

JP and JP Booster

Installation and operating instructions



JP and JP Booster

English (GB)

Installation and operating instructions	4
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English (GB) Installation and operating instructions

Original installation and operating instructions

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1. General information



This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.

Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.



Read this document before you install the product. Installation and operation must comply with local regulations and accepted codes of good practice.

1.1 Target group

These installation and operating instructions are intended for professional as well as non-professional users.

1.2 Hazard statements

The symbols and hazard statements below may appear in Grundfos installation and operating instructions, safety instructions and service instructions.



DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious personal injury.



WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious personal injury.



CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate personal injury.

The hazard statements are structured in the following way:



SIGNAL WORD

Description of the hazard

Consequence of ignoring the warning

- Action to avoid the hazard.

1.3 Notes

The symbols and notes below may appear in Grundfos installation and operating instructions, safety instructions and service instructions.



Observe these instructions for explosion-proof products.



A blue or grey circle with a white graphical symbol indicates that an action must be taken.



A red or grey circle with a diagonal bar, possibly with a black graphical symbol, indicates that an action must not be taken or must be stopped.



If these instructions are not observed, it may result in malfunction or damage to the equipment.



Tips and advice that make the work easier.

2. Receiving the product

2.1 Inspecting the product

On receipt of the product, do the following:

- Check that the product is as ordered.
If the product is not as ordered, contact the supplier.
- Make sure that the voltage and frequency of the product match the voltage and frequency of the installation site. See the product's nameplate.

Related information

[5.5.1 Nameplate example for JP and JP Booster](#)

2.2 Scope of delivery, JP

The box contains the following items:

- 1 Grundfos JP pump
- 1 lifting-handle kit
- 1 quick guide
- 1 safety instructions booklet.

2.3 Scope of delivery, JP Booster

The box contains the following items:

- 1 Grundfos JP Booster
- 1 quick guide
- 1 safety instructions booklet.

3. Installing the product

3.1 Location

The product can be installed both indoors and outdoors. Use a suitable cover to protect the product from exposure to direct sunlight, rain or snow.

Please observe the following:

- Install the product in a well-ventilated location to ensure cooling of its components.
- Install the product to enable easy inspection, maintenance and service.
- We recommend that you place the product as close to the liquid to be pumped as possible.
- We recommend that you install the product near a drain or in a drip tray connected to a drain in order to lead away possible condensation from cold surfaces.

Related information

3.1.2 Ambient temperature during operation

3.1.1 Installation of the product in a frosty environment

Protect the product from freezing if it is to be installed outdoors where frost may occur.

3.1.2 Ambient temperature during operation

The ambient temperature must not exceed 55 °C.

Ambient temperature		
Up to 40 °C	The pump can run continuous operation.	
40 to 55 °C	The overheating protection ensures that the pump runs intermittent operation when the air temperature is too high to cool the motor efficiently. Example of intermittent cycle: the pump runs for 20 minutes and stops for 40 minutes before it starts again. See the table below.	
Intermittent operation (S3 mode)		
40-55 °C	50 Hz	60 Hz
JP 3-42	ON: 20 min. OFF: 40 min.	ON: 20 min. OFF: 40 min.
JP 4-47	ON: 20 min. OFF: 40 min.	ON: 10 min. OFF: 50 min.
JP 4-54	ON: 20 min. OFF: 40 min.	ON: 20 min. OFF: 40 min.
JP 5-48	ON: 20 min. OFF: 40 min.	ON: 30 min. OFF: 30 min.

Related information

3.1 Location

3.1.3 Minimum space

Ensure sufficient space for service and maintenance and for motor cooling.

- We recommend a clearance of 0.5 m on three sides of the product.
- The motor is fan cooled, so do not block the fan cover.
- If you install the product with one side against a wall, make sure that the nameplate is visible.

3.2 Mechanical installation

WARNING

Electric shock

Death or serious personal injury

- Switch off the power supply before you start any work on the product. Make sure that the power supply cannot be switched on accidentally.



CAUTION

Crushing of feet

Minor or moderate personal injury

- Wear safety shoes when handling the product.



CAUTION

Impurities in water

Minor or moderate personal injury

- Before the pump is used for supplying drinking water, flush the pump thoroughly with clean water.



3.2.1 Mounting the product

- Place the product in a horizontal position with a maximum inclination angle of $\pm 5^\circ$. The base plate must be facing downwards.
- Fasten the product to a solid horizontal foundation by means of screws through the holes in the base plate.

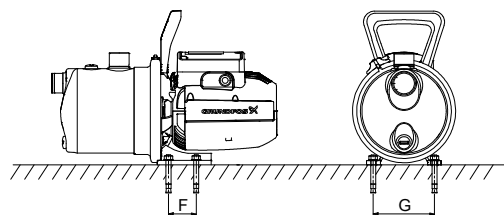


Fig. Foundation of a JP pump

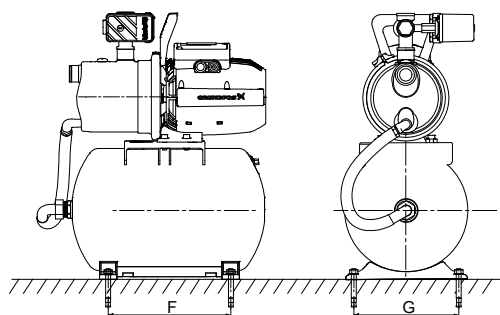
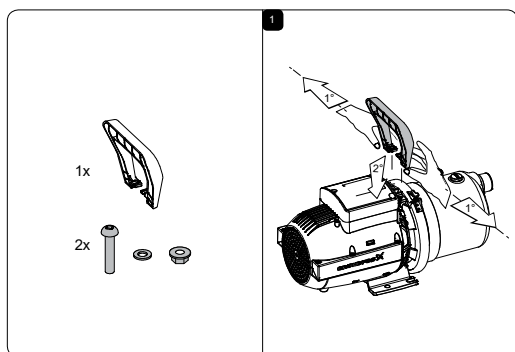


Fig. Foundation of JP PT-H Booster

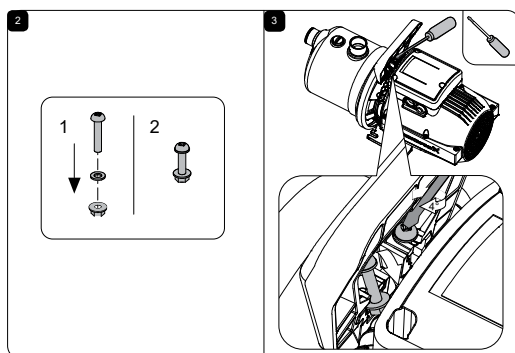
	JP pump [mm]	JP PT-H Booster [mm]
F	47	265
G	110	230

3.2.2 Attaching the lifting handle

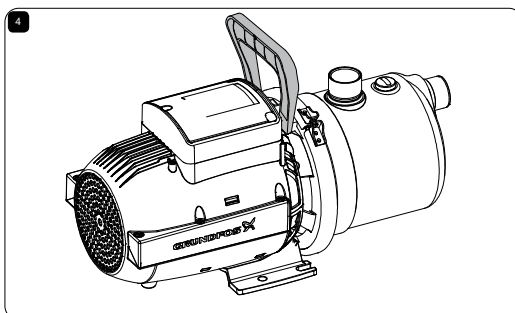
The handle is supplied with the JP pump. It is optional to attach the handle on the pump, for example on permanently installed pumps.



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3.2.3 Connecting the pipe system

! Install the product so that it is not stressed by the pipe system.

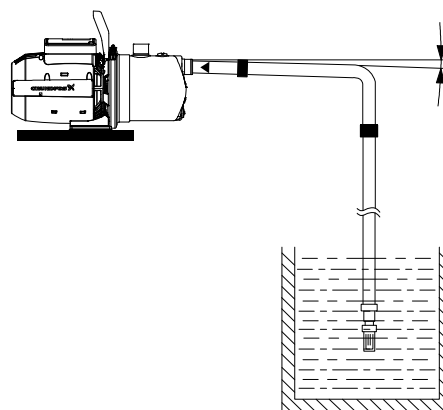
Pipe dimensions:

- ! • The diameter of the inlet pipe must be larger than 1", if the inlet pipe is longer than 10 m, or if the suction lift exceeds 4 m.
- If a hose is used as inlet pipe, it must be non-collapsible.



We recommend that you install isolating valves on both the inlet and outlet side of the pump.

1. Seal the pipe fittings with thread sealing tape or similar.
2. Connect pipes to the inlet and outlet port on the pump. Do not let the pump support the pipes. Use a pipe wrench or similar tool.
3. Fit a foot valve to the inlet pipe if the pump is installed above the liquid level, for example if you pump from a well, tank or reservoir. We recommend a foot valve with strainer.
4. We recommend that you install a filter on the inlet side to protect the pump from sand, gravel or other debris if the pump is to be used for pumping rainwater or well water.
5. Make sure that the inlet pipe has a gradual upward slope of 5 ° towards the pump to avoid air pockets, especially under suction-lift conditions.



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3.2.3.1 Maximum system pressure



Make sure that the system in which the pump is incorporated is designed for the maximum pump pressure.

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.

We recommend that you install a pressure-relief valve to protect the pump so that the outlet pressure does not exceed the maximum system pressure.

3.2.3.2 Inlet and outlet pipes

Please follow these general precautions when connecting the inlet and outlet pipes.



Do not let the pump support the pipes. Use pipe hangers or other supports at proper intervals to provide pipe support near the pump.



The internal diameter of the pipes must never be smaller than the diameter of the pump ports.

- Install the pipes so that air pockets are avoided, especially on the inlet side of the pump.
- Use eccentric reducers with the tapered side down.
- Make sure the pipes are as straight as possible to avoid unnecessary bends and fittings. We recommend long-radius 90 ° pipe bends to decrease friction loss.
- Run the inlet pipe as direct as possible and, ideally, make sure the length is at least ten times the pipe diameter.
- If possible, run a horizontal inlet line. We recommend a gradual upward slope to pumps operating in suction-lift conditions, and a gradual downward slope to pumps operating in positive inlet-pressure conditions.

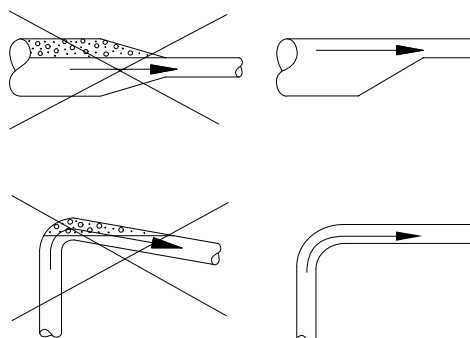
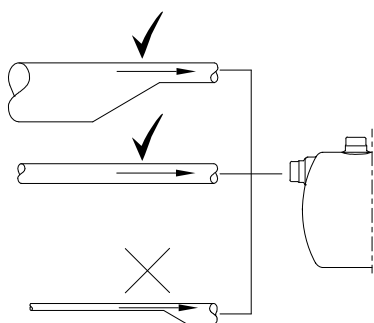


Fig. Recommended pipe installation to avoid friction and air pockets

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- A short pipe must be the same diameter as the inlet port or larger.
- A long pipe must be one or two sizes larger than the inlet port, depending on the length.



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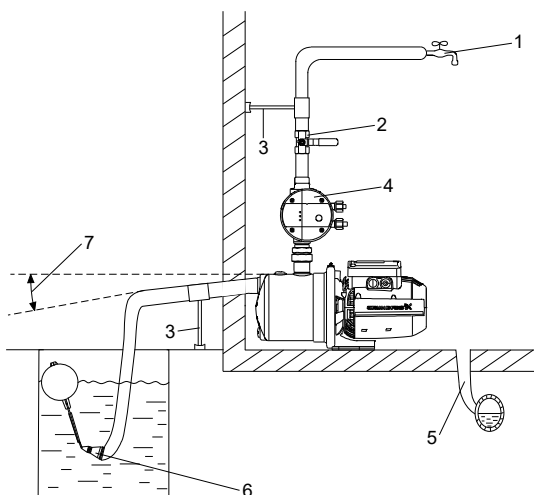
Fig. Correct pipe sizing for connection to the pump inlet or outlet

3.2.4 Installation examples

We recommend that you follow the installation examples. Valves are not supplied with the pump.

3.2.4.1 Suction from a tank

This installation example shows JP PM, but it applies to all variants of the JP range.

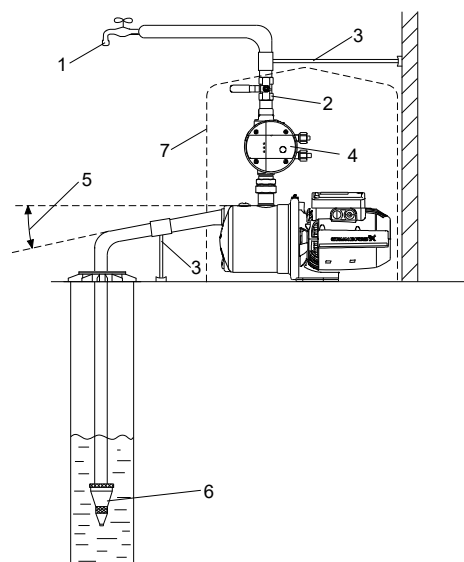


TM072435

Pos.	Description
1	Highest tapping point.
2	Isolating valve.
3	Pipe support.
4	Pressure manager.
5	Drain to sewer.
6	Strainer. A foot valve is optional. We recommend using a foot valve together with JP PM.
7	5 ° angle.

3.2.4.2 Suction from a well

This installation example shows the JP PM, but it applies to all variants of the JP range.



TM072434

Pos. Description

1	Highest tapping point.
2	Isolating valve.
3	Pipe support.
4	Pressure manager.
5	5 ° angle.
6	Foot valve with strainer. The foot valve is optional. We recommend using a foot valve together with JP PM.
7	Pump cover.

3.3 Electrical connection

WARNING

Electric shock

Death or serious personal injury

- Switch off the power supply before you start any work on the product. Make sure that the power supply cannot be switched on accidentally.



WARNING

Electric shock

Death or serious personal injury

- The product is supplied with a grounding conductor and grounding-type attachment plug. To reduce the risk of electric shock, be certain that the product is connected only to a properly grounded, grounding-type receptacle (protective earth).



WARNING

Electric shock

Death or serious personal injury

- If national legislation requires a Residual Current Device (RCD) or equivalent in the electrical installation, this must be type A or better.



WARNING

Electric shock

Death or serious personal injury

- If the product is used for cleaning or maintenance of swimming pools, garden ponds or similar places, make sure that the pump is supplied through a Residual Current Device (RCD) with a rated residual operating current not exceeding 30 mA.



All electrical connections must be carried out by qualified persons in accordance with local regulations.



Make sure that the electrical installation supports the rated current [A] of the product. See the product's nameplate.

3.3.1 Connecting products with a plug

WARNING **Electric shock**

Death or serious personal injury



- Make sure that the power-supply plug delivered with the product is in compliance with local regulations.
- The plug must have the same protective earth (PE) connection system as the power outlet. If not, use a suitable adapter if allowed by local regulations.



Do not turn on the power supply until the pump has been filled with liquid.

1. Switch off the power supply to the power socket.
2. Connect the plug to the power socket.

3.3.2 Connecting products without a plug

WARNING **Electric shock**

Death or serious personal injury



- Power supply cables without a plug must be connected to a supply disconnecting device incorporated in the fixed wiring according to the local wiring rules.



Do not turn on the power supply until the product has been filled with liquid.

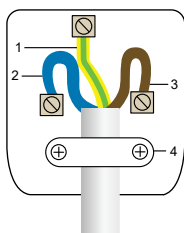
If the product is delivered with a cable but without a plug, connect the cable to the external main switch or attach a plug.

Connecting the cable to an external main switch

1. Strip the cable.
2. Thread each individual wire to the correct terminal in the external main switch.

Wiring a plug

1. Strip the cable.
2. Loosen the two screws holding the cable grip and pull the cable through.
3. Thread each individual wire to the correct terminal.
4. Tighten the terminal screws and the cable grip screw. Make sure not to overtighten the cable grip screw.



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Fig. Example, plug wiring

Pos.	Description
1	E: Earth, yellow and green wire
2	N: Neutral, blue wire
3	L: Live, brown wire
4	Cable grip

Related information

[3.3.3 Connecting products without a cable](#)

3.3.3 Connecting products without a cable

WARNING **Electric shock**

Death or serious personal injury



- Power supply cables without a plug must be connected to a supply disconnecting device incorporated in the fixed wiring according to the local wiring rules.



Do not turn on the power supply until the product has been filled with liquid.

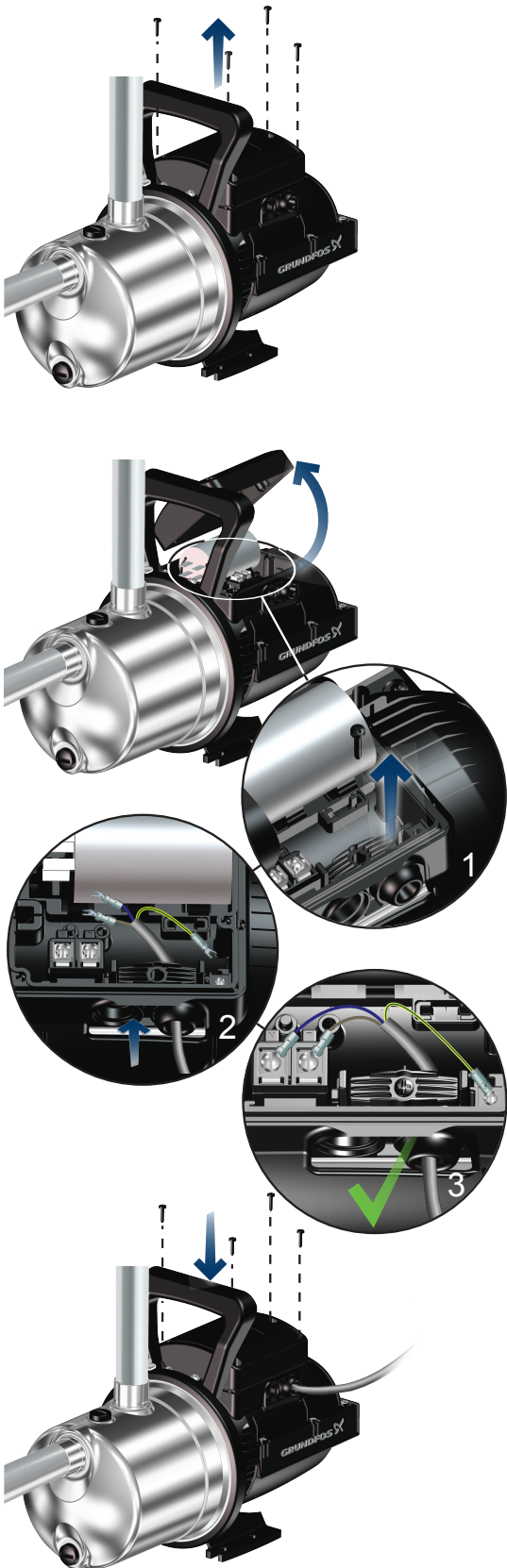
If the product is delivered without a cable, please connect the pump to the power supply using one of the following cable types:

Pump model	Recommended cable type
JP 3-42 and JP 4-47	H05 RN-F
JP 4-54 and JP 5-48	H07 RN-F

Do as follows to connect the cable to the pump:

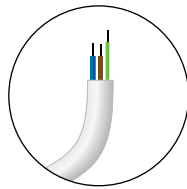
1. Remove the top cover on the motor by loosening the screws.
2. Locate the power-supply terminal and cable clamp inside the terminal box.
3. Loosen the cable clamp.
4. Pull one end of the cable through the cable gland located on the side of the terminal box.

5. Strip the cable conductors and add cable shoes.



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6. Connect the cable conductors to the power-supply terminal. See wiring diagram.
7. Tighten the terminal screws and the cable clamp screw. Make sure not to overtighten the cable clamp screw.
8. Refit the top cover and tighten the screws.
9. Strip the other end of the cable and connect it to a plug or an external main switch.

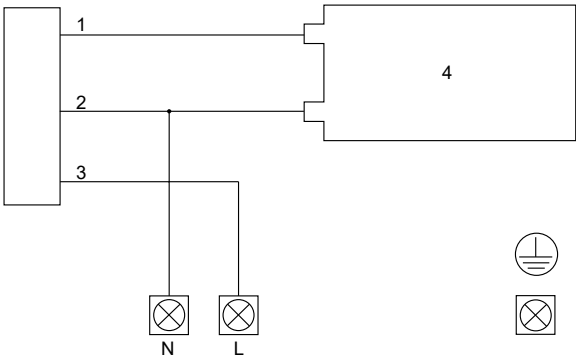


Related information

[3.3.2 Connecting products without a plug](#)

[3.3.4 Wiring diagram](#)

3.3.4 Wiring diagram



TM072335

Pos.	Description
1	Red
2	Blue
3	Black
4	Capacitor

Related information

[3.3.3 Connecting products without a cable](#)

3.3.5 Motor protection

The pump incorporates current- and temperature-dependent motor protection. If the pump is running without water, is blocked or otherwise overloaded, the built-in thermal switch will cut out. When the motor has cooled sufficiently, it will restart automatically. No external motor protection is required.

4. Startup of the product

WARNING Electric shock



Death or serious personal injury

- Do not use the product for cleaning and other maintenance of swimming pools or similar places if there are people in the water.

CAUTION Hot surface



Minor or moderate personal injury

- Use protective gloves if the liquid or ambient temperature is higher than 40 °C.

CAUTION Hot surface



Minor or moderate personal injury

- Do not run the pump continuously with a closed inlet or outlet valve.

CAUTION Hot or cold liquid



Minor or moderate personal injury

- Make sure that escaping hot or cold liquid does not cause injury to persons or damage to the equipment.



Do not turn on the power supply until the pump has been filled with liquid.



The number of starts and stops must not exceed 20 times per hour.



The pump must not run without delivering water for more than 5 minutes.



Only use the product for the intended use and the pumped liquids stated in these installation and operating instructions.

Related information

[5.3 Intended use](#)

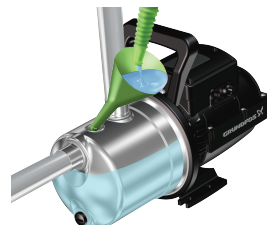
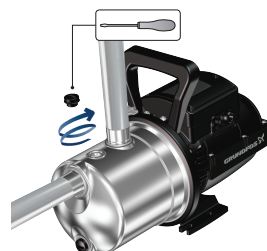
[5.4 Pumped liquids](#)

4.1 Priming the product



Always tighten the priming plug by hand.

1. Unscrew the priming plug.
2. Fill the pump with water.
3. Refit the priming plug and tighten by hand.



4.2 Starting up the product

After installing the product, do the following:

1. Open all isolating valves. Make sure that the water supply is sufficient on the inlet side of the pump.
2. Turn on the power supply to the pump, and the pump will start. If there is a suction lift, it can take up to five minutes before the pump delivers water. This period depends on the length and diameter of the inlet pipe.
3. Open the tapping point that is highest or furthest away from the pump to let out air trapped in the system.
4. When water flows through the tapping point, close it.
5. Startup is completed, and the pump is ready for operation.

4.2.1 Startup of JP PM

For JP pumps with pressure manager, please see the PM 1/PM 2 quick guide for instructions on how to start up the product.



<http://net.grundfos.com/qr/i/98388184>



If a pressure is not built up in the system within five minutes after startup, the dry-running protection will be activated, and the pump will be stopped. Check the priming conditions of the pump before attempting to restart it.

4.2.2 Shaft seal run-in

The shaft seal faces are lubricated by the pumped liquid. A slight leakage from the shaft seal of up to 10 ml per day or 8 to 10 drops per hour may occur. Under normal conditions, the leaking liquid will evaporate. As a result, no leakage will be detected.

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QR66804589

When the pump is started for the first time, or when the shaft seal has been replaced, a certain run-in period is required before the leakage is reduced to an acceptable level. The time required for this depends on the operating conditions, that is, every time the operating conditions change, a new run-in period will be started. Leaking liquid will drain through the drain holes in the motor flange. Install the product in such a way that leakage cannot cause undesirable collateral damage.

5. Product introduction

Grundfos jet pumps and boosters are designed for domestic use and ensure a constant supply of clean water to households and gardens as well as light commercial applications.

JP

JP is a self-priming, single-stage centrifugal jet pump. The jet pump has excellent suction capacity and is designed for long and trouble-free operation. The built-in ejector with guide vanes ensures optimum self-priming properties. JP is small and compact, and the lifting handle makes JP handy and easy to carry. The pump housing is made of stainless steel.

JP Boosters

JP Boosters are compact systems for pressure boosting with pressure control. The pressure control gives more comfort to the user, as it allows the pump to start and stop automatically according to demand.

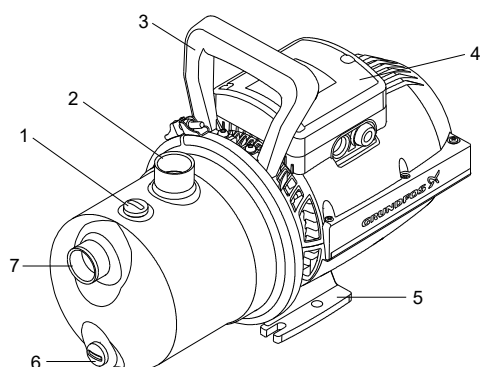
JP Boosters are available in the following variants:

- JP PM: a jet pump with a pressure manager (Grundfos PM 1)
- JP PT-V: a jet pump with a vertical pressure tank and a pressure switch
- JP PT-H: a jet pump with a horizontal pressure tank and a pressure switch.

AISI 316 variant

A special variant of the JP pump is available with components made with a higher stainless-steel grade. This pump is especially suitable for pool-cleaning applications.

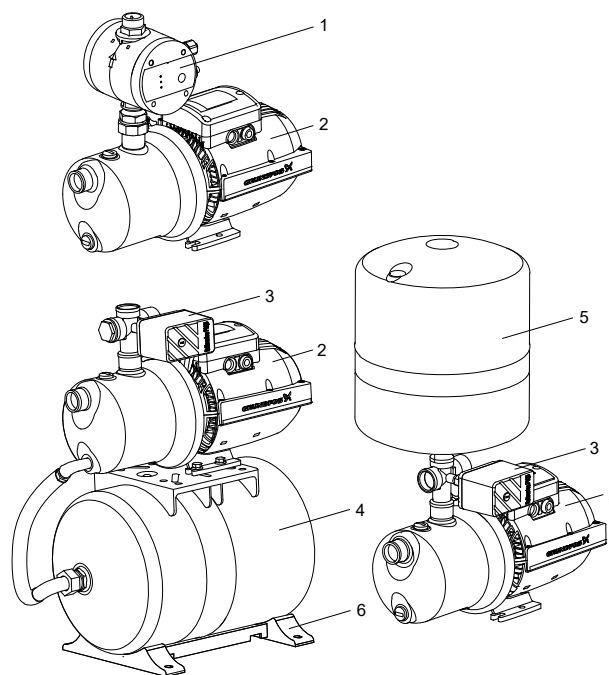
5.1 Product overview, JP



TM072509

Pos.	Description
1	Priming plug
2	G1 outlet connection
3	Lifting handle
4	Terminal box and cable connection
5	Base plate
6	Drain plug
7	G1 inlet connection

5.2 Product overview, JP Booster



TM072656

Fig. JP PM (top), JP PT-H (left), JP PT-V (right)

Pos.	Description
1	Pressure Manager
2	JP pump
3	Pressure switch
4	Pressure tank, horizontal
5	Pressure tank, vertical
6	Base plate

5.3 Intended use



Only use the product according to the specifications stated in these installation and operating instructions.

The product is suitable for pressure boosting of clean water in domestic water-supply systems.

Related information

[4. Startup of the product](#)

[5.4 Pumped liquids](#)

5.3.1 Intended use of the AISI 316 variant

WARNING

Electric shock

Death or serious personal injury

- Do not use the product for cleaning and other maintenance of swimming pools or similar places if there are people in the water.



CAUTION

Impurities in the water

Minor or moderate personal injury

- Do not use the product for drinking water.



The AISI 316 variant of the JP pump is especially suitable for pool-cleaning applications.

5.4 Pumped liquids



WARNING Flammable material

Death or serious personal injury

- Do not use the product for flammable liquids such as diesel oil, petrol or similar liquids. The product must only be used for water.



WARNING Toxic material

Death or serious personal injury

- Do not use the product for toxic liquids. The product must only be used for water.



WARNING Corrosive substance

Death or serious personal injury

- Do not use the product for aggressive liquids. The product must only be used for water.



If the water contains sand, gravel or other debris, there is a risk of pump blockage and pump damage. Please install a filter on the inlet side or apply a floating strainer to protect the pump.

The product is suitable for pumping clean, thin, non-aggressive, non-toxic and non-explosive liquids without solid particles or fibres. Examples of liquids:

- potable water
- rainwater.

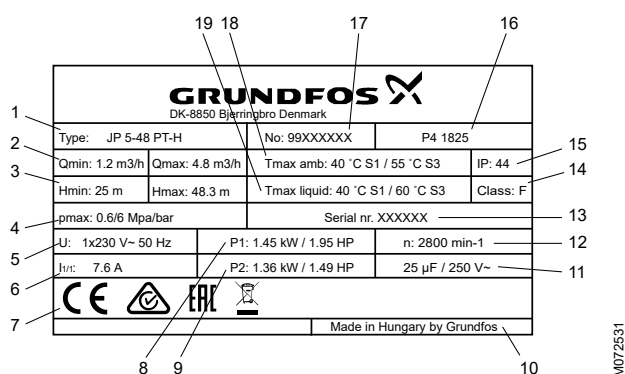
Related information

4. Startup of the product

5.3 Intended use

5.5 Identification

5.5.1 Nameplate example for JP and JP Booster



Pos.	Description
1	Type
2	Min. flow rate and max. flow rate
3	Min. head and Max. head
4	Max. pressure
5	Supply voltage and Frequency
6	Full-load current
7	Approvals
8	Power consumption
9	Rated power
10	Country of origin
11	Capacitor data
12	Speed of rotation
13	Serial number

Pos.	Description
14	Insulation class
15	Enclosure class
16	Factory and production code, year and week
17	Product number
18	Max. ambient temperature
19	Max. liquid temperature

Related information

2.1 Inspecting the product

5.5.2 Type key, JP pump and booster

Example:

JP . 3- . 42 . PT- . V . 1x230 V . 50 Hz . 2m . SCHUKO . HU

	Description
JP	Jet Pump
3-	Max. flow rate [m ³ /h]
42	Max. head [m]
	Booster type, if applicable:
PT-	• PT: Pressure Tank • PM: Pressure Manager • PS: Pressure Switch
	Tank type, if applicable:
V	• V: Vertical • H: Horizontal
1x230 V	Voltage [V]
50 Hz	Frequency [Hz]
2m	Cable length [m]
SCHUKO	Plug type
HU	Country of origin

6. Service

WARNING Electric shock



Death or serious personal injury

- Switch off the power supply before you start any work on the product. Make sure that the power supply cannot be switched on accidentally.

WARNING Chemical hazard



Death or serious personal injury

- Make sure that the product has only been used for water. If the product has been used for pumping aggressive liquids, flush the system with clean water before you start work on the product.

WARNING Pressurised system



Death or serious personal injury

- Before dismantling the pump, drain the system or close the isolating valves on both sides of the pump. Slowly loosen the drain plug and unpressurise the system.

CAUTION Impurities in water



Minor or moderate personal injury

- Before the pump is used for supplying drinking water, flush the pump thoroughly with clean water.



Only qualified persons are allowed to service the pump.

6.1 Maintenance

The product is maintenance-free during normal operation. For cleaning, use a dry and dust-free cloth.

6.2 Maintaining the pressure tank

Check the precharge pressure annually.

The pressure tanks are supplied from factory with a precharge pressure. See tank nameplate.

Do not use a tank with signs of damage, such as dents, leakage or corrosion.

6.2.1 Adjusting the precharge pressure

CAUTION

Pressurised system

Minor or moderate personal injury

- Before starting work on the product, make sure there is no system pressure on the tank.
- Disconnect pumps or switch off the power supply.

1. Make sure that there is no water pressure in the tank. Switch off the pump and open a tap, or close the isolating valves and drain the pump.
2. Use a suitable pressure gauge to check the precharge pressure.
3. Release or add compressed air to make the precharge pressure equal to the recommended precharge pressure.
4. If water escapes during the precharge-pressure check, the membrane is defective.

6.3 Service kits

For further information on service kits, see Grundfos Product Center at www.product-selection.grundfos.com.

7. Taking the product out of operation

WARNING

Electric shock

Death or serious personal injury

- Switch off the power supply before you start any work on the product. Make sure that the power supply cannot be switched on accidentally.

If the product is taken out of operation for a period of time, for example during winter, it must be disconnected from the power supply and placed in a dry location. Do as follows:

1. Disconnect the product from the power supply.
2. Open a tap to release the pressure in the pipe system.
3. Close the isolating valves and/or the drain pipes.
4. Gradually loosen the drain plug to release the pressure in the product.
5. Drain the product.
6. Store the product according to the recommended storing conditions.

Related information

[7.1 Draining JP and JP PT-V](#)

[7.2 Draining JP PT-H](#)

[7.3 Storage of the product](#)

7.1 Draining JP and JP PT-V

To drain the JP pump and JP Booster with a vertical pressure tank, do as follows:

1. Unscrew the drain plug using a screw driver.
2. Let the water flow out of the pump.
3. When the pump is empty, refit the plug by hand.



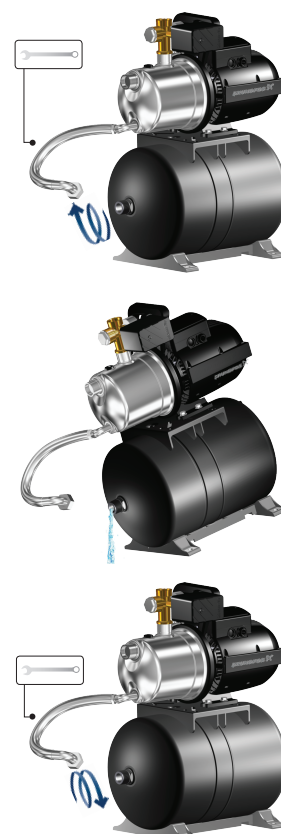
Related information

[7. Taking the product out of operation](#)

7.2 Draining JP PT-H

To drain JP Booster with a horizontal pressure tank, do as follows::

1. Drain the pump by removing the drain plug.
2. Unscrew the hose on the tank.
3. Tilt the tank so that the water flows out.
4. When the tank is empty, refit the hose.



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Related information*7. Taking the product out of operation***7.3 Storage of the product****WARNING****Electric shock**

Death or serious personal injury

- Switch off the power supply before you start any work on the product. Make sure that the power supply cannot be switched on accidentally.

If the product is to be stored for a period of time, for example during winter, drain it by removing the drain plug and store the product indoors in a dry location.

During storage the temperature must be between -40 and +70 °C and have a maximum relative humidity of 98 % RH.

Related information*7. Taking the product out of operation***7.4 Frost protection**

If the product is not used during periods of frost, it must be drained to avoid damage.

8. Fault finding the product**WARNING****Electric shock**

Death or serious personal injury

- Switch off the power supply before you start any work on the product. Make sure that the power supply cannot be switched on accidentally.

WARNING**Chemical hazard**

Death or serious personal injury

- Make sure that the product has only been used for water. If the product has been used for pumping aggressive liquids, flush the system with clean water before you start work on the product.

WARNING**Pressurised system**

Death or serious personal injury

- Before dismantling the product, drain the system or close the isolating valves on both sides of the pump. Slowly loosen the drain plug and unpressurise the system.

8.1 The pump does not start

Cause	Supply failure.
Remedy	Cut in the circuit breaker or replace the fuses. If the new fuses also blow, check the electrical installation.

Cause	The pump is blocked by impurities.
Remedy	1. Clean the pump. 2. Clean or replace the strainer in the inlet pipe.

Cause	The motor is defective.
Remedy	Replace the pump.

8.2 The pump stops unexpectedly during operation and starts again after a while

The thermal switch in the motor has tripped due to overheating and runs intermittent operation. The thermal switch will cut in automatically when the motor has cooled sufficiently. If the problem persists, check the possible causes:

Cause	The impeller is stuck.
Remedy	Clean the pump.

Cause	The motor is defective.
--------------	--------------------------------

Remedy	Replace the pump.
---------------	-------------------

Cause	The ambient temperature is too high.
--------------	---

Remedy	Make sure that the ambient temperature is below the maximum ambient temperature for the product. See nameplate.
---------------	---

8.3 The pump runs, but does not deliver the expected amount of water

Cause	The outlet pipe is blocked. In this case, the pump typically delivers a reduced quantity of water at a high pressure.
--------------	---

Remedy	Clean the pipe or open the isolating valves, if any.
---------------	--

Cause	The pump is not filled with water.
--------------	---

Remedy	Prime the pump.
---------------	-----------------

Cause	The inlet pipe is blocked by impurities.
--------------	---

Remedy	Clean the inlet pipe. Clean or replace the strainer in the inlet pipe.
---------------	--

Cause	The pump is blocked by impurities.
--------------	---

Remedy	Clean the pump. Clean or replace the strainer in the inlet pipe.
---------------	--

Cause	The suction lift is too high.
--------------	--------------------------------------

Remedy	Change the position of the pump. The suction lift must not exceed 8 m.
---------------	--

Cause	The inlet pipe is too long.
--------------	------------------------------------

Remedy	Change the position of the pump.
---------------	----------------------------------

Cause	The diameter of the inlet pipe is too small.
--------------	---

Remedy	Replace the inlet pipe.
---------------	-------------------------

Cause	The inlet pipe is not immersed deeply enough.
--------------	--

Remedy	Make sure that the inlet pipe is immersed sufficiently.
---------------	---

Cause	The inlet pipe is leaking.
--------------	-----------------------------------

Remedy	Repair or replace the pipe.
---------------	-----------------------------

8.4 Fault finding boosters with a pressure manager

8.4.1 Operating panel for pressure manager PM 1

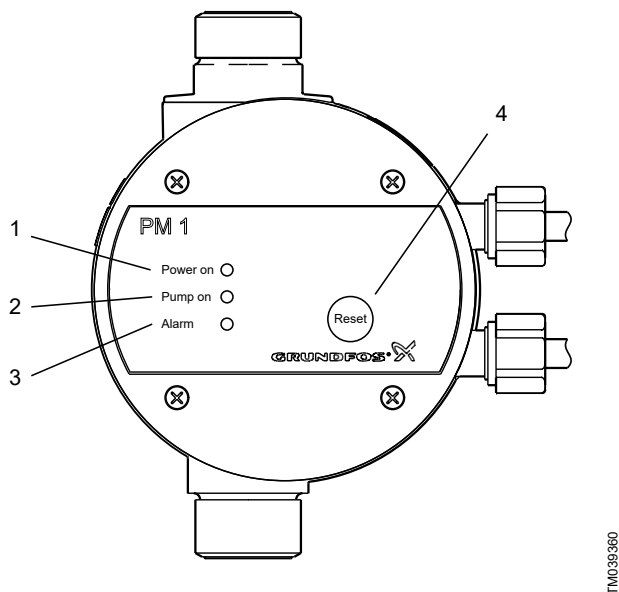


Fig. Operating panel on pressure manager PM 1

Pos.	Symbol	Description
1	Power on	The green indicator light is permanently on when the power is on.
2	Pump on	The green indicator light is permanently on when the pump is running.
3	Alarm	The red indicator light is permanently on or flashes when the pump has stopped due to an operating fault.
4	Reset	The reset button is used for - resetting fault indications - enabling and disabling the anti-cycling function.

For indicator light check, all indicator lights illuminate when the power is switched on.

8.4.2 The "Alarm" indicator light flashes once at a regular interval

The anti-cycling function has stopped the pump because the pump starts and stops too frequently.

- | | |
|---------------|--|
| Cause | A tap has not been closed entirely after use. |
| Remedy | Check that all taps have been closed. |
| Cause | There is a minor leakage in the system. |
| Remedy | Make sure that there are no leakages in the system. |

8.4.3 The "Alarm" indicator light is permanently on

- | | |
|---------------|--|
| Cause | Dry running. The pump needs water.
The pumps has stopped due to the dry-running function. |
| Remedy | Make sure that the water supply is sufficient. |
| Cause | The power supply to the pump is disconnected. |
| Remedy | Check the plug and cable connections, and make sure that the built-in circuit breaker of the pump is switched off. |
| Cause | The motor protection of the pump has tripped due to overload. |

- | | |
|---------------|--|
| Remedy | Make sure that the motor or pump is not blocked. |
|---------------|--|

- | | |
|--------------|---|
| Cause | The pressure manager is defective. |
|--------------|---|

- | | |
|---------------|---|
| Remedy | Repair or replace the pressure manager.
Find more information in the service instructions at https://product-selection.grundfos.com . |
|---------------|---|

8.4.4 The "Power on" indicator light is off even though the power supply has been switched on

- | | |
|---------------|---|
| Cause | The fuses in the electrical installation have blown. |
| Remedy | Replace the fuses. If the new fuses also blow, check the electrical installation for malfunctions. |
| Cause | The earth-leakage circuit breaker or the voltage-operated circuit breaker has tripped. |
| Remedy | Cut in the circuit breaker. |
| Cause | The pressure manager is defective. |
| Remedy | Repair or replace the pressure manager.
Find more information in the service instructions at https://product-selection.grundfos.com . |

8.4.5 The "Pump on" indicator light is on, but the pump does not start

- | | |
|---------------|---|
| Cause | The power supply to the pump is disconnected. |
| Remedy | Check the plug and cable connections, and make sure that the built-in circuit breaker of the pump is switched off. |
| Cause | The motor protection of the pump has tripped due to overload. |
| Remedy | Make sure that the motor or pump is not blocked. |
| Cause | The pump is defective. |
| Remedy | Repair or replace the pump. |
| Cause | The pressure manager is defective. |
| Remedy | Repair or replace the pressure manager.
Find more information in the service instructions on https://product-selection.grundfos.com |

8.4.6 The pump does not start when water is consumed

The "Pump on" indicator light is off.

- | | |
|---------------|--|
| Cause | There is too big a difference in height between the pressure manager and the tapping point. |
| Remedy | Adjust the installation, or increase the start pressure. |
| Cause | The pressure manager is defective. |
| Remedy | Replace the pressure manager. |

8.4.7 The pump does not stop

- | | |
|---------------|---|
| Cause | The pump cannot deliver the necessary outlet pressure. |
| Remedy | Replace the pump. |
| Cause | The start pressure is set too high. |
| Remedy | <ul style="list-style-type: none"> PM 1: The start pressure is factory set. Make sure that your product is dimensioned correctly. PM 2, PM TWIN: Decrease the start pressure. |

Cause The non-return valve is stuck in open position.

Remedy Clean or replace the non-return valve.

Cause The pressure manager is defective.

Remedy Repair or replace the pressure manager.
Find more information in the service instructions at <https://product-selection.grundfos.com>.

8.5 Fault finding boosters with a pressure tank

8.5.1 The booster starts and stops too frequently

Cause Incorrect precharge pressure.

Remedy Adjust the diaphragm tank pressure.

Cause Leakage in pipes.

Remedy Check and repair the pipes.

Cause The diaphragm is broken. Water escapes if the air valve is pushed down.

Remedy Replace the pressure tank.

9. Technical data

9.1 Operating conditions

System pressure	Max. 6 bar / 0.60 MPa
Suction lift	Maximum 8 m, including inlet-pipe pressure loss at a liquid temperature of 20 °C
Liquid temperature	Max. 40 °C (S1) / 60 °C (S3)
Ambient temperature	Max. 40 °C (S1) / 55 °C (S3)
Relative humidity	Max. 98 %
Enclosure class	IP44
Insulation class	F
Supply voltage	1 x 220-240 V, 50/60 Hz 1 x 115 V, 60 Hz
Start/stop frequency	Maximum 20 per hour
Sound pressure level	Maximum sound pressure level of the pump: JP 3-42: 68 [dB(A)] JP 4-47: 70 [dB(A)] JP 4-54: 74 [dB(A)] JP 5-48: 81 [dB(A)]

9.2 Head and flow rate

Max. head	JP 3-42: 42 m JP 4-47: 47 m JP 4-54: 54 m JP 5-48: 48 m
Max. flow rate	JP 3-42: 3 m ³ /h JP 4-47: 4 m ³ /h JP 4-54: 4 m ³ /h JP 5-48: 5 m ³ /h

9.3 Inlet pressure

Max. inlet pressure	JP 3-42: 1.5 bar / 0.15 MPa JP 4-47: 1.0 bar / 0.10 MPa JP 4-54: 0.5 bar / 0.05 MPa JP 5-48: 1.0 bar / 0.10 MPa
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9.4 Miscellaneous data

Min./max. storage temperature	Max. storage temperature: +70 °C Min. storage temperature: -20 °C
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10. Disposing of the product

This product or parts of it must be disposed of in an environmentally sound way.

1. Use the public or private waste collection service.
2. If this is not possible, contact the nearest Grundfos company or service workshop.
3. Dispose of the waste battery through the national collective schemes. If in doubt, contact your local Grundfos company.



The crossed-out wheeled bin symbol on a product means that it must be disposed of separately from household waste. When a product marked with this symbol reaches its end of life, take it to a collection point designated by the local waste disposal authorities. The separate collection and recycling of such products will help protect the environment and human health.

See also end-of-life information at www.grundfos.com/product-recycling.

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