

# SERIES 131N HI-PERCARB



Kyocera SGS Precision Tools Case Study

## INDUSTRY

MEDICAL

## MATERIAL

7071 ALUMINUM

## PRODUCT

SERIES 131N HI-PERCARB 5XD DRILL

## APPLICATION

DRILLING

## COMPETITOR

COMPARABLE 3 Flute Drill

## COOLANT

FLOOD

## TOOL INFORMATION

8.2mm DIA / 37mm LOC / 79mm OAL

## GOALS

The goals of this study were to significantly reduce job cost through increasing tool life, reducing machining time and improving overall manufacturing efficiency.

## 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	8.2mm	8.2mm
SPEED	5000 RPM	4000 RPM
FEED	16 IPM	60 IPM
RADIAL CUT (AE)	N/A	N/A
AXIAL CUT (AP)	1.135"	1.135"
CYCLE TIME	60 SECONDS	.60 SECONDS

## RESULTS

The overall findings of this study indicate the series 131N HI-PERCARB drill outperformed the competition in every statistically category. **The HI-PERCARB's tool life doubled that of the competitor** because the HI-PERCARB was able to **capacitate a 73% higher feed rate and a 20% improvement in RPM**. It also produced twice the amount of parts as the competition's drill. The engineer's knowledge of the tool heavily factored into how efficiently the tool performed. He was able to achieve a **material removal rate nearly 4 times that of the competition's drill**. In this case, the net price per new tool was irrelevant because the reduction in necessary tools produced a **savings in new tool cost of over \$33,000**. When you combine that with the machining cost savings, the customer experienced a **total cost savings of \$33,910.44**.

### NEW TOOLS REQUIRED TO COMPLETE JOB

### MATERIAL REMOVAL RATE (IN<sup>3</sup>/ MINUTE)

