

# *Pioneer*

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## **Owner's Manual**

BRIDGEABLE TWO-CHANNEL POWER AMPLIFIER

# **GM-A5602**

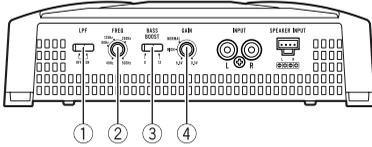
# **GM-A3602**

# Setting the unit

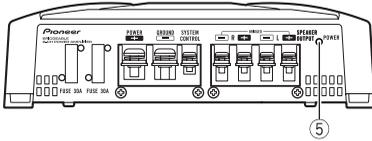
## What's what

### GM-A5602

Front side

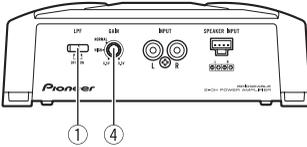


Rear side

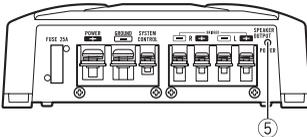


### GM-A3602

Front side



Rear side



To adjust the switch, use a flathead screwdriver if needed.

#### ① LPF (low-pass filter) switch

Switch the settings based on the connected speaker.

- When the Subwoofer is connected: Select **ON**. This eliminates high range frequency and outputs low range frequency.
- When the full range speaker is connected: Select **OFF**. **OFF** outputs the entire frequency range.

#### ② FREQ (cut off frequency) control

Cut off frequency selectable from 40 Hz to 500 Hz if the **LPF** select switch is set to **ON**.

#### ③ BASS BOOST (bass boost level control) switch

You can select a bass boost level from 0 dB, 6 dB and 12 dB.

#### ④ GAIN (gain) control

If output remains low, even when the car stereo volume is turned up, turn controls to lower level. If distortion occurs when the car stereo volume is turned up, turn these controls to higher level.

- For use with an RCA equipped car stereo (standard output of 500 mV), set to the **NORMAL** position. For use with an RCA equipped Pioneer car stereo, with maximum output of 4 V or more, adjust level to match that of the car stereo output.
- For use with an RCA equipped car stereo with output of 4 V, set to the **HIGH** position.
- If you hear too much noise when using the speaker input terminals, turn the gain control to higher level.

#### ⑤ Power indicator

The power indicator lights up to indicate power ON.

## Setting gain properly

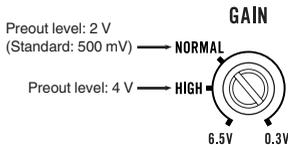
- Protective function included to prevent malfunction of the unit and/or speakers due to excessive output, improper use or improper connection.
- When outputting high volume sound etc., this function cuts off the output for a few seconds as a normal function, but output is restored when the volume of the head unit is turned down.

## Setting the unit

- A cut in sound output may indicate improper setting of the gain control. To ensure continuous sound output with the head unit at a high volume, set amplifier gain control to a level appropriate for the preout maximum output level of the head unit, so that volume can remain unchanged and to control excess output.
- Despite correct volume and gain settings, the unit sound still cuts out periodically. In such cases, please contact the nearest authorized Pioneer Service Station.

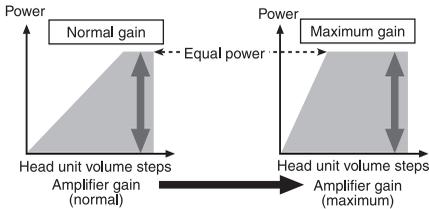
If the signal waveform is distorted due to high output, even if the amplifier gain is raised, the output power will change only slightly. 

### Gain control of this unit



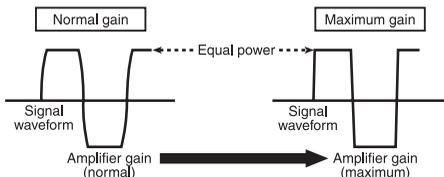
Above illustration shows **NORMAL** gain setting.

### Relationship between amplifier gain and head unit output power



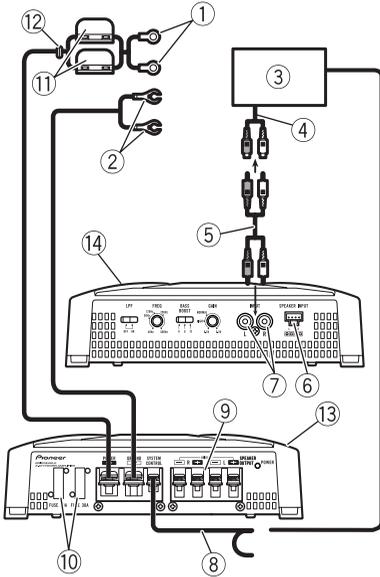
If amplifier gain is raised improperly, this will simply increase distortion, with little increase in power.

### Signal waveform when outputting at high volume using amplifier gain control



# Connecting the units

## Connection diagram



- ① Special red battery wire RD-223 (sold separately)  
After completing all other amplifier connections, finally connect the battery wire terminal of the amplifier to the positive ⊕ battery terminal.
- ② Ground wire (Black) RD-223 (sold separately)  
Connect to metal body or chassis.
- ③ Car stereo with RCA output jacks (sold separately)
- ④ External output
- ⑤ Connecting wire with RCA pin plugs (sold separately)
- ⑥ Speaker input terminal (use a connector included)  
Please see the following section for speaker connection instructions. Refer to *Connections when using the speaker input wire* on page 8.
- ⑦ RCA input jack
- ⑧ System remote control wire (sold separately)  
Connect male terminal of this wire to the system remote control terminal of the car stereo.

The female terminal can be connected to the auto-antenna relay control terminal. If the car stereo lacks a system remote control terminal, connect the male terminal to the power terminal via the ignition switch.

- ⑨ Speaker output terminals  
Please see the following section for speaker connection instructions. Refer to *Connections when using the speaker input wire* on page 8.
- ⑩ Fuse 30 A × 2 (GM-A5602) / 25 A × 1 (GM-A3602)
- ⑪ Fuse (30 A) × 2
- ⑫ Grommet
- ⑬ Rear side
- ⑭ Front side ▣

## Before connecting the amplifier

### ⚠ WARNING

- Secure the wiring with cable clamps or adhesive tape. To protect the wiring, wrap sections in contact with metal parts in adhesive tape.
- Never cut the insulation of the power supply to feed power to other equipment. Current capacity of the wire is limited.

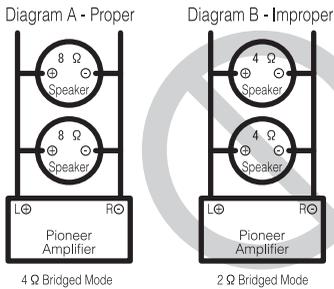
### ⚠ CAUTION

- Never shorten any wires, the protection circuit may malfunction.
- Never wire the speaker negative cable directly to ground.
- Never band together multiple speaker's negative cables.
- If the system remote control wire of the amplifier is connected to the power terminal via the ignition switch (12 V DC), the amplifier will remain on with the ignition whether the car stereo is on or off, which may exhaust battery if the engine is at rest or idling.

## Connecting the units

- Install and route the separately sold battery wire as far as possible from the speaker wires. Install and route the separately sold battery wire, ground wire, speaker wires and the amplifier as far away as possible from the antenna, antenna cable and tuner.

### About bridged mode



- Do not install or use this amplifier by wiring speakers rated at 4 Ω (or lower) in parallel to achieve a 2 Ω (or lower) bridged mode (Diagram B). Amplifier damage, smoke, and overheating could result from improper bridging. The amplifier surface could also become hot to the touch and minor burns could result. To properly install or use a bridged mode and achieve a 4 Ω load, wire two 8 Ω speakers in parallel with Left ⊕ and Right ⊖ (Diagram A) or use a single 4 Ω speaker. In addition, refer to the speaker instruction manual for information on the correct connection procedure.
- For any further enquiries, contact your local authorized Pioneer dealer or customer service.

### About suitable specification of speaker

Ensure speakers conform to the following standards, otherwise there is a risk of fire, smoke or damage. Speaker impedance is 2 Ω

to 8 Ω for stereo connection, or 4 Ω to 8 Ω for monaural and other bridge connection.

### Subwoofer

Speaker channel	Power
Two-channel output	Nominal input: Min. 150 W (GM-A5602) Min. 60 W (GM-A3602)
One-channel output	Nominal input: Min. 450 W (GM-A5602) Min. 180 W (GM-A3602)

### Other than subwoofer

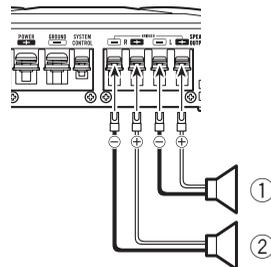
Speaker channel	Power
Two-channel output	MAX input: Min. 300 W (GM-A5602) Min. 120 W (GM-A3602)
One-channel output	MAX input: Min. 900 W (GM-A5602) Min. 400 W (GM-A3602)



## Connecting the speakers

The speaker output mode can be two-channel (stereo) or one-channel (mono). Connect the speaker leads to suit the mode according to the figures shown below.

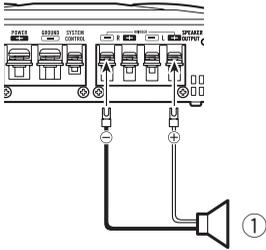
### Two-channel output (Stereo)



- Speaker (Left)
- Speaker (Right)

# Connecting the units

## One-channel output

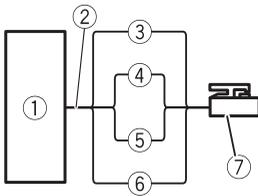


① Speaker (Mono) ■

## Connections when using the speaker input wire

Connect the car stereo speaker output wires to the amplifier using the supplied speaker input wire.

- Do not connect both the RCA input and the speaker input at the same time.



- ① Car Stereo
- ② Speaker output
- ③ White/black: Left ⊖
- ④ White: Left ⊕
- ⑤ Gray/black: Right ⊖
- ⑥ Gray: Right ⊕
- ⑦ Speaker input connector  
To speaker input terminal of this unit.

### Note

If speaker input wires from a headunit are connected to this amplifier, the amplifier will automatically turn on when the headunit is turned on. When the headunit is turned off, the amplifier turns off automatically. This function may not

work with some headunits. In such cases, please use a system remote control wire (sold separately). If multiple amplifiers are to be connected together synchronously, connect the head unit and all amplifiers via the system remote control wire. ■

## Connecting the power terminal

The use of a special red battery and ground wire RD-223 (sold separately) is recommended. Connect the battery wire directly to the car battery positive terminal ⊕ and the ground wire to the car body.

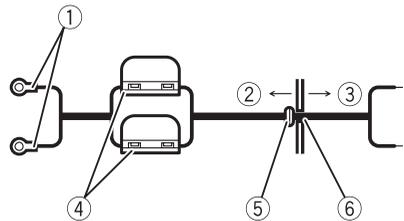
### ⚠ WARNING

If the battery wire is not securely fixed to the terminal using the terminal screws, there is a risk of overheating, malfunction and injury, including minor burns.

### 1 Route battery wire from engine compartment to the vehicle interior.

- When drilling a cable pass-hole into the vehicle body and routing a battery wire through it, take care not to short-circuit the wire damaging it by the cut edges or burrs of the hole.

After completing all other amplifier connections, finally connect the battery wire terminal of the amplifier to the positive ⊕ battery terminal.

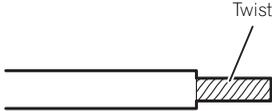


- ① Positive ⊕ terminal
- ② Engine compartment
- ③ Vehicle interior
- ④ Fuse (30 A) × 2

## Connecting the units

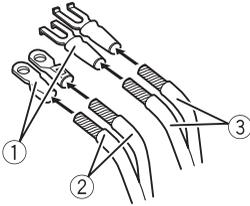
- ⑤ Insert the O-ring rubber grommet into the vehicle body.
- ⑥ Drill a 14 mm hole into the vehicle body.

### 2 Twist the battery wire, ground wire and system remote control wire.



### 3 Attach lugs to wire ends.

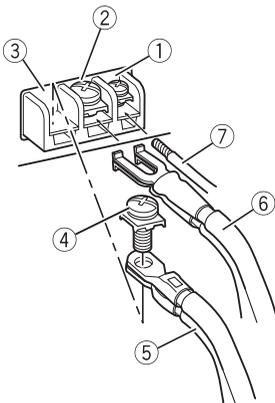
Use pliers, etc., to crimp lugs to wires.



- ① Lug (sold separately)
- ② Battery wire
- ③ Ground wire

### 4 Connect the wires to the terminal.

Fix the wires securely with the terminal screws.

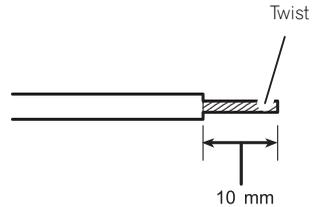


- ① System remote control terminal
- ② Ground terminal
- ③ Power terminal

- ④ Terminal screws
- ⑤ Battery wire
- ⑥ Ground wire
- ⑦ System remote control wire

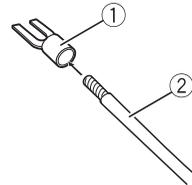
## Connecting the speaker output terminals

1 Use wire cutters or a utility knife to strip the end of the speaker wires to expose about 10 mm of wire and then twist the wire.



### 2 Attach lugs to wire ends.

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

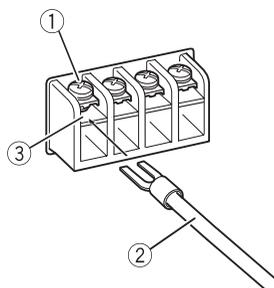


- ① Lug (sold separately)
- ② Speaker wire

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

Fix the speaker wires securely with the terminal screws.

## Connecting the units



- ① Terminal screws
- ② Speaker wires
- ③ Speaker output terminals ■

# Installation

## Before installing the amplifier

### **⚠ WARNING**

- To ensure proper installation, use the supplied parts in the manner specified. If any parts other than those supplied are used, they may damage internal parts of the amplifier, or become loose causing the amplifier to shut down.
- Do not install in:
  - Places where it could injure the driver or passengers if the vehicle stops suddenly.
  - Places where it may interfere with the driver, such as on the floor in front of the driver's seat.
- Install tapping screws in such a way that the screw tip does not touch any wire. This is important to prevent wires from being cut by vibration of the car, which can result in fire.
- Make sure that wires do not get caught in the sliding mechanism of the seats or touch the legs of a person in the vehicle as short-circuit may result.
- When drilling to install the amplifier, always confirm no parts are behind the panel and protect all cables and important equipment (e.g. fuel/brake lines, wiring) from damage.

### **⚠ CAUTION**

- To ensure proper heat dissipation of the amplifier, ensure the following during installation:
  - Allow adequate space above the amplifier for proper ventilation.
  - Do not cover the amplifier with a floor mat or carpet.
- Protection function may activate to protect the amplifier against overheating due to installation in locations where sufficient heat cannot be dissipated, continuous use under high-volume conditions, etc. In such cases, the amplifier reduces the power output or shuts down until it has cooled to a certain designated temperature.
- Place all cables away from hot places, such as near the heater outlet.
- The optimal installation location differs depending on the car model. Secure the amplifier at a sufficiently rigid location.

- Check all connections and systems before final installation.
- After installing the amplifier, confirm that the spare tire, jack and tools can be easily removed.

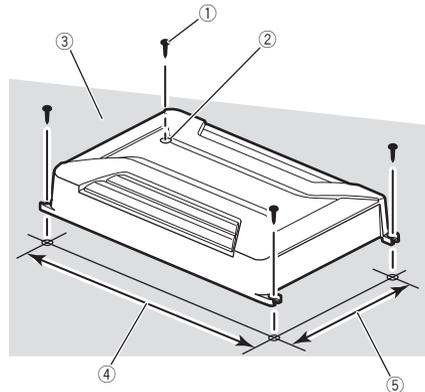
## Example of installation on the floor mat or chassis

### 1 Place the amplifier in the desired installation location.

Insert the supplied tapping screws (4 mm × 18 mm) into the screw holes and push on the screws with a screwdriver so they make an imprint where the installation holes are to be located.

### 2 Drill 2.5 mm diameter holes at the imprints either on the carpet or directly on the chassis.

### 3 Install the amplifier with the use of supplied tapping screws (4 mm × 18 mm).



- ① Tapping-screws (4 mm × 18 mm)
- ② Drill a 2.5 mm diameter hole
- ③ Floor mat or chassis
- ④ Hole-to-hole distance: 338 mm (GM-A5602) / 228 mm (GM-A3602)
- ⑤ Hole-to-hole distance: 196 mm (GM-A5602) / 161 mm (GM-A3602)

## Additional information

### Specifications

#### GM-A5602

Power source .....	14.4 V DC (10.8 V to 15.1 V allowable)
Grounding system .....	Negative type
Current consumption .....	36 A (at continuous power, 4 Ω)
Average current drawn .....	9.5 A (4 Ω for two channels) 15.5 A (4 Ω for one channel)
Fuse .....	30 A × 2
Dimensions (W × H × D) ...	348 mm × 60 mm × 215 mm
Weight .....	2.3 kg (Leads for wiring not included)
Maximum power output .....	300 W × 2 (4 Ω) / 450 W × 2 (2 Ω) / 900 W TOTAL (BRIDGE)
Continuous power output ...	150 W × 2 (at 14.4 V, 4 Ω, 20 Hz to 20 kHz, ≤ 1.0% THD +N) 450 W × 1 (at 14.4 V, 4 Ω BRIDGE 1 kHz, ≤ 1.0% THD +N)
Load impedance .....	4 Ω (2 Ω to 8 Ω allowable)
Frequency response .....	10 Hz to 70 kHz (+0 dB, -3 dB)
Signal-to-noise ratio .....	96 dB (IEC-A network)
Distortion .....	0.05 % (10 W, 1 kHz)
Low pass filter:	
Cut off frequency .....	40 Hz to 500 Hz
Cut off slope .....	-12 dB/oct
Bass boost:	
Frequency .....	50 Hz
Level .....	0 dB/6 dB/12 dB
Gain control:	
RCA .....	0.3 V to 6.5 V
Speaker .....	3.0 V to 26 V
Maximum input level / impedance:	
RCA .....	6.5 V / 22 kΩ
Speaker .....	26 V / 16 kΩ

#### GM-A3602

Power source .....	14.4 V DC (10.8 V to 15.1 V allowable)
Grounding system .....	Negative type
Current consumption .....	14.5 A (at continuous power, 4 Ω)
Average current drawn .....	4 A (4 Ω for two channels) 6.5 A (4 Ω for one channel)
Fuse .....	25 A × 1

Dimensions (W × H × D) ...	238 mm × 60 mm × 180 mm
Weight .....	1.4 kg (Leads for wiring not included)
Maximum power output .....	120 W × 2 (4 Ω) / 200 W × 2 (2 Ω) / 400 W TOTAL (BRIDGE)
Continuous power output ...	60 W × 2 (at 14.4 V, 4 Ω, 20 Hz to 20 kHz, ≤ 1.0% THD +N) 180 W × 1 (at 14.4 V, 4 Ω BRIDGE 1 kHz, ≤ 1.0% THD +N) 90 W × 2 (at 14.4 V, 2 Ω, 1 kHz, ≤ 1.0% THD+N)
Load impedance .....	4 Ω (2 Ω to 8 Ω allowable)
Frequency response .....	10 Hz to 70 Hz (+0 dB, -3 dB)
Signal-to-noise ratio .....	95 dB (IEC-A network)
Distortion .....	0.05 % (10 W, 1 kHz)
Low pass filter:	
Cut off frequency .....	80 Hz
Cut off slope .....	-12 dB/oct
Gain control:	
RCA .....	0.3 V to 6.5 V
Speaker .....	3.0 V to 26 V
Maximum input level / impedance:	
RCA .....	6.5 V / 22 kΩ
Speaker .....	26 V / 16 kΩ

#### Notes

- Specifications and the design are subject to modifications without notice.
- 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. ▣