

# Z-CARB HPR



Kyocera SGS Precision Tools Case Study

## INDUSTRY



## ENGINEERING

### MATERIAL

304LP Stainless Steel

### PRODUCT

KSPT Z-CARB HPR

### APPLICATION

MILLING

### COMPETITOR

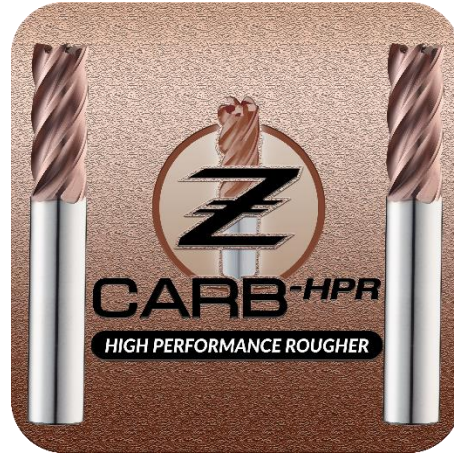
INSERT CUTTER

### COOLANT

FLOOD

### TOOL INFORMATION

.625 DIA / 1.25" LOC / 3.5" OAL



## GOALS

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

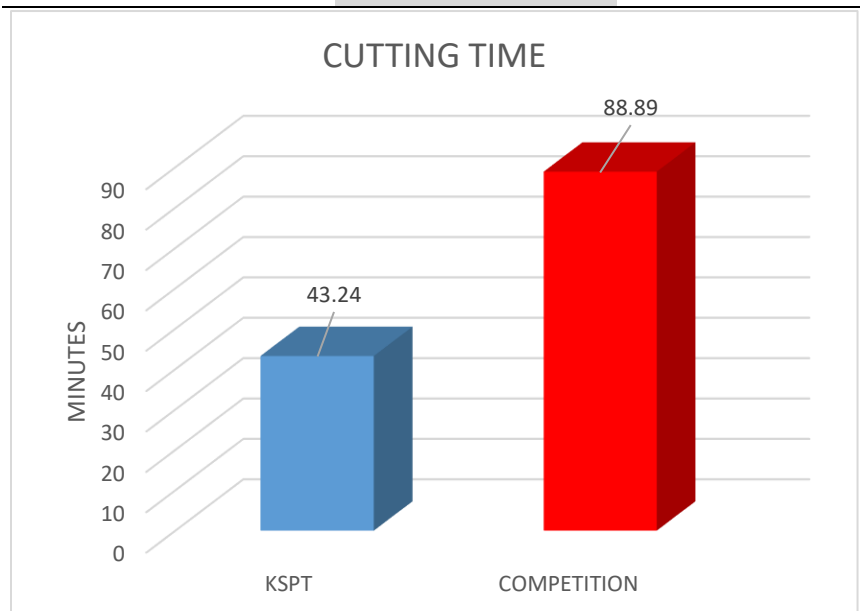
## STRATEGY

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	.6250"	2"
SPEED	1850 RPM	1200 RPM
FEED	18.5 IPM	9.0 IPM
RADIAL CUT (AE)	.0500"	.1250"
AXIAL CUT (AP)	.3000"	1.4000"
CYCLE TIME	43.24 MINUTES	88.89 MINUTES



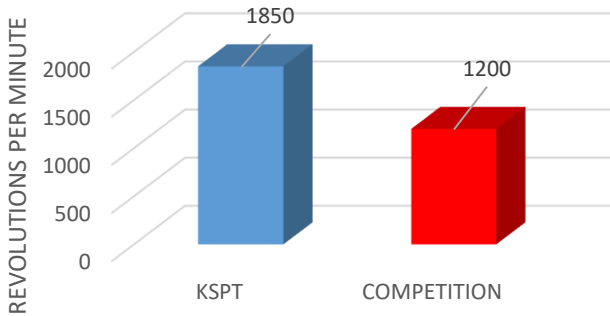
KSPT's Z-Carb HPR cut the total cycle time in half!!



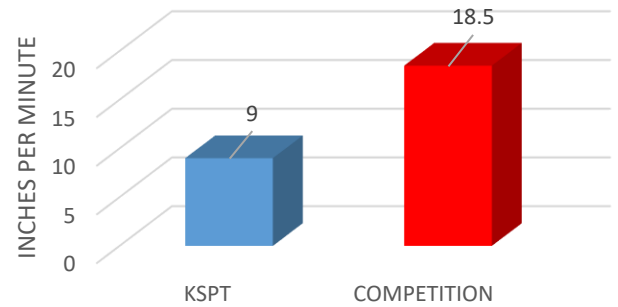
# RESULTS

The overall findings of this study indicate that **KSPT's Z-Carb HPR outperformed the competition in every statistical category.** The HPR was able to be run more than **35% faster than the competition**, while maintaining a **feed rate that was double the competition.** Given those increased efficiencies, the HPR was able to **produce 8 times as many parts with 8 times less new tools.** With the limited number of new tools necessary to complete the job, the **tool change cost savings was over \$12,000.** Additionally, the smaller number of new tools lead to a **total new tool cost more than \$171,000 less than the competition.** The HPR outperformed the competition so impressively that the **total machining cost savings for the job was \$11,411 and the total cost savings was a whopping \$195,248.91!!**

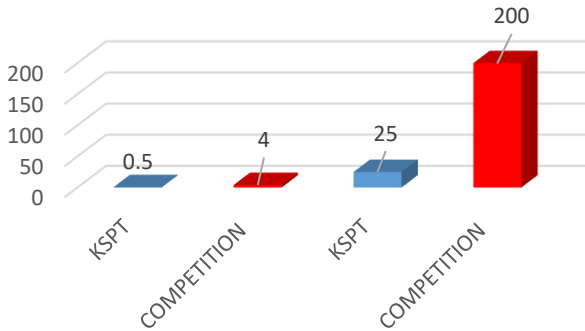
### SPEED (RPM)



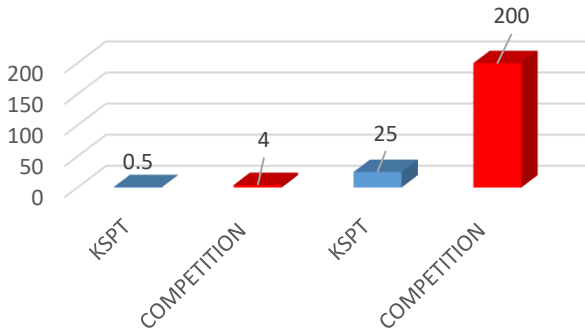
### FEED (IPM)



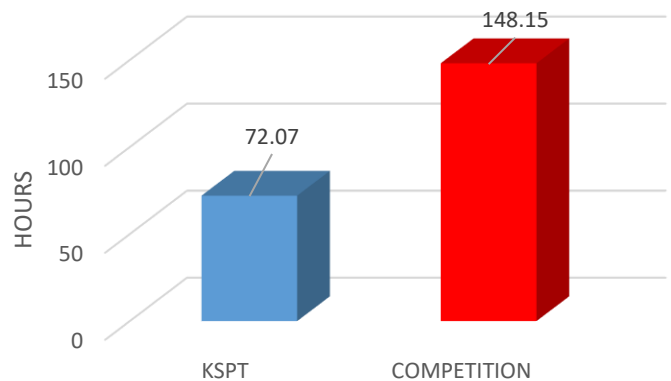
### PARTS PRODUCED BY NEW TOOL



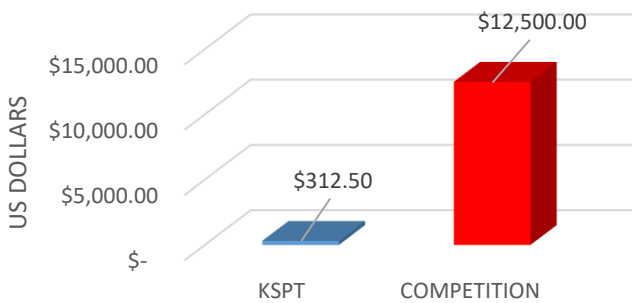
### NEW TOOLS REQUIRED TO COMPLETE JOB



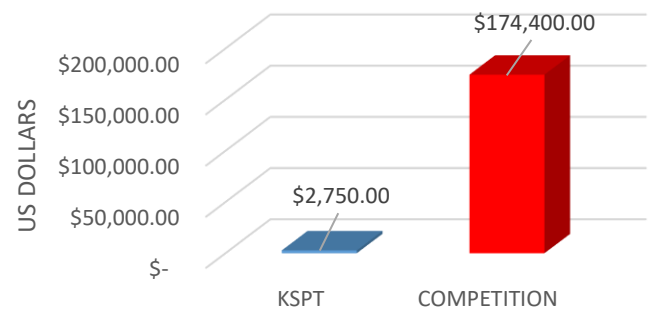
### TOTAL MACHINING HOURS



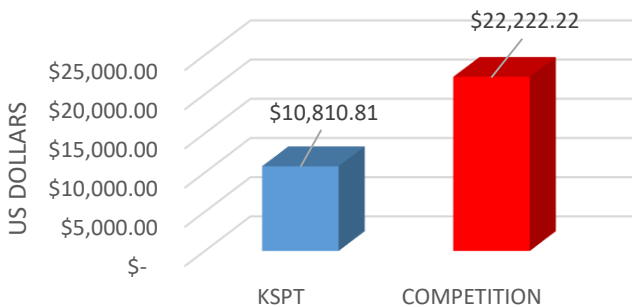
### TOTAL TOOL CHANGE COST



### TOTAL NEW TOOL COST



### TOTAL MACHINING COST



### TOTAL COST

