



WANNER HYDRA-CELL

The Cost-Saving Pumping Alternative

Wanner Hydra-Cell hydraulic diaphragm pumps are 'different'. Because of their seal-less design they can handle abrasives, solids in suspension, corrosives and non-lubricating liquids that would create regular maintenance for pumps with shaft seals and other components vulnerable to rapid wear. They can pump hot or cold liquids, viscous liquids, non-lubricating liquids such as ethanol, re-cycled liquids and slurries. They can run dry without damage.

They offer the cost benefits of simple construction and with efficiencies of 85% they can give significant cost savings compared with centrifugal pumps for example. Any given Hydra-Cell pump is easily controlled to deliver a wide range of flows, so that one model can cover many different requirements.

Applications range from process liquid transfer to high pressure cleaning and washing, reverse osmosis, waste water treatment and metering. Their design is so compact and flow so precise that on metering and dosing applications, for instance, a Hydra-Cell pump can match the strict accuracy standards of a much bigger and elaborately engineered traditional metering pump and deliver the same flow and pressure. This can save a pump user up to 30% on purchase price and yield further savings on repairs, routine maintenance and energy costs.

In March this year, an independent authority on process pumps, Dr.-Ing. Friedrich-Wilhelm Hennecke, presented the results of a comparative study of pump life cycle costs (LCC). The LCC of a pump is its total cost from purchase to scrapping, including elements such as repairs and energy consumption. It is one of Dr Hennecke's special interests. While still pump chief at BASF, he was co-editor of the landmark Guide to Pump Life Cycle Costs published jointly in 2001 by Europump and the Hydraulic Institute in the USA.

In his recent investigation, using detailed data supplied by the pump manufacturers themselves, he compared the Hydra-Cell with four other types of pump commonly used in processing applications – Centrifugal, Side-Channel, Peristaltic and Membrane-Piston. Within the 'considered range', which covered flow rates of 1.4, 4.2 and 8.4m³/hr and pressures of 5, 10, 50, 75 and 100 bar, the Hydra-Cell emerged as the most economic pump overall. And was not restricted by pressure considerations or the type of fluid it could handle

What lies behind the cost effectiveness and versatility of the Hydra-Cell pump?

No seals are necessary. It uses the principle of hydraulically balanced diaphragms, which not only flex to provide pumping action but also totally isolate the (hydraulic) drive end of the pump from the liquid that is being pumped. System pressure at all operating levels is balanced by the pressure of the hydraulic fluid, so that the diaphragms operate without stress. And Wanner's patented Kel-Cell technology keeps the diaphragms in balance even with adverse inlet conditions, such as a blocked suction filter or accidental closure of a valve.

Multiple diaphragms are incorporated in the same compact pump head. The diaphragms flex in sequence, and this operation gives the Hydra-Cell significant advantages. Pulsation is much lower, avoiding or reducing need for pulsation dampeners. The control system is greatly simplified and therefore less expensive.

Flow is constant irrespective of pressure. It is always directly proportional to shaft speed and can be varied instantly and very accurately by electronic means, using a frequency inverter.

Hydra-Cell pumps are available in a wide range of pump head and elastomer materials, and optional hydraulic fluids recommended for the drive end of the pump include FDA approved hydraulic oils. There is a choice of pump models offering max flow rates up to 140 l/min and pressures to 170 bar.



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