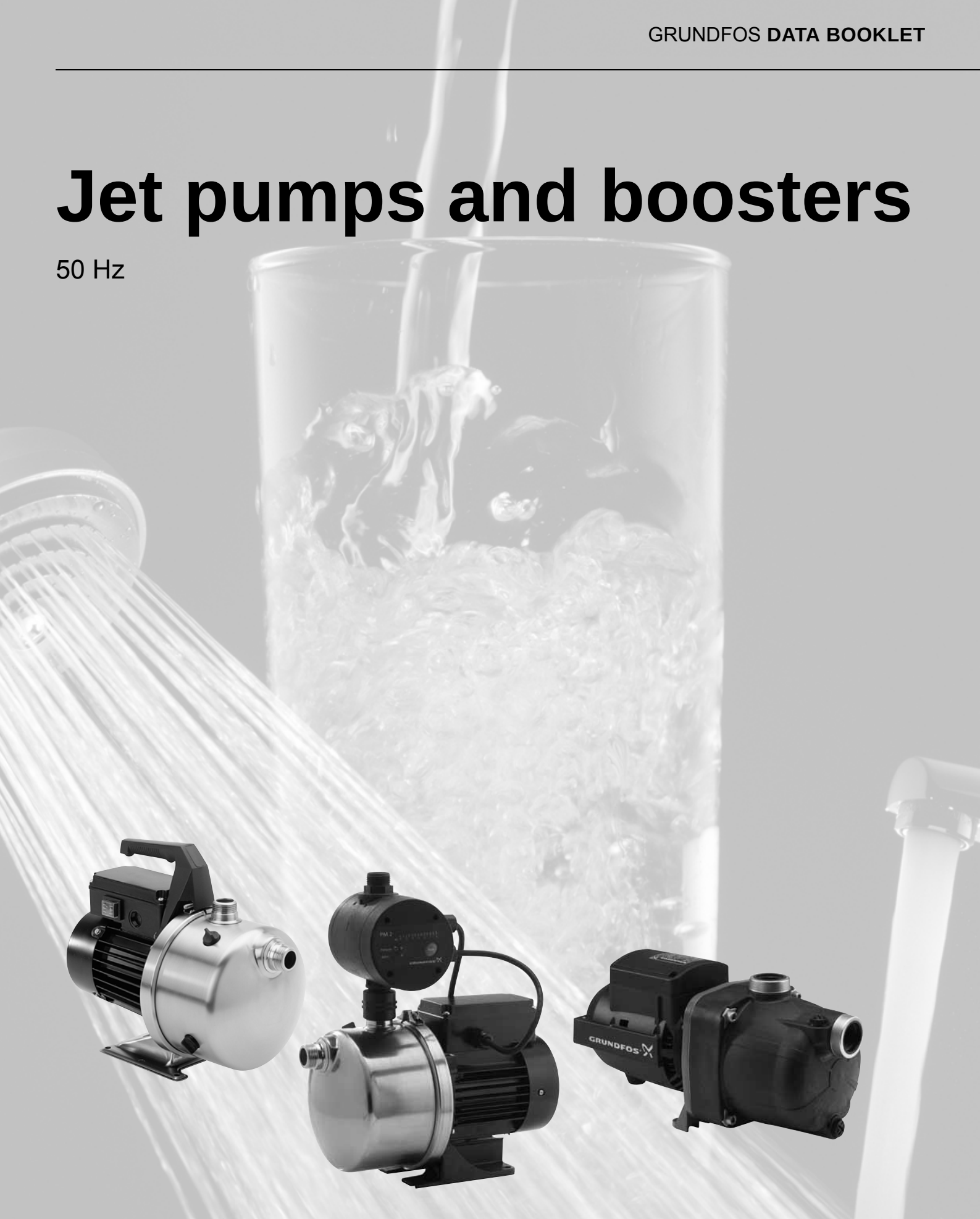
Jet pumps and boosters

50 Hz



be
think
innovate

GRUNDFOS

Table of contents

1. Product description 3
Applications 4
Identification 5
Installation 6

2. Technical data for jet pumps 8
JP 5, JP 6 8
JPRain 10
JPBasic 12
JDBasic 14
Ejector nozzle 16

3. Technical data for jet pump boosters 17
JP Booster PM 2 17
JP Booster PM 1 19
JP Booster PT 21
JPRain PM 23
JPBasic PM 25
JPBasic PS 27
JPRain PT 29
JPBasic PT 31

4. Product numbers 33

5. Further product information 36
WebCAPS 36
WinCAPS 37
GO CAPS 38

1. Product description

Grundfos offers jet pumps for a wide range of domestic applications such as raw water supply, pressure boosting, irrigation and dewatering. The jet pumps ensure a constant supply of fresh water to your home and garden. Grundfos offers five different product types which include a jet pump:

- stand-alone jet pumps (JP, JPRain, JPBasic)
- a jet pump and an external ejector nozzle for deep-well applications (JDBasic)
- booster solutions which include a jet pump and a Pressure Manager (JP Booster PM1/PM2, JPRain PM, JPBasic PM)
- a booster solution which includes a jet pump and a pressure switch (JPBasic PS)
- booster solutions which include a jet pump, a pressure switch and a pressure tank (JP Booster PT, JPRain PT, JPBasic PT).

JP, JPRain and JPBasic

The jet pumps are self-priming centrifugal pumps designed for long and trouble-free operation. A jet pump has an excellent suction capacity, and due to the built-in ejector the pump is self-priming.

The pump is small, handy and easy to move around, which makes it suitable for a various of applications.

TM01 4595 3502 - TM05 5205 3412
Gr1045 - Gr79 03_p 0704

Fig. 1 JP 5, JP 6, JPRain and JPBasic

Booster units

The booster units are compact booster systems for domestic water supply. The pressure booster units consist of a Grundfos jet pump and a pressure control unit. The pressure control unit allows the pump to start and stop automatically according to demand and protects the pump from dry running (only applicable for the Grundfos Pressure Manager).

The booster units offered by Grundfos are available in different variants depending on the desired jet pump and pressure control unit. The booster units are divided into two main groups, i.e. jet pumps with Pressure Manager and jet pumps with pressure switch. Pump control with a pressure switch can be combined with a pressure tank to reduce the number of starts and stops.

In addition, the pump can be combined with a diaphragm pressure tank to limit the switching frequency of the pump in case of low water consumption or leakage loss.

TM05 5987 4312 - TM05 5989 4312
Gr79 08_p 0804

Fig. 2 JP Booster PM1, JP Booster PT and JPBasic PS

Applications

Jet pumps and booster units are used for water supply to domestic installations. They are ideal for use in home, garden and hobby applications as well as in agriculture, horticulture and wherever self-priming operation is necessary.

Jet pumps and boosters may be used in:

- single- or two-family households
- summer houses and weekend cottages.

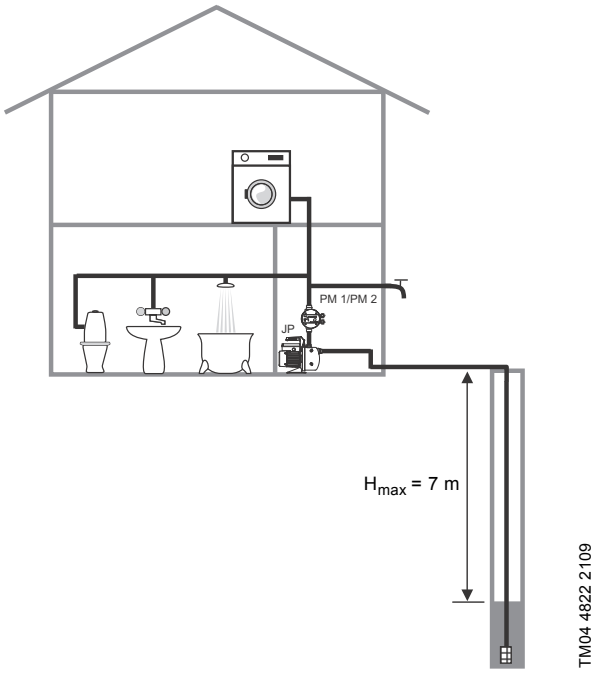


Fig. 3 JP Booster supplying water for different applications

Pumped liquids

Jet pumps and boosters are suitable for pumping clean, thin, non-aggressive and non-explosive liquids without solid particles or fibres. Examples of use:

- potable water
- rainwater.

Note: If the pumps are used for pumping unclean liquids, such as pool water, they must subsequently be flushed with clean water. The pumps must not be used for transfer of diesel oil or other oil-containing liquids. Sand and other impurities in the water will cause wear to the pump.

Identification

Type key, JP

Example	JP5	B-	A-	CVBP-	C-	Y	1 x 220-240 V, 50 Hz

Pump type
JP 5
JP 6

Pipe connections
A: Rp 1 internal thread (only on request)
B: G 1 external thread

Material
A: Composite motor stool/stainless-steel impeller
B: Aluminium motor stool/stainless-steel impeller
X: Variant

Code for shaft seal
C: O-ring seal with spring as seal driver
V: Ceramic
B: Carbon, resin-impregnated
P: NBR (nitrile rubber)

Mains cable and plug
A: Australian plug
C: Schuko plug
D: Cable, no plug
E: No cable
F: Swiss plug

Switch
Y: With on/off switch
N: Without on/off switch

Voltage
1 x 220-240 V, 50 Hz
3 x 220-240/380-415 V, 50 Hz

Type key, JP Booster

Example	JPB	5	A-	A-	A-	C-	C-	P	24L

Pump type
JPB: JP Booster

JP model
5: JP 5
6: JP 6

Booster pump version
A: Standard JP Booster pump
X: Special JP Booster pump

Pipe connection
A:
Inlet, JP ext. G 1"
Outlet, 5-way valve ext. R1"
B:
Inlet, JP ext. G 1"
Outlet PM thread ext. G1"
X: Other pipe configuration

Material of wetted parts
A:
Sleeve: stainless steel
Motor stool: composite
Hydraulic parts: stainless steel
Pressure Manager: technopolymer
B:
Sleeve: stainless steel
Motor stool: stainless steel
Hydraulic parts: stainless steel
Pressure Manager: technopolymer

Supply voltage
C: 1 x 220-240 V, 50 Hz
F: 3 x 220-240 V, 50 Hz

Mains cable and plug
A: Australian plug
C: Schuko plug
D: Cable, no plug
E: No cable

Control device
A: PM1 - 1.5 bar
B: PM1 - 2.2 bar
C: PM2
P: Pressure switch

Pressure tank size

Installation

Mechanical installation

Placing the pump above ground is generally a convenient way of establishing a water or rainwater supply.

Place the pump as close as possible to the water supply to make the suction pipe as short as possible.

If a hose is used as suction pipe, it must be non-collapsible. To prevent solids from entering the pump, fit a strainer to the suction pipe.

Suction pipe limitations

Although dry-installed pumps have been designed for optimum suction capacity, a few limitations apply to the suction pipe.

The length of the suction pipe cannot exceed the length stated in fig. 1. The maximum length depends on the geodetic suction lift. As shown in the example below, if the suction height is 2.5 m, the length of the suction pipe must not exceed 25 m.

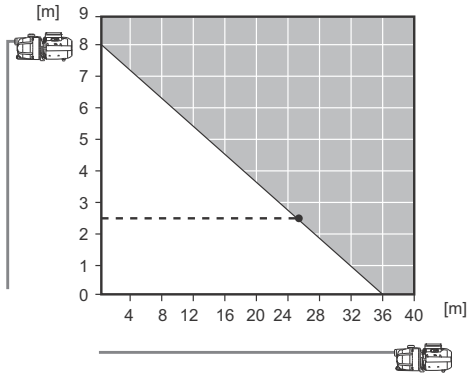


Fig. 1 Recommended maximum suction lift and maximum suction pipe length (Y-axis)

Install the suction pipe so as to avoid bends, air pockets and any unnecessary restrictions to the flow. See fig. 2.

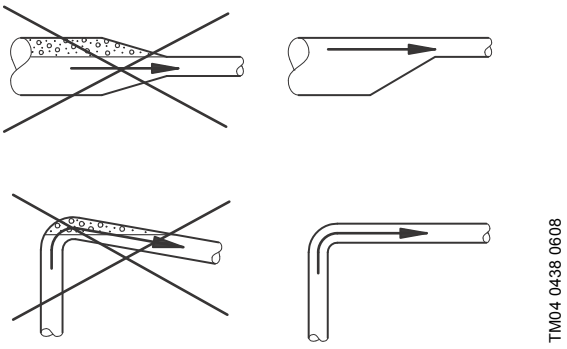


Fig. 2 Pipework recommendations

Long suction pipes affect the performance of the pump. The diameter of the suction pipe must not be smaller than that of the suction port. When the suction pipe is longer than 10 metres or the suction lift is greater than 4 metres, the diameter of the suction pipe must be larger than that of the suction port.

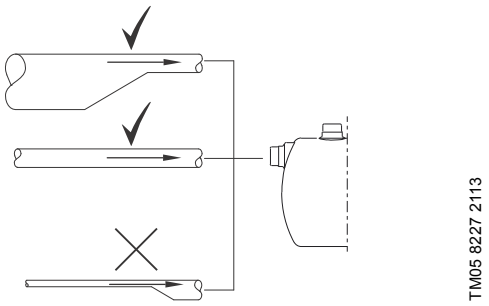


Fig. 3 Recommended size of the suction pipe

If there is a suction lift, we recommend installaing a non-return valve in the suction pipe.

The time from the pump is started until it delivers water depends on the length of the suction pipe and on the suction lift. Do not allow the pump to run for more than five minutes before it delivers water as the heat generated will damage the pump.

Operation limitations

The maximum time of operation against a closed discharge port is limited by the liquid temperature which must not exceed +40 °C (104 °F).

The maximum inlet pressure depends on the pump head at the actual duty point. The sum of the inlet pressure and the pump head must not exceed the maximum system pressure.

Jet pumps

In order to protect the pump, it can be fitted with a pressure control unit or pressure relief valve, which ensures that the discharge pressure does not exceed the maximum system pressure.

Booster units

The booster unit is equipped with a pressure control unit which is designed to start and stop the pump according to the consumption of water. With the pressure control unit, you need not worry about exceeding system pressure limits.

Electrical installation

The electrical connection and protection should be carried out in accordance with local regulations.

- The pump must be connected to an external mains switch with a minimum contact gap of 3 mm in all poles.
- Make sure that the pump and pressure control unit are suitable for the power supply to which they are to be connected.
- The pump and pressure control unit must always be correctly earthed.
- One-phase pumps incorporate thermal protection and therefore require no external protection.
- Three-phase pumps require external motor protection in accordance with the applicable regulations.
- The electrical installation of the pressure control unit must be carried out so as to ensure that the enclosure class is maintained.

2. Technical data for jet pumps

JP 5, JP 6

TM01 4595 3502

Fig. 4 JP 6

JP 5 and JP 6 are self-priming, single-stage centrifugal pumps with axial suction port and radial discharge port, G 1. They have a built-in ejector with guide vanes for optimum self-priming properties. JP 5 and JP 6 are made of high-quality materials, which makes them very robust.

Applications

JP 5 and JP 6 are ideal for water supply and transfer in minor applications such as domestic systems, garden irrigation and car washing. JP 5 and JP 6 may be used in the following domestic installations:

- single- or two-family households
- summer houses and weekend cottages.

JP 5 and JP 6 are especially ideal for use in small-scale agriculture, gardening and wherever self-priming operation is necessary.

Motor

The pump is directly coupled to a special fan-cooled asynchronous Grundfos motor which corresponds to the pump performance. Single-phase motors have a built-in thermal switch and require no additional motor protection. Three-phase motors require external motor protection.

Enclosure class: IP44 (splash-proof).

Insulation class: F.

Features

- Self-priming
- robust design
- corrosion-free materials.

Operating conditions

System pressure	Max. 6 bar
Suction lift	Max. 7 m, including suction-pipe pressure loss at a liquid temperature of +20 °C
Liquid temperature	0 °C to +40 °C
Ambient temperature	Max. +45 °C
	Min. -20 °C
Relative air humidity	Max. 95 %
Enclosure class	IP44
Insulation class	F
Sound pressure level	The sound pressure level of the pump is below 72 dB(A).
Supply voltage	1 x 220-240 V, 50 Hz
	3 x 220-240/380-415 V, 50 Hz
Start/stop frequency	Max. 100 per hour

Electrical data, 50 Hz

Pump type	Voltage [V]	P1 [W]	n [min^{-1}]	I_n [A]	I_{start} [A]
JP 5	1 x 220-240	850	2650	3.8	13.0
	3 x 220-240/ 380-415	780	2830	2.4 / 1.4	7.0
JP 6	1 x 220-240	1400	2800	6.2	26.0
	3 x 220-240/ 380-415	1325	2850	4.1 / 2.4	16.3

Approvals and markings

Pump type	Approvals		Markings		
	WRAS	ACS	CE	C-Tick	GOST
JP 5	●	●*	●	●	●
JP 6	-	●*	●	●	●

* **Note:** JP pumps are available in two material variants: composite or aluminium motor stool. The ACS certificates only cover the composite motor stool version.

Performance curves

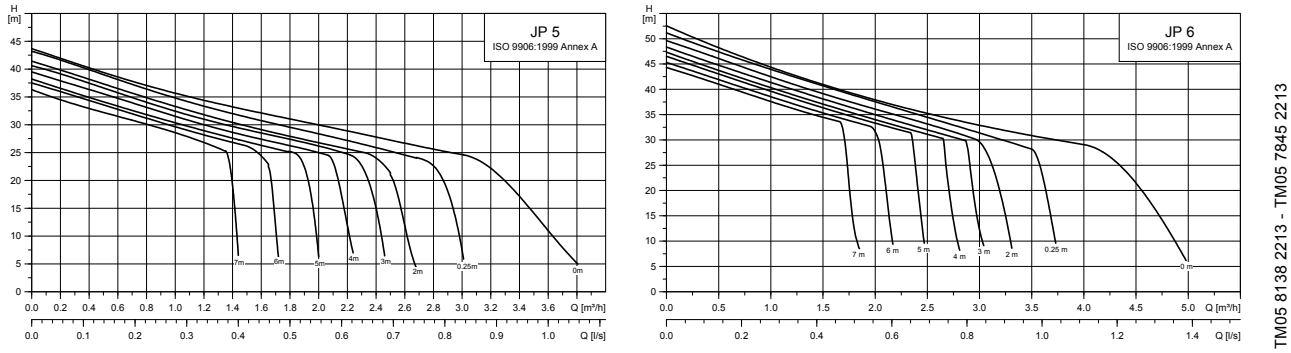


Fig. 5 Performance curves for JP 5 and JP 6

Wetted parts

The below table specifies the parts of the pump which are in contact with water.

Designation	Material	Technical description
Pump sleeve	Stainless steel	EN 1.4301 AISI 304
Impeller	Stainless steel	EN 1.4301 AISI 304
Diffuser	Technopolymer	PP 20 % Talc
Ejector	Technopolymer	PPE/PS 20 % GF
Nozzle	Stainless steel	EN 1.4301 AISI 304
Shaft	Stainless steel	EN 1.4301 AISI 304
Shaft seal	Carbon with resin/ceramic	CVBP
Filling plug	Technopolymer	PES 30 % GF
Drainage plug	Technopolymer	PES 30 % GF

Materials

JP 5 and JP 6 are available in two material variants:

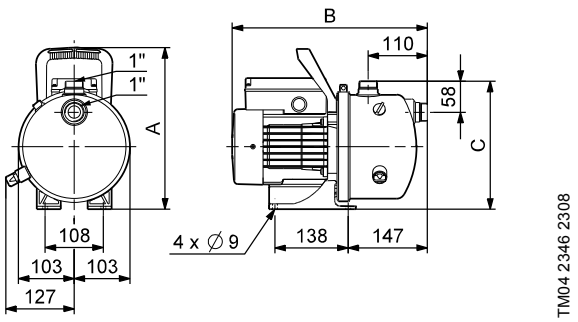
Material variant A

Cover plate, motor stool and base plate are one unit, which is made of composite material. The handle is fitted crosswise and also made of composite material.

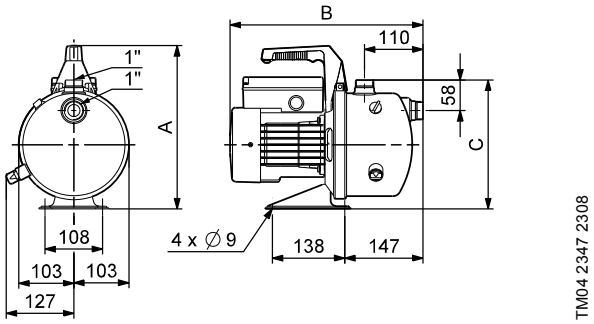
Material variant B

Stainless-steel cover plate, aluminium motor stool and stainless-steel base plate, all separate parts.
The handle is fitted lengthwise and made of composite material.

Dimensions



Pump type	Material variant A			
	Dimensions [mm]			Weight [kg]
	A	B	C	
JP 5, material variant A	300	364	240	8.5
JP 6, material variant A	300	401	240	10.0



Pump type	Material variant B			
	Dimensions [mm]			Weight [kg]
	A	B	C	
JP 5, material variant B	300	364	240	11.0
JP 6, material variant B	300	401	240	10.8

JPRain

TM05 5091 3212

Fig. 6 JPRain

JPRain is a self-priming, single-stage centrifugal pump with axial suction port and radial discharge port, G 1. The pump has a built-in ejector with guide vanes for optimum self-priming properties.

Applications

JPRain is ideal for water supply and transfer in minor applications such as domestic systems, garden irrigation and car washing. JPRain may be used in the following domestic installations:

- single- or two-family households
- summer houses and weekend cottages.

JPRain is especially ideal for use in small-scale agriculture, gardening and wherever self-priming operation is necessary.

Motor

The rotor is mounted on an oversize, sealed, greased-for-life ball bearings to ensure silent running and long life. Single-phase motors have built-in thermal and current protection and require no additional motor protection.

Enclosure class: IP44 (splash-proof).

Insulation class: F.

Features

- Self-priming
- robust design
- corrosion-free materials.

Operating conditions

System pressure	Max. 6 bar
Suction lift	Max. 8 m, including suction-pipe pressure loss at a liquid temperature of +20 °C
Liquid temperature	0 °C to +35 °C
Ambient temperature	Max. +40 °C
Relative air humidity	Max. 95 %
Enclosure class	IP44
Insulation class	F
Sound pressure level	Maximum sound pressure level of the pump: JPRain 2: 82.9 dB JPRain 3: 84.8 dB JPRain 4: 88.0 dB
Supply voltage	1 x 220-240 V, 50 Hz
Start/stop frequency	Max. 20 per hour

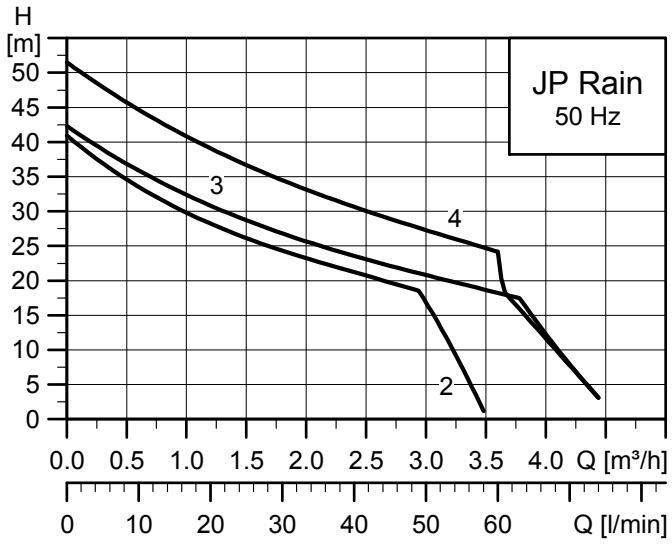
Electrical data, 50 Hz

Pump type	Voltage [V]	P1 [W]	n [min^{-1}]	I_n [A]	I_{start} [A]
JPRain 2	1 x 220-240	720	2900	3.12	8.54
JPRain 3	1 x 220-240	850	2900	3.8	11.27
JPRain 4	1 x 220-240	1130	2900	5.1	17.8

Approvals and markings

Pump type	Approvals		Markings		
	WRAS	ACS	CE	C-Tick	GOST
JPRain 2	-	-	•	•	-
JPRain 3	-	-	•	•	-
JPRain 4	-	-	•	•	-

Performance curves



TM05 5237 3512

Fig. 7 Performance curves for JPRain 2, JPRain 3 and JPRain 4

Wetted parts

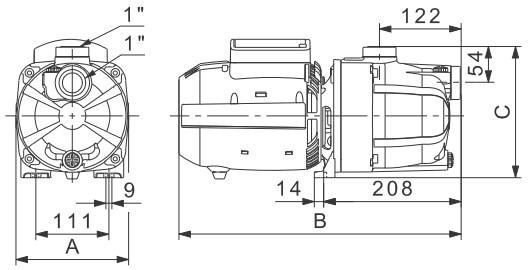
The below table specifies the parts of the pump which are in contact with water.

Designation	Material	Technical description
Pump body	Technopolymer	PP 30 % GF
Impeller	Technopolymer	PPE 20 % GF brass
Diffuser	Technopolymer	PPE 20 % GF
Diffuser ring	Stainless steel	EN 1.4401 AISI 316
Venturi tube	Technopolymer Rubber	PPE + 20 % GF NBR
Seal housing	Rubber	NBR
Shaft	Stainless steel	EN 1.4305 AISI 303
Shaft seal	Carbon with resin/ceramic	CBBXP
Filling plug	Technopolymer	PPE 20 % GF
Filling plug gasket	Rubber	NBR
Drainage plug	Technopolymer	PPE 20 % GF
Drainage plug gasket	Rubber	NBR
Mechanical seal disc	Stainless steel	EN 1.4301 AISI 304

Materials

The pump body is made of technopolymer and the motor support of die-cast aluminium.
Internal components, such as impeller, diffuser, venturi tube and sand guard, are made of technopolymer.

Dimensions



TM05 5605 3712

Pump type	Dimensions [mm]			Weight [kg]
	A	B	C	
JPRain 2	240	470	240	9.1
JPRain 3	240	470	240	9.1
JPRain 4	240	470	240	11.45

JPBasic

Fig. 8 JPBasic

JPBasic is a self-priming, single-stage centrifugal pump with axial suction port and radial discharge port. The pump has a built-in ejector with guide vanes for optimum self-priming properties.

Applications

JPBasic is ideal for water supply and transfer in minor applications such as domestic systems, garden irrigation and car washing. JPBasic may be used in the following domestic installations:

- single- or two-family households
- summer houses and weekend cottages.

JPBasic is especially ideal for use in small-scale agriculture, gardening and wherever self-priming operation is necessary.

Motor

The rotor is mounted on an oversize, sealed, greased-for-life ball bearings to ensure silent running and long life. Single-phase motors have built-in thermal and current protection and require no additional motor protection.

Three-phase motors require external motor protection.

Enclosure class: IP44 (splash-proof).

Insulation class: F.

Features

- Self-priming
- robust design
- corrosion-resistant materials
- sand guard.

Operating conditions

System pressure	Max. 6 bar (JPBasic 2, -3, -4) Max. 7.5 bar (JPBasic 5, -7, -9, -10)
Operating range	0.6 to 10.5 m^3/h
Suction lift	Max. 8 m, including suction-pipe pressure loss at a liquid temperature of +20 °C
Liquid temperature	0 °C to +35 °C (for domestic use) 0 °C to +40 °C (for other use)
Ambient temperature	Max. +40 °C
Relative air humidity	Max. 95 %
Enclosure class	IP44
Insulation class	F
Sound pressure level	The sound pressure level of the pump is below 77 dB(A).
Supply voltage	1 x 220-240 V, 50 Hz 3 x 220-240/380-415 V, 50 Hz
Start/stop frequency	Max. 20 per hour

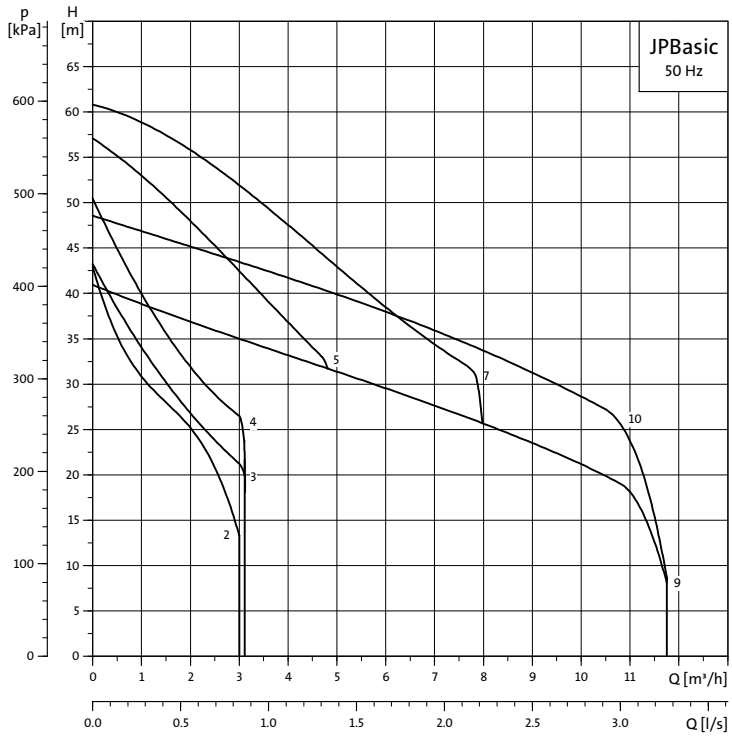
Electrical data, 50 Hz

Pump type	Voltage [V]	P1 [W]	n [min^{-1}]	I_n [A]
JPBasic 2	1 x 220-240	720	2850	3.12
	3 x 220-240/ 380-415	670		2.1 / 1.2
JPBasic 3	1 x 220-240	850	2750	3.8
	3 x 220-240/ 380-415	860		2.8 / 1.6
JPBasic 4	1 x 220-240	1130	2800	5.1
	3 x 220-240/ 380-415	1040		3.3 / 1.9
JPBasic 5	1 x 220-240	1600	2800	7.2
	3 x 220-240/ 380-415	1600		5.2 / 3.0
JPBasic 7	1 x 220-240	2200	2800	10
	3 x 220-240/ 380-415	2200		6.9 / 4.0
JPBasic 9	1 x 220-240	2000	2850	9
	3 x 220-240/ 380-415	2000		6.8 / 3.9
JPBasic 10	1 x 220-240	2700	2850	12
	3 x 220-240/ 380-415	2700		8.5 / 4.9

Approvals and markings

Pump type	Approvals		Markings		
	WRAS	ACS	CE	C-Tick	GOST
JPBasic 2	-	-	•	•	•
JPBasic 3	-	-	•	•	•
JPBasic 4	-	-	•	•	•
JPBasic 5	-	-	•	•	•
JPBasic 7	-	-	•	•	•
JPBasic 9	-	-	•	•	•
JPBasic 10	-	-	•	•	•

Performance curves



TM02 8936 1804

Fig. 9 Performance curves for JPBasic

Wetted parts

The below table specifies the parts of the pump which are in contact with water.

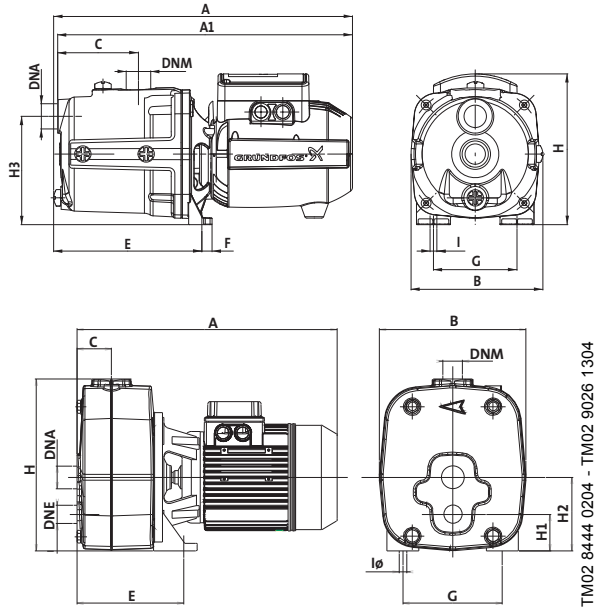
Designation	Material	Technical description
Pump body	Cast iron	EN-GJL-200
Motor support	Cast iron Die-cast aluminum*	EN-GJL-200 EN AB 46100
Impeller	Technopolymer	Noryl GFN 2
Diffuser	Technopolymer	Noryl GFN 2
Diffuser ring	Stainless steel	EN 1.4401 AISI 316
Venturi tube	Technopolymer Rubber	Noryl GFN 2
Shaft	Stainless steel	EN 1.4305 AISI 303
Shaft seal	Carbon with resin/ceramic	BBQP
Filling/drainage plug	Technopolymer	PPE 20 % GF
Filling/drainage plug gasket	Rubber	NBR
Back plate	Stainless steel	EN 1.4301 AISI 304

* Applies to JPBasic 2, -3, -4.

Materials

The pump body and the motor support are made of cast iron. Internal components, such as impeller, diffuser, venturi tube and sand guard, are made of technopolymer.

Dimensions



TM02 8444 0204 - TM02 9026 1304

Pump type	Dimensions [mm]			Weight [kg]	Port	
	A	B	H		Suction	Discharge
JPBasic 2	470	240	240	11.6	Rp 1	Rp 1
JPBasic 3	470	240	240	12.2	Rp 1	Rp 1
JPBasic 4	470	240	240	13.9	Rp 1	Rp 1
JPBasic 5	680	293	246	32.3	Rp 1 1/4	Rp 1
JPBasic 7	680	293	246	32.7	Rp 1 1/4	Rp 1
JPBasic 9	680	293	246	35.9	Rp 1 1/2	Rp 1 1/4
JPBasic 10	680	293	246	32.2	Rp 1 1/2	Rp 1 1/4

JDBasic

Gr78 99_p 0804 - TM00 9974-01 0897

JDBasic is a self-priming centrifugal pump for suction up to 27 metres, achieved by means of an ejector to be inserted into wells with a diameter of 4" or larger. The pump is ideal for supplying water to farmhouses and in small-scale agriculture.

Applications

JPBasic PT is suitable for pressure boosting from mains water or below-ground water tanks where self-priming operation is necessary. Due to the pressure switch and the diaphragm tank, the booster unit provides great comfort for the user. The booster unit may be used in the following domestic installations:

- single- or two-family households
- summer houses and weekend cottages.

Features

Pump

Cast-iron pump body and motor support, anti-corrosion treated on the outer as well as the inner surfaces. Technopolymer impeller, diffuser and Venturi tube and brass nozzle. Stainless-steel pressure disc. Carbon/ceramic mechanical seal mounted on stainless-steel rotor shaft extension.

Ejector

Cast-iron body, anti-corrosion treated on the outer as well as the inner surfaces. Technopolymer Venturi tube and brass nozzle. The ejector is available in 3 models (E20, E25, E30) to be chosen according to performance requirements. See section *Ejector nozzle*.

Motor

The rotor is mounted on an oversize, sealed, greased-for-life ball bearings to ensure silent running and long life. Single-phase motors have built-in thermal and current protection and require no additional motor protection.

Three-phase motors require external motor protection.

Enclosure class: IP44 (splash-proof).

Insulation class: F.

Operating conditions

System pressure	Max. 6 bar (JDBasic 2, 4) Max. 7.5 bar (JDBasic 5, 7)
Suction lift	Max. 27 m, including suction-pipe pressure loss at a liquid temperature of +20 °C
Liquid temperature	0 °C to +35 °C (for domestic use) 0 °C to +40 °C (for other use)
Ambient temperature	Max. +40 °C
Relative air humidity	Max. 95 %
Enclosure class	IP44
Insulation class	F
Sound pressure level	The sound pressure level of the pump is below 77 dB(A).
Supply voltage	1 x 220-240 V, 50 Hz 3 x 220-240/380-415, 50 Hz
Start/stop frequency	Max. 20 per hour

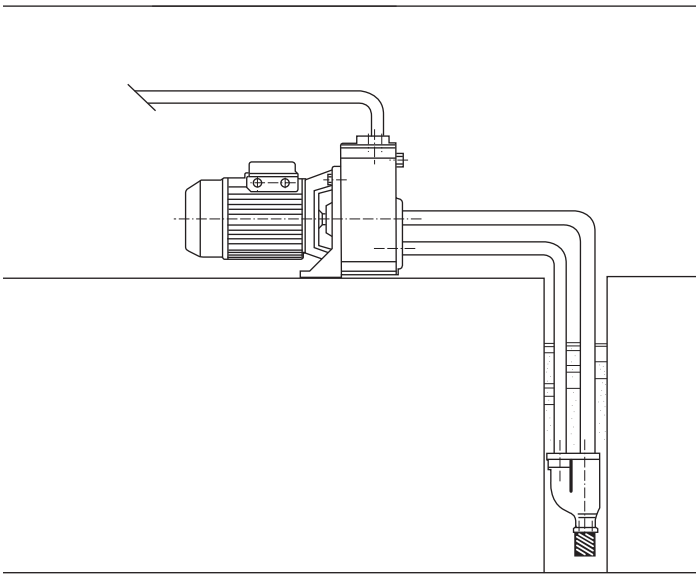
Electrical data, 50 Hz

Pump type	Voltage [V]	P1 [W]	n [min^{-1}]	I_n [A]
JDBasic 2	1 x 220-240	690	2850	3.2
	3 x 220-240/ 380-415	660	2850	2.6 / 1.5
JDBasic 4	1 x 220-240	790	2850	3.8
	3 x 220-240/ 380-415	640	2850	2.6 / 1.5
JDBasic 5	1 x 220-240	1560	2850	7
	3 x 220-240/ 380-415	1450	2850	4.7 / 2.7
JDBasic 7	1 x 220-240	2100	2850	8.3
	3 x 220-240/ 380-415	1780	2850	5.6 / 3.2

Approvals and markings

Pump type	Approvals		Markings		
	WRAS	ACS	CE	C-Tick	GOST
JDBasic 2	-	-	●	-	●
JDBasic 4	-	-	●	-	●
JDBasic 5	-	-	●	-	●
JDBasic 7	-	-	●	-	●

Principle



TM00 9976 1097

Fig. 10 Installation principle for JDBasic

Wetted parts

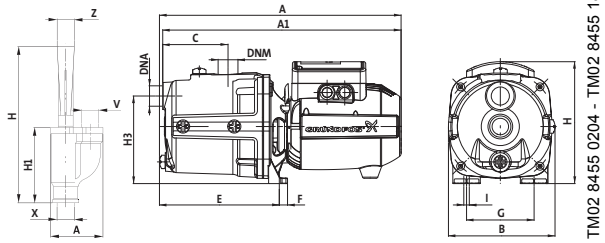
The below table specifies the parts of the pump which are in contact with water.

Pump

Designation	Material	Technical description
Pump body	Cast iron	EN-GJL-200
Motor support	Cast iron Die-cast aluminum*	EN-GJL-200 EN AB 46100
Impeller	Technopolymer	Noryl GFN 2
Diffuser	Technopolymer	Noryl GFN 2
Diffuser ring	Stainless steel	EN 1.4401 AISI 316
Venturi tube	Technopolymer Rubber	Noryl GFN 2
Shaft	Stainless steel	EN 1.4305 AISI 303
Shaft seal	Carbon with resin/ceramic	BBQP
Filling/drainage plug	Technopolymer	PPE 20 % GF
Filling/drainage plug gasket	Rubber	NBR
Back plate	Stainless steel	EN 1.4301 AISI 304

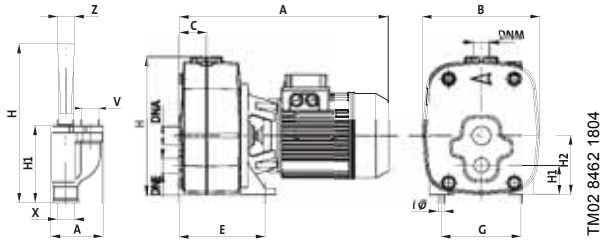
* Applies to JPBasic 2, -4.

Dimensions



TM02 8455 0204 - TM02 8455 1804

Pump type	Dimensions [mm]			Weight [kg]	Port	
	A	B	H		Suction	Discharge
JDBasic 2	365	180	225	13.9	G 1 1/4	G1
JDBasic 4	470	240	240	16.8	G 1 1/4	G1

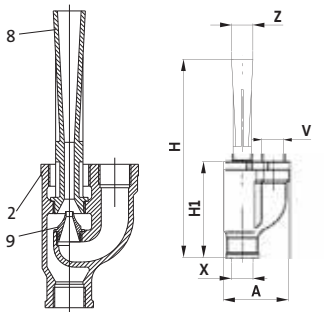


TM02 8462 1804

Pump type	Dimensions [mm]			Weight [kg]	Port	
	A	B	H		Suction	Discharge
JDBasic 5	428	293	240	27	G 1 1/4	G1
JDBasic 7	612	293	246	32	G 1 1/4	G1

Ejector nozzle

The ejector is available in three models (E20, E25, E30) to be chosen according to performance requirements.



TM02 8456 0204 - TM02 8457 0204

Fig. 11 Ejector

Pos.	Description
2	Ejector body
8	Venturi tube
9	Nozzle

Pump type	A [mm]	H [mm]	H1 [mm]	x	v	z
JDBasic	97	295	243	G 1	G 1	G 1 1/4

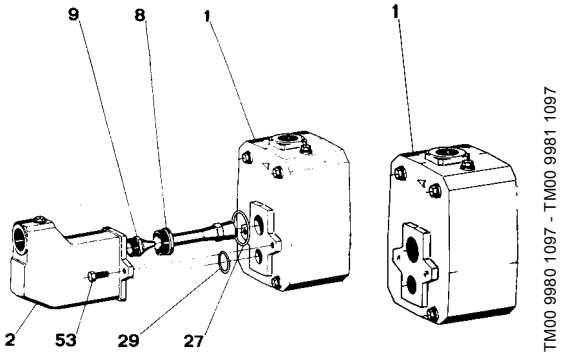
JDBasic 2, JDBasic 4

Hydraulic data (n ≈ 2850 min $^{-1}$)								
Pump type	Ejector type	Suction depth	Delivery pressure in bar					
			1.5	2.0	2.5	3.0	3.5	4.0
			Capacity table in [l/h]					
JDBasic 2	E25	9	1813	1080	446	33		
		12	1426	720	225			
		15	900	326				
	E30	9	1753	1286	812	524	261	46
		12	1345	965	608	356	162	0
		15	1166	761	452	228	45	
JDBasic 4	E25	9	2386	1756	1097	515	126	
		12	1930	1190	536	87		
		15	1459	773	252			
	E30	12		1240	872	566	329	156
		15		1028	701	449	255	96
		18		785	527	302	150	15
		21		635	374	180	39	

JDBasic 5, JDBasic 7

Hydraulic data (n ≈ 2850 min $^{-1}$)													
Pump type	Ejector type	Suction depth	Delivery pressure [bar]										
			3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0
			Capacity table [l/h]										
JDBasic 5	E 20	9	3412	2769	2090	1363	586						
		12	3065	2400	1719	952	143						
		15	2643	2000	1257	495							
		18	2289	1593	826	0							
	E 25	15	2745	2244	1761	1257	814	435	77				
		18	2465	1969	1477	997	584	218					
		21	2206	1712	1224	779	388	45					
	E 30	21	1797	1615	1368	1106	861	658	472	312	163	25	
		24	1652	1484	1217	962	740	547	378	220	67		
		27	1520	1333	1069	841	636	448	287	139			
JDBasic 7	E 20	9		3431	2751	2033	1236	448					
		12		3043	2324	1554	763	0					
		15		2665	1936	1145	344						
		18		2244	1478	675							
	E 25	15		2840	2324	1806	1296	849	463	138			
		18		2535	2038	1523	1049	640	286				
		21		2267	1757	1257	817	424	91				
		24		1970	1458	989	583	226					
	E 30	21		1812	1671	1419	1163	919	716	531	377	226	91
		24		1668	1549	1278	1023	791	619	445	297	156	13
		27		1541	1395	1145	906	700	521	351	206	62	

Instructions for conversion



TM00 9980 1097 - TM00 9981 1097

Conversion from JDBasic 5 or JDBasic 7 to JPBasic 5 or JPBasic 7

Screw nozzle (9) into the seat of ejector body (2) and Venturi tube (8).

Position O-rings (27 and 29) in their respective seats, and mount ejector body (2) on pump body (1) with the two screws (53).

Conversion from JPBasic 5 or JPBasic 7 to JDBasic 5 or JDBasic 7

Loosen and remove the two joining screws (53) between ejector body (2) and pump body (1).

Collect O-rings (27 and 29).

3. Technical data for jet pump boosters

JP Booster PM 2

TM05 5988 4312

JP Booster PM 2 is an automatic booster unit for water supply in domestic and irrigation applications as well as other installations where small leakages are expected to occur. The pressure booster unit consists of a JP 5 or JP 6 pump combined with a Grundfos PM 2 Pressure Manager. The Pressure Manager allows the pump to start and stop automatically according to demand.

To reduce the number of starts/stops, an external tank can be installed. See sections *GT-U, bladder* and *GT-H, diaphragm* on page 35.

Applications

JP Booster PM 2 is suitable for pressure boosting from mains water or below-ground water tanks where self-priming operation is necessary. The booster unit may be used in the following domestic installations:

- single- or two-family households
- summer houses and weekend cottages.

Features

- Self-priming
- robust design
- corrosion-free materials
- automatic start/stop
- integrated non-return valve.

The PM 2 Pressure Manager incorporated in the booster unit provides the following features:

Adjustable start pressure

The booster unit can be set to start automatically within an adjustable pressure range of 1.5 to 5 bar. The current pressure is indicated on the LED display on the front of the PM 2.

Anti-cycling

If there is a minor leakage in the system, or a tap has not been entirely closed, the PM 2 would normally start and stop the pump periodically. However, in order to avoid cycling, the anti-cycling function of the PM 2 will stop the pump and indicate an alarm.

Dry-running protection

The PM 2 incorporates dry-running protection that automatically stops the pump in case of dry running. The dry-running protection functions differently during priming and operation.

Maximum continuous operating time (30 minutes)

When this function is enabled, the pump will stop when it has been running continuously for 30 minutes. The purpose of the function is to avoid unnecessary water and current consumption, e.g. in case of pipe fracture or considerable leakages.

Motor

The pump is directly coupled to a special fan-cooled asynchronous Grundfos motor which corresponds to the pump performance. Single-phase motors have a built-in thermal switch and require no additional motor protection.

Enclosure class: IP44 (splash-proof).

Insulation class: F.

Operating conditions

System pressure	Max. 6 bar
Suction lift	Max. 7 m, including suction-pipe pressure loss at a liquid temperature of +20 °C
Liquid temperature	0 °C to +40 °C
Ambient temperature	Max. +45 °C
	Min. -20 °C
Relative air humidity	Max. 95 %
Enclosure class	IP44
Insulation class	F
Sound pressure level	The sound pressure level of the pump is below 72 dB(A).
Supply voltage	1 x 220-240 V, 50 Hz
Start/stop frequency	Max. 100 per hour

Electrical data, 50 Hz

Pump type	Voltage [V]	P1 [W]	n [min^{-1}]	I_n [A]	I_{start} [A]
JP 5 Booster PM 2	1 x 220-240	850	2650	3.8	13.0
JP 6 Booster PM 2	1 x 220-240	1400	2800	6	26.0

Approvals and markings

Pump type	Approvals		Markings		
	WRAS	ACS	CE	C-Tick	GOST TR
JP Booster PM 2	-	-	•	•	•

Performance curves

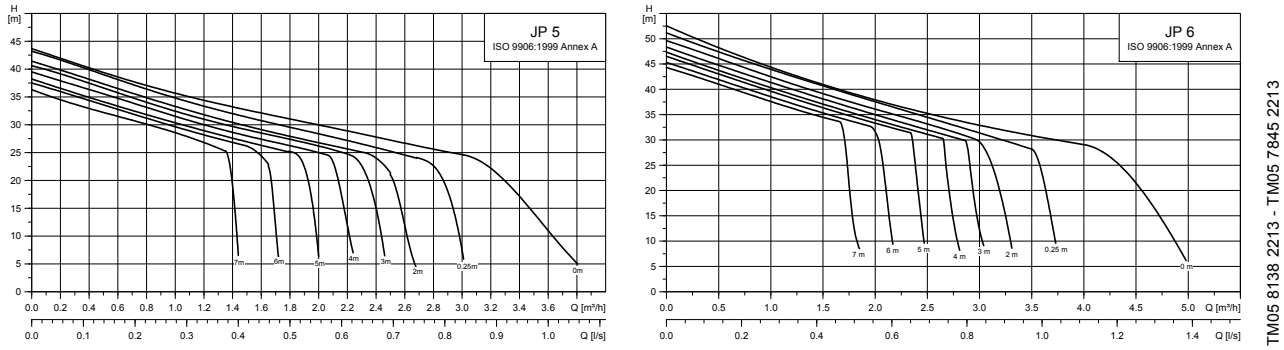


Fig. 12 Performance curves for JP 5 and JP 6

Note: The performance curves are for the pumps only. Additional pressure drop over the Pressure Manager will occur.

Wetted parts

The below tables specify the parts of the pump and Pressure Manager which are in contact with water.

Pump

Designation	Material	Technical description
Pump sleeve	Stainless steel	EN 1.4301 AISI 304
Impeller	Stainless steel	EN 1.4301 AISI 304
Diffuser	Technopolymer	PP 20 % Talc
Ejector	Technopolymer	PPE/PS 20 % GF
Nozzle	Stainless steel	EN 1.4301 AISI 304
Shaft	Stainless steel	EN 1.4301 AISI 304
Shaft seal	Carbon with resin/ceramic	CVBP
Filling plug	Technopolymer	PES 30 % GF
Drainage plug	Technopolymer	PES 30 % GF

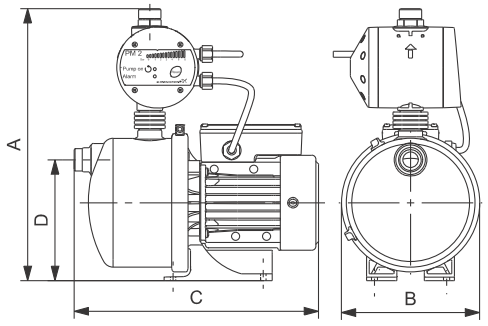
Pressure Manager

Designation	Material	Technical description
Main housing	Technopolymer	PP 30 % GF
Shutter	Technopolymer	PPO 20 % GF
O-ring	Rubber	NBR
Cover magnet	Technopolymer	PPO 20 % GF
Fitting 1"	Technopolymer	PPO 30 % GF
Spring	Stainless steel	EN 1.4305 AISI 303
Diaphragm	Butil	Foodgum 55 N/B

Pump

JP Booster PM 2 is available with a JP 5 or JP 6 pump. The motor stool of the pump is made of composite, and the pump has no handle. For further information on the differences between JP 5 and JP 6, see page 8.

Dimensions



Pump type	Dimensions [mm]				Weight [kg]
	A	B	C	D	
JP 5	364	206	420	182	8.5
JP 6	401	206	420	182	10.0

JP Booster PM 1

TM05 5989 4312

JP Booster PM 1 is a compact booster unit for water supply in domestic and irrigation applications.
The pressure booster unit consists of a JP 5 or JP 6 combined with a Grundfos PM 1 Pressure Manager. The Pressure Manager allows the pump to start and stop automatically according to demand and protects the pump from dry running. Depending on the booster unit, the pump automatically starts at 1.5 or 2.2 bar.

To reduce the number of starts/stops, an external tank can be installed. See sections *GT-U, bladder* and *GT-H, diaphragm*, page 35.

Applications

JP Booster PM 1 is suitable for pressure boosting from mains water or below-ground break tanks where self-priming operation is necessary. The booster unit may be used in the following domestic installations:

- single- or two-family households
- summer houses and weekend cottages.

Features

- Self-priming
- robust design
- corrosion-free materials
- automatic start/stop
- integrated non-return valve.

The PM 1 Pressure Manager incorporated in the booster unit provides the following features:

Anti-cycling

If there is a minor leakage in the system, or a tap has not been entirely closed, the PM 1 would normally start and stop the pump periodically. However, in order to avoid cycling, the anti-cycling function of the PM 1 will stop the pump and indicate an alarm.

Dry-running protection

The PM 1 incorporates dry-running protection that automatically stops the pump in case of dry running. The dry-running protection functions differently during priming and operation.

Motor

The pump is directly coupled to a special fan-cooled asynchronous Grundfos motor which corresponds to the pump performance. Single-phase motors have a built-in thermal switch and require no additional motor protection.

Enclosure class: IP44 (splash-proof).

Insulation class: F.

Operating conditions

System pressure	Max. 6 bar
Suction lift	Max. 7 m, including suction-pipe pressure loss at a liquid temperature of +20 °C
Liquid temperature	0 °C to +40 °C
Ambient temperature	Max. +45 °C
	Min. -20 °C
Relative air humidity	Max. 95 %
Enclosure class	IP44
Insulation class	F
Sound pressure level	The sound pressure level of the pump is below 72 dB(A).
Supply voltage	1 x 220-240 V, 50 Hz
Start/stop frequency	Max. 100 per hour

Electrical data, 50 Hz

Pump type	Voltage [V]	P1 [W]	n [min^{-1}]	I_n [A]	I_{start} [A]
JP 5 Booster PM 1	1 x 220-240	850	2650	3.8	13.0
JP 6 Booster PM 1	1 x 220-240	1400	2800	6	26.0

Approvals and markings

Pump type	Approvals		Markings		
	WRAS	ACS	CE	C-Tick	GOST TR
JP Booster PM 1	-	-	•	•	•

Performance curves

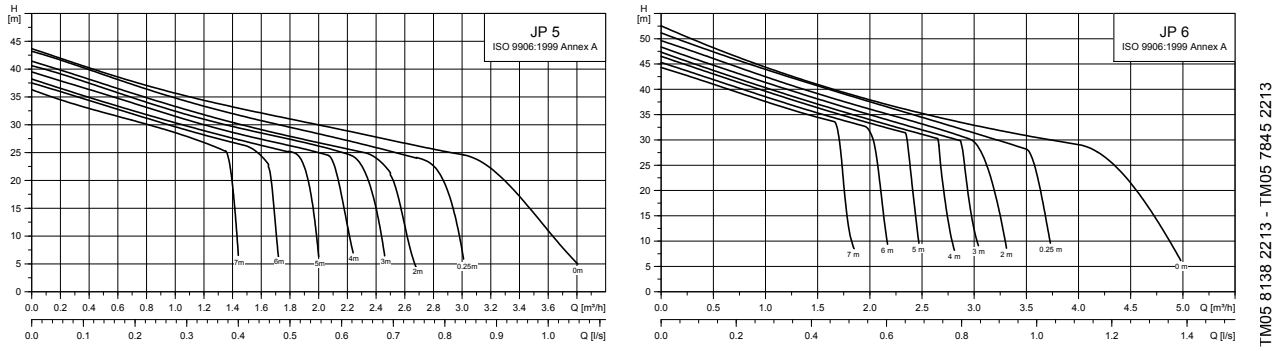


Fig. 13 Performance curves for JP 5 and JP 6

Note: The performance curves are for the pumps only. Additional pressure drop over the Pressure Manager will occur.

Wetted parts

The below tables specify the parts of the pump and Pressure Manager which are in contact with water.

Pump

Designation	Material	Technical description
Pump sleeve	Stainless steel	EN 1.4301 AISI 304
Impeller	Stainless steel	EN 1.4301 AISI 304
Diffuser	Technopolymer	PP 20 % Talc
Ejector	Technopolymer	PPE/PS 20 % GF
Nozzle	Stainless steel	EN 1.4301 AISI 304
Shaft	Stainless steel	EN 1.4301 AISI 304
Shaft seal	Carbon with resin/ceramic	CVBP
Filling plug	Technopolymer	PES 30 % GF
Drainage plug	Technopolymer	PES 30 % GF

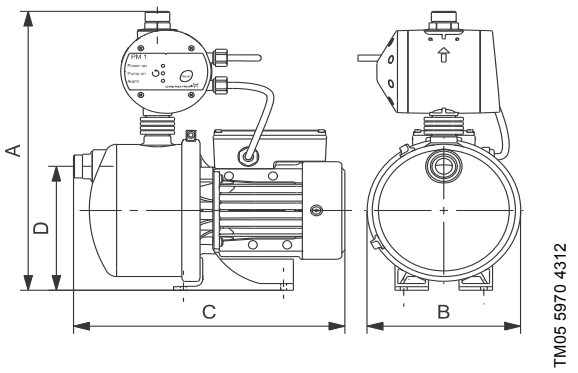
Pressure Manager

Designation	Material	Technical description
Main housing	Technopolymer	PP 30 % GF
Shutter	Technopolymer	PPO 20 % GF
O-ring	Rubber	NBR
Cover magnet	Technopolymer	PPO 20 % GF
Fitting 1"	Technopolymer	PPO 30 % GF
Spring	Stainless steel	EN 1.4305 AISI 303
Diaphragm	Butil	Foodgum 55 N/B

Pump

JP Booster PM 1 is available with a JP 5 or JP 6 pump. The motor stool of the pump is made of composite, and the pump has no handle. For further information on the differences between JP 5 and JP 6, see page 8.

Dimensions



Pump type	Dimensions [mm]				Weight [kg]
	A	B	C	D	
JP 5	364	206	420	182	8.5
JP 6	401	206	420	182	10.0

JP Booster PT

TM05 5987 4312

JP Booster PT is an automatic booster unit for water supply in domestic and agricultural applications as well as other installations where small leakages are expected to occur. The pressure booster unit consists of a JP 5 or JP 6 pump combined with a pressure switch and a diaphragm tank.

The pressure switch automatically starts the pump according to demand. The preset cut-in and cut-out pressures are 2.2 and 3.3 bar, respectively.

The diaphragm tank ensures a controlled pressure in the water supply and thereby limits the switching frequency of the pump in case of low water consumption or leakage loss. Furthermore, the diaphragm tank increases system comfort by compensating for pressure drops when a tap is opened, and finally it reduces problems with water hammer in the pipework.

JP Booster PT is available with the following diaphragm tanks:

- 18-litre vertical tank
- 24-litre horizontal tank
- 60-litre horizontal tank.

Applications

JP Booster PT is suitable for pressure boosting from mains water or below-ground water tanks where self-priming operation is necessary. Due to the pressure switch and the diaphragm tank, the booster unit provides great comfort for the user. The booster unit may be used in the following domestic installations:

- single- or two-family households
- summer houses and weekend cottages.

Features

- Self-priming
- robust design
- corrosion-free materials
- automatic start/stop
- constant water supply.

Motor

The pump is directly coupled to a special fan-cooled asynchronous Grundfos motor which corresponds to the pump performance. Single-phase motors have a built-in thermal switch and require no additional motor protection. Three-phase motors require external motor protection.

Enclosure class: IP44 (splash-proof).

Insulation class: F.

Operating conditions

System pressure	Max. 6 bar
Suction lift	Max. 7 m, including suction-pipe pressure loss at a liquid temperature of +20 °C
Liquid temperature	0 °C to +40 °C
Ambient temperature	Max. +45 °C
	Min. -20 °C
Relative air humidity	Max. 95 %
Enclosure class	IP44
Insulation class	F
Sound pressure level	The sound pressure level of the pump is below 72 dB(A).
Supply voltage	1 x 220-240 V, 50 Hz
	3 x 220-240/380-415 V, 50 Hz
Start/stop frequency	Max. 100 per hour

Electrical data, 50 Hz

Pump type	Voltage [V]	P1 [W]	n [min^{-1}]	I_n [A]	I_{start} [A]
JP 5	1 x 220-240	850	2650	3.8	13.0
	3 x 220-240/ 380-415	780	2830	2.4 / 1.4	7.0
JP 6	1 x 220-240	1400	2800	6	26.0
	3 x 220-240/ 380-415	1325	2850	4.1 / 2.35	16.3

Approvals and markings

Pump type	Approvals		Markings		
	WRAS	ACS	CE	C-Tick	GOST TR
JP Booster PT	-	-	•	-	•

Performance curves

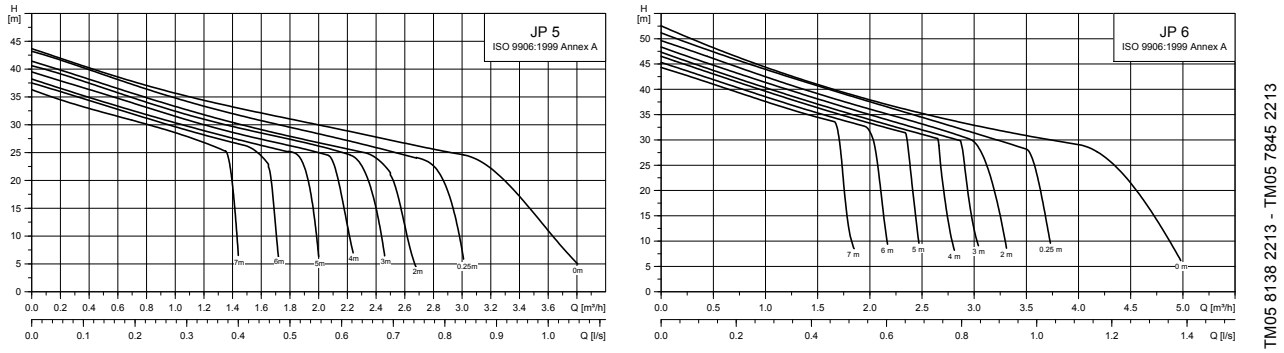


Fig. 14 Performance curves for JP 5 and JP 6

Note: The performance curves are for the pumps only. Additional pressure drop over the pressure switch will occur.

Wetted parts

The below tables specify the parts of the pump, pressure switch and pressure tank which are in contact with water.

Pump

Designation	Material	Technical description
Pump sleeve	Stainless steel	EN 1.4301 AISI 304
Impeller	Stainless steel	EN 1.4301 AISI 304
Diffuser	Technopolymer	PP 20 % Talc
Ejector	Technopolymer	PPE/PS 20 % GF
Nozzle	Stainless steel	EN 1.4301 AISI 304
Shaft	Stainless steel	EN 1.4301 AISI 304
Shaft seal	Carbon with resin/ceramic	CVBP
Filling plug	Technopolymer	PES 30 % GF
Drainage plug	Technopolymer	PES 30 % GF

Pressure switch

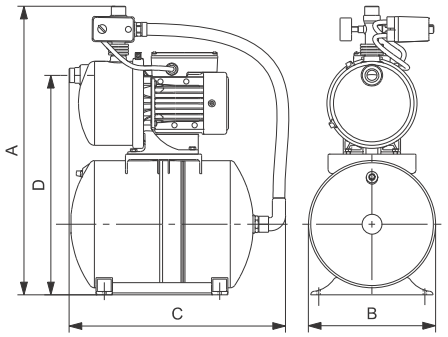
Designation	Material	Technical description
Pressure sensor	Zinc alloy	NF EN 12844
5-way valve	Brass	MSG58
Pressure gauge	Brass	

Pressure tank

Pressure tank	Rubber/stainless steel	
Armed rubber hose	Rubber/stainless steel	

Dimensions

JP Booster PT is available with different diaphragm tank sizes. The setup of the booster unit will differ depending on the size of the selected tank.



Pump type	Tank size [l]	Dimensions [mm]				Weight [kg]
		A	B	C	D	
JP 5, JP 6	18	668	275	475	494	20
JP 5, JP 6	24	680	291	510	506	21
JP 5, JP 6	60	786	390	580	612	26

JPRain PM

TM05 8007 1813

Fig. 15 JPRain PM

JPRain PM is a self-priming, single-stage centrifugal pump with axial suction port and radial discharge port. The pressure booster unit consists of a JPRain combined with a Grundfos PM 1PM 1 Pressure Manager and a power supply cable. The Pressure Manager allows the pump to start and stop automatically according to demand and protects the pump from dry running. The booster unit starts automatically at 1.5 bar.

To reduce the number of starts/stops, an external tank can be installed. See sections *GT-U, bladder* and *GT-H, diaphragm* on page 35.

Applications

JPRain PM is ideal for water supply and transfer in minor applications such as domestic systems, garden irrigation and car washing. JPRain PM may be used in the following domestic installations:

- single- or two-family households
- summer houses and weekend cottages.

JPRain PM is especially ideal for use in small-scale agriculture, gardening and wherever self-priming operation is necessary. JPRain PM adds the comfort of an automatically operated pump.

Features

- Self-priming
- robust design
- corrosion-resistant materials
- sand guard
- automatic start/stop
- integrated non-return valve.

The PM 1 Pressure Manager incorporated in the booster unit provides the following features:

Anti-cycling

If there is a minor leakage in the system, or a tap has not been entirely closed, the PM 1 would normally start and stop the pump periodically. However, in order to avoid cycling, the anti-cycling function of the PM 1 will stop the pump and indicate an alarm.

Dry-running protection

The PM 1 incorporates dry-running protection that automatically stops the pump in case of dry running. The dry-running protection functions differently during priming and operation.

Motor

The rotor is mounted on an oversize, sealed, greased-for-life ball bearings to ensure silent running and long life. Single-phase motors have built-in thermal and current protection and require no additional motor protection.

Enclosure class: IP44 (splash-proof).

Insulation class: F.

Operating conditions

System pressure	Max. 6 bar
Suction lift	Max. 8 m, including suction-pipe pressure loss at a liquid temperature of +20 °C
Liquid temperature	0 °C to +35 °C
Ambient temperature	Max. +40 °C
Relative air humidity	Max. 95 %
Enclosure class	IP44
Insulation class	F
Sound pressure level	The sound pressure level of the pump is below: JPRain 2 PM: 82.9 dB JPRain 3 PM: 84.8 dB JPRain 4 PM: 88.0 dB
Supply voltage	1 x 220-240 V, 50 Hz
Start/stop frequency	Max. 20 per hour

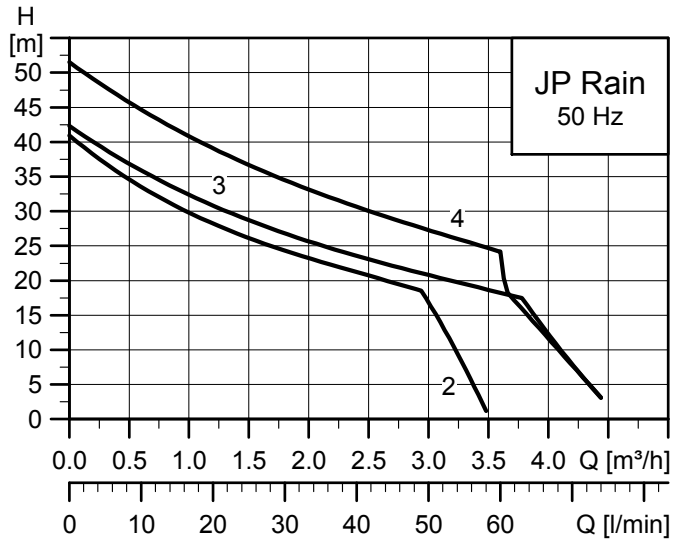
Electrical data, 50 Hz

Pump type	Voltage [V]	P1 [W]	n [min^{-1}]	I_n [A]	I_{start} [A]
JPRain 2 PM	1 x 220-240	720	2900	3.12	8.54
JPRain 3 PM	1 x 220-240	850	2900	3.8	11.27
JPRain 4 PM	1 x 220-240	1130	2900	5.1	17.8

Approvals and markings

Pump type	Approvals		Markings		
	WRAS	ACS	CE	C-Tick	GOST
JPRain 2 PM	-	-	•	•	-
JPRain 3 PM	-	-	•	•	-
JPRain 4 PM	-	-	•	•	-

Performance curves



TM05 5237 3512

Fig. 16 Performance curves for JPRain 2, JPRain 3 and JPRain 4

Note: The performance curves are for the pumps only. Additional pressure drop over the Pressure Manager will occur.

Wetted parts

The below tables specify the parts of the pump and Pressure Manager which are in contact with water.

Designation	Material	Technical description
Pump body	Technopolymer	PP 30 % GF
Impeller	Technopolymer	PPE 20 % GF brass
Diffuser	Technopolymer	PPE 20 % GF
Diffuser ring	Stainless steel	EN 1.4401 AISI 316
Venturi tube	Technopolymer Rubber	PPE + 20 % GF NBR
Seal housing	Rubber	NBR
Shaft	Stainless steel	EN 1.4305 AISI 303
Shaft seal	Carbon with resin/ceramic	CBBXP
Filling plug	Technopolymer	PPE 20 % GF
Filling plug gasket	Rubber	NBR
Drainage plug	Technopolymer	PPE 20 % GF
Drainage plug gasket	Rubber	NBR
Mechanical seal disc	Stainless steel	EN 1.4301 AISI 304

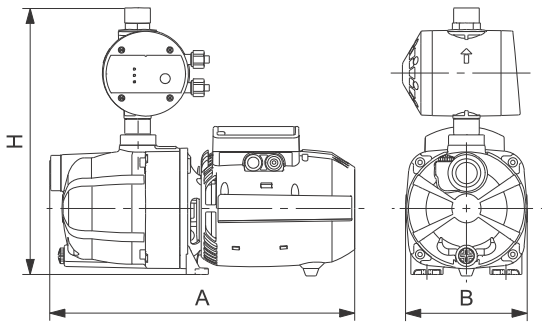
Pressure Manager

Designation	Material	Technical description
Main housing	Technopolymer	PP 30 % GF
Shutter	Technopolymer	PPO 20 % GF
O-ring	Rubber	NBR
Cover magnet	Technopolymer	PPO 20 % GF
Fitting 1"	Technopolymer	PPO 30 % GF
Spring	Stainless steel	EN 1.4305 AISI 303
Diaphragm	Butil	Foodgum 55 N/B

Materials

The pump body is made of technopolymer and the motor support of die-cast aluminium.
Internal components,such as impeller, diffuser, venturi tube and sand guard, are made of technopolymer.

Dimensions



TM05 7574 1213

Pump type	Dimensions [mm]			Weight [kg]	Port	
	A	B	H		Suction	Discharge
JPRain 2 PM	585	235	235	11	G 1	G 1
JPRain 3 PM	585	235	235	11.5	G 1	G 1
JPRain 4 PM	585	235	235	13.5	G 1	G 1

JPBasic PM

TM05 7571 1113

Fig. 17 JPBasic PM

JPBasic PM is a self-priming, single-stage centrifugal pump with axial suction port and radial discharge port. The pressure booster unit consists of a JPBasic combined with a Grundfos PM 1 Pressure Manager and a power supply cable. The Pressure Manager allows the pump to start and stop automatically according to demand and protects the pump from dry running. Depending on the booster unit, the pump automatically starts at 1.5 or 2.2 bar.

To reduce the number of starts/stops, an external tank can be installed. See sections *GT-U, bladder* and *GT-H, diaphragm* on page 35.

Applications

JPBasic PM is ideal for water supply and transfer in minor applications such as domestic systems, garden irrigation and car washing. JPBasic PM may be used in the following domestic installations:

- single- or two-family households
- summer houses and weekend cottages.

JPBasic PM is especially ideal for use in small-scale agriculture, gardening and wherever self-priming operation is necessary. JPBasic adds the comfort of an automatically operated pump.

Features

- Self-priming
- robust design
- corrosion-resistant materials
- sand guard
- automatic start/stop
- integrated non-return valve.

The PM 1 Pressure Manager incorporated in the booster unit provides the following features:

Anti-cycling

If there is a minor leakage in the system, or a tap has not been entirely closed, the PM 1 would normally start and stop the pump periodically. However, in order to avoid cycling, the anti-cycling function of the PM 1 will stop the pump and indicate an alarm.

Dry-running protection

The PM 1 incorporates dry-running protection that automatically stops the pump in case of dry running. The dry-running protection functions differently during priming and operation.

Motor

The rotor is mounted on an oversize, sealed, greased-for-life ball bearings to ensure silent running and long life. Single-phase motors have built-in thermal and current protection and require no additional motor protection.

Enclosure class: IP44 (splash-proof).

Insulation class: F.

Operating conditions

System pressure	Max. 6 bar
Operating range	0.6 to 3.6 m^3/h
Suction lift	Max. 8 m, including suction-pipe pressure loss at a liquid temperature of +20 °C
Liquid temperature	0 °C to +35 °C (for domestic use) 0 °C to +40 °C (for other use)
Ambient temperature	Max. +40 °C
Relative air humidity	Max. 95 %
Enclosure class	IP44
Insulation class	F
Sound pressure level	The sound pressure level of the pump is below 77 dB(A).
Supply voltage	1 x 220-240 V, 50 Hz
Start/stop frequency	Max. 20 per hour

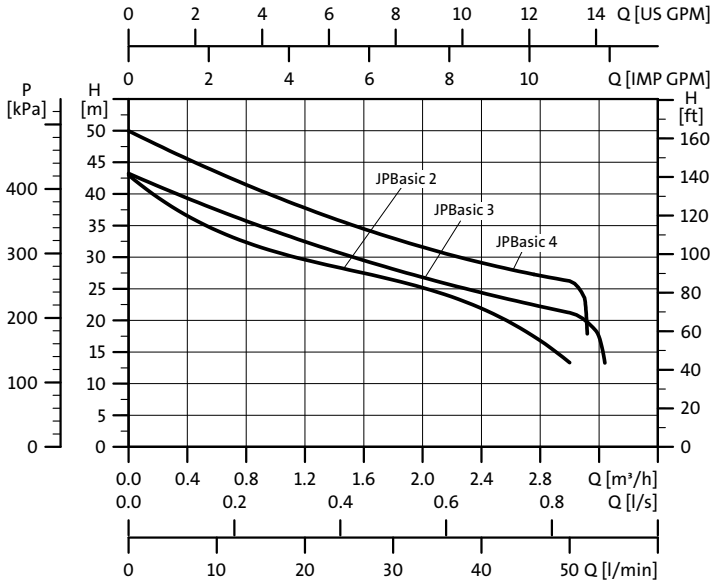
Electrical data, 50 Hz

Pump type	Voltage [V]	P1 [W]	n [min^{-1}]	I_n [A]
JPBasic 2 PM	1 x 220-240	720	2850	3.12
JPBasic 3 PM	1 x 220-240	850	2750	3.4
JPBasic 4 PM	1 x 220-240	1130	2800	4.7

Approvals and markings

Pump type	Approvals		Markings		
	WRAS	ACS	CE	C-Tick	GOST
JPBasic 2 PM	-	-	•	•	•
JPBasic 3 PM	-	-	•	•	•
JPBasic 4 PM	-	-	•	•	•

Performance curves



TM02 8940 1704

Fig. 18 Performance curves for JPBasic

Note: The performance curves are for the pump only. Additional pressure drop over the Pressure Manager will occur.

Wetted parts

The below tables specify the parts of the pump and Pressure Manager which are in contact with water.

Designation	Material	Technical description
Pump body	Cast iron	EN-GJL-200
Motor support	Cast iron Die-cast aluminum*	EN-GJL-200 EN AB 46100
Impeller	Technopolymer	Noryl GFN 2
Diffuser	Technopolymer	Noryl GFN 2
Diffuser ring	Stainless steel	EN 1.4401 AISI 316
Venturi tube	Technopolymer Rubber	Noryl GFN 2
Shaft	Stainless steel	EN 1.4305 AISI 303
Shaft seal	Carbon with resin/ceramic	BBQP
Filling/drainage plug	Technopolymer	PPE 20 % GF
Filling/drainage plug gasket	Rubber	NBR
Back plate	Stainless steel	EN 1.4301 AISI 304

* Applies to JPBasic 2, -3, -4.

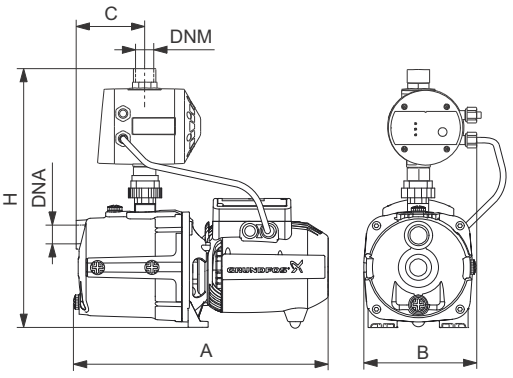
Pressure Manager

Designation	Material	Technical description
Main housing	Technopolymer	PP 30 % GF
Shutter	Technopolymer	PPO 20 % GF
O-ring	Rubber	NBR
Cover magnet	Technopolymer	PPO 20 % GF
Fitting 1"	Technopolymer	PPO 30 % GF
Spring	Stainless steel	EN 1.4305 AISI 303
Diaphragm	Butil	Foodgum 55 N/B

Materials

The pump body and the motor support are made of cast iron. Internal components, such as impeller, diffuser, venturi tube and sand guard, are made of technopolymer.

Dimensions



TM05 7575 1213

Pump type	Dimensions [mm]			Weight [kg]	Port	
	A	B	H		Suction	Discharge
JPBasic 2 PM	395	178	355	11.8	Rp 1	G 1
JPBasic 3 PM	395	178	355	11.9	Rp 1	G 1
JPBasic 4 PM	414	178	368	17.1	Rp 1	G 1

JPBasic PS

Fig. 19 JPBasic PS

JPBasic PS is a self-priming, single-stage centrifugal pump with axial suction port and radial discharge port. The pressure booster unit consists of a JPBasic combined with a pressure switch, a pressure gauge and a power supply cable. Furthermore, a three-way brass connector for connecting to a tank is included. The pressure switch allows the pump to start and stop automatically according to demand.

To reduce the number of starts/stops, an external tank can be installed. See sections *GT-U, bladder* and *GT-H, diaphragm* on page 35.

Applications

JPBasic PS is ideal for water supply and transfer in minor applications such as domestic systems, garden irrigation and car washing. JPBasic PS may be used in the following domestic installations:

- single- or two-family households
- summer houses and weekend cottages.

JPBasic PS is especially ideal for use in small-scale agriculture, gardening and wherever self-priming operation is necessary. JPBasic PS adds the comfort of an automatically operated pump.

Features

- Self-priming
- robust design
- corrosion-resistant materials
- sand guard
- automatic start/stop.

Motor

The rotor is mounted on an oversize, sealed, greased-for-life ball bearings to ensure silent running and long life. Single-phase motors have built-in thermal and current protection and require no additional motor protection.

Enclosure class: IP44 (splash-proof).

Insulation class: F.

Operating conditions

System pressure	Max. 6 bar
Operating range	0.6 to 3.6 m^3/h
Suction lift	Max. 8 m, including suction-pipe pressure loss at a liquid temperature of +20 °C
Liquid temperature	0 °C to +35 °C (for domestic use) 0 °C to +40 °C (for other use)
Ambient temperature	Max. +40 °C
Relative air humidity	Max. 95 %
Enclosure class	IP44
Insulation class	F
Sound pressure level	The sound pressure level of the pump is below 77 dB(A).
Supply voltage	1 x 220-240 V, 50 Hz
Start/stop frequency	Max. 20 per hour

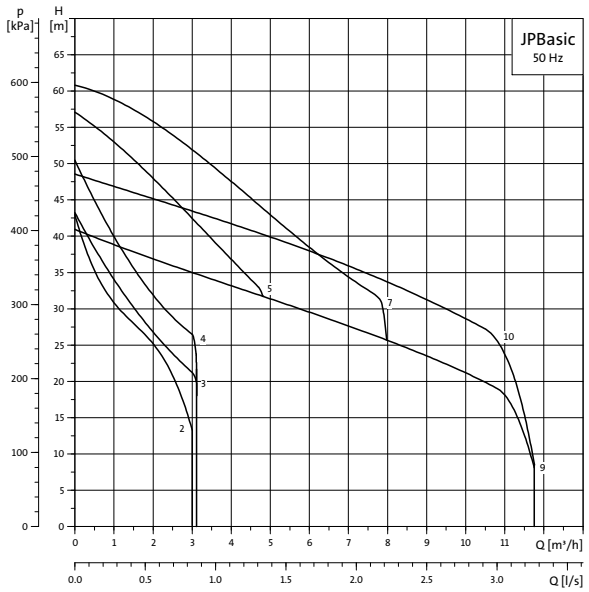
Electrical data, 50 Hz

Pump type	Voltage [V]	P1 [W]	n [min^{-1}]	I_n [A]
JPBasic 2 PS	1 x 220-240	720	2850	3.12
JPBasic 3 PS	1 x 220-240	850	2750	3.8
JPBasic 4 PS	1 x 220-240	1130	2800	5.1
JPBasic 5 PS	1 x 220-240	1600	2800	7.2

Approvals and markings

Pump type	Approvals		Markings		
	WRAS	ACS	CE	C-Tick	GOST
JPBasic 2 PS	-	-	•	•	•
JPBasic 3 PS	-	-	•	•	•
JPBasic 4 PS	-	-	•	•	•
JPBasic 5 PS	-	-	•	•	•

Performance curves



TM02 8936 1804

Fig. 20 Performance curves for JPBasic

Note: The performance curves are for the pump only. Additional pressure drop over the pressure switch will occur.

Wetted parts

The below tables specify the parts of the pump and pressure switch which are in contact with water.

Designation	Material	Technical description
Pump body	Cast iron	EN-GJL-200
Motor support	Cast iron Die-cast aluminum*	EN-GJL-200 EN AB 46100
Impeller	Technopolymer	Noryl GFN 2
Diffuser	Technopolymer	Noryl GFN 2
Diffuser ring	Stainless steel	EN 1.4401 AISI 316
Venturi tube	Technopolymer Rubber	Noryl GFN 2
Shaft	Stainless steel	EN 1.4305 AISI 303
Shaft seal	Carbon with resin/ceramic	BBQP
Filling/drainage plug	Technopolymer	PPE 20 % GF
Filling/drainage plug gasket	Rubber	NBR
Back plate	Stainless steel	EN 1.4301 AISI 304

* Applies to JPBasic 2, -3, -4.

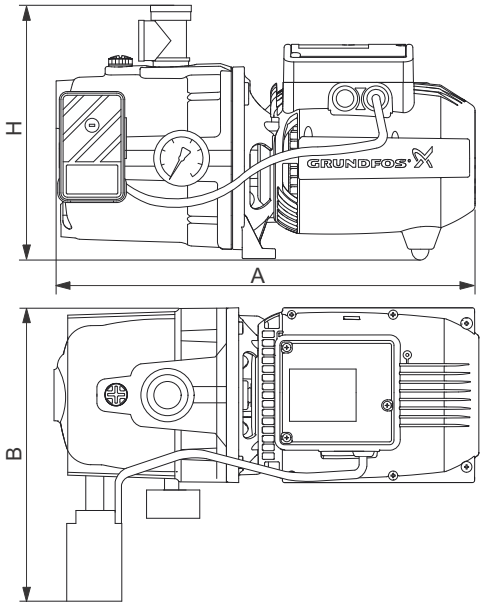
Pressure switch

Designation	Material	Technical description
Pressure sensor	Stainless steel	EN 1.4301 AISI 304
	Rubber	TIMO 70
5-way valve	Brass	MSG58
Pressure gauge	Brass	

Materials

The pump body and the motor support are made of cast iron. Internal components, such as impeller, diffuser, venturi tube and sand guard, are made of technopolymer.

Dimensions



TM05 7569 1113

Pump type	Dimensions [mm]			Weight [kg]	Port	
	A	B	H		Suction	Discharge
JPBasic 2 PS	440	238	307	11.9	Rp 1	Rp 1
JPBasic 3 PS	440	238	307	12.1	Rp 1	Rp 1
JPBasic 4 PS	440	238	307	13.9	Rp 1	Rp 1
JPBasic 5 PS	610	293	246	33.5	Rp 1 1/4	Rp 1

JPRain PT

TM05 8225 2113

JPRain PT is an automatic booster unit for water supply in domestic and agricultural applications as well as other installations where small leakages are expected to occur. The pressure booster unit consists of a JPRain pump combined with a pressure switch, a pressure gauge and a diaphragm tank.

The pressure switch allows the pump to start and stop automatically according to demand.

The diaphragm tank ensures a controlled pressure in the water supply and thereby limits the switching frequency of the pump in case of low water consumption or leakage loss. Furthermore, the diaphragm tank increases system comfort by compensating for pressure drops when a tap is opened, and finally it reduces problems with water hammer in the pipework.

JPRain PT is available with an 8- or 18-litre vertical diaphragm tank.

Applications

JPRain PT is suitable for pressure boosting from mains water or below-ground water tanks where self-priming operation is necessary. Due to the pressure switch and the diaphragm tank, the booster unit provides great comfort for the user. The booster unit may be used in the following domestic installations:

- single- or two-family households
- summer houses and weekend cottages.

Features

- Self-priming
- robust design
- corrosion-free materials
- constant water supply
- automatic start/stop.

Motor

The rotor is mounted on an oversize, sealed, greased-for-life ball bearings to ensure silent running and long life. Single-phase motors have built-in thermal and current protection and require no additional motor protection.

Enclosure class: IP44 (splash-proof).

Insulation class: F.

Operating conditions

System pressure	Max. 6 bar
Suction lift	Max. 8 m, including suction-pipe pressure loss at a liquid temperature of +20 °C
Liquid temperature	0 °C to +35 °C
Ambient temperature	Max. +40 °C
Relative air humidity	Max. 95 %
Enclosure class	IP44
Insulation class	F
Sound pressure level	The sound pressure level of the pump is below: JPRain 2 PT: 82.9 dB JPRain 3 PT: 84.8 dB JPRain 4 PT: 88.0 dB
Supply voltage	1 x 220-240 V, 50 Hz
Start/stop frequency	Max. 20 per hour

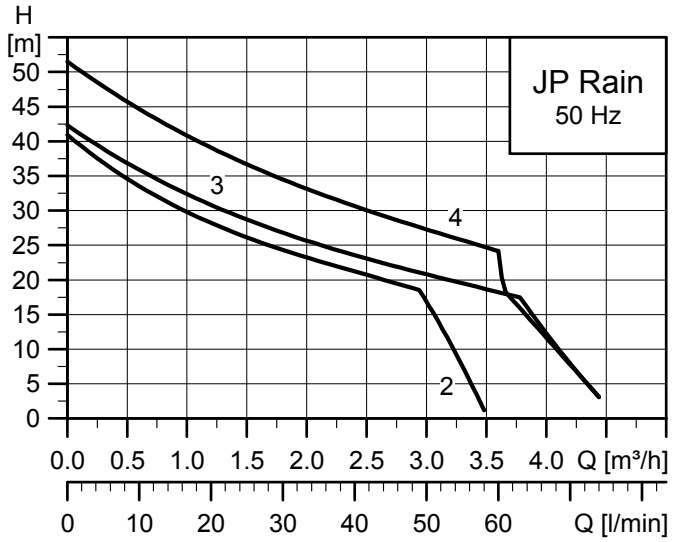
Electrical data, 50 Hz

Pump type	Voltage [V]	P1 [W]	n [min^{-1}]	I_n [A]	I_{start} [A]
JPRain 2 PT	1 x 220-240	720	2900	3.12	8.54
JPRain 3 PT	1 x 220-240	850	2900	3.8	11.27
JPRain 4 PT	1 x 220-240	1130	2900	5.1	17.8

Approvals and markings

Pump type	Approvals		Markings		
	WRAS	ACS	CE	C-Tick	GOST
JPRain 2 PT	-	-	•	•	-
JPRain 3 PT	-	-	•	•	-
JPRain 4 PT	-	-	•	•	-

Performance curves



TM05 5237 3512

Fig. 21 Performance curves for JPRain 2, JPRain 3 and JPRain 4

Note: The performance curves are for the pumps only. Additional pressure drop over the pressure switch will occur.

Wetted parts

The below tables specify the parts of the pump, pressure switch and pressure tank which are in contact with water.

Pump

Designation	Material	Technical description
Pump body	Technopolymer	PP 30 % GF
Impeller	Technopolymer	PPE 20 % GF brass
Diffuser	Technopolymer	PPE 20 % GF
Diffuser ring	Stainless steel	EN 1.4401 AISI 316
Venturi tube	Technopolymer Rubber	PPE + 20 % GF NBR
Seal housing	Rubber	NBR
Shaft	Stainless steel	EN 1.4305 AISI 303
Shaft seal	Carbon with resin/ceramic	CBBXP
Filling plug	Technopolymer	PPE 20 % GF
Filling plug gasket	Rubber	NBR
Drainage plug	Technopolymer	PPE 20 % GF
Drainage plug gasket	Rubber	NBR
Mechanical seal disc	Stainless steel	EN 1.4301 AISI 304

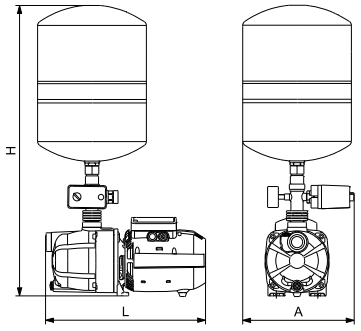
Pressure switch

Designation	Material	Technical description
Pressure sensor	Stainless steel	EN 1.4301 AISI 304
	Rubber	TIMO 70
5-way valve	Brass	MSG58
Pressure gauge	Brass	

Pressure tank

Pressure tank	Rubber/stainless steel	
Armed rubber hose	Rubber/stainless steel	

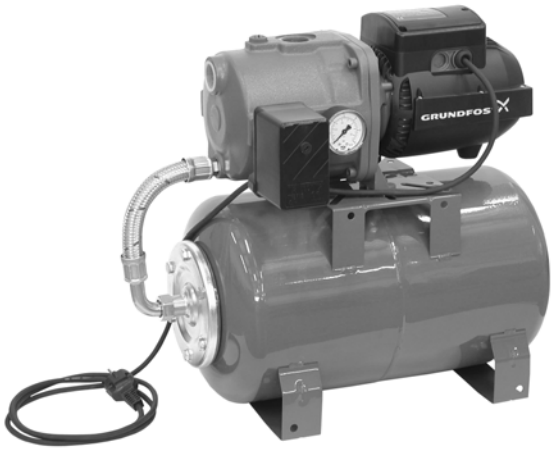
Dimensions



TM05 8752 2613

Pump type	Dimensions [mm]			Weight [kg]	Port	
	A	L	H		Suction	Discharge
JPRain 2 PT	447	238	307	14.2	G 1	Rp 1
JPRain 3 PT	447	238	307	15.2	G 1	Rp 1
JPRain 4 PT	447	238	307	17.4	G 1	Rp 1

JPBasic PT



TM02 9060 1704

JPBasic PT is an automatic booster unit for water supply in domestic and agricultural applications as well as other installations where small leakages are expected to occur. The pressure booster unit consists of a JPBasic pump combined with a pressure switch, a pressure gauge and a diaphragm tank.

The pressure switch automatically starts the pump according to demand.

The diaphragm tank ensures a controlled pressure in the water supply and thereby limits the switching frequency of the pump in case of low water consumption or leakage loss. Furthermore, the diaphragm tank increases system comfort by compensating for pressure drops when a tap is opened, and finally it reduces problems with water hammer in the pipework.

JPBasic PT is available with a 20-litre horizontal diaphragm tank.

Applications

JPBasic PT is suitable for pressure boosting from mains water or below-ground water tanks where self-priming operation is necessary. Due to the pressure switch and the diaphragm tank, the booster unit provides great comfort for the user. The booster unit may be used in the following domestic installations:

- single- or two-family households
- summer houses and weekend cottages.

Features

- Self-priming
- robust design
- corrosion-free materials
- constant water supply
- automatic start/stop.

Motor

The rotor is mounted on an oversize, sealed, greased-for-life ball bearings to ensure silent running and long life. Single-phase motors have built-in thermal and current protection and require no additional motor protection.

Enclosure class: IP44 (splash-proof).

Insulation class: F.

Operating conditions

System pressure	Max. 6 bar
Suction lift	Max. 8 m, including suction-pipe pressure loss at a liquid temperature of +20 °C
Liquid temperature	0 °C to +35 °C (for domestic use) 0 °C to +40 °C (for other use)
Ambient temperature	Max. +40 °C
Relative air humidity	Max. 95 %
Enclosure class	IP44
Insulation class	F
Sound pressure level	The sound pressure level of the pump is below 77 dB(A).
Supply voltage	1 x 220-240 V, 50 Hz
Start/stop frequency	Max. 20 per hour

Electrical data, 50 Hz

Pump type	Voltage [V]	P1 [W]	n [min^{-1}]	I_n [A]
JPBasic 2 PT	1 x 220-240	720	2850	3.12
JPBasic 3 PT	1 x 220-240	850	2750	3.8
JPBasic 4 PT	1 x 220-240	1130	2800	5.1

Approvals and markings

Pump type	Approvals		Markings		
	WRAS	ACS	CE	C-Tick	GOST
JPBasic 2 PT	-	-	•	•	•
JPBasic 3 PT	-	-	•	•	•
JPBasic 4 PT	-	-	•	•	•

Performance curves

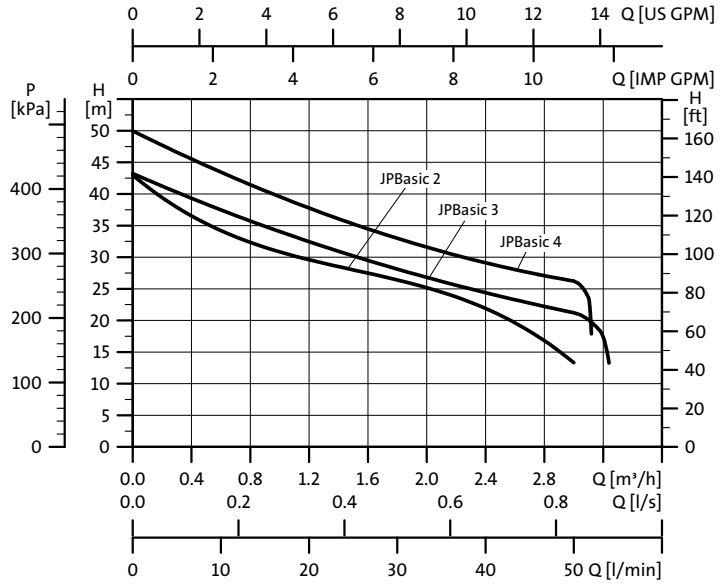


Fig. 22 Performance curves for JPBasic PT

Note: The performance curves are for the pump only. Additional pressure drop over the pressure switch will occur.

Wetted parts

The below tables specify the parts of the pump, pressure switch and pressure tank which are in contact with water.

Pump

Designation	Material	Technical description
Pump body	Cast iron	EN-GJL-200
Motor support	Cast iron Die-cast aluminum*	EN-GJL-200 EN AB 46100
Impeller	Technopolymer	Noryl GFN 2
Diffuser	Technopolymer	Noryl GFN 2
Diffuser ring	Stainless steel	EN 1.4401 AISI 316
Venturi tube	Technopolymer Rubber	Noryl GFN 2
Shaft	Stainless steel	EN 1.4305 AISI 303
Shaft seal	Carbon with resin/ceramic	BBQP
Filling/drainage plug	Technopolymer	PPE 20 % GF
Filling/drainage plug gasket	Rubber	NBR
Back plate	Stainless steel	EN 1.4301 AISI 304

* Applies to JPBasic 2, -3, -4.

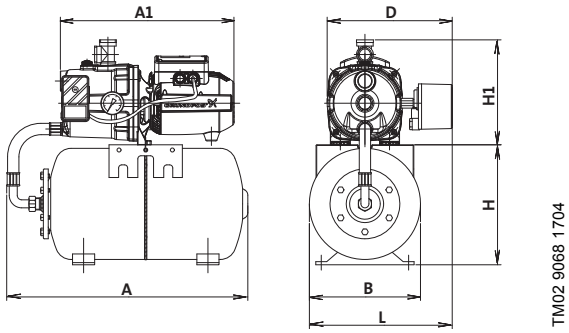
Pressure switch

Designation	Material	Technical description
Pressure sensor	Stainless steel	EN 1.4301 AISI 304
	Rubber	TIMO 70
5-way valve	Brass	MSG58
Pressure gauge	Brass	

Pressure tank

Pressure tank	Rubber/stainless steel
Armed rubber hose	Rubber/stainless steel

Dimensions



Pump type	Dimensions [mm]			Weight [kg]	Port	
	A	L	H + H1		Suction	Discharge
JPBasic 2 PT	447	238	307	15.8	Rp 1	Rp 1
JPBasic 3 PT	447	238	307	18.1	Rp 1	Rp 1
JPBasic 4 PT	447	238	307	19.8	Rp 1	Rp 1

4. Product numbers

Jet pumps

Pump type	Voltage 1 x 220-240 V, 50 Hz	Voltage 3 x 220-240/ 380-415 V, 50 Hz	Material variant	Cable	Plug	With on/off switch	Product number
Jet pumps							
JP 5	•		A	1.5 m	Schuko	•	46511002
	•				No plug	•	46511011
	•						46511012
	•				Australian	•	98155855
	•				No plug		46531011
	•		B	1.5 m	Schuko	•	46711002
	•				No plug	•	46711011
	•						46711012
	•						46731011
JP 6		•	A	1.5 m	No plug	•	46611011
		•					46611012
		•			Australian	•	98155858
		•			No plug		46631011
	•		B	1.5 m	Schuko	•	46811002
	•				No plug	•	46811011
	•						46811012
	•						46831011
	•				Schuko	•	46611002
JPRain 2	•			2 m	Australian		96827879
	•			2 m	No plug		98061490
JPRain 3	•			2 m	Australian		96827877
	•			2 m	No plug		98061503
JPRain 4	•			2 m	Australian		96827878
	•			2 m	No plug		98061505
JPBasic 2	•			No cable	No plug		96121750
JPBasic 3	•						96121751
JPBasic 4	•						96121752
JPBasic 5	•						96121754
JPBasic 7	•						96121758
JPBasic 9	•						96121756
JPBasic 10	•						96121760
Jet pumps for deep wells							
JDBasic 2	•			No cable	No plug		96121777
JDBasic 4	•						96121779
JDBasic 5	•			2 m	Australian		96149988
JDBasic 7	•			No cable	No plug		96121783
Ejector E 20							96150012
Ejector E 25							96150013
Ejector E 30							96150014

Booster units

Pump type	Voltage 1 x 220-240 V, 50 Hz	Voltage 3 x 220-240/ 380-415 V, 50 Hz	Tank size	Cable	Plug	With on/off switch	Product number
Booster unit, plug and pump*							
JP 5 Booster PM 1	•			1.5 m	Schuko		98071524
	•				Australian		98071526
JP 5 Booster PM 2	•				Schuko		98071528
	•				Australian		98071530
JP 6 Booster PM 1	•				Schuko		98071533
	•				Australian		98071535
JP 6 Booster PM 2	•				Schuko		98071537
	•				Australian		98071539
JPBasic 2 PM	•			1.5 m	Australian		98393779
JPBasic 3 PM	•				Australian		98393780
JPBasic 4 PM	•				Australian		98393781
	•				Schuko		98393783
JPBasic 5 PM	•			2 m	Australian		98388476
JPRain 2 PM	•			1.5 m	Australian		98388472
JPRain 3 PM	•						98388473
JPRain 4 PM	•						98388475
JPBasic 2 PS	•			2 m	Schuko		96121875
JPBasic 3 PS	•						96121876
JPBasic 4 PS	•						96121877
JPBasic 5 PS	•						96121878
JP Booster, package solution**							
JP 5 Booster PM 1	•			1.5 m	Schuko		98071540
JP 6 Booster PM 1	•						98071541
JP 5 Booster PM 2	•						98071542
JP 6 Booster PM 2	•						98071543
Booster unit with pressure switch and tank							
JP 5 Booster PT	•		18 l	1.5 m	Schuko		4651BTBB
	•		24 l				4651BPBB
	•		60 l				4651BQBB
		•	24 l		No plug		4653FPDB
		•	60 l				4653FQDB
JP 6 Booster PT	•		18 l	1.5 m	Schuko		4661BTBB
	•		24 l				4661BPBB
	•		60 l				4661BQBB
		•	24 l		No plug		4663FPDB
		•	60 l				4663FQDB
JPBasic 2 PT	•		20 l	2 m	Schuko		96150002
JPBasic 3 PT	•						96150003
JPBasic 4 PT	•						96150004
JPRain 2 PT	•		8 l	2 m	Australian		96827840
JPRain 3 PT	•		18 l				96935306
JPRain 4 PT	•		18 l				96935307

The abbreviations in the above table refer to the type key. See page 5.

* The jet pump and Pressure Manager are combined into one unit with common installation and operating instructions.

** The jet pump and Pressure Manager are delivered in the same box with one product number, but with two separate installation and operating instructions.

Accessories

The vital components of the booster solutions are also available as stand-alone products. They can be combined with any pump to create a booster system.

Grundfos Pressure Manager

Grundfos PM 1 and PM 2 Pressure Managers are designed for automatic start/stop control of Grundfos pumps and other water supply pumps.

PM 1

The PM 1 is suitable for applications where start/stop of the pump according to consumption is needed.
It is the basic control solution offering start at 1.5 or 2.2 bar.

The PM 1 starts the pump when the start pressure is reached, and the pump keeps running as long as there is flow.

The PM 1 offers dry-running protection and cycling alarm for increased safety.

TM05 5089 3212

PM 2

The PM 2 is the all-round control solution offering adjustable start at 1.5 to 5 bar. This enables customisation to different types of installations and ensures a high level of comfort.

The start pressure is set by means of DIP switches located behind the control panel, and the current pressure is indicated on the LED display on the front of the PM 2.

The PM 2 starts the pump when the start pressure is reached, and the pump keeps running as long as there is flow.

The PM 2 can be optimised for operation with an external pressure tank by enabling the 1 bar differential-pressure function. This function significantly reduces the number of operating hours of the pump in installations with a pressure tank.

TM055090 3212

Note: For further information, see the data booklet for Grundfos Pressure Manager.

Grundfos pressure tanks

Grundfos GT pressure tanks are long-life tanks, which are ideally suited for controlling the pressure in domestic as well as industrial applications.

GT-U, bladder

The pressure tank body is made of steel, and the tank is factory-pre-charged with nitrogen. All parts in contact with water are either made of stainless steel or coated for protection against corrosion.
The replaceable bladder for tanks with a volume of more than 60 litres is made of high-quality rubber material suitable for potable-water applications, such as booster systems, pressurisation and water hammer arresting.

TM05 5088 3212 - TM05 5087 3212

Fig. 23 GT-U bladder tanks

GT-H, diaphragm

The polypropylene liner combined with an FDA-approved high-grade butyl diaphragm makes up the water chamber. This is held against the tank wall with a steel clench ring. The brass air valve, sealed by a threaded O-ring valve cap, prevents air leaks.

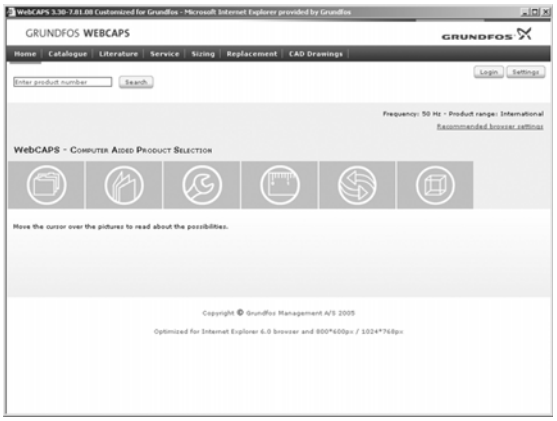
TM05 5085 3212 - TM05 5086 3212

Fig. 24 GT-H diaphragm tanks

Note: For further information, see the data booklet for Grundfos pressure tanks.

5. Further product information

WebCAPS

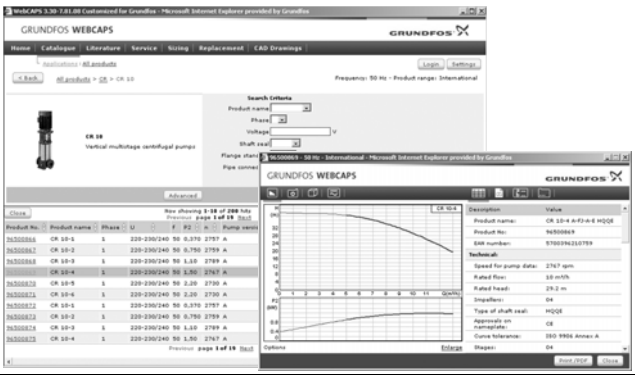


WebCAPS is a **Web**-based **C**omputer **A**ided **P**roduct **S**election program available on www.grundfos.com.

WebCAPS contains detailed information on more than 220,000 Grundfos products in more than 30 languages.

Information in WebCAPS is divided into six sections:

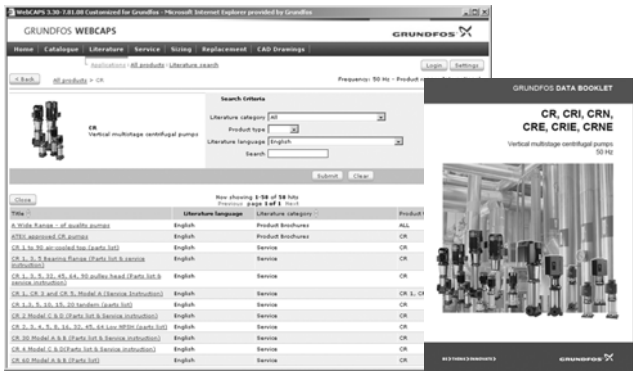
- Catalogue
- Literature
- Service
- Sizing
- Replacement
- CAD drawings.



Catalogue

Based on fields of application and pump types, this section contains the following:

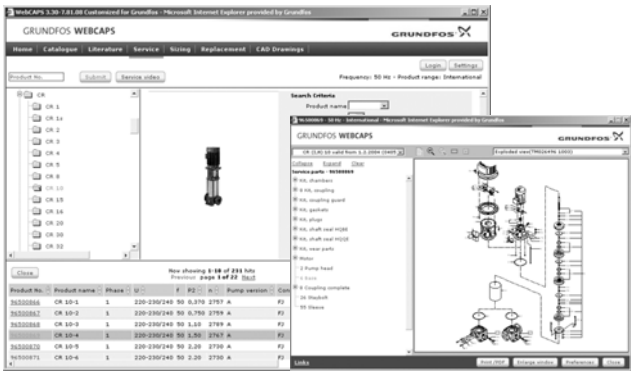
- technical data
- curves (QH, Eta, P1, P2, etc.) which can be adapted to the density and viscosity of the pumped liquid and show the number of pumps in operation
- product photos
- dimensional drawings
- wiring diagrams
- quotation texts, etc.



Literature

This section contains all the latest documents of a given pump, such as

- data booklets
- installation and operating instructions
- service documentation, such as Service kit catalogue and Service kit instructions
- quick guides
- product brochures.



Service

This section contains an easy-to-use interactive service catalogue. Here you can find and identify service parts of both existing and discontinued Grundfos pumps.
Furthermore, the section contains service videos showing you how to replace service parts.

Sizing

This section is based on different fields of application and installation examples and gives easy step-by-step instructions in how to size a product:

- Select the most suitable and efficient pump for your installation.
- Carry out advanced calculations based on energy, consumption, payback periods, load profiles, life cycle costs, etc.
- Analyse your selected pump via the built-in life cycle cost tool.
- Determine the flow velocity in wastewater applications, etc.

Replacement

In this section you find a guide to selecting and comparing replacement data of an installed pump in order to replace the pump with a more efficient Grundfos pump.
The section contains replacement data of a wide range of pumps produced by other manufacturers than Grundfos.

Based on an easy step-by-step guide, you can compare Grundfos pumps with the one you have installed on your site. When you have specified the installed pump, the guide will suggest a number of Grundfos pumps which can improve both comfort and efficiency.

CAD drawings

In this section, it is possible to download 2-dimensional (2D) and 3-dimensional (3D) CAD drawings of most Grundfos pumps.

These formats are available in WebCAPS:

2-dimensional drawings:

- .dxf, wireframe drawings
- .dwg, wireframe drawings.

3-dimensional drawings:

- .dwg, wireframe drawings (without surfaces)
- .stp, solid drawings (with surfaces)
- .eprt, E-drawings.

WinCAPS

Fig. 25 WinCAPS DVD

WinCAPS is a **Win**dows-based **C**omputer **A**ided **P**roduct **S**election program containing detailed information on more than 220,000 Grundfos products in more than 30 languages.

The program contains the same features and functions as WebCAPS, but is an ideal solution if no internet connection is available.

WinCAPS is available on DVD and updated once a year.

GO CAPS

Mobile solution for professionals on the GO!

CAPS functionality on the mobile workplace.

Available on the App Store

be think innovate

V7112680 0713
ECM: 1111213

GRUNDFOS A/S
DK-8850 Bjerringbro . Denmark
Telephone: +45 87 50 14 00
www.grundfos.com

GRUNDFOS