

S-Carb 43 (Special 3FL 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

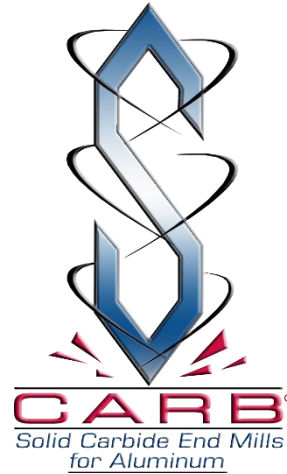
COMPETITOR'S COMPARABLE END MILL

COOLANT

SOLUBLE FLOOD

TOOL INFORMATION

.75 DIA Specially Designed S-Carb



GOALS

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

STRATEGY

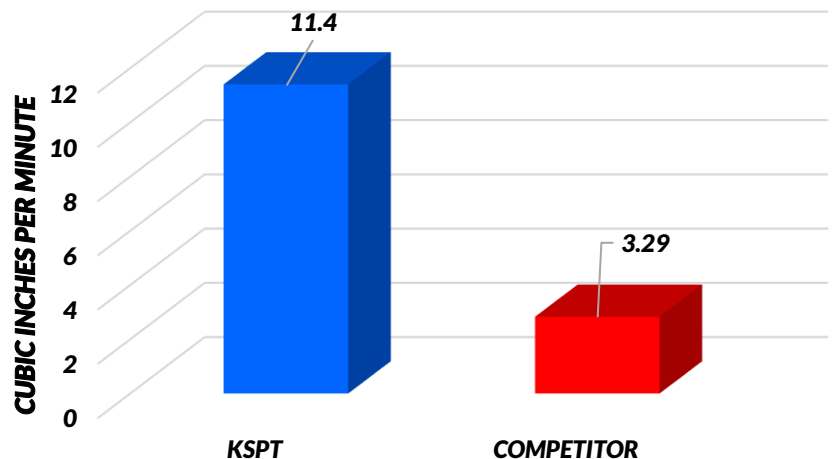
KSPT approached this job with a specially designed 3 flute S-Carb. KSPT's S-Carb, engineered for high power, high-efficiency machining of aluminum aerospace structural parts. Material removal rates of 550 cubic inches is achievable with remarkable tool life and product finish.

	KSPT	COMPETITOR
TOOL DIAMETER	.7500	.7500
SPEED	10,000 RPM	5500 RPM
FEED	210 IPM	60.5 IPM
RADIAL CUT (AE)	.100	.100
AXIAL CUT (AP)	.5430	.5430
CYCLE TIME	1minute 10 second	1 minute 50 second



KSTH's S-Carb produced a material removal rate more than 3 times as high as the competitor.

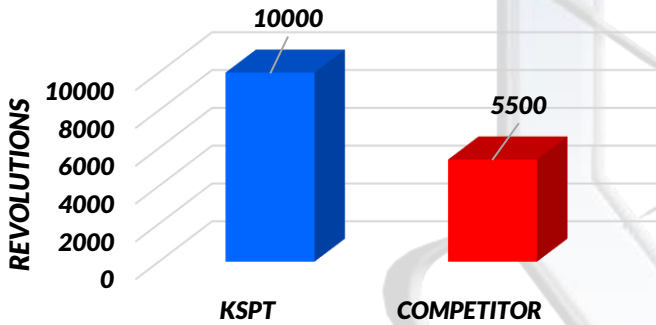
MATERIAL REMOVAL RATE



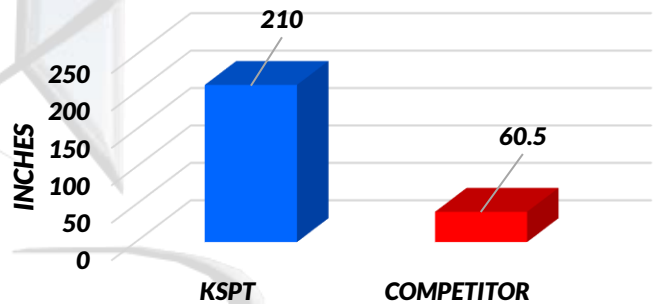
RESULTS

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 increased the material removal rate to a level more than 3 times as high as the competitor's tool. It was also able to produce 53,00 more part. It was also able to reduce the total hours of machining required by over 150 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 \$50,000 and when all was said and done, KSPT had saved the customer a grand total of 53,459.92!!!

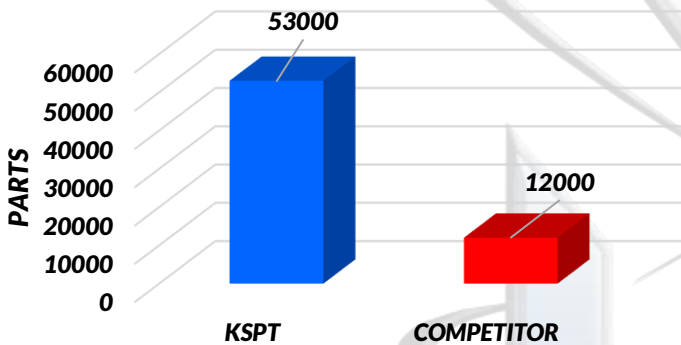
REVOLUTIONS PER MINUTE (SPEED)



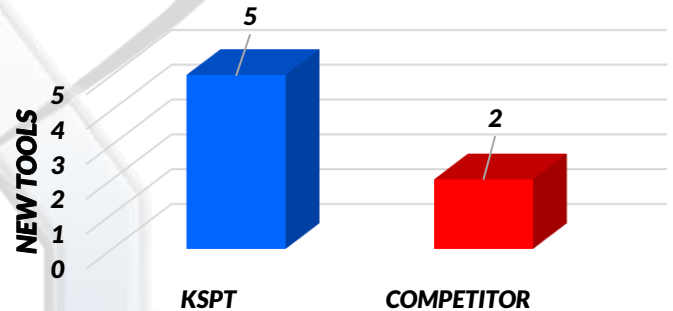
INCHES PER MINUTE (FEED)



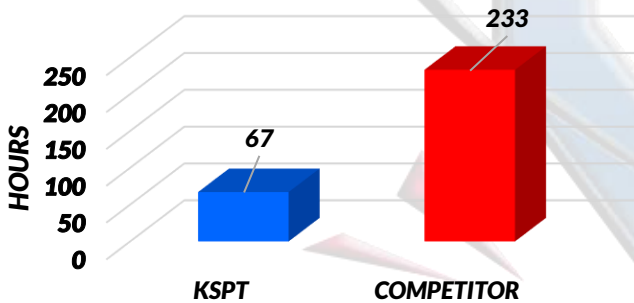
PARTS PRODUCED BY A NEW TOOL



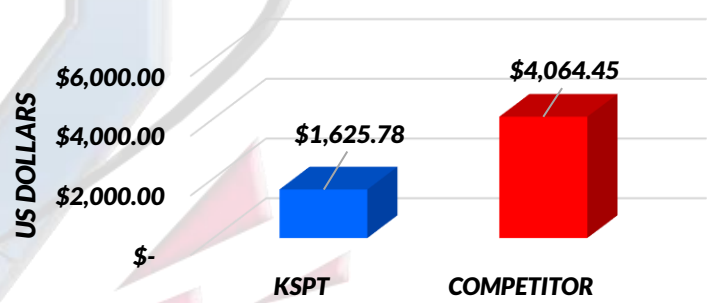
NEW TOOLS NEEDED TO COMPLETE THE JOB



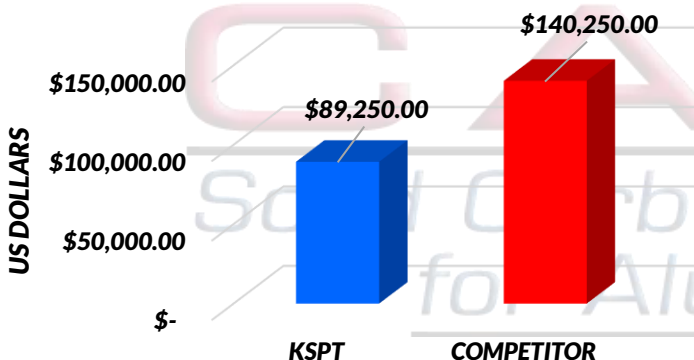
TOTAL HOURS OF MACHINING TIME



TOTAL NEW TOOL COST



TOTAL MACHINING COST



TOTAL COST

