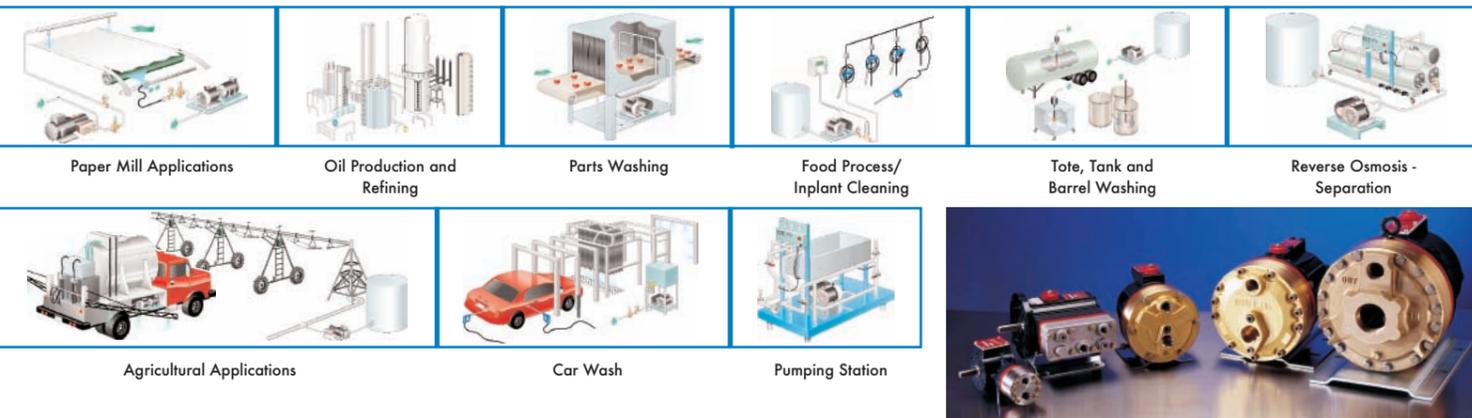


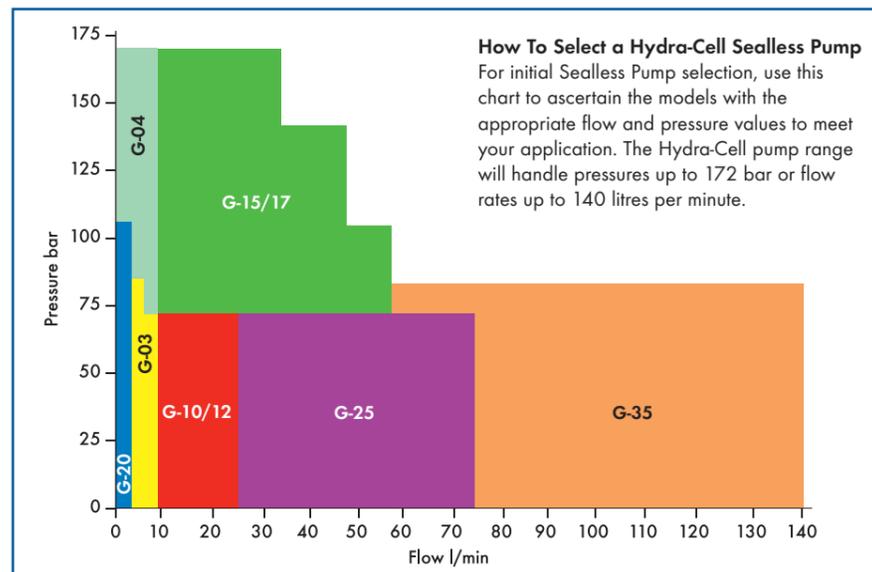
Hydra-Cell pumps for...



Pumping Matters

NOVEMBER 2006 ISSUE 03

Pump Selection chart



Accessories that make all the difference

Hydra-Cell pumps come with a range of accessories that make them even more effective in high pressure cleaning systems and ease the installation.

1 Safety bypass valves

C series Hydra-Cell valves bypass system fluid to prevent excess pressure build-up.

2 Air bleed valves

C80 bleed valves allow the pump to prime by quickly relieving the system of entrained vapours.

3 Motor adaptors

A wide range of Pump/motor adaptors for simple alignment and assembly.

4 Vertical configurations

Hydra-Cell G12 and G17 pumps are available in vertical configurations for use where footprint space is at a premium.

5 Surge suppression dampers

To remove pressure spikes and shocks from the system.



Welcome to this third edition of Pumping Matters. This issue is devoted totally to the topic of cleaning... a market area where the Hydra-Cell pump has met with enormous success because of its ability to do work with aggressive fluids and fluids with particles, its ability to 'run dry', its high efficiency and low power consumption.

As more of us experience drought conditions the use of recycled water becomes increasingly important in many cleaning applications. Not only does our Hydra-Cell pump handle 'dirty' water with ease; it offers operators considerable savings in other areas such as operating costs (maintenance and energy).

Drivers such as environmental issues and economic issues are forcing customers carrying out cleaning operations to re-evaluate their processes. Because of the unique characteristics of the Hydra Cell pump, it can help users meet these challenges.

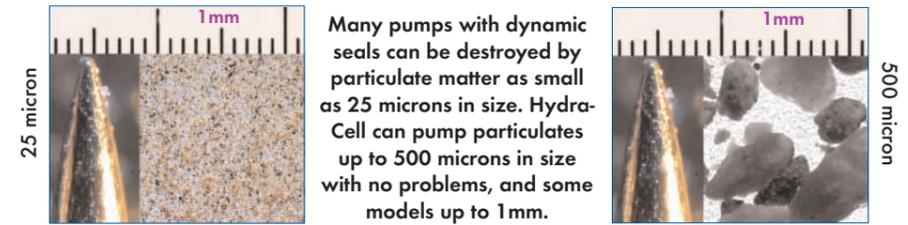
Paul Davis
Managing Director

Cleaning

Cleaning is a crucial activity in many industries. The trends in the market are fast becoming clear:

- 1 As water and other solvents become more costly or less available then recycling becomes the order of the day.
 - 2 As energy costs increase so the choice of pumping technology becomes more critical.
 - 3 To conserve energy, the use of more aggressive and effective cleaning fluids is increasing.
 - 4 In order to reduce the volume of fluids required, the use of higher-pressure, lower-flow systems that maintain or improve the 'cleaning impact' is increasing
- Each of these trends is 'good news' for the Hydra-Cell pump.

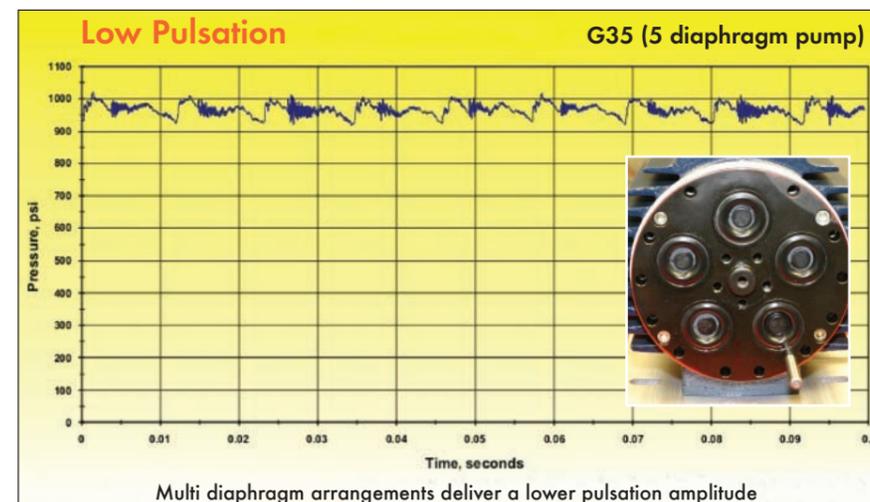
There are no pumps on the market more effective at handling recycled fluids and fluids containing particulate matter than Hydra-Cell.



Why should you choose Hydra-Cell?

- **Sealless Design** - The Hydra Cell has no dynamic seals, cups and packings. So aggressive fluids, non lubricating fluids, corrosive fluids and fluids with particles can be pumped. Unlike piston pumps and centrifugal pumps there is no maintenance to be done on seals, cups and packings.
- **Energy Efficient** - Hydra-Cell pumps operate at far higher levels of efficiency than multi stage centrifugal pumps commonly found in cleaning applications, saving energy costs.

Pump type	Q (l/min)	Pressure (Bar)	Absorbed power (KW)	Annual Euro saving using Hydra-Cell
Grundfos CRNE1-23 HS	29	40	5.62	122% more energy than the Hydra-Cell
Hydra-Cell G10	29	40	2.53	1,112 Euros



Notes:

- Efficiencies are from manufacturers published data sheets
- Annual cost savings are calculated using the following data
 - Average cost in Europe of electricity is 9 Euro cents per KW hour
 - Pump running for 4000 hours per year

• **"Run Dry"** - The Hydra Cell pump Seal-less design means that it does not need the pumped fluid to lubricate. So it can run dry all day without damaging the pump!!!

• **"Steady Low pulsing flow"** - In some cleaning applications, a steady low pulsing flow is critical. Hydra Cells unique multiple diaphragm design in a single pump head achieves this.



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Hatching Savings

Maple Leaf Hatcheries, a Canadian chicken hatchery was using individual pressure wash units in each of 5 rooms for cleaning work. High maintenance costs were incurred and the arrangement was not energy efficient and wasted water. Potential cross contamination prevented the use of portable units. A clean-in-place system was installed, based on the G15 pump feeding hand-held spray guns in each of the 5 locations.



The new system is energy-efficient and reduces wastage of power and water.



Pressure is maintained at 104 bar at each gun, no matter how many guns are in use at once. The system includes a C23 pressure regulating valve set to regulate outlet pressure to 104 bar, while a pressure transducer monitors line pressure. Pump speed and flow are matched to the capacity of the spray guns. As another gun is turned on, motor speed increases to the next setting (The output of the Hydra-Cell pump is precisely related to motor speed).

OEM settles on Hydra-Cell

CEB Impianti is a major Italian manufacturer of pressure washing systems. The Company has been using Hydra-Cell G10 and G25 pumps in its solvent systems since 2001. The pumps are usually cast iron/PTFE/ATEX and have been selected for their ability to handle a range of solvents at up to 40 bar pressure for the paint market.

Environmental and solvent cost pressures have encouraged CEB Impianti to use recycled fluid which caused high wear on the triplex piston pumps previously used. Hydra-Cell handles recycled fluids and particulate matter, up to 500 microns, easily.

Hydra-Cell pumps also feature prominently in the Company's machines for the food market where they pump hot water.



Customised Cleaning System with Recycled Water



CATAG, a Hydra-Cell distributor, was asked to design and produce a complete washing system to clean pipes after welding and before a coating process... for a fabrication plant in Egypt. The recycled water used is abrasive as it contains weld spatter particles up to 500 microns in size and had previously caused problems with centrifugal pumps. A Hydra-Cell pump with ceramic valves and seats handles the fluid well without undue wear.

In the 4 nozzle design, the pump pressure is controlled by sensing the pressure at the nozzles. By feeding this signal back to an inverter control, the pump speed can be controlled. (As the Hydra Cells flow is directly proportional to the pump speed, the flow and the pressure can be controlled accurately.) The cleaning is done at 80 bar with a flow rate of 80 lit/min and the results are both good and consistent.

Cleaning with Recycled Solvent

Recycling a tank-cleaning fluid can save both chemical cost and waste disposal cost - but the reclaimed liquid is not always easy to pump... Screen-printing ink manufacturer Sericol had relied on piston-type pumps to handle the recycled solvent used in its system for cleaning mixing vessels. But when the company installed a more efficient handling system these pumps were unable to handle the higher pressures required. Seal leakage became a serious problem.

Sericol solved it by replacing the piston pump with a Hydra-Cell. With its seal-less design and ability to handle abrasive solvents and solid particles, the Hydra-Cell pump has no trouble delivering recycled solvent to the rotating spray head at the required 50 bar pressure.

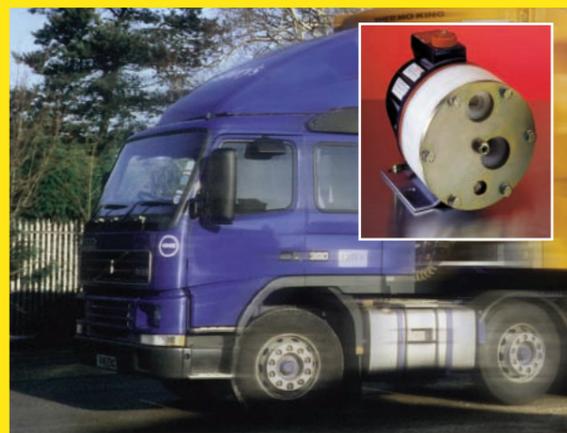
At that level the pump is working well within its pressure range. Uniform cleaning impact is ensured by the pump's low pulsation and smooth delivery. The customer also noted that the Hydra-Cell was much quieter than the original pumps, so there was no need for sound proofing. Another important saving was in maintenance. Requirements were minimal, whereas the leaking piston pumps needed frequent attention.



Cleaning Small Parts

A company refurbishing fuel injectors for trucks were using a cleaning system powered by a piston pump that was demonstrably incapable of handling the road dirt and grime that inevitably bypassed the filtration in the recycled water system. The pumps were being replaced under warranty every 5-6 weeks... expensive for the cleaner supplier and massively inconvenient for the customer.

A Hydra-Cell G10 pump was fitted as a replacement using the existing drive. Pumping hot dirty water (75°C) at 25 litres per minute, 8 - 10 hours a day five days a week, with zero maintenance, the Hydra-Cell proved itself to be the perfect solution. Some three years later the pump was still performing its task with great efficiency for one very happy customer.



CORROSIVE FLUIDS

RECYCLED SOLVENTS

CLEANING OEM

HIGH PRESSURE CENTRALISED CLEANING SYSTEM

CLEANING SOLUTIONS WITH HYDRA-CELL

ABRASIVE FLUIDS

HIGH RELIABILITY

RECYCLED WATER

HOT FLUIDS

ENERGY SAVING

A Fishy Story

A fishing fleet operator was experiencing short life from on-vessel plunger pumps used for cleaning. The fish cleaning and packaging operation takes place in the boat while at sea and operators must keep the cleaning and packaging area clean and can not afford downtime. High reliability is very important out at sea.

The short pump life was put down to the seawater it was pumping which had just enough abrasive materials in it to cause the failure. Screening and filtering the wash water had proven ineffective.

G10 Hydra-Cell pumps, with no cups, packings or seals to cause problems, handled the sea water and its minor debris with consummate ease.



Solving Food Hygiene Problems

In-plant cleaning in food processing is a particularly strict regime. Conveyors, storage vessels, digesters, dryers, in fact every piece of plant that could possibly come into contact with food needs to be cleaned and sanitised on a regular basis, either automatically or manually. These applications are ideally suited to the Hydra-Cell pump. A single G35 Food pump with a variable speed drive can supply many take-off points in an in-plant system. No other food pump can handle the hot fluids, detergents and caustic solutions as well as the Hydra-Cell. They meet the pressure and flow requirements but importantly have a reduced energy requirement.



Hydra-Cell Saves Money for Paper Mill

The Bäckhammar Paper Mill, at Kristinehamn, Sweden, used water pressure alone, generated by multi-stage centrifugal pumps, to clean filters of 'lime mud' generated in a white liquor recovery process. High energy and maintenance costs and an inability to achieve continuous working pressures of 50 bar encouraged managers to look for an alternative solution.

The Hydra-Cell G25 diaphragm pump recommended by pump specialists, AB Telfa, draws only 3kW of power (only 10% of that consumed by the Centrifugal pump). The G25 was also less expensive to acquire, has a smaller footprint, is easier and cheaper to maintain and generates pressures of 70 bar which make the cleaning process more efficient.

Ongoing servicing costs have been reduced, the initial investment has paid back in under a year and annual savings of SEK 60.7k (£3800-4500) will continue into the future.



Clean that Screen!

Nine model G10 Hydra-Cell pumps have been installed in a plant of a leading manufacturer of glass windscreens and windows. The pumps are part of a system for cleaning the glass pieces as they pass through a header.

Hydra-Cell pumps were selected primarily because of their ability to 'run dry', handle the reclaimed water and meet the required pressures and flow rates.





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