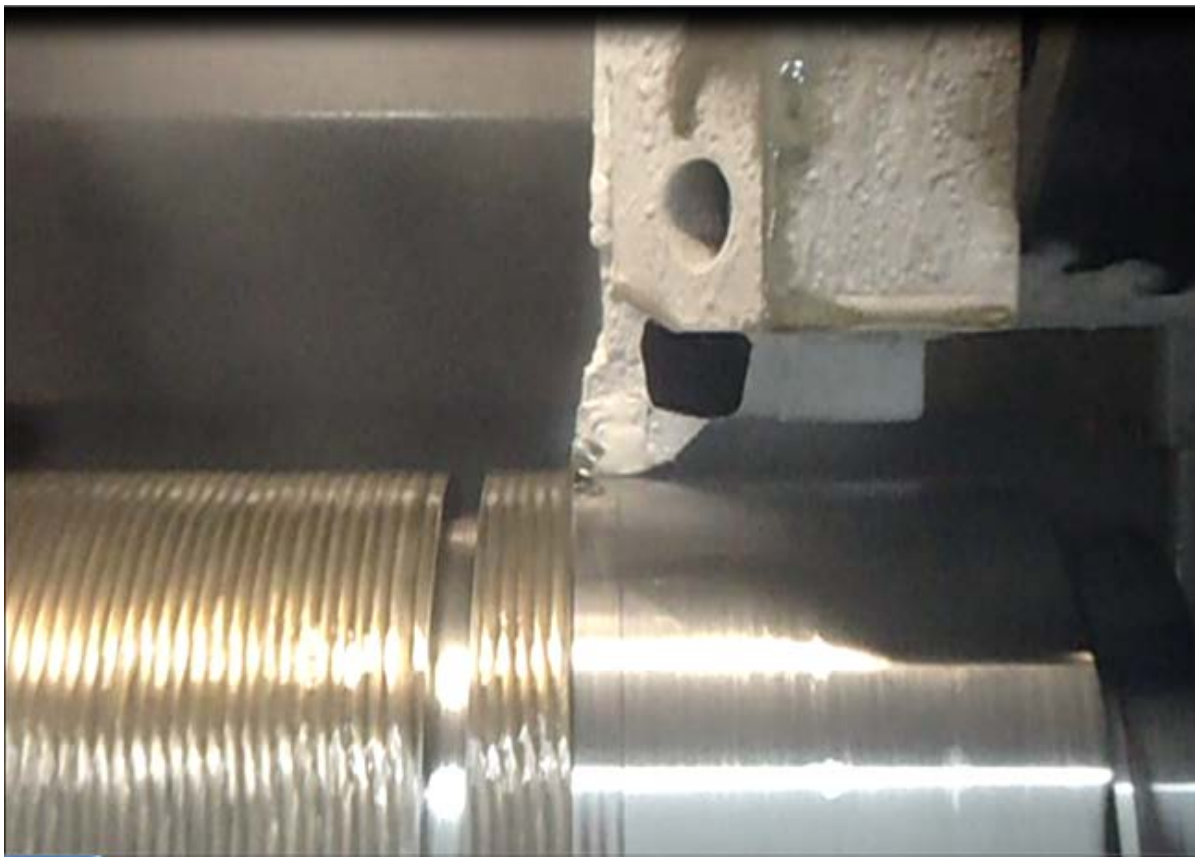


CASE STUDY: CRYOGENIC MACHINING OF INCONEL 625



Objective & Results

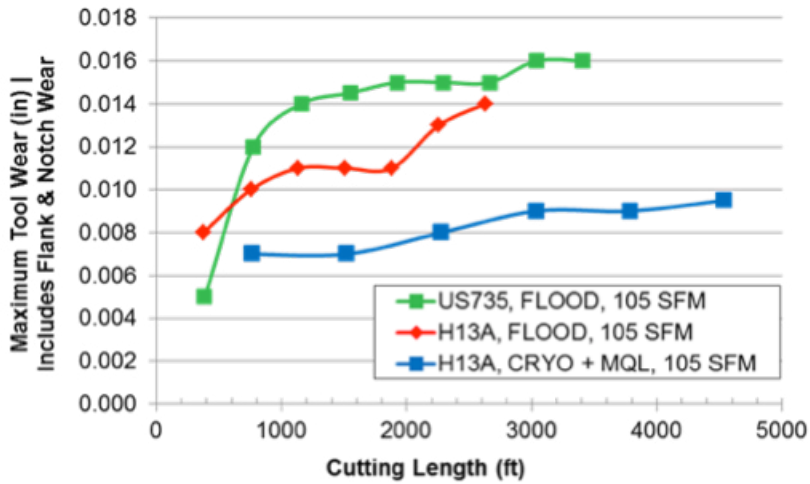
Inconel alloys are difficult and expensive to machine due to extreme heat generated at the cutting edge. The heat generated in the cut is necessary to machine the material; however, it accelerates tool wear. By applying through-the-spindle and through-the-tool Cryogenic Machining Technology, the cutting edge is cooled while maintaining normal cutting temperatures. The end result is a clean environment with improved tool life, increased cutting speeds, and improved surface finish.

Cryogenic Advantages

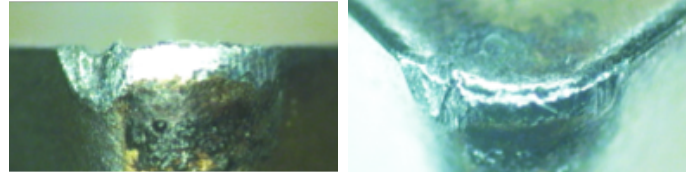
- > 25% Increase in Cutting Parameters with 2X Tool Life
- > 5X Improvement in Surface Finish
- > Easy to Manage Dry Chips

Testing SOW

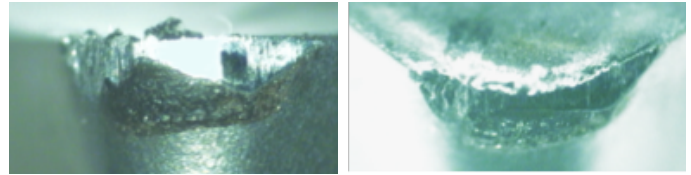
- > Material: Inconel 625 Alloy
- > Test Part: Bar Stock
- > Tool: 5ME™ Cryogenic Single Point, Indexable Turning Tool
- > Parameters: 0.004" per Rev, 0.02" DOC
- > Machine: Hawk 150 HTC
- > Location: 5ME Technology Center



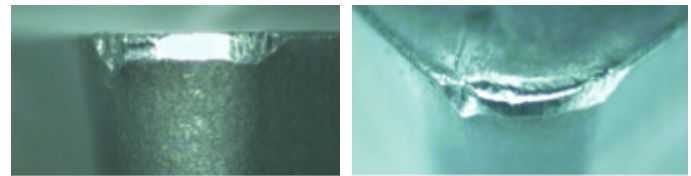
Coated Carbide, WET



Uncoated Carbide, WET



Uncoated Carbide, CRYO



At a speed of 105 SFM, the 5ME Cryogenic Machining process delivered significant cutting stability and predictability at twice the tool life.

5ME, LLC

4270 Ivy Pointe Blvd.
Suite 100
Cincinnati, Ohio 45245
tel: +1 513 719 1600
fax: +1 513 752 1906

5ME, LLC

Tech Center
6990 Murthum
Warren, MI 48092
tel: +1 586 473 5070
fax: +1 586 983 2575

www.5ME.com

