

Title (en)  
CYLINDER PISTON DRIVE

Title (de)  
ZYLINDER - KOLBENTRIEB

Title (fr)  
COMMANDE DE PISTON DE CYLINDRE

Publication  
**EP 1485584 A1 20041215 (DE)**

Application  
**EP 03704222 A 20030117**

Priority  
• DE 0300120 W 20030117  
• DE 10210158 A 20020307

Abstract (en)  
[origin: WO03074844A1] The invention relates to a cylinder piston drive, particularly a hydraulically controlled actuator (1) actuating a gas exchange valve (2) of a combustion engine, comprising a control piston (8) which moves inside the cylinder (6) and delimits pressure chambers (10, 12) along with opposite ends (14, 16) of the piston. Said control piston (8) has several parts and comprises at least two partial pistons (18, 20), which are inserted into one another, are movable relative to each, and knock against each other at stop faces (36, 38). One pressure chamber (10) is delimited by all partial pistons (20), whereas the other pressure chamber (12) is delimited only by one part thereof. The displacement paths of the partial pistons (18) which do not delimit the other pressure chamber (12) are reduced compared with the total displacement path of the control piston (8). At least one stop face (36) is disposed on the cylinder (6), which a stop face (38) of one of the partial pistons (18) hits after completing the reduced displacement path. At least some of the stop faces that are assigned to each other are configured as conical surfaces (36, 38) which form a conical seat when knocking against each other, whereby the leakage volume flow is reduced by the control piston.

IPC 1-7  
**F01L 9/02**; **F01L 1/46**

IPC 8 full level  
**F01L 9/10** (2021.01); **F01L 1/46** (2006.01)

CPC (source: EP KR US)  
**F01L 1/46** (2013.01 - EP KR US); **F01L 9/10** (2021.01 - EP US)

Citation (search report)  
See references of WO 03074844A1

Designated contracting state (EPC)  
DE FR IT

DOCDB simple family (publication)  
**WO 03074844 A1 20030912**; DE 10210158 A1 20030918; DE 50309412 D1 20080430; EP 1485584 A1 20041215; EP 1485584 B1 20080319; JP 2005519217 A 20050630; JP 4335694 B2 20090930; KR 20040094435 A 20041109; US 2004154564 A1 20040812; US 6915731 B2 20050712

DOCDB simple family (application)  
**DE 0300120 W 20030117**; DE 10210158 A 20020307; DE 50309412 T 20030117; EP 03704222 A 20030117; JP 2003573273 A 20030117; KR 20047013912 A 20030117; US 47722703 A 20031106