FNPM

Horizontal plastic pump with magnetic drive
The FNPM
Optimal for corrosive media

The magnetic drive pump TYP FNPM are used to pump high-grade aggressive, corrosive as well as toxic, generally hazardous or environmentally polluting media safely at all times.

Design features

- Design: horizontal, single-stage
- Construction: back-pull-out design
- Casing design: Volute casing with plastic lining
- Impeller: closed
- Axial thrust balancing: by balancing holes
- Bearing lubrication: lifetime grease lubrication
- Sleeve bearing lubrication: by the pumped medium or external lubrication
- Installation versions: base plate, base frame or stilt mounting
- Ambient temperature: -20 °C to +60 °C
### Technical data

<table>
<thead>
<tr>
<th></th>
<th>FNPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size DN</td>
<td>25 to 125</td>
</tr>
<tr>
<td>( Q_{\text{max}} ) (m³/h)</td>
<td>400</td>
</tr>
<tr>
<td>( H_{\text{max}} ) (m)</td>
<td>95</td>
</tr>
<tr>
<td>Temperature (°C)</td>
<td>-30 to +190</td>
</tr>
<tr>
<td>Standards</td>
<td>EN 22858, ISO 2858, ISO 5199, ISO 15783</td>
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<tr>
<td>Flange motor design</td>
<td>Option (FNPMF)</td>
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<tr>
<td>Closed impeller</td>
<td>Standard</td>
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<tr>
<td>Back pull out design</td>
<td>Standard</td>
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<tr>
<td>Plastic lining</td>
<td>Standard</td>
</tr>
<tr>
<td>Seal</td>
<td>Magnetic drive</td>
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</table>

### Options

- Drain of volute casing
- Flange processing in line with international standards
- Leakage monitoring
- Pump accessories

### Fields of application

- Chloralkali electrolysis
- Hydrochloric acid
- Nitric acid
- Organic solvents
- Sodium hydroxide
- Sulphuric acid
Main features

1. Massive PTFE volute casings offer high resistance to corrosion in highly diffusing media.

2. Hermetically and eddy-current-free sealing by the spacer cans made of highly resistant ceramic or CFRP/PFA.

3. A modern and robust bearing concept with high-quality radial ball bearings which are lubricated for their whole life-span ensures smooth running and operational reliability.

4. The slide bearings made of high-purity silicon carbide (SSiC) are also designed for high loads and guarantee safe operation even with unfavourable operating conditions. Due to uniform geometries, there is no danger of confusion during assembly. Friction-optimised surfaces ensure maximum operational reliability in the event of dry running or a lack of lubrication.

The drawings essentially correspond to the execution. We reserve the right to make design changes.
Design with a plastic lined volute casing

Design with an armoured volute casing
Innovative magnetic drive

Service-friendly cartridge design

The fully pre-mounted unit comprising impeller and internal magnet system saves time during fitting and costs associated with keeping items in stock. The assembly and installation of the magnet cartridge does not require any prior knowledge. No gap clearance adjustment is necessary. High-performance magnets deliver traction even at temperatures ranging from -30 °C to 190 °C.

ITT Rheinhütte Pumpen GmbH is the only manufacturer of plastic magnetic drive pumps offering the high-strength ceramic spacer cans made of zirconium oxide as standard. The high mechanical strength, compared to PFA coated spacer cans, creates a clearly safe mode of operation, since the containment can is not immediately destroyed in the event of a slide bearing failure. For special cases, a spacer can made of CFRP/PFA is also available as an alternative.
Plastic materials

The chemical centrifugal pump FNPM is available in two different plastics. Plastics are in particular demand in applications with high corrosion resistance requirements, in order to ensure a long pump life cycle.

PFA – Perfluoroalkoxy

PFA is a perfluorated alkylvinyl ether. Centrifugal pumps lined with PFA can be used between -30 °C and 190 °C. With a few exceptions this material has a universal resistance to chemicals.

Advantages of the ceramic spacer can

The ceramic zirconium oxide spacer can brakes the internal rotor in every case to a complete halt in the event of sleeve bearing damage and considerably reduces the risk of media leakage as a result. Zirconium oxide exhibits extreme diffusion impermeability and is chemically resistant to practically all media.

- Hermetically seals the pump free of eddy currents
- Mechanically resilient and impermeable to diffusion
- Chemically resistant to practically all media
- Impervious to temperature shocks up to and exceeding 180 K
- Pressure resistant up to and exceeding 20 bar
- Vacuum tight up to 0 bar
- Solenoidal
- Available with conductive coating for ATEX applications in Zone 1 (Category 2)

PTFE – Polytetrafluorethylene

PTFE shows an outstandy resistance against nearly all organic and inorganic media over a wide temperature range. Centrifugal pumps made of PTFE can be used between -30 °C and 190 °C.

- Flexible and economical material concept: PFA and PTFE
- 15 sizes up to bearing bracket 3
- Easy assembly and reliable mounting design, no gap clearance adjustment necessary
- Flexible stocking strategies possible
- Easy dismantling and quick assembly of pump and assemblies
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## Pumps & installation dimensions

<table>
<thead>
<tr>
<th>Size</th>
<th>BB</th>
<th>Pump dimensions</th>
<th>Base dimensions</th>
<th>Shaft end</th>
<th>Flange dimensions</th>
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<tr>
<td></td>
<td></td>
<td>a  f  h1  h2  w</td>
<td>ød  l  N1  N2</td>
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BB = Bearing bracket, N2 = Pressure flange
Capacity ranges

FNPM: 50 Hz  \( n = 1450 \text{ /min} \)

FNPM: 50 Hz  \( n = 2900 \text{ /min} \)

Flow rate \( Q (\text{m}^3/\text{h}) \)

Pump head \( H (\text{m}) \)

US. GPM

Bearing bracket 0 1 2 3