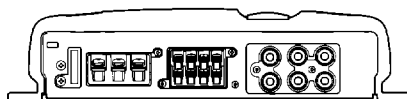


Service Manual

 **PIONEER®**
The Art of Entertainment



ORDER NO.
CRT1941

BRIDGEABLE FOUR-CHANNEL POWER AMPLIFIER

GM-X414

X1H/UC, X1H/ES

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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.

UC model

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5). When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 501 Orchard Road, #10-00, Lane Crawford Place, Singapore 0923

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING METHOD

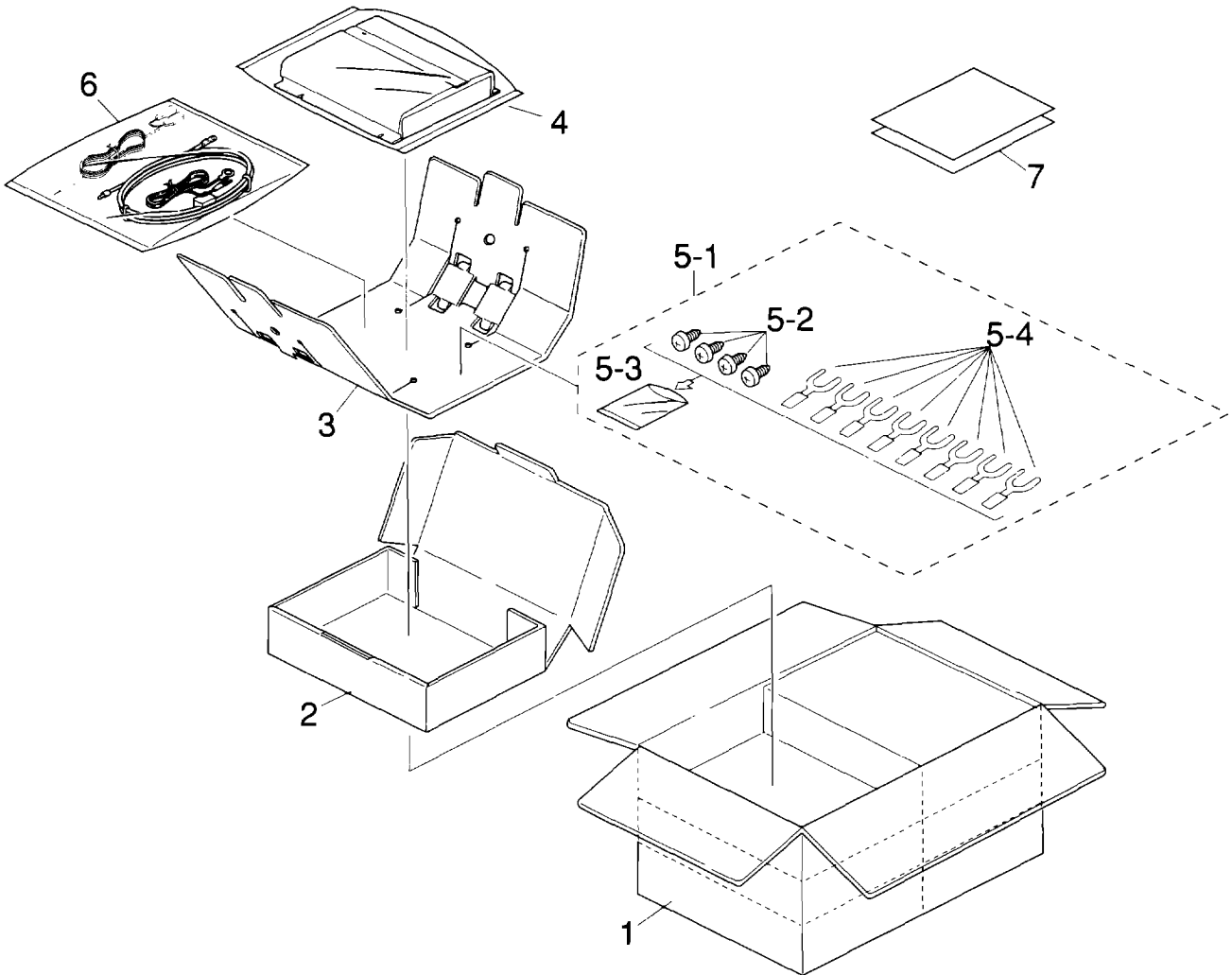


Fig. 1

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.

(1) PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Contain Box	See Contrast table (2)	5-2	Screw(x4)	BYC40P180FZK
2	Carton	See Contrast table (2)	5-3	Polyethylene Bag	HEG0011
3	Protector	HHP0001	5-4	Terminal(x8)	See Contrast table (2)
4	Polyethylene Bag	HEG0009	6	Cord Assy	See Contrast table (2)
5-1	Screw Assy	See Contrast table (2)	7-1	Owner's Manual	See Contrast table (2)
			*	7-2 Warranty Card	See Contrast table (2)
			*	7-3 Caution Card	HRP0001
			*	7-4 Caution Card	See Contrast table (2)

(2) CONTRAST TABLE

GM-X414/X1H/UC and GM-X414/X1H/ES have the same construction except for the following:

Mark	No.	Symbol & Description	Part No.	
			GM-X414/X1H/UC	GM-X414/X1H/ES
	1	Contain Box	HHL0074	HHL0077
	2	Carton	HHG0074	HHG0077
	5-1	Screw Assy	HEA0008	HEA0010
	5-2	Terminal(x8)	HKC0001	HKC0003
	6	Cord Assy	Not used	HDE4419
	7-1	Owner's Manual	HRD0029	HRD0031
*	7-2	Warranty Card	HRY1070	Not used
*	7-4	Caution Card	HRD0006	Not used

● Owner's Manual

Part No.	Model	Language
HRD0029	GM-X414/X1H/UC	English, French
HRD0031	GM-X414/X1H/ES	English, Spanish, Arabic, Portuguese(B)

2.2 EXTERIOR

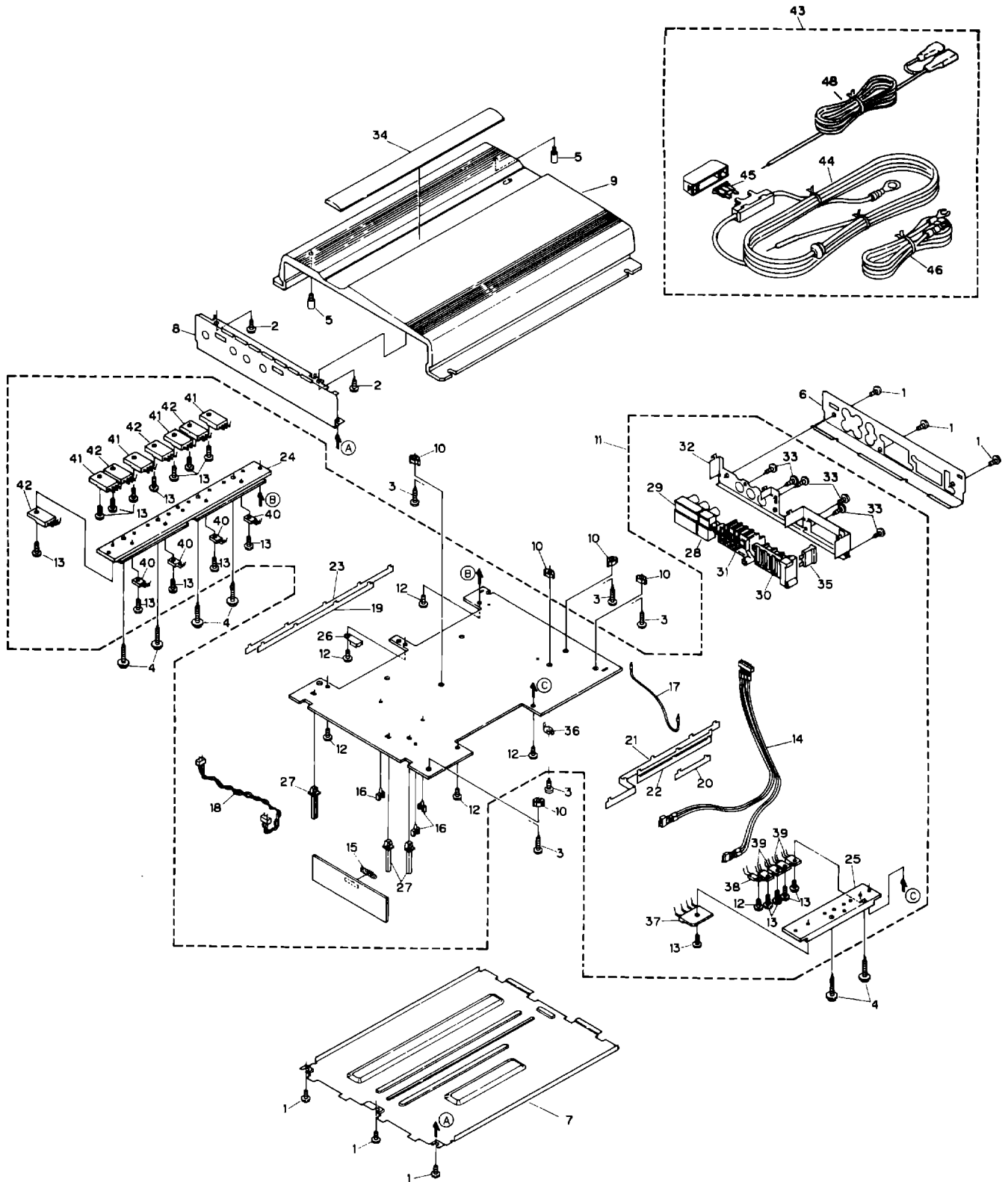


Fig. 2

(1) PARTS LIST

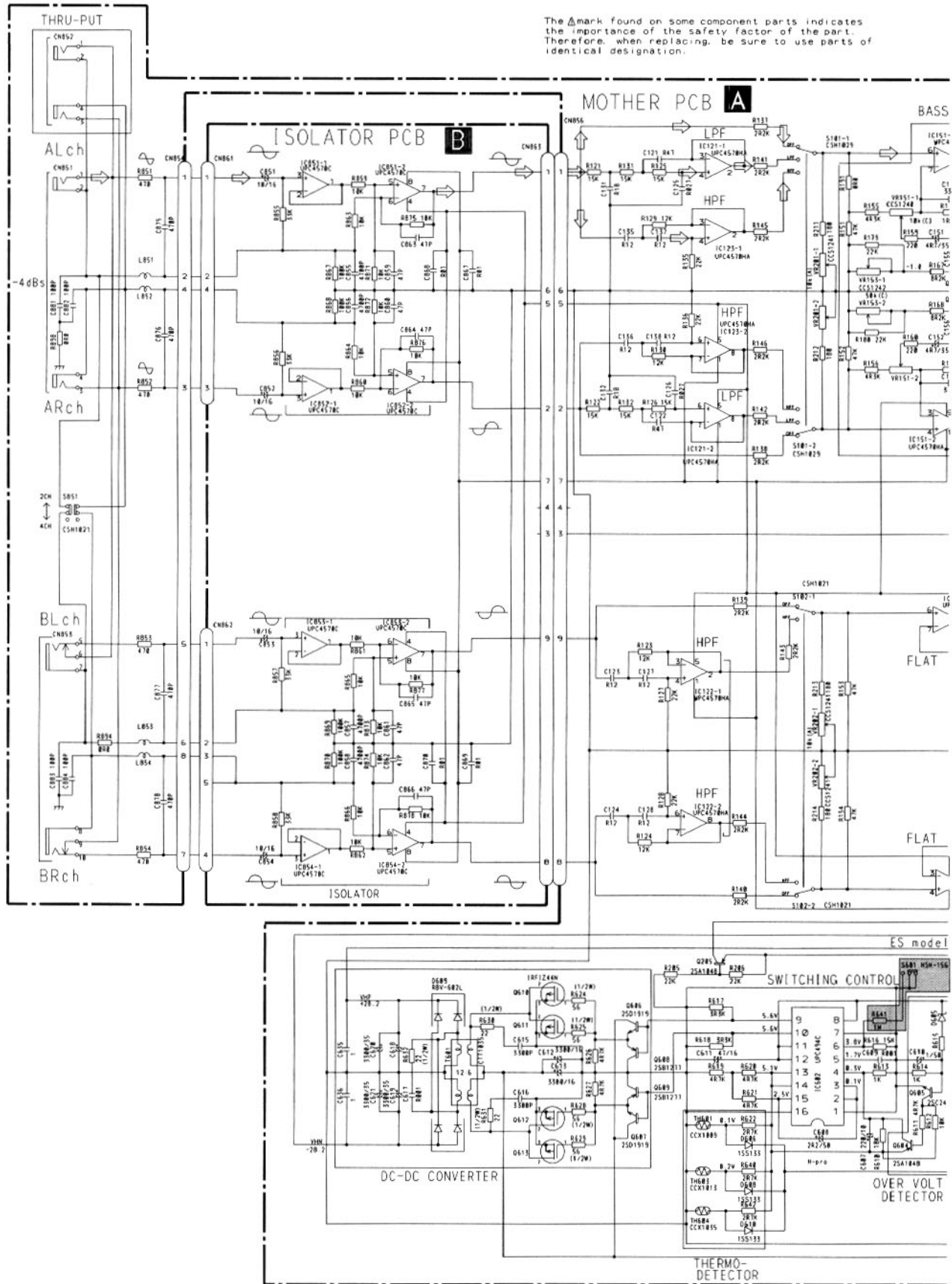
Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BSZ30P050FZK	26	Clamper	HNV0003
2	Screw(M3x6)	CBA1320	27	Holder	HNV0005
3	Screw(M3x12)	CBA1323	28	Pin Jack(CN852)	See Contrast table (2)
4	Screw	CBA1382	29	Pin Jack(CN851)	See Contrast table (2)
5	Screw	HBA0006	30	Terminal(CN601)	See Contrast table (2)
6	Panel	HNB0009	31	Terminal(CN303)	See Contrast table (2)
7	Case	HNB0015	32	Holder	HNC0006
8	Panel	HNB0017	33	Screw	PPZ30P060FZK
9	Heat Sink	See Contrast table (2)	34	Plate Unit	See Contrast table (2)
10	Spacer	HNV3975	35	Fuse(FU999)(25A)	HEK0025
11	Amp Unit	See Contrast table (2)	36	Holder	CNC5399
12	Screw	BMS30P060FZK	37	Diode(D609)	RBV-602L
13	Screw	BMS30P080FMC	38	Thermistor(TH603)	CCX1013
14	Connector(CN854)	HDE5212	39	FET(Q610-613)	IRFIZ44N
15	Plug(CN863)	CKS1618	40	Transistor(Q313-316)	2SD2343
16	Clamper	CNV1335	41	Transistor(Q329-332)	2SB1587
17	Cord(CN901)	HDC1030	42	Transistor(Q325-328)	2SD2438
18	Cord	HDE4610	43	Cord Assy	See Contrast table (2)
19	Bass Bar	HNC0014	44	Cord Assy	See Contrast table (2)
20	Holder	HNC5538	45	Fuse(30A)	See Contrast table (2)
21	Holder	HNC5540	46	Cord	See Contrast table (2)
22	Holder	HNC5541	47	
23	Holder	HNC5841	48	Cord Assy	See Contrast table (2)
24	Heat Sink(Sub Heat Sink)	HNR0050			
25	Heat Sink(Sub Heat Sink)	HNR0052			

(2) CONTRAST TABLE

GM-X414/X1H/UC and GM-X414/X1H/ES have the same construction except for the following:

Mark No.	Symbol & Description	Part No.	
		GM-X414/X1H/UC	GM-X414/X1H/ES
9	Heat Sink	HNR0046	HNR0048
11	Amp Unit	HWH0006	HWH0005
28	Pin Jack(CN852)	CKB1013	CKB1011
29	Pin Jack(CN851)	CKB1022	CKB1021
30	Terminal(CN601)	HKE0002	HKE0001
31	Terminal(CN303)	HKE0006	HKE0005
34	Plate Unit	HXA0031	HXA0064
43	Cord Assy	Not used	HDE4419
44	Cord Assy	Not used	HDE4423
45	Fuse(30A)	Not used	HEK0030
46	Cord	Not used	HDE4455
48	Cord Assy	Not used	HDE0007

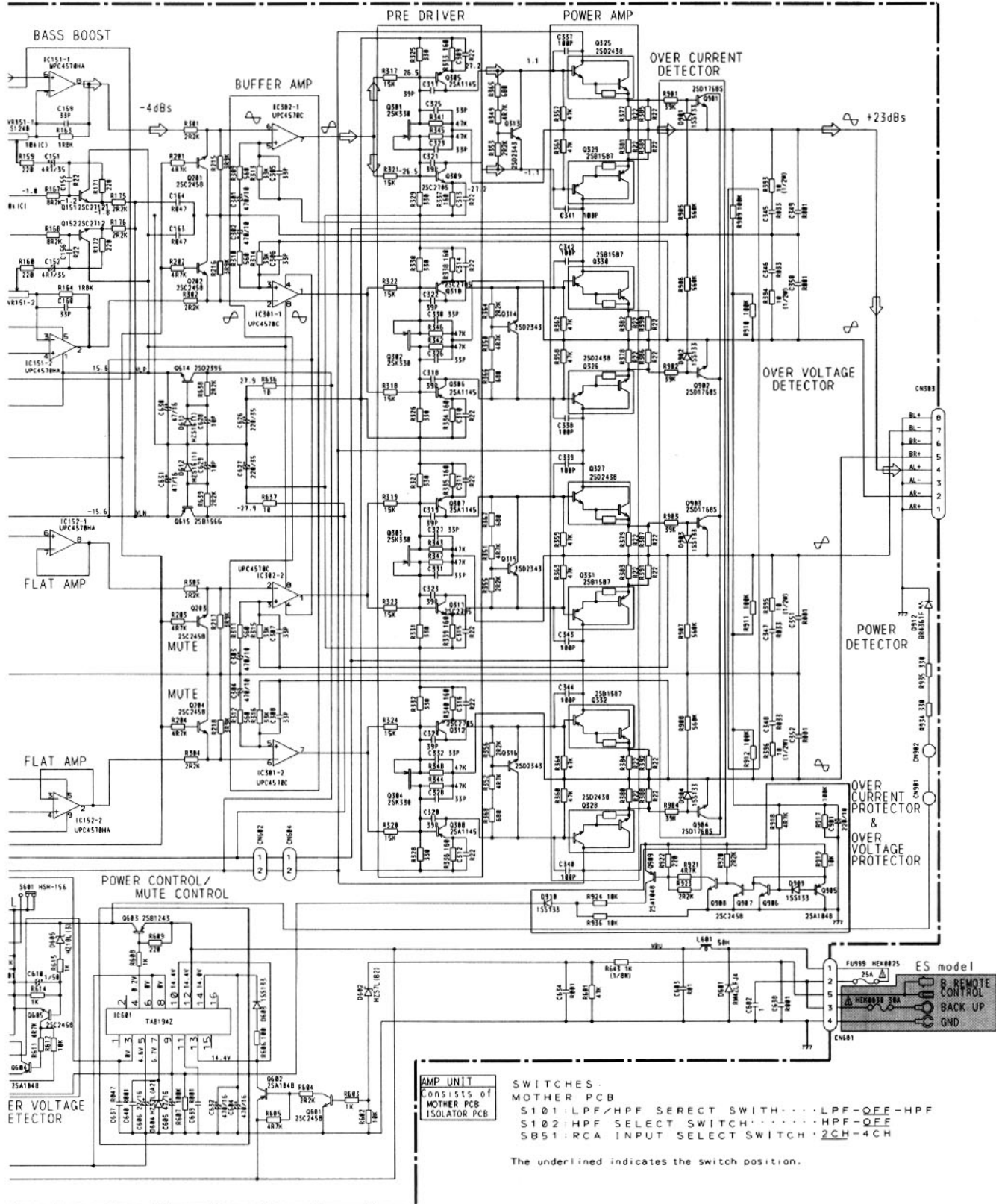
3. SCHEMATIC DIAGRAM



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



AMP UNIT
CONSISTS OF
MOTHER PCB
ISOLATOR PCB

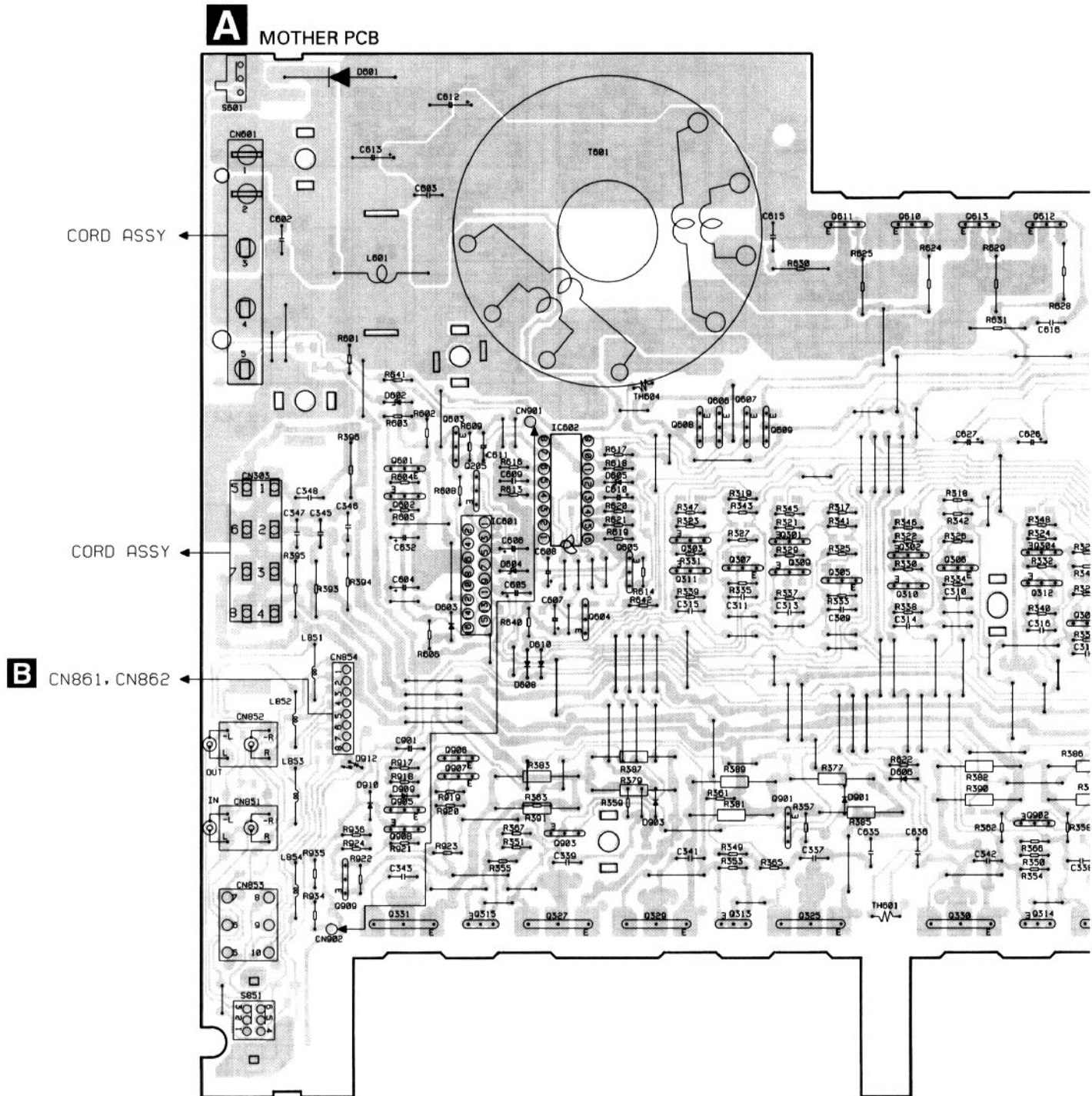
SWITCHES:
MOTHER PCB
S101: LPF/HPF SELECT SWITCH... LPF-OFF-HPF
S102: HPF SELECT SWITCH... HPF-OFF
S851: RCA INPUT SELECT SWITCH... 2CH-4CH

The underlined indicates the switch position.

Fig. 3

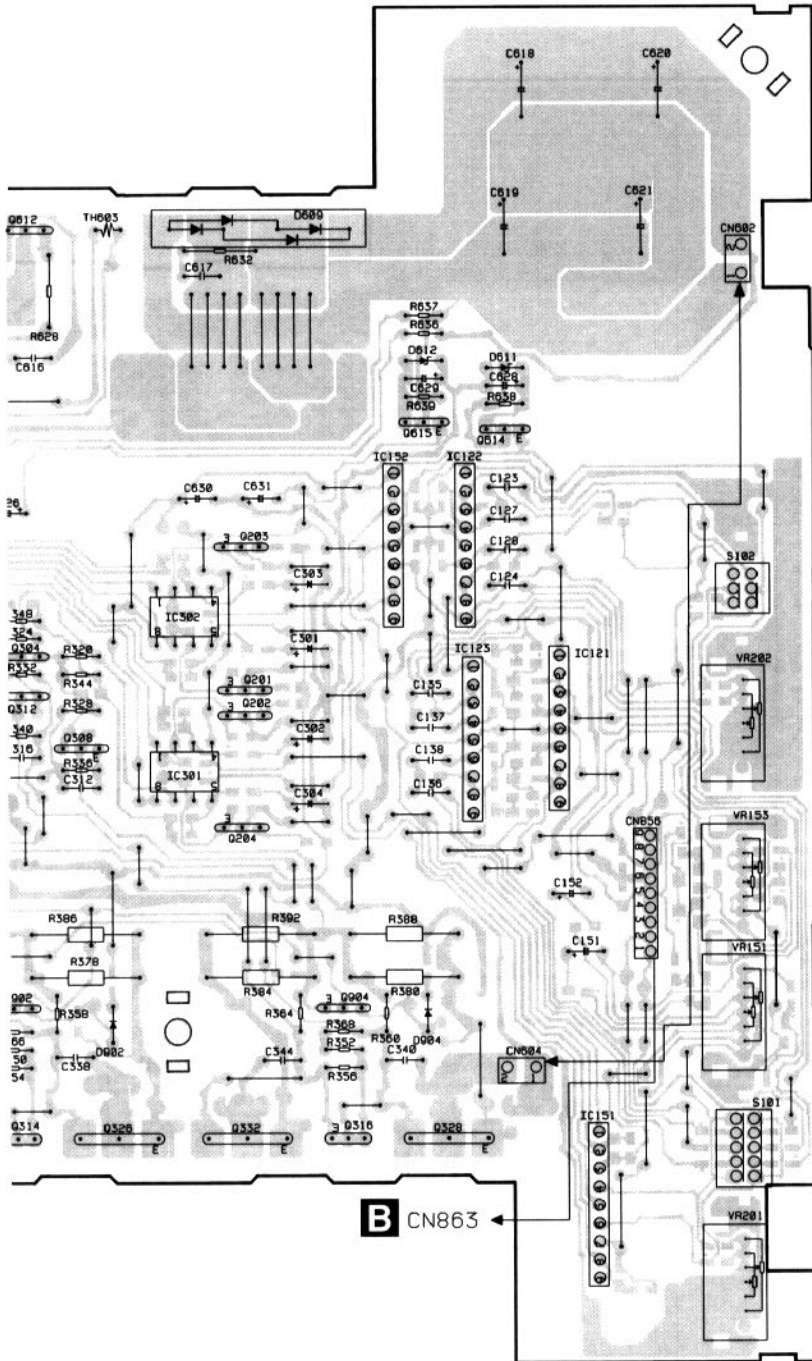
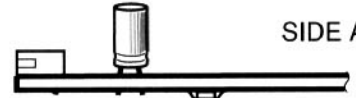


4. PCB CONNECTION DIAGRAM

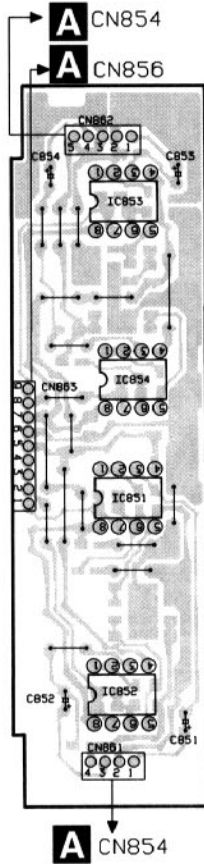


NOTE:
 The parts mounted on this PCB include all necessary parts for several destinations.
 For further information for respective destinations, be sure to check with the schematic diagram.

SIDE A



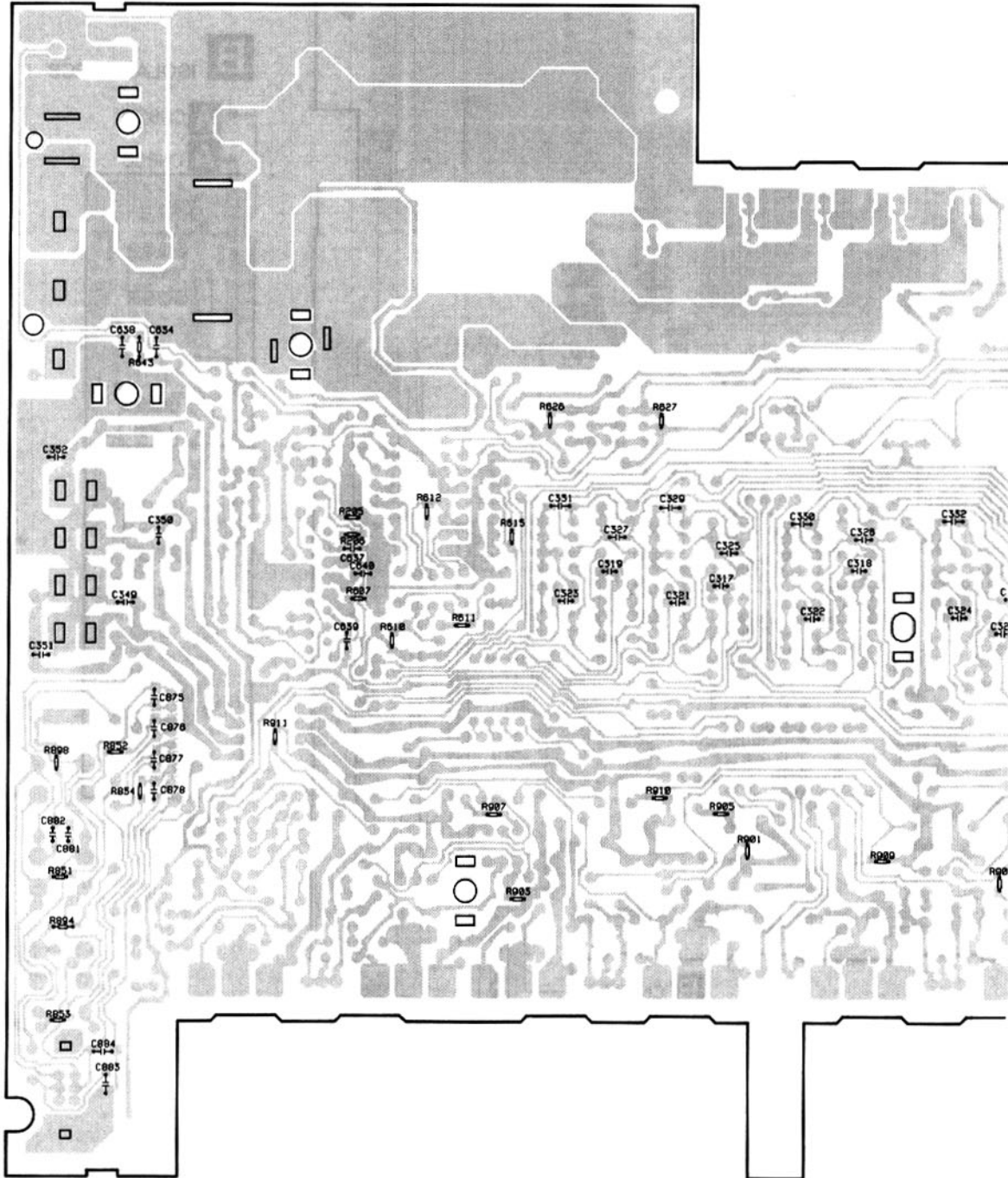
B ISOLATOR PCB



ROJ	IC-D
0611	0610 0613 0612
0615	0614
IC853	
IC152 IC122	0608 0606 0607 0609
0605	
0601	0203
0602	0205
IC502 IC854	
IC002 0505	
IC001 0501 IC125 IC121	
0605 0507 0502 0506 0504	
0311 0309 0305	
0312 0201	
0510	
0202 IC851	
0308	
0604	
IC501	
0204	
VR202	
VR153	
0906	
IC852	
0907	
VR151	
0905	
0901	
0908 0902 0904	
0903	
0909	
IC151	
0530 0526 0532 0528	
0531 0527 0529 0525	
0515 0513 0514 0516	
VR201	

Fig. 4

A MOTHER PCB



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.
GM-X414/X1H/UC		Q 329	Transistor 2SB1587
		Q 330	Transistor 2SB1587
		Q 331	Transistor 2SB1587
		Q 332	Transistor 2SB1587
		Q 601	Transistor 2SC2458
		Q 602	Transistor 2SA1048
		Q 603	Transistor 2SB1243
		Q 604	Transistor 2SA1048
		Q 605	Transistor 2SC2458
		Q 606	Transistor 2SD1919
		Q 607	Transistor 2SD1919
		Q 608	Transistor 2SB1277
		Q 609	Transistor 2SB1277
		Q 610	FET IRFIZ44N
		Q 611	FET IRFIZ44N
		Q 612	FET IRFIZ44N
		Q 613	FET IRFIZ44N
		Q 614	Transistor 2SD2395
		Q 615	Transistor 2SB1566
		Q 901	Transistor 2SD1768S
		Q 902	Transistor 2SD1768S
		Q 903	Transistor 2SD1768S
		Q 904	Transistor 2SD1768S
		Q 905	Transistor 2SA1048
		Q 906	Transistor 2SC2458
		Q 907	Transistor 2SC2458
		Q 908	Transistor 2SC2458
		Q 909	Transistor 2SA1048
		D 601	Diode RM4Z-LFJ4
		D 602	Diode HZS7L(B2)
		D 603	Diode 1SS133
		D 604	Diode HZS7L(A2)
		D 605	Diode HZS18L(3)
		D 606	Diode 1SS133
		D 608	Diode 1SS133
		D 609	Diode RBV-602L
		D 610	Diode 1SS133
		D 611	Diode HZS16L(1)
		D 612	Diode HZS16L(1)
		D 901	Diode 1SS133
		D 902	Diode 1SS133
		D 903	Diode 1SS133
		D 904	Diode 1SS133
		D 909	Diode 1SS133
		D 910	Diode 1SS133
		D 912	LED BR4361F
		L 601	Choke Coil 50H CTH1142
		L 851	Ferri-Inductor CTF1007
		L 852	Ferri-Inductor CTF1007
		L 853	Ferri-Inductor CTF1007
		L 854	Ferri-Inductor CTF1007
		T 601	Transformer HTT1035
		TH601	Thermistor CCX1009
		TH603	Thermistor CCX1013
		TH604	Thermistor CCX1035

AMP UNIT
Consists of
MOTHER PCB
ISOLATOR PCB

A B Unit Number : HWH0006
Unit Name : Amp Unit

MISCELLANEOUS

IC121	IC	UPC4570HA
IC122	IC	UPC4570HA
IC123	IC	UPC4570HA
IC151	IC	UPC4570HA
IC152	IC	UPC4570HA
IC301	IC	UPC4570C
IC302	IC	UPC4570C
IC601	IC	TA8194Z
IC602	IC	UPC494C
IC851	IC	UPC4570C
IC852	IC	UPC4570C
IC853	IC	UPC4570C
IC854	IC	UPC4570C
Q 151	Transistor	2SC2712
Q 152	Transistor	2SC2712
Q 201	Transistor	2SC2458
Q 202	Transistor	2SC2458
Q 203	Transistor	2SC2458
Q 204	Transistor	2SC2458
Q 205	Transistor	2SA1048
Q 301	Transistor	2SK330
Q 302	Transistor	2SK330
Q 303	Transistor	2SK330
Q 304	Transistor	2SK330
Q 305	Transistor	2SA1145
Q 306	Transistor	2SA1145
Q 307	Transistor	2SA1145
Q 308	Transistor	2SA1145
Q 309	Transistor	2SC2705
Q 310	Transistor	2SC2705
Q 311	Transistor	2SC2705
Q 312	Transistor	2SC2705
Q 313	Transistor	2SD2343
Q 314	Transistor	2SD2343
Q 315	Transistor	2SD2343
Q 316	Transistor	2SD2343
Q 325	Transistor	2SD2438
Q 326	Transistor	2SD2438
Q 327	Transistor	2SD2438
Q 328	Transistor	2SD2438

====Circuit Symbol & No.====Part Name	Part No.	====Circuit Symbol & No.====Part Name	Part No.
S 101	Switch	R 301	RS1/10S222J
S 102	Switch	R 302	RS1/10S222J
S 851	Switch	R 303	RS1/10S222J
VR151	Volume 10KΩ(C)	R 304	RS1/10S222J
VR153	Volume 50KΩ(C)	R 309	RS1/10S561J
VR201	Volume 10KΩ(A)	R 310	RS1/10S561J
VR202	Volume 10KΩ(A)	R 311	RS1/10S561J
FU999	Fuse 25A	R 312	RS1/10S561J
		R 313	RS1/10S333J
		R 314	RS1/10S333J
RESISTORS			
R 121	RS1/10S153J	R 315	RS1/10S333J
R 122	RS1/10S153J	R 316	RS1/10S333J
R 123	RS1/10S123J	R 317	RD1/4PU153J
R 124	RS1/10S123J	R 318	RD1/4PU153J
R 125	RS1/10S153J	R 319	RD1/4PU153J
R 126	RS1/10S153J	R 320	RD1/4PU153J
R 127	RS1/10S223J	R 321	RD1/4PU153J
R 128	RS1/10S223J	R 322	RD1/4PU153J
R 129	RS1/10S123J	R 323	RD1/4PU153J
R 130	RS1/10S123J	R 324	RD1/4PU153J
R 131	RS1/10S153J	R 325	RD1/4PU331J
R 132	RS1/10S153J	R 326	RD1/4PU331J
R 135	RS1/10S223J	R 327	RD1/4PU331J
R 136	RS1/10S223J	R 328	RD1/4PU331J
R 137	RS1/10S222J	R 329	RD1/4PU331J
R 138	RS1/10S222J	R 330	RD1/4PU331J
R 139	RS1/10S222J	R 331	RD1/4PU331J
R 140	RS1/10S222J	R 332	RD1/4PU331J
R 141	RS1/10S222J	R 333	RD1/4PU161J
R 142	RS1/10S222J	R 334	RD1/4PU161J
R 143	RS1/10S222J	R 335	RD1/4PU161J
R 144	RS1/10S222J	R 336	RD1/4PU161J
R 145	RS1/10S222J	R 337	RD1/4PU161J
R 146	RS1/10S222J	R 338	RD1/4PU161J
R 151	RS1/10S473J	R 339	RD1/4PU161J
R 152	RS1/10S473J	R 340	RD1/4PU161J
R 153	RS1/10S473J	R 341	RD1/4PU473J
R 154	RS1/10S473J	R 342	RD1/4PU473J
R 155	RS1/10S432J	R 343	RD1/4PU473J
R 156	RS1/10S432J	R 344	RD1/4PU473J
R 159	RS1/10S221J	R 345	RD1/4PU473J
R 160	RS1/10S221J	R 346	RD1/4PU473J
R 163	RS1/10S182J	R 347	RD1/4PU473J
R 164	RS1/10S182J	R 348	RD1/4PU473J
R 167	RS1/10S822J	R 349	RD1/4PU472J
R 168	RS1/10S822J	R 350	RD1/4PU472J
R 171	RS1/10S221J	R 351	RD1/4PU472J
R 172	RS1/10S221J	R 352	RD1/4PU472J
R 175	RS1/10S222J	R 353	RD1/4PU222J
R 176	RS1/10S222J	R 354	RD1/4PU222J
R 191	RS1/8S0R0J	R 355	RD1/4PU222J
R 201	RS1/10S472J	R 356	RD1/4PU222J
R 202	RS1/10S472J	R 357	RD1/4PU473J
R 203	RS1/10S472J	R 358	RD1/4PU473J
R 204	RS1/10S472J	R 359	RD1/4PU473J
R 205	RS1/10S223J	R 360	RD1/4PU473J
R 206	RS1/10S223J	R 361	RD1/4PU473J
R 211	RS1/10S181J	R 362	RD1/4PU473J
R 212	RS1/10S181J	R 363	RD1/4PU473J
R 213	RS1/10S181J	R 364	RD1/4PU473J
R 214	RS1/10S181J	R 365	RD1/4PU681J
R 215	RS1/10S392J	R 366	RD1/4PU681J
R 216	RS1/10S392J	R 367	RD1/4PU681J
R 217	RS1/10S392J	R 368	RD1/4PU681J
R 218	RS1/10S392J	R 377	CCN1013
			0.22Ω

====Circuit Symbol & No.====Part Name	Part No.	====Circuit Symbol & No.====Part Name	Part No.
C 163	CKSQYB473K25	C 612	3300µF/16V
C 164	CKSQYB473K25	C 613	3300µF/16V
C 301	CEAS471M10	C 615	
C 302	CEAS471M10	C 616	
C 303	CEAS471M10	C 617	
C 304	CEAS471M10	C 618	3300µF/35V
C 305	CCSQCH330J50	C 619	3300µF/35V
C 306	CCSQCH330J50	C 620	3300µF/35V
C 307	CCSQCH330J50	C 621	3300µF/35V
C 308	CCSQCH330J50	C 626	
C 309	CFTNA224J50	C 627	
C 310	CFTNA224J50	C 628	
C 311	CFTNA224J50	C 629	
C 312	CFTNA224J50	C 630	
C 313	CFTNA224J50	C 631	
C 314	CFTNA224J50	C 632	470µF/16V
C 315	CFTNA224J50	C 634	
C 316	CFTNA224J50	C 635	
C 317	CCSQCH390J50	C 636	
C 318	CCSQCH390J50	C 637	
C 319	CCSQCH390J50	C 638	
C 320	CCSQCH390J50	C 639	
C 321	CCSQCH390J50	C 640	
C 322	CCSQCH390J50	C 851	
C 323	CCSQCH390J50	C 852	
C 324	CCSQCH390J50	C 853	
C 325	CCSQCH330J50	C 854	
C 326	CCSQCH330J50	C 855	
C 327	CCSQCH330J50	C 856	
C 328	CCSQCH330J50	C 857	
C 329	CCSCH330J50	C 858	
C 330	CCSCH330J50	C 859	
C 331	CCSCH330J50	C 860	
C 332	CCSCH330J50	C 861	
C 337	CCSSL101J50	C 862	
C 338	CCSSL101J50	C 863	
C 339	CCSSL101J50	C 864	
C 340	CCSSL101J50	C 865	
C 341	CCSSL101J50	C 866	
C 342	CCSSL101J50	C 867	
C 343	CCSSL101J50	C 868	
C 344	CCSSL101J50	C 869	
C 345	CFTNA333J50	C 870	
C 346	CFTNA333J50	C 875	
C 347	CFTNA333J50	C 876	
C 348	CFTNA333J50	C 877	
C 349	CKSQYB102K50	C 878	
C 350	CKSQYB102K50	C 881	
C 351	CKSQYB102K50	C 882	
C 352	CKSQYB102K50	C 883	
C 602	CFTNA105J50	C 884	
C 603	CFTNA103J50	C 901	220µF/10V
C 604	CCH1183		
C 605	CEAS470M16		
C 606	CEAS220M16		
C 607	CEAS221M10		
C 608	CEAS2R2M50		
C 609	CQMA102J50		
C 610	CEAS1R0M50		
C 611	CEAS470M16		

GM-X414/X1H/UC and GM-X414/X1H/ES have the same construction except for the following:

● Amp Unit

Circuit Symbol & No.	GM-X414/X1H/UC	GM-X414/X1H/ES
	Part No.	Part No.
S601	Not used	HSH-156
R641	Not used	RD1/4PU105J

6. ADJUSTMENT

There is no information to be shown in this chapter.

7. GENERAL INFORMATION

7.1 DISASSEMBLY

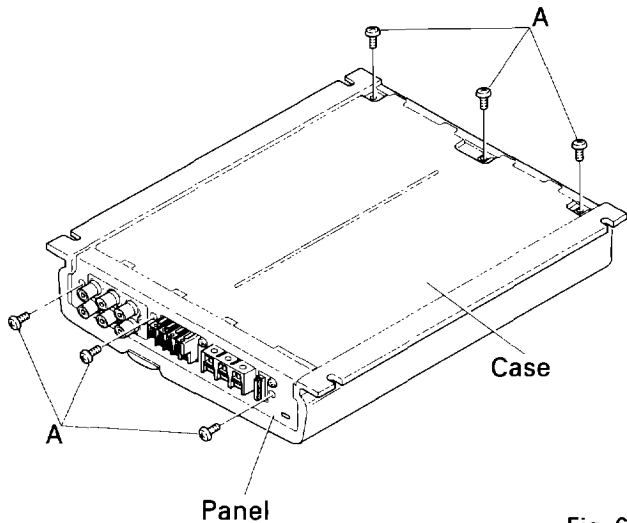


Fig. 6

● Removing the Case and Panel

1. Remove six screws A, and then remove case.
2. Remove panel.

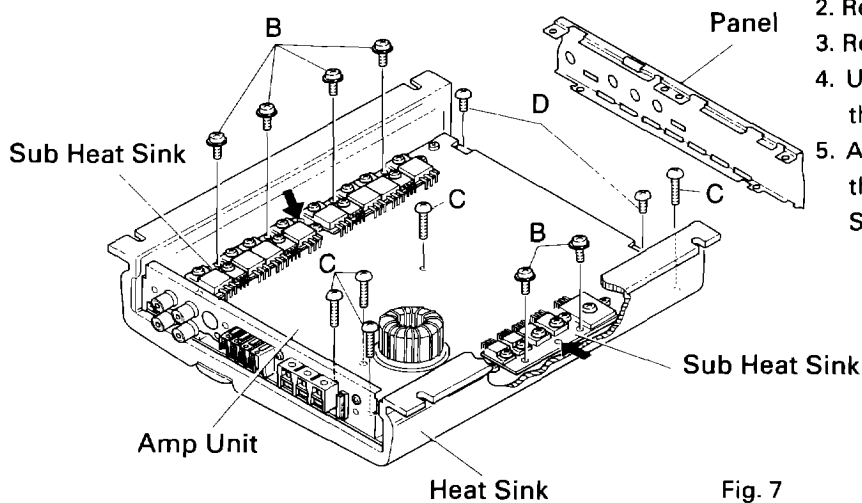


Fig. 7

● Removing the Amp Unit

Some silicone glue has been applied between the Heat Sink and the Sub Heat Sink. therefore, to remove the Amp Unit from the Heat Sink.

1. Remove two screws D.
2. Remove Panel.
3. Remove six screws B and five screws C.
4. Use 2 pcs. of screw B and insert them into the two holes marked with an arrow.
5. Alternately tighten them little by little until the Sub Heat Sink separates from the Heat Sink.

8. OPERATIONS AND SPECIFICATIONS

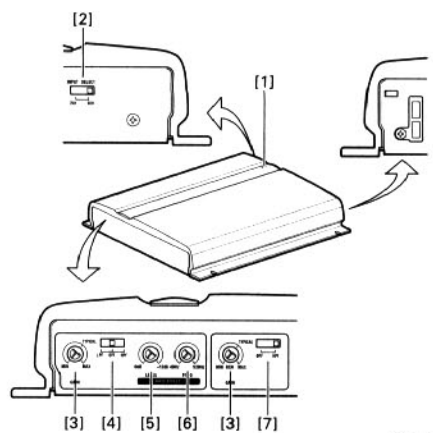


Fig. 8

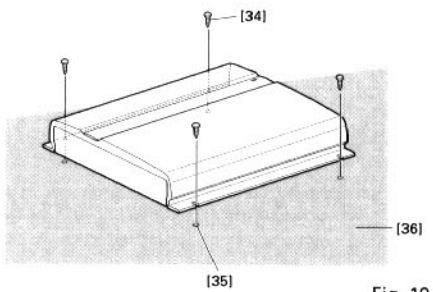


Fig. 10

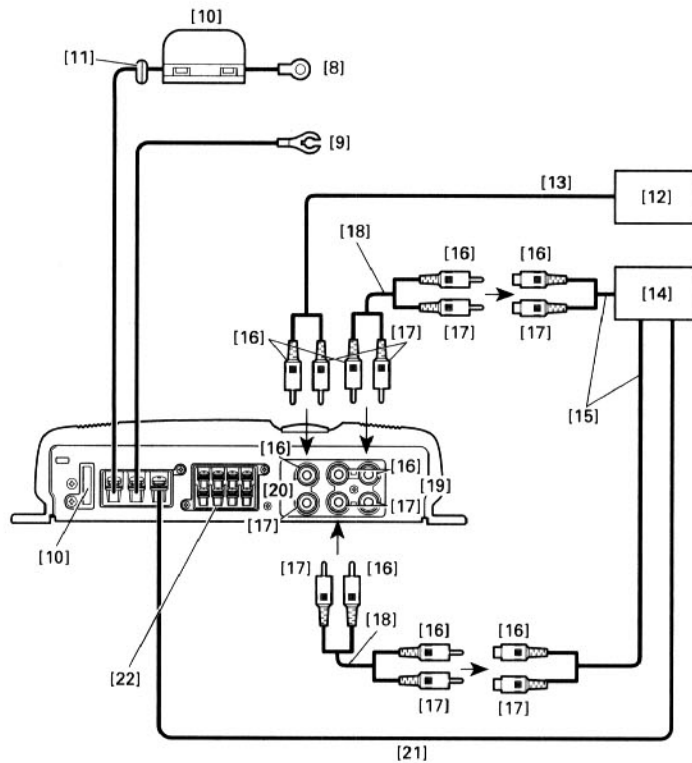


Fig. 9

Setting the Unit

(Fig. 8)

[1] Power Indicator

The power indicator lights when the power is switched on.

[2] RCA Input Select Switch

For two-channel input, slide this switch to the left. For four-channel input, slide this switch to the right.

[3] Input Level Adjustment

Adjusting the input level controls A and B will help match the output of the car stereo to the Pioneer amplifier. Input level control A is used to adjust the volume of speaker output A; input level control B is used to adjust the volume of speaker output B. Normally, set the switch to the "TYPICAL" position. If the output is low even when the volume of the car stereo is turned up, turn these controls clockwise. If there is distortion when the volume of the car stereo is turned up, turn these controls counter clockwise.

- If you only use one input pin plug, set the input level controls for speaker outputs A and B to the same position.
- Set the input level control to "TYPICAL" when this amplifier is connected to a Pioneer car stereo with RCA output jacks. If the sound is too low or distorts, adjust the input level control.

[4] Speaker Out A: LPF (Low-Pass Filter)/HPF (High-Pass Filter) Select Switch

Set the LPF/HPF select switch as follows according to the type of the speaker that is connected to the speaker output connector and the car stereo system:

LPF/HPF Select Switch	Audio frequency range to be output	Speaker Type
LPF (left)	Very-low-frequency range	Sub-woofer
OFF (center)	Very-low-frequency range to high-frequency range	Other than sub-woofer
HPF (right)*	Low-frequency range to high-frequency range	Other than sub-woofer

* Set the LPF/HPF select switch to the HPF (right) position if you want to cut the very-low-frequency range because it is not necessary for the speaker you use.

[5] Speaker Out A: Bass Boost Level Control

Bass boost level control can boost the level around the frequency selected by the bass boost frequency control to 0 to 12 dB.

[6] Speaker Out A: Bass Boost Frequency Control

You can select a bass boost frequency from 40 to 120 Hz with the bass boost control.

- [5], [6] can be adjusted only when the LPF/HPF select switch is set to a position other than HPF.

[7] Speaker Out B: HPF (High-Pass Filter) Select Switch

Set the HPF select switch as follows according to the car stereo system and the type of speaker connected to the speaker output:

HPF Select Switch	Audio frequency range to be output	Speaker Type
OFF (left)	Very-low-frequency range to high-frequency range	Other than sub-woofer
HPF (right)*	Low-frequency range to high-frequency range	Other than sub-woofer

* Set the HPF select switch to the HPF (right) position if you want to cut the very-low-frequency range because it is not necessary for the speaker you use.

(Fig. 9)

- [8] Special red battery wire [RD-222] (sold separately)
After making all other connections at the amplifier, connect the battery wire terminal of the amplifier to the positive (+) terminal of the battery.
- [9] Ground wire (black) [RD-222] (sold separately)
Connect to metal body or chassis.
- [10] Fuse (Special red battery wire: 30 A, Amplifier: 25 A)

- [11] Grommet
- [12] Amplifier with RCA input jacks
- [13] RCA input
- [14] Car stereo with RCA output jacks
- [15] External Output
- [16] White
- [17] Red
- [18] Connecting wires with RCA pin plugs (sold separately)
- [19] RCA input jack A, B
- [20] RCA output jack
- [21] Blue

For details on how to connect to RCA input jacks A and B, see the "Connecting the Speakers and Input wires" section.
If only input pin plug, do not connect anything to RCA input jack B.

Connect the male terminal of this wire to the blue wire of the car stereo (system control terminal). The female terminal can be connected to the auto-antenna relay control terminal. If the car stereo does not have a system remote control terminal, connect the male terminal to the power terminal through the ignition switch.

- [22] Speaker output terminal
- See the "Connecting the Speakers and Input wires" section for speaker connection instructions.

Connecting the Power Terminal

• Always use the special red battery and ground wire [RD-222], which is sold separately. Connect the special red battery wire directly to the car battery positive terminal (+) and the black ground wire to the car body. (The special red battery and ground wire [RD-222] are designed so that the amplifier can be safely connected.)

1. Pass the special red battery wire from the engine compartment to the interior of the vehicle.

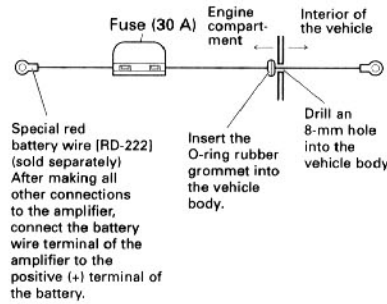


Fig. 11

2. Twist the system remote control wire.

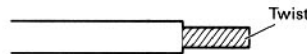


Fig. 12

3. Connect the wires to the terminal.

- Fix the wires securely with the terminal screws.
- If the supplied the System remote control wire are insufficient, please procure the System remote control wire that you require.

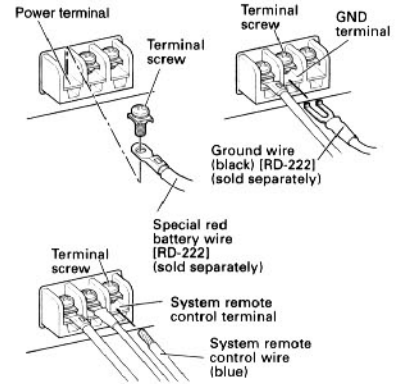


Fig. 13

Connecting the Speakers and Input wires

The speaker output mode can be four-channel, three-channel (stereo + mono) or two-channel (stereo, mono). Connect the speakers according to figures on the following pages.

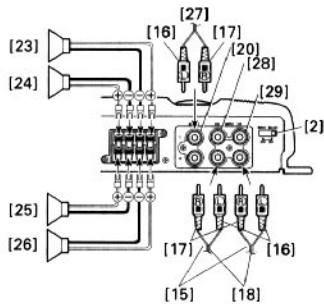


Fig. 14

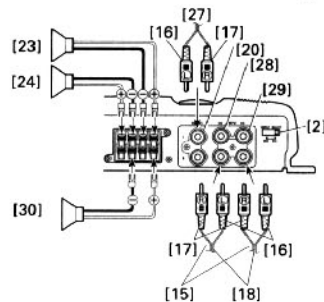


Fig. 15

Four-channel mode (Fig. 14)

- [2] RCA Input Select Switch
- For two-channel input, slide this switch to the left. For four-channel input, slide this switch to the right.
- [15] From car stereo (RCA output)
- If only one input plug is used, such as when the car stereo has only one output (RCA output), connect the plug to RCA input A, and do not connect any plug to RCA input B.
- [16] White
- [17] Red
- [18] Connecting wires with RCA plugs (sold separately)
- [20] RCA output jack
- [23] Speaker out B: Speaker (left)
- [24] Speaker out B: Speaker (right)
- [25] Speaker out A: Speaker (right)
- [26] Speaker out A: Speaker (left)
- [27] To a separate amplifier (RCA input)
- [28] RCA input jack A
- [29] RCA input jack B
- Connect the front or rear output plugs to jacks [28] or [29], according to your system.

Three-channel mode (Fig. 15)

- [2] RCA Input Select Switch
- For two-channel input, slide this switch to the left. For four-channel input, slide this switch to the right.
- [15] From car stereo (RCA output)
- If only one input plug is used, such as when the car stereo has only one output (RCA output), connect the plug to RCA input A, and do not connect any plug to RCA input B.
- [16] White
- [17] Red
- [18] Connecting wires with RCA plugs (sold separately)
- [20] RCA output jack
- [23] Speaker out B: Speaker (left)
- [24] Speaker out B: Speaker (right)
- [27] To a separate amplifier (RCA input)
- [28] RCA input jack A
- [29] RCA input jack B
- Connect the front or rear output plugs to jacks [28] or [29], according to your system.
- [30] Speaker out A: Speaker (mono)

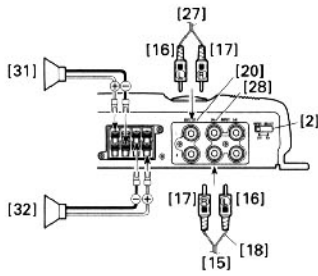


Fig. 16

Two-channel mode (stereo) (Fig. 16)

- [2] RCA Input Select Switch
Slide this switch to the left.
- [15] From car stereo (RCA output)
- [16] White
- [17] Red
- [18] Connecting wire with RCA plug
(sold separately)
- [20] RCA output jack
- [27] To a separate amplifier (RCA input)
- [28] RCA input jack A
- [31] Speaker (right)
- [32] Speaker (left)

Two-channel mode (mono) (Fig. 17)

- [2] RCA Input Select Switch
Slide this switch to the left.
- [15] From car stereo (RCA output)
- [16] White
- [17] Red
- [18] Connecting wire with RCA plug
(sold separately)
- [20] RCA output jack
- [27] To a separate amplifier (RCA input)
- [28] RCA input jack A
- [33] Speaker (mono)

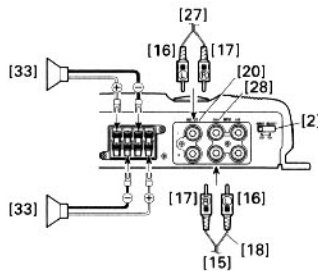


Fig. 17

- (Fig. 10)
- [35] Tapping-screws (4 × 18 mm)
 - [36] Drill a 2.5-mm-diameter hole
 - [37] Floor mat or chassis

Connecting the Speaker Output Terminals

1. Expose the end of the speaker wires by about 10 mm and twist it using nippers or a cutter.

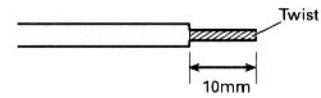


Fig. 18

2. Attach lugs to speaker wire ends.

- Use pliers, etc., to crimp lugs to wires.

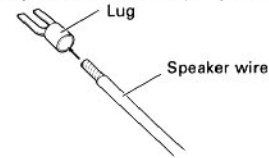


Fig. 19

3. Connect the speaker wires to the speaker output terminals.

- Fix the speaker wires securely with the terminal screws.

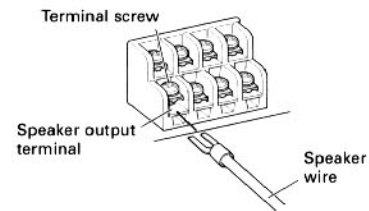


Fig. 20

Specifications

Power source	14.4 V DC (10.8 — 15.6 V allowable)
(ES model)	14.4 V DC (10.8 — 15.1 V allowable)
Grounding system	Negative type
Current consumption	18 A (at continuous power, 4 Ω)
Average current drawn*	5.5 A (4 Ω for four channels) 10 A (4 Ω for two channels)
Fuse	25 A
Dimensions	206 (W) × 50 (H) × 270 (D) mm
Weight	2.9 kg (6.4 lbs.)(Leads for wiring not included)
Maximum power output	60 W × 4 / 140 W × 2 (EIAJ)
Continuous power output	30 W × 4 (at 14.4 V, 4 Ω, 20 — 20,000 Hz, 0.08% THD) 70 W × 2 (at 14.4 V, 4 Ω, 20 — 20,000 Hz, 0.8% THD) 35 W × 4 (at 14.4 V, 2 Ω, 20 — 20,000 Hz, 0.8% THD)
(UC model only)	20 W × 4 (at 12 V, 4 Ω, 20 — 20,000 Hz, 0.08% THD) 50 W × 2 (at 12 V, 4 Ω, 20 — 20,000 Hz, 0.8% THD) 25 W × 4 (at 12 V, 2 Ω, 20 — 20,000 Hz, 0.8% THD)
Load impedance	4 Ω (2 — 8 Ω allowable) (Bridge connection: 4 — 8 Ω allowable)
Frequency response	10 — 50,000 Hz (+0 dB, -1 dB)
Signal-to-noise ratio	108 dB (IHF - A network)
(ES model)	108 dB (ICE - A network)
Separation	65 dB (1 kHz)
Low pass filter	Cut off frequency: 80 Hz Cut off slope: -18 dB/oct
High pass filter	Cut off frequency: 80 Hz Cut off slope: -12 dB/oct
Bass boost	Frequency: 40 — 120 Hz Gain: 0 — 12 dB
Input level / impedance	0.4 — 4 V / 22 kΩ

Note:

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

***Average current drawn**

The average current drawn is nearly the maximum current drawn by this unit when an audio signal is input. Use this value when working out total current drawn by multiple power amplifiers.

MEMO