

Title (en)

Control method and apparatus for variable discharge-type high pressure pumps

Title (de)

Verfahren und Vorrichtung zum Steuern einer Hochdruckpumpe mit variabler Durchflussrate

Title (fr)

Procédé et dispositif de commande d' une pompe à haute pression à débit variable

Publication

EP 1024282 B1 20040915 (EN)

Application

EP 00100854 A 20000117

Priority

- JP 2038899 A 19990128
- JP 35016899 A 19991209

Abstract (en)

[origin: EP1024282A2] A control valve (6a) and a check valve (4a) are provided from the upstream side in the middle of a flow passage leading from a low pressure pump (P1) to a pressure chamber (23a) which sucks low pressure fuel and pressure-feed it by its expansion and contraction of displacement. A variable discharge-type high pressure pump sucks fuel into the pressure chamber (23a) during a period until the control valve (6a) and the check valve (4a) are closed, when the displacement of the pressure chamber (23a) expands. The opening of the control valve (6a) is disabled if the pressure in an accumulation chamber is higher than a target pressure by more than a tolerance, so that air admixed in fuel from the low pressure pump (P1) is not allowed to flow into the upstream side of the check valve (4a). Thus, fuel excess condition in the pressure chamber (23a) which will be caused when the air expands due to lowering of pressure from a feed pressure after closing of the control valve (6a) and forces out fuel into the pressure chamber 23a is avoided, so that excessive pressure-feeding of fuel is prevented. <IMAGE>

IPC 1-7

F02D 41/38; F02M 59/06; F02M 59/36; F02M 63/02; F02M 55/00

IPC 8 full level

F02M 47/00 (2006.01); **F02D 41/38** (2006.01); **F02M 39/02** (2006.01); **F02M 41/14** (2006.01); **F02M 55/00** (2006.01); **F02M 59/20** (2006.01); **F02M 59/36** (2006.01); **F02M 63/02** (2006.01)

CPC (source: EP)

F02M 39/02 (2013.01); **F02M 41/1411** (2013.01); **F02M 41/1427** (2013.01); **F02M 59/366** (2013.01); **F02M 63/0225** (2013.01)

Cited by

DE102006000459B4

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

EP 1024282 A2 20000802; **EP 1024282 A3 20030514**; **EP 1024282 B1 20040915**; DE 60013657 D1 20041021; DE 60013657 T2 20050929; JP 2000282938 A 20001010; JP 3744290 B2 20060208

DOCDB simple family (application)

EP 00100854 A 20000117; DE 60013657 T 20000117; JP 35016899 A 19991209