CUTTING EDGE CASE STUDIES

THREAD MILLING
AUTOMOTIVE
CAST ALUMINUM

A BRAND AT-1

The A Brand

SNAPSHOT

BACKGROUND
The customer was thread milling M12x1.5 threads and experiencing chatter in the threads.

GOALS
Reduce the amount of chatter in threaded holes while maintaining or increasing production levels.

DETAILS

INDUSTRY
Automotive

PART
Valve Housing

MATERIAL
Cast Aluminum

MACHINE
Fanuc Robodrill

SPINDLE
BT30

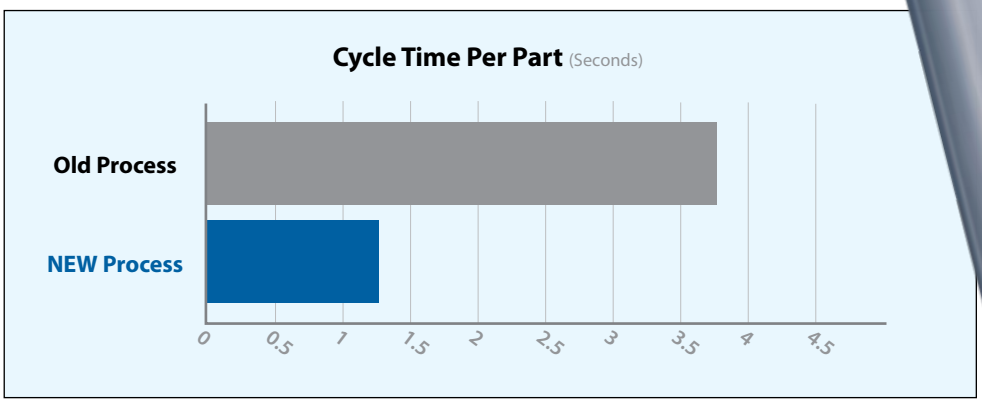
ORIGINAL TOOLING
Competitor Thread Mill
M12x1.5 | 4 Flute | TiCN Coated

NEW TOOLING
A Brand AT-1 Thread Mill
M12x1.5 | 5 Flute | EgiAs Coated

$42,400 ANNUAL COST SAVINGS!

THE STRATEGY
To introduce OSG's AT-1 thread mill. The AT-1's unique geometry allows for reduction of chatter and vibration. This recommendation allowed for an increase to both feed and speed.

	Original Process	NEW Process
Tool Diameter (mm)	9.95	**9.70**
Speed (RPM)	4,200	**6,500**
Feed (mm/min)	1,016.5	**2,476.5**
Thread Depth (mm)	12	
Holes/Part	2	
Cycle Time (Seconds)	1.71	**0.68**



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THE RESULTS

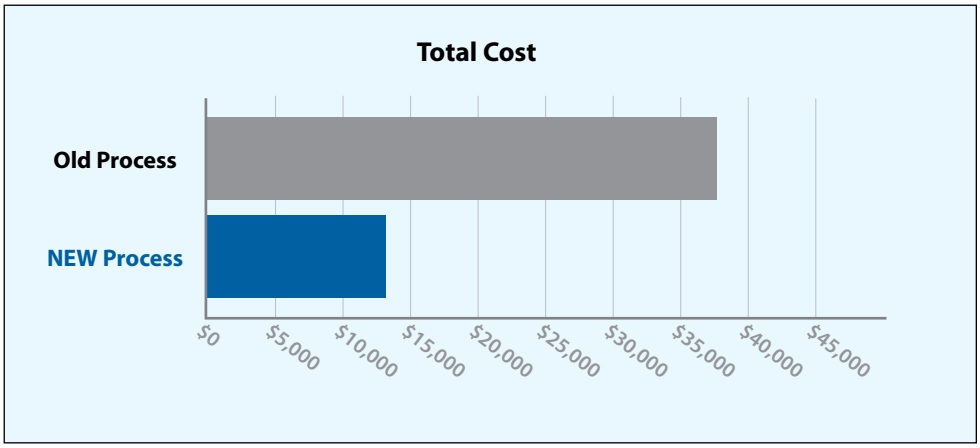
Switching to the AT-1 thread mill, which utilizes a right-hand cut/left-hand helix geometry along with unequal spacing and variable lead flute geometry, yielded the following results.

- Increased speed ***from 446 SFM to 650 SFM***
- Increased feed rate ***from 1,016.5 mm/min to 2,476.5 mm/min***
- Tool life increased from 40,000 to 50,000 parts. ***10,000 additional parts!***
- ***Cycle time reduced by 60%;***
  Saving a total of 233 hours of machine time per year!
- Saved an extra $200 on tooling by cutting the number of tools needed for the job from 10 to 8.
- ***A total savings of $22,553***

Results Overview	
Cycle Time Saved per Part (Seconds)	**2.058**
Number of Parts Per Year	**468,000**
Cycle Time Saved Annually (hours)	**233**
Cost to Machine (Per Hour)	**$100**
Machine Cost Saved Annually	**$22,342**
Tool Life Improvement (Parts)	**10,000**
Total Cost Saved Per Part	**$0.06**
Total Machining Cost Saved Annually	**$22,553**

THE CONCLUSION

OSG was able to eliminate the chatter in the threaded portion of the part and save the customer a significant amount of machining time. OSG implemented this same strategy on two additional threaded hole sizes to ***save the customer a combined total of $42,400*** between the three sizes.



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FIND OUT MORE
Click or scan for stock, features & benefits, videos and more! ***osgtool.com/at-1***