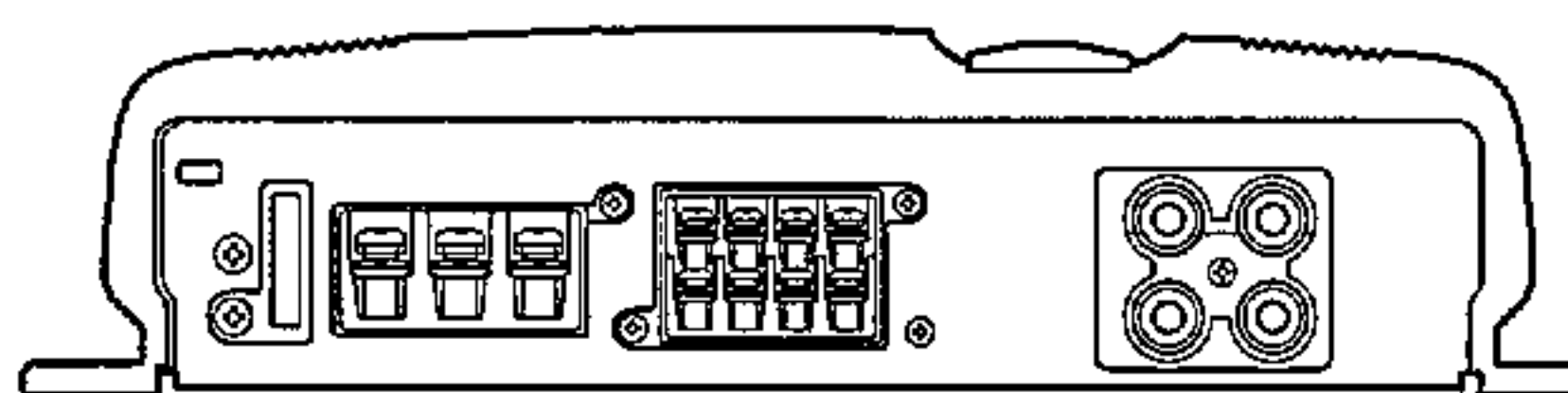


# Service Manual



ORDER NO.  
**CRT1972**

BRIDGEABLE FOUR-CHANNEL POWER AMPLIFIER

# GM-X404-02

**X1H/EW**

# GM-X314

**X1H/UC**

## CONTENTS

|  |   |                                       |    |
|--|---|---------------------------------------|----|
| 1. SAFETY INFORMATION .....            | 1 | 5. ELECTRICAL PARTS LIST .....        | 12 |
| 2. EXPLODED VIEWS AND PARTS LIST ..... | 2 | 6. ADJUSTMENT.....                    | 16 |
| 3. SCHEMATIC DIAGRAM .....             | 6 | 7. GENERAL INFORMATION .....          | 16 |
| 4. PCB CONNECTION DIAGRAM .....        | 8 | 7.1 DISASSEMBLY .....                 | 16 |
|  |   | 8. OPERATIONS AND SPECIFICATIONS..... | 17 |

## 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.

## 2. EXPLODED VIEWS AND PARTS LIST

### 2.1 PACKING METHOD

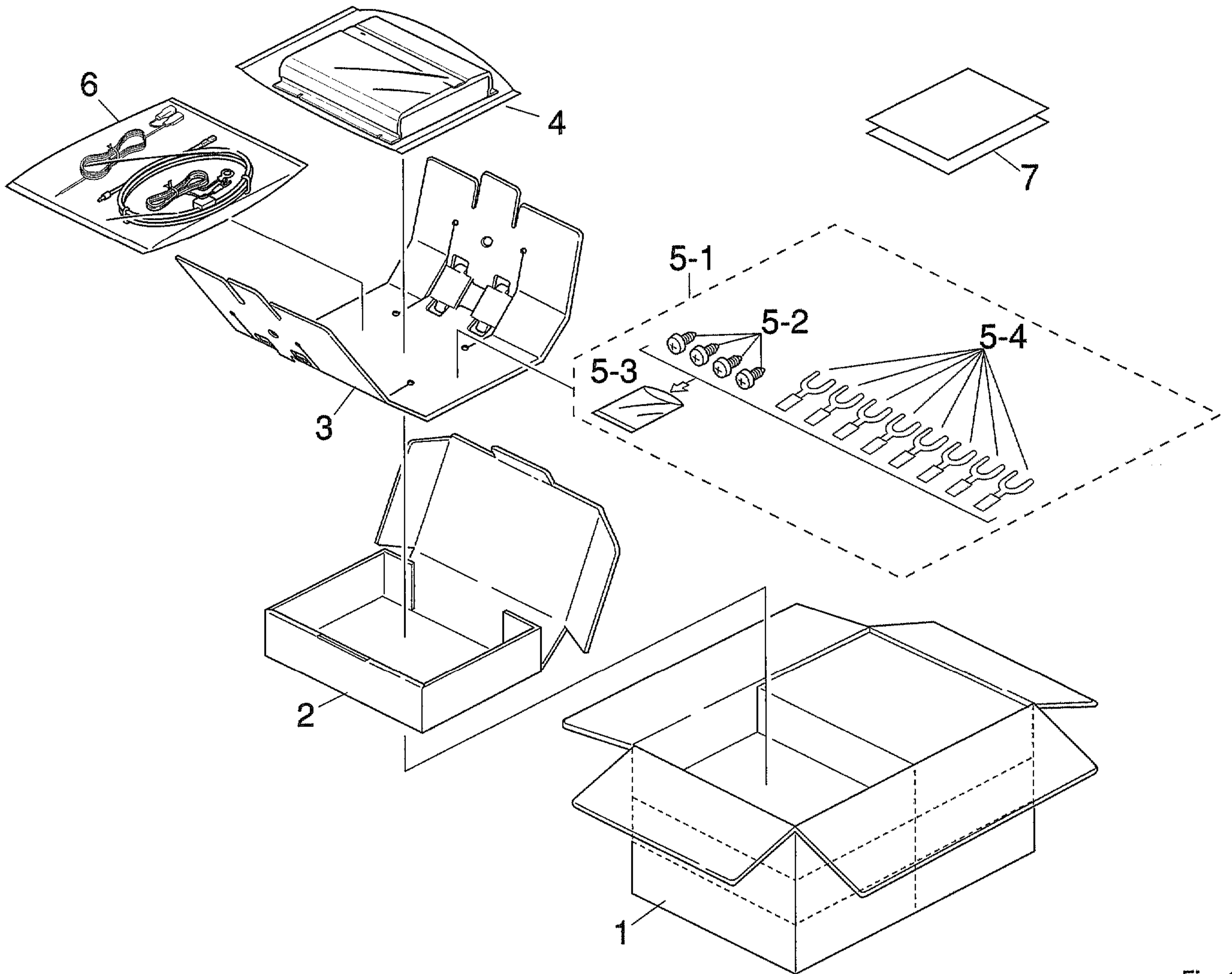


Fig. 1

**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) | *        | 7-2 Warranty Card | HRY1087                |
| 2        | Carton           | See Contrast table (2) | *        | 7-3 Caution Card  | HRP0002                |
| 3        | Protector        | HHP0001                | *        | 7-4 Caution Card  | HRP1141                |
| 4        | Polyethylene Bag | HEG0009                | *        | 7-5 Caution Card  | HRP0001                |
| 5-1      | Screw Assy       | HEA0010                | *        | 7-6 Card          | See Contrast table (2) |
| 5-2      | Screw(x4)        | BYC40P180FZK           |          |                   |                        |
| 5-3      | Polyethylene Bag | HEG0011                |          |                   |                        |
| 5-4      | Terminal(x8)     | HKC0003                |          |                   |                        |
| 6        | Cord Assy        | See Contrast table (2) |          |                   |                        |
| 7-1      | Owner's Manual   | See Contrast table (2) |          |                   |                        |

**(2) CONTRAST TABLE**

GM-X404-02/X1H/EW and GM-X314/X1H/UC have the same construction except for the following:

| Mark | No. | Symbol & Description | Part No.          |                |
|------|-----|----------------------|-------------------|----------------|
|      |     |                      | GM-X404-02/X1H/EW | GM-X314/X1H/UC |
|      | 1   | Contain Box          | HHL0078           | HHL0075        |
|      | 2   | Carton               | HHG0078           | HHG0075        |
|      | 6   | Cord Assy            | HDE4419           | Not used       |
|      | 7-1 | Owner's Manual       | HRD0030           | HRD0028        |
| *    | 7-6 | Card                 | .....             | ARY1048        |

**● Owner's Manual**

| Part No. | Model             | Language   |
|----------|-------------------|--|
| HRD0030  | GM-X404-02/X1H/EW | English, French, German, Dutch, Spanish, Italian |
| HRD0028  | GM-X314/X1H/UC    | English, French                                  |

2.2 EXTERIOR

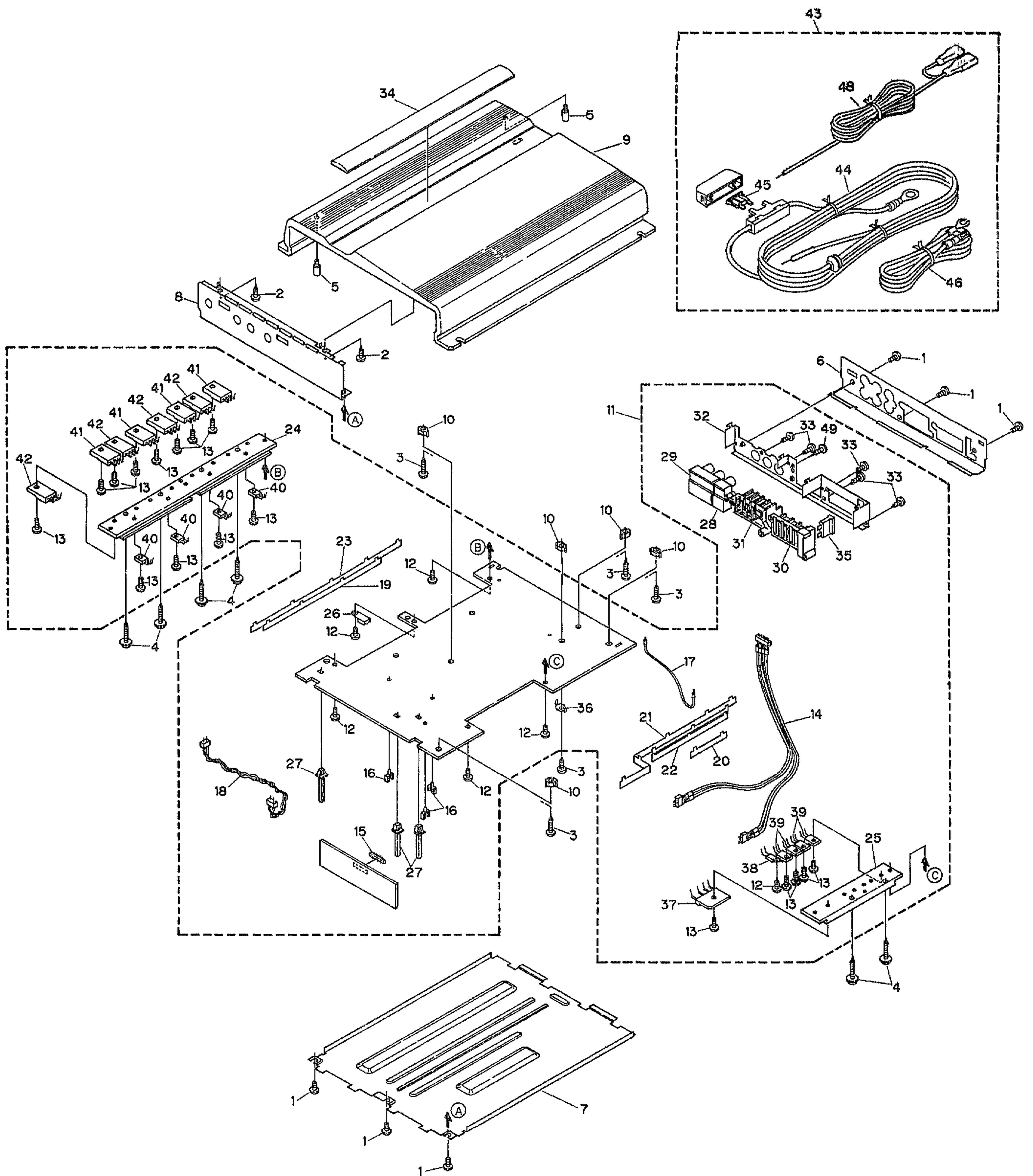


Fig. 2

**(1) PARTS LIST**

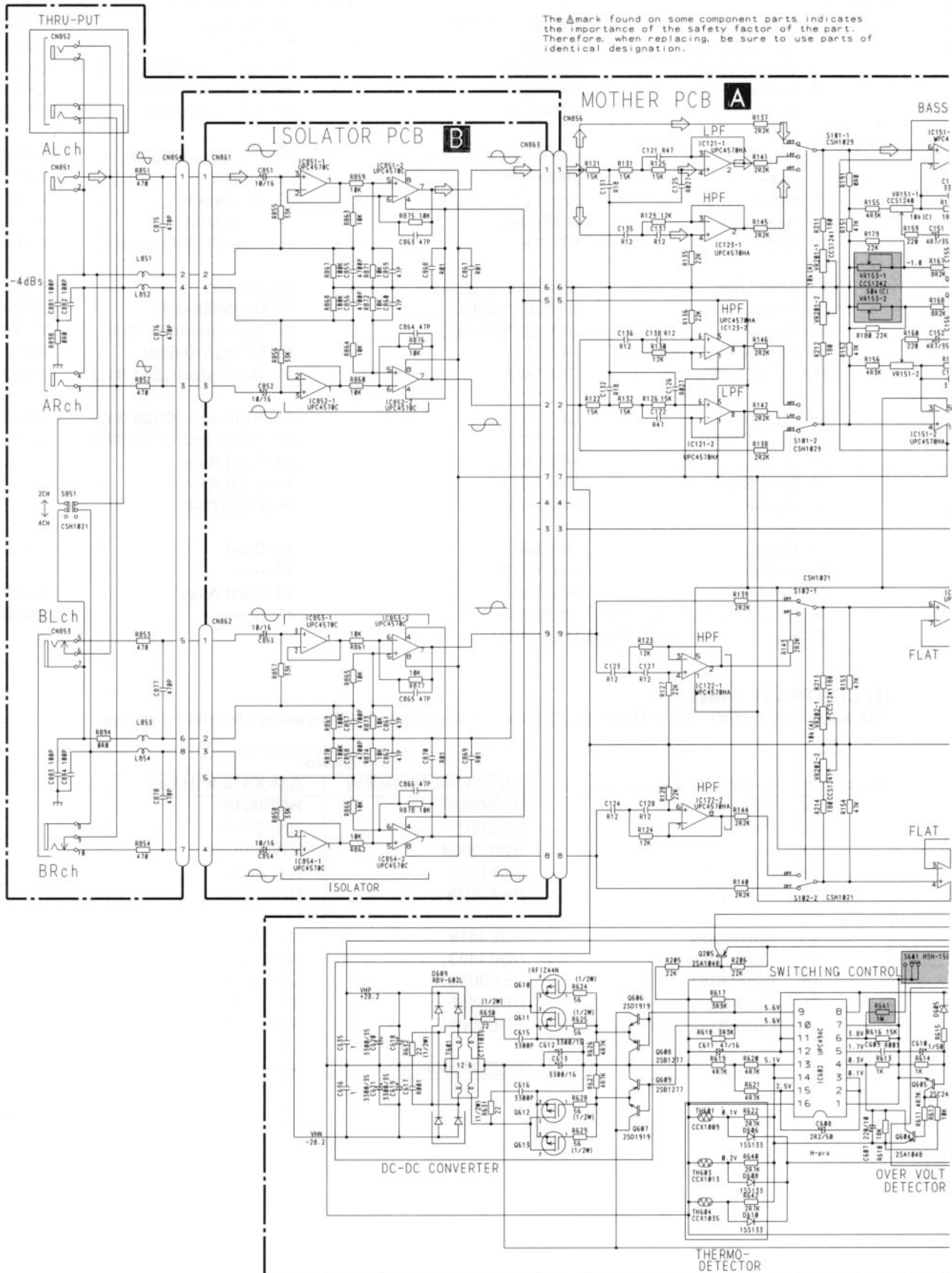
| Mark No. | Description              | Part No.               | Mark No. | Description          | Part No.               |
|----------|--------------------------|------------------------|----------|----------------------|------------------------|
| 1        | Screw                    | BSZ30P050FZK           | 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)      | CKB1021                |
| 5        | Screw                    | HBA0006                | 30       | Terminal(CN601)      | HKE0001                |
| 6        | Panel                    | See Contrast table (2) | 31       | Terminal(CN303)      | HKE0005                |
| 7        | Case                     | HNB0015                | 32       | Holder               | HNC0006                |
| 8        | Panel                    | See Contrast table (2) | 33       | Screw(x5)            | PPZ30P060FZK           |
| 9        | Heat Sink                | HNR0048                | 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                | 49       | Screw                | See Contrast table (2) |
| 25       | Heat Sink(Sub Heat Sink) | HNR0052                |          |                      |                        |

**(2) CONTRAST TABLE**

GM-X404-02/X1H/EW, GM-X314/X1H/UC have the same construction except for the following:

| Mark No. | Symbol & Description | Part No.          |                |
|----------|----------------------|-------------------|----------------|
|          |                      | GM-X404-02/X1H/EW | GM-X314/X1H/UC |
| 6        | Panel                | HNB0009           | HNB0010        |
| 8        | Panel                | HNB0017           | HNB0018        |
| 11       | Amp Unit             | HWH0004           | HWH0007        |
| 28       | Pin Jack(CN852)      | CKB1011           | Not used       |
| 34       | Plate Unit           | HXA0029           | HXA0030        |
| 43       | Cord Assy            | HDE4419           | Not used       |
| 44       | Cord Assy            | HDE4423           | Not used       |
| 45       | Fuse(30A)            | HEK0030           | Not used       |
| 46       | Cord Assy            | HDE4455           | Not used       |
| 48       | Cord Assy            | HDE0007           | Not used       |
| 49       | Screw                | PPZ30P060FZK      | Not used       |

### 3. SCHEMATIC DIAGRAM



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.

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

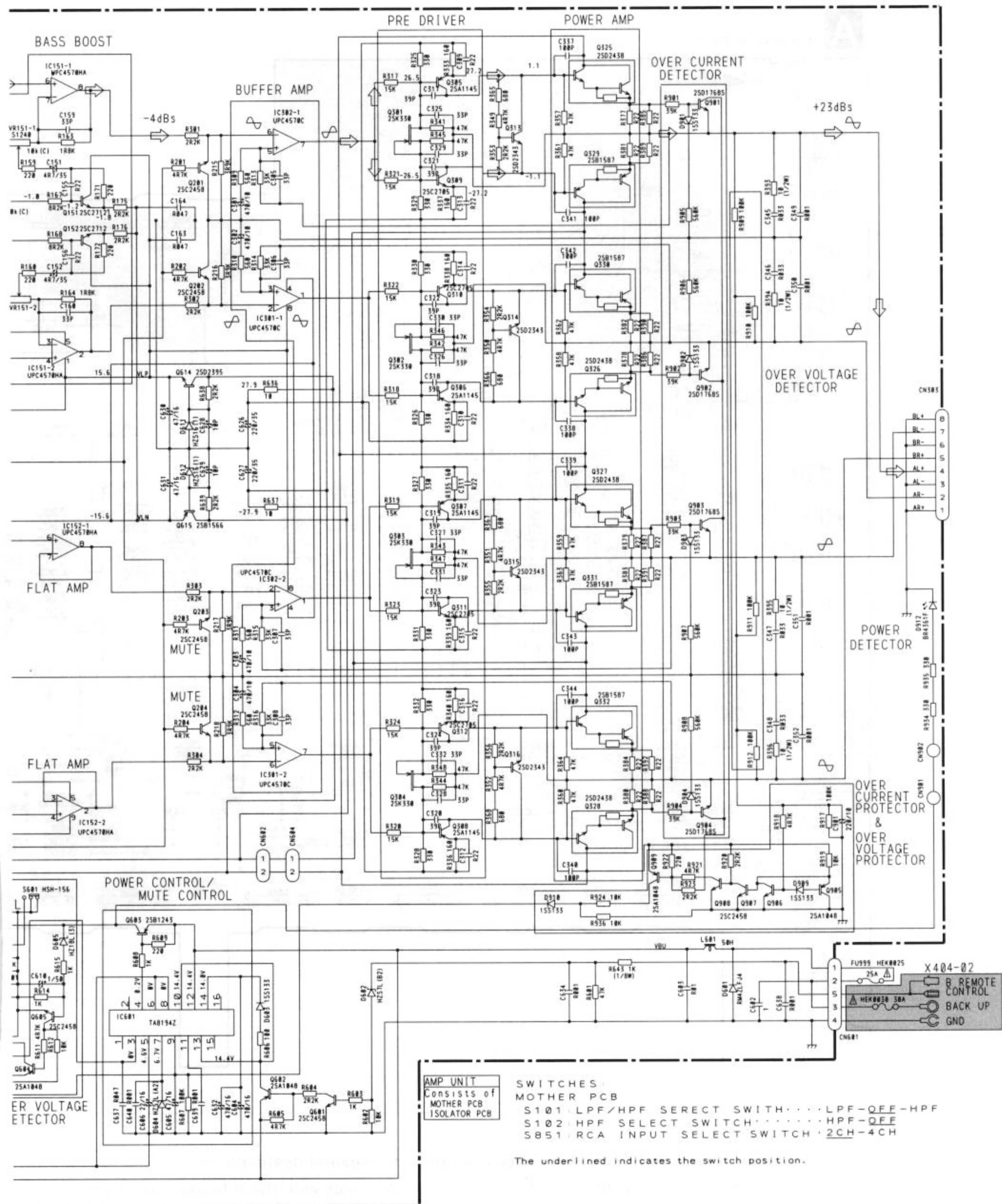
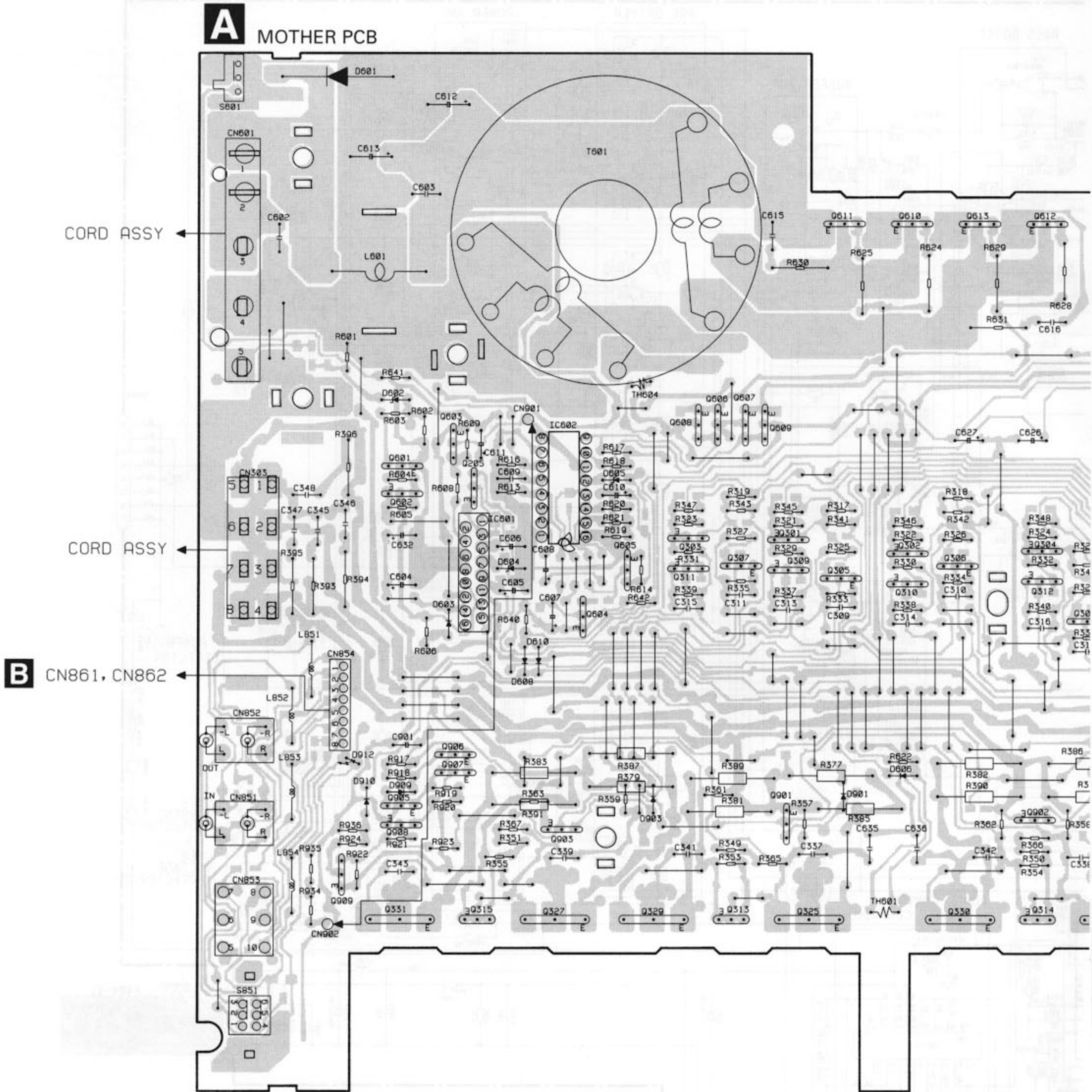


Fig. 3



### 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.



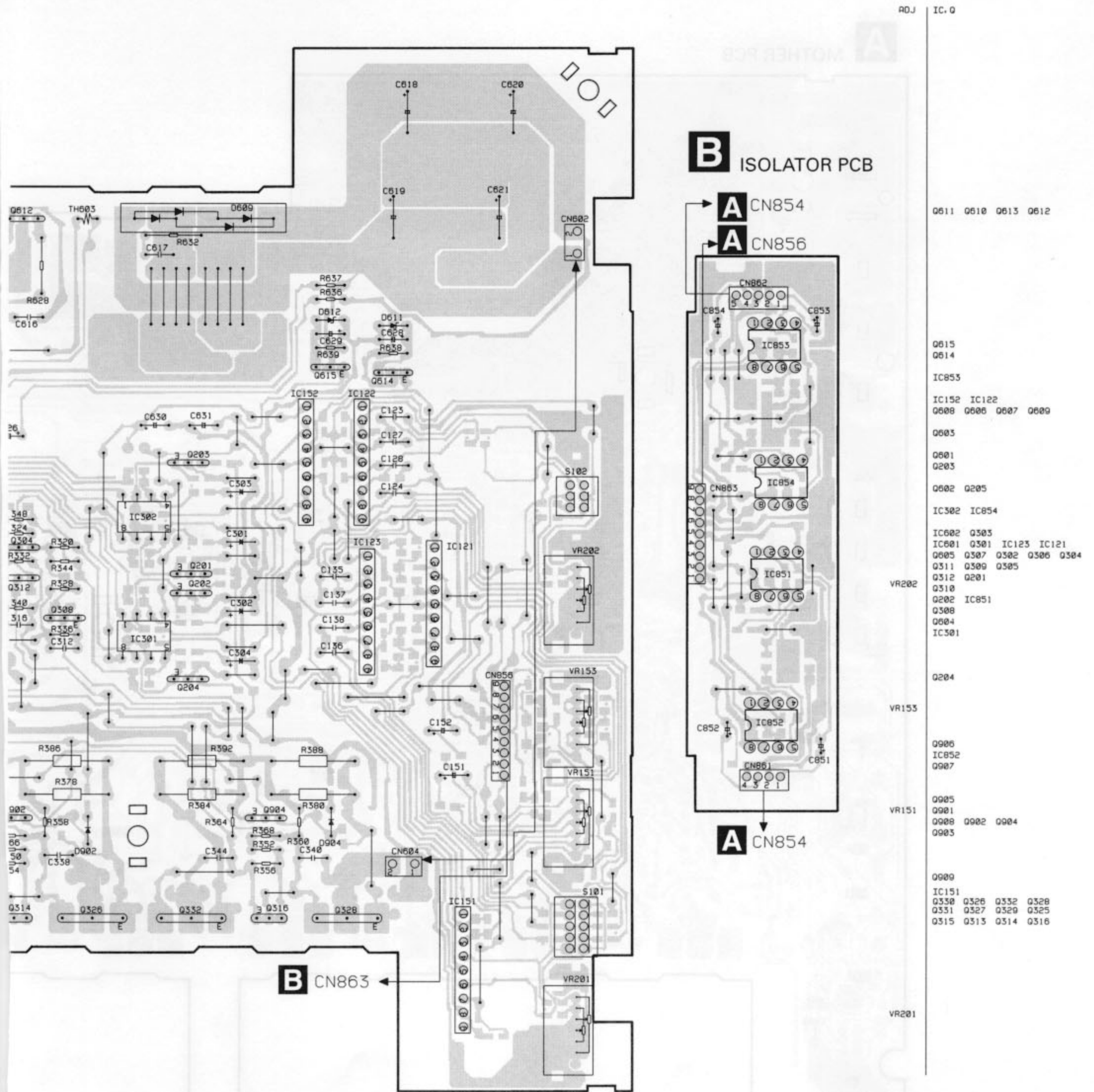
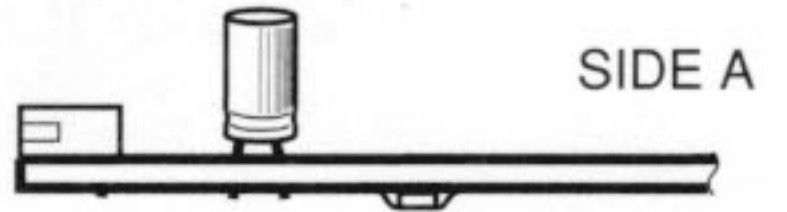
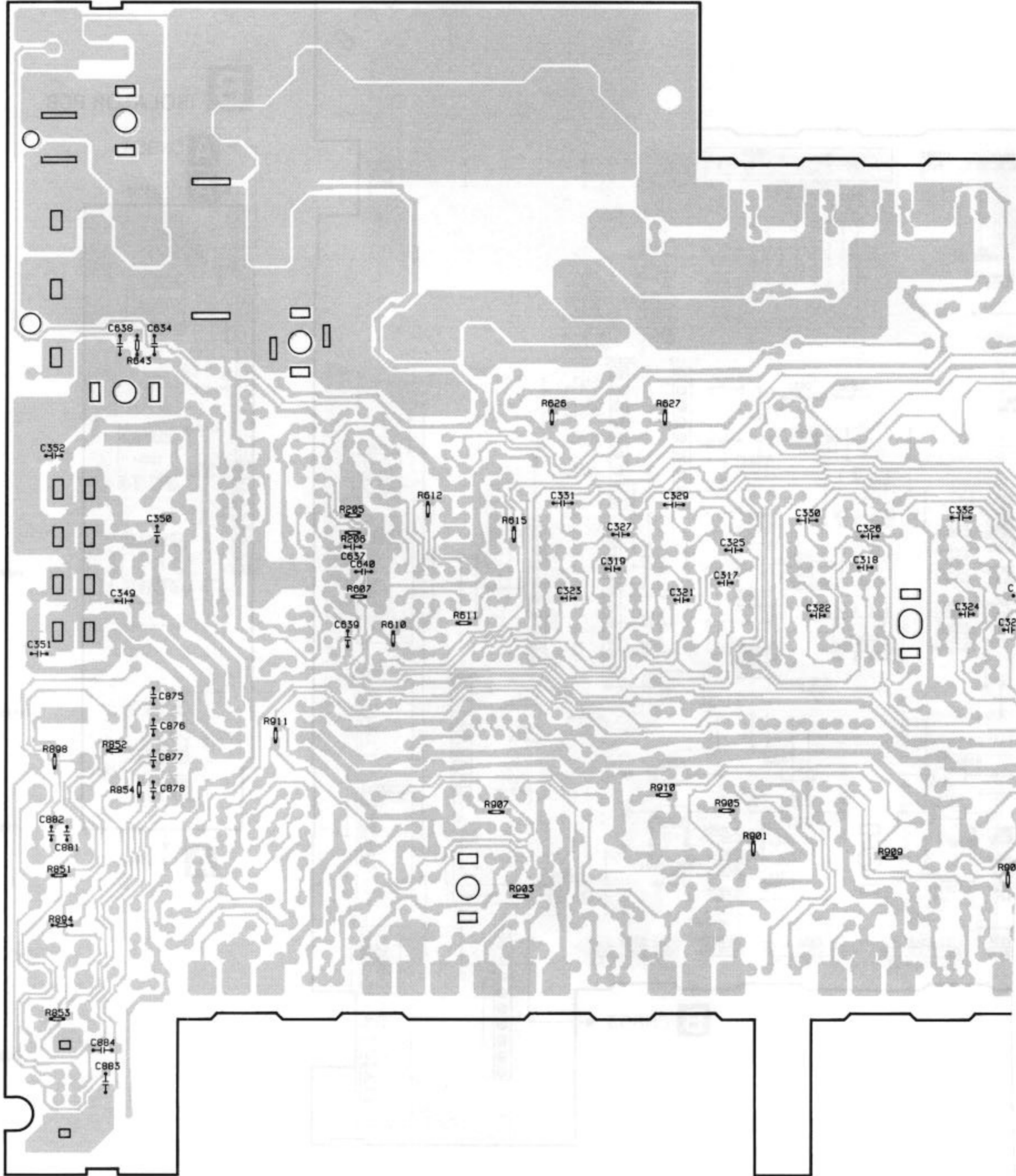
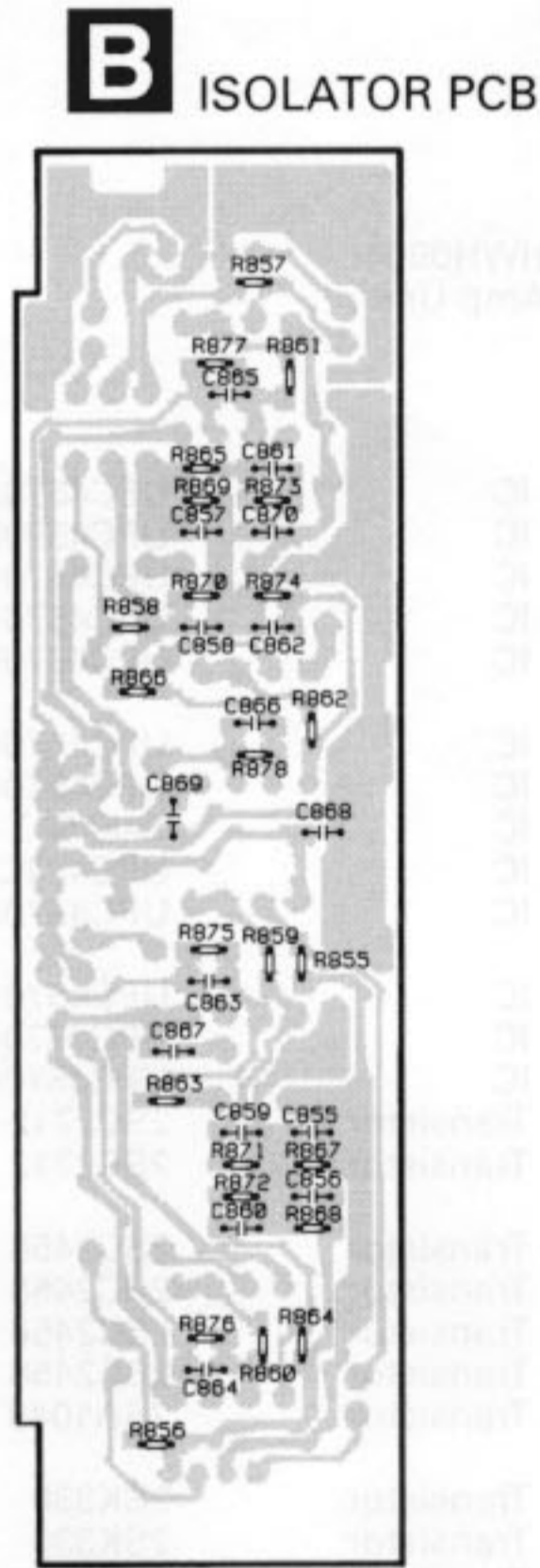
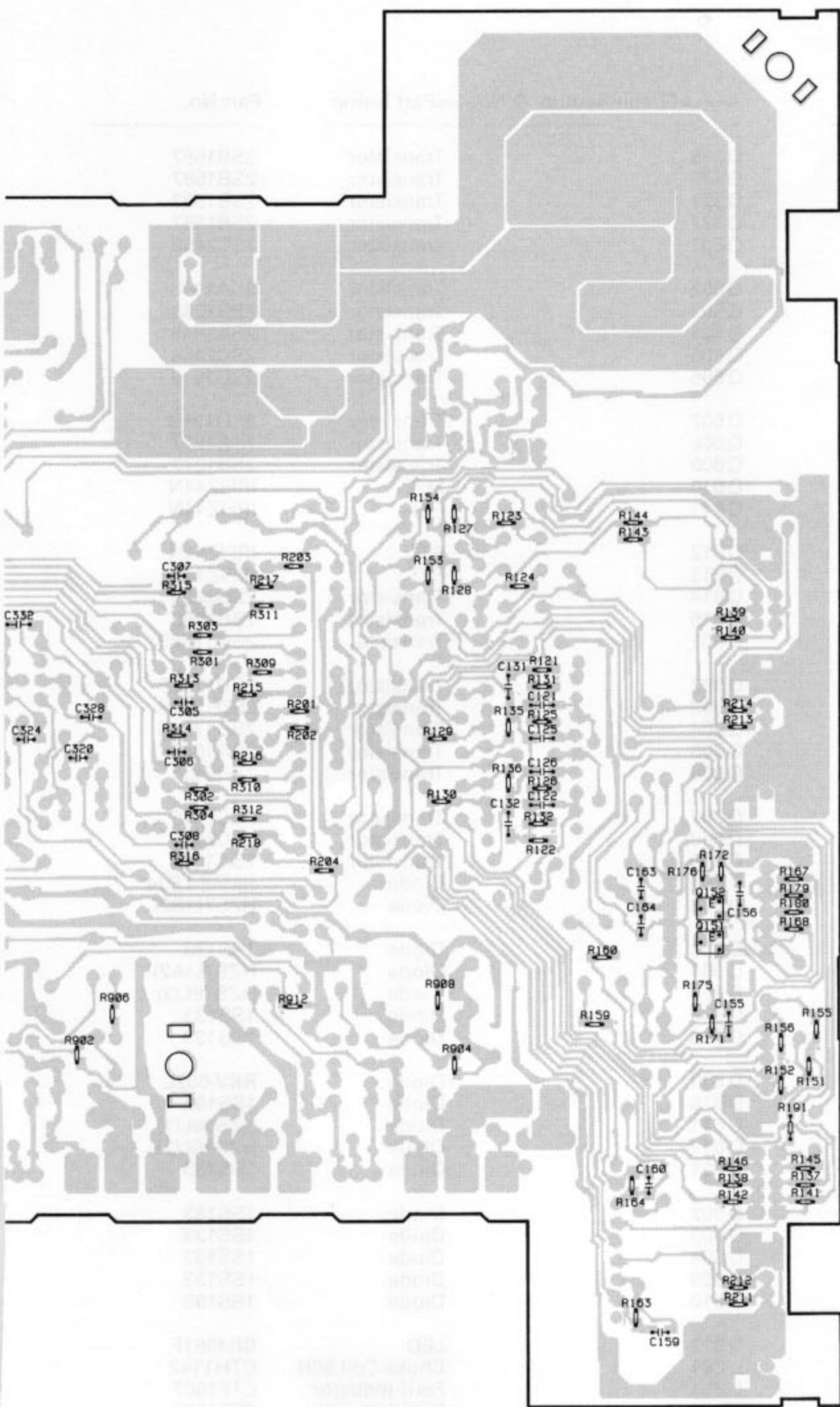


Fig. 4

**A** MOTHER PCB





IC. 0

|      |  |
|------|--|
| Q152 |  |
| Q151 |  |

SIDE B

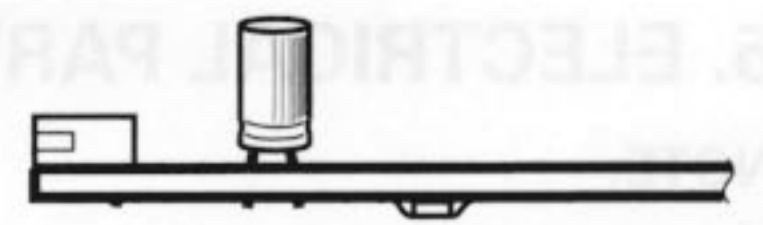


Fig. 5

## 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-X404-02/X1H/EW  |            |                                       |                              |          |             |                       |              |  |  |                      |  |
| <table border="1" style="margin-left: 20px;"> <tr><td>AMP UNIT</td></tr> <tr><td>Consists of</td></tr> <tr><td>MOTHER PCB</td></tr> <tr><td>ISOLATOR PCB</td></tr> </table>  |            |                                       |                              | AMP UNIT | Consists of | MOTHER PCB            | ISOLATOR PCB |  |  |                      |  |
| AMP UNIT   |            |                                       |                              |          |             |                       |              |  |  |                      |  |
| Consists of  |            |                                       |                              |          |             |                       |              |  |  |                      |  |
| MOTHER PCB   |            |                                       |                              |          |             |                       |              |  |  |                      |  |
| ISOLATOR PCB   |            |                                       |                              |          |             |                       |              |  |  |                      |  |
| <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;"><b>A</b></td> <td style="width: 10%;"><b>B</b></td> <td style="width: 40%;">Unit Number : HWH0004</td> <td style="width: 30%;"></td> </tr> <tr> <td></td> <td></td> <td>Unit Name : Amp Unit</td> <td></td> </tr> </table> |            |                                       |                              | <b>A</b> | <b>B</b>    | Unit Number : HWH0004 |              |  |  | Unit Name : Amp Unit |  |
| <b>A</b>   | <b>B</b>   | Unit Number : HWH0004                 |                              |          |             |                       |              |  |  |                      |  |
|  |            | Unit Name : Amp Unit                  |                              |          |             |                       |              |  |  |                      |  |
| MISCELLANEOUS  |            |                                       |                              |          |             |                       |              |  |  |                      |  |
| IC121  | IC         | UPC4570HA                             | Q 329 Transistor 2SB1587     |          |             |                       |              |  |  |                      |  |
| IC122  | IC         | UPC4570HA                             | Q 330 Transistor 2SB1587     |          |             |                       |              |  |  |                      |  |
| IC123  | IC         | UPC4570HA                             | Q 331 Transistor 2SB1587     |          |             |                       |              |  |  |                      |  |
| IC151  | IC         | UPC4570HA                             | Q 332 Transistor 2SB1587     |          |             |                       |              |  |  |                      |  |
| IC152  | IC         | UPC4570HA                             | Q 601 Transistor 2SC2458     |          |             |                       |              |  |  |                      |  |
| IC301  | IC         | UPC4570C                              | Q 602 Transistor 2SA1048     |          |             |                       |              |  |  |                      |  |
| IC302  | IC         | UPC4570C                              | Q 603 Transistor 2SB1243     |          |             |                       |              |  |  |                      |  |
| IC601  | IC         | TA8194Z                               | Q 604 Transistor 2SA1048     |          |             |                       |              |  |  |                      |  |
| IC602  | IC         | UPC494C                               | Q 605 Transistor 2SC2458     |          |             |                       |              |  |  |                      |  |
| IC851  | IC         | UPC4570C                              | Q 606 Transistor 2SD1919     |          |             |                       |              |  |  |                      |  |
| IC852  | IC         | UPC4570C                              | Q 607 Transistor 2SD1919     |          |             |                       |              |  |  |                      |  |
| IC853  | IC         | UPC4570C                              | Q 608 Transistor 2SB1277     |          |             |                       |              |  |  |                      |  |
| IC854  | IC         | UPC4570C                              | Q 609 Transistor 2SB1277     |          |             |                       |              |  |  |                      |  |
| Q 151  | Transistor | 2SC2712                               | Q 610 FET IRFIZ44N           |          |             |                       |              |  |  |                      |  |
| Q 152  | Transistor | 2SC2712                               | Q 611 FET IRFIZ44N           |          |             |                       |              |  |  |                      |  |
| Q 201  | Transistor | 2SC2458                               | Q 612 FET IRFIZ44N           |          |             |                       |              |  |  |                      |  |
| Q 202  | Transistor | 2SC2458                               | Q 613 FET IRFIZ44N           |          |             |                       |              |  |  |                      |  |
| Q 203  | Transistor | 2SC2458                               | Q 614 Transistor 2SD2395     |          |             |                       |              |  |  |                      |  |
| Q 204  | Transistor | 2SC2458                               | Q 615 Transistor 2SB1566     |          |             |                       |              |  |  |                      |  |
| Q 205  | Transistor | 2SA1048                               | Q 901 Transistor 2SD1768S    |          |             |                       |              |  |  |                      |  |
| Q 301  | Transistor | 2SK330                                | Q 902 Transistor 2SD1768S    |          |             |                       |              |  |  |                      |  |
| Q 302  | Transistor | 2SK330                                | Q 903 Transistor 2SD1768S    |          |             |                       |              |  |  |                      |  |
| Q 303  | Transistor | 2SK330                                | Q 904 Transistor 2SD1768S    |          |             |                       |              |  |  |                      |  |
| Q 304  | Transistor | 2SK330                                | Q 905 Transistor 2SA1048     |          |             |                       |              |  |  |                      |  |
| Q 305  | Transistor | 2SA1145                               | Q 906 Transistor 2SC2458     |          |             |                       |              |  |  |                      |  |
| Q 306  | Transistor | 2SA1145                               | Q 907 Transistor 2SC2458     |          |             |                       |              |  |  |                      |  |
| Q 307  | Transistor | 2SA1145                               | Q 908 Transistor 2SC2458     |          |             |                       |              |  |  |                      |  |
| Q 308  | Transistor | 2SA1145                               | Q 909 Transistor 2SA1048     |          |             |                       |              |  |  |                      |  |
| Q 309  | Transistor | 2SC2705                               | D 601 Diode RM4Z-LFJ4        |          |             |                       |              |  |  |                      |  |
| Q 310  | Transistor | 2SC2705                               | D 602 Diode HZS7L(B2)        |          |             |                       |              |  |  |                      |  |
| Q 311  | Transistor | 2SC2705                               | D 603 Diode 1SS133           |          |             |                       |              |  |  |                      |  |
| Q 312  | Transistor | 2SC2705                               | D 604 Diode HZS7L(A2)        |          |             |                       |              |  |  |                      |  |
| Q 313  | Transistor | 2SD2343                               | D 605 Diode HZS18L(3)        |          |             |                       |              |  |  |                      |  |
| Q 314  | Transistor | 2SD2343                               | D 606 Diode 1SS133           |          |             |                       |              |  |  |                      |  |
| Q 315  | Transistor | 2SD2343                               | D 608 Diode 1SS133           |          |             |                       |              |  |  |                      |  |
| Q 316  | Transistor | 2SD2343                               | D 609 Diode RBV-602L         |          |             |                       |              |  |  |                      |  |
| Q 325  | Transistor | 2SD2438                               | D 610 Diode 1SS133           |          |             |                       |              |  |  |                      |  |
| Q 326  | Transistor | 2SD2438                               | D 611 Diode HZS16L(1)        |          |             |                       |              |  |  |                      |  |
| Q 327  | Transistor | 2SD2438                               | D 612 Diode HZS16L(1)        |          |             |                       |              |  |  |                      |  |
| Q 328  | Transistor | 2SD2438                               | 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     |          |             |                       |              |  |  |                      |  |

| ====Circuit Symbol & No.====Part Name | Part No.       | ====Circuit Symbol & No.====Part Name | Part No. |
|---------------------------------------|----------------|---------------------------------------|----------|
| S 101                                 | Switch         | CSH1029                               | R 301    |
| S 102                                 | Switch         | CSH1021                               | R 302    |
| S 601                                 | Switch         | HSH-156                               | R 303    |
| S 851                                 | Switch         | CSH1021                               | R 304    |
| VR151                                 | Volume 10KΩ(C) | CCS1240                               | R 309    |
| VR153                                 | Volume 50KΩ(C) | CCS1242                               | R 310    |
| VR201                                 | Volume 10KΩ(A) | CCS1241                               | R 311    |
| VR202                                 | Volume 10KΩ(A) | CCS1241                               | R 312    |
| FU999                                 | Fuse 25A       | HEK0025                               | R 313    |
|                                       |                |                                       | R 314    |
| RESISTORS                             |                |                                       | R 315    |
| R 121                                 |                | RS1/10S153J                           | R 316    |
| R 122                                 |                | RS1/10S153J                           | R 317    |
| R 123                                 |                | RS1/10S123J                           | R 318    |
| R 124                                 |                | RS1/10S123J                           | R 319    |
| R 125                                 |                | RS1/10S153J                           |          |
|                                       |                |                                       | R 320    |
| R 126                                 |                | RS1/10S153J                           | R 321    |
| R 127                                 |                | RS1/10S223J                           | R 322    |
| R 128                                 |                | RS1/10S223J                           | R 323    |
| R 129                                 |                | RS1/10S123J                           | R 324    |
| R 130                                 |                | RS1/10S123J                           |          |
|                                       |                |                                       | R 325    |
| R 131                                 |                | RS1/10S153J                           | R 326    |
| R 132                                 |                | RS1/10S153J                           | R 327    |
| R 135                                 |                | RS1/10S223J                           | R 328    |
| R 136                                 |                | RS1/10S223J                           | R 329    |
| R 137                                 |                | RS1/10S222J                           |          |
|                                       |                |                                       | R 330    |
| R 138                                 |                | RS1/10S222J                           | R 331    |
| R 139                                 |                | RS1/10S222J                           | R 332    |
| R 140                                 |                | RS1/10S222J                           | R 333    |
| R 141                                 |                | RS1/10S222J                           | R 334    |
| R 142                                 |                | RS1/10S222J                           |          |
|                                       |                |                                       | R 335    |
| R 143                                 |                | RS1/10S222J                           | R 336    |
| R 144                                 |                | RS1/10S222J                           | R 337    |
| R 145                                 |                | RS1/10S222J                           | R 338    |
| R 146                                 |                | RS1/10S222J                           | R 339    |
| R 151                                 |                | RS1/10S473J                           |          |
|                                       |                |                                       | R 340    |
| R 152                                 |                | RS1/10S473J                           | R 341    |
| R 153                                 |                | RS1/10S473J                           | R 342    |
| R 154                                 |                | RS1/10S473J                           | R 343    |
| R 155                                 |                | RS1/10S432J                           | R 344    |
| R 156                                 |                | RS1/10S432J                           |          |
|                                       |                |                                       | R 345    |
| R 159                                 |                | RS1/10S221J                           | R 346    |
| R 160                                 |                | RS1/10S221J                           | R 347    |
| R 163                                 |                | RS1/10S182J                           | R 348    |
| R 164                                 |                | RS1/10S182J                           | R 349    |
| R 167                                 |                | RS1/10S822J                           |          |
|                                       |                |                                       | R 350    |
| R 168                                 |                | RS1/10S822J                           | R 351    |
| R 171                                 |                | RS1/10S221J                           | R 352    |
| R 172                                 |                | RS1/10S221J                           | R 353    |
| R 175                                 |                | RS1/10S222J                           | R 354    |
| R 176                                 |                | RS1/10S222J                           |          |
|                                       |                |                                       | R 355    |
| R 191                                 |                | RS1/8S0R0J                            | R 356    |
| R 201                                 |                | RS1/10S472J                           | R 357    |
| R 202                                 |                | RS1/10S472J                           | R 358    |
| R 203                                 |                | RS1/10S472J                           | R 359    |
| R 204                                 |                | RS1/10S472J                           |          |
|                                       |                |                                       | R 360    |
| R 205                                 |                | RS1/10S223J                           | R 361    |
| R 206                                 |                | RS1/10S223J                           | R 362    |
| R 211                                 |                | RS1/10S181J                           | R 363    |
| R 212                                 |                | RS1/10S181J                           | R 364    |
| R 213                                 |                | RS1/10S181J                           |          |
|                                       |                |                                       | R 365    |
| R 214                                 |                | RS1/10S181J                           | R 366    |
| R 215                                 |                | RS1/10S392J                           | R 367    |
| R 216                                 |                | RS1/10S392J                           | R 368    |
| R 217                                 |                | RS1/10S392J                           | R 377    |
| R 218                                 |                | RS1/10S392J                           |          |
|                                       |                |                                       | 0.22Ω    |
|                                       |                |                                       | CCN1013  |

# GM-X404-02,X314

| ====Circuit Symbol & No.====Part Name | Part No. | ====Circuit Symbol & No.====Part Name | Part No.      |
|---------------------------------------|----------|---------------------------------------|---------------|
| R 378                                 | 0.22Ω    | CCN1013                               | R 858         |
| R 379                                 | 0.22Ω    | CCN1013                               | R 859         |
| R 380                                 | 0.22Ω    | CCN1013                               | R 860         |
| R 381                                 | 0.22Ω    | CCN1013                               | R 861         |
| R 382                                 | 0.22Ω    | CCN1013                               | R 862         |
| R 383                                 | 0.22Ω    | CCN1013                               | R 863         |
| R 384                                 | 0.22Ω    | CCN1013                               | R 864         |
| R 385                                 | 0.22Ω    | CCN1013                               | R 865         |
| R 386                                 | 0.22Ω    | CCN1013                               | R 866         |
| R 387                                 | 0.22Ω    | CCN1013                               | R 867         |
| R 388                                 | 0.22Ω    | CCN1013                               | R 868         |
| R 389                                 | 0.22Ω    | CCN1013                               | R 869         |
| R 390                                 | 0.22Ω    | CCN1013                               | R 870         |
| R 391                                 | 0.22Ω    | CCN1013                               | R 871         |
| R 392                                 | 0.22Ω    | CCN1013                               | R 872         |
| R 393                                 |          | RS1/2PMF100J                          | R 873         |
| R 394                                 |          | RS1/2PMF100J                          | R 874         |
| R 395                                 |          | RS1/2PMF100J                          | R 875         |
| R 396                                 |          | RS1/2PMF100J                          | R 876         |
| R 601                                 |          | RD1/4PU473J                           | R 877         |
| R 602                                 |          | RD1/4PU103J                           | R 878         |
| R 603                                 |          | RD1/4PU103J                           | R 894         |
| R 604                                 |          | RD1/4PU222J                           | R 898         |
| R 605                                 |          | RD1/4PU472J                           | R 901         |
| R 606                                 |          | RD1/4PU101J                           | R 902         |
| R 607                                 |          | RS1/10S104J                           | R 903         |
| R 608                                 |          | RD1/4PU102J                           | R 904         |
| R 609                                 |          | RD1/4PU221J                           | R 905         |
| R 610                                 |          | RS1/10S183J                           | R 906         |
| R 611                                 |          | RS1/10S472J                           | R 907         |
| R 612                                 |          | RS1/10S103J                           | R 908         |
| R 613                                 |          | RD1/4PU102J                           | R 909         |
| R 614                                 |          | RD1/4PU102J                           | R 910         |
| R 615                                 |          | RS1/10S102J                           | R 911         |
| R 616                                 |          | RD1/4PU153J                           | R 912         |
| R 617                                 |          | RD1/4PU332J                           | R 917         |
| R 618                                 |          | RD1/4PU332J                           | R 918         |
| R 619                                 |          | RD1/4PU472J                           | R 919         |
| R 620                                 |          | RD1/4PU472J                           | R 920         |
| R 621                                 |          | RD1/4PU472J                           | R 921         |
| R 622                                 |          | RD1/4PU272J                           | R 922         |
| R 624                                 |          | RS1/2PMF560J                          | R 923         |
| R 625                                 |          | RS1/2PMF560J                          | R 924         |
| R 626                                 |          | RS1/10S472J                           | R 934         |
| R 627                                 |          | RS1/10S472J                           | R 935         |
| R 628                                 |          | RS1/2PMF560J                          | R 936         |
| R 629                                 |          | RS1/2PMF560J                          |               |
| R 630                                 |          | RS1/2PMF220J                          | CAPACITORS    |
| R 631                                 |          | RS1/2PMF220J                          | C 121         |
| R 632                                 |          | RS1/2PMF220J                          | C 122         |
| R 636                                 |          | RD1/4PU100J                           | C 123         |
| R 637                                 |          | RD1/4PU100J                           | C 124         |
| R 638                                 |          | RD1/4PU222J                           | C 125         |
| R 639                                 |          | RD1/4PU222J                           |               |
| R 640                                 |          | RD1/4PU272J                           | C 126         |
| R 641                                 |          | RD1/4PU105J                           | C 127         |
| R 642                                 |          | RD1/4PU272J                           | C 128         |
| R 643                                 |          | RS1/8S102J                            | C 131         |
| R 851                                 |          | RS1/10S471J                           | C 132         |
| R 852                                 |          | RS1/10S471J                           | C 135         |
| R 853                                 |          | RS1/10S471J                           | C 136         |
| R 854                                 |          | RS1/10S471J                           | C 137         |
| R 855                                 |          | RS1/10S333J                           | C 138         |
| R 856                                 |          | RS1/10S333J                           | C 151         |
| R 857                                 |          | RS1/10S333J                           | C 152         |
|                                       |          |                                       | C 155         |
|                                       |          |                                       | C 156         |
|                                       |          |                                       | C 159         |
|                                       |          |                                       | C 160         |
|                                       |          |                                       | RS1/10S333J   |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RS1/10S104J   |
|                                       |          |                                       | RS1/10S104J   |
|                                       |          |                                       | RS1/10S104J   |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RS1/10S104J   |
|                                       |          |                                       | RS1/10S104J   |
|                                       |          |                                       | RS1/10S104J   |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RN1/10SE1002D |
|                                       |          |                                       | RS1/8S0R0J    |
|                                       |          |                                       | RS1/10S0R0J   |
|                                       |          |                                       | RS1/10S393J   |
|                                       |          |                                       | RS1/10S393J   |
|                                       |          |                                       | RS1/10S393J   |
|                                       |          |                                       | RS1/10S564J   |
|                                       |          |                                       | RS1/10S564J   |
|                                       |          |                                       | RS1/10S564J   |
|                                       |          |                                       | RS1/10S564J   |
|                                       |          |                                       | RS1/10S564J   |
|                                       |          |                                       | RS1/10S104J   |
|                                       |          |                                       | RS1/10S104J   |
|                                       |          |                                       | RS1/10S104J   |
|                                       |          |                                       | RS1/10S104J   |
|                                       |          |                                       | RS1/10S104J   |
|                                       |          |                                       | RD1/4PU104J   |
|                                       |          |                                       | RD1/4PU472J   |
|                                       |          |                                       | RD1/4PU103J   |
|                                       |          |                                       | RD1/4PU222J   |
|                                       |          |                                       | RD1/4PU331J   |
|                                       |          |                                       | RD1/4PU331J   |
|                                       |          |                                       | RD1/4PU103J   |
|                                       |          |                                       | CKSYB474K16   |
|                                       |          |                                       | CKSYB474K16   |
|                                       |          |                                       | CFTNA124J50   |
|                                       |          |                                       | CFTNA124J50   |
|                                       |          |                                       | CKSYB273K25   |
|                                       |          |                                       | CKSYB273K25   |
|                                       |          |                                       | CFTNA124J50   |
|                                       |          |                                       | CFTNA124J50   |
|                                       |          |                                       | CFTNA124J50   |
|                                       |          |                                       | CKSYB184K16   |
|                                       |          |                                       | CKSYB184K16   |
|                                       |          |                                       | CFTNA124J50   |
|                                       |          |                                       | CFTNA124J50   |
|                                       |          |                                       | CFTNA124J50   |
|                                       |          |                                       | CFTNA124J50   |
|                                       |          |                                       | CEAS4R7M35    |
|                                       |          |                                       | CEAS4R7M35    |
|                                       |          |                                       | CKSYB224K16   |
|                                       |          |                                       | CKSYB224K16   |
|                                       |          |                                       | CCSQCH330J50  |
|                                       |          |                                       | CCSQCH330J50  |

| ====Circuit Symbol & No.====Part Name | Part No.     | ====Circuit Symbol & No.====Part Name | Part No.           |
|---------------------------------------|--------------|---------------------------------------|--------------------|
| ∩ 163                                 | CKSQYB473K25 | C 607                                 | CEAS221M10         |
| ∩ 164                                 | CKSQYB473K25 | C 608                                 | CEAS2R2M50         |
| ∩ 301                                 | CEAS471M10   | C 609                                 | CQMA102J50         |
| ∩ 302                                 | CEAS471M10   | C 610                                 | CEAS1R0M50         |
| ∩ 303                                 | CEAS471M10   | C 611                                 | CEAS470M16         |
| ∩ 304                                 | CEAS471M10   | C 612                                 | 3300μF/16V CCH1130 |
| ∩ 305                                 | CCSQCH330J50 | C 613                                 | 3300μF/16V CCH1130 |
| ∩ 306                                 | CCSQCH330J50 | C 615                                 | CQMA332J50         |
| ∩ 307                                 | CCSQCH330J50 | C 616                                 | CQMA332J50         |
| ∩ 308                                 | CCSQCH330J50 | C 617                                 | CQMA102J50         |
| ∩ 309                                 | CFTNA224J50  | C 618                                 | 3300μF/35V CCH1200 |
| ∩ 310                                 | CFTNA224J50  | C 619                                 | 3300μF/35V CCH1200 |
| ∩ 311                                 | CFTNA224J50  | C 620                                 | 3300μF/35V CCH1200 |
| ∩ 312                                 | CFTNA224J50  | C 621                                 | 3300μF/35V CCH1200 |
| ∩ 313                                 | CFTNA224J50  | C 626                                 | CEAS221M35         |
| ∩ 314                                 | CFTNA224J50  | C 627                                 | CEAS221M35         |
| ∩ 315                                 | CFTNA224J50  | C 628                                 | CEAS100M50         |
| ∩ 316                                 | CFTNA224J50  | C 629                                 | CEAS100M50         |
| ∩ 317                                 | CCSQCH390J50 | C 630                                 | CEAS470M16         |
| ∩ 318                                 | CCSQCH390J50 | C 631                                 | CEAS470M16         |
| ∩ 319                                 | CCSQCH390J50 | C 632                                 | 470μF/16V CCH1183  |
| ∩ 320                                 | CCSQCH390J50 | C 634                                 | CKSYB102K50        |
| ∩ 321                                 | CCSQCH390J50 | C 635                                 | CFTNA105J50        |
| ∩ 322                                 | CCSQCH390J50 | C 636                                 | CFTNA105J50        |
| ∩ 323                                 | CCSQCH390J50 | C 637                                 | CKSQYB473K16       |
| ∩ 324                                 | CCSQCH390J50 | C 638                                 | CKSYB102K50        |
| ∩ 325                                 | CCSQCH330J50 | C 639                                 | CKSQYB102K50       |
| ∩ 326                                 | CCSQCH330J50 | C 640                                 | CKSQYB102K50       |
| ∩ 327                                 | CCSQCH330J50 | C 851                                 | CEAL100M16         |
| ∩ 328                                 | CCSQCH330J50 | C 852                                 | CEAL100M16         |
| ∩ 329                                 | CCSCH330J50  | C 853                                 | CEAL100M16         |
| ∩ 330                                 | CCSCH330J50  | C 854                                 | CEAL100M16         |
| ∩ 331                                 | CCSCH330J50  | C 855                                 | CKSQYB472K50       |
| ∩ 332                                 | CCSCH330J50  | C 856                                 | CKSQYB472K50       |
| ∩ 337                                 | CCCSL101J50  | C 857                                 | CKSQYB472K50       |
| ∩ 338                                 | CCCSL101J50  | C 858                                 | CKSQYB472K50       |
| ∩ 339                                 | CCCSL101J50  | C 859                                 | CCSQCH470J50       |
| ∩ 340                                 | CCCSL101J50  | C 860                                 | CCSQCH470J50       |
| ∩ 341                                 | CCCSL101J50  | C 861                                 | CCSQCH470J50       |
| ∩ 342                                 | CCCSL101J50  | C 862                                 | CCSQCH470J50       |
| ∩ 343                                 | CCCSL101J50  | C 863                                 | CCSQCH470J50       |
| ∩ 344                                 | CCCSL101J50  | C 864                                 | CCSQCH470J50       |
| ∩ 345                                 | CFTNA333J50  | C 865                                 | CCSQCH470J50       |
| ∩ 346                                 | CFTNA333J50  | C 866                                 | CCSQCH470J50       |
| ∩ 347                                 | CFTNA333J50  | C 867                                 | CKSQYB103K50       |
| ∩ 348                                 | CFTNA333J50  | C 868                                 | CKSQYB103K50       |
| C 348                                 | CFTNA333J50  | C 869                                 | CKSQYB103K50       |
| C 349                                 | CKSQYB102K50 | C 870                                 | CKSQYB103K50       |
| C 350                                 | CKSQYB102K50 | C 875                                 | CKSQYB471K50       |
| C 351                                 | CKSQYB102K50 | C 876                                 | CKSQYB471K50       |
| C 352                                 | CKSQYB102K50 | C 877                                 | CKSQYB471K50       |
| C 602                                 | CFTNA105J50  | C 878                                 | CKSQYB471K50       |
| C 603                                 | CFTNA103J50  | C 881                                 | CCSSL101J50        |
| C 604                                 | CCH1183      | C 882                                 | CCSSL101J50        |
| C 605                                 | CEAS470M16   | C 883                                 | CCSSL101J50        |
| C 606                                 | CEAS220M16   | C 884                                 | CCSSL101J50        |
|                                       |              | C 901                                 | 220μF/10V CCH1036  |

GM-X404-02/X1H/EW and GM-X314/X1H/UC have the same construction except for the following:

● **Amp Unit**

| Circuit Symbol & No. | GM-X404-02/X1H/EW | GM-X314/X1H/UC |
|----------------------|-------------------|----------------|
|                      | Part No.          | Part No.       |
| S601                 | HSH-156           | Not used       |
| R641                 | RD1/4PU105J       | Not used       |
| VR153                | CCS1242           | Not used       |
| R179,180             | Not used          | RS1/10S223J    |

## 6. ADJUSTMENT

There is no information to be shown in this chapter.

## 7. GENERAL INFORMATION

### 7.1 DISASSEMBLY

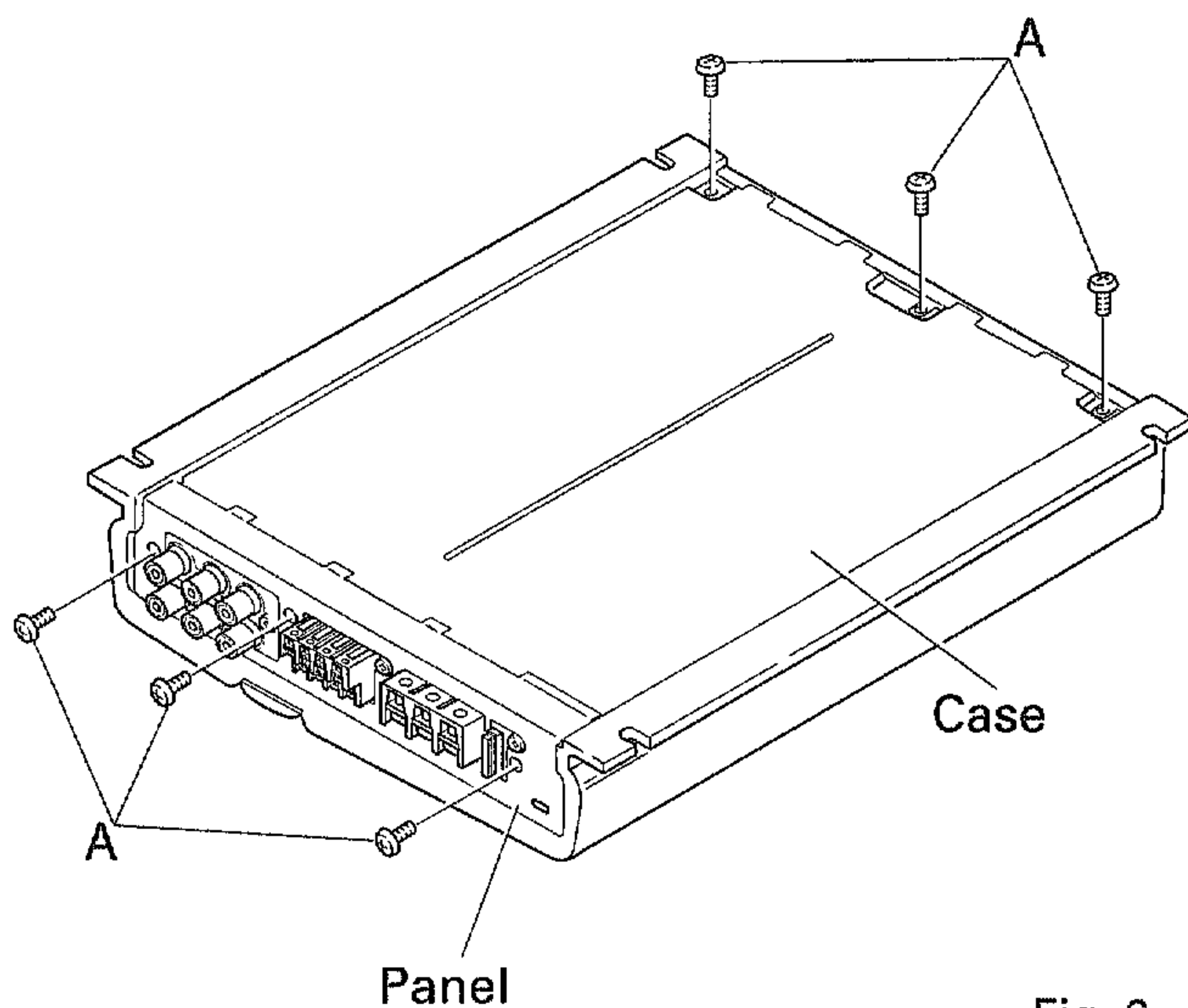


Fig. 6

#### ● Removing the Case and Panel

1. Remove six screws A, and then remove Case.
2. Remove Panel.

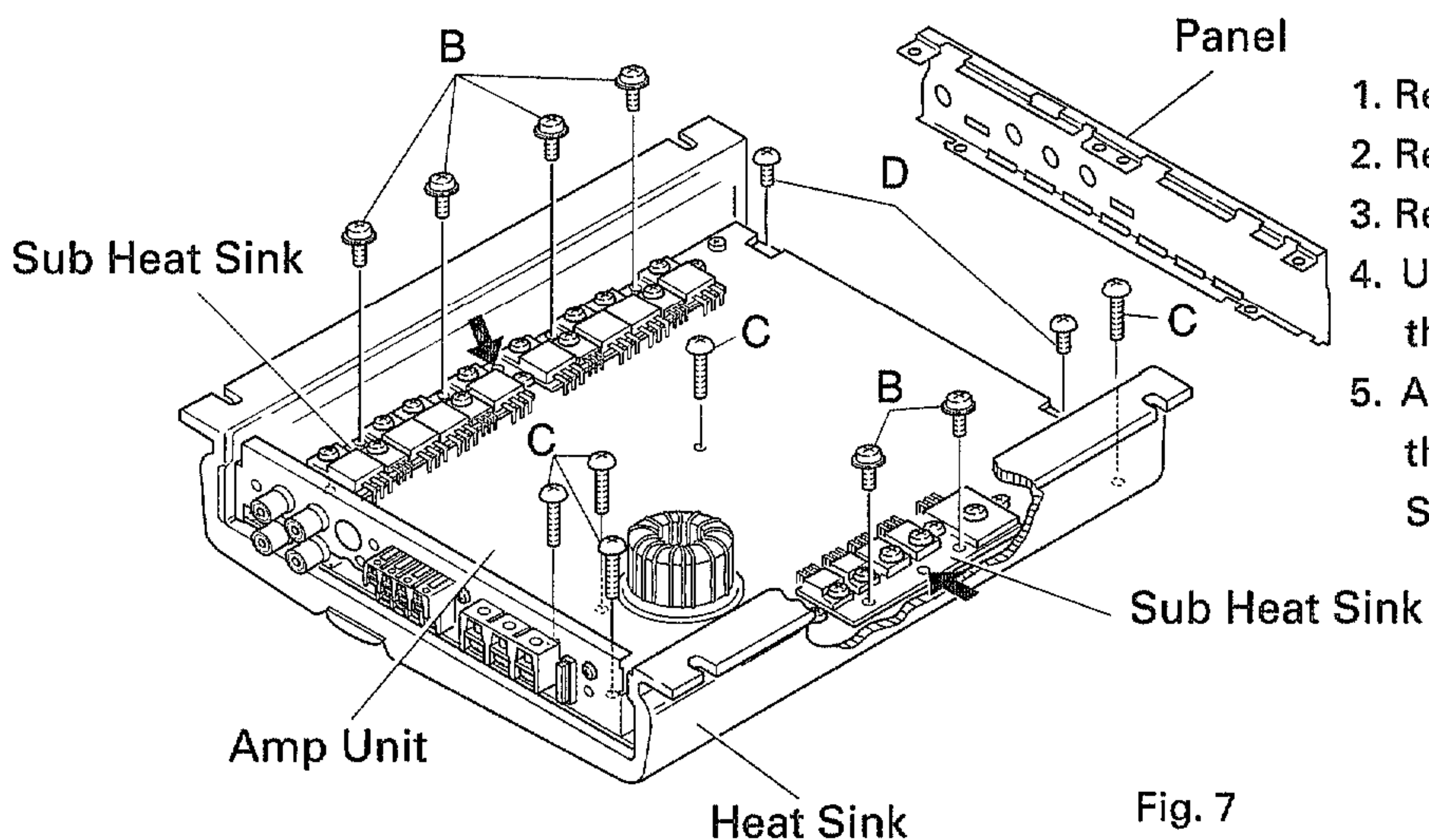


Fig. 7

#### ● 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

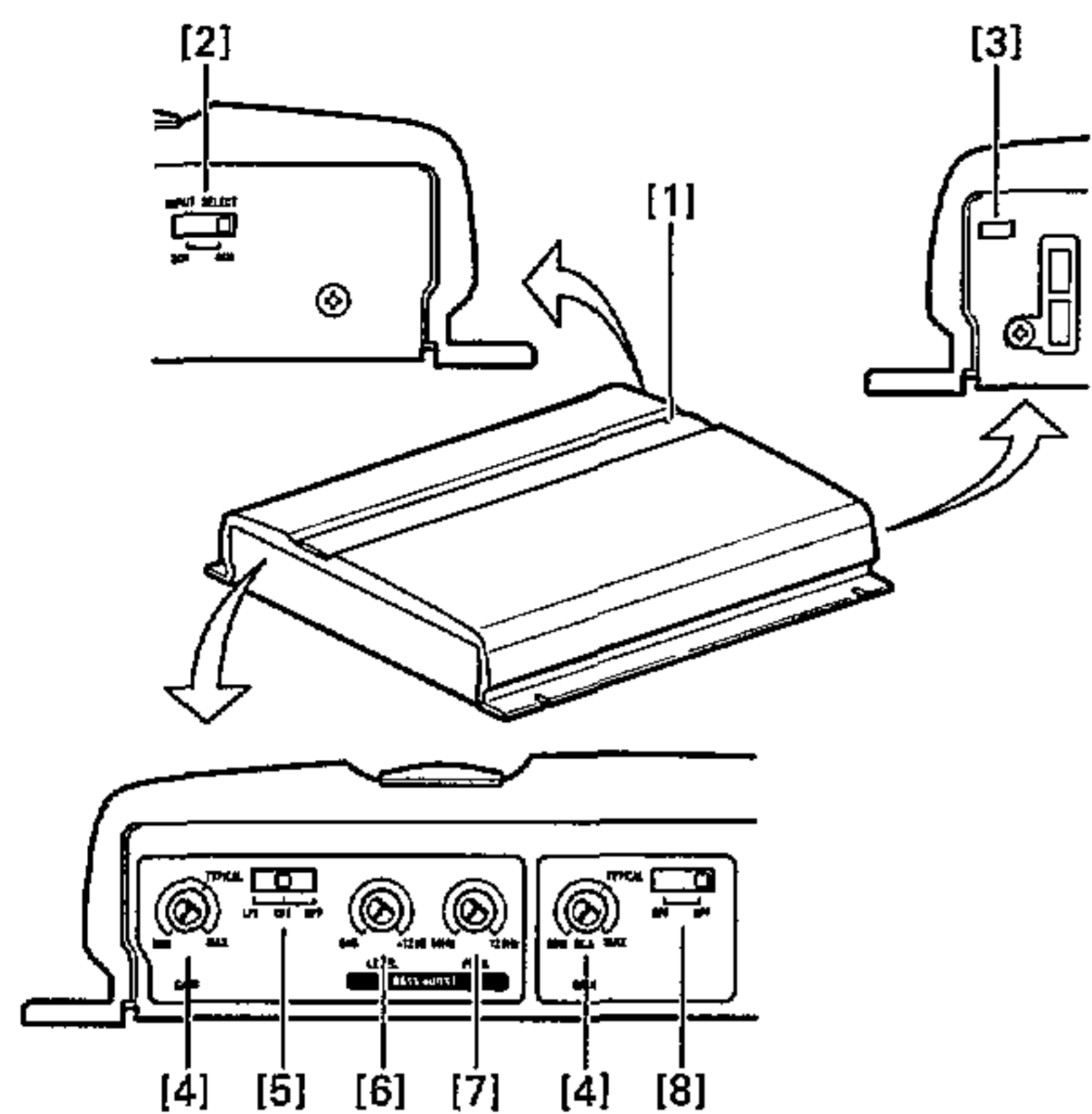


Fig. 8

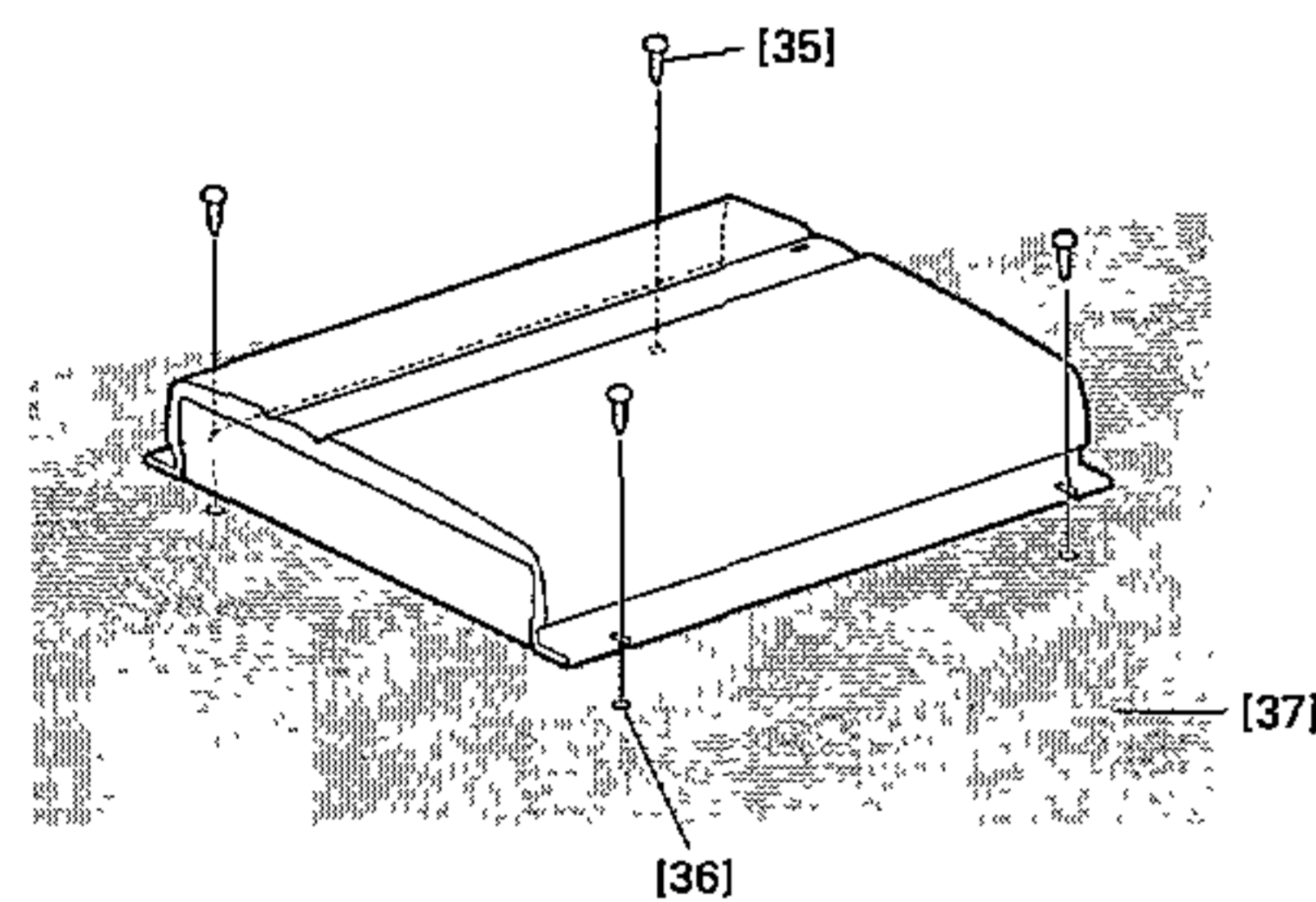


Fig. 10

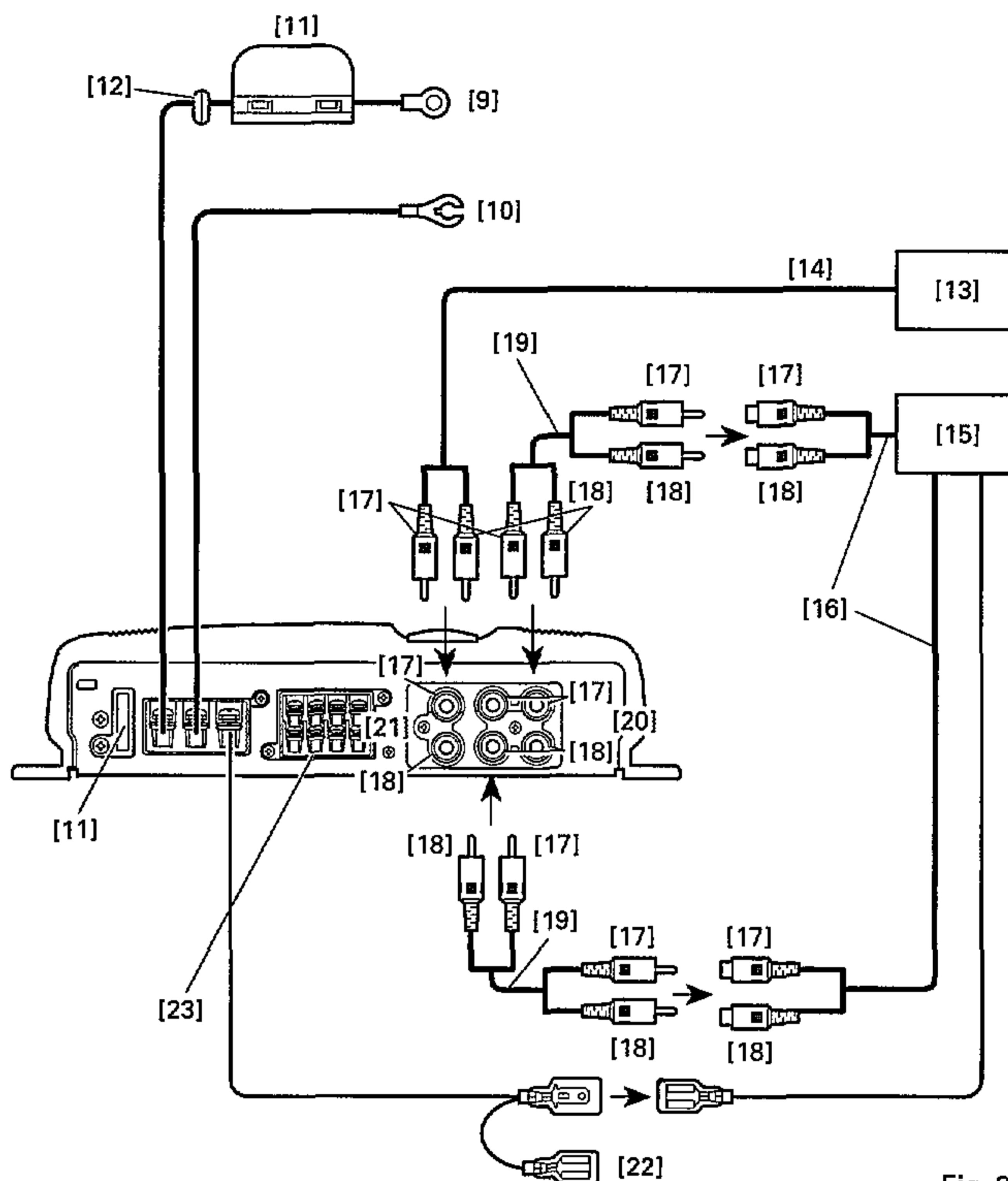


Fig. 9

### 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] BFC (Beat Frequency Control) Switch

If you hear a beat while listening to an AM broadcast with your car stereo, change the BFC switch using a small screwdriver.

#### [4] 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.

#### [5] 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.

#### [6] 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.

#### [7] Speaker Out A: Bass Boost Frequency Control

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

- [6] [7] can be adjusted only when the LPF/HPF select switch is set to a position other than HPF.

#### [8] 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)

#### [9] Special red battery wire

After making all other connections at the amplifier, connect the battery wire terminal of the amplifier to the positive (+) terminal of the battery.

#### [10] Ground wire (black)

Connect to metal body or chassis.

#### [11] Fuse (Special red battery wire: 30 A, Amplifier: 25 A)

- [12] Grommet
- [13] Amplifier with RCA input jacks
- [14] RCA input
- [15] Car stereo with RCA output jacks
- [16] External Output  
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.
- [17] White
- [18] Red
- [19] Connecting wires with RCA pin plugs (sold separately)
- [20] RCA input jack A, B
- [21] RCA output jack
- [22] Blue  
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.
- [23] Speaker output terminal  
See the "Connecting the Speakers and Input wires" section for speaker connection instructions.

**Connecting the Power Terminal**

• Be sure to use the special red battery wire supplied with the amplifier and connect directly to the battery. Use the supplied black ground wire and connect to the vehicle body. (The supplied special red battery and ground wires are designed so that the amplifier can be connected safely.)

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

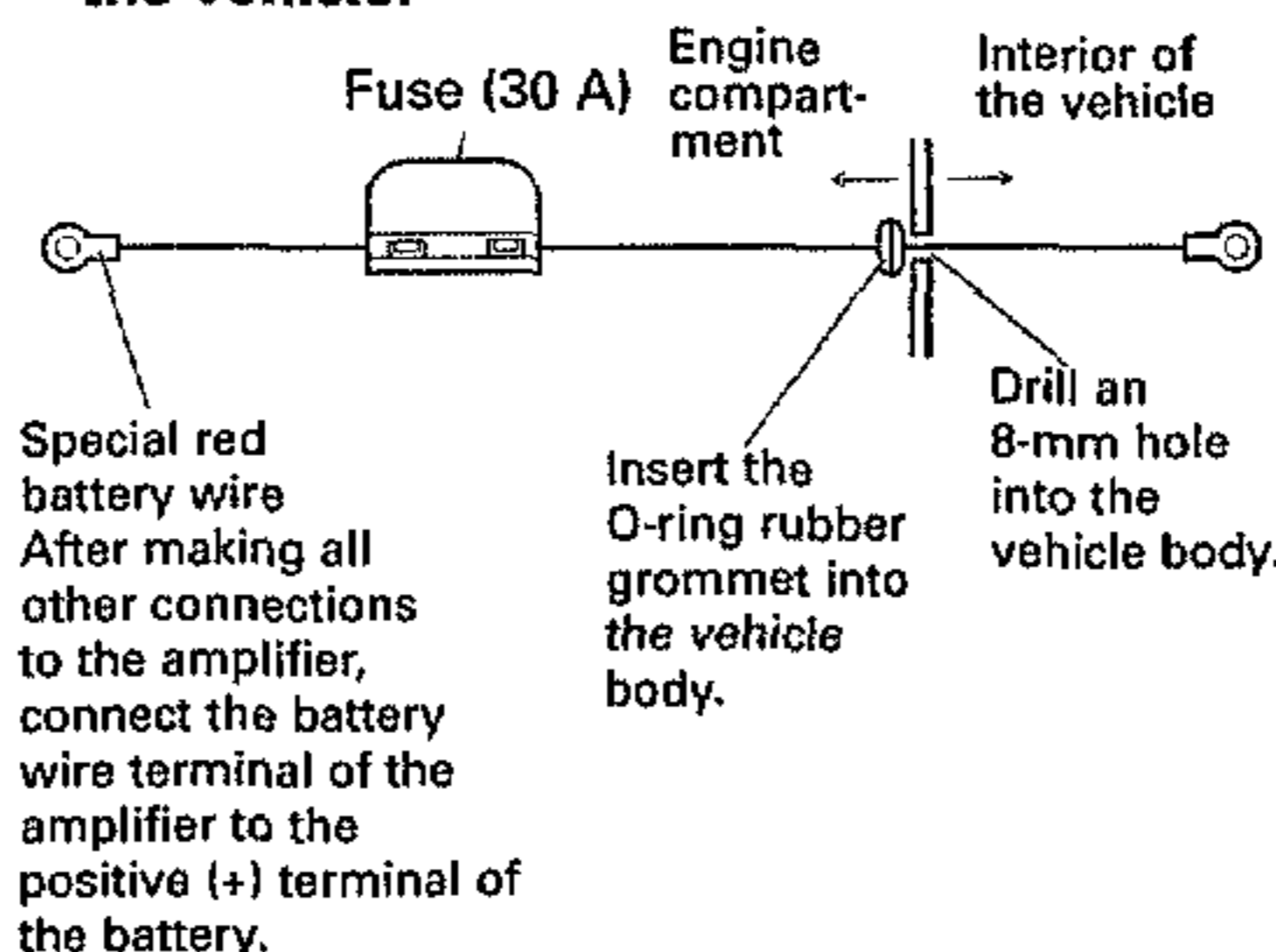


Fig. 11

**2. Connect the wires to the terminal.**

• Fix the wires securely with the terminal screws.

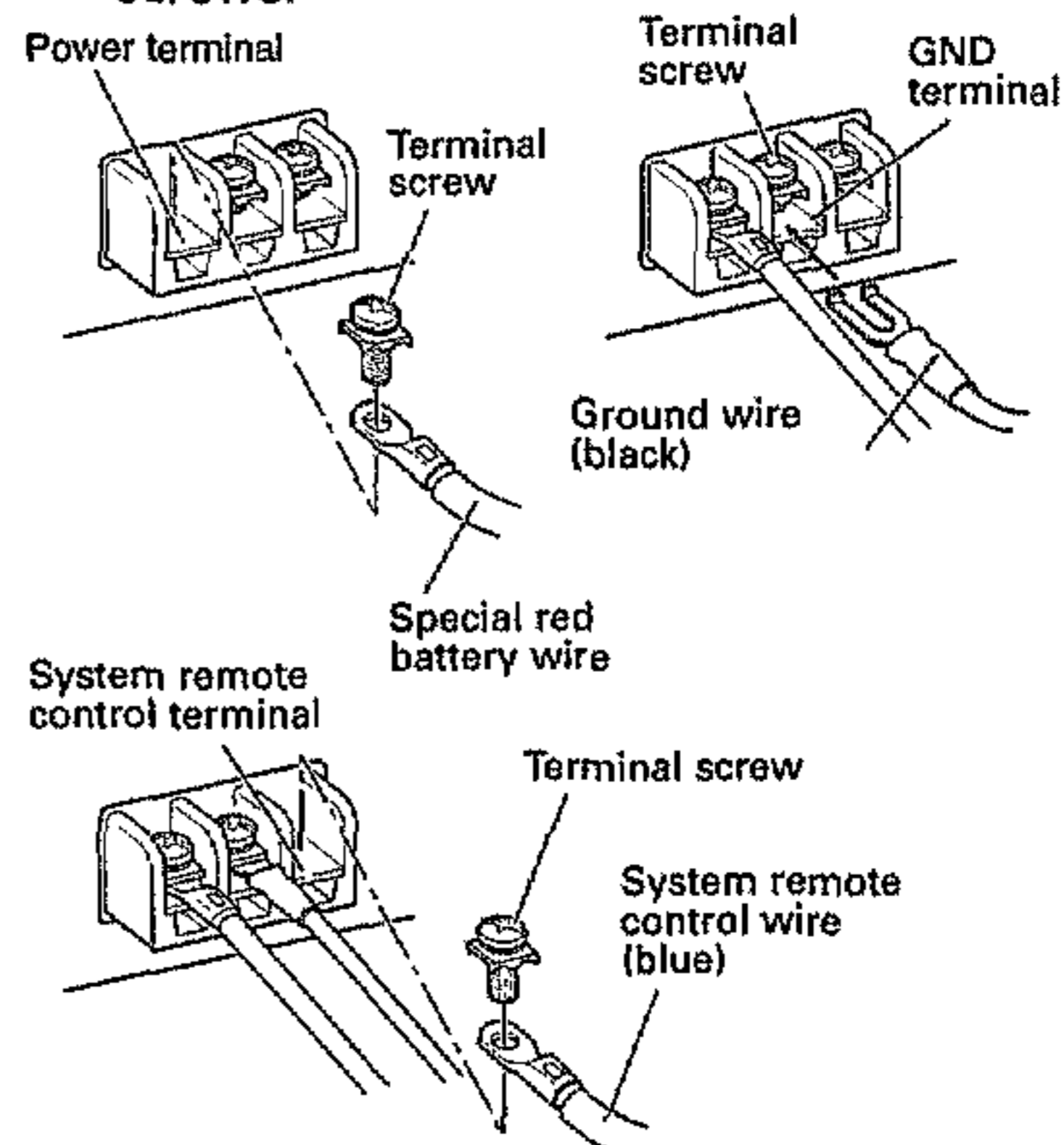


Fig. 12

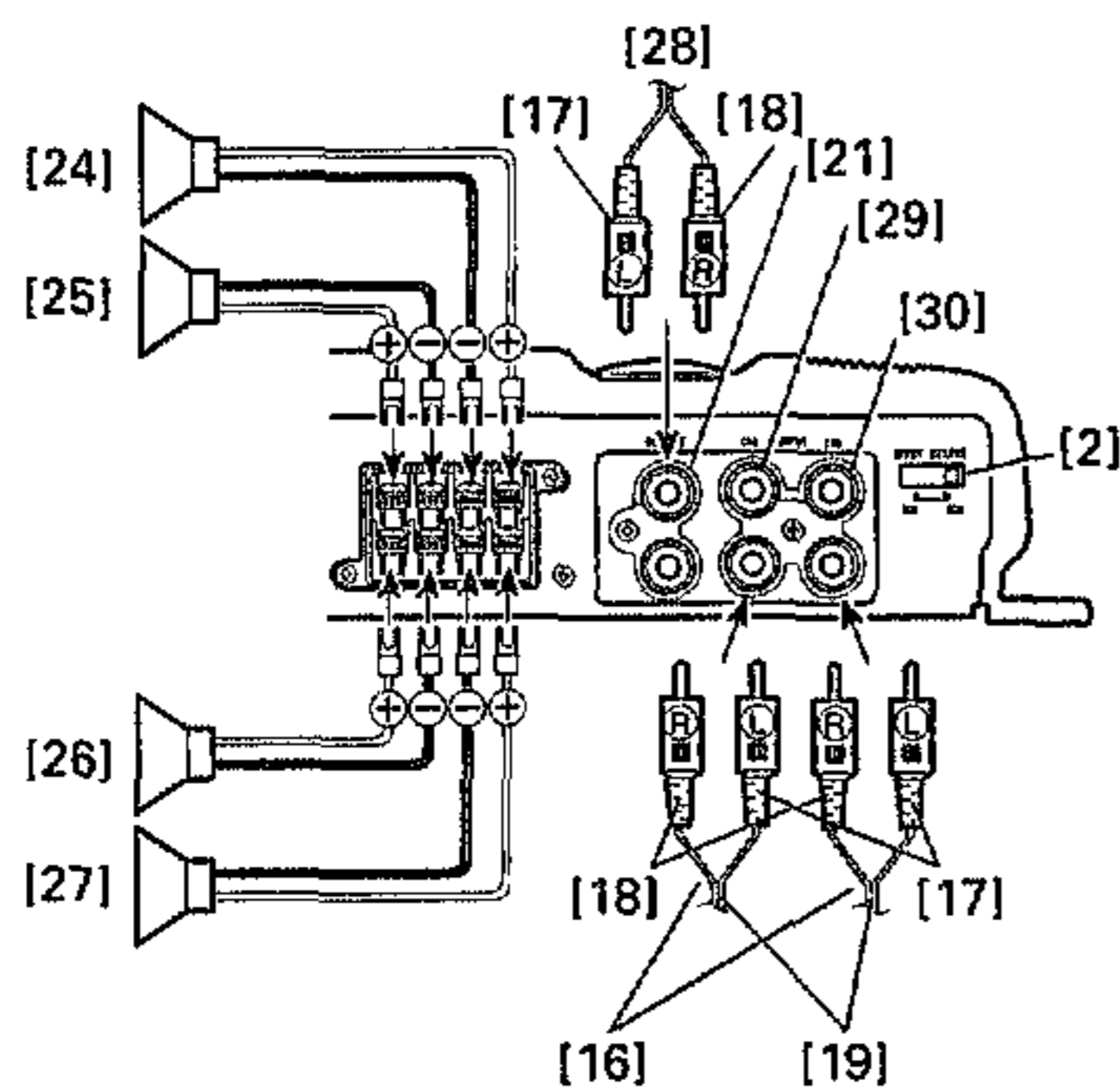


Fig. 13

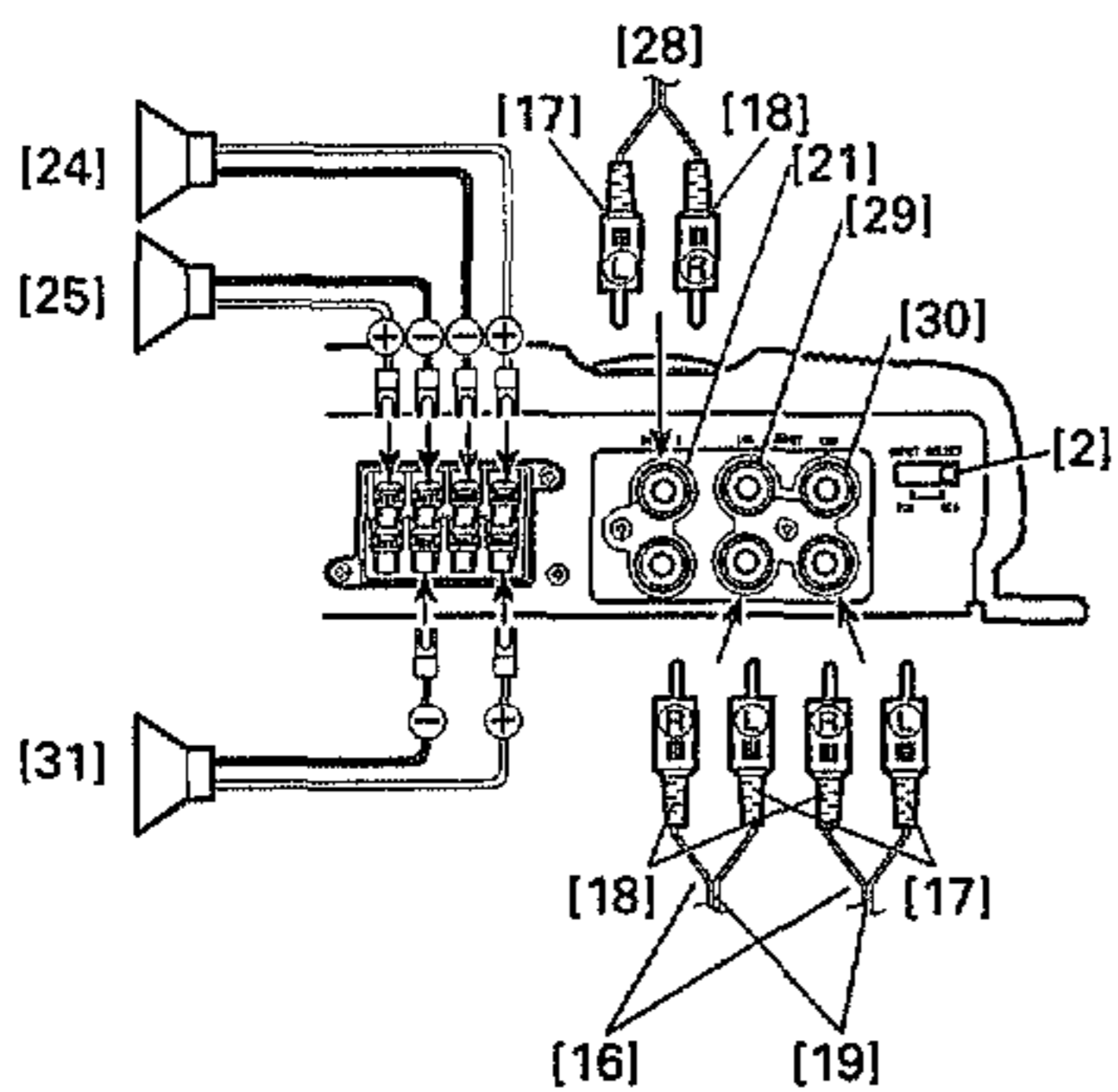


Fig. 14

**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.

**Four-channel mode (Fig. 13)**

- [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.
- [16] 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.

- [17] White
- [18] Red
- [19] Connecting wires with RCA plugs (sold separately)
- [21] RCA output jack
- [24] Speaker out B: Speaker (left)
- [25] Speaker out B: Speaker (right)
- [26] Speaker out A: Speaker (right)
- [27] Speaker out A: Speaker (left)
- [28] To a separate amplifier (RCA input)
- [29] RCA input jack A
- [30] RCA input jack B
- Connect the front or rear output plugs to jacks [29] or [30], according to your system.

**Three-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.
- [16] 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.
- [17] White
- [18] Red
- [19] Connecting wires with RCA plugs (sold separately)
- [21] RCA output jack
- [24] Speaker out B: Speaker (left)
- [25] Speaker out B: Speaker (right)
- [28] To a separate amplifier (RCA input)
- [29] RCA input jack A
- [30] RCA input jack B
- Connect the front or rear output plugs to jacks [29] or [30], according to your system.
- [31] Speaker out A: Speaker (mono)

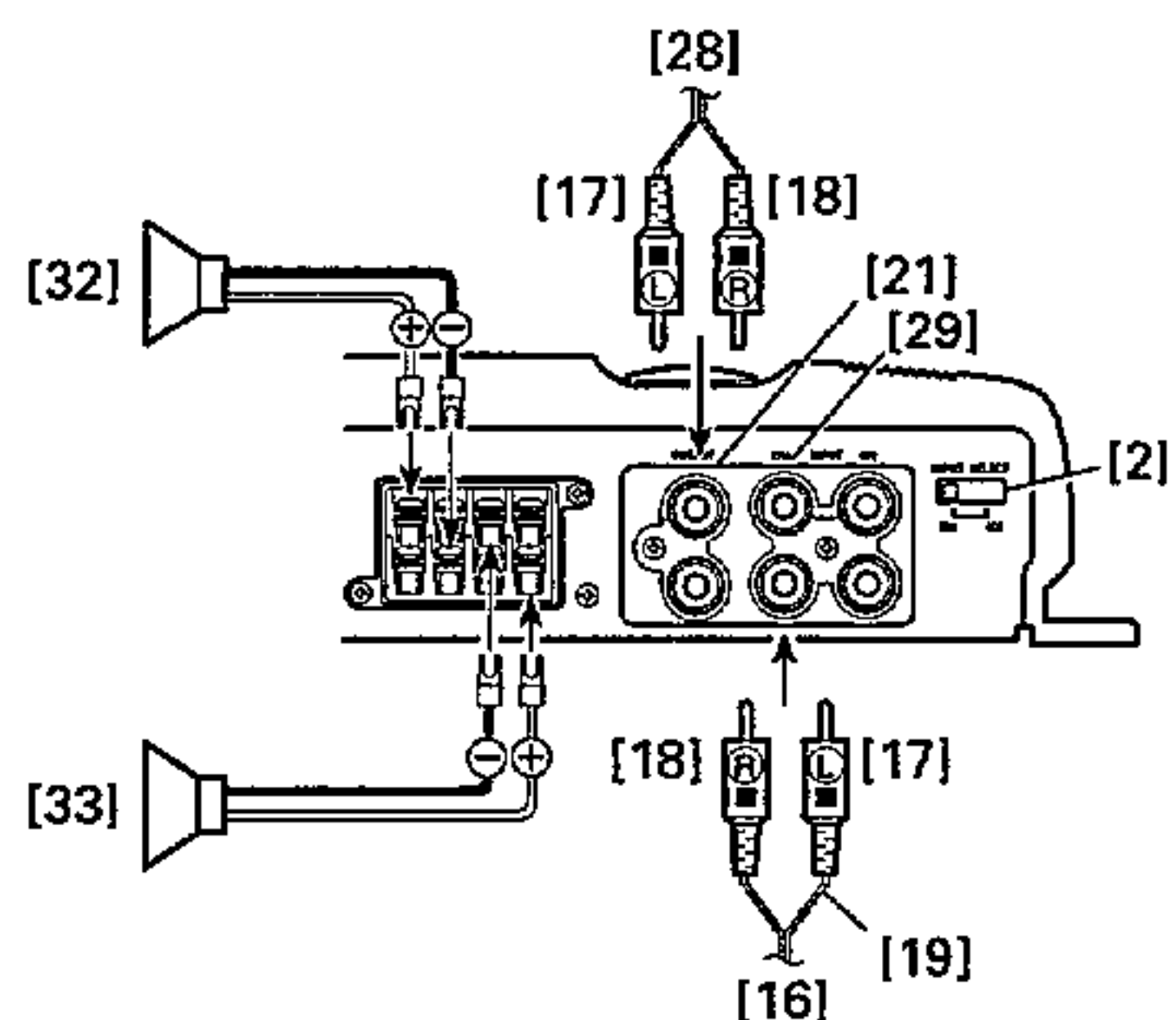


Fig. 15

**Two-channel mode (stereo) (Fig. 15)**

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

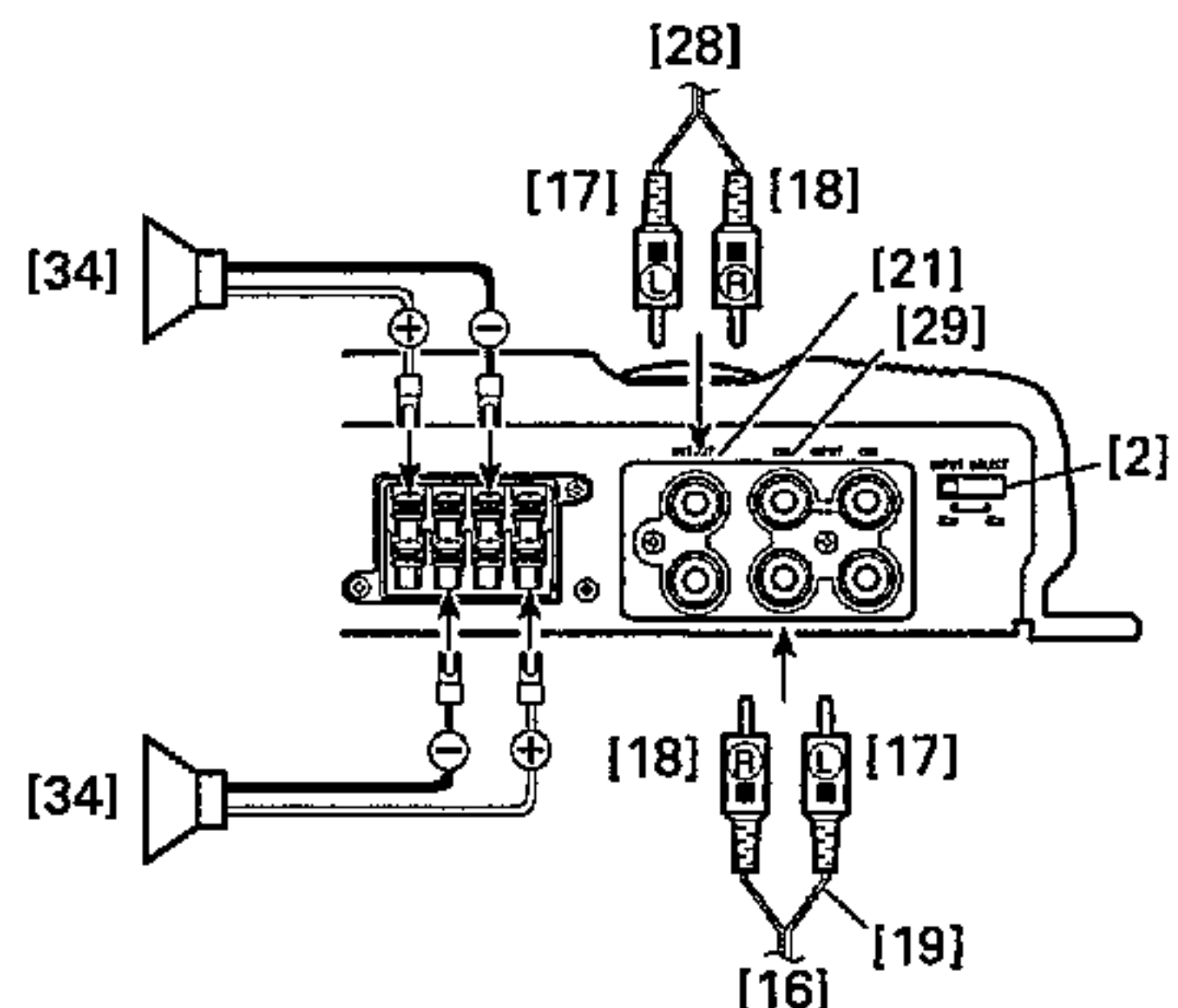


Fig. 16

**Two-channel mode (mono) (Fig. 16)**

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

**(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.

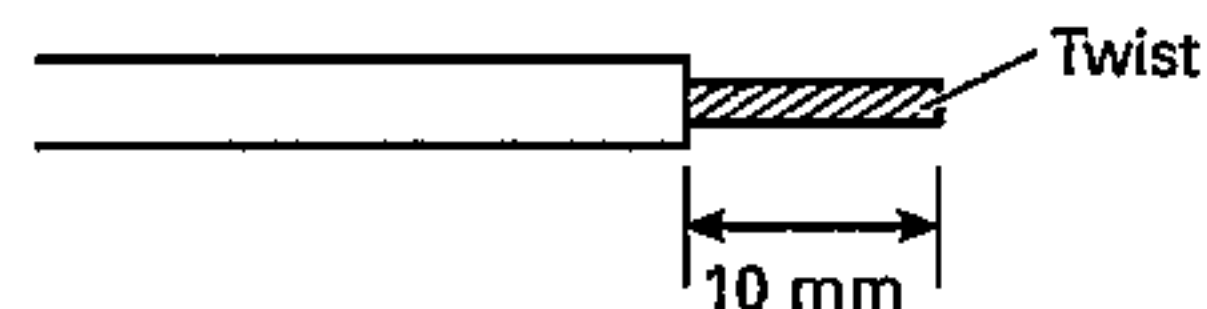


Fig. 17

2. Attach lugs to speaker wire ends.

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

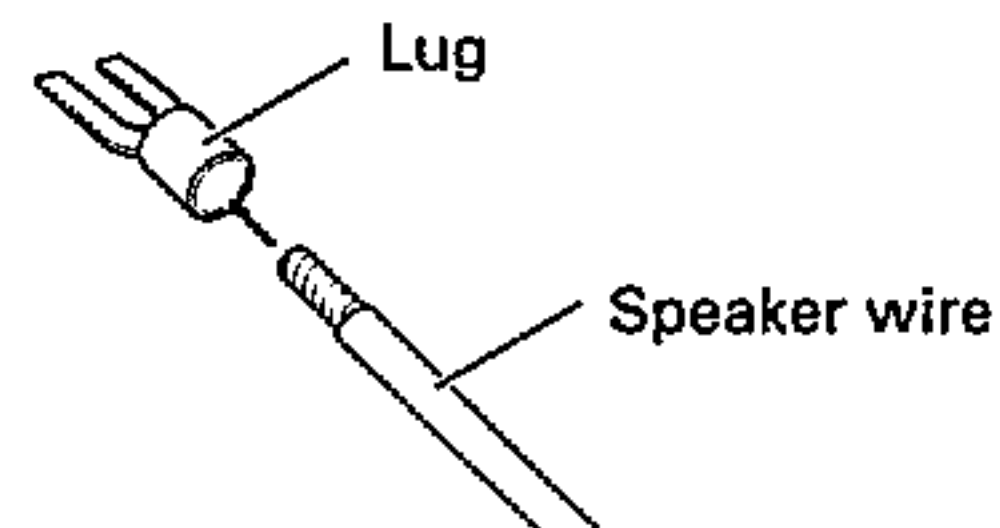


Fig. 18

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

- Fix the speaker wires securely with the terminal screws.

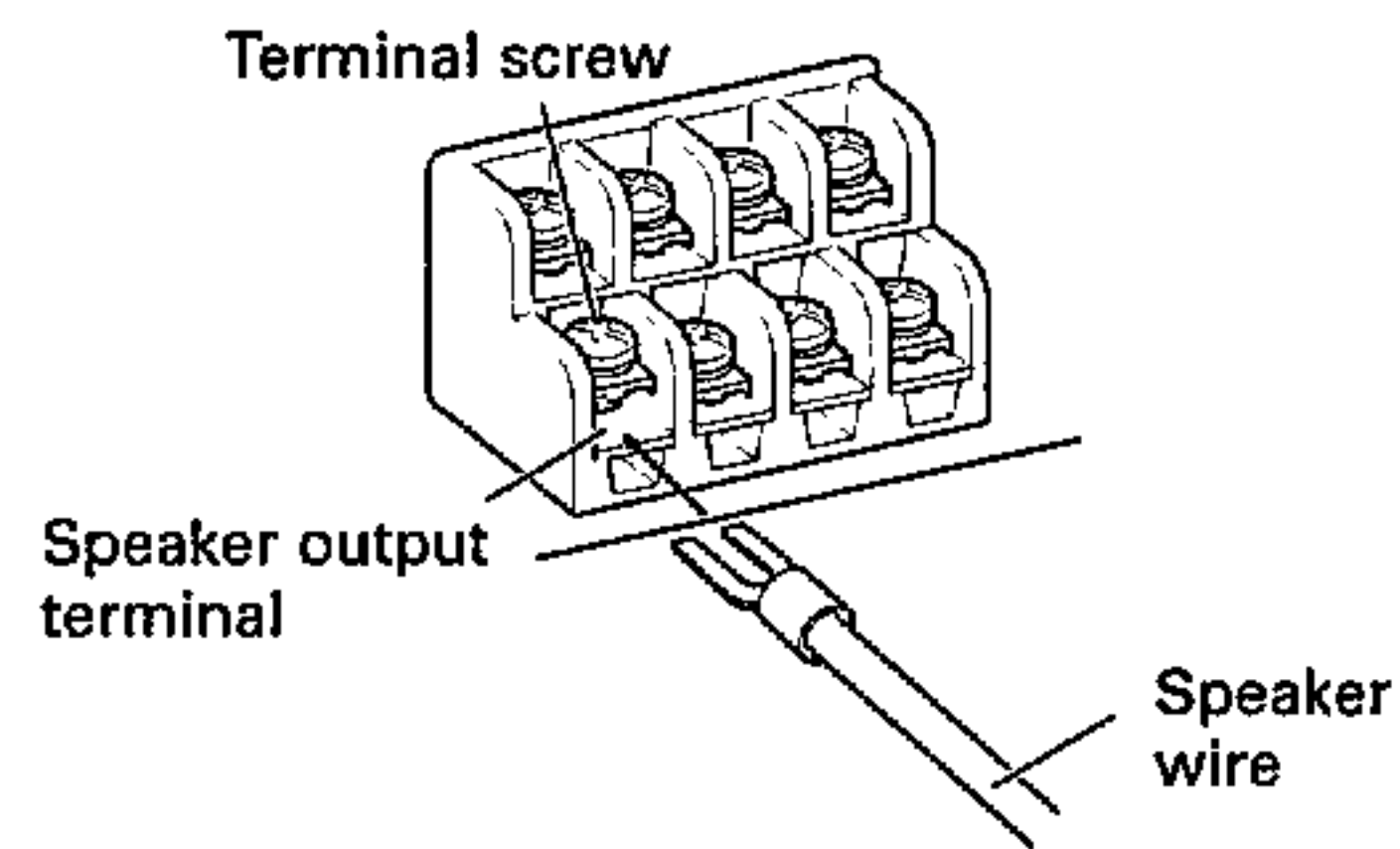


Fig. 19

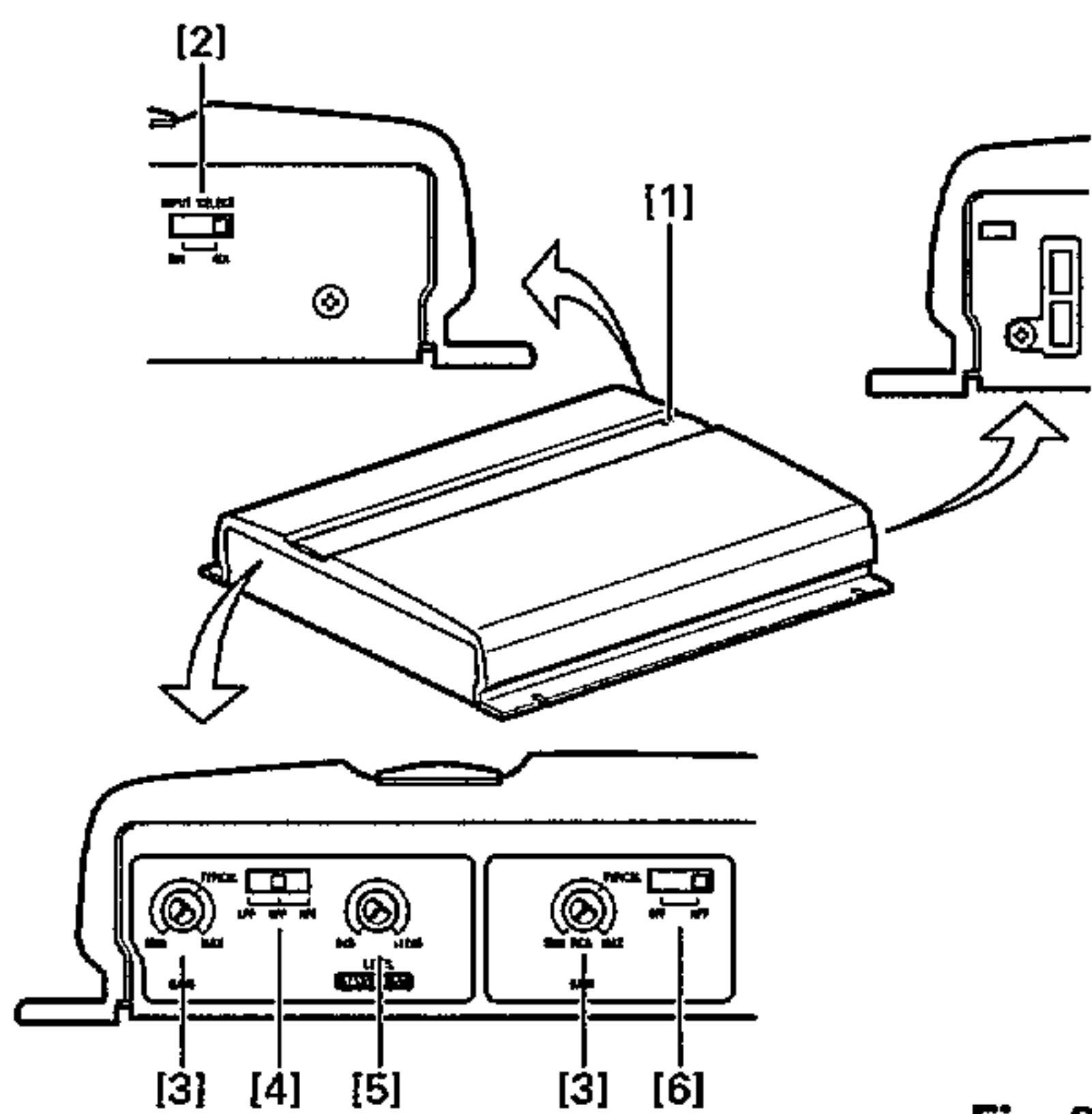


Fig. 20

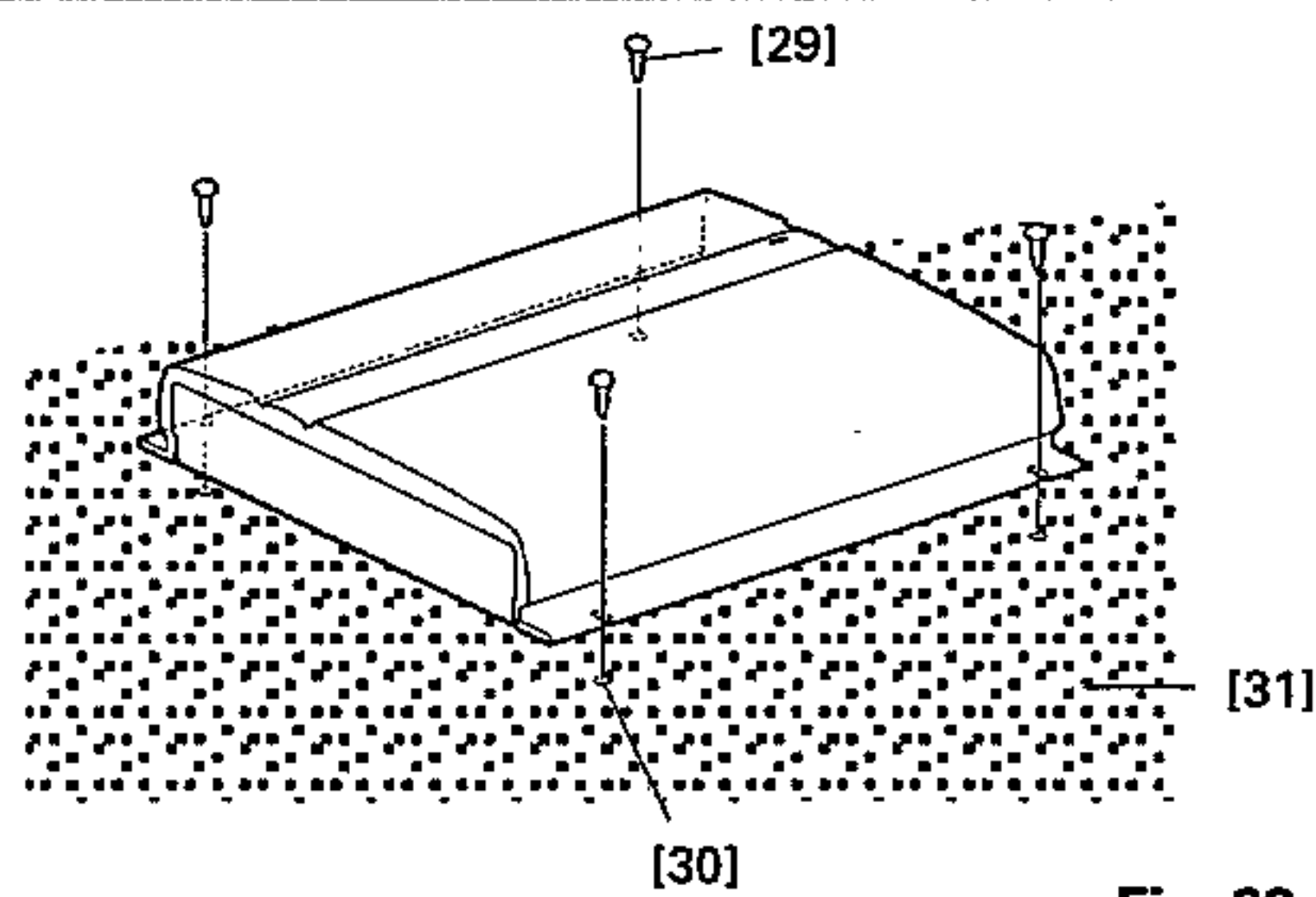


Fig. 22

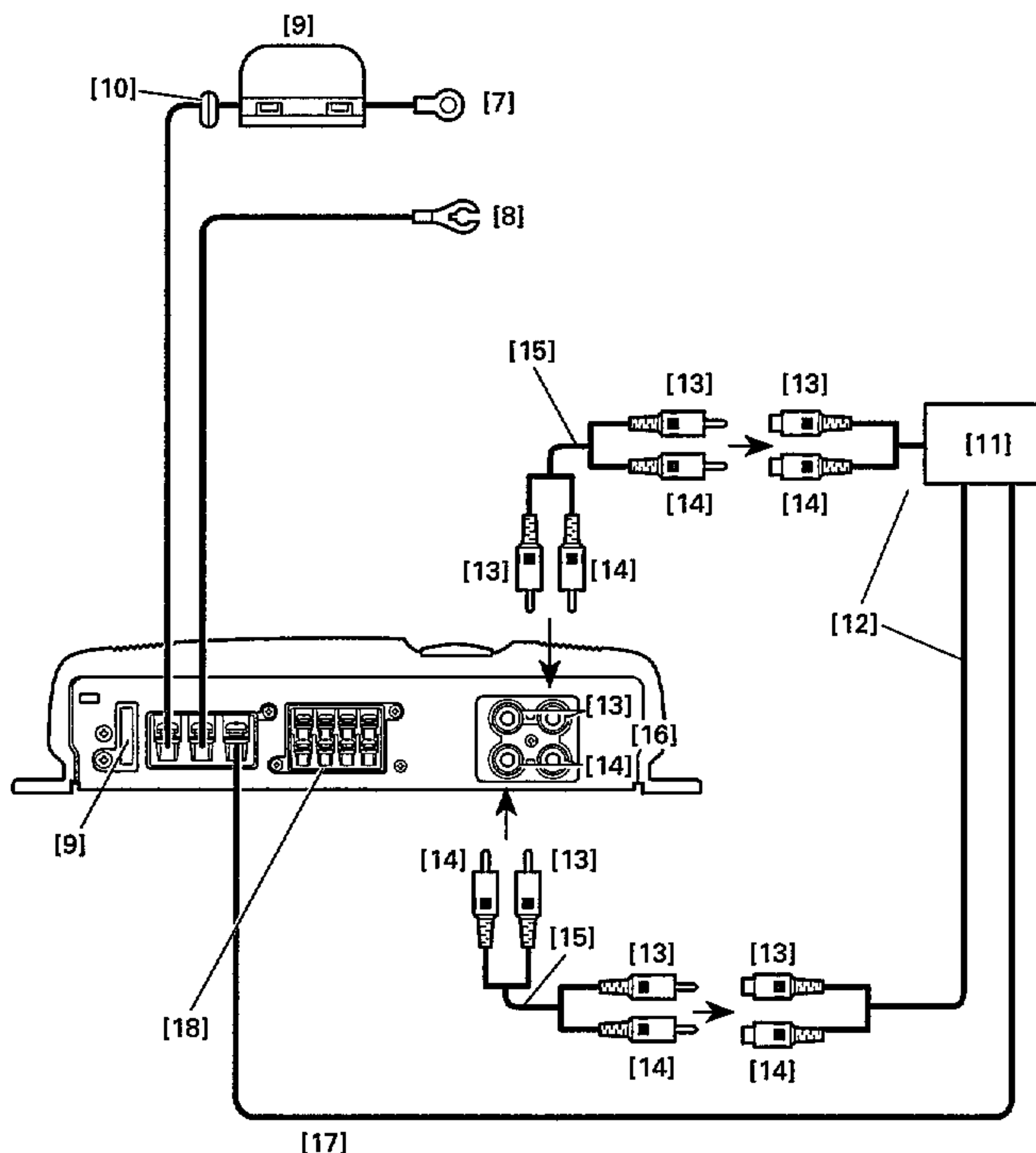


Fig. 21

**Setting the Unit**

(Fig. 20)

**[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 60 Hz to 0 to 12 dB.

- Bass boost level control can be adjusted only when the LPF/HPF select switch is set to a position other than HPF.

**[6] 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. 21)

**[7] 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.

**[8] Ground wire (black) [RD-222] (sold separately)**

Connect to metal body or chassis.

**[9] Fuse (Special red battery wire: 30 A, Amplifier: 25 A)**

**[10] Grommet**

**[11] Car stereo with RCA output jacks**

**[14] External Output**

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.

**[13] White**

**[14] Red**

**[15] Connecting wires with RCA pin plugs (sold separately)**

**[16] RCA input jack A, B**

**[17] Blue**

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.

**[18] 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.**

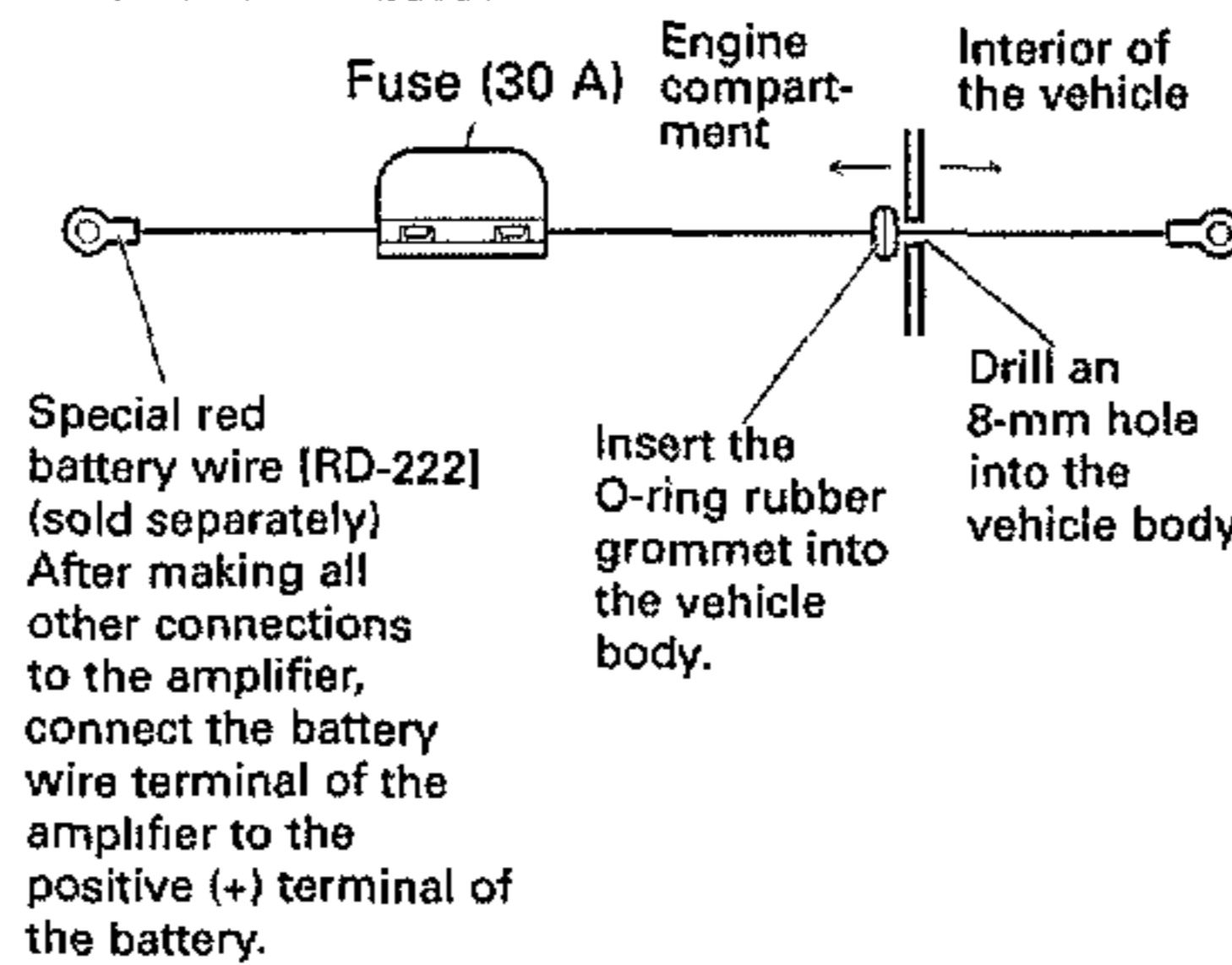


Fig. 23

**2. Twist the system remote control wire.**

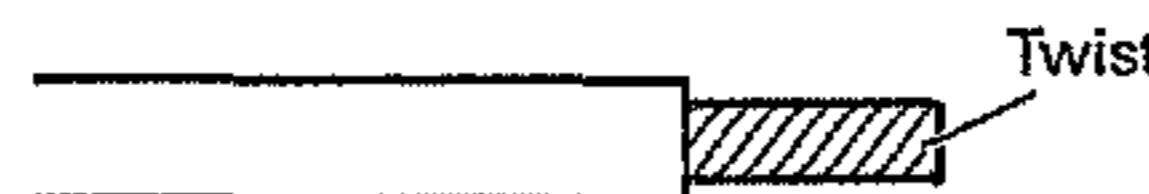


Fig. 24

**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.

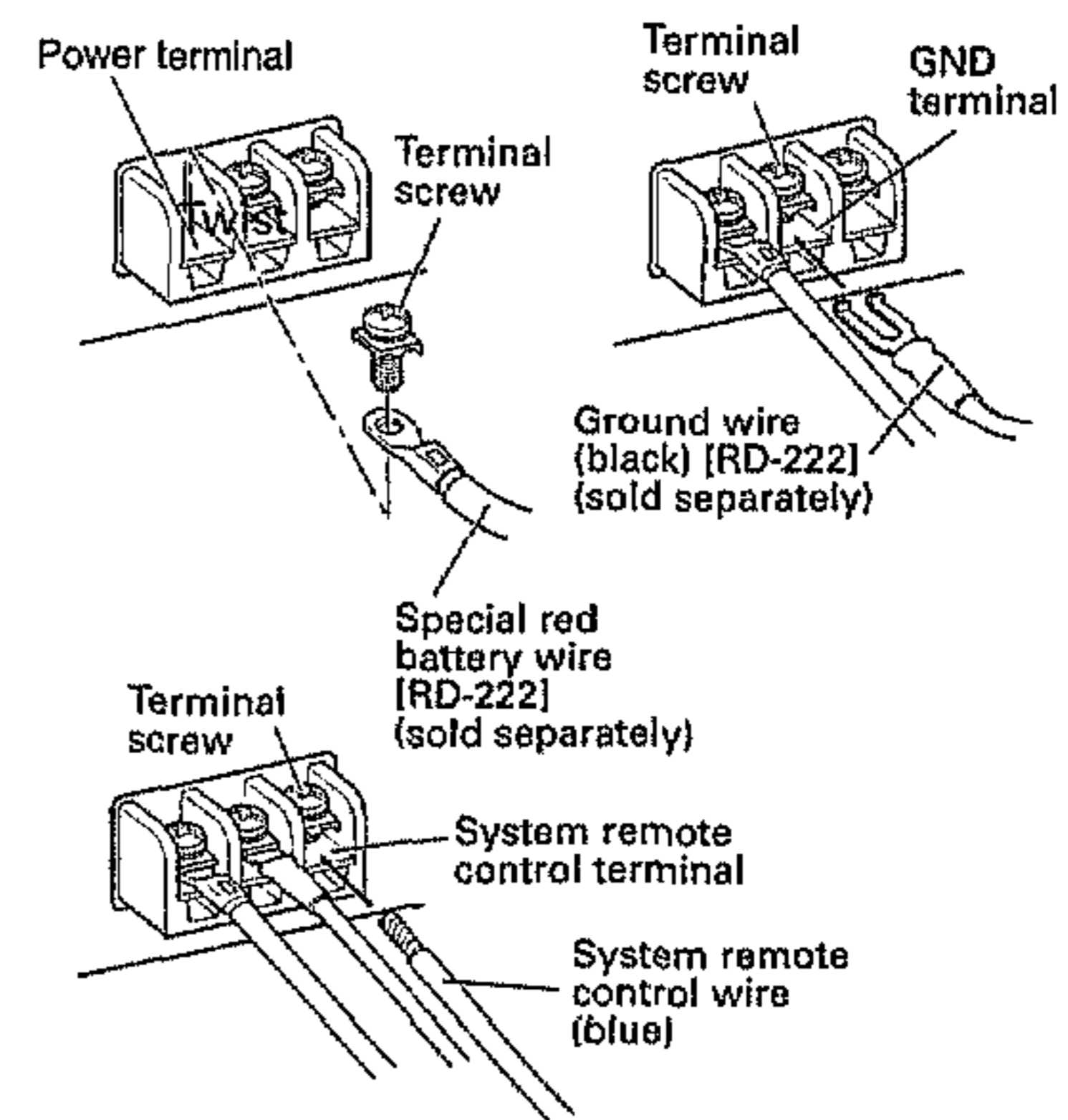


Fig. 25

**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.

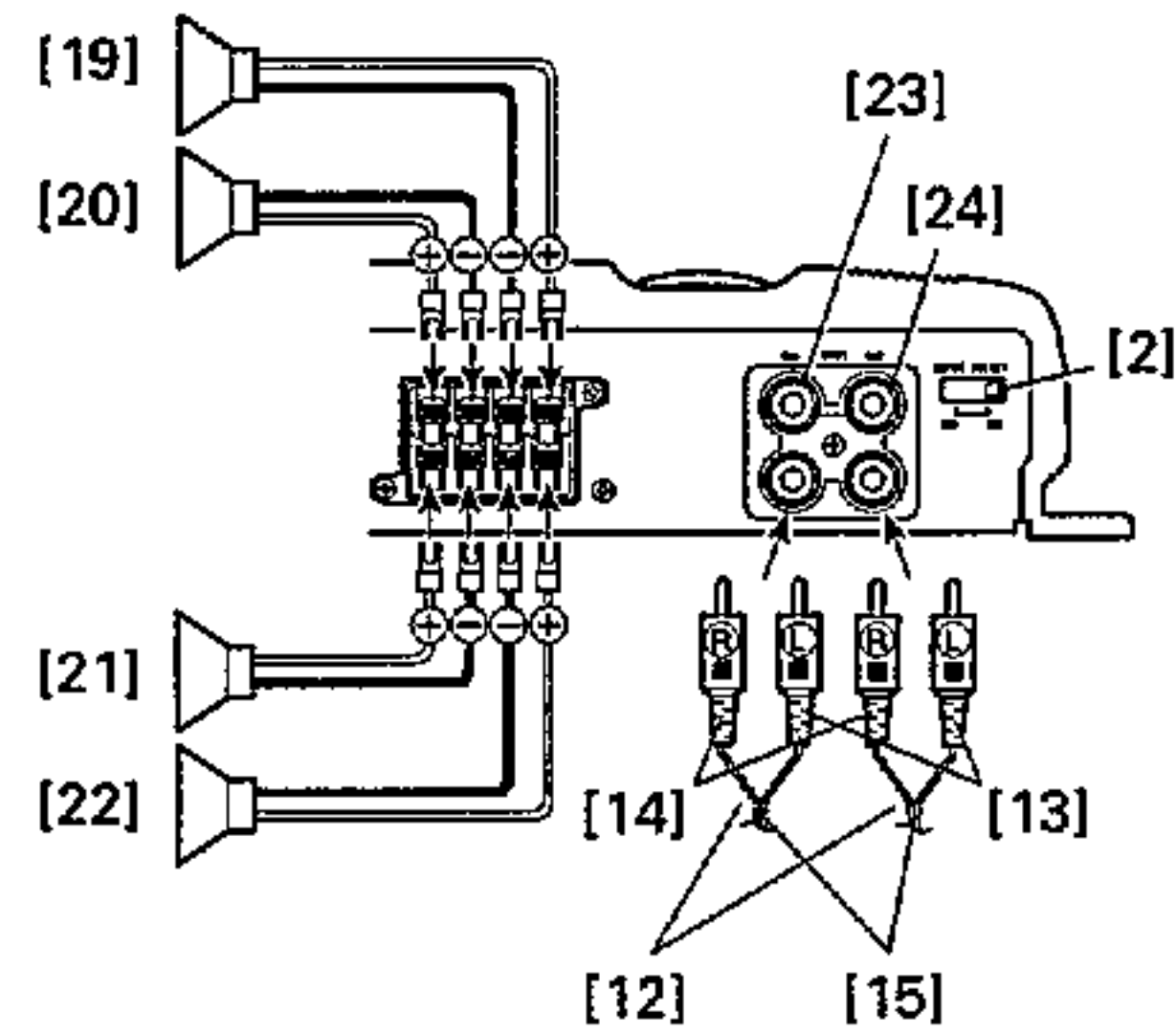


Fig. 26

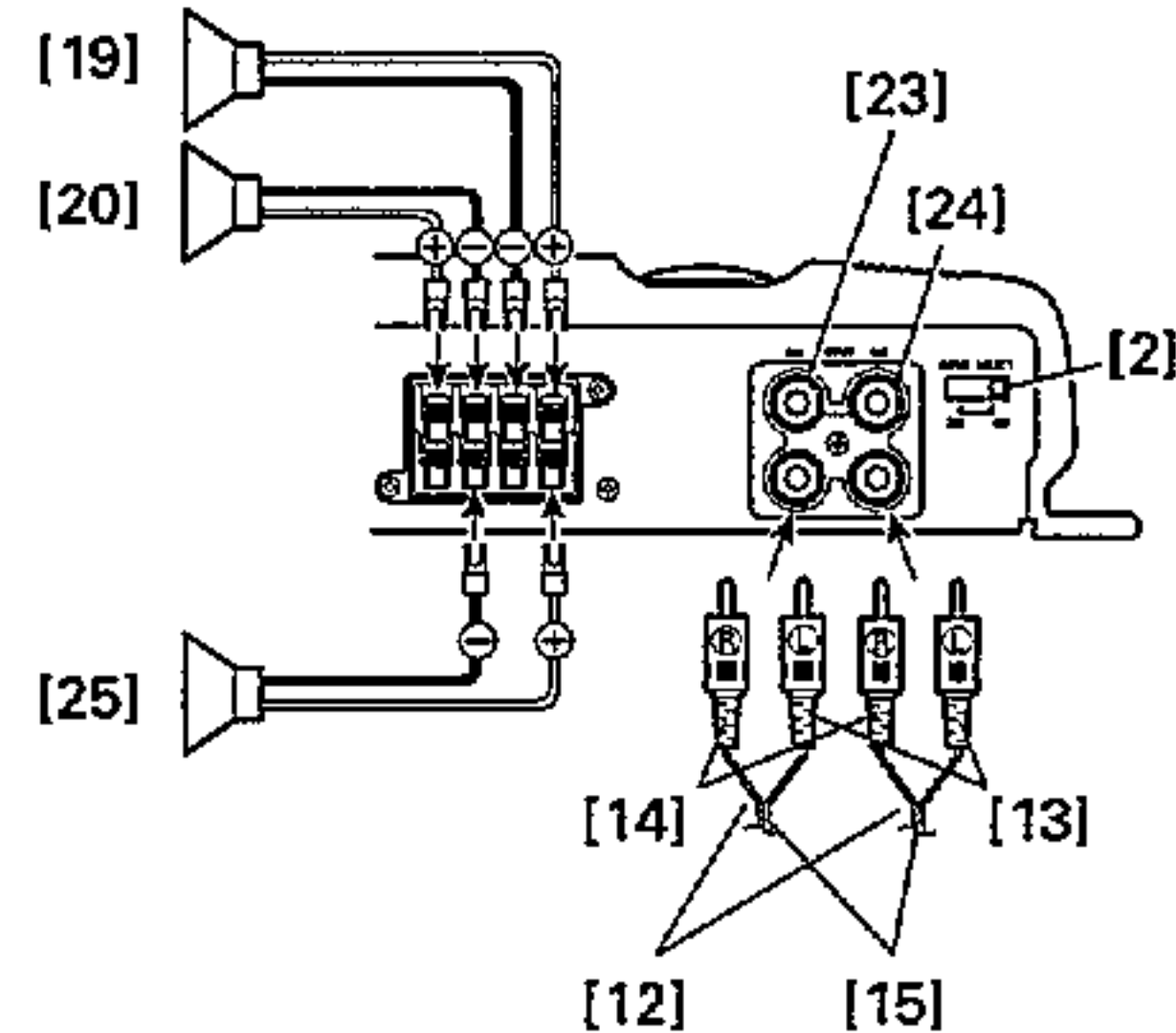


Fig. 27

**Four-channel mode (Fig. 26)**

- [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.
- [12] 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.
- [13] White
- [14] Red
- [15] Connecting wires with RCA plugs (sold separately)
- [19] Speaker out B: Speaker (left)
- [20] Speaker out B: Speaker (right)
- [21] Speaker out A: Speaker (right)
- [22] Speaker out A: Speaker (left)
- [23] RCA input jack A
- [24] RCA input jack B
- Connect the front or rear output plugs to jacks [23] or [24], according to your system.

**Three-channel mode (Fig. 27)**

- [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.
- [12] 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.
- [13] White
- [14] Red
- [15] Connecting wires with RCA plugs (sold separately)
- [19] Speaker out B: Speaker (left)
- [20] Speaker out B: Speaker (right)
- [23] RCA input jack A
- [24] RCA input jack B
- Connect the front or rear output plugs to jacks [23] or [24], according to your system.
- [25] Speaker out A: Speaker (mono)

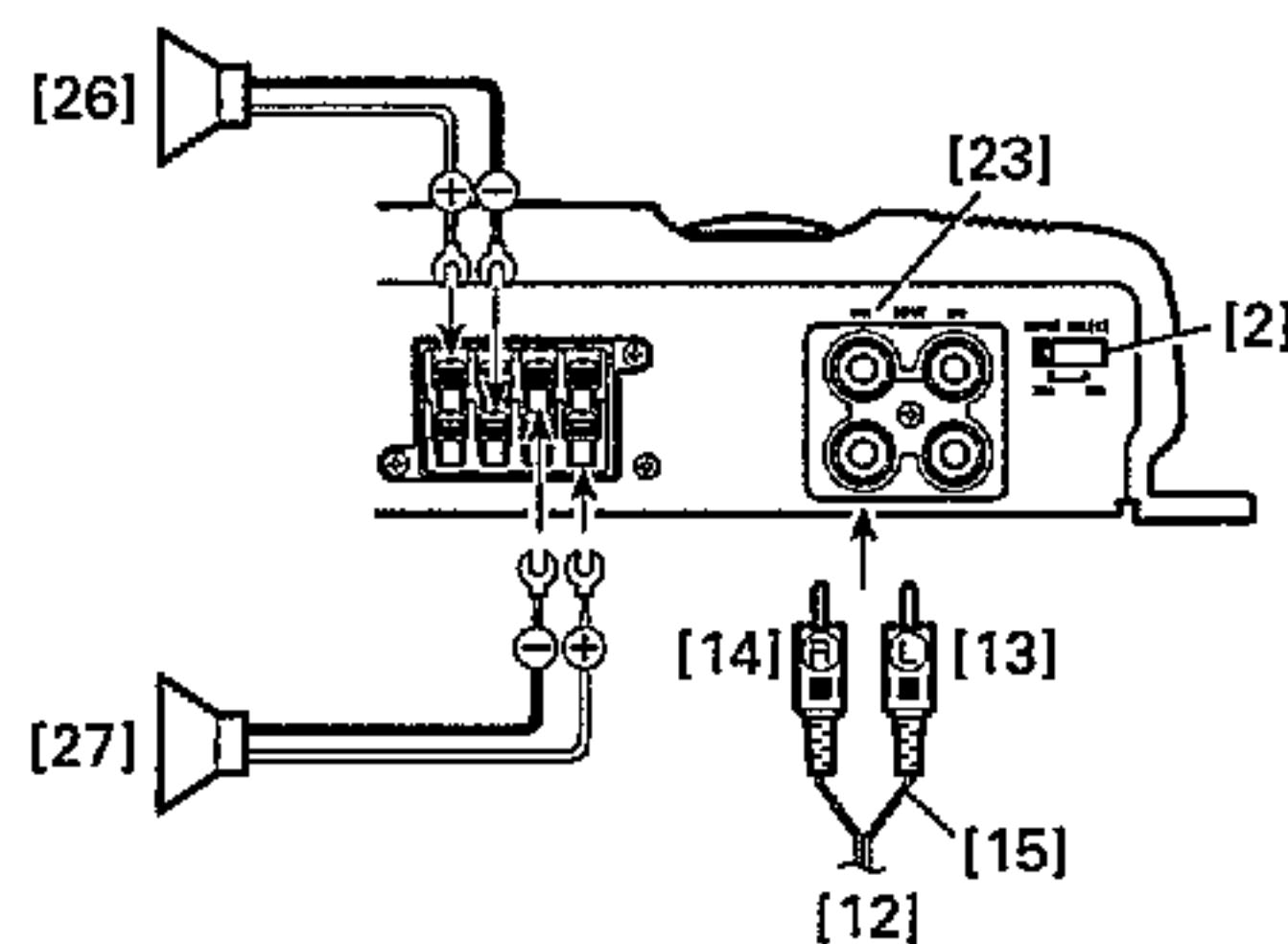


Fig. 28

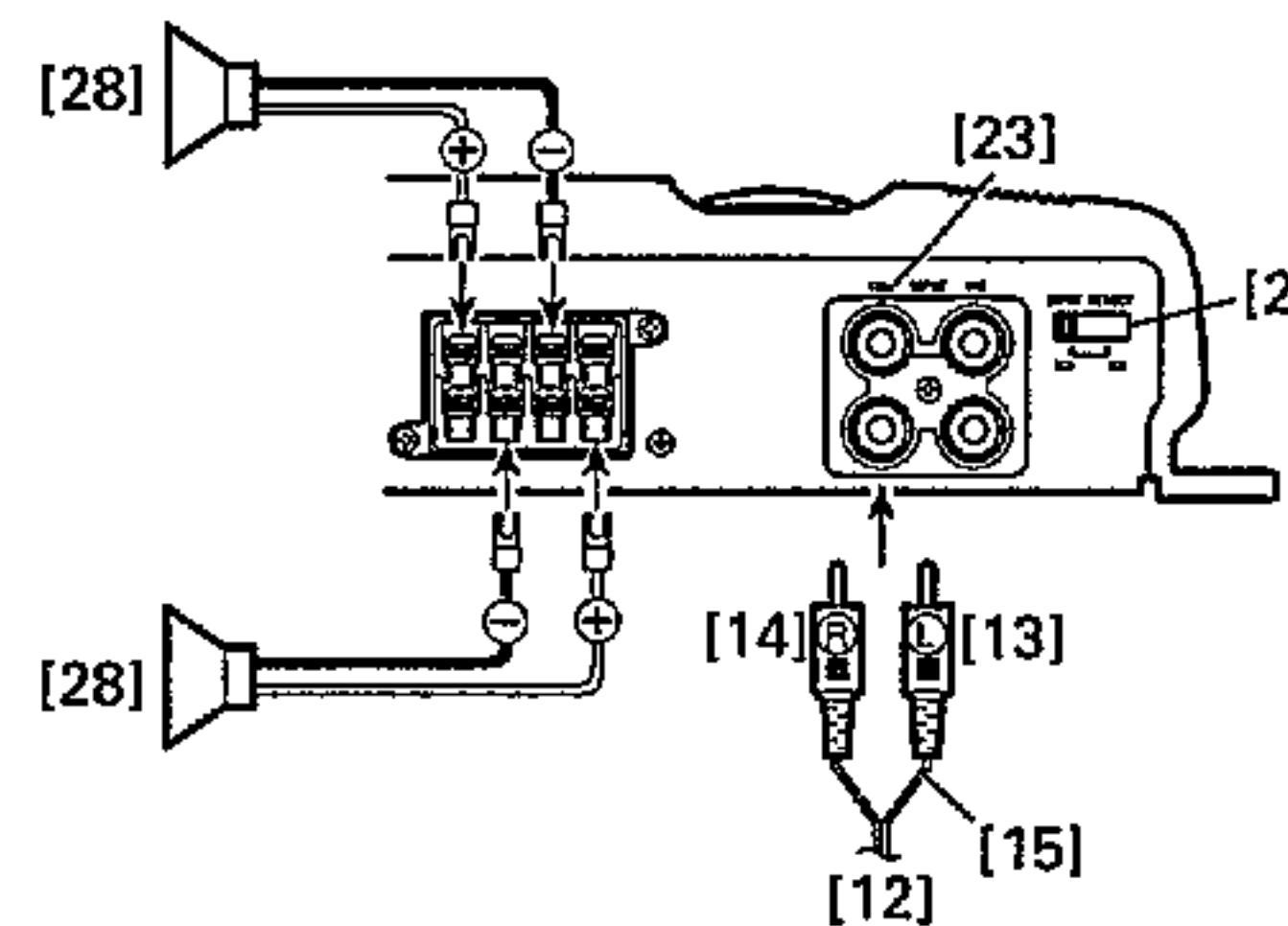


Fig. 29

**Two-channel mode (stereo) (Fig. 28)**

- [2] RCA Input Select Switch  
Slide this switch to the left.
- [12] From car stereo (RCA output)
- [13] White
- [14] Red
- [15] Connecting wire with RCA plug (sold separately)
- [23] RCA input jack A
- [26] Speaker (right)
- [27] Speaker (left)

**Two-channel mode (mono) (Fig. 29)**

- [2] RCA Input Select Switch  
Slide this switch to the left.
- [12] From car stereo (RCA output)
- [13] White
- [14] Red
- [15] Connecting wire with RCA plug (sold separately)
- [23] RCA input jack A
- [28] Speaker (mono)

**Example of installation on the floor mat or on the chassis**

1. Place the amplifier where it is to be installed. Insert the supplied tapping screws (4 × 18 mm) into the screw holes. Push on the screws with a screwdriver so they make marks where the installation holes are to be located.
2. Drill 2.5-mm diameter holes at the point marked, and install the amplifier, either on the carpet or directly to the chassis.

**(Fig. 21)**

- [29] Tapping-screws (4 × 18 mm)
- [30] Drill a 2.5-mm-diameter hole
- [31] 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.

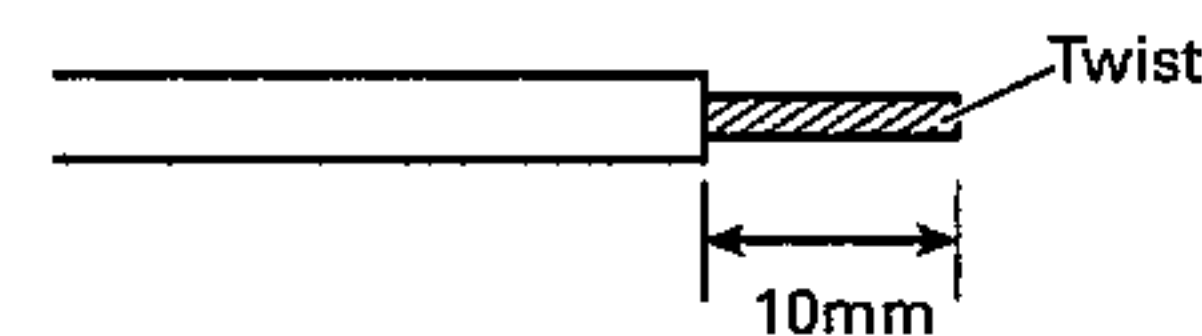


Fig. 30

2. Attach lugs to speaker wire ends.

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

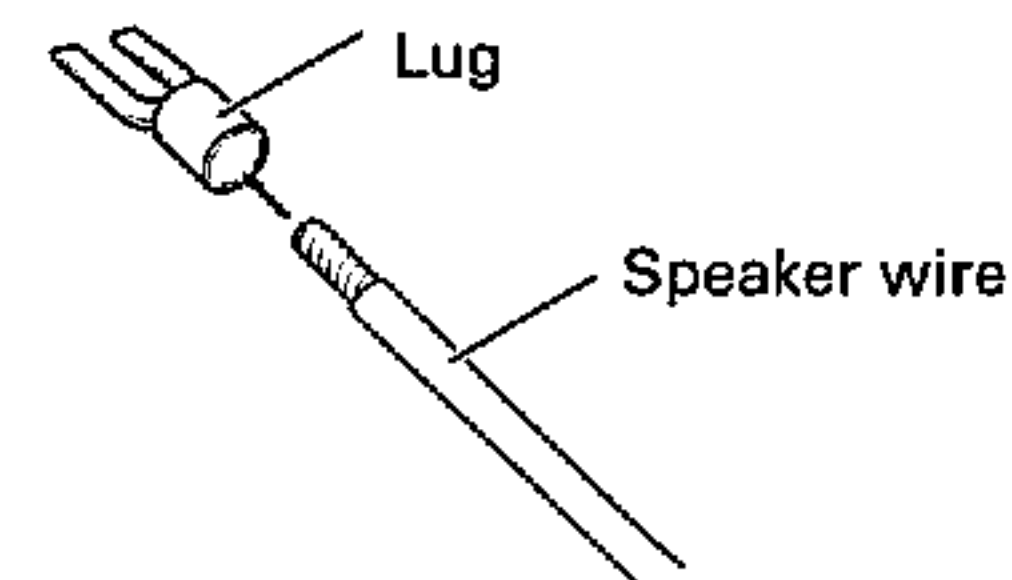


Fig. 31

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

- Fix the speaker wires securely with the terminal screws.

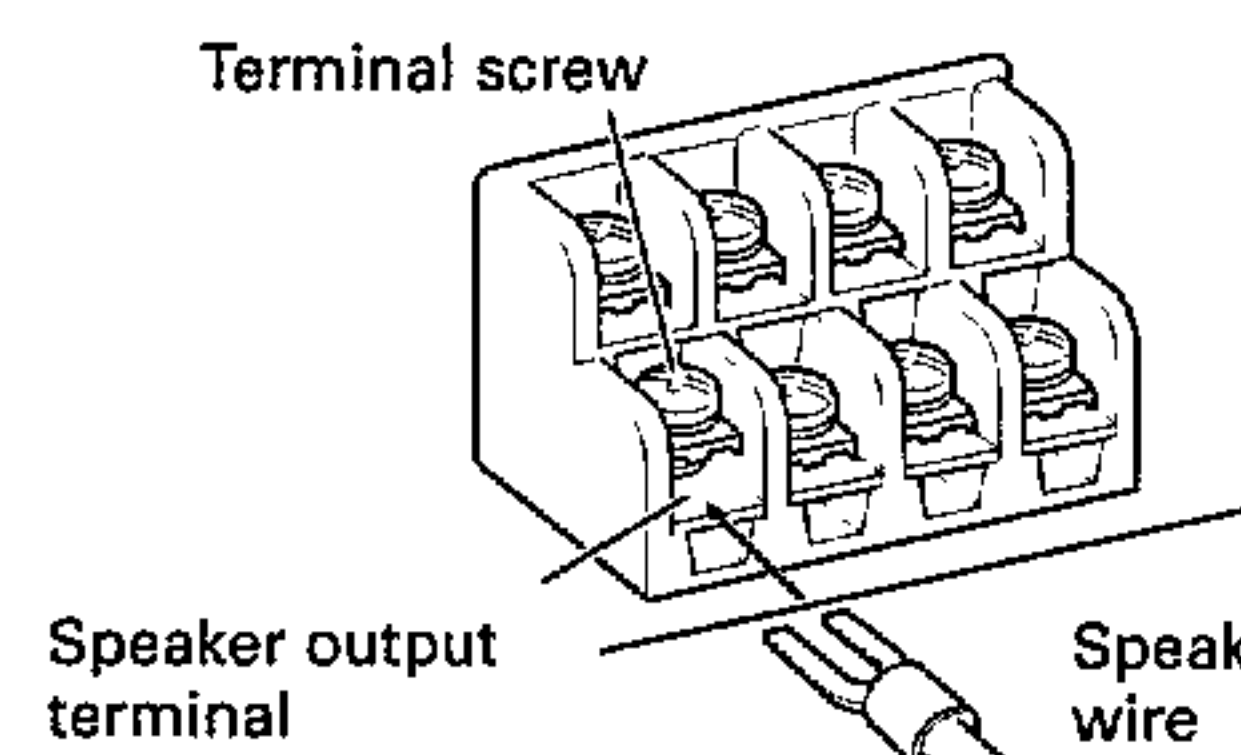


Fig. 32

## Specifications

|                         |  |
|-------------------------|--|
| Power source            | 14.4 V DC (10.8 — 15.6 V allowable)                  |
| (GM-X314)               | 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 (Leads for wiring not included)               |
| Maximum power output    | 60 W × 4 / 140 W × 2 (EIAJ)                          |
| Continuous power output | 40 W × 4 / 90 W × 2 (DIN 45324, +B = 14.4 V)         |
| (GM-X314)               | 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)  |
|                         | 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)                              |
| (GM-X314)               | 4 Ω (4 — 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 (IEC-A network)                               |
| (GM-X314)               | 108 dB (IHF - 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                               |
| (GM-X314)               | Frequency: 60 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.