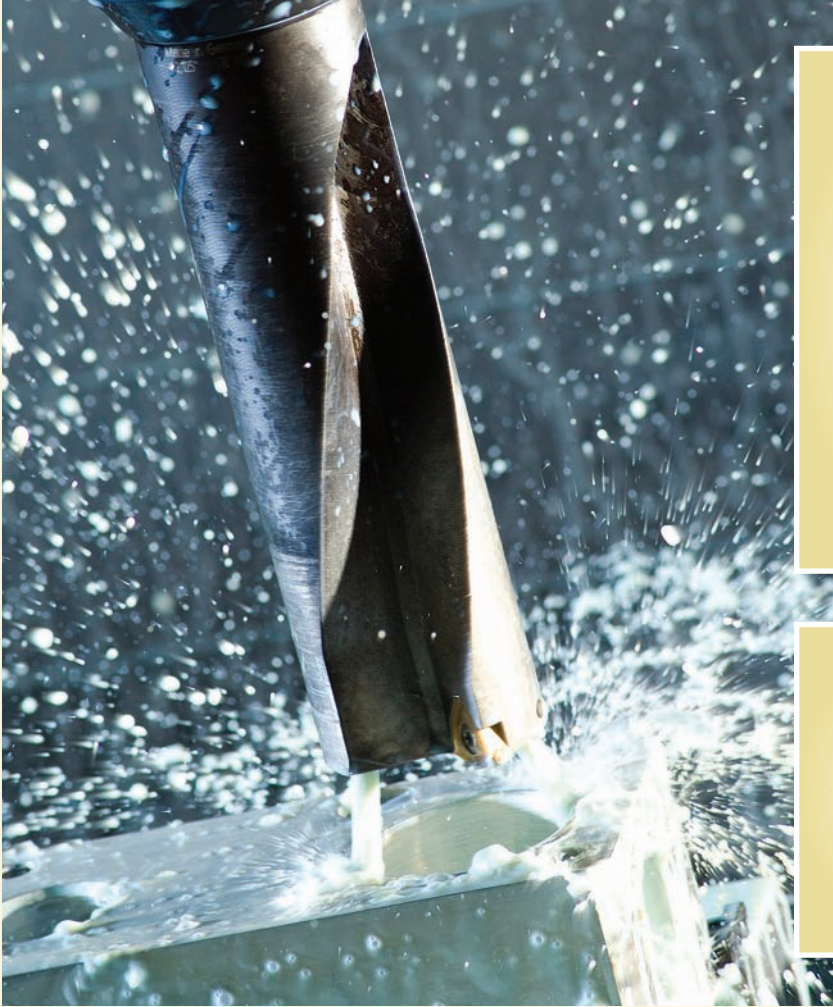


Pumps for High-Pressure Machine Tool Coolant



Reduce Operating Costs & Improve Cutting Performance

Advantages of High Pressure Coolant Delivery:

- Eliminates chip build-up
- Prolongs tool life
- Improves work quality
- Increases productivity
- Optimizes energy efficiency
- Enhances grinding performance

Advantages of Hydra-Cell Pumps:

- Accurate flow control allows you to maintain a constant rate of pressure for better performance
- Operational efficiencies reduce your energy costs
- Seal-less design enables operation without the expense of fine filtration
- Can handle any type of coolant with no loss of efficiency
- Able to run dry without damage and additional maintenance in case of accident or operator error

High-Performance Pumps for High-Pressure Coolant Delivery

The use of high-pressure cooling has increased five-fold in recent years because of the added benefits it provides in the removal of abrasive chips and lubrication in machine tool operations, and in the cleaning of grinding wheels.

Hydra-Cell is a seal-less, positive-displacement pump ideally suited for pumping machine tool coolant at high pressure. Screw pumps, centrifugal pumps, gear pumps, and multi-piston pumps cannot match the rugged construction, flow rate control, energy efficiency, and versatility of Hydra-Cell pumps for your machine tool applications.

Reduces energy costs

Based on manufacturers' published data, twin screw pumps use 78% to 147% more energy than Hydra-Cell pumps, and multi-stage centrifugal pumps use 122% more energy.



Runs dry without damage

If flow is restricted (e.g. blocked filter) or operator error (valve closure), or if entrapped air in the coolant creates an air lock, pumps with dynamic seals will be damaged, stopping production. Hydra-Cell's seal-less design allows the pump to run dry without damage, saving you costly repairs and downtime.

Pump Type	Flow (GPM)	Pressure (PSI)	Absorbed Power (KW)	Energy Usage	Annual Savings with Hydra-Cell
Screw Pump A	1.06	1160	2.8	147% more energy than Hydra-Cell	
Hydra-Cell M03	1.06	1160	0.7		\$756
Screw Pump B	7.66	1000	8.3	97% more energy than Hydra-Cell	
Hydra-Cell D10	7.66	1000	4.2		\$1,476
Screw Pump C	31.17	1160	34.5	78% more energy than Hydra-Cell	
Hydra-Cell D35	31.17	1160	19.5		\$5,400
Centrifugal Pump	7.66	580	5.6	122% more energy than Hydra-Cell	
Hydra-Cell D10	7.66	580	2.5		\$1,112

- Efficiencies compiled from manufacturers' published data sheets.
- Energy cost savings are calculated based on pump running 4,000 hours per year at the USA recent average of 9 cents per kilowatt hour.

Accurate flow control improves performance

When switching tools on a machine, other pumps rely on adjusting the pressure to accommodate differences in the tools. But it is more important to maintain constant pressure by controlling the flow rate to provide more predictable tool life and work-piece quality.

By utilizing a variable speed drive motor, Hydra-Cell pumps control the flow rate scientifically while maximizing feed and speed rates and minimizing energy costs. It provides linear flow independent of the pressure or the type of coolant used.

Avoids the extra cost of fine filtration

With its seal-less design, Hydra-Cell pumps can handle abrasive particles of up to 500 microns or larger. This eliminates the need for and the added expense of 10-micron filters common to other pump designs.

Tolerates non-ideal operating conditions

There are no maintenance-heavy packings, cups or seals in Hydra-Cell pumps so they do not rely on the coolant being pumped for lubrication. Hydra-Cell pumps are not damaged by particles that pass through the filtration process due to filter paper breakages, incorrect start-up procedures or common operator errors.

Hydra-Cell Models for High-Pressure Coolants

Model	Flow Capacity (GPM)	Max. Discharge Pressure (PSI)	Max. Temp. (F)	Max. Suction Pressure (PSI)
M03	3	1200	250°	250
D10	8	1000	250°	250
D12*	8	1000	250°	250
D15	15	2500	250°	500
D17*	15	2500	250°	500
H25	20	1000	250°	250
D35	37	1200	250°	250

* Vertical Models

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