

# Z-CARB HPR

Kyocera SGS Precision Tools Case Study



## INDUSTRY



## AUTOMOTIVE

## MATERIAL

316 STAINLESS STEEL (22Rc hardness)

## PRODUCT

KSPT Z-CARB HPR

## APPLICATION

MILLING

## COMPETITOR

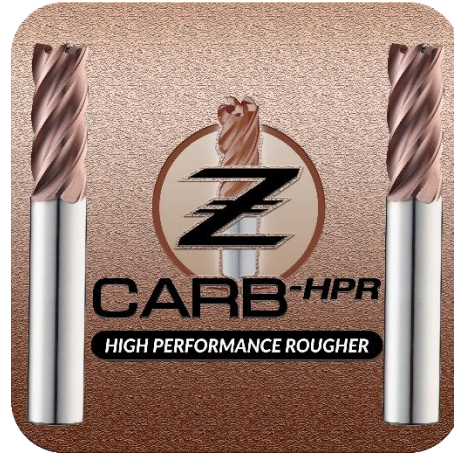
4 FLUTE END MILL

## COOLANT

Soluble Flood

## TOOL INFORMATION

.500 DIA / 1.25" LOC / 3.25" OAL



## GOALS

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

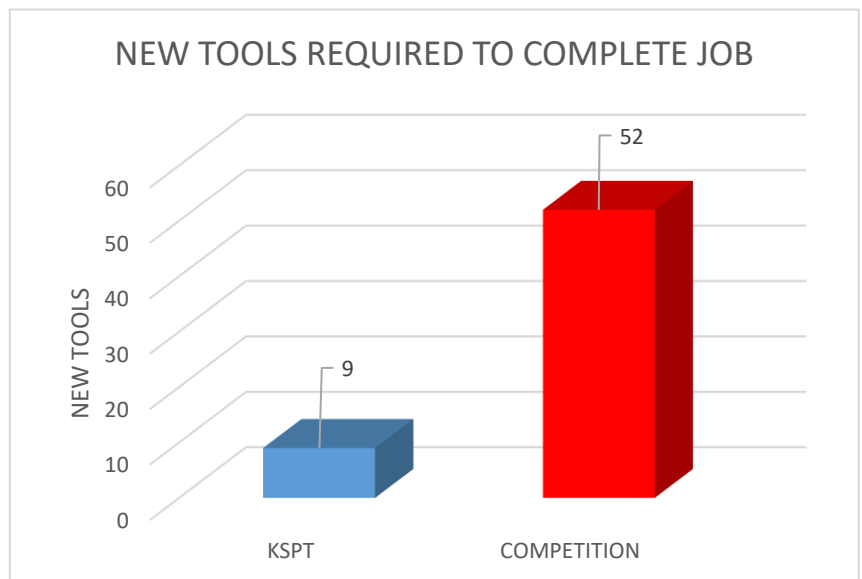
## STRATEGY

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	.500"	.500"
SPEED	3884 RPM	1833 RPM
FEED	79.1 IPM	18.3 IPM
RADIAL CUT (AE)	.4000"	.0350"
AXIAL CUT (AP)	.5000"	1.4500"
CYCLE TIME	24 MINUTES	225 MINUTES



KSPT's Z-Carb HPR needed only 20% of the tools to complete the entire job.



# 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 **twice as fast as the competition**, while maintaining a **feed rate almost 4 times the competition**. Given those increased efficiencies, the HPR was able to **produce 6 times as many parts with 80% less new tools**. With the limited number of new tools necessary to complete the job, the **tool change cost was 1/5 of the competition**. Additionally, the smaller number of new tools lead to a **total new tool cost more than \$2,000 less than the competition**. The total cost per part, given the superior performance of the HPR led to a **cost per part more than 7 times less**. The HPR outperformed the competition so impressively that the **total machining cost savings for the job was \$13,936 and the total cost savings equaled \$16,341.72!!**

