

Title (en)
SPEED-REGULATED PRESSURE EXCHANGER

Title (de)
DREHZAHLREGELBARER DRUCKAUSTAUSCHER

Title (fr)
ECHANGEUR DE PRESSION A VITESSE DE ROTATION REGLABLE

Publication
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Application
EP 05760599 A 20050714

Priority
• EP 2005007649 W 20050714
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Abstract (en)
[origin: WO2006015682A1] The invention relates to a pressure exchanger for the transfer of pressure energy from a first fluid in a first fluid system to a second fluid in a second fluid system, comprising a housing (8) with connector openings (10 - 10.3) in the form of inlet and outlet openings for each fluid and a rotor (1) arranged to rotate about the longitudinal axis thereof in the housing (8). The rotor (1) comprises a number of through channels (13) with openings (12) arranged around the longitudinal axis thereof on each rotor front face (2, 3), whereby the rotor channels (13) are connected for connection to the connector openings (10, 10.3) of the housing (8) through flow openings (11 - 11.3) on the housing side, such that, during rotation of the rotor (1), alternately fluid at high pressure and fluid at low pressure are introduced to the relevant system. A predominantly axially running flow transition is formed between the housing side flow openings (11 - 11.3) and the openings (12) of the rotor channels (13), whereby the housing side flow openings (11 - 11.3) form part of curved cavities (19), connected to the connector openings (10 - 10.3) and each cavity (19) simultaneously covers several openings (12) of the rotor channels (13). The cavities (19) have a shape which equilibrates the flow speed in the region of the housing side flow openings (11, 11.3) and the external surfaces (5 - 5.3) of the rotor (1) have an energy converting and/or energy transmitting form (6). A partial flow (TS) of high pressure and or flow energy impinging on the form (6) generates the rotor speed and regulation means (7) alter the amount of the partial flow (TS) and the speed of the rotor (1) and regulate the rotor speed to a speed suitable for an essentially smooth inlet of the mass flow into the rotor channels (13).

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Citation (search report)
See references of WO 2006015682A1

Citation (third parties)
Third party :
• US 2004052639 A1 20040318 - AL HAWAJ OSAMA M [KW]
• US 4887942 A 19891219 - HAUGE LEIF J [NO]

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