# Jet pumps and boosters

50/60 Hz





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# **1. Product overview**

Pump	Description	Technical data	Page
JP 5 and JP 6 pumps	and boosters		
JP 5, JP 6			
	<ul> <li>Self-priming pump for water supply and transfer in applications such as:</li> <li>single- and two-family houses</li> <li>gardens.</li> </ul>	Maximum suction lift: 7 m Maximum head: 57 m Maximum flow rate: 5 m Pump body: stainless steel	9
JP 5 PM, JP 6 PM			
	<ul> <li>JP 5 or JP 6 pump with a Pressure Manager</li> <li>Features <ul> <li>Anticycling</li> <li>dry-running protection</li> <li>automatic start/stop.</li> </ul> </li> </ul>	Maximum suction lift: 7 m Maximum head: 57 m Maximum flow rate: 5 m Pump body: stainless steel	11
JP 5 PT, JP 6 PT			
	<ul> <li>JP 5 or JP 6 pump with a pressure tank and pressure switch</li> <li>Features</li> <li>Automatic start/stop</li> <li>constant water supply.</li> </ul>	Maximum suction lift: 7 m Maximum head: 57 m Maximum flow rate: 5 m Pump body: stainless steel Tank: 18, 24, 60 l, horizontal	12
JPA pumps and boos	sters		
JPA			
	Self-priming pump for water supply and transfer in applications such as: • 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	13
JPA PM			
	JPA pump with a PM pressure manager Features Anticycling dry-running protection automatic start/stop.	Maximum suction lift: 8 m Maximum head: 54 m Maximum flow rate: 4 m Pump body: cast iron	15
JPA PT			
	JPA pump with a pressure tank and pressure switch. The pressure tank is available in a horizontal or vertical version. Features • 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 I vertical, 20 I horizontal	16

Product overview

Pump	Description	Technical data	Page
JPC pumps and boosters	;		
JPC			
	<ul> <li>Self-priming pump for water supply and transfer in applications such as:</li> <li>single- and two-family houses</li> <li>gardens.</li> </ul>	Maximum suction lift: 8 m Maximum head: 54 m Maximum flow rate: 4 m Pump body: composite material	17
JPC PM			
	JPC pump with a PM pressure manager <b>Features:</b> • Anticycling • dry-running protection • automatic start/stop.	Maximum suction lift: 8 m Maximum head: 54 m Maximum flow rate: 4 m Pump body: composite material	20
JPC PT			
	JPC pump with a pressure tank and pressure switch <b>Features</b> • 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 I vertical	21
JPD boosters for deep-w	ell applications		
JPD PT			
	<ul> <li>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:</li> <li>farmhouses</li> <li>small-scale agriculture.</li> </ul> Features <ul> <li>Suction lift up to 27 metres</li> <li>constant water supply</li> <li>automatic start/stop.</li> </ul>	Maximum suction lift: 27 m Maximum head: 62 m Maximum flow rate: 12 m Pump body: cast iron Tank: 18 I vertical	22

# 2. Product description

### Introduction

Grundfos offers jet pumps for a wide range of domestic applications such as water supply to single- and twofamily 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
- booster solutions which include a jet pump and a
   Pressure Manager
- booster solutions which include a jet pump, a pressure switch and a pressure tank
- booster solutions which include a jet pump, a pressure switch, a pressure tank and an external ejector nozzle for deep-well applications.

### 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 is small, handy and easy to move around, which makes it suitable for various applications.



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

### **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 5/6 PM, JPA PM, JPC PM

#### 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 5/6 PT, JPC PT, JPA PT, JPD PT

### **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 cause wear to the pump. Product description

5

# 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 noncollapsible. 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.

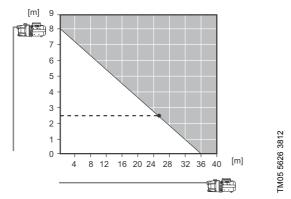


Fig. 4 Recommended maximum suction lift and maximum inlet pipe length (Y-axis)

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

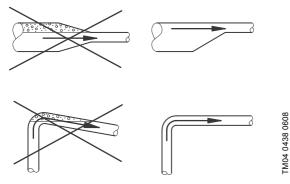


Fig. 5 Pipework recommendations

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.

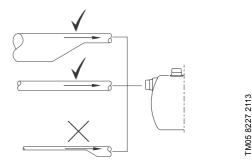


Fig. 6 Recommended size of the inlet pipe

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.

# Identification

# Type key, JP 5 and JP 6 pumps

Example	JP5	B-	Α-	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			4				
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							
Switch Y: With on/off switch N: Without on/off switch						4	
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	Α-	Α-	Α-	C-	C-	Р	24L
JPB: JP booster	_								
Pump type 5: JP 5 6: JP 6									
Pump version A: Standard 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						2			
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							-		L

2

7

2

# Type key, JPA, JPC and JPD pumps and boosters

Example	JPA	4-	54	(PT)	(V)	230 V	50 Hz	Schuko	IT	h_tem
Pump type JPA: Cast iron, self-priming JPC: Composite, self-priming JPD: Cast iron, self-priming, deep well										
Maximum flow rate [m <sup>3</sup> /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						1				
Frequency										
<b>Cable plug type</b> No plug Schuko plug								-		
Country of production IT: Italy HU: Hungary CN: China										
Temperature variant h_temp: High temperature []: Standard										_

# 3. JP 5 and JP 6 pumps and boosters

### JP 5, JP 6



FM01 4595 3502

Fig. 7 JP 6

The JP 5 and JP 6 self-priming, single-stage centrifugal pumps have axial inlet and radial outlet. The pumps 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 <sup>3</sup> /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	Maximum 6 bar
Suction lift	Maximum 7 m, including inlet-pipe pressure loss at a liquid temperature of 20 °C
Liquid temperature	0-40 °C
Ambient temperature	Maximum 45 °C
Amplent temperature	Minimum -20 °C
Relative humidity	Maximum 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	Maximum 100 per hour

### Electrical data, 50 Hz

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

### Approvals and markings

Pump type	Appro	ovals	Markings			
Pullip type	WRAS	ACS	CE	C-Tick	EAC	
JP 5	•	•	•	•	•	
JP 6	-	٠	•	٠	٠	

### **Materials**

The JP 5 and JP 6 are available in one material variant:

Variant A
Composite, one unit
—
Composite

### Wetted parts

The below table specifies the parts 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 is an additional pressure drop over the Pressure Manager. The suction lift is 0 metre.

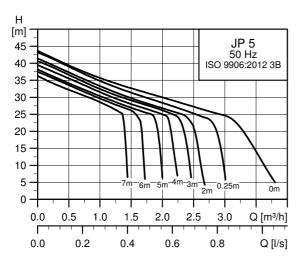
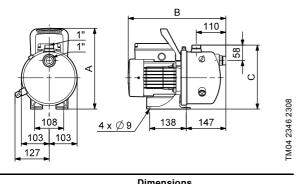


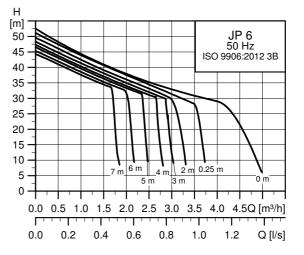
Fig. 8 Performance curves for the JP 5 and JP 6

### Dimensions

#### Material variant A



Pump type	E	Dimensions [mm]			
	Α	В	С	[kg]	
JP 5	300	364	240	8.5	
JP 6	300	401	240	10	





### JP 5 PM, JP 6 PM



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

The compact JP 5 PM and JP 6 PM boosters consist 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 *GT-U bladder tanks* on page 29 and *GT-H diaphragm tanks* on page 29.

### 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 *Accessories* on page 28.

### **Electrical data**

The JP PM 1 and JP PM 2 come with single-phase motors. See *Electrical data, 50 Hz* on page 9.

### Approvals and markings

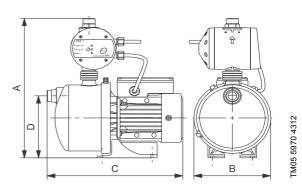
Appro	ovals	Markings			
WRAS	ACS	CE	C-Tick	EAC	
-	-	•	•	•	

### Wetted parts of the Pressure Manager

The below table specifies the parts in contact with water.

Material	Technical description
Technopolymer	PP 30 % GF
Technopolymer	PPO 20 % GF
Rubber	NBR
Technopolymer	PPO 20 % GF
Technopolymer	PPO 30 % GF
Stainless steel	EN 1.4305 AISI 303
Butyl	Foodgum 55 N/B
	Technopolymer Technopolymer Rubber Technopolymer Technopolymer Stainless steel

### **Dimensions**



Pump type	Dimensions [mm]				Weight [kg]
	Α	В	С	D	- [K9]
JP 5 PM	364	206	420	182	8.5
JP 6 PM	401	206	420	182	10

# JP 5, JP 6 PT



TM05 5987 4312

Fig. 10 JP PT

The compact JP 5 PT and JP 6 PT boosters consist 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.

The 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

Appro	ovals	Markings			
WRAS	ACS	CE	C-Tick	EAC	
-	-	•	-	•	

### Wetted parts

The below tables specify the parts in contact with water.

### **Pressure switch**

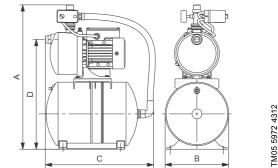
Designation	Material	Technical description
Pressure sensor	Zinc alloy	NF EN 12844
5-way valve	Brass	MSG58
Pressure gauge	Brass	
Dressure tenk		

### Pressure tank

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

### **Dimensions**

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





Pump type	Tank size [I]	Dimensions [mm]			Weight - [kg]	
	[1]	Α	В	С	D	[^9]
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**



Fig. 11 JPA pumps

The JPA self-priming, single-stage centrifugal pump has a cast iron body as well as 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 <sup>3</sup> /h]	Maximum head [m]
	3	42
JPA, JPA PT, JPA PM	4	47
	4	54
	5	61
JPA	8	62
JFA	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-forlife 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	Maximum 8 bar
Flow rate	0.6 - 10.5 m <sup>3</sup> /h
Suction lift	Maximum 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	Maximum 40 °C
Relative humidity	Maximum 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	Maximum 20 per hour

### Electrical data, 50 Hz

Pump type	Voltage [V]	P1 [W]	Speed [min <sup>-1</sup> ]	I <sub>n</sub> [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	EAC	
-	-	•	•	•	

### Wetted parts

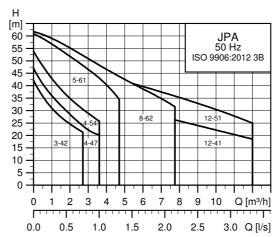
The below table specifies the parts in contact with water.

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.

TM02 8936 1817

### **Performance curves**



TM06 5267 4215

Fig. 12 Performance curves for JPA

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

### Dimensions

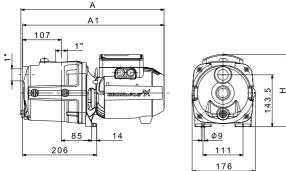
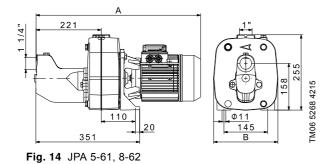


Fig. 13 JPA 3-42, 4-47, 4-54

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



Pump type	Dimer [m	Weight – [kg]	
	А	В	_ [kg]
JPA 5-61	558	217	29
JPA 8-62	632	218	33

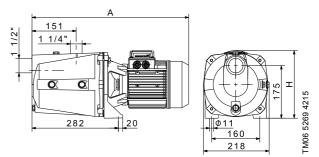


Fig. 15 JPA 12-41, JPA 12-51

Pump type	Dimensions [mm]		Weight – [kg]
	Α	н	[K9]
JPA 12-41	521	225	26
JPA 12-51	595	230	29

### JPA PM



Fig. 16 JPA PM

The compact JPA PM booster consists of a JPA pump and a Grundfos Pressure Manager.

The Pressure Manager comes in the PM 1 version.

To reduce the number of starts/stops, an external tank can be installed. See *GT-U bladder tanks* on page 29 and *GT-H diaphragm tanks* on page 29.

### Features

- · Anticycling
- dry-running protection
- automatic start/stop.

### Wetted parts of the Pressure Manager

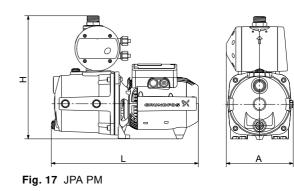
The below table specifies the parts in contact with water.

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

JPA PM

TM06 6703 2216



Tuno	Dir	Weight		
Туре	н	L	Α	[kg]
JPA 3-42 PM	332	396	180	10
JPA 4-47 PM	332	396	180	11
JPA 4-54 PM	332	417	180	13

JPA pumps and boosters

TM06 7407 3416

# JPA PT



Fig. 18 JPA PT-V (left) and JPA PT-H (right)

The JPA PT booster consists 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 in contact with water.

### **Pressure switch**

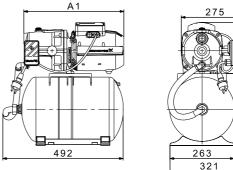
Designation	Material	Technical description
Pressure sensor	Stainless steel	EN 1.4301 AISI 304
	Rubber	TIMO 70
5-way valve	Brass	MSG58
Pressure gauge	Brass	

### **Pressure tank**

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

### **Dimensions**

### JPA PT-H



321

TM06 5272 4215

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296

Fig. 19 JPA PT-H

Тиро	Dimensio	Dimensions [mm]	
Туре	A1	H1	[kg]
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

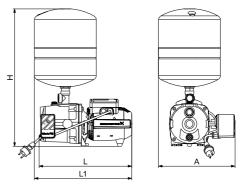
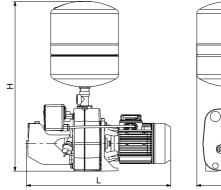


Fig. 20 JPA 4-47, 4-54 PT-V

Туро		Dimensi	ensions [mm]	
Туре	Α	L	L1	н
JPA 4-47 PT-V	587	396	416	327
JPA 4-54 PT-V	586	411	436	324



TM06 5355 4415

TM06 5354 4415

Fig. 21 JPA 5-61, 8-62 PT-V

Туре	Di	imensions [mi	m]
Туре	Α	L	н
JPA 5-61 PT-V	264	563	662
JPA 8-62 PT-V	264	637	662

JPC pumps and boosters

# 5. JPC pumps and boosters

# General data



Fig. 22 JPC

The JPC self-priming, single-stage centrifugal pump has a composite body as well as 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 <sup>3</sup> /h]	Maximum head [m]
	3	42
JPC, JPC PM, JPC	4	47
PT	4	54
	5	48

### 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 oversized, sealed, greasedfor-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	Maximum 8 bar
Suction lift	Maximum 8 m, including inlet-pipe pressure loss at a liquid temperature of 20 °C
Liquid temperature	0-35 °C (0-60 °C*)
Ambient temperature	Maximum 40 °C (maximum 55 °C*)
Relative humidity	Maximum 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	Maximum 20 per hour

h\_temp variants only

### Electrical data, 50 Hz

Pump type	Voltage [V]	P1 [W]	n [min <sup>-1</sup> ]	I <sub>n</sub> [A]	I <sub>start</sub> [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
JPC 5-48	1 x 220-240	1490	2900	6.6	26.4

### Electrical data, 60 Hz

Pump type	Voltage [V]	P1 [W]	P2 [W]	n [min <sup>-1</sup> ]	I <sub>n</sub> [A]	I <sub>start</sub> [A]
JPC 3-42	1 x 110-120	730	450	3400	6.6	22.4
JF C 3-42	1 x 220-240	700	450	3400	4	11.3
JPC 4-47	1 x 110-120	900	600	3400	8	26.8
JF C 4-47	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
JF C 4-54	1 x 220-240	1100	750	3400	5	23.9
IPC 5-48	1 x 110-120	1470	1000	3400	13.4	53.6
JFC 3-40	1 x 220-240	1450	1000	3400	7.6	30.4
JPC 5-48						

### Approvals and markings

Appro	ovals		Markings	
WRAS	ACS	CE	C-Tick	EAC
-	-	•	•	٠

### **Materials**

The motor stool is made of die-cast aluminium.

### Wetted parts

The below table specifies the parts in contact with water.

Designation	Material	Technical description
Pump body	Technopolymer	PP 30 % GF PA 66 GF 30*
Impeller	Technopolymer	PPE 20 % GF PA 66 GF 30* brass
Diffuser	Technopolymer	PPE 20 % GF PA 66 GF 30*
Diffuser ring	Stainless steel	EN 1.4401 AISI 316
Venturi tube	Technopolymer Rubber	PPE + 20 % GF PA 66 GF 30* 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 PA 66 GF 30*
Filling plug gasket	Rubber	NBR
Drainage plug	Technopolymer	PPE 20 % GF PA 66 GF 30*
Drainage plug gasket	Rubber	NBR
Mechanical seal disc	Stainless steel	EN 1.4301 AISI 304

\* h\_temp variants only

TM06 3685 1817 - TM06 3686 1817

### Performance curves

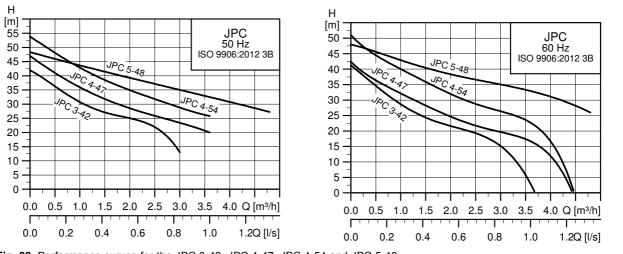


Fig. 23 Performance curves for the JPC 3-42, JPC 4-47, JPC 4-54 and JPC 5-48

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

### Dimensions

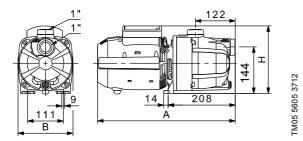


Fig. 24 JPC

Pump type	[V]	I	Dimension [mm]	s	Weight
		Α	В	н	- [kg]
100 2 42	115	410	198	200	8
JPC 3-42	230	410	171	200	8
JPC 4-47	115	410	198	200	9.5
JFC 4-47	230	410	171	200	9.5
JPC 4-54	115	430	206	210	10.5
JF C 4-04	230	430	171	210	10.5
JPC 5-48	115	426	171	210	10.5
JFC 3-40	230	426	171	210	10.5

# JPC PM



TM05 8007 2216

Fig. 25 JPC PM

The compact JPC PM booster consists of a JPA pump and a Grundfos Pressure Manager.

The Pressure Manager comes in the PM 1 version.

To reduce the number of starts/stops, an external tank can be installed. See *GT-U bladder tanks* on page *GT-U bladder tanks* on page 29.

### Features

- Anticycling
- · dry-running protection
- automatic start/stop.

### Wetted parts of the Pressure Manager

The below table specifies the parts 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

JPC PM

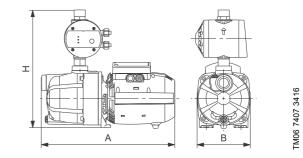


Fig. 26 JPC PM

Type	Din	Dimensions [mm]			
Туре	н	L	Α	[kg]	
JPC 3-42 PM	349	407	175	10	
JPC 4-47 PM	349	407	175	11	
JPC 4-54 PM	359	407	195	13	



Fig. 27 JPC PT

The JPC PT booster consists 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 in contact with water.

### **Pressure switch**

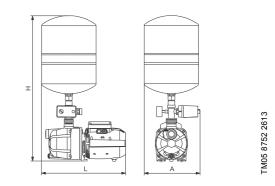
Designation	Material	Technical description
Pressure sensor	Stainless steel	EN 1.4301 AISI 304
	Rubber	TIMO 70
5-way valve	Brass	MSG58
Pressure gauge	Brass	

### Pressure tank

TM05 8225 2113

Tank	Rubber/steel	Butyl	

### **Dimensions**



Bump type	Dimensions [mm] W		Weight	
Pump type	Α	L	н	[kg]
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



Fig. 28 Ejector and JPD PT boosters

The JPD PT-V self-priming centrifugal booster is suitable for suction lifts up to 27 metres. The booster 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 <sup>3</sup> /h]	Maximum head [m]
	4	47
JPD PT	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.

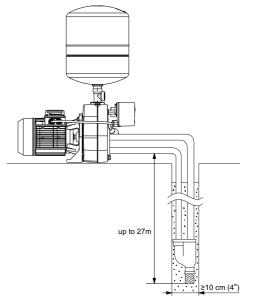


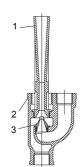
Fig. 29 Suction principle of the JPD

### Motor

The rotor is mounted on an oversize, sealed, greasedfor-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 *Performance curves, JPD PT* on page 24.



TM02 8456 0204

FM06 5436 4615

Fig. 30 Ejector

Pos.	Designation
1	Venturi tube
2	Ejector body
3	Nozzle

JPD boosters

### **Operating conditions**

System pressure	Maximum 6 bar (JPD 4-47, 4-54)					
	Maximum 8 bar (JPD 5-61, 8-62)					
Suction lift	Maximum 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	Maximum 40 °C					
Relative humidity	Maximum 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	Maximum 20 per hour					

### Electrical data, 50 Hz

Pump type	Voltage [V]	P1 [W]	n [min <sup>-1</sup> ]	I <sub>n</sub> [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

Appro	ovals		js	
WRAS	ACS	CE	C-Tick	GOST/EAC
-	-	•	-	•

### Wetted parts

The below table specifies the parts 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	EN 1.4301 AISI 304
	Rubber	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

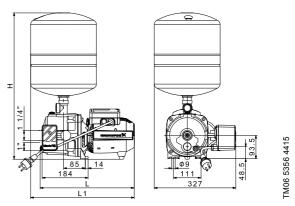


Fig. 31 JPD 4-47, 4-54 PT

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

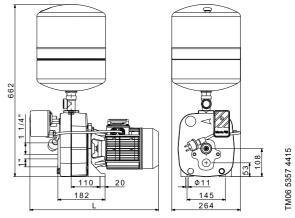
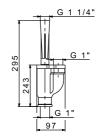
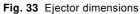


Fig. 32 JPD 5-61, 8-62 PT

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

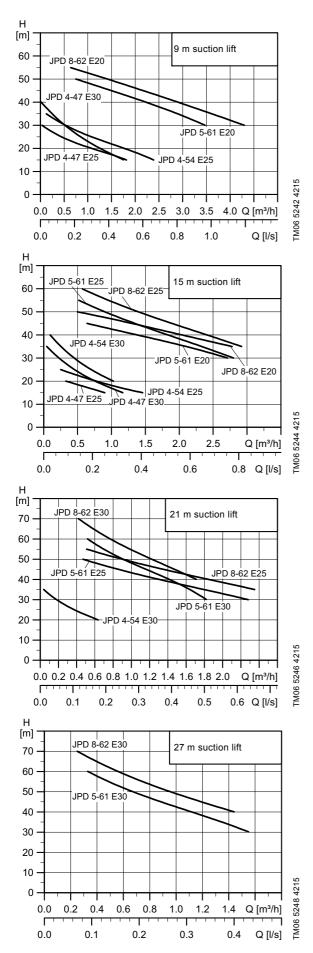


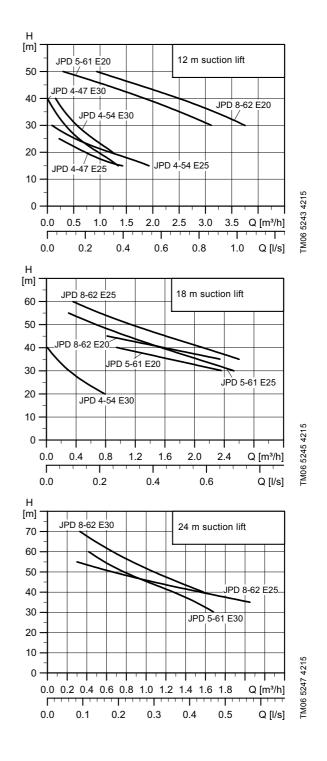


TM02 8457 0204



### Performance curves, JPD PT





# 7. Product numbers

### JP 5, JP 6 pumps

D		Voltage	On/off	1.5 m		Product			
Pump type	1 x 220-240 V, 50 Hz	3 x 220-240 / 380-415 V, 50 Hz	switch	cable	Schuko Swiss AUS		AUS	number	
JP 5, JP 6									
	•		•	•	•			46511002	
	•		٠	•		•		46511003	
JP 5	•		٠					46511011	
JF 5	•							46511012	
	•		٠	•			•	98155855	
		•						46531011	
	•		٠	•				46611011	
	•			•				46611012	
JP 6	•		٠	•			•	98155858	
		•		•				46631011	
	•		•	•	•			46611002	

### JP 5, JP 6 boosters

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

		Voltage	Pressur	e Manager	Plu	Product		
Pump type	1 x 220-240 V, 50 Hz	3 x 220-240 / 380-415 V, 50 Hz	PM 1	PM 2	Schuko	AUS	number	
IP 5, JP 6 PM	, one unit	The pump and Pressure Manage instructions.	r come as oi	ne unit with co	mmon installation	n and operat	ting	
	•		•		•		98071524	
IP 5	•		٠			٠	98071526	
P 5	•			٠	•		98071528	
	•			٠		•	98071530	
	•		٠		•		98071533	
P 6	•		•			•	98071535	
ΓU	•			٠	•		98071537	
	•			•		•	98071539	
P 5, JP 6 PM	, separate	The pump and Pressure Manage installation and operating instru	r come as tw ctions.	vo separate par	ts in the same bo	ox, with sep	arate	
P 5	•		•		•	98071540		
rj —	•			•	•		98071542	
IP 6 -	•		•		•		98071541	
FU	•			٠	•		98071543	
		Voltage	Pre	ssure tank	P	Plug		
oump type	1 x 220-240 V, 50 Hz	3 x 220-240 / 380-415 V, 50 Hz	18 I	24 I 6	0 I Schuko	AUS	number	
P 5, JP 6 PT								
	•		•		•		4651BTBE	
	•			•	•		4651BPB	
P 5	•				• •		4651BQB	
		•		•			4653FPD	
		•			•		4653FQD	
	•		•		•		4661BTBI	
	•			•	•		4661BPB	
P 6	•				• •		4661BQB	
		•		•			4663FPDI	

# JPA, JPC, JPD pumps and boosters (PM and PT)

		Voltage		Pressur				Plug			0	Th	reads	Draduat
Pump type	1 x 230 V, 50 Hz	1 x 230 V, 60 Hz	1 x 115 V, 60 Hz	20 I, horizontal	18 I,	tempera- ture variant	1.5 m cable		UK	AUS	Country of origin	G 1	NPT 1	Product number
JPA														
DA 2 42	•										HU	٠		9894609
PA 3-42	•							•			HU	٠		9913167
IPA 4-47	•										HU	٠		9894609
// <del>/</del> /	٠							٠			HU	٠		9913167
IPA 4-54	•										HU	٠		9894609
	•							٠			HU	٠		9913167
IPA 5-61	•										IT	٠		9894609
	•							•			IT	•		9913167
JPA 8-62	•										IT	٠		9894609
	•							٠			IT	•		9913167
JPA 12-41	•										IT IT	•		9894609
	•							•			IT	•		9913167 9894609
JPA 12-51	•							•			IT	•		9894009
	•							•				•		9913107
JPA 3-42 PM	•						•		•		CN	٠		9905141
JPA 4-47 PM	•						•		•		CN	•		9905142
JPA 4-54 PM	•						•		•		CN	•		9905142
JPA PT														
	٠			٠			٠	٠			HU	٠		9894610
JPA 3-42 PT	•				•		•	•			CN	٠		97855079
	•				•			•			CN	٠		9907403
	•			•			٠	٠			HU	٠		9894610
JPA 4-47 PT	•				•		٠	•			CN	٠		9894610
	•				•			•			CN	•		9907403
	•			•			•	•			HU	•		9894610
JPA 4-54 PT ·	•				•		•	•			CN	٠		9897371
	•			00.11	•			•			CN	•		9907403
	•			60 litre				•			HU	•		9913167
JPA 5-61 PT	•				•		•	•			CN CN	•		9897371 9907404
	•				•		•	•			CN	•		9897371
JPA 8-62 PT					•		•	•			CN	•		9907404
JPC	-				-			-						0001101
	•						•				CN	•		9860100
	•						•				HU	•		9871773
	•					•	•				HU	•		9907405
		•					•				CN		•	9862974
JPC 3-42		•					•				HU	٠		9871774
		•					٠				CN	٠		9860101
		٠				٠	٠				HU	٠		9907405
			•				٠				CN		٠	9862974
			•				•				CN	٠		9860100
	•						•				CN	٠		9860102
	•						٠				HU	٠		9871773
	•					•	٠				HU	٠		9907405
		•					•				CN		•	9862975
JPC 4-47		•					•				HU	•		9871775
		•					•				CN	•		9860102
		•				•	•				HU CN	•		9907406
			•				•					•	•	9862974 9860102
	•		•				•					•		9860102
							•				HU	•		9860102
	•					•	•				HU	•		9907405
		•				-	•				CN	•	•	9862975
JPC 4-54		•					•				HU	•	-	9871775
		•					•				CN	•		9860103
		•				•	•				HU	•		9907406
			•				•				CN		•	9862974
			•				•				CN	•		9860102

Pump type	Voltage			Pressure tank		High	1.5	Plug		Country	Threads		Product	
	1 x 230 V, 50 Hz	1 x 230 V, 60 Hz	1 x 115 V, 60 Hz	20 I, horizontal	18 I, vertical	tempera- ture variant	cable	Schuko	UK	AUS	of origin	G 1	NPT 1	number
JPC 5-48	•										CN	٠		99126394
			٠								CN	٠		99126399
		•									CN	٠		99126401
JPC PM														
JPC 3-42 PM	•						•		•		CN	•		99051419
	•									•	CN	٠		98388472
JPC 4-47 PM	٠						•		٠		CN	٠		99051420
	•									•	CN	٠		98388473
JPC 4-54 PM	٠						•		٠		CN	٠		99051421
JPC 4-54 PM	•									•	CN	٠		98388475
JPC PT														
	•				•		•				CN	•		98616018
		•			•		•				CN	•		98616052
JPC 3-42 PT		•			•		•				CN		•	98629755
			•		•		•				CN	•		98616017
			٠		٠		٠				CN		•	98629752
JPC 4-47 PT	٠				٠		٠				CN	٠		98616054
		٠			٠		•				CN	٠		98616055
		٠			٠		•				CN		٠	98629756
			٠		٠		•				CN	٠		98616053
			•		٠		٠				CN		•	98629753
JPC 4-54 PT	•				•		•				CN	٠		98616057
		•			٠		•				CN	٠		98616058
		•			٠		•				CN		•	98629757
			٠		٠		•				CN	٠		98616056
			٠		٠		•				CN		•	98629754
JPD PT														
JPD 4-47 PT	•				•		•	•			CN	•		98973718*
	•				•		•	•			CN	٠		99074042
JPD 4-54 PT	٠				•		•	•			CN	٠		98973719*
	•				٠		•	•			CN	٠		99074053
JPD 5-61 PT	٠				٠		•	•			CN	٠		98973720*
	•				٠		٠	٠			CN	٠		99074054
JPD 8-62 PT	٠				٠		٠	٠			CN	٠		98973721*
	•				•		•	•			CN	٠		99074055

\* SNI (Indonesia).

# Ejector for JPD PT

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

**Product numbers** 

# 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. 34 PM 1

### **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.



TM05 5090 3212

Fig. 35 PM 2

### **Features**

M05 5089 3212

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	٠	٠
Alarm indication	•	٠
Dry-running protection	•	٠
Free position in installation	•	•
Suitable for generator supply	•	٠
Rotary outlet connection	•	٠
Integrated non-return valve	٠	٠
Cycling alarm	٠	•
Integrated pressure sensor from Grundfos Direct Sensors		•
Adjustable start pressure		٠
Start/stop with 1 bar differential pressure		٠
Automatic restarting after dry running		٠
Maximum continuous operating time of 30 minutes		٠
Pressure indication		٠
Internal pressure tank	٠	٠

### 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 indicates 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.



**2R97506325** 

### 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.



Fig. 36 GT-U bladder tanks

### **GT-H** diaphragm tanks

The polypropylene liner combined with an FDAapproved 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.

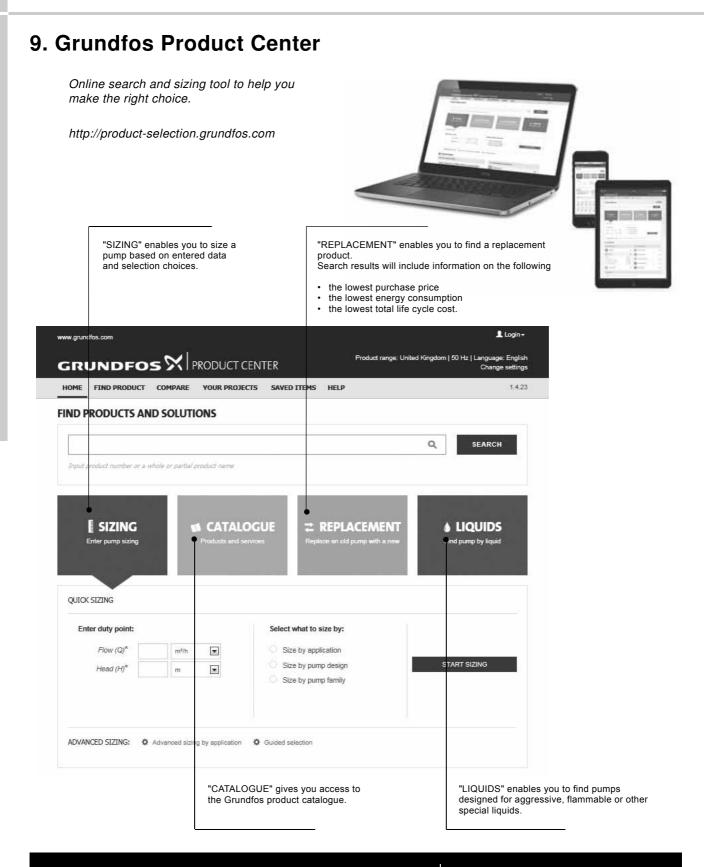


Fig. 37 GT-H diaphragm tanks

**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.



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

Subject to alterations.

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