Aliaxis
UTILITIES & INDUSTRY

RHEINHÜTTE PUMPEN

PLASTIC PUMPS FNPM

Magnetic Drive Plastic Pumps – for the toughest applications.

THE RIGHT SOLUTION. FOR ANY FLUID.

FNPM FOR
THE TOUGHEST APPLICATIONS

If you want to solve demanding pumping tasks in the chemical industry efficiently, permanently and economically, you need more than just a coherent technical concept. Experience of application, material knowledge and dialogue with you ultimately lead to the optimum solution. A way which Rheinhütte Pumpen has been following for over 150 years.

SAFE SOLUTIONS FOR DEMANDING PUMPING TASKS

Magnetic drive Rheinhütte pumps are used to pump high-grade aggressive, corrosive as well as toxic, generally hazadous or environmentally polluting media safely at all times. This means safe solutions for all demanding pumping tasks.

EFFICIENT MAINTENANCE CONCEPT: THE CARTRIDGE UNIT

The universal standardisation of drive components and the unique magnet cartridge reduce the range of different parts and allow cost-saving stock provisioning concepts to be implemented. The magnet cartridge is a preassembled unit which is ready for use and contains all of the core components of the magnetic drive pump (e.g. slide bearing, impeller and spacer can). The exchange can take place in just a few minutes – the old unit can then be reconditioned. The cost saving compared with the standard quick-change unit is up to 25%.

WIDE RANGE OF MATERIALS

With the world's widest range of materials, our pumps are an economically appealing alternative to costly metals and existing plastic pumps of other makes: Depending on the size and design, Rheinhütte pumps are available in all customary commercial materials.

ALWAYS THE RIGHT CHOICE

With its variable material selection and the high level of standardisation of the drive components, the revised modular principle of the FNPM range offers considerable potential for savings to be made. In addition, flow-optimised impellers and volute casings allow cost-neutral adjustments and thus also increase the efficiency of the unit.

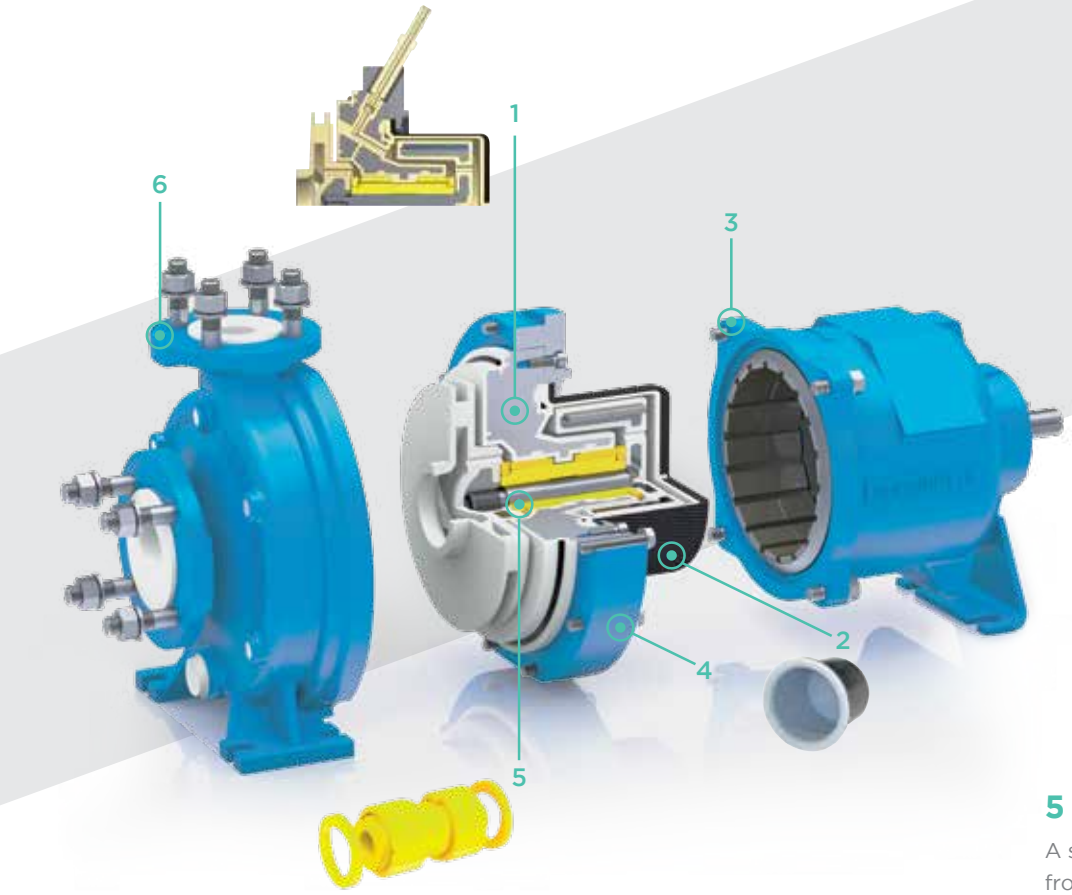
Options

- Close-coupled design (type FNPMF)
- External flushing of the slide bearings is possible
- Self-priming version
- Drain of volute casings
- Electrically conductive materials
- FDA certificates
- Practical monitoring and protection device

FNPM – YOUR ADVANTAGES **AT A GLANCE**

Materials
PFA · PTFE ·
PVDF · PE 1000 · PP

DIN EN 22858
ISO 2858
ISO 5199



1 PROTECTED

For the toughest assignments – for example **solids loads of > 5%** or with **high vapour pressures** – the extenal flushing permanently protects the sensitive areas of the pump using pure medium.

2 RELIABLE

Highly durable PFA (inside) and stable CFK (outside) hermetically seal the pump – with no **eddy currents and vacuum-tight**. Solid ceramic spacer caps increase the level of safety when working with very difficult media.

3 ADVANCED

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**. High-performance magnets deliver traction even at temperatures ranging from -30 to 190°C.

4 EFFICIENT

The **fully pre-mounted unit** comprising impeller and internal magnet system **saves time** during fitting and costs associated with keeping items in stock. The magnet cartridge is very **easy to fit!** It does not require any prior knowledge or any readjustments.

5 INNOVATIVE

A solid, large-scale slide bearing made from high-purity silicon carbide (SiC) tolerates rough operating conditions and guarantees **ease of handling** at all times when carrying out maintenance work. Friction-optimised surfaces ensure **maximum operational** reliability in the event of dry running or a lack of lubrication.

6 INDIVIDUAL

Let us help you **to select the best hydraulic materials** from technical or economical points of view: PFA, PTFE, PVDF, PE 1000 or PP – **lined or full material.** All versions are compatible with one another. A solid, completely closed cast armour provides protection from pipeline forces and UV rays.
We adapt our 15 standard hydraulic units to reflect **your specific requirements** – for example with low negative NPSHa or with large delivery heights.

PLASTIC
A VARIABLE MATERIAL

Our magnetic drive pump FNPM is available in five different plastics – always specifically coordinated to meet your application. The use of plastic ensures excellent corrosion resistance. Your advantage – you can be certain of a long life-cycle for your pumps.

PP – POLYPROPYLENE
THE TIME-TESTED PLASTIC

This plastic is particularly suitable for simple, frequently-met applications. Its performance in the temperature range from 0 to 100 °C is astonishing. PP has proved its suitability for use in acids, alkalis and salt solutions as well as in hydrochloric acid pickling processes.

PVDF – POLYVINYLIDENE FLUORIDE
THE INEXPENSIVE GENERALIST

The partial fluorination of this polymer increases its resistance to chemicals several times over. PVDF resists most solvents, acids and oxidising agents. PVFD is an optimal material for many applications in the chemical industry from -20 to 130 °C.

PE 1000 (UHMWPE) – POLYETHYLENE
THE WEAR-RESISTANT PLASTIC

The outstanding property of this high molecular polymer is its wear resistance when solids are present in the medium being pumped.
A further attribute is its resistance to corrosion from a wide spectrum of chemicals. In many cases it is an alternative to stainless steels.

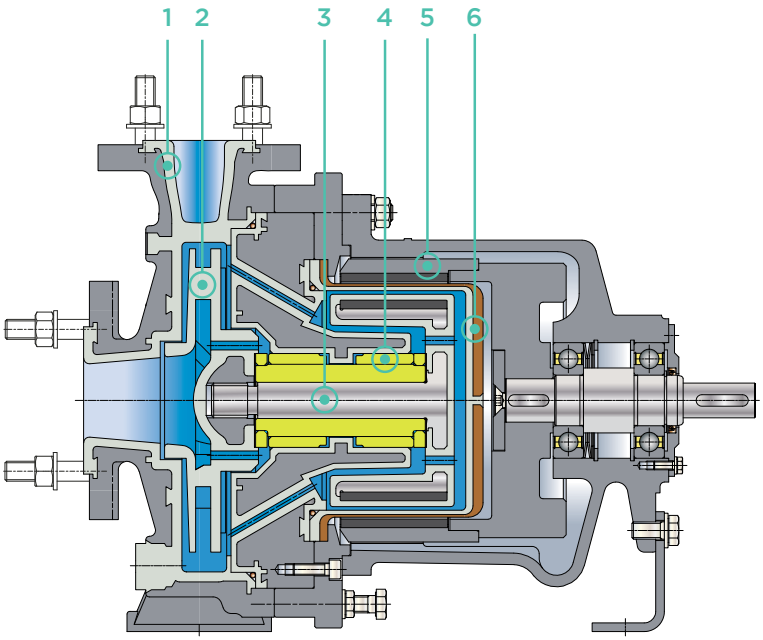
PTFE – POLYTETRAFLUORETHYLENE
PFA – PERFLOURINATED ALKYL VINYL ETHER
THE ALLROUNDER AMONG THE PLASTICS

Its excellent resistance to almost every chemical attack makes it possible for this material to be used in almost every application – at temperatures up to 180 °C.
As well as supplying pumps made from solid PTFE, Rheinhütte also supplies pumps plastic lined with PFA.
Both versions provide the same corrosion resistance.

The experts of RHEINHÜTTE MATERIAL ANALYSIS AND RECOMMENDATION will establish the optimal material for your particular application and also provide you with detailed information about the operating parameters and possible alternatives (inculding metals and ceramics).

FNPM IN DETAIL
DESIGN FEATURES

Design with a plastic lined volute casing

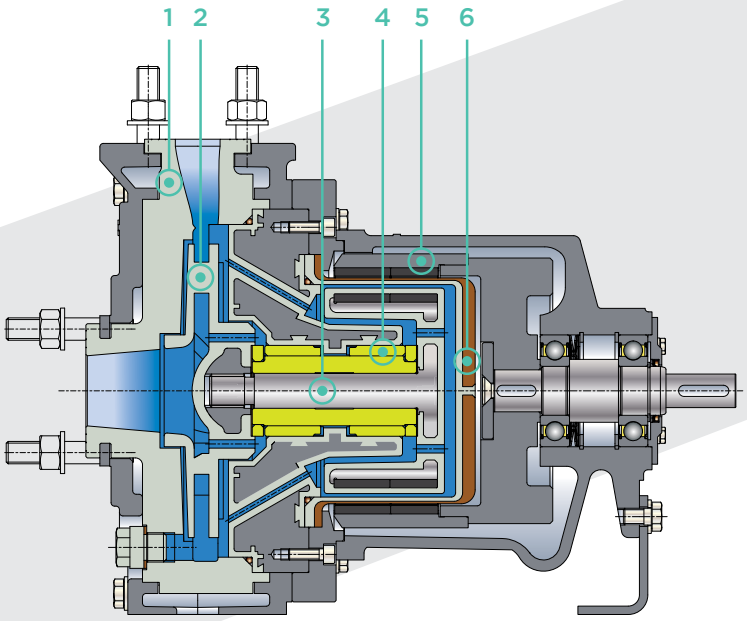


FNPM

1 Volute casing: PFA, PTFE, PVDF, PE 1000 or PP
2 Closed impeller, screwed on. Materials corresponding to 1
3 Internal rotor with SmKo magnets, single-piece design: rotor and shaft completely coated with PFA
4 Anti-twist and low-friction slide bearings made from pure, silicon-free SiC
5 Power transmission through concentric rotary coupling
6 Metal-free (eddy current-free) spacer can: CFK/PFA or ZrO2 ceramic

Technical Data	
Q	max. 350 m³/h
H	max. 100 m
T	-30 to 190 °C
PN	16 bar

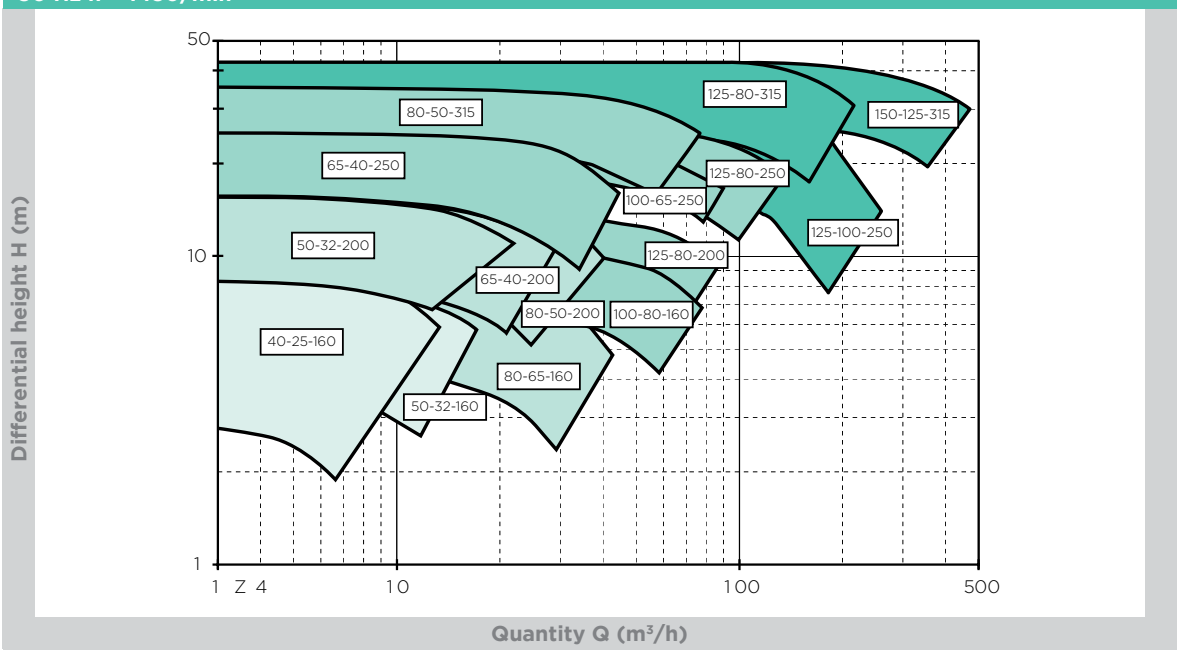
Design with an armoured volute casing



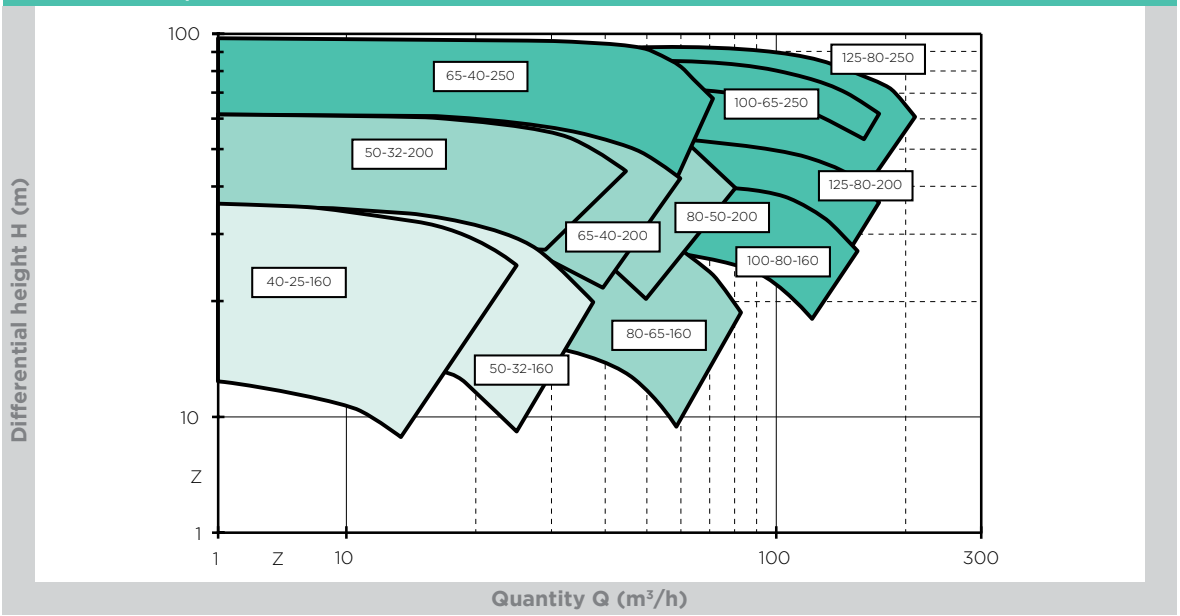
Pump complies generally with drawing but the design is subject to alteration.

FNPM IN DETAIL
RANGE CHART

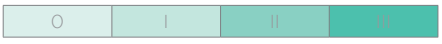
50 Hz n = 1450/min



50 Hz n = 2900/min



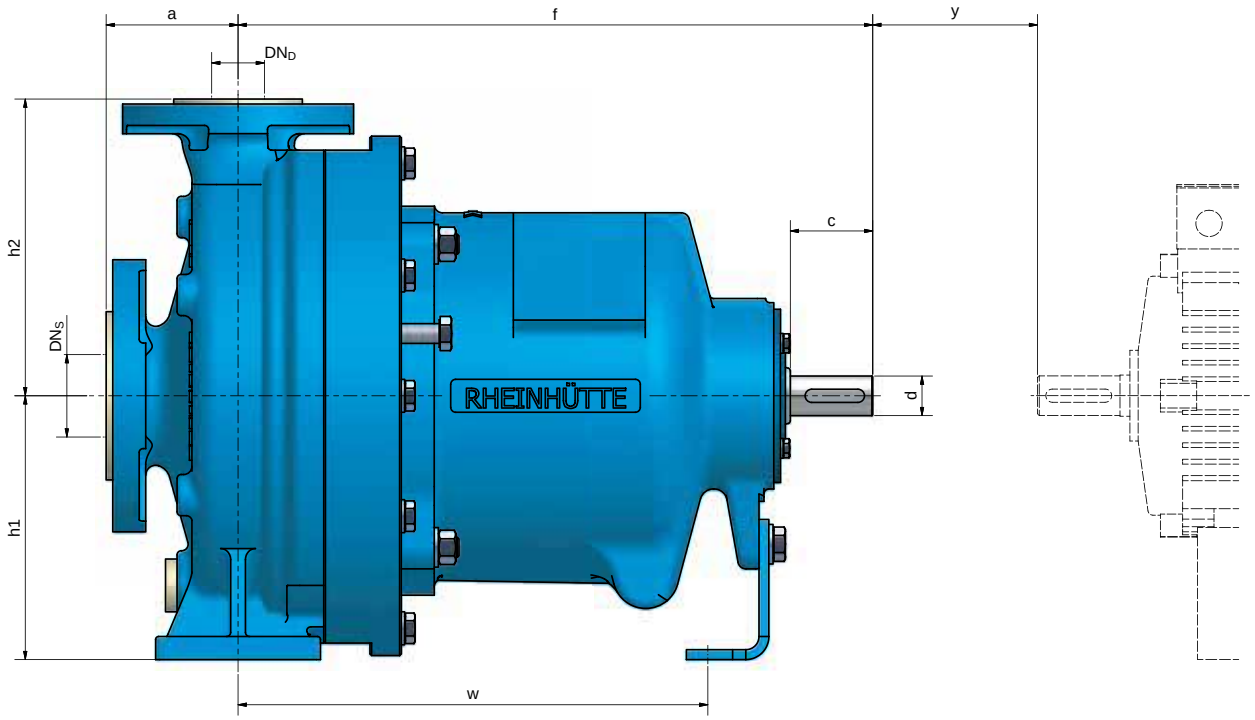
Bearing bracket



The performance data of the FNPM range correspond to the chemical standard EN 22858. This guarantees that pumps of different makes are interchangeable. However, in specific cases, for example if there are unfavourable intake conditions (NPSH) or unfavourable operating points (Q/H), we offer customised, computer-optimised hydraulic units (CFD) which meet the particular requirements of your application.

FNPM IN DETAIL
DIMENSIONS

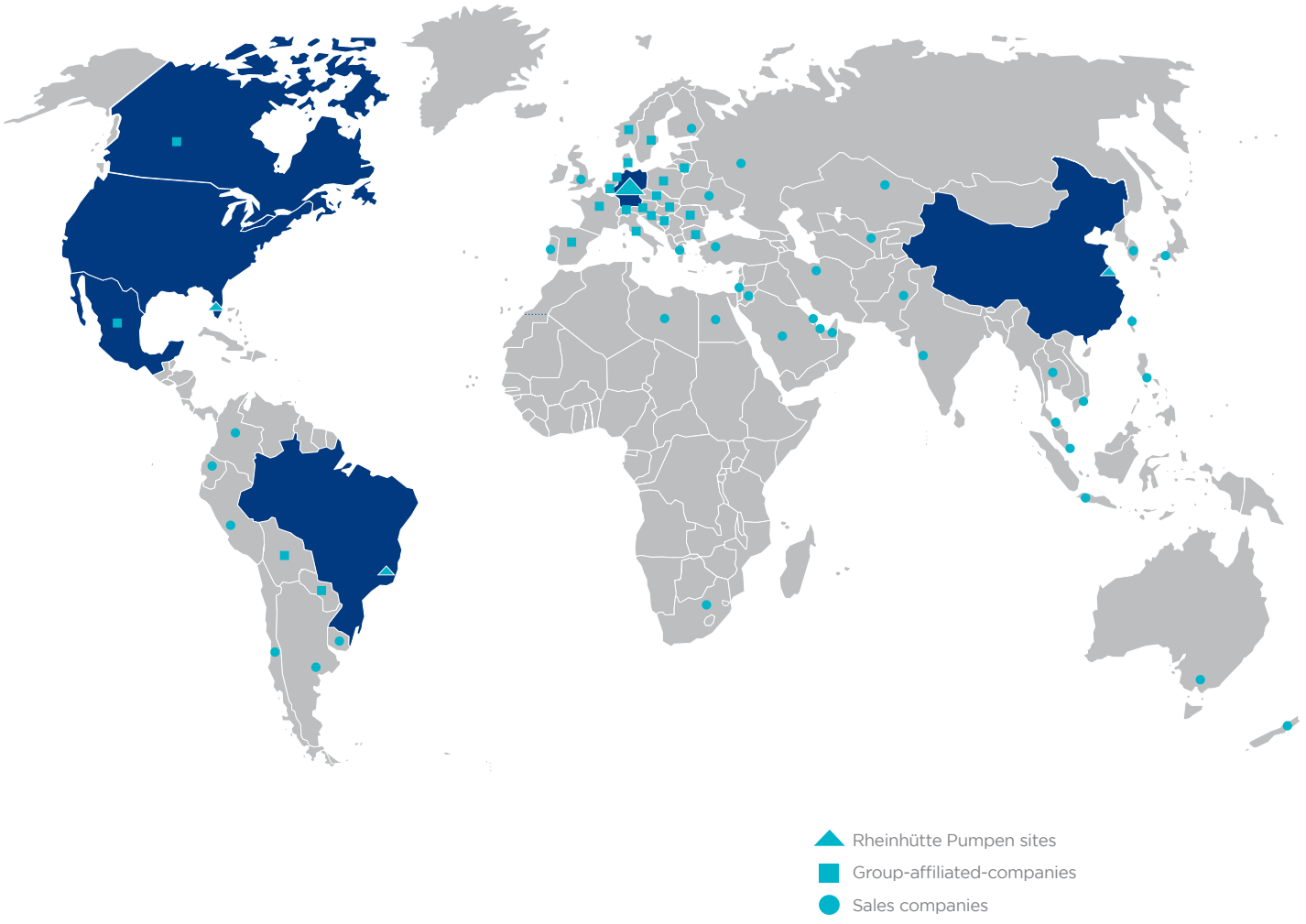
Variety in standard sizes for any pumping task. 15 sizes available.



Size	BB[1]	Pump Dimensions				Base Dimension	Spacer length	Shaft end		Flange Dimensions	
		a	f	h_1	h_2	w	y	d	c	DN_D [2]	DN_S [3]
40-25-160	0	80	385	132	160	285	100	24	50	25	40
50-32-160	0	80	385	132	160	285	100	24	50	32	40
50-32-200	I	80	385	160	180	285	100	24	50	32	50
80-65-160	I	100	385	160	180	285	100	24	50	65	80
65-40-200	I	100	385	160	180	285	100	24	50	40	65
80-50-200	I	100	385	160	200	285	100	24	50	50	80
65-40-250	II	100	500	180	225	370	100	32	80	40	65
80-50-315	II	125	500	225	280	370	100	32	80	50	80
100-80-160	II	100	500	160	200	370	100	32	80	80	100
100-65-250	II	125	500	200	250	370	140	32	80	65	100
125-80-200	II	125	500	180	250	370	140	32	80	80	125
125-80-250	II	125	500	225	280	370	140	32	80	80	125
125-80-315	III	125	530	250	315	370	140	42	110	80	125
125-100-250	III	140	530	225	280	370	140	42	110	100	125
150-125-315	III	140	530	280	355	370	140	42	110	125	150

[1] BB = Bearing bracket [2] DN_D = Pressure flange [3] DN_S = Suction flange

RHEINHÜTTE PUMPEN
GLOBAL EXPERTISE



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