

S-Carb 43 (Special Design)

Kyocera SGS Precision Tools (Tech Hub) Case Study



KYOCERA SGS Tech Hub LLC

INDUSTRY

GENERAL ENGINEERING

MATERIAL

6061 ALUMINUM

PRODUCT

KSPT S-CARB SPECIALLY MODIFIED

APPLICATION

PROFILING

COMPETITOR

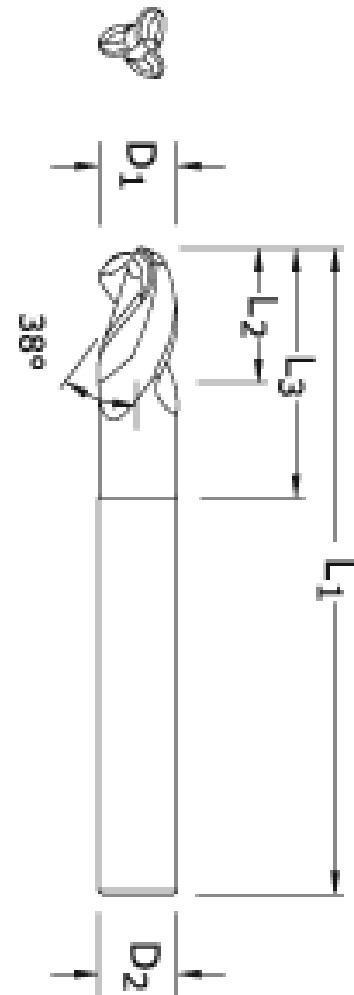
COMPETITOR'S COMPARABLE END MILL

COOLANT

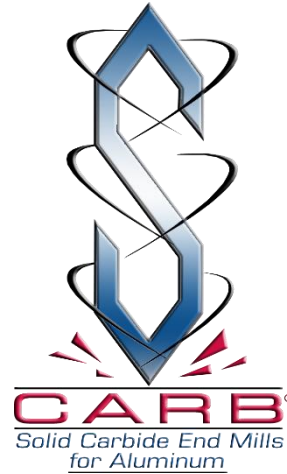
SOLUBLE FLOOD

TOOL INFORMATION

.75 DIA Specially Designed S-Carb



KSPT's S-Carb APR reduced overall cycle time by 33%!



GOALS

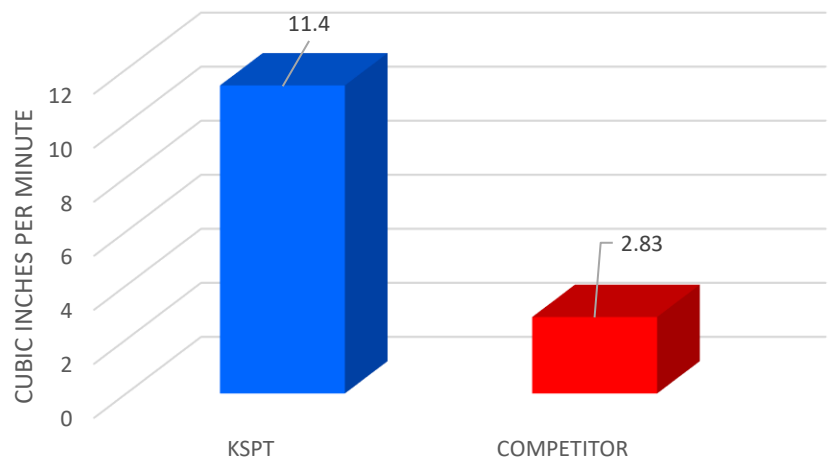
The goals of this study were to significantly reduce cost through manufacturing efficiencies that will then reduce cycle time.

STRATEGY

KSPT approached this job with the S-Carb Advanced Productivity Rougher (APR). KSPT's S-Carb APR, engineered for high power, high-efficiency machining of aluminum aerospace structural parts. Material removal rates of 550 cubic inches is achievable with remarkable tool life and product finish.

	KSPT	COMPETITOR
TOOL DIAMETER	.7500	.7500
SPEED	10,000 RPM	5400 RPM
FEED	210 IPM	40.5 IPM
RADIAL CUT (AE)	.100	.100
AXIAL CUT (AP)	.5430	.5430
CYCLE TIME	1minute 19 second	1 minute 59 second

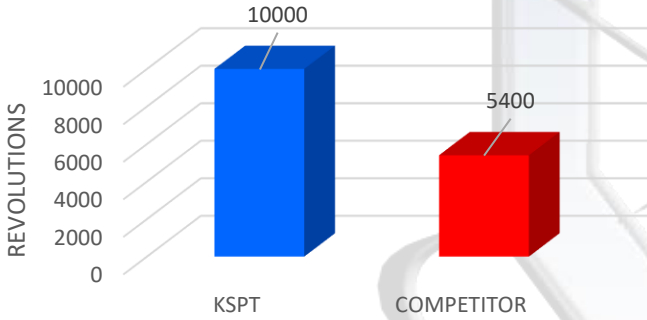
MATERIAL REMOVAL RATE



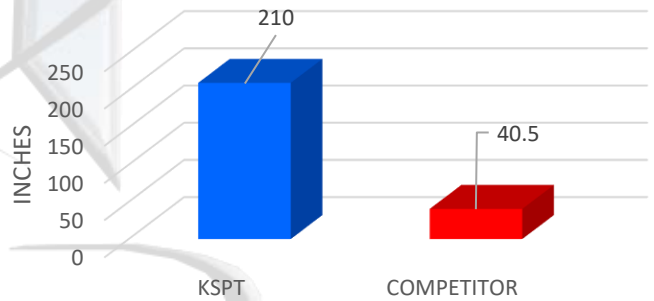
RESULTS

Creating a good chip in 6061 aluminum can be challenging and sometimes it requires a custom-tailored solution. KSPT's Tech Hub was able to take an accelerated and flexible approach specific to this individual customer's needs. This customer required a specially designed tool in a non-ferrous application. The S-Carb was the vehicle for such a customization. It decisively outperformed the competition in every statistical category. The Tech Hub's solution reduced the cycle time by 33% and overall material removal rate by another 80%. It was also able to produce 52,200 more parts with 200% less tools. It was also able to reduce the total hours of machining required by over 1,000 hours!! Because of the reduced number of tools needed, the total new tool cost was reduced by over \$3,300. With the added machining efficiencies with the Tech Hub's tool, the customer saved over \$200,000 and when all was said and done, KSPT had saved the customer a grand total of 216,800.75!!!

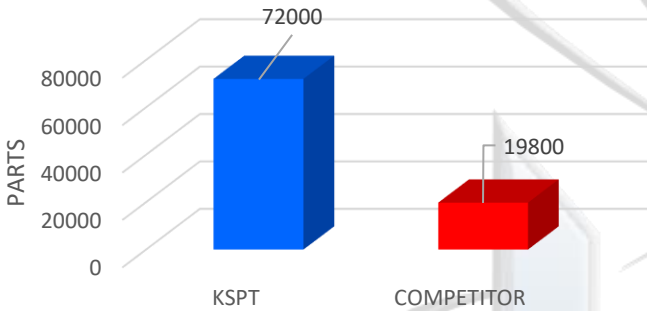
REVOLUTIONS PER MINUTE (SPEED)



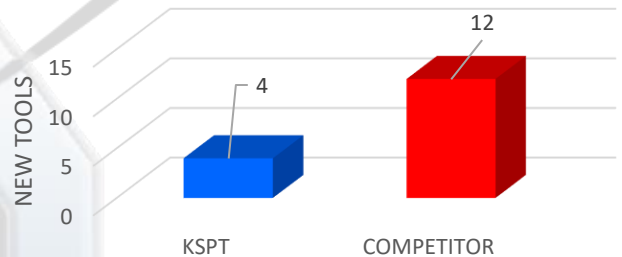
INCHES PER MINUTE (FEED)



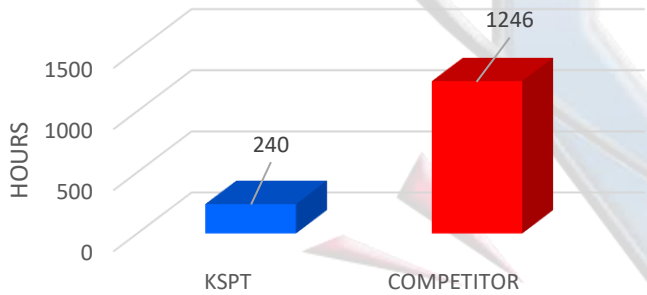
PARTS PRODUCED BY A NEW TOOL



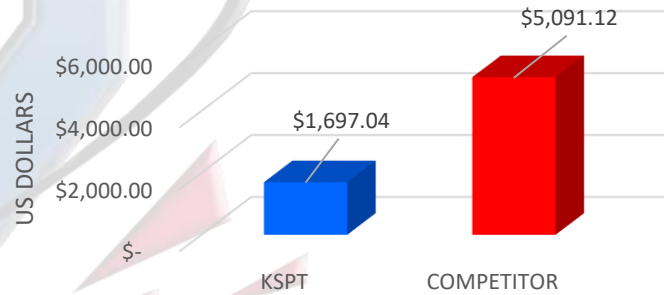
NEW TOOLS NEEDED TO COMPLETE THE JOB



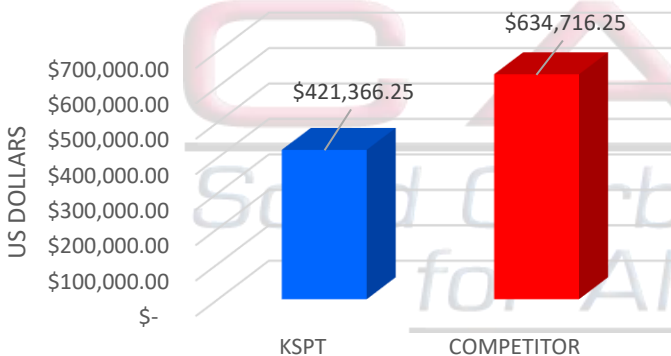
TOTAL HOURS OF MACHINING TIME



TOTAL NEW TOOL COST



TOTAL MACHINING COST



TOTAL COST

