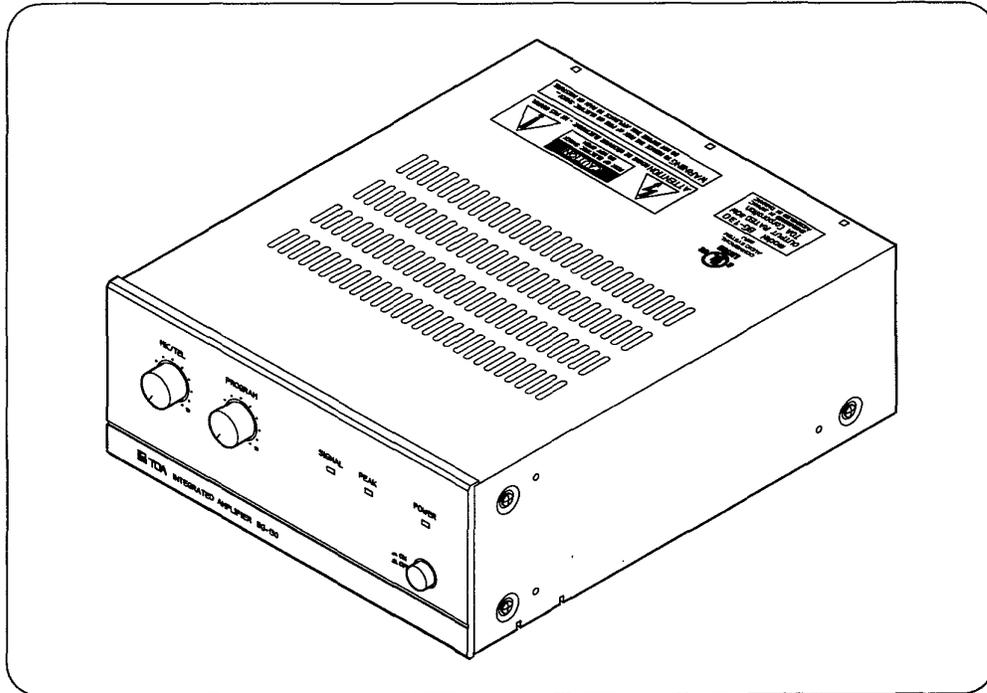


MIXER POWER AMPLIFIER

BG-115
BG-130



	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	
<p>TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL</p>		



The lightning flash with arrowhead within a triangle is intended to tell the user that parts inside the product are a risk of electric shock to persons.



The exclamation point within a triangle is intended to tell the user that important operating and servicing instructions are in the papers with the appliance.

Please follow the instructions in this manual to obtain the optimum results from this unit. We also recommend that you keep this manual handy for future reference.

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IMPORTANT SAFETY INSTRUCTIONS

- Be sure to read the instructions in this section carefully before use.
- Make sure to observe the instructions in this manual as the safety messages regarded as very important precautions are included.
- We also recommend you keep this instruction manual handy for future reference.

- Do not block any ventilation openings.
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.
- 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 is provided for your safety. When 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 the attachments or accessories specified by the manufacturer.
- Use only with a 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.



1. SAFETY PRECAUTIONS

- Be sure to read the instructions in this section carefully before use.
- Make sure to observe the instructions in this manual as the conventions of safety symbols and messages regarded as very important precautions are included.
- We also recommend you keep this instruction 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 so you are thoroughly aware of the potential safety hazards as well as understand the safety symbols and messages.



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



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



■ 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.
- Be sure to ground to the safety ground (earth) terminal to avoid electric shock. Never ground to a gas pipe as a catastrophic disaster may result.
- 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.

■ 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.
- 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 power supply plug during thunder and lightning, as this may result in electric shock.

- The AC power output is specified on the AC outlet of the unit. Never exceed the specified wattage on the unit when connecting equipment. Doing so may cause fire or property damage.

 **CAUTION**

■ **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 upper panel 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 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.
- 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.
- 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. A fire or electric shock may result.

2. GENERAL DESCRIPTION

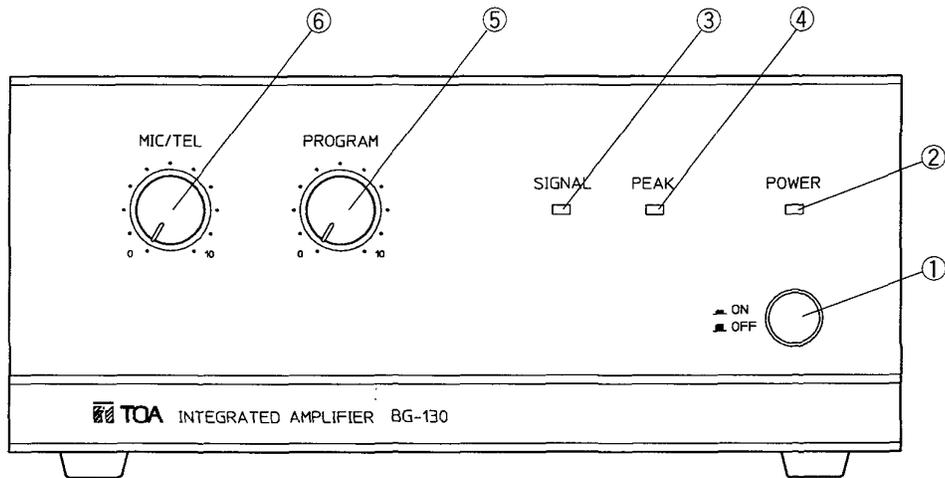
TOA's BG-115 and BG-130 are mixer/power amplifiers, and can mix up to three signals. Rated at 15 watts (BG-115) and 30 watts (BG-130), these amplifiers are ideal for applications that require small sound reinforcement systems. Any microphone with impedance of less than 600 Ω can be connected. Setting 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 override facilities mean that 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.

3. FEATURES

- Three-channel mixer/power amplifier
- Wide frequency range of 50 Hz - 20 kHz (\pm 3 dB)
- Low distortion and low noise level
- Bass and treble controls
- Built-in muting circuit
- Balanced inputs (2 inputs)
- Microphone/Telephone Paging input (selectable)
- Overcurrent and thermal protection for the power amplifier stage
- Three different output impedance: 4 ohms, 25 and 70 V
- Small in size and light in weight
- Mountable on a desk or in an equipment rack

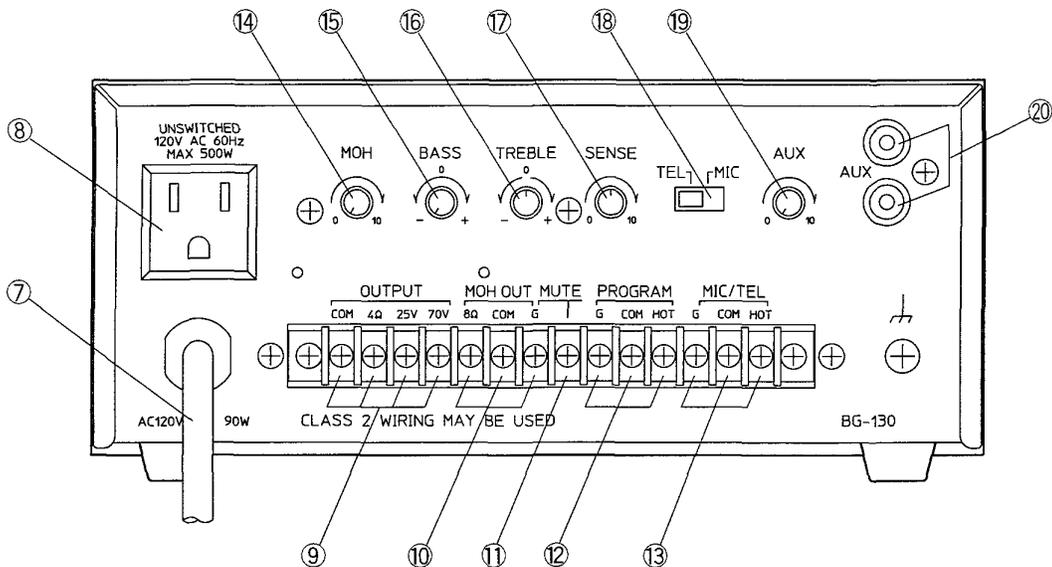
4. NOMENCLATURE

[Front Panel]



- ① **Power switch**
Power is switched on and off with each depression of this switch.
- ② **Power indicator**
Lights green-when the power is switched on.
- ③ **Signal level indicator**
Lights green when input signal levels exceed -30 dB.
- ④ **Peak indicator**
Lights red when signal levels approach the signal clipping point. When this lamp remains lit, adjust the input level control so that the indicator flashes.
- ⑤ **Program input volume control**
Adjusts the gain of the Program input. The gain increases as the control is turned clockwise.
- ⑥ **Mic/Tel input volume control**
Adjusts the gain of the microphone or telephone paging. The gain increases as the control is turned clockwise.

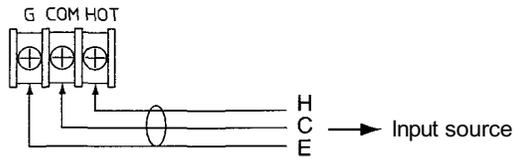
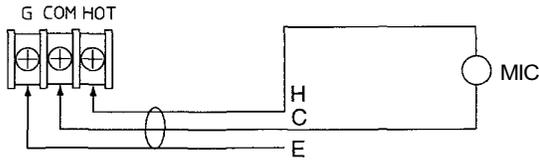
[Rear Panel]



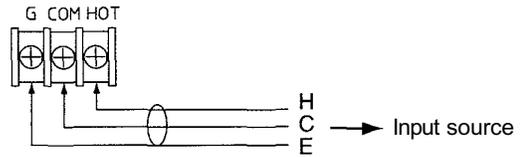
- ⑦ **AC power cord**
Connects to the wall AC outlet.
- ⑧ **AC outlet (Unswitched)**
Supplies power of up to 500 W to auxiliary equipment.
- ⑨ **Output terminals**
Connect to speakers.
- ⑩ **MOH output terminals (transformer-isolated output)**
Connect to the telephone system.
- ⑪ **Muting terminals**
Shorting this terminal mutes signals input to the muting circuit.
- ⑫ **Program input**
Electrically-balanced input, 10 kohms.
- ⑬ **Mic/Tel input**
Transformer-isolated input (Mic: 600 ohms, Tel: 10 kohms).
- ⑭ **MOH volume control**
Adjusts the gain of the MOH amplifier.
- ⑮ **Bass control**
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**
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**
Adjusts the sensitivity of the muting circuit.
- ⑱ **Mic/Tel selector switch**
Select either position depending on the type of equipment connected to the Mic/Tel input.
- ⑲ **AUX volume control**
Adjusts the gain of the AUX input. Clockwise rotation increases the gain.
- ⑳ **AUX input (dual RCA phone jack)**
Unbalanced input, 10 kohms.

5. INPUT CONNECTIONS

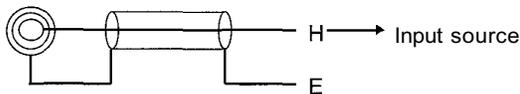
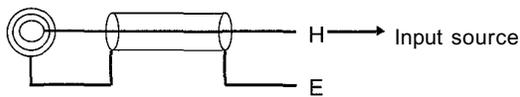
• Mic/Tel input connections



• Program input connections



• AUX input connections

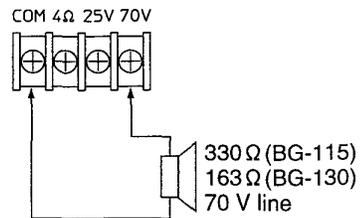
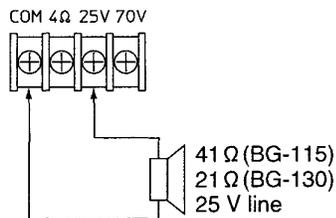
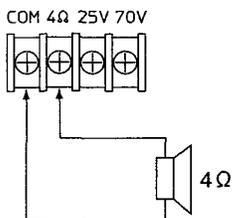


6. OUTPUT CONNECTIONS

• Output terminals

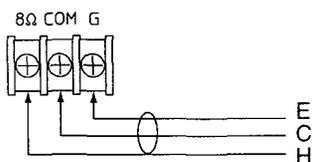
The amplifier has three speaker outputs: 4 Ω , 25 V and 70 V. Use only one of these outputs for connection. Class 2 wiring may be used.

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



• MOH output terminals

The amplifier's MOH output is 1w/8 Ω



7. 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.

Important: This change must be made by an authorized electrician.

● Factory-setting

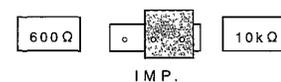


8. MIC/TEL INPUT IMPEDANCE SELECTION

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 .

Important: This change must be made by an authorized electrician.

● Factory-setting



9. 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.

	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.)

● Factory-setting



Important: This change must be made by an authorized electrician.

10. OPERATION

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

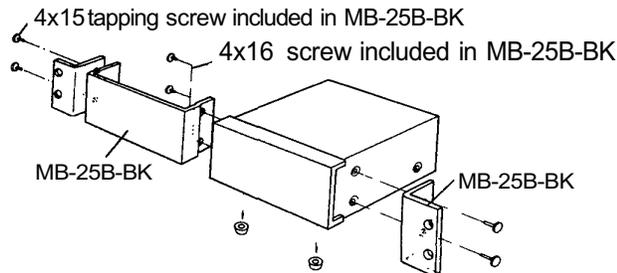
Note : When the heat sink temperature exceeds 105°C, the protection circuit begins to operate to disconnect the output from the circuit. The disconnected output is automatically restored as soon as the temperature returns to the normal operating range.

11. RACK MOUNTING

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

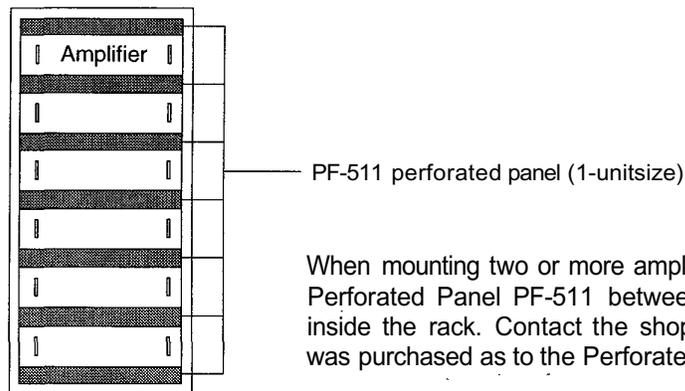
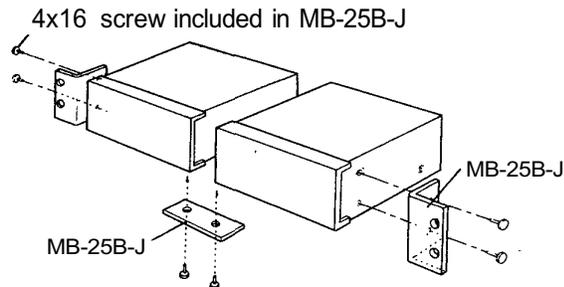
[MB-25B-BK]

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.



[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 provided on the bottom surface of each amplifier and joint the two amplifiers with a metal connector, as illustrated below. Then attach the brackets using the supplied four screws. When using other screws, see to it that each screw is shorter than 15 mm.

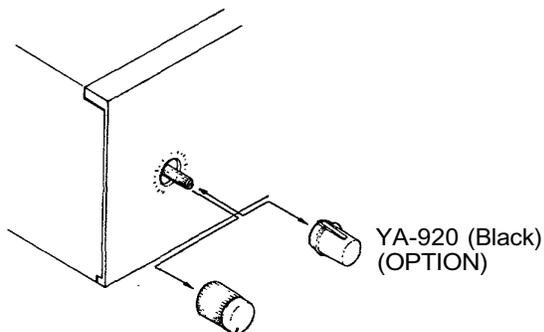


When mounting two or more amplifiers in the rack, insert the Perforated Panel PF-511 between amplifiers for ventilation inside the rack. Contact the shop from where the amplifier was purchased as to the Perforated Panel.

12. VOLUME SETTING

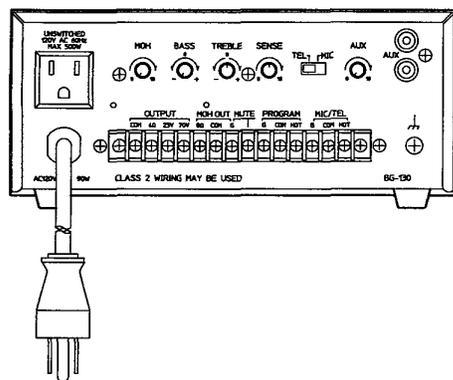
Output levels are adjustable with individual volume controls. For music play or announcement, adjust the corresponding volume control so that the signal indicator lights intermittently. Note that the sound quality is downgraded when the peak indicator remains lit.

13. VOLUME CONTROL COVER

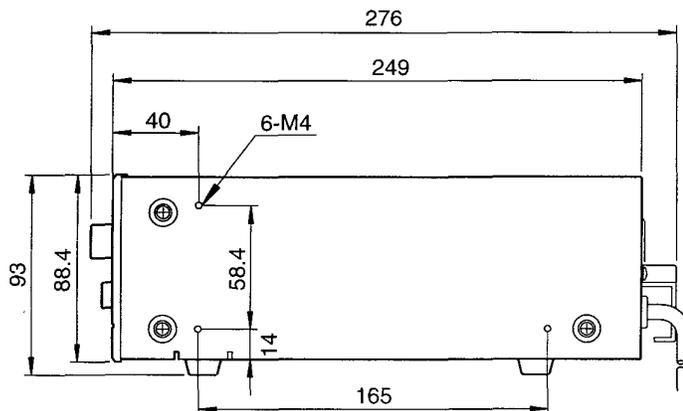
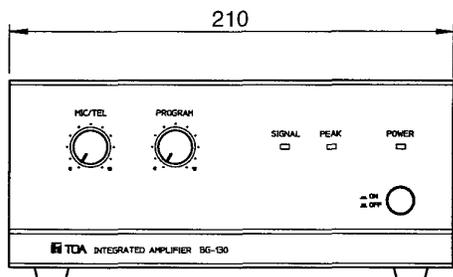


To prevent the accidental change of the settings of the Program input and Mic/Tel input volume controls, remove their knobs after setting them to the desired position and attach the optional cover YA-920 instead.

14. DIMENSIONAL DIAGRAM



unit: mm



15. SPECIFICATIONS

Model	BG-115	BG-130
Type	3-channel mixer power amplifier	
Output Power	15 W RMS	30 W RMS
Frequency Responce	50 - 20,000 Hz (\pm 3 dB)	
Total Harmonic Distortion	0.5 % or less, at 1 kHz, rated output 0.1 % or less, at 1 kHz, 5 W output	
Inputs	Mic/Telephone page input Program input AUX input	
Input Sensitivity and Impedance	Mic : 1 mV (-60 dB) , 600 ohms, balanced Telephne page : 100 mV (-20dB), 10 kohms, balanced Program : 315 mV (-10 dB), 10 kohms, electrically-balanced * AUX : 315 mV (-10 dB), 10 kohms, unbalanced	
Outputs (Transformer-isolated) MOH Output	Balanced 4 ohms, 25&70 volts Balanced 1 W (8 ohms)	
Output Regulation	Less than 2.0 dB, no load to full load	
Signal-to-Noise Ratio (Band pass 20 - 20,000 Hz) (Tone controls : set at center)	Mic : 60 dB Telephone page : 75 dB Program : 75 dB AUX : 75 dB	
Tone Controls	Bass : \pm 10 dB at 100 Hz Treble: + 10 dB at 10 kHz Controls affect only program input and aux input.	
Controls	1 Mic/Tel gain control 1 Program gain control 1 AUX gain control 1 Bass tone control 1 Treble tone control 1 MOH control 1 Sense control 1 Mic/Tel selector switch 1 Power ON/OFF switch	
Indicators	1 Power LED, 1 Signal LED, 1 Peak LED	
Power Consumption	50 W	90 W
Other Features	Automatic electronic drive limiter Electronic muting	
Color	Black	
Dimensions	210(w)x93(h)x276(d)mm	
Weight	3.3 kg	3.9 kg

* 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.

