

Title (en)  
VALVE FOR CONTROLLING LIQUIDS

Title (de)  
VENTIL ZUM STEUERN VON FLÜSSIGKEITEN

Title (fr)  
SOUPAPE POUR COMMANDER LE PASSAGE DE FLUIDES

Publication  
**EP 1135594 B1 20041201 (DE)**

Application  
**EP 00974319 A 20000914**

Priority  
• DE 0003200 W 20000914  
• DE 19946840 A 19990930

Abstract (en)  
[origin: WO0123744A1] The invention relates to a valve for controlling liquids said valve having a piezoelectric actuator (3) for operating a valve member (2) which at one end has a valve closing member forming a valve head (7) cooperating with a seat (8) mounted on a valve body (6) for opening and closing the valve (1). A hydraulic chamber (21) is provided on the side of the piezoelectric actuator (3) opposite the valve member (2) which is connected via at least one hydraulic line (23) to a bore (5) of said valve member (2) that is sealed in comparison with said piezoelectric actuator (3) and can be dipped into a cylinder (20) connected to said piezoelectric actuator (3). The hydraulic chamber (21) is formed as a hydraulic spring. The spring force acting on the cylinder (20) connected to the piezoelectric actuator (3) creates a prestress element and a tolerance compensation element. Said valve is in particular provided as a component of a fuel injection valve.

IPC 1-7  
**F02M 45/04**; **F02M 47/02**; **F02M 59/46**

IPC 8 full level  
**F02M 47/00** (2006.01); **F02M 45/04** (2006.01); **F02M 47/02** (2006.01); **F02M 51/00** (2006.01); **F02M 59/46** (2006.01); **F02M 61/16** (2006.01); **F02M 61/20** (2006.01); **F16K 31/02** (2006.01)

CPC (source: EP US)  
**F02M 47/027** (2013.01 - EP US); **F02M 63/0026** (2013.01 - EP US); **Y10S 137/906** (2013.01 - EP US)

Designated contracting state (EPC)  
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)  
**WO 0123744 A1 20010405**; AT E283973 T1 20041215; CZ 20011881 A3 20020417; DE 19946840 A1 20010503; DE 50008830 D1 20050105; EP 1135594 A1 20010926; EP 1135594 B1 20041201; JP 2003510507 A 20030318; KR 20010101060 A 20011114; US 6502803 B1 20030107

DOCDB simple family (application)  
**DE 0003200 W 20000914**; AT 00974319 T 20000914; CZ 20011881 A 20000914; DE 19946840 A 19990930; DE 50008830 T 20000914; EP 00974319 A 20000914; JP 2001527102 A 20000914; KR 20017006491 A 20010524; US 85683701 A 20010525