

Title (en)  
FUEL INJECTION DEVICE FOR AN INTERNAL COMBUSTION ENGINE

Title (de)  
KRAFTSTOFFEINSPRITZEINRICHTUNG FÜR EINE BRENNKRAFTMASCHINE

Title (fr)  
DISPOSITIF D'INJECTION DE CARBURANT POUR UN MOTEUR A COMBUSTION INTERNE

Publication  
**EP 1599668 A1 20051130 (DE)**

Application  
**EP 03773513 A 20031013**

Priority  
• DE 0303394 W 20031013  
• DE 10307877 A 20030225

Abstract (en)  
[origin: WO2004076847A1] The invention relates to a fuel injection device comprising a high-pressure pump (10) which is used to deliver fuel into a tank (12) from which fuel is extracted for injecting into the internal combustion engine. A feed pump (22) is used to deliver fuel from a fuel reservoir (24) to the high-pressure pump (10). Said high-pressure pump (10) comprises a housing (30) provided with an inner chamber (31) in which a drive (32, 34) for at least one pump element (36) pertaining to the high-pressure pump (10) is arranged. Said pump element (36) comprises a pump piston (38) which is driven by a drive (32, 34) in a reciprocating motion and defines a pump working chamber (42) into which fuel is supplied through an admission (60) during a suction stroke of the pump piston (38), and out of which fuel is driven through an outlet (64), into the tank, (12) during a delivery stroke of the pump piston (38). The pump piston (38) moves towards the inner chamber (31) during the suction stroke, and moves away from the inner chamber (31) during the delivery stroke. The feed pump (22) delivers fuel into the inner chamber (31) by means of a connection (23) comprising a check valve (52) which is open towards the inner chamber (31) of the housing (30), and the admission (60) of the pump working chamber (42) is connected to the inner chamber (31).

IPC 1-7  
**F02M 59/08**; **F02M 59/06**; **F02M 37/04**; **F02M 63/02**

IPC 8 full level  
**F02M 59/08** (2006.01); **F02M 59/10** (2006.01); **F02M 63/02** (2006.01)

CPC (source: EP US)  
**F02M 59/08** (2013.01 - EP US); **F02M 59/102** (2013.01 - EP US); **F02M 63/0001** (2013.01 - EP US); **F02M 63/02** (2013.01 - EP US); **F02M 63/0225** (2013.01 - EP US)

Citation (search report)  
See references of WO 2004076847A1

Designated contracting state (EPC)  
DE FR IT

DOCDB simple family (publication)  
**DE 10307877 A1 20040902**; DE 50304406 D1 20060907; EP 1599668 A1 20051130; EP 1599668 B1 20060726; JP 2006514202 A 20060427; JP 4461026 B2 20100512; US 2006193736 A1 20060831; US 7850435 B2 20101214; WO 2004076847 A1 20040910

DOCDB simple family (application)  
**DE 10307877 A 20030225**; DE 0303394 W 20031013; DE 50304406 T 20031013; EP 03773513 A 20031013; JP 2004568633 A 20031013; US 54665505 A 20050824