



# HORN TECHNOLOGY DAYS 2013



A special department handles one-off and special order tooling

## At Horn Technology Days, visitors were offered knowledge and a peek into the insert-making process

By Jim Anderton, Editor

In Tübingen, Germany, just outside Stuttgart, Horn USA's parent company plants, Paul Horn GmbH and Horn Hartstoffe GmbH (literally, "Horn Hard Materials") operate state-of-the-art cutting tool and custom tooling facilities that are rarely seen by outsiders. On June 5th to 7th, however, visitors to Horn Technology Days enjoyed a look at the operation during the event. Technology Days offered eight seminars on subjects from high feed rate machining to customized tool solutions, timed to allow attendees the opportunity to take in multiple talks, as well as plant floor demonstrations on unique applications and a broad range of Horn products. Over 2000 visitors from around the world attended the three day event.

Many visitors commented on their surprise at the number and variety of products manufactured at the Horn facilities. Insert making is a major part of the operations, but tool holding solutions were prominent; Horn uses a major



Raw materials for inserts that start life as a powder must be pressed and sintered into a final shape. This machine extrudes the powder into stick-like preforms for further processing



This machine uses a process called isostatic pressing to compress the powder into shape with the same force over the whole surface area of the insert. Complex shapes that can't be molded using conventional equipment can be processed.



The semi-finished preforms ready for downstream shaping and sintering. Sintering is perhaps the most important part of the insert-making process, and methods are a closely guarded secret. Photography was prohibited in the sintering department, but the equipment was seen to have very large capacity and computer control.

in-house machining department with 5-axis equipment as well as EDM capability. Both production and custom tool holding options are produced in the Tübingen operations. The overall impression on the Horn operations is one of order. Work stations are carefully planned and the work flow moves smoothly with little evidence of rework or scrap materials. Floor space is used efficiently, with wide aisles for movement of goods and people. The in-house training facility uses modern equipment and includes some conventional machine tools, consistent with the German philosophy of training a sound background in the basics and the development of "feel" before moving to software-controlled operations.

Company chairman Lothar Horn spoke to journalists at the event, offering a frank discussion of industry challenges, such as raw material costs. "The automotive, medical and hydraulic industries have many possibilities", declared Horn, who notes that the current industry crisis around spiraling



Simpler shapes can be injection molded with equipment similar to the presses used in the plastics industry



carbide raw material costs has a positive aspect: “carbide prices going up is a good thing..it’s a sign that business is working at a high level”.  
 Horn noted that exports to the USA are up 10 percent year over year, and in China, exports are up 25 percent , “Which is not so bad”, Horn states modestly. Paul Horn the company is equally pleased, enjoying continuous growth



Worker amenities include modern, comfortable cafeterias and even a mediation room for yoga or quiet contemplation



If it looks like a modern machine shop that’s because it is. Horn also makes tool holders using modern 5-axis machining centres.



Custom tooling jobs.



Modern AgieCharmilles EDM machines handle intricate work



The face of modern manufacturing. This is not a clean room inside the facility, its normal housekeeping at Horn

since the company’s founding in 1969. In 2012 the firm launched subsidiaries in Brasil, the Czech Republic and China. Horn is represented in 70 countries globally. Horn employs 1150 globally and plans to move to a new building on 2016 doubling the floor area to accommodate higher production levels and new processes. Horn USA similarly intends to triple production capacity. The US market is the highest growth zone at present for Horn operations.

Finding skilled workers is as much a problem in Germany as here, and to address it, Horn has partnered with government industrial authorities which resulted in the a pilot project that graduated 14 apprentices in May with a special certificate in cutting tools. “The project will take five or six years to compete”, says Horn, adding “but

it’s worth it for the future”. The firm is also developing a university co-op program with 8 students, developed with the regional high school’s university training authority. Horn currently lists 20,000 products, “but we can equal this in special tools”, declared Horn. “Special tools are 50 percent of our turnover ... we make them on production machines, here in Germany and also in major markets like the US and the UK.” And the threat of low-cost competition from China? Lothar Horn states unequivocally, “the quality’s not at the same level today, but they can produce a copy in two weeks to two month’s time ... but with 100,000 drawings, it’s not in their interest to copy our products. But when we produce in China it’s a different situation.” **CM**