

ULTRABASS BVT 4500H/5500H

User manual

en

Version 1.1 2007-07



www.behringer.com



ATTENTION

CAUTION: To reduce the risk of electric shock, do not touch the top cover or the serviceable parts of the unit while the power is on.

WARNING: To reduce the risk of fire, do not use the unit in the vicinity of flammable liquids, gases, or vapors. Do not use the unit in the vicinity of explosive atmospheres.

CAUTION: Before servicing the unit, disconnect the power cord from the power source. To avoid damage to the unit, do not touch the internal components.



When the warning symbol appears, alerts you to the presence of a dangerous voltage inside the unit that may be sufficient to cause electric shock.



When the warning symbol appears, alerts you to the presence of a dangerous voltage inside the unit that may be sufficient to cause electric shock. Please read the maintenance instructions literature. Please read the

Foreword



Dear customer,

Welcome to the team of ULTRABASS users and thank you very much for expressing your confidence in BEHRINGER products by purchasing the BEHRINGER BVT4500H/BVT5500H.

Writing this foreword for you gives me great pleasure, because it represents the culmination of many months of hard work delivered by our engineering team to achieve a very ambitious goal: to present an outstanding bass workstation that gives you

maximum flexibility and performance with its unique sound character and broad range of functions.

The task of designing our new BVT4500H/5500H certainly meant a great deal of responsibility, which we assumed by focusing on you, the discerning user and musician. Meeting your expectations also meant a lot of work and night shifts. But it was fun, too. Developing a product usually brings a lot of people together. What a great feeling it is when all who participated in such a project can be proud of what they've achieved.

It is our philosophy to share our enjoyment with you, because you are the most important member of the BEHRINGER team. With your highly competent suggestions for new products you've made a significant contribution to shaping our company and making it successful. In return, we guarantee you uncompromising quality as well as excellent technical and audio properties at an extremely reasonable price. All of this will enable you to give free rein to your creativity without being hampered by budget constraints.

ULTRABASS BVT4500H/5500H

1. Introduction

With the BVT4500H/5500H you have acquired a pro-level amplifier from our ULTRABASS series. This classic bass amp combines an uncompromising, “cutting-through” sound with a full range of sound-shaping features.

1.1 The Design Concept

Over the past few years, flexibility has become important. Bass players must now offer a broad range of sounds and play in different venues: home studios, professional studios, and live concerts. Additionally, the world of electric bass playing has changed. New effects devices and basses, with five or six strings, are launched all the time. There is also the desire to create one's own, “unique” sound—which can only be achieved with innovative amplifiers.

In response to these dual needs (flexibility and individuality), the BVT4500H/5500H offers you:

- ▲ TONE and GRAPHIC EQ features—for shaping and refining sound.
- ▲ VTC (Virtual Tube Circuitry)—adding the warmth of vintage tube circuitry to sound.
- ▲ Jacks for connecting the BVT4500H/5500H to effects processors, mixers/recording units, other preamps, and other power amps.
- ▲ 2 types of speaker jacks: ¼" TS and compatible with Neutrik Speakon connectors.

1.2 Before you get started

1.2.1 Shipment

Your BVT4500H/5500H was carefully packed at the factory, and the packaging was designed to protect the unit from damage caused by rough handling. Nevertheless, we recommend that you carefully examine the packaging and its contents for any signs of physical damage that may have occurred during transit.

- 👉 **If the unit is damaged, please do NOT return it to us; instead, notify your dealer and the shipping company immediately, otherwise claims for damage or replacement may not be granted.**
- 👉 **Please always use the original packaging to avoid damage due to storage or shipping.**
- 👉 **Never let unsupervised children play with the BVT4500H/5500H or with its packaging.**
- 👉 **Recycle whenever possible.**

1.2.2 Initial operation

- 👉 **Ensure adequate air supply and to avoid overheating do not place the unit near radiators etc.**

Before you connect your BVT4500H/5500H to the mains, please make sure that your local voltage matches the voltage required by the unit.

CAUTION: The following applies only to BVT versions that can be switched between 120 V and 230 V: The fuse holder on the mains connector has 3 triangular markings, with two of these triangles opposing each other. The BVT4500H/5500H is set to the operating voltage printed next to these markers and can be set to another voltage by turning the fuse holder by 180°.

- 👉 **Please note that when operating the unit at 120 V, a higher fuse rating is required. Please refer to the “SPECIFICATIONS” for details.**

- 👉 **If you set the unit to a different mains voltage, be sure to use a fuse of the correct type and rating. Please refer to the “SPECIFICATIONS” for details.**

- 👉 **Blown fuses must be replaced by fuses of the same type and rating! Please refer to the “SPECIFICATIONS” for details.**

CAUTION!

- 👉 **Before changing the fuse, switch off the device and pull the plug to avoid electric shock or damage to the device.**

The BVT4500H/5500H power connection is made by using the enclosed cable and the amplifier's standard IEC receptacle. It meets all of the international safety certification requirements.

- 👉 **Please make sure that all units have a proper earth connection. For your own safety, never remove or disable the earth conductor from the unit or of the AC power cord.**

IMPORTANT NOTES CONCERNING INSTALLATION

- 👉 **The sound quality may diminish within the range of powerful broadcasting stations and high-frequency sources. Increase the distance between the transmitter and the device and use shielded cables for all connections.**

1.2.3 Online registration

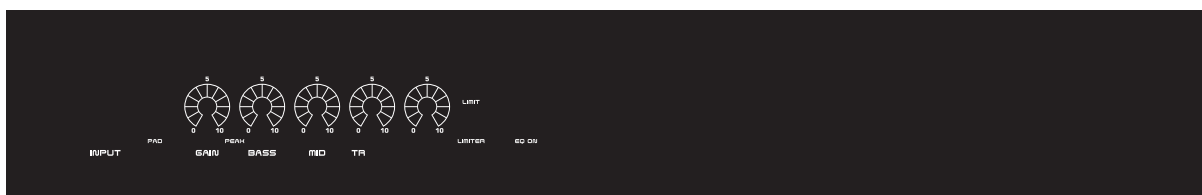
Please do remember to register your new BEHRINGER equipment right after your purchase by visiting www.behringer.com (alternatively www.behringer.de) and kindly read the terms and conditions of our warranty carefully.

Should your BEHRINGER product malfunction, our goal is to have it repaired as quickly as possible. To arrange for warranty service, please contact the 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 (www.behringer.com).

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

Thank you for your cooperation!

2. Front panel



ULTRABASS BVT4500H/5500H

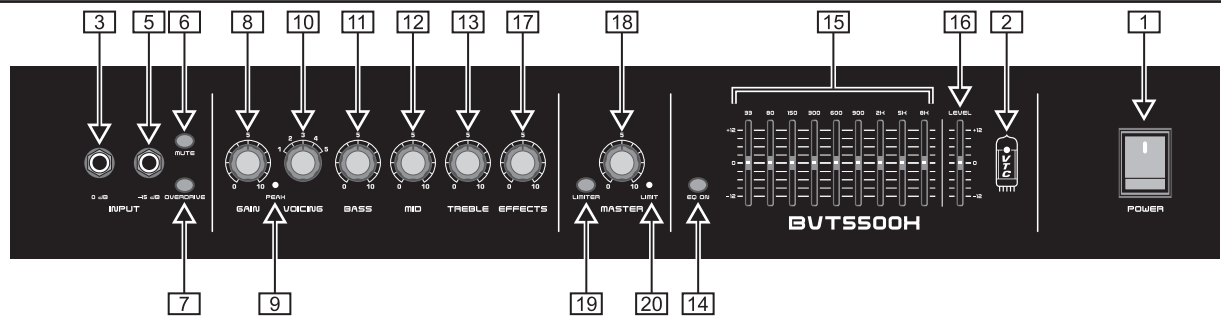


Fig. 2.2: BVT5500H front panel

This section describes how to use the front panel of the BVT4500H and the BVT5500H, illustrated on the previous page and above.

1 POWER switch:

Use the **POWER** switch to turn on your BVT4500H/5500H. The **POWER** switch should always be in the "Off" position when you are about to connect your unit to the wall socket or disconnect it.

Switch-on thumps can damage your hearing and your speakers. Before you connect the BVT to the mains, ensure that it is turned off.

2 VTC LED:

When the BVT is off, this LED is not illuminated. When it is on, this LED is illuminated and indicates that the amp is activated for use. VTC is BEHRINGER's analog technology that emulates the warmth of vintage tube circuitry.

INPUT features

To input an audio signal to the BVT, use features [3] - [7], as follows:

3 0 dB jack:

To connect an electric bass to the BVT, use this 1/4" mono jack (unbalanced). Bases with active pickups create high-level signals. If your bass includes an active pickup and you work with:

- ▲ the BVT4500H, use the **PAD** button [4] to reduce the input audio signal.
- ▲ the BVT5500H, use the **-15 dB** jack [5] instead of the 0 dB jack.

4 PAD button (BVT4500H only):

If the **PEAK** LED [9] constantly illuminates and the **GAIN** control [8] is set to 0 (zero), the input level of the audio signal is too high. In this case, press this button to activate the pad. The pad reduces the input sensitivity by 15 dB.

5 -15 dB jack (BVT5500H only):

To connect an active bass to the BVT5500H, use this 1/4" mono jack (unbalanced). Using this jack will give you a lower input sensitivity as compared with the 0 dB jack.

6 MUTE button (BVT5500H only):

Use this button if you want to tune a bass without hearing the tone. This feature mutes the main signal path, but not the **TUNER** output.

7 OVERDRIVE button (BVT5500H only):

Use this button to add a distorted texture to the audio signal. This feature "overdrives" the BVT5500H preamp.

8 GAIN control:

Use this control to boost or cut the level of the input signal.

9 PEAKLED:

At various points in the signal path, the BVT monitors the level of the audio signal. When the level is too high, the **PEAK** LED warns that clipping can occur. If the LED:

- ▲ occasionally illuminates, the BVT clips only some peaks in the audio signal. Occasional clipping does not reduce the sound quality and shows that the signal is strong enough.
- ▲ never illuminates, the BVT does not clip any signal peaks in the audio signal. The audio signal is probably too weak to make use of the full dynamic range. Increase the **GAIN** [8] setting until the **PEAK** LED lights up only occasionally, at the strongest signal peaks.
- ▲ constantly illuminates, the BVT clips a large part of the audio signal and you will hear a distortion. Lower the **GAIN** setting and check for extreme fader or control settings.

TONE features

"Tone" refers to the presence and quality of these frequency bands of an audio signal:

- ▲ bass: from 30 to 200 Hz
- ▲ mid-range: from 200 to 2 000 Hz
- ▲ treble: from 2 000 Hz to 20 kHz

The BVT offers controls to effectively tailor the sounds to your needs by cutting or boosting specific bands. To adjust the tone, use features [10] - [13], as follows:

10 VOICING control (BVT5500H only):

To select the tone you want, turn this knob to one of the following presets. The BVT5500H equalizes the audio signal for you.

- 1: Prominent bass and treble tones (scooped mids).
- 2: Smooth and warm treble tones (passive tone).
- 3: Flat, natural bass tones (no equalization).
- 4: Bright treble tones.
- 5: Flat, natural bass tones that are not muddy (bass rolloff).

11 - 13 BASS, MID, and TREBLE controls:

For each tone (bass, mid-range, and treble) that you can emphasize or de-emphasize, the BVT includes a single **TONE** control.

To emphasize a tone, you can turn the relevant tone control toward 10 (maximum boost). Alternatively, you might consider lowering adjacent bands. To de-emphasize a tone, you can turn the relevant tone control toward 0 (maximum cut).

DOH

EFFECTS MIX control (BVT5500H only):

If you created an effects loop, use this control to adjust the *dry-wet* mix. As you turn this control toward:

0 (zero), you hear more of the *dry* signal (without effects). At zero, you hear only the dry signal.

10, you hear more of the *wet* signal (effects). At 10, you hear only the wet signal.

For details about creating an effects loop, see 3. **REAR WEL** ([29] - [30]).

R features

MASTER control:

To adjust the speaker volume and the level of the PREAMP JTPUT, turn this control toward 0 (no volume/level) or, alternatively 10 (maximum volume/level).

LIMITER button:

The limiter reduces only the signal peaks that can overdrive the POWER AMP and distort the audio signal. The limiter prevents the BVT4500H/5500H from clipping these signal peaks. To activate or alternatively deactivate the limiter, push this button.


Because high signal peaks can damage loudspeakers, it is recommended to activate the limiter and not to play at full volume for a long time without ear protection.


LIMITED:

When the limiter is activated, this LED is illuminated.



If you use a single speaker or a high-power speaker, connect this speaker to the Neutrik Speakon compatible jack. To prevent electrical shock and ensure the correct polarity, this jack locks an audio plug in place.

 **Before you connect speakers to the BVT4500H/5500H, turn it off.**

 **Your speaker cabinets should have a sufficient power rating (BVT4500H: > 450 W, BVT5500H: > 550 W) and preferably a total impedance of 4 Ω or higher. Too high a load impedance will decrease the output power rating of the power stage. For details, refer to the chapter “ABOUT SPEAKER IMPEDANCE”.**

[27] POWER AMP INPUT:

To connect an external preamplifier to the BVT, use this ¼" TS jack.

[28] PREAMP OUTPUT:

To connect an external power amplifier to the BVT, use this ¼" TS jack.

EFFECTS LOOP jacks

To connect the BVT4500H/5500H to an effects processor you can use one or, alternatively both of these jacks ([29]- [30]). Keep in mind that the BVT4500H and the BVT5500H do not process effects in the same way. For details, see “THE SIGNAL PATH”.

[29] RETURN jack:

To send an audio signal from an effects processor to the BVT, use this ¼" TS jack.

[30] SEND jack:

To send an audio signal from the BVT to an effects processor, use this ¼" TS jack.

LINE OUTPUT features

To send an audio signal from the BVT to a mixer or a recording unit, use the LINE OUTPUT features ([31] - [34]), as follows:

[31] LEVEL control:

To adjust the level of any LINE OUTPUT, turn this knob toward min (no level) or, alternatively max. The value of the max setting depends on what you selected via the PRE/POST button [33]. If you selected:

- ▲ PRE: max is ~ 0 dB.
- ▲ POST: max is ~ 10 dB.

[32] GND LIFT button:

To manage the ground connection between the BVT and a mixer/recording unit, use this button. When this button is:

- ▲ pushed out, you maintain a ground connection that prevents electrostatic charges from interfering with an audio signal.
- ▲ pushed in, you break the ground connection. Do this only when ground-loop hum interferes with an audio signal.

[33] PRE/POST button:

To select the type of signal you want to send to a mixer/recording unit, use this button. When this button is:


- ▲ pushed out (PRE EQ and effects), the BVT does not apply any preamp features (TONE/EQ/EFFECTS) to the audio signal.
- ▲ pushed in (POST EQ and effects), the BVT applies all preamp features to the audio signal.

For details, see “THE SIGNAL PATH”.

[34] BALANCED OUTPUT:

To connect the BVT to the mic input on a mixer or,

alternatively to a recording unit, use this XLR jack (balanced).

 **Before you connect the BVT4500H/5500H to mic input on a mixer, turn off the phantom power on the relevant channel of the mixer.**

[35] TUNER OUT jack:

To connect the BVT4500H/5500H to an electronic tuner, use this ¼" TS jack.

To tune while muting the PARALLEL SPEAKER OUTPUTs, do one of the following. If you work with:

- ▲ the BVT4500H, turn the MASTER control to 0 (minimum setting).

Alternatively, you can use the tuner's mute feature: Connect EFFECTS SEND [30] to the tuner input and EFFECTS RETURN [29] to the tuner output. When you:

- ▲ activate the mute feature on the tuner, the tuner does not send the audio signal to the RETURN jack.
- ▲ deactivate the mute feature on the tuner, the tuner sends the audio signal to the RETURN jack. The audio signal follows the signal path to the PARALLEL SPEAKER OUTPUTs.

- ▲ the BVT5500H, activate the mute feature [6].

4. About speaker impedance

The total impedance of the speakers that you connect to the BVT affects the power output of the BVT. The minimum speaker impedance is 4 Ω. When the total load is 4 Ω, the BVT supplies the optimal power.

How to calculate the speaker impedance

When using more than one speaker and each connecting to another BVT speaker jack, the speakers are connected in parallel. To calculate the resulting total impedance of the speakers, use the following formula—

$$Z_{\text{total}} = \frac{1}{1/Z_1 + 1/Z_2 + \dots}$$


—where Z_1 , Z_2 etc. are each the impedance of a single speaker and Z_{total} is the resulting impedance of all speakers.

For two speakers (Z_1 and Z_2), the formula reads as:

$$Z_{\text{total}} = \frac{Z_1 \cdot Z_2}{Z_1 + Z_2}$$

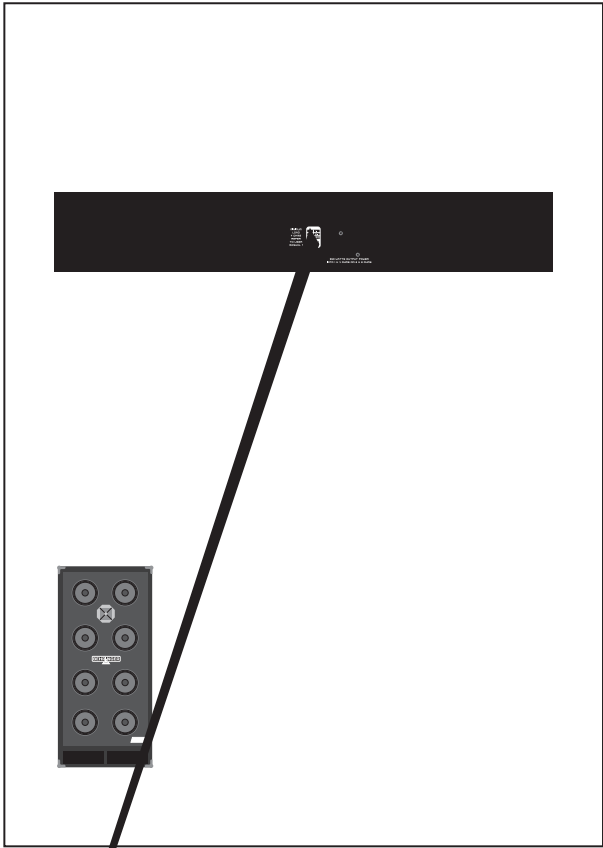
Via the formula, you get a 4 Ω load with:

- ▲ one 4 Ω speaker
- ▲ two 8 Ω speakers
- ▲ one 8 Ω speaker and two 16 Ω speakers

 **As the speaker impedance decreases, the output power of the BVT increases. High output power can damage your speakers. As the speaker impedance increases, the output power of the BVT decreases.**

5. Setup example

The following illustration provides an example of how to set up the BVT5500H.



6.4 EFFECTS LOOP

The EFFECTS LOOP section can be used in three ways:

6.4.1 SEND and RETURN

- ▲ **PURPOSE:** To create an effects loop, i.e., to apply external effects to the signal.
- ▲ **RESULTS:** If you use the:
 - ▲ BVT4500H, only the audio signal that enters via the *RETURN* jack continues to follow the BVT4500H signal path. The level of the effects has to be adjusted on the external unit.
 - ▲ BVT5500H, both the main audio signal and the audio signal that enters via the *RETURN* jack follow the BVT5500H signal path. To adjust the dry-wet mix, use the *EFFECTS MIX* control.

6.4.2 SEND only (BVT5500H only)

- ▲ **PURPOSE:** To send an audio signal from the BVT5500H to an effects processor.
- ▲ **RESULTS:** The main signal path is not affected.

6.4.3 RETURN only

- ▲ **PURPOSE:** To send an audio signal from an external pre-amp to the BVT4500H/5500H, i.e., to use the BVT as a power amp only.
- ▲ **RESULTS:** If you use the:
 - ▲ BVT4500H, the *INPUT* jack is deactivated. The signal path begins at the *RETURN* jack.
 - ▲ BVT5500H, the *INPUT* jack remains active. You could e.g., connect two basses to the BVT, one to *INPUT* and the other to *RETURN*. To adjust the balance between the two, use the *EFFECTS MIX* control.

6.5 INSERT CHANNEL

6.5.1 PREAMP OUTPUT

- ▲ **PURPOSE:** To process an audio signal with all BVT preamp features (TONE, EQ, EFFECTS), and then send the audio signal to an external power amp. The BVT settings affect the volume on the external amp.
- ▲ **RESULTS:** The main signal path is not affected.

6.5.2 POWER AMP IN

- ▲ **PURPOSE:** To process an audio signal with an external preamp, and then send the audio signal to the BVT4500H/5500H power amp.
- ▲ **RESULTS:** The signal path begins at the *POWER AMP IN* jack. The signal is independent of the *MASTER* control.

 **Switch off the unit before connecting an external preamp to POWER AMP IN.**

7. Audio connectors

This section illustrates the audio connectors that you need for the BVT jacks. For details about most BVT jacks, see the section "REAR PANEL". For details about the *INPUT* jack, see the section "FRONT PANEL".

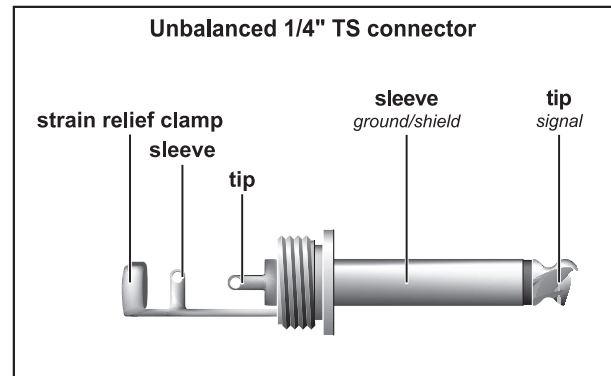


Fig. 7.1: The connector for a 1/4" TS jack

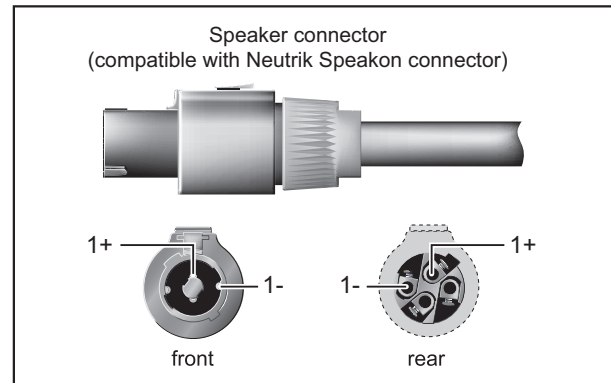
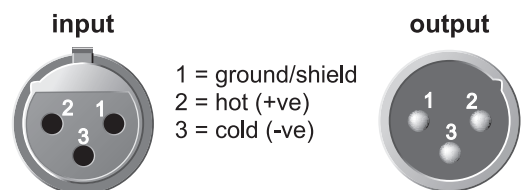


Fig. 7.2: The connector for a Neutrik Speakon compatible jack

Balanced use with XLR connectors



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

Fig. 7.3: The connector for an XLR jack





10. Warranty

§ 1 Other warranty rights and national law

1. This warranty does not exclude or limit the buyer's statutory rights provided by national law, in particular, any such rights against the seller that arise from a legally effective purchase contract.
2. The warranty regulations mentioned herein are applicable unless they constitute an infringement of national warranty law.

§ 2 Online registration

Please do remember to register your new BEHRINGER equipment right after your purchase by visiting <http://www.behringer.com> and kindly read the terms and conditions of our warranty carefully. Registering your purchase and equipment with us helps us process your repair claims quicker and more efficiently. Thank you for your cooperation!

§ 3 Warranty

1. BEHRINGER (BEHRINGER International GmbH including all BEHRINGER subsidiaries, except BEHRINGER Japan) warrants the mechanical and electronic components of this product to be free of defects in material and workmanship for a period of one (1) year* from the original date of purchase, in accordance with the warranty regulations described below. BEHRINGER warrants the mechanical and electronic components of this product to be free of defects in material and workmanship for a period of one (1) year* from the original date of purchase, in accordance with the warranty regulations described below. If the product shows any defects within the specified warranty period that are not excluded from this warranty as described under § 5, BEHRINGER shall, at its discretion, either replace the product by providing a new or reconditioned product or repair the product using suitable new or reconditioned parts. In the case that other parts are used which constitute an improvement, BEHRINGER may, at its discretion, charge the customer for the additional cost of these parts. In case BEHRINGER decides to replace the product, this warranty shall apply to the replacement product for the remaining initial warranty period, i.e. one year* from the date of purchase of the initial product.
2. If the warranty claim proves to be justified, the product will be returned to the user freight prepaid.
3. Warranty claims other than those indicated above are expressly excluded.

§ 4 Return authorization number

1. To obtain warranty service, the buyer (or his authorized dealer) must call BEHRINGER during normal business hours BEFORE returning the product. To obtain warranty service, the buyer (or his authorized dealer) must call BEHRINGER as exclusive distributor of BEHRINGER products (see enclosed list) during normal business hours BEFORE returning the product. All inquiries must be accompanied by a description of the problem. The buyer or his authorized dealer will receive a return authorization number.
2. Subsequently, the product must be returned in its original shipping carton, together with the return authorization number. The return shipment address will be indicated by BEHRINGER.
3. Shipments without freight prepaid will not be accepted.

§ 5 Warranty regulations

1. Warranty services will be furnished only if the product is accompanied by a copy of the original retail dealer's invoice. Any product deemed eligible for repair or replacement under the terms of this warranty will be repaired or replaced.

2. If the product needs to be modified or adapted in order to comply with applicable technical or safety standards on a national or local level, in any country which is not the country for which the product was originally developed and manufactured, this modification/adaptation shall not be considered a defect in materials or workmanship. The warranty does not cover any such modification/adaptation, irrespective of whether it was carried out properly or not. Under the terms of this warranty, BEHRINGER shall not be held responsible for any cost resulting from such a modification/adaptation.

3. Free inspections and maintenance/repair work are expressly excluded from this warranty, in particular, if caused by improper handling of the product by the user. This also applies to defects caused by normal wear and tear, in particular, of faders, crossfaders, potentiometers, keys/buttons, tubes, guitar strings, illuminants and similar parts.

4. Damage/defects caused by the following conditions are not covered by this warranty:

- ▲ improper handling, neglect or failure to operate the unit in compliance with the instructions given in BEHRINGER user or service manuals.
- ▲ connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used.
- ▲ damage/defects caused by force majeure or any other condition that is beyond the control of BEHRINGER.

5. Any repair or opening of the unit carried out by unauthorized personnel (user included) will void the warranty.

6. If an inspection of the product by BEHRINGER shows that the defect in question is not covered by the warranty, the inspection costs are payable by the customer.

7. Products which do not meet the terms of this warranty will be repaired exclusively at the buyer's expense. BEHRINGER will inform the buyer of any such circumstance. If the buyer fails to submit a written repair order within 6 weeks after notification, BEHRINGER will return the unit. Costs for freight and packing will be invoiced separately C.O.D. When the buyer has sent in a written repair order such costs will also be invoiced separately.

§ 6 Warranty transferability

This warranty is extended exclusively to the original buyer (customer of retail dealer) and is not transferable to anyone who may subsequently purchase this product. No other person (retail dealer, etc.) shall be entitled to give any warranty promise on behalf of BEHRINGER. No other person (retail dealer, etc.) shall be entitled to give any warranty promise on behalf of either BEHRINGER or BEHRINGER.

§ 7 Claim for damages

Failure of BEHRINGER to provide proper warranty service shall not entitle the buyer to claim (consequential) damages. In no event shall the liability of BEHRINGER exceed the invoiced value of the product.

* Customers in the European Union please contact BEHRINGER Germany Support for further details.

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