

## PREAMP BUYER'S GUIDE

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A preamp (or preamplifier) is a device that takes a weak signal from a microphone or pickup, and amplifies it to a stronger signal called "line level".

Two basic types of preamp are a **mic preamp** (which amplifies a signal from a microphone) and an **instrument preamp** (which amplifies a signal from an instrument's pickup).

You do not need to use a preamp with Bartlett Microphones. They have a strong signal. Just plug them directly into a sound system, or into an instrument amp with phantom power. The mic preamp is built into the mixer or amp.

Still, you would need a preamp if you want to mix a mic with a pickup. Or you might want have EQ (tone control) on stage, and some preamps include EQ. Or you might use a vacuum tube preamp to "warm up" the sound with a little euphonic distortion.

An instrument pickup will also work with the Guitar Mic B to make it louder if necessary.

Let's explain the technology behind preamps and list the features of several models.

A **mic preamp** has an XLR (3-pin) input connector. Most mic preamps have phantom power, which all Bartlett Microphones require to operate. (An exception is the Bartlett Guitar Mic B, which has its own battery power).

An **instrument preamp**, also called pickup preamp, takes a high-impedance signal from a pickup and converts it to a low-impedance signal without losing level. Why is that impedance conversion needed? Pickups are high-impedance devices. A high-impedance signal from a pickup, sent through a long mic cable to a mixer, will pick up hum and will sound muffled. However, a low-impedance signal can be fed through long mic cables without picking up hum or sounding muffled.

Some preamps combine both a mic preamp and an instrument preamp in a single chassis. The mic preamp has a low-impedance XLR connector and the instrument preamp has a high-impedance (high-Z) 1/4" phone jack connector.

Here are some features to look for in a preamp:

- Type of input connectors: XLR for a mic, 1/4" phone jack for a pickup.
- A gain or volume control.

- Phantom power. Most mic preamps with an XLR mic input have phantom power, which is usually 48 volts applied to the microphone on its mic cable.
- Phase switch. A "phase" or "phase reversal" switch may be useful when you want to amplify both a pickup and a mic simultaneously. The phase switch lets you invert the polarity of the pickup's signal relative to the mic's signal. Just set it where it sounds best.
- Highpass filter (HPF). Also known as a low-cut filter, an HPF removes very low frequencies which might otherwise feed back.
- EQ (equalization or tone control). A 3-band EQ lets you adjust bass, midrange and treble.
- Tunable notch filter. This function removes a narrow band of frequencies from the audio signal. You sweep it up or down in frequency to remove a frequency that feeds back.

Shown below are a few preamp models and their features.

### ART Tube MP Preamplifier \$39



- For a microphone and/or a pickup.
- XLR and 1/4" inputs and outputs.
- Has a vacuum tube for a "smooth, warm and fat sound quality".
- 48 volts phantom power.
- Phase+(polarity) reversal switch.

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### Grace Design M101 \$685



- For a microphone, not for a pickup. XLR mic input.
- Extreme high quality, very clean signal.
- 48 volts phantom power.
- Rejects radio frequency interference.
- Three output connectors: XLR balanced, 1/4" TRS (tip-ring-sleeve) balanced and 1/4" TS (tip-sleeve) unbalanced.
- Built in, universal power supply (no "wall wart" needed).

### Alesis MicTube Duo \$99



- For a microphone and/or a pickup. Two XLR mic inputs and 1/4" pickup inputs.
- 48 volts phantom power.
- Polarity reverse switch.
- 80 Hz highpass filter.
- "Drive" control affects the amount of tube distortion that you want to add.
- LED signal level indicators.
- Low noise.
- Small size.

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### BBE Acoustimax \$199



- For a pickup, not a microphone. 1/4" input.
- Foot switches.
- Ground-lift switch to prevent hum from ground loops.
- 3 band EQ with sweepable midrange.
- Low-frequency notch filter to reduce feedback.
- Sonic Maximizer lets you add sparkle and excitement to any instrument.

### Headway EDB-1 preamp \$319



- For a pickup and/or a microphone. XLR and 1/4" inputs and outputs.
- Powered by two 9-volt PP3 (6F22) batteries or by a plug-in DC power supply.
- Input impedance switchable to optimize various pickup types.
- 3-way Range control selects low-cut settings for guitar, violin, or bass.
- 2 channels.
- 5-band EQ.
- Tunable notch filter.
- Phantom power.
- Balanced XLR line out (a mix of 2 channels) and ground-lift switch to prevent hum from ground loops.

**Peavey PV-6 mixer \$99**



For microphones, not for a pickup. This is a mixer rather than a preamp. It works great with all Bartlett Mics. The PV-6 sounds clean and lets you EQ your sound onstage. It also lets you mix your instrument with a vocal mic if desired.

- 3-band EQ.
- 48 volts phantom power.
- Effects send control lets you add effects such as reverb.
- Stereo output on 1/4" balanced connectors.
- 4 mic inputs.

**Boss GE-7 seven-band equalizer effects pedal \$109**



This is not a preamp; it's an equalizer which you can use onstage to shape your instrument's tone. It has 1/4" phone jacks in and out. Normally it's used with a pickup. To use it with a Guitar Mic B, plug the mic into the Boss unit.

To use it with any other Bartlett Microphone, plug the mic into a phantom power supply. Plug the supply's output into a Radio Shack 274-016 XLR-to-1/4" adapter. Plug the adapter into the Boss unit.

Here are the connections: mic > mic cable > phantom power supply > mic cable > Radio Shack 274-016 adapter > Boss GE-7 > guitar cord > amp or direct box.



*Radio Shack 274-016 XLR-to-1/4" adapter*

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