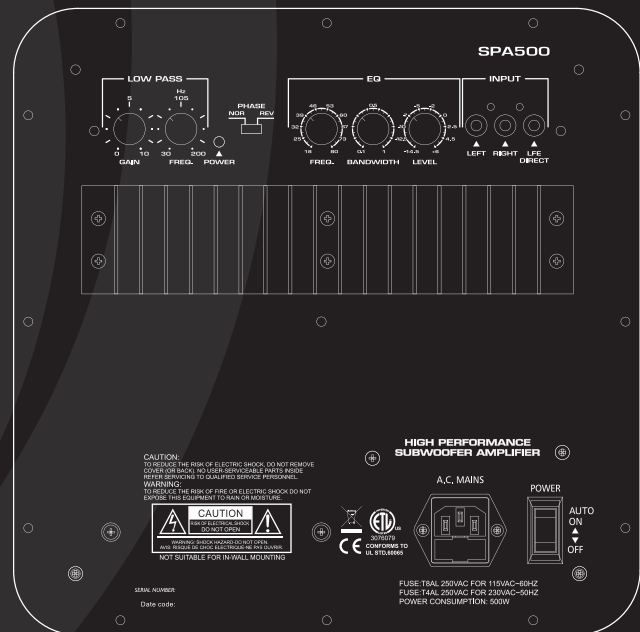


# 500W SUBWOOFER PLATE AMPLIFIER

Model: SPA500 User Manual



Thank you for purchasing the Dayton Audio® SPA500 subwoofer amplifier, one of the most versatile and powerful subwoofer amplifiers available. The SPA500 has the power to drive even the most power-hungry subwoofer systems.

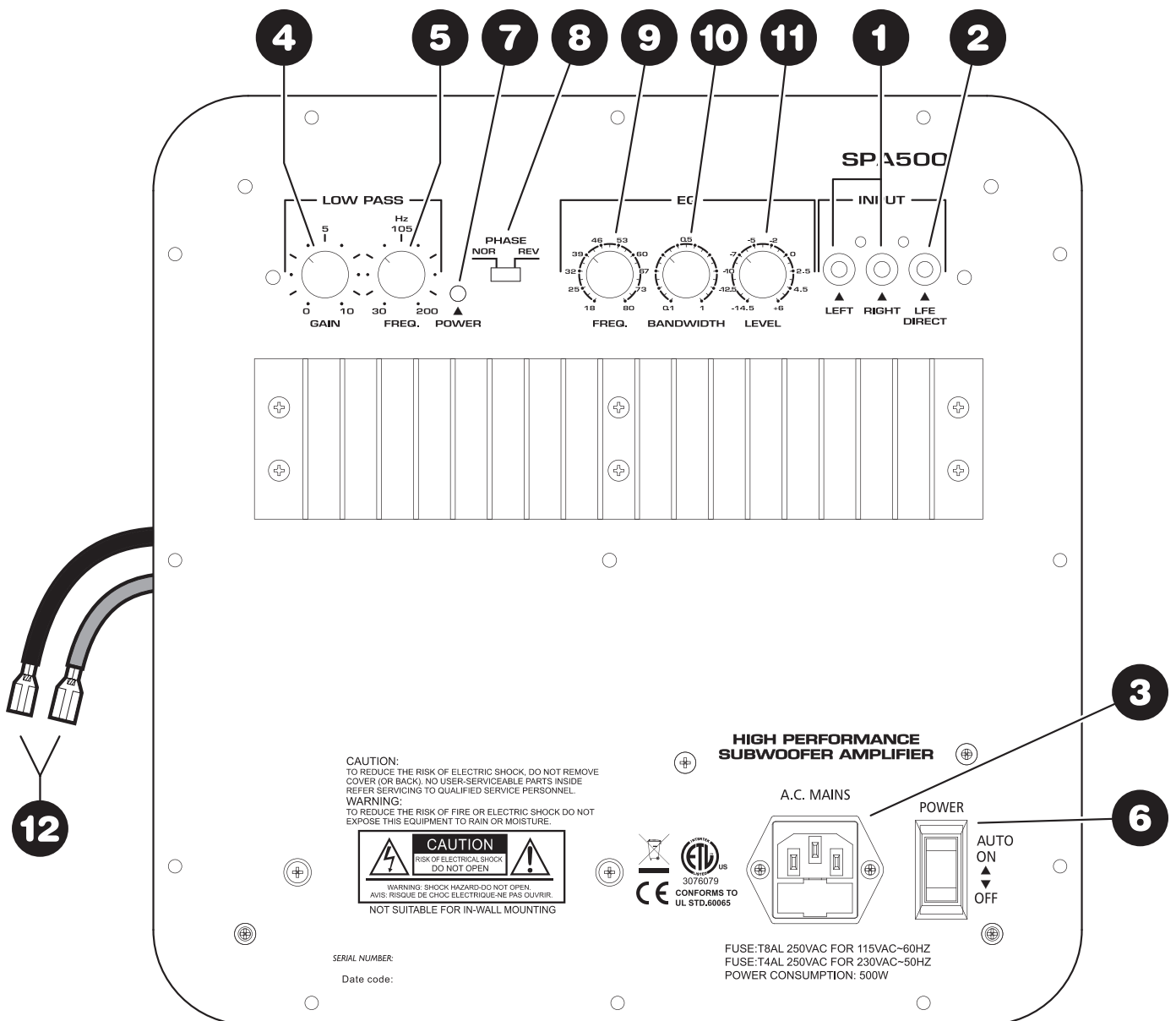
**FEATURES:**

- Patented tracking downconverter power supply for high efficiency
- Class AB output stage for clean, controlled output
- Low frequency parametric EQ allows you to boost or cut to custom-tailor the sound
- Advanced soft clip circuitry improves headroom and protects woofers
- Variable low pass filter
- Switchable 115/230V input voltage

**INSTALLATION:**

The SPA500 is designed to provide high fidelity subwoofer amplification and is tailored for home audio, home theater, and studio environments.

It is not recommended for use in DJ, pro-sound, or other high-duty-cycle applications. The amplifier runs cool thanks to its high efficiency, but care should be taken to leave some room for air circulation above and behind the amplifier.



## INPUT CONNECTIONS

### 1.) Left/Right inputs

RCA style jacks that will accept standard line level inputs from a pre-amp level source. They will accept a stereo signal and internally combine it into mono. Both left and right input jacks must be connected to the source in order to drive the amplifier to full output. The use of a "Y" cord is suggested if a mono source is all that is available.

### 2.) LFE direct input

RCA jack that will accept a signal from the mono LFE (Low Frequency Effects) output on a pre-amp or receiver that is equipped with a dedicated sub bass output. This input bypasses the amplifier's own internal low pass filter circuitry, relying instead on the processed output provided by the source equipment. This would be the recommended connection for most home theater surround sound receivers and pre-amps. We would also suggest the use of the LFE input when an external line level electronic crossover or frequency dividing network is used.

### 3.) Power input

This unit features an IEC grounding type power input connector. The IEC inlet connector also features an integrated fuse holder that contains the AC line fuse. **For 230V input, remove the fuse holder, rotate 180 degrees, and re-install. In most 230V applications a separate power cord will be required and is not included.**

## CONTROLS/INDICATORS

### 4.) Low Pass, Gain

Will match the amplifier's input sensitivity to the output of the pre-amp source. If the source output has a variable control, we recommend that the user spend a moment or two determining the best balance between the two controls. When a balance is found between low noise, linear level control, and sufficient level to drive the amp to the required output, the gain knob can be considered to be the "volume control" for the subwoofer system.

### 5.) Low Pass, Frequency

This control is used to establish the highest frequency that the subwoofer will reproduce and has a range between 30 and 200 Hz. If your main speakers have good bass capability, you could set the control to a fairly low value at 40, 60, or even 100 Hz. If the main speakers are smaller or do not have much bass output, set the control higher. Experiment with the amount of "overlap" that you will experience when all speakers are playing in the same range. This can be helpful when integrating the subwoofer with the rest of the system and with the room.

### 6.) Power Switch

This switch manually turns the unit on and off. When switched to the on position, the unit will first turn on and be fully operational. After a period of 10-15 minutes without a signal the unit will go into "stand by" mode.

### 7.) Power LED

When the power switch is moved to the "on" position, the LED will illuminate in green, and the amp will be in "stand by" mode. If a low level signal of about 3 millivolts or greater is applied to the input, the light will change color to yellow to indicate that the amplifier is fully operational and receiving

typical music program. As input signal increases to the onset of clipping the LED will turn red, which indicates that the clip limiting circuitry is activated. If an input signal is not detected for 10 to 15 minutes, the amp will go back to "stand by" mode and the LED will change back to green.

### 8.) Phase

This two-position (NOR = 0° phase and REV = 180° phase) switch helps to compensate for differences in the acoustical and electrical characteristics between the subwoofer and the main system speakers. The relative locations of speakers in the system can cause significant disturbances in speaker interaction due to time delay issues, or the destructive phase interferences that can occur at certain frequencies. The use of this switch in conjunction with altering the location of the subwoofer can have a dramatic effect on system integration. The "NOR" setting would be considered the normal or default setting, but be sure to experiment during system set-up.

## PARAMETRIC EQUALIZER

The SPA500 features a fully parametric equalizer to help you to achieve the best possible subwoofer performance. Professional sound engineers have for many years considered the parametric EQ to be one of the most accurate, versatile, and high fidelity tools for audio enhancement. A greater degree of control can be achieved when using the EQ's unique ability to vary the frequency to be affected, the amount of boost or cut, and the width or narrowness at the selected frequency.

### 9.) EQ-Frequency

Establishes the specific frequency at which EQ boost or cut may be applied between 18 Hz and 80 Hz.

### 10.) EQ-Bandwidth

Determines how narrow or wide the EQ curve will be within a range of 0.1 to 1.0. If for example a frequency of 60 Hz were selected along with a Q of 0.1, the frequencies to either side of 60 Hz would be less affected. This is a narrow bandwidth that could be useful for "surgically" removing an offending peak without disturbing adjacent frequencies. At the other extreme, a Q of 1 would result in a much broader effect which could be used for smooth overall bass boost or cut, to balance the overall tone character of the sub.

### 11.) EQ-Level

Permits the application of up to 6 dB of boost or 14.5 dB of cut at the selected frequency and bandwidth. Setting the control at the 0 position effectively removes the EQ from the circuit path. It is good to remember that high levels of boost reduce amplifier headroom; it is the same as turning up the low pass gain control but only at the selected EQ frequencies. It would be helpful to reduce or increase the low pass gain control to balance the amount of cut or boost applied by the EQ.

### 12.) Output Lead for Subwoofer Driver:

This rear mounted output lead connects the amplifier to the subwoofer driver. The output lead is roughly 20" long and is color coded. The red wire uses an insulated .250" quick disconnect and the black wire uses an insulated .205" quick disconnect. These connectors can be easily removed if your driver requires another size or type of connector. Be sure to observe proper polarity when connecting the amplifier to your subwoofer driver (red = positive, black = negative).

## NOTES ABOUT HUM:

While the SPA500 has been designed to minimize the possibility of hum in the subwoofer system, it is still possible that a hum will occur in rare circumstances. Its safety grounding can create a path for small amounts of 60 Hz energy to travel through the line-level audio system. While not dangerous, this energy can cause difficulty with the subwoofer auto signal sensing circuit, and at the very least will interfere with the quiet enjoyment of your system. The first course of action should be trying to make sure that all of the audio components are connected to either the same electrical outlet, or at least into the same circuit branch. Next, cable TV systems are notoriously the culprit, so be sure to try disconnecting all coaxial feeds that are connected to the system. If this solves the problem, install a coaxial line isolator and reconnect the system. In the very worst case, a line-level audio isolator/transformer connected to the line-in of the subwoofer amplifier will usually solve the problem.

## SPECIFICATIONS:

<b>Rated Power Output:</b>	(0.92 % THD) 273 watts* into 8 ohms, 540 watts* into 4 ohms <i>*Based on one-third power duty cycle</i>
<b>Signal to Noise Ratio:</b>	98 dB A-weighted
<b>Efficiency:</b>	75%
<b>Input Impedance:</b>	12K ohms
<b>Low Pass Adjustment:</b>	30 Hz – 200 Hz
<b>Phase Adjustment:</b>	0° (NOR) or 180° (REV)
<b>Parametric EQ:</b>	
<b>Frequency:</b>	18 Hz – 80 Hz
<b>Bandwidth:</b>	0.1 – 1 Q
<b>Level:</b>	-14.5dB – +6dB
<b>Dimensions:</b>	11-15/16" W x 11-15/16" H x 5-1/4" D
<b>Enclosure Cutout:</b>	10" x 10"
<b>Power Requirements:</b>	115/230 VAC, 50 Hz/60 Hz
<b>Stand-by Power Rating:</b>	115V 24W; 230V 18.4W
<b>Weight:</b>	15.2 lbs.

## IMPORTANT SAFETY INSTRUCTIONS

To reduce the risk of electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified personnel. To reduce the risk of fire and shock do not expose unit to rain or moisture. The unit should be connected to an earth grounded AC electrical socket. The unit should be operated in a well ventilated area. Minimum clearance is 2 inches from the ventilation openings.



Note: Unit is set at the factory for 115V operation. Be sure to change the fuse (5A rating) before switching to 230V operation.

### Warranty Information

Dayton Audio products are warranted free from defects in material and workmanship for **5 years** from date of purchase. **1 year** warranty applies to the following products: powered subwoofers and electronic devices (e.g. subwoofer amplifiers, and plate amplifiers, as well as the Omnimic V2 and DATS loudspeaker testing devices). In the rare case of a product failure, please contact your place of purchase or call our Customer Support Department at (937) 743-8248.

### Warranty Limitations

There are no other warranties, either expressed or implied, that extend the foregoing, and there are no warranties of merchantability or fitness for any particular purpose. Dayton Audio is not responsible for any consequential or incidental damage to any other unit or component or the cost for installation or extraction of any component of the audio system, or for the improper use of products. This includes but is not limited to burnt voice coils, overheating, bent frames, holes in the cone, or broken lead wires.

This warranty gives you specific legal rights and you may also have other rights that vary from state to state.

**Non-Warranty Service:** If non-warranty service is required, the product may be sent to the Company for repair/replacement, transportation prepaid, by calling (937) 743-8248 for details, complete instructions, and service fee charges.



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