
Crossover boards being assembled

I don't want to have an instrument as a cabinet—it must be neutral over the entire frequency range

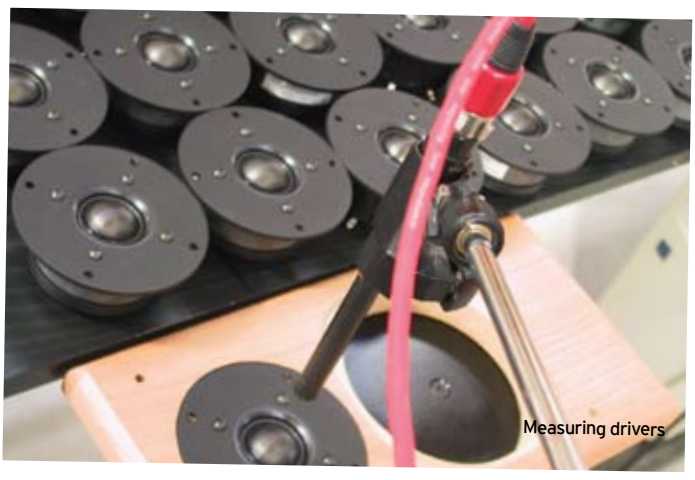
The crossovers arrive from Germany. (VA winds its own coils for use in its crossovers, to a tolerance of 0.7%.) At this point, the approved drivers, crossover components, back plates, and speaker terminals are assembled. Every driver is exclusive to Vienna Acoustics; the company's patented TPX spider cones and its latest innovation, the TPX-hybrid flat cones for the Reference Line, are manufactured to spec by a facility in Vienna. These diaphragms are quality-checked back at the factory, then sent out to either Eton or ScanSpeak for final assembly and returned to VA as finished units. It makes for a relatively complicated supply chain. Management of these various vendors alone is a nearly full-time job for Ms. Gansterer. For example, she hand-selects every piece of veneer, and this alone requires a trip to Italy one day each month, just to choose from master sheets of the various grains.

Tolerances are stringent, but the rejection rate is considered within bounds. Upon arrival at the factory, every component is rigorously inspected visually. However, there is a much more involved procedure when electrical components arrive. For example, a typical order received might be 500 tweeters from ScanSpeak. Twenty pieces are immediately checked upon arrival to gauge whether the shipment appears to meet the required spec. But Gansterer adds that since every batch of drivers typically has a slightly different sensitivity, he must revise the crossover components accordingly. He'll employ measuring and listening until he gets a match to the original reference speaker. In the end, each production run is optimized to be identical to the original reference design. The reference speakers are checked for calibration each month to ensure climate and humidity changes haven't skewed their response. A final check against the reference towards the end of the assembly process will show up any other deviations.

Ms. Gansterer stressed that each of the twenty production-line employees is able, in most cases, to fill in for the others, identify problems, and solve them. This "team" mindset has become a part of the company's collective culture—one that emphasizes that the experience of Vienna Acoustics ownership begins the very moment the speaker is unpacked. Which is why every speaker arrives with its own set of white gloves.

Conversing with Peter Gansterer reveals a designer with an eclectic, even instinctual feel for loudspeaker design. In our conversations he didn't appear dogmatic nor wedded to one technology. He employs the conventional tools of the trade but only to the extent that it serves the project. For examples, FEA (Finite Element Analysis) is utilized, especially for cone-rib architecture and cabinet-bracing placement. Yet he's adamant that flat frequency response is not the main goal; rather, it's a raw measuring tool that sets the speaker on the path he's directing. Though waterfall-plot measurements and second- and third-order harmonic distortion numbers are useful, particularly early on, Gansterer insists that only a fraction of the final voicing of his designs can be explained or helped by measurements.

Gansterer says that cone technology remains the greatest challenge in dynamic loudspeaker design. He points to the latest spider technology where the ribs have been fashioned on the *rear* surface of the cone. He concludes that this results in the best damping-to-stiffness ratio and affords greater flexibility for tuning.


Measuring drivers

A Vienna customer makes his decision first on musical merits and only then considers multichannel

The subject perhaps closest to Gansterer's heart at the moment is the flat-cone coaxial midrange/tweeter to be premiered in the Reference Line when it ships in early 2008. In his view the new flat cone combines all the advantages and none of the disadvantages of current coaxial speakers. "I had to come up with a coax that didn't have horn-loading for the tweeter. For pure neutrality, horn-loading is not good. It's perfect for public address systems and it has advantages in other settings, but for violin and classical and voice the horn-loading is something you can always hear." But a flat cone presented new challenges, as well. "Its physical rigidity, stability, and lightness were only possible with the spider cone technology. And we also had to go to new materials to achieve the extreme stiffness we needed in order to ensure that it moves in a pure pistonic fashion."

The new formula is actually a derivative of the polypropylene material that current VA TPX drivers use. But for the flat cone, fine glass-fibers are also injected. The new hybrid formula is then melted and injection-molded. He characterizes this driver as no less than the "future for Vienna Acoustics." John Hunter of Sumiko, Vienna Acoustics' U.S. distributor, agrees: "We've been encouraging Peter to take the gloves off for some time now. In the high end, one is compelled to take one's best shot, to remove most, if not all, of the limits imposed by common sense and size/price restrictions. The Reference Line will be very interesting and important to Vienna's future—we're seeing more and more very expensive *über*-high-end systems selling into the market, and I predict this trend will be growing dramatically over the next five years, as more Baby Boomers near retirement and invest some of their hard-earned money in systems 'for the rest of their lives.'"

On the subject of tweeters, Gansterer is equally outspoken. I asked him about the current trend away from soft domes and towards more exotic materials like beryllium. He's still not convinced and continues to be disturbed by material colorations, particularly in the ear's sensitive presence range between 1kHz and 3kHz. He admits that the silk dome might have a slight disadvantage at the highest resolutions and that beryllium is excellent at the highest overtones and harmonics, but he believes that the work VA has been doing with ScanSpeak over the last five years is actually closing that gap. And those results can be heard in the current Grand Series. He does concede that for the new flagship Reference Line, a supertweeter has been implemented to kick in around 12–15kHz—the crossover is still in testing. **TAS**

The Reference Line and Beyond

If Gansterer and the VA crew remain focused on the launch of the new flagship, it's the job of the distributor to see to the future needs of his market. Sumiko's John Hunter candidly admitted, "Multichannel is playing a large part, but I would like to stress that it is our experience that the Vienna customer makes his decision first on musical merits and only then will he move forward with the decision to use them in multichannel." In the future, Hunter would like to see a small part of Vienna Acoustics' business directed toward truly high-quality in-wall and in-ceiling speakers. "We've heard from numerous customers over the years who would like to have been able to do the rest of their home with Vienna, or perhaps their room required rear channels to be installed overhead. As amazing as the Waltzes are, sometimes they simply have to be able to slip into a wall or ceiling." Hunter also mentioned the need for a speaker to fill the gap between the current Grand Series and the new Reference Line products—something perhaps based on the Mahler but drawing on some on the latest innovations.

As of press time, the Reference line is expected to comprise three models, plus a center channel. Hunter said that the inspirations for naming the Reference models are the works of Viennese Symbolist painter Gustav Klimt. The flagship is likely to be called "The Music" and retail for about $25,000 the pair. Expect a model called "The Kiss" to follow later in 2008.

Seattle's Definitive Audio to Host Music Matters III

High-end retailer Definitive Audio will host the third annual Music Matters high-end audio showcase on February 6th from 5pm to 10pm. The event is billed as "An extraordinary gathering of internationally renowned experts giving presentations devoted exclusively to the latest advancements in the field of high-fidelity music reproduction." See last issue's Industry News for details. Please RSVP to (206) 524-6633 or online at definitive.com.

A Vienna customer makes his decision first on musical merits and only then considers multichannel

The subject perhaps closest to Gansterer's heart at the moment is the flat-cone coaxial midrange/tweeter to be premiered in the Reference Line when it ships in early 2008. In his view the new flat cone combines all the advantages and none of the disadvantages of current coaxial speakers. "I had to come up with a coax that didn't have horn-loading for the tweeter. For pure neutrality, horn-loading is not good. It's perfect for public address systems and it has advantages in other settings, but for violin and classical and voice the horn-loading is something you can always hear." But a flat cone presented new challenges, as well. "Its physical rigidity, stability, and lightness were only possible with the spider cone technology. And we also had to go to new materials to achieve the extreme stiffness we needed in order to ensure that it moves in a pure pistonic fashion."

The new formula is actually a derivative of the polypropylene material that current VA TPX drivers use. But for the flat cone, fine glass-fibers are also injected. The new hybrid formula is then melted and injection-molded. He characterizes this driver as no less than the "future for Vienna Acoustics." John Hunter of Sumiko, Vienna Acoustics' U.S. distributor, agrees: "We've been encouraging Peter to take the gloves off for some time now. In the high end, one is compelled to take one's best shot, to remove most, if not all, of the limits imposed by common sense and size/price restrictions. The Reference Line will be very interesting and important to Vienna's future—we're seeing more and more very expensive *über*-high-end systems selling into the market, and I predict this trend will be growing dramatically over the next five years, as more Baby Boomers near retirement and invest some of their hard-earned money in systems 'for the rest of their lives.'"

On the subject of tweeters, Gansterer is equally outspoken. I asked him about the current trend away from soft domes and towards more exotic materials like beryllium. He's still not convinced and continues to be disturbed by material colorations, particularly in the ear's sensitive presence range between 1kHz and 3kHz. He admits that the silk dome might have a slight disadvantage at the highest resolutions and that beryllium is excellent at the highest overtones and harmonics, but he believes that the work VA has been doing with ScanSpeak over the last five years is actually closing that gap. And those results can be heard in the current Grand Series. He does concede that for the new flagship Reference Line, a supertweeter has been implemented to kick in around 12–15kHz—the crossover is still in testing. **TAS**

The Reference Line and Beyond

If Gansterer and the VA crew remain focused on the launch of the new flagship, it's the job of the distributor to see to the future needs of his market. Sumiko's John Hunter candidly admitted, "Multichannel is playing a large part, but I would like to stress that it is our experience that the Vienna customer makes his decision first on musical merits and only then will he move forward with the decision to use them in multichannel." In the future, Hunter would like to see a small part of Vienna Acoustics' business directed toward truly high-quality in-wall and in-ceiling speakers. "We've heard from numerous customers over the years who would like to have been able to do the rest of their home with Vienna, or perhaps their room required rear channels to be installed overhead. As amazing as the Waltzes are, sometimes they simply have to be able to slip into a wall or ceiling." Hunter also mentioned the need for a speaker to fill the gap between the current Grand Series and the new Reference Line products—something perhaps based on the Mahler but drawing on some on the latest innovations.

As of press time, the Reference line is expected to comprise three models, plus a center channel. Hunter said that the inspirations for naming the Reference models are the works of Viennese Symbolist painter Gustav Klimt. The flagship is likely to be called "The Music" and retail for about $25,000 the pair. Expect a model called "The Kiss" to follow later in 2008.

Seattle's Definitive Audio to Host Music Matters III

High-end retailer Definitive Audio will host the third annual Music Matters high-end audio showcase on February 6th from 5pm to 10pm. The event is billed as "An extraordinary gathering of internationally renowned experts giving presentations devoted exclusively to the latest advancements in the field of high-fidelity music reproduction." See last issue's Industry News for details. Please RSVP to (206) 524-6633 or online at definitive.com.

Back Page

Neil Gader

16 Questions for Peter Gansterer, Founder and Designer, Vienna Acoustics

Was it the gear or the music that first drew you to the high end?
Absolutely the music. First the music, but then I realized that better sound gave me a better experience, more understanding and emotions. Early on I started playing around with amplifiers.

How old were you?
Maybe seventeen, eighteen.

Did you just arrive at this naturally or through your parents?
Books. Later on when I came to Vienna I continued studying it while in college, but it's not really an area where you can get a degree.

What were you formally studying?
Philosophy and geography.

Was there a particular system you dreamed of owning?
Not really.

Not even a special loudspeaker?
Interestingly, no. Perhaps you can call it hubris but I never had a model or example.

You were pretty independently minded then?
Absolutely.

Why did you choose to concentrate on loudspeaker design?
When I started fooling around with amplifiers and speakers, I soon realized that the biggest difference in sound is realized in a speaker. The transformation from electrical energy to acoustical energy requires such fine mechanisms—there are so many possibilities to create sound and get closer to the truth with a loudspeaker than with an amplifier.

And to make mistakes?
Yes.

Why dynamic cone-driven systems and not ribbons or planars?
It's the best technology we have for reproducing music—for transforming electrical energy to acoustical energy—except for the higher frequencies. There was a time about fifteen years ago when I tested Apogee and Martin Logan, and I thought this technology might be the right thing, and I would say that perhaps above 3kHz these technologies are slightly better. The problem is that as soon as you combine a ribbon or any other transducer technology with a dynamic driver in the midrange and even in the bass, it doesn't work as coherently. Over the whole range it's definitely much more even and homogenous with the full-range dynamic speaker.

Are you surprised at how resilient the vinyl market is?
Surprised, no. The sound is very, very good. In the right system it's superior. I must emphasize in the "right" system, set up perfectly—no surprise there. I'm disappointed that SACD and DVD-A were not successes. I was hoping that these two formats would have greater widespread use—it's a pity.

Are you hopeful that the new hi-res formats associated with HD-DVD and Blu-Ray will pick up where SACD left off?
Honestly, I'm not hopeful.

What do you expect we'll be listening on in the next five or ten years?
No predictions. But many people are running around with their iPods—that's all I can say.

What's your take on multichannel?
I encourage people to experience multichannel. The problem of course is limited space especially in Europe. But that's why we created the Schoenberg Series. You have a little more space in America, so it's more common. I think 5.1-channel is absolutely a good experience.

But you would consider yourself primarily a stereo listener?
Yes but that's because there are few recordings. Where is the good music in true multichannel? Where are the Beatles or Queen in true multichannel? Classical music in a concert hall in uncompressed five channel—that is something that would really be nice.
.

What's your best advice to someone putting together a system?
The advice I always give requires a little effort. For example, let's say you're buying an amplifier. Go to a good dealer, but pre-select some options a little bit beforehand. Tell the dealer you'll buy one for sure. Then take three amplifiers home for the weekend, so that you can hear them with your speakers in your room's acoustics. I can guarantee that this way you'll know which one is the perfect fit. Make sure you take that one—the one you sampled. With fine mechanical parts you have too many tolerances, especially with speakers. So if you audition one at home and you like it, never exchange it for a new one in the box. Fitting equipment together in this way will beat systems that cost three times as much. **TAS**