

Title (en)

Two stage valve for air supply of injectors of internal combustion engines

Title (de)

Zweistufen-Ventil für die Zuführung von Luft zu den Einspritzventilen einer Brennkraftmaschine

Title (fr)

Vanne à deux étages pour l'alimentation en air d'injecteurs de moteur à combustion interne

Publication

**EP 0676543 B1 19980304 (FR)**

Application

**EP 95400735 A 19950403**

Priority

FR 9404018 A 19940406

Abstract (en)

[origin: EP0676543A1] The valve includes a valve body (10) inside of which a piston(25) is connected to an actuator(23) and stopped from moving by a stop (30). During a first movement of the piston (25) from its position applied against the seat (27) it cooperates with stops (19) fixed on another piston (15), so as to move the first piston (25) in a direction, such that the second piston (15) moves away from its applied position against the seat (14). The actuator (23) regulates the flow of air by a first output (31) towards the air assisted injectors by regulating the position of the first piston (25) during its first movement. <IMAGE>

IPC 1-7

**F02M 69/32; F02M 3/07**

IPC 8 full level

**F02M 23/04** (2006.01); **F02D 9/14** (2006.01); **F02M 3/07** (2006.01); **F02M 59/46** (2006.01); **F02M 69/00** (2006.01); **F02M 69/04** (2006.01);  
**F02M 69/08** (2006.01); **F02M 69/32** (2006.01)

CPC (source: EP US)

**F02M 3/075** (2013.01 - EP US); **F02M 69/08** (2013.01 - EP US); **F02M 69/32** (2013.01 - EP US)

Cited by

EP1384873A4; KR20030030696A; EP1384874A4; WO9730285A1

Designated contracting state (EPC)

DE ES GB IT SE

DOCDB simple family (publication)

**EP 0676543 A1 19951011; EP 0676543 B1 19980304**; BR 9501452 A 19951107; DE 69501671 D1 19980409; DE 69501671 T2 19981022;  
ES 2113716 T3 19980501; FR 2718490 A1 19951013; FR 2718490 B1 19960705; JP H0893605 A 19960409; US 5497746 A 19960312

DOCDB simple family (application)

**EP 95400735 A 19950403**; BR 9501452 A 19950405; DE 69501671 T 19950403; ES 95400735 T 19950403; FR 9404018 A 19940406;  
JP 7799095 A 19950403; US 41698095 A 19950405