

Title (en)  
PISTON PUMP

Title (de)  
KOLBENPUMPE

Title (fr)  
POMPE A PISTON

Publication  
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Application  
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Abstract (en)  
[origin: WO2005003559A1] The invention relates to a piston pump whose piston (4), via its upper and lower piston faces, delimits the working space inside the pump cylinder (5) on both sides. The working space (c) is joined via a lever system (19, 22, 25, 28, 31) to two force-guided inlet valves (14, 16) and two force-guided outlet valves (10, 12) that each alternately open and close for filling or discharging the working volume upon reaching both final positions of the piston. An additional working volume, which is reduced by the volume portion of the piston rod, is obtained by the piston being acted upon twice per working stroke as described by the invention thus nearly doubling the efficiency and resulting in a delivery flow with few pulsations. A small residual pulsation remains only from the short period of time during which the valves change from open to closed upon reaching both end positions of the piston inside the cylinder. According to the invention, the design of the piston pump makes it possible for two or more piston pumps to be synchronously operated by coupling their drive levers (31, 40) to a common piston rod (35) and that, in doing this, different stroke lengths can be set by modifying the lever ratios.

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