



# Hydra-Cell<sup>®</sup>

Seal-less Pumping 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)	<ul style="list-style-type: none"> <li>• Vapours are toxic</li> </ul>	<ul style="list-style-type: none"> <li>• Hydra-Cell® seal-less design provides excellent containment</li> </ul>
Urea Formaldehyde	<ul style="list-style-type: none"> <li>• Vapour is an irritant.</li> <li>• Premature polymerisation under heat and pressure</li> <li>• Urea reacts with water to form Sulphuric acid.</li> <li>• Curing is time dependent</li> </ul>	<ul style="list-style-type: none"> <li>• Hydra-Cell® seal-less design provides excellent containment</li> <li>• Hydra-Cell® has no close tolerance potential hot spots or dead spots to cause hardening</li> </ul>
Phenol Formaldehyde	<ul style="list-style-type: none"> <li>• Premature polymerisation under heat and pressure</li> </ul>	<ul style="list-style-type: none"> <li>• Hydra-Cell® has no close tolerances or areas of high shear to create hot spots which stops premature polymerisation</li> </ul>
Melamine Resins	<ul style="list-style-type: none"> <li>• Cure fast at relatively low temperatures</li> </ul>	<ul style="list-style-type: none"> <li>• Hydra-Cell® creates no mechanical friction heat to cause premature curing and creation of solid particles</li> </ul>
MDI (Diphenylmethane diisocyanate)	<ul style="list-style-type: none"> <li>• Toxic in the manufacturing process and polymerises in the presence of water and water vapour</li> <li>• Exposure to air or moisture causes crystallisation and wear to dynamic seals</li> </ul>	<ul style="list-style-type: none"> <li>• Hydra-Cell® seal-less design provides excellent containment and prevents moisture ingress into the pumped fluid</li> <li>• Hydra-Cell has no dead areas to trap these ultra fast curing adhesives</li> </ul>
Wax Emulsion	<ul style="list-style-type: none"> <li>• Shear sensitive wax formulation</li> </ul>	<ul style="list-style-type: none"> <li>• Hydra-Cell® can pump at low or high pressures with very low shear</li> </ul>

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.

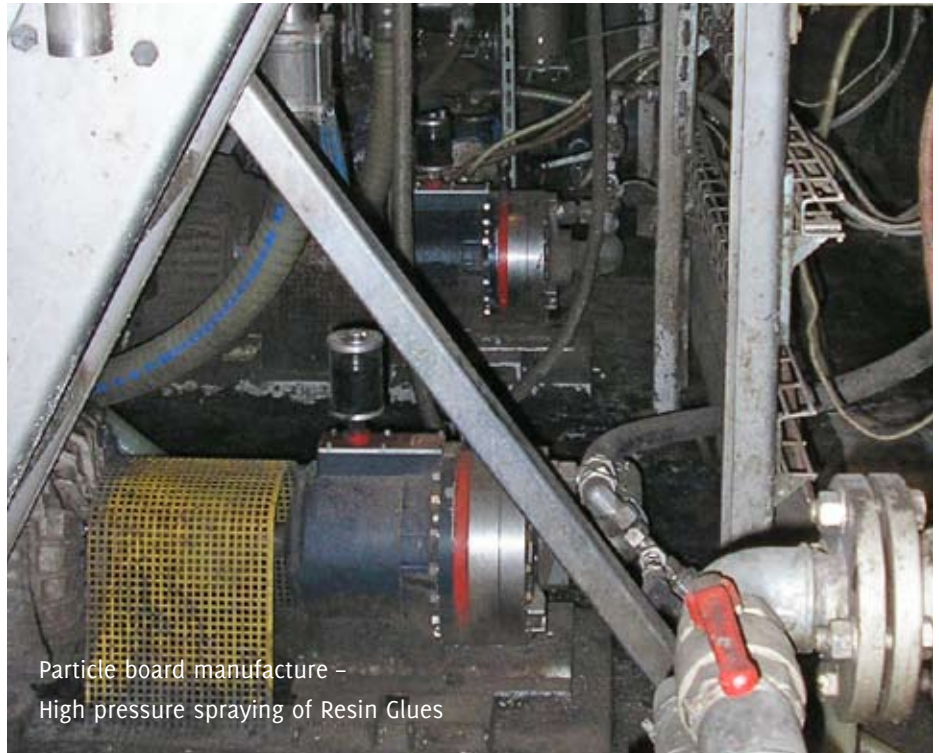
**Hydra-Cell®**  
Seal-less Pumping Technology

# Hydra-Cell<sup>®</sup>

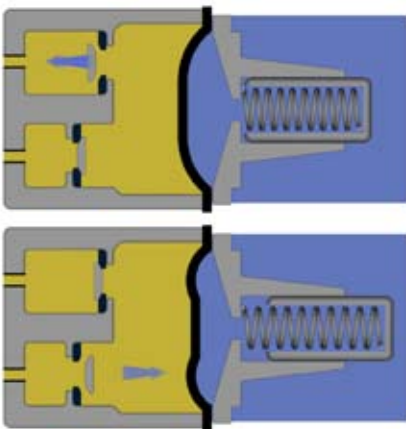
## advantages

Seal-less design distinguishes the Hydra-Cell<sup>®</sup> 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<sup>®</sup> 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

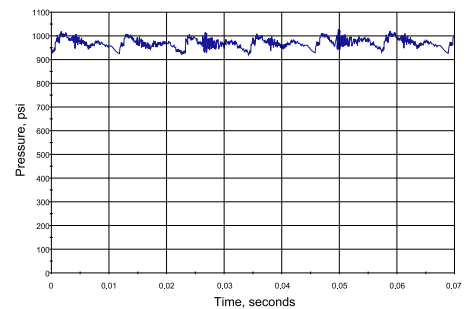
- Low cost of spare parts
- No tight tolerances or dead areas for resin to cure and harden in



### 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
- 316 Stainless Steel
- Duplex Stainless Steel
- Hastelloy<sup>®</sup>
- EPDM
- Viton<sup>®</sup>
- PTFE
- Polypropylene
- Kynar<sup>®</sup> PVDF

# Pump selection



Particle board manufacture –  
Dosing Ammonium Nitrate

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

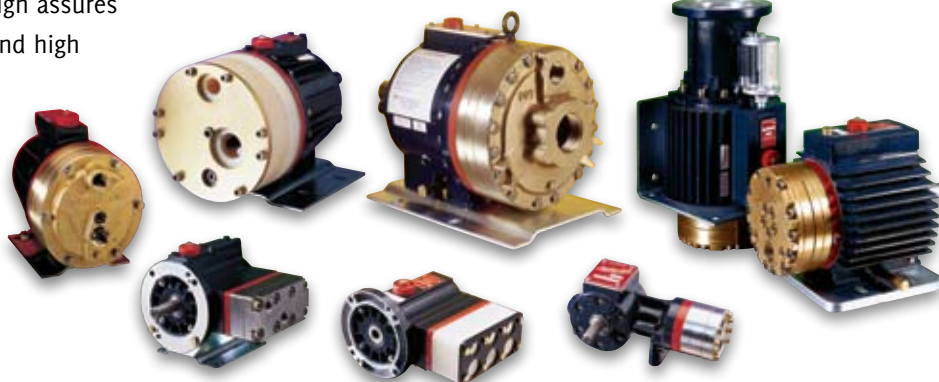
Hydra-Cell® 'G' series high pressure, heavy-duty pumps have proven performance and reliability in some of the toughest industrial equipment and process applications. The hydraulically-balanced diaphragm design assures dependability, long-life and high energy efficiency in a compact package.

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.

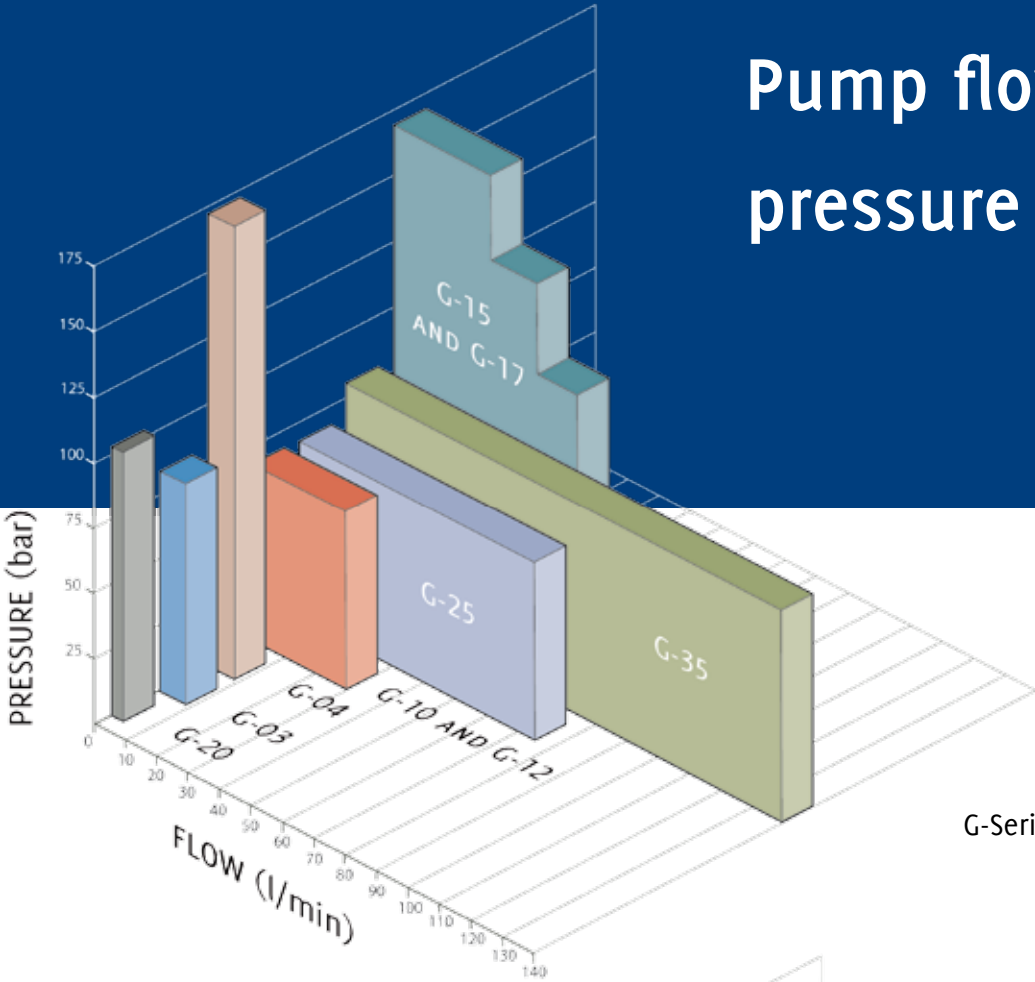
The modern design features of the Hydra-Cell®

pumps, lower acquisition costs when compared to ordinary metering pumps and its inherently simple yet elegant 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.

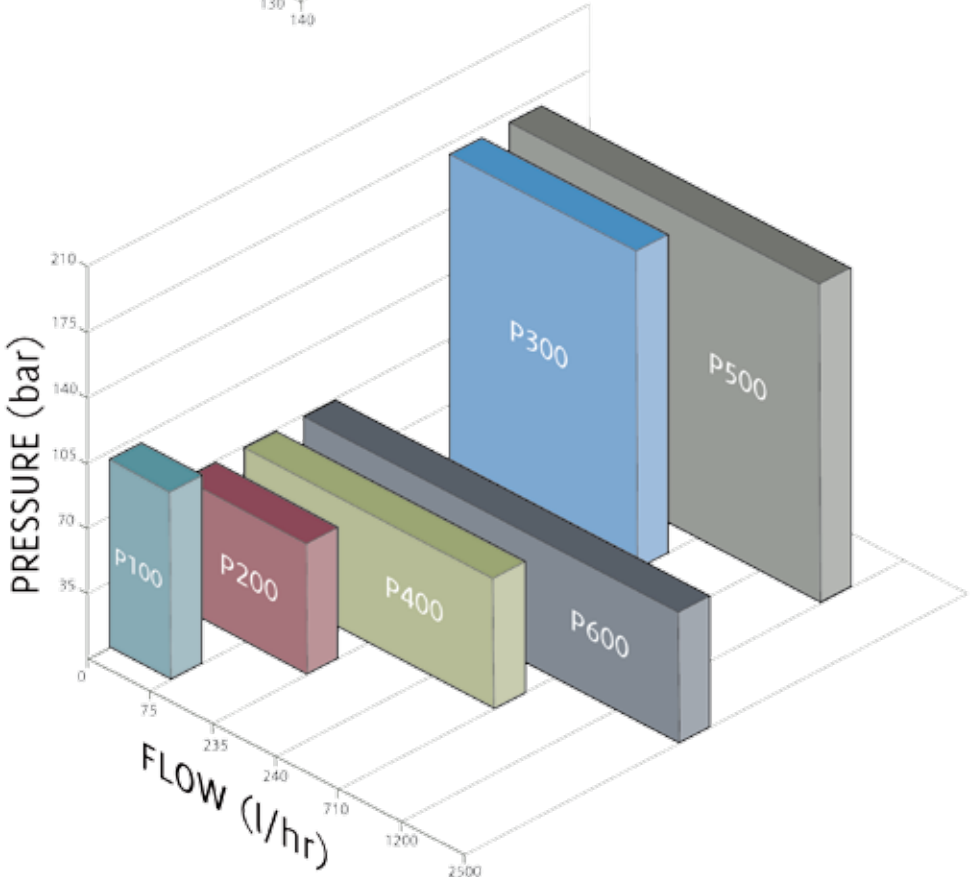


# Pump flow and pressure rates



G-Series Pumps

P-Series Pmps





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