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Tip-Top Productivity (July 2009 / Volume 61 / Issue 7 of Cutting Tool Engineering)

By Bill Kennedy

Drills with interchangeable carbide tips provide productivity, flexibility, accuracy and economy.

Mark Stevens, field sales engineer for Allied Machine & Engineering Corp., Dover, Ohio, said high penetration-rate drills like his company's GEN3SYS system represent "where everybody seems to be going right now." The interchangeable-tip drills feature a proprietary multilayer AM200 coating and a locating pad that enhances repeatability and runout reduction. "In the economic slowdown, shops are looking for the best ways to lower cost per hole," he said. Compared to solid-carbide drills, interchangeable-tip drills provide cost savings through both high production rates and lower tool cost, he said.

Courtesy of Quality Metal Products

At Peoria, Ill., shop Quality Metal Products, a 17mm-dia. GEN3SYS interchangeable-tip drill from Allied Machine & Engineering produces a 4.5 "-deep through-hole in 1E0018 gray iron at a cutting speed of 1,400 rpm and a 15-ipm feed rate.

Interchangeable-tip drills, Stevens said, are less expensive than solid-carbide ones. A 15mm- to 20mm-dia., solid-carbide drill for making holes 7 diameters deep costs about \$600, while a GEN3SYS tool for making the same holes costs about \$250 for the body and \$75 to \$90 for the inserts, he said.

Quality Metal Products Inc., Peoria, Ill., produces elbows, brackets and adapters made of steel and ductile and gray cast iron. Rob Lemons and Tim Swise, who purchase tools and oversee operations for the shop's CNC machines, said much of the facility's drilling requires drills in diameters up to 1.5 " to make holes 10 diameters deep. They use the GEN3SYS drills because "We need long tool lengths," Lemons said, and solid-carbide drills that long cost "a fortune." The interchangeable-tip tools are "cheaper to start with, we are getting better tool life and we have increased our speeds and feeds," he said. According to Swise, the interchangeability enables the shop to "replace the whole tip in a couple seconds," without a need to reset tool offset because the new tips always match the original length recorded in the machine program. Finally, interchangeable-tip tools are preferable to those that require resharping, which in a production environment "require you to have a lot of tools in the pipeline. Because whatever you've got out in resharpen, you still have to have plenty on the shop floor," Swise said.