

Title (en)
CONTROLLABLE COOLANT PUMP AND METHOD FOR THE CONTROL THEREOF

Title (de)
REGELBARE KÜHLMITTELPUMPE UND VERFAHREN ZU DEREN REGELUNG

Title (fr)
POMPE À LIQUIDE DE REFROIDISSEMENT RÉGULABLE ET PROCÉDÉ POUR SA RÉGULATION

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Application
EP 09745442 A 20090507

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Abstract (en)
[origin: WO2009138058A1] The invention relates to a controllable coolant pump and to a method for the control of this controllable coolant pump for internal combustion engines, which is driven over a belt pulley. The object of the invention is to develop a controllable coolant pump and a method for the control this controllable coolant pump (with a valve slide), which is driven over a pulley. By means of "zero leakage", said cooling pump ensures optimum warming up of the engine. Even if the space for installing the coolant pump in the engine compartment is very limited and the driving power is very low, the coolant pump nevertheless enables the valve slide to be operated reliably and, even in the event of the failure of the control system, ensures that the coolant pump continues to function (fail-safe). Moreover, the coolant pump is distinguished by a construction, which can be produced and installed very easily, is cost effective and can be standardized for different pump sizes to utilize the space available in the engine compartment optimally. Furthermore, it does not have to be filled in the open at the plant, has a high operational safety and reliability and can be tied simply and cost effectively into the engine management. By operating the slide valve by means of an electromagnetically operated piston pump, which is equipped with a return spring in the form of a compression spring (49) and realizes an inventive "pump capacity" by means of many small "partial lifts", wherein a "leakage flow" flowing in the opposite direction to the "pumped flow" is superimposed on the "pumped flow" by the inventive arrangement of the circular aperture in the inlet valve membrane (37) of the working piston (34) as well as in the outlet valve membrane (32) so that the valve slide can be shifted in a defined manner by means of the inventive arrangement by the inventive, defined, superimposition of the two aforementioned flows robustly and reliably with little driving power for realizing the inventive task. {Translator's note: the translation of the last sentence above is incomplete and the English grammar is incorrect. This is the best I can do with it. I believe the original German is faulty.}

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