



OPERATING INSTRUCTIONS

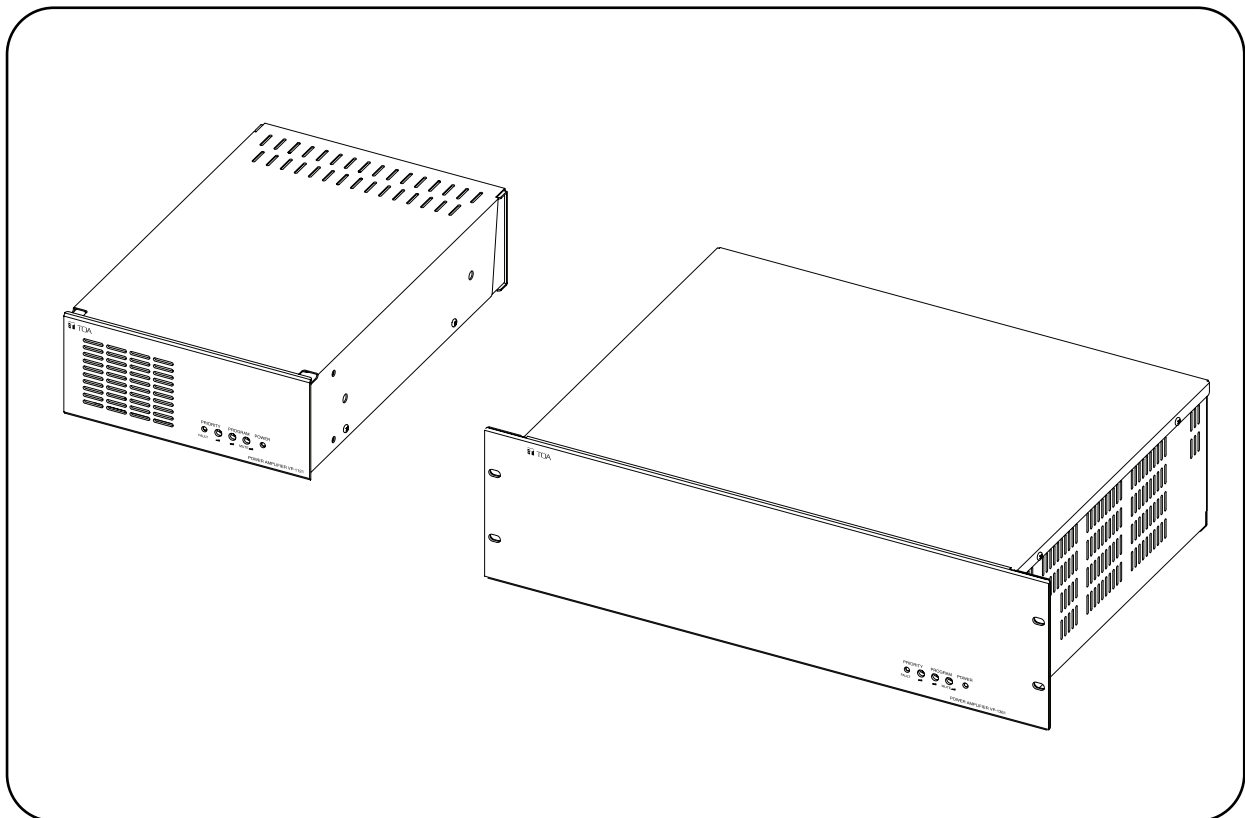
POWER AMPLIFIERS

VP-1061 (60 W)

VP-1121 (120 W)

VP-1241 (240 W)

VP-1361 (360 W)



Thank you for purchasing TOA's Power Amplifier.

Please carefully follow the instructions in this manual to ensure long, trouble-free use of your equipment.

TOA Corporation

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1. SAFETY PRECAUTIONS

- Be sure to read this safety instructions in this section carefully in prior to use.
- Be sure to follow all the precautionary instructions in this section, which contain important warnings and/or cautions regarding safety.
- After reading, keep this manual handy for future reference.


Safety Symbol and Message Conventions

Safety symbols and messages described below are used in this manual to prevent bodily injury and property damage which could result from mishandling. Before operating your product, read this manual first and understand the safety symbols and messages so you are thoroughly aware of the potential safety hazards.

WARNING

Indicates a potentially hazardous situation which, if mishandled, could result in death or serious personal injury.

When Installing the Unit

- Do not expose the unit to rain or an environment where it may be splashed by water or other liquids, as doing so may result in fire or electric shock.
- Use the unit only with the voltage specified on the unit. Using a voltage higher than that which is specified may result in fire or electric shock.
- Do not cut, kink, otherwise damage nor modify the power supply cord. In addition, avoid using the power cord in close proximity to heaters, and never place heavy objects -- including the unit itself -- on the power cord, as doing so may result in fire or electric shock.
- Owing to the unit's size and weight, be sure that at least two persons are available to install the unit. Failure to do so could result in personal injury.
- Do not use other methods than specified to mount the bracket. Extreme force is applied to the unit and the unit could fall off, possibly resulting in personal injuries.
- Use a cable of AWG 16 or thicker (VP-1061 and VP-1121) or AWG 12 or thicker (VP-1241 and VP-1361) for connecting to the 24 V DC POWER IN terminal. Also, be sure to firmly screw the cable to the terminal. Failure to do so may cause the cable to generate heat, possibly resulting in fire.
- The socket-outlet shall be installed near the equipment and the plug (disconnecting device) shall be easily accessible.
- The apparatus shall be connected to a main socket outlet with a protective earthing connection.
- The terminals marked with the symbol  are hazardous live. The external wiring to these terminals requires installation by an instructed person.

When the Unit is in Use

- Should the following irregularity be found during

use, immediately disconnect the power supply plug from the AC outlet and contact your nearest TOA dealer. Make no further attempt to operate the unit in this condition as this may cause fire or electric shock.

- If you detect smoke or a strange smell coming from the unit
- If water or any metallic object gets into the unit
- If the unit falls, or the unit case breaks
- If the power supply cord is damaged (exposure of the core, disconnection, etc.)
- If it is malfunctioning (no tone sounds.)
- To prevent a fire or electric shock, never open nor remove the unit case as there are high voltage components inside the unit. Refer all servicing to qualified service personnel.
- Do not place cups, bowls, or other containers of liquid or metallic objects on top of the unit. If they accidentally spill into the unit, this may cause a fire or electric shock.
- Do not insert nor drop metallic objects or flammable materials in the ventilation slots of the unit's cover, as this may result in fire or electric shock.
- Do not touch a plug during thunder and lightning, as this may result in electric shock.
- When replacing the fuse, be sure to use the supplied one or equivalent. Doing otherwise may cause fire or electric shock.

CAUTION

Indicates a potentially hazardous situation which, if mishandled, could result in moderate or minor personal injury, and/or property damage.

When Installing the Unit

- Never plug in nor remove the power supply plug with wet hands, as doing so may cause electric shock.
- When unplugging the power supply cord, be sure to grasp the power supply plug; never pull on the cord itself. Operating the unit with a damaged power supply cord may cause a fire or electric shock.

- When moving the unit, be sure to remove its power supply cord from the AC outlet. Moving the unit with the power supply cord connected to the outlet may cause damage to the power supply cord, resulting in fire or electric shock. When removing the power cord, be sure to hold its plug to pull.
- Do not block the ventilation slots in the unit's cover. Doing so may cause heat to build up inside the unit and result in fire.
- Avoid installing the unit in humid or dusty locations, in locations exposed to the direct sunlight, near the heaters, or in locations generating sooty smoke or steam as doing otherwise may result in fire or electric shock.
- When unpacking or moving the unit, be sure to handle it with two or more persons. Falling or dropping the unit may cause personal injury and/or property damage.
- To avoid electric shocks, be sure to disconnect the power supply plug from the AC outlet when connecting speakers.
- Be sure to follow the instructions below when rack-mounting the unit. Failure to do so may cause a fire or personal injury.
 - Install the equipment rack on a stable, hard floor. Fix it with anchor bolts or take other arrangements

to prevent it from falling down.

- When connecting the unit's power cord to an AC outlet, use the AC outlet with current capacity allowable to the unit.

When the Unit is in Use

- Make sure that the volume control is set to minimum position before power is switched on. Loud noise produced at high volume when power is switched on can impair hearing.
- Do not operate the unit for an extended period of time with the sound distorting. Doing so may cause the connected speakers to heat, resulting in a fire.
- Contact your TOA dealer as to the cleaning. If dust is allowed to accumulate in the unit over a long period of time, a fire or damage to the unit may result.
- If dust accumulates on the power supply plug or in the wall AC outlet, a fire may result. Clean it periodically. In addition, insert the plug in the wall outlet securely.
- Unplug the power supply plug from the AC outlet for safety purposes when cleaning or leaving the unit unused for 10 days or more. Doing otherwise may cause a fire or electric shock.

2. GENERAL DESCRIPTION

The VP-1061 (60 W), VP-1121 (120 W), VP-1241 (240 W), and VP-1361 (360 W) are 1-channel Power Amplifiers designed exclusively for rack mount use.

3. FEATURES

- Both the VP-1061 and VP-1121 are 2U* half rack size amplifiers, mountable either alone or side-by-side in a 19" rack.
- Both the VP-1241 and VP-1361 are 3U* full rack size amplifiers.
- Operate on either 230 V AC or 24 V DC.
- An optional YA-1000A Fault Detection Circuit Module can be installed.
- Equipped with Program and Priority inputs, volume level of Program input can be attenuated whenever the Priority input receives a signal. Attenuation of the volume level is adjustable.
- Input terminals employ removable terminal blocks to provide maximum connection ease.

* 1U size = 44.5 mm (standard size)

4. HANDLING PRECAUTIONS

- It is recommended that the unit be always used in locations where the ambient temperature ranges from 0 to +40 °C and humidity is less than 90% (no condensation).
- When cleaning the unit, be sure to disconnect the power supply plug from the AC outlet. Wipe with a soft dry cloth. If it gets very dirty, use the soft cloth slightly moistened in neutral cleanser. Never use thinner, benzene, chemically processed towels, or alcohol as the unit's plastic or other parts may be deformed or discolored.

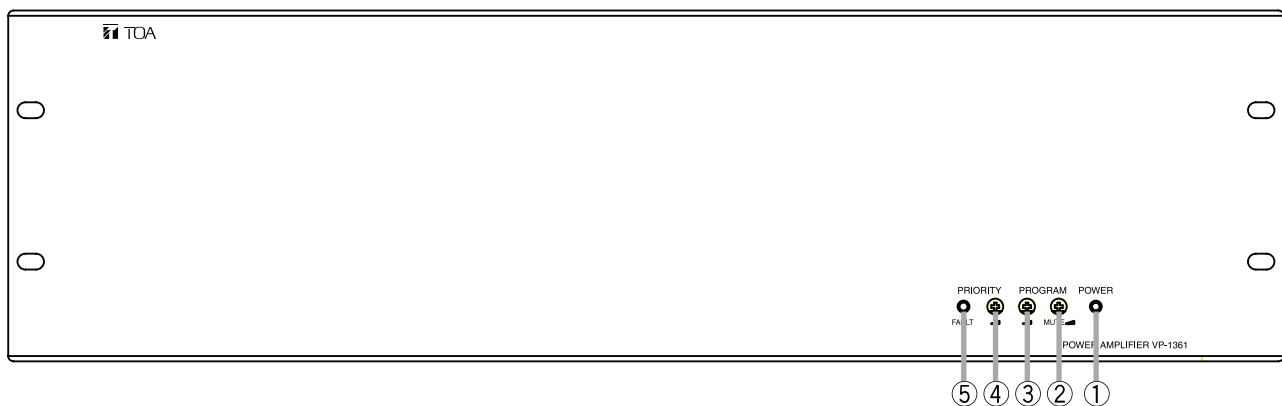
5. INSTALLATION PRECAUTIONS

- Avoid using the power supply cord other than the supplied one.
- Keep the input cable away from the output cable. If installed close to each other, oscillation could occur.
- To avoid amplifier failures, never connect outputs of two or more amplifiers in parallel.
- Only connect speakers with an impedance equal to or greater than those specified. Connecting speakers with a smaller than specified impedance could cause damage to the amplifier.

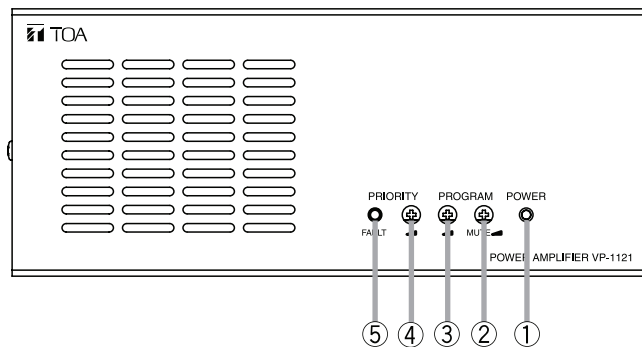
6. NOMENCLATURE AND FUNCTIONS

6.1. Front

VP-1241, VP-1361



VP-1061, VP-1121



1. Power indicator

Lights blue when the power is applied to the unit.

2. Program input mute level control

Program input volume can be muted (attenuated) by shorting the Priority control input terminals (17). This control adjusts the attenuation. Turn the control clockwise to increase attenuation and counterclockwise to decrease it.

3. Program input volume control

Adjusts the Program input (15) volume. Turn the control clockwise to increase the volume and counterclockwise to decrease it.

4. Priority input volume control

Adjusts the Priority input (18) volume. Turn the control clockwise to increase the volume and counterclockwise to decrease it.

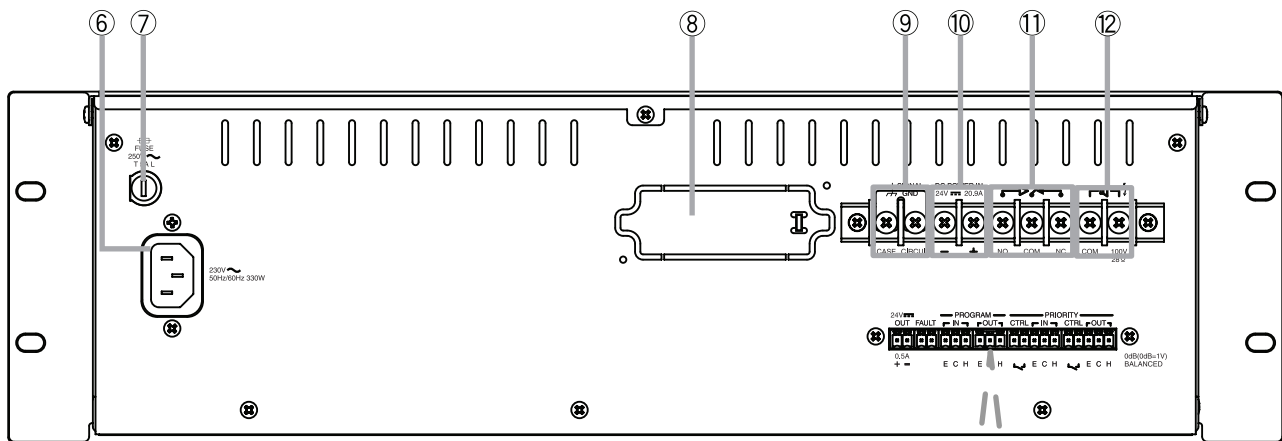
5. Priority input/Fault indicator

Lights green while the Priority control input terminals (17) are shorted.

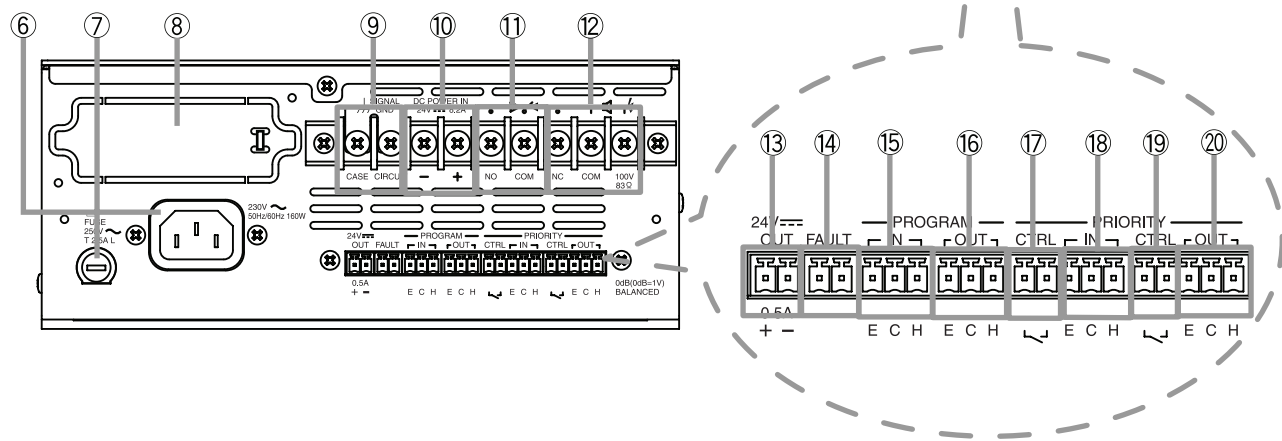
Lights red when the fault detection circuit is activated. (Operates when the YA-1000A is mounted.)

6.2. Rear

VP-1241, VP-1361



VP-1061, VP-1121



6. AC inlet

Connect this inlet to the AC power source using the supplied power cord.

7. AC fuse holder

When replacing the fuse, be sure to use the supplied one or equivalent shown below.

Model	Specification of AC fuse
VP-1061	250V T1.25A L
VP-1121	250V T2.5A L
VP-1241	250V T4.0A L
VP-1361	250V T6.3A L

For fuse replacement, refer to the next page.

8. Fault detection module slot

Accepts the YA-1000A Fault Detection Circuit Module.

Note

Leave this work to service personnel. Contact your TOA dealer.

9. Functional ground terminals

Hum noise may be generated when external equipment is connected to the unit. Connecting the case terminal to the functional ground terminal of the external equipment may reduce the hum noise.

A ground lift jumper is factory-set between the Case and Circuit terminals. When this jumper is removed, the circuit ground can be electrically disconnected.

Note

This ground is not for protective ground.

10. 24 V DC Power input terminals

Connect to 24 V DC power supply.

11. Emergency relay terminals

Provide relay output.

Switch from "NC" to "NO" in synchronization with the Priority control input (17).

12. Speaker output terminals

Connect to speakers.

13. DC Power output terminals

Supply DC power of 24 V, 500 mA to connected external equipment.

14. Fault output terminals

Not used.

15. Program input terminals

0 dB*, 20 kΩ, balanced

These terminals are internally connected in parallel to the Program output terminals (16). The Program input is muted while the Priority control input terminals (17) are shorted.

16. Program output terminals

These terminals are internally connected in parallel to the Program input terminals (15). Connecting these terminals to the other amplifier's input permits the Program input signals to be sent to such a connected amplifier.

17. Priority control input terminals

When these terminals are shorted, broadcast through the Priority input (18) takes precedence over the one through the Program input (15), switching the Emergency relay terminals (11) simultaneously.

18. Priority input terminals

0 dB*, 20 kΩ, balanced

These terminals are internally connected in parallel to the Priority output terminals (20).

Broadcast through the Priority input takes precedence over the one through the Program input (15) while the Priority control input (17) terminals are shorted.

19. Priority control output terminals

These terminals are internally connected in parallel to the Priority control input terminals (17).

20. Priority output terminals

These terminals are internally connected in parallel to the Priority input terminals (18). Connecting these terminals to the other amplifier's input permits the Priority input signals to be sent to such a connected amplifier.

* 0 dB = 1V

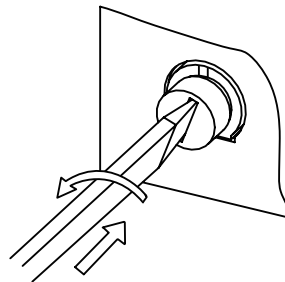
Fuse Replacement

[To remove the fuse]

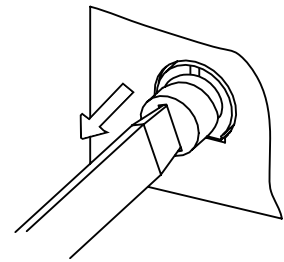
Step 1. Place the standard screwdriver blade into the slot in the fuse carrier. Rotate the fuse carrier counterclockwise while pressing it firmly.

Step 2. Release pressure and extract the fuse carrier and the fuse.

1 Rotate counterclockwise while pressing firmly.



2 Fuse carrier comes out.



[To install the fuse]

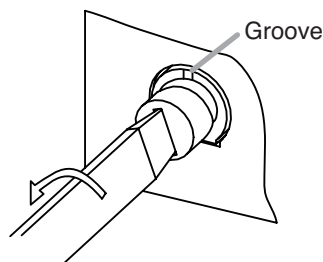
Step 1. Insert the fuse carrier with a new fuse into the holder body slightly by hand. First, rotate it counterclockwise with a standard screwdriver.

Note

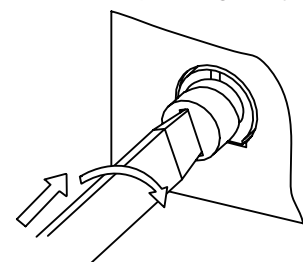
When installing the fuse carrier, do not insert its tab into the holder body's groove.

Step 2. Then, rotate the fuse carrier clockwise to lock while pressing it firmly.

1 First, rotate counterclockwise.



2 Rotate clockwise while pressing firmly.



7. RACK MOUNTING

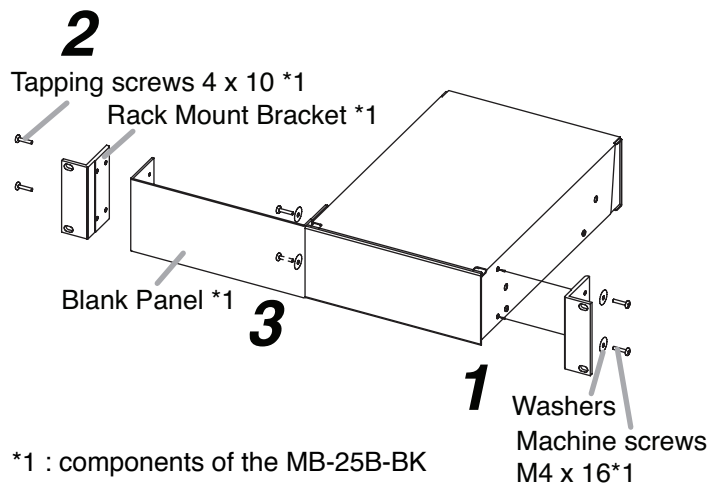
[When mounting a single VP-1061 or VP-1121]

Prepare the optional MB-25B-BK Rack Mounting Bracket.

Step 1. Attach the Mount Bracket to the unit's side using 2 machine screws M4 x 16 and 2 washers supplied with the MB-25B-BK.

Step 2. Attach the mount Bracket to the Blank Panel using 2 tapping screws 4 x 10 supplied with the MB-25B-BK.

Step 3. Attach the Blank Panel to the other side of the unit using 2 machine screws M4 x 16 and 2 washers supplied with the MB-25B-BK.



*1 : components of the MB-25B-BK

List of components of the MB-25B-BK	
Mount Bracket	2
Blank Panel	1
Mounting screws	1 set

[When linking 2 VP-1061s or VP-1121s]

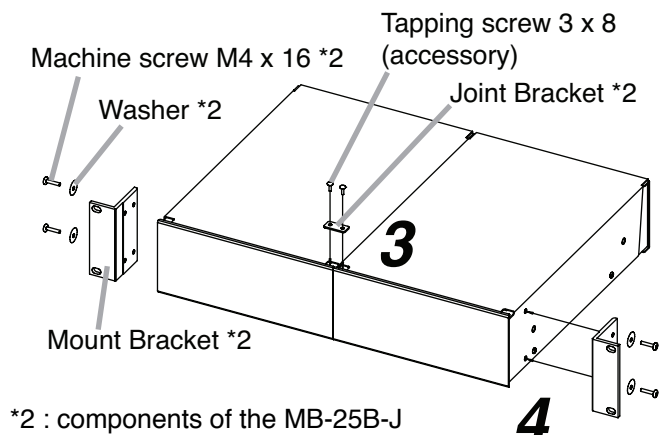
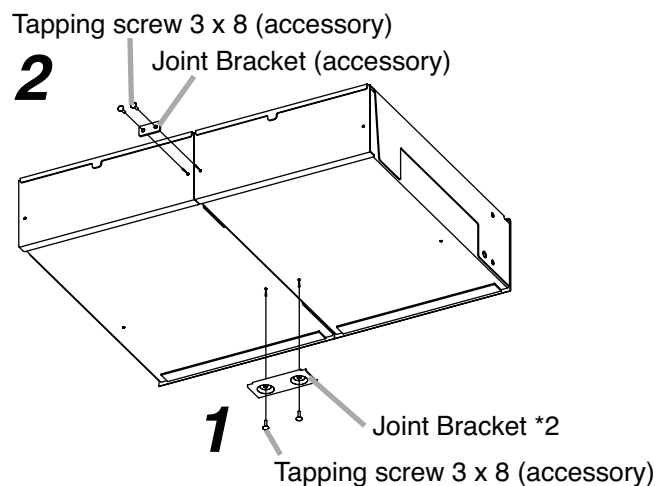
Prepare the optional MB-25B-J Rack Mounting Bracket.

Step 1. Secure the Joint Bracket supplied with the MB-25B-J to the bottom sides of the units using 2 supplied tapping screws 3 x 8.

Step 2. Secure the supplied joint bracket to the units' rear panels using 2 supplied tapping screws 3 x 8.

Step 3. Secure the supplied joint bracket to the units' top panels using 2 supplied tapping screws 3 x 8.

Step 4. Attach one Mount Bracket to the side of each unit as shown at right below using 2 sets of 2 machine screws M4 x 16 and 2 washers supplied with the MB-25B-J.

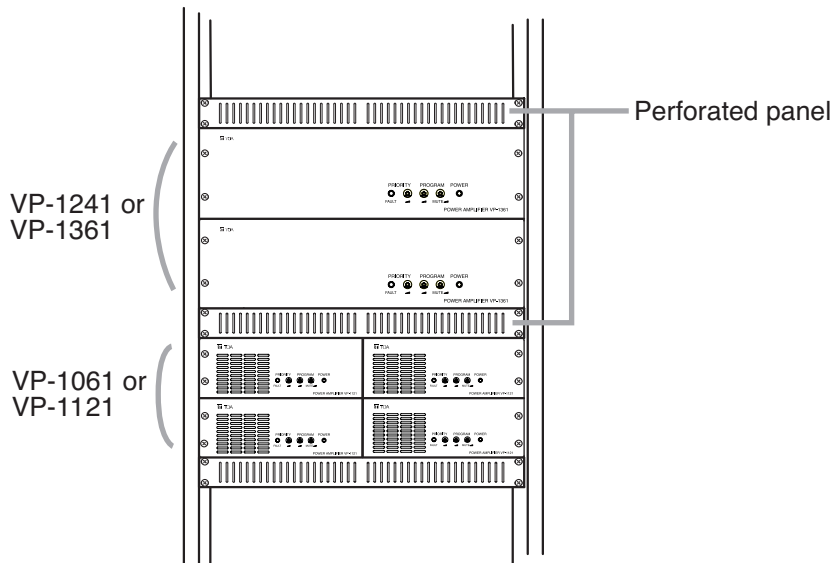


*2 : components of the MB-25B-J

List of components of the MB-25B-J	
Mount Bracket	2
Joint Bracket	1
Mounting screws	1 set

- When mounting 2 or more units in an equipment rack, be sure to mount a perforated panel larger than 1U size above every 2 stacks of amplifiers as shown in the figure.

*1U size = 44.5 mm (standard size)



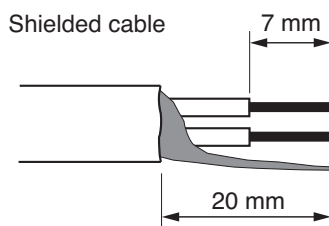
- It is recommended that a supporting runner be installed to the rack so that the unit can be easily drawn from the front of the rack for maintenance purpose.
For the installation procedures of the supporting runner, please contact manufacturer for the rack to be used.

8. REMOVABLE TERMINAL PLUG CONNECTION

Note

- Avoid soldering cable conductor, as contact resistance may increase when the cable is tightened and the solder is crushed, possibly resulting in an excessive rise in joint temperatures.
- Usable cables of AWG 16 - 28.

Cable end treatment



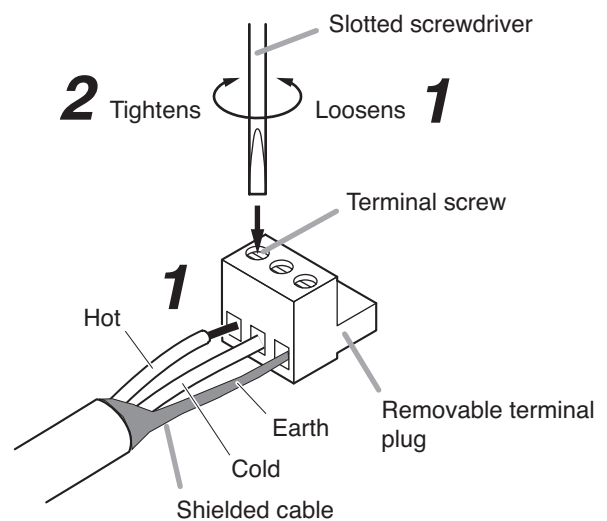
Connector Connections

Step 1. Loosen the terminal screw, then insert the cable.

Step 2. Retighten the terminal screw.

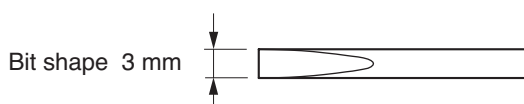
Note

Pull on the cable lead to ensure it is securely connected.



Tip

Recommended slotted screwdriver: Screwdriver with blade that is 3 mm in width.



9. CONNECTIONS

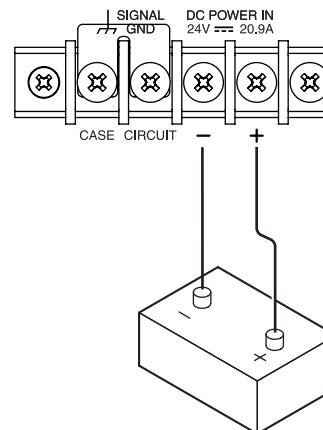
9.1. Connecting to an AC power source

Designed for continuous operations, the unit has no power on/off switch on itself.

The unit's power cord should be connected to the Switched AC power outlet of the junction panel so that power can be turned on and off for the entire amplifier rack.

9.2. Connecting to a DC Power Source

When using a 24 V DC external power source, connect it to the DC power input terminals on the unit's rear panel. When the AC power fails, the power is automatically switched to the DC power.



24 V DC power supply unit

⚠ WARNING

Use the DC power cable of AWG 16 or thicker (VP-1061 and VP-1121) or AWG 12 or thicker (VP-1241 and VP-1361). Also, be sure to firmly screw the cable to the terminal. Failure to do so may cause the cable to generate heat, possibly resulting in fire.

9.3. Speaker Connection

Only connect speakers with an impedance equal to or greater than those specified.

Note

Connecting speakers with a smaller than specified impedance could cause damage to the amplifier.

VP-1061 (60 W)	167 Ω
VP-1121 (120 W)	83 Ω
VP-1241 (240 W)	42 Ω
VP-1361 (360 W)	28 Ω

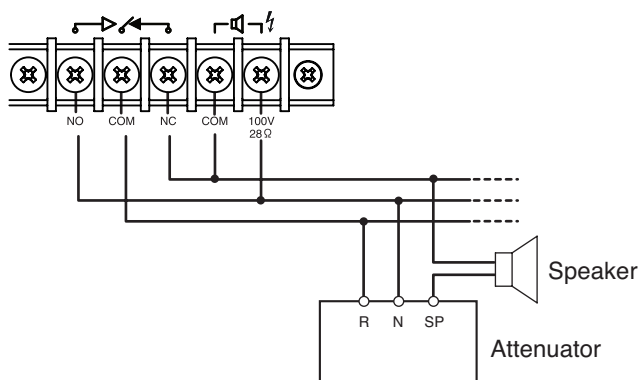
9.4. Attenuator Connection

The unit has a built-in relay interlocked with the Priority control input.

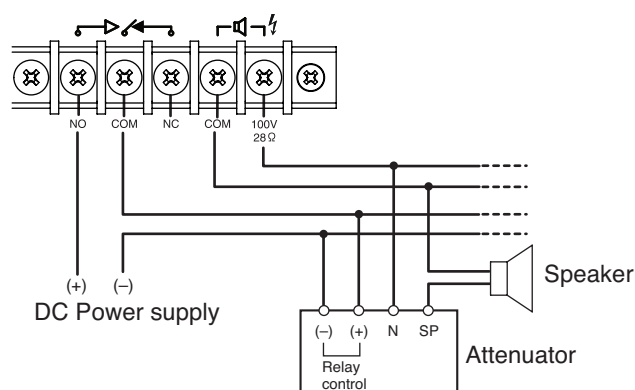
The relay provides NC and NO terminals on the unit's rear panel.

For emergency broadcast, attenuators can be connected using either of the following two methods.

[3-wire system]



[4-wire system]



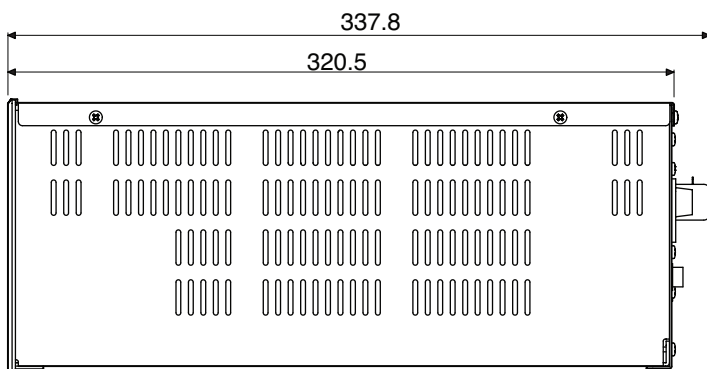
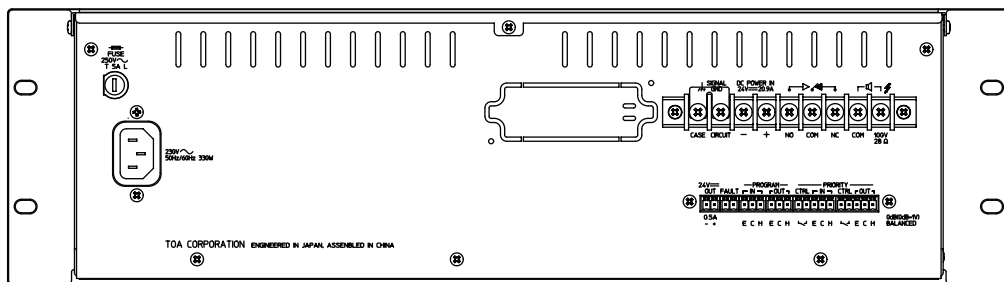
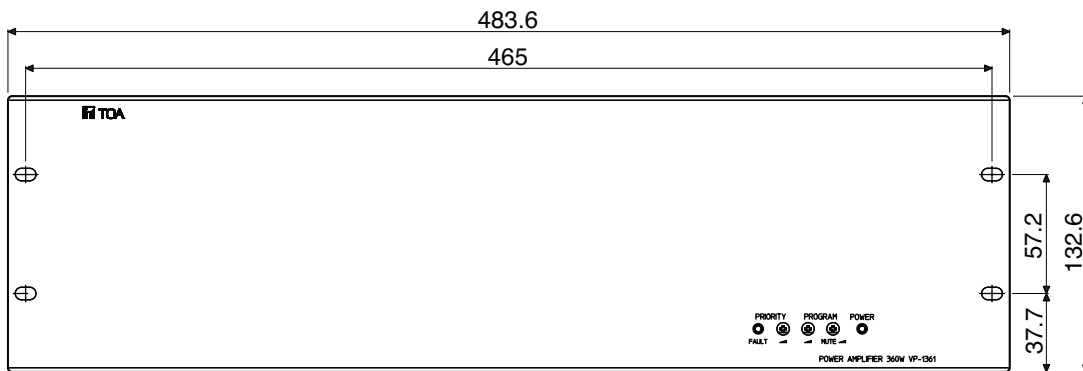
Note

Use the attenuator with relay control terminals that permit emergency broadcasts to bypass this attenuator by 24 V DC power.

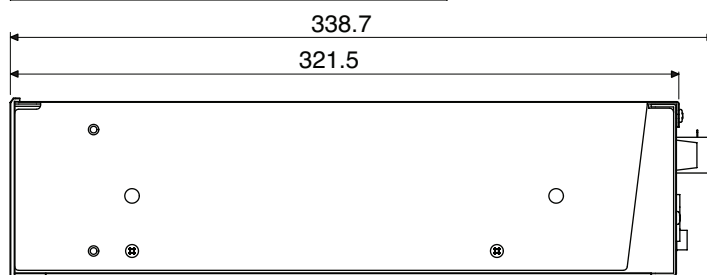
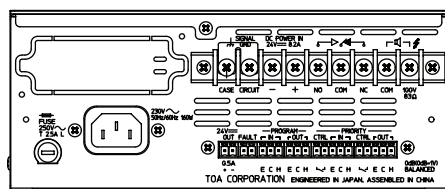
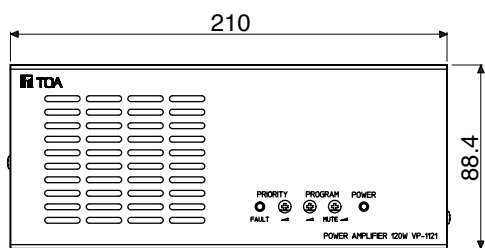
10. DIMENSIONAL DIAGRAMS

10.1. VP-1241, VP-1361

Unit: mm



10.2. VP-1061, VP-1121



11. SPECIFICATIONS

	VP-1061	VP-1121	VP-1241	VP-1361
Power Source	230 V AC, 50/60Hz 24 V DC			
Power Consumption				
AC: (at rated output)	170 W	320 W	537 W	768 W
AC: (EN60065)	100 W	160 W	240 W	330 W
AC: (no-signal)	14 W	19 W	21 W	37 W
DC: (at rated output)	4.5 A	8.2 A	14.6 A	20.9 A
DC: (no-signal)	0.1 A	0.1 A	0.4 A	0.5 A
Rated Output	60 W	120 W	240 W	360 W
Input	2 Program inputs (parallel), 0 dB*, 20 kΩ, balanced 2 Priority inputs (parallel), 0 dB*, 20 kΩ, balanced			
Impedance	167 Ω	83 Ω	42 Ω	28 Ω
S/N Ratio	80 dB or more			
Total Harmonic Distortion	1% or less (at rated output f = 1 kHz)			
Frequency Response	80 Hz – 16 kHz ±3 dB (at 1/3 rated output)			
Ventilation	Fan cooling			
Operating Temperature	0°C to +40°C			
Operating Humidity	90% RH or less (no condensation)			
Finish	Panel: Aluminum, black, alumite			
Dimensions	210 (w) x 88.4 (h) x 338.7 (d) mm		483.6 (w) x 132.6 (h) x 337.8 (d) mm	
Weight	6.9 kg	9.3 kg	13.4 kg	16.6 kg

* 0 dB = 1V

● Accessories

Power cable (2 m).....1
 Removable terminal plug (2 pins)2
 Removable terminal plug (3 pins)2
 Removable terminal plug (5 pins)2
 Joint plate1 (VP-1061, VP-1121 only)
 Joint plate mounting screw3 (VP-1061, VP-1121 only)
 Fuse.....1 (1.25 A: VP-1061, 2.5 A: VP-1121, 4.0 A: VP-1241, 6.3 A: VP-1361)

● Optional Products

Fault detector: YA-1000A
 Rack mounting bracket: MB-25B-BK (for rack mounting one VP-1061 or VP-1121 unit)
 Rack mounting bracket: MB-25B-J (for rack mounting two VP-1061 or VP-1121 unit)

Traceability Information for Europe (EMC directive 2004/108/EC)

Manufacturer:
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