

MACHINE TOOL COOLANT

Quick

STUDY

Hydra-Cell
Seal-less Pumps

www.Hydra-Cell.com

Location:	Ireland
Application:	Tool cooling on CNC machining
Media:	• Coolant
Model No.:	M03SKBTHHCA
Flow Rate:	1.6 - 2.6 gpm (6-10 l/min)
Pressure:	1015 psi (70 bar)
Hydra-Cell Advantages:	• High-pressure capability • Seal-less design • Ability to handle recycled liquids



High-pressure Coolant Delivery Saves 80% on Broken Drills

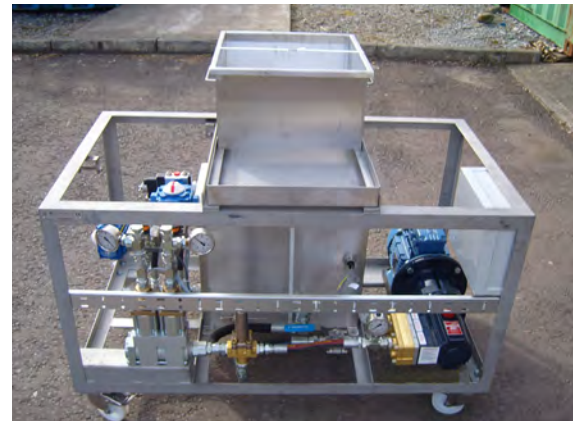
A leading manufacturer of turbo chargers for the automotive industry was experiencing high rates of drill failure and other machining problems at its Waterford, Ireland, plant - all associated with inadequate cooling at the work face.

The existing machine tool coolant systems, relying on multi-stage centrifugal pumps, could not deliver coolant at the flows and pressures required for efficient, fast cutting. For example, when drilling blind holes, pressures as high as 1015 psi were needed to force coolant liquid to the cutting zone through a hole only 0.00079 inches (0.02 mm) in diameter.

Lower pressure delivery was doubly ineffective, in terms of both cooling efficiency and swarf removal. Drills frequently broke and long strings of uncut swarf accumulated in the collection bins, which then had to be emptied every four hours.

On the advice of the local Hydra-Cell distributor, the plant adopted the Hydra-Cell M03 for high-pressure coolant pumping. Delivered at 1015 psi, liquid flow from the Hydra-Cell pump gave highly efficient cooling and increased tool life. The incidence of broken drills was massively reduced (down by as much as 80%).

As a general system improvement, the distributor designed mobile skid-mounted pumping and filtration units, making it easier to filter out swarf debris from the returning coolant and recycle the liquid.



Characteristics of Fluid Pumped:

- ☒ Contains Abrasives ☐ Corrosive ☒ Solids in Suspension ☐ High-temp. (>158°F/70°C) ☐ Non-lubricating ☐ High-viscosity (>500 cPs)