

## Security Advices

In order to avoid health risks and equipment damage: Do not use this machine anywhere near water (wash basin, swimming pools, or the like). Only use the connections as described. Never allow any fluids to be spilled or sprayed on the machine or a foreign object through any of the machine's chassis openings.

## Placement

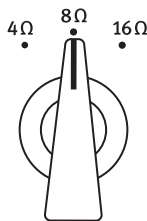
Never cover or otherwise close off chassis openings to protect the unit from overheating. Never place the unit on a soft surface (carpet, sofa, etc.). Make sure to provide for a mounting space of 5 cm/2 inches to the sides and top of the unit when mounting the unit in racks or on cabinets. Placing the unit upon a guitar amplifier is obvious and intended: the height of the feet is sufficient to also place the Reducer above a handle.

## Heat

The Reducer converts electrical energy into heat. It can get considerably hot if high energy levels have to be reduced. This is no reason for concern as long as you ensure to keep the max. input levels listed under "Specs" on page 2. **Side and top panels are cooling surfaces. Only touch with caution! Keep all objects at a safe distance!**

## Hook Up

### 1 Select Impedance

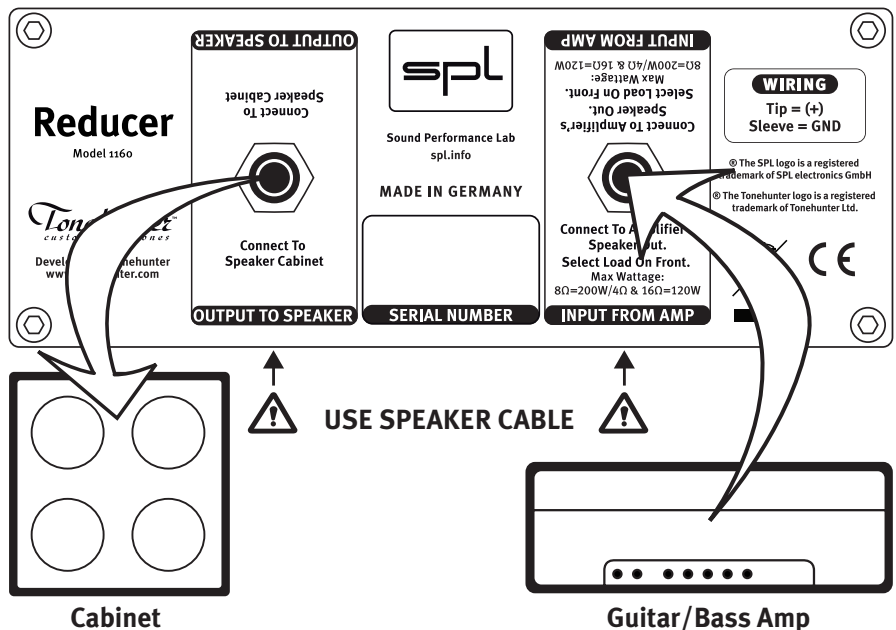


**IMPORTANT: Before connecting an amp, select the appropriate impedance for it with the front panel Impedance Switch (refer to "Impedance Switch" on page 2). Never reduce impedance while playing!**



The Reducer is a passive device and needs no electrical power. After the impedance is set, connect guitar amp and cabinet as shown below.

### 2 Connect Amp & Cabinet



## Input

Here you connect the amp's loudspeaker output. Connector variant and pin configurations follow industry standards: Unbalanced 1/4" jack (TS) connector with the signal at the tip and ground at the sleeve. **As with any typical amp and cabinet cabling, it is critical to observe loudspeaker cable of a minimum 1.5 mm<sup>2</sup> cross section. Instrument or line cables can lead to amplifier damage!** We recommend to use cables with a maximum length of 3 meters/10 feet for lossless signal transmission.

### IMPORTANT WARNING ON CONNECTING GUITAR AMPS

Many guitar amps are not designed for sustained maximum level operation, and if run this way, it can lead to overloads and power amp damage. At high levels, amps can produce high frequency oscillations which can destroy output transformers. Moreover, this can cause audible unwanted output transformer distortion. Such problems are not a result of Reducer use, but reside within the guitar amp. Even in situations where you might wish to push the guitar amp to its limits in conjunction with the Reducer, **you should always be sure to allow for ample power reserves to avoid endangering the amp itself! Therefore we strongly recommend that the guitar amp should never be run at over 70% of its maximal signal level!**

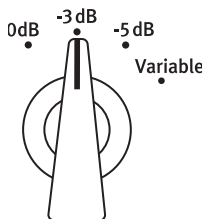
## Output

At the OUTPUT the amp signal appears as reduced with the front panel controls. It allows for the connection of a 4, 8 or 16 ohm cabinet. Reduction starts at 0 dB (unity gain) followed by two -3 dB and -5 dB switch settings. The variable values range from -7 dB to infinite. With this “volume control” between amp and cab, the guitar amp can be driven into saturation also at moderate listening levels.

Connector variant and connections follow industry standards: Unbalanced 1/4" jack connector with the signal at the tip and ground at the sleeve. **As with any typical amp and cabinet cabling, it is critical to observe loud-speaker cable of a minimum 1.5mm<sup>2</sup> cross section. Instrument or line cables can lead to amplifier damage!** We recommend to use cables with a maximum length of 3 meters/10 feet for lossless signal transmission.

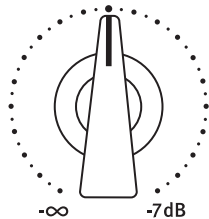
## Control Elements

### Reduction Switch



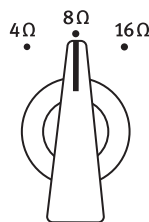
With the REDUCTION SWITCH on the left side of the front panel you select the first reduction values: 0dB (unity gain), -3dB, and -5dB. Selecting the VARIABLE switch position activates the central REDUCTION CONTROL for further, continuous reduction ranging from -7dB to infinite (mute). **IMPORTANT: The scaled values are only valid for 8 ohms operation.** With 16 ohms, deviations of reduction values are small, with 4 ohms, the following values apply: Switch to -3dB = ca. 5dB reduction, switch to -5dB = ca. 10dB reduction. As a rule of thumb, reduction values are roughly doubled in 4 ohms operation. The control range of the Reduction Control at 4 ohms: 0dB to ∞. Therefore, it does not continue seamlessly in fully right position after the -5dB switch and must eventually be set accordingly.

### Reduction Control



The central REDUCTION CONTROL is only active when the REDUCTION SWITCH is set to VARIABLE. Set fully left mutes the signal, turned fully right results in a power reduction of -7dB. A 7dB reduction can be compared approximately to the volume that results from a “half power” setting at guitar amps; usually this is still pretty loud in many situations.

### Impedance Switch



With the IMPEDANCE SWITCH to the right you select the required impedance for your amplifier. Check the impedance of your amplifier at its speaker output.

**IMPORTANT: Just as with any cabinet connection, selecting an impedance lower than needed can destroy the amplifier. Therefore, double check selection of the appropriate impedance before use. Never reduce impedance while playing!**

Selecting a higher impedance than necessary does not harm any device. Whenever you may be in doubt about the required impedance for an amp, select the highest impedance (16 ohms) – you may lose power, but not your amp.

## Specs

**Input**  
Impedance  
Max. input load

Socket: 1/4" TS (Mono Jack)  
4, 8, or 16 Ohms switchable  
@4 Ohms: 90W RMS/120W Peak  
@8 Ohms: 200W RMS/260W Peak  
@16 Ohms: 160W RMS/180W Peak

**Output**  
**Dimensions**

Socket: 1/4" TS (Mono Jack)  
Height 68 mm, 85 mm with feet  
Depth 190 mm, 208 mm with controls and sockets  
Width 179 mm

**Weight**

1,8 kg/3.97 lbs



The construction of the REDUCER, Model 1160, is in compliance with the standards and regulations of the European Community.