

Jet pumps and boosters

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1. Product overview

Pump	Description	Technical data	Page
JP 5 and JP 6 pumps and boosters			
JP 5, JP 6			
	Self-priming pump for water supply and transfer in applications such as: <ul style="list-style-type: none"> • single- and two-family houses • gardens. 	Maximum suction lift: 7 m Maximum head: 57 m Maximum flow rate: 5 m Pump body: stainless steel	8
JP 5, JP 6 PM			
	JP 5 or JP 6 pump with a Pressure Manager Features <ul style="list-style-type: none"> • anticycling • dry-running protection • automatic start/stop. 	Maximum suction lift: 7 m Maximum head: 57 m Maximum flow rate: 5 m Pump body: stainless steel	10
JP 5 PT, JP 6 PT			
	JP 5 or JP 6 pump with a pressure tank and pressure switch Features <ul style="list-style-type: none"> • automatic start/stop • constant water supply. 	Maximum suction lift: 7 m Maximum head: 57 m Maximum flow rate: 5 m Pump body: stainless steel Tank: 18, 24, 60 l, horizontal	11
JPA pumps and boosters			
JPA			
	Self-priming pump for water supply and transfer in applications such as: <ul style="list-style-type: none"> • single- and two-family houses • gardens • small-scale agriculture • industrial greenhouses. 	Maximum suction lift: 8 m Maximum head: 62 m Maximum flow rate: 12 m Pump body: cast iron	12
JPA PT			
	JPA pump with a pressure tank and pressure switch. The pressure tank is available in a horizontal or vertical version. Features <ul style="list-style-type: none"> • automatic start/stop • constant water supply. 	Maximum suction lift: 8 m Maximum head: 54 m Maximum flow rate: 4 m Pump body: cast iron Tank: 18 l vertical, 20 l horizontal	14
JPC pumps and boosters			
JPC			
	Self-priming pump for water supply and transfer in applications such as: <ul style="list-style-type: none"> • single- and two-family houses • gardens. 	Maximum suction lift: 8 m Maximum head: 54 m Maximum flow rate: 4 m Pump body: composite material	15
JPC PT			
	JPC pump with a pressure tank and pressure switch Features <ul style="list-style-type: none"> • automatic start/stop • constant water supply. 	Maximum suction lift: 8 m Maximum head: 54 m Maximum flow rate: 4 m Pump body: composite Tank: 18 l vertical	17
JPD boosters for deep-well applications			
JPD PT			
	Self-priming pump with a pressure tank, a pressure switch and an external ejector for deep-well applications. The booster is suitable for water supply and transfer in applications such as: <ul style="list-style-type: none"> • farmhouses • small-scale agriculture. Features <ul style="list-style-type: none"> • suction lift up to 27 metres • constant water supply • automatic start/stop. 	Maximum suction lift: 27 m Maximum head: 62 m Maximum flow rate: 12 m Pump body: cast iron Tank: 18 l vertical	18

2. Product description

Introduction

Grundfos offers jet pumps for a wide range of domestic applications such as water supply to single- and two-family houses, gardens and small-scale agriculture. The jet pumps ensure a constant supply of water to your home and garden. Grundfos offers four different product types which include a jet pump:

- separate jet pumps (JP 5, JP 6, JPA, JPC)
- booster solutions which include a jet pump and a Pressure Manager (JP 5 and JP 6 PM)
- booster solutions which include a jet pump, a pressure switch and a pressure tank (JP 5 and JP 6 PT, JPC PT, JPA PT)
- booster solutions which include a jet pump, a pressure switch, a pressure tank and an external ejector nozzle for deep-well applications (JPD PT).

Jet pumps

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

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



Fig. 1 JP 5, JP 6, JPC, JPA

TM01 4595 3502 - TM05 5205 3412
Gr1045 - TM06 5410 4515

Boosters

The boosters are compact systems for domestic water supply. The boosters consist of a Grundfos jet pump and a pressure control unit. The pressure control unit gives more comfort to the user, as it allows the pump to start and stop automatically according to demand.

The boosters are divided into two main groups, i.e. jet pumps with Pressure Manager and jet pumps with a pressure tank.

Booster with Pressure Manager

The Pressure Manager comes in two versions:

- a basic version, PM 1
- an advanced version, PM 2.

They both have the following features:

- anticycling
- automatic start/stop
- dry-running protection
- integrated non-return valve.



Fig. 2 JP 5 PM 1

TM05 5989 4312

Booster with pressure tank

The booster consists of 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 constant water pressure in the water supply and thereby limits the number of starts 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.



Fig. 3 JP 5 PT, JPC PT, JPA PT

TM05 5987 4312 -
TM05 8225 2113

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 liquids:

- potable water
- rainwater.

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.

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 inlet pipe as short as possible.

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

Inlet pipe

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

The length of the inlet pipe must not exceed the length stated in fig. 4. The maximum length depends on the geodetic suction lift. As shown in the example below, if the suction lift is 2.5 metres, the length of the inlet pipe must not exceed 25 metres.

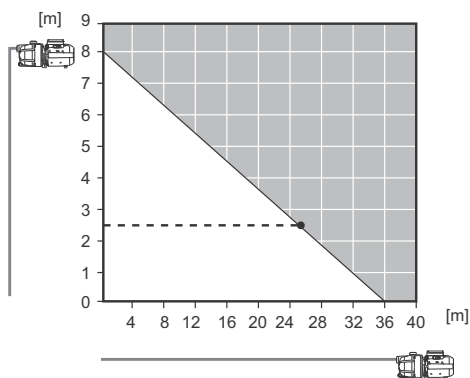


Fig. 4 Recommended maximum suction lift and maximum inlet pipe length (Y-axis)

Install the inlet pipe so as to avoid bends, air pockets and any unnecessary restrictions to the flow. See fig. 5.

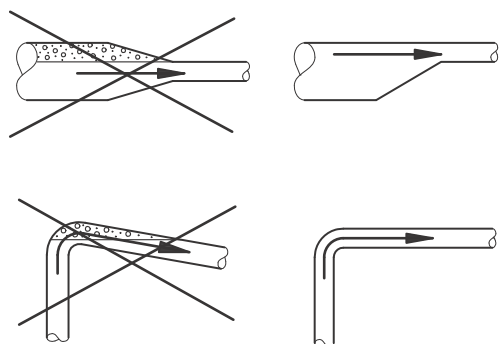


Fig. 5 Pipework recommendations

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

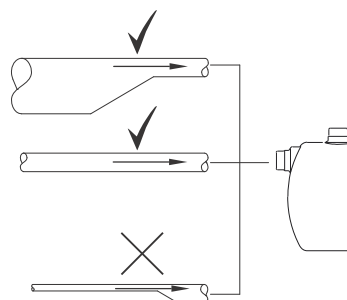


Fig. 6 Recommended size of the inlet pipe

If there is a suction lift, we recommend that you install a non-return valve in the inlet pipe.

The time from the pump is started until it delivers water depends on the length of the inlet pipe and on the suction lift.

Operation limitations

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.

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

Electrical installation

The electrical connection and protection must 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 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.

TM05 8227 2113

TM05 5626 3812

TM04 0438 0608

Identification

Type key, JP 5 and JP 6 pumps

Example	JP5	B-	A-	CVBP-	C-	Y	1 x 220-240 V, 50 Hz
Pump type JP 5 JP 6							
Pipe connection 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 5 and JP 6 boosters

Example	JPB	5	A-	A-	A-	C-	C-	P	24L
JPB: JP booster									
Pump type 5: JP 5 6: JP 6									
Pump version A: Standard version X: Special version									
Pipe connection A: Inlet, JP, external G 1 Outlet, 5-way valve, external R 1 B: Inlet, JP, external G 1 Outlet, PM, external G 1 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: PM 1, 1.5 bar B: PM 1, 2.2 bar C: PM 2 P: Pressure switch									
Tank size									

Type key, JPA, JPC and JPD pumps and boosters

Example	JPA	4-	54	(PT)	(V)	230 V	50 Hz	Schuko	IT
Pump type JPA: Cast iron, self-priming JPC: Composite, self-priming JPD: Cast iron, self-priming, deep well									
Maximum flow rate [m ³ /h]									
Maximum head [m]									
Accessory, if any: PT: Pressure tank PM: Pressure Manager - : None									
Tank type H: Horizontal tank V: Vertical tank - : No tank									
Voltage									
Frequency									
Cable plug type: No plug Schuko plug									
Country of production									

3. JP 5 and JP 6 pumps and boosters

JP 5, JP 6



TM01 4595 3502

Fig. 7 JP 6

The JP 5 and JP 6 are self-priming, single-stage centrifugal pumps with axial inlet and radial outlet. They have a built-in ejector with guide vanes for optimum self-priming properties. The pump body is made of stainless steel.

The JP 5 and JP 6 can be fitted with a Pressure Manager or a pressure switch combined with a pressure tank for more comfort.

Product range

Pump type	Maximum flow rate [m ³ /h]	Maximum head [m]
JP 5	4	43
JP 6	5	57

Applications

The pumps can be used in various applications requiring self-priming operation. They are especially suitable for water supply and transfer in the following applications:

- single- and two-family houses
- gardens.

Features

- Self-priming pump
- handle for easy lifting
- robust design
- corrosion-free materials.

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.

Operating conditions

System pressure	Max. 6 bar
Suction lift	Max. 7 m, including inlet-pipe pressure loss at a liquid temperature of 20 °C
Liquid temperature	0-40 °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).
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 / EAC
JP 5	•	•*	•	•	•
JP 6	-	•*	•	•	•

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

Materials

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

Designation	Variant A	Variant B
Cover plate		Stainless steel
Motor stool	Composite, one unit	Aluminium
Base plate		Stainless steel
Handle	Composite	Composite

Wetted parts

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

Designation	Material	Technical description
Pump body	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

Performance curves

The performance curves are for the pumps only. There will be an additional pressure drop over the Pressure Manager. The suction lift is 0 metre.

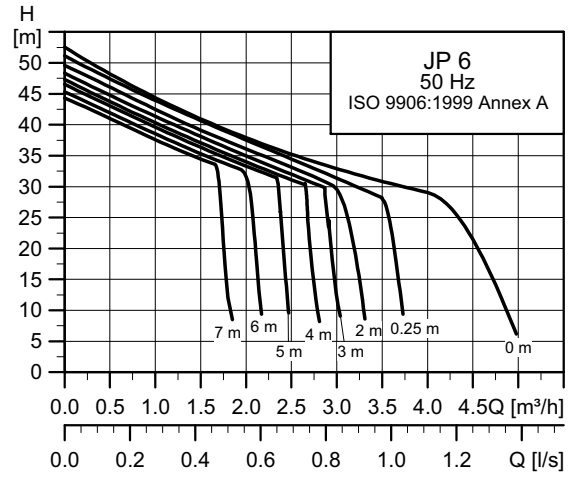
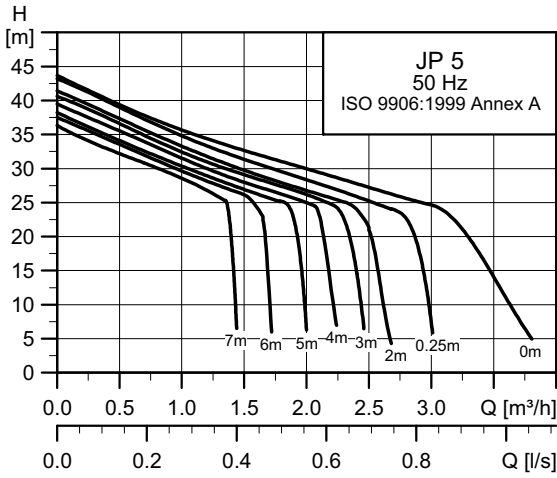
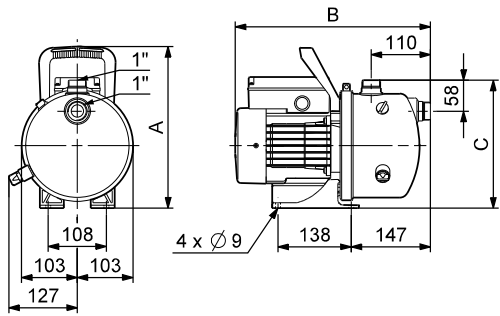


Fig. 8 Performance curves for JP 5 and JP 6

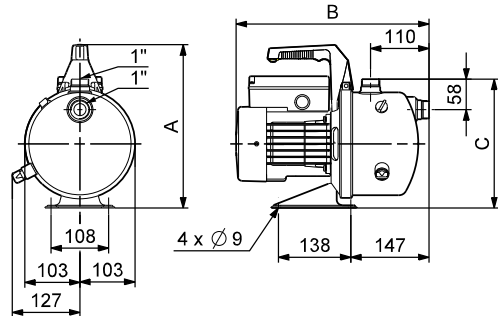
Dimensions

Material variant A



TM04 2346 2308

Material variant B



TM04 2347 2308

Pump type	Dimensions [mm]			Weight [kg]
	A	B	C	
JP 5	300	364	240	8.5
JP 6	300	401	240	10

Pump type	Dimensions [mm]			Weight [kg]
	A	B	C	
JP 5	300	364	240	11
JP 6	300	401	240	11

JP 5, JP 6 PM



TM05 5989 4312 - TM05 5988 4312

Fig. 9 JP PM 1 (left) and PM 2 (right)

JP 5 and JP 6 PM are compact boosters consisting of a JP 5 or JP 6 pump, material variant A, and a Grundfos Pressure Manager.

The Pressure Manager comes in two versions:

- a basic version, PM 1
- an advanced version, PM 2.

To reduce the number of starts/stops, an external tank can be installed. See sections *GT-U bladder tanks* and *GT-H diaphragm tanks*, page 24.

Features

- Anticycling
- Dry-running protection
- Automatic start/stop:
 - JP 5 PM 1: start pressure of 1.5 bar.
 - JP 6 PM 1: start pressure of 2.2 bar.
 - JP 5, JP 6 PM 2: Adjustable start pressure between 1.5 and 5.5 bar.
- Maximum continuous operating time (PM 2 only).

For a complete list of features, see section *Accessories* on page 23.

Electrical data

JP PM 1 and PM 2 come with single-phase motors. See section *Electrical data, 50 Hz* on page 8.

Approvals and markings

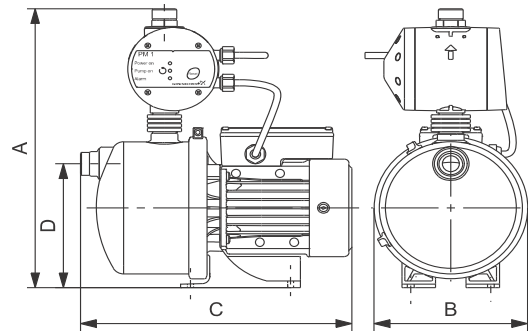
Approvals		Markings		
WRAS	ACS	CE	C-Tick	GOST TR / EAC
-	-	•	•	•

Wetted parts of the Pressure Manager

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

Designation	Material	Technical description
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	Butyl	Foodgum 55 N/B

Dimensions



TM05 5970 4312

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

JP 5, JP 6 PT



TM05 5987 4312

Fig. 10 JP PT

JP 5 and JP 6 PT are compact boosters consisting of a JP 5 or JP 6 pump, material variant A, a pressure switch 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.

JP PT is available with the following diaphragm tanks:

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

Features

- automatic start/stop at 2.2 and 3.3 bar.
- constant water supply.

Approvals and markings

Approvals		Markings		
WRAS	ACS	CE	C-Tick	GOST TR / EAC
-	-	•	-	•

Wetted parts

The below tables specify the parts which are in contact with water.

Pressure switch

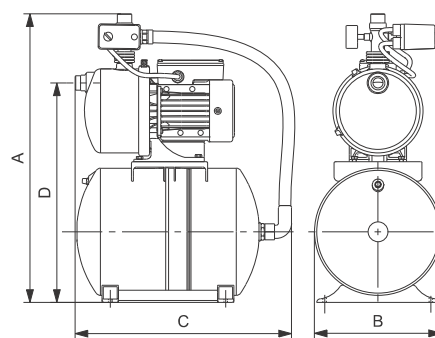
Designation	Material	Technical description
Pressure sensor	Zinc alloy	NF EN 12844
5-way valve	Brass	MSG58
Pressure gauge	Brass	

Pressure tank

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

Dimensions

JP PT is available with different tank sizes. The booster design depends on the size of the selected tank.



TM05 5972 4312

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

4. JPA pumps and boosters

General data



TM06 5406 - TM06 5410 - TM06 5411 4515

Fig. 11 JPA pumps

JPA is a self-priming, single-stage centrifugal pump with a body made of cast iron. It has an axial inlet and radial outlet. The pump has a built-in ejector with guide vanes for optimum self-priming properties.

The JPA can be fitted with a pressure tank for more comfort.

Product range

Pump type	Maximum flow rate [m ³ /h]	Maximum head [m]
JPA, JPA PT	3	42
	4	47
	4	54
	5	61
JPA	8	62
	12	41
	12	51

Applications

The pumps can be used in various applications where self-priming is needed. They are especially suitable for water supply and transfer in the following applications:

- single- or two-family houses
- gardens.

The big versions can be used in the following applications as well:

- water transfer
- small-scale agriculture
- industrial greenhouses.

Features

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

Motor

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

Operating conditions

System pressure	Max. 8 bar
Flow rate	0.6 - 10.5 m ³ /h
Suction lift	Max. 8 m, including inlet-pipe pressure loss at a liquid temperature of 20 °C
Liquid temperature	0-35 °C (domestic use) 0-40 °C (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).
Start/stop frequency	Max. 20 per hour

Electrical data, 50 Hz

Pump type	Voltage [V]	P1 [W]	Speed [min ⁻¹]	I _n [A]
JPA 3-42	1 x 220-240	720	2850	3.12
JPA 4-47	1 x 220-240	850	2750	3.8
JPA 4-54	1 x 220-240	1130	2800	5.1
JPA 5-61	1 x 220-240	1600	2800	7.2
JPA 8-62	1 x 220-240	2200	2800	10
JPA 12-41	1 x 220-240	2000	2800	9
JPA 12-51	1 x 220-240	2700	2800	12

Approvals and markings

Approvals		Markings		
WRAS	ACS	CE	C-Tick	GOST / EAC
-	-	•	•	•

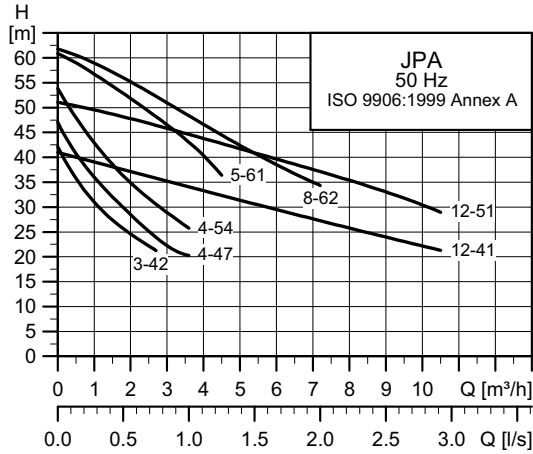
Wetted parts

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

Designation	Material	Technical description
Pump body	Cast iron	EN-GJL-200
Motor stool	Cast iron Die-cast aluminium*	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

* JPA 3-42, 4-47, 4-54.

Performance curves

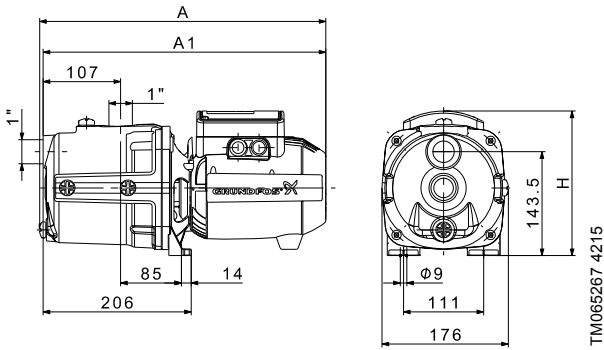


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Fig. 12 Performance curves for JPA

Note: For JPA PM, there will be an additional pressure drop over the Pressure Manager.

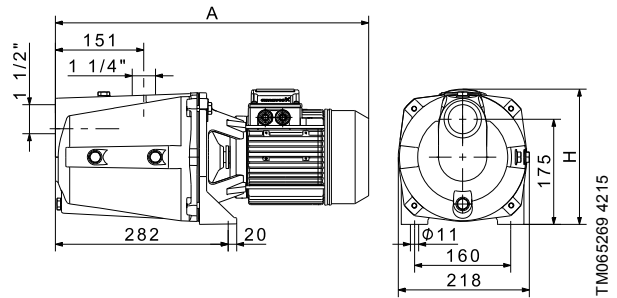
Dimensions



TM065267 4215

Fig. 13 JPA 3-42, 4-47, 4-54

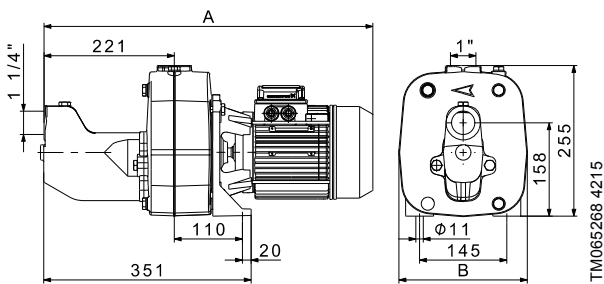
Pump type	Dimensions [mm]			Weight [kg]
	A	A1	H	
JPA 3-42	396	391	200	10.5
JPA 4-47	396	391	200	11
JPA 4-54	417	411	210	13



TM065269 4215

Fig. 15 JPA 12-41, JPA 12-51

Pump type	Dimensions [mm]		Weight [kg]
	A	H	
JPA 12-41	521	225	26
JPA 12-51	595	230	29



TM065268 4215

Fig. 14 JPA 5-61, 8-62

Pump type	Dimensions [mm]		Weight [kg]
	A	B	
JPA 5-61	558	217	29
JPA 8-62	632	218	33

JPA PT



TM06 5408 4515 - TM06 5409 4515

Fig. 16 JPA PT-V (left) and JPA PT-H (right)

The JPA PT is a booster consisting of a JPA pump, 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 constant water 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.

The JPA PT is available with the following tanks:

- 20-litre horizontal tank (JPA PT-H)
- 18-litre vertical tank (JPA PT-V).

Features

- Automatic start/stop
- constant water supply

Wetted parts

The below tables specify the parts which are in contact with water.

Pressure switch

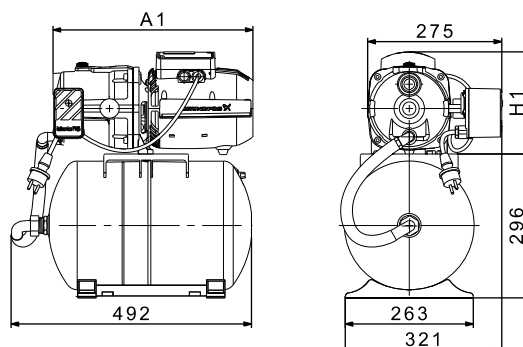
Designation	Material	Technical description
Pressure sensor	Stainless steel	EN 1.4301 AISI 304
	Rubber	TIMO 70
5-way valve	Brass	MSG58
Pressure gauge	Brass	

Pressure tank

Tank	Rubber/stainless steel
Armed rubber hose	Rubber/stainless steel

Dimensions

JPA PT-H

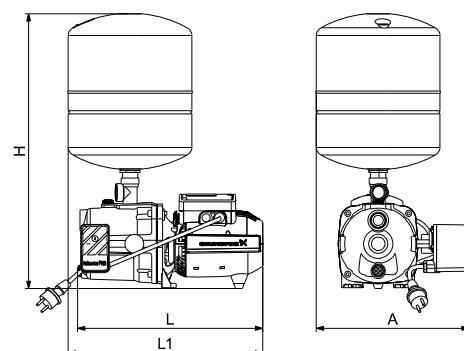


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Fig. 17 JPA PT-H

Type	Dimensions [mm]		Weight [kg]
	A1	H1	
JPA 3-42 PT-H	391	200	17
JPA 4-47 PT-H	391	200	17.5
JPA 4-54 PT-H	411	210	19

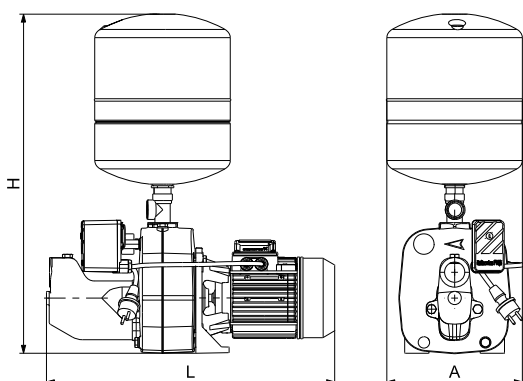
JPA PT-V



TM065354 4415

Fig. 18 JPA 4-47, 4-54 PT-V

Type	Dimensions [mm]			
	A	L	L1	H
JPA 4-47 PT-V	587	396	416	327
JPA 4-54 PT-V	586	411	436	324



TM065355 4415

Fig. 19 JPA 5-61, 8-62 PT-V

Type	Dimensions [mm]		
	A	L	H
JPA 5-61 PT-V	264	563	662
JPA 8-62 PT-V	264	637	662

5. JPC pumps and boosters

General data



TMD5 5091 3212

Fig. 20 JPC

The JPC is a self-priming, single-stage centrifugal pump with a body made of composite. It has an axial inlet and radial outlet. The pump has a built-in ejector with guide vanes for optimum self-priming properties.

Product range

Pump type	Maximum flow rate [m ³ /h]	Maximum head [m]
	3	42
JPC, JPC PT	4	47
	4	54

Applications

The pumps can be used in various applications where self-priming is needed. They are especially suitable for water supply and transfer in the following applications:

- single- and two-family houses
- gardens

Features

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

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.

Operating conditions

System pressure	Max. 8 bar
Suction lift	Max. 8 m, including inlet-pipe pressure loss at a liquid temperature of 20 °C
Liquid temperature	0-35 °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: JPC 3-42: 82.9 dB JPC 4-47: 84.8 dB JPC 4-54: 88.0 dB
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]
JPC 3-42	1 x 220-240	720	2900	3.12	8.54
JPC 4-47	1 x 220-240	850	2900	3.8	11.27
JPC 4-54	1 x 220-240	1130	2900	5.1	17.8

Electrical data, 60 Hz

Pump type	Voltage [V]	P1 [W]	P2 [W]	n [min ⁻¹]	I _n [A]	I _{start} [A]
JPC 3-42	1 x 110-120	730	450	3400	6.6	22.4
	1 x 220-240	700	450	3400	4	11.3
JPC 4-47	1 x 110-120	900	600	3400	8	26.8
	1 x 220-240	880	600	3400	3.9	13.2
JPC 4-54	1 x 110-120	1100	750	3400	9.7	47.5
	1 x 220-240	1100	750	3400	5	23.9

Approvals and markings

Approvals		Markings		
WRAS	ACS	CE	C-Tick	EAC
-	-	•	•	•

Materials

The motor stool is made of die-cast aluminium.

Wetted parts

The below table specifies the parts 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	PPE + 20 % GF
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

Performance curves

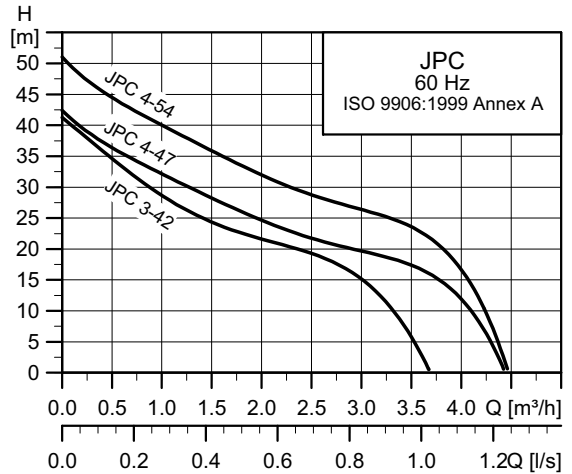
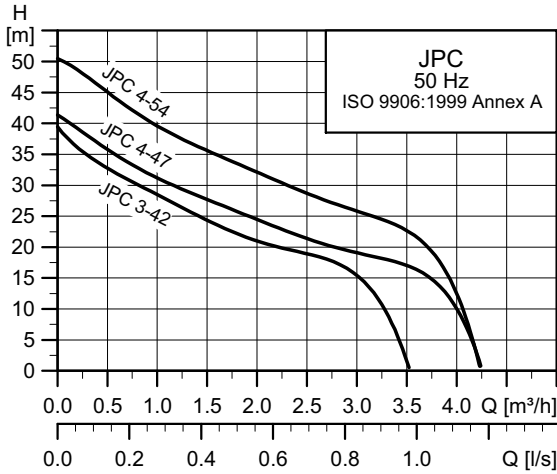
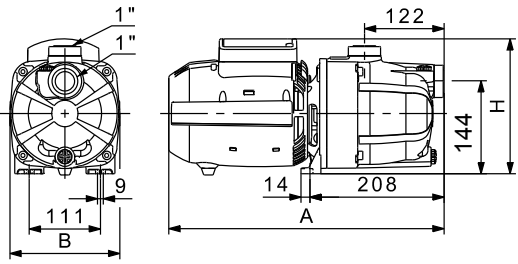


Fig. 21 Performance curves for JPC 3-42, JPC 4-47 and JPC 4-54

Note: For the JPC PM and JPC PT, there will be an additional pressure drop over the Pressure Manager and pressure switch.

Dimensions



TM05 5605 3712

Fig. 22 JPC

Pump type	[V]	Dimensions [mm]			Weight [kg]
		A	B	H	
JPC 3-42	115	410	198	200	8
	230	410	171	200	8
JPC 4-47	115	410	198	200	9.5
	230	410	171	200	9.5
JPC 4-54	115	430	206	210	10.5
	230	430	171	210	10.5

JPC PT



TM05 8225 2113

Fig. 23 JPC PT

JPC PT is a booster consisting of a JPC pump, 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.

The JPC PT is available with an 18-litre vertical diaphragm tank.

Features

- Constant water supply
- automatic start/stop.

Wetted parts

The below tables specify the parts which are in contact with water.

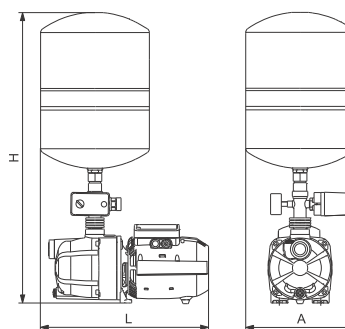
Pressure switch

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

Tank	Material	Technical description
	Rubber/steel	Butyl

Dimensions



TM05 8752 2613

Pump type	Dimensions [mm]			Weight [kg]
	A	L	H	
JPC 3-42 PT	290	430	632	15
JPC 4-47 PT	290	430	632	15
JPC 4-54 PT	290	430	632	17

6. JPD boosters

JPD PT



TM06 5413 4515 - TM06 5415 4515

Fig. 24 Ejector and JPD PT boosters

The JPD PT-V is a self-priming centrifugal booster for suction lifts up to 27 metres. It consists of a JPD pump, a pressure switch, a pressure gauge and a diaphragm tank. The pump body is made of cast iron. The high suction lift is achieved by means of an ejector which can be inserted into wells with a diameter of down to 10 cm (4").

The JPD PT is available with an 18-litre vertical diaphragm tank.

Product range

Pump type	Maximum flow rate [m ³ /h]	Maximum head [m]
JPD PT	4	47
	4	54
	5	61
	8	62

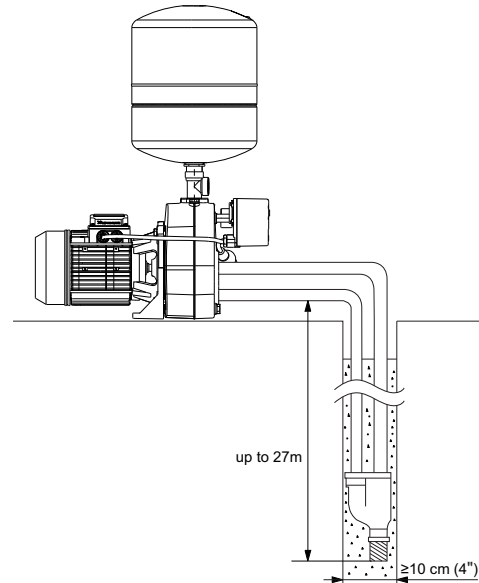
Applications

The boosters can be used in various applications where self-priming with a high suction lift is needed. They are especially suitable in the following applications:

- water supply to farmhouses
- small-scale agriculture.

Features

- Self-priming
- suction lift up to 27 metres
- constant water supply
- automatic start/stop.



TM065436 4615

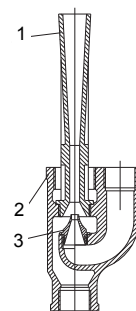
Fig. 25 Suction principle of JPD

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.

Ejector

The ejector is available in three versions (E20, E25, E30) and is to be chosen according to performance requirements. See section *Performance curves for JPD PT* on page 20.



TM02 8456 0204

Fig. 26 Ejector

Pos.	Designation
1	Ejector body
2	Venturi tube
3	Nozzle

Operating conditions

System pressure	Max. 6 bar (JPD 4-47, 4-54) Max. 8 bar (JPD 5-61, 8-62)
Suction lift	Max. 27 m, including inlet-pipe pressure loss at a liquid temperature of 20 °C
Liquid temperature	0-35 °C (domestic use) 0-40 °C (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).
Start/stop frequency	Max. 20 per hour

Electrical data, 50 Hz

Pump type	Voltage [V]	P1 [W]	n [min ⁻¹]	I _n [A]
JPD 4-47 PT	1 x 220-240	730	2850	3.4
JPD 4-54 PT	1 x 220-240	790	2850	3.8
JPD 5-61 PT	1 x 220-240	1560	2850	7
JPD 8-62 PT	1 x 220-240	2100	2850	8.3

Approvals and markings

Approvals		Markings		
WRAS	ACS	CE	C-Tick	GOST / EAC
-	-	•	-	•

Wetted parts

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

Pump

Designation	Material	Technical description
Pump body	Cast iron	EN-GJL-200
Motor stool	Cast iron Die-cast aluminium*	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

* JPA 4-47, 4-54.

Pressure switch

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

Pressure tank

Tank	Rubber/steel	Butyl

Ejector

Designation	Material	Technical description
Ejector body	Cast-iron body, anticorrosion-treated on the outer and inner surfaces.	
Venturi tube	Technopolymer	
Nozzle	Brass	

Dimensions

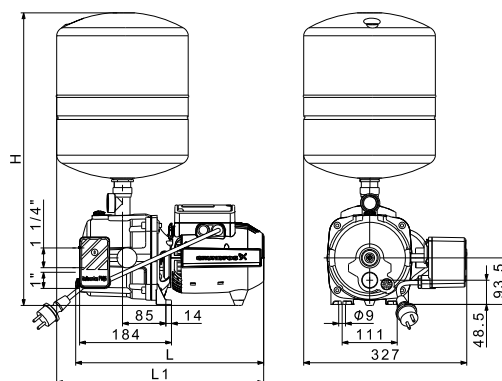


Fig. 27 JPD 4-47, 4-54 PT

TM065356 4415

Pump type	Dimensions [mm]		
	H	L	L1
JPD 4-47 PT	588	378	416
JPD 4-54 PT	586	398	436

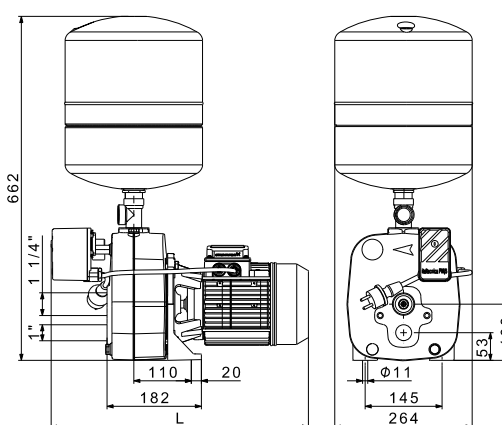


Fig. 28 JPD 5-61, 8-62 PT

TM065357 4415

Pump type	Dimensions L [mm]
JPD 5-61 PT	495
JPD 8-62 PT	571

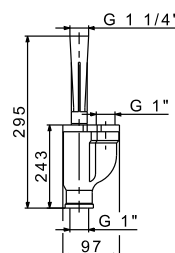
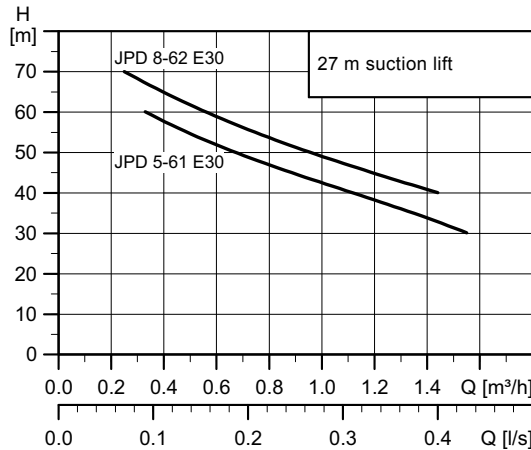
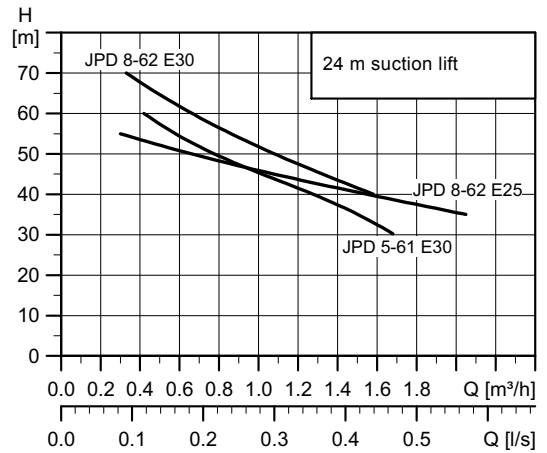
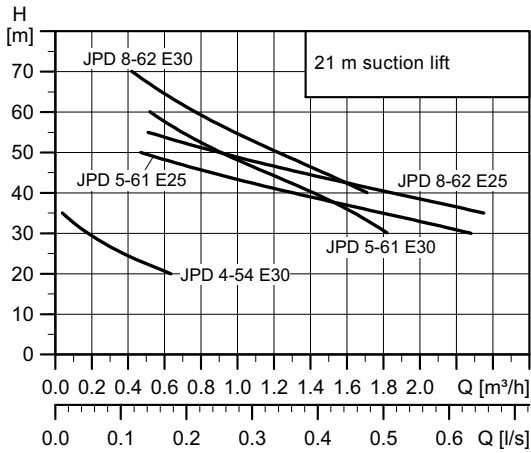
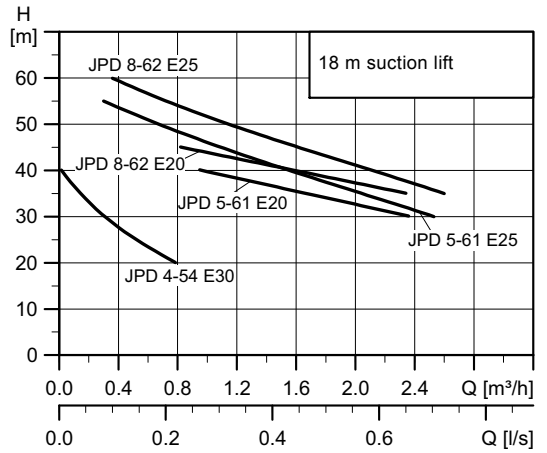
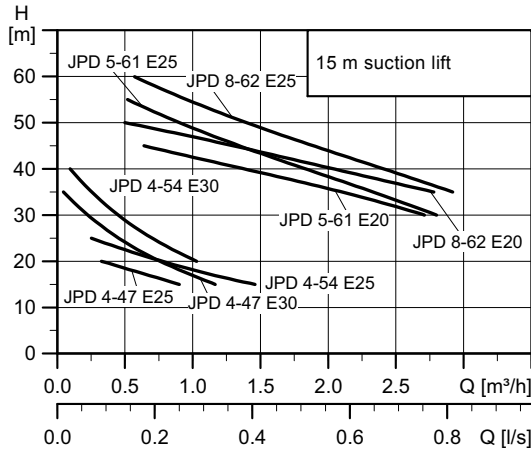
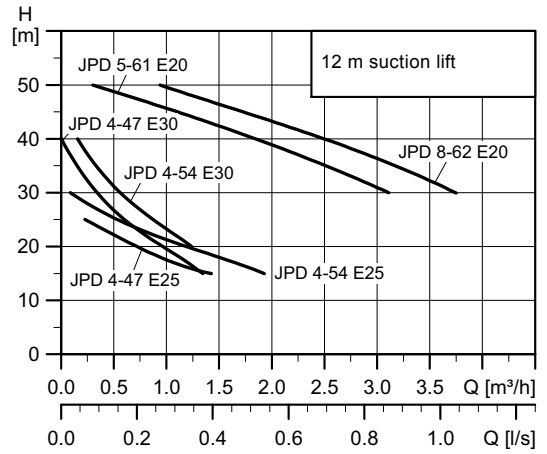
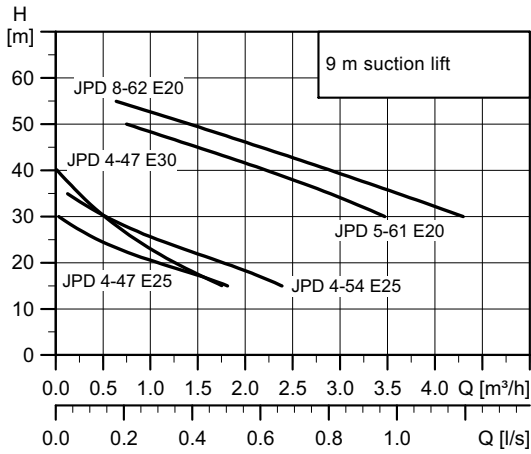


Fig. 29 Ejector dimensions

TM02 8457 0204

Performance curves for JPD PT



7. Product numbers

JP 5, JP 6 pumps

Pump type	Voltage		Material variant (motor stool)		On/off switch	1.5 m cable	Plug			Product number
	1 x 220-240 V, 50 Hz	3 x 220-240 / 380-415 V, 50 Hz	A Composite	B Aluminium			Schuko	Swiss	AUS	
JP 5, JP 6										
JP 5	•		•		•	•	•			46511002
	•		•		•	•		•		46511003
	•		•		•					46511011
	•		•							46511012
	•		•		•	•				98155855
		•		•						46531011
	•			•		•	•	•		46711002
	•			•		•				46711011
	•			•						46711012
		•		•						46731011
JP 6	•		•		•	•				46611011
	•		•							46611012
	•		•		•	•				98155858
		•		•						46631011
	•			•		•	•	•		46611002
	•			•		•	•			46811002
	•			•		•	•			46811011
	•			•						46811012
		•		•						46831011

JP 5, JP 6 boosters

All boosters come with a pump in material variant A (composite motor stool) and a 1.5 m cable.

Pump type	Voltage		Pressure Manager		Plug		Product number
	1 x 220-240 V, 50 Hz	3 x 220-240 / 380-415 V, 50 Hz	PM 1	PM 2	Schuko	AUS	
JP 5, JP 6 PM, one unit							
The pump and Pressure Manager come as one unit with common installation and operating instructions.							
JP 5	•		•			•	98071524
	•		•				98071526
	•			•	•		98071528
	•			•		•	98071530
JP 6	•		•			•	98071533
	•		•			•	98071535
	•			•	•		98071537
	•			•		•	98071539
JP 5, JP 6 PM, separate							
The pump and Pressure Manager come as two separate parts in the same box, with separate installation and operating instructions.							
JP 5	•		•			•	98071540
	•			•	•		98071542
JP 6	•		•			•	98071541
	•			•	•		98071543

Pump type	Voltage		Pressure tank			Plug		Product number
	1 x 220-240 V, 50 Hz	3 x 220-240 / 380-415 V, 50 Hz	18 l	24 l	60 l	Schuko	AUS	
JP 5, JP 6 PT								
JP 5	•		•				•	4651BTBB
	•			•			•	4651BPBB
	•				•	•	•	4651BQBB
		•		•				4653FPDB
		•			•			4653FQDB
JP 6	•		•				•	4661BTBB
	•			•			•	4661BPBB
	•				•	•	•	4661BQBB
		•		•				4663FPDB
		•			•			4663FQDB

JPA, JPC, JPD pumps and boosters (PT)

Pump type	Voltage			Pressure tank		1.5 m cable	Plug (Schuko)	Threads		Product number
	1 x 220-240 V, 50 Hz	1 x 220-240 V, 60 Hz	1 x 110-120 V, 60 Hz	20 l, horizontal	18 l, vertical			G 1	NPT 1	
JPA										
JPA 3-42	•							•		98946090
JPA 4-47	•							•		98946091
JPA 4-54	•							•		98946092
JPA 5-61	•							•		98946093
JPA 8-62	•							•		98946094
JPA 12-41	•							•		98946095
JPA 12-51	•							•		98946096
JPA PT										
JPA 3-42 PT	•			•		•	•	•		98946107
JPA 4-47 PT	•			•		•	•	•		98946108
	•				•	•	•	•		98946102
JPA 4-54 PT	•			•		•	•	•		98946109
	•				•	•	•	•		98973715
JPA 5-61 PT	•				•	•	•	•		98973716
JPA 8-62 PT	•				•	•	•	•		98973717
JPC										
	•					•		•		98601006*
										98717733**
JPC 3-42		•				•			•	98629749
		•				•		•		98717740
			•			•			•	98629746
	•					•		•		98601024*
										98717734**
JPC 4-47		•				•			•	98629750
		•				•		•		98717755
			•			•			•	98629747
	•					•		•		98601027*
										98717738**
JPC 4-54		•				•			•	98629751
		•				•		•		98717759
			•			•			•	98629748
JPC PT										
	•			•		•		•		98616018
		•		•		•		•		98616052
JPC 3-42 PT		•		•		•			•	98629755
			•	•		•		•		98616017
			•	•		•			•	98629752
	•			•		•		•		98616054
		•		•		•		•		98616055
JPC 4-47 PT		•		•		•			•	98629756
			•	•		•		•		98616053
			•	•		•			•	98629753
	•			•		•		•		98616057
		•		•		•		•		98616058
JPC 4-54 PT		•		•		•			•	98629757
			•	•		•		•		98616056
			•	•		•			•	98629754
JPD PT										
JPD 4-47 PT	•			•		•	•	•		98973718
JPD 4-54 PT	•			•		•	•	•		98973719
JPD 5-61 PT	•			•		•	•	•		98973720
JPD 8-62 PT	•			•		•	•	•		98973721

* Assembled in China.

** Assembled in Hungary.

Ejector for JPD PT

Type	Product number
E 20	96150012
E 25	96150013
E 30	96150014

8. Accessories

The vital components of the booster solutions are also available as separate 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.



Fig. 30 PM 1

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.



Fig. 31 PM 2

TM055090 3212

Features

The table below shows the features of PM 1 and PM 2. The main features are described after the table.

Feature	PM 1	PM 2
Power-on indication	•	•
Pump running indication	•	•
Alarm indication	•	•
Dry-running protection	•	•
Free position in installation	•	•
Suitable for generator supply	•	•
Rotary outlet connection	•	•
Integrated non-return valve	•	•
Cycling alarm	•	•
Integrated pressure sensor from Grundfos Direct Sensors		•
Adjustable start pressure		•
Start/stop with 1 bar differential pressure		•
Automatic restarting after dry running		•
Maximum continuous operating time of 30 minutes		•
Pressure indication		•
Internal pressure tank	•	•

Anticycling

If there is a minor leakage in the system, or a tap has not been entirely closed, the PM 1 and PM 2 would normally start and stop the pump periodically. However, in order to avoid cycling, the anticycling function stops the pump and indicate an alarm.

Dry-running protection

The PM 1 and PM 2 incorporate dry-running protection that automatically stops the pump in case of dry running. The dry-running protection functions differently during priming and operation.

Adjustable start pressure (PM 2 only)

The booster 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.

Maximum continuous operating time (PM 2 only)

When this function is enabled, the pump stops 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.

Note: For further information, download the data booklet for Grundfos Pressure Manager using the following link or the QR code: <http://net.grundfos.com/qr/i/97506325>



QR97506325

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 tanks

The pressure tank body is made of steel, and the tank is factory-precharged 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. 32 GT-U bladder tanks

GT-H diaphragm tanks

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. 33 GT-H diaphragm tanks

Note: For further information, download the data booklet for Grundfos GT tanks using the following link or the QR code: <http://net.grundfos.com/qr/i/96552805>



QR97506325

9. Grundfos Product Center

Online search and sizing tool to help you make the right choice.

<http://product-selection.grundfos.com>



"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 Grundfos logo and 'PRODUCT CENTER'. Below this 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' (application, pump design, pump family). A 'START SIZING' button is also present.

"CATALOGUE" gives you access to the Grundfos product catalogue.

"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.

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