General
Pump
BN-type motor pump units are normal-priming, single-stage, plastic centrifugal pumps in block design with horizontal axis. Their dimensions and flow rates mainly correspond to DIN/EN 22858.

The pumps of this series were developed to meet the requirements of the chemical industry and are therefore especially suited to pump pure or solid matter containing, acid or alkaline, low-viscosity liquids.

As the materials getting in contact with the pumped medium are physiologically harmless, the pumps can also be used in the food industry.

The extended shaft of the drive motors directly carries the impeller. The pump head is flanged to the drive motor using an intermediate piece.

Pump head, impeller
All wetted-end parts are made of high-quality materials such as PP, PVDF, hard carbon, EPDM or FPM elastomers. The external metallic parts are protected against corrosion by a chemically resistant varnish coat. For all pump sizes, closed impellers with relief borings for compensation of the axial thrust are used. The transmission of the torque is form-locking.

Position of connections, flanges
The suction connection is positioned axially, the pressure flange radially in upward direction. As a standard the suction and pressure connections are fitted with flanges according to DIN 2501/PN 10.

Shaft seals
The shafts are sealed by means of maintenance-free mechanical seals. Depending on the operating conditions, internal, single-acting or double-acting versions are used. Double-acting mechanical seals require a sealing liquid.

Sliding materials in silicon carbide (SiC), bellows and secondary seals of EPDM or FPM, metallic parts of stainless steel (1.4571) or Hastelloy C-4 (2.4610) are standard combinations and cover a large range of applications.

The space available in the sealing area allows to use standard seals. Special versions on request.

Drive
Surface-cooled three-phase motors with extended rotor shaft and reinforced bearing, otherwise according to IEC standard, 1450min-1or 2900min-1, enclosure IP 55, insulation class F, mounting IM B5.
### Nominal pump capacities according to DIN/EN 22 858

<table>
<thead>
<tr>
<th>Pump size BN ...</th>
<th>Output at 1450 min⁻¹</th>
<th>Output at 2900 min⁻¹</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nominal flow rate [m³/h]</td>
<td>Nominal head [m]</td>
</tr>
<tr>
<td>50-32-125</td>
<td>5</td>
<td>12.5</td>
</tr>
<tr>
<td>50-32-160</td>
<td>6.3</td>
<td>8</td>
</tr>
<tr>
<td>50-32-200</td>
<td>12.5</td>
<td></td>
</tr>
<tr>
<td>65-40-125</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>65-40-160</td>
<td>12.5</td>
<td></td>
</tr>
<tr>
<td>65-40-200</td>
<td>12.5</td>
<td></td>
</tr>
<tr>
<td>80-50-125</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>80-50-160</td>
<td>25</td>
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<td>50</td>
<td></td>
</tr>
<tr>
<td>100-65-160</td>
<td>5</td>
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</tbody>
</table>

### Dimensions

**Pump**
<table>
<thead>
<tr>
<th>Pump size BN</th>
<th>Power in kW at 1450 min⁻¹</th>
<th>Motor size</th>
<th>L</th>
<th>Approx. weight kg (PP) at 1450 min⁻¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>50-32-125</td>
<td>1,1 1,5 2,2 3 4 5,5+7,5+11</td>
<td>90S 90L 100L 112 132</td>
<td>490 510 550 560 640</td>
<td>28 34 41 61</td>
</tr>
<tr>
<td>50-32-160</td>
<td>1,1 1,5 2,2 3 4 5,5+7,5+11</td>
<td>90S 90L 100L 112 132</td>
<td>500 520 560 570 640</td>
<td>37 39 46 52 79/85/85</td>
</tr>
<tr>
<td>50-32-200</td>
<td>1,1 1,5 2,2 3 4 5,5+7,5+11</td>
<td>90S 90L 100L 112 132</td>
<td>500 520 560 570 640</td>
<td>44 46 53 73 86/92/92</td>
</tr>
<tr>
<td>65-40-125</td>
<td>1,1 1,5 2,2 3 4 5,5+7,5+11</td>
<td>90S 90L 100L 112 132</td>
<td>490 510 550 560 640</td>
<td>33 35 42 62</td>
</tr>
<tr>
<td>65-40-160</td>
<td>1,1 1,5 2,2 3 4 5,5+7,5+11</td>
<td>90S 90L 100L 112 132</td>
<td>500 520 560 570 640</td>
<td>38 40 47 67 80/86/86</td>
</tr>
<tr>
<td>65-40-200</td>
<td>1,1 1,5 2,2 3 4 5,5+7,5+11</td>
<td>90S 90L 100L 112 132</td>
<td>520 540 580 590 660</td>
<td>38 40 53 77 90/96/96</td>
</tr>
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<td>80-50-125</td>
<td>1,1 1,5 2,2 3 4 5,5+7,5+11</td>
<td>90L 100L 112 132</td>
<td>540 580 590 660 660</td>
<td>41 43 57 63 76/82/82</td>
</tr>
<tr>
<td>80-50-160</td>
<td>1,1 1,5 2,2 3 4 5,5+7,5+11</td>
<td>90L 100L 112 132</td>
<td>540 580 590 660 660</td>
<td>48 43 57 63 81/87/87</td>
</tr>
<tr>
<td>80-50-200</td>
<td>1,1 1,5 2,2 3 4 5,5+7,5+11</td>
<td>90L 100L 112 132</td>
<td>540 580 590 660 660</td>
<td>54 61 63 81 100</td>
</tr>
<tr>
<td>100-65-125</td>
<td>1,1 1,5 2,2 3 4 5,5+7,5+11</td>
<td>90L 100L 112 132</td>
<td>560 590 590 660 660</td>
<td>42 49/51 69 74/80/80</td>
</tr>
<tr>
<td>100-65-160</td>
<td>1,1 1,5 2,2 3 4 5,5+7,5+11</td>
<td>90L 100L 112 132</td>
<td>560 590 590 660 660</td>
<td>47 54/56 69 74/80/80</td>
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</table>
### Dimensions

#### Pump

**Flanges**

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<tr>
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<td>110</td>
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<td>4</td>
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<tr>
<td>100</td>
<td>180</td>
<td>18</td>
<td>8</td>
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</table>

**Flanges according to DIN 2501**

<table>
<thead>
<tr>
<th>Pump size BN</th>
<th>Flange connection dimensions according to DIN 2501, Part f. PN10</th>
<th>Pump dimensions</th>
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<tbody>
<tr>
<td></td>
<td>DN_inlet DN_outlet</td>
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<tr>
<td>50-32-125</td>
<td>50 32</td>
<td>80</td>
</tr>
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<td>50-32-160</td>
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<tr>
<td>50-32-200</td>
<td></td>
<td>80</td>
</tr>
<tr>
<td>65-40-125</td>
<td>65 40</td>
<td>80</td>
</tr>
<tr>
<td>65-40-160</td>
<td></td>
<td>80</td>
</tr>
<tr>
<td>65-40-200</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>80-50-125</td>
<td>80 50</td>
<td>100</td>
</tr>
<tr>
<td>80-50-160</td>
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<td>80-50-200</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>100-65-125</td>
<td>100 65</td>
<td>100</td>
</tr>
<tr>
<td>100-65-160</td>
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<td>100</td>
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</tbody>
</table>
Mechanical seals

General
Mechanical seals basically consist of two perfectly plane surfaces. One surface rotates with the shaft, while the other one is stationary. The sealing effect is achieved by the direct contact between the two plane surfaces. The stationary counter-ring is normally fixed in position. The sliding ring is able to move axially and radially in order to compensate the shaft deflections during operation. This axial mobility enables mechanical seals to be fitted within practicable manufacturing tolerances, the accuracy required being dependent on the design of the seal.

Type B2I

Single-acting, loaded, internal seal, independent of direction of rotation.

Combination of sliding materials in silicon carbide (SiC). Bellows and secondary seals of EPDM and FPM. Metallic parts of stainless steel or Hastelloy C-4.

Suitable for application with neutral and aggressive media which do not crystallize out and are free from solid matter.

Type B2Q

Single-acting, loaded, internal seal, independent of direction of rotation, with quenching chamber. The quenching chamber is sealed from the atmosphere by a shaft sealing ring to prevent deposits and/or reduction of the temperature in the area of the mechanical seal.

Combination of sliding materials in silicon carbide (SiC). Bellows and secondary seals of EPDM and FPM. Metallic parts of stainless steel or Hastelloy C-4.

Suitable for application with aggressive media tending to crystallize out.

Function of quending:
- Prevention of crystallizing rings (air seals)
- Absorption of leakage
- Cooling of sliding rings
- Monitoring of leakage rate
- Lubricating film stabilization during vacuum operation
Double-acting, loaded, internal seal, independent from direction of rotation, arranged back-to-back with sealing chamber. This arrangement is the most usual form of double-acting seals used for difficult, chemically particularly aggressive media.

Combination of sliding materials in silicon carbide (SiC). Bellows and secondary seals of EPDM and FPM. Metallic parts of stainless steel.

Suitable for application with aggressive and abrasive media.

Function of sealing:
- Prevention of contact between pumped liquid and atmosphere
- Formation of lubricating film between the sliding rings
- Cooling of sliding rings
- Monitoring of leakage rate
Performance curves
The following diagrams show the Q-H curves in dependence of the impeller diameter as well as the power consumption in kW, the efficiency and the NPSH value (only for nominal speed of 2900 min⁻¹). Flow rate and efficiency guarantees according to DIN 1944.

Type BN 50 - 32 - 125
Motor kW: 2.2
Speed: 2900

Flow rate, Meters of head, Flow rate in m³/h, Hyd. efficiency in %, Power consumption in kW, Leistungsbedarf in kW, Förderhöhe in mWs, Förderstrom in m³/h, Wirkungsgrad, Wirkungsgrad in %, Leistungsbedarf, Flow rate, Hyd. efficiency, Power consumption

Lutz-Jesco GmbH
Improved changes are always reserved without notice.
Type BN 50 - 32 - 125

Motor
- kW: 1.1
- Speed: 1450

Flow rate

Meters of head

Efficiency

Hyd. efficiency in %

Power consumption

Power consumption in kW

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Improved changes are always reserved without notice.
Type BN 50 - 32 - 160

Motor kW: 4
Speed: 2900

Flow rate

Efficiency

Power consumption

Lutz-Jesco GmbH

Improved changes are always reserved without notice.
Type BN 50 - 32 - 160

Motor  
- kW: 1.5
- Speed: 1450

Flow rate

- Flow rate in m³/h
- Meters of head
- Lines: d 172, d 160

Efficiency

- Flow rate in m³/h
- Hyd. efficiency in %
- Lines: d 172, d 160

Power consumption

- Flow rate in m³/h
- Power consumption in kW
- Lines: d 172, d 160

Lutz-Jesco GmbH

Improved changes are always reserved without notice.
Type BN 50 - 32 - 200

Motor
- kW: 7.5
- Speed: 2900

Flow rate

<table>
<thead>
<tr>
<th>Flow rate in m³/h</th>
<th>d 210</th>
<th>d 190</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

Meters of head

<table>
<thead>
<tr>
<th>Flow rate in m³/h</th>
<th>d 210</th>
<th>d 190</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Efficiency

<table>
<thead>
<tr>
<th>Flow rate in m³/h</th>
<th>d 210</th>
<th>d 190</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hyd. efficiency in %

<table>
<thead>
<tr>
<th>Flow rate in m³/h</th>
<th>d 210</th>
<th>d 190</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

Power consumption

<table>
<thead>
<tr>
<th>Flow rate in m³/h</th>
<th>d 210</th>
<th>d 190</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Type BN 50 - 32 - 200

Motor
- kW: 1.5
- Speed: 1450

**Flow rate**

Meters of head

0 5 10 15 20 25 30 35

Flow rate in m³/h

**Efficiency**

Hyd. efficiency in %

0 5 10 15 20 25 30 35

Flow rate in m³/h

**Power consumption**

Power consumption in kW

0 0.5 1 1.5 2

Flow rate in m³/h

Lutz-Jesco GmbH

Improved changes are always reserved without notice.
Type BN 65 - 40 - 125

Motor
- kW: 3
- Speed: 2900

Flow rate
- Flow rate in m³/h
- Meters of head
- d 140
- d 120

Efficiency
- Hyd. efficiency in %
- Flow rate in m³/h
- d 140
- d 120

Power consumption
- Power consumption in kW
- Flow rate in m³/h
- d 140
- d 120
Type BN 65 - 40 - 125

Motor  

- kW: 1.5
- Speed: 1450

**Flow rate**

- d 140
- d 115

**Efficiency**

- d 140
- d 115

**Power consumption**

- d 140
- d 115

Lutz-Jesco GmbH

Improved changes are always reserved without notice.
Type BN 65 - 40 - 160

Motor

- kW: 7.5
- Speed: 2900

Flow rate

<table>
<thead>
<tr>
<th>Meters of head</th>
<th>d 172</th>
<th>d 155</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
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<td>60</td>
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Efficiency

<table>
<thead>
<tr>
<th>Hyd. efficiency in %</th>
<th>d 172</th>
<th>d 155</th>
</tr>
</thead>
<tbody>
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<tr>
<td>10</td>
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<td>80</td>
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Power consumption

<table>
<thead>
<tr>
<th>Power consumption in kW</th>
<th>d 172</th>
<th>d 155</th>
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<td>10</td>
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</table>

Chemical Motor Pump Unit BN

Lutz-Jesco GmbH

Improved changes are always reserved without notice.
Type BN 65 - 40 - 160

Motor
kW: 2.2
Speed: 1450

Flow rate

Meters of head

Flow rate in m³/h

Efficiency

Hyd. efficiency in %

Flow rate in m³/h

Power consumption

Power consumption in kW

Flow rate in m³/h

Lutz-Jesco GmbH

Improved changes are always reserved without notice.
Type BN 65 - 40 - 200

Motor
- kW: 7.5
- Speed: 2900

Flow rate in m³/h

Efficiency

Power consumption in kW

Lutz-Jesco GmbH

Improved changes are always reserved without notice.
Type BN 65 - 40 - 200

Motor  
- kW: 2.5
- Speed: 1450

Flow rate

Flow rate in m³/h

Meters of head

Flow rate in m³/h

Efficiency

Hyd. efficiency in %

Flow rate in m³/h

Power consumption

Power consumption in kW

Flow rate in m³/h

Lutz-Jesco GmbH

Improved changes are always reserved without notice.
Chemical Motor Pump Unit BN

Typ BN 80 - 50 - 125

Motor
kW: 7.5
Speed: 2900

Flow rate

Meters of head

Flow rate in m³/h

Hyd. efficiency in %

Power consumption in kW

Efficiency

Power consumption

Flow rate in m³/h
Type BN 80 - 50 - 125

Motor
- kW: 1.5
- Speed: 1450

Flow rate
- Flow rate in m³/h
- Meters of head

Efficiency
- Hyd. efficiency in %

Power consumption
- Power consumption in kW

Lutz-Jesco GmbH
Improved changes are always reserved without notice.
Type BN 80 - 50 - 160

Motor
kW: 11
Speed: 2900

Flow rate

Efficiency

Power consumption

Lutz-Jesco GmbH
Improved changes are always reserved without notice.
Chemical Motor Pump Unit BN

Type BN 80 - 50 - 160

Motor
- kW: 4
- Speed: 1450

Flow rate

- Flow rate in m³/h
- Meters of head

Efficiency

- Hyd. efficiency in %

Power consumption

- Power consumption in kW

Lutz-Jesco GmbH

Improved changes are always reserved without notice.
Type BN 80 - 50 - 200

Motor
- kW: 15
- Speed: 2900

Flow rate

Meters of head

Efficiency

Hyd. efficiency in %

Power consumption

Power consumption in kW

---

Lutz-Jesco GmbH

Improved changes are always reserved without notice.
Type BN 80 - 50 - 200

Motor
kW: 3
Speed: 1450

Flow rate

Meters of head

Flow rate in m³/h

Efficiency

Hyd. efficiency in %

Flow rate in m³/h

Power consumption

Power consumption in kW

Flow rate in m³/h

Lutz-Jesco GmbH
Improve changes are always reserved without notice.
Type BN 100 - 65 - 125

Motor
kW: 11
Speed: 2900

Flow rate

Efficiency

Power consumption
Type BN 100 - 65 - 125

Motor
- kW: 5.5
- Speed: 1450

Flow rate

Meters of head

Efficiency

Hyd. efficiency in %

Power consumption

Power consumption in kW

Flow rate in m³/h

Lutz-Jesco GmbH

Improved changes are always reserved without notice.
Type BN 100 - 65 - 160

Motor
- kW: 15
- Speed: 2900

Flow rate
- Flow rate in m³/h
- Meters of head

Efficiency
- Hyd. efficiency in %

Power consumption
- Power consumption in kW

Lutz-Jesco GmbH

Improved changes are always reserved without notice.
Type BN 100 - 65 - 160

Motor
- kW: 3
- Speed: 1450

Flow rate

Meters of head

Efficiency

Hyd. efficiency in %

Power consumption

Power consumption in kW

Flow rate in m³/h

Flow rate in m³/h

Flow rate in m³/h

Lutz-Jesco GmbH

Improved changes are always reserved without notice.