

Hydra-Cell[®]

Seal-less Pumps

Precise Dosing and Rugged Reliability for Chemical and Petrochemical Processing



Chemical Processing



Pressure Injecting and Mixing • Transfer • Spraying • Metering and Dosing

Compact, Seal-less Pumps Reduce Costs and Provide Dependable Performance

With more than 40 years of experience serving the market, including many of the major global companies, Hydra-Cell pumps are performance-proved in efficiently pumping the widest range of corrosive, hot, abrasive, viscous, non-lubricating, and recycled fluids, as well as liquids containing solids. The multi-diaphragm, seal-less design of Hydra-Cell provides 100% safe containment for even the most aggressive liquids while providing virtually pulse-free operation.

Advantages of Hydra-Cell:

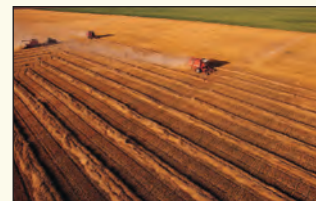
- Variety of models, wide range of capacities and ratings, plus extensive choices in materials of construction make Hydra-Cell ideally suited to a wide range of processing applications.
- Pumps the full spectrum of low-to-high viscosity fluids.
- Seal-less design can tolerate abrasive solids of up to 800 microns in size depending on pump model.
- Operational efficiencies reduce energy costs.
- Able to run dry without damage (or additional maintenance) to the pump in case of accident or operator error.
- Tolerates non-ideal operating conditions.
- Minimizes maintenance because there are no seals, packing, or cups to leak or replace.
- Metering pump models designed to exceed API 675 performance standards without the use of expensive pulsation dampeners.



Hydra-Cell pumping for waste stream reduction and salt solution concentration at a pharmaceutical chemical plant.

Hydra-Cell Standard Pumps, Hydra-Cell Metering Pumps, and Hydra-Cell T80 Series Pumps

Hydra-Cell positive displacement pumps are available in 16 pump models covering a wide range of flows and pressures.



Eight (8) standard Hydra-Cell models are ideal for transfer, spraying, and pressure injecting and mixing.



Six (6) metering pump models are ideal for metering and dosing, spraying, and pressure injecting and mixing.



Two (2) Hydra-Cell T80 Series high-pressure pumps.

Hydra-Cell pumps are used in many industries with chemical processing applications.

- Agrichemical
- Biodiesel & Biotechnical
- Ceramics, Clay & Glass
- Industrial Organic & Inorganic
- Offshore Drilling & Processing
- Oil, Gas & Petrochemical
- Paints, Coatings, Sealants & Adhesives
- Pharmaceutical
- Polyurethane
- Propellant Packaging
- Pulp, Paper & Textiles
- Reverse Osmosis
- Rubber & Plastic
- Soaps, Cosmetics & Personal Care
- Water & Wastewater Treatment



Typical Liquids Pumped	Challenges in Pumping	The Hydra-Cell Advantage
Acids (Sulfuric, Hydrochloric, Nitric, et. al.)	Crystallization can occur under certain conditions creating solids in the liquid.	<ul style="list-style-type: none"> Seal-less design and spring-loaded, horizontal disk check valves can handle abrasive, un-dissolved particles up to 800 microns in size (depending on model).
	Aggressive and corrosive.	<ul style="list-style-type: none"> No dynamic seals so corrosive liquids can be pumped reliably.
Caustics (Sodium Hydroxide, Potassium Hydroxide)	Crystallization can occur under certain conditions creating abrasive solid particles.	<ul style="list-style-type: none"> Seal-less design and spring-loaded, horizontal disk check valves can handle abrasive, un-dissolved particles up to 800 microns in size (depending on model).
Solvents	Non-lubricating.	<ul style="list-style-type: none"> No dynamic seals that need to be lubricated by the process liquid.
Slurries	Contains abrasive non-soluble particles that can damage dynamic seals.	<ul style="list-style-type: none"> No dynamic seals to be damaged by abrasive solids.
Polymers	May shear thin liquids easily, breaking down the chemistry.	<ul style="list-style-type: none"> Low shear pumping action.
	May flocculate if exposed to excessive temperatures.	<ul style="list-style-type: none"> Minimal heat transfer from the pump to the process liquid.
Resins	Exposure to air can cause crystallization.	<ul style="list-style-type: none"> No dynamic seals to leak air into the pump liquid or to be damaged by solid abrasive particles.
	Viscous liquids.	<ul style="list-style-type: none"> Can handle high-viscosity liquids.
De-ionized Water	Non-lubricating and aggressive.	<ul style="list-style-type: none"> No dynamic seals that need to be lubricated by the process liquid.
Recycled Liquids	Crystals can form when exposed to air resulting in non-dissolved solid particles in the resin.	<ul style="list-style-type: none"> No dynamic seals or tight tolerances sitting in the process liquid to be damaged by the solid particles.
Hydrocarbons	Non-lubricating.	<ul style="list-style-type: none"> No dynamic seals that need to be lubricated by the process liquid.
	Thin, very low-viscosity liquids search for leak paths.	<ul style="list-style-type: none"> No dynamic seals to leak. Pumped liquid is 100% contained.
Waste Chemical Streams	May contain non-lubricating corrosive liquids with non-dissolved particles.	<ul style="list-style-type: none"> No dynamic seals to be damaged by process liquid.
Proprietary Chemicals	Complex chemistry may mean exotic materials are needed for the pump head.	<ul style="list-style-type: none"> Compact design and interchangeable liquid end parts provide the flexibility and ease to handle complex, proprietary chemicals reliably and cost effectively.
Hot Liquids	Higher temperatures have a dramatic effect on speeding up corrosion rates.	<ul style="list-style-type: none"> No dynamic seals mean that Hydra-Cell can handle liquids with temperatures up to 250°F.

Lower Initial Investment and Lower Energy Costs

Uses lower hp motors

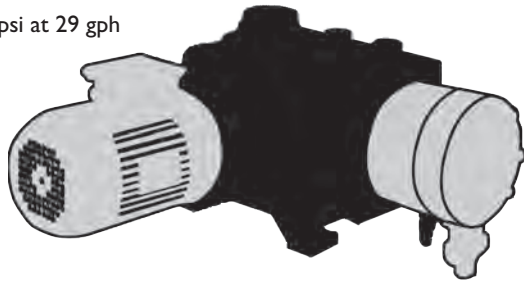
- Although both pumps have the same pressure rating, the lighter, more compact Hydra-Cell has a higher flow rating while requiring a less expensive, lower hp motor. This means Hydra-Cell saves approximately 30% to 55% on initial costs.



Hydra-Cell metering pump
 Weight: 51 lbs.
 Rated: 2500 psi at 35 gph
 Motor: 1-1/2 hp

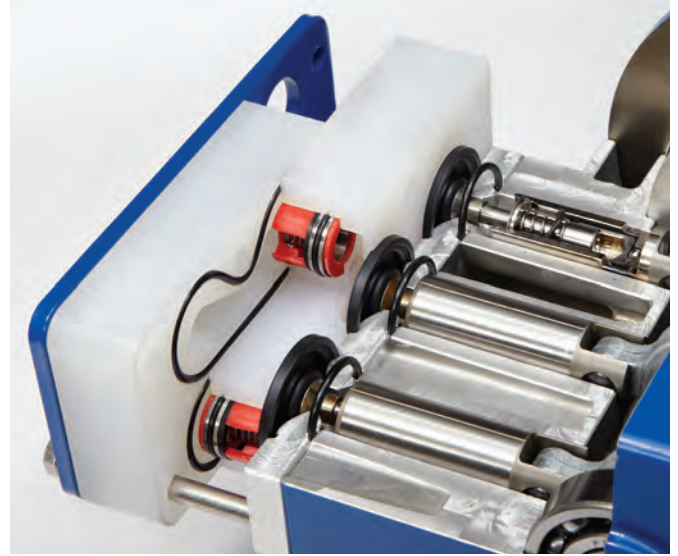
Conventional metering pump

Weight: 220 lbs.
 Rated: 2500 psi at 29 gph
 Motor: 5 hp



Low power consumption - 85% to 90% energy efficiency

- The lower hp requirement of the Hydra-Cell pump achieves the same performance but with greater energy efficiency and less power consumption.
- Hydra-Cell positive displacement pumps show significant energy savings when compared to screw pumps and multi-stage centrifugal pumps (notably in cleaning and transfer applications).



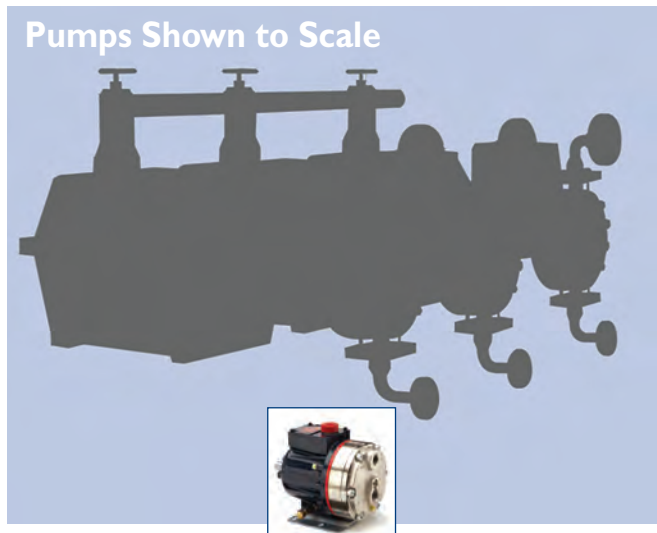
The multiple-diaphragm liquid head of Hydra-Cell also allows a less expensive, energy-saving motor to be used.

Small footprint for savings

- Compact design can mean up to 30% lower initial cost compared to other pumps.
- Space-saving design creates a smaller footprint for more efficient use of plant space.
- Easier to access for routine maintenance or servicing.

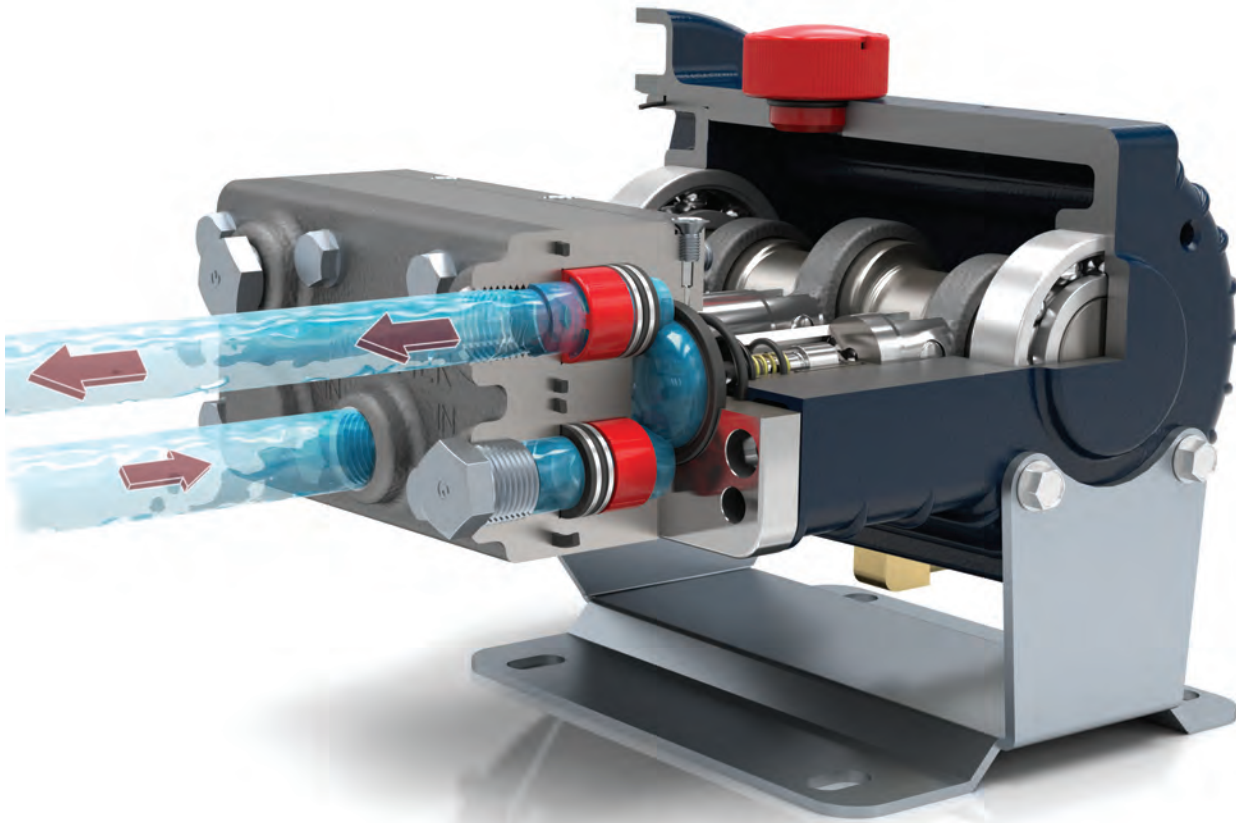
Minimal filtration

- Unlike gear pumps and screw pumps that wear excessively without fine filtration, Hydra-Cell has no mechanical seals or tight tolerances that need protection by fine filtration.
- Seal-less design handles abrasive particles up to 800 microns in size (depending on pump model) and up to 9 hardness on the Mohs scale.
- Can pump liquids with non-dissolved solids up to 40% depending on particle distribution.
- Unaffected by lapses in filtration, reducing costly pump repairs.
- Less need for costly filtration management and maintenance.



This Hydra-Cell pump shown to scale has the same flow capacity and pressure rating as this conventional triplex metering pump system.

Pumps Abrasives and Low-to-High Viscosity Fluids



Hydra-Cell's horizontal check valves operate in a horizontal liquid flow and will handle abrasives and particulates without clogging or damage to the pump.

Handles abrasives and particulates

- Seal-less design and spring-loaded, horizontal disk check valves provide superior handling of abrasive fillers and particulates.
- Reliably pumps acids and caustics which crystallize.
- Efficiently pumps liquids with solids such as lime slurries and sour water containing sand.

Runs dry without damage

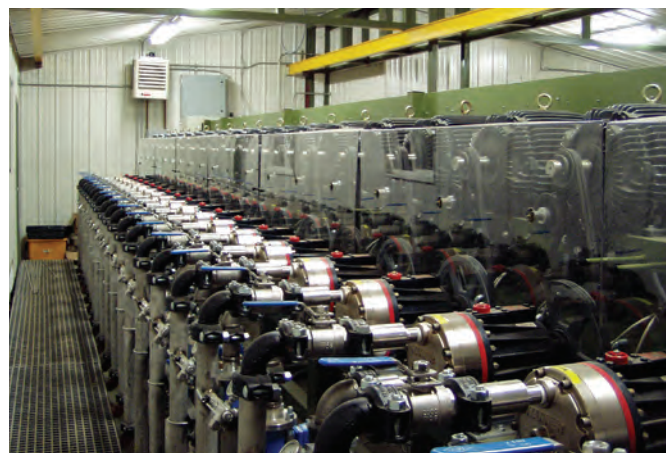
- Running dry can damage or destroy gear pumps and screw pumps, requiring costly repairs or pump replacement, and resulting in lost production. Hydra-Cell pumps can run dry without damage to the pump.
- When an interruption in flow is caused by suction blockage or a valve closure, gear pumps and screw pumps can fail immediately. Hydra-Cell pumps equipped with Kel-Cell Diaphragm Position Control (DPC) will not be affected, allowing for correction of the interruption.

Environmental protection

- Liquids are 100% sealed from the atmosphere.
- No leak path for toxic vapors or harmful gases (e.g. H₂S).
- No seals to leak any Volatile Organic Compounds (VOC).

Handles low-to-high viscosity fluids

- Pumps non-viscous as well as viscous liquids up to 5000 cPs (or more, depending on pump model) throughout the entire pressure range.
- Low-shear pumping action makes Hydra-Cell ideal for pumping and protecting shear-sensitive polymers.
- Non-lubricating liquids can be pumped reliably.



Hydra-Cell pumping shear-sensitive polymers for enhanced oil recovery.

Accurate Metering and Dosing with Pulse-free, Linear Flow

Accurate electronic flow control

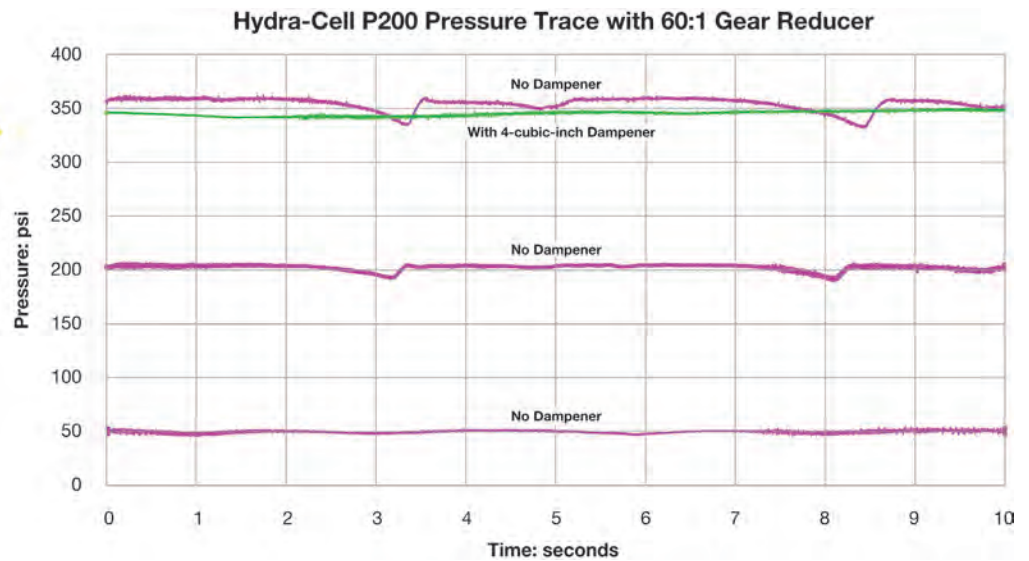
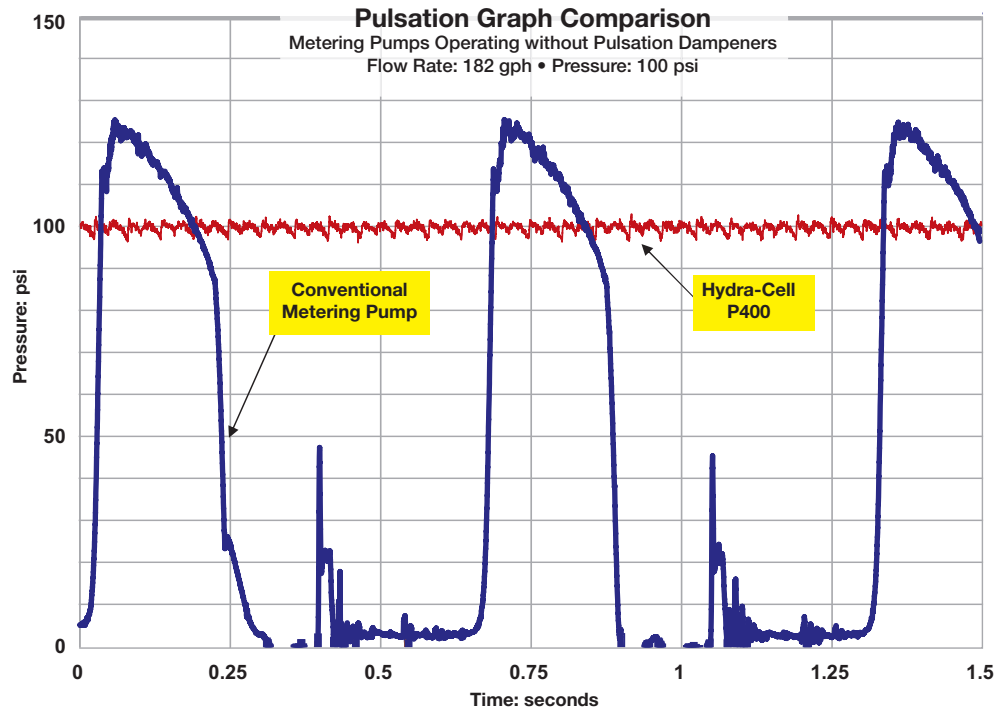
- Compared to pumps that rely on manual stroke adjustment or expensive actuators to change flow, Hydra-Cell metering pumps utilize speed control for greater accuracy throughout the turn-down range.
- Can be equipped with solid-state electronic flow control where the volume per every stroke is constant and a known value.
- Electronic flow also provides easy calibration of the desired feed rate and a near instantaneous rate of change (0 to maximum rpm in 0.3 seconds).

	Standard Models	Metering Pumps
Steady State Accuracy	>±1%	>±0.5%
Repeatability	>±3%	>±1%
Linearity	>±3%	>±1%

Typical results for recommended speed range

Virtually pulse-free flow

- Multiple-diaphragm design minimizes pulsations, eliminating the need for expensive pulsation dampeners for most Hydra-Cell models.
- Reduces pipe strain.
- Enhances operating safety.
- Minimizes maintenance.
- Reduces acceleration/friction losses in the suction line.
- Provides accurate metering with linear, constant flow.
- Lowers system acquisition costs.



One Versatile, Low-Maintenance Pump Design

Adaptable to many applications

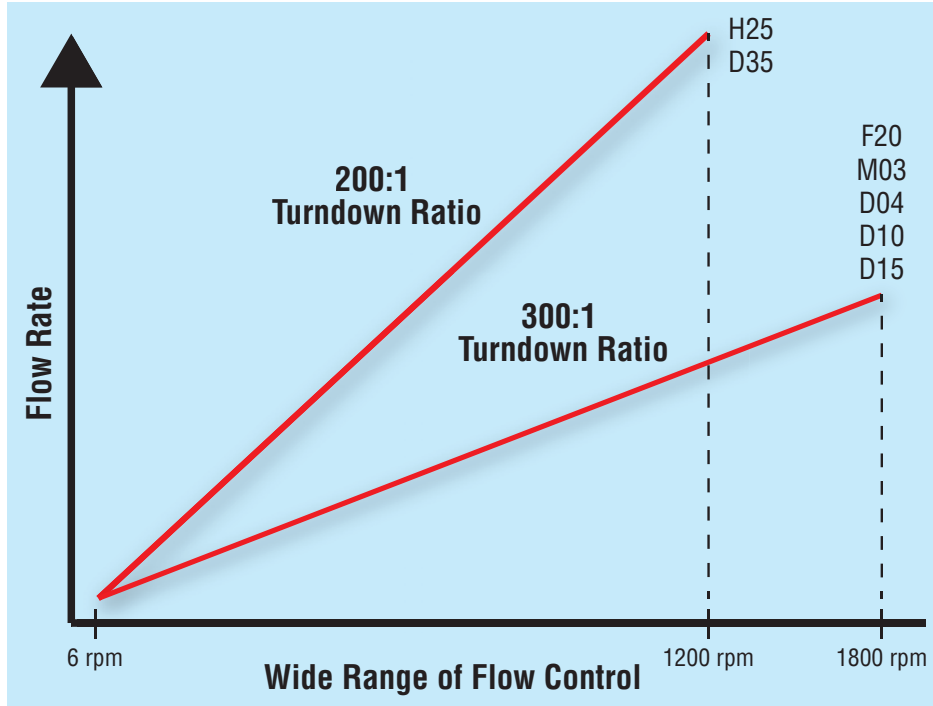
- One Hydra-Cell seal-less design with 16 models (8 standard; 6 metering; 2 high pressure) covers a wide range of operating flows and pressures.
- Can be fitted with ANSI or DIN flanges, IEC or NEMA motor mounts, or provided with ATEX certification to adapt to specific applications or meet international standards.
- Proven record of replacing different pump technologies with improved abrasives handling, less maintenance, and other benefits (as detailed on pages 8-11).

Extensive operating range

- Shaft speeds from 6 rpm to 1800/1200 rpm, yielding a 300/200:1 turndown ratio.
- Maximum discharge pressures from 1000 to 2500 psi.
- Maximum flow rates for standard Hydra-Cell models from 1 to 37 gpm and for metering pumps from 27 to 895 gph
- Minimum flow rates less than 0.15 gph at approximately 6 rpm.

Simple pump head design

- Liquid head materials can be changed readily, enabling Hydra-Cell to be used for many different chemicals and liquids pumped.
- Minimal maintenance required with no special tools needed.
- Low cost of spare parts.



	Minimum	Maximum
Flow Rate	0.0025 gpm (0.15 gph)	37 gpm (2220 gph)
Discharge Pressure	0 psi	2500 psi



Low maintenance

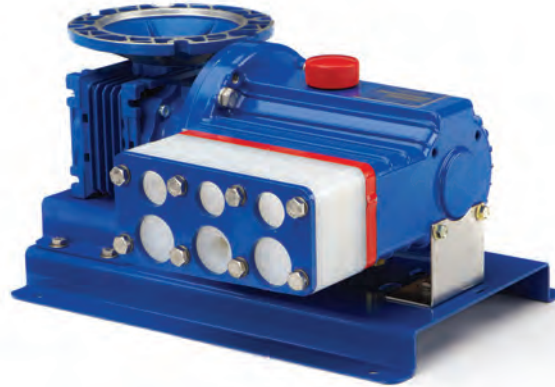
- No seals or packing to leak, wear, or replace.
- No tight tolerances that could be susceptible to corrosion or damaged by solid particles.
- One design for all applications minimizes the need for standby pumps and spare parts, which optimizes training and service expertise and reduces inventory size and expense.
- Since there are no dynamic seals to wear or replace, Hydra-Cell pumps need little maintenance and will operate reliably under continuous duty at high pressure.
- Any maintenance or repair can usually be performed on-site.
- Typically run 6,000 hours before changing lubricating oil (compared to 1,500 hours recommended by many piston pump manufacturers).

Hydra-Cell® Performance Advantages Compared to Other Types of Pumps

Magnetic Drive Pump Disadvantages:	Hydra-Cell Advantages:
<ul style="list-style-type: none"> • Cannot run dry without damage to the pump. 	<ul style="list-style-type: none"> • Seal-less design enables Hydra-Cell to run dry without damage to the pump.
<ul style="list-style-type: none"> • Requires monitoring to ensure fluid flow. 	<ul style="list-style-type: none"> • Ensures proper fluid flow without monitoring.
<ul style="list-style-type: none"> • Designed to pump clean, low-viscosity fluids. 	<ul style="list-style-type: none"> • Seal-less pumping chamber and spring-loaded, horizontal disk check valves can handle particulates and abrasive fillers.
<ul style="list-style-type: none"> • Higher power requirements and energy costs. 	<ul style="list-style-type: none"> • Low-shear pumping action handles higher viscosity fluids.
<ul style="list-style-type: none"> • Can have a long horizontal footprint with higher acquisition and replacement costs. 	<ul style="list-style-type: none"> • Smaller footprint compared to some magnetic drive pumps. • More energy efficient. • Easier to service. • Lower acquisition, operating and replacement costs.

Peristaltic Pump Disadvantages:	Hydra-Cell Advantages:
<ul style="list-style-type: none"> • Require expensive pulsation dampeners to minimize pulsations. 	<ul style="list-style-type: none"> • Multiple-diaphragm design provides virtually pulse-free flow, so expensive pulsation dampeners may not be required.
<ul style="list-style-type: none"> • Pump tube operates under stress, resulting in a consumable part that will need to be replaced. 	<ul style="list-style-type: none"> • Diaphragms operate in hydraulic balance and are not under stress, thus providing long service life.

Conventional Metering Pump Disadvantages:	Hydra-Cell Advantages:
<ul style="list-style-type: none"> • Use manual stroke adjusters or expensive actuators to control flow, which can result in pumping inaccuracies, lost motion, operator error, and a greater chance of leakage. 	<ul style="list-style-type: none"> • Hydra-Cell employs optional Variable Frequency Drive (VFD) electronic flow control for greater accuracy and repeatability, eliminating lost motion, reducing the chance of operator error, and removing a potential leak path.
<ul style="list-style-type: none"> • Require expensive pulsation dampeners to minimize pulsations. 	<ul style="list-style-type: none"> • Multiple-diaphragm design provides virtually pulse-free flow, so expensive pulsation dampeners may not be required.
<ul style="list-style-type: none"> • May only offer PTFE diaphragms, requiring frequent replacement due to stress and poor elastomeric memory. 	<ul style="list-style-type: none"> • Available with a wide choice of cost-effective, elastomeric diaphragm materials.
<ul style="list-style-type: none"> • Large footprint to achieve required maximum flow and pressure. 	<ul style="list-style-type: none"> • Can meet the same flow and pressure requirements with a much smaller footprint, saving space and costs.
<ul style="list-style-type: none"> • Different plunger and liquid end sizes needed to accommodate changes in operating pressures. 	<ul style="list-style-type: none"> • Operates over a wide range of pressures without changes to the plunger or liquid end size.
<ul style="list-style-type: none"> • Integral gearing (necessary to prevent cross-contamination of actuating oil) is difficult and expensive to maintain. 	<ul style="list-style-type: none"> • The simplicity of design means lower parts and maintenance costs. • Separate gearbox prevents cross-contamination of the actuating oil.



Compared to other pumps, Hydra-Cell requires minimal maintenance for chemical processors. Hydra-Cell has no packing or seals that leak or need to be replaced and no internal gears to wear.

Internal Gear Pump Disadvantages:	Hydra-Cell Advantages:
<ul style="list-style-type: none"> Mechanical seals and packing require maintenance, and replacement or adjustment. 	<ul style="list-style-type: none"> The seal-less design of Hydra-Cell means that there are no seals or packing to leak or replace.
<ul style="list-style-type: none"> Does not tolerate thin/non-lubricating liquids, and does not handle solids, abrasives or particulates well. 	<ul style="list-style-type: none"> Seal-less pumping chamber and spring-loaded, horizontal disk check valves can pump solids, abrasive fillers and particulates while handling liquids thick or thin.
<ul style="list-style-type: none"> Designed for operating at low speeds and low pressure ratings. Low volumetric efficiency. 	<ul style="list-style-type: none"> Operates at low-to-high speeds and at higher pressures with higher volumetric efficiency.
<ul style="list-style-type: none"> Component wear reduces accuracy and efficiency. 	<ul style="list-style-type: none"> No internal gears to wear so there is less maintenance and spare part replacement. Accuracy and efficiency are more stable.
<ul style="list-style-type: none"> One bearing runs in the pumped fluid. 	<ul style="list-style-type: none"> No bearings in the pumped fluid.
<ul style="list-style-type: none"> Unbalanced - overhung load on the shaft bearing. 	<ul style="list-style-type: none"> Hydraulically balanced design so there is no overhung load.

External Gear Pump Disadvantages:	Hydra-Cell Advantages:
<ul style="list-style-type: none"> Mechanical seals and packing require maintenance, and replacement or adjustment. 	<ul style="list-style-type: none"> The seal-less design of Hydra-Cell means that there are no seals or packing to leak or replace.
<ul style="list-style-type: none"> Does not tolerate solids, abrasives, or particulates. 	<ul style="list-style-type: none"> Seal-less pumping chamber and spring-loaded, horizontal disk check valves can pump solids, abrasive fillers and particulates.
<ul style="list-style-type: none"> Component wear reduces accuracy and efficiency. 	<ul style="list-style-type: none"> No internal gears to wear so efficiency is more stable and there is less maintenance and spare part replacement.
<ul style="list-style-type: none"> Contains four bushings/bearings in the fluid area. 	<ul style="list-style-type: none"> No bushings/bearings in the pumped fluid.
<ul style="list-style-type: none"> Fixed end clearances are typical. 	<ul style="list-style-type: none"> Design does not rely on clearances.
<ul style="list-style-type: none"> Efficiency drops as outlet pressure increases. 	<ul style="list-style-type: none"> Efficiency remains relatively constant over its range of operating pressures.
<ul style="list-style-type: none"> Depends on pumped liquid for lubrication. 	<ul style="list-style-type: none"> Seal-less design does not require pumped liquid for lubrication.

Hydra-Cell® Performance Advantages Compared to Other Types of Pumps

Centrifugal Pump Disadvantages:	Hydra-Cell Advantages:
<ul style="list-style-type: none"> • Double mechanical seals are expensive and require a fluid barrier system. 	<ul style="list-style-type: none"> • The seal-less design of Hydra-Cell means that there are no seals or packing to leak or replace.
<ul style="list-style-type: none"> • Particulates and fines in the pumped fluid will cause wear in the case and the impellers. 	<ul style="list-style-type: none"> • Seal-less pumping chamber with spring-loaded, horizontal disk check valves can pump particulates and fines up to 800 microns in size (depending on pump model).
<ul style="list-style-type: none"> • Difficult to maintain high efficiency with varying flow rate. 	<ul style="list-style-type: none"> • Designed for efficient delivery at varying flow rates.
<ul style="list-style-type: none"> • Running dry can cause a catastrophic mechanical seal failure. 	<ul style="list-style-type: none"> • Can run dry without damage to the pump. Entrapped air in the coolant does not cause immediate failure.
<ul style="list-style-type: none"> • Ineffective at low flow rates and high outlet pressures. 	<ul style="list-style-type: none"> • Runs at very low speeds and flow rates while maintaining outlet pressures.
<ul style="list-style-type: none"> • Flow rate is difficult to control effectively. 	<ul style="list-style-type: none"> • Positive displacement design allows for accurate speed control.

Progressive Cavity Pump Disadvantages:	Hydra-Cell Advantages:
<ul style="list-style-type: none"> • Dynamic seals are worn by abrasive liquids. 	<ul style="list-style-type: none"> • No dynamic seals in the pumped liquid can handle abrasive liquids reliably.
<ul style="list-style-type: none"> • Hydrodynamic film between the stator and rotor cam breaks down under pressure, reducing flow rate and negating true positive displacement pumping action. 	<ul style="list-style-type: none"> • Seal-less pump chamber with hydraulically-balanced diaphragms mean that flow rate is maintained even as discharge pressure increases.

Plunger/Piston Pump Disadvantages:	Hydra-Cell Advantages:
<ul style="list-style-type: none"> • External packing lubrication system required, creating maintenance, containment, disposal, safety, and house-keeping issues with their associated costs. 	<ul style="list-style-type: none"> • Seal-less design means no packing or other secondary containment requirements, no clean-up or disposal issues, improved safety, and reduced maintenance costs.
<ul style="list-style-type: none"> • Packing requires frequent adjustments and then replacement as it wears. 	<ul style="list-style-type: none"> • Since Hydra-Cell uses no packing, downtime and maintenance costs are reduced.
<ul style="list-style-type: none"> • Packing causes plunger/piston wear, which is exacerbated by abrasives. 	<ul style="list-style-type: none"> • Diaphragm design allows pumping of abrasive and corrosive media without concern for wear, or replacement of packing or plunger/piston.
<ul style="list-style-type: none"> • Plungers, stuffing boxes, and packing require repair and replacement during normal operation because they come in contact with the pumped fluid. 	<ul style="list-style-type: none"> • Only the Hydra-Cell diaphragms, constructed of robust, long-lasting materials, come in contact with the pumped fluid.

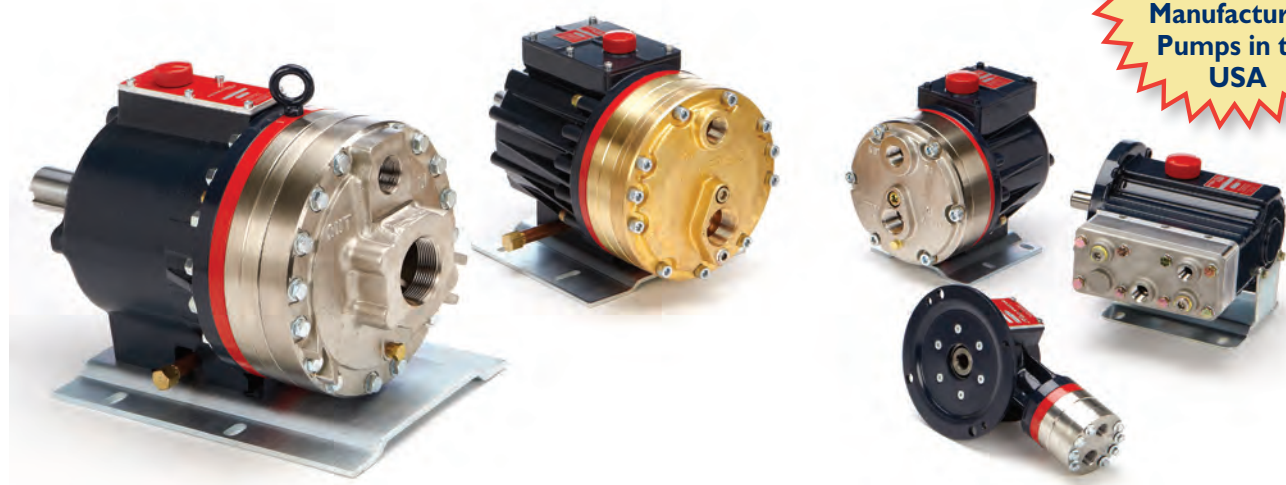


Model D10 (above left) fitted with ANSI flanges. Hydra-Cell pumps are also available with DIN flanges, NEMA or IEC motor mounts, or provided with ATEX certification to adapt to specific applications or meet international standards.

Triple Screw Pump Disadvantages:	Hydra-Cell Advantages:
<ul style="list-style-type: none"> • Close tolerances and running clearances require ultra-filtration (usually to <10 microns). 	<ul style="list-style-type: none"> • Precisely-engineered tolerances and seal-less design eliminate the need for fine filtration.
<ul style="list-style-type: none"> • Performance characteristics sensitive to viscosity change. 	<ul style="list-style-type: none"> • Pumps thin or highly viscous liquids with equal efficiency.
<ul style="list-style-type: none"> • Mechanical seals and packing require maintenance, and replacement or adjustment. 	<ul style="list-style-type: none"> • The seal-less design of Hydra-Cell means that there are no seals or packing to leak or replace.
<ul style="list-style-type: none"> • Does not tolerate solids, fines, abrasives or particulates. 	<ul style="list-style-type: none"> • Seal-less pumping chamber with spring-loaded, horizontal disk check valves can pump fines up to 800 microns in size (depending on pump model).
<ul style="list-style-type: none"> • Inefficient at low speeds (usually requires minimum 1000 rpm). 	<ul style="list-style-type: none"> • Runs at very low speeds (from 18 to 1800 rpm) while maintaining outlet pressures.
<ul style="list-style-type: none"> • Depends on pumped liquid for sealing and hydrodynamic lubrication. 	<ul style="list-style-type: none"> • No requirement for the pumped liquid to seal or lubricate.
<ul style="list-style-type: none"> • Contains bushings in the pumped liquid. 	<ul style="list-style-type: none"> • No bushings in the pumped liquid.
<ul style="list-style-type: none"> • Dry running and entrapped air cause immediate damage. 	<ul style="list-style-type: none"> • Can run dry without damage to the pump. Tolerates entrapped air.
<ul style="list-style-type: none"> • Incorrect direction of rotation results in damage to the pump. 	<ul style="list-style-type: none"> • Hydra-Cell pumps are bidirectional, eliminating the risk of damage.

Hydra-Cell Positive Displacement Diaphragm Pumps are Ideal for Handling Abrasives and Particulates

40+
Years of
Manufacturing
Pumps in the
USA



Hydra-Cell
Seal-less Pumps

- Unmatched versatility for a wide range of pumping applications required in the chemical and petrochemical industries.
- Features a seal-less design and horizontal disk check valves that enable the pump to handle abrasives and particulates that might damage or destroy other types of pumps.
- Simple, compact design reduces initial investment and lowers maintenance costs.
- Variety of models that can operate with very low to very high flow rates and discharge pressures up to 2500 psi.
- Available in a wide range of pump head materials of construction and diaphragm materials.
- Variety of options and accessories to optimize performance.

Flow Capacities & Pressure Ratings

Model ¹	Maximum Capacity gpm (l/min)	Maximum Discharge Pressure psi (bar)		Maximum Operating Temperature F (C) ³		Maximum Inlet Pressure psi (bar)
		Non-metallic ²	Metallic	Non-metallic ²	Metallic	
F20	1 (3.8)	350 (24)	1500 (103)	140° (60°)	250° (121°)	250 (17)
M03	3 (11.7)	350 (24)	1200 (83)	140° (60°)	250° (121°)	250 (17)
D04	3 (11.7)	N/A	2500 (172)	N/A	250° (121°)	500 (34)
D10⁴	4 (15.1)	N/A	1500 (103)	N/A	250° (121°)	250 (17)
D10	8 (30.6)	350 (24)	1000 (69)	140° (60°)	250° (121°)	250 (17)
D12	8 (30.6)	N/A	1000 (69)	N/A	250° (121°)	250 (17)
D15 & D17	15 (58.7)	N/A	2500 (172)	N/A	250° (121°)	500 (34)
H25	20 (75.7)	350 (24)	1000 (69)	140° (60°)	250° (121°)	250 (17)
D35⁵	24 (90.8)	N/A	1500 (103)	N/A	250° (121°)	250 (17)
D35	37 (138)	N/A	1200 (83)	N/A	250° (121°)	500 (34)

¹ Ratings are for X-Cam design.

² 350 psi (24 bar) maximum with PVDF liquid end; 250 psi (17 bar) maximum with Polypropylene liquid end.

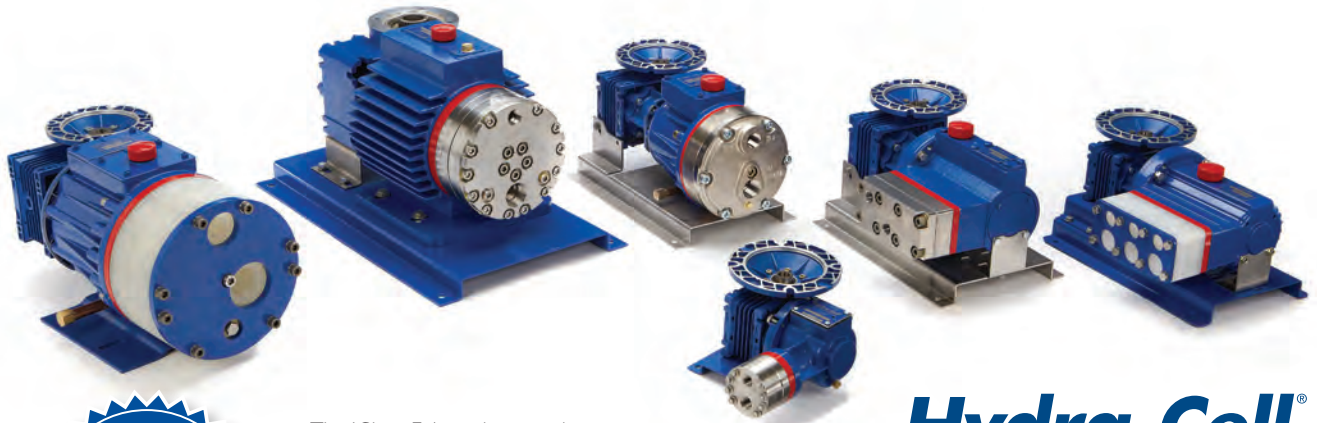
³ Consult factory for correct component selection for temperatures above 160°F (71°C).

⁴ D10 @790 rpm maximum.

⁵ D35 @700 rpm maximum.

For complete specifications and ordering information, consult the Hydra-Cell catalog.

Hydra-Cell Metering Pumps Exceed API 675 Standards and Provide “Pulse-free” Linear Flow



The IChemE Awards recognize innovation and excellence in making outstanding contributions to safety, the environment, and sustainable development in the chemical and bioprocess industries.



- Designed for use with Variable Frequency Drive (VFD) electronic flow control to maintain greater accuracy throughout the turndown range.
- Multiple-diaphragm design (except the P100) provides virtually pulse-free flow, eliminating the need to purchase expensive pulsation dampeners.
- Offers all the features and benefits of standard Hydra-Cell pumps (F/M/D/H Series) including seal-less design, horizontal disk check valves, and space-saving, compact design.
- Variety of models that can operate with very low to very high flow rates and discharge pressures up to 2500 psi.
- Available in a wide range of pump head materials of construction and diaphragm materials.
- Every model is available with a variety of gear box ratios to meet your application needs.
- Variety of options and accessories to optimize performance.

Flow Capacities & Pressure Ratings

Model ¹	Maximum Capacity gph ²	Maximum Discharge Pressure psi (bar)		Maximum Operating Temperature F (C) ⁴		Maximum Inlet Pressure psi (bar)
		Non-metallic ³	Metallic	Non-metallic	Metallic	
P100	26.5	350 (24)	1500 (103)	140° (60°)	250° (121°)	250 (17)
P200	80.8	350 (24)	1000 (69)	140° (60°)	250° (121°)	250 (17)
P300	82.3	N/A	2500 (172)	N/A	250° (121°)	500 (34)
P400	243.0	350 (24)	1500 (103)	140° (60°)	250° (121°)	250 (17)
P500	426.0	N/A	2500 (172)	N/A	250° (121°)	250 (17)
P600	894.6	350 (24)	1000 (69)	140° (60°)	250° (121°)	500 (34)

¹ Ratings are for X-Cam design.

² Consult factory for ratings in liters per hour (lph).

³ 350 psi (24 bar) maximum with PVDF liquid end; 250 psi (17 bar) maximum with Polypropylene liquid end.

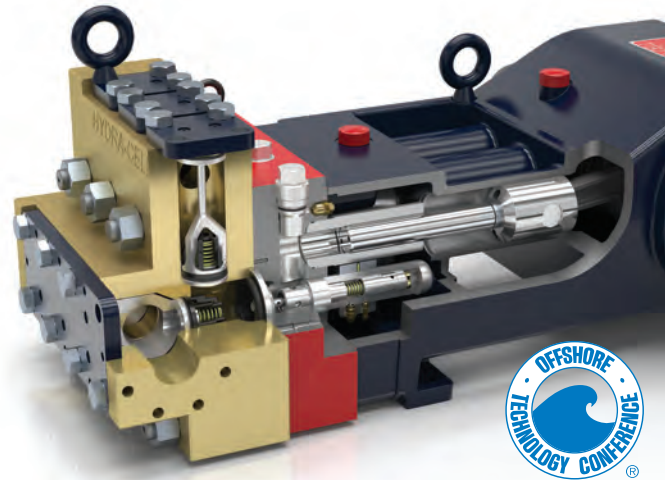
⁴ Consult factory for correct component selection for temperatures above 160°F (71°C).

For complete specifications and ordering information, consult the Hydra-Cell metering pumps catalog.

Hydra-Cell High-pressure Pumps



- Seal-less design eliminates leaks, hazards and the expense associated with seals and packing.
- Low NPSH requirements allow for operation with a vacuum condition on the suction - positive suction pressure is not necessary.
- Can operate with a closed or blocked suction line and run dry indefinitely without damage, eliminating downtime and repair costs.
- Unique diaphragm design handles more abrasives with less wear than gear, screw or plunger pumps.
- Hydraulically balanced diaphragms handle high pressures with low stress.
- Lower energy costs than centrifugal pumps.
- Rugged construction for long life with minimal maintenance.
- Compact design and double-ended shaft provides a variety of installation options.



Designed for higher pressures, the Hydra-Cell packing-free seal-less pump received a "Spotlight on New Technology" award from the Offshore Technology Conference.

Model	Maximum Capacity		Maximum Discharge Pressure		Maximum Inlet Pressure		Maximum Operating Temperature	
	(gpm)	(l/min)	(psi)	(bar)	(psi)	(bar)	(F)*	(C)*
T8045	45.0	170.4	3000	207	500	34	180°	82°
T8030	26.0	98.4	5000	345	500	34	180°	82°

* Consult factory for correct component selection for temperatures above 180°F (82°C) or below 40°F (4°C)

For complete specifications and ordering information, consult the Hydra-Cell T8045 and T8030 product bulletins.

Non-metallic ANSI Centrifugal Pumps

STAN-COR

- Solid PVDF pump head for chemical compatibility and excellent abrasion resistance.
- Operate with a smooth, full-curve performance.
- Concentric casing design for better flow patterns than other centrifugal pumps - less turbulence, longer seal life, and reduced shaft deflection.
- Handles high operating temperatures.
- Compact design features including heavy-duty drive shaft, adjustable bearing supports, and large-capacity oil bath ensure low maintenance as well as durable performance for the toughest fluid applications.
- Back pull-out design for easy servicing.
- Handles solid sizes up to 9/16" maximum.



Designed to handle difficult process fluids, Stan-Cor pumps offer total dynamic head to 350 feet and flow rate capacities to 700 gpm (2650 l/min).

Peristaltic Pumps that Isolate the Pumped Fluid

VECTOR

- Dry pump cavity.
- Self-priming operation.
- Runs dry without damage to the pump.
- Complete isolation of the fluid being pumped from contact with mechanical parts for the fluid transport system.
- Heavy-duty roller bearings.
- Wide range of pump configurations and flow rates.
- No cups, packing, or seals to leak or replace or come in direct contact with the pumped fluid.
- Low maintenance.
- Reversible flow.



Designed to handle tough fluid processing applications, Vector pumps provide flow rate capacities to 200 gpm (757 l/min) and pressure ratings to 100 psi (7 bar).

Wanner Engineering Additional Product Lines

Hydra-Cell®

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