



ELEKTROAKUSTISCHE MANUFAKTUR

# DSR-3

Bedienungsanleitung  
User Guide

# Introduction

The invention of the Hammond organ in the last century's mid 30s resulted in a need for artificial reverb. This led to the development of spring reverberation systems. Constant improvements turned these formerly bulky units into compact machines. In the beginning of the 60's, spring reverb was discovered by Leo Fender to be used in his now world famous guitar amplifiers.

Today, digital technology can create a perfect room simulation. However, spring reverb and its less-than-perfect but distinctive sound is still relevant in modern music production. It is its distinctiveness, the sensitivity to mechanical influences, unnatural resonances and a limited frequency range that build the charm of a spring generated reverb effect.

Vermona already offers an impressive collection of spring reverberation systems ranging from the valve-based ReTubeVerb, the classic VSR 3.2 to the more experimental Retroverb Lancet. The two-channel DSR-3 is an advanced spring reverberation unit for studio use that specializes in processing stereophonic sound sources. However, the DSR-3 doesn't stop here. It also offers serial and parallel routings to expand its sonic possibilities.

Congratulations on your purchase of the DSR-3. We wish you lots of creative hours of making music, composing and production.

Your VERMONA crew from the  
Elektroakustischen Manufaktur, Erlbach

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# Important Safety Information

1. Read these instructions.
2. Keep these instructions. Always include these instructions when passing the product on to third parties.
3. Heed all warnings and follow all instructions.
4. Do not use this apparatus near water.
5. Only clean the product when it is not connected to the mains power supply. Clean only with a dry cloth.
6. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
7. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
8. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarizer plug has two blades and a third ground 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.
9. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
10. Only use attachments/accessories specified by VERMONA.
11. Use only with the cart, stand, tripod, bracket, or table specified by VERMONA or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. 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, when the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. To completely disconnect this apparatus from the AC mains, disconnect the power supply cord plug from the AC receptacle.
15. **WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
16. Do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.
17. The mains plug of the power supply cord shall remain readily accessible.

## Installation

- Ensure that the room in which you use this product is wired in accordance with the local electrical code and checked by a qualified inspector.
- Do not install the product in hot, humid, or excessively dusty locations, in direct sunlight or in locations where it is exposed to externally generated vibrations.
- Do not place burning objects (e.g. candles) on top of or near the product.
- If condensation has formed on the product, e.g. because it was moved from a cold environment to a warm one, allow the product to acclimatize to room temperature before using it.
- Do not overload wall outlets and extension cables as this may result in fire and electric shock.

## Spare parts and modification

Modification instructions and schematics should only be used from service departments of our official authorized dealers.

**Always disconnect the power cord before opening the unit! To prevent the risk of electrical shock, do not open any unit yourself!**

The manufacturer prohibits the installation of additional components or any modification to existing circuits.

**The manufacturer will not be liable for any claims in these cases! By opening the unit, warranty will be cease to exist.**

# Setup

## Unpacking and scope of delivery

To ensure top quality, we carefully inspected the DSR-3 before packaging. Nevertheless, the unit could have been damaged during transportation. Therefore, we ask you to take a serious look at the unit when unpacking. Do not hesitate to contact your dealer or us, should there be anything unusual with the unit or its packaging.

You should find the following items in the box:

- the DSR-3
- a power cord
- this manual

## Positioning and connecting

The DSR-3 requires two 19" rack units. Make sure the unit receives adequate air supply to avoid overheating.



**Spring tanks are prone to electromagnetic interference. When placed disadvantageous, e.g. near equipment with a transformer or speakers, interference might occur. In this case, try to reposition the DSR-3.**



**Make sure, the DSR-3 is switched off, before connecting audio- and power connections!**

The DSR-3 can either be directly connected to an audio source or in effect loops.

## Connecting instruments directly

1. Connect the supplied power cord to the **MAINS IN** jack ⑥ on the DSR-3's rear panel. Connect the power cord to a power receptacle.
2. Connect the at least one of the inputs ①, ⑩ or ⑰ to an audio source.
3. Connect the at least one of the outputs ⑭, ⑮ to an audio input of your mixer, audio-interface or amplifier.



**The in- and outputs on the DSR-3's rear panel are assigned to the channels SPRING REVERB A and SPRING REVERB B. Therefore, an input signal being connected to SPRING REVERB A will not be output from SPRING REVERB B.**

**An exception is the front input ① which feeds both channels in parallel.**

4. Use the **POWER** switch ⑤ on the DSR-3's rear panel to switch the unit on.

## Using the DSR-3 in a mixer's effect loop

1. Connect the supplied power cord to the **MAINS IN** jack ⑥ on the DSR-3's rear panel. Connect the power cord to a power receptacle.
2. Connect the at least one of the inputs ①, ⑩ or ⑰ to effect send(s) (i.e. of a mixing console).
3. Connect at least one of the outputs ⑭, ⑮ to effect return(s) (i.e. of a mixing console).
4. Use the **POWER** switch ⑤ on the DSR-3's rear panel to switch the unit on.

# Controls and Connections

## Front Panel

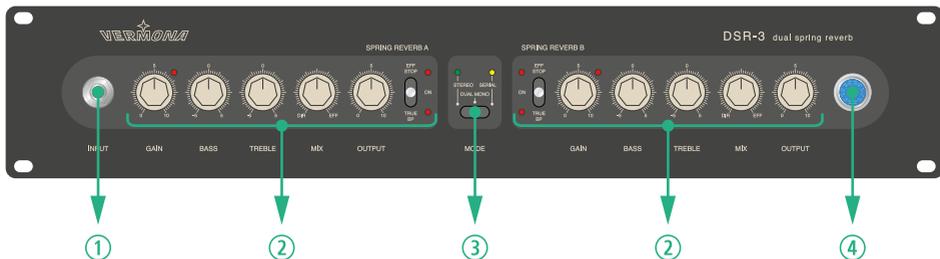


Figure 1: DSR-3 front panel

- ① **INPUT** This high impedance input is used to feed audio signals into the DSR-3. The front input overrules the rear panel TS- and XLR-inputs ⑰ and ⑱. It is routed in parallel to reverberation channels **SPRING REVERB A** and **SPRING REVERB B**.
- ② spring reverb channels Both channels **SPRING REVERB A** and **SPRING REVERB B** are described in chapter „Spring Reverb Channels A and B“ on page 9.
- ③ **MODE** The **MODE** switch selects the DSR-3's operating modes. It determines if and how channels **SPRING REVERB A** and **SPRING REVERB B** are interconnected. The three settings are described in „DSR-3 Operating Modes“ on page 12.
- ④ pilot lamp With the DSR-3 switched on, the pilot lamp is lit.

## Rear Panel

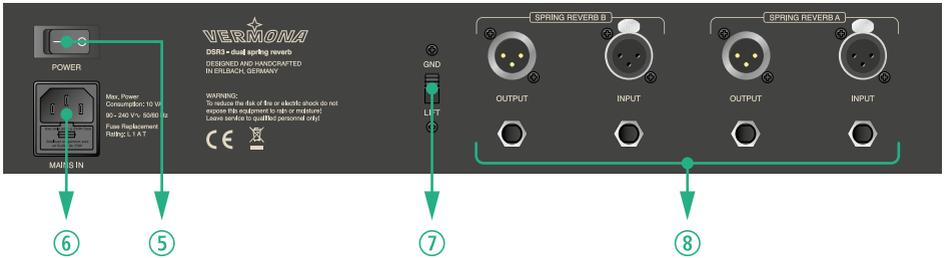


Figure 2: DSR-3 rear panel

- ⑤ **POWER** The **POWER** switch turns the DSR-3 on and off.
- ⑥ **MAINS IN** The **MAINS IN** jack connects the DSR-3 to power. The DSR-3 uses a switching power supply and can be used with alternating currents ranging between 90 to 240 volts (50/60 Hz).
- ⑦ **GND/LIFT** Setting this switch to **LIFT** (downwards) will interrupt the connection between electrical mass and the grounding receptacle. This might help to avoid/cut off existing ground loops.
- ⑧ in- and output connectors  
The balanced and unbalanced in- and outputs for **SPRING REVERB A** and **SPRING REVERB B** are described in „[Spring Reverb Channels A and B](#)“ on page 9.

## Spring Reverb Channels A and B

The DSR-3 offers two spring reverberation channels: **SPRING REVERB A** and **SPRING REVERB B**. Both channels are equipped with identical controls and functions.

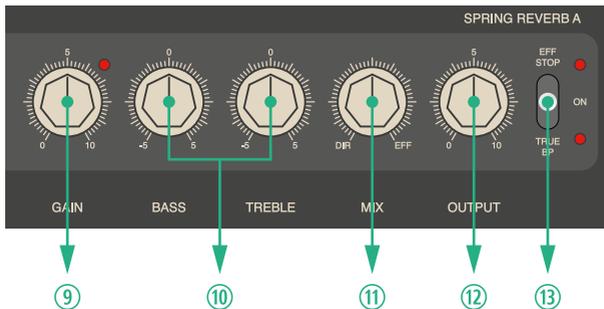


Figure 3: DSR-3 reverb channel

- ⑨ **GAIN** Sets the input level. The corresponding CLIP LED lids up as soon as the input signal overdrives the preamp. Always assure optimal input level for the best possible signal to noise ratio.
- ⑩ **equalizer** The effect signal can be shaped in sound using the two equalizing controls **BASS** and **TREBLE**. In their center positions these controls do not affect the sound.

The **BASS** control attenuates respectively boosts frequencies around 40 Hz by 13 dB.

The **TREBLE** control attenuates respectively boosts frequencies around 7 kHz by 22 dB.
- ⑪ **MIX** The **MIX** control sets the balance between direct- and processed signals.
- ⑫ **OUTPUT** Sets the output level.

### ⑬ BYPASS/EFF STOP

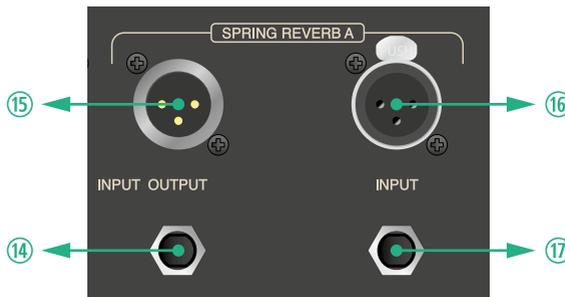
Setting the **BYPASS/EFFECT STOP** switch to its lower position (**TRUE BP**) will bypass the effect circuit. This bypass will work as true bypass when using the balanced XLR in- and outputs ⑮ and ⑯. Here, the complete circuit as well as the pre-amplification will not be used.

When using the unbalanced TS in- and outputs ⑰ and ⑱, the input signal will still pass through the input amplifier when set to **TRUE BP**.

In its upper position **EFF STOP**, the effect-stop- function is activated, meaning the output of the reverberation spring will be muted. The direct signal will still pass through the DSR-3's in- and output stages.



**With EFF STOP enabled, the reverberation spring is muted. Therefore, no effect is generated. With MIX ⑪ set to 100% effect (fully clockwise), there will be no signal present at the outputs.**



*Figure 4: in- and outputs of the DSR-3*

⑱ / ⑮ **OUTPUT** The jack outputs ⑱ carry unbalanced audio signals.

The XLR outputs ⑮ carry balanced audio signals. Balancing is performed using a high-quality output transformer.

**⑩ / ⑪ INPUT**

By using the unbalanced TS inputs ⑪, unbalanced audio signals can be fed into channels **SPRING REVERB A** and/or **SPRING REVERB B**.

By using the balanced XLR inputs ⑩, balanced audio signals can be fed into channels **SPRING REVERB A** and/or **SPRING REVERB B**.



**Unbalanced signals may be balanced by using the jack inputs ⑪ and the XLR outputs ⑩. Here, the DSR-3 functions as a two channel DI-box.**

**XLR- and jack outputs ⑩ / ⑪ work in parallel and therefore carry the same output signal. This way, you may as well use the DSR-3 to distribute audio signals.**

# DSR-3 Operating Modes

The two DSR-3's channels may be used separately or in combination, e.g. to process stereophonic sound sources.

There are three operating modes: **STEREO**, **DUAL MONO** and **SERIAL**. Use the **MODE** switch ③ to select the operating mode.

## DUAL MONO

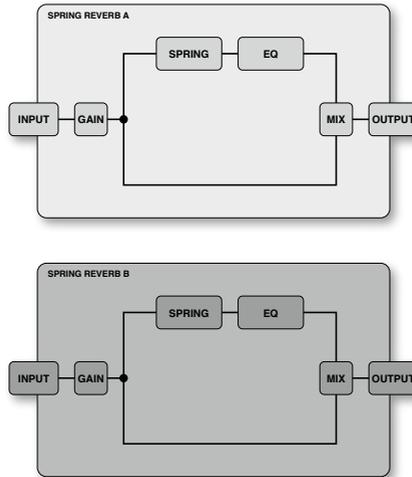


Figure 5: signal flow in dual mono mode

The center position of the **MODE** switch sets the DSR-3 to **DUAL MONO** mode.

Here, both channels **SPRING REVERB A** and **SPRING REVERB B** work independently, as if you had two separate spring reverberation units.

Each channel can be fed with individual signals and offers a proprietary set of controls.

Only when using the front panel input ①, the signal is sent to both channels **SPRING REVERB A** and **SPRING REVERB B** in parallel. This way, you may add two different reverb effects to the same signal.

## STEREO

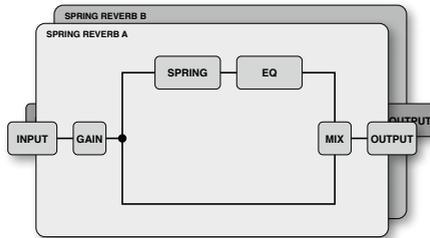


Figure 6: signal flow in stere mode

In this mode, the DSR-3 works a stereo spring reverberation system.

With the exception of the **BYPASS/EFF STOP** switch ②, channel **SPRING REVERB A** is used to control **SPRING REVERB B**'s settings as well.

Again, when using the front panel input ① the signal is distributed to both channels in parallel.

# SERIAL

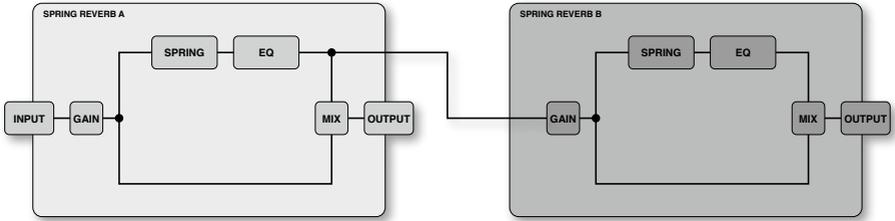


Figure 7: signal flow in serial mode

This operation mode is suited to create extreme reverberation effects.

**SPRING REVERB A** works as if being in **DUAL MONO** mode. However, the effect output of this channel is used as the input signal for **SPRING REVERB B**.



The inputs ⑯ and ⑰ of **SPRING REVERB B** are disconnected. Also, a signal being present at the front panel input ① will not be send to both channels.

By using **SPRING REVERB B**, the reverberated signal of **SPRING REVERB A** can pass through a second reverberation spring.

## Technical Data

<b>Reverb</b>	
spring tank	2x AccuBell, type 9, selected
<b>Level</b>	
max. input level	+ 18 dBu
max. output level	+ 17 dBu
<b>Impedance</b>	
input impedance, TS front	1 M $\Omega$
input impedance, TS rear	100 k $\Omega$
input impedance, XLR	10 k $\Omega$
output impedance	< 600 $\Omega$
<b>Signal-to-Noise</b>	
direct	>= 94 dB
effect	>= 70 dB
<b>Equalizer</b>	
BASS	40 Hz, $\pm$ 13 dB
TREBLE	7 kHz, $\pm$ 22 dB
<b>Voltage and Power Consumption</b>	
mains voltage	90 - 240 V AC, 50-60 Hz
power consumption	10 VA
power fuse	L 1 A T
<b>Dimensions and Weight</b>	
dimensions	19", 2 HE, depth about 24.7 cm (from rear front panel)
weight	7 kg





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