Liebherr Common Rail solutions for large engines
Liebherr offers robust Common Rail Systems for large engines in the power range up to five megawatts. Injectors with integrated high pressure accumulators ensure a very low pressure drop and precise metering of the injection quantity. With regard to their compact design, the high pressure pumps deliver above-average fuel at up to 970 l per hour. Individual drive flanges and high pressure interfaces mean the injector and pump can be flexibly adapted to specific installation situations. A double-walled housing on the injectors ensure maximum safety and an oil-lubricated drive on the pumps allow the large diesel components to meet the requirements of aggressive fuels. All components in the field of large engines are certified according to common marine standards.

### Technical Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>System pressure</td>
<td>400 – 2,200 bar</td>
</tr>
<tr>
<td>Engine power/displacement</td>
<td>290 kW/cyl</td>
</tr>
<tr>
<td>Number of injections</td>
<td>4</td>
</tr>
<tr>
<td>Hydraulic flow rate</td>
<td>1,400 – 4,000 ml/30 sec</td>
</tr>
<tr>
<td>Nozzle diameter</td>
<td>13 mm</td>
</tr>
<tr>
<td>Max. hydraulic flow (pump)</td>
<td>970 l/h</td>
</tr>
<tr>
<td>Control leakage/injector</td>
<td>&lt; 50 ml/min</td>
</tr>
</tbody>
</table>
Modular design
Thanks to intelligent design and flexible connections, the modular individual components can be easily combined and adapted to specific engine designs. Different design variants, variable drive flanges and individual interfaces make Liebherr’s Common Rail Systems so flexible.

Precision parts produced in-house
Liebherr manufactures a major part of the functional micro-precision parts in-house. The high degree of vertical integration and the corresponding technical expertise allow us to flexibly respond to customer-specific special requirements for fuel injection.

Stable performance
All injection components are specially designed for highly dynamic loads in on- and off-highway vehicles. Liebherr covers the entire validation program in-house, from the development phase on the test bench to the final application on the field and implies the use of dirty and alternative fuels.

Engineering competence
Experts define the specific functionalities and requirements for the injection, diagnostics and correction process for each customer and carry out appropriate validations. In this regard, they draw on decades of experience in the development and production of diesel engines.

**Injector LI3**
- System pressure: 300 – 2,500 bar
- Nozzle diameter: 13 mm
- Hydraulic flow rate: 1,600 – 4,000 ml / 30 sec

**High pressure pump LP11.5**
- System Pressure: 100 – 2,200 bar
- Max. hydraulic flow: 810 l / h
- Rated pump speed: 4,500 rpm

**High pressure pump LP11.6**
- System Pressure: 100 – 2,200 bar
- Max. hydraulic flow: 970 l / h
- Rated pump speed: 4,500 rpm

**Engine Control Unit ECU2-HD**
- Supported emission standards: Euro V / Euro VI / EPA Tier 4f / EU Stage IV / EU Stage V / IMO III
- Supported engines: Diesel engines / Stationary gas engines (CNG)
- Number of supported cylinders: 12
Liebherr Components

From A to Z – the components division of the Liebherr Group offers a broad range of solutions in the area of mechanical, hydraulic, electric and electronic drive system and control technology. The efficient components and systems are produced at a total of ten production sites around the world to the highest standards of quality. Central contact persons for all product lines are available to our customers at Liebherr-Components AG and the regional sales and distribution branches.

Liebherr is your partner for joint success: from the product idea to development, manufacture and commissioning right through to customer service solutions like remanufacturing.

components.liebherr.com