

# Series 77 H-Carb

Kyocera SGS Precision Tools Case Study

**TOTAL  
SAVINGS  
\$114,663**

**SGS**  
Solid Carbide Tools

## INDUSTRY

AEROSPACE

## MATERIAL

13-8PH STAINLESS STEEL (42 HRC)

## PRODUCT

KSPT SERIES 77 H-CARB 7 FLUTE END MILL

## APPLICATION

HIGH EFFICIENCY MILLING

## COMPETITOR

2" INDEXABLE CUTTER

## COOLANT

FLOOD

## TOOL INFORMATION

.625" DIA / 1.875" LOC / 4" OAL

## GOALS

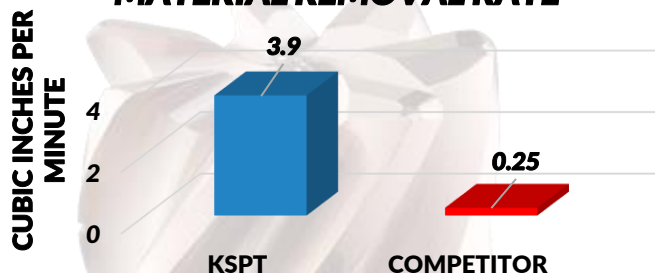
The goals of this study were to reduce job cost through a complete revision of their machining strategy. In doing so we looked to increase tool life, reduce machining time, and provide an improvement in manufacturing efficiency.

## STRATEGY

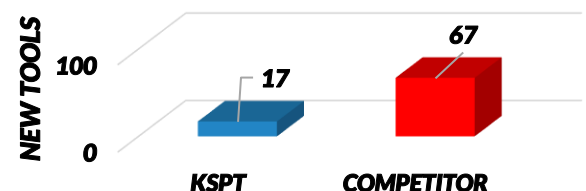
For this job KSPT picked the Series 77 (H-Carb), 7 flute high efficiency end mill, and attempted a single axial stepdown. A specialized core and flute design improves rigidity and chip flow, while also reducing deflection, making the H-Carb well suited for deep axial cuts.

	KSPT	COMPETITOR
TOOL DIAMETER	.625 Inch	INDEXABLE CUTTER
SPEED	1700 RPM	500 RPM
FEED	35.7 IPM	5.0 IPM
RADIAL CUT (AE)	.0625 INCH	2.0 INCH
AXIAL CUT (AP)	1.75 INCH	.0250 INCH
CYCLE TIME	20 MINUTES	60 MINUTES

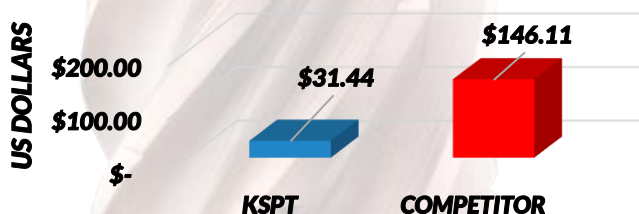
## MATERIAL REMOVAL RATE



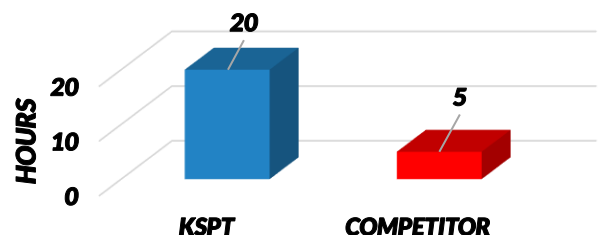
## NEW TOOLS REQUIRED TO COMPLETE THE JOB



## TOTAL COST PER PART



## TOTAL TOOL LIFE



## RESULTS

The improved cycle time that the H-Carb was able to facilitate was more than 3 times faster, and the feed rate was almost 5.5 times higher than the competitor's indexable cutter. These efficiencies lead to 1,460% improvement in material removal rate! The H-Carb produced almost 4 times as many parts per new tool. All these performance capabilities combine to produce a machining cost reduction of over \$113,333. Even considering the customer spent \$45 more in total new tool cost choosing the H-Carb, they saved \$1,375 in man-hours performing tool changes.

When you combine everything, we helped the customer garner a savings of **\$114,663!!!**