SERIES 51 T-CARB

Kyocera SGS Precision Tools Case Study

INDUSTRY

ENGINEERING

MATERIAL

304 STAINLESS STEEL

PRODUCT

KSPT SERIES 51 T-CARB

APPLICATION

13% TROCHOIDAL PROFILE AT 75% DEPTH OF CUT

COMPETITOR

COMPETITOR'S 5 FLUTE HP END MILL

COOLANT

FLOOD

TOOL INFORMATION

.3750 DIA / 1.0" LOC / 2.5" OAL

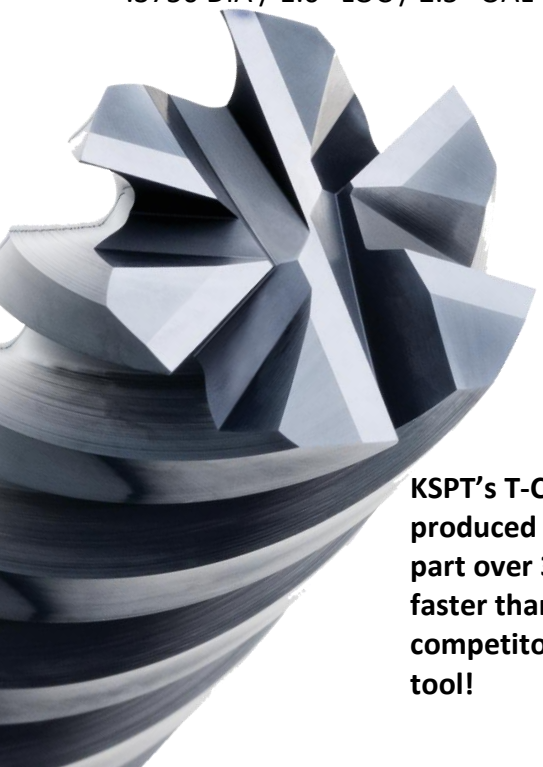
GOALS

The goals of this study were to significantly reduce job cost through reduced cycle time and increased manufacturing efficiencies thus increasing tool life.

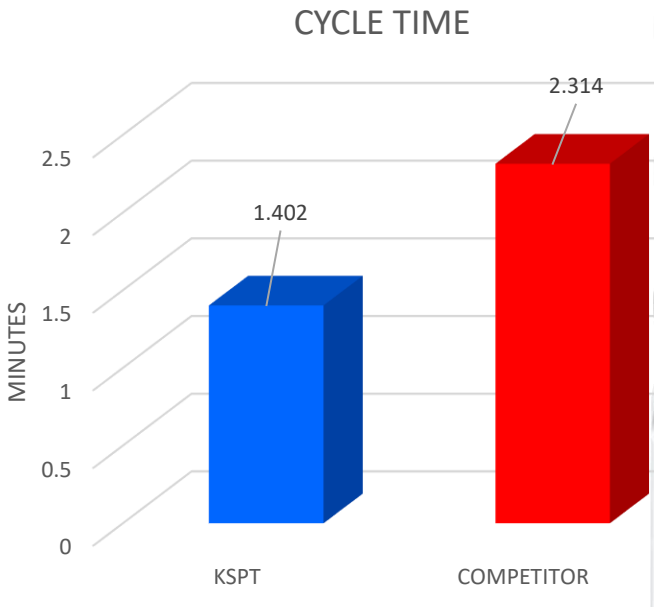
Features

KSPT approached this job with a 6 flute T-Carb end mill. KSPT's T-Carb excels at high-speed machining. Specifically, trochoidal and peel milling, the T-Carb's 6 flute design with eccentric relief provides strength and supreme chip control at high speeds, and with surprising finish results.

	KSPT	COMPETITOR
TOOL DIAMETER	.3750"	.3750"
SPEED	3963 RPM	4150 RPM
FEED	53.5 IPM	32.8 IPM
RADIAL CUT (AE)	.050	.3750
AXIAL CUT (AP)	.7500	.7500
CYCLE TIME	1.402 MINUTES	2.314 MINUTES



KSPT's T-Carb produced a new part over 35% faster than the competitor's tool!



RESULTS

Given the rapidly increasing cost of carbide in the market, extending the life of cutting tools becomes extremely important. While trochoidal milling is not a new technique, it is not nearly as widely used as it deserves to be. When comparing the data in conventional milling techniques, the those of trochoidal milling, the benefits become very clear. Introducing the KSPT Series 51 T-Carb allowed for employment of a highspeed chip thinning trochoidal milling approach. With a trochoidal milling approach, it allows for a higher feed rate at a slower RPM. In this case, the T-Carb's speed was reduced to 96% of the competitors tool speed but the **feed rate was increased by almost 40%**. The tool life of the T-Carb eclipsed the competitor's tool. **Just one T-Carb was able to produce over 30% more parts than the competitor's tool**. For this job the customer needed 8,500 parts. **The T-Carb was able to accomplish that feat with over 100 fewer tools**. **This reduced the customer's new tool cost but almost $5,000.** Given the increased manufacturing efficiencies**, the total machining cost was reduced by over $8,000. When all was said and done, KSPT and the T-Carb had saved the customer a total of $13,195.64!!**