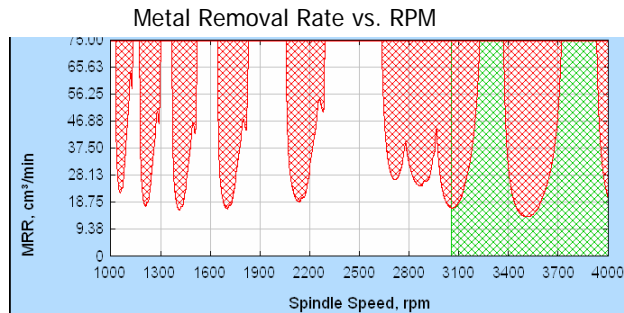
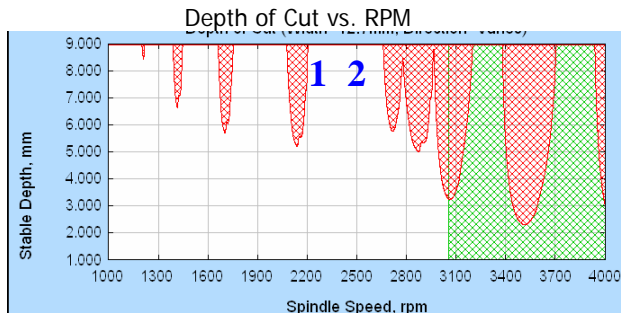


## Case Study: Small job shop, Stainless Steel

ROI ~ 39 days



Spindle: Cat 40  
 Max RPM: 8000 rpm  
 Material: 17-4 PH stainless  
 Max SMM: 400 (~3000 rpm)

Tool Diameter: 12.7  
 Tooth count: 4  
 Tool Material: Carbide  
 Feed per tooth: 0.038 mm

Initial Problem: Occasional chatter and corrosion fretting on tool-holder near gage line

Initial Process (1): 2250 rpm, 85.5 mm/min, 8 mm Depth of Cut, *occasional chatter*

New Process (2): 2500 rpm, 95 mm/min, 8 mm Depth of Cut, no chatter

Throughput Improvement = 11% =  $(95-85.5)/85.5$

Quality Improvement = *No chatter with new consistent setup and rpm*

Time Savings = 0.025 hours/part =  $0.25 \text{ hours/part} * [11\% / (1+11\%)]$

Cost Savings = \$187/week =  $(100 \text{ parts/week} * 0.25 \text{ hours/part} * \$75/\text{hour})$

{ ~\$9375 savings/year }

Other Savings = *Reduction in tool-holder usage and spindle wear and tear*



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