

Title (en)
HIGH-PRESSURE PUMP, IN PARTICULAR FOR A FUEL-INJECTION DEVICE OF AN INTERNAL COMBUSTION ENGINE

Title (de)
HOCHDRUCKPUMPE, INSBESONDERE FÜR EINE KRAFTSTOFFEINSPRITZEIN RICHTUNG EINER BRENNKRAFTMASCHINE

Title (fr)
POMPE A HAUTE PRESSION, NOTAMMENT POUR UN SYSTEME D'INJECTION DE CARBURANT DE MOTEUR A COMBUSTION INTERNE

Publication
EP 1697636 B1 20071114 (DE)

Application
EP 04786760 A 20040914

Priority
• DE 2004002039 W 20040914
• DE 10355027 A 20031125

Abstract (en)
[origin: WO2005052367A1] The invention relates to a high-pressure pump comprising at least one pump element (32) with a pump piston (34), the latter delimiting a working pump chamber (38) and being indirectly driven by means of a drive shaft (12) so that it performs a lifting displacement against the force of a restoring spring (68). The pump piston (34) is supported at least indirectly on the drive shaft (12) by means of a sleeve-type tappet (60) and the restoring spring (68) engages at least with the pump piston (34). A supporting element, which supports the pump piston (34) in the direction of the drive shaft (12), is inserted in the tappet (60) and is supported in turn at least indirectly on said drive shaft (12). The restoring spring (68) engages with the pump piston (34) and the tappet (60) by means of a spring retainer (66). The spring retainer (66) is elastically deformable in the direction of the pump piston (34) in such a way that any positional deviations of its surfaces (56;64) that are in contact with the pump piston (34) and the tappet (60) are compensated.

IPC 8 full level
F04B 1/04 (2006.01); **F02M 59/06** (2006.01); **F02M 59/10** (2006.01); **F02M 59/44** (2006.01); **F04B 1/053** (2006.01)

CPC (source: EP US)
F02M 59/06 (2013.01 - EP US); **F02M 59/102** (2013.01 - EP US); **F02M 59/44** (2013.01 - EP US); **F04B 1/0439** (2013.01 - EP US)

Designated contracting state (EPC)
DE FR IT

DOCDB simple family (publication)
WO 2005052367 A1 20050609; CN 100422551 C 20081001; CN 1886594 A 20061227; DE 10355027 A1 20050623;
DE 502004005537 D1 20071227; EP 1697636 A1 20060906; EP 1697636 B1 20071114; JP 2006528744 A 20061221; JP 4243630 B2 20090325;
US 2007071620 A1 20070329; US 7308849 B2 20071218

DOCDB simple family (application)
DE 2004002039 W 20040914; CN 200480034753 A 20040914; DE 10355027 A 20031125; DE 502004005537 T 20040914;
EP 04786760 A 20040914; JP 2006521393 A 20040914; US 57984604 A 20040914