

Title (en)  
PISTON PUMP FOR HIGH-PRESSURE FUEL GENERATION

Title (de)  
KOLBENPUMPE ZUR KRAFTSTOFFHOCHDRUCKERZEUGUNG

Title (fr)  
POMPE A PISTON POUR CARBURANT SOUS HAUTE PRESSION

Publication  
**EP 1141539 B1 20050223 (DE)**

Application  
**EP 99963253 A 19991116**

Priority  
• DE 9903643 W 19991116  
• DE 19860672 A 19981229

Abstract (en)  
[origin: DE19860672A1] High-pressure piston pump (6) with several pump elements (7) that is connected to a low-pressure flow-regulated pump (1) on the suction side. A first and a second check valve (10, 11) are connected in series to each pump element (7) on the suction side. The first check valve (10) opens against the force of a spring during the suction phase of the pump element (7) and closes during the delivery phase. The second check valve (11) opens against the force of a spring and closes assisted by the force of a spring when the fuel delivered by the pump (1) reaches pressures that are higher than the negative pressure generated in a cylinder chamber (9) of the pump element (7). The second check valve (11) regulates the amount of fuel delivered to the pump element (7). The first check valve (10) blocks the cylinder chamber (9) from the check valve (11) during the delivery phase. The piston pump ensures generation of high pressure fuel in fuel injection systems in internal combustion engines, especially in a common rail injection system.

IPC 1-7  
**F02M 59/06**; **F04B 53/10**; **F02M 39/00**; **F02M 37/04**

IPC 8 full level  
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