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S-400 Series II Stereo Reference Balanced Amplifier



Since its introduction in 2004, VTL's S-400 Stereo Reference amplifier has been valued by music lovers around the world as a high power, high performance tube amplifier--renowned for its ease of use and refined, natural depiction of music. The new Series II version of the S-400 uses the same circuitry as its bigger brother, the Siegfried Series II Reference monoblock amplifier, in an impressive single chassis design. The inclusion of VTL's latest engineering advances brings the renowned sonic performance of the S-400 to even greater heights.

For the Series II, VTL, has completely re-worked the entire signal path. Upgrades include a fully balanced differential input stage driving a differential phase splitter and a lower impedance push-pull output stage with a dramatically improved, fully balanced and enhanced interleaved and coupled output transformer. Equipped with the same "SmartTube" technology as the Siegfried II, the S-400 deploys Auto Bias and Fault Sensing, precision-regulated power supply technology, and bi-directional RS-232 control, giving unparalleled flexibility and ease of use.

The S-400 Series II gains further sonic benefits with a shorter, faster and fully balanced negative feedback loop, with zero global negative feedback. The negative feedback loop completely eliminates ringing and requires no capacitor compensation to maintain critical phase integrity and information. The result is an amplifier that remains stable even under the most demanding loads.

Adjustable precision-regulated plate, screen and bias supplies hold the output tube operating point constant even under AC and main power supply fluctuations, and stabilizes the critical power supplies yielding tonal stability and sonic integrity, especially during complex, dynamic signal conditions.

Another new feature is a user adjustable Damping Factor feedback control that allows the user to adjust the amplifier's output impedance by varying the amount of negative feedback. Impedance can now be precisely set to suit the listener's taste, and to improve control of the loudspeaker loads to deliver best performance. The 3 possible settings are:

1. LOW -- Lowest damping factor, good loudspeaker control, most natural sound.
2. MED -- Better loudspeaker control, with some impact on sound quality
3. HI -- Best loudspeaker control, with a little more impact on sound quality, but on speakers that need the control the sonic improvement is clear

Finally, the amplifier has been substantially re-voiced with premium Mundorf silver oil capacitors, for a sweeter, more extended top end and mid range tonality that sounds more relaxed, with better flow and integration. Input stage capacitors are also bypassed.

Even a brief listen to the S-400 Series II Stereo Reference amplifier reveals the successful implementation of the new technology. A lower noise floor creates a velvety black sonic background from which more of the nuances of music can emerge. The soundstage is taller and deeper, yielding better defined and more delineated instrumental images. The mid bass has more authority and control while the critical midrange exhibits a new effortlessness, better reflecting the natural colors and timbres of musical instruments.

Overall, the new amplifier has an uncanny ability to sound quick and agile, yet still possessing the ability to scale up effortlessly, with a sense of almost unlimited power. Listening to music through the S-400 II amplifier is an exciting and invigorating experience.

Feature List:

1. Fully balanced differential circuit – single-ended input signal produces balanced signal at output
2. Re-designed fully balanced differential input and driver stages for increased signal swing, bandwidth and stability
3. Zero global Negative Feedback
4. Shorter, faster feedback loop for greater tonal control without phase shift.
5. Improved handling of loudspeaker loads for greater signal stability.
6. The amplifier is unconditionally stable, without the need for any capacitor compensation.
7. New current source for greater sonic integrity in single-ended mode
8. Lower impedance output stage for improved loudspeaker control
9. Dramatically increased interleaving and coupling in the balanced VTL proprietary Reference output transformer, for wider bandwidth and zero ringing
10. Variable user-adjustable DF feedback control to vary output impedance and damping factor for optimal matching to speaker load
11. Software microprocessor controlled
 - Tetrode/Triode Switchable
 - Auto Bias, Fault Sensing
 - Current in-rush limiting
 - Standby Mute function; with reduced tube current for increased tube life
 - Fully bi-directional RS-232 control
12. 300 watts per channel in tetrode; 150 watts per channel in triode
13. Uses twelve 6550 or KT-88 tubes
14. Adjustable precision-regulated plate and screen supplies for stable operating point; discrete regulated input and driver supply for greater signal resolution and tonality
15. Adjustable precision-regulated bias supply for greater signal resolution and noise rejection and improved isolation from mains supply variations; output operating point does not change with AC power fluctuations
16. Improved Autobias and fault sensing system to operate in fully balanced differential mode; amplifier is fully protected against output tube failure; no need for precision matching of output tubes
17. All premium Mundorf silver oil caps in signal path

- 18. Film bypass of power supply caps for greater HF resolution
- 19. Extruded aluminum front panel with luxurious, modern look – black and silver options available
- 20. Precision regulated B+ and screen supplies
- 21. Rigid construction and improved ventilation for lower operating temperature
- 22. Factory upgradeable from Series I

Specifications

S-400 Series II Stereo Reference power amplifier

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|---------------------------------|---|
| Vacuum Tube Complement | 12 x 6550 or KT-88, 2 x 12AT7, 2 x 12BH7 |
| Output Power | Tetrode = 300 watts Triode = 150 Watts |
| 20Hz – 20KHz <3.5% THD | Into 5 ohms |
| Input Sensitivity | Variable between 1-2V, depending upon DF setting |
| Input Impedance | 48K Ohms |
| Load setting | 5 ohms |
| Optimum Load Range | 4 - 8 ohms |
| S/N Ratio | -90dB, 120 Hz |
| Power Consumption | Idle = 560 W Full Power = 1600 W |
| Primary Mains Fuse Rating B+ | 100/120V = 20A Ceramic Slo Blo 220/ 240V = 10A Ceramic Slo Blo |
| Logic Fuse | 100/120V = 1A Ceramic Slo Blo 220/240V = 1A Ceramic Slo Blo |
| Input Fuse | 100/120V = 2A Ceramic Slo Blo 220/240V = 1A Ceramic Slo Blo |
| Filament Fuse | 100/120V = 2A Ceramic Slo Blo 220/240V = 1A Ceramic Slo Blo |
| Secondary Fuse Rating | Plate Fuse -- 2.5A fast acting 600V Screen Fuse – 0.75A fast acting 600V |
| Dimensions W x D x H | 11.5 x 24 x 24 inches (29 x 61 x 61 cm) |
| Weight | 250 lbs (113 Kg) unpacked 350 lbs (158.7 Kg) packed |