

Wilson-Benesch's Circle 25 Turntable and A.C.T. 25 Tone Arm.

By Michael Fremer • Posted: Sep 26, 2015 • Published: Sep 25, 2015



For vinyl lovers, it's important to know that Wilson-Benesch first began in 1989 as a start-up dedicated to building a turntable simply because it felt vinyl was a superior medium compared to CD. For that reason alone, the company should be venerated. W-B argued that new, emerging technologies like carbon fiber could further elevate vinyl playback.

Carbon fiber was a relatively exotic material back in 1998 when I first reviewed [the Full Circle turntable and ACT 0.5 arm](#). Perhaps carbon fiber wasn't exotic in certain circles, but in audio—especially in turntable and tone arm construction—it was.

Today carbon fiber is relatively common place and used even in relatively inexpensive turntables and tone arms from companies like Pro-Ject as well as on more exotic and expensive product like the \$28,000 Swedish Analog Technology arm, that claims to use a more sophisticated construction methodology, as well as others from Canada and New Zealand.

As W.B. says on its website: "...there are actually very few designs which utilize highly engineered, geometrically optimised carbon composite structures. This includes the increasingly common single diameter carbon fibre tonearm tubes". In other words all "carbon fiber" products are not constructed identically.

Please read the full review linked above for the older Full Circle 'table and A.C.T. 05 arm basics as well as detailed description and description of the sonics. You'll also find fascinating the story of how the turntable came to be. Keep in mind that both the new arm and 'table, though similar looking to the old, have been completely re-worked.

I chose to re-visit the revamped Circle 25/A.C.T. 25 combo (“A.C.T.” stands for “Advanced Composite Technology”) both because it was an interesting and innovative design back in 1998 and because with the passing of seventeen years since the first review I wanted to see and hear how the ‘table and arm stand up to the competition and whether or not my opinion of the ‘table has changed over the years, now that I have all of that additional reviewing experience.

The original Full Circle has been refined in numerous ways since 1998, especially in terms of the materials used for its circular split plinth, which was formerly made of MDF (medium density fiber board) but is now fabricated from POM (polyoxymethylene)—a thermoplastic with attributes that include high stiffness and dimensional stability.

The switch to POM adds about six and a half pounds to the ‘table’s mass but more importantly POM is stiffer and more dense than MDF and has a superior damping coefficient, which W-B (incorrectly) claims on its website produces a “lower signal to noise ratio”. Of course they mean lower noise, which produces a *higher* signal to noise ratio. Oops. The claimed benefits of the higher signal to noise ratio are improved soundstaging, imaging and overall clarity.

The ‘table features a new bearing design though still utilizing a phosphor bronze bushing and hardened steel spindle—all machined in-house.

The price has risen from \$3895 for the original Full Circle and A.C.T. -0.5 arm to \$6900 for the Circle 25 ‘table and A.C.T. 25 arm. Keep in mind that \$3895 in 1998 dollars is \$5694.75 in 2015 dollars. In other words, the price of the new version is about \$1300 higher.

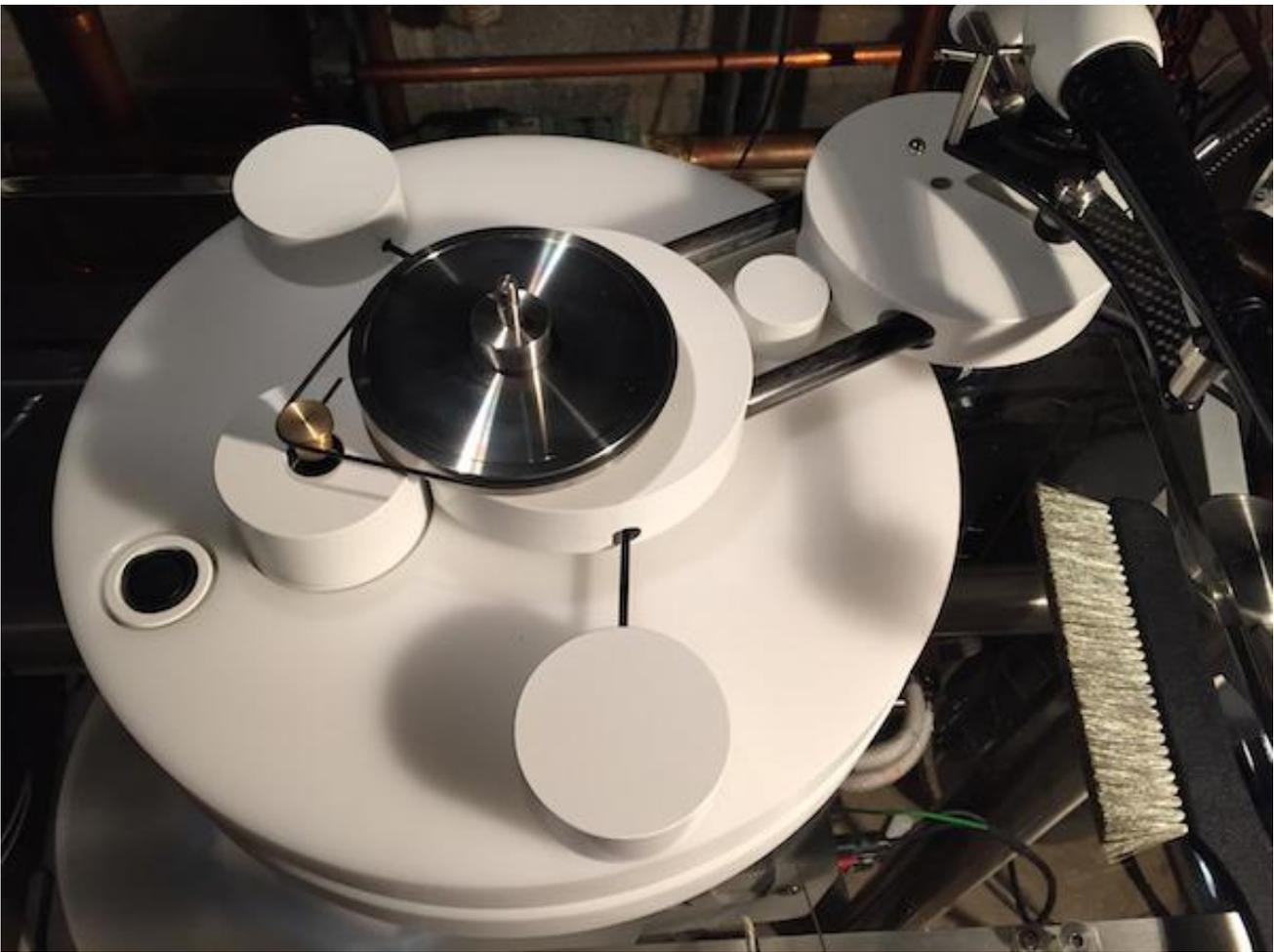
The round base, about the same diameter as the platter, is a smoothly finished wafer of POM on which is mounted a raised On/Off rocker switch and an AC-synchronous motor, the latter housed in a structure tall enough to protrude through a hole in the next layer of POM, which rests on the base via three elastomer feet.

Mounted on this POM layer are three satiny aluminum discs—two large, one small—that surround a much larger central disc, into which is fitted the phosphor-bronze spindle bearing. This central disc is suspended from the second base via a pair of small-diameter, "unidirectional" carbon-fiber rods, creating a cantilevered leaf-spring–like structure.

The aluminum arm-mounting platform is itself cantilevered off of the base via three more carbon-fiber tubes: two far thicker ones sustained by the bearing support disc, and a thinner one held by the smallest of the three surrounding aluminum discs, which is the disc closest to the armboard. Though both of these cantilevered structures are extremely stiff, they flex when pressed.

As you can see, the motor’s close proximity to the sub-platter and the “O”-ring drive is in many ways similar to Rega’s basic drive concept—something I didn’t take note of in the original review—though W-B’s execution appears more costly than that of the top Rega I’ve examined (the RP8) and the main bearing is (I think) of a larger diameter. The Circle 25, like its predecessor uses a two step brass pulley.

The A.C.T. 25, which has an effective length of 233mm and an overhang of 18mm (in other words its actual length is 215mm or around 8.5 inches) 15% lighter than the 0.5, with no loss in stiffness or damping claims Wilson-Benesch. I’m not sure why lighter is necessarily better in a tone arm. It all depends upon the mass and compliance of the cartridge you plan on using it with, of course.



W-B says the arm uses the same “kinematic” bearing as the original which it describes thusly:

“The kinematic bearing features, three x 1mm carbon-chrome ball bearings, which are held captive in a brass ball cap located at the end of the arm stem. A fourth ball is retained by a brass mount located in the egg shaped housing at the end of the tonearm. The shape of the eggshell derives stiffness and strength through its geometric form. When mated the fourth ball is held in a high pressure triangulated frame of reference ensuring that the centre of movement can never change regardless of the age of the system or the ambient temperature. In theory the contact surface is a single molecule.”



The platter is a nicely machined piece of acrylic about an inch thick, and hollowed out under its center both to accommodate the subplatter, and to increase the flywheel effect by having the mass concentrated about its outer edge. It is supplied with a felt mat.

The relatively light weight three pound acrylic platter topped by a felt mat wasn't an issue for me back in 1998 but in retrospect, and looking at this innovative and ingenious design today, it's almost as if Wilson-Benesch ran out of inspiration or *something* when they got to the platter.

To me, in 2015, a lightweight three pound acrylic platter topped by a felt mat makes more sense on a "lower tech" lower cost 'table than on one so ingenious and high-tech, though in today's turntable market the price is moderate not high. I can tell you that the Circle 25's isolation system works remarkably well on impulse type noise. With the arm in a record groove and the volume up, tapping the surface upon which you've mounted the 'table produces almost nothing from the speakers and its accomplished without a spring suspension. Even tapping on the top POM circle produces almost nothing. While impulse type testing can't predict the 'table's actual sonics, it can tell you about the quality of the isolation from the outside, and the Circle 25's is outstanding—and based on what I wrote in 1998 superior to that of the Full Circle.

For around the same price you can get something like a VPI Classic 3 with JMW Classic tone arm that incorporates an eighteen pound aluminum platter damped with a stainless steel disc bonded to its lower surface.

I'm not going to tell you that the VPI arm is in the same technological league as the A.C.T. 25's but at this price point I'm all about high mass platters and plinths or low mass platters and low mass plinths like Rega espouses. Both design philosophies have their adherents and both make sense. Here we have a relatively high mass plinth and a low mass platter—and one of acrylic, which is not my favorite platter material, particularly at this price point.

On the other hand, W-B may argue that the the Circle 25's plinth is actually very light in weight because it really consists of the suspended circle in which the bearing sits plus the cantilevered arm mounting circle, which would qualify as "low mass". The larger POM discs are more like a separate platform than part of the plinth mass. That would be the argument and it's not without merit, plus the upper of the two lower discs holds the motor in isolation, which should produce low noise above.

That said, the bottom line of course is how does the Circle 25 and A.C.T. 25 sound and how well does it measure? I did a great deal more listening before I measured speed accuracy, so let's go first to sound.

If you go back and read the old review keep in mind that my system then was a pale shadow of what I now have particularly in terms of bass response, and the quality of my reference turntable is in another orbit.

Back then I called the Full Circle's bass performance " absolutely superb—deep, tight and very well-controlled" though not in the same league as my then reference Simon Yorke Series 7/VibraPlane combination. Well of course what I've now got is in another league from *that* and my speakers are as well so while the W-B Circle 25 produces reasonably well-controlled and extended bass, by my standards today it's not "superb", but only very good and slightly soft, but fundamentally correct in that the deep bass did not intrude and color the lower mid-bass, which is something lesser 'tables often do.

I pulled out the same Super Analogue reissue of Solti's *Also Sprach Zarathustra* (KIJC 9198) referenced in the earlier review and compared the Circle 25's performance with that of another more expensive turntable under review as well as to my reference and though the Circle 25 didn't extend quite as deeply its bass performance was lighter on its feet in a positive way, and more nimble and you could say more "tuneful".

Like the Full Circle, the Circle 25 was impressively coherent top-to-bottom with an overall tonal neutrality and not a hint of grain or brightness, and like the Full Circle, the Circle 25's midband was "rich, airy and lush", but in today's context more rich and lush than airy.

On an original pressing of Tchaikowsky's (sic "vintage" RCA spelling) I wrote that Heifetz's violin sounded well-focused and well in front of the orchestra, "neither softening nor exaggerating the rasp of the bow sliding across the strings".

I wrote that in the mid-upper register the Full Circle never sounded "etched, aggressive, or steely. Yet it never sounded dull or soft either....if just slightly laid-back—which is the worst that can be said for the Full Circle's overall sonic performance."

The Circle 25's presentation was also slightly laid-back and I did have a few criticisms of the old 'table that hold true today but even more so in context of what's currently available: "the arm/table combo's three biggest shortcomings were: somewhat compressed macro- and microdynamics, which limited explosiveness on one end of the scale and diminished the resolution and "liveness" of inner detail on the other; a higher noise floor, with more of a sense of a "milky" background and less of a sense of "black" behind the music; and a bit of soundstage congestion that pressed images together."

All still true but consider that that's compared to far more expensive turntables on hand, and I suspect compared to the similarly priced VPI Classic 3, which based on admittedly dim sonic memory probably lacks the Circle 25's smooth, pleasing laid back (and probably somewhat less exciting) quality.

In the older review I compared the Full Circle to my sonic recollection of Rega's then top of the line RP9 and I stand by that today but compared to the RP8 that I reviewed some time ago. The Rega was faster, more exciting with better "rhythm'n'pacing", while the Circle 25 is richer, smoother and definitely more laid back and not as macrodynamically expressive or "punchy".

Those to me are attributes I now ascribe to platters made of acrylic.

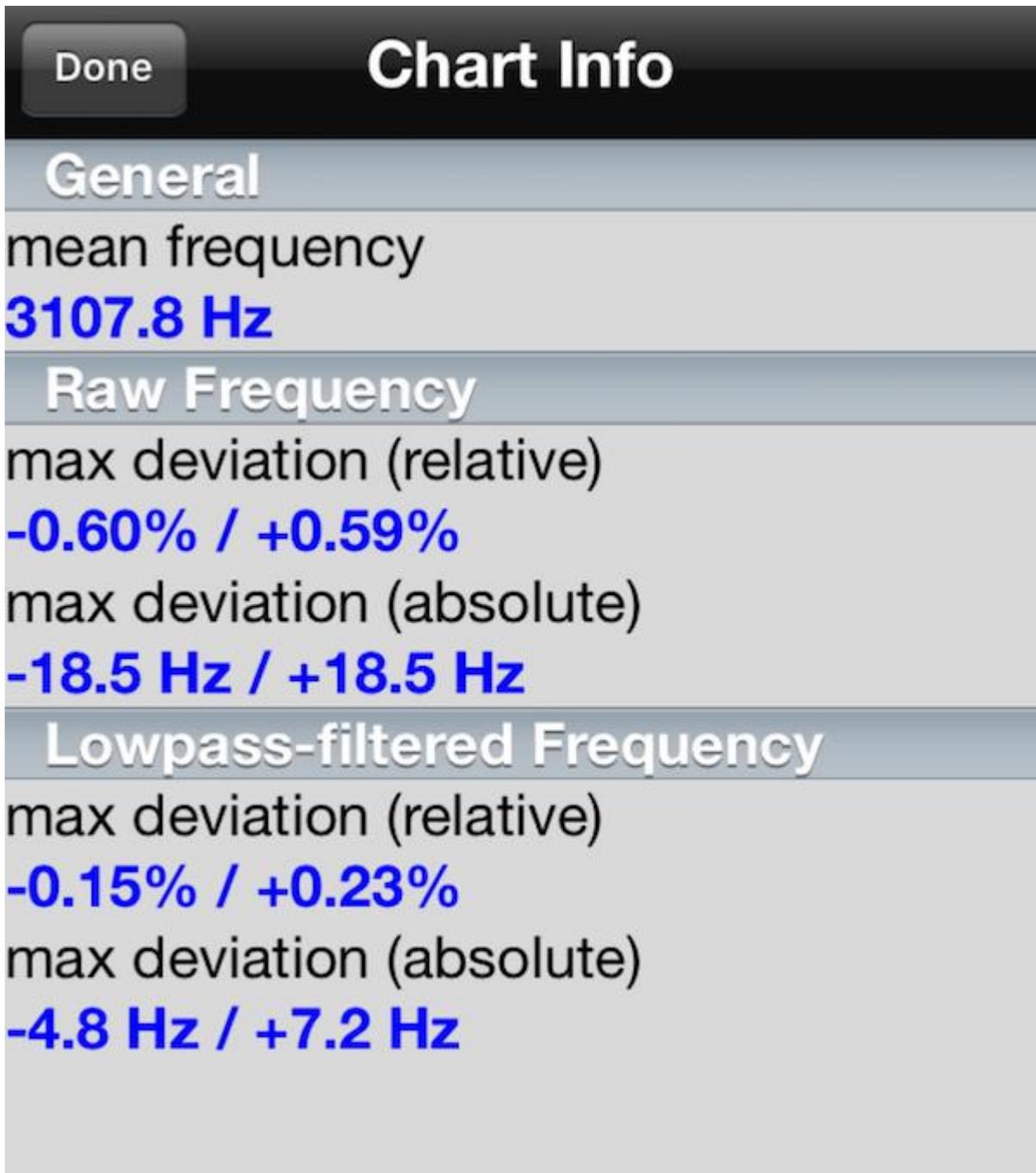
While I did much listening using the felt mat (and constant use of the Audio Desk ultrasonic cleaning machine), I ended up preferring the Boston Audio graphite mat. If you buy the Circle 25 or any felt-mat turntable, do yourself a favor and replace it with anything or nothing.

Surprising Measured Performance

When I finally got around to measuring the Circle 25's speed accuracy and consistency using the Feickert Platter Speed app, I was surprised to find that the 'table ran about 1.34% slow. In other words a 3150Hz tone was reproduced as 3107.8. That translates to about 32.8 rather than 33.33.

More troubling though and frankly inexplicable was the rather poor speed consistency measured by the Feickert software. The green line shows the filtered frequency. Ideally it should be a straight line. It never is, but it usually shows a slight ripple. This is far worse than normal.

I had a few new replacement "O"-rings and so substituted those but got the same results. I cleaned the pulley and inner hub surface and made sure that the upper POM plinth was correctly seated so that the distance was correct from the pulley to the inner hub. I did everything I could to improve the speed consistency and I made sure to do all of the measurements with the felt mat in place in case the heavier graphite platter was causing a problem.



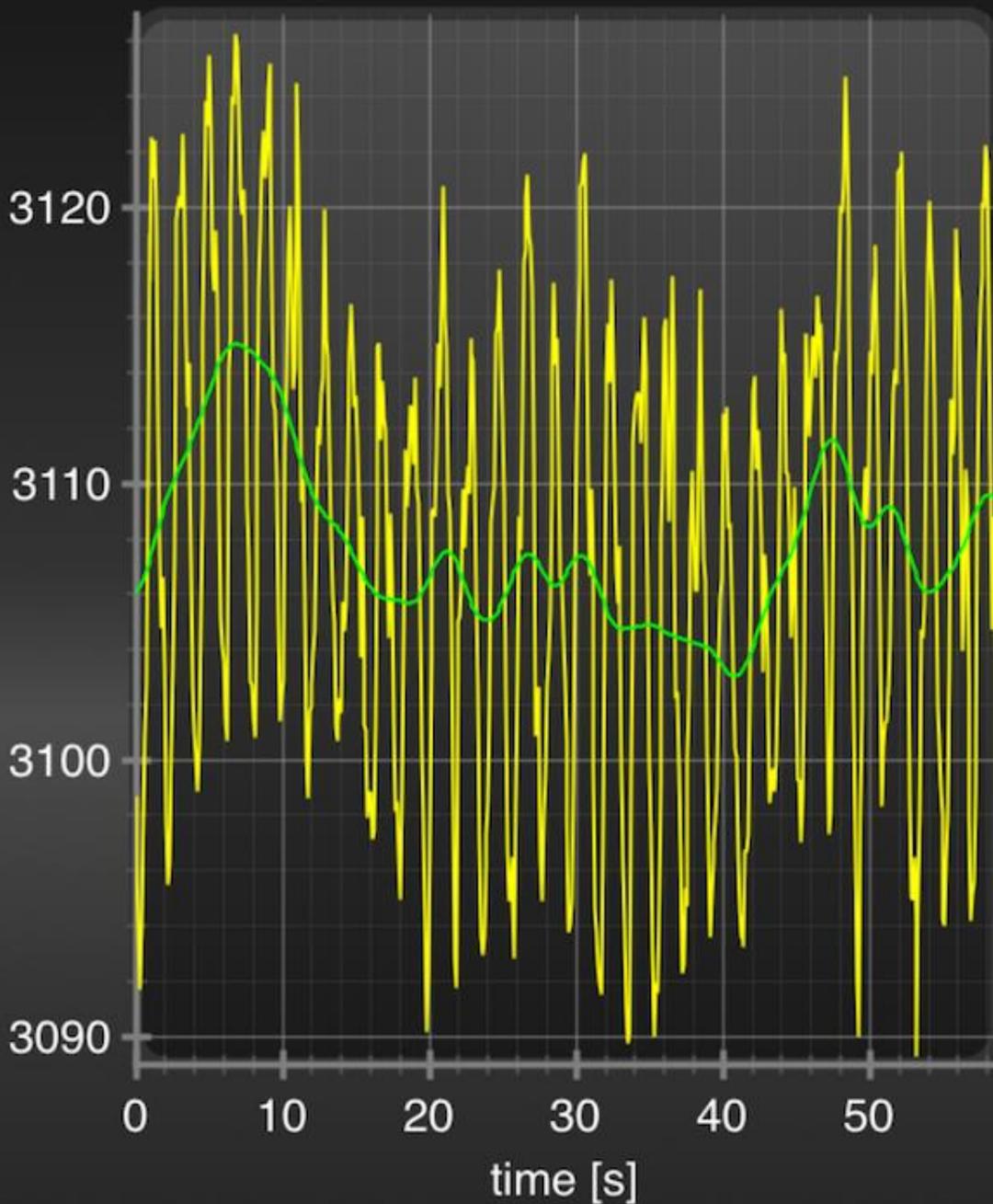
None of that made any difference, nor did trying the Falcon PSU. It brought the speed up to 33.3 (set to 33.5) but speed accuracy was made worse, perhaps because it is not compatible with whatever internal power supply W-B uses. So when the 'table goes back to the importer I hope Sound Organization will shed some light on this because I can't imagine the performance is typical of the 'table. I know this particular 'table has been "out on the road" so perhaps something not obvious and not visible caused the measured issues.

On the other hand, since nothing seemed obviously wrong I felt obliged to finish and publish the review. Why didn't I hear something wrong? For one thing the speed error is minor even though it appears gross. Only someone with perfect pitch (not me) would hear that the 'table was running somewhat slow.

As for the speed inconsistency, that may account for the overall smooth sound, lacking in transient "snap" and precision. I would have to hear another sample producing greater speed accuracy and consistency to know.



Frequency Chart



— raw frequency [Hz]

— lowpass-filtered frequency [Hz]



Speed



Frequency Chart



Info

Conclusion

The Wilson-Benesch Circle 25 turntable and A.C.T. 25 tone arm was a revolutionary product when introduced and all these years later it remains a unique design. I think the arm is the real star here. I'd like to hear it on other 'tables to really find it what it can do. The A.C.T. 25 arm was an excellent tracker and very stable in the groove. How it "sounded" independent of the 'table is a question I can't at this time answer.

This combo sets up easily and the set-up is basically fool-proof thanks to the design and excellent instructions. I don't like the felt mat and the addition of a platter spacer to compensate for 180 gram records is kind of silly. To change stylus rake angle (SRA) 1 degree on this length arm would require you to change the back of the arm height by a full 4mm. The spacer changes the SRA by a fraction of a degree and its audible effect is doubtful. But that's minor.

Overall, despite the speed issues which look worse than they sound, the Wilson-Benesch Circle 25 and A.C.T. 25 combo is a compact, extremely attractive, easy to use vinyl playback system that provided a great deal of listening pleasure. You may think you'd easily hear the measured problems but they didn't reveal themselves as obvious wow and flutter even on solo piano records that included generous amounts of pedal sustain. Analog is so forgiving.