

# Newsletter Newsletter



**MASTER TOOL, LLC**  
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Fig. 1



Fig. 2



Fig. 3

Brent Price, the Sumitomo sales engineer in the Detroit area, had an interesting application recently. One of his customers was struggling with rough boring on cast iron sleeves in an aluminum engine block.

The operation was being performed on a dedicated transfer line using an adapter that was bolted to a dedicated spindle and an interchangeable nose piece holding the inserts (see Fig. 1). The nose piece held three (3) CBN tipped, fixed pocket, special screw down inserts (the customer had also tried five (5) screw down inserts). The cutting head was connected to the adapter using a shell mill (center bolt) mount (see Fig. 1). The customer had also tried a straight shank, ABS™ type connection to help reduce his run-out problem.

The results of all of these different designs were poor at best. They had low tool life (2500 pieces, holes) and high cost per piece (cost per piece was approximately \$0.40 per bore). Their hole quality was poor with high withdrawal marks due to a high cutting edge - resulting in additional tool life and quality problems when they finished the hole later.

Brent convinced the customer that a whole different approach to this cut needed to be taken.

He suggested to the customer that they needed to look at machining this hole from both the front and the back end of the tool. He convinced the customer that the low tool life was mainly due to the fact that all of the inserts were not tracking radially; therefore, adjustable pockets with cartridges were required. He further convinced the customer that the high withdrawal marks could be attributed to the lack of repeatability of the connection between the cutting head and the adapter. In this case, a tapered connection (HSK) was required so that when the tool was preset to the correct diameter it would repeat when placed onto the adapter.

Brent added one additional offer that the customer could not refuse. **He told the customer that we could provide all of these features and provide a standard, 8 cutting edge, solid CBN insert at approximately the same price as the current special single edged insert** (see Figs. 2 & 3). He guaranteed the customer that this would eliminate his issues.

The customer placed the order and Master Tool Division manufactured the tools to our design standards. **The end result was to double their current tool life. The customers cost per hole was reduced from \$0.40 per hole to \$0.04 per hole. Over 300,000 part per year added up to a huge cost savings for the customer.**