

Z-CARB HPR

Kyocera SGS Precision Tools Case Study



INDUSTRY



AEROSPACE

MATERIAL

INCONEL 625

PRODUCT

KSPT Z-CARB HPR

APPLICATION

SLOTTING

COMPETITOR

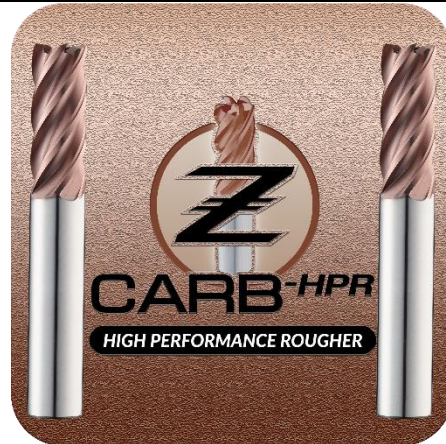
COMPARABLE 4 FLUTE END MILL

COOLANT

FLOOD & THRU SPINDLE

TOOL INFORMATION

.5" DIA / 1.25" LOC / 3.25" OAL



GOALS

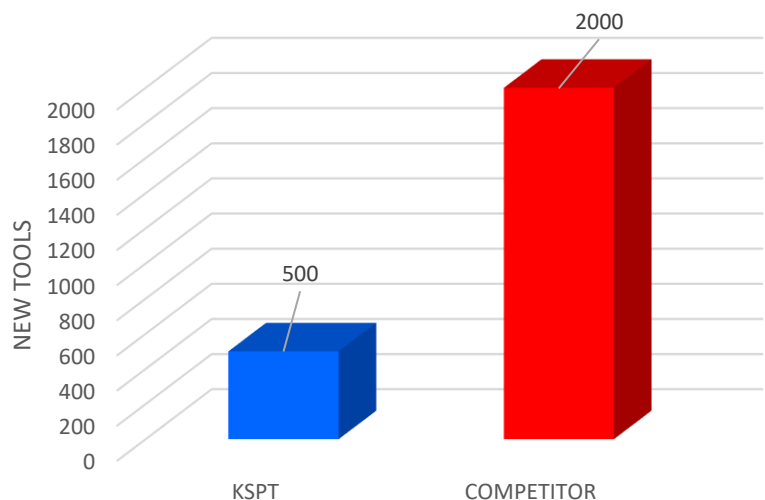
The goals of this study were to significantly reduce job cost through increasing tool life and maximizing manufacturing efficiencies.

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 four flute end mills.

	KSPT	COMPETITOR
TOOL DIAMETER	.5"	.5"
SPEED	600 RPM	550 RPM
FEED	5" IPM	4" IPM
RADIAL CUT (AE)	.5"	.5"
AXIAL CUT (AP)	.5"	.5"
MATERIAL REMOVAL RATE	1.25 CUBIC INCHES / MINUTE	.99 CUBIC INCHES / MINUTE

NEW TOOLS REQUIRED TO COMPLETE JOB



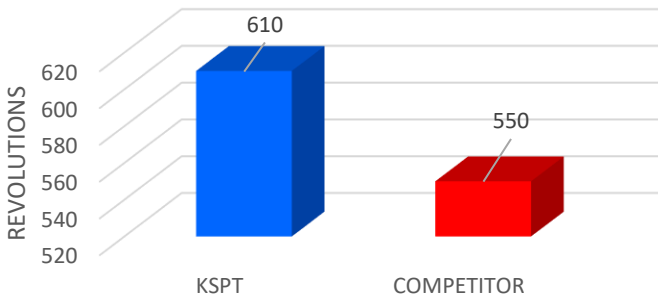
The competitor needed 4 times as many tools to equal what the HPR could do with 1!!



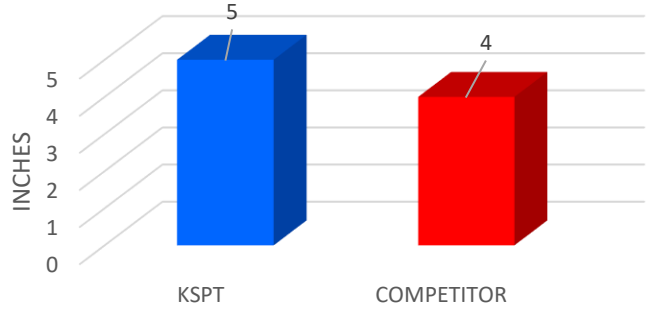
RESULTS

With quality tools come quality results, and this case is no different. The HPR was able to **produce 4 times as many parts per new tool than the competition**. The HPR was able to **capacitate a 20% higher material removal rate** than the competitor's tool. The customer, because of only having to use **1 HPR for every 4 of the competitor's tool**, produced a **per part cost less than half of the competition**. This cut **the tool change cost down by \$12,500!!** This also aided in saving the customer over **\$1700 in machining cost**. To complete the job the customer required 500 parts, the HPR was able to complete it using only 500 new tools, while the competitor needed 2,000! **This increase in tool life produced a total new tool cost savings of \$57,500, and when that was combined with all the other savings, the customer experienced a total cost savings of \$71,753.51!**

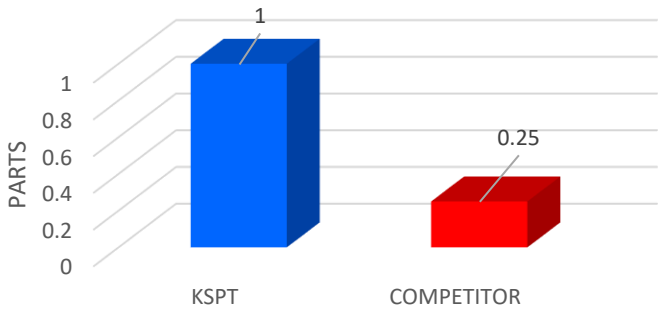
SPEED (RPM)



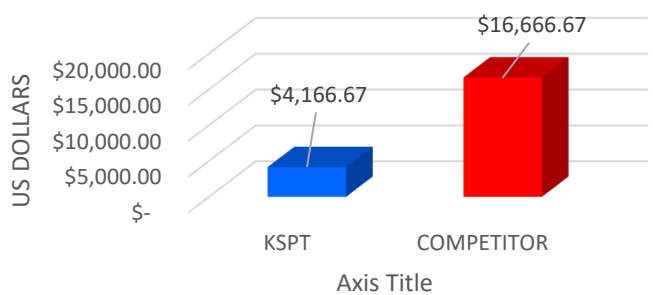
FEED (IPM)



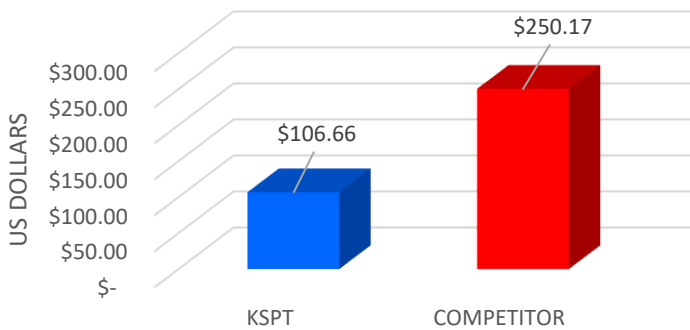
TOTAL PARTS PRODUCED BY A NEW TOOL



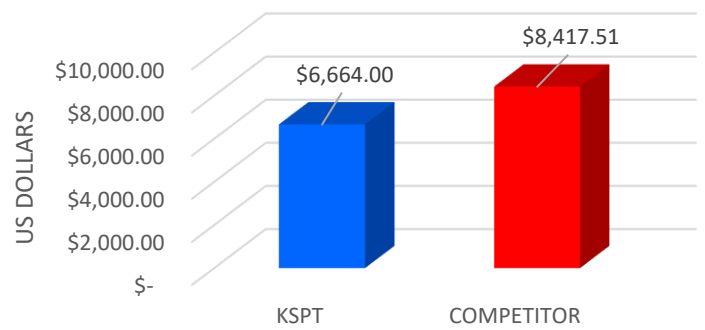
TOOL CHANGE COST



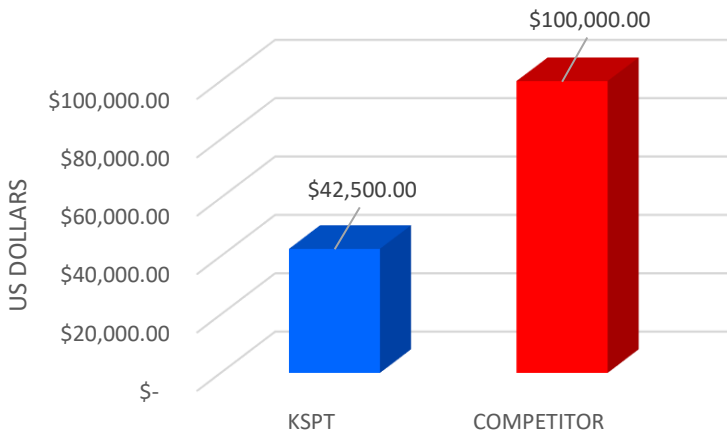
TOTAL COST PER PART



TOTAL MACHINING COST



TOTAL NEW TOOL COST



TOTAL COST

