Title (en)

VANE PUMP, ESPECIALLY FOR POWER STEERING

Publication

EP 0068035 B1 19860402 (DE)

Application

EP 81104981 A 19810626

Priority

EP 81104981 A 19810626

Abstract (en)

[origin: EP0068035A1] 1. Hydraulic vane pump especially for power steering comprising a) a housing (1, 2) to which a cam ring (5) is attached and which houses a pressure plate (4) and a rotor (7) which defines the axis of the pump, while leaving two working regions (11, 12) unoccupied, these regions (11, 12) being subdivided, by vanes (8), into cell spaces which, due to the rotor (7) being driven by a shaft (9), migrate for each of the working regions (11, 12) between first and second inlet openings (27, 28), located on different sides of the rotor, and outlet openings (31, 32) ; b) an inlet duct which leads to each working region (11, 12), this duct bifurcating, via a flow-distribution space (22), in the direction towards the first inlet opening (27) and the second inlet opening (28), each flow-distribution space including a radially outer zone and a radially inner zone, the radially outer zone leading to the second inlet opening (28) via a cam ring passage (25) and a flow reversing passage (26) ; c) on the rear face of the pressure plate (4), facing away from the rotor, the outlet openings (31, 32) leading from the working regions (11, 12) into a pressure space (35), the front face of the pressure plate (4), facing the rotor, being in sealing engagement with both the rotor (7) and the cam ring (5) ; and d) the inlet ducts being arranged essentially symmetrically with respect to one another, each inlet duct including a first admission duct portion (17a, 17b) and a second, knee-shaped admission duct portion (18a, 18b) which is provided with axial and radial limbs, the first admission duct portions (17a, 17b) lying in a plane running approximately perpendicular to the axis of the pump and the second admission duct portions (18a, 18b) extending in a plane containing the axis of the pump, their axial limbs opening into the flow-distribution spaces (22) while their radial limbs open into a valve space (19), from which the hydraulic fluid flows away when a valve (40) is actuated ; characterized in that e) the axial limb of each knee-shaped admission duct portion (18a, 18b) opens into an associated through-opening (20) which passes through the pressure plate (4), which is sealed relative to the pressure space (35) by means of circular seals (21) on the rear face of the pressure plate (4), and which houses one of the flow-distribution spaces (22), and in that f) the radially inner zone of each flow-distribution space (22) opens directly into the first inlet opening (27).

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F04C 15/02; F04C 15/00

IPC 8 full level

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