



RUN FASTER



CRYOGENIC MACHINING

Run 2-5x faster on hard-to-machine materials

For titanium and other hard-to-machine alloys, our breakthrough Cryogenic Machining Technology enables your machines to run faster, greener and more cost-effectively than ever before.

Our patented technology uses liquid nitrogen to keep cutting temperatures significantly lower so you can increase tool life, reduce your environmental impact and realize a healthier profit.

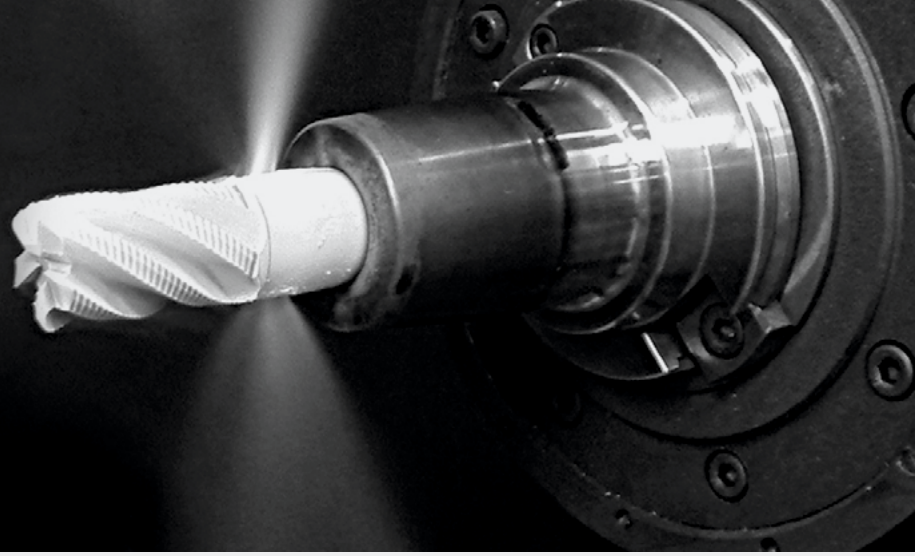
Find out more at 5me.com/cryo or call (586) 473-5070 to set up your demo at our North American Tech Center.

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- Faster Processing Speeds
 - Increased Tool Life
 - Significantly Improved Surface Quality
 - Reduction of Secondary Operations
 - Uniquely Sustainable Green Manufacturing



5ME

Make easier work of your hardest-to-machine materials



Compacted Graphite Iron

5^x increase in finishing cutting speed

10^x increase in tool life

Titanium

2^x increase in semi-finish cutting speed

3^x equivalent tool life*

Steel Alloys

16^x increase in semi-finish cutting speed and equivalent tool life*

Composites *(Drilling & Trimming)*

40% increase in tool life

- Keeps resin below critical temp during machining
- Reduced fiber pullout
- Temporarily increases material strength for cleaner shear and exit quality
- Enables deep hold drilling in structural composites

This breakthrough technology was developed in partnership with the U.S. Navy, U.S. Air Force, Creare, NavAir and Lockheed Martin.

* Compared with flood coolant

Greener and Cleaner

Our cryogenic system utilizes liquid nitrogen as a coolant, which evaporates into a non-toxic, non-greenhouse gas during the machining process so there's:

- No need for mist collection, filtration or collection of waste coolant
- No energy costs associated with coolant fans, pumps and drives
- No contamination of equipment or workpieces, which eliminates the need for secondary processes
- No slippery work surfaces or toxic fumes so your workforce can breathe easy too

An Easy Retrofit

Almost any machine can be retrofit to utilize our state-of-the-art cryogenic cooling technology.

Key Applications

Aerospace

Aero-structure, Aero-engine

Auto/Truck

Cylinder Blocks, Cylinder Heads, Crankshafts, Rods, Turbo Components

Medical Devices

Joint Replacement, Appliances, Surgical Instrumentation

Energy

Fracking Pumps, Subsea, Turbines, Clad Hardware



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