

# FNPM

Horizontal plastic pump with magnetic drive





# The FNPM

## Optimal for corrosive media

The magnetic drive pump type 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

	FNPM
Size DN	25 to 125
$Q_{\max}$ (m <sup>3</sup> /h)	400
$H_{\max}$ (m)	95
Temperature (°C)	-30 to +190
Standards	EN 22858, ISO 2858, ISO 5199, ISO 15783
Flange motor design	Option (FNPMF)
Closed impeller	Standard
Back pull out design	Standard
Plastic lining	Standard
Seal	Magnetic drive



## Options

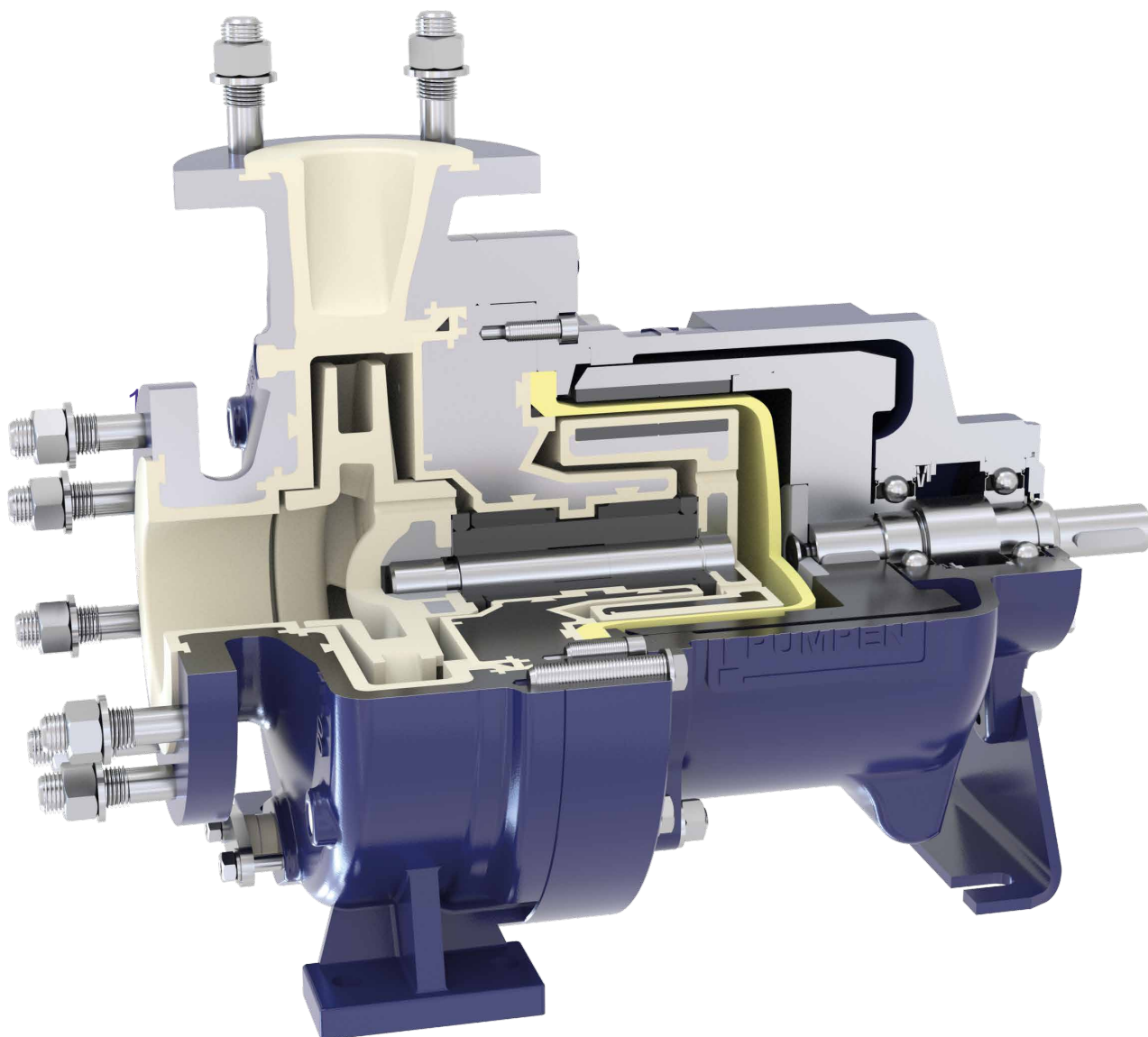
- Equipment health monitoring with i-Alert®3
- Drain of volute casing
- Flange processing in line with international standards
- Leakage monitoring
- Storage and priming tank
- Pump accessories

## 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

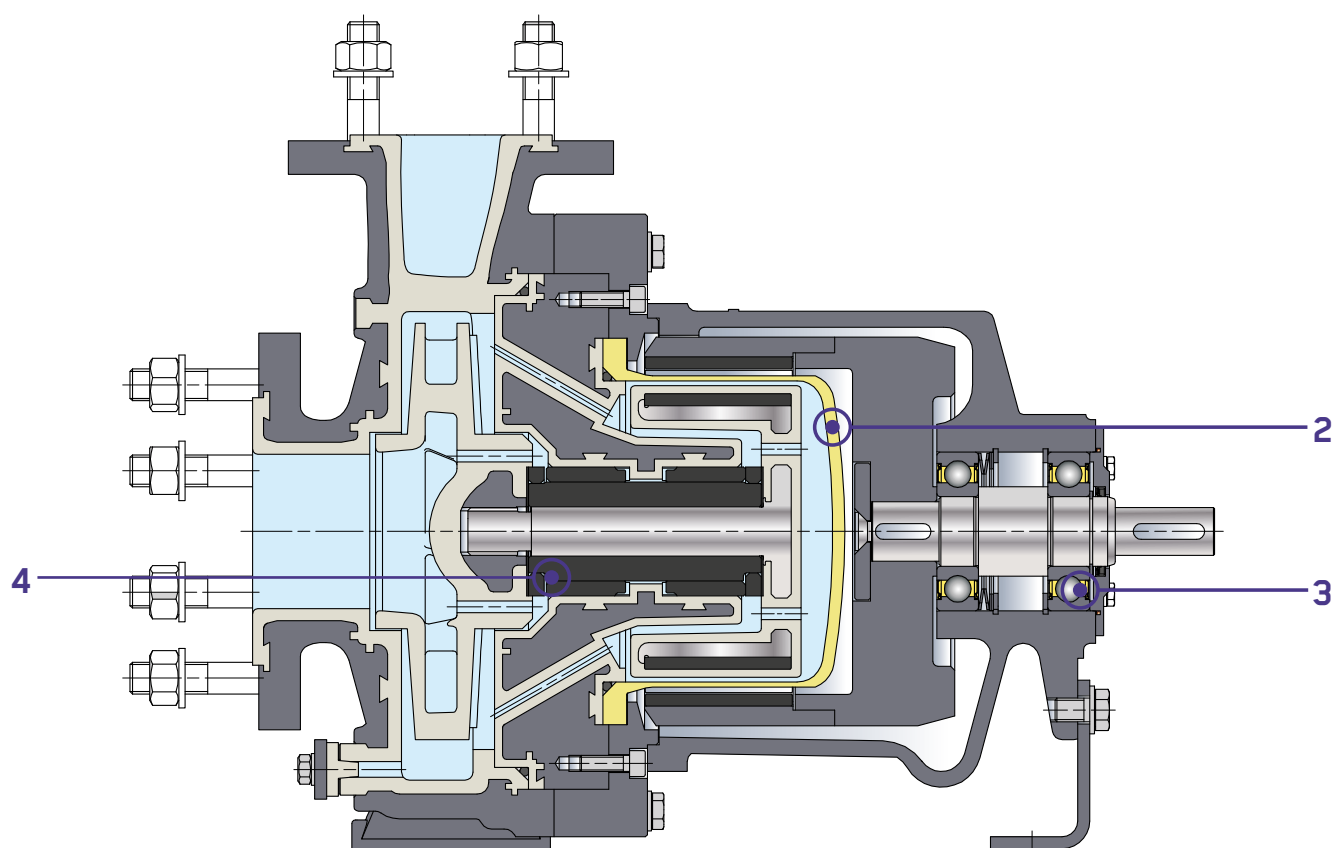
A modern and robust bearing concept with high-quality radial ball bearings which are lubricated for their whole life-span ensures smooth running and operational reliability.

4

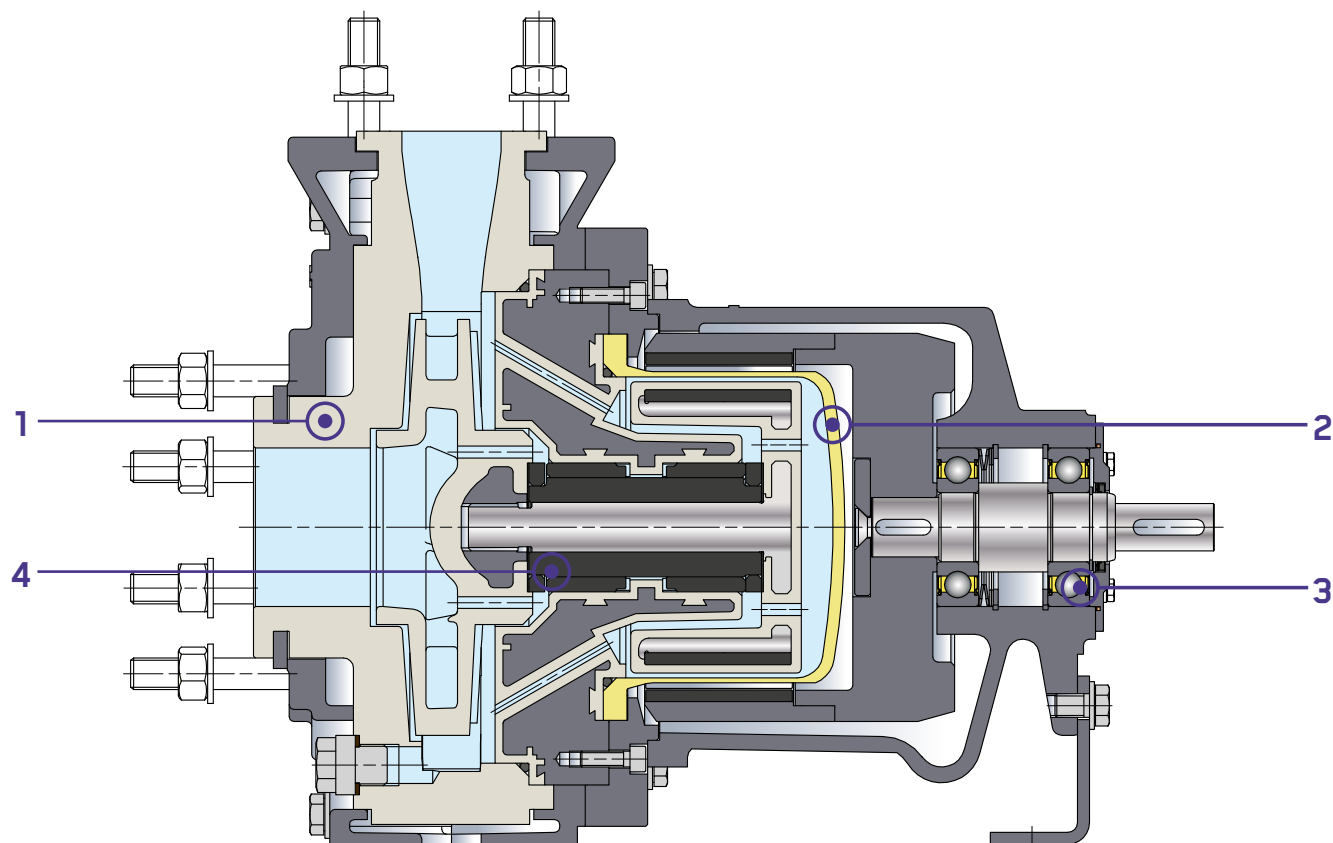
The slide bearings made of high-purity silicon carbide (SSiC) are also designed for high loads and guarantee safe operation even with unfavourable operating conditions. Due to uniform geometries, there is no danger of confusion during assembly. Friction-optimised surfaces ensure maximum operational reliability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

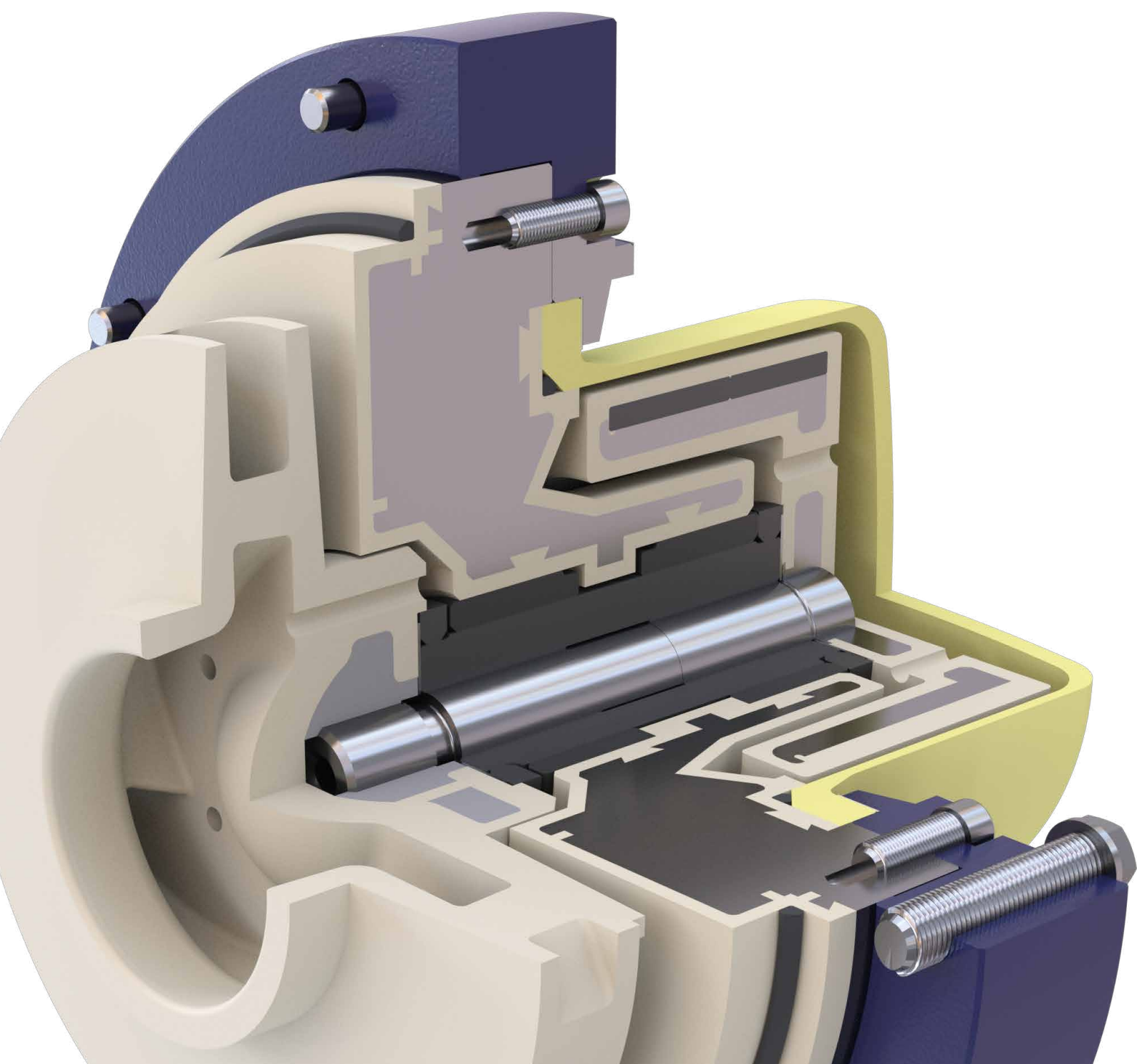


# Innovative magnetic drive

## 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  $-30^{\circ}\text{C}$  to  $190^{\circ}\text{C}$ .

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.



- Easy dismantling and quick assembly of pump and assemblies
- 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

### 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)

# 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 alkyvinyl 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.

## PTFE – Polytetrafluorethylen

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.

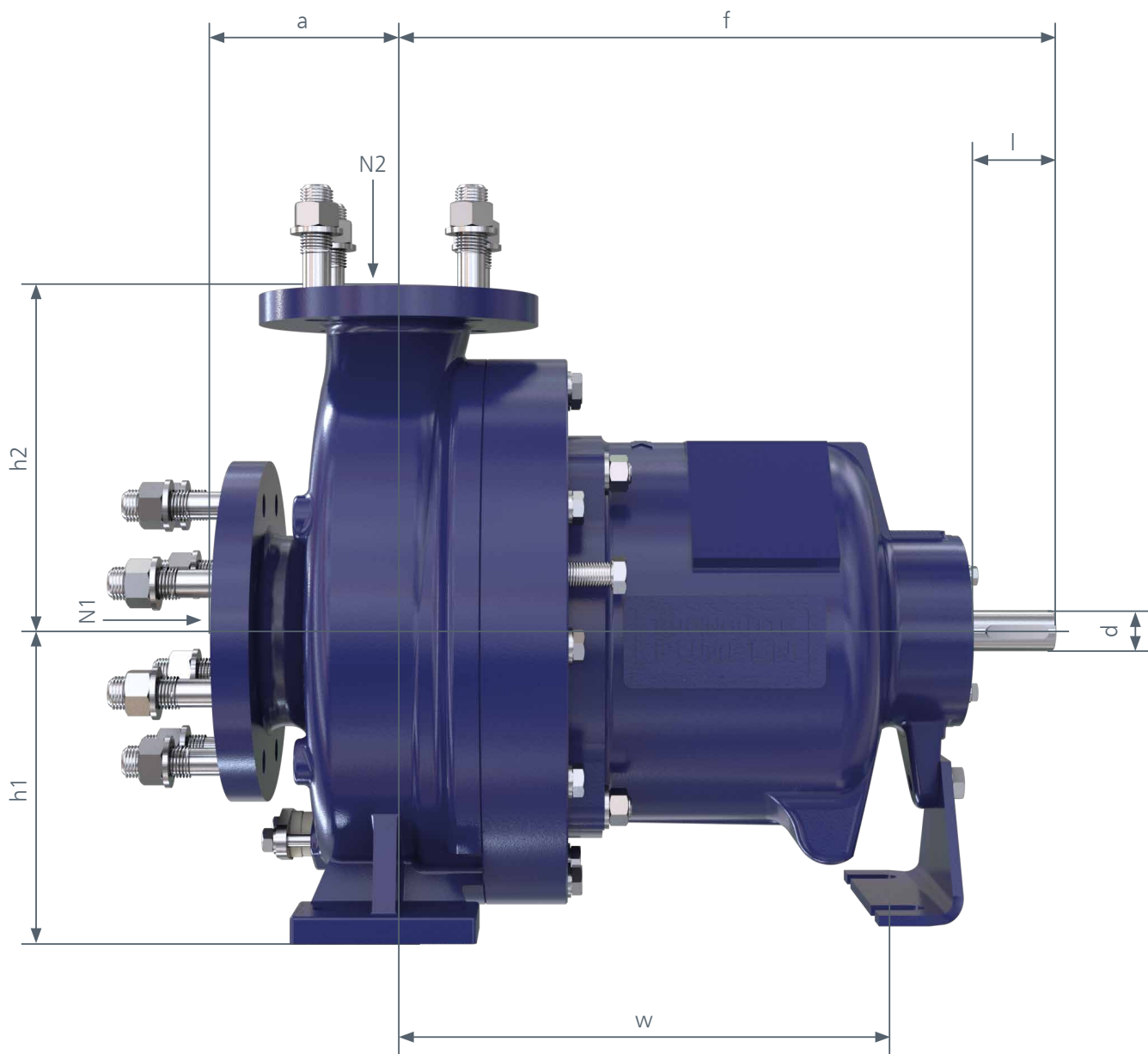


# Pumps & installation dimensions

Size	BB	Pump dimensions				Base dimensions	Shaft end		Flange dimensions	
		a	f	h1	h2	w	ød	l	N1	N2
40-25-160	0	80	385	132	160	285	24	50	40	25
50-32-160	0	80	385	132	160	285	24	50	40	32
50-32-200	1	80	385	160	180	285	24	50	50	32
80-65-160	1	100	385	160	180	285	24	50	80	65
65-40-200	1	100	385	160	180	285	24	50	65	40
80-50-200	1	100	385	160	200	285	24	50	80	50
65-40-250	2	100	500	180	225	370	32	80	65	40
80-50-315	2	125	500	225	280	370	32	80	80	50
100-80-160	2	100	500	160	200	370	32	80	100	80
100-65-250	2	125	500	200	250	370	32	80	100	65
125-80-200	2	125	500	180	250	370	32	80	125	80
125-80-250	2	125	500	225	280	370	32	80	125	80
125-80-315	3	125	530	250	315	370	42	110	125	80
125-100-250	3	140	530	225	280	370	42	110	125	100
150-125-315	3	140	530	280	355	370	42	110	150	125

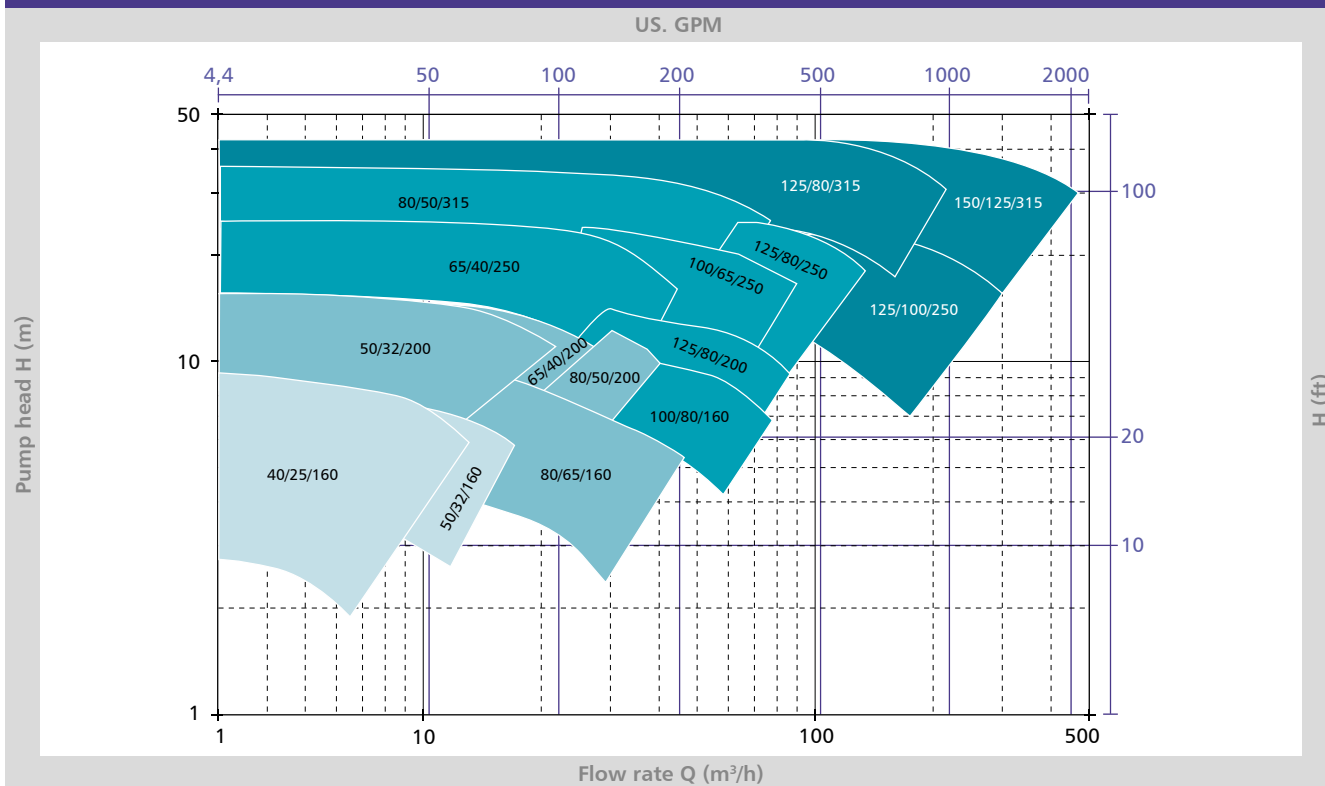
BB = Bearing bracket, N2 = Pressure flange



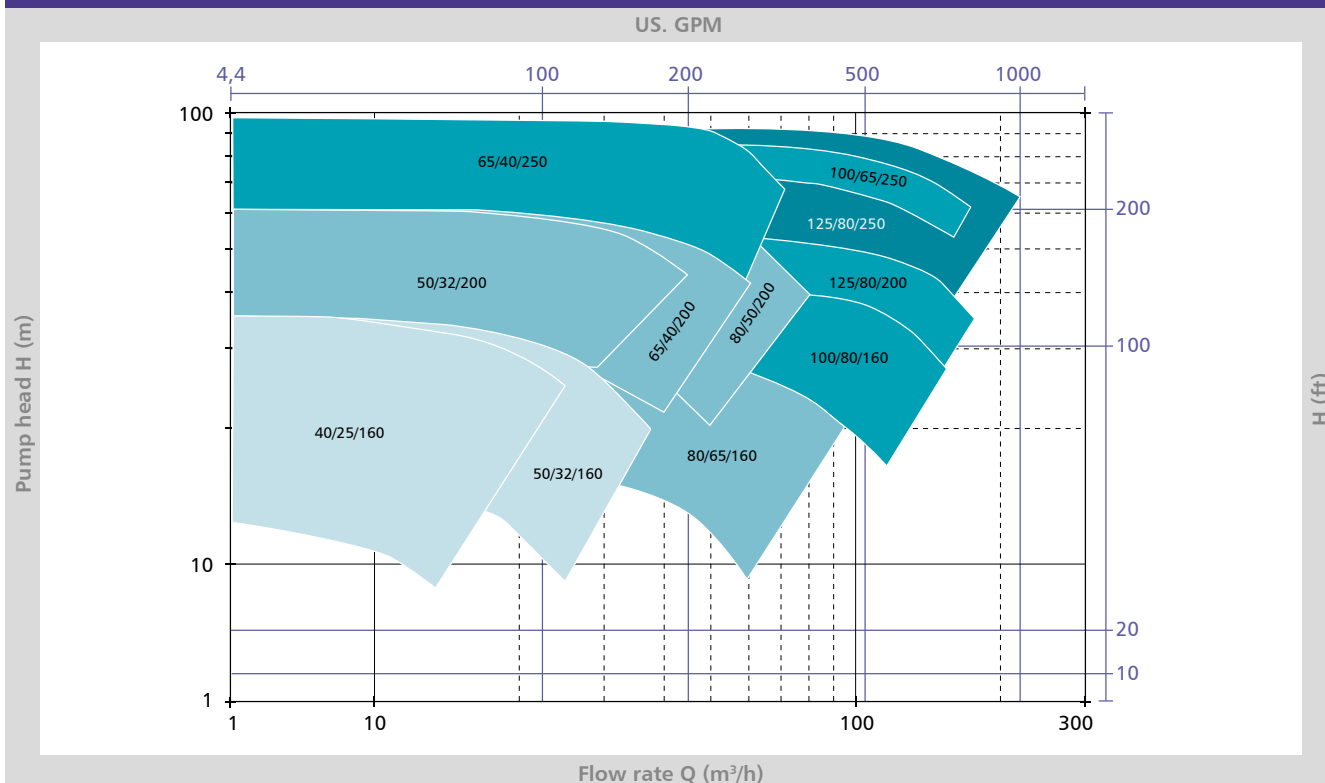


# Capacity ranges

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

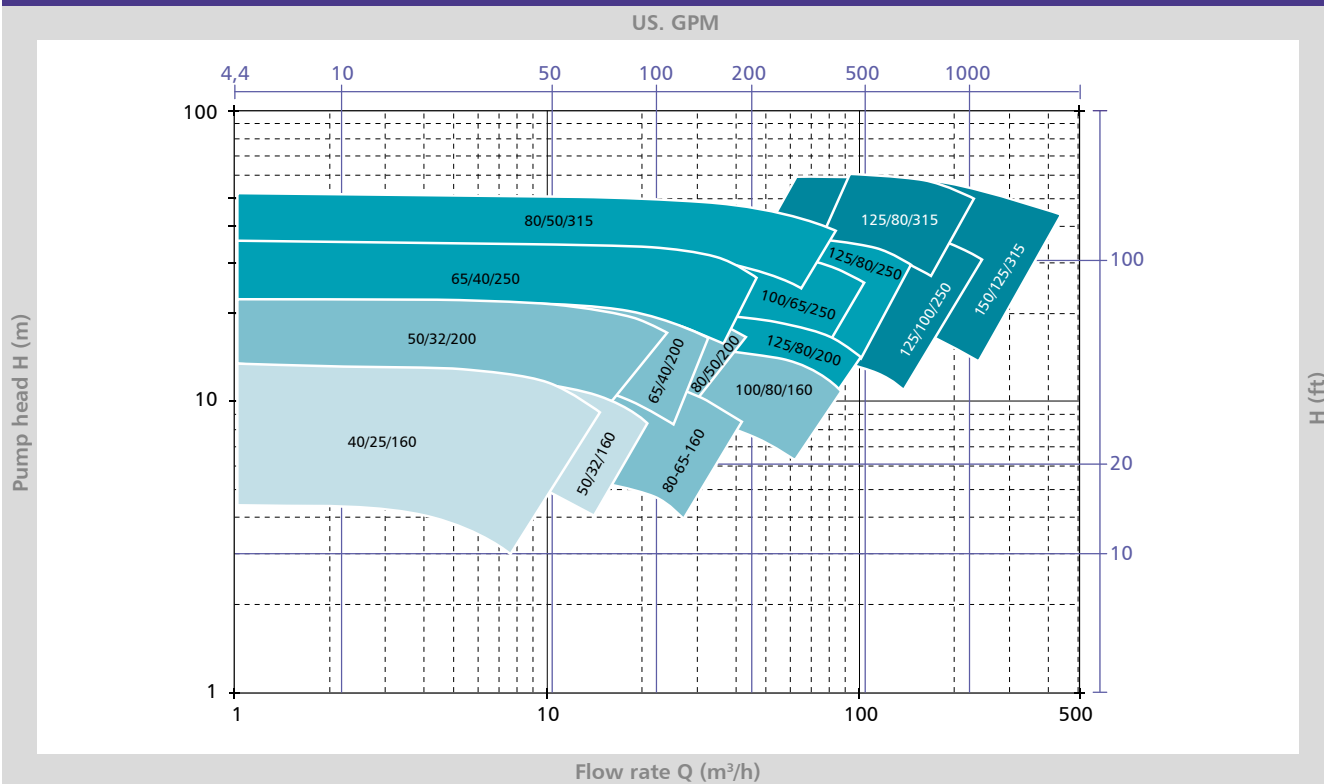


FNPM: 50 Hz  $n = 2900 / \text{min}$

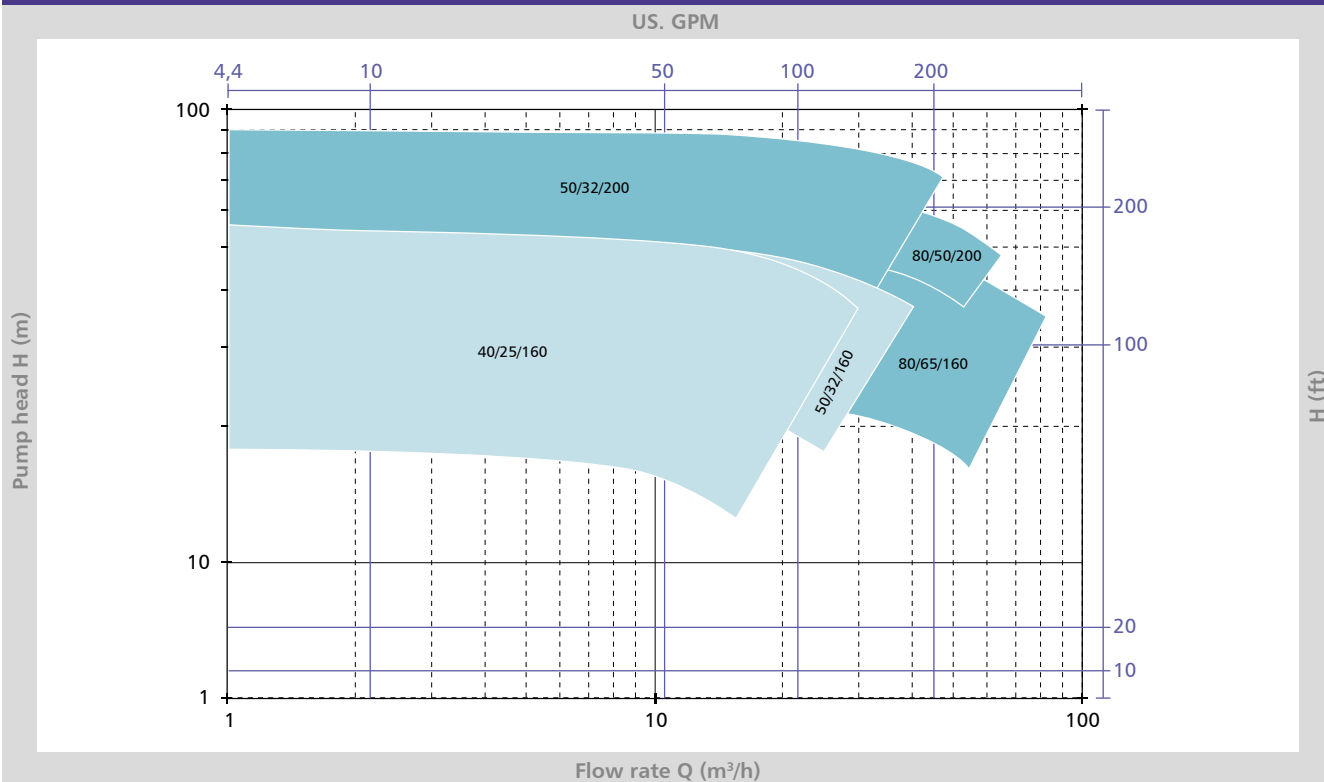


Bearing bracket 0 1 2 3

FNPM: 60 Hz  $n = 1750 / \text{min}$



FNPM: 60 Hz  $n = 3500 / \text{min}$





— An ITT Brand

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