



Z-Carb Series Z1S

Material
Steel - 4150

Part Type
Roller Shaft Keyways

SGS Product
3/8" Dia, 4 Flute, Square End Mill

Competitor Product
1/2" Rougher & 3/4" Finisher

Application
Milling: Semi-Rough / Profiling

SGS Tool Information

- 0.3750" Cutting Dia.
- 0.8750" Length of Cut
- 2.5000" Overall Length
- TX (Ti-NAMITE-X) Coating
- EDP: [36424](#)

Goal

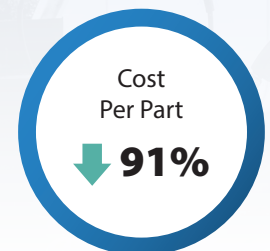
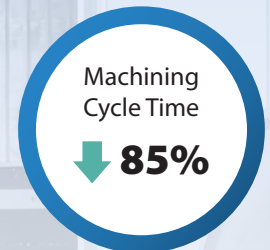
The customer wanted to increase tool life to reduce frequent replacements and downtime, while also lowering overall tooling costs by streamlining their machining process.

Strategy

The customer's original process used two separate end mills, a roughing end mill and a finishing end mill. We replaced this with a single 3/8" Z-Carb end mill, which could handle both roughing and finishing operations. This allowed the tool to take full advantage of its geometry, simplify the workflow, and reduce the need for multiple tools in inventory.

Result

The 3/8" Z-Carb successfully performed both operations, delivering significant improvements: total cost savings of \$35,350, machining cycle time reduced by 85%, new tool cost down 98%, and cost per part reduced by 91%. This solution simplified the customer's process, extended tool life, and cut overall expenses.



Learn more
about the
[Z-Carb](#)

Tools	Cutting Dia. (DC)	RPM	SFM	IPM	IPR	Radial Depth (AE)	Axial Depth (AP)	Coolant
SGS Z-Carb (4-Flute)	0.3750"	3000	295	21.60	0.0072	0.1250"	0.6000"	Flood
Competitor (4-Flute)	0.5000"	700	92	11.20	0.0160	0.2500"	0.1500"	Flood

Cycle Time

↓ 85%

New Tool Cost

↓ 98%

Cost Per Part

↓ 91%

