

NS, PF

50 Hz



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1. PF



Fig. 1 PF pump

General description

Grundfos PF pumps are compact peripheral centrifugal pumps. The pumps can generate high heads and are suitable for applications such as

- domestic applications
- water supply
- light gardening applications
- draining and filling of cisterns
- light industrial applications, such as feeding pressurised boilers (anti-condensation).

Features

- The pumps are efficient solutions in a simple design for the transfer of water.
- The materials of the pumps ensure an excellent robustness.
- All versions have built-in overload protection.

Constructional features

Pump

Cast-iron pump housing and motor stool with brass wear disc.

Brass impeller. Carbon/ceramic mechanical shaft seal.

Motor

Totally enclosed fan-cooled induction motor. The rotor is mounted on oversized greased-for-life ball bearings ensuring silent running and long life.

The motor incorporates overload protection as well as a capacitor which is switched on permanently.

Enclosure class:	Motor: IP44. Terminal box: IP55.
Insulation class:	F.
Supply voltage:	1 x 220-240 V, 50 Hz.

Material specification

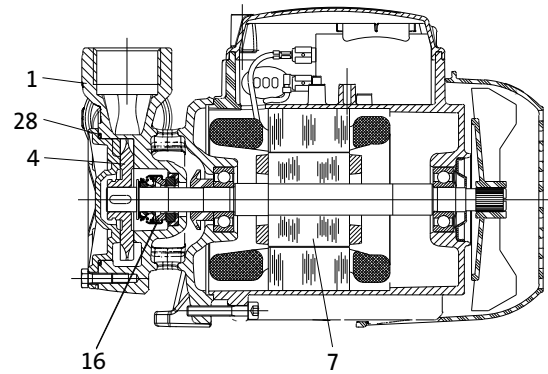


Fig. 2 Sectional drawing of PF pump

Pos.	Description	Material
1	Pump housing	Cast iron 250 UNI ISO 185
4	Impeller	Brass PCu Zn 40 Pb2 5705-65
7	Shaft	Stainless steel AISI 416, X12 CrS 13
16	Mechanical shaft seal	Carbon/ceramic
28	O-ring	NBR rubber

Marks



Technical data

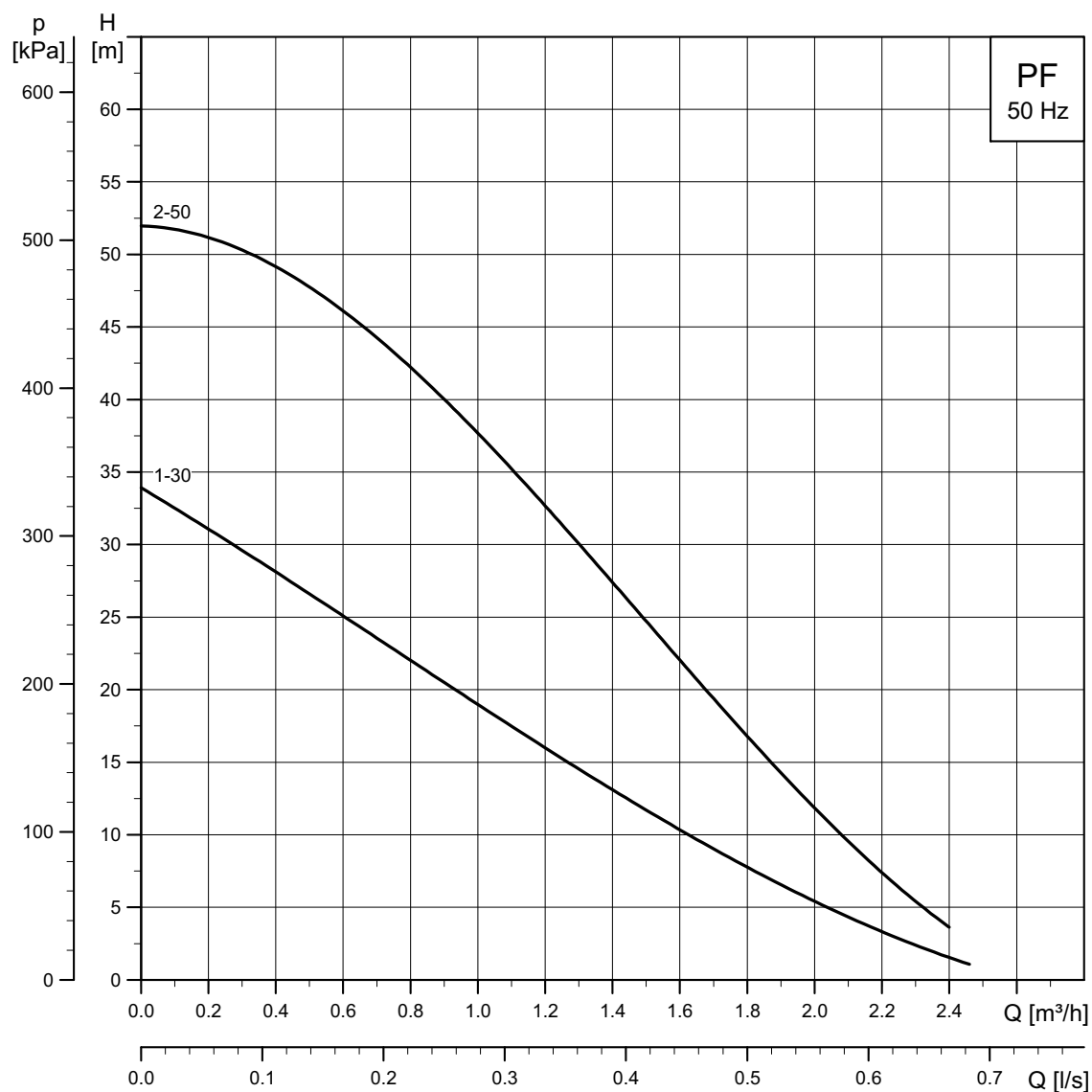
Operating range:	0.3 - 2.4 m ³ /h and heads up to 53 metres	
Liquid temperature:	0-35 °C for domestic use -10 - +50 °C for other uses	
Pumped liquids:	Thin, clean, non-aggressive and non-explosive liquids, not containing solid particles or fibres.	
Maximum ambient temperature:	40 °C	
Maximum operating pressure:	6 bar (600 kPa)	PF 1-30
	10 bar (1000 kPa)	PF 2-50
Installation:	Horizontal position	

Performance curves

Curve conditions

The performance curves are based on a kinematic viscosity of 1 mm²/s and a density of 1000 kg/m³.

Tolerances are according to ISO 9906, Annex A.

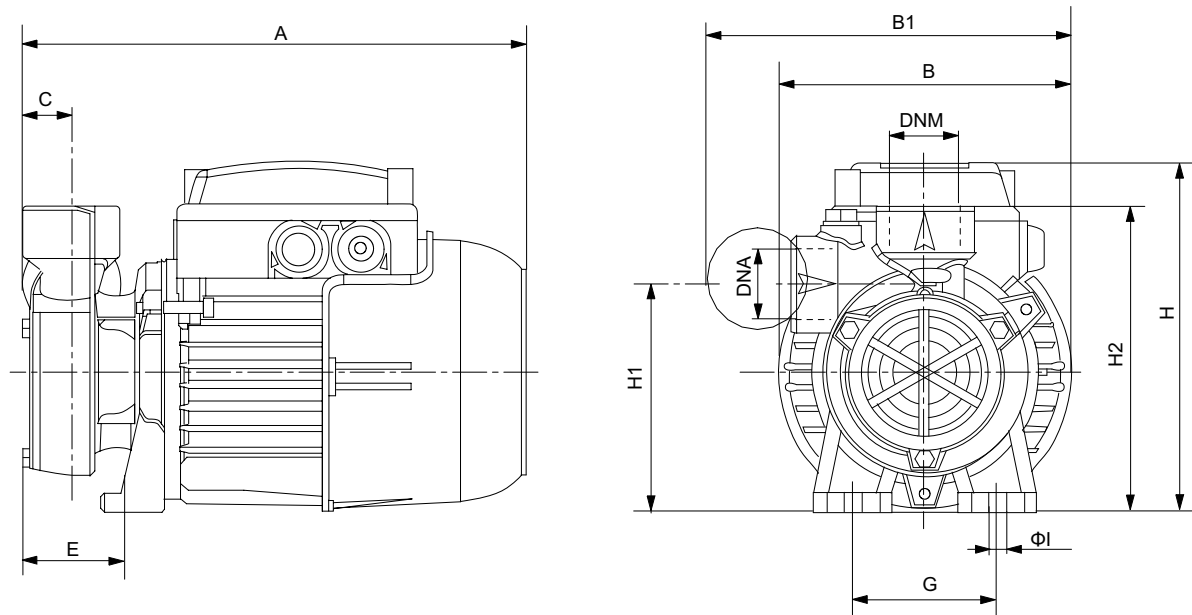


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Fig. 3 Performance curves of PF pumps

Dimensions

PF 1-30

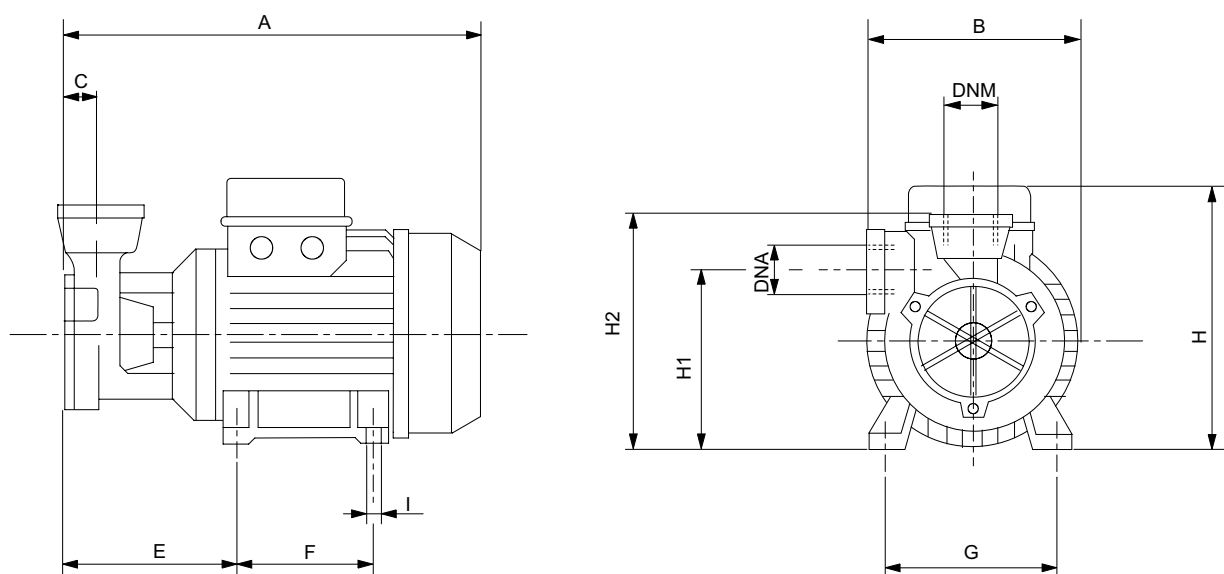


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Fig. 4 Dimensional sketches of PF pumps

Pump type	Voltage [V]	A	B	B1	C	E	G	H	H1	H2	ØI	DNA	DNM	Weight [kg]
PF 1-30	1 x 230	228	132	165	22	46	65	158	103	138	8	Rp 1	Rp 1	5

PF 2-50



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Fig. 5 Dimensional sketches of PF pumps

Pump type	Voltage [V]	A	B	C	E	G	H	H1	H2	I	DNA	DNM	Weight [kg]
PF 2-50	1 x 230	255	130	26	106	100	186	108	153	7	Rp 1	Rp 1	7

Product numbers and electrical data

Pump type	Production place		Voltage 1 x 220-240 V, 50 Hz	P1 Max. [kW]	I _{1/1} [A]	Capacitor		Product number
	Italy	Hungary				[μF]	[Vc]	
PF 1-30		•	•	0.47	2	8	450	98904984
PF 2-50	•		•	0.86	3.8	12.5		98904985

2. NS



Fig. 6 NS pump

General description

Grundfos NS pumps are centrifugal pumps designed for lifting water in domestic, industrial and agricultural installations.

The pumps come in two versions:

- single-impeller pumps
- twin-impeller pumps.

Features

- The pumps are efficient solutions in a simple design for the transfer of water.
- The materials of the pumps ensure an excellent robustness.
- All single-phase versions have built-in overload protection.

Constructional features

Pump

Cast-iron pump housing and motor stool treated against corrosion.

Technopolymer or cast-iron impeller.

Carbon/ceramic mechanical seal on stainless-steel rotor shaft extension.

Motor

Totally enclosed fan-cooled induction motor. The rotor is mounted on oversized greased-for-life ball bearings ensuring silent running and long life.

Single-phase pumps have built-in overload protection.

Three-phase pumps require additional protection.

Single-phase pumps have a capacitor which is permanently in circuit.

Enclosure class:	Motor: IP44. Terminal box: IP55.
Insulation class:	F.
Supply voltage:	1 x 220-240 V, 50 Hz. 3 x 220-240 / 380-415 V, 50 Hz.

Material specification

Single-impeller pumps

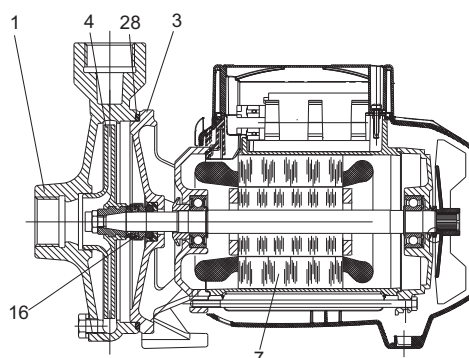


Fig. 7 NS single-impeller pump

Twin-impeller pumps

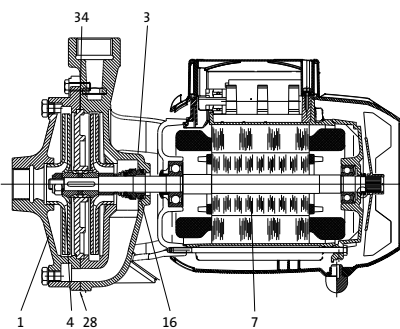


Fig. 8 NS twin-impeller pump

Pos.	Description	Material	Pump type
1	Pump housing	Cast iron 200 UNI ISO 185	
3	Motor stool	Cast iron 200 UNI ISO 185	
4	Impeller	Technopolymer A	NS 3-40, NS 4-23, NS 5-33, NS 5-50, NS 6-30, NS 6-40, NS 13-18
		Technopolymer B	NS 5-60
7	Shaft	Cast iron EN-GJL-200	NS 30-18, NS 30-30, NS 30-36
		Stainless steel AISI 416 X12 CrS 13 UNI 6900/71	NS 3-40, NS 4-23, NS 5-33, NS 13-18
		Stainless steel AISI 303 X10 CrNiS 1809 UNI 6900/71	NS 5-50, NS 5-60, NS 6-30, NS 6-40, NS 30-18, NS 30-30, NS 30-36
16	Mechanical shaft seal	Carbon/ceramic	
28	O-ring	NBR	NS 3-40, NS 4-23, NS 5-33, NS 5-50, NS 5-60, NS 6-30, NS 6-40, NS 13-18
		EPDM	NS 30-18, NS 30-30, NS 30-36
34	Disc	Cast iron 200 UNI ISO 185	

Marks



Technical data

Operating range:	Single-impeller pumps: 1.8 - 16.8 m ³ /h and heads up to 34 metres Twin-impeller pumps: 1.5 - 10.8 m ³ /h and heads up to 60 metres	
	0-35 °C for domestic use	
Liquid temperature:	-10 - +50 °C for other uses	NS 3-40, NS 4-23, NS 5-33, NS 5-50, NS 6-30, NS 6-40, NS 13-18
	-15 - +110 °C for other uses	NS 5-60, NS 30-18, NS 30-30, NS 30-36
Pumped liquids:	Thin, clean, non-aggressive and non-explosive liquids, not containing solid particles or fibres.	
Maximum ambient temperature:	40 °C	
Maximum operating pressure:	6 bar (600 kPa)	NS 3-40, NS 4-23, NS 5-33, NS 6-30, NS 6-40, NS 13-18, NS 30-18
	8 bar (800 kPa)	NS 5-50, NS 5-60, NS 30-30, NS 30-36
Installation:	Horizontal or vertical position. If the pump is installed in vertical position, the motor must be above the pump.	
On request:	Other voltages and/or frequencies	

Performance curves

Curve conditions

The performance curves are based on a kinematic viscosity of 1 mm²/s and a density of 1000 kg/m³. Tolerances are according to ISO 9906, Annex A.

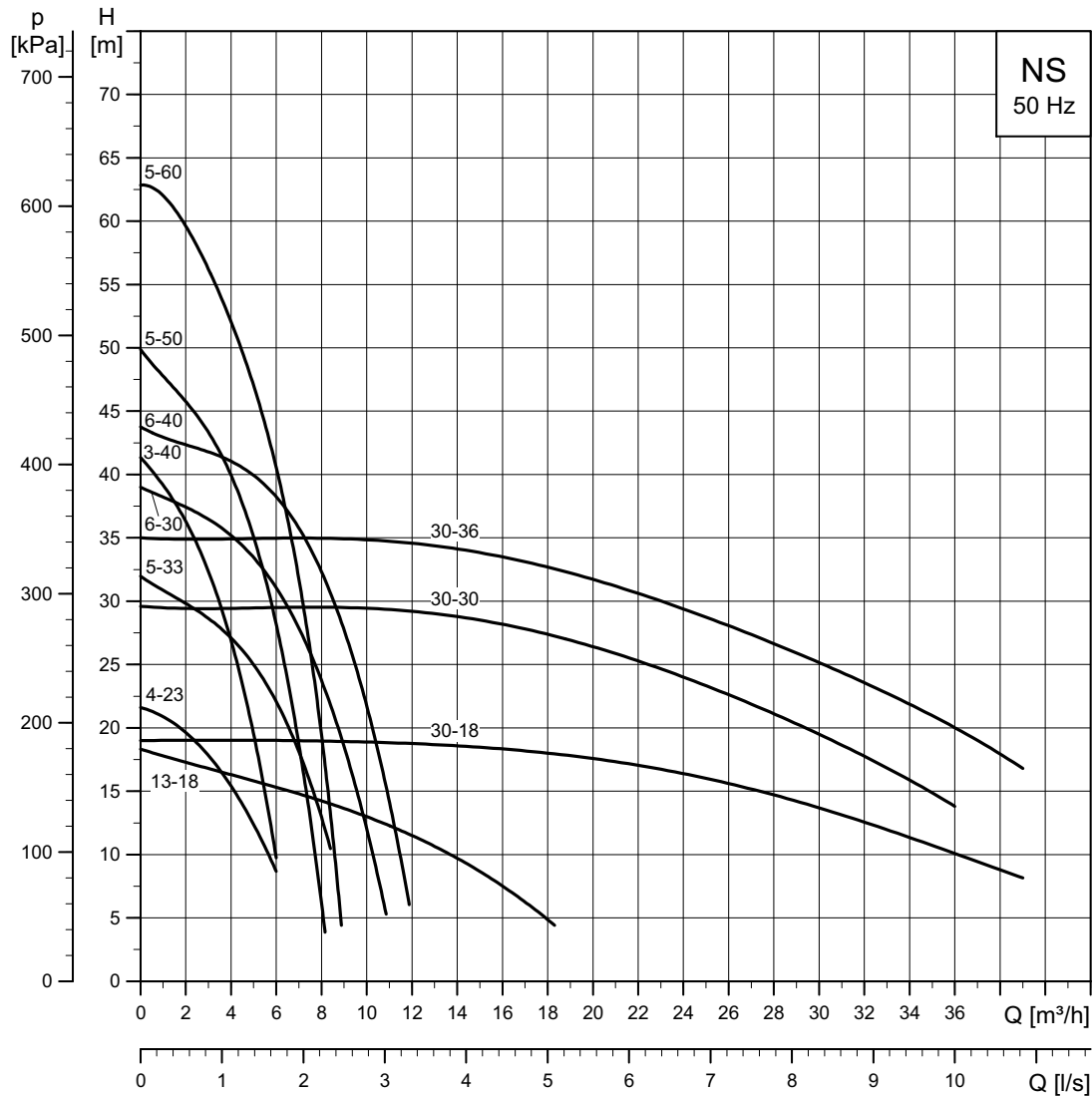
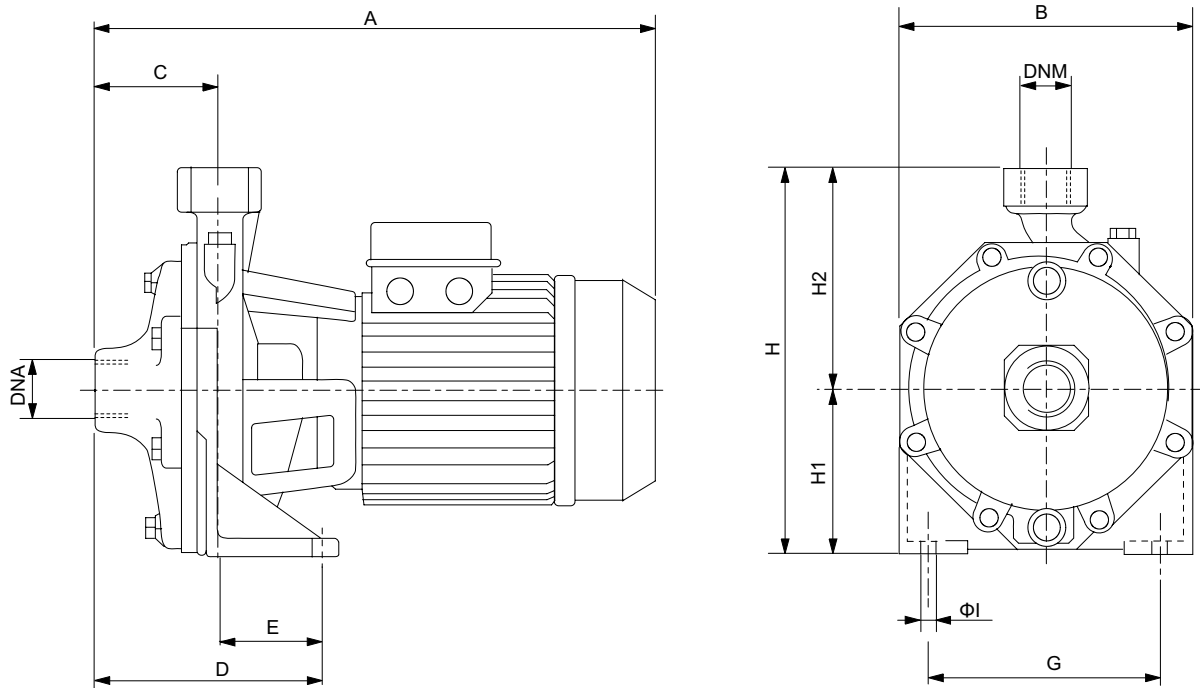


Fig. 9 Performance curves of NS pumps

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Dimensions

NS 3-40, NS 4-23, NS 5-33, NS 5-50, NS 5-60



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Fig. 10 Dimensional sketches of NS pumps

Pump type	Voltage [V]	A	B	C	D	E	F	G	H	H1	H2	ØI	DNA	DNM	Weight [kg]
NS 3-40	1 x 220-240	362	180	76	148	72	15	148	235	100	135	9.5	Rp 1	Rp 1	15
NS 4-23	1 x 220-240	275	160	50	100	50	15	110	205	85	120	9	Rp 1	Rp 1	10
NS 5-33	1 x 220-240	330	185	50	108	58	15	140	235	100	135	9	Rp 1	Rp 1	15
NS 5-50	1 x 220-240	370	210	75	144	69	15	165	268	118	150	11.5	Rp 1 1/4	Rp 1	26
NS 5-60	1 x 220-240	370	210	75	144	69	15	165	268	118	150	11.5	Rp 1 1/4	Rp 1	25

NS 6-30, NS 6-40

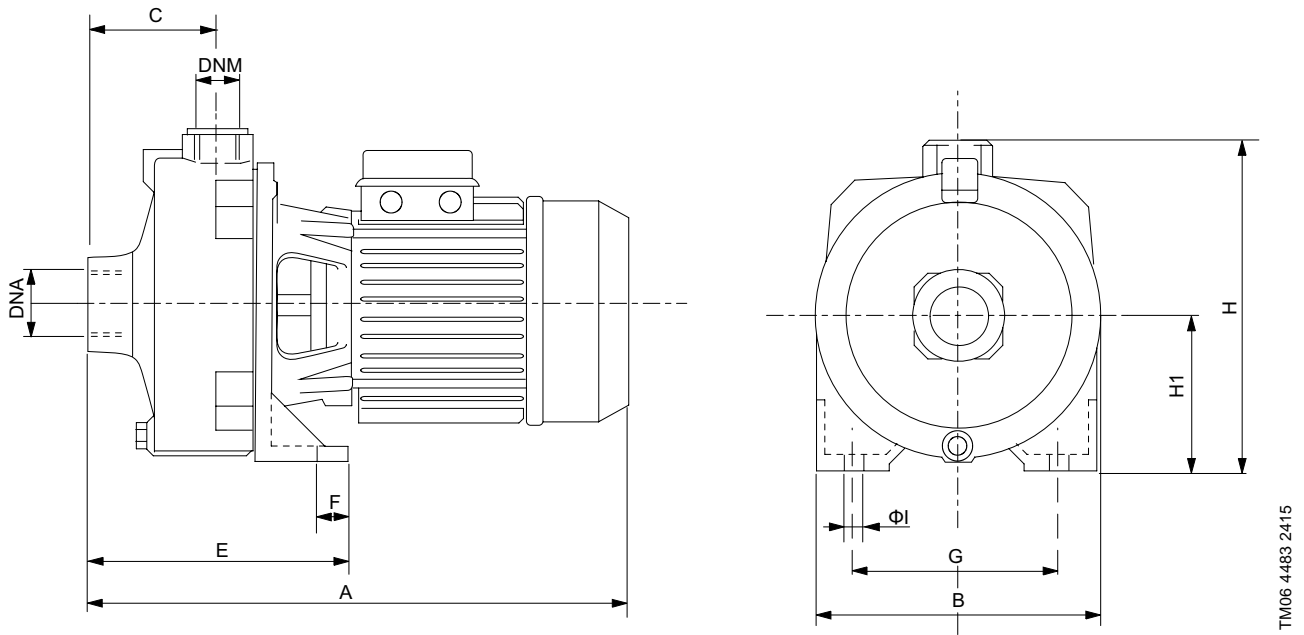
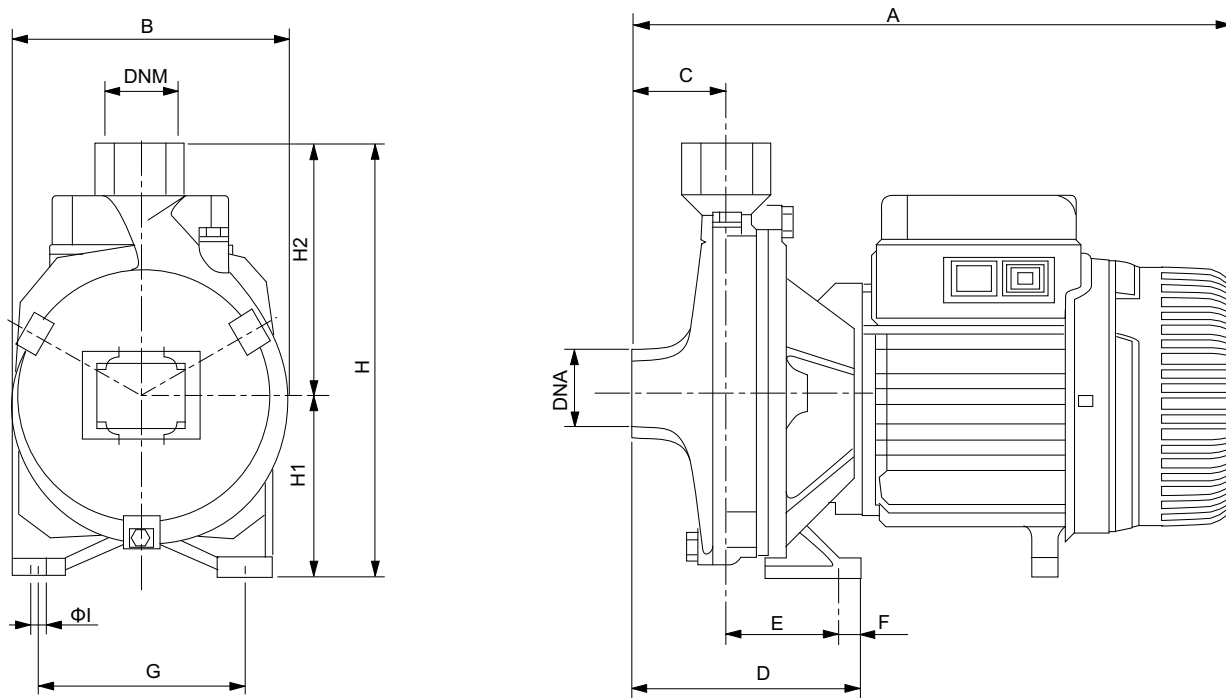


Fig. 11 Dimensional sketches of NS pumps

Pump type	Voltage [V]	A	B	C	E	F	G	H	H1	ØI	DNA	DNM	Weight [kg]
NS 6-30	1 x 220-240	387	205	88	169	20	145	233	108	11	Rp 1 1/2	Rp 1	26
NS 6-40	1 x 220-240	461	205	88	179	20	145	233	108	11	Rp 1 1/2	Rp 1	24

NS 13-18

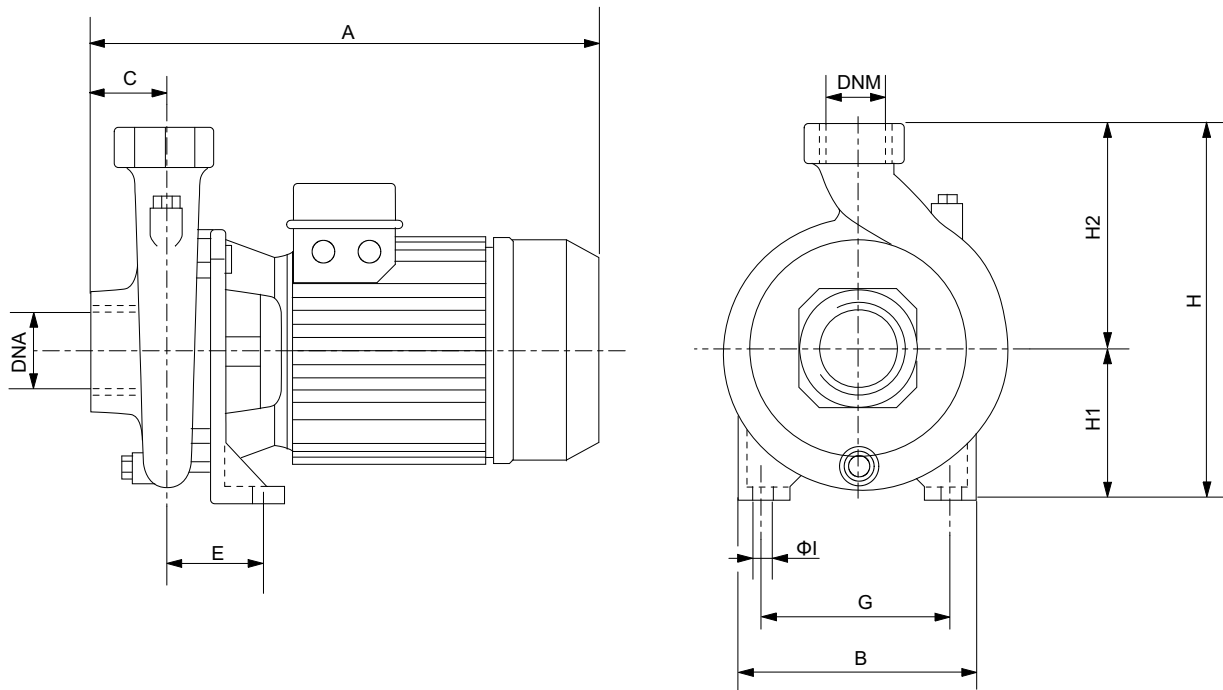


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Fig. 12 Dimensional sketches of NS pumps

Pump type	Voltage [V]	A	B	C	D	E	F	G	H	H1	H2	ØI	DNA	DNM	Weight
NS 3-18	1 x 220-240	325	173	45	118	58	15	110	218	85	125	9.5	Rp 1 1/2	Rp 1 1/2	16

NS 30-18, NS 30-30, NS 30-36



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Fig. 13 Dimensional sketches of NS pumps

Pump type	Voltage [V]	A	B	C	E	G	H	H1	H2	ØI	DNA	DNM	Weight
NS 30-18	1 x 220-240	430	200	62	74	120	270	105	165	11	Rp 2	Rp 2	23
NS 30-18	3 x 380-415	358	200	62	74	120	270	105	165	11	Rp 2	Rp 2	23
NS 30-30	3 x 380-415	440	240	62	100	155	312	132	180	14	Rp 2 1/2	Rp 2	37
NS 30-36	3 x 380-415	440	240	62	100	155	312	132	180	14	Rp 2 1/2	Rp 2	39

Product numbers and electrical data

Pump type	Production place		Voltage		P1	I _{1/1}	Capacitor		Product number
	Italy		1 x 220-240 V 50 Hz	3 x 380-415 V 50 Hz	Max. [kW]	[A]	[μF]	[Vc]	
NS 3-40	•		•		1.2	5.5	20		98904963
NS 4-23	•		•		0.65	3	10		98904964
NS 5-33	•		•		1.3	6	20		98904966
NS 5-50	•		•		1.9	8.3	31.5		98904967
NS 5-60	•		•		2.7	12.8	40	450	98904968
NS 6-30	•		•		1.56	7.1	25		98904969
NS 6-40	•		•		2	9	40		98904970
NS 13-18	•		•		1.1	9.5	20		98904981
NS 30-18	•		•		1.85	9.5	20		98904982
NS 30-18	•			•	2.1	3.6			98904983
NS 30-30	•			•	3.8	14.7	-	-	98907044
NS 30-36	•			•	4.55	10.2			98907045

3. Grundfos Product Center



"SIZING" enables you to size a pump based on entered data and selection choices.

"REPLACEMENT" enables you to find a replacement product. Search results will include information on the following:

- the lowest purchase price
- the lowest energy consumption
- the lowest total life cycle cost.

The screenshot shows the Grundfos Product Center website. At the top, there is a navigation bar with the logo and 'PRODUCT CENTER'. Below it is a search bar with a 'SEARCH' button. The main content area features four large buttons: 'SIZING' (with a subtext 'Enter pump sizing'), 'CATALOGUE' (with a subtext 'Products and services'), 'REPLACEMENT' (with a subtext 'Replace an old pump with a new'), and 'LIQUIDS' (with a subtext 'Find pump by liquid'). Below these buttons is a 'QUICK SIZING' section with input fields for 'Flow (Q)*' and 'Head (H)*', and radio buttons for 'Select what to size by: Size by application', 'Size by pump design', and 'Size by pump family'. A 'START SIZING' button is also present. At the bottom of the 'QUICK SIZING' section, there are links for 'ADVANCED SIZING: Advanced sizing by application' and 'Guided selection'.

Callout for "SIZING": "SIZING" enables you to size a pump based on entered data and selection choices.

Callout for "REPLACEMENT": "REPLACEMENT" enables you to find a replacement product. Search results will include information on the following:

- the lowest purchase price
- the lowest energy consumption
- the lowest total life cycle cost.

Callout for "CATALOGUE": "CATALOGUE" gives you access to the Grundfos product catalogue.

Callout for "LIQUIDS": "LIQUIDS" enables you to find pumps designed for aggressive, flammable or other special liquids.

All the information you need in one place

Performance curves, technical specifications, pictures, dimensional drawings, motor curves, wiring diagrams, spare parts, service kits, 3D drawings, documents, system parts. The Product Center displays any recent and saved items - including complete projects - right on the main page.

Downloads

On the product pages, you can download installation and operating instructions, data booklets, service instructions, etc. in PDF format.

Subject to alterations.

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ECM: 1161970

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