

Title (en)  
VARIABLE DISPLACEMENT HIGH PRESSURE PUMP

Publication  
**EP 0234006 A3 19880107 (EN)**

Application  
**EP 86116392 A 19861126**

Priority  
US 81375085 A 19851226

Abstract (en)  
[origin: EP0234006A2] A variable displacement piston pump (10) including a plurality of axially aligned pumping cylinders (24) with a driven drive shaft (16) extending there between having a tiltable swash plate (30) disposed on one end of the drive shaft (16) for operating the pumping cylinders, and a reaction thrust plate (38) on the other end of the drive shaft (16), for providing reaction force in the drive shaft (16) opposite that provided by the swash plate (30). The pumping cylinders (24) feed a common manifold (52). A check valve (50) is disposed between each cylinder (24) and the common manifold (52) to ensure one way flow. Check valve (50) between cylinders (24) and the common manifold (52) also reduces pressure pulsations during pumping. The thrust plate (38) is formed with a centrifugal impeller opening (62) formed therein through which incoming fluid flows and its pressure is increased. A dummy piston (28) is provided in each cylinder (24) opposite the active pumping piston (26). The active piston (26) and the dummy piston (34) each include an opening there through which is exposed during an intake stroke so that fluid is admitted into both ends of the cylinder (24). After the intake stroke, the openings in both pistons (26, 28) are sealed and pumping action occurs.

IPC 1-7  
**F04B 1/14**; **F04B 1/28**; **F04B 1/16**; **F04B 13/00**

IPC 8 full level  
**F04B 1/20** (2006.01); **F04B 1/14** (2006.01)

CPC (source: EP)  
**F04B 1/14** (2013.01)

Citation (search report)

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Designated contracting state (EPC)  
DE ES FR GB IT

DOCDB simple family (publication)  
**EP 0234006 A2 19870902**; **EP 0234006 A3 19880107**; JP S62165585 A 19870722

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**EP 86116392 A 19861126**; JP 31611586 A 19861224