



Balanced bridged design assures optimum signal purity

1,000-watt amplification provides ample current to drive any speaker

Massive heat sink and hundreds of ventilation ports assure reliable cooling

Two 1500-watt supply transformers with large storage capacitors for maximum peak output

Modular configuration for superior power with the musicality of single-ended amps

To craft the finest amplifier ever built, one must go beyond traditional thinking and cookie-cutter circuitry. We took this leap of faith to create the Hercules.

When we began planning the Hercules, we eschewed the normal path of building an overpowered behemoth then tweaking it to sound a little better. Instead, we first designed the ideal 125-watt amplifier, one that delivered the detail and subtlety we craved. Rather than changing this amplifier's circuitry to increase the power, we designed it as a module that would let us achieve more power simply by adding more modules. Even though the 1,000-watt Hercules has eight times the power of that original 125-watt amplifier, it sounds absolutely identical.

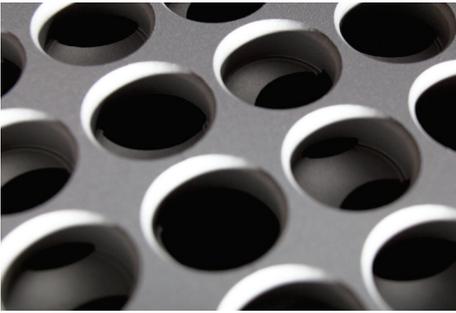
## The Circuit

The reason for the Hercules' incomparable combination of power and finesse is our unique balanced drive configuration. This design combines multiple single-ended amplifiers into a powerful fully balanced design, in which separate circuits amplify the positive and negative halves of the audio signal.

Other balanced amps use N-type output transistors for the positive half of the circuit and P-type transistors for the negative half. The differences between the two types of transistors cause an imbalance between the positive and negative halves of the signal, which robs the music of its natural timbre and emotion.

In the Hercules, we solve this problem by combining two matched single-ended amplifiers using only N-type output transistors. The two amplifiers are bridged together to deliver the full audio signal. Like the low-powered single-ended amplifiers many audiophiles prefer, the Hercules uses only one type of output device, so every element of the musical signal passes through exactly the same circuit components. Balance between the positive and negative halves of the signal is as perfect as can be achieved. The design also permits the driver circuits to run in full Class A mode.

The balanced drive design is inherently stable into a wide range of speaker loads, so it can drive any loudspeaker without strain. No Zobel network is



needed at the output in order to assure high-frequency stability.

The result is as radical as the circuit topology: an amplifier with more than sufficient power for any application, yet with the musicality of amps rated at only one-hundredth as much output.

### The Input Stage

The Hercules' performance can only be as good as the signal it receives. If the signal comes from our Altair line stage via our Constellation Link balanced audio interface, all is well. But if the signal comes from another brand of preamplifier, it will not be perfectly balanced.

This is why we equip the Hercules with our Line Stage Gain Module for input conditioning. This module is essentially the same topology as the output section of the Altair, with hand-matched FETs, a servo circuit that assures ideal positive/negative balancing, and a machined aluminum shield protecting it

from interference. The FETs we use in this circuit have the lowest noise of any we have found. They are also quite rare because their manufacturer has discontinued production. Fortunately we have amassed a sizeable inventory.

### The Power Supply

The finest amplification circuit in the world makes little difference if it is not supplied with clean, abundant electrical power. To this end, we use two custom-wound, 1,500-watt toroidal power-supply transformers. Its considerable mass contributes to the 275-pound weight of each Hercules monoblock.

In order to provide ample energy for dynamic peaks and deep bass notes, we specified massive storage capacitors for the section of the power supply that feeds the output stage. For lower-level circuitry, we use active voltage regulation to provide a noise-free, stable source of DC power.

### The Design

Upon first encounter, the Hercules is as surprising to the eye as it is delightful to the ear. The eye notes the distinctive design and the flawless finish. The hand senses the perfect fit of the components and the immaculately machined chassis.

Hundreds of round ventilation ports

perforate the side of the chassis. These ports are not mere design elements—they allow flow-through ventilation for the Hercules' massive aluminum heat sink.

A 432- by 230-pixel LCD display on the rear panel provides the user with extensive information about the Hercules' operating condition. It displays RMS and peak output power, operating temperature, hours of use, and overload condition warning. All of this information is communicated wirelessly for display on the Pyxis wireless commander provided with our line-level components.

### The Result

With almost limitless reserves of power, yet with the sonic sophistication of the most exotic single-ended amps, the Hercules delivers everything any audiophile could possibly want from an amplifier. Only our dream team of the world's best audio engineers and industrial designers could accomplish this feat. Audiophiles have long envisaged the perfect amplifier, one that simply leaves nothing to be desired. For the fortunate few who acquire the Hercules, the dream is now realized.

*Constellation reserves the right to change designs, and / or specifications*

## SPECIFICATIONS

### Hercules Monoblock Amplifier

#### Power Output @ 1 kHz @1% THD+N\*

1000 W amp:..... 1000 W/ch @ 8 ohm, 1400 W/ch @ 4 ohm, 1800 W/ch @ 2 ohm

Frequency response..... +1, -0,5 dB 10 Hz -100 kHz

Gain..... 32 dB

THD+N @ 1 kHz @ rated power..... <0.05%

Output impedance..... 0.05 ohm

Damping factor (re 8 ohm)..... 150

#### Input impedance

UB..... 100K

B..... 200K

Output noise..... < 500 uv, -100 dB re 250W

Weight..... 275 lbs / 125kg

Dimensions..... 28.88"/733.6mm x 11.75"/298.5mm x 20.25"/514.4mm (hwd)

\*= full power output dependent upon actual line voltage in your home

 constellation audio

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