

# KENWOOD

## KAC-848 KAC-748

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4-CHANNEL POWER AMPLIFIER ► Page 2-11

### INSTRUCTION MANUAL

AMPLIFICATEUR DE PUISSANCE 4 CANAUX ► Page 12-21

### MODE D'EMPLOI

AMPLIFICADOR DE POTENCIA DE 4 CANALES ► Page 22-31

### MANUAL DE INSTRUCCIONES

KENWOOD CORPORATION

**Take the time to read through this instruction manual.**

**Familiarity with installation and operation procedures will help you obtain the best performance from your new power amplifier.**

**For your records**

Record the serial number, found on the back of the unit, in the spaces designated on the warranty card, and in the space provided below.

Refer to the model and serial numbers whenever you call upon your KENWOOD dealer for information or service on the product.

Model KAC-848/748 Serial number \_\_\_\_\_

# Safety precautions

## ⚠ WARNING

**To prevent injury or fire, take the following precautions:**

- When extending the ignition, battery, or ground wires, make sure to use automotive-grade wires or other wires with a 5mm<sup>2</sup> (AWG10) or more to prevent wire deterioration and damage to the wire coating.
- To prevent a short circuit, never put or leave any metallic objects (such as coins or metal tools) inside the unit.
- If the unit starts to emit smoke or strange smells, turn off the power immediately and consult your Kenwood dealer.
- Do not touch the unit during use because the surface of the unit becomes hot and may cause burns if touched.

## ⚠ CAUTION

**To prevent damage to the machine, take the following precautions:**

- Be sure the unit is connected to a 12V DC power supply with a negative ground connection.
- Do not open the top or bottom covers of the unit.
- Do not install the unit in a spot exposed to direct sunlight or excessive heat or humidity. Also avoid places with too much dust or the possibility of water splashing.
- When replacing a fuse, only use a new one with the prescribed rating. Using a fuse with the wrong rating may cause your unit to malfunction.
- To prevent a short circuit when replacing a fuse, first disconnect the wiring harness.

## NOTE

- If you experience problems during installation, consult your Kenwood dealer.
- If the unit does not seem to be working right, consult your Kenwood dealer.

## Cleaning the unit

If the front panel gets dirty, turn off the power and wipe the panel with a dry silicon cloth or soft cloth.



## ⚠ CAUTION

Do not wipe the panel with a hard cloth or a cloth dampened by volatile solvents such as paint thinner and alcohol. They can scratch the surface of the panel and/or cause the indicator letters to peel off.

## FCC WARNING

This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

## Accessories

Part name	External View	Number of Items
Terminal cover (Power terminal)		1
Self-tapping screws (ø4 × 16 mm)		4

# Protection function

**This unit is equipped with a protection function for protecting this unit and your speakers from various accidents or problems that can occur.**

**When the protection function is triggered, the Power indicator goes off and the amplifier stops operating.**

## ■ Power indicator:

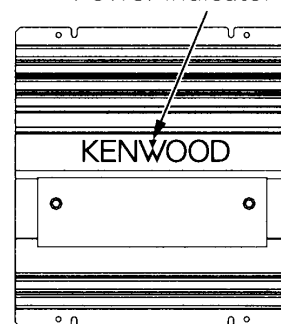
When the power is turned on, the Power indicator lights.

If the Power indicator does not light when the power is turned on, the protection function may be activated. Check whether there is any indication of trouble.

## ■ The protection function activates in the following situations:

- When a speaker wire may be short-circuited.
- When a speaker output contacts ground.
- When the temperature of internal parts exceeds 120°C (248°F).
- When a ground wire of the center unit (cassette receiver, CD receiver, etc.) or this unit is not connected to a metal part serving as an electrical ground passing electricity to the battery's negative ⊖ terminal.

Power indicator



# Installation procedure

1. Remove the ignition key and disconnect the negative  $\ominus$  terminal of the battery to prevent short circuits.
2. Set the unit according to the intended usage.
3. Connect the input and output cables of the units.
4. Connect the speaker wires.
5. Connect the power wire, power control wire and grounding wire following this order.
6. Install the unit in the car.
7. Connect the negative  $\ominus$  terminal of the battery.

## ⚠CAUTION

- Be sure to turn the power off before changing the setting of any switch.
- If the fuse blows, check wires for shorts, then replace the fuse with one of the same rating.
- Check that no unconnected wires or connectors are touching the car body. Do not remove caps from unconnected wires or connectors to prevent short circuits.
- Connect the speaker wires to appropriate speaker connectors separately. Sharing the negative wire of the speaker or grounding speaker wires to the metal body of the car can cause this unit to fail.
- After installation, check that the brake lamps, wipers, and wipers work properly.

## Installation



- Since the power amplifier has no parts which require operation, it can be installed at a position away from the driver's seat without any hindrances. As generally accepted positions for its installation, places such as inside the trunk, etc. can be considered.
- Use the extension cables. (Optional.)

Type \ Length	0.5m	1m	2m	4m	5m	6m
RCA cable	CA-2SL	CA-12SL	CA-22SL	—	CA-52SL	—
RCA cable (ø7mm)	CA-3WL	CA-13WL	CA-23WL	—	CA-53WL	—
RCA cable (ø12mm)	CA-5W	CA-15W	CA-25W	CA-45W	—	CA-65W

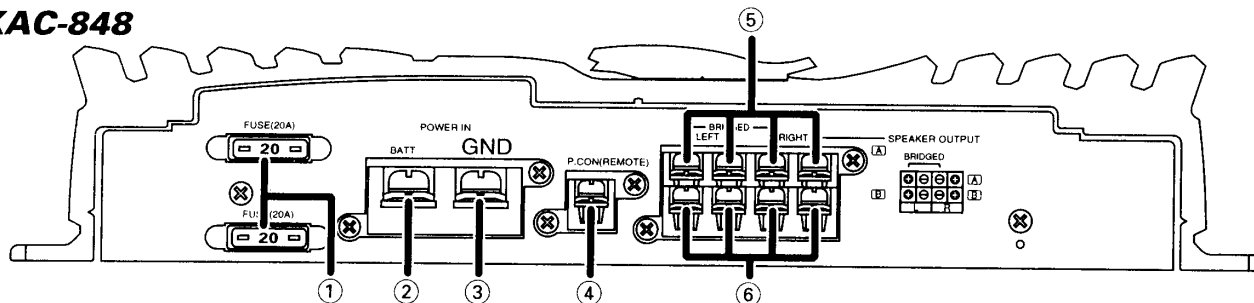
## ⚠CAUTION

- Do not install the unit under the carpet. Otherwise heat build-up occurs and the unit may be damaged.
- Install this unit in a location which allows heat to easily dissipate. Once installed, do not place any object on top of the unit.
- The surface temperature of the amplifier will become hot during use. Install the amplifier in a place where people, resins, and other substances that are sensitive to heat will not come into contact with it.
- When making a hole under a seat, inside the trunk, or somewhere else in the vehicle, check that there is nothing hazardous on the opposite side such as a gasoline tank, brake pipe, or wiring harness, and be careful not to cause scratches or other damage.
- Do not install near the dashboard, rear tray, or air bag safety parts.
- The installation to the vehicle should securely fasten the unit to a place in which it will not obstruct driving. If the unit comes off due to a shock and hits a person or safety part, it may cause injury or an accident.
- After installing the unit, check to make sure that electrical equipment such as the brake lamps, turn signal lamps and windshield wipers operate normally.

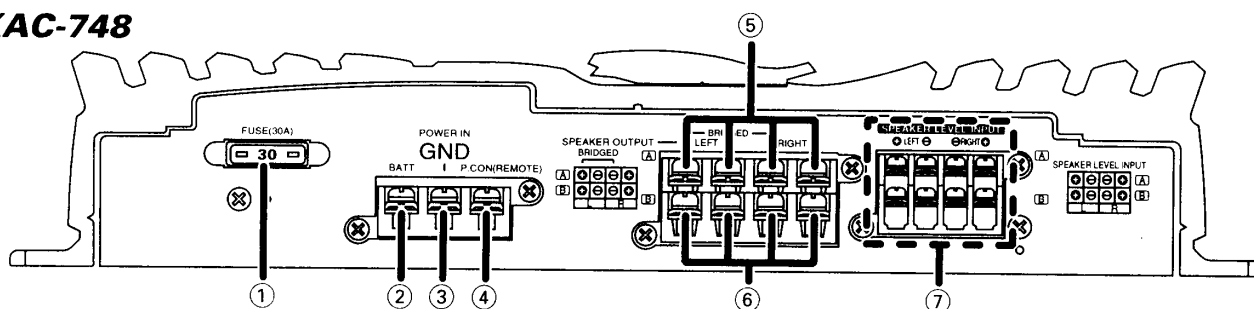
# Controls

This is a 4 channel amplifier including 2 stereo amplifiers in a body. One amplifier is referred to as amplifier A and the other is amplifier B. This unit is compatible with a large variety of systems by combining the switches and functions described in the following.

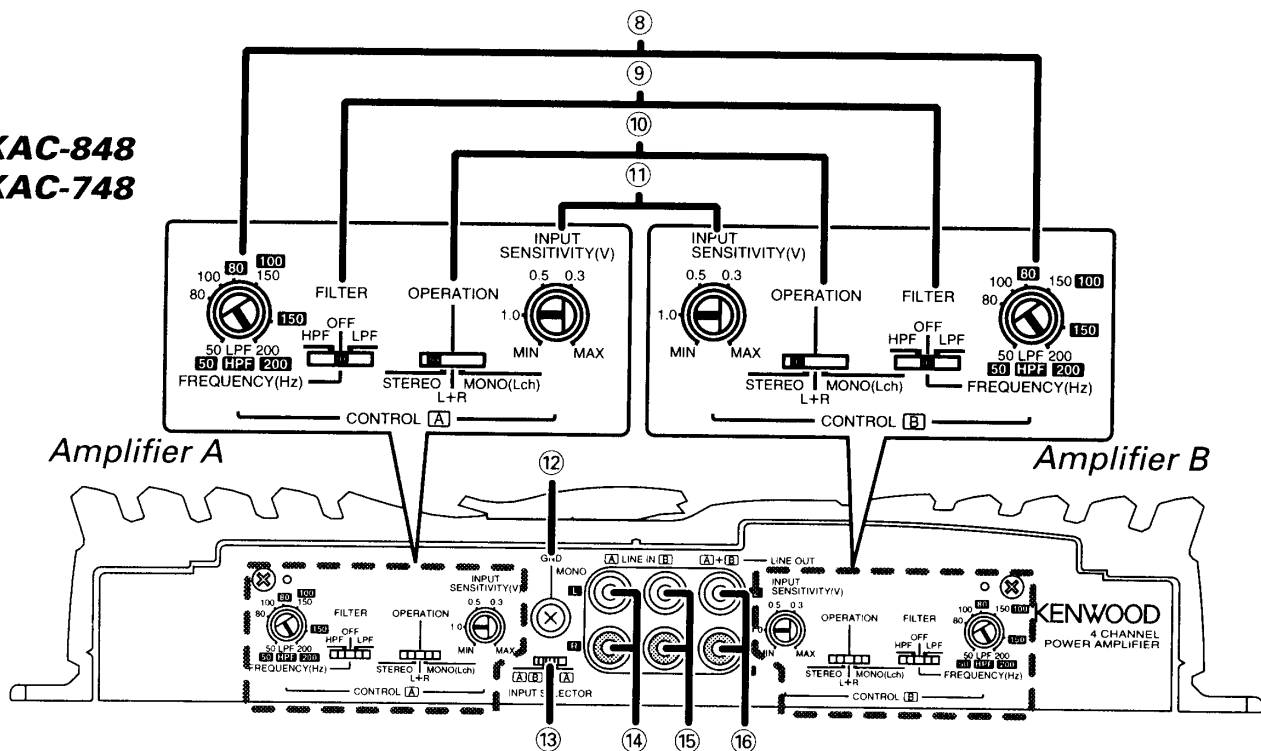
## KAC-848



## KAC-748



## KAC-848 KAC-748



① Fuse (20 A × 2 : KAC-848)  
(30 A × 1 : KAC-748)

② Battery terminal

③ Ground terminal

④ Power control (REMOTE) terminal

⑤ Amplifier A speaker output terminals

⑥ Amplifier B speaker output terminals

## ❖ **SPEAKER OUTPUT terminals**

### • **Stereo Connections:**

When you wish to use the unit as a stereo amplifier, stereo connections are used. The speakers to be connected should have an impedance of  $2\Omega$  or greater. When multiple speakers are to be connected, ensure that the combined impedance is  $2\Omega$  or greater for each channel.

### • **Bridged Connections:**

When you wish to use the unit as a high-output monaural amplifier, bridged connections are used. (Make connections to the LEFT channel (+) and the RIGHT channel (-) SPEAKER OUTPUT terminals.) The speakers to be connected should have an impedance of  $4\Omega$  or greater. When multiple speakers are to be connected, ensure that the combined impedance is  $4\Omega$  or greater.

#### **⚠ CAUTION**

The rated input of the speakers should be no less than the maximum output of the amplifier. Otherwise malfunction may result.

### ⑦ **Speaker level input terminals (KAC-748 only)**

### ⑧ **FREQUENCY control**

When the FILTER switch is set to the HPF (High-Pass Filter) or LPF (Low-Pass Filter) position, the threshold frequency can be adjusted with this control.

### ⑨ **FILTER switch**

High-pass or low-pass filtering can be applied to the speaker output according to the setting of this switch.

### ⑩ **OPERATION switch**

The amplification methods of the signals input to amplifiers A and B can be selected independently according to the setting of this switch.

#### • **STEREO position:**

The amplifier can be used as a stereo amplifier.

#### • **L+R position:**

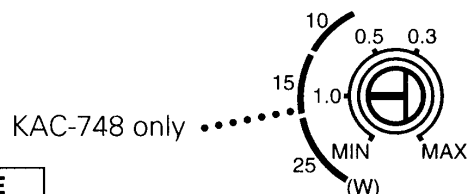
The input left and right signals are combined before being amplified. Use this position when the unit is used for subwoofer speakers or the L+R (monaural) sound is required.

#### • **MONO (Lch) position:**

Amplifies the signal input from the left side only. Set to this position and make bridged connections to use as a high-power monaural amplifier. (The input right signal is not output.)

### ⑪ **INPUT SENSITIVITY control**

Set this control according to the pre-output level of the center unit connected with this unit, or to the maximum power output of the genuine-accessory car stereo. Use the diagram on the right as a guide.



#### **NOTE**

For the pre-output level or the maximum power output, refer to the "Specifications" in the instruction manual of the center unit.

### ⑫ **RCA cable ground lead terminal**

### ⑬ **INPUT SELECTOR switch**

This switch selects the input method of the signals to be amplified by amplifiers A and B.



#### • **A B position:**

Amplifies both of the signals input to amplifiers A and B.

#### • **A position:**

Amplifies only signal input amplifier A with both amplifiers A and B.

### ⑭ **Amplifier A LINE IN terminal**

### ⑮ **Amplifier B LINE IN terminal**

### ⑯ **LINE OUT terminal**

These jacks output respectively the signals input to amplifiers A and B. They always output the stereo signals regardless of the position of the OPERATION switch.



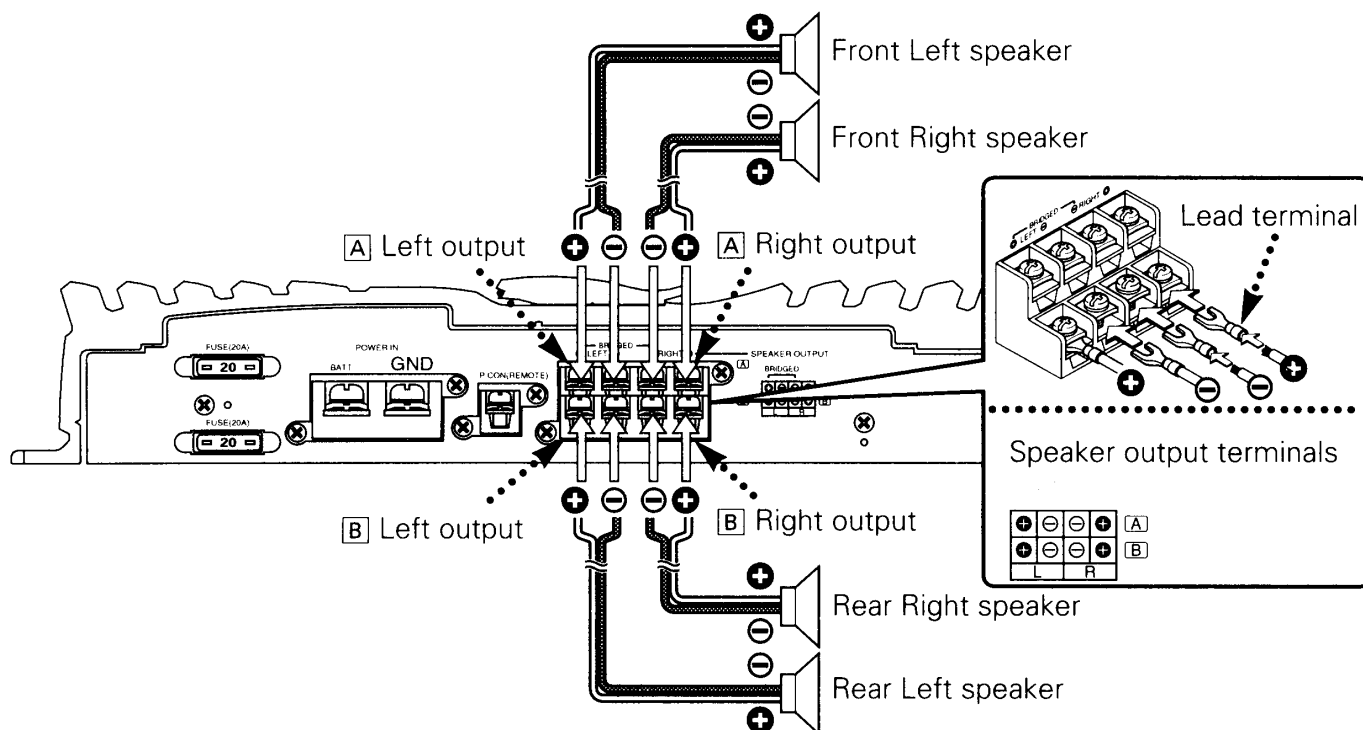


### ▲CAUTION

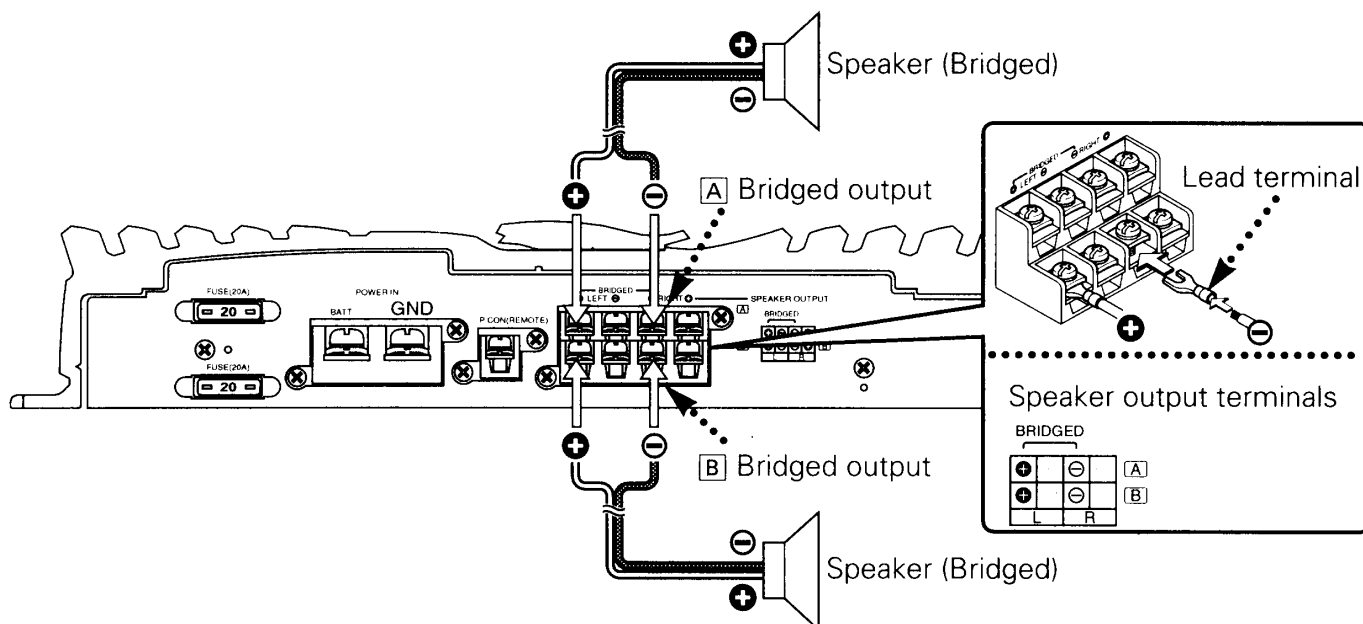
- The genuine-accessory car stereo shall have a maximum power output of no more than 25 W.
- Do not connect the speaker output leads from a power amplifier (Optional) to the speaker input terminals of this unit, for this may cause malfunction or damage.
- Do not connect cables and leads to both RCA cable input jacks and the speaker input terminals simultaneously, for this may cause malfunction or damage.
- Connect the power control lead to a power supply which can be turned ON/OFF by the ignition key switch (ACC line).

With this connection, shock noise may be generated when the power of the genuine-accessory car stereo is switched ON/OFF.

## ■ Speakers wire connection (Stereo Connections)



## (Bridged Connections)



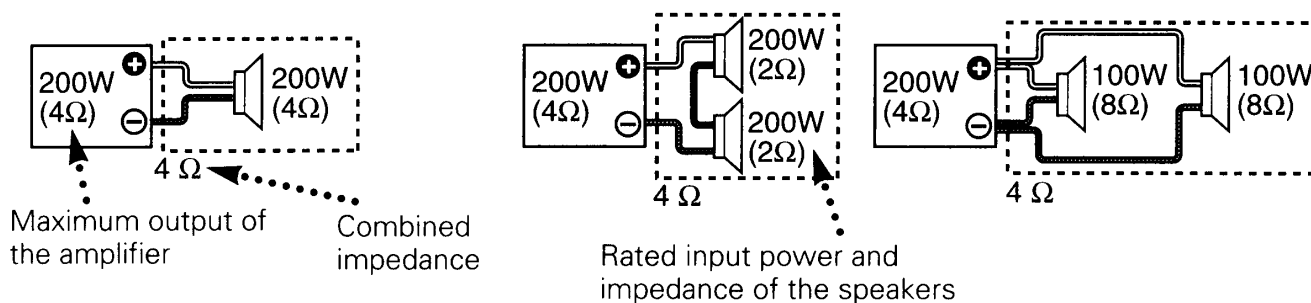
# Connection

## ■ Speaker Selection

- The rated input power of the speakers that are going to be connected should be greater than the maximum output power (in Watts) of the amplifier. Use of speakers having input power ratings that are less than the output power of the amplifier will cause smoke to be emitted as well as damage.
- The impedance of the speakers that are going to be connected should be  $2\Omega$  or greater (for stereo connections), or  $4\Omega$  or greater (for bridged connections). When more than one set of speakers are going to be used, calculate the combined impedance of the speakers and then connect suitable speakers to the amplifier.

### Examples:

Model	Stereo Connections ( $4\Omega$ )	Bridged Connections ( $4\Omega$ )
KAC-848	100 W or greater	300 W or greater
KAC-748	70 W or greater	200 W or greater



## ■ Power wire connection

### ⚠ WARNING

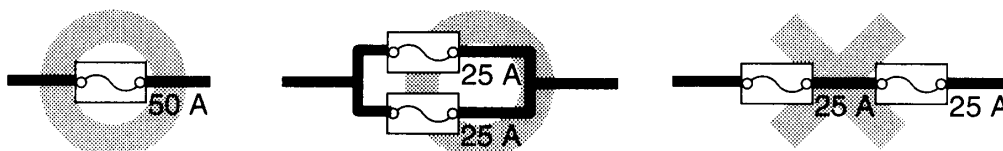
To prevent fire caused by a short in the wiring, connect a fusible link or breaker nearby the battery's positive terminal.

### Wiring

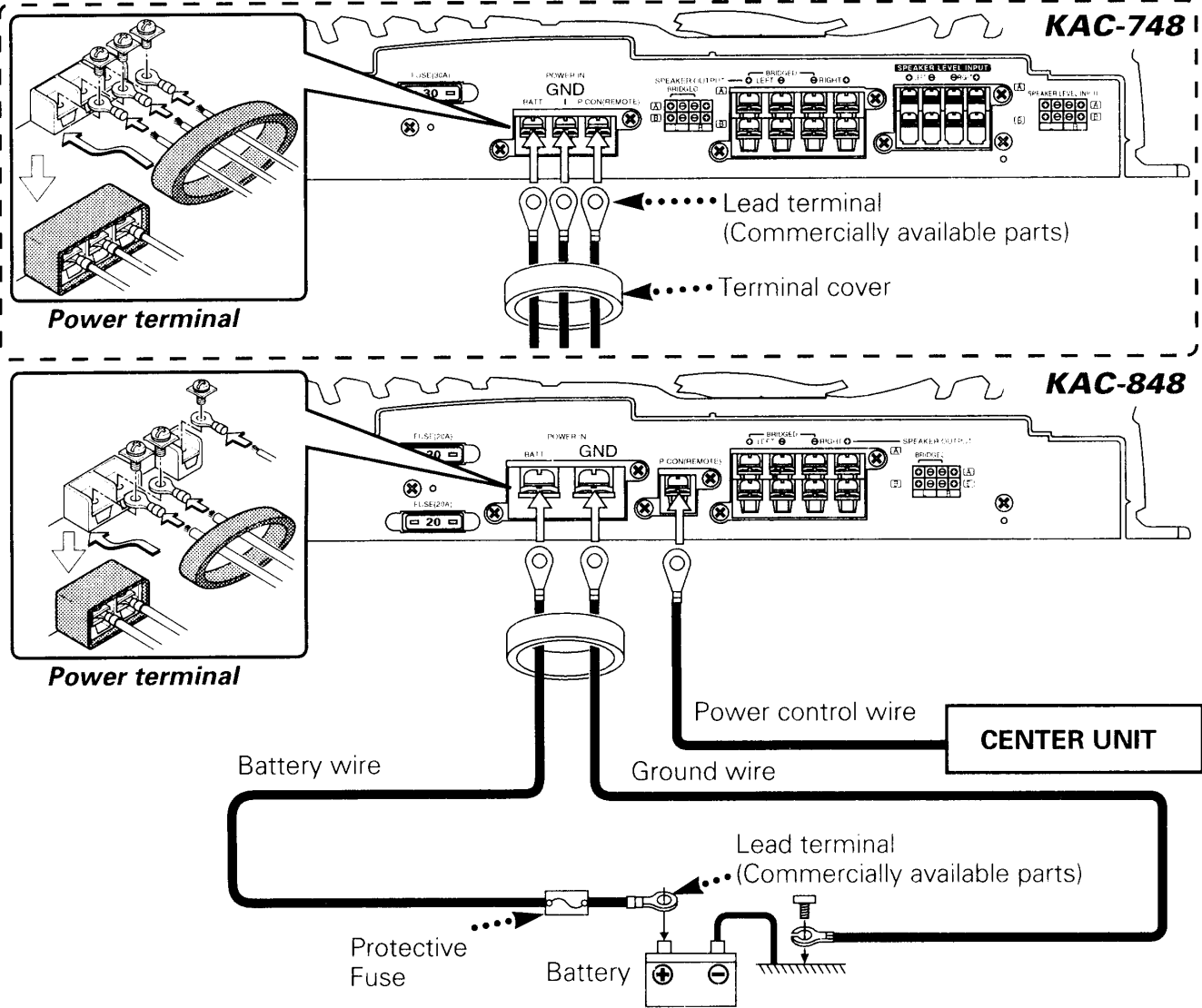
- If a buzzing noise is heard from the speakers when the engine is running, connect a line noise filter (optional) to each of the battery wire.
- Do not allow the cord to directly contact the edge of the iron plate by using Grommets.
- Connect the ground wire to a metal part of the car chassis that acts as an electrical ground passing electricity to the battery's negative  $\ominus$  terminal. Do not turn the power on if the ground wire is not connected.
- Be sure to attach a protective fuse into the battery wire close to the battery. Use a protective fuse having a capacity that is about 10 A higher than the maximum current drawn by the amplifier.
- Use vehicle-type (fire-resistant) power supply wiring wire for the battery wire and the ground wire. The current capacity of the power supply wiring wire should be about 10 A higher than that of the protective fuse capacity (which means about 20 A higher than the maximum current drawn by the amplifier).
- When more than one power amplifier are going to be used, use a power supply wiring wire and protective fuse of greater current-handling capacity than the total maximum current drawn by each amplifier.

### Example: One Power Amplifier Is Used

Model	Maximum Current Drawn	Protective Fuse	Cross-sectional Area of Wiring Wire (AWG)
KAC-848	38 A	50 A $\times$ 1 [25 A $\times$ 2]	5 mm <sup>2</sup> (AWG 10) or greater $\times$ 1
KAC-748	28 A	40 A $\times$ 1 [20 A $\times$ 2]	5 mm <sup>2</sup> (AWG 10) or greater $\times$ 1





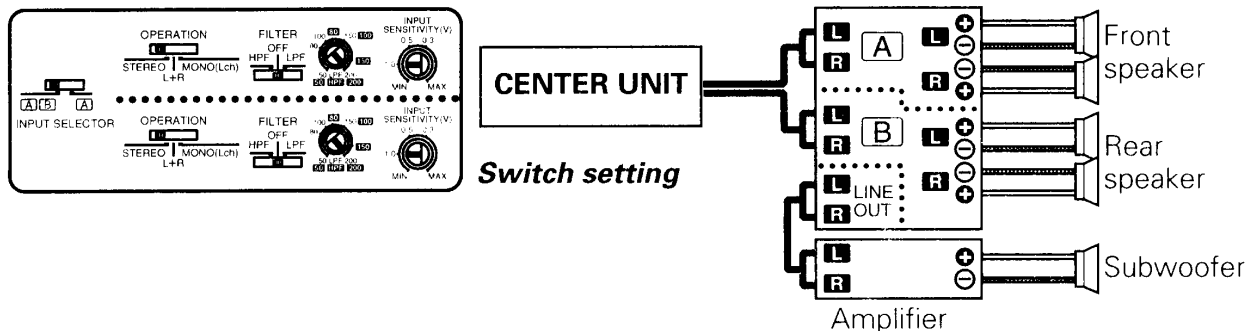


### Power terminal

Connect to their respective terminals the power control wire, power supply wire, and ground wire, all of which pass through the associated terminal cover. Once the connections are complete, place the cover on the terminal section.

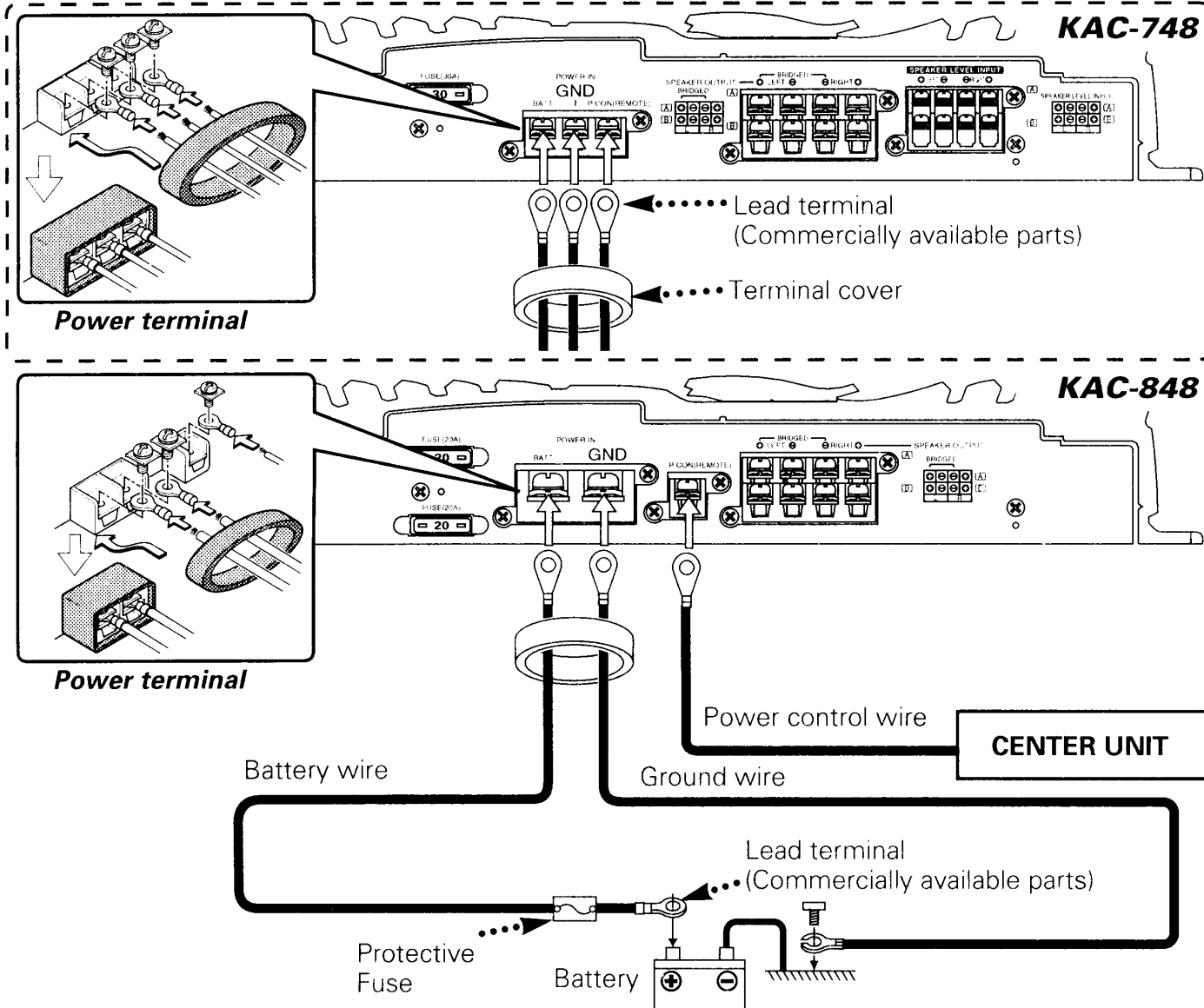
## System examples

### ■ Full-range 4-channel + Subwoofer system



**KAC-748**

**KAC-848**

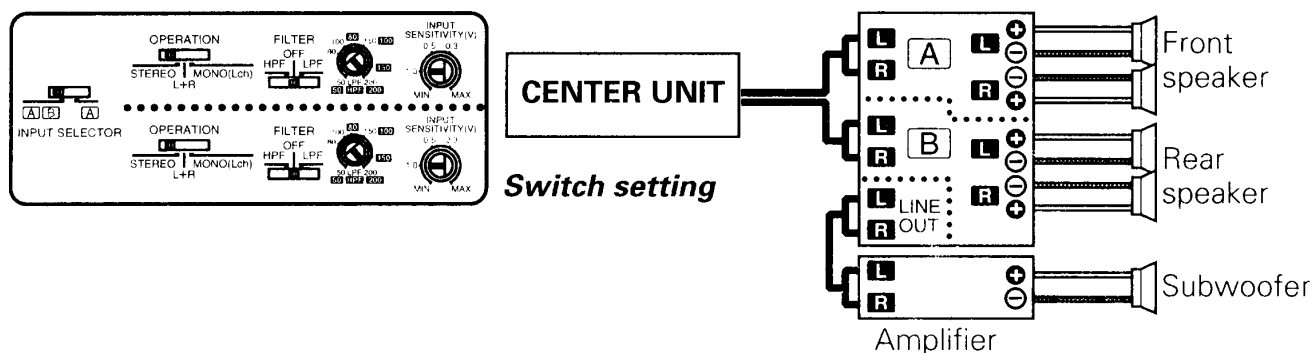


### Power terminal

Connect to their respective terminals the power control wire, power supply wire, and ground wire, all of which pass through the associated terminal cover. Once the connections are complete, place the cover on the terminal section.

## System examples

### ■ Full-range 4-channel + Subwoofer system



# Troubleshooting Guide

**What might appear to be a malfunction in your unit may just be the result of slight misoperation or miswiring. Before calling service, first check the following table for possible problems.**

<b>PROBLEM</b>	<b>POSSIBLE CAUSE</b>	<b>SOLUTION</b>
<b>No sound. (No sound from one side.)</b>	<ul style="list-style-type: none"> <li>• Input (or output) wires are disconnected.</li> <li>• Protection circuit may be activated.</li> <li>• The fuse may be blown because the volume was too high.</li> </ul>	<ul style="list-style-type: none"> <li>• Connect the input (or output) wires.</li> <li>• Check connections by referring to "Protection function".</li> <li>• Replace the fuse with a new fuse and use a lower volume.</li> </ul>
<b>The output level is too small (or too large).</b>	The input sensitivity adjusting control is not set to the correct position.	Adjust the control correctly referring to "Controls".
<b>The sound quality is bad. (The sound is distorted.)</b>	<ul style="list-style-type: none"> <li>• The speakers wire are connected with wrong <math>\oplus / \ominus</math> polarity.</li> <li>• A speaker wire is pinched by a screw in the car body.</li> <li>• The switches may be set improperly.</li> </ul>	<ul style="list-style-type: none"> <li>• Connect them properly checking the <math>\oplus / \ominus</math> of the terminals and wires well.</li> <li>• Connect the speaker wire again so that it is not pinched by anything.</li> <li>• Set switches properly by referring to "System examples".</li> </ul>

## Specifications

**Specifications subject to change without notice.**

<b>Audio Section</b>	<b>KAC-848</b>	<b>KAC-748</b>
Max Power Output (4 $\Omega$ )		
4 Channel Mode	100 W $\times$ 4	70 W $\times$ 4
3 Channel Mode	100 W $\times$ 2 + 300 W $\times$ 1	70 W $\times$ 2 + 200 W $\times$ 1
2 Channel Mode	300 W $\times$ 2	200 W $\times$ 2
Rated Power Output (4 $\Omega$ )		
4 Channel Mode (20 Hz ~ 20 kHz, less than 0.08 % THD)	50 W $\times$ 4	35 W $\times$ 4
3 Channel Mode (1 kHz, 0.08 % THD) + (1 kHz, 0.8 % THD)	50 W $\times$ 2 + 150 W $\times$ 1	35 W $\times$ 2 + 100 W $\times$ 1
2 Channel Mode (1 kHz, 0.8 % THD)	150 W $\times$ 2	100 W $\times$ 2
Rated Power Output (2 $\Omega$ )		
4 Channel Mode (1 kHz, 0.8 % THD)	75 W $\times$ 4	50 W $\times$ 4
Frequency Response (+0, -1 dB)	5 Hz ~ 50 kHz	5 Hz ~ 50 kHz
Signal to Noise Ratio	100 dB	100 dB
Sensitivity (MAX) (rated output)	0.15 V	0.15 V
(MIN) (rated output)	4.0 V	4.0 V
Input Impedance	10 k $\Omega$	10 k $\Omega$
Low Pass Filter Frequency (12 dB/oct.) (Variable)	50 ~ 200 Hz	50 ~ 200 Hz
High Pass Filter Frequency (12 dB/oct.) (Variable)	50 ~ 200 Hz	50 ~ 200 Hz
<b>General</b>	<b>KAC-848</b>	<b>KAC-748</b>
Operating Voltage (11 ~ 16 V allowable)	14.4 V	14.4 V
Current Consumption (1 kHz, 10 % THD)	38 A	28 A
Dimensions (W $\times$ H $\times$ D)	290 $\times$ 56 $\times$ 280 mm (11-7/16 $\times$ 2-3/16 $\times$ 11 in.)	290 $\times$ 56 $\times$ 230 mm (11-7/16 $\times$ 2-3/16 $\times$ 9-1/16 in.)
Weight	4.3 kg (9.4 lb)	3.7 kg (8.1 lb)

KEENWOOD

# Warranty Card

Geräte-Typ und Seriennummer  
Identification du produit  
Produkt navn og serie nummer  
Modelo y Número de serie  
Malli ja sarjanumero  
Μοντέλο και αριθμός σειράς  
Modello e numero di matricola  
Modell og serienummer  
Modelo e numero de série  
Apparat typ & serienummer  
Identificatie van het produkt  
Módel heiti og raðnúmer  
Il-Mudell u s-serial number  
Model name & serial number

Stempel und Unterschrift des Händlers  
Revendeur & cachet  
Forhandler  
Distribuidor y sello  
Jälleenmyyjä & leima  
Σφραγίδα εταιρίας  
Timbro del rivenditore  
Forhandlerens navn og stempel  
Agente e carimbo  
Återförsäljare & stämpel  
Dealer & stempel  
Undirritun og stimpill söluaðila  
Timbru tal-bejjiegh  
Dealer & stamp

Kaufdatum  
Date d'achat  
Købsdato  
Fecha de compra  
Ostopäivä  
Ημερομηνία αγοράς  
Data di acquisto  
Kjøpt dato  
Data de compra  
Inköpsdatum  
Aankoopdatum  
Söludagur  
Id-data ta' meta nxtara  
Purchase date

Name und Anschrift des Käufers  
Nom & adresse du client  
Købers navn og adresse  
Nombre y dirección del cliente  
Asiakkaan nimi & osoite  
Όνομα και διεύθυνση αγοραστή  
Nome e indirizzo del cliente  
Kundens navn og adresse  
Nome e morada do comprador  
Kundens namn & adress  
Naam & adres van de klant  
Nafn og heimilisfang kaupanda  
L-isem u l-indirizz tax-xerrej  
Name & address of customer

The tables of content are a back cover.

This warranty will be honored only in the U.S.A.

## **KENWOOD LIMITED WARRANTY FOR CAR STEREO COMPONENTS**

### **HOW LONG IS THE WARRANTY**

Kenwood U.S.A. Corporation ("Kenwood") warrants this product for a period of one (1) year from the date of original purchase.

### **WHAT IS COVERED AND WHAT IS NOT COVERED**

Except as specified below, this warranty covers all defects in material and workmanship in Kenwood car stereo components. The following are not covered by the warranty:

1. Any product which is not distributed in the U.S.A. by Kenwood or which is not purchased in the U.S.A. from an authorized Kenwood car stereo dealer or an automobile dealer, unless the product is purchased through the U.S.A. Military Exchange Service.
2. Any product on which the serial number has been defaced, modified or removed.
3. Damage, deterioration or malfunction resulting from:
  - a. Any shipment of the product (claims must be presented to the carrier).
  - b. Installation or removal of the product.
  - c. Accident, acts of nature, misuse, abuse, neglect, unauthorized product modification or failure to follow instructions supplied with the product.
  - d. Repair or attempted repair by anyone not authorized by Kenwood.
  - e. Any other cause which does not relate to a product defect.

### **WHO IS PROTECTED**

This warranty is enforceable only by the original purchaser.

### **WHAT WE WILL PAY FOR**

We will pay for all labor and material expenses for covered items. Payment of shipping charges is discussed in the next section of this warranty.

### **HOW TO OBTAIN WARRANTY SERVICE**

If your KENWOOD product ever needs service:

1. Take or ship it to any KENWOOD Authorized Service Center in the U.S.A. along with & complete description of the problem. (if you are uncertain as to whether a Service Center is authorized, please call **1-800-KENWOOD** for the nearest Service Center. **1-800-536-9663**).
2. Although you must pay any shipping charges if it is necessary to ship the product for warranty service, we will pay the return shipping charges if the repairs are covered by the warranty within the United States.
3. Whenever your units are taken or sent for warranty service, you must include a copy of the original dated sales receipt as proof of warranty coverage.

### **LIMITATION OF IMPLIED WARRANTIES**

ALL IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE LENGTH OF THIS WARRANTY.

### **EXCLUSION OF DAMAGES**

KENWOOD'S LIABILITY FOR ANY DEFECTIVE PRODUCT IS LIMITED TO THE REPAIR OR REPLACEMENT OF THE PRODUCT AT OUR OPTION. KENWOOD SHALL NOT BE LIABLE FOR:

1. INSTALLATION OR REMOVAL CHARGES, DAMAGE TO OTHER PROPERTY CAUSED BY ANY DEFECTS IN KENWOOD CAR STEREO COMPONENTS, DAMAGES BASED UPON INCONVENIENCE, LOSS OF USE OF THE PRODUCT; OR
2. ANY OTHER DAMAGES, WHETHER INCIDENTAL, CONSEQUENTIAL OR OTHERWISE.

SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS AND/OR DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS AND EXCLUSIONS MAY NOT APPLY TO YOU.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

If a problem develops during or after the Limited Warranty Period, or if you have any questions regarding the operation of the product, you should contact your KENWOOD Authorized Dealer or Authorized Service Center. If the problem or your question is not handled to your satisfaction, please contact our Customer Relations Department at the address listed below:

**KENWOOD SERVICE CORPORATION**  
P.O. Box 22745, 2201 East Dominguez Street, Long Beach CA 90801-5745  
Tel: (310) 639-5300