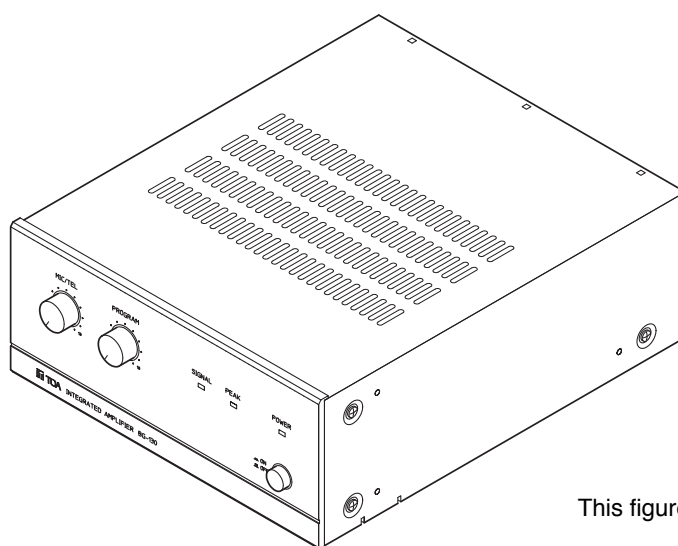


MIXER POWER AMPLIFIERS
BG-115
BG-130


This figure represents the BG-130.

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Thank you for purchasing TOA's Mixer Power Amplifier.

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

1. IMPORTANT SAFETY INSTRUCTIONS

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

INSTRUCTIONS ESSENTIELLES POUR LA SÉCURITÉ

- Lire ces instructions.
- Conserver ces instructions pour référence ultérieure.
- Respecter tous les avertissements.
- Suivre toutes les instructions.
- Ne pas utiliser cet appareil à proximité d'eau.
- Nettoyer uniquement à l'aide d'un chiffon sec.
- Ne pas obstruer les orifices de ventilation. Installer conformément aux instructions du fabricant.
- Ne pas installer à proximité de sources de chaleur telles que des radiateurs, des registres thermiques, des chaudières ou d'autres appareils (notamment des amplificateurs) produisant de la chaleur.
- Ne pas contourner la fonction de sécurité de la fiche polarisée ou de mise à la terre. Une fiche polarisée est équipée de deux broches, dont l'une est plus large que l'autre. Une fiche de mise à la terre est équipée de deux broches et d'une troisième pour la mise à la terre. Cette dernière, la plus large, est prévue à des fins de sécurité. Si la fiche fournie ne peut être insérée dans la prise électrique souhaitée, consulter un électricien pour faire remplacer cette dernière.
- Protéger le cordon d'alimentation pour éviter qu'il ne soit piétiné ou pincé, notamment au niveau des fiches, des prises de courant ou de son point de sortie de l'appareil.
- Utiliser uniquement les accessoires spécifiés par le fabricant.
- Utiliser uniquement avec le chariot, support, trépied, la patte de montage ou la table spécifiés par le fabricant ou vendus avec l'appareil. En cas d'utilisation d'un chariot, manipuler la combinaison chariot/appareil pour éviter les blessures dues à un renversement.



- Débrancher cet appareil pendant les orages ainsi que lorsqu'il reste inutilisé pendant une période prolongée.
- La maintenance de l'appareil doit être confiée à un technicien après-vente qualifié. Une maintenance s'avère nécessaire si l'appareil est endommagé (au niveau du cordon d'alimentation ou de la fiche), a été mouillé par un liquide, un objet est tombé à l'intérieur, s'il a été exposé à la pluie ou l'humidité, s'il ne fonctionne pas normalement ou s'il est tombé.

2. SAFETY PRECAUTIONS

- Before installation or use, be sure to carefully read all the instructions in this section for correct and safe operation.
- 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.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operation and maintenance (servicing) instruction in the literature accompanying the appliance.



Le point d'exclamation à l'intérieur d'un triangle équilatéral avertit l'utilisateur de l'existence d'instructions d'utilisation et d'entretien (réparation) dans la documentation fournie avec l'appareil.



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.
- Be sure to replace the unit's terminal cover after connection completion. Because the voltage of up to 70 V is applied to the high impedance speaker terminals, never touch these terminals to avoid electric shock.
- Veiller à remettre en place le capot de l'appareil une fois les connexions réalisées. Les bornes du haut-parleur à haute impédance étant soumis à une tension jusqu'à 70 V, ne jamais toucher ces bornes pour éviter un risque de choc électrique.
- Avoid installing or mounting the unit in unstable locations, such as on a rickety table or a slanted surface. Doing so may result in the unit falling down and causing personal injury and/or property damage.
- External wiring connected to the terminals marked with ⚡ requires installation by an instructed person.
- The apparatus shall be connected to a mains socket outlet with a protective earthing connection.
- The socket-outlet shall be installed near the equipment and the plug shall be easily accessible.
- Use the optional Rack mounting bracket MB-25B-BK or MB-25B-J when mounting the unit(s) in an equipment rack. Remove four M4 x 8 screws on both sides of the unit, and mount the bracket there using the M4 x 16 screws (supplied with the bracket) instead.

When the Unit is in Use

- Should the following irregularity be found during use, immediately switch off the power, 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 your nearest TOA dealer.
- Pour empêcher un incendie ou une électrocution, ne jamais ouvrir ni ne retirer le boîtier de l'appareil, en raison de la présence de pièces à haute tension. La maintenance de l'appareil doit être confiée au revendeur TOA le plus proche.
- 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.

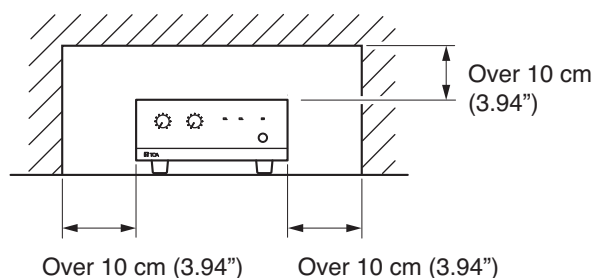


CAUTION

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 wall outlet. Moving the unit with the power cord connected to the outlet may cause damage to the power 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.
- To avoid electric shocks, be sure to unplug the unit's power supply cord 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.
 - No rack-mounting screws are supplied with the unit. Separately prepare the appropriate screws for the rack.
- Keep the amplifier over 10 cm (3.94") away from objects that may obstruct air flow to prevent the unit's internal temperature rise.



When the Unit is in Use

- Do not place heavy objects on the unit as this may cause it to fall or break which may result in personal injury and/or property damage. In addition, the object itself may fall off and cause injury and/or damage.
- 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. This is an indication of a malfunction, which in turn can cause heat to generate and result in a fire.
- 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.
- Switch off the power, and 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.



The lighting flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



L'éclair accompagné d'un symbole représentant une pointe de flèche à l'intérieur d'un triangle équilatéral avertit l'utilisateur de la présence d'une "tension dangereuse" à l'intérieur de l'enceinte du téléviseur, dont la magnitude peut être suffisante pour constituer un risque de choc électrique pour les personnes.



ATTENTION

L'appareil ne doit pas être exposé aux éclaboussures ou écoulements et tous objets remplis de liquide, tels que vases, ne doivent pas être sur l'appareil.

3. GENERAL DESCRIPTION

TOA's BG-115 and BG-130 are mixer/power amplifiers, and can mix up to three signals.

Rated at 15 W (BG-115) and 30 W (BG-130), these amplifiers are ideal for applications that require small sound reinforcement systems. Any microphone with impedance of less than 600 Ω can be connected.

Setting the Mic/Tel selector switch to the "TEL" position allows the BG-115 (BG-130) to function as an amplifier for paging made from the telephone. Because the Program input is 10 k Ω in impedance and is of electrically-balanced type, it can be connected to both balanced and unbalanced types of equipment. When the muting and grounding terminals are shorted, the microphone (telephone paging) input mutes both the program and AUX input. The amplifiers also come with independent bass and treble controls for the program and AUX inputs, which increase and decrease specific frequencies. Transformer-isolated output terminals are provided for connection of 4 Ω speakers or for 25 V or 70 V line applications.

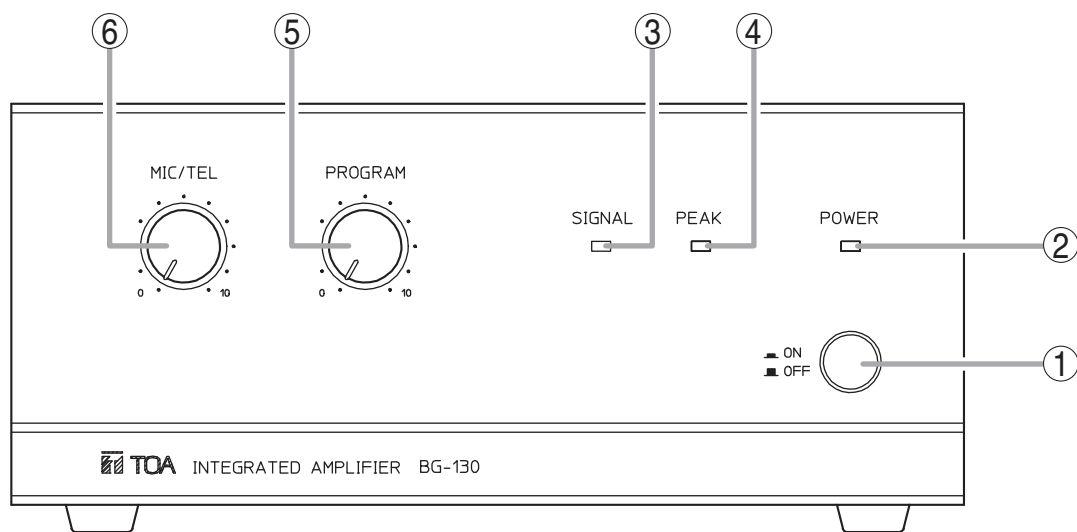
The BG-115 (BG-130) can be mounted in an equipment rack using the optional Rack Mounting Kit.

4. FEATURES

- Three-channel mixer/power amplifier
- Wide frequency range of 50 Hz to 20 kHz (± 3 dB)
- Low distortion and low noise level
- Bass and treble controls
- Built-in muting circuits
- Balanced inputs (2 inputs)
- Microphone/telephone paging input (selectable)
- Overcurrent and thermal protection for the power amplifier stage
- Three different output impedance: 4 Ω , 25 V and 70 V
- Compact and lightweight
- Mountable on a desk or in an equipment rack

5. NOMENCLATURE AND FUNCTIONS

[Front]



This figure represents the BG-130.

1. Power switch [ON / OFF]

Power is switched on and off with each depression of this switch.

2. Power indicator [POWER]

Lights green when the Power switch (1) is switched on.

3. Signal level indicator [SIGNAL]

Lights green when input signal levels exceed -30 dB.

4. Peak indicator [PEAK]

Lights red when signal levels approach the signal clipping point. When this lamp remains lit, adjust the input level control so that the indicator lights intermittently.

5. Program input volume control [PROGRAM]

Adjusts the gain of the program input.

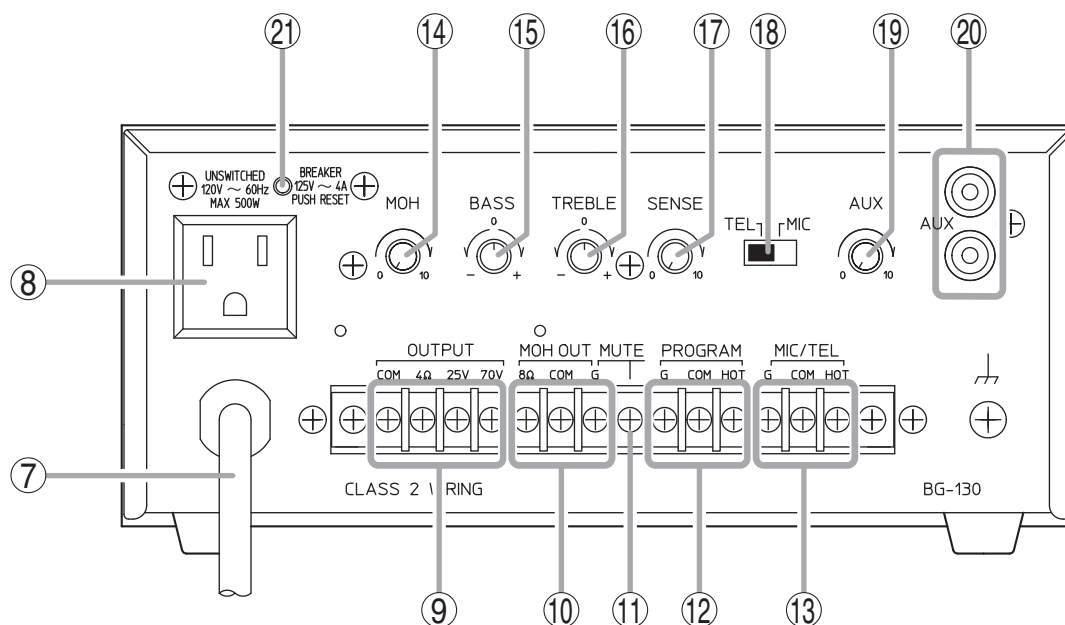
The gain increases as the control is turned clockwise.

6. Mic/Tel input volume control [MIC/TEL]

Adjusts the gain of the microphone or telephone paging.

The gain increases as the control is turned clockwise.

[Rear]



This figure represents the BG-130.

7. AC power cord

Connect this cord to an AC wall outlet.

8. AC outlet (Unswitched)

Supplies power of up to 500 W to auxiliary equipment.

9. Output terminals [OUTPUT]

Connect to speakers.

10. MOH output terminals [MOH OUT] (transformer-isolated output)

Connect to the telephone system.

11. Muting terminals [MUTE]

Shorting between this terminal and the ground terminal mutes signals input to the muting circuit.

12. Program input [PROGRAM]

Electrically-balanced input, 10 k Ω .

13. Mic/Tel input [MIC/TEL]

Transformer-isolated input (Mic: 600 Ω , Tel: 10 k Ω).

14. MOH volume control [MOH]

Adjusts the gain of the MOH amplifier.

15. Bass control [BASS]

Increases the low frequency response when turned clockwise, and decreases the response when turned counter-clockwise. The center position provides the flat response.

16. Treble control [TREBLE]

Increases the high frequency response when turned clockwise, and decreases the response when turned counter-clockwise. The center position provides the flat response.

17. Sensitivity control [SENSE]

Adjusts the sensitivity of the muting circuit.

18. Mic/Tel selector switch [MIC, TEL]

Select either position depending on the type of equipment connected to the Mic/Tel input.

19. AUX volume control [AUX]

Adjusts the gain of the AUX input. Clockwise rotation increases the gain.

20. AUX input (dual RCA phone jack)

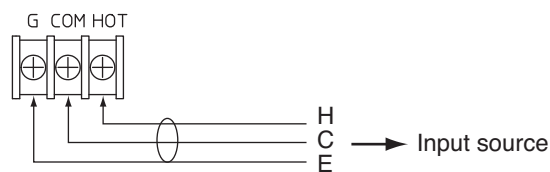
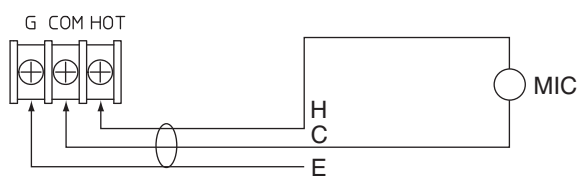
10 k Ω , unbalanced.

21. Breaker (for AC outlet)

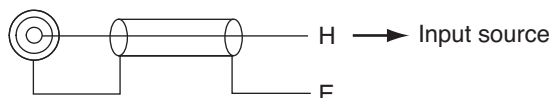
Cuts the AC power when excessive current flows. Push the reset button after removing the fault.

6. INPUT CONNECTIONS

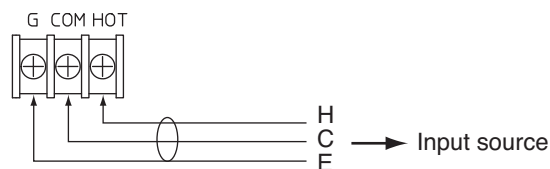
[MIC/TEL input connections]



[AUX input connections]



[Program input connections]

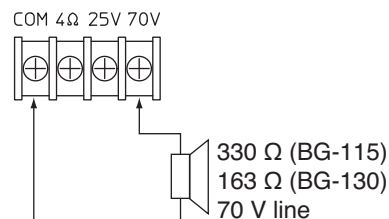
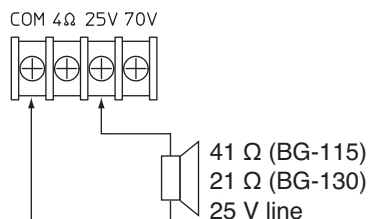
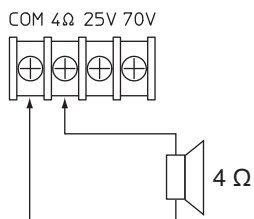


7. OUTPUT CONNECTIONS

[Output terminals]

The amplifier has three speaker outputs: 4 Ω , 25 V and 70 V. Use only one of these outputs for connection. Class 2 wiring may be used.

Note: The impedance in the figure below represents the total impedance of the speaker system.



WARNING

The terminals marked with the symbol ⚡ are hazardous live. The external wiring to these terminals requires installation by an instructed person.

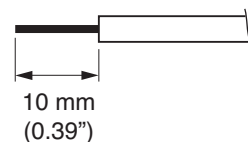
[Connection of speaker cable]

Step 1. Unscrew the terminal cover.

Step 2. Strip 10 mm (0.39") of insulative jacket from the end of the speaker cable, as shown in the figure at right.

Step 3. Connect speaker cables to the speaker output terminals.

Step 4. Replace the terminal cover.

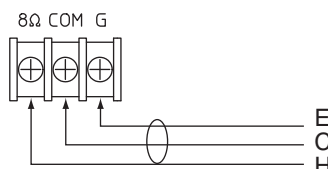


WARNING

Be sure to replace the terminal cover after connection completion. Because high voltage is generated at the speaker output terminals, never touch these terminals to avoid electric shock.

[MOH output connections]

The amplifier's MOH output is 1 W / 8 Ω .



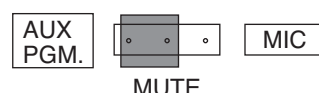
8. MUTING FUNCTION

Announcements made using the Mic/Tel input take precedence, decreasing the sound volume of all current broadcasts from equipment connected to the Program or AUX input. The interrupted broadcasts are automatically restored gradually after Mic/Tel input announcement completion. Use the sensitivity control to determine the threshold value for muting. Turning the control clockwise increases the sensitivity, while the counter-clockwise rotation decreases the sensitivity.

When operating an external muting function (muting from the terminal block), short the muting terminals of the terminal block on the rear panel. Signals to the AUX input and Program input are muted. Turn the sensitivity control fully counterclockwise when using this function.

The BG-115 (BG-130) is set to mute the AUX and Program inputs by the factory. To mute the Mic/Tel input instead of the AUX/Program inputs, change the position of the jumper on the internal circuit board.

[Factory-setting]



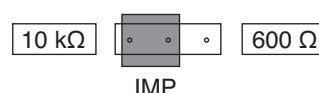
CAUTION

These servicing instructions are for use by qualified personnel only. To avoid electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

9. MIC/TEL INPUT IMPEDANCE SELECTION

The Mic/Tel input impedance selector switch is set to 10 k Ω by the factory. To change the setting to 600 Ω , set a jumper on the internal circuit board to 600 Ω .

[Factory-setting]



CAUTION

These servicing instructions are for use by qualified personnel only. To avoid electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

10. JUMPER WIRE SETTING

The amplifier is set by the factory to send AUX and Program inputs to both the output terminals and MOH output terminals. This setting can be changed as shown in the table below by cutting JP202 and JP203 jumpers on the internal circuit board.

[Factory-setting]



	Output terminal	MOH output terminal
Cut of JP202	Outputs only the Program input. (AUX input is cut off.)	Outputs both AUX and Program inputs.
Cut of JP203	Outputs both AUX and Program inputs.	Outputs only the AUX input. (Program input is cut off.)

CAUTION

These servicing instructions are for use by qualified personnel only. To avoid electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

11. OPERATION

After completing all connections, turn on the power switch, and check to confirm that the power indicator lights.

Note: When the heat sink temperature exceeds 105°C (221°F), the protection circuit begins to operate to disconnect the output from the circuit. The disconnected output is automatically restored as soon as the temperature returns to the normal operating range.

12. RACK MOUNTING BRACKET ATTACHMENT

To mount the BG-115 (BG-130) in a standard 19" equipment rack, use the optional MB-25B-BK or MB-25B-J Rack Mounting Kit.

Before attaching the rack mounting bracket, remove each 2 frontmost screws on both sides of the amplifier. These removed screws are not used for rack mounting.

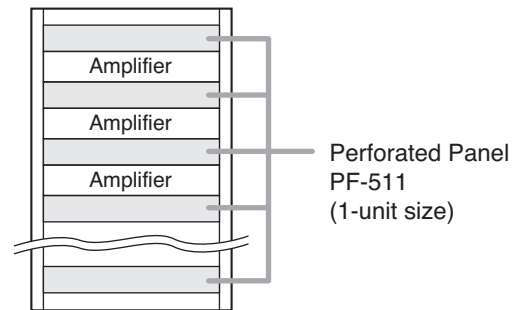
Notes

- Rack mounting screws are not supplied with the unit. Use the screws that are appropriate for the rack.
- When mounting the unit in an equipment rack, the inside of the rack must be sufficiently ventilated.

To achieve sufficient ventilation, also mount the optional PF-511 Perforated Panel (1U*):

- (1) at the top and the bottom of the rack, and
- (2) above and below the unit.

* 1U size = 44.5 mm or 1.75" (reference size)

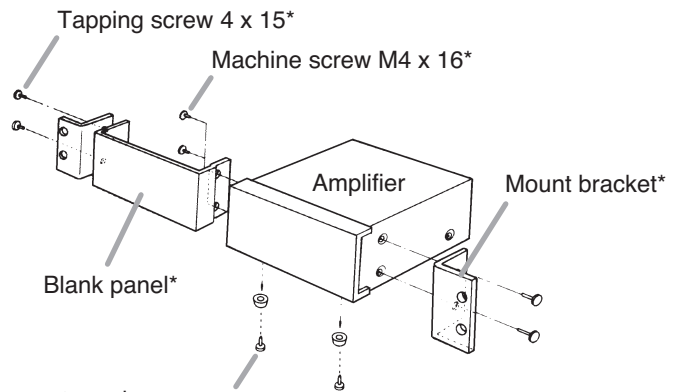


[MB-25B-BK]

Remove four plastic feet on the bottom surface. Note that these removed screws are not used.

Attach the MB-25B-BK to the amplifier using the supplied four screws.

When using other screws, see to it that each screw is shorter than 15 mm (0.59").



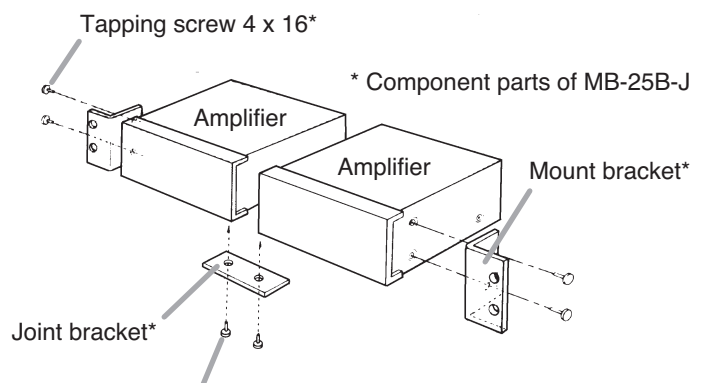
* Component parts of MB-25B-BK

[MB-25B-J]

The MB-25B-J is designed to mount two BG-115s (BG-130s) in a single rack.

When using this bracket, remove four plastic feet on the bottom surface of each amplifier and joint the two amplifiers with a joint bracket, as illustrated at right.

Then attach the brackets using the supplied four screws. When using other screws, see to it that each screw is shorter than 16 mm (0.63").



Screws that secured the rubber feet (tapping screw 3 x 8)

Note

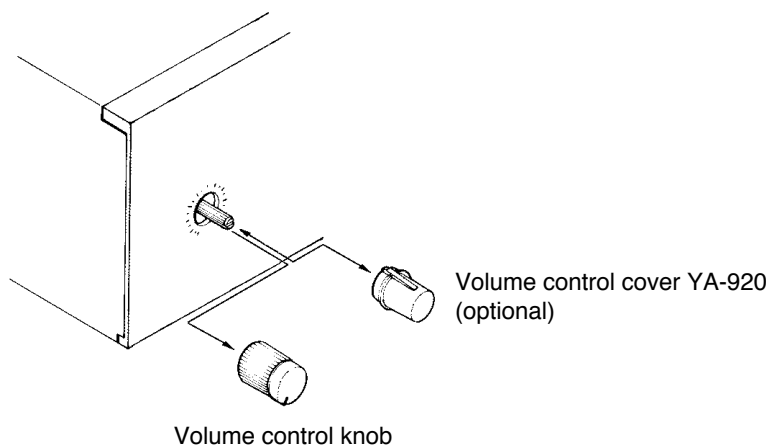
Do not use the tapping screws 4 x 10 supplied with the MB-25B-J.

13. VOLUME SETTING

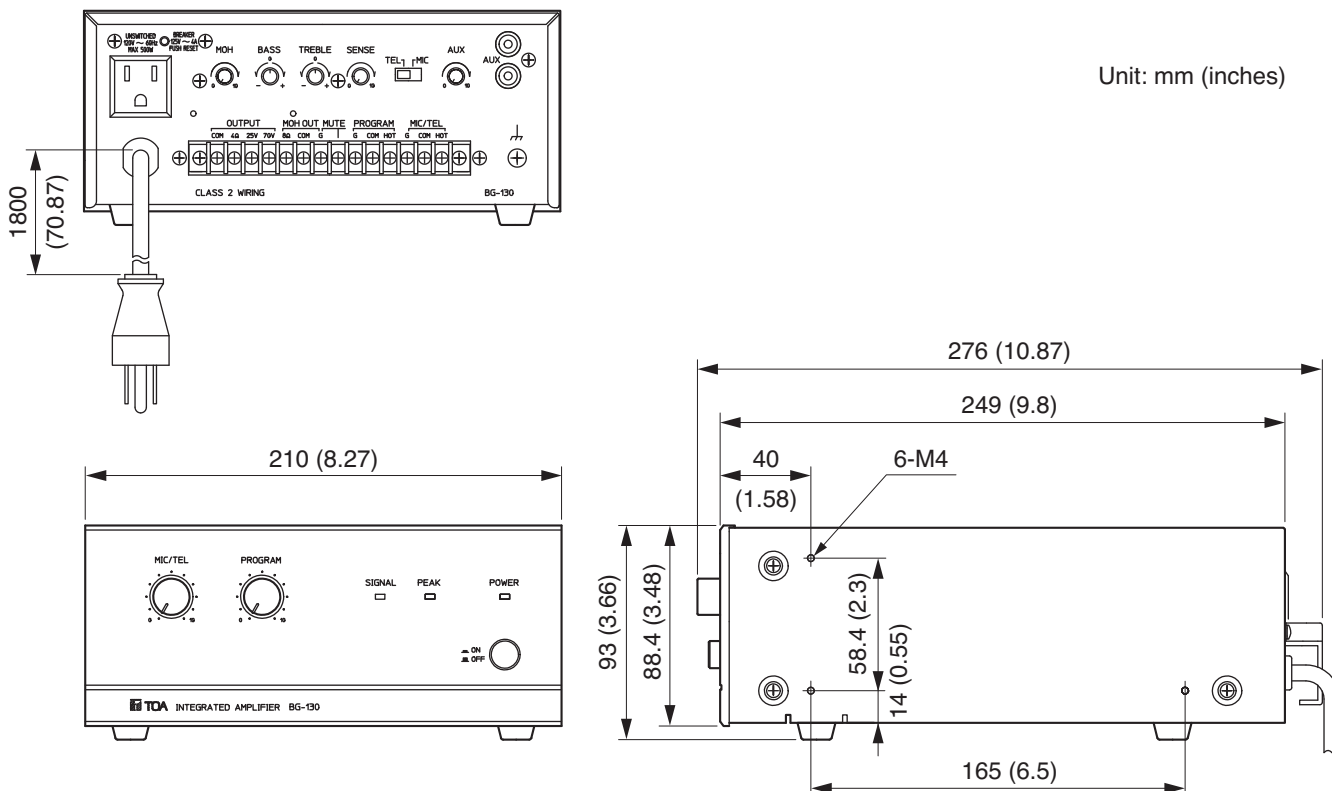
Output levels are adjustable with individual volume controls. For music play or announcement, adjust the corresponding volume control so that the signal indicator lights intermittently. Note that the sound quality is downgraded when the peak indicator remains lit.

14. VOLUME CONTROL COVER

To prevent the accidental change of the settings of the Program input and Mic/Tel input volume controls, remove their knobs after setting them to the desired position and attach the optional cover YA-920 instead.



15. DIMENSIONAL DIAGRAM



This figure represents the BG-130.

16. SPECIFICATIONS

Model No.	BG-115	BG-130
Power Source	120 V AC, 60 Hz	
Rated Output	15 W	30 W
Power Consumption (Rated output)	60 W	90 W
Frequency Response	50 Hz – 20 kHz	
Total Harmonic Distortion	0.5% or less, at 1 kHz, rated output	
Input	Mic/Telephone page input, program input, Aux input	
Input Sensitivity/Impedance	Mic: –60 dB* ¹ , 600 Ω, balanced Telephone page: –20 dB* ¹ , 10 kΩ, balanced Program: –10 dB* ¹ , 10 kΩ, electrically balanced* ² M3 screw terminal, distance between barriers: 6 mm (0.24") Aux: –10 dB* ¹ , 10 kΩ, unbalanced, pin jack	
Output	4 Ω, 25 V and 70 V, balanced	
MOH Output	1 W (8 Ω), balanced	
Output Regulation (1 kHz)	Under 2 dB, no load to full load	
S/N Ratio	Mic: 60 dB, Telephone page: 75 dB, Program: 75 dB, Aux: 75 dB (Band Pass: 20 Hz – 20 kHz, Tone Controls: Centered)	
Tone Control	Bass: ±10 dB at 100 Hz, Treble: ±10 dB at 10 kHz Controls affect only program input and aux input	
Control	Mic/Tel gain control, program gain control, Aux gain control, Bass tone control, Treble tone control, MOH control, Muting threshold level, Mic/Tel selector switch, Power ON/OFF switch	
Indicator	Power LED, Signal LED, Peak LED	
Other Feature	Automatic electronic drive limiter, electronic muting	
Finish	Panel: ABS resin, black Case: Steel plate, black, paint	
Dimensions	210 (w) x 93 (h) x 276 (d) mm (8.27" x 3.66" x 10.87")	
Weight	3.3 kg (7.28 lb)	3.9 kg (8.6 lb)

*¹ 0 dB = 1 V

*² Can be converted into the transformer-isolated input by installing an optional transformer.

Note: The design and specifications are subject to change without notice for improvement.

• Optional products

Rack mounting bracket: MB-25B-BK, MB-25B-J

Volume control cover: YA-920

