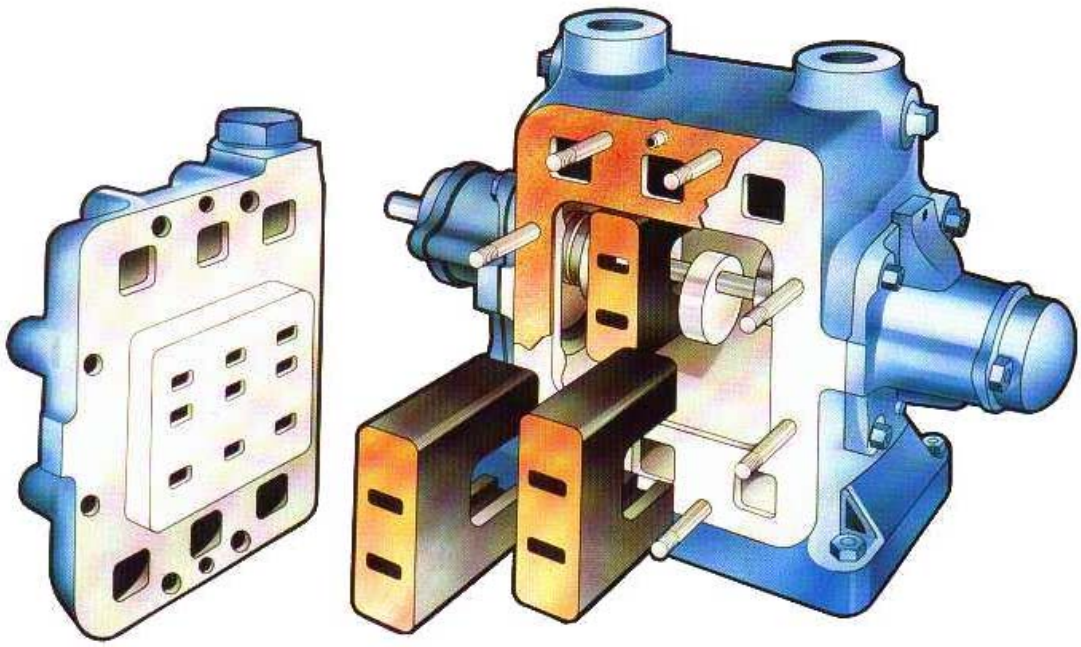
MEGATOR

Pumping & Pollution Control Solutions

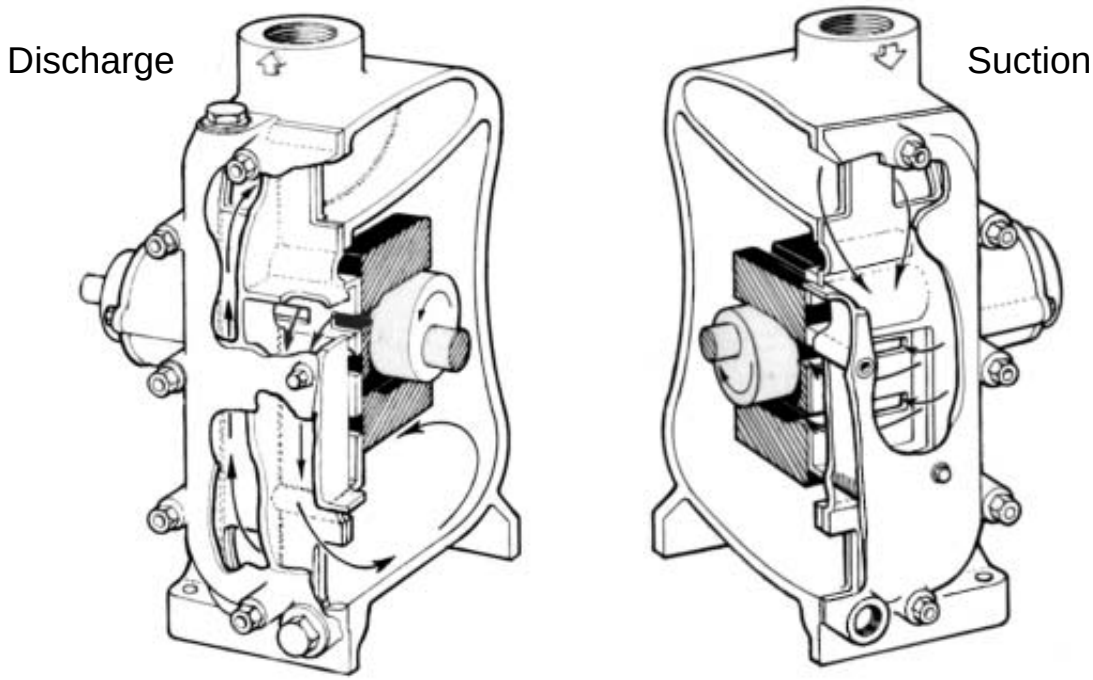
Sliding Shoe Pump



The Megator positive displacement sliding-shoe pump provides exceptional suction performance, versatility, and the ability to pump at constant capacity against heads to 75 metres. It can run without harm during dry suction, is self compensating for wear, has a simple design with few working parts and single cover access. It might be said to resemble a piston pump, and it has indeed all the well known merits of that type - powerful suction and self priming, constant capacity at varying heads, the ability to cope with rough conditions and to handle a great variety of liquids, viscous or free flowing, clean or dirty. Yet in its simplicity, compactness and even flow it more closely resembles the centrifugal pump. It thus combines the advantageous features of both these two main pump types without their respective limitations.

How The Pump Works

Pumping action is derived from the rotation of three or more eccentric discs, each of which is closely fitted into a displacement chamber (shoe). The eccentric movement of each disc comprises horizontal and vertical components. The horizontal motion provides displacement, the disc reciprocating in the shoe like a piston in a cylinder. The vertical motion controls the entry and discharge of the liquid through the pump.



When the pump is started, a hydraulic pressure differential is created which ensures a tight seal and maintains the shoes in close contact with a flat portplate forming the division between the suction and discharge sides of the pump. The plate has ports opposite each shoe respectively leading from the suction branch and into the discharge side of the pump. During the suction stroke, liquid passes down through the main cover and is drawn into the shoes through the suction ports in the plate. During the discharge stroke, the liquid then passes down through the main cover into the bottom of the pump body before flowing through another passage in the main cover to the discharge branch. This arrangement helps to scavenge the bottom of the pump body and prevent the accumulation of solids. The outstanding performance of the pump does not depend upon fine clearances.

Pump Comparison

Due to the fact that the Megator sliding-shoe pump is a unique design, we are frequently asked by our customers as to why they should install the sliding-shoe pump. Below is a comparison of the sliding-shoe pump against three main pump types.

Piston & Plunger Pumps

The absence of valves ensures greater reliability and easier maintenance.

Weight and space occupied are a fraction of that of a piston or plunger pump of equivalent rating.

The elimination of gearing and crank mechanism saves lubrication and maintenance.

Shock and vibration in pipelines are avoided by the smooth flow of the sliding-shoe pump.

Gear, Vane, Screw & Progressive Cavity Pumps

Effective pumping and self-priming in the sliding-shoe pumps are not dependent on fine fits or clearances.

Positive seating and self compensation for wear enable them to keep going under condition too severe for ordinary rotary positive pumps.

Sliding-shoe pumps are not confined to liquids having recognised lubricating or sealing properties, as they work with equal efficiency and length of life on water and similar “non-lubricating” liquids.

Sliding-shoe pumps will run for long periods with a completely dry suction without overheating or damage.

Centrifugal Pumps

Self-priming of the sliding-shoe pump is spontaneous, without the use of any added priming device, and is completely reliable, even when the pump is in an old and worn condition.

Small seepages can be dealt with continuously, and any increased flow up to the full capacity of the pump is instantly picked up. The last drop can be sucked out of a container.

Very high suction lifts and long suction lines can be handled reliably without reduction in capacity. Entrapped air presents no difficulty.

Quantity pumped at a given speed, instead of falling away rapidly with increase in head, is practically constant at all heads and suction lifts within the range of the pump.

A sliding-shoe pump cannot overload the motor as a result of reduced head, and for this reason smaller motors can generally be used.

Sliding-shoe pumps have high efficiency over a wide range of heads and not merely at or near a single “duty point”.

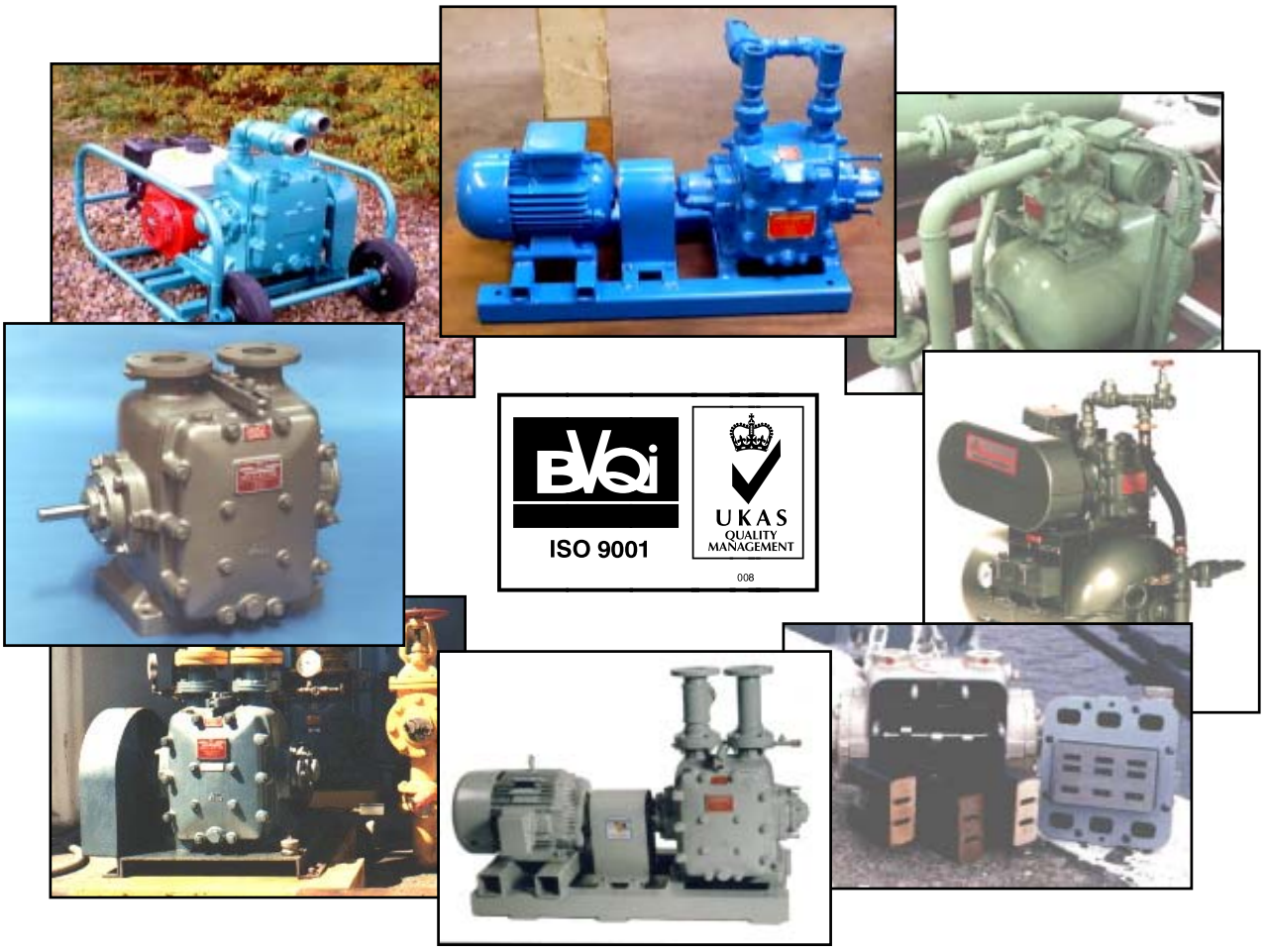
A sliding-shoe pump at a given speed will work efficiently, and give the same capacity, with liquids of very low or very high viscosity.

Benefits

- Self-priming
- Operates with dry suction
- Simple to install
- High suction lift
- Constant capacity at varying heads
- Single cover access
- Simple to operate
- Self compensating for wear
- The same pump for water and oils
- Remove the last drop from containers
- Minimal shear/emulsification

Features

- Capacities up to 60m^3/hr
- Suction lifts up to 8.2m
- Viscosities up to 5000cSt
- Heads up to 75m
- Available in bronze, cast iron & Aluminium casings
- Air, diesel, electric, hydraulic or petrol driven
- Variable speed inverter control
- Direct coupled or belt drive options
- Available assemblies include stationary, skid-mounted & mobile options.



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