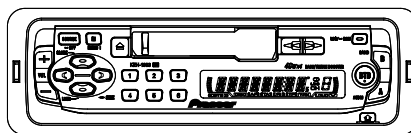


Pioneer *sound.vision.soul*

Service Manual



KEH-1033/XM/EW

ORDER NO.
CRT2977

HIGH POWER CASSETTE PLAYER WITH FM/MW/LW TUNER

KEH-1033

 XM/EW

KEH-1032

 XM/EW

KEH-2031

 XM/EE

For details, refer to "Important symbols for good services".

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A 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.

[Important symbols for good services]

In this manual, the symbols shown-below indicate that adjustments, settings or cleaning should be made securely. When you find the procedures bearing any of the symbols, be sure to fulfill them:

1. Product safety



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. Adjustments



To keep the original performances of the product, optimum adjustments or specification confirmation is indispensable. In accordance with the procedures or instructions described in this manual, adjustments should be performed.

3. Cleaning



For optical pickups, tape-deck heads, lenses and mirrors used in projection monitors, and other parts requiring cleaning, proper cleaning should be performed to restore their performances.

4. Shipping mode and shipping screws



To protect the product from damages or failures that may be caused during transit, the shipping mode should be set or the shipping screws should be installed before shipping out in accordance with this manual, if necessary.

5. Lubricants, glues, and replacement parts



Appropriately applying grease or glue can maintain the product performances. But improper lubrication or applying glue may lead to failures or troubles in the product. By following the instructions in this manual, be sure to apply the prescribed grease or glue to proper portions by the appropriate amount. For replacement parts or tools, the prescribed ones should be used.

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1. SPECIFICATIONS

● KEH-1033/XM/EW, 1032/XM/EW

General

Power source	14.4 V DC (10.8 – 15.1 V allowable)
Grounding system	Negative type
Max. current consumption	8.5 A
Dimensions (W × H × D):	
Chassis	178 × 50 × 155 mm
Nose	188 × 58 × 20 mm
Weight	1.4 kg
Backup current.....	Less than 3 mA

Audio

Maximum power output	40 W × 4
Continuous power output ...	22 W × 4 (DIN 45324, +B=14.4 V)
Load impedance	4 Ω (4 – 8 Ω allowable)
Bass/Treble:	
Bass	
Frequency	100 Hz
Gain	±12dB
Treble	
Frequency	10k Hz
Gain	±12dB
Loudness contour	
Low	+7 dB (100 Hz), +4 dB (10 kHz)
High	+10 dB (100 Hz), +6.5 dB (10 kHz) (volume: –30 dB)

Cassette player

Tape	Compact cassette tape (C-30 – C-90)
Tape speed	4.76 cm/sec. (+0.14cm/sec., -0.05cm/sec.)
Fast forward/rewinding time	Approx. 100 sec (C-60)
Wow & flutter	0.13 % (WRMS)
Frequency response	30 – 16,000 Hz (±3 dB)
Stereo separation	45 dB
Signal-to-noise ratio	52 dB (IEC-A network)

FM tuner

Frequency range	87.5 – 108.0 MHz
Usable sensitivity	11 dBf (1.1 μV/75 Ω mono, S/N: 30 dB)
50 dB quieting sensitivity	17 dBf (2.2 μV/75 Ω mono)
Signal-to-noise ratio	58 dB (IEC-A network)
Distortion	0.5 % (at 65 dBf, 1 kHz, stereo)

Frequency response	30 – 15,000 Hz (±3 dB)
Stereo separation	24 dB (at 65 dBf, 1 kHz)

MW tuner

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

LW tuner

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



Note

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

● KEH-2031/XM/EE

General

Power source	14.4 V DC (10.8 – 15.1 V allowable)
Grounding system	Negative type
Max. current consumption	8.5 A
Dimensions (W × H × D):	
DIN	
Chassis	178 × 50 × 155 mm
Nose	188 × 58 × 20 mm
D	
Chassis	178 × 50 × 160 mm
Nose	170 × 48 × 15 mm
Weight	1.4 kg
Backup current.....	Less than 3 mA

Audio

Maximum power output	40 W × 4
Continuous power output ...	22 W × 4 (DIN 45324, +B=14.4 V)
Load impedance	4 Ω (4 – 8 Ω allowable)
Preout max output level/output impedance	2.2 V/1 kΩ
Bass/Treble:	
Bass	
Frequency	100 Hz
Gain	±12dB
Treble	
Frequency	10k Hz
Gain	±12dB
Loudness contour	
Low	+7 dB (100 Hz), +4 dB (10 kHz)
High	+10 dB (100 Hz), +6.5 dB (10 kHz) (volume: -30 dB)

Cassette player

Tape	Compact cassette tape (C-30 – C-90)
Tape speed	4.76 cm/sec. (+0.14cm/sec., -0.05cm/sec.)
Fast forward/rewinding time	Approx. 100 sec (C-60)
Wow & flutter	0.13 % (WRMS)
Frequency response	30 – 16,000 Hz (±3 dB)
Stereo separation	45 dB
Signal-to-noise ratio	52 dB (IEC-A network)

FM tuner

Frequency range	65 – 74 MHz
	87.5 – 108.0 MHz
Usable sensitivity	11 dBf (1.1 μV/75 Ω mono, S/N: 30 dB)
50 dB quieting sensitivity	17 dBf (2.2 μV/75 Ω mono)
Signal-to-noise ratio	58 dB (IEC-A network)
Distortion	0.5 % (at 65 dBf, 1 kHz, stereo)
Frequency response	30 – 15,000 Hz (±3 dB)
Stereo separation	24 dB (at 65 dBf, 1 kHz)

MW tuner


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

LW tuner

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

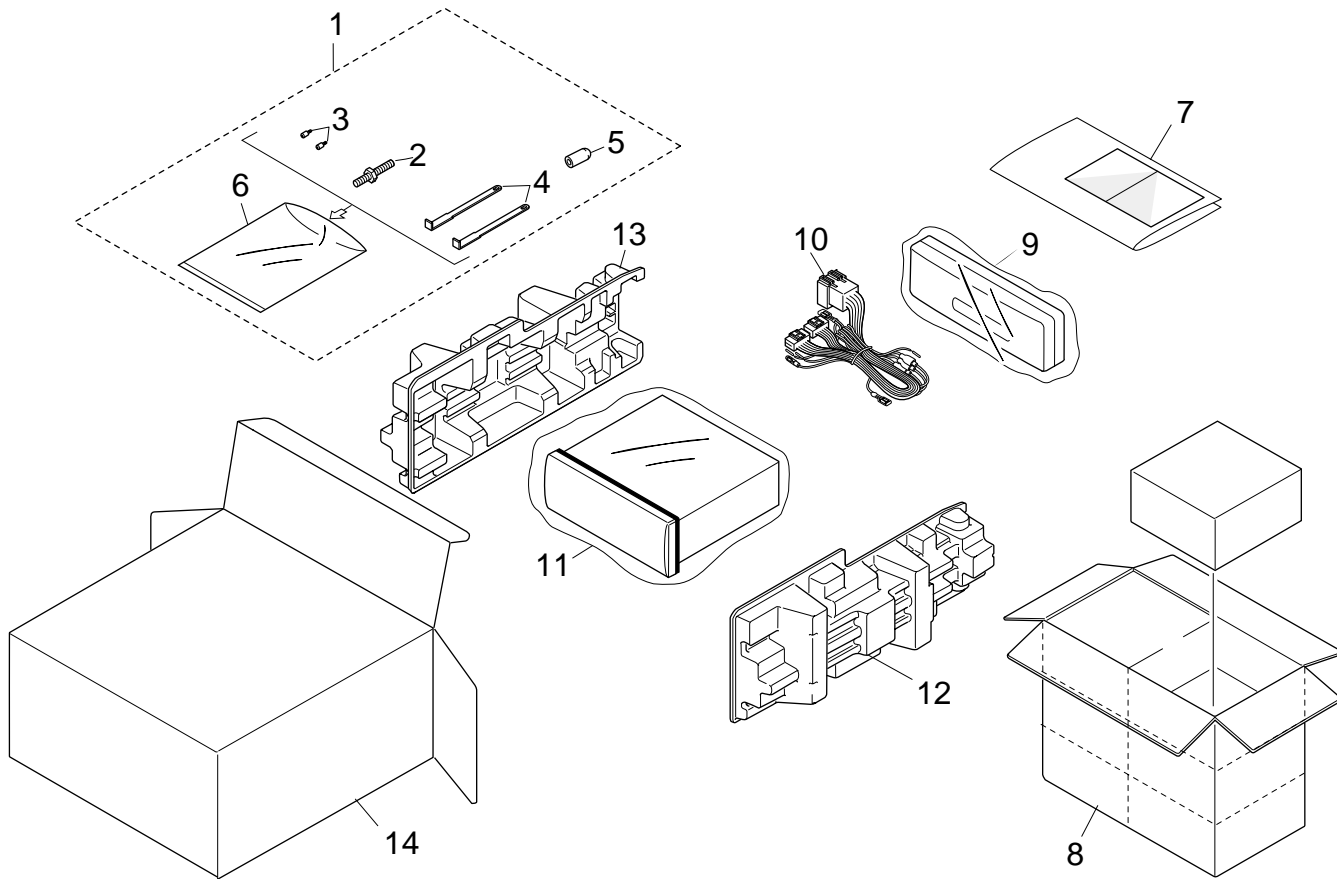


Note

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

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING(KEH-1033/XM/EW, 1032/XM/EW)



NOTE:

- Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ∇ mark on the product are used for disassembly.
- 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.)

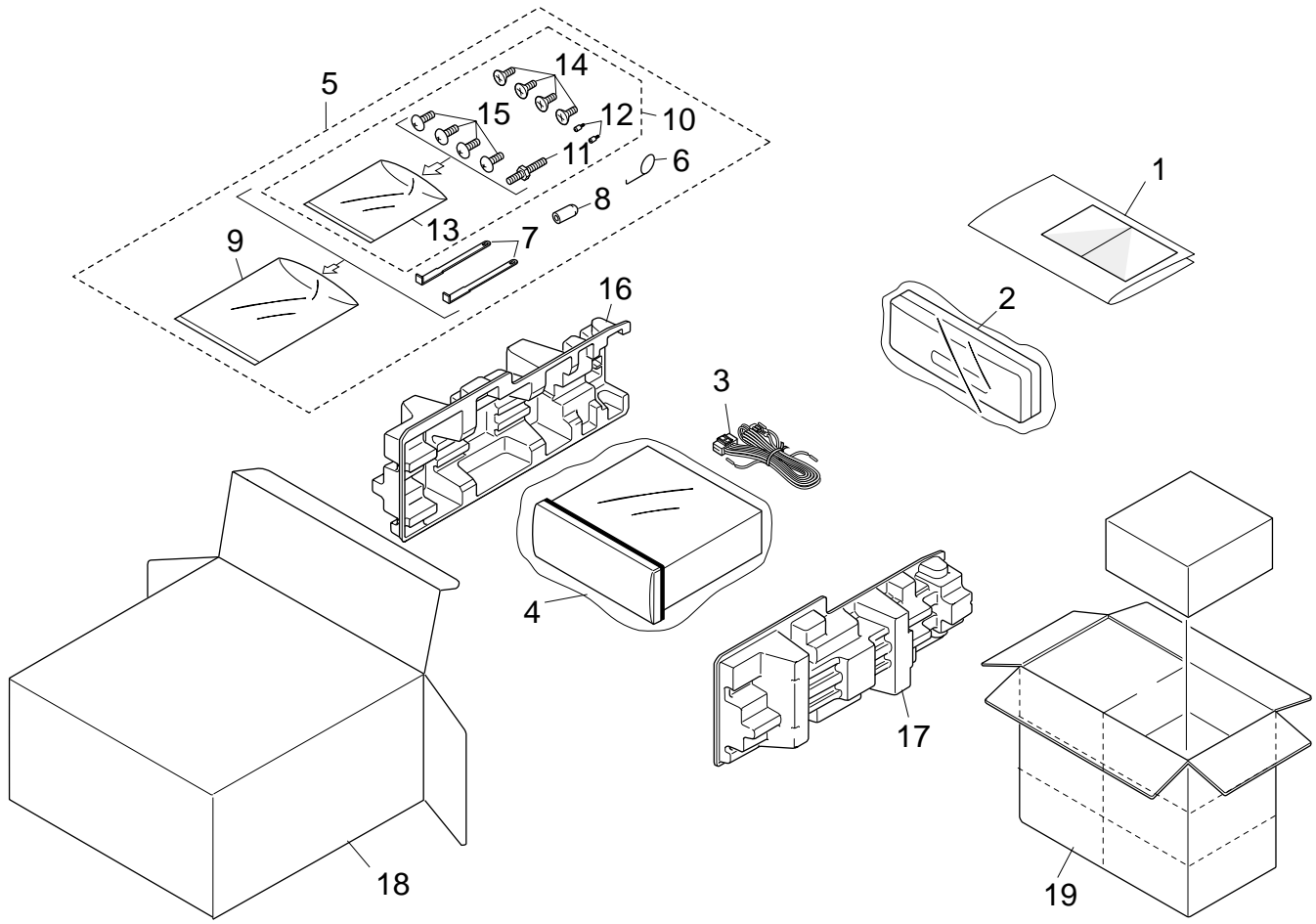
● PACKING(KEH-1033/XM/EW, 1032/XM/EW) SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Accessory Assy	CEA3094	12	Protector	CZH5591
2	Screw	CBA1002	13	Protector	CZH5592
3	Fixing Screw(M2x4)	CBA1488	14	Carton(KEH-1033)	CZH6605
4	Handle	CNC5395		Carton(KEH-1032)	CZH6603
5	Bush	CNV3930			
*	6 Polyethylene Bag	E36-615			
*	7-1 Passport	CRY1013			
*	7-2 Warranty Card	CRY1157			
	7-3 Owner's Manual	CZR2964			
	7-4 Installation Manual	CZR2965			
	8 Contain Box(KEH-1033)	CZH6606			
	Contain Box(KEH-1032)	CZH6604			
	9 Case Assy	CXB3520			
	10 Cord Assy	CZD2979			
	11 Polyethylene Bag	CZE2903			

● Owner's Manual, Installation Manual

Model	Part No.	Language
KEH-1033/XM/EW	CZR2964	English, Spanish, German, French, Italian, Dutch
KEH-1032/XM/EW	CZR2965	English, Spanish, German, French, Italian, Dutch

2.2 PACKING(KEH-2031/XM/EE)



● **PACKING(KEH-2031/XM/EE) SECTION PARTS LIST**

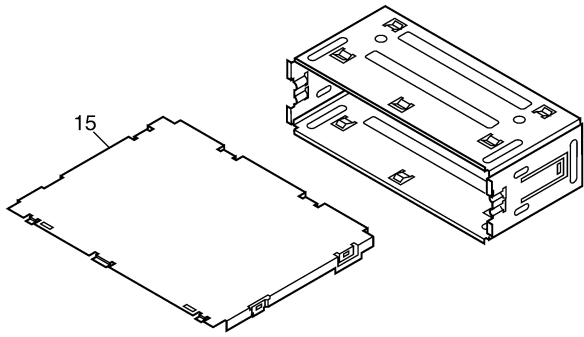
Mark No.	Description	Part No.	Mark No.	Description	Part No.
* 1-1	Warranty Card	CRY1157	14	Screw	CRZ50P080FMC
1-2	Owner's Manual	CZR2957	15	Screw	TRZ50P080FMC
1-3	Installation Manual	CZR2958	16	Protector	CZH5592
2	Case Assy	CXB3520	17	Protector	CZH5591
3	Cord Assy	CZD2976	18	Carton	CZH5597
4	Polyethylene Bag	CZE2903	19	Contain Box	CZH5598
5	Accessory Assy	CZE2954			
6	Spring	CBH1650			
7	Handle	CNC5395			
8	Bush	CNV3930			
* 9	Polyethylene Bag	CZE2908			
10	Screw Assy	CZE2952			
11	Screw	CBA1002			
12	Fixing Screw(M2x4)	CBA1488			
* 13	Polyethylene Bag	CEG-127			

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

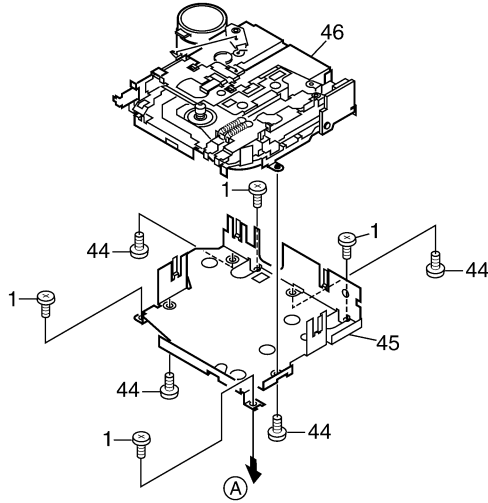
Model	Part No.	Language
KEH-2031/XM/EE	CZR2957	English, Russian
	CZR2958	English, Russian

2.3 EXTERIOR(KEH-1033/XM/EW, 1032/XM/EW)

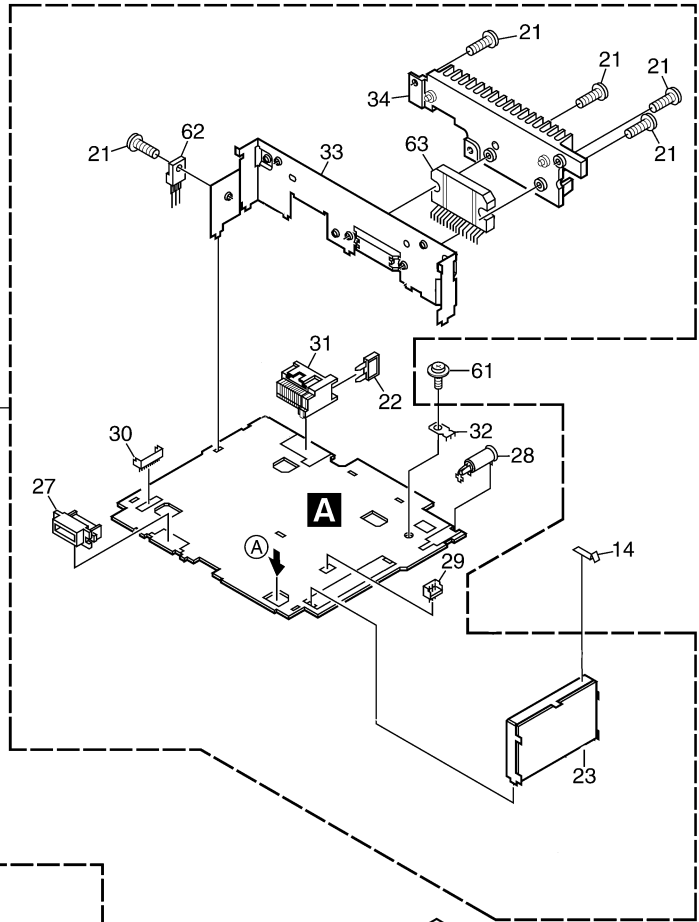
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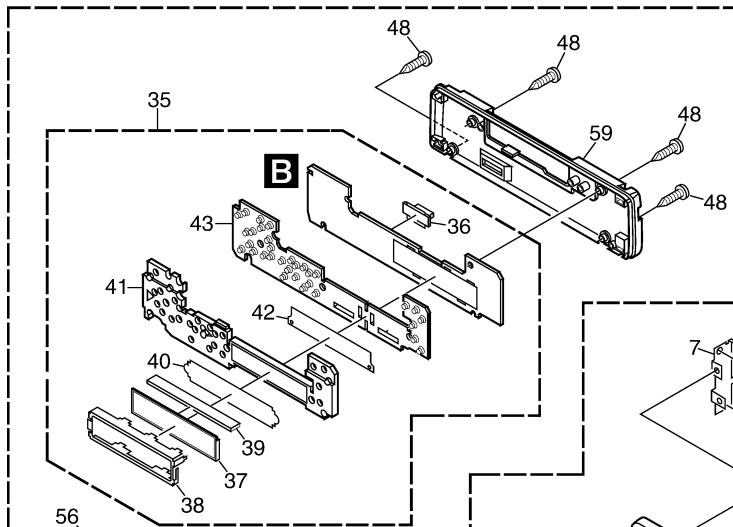
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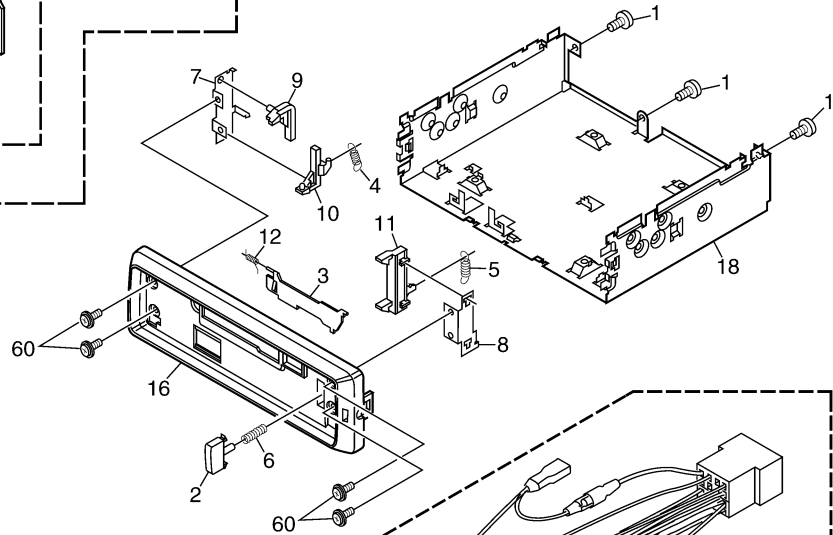
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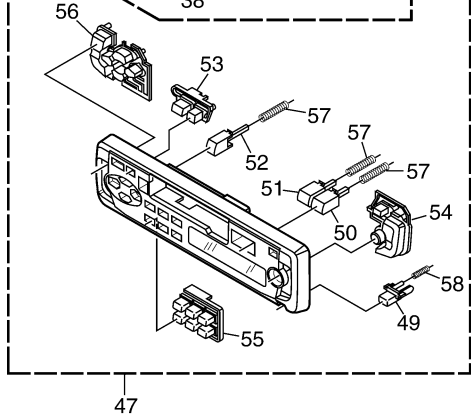
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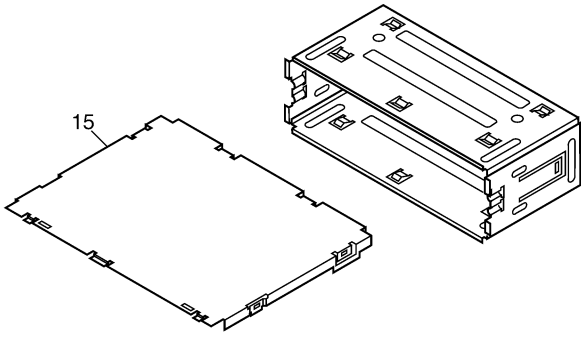


● EXTERIOR(KEH-1033/XM/EW, 1032/XM/EW) SECTION PARTS LIST

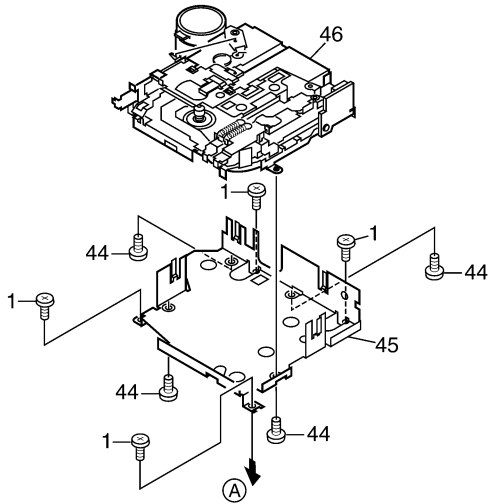
Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BSZ26P060FMC	41	Lighting Conductor	CZN6846
2	Button	CAC4836	42	Rubber	CZN6847
3	Door(KEH-1033)	CAT2108	43	Sheet	CZN6848
	Door(KEH-1032)	CAT2456	44	Screw	BMZ26P040FMC
4	Spring	CBH1834	45	Bracket	CZN6738
5	Spring	CBH1835	46	Mechanism	CZX5514
6	Spring	CBH1996	47	Detach Grille Assy(KEH-1033)	CZX5554
7	Bracket	CNC6135		Detach Grille Assy(KEH-1032)	CZX5553
8	Bracket	CNC6791	48	Screw	BPZ20P100FZK
9	Arm	CNV4692	49	Button(DETACH)(KEH-1033)	CAC5929
10	Arm	CNV4693		Button(DETACH)(KEH-1032)	CAC7870
11	Arm	CNV4728	50	Button(FF)	CZA5529
12	Spring	CZB2982	51	Button(REW)	CZA5530
13	Cord Assy	CZD2979	52	Button(EJECT)	CZA5531
14	Plate	CZN6730	56	Button(VOL)	CZA5563
15	Case	CZN6739	55	Button(1-6)	CZA5564
16	Panel(KEH-1033)	CZN6757	54	Button(BTB)	CZA5565
	Panel(KEH-1032)	CZN6867	53	Button(SOURCE)	CZA5567
17	Insulator	CZN6836	57	Spring	CZB2976
18	Chassis(KEH-1033)	CZN6858	58	Spring	CZB2977
	Chassis(KEH-1032)	CZN6857	59	Cover(KEH-1033)	CZN6754
19	Tuner Amp Unit	CZW5541		Cover(KEH-1032)	CZN6753
20		60	Screw	IMS20P030FZK
21	Screw	BSZ26P100FMC	61	Screw	ISS26P055FUC
22	Fuse(10A)	CEK1208	62	Transistor(Q604)	2SD2396
23	Tuner Unit(TU100)	CZW5535	63	IC(IC500)	TDA7384
24-26				
27	Connector(CN800)	CKS3581			
28	Antenna Jack(CN100)	CKX1056			
29	Connector(CN200)	CZK2945			
30	Connector(CN250)	CZK2946			
31	Connector(CN600)	CZK2951			
32	Connector(CN101)	CZK2954			
33	Rear Chassis	CZN6861			
34	Heat Sink	CZN6835			
35	Keyboard Unit(KEH-1033)	CZW5544			
	Keyboard Unit(KEH-1032)	CZW5543			
36	Connector(CN900)	CKS3580			
37	LCD(LCD900)	CZA5579			
38	Holder	CZN6743			
39	Connector	CZN6745			
40	Light Plate	CZN6760			

2.4 EXTERIOR(KEH-2031/XM/EE)

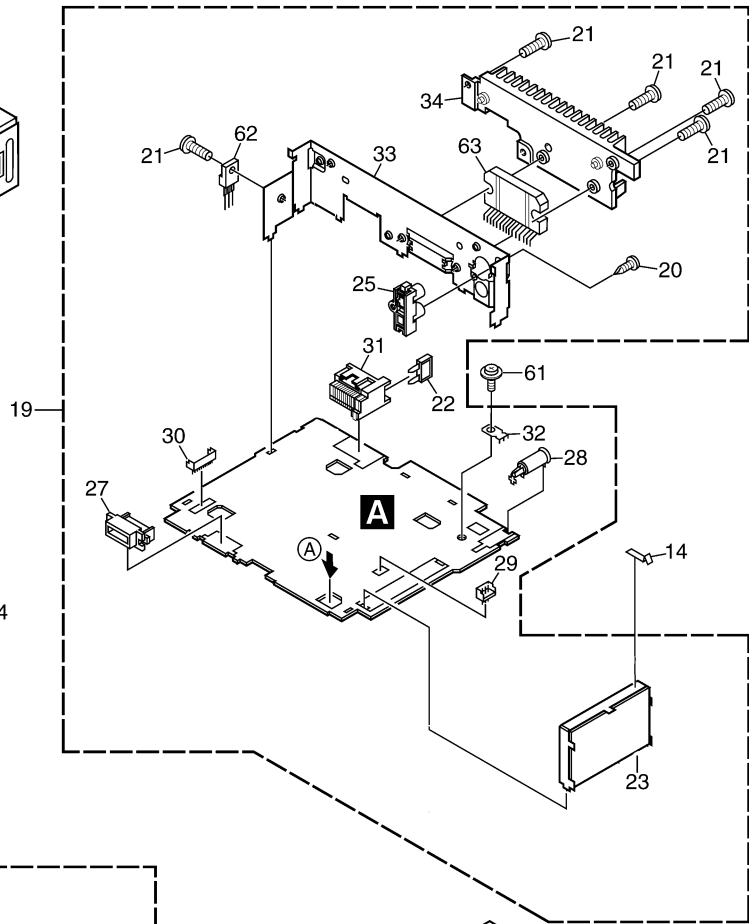
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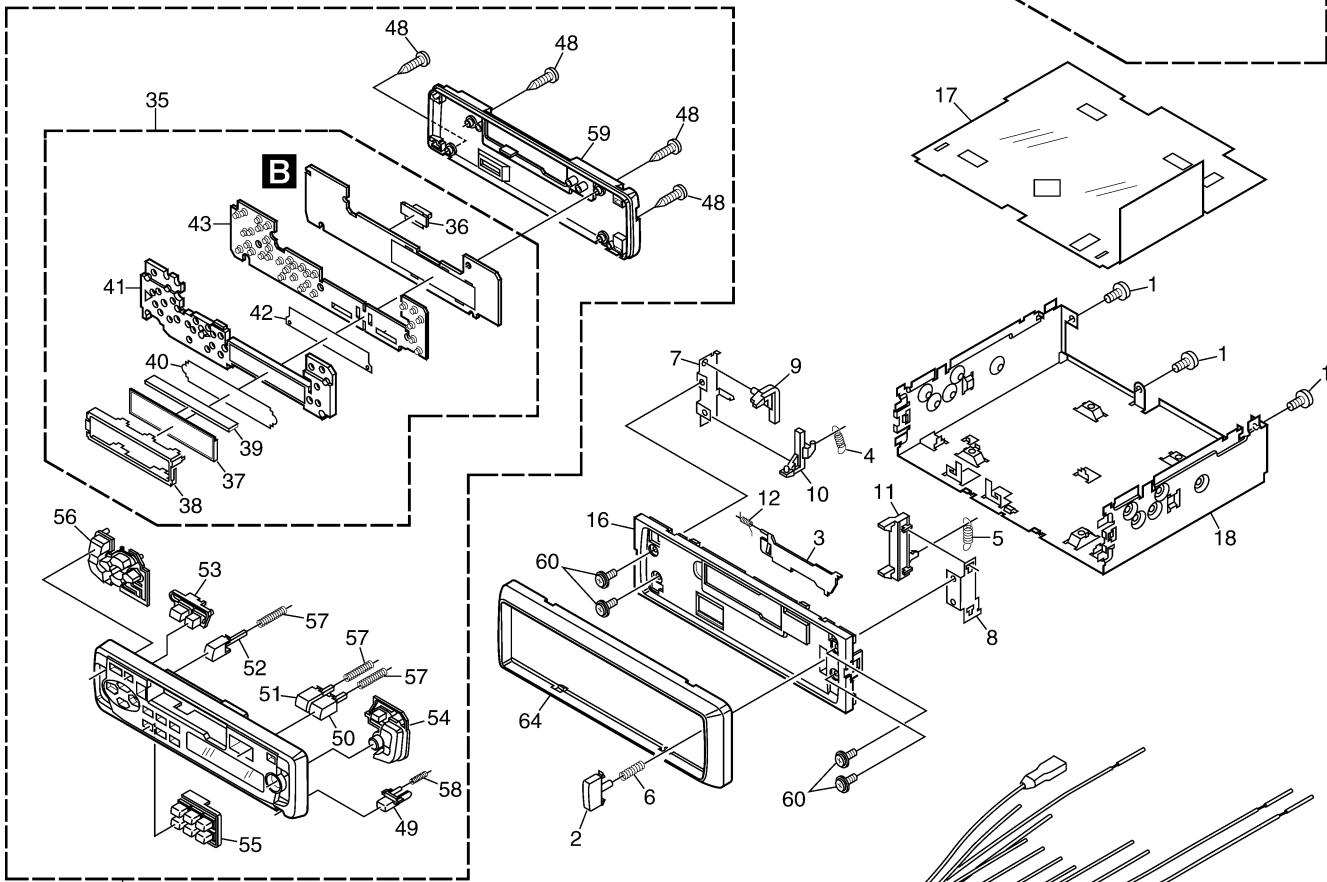
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● EXTERIOR(KEH-2031/XM/EE) SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BSZ26P060FMC	41	Lighting Conductor	CZN6846
2	Button	CAC4836	42	Rubber	CZN6847
3	Door	CAT2108	43	Sheet	CZN6848
4	Spring	CBH1834	44	Screw	BMZ26P040FMC
5	Spring	CBH1835	45	Bracket	CZN6738
6	Spring	CBH1996	46	Mechanism	CZX5514
7	Bracket	CNC6135	47	Detach Grille Assy	CZX5550
8	Bracket	CNC6791	48	Screw	BPZ20P100FZK
9	Arm	CNV4692	49	Button(DETACH)	CAC5929
10	Arm	CNV4693	50	Button(FF)	CZA5529
11	Arm	CNV4728	51	Button(REW)	CZA5530
12	Spring	CZB2982	52	Button(EJECT)	CZA5531
13	Cord Assy	CZD2976	53	Button(SOURCE)	CZA5567
14	Plate	CZN6730	54	Button(BTB)	CZA5565
15	Case	CZN6739	55	Button(1-6)	CZA5564
16	Panel	CZN6872	56	Button(VOL)	CZA5563
17	Insulator	CZN6836	57	Spring	CZB2976
18	Chassis	CZN6735	58	Spring	CZB2977
19	Tuner Amp Unit	CZW5539	59	Cover	CZN6754
20	Screw	BPZ26P100FZK	60	Screw	IMS20P030FZK
21	Screw	BSZ26P100FMC	61	Screw	ISS26P055FUC
22	Fuse(10A)	CEK1208	62	Transistor(Q604)	2SD2396
23	Tuner Unit(TU100)	CZW5536	63	IC(IC500)	TDA7384
24	*****		64	Panel	CNS7485
25	Pin Jack(CN350)	CKB1041			
26	*****				
27	Connector(CN800)	CKS3581			
28	Antenna Jack(CN100)	CKX1056			
29	Connector(CN200)	CZK2945			
30	Connector(CN250)	CZK2946			
31	Connector(CN600)	CZK2951			
32	Connector(CN101)	CZK2954			
33	Rear Chassis	CZN6865			
34	Heat Sink	CZN6835			
35	Keyboard Unit	CZW5543			
36	Connector(CN900)	CKS3580			
37	LCD(LCD900)	CZA5579			
38	Holder	CZN6743			
39	Connector	CZN6745			
40	Light Plate	CZN6760			

2.5 CASSETTE MECHANISM

A

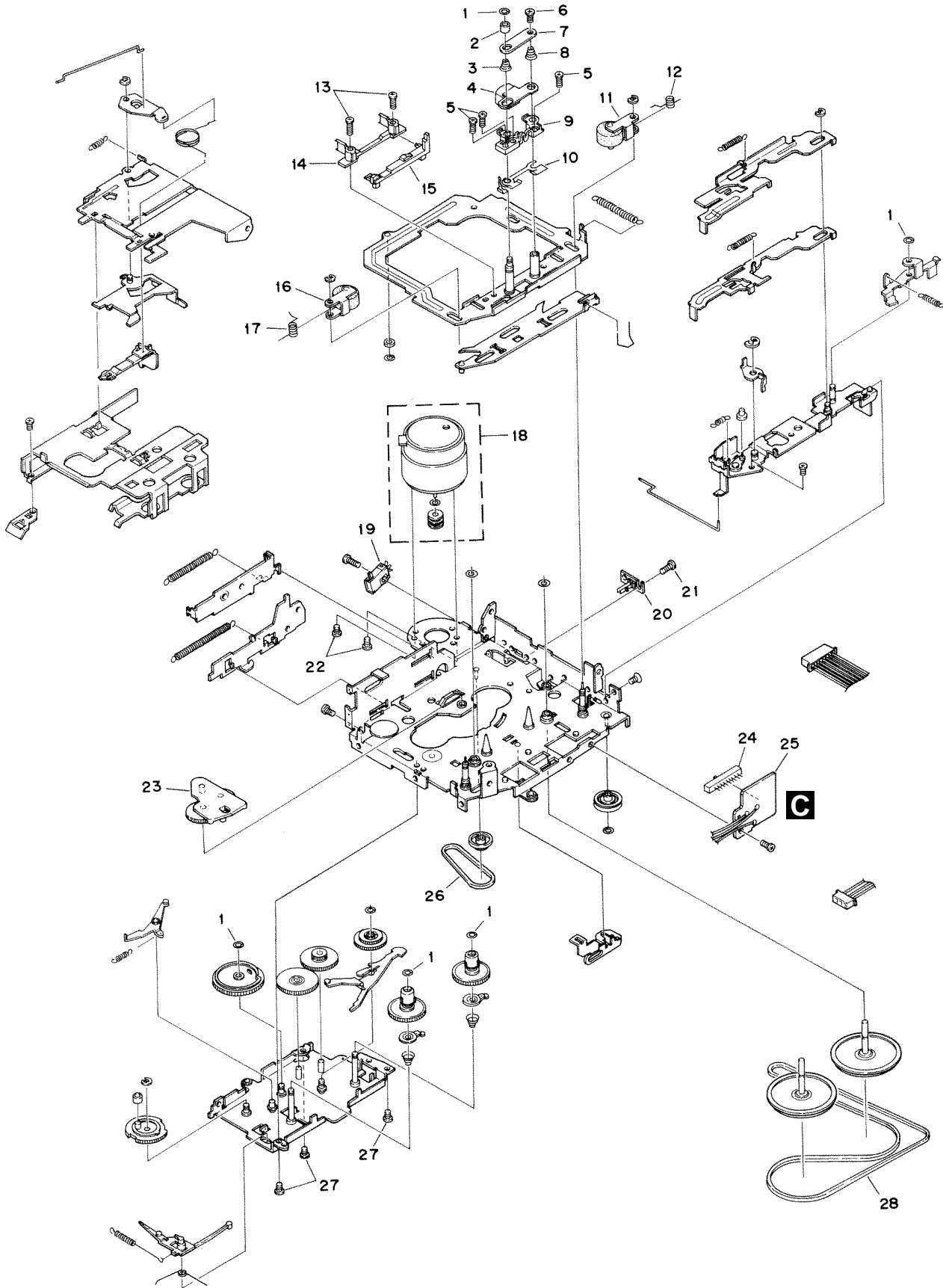
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NOTE

- For the cassette mechanism, only the parts listed here are available as spare parts.
The others (not shown in the list) cannot be supplied.

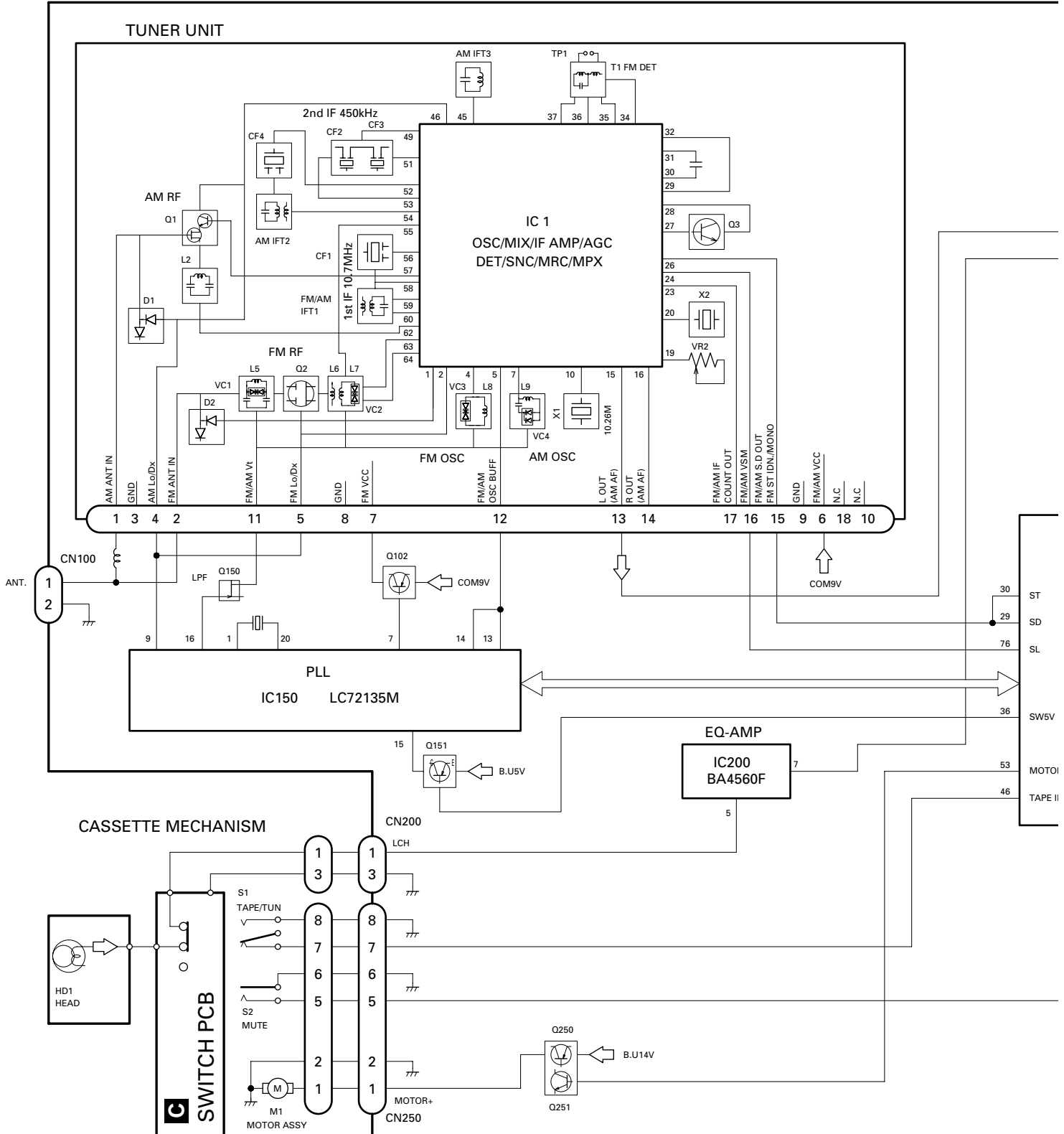
● CASSETTE MECHANISM SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Washer	1-0036-5024	26	Belt	1-0036-5018
2	Roller	1-0363-3018	27	Screw	213820030-C2
3	Spring	1-0036-4011	28	Belt	1-0036-5004
4	Head(HD1)	1-0036-7123			
5	Screw	1-0138-5002			
6	Screw	2-1012-0040-C2			
7	Plate	1-0036-1015			
8	Spring	1-0036-4010			
9	Arm	10138-2005-3			
10	Shim	1-0138-1006			
11	Pinch Arm (F) Assy	1-0036-6014			
12	Spring	1-0363-4003			
13	Screw	2-1032-0070-C2			
14	Tape Guide	1-0038-2018			
15	Link	1-0363-2006			
16	Pinch Arm (R) Assy	1-0036-6013			
17	Spring	1-0363-4004			
18	Motor Assy (M1)	X-0363-7006			
19	Power Switch (S1)	1-0363-7005			
20	Mute Switch (S2)	1-0363-7001			
21	Screw	213317040-C2			
22	Screw	2-1032-0025-C2			
23	Arm Assy	X-0363-6003			
24	Slide Switch (S3)	1-0363-7002			
25	SW PWB	1-0363-7008			

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

A TUNER AMP UNIT



A

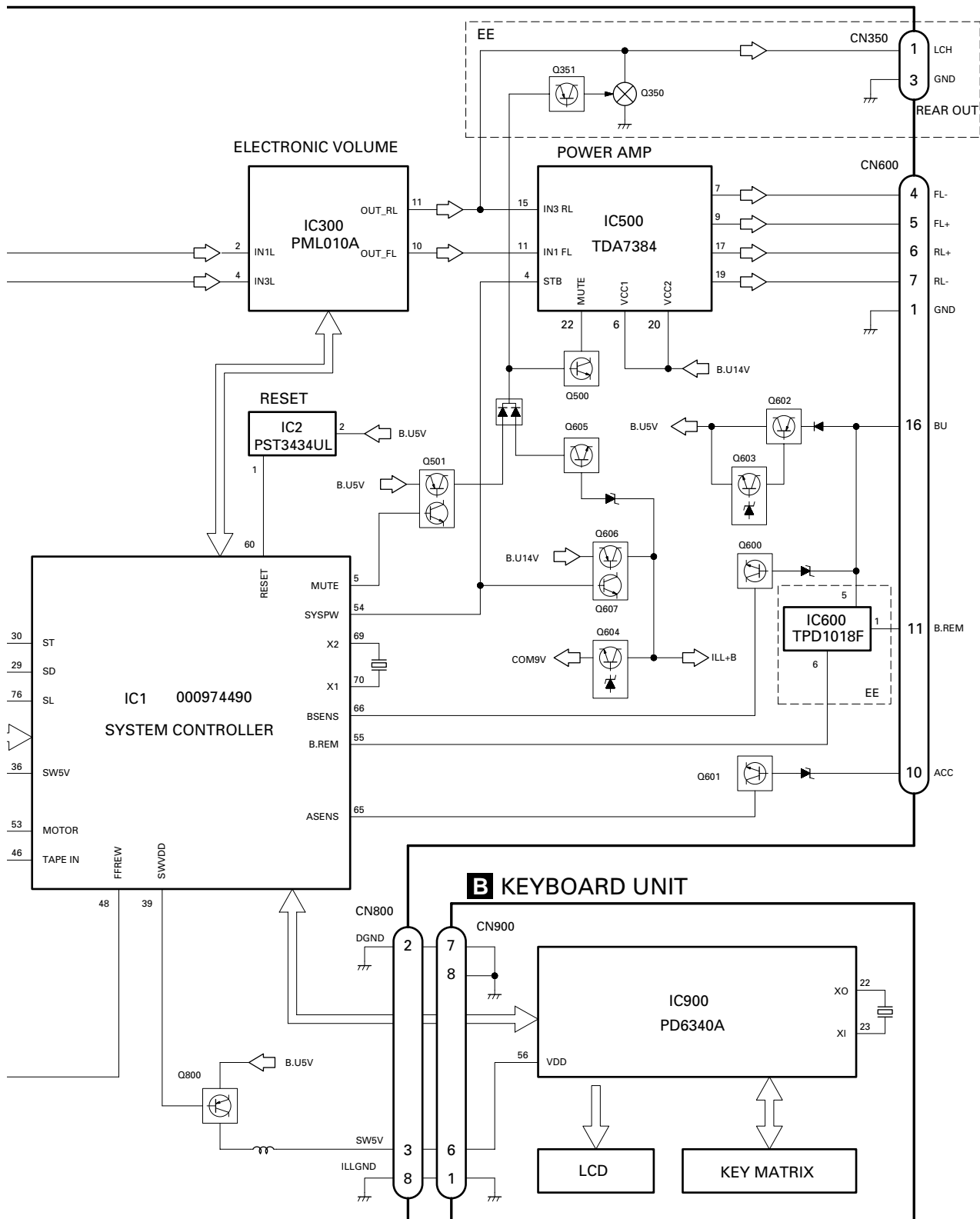
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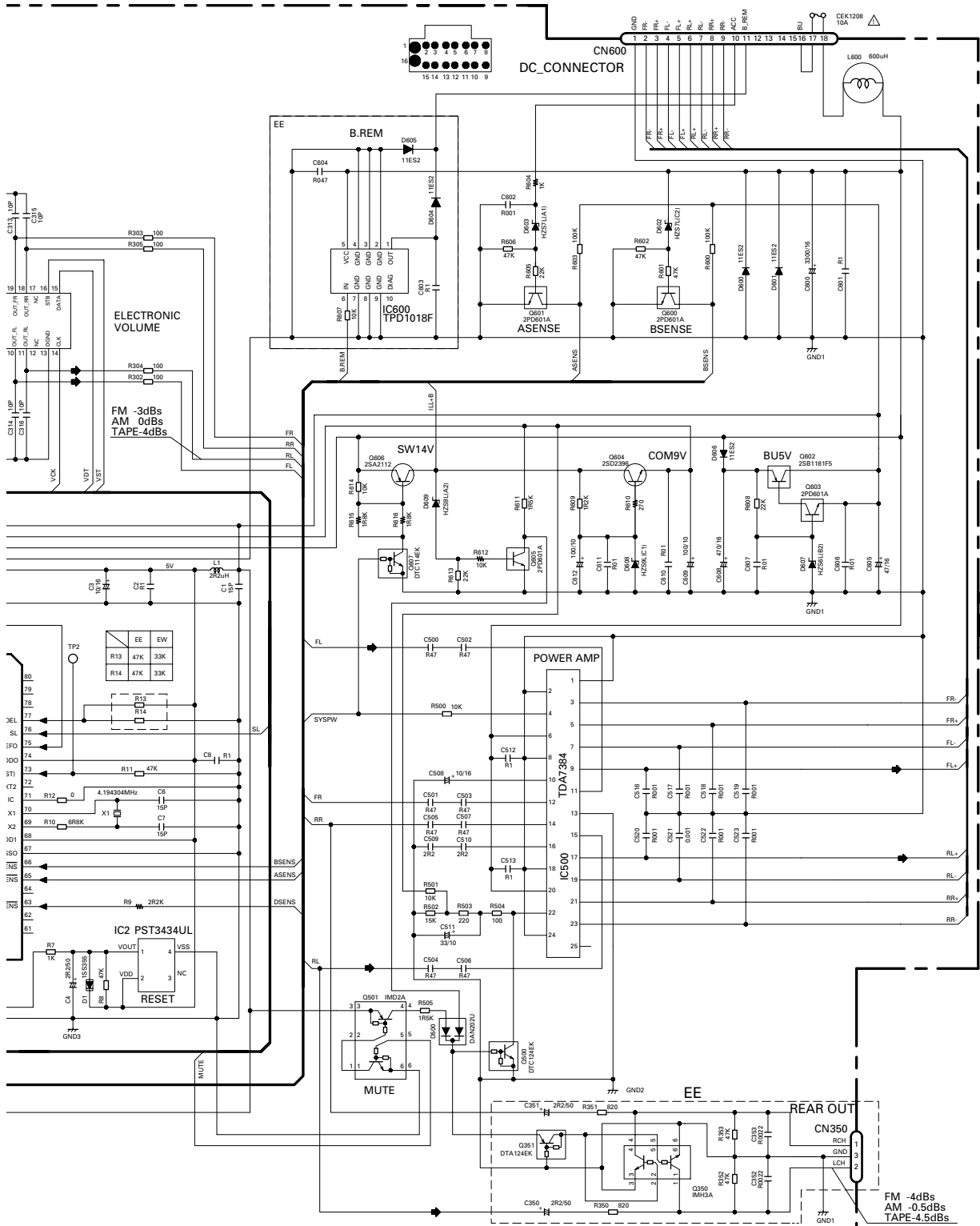
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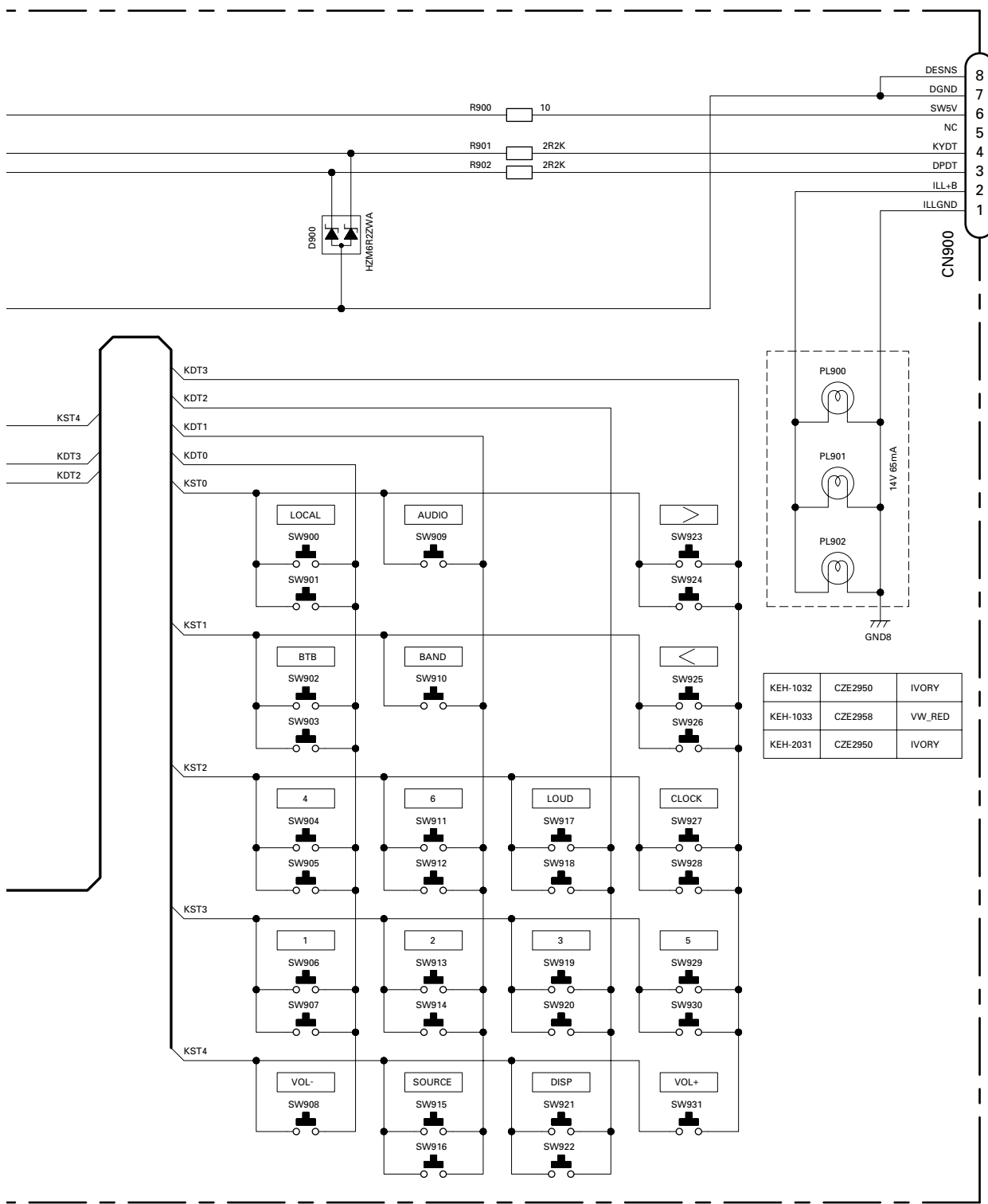
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NOTE : Decimal points for resistor and capacitor fixed values are expressed as :
 2.2 → 2R2
 0.022 → R022

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

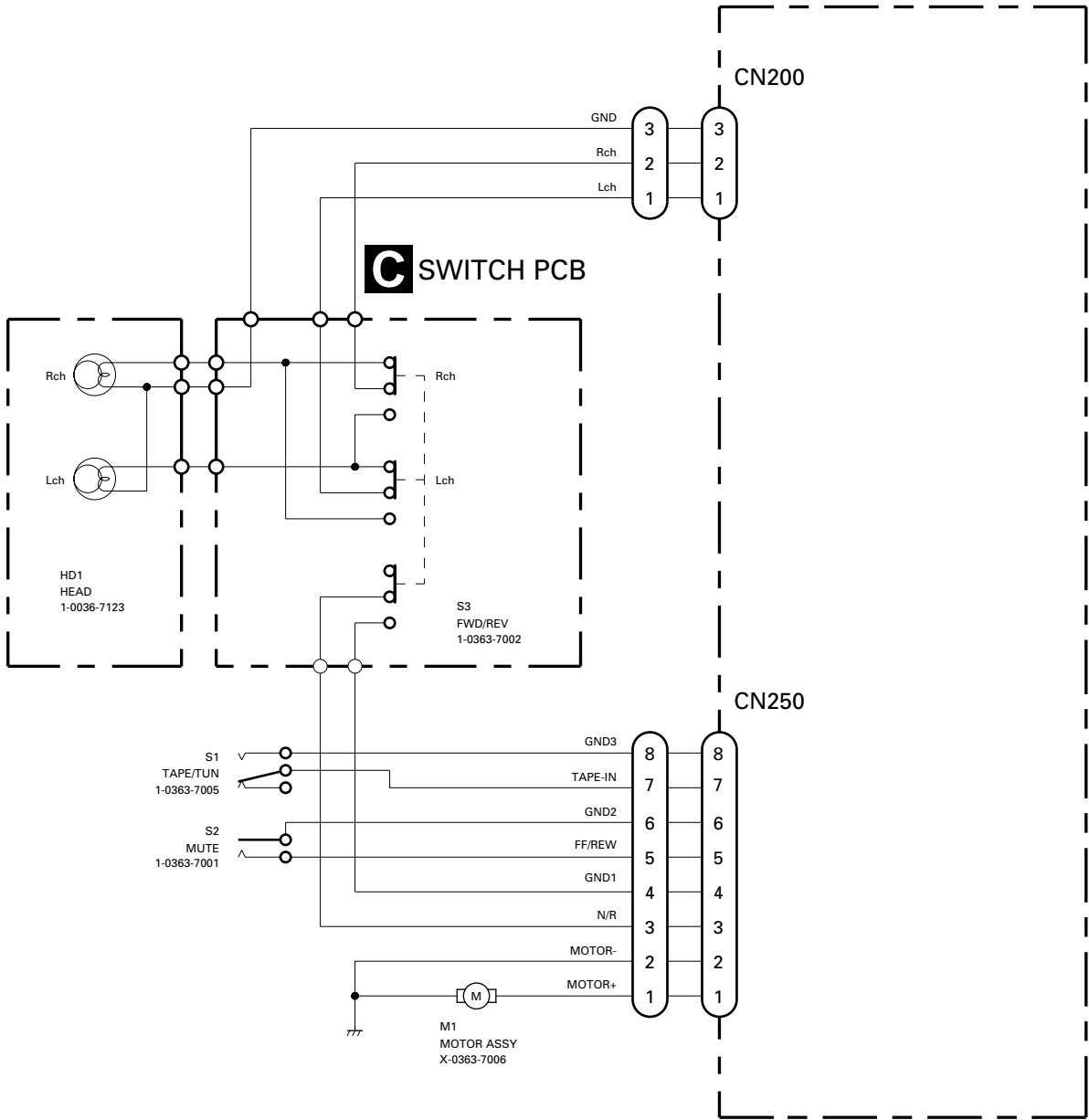


A CN800

3.4 CASSETTE MECHANISM

A TUNER AMP UNIT

C SWITCH PCB



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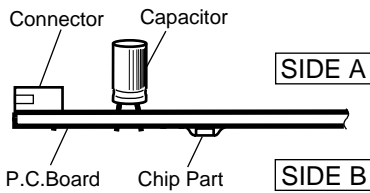
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4. PCB CONNECTION DIAGRAM

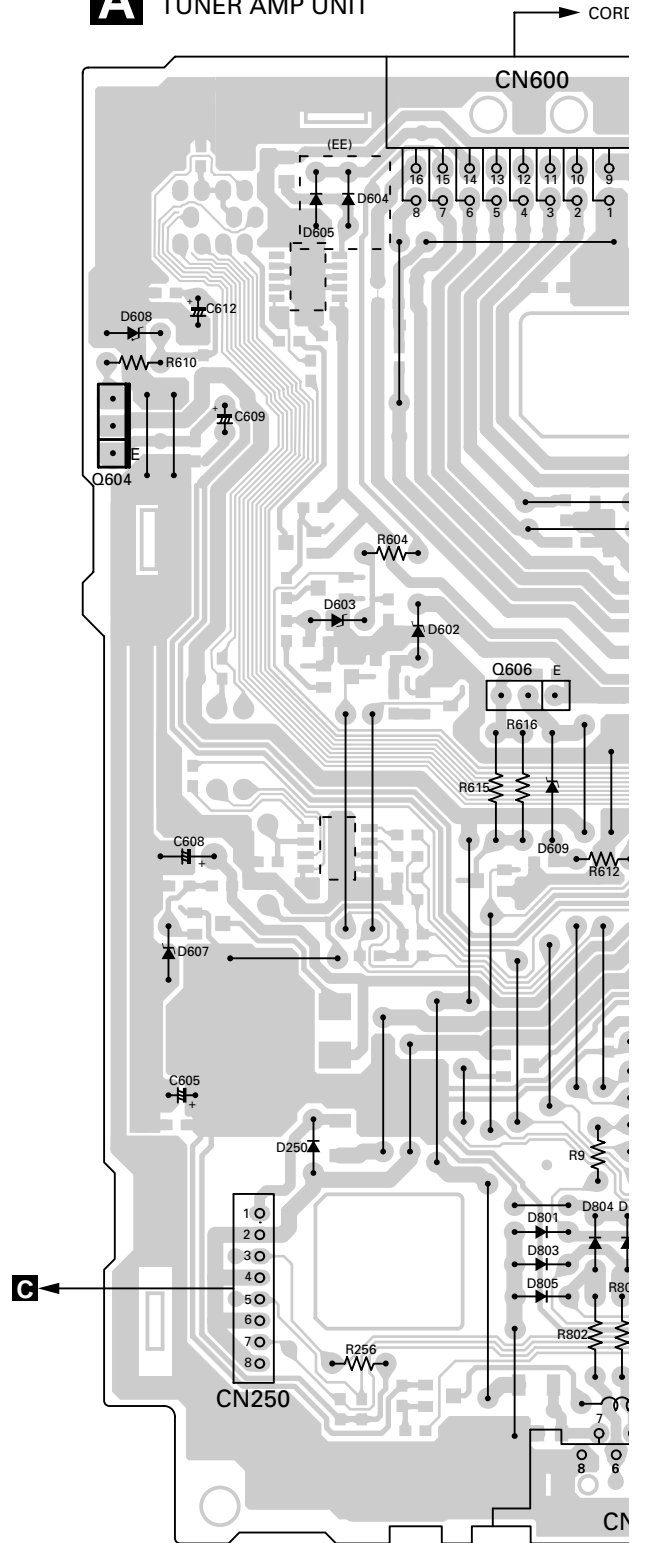
4.1 TUNER AMP UNIT

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

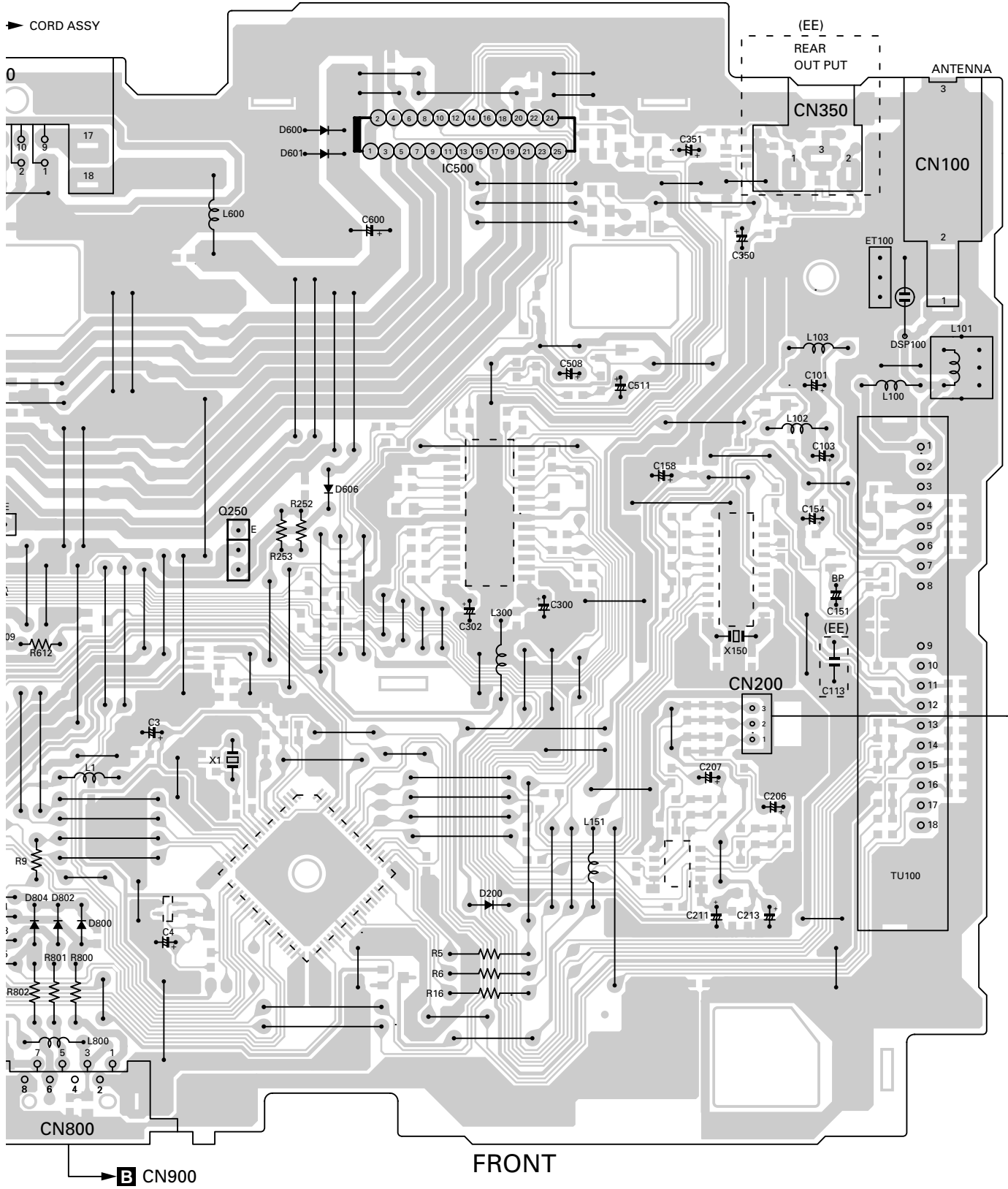


A TUNER AMP UNIT



SIDE A

A



IC,Q
 IC500
 B
 Q604
 C
 Q606
 Q250
 D
 E
 F

FRONT

▶ B CN900

A TUNER AMP UNIT

A

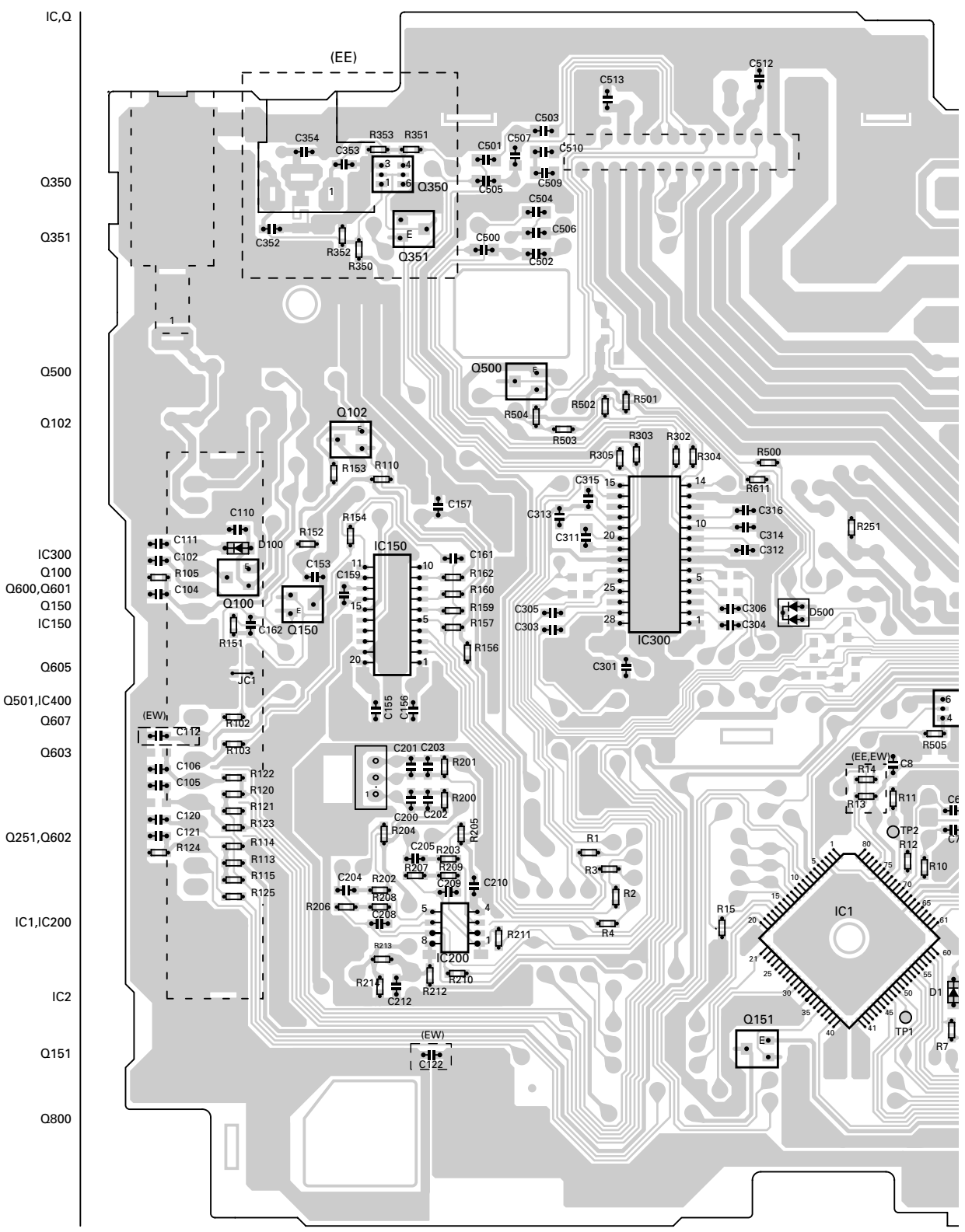
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SIDE B

A

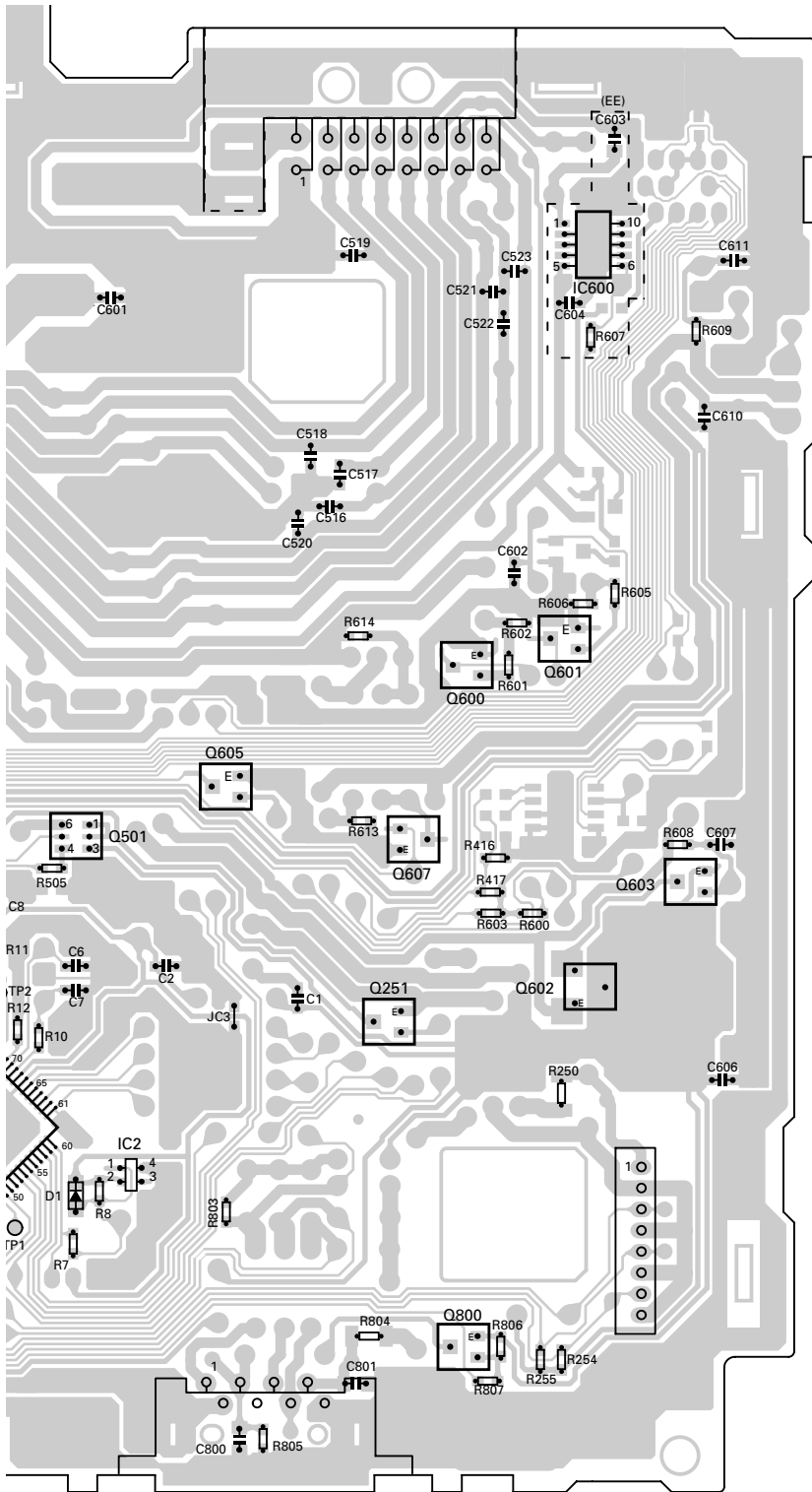
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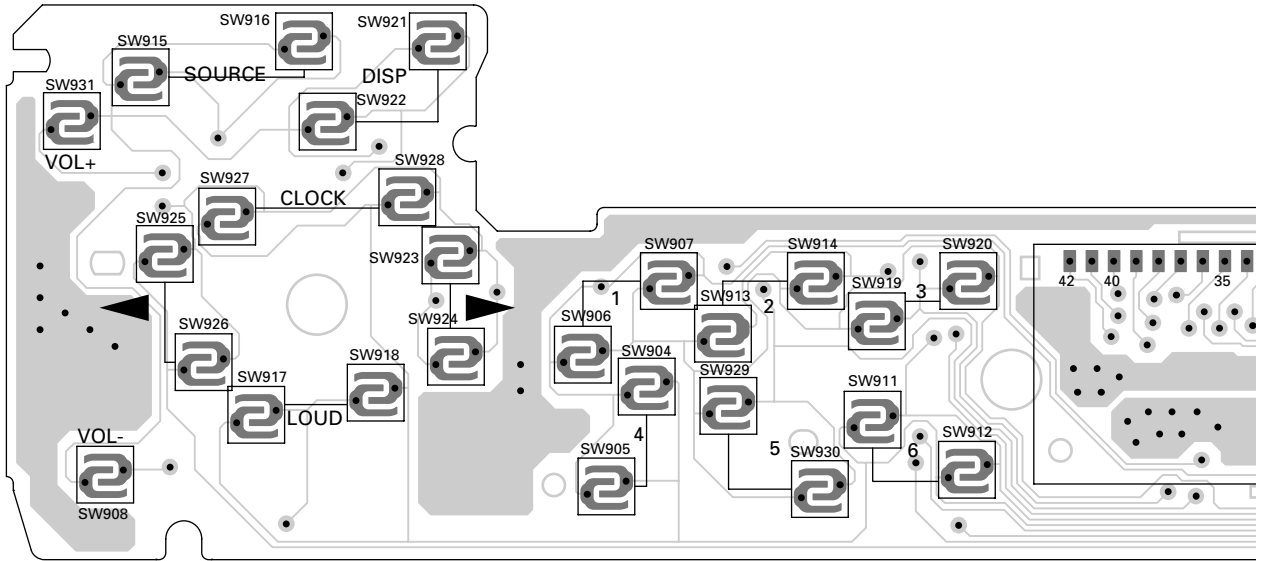
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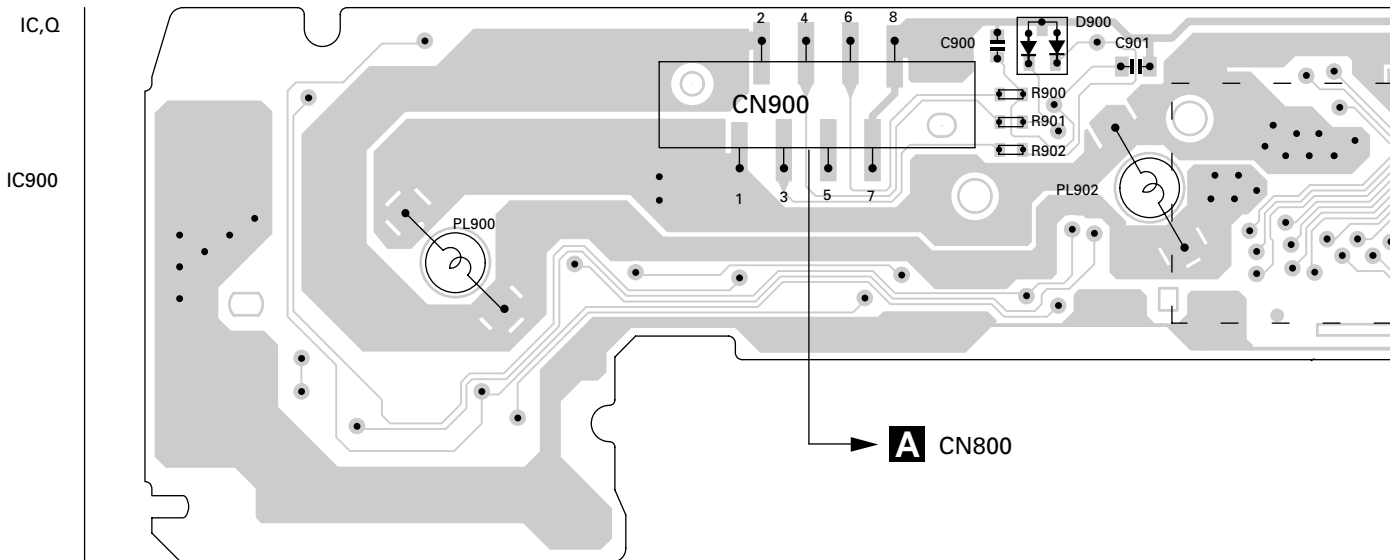


4.2 KEYBOARD UNIT

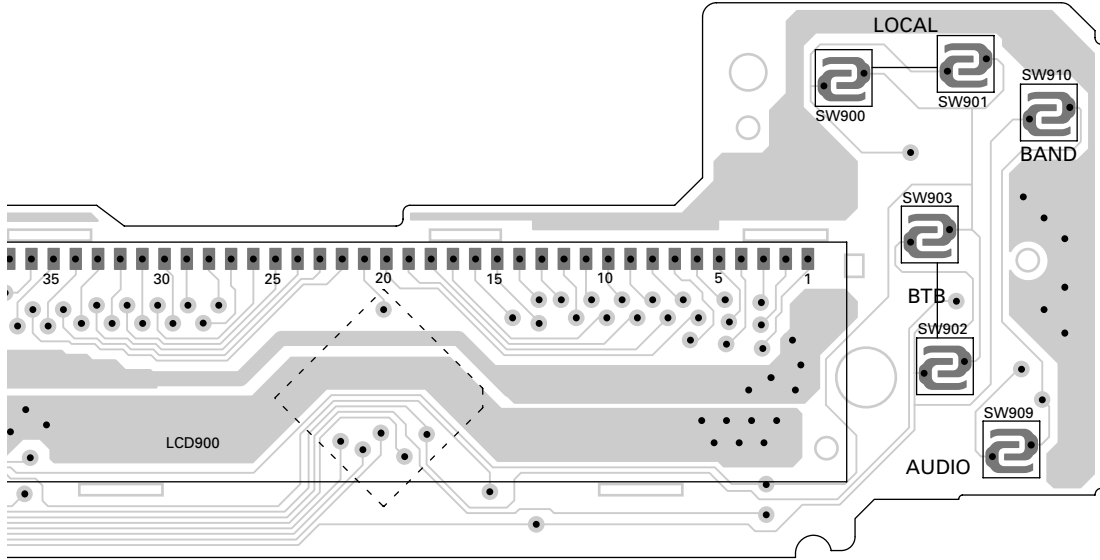
B KEYBOARD UNIT



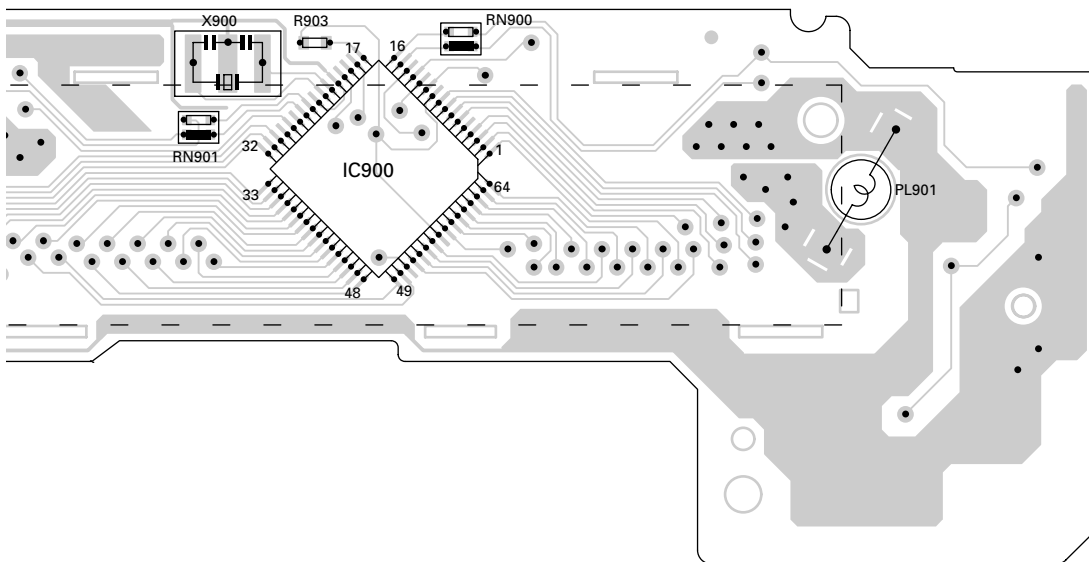
B KEYBOARD UNIT



SIDE A



SIDE B



A

B

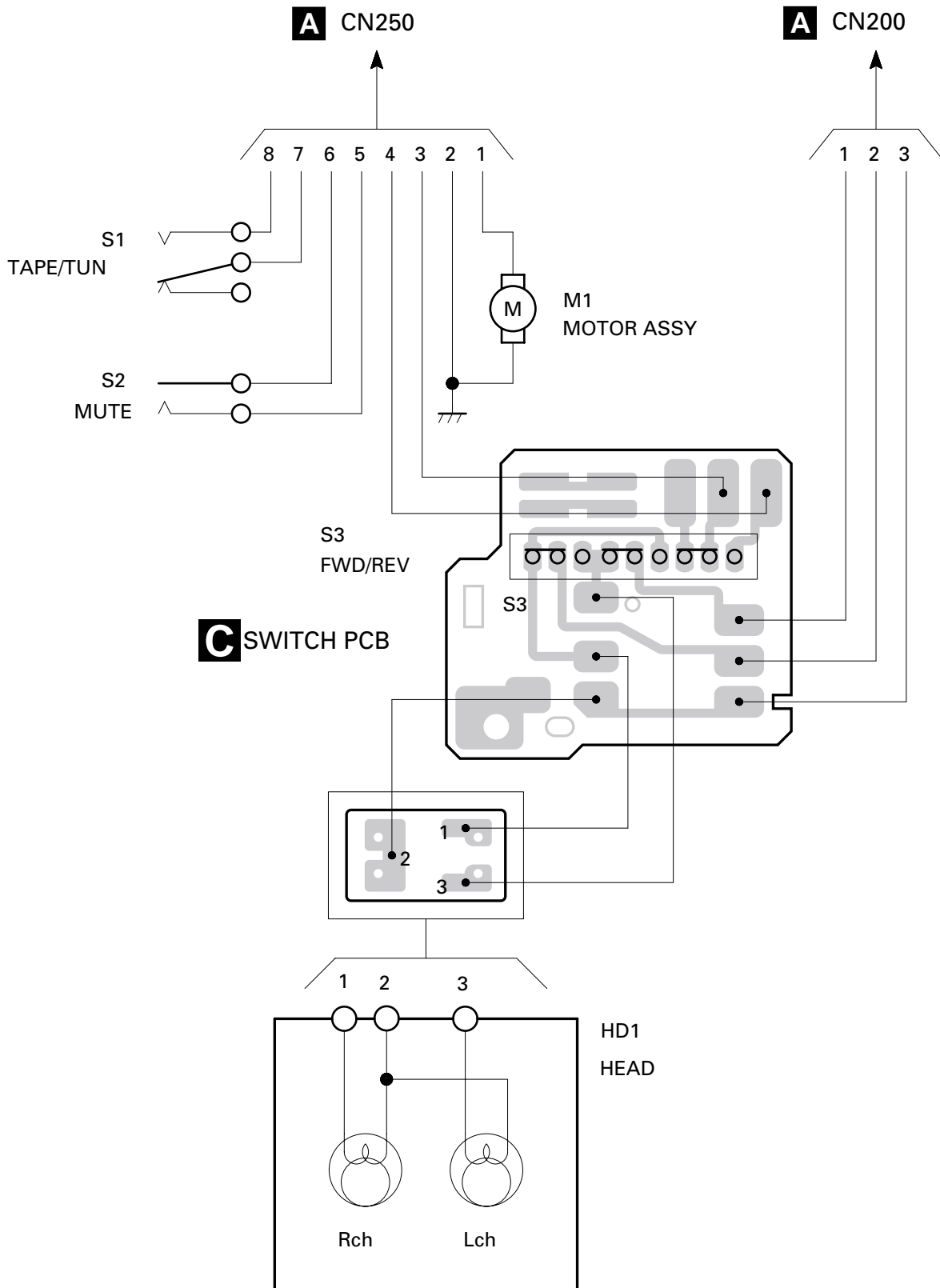
C

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E

F

4.3 CASSETTE MECHANISM



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/OS○○○○J,RS1/○○S○○○○J

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

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

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
A Unit Number : CZW5541(KEH-1032, 1033)		L 800 Ferri-Inductor	LAU100J
Unit Name : Tuner Amp Unit		X 1 Crystal Resonator 4.194304MHz	CZS2918
		X 150 Crystal Resonator 7.2MHz	CZS2920
		TU 100 Tuner Unit	CZW5535
		DSP 100 Surge Protector	DSP-201M-A11F
MISCELLANEOUS		RESISTORS	
IC 1 IC	000974490	R 1	RS1/16S102J
IC 2 IC	PST3434UL	R 2	RS1/16S102J
IC 150 IC	LC72135M	R 3	RS1/16S102J
IC 200 IC	BA4560F	R 4	RS1/16S102J
IC 300 IC	PML010A	R 5	RD1/4PU102J
IC 500 IC	TDA7384	R 6	RD1/4PU102J
Q 100 Transistor	DTC124EK	R 7	RS1/16S102J
Q 102 Transistor	DTA123YKA	R 8	RS1/16S473J
Q 150 Transistor	2SK536	R 9	RD1/4PU222J
Q 151 Transistor	DTA123YKA	R 10	RS1/16S682J
Q 250 Transistor	2SA1706	R 11	RS1/16S473J
Q 251 Transistor	DTC114EK	R 12	RS1/16S0R0J
Q 500 Transistor	DTC124EK	R 13	RS1/16S333J
Q 501 Transistor	IMD2A	R 14	RS1/16S103J
Q 600 Transistor	2PD601A	R 15	RS1/16S104J
Q 601 Transistor	2PD601A	R 16	RD1/4PU102J
Q 602 Transistor	2SB1181F5	R 102	RS1/16S101J
Q 603 Transistor	2PD601A	R 103	RS1/16S101J
Q 604 Transistor	2SD2396	R 105	RS1/16S222J
Q 605 Transistor	2PD601A	R 110	RS1/16S103J
Q 606 Transistor	2SA2112	R 113	RS1/16S152J
Q 607 Transistor	DTC114EK	R 114	RS1/16S222J
Q 800 Transistor	2PB709A	R 115	RS1/16S223J
D 1 Diode	1SS355	R 120	RS1/16S153J
D 100 Diode	1SS355	R 121	RS1/16S153J
D 200 Diode	1SS133	R 122	RS1/16S103J
D 250 Diode	11ES2	R 123	RS1/16S103J
D 500 Diode	DAN202U	R 124	RS1/16S104J
D 600 Diode	11ES2	R 125	RS1/16S223J
D 601 Diode	11ES2	R 151	RS1/16S222J
D 602 Diode	HZS7L(C2)	R 152	RS1/16S332J
D 603 Diode	HZS7L(A1)	R 153	RS1/16S181J
D 606 Diode	11ES2	R 154	RS1/16S222J
D 607 Diode	HZS6L(B2)	R 156	RS1/16S513J
D 608 Diode	HZS9L(C1)	R 157	RS1/16S103J
D 609 Diode	HZS9L(A2)	R 159	RS1/16S102J
D 800 Diode	1SS133	R 160	RS1/16S102J
D 801 Diode	1SS133	R 162	RS1/16S471J
D 802 Diode	1SS133	R 200	RS1/16S473J
D 803 Diode	1SS133	R 201	RS1/16S473J
D 804 Diode	1SS133	R 202	RS1/16S101J
D 805 Diode	1SS133	R 203	RS1/16S101J
L 1 Inductor	LAU2R2J	R 204	RS1/16S330J
L 100 Ferri-Inductor	LAU100J	R 205	RS1/16S330J
L 101 Coil	CZT2930	R 206	RS1/16S564J
L 102 Ferri-Inductor	LAU4R7J	R 207	RS1/16S564J
L 103 Ferri-Inductor	LAU4R7J	R 208	RS1/16S153J
L 151 Ferri-Inductor	LAU4R7J	R 209	RS1/16S153J
L 300 Ferri-Inductor	LAU4R7J	R 210	RS1/16S102J
L 600 Choke Coil 600μH	CTH1221	R 211	RS1/16S102J

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.	A
A Unit Number : CZW5539(KEH-2031)		RESISTORS		
Unit Name : Tuner Amp Unit				
MISCELLANEOUS				
IC 1 IC	000974490	R 1	RS1/16S102J	
IC 2 IC	PST3434UL	R 2	RS1/16S102J	
IC 150 IC	LC72135M	R 3	RS1/16S102J	
IC 200 IC	BA4560F	R 4	RS1/16S102J	
IC 300 IC	PML010A	R 5	RD1/4PU102J	
IC 500 IC	TDA7384	R 6	RD1/4PU102J	
IC 600 IC	TPD1018F	R 7	RS1/16S102J	
Q 100 Transistor	DTC124EK	R 8	RS1/16S473J	
Q 102 Transistor	DTA123YKA	R 9	RD1/4PU222J	
Q 150 Transistor	2SK536	R 10	RS1/16S682J	
Q 151 Transistor	DTA123YKA	R 11	RS1/16S473J	B
Q 250 Transistor	2SA1706	R 12	RS1/16S0R0J	
Q 251 Transistor	DTC114EK	R 13	RS1/16S473J	
Q 350 Transistor	IMH3A	R 14	RS1/16S473J	
Q 351 Transistor	DTA124EK	R 15	RS1/16S104J	
Q 500 Transistor	DTC124EK	R 16	RD1/4PU102J	
Q 501 Transistor	IMD2A	R 102	RS1/16S101J	
Q 600 Transistor	2PD601A	R 103	RS1/16S101J	
Q 601 Transistor	2PD601A	R 105	RS1/16S222J	
Q 602 Transistor	2SB1181F5	R 110	RS1/16S103J	
Q 603 Transistor	2PD601A	R 113	RS1/16S152J	
Q 604 Transistor	2SD2396	R 114	RS1/16S222J	
Q 605 Transistor	2PD601A	R 115	RS1/16S223J	
Q 606 Transistor	2SA2112	R 120	RS1/16S153J	
Q 607 Transistor	DTC114EK	R 121	RS1/16S153J	C
Q 800 Transistor	2PB709A	R 122	RS1/16S103J	
D 1 Diode	1SS355	R 123	RS1/16S103J	
D 100 Diode	1SS355	R 124	RS1/16S104J	
D 200 Diode	1SS133	R 125	RS1/16S223J	
D 250 Diode	11ES2	R 151	RS1/16S222J	
D 500 Diode	DAN202U	R 152	RS1/16S332J	
D 600 Diode	11ES2	R 153	RS1/16S181J	
D 601 Diode	11ES2	R 154	RS1/16S222J	
D 602 Diode	HZS7L(C2)	R 155	RS1/16S513J	
D 603 Diode	HZS7L(A1)	R 156	RS1/16S103J	
D 604 Diode	11ES2	R 157	RS1/16S102J	
D 605 Diode	11ES2	R 159	RS1/16S102J	
D 606 Diode	11ES2	R 160	RS1/16S102J	
D 607 Diode	HZS6L(B2)	R 162	RS1/16S471J	D
D 608 Diode	HZS9L(C1)	R 200	RS1/16S473J	
D 609 Diode	HZS9L(A2)	R 201	RS1/16S473J	
D 800 Diode	1SS133	R 202	RS1/16S101J	
D 801 Diode	1SS133	R 203	RS1/16S101J	
D 802 Diode	1SS133	R 204	RS1/16S330J	
D 803 Diode	1SS133	R 205	RS1/16S330J	
D 804 Diode	1SS133	R 206	RS1/16S564J	
D 805 Diode	1SS133	R 207	RS1/16S564J	
L 1 Inductor	LAU2R2J	R 208	RS1/16S153J	
L 100 Ferri-Inductor	LAU100J	R 209	RS1/16S153J	
L 101 Coil	CZT2930	R 210	RS1/16S102J	
L 102 Ferri-Inductor	LAU4R7J	R 211	RS1/16S102J	
L 103 Ferri-Inductor	LAU4R7J	R 212	RS1/16S100J	E
L 151 Ferri-Inductor	LAU4R7J	R 213	RS1/16S103J	
L 300 Ferri-Inductor	LAU4R7J	R 214	RS1/16S103J	
L 600 Choke Coil 600µH	CTH1221	R 250	RS1/8S3R3J	
L 800 Ferri-Inductor	LAU100J	R 251	RS1/16S103J	
X 1 Crystal Resonator 4.194304MHz	CZS2918	R 252	RD1/4PU182J	
X 150 Crystal Resonator 7.200MHz	CZS2920	R 253	RD1/4PU182J	
TU 100 Tuner Unit	CZW5536	R 254	RS1/16S104J	
DSP 100 Surge Protector	DSP-201M-A11F	R 255	RS1/16S104J	
		R 256	RD1/4PU104J	
		R 302	RS1/16S101J	
		R 303	RS1/16S101J	
		R 304	RS1/16S101J	
		R 305	RS1/16S101J	F
		R 350	RS1/16S821J	

A	====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
	R 351	RS1/16S821J	C 203	CKSRYP102K50
	R 352	RS1/16S473J	C 204	CCSRCH101J50
	R 353	RS1/16S473J	C 205	CCSRCH101J50
	R 416	RS1/16S473J	C 206	CEAL101M10
	R 500	RS1/16S103J	C 207	CEAL101M10
	R 501	RS1/16S103J	C 208	CKSRYP103K50
	R 502	RS1/16S153J	C 209	CKSRYP103K50
	R 503	RS1/16S221J	C 210	CCSRCH471J50
	R 504	RS1/16S101J	C 211	CEAL100M16
	R 505	RS1/16S152J	C 212	CKSRYP103K50
	R 600	RS1/16S104J	C 213	CEAL330M10
	R 601	RS1/16S473J	C 300	CCH1378
B	R 602	RS1/16S473J	C 301	CKSRYP104K50
	R 603	RS1/16S104J	C 302	CCH1377
	R 604	RD1/4PU102J	C 303	CKSRYP224K16
	R 605	RS1/16S223J	C 304	CKSRYP224K16
	R 606	RS1/16S473J	C 305	CKSRYP224K16
	R 607	RS1/16S103J	C 306	CKSRYP224K16
	R 608	RS1/16S223J	C 311	CKSQYB475K6R3
	R 609	RS1/16S122J	C 312	CKSQYB475K6R3
	R 610	RD1/4PU271J	C 313	CCSRCH100D50
	R 611	RS1/16S152J	C 314	CCSRCH100D50
	R 612	RD1/4PU103J	C 315	CCSRCH100D50
	R 613	RS1/16S223J	C 316	CCSRCH100D50
	R 614	RS1/16S103J	C 350	CEAL2R2M50
	R 615	RD1/4PU182J	C 351	CEAL2R2M50
	R 616	RD1/4PU182J	C 352	CKSRYP222K50
	R 800	RD1/4PU222J	C 353	CKSRYP222K50
	R 801	RD1/4PU222J	C 500	CKSQYB474K25
	R 802	RD1/4PU222J	C 501	CKSQYB474K25
	R 803	RS1/16S473J	C 502	CKSQYB474K25
	R 804	RS1/8S4R7J	C 503	CKSQYB474K25
	R 805	RS1/16S222J	C 504	CKSQYB474K25
	R 806	RS1/16S223J	C 505	CKSQYB474K25
	R 807	RS1/16S222J	C 506	CKSQYB474K25
	JC 1	RS1/16S0R0J	C 507	CKSQYB474K25
	JC 3	RS1/16S0R0J	C 508	CEAL100M16
			C 509	CKSQYB225K10
			C 510	CKSQYB225K10
			C 511	CEAL330M10
D	C 1	CCSRCH150J50		
	C 2	CKSRYP104K50	C 512	CKSRYP104K50
	C 3	CEAL100M16	C 513	CKSRYP104K50
	C 4	CEAL2R2M50	C 516	CKSRYP102K50
	C 6	CCSRCH150J50	C 517	CKSRYP102K50
			C 518	CKSRYP102K50
	C 7	CCSRCH150J50		
	C 8	CKSRYP104K50	C 519	CKSRYP102K50
	C 101	CCH1019	C 520	CKSRYP102K50
	C 102	CKSRYP103K50	C 521	CKSRYP102K50
	C 103	CEAL100M16	C 522	CKSRYP102K50
			C 523	CKSRYP102K50
	C 104	CKSRYP103K50		
	C 105	CKSRYP332K50	C 600	3300μF/16V
	C 106	CKSRYP332K50	C 601	CCH1018
E	C 111	CKSRYP223K50	C 602	CKSRYP104K50
	C 113	CQMAQ473J50	C 603	CKSRYP102K50
			C 604	CKSQYB104K50
	C 120	CKSRYP223K50		
	C 121	CKSRYP103K50	C 605	CEAL470M16
	C 151	CCH-108	C 606	CKSRYP103K50
	C 153	CKSRYP103K50	C 607	CKSRYP103K50
	C 154	CCH1019	C 608	470μF/16V
			C 609	100μF/10V
	C 155	CCSRCH150J50		
	C 156	CCSRCH150J50	C 610	CKSRYP103K50
	C 157	CKSRYP103K50	C 611	CKSRYP103K50
	C 158	CCH1377	C 612	100μF/10V
	C 159	CCSRCH331J50	C 800	CKSQYB104K50
			C 801	CKSQYB104K50
F	C 161	CCSRCH331J50		
	C 162	CKSRYP103K50		
	C 200	CCSRCH220J50		
	C 201	CCSRCH220J50		
	C 202	CKSRYP102K50		

====Circuit Symbol and No.====Part Name Part No.

B Unit Number : CZW5544(KEH-1033)
Unit Name : Keyboard Unit

MISCELLANEOUS

IC	900	IC	PD6340A
D	900	Diode	HZM6R2ZWA
X	900	Ceramic Resonator 4.97MHz	CSS1422
PL	900	Lamp 14V 65mA	CZE2958
PL	901	Lamp 14V 65mA	CZE2958
PL	902	Lamp 14V 65mA	CZE2958
LCD	900	LCD	CZA5579

RESISTORS

R	900	RS1/16S100J
R	901	RS1/16S222J
R	902	RS1/16S222J
R	903	RS1/16S473J
RN	900	RA2S471J
RN	901	RA2S471J

CAPACITORS

C	900	CKSRYB104K50
C	901	CKSQYB225K10

B Unit Number : CZW5543(KEH-1032, 2031)
Unit Name : Keyboard Unit

MISCELLANEOUS

IC	900	IC	PD6340A
D	900	Diode	HZM6R2ZWA
X	900	Ceramic Resonator 4.97MHz	CSS1422
PL	900	Lamp 14V 65mA	CZE2950
PL	901	Lamp 14V 65mA	CZE2950
PL	902	Lamp 14V 65mA	CZE2950
LCD	900	LCD	CZA5579

RESISTORS

R	900	RS1/16S100J
R	901	RS1/16S222J
R	902	RS1/16S222J
R	903	RS1/16S473J
RN	900	RA2S471J
RN	901	RA2S471J

CAPACITORS

C	900	CKSRYB104K50
C	901	CKSQYB225K10

====Circuit Symbol and No.====Part Name Part No.

C Unit Number :
Unit Name : Switch PCB

S	3	Slide Switch(FWD/REV)	1-0363-7002
---	---	-----------------------	-------------

Miscellaneous Parts List

S	1	Power Switch(TAPE/TUN)	1-0363-7005
S	2	Mute Switch(MUTE)	1-0363-7001
HD	1	Head	1-0036-7123
M	1	Motor Assy	X-0363-7006

6. ADJUSTMENT

There is no information to be shown in this chapter.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

● Removing the Case (not shown)

1. Remove the Case.

● Removing the Cassette Mechanism (Fig.1)

1 Remove the four screws.

Disconnect the connector and then remove the Cassette Mechanism .

● Removing the Grille Assy (Fig.1)

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

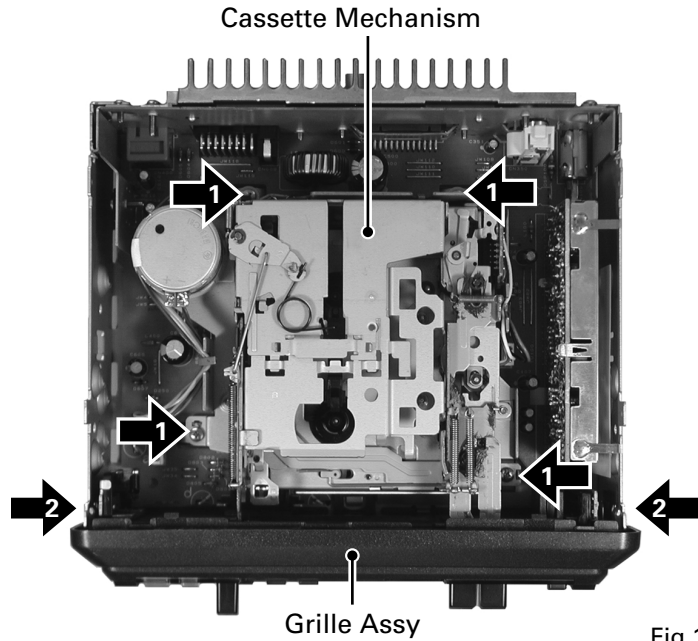


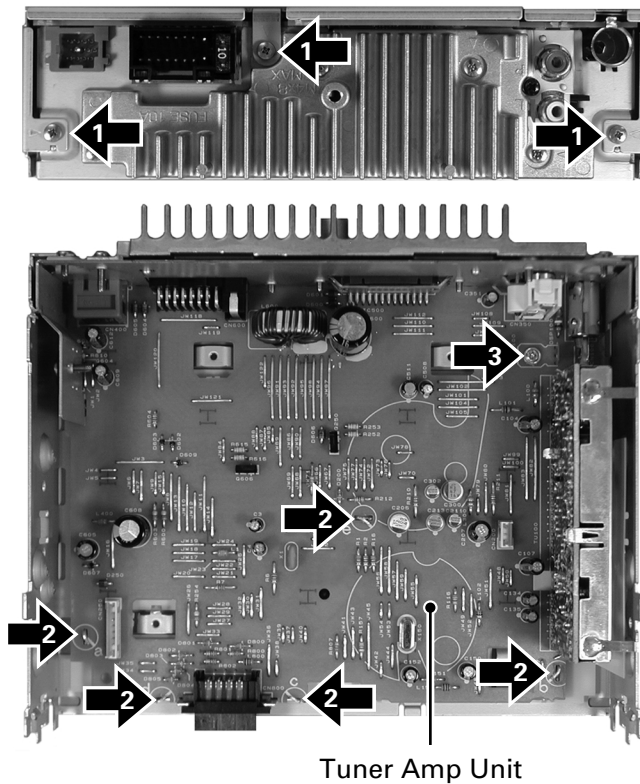
Fig.1

● Removing the Tuner Amp Unit (Fig.2)

1 Remove the three screws.

2 Straight the tabs at five locations indicated.

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

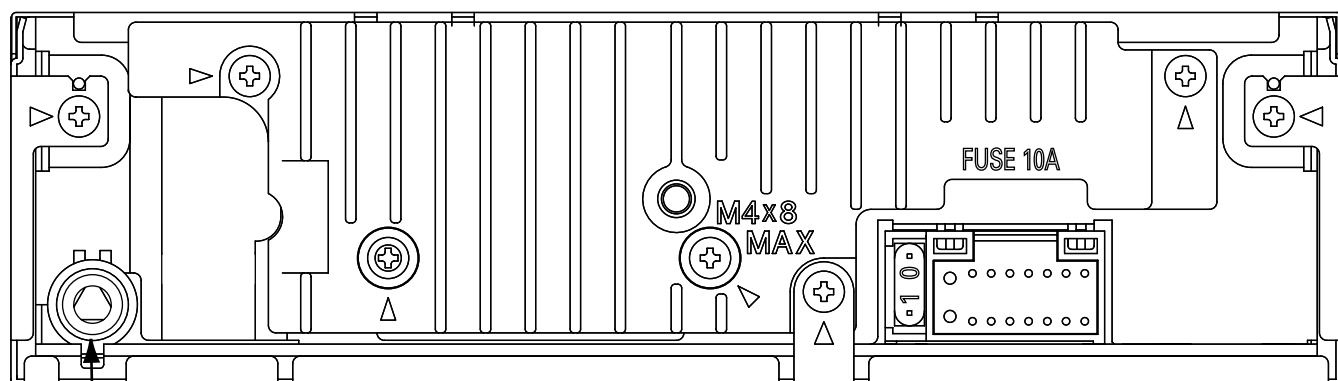


Tuner Amp Unit

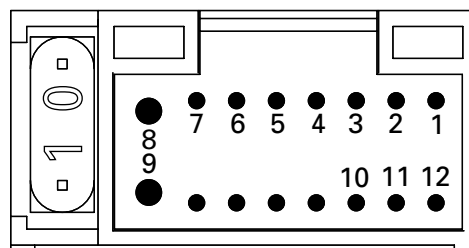
Fig.2

7.1.2 CONNECTOR FUNCTION DESCRIPTION

● KEH-1033/XM/EW, 1032/XM/EW



ANTENNA

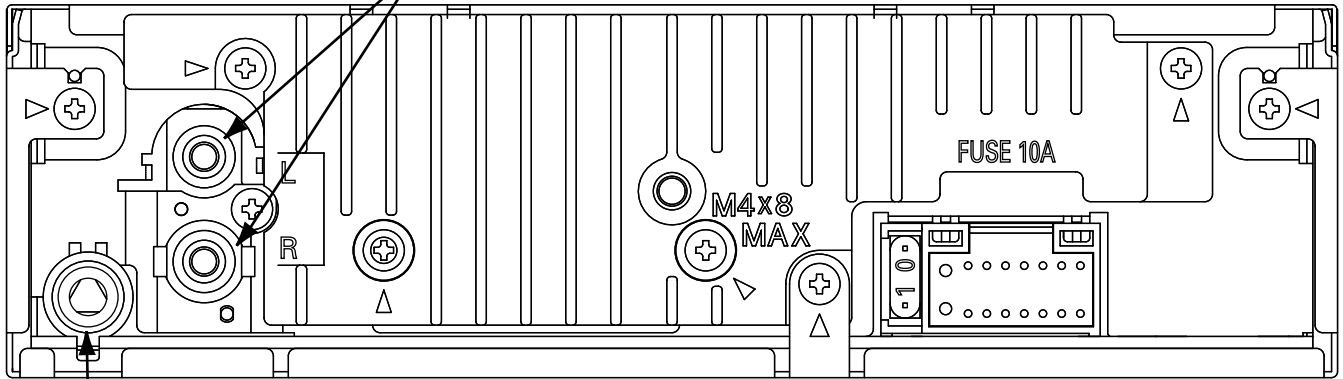


- 1 RR+
- 2 RL-
- 3 RL+
- 4 FL+
- 5 FL-
- 6 FR+
- 7 FR-
- 8 GND
- 9 BACK UP
- 10 B.REMOTE
- 11 ACC
- 12 RR-

● KEH-2031/XM/EE

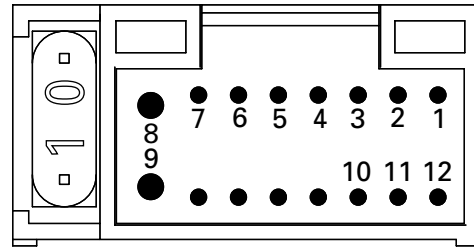
A

REAR OUTPUT



B

ANTENNA



C

- 1 RR+
- 2 RL-
- 3 RL+
- 4 FL+
- 5 FL-
- 6 FR+
- 7 FR-
- 8 GND
- 9 BACK UP
- 10 B.REMOTE
- 11 ACC
- 12 RR-

D

E

F

7.2 PARTS

7.2.1 IC

●Pin Functions(000974490)

Pin No.	Pin Name	I/O	Format	Function and Operation
1,2	NC			Not used
3	ADPW	O	C	A/D converter power supply control output
4	AVSS			GND
5	MUTE	O	C	System mute output
6	NC			Not used
7	AVREF1	I		D/A converter reference voltage terminal
8	KYDT	I		Key data input
9	DPDT	O	C	Display data output
10	NC			Not used
11	TUNPDI	I		PLL IC data input
12	TUNPDO	O	C	PLL IC data output
13	TUNPCK	O	C	PLL IC clock output
14	TUNPCE	O	C	PLL IC chip enable output
15-18	NC			Not used
19	VST	O	C	Strobe pulse output for electronic volume
20	VDT	O	C	Data output for electronic volume
21	VCK	O	C	Clock output for electronic volume
22-28	NC			Not used
29	SD	I		SD signal input
30	ST	I		FM stereo input
31,32	NC			Not used
33	VSS1			GND
34,35	NC			Not used
36	SW5V	O	N	PLL IC power supply control output(5V)
37	FM/AM	O	N	FM/AM band select pin"H":AM "L":FM
38	TUON	O	N	Tuner power supply control output
39	SWVDD	O	N	Grille power supply control output(5V)
40-45	NC			Not used
46	TAPEIN	I		Tape insert sense input
47	NC			Not used
48	FFREW	I		FF/REW sense input
49	PCL	O	C	Clock adjustment output
50	F/R	I		Tape direction sense input "H":NOR "L":REV
51,52	NC			Not used
53	MOTOR	O	C	Motor control output
54	SYSPW	O	C	System power output
55	B.REM	O	C	B.Remote ON/OFF output
56-59	NC			Not used
60	RESET	I		Reset input
61,62	NC			Not used
63	DSSENS	I		Grille detach sense input
64	NC			Not used
65	ASSENS	I		ACC power sense input
66	BSSENS	I		Backup power sense input
67	VSS0			GND
68	VDD1			Power supply
69	X2			Crystal oscillator connection pin
70	X1	I		Crystal oscillator connection pin
71	IC			(GND)
72	XT2			Not used
73	TESTIN	I		Test program mode input
74	VDD0			Power supply
75	AVREF0	I		A/D converter reference voltage terminal
76	SL	I		Signal level input
77	MODELIN	I		Distinction input (2.0-3.0V)
78-80	NC			Not used

A

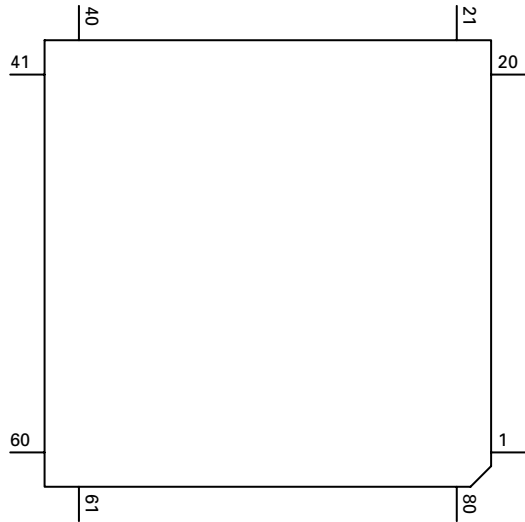
Format	Meaning
C	C MOS
N	N Channel open drain

IC's marked by * are MOS type.

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

*000974490

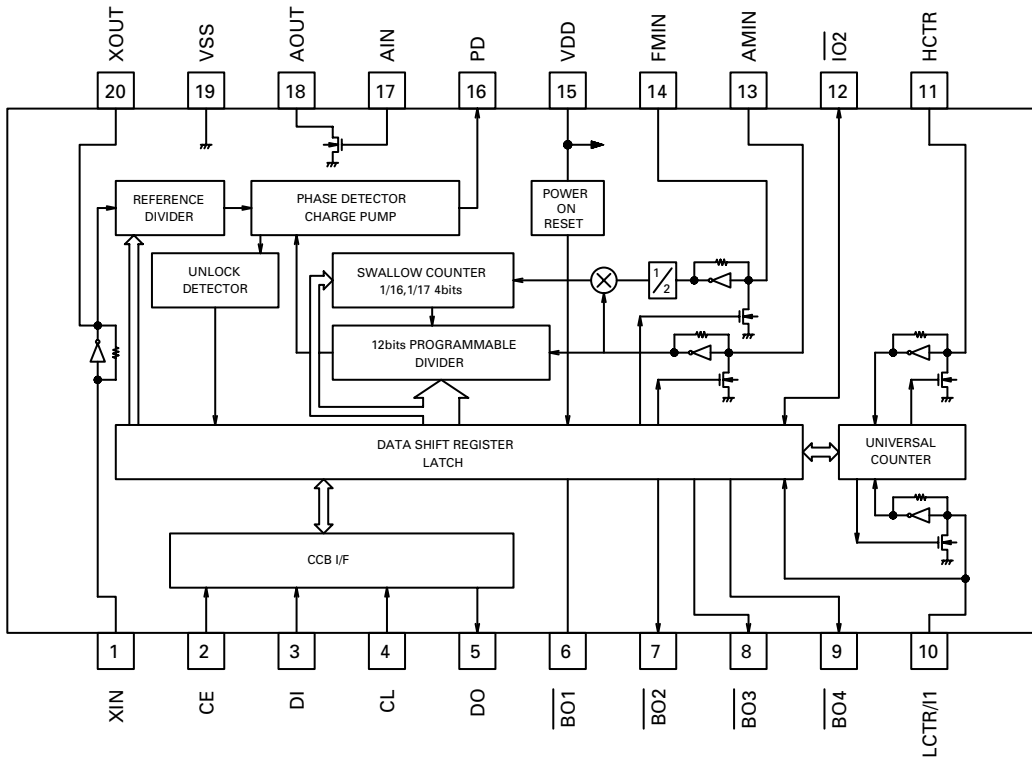
B



C

*LC72153M-TBB

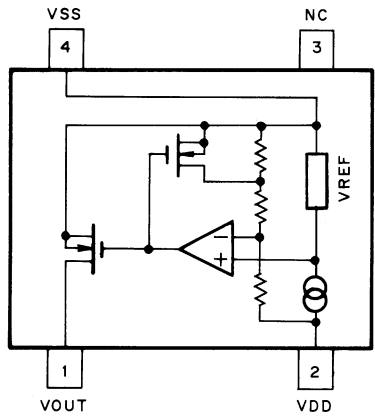
D



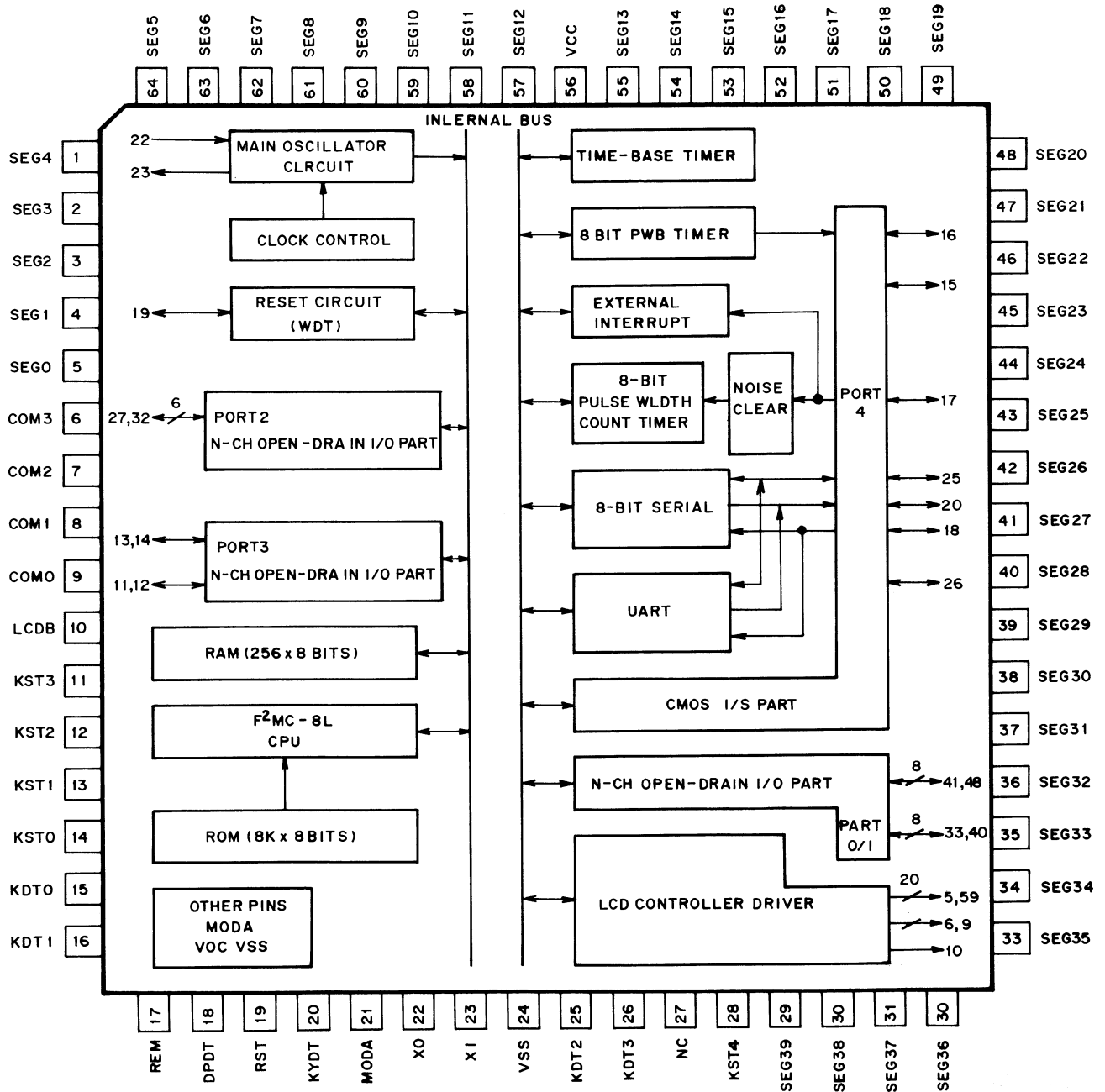
E

F

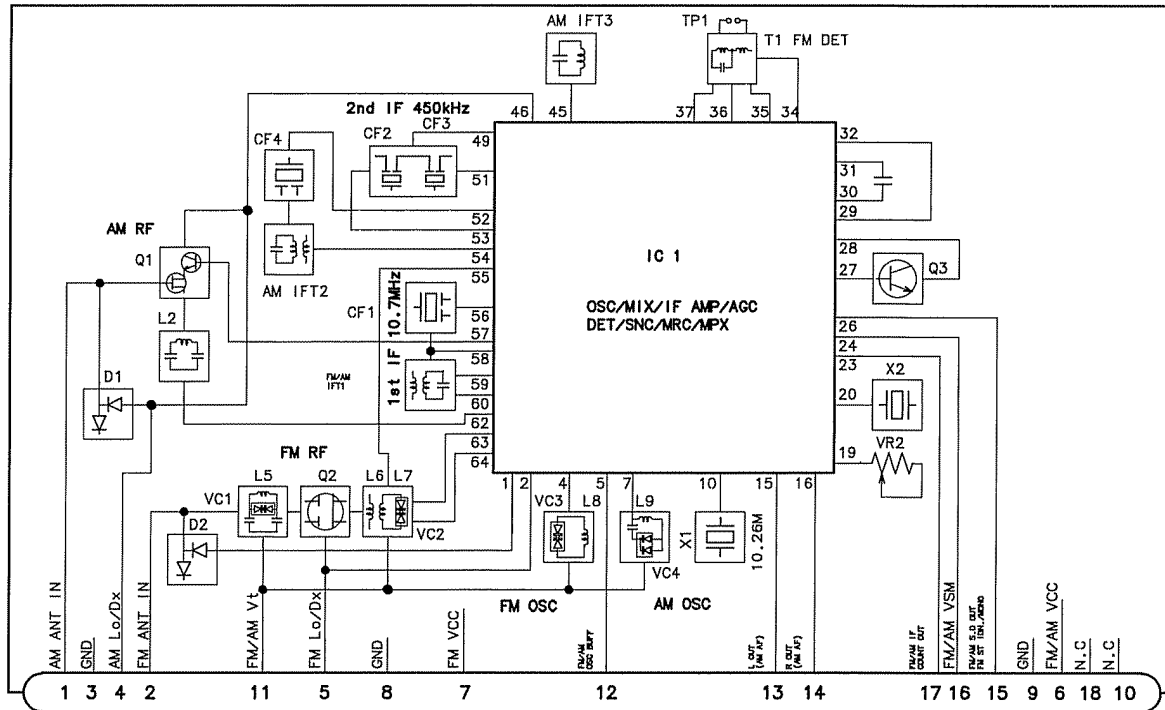
PST3434UL



*PD6340A



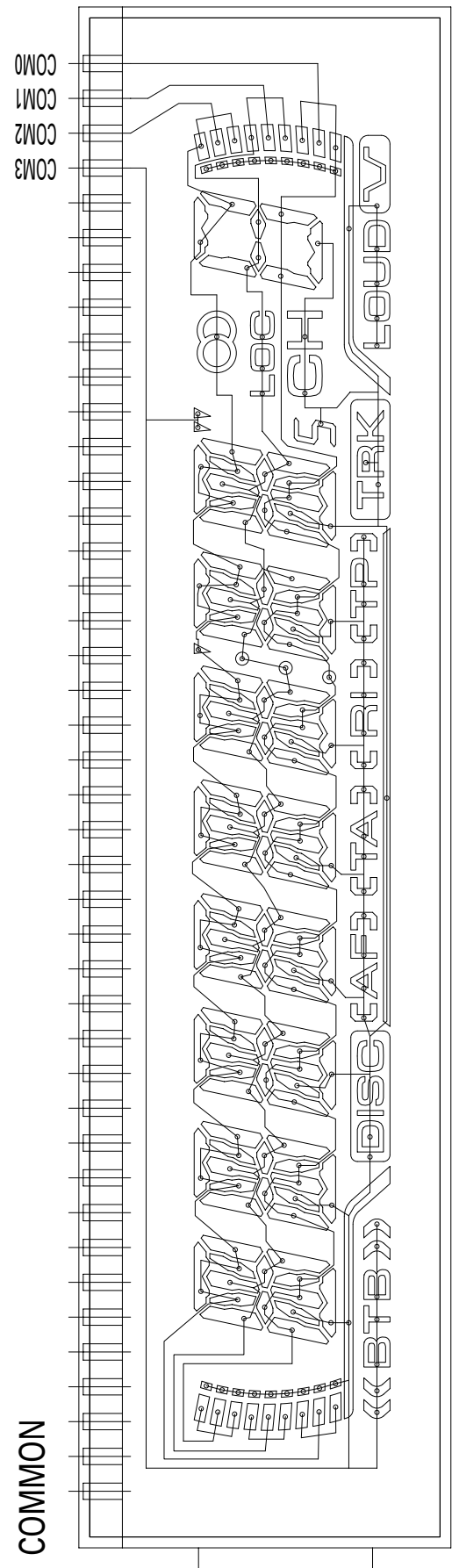
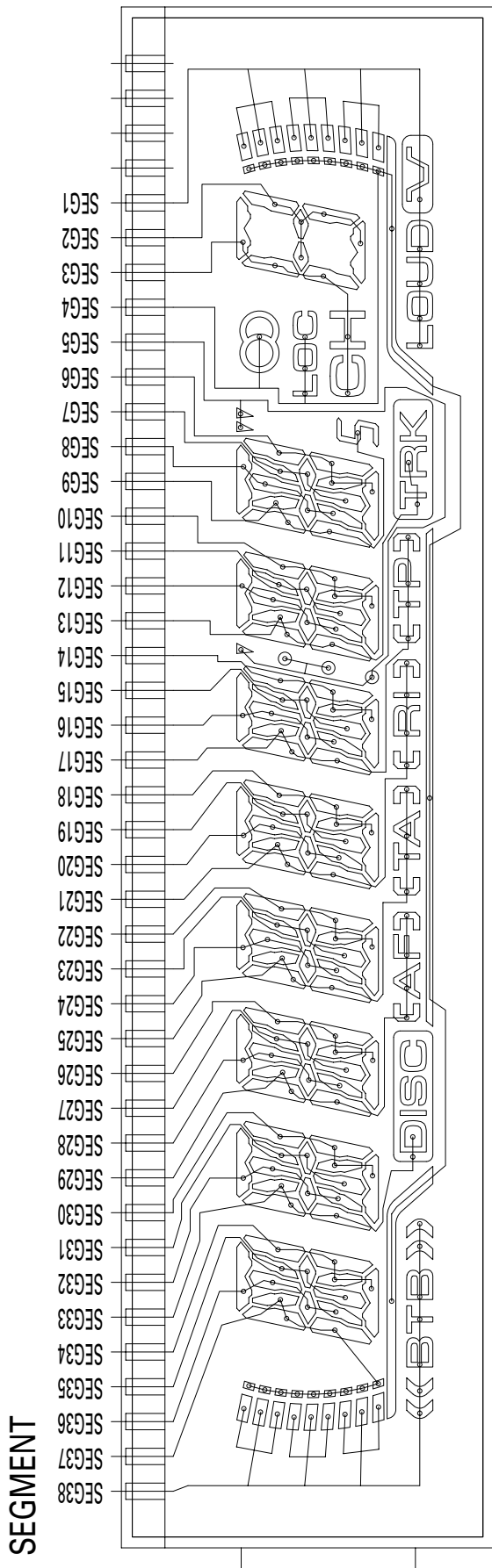
● Tuner Unit(CZW5535, CZW5536)



No.	Symbol	I/O	Explain	
1	AM ANT IN	I	AM antenna input	High impedance. Connect to the antenna through an antenna circuit of receiver set.
2	FM ANT IN	I	FM antenna input	75Ω . Surge absorber is necessary.
3	GND		RF ground	Ground for the antenna section.
4	AM Lo/Dx	I	AM local /distance	Lo: 5V / Dx: open
5	FM Lo/Dx	I	FM local / distance	Lo: ground / Dx: open
6	FM/AM VCC		FM / AM power supply	FM/AM section power supply. DC +8.2V
7	FM VCC		FM power supply	FM RF and band switch section power supply. DC +8.2V
8	GND		FE ground	Ground for the front end section.
9	GND		FM IF/ AM ground	Ground for the FM IF/AM section.
10	N.C			Not used.
11	FM/AM Vt	I	Tuning voltage	Connect to the PLL circuit.
12	FM/AM OSC BUFF	O	OSC buffer output	Connect to the PLL circuit.
13	L OUT	O	L channel output	FM stereo L-ch signal output or AM audio output.
14	R OUT	O	R channel output	FM stereo R-ch signal output or AM audio output.
15	FM/AM SD OUT	O	Station detector	High when signals are received. To be pulled up +5V at 100kΩ
	FM ST IND/MONO		Stereo indicator out	ON when 16pin SD/IF request normal 0V(seek stop).
16	FM/AM VSM	O	Signal meter output	Received FM/AM signal level (strength) output.
17	FM/AM IF COUNT OUT	I/O	IF count output	ON when signals are received at seeking.
			SD / IF request in	
18	N.C			Not used.

7.2.2 DISPLAY

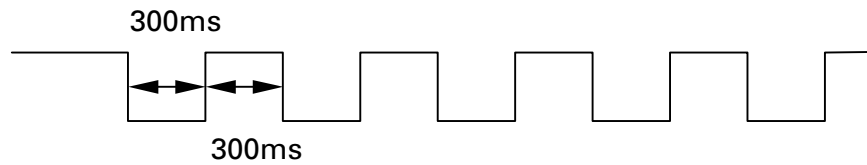
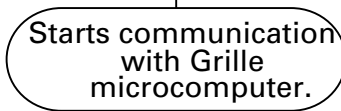
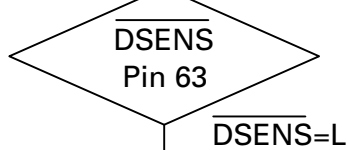
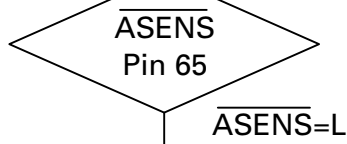
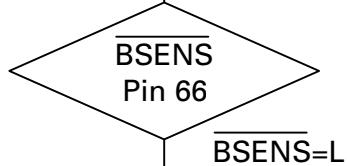
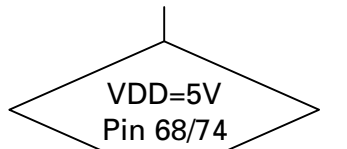
● CZA5579



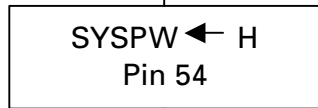
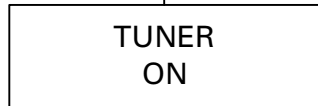
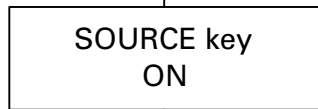
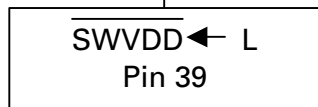
A
B
C
D
E
F

7.3 OPERATIONAL FLOW CHART

Backup, Acc ON



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
Cassette heads Pinch rollers Capstans	Cleaning paper : GED-008

A

B

C

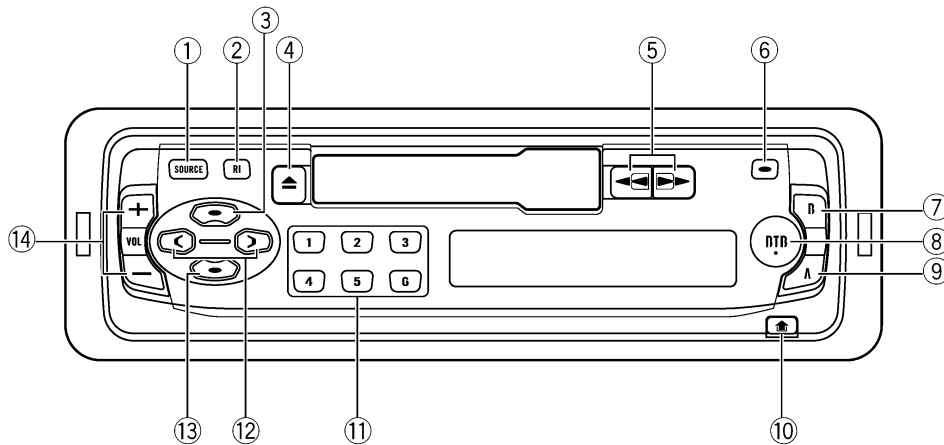
D

E

F

8. OPERATIONS

What's What



Head unit

① SOURCE button

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

② RI button

Press to turn radio intercept on or off.

③ CLOCK button

Press to change to the clock display.

④ TAPE EJECT button

Press to eject a tape from your cassette player.

⑤ ◀▶ buttons

Press to fast forward or rewind the tape.

⑥ LOCAL/BSM button

Press to turn local function on or off when tuner is selected as a source. Press and hold to turn BSM function on or off when tuner is selected as a source.

⑦ BAND button

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

⑧ BTB button

Press to select various BTB (bass treble booster) setting.

⑨ AUDIO button

Press to select various sound quality controls.

⑩ DETACH button

Press to remove the front panel from the head unit.

⑪ 1-6 buttons

Press for preset tuning.


⑫ ◀▶ buttons

Press to do manual seek tuning. Also used for controlling functions.

⑬ LOUDNESS button

Press to turn loudness on or off.

⑭ VOLUME button

Press to increase or decrease the volume. 

Power ON/OFF

Turning the unit on

- Press **SOURCE** to turn the unit on. When you select a source the unit is turned on. 

Selecting a source

You can select a source you want to listen to. To switch to the cassette player, load a cassette tape in this unit.

- Press **SOURCE** to select a source. Press **SOURCE** repeatedly to switch between the following sources:

Tuner—Cassette player



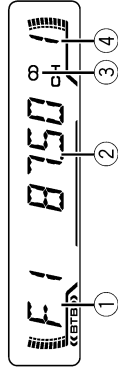
When no cassette is set in this unit, cassette source will not change. 

Turning the unit off

- Press **SOURCE** and hold until the unit turns off. 

Tuner

Listening to the radio



- ① **Band indicator**
Shows which band the radio is tuned to, MW, LW or FM.
- ② **Frequency indicator**
Shows to which frequency the tuner is tuned.
- ③ **Stereo (OD) indicator**
Shows that the frequency selected is being broadcast in stereo.
- ④ **Preset number indicator**
Shows what preset has been selected.

- 1 Press **SOURCE** to select the tuner.

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

When you press **VOLUME** up/+, the volume is raised and when pressed down/–, the volume is lowered.

- 3 Press **BAND** to select a band.

Press **BAND** until the desired band is displayed, **F1**, **F2**, **F3** for FM or **MW/LW**.

- 4 To perform manual tuning, press ◀ or ▶ with quick presses.

The frequencies move up or down step by step.

- 5 To perform seek tuning, press and hold ◀ or ▶ for about one second and release.

The tuner will scan the frequencies until a broadcast strong enough for good reception is found.

- You can cancel seek tuning by pressing either ◀ or ▶ with a quick press.
- If you press and hold ◀ or ▶ you can skip broadcasting stations. Seek tuning starts as soon as you release the buttons.



When the frequency selected is being broadcast in stereo the stereo (OD) indicator will light. 

Storing and recalling broadcast frequencies

If you press any of the preset tuning buttons 1–6 you can easily store up to six broadcast frequencies for later recall with the touch of a button.

- When you find a frequency that you want to store in memory press a preset tuning button 1–6 and hold until the preset number stops flashing.

The number you have pressed will flash in the preset number indicator and then remain lit. The selected radio station frequency has been stored in memory.

The next time you press the same preset tuning button 1–6 the radio station frequency is recalled from memory.



Up to 18 FM stations, 6 for each of the three FM bands, and 6 MW/LW stations can be stored in memory. 

Tuning in strong signals

Local seek tuning lets you tune in only those radio stations with sufficiently strong signals for good reception.

Tuner

- 1 Press **LOCAL/BSM** to turn local seek tuning on. **LOC** appears in the display.
- 2 When you want to return to normal seek tuning, press **LOCAL/BSM** to turn local seek tuning off. 

Storing the strongest broadcast frequencies

BSM (best stations memory) lets you automatically store the six strongest broadcast frequencies under preset tuning buttons 1–6 and once stored there you can tune in to those frequencies with the touch of a button.

- Press **LOCAL/BSM** and hold until the **BSM** turns on.

BSM begins to flash. While **BSM** is flashing the six strongest broadcast frequencies will be stored under preset tuning buttons 1–6 in order of their signal strength. When finished, **BSM** stops flashing.

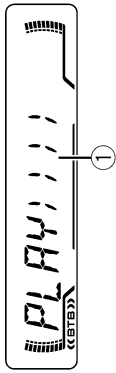
- To cancel the storage process, press **LOCAL/BSM**.



Storing broadcast frequencies with **BSM** may replace broadcast frequencies you have saved using 1–6. 

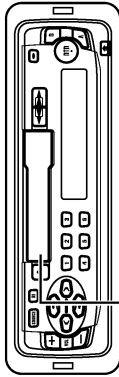
Cassette Player

Playing a tape



- 1 **Tape direction indicator**
Shows the direction of the tape transport.

- 1 **Insert a cassette tape into the cassette loading slot.**
Playback will automatically start.

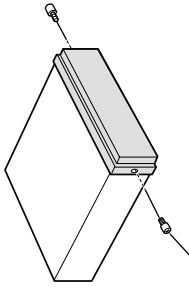


Cassette loading slot

- You can eject a cassette tape by pressing **TAPE EJECT**.
- 2 **After a cassette tape has been inserted, press SOURCE to select the cassette player.**
Press **SOURCE** until cassette player is selected as the source.
 - 3 **Use VOLUME to adjust the sound level.**
When you press **VOLUME** up/+, the volume is raised and when pressed down/–, the volume is lowered.
 - 4 **To perform fast forward or rewind, press ◀◀ or ▶▶.**
 - You can cancel fast forward or rewind by pressing ◀◀ or ▶▶ in the opposite direction lightly.
 - 5 **To change the direction of the tape transport, press ◀◀ and ▶▶ simultaneously.**


About the fixing screws for the front panel

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



Fixing screw
CBA1488

Note

Do not insert anything other than a cassette tape into the cassette loading slot. 

Radio intercept

Radio intercept allows you to listen to the radio during tape fast-forwarding/rewinding.

- **Press RI to turn radio intercept on or off.** 

● KEH-1033/XM/EW, 1032/XM/EW

