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## Dayton Audio SA100

# Dayton Audio SA100 100W Subwoofer Plate Amplifier

Model: SA100

## INTRODUCTION

Thank you for choosing the Dayton Audio SA100 Subwoofer Plate Amplifier. This amplifier is designed to provide robust and clean power for passive subwoofers, enhancing your audio system's low-frequency performance. Featuring a low-distortion audiophile sound, adjustable low-pass crossover, and versatile input/output options, the SA100 offers excellent performance and flexibility. This manual provides detailed instructions for installation, operation, and maintenance to ensure optimal performance and longevity of your amplifier.

## IMPORTANT SAFETY INSTRUCTIONS

Please read and retain these instructions for future reference. Adhere to all warnings and follow all instructions to prevent damage to the unit or potential hazards.

- **Power Source:** Connect the unit only to a power supply of the type described in this manual or marked on the unit.
- **Ventilation:** Ensure proper ventilation. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- **Heat:** Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- **Water and Moisture:** Do not use this apparatus near water or moisture.
- **Cleaning:** Clean only with a dry cloth.
- **Servicing:** Do not attempt to service this product yourself. 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, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- **Grounding:** This product is not suitable for in-wall mounting. Ensure proper grounding if applicable.

## KEY FEATURES

- Low distortion audiophile sound reproduction.
- Adjustable low-pass crossover for seamless integration with main speakers.
- High and low-level inputs and outputs for versatile connectivity.
- Automatic power on/off feature for convenience.
- Output power: 75 watts RMS @ 8 ohms, 100 watts RMS @ 4 ohms.

## CONTROLS AND CONNECTIONS

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The Dayton Audio SA100 amplifier features a comprehensive set of controls and connection options on its rear panel. Understanding these will ensure proper setup and optimal performance.



**Figure 1:** Labeled diagram of the SA100 amplifier rear panel, showing all controls and connections.

1. **Low-Level Inputs (RCA):** These inputs are used to connect the amplifier to the low-level (line-level) output of your receiver or preamplifier. Use a Y-adaptor if your source has a single mono subwoofer output to ensure full power output.
2. **Low-Level Outputs (RCA):** These outputs allow you to pass the low-level signal to another amplifier or device.
3. **High-Level Inputs (Speaker Level):** Connect these inputs to the speaker outputs of your main amplifier or receiver. This is useful if your source unit does not have dedicated low-level outputs. Connect the left and right channels from your main amplifier to the corresponding 'FROM AMPLIFIER' terminals.
4. **High-Level Outputs (Speaker Level):** These outputs allow you to pass the full-range speaker signal to your main speakers. Connect your main speakers to the 'TO SPEAKERS' terminals.
5. **Power Input:** Connect the supplied AC power cord here. Ensure the voltage matches your local power supply (120VAC, 60Hz).
6. **Speaker Output (Internal):** These wires connect internally to your subwoofer driver. Ensure correct polarity (+ to + and - to -) for proper operation.
7. **Gain Control:** This knob adjusts the overall output volume of the subwoofer. Start with a low setting and gradually increase until the subwoofer output blends seamlessly with your main speakers.
8. **Power/Protection Indicator:** This LED illuminates to indicate the amplifier's operational status. It typically glows green during normal operation and may change color or flash to indicate a protection mode.
9. **Frequency (Crossover) Control:** This knob adjusts the low-pass crossover frequency from 40Hz to 180Hz. This determines the highest frequency the subwoofer will reproduce. Adjust it to blend smoothly with your main speakers, typically set slightly above the lowest frequency your main speakers can reproduce.



**Figure 2:** Detail of the Frequency (Crossover) Control knob.

10. **Auto On/Off Switch:** This three-position switch controls the amplifier's power state.
  - **ON:** The amplifier is continuously powered on.
  - **AUTO:** The amplifier will automatically turn on when an audio signal is detected and enter standby mode after a period of no signal.
  - **OFF:** The amplifier is powered off.



**Figure 3:** Detail of the Auto On/Off switch.

11. **Phase Switch:** This two-position switch (REV/NOR) adjusts the phase of the subwoofer output by 180 degrees. Experiment with both settings to find the one that provides the most impactful and coherent bass response with your main speakers.



**Figure 4:** Detail of the Phase switch.

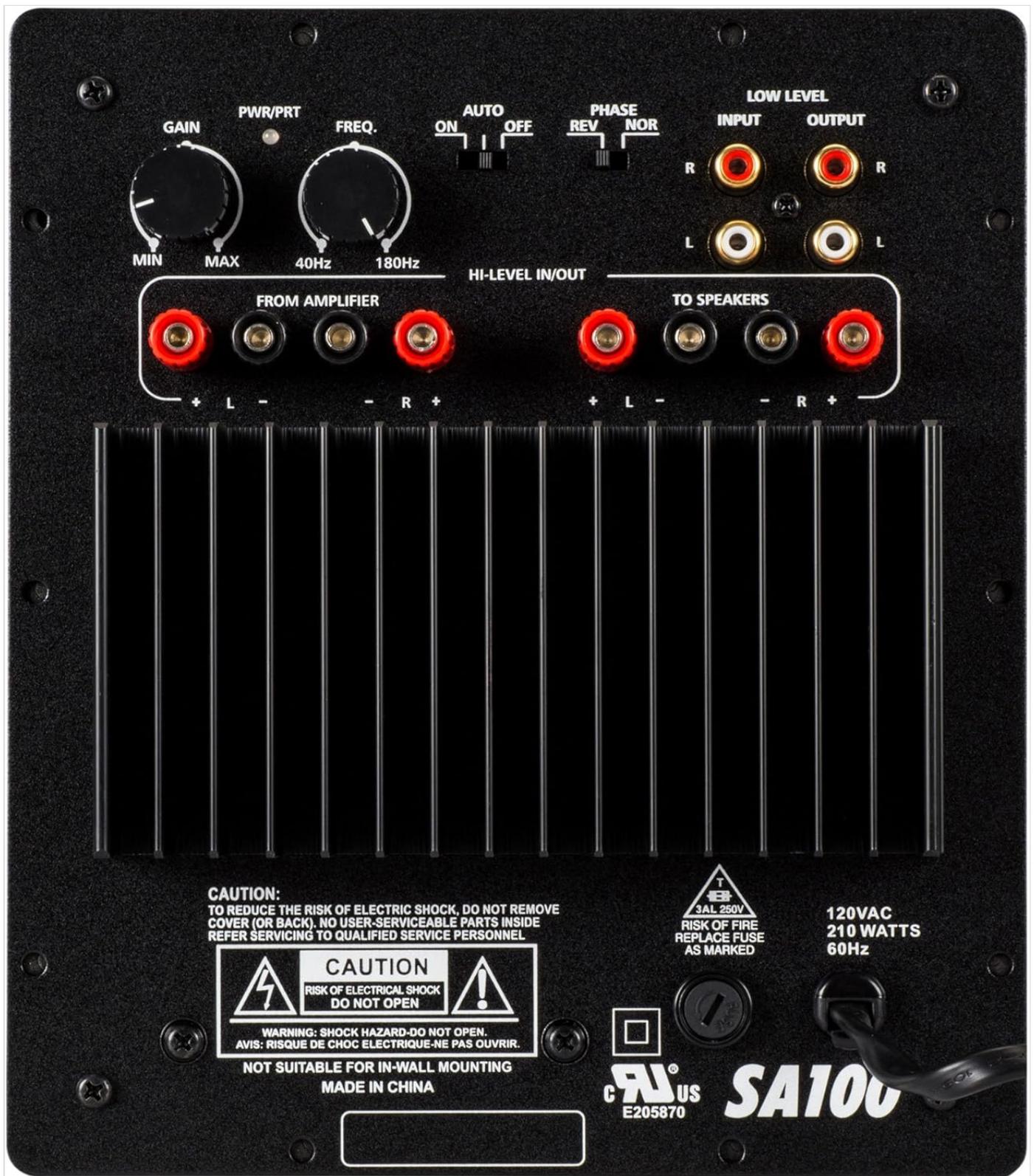


Figure 5: Rear panel of the SA100 amplifier, showing all physical connections and controls.

## SETUP AND INSTALLATION

Proper installation is crucial for the performance and safety of your SA100 amplifier. This amplifier is designed to be mounted into a custom subwoofer enclosure.

### Mounting the Amplifier

1. **Enclosure Preparation:** Ensure your subwoofer enclosure has a cutout that matches the dimensions of the SA100 amplifier's mounting plate. The product dimensions are 4.72 x 8.66 x 7.48 inches.
2. **Internal Wiring:** Connect the internal speaker wires (6) from the amplifier to your subwoofer driver. Observe correct polarity:

red to positive (+) and black to negative (-).

3. **Secure Mounting:** Carefully insert the amplifier into the cutout. Use appropriate screws to secure the amplifier plate firmly to the enclosure, ensuring an airtight seal.

## Connecting to Your Audio System

Choose one of the following connection methods based on your audio system's capabilities:

### Method 1: Using Low-Level (RCA) Inputs

- Connect an RCA cable from the subwoofer output (LFE output) of your receiver or preamplifier to the Low-Level Inputs (1) on the SA100.
- If your receiver has only one LFE output, use an RCA Y-adaptor to connect to both L and R Low-Level Inputs on the SA100 for optimal performance.

### Method 2: Using High-Level (Speaker Level) Inputs

- Connect speaker wires from the speaker outputs of your main amplifier or receiver to the High-Level Inputs (3) on the SA100. Ensure correct polarity.
- If you wish to pass the signal to your main speakers, connect speaker wires from the High-Level Outputs (4) on the SA100 to your main speakers.

## Power Connection

- Once all audio connections are made, connect the supplied AC power cord to the Power Input (5) on the amplifier and then to a suitable wall outlet.

## OPERATING INSTRUCTIONS

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Follow these steps to power on and adjust your SA100 amplifier for optimal sound.

1. **Power On:** Set the Auto On/Off switch (10) to 'ON' or 'AUTO'. The Power/Protection Indicator (8) should illuminate.
2. **Initial Gain Setting:** Set the Gain control (7) to its minimum position (fully counter-clockwise).
3. **Crossover Frequency Adjustment:** Set the Frequency (Crossover) control (9) to a starting point, typically around 80Hz-100Hz. This will depend on the low-frequency capabilities of your main speakers.
4. **Phase Adjustment:** Set the Phase switch (11) to 'NOR' (Normal).
5. **Play Audio:** Begin playing audio through your system at a moderate listening level.
6. **Adjust Gain:** Slowly increase the Gain control (7) on the SA100 until the subwoofer's output blends smoothly with your main speakers. The subwoofer should not sound overly loud or localized.
7. **Fine-tune Crossover:** Adjust the Frequency (Crossover) control (9) to achieve the best blend between the subwoofer and your main speakers. The goal is a seamless transition without a noticeable gap or overlap in frequencies.
8. **Adjust Phase:** Experiment with the Phase switch (11) in both 'NOR' and 'REV' positions. Choose the setting that provides the most impactful and coherent bass response at your listening position. This often involves listening for the strongest and clearest bass.
9. **Auto On/Off (Optional):** If you prefer the amplifier to power on and off automatically with your audio system, set the Auto On/Off switch (10) to 'AUTO'. The amplifier will enter standby mode after approximately 15-20 minutes of no audio signal.

## CARE AND MAINTENANCE

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To ensure the longevity and optimal performance of your Dayton Audio SA100 amplifier, follow these simple care and maintenance guidelines:

- **Cleaning:** Dust the amplifier regularly with a soft, dry cloth. For stubborn marks, lightly dampen the cloth with water or a mild, non-abrasive cleaner. Avoid using harsh chemicals or solvents.

- **Ventilation:** Ensure that the amplifier's heat sink and ventilation openings are free from dust and obstructions. Good airflow is essential for preventing overheating.
- **Environment:** Operate the amplifier in a stable environment, away from extreme temperatures, direct sunlight, high humidity, and excessive vibrations.
- **Power Cord:** Periodically check the power cord for any signs of damage. If damaged, replace it immediately with an approved cord.
- **Storage:** If storing the amplifier for an extended period, disconnect it from power, clean it, and store it in a cool, dry place, preferably in its original packaging.

## TROUBLESHOOTING

If you encounter issues with your SA100 amplifier, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No power/No indicator light	Power cord disconnected; Power outlet faulty; Auto On/Off switch in 'OFF' position.	Check power cord connection; Test outlet with another device; Set Auto On/Off switch to 'ON' or 'AUTO'.
No sound from subwoofer	Input cables disconnected/faulty; Gain control too low; Crossover frequency too low; Subwoofer driver disconnected/faulty; Source unit not sending signal.	Check all audio cable connections; Increase Gain control; Increase Crossover frequency; Verify subwoofer driver connection; Ensure source unit is playing audio.
Distorted sound	Gain set too high; Source signal too high; Damaged subwoofer driver.	Reduce Gain control; Reduce output level from source unit; Inspect subwoofer driver for damage.
Subwoofer hums	Ground loop; Faulty cables; Proximity to interference sources.	Try connecting all audio components to the same power outlet; Use shielded cables; Move amplifier away from other electronics.
Subwoofer sounds out of phase	Incorrect phase setting.	Toggle the Phase switch (11) between 'NOR' and 'REV' to find the best sound.

## SPECIFICATIONS

Feature	Specification
Output Power	75 watts RMS @ 8 ohms, 100 watts RMS @ 4 ohms
Low Pass Crossover	Adjustable from 40 Hz to 180 Hz
Phase Control	0° (Normal) / 180° (Reverse) switchable
Inputs	Low-level (RCA) and High-level (Speaker Level)
Outputs	Low-level (RCA) and High-level (Speaker Level) pass-through
Auto On/Off	Yes, with signal sensing

Feature	Specification
Power Requirement	120VAC, 60Hz, 210 Watts
Product Dimensions	4.72 x 8.66 x 7.48 inches (120 x 220 x 190 mm)
Item Weight	8.32 pounds (3.77 kg)

## WARRANTY AND SUPPORT

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Dayton Audio products are designed for reliability and performance. This product is covered by a manufacturer's warranty against defects in materials and workmanship. For specific warranty terms and conditions, please refer to the documentation included with your purchase or visit the official Dayton Audio website.

For technical support, troubleshooting assistance, or service inquiries, please contact Dayton Audio customer support through their official website or the retailer from whom you purchased the product. Please have your model number (SA100) and purchase information ready when contacting support.