

# esoterica

## D'AGOSTINO MOMENTUM MONOBLOC POWER AMPLIFIERS

'A spectacular and unique design statement'





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**T**he cliché is that beauty is in the eye of the beholder. But, in my opinion, the truest form of absolute beauty transcends personal or individual discrimination and, at its purest, is universal. These esoteric principles aren't usually associated with something as relatively mundane as a hi-fi component, but if I may, I'd have to say that the D'Agostino products truly qualify as pure beauty.

The Momentum amplifiers are spectacular and a unique design statement in the high-end world. Visually, everything about these relatively diminutive amplifiers sets them apart from the competition. For starters, their size camouflages the substantial

speaker-driving power of 300-watts into 8 $\Omega$  loads, increasing to 1,200-watts into 2 $\Omega$  loads. The solid aluminium billet chassis, hand-machined and assembled in the USA, with its brilliant lustre and immaculate fit and finish, could pass for industrial sculpture. The heatsinks are a unique blend of beauty and functionality—the solid polished copper construction and 'Venturi' pattern aiding efficient cooling. And then there's the much-discussed and much-admired main meter dial with its Breguet-styled needle and signature imprint, a Dan D'Agostino labour of love reflecting this designer's passion for fast cars and expensive watches. The whole design is an extraordinary

amalgamation of exquisite form and efficient practicality of function. Of course this design is a far cry from D'Agostino's previous efforts at the helm of Krell where his early creations (along with his competitor Mark Levinson) were seminal in defining the physical appearance of modern high-end solid-state components. Krell's amplification products were of course famous for their high power, massive size and hernia-inducing mass, while featuring circuitry that operated in varying degrees of Class-A operation. Besides, although attractive and immaculately built, Krell amplifiers were industrial, or business-like in design rather than excelling in outright gorgeousness.

## MAINTAIN THE MOMENTUM

Even before being hooked up to my reference Wilson Audio Sasha W/P speakers, and despite their relatively diminutive size, the Momentum amps made a powerful visual statement. The amps drew 'oohs' and 'aahs' from every single visitor to my home, whether that visitor was a battle-hardened audio veteran or a plain civilian. One of my own reference amplifiers comprises a pair of monoblocs that sit on custom cone-coupled acrylic platforms. Fortuitously, the Momentum amps fitted atop these as if these platforms were made for them. Oh, and *apropos* the Sashas and Momentums, D'Agostino himself has been very outspoken in his endorsement of the synergistic relationship between these two components: he has personally teamed his amplifiers with the Sashas at many hi-fi shows and exhibitions around the world. So my expectations and excitement levels were—I think quite justifiably—high.

The same dedication and attention to detail applied to the Momentum's external finery has been carried through to the circuitry inside it. For starters, a specially-designed low profile power transformer has been engineered with the aim of supplying more than adequate power while minimising bulk and overall component size. Deceivingly for its size, the Momentum amp is claimed to be able to deliver 300-watts into 8Ω and increase its power output with decreasing loads until it reaches its maximum of 1,200-watts into 2Ω. Distortion has been specified as 0.1 per cent at 1kHz at rated

output into 8Ω. Gain is specified at 26.5dB and input impedance at 100kΩ. Frequency response is specified as extending from 1Hz to 200kHz -1dB and from 20Hz to 20kHz ±0.0dB. Despite its relatively modest size (127×318×533mm) the Momentum weighs 46kg.

Look inside the Momentum and you'll see 28 output power transistors per monobloc. D'Agostino says of their performance: *'they're amongst the fastest high-output transistors available. They run at a blistering 69MHz, permitting incredible bandwidth. Each transistor mounts with two stainless*

similar to those on the Sasha W/P). Also on the rear are the IEC mains power socket, a set of small toggle switches that control the front panel's meter sensitivity and intensity, and 12-volt trigger inputs and outputs.

From the tip of the meter's Breguet-styled needle to the ends of the speaker binding posts and all that is in between, the Momentum monos exude class. The product provides the kind of ownership cachet usually reserved for possessions such as exclusive cars of the Bugatti or Aston-Martin ilk or, indeed, Breguet or Perregaux luxury timepieces. Having the D'Agostino



*From the Breguet-styled meter needles to the ends of the speaker binding posts and all that is in between, the Momentum monos exude class*

steel fasteners to enable maximum thermal transfer to the copper heat sinks.' You'll also see there are no surface-mount devices on the printed circuit boards, because D'Agostino says he prefers through-hole circuit boards for their heat tolerance and long-term reliability and the ability to accommodate much higher-grade capacitors—though none are used in the signal path: this amplifier is d.c.-coupled from input to output.

The rear panel offers balanced XLR inputs as the only signal connection option and there's a set of high quality gold speaker binding posts (looking remarkably

Momentums in my listening room alongside my speakers' piano gloss and the other components' chrome and brushed aluminium finishes made for some potent eye candy.

## MASTER SOUND

The more cynical amongst my readers may imagine that in the light of the Momentums' powerful visual statement and the high expectations nurtured by reviewers and audiophiles alike ever since their release, your reviewers' mind would play him tricks and his powers of critical analysis would be compromised.

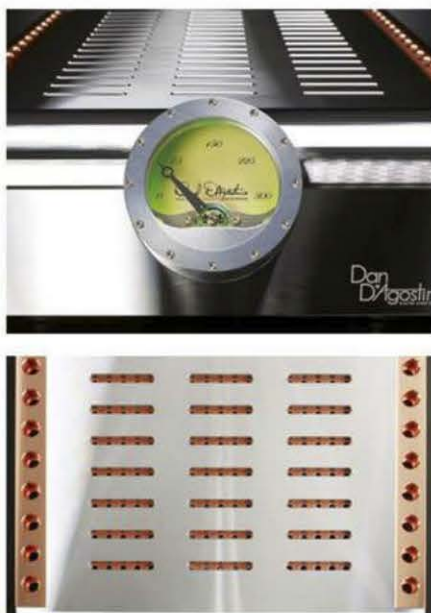


That indeed may have been a possible concern—but, really, only for the very short term—however it so happened that the D'Agostinos followed in the review steps of two other physically massive über high-end amplifiers that had already etched their unforgettable sonic imprints in the Kramer review memory. The sonic, umm... momentum had therefore been built-up by amps that set the bar at the very highest level. How would the comparatively diminutive Momentums stack up?

Actually, to start off, I did have a concern about the sonics. I was finding the Momentum's sound a tad unbalanced: tipped-up towards the bass region, to be specific. This imbalance made the sound obviously bass-heavy, somewhat mellow, and lacking in bite and detail in the mids and highs. Vocals were recessed and obscured by the instrumentation. After trying two different preamps (with established sonic credentials) after which the situation was for the most unchanged, I was left scratching my head. Then... a light bulb moment. I recalled an anecdote from last year's Melbourne Audio Show where it was reported that the D'Agostino room sounded good one day but even better the next. The only change? The system had undergone a complete cable loom change that elevated the performance to another level.

So after reconfiguring cable looms... what a difference! There was a profound change in sound balance that came as a total surprise—the previous lower-priced cable having performed superbly in other contexts. The Momentum amps seem to be quite exacting, actually demanding, in their synergy with the cable selection... in my experience to an unprecedented extent.

With the new set-up came a more balanced sound that in no way obscured the mids and highs (although overall I found the sound signature slightly laid back). Vocals projected forward, as they should, leaving the instruments well-placed and in perspective. Ani DiFranco's 'Amazing Grace' from her *Living in Clip* live album had her accurately-placed mid-stage and well in front of the drums. In fact, the Momentums reproduced her voice superbly, with fine detail and stunning dynamic range. And right there was one of the major strengths of these wonderful monos—dynamic contrast. No crescendo or drum whack was too difficult for these amplifiers to reproduce; they could handle the most demanding of dynamic challenges without raising a sweat



bead and with only the barest flick of the front panel meter's needle.

That same track features one of the largest sound fields I have come across. The engineers have managed to capture the performance's large venue ambience in a way that, given a suitable component mix, can mesmerise. The D'Agostino did not restrict the immensity of the soundfield in any way. Low-level crowd noise, such as coughs or whistles, gave the illusion of coming from 100 metres away. Eyes wide shut, I was at the venue mixing it with the crowd.

And if you like the visceral experience deep and powerful bass can provide, these amplifiers are only too willing to accommodate. Mino Cinelu's self-titled album features a number of tracks that can shake foundations and put to the test any amplifier and speaker system. The Momentums' bass depth, punch and detail (a legacy of the Krell days perhaps?)—now appropriately balanced—was exemplary. There was a 'spring in the step', a certain snappiness—a 'boppiness'—to the bass' initial attack that propelled the music along.

Orchestral material displayed equal amounts of spaciousness and expansiveness to the sonic presentation. Tchaikovsky's violin concerto, on Decca, featuring Boris Belkin on violin with the New Philharmonia Orchestra conducted by Vladimir Ashkenazy illustrated the Momentum's power of resolution in separating Belkin's virtuosity from the orchestra's enormity while presenting his instrument with superbly accurate tonality, rosin on string. And, once again, when the orchestra lets fly, the amps' vast dynamic range let me get that much closer

to the reality of the event, the exuberance again only just flicking the meter's needle—the Momentums are just cruisin' easy... even at these power output levels.

Speaking of tonality, it's been my experience of late, while reviewing some of the world's best amplification products, that the previously wide gap between the very best valve and the very best solid-state designs is closing. Undisputed masters of tone valve designs may once have been, but now SOTA solid-state designs, such as these Momentum monoblocs, are biting at the proverbial ankles of the glowing glass brigade.

## CONCLUSION

The Momentum amplifiers come from a DNA pool of considerable and indeed enviable depth. But D'Agostino Master Systems sees the man who spearheaded high-end amplifiers taking a different philosophical and pragmatic approach. D'Agostino, the man, has married the very latest technology with his unparalleled engineering expertise to create one of the most distinctively beautiful audio components I have ever experienced. Sonically, with careful component and cable-matching, the Momentum amplifiers stand head-to-head with the very best. Dan, do thrust forward at full momentum. ⚡ **Edgar Kramer**

## D'AGOSTINO MOMENTUM

**Brand:** D'Agostino Master Systems  
**Model:** Momentum Mono  
**Category:** Power Amplifier  
**RRP:** \$59,995/pair  
**Warranty:** Five Years  
**Distributor:** Advance Audio Australia  
**Address:** Unit 8, 509-529 Parramatta Rd  
 Leichhardt  
 NSW 2040  
**T:** (02) 9561 0799  
**F:** (02) 9569 1085  
**E:** sales@advanceaudio.com.au  
**W:** www.advanceaudio.com.au



Uniquely and gorgeously styled  
 Dynamic and expansive sound  
 Manageable size considering  
 its enormous power output



Sensitive to cable matching  
 Binding posts don't accept  
 banana plugs

LAB REPORT: Turn to page 79  
 Test results apply to review sample only.

## TEST RESULTS

On *Newport Test Labs*' test bench, the D'Agostino Momentum monobloc amplifier easily cracked the 300-watt mark for power output into 8Ω, as you can see from both the tabulated figures and the bar graph, returning 355-watts at 1kHz, 347-watts at 20Hz and 342-watts at 20kHz. Loaded down with 4Ω loads, the D'Agostino delivered 600-watts at 1kHz, but came up just 3-watts shy (597-watts) at 20kHz, and delivered 588-watts at 20kHz. However, as you can see from the tabulated chart, *Newport Test Labs* was not keeping the mains power supply constant (it varied between 239 volts and 255 volts during the testing period) so it's likely that had the mains power been a minimum of 240-volts at all times, the Momentum would have got across the line at all test frequencies. Driving a 2Ω load, the D'Agostino Momentum delivered more than 900-watts at all frequencies tested, which is a fantastic result. Moreover, it did so easily, with the lab's technicians noting that unlike most amplifiers, there was no 'whine' from the power supply, nor any notches appearing at the crossover points. For the 2Ω results, power output was measured just prior to the onset of clipping, so if the lab had allowed distortion levels of 3%, which is a common measurement technique, power output would have been even higher than measured. Note also that even taking into account the mains power supply being lower than 240V, the results obtained by the lab when the Momentum into a 2Ω load are still only around 1dB lower than D'Agostino's rating of 30.7dBW, with *Newport Test Labs* measuring 29.6dBW. In real terms, this difference is insignificant. Total harmonic distortion at an output of 1-watt into 8Ω was low, with a second harmonic at -93dB (0.002%), a third harmonic at -78dB (0.012%), a fourth at -102dB (0.0007%) and a fifth at -110dB (0.0003%). The noise floor was mostly more than 100dB down, creeping above this only below 2kHz. Note, however, that at very low frequencies (extreme left of the graph) there are no signals that would indicate the presence of mains hum. Distortion at 1-watt output was considerably higher into 4Ω loads, suggesting to me that D'Agostino is not using much negative feedback. As you can see, there's a second harmonic at -70dB (0.031%), a third at -65dB (0.056%), a fifth at -88dB (0.003%) and sixth and seventh harmonics down at -110dB. (The fourth harmonic

## D'Agostino Momentum Mono Amplifier Test Results

Test	Measured Result	Units/Comment
Frequency Response @ 1 watt o/p	0Hz - 105kHz	-1dB
Frequency Response @ 1 watt o/p	0Hz - 180kHz	-3dB
THD+N	0.12% / 0.45%	@ 1-watt / @ rated output
Signal-to-Noise (unwghted/wghted)	77dB / 81dB	dB referred to 1-watt output
Signal-to-Noise (unwghted/wghted)	101dB / 105dB	dB referred to rated output
Input Sensitivity	191mV / 3.31V	(1-watt / rated output)
Output Impedance	0.15Ω	@1kHz
Damping Factor	53	@1kHz
Power Consumption	0.37 / 130	watts (Standby / On)
Power Consumption	133 / 509	watts at 1-watt / at rated output
Mains Voltage Variation during Test	239 - 255	Minimum - Maximum
Heatsink Temperature (Degrees C)	53	Measured at copper edge rail

## D'Agostino Momentum Mono Amplifier Power Output

Channel	Load (Ω)	20Hz (watts)	20Hz (dBW)	1kHz (watts)	1kHz (dBW)	20kHz (watts)	20kHz (dBW)
Monobloc	8 Ω	347	25.4	355	25.5	342	25.3
Monobloc	4 Ω	597	27.7	600	27.7	588	27.6
Monobloc	2 Ω	907	29.5	924	29.6	911	29.5

Note: Figures in the dBW column represent output level in decibels referred to one watt output.



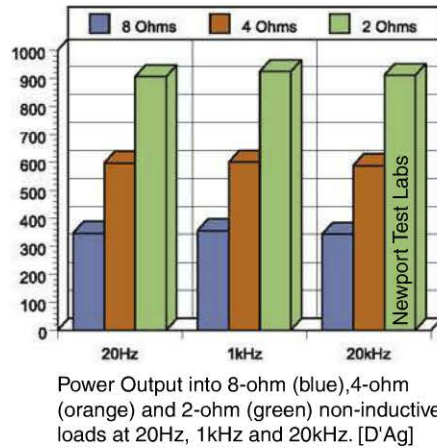
*The D'Agostino Momentum is a superb example of high-end amplifier design at its very best.*



was buried in the noise floor, you can just spot it at  $-113\text{dB}$  (0.0002%). Again, the noise floor is well-controlled, even at low frequencies.

Distortion increased considerably when the amplifier was delivering its maximum power into 8Ω loads (Graph 3) and into 4Ω loads (Graph 4), but as you can appreciate, the output levels were 300-watts and 600-watts respectively! The harmonic distortion 'signature' is similar for both graphs, so I'll only explain Graph 3 in detail: You can see there's a second harmonic at  $-68\text{dB}$  (0.039%), a third at  $-46\text{dB}$  (0.0501%), a fourth at  $-80\text{dB}$  (0.01%), a fifth at  $-59\text{dB}$  (0.11%), a sixth at  $-95\text{dB}$  (0.001%) and a seventh at  $-74\text{dB}$  (0.019%). For the higher-order harmonics visible on the graph, they're all at or more than 90dB down

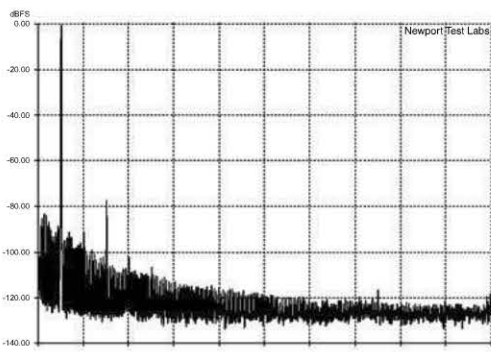
(0.003%). On both graphs the noise floor is more than 130dB down across almost the entire audio band. Even at low frequencies, it's more than 100dB down.



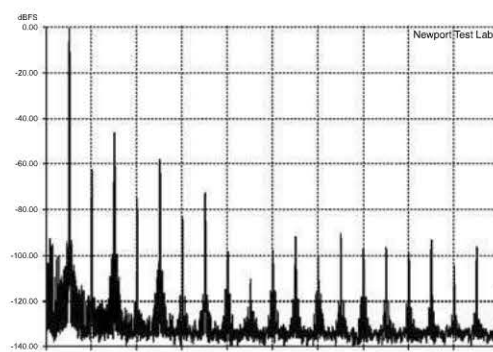
The D'Agostino's frequency response into 8Ω non-inductive loads was, as you can see (Graph 5), ruler-flat across the audio band, dipping below reference only at the frequency extremes (low frequency roll-off starts at 8Hz, and the high-frequency response is just 0.1dB down at 20kHz, so the normalised response would be 20Hz to 20kHz  $\pm 0.05\text{dB}$ ). When driving a load that simulates that of a real loudspeaker, the response is not quite so flat but still easily 20Hz to 20kHz  $\pm 0.2\text{dB}$ , which is an excellent result. The limits of the Momentum's response are shown in the tabulated results. In the low frequencies, there are no limits: this amplifier's response extends within 1dB down to d.c. At high frequencies, the Momentum is 1dB down at 105kHz and 3dB down at 180kHz.

Intermodulation distortion (CCIF-IMD) was extraordinarily low, as you can see from Graph 6. The two test tones to the right of the graph are accompanied by some IMD products, but the closest sidebands are 72dB down, and the next are 80dB down. The oscillograms showing the D'Agostino's responses during square wave testing depict almost-perfect performance. At 10kHz there is some very slight rounding, but the wave is otherwise perfectly square and well-behaved. The amplifier's performance when it's loaded down with a highly capacitive load is excellent: only a trivial overshoot and almost no ringing, quickly damped. This amplifier is unconditionally stable and a perfect candidate for driving even the most difficult and demanding loads.

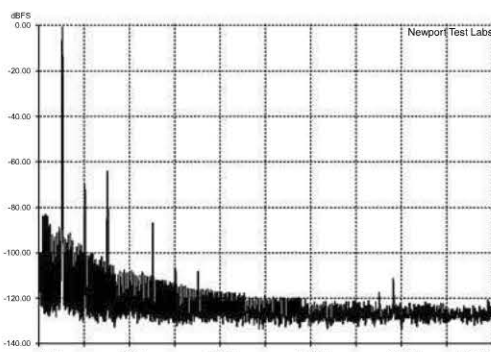
The D'Agostino Momentum is a superb example of high-end amplifier design at its very best.  Steve Holding



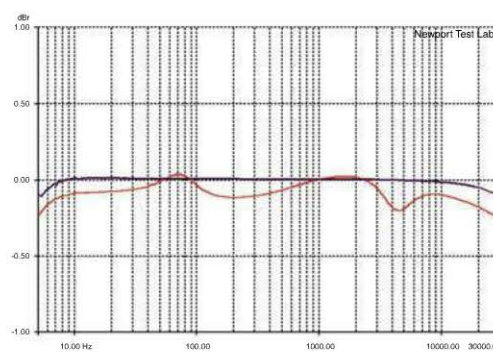
Graph 1: Total harmonic distortion (THD) at 1kHz at an output of 1-watt into an 8-ohm non-inductive load, referenced to 0dB. [D'Agostino Momentum Monobloc]



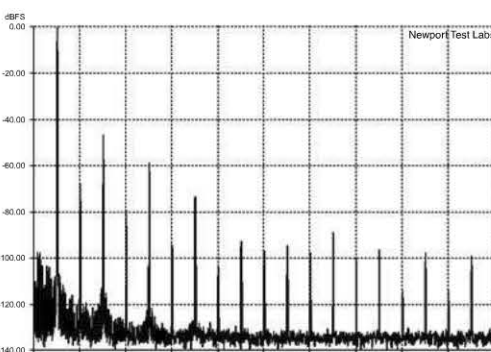
Graph 4: Total harmonic distortion (THD) at 1kHz at rated output (600-watts) into a 4-ohm non-inductive load, referenced to 0dB. [D'Agostino Momentum Monobloc]



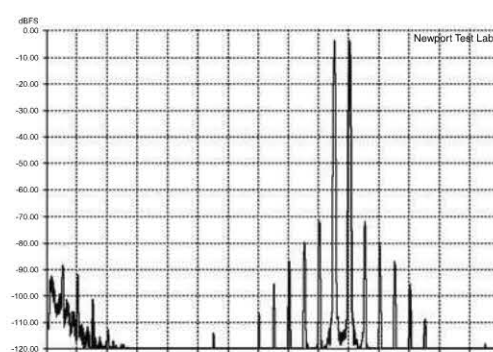
Graph 2: Total harmonic distortion (THD) at 1kHz at an output of 1-watt into a 4-ohm non-inductive load, referenced to 0dB. [D'Agostino Momentum Monobloc]



Graph 5: Frequency response of balance input at an output of 1-watt into an 8-ohm non-inductive load (black trace) and into a combination resistive/inductive/capacitive load representative of a typical two-way loudspeaker system (red trace). [D'Agostino Momentum Monobloc]



Graph 3: Total harmonic distortion (THD) at 1kHz at rated output (300-watts) into an 8-ohm non-inductive load, referenced to 0dB. [D'Agostino Momentum Monobloc]



Graph 6: Intermodulation distortion (CCIF-IMD) using test signals at 19kHz and 20kHz, at an output of 10-watts into an 8-ohm non-inductive load, referenced to 0dB. [D'Agostino Momentum Monobloc]