

# TUBE ULTRAGAIN MIC100

## User's Manual

ENGLISH

Version 1.1 September 2003



[www.behringer.com](http://www.behringer.com)

## IMPORTANT SAFETY INSTRUCTIONS

**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.

**WARNING:** To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture.



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.



### DETAILED SAFETY INSTRUCTIONS:

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this device near water.
- 6) Clean only with a 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, extension cords, and the point at which they exit the unit.
- 11) Only use 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 device. When a cart is used, use caution when moving the cart/device combination to avoid injury from stumbling over it.
- 13) Unplug this device during lightning storms or when not used for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the unit 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 device, the unit has been exposed to rain or moisture, does not operate normally, or has been dropped.

### **Welcome to the BEHRINGER family!**

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.

### **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.

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## 2. CONTROL ELEMENTS

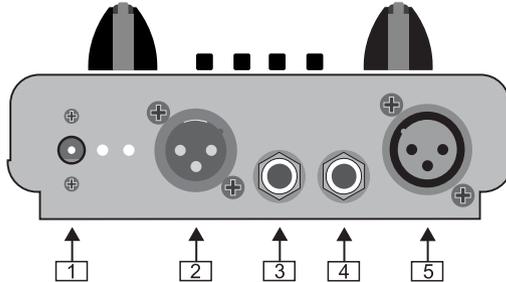


Fig. 2.1: Side panel of the MIC100

### 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.
-  **Please note that you can use the XLR and TRS outputs of your MIC100 at the same time! Thus, it is possible to connect the MIC100's output signal to two different devices simultaneously.**
- 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.

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- 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

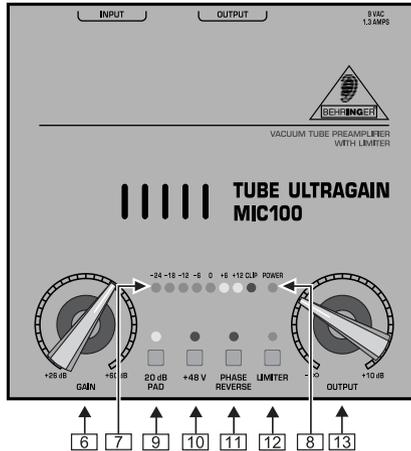


Fig. 2.2: User interface of the MIC100

- 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.

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- 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  $-\infty$  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.

### 2.3 Serial number

The MIC100's serial number is located on the bottom cover. Please take time to fill in and return the warranty card within 14 days after the date of purchase, so as to benefit from our extended warranty. Or use our online registration option available on the World Wide Web at [www.behringer.com](http://www.behringer.com).

## 3. WIRING EXAMPLES

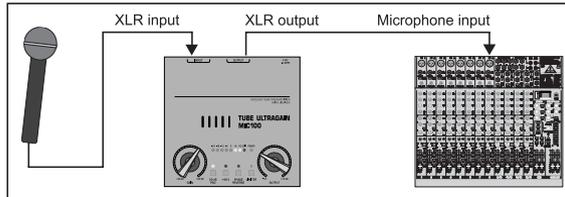
You'll be surprised how flexibly you can set up your MIC100. The following chapter describes some typical wiring examples.

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### 3.1 Enhancing vocals and instruments in live applications

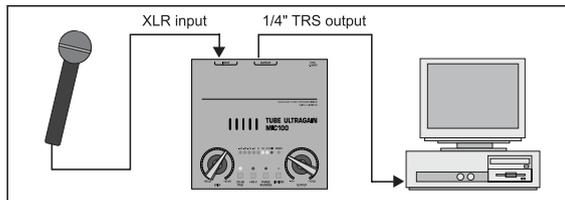
Here, the MIC100 is wired before the mixer's channel input. Thus, the sound gains in warmth and transparency. Due to the integrated limiter, distortion is eliminated effectively.



*Fig. 3.1: Standard live application*

### 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*

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### 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.

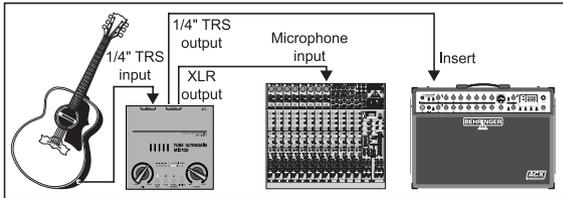


Fig. 3.3: The MIC100 as DI-box

## 4. AUDIO CONNECTIONS

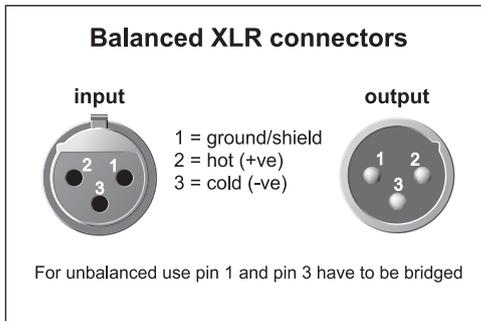
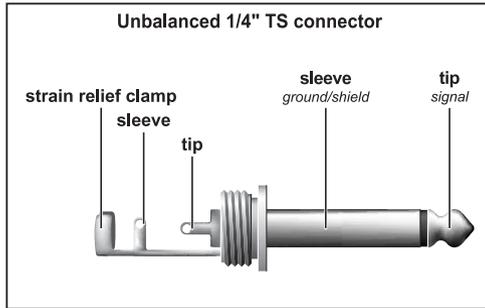
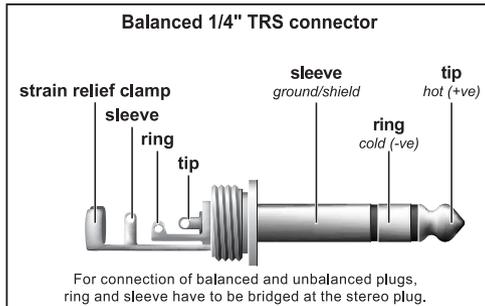


Fig. 4.1: XLR connectors

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*Fig. 4.2: 1/4" TS connector*



*Fig. 4.3: 1/4" TRS connector*

## 5. WARRANTY

For our current warranty terms, please refer to our website at <http://www.behringer.com>, or send us a request via e-mail at [support@behringer.de](mailto:support@behringer.de), fax at +49 2154 9206 4199, or call +49 2154 9206 4166.

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## 6. SPECIFICATIONS

### XLR input

Connector	Balanced/unbalanced
Type	Transformerless, DC-decoupled input
Impedance	approx. 2 k $\Omega$
Max. input level	+7 dBu / 20 dB with pad

### 1/4" TRS input

Connector	Balanced/unbalanced
Type	Transformerless, DC-decoupled input
Impedance	approx. 1 M $\Omega$
Max. input level	+16 dBu / 20 dB with pad

### Audio outputs

Connectors	XLR and 1/4" TRS connector balanced/unbalanced
Type	Transformerless, DC-decoupled output
Impedance	approx. 700 $\Omega$ balanced / approx. 350 $\Omega$ unbalanced
Max. output level	approx. +26 dBu @ 100 k $\Omega$

### System specifications

Frequency response	Mic input <10 Hz - 43 kHz (+/-3 dB) Line input <10 Hz - 40 kHz (+/-3 dB)
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### Function controls

Gain	variable (+26 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°)
Limiters	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

Mains voltages	USA/Canada	120 V~, 60 Hz, PSU
	U.K./Australia	240 V~, 50 Hz, PSU
	Europe	230 V~, 50 Hz, PSU
	Japan	100 V~, 50 - 60 Hz, PSU

### Physical

Dimensions (H x W x D)	approx. 2 1/2" (64 mm) x 5 1/4" (135 mm) x 5 1/4" (135 mm)
Weight (without power supply)	approx. 0.5 kg (1.1 lbs)

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.

## **TUBE ULTRAGAIN MIC100**

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BEHRINGER Spezielle Studioteknik GmbH, Hanns-Martin-Schleyer-Str. 36-38,  
47877 Willich-Münchheide II, Germany  
Tel. +49 2154 9206 0, Fax +49 2154 9206 4903

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