



Email : sales@laboratoryinstrumentindia.com

Product Name :
Experiments With A Piston Pump

Product Code :
LBNY-0005-103000101



Description :

Piston pumps are used when high pressures are to be generated. The flow rate of piston pumps is independent of the head and is determined only by speed. Its good suction performance is outstanding. Piston pumps belong to the group of positive displacement pumps. They transport the medium by a reciprocating motion of a piston in the pump working space, called stroke. The stroke creates a suction respectively vacuum effect used to deliver the water. The pulsating pressure curve of the pump can be damped with the aid of the air vessel. Flow rate and head are adjusted via needle valve and overflow valve. The experimental unit is fitted with sensors for pressure and flow rate. The cycle that takes place (intake and discharge of water) can be shown clearly in the p-V diagram. The position of the piston rod is measured by an angle sensor. This allows the determination of the cylinder volume. One pressure sensor measures the pressure at the outlet of the pump, another one measures the pressure in the inside of the cylinder.

Technical Specification :

Functioning and operating behaviour of a piston pump
Pulsation damping of the delivery pressure using air vessel with bleed valve
Sensors for pressure on delivery side and in the cylinder of the pump, flow rate and crank angle
Transparent housing for observing the pump piston
Microprocessor-based measuring technique
Overflow valve for adjusting the head
Closed water circuit contains piston pump with variable speed via frequency converter, transparent water tank and air vessel
Needle valve for adjusting the flow rate.



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