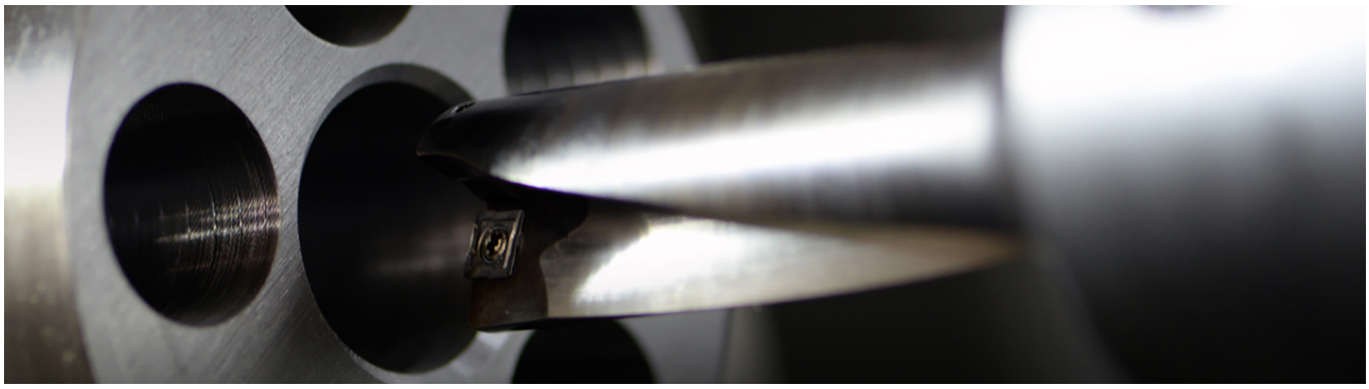


Innovate

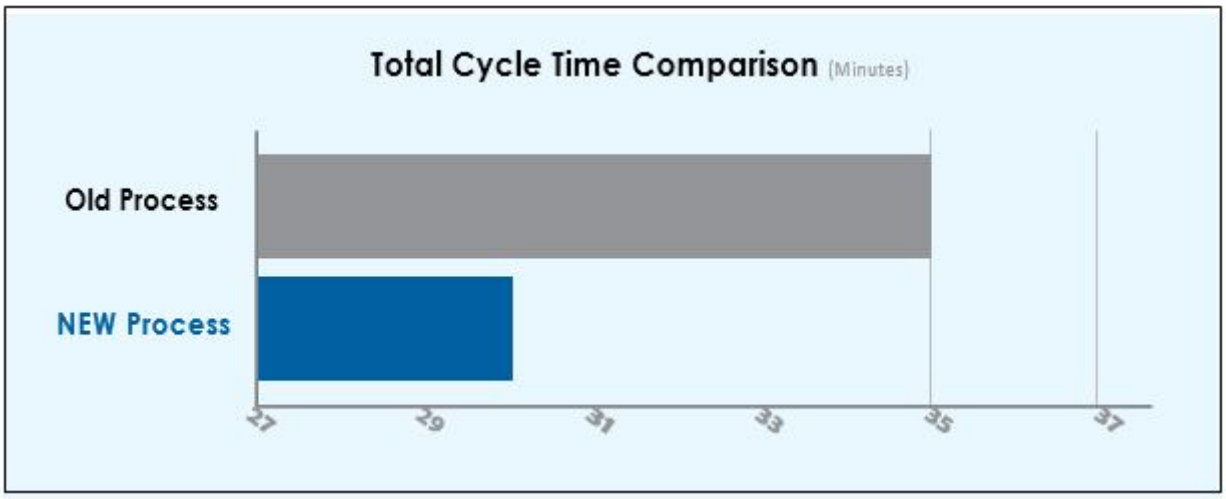
Case Study: Minimize Chipping with OSG's PHOENIX® PD Indexable Drill

Brought To You by OSG | Dec 01, 2022

THE STRATEGY

Upon review of the application it was determined the current drill design was causing the irregular chipping due to the variation of the placement of the cast holes. We recommended our PHOENIX PD indexable drill. By drilling with this indexable inserted drill, the drill will enter the part consistently even in offset holes.

	Original Process	NEW Process
Tool Diameter (Inch)	1.125"	1.125"
Cutting Speed (RPM • SFM)	611 • 180	1,375 • 405
Feed (IPM)	3.055	12
Hole Depth (In)	1.25"	1.25"
Metal Removal Rate	3.04 in^3 min	12.29 in^3 min
Cycle Time (Minutes)	35	30
Tool Life (# of Holes)	200	1,600



THE RESULTS

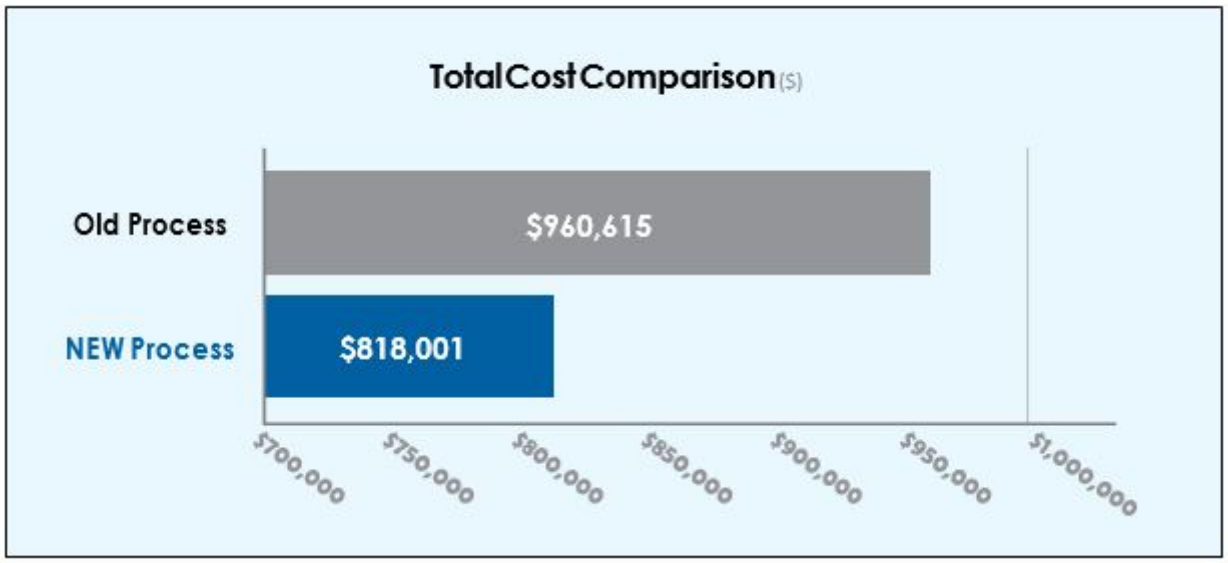
OSG was able to successfully achieve both goals. By eliminating the chipping, tool life was improved from 100 parts/head to 400 parts/index. We also were able to both increase the speed and feed, resulting in the cycle time to be reduced from 2,100 sec (35 min) to 1,800 sec (30 min).

- Tool life improved from ***100 parts/head to 400 parts/index.***
- Cycle time reduced from ***35 min.*** to ***30 min.***
- ***A total annual savings of over $140,000!***

Results Overview	
Cycle Time Saved Per Part (Minutes)	5
Number of Parts Per Year	13,000
Annual Cycle Time Saved (Minutes)	65,000
Annual Machine Cost Savings	$135,417
Tool Life Productivity Improvement (%)	700%
Annual Tool Change Cost Savings	$2,369.79
Total Machining Cost Saved Annually	$142,614

THE CONCLUSION

The customer was able to save roughly 1,000 total hours of machine time per year and decrease their insert usage from 130 heads/year to 16 inserts/year. In total customer was able to save over $140,000!



Download a PDF of the Case Study here.

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