

SERIES 131N HI-PERCARB



Kyocera SGS Precision Tools Case Study

INDUSTRY



ENGINEERING

MATERIAL

6061 ALUMINUM

PRODUCT

131N HI-PERCARB 5XD DRILL

APPLICATION

DRILLING

COMPETITOR

2 Flute Drill Internal Coolant Drill

COOLANT

Qualichem 251C

TOOL INFORMATION

14.5mm DIA / 83.01mm LOC / 132.99mm OAL



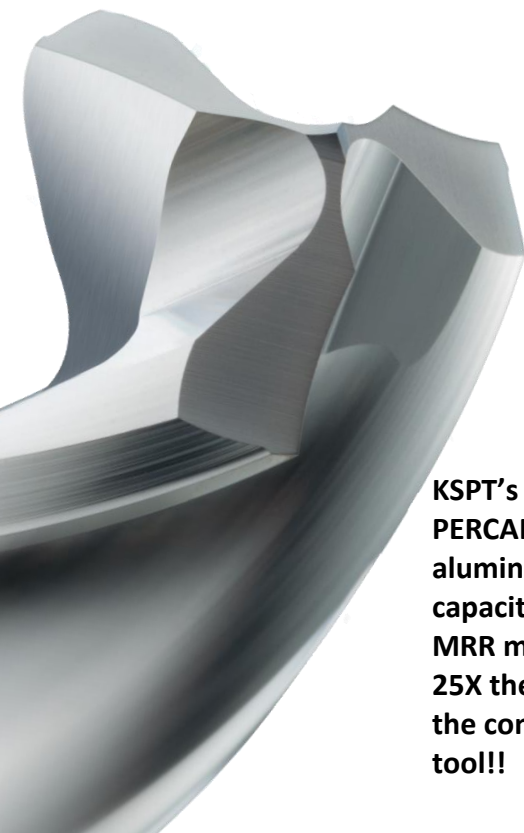
GOALS

The goals of this study were to significantly reduce job cost through the implementation of superior tooling and increased manufacturing efficiencies, and a reduction in cycle time.

STRATEGY

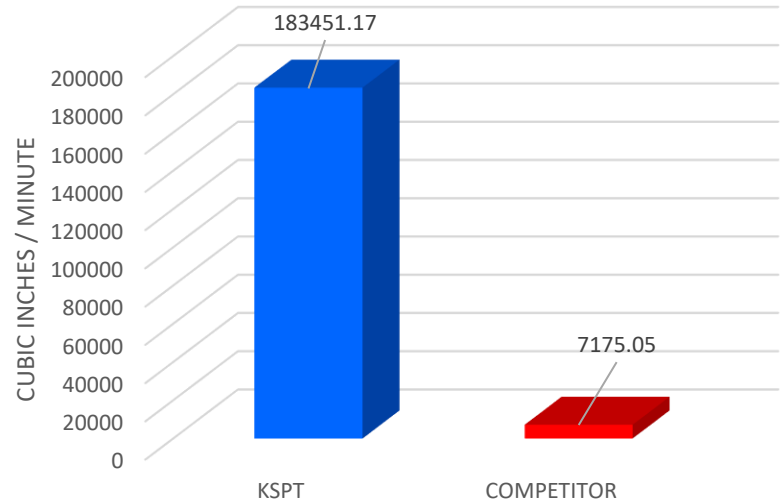
KSPT approached this job with a 3 flute HI-PERCARB aluminum drill. The tri-margin design offers superior surface finish and hole cylindricity. Additionally, the sculpted gash allows for a reduction of cutting forces over competitive three-flute designs.

	KSPT	COMPETITOR
TOOL DIAMETER	.57"	.531"
SPEED	5,500 RPM	1,800 RPM
FEED	715000 IPM	32400 IPM
RADIAL CUT (AE)	n/a	n/a
AXIAL CUT (AP)	1.375	1.375
CYCLE TIME	0:18	2:06



KSPT's HI-PERCARB aluminum drill capacitated an MRR more than 25X the rate of the competitor's tool!!

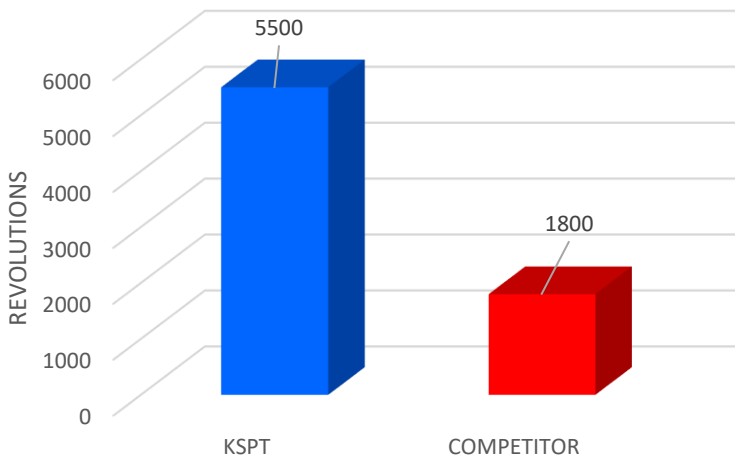
MATERIAL REMOVAL RATE



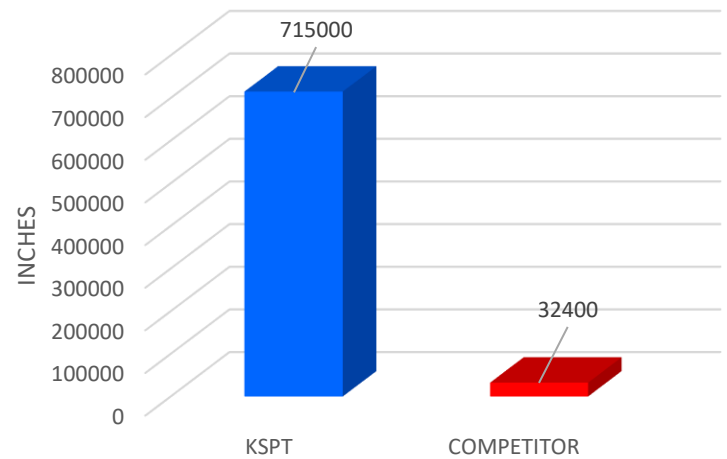
RESULTS

The overall findings of this study indicate although KSPT's HI-PERCARB aluminum drill heavily outperformed the competitor's drill in efficiency and effectiveness. **The 131N worked at a speed 3 times as fast as the competitor's drill.** The feed rate was where the customer saw the biggest difference. The 131N worked at a **feed rate more than 25 times that of the customer's drill!** This led to the **Hi-Percarb's material removal rate being 25 times higher** than the competitors drill. That **reduced the cycle time** from over 2 minutes with the competitor's drill to just 18 seconds with the 131N. With all the efficiencies, the Hi-Percarb produced a **machining cost savings to the customer of \$12,000!** The customer saved over 6 times as much per part using the 131N, and when all was said and done saved a total of 11,872!!

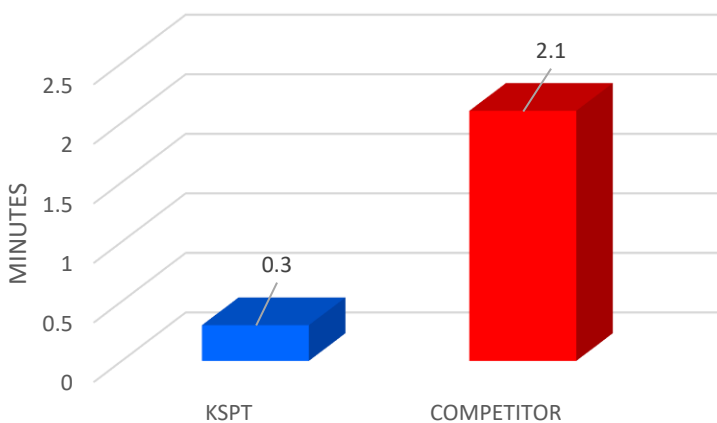
SPEED (RPM)



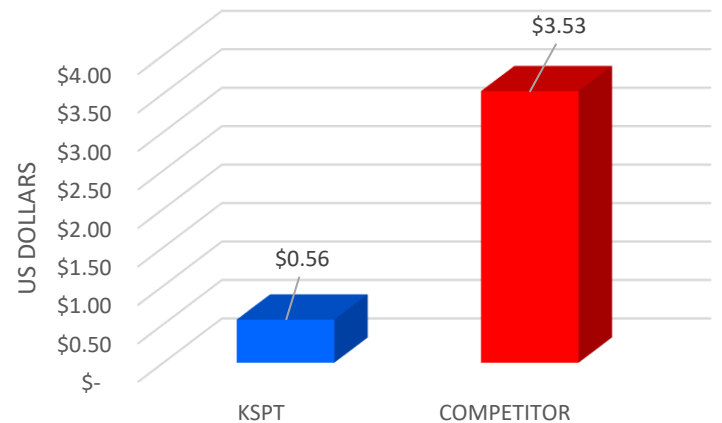
FEED (IPM)



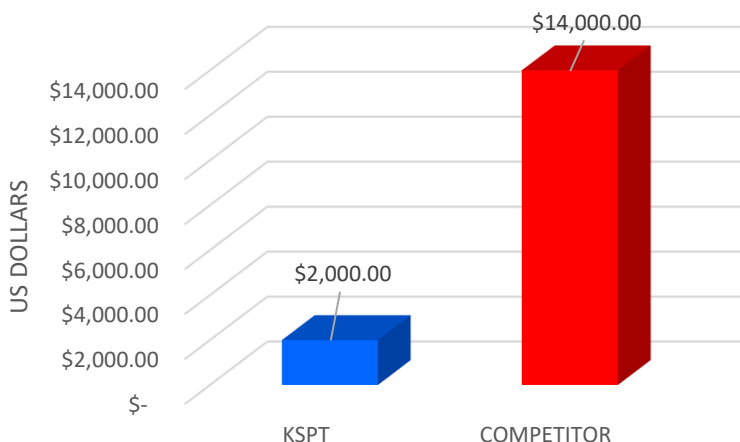
CYCLE TIME



TOTAL COST PER PART



TOTAL MACHINING COST



TOTAL COST

