User Manual

VIRTUBE

VT250FX

2 x 50-Watt Guitar Amplifier with 2 Independent Channels,
VTC Tube Modeling, Dual FX and 2 Original BUGERA 12" Speakers

VT100FX/VT50FX

100/60-Watt Guitar Amplifier with 2 Independent Channels,
VTC Tube Modeling, Dual FX and Original BUGERA 12" Speaker

VT100FXH

100-Watt Guitar Amplifier Head with 2 Independent Channels,
VTC Tube Modeling and Dual FX

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Table of Contents

Thank you

Congratulations! With the VIRTUBE, you have the newest generation of guitar amps. It offers an extremely broad range of options and possibilities, the only limit being your own creativity. The VIRTUBE is an allrounder with so many features that you hardly need any other equipment.

 EN **Important Safety Instructions**

CAUTION
RISK OF ELECTRIC SHOCK!
DO NOT OPEN!
ATTENTION
RISQUE D'ÉLECTROCUTION !
NE PAS OUVRIR !

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

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

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

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

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

Caution
These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions. Repairs have to be performed by qualified service personnel.

1. Read these instructions.

2. Keep these instructions.

3. Heed all warnings.

4. Follow all instructions.

5. Do not use this apparatus near water.

6. Clean only with dry cloth.

7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11. Use only attachments/accessories specified by the manufacturer.

12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.

14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

15. The apparatus shall be connected to a MAINS socket outlet with a protective earthing connection.

16. Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.

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1. Introduction

The demands placed on a guitar amp are nowadays very broad. A guitarist should offer a wide array of sounds. That's why it is very important to us to be able to offer you maximum sound diversity as well as a variety of connection possibilities with your VIRTUBE. Don't worry: you will quickly master the VIRTUBE and learn how to use all of its capabilities easily and intuitively. With its up-to-date circuitry, the VIRTUBE features the functionality and reliability of a truly modern guitar amp.

VTC Virtual Tube Circuitry

The specially developed VTC Virtual Tube Circuitry gives your sound the unique vintage flavor of classic tube amps.

1.1 Before you get started

Your product was carefully packed at the factory to ensure safe transport. Nevertheless, if the box is damaged inspect the unit immediately for signs of damage.

◊ **If the unit is damaged please do NOT return it to us, but notify your dealer and the shipping company immediately; otherwise, claims for damage or replacement may not be granted.**

◊ **Otherwise, always use the original box to prevent damage during storage or transport.**

◊ **Make sure that children cannot play unsupervised with the unit or its packaging.**

◊ **Please ensure proper disposal of all packing materials. Recylce whenever possible.**

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

◊ **Please make sure that all devices are properly grounded/earthed. For your own safety, never remove or disable the ground/earth conductors from the devices or on the power cords. The unit must always be connected to the mains outlet with a protective grounding connection.**

1.1.1 Online registration

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

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

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

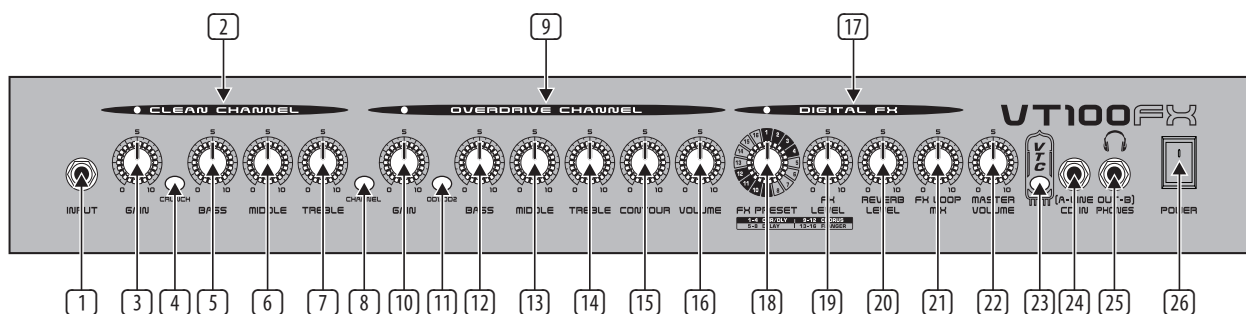Thank you for your cooperation!.

2. Control Elements

Fig. 2.1: VIRTUBE control elements (front panel)

2.1 Front panel

① The **INPUT** socket is the ¼" connector for your guitar. Please use a standard ¼" TS connector.

2.1.1 CLEAN CHANNEL

② The **CLEAN CHANNEL** LED lights up when the CLEAN channel is active.

③ The **GAIN** control determines the volume of the CLEAN channel.

④ The **CRUNCH** button (VT100FXH and VT100FX only) allows you to add some slight distortion to your clean sound, giving it a bit of "dirt" or "crunch".

⑤ The **BASS** control in the EQ section allows you to raise or lower the bass frequencies on the CLEAN channel.

⑥ With the **MIDDLE** control you can raise or lower the midrange frequencies on the CLEAN channel.

⑦ The **TREBLE** control adjusts the treble frequencies on the CLEAN channel.

⑧ Press the **CHANNEL** button to switch between the CLEAN and OVERDRIVE channels. The channel LED lights up when the channel is activated. With all models you can also switch between channels using the footswitch provided.

2.1.2 OVERDRIVE CHANNEL

⑨ The **OVERDRIVE CHANNEL** LED lights up when the channel is active.

⑩ The **GAIN** control determines the amount of gain applied and hence the degree of distortion in the OVERDRIVE channel.

⑪ The **OD1/OD2** button (VT100FXH and VT100FX only) switches between two different overdrive sounds.

⑫ The **BASS** control in the EQ section allows you to raise or lower the bass frequencies on the OVERDRIVE channel.

⑬ With the **MIDDLE** control (VT100FXH and VT100FX only) you can raise or lower the midrange frequencies on the OVERDRIVE channel.

⑭ The **TREBLE** control adjusts the treble frequencies on the OVERDRIVE channel.

⑮ Use the **CONTOUR** control for additional, highly characteristic adjustment of the midrange, allowing you to easily create traditional as well as ultra-modern guitar sounds.

⑯ The **VOLUME** control adjusts the volume level of the OVERDRIVE channel.

2.1.3 DIGITAL FX

⑰ The **DIGITAL FX** LED lights up when the effects processor is active.

⑱ Use the **FX PRESET** control to select one of 16 effects.

Preset	FX
1 - 4	Chorus/Delay
5 - 8	Delay
9 - 12	Chorus
13 - 16	Flanger

Tab. 2.1: Effects

⑲ The **FX LEVEL** control adjusts the mix ratio between the original and the effect signal.

⑳ The **REVERB LEVEL** control determines the effect intensity of the additional reverb effect.

㉑ The **FX LOOP MIX** control (VT100FXH and VT100FX only) determines the effect intensity of the external effect (see Chapter 2.2.1 FX LOOP).

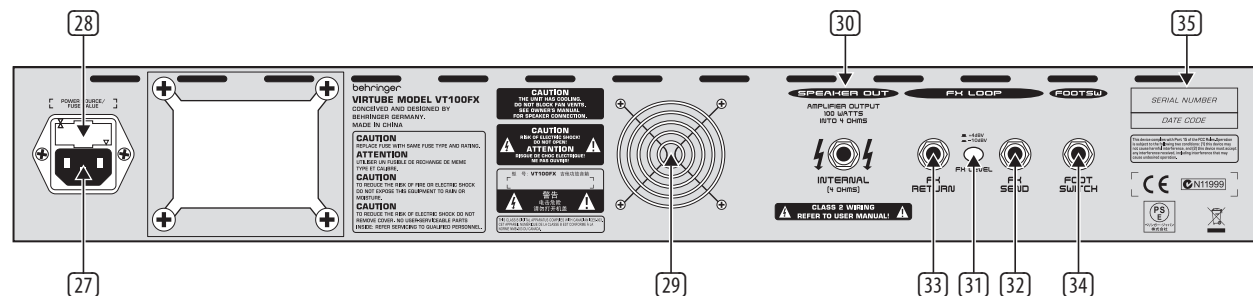### 2.1.4 MASTER section

㉒ The **MASTER VOLUME** control adjusts both the overall volume and the line out/headphones volume.

㉓ The **VTC** push button activates and deactivates the VTC Virtual Tube Circuitry.

㉔ The **CD IN** connector allows you to connect the output signal of a CD player, tape deck, or CD/MD walkman. For example, you can play back music CDs or CDs accompanying a guitar tutor while practising. This connector can also be used as a LINE OUT output. In this case, the guitar signal is output with no speaker simulation applied and can be routed to an external amp or mixing console. This will not mute the VIRTUBE's built-in loudspeaker.

㉕ The **LINE OUT/PHONES** jack is for headphones connection. Internal speaker simulation is applied to the headphones signal in order to produce an authentic signal. The VIRTUBE's built-in loudspeaker is muted when this connector is used.

◊ **The headphones output signal can also be routed to a mixing console or other sound reinforcement system. To do so, connect the headphones output with the line input on the mixing console. Use a standard cable with 1/4" TS connectors. If hum problems occur, you could insert a DI box, e.g. BEHRINGER ULTRA-DI DI100 or DI120.**

◊ **Some headphones tend to produce distortion with too high volume level. Please turn down the volume a bit, until distortion stops.**

㉖ The **POWER** switch turns your VIRTUBE on and off. It should always be in the OFF position when connecting the unit to the mains.

◊ **Please note: Merely switching the unit off does not mean that it is fully disconnected from the mains. To disconnect the unit from the mains, pull out the mains connector. Before installation, please make sure that the mains connector has not been damaged. If you do not use the unit for an extended period of time, please disconnect it at the mains.**

Fig. 2.2: VIRTUBE control elements (rear panel)

2.2 Rear panel

㉗ The VIRTUBE is connected to the mains using a standard **IEC** receptacle. A suitable power cord is included with the unit.

㉘ **FUSE HOLDER/VOLTAGE SELECTOR.** Before connecting the unit to the mains, ensure that the voltage setting matches your local voltage. Blown fuses must be replaced with a fuse of the same type and rating. On some units, the fuse holder can be switched to one of two positions, i.e. 230 V and 120 V. Please note: when operating the unit outside Europe at 120 V, a higher fuse rating is required (see Chapter 4, "Installation").

㉙ This is where the fan of the unit is located.

㉚ The **SPEAKER OUT** connectors (only one on the VT100FX and VT50FX) can be used to connect external speakers with a miminum impedance of 4 Ω. The outputs of the VT250FX deliver 50 Watts of power per channel

(L/R). Always use speakers with a minimum impedance of 8 Ω to ensure maximum power output. Using the SPEAKER OUT connectors will mute the built-in loudspeakers.

2.2.1 FX LOOP

㉛ The **FX LEVEL** button allows you to adapt the FX LOOP to the operating level of an external effects device (+4 dBu/-10 dBV).

㉜ The VIRTUBE provides a serial insert path for inserting external effects (e.g. reverb processor). To do so, connect the **FX SEND** jack to the input of the effects device.

◊ **The FX SEND can also be used as a parallel output with no effects, for example, to record a "dry" guitar signal. As long as the RETURN jack is not in use, there will be no break in the internal signal path.**

[33] Connect the **FX RETURN** jack to the output of the external effects device. The VT250FX has two jacks (L/R) because it is a stereo amplifier.

[34] Use the **FOOTSWITCH** jack to connect the ¼" TRS plug of the footswitch supplied with the unit. The footswitch performs a dual function: it switches between the two channels and turns the DIGITAL FX on and off.

[35] **SERIAL NUMBER.**

3. Application Examples

The VIRTUBE features plenty of connectors for a wealth of applications. Here's a few examples of how flexible your VIRTUBE can be:

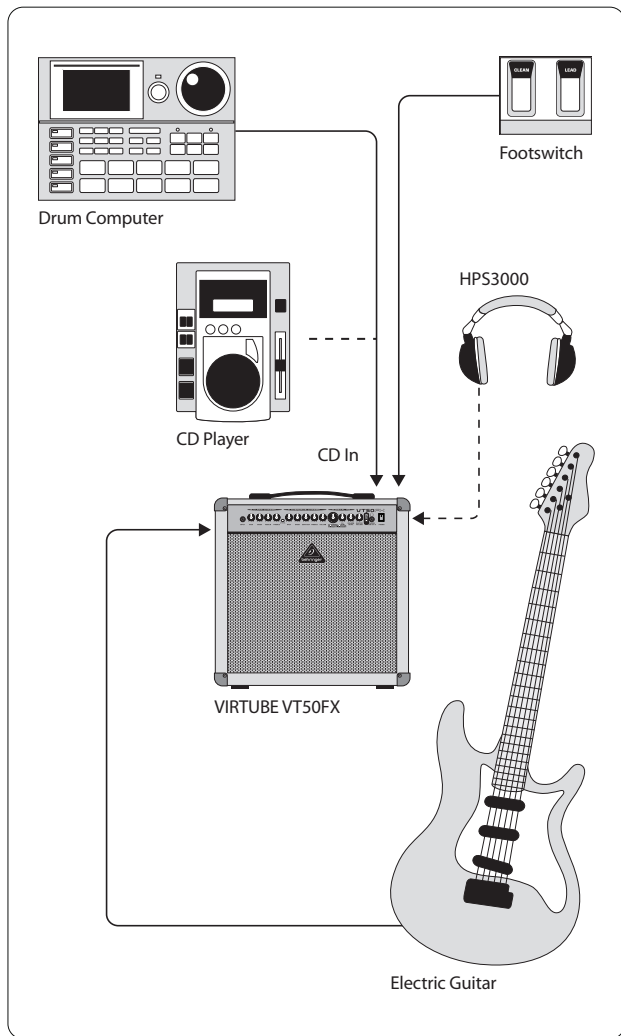## 3.1 Set-up for practicing with playbacks

Fig. 3.1: VT50FX standard set-up

For practising in the rehearsal room or at home, please wire your VIRTUBE as shown in Fig. 3.1. Connect a CD player or drum computer to the CD IN input. If you want to practice with headphones, connect your headphones to the PHONES jack. The built-in loudspeaker will be muted automatically. Connect the dual footswitch supplied with the unit to the FOOTSWITCH jack on the VIRTUBE. The CHANNEL footswitch switches between the channels. The EFFECT button switches the effect on and off.

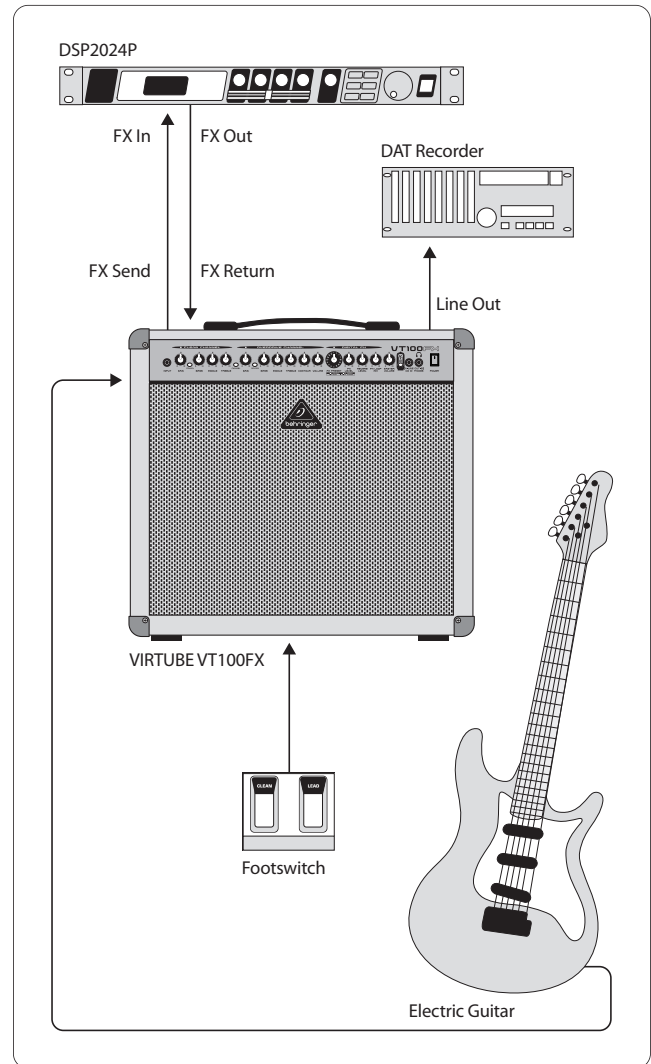## 3.2 Recording set-up with effects device

Fig. 3.2: Recording set-up with the VT100FX

If you want to use your VIRTUBE in a home-recording or studio environment, please wire it as shown in Fig. 3.2. Of course, you can still use a CD player or drum computer in this set-up. This is not shown here to provide for a better overview. Connect the input of the effects device to the FX SEND and the effects output to the FX RETURN.

If you want to record your guitar signal with effects, connect the PHONES output to your mixing console, audio sequencer or multi-track recorder.

To record a "dry" guitar signal with no effect, it is best to use the FX SEND connector. You can use both outputs at the same time, for example, to record signals via the FX SEND output (no effect), while monitoring them via the PHONES output (with effect).

Instead of an external 19" effects processor, you can also use a wah-wah pedal or other stomp box. However, please note that the FX LOOP is post-preamp, i.e. after the distortion stages.
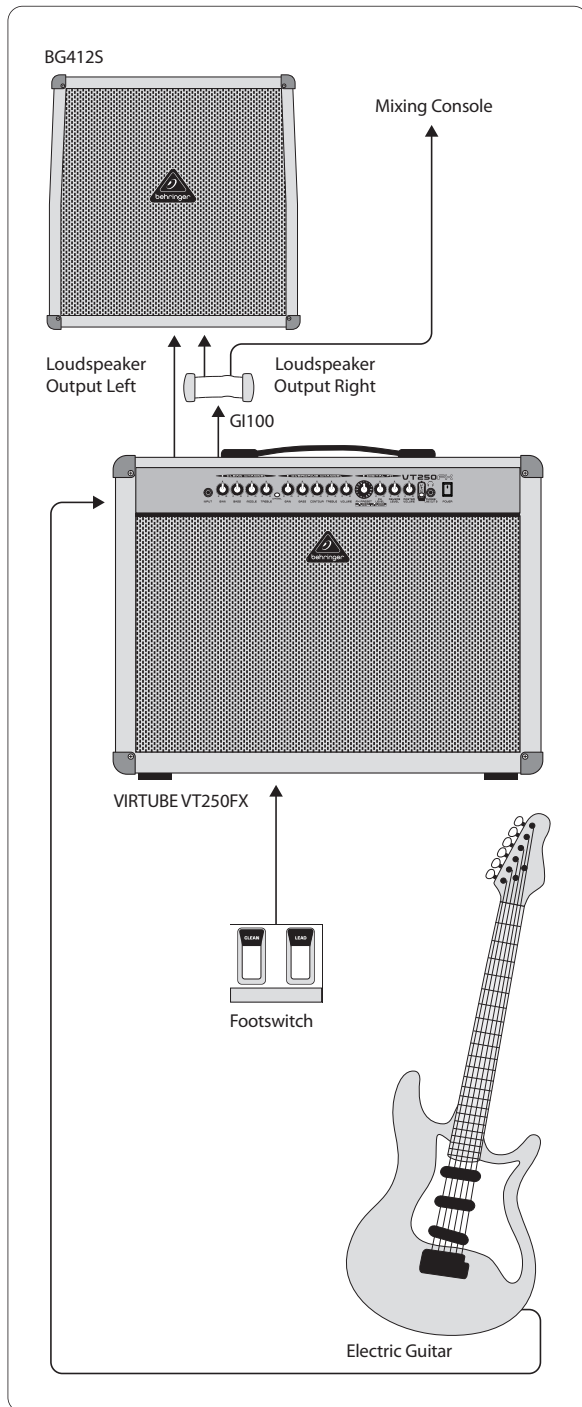
3.3 Live set-up with external speaker box

Fig. 3.3: Set-up comprising VT250FX and one speaker box

Fig. 3.3 shows how the LINE OUT signal is routed to a mixing console. You can connect external guitar speaker boxes to the SPEAKER OUT outputs of the VIRTUBE (VT100FX and VT50FX have only one output) to achieve more power and higher volume levels on stage. When the VT250FX is used, we recommend connecting two separate speaker cabinets for stereo applications or one stereo cabinet (e.g. BEHRINGER ULTRASTACK BG412S).

3.4 Wiring the VT100FXH

The VT100FXH has two SPEAKER OUT outputs for connection of one or two external speaker cabinets. To achieve maximum power output on the VT100FXH, both speaker outputs should be connected to speaker cabinets with a minimum impedance of 4 Ω. Connecting headphones to the PHONES jack will automatically mute the speaker outputs.
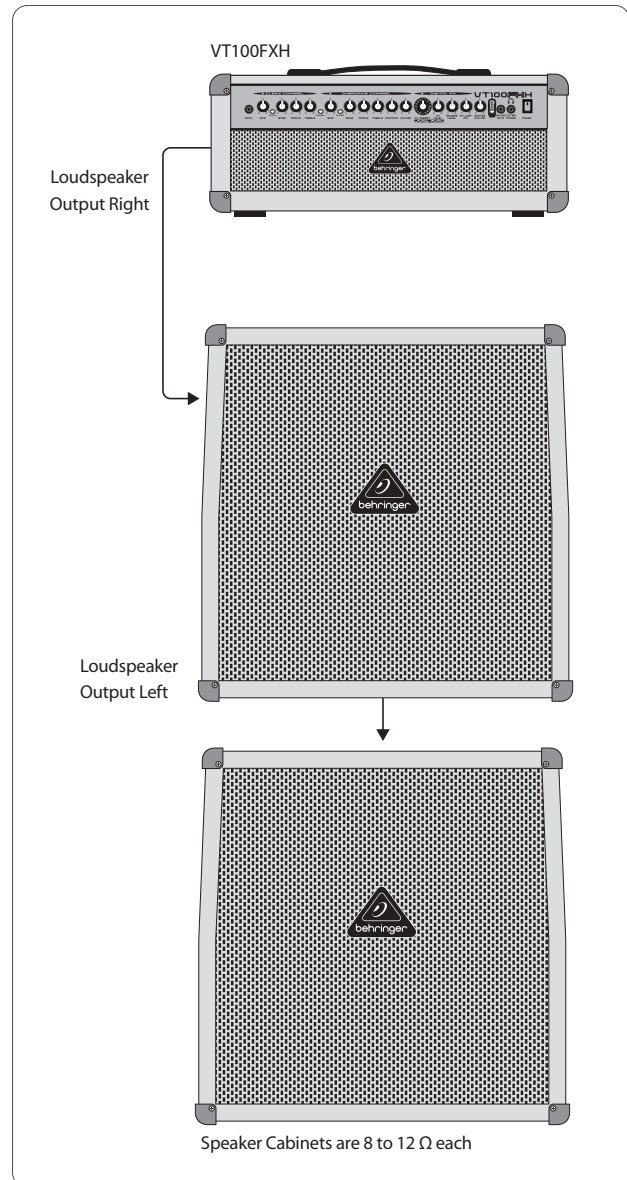

Speaker Cabinets are 8 to 12 Ω each

Fig. 3.4: VT100FXH with two speaker boxes

4. Installation

Except for the headphones output and the CD IN input (¼" TRS connectors), all audio inputs and outputs on the BEHRINGER VIRTUBE are on ¼" TS connectors. Please see Chapter 5, "Specifications" for more information.

◊   **Please ensure that the unit is installed and operated only by people qualified to do so. During installation and operation the user must have sufficient electrical contact to earth. Electrostatic discharge may affect the operation of the unit.**
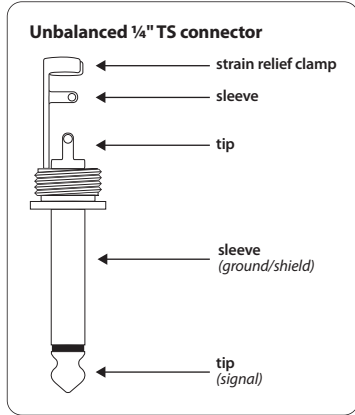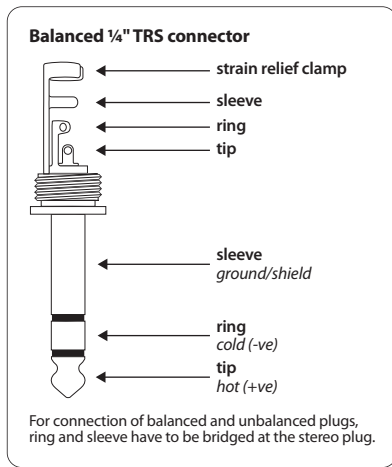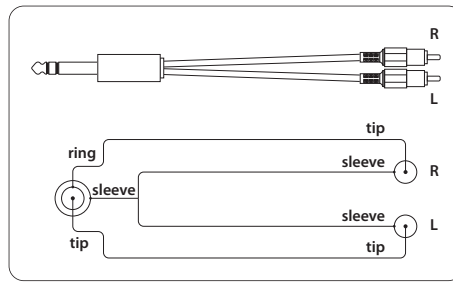

Fig. 4.1: ¼" TS connector

Fig. 4.2: ¼" TRS connector

Fig. 4.3: Stereo adapter cable
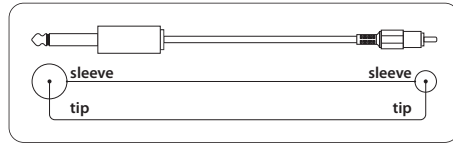
Fig. 4.4: Mono adapter cable

5. Specifications

VT250FX

Audio Inputs

Input	¼" TS, RF filtered
Input impedance	approx. 1 MΩ, unbalanced
FX Return	2 x ¼" TS
Input impedance	approx. 33 kΩ, unbalanced
CD In	¼" TRS
Input impedance	approx. 5.6 kΩ, unbalanced

Audio Outputs

FX Send	¼" TS
Output impedance	approx. 5.6, kΩ unbalanced
Line Out / Phones	¼" TRS, unbalanced
Output level	max. +16 dBV / 100 Ω

Loudspeaker Outputs

Type	2 x ¼"
Min. load impedance	2 x 8 Ω

Amplifier

Peak power	2 x 50 Watts / 8 Ω

Digital Signal Processing

Converter	24-bit, sigma-delta
Sample rate	40 kHz

Loudspeaker

Size	2 x 12"
Model	BUGERA Vintage Guitar Series 2 x 12G50J8
Impedance	2 x 8 Ω
Continuous power (IEC268-5)	2 x 50 Watts
Peak power	2 x 200 Watts

Power Supply

Power consumption	max. 180 Watts
Fuse	
100 V~, 50/60 Hz	T 3.15 A H 250 V
120 V~, 50/60 Hz	T 2.5 A H 250 V
220 - 230 V~, 50/60 Hz	T 1.25 A H 250 V
Mains connection	Standard IEC receptacle

Dimensions / Weight

Dimensions (H x W x D)	520 x 670 x 275 mm (20.5 x 26.3 x 10.8")
Weight	22.2 kg (48.8 lbs)

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VT100FX

Audio Inputs

Input	¼" TS, RF filtered
Input impedance	approx. 1 MΩ, unbalanced
FX Return	¼" TS
Input impedance	approx. 33 kΩ, unbalanced
CD In	¼" TRS
Input impedance	approx. 5.6 kΩ, unbalanced

Audio Outputs

FX Send	¼" TS
Output impedance	approx. 8.2, kΩ unbalanced
Line Out / Phones	¼" TRS, unbalanced
Output level	max. +16 dBV / 100 Ω

Loudspeaker Outputs

Type	¼"
Min. load impedance	4 Ω

Amplifier

Peak power	100 Watts / 4 Ω

Digital Signal Processing

Converter	24-bit, sigma-delta
Sample rate	40 kHz

Loudspeaker

Size	12"
Model	BUGERA Vintage Guitar Series 12G70J4
Impedance	4 Ω
Continuous power (IEC268-5)	70 Watts
Peak power	280 Watts

Power Supply

Power consumption	max. 180 Watts
Fuse	
100 V~, 50/60 Hz	T 2.5 A H 250 V
120 V~, 50/60 Hz	T 2.5 A H 250 V
220 - 230 V~, 50/60 Hz	T 1.0 A H 250 V
Mains connection	Standard IEC receptacle

Dimensions / Weight

Dimensions (H x W x D)	550 x 580 x 275 mm (21.6 x 22.8 x 10.9")
Weight	20.4 kg (44.9 lbs)

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VT50FX

Audio Inputs

Input	¼" TS, RF filtered
Input impedance	approx. 1 MΩ, unbalanced
FX Return	¼" TS
Input impedance	approx. 33 kΩ, unbalanced
CD In	¼" TRS
Input impedance	approx. 5.6 kΩ, unbalanced

Audio Outputs

FX Send	¼" TS
Output impedance	approx. 5.6, kΩ unbalanced
Line Out / Phones	¼" TRS, unbalanced
Output level	max. +16 dBV / 100 Ω

Loudspeaker Outputs

Type	¼"
Min. load impedance	8 Ω

Amplifier

Peak power	60 Watts / 8 Ω

Digital Signal Processing

Converter	24-bit, sigma-delta
Sample rate	40 kHz

Loudspeaker

Size	12"
Model	BUGERA Vintage Guitar Series 12G50J8
Impedance	8 Ω
Continuous power (IEC268-5)	50 Watts
Peak power	200 Watts

Power Supply

Power consumption	max. 90 Watts
Fuse	
100 V~, 50/60 Hz	T 1.6 A H 250 V
120 V~, 50/60 Hz	T 1.25 A H 250 V
220 - 230 V~, 50/60 Hz	T 630 mA H 250 V
Mains connection	Standard IEC receptacle

Dimensions / Weight

Dimensions (H x W x D)	520 x 515 x 275 mm (20.5 x 20.3 x 10.8")
Weight	16.5 kg (36.3 lbs)

VT100FXH

Audio Inputs

Input	¼" TS, RF filtered
Input impedance	approx. 1 MΩ, unbalanced
FX Return	¼" TS
Input impedance	approx. 33 kΩ, unbalanced
CD In	¼" TRS
Input impedance	approx. 5.6 kΩ, unbalanced

Audio Outputs

FX Send	¼" TS
Output impedance	approx. 8.2, kΩ unbalanced
Line Out / Phones	¼" TRS, unbalanced
Output level	max. +16 dBV / 100 Ω

Loudspeaker Outputs

Type	2 x ¼"
Min. load impedance	4 Ω

Amplifier

Peak power	100 Watts / 4 Ω

Digital Signal Processing

Converter	24-bit, sigma-delta
Sample rate	40 kHz

Loudspeaker

Size	—
Model	—
Impedance	—
Continuous power (IEC268-5)	—
Peak power	—

Power Supply

Power consumption	max. 180 Watts
Fuse	
100 V~, 50/60 Hz	T 2.5 A H 250 V
120 V~, 50/60 Hz	T 2.5 A H 250 V
220 - 230 V~, 50/60 Hz	T 1.0 A H 250 V
Mains connection	Standard IEC receptacle

Dimensions / Weight

Dimensions (H x W x D)	250 x 580 x 270 mm (9.8 x 22.8 x 10.6")
Weight	12.7 kg (27.9 lbs)

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