagram



■

5

■

6

■

7

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8

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A

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B

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C

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D

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E

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F

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5

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6

■

7

■

8

■

● Jigs List

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

A

B

C

D

E

F