

Myriad Design

6536-6 Phantom Piezo Preamp V2

(SKU SV806)

User Guide V1.0 – Nov 2020

Thank you for purchasing the Stompville Phantom Piezo Preamp V2.

The preamp is designed for use with a musical instrument, an art installation or a hydrophone and its purpose is to buffer the output of a piezo transducer element. The preamp is professionally hand-built and the JFET transistors are very closely matched. The preamp has very low distortion and noise.

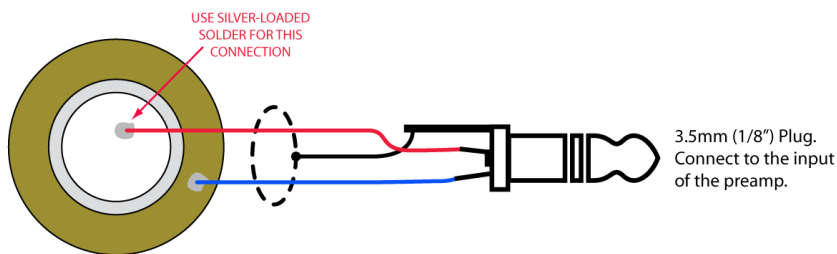
The output voltage of a piezo is comparatively large but the impedance is very high. The preamp provides some voltage-gain (approx. 12dB) but mainly lowers the output impedance of the piezo transducer to allow the piezo to drive a significant length of microphone cable.

The unit must be connected to a mixing desk/console/sound board/portable recorder or DAW balanced microphone input using a standard balanced XLRM-to-XLRF microphone cable. The mixing desk/console must have phantom power facility of 12-48V. The preamp unit does not incorporate a battery or other power source.

The preamp serves the same purpose as a D.I. box. However, the preamp will have better performance than a DI box because the input impedance is very high and the input design is optimised for piezo transducers.

If the piezo transducer is incorporated into a wooden case, such as a stomp box, cigar box guitar, or cajon, and you use a bare transducer, you must create a shielded environment for the transducer preferably with self-adhesive copper shielding (or aluminium shielding).

For further information on shielding, search YouTube for “shielding a guitar”. Ensure that the piezo element is not in electrical contact with the shielding.



Connect the piezo transducer to the tip and ring on the input connector. It does not matter which way around you connect the tip and ring. You must use shielded cable.

If your transducer has a pre-made mono jack plug, just plug it in. It will automatically be connected unbalanced. Note that the preamp is not suitable for electret microphones.

Changing the orientation of the tip and ring connections will change the phase of the signal. Human hearing is not sensitive to absolute phase, however, if you have multiple transducers close together, consider phase cancellation and experiment to get the best results. You can either change the polarity of the tip and ring connections, or move one of the transducers, or use the phase invert switch on your mixer or DAW.

Note that the XLR cord from the preamp to the device which provides phantom power must be fully wired (i.e. pin 1 must be connected at both ends). Some XLR cables are wired with pin 1 connected only at one end in order to break ground loops.

Selecting a Piezo Transducer

Piezo transducers come in many variations. Generally, the larger the diameter, the lower the resonant frequency and the better the low-frequency response. However, if the transducer is bonded to a hard surface, the diameter of the transducer is less important. In a contact microphone, for example, the piezo transducer is often bonded to a steel plate.

Search Ebay for "piezo pickup" for a range of transducer options.

Version 2 Input Protection

Note that the preamp is the same circuit as the modular Phantom Piezo Preamp which is currently on version 2. Version 2 incorporates back-to-back zener diodes which clamp the maximum input voltage to approximately $\pm 4V$ (8V peak-to-peak).

Using The Preamp

Piezo transducers have good frequency response and high output voltage. The preamp will drive at least 100m of low-capacitance microphone cable without significant loss of high-frequencies.

- Connect the unit to a microphone input on your mixing desk/console/board.
- Switch phantom power on.
- Consider using the PAD attenuator (if available and if necessary) to avoid overloading the microphone preamp.
- Use equalisation (EQ) to alter the tonal quality of the piezo transducer.
- Use the phase reversal switch to experiment with blended sound if you have more than one transducer.
- Use a limiter and/or compressor to reduce dynamic range or avoid overloads.
- Use the piezo transducer audio as a trigger for a sidechain effect.

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Myriad Design · United Kingdom
www.stompville.co.uk · sales@stompville.co.uk