

AUDIOFILE

China syndrome

Asian manufacturer Aurum Cantus uses its best ribbon tweeters to deliver pure sound, writes **Greg Borrowman**.

Building a speaker that will deliver superior sound at high frequencies is difficult. It requires a diaphragm that can move back and forth 50,000 times a second. Over the years, inventors have created dozens of strange designs in their attempts to achieve this.

Siegfried Klein's tweeter was the most outlandish. It had no diaphragm. Instead, a high-voltage electrical arc transformed the air into a glowing plasma that created high-frequency sound by vibrating air particles. Unfortunately, the arc also vaporised the two electrodes used to create it, so his tweeters self-destructed after a few minutes. Worse, when they were operational the speakers hissed alarmingly, interfered with radio reception and generated high ozone levels.

Amazingly, these drawbacks didn't deter others from licensing the technology. The German company Magnat solved most of the problems and built so-called "Plasma Ion" speakers for many years before radiation and safety issues forced it to abandon production.



Ribbon tweeters are almost as strange. A tiny ribbon of aluminium foil a few microns thick stretched across a powerful magnetic field produces the sound. Only recently have magnets become small and powerful enough to permit the production of high-output ribbon tweeters. The Chinese manufacturer Aurum Cantus is at the forefront of this technology, having purchased the rights to an Italian design. It uses two of its best ribbon tweeters in its Leisure 3 SE speakers (pictured). These have corrugated ribbons and N45-grade neodymium-ferrite-boron

magnets. Strong metal mesh protects the delicate ribbon. The 165mm-diameter bass/mid-range driver is a conventional moving-coil design, but the cone is made from a high-tech composite formed by bonding non-woven carbon fibre and Kevlar.

The Leisure 3 SE cabinet is finished mostly in an elegant gloss-black polyurethane paint, but naturally coloured hardwood panels are fixed to the sides. These have been sanded by hand so they narrow down to a sliver at the edges. The workmanship is superb.

We got the best performance when the Leisure 3 SEs were mounted on stands a metre from any wall. The height of the tweeters is critical because ribbon tweeters are highly directional. The tweeters must be at ear height and the cabinets must face the listening position. The tweeters deliver pure sound that's crisp and precise and the mid-range and bass are smooth and extended.

Greg Borrowman is the editor of Australian Hi-Fi magazine.

INFOFILE

Aurum Cantus Leisure 3 SE Loudspeakers
RRP: \$2399

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Q&A Rod Easdown

TWO OF A KIND


I was fascinated by Greg Borrowman's review of Tannoy's Eyriss DC1 speakers (The Guide, February 13). Is the dual-concentric design the same as dual-cone car speakers?

Most car speakers have the tweeter on the same vertical axis as the cone driver, usually by suspending it on a frame above the cone, not on the horizontal axis as well. Some have the tweeter mounted on the pole piece but they're not dual concentric since the voice coils are offset.

CURRENT ASSETS


I have a battery charger for Ni-Cd (nickel-cadmium) batteries that I'm told can't be used for Ni-MH (nickel-metal hydride) batteries. Why?

In theory it's possible to use Ni-MH batteries in a charger designed for Ni-Cd batteries. They have similar voltages and require similar charging currents. But it's not a good idea because most Ni-Cd chargers have a timer circuit that stops the charge cycle after a pre-set time. This charge time is incorrect in most cases for Ni-MH batteries due to differences in battery chemistry. If the charging time is too short the battery will be undercharged and will run flat. Charging for too long will cause the battery to overheat, possibly causing damage. Ni-MH chargers have circuitry to measure the batteries' state as they're being charged, adjusting current accordingly and switching off when the batteries are fully charged.



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