

Title (en)
COOLANT PUMP

Title (de)
KÜHLMITTELPUMPE

Title (fr)
POMPE DE REFROIDISSEMENT

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Application
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Abstract (en)
[origin: WO2012072068A1] The invention relates to an axial flow-type coolant pump that is mechanically driven by a pulley, a gear, a plug-in shaft, or the like for internal combustion engines. The aim of the invention is to develop an axial-flow coolant pump for internal combustion engines, wherein the pump allows a clear increase of the pump pressure in axial-flow coolant pumps with a smaller installation space/installation volume in comparison to the prior art and at the same pump shaft rotational speed, that is, the rotational speed that is conventional for coolant pumps; the pump is simultaneously characterized by a stable characteristic curve of the coolant capacity above the pump pressure at a constant rotational speed, said characteristic curve being clearly improved in comparison to the prior art; the pump is additionally resistant to cavitation, prevents swirling of the delivery capacity, and simultaneously ensures a very high degree of efficiency. The pump is further characterized by a very compact, inexpensive, and robust design that is simple to produce and assemble, and the pump also ensures a high operating reliability and dependability with a very long service life even in the event of a coolant having a contamination load. The coolant pump according to the invention is characterized in that a semi-axial impeller, a Francis impeller, or a diagonal impeller with vanes (15) which are three-dimensionally curved is used as the rotor (14). The guide wheel (9) that lies in the pump housing (2) has an inner guide cone (16) that is tapered in the flow direction and an outer conical guide cap (17) that is spaced from said cone, and the guide cone and the guide cap are connected to each other in a symmetrically spaced manner by three-dimensionally curved guide vanes (10), said rotor (14) being spaced from the guide wheel (9) by an annular gap (13) such that the rotor (14) is both laterally spaced from the adjacent outer edge of the guide cone (16) as well as laterally spaced from the adjacent outer edge of the guide cap (17).

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