

Title (en)  
PUMP ASSEMBLY COMPRISING TWO HYDRAULIC PUMPS

Title (de)  
PUMPENANORDNUNG MIT ZWEI HYDROPUMPEN

Title (fr)  
ENSEMBLE DE POMPES COMPORTANT DEUX POMPES HYDRAULIQUES

Publication  
**EP 1141551 B1 20021016 (DE)**

Application  
**EP 99964582 A 19991216**

Priority  

- DE 19860155 A 19981224
- DE 19952167 A 19991029
- EP 9909995 W 19991216

Abstract (en)  
[origin: US6579070B1] A pump assembly which comprises a vane pump and a second hydraulic pump driven together with this vane pump. The vane pump has a suction region in which first pressure spaces between the vanes and second, rear pressure spaces behind the vanes become larger and a pressure region in which the pressure spaces become smaller and in which the pressure spaces are fluidically connected to a pressure outlet. This vane pump is intended particularly for supplying operating cylinders of a hydromechanical transmission of a motor vehicle with pressure fluid under relatively high pressure. The second hydraulic pump has positively driven displacement elements and is intended for supplying a circuit having a relatively low system pressure, in particular a lubricating-oil circuit of the motor vehicle, with pressure fluid. So that the vane pump also begins to deliver at low outside temperatures and with highly viscous pressure fluid even at low rotational drive speeds, the rear pressure spaces of the vane pump are connected in the suction region to the pressure outlet of the second hydraulic pump.

IPC 1-7  
**F04C 11/00**; **F04C 15/04**

IPC 8 full level  
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Cited by  
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**US 6579070 B1 20030617**; AT E226283 T1 20021115; EP 1141551 A1 20011010; EP 1141551 B1 20021016; WO 0039465 A1 20000706

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