

V-TONE GMX110/GMX210/GMX212/GMX1200H

User's Manual

Version 1.1 July 2004

ENGLISH



www.behringer.com



V-TONE GMX110/GMX210/GMX212/GMX1200H

IMPORTANT SAFETY PRECAUTIONS



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. The apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.




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 apparatus near water.
 - 6) Clean only with 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, convenience receptacles, and the point where they exit from the apparatus.
 - 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 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) **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 unless you are qualified to do so.

V-TONE GMX110/GMX210/GMX212/GMX1200H

FOREWORD



Dear Customer,
welcome to the team of BEHRINGER users, and thank you very much for expressing your confidence in us by purchasing the BEHRINGER V-TONE.

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 develop four outstanding guitar amps that are at the forefront of what is

technically possible and that can be used in many different applications. Our guitar amps offer you strong performance, their sound is amazingly clear, and they are easy to use both as direct recording amps as well as stage amps. The task of designing our new V-TONEs 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, and 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.

We are often asked how we manage to produce such high-quality devices at such unbelievably low prices. The answer is quite simple: it's you, our customers! Many satisfied customers mean large sales volumes enabling us to get better purchasing terms for components, etc. Isn't it only fair to pass this benefit on to you? Because we know that your success is our success too!

I would like to thank all of you who have made the V-TONE Series possible. You have all made your own personal contributions, from the developers to the many other employees at this company, and to you, the BEHRINGER user.

My friends, it's been worth the effort!


Thank you very much,

Uli Behringer

TABLE OF CONTENTS

1. INTRODUCTION	4
1.1 The concept	4
1.2 DYNAMIZER technology and analog modeling	4
1.3 Before you get started	4
1.3.1 Shipment	4
1.3.2 Initial operation	4
1.3.3 Warranty	4
2. CONTROL ELEMENTS AND CONNECTIONS	5
2.1 Front panel	5
2.2 Rear panel	5
3. APPLICATIONS	6
3.1 Practice setup with playback	6
3.2 Recording setup with an external effects device	7
3.3 Live setup with a MIDI foot controller	7
3.4 Wiring the GMX1200H	8
4. EFFECTS PROCESSOR	8
4.1 FXT—effects tracking	9
4.2 The effects	9
4.3 MIDI control	10
5. TUNER	12
5.1 Tuning your guitar	12
5.2 Setting up the “a” reference tone	12
6. INSTALLATION	12
6.1 Audio connections	12
6.2 Speaker connection	13
6.3 MIDI connection	13
7. APPENDIX	13
7.1 MIDI implementation	13
7.2 Effect presets	14
8. SPECIFICATIONS	15
9. WARRANTY	16

WARNING!

 We would like to bring your attention to the fact that extremely loud sound levels may damage your hearing as well as your headphones. Please turn the MASTER control all the way to the left before powering up the unit. Always try to keep volume at appropriate levels.

V-TONE GMX110/GMX210/GMX212/GMX1200H

1. INTRODUCTION

Thank you for the trust that you have placed in us by buying your V-TONE. You have gotten your hands on a latest-generation guitar amp that sets completely new standards when it comes to analog modeling.

Our primary goal during development was to simulate the typical sounds of analog guitar amps, and at the same time give you a powerful sound tool that you can use flexibly. In doing so, we constantly strove to create a piece of equipment that is intuitive and easy to use.

The demands placed on a guitar amp are nowadays very broad. A guitarist should offer a wide array of sounds, but at the same time be able to quickly adapt to specific requirements of various applications—be it home recording, studio, live performances, etc. That's why it is very important to us to be able to offer you a maximal sound diversity as well as diverse connection possibilities with our V-TONE. Fret not: you will quickly master the V-TONE and will be able to quickly learn how to use all of its capabilities easily and intuitively.

With its up-to-date circuitry, its digital signal processor (DSP) and its integrated tuner, the V-TONE features the functionality and dependability of a truly modern guitar amp. Yet it is user-friendly and problem-free as if it were a classic tube combo. We highly recommend taking your time to truly learn all of the V-TONE's functions so you can reach its maximum potential.

1.1 The concept

The BEHRINGER company philosophy guarantees a perfectly thought-out circuitry concept, with components that were selected without cutting any corners. The operational amplifiers that BEHRINGER uses in the V-TONE are some of the most noise-free operational amps around, and are characterized by extreme linearity and low distortion. They are complemented by low-tolerance resistors and capacitors, high-value potentiometers and switches as well as additional select components.


The robust housing of your V-TONE, with its oversize power supply, gives you the peace of mind that the V-TONE will hold its own even under the most demanding stage conditions. The housing is made of high-grade, environment-friendly MDF wood consisting of multiply impregnated layers.

1.2 DYNAMIZER technology and analog modeling

When an electric instrument is amplified, that's where you either make it or break it. Unlike the signals that have been mixed and mastered, the signals of electric instruments have extremely high signal peaks, placing the dynamic range of the amp's circuitry under immense strain. How your amp reacts to these signal peaks is one of its most defining characteristics.

That's why we've equipped all V-TONE Series amps with our unique DYNAMIZER preamplifier circuitry. It guarantees a lively sound with a lot of punch, even when the amp is pushed to its limits. Combine that with our V-TONE analog modeling, and not only do you have amazingly authentic tube sounds at your fingertips, you also get the dynamic performance typical of the respective amp type. Crystal-clear guitar tones come through with transparency, warmth and the compression typical of tube amps. Even as distortion increases, the sound remains lively and full of power, without losing any of its assertiveness.

All along, you have full control over the volume. Plainly talking, you can take the same sound you are used to at your practice room and replicate it in your bedroom at much more reasonable volume levels, or you can even record yourself while playing.






 **The following user's manual will familiarize you with the control elements of your new V-TONE and let you learn all of its functions. After reading this manual, store it somewhere where you can easily find in the future, should you need to look up some information.**

1.3 Before you get started

1.3.1 Shipment


The V-TONE was carefully packed at the assembly plant to assure secure transport.

Should the condition of the cardboard box suggest that your V-TONE may have been damaged in transport, please inspect the unit immediately and look for physical indications of damage.


-  **Damaged equipment should NEVER be sent directly to us. Please inform the dealer from whom you acquired it immediately as well as the transportation company from which you took delivery. Otherwise, all claims for replacement/repair may be rendered invalid.**
-  **To assure optimal protection of your V-TONE during transport, we recommend utilizing a carrying case.**
-  **If the unit needs to be shipped, please always use the original packaging to avoid damage.**
-  **Never let unsupervised children play with the V-TONE or with its packaging.**
-  **Please dispose of all packaging materials in an environmentally-friendly fashion.**


1.3.2 Initial operation

Please make sure that your V-TONE is provided with sufficient ventilation, and never place it on other amplifiers or in the vicinity of a heater to avoid the risk of overheating.


 **Before plugging your V-TONE into a power socket, please make sure you have selected the correct voltage:**

The fuse mount near the power cord connector has three triangular markings. Two of these triangles are facing opposite one another. Your V-TONE is set up for the voltage indicated near these markings, and can be altered by turning the fuse mount by 180 degrees. **ATTENTION: This does not apply to export models built for 120 V, for example!**

 **If you use your V-TONE unit with a different voltage, you must change the fuses accordingly. The correct value of the fuses needed can be found in the section "SPECIFICATIONS".**

 **Faulty fuses must be replaced with fuses of appropriate rating, without exception! The correct value of the fuses needed can be found in the section "SPECIFICATIONS".**

Power is delivered via the cable that was delivered with the V-TONE. All mandatory safety precautions have been adhered to.

 **Please make sure that all your equipment is grounded at all times. For your own protection, you should never tamper with the grounding of the cable or the unit itself. The unit shall always be connected to a mains socket outlet with a protective earthing connection.**

MIDI connection is established using a standard DIN connector. Data transfer occurs via isolated opto-couplers. Additional information can be found in section 6 "INSTALLATION".

1.3.3 Warranty

Please send the completely filled out warranty card within 14 days of purchase to us, as warranty claims may otherwise be rendered invalid. The serial number of your V-TONE is located on the rear. Alternatively, you may register online at www.behringer.com.






2. CONTROL ELEMENTS AND CONNECTIONS

Control elements of your V-TONE guitar amp are described in this section. All controls and connections are explained in detail, and we give you useful tips about using them. An illustration of the control elements with the corresponding numbering can be found on the separately included supplementary sheet.


Because models GMX210, GMX212 and GMX1200H each feature two identical MODELING CHANNELS, control elements [4] through [11] will only be described once in the following section.

2.1 Front panel

- [1] The connector labeled *INPUT* is the 1/4" jack input of your V-TONE. Use it to connect your guitar. Use a commercially available 1/4" jack mono cable (no DIY, better ask your specialized dealer), with good mechanical and electrical shielding to avoid unpleasant surprises during rehearsals or concerts.
- [2] On the GMX110, the *CLEAN* control modifies the volume of the CLEAN channel in relation to the MODELING CHANNEL.
- [3] Use the *CHANNEL* key to switch between the two MODELING CHANNELS (except for the GMX110). The channel LED [5] of the active channel lights up. On the GMX110, the *CHANNEL* key switches between CLEAN and MODELING CHANNEL. CLEAN CHANNEL is active when the channel LED [5] is not lit up. With all models you can also switch between channels using the provided footswitch. A long hit (approx. 2 seconds) on the *CHANNEL* key activates the guitar tuner.
- [4] The *DRIVE* control determines the amount of distortion in the respective MODELING CHANNEL. This way, the preamp of your V-TONE can be ideally adjusted to the output level of your guitar pick-up to achieve the desired amount of distortion (depending on the amp, mode and speaker combination you selected).
- [5] The *CHANNEL* LED indicates the currently selected channel.
- [6] Use the *AMP* switch to dial up the basic sounds of the three guitar amps that orient themselves on classic tube amps. You will surely recognize these classic amp sounds as soon as you hear them. Expect crystal-clear, transparent sounds with dynamic basses if you select *TWEED*. You get aggressive mids and pressure-rich, inescapable assertiveness and endurance when you select *BRITISH*. Rounder and more evened-out (yet still sophisticated) sounds can be dialed up if you select *CALIF.(ORNIAN)*; it's perfect for lead sounds.
- [7] Use the *MODE* switch to dial up one of three possible gain settings (CLEAN, HI GAIN and HOT) that you wish to use with the basic sound you selected using *AMP*.
- [8] The *SPEAKER* switch offers the simulations of two classic guitar speakers: 4 x 12" speaker in an enclosed casing (U.K.) and 2 x 12" speaker in an open casing (US). Additionally, we have built in a frequency response correction (FLAT) specially modified to go with V-TONE's cabinet.
- [9] The *LOW* control on the EQ section lets you cut or boost the bass frequencies.
- [10] Use the *MID* control to cut or boost the mids.
- [11] The *HIGH* control regulates the upper frequency range.
- [12] If the tuner is activated, these LEDs (in connection with the FX display) indicate your guitar's tune. Activate the tuner by keeping the *CHANNEL* pressed for roughly 2 seconds.
- [13] The *FX DISPLAY* indicates either the program number of the preset you selected or the value of the parameter dialed up using the *FX* control.

- [14] Use the *PRESET* control to dial up one of the effect presets (between 01 and 99). The preset you dialed up is loaded when you make no further changes for about one second after dialing up that preset.
- [15] Use the *IN/OUT* key to activate/deactivate the selected effect. When the effect is activated, the LED located above the switch lights up. You can save your own effect settings by keeping this key pressed for about 2 seconds (also see section 4). The effect can also be activated/deactivated using the provided footswitch.
-  **If the MIDI function is deactivated (see ch. 4.2), FX tracking **FXT** is active, i.e. a separate effect can be selected for each of the channels of your V-TONE. FXT is explained in detail in section 4.1.**
- [16] The *FX* control adjusts the mix ratio between the original and the effect signal.
- [17] The *LEVEL* control adjusts the volume of the respective channel. Adjust *LEVEL* so that you achieve the desired volume balance between both channels.
-  **The GMX110 features no such control. However, use [2] to control the volume of the CLEAN channel in respect to the MODELING channel; use MASTER [19] to control the overall volume.**
-  **The GMX210 features the LEVEL control only on MODELING CHANNEL 1. It controls the volume of the channel in respect to the second channel.**
- [18] The *PRESENCE* control gives you an additional way to cut or boost the highs (GMX212 and GMX1200H).
- [19] The *MASTER* control regulates the overall volume as well as headphone volume.
- [20] The *POWER* switch powers up your V-TONE. The *POWER* switch should always be in the "Off" position before you connect the V-TONE to the mains.
-  **Please beware: Switching the POWER switch off does not fully disconnect your V-TONE from the mains. If you won't be using it for longer periods of time, unplug the power cord from the mains.**
-  **GMX110's POWER switch is located on the rear.**

2.2 Rear panel

- [21] Connect the stereo jack connector of the provided footswitch to the *FOOTSWITCH* connector. The footswitch has several functions: it lets you switch between two channels, and it also lets you activate/deactivate an effect. Additionally, the tuner can also be activated using the footswitch. To do that, keep the *CHANNEL* key pressed for about 2 seconds.
- [22] *MIDI IN*. This connector lets you remotely control your V-TONE via MIDI. You can activate/deactivate effects or switch between channels. You can use effect bypass via program changes and parameter edits as well as edit the presets via controllers (also see sections 6.3 and 7.1).
- [23] You can connect two external loudspeakers (L/R) to the *LOUDSPEAKER* connectors (GMX212 and GMX1200H). The outputs deliver 60 W into 8 Ω per channel. For optimum performance, please only connect loudspeakers with a minimum impedance of 8 Ω each (see also section 6.2). When these connectors are used the internal loudspeakers are automatically disconnected.
-  **The GMX210 features no external loudspeaker connectors. The loudspeaker connector on the GMX110 is described under [32].**
- [24] The *PHONES* connector lets you monitor the signal from your V-TONE with standard headphones. For example, the BEHRINGER HP series is well suited for this. When the

V-TONE GMX110/GMX210/GMX212/GMX1200H

PHONES connector is used, the internal loudspeakers and the speaker outputs are disconnected.

- 25 Those signals that are connected to the *SLAVE IN* connectors are directly routed to the *V-TONE*'s power amp. This way, you can connect an external guitar preamp or modeling amp (e. g. *V-AMP 2* or *V-AMP PRO*) without using the internal preamp on your *V-TONE*.

The GMX110 features no SLAVE IN connectors.

- 26 You can take the stereo signal of your *V-TONE* at the *TAPE* outputs (RCA) and record it, for example.

- 27 The *TAPE* inputs (RCA) let you feed an additional stereo signal into your *V-TONE*. You can play along to the beat of a drum computer or play to the music from a CD or MD player.

- 28 You can take the stereo signal of your *V-TONE* at the *LINE* outputs to record it or route it to a P.A. system. This output is independent from the *MASTER* control and does not render the *AUX* signal. Additionally, its frequency response is corrected (speaker simulation).

The GMX110 features no LINE outputs.

- 29 Use the *AUX IN* control to adjust the volume of the signal that is fed in via the *AUX IN* connectors (e. g. drum computer, playback).

On the GMX110, this control is called TAPE INPUT. It regulates the volume of the signal fed in at the TAPE IN connectors.

- 30 The *AUX IN* lets you feed an additional stereo signal into the amp (except for the GMX110). This way, you can play to a backing track that supports you on-stage but should not be audible via the *LINE* outputs connecting the GMX210/GMX212 to the P.A. system. Additionally, you can use *AUX IN* together with the *INSERT SEND* as a parallel insert loop. To do that, connect the *INSERT SEND* to the input of your effects device; connect the *AUX IN* (*TAPE IN* on the GMX110) to the output of your effects unit (the *INSERT RETURN* connector should not be in use!). This way, the signal flow in your *V-TONE* is not interrupted. With the *AUX IN* control, you can determine the extent to which the external effects unit alters the original signal. Keep in mind that the effects unit should be set up to 100% effects signal (100% "wet").

- 31 Your *V-TONE* features a serial insert loop that can be used to connect external effects (e. g. a Wah pedal). Connect the *SEND* connector on the *V-TONE* to the input of your effects unit. The *SEND* connector is tapped into directly before (i.e. pre) the digital signal processor (DSP) of your *V-TONE*. Connect the output of your external effects unit to the *RETURN* connector of your *V-TONE*.

You can use the INSERT SEND as a parallel output without the effects. This is useful when you for example need to record a dry guitar signal. As long as the RETURN connector has nothing plugged into it, the signal is not interrupted internally.

- 32 Use the *SPEAKER OUT* connector to connect one additional loudspeaker to your GMX110. This loudspeaker should have an impedance of 4 Ω. When this connector is used, the internal loudspeaker is automatically muted. Additional information about connecting an external loudspeaker can be found in section 6.2.

- 33 **FUSE RETAINER/VOLTAGE SELECTOR.** Please make sure that the voltage indicated by the voltage selector matches the local voltage before you connect the unit to the mains. Always replace blown fuses with fuses of the same type. Some units feature a fuse retainer in which a selection between 230 V and 120 V is possible. Please beware: When using your unit outside of Europe with 120 V, a higher fuse rate is required.

- 34 Power is supplied via an *IEC* connector. The matching cable is provided with the unit.

- 35 **SERIAL NUMBER.** The serial number of your *V-TONE* is located on the rear. Please send the completely filled out warranty card within 14 days of purchase to assure unproblematic warranty processing in the future. Or use our online registration form at www.behringer.com.

3. APPLICATIONS

The *V-TONE* features many different connectors, letting you live up to all kinds of application challenges. We have listed just a few examples of how flexibly your *V-TONE* can be used:

3.1 Practice setup with playback

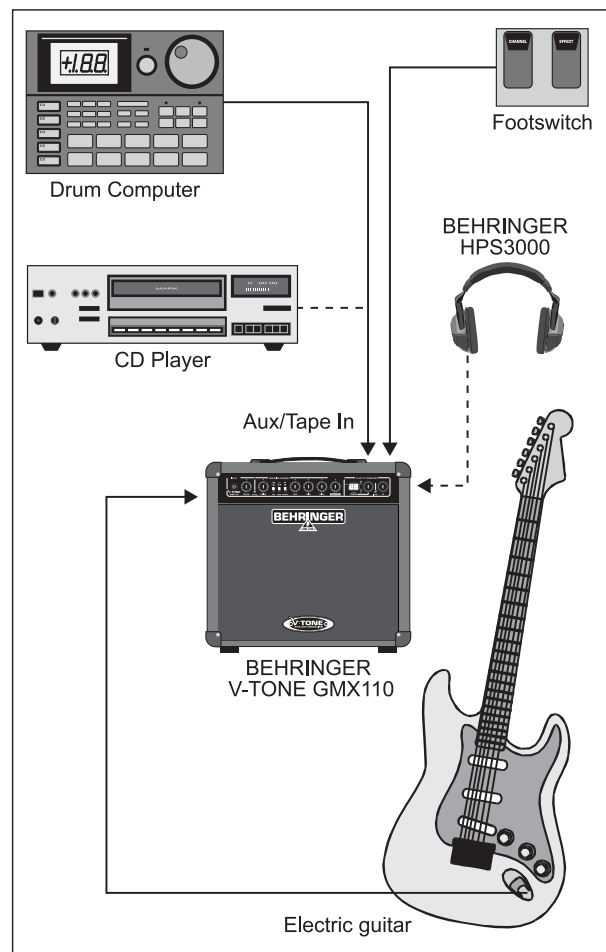


Fig. 3.1: Standard setup

To use your *V-TONE* in practice rooms or to jam at home, connect your *V-TONE* as illustrated in figure 3.1. Connect a CD player or a drum computer to the *TAPE* input. You can control the volume of the connected signal by using the *TAPE INPUT* control (on the GMX210, GMX212 and the GMX1200H, the *AUX* control adjusts the signal connected to the *AUX IN*). If you want (or have to!) to practice using headphones, connect your headphones to the *PHONES* connector on your *V-TONE*. The loudspeaker is automatically muted. Connect the provided dual footswitch to the footswitch connector on the *V-TONE*. Use the *CHANNEL* footswitch to switch between the channels. If **FXT** is active (see section 4.1), the effects selected for both channels are loaded. Use the *IN/OUT* footswitch to activate/deactivate the effect. Keeping *CHANNEL* depressed for about 2 seconds activates the internal tuner.

V-TONE GMX110/GMX210/GMX212/GMX1200H

3.2 Recording setup with an external effects device

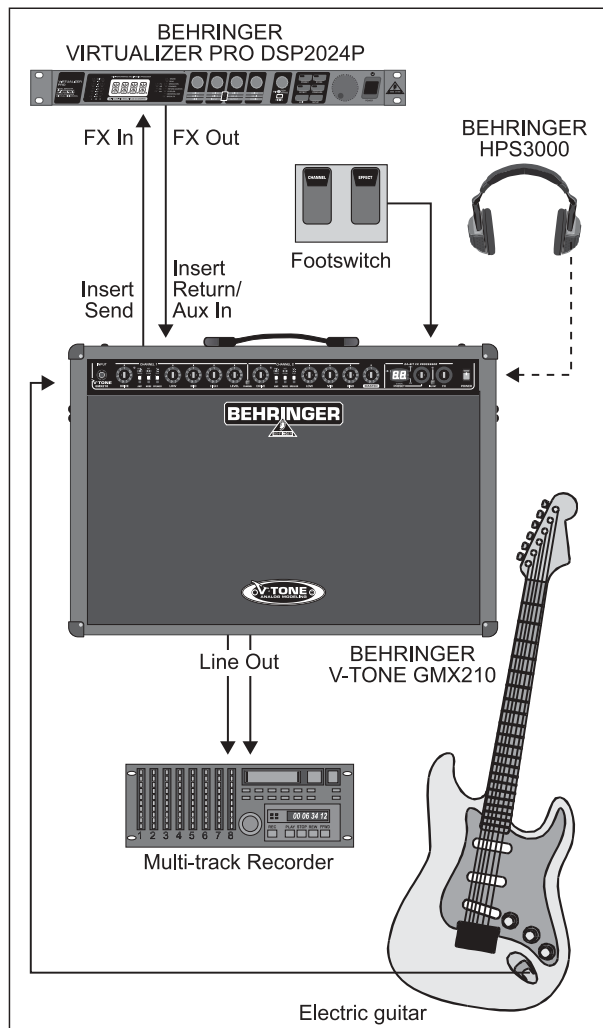


Fig. 3.2: Recording setup

If you want to use your V-TONE in home recording or studio situations, we suggest wiring your equipment as illustrated in figure 3.2. Of course, you can continue using a CD player or a drum computer. However, for clarity's sake we've omitted those two in this illustration. Connect the input of your effects unit to the INSERT SEND connector of the V-TONE; connect the output on your effects unit to the INSERT RETURN connector on the V-TONE.

If you wish to record the guitar signal together with the stereo effects, connect the LINE outputs to your mixer, audio sequencer or a multi-track recorder. To record the dry guitar signal without the internal effects, it is best to use the INSERT SEND connector on the V-TONE. You can also use both outputs at the same time to for example record the dry signal without permanently committing to a single effect. At the same time, the LINE output (with the effect signal) lets you listen to yourself while recording.

Of course, you can insert a Wah pedal or some other stomp box instead of an external 19" effects unit. To achieve a parallel stereo insert, you can connect the effect return to the AUX input, and then use the AUX IN control to determine the extent to which the effect is present. In this case, the effects unit should be set up to 100% effect signal, and the INSERT RETURN connector should have nothing plugged into it.

If you want to use another guitar preamp or a modeling amp (e. g. the V-AMP 2 or the V-AMP PRO), connect it to the SLAVE IN connectors (except for the GMX110). Then the V-TONE operates only as a power amp, and its preamp section is not active.

3.3 Live setup with a MIDI foot controller

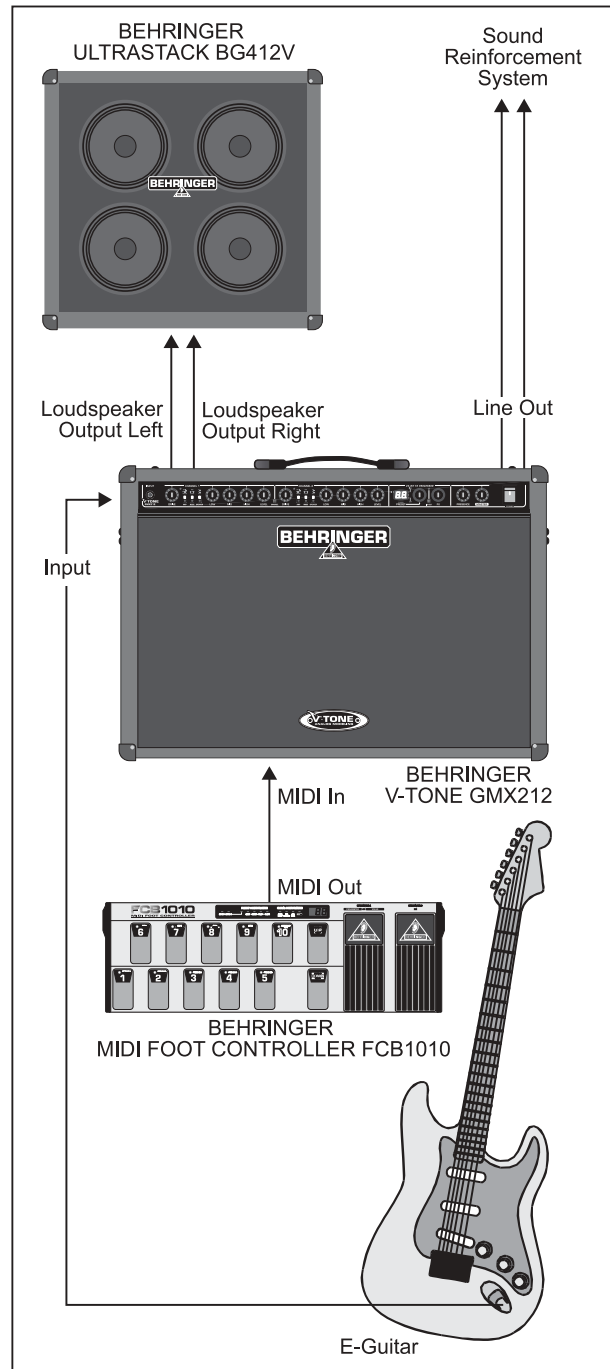


Fig. 3.3: Setup with a MIDI foot controller and an external loudspeaker

In this illustration, we've omitted the headphones and the additional equipment from figure 3.1; this illustration serves as an expansion of the standard setup.

You can use the MIDI foot controller to control channel and effects changes, volume, Wah and so on. (Additional information about MIDI can be found in section 4.3). The LINE OUT signal with the speaker simulation can be fed into your mixer or your P.A. system's stagebox.

External guitar loudspeakers can be connected to the loudspeaker outputs of the GMX212 in order to get more punch and higher volume on the stage. You can do this in two ways: use two separate loudspeakers for stereo applications, or use a single stereo box (e.g. the BEHRINGER ULTRASTACK BG412V).

Instead of loudspeaker outputs, the GMX110 features a single SPEAKER OUT connector ([32]) used for connecting an external loudspeaker.

V-TONE GMX110/GMX210/GMX212/GMX1200H

3.4 Wiring the GMX1200H

The GMX1200H head features two LOUDSPEAKER outputs (EXT LEFT and EXT RIGHT) that can be used to connect one or two external loudspeakers. To get the most power from the GMX1200H, both loudspeaker outputs should be used and connected to speakers with minimum 8 Ohms impedance. Loudspeaker outputs are automatically muted as soon as you activate the tuner or connect a set of headphones (see section 5.1). To assure optimal and safe use of your amplifier, please also read section 6.2.

When the GMX1200H is used with a single BEHRINGER ULTRASTACK BG412V, the rear panel switch of the BG412V **must** be in the stereo position and the two outputs should be connected as shown in fig. 3.4.

When using two speaker cabinets to form a classic full-stack please make sure the impedance of each speaker cabinet is between 8 to 16 Ohms (see fig. 3.5).

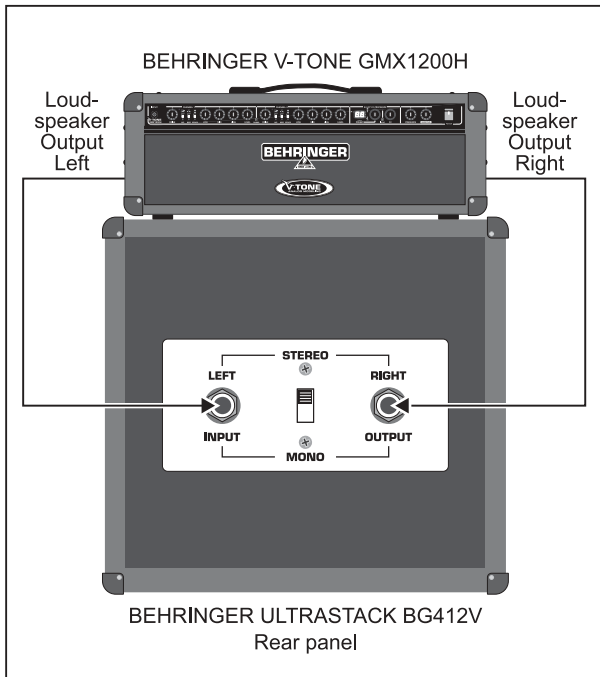


Fig. 3.4: GMX1200H with an ULTRASTACK BG412V in stereo mode

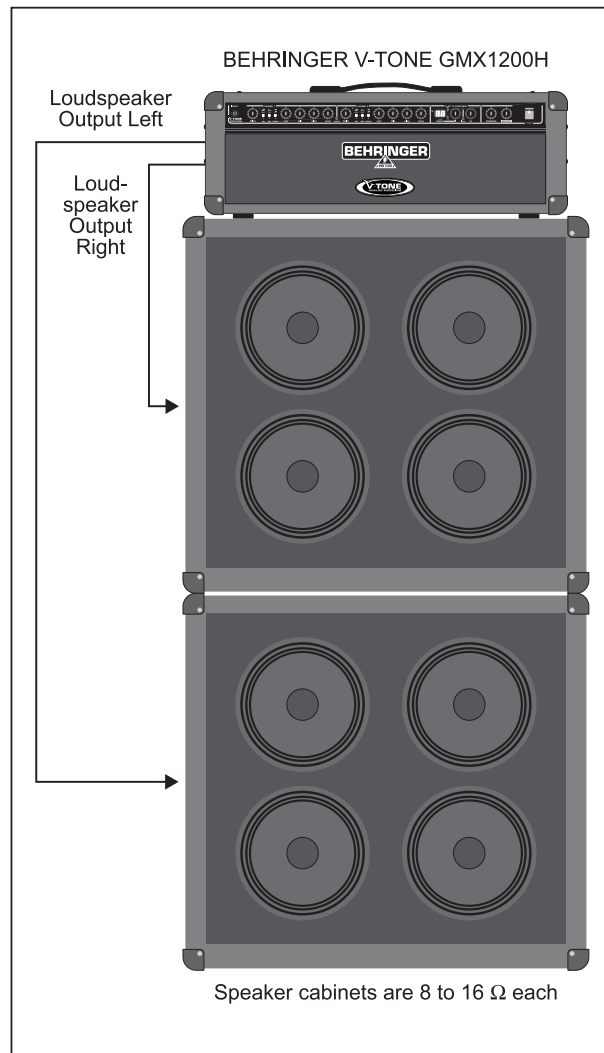


Fig. 3.5: GMX1200H with two speaker cabinets

4. EFFECTS PROCESSOR

Effects are the icing on the cake when it comes to creative sound designs. On the one hand, direct recordings (i.e. recordings without a microphone, which is possible with the V-TONE) are all about placing the guitar sound in an artificially created space since no natural ambience is possible. On the other, effects such as delay, chorus, flanger and tremolo are an integral part of the modern guitar sound. For this reason, we've equipped the V-TONE with an effects processor that lets you create a professional-grade sound that you are used to hearing on your favorite recordings. This way, you are one giant step closer to emulating your fave sounds without having to schlep a rackfull of effects everywhere you go.

The integrated multi-effects processor offers the same audio quality found in our 19" effects unit VIRTUALIZER PRO, known for being used in studios. You get 31 different groups of first-class effects at your disposal, for example reverb, chorus, flanger, delay, pitch shifter, compressor, expander, Wah variations, various combination effects and even tube and speaker simulations. All in all, there are 99 presets you can use, offering you a wide variety of different-sounding effects. You can edit one parameter on each preset directly on the V-TONE and three parameters via MIDI. Additionally, the multi-effects processor lets you mix and match different effects with different speakers, depending on each preset. Presets can be overwritten with your own creations.

V-TONE GMX110/GMX210/GMX212/GMX1200H

The multi-effects processor works basically in stereo, whereby only the TAPE and PHONES outputs are influenced in the case of the GMX110. Both signals (left and right) are added up for the speaker and the mono power amp of the GMX110. However, you can still use stereo effects for recording purposes by utilizing the TAPE OUT or by playing with a second amp in stereo. The GMX210 and GMX212 can produce the effects in stereo because they have two built-in speakers. Stereo reproduction is also possible with the GMX1200H when the speakers are connected to it in stereo.

- ▲ Turn the PRESET control to dial up an effect preset. While the preset is loading up, the new program number blinks in the display. The preset you dialed up is active shortly thereafter. This new preset is shown in the display.
- ▲ Use the FX control to edit the effect. Effect mix is shown in the display. After 3 seconds, the display shows the preset number again. The decimal point in the 2-digit display blinks each time you make a change.
- ▲ To store an edit, keep the IN/OUT key pressed for about 2 seconds. This overwrites the previous settings.
- ▲ To restore factory presets (reset function), keep IN/OUT pressed *while* powering up the V-TONE.

4.1 FXT—effects tracking



FXT is an extremely useful function that lets you assign a specific effect to each channel of the V-TONE, and then activate these effects when you switch between the channels.

This way, you can for example assign a DELAY effect to the MODELING CHANNEL 1, and assign a REVERB/CHORUS combination effect to the MODELING CHANNEL 2. A single tap on the CHANNEL key or the footswitch lets you switch between the channels, and the V-TONE automatically loads up the correct effect.

When MIDI is active, the above no longer applies. You can switch between the channels and the effects independently from one another. How MIDI is activated is described in ch. 4.3.

4.2 The effects



01-02 Spring Reverb: Even on a guitar amp with digital multi-effects, you should still be able to use a classic spring reverb. This effect simulates the typical sound of the spring reverb known from countless guitar amps, and without having the negative effect of producing rattling noises when the amp vibrates.

03-04 Studio: This effect simulates the characteristics of midsize rooms. This spatial simulation sounds very natural and can be used in various setups.

05-06 Chamber: You really get the feeling you're dealing with some serious walls. This effect is ideal for creating reverb that doesn't come through as a clear effect, and a dry guitar sound gets some natural feeling instilled into it.

07-08 Stage: Very nice reverb, great for widening and freshening up the sound of a clean-sounding guitar.

09-10 Concert: Here, you can choose between a small theater (preset 9) and a big concert hall (preset 10). Compared to Studio Reverb, this reverb is livelier and has richer highs.

11-12 Plate: The sound of the classic plates. A true classic, it gives your guitar sound a nice, pleasant note.

Reverbs 01 to 12 are all available in two versions. The first one basically uses a short pre-delay (a delay until the reverb tail starts). The second variation always uses a long pre-delay.

13-14 Gated Reverb: "In the air tonight" by Phil Collins made this artificially cut off reverb famous.

15-16 Ambience: The resonance of a room is comprised out of the so-called "early reflections" and a reverb tail. This effect concentrates itself on the simulation of the first 15 early reflections. Since human hearing uses these reflections to size up a room, you can create very subtle density without alienating the signal with long reverb tails. This effect is particularly noticeable when you use headphones.



17-19 Wah/Delay/Distortion: Filters generally influence the frequency response of a signal. The Wah effect, in this case combined with a delay and a distortion effect, lets the middle frequency response through and suppresses the others more or less. Jimi Hendrix and Eric Clapton made the Wah effect a household name. It's an effect that will never be out of fashion. By using the MIDI controller 15, you can edit the range of the Wah effect with a MIDI footswitch, among others. This way, the Wah effect can be used as an analog Wah pedal. You can modify how prominently the delay effect kicks in.



20 Delay/Reverb: First, an ordinary delay is created. Then, the signal goes through a reverb with an editable mix ratio.

21-24 Delay (stereo): "Delay" refers to the delay in the input signal, with one or more repetitions of the signal (feedback). With stereo delay, the delay times in the left and the right channel are not the same length (in order to create a stereo effect). The delay time in the left channel amounts to two-thirds of the delay time value in the right channel.

25-29 Delay (long mono): Mono delays offer longer delay times with a differing number of repetitions (feedback values). You can use the FX MIX control to determine the effect mix ratio.



30-33 Phaser: Technically speaking, a phaser is a modulation effect in which multiple phase shifting takes place. Signal attenuation or amplification of the signal happens through the modulation of the frequency-dependent phase shift via an LFO (Low Frequency Oscillator). Depending on the preset, the phaser can be used either to lightly modulate or to totally alienate the signal. The sound reminds of a constantly modulating filter.



34-37 Chorus: Let's picture a string quartet in which each musician plays the exact same sheet music. However, it is only natural that musicians can never be 100% in tune. This way, signals that are perpetually out of tune are created, and they are furthermore temporally superimposed. To recreate this effect, copies of the original signal are delayed in chorus for 20 - 40 ms, are tuned out slightly and then modulated through the LFO. This creates a pleasant-sounding floating effect. We'll refrain for making any recommendations because this effect is used so often and in so many different ways. Any recommendation about when to use it would undoubtedly leave out too many other possible uses.

V-TONE GMX110/GMX210/GMX212/GMX1200H

38-42 Chorus/Reverb: First, the signal goes through a chorus effect with varying intensity, and then it goes through a reverb. Adjustable parameter: chorus mix.

43-47 Chorus/Delay: The signal first goes through a chorus effect with varying intensity, and then it goes through a delay effect with varying feedback and delay time values. You can adjust the delay ratio in the mix.



48-51 Flanger: Using an LFO, the pitch of the effect signal is somewhat modulated in constant tempo, and is then brought back to the input signal. This effect goes hand in hand with the sound of a distorted guitar.

52-56 Flanger/Reverb: The signal first goes through a flanger with varying intensity, and then it goes through a reverb. The FX control lets you adjust the ratio of the flanger mix.

57-61 Flanger/Delay: The signal is first passed through a flanger with varying intensity, and then it goes through a delay effect. The ratio of the delay mix can be adjusted.



62-63 Tremolo: The tremolo effect refers to more or less rapid and intensive variations in the volume.

64-66 Tremolo/Delay: A more or less rapid and intensive variation of the volume that is also coupled to a delay effect. The FX MIX control lets you adjust the ratio of the delay mix.



67-68 Rotary Speaker: A simulation of a classic organ effect that is normally achieved with a terribly heavy casing and slowly or quickly rotating speakers. The physical principle of the Doppler effect is used to modulate the signal.

69-70 Magic Drive: An absolutely "in" effect that's combined with a delay. And, as whip cream on top, this effect gets an LFO-controlled notch filter. The delay mix ratio is adjustable. This effect is excellent for solo sounds due to its high volume.



71-72 Auto Wah: Depending on the attack time, the Auto Wah effect lets the lower frequencies pass through and more or less suppresses the highs. The sensitivity value of the filter can be adjusted via the FX MIX control. If you primarily play low-end sounds, dial up a lower value. The higher the frequency of the sound you create, the higher the FX MIX value should be.

73-74 LFO Wah: With this effect, the LFO determines how quickly the frequency response is affected. You can create regularly recurring Wah effects. With the LFO Wah effects you can really create impressive results.



75-81 Pitch Shifter: This effect modifies the pitch of the input signal. Musical intervals and harmonics are created, and the propagation of a single voice can be adjusted. You can create signals that are majorly out of tune (e.g. signals shifted upward by several half-tones), such as the strange-sounding voices often used in cartoons. There are several default intervals already built into the presets.

82-85 Pitch/Reverb: The signal first goes through a pitch shifter with various transpositions in half-tone increments (or smaller). A reverb follows. Adjustable parameter: pitch shifter mix.

86-89 Pitch/Delay: The signal first goes through the pitch shifter with various intervals, and then it's run through a delay effect. Use FX MIX to adjust the pitch shifter mix parameter.



90-91 Compressor: A signal's dynamic characteristics are often limited to assure its integration into the overall mix. This can be done by using a compressor or a limiter. A limiter confines the signal to the values above or below a previously determined threshold value rather abruptly, whereas the compressor does basically the same, but the threshold area is rather "softly" delineated, so program intervention is not so suddenly felt. Use the FX MIX control to determine the threshold point for the compressor. This effect prolongs the sustain of your guitar, or you can also for example make the strumming on a funky-style guitar more audible (chicken scratch).

92-93 Expander: Background noise of all kinds (hissing, hum, etc.) limit the dynamic range of the desired signal. As long as the main signal's level is considerably higher than the noise floor, background noise is inaudible; the main signal basically masks the underlying noise signal. You can use the expander to effectively broaden the dynamic range of a signal. The signal is weakened when the amplitudes are smaller, whereby background noise is lowered. The FX MIX control determines the expander's threshold.



94-96 Guitar Combo: This effect simulates the sound characteristics of a small guitar combo, simulating not only two tube stages, but also the cabinet and the speaker. Use the FX MIX control to adjust the mix of direct and combo signals.

97-99 Speaker Cabinet: This effect emulates three different types of speaker cabinets. Additionally, you can shift the speaker's main resonance peak by using the FX MIX control.

4.3 MIDI control

Thanks to its built-in MIDI interface, you can integrate your V-TONE into any MIDI setup. The V-TONE is capable of receiving both program change and MIDI controller information. So, you can change programs via MIDI using a MIDI foot controller or a computer-based sequencing software, and you can also control individual effect parameters and edit your own effects. Our MIDI foot controller FCB1010 gives you precisely these options, and is a perfect match for all BEHRINGER guitar amps.

This is how you activate the MIDI functions:

- ▲ Connect the MIDI IN connector of your V-TONE to the MIDI OUT jack of a MIDI foot controller (see fig. 3.3).
- ▲ Keep CHANNEL and IN/OUT keys simultaneously depressed for 2 seconds.
- ▲ Use the PRESET control to select a MIDI channel (1 through 16, "ON" = Omni mode, "OF" = off). When the display no longer blinks, the selected MIDI channel is activated. Omni mode means that your V-TONE receives and processes relevant MIDI information on all channels. Of course, you should select the same channel both on your MIDI foot controller and the V-TONE (see your MIDI foot controller user's manual). The left decimal point on the display jitters when MIDI data is received on the V-TONE, giving you visual confirmation about the information currently being received.

V-TONE GMX110/GMX210/GMX212/GMX1200H

☞ Once you activate MIDI, FX tracking is no longer active, i.e. there is no assignment between an effect number and a channel. This means that when you switch a channel, the previously set effect is not automatically loaded up. As this assignment feature would probably cause confusion when controlling the V-TONE via a MIDI foot controller, it makes sense only when it is controlled from the enclosed footswitch or directly from the V-TONE. To operate your V-TONE without MIDI remote control, please disable the MIDI function (display reads "OF").

You can control different functions of your V-TONE using MIDI. To this end, the V-TONE receives MIDI instructions (so-called messages). The messages that need to be sent to your V-TONE have to be created either on a MIDI foot controller or on a MIDI sequencer. Basically, these are **Program Change Messages** and **Controller Messages**:

Program Changes: You can dial up presets using MIDI program changes. Since program changes start at 0 and go up to 127, program change 0 corresponds to preset 1, program change 1 to preset 2, and so on (compare table 7.1 in the appendix). After the switch is done, the preset is directly active, i.e. independent from a possibly set bypass.

Effect parameters: Three parameters of the effects processor can be adjusted in real time. This way, you can create your own effects, modify existing effects to your specific needs (e.g. adapt the delay time to the tact of your song) or remotely control using a MIDI foot controller.

Select a controller number for the footswitch on your MIDI foot controller. Use control numbers 12, 13 or 14. Using the footswitch on your MIDI foot controller, you can now modify the values of the three adjustable parameters in real time or directly enter their values. Which three parameters for the respective effect can be edited is shown in the following table:

Effect	Preset No.	Parameter 3	Parameter 2	Parameter 1
REVERB	1 - 12	Reverb Time	Mix L	Mix R
GATED REVERB	13, 14	Gt./Rev. Time	Sensitivity	Mix
AMBIENCE	15, 16	Room Size	Pre-Delay	Mix
WAH / DELAY / DISTORTION	17 - 19	Delay Time	Drive	Delay Mix
DELAY / REVERB	20	Delay Time	Delay Mix	Reverb Mix
DELAY	21 - 29	Delay Time	Feedback	Mix
PHASER, CHORUS	30 - 37	LFO Speed	Depth	Mix
CHORUS / REVERB	38 - 42	Reverb Time	Reverb Mix	Chorus Mix
CHORUS / DELAY	43 - 47	Delay Time	Delay Mix	Chorus Mix
FLANGER	48 - 51	LFO Speed	Depth	Mix
FLANGER / REVERB	52 - 56	Reverb Time	Reverb Mix	Flanger Mix
FLANGER / DELAY	57 - 61	Delay Time	Delay Mix	Flanger Mix
STEREO TREMOLO	62, 63	LFO Speed	Pan	Mix
TREMOLO / DELAY	64 - 66	LFO Speed	Tremolo Mix	Delay Mix
ROTARY SPEAKER	67, 68	Speed	Variation	Mix
MAGIC DRIVE	69, 70	Delay Time	Variation	Delay Mix
AUTO WAH	71, 72	Mix	Depth	Sensitivity
LFO WAH	73, 74	LFO Speed	Depth	Mix
PITCH SHIFTER	75 - 81	Tune Left	Mix L	Mix R
PITCH SHIFTER / REVERB	82 - 85	Reverb Time	Reverb Mix	Pitch Mix
PITCH SHIFTER / DELAY	86 - 89	Delay Time	Delay Mix	Pitch Mix
COMPR./ EXPANDER	90 - 93	Gain	Ratio	Sensitivity
GUITAR COMBO	94 - 96	Drive	Presence	Mix
SPEAKER CABINET	97 - 99	HF Cut	Peak Gain	Peak Freq.

Table 4.1: MIDI-controllable effect parameters

Channel switching: Changing modeling CHANNELS is done via controller #10. If you send value 0 via this controller, then channel 1 is active. Sending value 1 activates channel change to channel 2. Program change instructions can also be used to change channels. Program change #123 activates channels 1 and program change #124 activates channel 2 of your V-TONE.

In addition to switching channels, you can also deactivate the effect. To this end, send value 0 via controller #11. Value 1 activates the effect again. An alternative option for an **effect bypass** is sending program change #127.

Sending program change #122 activates the **tuner**. As soon as another program change number is sent, the tuner is automatically deactivated.

V-TONE GMX110/GMX210/GMX212/GMX1200H

You determine the **input volume** of the effect module by using MIDI controller #7. This lets you adjust the volume of your V-TONE to your own requirements. Since this controller does not control master volume, you should first adjust the maximum volume you need by using the master volume control, and then use MIDI controller #7 to lower the volume. This function is also called "volume controller".

The operating range of the **Wah effect** is adjusted using MIDI controller #15.

Furthermore, if you're using LFO-controlled modulation effects, you can deactivate LFO and implement **modulation** via MIDI controller #15. To activate this MIDI controller, you should first set up the LFO velocity either directly on your V-TONE or set the respective MIDI controller to value 0.

Of course, you can use a MIDI sequencer or a computer-based MIDI editor for MIDI remote control, particularly in the home recording environment.

5. TUNER

- ▲ The integrated tuner is activated by pressing the CHANNEL key for about 2 seconds (directly on the amp or on the footswitch).

5.1 Tuning your guitar

The chromatic tuner automatically recognizes the frequencies of guitar notes. For A string, this means a frequency of 110 Hz. When you connect your guitar to the V-TONE and strum a string, the tuner tries to recognize the tone and shows it in the display. Because the tuner functions chromatically, it can also recognize semitones. These are shown in the display with a "b" accompanying the value.

However, it may be the case that a played note (shown in the display as for example "a") slightly deviates from the ideal tone. This will be indicated by lighting up at least one of the red tuner LEDs (HIGH/LOW) near the FX display. The faster the LED blinks, the harsher the deviation of the played tone from the note shown in the display. If the middle LED (green) lights up, the tone you played is completely in tune with the tone indicated in the display.

When the tuner is active, the loudspeaker outputs are typically muted. However, sometimes it is preferable not to mute the signal in order to let you have acoustic control of what you are doing while you are tuning your guitar. For this reason, the V-TONE has an integrated tuner level function.

- ▲ You can adjust tuner volume from 0 to 99 by using the FX control. At "0" the guitar signal is completely muted. After a successfully implemented adjustment, the display automatically goes back to tuner mode.

5.2 Setting up the "a" reference tone

To put complete freedom at your disposal when tuning your instrument, you have the option to change the preset of the reference tone "a". Here is a quick intro to the subject.

The so-called "chamber tone a" has been continually revised upwards ever since it was first measured: tuning forks of Bach, Handel or Mozart were at 415, 420 or 421 Hz (vibrations pro second).

Nowadays, orchestras set the "a" with 444 Hz, and the Berlin Philharmonic Orchestra wishes to stay ahead: their "chamber tone a" lies at a full 447 Hz.

The reference tone "a" of the V-TONE is programmed at 440 Hz. Let's say, you want to work with a big orchestra that works with the chamber tone "a" set to 444 Hz. To activate the function that changes the chamber tone, do the following:

- ▲ Activate the tuner by keeping the CHANNEL key pressed for a few seconds.
- ▲ By turning the PRESET control, you can adjust the "a" reference tone up or down in 1 Hz increments for a maximum of 15 Hz. The last two digits of the frequency value are always shown in the display, since the first digit is always a 4. For example, when you start with the 440 Hz basic tone, and then press the right arrow key four times, the display shows 44, which corresponds to a frequency of 444 Hz.

After about 5 seconds, the display goes back to tuner mode. Your changes are automatically stored. Ideal tones for the remaining strings are automatically set up using the newly adjusted frequency as a reference.

A quick hit on the CHANNEL key lets you leave tuner mode and go back to amp mode.

6. INSTALLATION

6.1 Audio connections

With the exception of the headphone output and the AUX input (stereo jacks), audio inputs and outputs of your BEHRINGER V-TONE are provided in the form of mono jack connectors. Tape inputs and outputs are provided as RCA connectors.

- ⚠ Please keep in mind that your V-TONE should be installed and operated only by those who possess sufficient technical knowledge about its installation and operation. Everyone dealing with your V-TONE should be sufficiently grounded both during the installation as well as during actual usage. Failure to do so may cause undesirable or faulty operation due to electromagnetic discharges and similar.

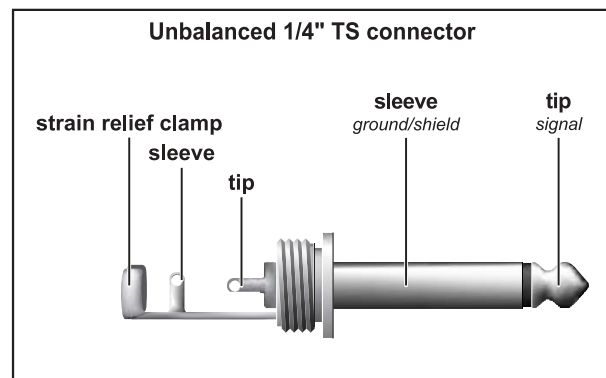


Fig. 6.1: 1/4" TS connector

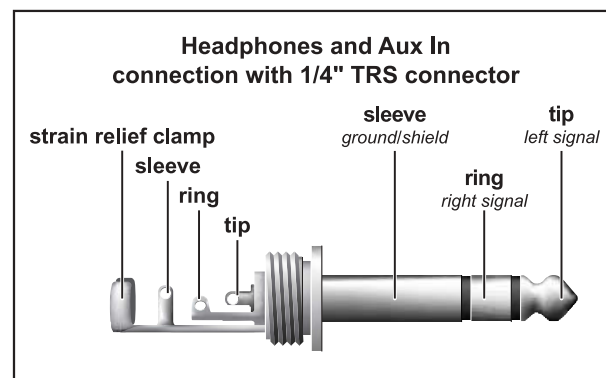



Fig. 6.2: 1/4" stereo TRS connector for AUX and PHONES

6.2 Speaker connection

The GMX110 features a SPEAKER connector to which you can connect an additional loudspeaker. This additional loudspeaker should be able to handle at least 30 Watts and the impedance of 4 Ω.

The GMX212 and GMX1200H feature two LOUDSPEAKER-outputs (EXT LEFT and EXT RIGHT) for connecting two loudspeakers or a single stereo loudspeaker unit. The output power rating is 60 W per channel. To assure optimal power delivery from the amp, you should use 8-Ω loudspeakers that can handle at least 60 Watts.

This goes for all models: You can also use loudspeakers with higher impedance values, but this lowers proportionally the power delivery as the resistance increases. Doubling the impedance halves the power value (double the Ohms = half the Watts).

 **Since SPEAKER and LOUDSPEAKER outputs are connectors where amplified signals are given out, never connect equipment with line-level inputs to these two connectors, e. g. mixer inputs.**

6.3 MIDI connection

The MIDI standard (Musical Instruments Digital Interface) was first developed at the beginning of the '80s, with the goal of enabling mutual communication between electronic instruments of various manufacturers. Over the years, the number of possible MIDI applications has increased substantially; nowadays, it is perfectly normal to connect entire studios via MIDI.

At the center of this network is a computer with a sequencing software, used to control not only keyboards but also effects processors and other peripheral equipment. In such a studio, you can control your V-TONE in real time from a computer. Using a MIDI footswitch presents itself as a great idea, especially in live applications, because it allows you to control not only effect parameters but also switch between channels and effects.

The standard 5-pole DIN MIDI connector is located on the rear of your V-TONE. To connect your V-TONE with other MIDI equipment, you will need a MIDI cable. Pre-packed cables available at music stores are used for this purpose. Such cables should not be longer than 15 m (45 ft).

MIDI IN receives MIDI control data. The receiving channel is adjusted using the CHANNEL and IN/OUT key combination On = Omni means that MIDI data are being received and processed on all channels (compare section 4.2).

7. APPENDIX

7.1 MIDI implementation

MIDI Implementation Chart				
Function		Transmitted	Recognized	Remarks
Basic Channel	Default	X	OFF, 1 - 16	memorized
	Changed	X	OFF, 1 - 16	
Mode	Default	X	1,2	
	Messages	X	X	
	Altered	X	X	
Note Number	True Voice	X	X	
		X	X	
Velocity	Note ON	X	X	
	Note OFF	X	X	
After Touch	Keys	X	X	
	Channels	X	X	
Pitch Bender		X	X	
Control		X	O 7, 10 - 15, 18	see add. table
Progr. Change	True #	X	O 122, 123, 124, 127 (0 - 98) 1 - 99	122 = TUNER 123 = CLEAN 124 = DRIVE 127 = Effect Bypass
System Exclusive		X	X	
System Common	Song Pos.	X	X	
	Song Sel.	X	X	
	Tune	X	X	
System Real Time	Clock	X	X	
	Commands	X	X	
Aux Messages	Local ON/OFF	X	X	
	All notes OFF	X	X	
	Active Sense	X	X	
	Reset	X	X	
Notes				
O = YES, X = NO				
Mode 1: OMNI ON				
Mode 2: OMNI OFF				

Tab. 7.1: MIDI implementation

Parameter Name	Display Range	Midi Control Number	Control Value Range
Volume Controller	-	7	0 .. 127
Channel	CLEAN (Channel 1) = 0 DRIVE (Channel 2) = 1	10	0 .. 1
Effect	OFF = 0, ON = 1	11	0 .. 1
Parameter 1	depends on effect *	12	0 .. 127 (max.)
Parameter 2	depends on effect *	13	0 .. 127 (max.)
Parameter 3	depends on effect *	14	0 .. 127 (max.)
Wah/Modulation	-	15	0 .. 127
Store Enable	-	18	0 .. 127
* for details see Tab. 4.1			

Tab. 7.2: V-TONE MIDI controllers

V-TONE GMX110/GMX210/GMX212/GMX1200H

7.2 Effect presets

Preset-Nr.	Effect	Variation	FX MIX	Range	Default
1	SPRING REVERB	short Pre-Delay	Mix	0..50	25
2		long Pre-Delay	Mix	0..50	25
3	STUDIO	short Pre-Delay	Mix	0..50	20
4		long Pre-Delay	Mix	0..50	20
5	CHAMBER	short Pre-Delay	Mix	0..50	25
6		long Pre-Delay	Mix	0..50	25
7	STAGE	short Pre-Delay	Mix	0..50	20
8		long Pre-Delay	Mix	0..50	20
9	CONCERT	short Pre-Delay	Mix	0..50	30
10		long Pre-Delay	Mix	0..50	30
11	PLATE	short Pre-Delay	Mix	0..50	25
12		long Pre-Delay	Mix	0..50	25
13	GATED REVERB	min. Density	Mix	0..50	20
14		max. Density	Mix	0..50	20
15	AMBIENCE	min. Reflections	Mix	0..50	30
16		max. Reflections	Mix	0..50	30
17	WAH / DELAY / DISTORTION	Feedback 10 %	Delay Mix	0..50	6
18		Feedback 10 %	Delay Mix	0..50	6
19		Feedback 10 %	Delay Mix	0..50	6
20	DELAY / REV.	-	Reverb Mix	0..50	20
21	DELAY (stereo)	-	Mix	0..50	11
22		-	Mix	0..50	11
23		-	Mix	0..50	16
24		-	Mix	0..50	35
25	DELAY (long mono)	-	Mix	0..50	8
26		-	Mix	0..50	10
27		-	Mix	0..50	9
28		-	Mix	0..50	10
29		-	Mix	0..50	10
30	PHASER	Feedback 0 %	Mix	0..99	50
31		Feedback 62 %	Mix	0..99	60
32		Feedback 62 %	Mix	0..99	50
33	CHORUS	fat	Mix	0..99	30
34		slow	Mix	0..99	40
35		stereo	Mix	0..99	50
36		stereo	Mix	0..99	50
37	CHORUS / REVERB	ultra	Chorus Mix	0..99	50
38		slow	Chorus Mix	0..99	50
39		medium I	Chorus Mix	0..99	40
40		medium II	Chorus Mix	0..99	50
41	CHORUS / DELAY	fast	Chorus Mix	0..99	50
42		ultra	Chorus Mix	0..99	50
43		slow	Chorus Mix	0..99	30
44		medium I	Chorus Mix	0..99	50
45		medium II	Chorus Mix	0..99	50
46	FLANGER	hold	Chorus Mix	0..99	40
47		fat	Mix	0..99	30
48		classic	Mix	0..99	14
49		stereo	Mix	0..99	24
50	FLANGER / REVERB	ultra	Flanger Mix	0..99	50
51		slow	Flanger Mix	0..99	40
52	FLANGER / DELAY	medium I	Flanger Mix	0..99	50
53		medium II	Flanger Mix	0..99	50
54		fast	Flanger Mix	0..99	50
55		ultra	Flanger Mix	0..99	30
56	STEREO TREMOLO	slow	Flanger Mix	0..99	30
57		medium I	Flanger Mix	0..99	30
58		medium II	Flanger Mix	0..99	50
59		fast	Flanger Mix	0..99	30
60	TREMLO / DELAY	-	Mix	0..99	50
61		-	Mix	0..99	40
62		slow	Delay Mix	0..50	10
63	ROTARY SPEAKER	ultra	Delay Mix	0..50	10
64		medium	Delay Mix	0..50	15
65	MAGIC DRIVE	-	Mix	0..99	50
66		-	Mix	0..99	50
67	AUTO WAH	-	Delay Mix	0..50	1
68		-	Delay Mix	0..50	11
69	LFO WAH	fast	Sensitivity	0..63	50
70		slow	Sensitivity	0..63	50
71	PITCH SHIFTER	LFO bandpass	Mix	0..99	90
72		LFO bandpass	Mix	0..99	60
73	PITCH SHIFTER / REVERB	-12	Mix	0..99	50
74		-5	Mix	0..99	34
75		+3	Mix	0..99	34
76		+4	Mix	0..99	20
77		+7	Mix	0..99	34
78		+4 %	Mix	0..99	20
79	PITCH SHIFTER / DELAY	+8 %	Mix	0..99	34
80		-12	Pitch Mix	0..99	30
81		+3	Pitch Mix	0..99	24
82		+4 %	Pitch Mix	0..99	40
83	COMPRESSOR	+8 %	Pitch Mix	0..99	40
84		-12	Pitch Mix	0..99	40
85		-5	Pitch Mix	0..99	34
86	EXPANDER	+4	Pitch Mix	0..99	20
87		+7	Pitch Mix	0..99	20
88	GUITAR COMBO	Fast	Sensitivity	0..63	30
89		Slow	Sensitivity	0..63	30
90		Fast	Sensitivity	0..63	35
91	SPEAKER CABINET	Slow	Sensitivity	0..63	20
92		-	Mix	0..99	99
93	SPEAKER CABINET	-	Mix	0..99	99
94		-	Mix	0..99	99
95		Stack A	Peak Freq.	0..63	63
96	Stack B	Peak Freq.	0..63	30	
97	Combo	Peak Freq.	0..63	10	

Tab. 7.3: V-TONE effect presets

V-TONE GMX110/GMX210/GMX212/GMX1200H

8. SPECIFICATIONS

	GMX110	GMX210	GMX212	GMX1200H
AUDIO INPUTS				
GUITAR IN	1/4" TS, RF filtered			
Input Impedance	approx. 1 M Ω unbalanced			
INSERT RETURN	1/4" TS			
Input Impedance	approx. 10 k Ω unbalanced			
SLAVE IN	-	1/4" TRS (tip = input)		
Input Impedance	-	approx. 30 k Ω unbalanced		
AUX IN	-	1/4" stereo jack		
Input Impedance	-	approx. 10 k Ω unbalanced		
TAPE IN	RCA			
Input Impedance	approx. 10 k Ω unbalanced			
AUDIO OUTPUTS				
INSERT SEND	1/4" TS, low-impedance, line level			
Output Impedance	approx. 1 k Ω unbalanced	approx. 100 Ω unbalanced		
LINE OUT	-	1/4" mono jack		
Output Impedance	-	> 1 k Ω unbalanced		
Max. output level	-	+8 dBu unbalanced		
TAPE OUT	RCA			
Output Impedance	approx. 3 k Ω unbalanced			
Max. output level	+9 dBu unbalanced			
PHONES OUTPUT	1/4" TRS stereo			
Max. output level	+15 dBu / 100 Ω (+23 dBm)			
SLAVE OUT	-	1/4" TRS (ring = output)		
Output impedance	-	approx. 2 k Ω unbalanced		
Max. output level	-	+21 dBu unbalanced		
LOUDSPEAKER OUTPUT				
Type	1/4" TS	-	1/4" TS x 2	
Min. load impedance	4 Ω	-	8 Ω	
SYSTEM SPECIFICATIONS				
power amp output	1 x 30 W / 4 Ω	2 x 30 / 2 x 4 Ω	2 x 60 W / 2 x 8 Ω	
MIDI-INTERFACE				
Type	5-pin DIN-socket, MIDI IN			
DIGITAL PROCESSING				
Converters	24-bit sigma-delta, 64/128-times oversampling			
Sampling rate	46.875 kHz			
DISPLAY				
Type	2-digit numeric LED-display			
LOUDSPEAKERS				
Type	10" heavy-duty	2 x 10" heavy-duty	2 x 12" heavy-duty	-
Model	JENSEN [®] / BUGERA [™]			
Impedance	4 Ω	2 x 4 Ω	2 x 8 Ω	-
Power handling	35 W	35 W	70 W	-
POWER SUPPLY				
Mains voltage	USA/Canada 120 V~, 60 Hz			
	Europe/U.K./Australia 230 V~, 50 Hz			
	Japan 100 V~, 50 - 60 Hz			
	General Export model 120/230 V~, 50 - 60 Hz			
Power consumption	max. 70 watts	max. 150 watts	max. 200 watts	max. 200 watts
Fuses 100 - 120 V~ 200 - 240 V~	T 2 A H 250 V	T 2,5 A H 250 V	T 5 A H 250 V	T 5 A H 250 V
	T 1 A H 250 V	T 1,25 A H 250 V	T 2,5 A H 250 V	T 2,5 A H 250 V
Mains connection	Standard IEC receptacle			
DIMENSIONS AND WEIGHT				
Dimesions (H x W x D)	400 x 423 x 213/253 mm	473 x 605 x 255 mm	493 x 712 x 255 mm	280 x 712 x 240 mm
	15 3/4 x 16 3/4 x 8 3/8 / 10"	18 3/5 x 23 5/6 x 10"	19 2/5 x 28 x 10"	11 x 28 x 9"
Weight	24.25 lbs (11 kg)	40.1 lbs (18.2 kg)	53 lbs (24 kg)	34 lbs (15.5 kg)

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.

9. WARRANTY

§ 1 WARRANTY CARD/ONLINE REGISTRATION

To be protected by the extended warranty, the buyer must complete and return the enclosed warranty card within 14 days of the date of purchase to BEHRINGER Spezielle Studioteknik GmbH, in accordance with the conditions stipulated in § 3. Failure to return the card in due time (date as per postmark) will void any extended warranty claims. Based on the conditions herein, the buyer may also choose to use the online registration option via the Internet (www.behringer.com or www.behringer.de).

§ 2 WARRANTY

1. BEHRINGER (BEHRINGER Spezielle Studioteknik GmbH including all BEHRINGER subsidiaries listed on the enclosed page, 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. If the product shows any defects within the specified warranty period that are not excluded from this warranty as described under § 4, BEHRINGER shall, at its discretion, either replace 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.

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.

§ 3 RETURN AUTHORIZATION NUMBER

1. To obtain warranty service, the buyer (or his authorized dealer) must call BEHRINGER (see enclosed list) during normal business hours **BEFORE** returning the product. All inquiries must be accompanied by a description of the problem. BEHRINGER will then issue a return authorization number.

2. Subsequently, the product must be returned in its original shipping carton, together with the return authorization number to the address indicated by BEHRINGER.

3. Shipments without freight prepaid will not be accepted.

§ 4 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. Damages/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.

▲ damages/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 C.O.D. with a separate invoice for freight and packing. Such costs will also be invoiced separately when the buyer has sent in a written repair order.

§ 5 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.

§ 6 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.

§ 7 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.

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

Technical specifications and appearance subject to change without notice. The information contained herein is correct at the time of printing. JENSEN® and its respective logo are registered trademarks of its respective owner. Their use neither constitutes a claim of the trademarks by BEHRINGER® nor affiliation of the trademark owners with BEHRINGER®. BEHRINGER® accepts no liability for any loss which may be suffered by any person who relies either wholly or in part upon any description, photograph or statement contained herein. Colours and specification may vary slightly from product. Products are sold through our authorised dealers only. Distributors and dealers are not agents of BEHRINGER® and have absolutely no authority to bind BEHRINGER® by any express or implied undertaking or representation. No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording of any kind, for any purpose, without the express written permission of BEHRINGER Spezielle Studioteknik GmbH. BEHRINGER® is a registered trademark.

ALL RIGHTS RESERVED. © 2004 BEHRINGER Spezielle Studioteknik GmbH. 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