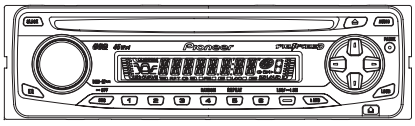
Pioneer sound.vision.soul

Service Manual



DEH-2700/XU/UC

ORDER NO.
CRT3363

HIGH POWER CD PLAYER WITH FM/AM TUNER

DEH-2700/XU/UC

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

Model No.	Order No.	Mech.Module	Remarks
CX-3110	CRT3178	S10.1	CD Mech. Module : Circuit Description, Mech. Description, Disassembly



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

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936
ⓒ**PIONEER CORPORATION 2004**

K-ZZA. NOV. 2004 Printed in Japan

SAFETY INFORMATION

CAUTION

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.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65

● 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.

COMPACT disc DIGITAL AUDIO

[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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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 (7 × 2 × 6-1/8 in.)
  - Nose ..... 188 × 58 × 19 mm (7-3/8 × 2-1/4 × 3/4 in.)
- D
  - Chassis ..... 178 × 50 × 162 mm (7 × 2 × 6-3/8 in.)
  - Nose ..... 170 × 48 × 14 mm (6-3/4 × 1-7/8 × 1/2 in.)

Weight ..... 1.3 kg (2.9 lbs)

Audio

Continuous power output is 20 W per channel minimum into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output ..... 45 W × 4
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)

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) (IHF-A network)
Dynamic range ..... 92 dB (1 kHz)
Number of channels ..... 2 (stereo)

FM tuner

Frequency range ..... 87.9 – 107.9 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 (IHF-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)
Three-signal intermodulation (desired signal level) ..... 30 dBf (two undesired signal level: 100 dBf)

AM tuner

Frequency range ..... 530 – 1,710 kHz (10 kHz)
Usable sensitivity ..... 18 μV (S/N: 20 dB)
Signal-to-noise ratio ..... 65 dB (IHF-A network)

Note

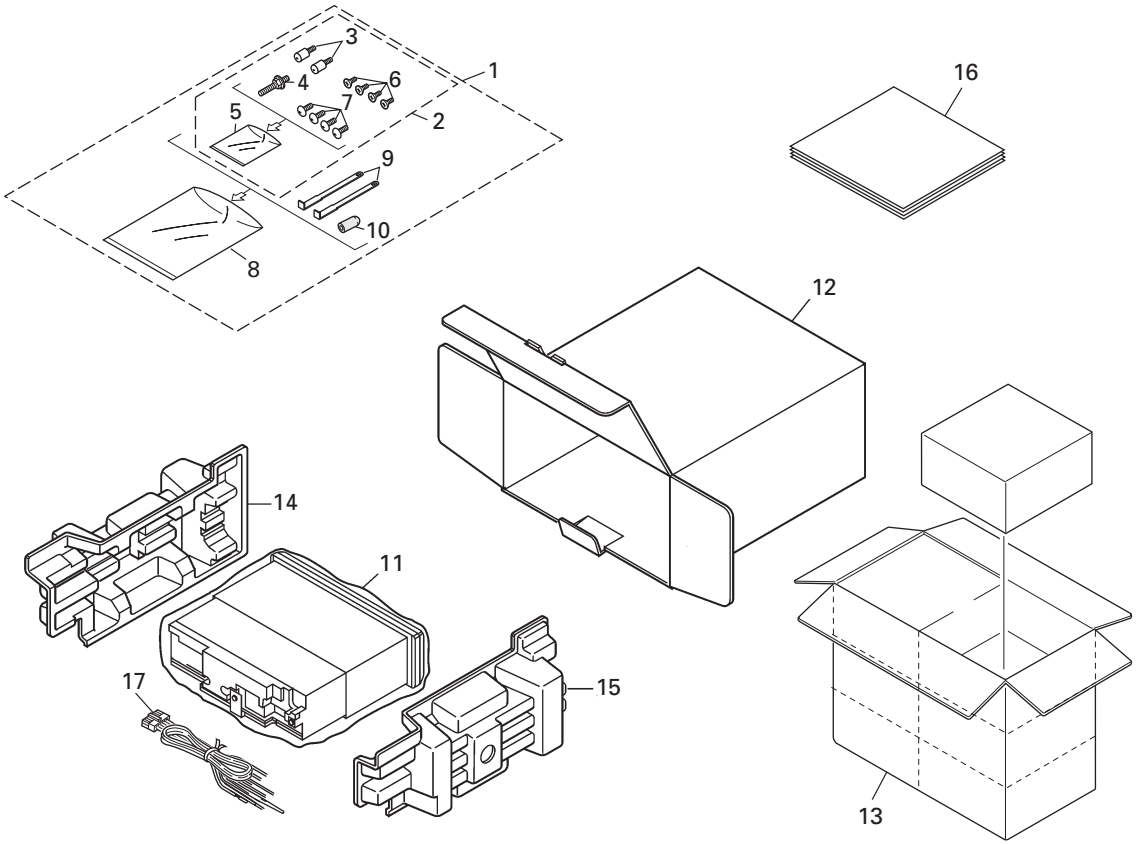
Specifications and the design are subject to possible modifications without notice due to improvements. ▣

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 indicatesthe 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 lobricants or glue, follow the instructions in this manual. (In the case of no amount instructions,apply as you think it appropriate.)*

2.1 PACKING



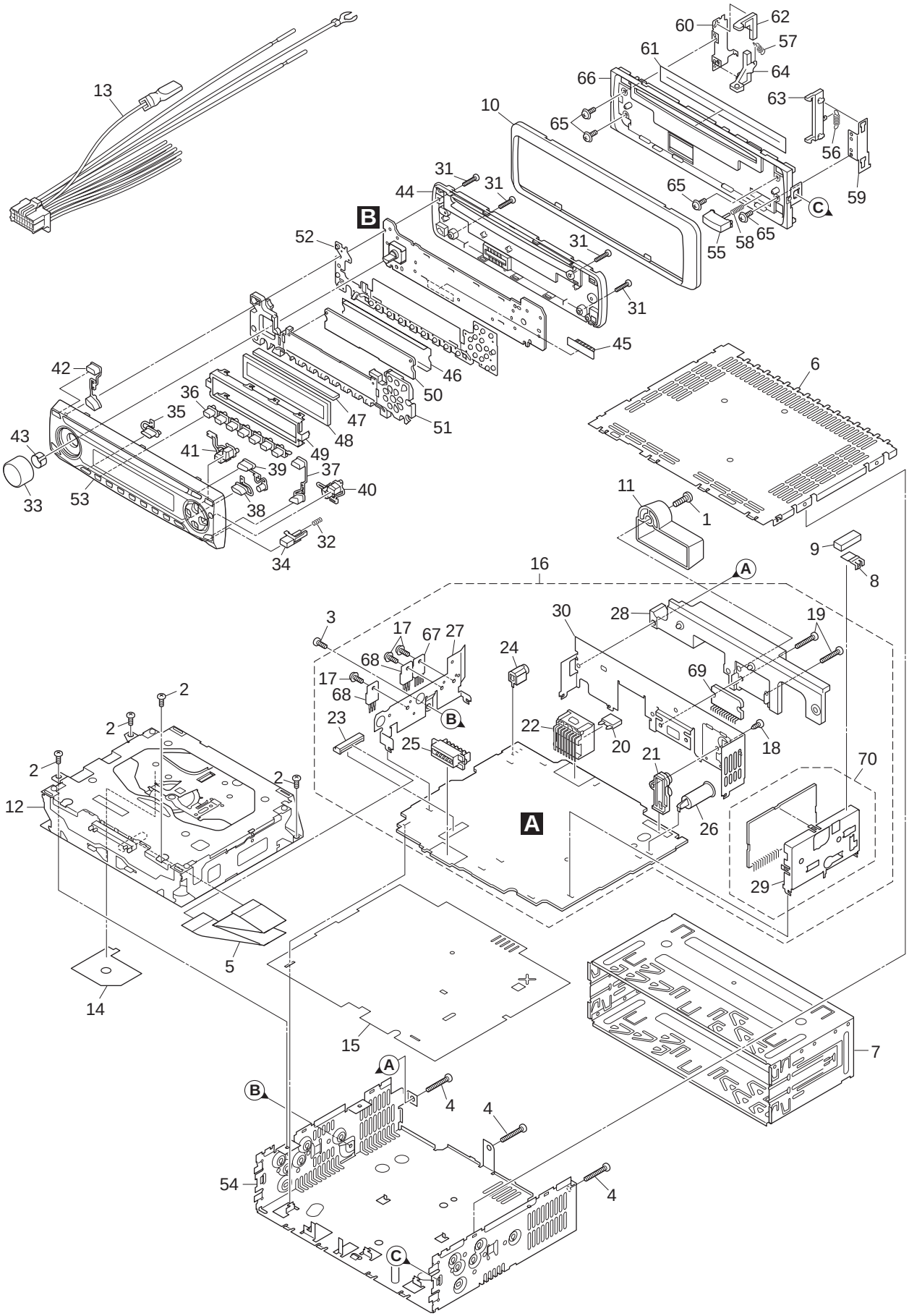
PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Accessory Assy	CEA4610
	2	Screw Assy	CEA4611
	3	Fixing Screw(M2x4)	CBA1488
	4	Screw	CBA1650
*	5	Polyethylene Bag	CEG-127
	6	Screw	CRZ50P090FTC
	7	Screw	TRZ50P080FTC
*	8	Polyethylene Bag	CEG-158
	9	Handle	CNC5395
	10	Bush	CNV3930
	11	Polyethylene Bag	CEG1173
	12	Carton	YHG5028
	13	Contain Box	YHL5028
	14	Protector	XHP7004
	15	Protector	XHP7003
	16-1	Owner's Manual	YRD5013
	16-2	Installation Manual	YRD5017
	16-3	Caution Card	CRP1294
	16-4	Caution Card	CRP1310
*	16-5	Card	ARY1048
	17	Cord Assy	XDE7008

Owner's Manual,Installation Manual

Part No.	Language
YRD5013	English, French, Spanish
YRD5017	English, French, Spanish

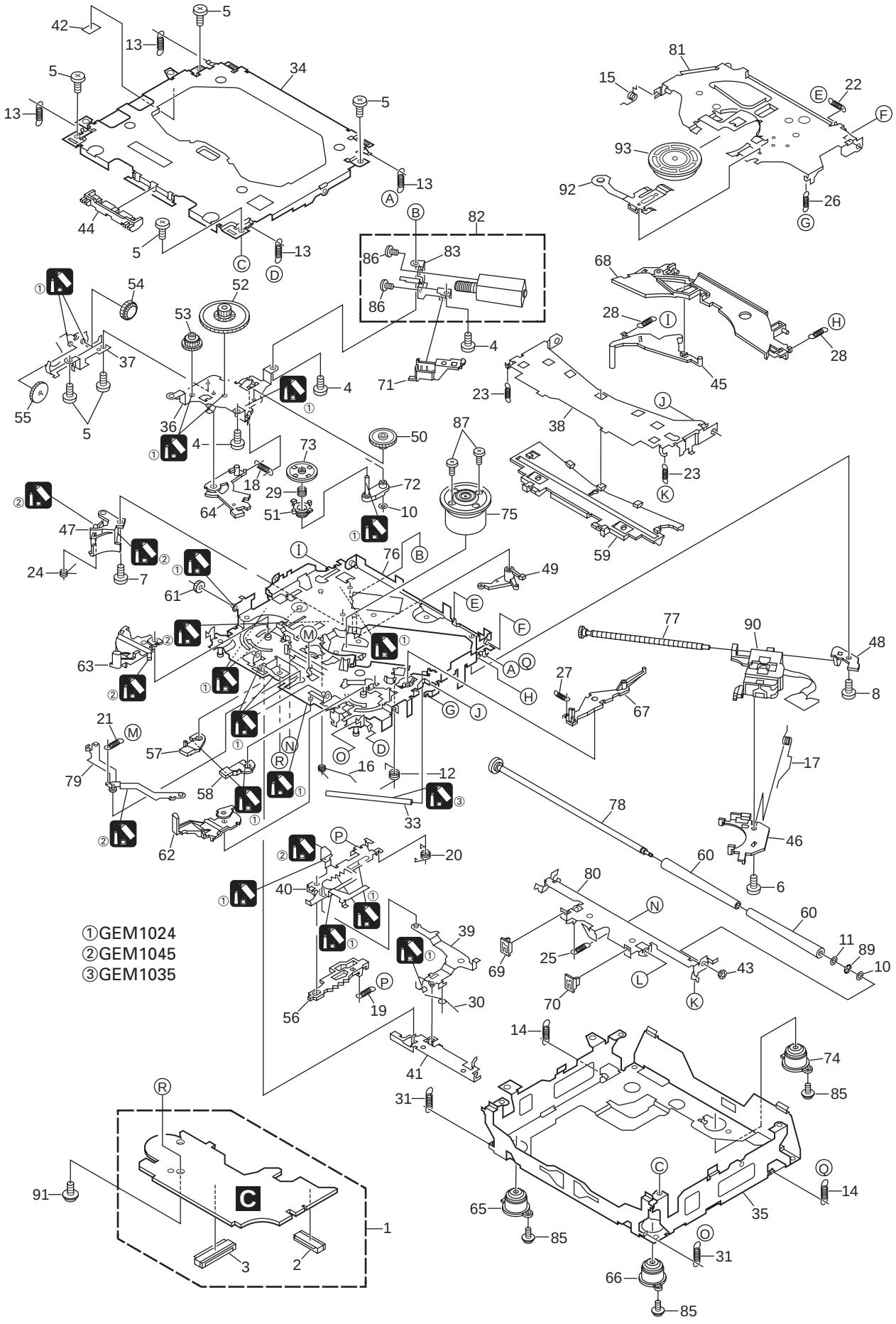
2.2 EXTERIOR


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54

EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	BMZ40P140FTC
	2	Screw	BSZ26P060FTC
	3	Screw	BSZ30P060FTC
	4	Screw	BSZ30P200FTC
	5	Cable	CDE7113
	6	Case	CNB2793
	7	Holder	CNC8659
	8	Earth Plate	CNC8915
	9	Cushion	CNM8890
	10	Panel	CNS8046
	11	Holder	CNV7619
	12	CD Mechanism Module(S10)	CXK5601
	13	Cord Assy	XDE7008
	14	Insulator	XNM7106
	15	Insulator	YNM5012
	16	Tuner Amp Unit	YWM5049
	17	Screw	ASZ26P060FTC
	18	Screw	BPZ26P080FTC
	19	Screw	BSZ26P160FTC
⚠	20	Fuse(10A)	CEK1208
	21	Pin Jack(CN352)	CKB1057
	22	Plug(CN901)	CKM1376
	23	Connector(CN721)	CKS3835
	24	Connector(CN621)	CKS4124
	25	Connector(CN831)	CKS4944
	26	Antenna Jack(CN401)	CKX1056
	27	Holder	CND1328
	28	Heat Sink	CNR1668
	29	Holder	CND1054
	30	Holder	YNC5002
	31	Screw	BPZ20P100FZK
	32	Spring	CBH2210
	33	Knob(VOLUME)	YAA5001
	34	Button(DETACH)	YAC5027
	35	Button(SOURCE)	YAC5030
	36	Button(1-6, LOCAL/BSM)	YAC5031
	37	Button(AUDIO, LOUDNESS)	YAC5032
	38	Button(BAND)	YAC5033
	39	Button(EJECT, PAUSE)	YAC5034
	40	Button(DOWN, RIGHT)	YAC5035
	41	Button(UP, LEFT)	YAC5036
	42	Button(CLOCK, EQ)	YAC5039
	43	Spring	YBL5001
	44	Cover	YNS5038
	45	Connector(CN1801)	CKS4943
	46	Sheet	CNM7932
	47	Connector	CNV7369
	48	LCD(LCD1801)	YAW5021
	49	Holder	YNC5005
	50	Lighting Conductor	YNV5004
	51	Lighting Conductor	YNV5005
	52	Rubber Contact	YNV5006
	53	Grille Unit	YXA5071
	54	Chassis Unit	YXA5080
	55	Button(DETACH)	CAC4836
	56	Spring	CBH1835
	57	Spring	CBH2208
	58	Spring	CBH2367
	59	Bracket	CNC6791
	60	Holder	CNC8042
	61	Cover	CNM6276
	62	Arm	CNV4692
	63	Arm	CNV4728
	64	Arm	CNV5576
	65	Screw	IMS20P030FZK
	66	Panel	YNS5046
	67	IC(IC921)	NJM2388F84
	68	Transistor(Q911, 991)	2SD2396
	69	IC(IC302)	TDA7386
	70	FM/AM Tuner Unit(Z401)	CWE1646

2.3 CD MECHANISM MODULE

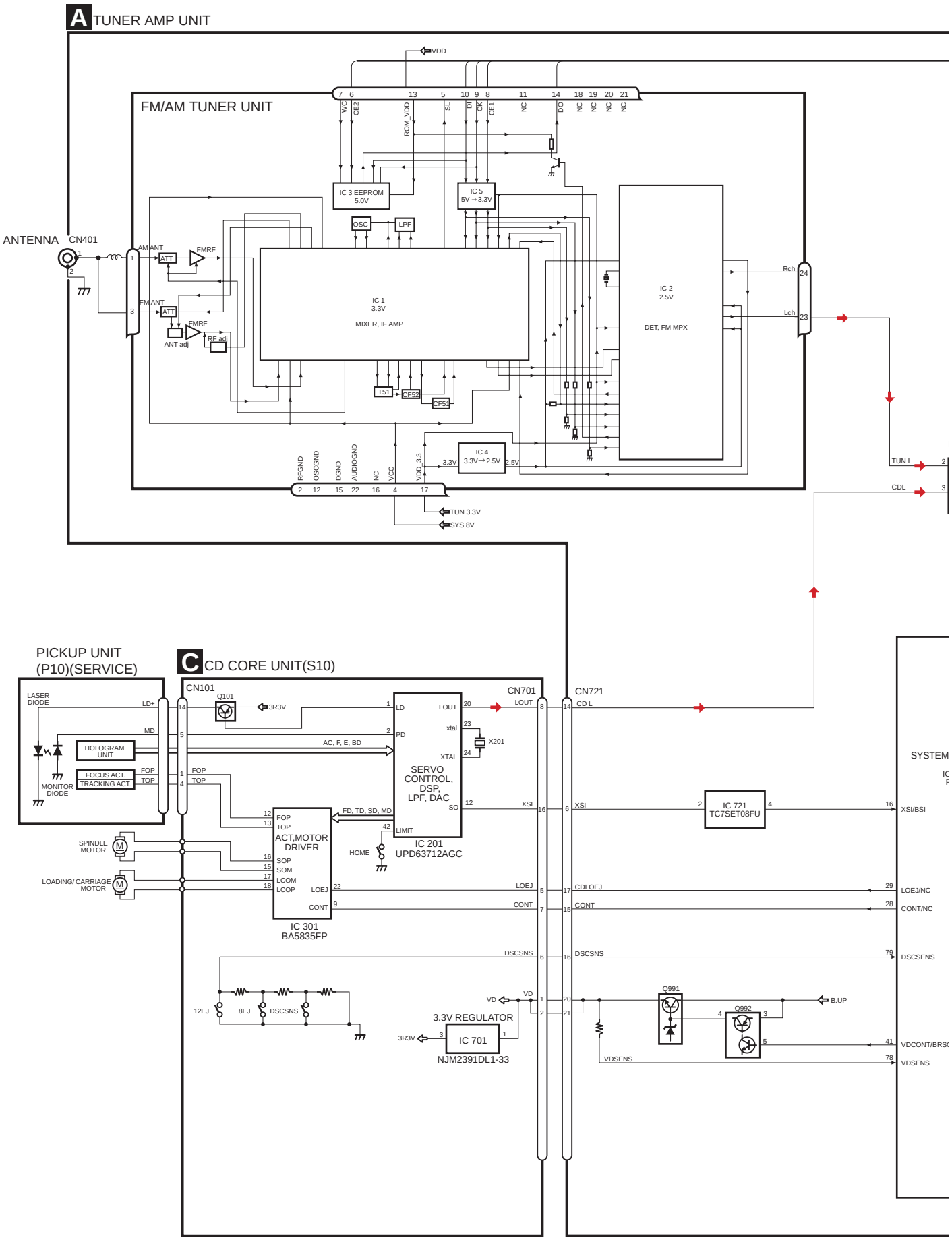


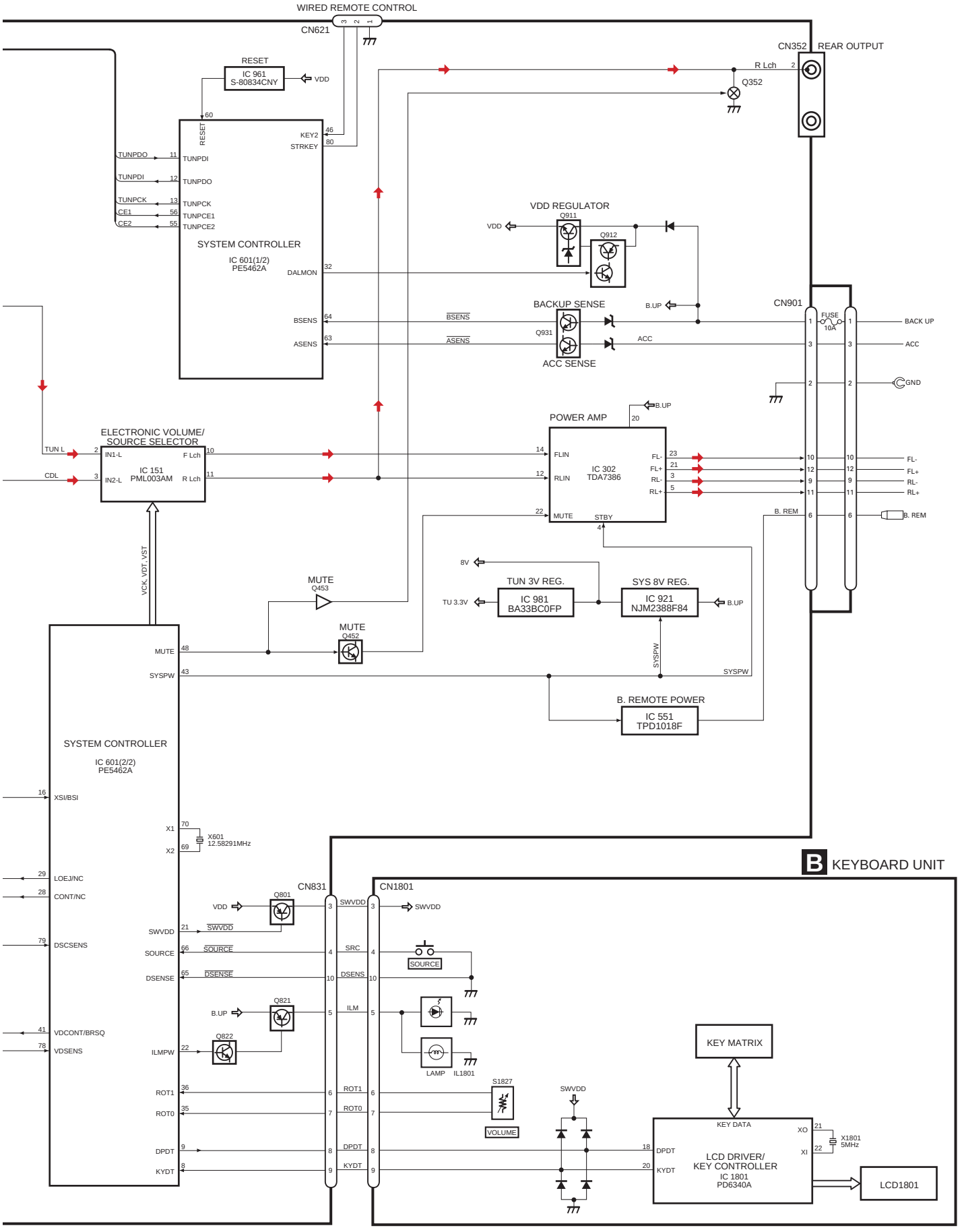
CD MECHANISM MODULE SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	CD Core Unit(S10)	CWX3110
	2	Connector(CN101)	CKS4182
	3	Connector(CN701)	CKS4188
	4	Screw	BMZ20P035FTC
	5	Screw	BSZ20P040FTC
	6	Screw(M2x4)	CBA1362
	7	Screw(M2x3)	CBA1824
	8	Screw(M2x3)	CBA1825
	9	•••••	
	10	Washer	CBF1038
	11	Washer	CBF1060
	12	Spring	CBH2390
	13	Spring	CBH2606
	14	Spring	CBH2607
	15	Spring	CBH2608
	16	Spring	CBH2609
	17	Spring	CBH2610
	18	Spring	CBH2735
	19	Spring	CBH2612
	20	Spring	CBH2613
	21	Spring	CBH2614
	22	Spring	CBH2615
	23	Spring	CBH2616
	24	Spring	CBH2617
	25	Spring	CBH2620
	26	Spring	CBH2621
	27	Spring	CBH2641
	28	Spring	CBH2642
	29	Spring	CBH2643
	30	Spring	CBH2659
	31	Spring	CBH2688
	32	•••••	
	33	Shaft	CLA4441
	34	Frame	CND2443
	35	Frame	CNC9963
	36	Bracket	CND2712
	37	Bracket	CND1895
	38	Arm	CNC9968
	39	Arm	CND1909
	40	Lever	CND2032
	41	Lever	CNC9984
	42	Sheet	CNM8134
	43	Collar	CNV8447
	44	Guide	CNV8448
	45	Arm	CNV8403
	46	Rack	CNV8374
	47	Holder	CNV8376
	48	Holder	CNV8377
	49	Arm	CNV8378
	50	Gear	CNV8379
	51	Gear	CNV8380
	52	Gear	CNV8381
	53	Gear	CNV8382
	54	Gear	CNV8383
	55	Gear	CNV8384
	56	Rack	CNV8385
	57	Arm	CNV8386
	58	Arm	CNV8387
	59	Guide	CNV8388
	60	Roller	CNV8189
	61	Gear	CNV8389
	62	Arm	CNV8391
	63	Arm	CNV8390
	64	Arm	CNV8392
	65	Damper	CNV7313
	66	Damper	CNV7314
	67	Arm	CNV8394
	68	Arm	CNV8395
	69	Guide	CNV8396
	70	Guide	CNV8397
	71	Holder	CNV8398
	72	Arm	CNV8402
	73	Gear	CNV8400
	74	Damper	CNV7618
	75	Motor Unit(M1)	CXC4440
	76	Chassis Unit	CXC2318
	77	Screw Unit	CXB8729
	78	Gear Unit	CXC2397
	79	Arm Unit	CXC2316
	80	Arm	CND1896
	81	Arm	CND1894
	82	Motor Unit(M2)	CXB8933
	83	Bracket	CNC9985
	84	•••••	
	85	Screw(M2x5)	EBA1028
	86	Screw	JFZ20P020FTC
	87	Screw	JGZ17P022FTC
	88	•••••	
	89	Washer	YE20FTC
	90	Pickup Unit(P10)(Service)	CXX1647
	91	Screw	IMS26P030FTC
	92	Spring	CBL1635
	93	Clamper	CNV8372

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

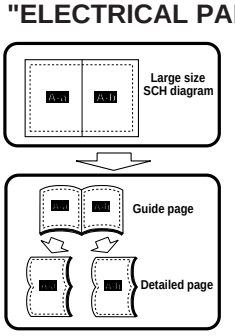
3.1 BLOCK DIAGRAM



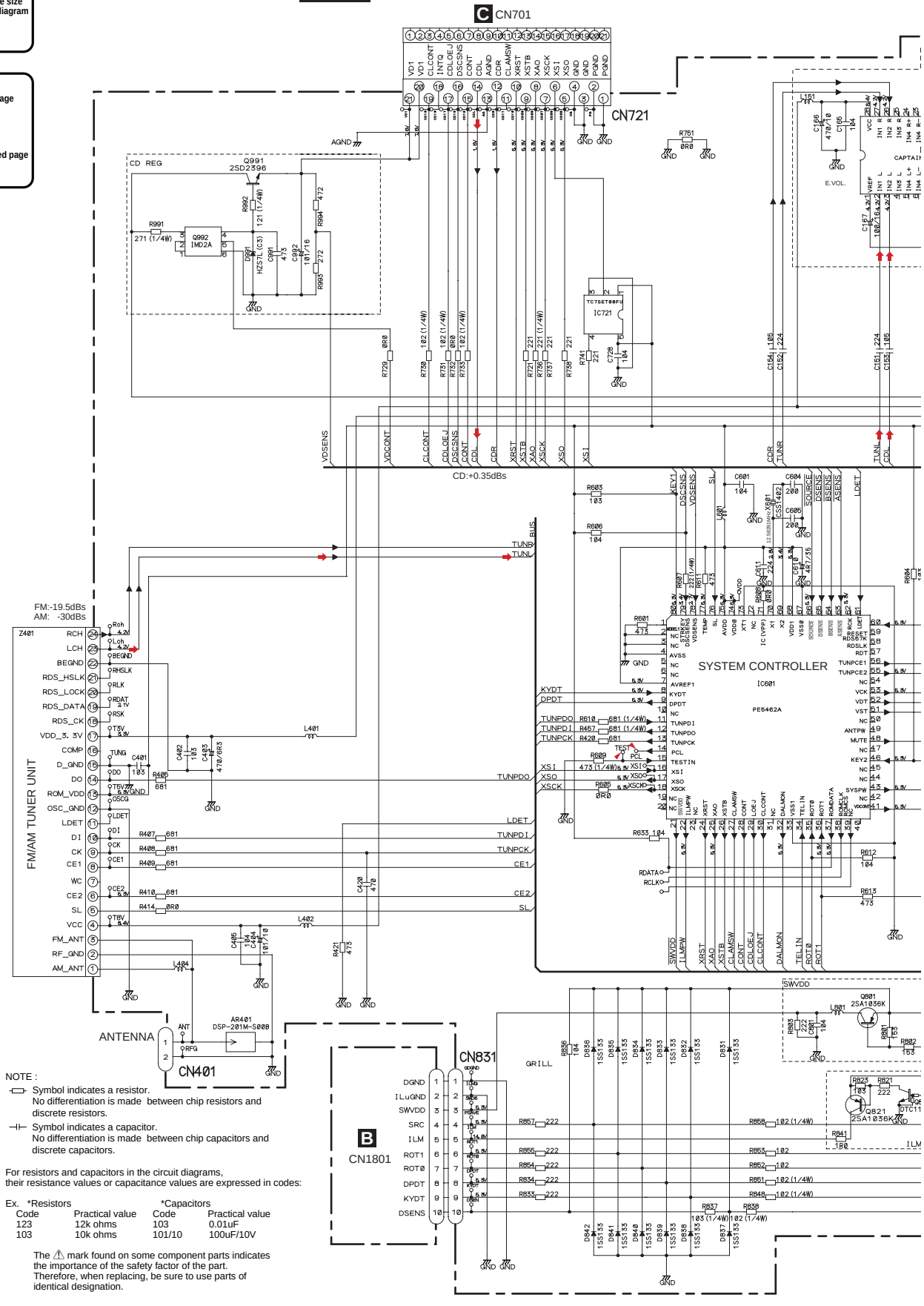

WIRED REMOTE CONTROL
CN621
RESET
IC 961
S-80834CNY
VDD
CN352
REAR OUTPUT
R Lch
Q352
SYSTEM CONTROLLER
IC 601(1/2)
PE5462A
TUNPDO
TUNPDI
TUNPCK
CE1
CE2
TUNPCE1
TUNPCE2
KEY2
STRKEY
DALMON
BSENS
ASENS
VDD REGULATOR
Q911
Q912
BACKUP SENSE
Q931
ACC SENSE
B.UP
ACC
CN901
FUSE
10A
BACK UP
GND
ELECTRONIC VOLUME/
SOURCE SELECTOR
IC 151
PML003AM
TUN L
CDL
F Lch
R Lch
POWER AMP
IC 302
TDA7386
FLIN
RLIN
MUTE
STBY
FL-
FL+
RL-
RL+
B. REM
MUTE
Q453
MUTE
Q452
8V
TUN 3V REG.
IC 981
BA33BC0FP
TU 3.3V
SYS 8V REG.
IC 921
NJM2388F84
SYSPW
B. REMOTE POWER
IC 551
TPD1018F
VCK, VDT, VST
SYSTEM CONTROLLER
IC 601(2/2)
PE5462A
XSI/BSI
X1
X2
X601
12.58291MHz
LOEJ/NC
CONT/NC
DSCSENS
VDCONT/BRSQ
VDSENS
SWVDD
SOURCE
DSENSE
ILMPW
ROT1
ROT0
DPDT
KYDT
CN831
CN1801
Q801
Q821
Q822
SRC
DSENS
ILM
LAMP
IL1801
S1827
VOLUME
KEY MATRIX
KEY DATA
LCD DRIVER/
KEY CONTROLLER
IC 1801
PD6340A
X1801
5MHz
XO
XI
LCD1801
B KEYBOARD UNIT

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



NOTE :

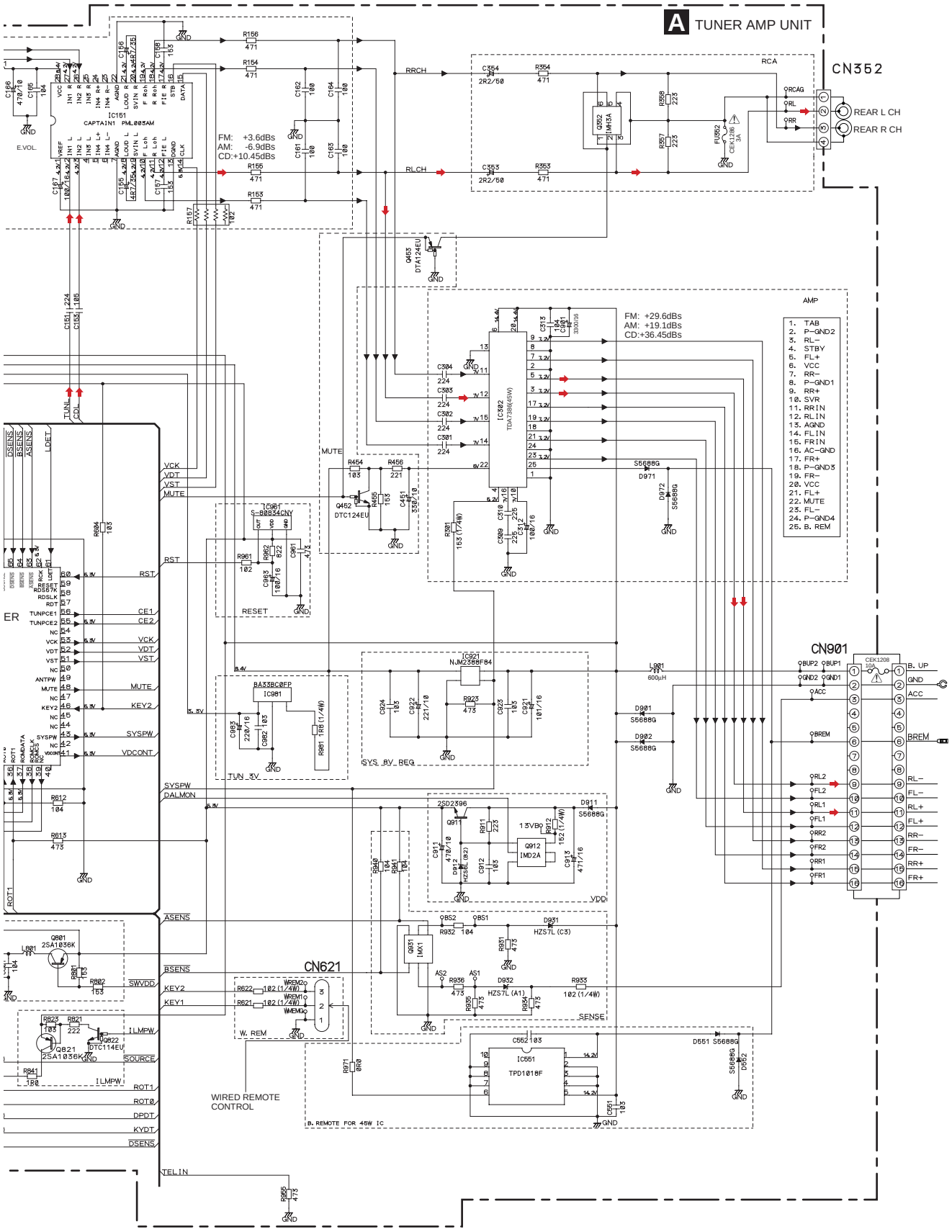
- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

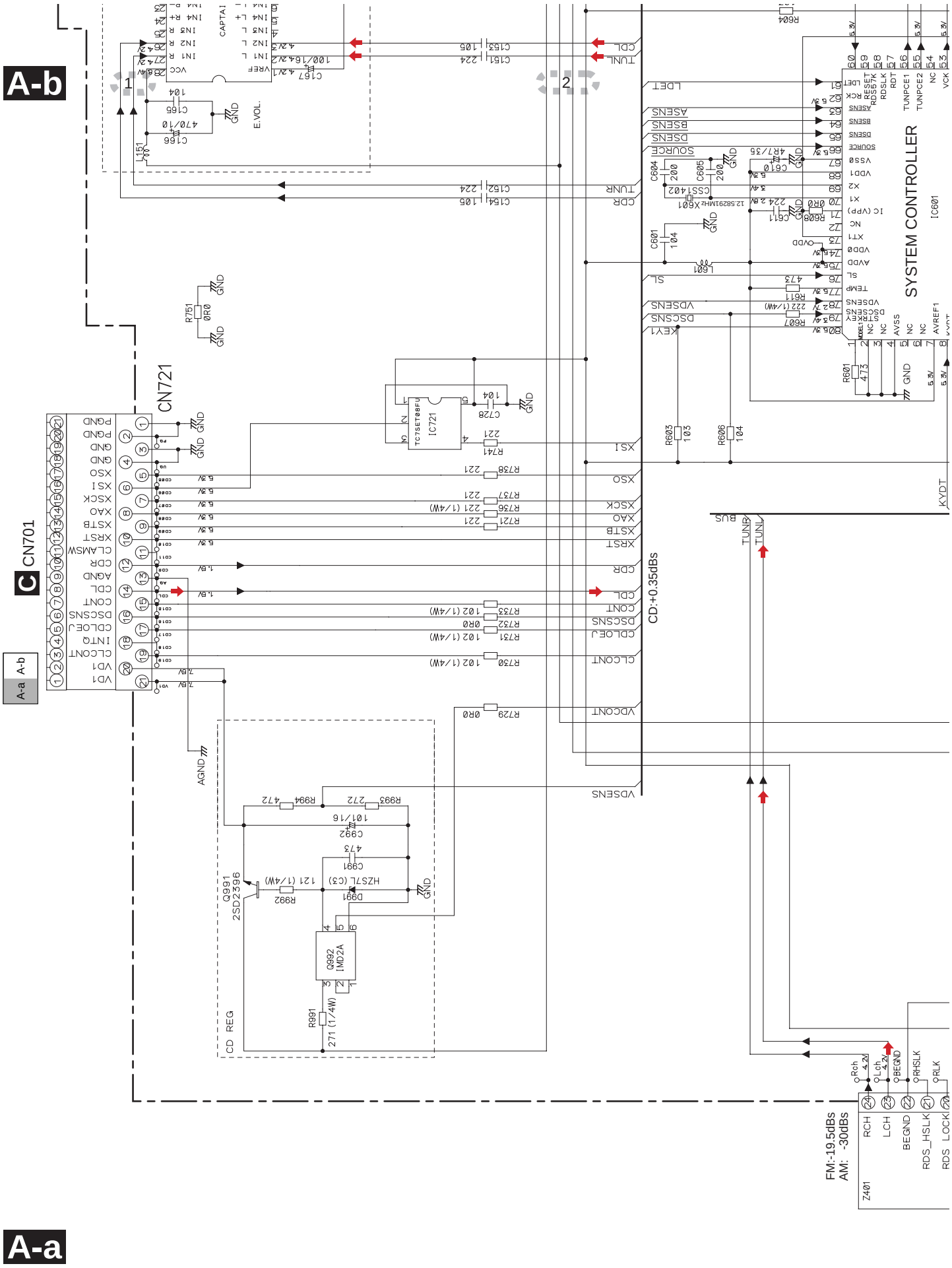
For resistors and capacitors in the circuit diagrams, their resistance values or capacitance values are expressed in codes:

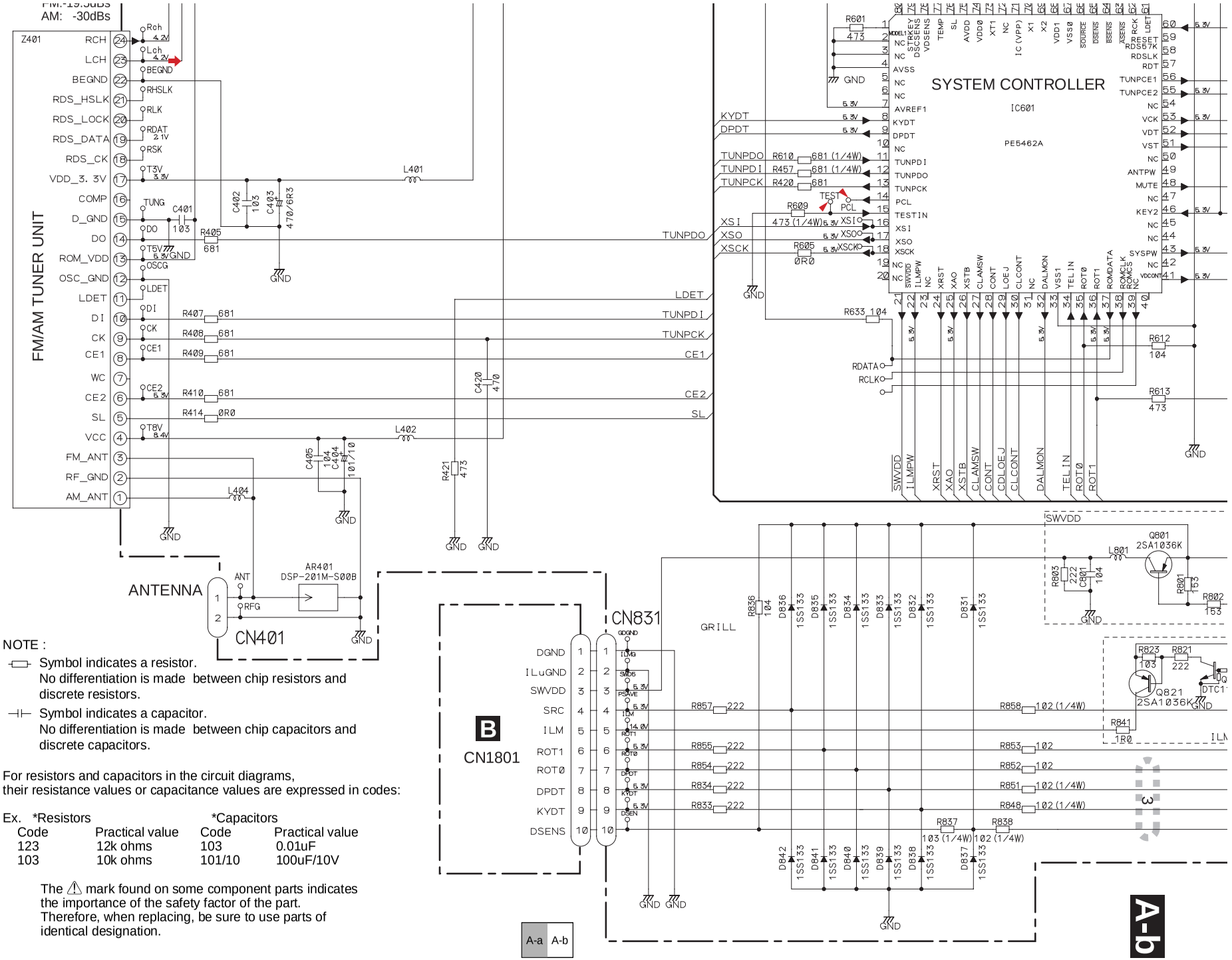
Ex. *Resistors		*Capacitors	
Code	Practical value	Code	Practical value
123	12k ohms	103	0.01uF
103	10k ohms	101/10	100uF/10V

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

A


A TUNER AMP UNIT
CN352
RCA
REAR L CH
REAR R CH
IC151
CAPTAIN1 PML083AM
E.VOL
FM: +3.6dBs
AM: -6.9dBs
CD:+10.45dBs
RRCH
RLCH
IC302
TDA7388(45W)
AMP
1. TAB
2. P-GND2
3. RL-
4. STBY
5. FL+
6. VCC
7. RR-
8. P-GND1
9. RR+
10. SVR
11. RRIN
12. RLIN
13. AGND
14. FLIN
15. FRIN
16. AC-GND
17. FR+
18. P-GND3
19. FR-
20. VCC
21. FL+
22. MUTE
23. FL-
24. P-GND4
25. B. REM
FM: +29.6dBs
AM: +19.1dBs
CD:+36.45dBs
MUTE
VCK
VDT
VST
MUTE
RST
CE1
CE2
VCK
VDT
VST
MUTE
KEY2
SYSPW
VDCONT
RESET
TUN_3V
SYS_8V_REG
SYSPW
DALMON
VDD
ASENS
BSENS
SWVDD
KEY2
KEY1
ILMPW
SOURCE
ROT1
ROT0
DPDT
KYDT
DSENS
TELIN
W. REM
WIRED REMOTE CONTROL
B. REMOTE FOR 45W IC
SENSE
CN621
CN901
B. UP
GND
ACC
BREM
RL-
FL-
RL+
FL+
RR-
FR-
RR+
FR+
ER


A-b
SYSTEM CONTROLLER
IC601
CN721
CN701
A-a
CD REG
FM:-19.5dBs
AM: -30dBs
CD:+0.35dBs
KYDT
E.VOL.



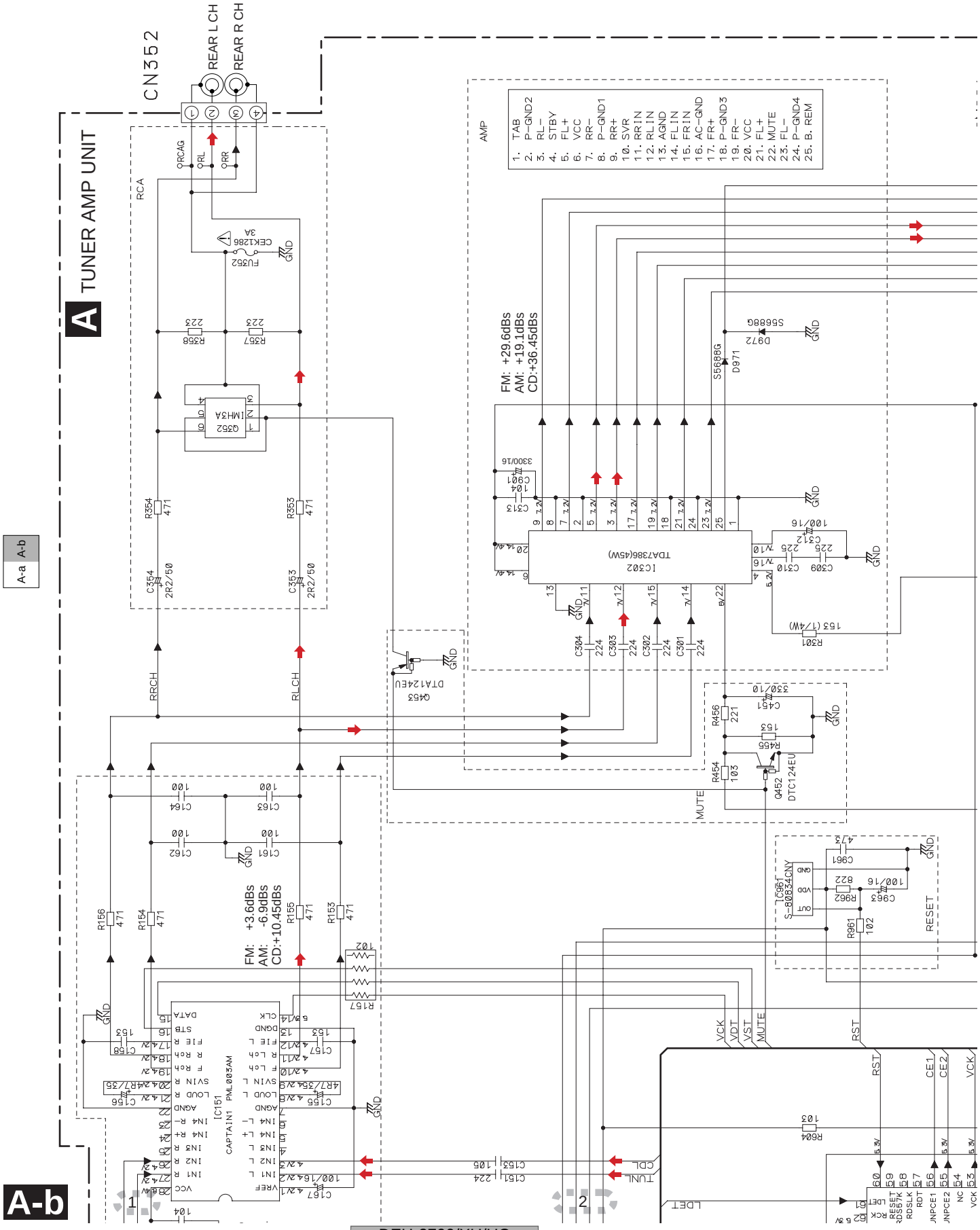
NOTE :

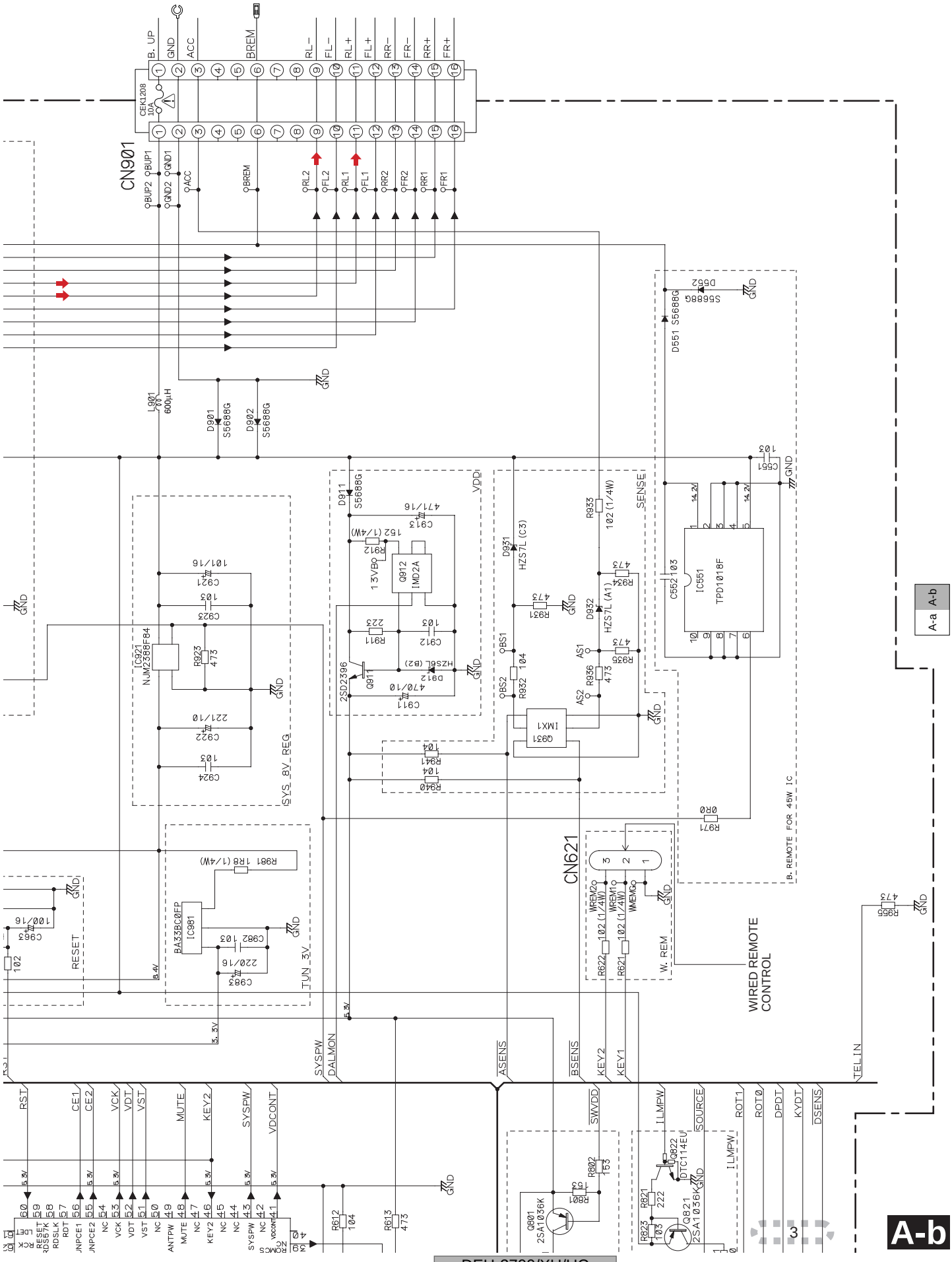
- Symbol indicates a resistor.
  No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor.
  No differentiation is made between chip capacitors and discrete capacitors.

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

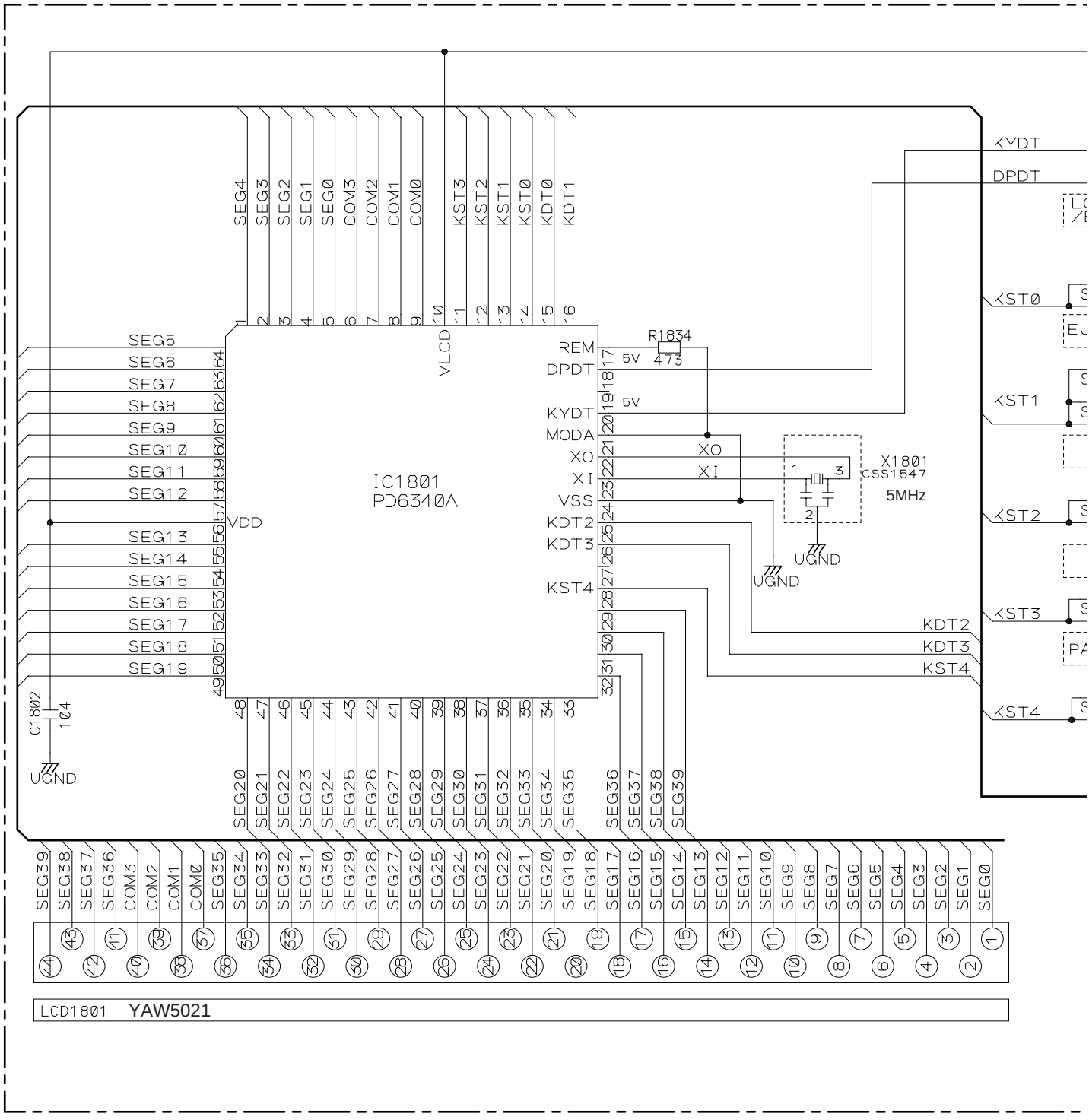
Ex.	*Resistors		*Capacitors	
	Code	Practical value	Code	Practical value
	123	12k ohms	103	0.01uF
	103	10k ohms	101/10	100uF/10V

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

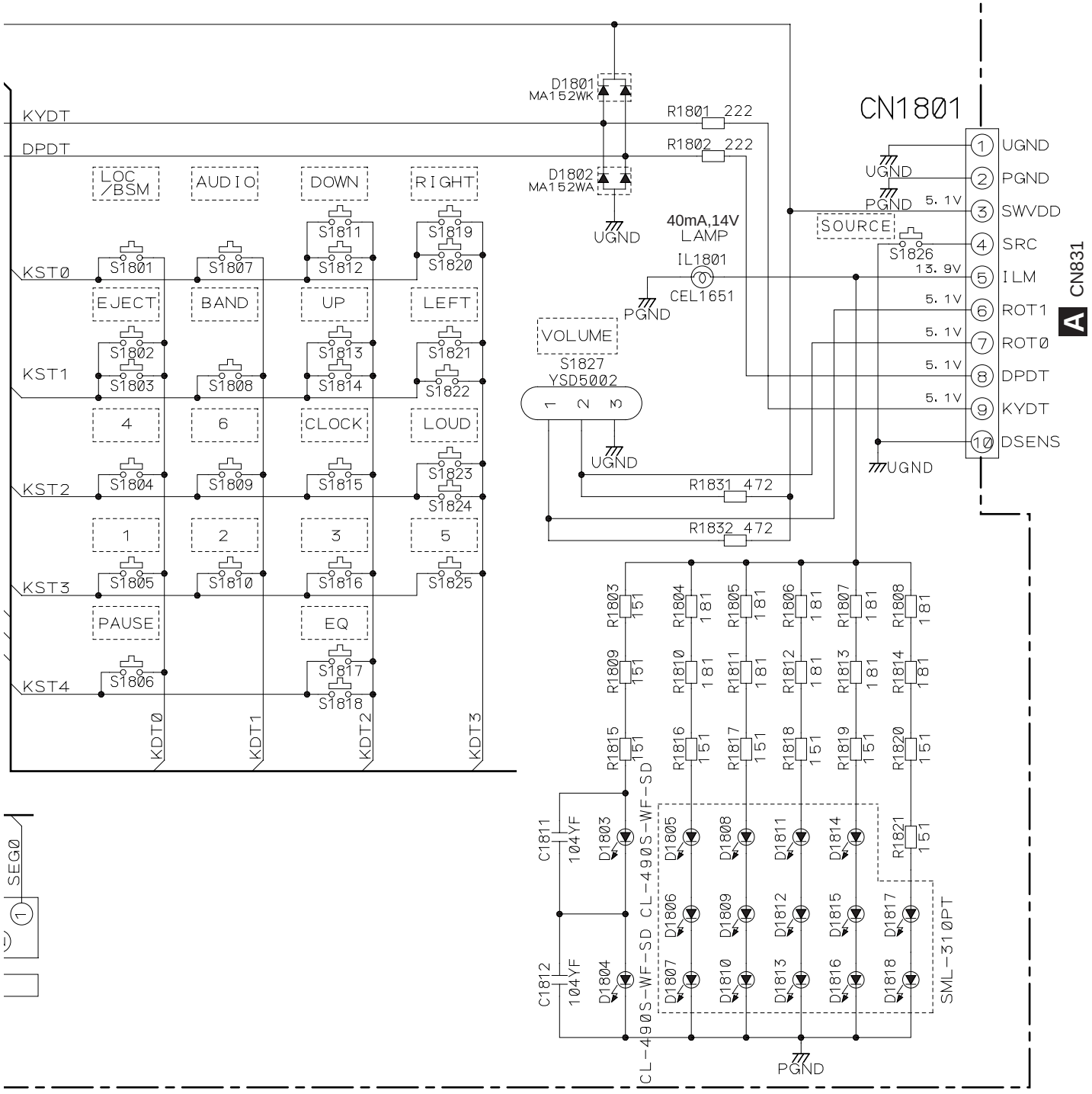

A TUNER AMP UNIT
CN352
REAR L CH
REAR R CH
RCA
AMP
IC302
TDA7386(45W)
IC151
PML003AM
CAPTAIN1
IC961
S-80834CNY
Q452
DTC124EU
Q453
DTA124EU
FM: +29.6dBs
AM: +19.1dBs
CD:+36.45dBs
FM: +3.6dBs
AM: -6.9dBs
CD:+10.45dBs
MUTE
RESET
RRCH
RLCH
VCK
VDT
VST
MUTE
RST
CE1
CE2
TUNL
CDL
LDET
A-b
A-a
DEH-2700/XU/UC
18


CN901
B. UP
GND
ACC
BREM
RL−
FL−
RL+
FL+
RR−
FR−
RR+
FR+
CEK1208
10A
BUP2
BUP1
GND2
GND1
ACC
BREM
RL2
FL2
RL1
FL1
RR2
FR2
RR1
FR1
L901
600µH
D901
S5688G
D902
S5688G
D911
S5688G
D551
S5688G
D552
S5688G
C913
471/16
R912
152 (1/4W)
Q912
IMD2A
13VBP
C912
103
R911
223
D912
HZS5L (B2)
Q911
2SD2396
C911
470/10
VDD
D931
HZS7L (C3)
R933
102 (1/4W)
SENSE
R934
473
D932
HZS7L (A1)
R931
473
R935
473
R936
473
BS1
BS2
AS1
AS2
R932
104
Q931
IMX1
R941
104
R940
104
C921
101/16
C923
103
C922
221/10
C924
103
IC921
NJM2388F84
R925
473
SYS_8V_REG
GND
C552
103
IC551
TPD1018F
C551
103
R971
0R0
B. REMOTE FOR 45W IC
CN621
WREM2
WREM1
WMEMG
R622
102 (1/4W)
R621
102 (1/4W)
W. REM
WIRED REMOTE CONTROL
R955
47
R981
1R8 (1/4W)
C963
100/16
R963
102
RESET
BA33BC0FP
IC981
C982
103
C983
220/16
TUN_3V
5.4V
5.3V
SYSPW
DALMON
ASENS
BSENS
KEY2
KEY1
TELIN
RST
CE1
CE2
VCK
VDT
VST
MUTE
KEY2
SYSPW
VDCONT
SWVDD
ILMPW
SOURCE
ROT1
ROT0
DPDT
KYDT
DSENS
R802
153
Q801
2SA1036K
R801
0R1
Q822
DTC114EU
R821
222
R823
103
Q821
2SA1036K
ILMPW
A-a
A-b
A-b
DEH-2700/XU/UC
19

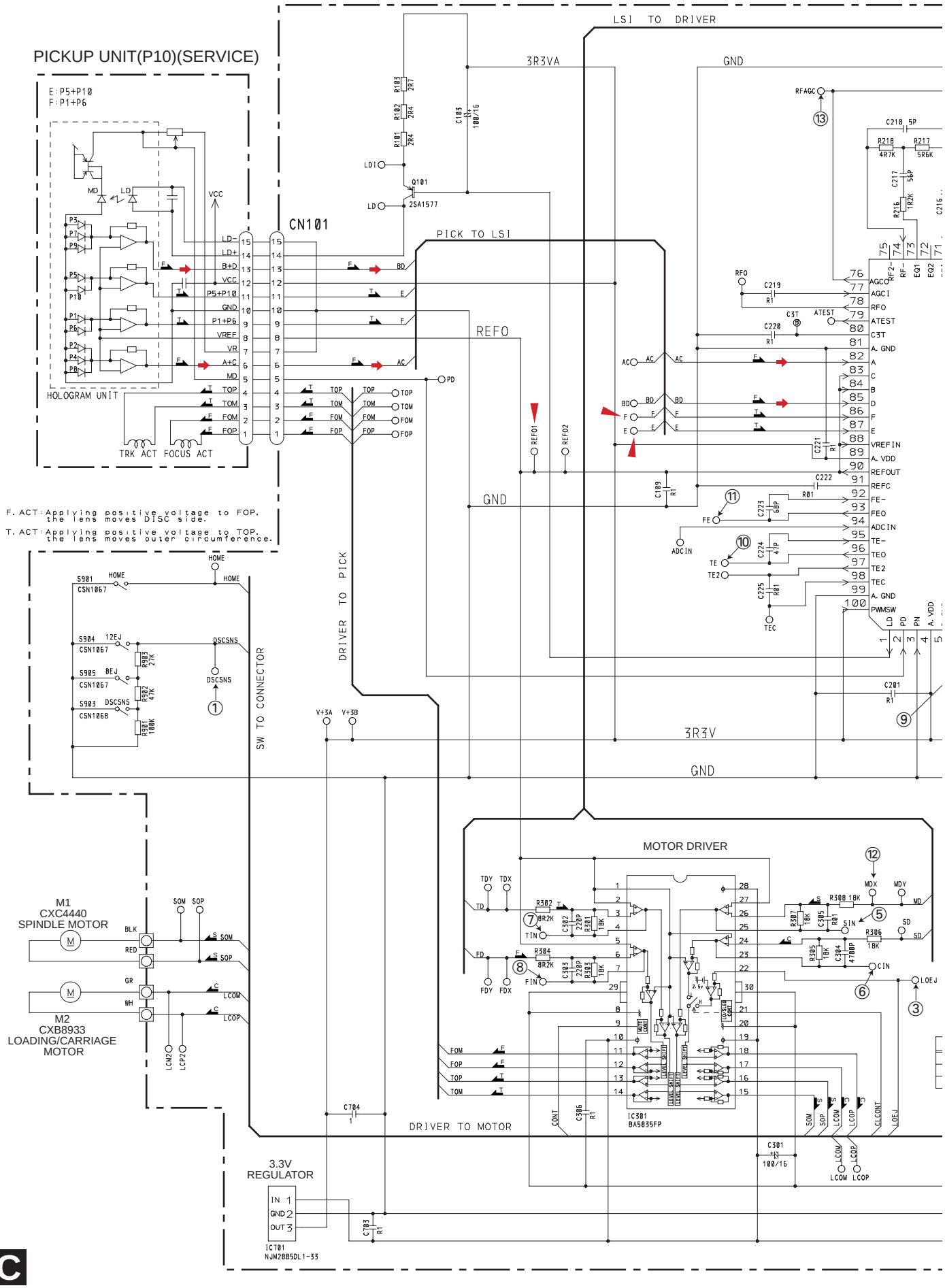
3.3 KEYBOARD UNIT

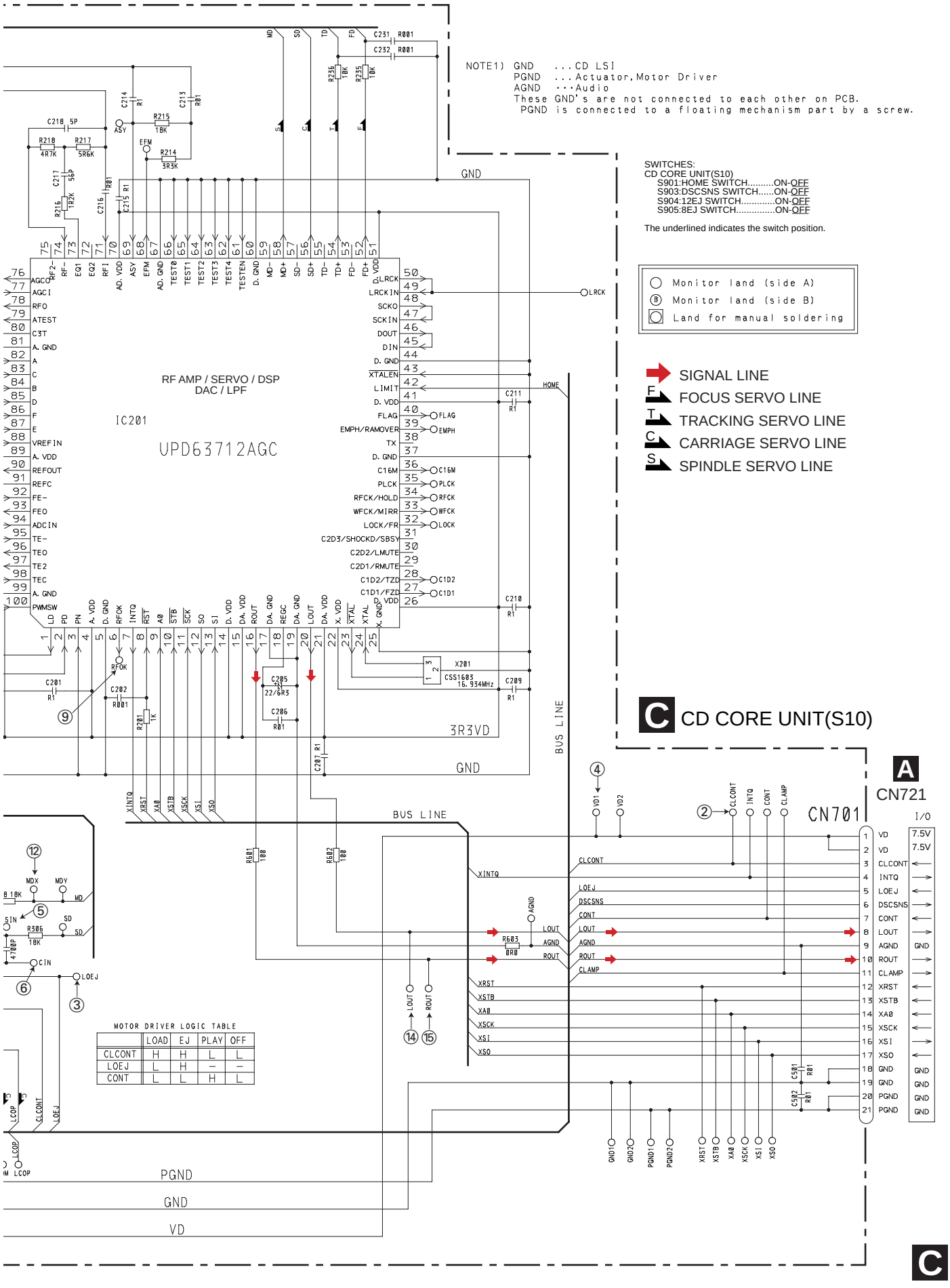


B KEYBOARD UNIT



3.4 CD MECHANISM MODULE



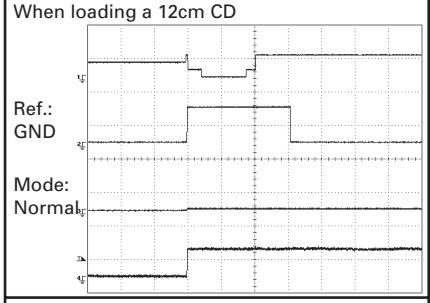

NOTE1) GND ...CD LSI
PGND ...Actuator,Motor Driver
AGND ...Audio
These GND's are not connected to each other on PCB.
PGND is connected to a floating mechanism part by a screw.
SWITCHES:
CD CORE UNIT(S10)
S901:HOME SWITCH.....ON-OFF
S903:DSCSNS SWITCH.....ON-OFF
S904:12EJ SWITCH.....ON-OFF
S905:8EJ SWITCH.....ON-OFF
The underlined indicates the switch position.
Monitor land (side A)
Monitor land (side B)
Land for manual soldering
SIGNAL LINE
FOCUS SERVO LINE
TRACKING SERVO LINE
CARRIAGE SERVO LINE
SPINDLE SERVO LINE
RF AMP / SERVO / DSP
DAC / LPF
IC201
UPD63712AGC
C CD CORE UNIT(S10)
A CN721
CN701
I/O
BUS LINE
MOTOR DRIVER LOGIC TABLE
LOAD EJ PLAY OFF
CLCONT H H L L
LOEJ L H – –
CONT L L H L
GND
PGND
VD
3R3VD

● Waveforms

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

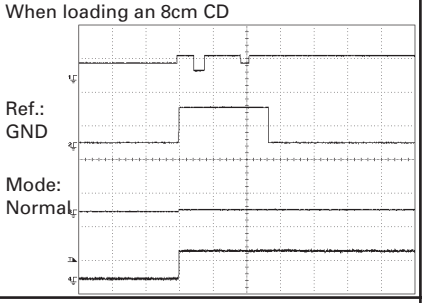
① DSCSNS 5V/div 500ms/div
② CLCONT 5V/div
③ LOEJ 5V/div
④ VD 10V/div

When loading a 12cm CD



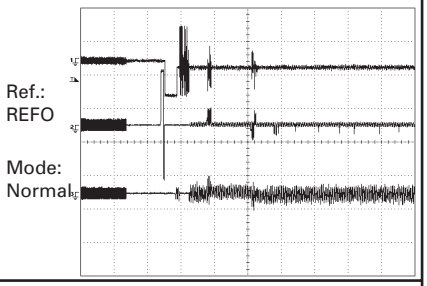
① DSCSNS 5V/div 500ms/div
② CLCONT 5V/div
③ LOEJ 5V/div
④ VD 10V/div

When loading an 8cm CD



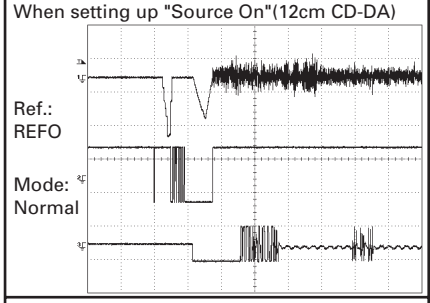
⑤ SIN 1V/div 2s/div
⑥ CIN 500mV/div
⑦ TIN 500mV/div

When setting up after loading a 12cm CD-DA disc



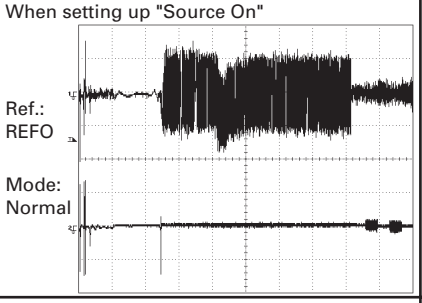
⑧ FIN 200mV/div 500ms/div
⑨ RFOK 2V/div
⑤ SIN 2V/div

When setting up "Source On"(12cm CD-DA)



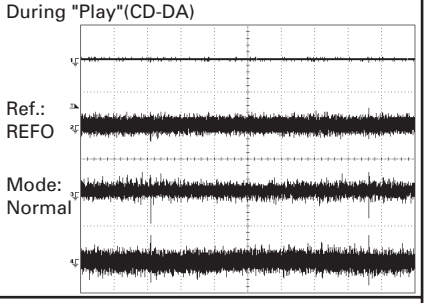
⑩ TE 500mV/div 200ms/div
⑪ FE 500mV/div

When setting up "Source On"



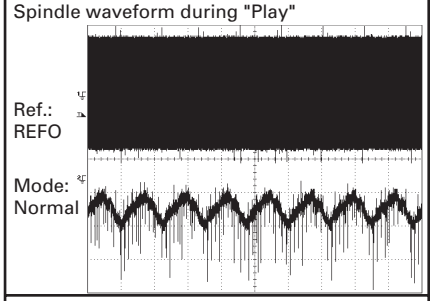
⑪ FE 500mV/div 20ms/div
⑧ FIN 500mV/div
⑩ TE 500mV/div
⑦ TIN 500mV/div

During "Play"(CD-DA)



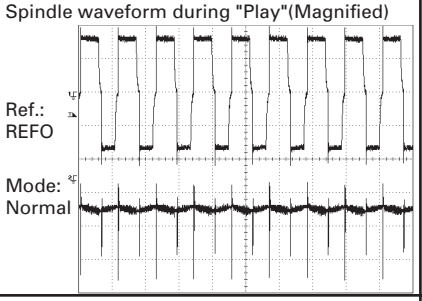
⑫ MDX 500mV/div 5ms/div
⑤ SIN 1V/div

Spindle waveform during "Play"



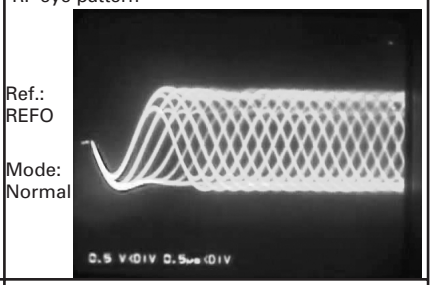
⑫ MDX 500mV/div 5µs/div
⑤ SIN 1V/div

Spindle waveform during "Play"(Magnified)



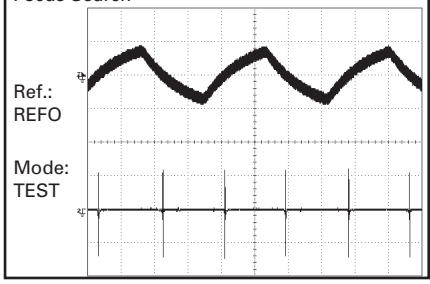
⑬ RFAGC 500mV/div 0.5µs/div

RF eye pattern



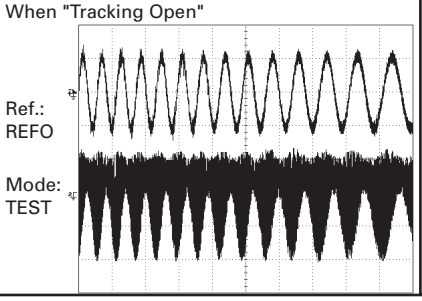
⑧ FIN 500mV/div 200ms/div
⑪ FE 500mV/div

Focus Search



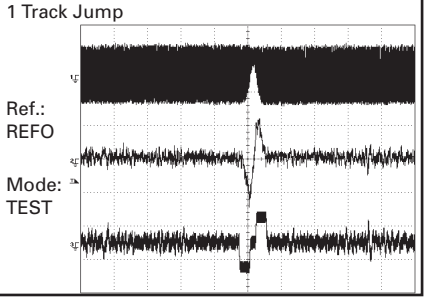
⑩ TE 500mV/div 2ms/div
⑬ RFAGC 500mV/div

When "Tracking Open"



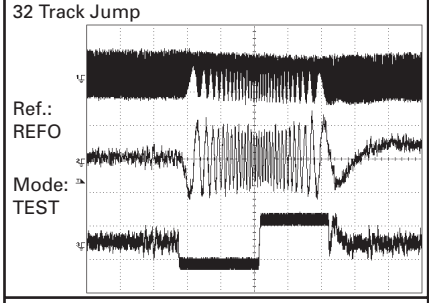
⑬ RFAGC 1V/div 500µs/div
⑩ TE 500mV/div
⑦ TIN 500mV/div

1 Track Jump



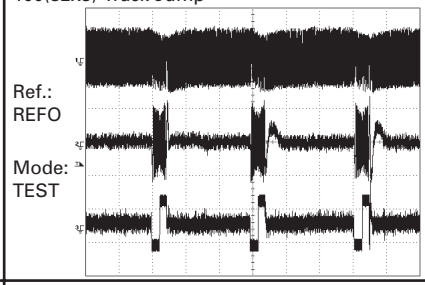
⑬ RFAGC	1V/div	500ms/div
⑩ TE	500mV/div	
⑦ TIN	500mV/div	

32 Track Jump



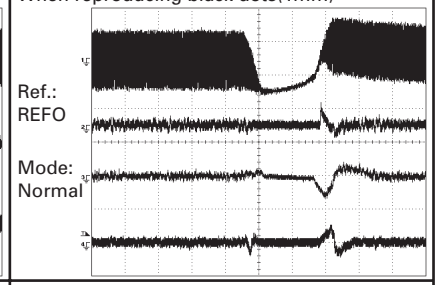
⑬ RFAGC	1V/div	5ms/div
⑩ TE	500mV/div	
⑦ TIN	500mV/div	

100(32x3) Track Jump



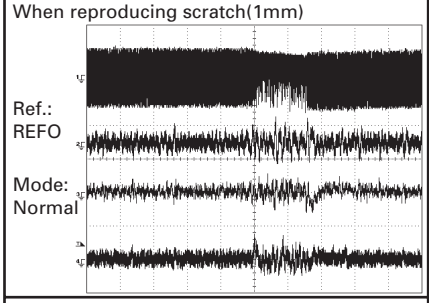
⑬ RFAGC	1V/div	500µs/div
⑦ TIN	1V/div	
⑩ TE	1V/div	
⑧ FIN	1V/div	

When reproducing black dots(1mm)



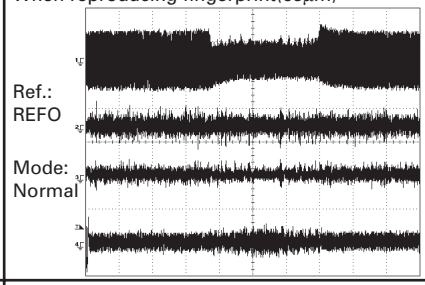
⑬ RFAGC	1V/div	500µs/div
⑩ TE	1V/div	
⑥ CIN	500mV/div	
⑤ SIN	2V/div	

When reproducing scratch(1mm)



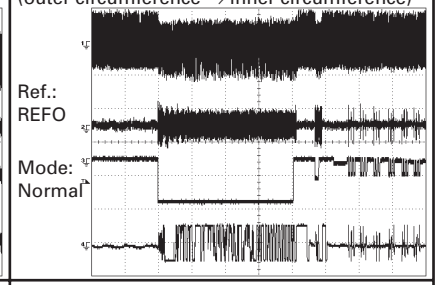
⑬ RFAGC	1V/div	5ms/div
⑩ TE	1V/div	
⑥ CIN	500mV/div	
⑤ SIN	2V/div	

When reproducing fingerprint(65µm)



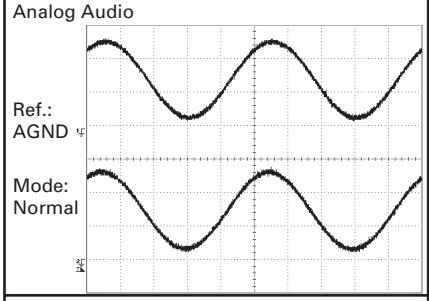
⑬ RFAGC	1V/div	500µs/div
⑩ TE	1V/div	
⑥ CIN	500mV/div	
⑤ SIN	2V/div	

During inside/outside search
(outer circumference → inner circumference)



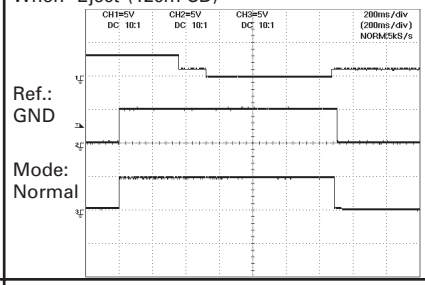
⑭ LOUT	1V/div	200µs/div
⑮ ROUT	1V/div	

Analog Audio



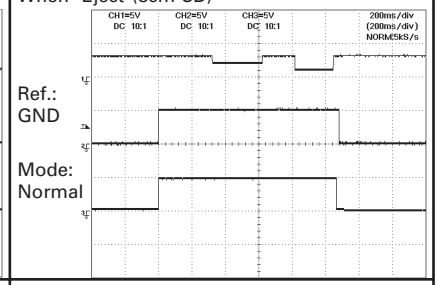
① DSCSNS	5V/div	200ms/div
② CLCONT	5V/div	
③ LOEJ	5V/div	

When "Eject"(12cm CD)



① DSCSNS	5V/div	200ms/div
② CLCONT	5V/div	
③ LOEJ	5V/div	

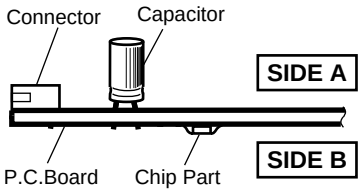
When "Eject"(8cm CD)



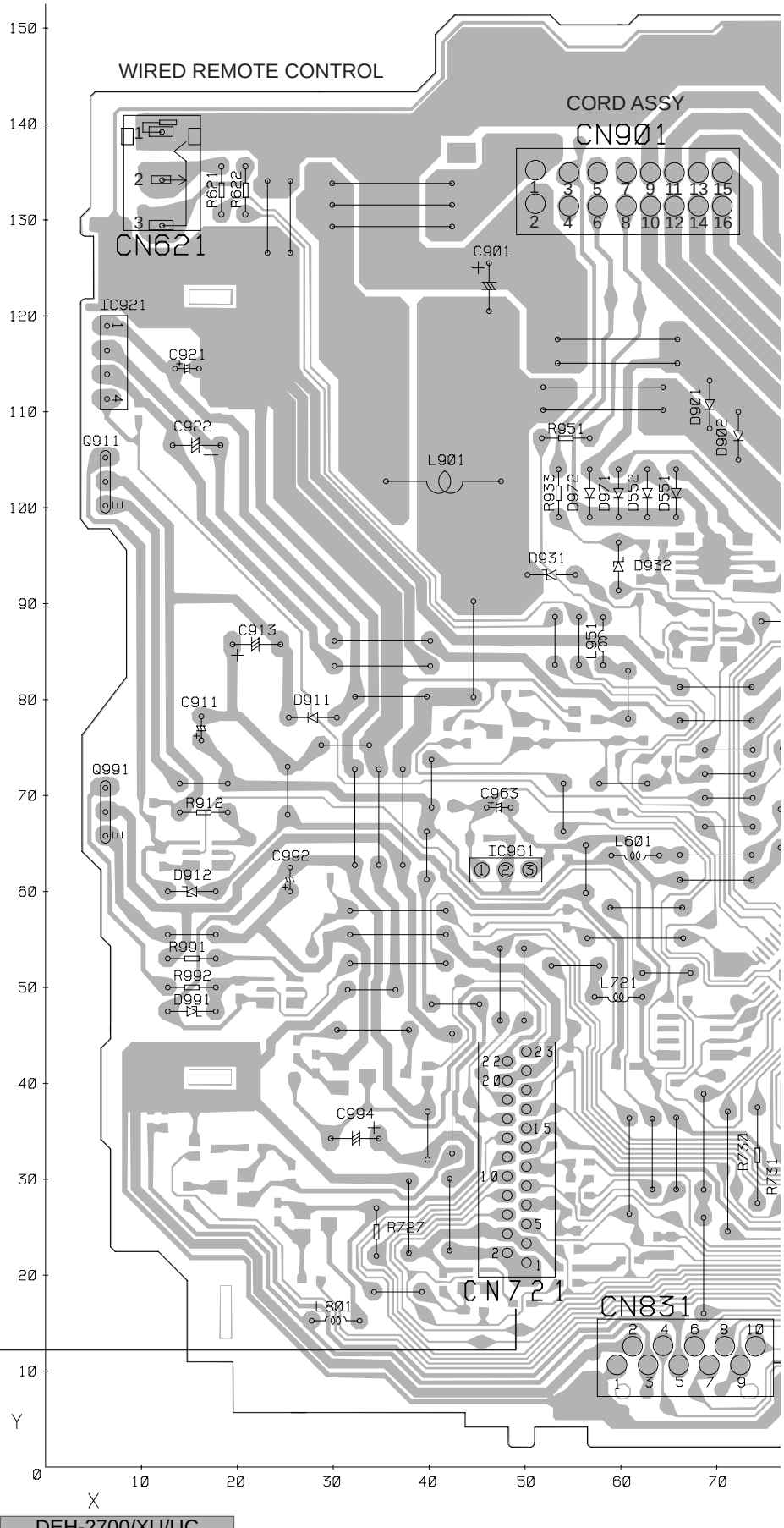
4. PCB CONNECTION DIAGRAM
4.1 TUNER AMP UNIT

NOTE FOR PCB DIAGRAMS

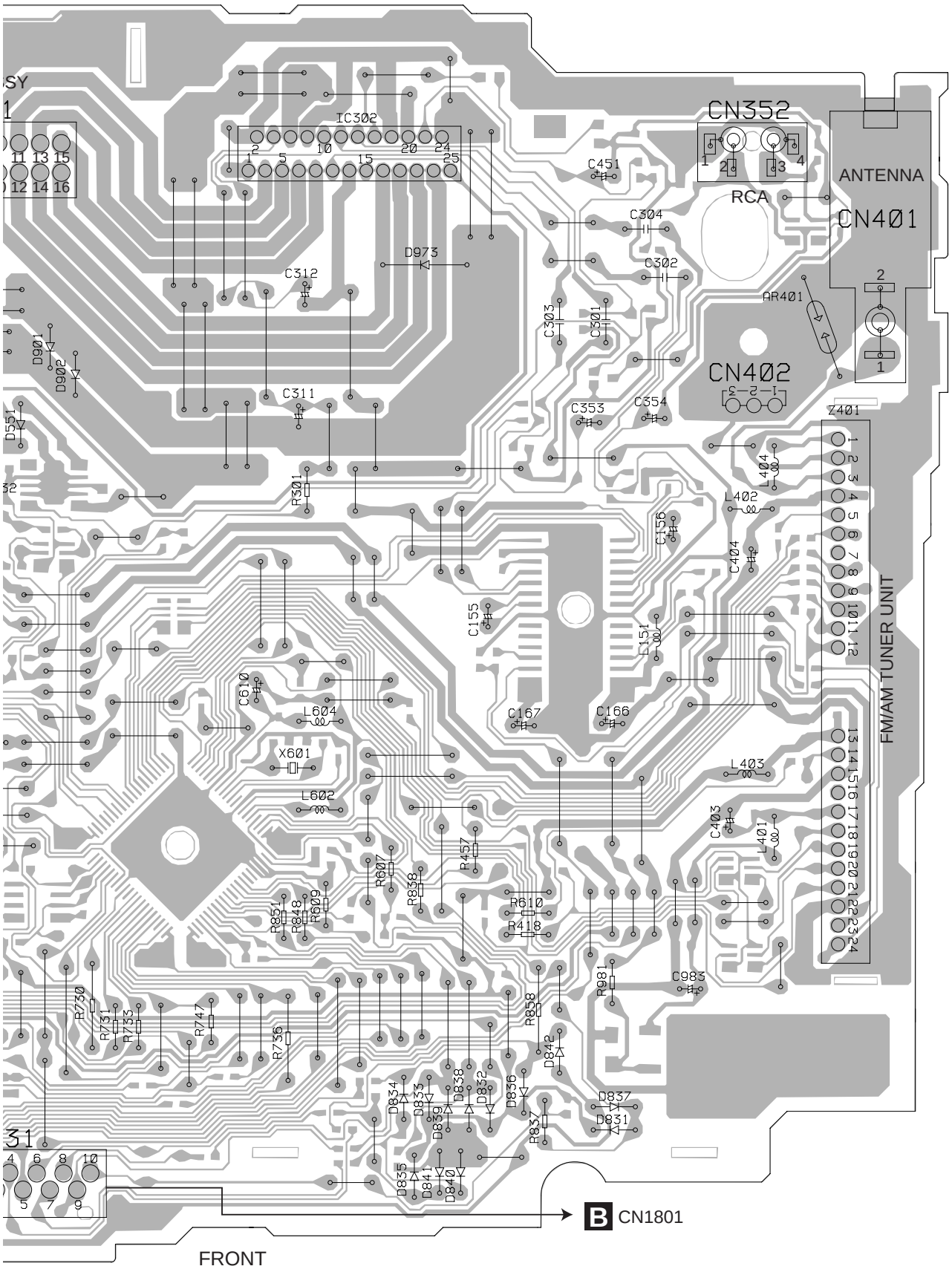
1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



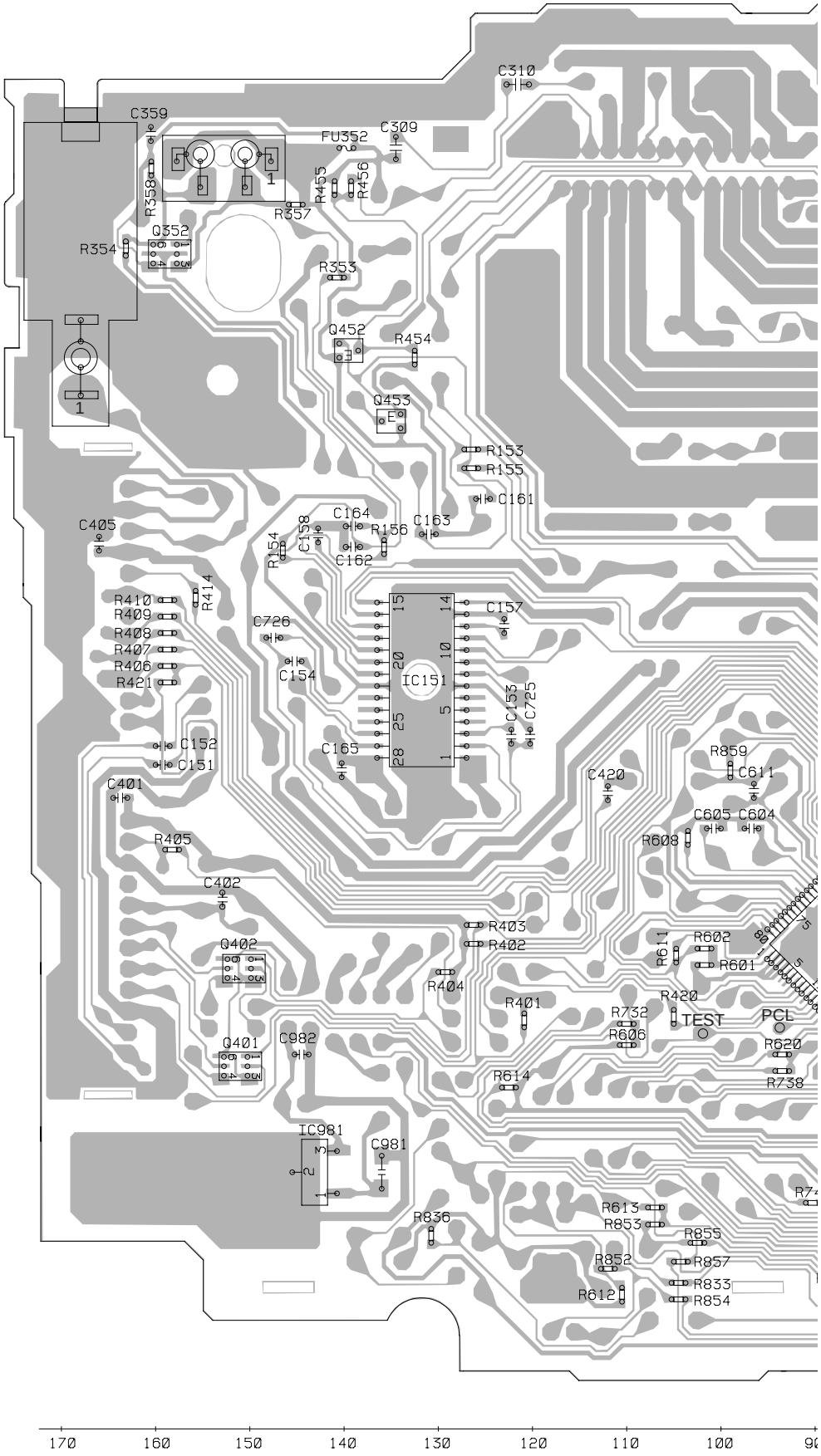
A TUNER AMP UNIT



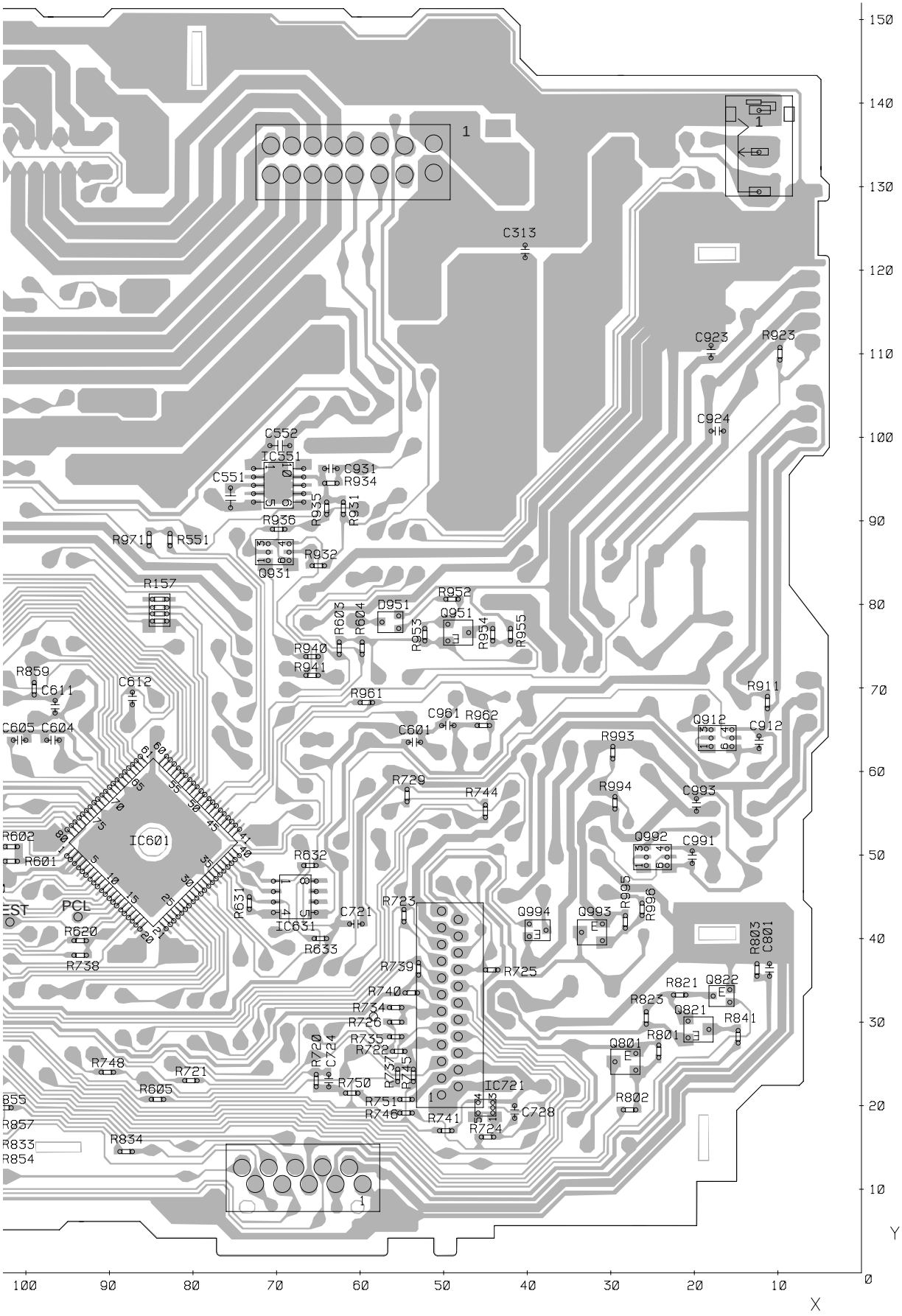
SIDE A


CN352
ANTENNA
RCA
CN401
CN402
AR401
IC302
C451
C304
C302
D973
C312
C303
C301
C311
C353
C354
Z401
L404
L402
C156
C404
C155
L151
C610
L604
C167
C166
X601
L602
L403
C403
L401
R457
R607
R838
R851
R848
R609
R610
R418
R981
C983
R858
D842
R730
R731
R733
R747
R736
D834
D833
D839
D838
D832
D836
D837
D831
R837
D835
D841
D840
FM/AM TUNER UNIT
B CN1801
FRONT

A TUNER AMP UNIT



SIDE B

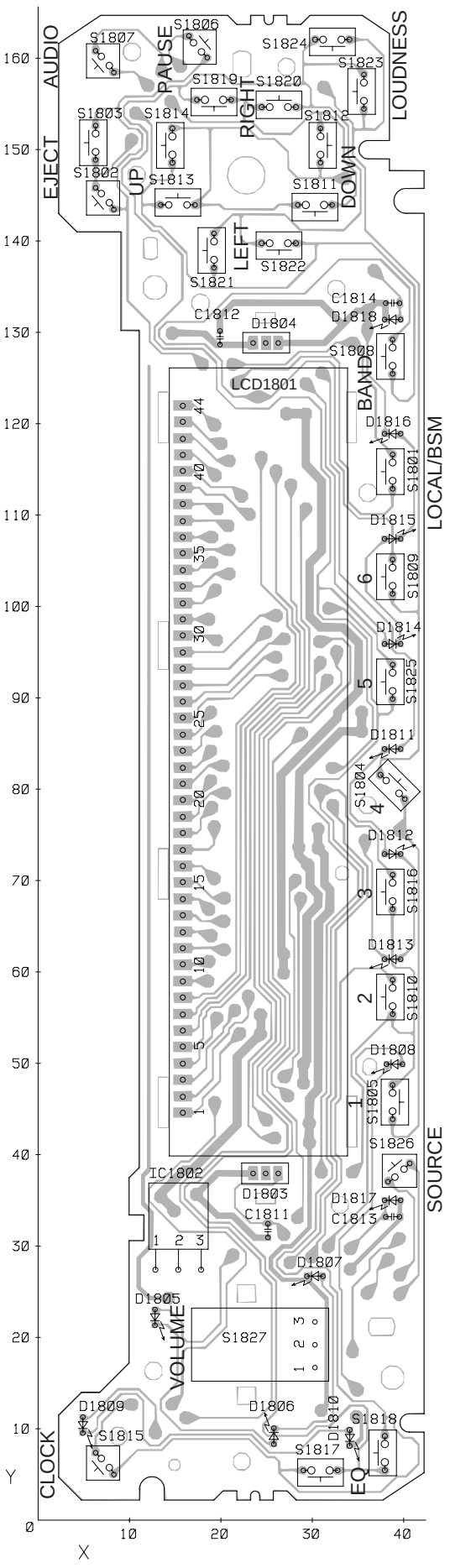


DEH-2700/XU/UC

4.2 KEYBOARD UNIT

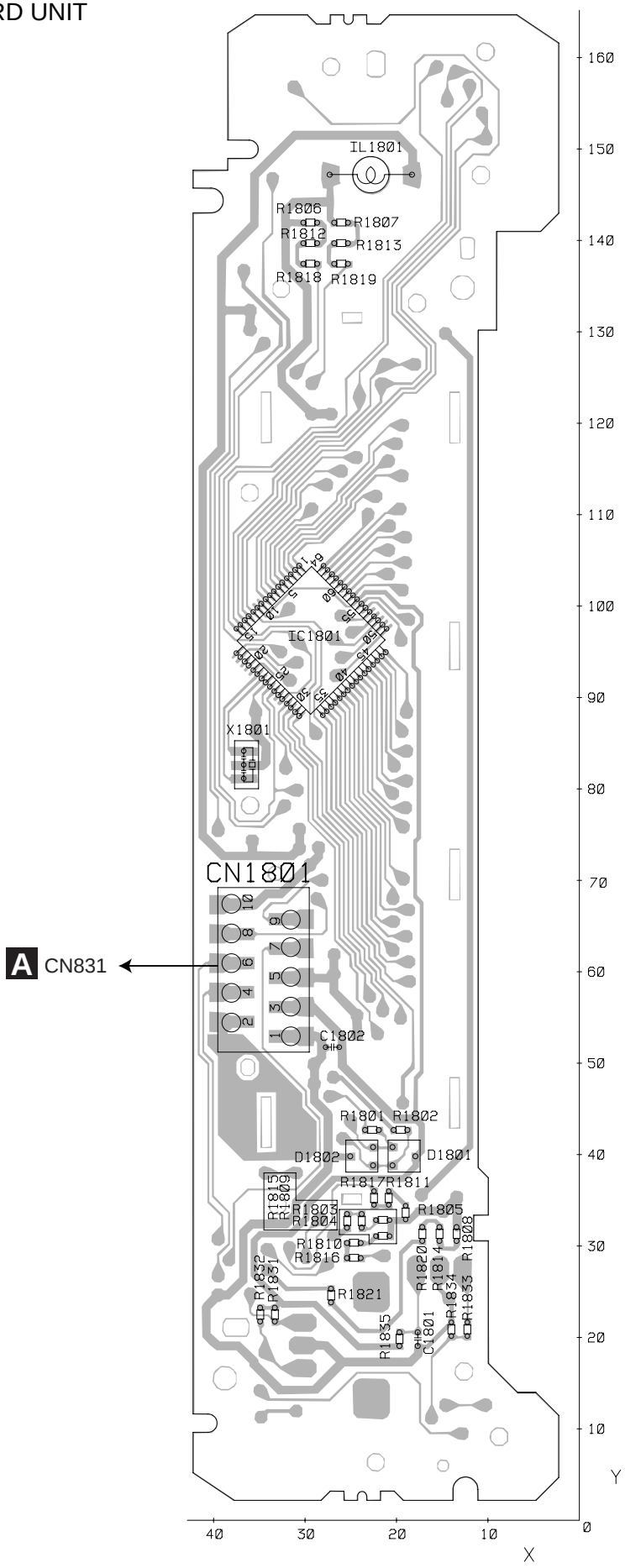
B KEYBOARD UNIT

SIDE A



B KEYBOARD UNIT

SIDE B

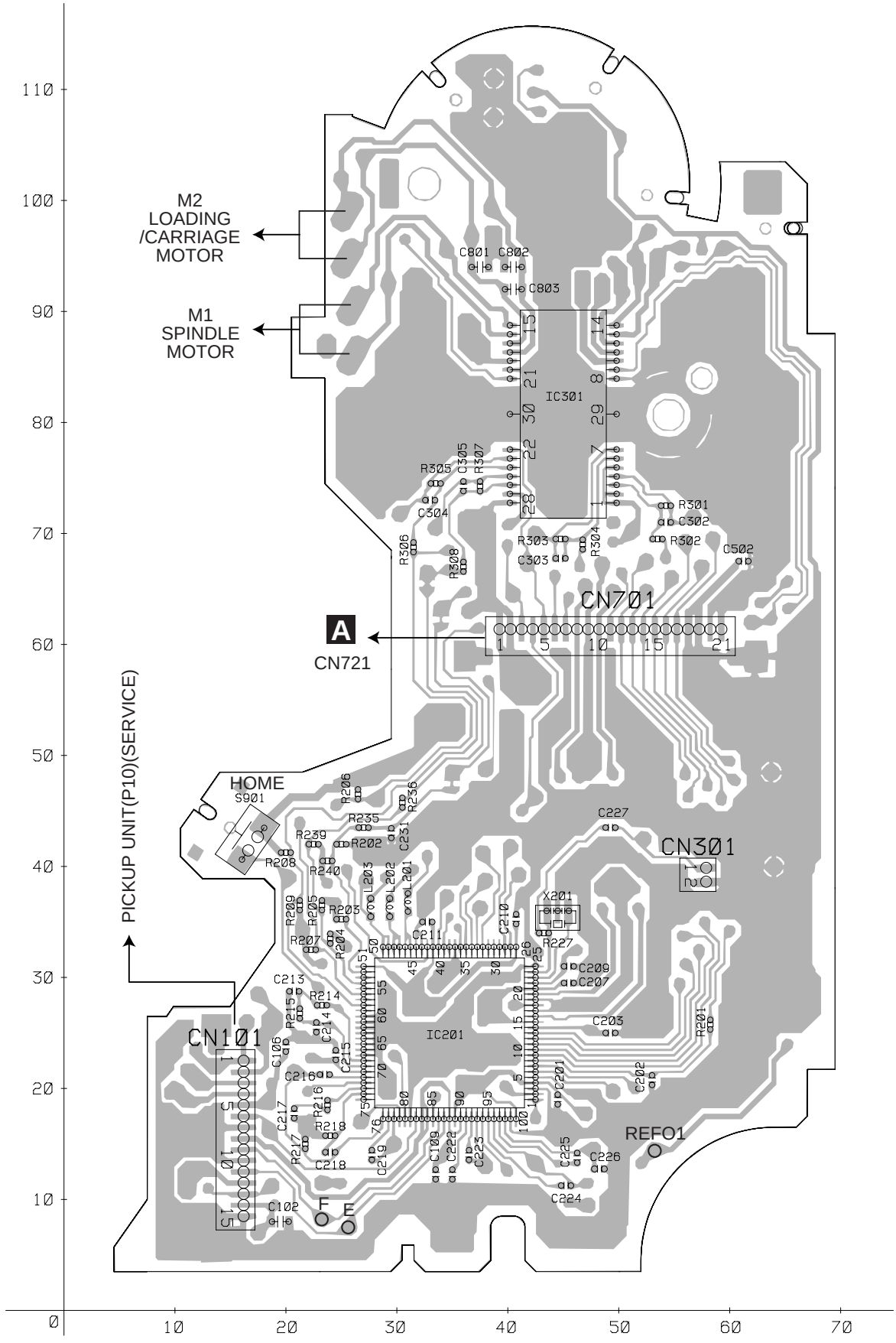


A CN831

4.3 CD CORE UNIT(S10)

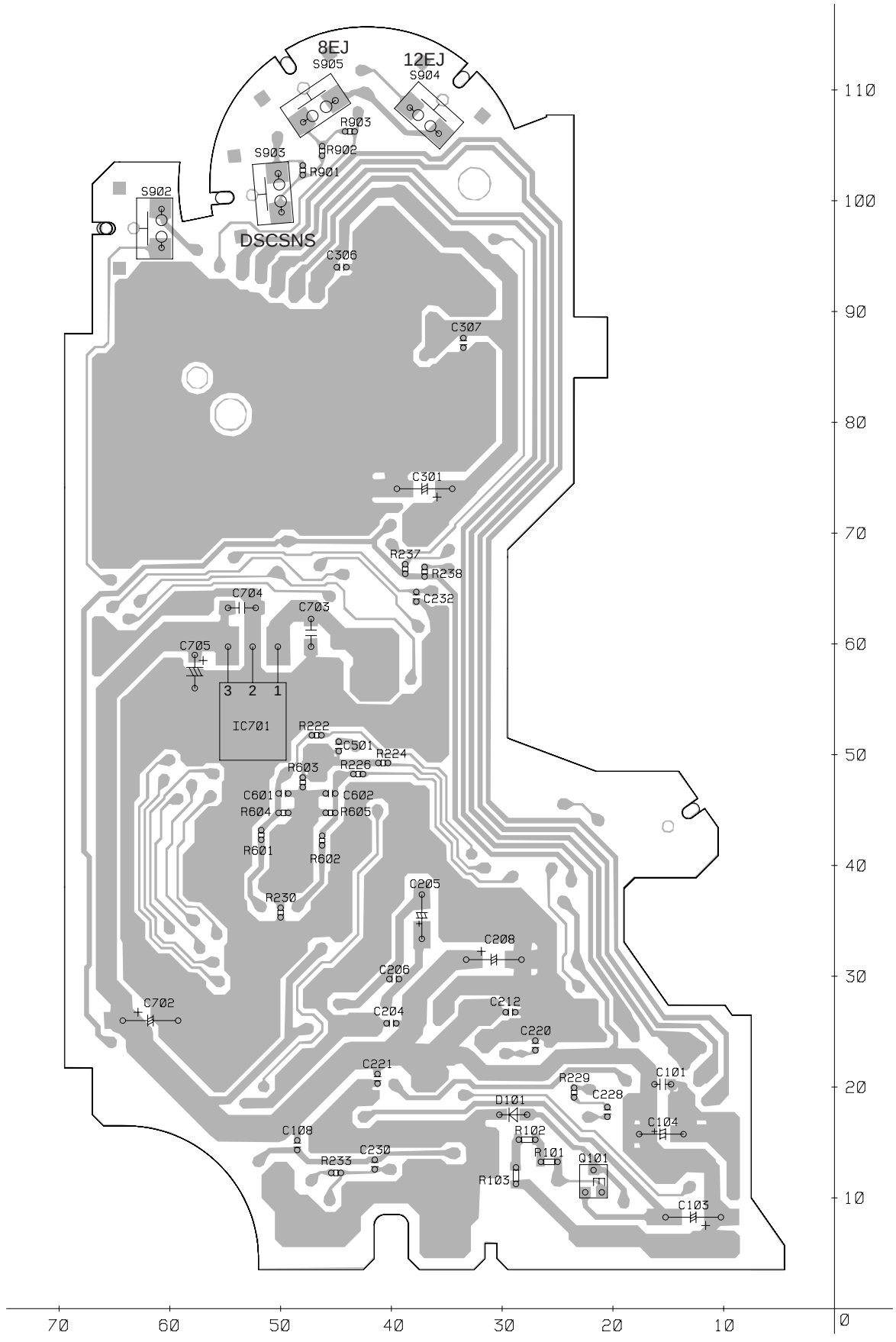
C CD CORE UNIT(S10)

SIDE A



C CD CORE UNIT(S10)

SIDE B



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 indicatesthe importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*

A

Unit Number:YWM5049

Unit Name:Tuner Amp Unit

MISCELLANEOUS

Circuit Symbol and No.		Part No.
IC 151	(B,132,80) IC	PML003AM
IC 302	(A,93,132) IC	TDA7386
IC 551	(B,70,94) IC	TPD1018F
IC 601	(B,85,52) IC	PE5462A
IC 721	(B,45,20) IC	TC7SET08FU
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 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 991	(A,6,66) Transistor	2SD2396
Q 992	(B,25,50) Transistor	IMD2A
D 551	(A,66,104) Diode	S5688G
D 552	(A,63,104) Diode	S5688G
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
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 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) Ferri-Inductor	LAU100K
L 801	(A,28,15) Inductor	LAU2R2K
L 901	(A,35,103) Choke Coil 600µH	CTH1280
X 601	(A,101,61) Radiator 12.58291MHz	CSS1402
⚠FU352	(B,140,136) Fuse 3A	CEK1286
AR401	(A,159,119) Surge Protector	DSP-201M-S00B
Z 401	(A,163,100) FM/AM Tuner Unit	CWE1646
⚠	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 405	(B,158,62)	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)	RS1/16S0R0J
R 420	(B,105,44)	RS1/16S681J
R 421	(B,159,79)	RS1/16S473J
R 454	(B,133,114)	RS1/16S103J
R 455	(B,141,132)	RS1/16S153J
R 456	(B,139,132)	RS1/16S221J
R 457	(A,120,54)	RD1/4PU681J
R 601	(B,102,49)	RS1/16S473J
R 603	(B,63,75)	RS1/16S103J
R 604	(B,60,75)	RS1/16S103J
R 605	(B,84,21)	RS1/16S0R0J
R 606	(B,110,41)	RS1/16S104J
R 607	(A,110,51)	RD1/4PU222J
R 608	(B,104,63)	RS1/16S0R0J
R 609	(A,102,47)	RD1/4PU473J

Circuit Symbol and No.		Part No.
R 610	(A,129,44)	RD1/4PU681J
R 611	(B,105,50)	RS1/16S473J
R 612	(B,111,14)	RS1/16S104J
R 613	(B,107,24)	RS1/16S473J
R 621	(A,18,131)	RD1/4PU102J
R 622	(A,21,131)	RD1/4PU102J
R 633	(B,65,40)	RS1/16S104J
R 721	(B,80,23)	RS1/16S221J
R 729	(B,54,57)	RS1/16S0R0J
R 730	(A,74,38)	RD1/4PU102J
R 731	(A,77,33)	RD1/4PU102J
R 732	(B,110,43)	RS1/16S0R0J
R 733	(A,80,33)	RD1/4PU102J
R 736	(A,98,34)	RD1/4PU221J
R 737	(B,56,24)	RS1/16S221J
R 738	(B,94,38)	RS1/16S221J
R 741	(B,50,17)	RS1/16S221J
R 751	(B,55,21)	RS1/16S0R0J
R 801	(B,24,27)	RS1/16S153J
R 802	(B,28,20)	RS1/16S153J
R 803	(B,13,36)	RS1/16S222J
R 821	(B,22,33)	RS1/16S222J
R 823	(B,26,31)	RS1/16S103J
R 833	(B,105,16)	RS1/16S222J
R 834	(B,88,15)	RS1/16S222J
R 836	(B,131,21)	RS1/16S104J
R 837	(A,128,21)	RD1/4PU103J
R 838	(A,113,44)	RD1/4PU102J
R 841	(B,15,28)	RS1/16S1R0J
R 848	(A,100,41)	RD1/4PU102J
R 851	(A,97,41)	RD1/4PU102J
R 852	(B,112,17)	RS1/16S102J
R 853	(B,107,22)	RS1/16S102J
R 854	(B,105,14)	RS1/16S222J
R 855	(B,103,20)	RS1/16S222J
R 857	(B,104,18)	RS1/16S222J
R 858	(A,127,27)	RD1/4PU102J
R 911	(B,11,68)	RS1/16S223J
R 912	(A,14,68)	RD1/4PU152J
R 923	(B,10,110)	RS1/16S473J
R 931	(B,62,92)	RS1/16S473J
R 932	(B,65,85)	RS1/16S104J
R 933	(A,54,99)	RD1/4PU102J
R 934	(B,64,95)	RS1/16S473J
R 935	(B,64,92)	RS1/16S473J
R 936	(B,70,89)	RS1/16S473J
R 940	(B,66,74)	RS1/16S104J
R 941	(B,66,72)	RS1/16S104J
R 955	(B,42,76)	RS1/16S473J
R 961	(B,59,68)	RS1/16S102J
R 962	(B,45,66)	RS1/16S822J
R 971	(B,85,88)	RS1/16S0R0J
R 981	(A,136,38)	RD1/4PU1R8J
R 991	(A,13,53)	RD1/4PU271J
R 992	(A,18,50)	RD1/4PU121J
R 993	(B,30,62)	RS1/16S272J
R 994	(B,30,56)	RS1/16S472J

CAPACITORS

Circuit Symbol and No.		Part No.
C 151	(B,159,71)	CKSRYB224K16
C 152	(B,159,73)	CKSRYB224K16
C 153	(B,122,74)	CKSRYB105K10
C 154	(B,145,82)	CKSRYB105K10
C 155	(A,121,78)	CEJQ4R7M35
C 156	(A,143,88)	CEJQ4R7M35
C 157	(B,123,85)	CKSRYB153K50
C 158	(B,143,95)	CKSRYB153K50
C 161	(B,125,99)	CCSRCH100D50
C 162	(B,139,94)	CCSRCH100D50
C 163	(B,131,95)	CCSRCH100D50
C 164	(B,139,96)	CCSRCH100D50
C 165	(B,140,70)	CKSRYB104K16
C 166	(A,135,66)	CEJQ470M10
C 167	(A,124,66)	CEJQ100M16
C 301	(A,135,111)	CFTNA224J50
C 302	(A,145,119)	CFTNA224J50
C 303	(A,130,111)	CFTNA224J50
C 304	(A,143,125)	CFTNA224J50
C 309	(B,135,136)	CKSQYB225K10
C 310	(B,122,143)	CKSQYB225K10
C 311	(A,99,104)	CEJQ2R2M50
C 312	(A,100,118)	CEJQ100M16
C 313	(B,40,122)	CKSRYB104K16
C 353	(A,132,102)	CEJQ2R2M50
C 354	(A,140,102)	CEJQ2R2M50
C 401	(B,164,67)	CKSRYB103K50
C 402	(B,153,56)	CKSRYB103K50
C 403	(A,150,53)	CEJQ470M6R3
C 404	(A,153,87)	CEJQ101M10
C 405	(B,166,94)	CKSRYB104K25
C 420	(B,112,68)	CCSRCH470J50
C 451	(A,134,131)	CEJQ330M10
C 551	(B,76,93)	CKSQYB103K50
C 552	(B,70,99)	CKSQYB103K50
C 601	(B,54,64)	CKSRYB104K25
C 604	(B,97,64)	CCSRCH200J50
C 605	(B,101,64)	CCSRCH200J50
C 610	(A,94,71)	CEJQ4R7M35
C 611	(B,97,68)	CKSRYB224K16
C 728	(B,42,19)	CKSRYB104K16
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
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 982	(B,145,40)	CKSRYB103K50
C 983	(A,147,35)	CEJQ220M16
C 991	(B,20,50)	CKSRYB473K50
C 992	(A,26,60)	CEJQ101M16

B

Circuit Symbol and No.		Part No.

Unit Number:
Unit Name:Keyboard Unit

MISCELLANEOUS

IC 1801	(B,29,96) IC	PD6340A
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-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
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	SML-310PT
D 1818	(A,39,131) LED	SML-310PT
X 1801	(B,37,83) Ceramic Resonator 5.00MHz	CSS1547
S 1827	(A,23,19) Switch(VOLUME)	YSD5002
IL 1801	(B,23,147) Lamp 40mA,14V	CEL1651
LCD1801	(A,16,45) LCD	YAW5021

RESISTORS

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
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)	RS1/16S151J
R 1821	(B,27,25)	RS1/16S151J
R 1831	(B,33,23)	RS1/16S472J
R 1832	(B,35,23)	RS1/16S472J
R 1834	(B,14,21)	RS1/16S473J

CAPACITORS

C 1802	(B,27,52)	CKSRYF104Z25
C 1811	(A,25,32)	CKSRYF104Z25
C 1812	(A,20,129)	CKSRYF104Z25

Circuit Symbol and No.		Part No.

C

Unit Number:CWX3110
Unit Name:CD Core Unit(S10)

MISCELLANEOUS

IC 201	(A,35,25) IC	UPD63712AGC
IC 301	(A,45,81) IC	BA5835FP
IC 701	(B,53,56) IC	NJM2885DL1-33
Q 101	(B,22,12) Transistor	2SA1577
X 201	(A,45,36) Ceramic Resonator 16.934MHz	CSS1603
S 901	(A,15,44) Switch(HOME)	CSN1067
S 903	(B,53,101) Switch(DSCSNS)	CSN1068
S 904	(B,35,109) Switch(12EJ)	CSN1067
S 905	(B,48,110) Switch(8EJ)	CSN1067

RESISTORS

R 101	(B,26,13)	RS1/10SR2R4J
R 102	(B,28,15)	RS1/10SR2R4J
R 103	(B,29,12)	RS1/10SR2R7J
R 201	(A,58,26)	RS1/16SS102J
R 214	(A,23,28)	RS1/16SS332J
R 215	(A,21,27)	RS1/16SS183J
R 216	(A,24,19)	RS1/16SS122J
R 217	(A,22,15)	RS1/16SS562J
R 218	(A,24,16)	RS1/16SS472J
R 235	(A,27,44)	RS1/16SS103J
R 236	(A,31,46)	RS1/16SS103J
R 301	(A,54,73)	RS1/16SS183J
R 302	(A,54,70)	RS1/16SS822J
R 303	(A,45,70)	RS1/16SS183J
R 304	(A,47,69)	RS1/16SS822J
R 305	(A,34,75)	RS1/16SS183J
R 306	(A,32,69)	RS1/16SS183J
R 307	(A,38,74)	RS1/16SS183J
R 308	(A,36,67)	RS1/16SS183J
R 601	(B,52,43)	RS1/16SS101J
R 602	(B,46,42)	RS1/16SS101J
R 603	(B,48,48)	RS1/16SS0R0J
R 901	(B,48,103)	RS1/16SS104J
R 902	(B,46,105)	RS1/16SS473J
R 903	(B,44,106)	RS1/16SS273J

CAPACITORS

C 103	(B,13,8) 100µF/16V	CCH1504
C 109	(A,34,12)	CKSSYB104K10
C 201	(A,45,19)	CKSSYB104K10
C 202	(A,53,21)	CKSSYB102K50
C 205	(B,37,36) 22µF/6.3V	CCH1507
C 206	(B,40,30)	CKSSYB103K16
C 207	(A,46,30)	CKSSYB104K10
C 209	(A,46,31)	CKSSYB104K10
C 210	(A,41,35)	CKSSYB104K10
C 211	(A,33,35)	CKSSYB104K10
C 213	(A,21,29)	CKSSYB103K16
C 214	(A,23,26)	CKSSYB104K10
C 215	(A,25,23)	CKSSYB104K10
C 216	(A,24,21)	CKSSYB103K16
C 217	(A,21,18)	CCSSCH560J50

Circuit Symbol and No.			Part No.
C 218	(A,24,14)		CCSSCH5R0C50
C 219	(A,28,14)		CKSSYB104K10
C 220	(B,27,24)		CKSSYB104K10
C 221	(B,41,21)		CKSSYB104K10
C 222	(A,35,12)		CKSSYB103K16
C 223	(A,37,14)		CCSSCH680J50
C 224	(A,45,11)		CCSSCH470J50
C 225	(A,46,14)		CKSSYB103K16
C 231	(A,30,43)		CKSSYB102K50
C 232	(B,38,64)		CKSSYB102K50
C 301	(B,37,74)	100µF/16V	CCH1504
C 302	(A,54,71)		CKSSYB221K50
C 303	(A,45,68)		CKSSYB221K50
C 304	(A,33,73)		CKSSYB472K25
C 305	(A,36,74)		CKSSYB103K16
C 306	(B,45,94)		CKSSYB104K10
C 501	(B,45,51)		CKSSYB103K16
C 502	(A,61,68)		CKSSYB103K16
C 703	(B,47,61)		CKSQYB104K16
C 704	(B,54,63)		CKSQYB105K10

Miscellaneous Parts List

	Pickup Unit(P10)(Service)	CXX1647
M 1	Motor Unit(SPINDLE)	CXC4440
M 2	Motor Unit(LOADING/CARRIAGE)	CXB8933

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.

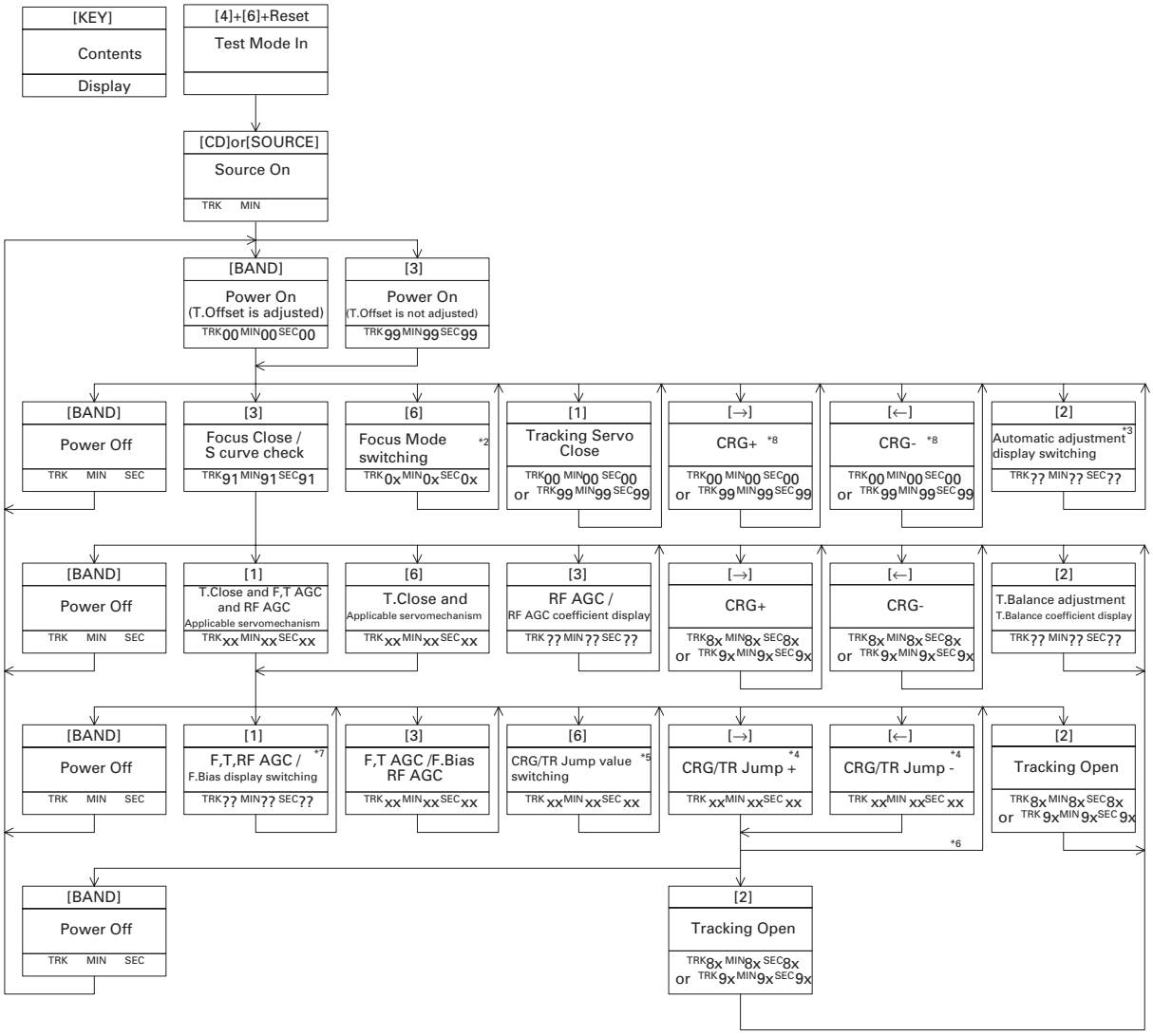
• The load and eject operation is not guarantied with the mechanism upside down. If the mechanism is blocked due to mistaken eject operation, reset the product or turn off and on the ACC to restore it.

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



*1) TYP → -12dB
TRK MIN SEC TRK 12 MIN 12 SEC 12

*2) Focus Close → S.Curve → F EQ measurement setting
TRK 00 MIN 00 SEC 00 TRK 01 MIN 01 SEC 01 TRK 02 MIN 02 SEC 02
(TRK 99 MIN 99 SEC 99)

*3) F.Offset Display → RF.Offset Display → T.Offset 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 or 100TR Jump

*7) TRK/MIN/SEC → F.AGC → T.AGC Gain → F.bias → RF AGC

*8) CRG motor voltage = 2[V]

[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]	CLS and AGC and Applicable servomechanism / AGC, AGC display switching
[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
-	SPDL 1X / 2X switching (Double-speed compatibility only)
-	Gop measurement
[6]	Forcus 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.

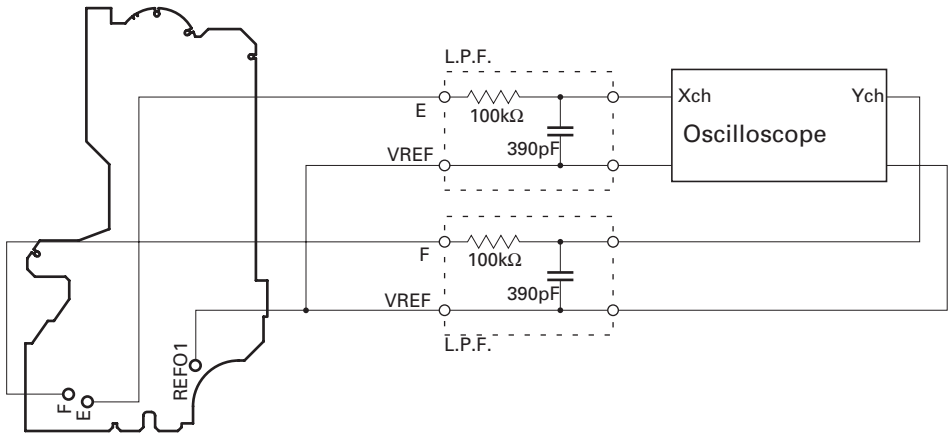
• **Purpose :**
To check that the grating is within an acceptable range when the PU unit is changed.

• **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

CD CORE UNIT(S10)



• **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.

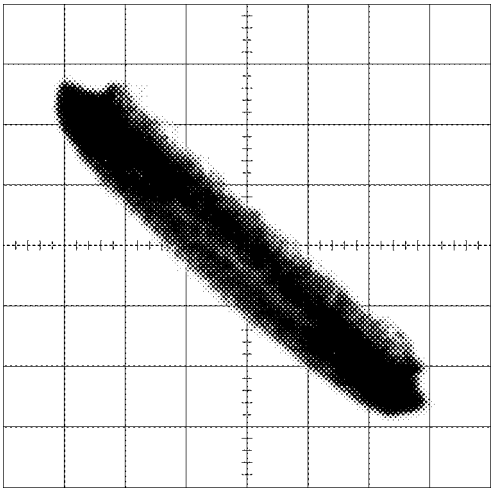
• **Note**
Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

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

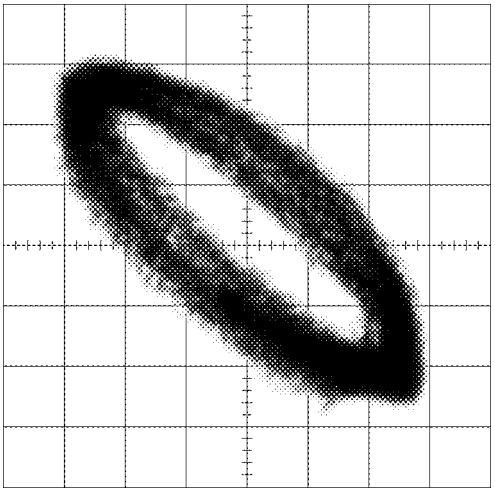
Grating waveform

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

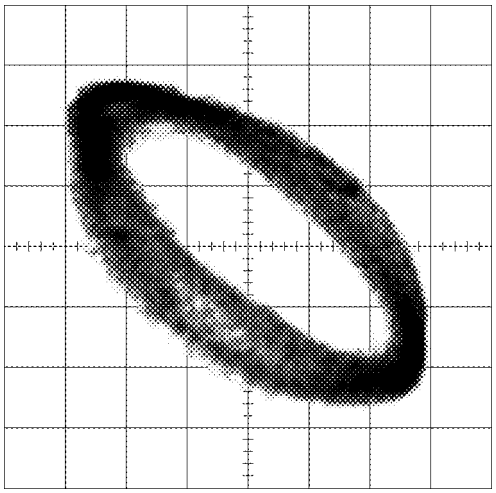
0°



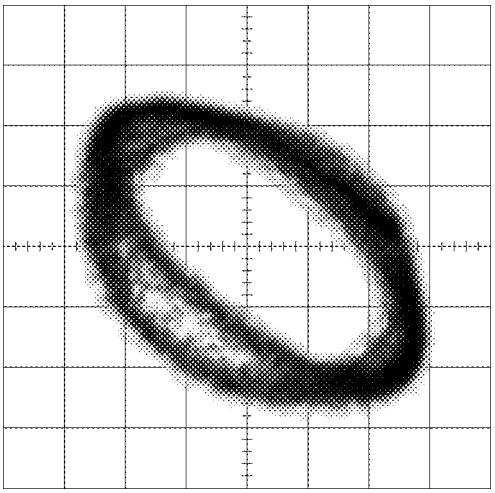
30°



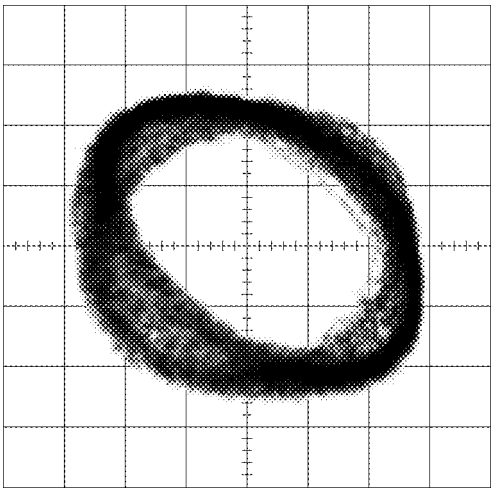
45°



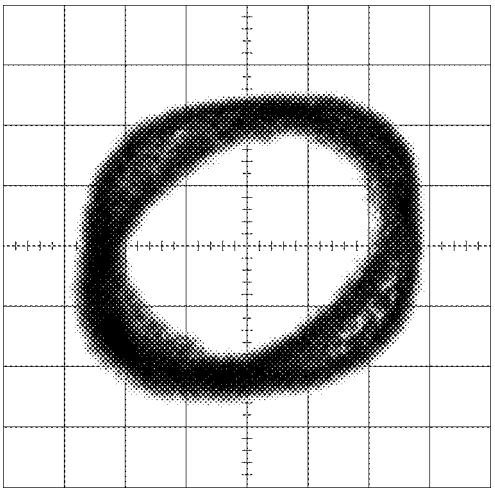
60°



75°



90°



6.3 ERROR MODE

● Error Messages

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

(1) Basic Indication Method

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

2) Head unit display examples

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

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

(2) Error Code List

Code	Class	Displayed error code	Description of the code and potential cause(s)
10	Electricity	Carriage Home NG SERVO LSI Communication Error	CRG can't be moved to inner diameter. CRG can't be moved from inner diameter. → Failure on home switch or CRG move mechanism. Communication error between microcomputer and SERVO LSI.
11	Electricity	Focus Servo NG	Focusing not available. → Stains on rear side of disc or excessive vibrations on REWRITABLE.
12	Electricity	Spindle Lock NG Subcode NG	Spindle not locked. Sub-code is strange (not readable). → Failure on spindle, stains or damages on disc, or excessive vibrations. A disc not containing CD-R data is found. Turned over disc are found, though rarely. CD signal error.
17	Electricity	Setup NG	AGC protection doesn't work. Focus can be easily lost. → Damages or stains on disc, or excessive vibrations on REWRITABLE.
30	Electricity	Search Time Out	Failed to reach target address. → CRG tracking error or damages on disc.
44	Electricity	ALL Skip	Skip setting for all track. (CD-R/RW)
50	Mechanism	CD On Mech Error	Mechanical error during CD ON. → Defective loading motor, mechanical lock and mechanical sensor.
A0	System	Power Supply NG	Power (VD) is ground faulted. → Failure on SW transistor or power supply (failure on connector).

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

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

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

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

6.4 SYSTEM MICROCOMPUTER TEST PROGRAM



● PCL Output

In the normal operation mode (with the detachable panel installed, the ACC switched ON, the standby mode cancelled), shift the TESTIN (Pin 15) terminal to H. The clock signal is output from the PCL terminal (Pin 14). The frequency of the clock signal is 786.432kHz that is one 16th of the fundamental frequency. The clock signal should be 786.432kHz ± 31.5Hz. If the clock signal is out of the range, the X'tal (X601) should be replaced with new one.

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 Release the two latchs and then remove the Grille Assy.

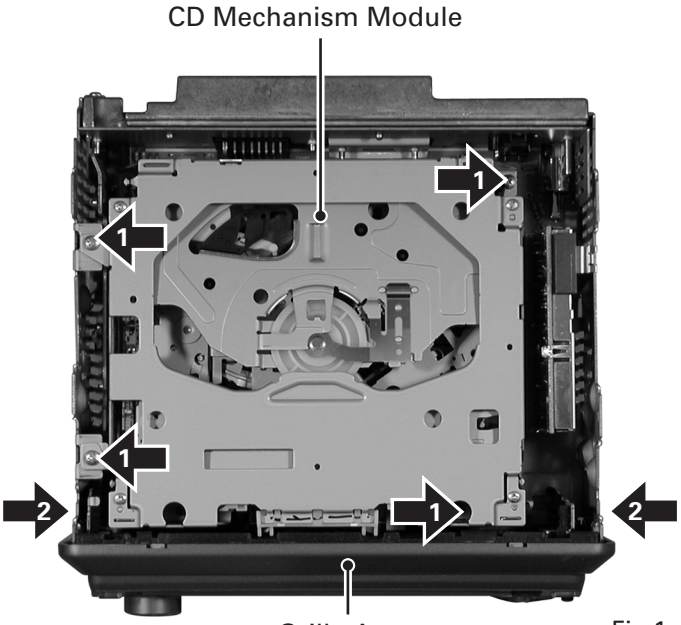


Fig.1

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

1 Remove the screw.

2 Remove the three screws.

3 Straighten the tabs at three locations indicated and then remove the Tuner Amp Unit.

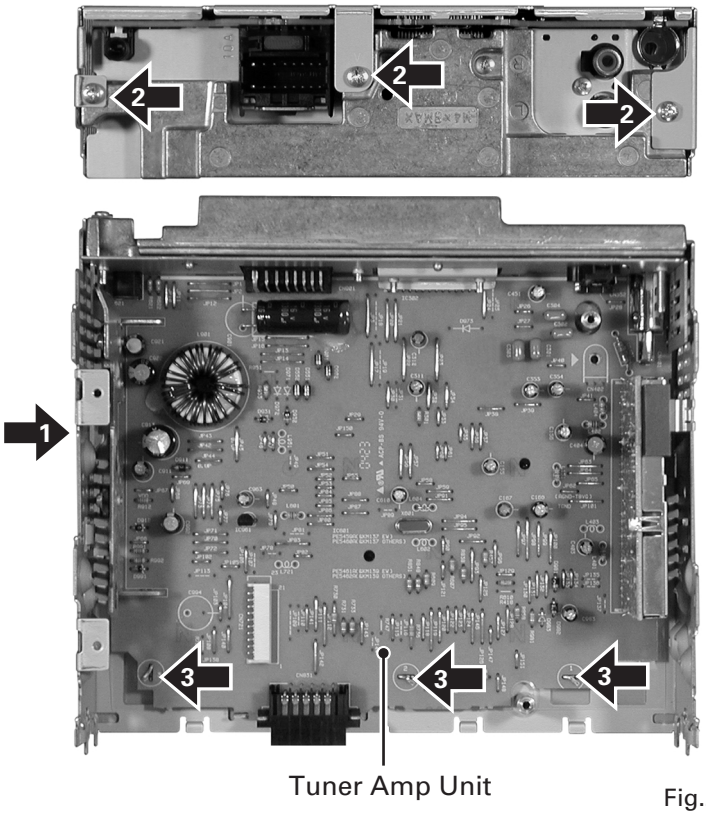
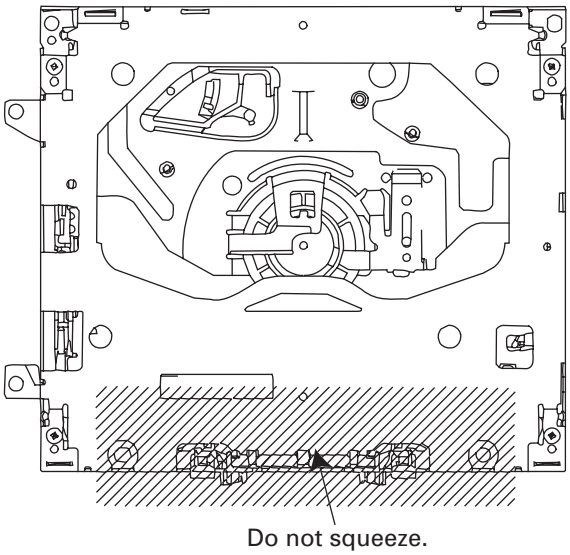


Fig.2

● How to hold the Mechanism Unit

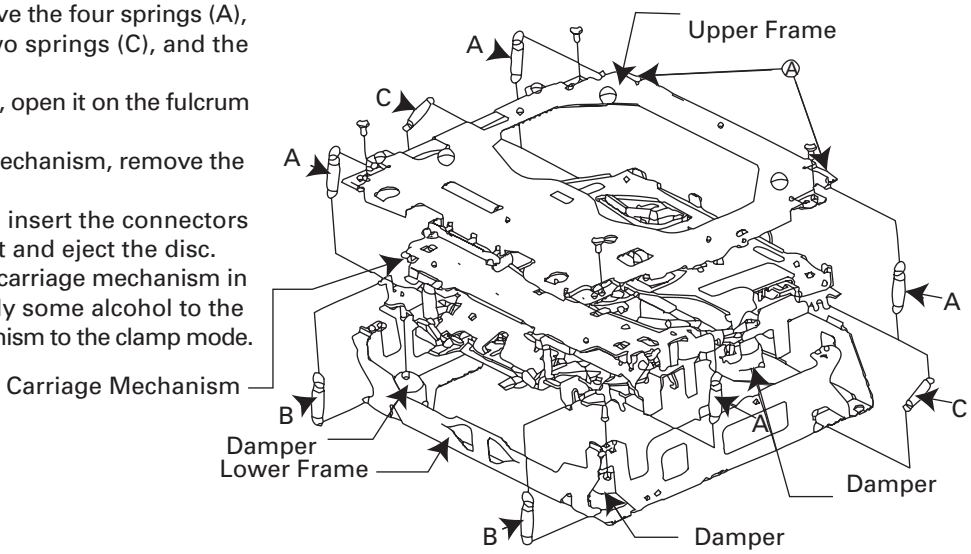
1. Hold the top and bottom frame.
2. Do not squeeze top frame's front portion too tight, because it is fragile.



● 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.

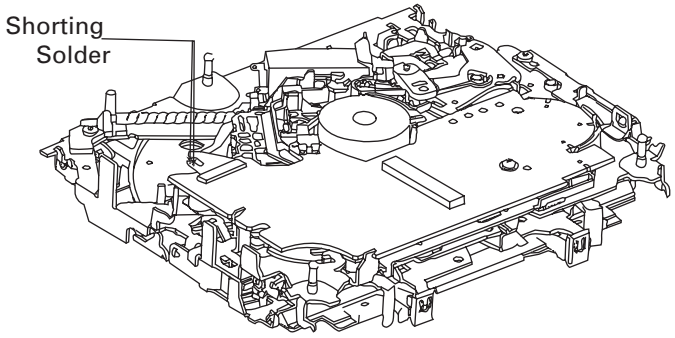
Caution: Before installing the carriage mechanism in the frames, be sure to apply some alcohol to the dampers and set the mechanism to the clamp mode.

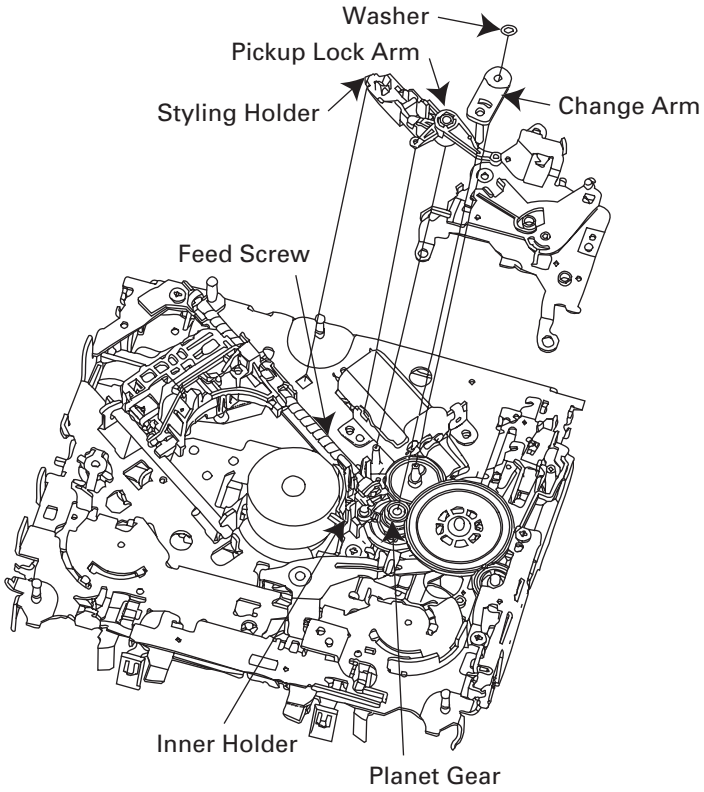


● Removing the Pickup Unit

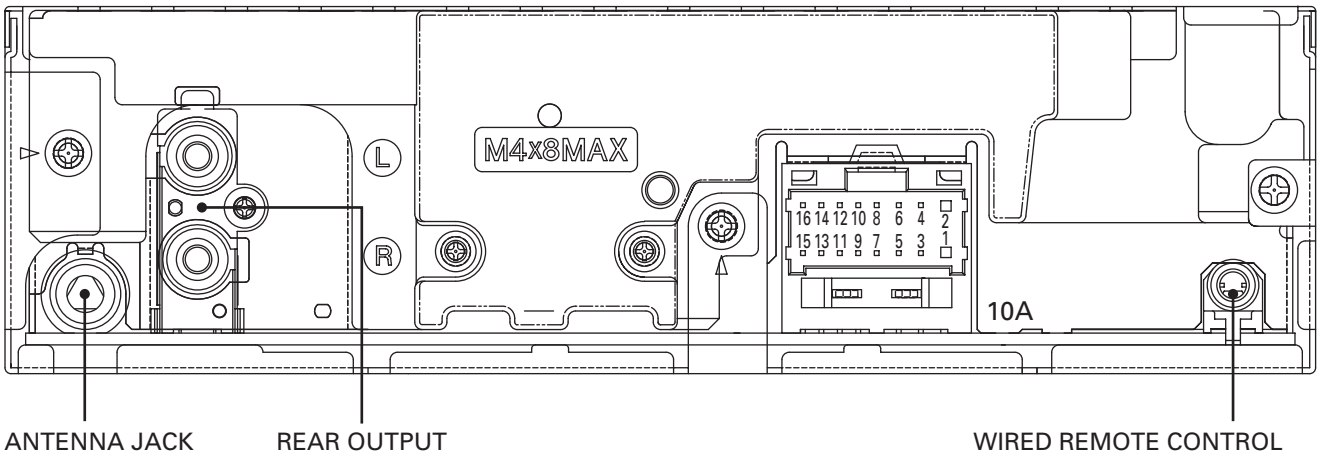
1. Apply shorting solder to the Pickup flexible cable. Disconnect the cable.
2. Set the mechanism to the clamp mode.
3. Remove the lead wires from the inner holder.
4. Remove the washer, styling holder, change arm, and pickup lock arm.
5. While releasing from the hook of the inner holder, lift the end 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	NC	16	FR+

7.2 PARTS

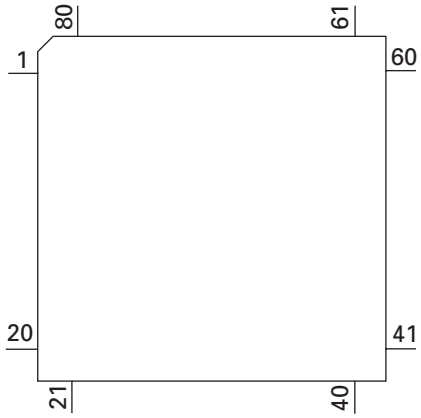
7.2.1 IC

● Pin Functions(PE5462A)

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	XSI	I	CD LSI serial data input
17	XSO	O	CD LSI serial data output
18	XSCK	O	CD LSI serial clock output
19, 20	NC		Not used
21	$\overline{\text{SWVDD}}$	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	XA0	O	CD LSI command data control output
26	XSTB	O	CD LSI strobe output
27	XTALEN	O	CD LSI ceramic oscillator oscillation 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		RDS decoder receiving output (Not used)
41	VDCONT	O	VD output
42	NC		Not used
43	SYSPW	O	System power output
44, 45	NC		Not used
46	STRKEY2	I	Wired remote control input
47	$\overline{\text{ISENS}}$	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		RDS LK input (Not used)
58	RDSLK		RDS clock input (Not used)
59	RDS57K		RDS 57K input (Not used)
60	RESET		Reset
61	LDET	I	PLL lock detection input
62	RCK	I	RDS clock input

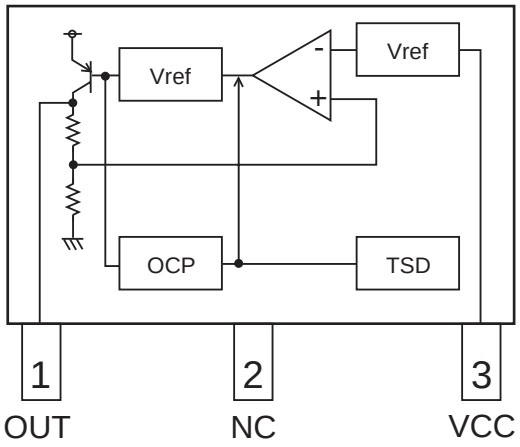
Pin No.	Pin Name	I/O	Function and Operation
63	$\overline{\text{ASENS}}$	I	ACC sense input
64	$\overline{\text{BSENS}}$	I	Back up sense input
65	$\overline{\text{DSENS}}$	I	Grille detach sense input
66	$\overline{\text{SOURCE}}$	I	Source sense input
67	VSS		GND
68	VDD		VDD
69, 70	X2, 1		Crystal oscillator 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	DISCSENS	I	DISC loading detection input
80	STRKEY1	I	Wired remote control input

* PE5462A



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

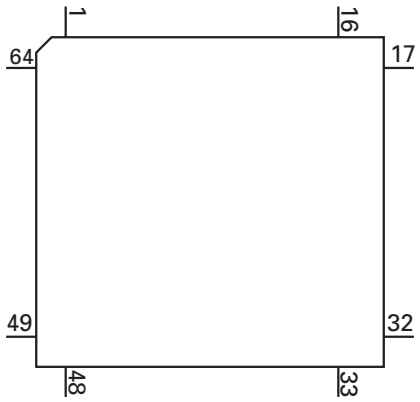
BA33BC0FP



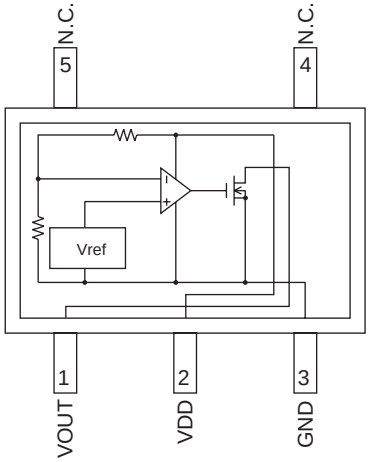
● Pin Functions(PD6340A)

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

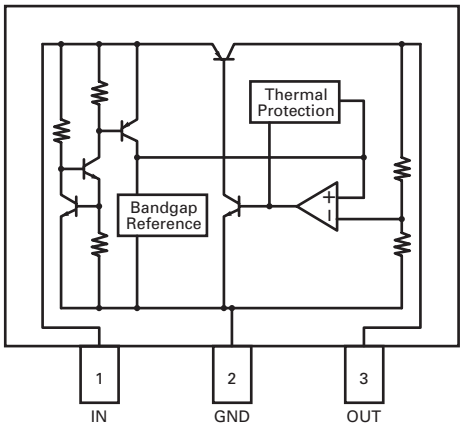
* PD6340A



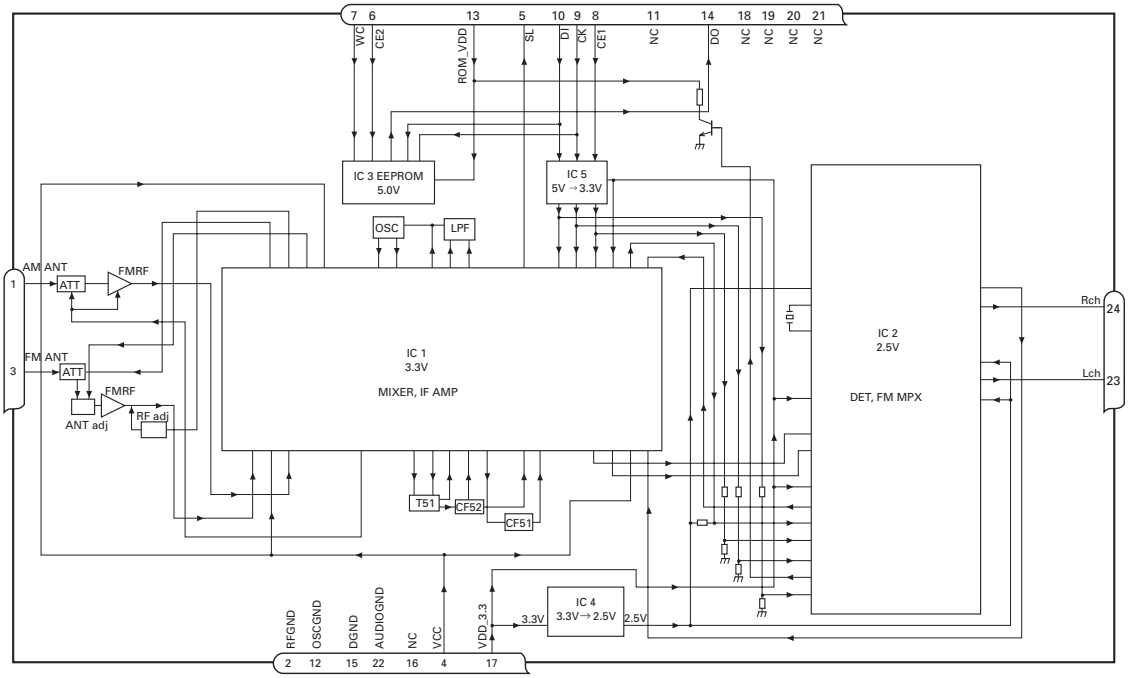
NJM2388F84



NJM2885DL1-33



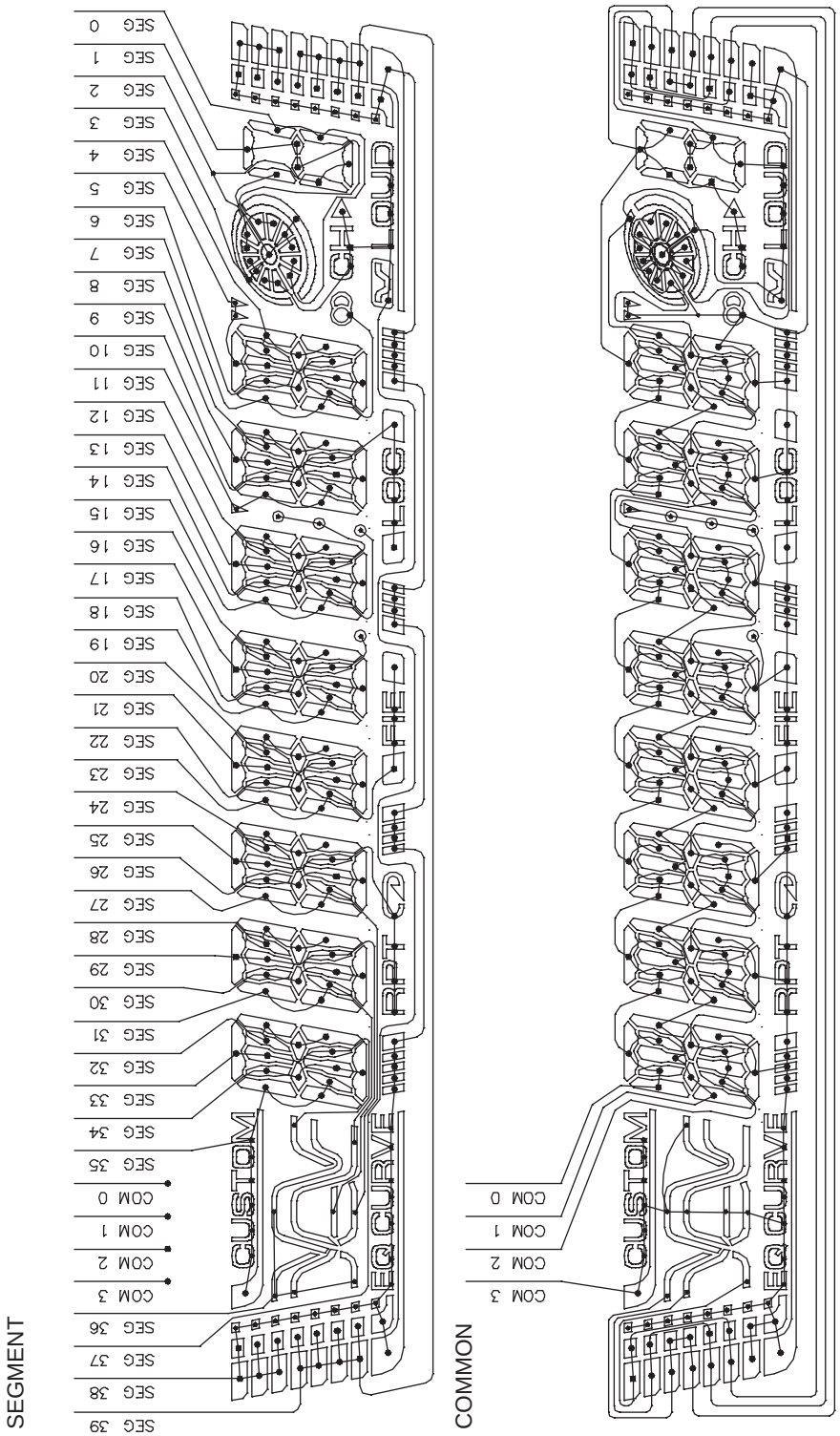
● FM/AM Tuner Unit



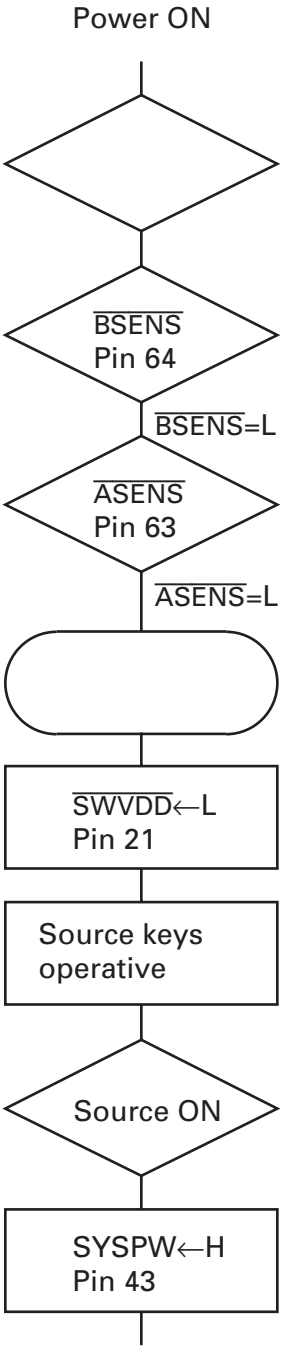
No.	Symbol	I/O	Explain	
1	AMANT	I	AM antenna input	AM antenna input high impedance AMANT pin is connected with an all antenna by way of 4.7μH. (LAU type inductor) A series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the hum of power transmission 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	NC		non connection	Not used
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	NC		non connection	Not used
19	NC		non connection	Not used
20	NC		non connection	Not used
21	NC		non connection	Not used
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

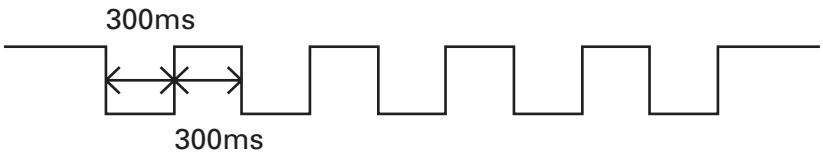
7.2.2 DISPLAY

● **LCD(YAW5021)**



7.3 OPERATIONAL FLOW CHART





In case of the above signal, the communication with Grille microcomputer may fail.
If the time interval is not 300msec, the oscillator may be defective.

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

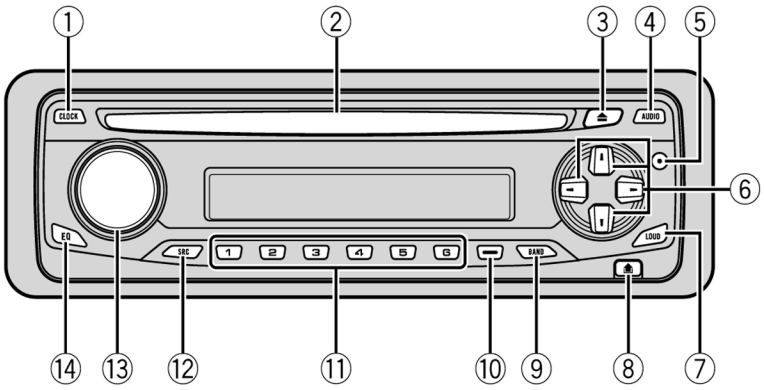
7.4 CLEANING



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 **CLOCK button**
Press to change to the clock display.

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 **PAUSE button**
Press to turn pause on or off.

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 three FM bands and one AM band and to 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.

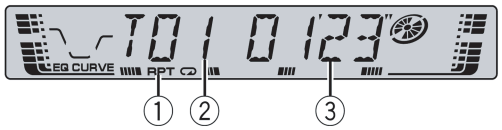
⑪ **1–6 buttons**
Press for preset tuning.

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. ▣

Playing a CD



① **RPT indicator**
Shows when repeat play is turned on.

② **Track number indicator**
Shows the track currently playing.

③ **Play time indicator**
Shows the elapsed playing time of the current track.

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 ►.

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.▣

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.▣

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.▣

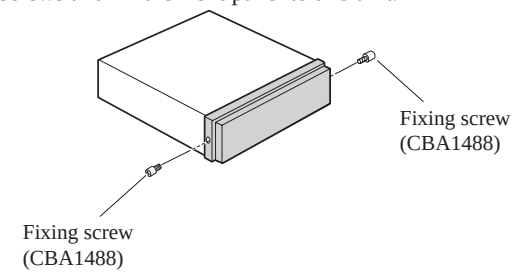
Pausing CD playback

Pause lets you temporarily stop playback of the CD.

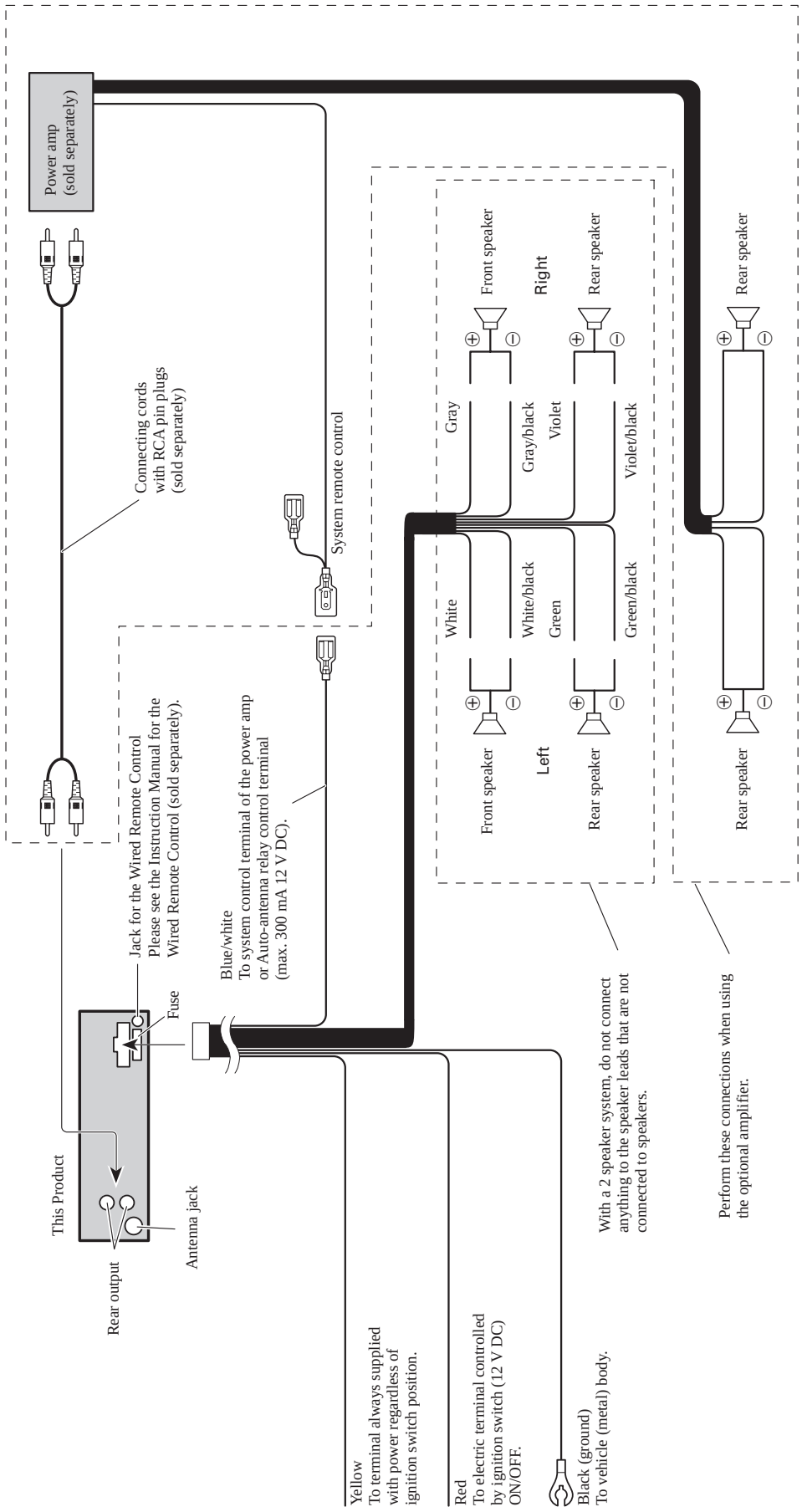
● **Press PAUSE repeatedly to turn pause on or off.**
When pause is on, **PAUSE** appears in the display.▣

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



● Jigs List

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