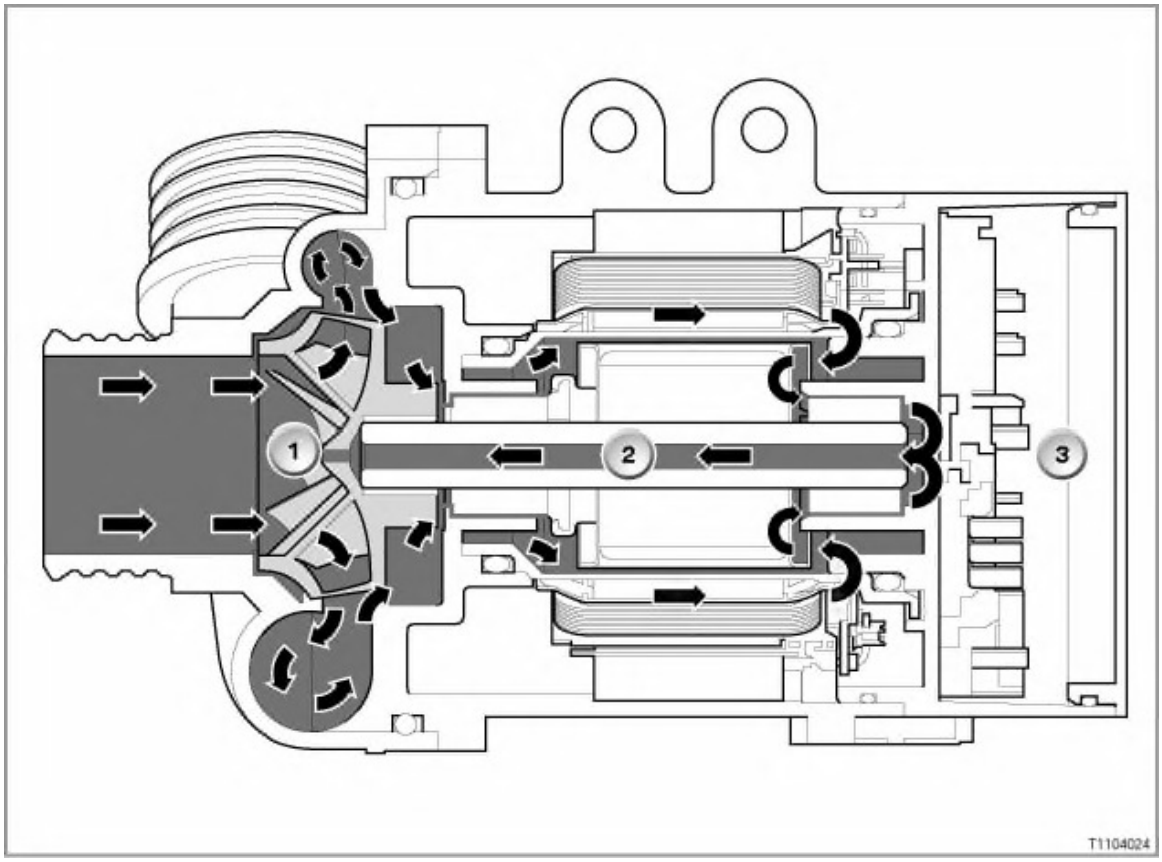
N52 engine, electric coolant pump: E60, E61, E63, E64, E65, E66, E70, E81, E82, E83, E85, E86, E87, E90, E91, E92, E93

Fast heating-up of the engine after a cold start significantly lowers fuel consumption and helps comply with exhaust threshold values.
High engine temperatures after stopping the engine can lead to a reduction in the engine service life. These function requirements can only be implemented with conventional cooling concepts with a high level of overhead and a great many compromises.
An electrically driven water pump delivers exactly the amount of coolant required in each operating condition. A low coolant flow volume with a cold engine enables rapid warm-up. Pumping after stopping the engine leads to a significant reduction in the engine temperature in the engine's afterheating phase.

Construction



Item	Description	Item	Description
1	Pump	2	Engine
3	Control electronics in the electrical coolant pump		

How it works

The coolant pump of the N52 engine is an electrically driven pump. The power output of the electric motor is controlled electronically by control electronics.
These control electronics are connected to the Digital Engine Electronics (DME) across the bit-serial data interface. The DME uses the load, the operating range and the data from the temperature sensors to determine the required cooling output. The DME provides the control electronics with the corresponding control signals to control the coolant pump.
The motor of the coolant pump is rinsed with coolant. This lubricates the bearings of the electrical coolant pump.