Speaker grille tools in a niche, in a pinch

building tools for speaker grilles is hard enough, but when injection molder Nifco LLC (Groveport, OH) was approached by a Tier One supplier with a grille opportunity, time was—as usual—critical. Tom Warner, corporate tooling manager for Nifco, says the firm was given a wireframe CAD file and five weeks to produce tooling and prototypes.

With 59 presses (Arburg, Sumitomo, Engel, Van Dorn, Autojectors, JSW, and Ube), 325 employees, an in-house tooling shop, 16 toolmakers, and a reputation for serving the automotive industry well, Nifco is talented and reputable, but not yet expert on cutting speaker grille tools. The grilles are designed for use in the rear deck and right front door of a model year 2001 car under development. The two back grilles are molded of acetal, the front of PP. But the material is the easy part. "The part geometry, undercuts, die direction, and just the way it was supposed to come out of the tool made it a real challenge," says Warner. So Nifco turned to an emerging authority on speaker grilles: Bernd Lindecke Specialty Tools in Bad Salzuflen, Germany, represented in North America by JPI Technologies Inc.

Molding speaker grilles can be tricky. That's why Nifco LLC turned to Bernd Lindecke, a German moldmaker and speaker grille tooling specialist. He made prototype tools for these grilles in less than five weeks.

Having manufactured more than 800 speaker grilles worldwide, Lindecke has developed an expertise building tools for grilles for injection molding and die casting parts.

The CAD file, a wireframe IGES file, was generated at the Tier One parent and redrawn by Nifco in SDRC. This was e-mailed to Lindecke in Germany. Subsequent tool drawings were also e-mailed, even while Lindecke vacationed (his mobile home has an office). Final reviews were conducted via digital video over the Internet.

What Lindecke and Nifco created was a single-cavity, cold drop, three-plate mold cut from P-20 steel. The mold base for the three grilles is the same with three interchangeable core and cavity inserts. Within five weeks of delivery of the design from the Tier One, Warner was in Germany for sampling.

"He [Lindecke] has it down to a science on the fill, mold design, and processing," Warner says. "He doesn't have to grind pullers, he doesn't worry about gas entrapment. He just dropped the mold into the machine and drank his coffee, totally confident that it would work. And it did." The parts were sampled on a 500-ton tiebarless Engel. The back grille is approximately 220 mm by 200 mm; the front grille is 330 mm by 200 mm. The holes are 1.3 mm in diameter; the honeycomb pattern is on the B side of the mold.

Warner is awaiting the Tier One's decision on who will get the program. In the meantime, he hopes to start building similar high-quality grille molds in-house.—*Jeff Sloan*