WATER CIRCULATION PUMP
Compact and Versatile
The water circulation pump – compact and versatile

The electronically commutated water circulation pump (WUP) with its brushless DC motor is a dependable alternative to conventional motor vehicle pumps with their wear-prone mechanical commutation systems. The pumps are chiefly used wherever additional cooling or heating functions need to be performed. Turbo charging, power electronics and EGR cooling duties are just some of the examples which also include auxiliary heating, residual heat extraction and vehicle interior heating systems.

The WUP is engineered in such a way that the pump itself and its electric drive are hermetically sealed from each other. Dispensing with any complex coupling mechanisms to ensure leak-proof sealing of the drive components has the advantage of substantial weight savings. The pump is regulated electronically and with all usual engine coolants. Thanks to the low number of moving parts, the pump operates very smoothly and hence quietly. Additionally, the electronically commutated design results in an exceptionally compact build.

Fig. 1: WUP 1 and WUP 2 (water circulation pump)
The WUP housing is made of high-duty PPS which combines the assets of weight savings and engine proximity installation thanks to its ample resistance to heat and fluids. Moreover, the compact dimensions combined with modular design allow the WUP to be installed at any angle. The pump comes compatible with a variety of hydraulic connections plus a range of fastening options for installation even in hot environments.

The third generation with two new circulating water pumps WUP 3 and WUP 3L will be available in 2011. The main feature is the enhanced diagnostic capability of operating conditions and the speed control as specified by the PWM input signal. In addition, an upgraded version under the name WUP 3L is available. The WUP 3L has an improved impeller with a higher hydraulic power. The delivered pressure is increased by 20% and the flow achieves up to 15% more flow of the coolant.

Fig. 2: Typical characteristics curves for the WUP: ● WUP 3L (preliminary) ● WUP 2 + WUP 3