



A BRAND AE-TL-N



SNAPSHOT

BACKGROUND

A job shop utilizing a traditional milling method with an indexable milling tool for an aluminum part was interested in decreasing cycle time on a job.

GOALS

Our objective was to optimize solid milling parameters by utilizing a tool capable of high efficiency milling to reduce cycle time over current method.

DETAILS

INDUSTRY

Food Processing

PART

Chamber for Motor

MATERIAL

6061 Aluminum

MACHINE

Doosan | Flood Coolant

SPINDLE

CT50

ORIGINAL TOOLING

Competitor Solid Carbide End Mill
1.5" | 4 Flute | Uncoated

NEW TOOLING

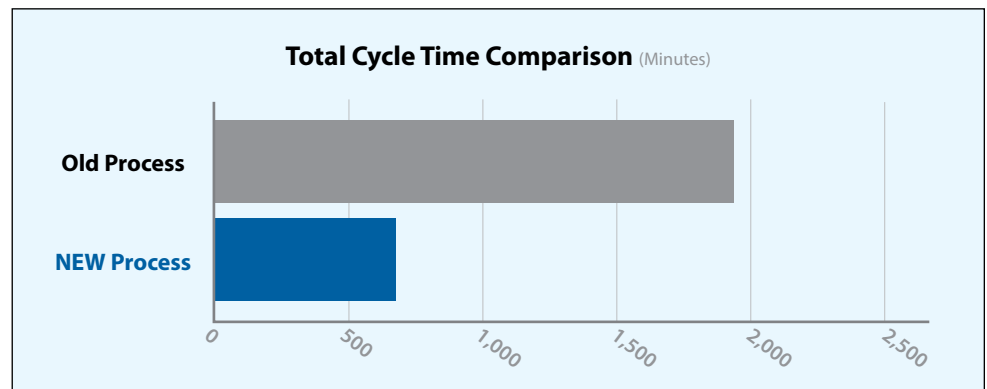
A Brand AE-TL-N
1" | 3 Flute | DLC

OVER \$18,000 ANNUAL SAVINGS!

THE STRATEGY

Our recommendation for this application was the AE-N series end mills. The current traditional processing method produced long cycle times. With the AE-TL-N tool coupled with a high efficiency milling method, the customer would be able to reduce cycle time immensely.

	Original Process	NEW Process
Tool Diameter (Inch)	1.5"	1"
Cutting Speed (RPM • SFM)	6,000 • 2,358	5,130 • 1,344
Feed (IPM • IPT)	120 • 0.005	231 • 0.015
Depth of Cut (Aa • Ar)	0.375" • 0.3"	2.5" • 0.14"
Metal Removal Rate	13.50 in ³ min	80.80 in ³ min
Cycle Time (Minutes)	1,925	667
Tool Life (# of Parts)	2	2





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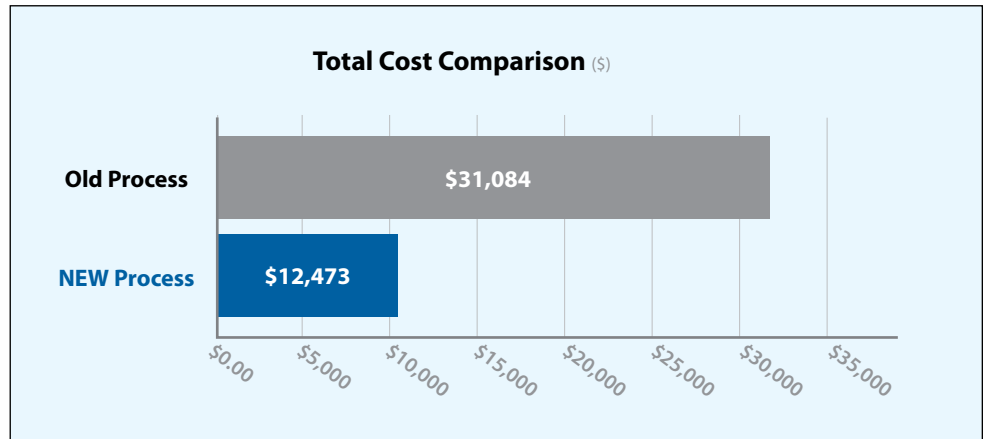
THE RESULTS

With the AE-TL-N End Mill, they were able to increase their depth of cut from 0.375 inches to 2.50 inches, while reducing the width of cut from 0.300 inches to 0.140 inches. This allowed them to increase their federate and reduce cycle times giving them an overall productivity increase of 190%. Overall, they saw a 6x increase on their material removal rate.

Results Overview	
Cycle Time Saved Per Part (Minutes)	1,258
Number of Parts Per Year	10
Annual Cycle Time Saved (Minutes)	12,579
Annual Machine Cost Savings	\$19,917
Tool Life Improvement (Parts)	0
Annual Tool Change Cost Savings	\$118.75
Total Machining Cost Saved Annually	\$18,611

THE CONCLUSION

With their new increase in productivity, and higher material removal rate, this amounted to a total annual cost savings of over \$18,000. These savings were able to shed light on other areas more suitable for high efficiency machining.



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