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Range of Applications

- Food and liquid applications
- Agriculture
- Paper industry
- Chemical industry
- Water treatment
- Textile industry
- Oil and gas industry
- Power generation
- Marine applications

Design
- Multistage, multistage end suction high-pressure pump, between bearings design
- Pump in-line version HP or as a “back-to-back” version GP
- Contourless casing for max. reliability at high temperatures and high nozzle loads
- Bearing types: antifriction bearings with ring oil lubrication, Mixed bearings: radial slide bearings- axial antifriction bearings with ring oil lubrication, Radial and axial slide bearings with pressure oil lubrication
- For HP series axial thrust compensation by balancing piston or double piston
- For GP Series axial thrust compensation by “back-to-back” arrangement
- 1st stage with NPSH impeller as standard
- Flanges according to ASME or DIN EN in different pressure ratings
- Single impeller support and shrink-fit impellers in reference to the application

Materials

<table>
<thead>
<tr>
<th>S</th>
<th>S-0</th>
<th>S-6</th>
<th>C-6</th>
<th>A-8</th>
<th>D-1</th>
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<td>Super duplex</td>
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<td>Bearing housing</td>
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<td>Shaft seal</td>
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<td>Flanges</td>
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<td>Carbon steel</td>
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</tbody>
</table>
| Bearing housing | prepared for all required connections for measuring and monitoring equipment
- application of high-grade metallic bearing isolators
- cooling box standard
- water cooling as option
- 360° mounting

Bearing housing
- prepared for all required connections for measuring and monitoring equipment
- application of high-grade metallic bearing isolators
- cooling box standard
- water cooling as option
- 360° mounting

Seal chamber
- Separate seal chamber according to API 610 / 692
- all the usual techniques of sealing and API piping schemes are possible
- equipped as standard with a cartridge mechanical seal

Shaft
- rotor-dynamically optimized solid shafts
- cylindrical or conical shaft end

Axial thrust compensation
- compensation by balancing piston or double piston
- “back-to-back” arrangement of impeller packages with GP version

Hydraulics
- static hydraulics per type size
- ensuring the best adaptation to customer needs and high efficiency

Performance range

<table>
<thead>
<tr>
<th>Capacity (m³/h)</th>
<th>Head (m)</th>
<th>Nozzle size (mm)</th>
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</thead>
<tbody>
<tr>
<td>1000</td>
<td>2600</td>
<td>50</td>
</tr>
<tr>
<td>800</td>
<td>2400</td>
<td>100</td>
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<tr>
<td>600</td>
<td>2200</td>
<td>150</td>
</tr>
<tr>
<td>400</td>
<td>2000</td>
<td>200</td>
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</tbody>
</table>

Nozzle size (mm) from 50 to 200

Operating temperature up to 250 °C

Pressure design up to 250 bar

Head up to 2600 m

Capacity up to 1000 m³/h

Nozzle size (mm) from 50 to 200

Materials according to API, NORSOK, NACE and special alloys are available.
Based on the excellent hydraulic characteristics, the perfectly optimized performance field and modern structural design according to API 610 latest edition, the pumps are suitable for applications such as:

- Suction impeller 12% chromium steel 12% chromium steel 12% chromium steel 316AUS Duplex Super duplex
- Impeller Cast iron 12% chromium steel 12% chromium steel 316AUS Duplex Super duplex
- Bearing housing Carbon steel Carbon steel Carbon steel Carbon steel Carbon steel Carbon steel Carbon steel
- Shaft Carbon steel 12% chromium steel 12% chromium steel 316AUS Duplex Super duplex
- Discharge casing Carbon steel Carbon steel Carbon steel Carbon steel Carbon steel Carbon steel Carbon steel
- Operating temperature up to 250 °C
- Pressure design up to 250 bar
- Head up to 2600 m
- Capacity up to 1000 m³/h
- Nozzle size (mm) from 50 to 200
- Shaft Seal
  - Separate seal chamber suitable for a variety of mechanical seals – from single and double mechanical seals up to cartridge mechanical seals and gland packing - all variants are available. Pumps of this version have a standard design with cartridge mechanical seal. Assembly space according to API 610/682.
  - 1° stage with NPSH impeller as standard
  - Flanges according to ASME or DIN EN in different pressure ratings
  - Single impeller support and shrink fit impellers in reference to the application

### Range of Applications

- Booster application in all industrial branches
- Water injection onshore and offshore
- Applications in refineries
- Applications in oil and gas industry
- Applications in refineries

### Design

- Horizontal, multistage ring-section high-pressure pumps, between bearings design
- Pump in-line version HP or as a “back-to-back” version GP
- Centerline casing for max. reliability at high temperatures and high nozzle loads
- Bearing types: antifriction bearings with ring oil lubrication, mixed bearings: radial slide bearings, axial antifriction bearings with oil-groove lubrication, radial and axial slide bearings with pressure oil lubrication
- For HP series axial thrust compensation by balancing piston or double piston
- For GP series axial thrust compensation by “back-to-back” arrangement
- 1° stage with NPSH impeller as standard
- Flanges according to ASME or DIN EN in different pressure ratings
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<th>S-3</th>
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</table>

### Performance Range

- Performance chart illustrating the pump's performance characteristics across various operating conditions.

### Axial Thrust Compensation

- Compensation by balancing piston or double piston
- “Back-to-back” arrangement of impeller packages with GP version.

### Suction Stage

- First stage as standard design with NPSH impeller
- Optimized intake geometry for lowest NPSH values
- Version with double-flux suction impeller available

### Seal Chamber

- Separate seal chamber according to API 610 / 682
- All the usual variants of sealing and API piping schemes are possible
- Equipped as standard with a cartridge mechanical seal

### Shaft

- Rotor dynamically optimized solid shafts
- Cylindrical or conical shaft end

### Hydraulics

- Various hydraulics per type size
- Ensuring the best adaptation to customer needs and high efficiency

### Operating Data

- Nozzle size (mm) from 50 to 200
- Capacity up to 1000 m³/h
- Head up to 2600 m
- Pressure design up to 250 bar
- Operating temperature up to 250 °C
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Modern type series with best hydraulic values and well-balanced performance field

Very good NPSH values

High reliability in operation and low operating cost

Modular design allows best adaptation to customer requirements

MULTISTAGE, VERTICAL CAN PUMPS
IN STANDARD DESIGN AND ALSO ACCORDING TO API 610 / TYPE VS6

Single stage pumps: OH1, OH2
- KRH
- KRHA / KRH / KRO
- KRP / KRP / KRP / KRPH

Single and two-stage between bearings pumps: BB2
- ZPR
- ZPRA / KGR / KGRD

Axial split between bearings pumps: BB1, BB3
- ZMK
- ZMP

Multistage high-pressure pumps, ring sections type: BB4
- HP
- GP „back-to-back” / GMHD

Multistage high-pressure barrel pumps: BB5
- TL
- TG „back-to-back” / TGDX

Single and multistage, vertical pumps: VS1, VS4, VS6
- HPTV
- HPI
- HPVX
- GSTV
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