

Service Notes

Service should only be made by a qualified technician.

Tubes

Tubes are consumables, as they have a given usable lifespan. They are part of the heart of the tone, so keeping correctly operating tubes is essential. Tubes can fail catastrophically or gradually, and it's good to know what to look for if they start to go bad. Periodically inspect them and look to see if anything inside the tube is glowing cherry red other than the normal orange glow of the filament. This would indicate a situation where the tube is conducting more current than it is capable of handling and most likely about to fail. Two other conditions to observe are: 1) filaments not glowing or 2) a miniature fireworks display inside the tube. Any of the above conditions indicate serious problems with the tube and should be taken care of immediately. Tubes quite often are the cause of spurious noise in the amp. Microphonic tubes will squeal or rattle with the vibrations induced by the speaker cabinet. If suspected, tap each tube lightly with a pencil with the amp powered up—the suspect tube will many times let you know. Note that there is a normal metallic clinking when doing this, but a microphonic tube will be obviously louder.

Replacing preamp tubes will not require any adjustment, but the power tubes will need rebiasing to assure proper operation. After power tube replacement, initially inspect the tubes often to assure there are no “cherry red” components within the tube. Tubes today can have a wide variety of tolerances and a re-bias is highly recommended with new ones.

Power tube bias should be adjusted from a preferred of 30 mV max., +/- 5 mV. If power tubes are mismatched by less than 5 mV, average the two around 30 mV. Mis-matched tubes beyond 5 mV can induce noise and may cause a degradation of tone. It is always recommended to purchase and install “matched” power tube sets.

NOTE! Never power up the amplifier without power tubes installed, as voltages can rise to levels that may damage internal components.

NOTE! Capacitors may retain an electric charge and can be dangerous even when the unit is off, unplugged, and has not been played for an extended period of time. USE CAUTION!!!!

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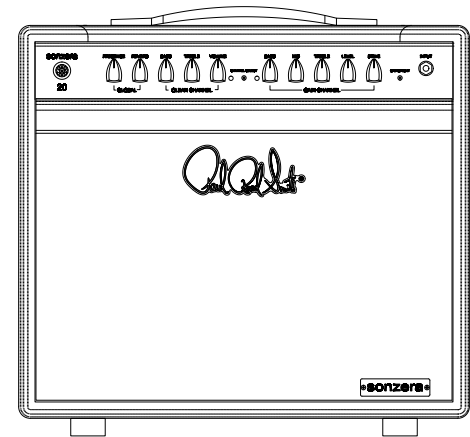
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Product Number: LIT-AMP-MAN-SONZ-REV-C

The image shows the signature logo for Paul Reed Smith, written in a cursive, handwritten style. The letters are black and the signature is enclosed in a thin black border.

SONZERA 20 COMBO

USER'S MANUAL



Using your PRS Amplifier

IMPORTANT: Before using your amplifier, refer to the IMPORTANT SAFETY INSTRUCTIONS insert supplied with the product.

Powering Up:

1. Make sure your speaker is connected to the correct speaker output impedance jack. To connect with an extension cabinet, always use a high quality speaker cable. Do not use guitar cords. Do not touch bare loudspeaker connectors due to an electric shock hazard.
2. Make sure the power cord is connected to a correct three pin earthed (grounded) outlet.
3. Make sure there is at least 150mm (6 inches) of clearance around the amplifier to allow for proper cooling. Never place the amplifier against a wall or other equipment, and keep it clear of other heat sources, such as other amplifiers or stoves. Make sure there are no flammable items, such as curtains, behind the amp. Do not drape items over the amps that can prevent proper cooling. Do not set drinks or other liquids on top of the amp that can spill into the amp.
4. The amplifier is designed to be able to power up without the use of a Standby Switch, however the Sonzera 20 is provided with a Standby switch that mutes the signal for convenience. Just turn the Power Switch to the On position and let the amplifier naturally warm up, and use the Standby when changing guitars, etc. Note that there still can be faint background noise or guitar signal when the Standby is engaged.
5. Turn the volume and master controls down to mute the amp, plug in the guitar cable or output of effects, bring the volumes up slowly to the desired loudness and play some tunes. This amplifier can produce very loud volumes so take care with this procedure to avoid volume surprises.



This equipment is capable of very high sound pressure levels. Prolonged exposure may cause hearing damage.

This equipment contains no user-serviceable parts. Refer all repairs to qualified service personnel.

This equipment is heavy and there is a risk of back injury. Lift using correct safe lifting techniques.

Ensure that the mains plug is easily accessible to allow the unit to be powered off by unplugging the power cable.

Only connect this unit to a three pin earthed (grounded) supply socket.

THIS UNIT IS CLASS 1 CONSTRUCTION AND MUST BE EARTHED!

Sonzera 20 Combo Amplifier Front Panel Controls

Input: 1/4" Standard Mono Guitar Cable.

Channel Controls: The Gain Channel is equipped with a Bright Switch, Drive, Level, Treble, Middle, and Bass controls. Use the Level control to adjust the overall channel volume. The Lead Channel is equipped with a Volume, Treble, and Bass controls. Adjust the tone controls to taste.

Channel Select: Select your channels when not using the footswitch. When the footswitch cable is inserted, the panel channel selector is overridden.

Reverb Control: Adjusts the level of the reverb on both channels globally. The reverb can be turned on and off via the footswitch.

Presence Control: Adjusts power amp brightness by manipulating negative feedback affecting both channels globally.

Rear Panel Controls

Mains Socket: Always use the mains lead supplied. Your sales outlet can provide a lead suitable for your country. Always disconnect the equipment from the mains and ancillary units before moving the amplifier.

Fuses: This amplifier is equipped with multiple accessible and inaccessible fuses.



Replacement fuses must be of the same type and rating as indicated. Failure to comply may result in permanent damage to the product, and/or create a safety hazard. **Always disconnect the equipment from the mains supply before replacing a fuse.**

Mains Fuses: These are located in a tray integral with the mains power input socket module. There is one active and one spare in the socket tray. Fuse types and specifications required for your country/region are silkscreened and marked below the mains socket.

B+ Fuse: The B+/H.T. fuse holder is accessible from the rear panel next to the Mains Socket. B+/H.T. fuses should only be evaluated and replaced by a qualified technician.

Filament Fuses: These are located internally on the circuit board and should only be evaluated and replaced by a qualified technician.

Power On/Off and Standby Switches: The Sonzera 20 Combo amp was designed to not need a traditional Standby Switch as part of properly powering the amp on. The Standby is a mute switch for convenience and note that there may still be faint background noise when the Standby is engaged. Engage the Power Switch and wait for the tubes to warm up before playing. Never switch on the amplifier without power tubes installed.

Effects Loop: This amplifier features a series effects loop that is integral to the overall sound of the amp. Connect the Send Jack with a high quality 1/4" mono instrument cable to the input of your pedal(s). Connect your pedal(s) output to the Return Jack also using a high quality 1/4" mono instrument cable. To minimize your cables picking up hum, arrange the cables together for the first few feet away from the amp and move them away from the power transformer and mains power cable. It may take some adjustment to find the quietest arrangement.

Bias Jacks and Pot: These jacks measure the power tube current draw in milliVolts. There will be one jack associated with one power tube. When metering, 1 measured mV = 1 mA of current flowing through the associated power tube. The center jack in the bias array is ground, and receives the Common probe on your meter. Review the information on the back of this manual for guidance on replacing tubes. Biasing and tube replacement should be performed only by a qualified technician. Bias adjustments can be made with a jewelers (small, 00 size recommended) Phillips head screwdriver. The bias adjustment affects both power tubes at the same time. The bias jacks can allow you to determine if any tubes are dead and not functioning (zero bias), or if they have drifted up or down out of specification from the other tubes. In these instances, individual tubes may be replaced with the same test rating numbers as the original tubes and conveniently verified using the bias jacks and a meter when installed.

Footswitch Jack: Connect the included PRS FS2S footswitch to control channel switching and reverb on/off. Do not use other footswitches as they can possibly damage the amp. When attached, the footswitch bypasses the functionality of the panel switch to select channels. There are no special positions of switches on the amp to allow the footswitch to function properly.

Speaker Jacks: These are the main outputs for your combo speaker or extension cabinet(s). There are 5 total jacks to use and include two 4 ohm jacks wired in parallel, two 8 ohm jacks wired in parallel, and a single 16 ohm jack. The internal speaker in the combo is 16 Ohms. If using extension cabinets, determine beforehand what your total speaker loading will be and use the appropriate jacks. Never "mix" impedance jacks such as using the 16 ohm jack with the 8 Ohm jack at the same time. It is also not suggested to use two speakers or cabinets with different impedances as these combine to create odd impedance values and performance. For two 16 ohm speakers or cabinets in parallel (creating an 8 ohm load), plug each cabinet into one of the two parallel 8 ohm jacks. Similarly, for two 8 ohm cabinets in parallel (creating a 4 ohm load), plug each cabinet into one of the two parallel 4 ohm jacks. Failure to correctly match the speaker load to the appropriate output jacks can cause tube socket arcs, blown power tubes, or failure of the amp.

Safety Symbols: The following symbols mean:



Warning: read instructions to understand possible hazard



Danger: electrical shock hazard



Warning: This equipment is capable of very high sound pressure levels. Prolonged exposure may cause hearing damage.