D'AGOSTINO MOMENTUM PHONO | REVIEW

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There is no lack of religion, opinions, or passion when it comes to vinyl. Which table, which tonearm, which cartridge, which geometry or even which equalization curve to use? Lots of smoke. Maybe even some fire. But even then, we don't regularly pay enough attention to one of the most important elements, the phono pre-amplifier, that little gadget that amplifies the electro-acoustic signal deep in our delicious grooves, down anywhere from 40 to 75dB, depending on whether you choose a moving magnet or a moving coil for your cartridge. This crucial bit impacts just how much micro-detail we hear, the dynamics that are established and the level of unwanted noise that joins the party. Which brings me to the D'Agostino Momentum Phono preamplifier.

For the past two years I have been enjoying vinyl reproduction with an Audio Research Ref Phono 3 phono pre-amplifier. It's big, it's detailed, and establishes a level of romance and soul as I drop the needle on my beloved LP collection. On the other end of my system lives a Dan D'Agostino Momentum S250 amplifier to get the party going. What has impressed me over the years has been the ability of the D'Agostino solid-state amplifier to command my Wilson Audio Alexia Series-2 speakers with ease, creating a sound that excites me like the world's best tube amplifiers are able to do.

Earlier this year I had a chance to listen to Dan D'Agostino's ultimate work with the development of the D'Agostino Relentless monoblock Amplifier. It may be the best amplifier bar none, but a less known fact is that much of the innovation found within came from D'Agostino's work earlier on the D'Agostino Momentum Phonostage. Upon discovering this little-known fact, I knew it was time to get a Momentum Phono into my room for closer inspection.

Dan on the D'Agostino Momentum Phonostage

After a few weeks of break-in, I ventured down to Arizona to check-out D'Agostino's new facility in the quaint town of Cave Creek. The new digs were just getting broken-in with the team enjoying their new space. We will cover more about their new facility in a future article.

I had an opportunity to get a little better insight into where D'Agostino was headed when he put pen to paper for the Momentum Phono. I was interested in understanding what his vision was, what inspired him and what LPs were on his playlist. Dan was very clear that his goal was to design something a little different and bring some fresh innovation to the phono pre-amplifier. "Nobody has ever created a phonostage like the Momentum Phonostage," he explained with a smile of success on his face. "Others do not work like this. I didn't create a phonostage like ANY other phonostage.

> *"When I listened to the phono stage, I am looking for layering and I am looking for when there are loud passages, I don't want everything to clench together, I want them separated. Which I think I did."*

This started a longer conversation on what really makes the D'Agostino Momentum Phono different. Let's roll through what I learned that beautiful day in Cave Creek.

Single-stage for both moving coil and moving magnet cartridges

It is common for phono stages to include an additional stage in the signal path to provide the necessary gain requirements for MC phono cartridges, but this is not the case in the D'Agostino Momentum Phono.

Since there is just one input stage for both MM and MC, D'Agostino can alter the impedance for MM and capacitance's, but the gain stage is the same for both. I wanted to better understand why this had not been tried before by other manufacturers. D'Agostino explained that his vision was to simplify down to two stages. A single input stage that could handle both MC and MM with integrated passive EQ followed by the output stage.

He explained that to do this, you need to be able to get enough gain from that single stage for low output MC cartridges without adding noise. Further, you need to be able to switch to a moving magnet without losing the dimension.

"Back in the '70s I was a fan of the Decca cartridges, they sounded like moving coil, before moving coil. They were dynamic, and so much fun to listen to. They had air and space around them. I get those sounds in my head, and when I listen to moving coil, I want that robustness of that old moving-iron Decca," he said. "And if you ever get a chance to listen to one, you should. It wasn't until Koetsu and others got to the moving coil that the industry was able to design a front end that was quiet enough for an MC."

Passive equalization design & curves

Just like everything, there are numerous opinions on which EQ curves a phono stage should support. D'Agostino reached out to his network, calling around the globe, getting feedback on what he should include. In general, the sentiment was to include different curves.
D'Agostino believed that both Columbia and Deutsche Grammophon (DG) were still using their EQ curves for some records in the '60s and not the RIAA EQ curve. From time to time when he used to buy classical records from DG, they didn't sound right – a little hard – like something was missing on the bottom end. One of the first things Dan did when they did the D'Agostino Momentum Phono was play one of those old DGs with the DG curve. He had a bunch of DGs from a friend, made in the '60s. When the needle dropped, what he heard was that hard edge had disappeared when using the DG EQ curve over RIAA.
Similarly, D'Agostino experienced a similar sound off some Columbia recordings from the '60s when they were quasi stereo/mono, but instead using the rather than RIAA Columbia curve.

D'Agostino went on,

"I have to control myself when it comes to phono. You know what I wanted to do? All I wanted to do is just offer RIAA and for the other ones offer adjustable gyrators so you can choose the curve as you go… There used to be a time when you bought a record, and on the back had Control A, B, C, D which were the EQ settings, before they had an RIAA curve. I like that! There is something cool about that. Today when they make records, how close are they to RIAA? What are they using as a reference?"

Passive EQ built into the input stage was another area of innovation in the Momentum Phono. This model can introduce another set of challenges. D'Agostino explained:

"With passive EQ you need lots of voltage. We run 25volt rails in this phono stage because we need more headroom. We are dumping a lot of energy into the passive EQ. The result is so much better. Once you hear it, you can't listen to the other curves. After listening to passive EQs at Krell,"

D'Agostino continued,

"I always wanted to do it, but I didn't since the complications. You need a completely isolated front end, then another stage, then another stage so that when you drive the passive EQ, you don't get the parasitics that change the frequency response. It has to be really well buffered."

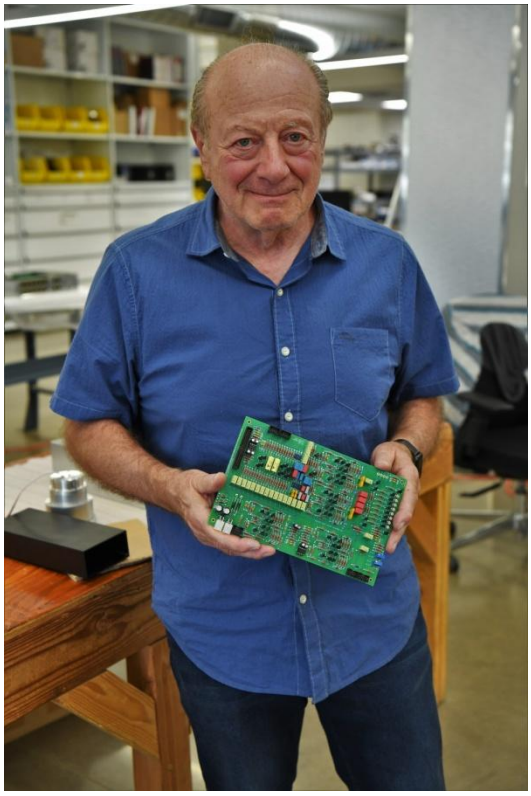
All of this adds up to a design that is simple with two stages but to execute is very complex. You will see on the phono board, there are probably 500+ parts. D'Agostino prides himself on also sourcing military grade components that are used through-out.

Differential design

D'Agostino is always keen to discuss the benefits of a true balanced differential design. It is a core tenant to his design of all his products and probably best executed in the Relentless Monoblock Power Amplifier. With vinyl this is even more important since a phono cartridge by nature is balanced and starts with a very low-level signal that needs to be amplified with the quietest signal path.
Compared to other products most moving coil gain input stages are rarely differential. They are

usually single-ended stages. The D'Agostino Momentum Phono is different in that it is differential from end-to-end to maintain the integrity of the signal. Differential inputs are unique because anything that happens on the inverse side reduces noise significantly. D'Agostino explained:

> *"If you take one of the stages of the Phonostage, there is a certain level of distortion, but if you take two stages and configure them differentially, the distortion is reduced to nearly zero. Of course, this doubles the parts count and that is often the reason you don't see fully balanced designs in many products."*



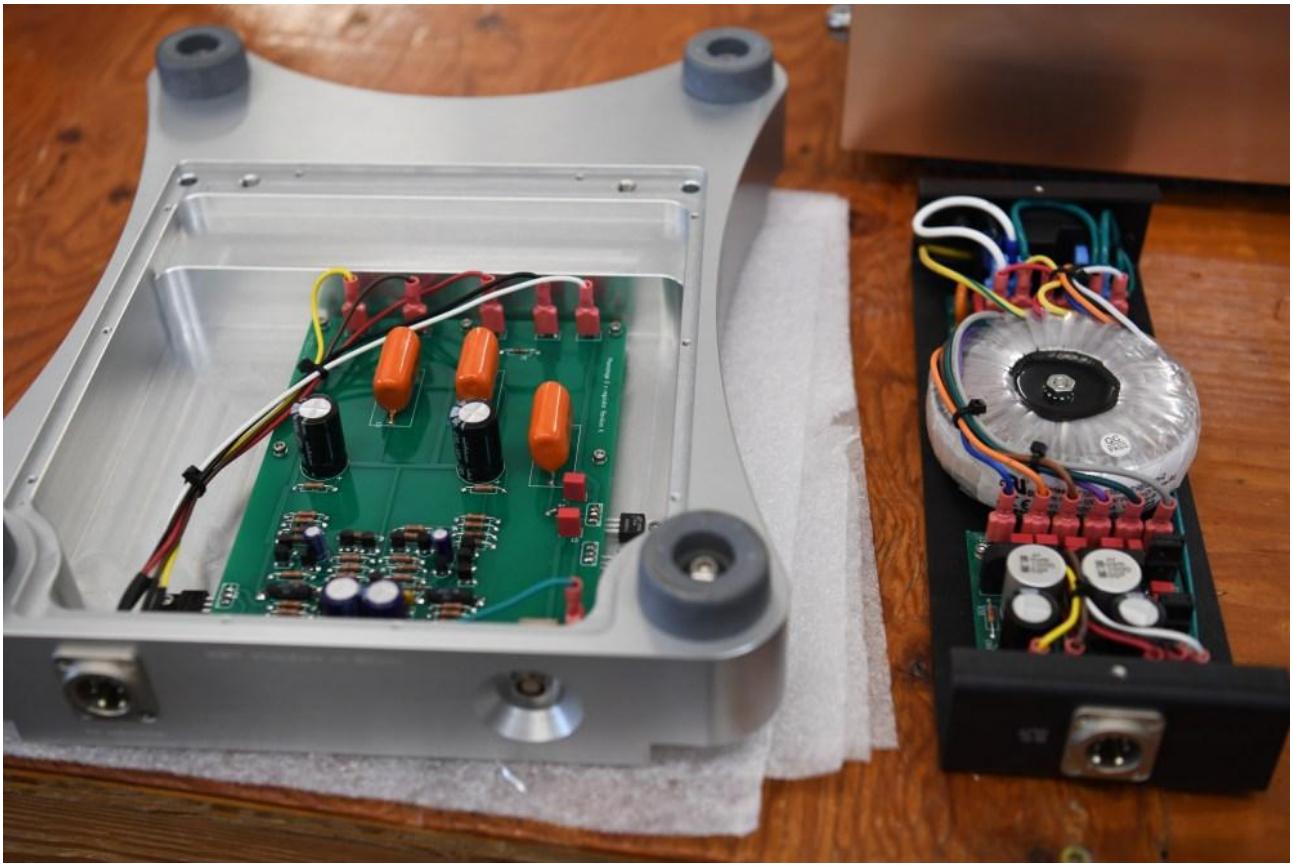
Later in the day I had a chance to sit by D'Agostino's desk as he dug deeper into this topic. The Momentum Phonostage also uses a special kind of current-biased differential stage that is completely isolated from the rest of the amplifier. He pulled up a schematic of the input stage. The core of the input stage is 16 FETS that take center stage, with eight used for each channel. Each of these is connected to its own bi-polar current source that keeps all of them at the same bias and gain level no matter what. This is the core of the front end, the current source forces them to be the same. On the output, Dan uses a current to voltage (I to V) converter to change the current into voltage like a DAC in the analog domain. The benefit of this it that anything that happens on the output of the amplifier has no impact on the front end, resulting in no feedback.

This is the how the front end of the phono stage works and was implemented in the Momentum Phonostage. This input design inspired the front-end design of the Relentless amplifier and one of the core changes that were recently introduced in the new Momentum HD Pre-amplifier.

Two-stage power supply

A key focus of the D'Agostino Momentum Phono was lowering noise. The design encompassed separating the noisy portion of the power away.

It starts with a small black box that sits away from your Phonostage. The main power rectifier is enclosed in this case and it is where all the noise is centralized. In my experience, it was critical to keep this box as far away from the Momentum Phono as possible.



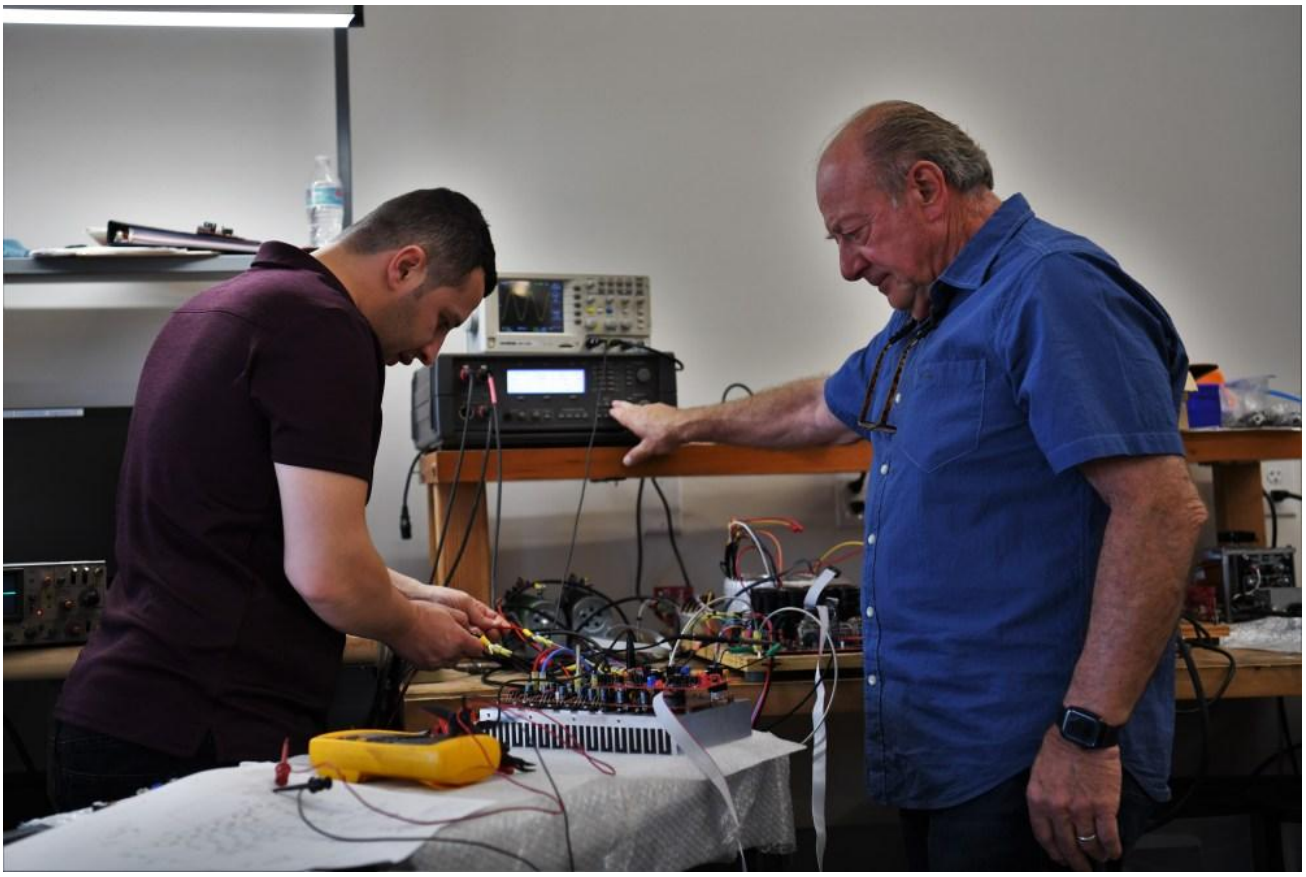
The next stage is another power rectifier and sophisticated regulator that is built into the base on which the main chassis on the Momentum Phonostage sits. This discrete regulator leverages special shot-key diodes to prevent any drop in any of the required voltages. All the different voltages required by different components are sourced from here. There are also two hemispheres on the transformers. One side for analog and one side for digital components such as the displays. The analog portions get a discrete power supply.

This three chassis model allows for the phono pre-amplifier circuits to be double-isolated from the transformer electrically and separated by physical distance.

Build and Quality Control

We moved over to a test bench where a partially assembled Momentum Phono was located that was used for testing. It allows us to dissect and get a better sense of what's inside. Building one

takes about two weeks. The entire process is done at their Arizona facility. The only automated process is the soldering that is done using a wave soldering machine. The process begins with board assembly. Each board is checked three times for quality. The boards are then checked one more time prior to assembly and one last time when the unit is fully assembled. You can feel certain your pre-amp will arrive perfect. QA is integrated deeply into the build process at D'Agostino.



Looking inside the unit, you see that the front is isolated and has the guts to power the displays. When they first added the displays, they experienced all kinds of noises. It is dead quiet now through a combination of physical isolation and by treating the four displays with high-speed diodes and snubbers to stop any noise.
The rear of the unit is where the analog boards are located. There are two boards placed on top of each other at the back. The two boards representing each of the two channels are the same.
The sides of the unit look like copper, but they are aluminum. Dan explained that there wasn't a need to utilize copper for thermal management. I have confirmed this is the case in my installation where my Momentum Phono is in a cabinet under my turntable on an HRS base where there is limited air flow. My Momentum Phono stays cool to the touch.

Setup

The Momentum Phono allows you to connect to two MC and two MM cartridges at any time, allowing for up to a total of four tonearms to be simultaneously connected. Each of the four inputs support both balanced and unbalanced connections from your tonearm.
Depending on what you use, a switch on the back of the Momentum needs to be placed into the correct position. (down for balanced, up for unbalanced). For most people, this will never be an inconvenience since you set it just once for your tonearm. But in my setup with three arms I needed to remember to put it in the right spot. When using a Transparent Audio Opus balanced interconnect and the ground switch set to balanced, I experienced the quietest performance to date with my Miyajima Madake Snakewood MC in my listening room. Dan explained that he had to keep the switch in the inconvenient location on the back to keep it close to the input location.

Front panel

The front panel has a very intuitive design. Simply use the aluminum dial on the left to select your desired input. You use the dial on the right to select your desired EQ curve. Each input gets its own display and on a per-input basis you can also select gain. The default gain for MM and MC cartridges is 50 and 70 dB respectively. Using a button on the front you can also increase the gain up or down by six dB.
Additionally, each input allows you to select your loading, and for MM cartridges you can also adjust the capacitance. I successfully managed to see that all my settings for each input were saved even when the unit was powered off or unplugged.

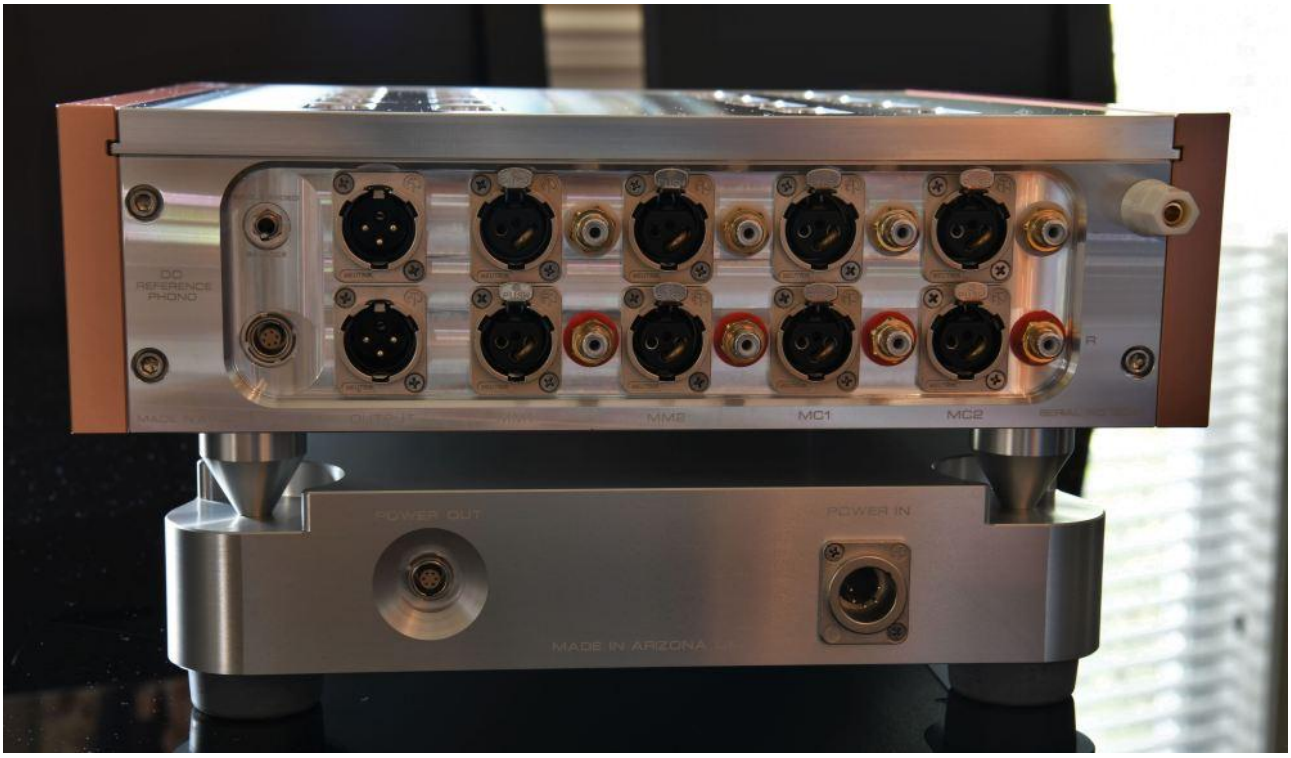
Listening

Before we get to how the unit sounds, I can't express how much I loved the fact that the unit is always on, always warmed up and ready to go. With that convenience and my busy schedule, the biggest change in my room is that I am listening more. Don't get me wrong, I love my Audio Research Ref Phono 3, but the tax of turning it on, waiting two minutes before the unit will allow you to un-mute and then approximately 15 minutes before the unit is 100% warmed up can take away from my listening when I may have less than 30 minutes to sit back and drop the needle. My listening notes with a Hana ML and Clearaudio Ovation table connected to the Momentum Phonostage were covered earlier here.

For now, we will focus on my stereo listening with a Miyajima Madake Snakewood cartridge and my mono listening with a Miyajima Zero Mono cartridge.

Listening in stereo

The D'Agostino Momentum Phono can produce some serious gain and low noise, so to see how perfect a pairing it could be when used it in combination with my Miyajima Madake Snakewood cartridge that has very low output at just .23 mV.



"Seek Up" performed by Dave Matthews & Tim Reynolds, on the Live at Luther College LP box set immediately whisks you away as Dave and Tim's guitars flow with beautiful tonality. It's very easy to have those guitars clinch together on other systems, but not today. Dave's voice emerged with a level of micro-detail that was just spooky. As I write this, I am listening to the same track on a small digital rig in my office and it certainly isn't the same experience.

Next up was Beethoven: Violin Sonata from Wilson Audiophile recordings. It was Father's Day, and I was enjoying a moment in my listening room. I had a conversation with Daryl Wilson the day prior and I was remembering his late father and thought the best way to honor David Wilson was to listen to one of his best recordings. The truth is that I hadn't listen to this LP since a few days after RMAF 2013 when David and I had spoken, and he was so kind to sign the cover. If you love chamber music, I encourage you to dust off this LP. I could feel the presence of the piano and violin's wood in my room as I closed my eyes. The background was pitch black and tonality of the instruments was potentially the best I had heard in my room. It brought out the best of my Wilson Audio Alexia Series-2.

The instruments were reproduced with a warm tube-like reproduction using the AMG Viella V12 turntable + Miyajima Madake Snakewood cartridge + D'Agostino Momentum Phono.

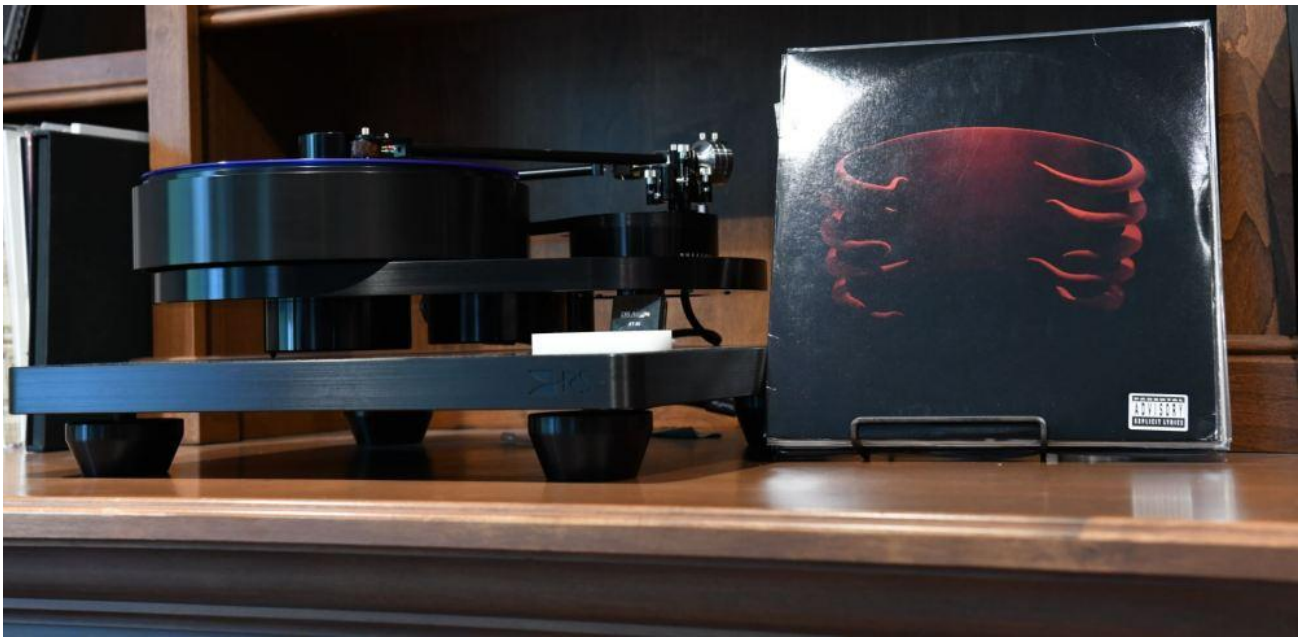
Another memorable experience was listening to the Mask and Mirror album from Lorenna McKennitt. Music reproduction when things are correct can whisk you back to that moment when the music was recorded or can transport you back to a moment in time where you have a special memory. This album takes me back to college, as I listened to it on repeat while studying. As I dropped the needle, McKennitt's voice emerged hypnotically and in multi-dimensions.]I tore up the volume louder and louder as the background soft chants fill the room. I was transported back 20 years, and emotions and memories filled my mind.

Listening in mono

Over the past couple of years, I have been on a buying binge of old mono LPs. With my Audio Research Phono 3, I preferred to use the Miyajima Zero mono cartridge in partnership with the Miyajima ETR-MONO step-up transformer. When using the D'Agostino Momentum Phono, my clear preference was to keep the setup clean and use the Miyajima Zero Mono directly into the Momentum Phonostage using a Wireworld Platinum Series-8 tonearm cable. I'm not surprised. The design of the Momentum Phono was all around having the single all-encompassing input stage, and

I think I was adding un-necessary fuel by adding the step-up in front of it when using the Momentum Phono.

Music Matters Jazz recently released a set of re-issues on what they refer to as "SRX Vinyl". MM Jazz describes this as: "SRX stands for 'Silent Running Xperience.' SRX is our own formula, conceived and developed by Rick Hashimoto of Record Technology and manufactured by NEOTECH. Its noise floor is fathoms lower than any other vinyl we know of out there past or present. Records pressed with it look like normal black discs until you hold them up to the light and see that they are translucent and smoky, silvery gray in color." The 2019 releases include 12 albums, of which five are mono releases. I dropped the needle on Sonny Rollins Volume 1, Blue Note 1542. The first side explodes with a star-studded cast and Rollins on tenor sax, Donald Byrd on trumpet, Wynton Kelly on piano and Max Roach tearing it up on the drums. As a fellow percussionist, the micro-detail of Roach's brushes on the snare and sizzling on the cymbals was just intoxicating. His soft and gentle solo using brushes was a quiet and beautiful, a testament to the Momentum Phono's ability to recreate music. Gene Ramey's bass was kicking hard in the back as all the instruments were placed beautifully.



As I was closing out my review, I decided to see just how hard the Momentum Phono could rock. I dug through my boxes and found a copy of an old Tool album that I acquired in the '90s. Since McKennitt took me back to college, I thought Tool could take me back 25 years to high school. I

think I may have damaged my ears as I pushed the SPL's up my room north of 90dB. There was so much going on in the popular track "Sober," but everything was layered. Drums, screaming guitars, bass and angry vocals. One of the few times during a session like this that I felt the need to get up, walk over to the Roland V-Drum kit that lives in my listening room and join in as I smiled ear to ear.

Summary

Friends know how much I enjoy analog and listening to my favorite LPs. There isn't anything better. I didn't think I could elevate my rig, but the D'Agostino Momentum Phono proved me wrong. It's ability to dig deep into those grooves, elevate micro-details and dynamics, and re-create music is breathtaking. And yes, I purchased the review sample.

–Mohammed

For more information: https://dandagostino.com/products/momentum-phono.php

ASSOCIATED EQUIPMENT:

- **Loudspeaker:** Wilson Audio Alexia Series-2 (**review**)

- **Amplifier:** Dan D'Agostino Momentum Stereo S250
- **Pre-Amp:** Dan D'Agostino Progression & Pass Labs XP-30
- **Phono Pre-Amp:** Dan D'Agostino Momentum Phono
- **Turntable:** AMG Viella V12, Lyra Atlas, Miyajima Mono Zero, Miyajima Madake Snakewood Cartridges.
- **Digital:** dCS Vivaldi DAC and Network Bridge (**review**)
- **Cables:** Transparent Opus Gen 5 Interconnects, Wireworld Platinum Series-8 interconnects, Transparent Ref XL Gen 5 Speaker Cable & Transparent XL Gen 5 Digital Cables, AudioQuest Diamond Ethernet cables
- **Power:** Audioquest Dragon Power cables & Niagara 100 & 7000 Power Conditioner (**review**)
- **Stands:** HRS Platforms, Vortex feet, Nimbus couplers, Plates
- **Room Conditioning:** Stillpoints Aperture panel, Synergistic Research Black Box, Atmosphere and HFTs