



Hydra-Cell[®]

Seal-less Pump Technology

Engineered Wood
Economy through Technology



Hydra-Cell®

Reliability in the Manufacture of Engineered Wood



The unique attributes of Hydra-Cell® pumps offer distinct benefits in pumping the resin adhesives and waxes used in this manufacturing process and make them the clear seal-less pump of choice for:

- Transfer
- Injection
- Spraying
- Metering
- Dosing

Typical Adhesives / Chemicals being Pumped	Challenges in Pumping	The Hydra-Cell® Solution
Formaldehyde (Formalin)	Vapours are toxic	Hydra-Cell® seal-less design provides excellent containment
Urea Formaldehyde	- Vapour is an irritant. - Premature polymerisation under heat and pressure - Urea reacts with water to form Sulphuric acid. - Curing is time dependent	- Hydra-Cell® seal-less design provides excellent containment - Hydra-Cell® has no close tolerance potential hot spots or dead spots to cause hardening
Phenol Formaldehyde	Premature polymerisation under heat and pressure	Hydra-Cell® has no close tolerances or areas of high shear to create hot spots which stops premature polymerisation
Melamine Resins	Cure fast at relatively low temperatures	Hydra-Cell® creates no mechanical friction heat to cause premature curing and creation of solid particles
MDI (Diphenylmethane diisocyanate)	- Toxic in the manufacturing process and polymerises in the presence of water and water vapour - Exposure to air or moisture causes crystallisation and wear to dynamic seals	- Hydra-Cell® seal-less design provides excellent containment and prevents moisture ingress into the pumped fluid - Hydra-Cell® has no dead areas to trap these ultra fast curing adhesives
Wax Emulsion	Shear sensitive wax formulation	Hydra-Cell® can pump at low or high pressures with very low shear

The seal-less design and ability to handle viscous and abrasive liquids (including solid particles up to 500 µm), develop high pressures, and provide excellent metering capabilities, all adds up to cost savings for the board producer.

We're in your
industry... trust in
our experience.

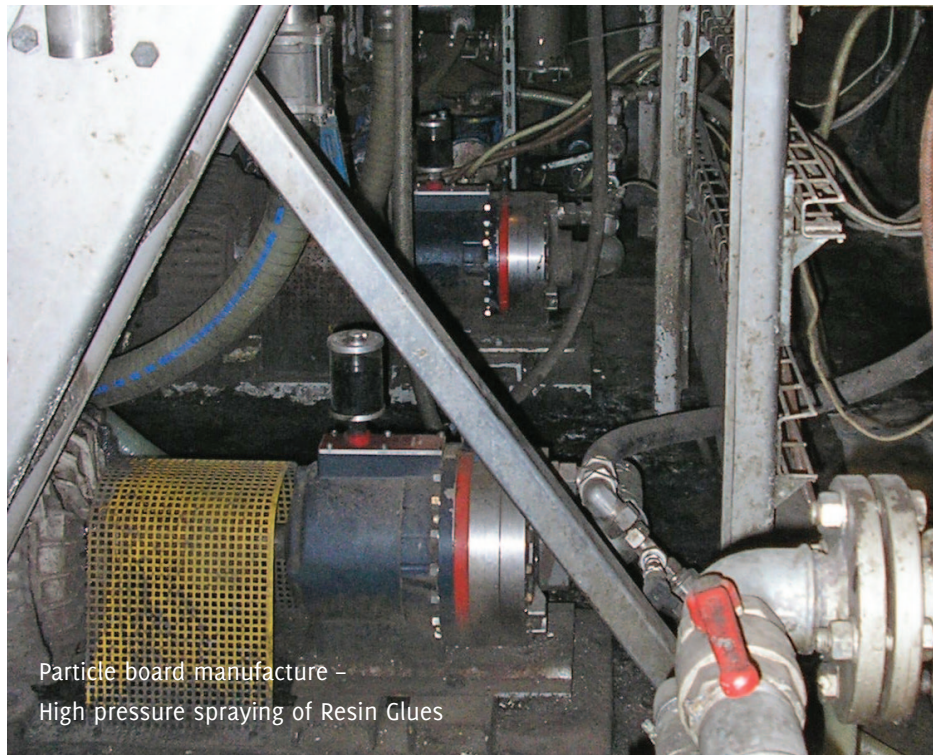
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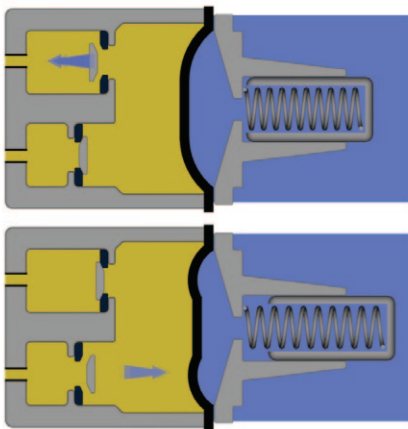
advantages

Seal-less design distinguishes the Hydra-Cell® pumps from most other pumps commonly used and is the basis of its long service life – pumping aggressive liquids can damage pump seals.

Hydra-Cell® seal-less pumps are tolerant of small solids and resistant to chemical and corrosive attack.



Particle board manufacture –
High pressure spraying of Resin Glues



Seal-less pumping chamber

- Resins are 100% sealed from the atmosphere preventing resin crystal formation
- Run-dry capability
- No seal maintenance
- No mechanical friction to create heat
- No leak path for toxic vapours
- Can pump resins with solid particles up to 500 µm. Helpful if storage tanks collect solid particles
- Non-lubricating resins can be pumped reliably

Low-shear pumping action

- Minimal heating of resins during pumping action
- No breaking down of polymer chains which are sensitive to shear
- No breaking down of wax emulsion

Simple pump head design

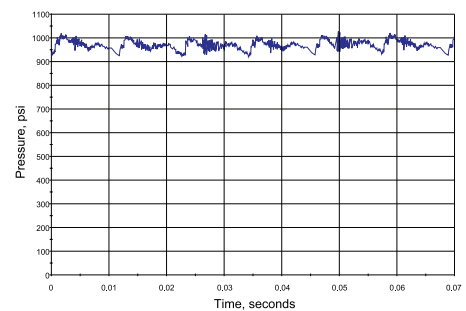
- Low cost of spare parts
- No tight tolerances or dead areas for resin to cure and harden in



Accurate controllable flow rate

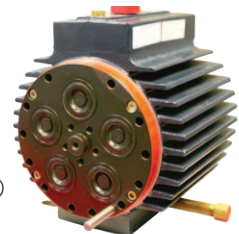
	G-Series	P series
Steady state accuracy	>±1%	>±0.5%
Repeatability	>±3%	>±1%
Linearity	>±3%	>±1%

Virtually pulse free flow



Multi diaphragm arrangements deliver a lower pulsation amplitude

G35 (5 diaphragm pump)



Wide range of materials of construction

- Cast Iron
- 316L Stainless Steel
- Duplex Alloy 2205
- Hastelloy® CW12MW
- EPDM
- FKM
- PTFE
- Polypropylene
- Kynar® PVDF

Pump selection



Particle board manufacture -
Dosing Ammonium Nitrate

Hydra-Cell® G-Series - High Performance, Positive Displacement Diaphragm Pumps

Hydra-Cell® 'G' series high pressure, heavy-duty pumps have proven performance and reliability in some of the toughest industrial equipment and process applications. The hydraulically-balanced diaphragm design assures dependability, long-life and high energy efficiency in a compact package.

Run-dry capable, Hydra-Cell® pumps require little

maintenance and deliver smooth, low pulsation flow. Hydra-Cell® are capable of pumping:

- Hydrochloric acid
- Sulphuric acid

- Caustics
- Abrasives such as lime slurries
- Viscous materials
 - Particle containing liquids
 - Non lubricating liquids



Hydra-Cell® P-Series - Extraordinary Metering Pumps - exceeding API 675 performance standards

Taking advantage of the most current technologies, Hydra-Cell® 'P' Series metering pumps achieve superior levels of accuracy, repeatability and linearity, while delivering precise, constant flow. This revolution in metering employs the latest electronic flow control to replace antiquated, inaccurate stroke adjusters.

The modern design features of the Hydra-Cell®

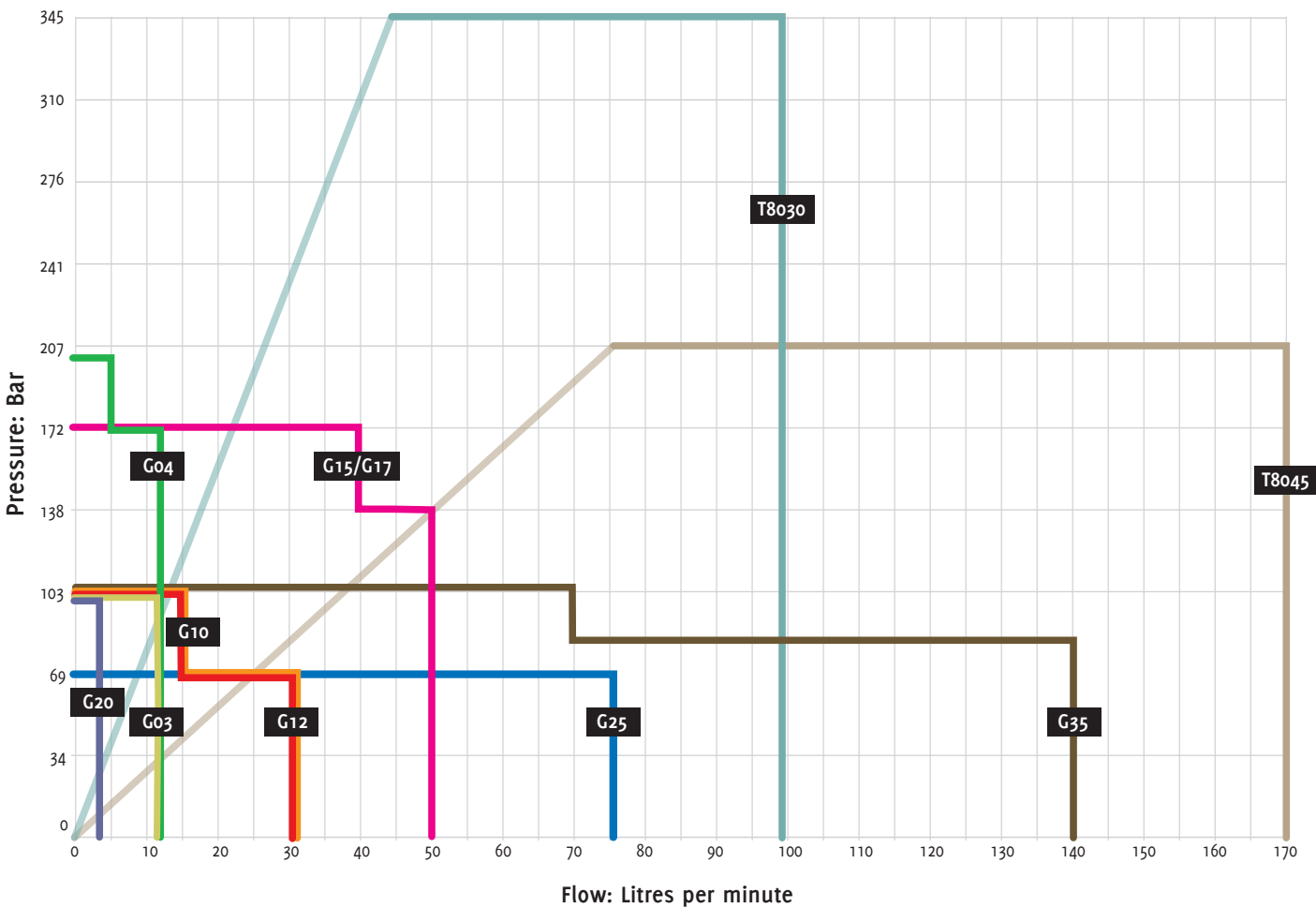
pumps, lower acquisition costs when compared to ordinary metering pumps and its inherently simple yet ground-breaking engineering keeps maintenance and replacement costs down.

Rugged construction and long-lasting durability will provide economy and value over the lifetime of your Hydra-Cell® metering system.



Hydra-Cell® Flow Capacities and Pressure Ratings

G Series and T Series Seal-less Pumps



The graph above displays the maximum flow capacity at a given pressure for each model series. The table below lists the maximum flow capacity and maximum pressure capability of each model series.

Please Note: Some models do not achieve maximum flow at maximum pressure. Refer to the individual model specifications in this section for precise flow and pressure capabilities by specific pump configuration.

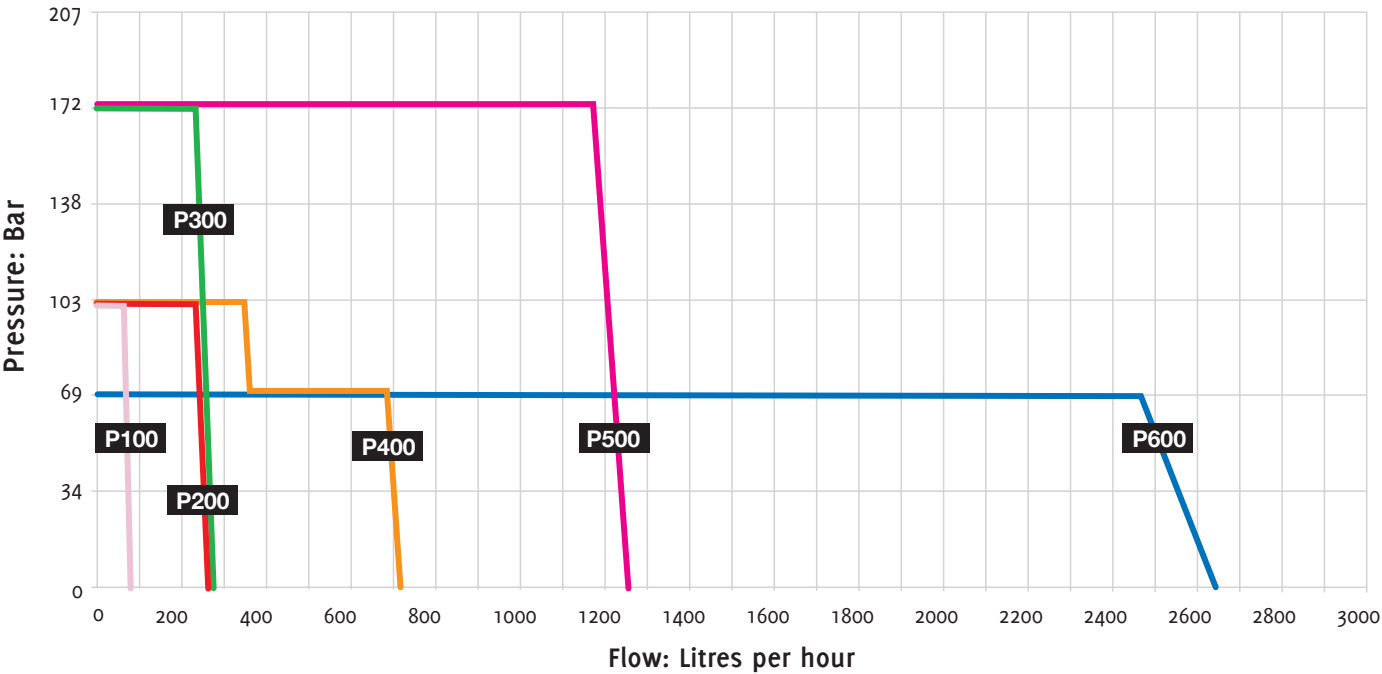
Model	Maximum Capacity l/min	Maximum Discharge Pressure bar (psi)		Maximum Operating Temperature °C°		Maximum Inlet Pressure bar (psi)
		Non-Metallic ¹	Metallic	Non-Metallic	Metallic	
G20	3.8	24	103	60°	121°	17
G03	11.7	24	103	60°	121°	17
G04	11.2	N/A	200	N/A	121°	34
G10	33.4	24	103	60°	121°	17
G12	33.4	N/A	103	N/A	121°	17
G15/17	58.7	N/A	172	N/A	121°	34
G25	75.9	24	69	60°	121°	17
G35	138	N/A	103	N/A	121°	34
T8045	170.4	N/A	207	N/A	82°	34
T8030	98.4	N/A	345	N/A	82°	34

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

² Consult factory for correct component selection for temperatures from 160°F (71°C) to 250°F (121°C).

HYDRA CELL® P Series Flow Capacities and Pressure Ratings

P Series Electronic Precision Metering Pumps



Model¹	Maximum Capacity l/hr	Maximum Discharge Pressure bar		Maximum Operating Temperature °C³		Maximum Inlet Pressure bar
		Non-Metallic²	Metallic	Non-Metallic²	Metallic	
P100	78.0	24	103	60°	121°	17
P200	237.4	24	103	60°	121°	17
P300	242.1	N/A	172	N/A	121°	34
P400	714.9	24	69	60°	121°	17
P500	1255.1	N/A	172	N/A	121°	17
P600	2634.0	24	69	60°	121°	34

1 Ratings are for X-Cam design
2 24 bar maximum with PVDF liquid end; 17 bar maximum with Polypropylene liquid end.
3 Consult factory for correct component selection for temperatures above 71 °C

HYDRA CELL® P Series Pumps Exceed API 675 Performance Standards

Hydra Cell Metering Solutions pumps meet or exceed API 675 performance standards for Steady-State Accuracy (± 1%), Linearity (± 3%) and Repeatability (± 3%).

Notes

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Hydra-Cell[®]

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