For high pressure – quiet – for universal use

The new SILENCE gear pump from Bosch reduces pulsation by 75 percent

BOSCH
Delivery gearing without backlash

Minimal flow pulsation thanks to newly developed manufacturing precision

Gear pumps for fluid delivery systems and agricultural and construction machinery belong today to the classics of Bosch Mobile Hydraulics. The new SILENCE gear pump with dual-flank seal complements the tried and tested range with additional user advantages.

A combination of advantages

To put it briefly, the SILENCE pump combines the design and performance profile of the standard pump with the noise and pulsation properties of the DUO pump: it is compact in build, delivers at constant high pressure despite hugely reduced noise emissions – and boasts a considerably longer service life.

“Backlash-free” gear pump

Whilst the standard pump is particularly priceworthy and the DUO pump especially quiet, the new SILENCE pump is both priceworthy and quiet at the same time.

Delivery principle: in the SILENCE Pump without backlash and with modified reversal geometry, the front and rear flanks contribute alternately to the delivery process. This dual-flank system reduces the flow pulsation by 75% compared with standard pumps.
The SILENCE pump is practically a standard pump without backlash in the gearing. This results in a 75% reduction in pressure pulsation.

**Optimized pressure pulsation**

This means: the running noise of the SILENCE pump is greatly reduced. In addition, this low pressure pulsation lowers the vibration excitation of downstream system components (pipelines, valves, cylinders, etc.), thereby reducing to a minimum the noise emissions of the system as a whole.

**Precision in series production**

The dual-flank principle has basically been known for a long time. However, only now are economical production methods available which are capable of fulfilling the precision requirements of the SILENCE concept. Only in this way could reliable process control and exact reproducibility be achieved in large-scale production. Bosch has gained an additional lead in quality with special manufacturing processes for bearing arrangements and gear wheels.

**Considerably longer life**

The reinforced drive mechanism is designed to withstand higher pressure than that of a standard pump, which means that continuous pressure of up to 250 bar and pressure peaks of up to 300 bar are possible. In field use, this permits higher power density values and a more compact structure. And finally, the aluminium housing of the SILENCE pump features stronger outside walls to make it even more robust: bringing all the advantages of a higher number of load changes and a considerably longer service life.
**SILENCE gear pump**

**Performance data: pressures and speeds**

<table>
<thead>
<tr>
<th>Displacement [cm³/rev]</th>
<th>4</th>
<th>5.5</th>
<th>8</th>
<th>11</th>
<th>14</th>
<th>16</th>
<th>19</th>
<th>22.5</th>
<th>25</th>
<th>28</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermittent pressure p2 [bar]</td>
<td>280</td>
<td>280</td>
<td>280</td>
<td>280</td>
<td>280</td>
<td>280</td>
<td>260</td>
<td>225</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Pressure peak p3 [bar]</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>290</td>
<td>265</td>
<td>240</td>
<td></td>
</tr>
<tr>
<td>Continuous pressure p1 [bar]</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>220</td>
<td>195</td>
<td>170</td>
<td></td>
</tr>
<tr>
<td>Max. speed at p2 [rpm]</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>3500</td>
<td>3000</td>
<td>3000</td>
<td>3500</td>
<td>3000</td>
<td>3000</td>
<td></td>
</tr>
</tbody>
</table>

**Intermittent pressure p2 [bar]**

```
<table>
<thead>
<tr>
<th>Displacement [cm³/rev]</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
</tr>
</tbody>
</table>
```

Your contact partner: **BOSCH**

Robert Bosch GmbH
Geschäftsbereich Automationstechnik
Fahrzeughydraulik
Postfach 30 02 40
D-70442 Stuttgart
Fax +(7 11) 8 11-17 98