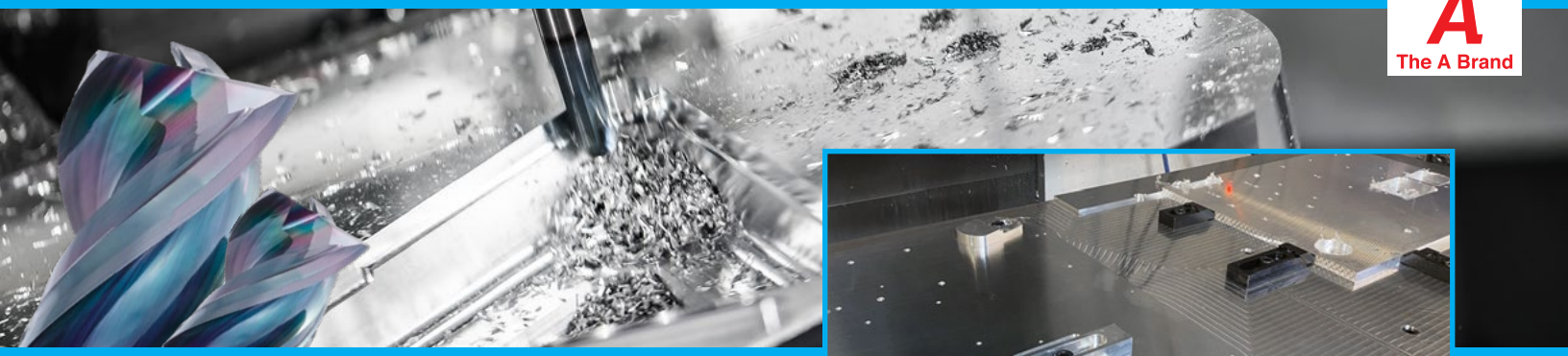
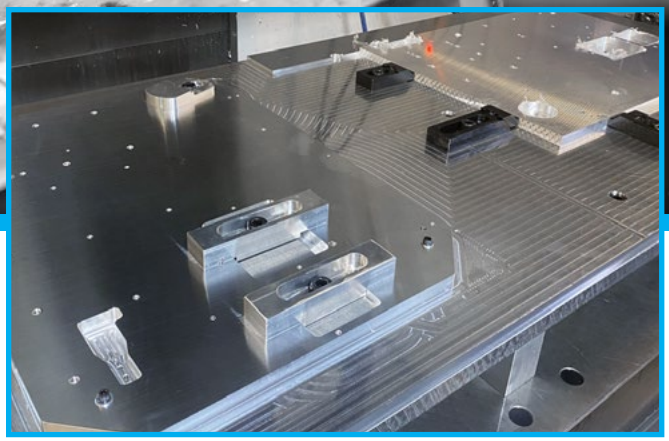
CUTTING EDGE CASE STUDIES

MILLING
JOB SHOP
6061 ALUMINUM

A BRAND AE-VTS-N





SNAPSHOT

BACKGROUND
An OSG customer was using a conventional aluminum end mill and was looking to significantly reduce their cycle times.

GOALS
The main customer goal was to reduce cycle times and improve their throughput.

DETAILS

INDUSTRY
Job Shop

PART
Base Plate

MATERIAL
6061 Aluminum

MACHINE
HAAS VF-1

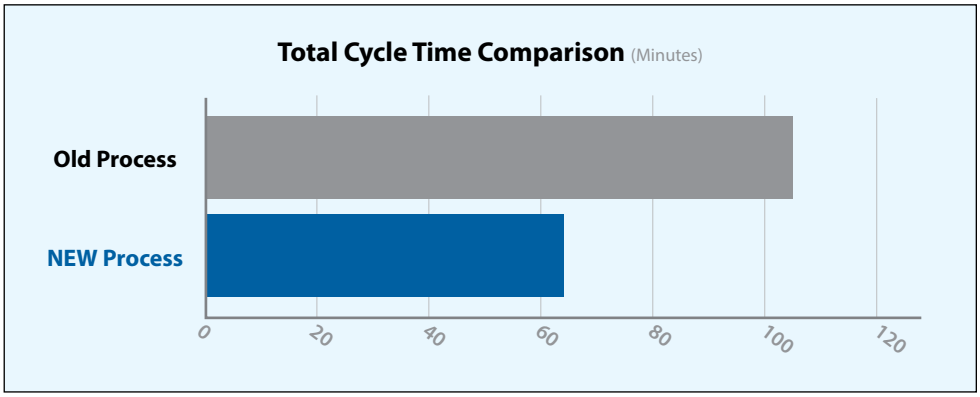
ORIGINAL TOOLING
Conventional Aluminum End Mill
0.5″ | 3 Flute | Bright

NEW TOOLING
A Brand AE-VTS-N
0.5″ | 3 Flute | DLC

NEARLY $17,000 ANNUAL SAVINGS!

THE STRATEGY
Since the customer was specifically focused on increased productivity, OSG felt that the A Brand AE-VTS-N was the perfect tool for the job. This tool was developed for manufacturers looking to improve their performance in aluminum milling. The tools combined state-of-the-art cutting geometry and DLC-IGUSS coating results in a tool that can excel under more aggressive milling conditions.

	Original Process	NEW Process
Tool Diameter (Inch)	0.5″	**0.5″**
Cutting Speed (RPM • SFM)	10,000 • 1,310	**10,000 • 1,310**
Feed (IPM • IPT)	120 • 0.004	**195 • 0.0065**
Depth of Cut (Aa • Ar)	0.5″ • 0.5″	**0.5″ • 0.5″**
Metal Removal Rate	30.00 in^3 min	**48.75 in^3 min**
Cycle Time (Minutes)	104.17	**64.10**
Tool Life (# of Parts)	25	**50**



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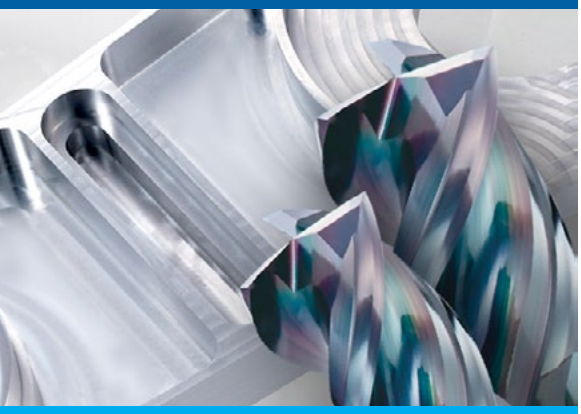

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THE RESULTS

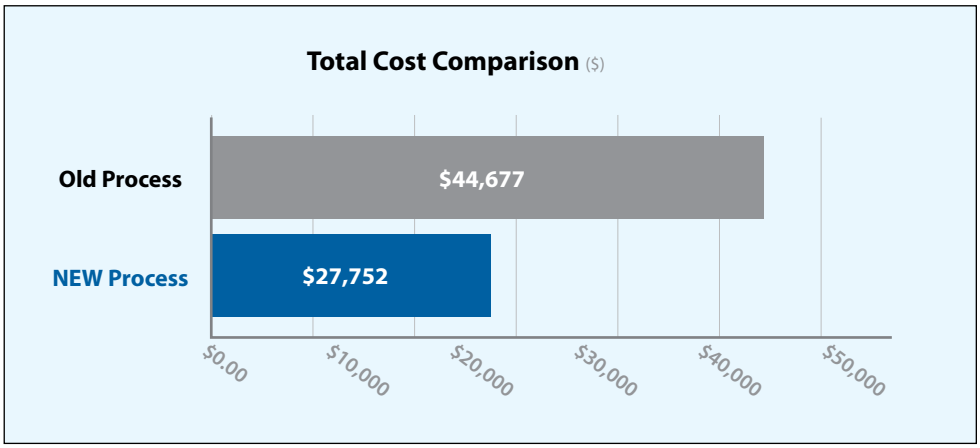
After testing the AE-VTS-N versus the conventional product, the customer was able to achieve the following results.

- Feed rate was increased from ***120 IPM to 195 IPM***.
- Cycle Time was reduced from ***104.17 min to 64.1 min***.
- Number of parts per tool was increased from ***25 to 50***.

Results Overview	
Cycle Time Saved Per Part (Minutes)	**40.06**
Number of Parts Per Year	**500**
Annual Cycle Time Saved (Minutes)	**20,032**
Annual Machine Cost Savings	**$16,693**
Tool Life Improvement (Parts)	**100%**
Annual Tool Change Cost Savings	**$83.33**
Total Machining Cost Saved Annually	**$16,925**

THE CONCLUSION

The customer's goal of reducing cycle time was achieved. Switching from the conventional product to the AE-VTS-N led to a cycle time savings of 335 hours per year. This combined with the increase in tool life led to a total cost savings of nearly $17,000 per year!



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