

# Z-CARB HPR

Kyocera SGS Precision Tools Case Study



## INDUSTRY



### MEDICAL

#### MATERIAL

4140 STEEL (35-40 ROCKWELL HARDNESS)

#### PRODUCT

KSPT Z-CARB HPR

#### APPLICATION

HIGH SPEED MACHINING

#### COMPETITOR

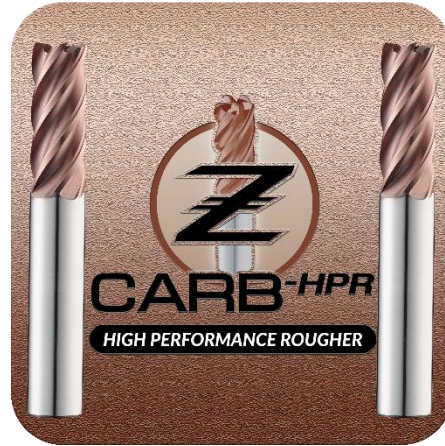
4-Flute GENERAL PURPOSE END MILL

#### COOLANT

FLOOD

#### TOOL INFORMATION

.3750 DIA / .5" LOC / 2.5" OAL



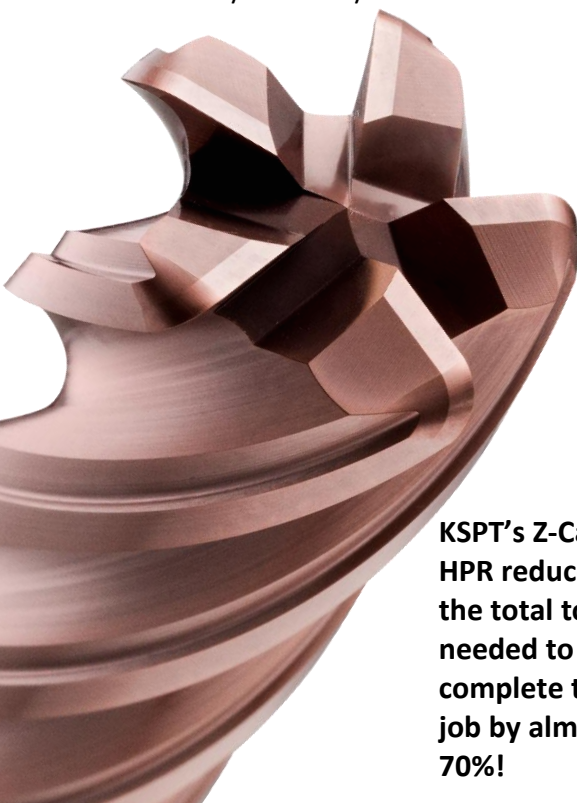
#### GOALS

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

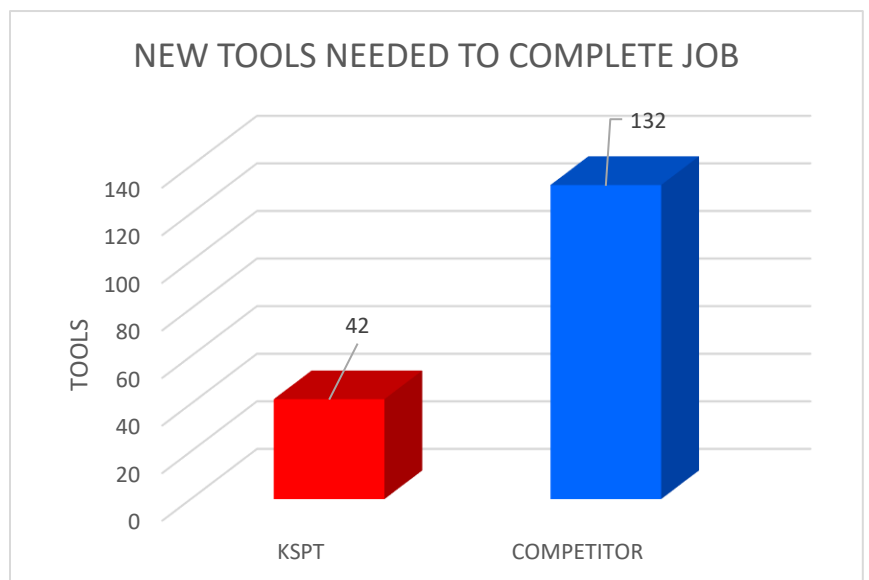
#### STRATEGY

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 specialized five flute design is engineered for increased productivity over three and

	KSPT	COMPETITOR
TOOL DIAMETER	.3750"	.3750"
SPEED	2567 RPM	2000 RPM
FEED	21.8 IPM	12 IPM
RADIAL CUT (AE)	.3750"	.3750"
AXIAL CUT (AP)	.1"	.1"
CYCLE TIME	2.5 MINUTES	7.5 MINUTES



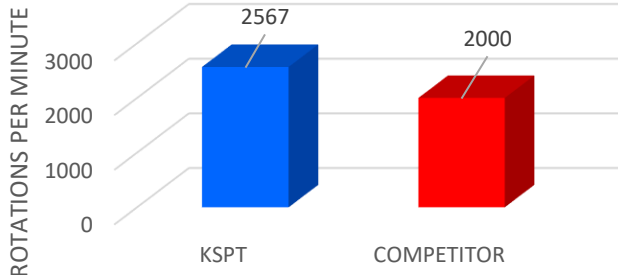
**KSPT's Z-Carb HPR reduced the total tools needed to complete the job by almost 70%!**



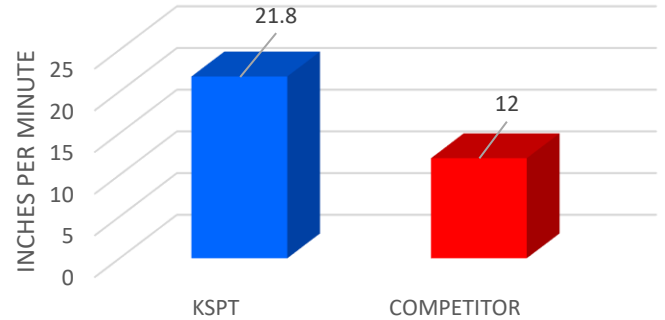
# RESULTS

The overall findings of this study indicate that KSPT's HPR outperformed the competitor's tool in every statistical category. We were also able to **reduce the tools needed to complete the job by nearly 70%**. The HPR was also able to **produce more than 3 times the number of parts per tool**. This was done using a higher quality tool capable of handling higher speed and feed rates. Through these efficiencies, the **cycle time for the HPR was a third of the time of the competitor**. The cost per part, because of the lesser number of HPRs needed, was reduced by over 60%. **Ultimately, when you combine the over \$7,300 in new tool savings with the over \$27,000 in machining cost savings, the customer had a total cost savings of \$34,438.79!!!**

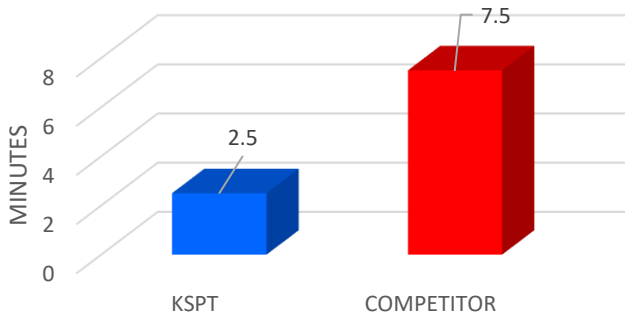
### SPEED (RPM)



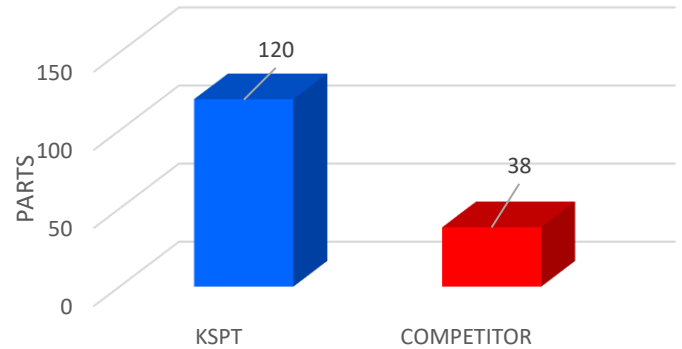
### FEED (IPM)



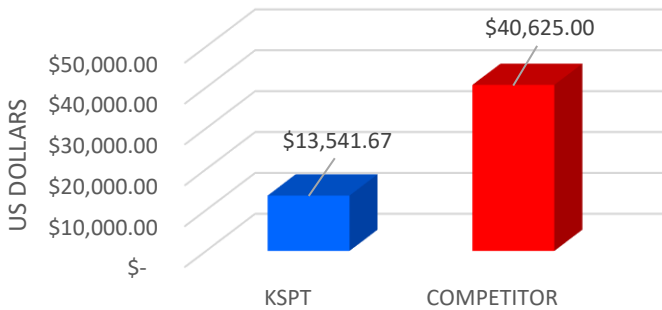
### CYCLE TIME



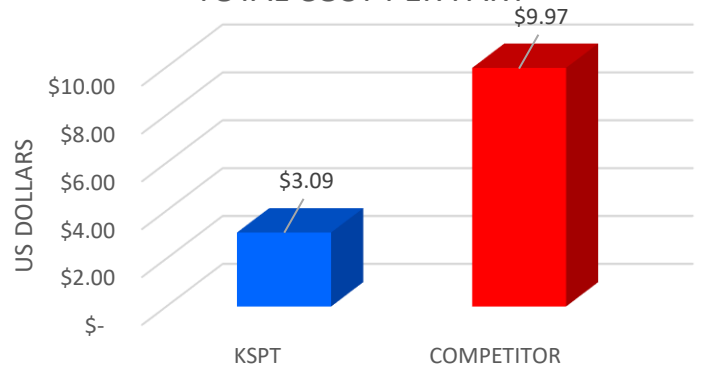
### PARTS PRODUCED BY NEW TOOL



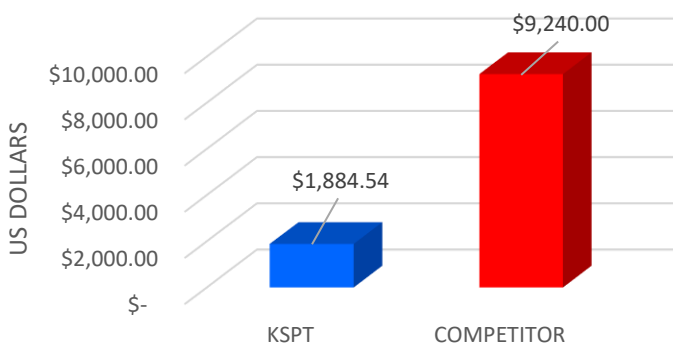
### TOTAL MACHINING COST



### TOTAL COST PER PART



### TOTAL NEW TOOL COST



### TOTAL COST

