



look-ahead

By Alan Richter, Editor

THIS MONTH

Cutting Tool Engineering covers:

- True 3-D PCD chipbreaker forms, and
- Gearboxes with 'intelligent' sensors.

CHIPS AWAY

Generating a "bird's nest" of chips when turning aluminum and other nonferrous metals can be a major problem, interrupting production through machine shutdowns. "Manufacturers can't afford to shut the machines down to dig the chips out," said Vic Gallagher, president of Rani Tool Corp. "We know instances where they've had to shut machines down every 45 minutes to clean out the chips."

Gallagher added that clearing long, uncontrolled swarf can sometimes take 15 minutes, and the problem is magnified when all of a shop's machines feed into one chip processing system. "If you clog that system, then you shut down the whole shop or cell," he said.

To avoid those production delays, Rani Tool distributes PCD-tipped inserts with "true 3-D" PCD chipbreaker forms from Becker Diamond Tools, Puchheim, Germany. The chipbreaker is formed via a proprietary process into the PCD tip after the tip is brazed to the insert body.

In addition to enhancing chip control, the higher shear angles integrated within the chipbreaker produces less heat expansion of the workpiece and lowers cutting pressures, according to Rani Tool. That can increase part accuracy, eliminating the need for secondary operations, and can extend tool life. "When run head to head with typical flat-top PCD inserts, we've seen at least a 20 to 30 percent increase in tool life," Gallagher said about the Becker inserts.

Effectively controlling chips also lessens the risk of producing scrap. "Especially in boring applications, you're able to get the chips out of the bore so they're not damaging the surface finish inside



Rani Tool

Becker Diamond Tools produces 3-D PCD chipbreaker forms at the cutting point of the PCD segment.

the part," Gallagher said.

And safety improves when workers don't have to handle large nests of sharp chips.

The tools are available in standard ISO, screw-on insert styles and in three grades for roughing to superfinishing applications.

For more information, contact Rani Tool Corp., Newington, Conn., at (888) 554-7264 or www.ranitool.com.

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