

# D'Agostino Relentless Monoblock Amp | First Listen

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**Dan D'Agostino's** new reference Relentless Monoblock amplifier ([website](#)) weighs in at a record 570 pounds, can dance beautifully at 1 watt and will party all the way 6000 watts into 2 ohms when driven by a 220v electrical circuit. Although it takes 4 strong dudes to drop it in place, once warmed up and you're past the dent in the checking account, I don't think you'll ever want to move it once you power it up. Two years in the making, Dan D'Agostino describes the development as a "relentless pursuit to make it work", and such where the name comes from.

## Dan D'Agostino Relentless Amplifier Roadshow

Luckily Dan D'Agostino and Bill McKeegan have been taking these muscle machines on a roadshow, so we jumped on the opportunity to see and hear them as they made a quick stop at **Definitive Audio** in Seattle. Pictures cannot express the sheer size and presence of these amplifiers. To give you a sense of their scale, I placed one of my favorite Fleetwood Mac LPs up against the Relentless as it dwarfs the LP jacket cover.



More startling is placing the D'Agostino Relentless directly beside our longtime favorite, the Momentum M400 Monoblock amplifier. They share the same design language, but the scale of the Relentless takes the amplifier to another level. A design that was inspired by Bugatti and Dan's love for timepieces.



Bill McKiegan, President of D'Agostino explained that they didn't have a scale large enough at the factory to weigh the Relentless during development and estimated the weight by summing up all the parts used. It wasn't until the first Relentless was shipped and FedEx returned the shipping weight that the actual weight of the Relentless was recorded!

## Balanced Amplifier Design

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During our visit to Definitive Audio, Dan was gracious to speak for about 40 minutes and walk us through the development and design of the D'Agostino Relentless. Dan began his presentation by speaking about the balanced design of the Relentless amplifier. He started with a primer on balanced designs starting with a balanced cable and then moved on to how the balanced design of the Relentless was achieved.



Dan explained:

“Making a 1500-watt amplifier has to be a balanced amplifier. You can’t do it like a Momentum or a regular amplifier. It must be balanced.

There are plenty of balanced or bridged amplifiers out there. But the problem is, when you bridge an amplifier, you drive one amplifier out of phase to the other amplifier and you hook a speaker in between. That makes one gigantic amplifier. So, if it’s a 400-watt amplifier, when you do this, you get 1600 watts or 4 times the power. Every amplifier over 1000 watts out there is usually bridged or balanced. But fact of the matter is all the technology is faulted. It is faulted in the way that it is virtually impossible to get the + and – side to be exact reciprocals of each other because two front end circuits are used. And if they are not identical, you get power, but you don’t get the sonic benefit.

The Relentless is the only amplifier on the market that inverts like a balanced cable. Because the two sides, the + and – are exact reciprocals of each other. Any engineer can make a differential amplifier, the problem is for audio use, you can’t control the DC currents in the unit without effecting the DC offset, so anything happening to one side, the opposite happens to the side. The challenge is making the amplifier have no DC in the signal path and the only way is with one front end. This creates a perfect mirror image current source and differential amplifier that is completely isolated from anything that the amplifier does at the output. To prove that, either one of the sides by themselves will have .1% distortion and a noise floor of -60 dB. Put them together and you get .007% distortion and the noise floor drops to -80dB. By putting the two identical reciprocals together, noise is completely cancelled and the noise floor drops dramatically. If you use two front ends and they are not perfect matches, you can see it on an FFT and hear it on a system this resolving.”

## Thermal Engine

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After some listening, Dan moved on to discuss the thermal management. Like the Momentum Amplifier, a gigantic piece of copper serves as a platform to which all the output devices are connected. One the copper is warm; its heat is transferred to the aircraft aluminum heat sinks along the sides of the amplifier. The aluminum is arranged like a venturi pattern with the wall cut out. They work just like a venturi but there is more air flow since they are open on the side. This is different from the hole pattern used on the smaller Momentum amplifiers.



Dan explained that these two components work together as a “thermal engine”. As the amplifier reaches its operating temperature, the copper will heat the aluminum heat sink and the temperature of the amp stays static from that time onward. If you measure the temperature of the heat sink and the temperature of the output devices, you will see they are the same. This is because the copper’s thermal mass is so enormous. All the components attached to it, stay the same temp.

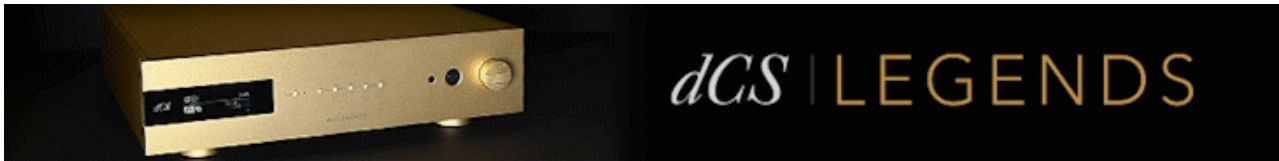
“The heat sink’s job when you are playing high volume levels, is to get rid of excess heat. The combination of the copper and aluminum heatsink work together as a thermal engine. They force each other to stay at a consistent temp. Since they are both warm and at the same temp, there is always airflow on the heat sink. Heat sinks only work when they are hot, since air is flowing. When they are cold, you don’t get air flow. Basically, forcing the heat sink to always be working. The copper will hold the temperature at about ~45 degrees Celsius and will always be relatively cool to the touch”

Dan went on to detail that in most other amplifier designs the output devices run 10-20 degrees hotter than the heat sink and that he felt that wasn’t a good idea. As one of the many stress tests, Dan played his Wilson Audio Alexx at crazy audio levels for 5-6 hours and the temperature was maintained, even with the difficult load the Alexx can demand.

The thermal engine is one of the key reasons why the D’Agostino Relentless managed to stay much smaller to other amplifiers from the past like a Krell Master Reference Amplifier.

## Meter Show

Let's be honest, we all love seeing meters on move on our audio gear. The challenge is, when your meter goes from one to a few thousand watts, you need to really work hard to get them to move. To deliver some fun, Dan decided another approach for Relentless meter.



When listening to the D'Agostino Relentless, the first 6 watts of power is all you need to move the needle because it is driven by an accelerometer circuit. That way, you get to enjoy your meter show. On the meter, once you pass 1000 watts, the meter accurately reports the power output. Prior to that, it's more of a party....

## Internals

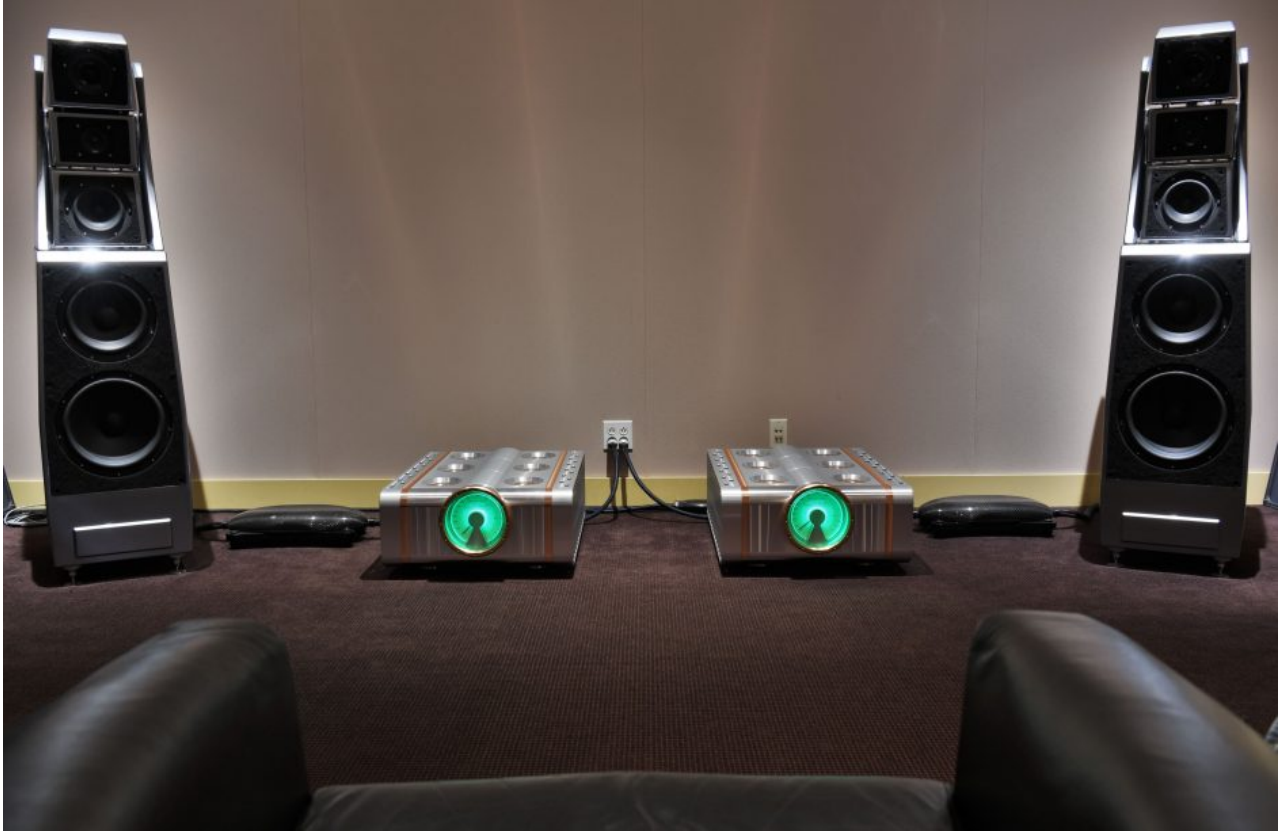
What else does the D'Agostino Relentless sport under its hood hiding alongside pounds of copper and aluminum? Inside you will find: 128 power devices, a 5.5 KW transformer, 6 x 100,000 microfarads capacitors, with all DC Coupled circuitry.

The unit can be run at either 110v or 220v, but Dan prefers them at 220v although he runs them in his own home at 110v (limited by power available). What's the power difference at 220? You get relentless power: 6000 watts into 2 ohms. You should only hear the difference at extreme levels and loads.

## Listening

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Through the presentation, we started and stopped listening to various tracks played from Bill's laptop to a **DCS Vivaldi** digital stack (Master Clock, Up-Sampler, and DAC) feeding a **Dan D'Agostino** Momentum Pre-amplifier into the two Relentless Monoblock amplifiers driving a pair of **Wilson Audio Alexx** loudspeakers.



Dan summarized his thoughts on the sound of the Relentless as:

“When you listen to it, you will hear it, it is effortless, and it doesn't have a sonic signature. It has almost unlimited power and has an output stage like the Momentum only carried to the nth degree. I have never made an amplifier that has this kind of current delivery. It was put into a relatively small package compared to a Krell Master Reference Amplifier (MRA) which is nearly 4 times bigger! It was a labor of love, it was a labor of music. When I brought it home, I think I listened for 6 hours before I turned them off around 4 or 5 in the morning when the dogs and my wife couldn't stand it anymore.”

What I heard? Music.... It was making it impossible for me to take notes or writing anything down on my phone as I was whisked away. Music filled the room, and the Wilson Audio Alexx drivers came alive. Dynamics, speed and tonality was probably the best I'd heard to date on the Alexx, and I've heard those speaker's kick some ass in other systems.

One of the key differentiators was the Relentless' ability to keep extreme levels of focus even when there is a fast change in dynamics. Almost like Relentless was a bodybuilder by day and perfect gentleman by night in its ability to be strong but also have a level of

finesse.

Although the Relentless does share parts with the other Momentum amplifiers – the power devices are the same in both amplifiers – the sound and DNA in my mind feels like an extension and refinement of the existing Momentum amplifiers. This isn't a knock in any way against the Relentless, it is a reminder just how good the Momentum amplifier is.

My hour was enjoyable with the Relentless, but I walked away yearning for an even more full experience. The Relentless demands the best in every component feeding it and a big room that gives them room to run. To get the full experience, we would require a better larger room and a pairing with something like David [Wilson's Magnum Opus WAMM Chronosonic](#) loudspeaker's to really hear what the Relentless can deliver.

## Dan D'Agostino Relentless Amplifier + Wilson Audio WAMM Chronosonic

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Feeling that I hadn't gotten the full experience, I asked Dan if he could share his experience from earlier in 2018, when he had the opportunity to listen to the D'Agostino Relentless Amplifier in David Wilson's incredible listening room alongside the Wilson Audio WAMM Chronosonic.

Dan was very gracious to share with us a little of the story.

“I had goose bumps, I was there with my friend Dave. It was bittersweet. I had promised him I would bring them up to hear. When they were finished, I listened to them over the weekend and I rented a truck and I drove them straight to Utah. I went there, and it was tear jerking, goose bump experience for both of us. It such an extraordinary combination it's hard to explain. You are hearing probably 1/3 or 1/8 of what it can do. When that kind of amplifier is on a WAMM, it's something you can't get enough of. It doesn't matter what you play.”

An incredible achievement Dan. We look forward to any future opportunities to hear these again, maybe one day on a WAMM Chronosonic. Yes, please 😊.



