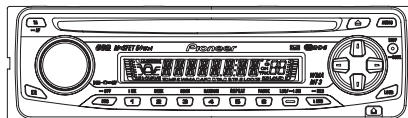


Service Manual



DEH-4700MP/XU/EW

ORDER NO.
CRT3398

HIGH POWER CD/MP3/WMA PLAYER WITH RDS TUNER

DEH-4700MP /XU/EW

DEH-4700MPB /XU/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.

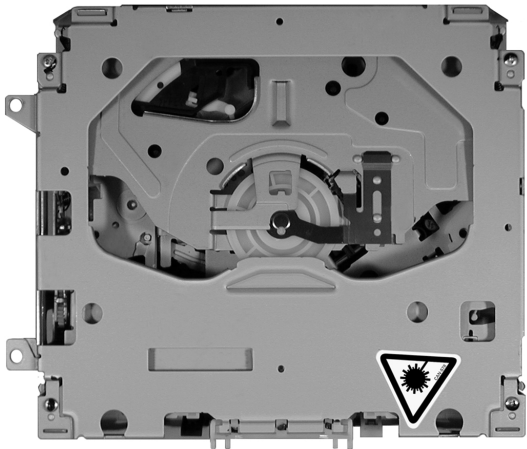
- When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.

Caution:

- During repair or tests, minimum distance of 13cm from the focus lens must be kept.
- 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

● Service Precaution

- 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.
- 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.
- To protect the pickup unit from electrostatic discharge during servicing, take an appropriate treatment (shorting-solder) by referring to "the DISASSEMBLY".
- 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	3 mA or less
Dimensions (W × H × D):	
DIN	
Chassis	178 × 50 × 157 mm
Nose	188 × 58 × 19 mm
D	
Chassis	178 × 50 × 162 mm
Nose	170 × 48 × 14 mm
Weight	1.3 kg

Audio

Maximum power output	50 W × 4
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 k Ω
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)

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, 7.1, 8, 9 (2ch audio)
WAV signal format	Linear PCM & MS ADPCM

FM tuner

Frequency range	87.5 – 108.0 MHz
Usable sensitivity	8 dBf (0.7 μ V/75 Ω mono, S/N: 30 dB)
50 dB quieting sensitivity	10 dBf (0.9 μ V/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 μ V (S/N: 20 dB)
Signal-to-noise ratio	65 dB (IEC-A network)

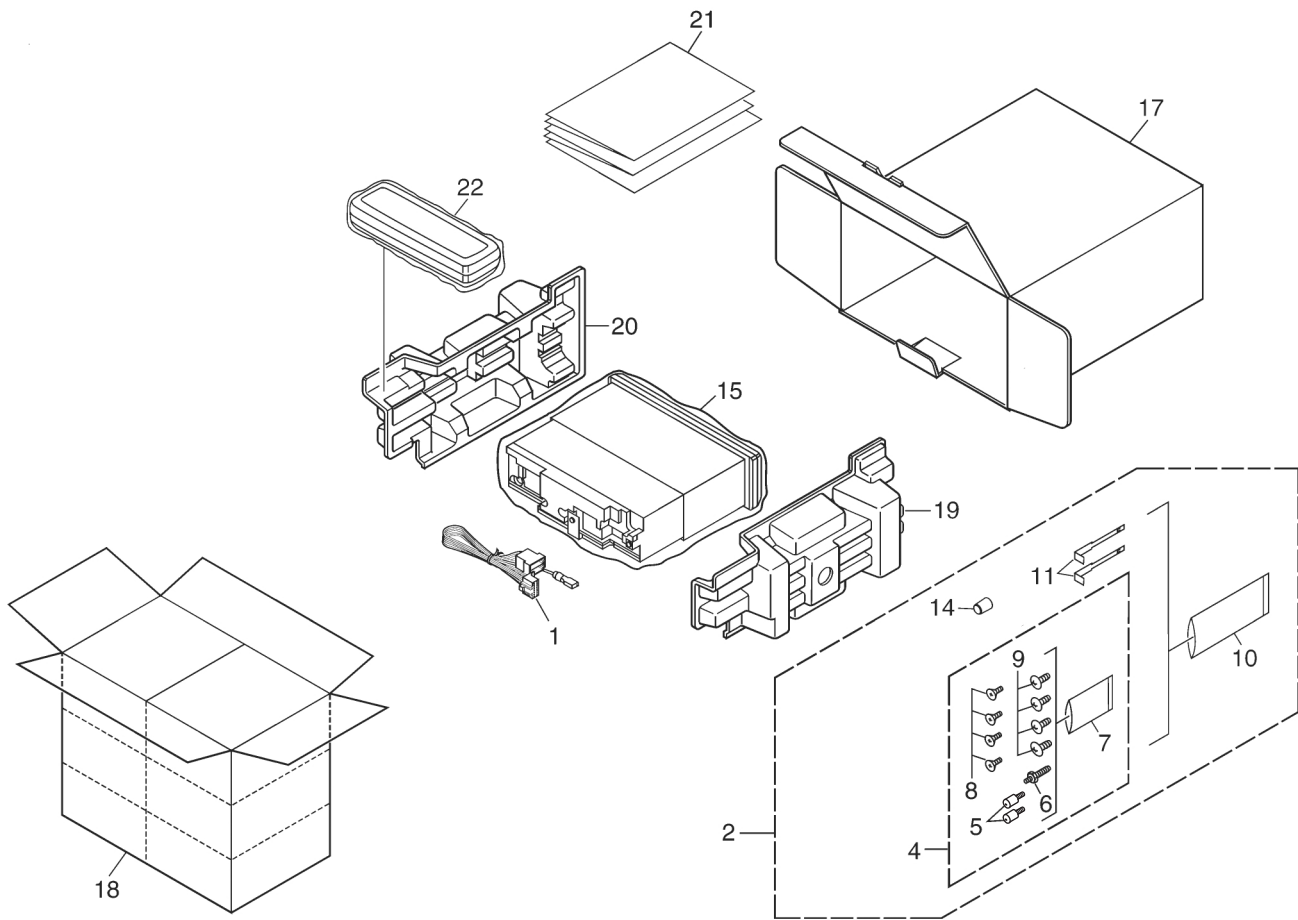
LW tuner

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

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



(1) PACKING SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Cord Assy	CDE7059	15	Polyethylene Bag	CEG-162
2	Accessory Assy	CEA4610			
3	*****		16	*****	
4	Screw Assy	CEA4611	17	Carton	See Contrast table(2)
5	Fixing Screw(M2x4)	CBA1488	18	Contain Box	See Contrast table(2)
			19	Protector	XHP7003
6	Screw	CBA1650	20	Protector	XHP7004
* 7	Polyethylene Bag	CEG-127	21-1	Owner's Manual	YRD5019
8	Screw	CRZ50P090FTC	21-2	Owner's Manual	YRD5027
9	Screw	TRZ50P080FTC	21-3	Installation Manual	YRD5022
* 10	Polyethylene Bag	CEG-158	* 21-4	Warranty Card	CRY1157
11	Handle	CNC5395	* 21-5	Passport	CRY1013
12	*****				
13	*****		22	Case Assy	YXB5005
14	Bush	CNV3930			

(2) CONTRAST TABLE

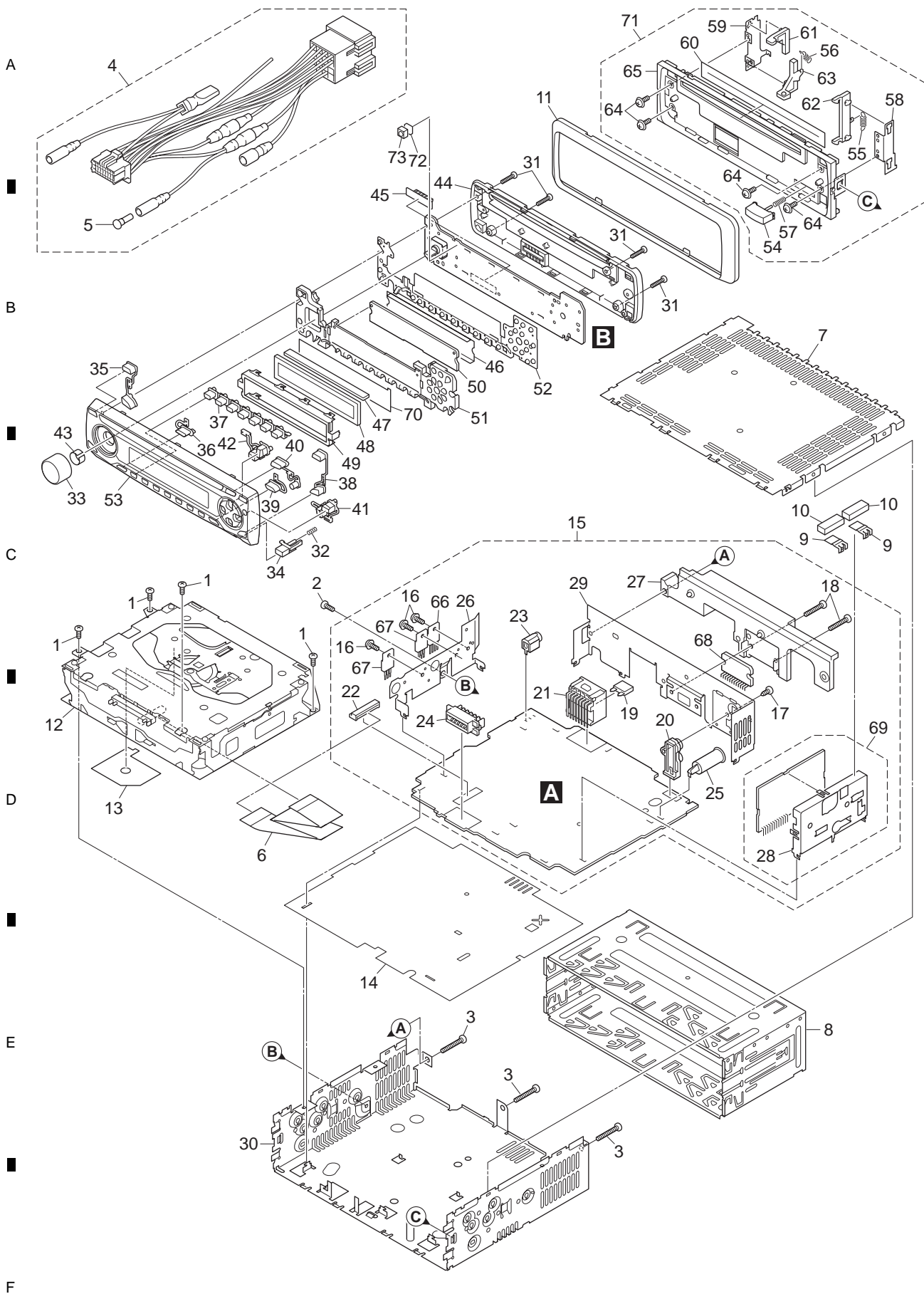
DEH-4700MP/XU/EW and DEH-4700MPB/XU/EW are constructed the same except for the following:

Mark	No.	Description	DEH-4700MP/XU/EW	DEH-4700MPB/XU/EW
	17	Carton	YHG5018	YHG5025
	18	Contain Box	YHL5018	YHL5025

Owner's Manual,Installation Manual

Part No.	Language
YRD5019	English, Spanish, German
YRD5027	French, Italian, Dutch
YRD5022	English, Spanish, German, French, Italian, Dutch

2.2 EXTERIOR



(1) EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
1	Screw	BSZ26P060FTC	38	Button(AUDIO, LOUDNESS)	YAC5032	
2	Screw	BSZ30P060FTC	39	Button(BAND)	YAC5033	A
3	Screw	BSZ30P200FTC	40	Button(EJECT, DISPLAY)	YAC5034	
4	Cord Assy	CDE7059				
5	Cap	CKX-003	41	Button(DOWN, RIGHT)	YAC5035	
			42	Button(UP, LEFT)	YAC5036	
6	Cable	YDE5008	43	Spring	YBL5001	
7	Case	CNB2793	44	Cover	See Contrast table(2)	
8	Holder	CNC8659	45	Connector(CN1801)	CKS4943	
9	Earth Plate	CNC8915				
10	Cushion	CNM8890	46	Sheet	CNM7932	
			47	Connector	CNV7369	
11	Panel	See Contrast table(2)	48	LCD(LCD1801)	See Contrast table(2)	B
12	CD Mechanism Module(S10.1AAC)	CXK5668	49	Holder	YNC5005	
13	Insulator	XNM7106	50	Lighting Conductor	YNV5004	
14	Insulator	YNM5012				
15	Tuner Amp Unit	See Contrast table(2)	51	Lighting Conductor	YNV5005	
			52	Rubber Contact	See Contrast table(2)	
16	Screw	ASZ26P060FTC	53	Grille Unit	See Contrast table(2)	
17	Screw	BPZ26P080FTC	54	Button(DETACH)	CAC4836	
18	Screw	BSZ26P160FTC	55	Spring	CBH1835	
⚠ 19	Fuse(10A)	CEK1208				
20	Pin Jack(CN352)	CKB1057	56	Spring	CBH2208	
			57	Spring	CBH2367	C
21	Plug(CN901)	CKM1376	58	Bracket	CNC6791	
22	Connector(CN721)	CKS3837	59	Holder	CNC8042	
23	Connector(CN621)	CKS4124	60	Cover	CNM6276	
24	Connector(CN831)	CKS4944				
25	Antenna Jack(CN401)	CKX1056	61	Arm	CNV4692	
			62	Arm	CNV4728	
26	Holder	CND1328	63	Arm	CNV5576	
27	Heat Sink	CNR1668	64	Screw	IMS20P030FZK	
28	Holder	CND1054	65	Panel	See Contrast table(2)	
29	Holder	YNC5002				
30	Chassis Unit	See Contrast table(2)	66	IC(IC921)	NJM2388F84	D
			67	Transistor(Q911, 991)	2SD2396	
31	Screw	BPZ20P100FZK	68	IC(IC302)	PAL007A	
32	Spring	CBH2210	69	FM/AM Tuner Unit(Z401)	CWE1645	
33	Knob(VOLUME)	YAA5001	70	Sheet	See Contrast table(2)	
34	Button(DETACH)	YAC5027				
35	Button(TA, EQ)	YAC5029	71	Panel Unit	See Contrast table(2)	
			72	Cushion	YNM5004	
36	Button(SOURCE)	YAC5030	73	IC(IC1802)	TSOP4840SB1	
37	Button(1-6, LOCAL/BSM)	YAC5031				

(2) CONTRAST TABLE

DEH-4700MP/XU/EW and DEH-4700MPB/XU/EW are constructed the same except for the following:

Mark	No.	Description	DEH-4700MP/XU/EW	DEH-4700MPB/XU/EW
	11	Panel	CNS8046	CNS8048
	15	Tuner Amp Unit	YWM5031	YWM5033
	30	Chassis Unit	YXA5043	YXA5045
	44	Cover	YNS5038	YNS5060
	48	LCD(LCD1801)	YAW5024	YAW5025
	52	Rubber Contact	YNV5006	YNV5023
	53	Grille Unit	YXA5047	YXA5050
	65	Panel	YNS5046	* YNS5082
	70	Sheet	Not used	YNM5009
	71	Panel Unit	Not used	YXA5079

△



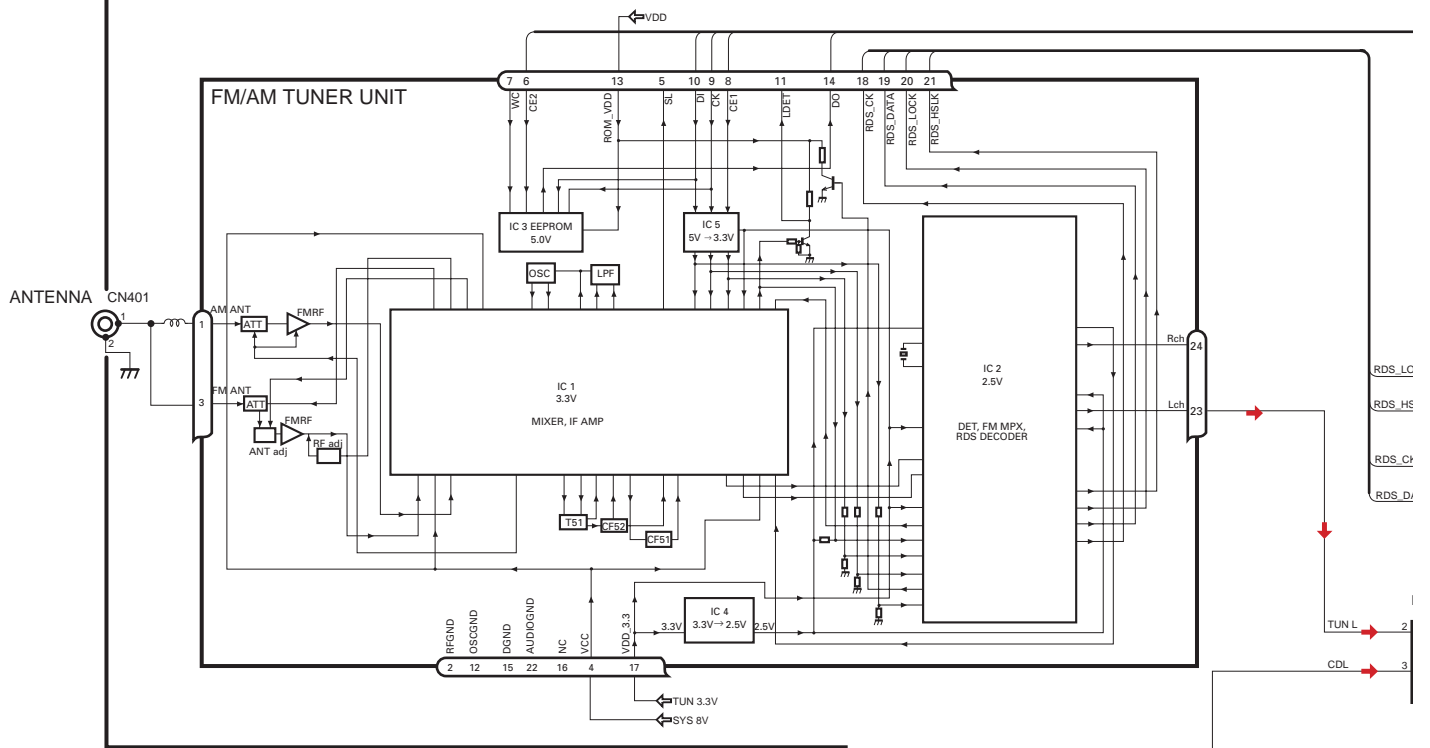
CD MECHANISM MODULE SECTION PARTS LIST

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	CNV8189	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	CND2443	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)	CXX1647	
42	Sheet	CNM8134				
43	Collar	CNV8447	91	Screw	IMS26P030FTC	
44	Guide	CNV8448	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

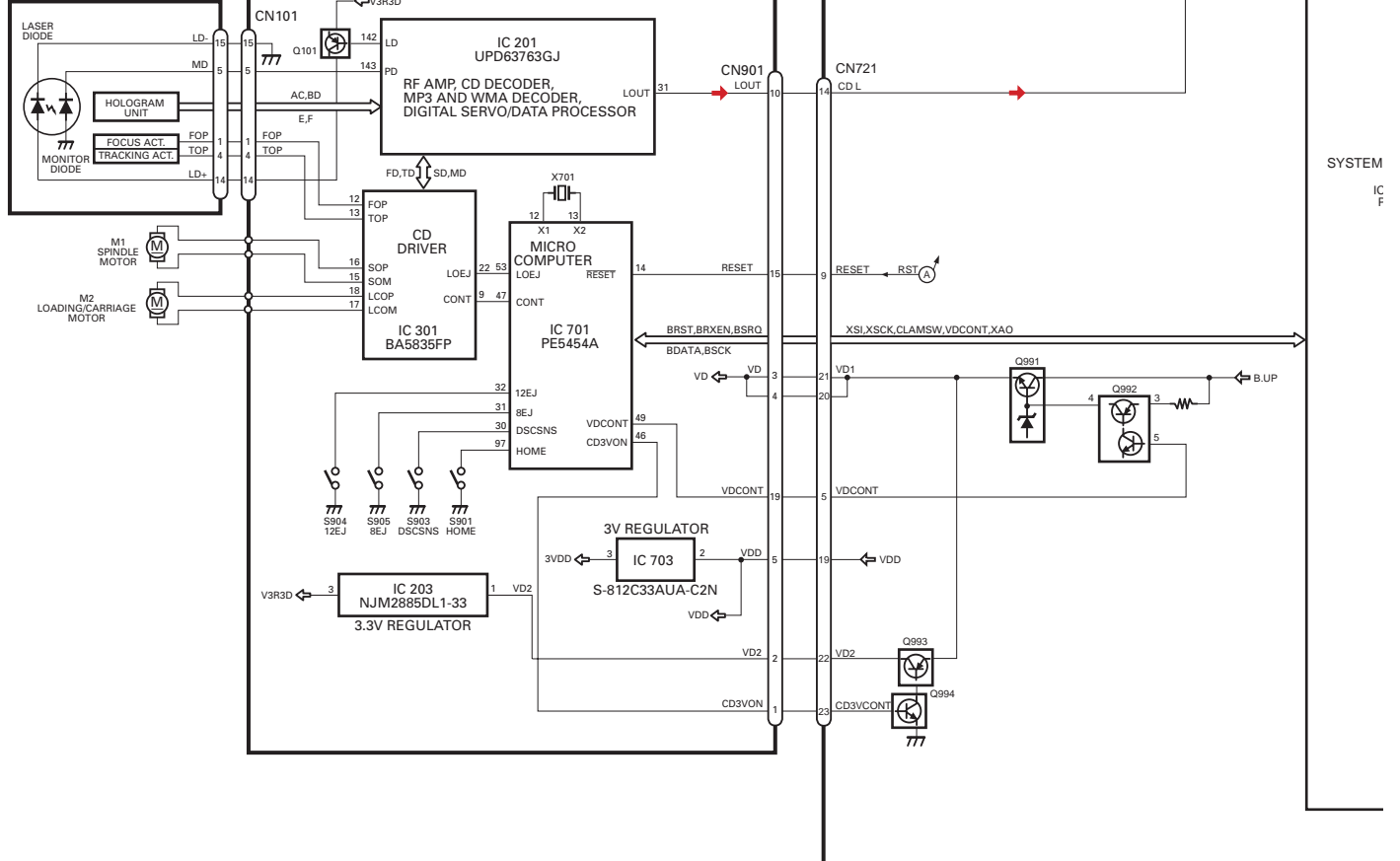
3.1 BLOCK DIAGRAM

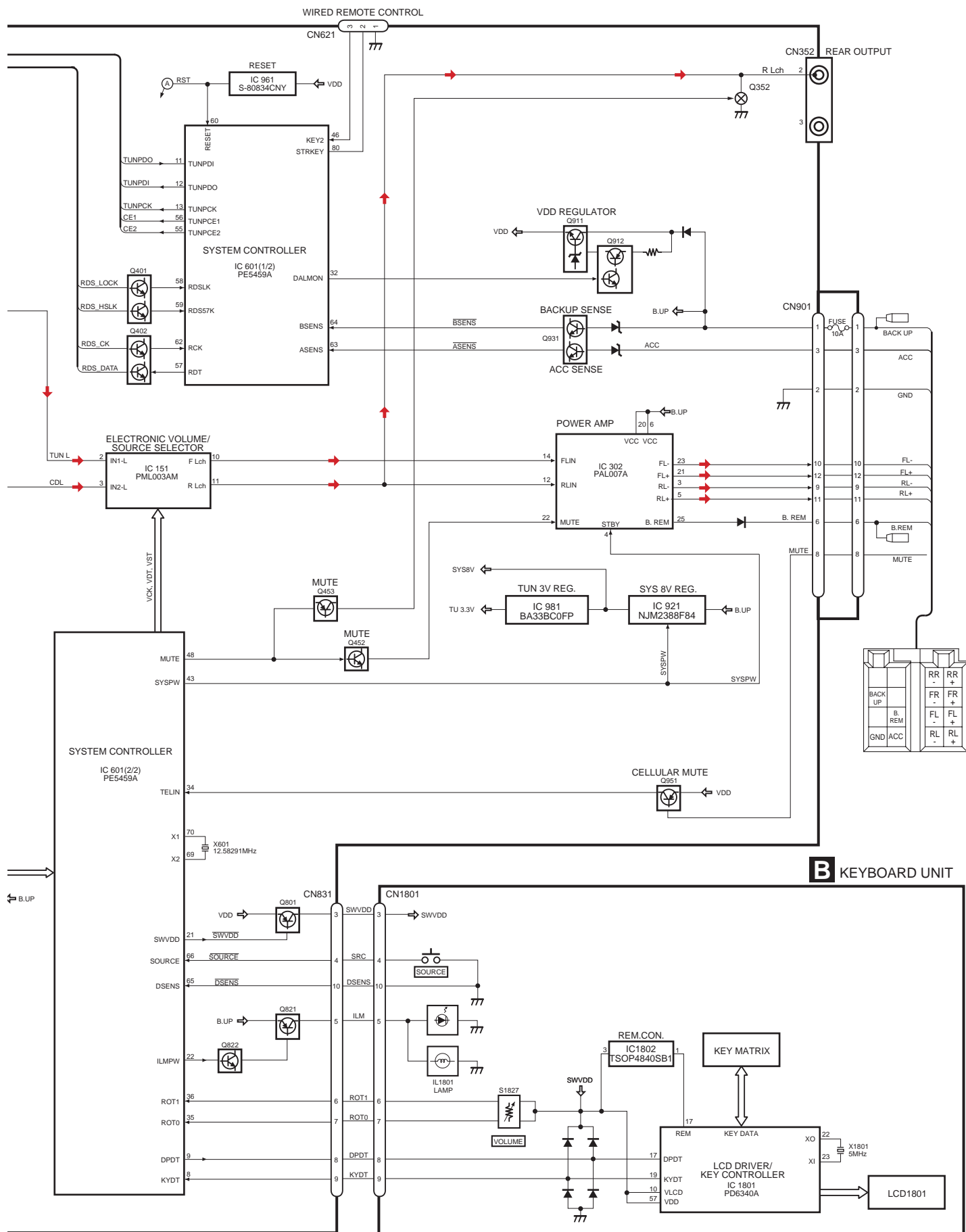
A TUNER AMP UNIT



C CD CORE UNIT(S10.1)

PICKUP UNIT (P10)(SERVICE)





A

B

C

D

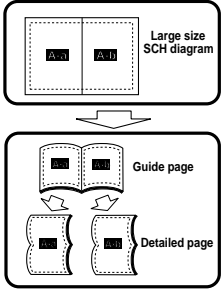
E

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



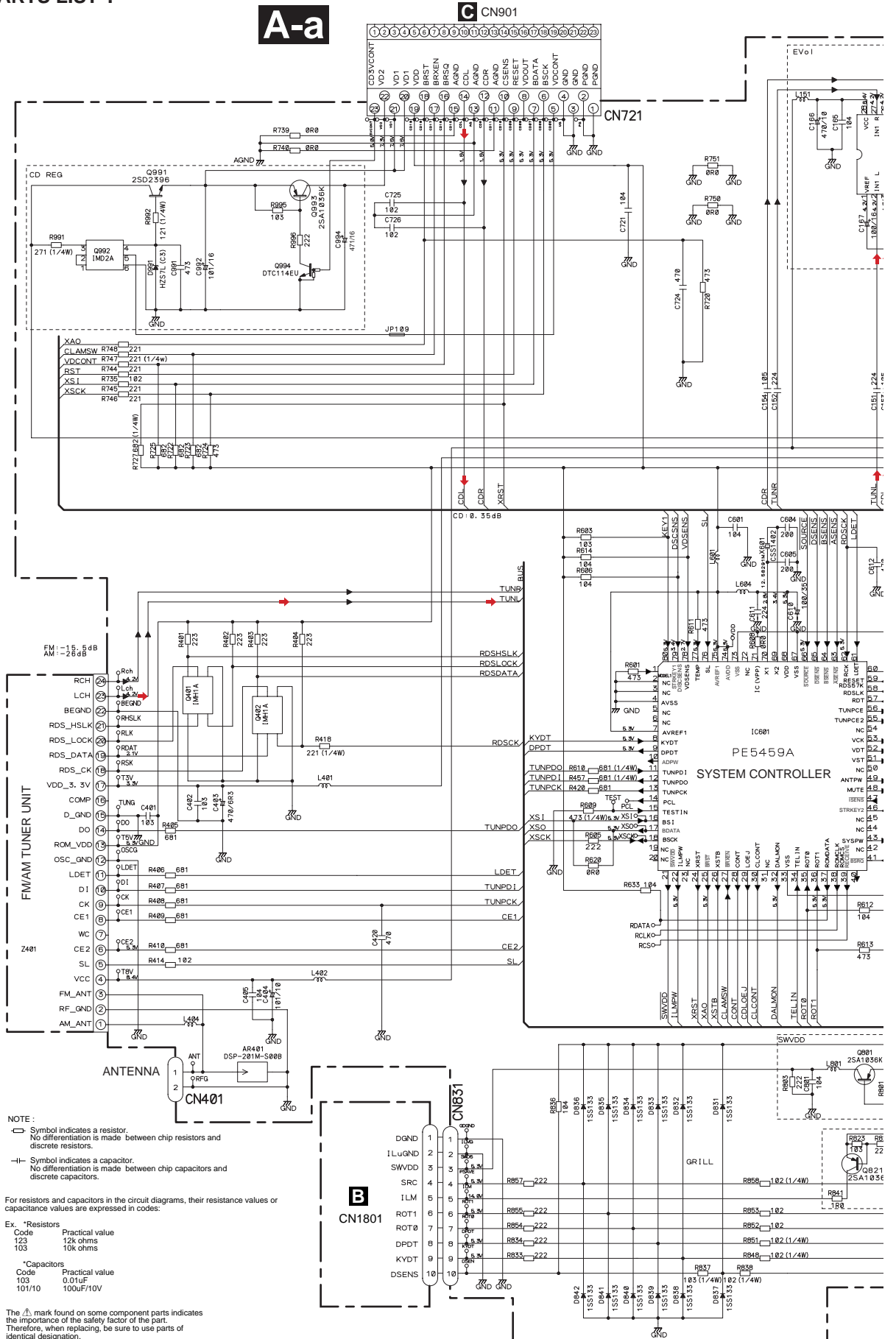
B

C

D

E

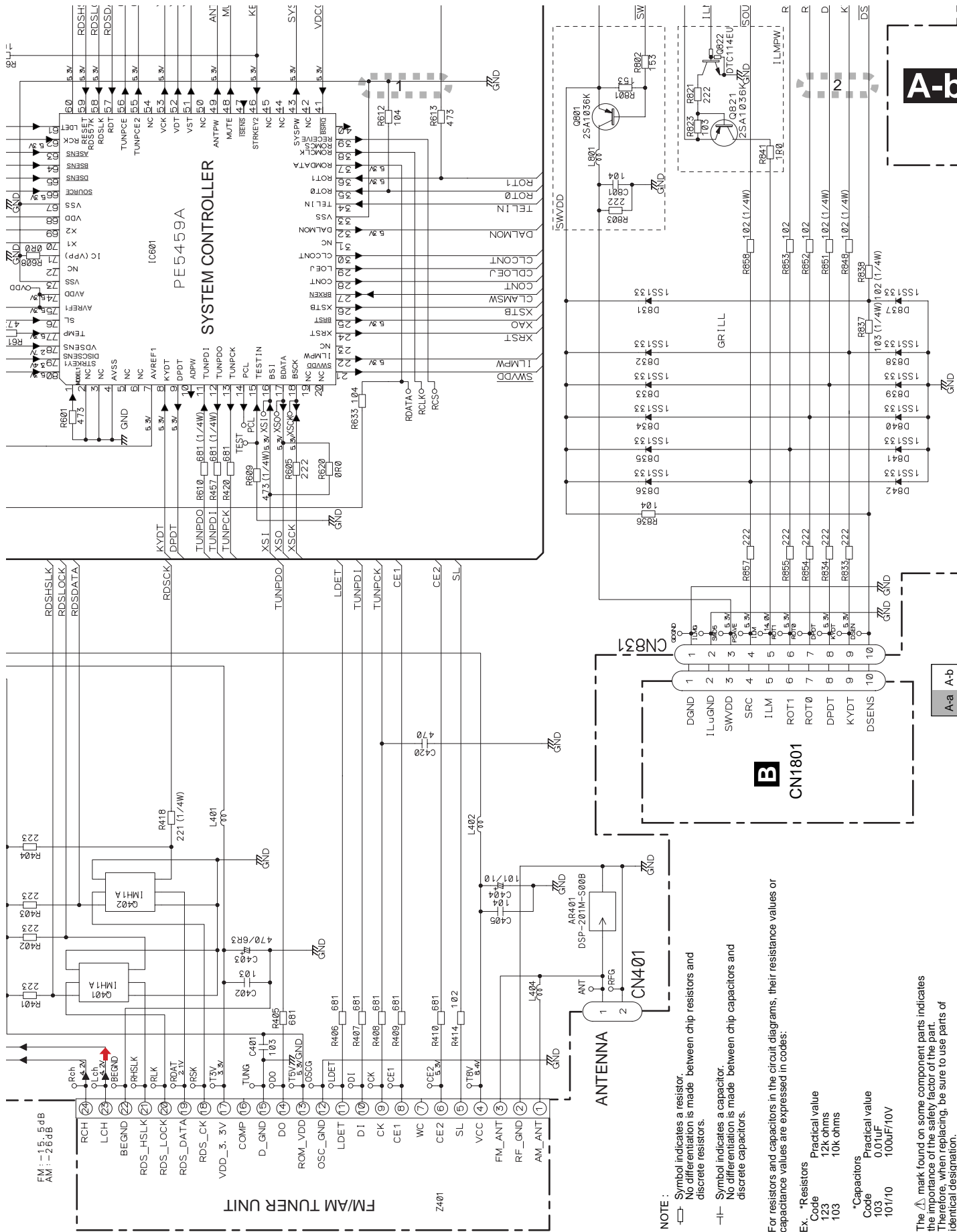
F



A



15



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 |

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

B

C

D

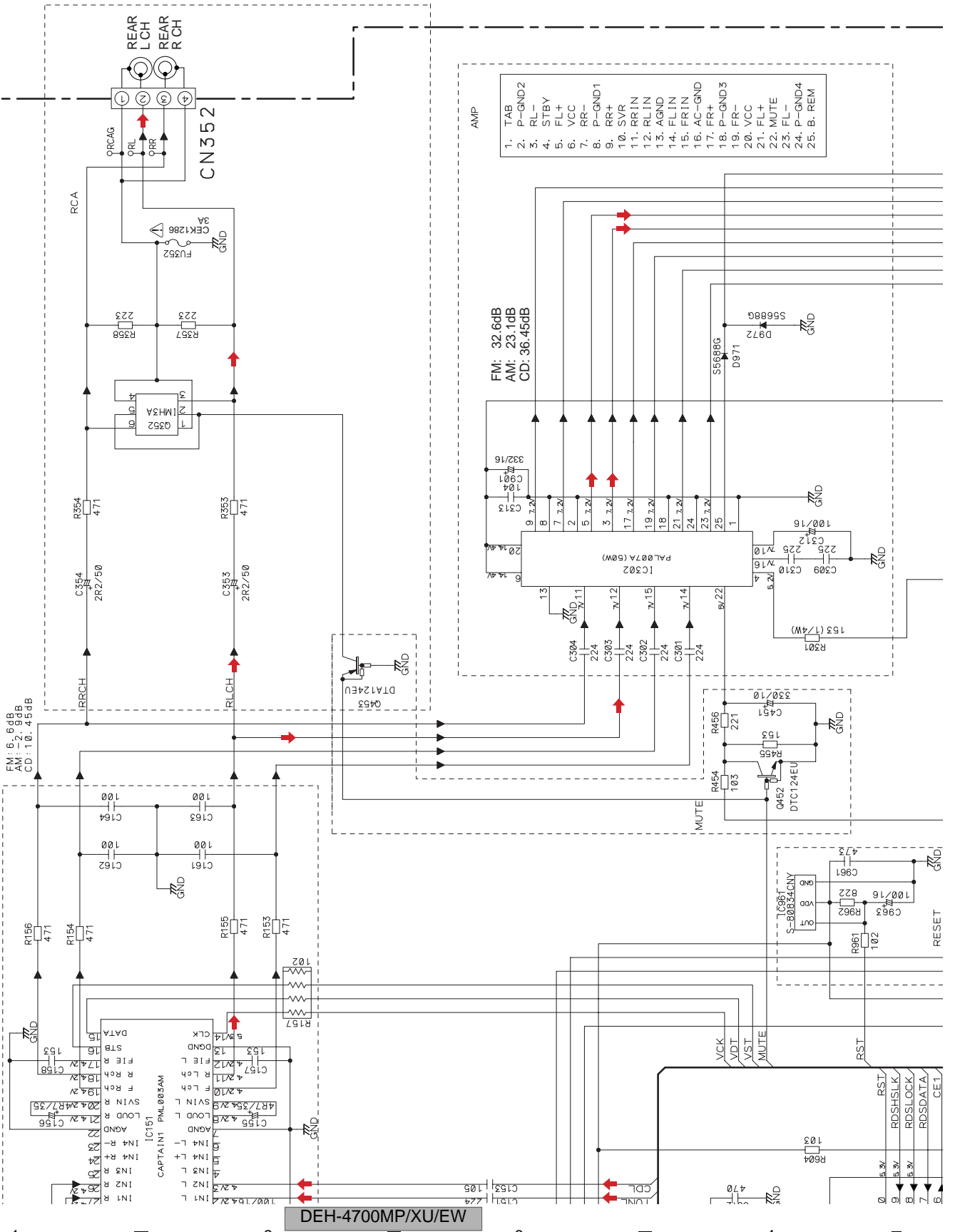
E

F

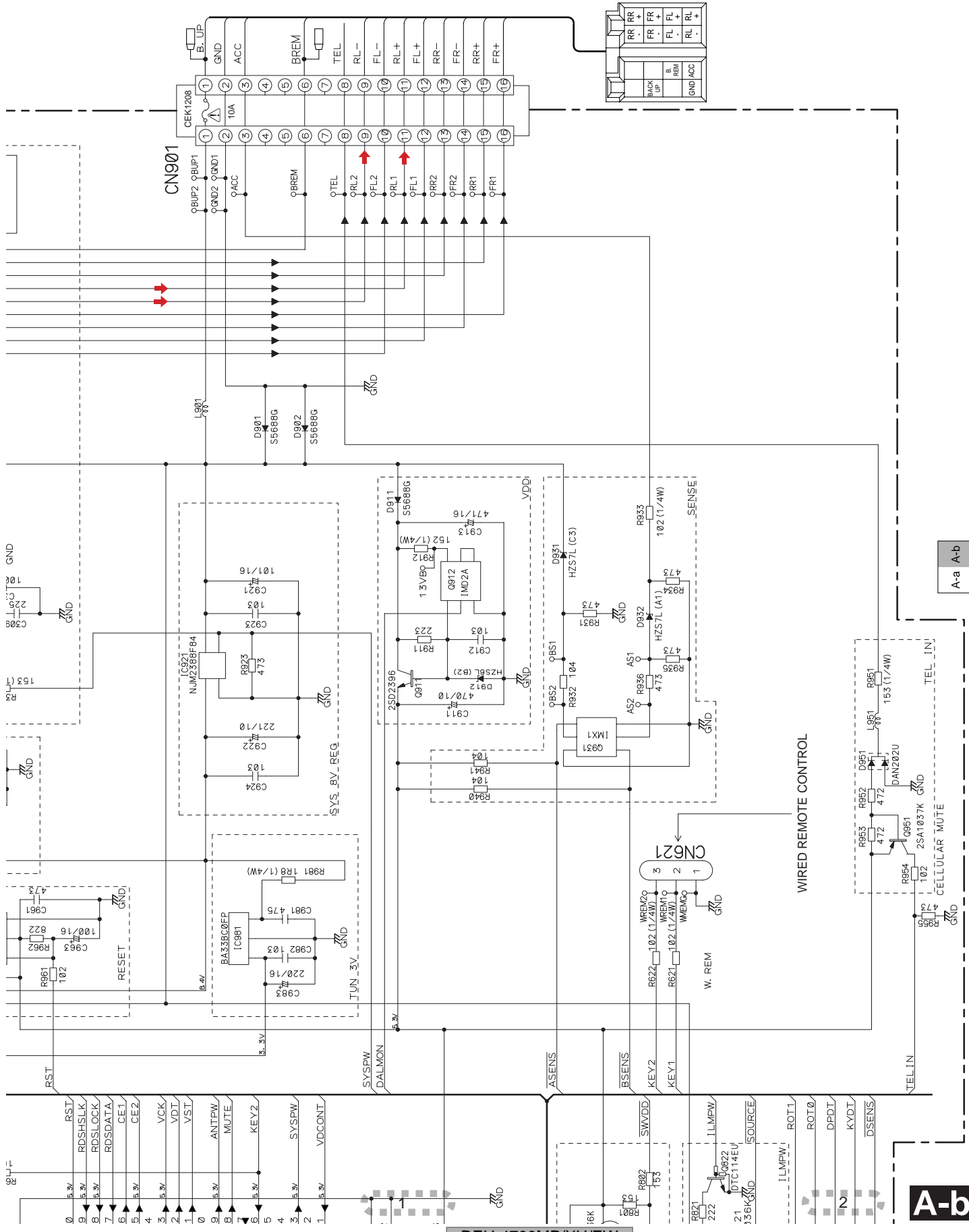
A TUNER AMP UNIT

A-a A-b

A-b



DEH-4700MP/XU/EW



DEH-4700MP/XU/EW

A-b

A
B
C
D
E
F

5

6

7

8

5

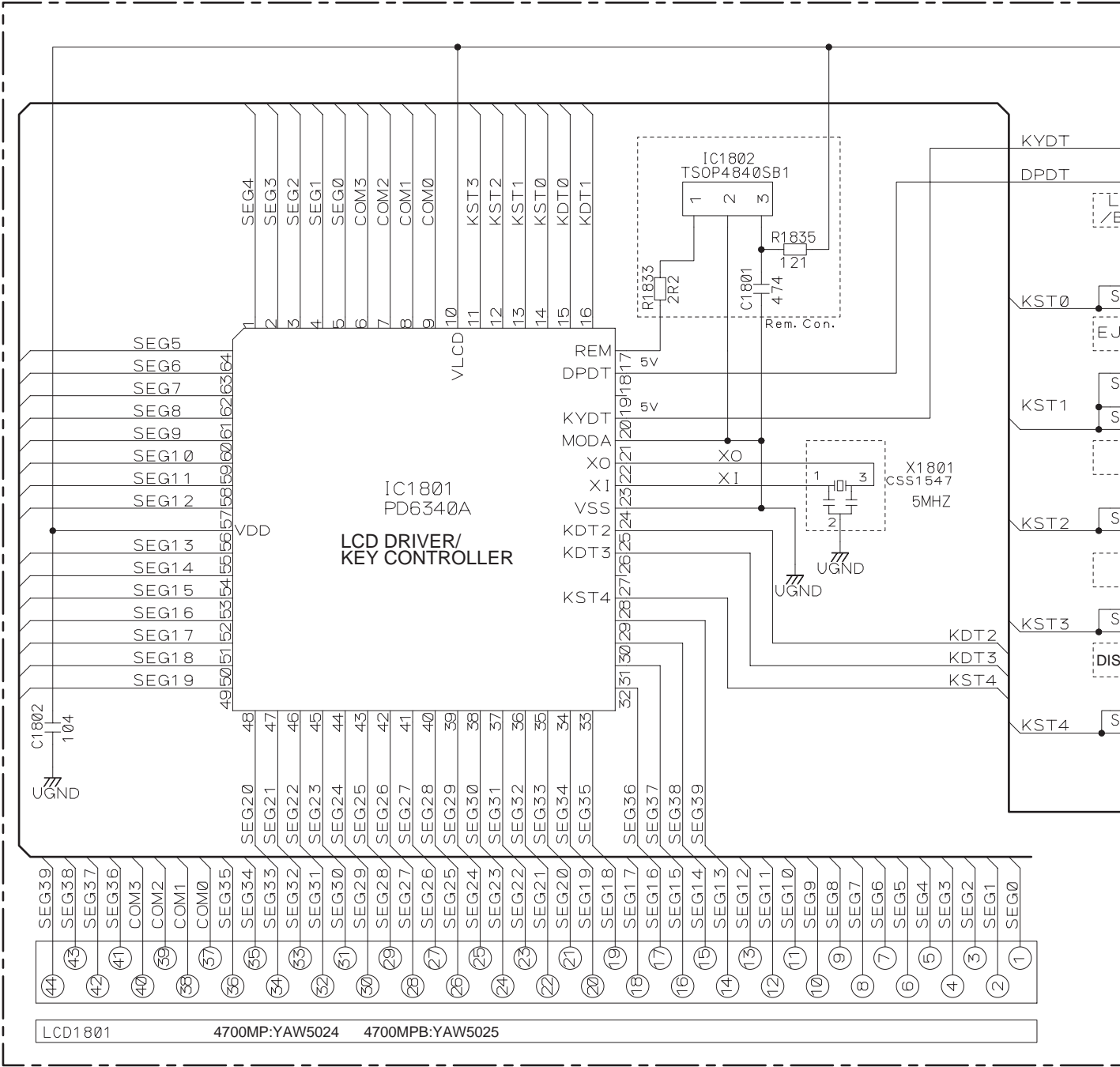
6

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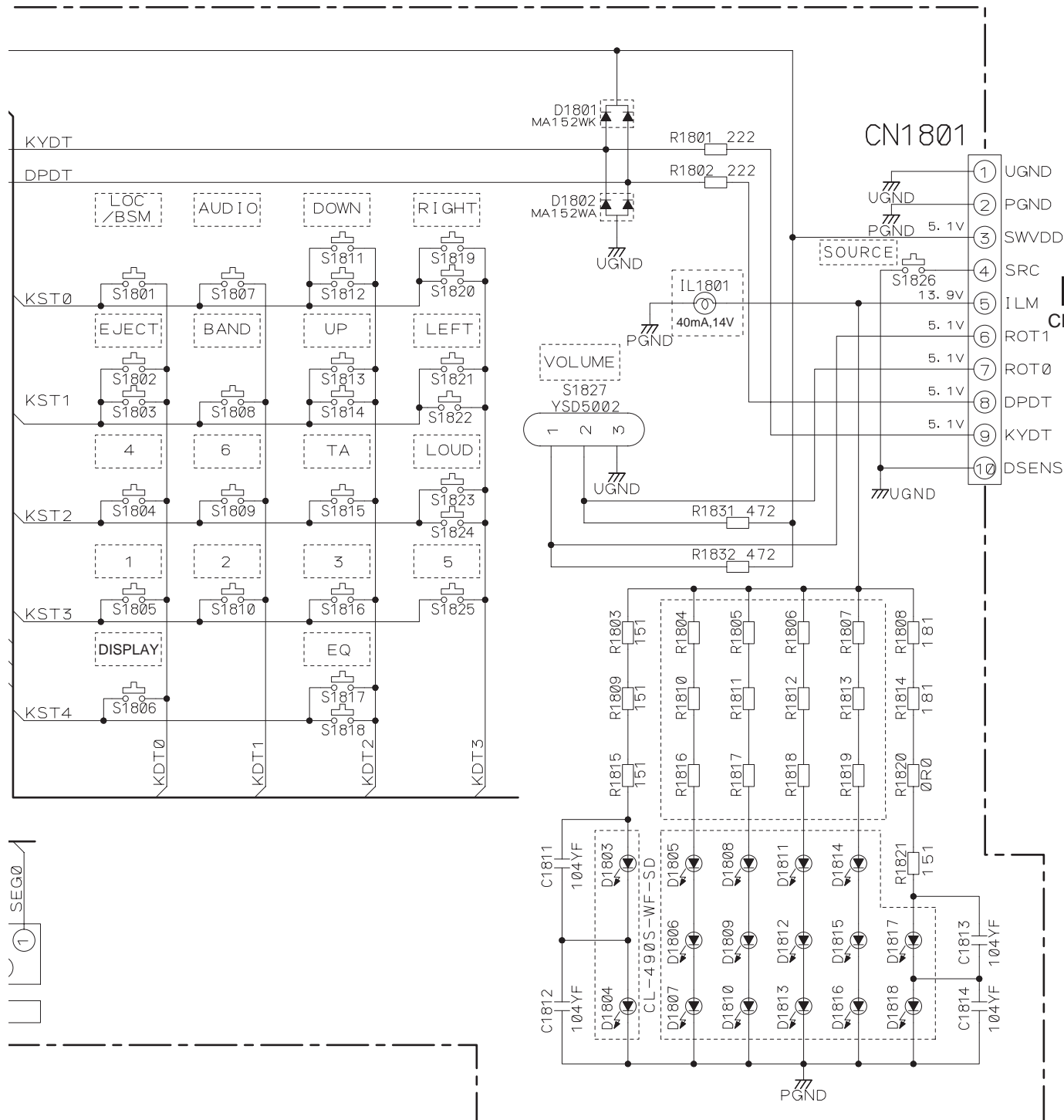
3.3 KEYBOARD UNIT

MODEL	ILM COLOUR	IL1801	D1805-1816	R1804-1813	R1816-1819
4700MP	GREEN(PG)	CEL1651	SML-310PT	181	151
4700MPB	VW RED(SR)	CEL1662	SML-310VT	331	331



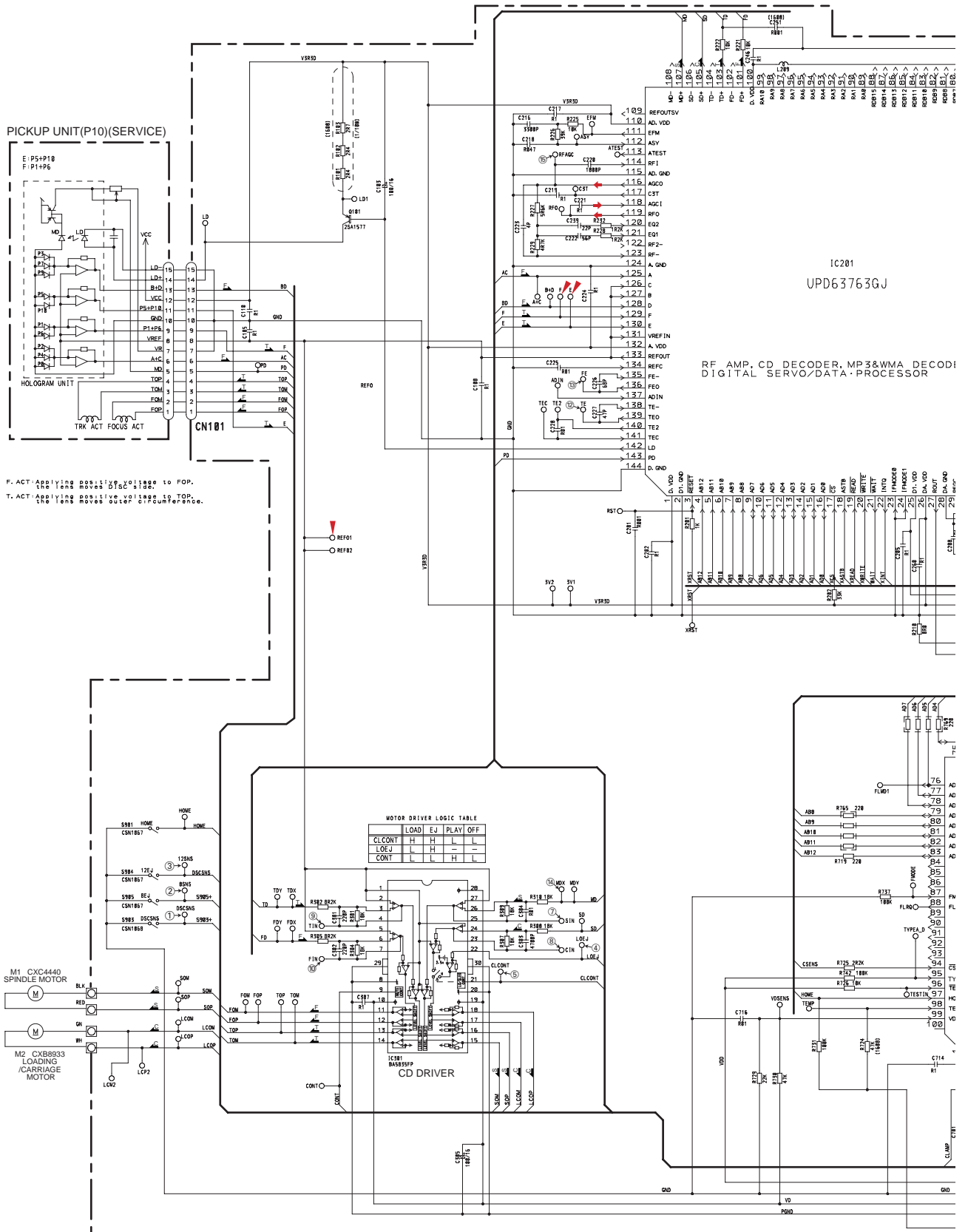
B

B KEYBOARD UNIT



3.4 CD MECHANISM MODULE(GUIDE PAGE)

C-a



B

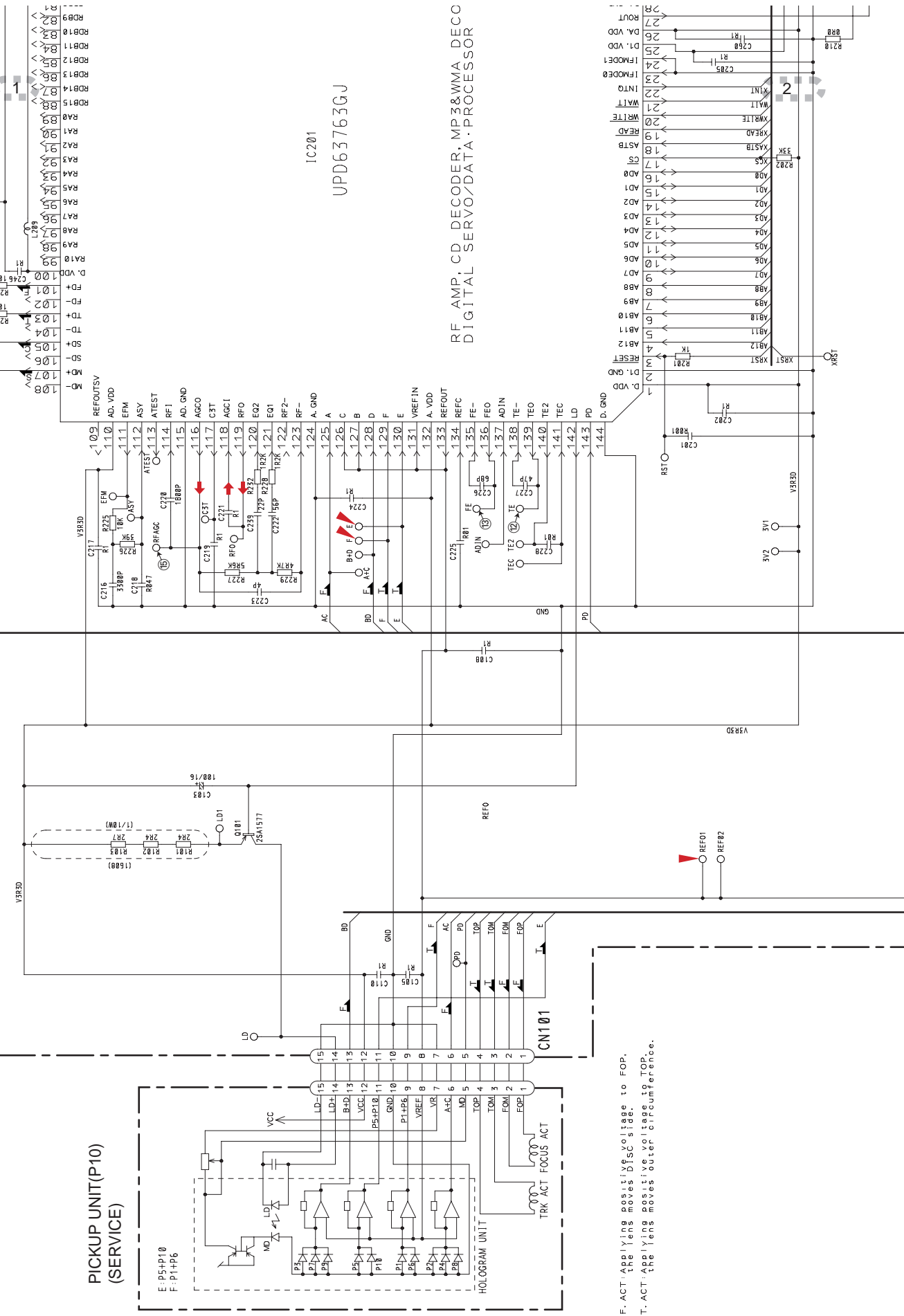
C

D

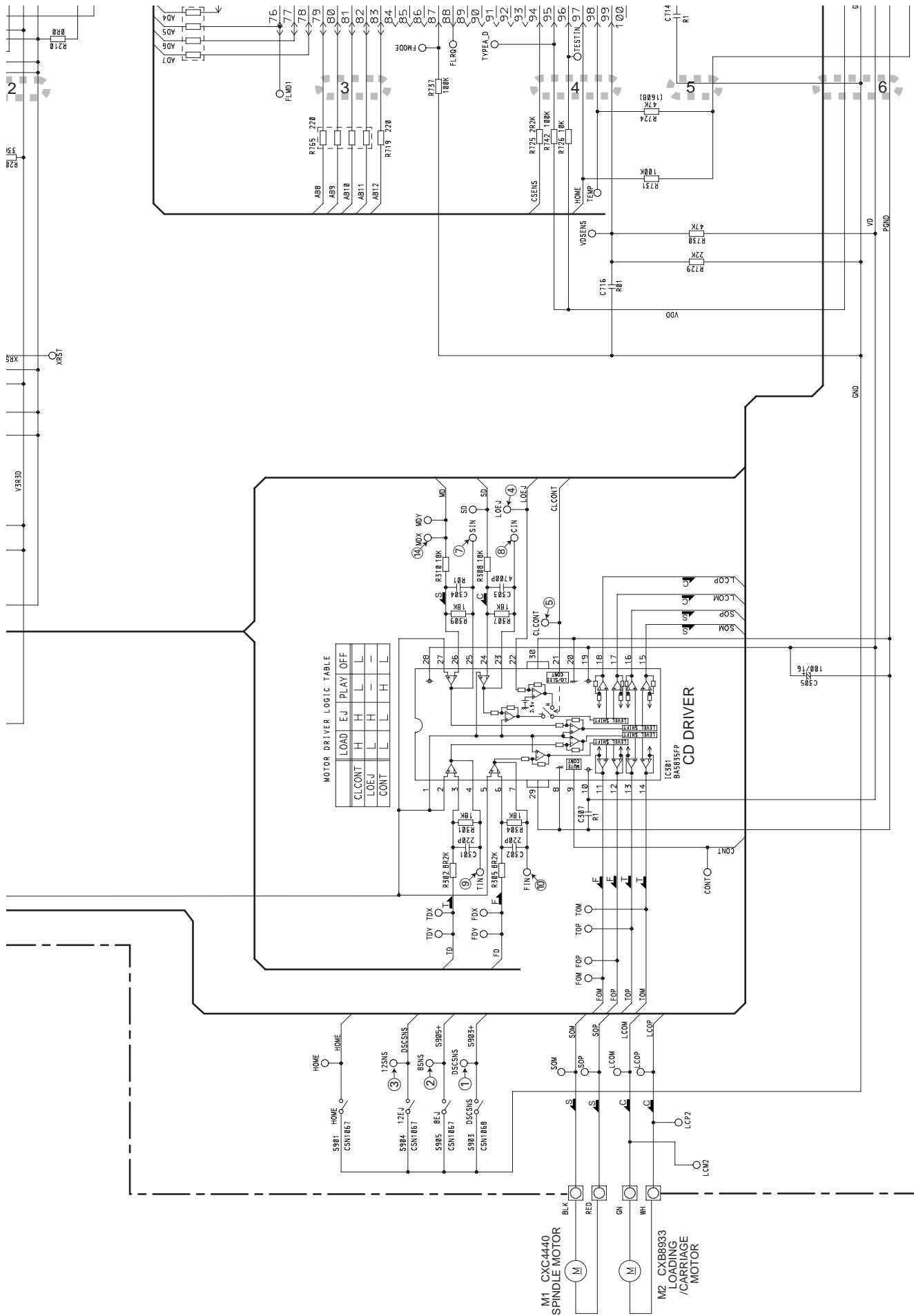
F

F





F. ACT: Applying positive voltage to FOP, the lens moves DISC side.
T. ACT: Applying positive voltage to TOP, the lens moves outer circumference.



C-a

C-a C-b

C-b

A B C D E F

A

B

C

D

E

F

1

2

3

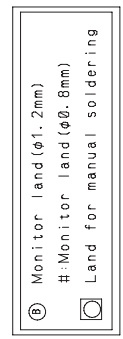
4

C-b

C-a C-b

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.

Decimal points for resistor
and capacitor fixed values
2.2→2R2
0.022→R022



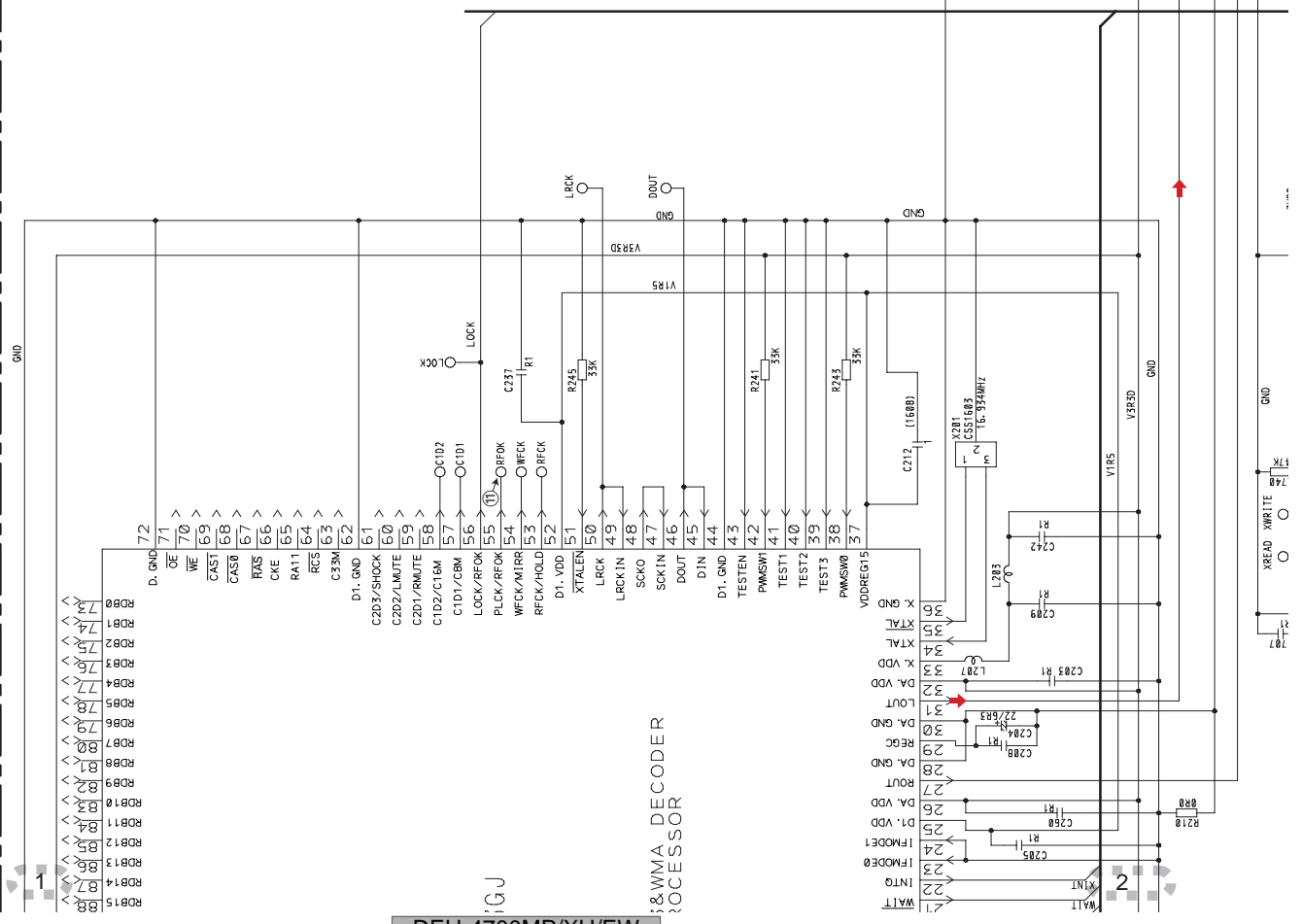
SWITCHES:
CD CORE UNIT(S10.1)
S901:HOME SWITCH.....ON-OFF
S903:DSCSNS SWITCH.....ON-OFF
S904:12EJ SWITCH.....ON-OFF
S905:8EJ SWITCH.....ON-OFF

The underlined indicates the switch position.

- SIGNAL LINE
- FOCUS SERVO LINE
- TRACKING SERVO LINE
- CARRIAGE SERVO LINE
- SPINDLE SERVO LINE

C CD CORE UNIT(S10.1)

3.3V REGULATOR





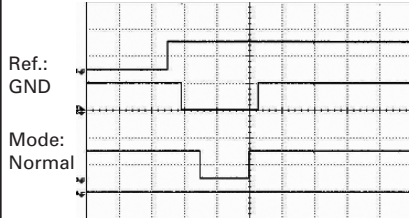
Waveforms

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

A

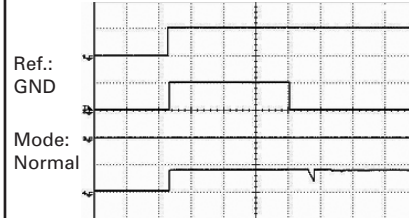
① DSCSNS 5V/div 500ms/div
② 8SNS 5V/div
③ 12SNS 5V/div
④ LOEJ 5V/div

12 cm CD Loading operation



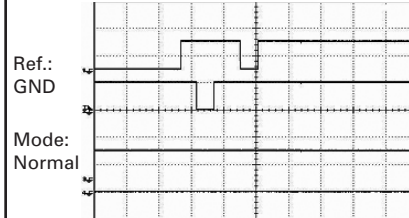
① DSCSNS 5V/div 500ms/div
⑤ CLCONT 5V/div
④ LOEJ 5V/div
⑥ VD 10V/div

12 cm CD Loading operation



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

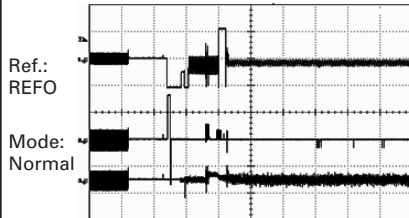
8 cm CD Loading operation



B

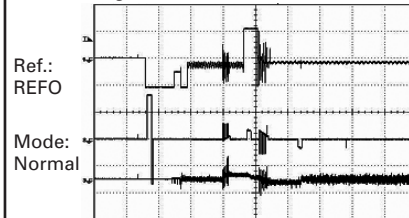
⑦ SIN 1V/div 2s/div
⑧ CIN 500mV/div
⑨ TIN 500mV/div

12 cm CD-DA setup operation after loading



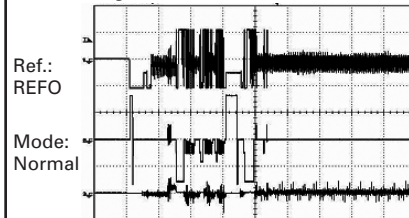
⑦ SIN 1V/div 1s/div
⑧ CIN 500mV/div
⑨ TIN 500mV/div

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



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

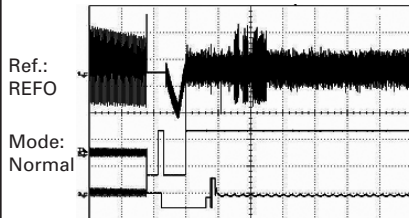
12 cm CD-ROM(3 sessions) setup operation after loading



C

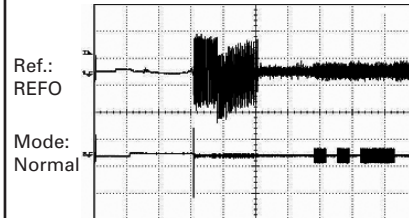
⑩ FIN 200mV/div 500ms/div
⑪ RFOK 2V/div
⑦ SIN 2V/div

12 cm CD-DA Source On setup operation



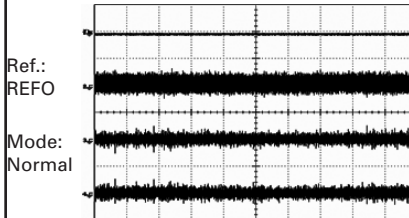
⑫ TE 500mV/div 200ms/div
⑬ FE 500mV/div

Source On setup operation



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

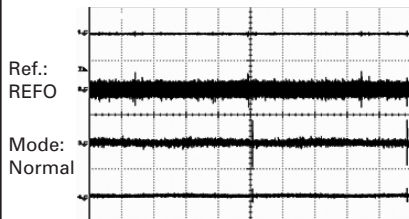
CD-DA Play operation



D

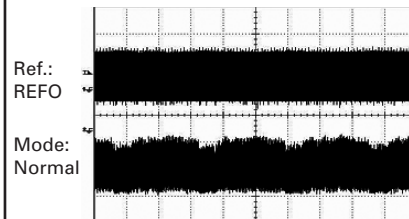
⑬ FE 500mV/div 20ms/div
⑩ FIN 500mV/div
⑫ TE 500mV/div
⑨ TIN 500mV/div

CD-ROM play operation(Regular track Jump)



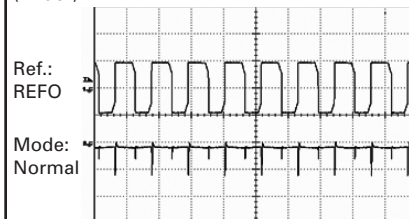
⑭ MDX 1V/div 50ms/div
⑦ SIN 200mV/div

Spindle waveform during play operation



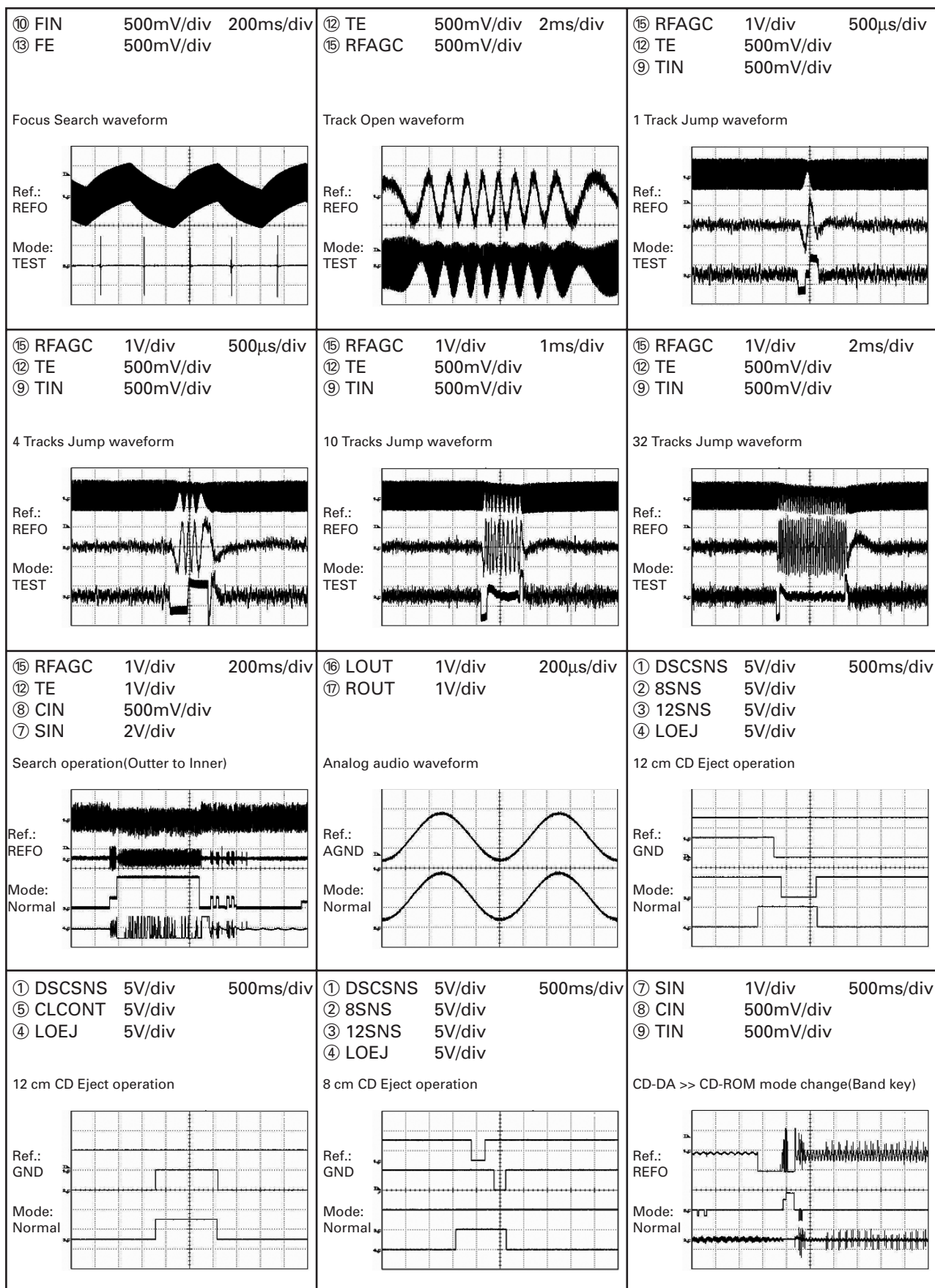
⑭ MDX 2V/div 5μs/div
⑦ SIN 1V/div

Spindle waveform during play operation (Wider)



E

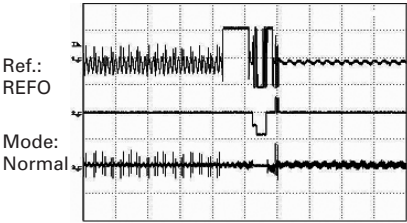
F



A

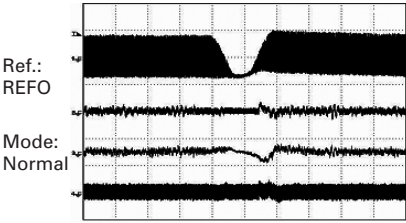
⑦ SIN 1V/div 500ms/div
⑧ CIN 500mV/div
⑨ TIN 500mV/div

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

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B

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C

■

D

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E

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F

■

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■

6

DEH-4700MP/XU/EW

■

7

■

8

■

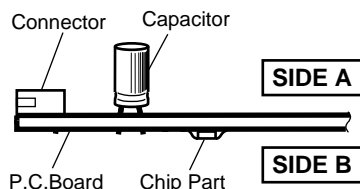
4. PCB CONNECTION DIAGRAM

4.1 TUNER AMP UNIT

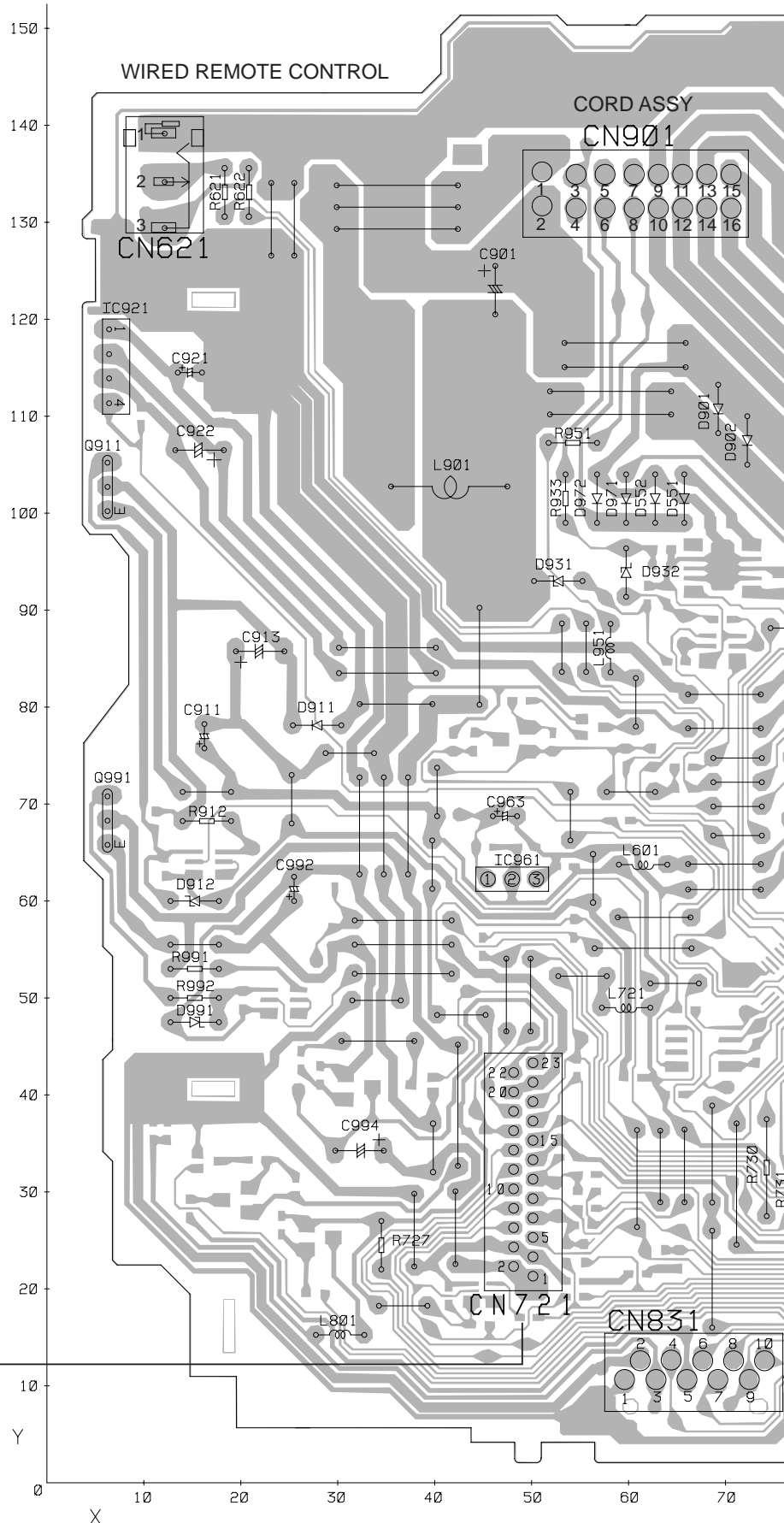
NOTE FOR PCB DIAGRAMS

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



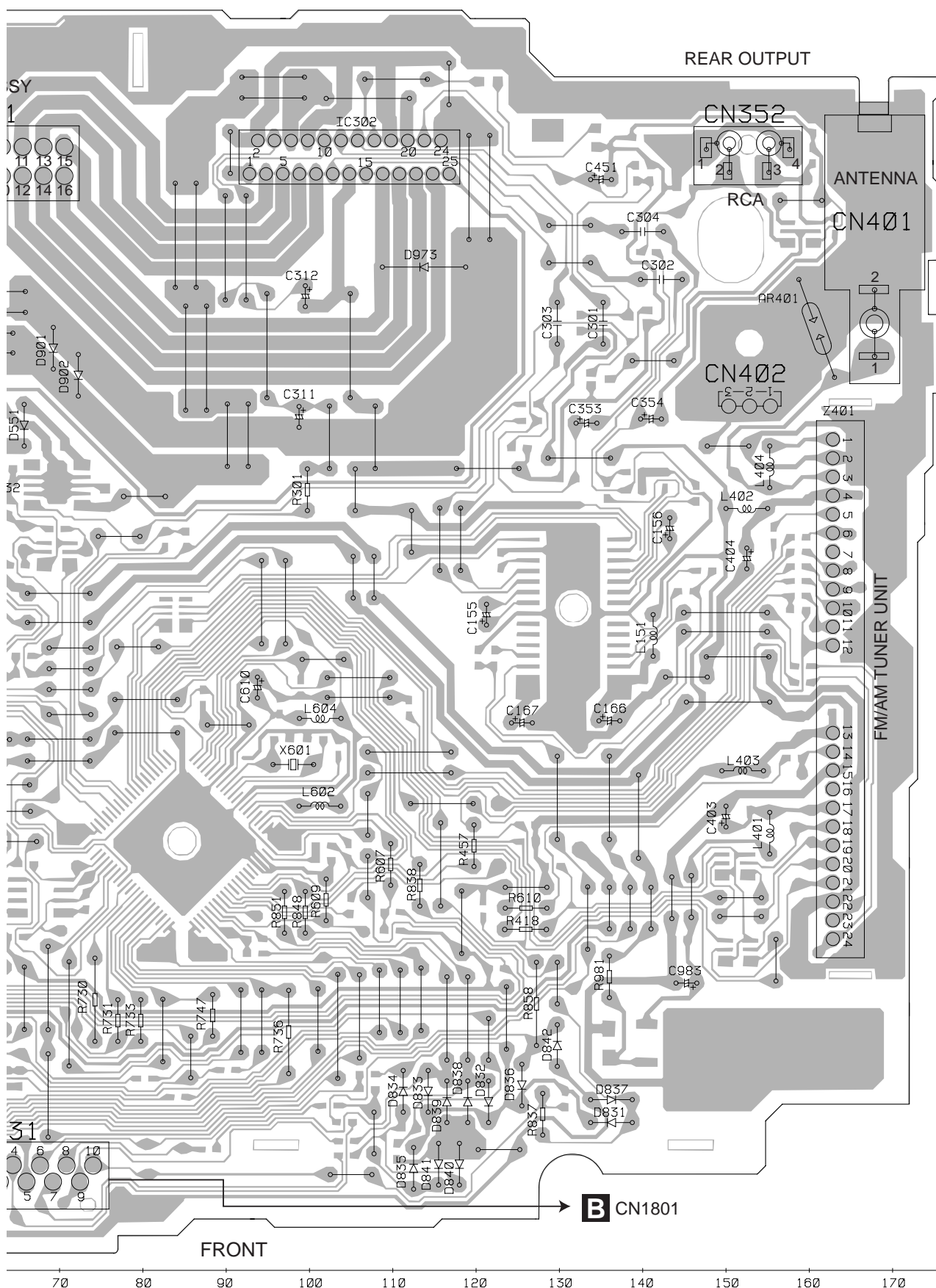
A TUNER AMP UNIT



C CN901

A

DEH-4700MP/XU/EW



A

A TUNER AMP UNIT

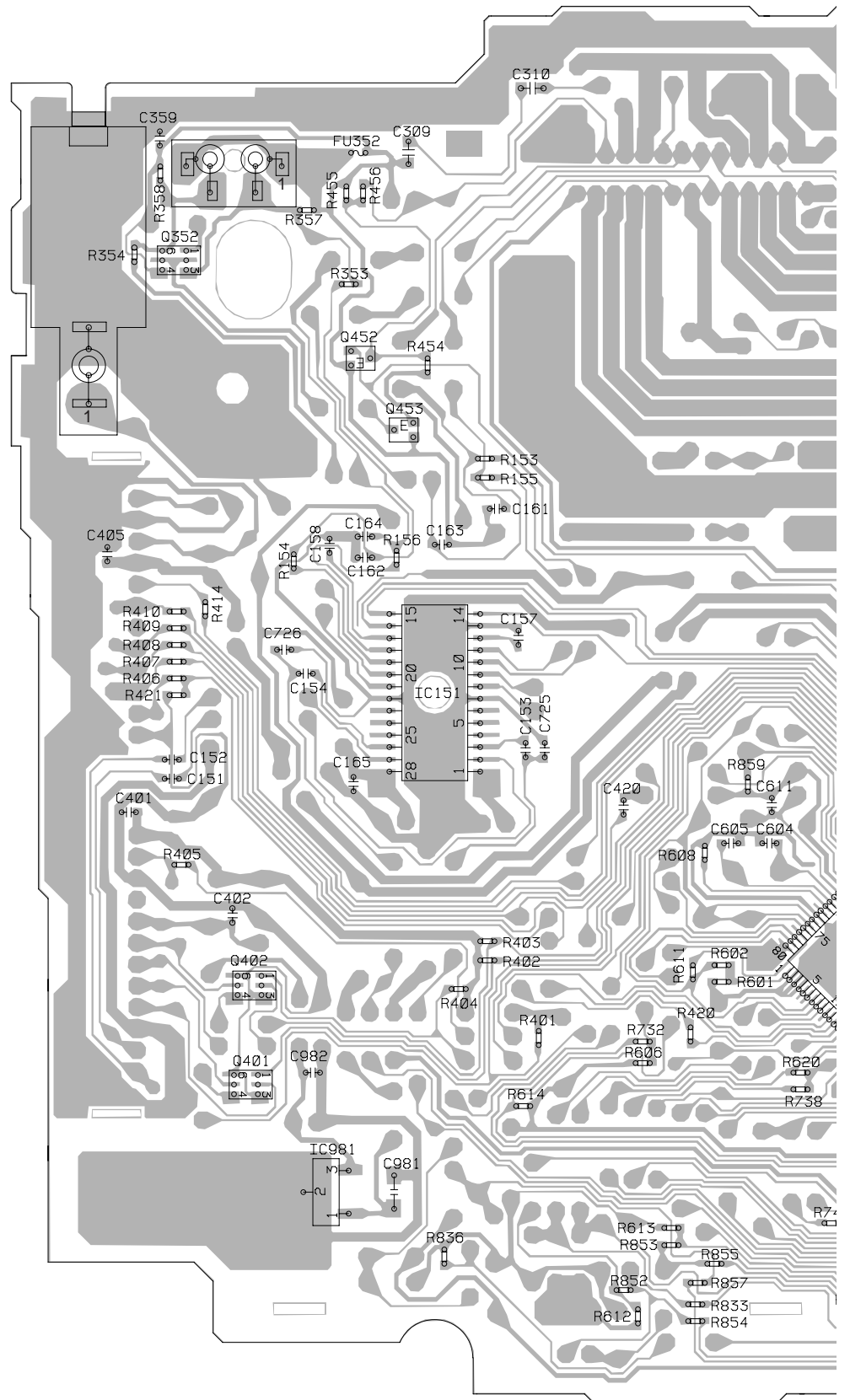
B

C

D

E

F



170 160 150 140 130 120 110 100 90

DEH-4700MP/XU/EW

A

SIDE B

A

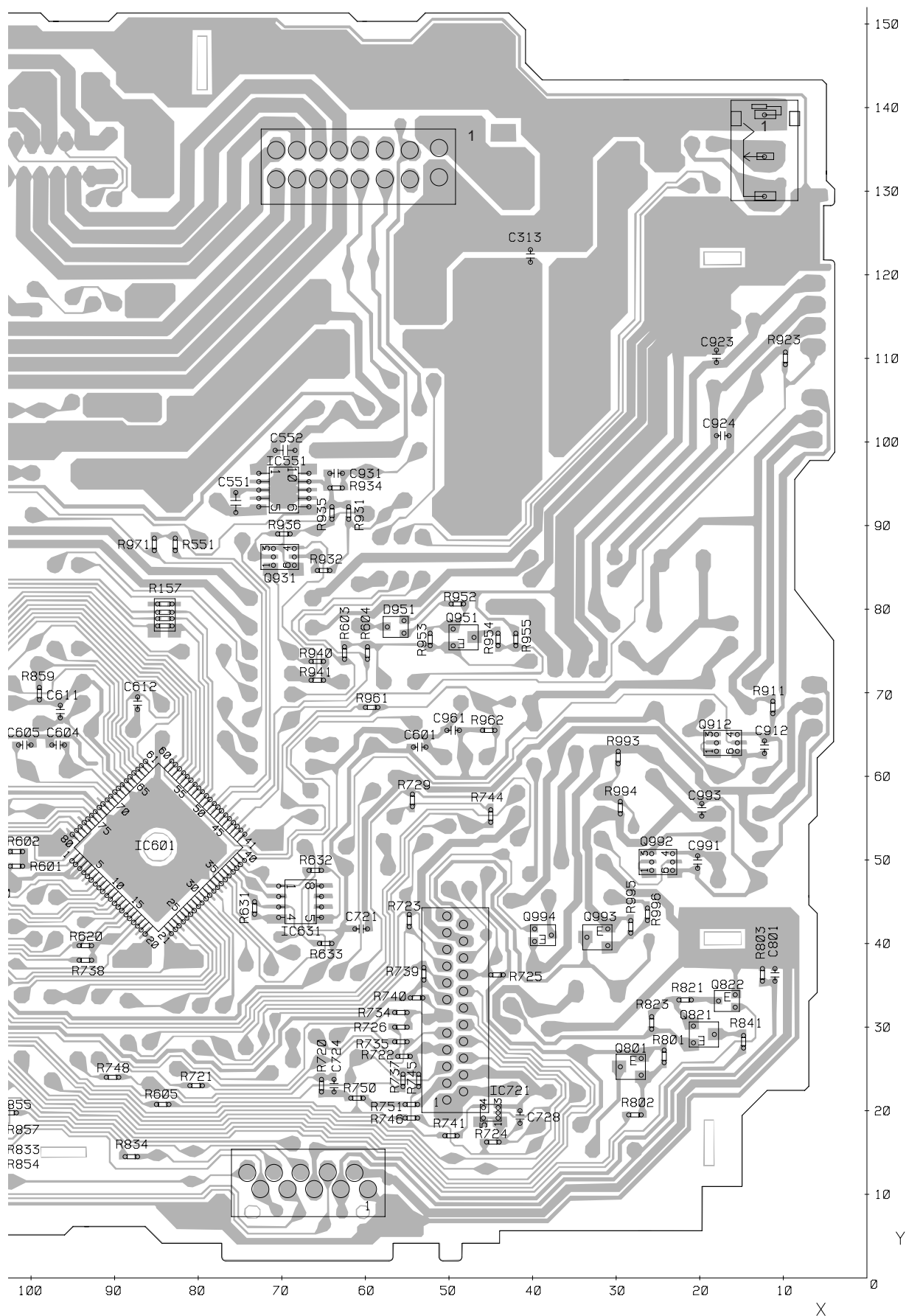
B

C

D

E

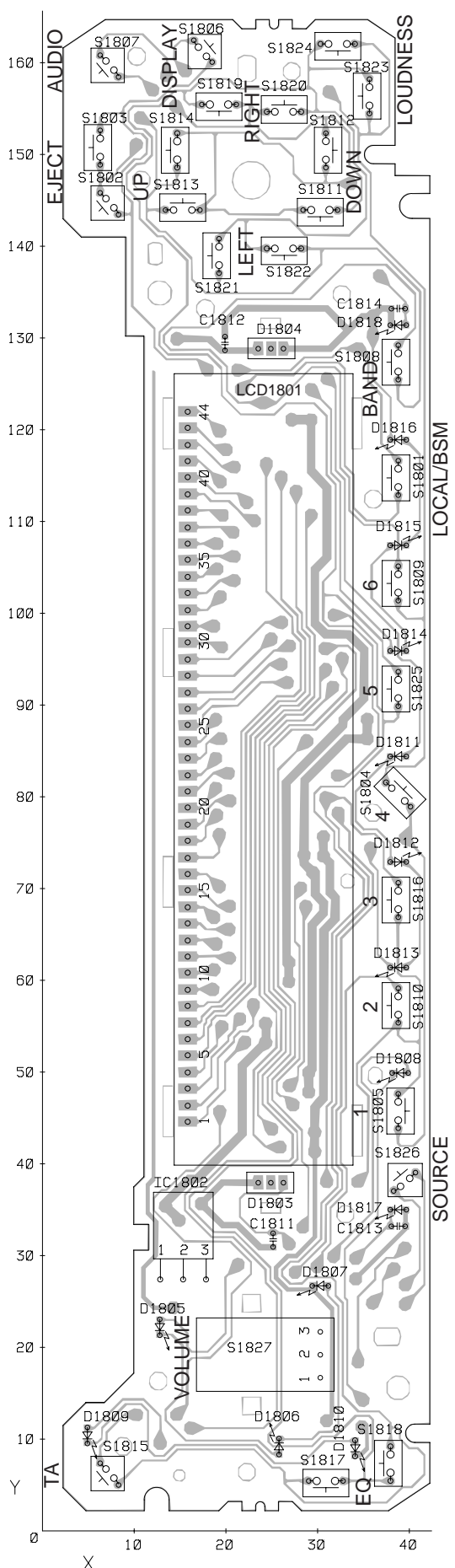
F



4.2 KEYBOARD UNIT

B KEYBOARD UNIT

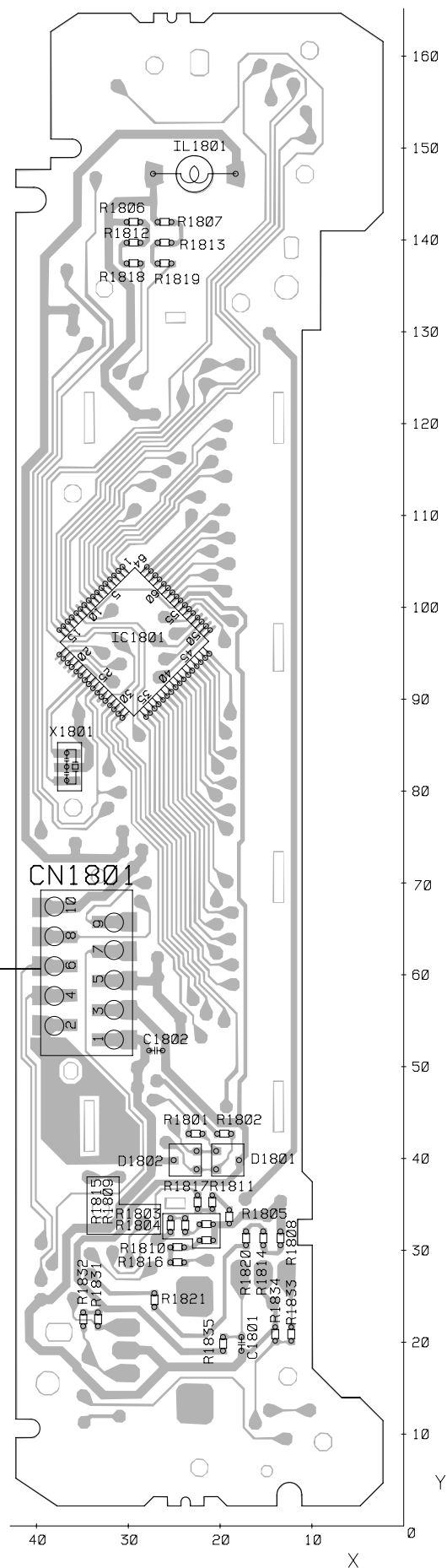
SIDE A



B KEYBOARD UNIT

SIDE B

A CN831



4.3 CD CORE UNIT(S10.1)

C CD CORE UNIT(S10.1)

SIDE A

A

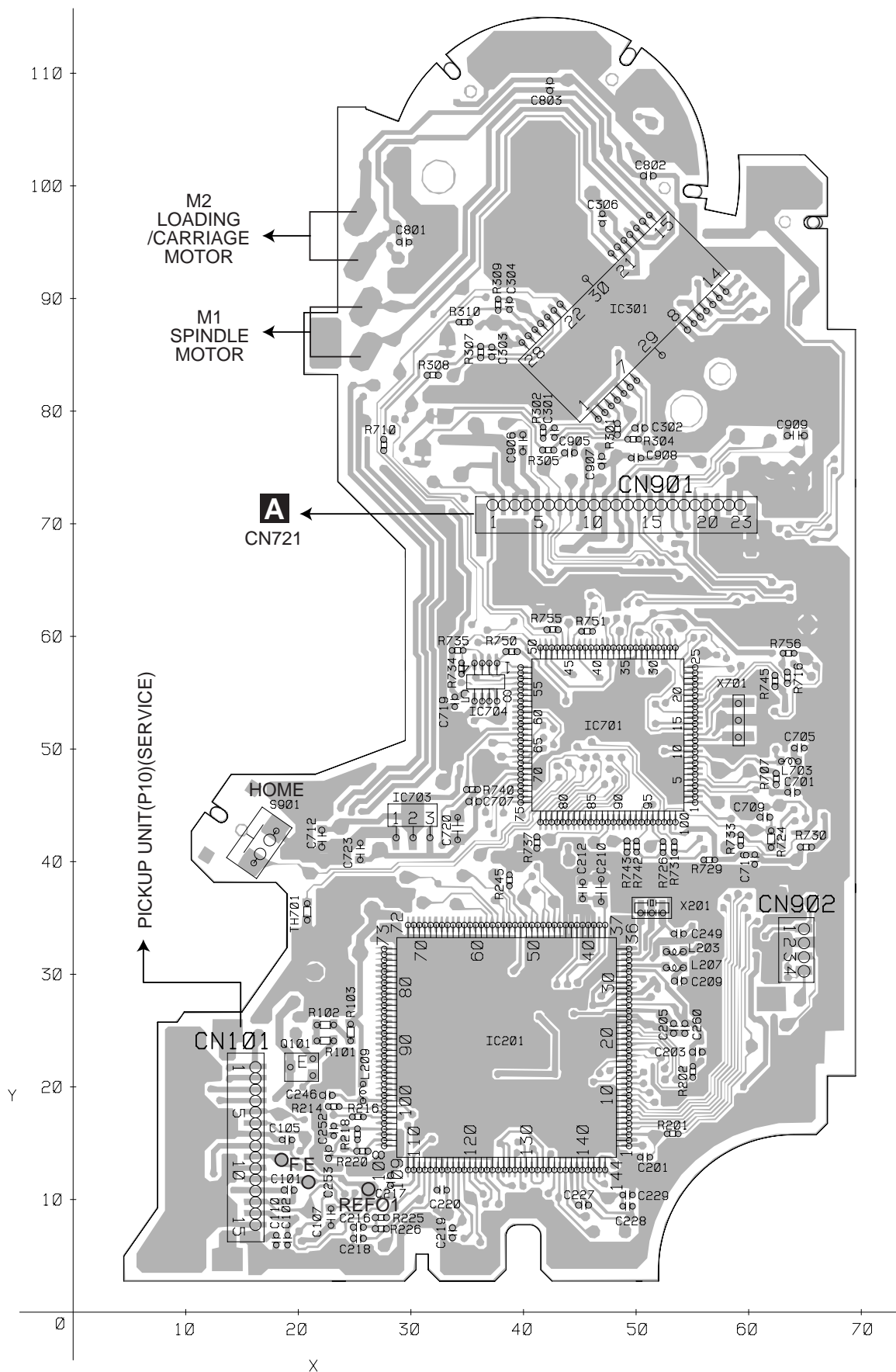
B

C

D

E

F



C CD CORE UNIT(S10.1)

SIDE B

A

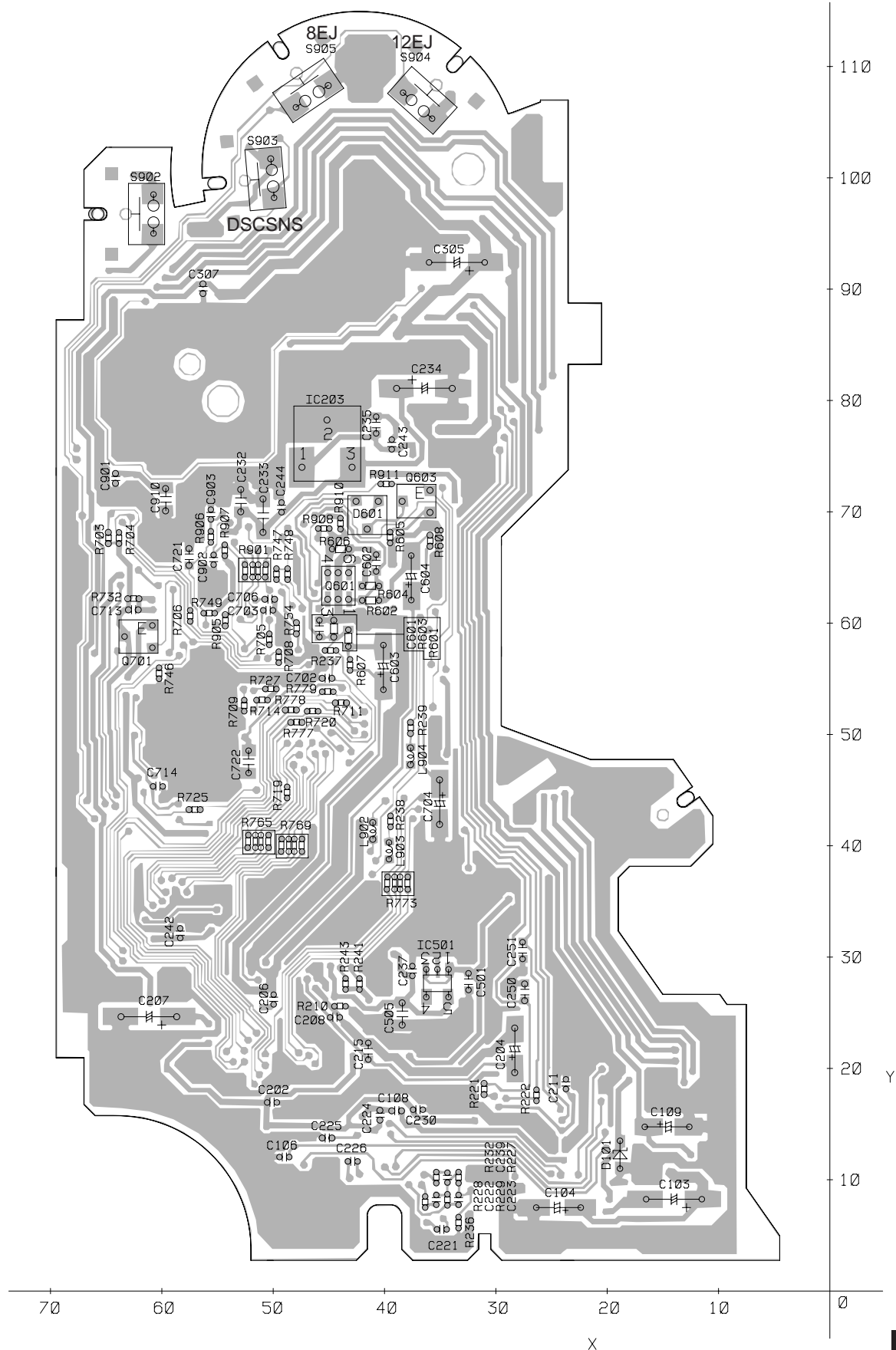
B

C

D

F

F



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.

Circuit Symbol and No.

Part No.

Circuit Symbol and No.

Part No.

D 911	(A,30,78) Diode	S5688G
D 912	(A,18,60) Diode	HZS6L(B2)
D 931	(A,55,93) Diode	HZS7L(C3)
D 932	(A,60,91) Diode	HZS7L(A1)
D 951	(B,56,78) Diode	DAN202U
D 971	(A,60,104) Diode	S5688G
D 972	(A,57,104) Diode	S5688G
D 991	(A,13,48) Diode	HZS7L(C3)
L 151	(A,141,79) Inductor	LAU2R2K
L 401	(A,155,55) Inductor	LAU1R0K
L 402	(A,155,92) Inductor	LAU1R0K
L 404	(A,155,99) Ferri-Inductor	LAU4R7K
L 601	(A,64,64) Inductor	LAU1R0K
L 604	(A,104,66) Inductor	LAU1R0K
L 801	(A,28,15) Inductor	LAU2R2K
L 901	(A,35,103) Choke Coil 600μH	CTH1280
L 951	(A,58,84) Inductor	LAU2R2K
X 601	(A,101,61) Radiator 12.58291MHz	CSS1402
⚠FU352	(B,140,136) Fuse 3A	CEK1286
Z 401	(A,163,100) FM/AM Tuner Unit	CWE1645
AR401	(A,159,119) Surge Protector	DSP-201M-S00B
⚠	Fuse 10A	CEK1208

RESISTORS

R 153	(B,127,104)	RS1/16S471J
R 154	(B,147,93)	RS1/16S471J
R 155	(B,127,102)	RS1/16S471J
R 156	(B,136,94)	RS1/16S471J
R 157	(B,84,79)	RAB4C102J
R 301	(A,100,96)	RD1/4PU153J
R 353	(B,141,122)	RS1/16S471J
R 354	(B,163,125)	RS1/16S471J
R 357	(B,145,130)	RS1/16S223J
R 358	(B,160,134)	RS1/16S223J
R 401	(B,121,43)	RS1/16S223J
R 402	(B,126,52)	RS1/16S223J
R 403	(B,126,54)	RS1/16S223J
R 404	(B,129,49)	RS1/16S223J
R 405	(B,158,62)	RS1/16S681J
R 406	(B,159,81)	RS1/16S681J
R 407	(B,159,83)	RS1/16S681J
R 408	(B,159,85)	RS1/16S681J
R 409	(B,159,86)	RS1/16S681J
R 410	(B,159,88)	RS1/16S681J
R 414	(B,156,88)	RS1/16S102J
R 418	(A,128,41)	RD1/4PU221J

MISCELLANEOUS

IC 151	(B,132,80) IC	PML003AM
IC 302	(A,93,132) IC	PAL007A
IC 601	(B,85,52) IC	PE5459A
IC 921	(A,6,119) IC	NJM2388F84
IC 961	(A,46,62) IC	S-80834CNY
IC 981	(B,146,27) IC	BA33BC0FP
Q 352	(B,159,125) Transistor	IMH3A
Q 401	(B,152,39) Transistor	IMH1A
Q 402	(B,151,49) Transistor	IMH1A
Q 452	(B,140,115) Transistor	DTC124EU
Q 453	(B,135,107) Transistor	DTA124EU
Q 801	(B,28,25) Transistor	2SA1036K
Q 821	(B,20,29) Transistor	2SA1036K
Q 822	(B,17,33) Transistor	DTC114EU
Q 911	(A,6,100) Transistor	2SD2396
Q 912	(B,17,64) Transistor	IMD2A
Q 931	(B,70,86) Transistor	IMX1
Q 951	(B,48,77) Transistor	2SA1037K
Q 991	(A,6,66) Transistor	2SD2396
Q 992	(B,25,50) Transistor	IMD2A
Q 993	(B,32,41) Transistor	2SA1036K
Q 994	(B,39,41) Transistor	DTC114EU
D 831	(A,139,18) Diode	1SS133
D 832	(A,122,23) Diode	1SS133
D 833	(A,114,24) Diode	1SS133
D 834	(A,111,19) Diode	1SS133
D 835	(A,113,10) Diode	1SS133
D 836	(A,126,25) Diode	1SS133
D 837	(A,134,21) Diode	1SS133
D 838	(A,119,18) Diode	1SS133
D 839	(A,117,18) Diode	1SS133
D 840	(A,118,15) Diode	1SS133
D 841	(A,116,15) Diode	1SS133
D 842	(A,130,25) Diode	1SS133
D 901	(A,69,113) Diode	S5688G
D 902	(A,72,110) Diode	S5688G

5		6		7		8	
<u>Circuit Symbol and No.</u>		<u>Part No.</u>		<u>Circuit Symbol and No.</u>		<u>Part No.</u>	
R 420	(B,105,44)	RS1/16S681J		R 932	(B,65,85)	RS1/16S104J	
R 454	(B,133,114)	RS1/16S103J		R 933	(A,54,99)	RD1/4PU102J	
R 455	(B,141,132)	RS1/16S153J		R 934	(B,64,95)	RS1/16S473J	A
R 456	(B,139,132)	RS1/16S221J		R 935	(B,64,92)	RS1/16S473J	
R 457	(A,120,54)	RD1/4PU681J		R 936	(B,70,89)	RS1/16S473J	
R 601	(B,102,49)	RS1/16S473J		R 940	(B,66,74)	RS1/16S104J	
R 603	(B,63,75)	RS1/16S103J		R 941	(B,66,72)	RS1/16S104J	
R 604	(B,60,75)	RS1/16S103J		R 951	(A,52,107)	RD1/4PU153J	
R 605	(B,84,21)	RS1/16S222J		R 952	(B,49,81)	RS1/16S472J	
R 606	(B,110,41)	RS1/16S104J		R 953	(B,52,76)	RS1/16S472J	
R 608	(B,104,63)	RS1/16S0R0J		R 954	(B,44,76)	RS1/16S102J	
R 609	(A,102,47)	RD1/4PU473J		R 955	(B,42,76)	RS1/16S473J	
R 610	(A,129,44)	RD1/4PU681J		R 961	(B,59,68)	RS1/16S102J	
R 611	(B,105,50)	RS1/16S473J		R 962	(B,45,66)	RS1/16S822J	B
R 612	(B,111,14)	RS1/16S104J		R 981	(A,136,38)	RD1/4PU1R8J	
R 613	(B,107,24)	RS1/16S473J		R 991	(A,13,53)	RD1/4PU271J	
R 614	(B,123,36)	RS1/16S104J		R 992	(A,18,50)	RD1/4PU121J	
R 620	(B,94,40)	RS1/16S0R0J		R 995	(B,28,42)	RS1/16S103J	
R 621	(A,18,131)	RD1/4PU102J		R 996	(B,26,44)	RS1/16S222J	
R 622	(A,21,131)	RD1/4PU102J		CAPACITORS			
R 633	(B,65,40)	RS1/16S104J		C 151	(B,159,71)	CKSRYB224K16	
R 720	(B,65,23)	RS1/16S473J		C 152	(B,159,73)	CKSRYB224K16	
R 722	(B,55,27)	RS1/16S682J		C 153	(B,122,74)	CKSRYB105K10	C
R 723	(B,55,43)	RS1/16S682J		C 154	(B,145,82)	CKSRYB105K10	
R 724	(B,45,16)	RS1/16S473J		C 155	(A,121,78)	CEJQ4R7M35	
R 725	(B,44,36)	RS1/16S682J		C 156	(A,143,88)	CEJQ4R7M35	
R 727	(A,35,22)	RD1/4PU682J		C 157	(B,123,85)	CKSRYB153K50	
R 735	(B,56,28)	RS1/16S102J		C 158	(B,143,95)	CKSRYB153K50	
R 739	(B,53,36)	RS1/16S0R0J		C 161	(B,125,99)	CCSRCH100D50	
R 740	(B,54,34)	RS1/16S0R0J		C 162	(B,139,94)	CCSRCH100D50	
R 744	(B,45,55)	RS1/16S221J		C 163	(B,131,95)	CCSRCH100D50	
R 745	(B,54,24)	RS1/16S221J		C 164	(B,139,96)	CCSRCH100D50	
R 746	(B,55,19)	RS1/16S221J		C 165	(B,140,70)	CKSRYB104K16	
R 747	(A,88,33)	RD1/4PU221J		C 166	(A,135,66)	CEJQ470M10	D
R 748	(B,90,24)	RS1/16S221J		C 167	(A,124,66)	CEJQ100M16	
R 750	(B,61,22)	RS1/16S0R0J		C 301	(A,135,111)	CFTNA224J50	
R 751	(B,55,21)	RS1/16S0R0J		C 302	(A,145,119)	CFTNA224J50	
R 801	(B,24,27)	RS1/16S153J		C 303	(A,130,111)	CFTNA224J50	
R 802	(B,28,20)	RS1/16S153J		C 304	(A,143,125)	CFTNA224J50	
R 803	(B,13,36)	RS1/16S222J		C 309	(B,135,136)	CKSQYB225K10	
R 821	(B,22,33)	RS1/16S222J		C 310	(B,122,143)	CKSQYB225K10	
R 823	(B,26,31)	RS1/16S103J		C 312	(A,100,118)	CEJQ100M16	
R 833	(B,105,16)	RS1/16S222J		C 313	(B,40,122)	CKSRYB104K16	
R 834	(B,88,15)	RS1/16S222J		C 353	(A,132,102)	CEJQ2R2M50	
R 836	(B,131,21)	RS1/16S104J		C 354	(A,140,102)	CEJQ2R2M50	E
R 837	(A,128,21)	RD1/4PU103J		C 401	(B,164,67)	CKSRYB103K50	
R 838	(A,113,44)	RD1/4PU102J		C 402	(B,153,56)	CKSRYB103K50	
R 841	(B,15,28)	RS1/16S1R0J		C 403	(A,150,53)	CEJQ470M6R3	
R 848	(A,100,41)	RD1/4PU102J		C 404	(A,153,87)	CEJQ101M10	
R 851	(A,97,41)	RD1/4PU102J		C 405	(B,166,94)	CKSRYB104K25	
R 852	(B,112,17)	RS1/16S102J		C 420	(B,112,68)	CCSRCH470J50	
R 853	(B,107,22)	RS1/16S102J		C 451	(A,134,131)	CEJQ330M10	
R 854	(B,105,14)	RS1/16S222J		C 601	(B,54,64)	CKSRYB104K25	
R 855	(B,103,20)	RS1/16S222J		C 604	(B,97,64)	CCSRCH200J50	
R 857	(B,104,18)	RS1/16S222J		C 605	(B,101,64)	CCSRCH200J50	
R 858	(A,127,27)	RD1/4PU102J		C 610	(A,94,71)	CEJQ100M16	F
R 911	(B,11,68)	RS1/16S223J		C 611	(B,97,68)	CKSRYB224K16	
R 912	(A,14,68)	RD1/4PU152J		C 612	(B,87,69)	CCSRCH470J50	
R 923	(B,10,110)	RS1/16S473J					
R 931	(B,62,92)	RS1/16S473J					

	<u>Circuit Symbol and No.</u>		<u>Part No.</u>
A	C 721	(B,61,42)	CKSRYB104K25
	C 724	(B,64,23)	CCSRCH470J50
	C 725	(B,120,74)	CKSRYB102K50
	C 726	(B,148,84)	CKSRYB102K50
	C 801	(B,11,36)	CKSRYB104K16
■	C 901	(A,46,121) 3300µF/16V	CCH1494
	C 911	(A,16,76)	CEJQ470M10
	C 912	(B,12,64)	CKSRYB103K50
	C 913	(A,25,86) 470µF/16V	CCH1331
	C 921	(A,14,115)	CEJQ101M16
B	C 922	(A,18,107)	CEJQ221M10
	C 923	(B,18,110)	CKSRYB103K50
	C 924	(B,17,101)	CKSRYB103K50
	C 961	(B,50,66)	CKSRYB473K50
	C 963	(A,46,69)	CEJQ100M16
■	C 981	(B,136,27)	CKSYB475K10
	C 982	(B,145,40)	CKSRYB103K50
	C 983	(A,147,35)	CEJQ220M16
	C 991	(B,20,50)	CKSRYB473K50
	C 992	(A,26,60)	CEJQ101M16
C	C 994	(A,30,34) 470µF/16V	CCH1331

B

Unit Number:(4700MP)
Unit Name:keyboard Unit

MISCELLANEOUS

■	IC 1801	(B,29,96) IC	PD6340A
	IC 1802	(A,15,27) IC	TSOP4840SB1
	D 1801	(B,19,40) Diode	MA152WK
	D 1802	(B,24,40) Diode	MA152WA
	D 1803	(A,25,38) LED	CL-490S-WF-SD
D	D 1804	(A,25,128) LED	CL-490S-WF-SD
	D 1805	(A,13,22) LED	SML-310PT
	D 1806	(A,26,9) LED	SML-310PT
	D 1807	(A,30,27) LED	SML-310PT
	D 1808	(A,39,50) LED	SML-310PT
■	D 1809	(A,5,10) LED	SML-310PT
	D 1810	(A,34,9) LED	SML-310PT
	D 1811	(A,39,84) LED	SML-310PT
	D 1812	(A,39,73) LED	SML-310PT
	D 1813	(A,39,61) LED	SML-310PT
E	D 1814	(A,39,96) LED	SML-310PT
	D 1815	(A,39,107) LED	SML-310PT
	D 1816	(A,39,119) LED	SML-310PT
	D 1817	(A,39,35) LED	CL-190UB2-X
	D 1818	(A,39,131) LED	CL-190UB2-X
■	X 1801	(B,37,83) Ceramic Resonator 5.00MHz	CSS1547
	S 1827	(A,23,19) Encoder(VOLUME)	YSD5002
	IL 1801	(B,23,147) Lamp 40mA,14V	CEL1651
	LCD1801	(A,16,45) LCD	YAW5024

RESISTORS

F	R 1801	(B,23,43)	RS1/16S222J
	R 1802	(B,20,43)	RS1/16S222J
	R 1803	(B,22,33)	RS1/16S151J
	R 1804	(B,22,31)	RS1/16S181J
	R 1805	(B,19,34)	RS1/16S181J
■	R 1806	(B,29,142)	RS1/16S181J

	<u>Circuit Symbol and No.</u>		<u>Part No.</u>
■	R 1807	(B,26,142)	RS1/16S181J
	R 1808	(B,13,31)	RS1/16S181J
	R 1809	(B,24,33)	RS1/16S151J
	R 1810	(B,25,30)	RS1/16S181J
	R 1811	(B,21,35)	RS1/16S181J
■	R 1812	(B,29,140)	RS1/16S181J
	R 1813	(B,26,140)	RS1/16S181J
	R 1814	(B,15,31)	RS1/16S181J
	R 1815	(B,25,33)	RS1/16S151J
	R 1816	(B,25,29)	RS1/16S151J
■	R 1817	(B,22,35)	RS1/16S151J
	R 1818	(B,29,137)	RS1/16S151J
	R 1819	(B,26,137)	RS1/16S151J
	R 1820	(B,17,31)	RS1/16S0R0J
	R 1821	(B,27,25)	RS1/16S151J
■	R 1831	(B,33,23)	RS1/16S472J
	R 1832	(B,35,23)	RS1/16S472J
	R 1833	(B,12,21)	RS1/16S2R2J
	R 1835	(B,20,20)	RS1/16S121J
	R 1835	(B,20,20)	RS1/16S121J

CAPACITORS

C 1801	(B,18,20)	CKSRYB474K10
C 1802	(B,27,52)	CKSRYF104Z25
C 1811	(A,25,32)	CKSRYF104Z25
C 1812	(A,20,129)	CKSRYF104Z25
C 1813	(A,39,33)	CKSRYF104Z25
C 1814	(A,39,133)	CKSRYF104Z25

B

Unit Number:(4700MPB)
Unit Name:keyboard Unit

MISCELLANEOUS

IC 1801	(B,29,96) IC	PD6340A
IC 1802	(A,15,27) IC	TSOP4840SB1
D 1801	(B,19,40) Diode	MA152WK
D 1802	(B,24,40) Diode	MA152WA
D 1803	(A,25,38) LED	CL-490S-WF-SD
D 1804	(A,25,128) LED	CL-490S-WF-SD
D 1805	(A,13,22) LED	SML-310VT
D 1806	(A,26,9) LED	SML-310VT
D 1807	(A,30,27) LED	SML-310VT
D 1808	(A,39,50) LED	SML-310VT
D 1809	(A,5,10) LED	SML-310VT
D 1810	(A,34,9) LED	SML-310VT
D 1811	(A,39,84) LED	SML-310VT
D 1812	(A,39,73) LED	SML-310VT
D 1813	(A,39,61) LED	SML-310VT
D 1814	(A,39,96) LED	SML-310VT
D 1815	(A,39,107) LED	SML-310VT
D 1816	(A,39,119) LED	SML-310VT
D 1817	(A,39,35) LED	CL-190UB2-X
D 1818	(A,39,131) LED	CL-190UB2-X
X 1801	(B,37,83) Ceramic Resonator 5.00MHz	CSS1547
S 1827	(A,23,19) Encoder(VOLUME)	YSD5002
IL 1801	(B,23,147) Lamp 40mA,14V	CEL1662
LCD1801	(A,16,45) LCD	YAW5025

RESISTORS

X 1801	(B,37,83) Ceramic Resonator 5.00MHz	CSS1547
S 1827	(A,23,19) Encoder(VOLUME)	YSD5002
IL 1801	(B,23,147) Lamp 40mA,14V	CEL1662
LCD1801	(A,16,45) LCD	YAW5025

5			6	7			8			
Circuit Symbol and No.			Part No.	Circuit Symbol and No.			Part No.			
R 1801	(B,23,43)		RS1/16S222J	R 101	(A,22,24)		RS1/10SR2R4J	A		
R 1802	(B,20,43)		RS1/16S222J	R 102	(A,22,26)		RS1/10SR2R4J			
R 1803	(B,22,33)		RS1/16S151J	R 103	(A,25,25)		RS1/10SR2R7J			
R 1804	(B,22,31)		RS1/16S331J	R 201	(A,53,16)		RS1/16SS102J			
R 1805	(B,19,34)		RS1/16S331J	R 202	(A,55,21)		RS1/16SS333J			
R 1806	(B,29,142)		RS1/16S331J	R 221	(B,31,18)		RS1/16SS103J			
R 1807	(B,26,142)		RS1/16S331J	R 222	(B,26,18)		RS1/16SS103J			
R 1808	(B,13,31)		RS1/16S181J	R 225	(A,27,8)		RS1/16SS103J			
R 1809	(B,24,33)		RS1/16S151J	R 226	(A,27,7)		RS1/16SS393J			
R 1810	(B,25,30)		RS1/16S331J	R 227	(B,33,10)		RS1/16SS562J			
R 1811	(B,21,35)		RS1/16S331J	R 228	(B,36,8)		RS1/16SS122J	B		
R 1812	(B,29,140)		RS1/16S331J	R 229	(B,34,8)		RS1/16SS472J			
R 1813	(B,26,140)		RS1/16S331J	R 232	(B,35,10)		RS1/16SS122J			
R 1814	(B,15,31)		RS1/16S181J	R 241	(B,42,28)		RS1/16SS333J			
R 1815	(B,25,33)		RS1/16S151J	R 243	(B,44,28)		RS1/16SS333J			
R 1816	(B,25,29)		RS1/16S331J	R 245	(A,39,38)		RS1/16SS333J			
R 1817	(B,22,35)		RS1/16S331J	R 301	(A,48,78)		RS1/16SS183J			
R 1818	(B,29,137)		RS1/16S331J	R 302	(A,42,78)		RS1/16SS822J			
R 1819	(B,26,137)		RS1/16S331J	R 304	(A,50,78)		RS1/16SS183J			
R 1820	(B,17,31)		RS1/16S0R0J	R 305	(A,42,77)		RS1/16SS822J			
R 1821	(B,27,25)		RS1/16S151J	R 307	(A,36,85)		RS1/16SS183J	C		
R 1831	(B,33,23)		RS1/16S472J	R 308	(A,32,83)		RS1/16SS183J			
R 1832	(B,35,23)		RS1/16S472J	R 309	(A,38,89)		RS1/16SS183J			
R 1833	(B,12,21)		RS1/16S2R2J	R 310	(A,35,88)		RS1/16SS183J			
R 1835	(B,20,20)		RS1/16S121J	R 601	(B,43,59)		RS1/16S101J			
CAPACITORS				R 602	(B,41,62)		RS1/16S101J			
C 1801	(B,18,20)		CKSRYB474K10	R 606	(B,44,67)		RS1/16S0R0J			
C 1802	(B,27,52)		CKSRYF104Z25	R 607	(B,43,56)		RS1/16SS0R0J			
C 1811	(A,25,32)		CKSRYF104Z25	R 608	(B,36,67)		RS1/16SS0R0J			
C 1812	(A,20,129)		CKSRYF104Z25	R 705	(B,50,59)		RS1/16SS221J			
C 1813	(A,39,33)		CKSRYF104Z25	R 706	(B,57,61)		RS1/16SS221J	D		
C 1814	(A,39,133)		CKSRYF104Z25	R 707	(A,62,47)		RS1/16SS473J			
Unit Number: CWX3096				R 708	(B,50,57)		RS1/16SS221J			
Unit Name: CD Core Unit(S10.1)				R 710	(A,28,77)		RS1/16SS102J			
MISCELLANEOUS				R 711	(B,44,53)		RS1/16SS221J			
IC 201	(A,39,24)	IC	UPD63763GJ	R 714	(B,51,53)		RS1/16SS473J			
IC 203	(B,45,78)	IC	NJM2885DL1-33	R 716	(A,63,56)		RS1/16SS472J			
IC 301	(A,49,88)	IC	BA5835FP	R 719	(B,49,45)		RS1/16SS221J			
IC 701	(A,48,51)	IC	PE5454A	R 720	(B,46,52)		RS1/16SS471J			
IC 703	(A,30,44)	IC	S-812C33AUA-C2N	R 724	(A,62,42)		RS1/16S473J			
Q 101	(A,20,22)	Transistor	2SA1577	R 725	(B,57,43)		RS1/16SS222J	E		
Q 701	(B,62,59)	Transistor	UN2111	R 726	(A,52,41)		RS1/16SS103J			
L 203	(A,53,32)	Inductor	CTF1389	R 727	(B,50,54)		RS1/16SS473J			
L 207	(A,53,31)	Inductor	CTF1389	R 729	(A,57,40)		RS1/16SS223J			
L 209	(A,26,20)	Inductor	CTF1389	R 730	(A,65,41)		RS1/16SS473J			
L 703	(A,64,49)	Inductor	CTF1389	R 731	(A,53,41)		RS1/16SS104J			
X 201	(A,51,35)	Ceramic Resonator 16.934MHz	CSS1603	R 737	(A,41,42)		RS1/16SS104J			
X 701	(A,59,53)	Ceramic Resonator 4.00MHz	CSS1652	R 740	(A,35,46)		RS1/16SS473J			
S 901	(A,15,43)	Switch(HOME)	CSN1067	R 742	(A,50,41)		RS1/16SS104J			
S 903	(B,53,100)	Switch(DSCSNS)	CSN1068	R 746	(B,60,56)		RS1/16SS104J			
S 904	(B,35,108)	Switch(12EJ)	CSN1067	R 750	(A,39,59)		RS1/16SS473J	F		
S 905	(B,48,109)	Switch(8EJ)	CSN1067	R 754	(B,48,60)		RS1/16SS102J			
RESISTORS				R 755	(A,43,61)		RS1/16SS102J			
				R 765	(B,51,40)		RAB4CQ221J			
				R 769	(B,48,40)		RAB4CQ221J			
				R 773	(B,39,37)		RAB4CQ221J			
				R 777	(B,48,51)		RS1/16SS221J			
				R 778	(B,48,52)		RS1/16SS221J			
				R 779	(B,45,54)		RS1/16SS221J			
				R 901	(B,52,65)		RAB4CQ221J			

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

A	R 905	(B,54,60)	RS1/16SS221J
	R 906	(B,56,68)	RS1/16SS221J
	R 908	(B,45,69)	RS1/16SS0R0J
	R 910	(B,44,69)	RS1/16SS0R0J
	R 911	(B,40,73)	RS1/16SS102J

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)	CXX1647
M 1	Motor Unit(SPINDLE)	CXC4440
M 2	Motor Unit(LOADING/CARRIAGE)	CXB8933

CAPACITORS

■	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
B	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
■	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	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
	C 227	(A,45,10)		CCSSCH470J50
	C 228	(A,49,9)		CKSSYB103K16
D	C 234	(B,36,81)		CEVW221M4
	C 237	(B,38,29)		CKSSYB104K10
	C 239	(B,34,10)		CCSSCH220J50
	C 242	(B,58,32)		CKSSYB104K10
	C 243	(B,39,76)		CKSSYB104K10
■	C 244	(B,49,70)		CKSSYB104K10
	C 246	(A,23,19)		CKSSYB104K10
	C 251	(B,28,31)		CKSRYB102K50
	C 260	(A,54,25)		CKSSYB104K10
	C 301	(A,43,78)		CKSSYB221K50
E	C 302	(A,50,79)		CKSSYB221K50
	C 303	(A,37,85)		CKSSYB472K25
	C 304	(A,39,89)		CKSSYB103K16
	C 305	(B,34,92)		CEVW101M16
	C 307	(B,56,90)		CKSSYB104K10
■	C 601	(B,46,60)		CCSRCH102J50
	C 602	(B,41,65)		CCSRCH102J50
	C 701	(A,64,46)		CKSSYB104K10
	C 703	(B,50,61)		CKSSYB103K16
	C 706	(B,50,62)		CKSSYB104K10
F	C 707	(A,36,45)		CKSSYB104K10
	C 712	(A,22,42)		CKSRYB224K16
	C 714	(B,60,45)		CKSSYB104K10
	C 716	(A,61,40)		CKSSYB103K16
	C 722	(B,52,48)		CKSQYB475K6R3
	C 723	(A,26,41)		CKSRYB105K10
	C 903	(B,56,70)		CKSSYB471K50

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.

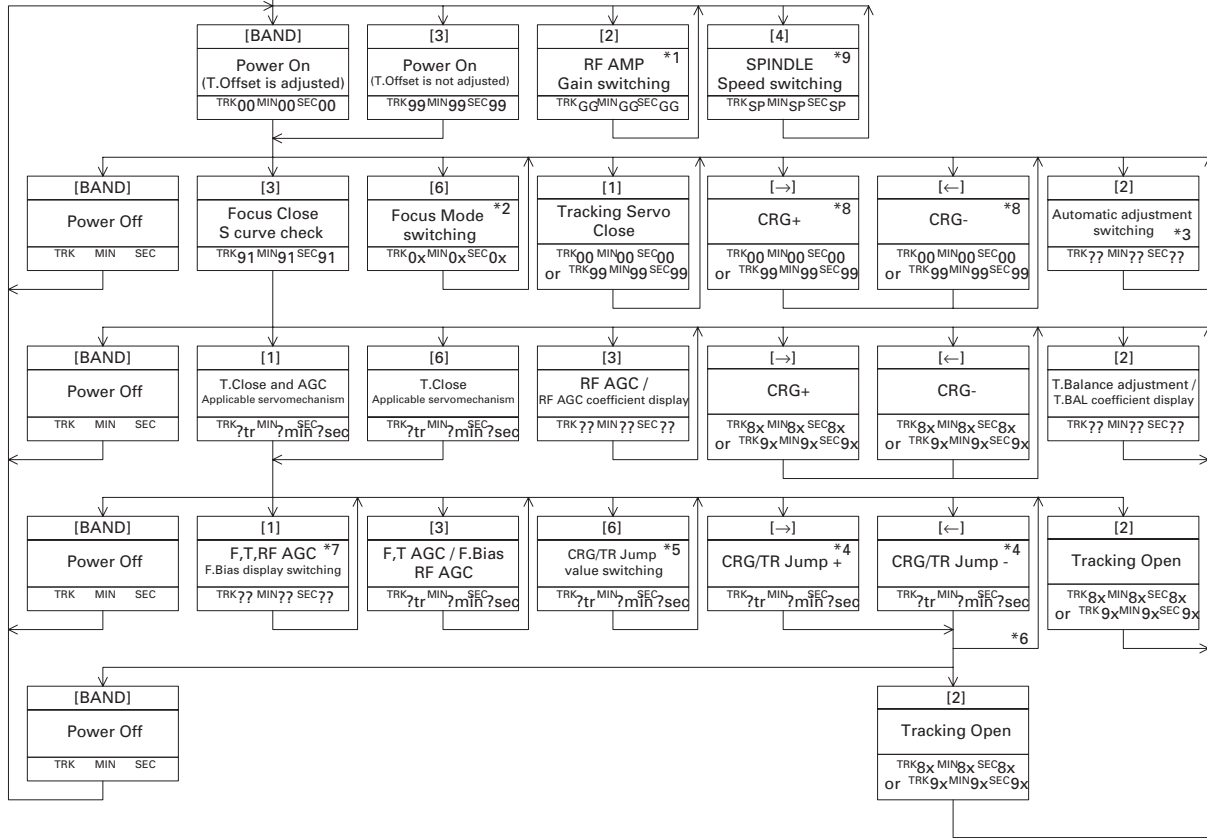
Flow Chart

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]
- *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

F

[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]	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 :

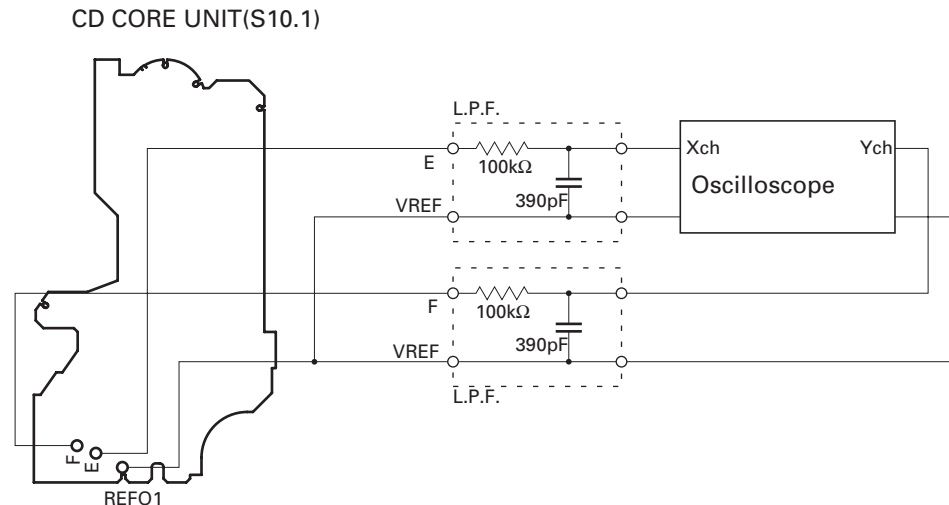
To check that the grating is within an acceptable range when the PU unit is changed.

• 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".

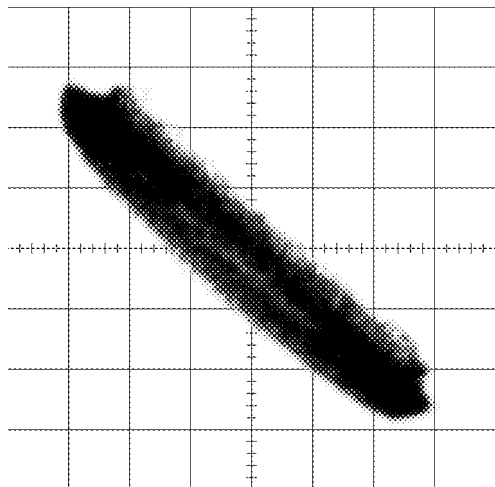
Grating waveform

Ech → Xch 20mV/div, AC

Fch → Ych 20mV/div, AC

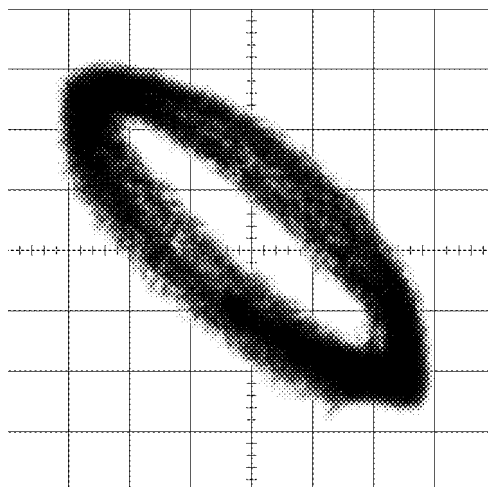
A

0°



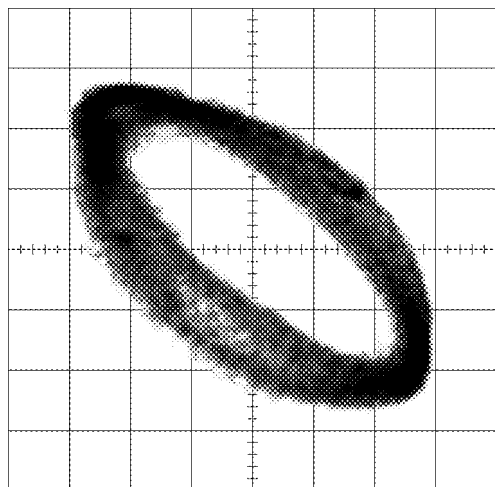
B

30°



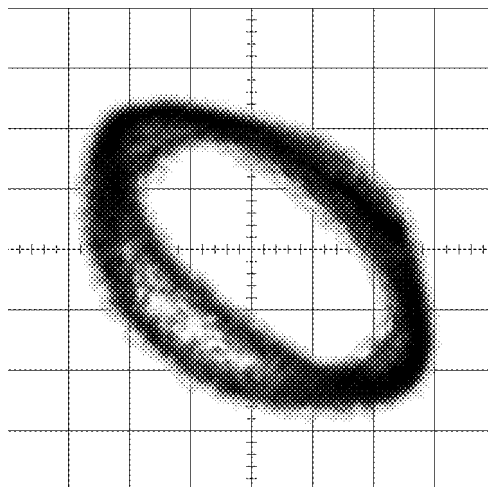
C

45°



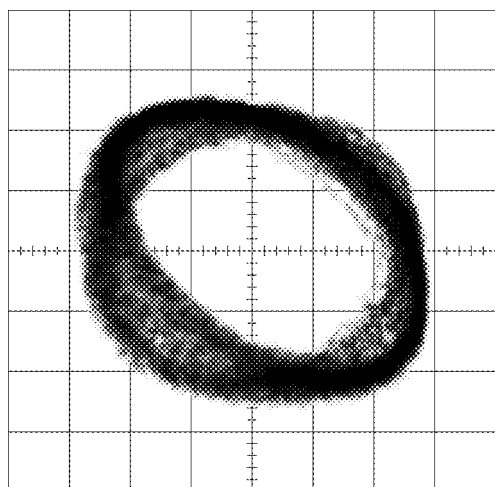
D

60°



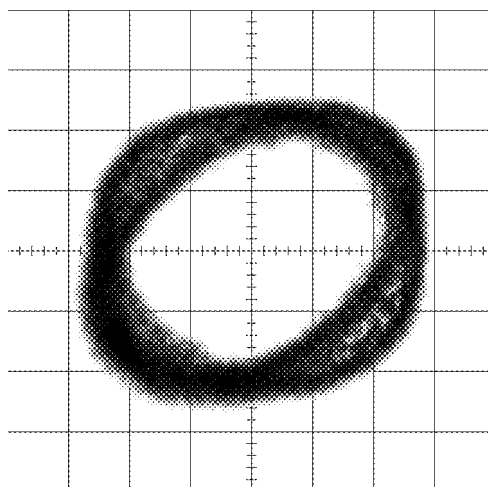
E

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.

1234

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

A

● **Removing the Case (not shown)**

1. Remove the Case.

B

● **Removing the CD Mechanism Module (Fig.1)**

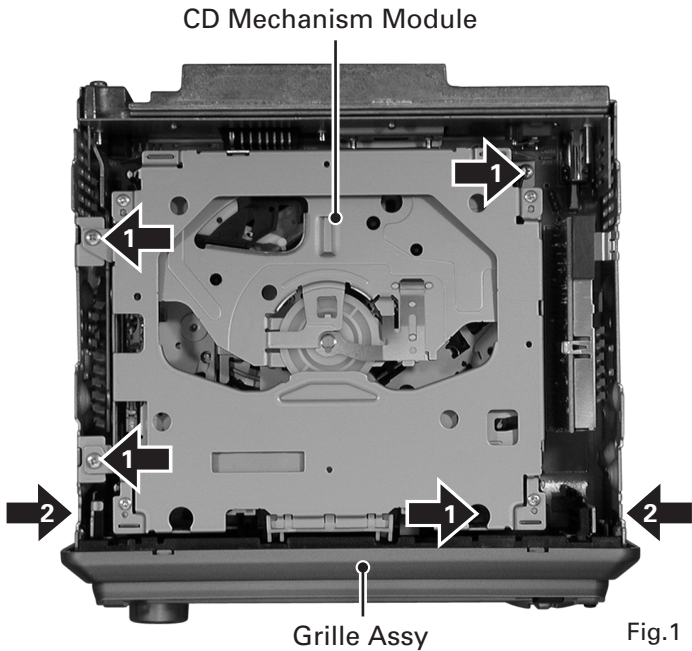
1 Remove the four screws.

Disconnect the connector and then remove the CD Mechanism Module.

C

● **Removing the Grille Assy (Fig.1)**

2 Release the two latches and then remove the Grille Assy.



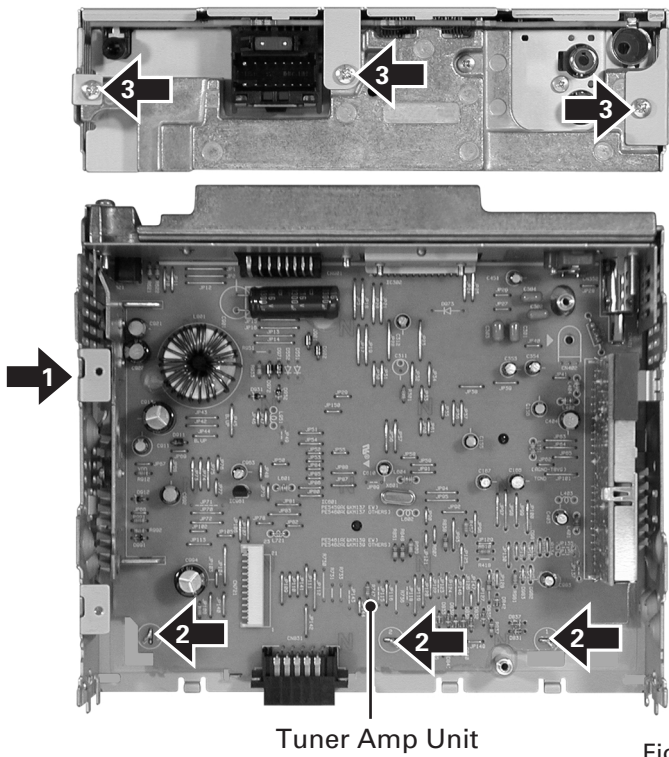
D

● **Removing the Tuner Amp Unit (Fig.2)**

1 Remove the screw.

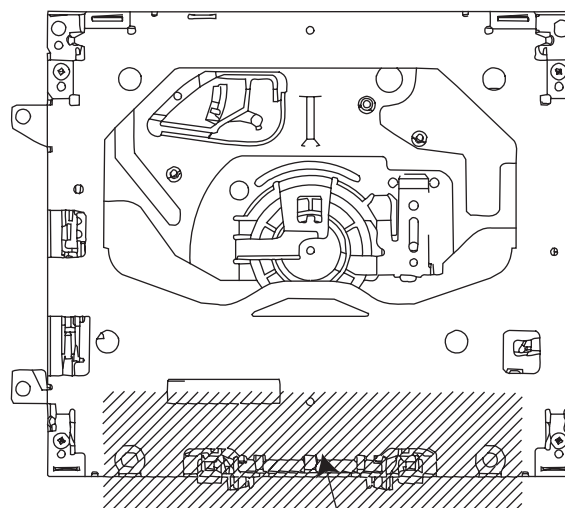
2 Straighten the tabs at three locations indicated.

3 Remove the three screws 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.

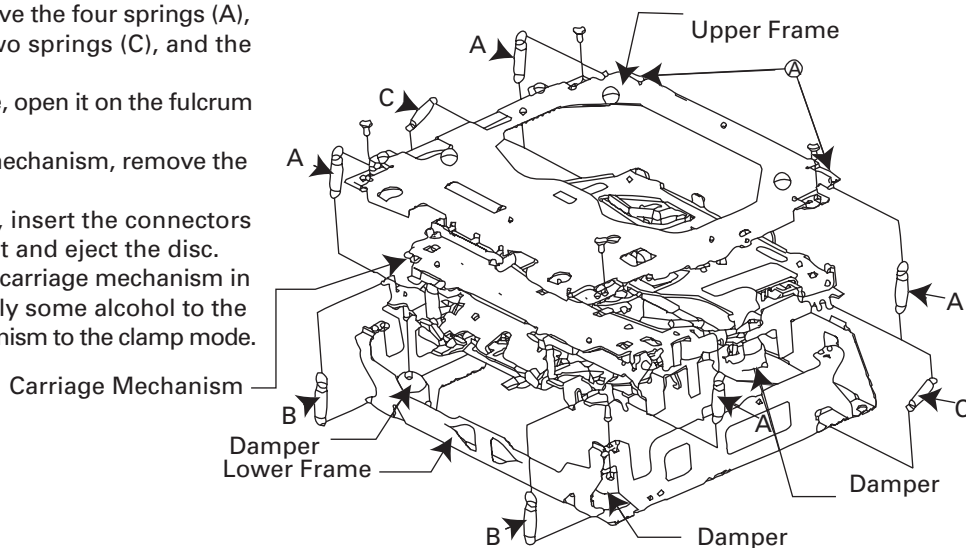


Do not squeeze.

● 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.

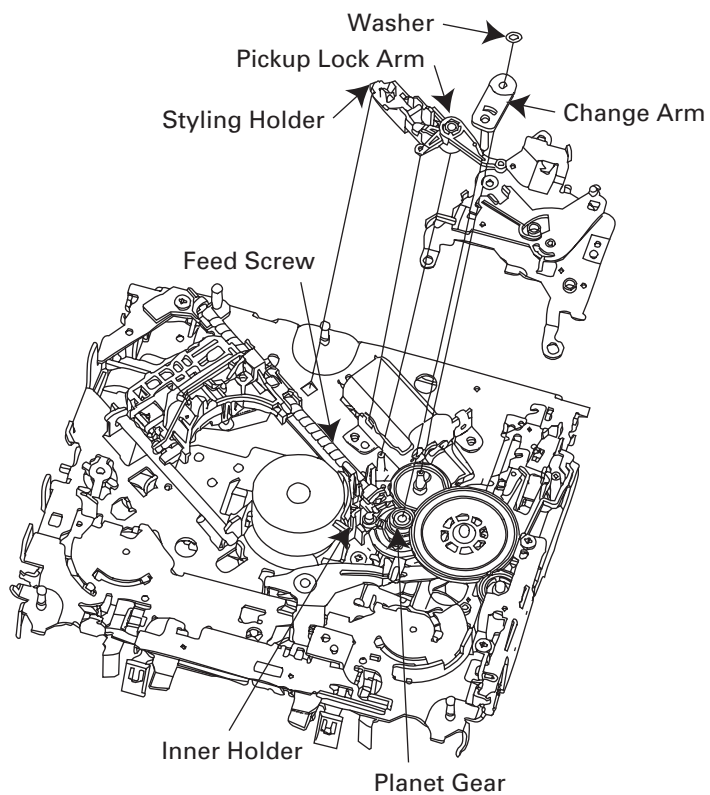
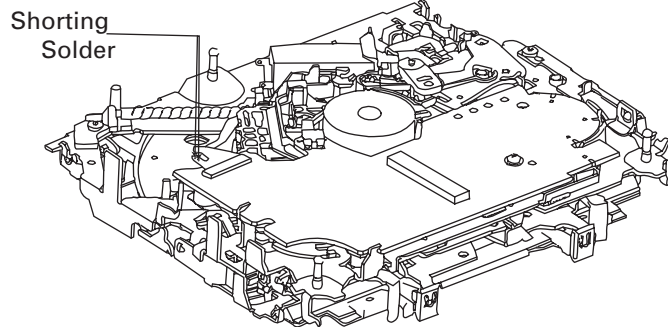
Caution: Before installing the carriage mechanism in the frames, be sure to apply some alcohol to the dampers and set the mechanism to the clamp mode.



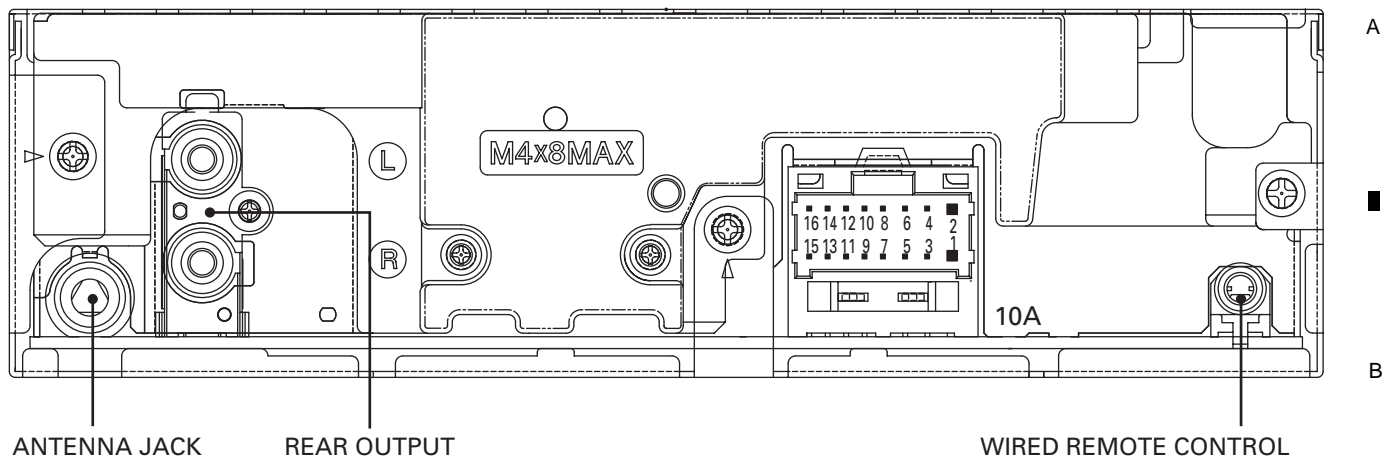
● Removing the Pickup Unit

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



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

7.2 PARTS

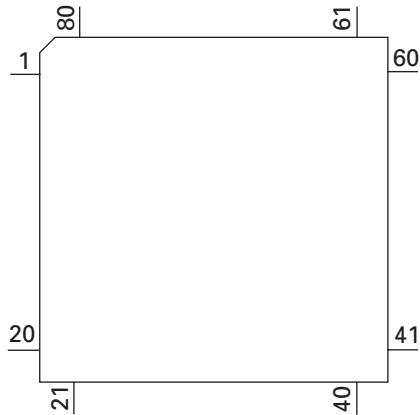
7.2.1 IC

● Pin Functions(PE5459A)

Pin No.	Pin Name	I/O	Function and Operation
1	MODEL1	I	Model select input
2, 3	NC		Not used
4	AVSS		GND
5, 6	NC		Not used
7	AVREF1		VDD
8	KYDT	I	Display microcomputer data input
9	DPDT	O	Display microcomputer communication data output
10	ADPW	O	A/D converter power supply output
11	TUNPDI	I	PLL data input
12	TUNPDO	O	PLL data output
13	TUNPCK	O	PLL clock output
14	PCL	O	Clock adjustment output
15	TESTIN	I	Test program input
16	BSI	I	P-BUS serial data input
17	BDATA	O	P-BUS serial data output
18	BSCK	I/O	P-BUS serial clock input/output
19, 20	NC		Not used
21	SWVDD	O	Display microcomputer chip select output
22	ILMPW	O	Illumination power output
23	NC		Not used
24	XRST	O	CD LSI reset control output
25	BRST	O	P-PUS reset signal output
26	XSTB	O	CD LSI strobe output
27	BRXEN	I/O	P-BUS reception enable signal input/output
28	CONT	O	Driver output
29	LOEJ	O	Load/eject output
30	CLCONT	O	Driver control output
31	NC		Not used
32	DALMON	O	Output for dark current reduction circuit
33	VSS		GND
34	TELIN	I	TEL mute input
35, 36	ROT0, 1	I	Rotary volume input 0, 1
37	ROMDATA	O	ROM collection data output
38	ROMCLK	O	ROM collection clock output
39	ROMCS	O	ROM collection chip select output
40	RECEIVE	O	RDS decoder receiving output
41	BSRQ	I	P-BUS serial pole request input
42	NC		Not used
43	SYSPW	O	System power output
44, 45	NC		Not used
46	STRKEY2	I	Wired remote control input
47	ISENS	I	Illumination input
48	MUTE	O	System mute output
49	ANTPW	O	Auto antenna control output
50	NC		Not used
51	VST	O	E.VOL strobe output
52	VDT	O	E.VOL data output
53	VCK	O	E.VOL clock output
54	NC		Not used
55	TUNPCE2	O	PLL chip enable output 2
56	TUNPCE	O	PLL chip enable output
57	RDT	I	RDS LK input
58	RDSLK	I	RDS clock input
59	RDS57K	I	RDS 57K input
60	RESET		Reset
61	LDET	I	PLL lock detection input
62	RCK	I	RDS clock input

Pin No.	Pin Name	I/O	Function and Operation
63	ASENS	I	ACC sense input
64	BSSENS	I	Back up sense input
65	DSSENS	I	Grille detach sense input
66	SOURCE	I	Source sense input
67	VSS		GND
68	VDD		VDD
69, 70	X2, 1		Crystal oscillator connection pin
71	IC(VPP)		GND
72	NC		Not used
73	VSS		VSS
74	AVDD		VDD
75	AVREF1		VDD
76	SL	I	Signal level input
77	TEMP	I	Temperature detection input
78	VDSENS	I	VD power supply short circuit input
79	DISCSSENS	I	DISC loading detection input
80	STRKEY1	I	Wired remote control input

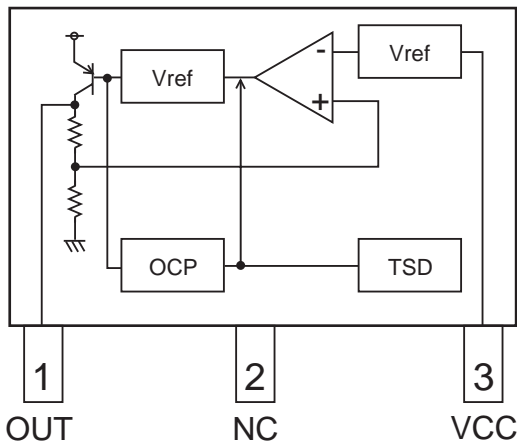
* PE5459A



IC's marked by * are MOS type.

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

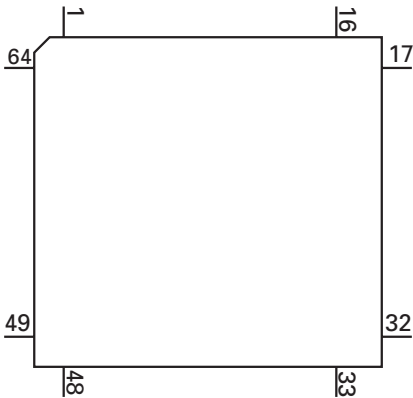
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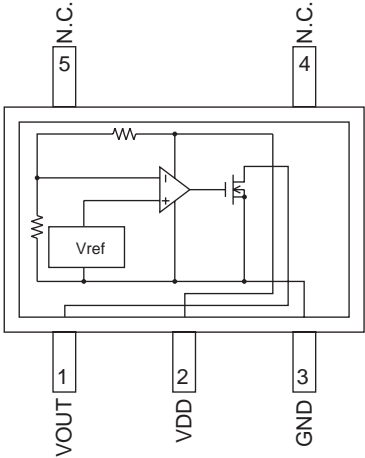
● Pin Functions(PD6340A)

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

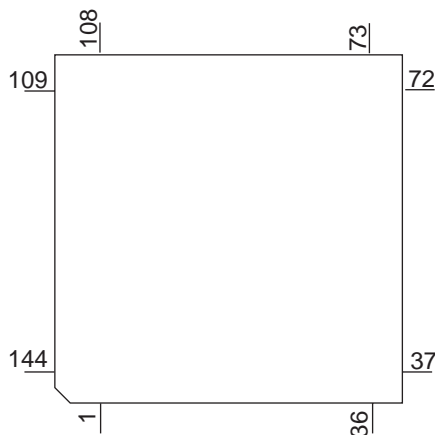


Pin Functions(UPD63763GJ)

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	\overline{READ}	I	Control signals(read)
20	\overline{WRITE}	I	Control signals(write)
21	\overline{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	\overline{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	(\overline{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	I	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 output(transmitted signal)
26	FRXD	I		For flash rewriting input(received signal)
27	BRXEN	I/O	/C	It is possible to receive P-Bus input/output
28	BSRQ	I/O	/C	P-Bus service request demand input/output
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 input
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

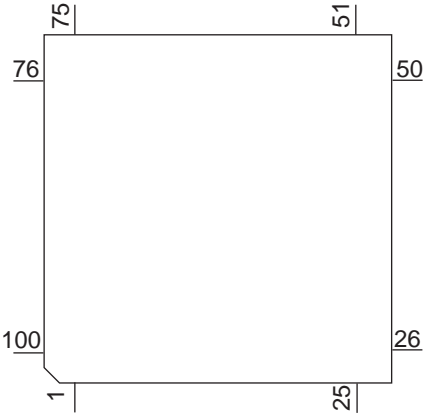
A

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	I		Temperature information sense input
99	VDSENS	I		VD power supply short sense input
100	NC			Not used

B

* PE5454A

C

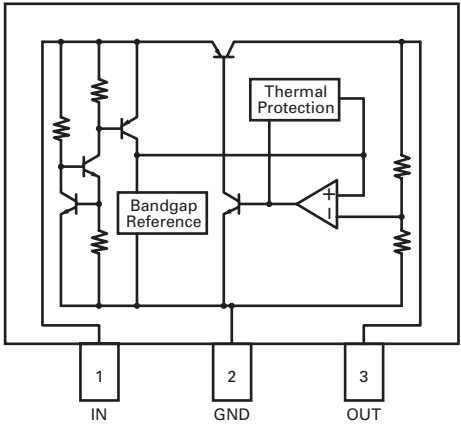


Format	Meaning
C	CMOS

D

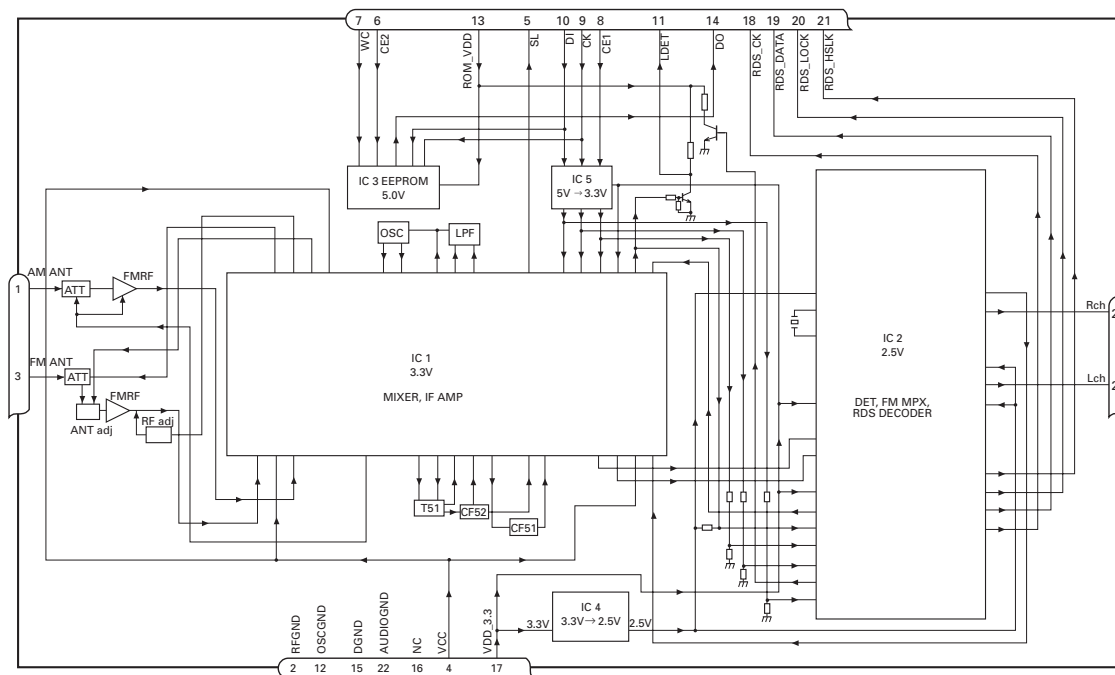
NJM2885DL1-33

E



F

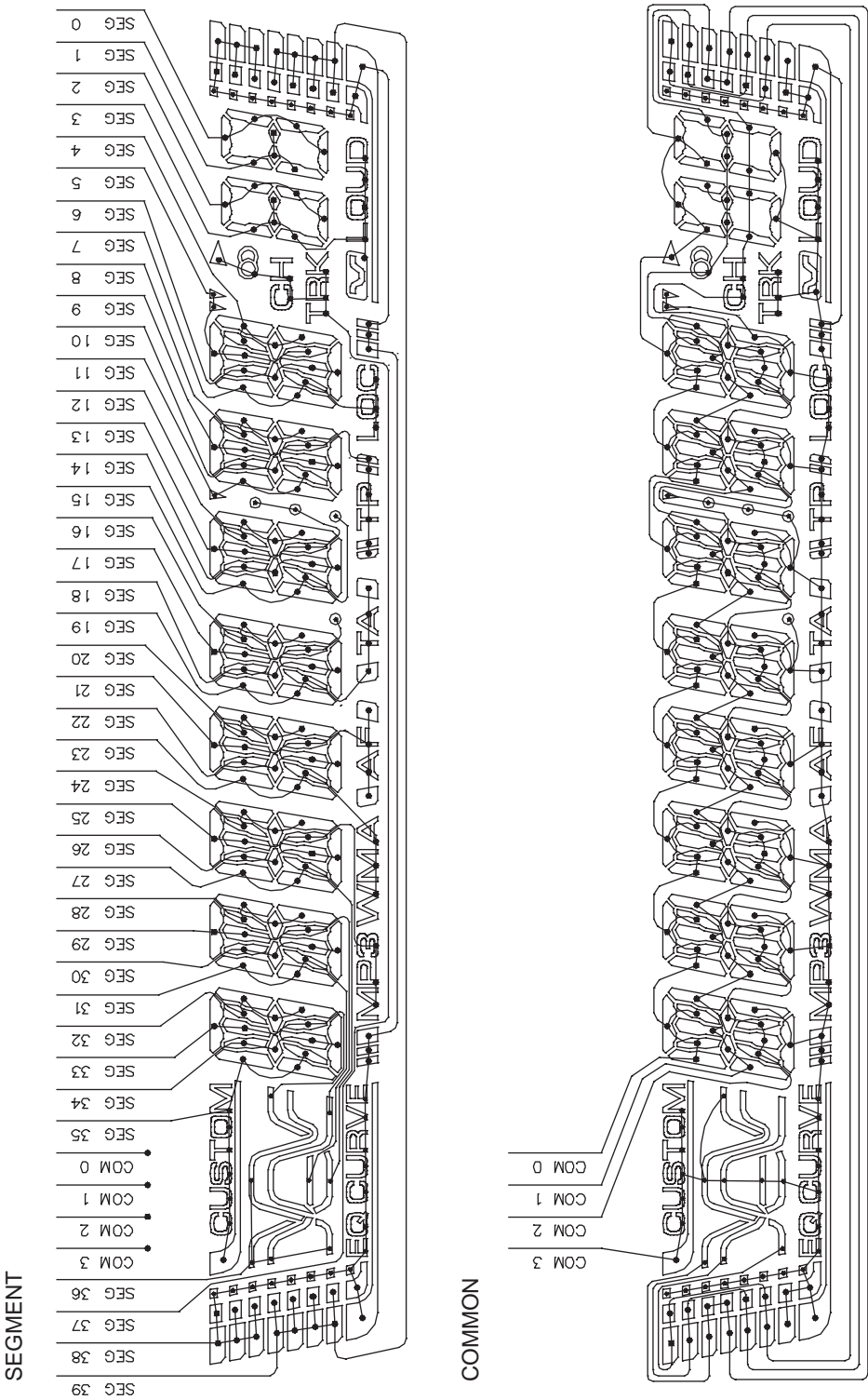
FM/AM Tuner Unit



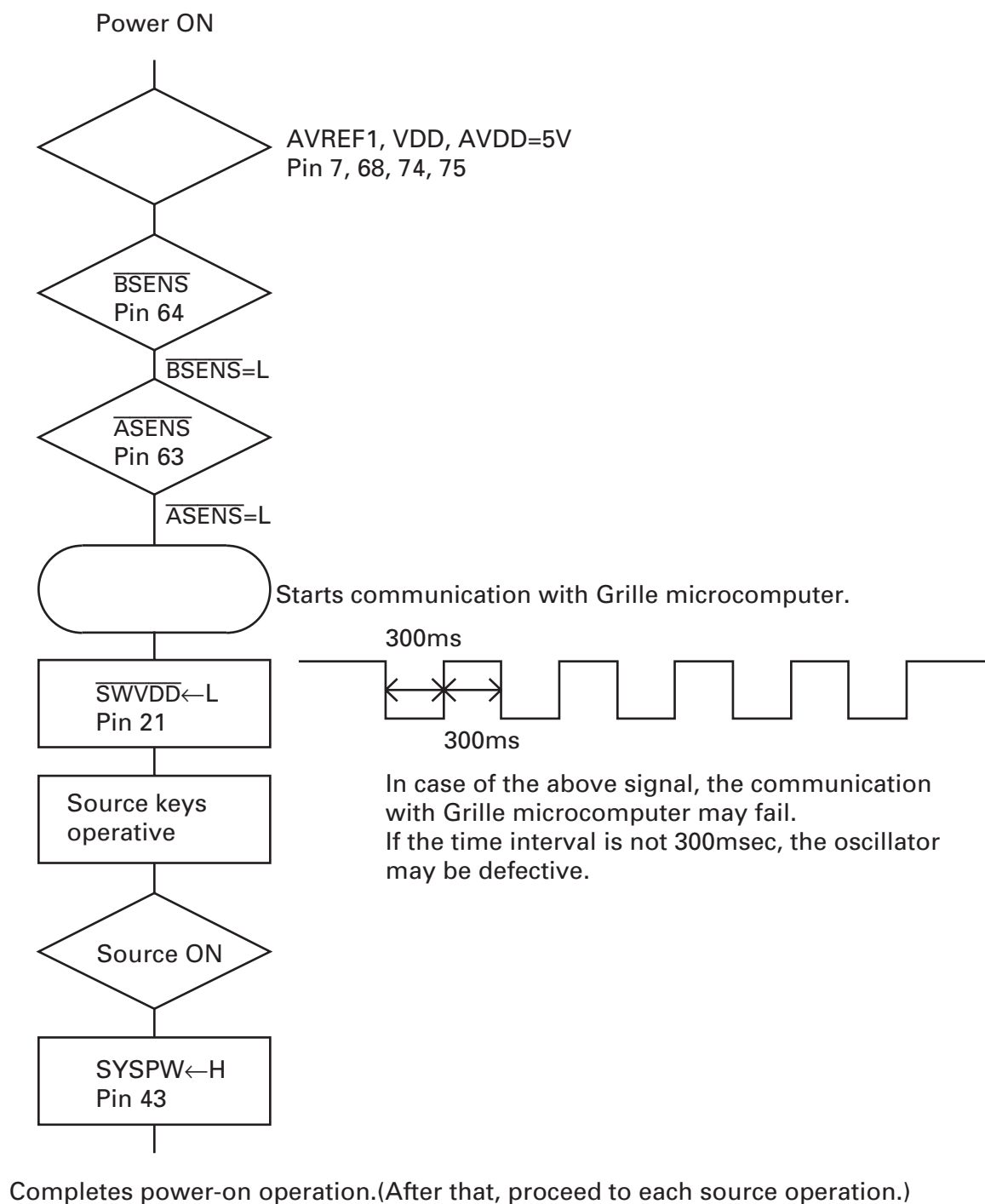
No.	Symbol	I/O	Explain
1	AMANT	I	AM antenna input AM antenna input high impedance AMANT pin is connected with an all antenna by way of 4.7μH. (LAU type inductor) A series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the hum of power transmission 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(YAW5024)(DEH-4700MP/XU/EW)
- LCD(YAW5025)(DEH-4700MPB/XU/EW)



7.3 OPERATIONAL FLOW CHART



1

2

3

4

7.4 CLEANING

A



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

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

B

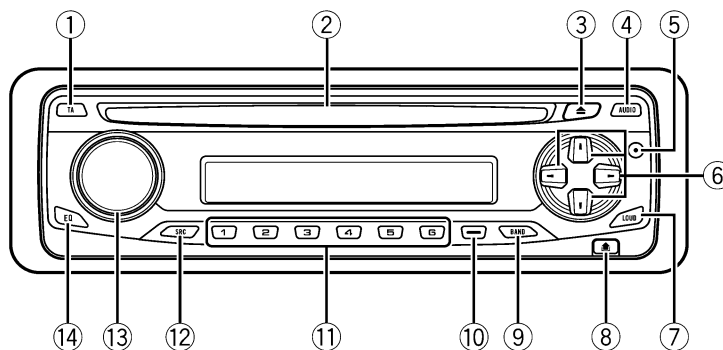
C

D

E

F

8. OPERATIONS



Head unit

① TA button

Press to turn TA function on or off. Press and hold to turn AF function on or off.

② Disc loading slot

Insert a disc to play.

③ EJECT button

Press to eject a CD from your built-in CD player.

④ AUDIO button

Press to select various sound quality controls.

⑤ DISPLAY button

Press to select different displays.

⑥ ▲/▼/◀/▶ buttons

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

⑦ LOUDNESS button

Press to turn loudness on or off.

⑧ DETACH button

Press to remove the front panel from the head unit.

⑨ BAND button

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

⑩ LOCAL/BSM button

Press to turn local function on or off. Press and hold to turn BSM function on or off.

⑪ 1-6 buttons

Press for preset tuning.

⑫ SOURCE button

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

⑬ VOLUME

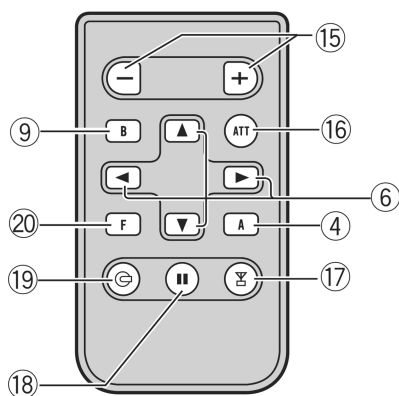
Rotate it to increase or decrease the volume.

⑭ EQ button

Press to select various equalizer curves. 

Optional remote control

The steering remote control CD-R300 is sold separately.



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.

⑮ VOLUME button

Press to increase or decrease the volume.

⑯ ATT button

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

⑰ TUNER button

Press to select the tuner as the source.

⑱ PAUSE button

Press to turn pause on or off.

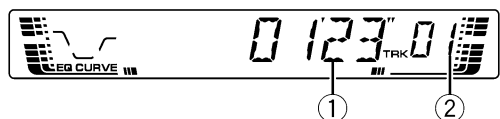
⑲ CD button

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

⑳ FUNCTION button

Not used. ☐

Playing a CD



① Play time indicator

Shows the elapsed playing time of the current track.

② Track number indicator

Shows the track currently playing.

1 Insert a CD into the CD loading slot.

Playback will automatically start.

- **Be sure to turn up the label side of a disc.**
- After a CD has been inserted, press **SOURCE** to select the built-in CD player.
- You can eject a CD by pressing **EJECT**.

2 Use **VOLUME** to adjust the sound level.

3 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. (Refer to *Selecting the search method* on the next page.)

4 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 an error message such as **ERROR-11** is displayed. □

Repeating play

Repeat play lets you hear the same track over again.

- **Press 5 repeatedly to turn repeat play on or off.**

When repeat play is on, **RPT** appears in the display.

- If you perform track search or fast forward/reverse, repeat play is automatically cancelled. □

Playing tracks in a random order

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

- **Press 4 repeatedly to turn random play on or off.**

When random play is on, **RDM** appears in the display. □

Scanning tracks of a CD

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

1 Press 3 to turn scan play on.

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

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


- 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.

● Press 6 repeatedly to turn pause on or off.

When pause is on, **PAUSE** appears in the display.

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

Selecting the search method

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

● Press 2 to select the search method.

Press **2** 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 this 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 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 function 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.

● Press 1 to select your favorite setting.

Press **1** repeatedly to switch between the following settings:

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

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.

● 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**).

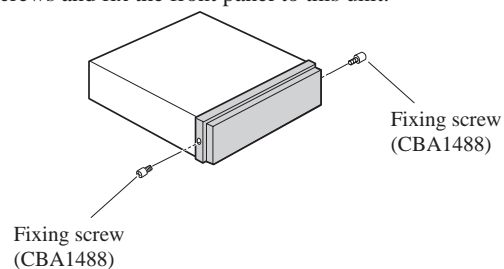


Note

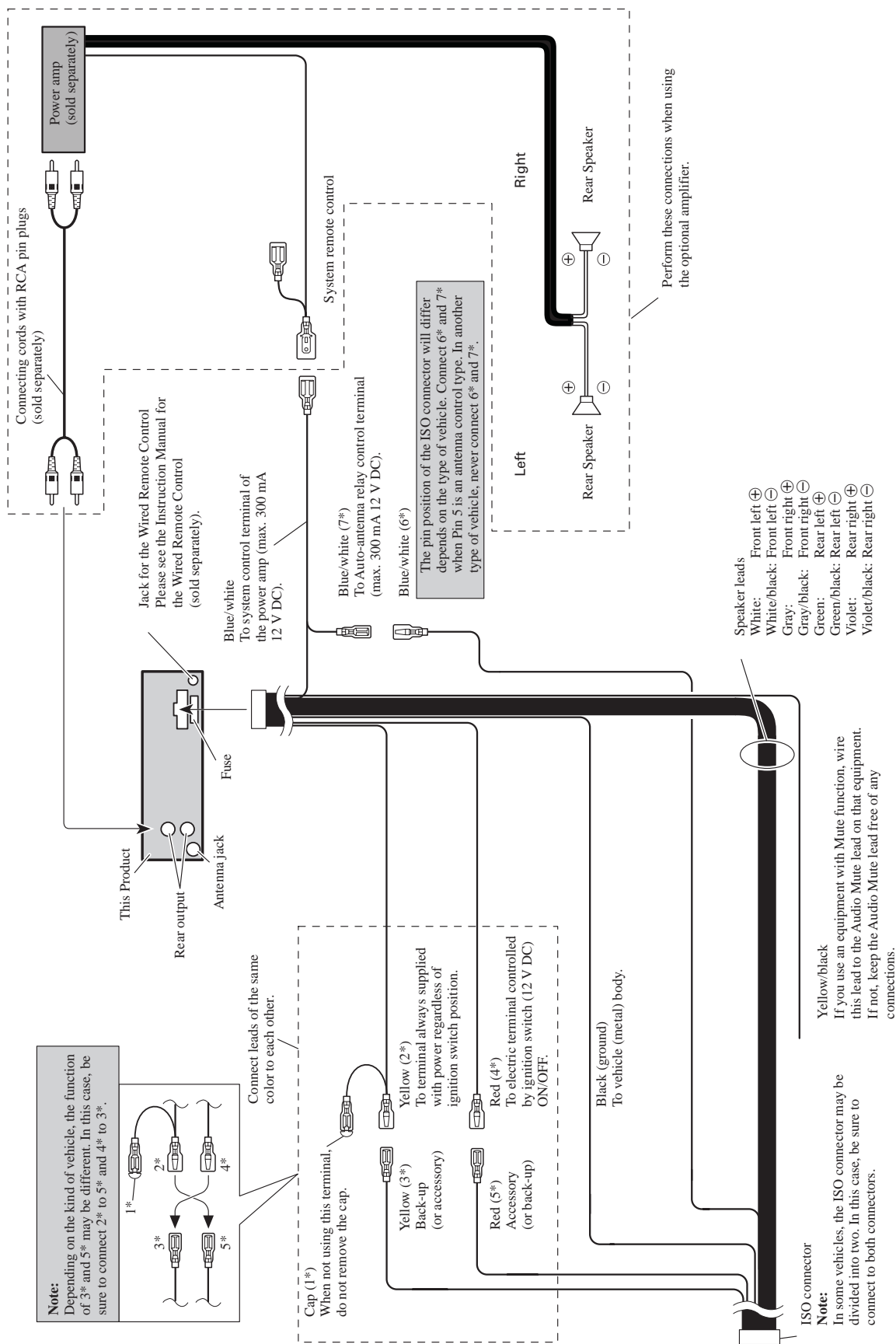
You can scroll to the left the title by pressing and holding **DISPLAY**. □

About the fixing screws for the front panel

If you do not operate the Detaching and Replacing the Front Panel Function, use the supplied fixing screws and fix the front panel to this unit.



● Connection Diagram



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DEH-4700MP/XU/EW

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● 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