

# SERIES 33

KYOCERA SGS Precision Tools Case Study

**TOTAL SAVINGS**  
**\$19,814!**

**SGS**  
Solid Carbide Tools

## INDUSTRY

GENERAL ENGINEERING

## MATERIAL

316L STAINLESS STEEL (HRc 23-32)

## PRODUCT

KSPT SERIES 33

## APPLICATION

FULL SLOT

## COMPETITOR

COMPARABLY SIZED 4 FLUTE END MILL

## COOLANT

FLOOD

## TOOL INFORMATION

5/8" DIA / 1-1/2" LOC / 3-1/2" OAL

## GOALS

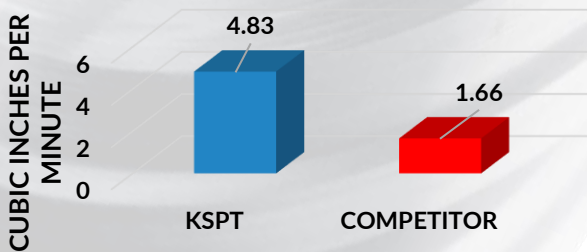
The goals of this study were to significantly reduce job cost through the use of a higher quality end mill and to maximize tool life.

## STRATEGY

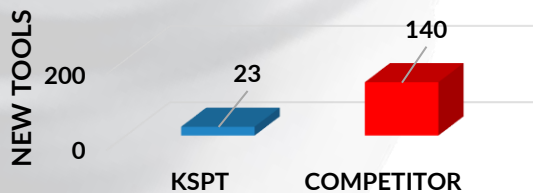
KSPT approached this job with a 3 flute Series 33 High Performance end mill. KSPT's Series 33 tools are ideal for aggressive ramping, pocketing, and slotting in difficult to machine materials such as stainless steel. Designed for applications challenged by heavy chip evacuation, this 3-flute design offers increased chip clearance and a reduction in harmful harmonics.

	KSPT	COMPETITOR
TOOL DIAMETER	5/8 INCH	5/8 INCH
SPEED	1650 RPM	1700 RPM
FEED	9.9 IN/MIN	6.8 IN/MIN
RADIAL CUT (AE)	.6250 INCH	.6250 INCH
AXIAL CUT (AP)	.78 INCH	.39 INCH
MATERIAL REMOVAL RATE	4.83 IN <sup>3</sup> / MINUTE	1.66 IN <sup>3</sup> / MINUTE

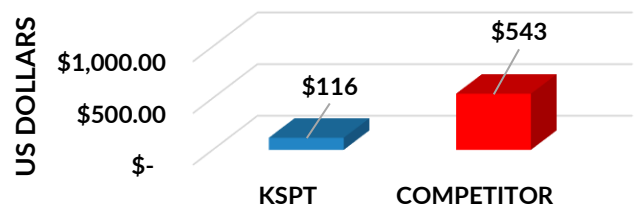
## MATERIAL REMOVAL RATE



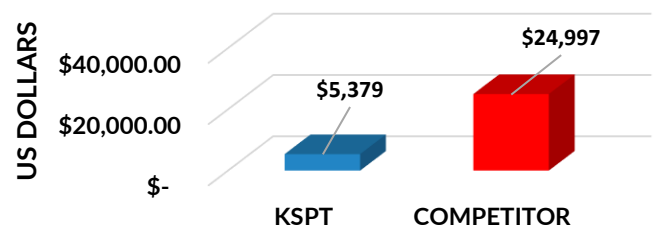
## NEW TOOLS NEEDED TO COMPLETE THE JOB



## TOTAL COST PER PART



## TOTAL COST



## RESULTS

The variety of stainless steels available today provide a veritable palette of properties that make it ideally suited for machining in several applications. In its annealed form, Austenitic Stainless Steels possess maximum corrosion resistance, ductility, good yield and tensile strength and high impact strength. A Ti-Namite®-A coated Series 33 end mill was the ideal tool for this application. While the speed of both tools was relatively the same, the feed rate the Series 33 was able to capacitate was 45% higher than the competitor's tool. This led to the Series 33 producing a material removal rate almost 3 times higher than the competitor's tool. The Series 33 end mill was able to complete the job only using 23 total tools while it took the 140 of the competitor's tool to do the same. Just in tool change cost alone, saved the customer over \$1,950 and when you combine that with the machining cost savings of \$4,460 and the new tool cost savings of \$13,404, the customer saw a total cost savings of \$19,814!