Braking system

Mechanical single-vane vacuum pump

PRODUCT BENEFITS

- Low weight due to thermoplastic rotor
- High evacuation performance
- Noise-optimized design
- Lower CO₂ emissions through minimized friction loss
- Optimized, modular design
- Safety options for optimized cold start and for avoiding counter-rotation
- High quality level (Bosch Quality Award 2011)

1. Spigot
2. Cover
3. Oil inlet
4. Oldham coupling
5. Mounting fixation holes
6. Housing
**Task**

In diesel and modern gasoline engines with low intake-manifold vacuum, the mechanical single-vane vacuum pump ensures the vacuum supply for the pneumatic operation of various components, e.g., brake booster, exhaust-gas recirculation valve, swirl actuator, wastegate valve on the exhaust-gas turbocharger and central locking system.

**Function**

Bosch’s mechanical single-vane pump allows a particularly efficient operation thanks to its optimized design and its very light thermoplastic rotor. In addition, it reduces the noise at low idle speed enhancing driving comfort. Vacuum is generated in the pump housing by means of a rotating, eccentrically mounted single vane. This alternatingly creates a suction and a compression chamber, thus generating vacuum. The mechanical single-vane vacuum pump offers a wide range of displacements and rotation speed for the optimum operating of various components.

**Variants**

Depending on customer’s request, the mechanical single-vane pump can be driven either by engine camshaft or by crankshaft via pulley, gear or chain. It can also be combined with an oil and/or fuel pump (including high-pressure pump). As a result, it meets the highest installation space requirements of modern engines.

<table>
<thead>
<tr>
<th>TECHNICAL CHARACTERISTICS</th>
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<tbody>
<tr>
<td>Direction of rotation</td>
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<tr>
<td>Lubrication</td>
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<tr>
<td>Drive</td>
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**Technical Characteristics**

- Optimized torque absorption leads to emission reduction compared to the average market level of new applications.
- Weight reduction through the use of thermoplastic rotor, resulting in more dynamic driving behavior and lower CO₂ emissions.

-200 g

-0.6 g CO₂/km

- Single-vane vacuum pump
- Non-return valve
- Brake booster