

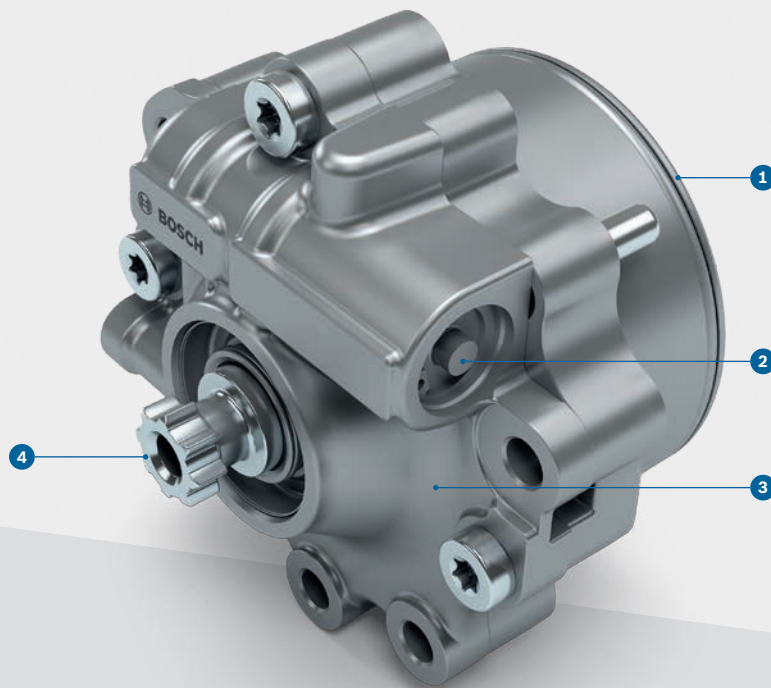
Transmission technology

Variable displacement vane pump



BOSCH

Invented for life



PRODUCT BENEFITS

- ▶ Reduced power consumption compared to a fixed displacement transmission pump
- ▶ Compact packaging
- ▶ Demand-based supply of transmission fluid
- ▶ High efficiency with low weight
- ▶ Robust, wear-free design
- ▶ Available with housing or as cartridge solution (without pump housing)

- 1 Housing with integrated pressure plate
- 2 Control valve
- 3 Cover with flange
- 4 Pump shaft with drive gearing



up to

40 %

lower power consumption compared with a fixed displacement transmission pump (depends on transmission's load spectrum and transmission control strategy)

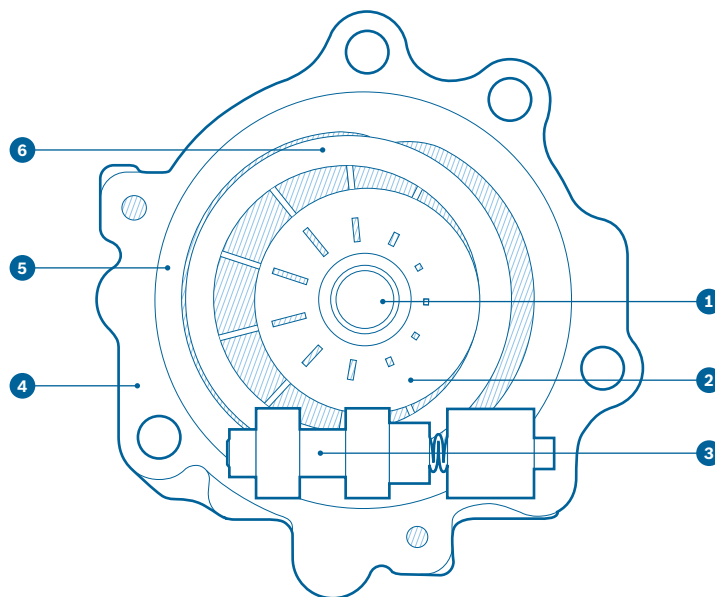
TASK

The controlled VPG transmission pump permanently provides the exact amount of fluid required at the pressure level needed, for shifting and coupling of multi-speed and continuously variable transmissions in passenger vehicles. In addition, the VPG provides the required amount of oil to lubricate and cool the transmission. The pump can be driven directly or indirectly by a drive gear installed on the pump shaft.

FUNCTION

The VPG transmission pump consists of the housing, cover, pressure plate, shaft and a rotor set. The rotor set comprises the rotor, vanes directed radially in the rotor, the cam ring and the outer ring. The VPG's cam ring is movable supported and it can be adjusted hydraulically. The VPG operates like a fixed displacement pump up to a defined control point. At the control point, the geometric delivery volume is reduced by adjustment of the cam ring to match the defined flow rate. The control point can be defined either by an external controller (e.g. transmission control unit) or an internal controller. The control unit is integrated into the pump. In contrast to a fixed displacement pump, the reduced delivery volume of a variable displacement pump made available by the adjustable cam ring ensures a lower power consumption. As a result of the lower power consumption, the system temperature is also reduced.

- 1 Shaft
- 2 Rotor with vanes
- 3 Control valve
- 4 Cover with flange
- 5 Outer ring
- 6 Cam ring



9,000 rpm

Designed for high-performance applications

maximum efficiency

vane pump technology

VARIANTS

The engineering and design allow the pump to be used as a cartridge (without pump housing) in the existing transmission housing or mounted in its own housing in the transmission.

TECHNICAL CHARACTERISTICS

Max. delivery volume (cm ³ /rev)	16.5
Max. variable-volume flow rate (l/min)	48
Max. rotational speed (rpm)	9,000
Max. pressure (bar)	22
Max. oil temperature (°C)	140
Weight (g)	1,000
Drive direction	CW or CCW
Drive type	direct, drive gear