Diesel Systems

CB08, CB18, CB28 high-pressure pumps

Engines for commercial vehicles in on- and off-highway applications have to comply with increasingly stricter emission limits. Specifically in emerging markets such as China and India this requires the change from mechanical to electronically controlled injection systems. Bosch has developed a solution that not only permits new engines to be equipped with the Common Rail System. It also allows existing engines, which were originally designed for distributor or mechanical in-line pumps, to be converted to the future-proof Common Rail technology. The CB pump family is easy to integrate into existing engine concepts.

The pumps of the CB family are oil-lubricated and fit for use with different fuel qualities due to their robust design.

With competent development and application in the local markets we can offer the best support to our customers for integrating the pump into a specific engine concept. Simultaneously we utilize the complete system know-how of the Bosch Group and our worldwide manufacturing network to be able to offer this pump family at a good price.

**Possible applications**
The CB family is used with diesel engines up to 200 kW:
- CB08 with engines up to 45 kW (minibuses, minitucks)
- CB18 up to 110 kW (passenger cars, light-duty and off-highway applications)
- CB28 up to 160 kW with four-cylinder and up to 200 kW with six-cylinder engines with 2 or 3 lobes (medium-duty and off-highway applications)

**Customer benefits**
- Contribute towards achieving CN 4, BS 4, Tier 3, Tier 4, Euro IV emission limits
- Robust pump concept for application with different fuel qualities
- Good price-to-performance ratio

**CB08**
- Fitted easily to new engines or converted existing engines, available in two pump versions (with housing or as single-plunger pump without housing)

**CB18, CB28**
- Easy adaptation of engines with a transmission ratio of 1:2 to Common Rail Systems
- Integrated mechanical supply pump
Operating principle
The high-pressure pump of the Common Rail System delivers the fuel to the rail and compresses it constantly to the required injection pressure.

With 1 or 2 plungers and up to 3 lobes, CB pumps offer a wide range of possible applications. Depending on the customers’ requirements, the pump can be driven by gear, belt or chain. The system pressure and the fuel delivery rate are regulated via an electronically controlled metering unit integrated in the pump. This ensures ideal operating conditions at any engine operating point.

We also offer a pump working on the single-plunger principle in the CB pump family. For this variant (CB08 without housing), the pump drive is supplied by the customer.

Outlook
Bosch engineers are already involved in the further development of the CB pump family so that the CN 5/BS 5 emission legislation can be fulfilled in a wide application spectrum. Major engineering focus will be a further increase in injection pressure.

### CB high-pressure pumps and their applications

- 1: CB28
- 2: CB18
- 3: CB08 with housing
- 4: CB08 without housing

### Technical features

<table>
<thead>
<tr>
<th></th>
<th>CB08</th>
<th>CB18</th>
<th>CB28</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. system pressure</td>
<td>1,600 bar</td>
<td>1,600 bar</td>
<td>1,800 bar</td>
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<tr>
<td>Lubrication</td>
<td>Oil</td>
<td>Oil</td>
<td>Oil</td>
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<tr>
<td>Transmission ratio</td>
<td>1:2</td>
<td>1:2</td>
<td>1:2</td>
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<tr>
<td></td>
<td>1:1 (w/o housing)</td>
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<tr>
<td>Lifetime</td>
<td>150,000 km</td>
<td>300,000 km</td>
<td>300,000 km</td>
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<tr>
<td>Off-highway</td>
<td>–</td>
<td>6,000 h</td>
<td>6,000 h</td>
</tr>
<tr>
<td>Engine cylinders</td>
<td>1–3</td>
<td>4–6</td>
<td>4–6</td>
</tr>
<tr>
<td>Max. engine power</td>
<td>45 kW</td>
<td>100 kW (on-highway)</td>
<td>160 kW (4 cyl.)</td>
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<tr>
<td></td>
<td></td>
<td>110 kW (off-highway)</td>
<td>200 kW (6 cyl.)</td>
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<tr>
<td>Emission target</td>
<td>CN 4, BS 4, Tier 3, Tier 4</td>
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</tr>
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1. CB28
2. CB18
3. CB08 with housing
4. CB08 without housing

Bosch: Automotive competence from a single source

- Comprehensive range of services and know-how
- System and network competence
- Innovator and technology leader
- Warrantor for quality and dependability
- Worldwide presence
- Universal partner