

User Manual



TUBE ULTRAGAIN MIC100

Audiophile Vacuum Tube Preamplifier with Limiter

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Thank you

Thank you for the confidence you have placed in us by purchasing the MIC100. Your MIC100 is a professional mic preamp that can be used in a variety of applications. Due to its incredible functionality and the broad range of connection options, the MIC100 ensures outstanding performance. You will soon appreciate the MIC100’s flexibility, be it live on stage or in the home/professional recording studio.

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Important Safety Instructions

Terminals marked with this symbol carry electrical current of sufficient magnitude to constitute risk of electric shock. Use only high-quality professional speaker cables with ¼" TS or twist-locking plugs pre-installed. All other installation or modification should be performed only by qualified personnel.



This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure - voltage that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

**Caution**

To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user serviceable parts inside. Refer servicing to qualified personnel.

**Caution**

To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus shall not be exposed to dripping or splashing liquids and no objects filled with liquids, such as vases, shall be placed on the apparatus.

**Caution**

These service 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 operation instructions. Repairs have to be performed by qualified service personnel.

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 only with dry cloth.

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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. Use only attachments/accessories specified by the manufacturer.



12. 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.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. 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.
15. The apparatus shall be connected to a MAINS socket outlet with a protective earthing connection.
16. Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.



17. Correct disposal of this product: This symbol indicates that this product must not be disposed of with

household waste, according to the WEEE Directive (2012/19/EU) and your national law. This product should be taken to a collection center licensed for the recycling of waste electrical and electronic equipment (EEE). The mishandling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the efficient use of natural resources. For more information about where you can take your waste equipment for recycling, please contact your local city office, or your household waste collection service.

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LIMITED WARRANTY

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1. Introduction

With the MIC100, you have purchased an extremely musical mic preamp that is equipped with a 12AX7 vacuum tube. An integrated limiter, a phase reverse function, phantom power supply, a highly accurate LED meter and a switchable pad function complement this powerful device.

1.1 The design concept

The heart of the TUBE ULTRAGAIN is an extremely low-noise microphone preamp circuitry that uses discrete components and produces a highly transparent sound. In combination with our BEHRINGER tube technology, the operational amplifiers 4580 and a sophisticated circuit topology, the TUBE ULTRAGAIN yields excellent noise and distortion properties. The innovative UTC circuitry that has been developed by our engineering team offers an abundance of sound-shaping possibilities. Absolute musicality was our major goal when we designed the TUBE ULTRAGAIN. The result is a device that, thanks to our tube circuitry, lends an incredible punch to percussion instruments. On the other hand, instruments that are rich in upper harmonics will receive more transparency. The sound will be warm, detailed and brilliant.

Surely you know the recording problem that single instruments or vocals sometimes don't cut through. Thanks to the TUBE ULTRAGAIN, vocals gain in presence and volume without masking other instruments. As a result, your voice will be perfectly integrated in the mix.

1.2 Online registration

Please register your new BEHRINGER equipment right after your purchase by visiting behringer.com and read the terms and conditions of our warranty carefully.

Should your BEHRINGER product malfunction, it is our intention to have it repaired as quickly as possible. To arrange for warranty service, please contact the BEHRINGER retailer from whom the equipment was purchased. Should your BEHRINGER dealer not be located in your vicinity, you may directly contact one of our subsidiaries. Corresponding contact information is included in the original equipment packaging (Global Contact Information/European Contact Information). Should your country not be listed, please contact the distributor nearest you. A list of distributors can be found in the support area of our website (behringer.com).

Registering your purchase and equipment with us helps us process your repair claims more quickly and efficiently.

Thank you for your cooperation!

EN 2. Control Elements

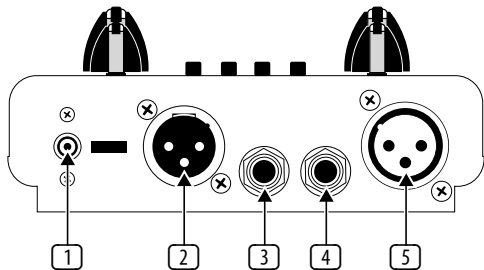


Fig. 2.1: Side panel of the MIC100

2.1 Connections (Side Panel)

- 1 Use the **POWER SUPPLY CONNECTOR** to hook up the enclosed power supply unit. Next to this connector you'll find the strain relief clamp, which prevents accidental release of the power supply.
 - 2 This is the balanced **XLR OUTPUT** of your MIC100. Use this connector to feed the XLR input of your mixing console, multitrack recorder or power amp.
 - 3 The balanced **1/4" TRS OUTPUT** of your MIC100 can also be connected to either mixer, recording system or power amp.
 - 4 The balanced **1/4" TRS INPUT** of your MIC100 can be used to connect your electric guitar, for example. This input is wired parallelly to the XLR input.
 - 5 Use the balanced **XLR INPUT** to connect your microphone.
- ◆ **In contrast to its outputs, the MIC100's inputs should never be used simultaneously!**

2.2 User interface



Fig. 2.2: User interface of the MIC100

- 6 The **GAIN** control allows applying gain from +26 to +60 dB to the input signal. This control should be set fully counterclockwise when (dis)connecting a sound source to the MIC100. When all connections are made, slowly start raising gain.
- 7 We recommend using the **LED** meter to adjust gain. The LED chain displays the output signal level in dB. Please make sure that the clip LED never lights up permanently. It should light up only at peak signals, but never all the time.
- 8 If your MIC100 is connected to the mains via the enclosed power supply unit, the **POWER LED** lights up to indicate that your MIC100 is running.
- 9 The **20 dB PAD** button reduces the input sensitivity by 20 dB. The appropriate setting depends on the equipment connected. No matter what your application is, the clip LED warns you to reduce the gain setting, so as to avoid distortion.
- 10 This **+48 V** switch activates the phantom power supply for the XLR input. Phantom power supply is required for operating condenser microphones.
- 11 With the **PHASE REVERSE** switch, the input signal is reversed by 180°. This function is available for both mic and line signals. Use this function in a multi-microphone setup if you detect phase cancellations in specific frequency bands.
- 12 Use the **LIMITER** switch to limit the signal and to prevent distortion.
- 13 The **OUTPUT** control governs the output level of the device within a range from -∞ to +10 dB. If the control is set fully counter-clockwise, there is no output signal at all. The more the control is set clockwise, the higher the output level.

The device's **SERIAL NUMBER** is found on the bottom side of the unit.

3. Wiring Examples

You'll be surprised how flexibly you can set up your MIC100. The following chapter describes some typical wiring examples.

3.1 Enhancing vocals and instruments in live applications

Here, the MIC100 is wired before the mixer's channel input. Thus, the sound gains in warmth and transparency. Due to the integrated limiter, distortion is eliminated effectively.

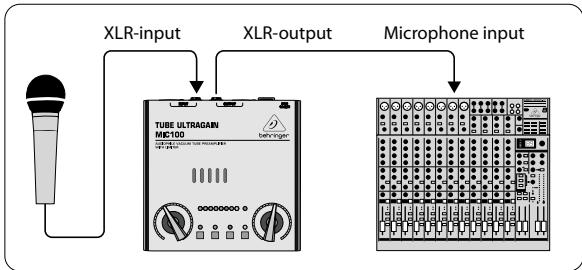


Fig. 3.1: Standard live application

EN 3.2 “Direct to Disk” application in studio or home recording environments

If you are looking for a device that considerably enhances the sound of your digital workstation, this is where the MIC100 comes in. Many hard disk recorders lack a certain “liveliness”. In addition, they are often equipped with “lousy” microphone preamps. Such problems can be solved perfectly with the MIC100.

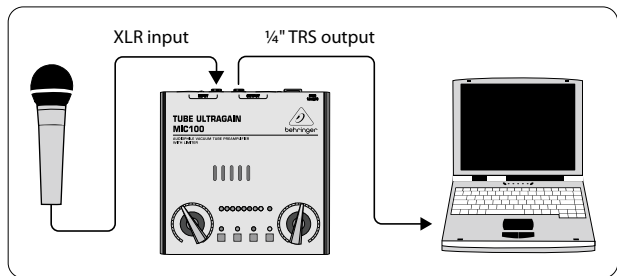


Fig. 3.2: Connection of the MIC100 and the soundcard of your PC

3.3 The MIC100 as DI-box

Your MIC100 is excellently suited for this application. For example, you can connect an unbalanced acoustic guitar signal to the MIC100 to prevent hum or interference noise. What you get is a balanced, noise-free signal.

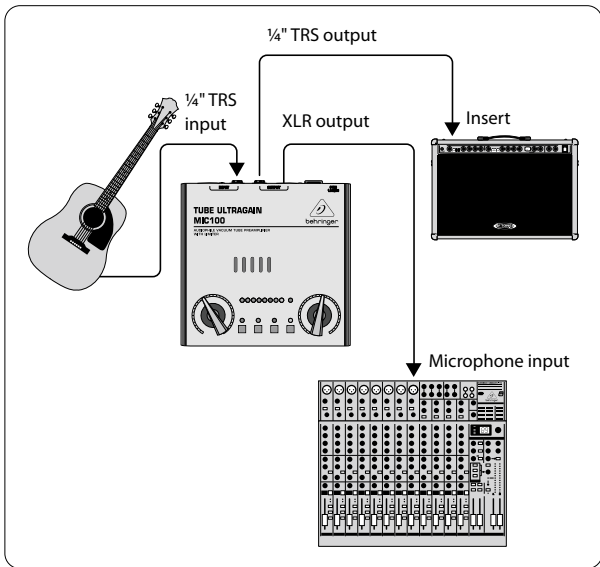


Fig. 3.3: The MIC100 as DI-box

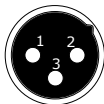
EN 4. Audio Connectors

Balanced use with XLR connectors



input

1 = ground/shield
2 = hot (+ve)
3 = cold (-ve)



output

For unbalanced use,
pin 1 and pin 3
have to be bridged

Fig. 4.1: XLR connectors

Unbalanced 1/4" TS connector

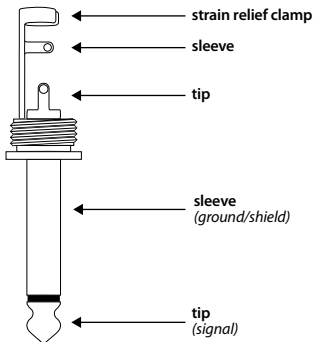
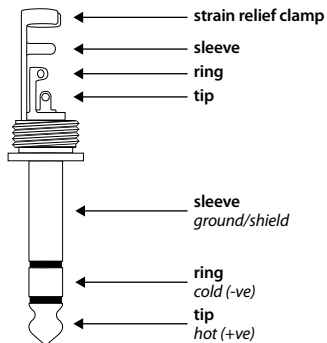


Fig. 4.2: 1/4" TS connector

Balanced ¼" TRS connector

For connection of balanced and unbalanced plugs, ring and sleeve have to be bridged at the stereo plug.

Fig. 4.3: ¼" TRS connector

EN 5. Specifications

XLR Input

Connector	balanced/unbalanced
Type	transformerless, DC-decoupled input
Impedance	approx. 2 k Ω
Max. input level	+7 dBu / -20 dB with pad

¼" TRS Input

Connector	balanced/unbalanced
Type	transformerless, DC-decoupled input
Impedance	approx. 1 M Ω
Max. input level	+16 dBu / -20 dB with pad

Audio Outputs

Connectors	XLR connector + ¼" TRS jack balanced/unbalanced
Type	transformerless, DC-decoupled output
Impedance	approx. 700 Ω balanced, approx. 350 Ω unbalanced
Max. output level	approx. +26 dBu @ 100 k Ω

Frequency Response

Mic input	<10 Hz to 43 kHz (± 3 dB)
Line input	<10 Hz to 40 kHz (± 3 dB)

Function Controls

GAIN	variable (+26 dB to +60 dB)
OUTPUT	variable ($-\infty$ to +10 dB)

Function Switches

20 dB PAD	level attenuation (20 dB)
+48 V	activates the phantom power
PHASE REVERSE	Phase reverse (180°)
LIMITER	limits the output signal

Indicators

Input Level	8-segment LED meter: -24, -18, -12, -6, 0, +6, +12, Clip
Power LED	indicates operation

Power Supply

Adapter	PSU
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Mains Voltage

USA/Canada	120 V~, 60 Hz
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Europe/U.K./Australia	230 V~, 50 Hz
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China	220 V~, 50 Hz
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Korea	220 V~, 60 Hz
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Japan	100 V~, 50 / 60 Hz
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Physical/Weight

Dimensions (H x W x D)	64 x 135 x 135 mm (2.5 x 5.3 x 5.3")
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Weight (without power supply)	1 kg (2.2 lbs)
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BEHRINGER is constantly striving to maintain the highest professional standards. As a result of these efforts, modifications may be made from time to time to existing products without prior notice. Specifications and appearance may differ from those listed or illustrated.



We Hear You