

Title (en)
CONTROLLABLE COOLANT PUMP

Title (de)
REGELBARE KÜHLMITTELPUMPE

Title (fr)
POMPE DE LIQUIDE DE REFROIDISSEMENT À RÉGULATION

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Application
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Abstract (en)
[origin: WO2010102604A1] The invention relates to a controllable coolant pump driven by a belt pulley for internal combustion engines in the form of a controllable axial pump. The aim of the invention is to develop a controllable coolant pump driven by a belt pulley for internal combustion engines in the form of a controllable axial pump, enabling active control of the amount of coolant delivered in order to ensure optimal heating of the engine by "zero leakage" and in order to precisely influence the engine temperature in steady-state operation after heating the engine so that both the pollutant emissions and the frictional losses and fuel consumption can be significantly reduced across the entire operational range of the engine, wherein the novel configuration is intended to transfer a high torque in a small amount of installation space, characterized by a very compact configuration that is simple to produce and assemble, low cost, and robust, and to prevent cavitation and turbulence in the delivery volume flow, and to ensure very long service life with high operational security and reliability even in the event of coolant having a high contamination load. The controllable coolant pump according to the invention is characterized in that a guide vane apparatus (8) is rotationally fixedly disposed in the pump housing (1), on which an outflow guide cone (14) having a ring land (15) is disposed in the direction of the flow outlet opening (3), wherein a piston valve working chamber (16) is disposed in the pump housing (1), into which the outflow cone (14) of the guide vane apparatus (8) extends, wherein an axial piston valve (22) disposed linearly displaceably, having an outflow guide contour (23), an outflow opening (24), and a ring groove (25) operationally and sealingly connected to the ring land (15) is disposed in said piston valve working chamber (16).

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