MACHINE TOOL COOLANT

Quick **STUDY**

Hydra-Cell® Seal-less Pumps

www.Hydra-Cell.com

Location:	Hungary
Application:	High-pressure pumping of coolant emulsion
Media:	• Coolant
Model No.:	D10XKBTHFECA
Flow Rate:	8 gpm (30 l/min)
Pressure:	870 psi - 1015 psi (60 -70 bar)
Hydra-Cell Advantages:	• High pressure capability • Small footprint • Consistent flow rate • Self-priming • Low energy consumption

High-pressure Cooling in Plastics Machining

A Hungarian plant of a leading international group specializing in glass and plastics manufacture was operating a machining facility far below its rated speed and capacity pending the development of a viable high-pressure coolant system. Meanwhile low-pressure centrifugal pumps were in use for coolant delivery.

The plant makes a variety of components and finished products machined in special plastics such as PEEK, PTFE, ETFE, PVDF, Plexiglas, and glass fiber PP. Products manufactured include purpose-designed trays for surgical screws and tools, turbo housings for the automotive industry, and other parts requiring precision surface finish.

While reliant on low-pressure cooling, the high costs of tooling and materials prevented the company from making proper use of its fast plastics processing machinery. Efficient cooling depends on consistently reliable delivery of coolant emulsion to the workface at high pressure. Inadequate cooling can cause the plastic to fuse, even to entrap the tool, and crash the system.

In choosing a pump for the projected high-pressure coolant system management considered piston pumps. However, the design advantages of the Hydra-Cell, distributor support, and the practical evidence of a successful three-month trial period with a customized system incorporating the D10 led to the purchase of another ten complete systems.

Each system, in addition to the pump itself, includes safety valve, filters, pipework and controls based on a PLC in conjunction with frequency inverter to vary motor speed.

Following the installation of the high-pressure coolant systems, processing speeds are faster, output has increased and energy costs have fallen.

Characteristics of Fluid Pumped:

● Contains Abrasives ○ Corrosive ○ Solids in Suspension ○ High-temp. (>158˚F/70˚C) ○ Non-lubricating ○ High-viscosity (>500 cPs)