KS-AR9004
KS-AR9001D

POWER AMPLIFIER: INSTRUCTIONS
AMPLIFICADOR DE POTENCIA: MANUAL DE INSTRUCCIONES

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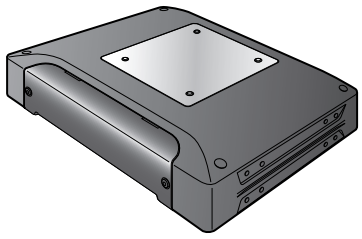
ENGLISH



Thank you for purchasing a JVC product. Please read all instructions carefully before operation, to ensure your complete understanding and to obtain the best possible performance from the unit.

KS-AR9001D is designed to be connected to subwoofers.

For safety....

- Do not raise the volume level too much, as this will block outside sounds, making driving dangerous.
- Stop the car before performing any complicated operations.

CAUTIONS AND NOTES

This unit is designed to operate on **12 V DC, NEGATIVE** ground electrical systems.

- This unit uses BTL (Balanced Transformerless) amplifier circuitry, i.e., floating ground system, so please comply with the following:
  Do not connect the "⊖" terminals of the speakers to each other.
  Do not connect the "⊖" terminals of the speakers to the metal body or chassis.
- Cover the unused terminals with insulating tape to prevent them from short circuiting.
- When an extension lead is used, it should be as thick and short as possible; connect it firmly with insulating tape.
- Be sure to leave an appropriate space between the antenna and the wires of this unit.
- For **KS-AR9004**: When replacing the fuse, only use a 40 A fuse.
  For **KS-AR9001D**: When replacing the fuse, only use a 30 A fuse.
- Do not let pebbles, sand or metallic objects get inside the unit.
- To keep the heat dissipation mechanism running effectively, wipe the accumulated dust off periodically.
- Listening to the tape, radio, CD or Digital Audio Player, etc. with the volume set at a high level for a long period of time will exhaust the battery, while the engine is turned off or while the engine is idling.
- This unit becomes very hot. Be careful not to touch the unit not only when using but for a while after using.

DO NOT disassemble the units since there are no user serviceable parts inside.

For Customer Use:
Enter below the Model No. and Serial No. which are located on the top or bottom of the cabinet. Retain this information for future reference.

Model No. _____ Serial No. _____

INSTALLATION

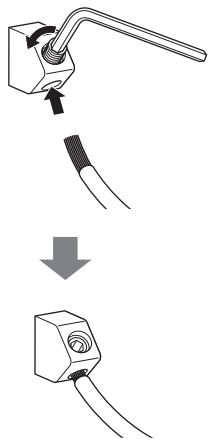
The following illustration shows a typical installation. However, you should make adjustments corresponding to your specific car. If you have any questions or require information regarding installation kits, consult your JVC car audio dealer or a company supplying the kits.

Ⓐ Mount this unit on a firm surface, such as in the trunk room or under the front seat.
- Since heat is generated in the unit, do not mount it near inflammable objects. In addition, mount it in an area that will not prevent the unit from dissipating the heat.
- Do not mount the unit in the places subject to heat: near a radiator, in a glove compartment or in insulated areas such as under a car mat that will prevent the unit from dissipating heat.
- When mounting the unit under the front seat, make sure that adjusting the seat position will not catch any wire of the unit.

Ⓑ When mounting this unit, be sure to use the provided screws. If any other screws are used, the unit may not be fixed firmly or parts inside the unit may be damaged.
- Before drilling holes in the trunk to install the unit, make sure to have a sufficient space under the trunk so that you do not drill holes in the fuel tank, etc.
- To detach and rotate the Logo Plate, use the provided hex wrench (2.5 mm).

Ⓒ When you use more than one KS-AR9000 series amplifier, you can pile them up to three with provided brackets, screws and washers in two ways, **X** or **Y**. Be sure to mount the lowest amplifier (①) primarily following Ⓑ.
- Before piling amplifiers, attach the provided spacers to the "+" marks on the bottom of the amplifiers ② and ③.
- Before piling amplifiers as **X**, first make the connections for the power supply (see "POWER SUPPLY") and speakers (see "SPEAKER CONNECTIONS" on page 2).

TERMINAL CONNECTIONS



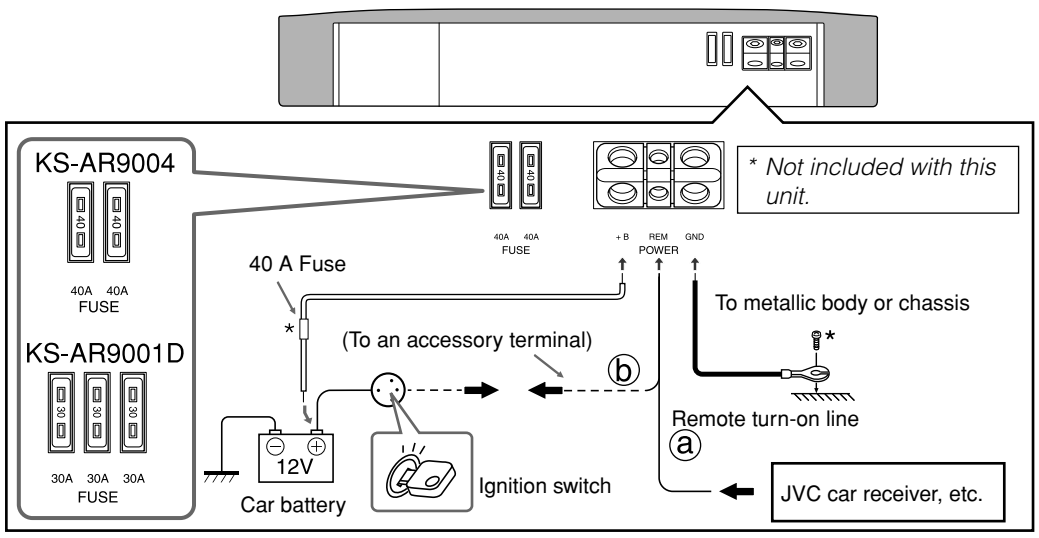
When making the terminal connections…

1. **Peel the insulating vinyl cover of a cord 7 mm (5/16 inch) to 10 mm (7/16 inch) long and expose the inside conductor.**
2. **Loosen the hex screw in a terminal with a provided hex wrench and insert the conductor into the terminal. Then fix the hex screw again to secure the conductor.**

Note

- *The exposed conductor should be 7 mm (5/16 inch) to 10 mm (7/16 inch) long.*
  - *– If shorter, it may cause a poor conductivity.*
  - *– If longer, it may cause a short circuit.*
- *Use a proper hex wrench for each terminal.*
  - *– 4 mm: +B terminal and GND terminal*
  - *– 3 mm: REM terminal and speaker terminals*

POWER SUPPLY



CAUTION

To prevent short circuits while making connections, keep the battery's negative terminal disconnected.

- When using a power cord (purchased separately), be sure to place the 40 A fuse near the battery as shown.
- Connect the lead wire (power cord) through which power is supplied directly to the battery's "⊕" terminal only after all the other connections have been made.

The proper lead wire connected to each POWER terminal is as follows.
- ***+ B** and **GND**: AWG 8 to AWG 4 (The cross section is about 8 mm² to 21 mm².)*
- ***REM**: AWG 18 to AWG 8 (The cross section is about 0.8 mm² to 8 mm².)*

- If you have any questions regarding the thickness of the power cord, etc., consult your nearest JVC car audio dealer.

ⓐ **When you use JVC car receiver with a remote lead,** connect to the REM terminal on this unit.

ⓑ **When you connect a unit without a remote lead,** connect to the accessory circuit of the car which is activated by the ignition switch. In this case, noise may occur when the car receiver is turned on or off. To avoid this noise, do not turn on or off the car receiver itself. You can turn on or off the car receiver along with the on/off operation of the ignition switch.

If the POWER/PROTECTOR lamp lights in red, it indicates incorrect speaker wiring or connections (see "TROUBLESHOOTING" on page 3). Make sure to correct speaker wiring and other connections.

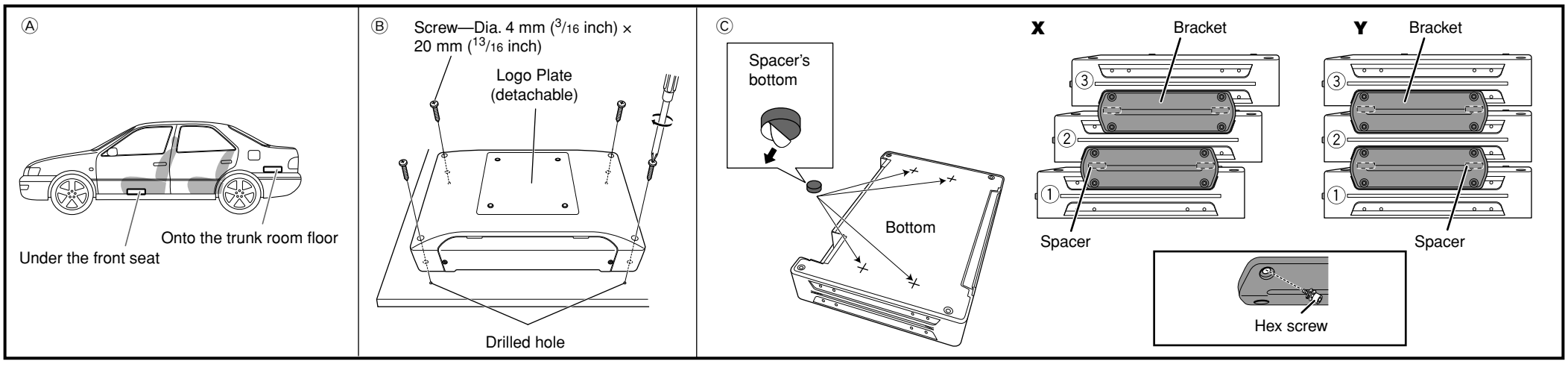
SPEAKER SYSTEMS

Make sure to comply with the following notes:

- Be sure not to connect the "⊖" terminals of the speakers to a common point.
- If the ground wire is common to both left/right and front/rear speaker wirings, this unit cannot be used. Always use the independent lead wires for the speakers to be used. In this case, redo the wirings.
- For **KS-AR9004**: Use the speakers with an impedance of 2 Ω to 8 Ω (4 Ω to 8 Ω when used in Bridge Mode).
  For **KS-AR9001D**: Use the speakers with an impedance of 1 Ω to 8 Ω.
- Use the speakers which have sufficient capacity to the unit.

The proper lead wire connected to each SPEAKER OUTPUT terminal is as follows.
AWG 18 to AWG 8 (The cross section is about 0.8 mm² to 8 mm².)

For **KS-AR9004**: When you connect 4 speakers to the unit, down mixed signals (front and rear) are emitted through the PRE OUT jacks.
For **KS-AR9001D**: Incoming signals are emitted through the PRE OUT jacks.



SPEAKER CONNECTIONS

Connection varies depending on the number of the speakers used in your car. Select the appropriate connection referring to the following diagrams.

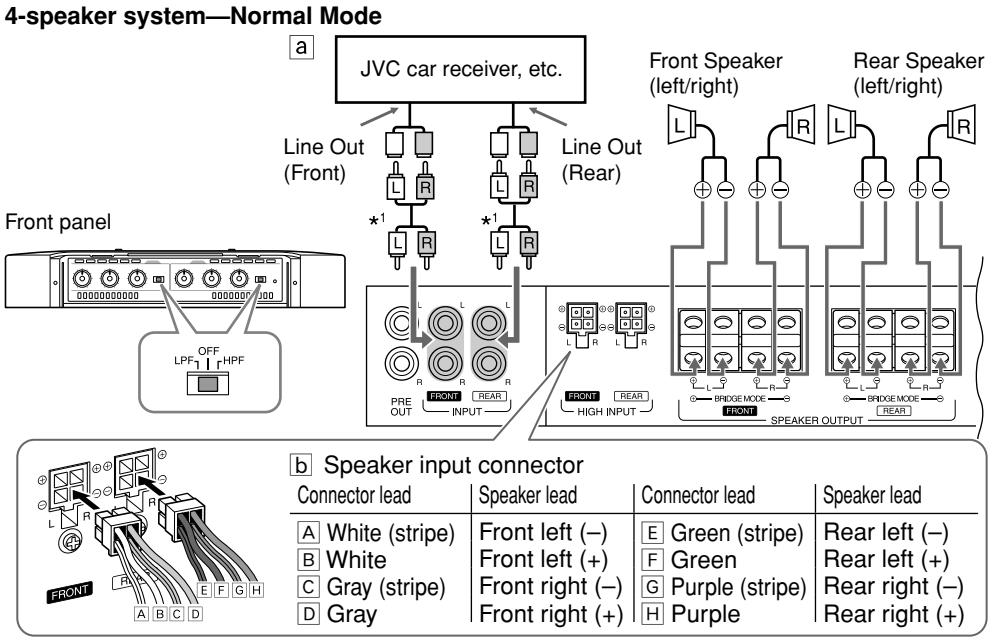
Before connecting: Securely connect all the parts. If the connections are loose, due to contact resistance etc., heat will break out and may cause an accident. Secure and cover the cords with insulating tape and run them under the car mats.

a **When your receiver is equipped with Line Output,** connect the Line Output (through the receiver) to the INPUT jacks on this unit.

b **When your receiver is NOT equipped with Line Output,** connect the provided speaker input connector (through the receiver) to the HIGH INPUT terminal on this unit.

KS-AR9004

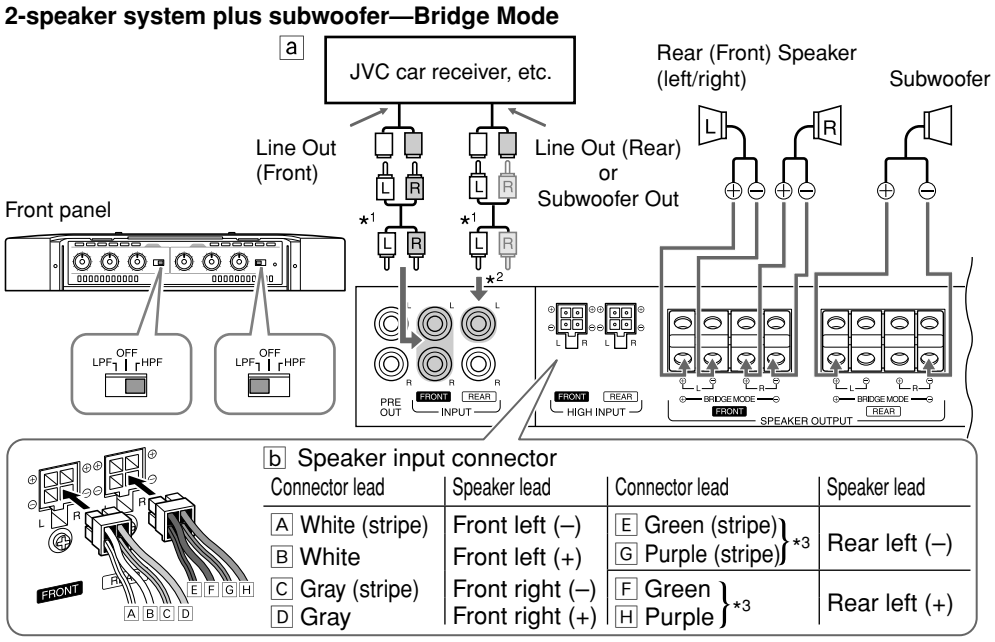
4-speaker system—Normal Mode



b Speaker input connector

Connector lead	Speaker lead	Connector lead	Speaker lead
A White (stripe)	Front left (–)	E Green (stripe)	Rear left (–)
B White	Front left (+)	F Green	Rear left (+)
C Gray (stripe)	Front right (–)	G Purple (stripe)	Rear right (–)
D Gray	Front right (+)	H Purple	Rear right (+)

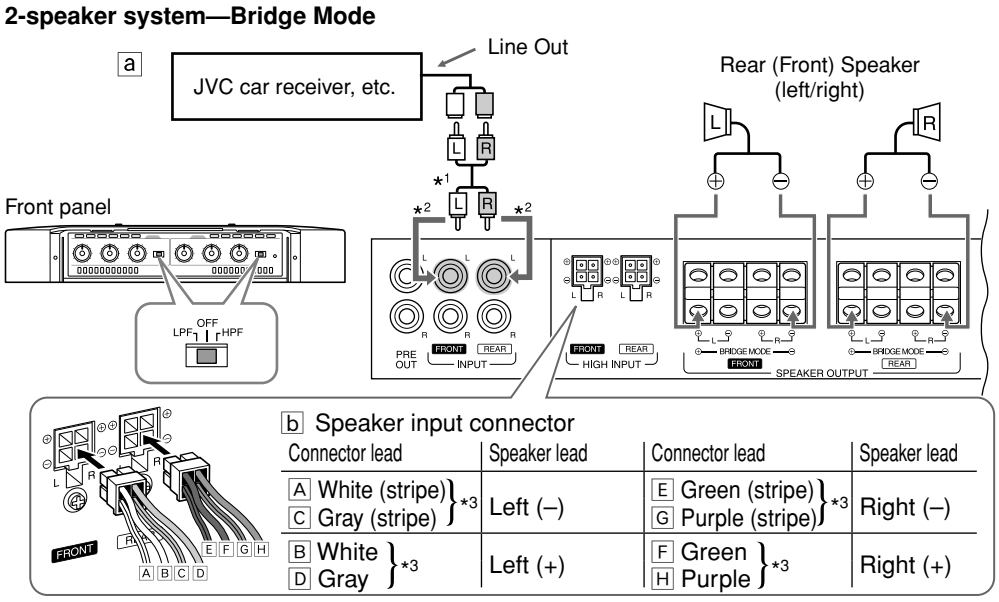
2-speaker system plus subwoofer—Bridge Mode



b Speaker input connector

Connector lead	Speaker lead	Connector lead	Speaker lead
A White (stripe)	Front left (–)	E Green (stripe) } *3	Rear left (–)
B White	Front left (+)	G Purple (stripe)	
C Gray (stripe)	Front right (–)	F Green } *3	Rear left (+)
D Gray	Front right (+)	H Purple	

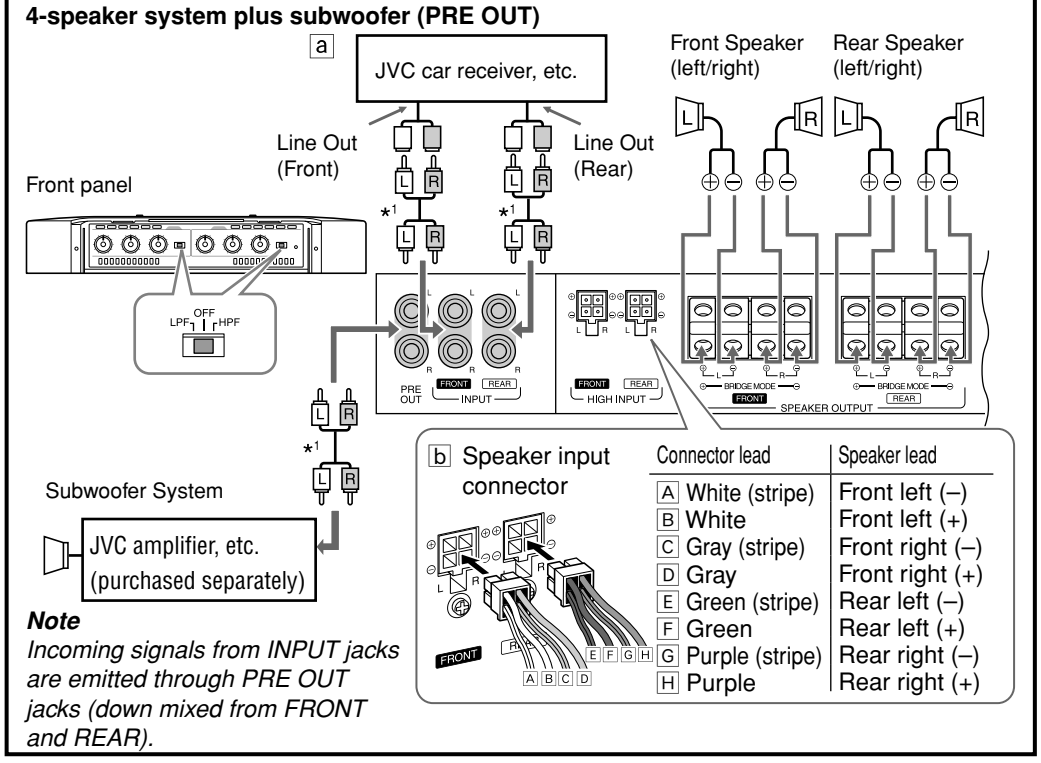
2-speaker system—Bridge Mode



b Speaker input connector

Connector lead	Speaker lead	Connector lead	Speaker lead
A White (stripe) } *3	Left (–)	E Green (stripe) } *3	Right (–)
C Gray (stripe)		G Purple (stripe)	
B White } *3	Left (+)	F Green } *3	Right (+)
D Gray		H Purple	

4-speaker system plus subwoofer (PRE OUT)



b Speaker input connector

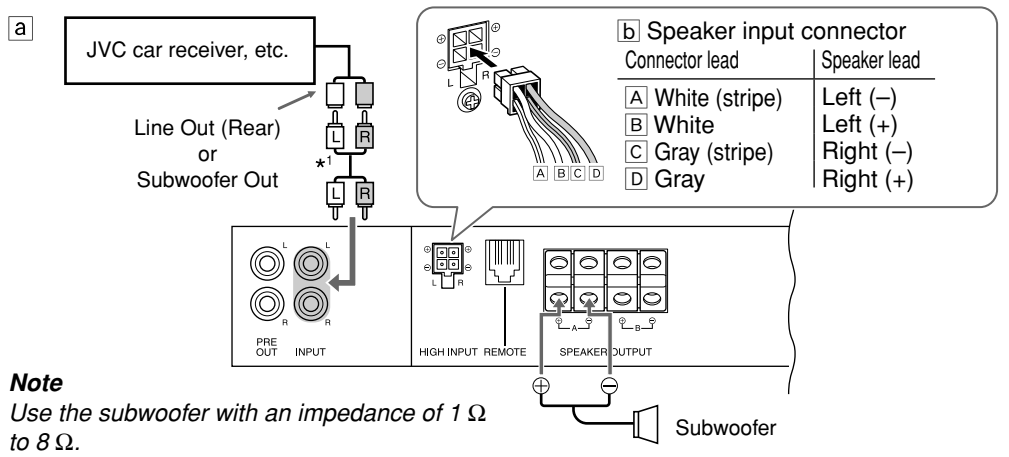
Connector lead	Speaker lead
A White (stripe)	Front left (–)
B White	Front left (+)
C Gray (stripe)	Front right (–)
D Gray	Front right (+)
E Green (stripe)	Rear left (–)
F Green	Rear left (+)
G Purple (stripe)	Rear right (–)
H Purple	Rear right (+)

Note

Incoming signals from INPUT jacks are emitted through PRE OUT jacks (down mixed from FRONT and REAR).

KS-AR9001D

Subwoofer system



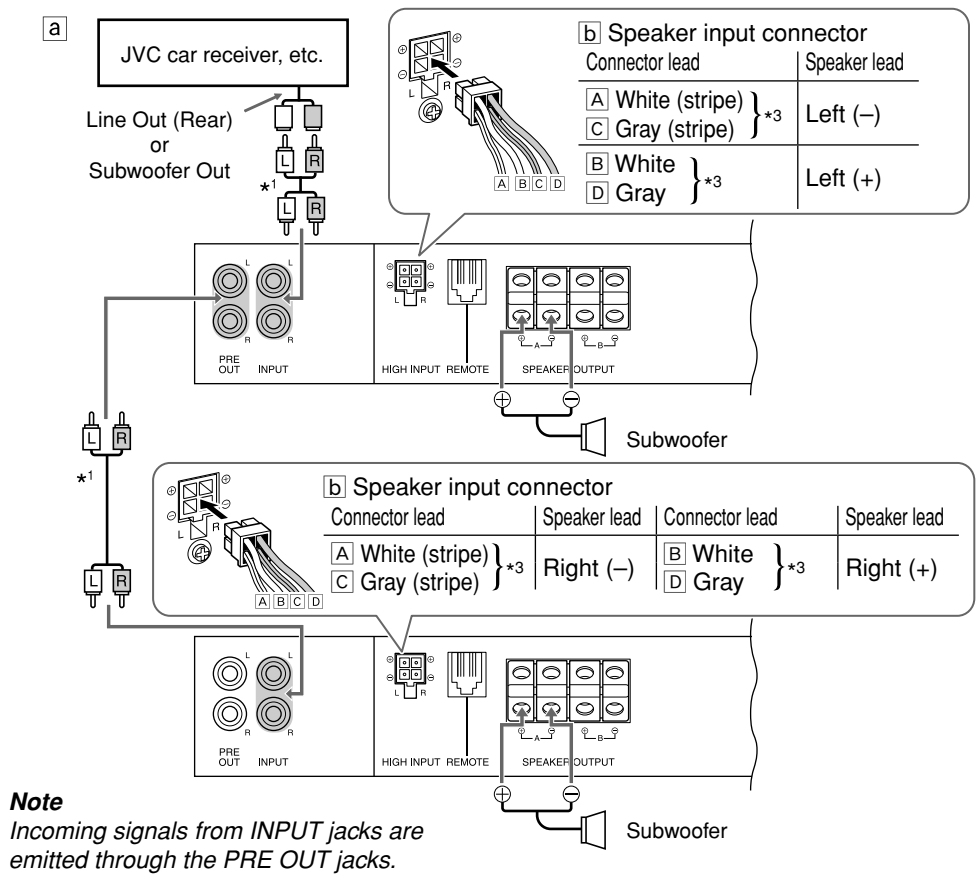
b Speaker input connector

Connector lead	Speaker lead
A White (stripe)	Left (–)
B White	Left (+)
C Gray (stripe)	Right (–)
D Gray	Right (+)

Note

Use the subwoofer with an impedance of 1 Ω to 8 Ω.

2-subwoofer system (2 amplifiers)



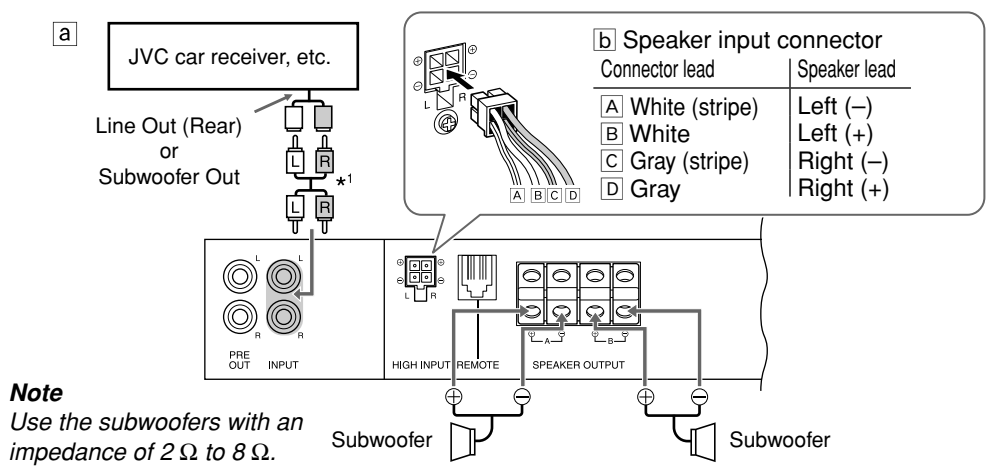
b Speaker input connector

Connector lead	Speaker lead	Connector lead	Speaker lead
A White (stripe) } *3	Left (–)		
C Gray (stripe)			
B White } *3	Left (+)		
D Gray			
A White (stripe) } *3	Right (–)	B White } *3	Right (+)
C Gray (stripe)		D Gray	

Note

Incoming signals from INPUT jacks are emitted through the PRE OUT jacks.

2-subwoofer system



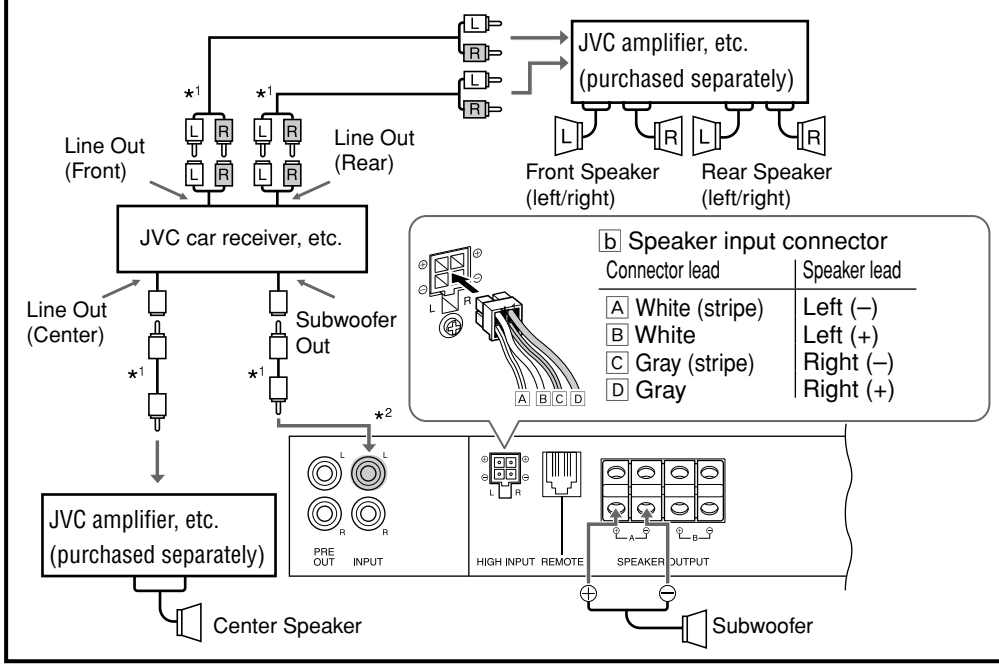
b Speaker input connector

Connector lead	Speaker lead
A White (stripe)	Left (–)
B White	Left (+)
C Gray (stripe)	Right (–)
D Gray	Right (+)

Note

Use the subwoofers with an impedance of 2 Ω to 8 Ω.

4-speaker system plus subwoofer—5.1-channel (3 amplifiers)



b Speaker input connector

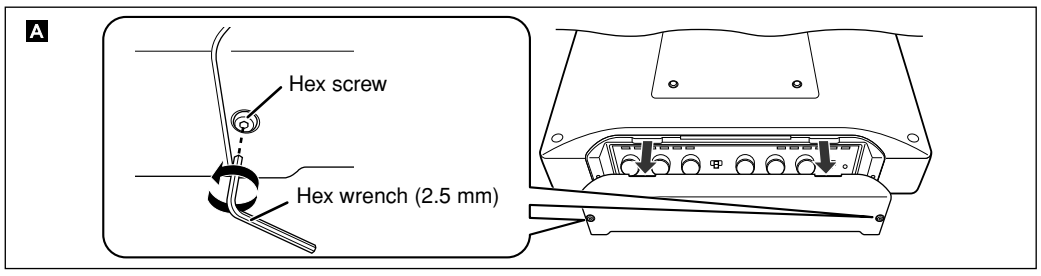
Connector lead	Speaker lead
A White (stripe)	Left (–)
B White	Left (+)
C Gray (stripe)	Right (–)
D Gray	Right (+)

*1 Not provided for this unit.

*2 Be sure to connect the line output from the receiver to the left (L) jack on this unit.

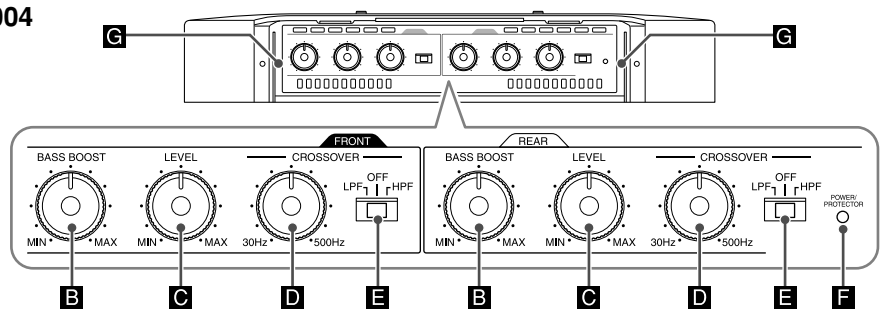
*3 Be sure to connect the both leads to the target speaker lead.

CONTROLS

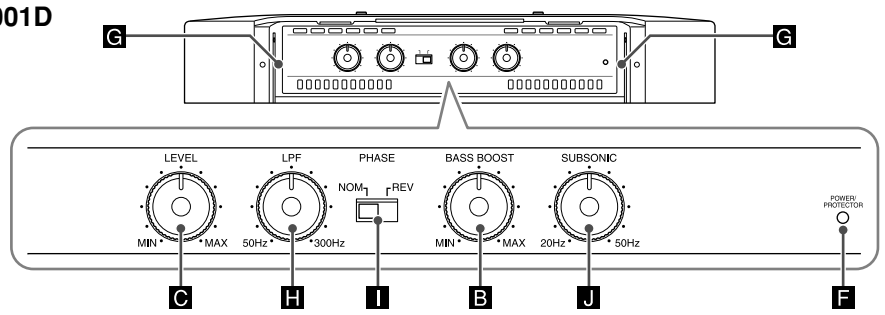


A Control cover
To operate the following controls, remove the hex screws with a provided hex wrench (2.5 mm) and detach the control cover. Attach it again after your operation.

KS-AR9004



KS-AR9001D



B BASS BOOST controller
Turning this boosts the 45 Hz frequency within the range of 0 dB to +18 dB. Adjust the level while listening to the sound. This controller is preset to MIN when the unit is shipped.

C Input LEVEL controller
The input level can be adjusted with this controller when this unit is connected to other source equipment. Adjust the level while listening to the sound. This controller is preset to MIN when the unit is shipped.

D CROSSOVER frequency controller
Turning this adjusts the cutoff frequency within the range of 30 Hz to 500 Hz. Adjust the level while listening to the sound. This controller is preset to 30 Hz when the unit is shipped.

E CROSSOVER filter switch
OFF: Normally, set to this position. The switch is preset to this position when the unit is shipped.
LPF: Set to this position when you want to turn on the LPF (Low-Pass Filter) switch (the Low-Pass Filter transmits frequencies lower than the cutoff frequency).
HPF: Set to this position when you want to turn on the HPF (High-Pass Filter) switch (the High-Pass Filter transmits frequencies higher than the cutoff frequency).

F POWER/PROTECTOR lamp
The lamp lights in green while the unit is turned on. If the lamp does not light or lights in red with the unit on, some trouble has occurred (see “TROUBLESHOOTING”).

G Power indicator
The blue lamp illuminates while the unit is turned on.

H LPF (Low-Pass Filter) controller
Adjust the cutoff frequency (the Low-Pass Filter transmits frequencies lower than the cutoff frequency) within the range of 50 Hz to 300 Hz. Adjust the level while listening to the sound. This controller is preset to 50 Hz when the unit is shipped.

I PHASE switch
Select either normal (NOM) or reverse (REV), which reproduce a better sound. This switch is preset to NOM when the unit is shipped.

J SUBSONIC filter controller
Adjust the cutoff frequency (the subsonic filter rejects frequencies lower than the cutoff frequency) within the range of 20 Hz to 50 Hz. This controller is preset to 20 Hz when the unit is shipped.

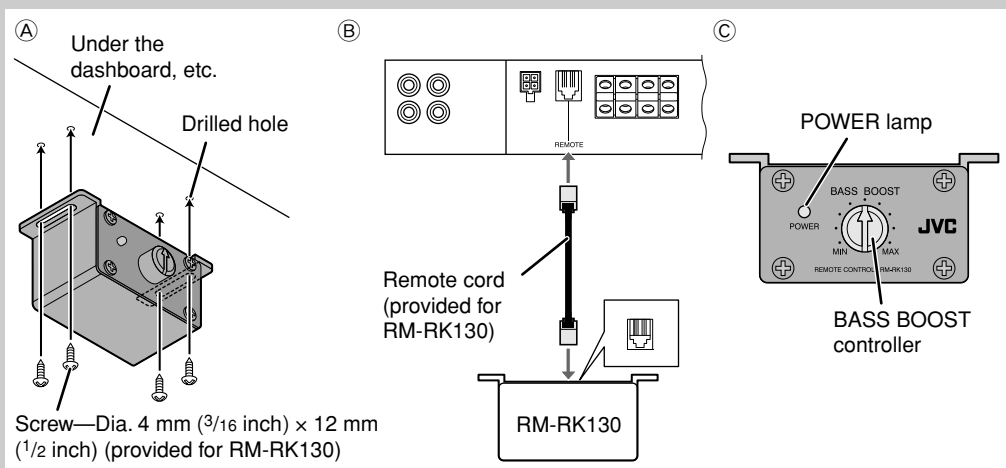
KS-AR9001D only
Wired remote control unit: RM-RK130 (purchased separately)

Using JVC’s wired remote control unit: RM-RK130 (purchased separately), you can adjust the bass boost in your seat without adjusting the BASS BOOST controller on the amplifier (see “CONTROLS”).

Note

Set the BASS BOOST controller on the amplifier to MIN when you use RM-RK130.

Ⓐ Mount RM-RK130 on a firm surface, such as under the dashboard.
Ⓑ Connect RM-RK130 to the REMOTE terminal on the amplifier with the remote cord provided for RM-RK130.
Ⓒ RM-RK130 boosts the 45 Hz frequency within the range of 0 dB to +18 dB. Adjust the level while listening to the sound.
• The POWER lamp lights in green while RM-RK130 is turned on.



TROUBLESHOOTING

For more details, consult your JVC car audio dealer.

The POWER/PROTECTOR lamp does not light.
- Change the fuses if the current one is blown.
- Connect the ground lead securely to a metal part of the car.
- Turn on the equipment connected to this unit.
- Use a relay if your system employs too many amplifiers.
- Confirm the battery voltage (11 V to 16 V).

The POWER/PROTECTOR lamp lights in red and/or the unit heats up abnormally.
- Use the speakers of suitable impedance.
- Correct the speaker wirings if they are short-circuited.
- Make the speaker wirings away from the power cord to prevent DC offset error.
- Leave the unit turned off for a while to cool it down.

No sound is heard.
- Confirm the connections for power supply (see “POWER SUPPLY” on page 1).
- Connect RCA pin cords to the INPUT jacks, or the speaker input connector to the HIGH INPUT terminal.

Alternator noise is heard.
- Keep the power cords away from the RCA pin cords.
- Keep the RCA pin cords away from other electrical cables in the car.
- Connect the ground lead securely to a metal part of the car.
- Make sure the negative speaker leads do not touch the car chassis.
- Replace the plugs or use plugs with load resistors.
- Connect a bypass capacitor across the accessory switches (horn, fan, etc.).

Noise is made when you connect the unit to an AM tuner.
- Move the speaker and power cords away from the antenna lead.

SPECIFICATIONS

Power Output	**KS-AR9004:** • Normal Mode: 100 W RMS x 4 channels at 4 Ω and ≤ 1% THD + N **KS-AR9001D:** • Normal Mode: 250 W RMS x 1 channel at 4 Ω and ≤ 1% THD + N
Signal-to-Noise Ratio	**KS-AR9004:** 80 dBA (reference: 1 W into 4 Ω) **KS-AR9001D:** 60 dBA (reference: 1 W into 4 Ω)
Power Output	**KS-AR9004:** • Normal Mode: 120 W RMS x 4 channels at 2 Ω and ≤ 1% THD + N • Bridge Mode: 240 W RMS x 2 channels at 4 Ω and ≤ 1% THD + N **KS-AR9001D:** 500 W RMS x 1 channel at 2 Ω and ≤ 1% THD + N 1 000 W RMS x 1 channel at 1 Ω and ≤ 1% THD + N
Maximum Power Output	**KS-AR9004:** 800 W (400 W x 2) **KS-AR9001D:** 1 200 W
Load Impedance	**KS-AR9004:** 4 Ω (2 Ω to 8 Ω allowance) 4 Ω (4 Ω to 8 Ω allowance) (Bridge Mode) **KS-AR9001D:** 4 Ω (1 Ω to 8 Ω allowance)
Frequency Response	**KS-AR9004:** 5 Hz to 50 kHz*1 (+0, –3 dB) *1 Subsonic filter cuts off extremely low frequency signals less than 20 Hz. **KS-AR9001D:** 20 Hz to 300 Hz*2 (+0, –3 dB) *2 Subsonic filter cuts off extremely low frequency signals. (The cutoff frequency is adjustable within the range of 20 Hz to 50 Hz.)
Input Sensitivity/Impedance	2 V/45 kΩ (0.3 V to 6 V, variable)
Distortion	**KS-AR9004:** Less than 0.04% (at 1 kHz) **KS-AR9001D:** Less than 0.1% (at 100 Hz)
Power Requirement	DC 14.4 V (11 V to 16 V allowance)
Grounding system	Negative ground
Dimensions (W×H×D)	360 mm × 60 mm × 245 mm (14 3/16 inch × 2 3/8 inch × 9 11/16 inch)
Mass (approx.)	**KS-AR9004:** 4.60 kg (10.15 lbs.) **KS-AR9001D:** 4.92 kg (10.85 lbs.)
Accessories	Speaker input connector **KS-AR9004:** 4P × 2 **KS-AR9001D:** 4P × 1 Screw—Dia. 4 mm (3/16 inch) × 20 mm (13/16 inch) × 4 Hex wrench 4 mm × 1 3 mm × 1 2.5 mm × 1 Spacer × 4 Bracket × 2 Hex screw—M4 × 12 mm (1/2 inch) × 6

Design and specifications are subject to change without notice.

Information for Users on Disposal of Old Equipment and Batteries

[European Union only]

These symbols indicate that the product and the battery with this symbol should not be disposed as general household waste at its end-of-life.
If you wish to dispose of this product and the battery, please do so in accordance with applicable national legislation or other rules in your country and municipality.
By disposing of this product correctly, you will help to conserve natural resources and will help prevent potential negative effects on the environment and human health.

Products

Battery

Notice:
The sign Pb below the symbol for batteries indicates that this battery contains lead.

Dear Customer,
This apparatus is in conformance with the valid European directives and standards regarding electromagnetic compatibility and electrical safety.
European representative of Victor Company of Japan, Limited is:
JVC Technical Services Europe GmbH
Postfach 10 05 04
61145 Friedberg
Germany