

Electronically Controlled Fan Drives for Light-, Medium-
and Heavy-Duty Trucks & Off-Highway Applications

Product Info

Visctronic® Fan Drive



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 **BorgWarner**

Visctronic® Fan Drives

Product Overview

The Visctronic™ Fan Drive represents a new generation of electronically controlled engine cooling products.

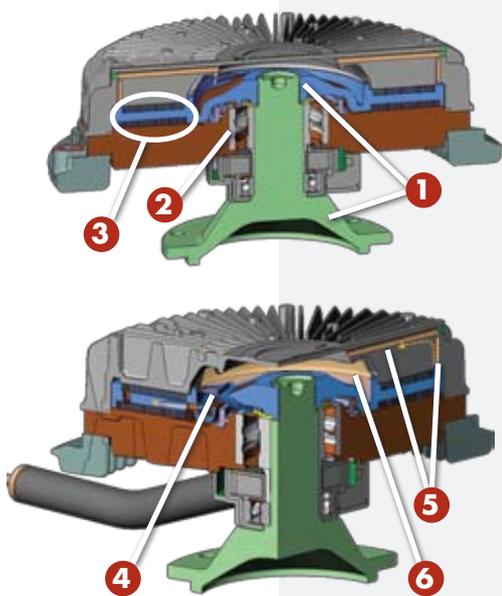
The electronically managed or direct-actuated Visctronic™ Fan Drive provides improved fuel economy through lower disengaged speeds and optimum fan load management during cooling periods for SUVs, light trucks, medium- and heavy-duty trucks and off-highway vehicles.

Not only does the Visctronic™ produce less fan noise and free more engine power for other tasks, through smoother speed transitions, it also extends the life of the fan drive belt, which is critical to engine performance. In addition to contributing to better fuel economy, the product's precise airflow management allows for tighter control of engine temperature, leading to a potential reduction in exhaust emissions.

Technical Features and Advantages

- Improved efficiency – fan operates when required and at the appropriate speed – allowing for possible fuel and horsepower savings of up to 6-10%
- Maintenance free – self contained unit, nothing to service or maintain
- Improved temperature control – for extended engine & component life
- High-speed reservoir and patented fluid distribution

How it Works:



1 The Inner clutch disc (blue) is driven by the input shaft (green) which is connected to the crankshaft or a remote bearing bracket. The clutch input speed is equal to the engine speed or increased by a transmission ratio of bearing bracket.

2 The inner clutch disc and outer housings are decoupled by special roller bearings.

3 The housings and clutch disc form a working chamber. During operation, the chamber is filled with varying amount of silicone fluid. Due to differences in fan speed and input speed, the silicone fluid is sheared. Shear forces cause torque that drives the fan.

4 The amount of silicone fluid in the chamber is controlled by electromagnetically actuated valve.

To empty the chamber (or disable the fan), silicone fluid is pumped back to a silicone reservoir (**6**) over a return channel (**5**). When the fan is off, the silicone fluid rests in the reservoir. When the fan engages, the valve (**4**) is opened to fill the chamber. Quick and accurate valve control precisely maintains the fan speed. Required activation is calculated by a specifically calibrated software module in the ECU.

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