

# Z-CARB HPR

Kyocera SGS Precision Tools Case Study



## INDUSTRY



**ENGINEERING**

## MATERIAL

316L STAINLESS STEEL

## PRODUCT

Z-CARB HPR W/ TI-NAMITE A COATING

## APPLICATION

15% PROFILE AT 89% LOC

## COMPETITOR

INSERT CUTTER

## COOLANT

FLOOD

## TOOL INFORMATION

.5 DIA / 1" LOC / 3" OAL



### GOALS

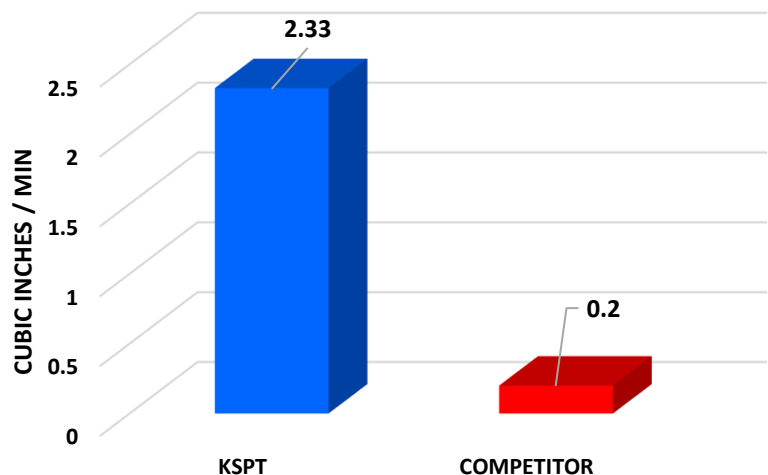
The goals of this study were to significantly reduce job cost through increasing material removal rates, reducing machining time and improving manufacturing efficiency.

### STRATEGY

KSPT approached this job with a 5 flute Z-Carb high performance rougher (HPR) end mill. KSPT's Z-Carb HPR ideal for achieving high metal removal rates, while at the same time achieving an optimal surface finish. The Ti-Namite M coating was selected for its outstanding performance in Titanium.

	KSPT	COMPETITOR
TOOL DIAMETER	.5 INCHES	.5 INCHES
SPEED	3323 RPM	2292 RPM
FEED	34.9 IPM	11.5 IPM
RADIAL CUT (AE)	.075 INCHES	.0200 INCHES
AXIAL CUT (AP)	.89 INCHES	.89 INCHES
CUTTING TIME / PART	.11 MINUTES	1.05 MINUTES

### MATERIAL REMOVAL RATE



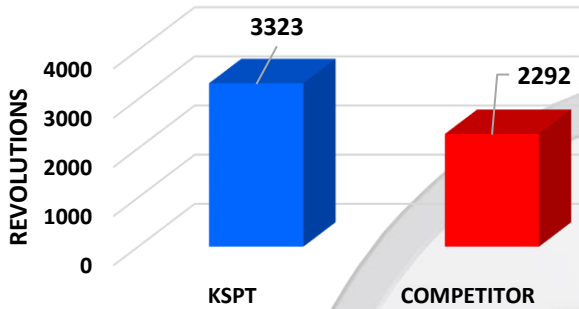
KSPT's Z-Carb HPR produced a material removal rate over 11 times higher than the competitor's tool!

# RESULTS

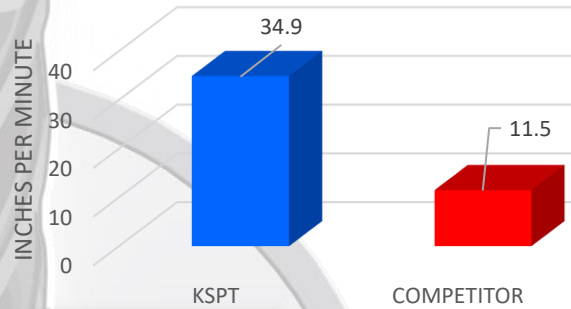
Every shop aims to create more parts in a shorter period, or to maximize money made while also minimizing money spent. One of the first places these machinists turn is to material removal rate (MRR). Boosting your shops efficiency even incrementally can lead to big profit gains. KSPT's Z-Carb HPR showed this customer a material removal rate that was 11 times higher than the competitor's tool. The increase in MRR led to a 78% reduction in new tools needed to complete the job. Less tools means less machining time and less machining time means less machining cost. An 89% reduction in fact. When combined with the over \$4,000 saved in new tooling cost, the customer experienced a total job cost savings of \$14,567.41.

## AN 84% SAVINGS OVER THE COMPETITOR'S TOOL!

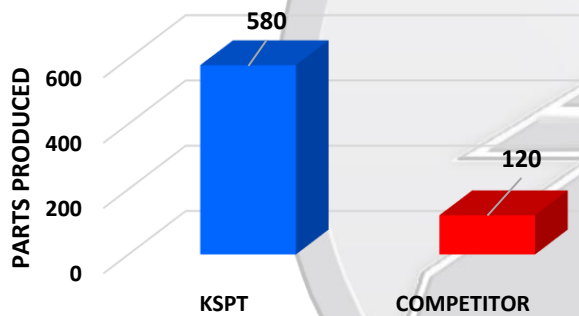
### SPEED (RPM)



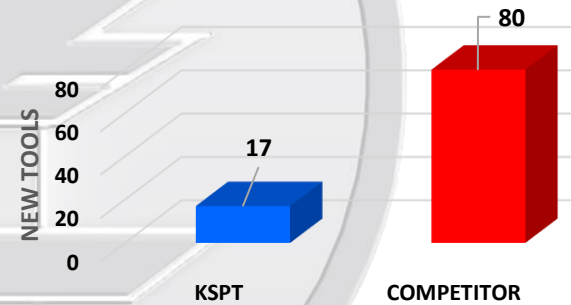
### FEED (IPM)



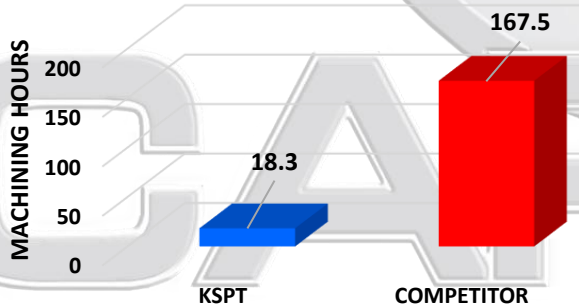
### PARTS PRODUCED BY A NEW TOOL



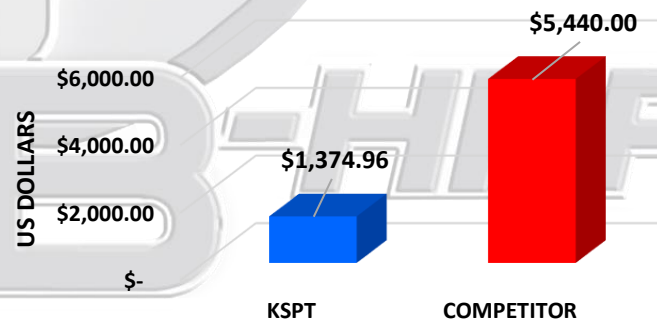
### NEW TOOLS REQUIRED TO COMPLETE THE JOB



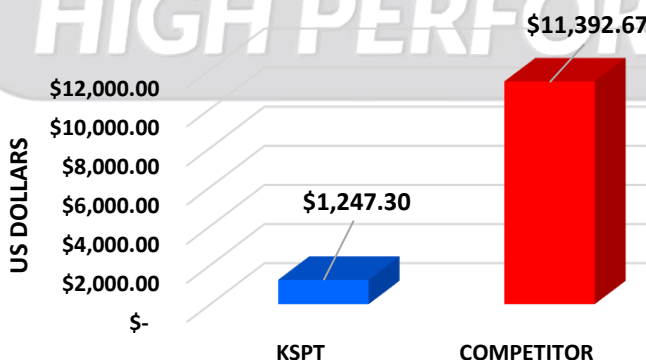
### TOTAL MACHINING HOURS



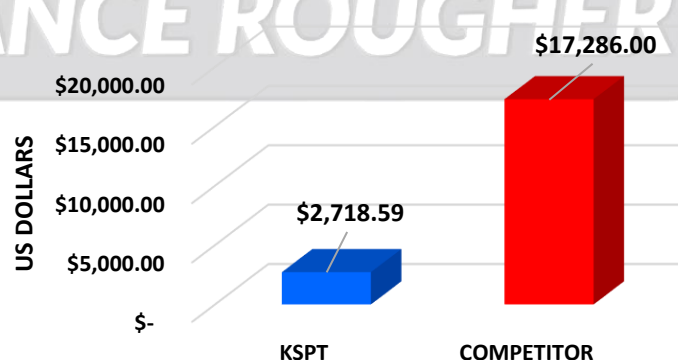
### TOTAL NEW TOOL COST



### TOTAL MACHINING COST



### TOTAL COST



# HIGH PERFORMANCE ROUGHER