Product Preview: Magico Q7 Loudspeaker

Posted by: Robert Harley at 3:03 pm, May 24th, 2012

In late May I visited the Magico factory in Berkeley, California, to hear the new Q7 flagship loudspeaker. I'm getting the Q7 for review in early August and wanted to learn about its design as well as to see firsthand exactly how it is built. An all-out assault on the state of the art in loudspeaker design, the Q7 is a four-way system featuring two 12" bass drivers, a 10" mid / bass, 6" midrange, and a beryllium tweeter. This 750-pound (apiece) loudspeaker is priced at $165,000 .

Alon Wolf with the Q7

Today's Magico factory is a far cry from the modest facility I visited in October, 2005. Back then, it was Magico co-founder Alon Wolf assembling the Mini from birch-ply cabinets and drivers sourced from Europe and not much else. Today, Magico occupies a 6000 square foot industrial area of Berkeley, with a second 6000 square foot factory in nearby San Jose that machines the loudspeakers' aluminum enclosures.
The company has grown to 35 employees between the two shops.
I'll have a full report on the Q7's unique design and construction in my upcoming review, but will give you a sneak preview here along with my listening impressions.

The Q7 is constructed like no other loudspeaker extant. The enclosure is built entirely from machined aluminum pieces 101 of them held together with 635 bolts. Most of these pieces form an intricate internal matrix that creates a rigid, inert structure that reduces enclosure vibration to an absolute minimum. The idea is to create a heavy, dense, resonance - free platform that is not easily put in motion by energy from the drivers. The Q7's enclosure is perhaps the most heroic design ever attempted.

The matrix under construction

The curved baffle you see on the loudspeaker's front is only part of the baffle structure. Behind the 85 pound curved baffle is a thick 70-pound slab of aluminum to which the woofers are mounted. This flat slab is bolted to the matrix structure and forms the front structural member. The midrange driver floats in its own sub-structure rather than being attached to the

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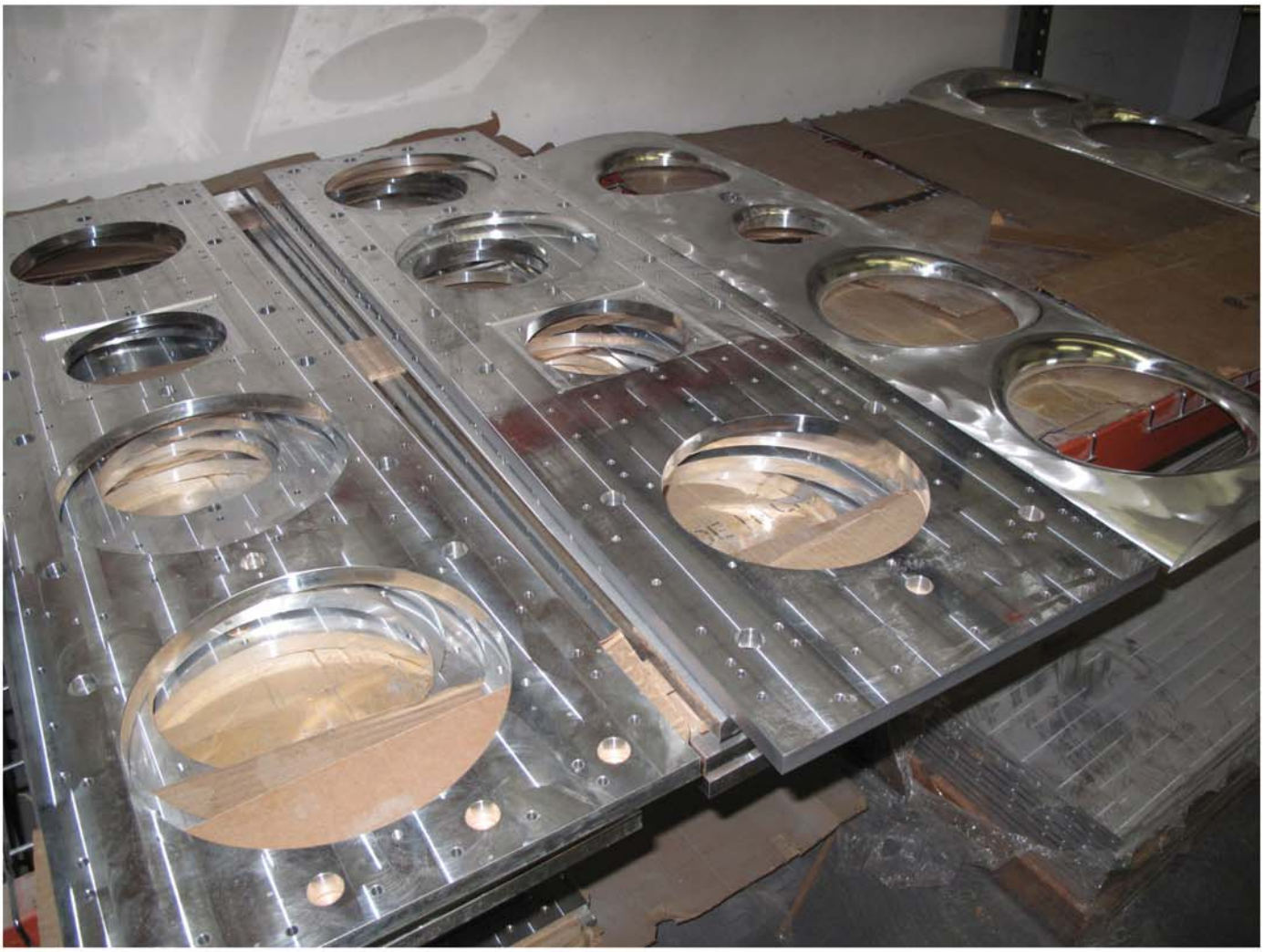
flat inner baffle. Only the tweeter is mounted to the curved outer baffle. This arrangement keeps resonance to a minimum and prevents energy imparted by one driver from being transmitted to the other drivers. The benefits of having nothing but the tweeter attached to the front baffle are obvious. You can see in the photo the flat woofer baffles on the left and the curved front baffle on the right.



The Q7's dual baffles before polishing and anodizing. The flat baffles are on the left.

The drivers are also unique. They feature the Magico developed NanoTech cone material that is based on carbon nano-tube technology designed for helicopter blades. The motor structures use immensely powerful magnets (I was unable to lift a 6" midrange driver from a metal work table), huge voice coils (3" voice coils in a 6" midrange), and a novel construction that reduces losses from eddy currents and increases the magnetic-field density in the gap.

The Q7's crossovers feature ultra-expensive and massive inductors along with premium-quality capacitors and resistors. A single inductor in the crossover costs more than many complete loudspeakers.

The matrix inside the enclosure

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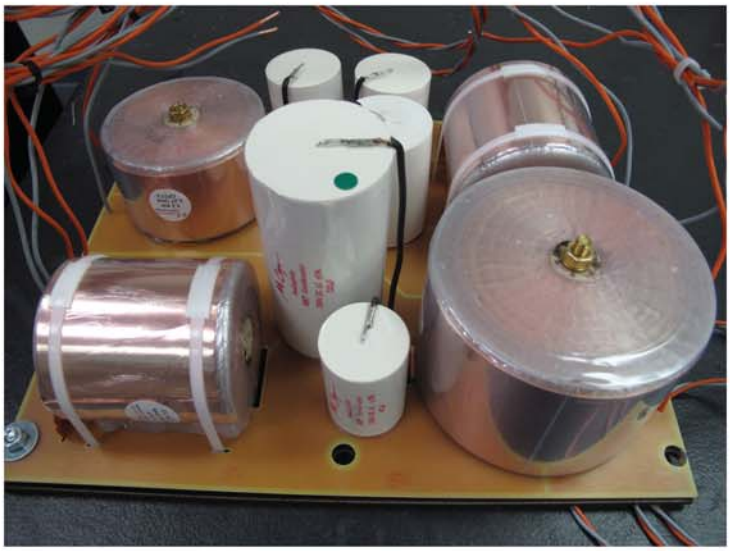
I'll have a lot more to say about the Q7's technology and how the speaker is built in my upcoming review. This brief description only hints at the advanced technologies behind the Q7.

I heard the Q7 in Magico's listening room driven by Spectral and Constellation Performance Series electronics, all connected with MIT cable. Sources included standard-resolution and high-resolution digital from a custom music server, a Continuum turntable and Zanden phonostage, and a Nagra open-reel tape machine with custom Bottlehead playback electronics. I was able to choose the music, run the demo, and listen at length to familiar references.



Part of the Q7's crossover board. The copper-film inductors are the size and weight of a power-amplifier power transformer

Just as no other loudspeaker in the world is built like the Q7, no other loudspeaker in the world sounds like the Q7. For starters, the background was stunningly, eerily, totally quiet. We've used the term "self-noise" to describe the phenomenon in loudspeakers in which you hear enclosure resonances. Self-noise isn't the gross tonal coloration frequently heard in the days of unbraced MDF enclosures, but rather is perceived as a "chatter" that smears fine detail and reduces the sense of

The Q7 in Magico's listening room

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immediacy and palpability. Lack of enclosure vibration contributes to palpability because images are presented against a dead-silent black background; images sound more alive, real, and present as a result. This may sound like a small difference, but in musical perception the difference was profound. The increase in realism was a step-function; the Q7 crossed some threshold that made the sound transcend hi-fi. This experience confirms something I've written about before that there's not a linear relationship between the objective magnitude of a difference and the musical effect of that difference. There was a heightened sense of realism and of being in the presence of the instrument itself rather than hearing a recreation of it. It's hard to identify this distortion unless you've heard a loudspeaker that doesn't exhibit it. But once you have, it is unforgettable. The Q7 had this quality in spades,presenting low-level detail with stunningly fine resolution, projecting a jet-black background against which the music seemed to hang in space, and portraying instrumental textures and images as vividly lifelike. In this regard, the Q7 was in a class by itself, at least compared to any other loudspeaker I've heard at any price.

The Q7's dynamics were also off-the-chart. The suddenness of attacks and decays in the bottom end were unlike any loudspeaker I've heard. Big bass-drum whacks had startling impact, but more importantly, no smearing or overhang on the decay. The Q7 starts and stops on a dime, no matter what the frequency or playback level. As viscerally thrilling as this quality was, I appreciated the Q7's amazing resolution of micro-detail - the brushes on Jimmy Cobb's snare drum on his CD Jazz in the Key of Blue (Chesky), for example. The music had a finely woven texture in which I could hear the instruments' micro-transient details with tremendous clarity. Overall, the Q7's dynamics reminded me of a horn loudspeaker in its transient speed and "jump factor." Moreover, the dynamic agility spanned the entire frequency spectrum, adding to the systems remarkable overall coherence.

The low bass was deeply extended, reproducing the pedal points on Rutter's Requiem, for example. The bass and midbass had a seemingly paradoxical combination of weight,fullness,and body on the one hand, and dynamic agility, precise pitch definition, and tautness on the other.

I could go on about the utterly gorgeous liquidity of string sound,the startling sense of transparency that fostered the impression of looking back through the recording chain, or the sheer realism of timbre, but I'll save that for the full review after I've lived with the Q7s for a couple of months. Suffice for now to say that, based on a few hours of listening in Magico's room, the Q7 is a monumental achievement in loudspeaker design. It has qualities that I've never heard from another loudspeaker. I'll even go so far as to say the Q7's presentation was the most musically lifelike and realistic I've ever heard from a hi-fi system. Significantly, all the aspects of the presentation that made the Q7 so special were all in the service of music. It wasn't a freak-show of hi-fi tricks that impress sonically but fails to connect the listener with the music. Rather,reducing the distortions we've become inured to in loudspeakers created an immediate and deep musical involvement that transcended any previous listening experience. Stay tuned.