

# Service Manual

**PIONEER**  
The Art of Entertainment

KEH-P4600R/X1M/EW



ORDER NO.  
**CRT2000**

MULTI-CD CONTROL HIGH POWER CASSETTE PLAYER WITH RDS TUNER

**KEH-P4600R** X1M/EW

**KEH-P4630R** X1M/EW

MULTI-CD CONTROL HIGH POWER CASSETTE PLAYER WITH FM/MW/LW TUNER

**KEH-P4610** X1M/EE

**NOTE:**

- See the separate manual CX-631(CRT1640) for the cassette mechanism description.
- The cassette mechanism assy employed in this model is one of X-2L series
- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
- This service manual does not describe the CD test mode.  
For the operations in the CD test mode, refer to the CD player's Service Manual.

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## **KEH-P4600R,P4630R,P4610**

### **1. 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.

## 2. EXPLODED VIEWS AND PARTS LIST

### 2.1 PACKING

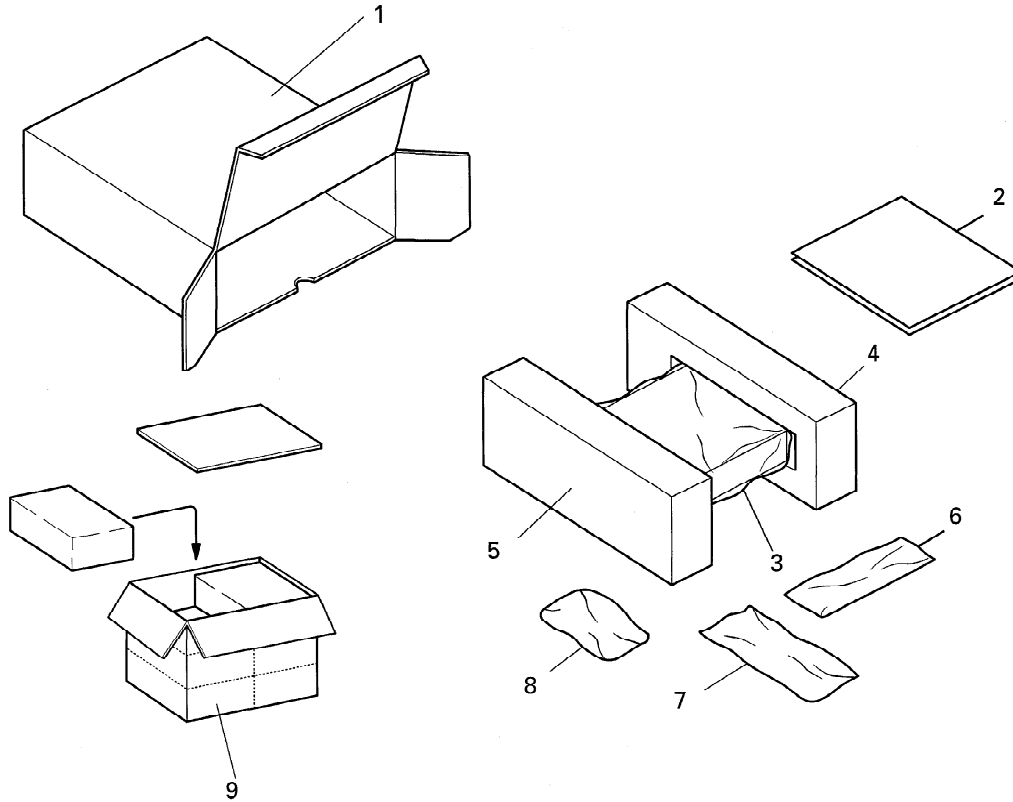


Fig. 1

**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.

● **Parts List**

Mark No.	Description	Part No.		
		KEH-P4600R/X1M/EW	KEH-P4630R/X1M/EW	KEH-P4610/X1M/EE
1	Carton	CHG3207	CHG3212	CHG3211
2-1	Owner's Manual	CRD2207	CRD2207	CRD2209
2-2	Installation Manual	CRD2208	CRD2208	CRD2210
2-3	Owner's Manual	CRD2227	CRD2227	CRD2229
2-4	Owner's Manual	CRD2228	CRD2228	CRD2230
*	2-5 Warranty Card	CRY1087	CRY1087	CRY1087
*	2-6 Passport	CRY1013	CRY1013	Not used
3	Polyethylene Bag	CEG-162	CEG-162	CEG-162
4	Protector	CHP1622	CHP1622	CHP1622
5	Protector	CHP1623	CHP1623	CHP1623
6	Case Assy	CXB1063	CXB1063	CXB1063
7	Cord Assy	CDE5286	CDE5286	CDE4849
8	Accessory Assy	CEA1917	CEA1917	CEA1917
9	Contain Box	CHL3207	CHL3212	CHL3211

# KEH-P4600R,P4630R,P4610

## ● Owner's Manual, Installation Manual

Model	Part No.	Language
KEH-P4600R/X1M/EW KEH-P4630R/X1M/EW	CRD2207	English, Spanish
	CRD2227	German, French
	CRD2228	Italian, Dutch
	CRD2208	English, Spanish, German, French Italian, Dutch
KEH-P4610/X1M/EE	CRD2209	English, German
	CRD2229	Hungarian, Russian
	CRD2230	Polish, Czech
	CRD2210	English, German, Hungarian, Russian, Polish, Czech

## ● Accessory Assy

Accessory Assy CEA1917

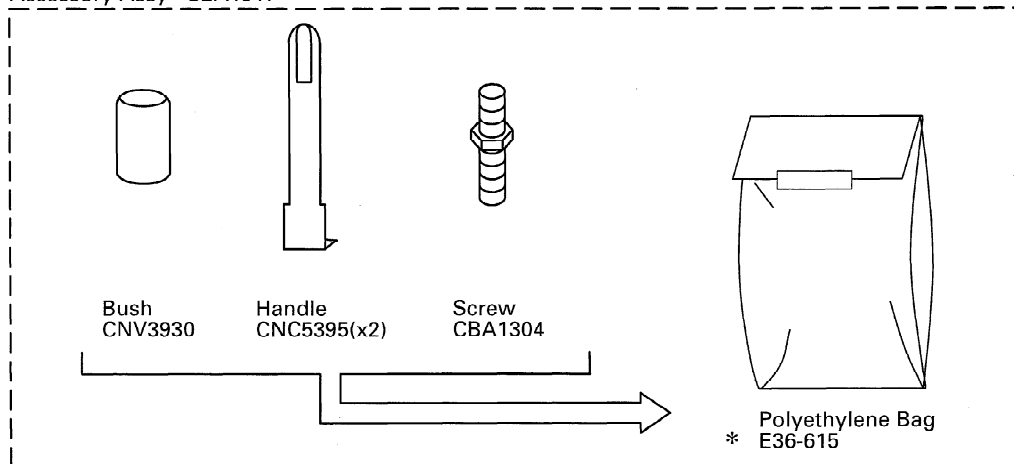


Fig. 2



# KEH-P4600R,P4630R,P4610

## 2.2 EXTERIOR

● KEH-P4600R/X1M/EW, P4630R/X1M/EW

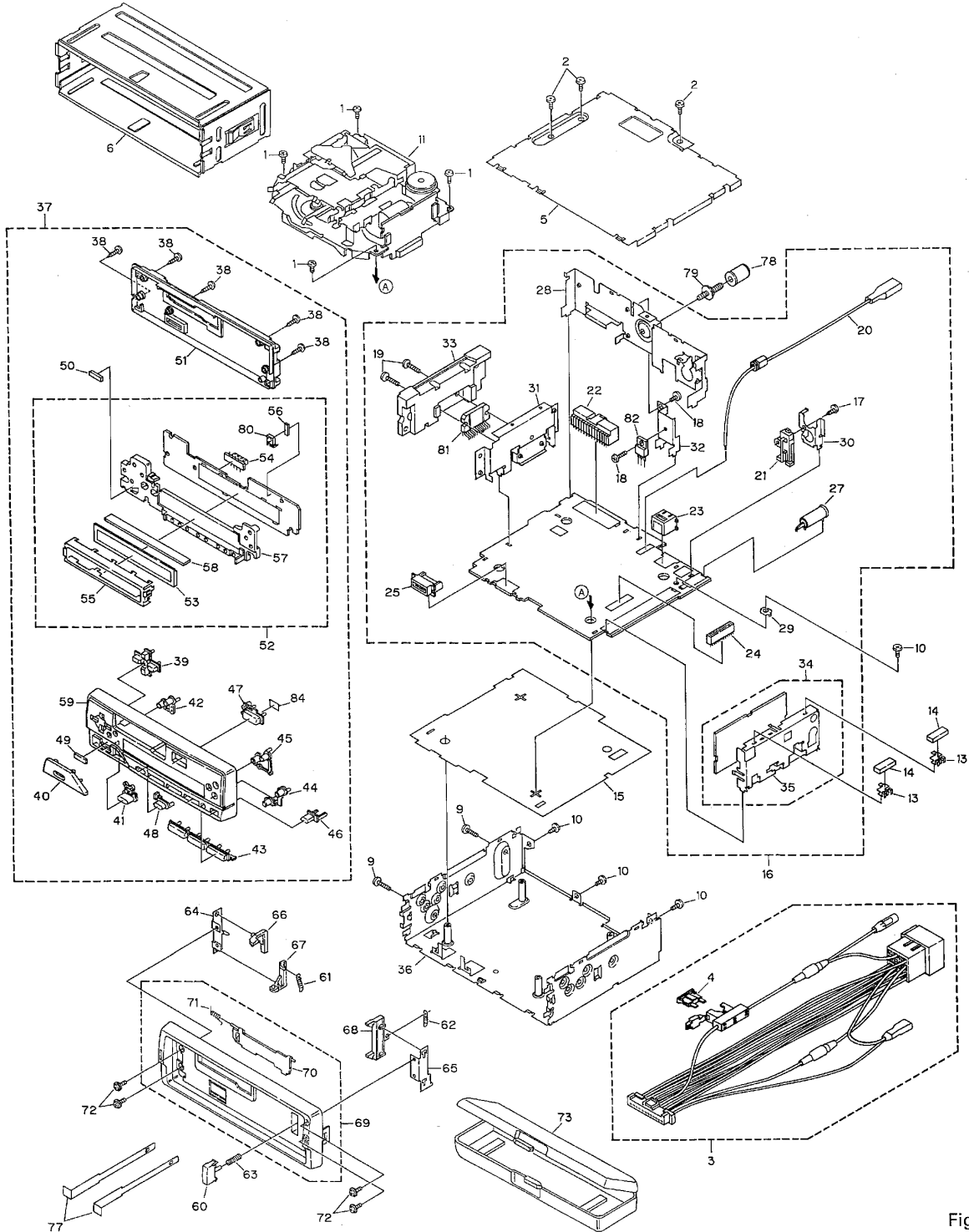


Fig. 3

# KEH-P4600R,P4630R,P4610

## ● Parts List

Mark No.	Description	Part No.	
		KEH P4600R/X1M/EW	KEH-P4630R/X1M/EW
1	Screw	BSZ26P050FMC	BSZ26P050FMC
2	Screw	BSZ30P060FMC	BSZ30P060FMC
3	Cord Assy	CDE5286	CDE5286
4	Fuse(10A)	CEK1136	CEK1136
5	Case	CNB2074	CNB2074
6	Holder	CNC6798	CNC6798
7	.....		
8	.....		
9	Screw	BMZ30P100FMC	BMZ30P100FMC
10	Screw	BSZ30P055FUC	BSZ30P055FUC
11	Cassette Mechanism Module	EXK3610	EXK3610
12	.....		
13	Holder	CNC5704	CNC5704
14	Cushion	CNM4870	CNM4870
15	Insulator	CNM5045	CNM5045
16	Tuner Amp Unit	CWM5256	CWM5256
17	Screw	BPZ26P080FMC	BPZ26P080FMC
18	Screw	BSZ26P080FMC	BSZ26P080FMC
19	Screw	BSZ26P140FMC	BSZ26P140FMC
20	Cord Assy(CN604)	CDE5327	CDE5327
21	Pin Jack(CN301)	CKB1028	CKB1028
22	Plug(CN951)	CKM1226	CKM1226
23	Connector(CN751)	CKS3408	CKS3408
24	Connector(CN602)	CKS3568	CKS3568
25	Connector(CN601)	CKS3581	CKS3581
26	Connector(CN302)	CKS3598	CKS3598
27	Antenna Jack(CN402)	CKX1056	CKX1056
28	Panel	CNB2110	CNB2110
29	Holder	CNC5399	CNC5399
30	Holder	CNC6531	CNC6531
31	Holder	CNC6674	CNC6674
32	Holder	CNC6845	CNC6845
33	Heat Sink	CNR1426	CNR1426
34	FM/AM Tuner Unit	CWE1416	CWE1416
35	Holder	CNC6555	CNC6555
36	Chassis Unit	CXA9588	CXA9857
37	Detach Grille Assy	CXB1045	CXB1046
38	Screw	BPZ20P120FZK	BPZ20P120FZK
39	Button	CAC4859	CAC4859
40	Button(+,-)	CAC4860	CAC4991
41	Button(SOURCE)	CAC4861	CAC4861
42	Button(FUNC,AUDIO)	CAC4862	CAC4862
43	Button(1-6)	CAC4864	CAC4992
44	Button(PGM,DISPLAY)	CAC4865	CAC4865
45	Button(TA,PTY)	CAC4866	CAC4866

## KEH-P4600R,P4630R,P4610

Mark No.	Description	Part No.	
		KEH-P4600R/X1M/EW	KEH-P4630R/X1M/EW
46	Button(Detach)	CAC4870	CAC4993
47	Button(EJECT)	CAC4874	CAC4874
48	Button(◀▶ )	CAC5130	CAC5130
49	Cushion	CNM5156	CNM5156
50	Cushion	CNM5271	CNM5271
51	Cover	CNS4194	CNS4369
52	Key Board Unit	CWM5038	CWM5269
53	LCD(LCD901)	CAW1383	CAW1391
54	Connector(CN901)	CKS3580	CKS3580
55	Holder	CNC6846	CNC6846
56	Spacer	CNM5043	CNM5043
57	Lighting Conductor	CNV4762	CNV4762
58	Connector	CNV4763	CNV4763
59	Grille Unit	CXB1101	CXB1102
60	Button	CAC4836	CAC4836
61	Spring	CBH1834	CBH1834
62	Spring	CBH1835	CBH1835
63	Spring	CBH1933	CBH1933
64	Bracket	CNC6135	CNC6135
65	Bracket	CNC6791	CNC6791
66	Arm	CNV4692	CNV4692
67	Arm	CNV4693	CNV4693
68	Arm	CNV4728	CNV4728
69	Panel Unit	CXB1037	CXB1038
70	Door	CAT1836	CAT1836
71	Spring	CBH1838	CBH1838
72	Screw	IMS20P030FZK	IMS20P030FZK
73	Case Assy	CXB1063	CXB1063
74-76	.....		
77	Handle	CNC5395	CNC5395
78	Bush	CNV3930	CNV3930
79	Screw	CBA1304	CBA1304
80	IC(IC902)	SBX8035-H	SBX8035-H
81	IC(IC301)	TDA7384A	TDA7384A
82	Transistor(Q951)	2SD2396	2SD2396
83	.....		
84	Spacer	CNM5356	CNM5356

# KEH-P4600R,P4630R,P4610

## ● KEH-P4610/X1M/EE

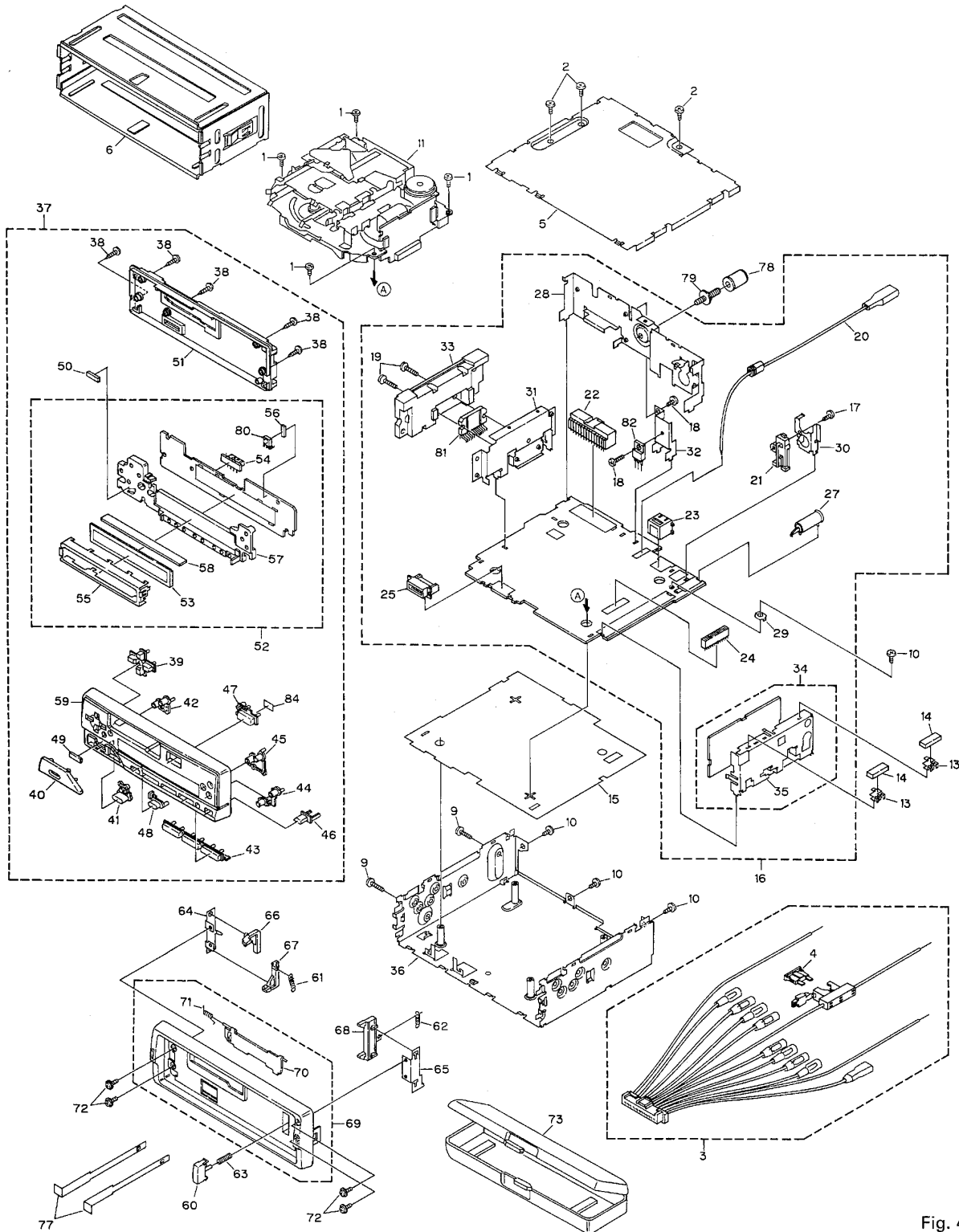


Fig. 4

## KEH-P4600R,P4630R,P4610

### ● Parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BSZ26P050FMC	46	Button(Detach)	CAC4993
2	Screw	BSZ30P060FMC	47	Button(EJECT)	CAC4874
3	Cord Assy	CDE4849	48	Button(◀▶)	CAC5130
4	Fuse(10A)	CEK1136	49	Cushion	CNM5156
5	Case	CNB2074	50	Cushion	CNM5271
6	Holder	CNC6798	51	Cover	CNS4369
7	.....		52	Key Board Unit	CWM5268
8	.....		53	LCD(LCD901)	CAW1425
9	Screw	BMZ30P100FMC	54	Connector(CN901)	CKS3580
10	Screw	BSZ30P055FUC	55	Holder	CNC6846
11	Cassette Mechanism Module	EXK3610	56	Spacer	CNM5043
12	.....		57	Lighting Conductor	CNV4762
13	Holder	CNC5704	58	Connector	CNV4763
14	Cushion	CNM4870	59	Grille Unit	CXB1105
15	Insulator	CNM5045	60	Button	CAC4836
16	Tuner Amp Unit	CWM5259	61	Spring	CBH1834
17	Screw	BPZ26P080FMC	62	Spring	CBH1835
18	Screw	BSZ26P080FMC	63	Spring	CBH1933
19	Screw	BSZ26P140FMC	64	Bracket	CNC6135
20	Cord Assy(CN604)	CDE5327	65	Bracket	CNC6791
21	Pin Jack(CN301)	CKB1028	66	Arm	CNV4692
22	Plug(CN951)	CKM1228	67	Arm	CNV4693
23	Connector(CN751)	CKS3408	68	Arm	CNV4728
24	Connector(CN602)	CKS3568	69	Panel Unit	CXB1038
25	Connector(CN601)	CKS3581	70	Door	CAT1836
26	Connector(CN302)	CKS3598	71	Spring	CBH1838
27	Antenna Jack(CN402)	CKX1056	72	Screw	IMS20P030FZK
28	Panel	CNB2110	73	Case Assy	CXB1063
29	Holder	CNC5399	74-76	.....	
30	Holder	CNC6531	77	Handle	CNC5395
31	Holder	CNC6674	78	Bush	CNV3930
32	Holder	CNC6845	79	Screw	CBA1304
33	Heat Sink	CNR1426	80	IC(IC902)	SBX8035 H
34	Tuner Unit	CWE1366	81	IC(IC301)	TDA7384A
35	Holder	CNC6523	82	Transistor(Q951)	2SD2396
36	Chassis Unit	CXA9858	83	.....	
37	Detach Grille Assy	CXB1049	84	Spacer	CNM5356
38	Screw	BPZ20P120FZK			
39	Button	CAC4859			
40	Button(+,-)	CAC4991			
41	Button(SOURCE)	CAC4861			
42	Button(FUNC,AUDIO)	CAC4862			
43	Button(1-6)	CAC4992			
44	Button(PGM,DISPLAY)	CAC4865			
45	Button(LOUD,CLOCK)	CAC4866			

# KEH-P4600R,P4630R,P4610

## 2.3 CASSETTE MECHANISM MODULE

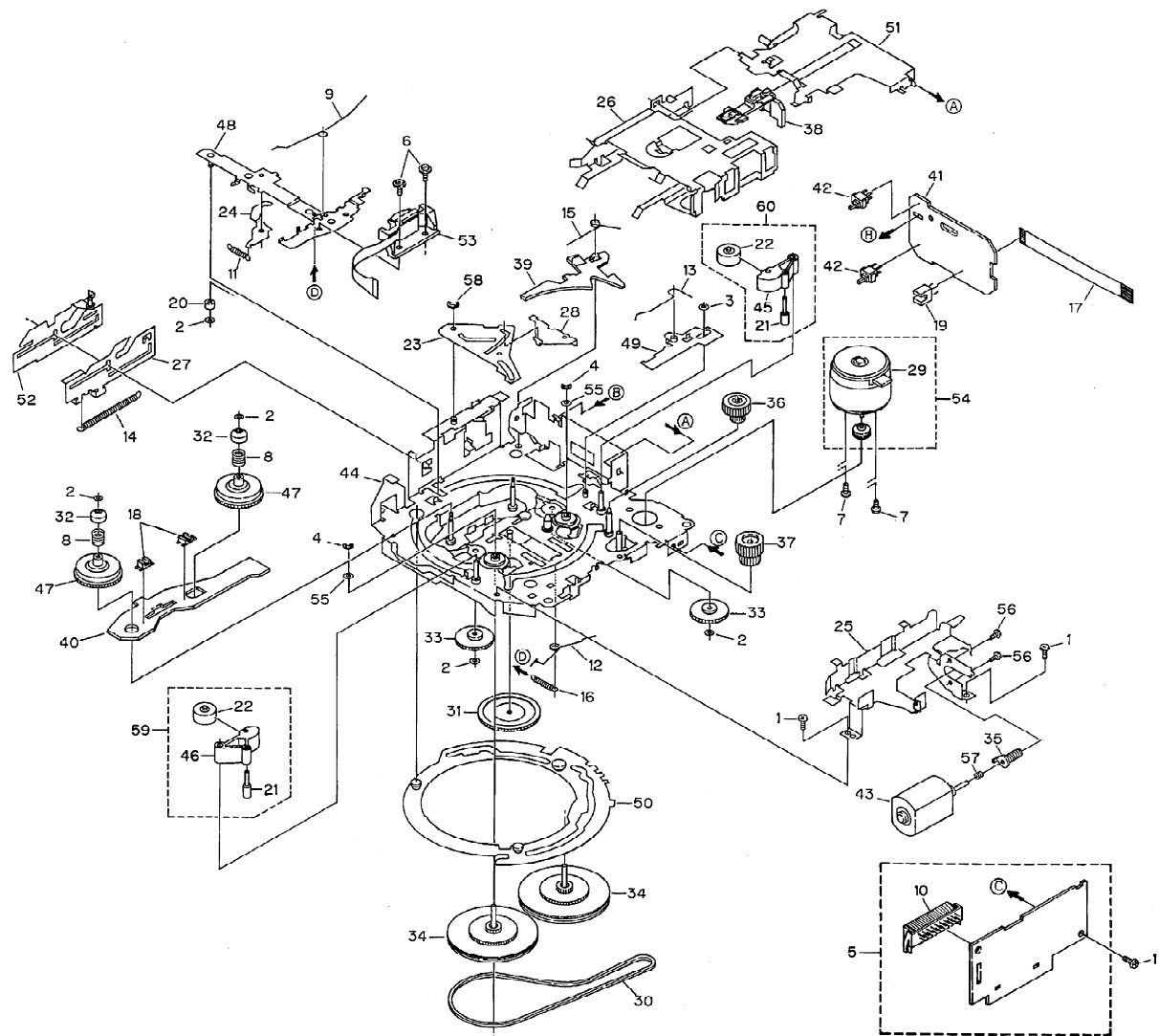


Fig. 5

## KEH-P4600R,P4630R,P4610

### ● Parts List

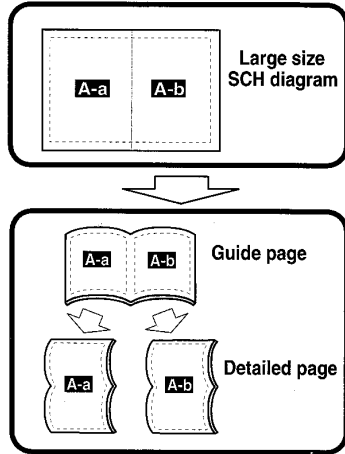
Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BSZ20P040FMC	31	Gear	ENV1347
2	Washer	CBF1037	32	Collar	ENV1508
3	Washer	CBF1038	33	Gear	ENV1350
4	Washer	CBG1003	34	Flywheel	ENV1516
5	Deck Unit	EWM1010	35	Worm Gear	ENV1439
6	Screw	EBA1028	36	Worm Wheel	ENV1440
7	Screw	EBA1037	37	Gear	ENR1028
8	Spring	EBH1531	38	Lever	ENV1442
9	Spring	EBH1575	39	Arm	ENV1445
10	Plug(CN251)	CKS3540	40	Gathering P.C.Board	ENX1037
11	Spring	EBH1515	41	Gathering P.C.Board	ENX1042
12	Spring	EBH1587	42	Switch(S1,S2)	ESG1004
13	Spring	EBH1517	43	Motor Unit(M2)	EXA1485
14	Spring	EBH1518	44	Chassis Unit	EXA1455
15	Spring	EBH1519	45	Pinch Holder	ENV1485
16	Spring	EBH1537	46	Pinch Holder	ENV1486
17	Cord	EDD1020	47	Reel Unit	EXA1456
18	Photo-interrupter(EGN2,3)	EGN1006	48	Head Base Unit	EXA1457
19	Photo-interrupter(EGN1)	EGN1005	49	Lever Unit	EXA1438
20	Roller	ENR1031	50	Gear Unit	EXA1436
21	Shaft	ELA1373	51	Frame Unit	EXA1458
22	Pinch Roller	ENV1501	52	Lever Unit	EXA1439
23	Arm	ENC1396	53	Head Assy(HD1)	EXA1506
24	Arm	ENC1397	54	Motor Unit(M1)	EXA1491
25	Guide	ENC1481	55	Washer	HBF-179
26	Holder	ENC1417	56	Screw	BMZ20P022FMC
27	Lever	ENC1448	57	Spring	EBH1545
28	Arm	ENC1401	58	Washer	YE20FUC
29	Motor	EXM1028	59	Pinch Holder Unit	EXA1501
30	Belt	ENT1027	60	Pinch Holder Unit	EXA1500

# KEH-P4600R,P4630R,P4610

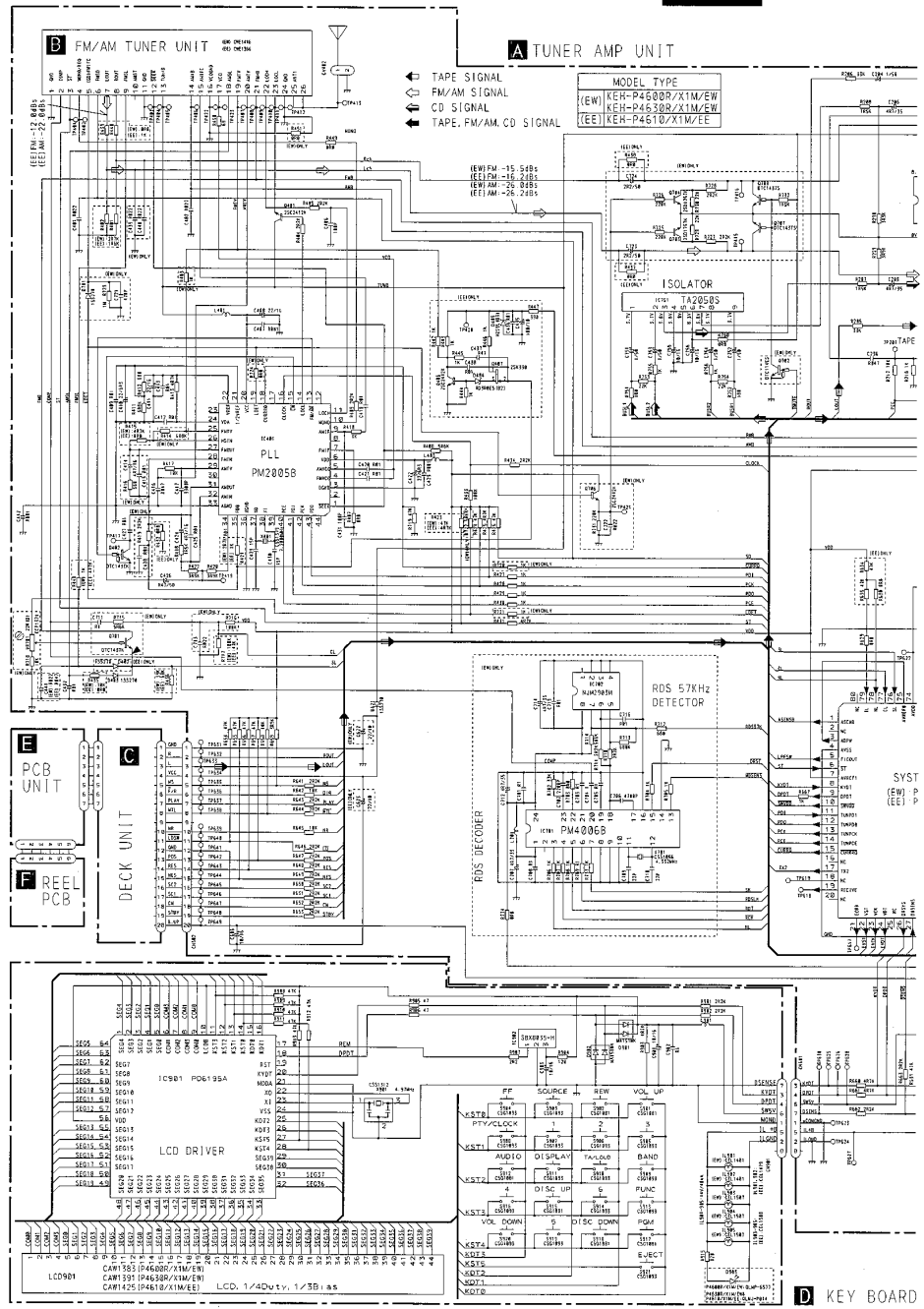
## 3. SCHEMATIC DIAGRAM

### 3.1 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

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



**A-a**





**A-b**

**NOTE**  
 1. Ground indicated by a triangle.  
 No differentiation is made between chip capacitors and discrete resistors.  
 2. Control indicators & capabilities.  
 No differentiation is made between chip capacitors and discrete capacitors.  
 Decimal points for resistor and capacitor fixed values are indicated as:  
 1.2345  
 0.2345E022  
 The  $\Delta$  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.

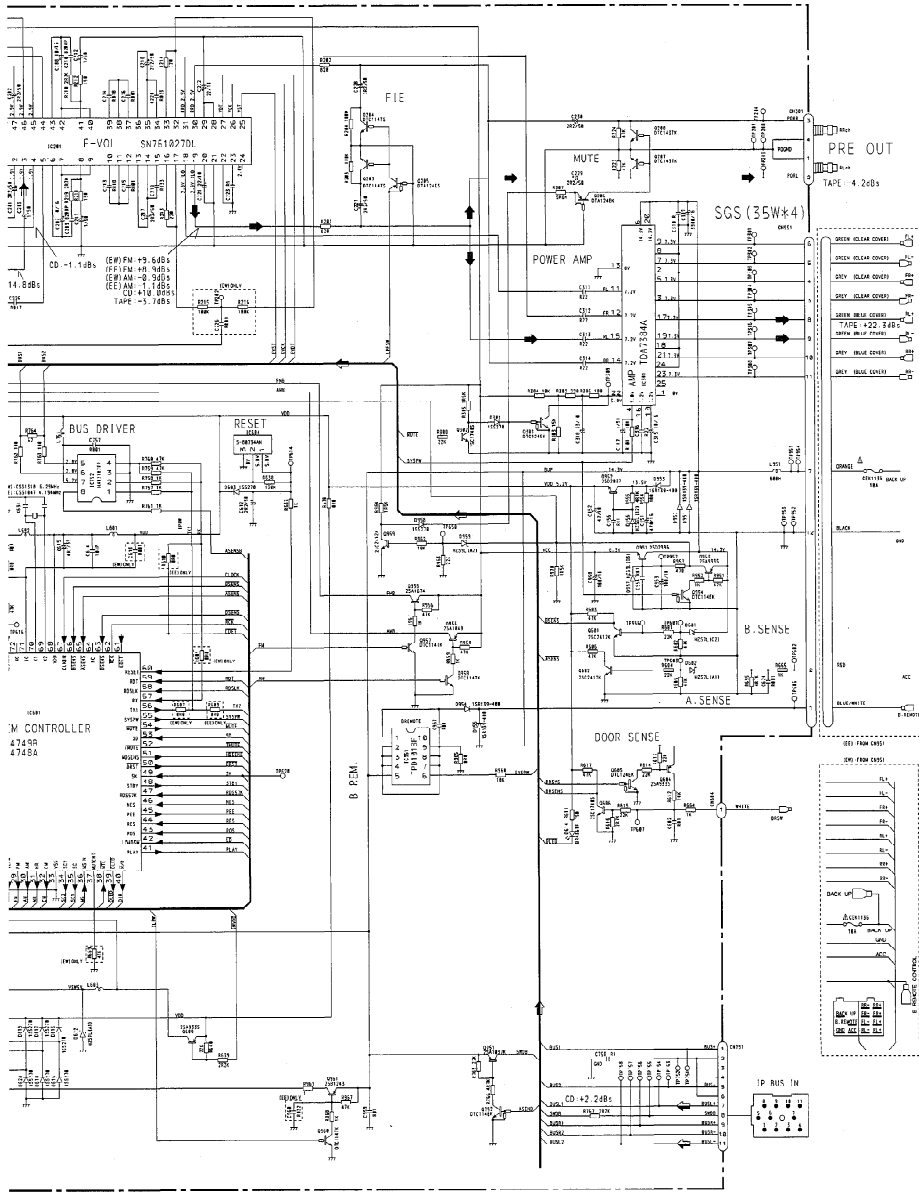
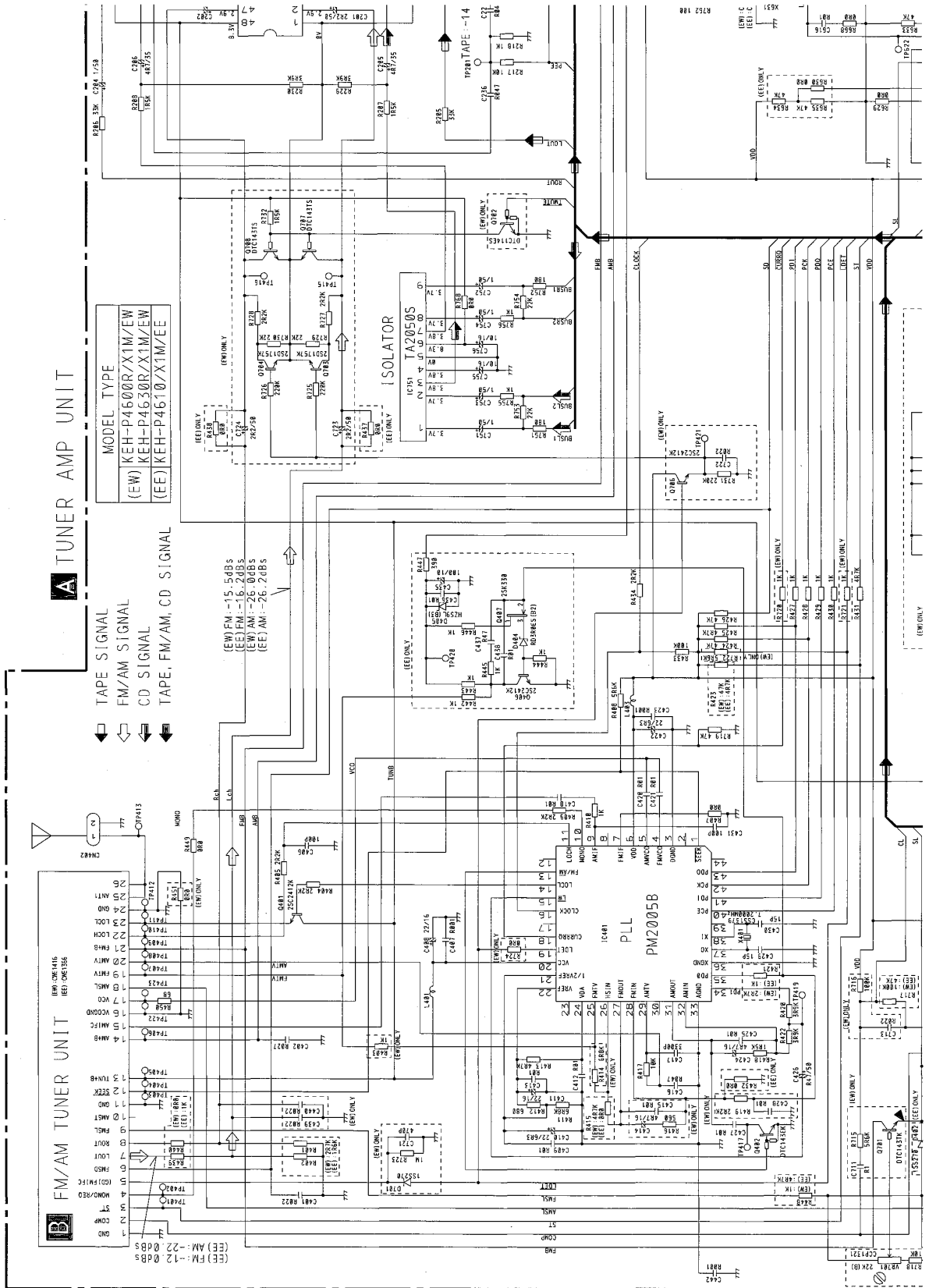


Fig. 6

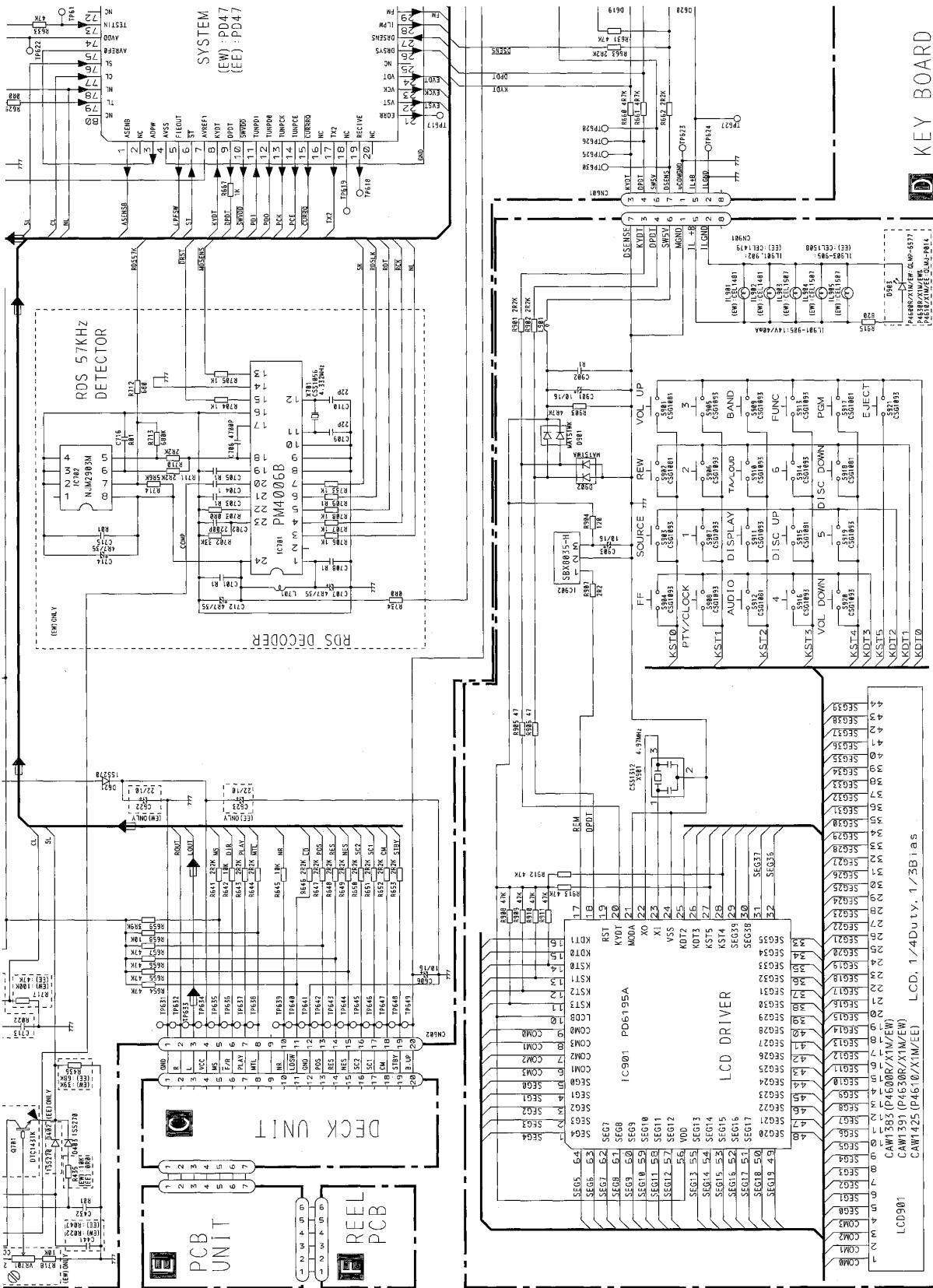
UNIT

# KEH-P4600R,P4630R,P4610

A-a



# KEH-P4600R, P4630R, P4610



A-a  
A-b



Fig. 7

**A-a**

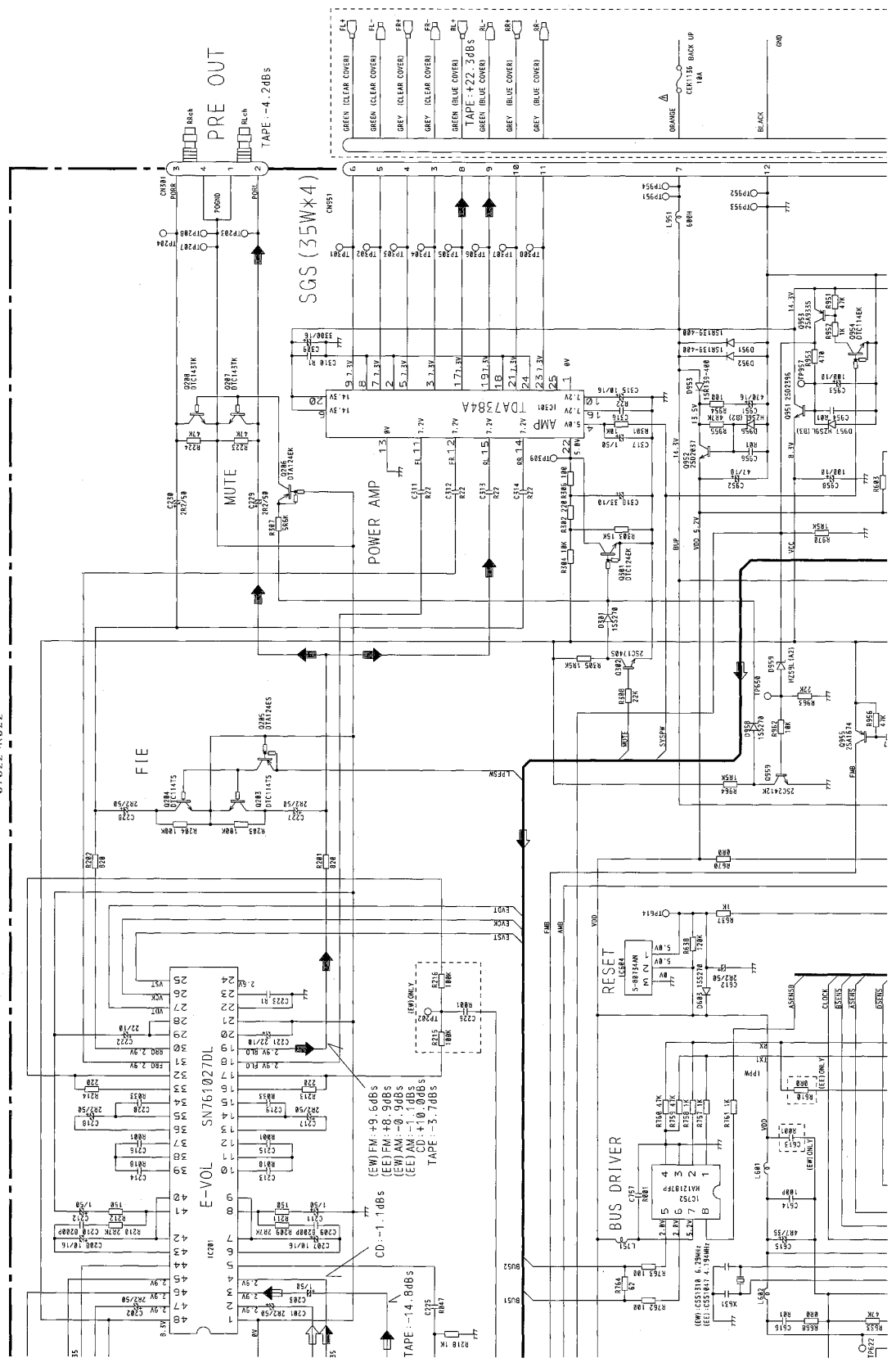
# KEH-P4600R, P4630R, P4610

A-a  
A-b

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

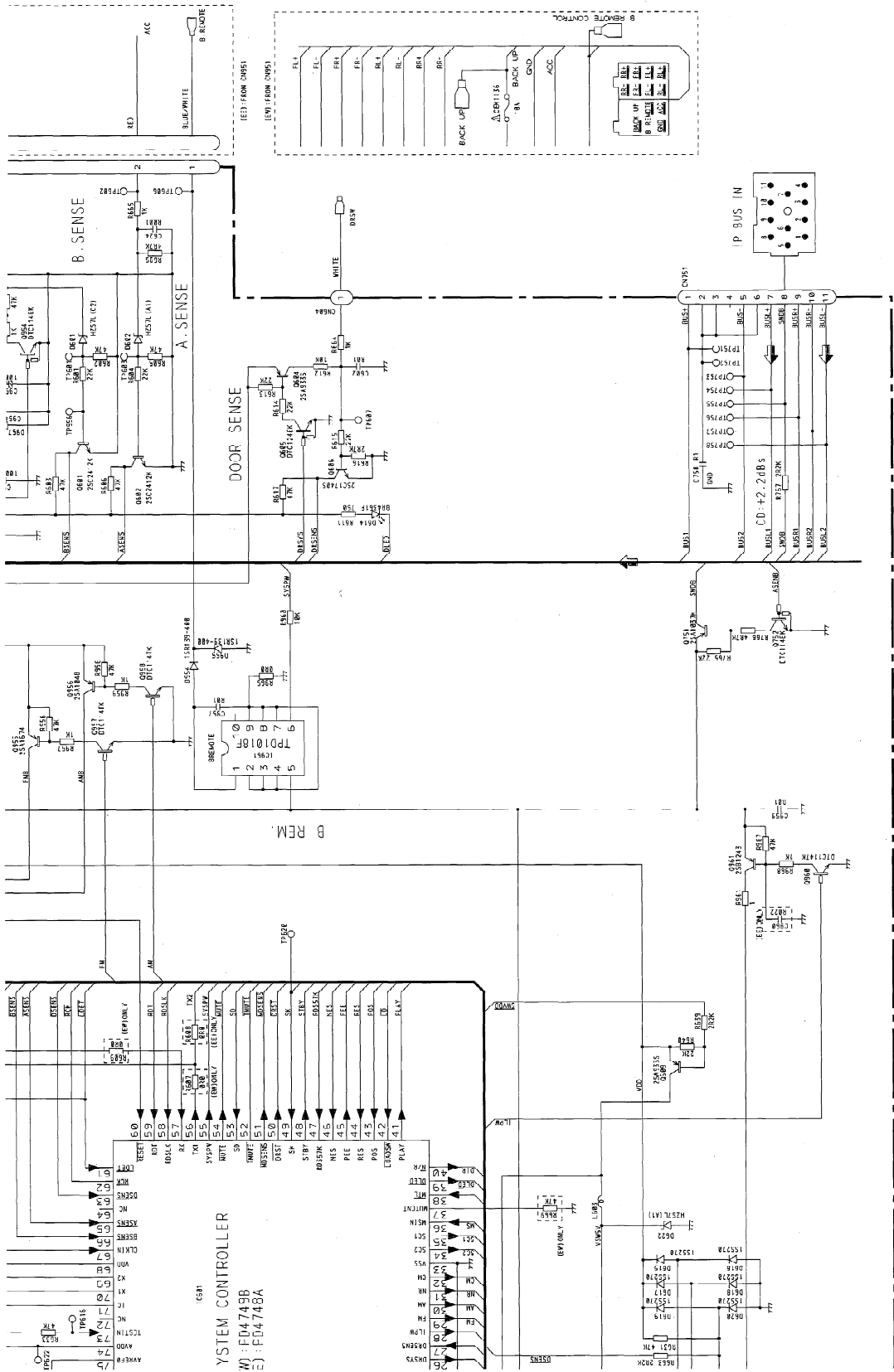
Decimal points for resistor and capacitor fixed values are expressed as:  
 2.2-2R2  
 0.022-R022

The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Refer to the component replacing, be sure to use parts of identical designation.



KEH-P4600R, P4630R, P4610

A-a A-b

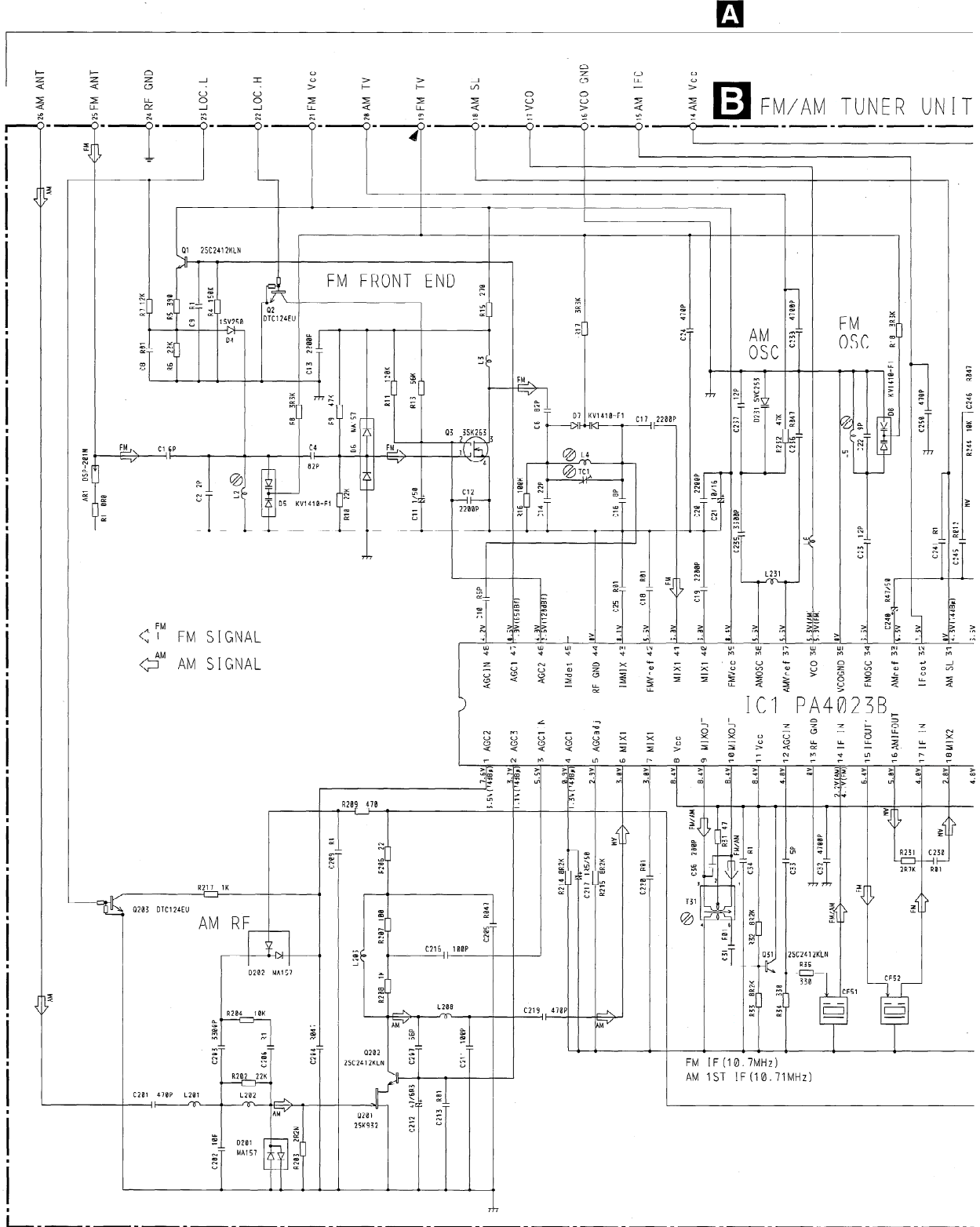


A-b

Fig. 8

# KEH-P4600R,P4630R,P4610

## 3.2 FM/AM TUNER UNIT(KEH-P4600R/X1M/EW, P4630R/X1M/EW)



# KEH-P4600R,P4630R,P4610

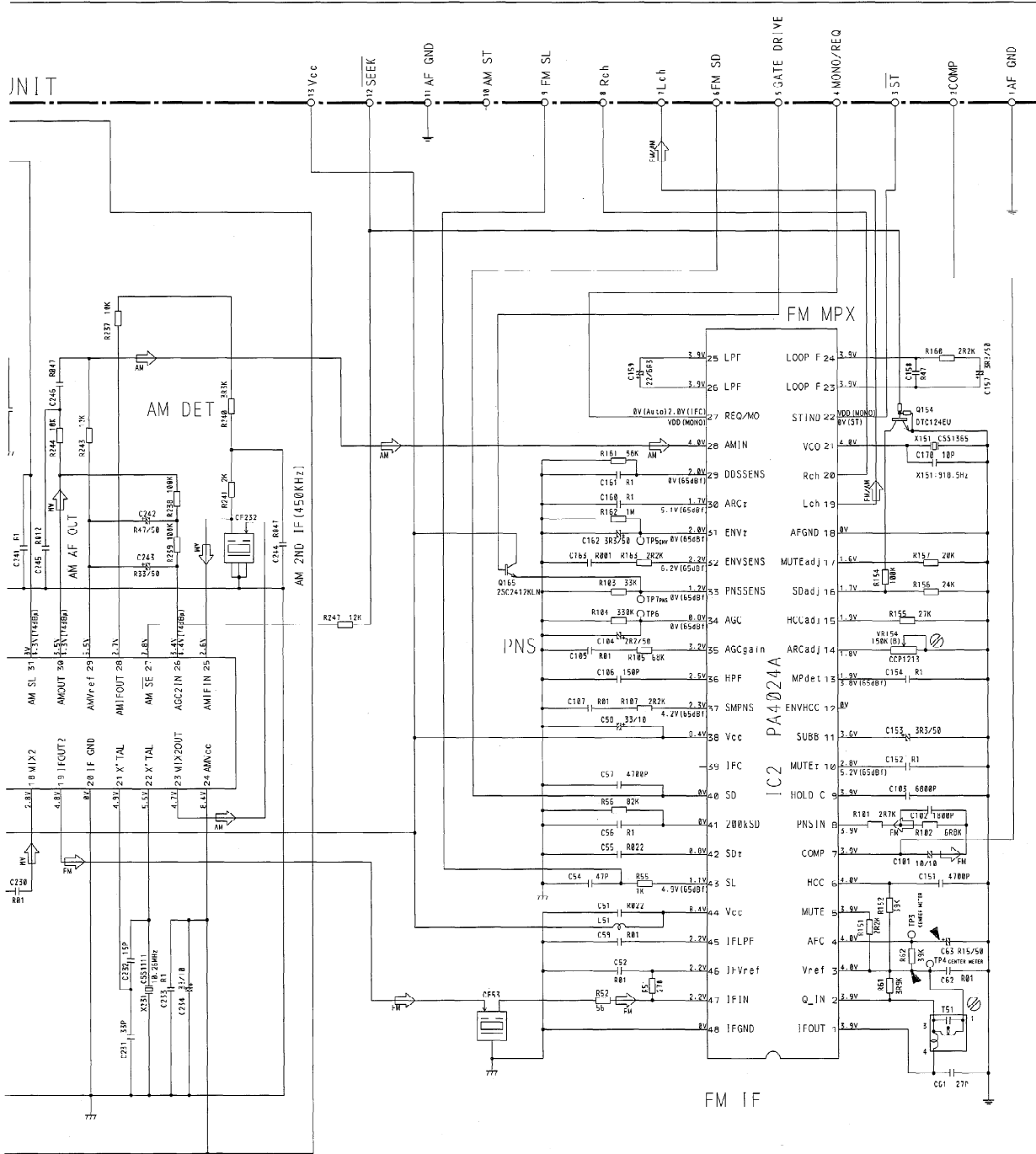
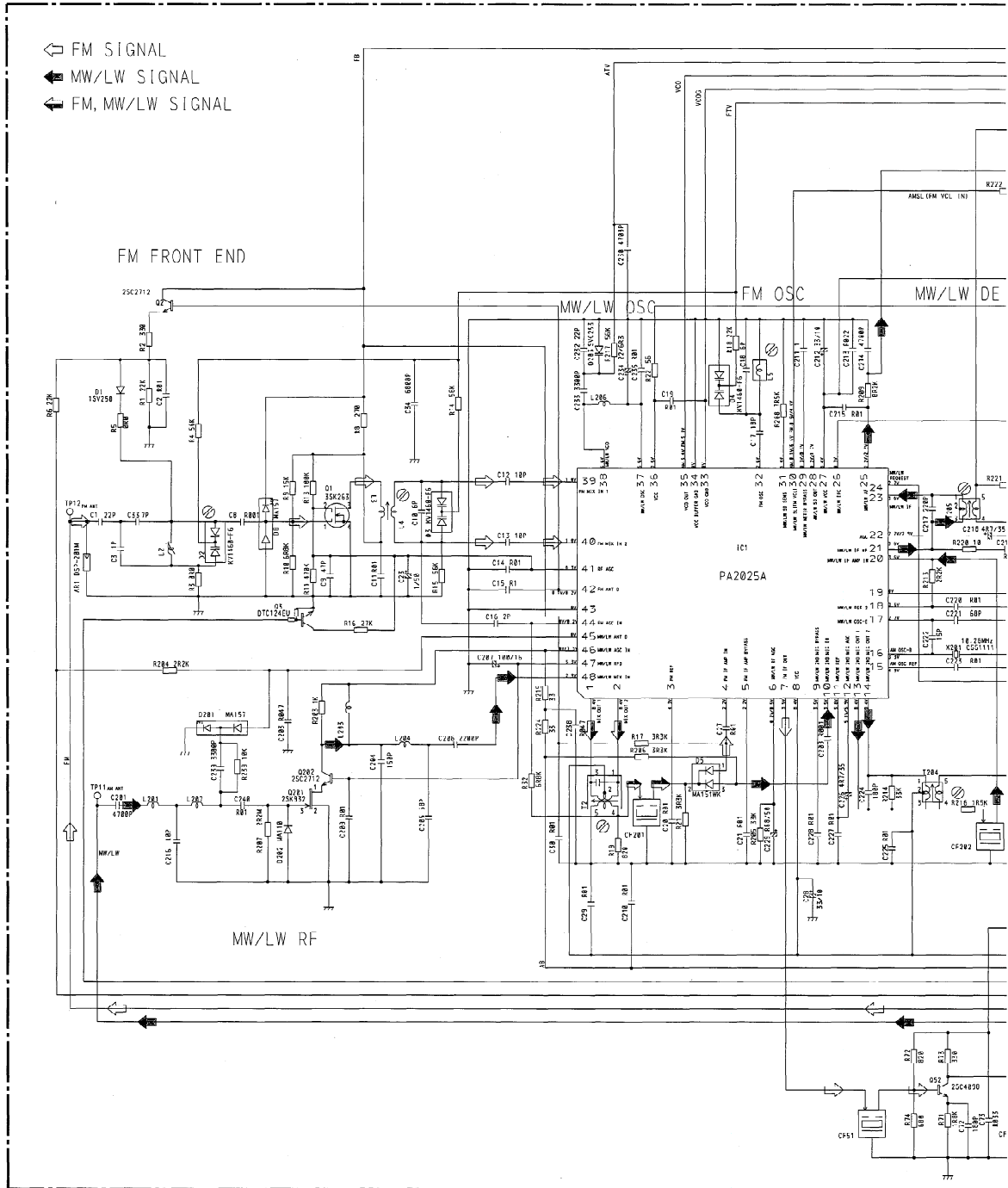


Fig. 9

# KEH-P4600R,P4630R,P4610

## 3.3 TUNER UNIT(KEH-P4610/X1M/EE)

### B TUNER UNIT



**NOTE:**

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

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



# KEH-P4600R,P4630R,P4610

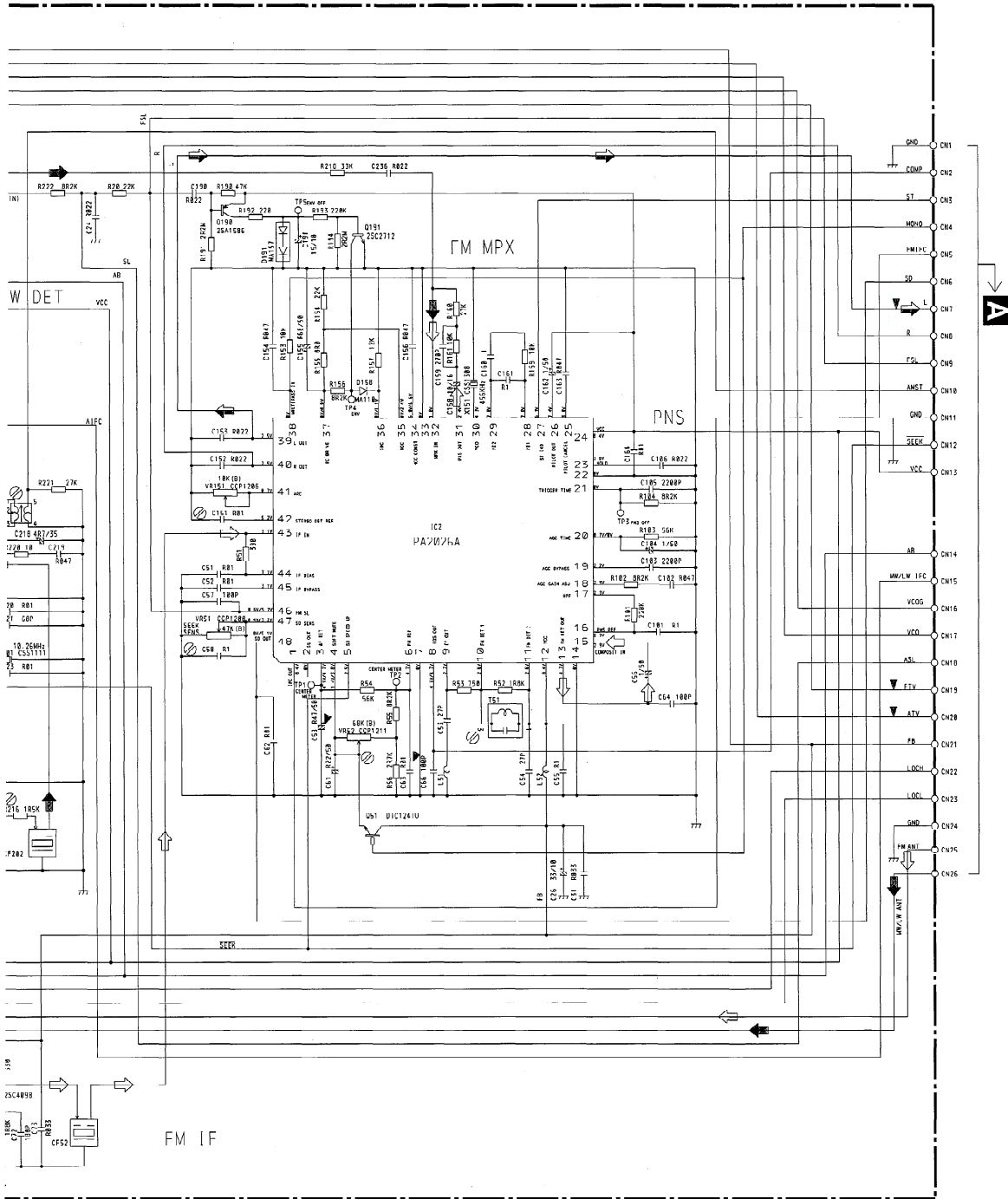
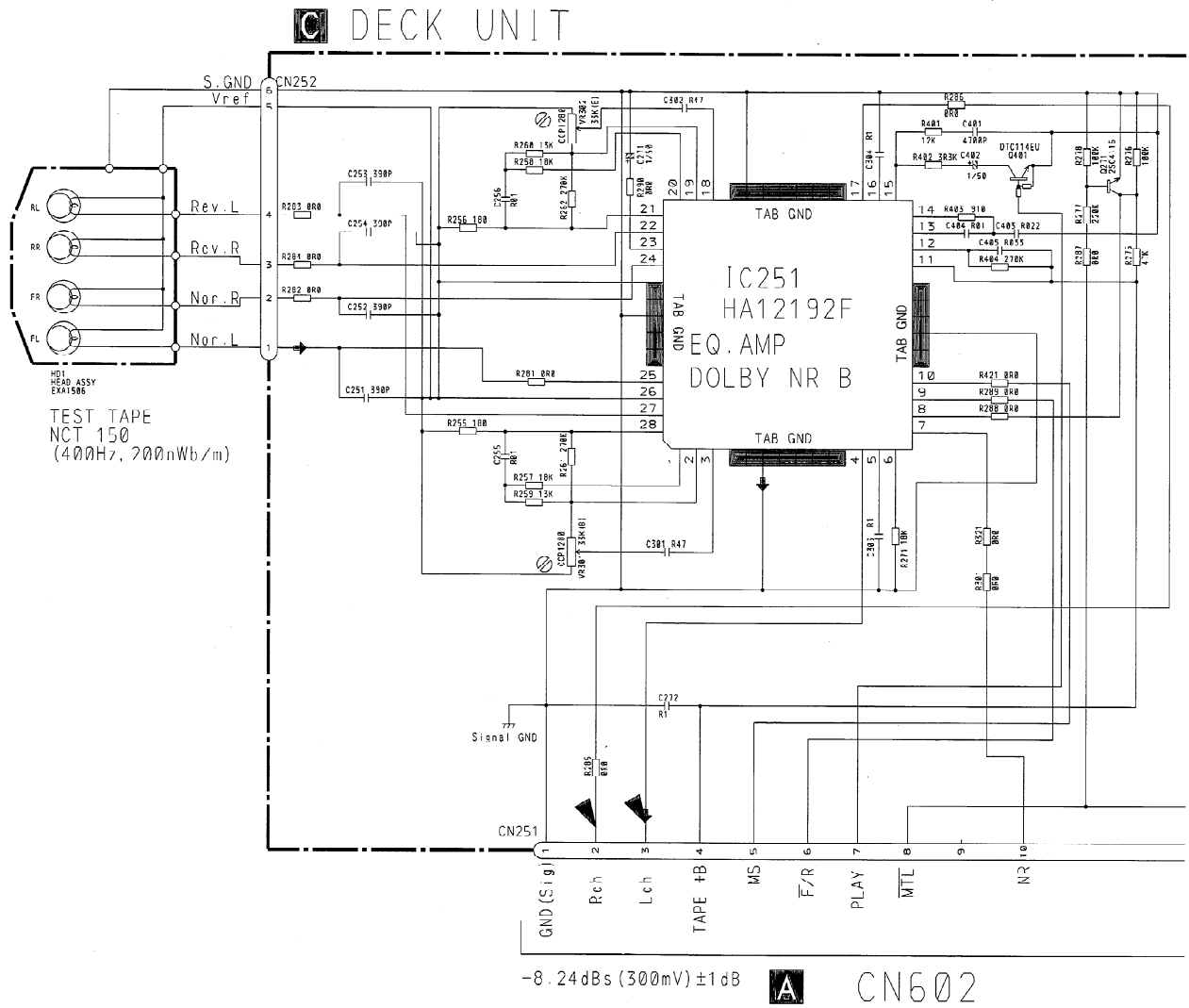


Fig. 10

# KEH-P4600R,P4630R,P4610

## 3.4 CASSETTE MECHANISM MODULE



KEH-P4600R,P4630R,P4610

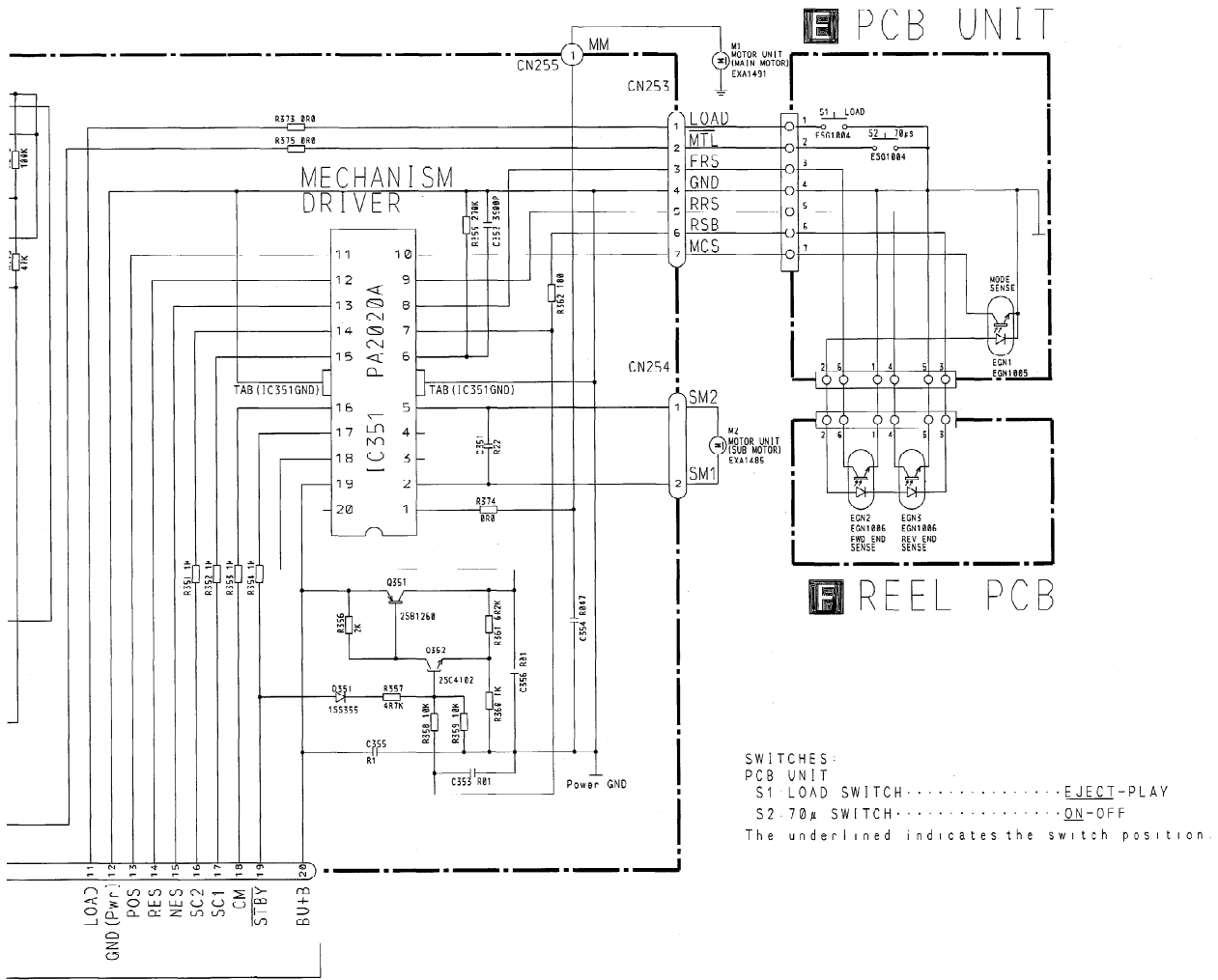


Fig. 11

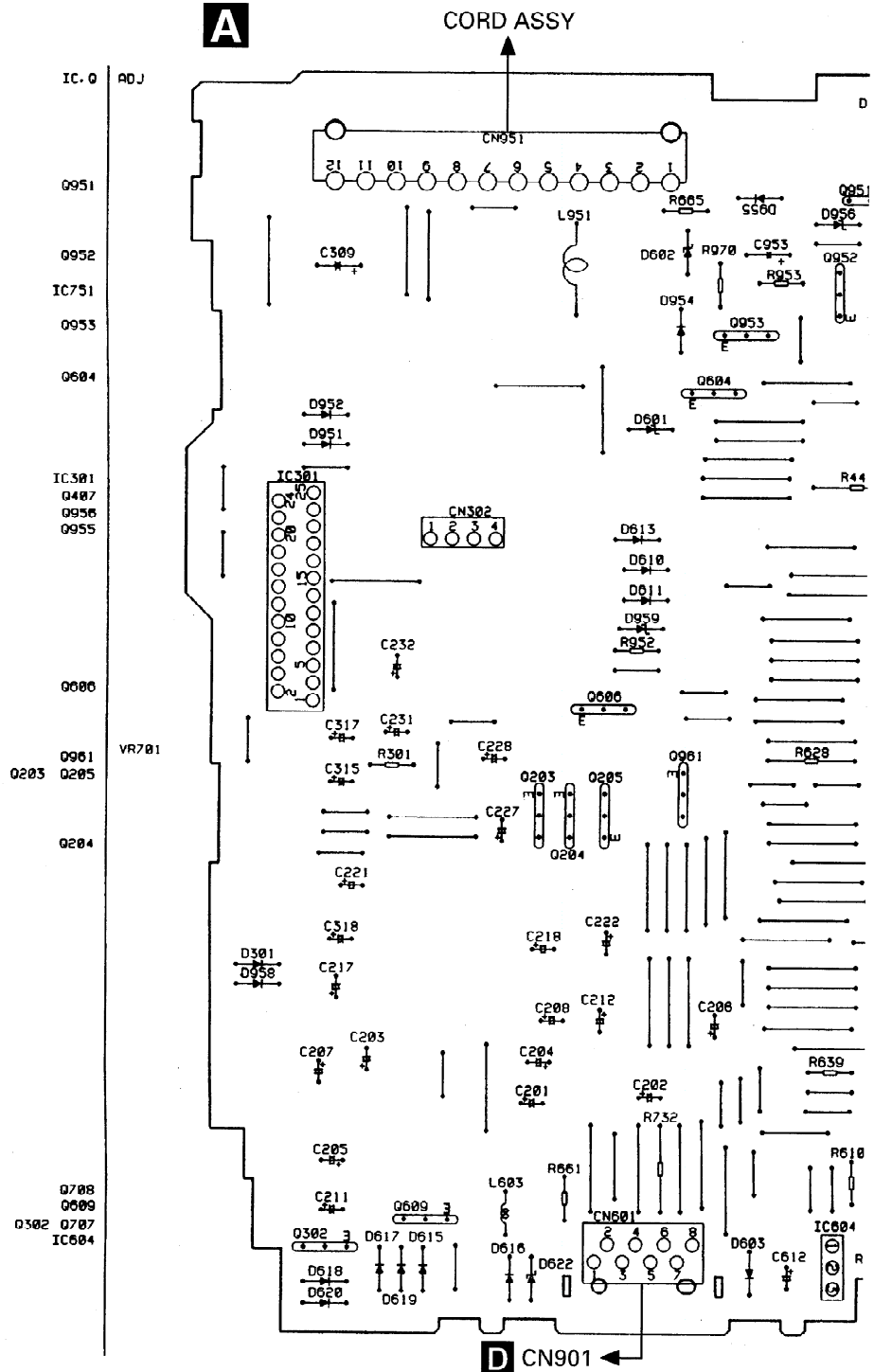
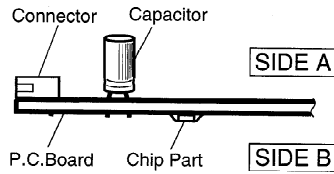
## 4. PCB CONNECTION DIAGRAM

### 4.1 TUNER AMP PCB

#### 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



# KEH-P4600R,P4630R,P4610

SIDE A

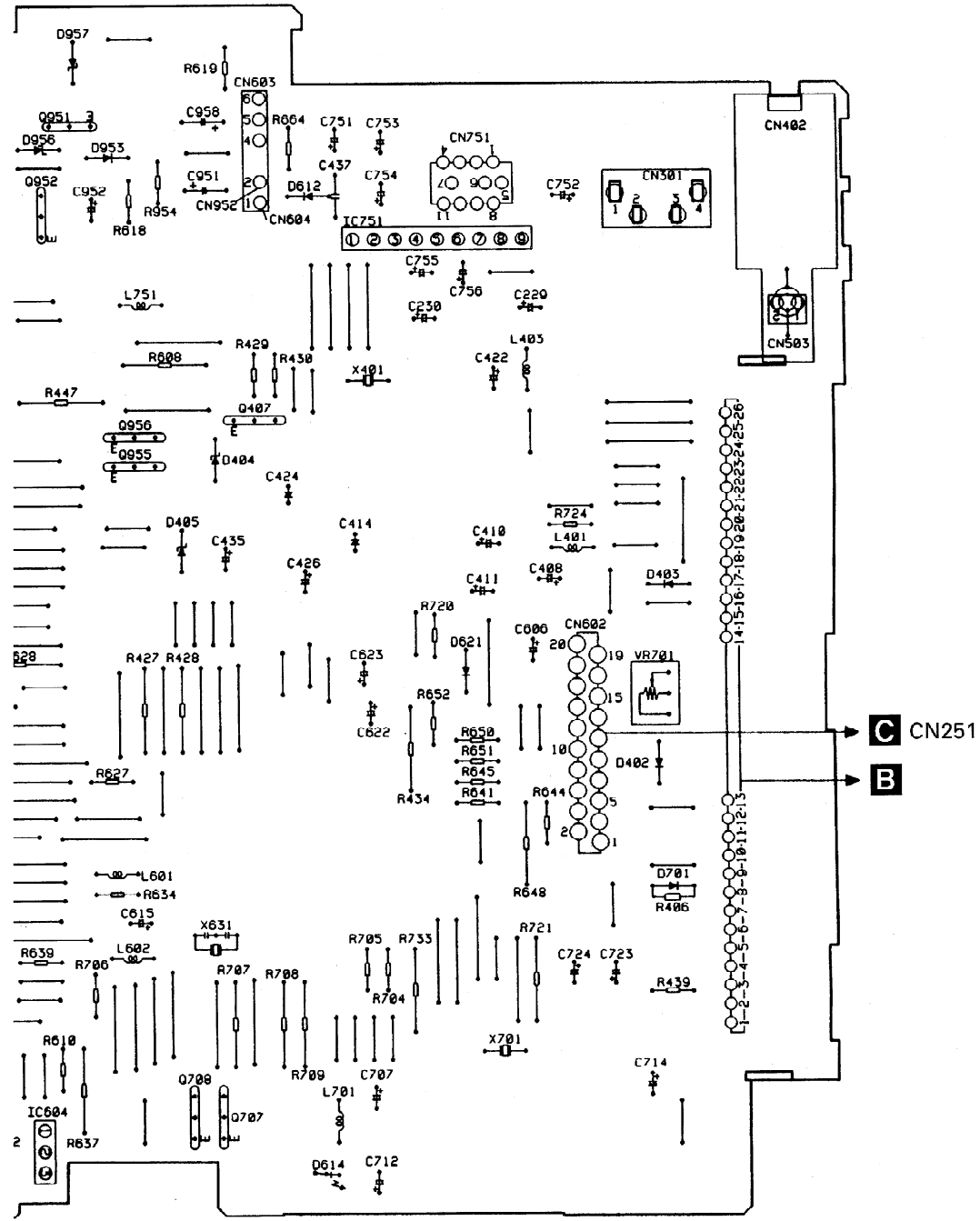
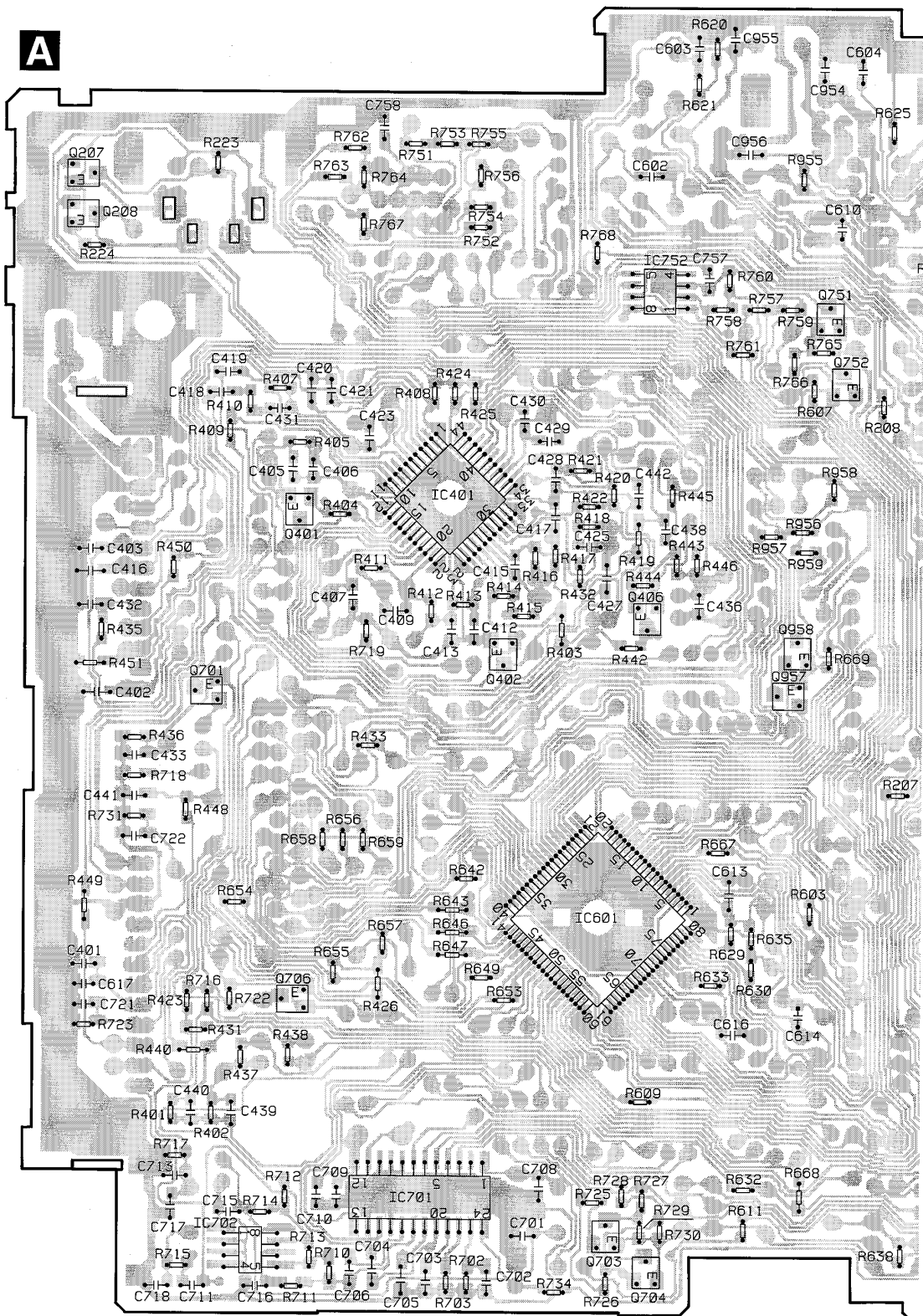


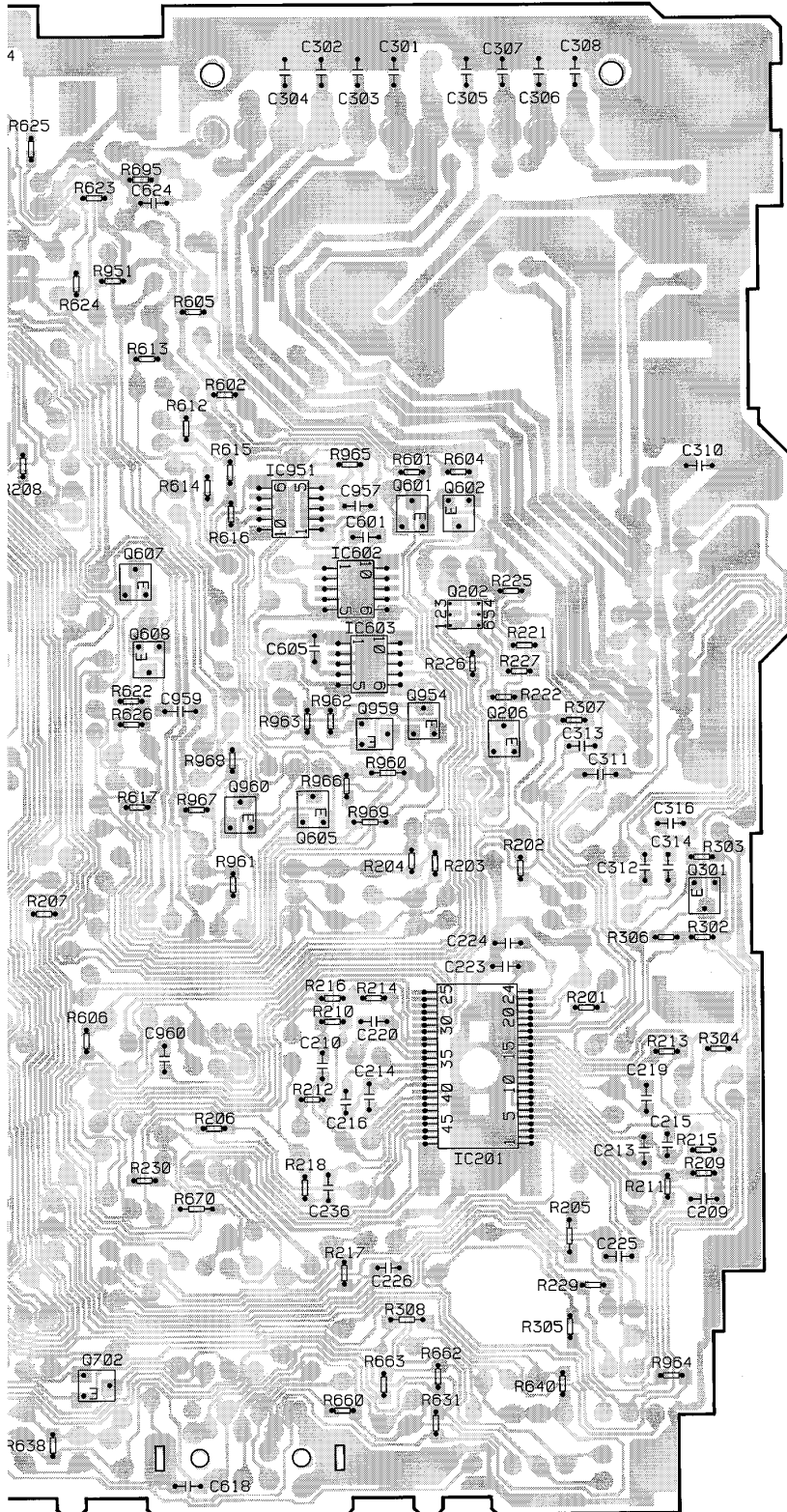
Fig. 12

KEH-P4600R,P4630R,P4610



KEH-P4600R,P4630R,P4610

SIDE B



- IC 0
- Q207
- Q208
- IC752
- Q751
- Q752
- IC951
- Q601
- Q602
- IC602
- IC401
- Q607
- Q202
- Q401
- Q608
- IC603
- Q406
- Q959
- Q954
- Q206
- Q958
- Q701
- Q957
- Q402
- Q960
- Q605
- Q301
- IC601
- Q706
- IC201
- Q702
- IC701
- IC702
- Q703
- Q704

Fig. 13

KEH-P4600R,P4630R,P4610

4.2 KEY BOARD UNIT

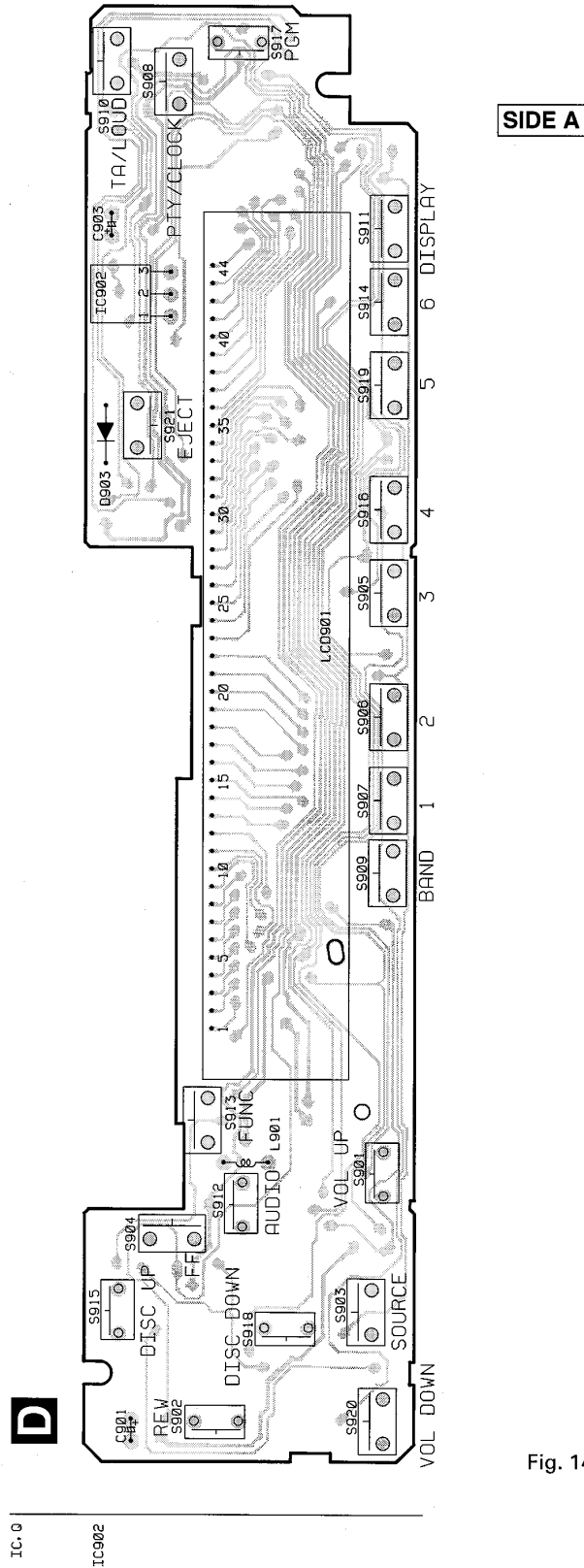


Fig. 14





KEH-P4600R,P4630R,P4610

IC. 0

IC901

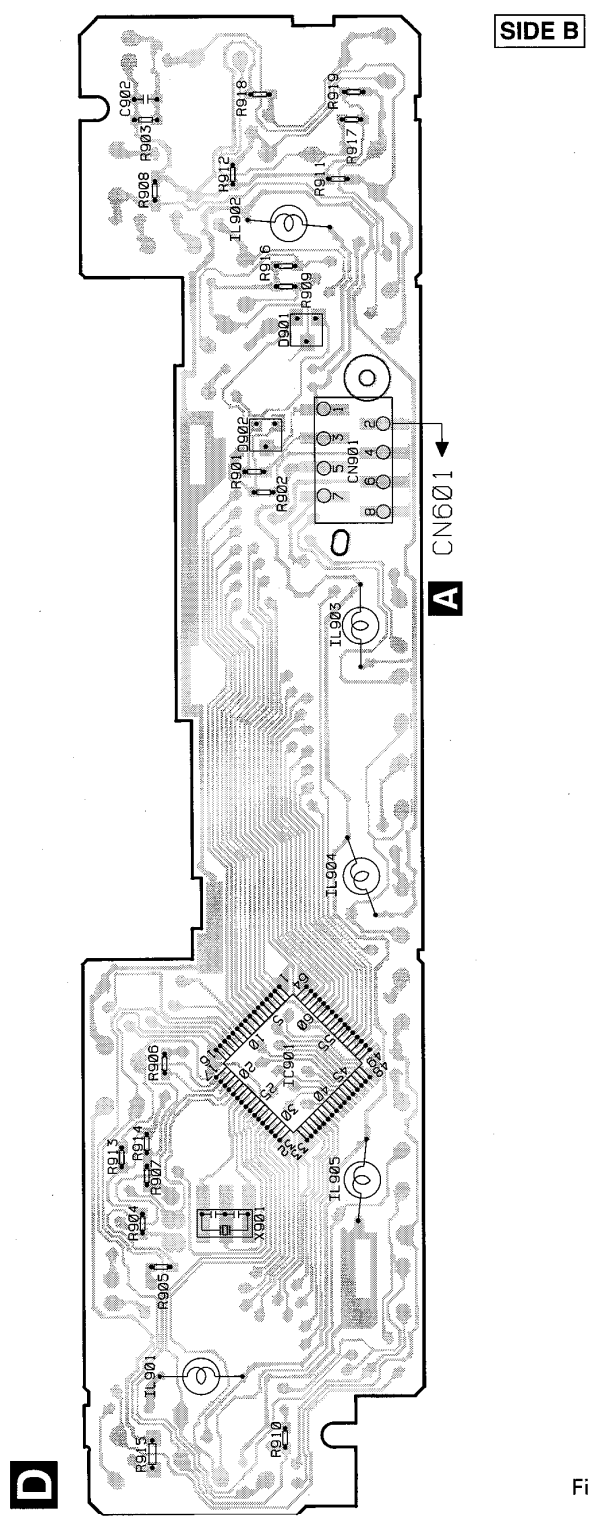


Fig. 15

# KEH-P4600R,P4630R,P4610

## 4.3 FM/AM TUNER UNIT (KEH-P4600R/X1M/EW, P4630R/X1M/EW)

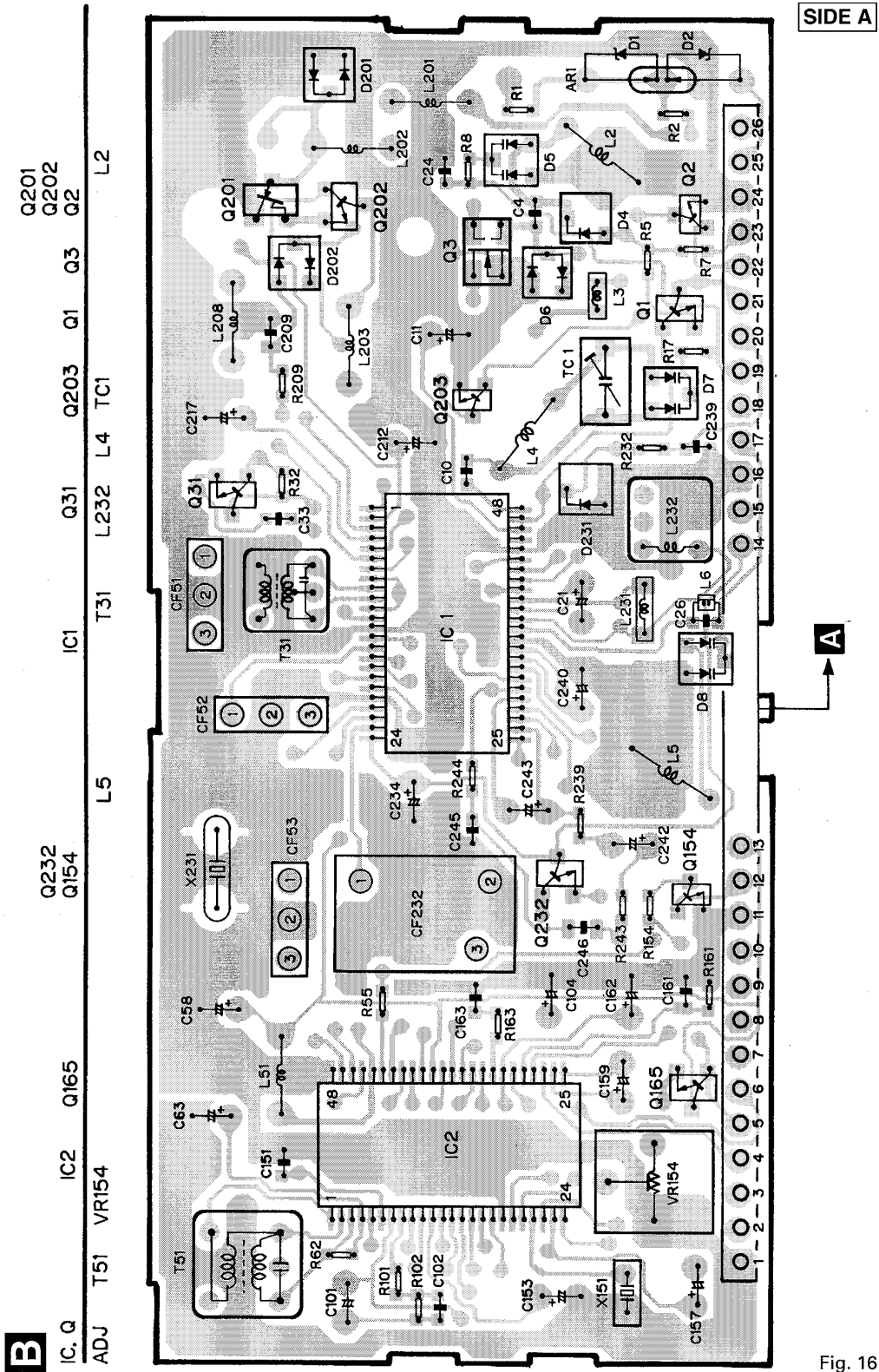
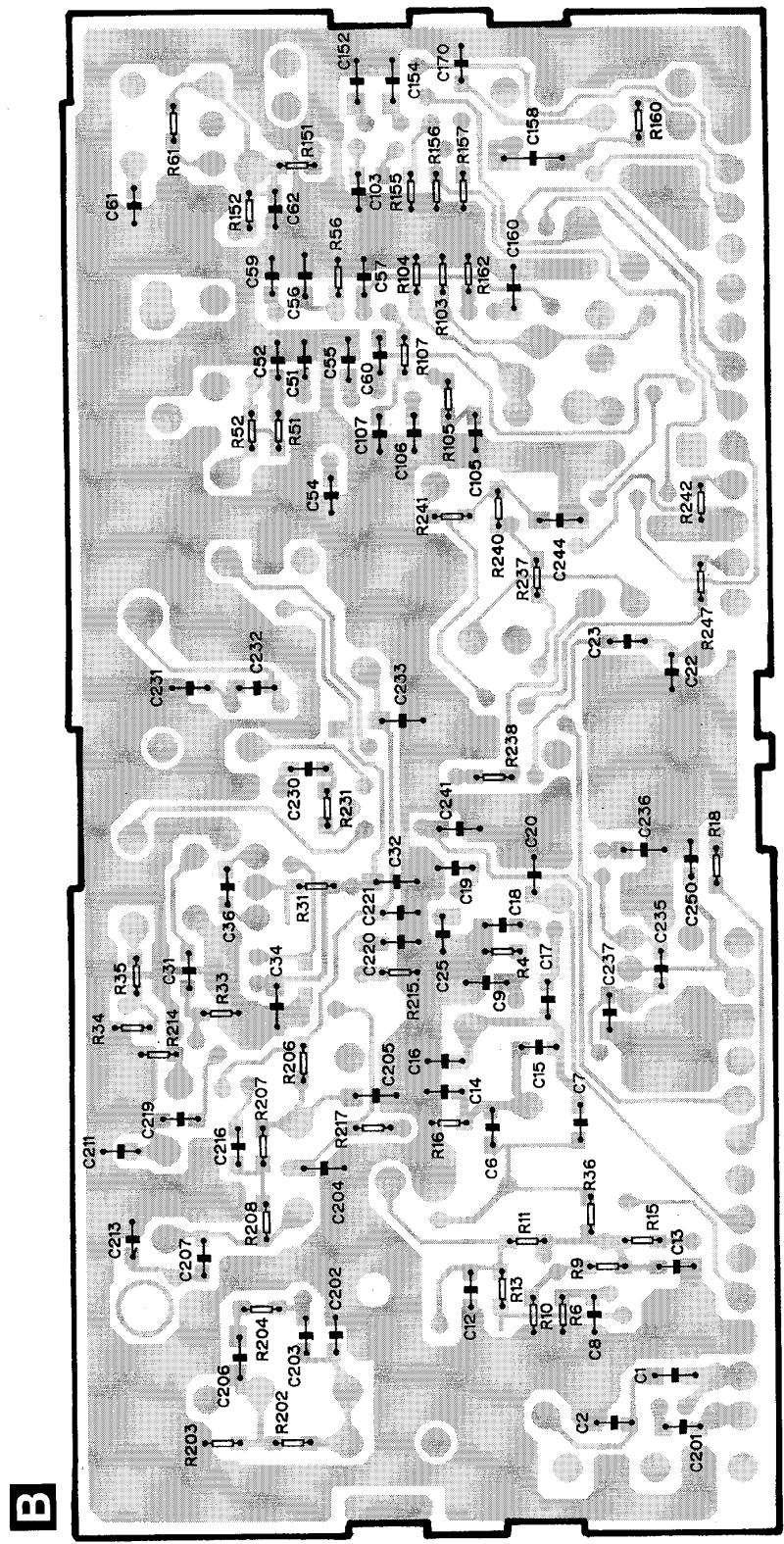


Fig. 16

SIDE B



B

Fig. 17

B

**KEH-P4600R,P4630R,P4610**

**4.4 TUNER UNIT (KEH-P4610/X1M/EE)**

**SIDE A**

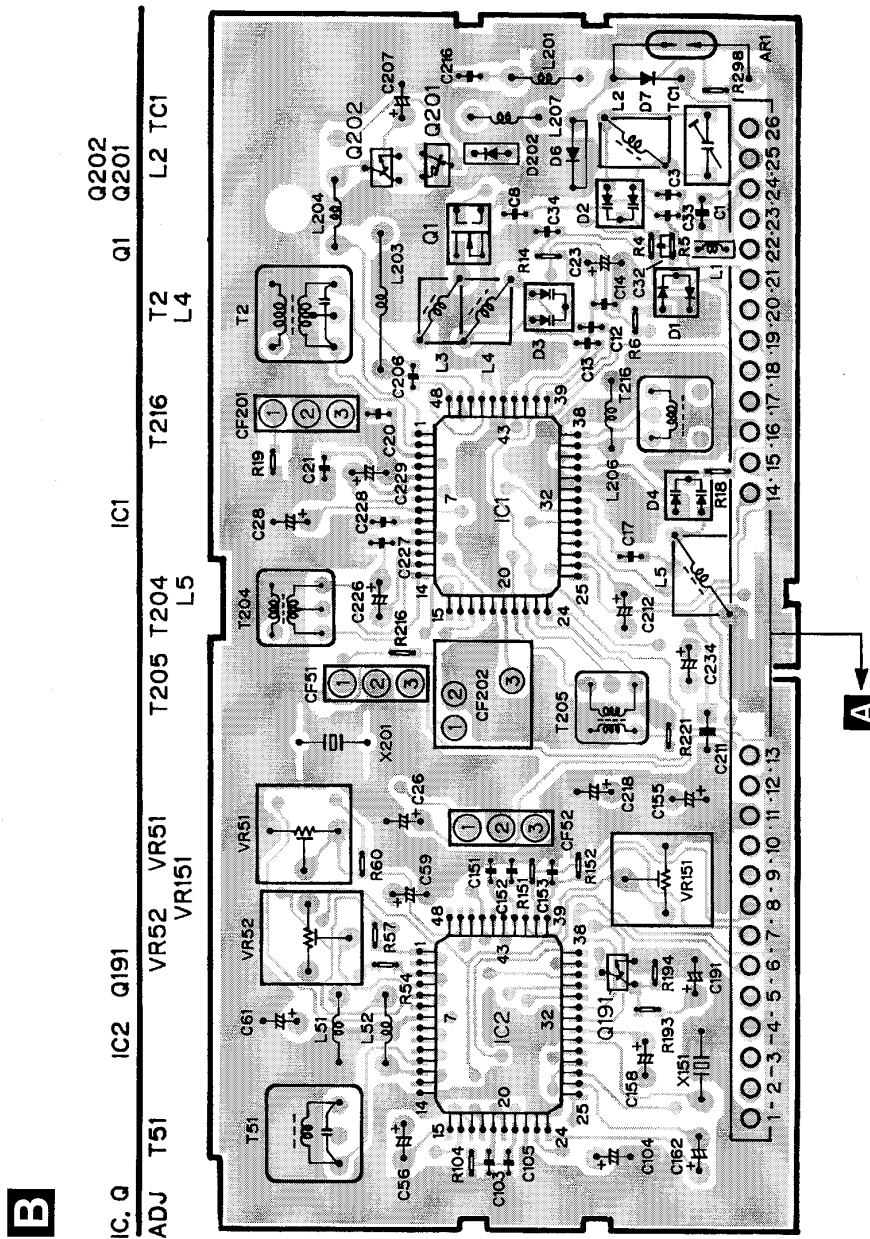


Fig. 18

SIDE B

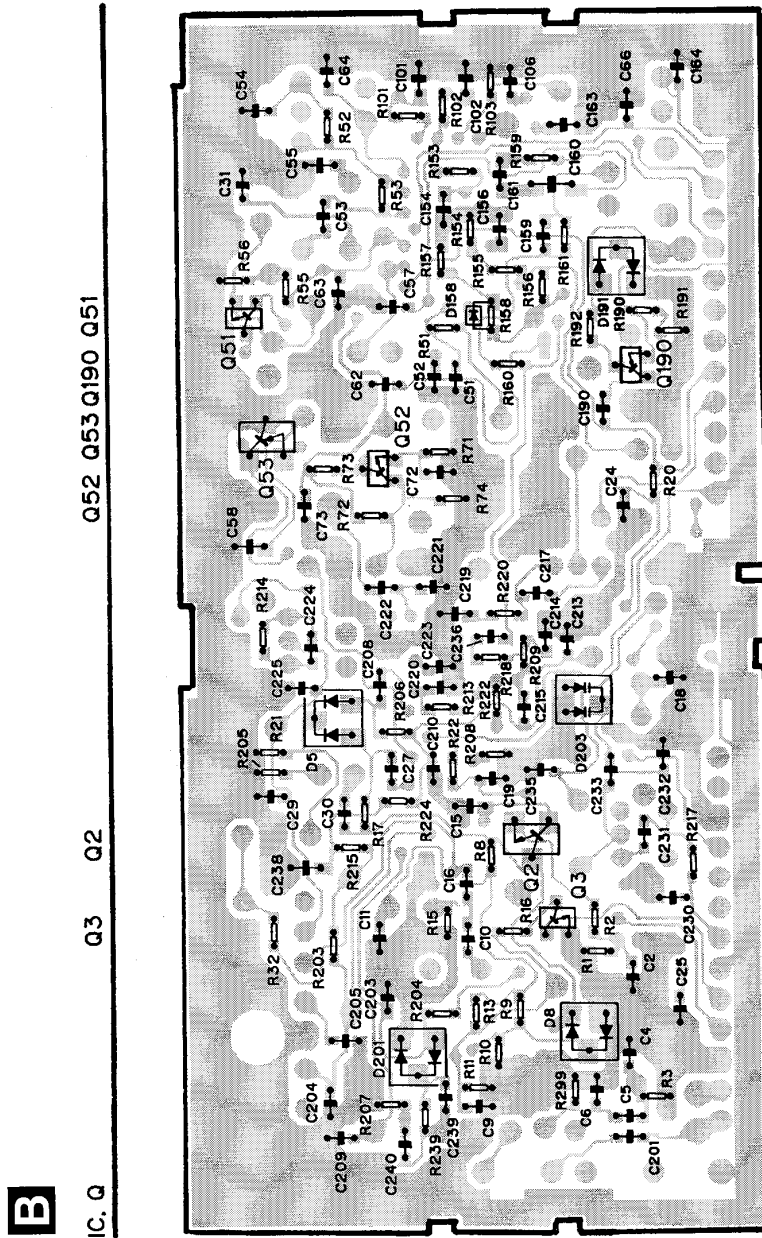


Fig. 19

**KEH-P4600R,P4630R,P4610**

**4.5 CASSETTE MECHANISM MODULE**

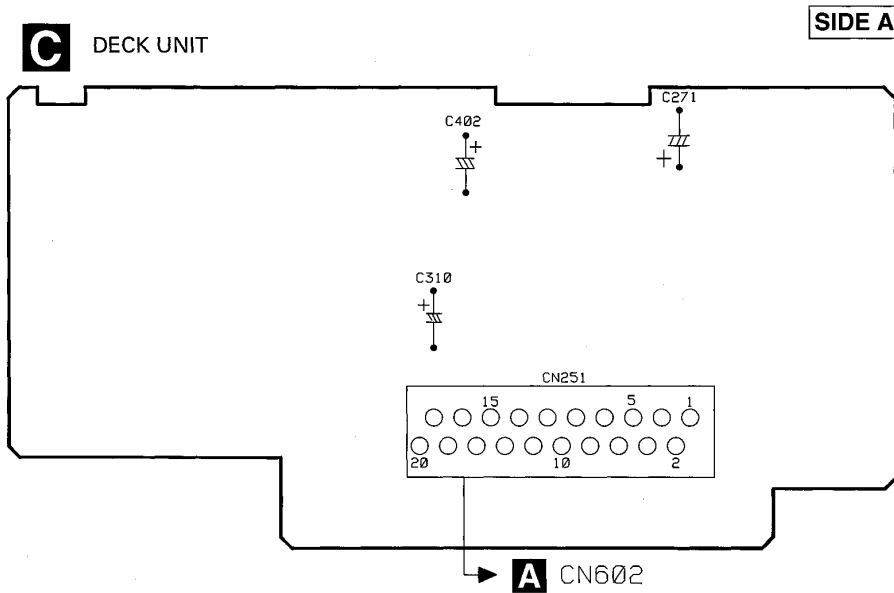


Fig. 20

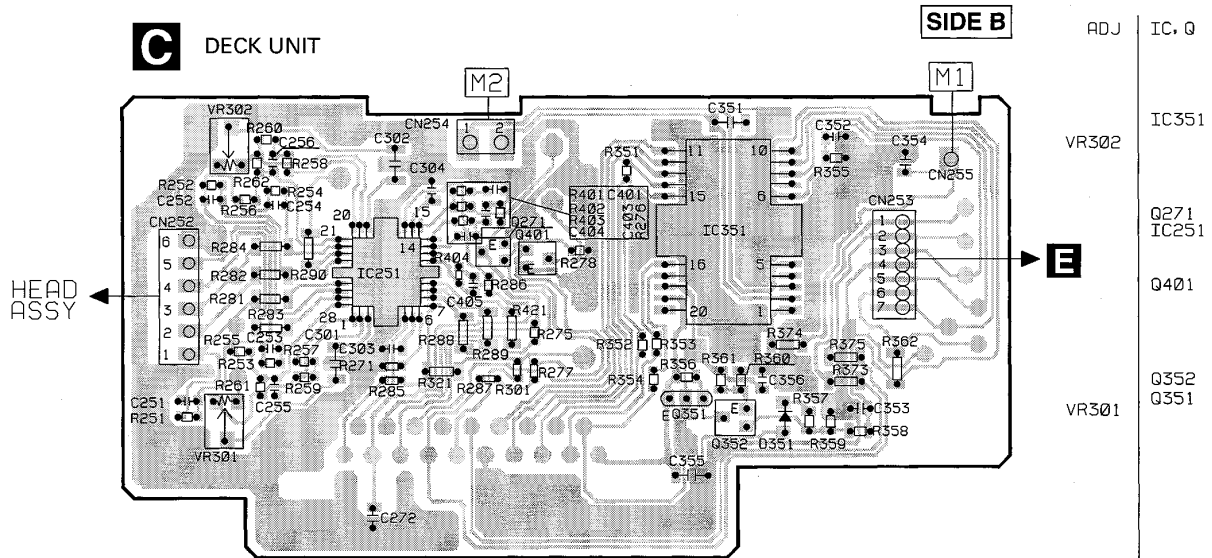


Fig. 21

KEH-P4600R,P4630R,P4610

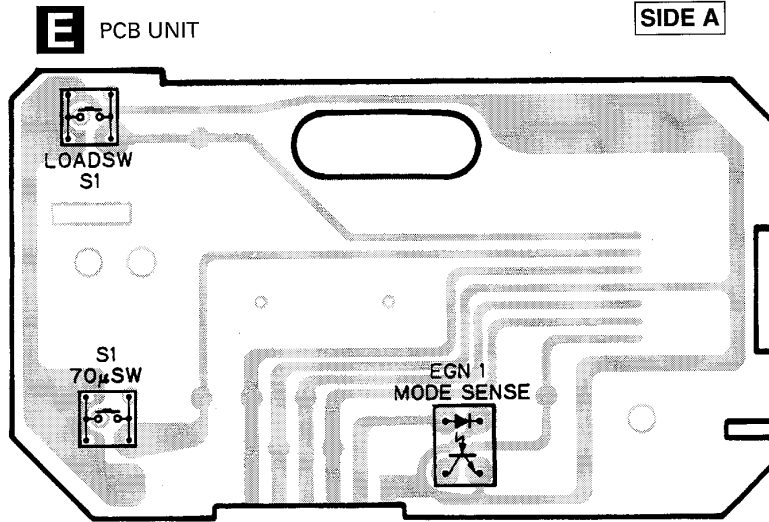


Fig. 22

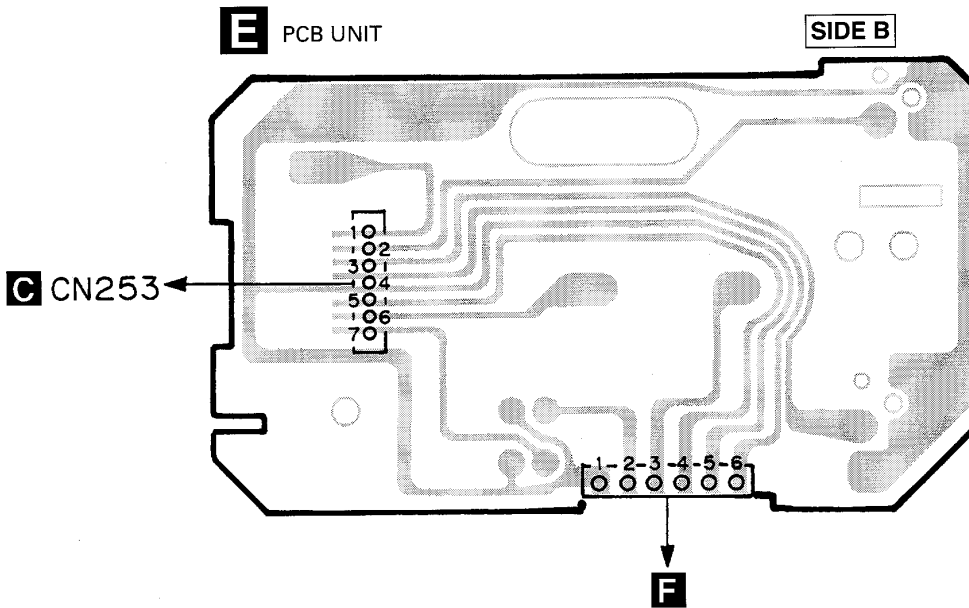


Fig. 23

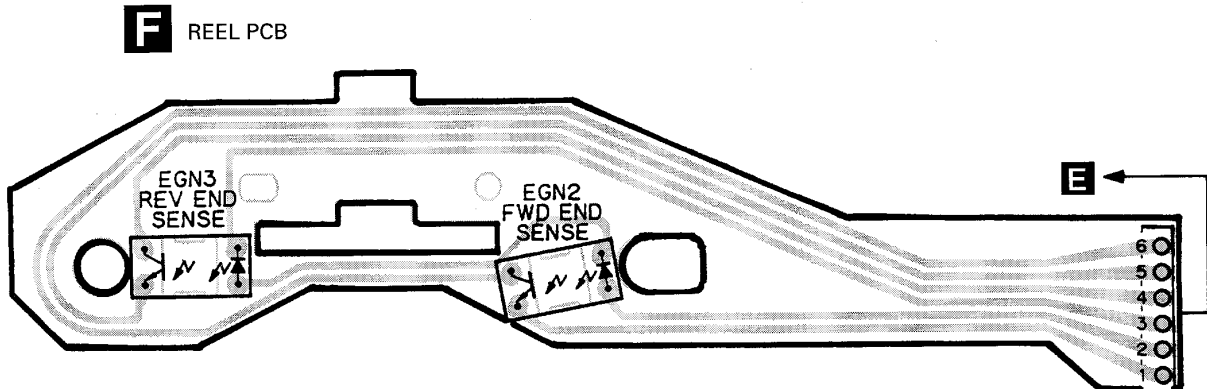


Fig. 24

# KEH-P4600R,P4630R,P4610

## 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/OSOOOJ,RS1/OOSOOOJ

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

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

====Circuit Symbol & No.===Part Name	Part No.	====Circuit Symbol & No.===Part Name	Part No.
<b>B</b> Unit Number : CWE1416(KEH-P4600R/X1M/EW,P4630R/X1M/EW)		R 8	RS1/16S332J
Unit Name : FM/AM Tuner Unit		R 9	RS1/16S473J
MISCELLANEOUS		R 10	RS1/16S223J
IC 1 IC	PA4023B	R 11	RS1/16S124J
IC 2 IC	PA4024A	R 13	RS1/16S563J
Q 1 Transistor	2SC2412KLN	R 15	RS1/16S271J
Q 2 Transistor	DTC124EU	R 16	RS1/16S104J
Q 3 FET	3SK263	R 17	RS1/16S332J
		R 18	RS1/16S332J
		R 31	RS1/16S470J
Q 31 Transistor	2SC2412KLN		
Q 154 Transistor	DTC124EU	R 32	RS1/16S822J
Q 185 Transistor	2SC2412KLN	R 33	RS1/16S822J
Q 201 FET	2SK932	R 34	RS1/16S331J
Q 202 Transistor	2SC2412KLN	R 35	RS1/16S331J
		R 51	RS1/16S271J
O 203 Transistor	DTC124EU		
D 4 Diode	1SV250	R 52	RS1/16S560J
D 5 Diode	KV1410-F1	R 55	RS1/16S102J
D 6 Diode	MA157	R 56	RS1/16S823J
D 7 Diode	KV1410-F1	R 61	RS1/16S392J
		R 62	RS1/16S393J
D 8 Diode	KV1410-F1		
D 201 Diode	MA157	R 101	RS1/16S272J
D 202 Diode	MA157	R 102	RS1/16S682J
D 231 Diode	SVC253	R 103	RS1/16S333J
L 2 Coil	CTC1108	R 104	RS1/16S334J
		R 105	RS1/16S683J
L 3 Inductor	LCTB2R2K2125		
L 4 Coil	CTC1108	R 107	RS1/16S222J
L 5 Coil	CTC1107	R 151	RS1/16S222J
L 6 Inductor	LCTBR15K1608	R 152	RS1/16S393J
L 51 Ferri-Inductor	LAU150K	R 154	RS1/16S104J
		R 155	RS1/16S273J
L 201 Ferri-Inductor	LAU4R7K		
L 202 Ferri-Inductor	LAU330K	R 156	RS1/16S243J
L 203 Inductor	CTF1287	R 157	RS1/16S203J
L 208 Inductor	LAU121K	R 160	RS1/16S222J
L 231 Inductor	LCTA3R3J3225	R 161	RS1/16S563J
		R 162	RS1/16S105J
T 31 Coil	CTE1116		
T 51 Coil	CTC1136	R 163	RS1/16S222J
TC 1 Capacitor	CCL1038	R 202	RS1/16S223J
CF 51 Ceramic Filter	CTF1292	R 203	RS1/16S225J
CF 52 Ceramic Filter	CTF1292	R 204	RS1/16S103J
		R 206	RS1/16S220J
CF 53 Ceramic Filter	CTF1292		
CF 232 Ceramic Filter	CTF1348	R 207	RS1/16S101J
X 151 Resonator 920.5kHz	CSS1365	R 208	RS1/16S102J
X 231 Crystal Resonator 10.26MHz	CSS1111	R 209	RS1/16S471J
VR 154 Semi-fixed 150kΩ(B)	CCP1213	R 214	RS1/16S822J
		R 215	RS1/16S822J
AR 1 Capacitor with Discharge Gap	DSP-201M		
RESISTORS		R 217	RS1/16S102J
		R 231	RS1/16S272J
		R 232	RS1/16S473J
R 1	RS1/16S0R0J	R 237	RS1/16S103J
R 4	RS1/16S154J	R 238	RS1/16S104J
R 5	RS1/16S391J		
R 6	RS1/16S223J	R 239	RS1/16S104J
R 7	RS1/16S123J	R 240	RS1/16S332J
		R 241	RS1/16S202J
		R 243	RS1/16S123J
		R 244	RS1/16S103J



# KEH-P4600R,P4630R,P4610

====Circuit Symbol & No.====Part Name	Part No.	====Circuit Symbol & No.====Part Name	Part No.
R 247	RS1/16S123J	C 212	CEJA470M6R3
<b>CAPACITORS</b>		C 213	CKSRYB103K25
C 1	CCSQCH6R0D50	C 216	CCSRCH101J50
C 2	CCSRCK2R0C50	C 217	CEJA1R5M50
C 4	CCSRCH820J50	C 219	CCSRCH471J50
C 6	CCSRCH820J50	C 220	CKSRYB103K25
C 8	CKSRYB103K25	C 230	CKSRYB103K25
C 9	CKSQYB104K16	C 231	CCSRCH330J50
C 10	CCSRCKR50C50	C 232	CCSRCH150J50
C 11	CEJA1R0M50	C 233	CKSQYB104K16
C 12	CKSRYB222K50	C 234	CEJA330M10
C 13	CKSRYB222K50	C 235	CKSRYB332K50
C 14	CCSRCH220J50	C 236	CKSQYB473K16
C 16	CCSRCH8R0D50	C 237	CCSRCH120J50
C 17	CKSRYB222K50	C 239	CKSRYB472K50
C 18	CKSRYB103K25	C 240	CEJAR47M50
C 19	CKSRYB222K50	C 241	CKSQYB104K16
C 20	CKSRYB222K50	C 242	CEJAR47M50
C 21	CEJA100M16	C 243	CEJAR33M50
C 22	CCSRTH9R0D50	C 244	CKSQYB473K16
C 23	CCSRTH120J50	C 245	CKSRYB123K25
C 24	CCSRCH471J50	C 246	CKSQYB473K16
C 25	CKSRYB103K25	C 250	CCSRCH471J50
C 31	CKSRYB103K25	<b>B</b> Unit Number : CWE1366(KEH-P4610/X1M/EE)	
C 32	CKSQYB472K50	Unit Name : Tuner Unit	
C 33	CCSRCH5R0C50	<b>MISCELLANEOUS</b>	
C 34	CKSQYB104K16	IC 1	IC PA2025A
C 36	CCSRRH201J50	IC 2	IC PA2026A
C 51	CKSRYB223K25	Q 1	FET 3SK263
C 52	CKSRYB103K25	Q 2	Transistor 2SC2712
C 54	CCSRCH470J50	Q 3	Transistor DTC124EU
C 55	CKSQYB223K25	Q 51	Transistor DTC124TU
C 56	CKSQYB104K16	Q 52	Transistor 2SC4098
C 57	CKSRYB472K50	Q 190	Transistor 2SA1586
C 58	CEJA330M10	Q 191	Transistor 2SC2712
C 59	CKSRYB103K25	Q 201	FET 2SK932
C 61	CCSRCH270J50	Q 202	Transistor 2SC2712
C 62	CKSRYB103K25	D 1	Diode 1SV250
C 63	CEJAR15M50	D 2	Diode KV1460-F6
C 101	CEJANP100M10	D 3	Diode KV1460-F6
C 102	CKSRYB182K50	D 4	Diode KV1460-F6
C 103	CKSRYB682K25	D 5	Chip Diode MA151WK
C 104	CEJA2R2M50	D 8	Diode MA157
C 105	CKSRYB103K25	D 158	Diode MA110
C 106	CCSRCH151J50	D 191	Diode MA157
C 107	CKSRYB103K25	D 201	Diode MA157
C 151	CKSRYB472K50	D 202	Diode MA110
C 152	CKSQYB104K16	D 203	Diode SVC253
C 153	CEJA3R3M50	L 2	Coil CTC1112
C 154	CKSQYB104K16	L 3	Coil CTC1121
C 157	CEJA3R3M50	L 4	Coil CTC1122
C 158	CKSYB474K16	L 5	Coil CTC1111
C 159	CEJA220M6R3	L 51	Ferri-Inductor LAU2R2K
C 160	CKSQYB104K16	L 52	Ferri-Inductor LAU150K
C 161	CKSQYB104K16	L 201	Ferri-Inductor LAU4R7K
C 162	CEJA3R3M50	L 203	Inductor 1mH CTF1026
C 163	CKSRYB102K50	L 204	Ferri-Inductor LAU151K
C 170	CCSRCH100D50	L 206	Inductor LAU3R3J
C 201	CCSRCH471J50	L 207	Ferri-Inductor LAU330K
C 202	CCSRCH100D50	T 2	Coil CTE1077
C 203	CKSRYB332K50	T 51	Coil CTC1119
C 204	CKSQYB473K16	T 204	Coil CTE1112
C 205	CKSQYB473K16	T 205	Coil CTE1118
C 206	CKSQYB104K16	CF 51	Ceramic Filter CTF1290
C 207	CCSRCH560J50	CF 52	Ceramic Filter CTF1290
C 209	CKSQYB104K16	CF 201	Ceramic Filter CTF1290
C 211	CCSRCH101J50		

# KEH-P4600R,P4630R,P4610

====Circuit Symbol & No.====Part Name	Part No.	====Circuit Symbol & No.----Part Name	Part No.
CF 202 Ceramic Filter	CTF1300	R 218	RS1/16S333J
X 151 Ceramic Resonator 456kHz	CSS1308	R 220	RS1/16S100J
X 201 Crystal Resonator 10.26MHz	CSS1111	R 221	RS1/16S273J
VR 51 Semi-fixed 22kΩ(B)	CCP1208	R 222	RS1/16S822J
VR 52 Semi-fixed 68kΩ(B)	CCP1211	R 224	RS1/16S330J
VR 151 Semi-fixed 10kΩ(B)	CCP1206	R 239	RS1/16S103J
AR 1 Capacitor with Discharge Gap	DSP-201M		
<b>RESISTORS</b>		<b>CAPACITORS</b>	
R 1	RS1/16S223J	C 1	CCSQCH220J50
R 2	RS1/16S331J	C 2	CKSRYB103K50
R 3	RS1/16S0R0J	C 3	CCSRCK1R0C50
R 4	RS1/16S563J	C 8	CKSRYB102K50
R 5	RS1/16S0R0J	C 9	CCSRCH470J50
R 6	RS1/16S223J	C 10	CCSRCH6R0D50
R 8	RS1/16S271J	C 11	CKSRYB103K50
R 9	RS1/16S153J	C 12	CCSRCH100D50
R 10	RS1/16S682J	C 13	CCSRCH100D50
R 11	RS1/16S474J	C 14	CKSRYB103K50
R 13	RS1/16S104J	C 15	CKSQYB104K16
R 14	RS1/16S563J	C 16	CCSRCK2R0D50
R 15	RS1/16S563J	C 17	CCSRCH180J50
R 16	RS1/16S273J	C 18	CCSRCH6R0D50
R 17	RS1/16S332J	C 19	CKSRYB103K50
R 18	RS1/16S223J	C 20	CKSRYB103K50
R 19	RS1/16S821J	C 21	CKSRYB103K50
R 20	RS1/16S223J	C 23	CEJA1R0M50
R 21	RS1/16S332J	C 24	CKSRYB223K25
R 22	RS1/16S560J	C 26	CEJA330M10
R 32	RS1/16S682J	C 27	CKSRYB103K50
R 51	RS1/16S391J	C 28	CEJA330M10
R 52	RS1/16S182J	C 29	CKSRYB103K50
R 53	RS1/16S751J	C 30	CKSRYB103K50
R 54	RS1/16S563J	C 31	CKSRYB333K16
R 55	RS1/16S822J	C 33	CCSRCH7R0D50
R 56	RS1/16S272J	C 34	CKSRYB682K50
R 71	RS1/16S182J	C 51	CKSRYB103K50
R 72	RS1/16S821J	C 52	CKSRYB103K50
R 73	RS1/16S331J	C 53	CCSRCH270J50
R 74	RS1/16S681J	C 54	CCSRCH270J50
R 101	RS1/16S224J	C 55	CKSQYB104K16
R 102	RS1/16S822J	C 56	CEJA1R0M50
R 103	RS1/16S563J	C 57	CCSRCH101J50
R 104	RS1/16S822J	C 58	CKSQYB104K16
R 153	RS1/16S103J	C 59	CEJAR47M50
R 154	RS1/16S223J	C 61	CEJAR22M50
R 155	RS1/16S0R0J	C 62	CKSRYB103K50
R 156	RS1/16S822J	C 63	CKSRYB103K50
R 157	RS1/16S123J	C 64	CCSRCH101J50
R 159	RS1/16S103J	C 66	CCSRCH101J50
R 160	RS1/16S273J	C 72	CCSRCH181J50
R 161	RS1/16S103J	C 73	CKSRYB333K16
R 190	RS1/16S473J	C 101	CKSQYB104K16
R 191	RS1/16S225J	C 102	CKSQYB473K16
R 192	RS1/16S221J	C 103	CKSRYB222K50
R 193	RS1/16S224J	C 104	CEJA1R0M50
R 194	RS1/16S225J	C 105	CKSRYB222K50
R 203	RS1/16S102J	C 106	CKSRYB223K25
R 204	RS1/16S222J	C 151	CKSRYB103K50
R 205	RS1/16S333J	C 152	CKSRYB223K25
R 206	RS1/16S332J	C 153	CKSRYB223K25
R 207	RS1/16S225J	C 154	CKSQYB473K16
R 208	RS1/16S752J	C 155	CEJAR68M50
R 209	RS1/16S822J	C 156	CKSQYB473K16
R 213	RS1/16S222J	C 158	CEJA100M16
R 214	RS1/16S333J	C 159	CCSRCH271J50
R 215	RS1/16S330J	C 160	CKSYB105K16
R 216	RS1/16S152J	C 161	CKSQYB104K16
R 217	RS1/16S563J	C 162	CEJA1R0M50

## KEH-P4600R,P4630R,P4610

====Circuit Symbol & No.===Part Name	Part No.	====Circuit Symbol & No.===Part Name	Part No.
C 163	CKSQYB473K16	Q 601	Transistor 2SC2412K
C 164	CKSRYB103K50	Q 602	Transistor 2SC2412K
C 190	CKSRYB223K25	Q 604	Transistor 2SA933S
C 191	CEAL150M10	Q 605	Transistor DTC124EK
C 201	CCSRCH471J50	Q 606	Transistor 2SC1740S
C 203	CKSQYB473K16	Q 609	Transistor 2SA933S
C 204	CCSRCH151J50	Q 701	Transistor DTC143TK
C 205	CCSRCH680J50	Q 702	Transistor DTC114EK
C 206	CKSRYB222K50	Q 703	Transistor 2SD1757K
C 207	CEJA101M16	Q 704	Transistor 2SD1757K
C 208	CKSRYB102K50	Q 706	Transistor 2SC2412K
C 209	CKSRYB103K50	Q 707	Transistor DTC143TS
C 210	CKSRYB103K50	Q 708	Transistor DTC143TS
C 211	CKSYB105K16	Q 751	Transistor 2SA1037K
C 212	CEJA330M10	Q 752	Transistor DTC114FK
C 213	CKSRYB223K25	Q 951	Transistor 2SD2396
C 214	CKSRYB472K50	Q 952	Transistor 2SD2037
C 215	CKSRYB103K50	Q 953	Transistor 2SA933S
C 216	CCSRCH100D50	Q 954	Transistor DTC114EK
C 217	CCSRCH221J50	Q 955	Transistor 2SA1674
C 218	CEJA4R7M35	Q 956	Transistor 2SA1048
C 219	CKSQYB473K16	Q 957	Transistor DTC114TK
C 220	CKSRYB103K50	Q 958	Transistor DTC114TK
C 221	CCSRCH680J50	Q 959	Transistor 2SC2412K
C 222	CCSRCH150J50	Q 960	Transistor DTC114TK
C 223	CKSRYB103K50	Q 961	Transistor 2SB1243
C 224	CCSRUJ181J50	D 301	Diode 1SS270
C 225	CKSRYB103K50	D 403	Diode 1SS270
C 226	CEJA4R7M35	D 601	Diode HZS7L(C2)
C 227	CKSRYB103K50	D 602	Diode HZS7L(A1)
C 228	CKSRYB103K50	D 603	Diode 1SS270
C 229	CEJAR68M50	D 614	LED BR4361F
C 230	CKSRYB472K50	D 615	Diode 1SS270
C 232	CCSRTH220J50	D 616	Diode 1SS270
C 233	CKSRYB332K50	D 617	Diode 1SS270
C 234	CEJA220M6R3	D 618	Diode 1SS270
C 235	CKSRYB103K50	D 619	Diode 1SS270
C 236	CKSRYB223K25	D 620	Diode 1SS270
C 238	CKSQYB473K16	D 621	Diode 1SS270
C 239	CKSRYB332K50	D 622	Diode HZS7L(A1)
C 240	CKSRYB103K50	D 701	Diode 1SS270
		D 951	Diode 1SR139-400
		D 952	Diode 1SR139-400
		D 953	Diode 1SR139-400
		D 954	Diode 1SR139-400
		D 955	Diode 1SR139-400
		D 956	Diode HZS6L(B2)
		D 957	Diode HZS9L(B3)
		D 958	Diode 1SS270
		D 959	Diode HZS9L(A2)
IC 201	IC SN761027DL	L 401	Ferri-Inductor LAU2R2K
IC 301	IC TDA7384A	L 403	Ferri-Inductor LAU2R2K
IC 401	IC PM2005B	L 601	Ferri-Inductor LAU2R2K
IC 601	IC PD4749B	L 602	Ferri-Inductor LAU2R2K
IC 604	IC S-80734AN	L 603	Ferri-Inductor LAU2R2K
IC 701	IC PM4006B	L 701	Ferri-Inductor LAU101K
IC 702	IC NJM2903M	L 751	Ferri-Inductor LAU2R2K
IC 751	IC TA2050S	L 951	Choke Coil 600H CTH1168
IC 752	IC HA12187FP	X 401	Crystal Resonator 7.200MHz CSS1379
IC 951	IC TPD1018F	X 631	Ceramic Resonator 6.29MHz CSS1310
Q 203	Transistor DTC114TS	X 701	Crystal Resonator 4.332MHz CSS1056
Q 204	Transistor DTC114TS	VR 701	Semi-fixed 22kΩ(B) CCP1321
Q 205	Transistor DTA124ES		FM/AM Tuner Unit CWE1416
Q 206	Transistor DTA124EK		
Q 207	Transistor DTC143TK		
Q 208	Transistor DTC143TK		
Q 301	Transistor DTC124EK		
Q 302	Transistor 2SC1740S		
Q 401	Transistor 2SC2412K		
Q 402	Transistor DTC143EK		
		RESISTORS	
		R 201	RS1/10S821J
		R 202	RS1/10S821J
		R 203	RS1/10S104J
		R 204	RS1/10S104J
		R 205	RS1/8S333J

**A** Unit Number : CWM5256(KEH-P4600R/X1M/EW,P4630R/X1M/EW)  
Unit Name : Tuner Amp Unit

**MISCELLANEOUS**

# KEH-P4600R,P4630R,P4610

====Circuit Symbol & No.====Part Name	Part No.	====Circuit Symbol & No.====Part Name	Part No.
R 206	RS1/10S333J	R 606	RS1/10S473J
R 207	RS1/10S152J	R 607	RS1/10S0R0J
R 208	RS1/10S152J	R 609	RS1/10S0R0J
R 209	RS1/10S272J	R 611	RS1/10S751J
R 210	RS1/10S272J	R 612	RS1/10S103J
R 211	RS1/10S151J	R 613	RS1/10S223J
R 212	RS1/10S151J	R 614	RS1/10S223J
R 213	RS1/10S221J	R 615	RS1/10S223J
R 214	RS1/10S221J	R 616	RS1/10S272J
R 215	RS1/10S104J	R 617	RS1/10S473J
R 216	RS1/10S104J	R 629	RS1/10S0R0J
R 217	RS1/10S103J	R 631	RS1/10S473J
R 218	RS1/10S102J	R 633	RS1/10S473J
R 223	RS1/10S473J	R 637	RD1/4PU102J
R 224	RS1/10S473J	R 638	RS1/10S124J
R 229	RS1/10S392J	R 639	RD1/4PU222J
R 230	RS1/10S392J	R 640	RS1/10S223J
R 301	RD1/4PU103J	R 641	RD1/4PU222J
R 302	RS1/10S221J	R 642	RS1/10S103J
R 303	RS1/10S153J	R 643	RS1/8S222J
R 304	RS1/10S103J	R 644	RD1/4PU222J
R 305	RS1/10S152J	R 645	RD1/4PU103J
R 306	RS1/10S101J	R 646	RS1/8S222J
R 307	RS1/10S562J	R 647	RS1/8S222J
R 308	RS1/8S223J	R 648	RD1/4PU222J
R 401	RS1/10S272J	R 649	RS1/10S222J
R 402	RS1/10S272J	R 650	RD1/4PU222J
R 403	RS1/8S102J	R 651	RD1/4PU222J
R 404	RS1/10S222J	R 652	RD1/4PU222J
R 405	RS1/10S222J	R 653	RS1/10S222J
R 407	RS1/10S0R0J	R 654	RS1/10S473J
R 408	RS1/10S562J	R 655	RS1/10S473J
R 409	RS1/10S222J	R 656	RS1/10S473J
R 410	RS1/10S102J	R 657	RS1/10S473J
R 411	RS1/10S682J	R 658	RS1/10S103J
R 412	RS1/10S681J	R 659	RS1/10S392J
R 413	RS1/10S472J	R 660	RS1/10S472J
R 414	RS1/10S682J	R 661	RD1/4PU472J
R 415	RS1/10S472J	R 662	RS1/10S222J
R 416	RS1/10S561J	R 663	RS1/10S222J
R 417	RS1/10S103J	R 664	RD1/4PU102J
R 418	RS1/10S152J	R 665	RD1/4PU102J
R 419	RS1/8S222J	R 667	RS1/10S102J
R 420	RS1/10S392J	R 668	RS1/8S0R0J
R 421	RS1/10S272J	R 669	RS1/10S473J
R 422	RS1/10S392J	R 670	RS1/8S0R0J
R 423	RS1/10S473J	R 695	RS1/10S472J
R 424	RS1/10S473J	R 702	RS1/10S333J
R 425	RS1/10S472J	R 703	RS1/10S0R0J
R 426	RS1/8S473J	R 704	RD1/4PU102J
R 427	RD1/4PU102J	R 705	RD1/4PU102J
R 428	RD1/4PU102J	R 706	RD1/4PU102J
R 429	RD1/4PU102J	R 707	RD1/4PU102J
R 430	RD1/4PU102J	R 708	RD1/4PU102J
R 431	RS1/10S472J	R 709	RD1/4PU102J
R 433	RS1/10S104J	R 710	RS1/10S222J
R 434	RD1/4PU222J	R 711	RS1/10S222J
R 435	RS1/10S103J	R 712	RS1/10S681J
R 436	RS1/10S393J	R 713	RS1/10S684J
R 439	RD1/4PU0R0J	R 714	RS1/10S562J
R 440	RS1/8S0R0J	R 715	RS1/10S562J
R 448	RS1/10S102J	R 716	RS1/10S104J
R 449	RS1/8S0R0J	R 717	RS1/10S104J
R 450	RS1/10S680J	R 718	RS1/10S103J
R 451	RS1/8S0R0J	R 719	RS1/10S473J
R 601	RS1/10S223J	R 720	RD1/4PU102J
R 602	RS1/10S473J	R 721	RD1/4PU102J
R 603	RS1/10S473J	R 722	RS1/10S562J
R 604	RS1/10S223J	R 723	RS1/10S105J
R 605	RS1/10S473J	R 724	RD1/4PU0R0J

## KEH-P4600R,P4630R,P4610

====Circuit Symbol & No.====Part Name	Part No.	====Circuit Symbol & No.====Part Name	Part No.
R 725	RS1/10S224J	C 221	CEJA220M10
R 726	RS1/10S224J	C 222	CEJA220M10
R 727	RS1/10S222J	C 223	CKSQYF104Z25
R 728	RS1/10S222J	C 225	CKSQYB473K16
R 729	RS1/10S223J	C 226	CKSQYB102K50
R 730	RS1/10S223J	C 227	CEJA2R2M50
R 731	RS1/10S224J	C 228	CEJA2R2M50
R 732	RD1/4PU152J	C 229	CEJA2R2M50
R 733	RD1/4PU102J	C 230	CEJA2R2M50
R 734	RS1/10S0R0J	C 236	CKSQYB473K16
R 751	RS1/10S181J	C 309	CCH1018
R 752	RS1/10S181J	C 310	CKSQYB104K16
R 753	RS1/10S223J	C 311	CKSYB224K16
R 754	RS1/10S223J	C 312	CKSQYB224K16
R 755	RS1/10S102J	C 313	CKSQYB224K16
R 756	RS1/10S102J	C 314	CKSQYB224K16
R 757	RS1/10S102J	C 315	CEJA100M16
R 758	RS1/10S102J	C 316	CKSQYB224K16
R 759	RS1/10S473J	C 317	CEJA1R0M50
R 760	RS1/10S473J	C 318	CEJA330M10
R 761	RS1/10S102J	C 401	CKSQYB223K25
R 762	RS1/10S101J	C 402	CKSYB273K25
R 763	RS1/10S101J	C 406	CCSQL101J50
R 764	RS1/10S620J	C 407	CKSQYB102K50
R 765	RS1/10S223J	C 408	CEJA220M16
R 766	RS1/10S472J	C 409	CKSQYB103K25
R 767	RS1/10S222J	C 410	CEJA220M6R3
R 768	RS1/10S0R0J	C 411	CEJA220M16
R 951	RS1/10S473J	C 412	CKSQYB103K25
R 952	RD1/4PU102J	C 413	CKSQYB103K25
R 953	RD1/4PU471J	C 414	CCH1250
R 954	RD1/4PU101J	C 415	CKSQYB103K25
R 955	RS1/10S472J	C 416	CKLSR473K16
R 956	RS1/10S473J	C 417	CKSYB332K50
R 957	RS1/10S102J	C 418	CKSQYB103K25
R 958	RS1/10S473J	C 420	CKSQYB103K25
R 959	RS1/10S102J	C 421	CKSQYB103K25
R 960	RS1/8S103J	C 422	CEJA220M6R3
R 961	RS1/10S1R0J	C 423	CKSQYB102K50
R 962	RS1/10S103J	C 424	CCH1250
R 963	RS1/10S223J	C 425	CKSQYB103K25
R 964	RS1/10S152J	C 426	CEJAR47M50
R 965	RS1/10S0R0J	C 427	CKSYB103K50
R 967	RS1/10S473J	C 428	CKSQYB103K25
R 968	RS1/10S102J	C 429	CCSQCH150J50
R 970	RD1/4PU152J	C 430	CCSQCH150J50
		C 431	CCSQL101J50
		C 432	CKSQYB103K25
		C 439	CKSQYB223K25
		C 440	CKSQYB223K25
		C 441	CKSQYB223K25
		C 442	CKSQYB102K50
		C 602	CKSQYB103K25
		C 606	CEJA100M16
		C 612	CEAL2R2M50
		C 613	CKSYB102K50
		C 614	CCSQL101J50
		C 615	CEJA4R7M35
		C 616	CKSQYB103K25
		C 622	CEJA220M10
		C 624	CKSQYB102K50
		C 701	CKSQYF104Z25
		C 702	CKSQYB222K50
		C 703	CKSQYB104K16
		C 704	CKSYB105K16
		C 705	CKSYB104K16
		C 706	CKSQYB472K50
		C 707	CEJA4R7M35
		C 708	CKSQYB104K16
		C 709	CCSQCH220J50
<b>CAPACITORS</b>			
C 201	CEJA2R2M50		
C 202	CEJA2R2M50		
C 203	CEJA1R0M50		
C 204	CEJA1R0M50		
C 205	CEJA4R7M35		
C 206	CEJA4R7M35		
C 207	CEJA100M16		
C 208	CEJA100M16		
C 209	CKSQYB822K50		
C 210	CKSQYB822K50		
C 211	CEJA1R0M50		
C 212	CEJA1R0M50		
C 213	CKSQYB183K25		
C 214	CKSQYB183K25		
C 215	CKSQYB102K50		
C 216	CKSQYB102K50		
C 217	CEJA2R2M50		
C 218	CEJA2R2M50		
C 219	CKSQYB333K25		
C 220	CKSQYB333K25		

# KEH-P4600R,P4630R,P4610

-----Circuit Symbol & No.-----Part Name		Part No.	-----Circuit Symbol & No.-----Part Name		Part No.	
C	710	CCSQCH220J50	Q	958	Transistor	DTC114TK
C	711	CKSQYB104K16	Q	959	Transistor	2SC2412K
C	712	CEJA4R7M35	Q	960	Transistor	DTC114TK
C	713	CKSQYB223K25	Q	961	Transistor	2SB1243
C	714	CEJA4R7M35	D	301	Diode	1SS270
C	715	CKSQYB103K25	D	402	Diode	1SS270
C	716	CKSQYB103K25	D	403	Diode	1SS270
C	721	CKSQYB471K50	D	404	Diode	RD3R0ES(B2)
C	722	CKSQYB223K25	D	405	Diode	HZS9L(B3)
C	723	CEAL2R2M50	D	601	Diode	HZS7L(C2)
C	724	CEJA2R2M50	D	602	Diode	HZS7L(A1)
C	751	CEJA1R0M50	D	603	Diode	1SS270
C	752	CEJA1R0M50	D	614	LED	BR4361F
C	753	CEJA1R0M50	D	615	Diode	1SS270
C	754	CEJA1R0M50	D	616	Diode	1SS270
C	755	CEJA100M16	D	617	Diode	1SS270
C	756	CEJA100M16	D	618	Diode	1SS270
C	757	CKSQYB102K50	D	619	Diode	1SS270
C	758	CKSQYB104K16	D	620	Diode	1SS270
C	951	470µF/16V CCH1183	D	621	Diode	1SS270
C	952	CEJA470M10	D	622	Diode	HZS7L(A1)
C	953	CEAS101M10	D	951	Diode	1SR139-400
C	954	CKSQYB103K25	D	952	Diode	1SR139-400
C	956	CKSQYB103K25	D	953	Diode	1SR139-400
C	957	CKSQYB103K25	D	954	Diode	1SR139-400
C	958	CEAS101M10	D	955	Diode	1SR139-400
C	959	CKSQYB103K50	D	956	Diode	HZS6L(B2)
			D	957	Diode	HZS9L(B3)
			D	958	Diode	1SS270
			D	959	Diode	HZS9L(A2)
			L	401	Ferri-Inductor	LAU2R2K
			L	403	Ferri-Inductor	LAU2R2K
			L	601	Ferri-Inductor	LAU2R2K
			L	602	Ferri-Inductor	LAU2R2K
			L	603	Ferri-Inductor	LAU2R2K
			L	751	Ferri Inductor	LAU2R2K
			L	951	Choke Coil 600H	CTH1171
			X	401	Crystal Resonator 7.200MHz	CSS1379
			X	631	Ceramic Resonator 4.194MHz Tuner Unit	CSS1047 CWE1366
			RESISTORS			
			R	201		RS1/10S821J
			R	202		RS1/10S821J
			R	203		RS1/10S104J
			R	204		RS1/10S104J
			R	205		RS1/8S333J
			R	206		RS1/10S333J
			R	207		RS1/10S152J
			R	208		RS1/10S152J
			R	209		RS1/10S272J
			R	210		RS1/10S272J
			R	211		RS1/10S151J
			R	212		RS1/10S151J
			R	213		RS1/10S221J
			R	214		RS1/10S221J
			R	217		RS1/10S103J
			R	218		RS1/10S102J
			R	223		RS1/10S473J
			R	224		RS1/10S473J
			R	229		RS1/10S392J
			R	230		RS1/10S392J
			R	301		RD1/4PU103J
			R	302		RS1/10S221J
			R	303		RS1/10S153J
			R	304		RS1/10S103J
			R	305		RS1/10S152J



Unit Number : CWM5259(KEH-P4610/X1M/EE)  
Unit Name : Tuner Amp Unit

## MISCELLANEOUS

IC	201	IC	SN761027DL
IC	301	IC	TDA7384A
IC	401	IC	PM2005B
IC	601	IC	PD4748A
IC	604	IC	S-80734AN
IC	751	IC	TA2050S
IC	752	IC	HA12187FP
IC	951	IC	TPD1018F
Q	203	Transistor	DTC114TS
Q	204	Transistor	DTC114TS
Q	205	Transistor	DTA124ES
Q	206	Transistor	DTA124EK
Q	207	Transistor	DTC143TK
Q	208	Transistor	DTC143TK
Q	301	Transistor	DTC124EK
Q	302	Transistor	2SC1740S
Q	401	Transistor	2SC2412K
Q	402	Transistor	DTC143EK
Q	406	Transistor	2SC2412K
Q	407	Transistor	2SK330
Q	601	Transistor	2SC2412K
Q	602	Transistor	2SC2412K
Q	604	Transistor	2SA933S
Q	605	Transistor	DTC124EK
Q	606	Transistor	2SC1740S
Q	609	Transistor	2SA933S
Q	751	Transistor	2SA1037K
Q	752	Transistor	DTC114EK
Q	951	Transistor	2SD2396
Q	952	Transistor	2SD2037
Q	953	Transistor	2SA933S
Q	954	Transistor	DTC114EK
Q	955	Transistor	2SA1674
Q	956	Transistor	2SA1048
Q	957	Transistor	DTC114TK

## KEH-P4600R,P4630R,P4610

-----Circuit Symbol & No.-----Part Name	Part No.	-----Circuit Symbol & No.-----Part Name	Part No.
R 306	RS1/10S101J	R 639	RD1/4PU222J
R 307	RS1/10S562J	R 640	RS1/10S223J
R 308	RS1/8S223J	R 641	RD1/4PU222J
R 401	RS1/10S162J	R 642	RS1/10S103J
R 402	RS1/10S162J	R 643	RS1/8S222J
R 404	RS1/10S222J	R 644	RD1/4PU222J
R 405	RS1/10S222J	R 645	RD1/4PU103J
R 407	RS1/10S0R0J	R 646	RS1/8S222J
R 408	RS1/10S562J	R 647	RS1/8S222J
R 409	RS1/10S222J	R 648	RD1/4PU222J
R 410	RS1/10S102J	R 649	RS1/10S222J
R 411	RS1/10S682J	R 650	RD1/4PU222J
R 412	RS1/10S681J	R 651	RD1/4PU222J
R 413	RS1/10S472J	R 652	RD1/4PU222J
R 415	RS1/10S0R0J	R 653	RS1/10S222J
R 417	RS1/10S103J	R 654	RS1/10S473J
R 418	RS1/10S152J	R 655	RS1/10S473J
R 420	RS1/10S392J	R 656	RS1/10S473J
R 421	RS1/10S102J	R 657	RS1/10S473J
R 422	RS1/10S392J	R 658	RS1/10S103J
R 423	RS1/10S473J	R 659	RS1/10S392J
R 424	RS1/10S473J	R 660	RS1/10S472J
R 425	RS1/10S472J	R 661	RD1/4PU472J
R 426	RS1/8S473J	R 662	RS1/10S222J
R 427	RD1/4PU102J	R 663	RS1/10S222J
R 428	RD1/4PU102J	R 664	RD1/4PU102J
R 429	RD1/4PU102J	R 665	RD1/4PU102J
R 430	RD1/4PU102J	R 667	RS1/10S102J
R 431	RS1/10S472J	R 668	RS1/8S0R0J
R 432	RS1/10S0R0J	R 670	RS1/8S0R0J
R 433	RS1/10S104J	R 695	RS1/10S472J
R 434	RD1/4PU222J	R 717	RS1/10S473J
R 435	RS1/10S0R0J	R 719	RS1/10S473J
R 436	RS1/10S683J	R 751	RS1/10S181J
R 437	RS1/10S0R0J	R 752	RS1/10S181J
R 438	RS1/10S0R0J	R 753	RS1/10S223J
R 439	RD1/4PU102J	R 754	RS1/10S223J
R 440	RS1/8S102J	R 755	RS1/10S102J
R 442	RS1/10S102J	R 756	RS1/10S102J
R 443	RS1/10S102J	R 757	RS1/10S102J
R 444	RS1/10S102J	R 758	RS1/10S102J
R 445	RS1/10S102J	R 759	RS1/10S473J
R 446	RS1/10S102J	R 760	RS1/10S473J
R 447	RD1/4PU391J	R 761	RS1/10S102J
R 448	RS1/10S472J	R 762	RS1/10S101J
R 449	RS1/8S0R0J	R 763	RS1/10S101J
R 450	RS1/10S680J	R 764	RS1/10S620J
R 601	RS1/10S223J	R 765	RS1/10S223J
R 602	RS1/10S473J	R 766	RS1/10S472J
R 603	RS1/10S473J	R 767	RS1/10S222J
R 604	RS1/10S223J	R 768	RS1/10S0R0J
R 605	RS1/10S473J	R 951	RS1/10S473J
R 606	RS1/10S473J	R 952	RD1/4PU102J
R 608	RD1/4PU0R0J	R 953	RD1/4PU471J
R 610	RD1/4PU0R0J	R 954	RD1/4PU101J
R 611	RS1/10S751J	R 955	RS1/10S472J
R 612	RS1/10S103J	R 956	RS1/10S473J
R 613	RS1/10S223J	R 957	RS1/10S102J
R 614	RS1/10S223J	R 958	RS1/10S473J
R 615	RS1/10S223J	R 959	RS1/10S102J
R 616	RS1/10S272J	R 960	RS1/8S103J
R 617	RS1/10S473J	R 961	RS1/10S1R0J
R 629	RS1/10S0R0J	R 962	RS1/10S103J
R 630	RS1/10S0R0J	R 963	RS1/10S223J
R 631	RS1/10S473J	R 964	RS1/10S152J
R 633	RS1/10S473J	R 965	RS1/10S0R0J
R 634	RD1/4PU473J	R 967	RS1/10S473J
R 635	RS1/10S473J	R 968	RS1/10S102J
R 637	RD1/4PU102J	R 970	RD1/4PU152J
R 638	RS1/10S124J		

# KEH-P4600R,P4630R,P4610

====Circuit Symbol & No.====Part Name	Part No.	====Circuit Symbol & No.====Part Name	Part No.
<b>CAPACITORS</b>			
C 201	CEJA2R2M50	C 436	CKSQYB103K25
C 202	CEJA2R2M50	C 437	CFTLA474J50
C 203	CEJA1R0M50	C 438	CKSQYB103K25
C 204	CEJA1R0M50	C 441	CKSQYB473K16
C 205	CEJA4R7M35	C 442	CKSQYB102K50
C 206	CEJA4R7M35	C 602	CKSQYB103K25
C 207	CEJA100M16	C 606	CEJA100M16
C 208	CEJA100M16	C 612	CEAL2R2M50
C 209	CKSQYB822K50	C 614	CCSOSL101J50
C 210	CKSQYB822K50	C 615	CEJA4R7M35
C 211	CEJA1R0M50	C 616	CKSQYB103K25
C 212	CEJA1R0M50	C 623	CEJA220M10
C 213	CKSQYB183K25	C 624	CKSQYB102K50
C 214	CKSQYB183K25	C 751	CEJA1R0M50
C 215	CKSQYB102K50	C 752	CEJA1R0M50
C 216	CKSQYB102K50	C 753	CEJA1R0M50
C 217	CEJA2R2M50	C 754	CEJA1R0M50
C 218	CEJA2R2M50	C 755	CEJA100M16
C 219	CKSQYB333K25	C 756	CEJA100M16
C 220	CKSQYB333K25	C 757	CKSQYB102K50
C 221	CEJA220M10	C 758	CKSQYB104K16
C 222	CEJA220M10	C 951	CCH1183
C 223	CKSQYF104Z25	C 952	CEJA470M10
C 225	CKSQYB473K16	C 953	CEAS101M10
C 227	CEJA2R2M50	C 954	CKSQYB103K25
C 228	CEJA2R2M50	C 956	CKSQYB103K25
C 229	CEJA2R2M50	C 957	CKSQYB103K25
C 230	CEJA2R2M50	C 958	CEAS101M10
C 236	CKSQYB473K16	C 959	CKSYB103K50
C 309	CCH1018	C 960	CKSQYB223K25
C 310	CKSQYB104K16		
C 311	CKSYB224K16		
C 312	CKSQYB224K16		
C 313	CKSQYB224K16		
C 314	CKSQYB224K16		
C 315	CEJA100M16		
C 316	CKSQYB224K16		
C 317	CEJA1R0M50		
C 318	CEJA330M10		
C 401	CKSQYB223K25		
C 402	CKSYB273K25		
C 406	CCSOSL101J50		
C 407	CKSQYB102K50		
C 408	CEJA220M16		
C 409	CKSQYB103K25		
C 410	CEJA220M6R3		
C 411	CEJA220M16		
C 412	CKSQYB103K25		
C 413	CKSQYB103K25		
C 416	CKLSR473K16		
C 417	CKSYB332K50		
C 418	CKSQYB103K25		
C 420	CKSQYB103K25		
C 421	CKSQYB103K25		
C 422	CEJA220M6R3		
C 423	CKSQYB102K50		
C 424	CCH1250		
C 425	CKSQYB103K25		
C 426	CEJAR47M50		
C 427	CKSYB103K50		
C 429	CCSQCH150J50		
C 430	CCSQCH150J50		
C 431	CCSOSL101J50		
C 432	CKSQYB103K25		
C 435	CEJA101M10		
		C 470	470µF/16V
		C 470	4.7µF/16V

**D** Unit Number : CWM5038(KEH-P4600R/X1M/EW)  
 Unit Name : Key Board Unit

## MISCELLANEOUS

IC 901	IC	PD6195A
IC 902	IC	SBX8035-H
D 901	Chip Diode	MA151WK
D 902	Diode	MA151WA
D 903	LED	See Contrast table
L 901	Ferri-Inductor	LAU101K
X 901	Ceramic Resonator 4.97MHz	CSG1312
S 901	Switch	CSG1081
S 902	Switch	CSG1081
S 903	Push Switch	CSG1093
S 904	Push Switch	CSG1093
S 905	Push Switch	CSG1093
S 906	Push Switch	CSG1093
S 907	Push Switch	CSG1093
S 908	Push Switch	CSG1093
S 909	Push Switch	CSG1093
S 910	Push Switch	CSG1093
S 911	Push Switch	CSG1093
S 912	Switch	CSG1081
S 913	Push Switch	CSG1093
S 914	Push Switch	CSG1093
S 915	Switch	CSG1081
S 916	Push Switch	CSG1093
S 917	Switch	CSG1081
S 918	Switch	CSG1081
S 919	Push Switch	CSG1093
S 920	Push Switch	CSG1093
S 921	Push Switch	CSG1093
IL 901	Lamp 14V 40mA	See Contrast table
IL 902	Lamp 14V 40mA	See Contrast table
IL 903	Lamp 14V 40mA	See Contrast table
IL 904	Lamp 14V 40mA	See Contrast table
IL 905	Lamp 14V 40mA	See Contrast table
LCD 901	LCD	See Contrast table



# KEH-P4600R,P4630R,P4610

====Circuit Symbol & No.===Part Name	Part No.
<b>RESISTORS</b>	
R 901	RS1/10S222J
R 902	RS1/10S222J
R 903	RS1/10S472J
R 904	RS1/10S121J
R 905	RS1/10S470J
R 906	RS1/10S470J
R 907	RS1/10S2R2J
R 908	RS1/10S473J
R 909	RS1/10S473J
R 910	RS1/10S473J
R 911	RS1/10S473J
R 912	RS1/10S473J
R 913	RS1/10S473J
R 915	RS1/4S821J
<b>CAPACITORS</b>	
C 901	CEAL100M16
C 902	CKSOYF104Z25
C 903	CEAL100M16
<b>MISCELLANEOUS</b>	
IC 251	IC HA12192F
IC 351	IC PA2020A
Q 271	Transistor 2SC4116
Q 351	Transistor 2SB1200
Q 352	Transistor 2SC4102
Q 401	Transistor DTC114EU
D 351	Diode 1SS355
VR 301	Semi-fixed 33kΩ(B) CCP1280
VR 302	Semi-fixed 33kΩ(B) CCP1280
<b>RESISTORS</b>	
R 255	RS1/16S181J
R 256	RS1/16S181J
R 257	RS1/16S183J
R 258	RS1/16S183J
R 259	RS1/16S133J
R 260	RS1/16S133J
R 261	RS1/16S274J
R 262	RS1/16S274J
R 271	RS1/16S183J
R 275	RS1/16S473J
R 276	RS1/16S104J
R 277	RS1/16S224J
R 278	RS1/16S104J
R 281	RS1/8S0R0J
R 282	RS1/8S0R0J
R 283	RS1/8S0R0J
R 284	RS1/8S0R0J
R 285	RS1/16S0R0J
R 286	RS1/16S0R0J
R 287	RS1/16S0R0J
R 288	RS1/8S0R0J
R 289	RS1/8S0R0J
R 290	RS1/8S0R0J
R 301	RS1/16S0R0J
R 321	RS1/8S0R0J
R 351	RS1/16S102J
R 352	RS1/16S102J
R 353	RS1/16S102J
R 354	RS1/16S102J
R 355	RS1/10S274J

**C** Unit Number : EWM1010  
Unit Name : Deck Unit

====Circuit Symbol & No.===Part Name	Part No.
R 356	RS1/10S202J
R 357	RS1/10S472J
R 358	RS1/10S103J
R 359	RS1/10S103J
R 360	RS1/10S102J
R 361	RS1/10S622J
R 362	RS1/8S181J
R 373	RS1/8S0R0J
R 374	RS1/8S0R0J
R 375	RS1/8S0R0J
R 401	RS1/16S123J
R 402	RS1/16S332J
R 403	RS1/16S911J
R 404	RS1/16S274J
R 421	RS1/8S0R0J
<b>CAPACITORS</b>	
C 251	CKSRYB391K50
C 252	CKSRYB391K50
C 253	CKSRYB391K50
C 254	CKSRYB391K50
C 255	CKSRYB103K50
C 256	CKSRYB103K50
C 271	CEJA1R0M50
C 272	CKSQYB104K16
C 301	CKSYB474K16
C 302	CKSYB474K16
C 303	CKSQYB104K16
C 304	CKSQYB104K16
C 351	CKSYB224K25
C 352	CKSQYB392K50
C 353	CKSQYB103K50
C 354	CKSQYB473K50
C 355	CKSYB104K50
C 356	CKSOYB103K50
C 401	CKSRYB472K50
C 402	CEJA1R0M50
C 403	CKSRYB223K25
C 404	CKSRYB103K50
C 405	CKSRYB333K16

**E** Unit Number :  
Unit Name : PCB Unit

S 1	Switch (Load)	ESG1004
S 2	Switch (70μS)	ESG1004
EGN 1	Photo-Interrupter	EGN1005

**F** Unit Number :  
Unit Name : Reel PCB

EGN 2	Photo-Interrupter	EGN1006
EGN 3	Photo-Interrupter	EGN1006

**Miscellaneous Parts List**

M 1	Motor Unit (Main)	EXA1491
M 2	Motor Unit (Sub)	EXA1485
HD 1	Head Assy	EXA1506

## KEH-P4600R,P4630R,P4610

### CONTRAST TABLE of KEY BOARD UNIT

KEH-P4600R/X1M/EW,KEH-P4630R/X1M/EW and KEH-P4610/X1M/EE have the same construction except for the following:

Symbol & Description	Part No.		
	KEH-P4600R/X1M/EW	KEH-P4630R/X1M/EW	KEH-P4610/X1M/EE
Key Board Unit	CWM5038	CWM5269	CWM5268
D 903 Diode	QLMP-6577	QLMJ-P014	QLMJ-P014
IL 901,902 Lamp 14V 40mA	CEL1481	CEL1479	CEL1479
IL 903,904,905 Lamp 14V 40mA	CEL1507	CEL1508	CEL1508
LCD 901 LCD	CAW1383	CAW1391	CAW1425

## 6. ADJUSTMENT

● Connection Diagram (KEH-P4600R/X1M/EW, P4630R/X1M/EW)

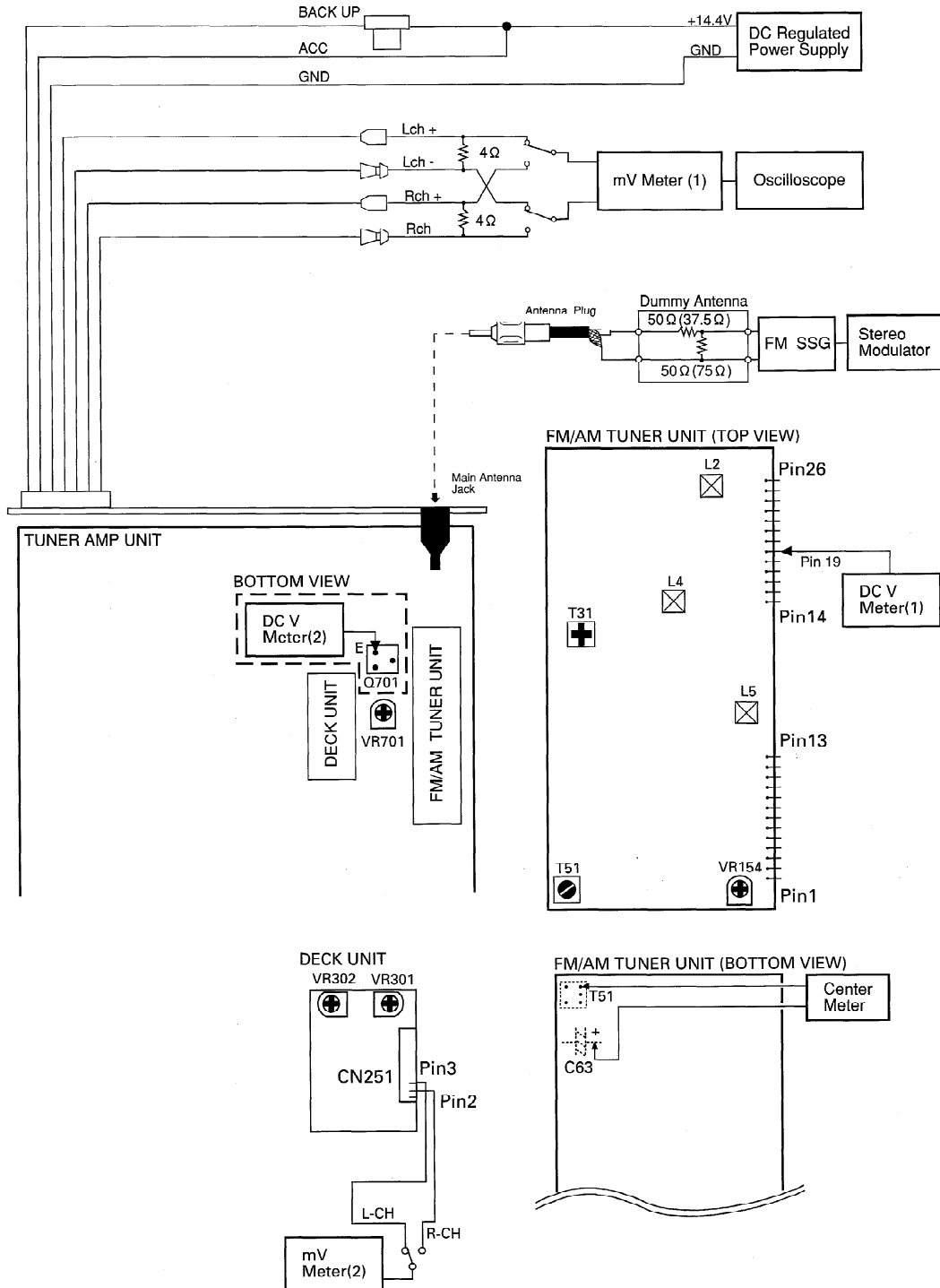


Fig. 25

## KEH-P4600R,P4630R,P4610

### ● KEH-P4600R/X1M/EW, P4630R/X1M/EW

#### FM ADJUSTMENT

Modulation M: MONO MOD., 400Hz 30%(22.5kHz Dev.) or 400Hz 100%(75kHz Dev.)

S1: STEREO MOD., 1kHz, L or R=30%(20.25kHz+7.5kHz Dev.)

S2: STEREO MOD., 400Hz, L or R=60%(40.50kHz+7.5kHz Dev.)

NOTE: Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

	No.	FM SSG		Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(MHz)	Level(dBf)			
TUN Volt	1	.....	.....	108.0	L5	DC V Meter(1) : 6V
IF	2	98.1 M	60	98.1	T51	Center Meter : 0
ANT Coil	3	98.1 M	5	98.1	L2	mV Meter(1) : Maximum
RF Coil	4	98.1 M	5	98.1	L4	mV Meter(1) : Maximum
Image	5	129.3 M	60-80	107.9	TC1	mV Meter(1) : Minimum
IFT	6	98.1 M	5	98.1	T31	mV Meter(1) : Maximum (STEREO MODE)
ARC	7	98.1 S1	40	98.1	VR154	mV Meter(1) : Separation 5dB (STEREO MODE)

#### RDS SL ADJUSTMENT

	No.	FM SSG		Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(MHz)	Level(dBf)			
	1	104.0 S2	35	104.0	VR701	DC V Meter(2) : 1.75V±0.05V

#### DOLBY B NR ADJUSTMENT

No.	Test Tape	Adjustment Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz,200nwb/m)	VR301(Lch),VR302(Rch)	mV Meter(2) : -8.24dB±1.0dB (DOLBY NR Switch : OFF)

● For Repair of the Detach Grille Assy, Use the Extension-Cord Tool GGD1056.

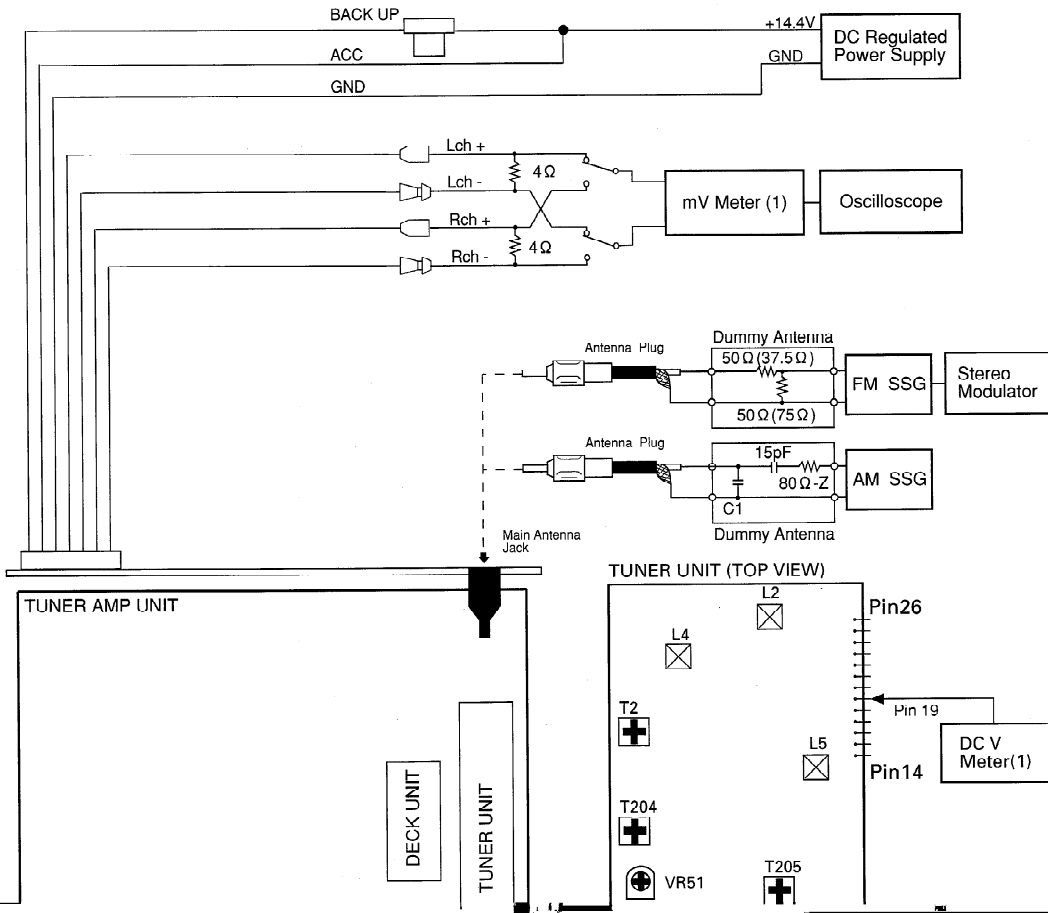
● For Repair of the Cassette Mechanism Module, Use the Extension-Cord Tool GGD1121.

# KEH-P4600R,P4630R,P4610

## ● Connection Diagram (KEH-P4610/X1M/EE)

### NOTE:

Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.



## KEH-P4600R,P4630R,P4610

### ● KEH-P4610/X1M/EE

#### FM ADJUSTMENT

Modulation M: MONO MOD., 400Hz 30%(22.5kHz Dev.) or 400Hz 100%(75kHz Dev.)

S: STEREO MOD., 1kHz, L or R=100%(67.5kHz+7.5kHz Dev.)

NOTE: Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

	No.	FM SSG		Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(MHz)	Level(dBf)			
TUN Volt	1	108.0 M	65	108.0	L5	DC V Meter(1) : 8.0V±0.1V
IF	1	98.1 M	65	98.1	T51	Center Meter : 0
ANT,RF	1	106.1 M	10	106.1 M	L2,L4	mV Meter(1) : Maximum
IFT	1	98.1 M	10	98.1	T2	mV Meter(1) : Maximum (STEREO MODE)
Soft Mute	1	98.1 M	65	98.1	—	mV Meter(1) : Maximum (STEREO MODE)
	2	98.1 M	10	98.1	VR52	mV Meter(1) : A-3dB
ARC	1	98.1 S	40	98.1	VR151	mV Meter(1) : Separation 5dB
SD	1	98.1 S	22	98.1	VR51	DC V Meter(2) : Approx. 5V

#### AM ADJUSTMENT

	No.	AM SSG		Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(MHz)	Level(dBf)			
IF	1	999	20	999	T204,T205	mV Meter(1) : Maximum

#### DOLBY B NR ADJUSTMENT

No.	Test Tape	Adjustment Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz,200nwb/m)	VR301(Lch),VR302(Rch)	mV Meter(2) : -8.24dB±1.0dB (DOLBY NR Switch : OFF)

● For Repair of the Detach Grille Assy, Use the Extension-Cord Tool GGD1056.

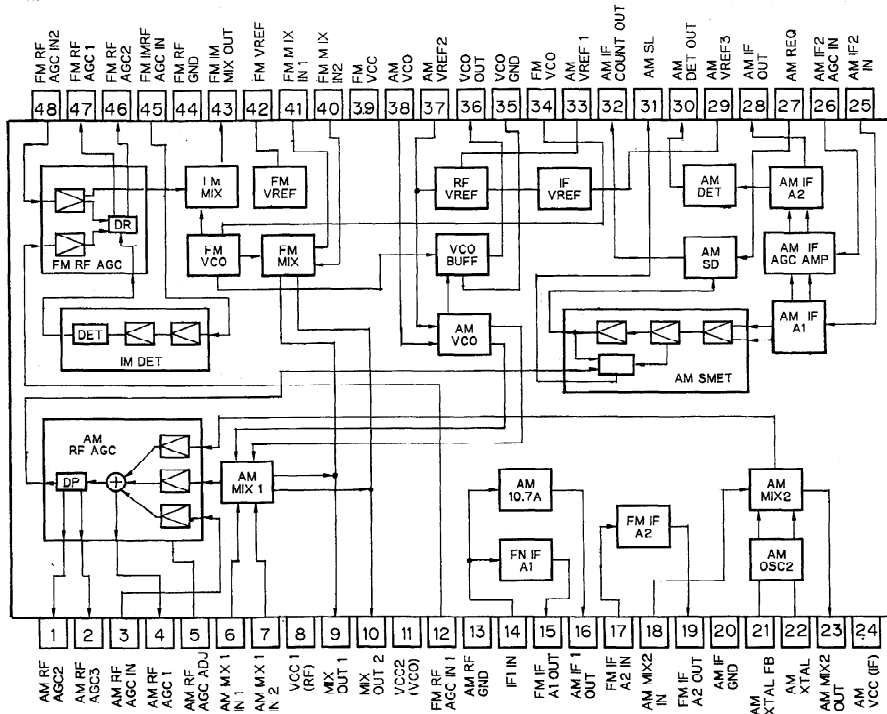
● For Repair of the Cassette Mechanism Module, Use the Extension-Cord Tool GGD1121.

## 7. GENERAL INFORMATION

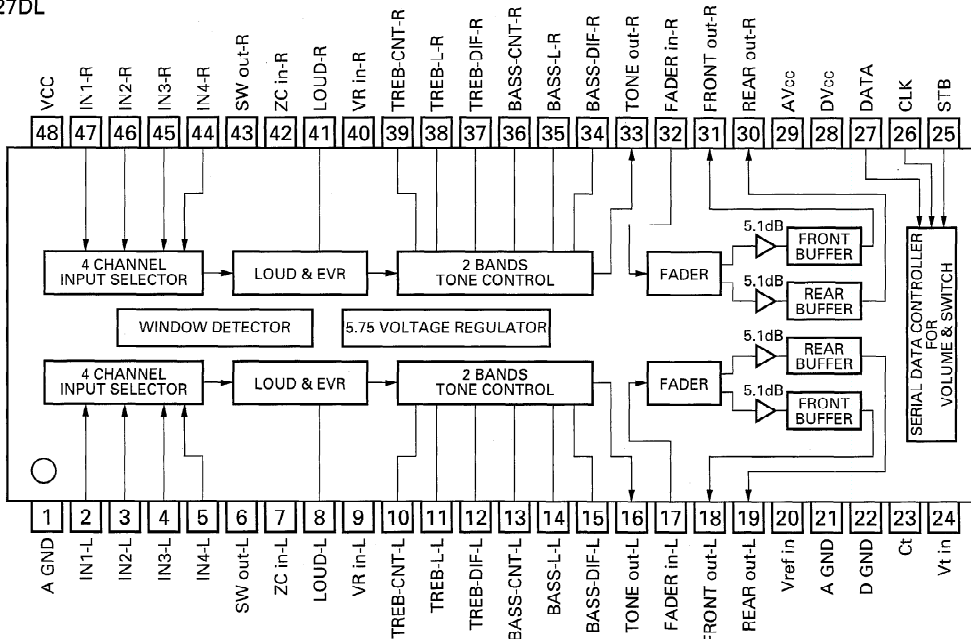
### 7.1 PARTS

#### 7.1.1 IC

PA4023B



\*SN761027DL

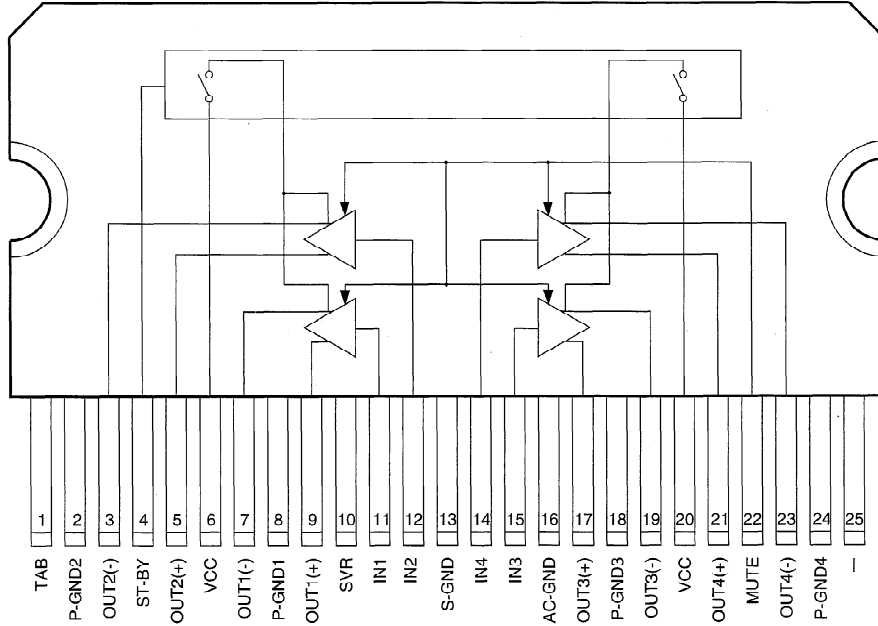


IC's marked by\* are MOS type.

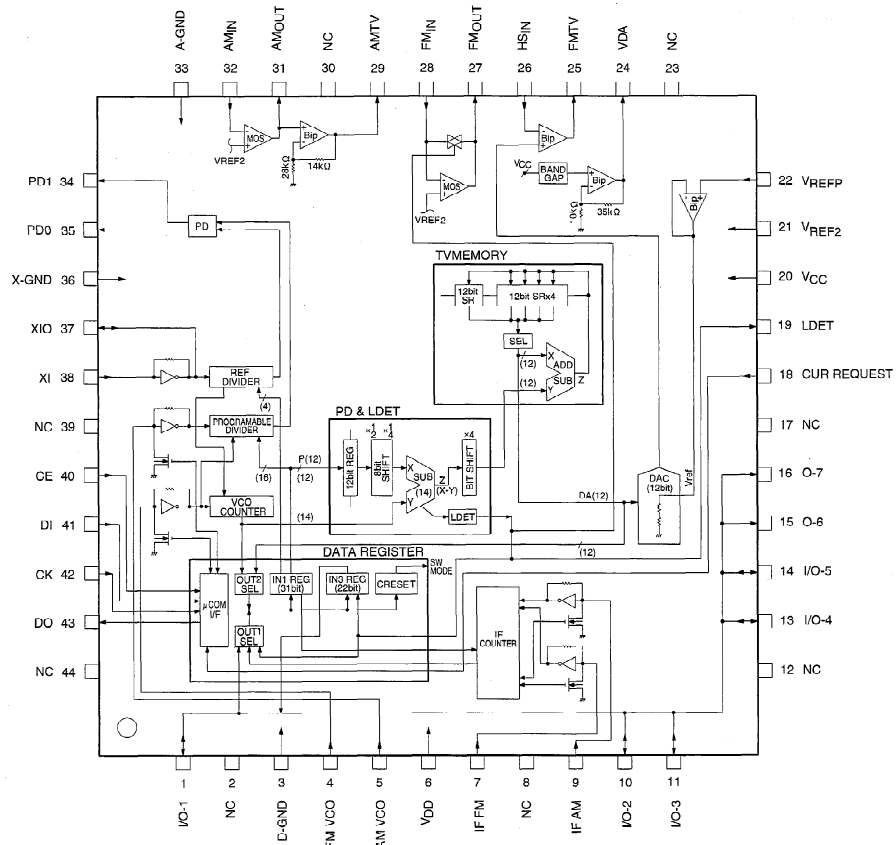
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

# KEH-P4600R,P4630R,P4610

TDA7384A



PM2005B





## KEH-P4600R,P4630R,P4610

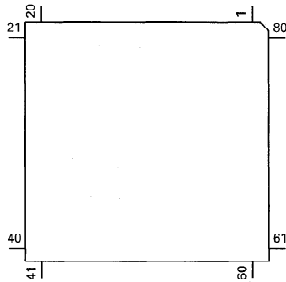
### ● Pin Functions (PD4749B:EW,PD4748A:EE)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	ASENB	O	C	ASENB output
2	NC			Not used
3	ADPW	O	C	Control output for analog input reference power
4	AVSS			A/D GND
5	FIEOUT	O	C	LPF switch
6	ST	I		FM stereo input
7	AVREF1			(D/A converter standard voltage)
8	KYDT	I		Key data input
9	DPDT	O	C	Key data output
10	SWVDD	O	C	Grille power supply control output
11	TUNPD1	I		PLL IC data input
12	TUNPD0	O	C	PLL IC data output
13	TUNPCK	O	C	PLL IC clock
14	TUNPCE	O	C	PLL IC chip enable
15	CURRRQ	O	C	Tuner voltage FIX output
16	NC			Not used
17	TX2	O	C	IP BUS data output
18	NC			Not used
19	RECIVE	O	C	RDS decoder receive output
20	NC			Not used
21	EORR	O	C	CorrectRDS error output
22	VST	O	C	Strobe pulse output for electronic volume
23	VCK	O	C	Clock output for electronic volume
24	VDT	O	C	Data output for electronic volume
25	NC			Not used
26	DRSYS	O	C	Door system select output
27	DRSENS	I		Door open/close sense input
28	ILPW	O	C	Illumination power
29	FM	O	C	FM power control output
30	AM	O	C	AM power control output
31	NR	O	C	Cassette mechanism noise reduction output
32	CM	O	C	Cassette mechanism capstan motor control output
33	VSS			GND
34	SC2	O	C	Cassette mechanism sub motor control output
35	SC1	O	C	Cassette mechanism sub motor control output
36	MSIN	I		Cassette mechanism MS sense input
37	MUTCNT			GND
38	MTL	I		Cassette mechanism tape select input
39	DLED	O	N	Alarm LED output
40	N/R	O	C	Normal reverse input
41	PLAY	O	C	MS gain select output
42	LOADSW	I		Tape loading input
43	POS	I		Cassette mechanism position sense input
44	RES	I		Cassette mechanism reverse end sense input
45	PEE	O	C	Beep tone output
46	NES	I		Cassette mechanism forward end sense input
47	RDS57K	I		57kHzBP-OUT sense input
48	STBY	O	C	Stand-by output terminal
49	SK	I		SK signal input
50	DRST	O	C	RDS decoder reset output
51	TMUTE	O	C	Tuner mute output
52	NC			Not used
53	SD	I		SD input
54	MUTE	O	C	System mute output
55	SYSPW	O	C	System power supply control output
56	TX1	O	C	IP-BUS output
57	RX	I		IP-BUS input

# KEH-P4600R,P4630R,P4610

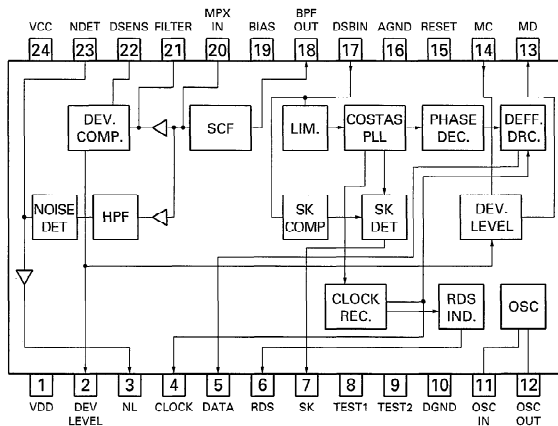
Pin No.	Pin Name	I/O	Format	Function and Operation
58	RDSLK	I		RDSLK input
59	RDT	I		RDS data input
60	RESET	I		Reset input
61	RX	I		IP BUS input
62	NC			Not used
63	DSSENS	I		Grille detach sense
64	NC			Not used
65	ASENS	I		ACC power sense input
66	BSSENS	I		Back up power sense input
67	CKIN	I		Clock input
68	VDD			Power supply
69	X2			Crystal oscillator connection pin
70	X1			Crystal oscillator connection pin
71	IC			GND
72	NC			Not used
73	TESTIN	I		Test program mode input
74	AVDD			Positive power supply terminal for analog circuit
75	AVREF0			GND
76	SL	I		SD level input from tuner
77	CL	I		Synchronizing signal input of display data latch
78	NL	I		RDS noise level input
79	TL	I		Trigger level input
80	NC			Not used

\*PD4749B,PD4748A

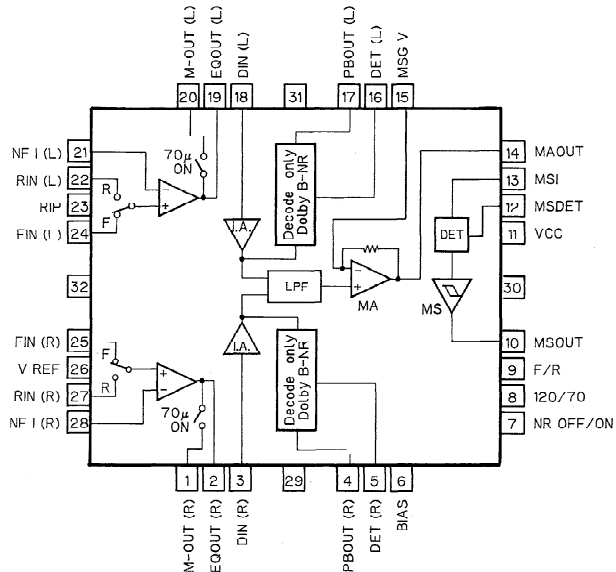


Format	Meaning
C	C MOS
N	N channel open drain

PM4006B



HA12192F

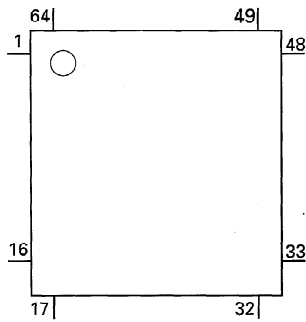


# KEH-P4600R,P4630R,P4610

## ● Pin Functions (PD6195A)

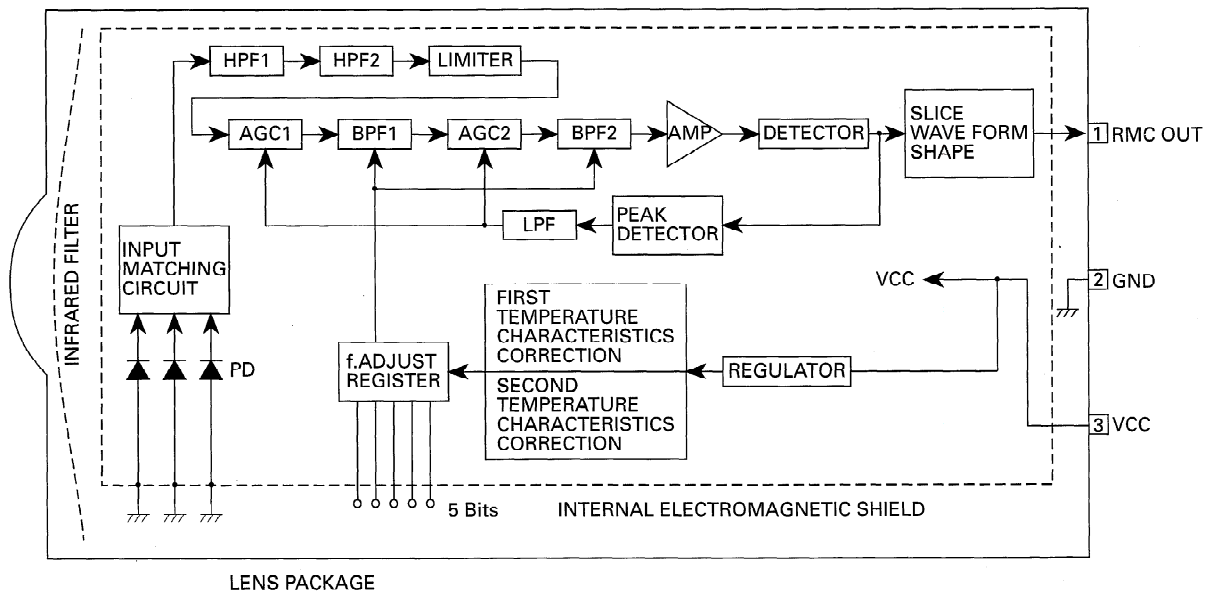
Pin No.	Pin Name	I/O	Format	Function and Operation
1-5	SEG4-0	O		LCD segment output
6-9	COM3-0	O		LCD Common driver output
10	LCDB			LCD bias power supply
11-14	KS4-1	O	N	Key strobe output
15,16	KD0,1	I		Key data input
17	REM	I		Remote control reception
18	DPDT	I		UART input
19	RST	I		System reset
20	SO	O	C	UART output
21	KYDT			(VSS)
22	X0			Crystal oscillator connection pin
23	X1			Crystal oscillator connection pin
24	VSS			GND
25,26	KD2,3	I		Key data input
27,28	KS5,4	O	N	Key strobe output
29-55	SEG39-13	O		LCD segment output
56	VDD			Power
57-64	SEG12-5	O		LCD segment output

\*PD6195A



Format	Meaning
C	C MOS
N	N channel open drain

SBX8035-H



# KEH-P4600R,P4630R,P4610

## 7.1.2 DISPLAY

● CAW1383 (KEH-P4600R/X1M/EW)

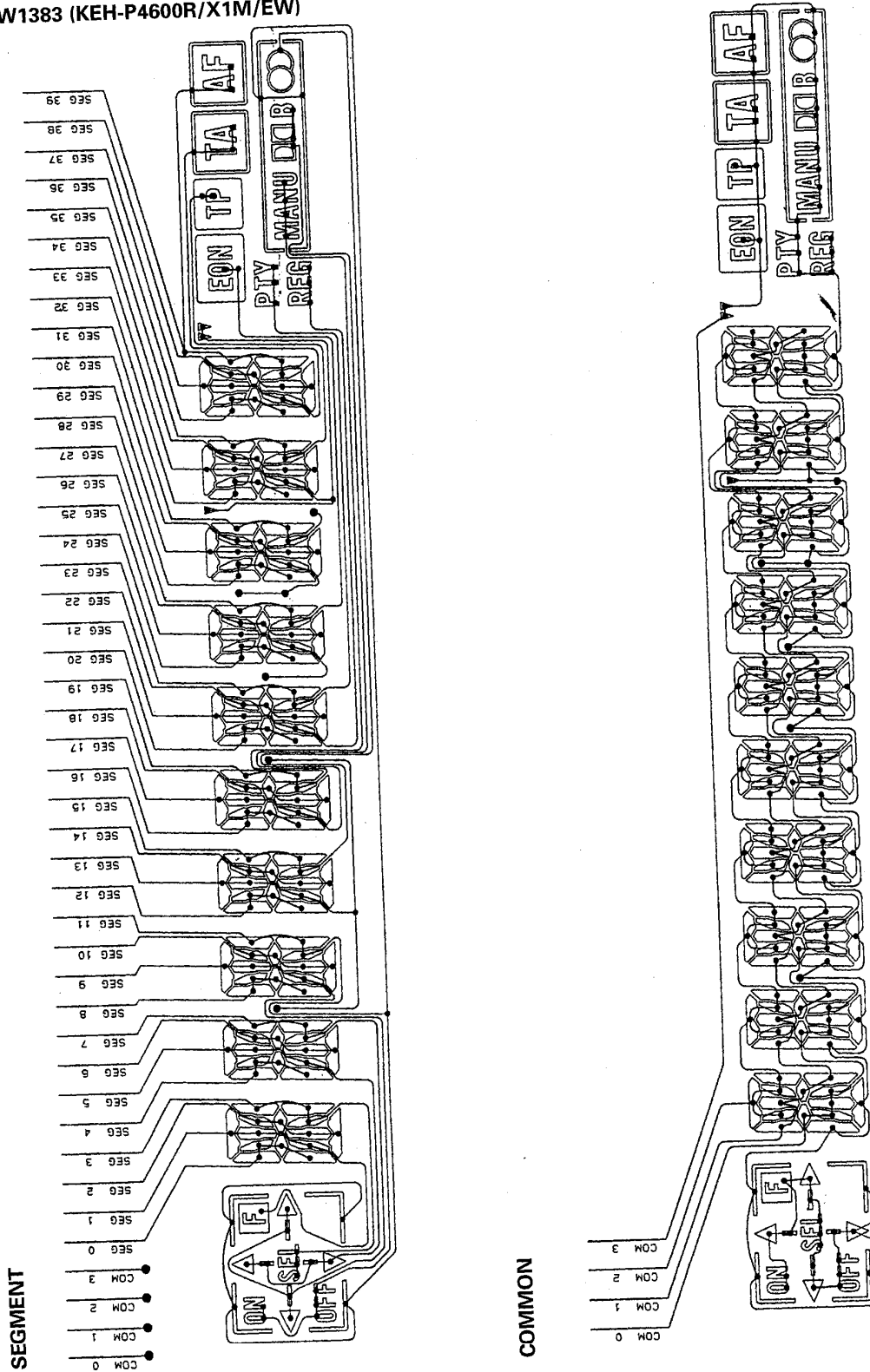


Fig. 27

KEH-P4600R,P4630R,P4610

● CAW1391 (KEH-P4630R/X1M/EW)

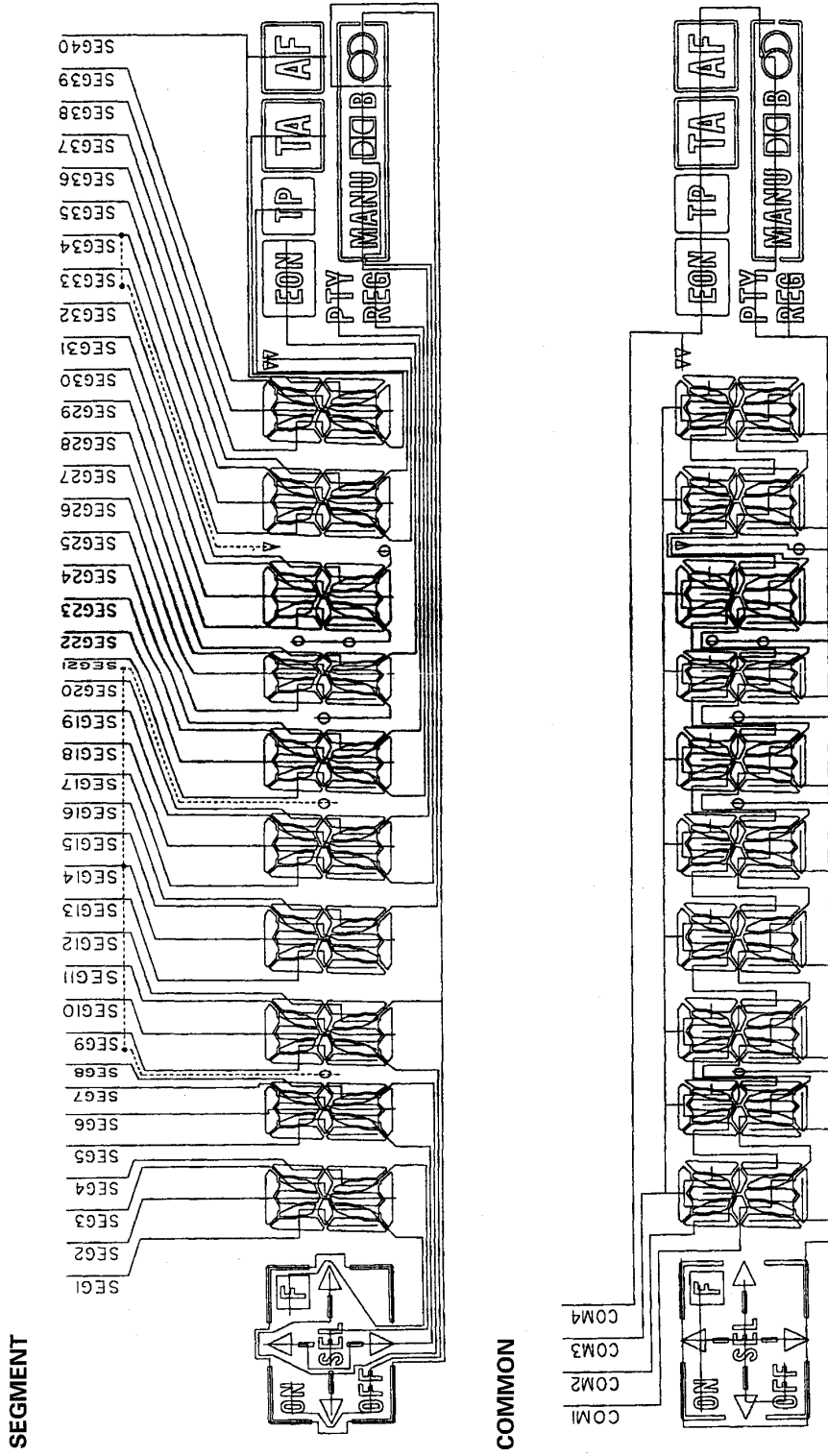


Fig. 28

**KEH-P4600R,P4630R,P4610**

● CAW1425 (KEH-P4610/X1M/EE)

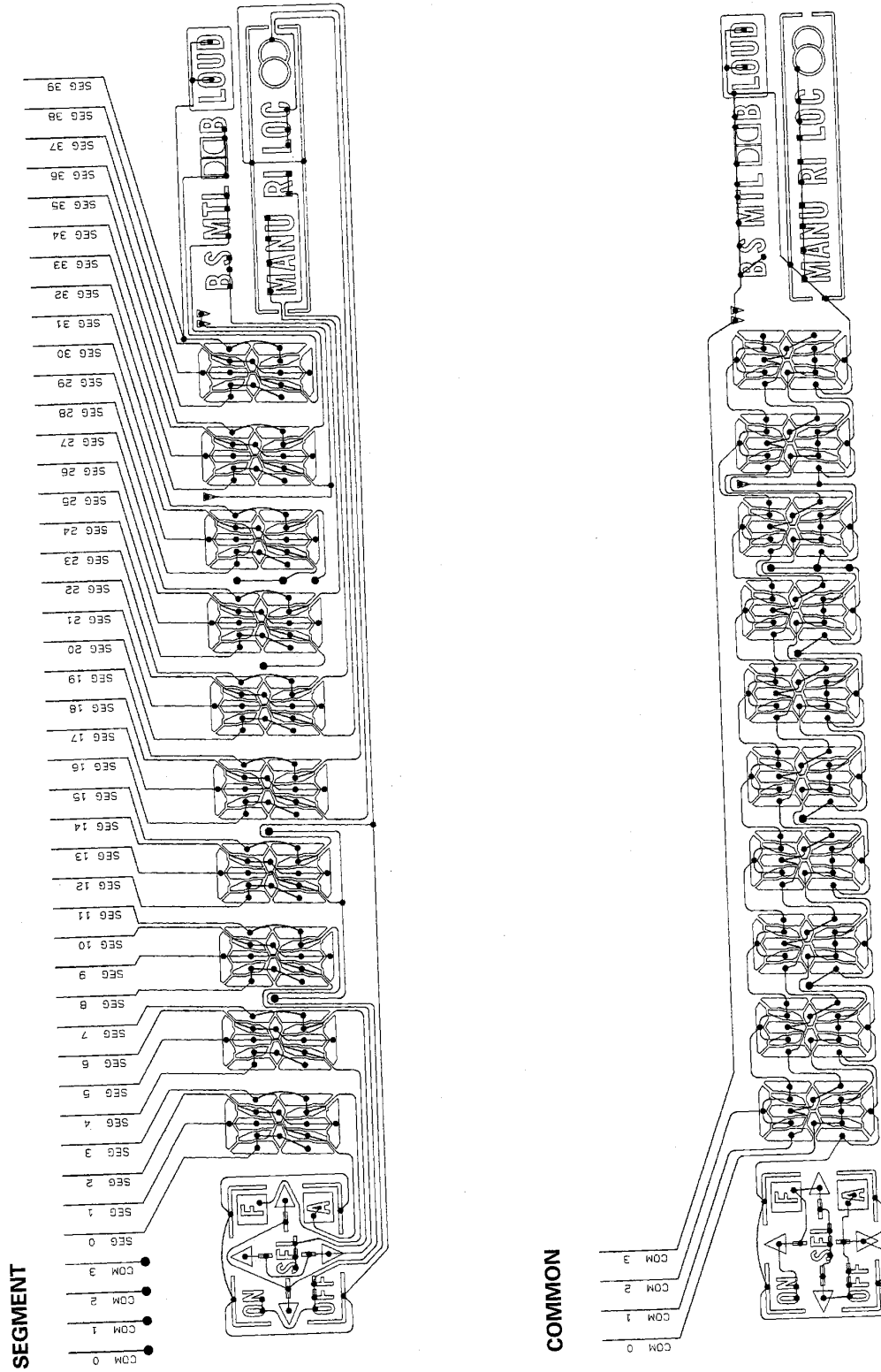
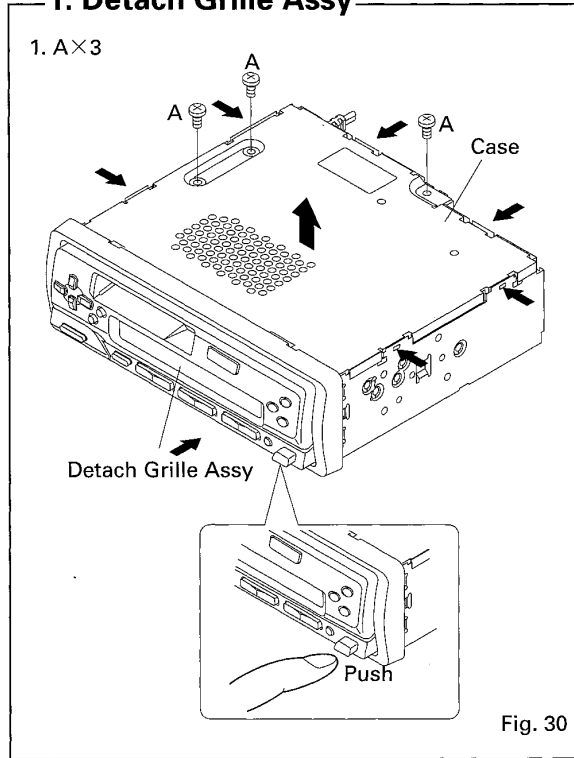


Fig. 29

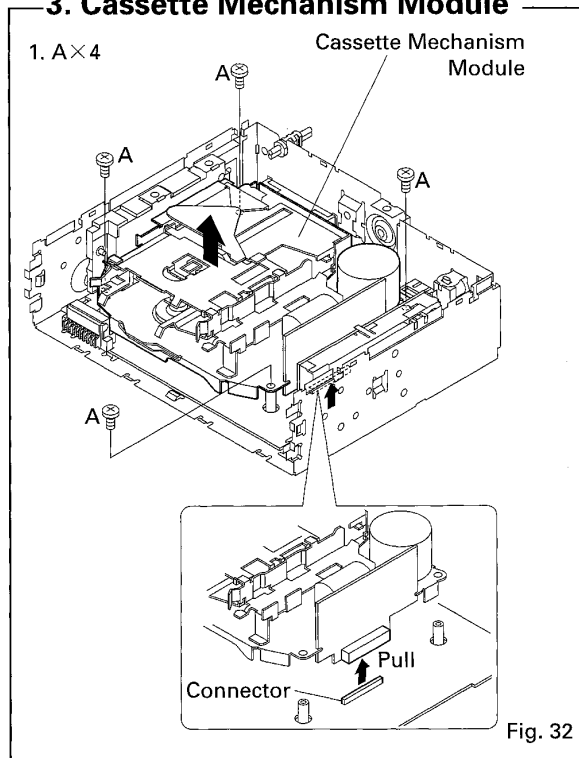
## 7.2 DIAGNOSIS

### 7.2.1 DISASSEMBLY

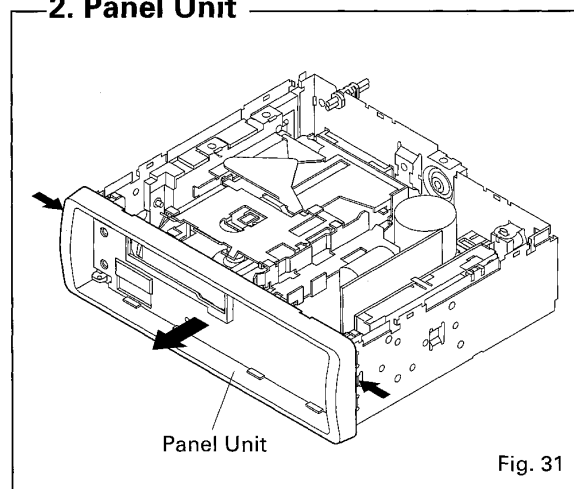
#### 1. Detach Grille Assy



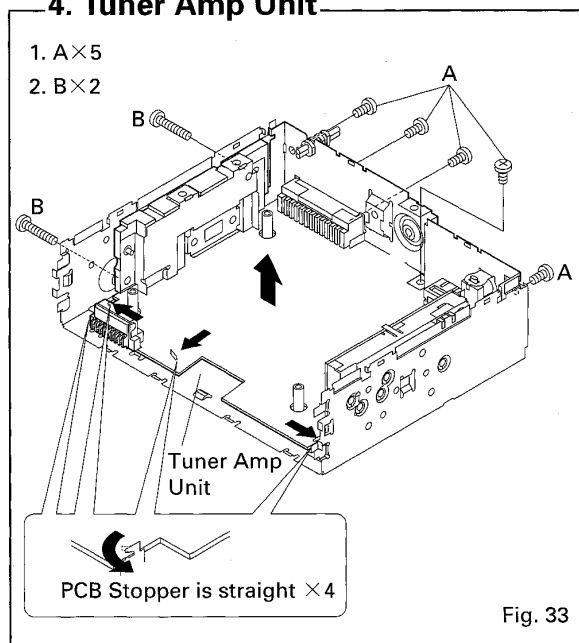
#### 3. Cassette Mechanism Module



#### 2. Panel Unit



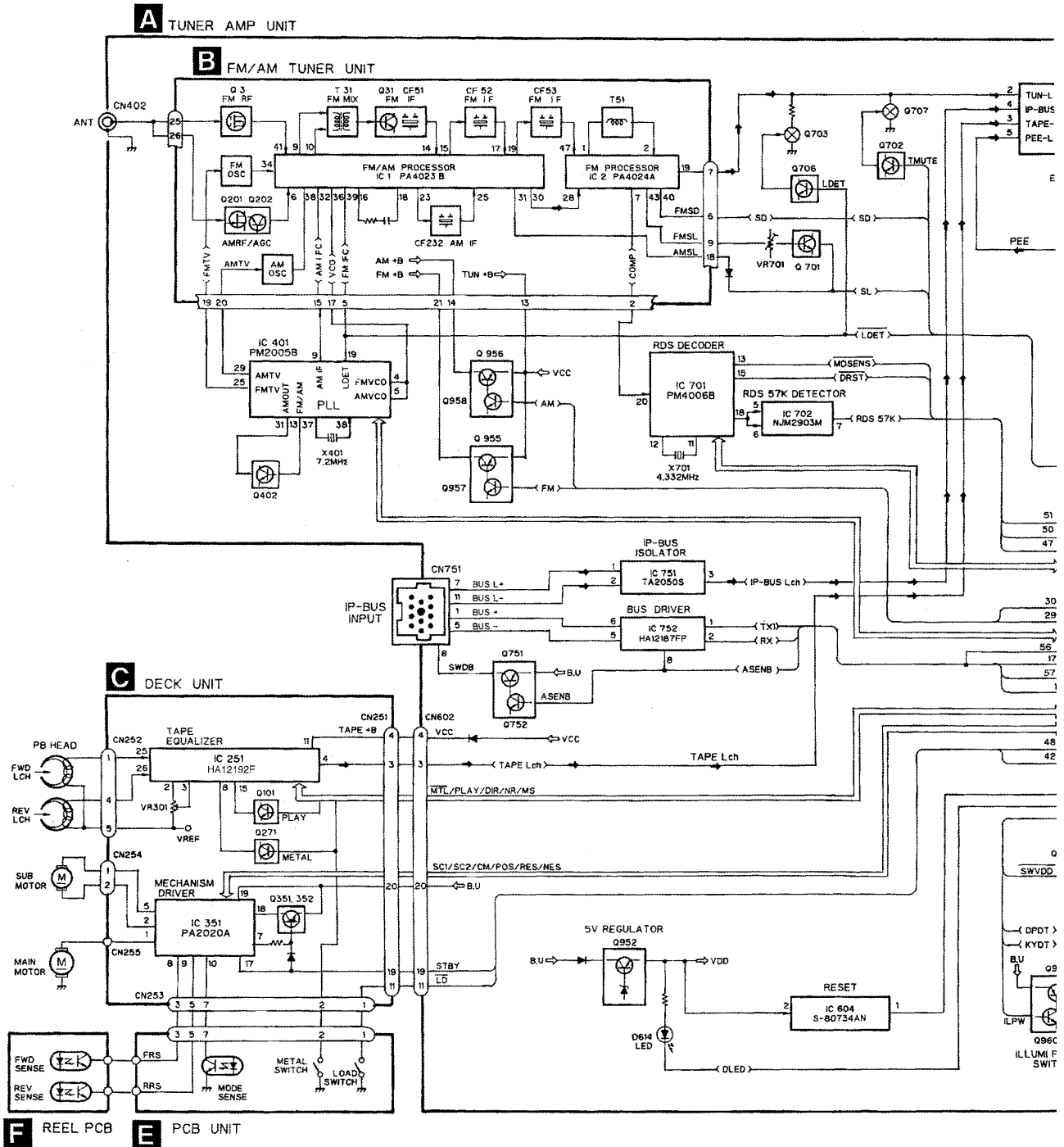
#### 4. Tuner Amp Unit



# KEH-P4600R, P4630R, P4610

## 7.3 BLOCK DIAGRAM

● KEH-P4600R/X1M/EW





# KEH-P4600R,P4630R,P4610

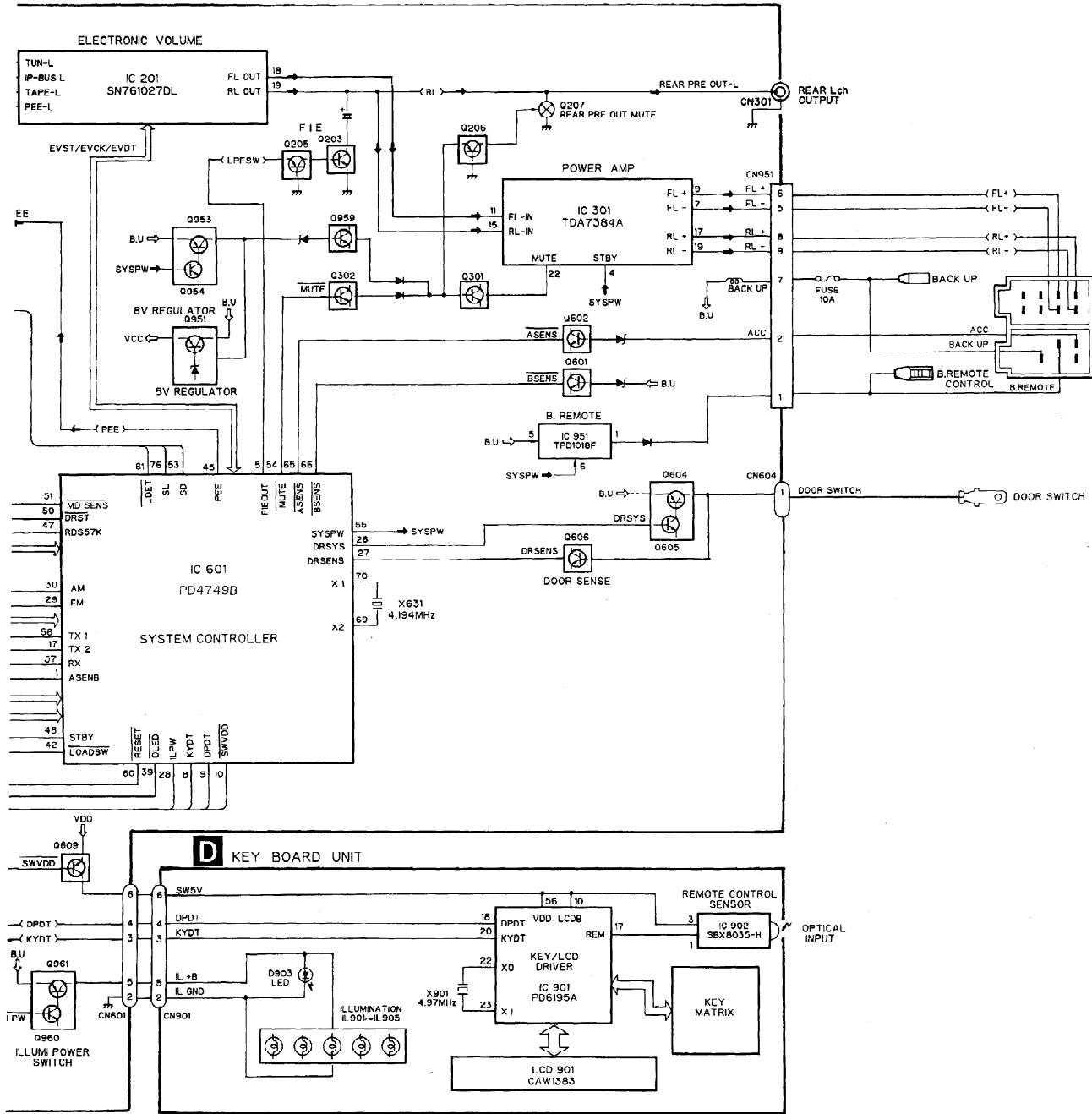


Fig. 34

8. OPERATIONS AND SPECIFICATIONS

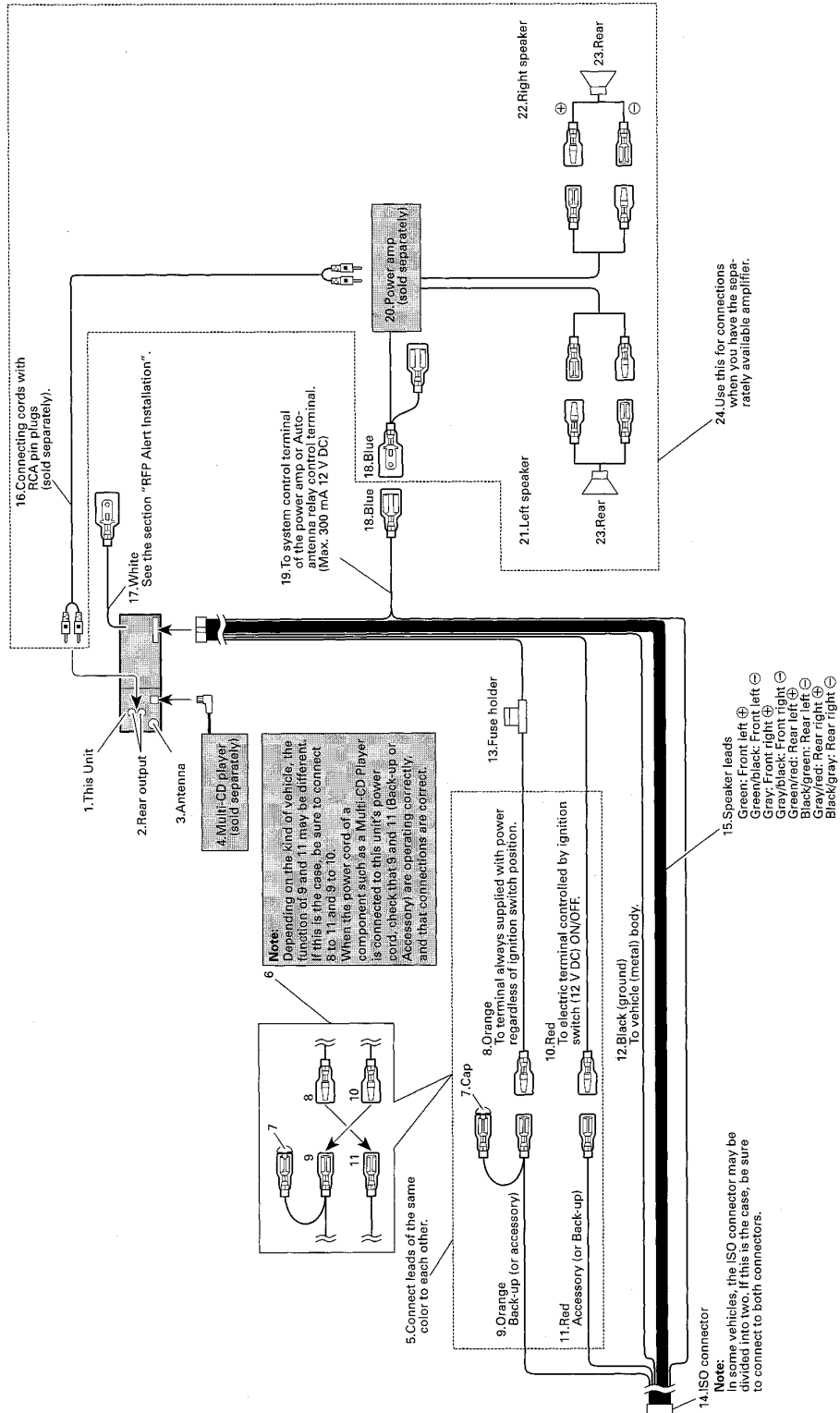
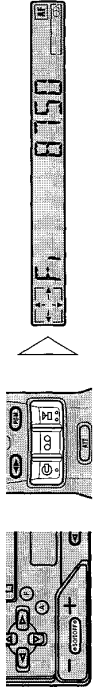


Fig. 35

**Basic Operation**

**Switching Power ON/OFF**

- Select the desired source (such as the tuner).



■ **Head Unit**

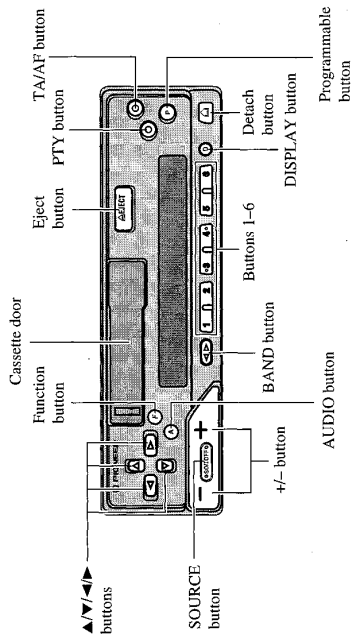
Each press of the SOURCE button selects the desired source in the following order:

Tuner → Tape → Multi-CD player → AUX

To switch the sources OFF, hold down the SOURCE button for 1 second or more.

**Key Finder**

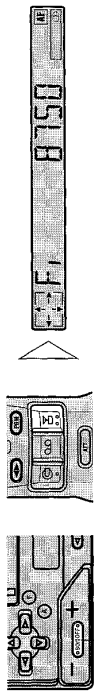
■ **Head Unit**



**Tuner Operation**

**Basic Operation of Tuner**

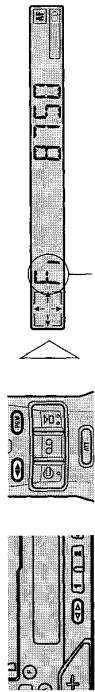
1. Select Tuner. (See page 63.)



Each press changes the Source ...

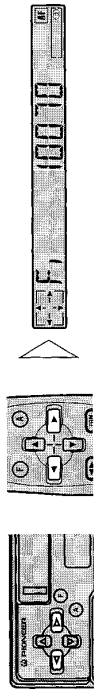
The program service name or frequency appears on the display. ("TUNER" indicator lights when a stereo station is selected.)

2. Select the desired band.



FM → FM → FM → MW/LW

3. Tune the receiver to a higher or lower frequency.



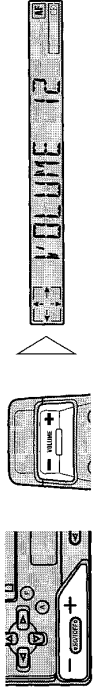
This product's tuner lets you select the tuning by changing the length of the time you press the button.

Manual Tuning (step by step)	0.3 seconds or less
Seek Tuning	0.3 - 2 seconds
Manual Tuning (continuously)	2 seconds or more

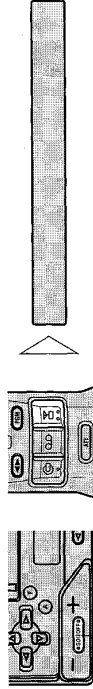
**Note:**

- To select a weak broadcasting station that cannot be tuned in with the Seek Tuning function, tune in with Manual Tuning.

4. Raise or lower the volume.



5. Turn the source OFF. (See page 63.)



Hold for 1 second

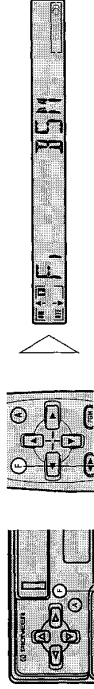
**Entering the Function Menu**

In this menu you can select tuner functions.

**Note:**

- REG, TA, PTY, and AF are RDS functions. Refer to "Using RDS Function" for details and instructions on how to use these functions.

• Select the desired mode in Function Menu.



Each press changes the Mode ...

Each press changes the Mode ...

Each press of the Function button selects the mode in the following order:  
BSM → REG → LOCAL → TA → PTY SELECT → AF

**Note:**

- You can cancel the Function Menu by pressing the BAND button.
- After selecting the Function Menu, if you do not perform an operation within about 30 seconds, the Function Menu is automatically canceled.

## Using the Cassette Player

### Basic Operation of Cassette Player

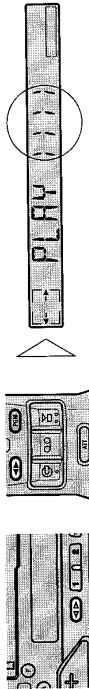
1. Insert the cassette tape.



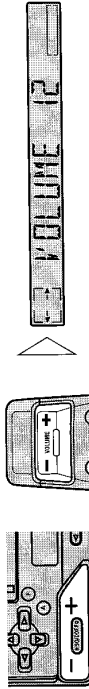
"METAL" appears on the display for 2 seconds when a metal or chrome tape is inserted. Nothing is displayed for a normal tape.



2. Switch tape playback from side A to side B, or vice versa.



3. Raise or lower the volume.



4. Remove the cassette tape.



**Note:**

- The Tape function can be turned ON/OFF with the cassette tape remaining in this product. (See page 63.)

### Fast Forward/Rewind and Music Search

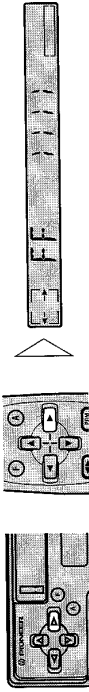
- Fast Forward and Forward-Music Search

While "FF" is displayed, the system fast-forwards the cassette tape to the end of the current side.

While "F-MS" is displayed, the system winds the cassette tape forward to the beginning of the next song, then play begins from that point.

- Select the desired mode in the following order:

FF → F-MS → Normal playback



**Note:**

- Fast Forward (FF) and Forward-Music Search (F-MS) can be canceled by pressing the BAND button during FF or F-MS operation.

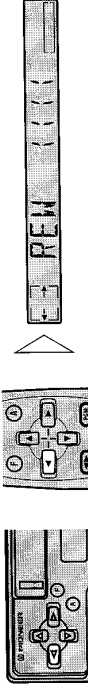
- Rewind and Rewind-Music Search

While "REW" is displayed, the system rewinds the cassette tape to the beginning of the current side.

While "R-MS" is displayed, the system rewinds the cassette tape to the beginning of the current song, then play begins from that point.

- Select the desired mode in the following order:

REW → R-MS → Normal playback



**Note:**

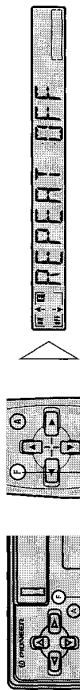
- Rewind (REW) and Rewind-Music Search (R-MS) can be canceled by pressing the BAND button during the REW or R-MS operation.

## Using the Cassette Player

### Entering the Function Menu

In this menu you can select Tape functions.

- Select the desired mode in Function Menu.



Each press changes the Mode ...

Each press changes the Mode ...

Each press of the Function button selects the mode in the following order:

REPEAT → B SKIP → RI → B NR

#### Note:

- You can cancel the Function Menu by pressing the BAND button.
- After selecting the Function Menu, if you do not perform an operation within about 30 seconds, the Function Menu is automatically canceled.

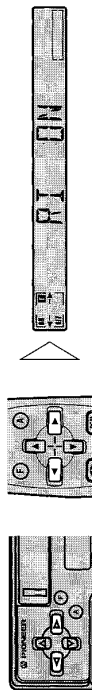
### Radio Intercept

This function allows you to listen to the radio during tape fast-forwarding/rewinding.

#### Note:

- The radio intercept function does not work during a Music Search operation.

- Select the Radio Intercept mode in the Function Menu.
- Switch the Radio Intercept mode ON or OFF.



#### Note:

- Pressing the BAND button cancels the Function Menu.

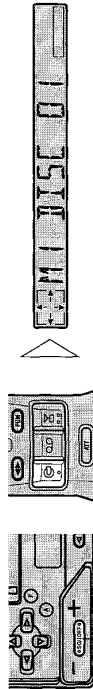
## KEH-P4600R,P4630R,P4610

## Using Multi-CD Players

This product can control one or more multi-CD players.

### Basic Operation of Multi-CD Players

- Select the multi-CD player source. (See page 63.)

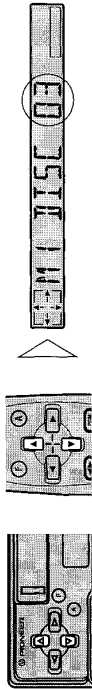


Each press changes the Source ...

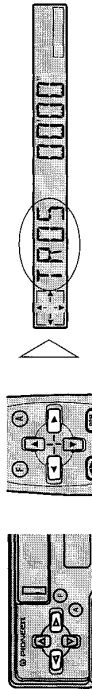
#### Note:

- The multi-CD player may perform a preparatory operation, such as verifying the presence of a disc or reading disc information, when the power is turned ON or a new disc is selected for playback. "READY" is displayed.
- If the multi-CD player cannot operate properly, an error message such as "ERROR 14" is displayed. Refer to the multi-CD player owner's manual.

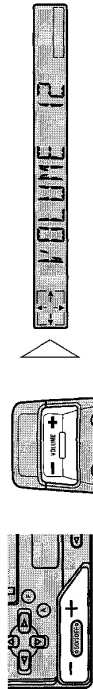
- Select the desired disc.



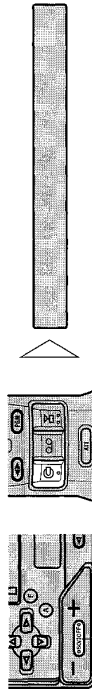
- Reverse or advance track by track.



- Raise or lower the volume.



- Turn the source OFF. (See page 63.)



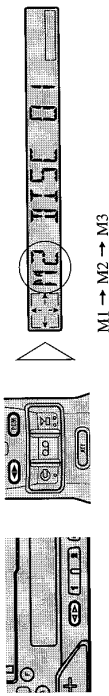
Hold for 1 second

## Using Multi-CD Players

### Switching the Multi-CD Player

It is possible to connect up to three multi-CD players by means of a multiple installation adapter. When two or more multi-CD players are installed, their priorities must be specified. Follow the multi-CD player instructions carefully, and set the address switches properly.

- Select the multi-CD player you want to use.



### Disc Number Search

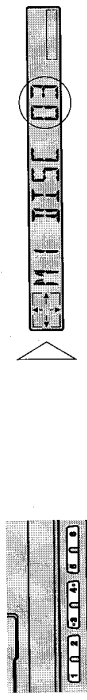
- **Disc Number Search (for 6-Disc, 12-Disc types)**

You can select discs directly with the 1 to 6 buttons. Just press the number corresponding to the disc you want to listen to.

#### Note:

- When a 12-Disc Multi-CD Player is connected and you want to select disc 7 to 12, press the 1 to 6 buttons for 2 seconds or longer.

- Select the desired disc. (eg. Press button 3.)



- **Disc Number Rough Search (for 50-Disc type only)**

This handy function lets you select discs loaded in a 50-Disc Multi-CD Player using the 1 to 5 buttons. The 50 discs are divided into five blocks, with each of the 1 to 5 buttons assigned to a block.

For example, if you press button 1, discs 10 through 19 are searched in order, and then the disc with the lowest disc number is selected.

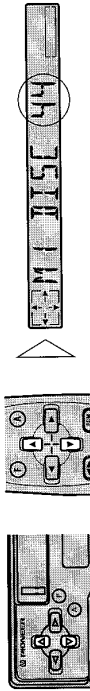
#### Note:

- Pressing button 5 lets you select the 50th disc only.
- Button 6 does not operate.
- Rough search of discs 1 to 9 is not possible. Use the ▲▼ buttons to select a desired disc.

1. Press the appropriate button from 1 to 5 to select the block containing the desired disc. (eg. Press button 4.)



2. Select the desired disc.



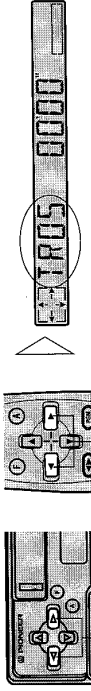
### Track Search and Fast-forward/Reverse

Besides Track Search convenience when searching for a desired track, this unit also lets you fast-forward and reverse through tracks to find a desired phrase or section of music.

- **Track Search**

This feature enables you to advance or reverse track by track.

- Reverse or advance track by track.

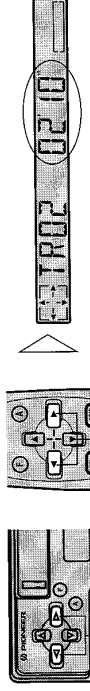


Hold for half a second or less

- **Fast-forward/Reverse**

This feature enables you to advance or reverse at high speed between tracks.

- Reverse or fast-forward through tracks.



Continue pressing

Continue pressing

**Specifications**

**General**

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)  
 Grounding system ..... Negative type  
 Max. current consumption ..... 8.5 A  
 Dimensions  
 (mounting size) .... 178 (W) × 50 (H) × 150 (D) mm  
 (front face) ..... 188 (W) × 58 (H) × 19 (D) mm  
 Weight ..... 1.2 kg

**Amplifier**

Maximum power output ..... 35 W × 4  
 Continuous power output ..... 22 W × 4  
 (DIN45324, +B = 14.4 V)  
 Load impedance ..... 4 Ω (4 – 8 Ω allowable)  
 Preout output level/output impedance ..... 500 mV/1 kΩ

**Tone controls**

(Bass) ..... ±12 dB (100 Hz)  
 (Treble) ..... ±12 dB (10 kHz)  
 Loudness contour ..... +10 dB (100 Hz), +7 dB (10 kHz)  
 (volume: –30 dB)

**Cassette player**

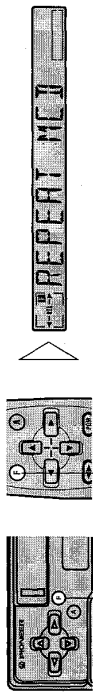
Tape ..... Compact cassette tape (C-30 – C-90)  
 Tape speed ..... 4.76 cm/sec. (+0.14 cm/sec. -0.05 cm/sec.)  
 Fast forward/rewinding time ... Approx. 100 sec. for C-60  
 Wow & flutter ..... 0.09% (WRMS)  
 Frequency response ..... Metal: 30 – 19,000 Hz (±3 dB)  
 Stereo separation ..... 45 dB  
 Signal-to-noise ratio  
 ..... Metal: Dolby B NR IN: 67 dB (IEC-A network)  
 Dolby NR OUT: 61 dB (IEC-A network)

**Using Multi-CD Players**

**Entering the Function Menu**

In this menu you can select Multi-CD Player functions.

- Select the desired mode in Function Menu.



Each press changes the Mode ...  
 Each press changes the Mode ...

Each press of the Function button selects the mode in the following order:  
 REPEAT → RANDOM → ITS P → PAUSE

**Note:**

- You can cancel the Function Menu by pressing the BAND button.
- After selecting the Function Menu, if you do not perform an operation within about 30 seconds, the Function Menu is automatically canceled.
- Pressing the BAND button cancels the Function Menu.

**Note:**

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

**FM tuner**

Frequency range (EW,EE) ..... 87.5 – 108 MHz  
 (EE) ..... 65 – 74 MHz  
 Usable sensitivity  
 ..... 1.1 dBf (1.0 μV/75 Ω, mono, S/N: 30 dB)  
 50 dB quieting sensitivity ..... 16 dBf (1.7 μV/75 Ω, mono)  
 Signal-to-noise ratio ..... 70 dB (IEC-A network)  
 Distortion ..... 0.3% (at 65 dBf, 1 kHz, stereo)  
 Frequency response ..... 30 – 15,000 Hz (±3 dB)  
 Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)

**MW tuner**

Frequency range ..... 531 – 1,602 kHz  
 Usable sensitivity ..... 18 μV (25 dB) (S/N: 20 dB)  
 Selectivity ..... 50 dB (±9 kHz)

**LW tuner**

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