Operating principle of a suction and pressure pump

Object of the experiment

1. Demonstrating the method of operation of a suction and pressure pump

Setup

Evaluation

When the piston is pulled upwards, an underpressure arises in the cylinder of the pump. Due to the outside air pressure, water is pressed through the suction valve into the cylinder.

When the piston is pushed down, an overpressure arises in the cylinder of the pump. As a result, the suction valve is closed.

The water in the cylinder runs through the delivery valve into the tube attached to the pump.

When the piston is pulled upwards again, the delivery valve is closed and suction is started again.

The process can be continued until all of the water has moved from the tank into the Erlenmeyer flask.

Apparatus

1 Suction and pressure pump	375 111
1 Pneumatic tank	664 194
1 Erlenmeyer flask, Boro 3.3, 250 ml, narrow neck	664 250
1 Silicone tubing, 7 mm diam., 1 m	604 433
1 Connector, straight, 8 mm diam., 10 pieces	665 222ET10
1 Colouring, red, 10 g	309 42
1 Stand base, V-shape, large	300 01
1 Stand rod, 47 cm, 12 mm diam.	300 42
2 Leybold multiclamps	301 01
2 Universal clamps, 0…80 mm	666 555

Carrying out the experiment

- Slowly pull the piston of the pump upwards, and then push it down again.
- Observe the suction valve, the delivery valve, and the water flow in the pump.
- Repeat the procedure several times.

KR 208

LEYBOLD DIDACTIC GMBH · Leyboldstrasse 1 · D-50354 Hürth · Phone (02233) 604-0 · Fax (02233) 604-222 · e-mail: info@leybold-didactic.de