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# **POWERSTAGE 200**

User Manual



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# POWERSTAGE 200

User Manual








# SeymourDuncan®

## POWERSTAGE 200 User Manual






Thank you for purchasing the Powerstage 200! Make sure to visit [SeymourDuncan.com](http://SeymourDuncan.com) for the most up to date info and sound samples.

**WARNING:** To reduce the risk of fire or electrical shock, do not expose this apparatus to rain or moisture.

-  **CAUTION :** Risk of electric shock. Do not open.
-  This symbol of a lightning flash inside a triangle is intended to alert the user to the presence of uninsulated “dangerous voltages” within the player’s enclosure that may be of magnitude so as to constitute a risk of electrical shock.
-  This symbol of an explanation point inside a triangle is intended to alert the user of the presence of important operating and safety information in the documents accompanying the player.
-  This warning indicates that the marked surface and adjacent surfaces can attain temperatures that may be hot to the touch.
-  This symbol indicates the proper attachment point for the protective earth safety ground. In the case of any repairs being conducted by a qualified electrical repair technician, the wire connecting the earth terminal of the IEC power socket to the chassis must be connected only to the attachment point indicated by this symbol.

See all safety markings on bottom and back of product.

### Important Safety Instructions

1. Read this instruction manual in its entirety before operating the equipment. Keep the manual for future reference.
2. Observe all safety precautions, warnings and instructions noted in this manual.
-  3. **WARNING –** To reduce the risk of fire or electric shock, do not expose this equipment to moisture. Keep this device away from sources of water such as pools, bathtubs and sinks. Do not expose to rain, dripping/splashing water or sprayed liquids. Do not place objects filled with liquids on the top.
4. Unplug from power source before cleaning. Clean only with dry cloth.
-  5. This product requires ventilation to operate properly. Do not block the fan opening or the vents on the side of the chassis. Maintain at least 4” clearance on all sides and top.
-  6. Keep this product away from sources of heat and open flame such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
-  7. Make sure that the power cord is intact and undamaged before using it. Do not use cords with visible damage to the insulation or end connectors. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
-  8. This device is equipped with a safety feature that requires the use of a three-pin grounding plug. Do not defeat the safety purpose of the grounding plug by using an adapter or any other means such as removing the third, grounding prong. If the provided plug does not fit your outlet, consult an electrician about replacing an obsolete power outlet or obtain the proper IEC power cord for your area.
9. Install in accordance with the manufacturer’s instructions.
10. Do not attempt to operate if the unit has been damaged in any way.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.



13. CAUTION – RISK OF ELECTRIC SHOCK! DO NOT OPEN! There are no user serviceable parts inside. 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.



14. WARNING – Due to the potential for hot surfaces and high sound pressure levels, this equipment is not suitable for use in locations where children are likely to be present.

## Compliance Statement

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device has been tested for and found to comply with Australia and New Zealand AS/NZS CISPR 32.

This device has been tested for and found to comply with Japan VCCI V3. This is a Class B product based on the standard of the VCCI Council. If this is used

near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

This device been tested and found to comply with Industry Canada ICES-003 Issue 6:2016. This device complies with CAN ICES-3B/NMB-3B.

This device has been tested and found to comply with Europe's EMC Directive 2014/30/EU. The standards applied were EN 55032 and EN 55035.

This device has been tested and found to comply with product safety directive EN 62368-1 for Audio/Video, information and communication technology equipment. EU, AS/NZ and Japan deviations have been included in testing.

Note: Any changes or modifications to this equipment not expressly approved by Seymour Duncan could void the user's authority to operate this equipment.

## Recycling Information



This symbol indicates this product is classified as Waste Electrical and Electronic Equipment (WEEE) in the European Union and should not be discarded with household waste. Other territories may vary.

## Before Using Your Amplifier



**VERIFY YOUR AC CIRCUIT VOLTAGE AND CAPACITY:** This amplifier is designed to accommodate line voltages from 100 to 240VAC, 50/60Hz. Connection to voltages outside this range may cause erratic operation or result in irreparable damage to the unit. The warranty does not cover damage caused by connection to voltages below 100VAC or above 240VAC. There are no user serviceable parts inside the chassis. Do not attempt to open the product or service it yourself.

Under maximum load conditions this amplifier may require heavy current draw. To ensure proper performance and avoid potential safety hazards, connect only to circuits that can provide a minimum of 15 amps of current. Avoid connecting to the same circuit as other high-current consumers such as heating devices, microwave ovens and high-wattage lighting as this may cause circuit breakers or fuses to blow. Avoid connecting any audio equipment to the same circuit as equipment

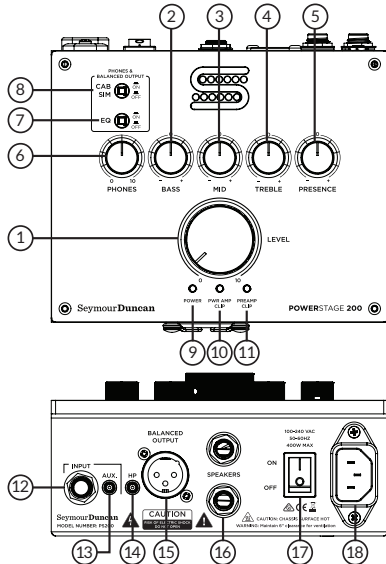
with motors such as compressors, refrigerators or air conditioners as this can cause high levels of unwanted noise in your sound or dips in power as motors start up.

**SET UP:** Place the unit on a firm, level surface. Do not plug or unplug an instrument or speaker while the amplifier is turned on.



**HEAT AND VENTILATION:** Make sure to allow space around the sides. Back and top for air circulation. Avoid use in extremely hot locations with direct exposure to sunlight or placement near heating equipment. Avoid use in moist or high humidity areas. Do not block fan opening or vent holes on the side. Allow for adequate air flow and do not place coats or blankets over the amplifier.

## Panel Layouts, Control Functions and Input/Output Jacks



## Top Panel

- Level Control** – controls the overall loudness of the amplifier.
- Bass Control** – provides 10dB of boost or cut at 87Hz.
- Midrange Control** – provides 10dB of boost or cut at 645Hz.
- Treble Control** – provides 8.5dB of boost or cut at 4.4kHz.
- Presence Control** – provides 6.5dB of boost or cut at 11.6kHz.
- Headphone Level Control** – controls the loudness of the headphones only. Adjust after setting the overall loudness with the Level control.
- Pre-Post EQ push-button** – low position places the feed to the headphone amplifier and the balanced line amplifier post EQ. High position is pre-EQ. Note that pre/post EQ selection does not affect the signal to the speaker output jack.
- Cabinet Simulation push-button** – low position places the feed to the headphone amplifier and the balanced line amplifier post cabinet simulation. High position is pre-cabinet simulation. Note that cabinet simulation is not present at the speaker output jack.
- Power Indicator** – lights when AC power is present and the power switch is turned on.
- Power Amp Clip/Over-Current Indicator** – this is a dual-purpose indicator. The primary function is to warn when the power amp is 1dB away from clipping. The secondary function is to indicate when an over-current condition exists on the speaker output jack, such as a shorted speaker cable. See detailed explanation under “Protection Features”.
- Pre-Amp Clip/Status Indicator** – this is also a dual-purpose indicator. The primary function is to indicate when any portion of the preamp is within 6dB of clipping. See more information under “Preparing for use”. The secondary function is to indicate the status of the power supply/power amp module. When lit continuously, the module has shut itself down due to one or more fault conditions. See detailed explanation under “Protection Features”.

## Rear Panel

12. **Input Jack (1/4" mono)** – Plug your main audio signal in here.
13. **Auxiliary Input Jack (3.5mm Stereo)** – This input feeds the headphone amplifier only. Plug your music storage device in here.
14. **Headphone Output Jack (3.5mm Stereo)** – Plug your headphones in here.
15. **Balanced Line Output (Male XLR)** – This is an instrument level, balanced output intended to drive the input of a mixing board.
16. **Speaker Output Jack (Dual 1/4" mono)** – Connect your speaker cabinet here.
17. **Power Switch** – turns mains power to the internal circuitry on and off.
18. **Power Cord receptacle** – Always use the appropriate power cord for the region in which you will be playing. The current rating should be adequate to sustain a minimum of 600W of continuous power being drawn from the line.

## Making Connections

Refer to Connection Guide to the right

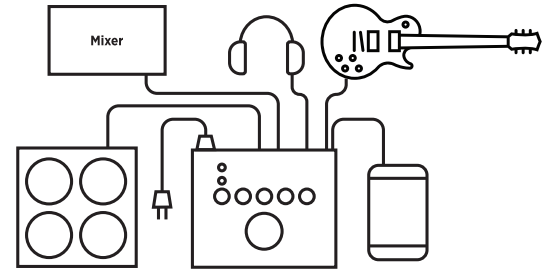
### MAKE SPEAKER CONNECTIONS FIRST

- Use a minimum of 14AWG stranded wire a maximum of 10 feet in length. Longer cable runs should use heavier wire. The speaker wires should be twisted in order to minimize radiated noise at the power amp switching frequency. Do not use shielded cable.
- The power amplifier operates in Bridge-Tied-Load configuration. Therefore, it is important that no ground connections are made in the power amp-to-speaker connection.
- **WARNING** – Do not connect to speaker loads totaling less than 4Ω.

**CONNECT INPUT SIGNAL LINES** - Use high-quality, shielded cable and ¼" phone plugs.

### PREPARING FOR USE

- Turn Level control down
- Connect AC cord. Observe all precautions noted in safety information.
- Actuate power switch. The two Red LEDs will light for a few seconds and then the Blue power LED will light, indicating that the amplifier is ready to use.



Connection Guide

- If either or both Red LEDs remain lit, turn power off and check speaker cables for short circuits. Power can be applied with the speaker cables removed to verify the presence of a short and to isolate which cable has a problem.
  - Set up proper input level by observing the Preamp Clip indicator (3rd LED) and turning up the output of the preceding audio device until the Preamp Clip indicator just begins to light on the highest peaks of your playing. It may be necessary to readjust this after setting up the EQ on the PS200.
  - Turn the Level control up slowly as you begin playing. Adjust for desired loudness.
- WARNING!** This amplifier is capable of producing very high sound pressure levels. Continued exposure to high sound pressure levels can cause permanent hearing damage. Set the Level control for a safe listening level or use hearing protection.
- Adjust Global EQ to compensate for any room anomalies and to fine tune your sound.

### SHUTTING DOWN:

- Turn power switch to “Off” position before removing any cables.



**WARNING!** - Amplifier housing may be hot after extended, high-power playing sessions. Allow adequate cooling time before handling.

## Protection Features

This amplifier has several features designed protect it under worst case conditions.

### POWER AMP CLIP / OVER-CURRENT / OVER-TEMPERATURE INDICATOR

This LED serves multiple purposes, indicating the following:

- Power Amp voltage clipping
- Power Amp current limiting
- Power Amp over-temperature warning

LIGHTING OF THIS INDICATOR CAN BE CAUSED BY THE FOLLOWING:

- Shorted speaker cable
- Speaker voice coil shorted to speaker pole piece or frame.
- Either + or - output signal connected to Ground.
- Total speaker impedance (parallel combination of speakers/cabinets) in excess of maximum rating.
- Level control set too high.
- Internal fault. Contact manufacturer for repairs.

**OVER TEMPERATURE PROTECTION:** The over-temperature circuit monitors the temperature in the output stage and power supply. As the temperature in either approaches 125°C, the Pwr Amp Clip/O.C. indicator will light continuously. When the temperature reaches 150°C, the amplifier will shut down until the temperature drops below 120°C, at which point it will reset.

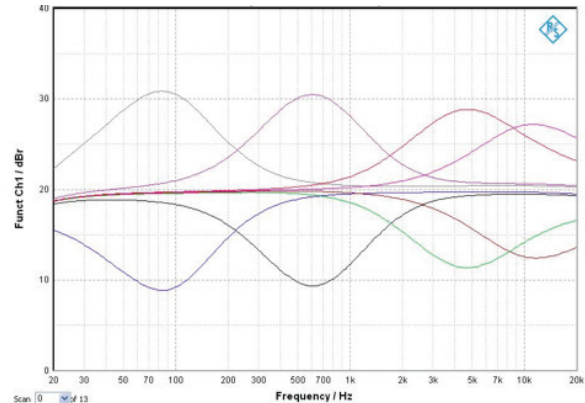
Lighting of the “Temp” indicator can be caused by the following:

- Lack of air circulation around amplifier.
- Blocked vents.
- Blocked or stopped cooling fan.
- Excessively high ambient temperatures.
- Heavy loading of output (low impedance loads) coupled with high power demand.
- Combinations of any or all the above.

### PREAMP CLIP / STATUS INDICATOR

This LED also serves multiple purposes, indicating the following.

- Preamp voltage clip warning – the LED will begin to light when the input signal is 6dB below the level of clipping. You should adjust the output level of the audio device directly feeding the PS200 so that this LED flashes on signal peaks.
- Protect Status of the power supply/power amp module – when lit continuously, the amplifier has shut itself down and entered protect mode due to potentially destructive overload conditions. In these cases, the amplifier will typically resume operation after a short delay or after the overload condition has been eliminated. Some causes are:
  - Severe overcurrent conditions and/or a short circuit on the speaker output.
  - Over-temperature conditions due to heavy loading at high output levels.
  - Over-temperature conditions due to inadequate air flow or excessively high ambient temperatures.
  - Internal fault. Contact manufacturer for repairs.



Tone Control Response

## Tech Specs

### POWER SPECIFICATIONS

- Maximum Output Power
  - 4Ω load – 210W @ 1% THD+N, 1kHz
  - 4Ω load – 255W @ 10% THD+N, 1kHz
  - 8Ω load – 117W @ 1% THD+N, 1kHz
- Continuous Output Power without thermal shutdown
  - @ 120VAC/60Hz – 140W
  - @ 230VAC/50Hz – 130W
- Nominal Mains voltage
  - 100 to 240 VAC, 50/60 Hz
- Maximum Input Power
  - 400W Max
- Total Power efficiency
  - $P_o = 200W - 78\%$

\*Specifications above are for an ambient temperature of 25°C, signal frequency of 1 kHz. Higher ambient temperatures or restricted air flow will result in earlier actuation of thermal shutdown circuitry.

### AUDIO SPECIFICATIONS

- Speaker Outputs
  - THD + N @ 1kHz, full rated power -  $\leq 1\%$
  - THD + N @ 1kHz, 10V out, 4Ω load – 0.003%
  - Output referenced idle noise –  $\leq 92\mu V$ , A-weighted
  - Dynamic Range, A-weighted – 109dB
  - Bandwidth – 5 Hz to 50 kHz  $\pm 3$  dB, 20 Hz to 20kHz @ nominal power
- EQ Parameters
  - Bass +/- 10 dB @ 87 Hz
  - Midrange +/- 10 dB @ 645 Hz
  - Treble +/- 8.5 dB @ 4.4 kHz
  - Presence +/- 6.8 dB @ 11.6 kHz

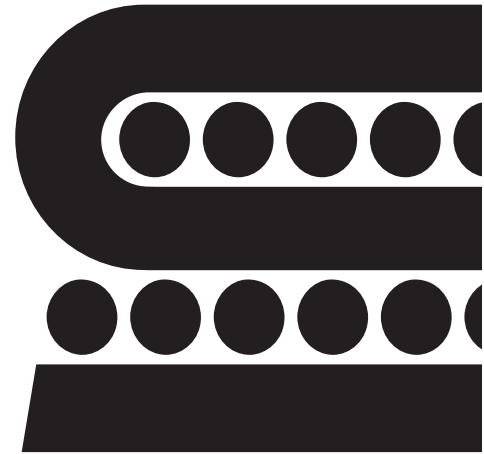
### ENVIRONMENTAL SPECIFICATIONS

- Ambient Operating Temperature – 0° to 50°C
- Relative Humidity – 85%, non-condensing
- Altitude, operating – 2000m (6500 ft.)
- Weight – 2.87 lbs.

## Limited Warranty

Seymour Duncan offers the original purchaser a one-year limited warranty on both labor and materials from the day this product is purchased. We will repair or replace this product at our option if it fails due to faulty workmanship or materials during this period. Defective products can be returned to your USA dealer, international distributor, or sent direct to our factory postage prepaid along with dated proof of purchase (e.g., original store receipt) and RMA number. Call or email our factory for an RMA number which must be written on the outside of the box. We reserve the right to refuse boxes without an RMA written on the outside. As you might expect this warranty does not apply if you've modified the unit or treated it unkindly. We can assume no liability for any incidental or consequential damages which may result from the use of this product. Any warranties implied in fact or by law are limited to the duration of this express limited warranty.





Make sure to visit [SeymourDuncan.com](https://www.seymourduncan.com) for the most up to date info and sound samples.

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