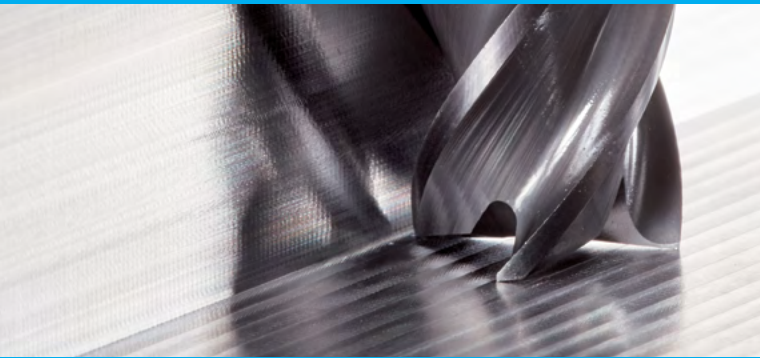




## A BRAND AE-CR-VMS



### SNAPSHOT

#### BACKGROUND

Unable to meet demand, a job shop was interested if they could increase their production by increasing their axial and radial depths of cut on a job.

#### GOALS

Our objective was to optimize solid milling parameters by utilizing a tool capable of higher radial and axial depths of cut.

#### DETAILS

##### INDUSTRY

Food Processing

##### PART

Motor Casing

##### MATERIAL

304 Stainless Steel (M)

##### MACHINE

Doosan | Flood Coolant

##### SPINDLE

CAT50

#### ORIGINAL TOOLING

Competitor Solid Carbide End Mill  
0.750" | 5 Flute | AlCrN

#### NEW TOOLING

A Brand AE-CR-VMS  
0.625" | 4 Flute | Durarise Coating

## OVER \$14,000 ANNUAL SAVINGS!

#### THE STRATEGY

Our recommendation for this application was the AE-VMS series end mills. The current tool with five flutes is limited in the amount both axial and radial depths of cut it can handle. With a four-flute tool coupled with enhanced OSG geometries and coatings, we anticipated higher metal removal rates along with longer tool life versus the current tool.

#### THE RESULTS

The AE-CR-VMS was able to reduce their cycle time from almost 11 hours to just under 1.5 hours. Now they are able to produce more parts quicker than ever before. The cycle time reduction combined with the increase in tool life resulted in over \$14,000 in savings!

	Original Process	NEW Process
Tool Diameter (Inch)	0.750"	0.625"
Cutting Speed (RPM • SFM)	2,037 • 400	1,528 • 250
Feed (IPM • IPT)	12.222 • 0.0012	15 • 0.0025
Depth of Cut (Aa • Ar)	0.2" • 0.3"	0.575" • 0.4"
Metal Removal Rate	0.49 in <sup>3</sup> min	3.51 in <sup>3</sup> min
Cycle Time (Seconds)	659	98
Tool Life (# of Parts)	2	3



## THE CONCLUSION

With their new tool, our customer is now able to take on more jobs and produce more parts. These savings pointed us in other directions around their shop where we are now testing more tooling and finding new opportunities for cycle time reduction.

Results Overview	
<b>Cycle Time Saved Per Part</b> (Minutes)	<b>560</b>
<b>Annual Part Production</b>	<b>15</b>
<b>Annual Cycle Time Saved</b> (Minutes)	<b>8,407</b>
<b>Annual Machine Cost Savings</b>	<b>\$13,311</b>
<b>Tool Life Productivity Improvement</b>	<b>50%</b>
<b>Annual Tool Change Cost Savings</b>	<b>\$91.04</b>
<b>Total Machining Cost Saved Annually</b>	<b>\$14,595</b>

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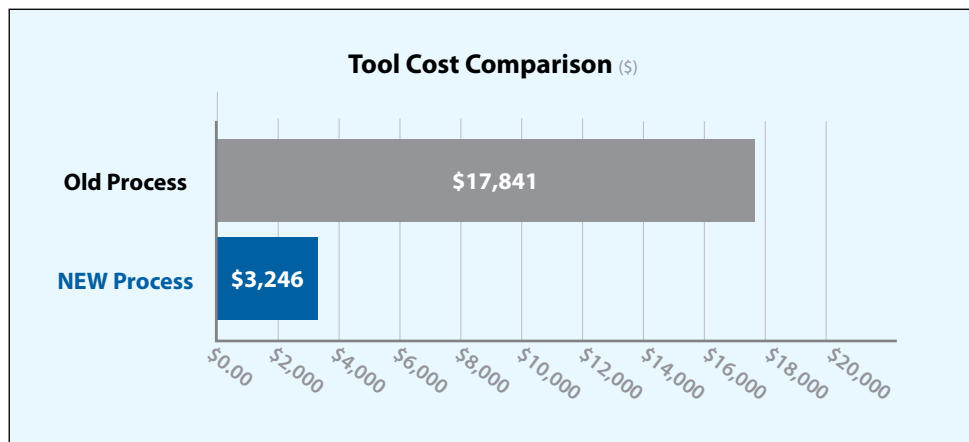
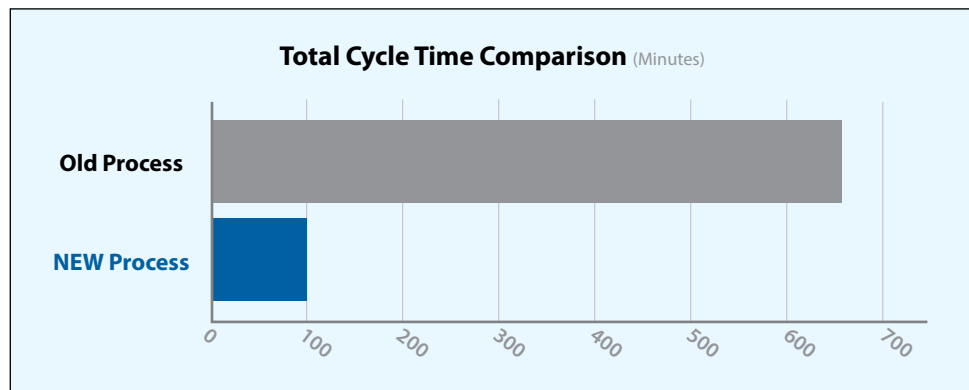
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