



Classic Series Public Address Amplifiers

C10 & C20 Models

Installation and Use Manual

NOTICE: Every effort was made to ensure that the information in this guide was complete and accurate at the time of printing. However, information is subject to change.

WARNING: To reduce the risk of Fire or Electric Shock, Do Not Expose this apparatus to rain or moisture.

Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases shall be placed on the apparatus.

WARNING: Only connect unit to AC mains outlet providing protective earthing connection.

NOTE: Mains plug is used as disconnect device from the mains and shall remain readily accessible and operable.

CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

CAUTION: DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE, BUILT-IN CABINET, OR IN ANOTHER CONFINED SPACE. ENSURE THE UNIT IS WELL VENTILATED. TO PREVENT THE RISK OF SHOCK OR FIRE HAZARD DUE TO OVERHEATING, ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION VENTS.

Always follow these basic safety precautions when installing and using the unit:

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean unit with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. 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.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when not used for long periods of time.
13. 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.

CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**



CAUTION: TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE ANY FRONT/BACK COVERS OR PANELS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

The lightning 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.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions.

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Description

Bogen Models C10 and C20 public address amplifiers are rated at 10 and 20 watts, respectively, and are listed to UL Standard 60065 for US and Canada.

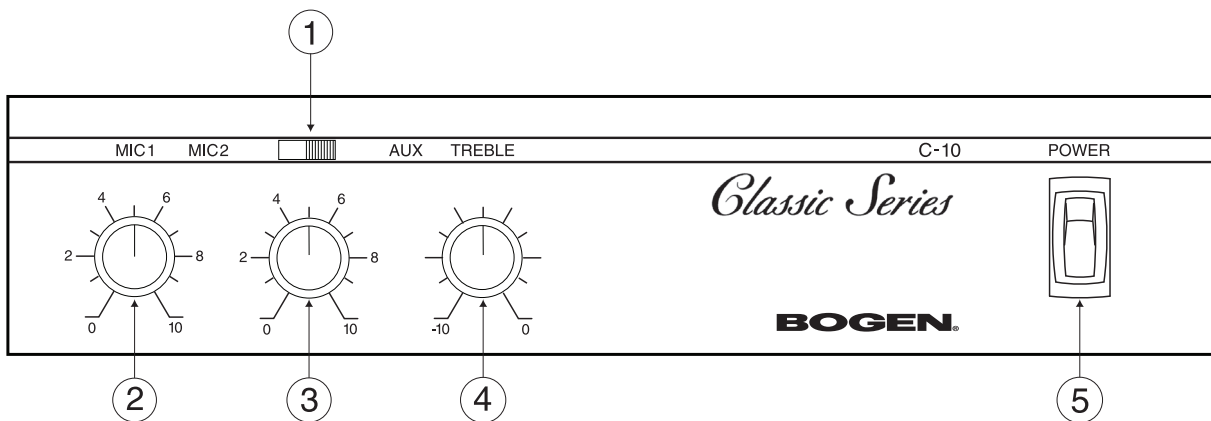
The amplifiers accommodate low-impedance microphones and high-impedance auxiliary sources. A front panel selector switch offers a choice of either two low-impedance balanced microphones (MIC1, MIC2), or one microphone and one auxiliary input (MIC1, AUX). The AUX input can be muted when a customer-supplied SPST normally open switch is used for microphone precedence. Independent volume controls and a treble control, for tonal balance, are provided.

Balanced and unbalanced outputs are provided for 4-, 8-, and 16-ohm speakers and for 25- and 70-volt constant voltage systems. An accessory transformer, Bogen Model WMT1A, can be installed to provide input- and output-matching to a telephone line.

The amplifiers operate from a 120~, 60Hz source. A thermostat enclosed in the power transformer protects the unit against overloads.

The amplifier also accommodates a transformer-balanced TEL/page input with VOX detector for muting the AUX.

Front Panel



1. MIC2/AUX Mode Switch

Switch selects either the MIC2 or AUX connection as the active input.

2. MIC1 Level Control

Individual level control for dedicated microphone input.

3. MIC2/AUX Level Control

Individual level control for a dedicated microphone input or for an auxiliary input depending on input mode selected.

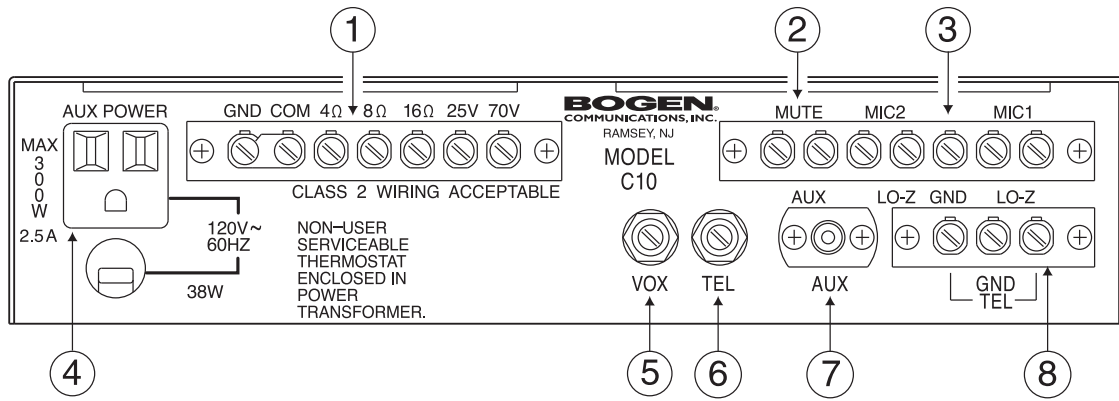
4. Treble Control

Controls the amount of attenuation to treble frequencies above 10 kHz.

5. Power

AC Power switch. Illuminates when ON.

Rear Panel



1. Amplifier Output

Screw terminal strip containing all available speaker outputs.

2. Mute Input

Screw terminal input for microphone precedence.

3. MIC1/MIC2

Screw terminal input for Lo-Z balanced microphone signal.

4. AUX Power

A grounded, unswitched AC convenience receptacle with 300W maximum capacity is provided for external equipment.

5. VOX SENS Control

Variable control for adjusting the TEL input signal level trigger point for automatic muting of the AUX input.

6. TEL Volume Control

Adjusts the telephone paging level.

7. AUX Input

RCA unbalanced, high-impedance input (AUX is switch-selectable with MIC2).

8. TEL Input

Screw terminal input for 600-ohm balanced telephone signal.

Installation

Power and Grounding

The AC line cord has a three-prong plug which must be plugged into a three-wire grounded 120-volt, 60 Hz outlet.

Note: It is important to ground the amplifier properly.

Input Connections

Microphone Connections

Two low-impedance balanced microphones may be connected simultaneously to the corresponding screw terminals on the rear panel of the amplifier.

Microphone Precedence

A built-in circuit provides microphones' precedence over the AUX channel. For this function, a customer-supplied normally-open SPST switch must be connected to the MUTE terminals. When the contacts are closed, the microphone will have precedence.

AUX

The AUX inputs may be used for any signal source having a line-level (greater than 85mV) output.

TEL

A balanced isolating transformer input for a telephone line is provided. A 600-ohm telephone line may be connected to the TEL terminals.

Output Connections

Speakers, General

The amplifier may be used with most conventional speaker systems. Connect one speaker lead to the screw terminal that corresponds to the total impedance or proper voltage of the speakers used in the system and the other lead to the COM terminal. For balanced output lines, remove the link between the COM and GND output terminals. Class 2 wiring may be used.

Operation

POWER

The front panel ON/OFF switch applies power to the amplifier.

MIC1, MIC2

For two microphone inputs, the MIC2/AUX selector switch should be in the MIC2 mode. The MIC controls are used to adjust the volume of the microphone inputs. Rotate the controls clockwise to increase volume and counterclockwise to decrease it. Turn the controls to the minimum counter-clockwise position if the inputs are not used.

AUX

For one auxiliary input, the MIC2/AUX selector switch should be in the AUX position. The AUX control is used to adjust the volume of the auxiliary input. Rotate the control clockwise to increase volume and counterclockwise to decrease it. Turn the control to the minimum counter-clockwise position if the input is not used.

TEL

The TEL volume control on the rear panel adjusts the telephone paging level. It does not affect the microphone level. Rotate the control counter-clockwise to decrease the level. Rotate the control clockwise to increase the level. Turn the control to the minimum counter-clockwise position if the input is not used.

VOX SENS

The VOX SENSitivity control should be set so that only the desired TEL signal is above the threshold level, while noise and unwanted signal is below it. When an input signal (such as a voice) is detected, the AUX channel will be muted. To adjust the sensitivity of the circuit:

1. Rotate the control fully clockwise. While making a page announcement and talking at a low level, the sound should not be choppy nor missing parts of words. If it is choppy, or if intelligibility is poor, rotate the control counter-clockwise to the point where the sound is clear and crisp (but not to the maximum counter-clockwise position).
2. If the background music shuts down when no page is in progress, rotate the control clockwise until the music is restored.

Microphone Precedence

Muting the AUX channel can be accomplished with a customer-supplied normally-opened SPST switch, which must be connected to the MUTE terminals. When the contacts are closed, the microphone will have precedence over the AUX input.

TREBLE

Use the TREBLE control to adjust the tonal balance of the amplifier output. Rotated fully clockwise there is no effect. Rotate counter-clockwise to attenuate the TREBLE of the audio.

Overload Protection

The amplifier output is protected against overload and shorted speaker lines by an electronic shut down circuit and a thermostat enclosed in the power transformer. If the protection operates, the amplifier will have no output. Set the Power switch to off and wait a reasonable amount of time for the protection to reset. If the protection trips again, have the problem investigated by a qualified technician.

Accessories

WMT1A - Line-Matching Transformer

- Hi-Z, 10k-ohm primary impedance
- Lo-Z, 600-ohm secondary impedance, balanced with center tap
- Matches high-impedance unbalanced or low-impedance balanced signals
- Jumper selection allows line level signal to microphone level signal conversion

RPK35B - Rack Panel Kit

- RPK35B adapts Classic Series amps (Models C10 and C20) for 19" rack mounting, 2 rack spaces (3-1/2")
- Heavy gauge steel construction

WMK1 - In-Wall Mounting Kit

- Cabinet fits between standard 2 x 4's on standard 16"
- Controls are accessible via a tilt-open door
- Heavy gauge steel construction

Technical Specifications

Power Output (RMS)

C10: 10W
C20: 20W

Distortion Less than 1% @ Rated Power Output

Frequency Response 70 Hz - 16 kHz (± 1 dB)

Hum and Noise (20 Hz to 20 kHz)

MIC Input: 55 dB below rated output
AUX Input: 70 dB below rated output
TEL Input: 70 dB below rated output

Input Sensitivity

MIC Lo-Z Balanced: 600 μ V
AUX: 85 mV
TEL: 75 mV

Outputs 4, 8, 16 ohms, 25V, and 70V

Output Connections: Screw terminal strip

Input Connections:

MIC/TEL: Lo-Z screw terminals
AUX: RCA jack

Controls: MIC1, MIC2/AUX (switch selected), TREBLE, VOX, TEL

Tone Control: TREBLE: -10 dB to 0 dB @ 10 kHz

Power Requirements: 120V~, 60Hz

C10: 38W
C20: 50W

Dimensions: 11-3/8" W x 2-7/8" H x 7-3/8" D (both models)

Shipping Weight

C10: 6 lb.
C20: 6 lb.

Limited Warranty; Exclusion of Certain Damages

The Bogen **Classic Series Amplifiers** are warranted to be free from defects in material or workmanship for two (2) years from the date of sale to the original purchaser. Any part of the product covered by this warranty that, with normal installation and use, becomes defective will be repaired or replaced by Bogen, at our option, provided the product is shipped insured and prepaid to: Bogen Factory Service Department, 50 Spring Street, Ramsey, NJ 07446, USA. The product will be returned to you freight prepaid. This warranty does not extend to any of our products that have been subjected to abuse, misuse, improper storage, neglect, accident, improper installation or have been modified or repaired or altered in any manner whatsoever, or where the serial number or date code has been removed or defaced.

THE FOREGOING LIMITED WARRANTY IS BOGEN'S SOLE AND EXCLUSIVE WARRANTY AND THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY. BOGEN MAKES NO OTHER WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED AND EXCLUDED TO THE MAXIMUM EXTENT ALLOWABLE BY LAW. Bogen's liability arising out of the manufacture, sale or supplying of products or their use or disposition, whether based upon warranty, contract, tort or otherwise, shall be limited to the price of the product. **IN NO EVENT SHALL BOGEN BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, LOSS OF DATA OR LOSS OF USE DAMAGES) ARISING OUT OF THE MANUFACTURE, SALE OR SUPPLYING OF PRODUCTS, EVEN IF BOGEN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR LOSSES.** Some States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from State to State.

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