

Title (en)
GEAR RING PUMP

Title (de)
ZAHNRINGPUMPE

Title (fr)
POMPE À ENGRENAGES

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Application
EP 12746262 A 20120627

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Abstract (en)
[origin: WO2013007233A1] The invention relates to a gear ring pump, in particular for use in small pump assemblies which are preferably driven by an electric motor, which are produced as pump kits, and which are used in vehicle and engine construction. The aim of the invention is to develop a gear ring pump which can be used in pump assemblies with a small housing outer diameter, the pump control times of which can be easily modified with respect to the production process in accordance with the respective customer request, and which always ensures an optimal axial gap even when using very inexpensive assemblies, such as pump housings made of aluminum and impellers made of steel, even under the extreme use conditions of an oil pump in conjunction with an internal combustion engine. The gear ring pump according to the invention is characterized in particular in that the pump bearing (6) is arranged in the housing cover (5), and a port support (18) is mounted in the pump housing (1) between the impeller set (8) and the end wall (3) of the working chamber (2) in a movable manner in the direction of the driveshaft (7) such that the port support is prevented from rotating. The port support is equipped with a suction kidney (12) and a pressure kidney (13) which pass through the port support (18) separately from each other across the entire width of the port support (18), wherein the thickness of the port support (18) approximately matches the thickness of the impeller set (8) but can also project past the thickness of the impeller set by up to 20%. The thermal expansion coefficient of the port support (18) is approximately 70% to 120% greater than the thermal expansion coefficient of the pump housing (1). The driveshaft (7) which is rotationally fixed to the inner rotor (9) does not protrude into the port support (18) under any circumstance. The port support (18) is designed or coated so as to be wear-resistant at the end face adjacent to the impeller set (8), and/or a sheet metal slide (25) which is rotationally fixed to the port support is arranged between the impeller set (8) and the port support (18).

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