



HY-PRO® CARB VGM5



SNAPSHOT

BACKGROUND

A medical manufacturer was experiencing chatter/vibration and surface finish issues while machining a part with long overhang.

GOALS

To provide a tool and machining parameters to reduce chatter and vibration during machining.

DETAILS

INDUSTRY

Medical

PART

Hand Tool Holder

MATERIAL

316 Stainless Steel (M)

MACHINE

DMG | Flood Coolant

SPINDLE

CAT50

ORIGINAL TOOLING

Competitor
0.25" | 5 Flute | Bright

NEW TOOLING

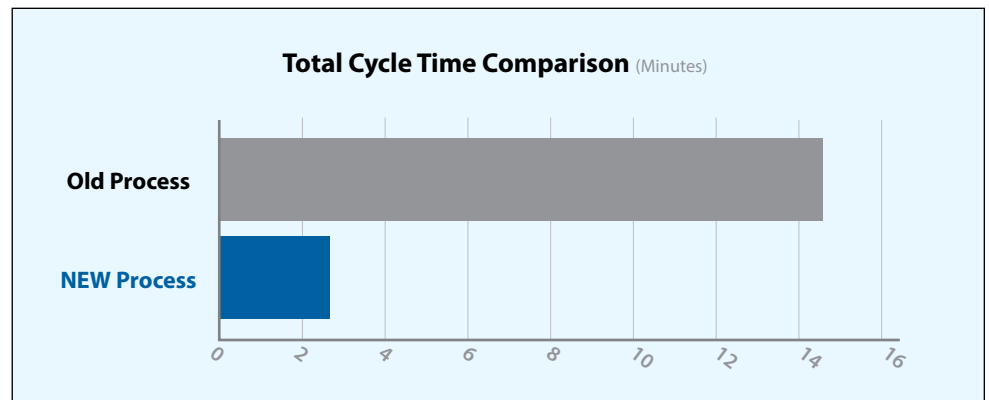
HY-PRO® CARB VGM5
0.5" | 5 Flute | EXO

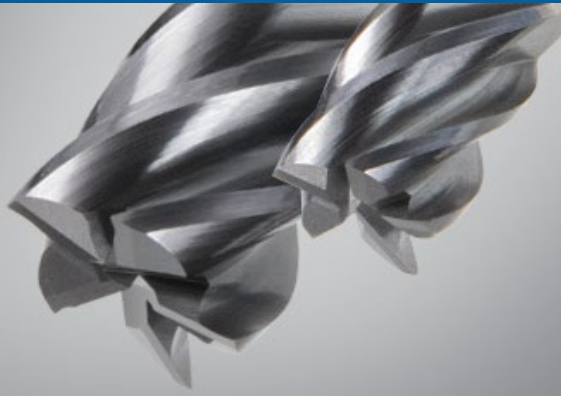
OVER \$64,000 ANNUAL SAVINGS!

THE STRATEGY

With the current setup of the part having a long overhang from the workholding the ideal machining situation was limited. The current tool was a 1/4 diameter, we suggested by changing their approach to a 1/2" tool along with variable geometry we should see a reduction in chatter as well as improving the surface finish while increasing the machining parameters.

	Original Process	NEW Process
Tool Diameter (Inch)	0.25"	0.5"
Cutting Speed (RPM • SFM)	3,972.8 • 260	2,047.52 • 268
Feed (IPM • IPT)	23.8368 • 0.0012 IPT	57 • 0.0056 IPT
Depth of Cut (Aa • Ar)	0.05" • 0.015"	0.05 • 0.015
Metal Removal Rate	0.02 in ³ min	0.04 in ³ min
Cycle Time (Minutes)	14.52	2.62
Tool Life (# of Parts)	4	162





THE RESULTS

After switching from the Competitor end mill to our HY-PRO CARB VGM5, our customer saw a significant reduction in cycle time as well as an impressive increase of tool life. Previously, their cycle time was 870.92 seconds. Our VGM5 was able to machine the same part in only 156.98 seconds! When it comes to tool life, they were previously averaging 4 parts per mill, where they are now getting an average of 162 parts per mill. This tool speaks for itself and it's easy to see why they switched to our VGM5.

- Reduced cycle time **from 870.92 seconds to 156.98 seconds per part**
- **An overall cost savings of over \$64,000!**

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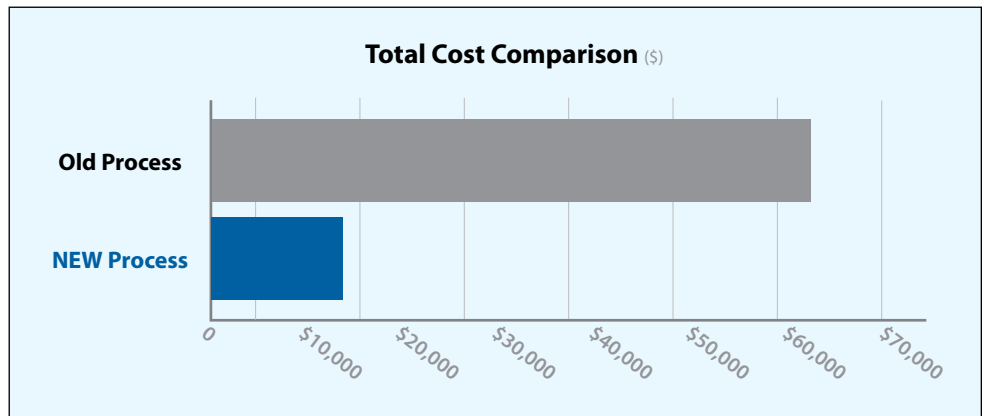
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Results Overview	
Cycle Time Saved per Part (Minutes)	11.90
Annual Part Production	4,800
Annual Cycle Time Saved (Minutes)	57,115
Annual Machine Cost Savings	\$28,558
Tool Life Productivity Improvement	3,950%
Annual Tool Change Cost Savings	\$2,925.93
Total Machining Cost Saved Annually	\$54,586

THE CONCLUSION

This tool conversion averaged our customer over 450% productivity increase and an annual cost savings of over \$64,000. There were many other tools used for this application, which we were then able to investigate further to see where they could get even more cycle time reduction and even greater cost savings. All from this one application, we are now working closely with our customer and their manufacturing team to replace more of their end mills with our HY-PRO CARB VGM line.



OVER \$64,000 ANNUAL SAVINGS!



FIND OUT MORE

Click or scan for stock, features & benefits, videos and more!
osgtool.com/vgm5

