

Process Pumps Up To 3000 bar

Powerful

Heidelberg, 15th May 2007. The metering pump spectrum previously offered by Prominent has been complemented in the high-end range by powerful pump series. The hydraulic diaphragm and piston metering pumps of the Heidelberg-based company meet the most demanding requirements under rugged process conditions. The process metering pumps reliably convey corrosive, toxic and flammable media at high delivery rates even at high pressures and within a large temperature range.

With their robust design, Prominent process metering pumps are designed for reliable operation even under the harshest conditions.

Their modular design makes it possible to flexibly adapt the diaphragm, hydraulic diaphragm and piston metering pumps to given conditions in practical operations. Corresponding to requirements, the pumps can be used without any problem at very high pressures up to 3,000 bar and product temperatures ranging from -40 °C to +400 °C as well as they can be used for metering high to very high viscosity liquids. Even media with a dynamic viscosity of up to 1,000,000 mPas can be pumped reliably.

Operational Safety and Availability

Their rigid pressure characteristic ensures extremely accurate metering. For instance, API 675 confirms metering accuracies of 0.5 %. These specifications of the American Petroleum Institute are considered to be some of the most important guidelines in refineries and in the oil and gas industry. Long service life of the diaphragm and piston guarantees maintenance free operation with no disturbances. Hermetically sealed metering units and correspondingly resistant materials such as Teflon and stainless steel ensure

effective delivery of aggressive media. Prominent process pumps are self-priming even at considerable suction heads.

Applications

As metering pumps they effectively meet application requirements in the chemical, petrochemical, refinery as well as oil and gas production industries or the requirements for special metering pumps in the process industries.

In the oil and gas industry, these pumps are designed for metering various chemicals at the well. Also they can be used on rigs for metering inhibitors, methanol and additives. For transport and in refineries, all process metering pumps are suitable for metering inhibitors, drag reducers, additives, catalysts or pigments.

Process Pump Series

In terms of process pumps, a distinction is made between diaphragm, hydraulic diaphragm and piston metering pumps.

EXtronic

Prominent Extronic series diaphragm metering pumps are certified for use in sites with potentially explosive atmospheres in accordance with Zone 1, Group II as well as in EXBa S version for firedamp atmospheres in mine construction.

Sigma Diaphragm Metering Pump

The Sigma motor-driven piston metering pumps are available in the basic version without their own internal electronics and as a microprocessor version for fast and reliable adaptation to varying metering tasks. The pumps are equipped with the Profibus DP interface.

Hydro/ 2 and Hydro/ 3 Hydraulic Diaphragm Pumps

The two hydraulic diaphragm pumps Hydro/ 2 and 3 provide the optimum solution in the lower output range up to 100 bar. They can be flexibly combined as a single-head pump, double-head pump or multiple station. In the standard version with multi-layer safety diaphragm and integrated overflow valve, the pump meets the highest safety requirements.

Makro TZ Diaphragm, Hydraulic Diaphragm, Piston Metering Pumps

Makro TZ metering pumps are the most effective modular solution for any application. They are available as simple, mechanical diaphragm pumps, as high-tech hydraulic diaphragm pumps or highly robust piston metering pumps for the low pressure range up to 10 bar. Plastic materials that are highly resistant to chemicals ensure trouble-free metering of aggressive chemical media.

Makro/ 5 Diaphragm, Hydraulic Diaphragm, Piston Metering Pumps

The Makro/ 5 pump series of high-performance metering pumps is available for a vast range of applications. The pump comes in three variants: As a mechanical diaphragm pump, high-tech hydraulic diaphragm pump and as a highly robust piston pump.

Modular expansion of the basic version is possible to produce double-head pumps or a series-connected multiple station.

Orlita MF Hydraulic Diaphragm Pump

The Orlita MF series of metering pumps is based on modular design and essentially consists of the function groups: drive, crank drive and delivery unit. The hydraulic diaphragm delivery unit is equipped with a PTFE double diaphragm system, including an integrated rupture signalling facility. An integrated overflow valve protects the pump from overloading. The pumps feature an extraordinarily high intake capacity (up to 8 m suction head).

They guarantee trouble-free operation with internal overfill and diaphragm protection and the valveless, virtually wear-free intake facility.

Orlita MH Hydraulic Diaphragm Pump

In the same way as the MF series, the Orlita MH hydraulic diaphragm pump is also extremely flexible in use and is designed for high pressures up to 3,000 bar. To ensure maximum operational safety and reliability, the pump heads are equipped with double stainless steel diaphragms. Additional features include extremely low wear operation and installation of the pump heads without the need for special tools. An overflow valve and the automatic vent valve for the hydraulic chamber are integrated in the pump head. The valveless forced intake for hydraulic leakage operates wear-free and guarantees optimum metering accuracy.

Meta Piston Metering Pump

The ProMinent Meta is designed as a sturdy, reliable, modular motor-driven piston metering pump. With add-on pumps, it can be expanded to a multiple pump with increased output. With its high reproducibility rate of $\pm 0.5\%$, the pump guarantees the highest process quality.

Orlita PS Piston Metering Pump

The Orlita PS series of piston metering pumps is particularly convincing with its high degree of hydraulic efficiency together with outstanding self-cleaning properties and low pressure loss. The PS pumps can be used in a wide temperature range from $-40\text{ }^{\circ}\text{C}$ to $+400\text{ }^{\circ}\text{C}$ and are maintenance-friendly, cost-effective and robust.

The piston packing can be tightened during operation by means of the tightening screw arranged on the end face.

Orlita DR Valveless Piston Metering Pump

The Orlita DR piston metering pump is equipped with a valveless-operating piston head. Its operating principle is based on the superimposed oscillating and rotating piston movement. In this way, the displacement piston effectively opens and closes the intake and delivery side. This means the pump requires no valves and can be operated in a broad stroke rate spectrum. The valveless functional principle enables extremely accurate metering of high to very high viscosity medium (up to 1.000.000 mPas). Even liquids containing solids are no problem for the valveless piston metering pumps. Products with a temperature ranging from $-40\text{ }^{\circ}\text{C}$ to $+400\text{ }^{\circ}\text{C}$ can be delivered infinitely variable from 0 – 100 %.

Table:

Output ranges of ProMinent process metering pumps:

Process pump series	Delivery rate l/h	At max. backpressure bar
Diaphragm process metering pumps		
EXtronic	0.23 - 60	25 – 1.5
Makro TZMb (mechanical diaphragm pump)	260 - 2100	12 – 4
Makro M5Ma (mechanical diaphragm pump)	1540 - 4000	4
Hydraulic diaphragm process metering pumps		
Hydro/ 2	3 - 72	100 - 25
Hydro/ 3	10 - 180	100 - 25
Makro TZHa (mechanical diaphragm pump)	300 - 1200	16 – 10
Makro M5Ha (mechanical diaphragm pump)	450 - 6000	25 – 6
Orlita MF	2 – 28,000	700 - 9
Piston process metering pumps		
Sigma/ 2	1.9 - 64	320 – 12
Meta	6.1 – 49.3	216 - 52
Makro TZKa (piston metering pump)	8 – 1141	320 - 11
Makro M5Ka (piston metering pump)	38 – 6000	320 - 6
Orlita Mh	1 – 773	Up to 900 bar (special version up to 3000 bar)
Orlita PS	1 – 37,000	400 - 8
Orlita DR	1 – 4000	400 - 4