

MACHINE TOOL COOLANT

Quick STUDY

Hydra-Cell®
Seal-less Pumps

www.Hydra-Cell.com

Location:	India
Application:	Machine tool cooling in automotive components manufacture
Media:	• Cutting oil • Coolant emulsion
Model No.:	D04XDBTHFEYA D10XKCTHFEYA H25XKCTHFEYA M03XKBTHFECA
Flow Rate:	1 - 18 gpm (4 - 70 l/min)
Pressure:	1890 psi (130 bar) 870 psi (60 bar) 1000 psi (69 bar)
Hydra-Cell Advantages:	• Seal-less design • Constant pressure irrespective of variation in flow • Peak performance regardless of viscosity or coolant type • Sustained reliable performance • Easy, lower-cost maintenance • Power savings



Hydra-Cell Replaces Seal-reliant Pumps for High-pressure Coolant Delivery

The production plants of a global manufacturer of engineering components, at various locations in India, work 24/7 365 days/year manufacturing components for leading vehicle builders such as Honda, Tata, Toyota, Mahindra & Mahindra, and Ashok Leyland.

Coolant liquids, whether neat oils or emulsions, on the more demanding operations are delivered “through-tool” to the cutting surface at high pressure by positive displacement pumps. Originally the types most commonly incorporated in the machining centers were gear, screw, vane and piston pumps - all of which use dynamic seals.

Over time, with small particles passing through protective filters, seals would wear. Pressure loss from internal leakage reduced liquid pressure, lowering cooling performance and machining efficiency and causing other problems: short tool life, ineffective chip removal, unsatisfactory surface finish. Lower pumping efficiency also increased power consumption.

As seal-less Hydra-Cell pumps were gradually introduced in place of seal-reliant pumps, this chain of cause and effect was broken. There are now more than 200 Hydra-Cell pumps in operation across five plants.

Characteristics of Fluid Pumped:

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