

S-CARB



Kyocera SGS Precision Tools Case Study

INDUSTRY

GENERAL ENGINEERING

MATERIAL

6061 ALUMINUM

PRODUCT

KSPT S-CARB

APPLICATION

HIGH SPEED MACHINING

COMPETITOR

COMPARABLE END MILL

COOLANT

Flood

TOOL INFORMATION

.4742" DIA / 1.88" LOC / 3.93" OAL

GOALS

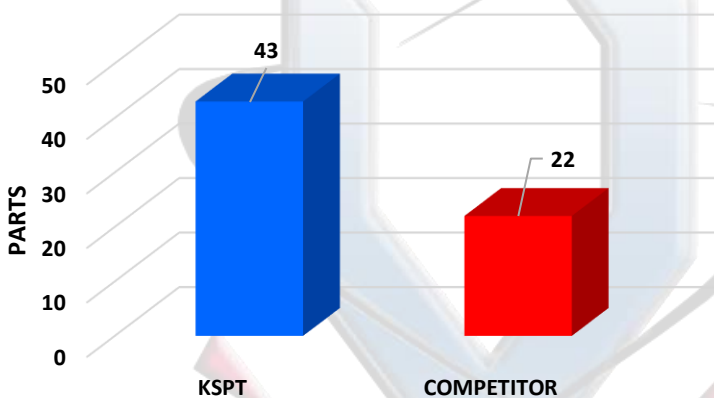
The goals of this study were to significantly reduce cost through an increase tool life, reducing cycle time and improving material removal rates.

STRATEGY

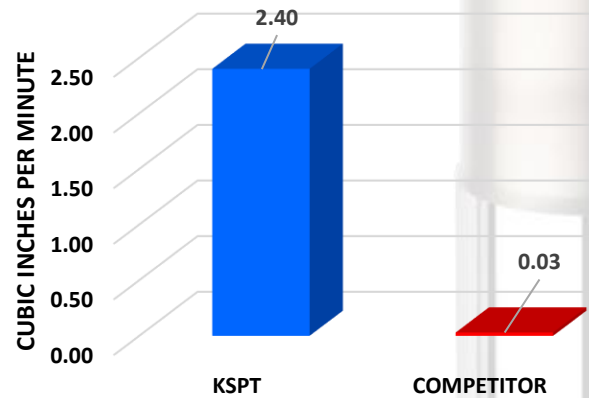
KSPT approached this job with the S-Carb. The S-Carb has an engineered flute form that provides high-performance results through a full range of machining conditions. These tools are designed for aggressive aluminum, non-ferrous, and non-metallic machining requiring a high level of material removal.

	KSPT	COMPETITOR
TOOL DIAMETER	.4742	.4742
SPEED	12,000 RPM	6,000 RPM
FEED	120 IPM	12 IPM
RADIAL CUT (AE)	.01	.01
AXIAL CUT (AP)	1.88	.25
CYCLE TIME	36 minutes	80 minutes

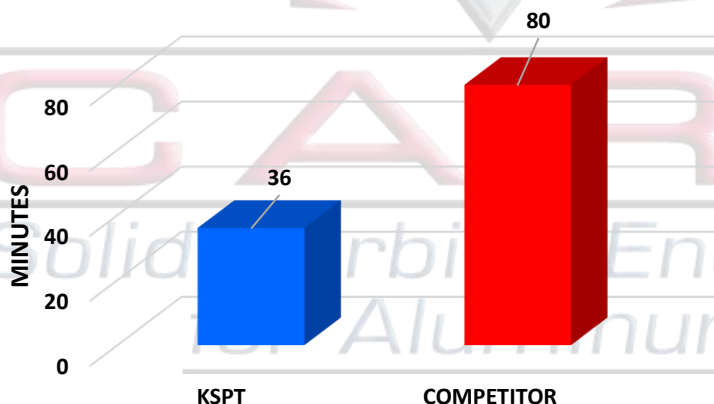
TOTAL PARTS AVAILABLE PER TOOL



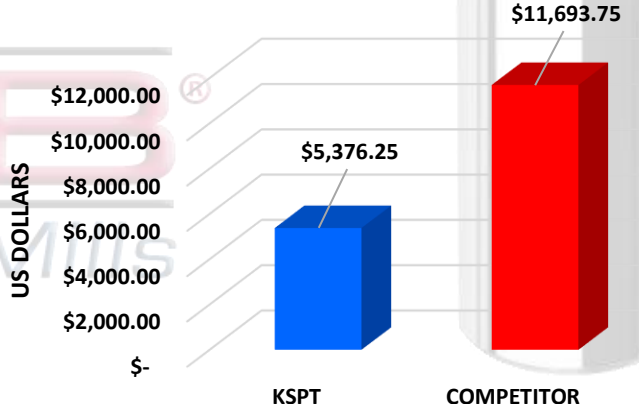
MATERIAL REMOVAL RATE



CYCLE TIME



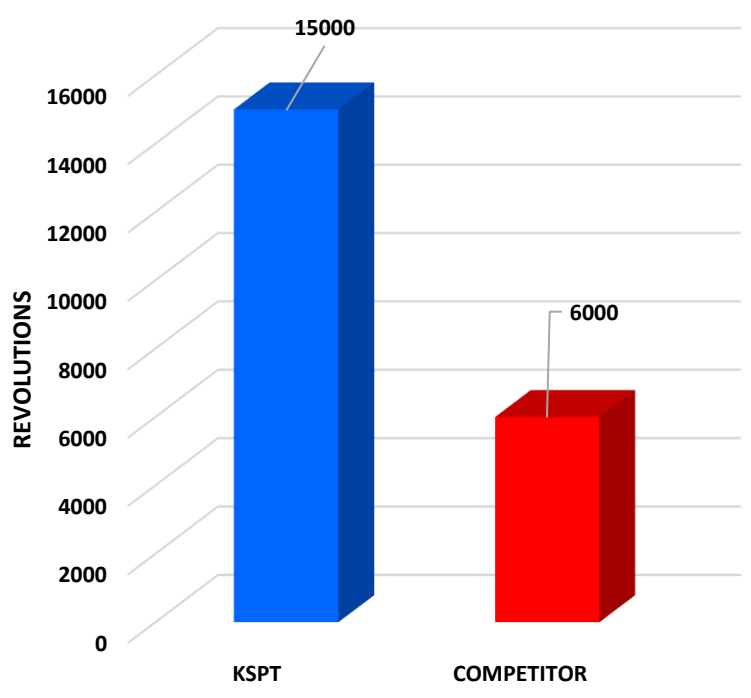
TOTAL COST



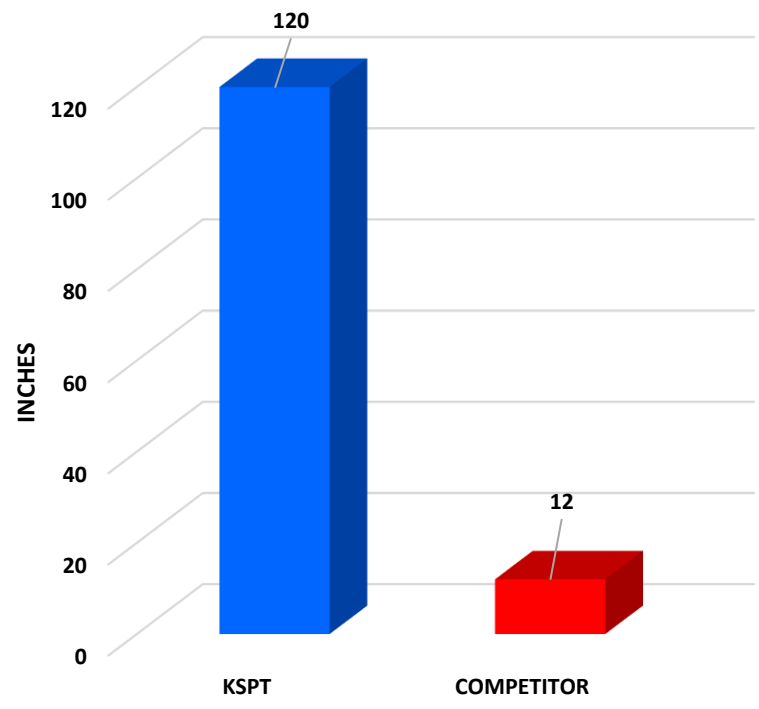
RESULTS

In manufacturing, long cycle times can result in significant investment in inventory which require high levels of finance, in physical work-space requirements to hold in-process inventory stock, in long waiting times to ship product to customers. In other words, high cycle times are something no one ever wants to hear. This was a case where a customer had a high cycle time and it was causing a lot of unnecessary costs and they needed a way to reduce it. The customer had the task of producing 100 parts out of 6061 aluminum. KSPT's S-Carb was the optimal tool for the task of reducing the desired cycle time. The RPM and IPM that the S-Carb can capacitate is significantly higher than the competitor's tool. These efficiencies assisted the S-Carb successfully reducing the cycle time by more than half! That material removal rate that the S-Carb produced was 80 times greater than the competitor's tool. Because the material removal rate was so much greater with the S-Carb it was able to produce almost double the amount of parts per new tool! Ultimately, when the total machining cost savings is combined with the savings from the total cost of new tools, the customer experienced a total cost savings of \$6,317.50!!

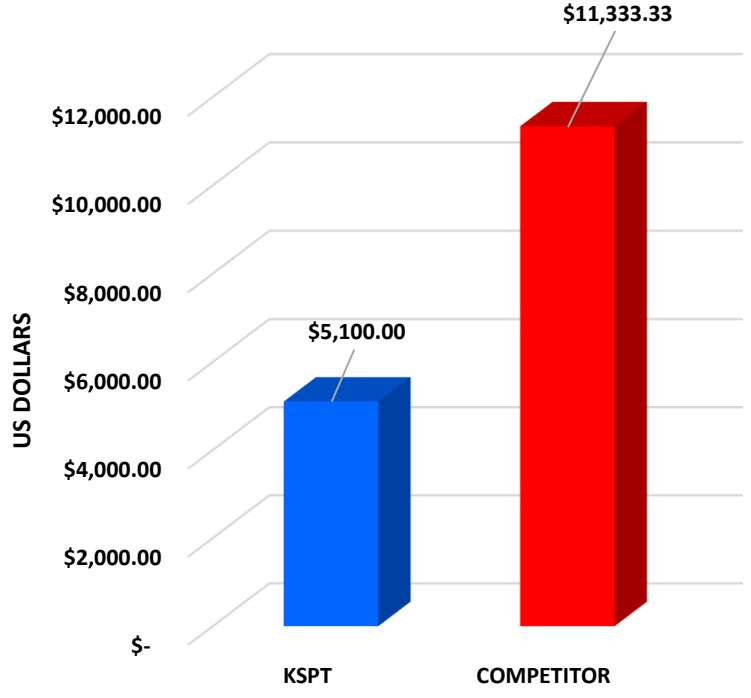
SPEED (RPM)



FEED (IPM)



TOTAL MACHINING COST



COST PER PART

