

Title (en)  
High pressure piston cylinder unit

Title (de)  
Hochdruck-Kolbenzylindereinheit

Title (fr)  
Unité cylindre-piston haute pression

Publication  
**EP 1234975 A3 20040811 (DE)**

Application  
**EP 02405048 A 20020128**

Priority  
• EP 02405048 A 20020128  
• EP 01810197 A 20010226

Abstract (en)  
[origin: EP1234975A2] The high pressure piston/cylinder unit (1), and especially in the fuel pump for an internal combustion motor, has at least two lateral grooves (2c,2d) at the piston (2) or the cylinder drilling (3a), spaced apart in the piston sliding direction (V). The first groove (2c) gives a fluid flow connection with the fuel feed (3b) through a connecting channel (2b). The second groove (2d) gives a fluid flow link to the low pressure end (3d) through a connecting channel (2f). The lateral grooves are separated by a sealing length (D), which is shorter than the piston stroke length (F).

IPC 1-7  
**F02M 59/44**

IPC 8 full level  
**F02M 59/44** (2006.01); **F02M 59/00** (2006.01); **F02M 59/26** (2006.01); **F02M 63/00** (2006.01); **F04B 53/08** (2006.01); **F04B 53/14** (2006.01); **F04B 53/18** (2006.01)

CPC (source: EP KR)  
**F02M 59/44** (2013.01 - EP KR); **F02M 63/0001** (2013.01 - EP)

Citation (search report)  
• [DA] WO 8910479 A1 19891102 - HEI TECH BV [NL]  
• [A] WO 8911035 A1 19891116 - HEI TECH BV [NL]  
• [A] AT 307808 B 19730612 - FRIEDMANN & MAIER AG

Cited by  
DE102007019909B4; EP1881191A3; DE102006016702A1; DE102006040468A1; DE102015016314A1; DE102007019909A1;  
DE102014010718A1; DE102014010718B4; US8382458B2; WO2015120930A1; EP1881189B1; EP2743492A1; DE102012223334A1

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