Concentric is one of the world’s leading manufacturers of hydraulic pumps. Our focus on important strategic markets such as trucks, construction equipment and materials handling has brought results: a series of high-performance hydraulic pumps. The W300 series builds on the versatile technical platform represented by the W series.

W300 High Pressure Gear Pumps are optimized for demanding work, with harsh weather conditions, rugged operations and long service intervals. The W300 series is a range of cost-efficient small pumps for all applications in which the customer’s demands for quality and accessibility are particularly high.
W300 DESCRIPTION

The W300 pumps come in single configuration and have a two piece modular design. All, mounting flange, and rear cover are manufactured of high strength aluminium alloy.

For optimum strength, gears and shafts are precision machined as a one-piece part. The 11-tooth gear geometry has been optimized for low noise level and low pressure pulsation.

All shaft bearing surfaces are continually cooled and lubricated by a controlled flow of fresh oil. This permits operation across a wide speed range at very high loads. Extra large slide bearings help guarantee a long service life.

A wide range of mounting flanges and port sizes are available to meet all international standards.

General data

| Displacement V | 0.8 ... 5.7 cm³ |
| Speed n        | 800 ... 6000 rpm |
| Pressure rated pressure $p_1$ up to 230 bar |
| Intermittent pressure $p_2$ up to 255 bar |
| Operating temperatures $t$ up to 90°C |
| Average volumetric efficiency 97% |

The maximum values for $n, p_1$, and $t$ for a given pump specification may be applied simultaneously.

Options

- Rectangular flanges, through bolt model.
- Tapered shaft with key, tang shaft.
- Thread ports of flange ports.
- Clockwise or anti-clockwise rotation.
- Integrated valve features.

PERFORMANCE DATA

Operating pressure range

| Inlet port: continuous, minimum -0.20 bar |
| intermittent, minimum -0.35 bar |
| maximum +2.00 bar |

Outlet port (See tables on pages 4-6)

| Pressure $p_1$ continuous pressure |
| Pressure $p_2$ intermittent pressure |

Product has been tested to 500,000 cycles at $p_2$. Pressure $p_2$ is permitted at maxi. 10 sec loaded following 4 sec minimum unloaded. Above represents performance which can be expected from units incorporating flange flange port styles.

Speed range

Minimum speed for all pump sizes depends on the pump model in question and can be identified from Tables below onwards for respective models.

Maximum speed for single pumps depends on the pump model in question and can be identified from Tables onwards for respective models.

Noise performance data according to DIN 45 635.

 Typical levels for pump type W3B1-2.5 at 160 bar using mineral oil with viscosity of 40 mm²/s and at temperature of 50°C at different speeds:

<table>
<thead>
<tr>
<th>Speed</th>
<th>Noise levels dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500</td>
<td>52 dB(A)</td>
</tr>
<tr>
<td>2300</td>
<td>56 dB(A)</td>
</tr>
<tr>
<td>3000</td>
<td>57 dB(A)</td>
</tr>
</tbody>
</table>

Hydraulic fluids. The use of HL-or HLP-hydraulic oil according to DIN 51 524 is recommended.

The permissible viscosity for all W3B pumps ranges from 800 to 12 mm²/s.

The permissible cold start viscosity is 2000 mm²/s.

We recommend to contact Concentric before using fire resistant or bio-degradable fluids.

Temperature range

Amb. temperature, mini. -25°C; maxi. +80°C

Fluid temperature, continuous operation, maxi. +80°C

short term operation, maxi. +90°C

Please note

Viscosities -when operating at above temperature limits-have to remain within the range specified under “Hydraulic Fluids”.

Fluid cleanliness

Fluid cleanliness according to ISO 4406/1986 Code 18/14 or better is required in order to assure the pump’s high level of efficiency in the long term.

Drive arrangement

Flexible couplings are preferred for direct drives. Please contact Concentric for indirect drive requirements.

Mounting position

As required.

Symbol

Single pump.
Concentric AB-W300 Pump-EU-2011-7

All shaft bearings are continually cooled and lubricated by a controlled flow of fresh oil. This enables operation across a wide speed range at very high loads. The large-sized slide bearings support the pump’s long-life condition. A wide range of mounting flanges and port sizes are available to meet European and international standards. W300 pumps may also be supplied with threaded ports in the rear cover (rear cover’s shape is prepared for this option). This option can simplify installation where space is limited.

Model code example for a single pump

<table>
<thead>
<tr>
<th>WP</th>
<th>03 B 1 B 008 R 20 MA 124 N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>= Type WP - Pump</td>
</tr>
<tr>
<td>2</td>
<td>= Series 03 - 300</td>
</tr>
<tr>
<td>3</td>
<td>= Design revision B - 2nd release</td>
</tr>
<tr>
<td>4</td>
<td>= # of sections 1 - Single</td>
</tr>
<tr>
<td>5</td>
<td>= Seal material B - Buna</td>
</tr>
<tr>
<td>6</td>
<td>= Displacement per section (See table below)</td>
</tr>
<tr>
<td>7</td>
<td>= Rotation R - Clockwise L - Counter clockwise</td>
</tr>
<tr>
<td>8</td>
<td>= Mounting flange 20</td>
</tr>
<tr>
<td>9</td>
<td>= Drive shaft MA</td>
</tr>
<tr>
<td>10</td>
<td>= Portings 124 - G3/8” + G3/8” BSPP</td>
</tr>
<tr>
<td></td>
<td>166 - M18 x 1.5 + M14 x 1.5</td>
</tr>
<tr>
<td>11</td>
<td>= Valve options N - None</td>
</tr>
</tbody>
</table>

At CCW rotation inlet and outlet are reversed.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>008 - 0,8cc</td>
<td>230</td>
<td>255</td>
<td>6000</td>
<td>1200</td>
<td>68,1</td>
<td>32,6</td>
<td>60,1</td>
<td>0,70</td>
</tr>
<tr>
<td>012 - 1,2cc</td>
<td>230</td>
<td>255</td>
<td>6000</td>
<td>1100</td>
<td>69,8</td>
<td>33,4</td>
<td>61,6</td>
<td>0,72</td>
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<tr>
<td>016 - 1,6cc</td>
<td>230</td>
<td>255</td>
<td>6000</td>
<td>1100</td>
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<td>34,2</td>
<td>63,5</td>
<td>0,74</td>
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<td>230</td>
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<td>6000</td>
<td>1000</td>
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<td>35,1</td>
<td>65,2</td>
<td>0,77</td>
</tr>
<tr>
<td>025 - 2,5cc</td>
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<td>255</td>
<td>5000</td>
<td>1000</td>
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<td>35,9</td>
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<td>5000</td>
<td>1000</td>
<td>78,2</td>
<td>37,6</td>
<td>70,2</td>
<td>0,83</td>
</tr>
<tr>
<td>038 - 3,8cc</td>
<td>210</td>
<td>230</td>
<td>4500</td>
<td>850</td>
<td>80,8</td>
<td>38,9</td>
<td>72,8</td>
<td>0,86</td>
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<tr>
<td>043 - 4,3cc</td>
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<td>210</td>
<td>4500</td>
<td>850</td>
<td>82,9</td>
<td>40,0</td>
<td>74,9</td>
<td>0,89</td>
</tr>
<tr>
<td>048 - 4,8cc</td>
<td>170</td>
<td>187</td>
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<td>800</td>
<td>85,0</td>
<td>41,0</td>
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<td>0,91</td>
</tr>
<tr>
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<td>160</td>
<td>3800</td>
<td>800</td>
<td>98,8</td>
<td>42,9</td>
<td>80,8</td>
<td>0,96</td>
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</tbody>
</table>
At CCW rotation inlet and outlet are reversed.

Model code example for a single pump

<table>
<thead>
<tr>
<th>WP</th>
<th>03</th>
<th>B</th>
<th>1</th>
<th>B</th>
<th>008</th>
<th>R</th>
<th>22</th>
<th>NA</th>
<th>124</th>
<th>N</th>
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<td>Type WP - Pump</td>
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</tr>
<tr>
<td>2</td>
<td>Series 03 - 300</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>3</td>
<td>Design revision B - 2nd release</td>
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<td></td>
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<tr>
<td>4</td>
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</tr>
<tr>
<td>5</td>
<td>Seal material B - Buna</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Displacement per section (See table below)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

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<td>255</td>
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<td>1200</td>
<td>68,1</td>
<td>32,6</td>
<td>60,1</td>
<td>0,70</td>
</tr>
<tr>
<td>012 - 1,2cc</td>
<td>230</td>
<td>255</td>
<td>6000</td>
<td>1100</td>
<td>69,8</td>
<td>33,4</td>
<td>61,8</td>
<td>0,72</td>
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<td>016 - 1,6cc</td>
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<td>255</td>
<td>6000</td>
<td>1100</td>
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<td>34,2</td>
<td>63,5</td>
<td>0,74</td>
</tr>
<tr>
<td>020 - 2,0cc</td>
<td>230</td>
<td>255</td>
<td>6000</td>
<td>1000</td>
<td>73,2</td>
<td>35,1</td>
<td>65,2</td>
<td>0,77</td>
</tr>
<tr>
<td>025 - 2,5cc</td>
<td>230</td>
<td>255</td>
<td>5000</td>
<td>1000</td>
<td>75,3</td>
<td>35,9</td>
<td>67,3</td>
<td>0,80</td>
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<td>032 - 3,2cc</td>
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<td>255</td>
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<td>78,2</td>
<td>37,6</td>
<td>70,2</td>
<td>0,83</td>
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<td>210</td>
<td>230</td>
<td>4500</td>
<td>850</td>
<td>80,8</td>
<td>38,9</td>
<td>72,8</td>
<td>0,86</td>
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<tr>
<td>043 - 4,3cc</td>
<td>190</td>
<td>210</td>
<td>4500</td>
<td>850</td>
<td>82,9</td>
<td>40,0</td>
<td>74,9</td>
<td>0,89</td>
</tr>
<tr>
<td>048 - 4,8cc</td>
<td>170</td>
<td>187</td>
<td>4200</td>
<td>800</td>
<td>85,0</td>
<td>41,0</td>
<td>77,0</td>
<td>0,91</td>
</tr>
<tr>
<td>057 - 5,7cc</td>
<td>145</td>
<td>160</td>
<td>3800</td>
<td>800</td>
<td>98,8</td>
<td>42,9</td>
<td>80,8</td>
<td>0,96</td>
</tr>
</tbody>
</table>
At CCW rotation inlet and outlet are reversed.

Model code example for a single pump

\[
\begin{array}{cccccccc}
WP & 03 & B & 1 & B & 008 & R & 23 & QA & 124 & N \\
\hline
1 & = & Type WP - Pump & & & & & & & \\
2 & = & Series 03 - 300 & & & & & & & \\
3 & = & Design revision B - 2 nd release & & & & & & & \\
4 & = & # of sections 1 - Single & & & & & & & \\
5 & = & Seal material B - Buna & & & & & & & \\
6 & = & Displacement per section (See table below) & & & & & & & \\
7 & = & Rotation R - Clockwise & & & & & & & \\
& & L - Counter clockwise & & & & & & & \\
8 & = & Mounting flange 23 & & & & & & & \\
& & Drive shaft QA & & & & & & & \\
& & Portings & & & & & & & \\
& & 166 - M18 x 1,5 + M14 x 1,5 & & & & & & & \\
& & Valve options N - None & & & & & & & \\
\end{array}
\]

<table>
<thead>
<tr>
<th>Code Displ.</th>
<th>Rated pressure ( P_s ) [bar]</th>
<th>Intermitt. ( P_a ) [bar]</th>
<th>Maxi. speed [min(^{-1})]</th>
<th>Mini. speed [min(^{-1})]</th>
<th>Dimensions [A [mm], B [mm], C [mm]]</th>
<th>Weight (approx.) [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>008 - 0,8cc</td>
<td>230</td>
<td>255</td>
<td>6000</td>
<td>1200</td>
<td>68,1, 32,6, 60,1</td>
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<tr>
<td>012 - 1,2cc</td>
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<td>255</td>
<td>6000</td>
<td>1100</td>
<td>69,8, 33,4, 61,8</td>
<td>0,70</td>
</tr>
<tr>
<td>016 - 1,6cc</td>
<td>230</td>
<td>255</td>
<td>6000</td>
<td>1100</td>
<td>71,5, 34,2, 63,5</td>
<td>0,72</td>
</tr>
<tr>
<td>020 - 2,0cc</td>
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<td>255</td>
<td>6000</td>
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<td>1000</td>
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<tr>
<td>032 - 3,2cc</td>
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<tr>
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<td>850</td>
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<td>4200</td>
<td>800</td>
<td>85,0, 41,0, 77,0</td>
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<tr>
<td>057 - 5,7cc</td>
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<td>160</td>
<td>3800</td>
<td>800</td>
<td>98,8, 42,9, 80,8</td>
<td>0,94</td>
</tr>
</tbody>
</table>
EFFICIENCIES, TOTAL, MECHANICAL, VOLUMETRIC

OVERALL EFFICIENCY  W3B1-1.2-**-*-N-N
AVERAGE ± 3% AT 42°C, 32 cSt.

OVERALL EFFICIENCY  W3B1-1.2-**-*-N-N
AVERAGE ± 3% AT 42°C, 32 cSt.

OVERALL EFFICIENCY  W3B1-1.2-**-*-N-N
AVERAGE ± 3% AT 42°C, 32 cSt.

MECHANICAL EFFICIENCY  W3B1-1.2-**-*-N-N
AVERAGE ± 3% AT 42°C, 32 cSt.

MECHANICAL EFFICIENCY  W3B1-1.2-**-*-N-N
AVERAGE ± 3% AT 42°C, 32 cSt.

MECHANICAL EFFICIENCY  W3B1-1.2-**-*-N-N
AVERAGE ± 3% AT 42°C, 32 cSt.

VOLUMETRIC EFFICIENCY  W3B1-1.2-**-*-N-N
AVERAGE ± 3% AT 42°C, 32 cSt.

VOLUMETRIC EFFICIENCY  W3B1-1.2-**-*-N-N
AVERAGE ± 3% AT 42°C, 32 cSt.

VOLUMETRIC EFFICIENCY  W3B1-1.2-**-*-N-N
AVERAGE ± 3% AT 42°C, 32 cSt.

VOLUMETRIC EFFICIENCY  W3B1-1.2-**-*-N-N
AVERAGE ± 3% AT 42°C, 32 cSt.

VOLUMETRIC EFFICIENCY  W3B1-1.2-**-*-N-N
AVERAGE ± 3% AT 42°C, 32 cSt.

VOLUMETRIC EFFICIENCY  W3B1-1.2-**-*-N-N
AVERAGE ± 3% AT 42°C, 32 cSt.

VOLUMETRIC EFFICIENCY  W3B1-1.2-**-*-N-N
AVERAGE ± 3% AT 42°C, 32 cSt.

VOLUMETRIC EFFICIENCY  W3B1-1.2-**-*-N-N
AVERAGE ± 3% AT 42°C, 32 cSt.
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**PRODUCT RANGE**

**HE Powerpacks**
12/24/48 VDC 0.3 – 4.5 kW and 0.75 – 3 kW AC modular power packs

**HE Box Powerpacks**
12/24/48 VDC modular power packs in weatherproof boxes

**Pressure Switches**
5 – 350 bar, connecting/disconnecting

**W100 Hydraulic pumps**
0.5 – 2.0 cc 227 bar

**W300 Hydraulic pumps**
0.8 – 5.7 cc 230 bar

**W600 Hydraulic pumps / motors**
3 – 12 cc 276 bar

**W900 Hydraulic pumps / motors**
5 – 31 cc/section 276 bar

**Calma The new quiet pumps**
6.2 – 23.7 cc/section 250 bar

**WQ900 The quiet pumps**
5 – 23 cc/section 230 bar

**WP900X Hydraulic pumps**
16 - 31 cc/section 276 bar

**W1500 Hydraulic pumps / motors**
19 - 50 cc/section 276 bar

**F12 FERRA Heavy duty pumps**
16 - 41 cc/section 276 bar

**F15 FERRA Heavy duty pumps**
19 - 50 cc/section 276 bar

**F20/F30 (LS) Hydraulic pumps / motors**
23 – 161 cc/section 276 bar

**GPA Internal Gear pumps**
1,7 – 63 cc/section 100 bar

**GC Hydraulic pumps / motors**
1,06 – 11,65 cc/section 276 bar

**D Hydraulic pumps**
3.8 – 22.9 cc/section 207 bar

**H Hydraulic pumps**
9.8 – 39.4 cc/section 207 bar

**Il-Stage Hydraulic pumps**
4.2 – 22.8 cc/section 276 bar

**Rotary Flow Dividers**
3.8 – 13.3 cc/section 300 bar

**Transmission pumps**

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Fax:   +1-815 398 5977
E-mail: info.hydraulics.us@concentricAB.com

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Fax:   +46-433 30546
E-mail: info.hydraulics.eu@concentricAB.com

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Tel:   +49-9281 895-0
Fax:   +49-9281 87133
E-mail: info.hydraulics.eu@concentricAB.com

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China
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Tel +86 512 8717 5100
Fax +86 512 8717 5101
info.chsh@concentricAB.com

Concentric is an innovator in flow control and fluid power, supplying proprietary systems and components for trucks, buses and industrial vehicles, worldwide. With 1,156 employees and yearly sales exceeding 1,977 million Swedish Kronor, Concentric AB is listed on the Stockholm Stock Exchange (www.concentricAB.com).