

HRE HIDRAULIC

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BECOLD...the cool way of machining

Becold is a cryogenic machining novel solution based on carbon dioxide combined with Minimum Quantity of Lubricant (MQL). HRE Hydraulic, University of Basque Country and Tecnalía have developed a cost effective and easy to industrialized (plug-and-play) cryogenic unit.

WHY: Due to the high worldwide competitiveness, it is necessary to reduce manufacturing costs and environmental impact. Eliminating or minimizing the use of conventional cutting fluids is one of the key factors to achieve success, cryogenic machining seems to be the best option.

ECONOMIC SAVINGS: Cutting fluids, which are based on mineral and synthetic oils, can suppose around 5-15% of the total manufacturing costs. Additionally, treatment and disposal costs in the EU are around 2-4 times their purchase price. With Cryogenic Machining, traditional cutting fluids are removed.

ECOLOGIC BENEFITS: Around 30% of the cutting fluids consumed are lost through leakage of circuits and particles attached to the machine. Moreover, long expositions are harmful to workers health. With Cryogenic Machining these problems disappear.

The logo for Becold cryogenic machining features the word "becold" in a blue, lowercase, sans-serif font. The letter "o" is replaced by a white snowflake icon. Below "becold" is the phrase "cryogenic machining" in a smaller, lowercase, sans-serif font.

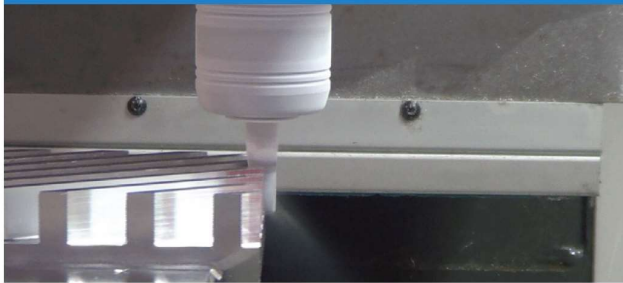
becold
cryogenic machining

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MAIN APPLICATIONS: Cryogenic machining is mainly indicated for heat-resistant super alloys and hardened steels, also carbon or glass fiber reinforced plastic are indicated for cryogenic machining. In these difficult-to-cut materials, controlling thermal effects which cause a premature tool wear is the key for obtaining a successful machining process. Depending on the applications, CO₂ can be delivered through spindle or externally for any process, like milling, drilling, threading, turning, etc.

STAND ALONE SYSTEM



CRYOGENIC MQL



CRYOGENIC TURNING



ECO₂ MACHINING...economic and eco-friendly

CO₂ is obtained from a primary process. Thus, instead of emitting CO₂ to the atmosphere directly, it is captured and used for a second use, as cutting fluid for cryogenic machining processes.

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