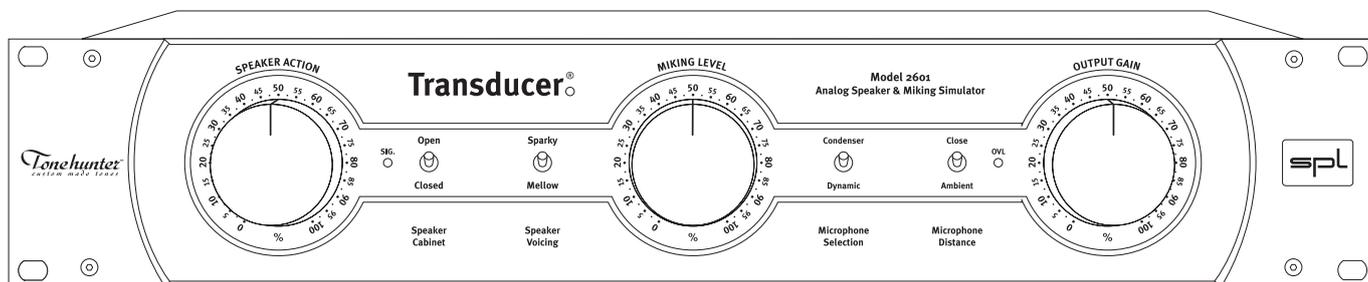


Manual



Transducer

Model 2601

Manual Transducer, Model 2601

Version 1.1 – 5/2007

Designer: Ralf Reichen, Jens Gronwald

This user's guide contains a description of the product. It in no way represents a guarantee of particular characteristics or results of use. The information in this document has been carefully compiled and verified and, unless otherwise stated or agreed upon, correctly describes the product at the time of packaging with this document.

Sound Performance Lab (SPL) continuously strives to improve its products and reserves the right to modify the product described in this manual at any time without prior notice. This document is the property of SPL and may not be copied or reproduced in any manner, in part or fully, without prior authorization by SPL.

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CE Declaration of Conformity

Manufacturer: SPL electronics GmbH

Type of Equipment: Audio Signal Processor

Product: Transducer, Model 2601

Compliance Engineer: Wolfgang Neumann

Test Basis: EN50081-1:1992, EN50082-1:1992, EN60065:1993, EN61000-3-3:1995, EN60065:2002, EN55013:2001, EN55020:2002, EN61000-3-2:2000, 73/23 EWG; 93/68 EWG.

We herewith declare, that the construction of the Transducer, Model 2601, is in compliance with the standards and regulations mentioned above.



Notes on environmental protection

At the end of its operating life, this product must not be disposed of with regular household waste but must be returned to a collection point for the recycling of electrical and electronic equipment. The “wheelie bin” symbol on the product, user’s manual and packaging indicates that. The materials can be re-used in accordance with their markings. Through re-use, recycling of raw materials, or other forms of recycling of old products, you are making an important contribution to the protection of our environment. Your local administrative office can advise you of the responsible waste disposal point.



WEEE Registration: 973 349 88

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Important Safety Information	4
Hook Up	5
Hook Up, Rack Mounting, Warnings, Symbols and Notes, Advices	5
Scope of Delivery	6
Introduction	6
Tonehunter and SPL, Tonehunter, SPL, Transducer	6
Advantages – an Overview, On Stage	7
Sound Setups, Complete – Not Approximated – Simulation	8
Authentic Variety, Analog Construction – Analog Function	8
REAR PANEL	9
Power Connection, On and Off, Signal Connections, XLR, 1/4" Jacks	9
Overview, Wiring Examples	10
Connections	11
Power Input, Warning: Connecting Guitar Amps , Speaker Thru	11
Mic Level Output, Line Output 1, Line Output 2, Pre Simulator Out	12
Switches	13
Power, Voltage, Ground Lift, Phase	13
FRONT PANEL	14
Overview	14
Control Elements	14
Signal LED, Speaker Action, Speaker Cabinet, Speaker Voicing	14
Miking Level, Microphone Selection, Microphone Distance, Output Gain, OVL LED ...	15
Setup Examples	16
Recording: Setup 1, Live: Setup 2	16
Live: Setup 3 and 4	17
Live: Stereo Effect/Dry-Wet-Wet – Setup 5 and 6	18
Live: Stereo-Effect/Dry-Wet-Wet, Stage and P. A. – Setup 7	19
Leveling the Transducer	20
Presets	20
Clean	21
Crunch	22
Lead	23
Specifications	24
Power Supply	25
Guarantee & Product Registration	25
Block Diagram	26
Copy Master Transducer Settings	27

Important Safety Information



Please note and retain this information. Carefully read and follow all of the safety and operating instructions before you use the machine. Be doubly careful to note and follow the warnings and special safety notices.

Connections: Only use the connections as described. Other connections can lead to health risks and equipment damage.

Water and Humidity: Do NOT use this machine anywhere near water (for example near a wash basin or bath, in a damp cellar, near swimming pools, or the like). In such cases there is an extremely high risk of fatal electrical shocks!

Insertion of Foreign Objects or Fluids: NEVER allow a foreign object through any of the machine's chassis openings. You can easily come into contact with dangerous voltage or cause a damaging short circuit. NEVER allow any fluids to be spilled or sprayed on the machine. Such actions can lead to dangerous electrical shocks or fire!

Opening the Machine: Do NOT open the machine housing, as there is great risk you will damage the machine, or – even after being disconnected – you may receive a dangerous electrical shock!

Electrical Power: Run this machine ONLY from sources which can provide proper power at the prescribed rating. When in doubt about a source, contact your dealer or a professional electrician. To be sure you have isolated the machine, do so by disconnecting the power cord from your wall connection. Be sure that the power cord plug is always accessible. When not using the machine for a longer period, make sure to unplug it from your wall power socket.

Power Cord Protection: Make sure that your power cord is arranged to avoid being stepped on or any kind of crimping and damage related to such event. Do not allow any equipment or furniture to crimp this power cord.

Power Connection Overloads: Avoid any kind of overload in connections to wall sockets, extension or splitter power cords. Always keep manufacturer warnings and instructions in mind. Overloads create fire hazards and risk of dangerous shocks!

Lightning: Before thunderstorms or other severe weather, disconnect the machine from wall power (but to avoid life threatening lightning strikes, not during a storm). Similarly, before any severe weather, disconnect ALL the power connections of other machines and antenna and phone/internet cables which may be interconnected so that no lightning damage or overload results from such secondary connections.

Air Circulation: Chassis openings offer ventilation and serve to protect the machine from overheating. NEVER cover or otherwise close off these openings. NEVER place the machine on a soft surface (carpet, sofa, etc.). Make sure to provide for a mounting space of 4-5 cm/2 inches when mounting the machine in racks or cabinets.

Repairs: Unplug the machine and immediately contact a qualified technician when you think repairs are needed – or when moisture or foreign objects may accidentally have gotten in to the housing, or in cases when the machine may have fallen and shows any sign of having been damaged. This also applies to any situation in which the machine has not been subjected to any of these unusual circumstances but still is not functioning normally or its performance is substantially altered.

In cases of damage to the power cord or its plug, first consider turning off the main circuit breaker before unplugging the power cord.

Operate the controls and switches only as described in the manual. Incorrect adjustments outside safe parameters can lead to damage and unnecessary repair costs. Never use the switches or level controls to effect excessive or extreme changes.

Replacement/Substitute Parts: Be sure that any service technician uses original replacement parts or those with identical specifications as the originals. Incorrectly substituted parts can lead to fire, electrical shock, or other dangers, including further equipment damage.

Safety inspection: Be sure always to ask a service technician to conduct a thorough safety check and ensure that the state of the repaired machine is in all respects up to factory standards.

Cleaning: In cleaning, do NOT use any solvents, as these can damage the chassis finish. Use a clean, dry cloth (if necessary, with an acid-free cleaning oil). Disconnect the machine from your power source before cleaning.

Hook up

Be very careful to check that the rear chassis power selection switch is set to the correct local line voltage position before using the unit (230V position: 220-240V, 115V position: 110-120V)! When in doubt about a source, contact your dealer or a professional electrician.

Before connecting any equipment make sure that any machine to be connected is turned off (rear panel power switch). Follow all safety instructions on page 4.

Place the unit on a level and stable surface. The unit's enclosure is EMC-safe and effectively shielded against HF interference. Nonetheless, you should carefully consider where you place the unit to avoid electrical disturbances. It should be positioned so that you can easily reach it, but there are other considerations. Try not to place it near heat sources or in direct sunlight, and avoid exposure to vibrations, dust, heat, cold or moisture. It should also be kept away from transformers, motors, power amplifiers and digital processors. Always ensure sufficient air circulation by keeping a distance of 4-5 cm/2 inches to other units and to the sides of the unit.

Rack Mounting

Be sure that both above and below the machine you maintain a distance of 1U (44mm/ 1.5-2 inches) in order to eliminate electromagnetic or high frequency interference from other equipment. Moreover, this will ensure adequate air circulation to prevent overheating. Do NOT locate other machines that produce excessive heat below the Transducer. The rear side of the machine should be properly supported – especially when transport is involved.

WARNINGS

DO NOT PLACE THE MACHINE IN SUCH A WAY THAT IT MIGHT COME INTO CONTACT WITH OR SIT ON ANY FLUIDS. AVOIDING SUCH CONTACT WILL AVOID HAZARDS FROM FIRE, DANGEROUS ELECTRICAL SHOCK OR MACHINE DAMAGE. DO NOT OPEN THE MACHINE. THE LIGHTNING SYMBOL WITHIN A TRIANGLE WARNS YOU ABOUT UNINSULATED HIGH VOLTAGE INSIDE THE TRANSDUCER AND THE POTENTIAL FOR DANGEROUS ELECTRICAL SHOCKS – WHICH CAN ALSO OCCUR EVEN AFTER THE MACHINE HAS BEEN DISCONNECTED FROM A POWER SOURCE.

SYMBOLS AND NOTES

ALSO IN THIS MANUAL A LIGHTNING SYMBOL WITHIN A TRIANGLE WARNS YOU ABOUT THE POTENTIAL FOR DANGEROUS ELECTRICAL SHOCKS – WHICH CAN ALSO OCCUR EVEN AFTER THE MACHINE HAS BEEN DISCONNECTED FROM A POWER SOURCE.

AN EXCLAMATION MARK (!) WITHIN A TRIANGLE IS INTENDED TO MAKE YOU AWARE OF IMPORTANT OPERATIONAL ADVICE AND/OR WARNINGS THAT MUST BE FOLLOWED. BE ESPECIALLY ATTENTIVE TO THESE AND ALWAYS FOLLOW THE ADVICE THEY GIVE.

The symbol of a lamp directs your attention to explanations of important functions or applications.

ATTENTION

Do not attempt any alterations to this machine without the approval or supervision of SPL electronics GmbH. Doing so could nullify completely any and all of your warranty/guarantee rights and claims to user support.



Scope of Delivery

The scope of delivery comprises the Transducer, the power cable and the manual. Please keep the original packaging. In case of a service procedure the original packaging ensures a safe transport. It also serves as a safe packaging for your own transports if you do not use special transportation cases.

Introduction

Tonehunter and SPL

The Transducer is a cooperative developmental effort between the guitar amp firm of Tonehunter and SPL. It brings together many years of experience from the professional music scene, combining specialized knowledge of electric guitarists and SPL's established international reputation in the research and development of analog studio electronics. This mutual effort of these two firms has been the basis for new ideas such as the unique Transducer concept, which has the potential to revolutionize the working life of both the electric guitarist and the recording studio engineer.

Tonehunter

The firm Tonehunter has over 15 years of experience pursuing the goal of fulfilling the sonic wishes of professional electric guitarists. This includes tube amplifiers, effects units, support for live and studio sessions as well as custom set designs from instruments, cables and effects machines to pickups, amps and speaker cabinets. The Tonehunter team is comprised exclusively of musicians with extensive audio engineering backgrounds who, in contact with their customers, are always at the forefront of new, no-compromise developments that fulfill the highest user expectations.

SPL – Sound Performance Lab

SPL boasts over 20 years of experience in the development and production of analog and digital audio processing equipment in the professional music, film, multimedia and broadcasting industries. Our products enjoy a first rank, worldwide reputation for innovation, user friendliness and consistently superior performance.

To SPL's technological milestones belong the first level-independent analog dynamic envelope shaping tool (the "Transient Designer"), the pioneering introduction in 1998 of the first discrete 5.1 surround recording system ("Atmos 5.1") and the development of the SPL SUPRA OpAmps with an unprecedented operating voltage of 120 Volts. These SUPRA OpAmps form the basis for SPL's Mastering Series for stereo and multi-channel applications and with their performance set new benchmarks in audio signal processing that are clearly a step beyond all existing analog or digital audio formats.

Transducer

The SPL Transducer is an analog cabinet and miking simulator for guitar amplifiers. In studio and on stage the Transducer replaces the guitar speaker cabinet and microphone(s) so that the time and resource-intensive microphone processing of this loud sonic source is no longer necessary. In addition the Transducer offers much more sonic flexibility and variety than a single mike and cabinet setup because it allows for varied speaker and mike simulations while allowing to retain accustomed features of individual setups (such as the ability to vary level-dependent loudspeaker characteristics and microphone distances).

Do you want to record a fully torqued tube amp in a hotel at night? You'll stay: with headphones virtually inaudible to anyone else, soundwise with stunning authenticity, and with the direct response of latency-free analog gear. The Transducer's purely analog design and strictly selected components are the key to its extremely fast and complex sonic processing – latency problems simply do not exist! It thereby gives the guitarist a direct response with an authentic punch. The analog simulation is so lavishly designed and constructed that even the most subtle guitar amp nuances are reproduced. With just a few adjustments the engineer has at his or her disposal a first class guitar signal for either studio recording sessions or in a live P. A. mix.



Advantages – an Overview

The Transducer supplants at least four loudspeaker cabinets, two high quality microphones, their preamp, a good room ambiance, and at any time, the amplification may be cranked up. Moreover, the entire Transducer usage is highly intuitive and requires no prior miking expertise.

- The Transducer offers a unique ability for the guitarist during production performance to hear a true playback and then adjust his playback to the moment in the control room.
- Fully analog construction for the highest authenticity in sonic quality and outstanding playability through direct, latency-free response.
- Critical parts are carefully selected for exceptional sonic characteristics. In these days of mass production, we still select our OP amps only after listening to them and rejecting those lacking in our required exceptional sonic characteristics. This also applies to our top flight foil condensers and individually built High-Z transformers from Lehle.
- The Transducer replaces all major cabinet and microphone types, thereby enormous savings in cost and space in transport, on stage, or in the studio.
- Processing is independent from absolute volume levels, which means that no recording room is necessary and ear-saving work is possible everywhere and at any time.
- Sonically much more flexible than a fixed cabinet/mike set in that all important loudspeaker and cabinet types, as well as dynamic and condenser microphones can be simulated.
- Multiple guitar tracks can be “stacked” – the doubled layers become “phatter”. In the process, there will not be any thinning effect from phase shifts as with digital simulation.
- 200-Watt Power Soak: The power amp’s distortion may, as with cabinets, be integrated into an authentically distorted sonic design. **Please pay close attention to the warnings for connecting guitar amps to the Transducer on page 11.**
- Resulting recorded sounds are independent from room characteristics – what you hear is what you get.
- Signals for live mixes are at recording quality level and free from crosstalk from other sound sources.
- As on-stage recording loudspeakers are not needed any in-ear monitoring is done at safe-hearing levels as the cabinet must not be drowned out.
- Significantly less time spent and much more efficiency and convenience in equipment setup, preparation, and working with sound variations.
- Working procedures and connections follow customary standards of amp and cabinet sets.
- Live application advantage: It is extremely easy to achieve a dry-wet-wet setup. The amp signal passes via “Speaker Thru”, for a dry direct signal and the Transducer line out is connected to the effects machine; FX left and right out provides a wet signal on stage.
- Live application advantage: two line outs with separate balancing drivers – the Transducer provides for both FOH and stage routings.

On Stage

The Transducer’s “Speaker Thru” option allows a cabinet to be connected without any loss in signal quality. The stage sound comes as usual from the stack, while at the same time the sound technician receives a top quality recording quality signal without miking – and without crosstalk from any other sound source. If on the other hand very low sound levels are required on stage, the Transducer can supplant the cabinet. The line or microphone signal of the Transducer can then be routed via FOH mixer to either a stage monitor or in-ear system for the guitarist.

Sound Setups

After cabling is complete, the sound setup functions primarily as one might expect: First, guitar amp sound adjustments are prepared as though the cabinet were already connected. However, instead of choosing a cabinet and experimenting with microphones and their positioning, adjustments need only be made with the Transducer controls. In such cases the Transducer interfaces with the guitar amp just as an actual guitar cabinet and microphone: When switching the Transducer to a smaller cabinet with a “crispy” speaker, one probably also changes the amplifier settings.

During studio production the guitarist can try out different adjustments, and during playback, immediately hear these settings and their effects on the mix. The operation is based on standard procedures, is completely intuitive and independent from room acoustics – what you hear is what you get.

A Complete – Not Approximated – Simulation

An important aspect of signal processing with guitar sound distortion is the reproduction of chords: The string sound should exhibit a fine resolution and homogeneous, musically unified sound quality. From this emanates the deep, complex and unified sonic structure typical of the best speaker and box assemblies. This aspect is also a prime consideration in the Transducer’s uniquely precise output: Through its new concept in signal processing you experience a completely authentic sonic feel.

The Transducer circuitry also conveys the different time characteristics of guitar speaker low and high frequencies. With reduced guitar signal levels, the Transducer nonetheless reproduces the full dynamic range of a guitar amp. Even attack-dependent loudspeaker compression characteristics are realistically reproduced. For guitarists there is his playing no change in comparison to normal box setups.

Authentic Variety

The Transducer’s flexible switching enables adjustments which allow the creation of complex sound and attack characteristics of “classic” electric guitar cabinets and their speakers in all frequency ranges. From the small, half open 1x12 inch cabinet with alnico speaker to British 4x12 inch Rock n’ Roll cabinets, the Transducer has every sound covered. Even speaker distortion effects and recording levels may be simulated, including the desired loudness effect.

Analog Construction – Analog Function

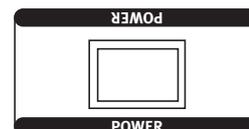
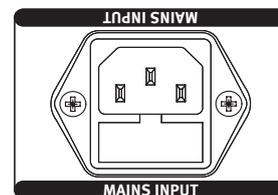
In working with the Transducer, a guitar amp will be loaded as if with an actual cabinet so that the interaction of both components will produce the same results. As the microphone type and positioning are adjustable, the Transducer can supplant both cabinet and mike.

One Transducer output can also be used the same as if it were a microphone standing in front of a guitarist’s cabinet: It can be used with a microphone preamp. Just as it is worth the effort to try out different mike preamps with mikes and cabinets, one may do the same with the Transducer. Alternatively the Transducer also provides for a line signal output so that additional microphone amplification is no longer needed. An internal microphone preamplifier in traditional SPL quality is used here for pristine sound results.

Power Connection

Before you connect the Transducer to any local power source, be SURE to check that the rear panel voltage switch is correctly set for your local area (115V position: 110-120V, 230 V position: 220-240V).

Connect the included power chord to the rear Mains Input. Transformer, power chord and case connection conform to VDE, UL and CSA requirements. Power fuse ratings are 200 mA slow blow (230 volts) or 400 mA slow blow (115 volts).



On and Off

In switching on and off, you need not follow any particular sequence. Even when the amp is running and the Transducer is shut off, the latter works as a passive resistance circuit. Therefore the amp is not loaded more heavily by a switched off Transducer as it is in the case of a connected cabinet.

Signal Connections

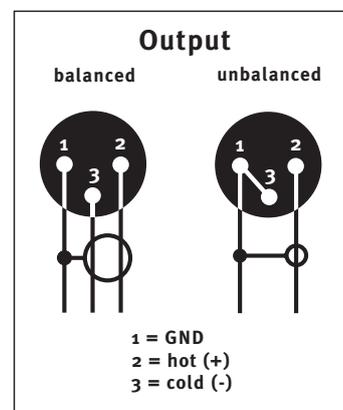
Before first connecting any other equipment – and in all other cases where you are connecting cables with or from other sources – you should be sure to shut the Transducer and all machines to be connected off (rear panel power switch). Otherwise you risk to damage the unit, connected gear or your ears.



XLR Connections

The diagram shows how to wire the balanced XLR output connections if unbalanced connections are required.

For further information on the XLR connections (pin wiring) please refer to the descriptions of the respective outputs on the following pages.

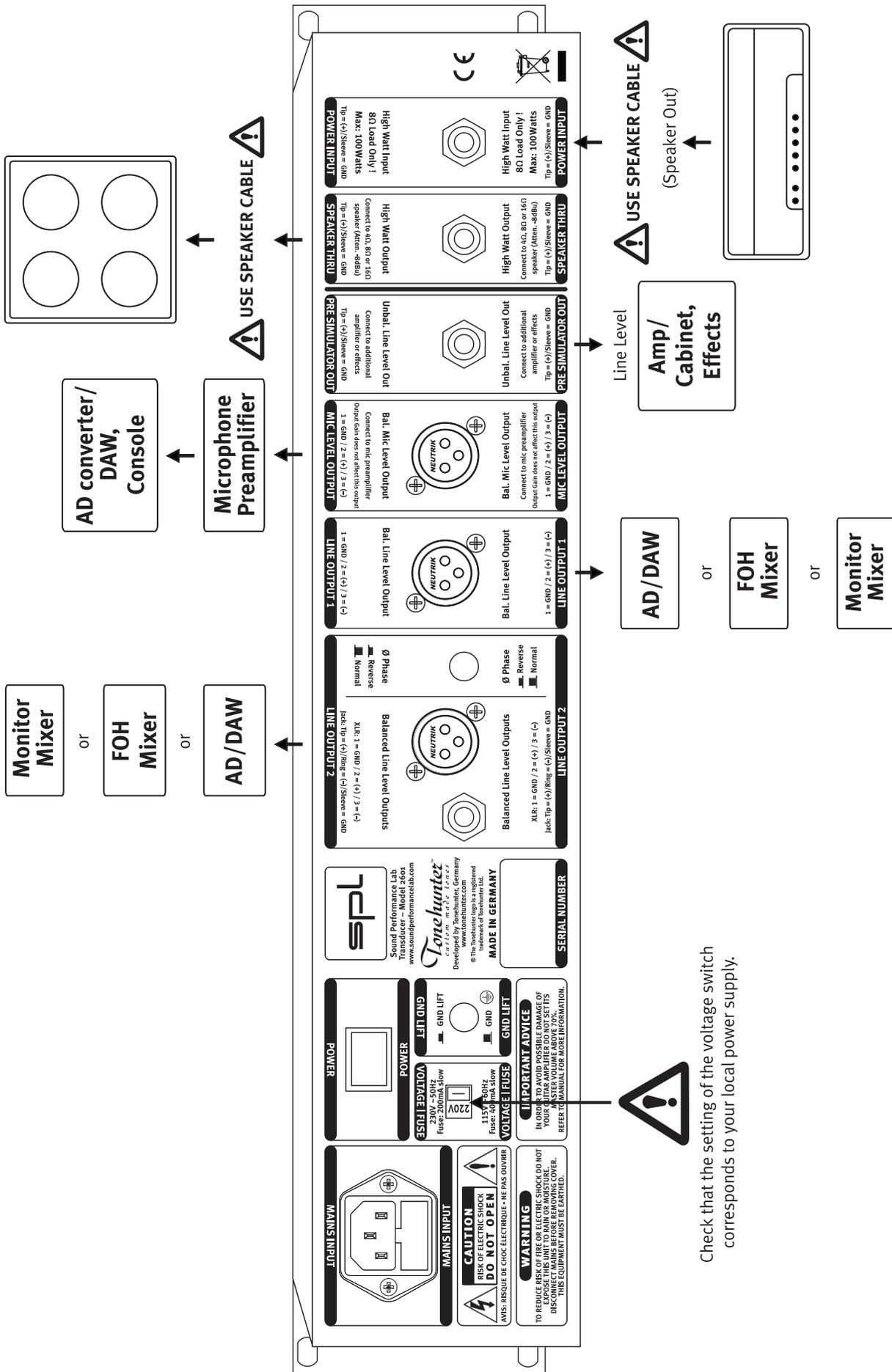


1/4" Jack Connections

The 1/4" Jack connections of Pre Simulator and Speaker Thru output as well as Power Input are unbalanced.

The balanced TRS connector of Line Output 2 can be used both with balanced and unbalanced (=mono Jack connection) wiring.

For further information on the Jack connections (pin wiring) please refer to the descriptions of the respective inputs and outputs on the following pages.



Check that the setting of the voltage switch corresponds to your local power supply.

Mic Level Output, Line Output 1, Line Output 2 (XLR or TRS) and Pre Simulator output can be used simultaneously. Use either the XLR or TRS connection of Line Output 2.

Carefully read and follow the advices and descriptions of all connections and switches on the following pages as well as all safety instructions on pages 4 and 5.

Power Input

Here you connect the guitar amp’s loudspeaker output. Connector variant and pin configurations follow industry standards: Unbalanced 1/4” Jack connector with the signal at the tip and ground at the sleeve.

IMPORTANT INFORMATION:

As with any typical amp and cabinet cabling, it is critical to observe loudspeaker cable of a minimum 1.5mm² cross section. Guitar 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.

WARNING: Connecting Guitar Amps and the Transducer

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 Transducer use, but reside within the guitar amp.

Even in situations where you might wish to push the guitar amp to its limit in conjunction with the Transducer, you should always be sure to allow for ample power reserves to avoid endangering the amp itself!

In the same way a guitar amp and box should never be run knobs full to the right, so should you avoid running the Transducer this way. Therefore we strongly recommend that the guitar amp should never be run at over 70% of its maximal signal level!

Look for the amp’s “Sweet Spot” as you make adjustments to it. This is almost never in the upper level output range. Where the amp’s bass starts to sound “spongy” and somewhat undifferentiated is the place where your master level control should be turned back.

The guitar amp output must be rated at 8 ohms! Only connect amplifiers rated at a 100 W maximum to maintain a further 100 W reserve for signal peaks. A guitar amp may be used ONLY within its normal operating parameters. The Transducer may be loaded up to 200W. But please note that a 100 W amp at higher volumes, eventually combined with further effects, produces peaks far above 100 W. Therefore we strongly recommend connecting amps rated at a maximum of 100 W.

Speaker Thru

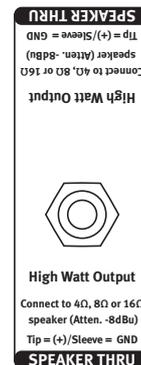
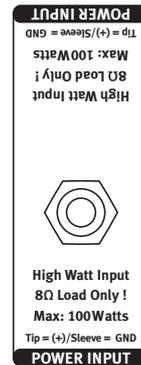
This output provides for a passthrough from guitar amp to speaker in order to allow for the connection of an additional 4, 8 or 16-ohm cabinet. This setup makes it possible to have a traditional amp and cabinet combination sound sent to the stage and at the same time, route the Mic Level or Line Output for PA or recording.

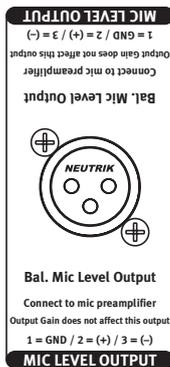
At Speaker Thru the amp signal appears with a -8dB lowering of the original signal level. The guitar amp therefore can be driven into saturation also at moderate levels.

Connector variant and connections follow industry standards: Unbalanced 1/4” Jack connector with the signal at the tip and ground at the sleeve.

IMPORTANT INFORMATION:

As with any typical amp and cabinet cabling, it is critical to observe loudspeaker cable of a minimum 1.5mm² cross section. Guitar 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.

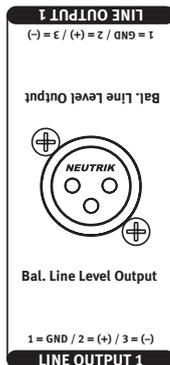




Mic Level Output

The microphone level output is usable just like any mike out. The Miking Level control on the Transducer front panel regulates the signal. The Output Gain control has no influence on the Miking Level output. Just as with conventional cabinet miking, variations in microphone preamp choices may of course be made to influence further the sonic result.

Balanced XLR output, wiring: pin 1 = ground, pin 2 = hot (+), pin 3 = cold (-).

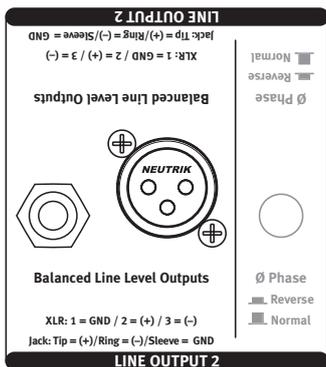


Line Output 1

The front panel Output Gain control regulates the output signal, which appears at the Line Output 1 connector.

Balanced XLR output, line signal with +4dB.

Wiring: pin 1=ground, pin 2=hot (+), pin 3=cold (-).



Line Output 2

The front panel Output Gain control regulates the output signal, which appears at the Line Output 2 connectors.

Balanced XLR and 1/4" TRS connector, line signal with +4dB.

Wiring XLR: pin 1 = ground, pin 2 = hot (+), pin 3 = cold (-).

Wiring TRS: tip =hot (+), ring = cold (-), sleeve = ground.

The Line Output 2 phase switch provides for a reversal of this output's signal phase.



IMPORTANT ADVICE

Use only one (either an XLR or 1/4" TRS) Line Output 2 connection at a time. Using both output connections simultaneously can impair the signal through impedance mismatches from the doubled load that can lead to such problems as high frequency damping.

However, Line Output 1 and 2 can be used simultaneously.



Pre Simulator Out

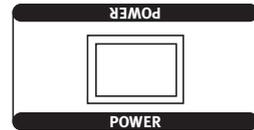
This output is independent from Speaker Simulation and thus independent from Transducer adjustments. The signal at this Pre Simulator Out is that of the power-reduced amp signal (line level). With this arrangement you can feed a separate amp and guitar box setup or effects machines.

Connector variant and connections correspond to industry standards: Unbalanced 1/4" Jack connector with the signal at tip and ground at sleeve.

Mic Level Output, Line Output 1, Line Output 2 (XLR or TRS connection) und Pre Simulator Out may all be used simultaneously.

Power

The rear panel Power switch activates the Transducer, confirmed by the lighted blue front panel LED.



Voltage

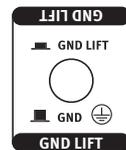
The rear panel voltage selector switch serves to let the user switch to the local line voltage standard.

IMPORTANT ADVICE: Before you use the Transducer, make sure that this switch setting reflects the correct local power line voltage (115V position: 110-120V, 230 V position: 220-240V).



Ground Lift

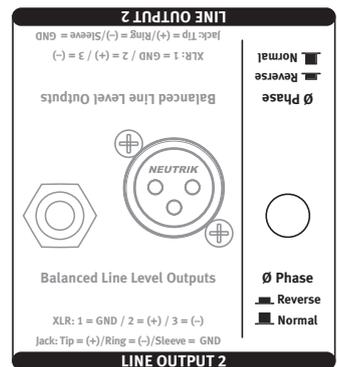
The rear panel GND lift switch eliminates hum by separating the internal ground from the unit's housing ground. Hum can, for example, result when this unit's housing has a common ground connection with other machines that might have a different ground potential.

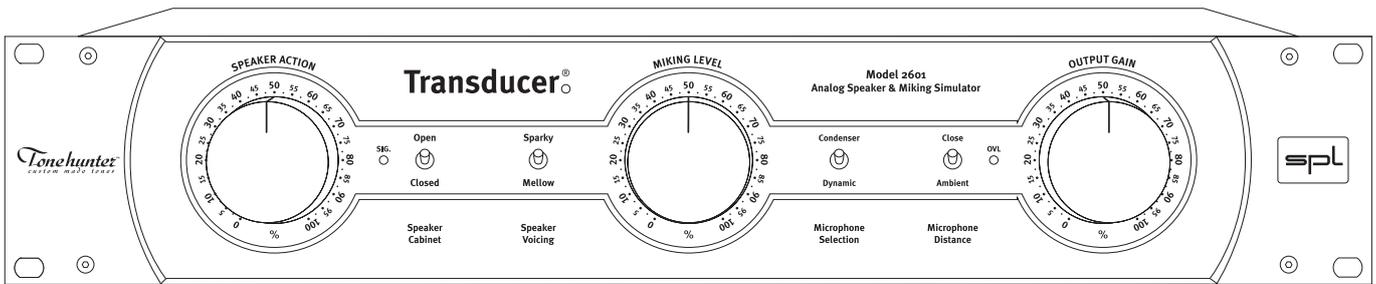


Phase

Applies to Line Output 2 only. This switch reverses the signal phase by 180° to prevent frequency cancellations when another machine is connected.

Phase reverse is applied for example to compensate for different phases from a cabinet (connected via Speaker Thru) and a monitor in a live setup or to compensate for phase differences from two guitar amps in a studio setup.





Control Elements

Controls, LEDs and Switches from left to right

SIG.
○

Signal LED

The signal LED indicates the presence of a signal at the Transducer’s input. It is activated at a -20 dBu level.

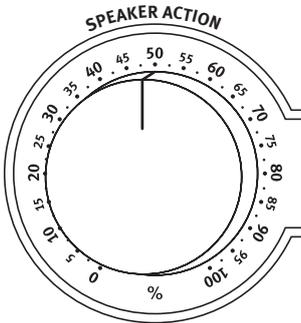


WARNING

If an amplifier is connected and the Signal LED illuminates though a signal is not present or too much noise from the amp is not the reason, the lighted LED can indicate a high frequency resonance of the amp.

In this case turn down the master volume of the amp until the LED goes out. High frequency resonances can overload and damage the guitar amp!

Such problems are not a result of Transducer use, but reside within the guitar amp.



Speaker Action

This simulates speaker cone characteristics at different levels. With a moderately driven guitar box (Speaker Action from 0%-35%), speakers ideally reproduce the signal clearly without too many side effects. As levels increase, overtones are added by the overdriven speaker, producing its characteristic “rasping” distortion effect. Speaker Action allows for the simulation of this effect.

Speaker Actions is, as with Miking Level and Output Gain, a level control. Turning it to the left allows only low levels to pass, just as with a cabinet driven at low levels. If a small Speaker Action is wanted, it must be compensated for with a comparable increase in Miking Level – in principle the same as you would need to do in working with a cabinet.

Please pay attention to the information under “Leveling the Transducer” on page 20.

Open



Closed

Speaker Cabinet

This switch toggles between an open and closed guitar cabinet characteristic.

“Open” sounds definitely more open, brilliant and direct, as the signal contains more transients and produces less punch as with the “Closed” setting, wherein the sound has more punch and with its added compression more closely creates the impression of the compressed air in a closed box, though with less brilliance and detail.

Sparky



Mellow

Speaker Voicing

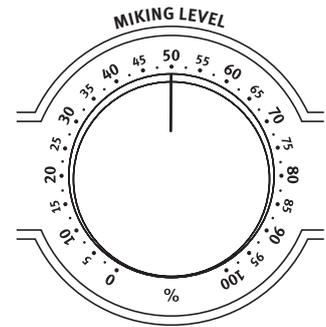
This offers the choice of sound and attack characteristics from either alnico speakers (Sparky) or the British ceramic construction (Mellow). The “Sparky” setting produces a lively, more responsive sound with additional overtones, while the “Mellow” setting sounds warmer and softer.

Miking Level

A microphone produces a different sound at lower sound levels than at higher ones. With the Transducer's Miking Level one can simulate these differences. Increasing the Miking Level effect produces a stronger compression level and a denser sound canvas. This builds an effect of increasing loudness.

A lower miking level produces a more refined and at the same time, marked high frequency production with reduced mids.

Please pay attention to the information under "Leveling the Transducer" on page 20.



Microphone Selection

This provides for selecting either condenser or dynamic microphone characteristics. Depending upon the cabinet these microphone choices will affect the sound right from the start, and clearly this will continue to contribute to the overall available guitar sound.

A condenser microphone normally sounds more open and transparent, though less punchy than a dynamic. It is also unforgiving, and, for example, can quickly single out weaknesses in loudspeaker microphoning. A dynamic microphone has more punch, though it sounds less clear than a condenser. It can be more forgiving and withstands higher sound pressure levels.

Condenser



Dynamic

Microphone Distance

The sound dispersion characteristics of guitar speakers varies with microphone distance, with slightly distanced microphoning adding more ambience. With Microphone Distance settings it is possible to simulate these different sonic characteristics.

The Close setting provides a more direct sound and tends to sit in the front of the mix. With sharply defined corners and angles, full detailing and overtone rich, this sound is suited for soloists. In contrast, the Ambient setting is ideal for a "wall of sound" – and is sonically less direct, softer, but with more push and punch.

Close



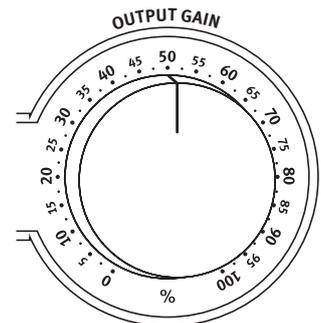
Ambient

Output Gain

This controls the Line Output 1 and 2 output levels; the Mic Level Output is not influenced by this control. Please pay attention to the Information under "Leveling the Transducer" on page 20.

This LED illuminates 3 dB before the internal microphone preamplifier stage is overloaded. In this case, be sure to lower the Output Gain until the OVL LED goes out.

NOTE: The Mic Level Output is independent from the Output Gain control.

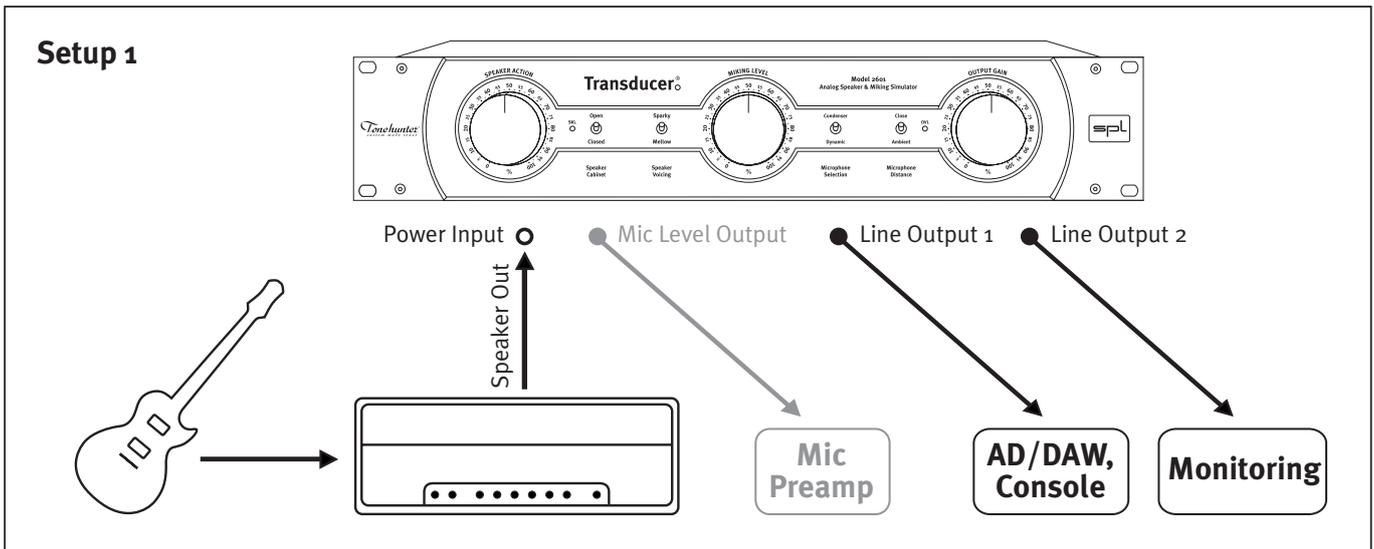


OVL



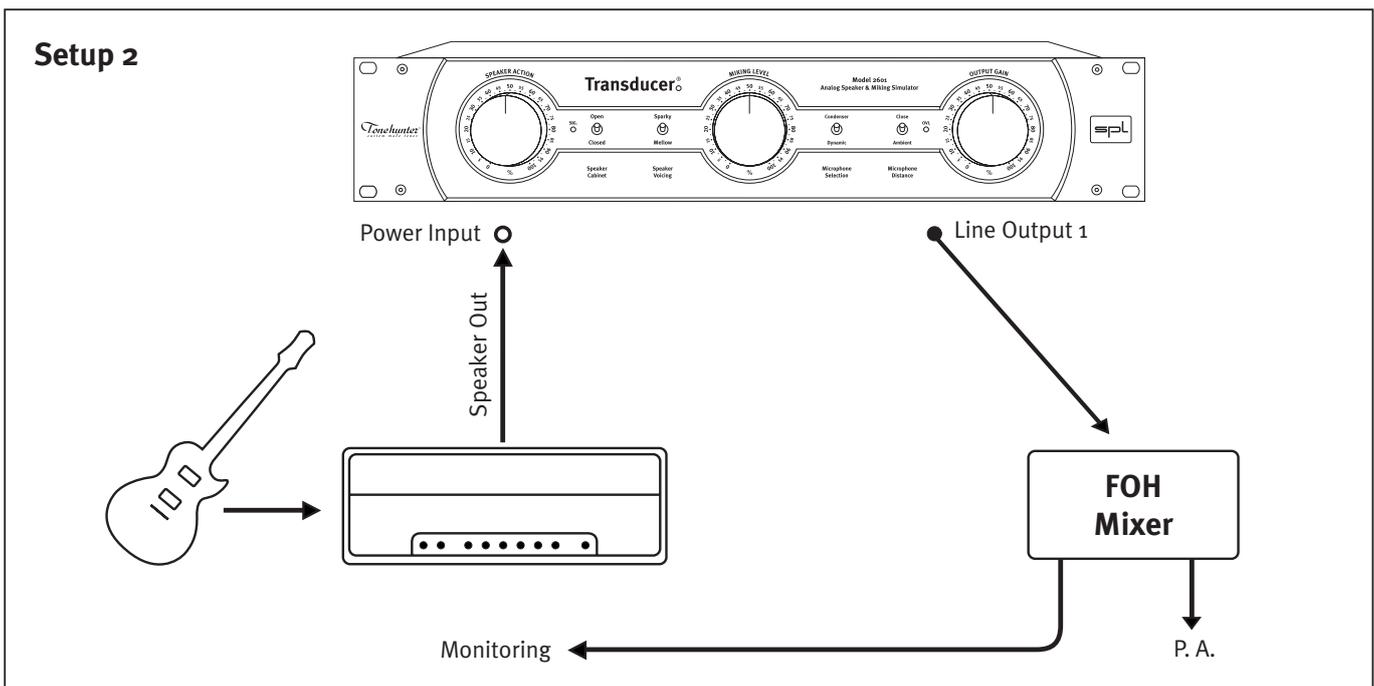
Overload LED

Line Output 1 and Line Output 2 only. This LED illuminates 3 dB before the internal microphone preamplifier stage is overloaded. In this case, be sure to lower the Output Gain until the OVL LED goes out.



Setup 1

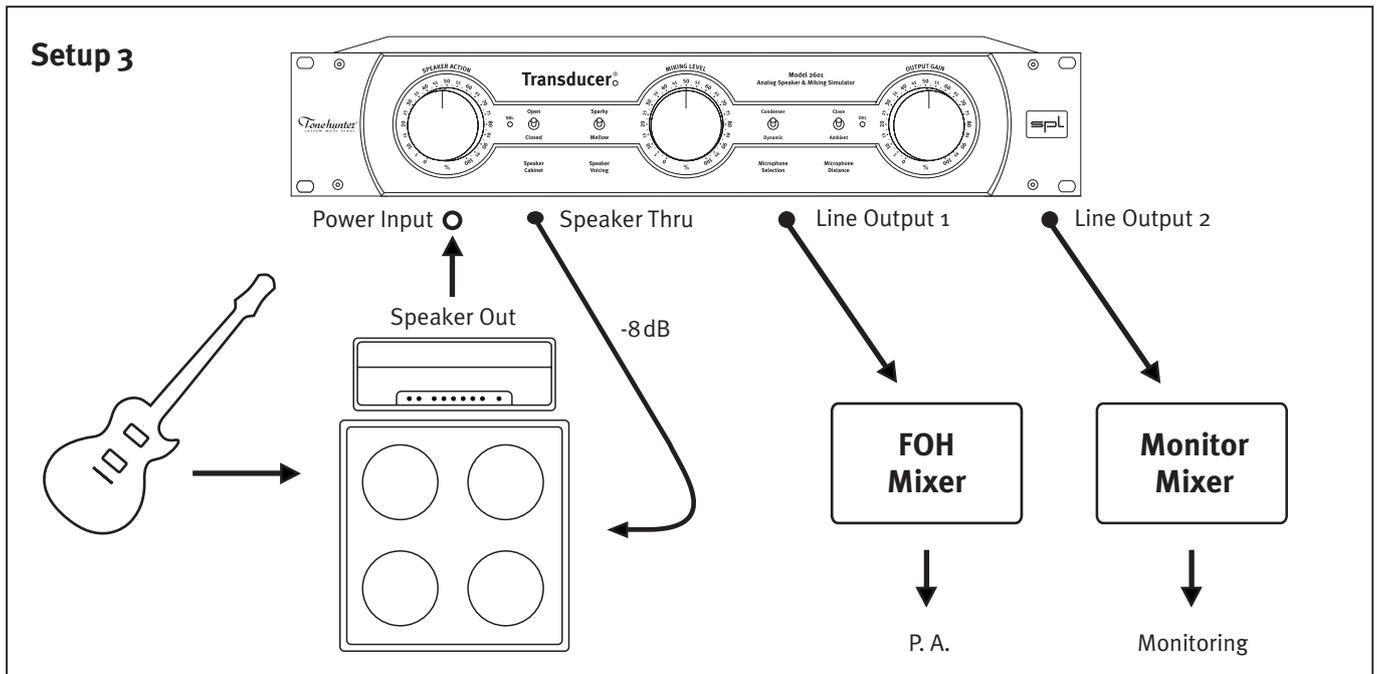
This is the simplest setup for recording situations. The guitar amp is connected normally to the Transducer. In this case either the Transducer Mic Level Output can be routed to a microphone preamp or its Line Output can connect to an external line in. Both of these outputs may be used simultaneously.



Setup 2

This is the simplest setup for live applications and when it should be quiet on stage. Connect the amp to the Transducer. The guitarist receives a monitoring signal (in-ear or through a monitor box) from the Transducer Line Output through the live mixer.

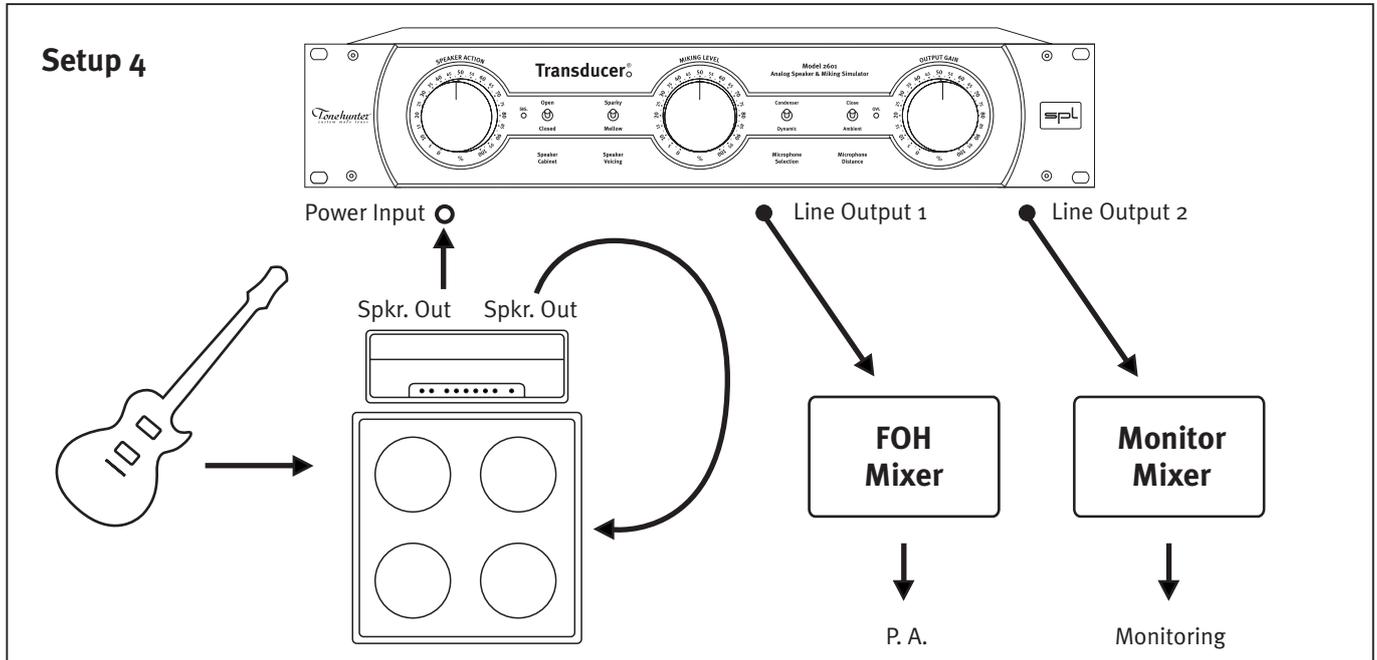
The PA may also be fed from the mixer or a Transducer output (Line Output, or Mic Level Output).



Setup 3

If an on-stage guitarist wishes to have his cabinet sound, the signal should be routed to his box via the Transducer Speaker Thru. In this case the amp signal power is reduced by 8dB enroute to the box; here saturation (that is, power amp distortion) begins to occur at moderate listening levels.

The two separate Transducer Line Outputs may be used simultaneously to feed both an FOH mixer and monitor mixer.

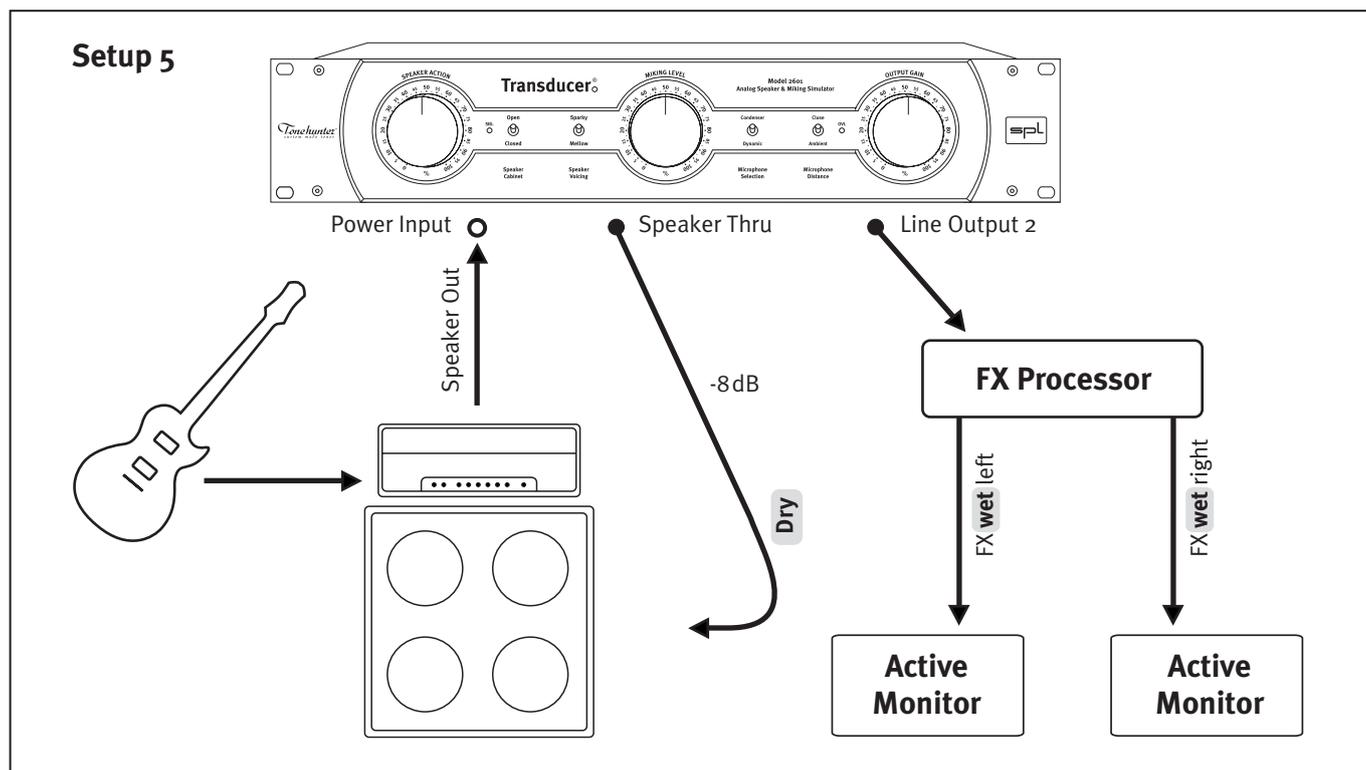


Setup 4

If the guitarist does not need the 8dB Speaker Thru signal reduction, he may connect both the guitar box and Transducer simultaneously with the guitar amp loudspeaker outputs (assuming this is an amp option).

IMPORTANT ADVICE: In such cases the guitar amp impedance must be reduced by half. For example: In connecting to the Transducer (8 ohms) and guitar box rated at 8 ohms, the guitar amp must be set up at 4 ohms. The two separate Transducer Line Outputs may be used to feed both an FOH mixer and monitor mixer simultaneously.

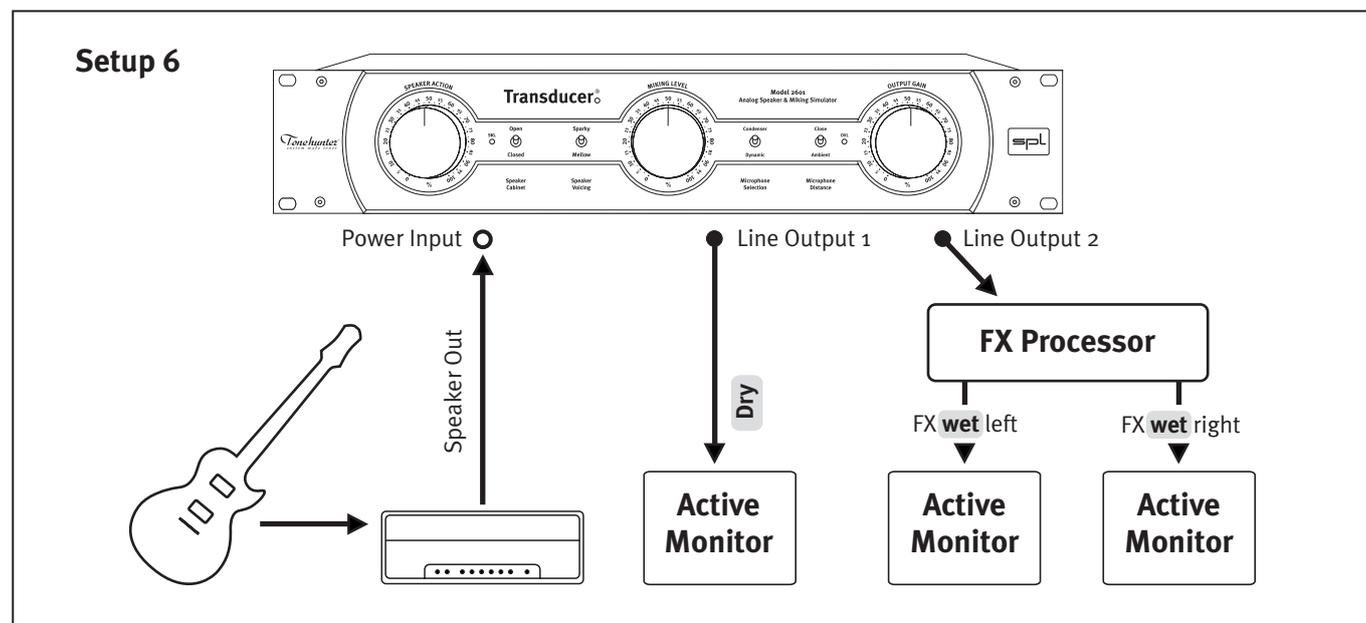




Setup 5

Stereo Effects Setup: Dry-Wet-Wet Setup with guitar box (Dry) and two stage monitors (Wet).

The dry guitar signal is routed from the Transducer Speaker Thru. Connect the Transducer Line Output to an effects machine. The effects machine's wet outputs (Right/Left) are then connected as needed to powered monitors. The guitarist gets a simple stereo effects (Dry-Wet-Wet setup) signal on stage. The second Transducer Line Output may, for example, be routed for P. A. use.

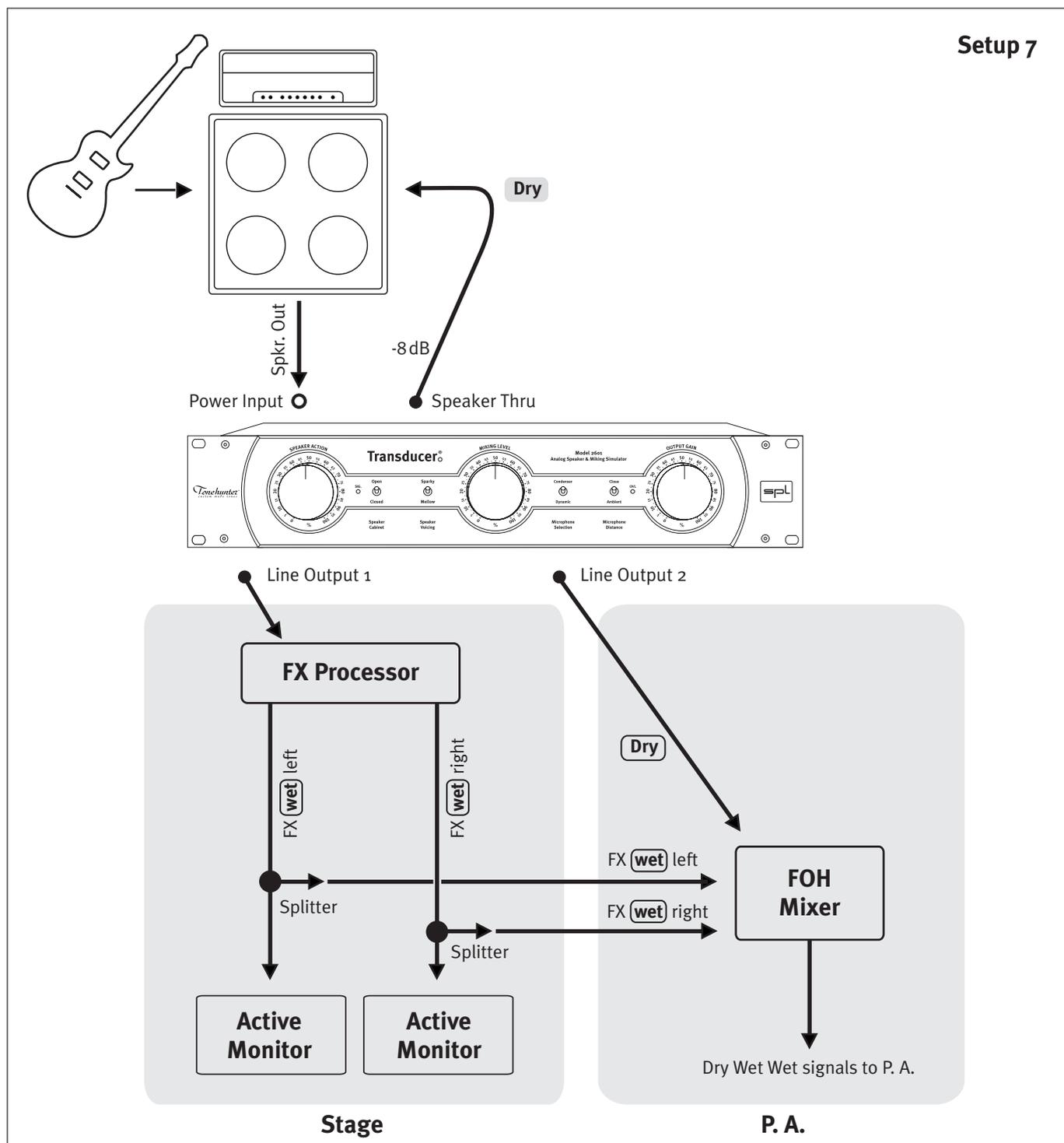


Setup 6

Stereo Effects Setup: Dry-Wet-Wet setup for three powered monitors without cabinet.

The dry guitar signal derives from Line Output 1, which is routed to an active monitor. Connect the Transducer Line Output 2 with an effects machine and route each of its wet outputs (L/R) to an active monitor. The guitarist gets a simple stereo effect Dry-Wet-Wet setup on stage.

Setup 7



Setup 7

Stereo Effects Setup on stage and for P. A.: Dry-Wet-Wet setup with (Dry) cabinet and two (Wet) stage monitors.

The dry guitar signal is routed via the Transducer’s Speaker Thru. Connect the Transducer Line Output 1 with an effects machine and each of its wet outputs (L/R) to an active monitor.

The on-stage guitarist gets a simple stereo effects Dry-Wet-Wet setup. For the FOH mixer, the two wet signals need only to be split for further routing. The FOH mixer receives a dry signal from the Transducer Line Output 2.

Leveling the Transducer



All three Transducer level controls influence output levels. Therefore it is important to understand their existing mutual effects and the overall results. These controls have been designed purposefully with a percentage scaling, as one structured in dB is in fact not possible. The input signal itself – coming from the guitar amp – is a power signal that is no longer measurable or depictable in dB. Thus a “odB” input level is not definable, and thus other levels may not be derived from it. Because this reference point is lacking, it is also impossible to construct subsequent controls in dB scaling.

1. As an initial setting, move the Speaker Action, Miking Level and Output Gain controls to 50%.
2. In order to provide the following peripherals with proper levels, adjust the Output Gain* control appropriately.
3. For desired adjustments to the Transducer sound you have available the four toggle switch options provided by Speaker Action and Miking Level controls.
With a more limited Speaker Action a signal will sound cleaner and have more definition. A higher Speaker Action offers stronger compression and more overtones which begin to introduce light speaker cone distortion.
A limited Miking Level provides both more highs and refinement in overtones with somewhat reduced mids. As Miking Level is increased, the signal thickens. Mids and bass are compressed and moved to the foreground.
4. You can adjust overall level controls that are effected by Speaker Action and Miking Level with the Output Gain* control.

*: The Output Gain control functions only with the Line Outputs. If you are routing from the Mic Level Output, use the control in your following mic preamp to adjust the overall level.

It is important to consider added power amp distortion, as it is the basis for the Transducer's concept with its ability to process up to a 200 Watt, 8 ohm cabinet-amplified signal. Avoid too much mental separation in what should be your integrated Transducer level control thinking, as just with past situations that employed traditional guitar amp and cabinets, you must consider the interaction with a guitar amp – and here especially in relation to the preamp and master gain. This is really the only way you can achieve the effects you're looking for (in particular, the distortion from pre and power amps).

Please pay attention to the instructions for connecting guitar amps to the Transducer on page 11!

Presets

Setting Examples for Clean, Crunch and Lead Sounds

Just as you would choose a cabinet matching your amp you can use the settings of the following presets. Our presets correspond to the respective amps and provide a first orientation for your individual settings.

Speaker Action and Miking Level controls determine both the basic sound and leveling; individual experimentation is always required here. The Transducer delivers a full bandwidth signal from 20Hz to 20kHz, so we recommend to create the basic sound without further EQ processing first. Once you have found your sound you can go ahead with any desired effects.

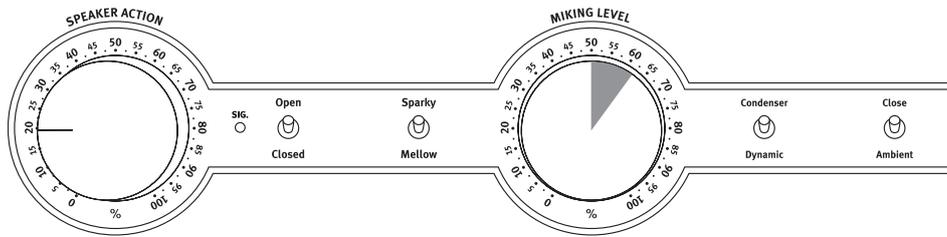
WARNING



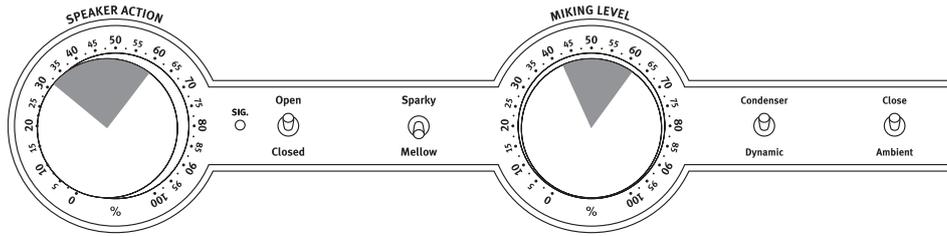
If an amplifier is connected and the Signal LED illuminates though a signal is not present or too much noise from the amp is not the reason, the lighted LED can indicate a high frequency resonance of the amp.

In this case turn down the master volume of the amp until the LED goes out. High frequency resonances can overload and damage the guitar amp!

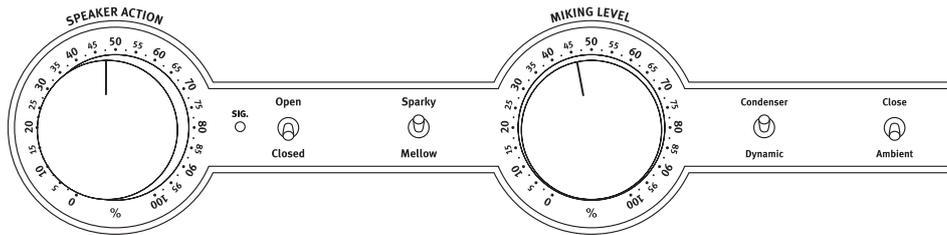
Such problems are not a result of Transducer use, but reside within the guitar amp.



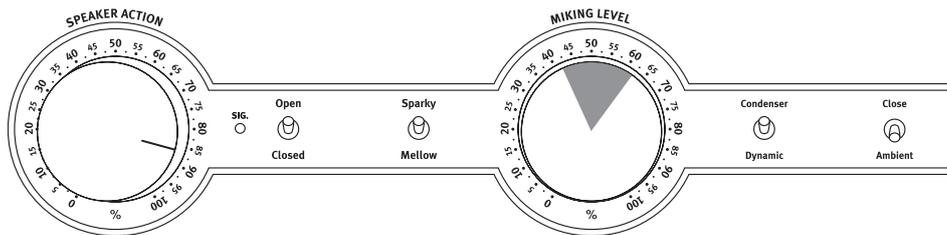
Open Cabinet,
2 x 10" Alnico Speakers
Sixties Sound



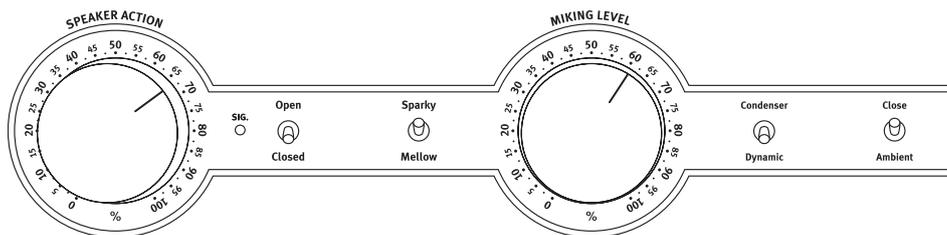
Open Cabinet,
2 x 12" Ceramic Speakers
Sixties Sound



Closed Cabinet,
2 x 12" Ceramic Speakers,
American Modern Clean

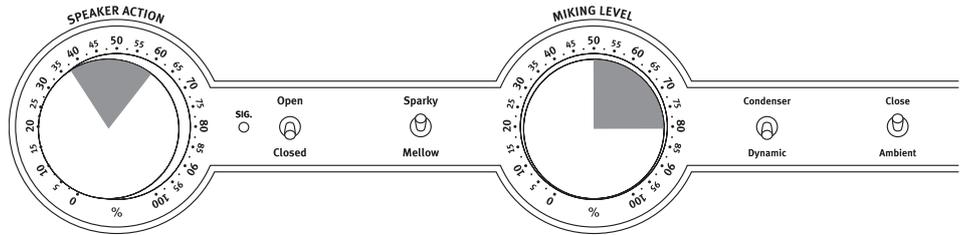


Open Cabinet,
overloaded 1 x 12" Alnico Speaker,
Light Crunch

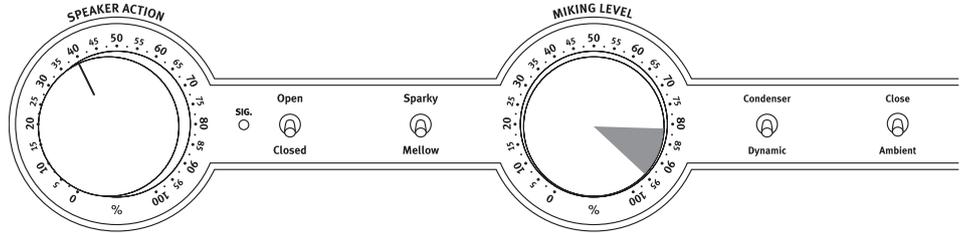


Closed Cabinet,
2 x 12" Alnico Speaker

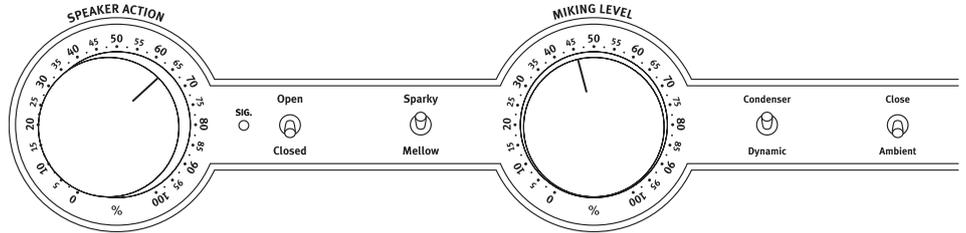
4 x 12", Plexi "Greenback"



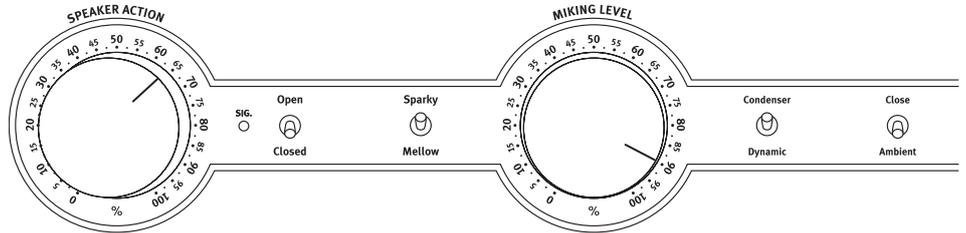
4 x 12", early "Vintage 30"



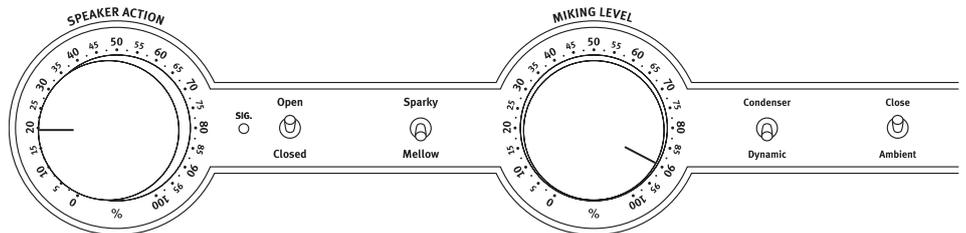
4 x 12", sparky "Greenback"



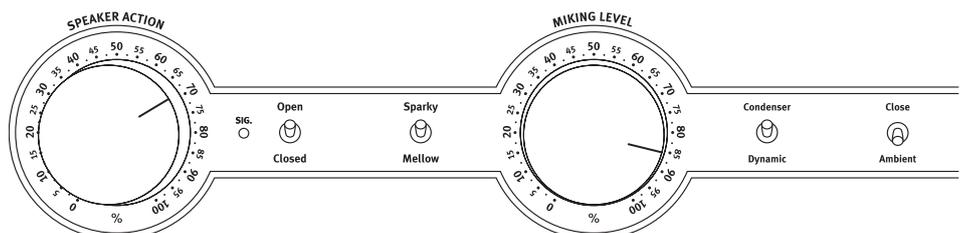
4 x 12", sparky "G 12 H"



1 x 12", "EV 12 L"



2 x 12", "Black Face"



SPEAKER ACTION: 0-60 scale, needle at 50. SIG. Open Closed. Sparky Mellow. MIKING LEVEL: 0-60 scale, needle at 50. Condenser Dynamic. Close Ambient.

4 x 12" "Greenback" Rock

SPEAKER ACTION: 0-60 scale, needle at 50. SIG. Open Closed. Sparky Mellow. MIKING LEVEL: 0-60 scale, needle at 30. Condenser Dynamic. Close Ambient.

4 x 12" "G12 H"

SPEAKER ACTION: 0-60 scale, needle at 50. SIG. Open Closed. Sparky Mellow. MIKING LEVEL: 0-60 scale, needle at 50. Condenser Dynamic. Close Ambient.

"Vintage 30"

SPEAKER ACTION: 0-60 scale, needle at 50. SIG. Open Closed. Sparky Mellow. MIKING LEVEL: 0-60 scale, needle at 50. Condenser Dynamic. Close Ambient.

"Bluesbraker"

SPEAKER ACTION: 0-60 scale, needle at 50. SIG. Open Closed. Sparky Mellow. MIKING LEVEL: 0-60 scale, needle at 50. Condenser Dynamic. Close Ambient.

2 x 12" "Bulldog"

SPEAKER ACTION: 0-60 scale, needle at 50. SIG. Open Closed. Sparky Mellow. MIKING LEVEL: 0-60 scale, needle at 50, shaded area from 0 to 50. Condenser Dynamic. Close Ambient.

Sparky "EV"

Specifications

Input

Speaker Input	1/4" Jack connection
Impedance	8 Ohms
Max. Input Load	100 W RMS, 200 W Peak

Outputs

Speaker Thru	1/4" Jack connection
Pre Simulation Out	1/4" Jack connection
Impedance	ca. 1 kOhm
Mic Level Output	XLR, electronically balanced
Impedance unbalanced	ca. 600 Ohms
Impedance balanced	ca. 1,2 kOhms
Max. Output Level	+6 dBu
Signal to Noise Ratio	-100 dBu (A weighted)
Line Output 1	XLR, electronically balanced
Impedance unbalanced	ca. 600 Ohms
Impedance balanced	ca. 1,2 kOhms
Max. Output Level	+21,5 dBu
Signal to Noise Ratio	-94 dBu (A weighted)
Line Output 2	XLR and 1/4" TRS connection, electronically balanced
Impedance unbalanced	ca. 600 Ohms
Impedance balanced	ca. 1,2 kOhms
Max. Output Level	+21,5 dBu
Signal to Noise Ratio	-94 dBu (A weighted)

Power Supply

Selectable Line Voltages	115 V AC, 60 Hz 230 V AC, 50 Hz
Power Consumption	5,2 VA
Fuses	110 – 120 VAC: 400 mA slow blow 220 – 240 VAC: 200 mA slow blow
Power Connector	Standard 3-prong IEC connector

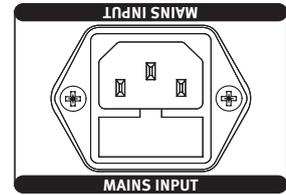
Dimensions & Weight

Height x Width x Depth	88,2 mm x 482,6 mm x 270 mm ca. 3,4" x 19" x 10,6"
Weight	4,8 kg/10,58 lbs

The power supply was carefully engineered to provide clean and consistent current, an important prerequisite for excellent audio. Built around an oversized toroidal transformer, the power supply generates a minimal electromagnetic field with no hum or mechanical noise.

All audio-related components are fed by two separate voltage regulators to minimize disturbance from other components.

An AC power cord is included for connection to the standard 3-prong IEC connector. The transformer, power cord and IEC connector are VDE, UL and CSA approved. The AC fuse is rated at 200 mA (230V version) or 400 mA (115 V version).



Guarantee & Product Registration

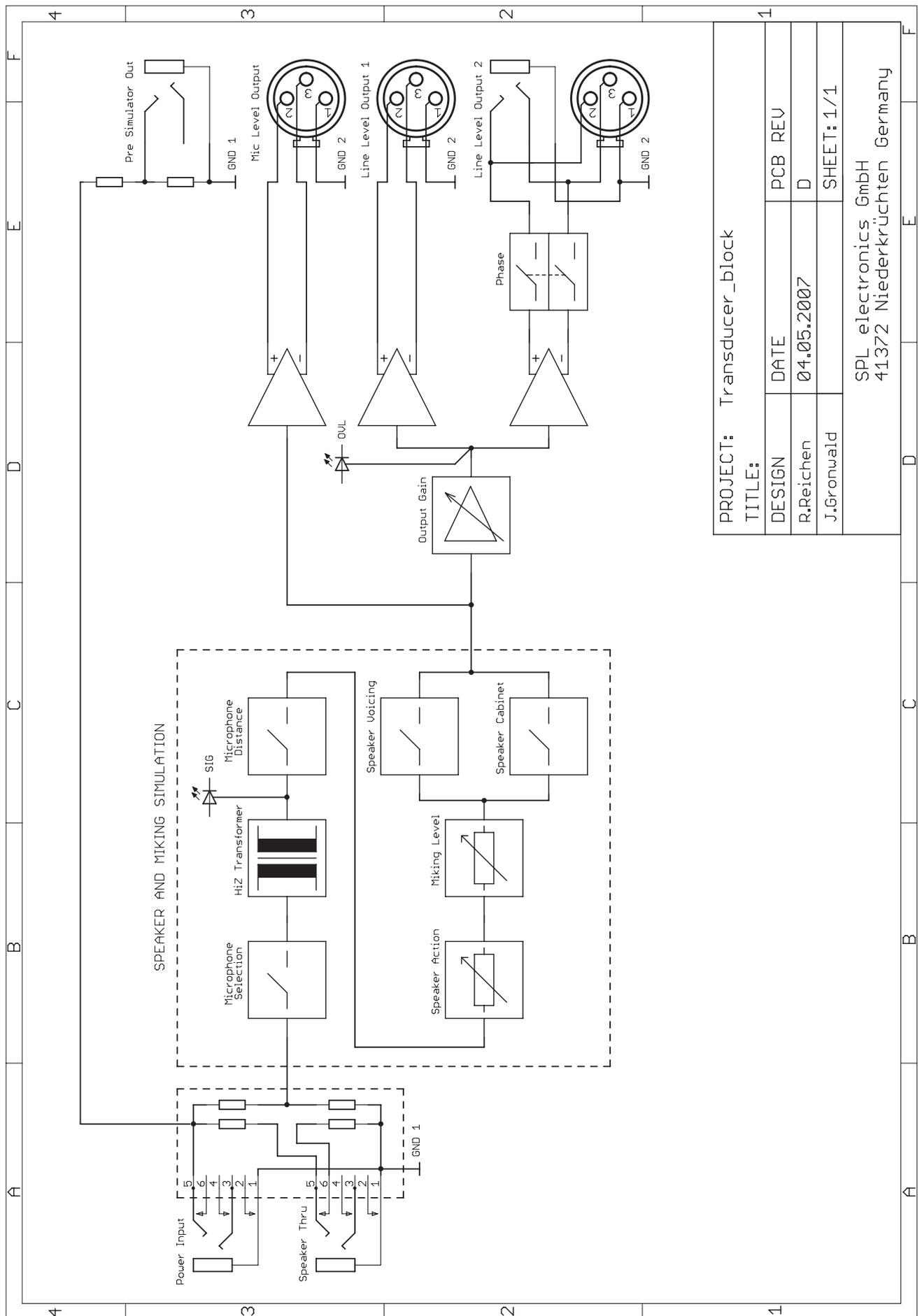
All SPL products come with a two-year manufacturer's guarantee against defects in material or assembly from the date of purchase.

End users are supported in the two-year guarantee through their distributor or dealer. In such cases, please contact your dealer for full guarantee conditions and service.

Direct SPL product support requires product registration. Please fill out the guarantee card enclosed in the package legibly in printed letters and send it directly to SPL.

Or use the **online registration** form that may be reached at www.soundperformancelab.com (international clients) or www.spl-usa.com (US clients).

Block Diagram



PROJECT: Transducer_block

TITLE:

DESIGN DATE PCB REV

R.Reichen 04.05.2007 D

J.Gronwald SHEET: 1/1

SPL electronics GmbH
41372 Niederkrüchten Germany

Copy Master Transducer Settings



Guitar player:

Engineer:

Album/Gig:

Track(s)/Group:

Title:

Date:

