BM, BM hp

Installation and operating instructions

BM, BM hp
Installation and operating instructions
Other languages
http://net.grundfos.com/qr/i/150095

GRUNDFOS

BM, BM hp

Original installation and operating instructions

Table of contents

1. General information

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

1.1 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.

1.2 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. Product introduction

Grundfos BM and BM hp booster modules are designed for pressure boosting, liquid transfer, filtration applications and circulation in systems with a high static pressure.

2.1 Pumped liquids

The pumps are suitable for pumping thin, non-explosive liquids, not containing solid particles or fibres. The liquid must not chemically attack the pump materials. In case of doubt, contact Grundfos.

The pumps must never operate with water or liquid containing substances which would remove the surface tension, for example soap. If you use this type of detergent to clean the system, the water or liquid must be led around the pumps via a bypass.

Do not use the pumps for pumping flammable or combustible liquids such as diesel oil, petrol or similar liquids.

3. Receiving the product

3.1 Delivery

The booster modules are supplied from the factory in proper packing in which they should remain until they are to be installed. The modules are ready for installation.

For BM hp 8", two mounting brackets are supplied with the pump.

3.2 Transporting the product

CAUTION
Crushing of feet
Minor or moderate personal injury

- Observe the centre of gravity marked on the box when lifting the pump.
- Wear personal protective equipment.

During transportation, the booster modules may only be placed in the positions shown in the section on storage.

1. Check for transport damage. Make sure that the module has not been damaged during transportation.
2. Check that the type designation given on the nameplate fitted to the sleeve corresponds to the order.

Related information

11. Storage

4. Installation requirements

Before installation, the following checks must be made:

1. **Power supply**
   The motor voltage and frequency are marked on the nameplate. Make sure that the motor is suitable for the power supply.
2. **Liquid in motor**
   If a module has been stored for more than one year, check the motor liquid and refill, if required. If in doubt, contact Grundfos. If a module is supplied for a special system, the motor may be supplied without liquid or with demineralised water. See the section on storage.

Related information

11. Storage

4.1 Versions

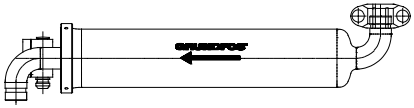
The arrows in the figures below indicate the flow direction.

BM 4"

Straight version

TM003793

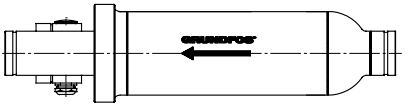
Bent version



TM003794

BM, BM hp 6"

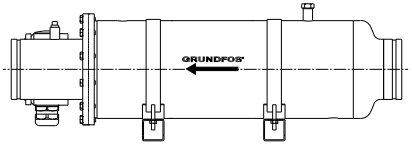
BM, BM hp 6" are only available in a straight version.



TM004019

BM, BM hp 8"

BM, BM hp 8" are only available in a straight version.



TM011420

4.2 Reading the guide

When installing the products, follow the steps below.

1. Mechanical installation.
2. Electrical connection.
3. Commissioning the product.

Related information

5. Mechanical installation

6. Electrical connection

7.1 Before starting the booster modules

5. Mechanical installation

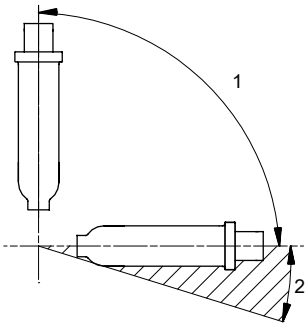
WARNING
Electric shock
Death or serious personal injury

- The electrical installation must be carried out by an authorised person in accordance with local regulations.

Grundfos booster modules are as standard supplied without a built-in non-return valve. However, a non-return valve can be built in on request.

In systems involving a risk of water hammer in connection with start/stop, the necessary measures must be taken to minimise this risk.

The booster modules are suitable for both vertical and horizontal installation. However, the outlet port must never fall below the horizontal plane.

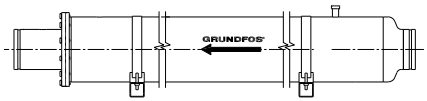


TM081831

Positional requirements

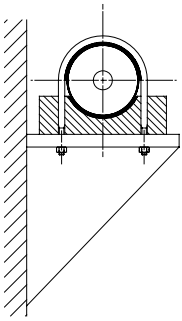
Pos.	Description
1	Allowed
2	Not allowed

An arrow on the module sleeve shows the direction of liquid flow through the module.



TM025911

The module is fastened by means of clamps.

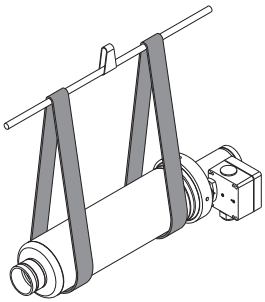


TM004041

Fastening by means of clamps

WARNING
Falling objects
Death or serious personal injury

- Observe local regulations concerning limits for manual lifting or handling. See the weight on the nameplate.
- Note that the module has an uneven weight distribution. Because of the motor, the largest weight will be in the first third of the sleeve when seen from the outlet port.
- Use straps on the motor, and do not lift the pump by the terminal box.
- Use certified and approved lifting equipment.



TM066892

How to lift the pump

If you do not follow these instructions, there is a risk of warping or crushing some of the equipment such as the terminal box, cover or drip cover.

Related information

4. Installation requirements

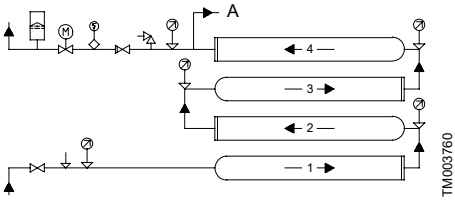
5.1 Booster modules connected in series and in parallel

5.1 Booster modules connected in series and in parallel

Symbols used in the figures below:

	Air escape valve
	Isolating valve
	Non-return valve
	Pressure switch
	Flow switch
	Pressure gauge
	Motor-operated valve
	Diaphragm tank
A	Bypass

- **Series operation (high pressure)**
  If a pressure higher than that of a single module is required, several modules are connected in series. The resulting pressure is found by adding the pressure of each individual module. The flow rate will be the same as for one pump. Make sure that the maximum inlet pressure is not exceeded. For modules connected in series, mounted above each other, we recommend to connect the pipes as shown in the figure below.

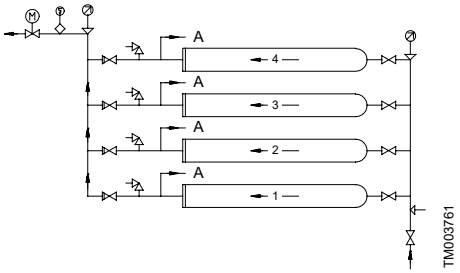


TM003760

Booster system with four modules connected in series, mounted above each other

- **Parallel operation (high flow)**

If a flow higher than that of a single module is required, several modules are connected in parallel. The resulting flow is found by adding the flow of each individual module. The pressure will be the same as for one pump. For modules connected in parallel, mounted above each other, we recommend to connect the pipes as shown in the figure below. This layout ensures that the modules are filled with water before starting.



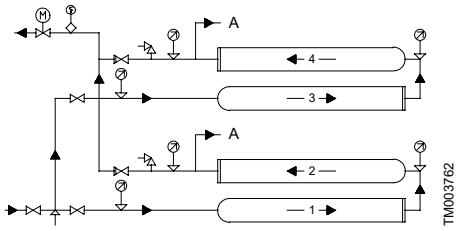
Booster system with four modules connected in parallel, mounted above each other

- **Parallel and series operation (high flow and pressure)**

  If a higher flow and pressure than that of a single module is required, several modules can be connected in parallel and series. The resulting flow is found by adding the flow of each individual module connected in parallel, while the pressure is found by adding the pressure of each individual module connected in series.

  Make sure that the maximum inlet pressure is not exceeded.

  For modules connected in series and parallel, mounted above each other, we recommend to connect the pipes as shown in the figure below.

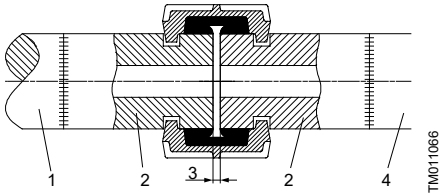


Booster system with two modules connected in series and in parallel, mounted above each other

WARNING
Description of the hazard
Death or serious personal injury
- Make sure that the pump and the system are fully vented before startup.

5.2 Pipe connection

The booster modules are fitted with clamp liners for Victaulic/PJE clamp couplings on the inlet and outlet sides.



Pipe connection using clamp couplings

Pos.	Description
1	Pipe system
2	Clamp liners
3	Gap
4	Booster module

WARNING
Pressurised system
Death or serious personal injury
- Avoid stress in the pipe system.

Clean Victaulic connections, rubber and pipes, with fresh water in order to prevent crevice corrosion.

Size	Type	Victaulic coupling		Gap [mm]
BM 4"	BM 3A - BM 9	1 1/4"	∅42	1
BM, BM hp 6"	BM 18 - BM 60	3"	∅89	3
BM 8"	BM 32 - BM 46	3"	∅89	3
BM 8"	BM 60	4"	∅114	6
BM, BM hp 8"	BM 77 - BM 95	5"	∅139	6
BM, BM hp 8"	BM 125 - BM 215	6"	∅168	6

6. Electrical connection

The electrical connection must be carried out by an authorised electrician in accordance with local regulations.

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.

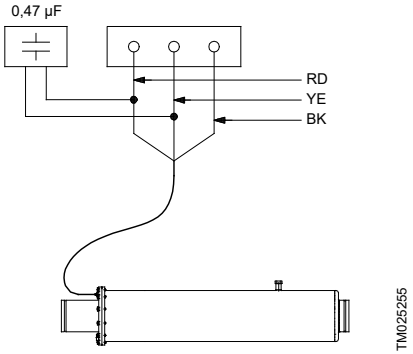
WARNING
Electric shock
Death or serious personal injury

- Connect the pump to an external main switch placed close to the pump and to a motor-protective circuit breaker or a frequency converter.
- It must be possible to lock the main switch in OFF position (isolated). Type and requirements as specified in EN 60204-1, 5.3.2.
- The pump must be earthed.

The required voltage quality measured at the module terminals is -10 % / +6 % of the rated voltage during continuous operation, including variation in the supply voltage and losses in cables.

Check that there is voltage symmetry in the power supply lines, that is approximately the same difference in voltage between the individual phases. See also the section on checking of motor and cable, point 1.

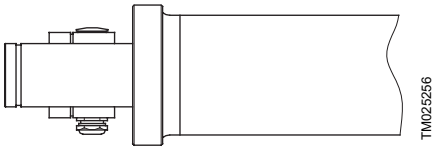
In order for the modules to meet the EC EMC Directive (2014/30/EU), a 0.47 µF capacitor, in accordance with IEC 384-14, must always be connected over the two phases to which the temperature transmitter is connected.



Electrical connection

Pos.	Description
RD	Red
YE	Yellow
BK	Black

The electrical connections must be made close to the flange either by means of a terminal box or a cable termination kit.



BM, BM hp with a terminal box

Note that frequency converter operation is wanted. Do not mount the 0.47 µF capacitor.

Related information

6.4 BM/BM hp 6" MS 6000
6.5 BM/BM hp 8" MMS 8000
7.5 Checking of motor and cable

6.1 Motor protection

The booster module must be connected to an effective motor-protective circuit breaker which must protect the motor against damage from voltage drop, phase failure, overload and a locked rotor.

In power supply systems where undervoltage and variations in phase symmetry may occur, a phase failure relay must also be fitted. See the section on checking of motor and cable.

The control circuit must always be made in such a way that all modules are stopped if one module fails.

Related information

7.5 Checking of motor and cable

6.1.1 Setting of motor-protective circuit breaker

For cold motors, the tripping time for the motor-protective circuit breaker must be less than 10 seconds (Class 10) at 5 times the rated full-load current ($I_{1/1}/I_{SFA}$) of the module. See the module nameplate.

Make sure this requirement is met, otherwise the motor warranty will be invalidated.

In order to ensure the optimum protection of the submersible motor, the motor-protective circuit breaker must be set in accordance with the following guidelines:

1. Set the motor-protective circuit breaker to the rated full-load current ($I_{1/1}/I_{SFA}$) of the module.
2. Start the module, and let it run for half an hour at normal performance. See the section on before starting the booster modules.
3. Slowly grade down the scale indicator until the motor trip point is reached.
4. Increase the overload setting by 5 %.

The highest permissible setting is the rated full-load current ($I_{1/1}/I_{SFA}$) of the module.

For modules wound for star-delta starting, the motor-protective circuit breaker must be set as described above, but the maximum setting must be as follows:

Motor-protective circuit breaker setting = rated full-load current × 0.58.

The highest permissible startup time for star-delta starting is 2 seconds.

Related information

7.1 Before starting the booster modules

6.2 Output filters

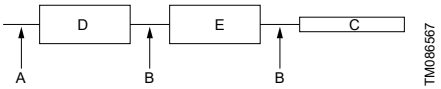
Output filters are used primarily to protect the motor against overvoltage and increased operating temperature. However, you can also use output filters to reduce acoustic noise from the motor.

Grundfos offers two types of output filter as accessories for CUE:

- dU/dt filters
- sine-wave filters.

An output filter must be used when the product is operated together with the CUE frequency converter.

6.2.1 Cables used in CUE installations



Example of an installation in EMC-sensitive sites

Pos.	Description
A	Mains cable, unscreened
B	Screened cable
C	BM pump
D	CUE
E	Filter

Screened cables and output filters are required in those parts of the installation where the surroundings must be protected against EMC.

CUE is the right choice of frequency converter in BM installations as it meets all basic issues. CUE has a pre-installed startup guide that takes the installer through all the necessary settings.

Consider the following issues when using frequency converters in BM installations:

- To limit wear and overheating of windings, lubricate the journal bearings.

  - Ramping up and down takes maximum 3 seconds.
- Use temperature monitoring by a Pt sensor.

  - If the motor overheats, there will be low insulation resistance, which results in sensitivity to voltage peaks.
- Remember to use an output filter.

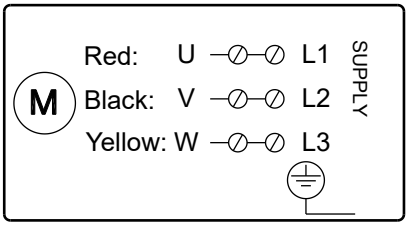
  - Cables act as an amplifier, which measures peaks at the motor.
- Limit the rise time (dU/dt) to a maximum of 1000 V/µs. It is determined by the equipment in CUE.

  - Time between switches is an expression of losses; therefore, exceeding the limit of 1000 V/µs may be required. The solution for this issue is filtering the output from CUE.
- Size CUE in respect of the current, not the power output.

  - You can end up with a CUE frequency converter that is too small in size otherwise.

6.3 BM 4", BM/BM hp 6" MS 4000

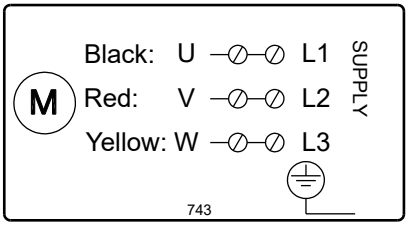
Direct-on-line



Wiring diagram, DOL connection

6.4 BM/BM hp 6" MS 6000

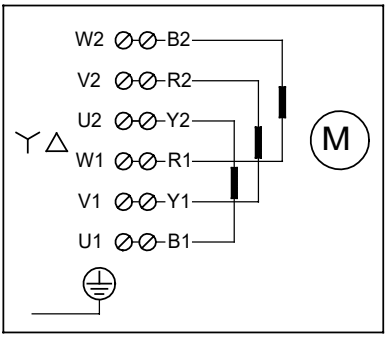
Direct-on-line



Wiring diagram, DOL connection

6.5 BM/BM hp 8" MMS 8000

Star-delta starting



Wiring diagram, star-delta connection

Pos.	Description
BK	Black
RD	Red
YE	Yellow

6.6 Frequency converter operation

Grundfos motors

Three-phase Grundfos MS and MMS motors can be connected to a frequency converter.

If a frequency converter is to be used for booster modules connected in series, it must be connected to the last module in the flow direction.

We recommend Grundfos CUE. CUE is a series of frequency converters designed for speed control of a wide range of Grundfos products, for example BM and BM hp.

If a Grundfos MS motor with a temperature transmitter is connected to a frequency converter, a fuse incorporated in the transmitter will melt, and the transmitter will be inactive. The transmitter cannot be reactivated. This means that the motor will operate like a motor without a temperature transmitter.

To avoid EMC problems, shielded cables are required between the frequency converter and the sine wave filter, and in EMC sensitive installations from the sine wave filter to the pump.

During frequency converter operation, we do not recommend to run the motor at a frequency higher than the rated frequency, 50 or 60 Hz. In connection with pump operation, it is important never to reduce the frequency, and consequently the speed, to such a level that the necessary flow rate of cooling liquid past the motor is no longer ensured.

The permissible frequency ranges are 30-50 Hz and 30-60 Hz, respectively.

During starts, the maximum acceleration time from 0 to 30 Hz is 3 seconds.

During stops, the maximum deceleration time from 30 to 0 Hz is 3 seconds.

Depending on the frequency converter type, it may expose the motor to detrimental voltage peaks.

The above disturbance can be abated by installing an RC filter between the frequency converter and the motor.

Possible increased acoustic noise from the motor can be abated by installing an LC filter which will also eliminate voltage peaks from the frequency converter.

For further details, contact your frequency converter supplier or Grundfos.

7. Starting up the product

7.1 Before starting the booster modules

If you are working with booster systems with modules connected in series or in parallel, see the figures in the section on booster modules connected in series and in parallel.

The booster modules must be filled with water before startup.

Procedure:

1. Loosen the vent valve of the booster module, if any.
2. Ensure an inlet pressure on the booster module.
3. Completely open the isolating valve.
4. Wait 3 to 5 minutes to ensure optimum venting.
5. Tighten and clean the vent valve.

Checking the direction of rotation

Procedure:

1. Close the isolating valve on the outlet side of module 1 to approximately 1/3 of the maximum flow rate.
2. Start module 1 and record the outlet pressure and flow readings.
3. Stop the module and interchange two of the phases to the module.
4. Restart the module and re-record the outlet pressure and flow readings.
5. Stop the module.
6. Compare the results taken under points 2 and 4. The connection which gave the larger pressure and flow rate is the correct direction of rotation.

The check of the direction of rotation should last for the shortest possible time.

If the booster system has several modules, starting and rotation checks must be made in the order 1-2-3-4 until all modules are running. When module 2 is checked, module 1 must be running. When module 3 is checked, modules 1 and 2 must be running, and so on.

If modules in series are also connected in parallel, the direction of rotation of each section connected in series must be checked.

After having checked the direction of rotation, stop the modules in the order 4-3-2-1.

The booster system is now ready for operation.

Related information

5.1 Booster modules connected in series and in parallel

7.2 Operation

Start

WARNING
Pressurised system
Death or serious personal injury

- The pump must not run against a closed outlet valve for more than 5 seconds.
- Ensure a minimum liquid flow rate through the pump by connecting a bypass or drain to the outlet side of the pump. The drain can be connected to a tank.

WARNING
Pressurised system
Death or serious personal injury

- Be aware of pressurised pipe systems even after shutdown.

The booster modules must be started in the order 1-2-3-4 at intervals of 1 to 2 seconds. See the section on booster modules connected in series and in parallel. If other intervals are required, contact Grundfos.

Module 1 is always the first module on the inlet side. During startup, we recommend to close the isolating valve 3/4 and open it slowly (2 to 3 seconds).

In systems involving the risk of water hammer in connection with start/stop, the necessary measures must be taken to minimise this risk, for example by installing a diaphragm tank.

Operation

During operation, the inlet pressure must be checked in accordance with the section on limitations to operation.

The total outlet pressure and flow rate of modules connected in series must never be changed by stopping one or more of the modules. If other pressures or flow rates are required, the following procedures are applicable:

- Bypass of modules: Install a bypass between two modules. See the section on booster modules connected in series and in parallel. Stop the modules which are not required, and close the isolating valves on either side of the module. See the section on flushing of the booster module. The modules to be bypassed are always the last modules in the flow direction.
- Fit a reducing valve to the outlet pipe. The values stated in the section on limitations to operation must be observed.
- Modules with three-phase motors: Install a frequency converter for speed control of the last booster module in the flow direction. See the section on frequency converter operation.

Stop

The modules must be stopped in reverse order, that is 4-3-2-1, at intervals of 1 to 2 seconds. See the section on booster modules connected in series and in parallel.

If the booster system is taken out of operation for a long period, the modules must be flushed through with clean fresh water. The modules are then left with fresh water until they are to be used again.

Related information

5.1 Booster modules connected in series and in parallel

6.6 Frequency converter operation

7.2.1.2 Flushing of the booster module

7.2.1 Limitations to operation

7.2.1 Limitations to operation

The flow limits stated in the table below apply to the optimum operating ranges of the modules as regards efficiency.

Recommended flow rate at 25 °C / 77 °F				
Type	m^3/h		US gpm	
	50 Hz	60 Hz	50 Hz	60 Hz
BM 3A	0.8 - 4.4	1.0 - 4.7	3.5 - 20	4.4 - 21
BM 5A	2.5 - 6.8	3.0 - 7.7	11-30	13-34
BM 9	4.0 - 11	4.8 - 11	17-48	21-48
BM, BM hp 18	8-22	10-26	35-176	44-115
BM, BM hp 32	15-38	19-45	66-167	84-198
BM, BM hp 46	24-60	28-72	106-264	123-317
BM, BM hp 60	30-75	37-90	132-330	163-396
BM, BM hp 77	38-96	47-120	167-422	207-528
BM, BM hp 95	47-118	57-143	207-520	251-629
BM, BM hp 125	62-156	75-187	273-686	330-823
BM, BM hp 160	78-195	90-215	343-858	396-946
BM, BM hp 215	98-265	115-310	431-1166	506-1364

The pressure limits stated in the table below must be observed.

Recommended pressure [1]						
Type	Inlet pressure				Outlet pressure	
	Min.		Max. [2]		Max. [2]	
	[bar]	[psi]	[bar]	[psi]	[bar]	[psi]
BM 4" Standard and N version	0.5	7.25	50	725	82.7	1200
BM 4" R version	0.5	7.25	60	870	82.7	1200
BM 6" Standard and N version	0.5	7.25	50	725	82.7	1200
BM 6" R version	0.5	7.25	60	870	82.7	1200
BM 8" Standard and N version	1	14.5	25	362	82.7	1200
BM 8" R version	1	14.5	60	870	82.7	1200
BM hp 6"	0.5	7.25	80	1160	82.7	1200
BM hp 8"	1	14.5	80	1160	82.7	1200

1) Contact Grundfos if higher pressures are required.

2) If the maximum inlet or outlet pressure is exceeded, install a safety valve.

7.2.1.1 Cooling

The temperature and flow limits stated in the table below must be observed to ensure sufficient cooling of the motor.

Maximum permissible liquid temperature				
Motors	Maximum liquid temperature		Minimum flow velocity past the motor	Minimum flow rate
	[°C]	[°F]	[m/s (ft/s)]	[m^3/h (US GPM)]
Grundfos 4"	40	104	≥ 0.15 (0.49)	≥ 0.8 (3.5)
Grundfos 6"	40	104	≥ 0.15 (0.49)	≥ 5.5 (24)
Grundfos 8"	40	104	≥ 0.15 (0.49)	≥ 18.5 (81.5)

7.2.1.2 Flushing of the booster module

When a module is flushed, the flow rate must be reduced to maximum 10 % of the rated flow rate at a minimum pressure of 2 bar. The modules must be stopped while the system is flushed. See the section on operation.

When pumping water with a salinity above 2000 ppm NaCl, the module must be flushed through in the flow direction as described in the following.

The flushing procedure depends on the operating condition:

- **Intermittent operation**

  If the booster module has to be stopped for more than 30 minutes, it must be flushed through with clean fresh water for approximately 10 minutes. The flushing must be continued until the module is completely filled with clean fresh water. The salinity of the flush water must be below 500 ppm on the outlet side.
- **Continuous operation**

  BM:

  Once every 24 hours, the module must be stopped and flushed through with the pumped liquid by means of the feed pump.

  BM hp:

  Due to an internal bypass, it is not necessary to stop the BM hp booster modules every 24 hours.
- **Interruption of operation**

  In case of power, pump or motor failure, the booster module must be cooled and flushed through with clean fresh water. The drain plug can be used when flushing the booster module. The booster module can also be disconnected, removed, dismantled and cleaned with clean fresh water.

Related information

7.2 Operation

7.3 Automatic monitoring devices

To protect the modules against dry running and to ensure a minimum flow rate of cooling water past the motors, the system must be fitted with flow and pressure monitoring devices. See the section on booster modules connected in series and in parallel.

The pressure switch on the inlet side is set in accordance with the estimated inlet pressure. At a pressure lower than 0.5 bar for BM 4" and BM, BM hp 6", and 1 bar for BM, BM hp 8", an alarm is given and the module must be stopped without delay.

All outlet connections to the system must be fitted with a flow switch which will stop the system at the set minimum flow rates.

The above monitoring devices ensure a correct inlet pressure and a minimum flow rate of cooling water past the motor.

If the modules are stopped automatically, we recommend automatic flushing. See the section on flushing of the booster module.

Related information

5.1 Booster modules connected in series and in parallel

7.2.1.2 Flushing of the booster module

7.4 Checking of operation

Depending on the number of operating hours of the modules, the following must be checked at suitable intervals:

- flow
- starting frequency
- control and protective devices
- liquid temperature
- minimum flow rate through modules during operation.

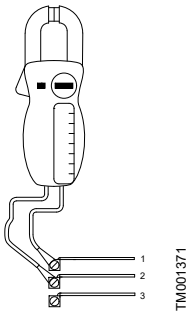
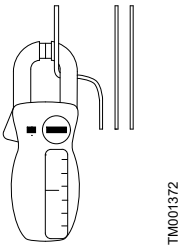
If any of the above checks reveal any abnormal operating details, inspection must be carried out in accordance with the section on fault finding.

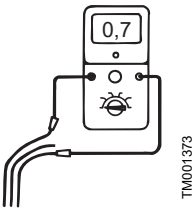
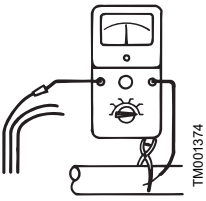
We recommend that you use the log book in the appendix.

Related information

12. Fault finding

7.5 Checking of motor and cable

1. Supply voltage  Voltmeter	Measure the voltage between the phases by means of a voltmeter. Connect the voltmeter to the terminals in the motor-protective circuit breaker.	The voltage must be within -10 % / +6 % of the rated voltage when the motor is loaded. In case of larger variations in voltage, the motor may burn. If the voltage is constantly too high or too low, the motor must be replaced by one corresponding to the supply voltage. Large variations in voltage indicate poor power supply, and the module must be stopped until the fault has been found. Resetting of the motor-protective circuit breaker may be necessary.
2. Current consumption  Ammeter	Measure the current of each phase while the module is operating at a constant outlet pressure, if possible at the capacity where the motor is most heavily loaded. For normal operating current, see the nameplate.	Calculate the current unbalance (%) in the three phases as follows: 1. Add up the three phase currents. 2. Divide this value by three to ascertain the average current. 3. Find the phase current differing most from the average current. 4. Compare the results from points 2 and 3. 5. Divide the difference by the average value and multiply by 100. The result is the current unbalance in percentage. For three-phase motors, the current unbalance must not exceed 5 %. If so, or if the current exceeds the maximum operating current, there are the following possible faults: • The contacts of the motor-protective circuit breaker are burnt. Replace the contacts. • Poor connection in leads, possibly in terminal box. • Too high or too low supply voltage. See point 1. • The motor windings are short-circuited or partly disjointed. See point 3. • A damaged pump is causing the motor to be overloaded. Pull the pump out of the sleeve for overhaul. • The resistance value of the motor windings deviates too much. Move the phases in phase order to a more uniform load. If this does not help, see point 3.
Items 3 and 4: Measurement not necessary if supply voltage and current consumption are normal.		

3. Winding resistance  Ohmmeter	Remove the phase leads from the terminal box. Measure the winding resistance as shown on the drawing.	The highest value must not exceed the lowest value by more than 10 %. If the deviation is higher, pull the pump out of the sleeve. Measure motor and cable separately, and replace or repair defective parts. See the section on servicing the product.
4. Insulation resistance  Megohmmeter	Remove the phase leads from the terminal box. Measure the insulation resistance from each phase to earth (frame). Make sure that the earth connection is made carefully.	If the measured insulation resistance is less than 0.5 MΩ and the power cable is okay, pull the pump out of the sleeve for motor or cable repair or replacement. See the section on servicing the product.

Related information

8. Servicing the product

8. Servicing the product

Check the following at suitable intervals, preferably daily:

- flow rate and pressure
- noise level.

We recommend that you write the operating data in a log book as they may be useful in connection with maintenance for you to see any variation in the pump performance and be able to react to this.

For further information on maintenance and service, refer to the separate documents supplied for each component and to Grundfos Product Center: http://product-selection.grundfos.com/.

If you have any questions, contact the nearest Grundfos company or service workshop.

9. Starting up after standstill

Follow the normal startup procedure step by step.

9.1 Frequency of starts and stops

The following frequency of starts and stops is recommended.

Minimum 1 per year.

Maximum 20 per hour.

Maximum 100 per day.

8" modules: Maximum 20 per day.

10. Taking the product out of operation

Before periods of inactivity, take various precautions to protect the system.

The specific precautions to be taken appear from the table:

Action	Period of inactivity	
	More than 6 hours	More than 1 month
Flush the pump.	x	x
Fill the pump with fresh water.	x	x
Preserve the pump. [3]		x

3) Use the same solution that is used to preserve the membranes.

For more details, see the section on flushing and salinity.

Flush the pumps to prevent stagnant seawater which can start corrosion inside the pump.

Related information

7.2.1.2 Flushing of the booster module

11.1 Frost protection

10.1 Shutting down the pump

1. Stop the feed pump.
2. Start the fresh-water flush pump and flush the system with fresh water, minimum 2 bar for flushing.
3. Flush the system until the salinity is lower than 500 ppm TDS. Only flush desalination systems pumping seawater or similar aggressive liquids.
4. Stop the fresh-water pump.
5. Close all valves to keep the fresh water in the system during the shutdown.

If the flushing takes more than 10 minutes, reduce the flow rate to maximum 10 % of the rated flow rate.

During periods of inactivity, fill the pump with clean fresh water.

11. Storage

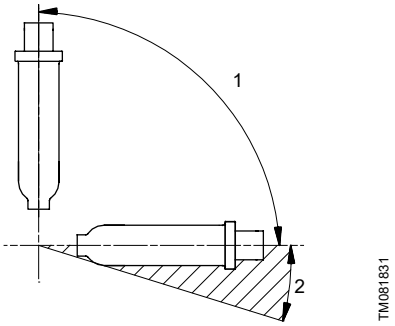
CAUTION
Crushing of feet
Minor or moderate personal injury

- The pump must be stored in dry conditions.
- Observe the centre of gravity marked on the box when lifting the pump.
- Wear personal protective equipment.

During storage, never preserve the pumps with glycerine or similar liquids which are aggressive to the pump materials.

During storage, the booster modules may only be placed in the positions shown in the figure below.

Before storage, the booster modules must be flushed through with clean fresh water. See the section on flushing of the booster module.



Positional requirements

Pos.	Description
1	Allowed
2	Not allowed

If the module has been stored for more than one year, the motor liquid must be checked and refilled, if required.

Motors of standard modules are factory-filled with a Grundfos motor liquid, SML-3, which is frost-proof down to -20 °C.

Motors of modules in special versions may be filled with demineralised water, that is not frost-proof.

Related information

7.2.1.2 Flushing of the booster module

11.1 Frost protection

If the module has to be stored, it must be stored on a frost-free location, or it must be ensured that the motor liquid is frost-proof.

12. Fault finding

DANGER
Electric shock
Death or serious personal injury

- Before starting any work on the product, make sure that the power supply has been switched off and that it cannot be accidentally switched on.

12.1 The booster system stops occasionally. One or more modules stop

Cause	Remedy
No or insufficient water supply. The pressure switch has cut out.	Check that the pressure switch functions normally (without delay) and is adjusted correctly. Check that the minimum inlet pressure is correct.
The capacity is too small. The flow switch has cut out.	• The outlet pipe is totally or partly blocked due to incorrectly adjusted manually operated valve or failure in the magnetic or motor-operated valve. • Check these valves. • The flow switch is faulty or incorrectly adjusted. • Check and adjust the switch if necessary.

12.2 The booster system does not run

Cause	Remedy
The fuses are blown.	Check and replace both main fuses and/or fuses for the control circuit.
The motor-protective circuit breaker has tripped.	Reset the motor-protective circuit breaker. If it trips again, the voltage must be checked.
The magnetic coil of the motor-protective circuit breaker/contactor is short-circuited (not cutting in).	Replace the coil. Check the coil voltage.
The control circuit has cut out or is defective.	Check the control circuit and the contacts in the monitoring devices (pressure switch, flow switch, etc.).
The motor/power cable is defective.	Check motor and cable. See also the section on checking of motor and cable.

Related information

7.5 Checking of motor and cable

12.3 The booster system runs, but gives no water or develops no pressure

Cause	Remedy
No water or too small quantity delivered to the modules or air in the system.	• Check that the inlet pressure during operation is at least 0.5 bar for BM 4" and BM, BM hp 6", and 1 bar for BM, BM hp 8". If this is the case, the water supply is okay. Stop and vent the system. Restart the system as described in the section on operation. • If the module is defective, it must be dismantled and repaired or replaced.
Inlet parts are blocked.	Pull the pump out of the sleeve, and clean the inlet parts.

Related information

7.2 Operation

12.4 The booster system runs at reduced capacity (flow rate and pressure)

Cause	Remedy
Wrong direction of rotation.	See the section on before starting the booster modules.
The valves on the outlet side are partly closed or blocked.	Check the valves.
The outlet pipe is partly blocked by impurities.	• Measure the outlet pressure and compare with the calculated data. • Clean or replace the outlet pipe.
The module is partly blocked by impurities.	• Pull the pump out of the sleeve. • Dismantle, clean and check the pump. Replace defective parts. • Clean the pipes.
The module is defective.	• Pull the pump out of the sleeve. • Dismantle, clean and check the pump. • Replace defective parts. • See the section on servicing the product.

Related information

7.1 Before starting the booster modules

8. Servicing the product

13. Technical data

13.1 Product range

BM, 50 Hz

Pump type	Motor type	Power range [kW (hp)]	Speed range [rpm]	Min. liquid temp. [°C (°F)]	Max. liquid temperature [°C (°F)]		Max. inlet pressure [bar (psi)]		Max. outlet pressure [bar (psi)]
					Corrosive [4]	Non-corrosive	Standard, N ver.	R ver.	
BM 4"									
BM 3A	MS 4000	0.75 - 4 (1 - 5.5)	2840-2880	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 5A	MS 4000	1.1 - 5.5 (1.5 - 7.5)	2840-2880	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 9	MS 4000	1.1 - 5.5 (1.5 - 7.5)	2840-2880	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 6"									
BM 18-5 - BM 18-9	MS 4000	3 - 5.5 (4 - 7.5)	2850-2880	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 18-13 - BM 18-40	MS 6000	7.5 - 22 (10-30)	2850-2890	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 32-3 - BM 32-6	MS 4000	3 - 5.5 (4 - 7.5)	2850-2880	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 32-8 - BM 32-35	MS 6000	7.5 - 30 (10-40)	2850-2890	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 46-2 - BM 46-3	MS 4000	3 - 5.5 (4 - 7.5)	2850-2880	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 46-5 - BM 46-19	MS 6000	7.5 - 30 (10-40)	2850-2890	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 60-5 - BM 60-16	MS 6000	9.2 - 30 (12.5 - 40)	2850-2890	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 8"									
BM 46-20 - BM 46-24	MMS 8000	37 (50)	2870-2900	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 60-20 - BM 60-22	MMS 8000	37-45 (50-60)	2870-2920	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 77-6 - BM 77-8	MS 6000	22-30 (30-40)	2850-2920	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 77-10 - BM 77-20	MMS 8000	37-75 (50-100)	2870-2920	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)

Pump type	Motor type	Power range [kW (hp)]	Speed range [rpm]	Min. liquid temp. [°C (°F)]	Max. liquid temperature [°C (°F)]		Max. inlet pressure [bar (psi)]		Max. outlet pressure [bar (psi)]
					Corrosive [4]	Non-corrosive	Standard, N ver.	R ver.	
BM 95-6 - BM 95-12	MS 6000	26 (35)	2850-2880	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 95-8 - BM 95-20	MMS 8000	37-92 (50-123)	2870-2900	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 125-3	MS 6000	30 (40)	2850-2920	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 125-4-A - BM 125-9	MMS 8000	37-92 (50-123)	2870-2900	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 160-1 - BM160-3-AA	MS 6000	13-30 (17.5 - 40)	2850-2880	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 160-3 - BM 160-8	MMS 8000	37-92 (50-123)	2870-2900	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 215-1-A - BM-2-AA	MS 6000	15-30 (20-40)	2850-2920	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 215-2 - BM 215-5	MMS 8000	45-92 (60-123)	2870-2920	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)

4) Use the R version when working with corrosive liquids. We do not recommend the standard version or the N version.

BM, 60 Hz

Pump type	Motor type	Power range [kW (hp)]	Speed range [rpm]	Min. liquid temp. [°C (°F)]	Max. liquid temperature [°C (°F)]		Max. inlet pressure [bar (psi)]		Max. outlet pressure [bar (psi)]
					Corrosive [5]	Non-corrosive	Standard, N ver.	R ver.	
BM 4"									
BM 3A	MS 4000	0.75 - 4 (1 - 5.5)	3420-3490	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 5A	MS 4000	0.75 - 5.5 (1 - 7.5)	3420-3490	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 9	MS 4000	1.1 - 5.5 (1.5 - 7.5)	3420-3490	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 6"									
BM 18-3 - BM 18-6	MS 4000	3 - 5.5 (4 - 7.5)	3440-3490	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 18-8 - BM 18-30	MS 6000	7.5 - 26 (10-35)	3440-3490	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 32-2 - BM 32-4	MS 4000	3 - 5.5 (4 - 7.5)	3440-3490	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 32-5 - BM 32-23	MS 6000	7.5 - 30 (10-40)	3440-3490	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 46-2	MS 4000	5.5 (7.5)	3440-3490	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 46-3 - BM 46-13	MS 6000	7.5 - 30 (10-40)	3440-3490	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 60-5 - BM 60-10	MS 6000	15-30 (20-40)	3440-3490	0 (32)	25 (77)	40 (104)	50 (725)	60 (870)	82.7 (1200)
BM 8"									
BM 32-27	MMS 8000	37 (50)	3480	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 46-16 - BM 46-19	MMS 8000	37-45 (50-60)	3480-3500	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 60-13 - BM 60-18	MMS 8000	37-55 (50-75)	3480-3500	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)

Pump type	Motor type	Power range [kW (hp)]	Speed range [rpm]	Min. liquid temp. [°C (°F)]	Max. liquid temperature [°C (°F)]		Max. inlet pressure [bar (psi)]		Max. outlet pressure [bar (psi)]
					Corrosive [5]	Non-corrosive	Standard, N ver.	R ver.	
BM 77-4 - BM 77-5	MS 6000	22-30 (30-40)	3440-3480	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 77-6 - BM 77-13	MMS 8000	37-75 (50-100)	3480-3500	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 95-4	MS 6000	26 (35)	3440-3480	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 95-5 - BM 95-13	MMS 8000	37-92 (50-123)	3480	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 125-2	MS 6000	30 (40)	3440-3480	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 125-3-AA - BM 125-6-A	MMS 8000	37-92 (50-123)	3480-3500	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 160-1	MS 6000	22 (30)	3440-3500	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 160-2 - BM 160-5-A	MMS 8000	37-92 (50-123)	3480-3500	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 215-1	MS 6000	30 (40)	3440-3480	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)
BM 215-2-A - BM 215-3-A	MMS 8000	55-92 (75-123)	3480-3500	0 (32)	25 (77)	40 (104)	25 (362)	60 (870)	82.7 (1200)

[5] Use the R version when working with corrosive liquids. We do not recommend the standard version or the N version.

BM hp, 50 Hz

Pump type	Motor type	Power range [kW (hp)]	Speed range [rpm]	Min. liquid temp. [°C (°F)]	Max. liquid temperature [°C (°F)]		Max. inlet pressure [bar (psi)]	Max. outlet pressure [bar (psi)]
					Corrosive [6]	Non-corrosive	R ver.	
BM hp 6"								
BM hp 18	MS 6000	5.5 (7.5)	2870-2890	0 (32)	25 (77)	40 (104)	80 (1160)	82.7 (1200)
BM hp 32	MS 6000	5.5 - 7.5 (7.5 - 10)	2850-2890	0 (32)	25 (77)	40 (104)	80 (1160)	82.7 (1200)
BM hp 46	MS 6000	7.5 - 11 (10-15)	2850-2880	0 (32)	25 (77)	40 (104)	80 (1160)	82.7 (1200)
BM hp 60	MS 6000	5.5 - 13 (7.5 - 17.5)	2850-2890	0 (32)	25 (77)	40 (104)	80 (1160)	82.7 (1200)
BM hp 8"								
BM hp 77	MS 6000	7.5 - 22 (10-30)	2850-2890	0 (32)	25 (77)	40 (104)	80 (1160)	82.7 (1200)
BM hp 95	MS 6000	9.2 - 26 (12.5 - 35)	2850-2890	0 (32)	25 (77)	40 (104)	80 (1160)	82.7 (1200)
BM hp 125	MS 6000	11-30 (15-40)	2850-2890	0 (32)	25 (77)	40 (104)	80 (1160)	82.7 (1200)
BM hp 160	MS 6000	13-30 (17.5 - 40)	2850-2890	0 (32)	25 (77)	40 (104)	80 (1160)	82.7 (1200)
BM hp 215	MS 6000	15-30 (20-40)	2850-2890	0 (32)	25 (77)	40 (104)	80 (1160)	82.7 (1200)

[6] BM hp is only available in the R version.

BM hp, 60 Hz

Pump type	Motor type	Power range [kW (hp)]	Speed range [rpm]	Min. liquid temp. [°C (°F)]	Max. liquid temperature [°C (°F)]		Max. inlet pressure [bar (psi)]	Max. outlet pressure [bar (psi)]
					Corrosive [7]	Non-corrosive	R ver.	
BM hp 6"								
BM hp 18	MS 6000	5.5 (7.5)	3470-3490	0 (32)	25 (77)	40 (104)	80 (1160)	82.7 (1200)
BM hp 32	MS 6000	5.5 - 9.2 (7.5 - 12.5)	3450-3490	0 (32)	25 (77)	40 (104)	80 (1160)	82.7 (1200)
BM hp 46	MS 6000	5.5 - 15 (7.5 - 20)	3450-3490	0 (32)	25 (77)	40 (104)	80 (1160)	82.7 (1200)
BM hp 60	MS 6000	5.5 - 18.5 (7.5 - 25)	3450-3490	0 (32)	25 (77)	40 (104)	80 (1160)	82.7 (1200)
BM hp 8"								
BM hp 77	MS 6000	7.5 - 30 (10-40)	3440-3490	0 (32)	25 (77)	40 (104)	80 (1160)	82.7 (1200)
BM hp 95	MS 6000	9.2 - 26 (12.5 - 35)	3450-3480	0 (32)	25 (77)	40 (104)	80 (1160)	82.7 (1200)
BM hp 125	MS 6000	11-30 (15-40)	3440-3490	0 (32)	25 (77)	40 (104)	80 (1160)	82.7 (1200)
BM hp 160	MS 6000	15-26 (20-35)	3450-3480	0 (32)	25 (77)	40 (104)	80 (1160)	82.7 (1200)
BM hp 215	MS 6000	22-30 (30-40)	3440-3480	0 (32)	25 (77)	40 (104)	80 (1160)	82.7 (1200)

[7] BM hp is only available in the R version.

13.2 Sound pressure level

Pump type	Sound pressure level
BM 4"	< 60 dB(A)
BM 6"	< 70 dB(A)
BM 8"	< 80 dB(A)
BM hp 6"	< 70 dB(A)
BM hp 8"	< 80 dB(A)

13.3 Ambient temperature and installation altitude

Storage and transport temperature: -20 to 60 °C.

Humidity

Relative humidity in accordance with IEC 60068-2-56: lower than 90 % non-condensing.

Installation altitude

0 to 4000 m (13,123 ft), with derating of motor power at altitudes higher than 1000 m (3,280 ft).

14. 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.

The crossed-out wheelie 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*.

15. Document quality feedback

To provide feedback about this document, use your smart device to scan the QR code.

Click here to submit your feedback

Appendix A

A.1. 中国 RoHS

产品中有害物质的名称及含量

部件名称	有害物质					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr6+)	多溴联苯 (PBB)	多溴联苯醚 (PBDE)
泵壳	X	O	O	O	O	O
印刷电路板	X	O	O	O	O	O
紧固件	X	O	O	O	O	O
管件	X	O	O	O	O	O
定子	X	O	O	O	O	O
转子	X	O	O	O	O	O

本表格依据 SJ/T 11364 的规定编制

O：表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。
X： 表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 该规定的限量要求。

该产品环保使用期限为 10 年，标识如左图所示。
此环保期限只适用于产品在安装与使用说明书中所规定的条件下工作

Declaration of conformity

GB: EU declaration of conformity

We, Grundfos, declare under our sole responsibility that the products BM, BM hp, to which the declaration below relates, are in conformity with the Council Directives listed below on the approximation of the laws of the EU member states.

BG: Декларация за съответствие на ЕС

Ние, Grundfos, декларираме с пълната си отговорност, че продуктите BM, BM hp, за които се отнася настоящата декларация, отговарят на следните директиви на Съвета за уеднаквяване на правните разпоредби на държавите-членки на ЕС.

CZ: EU prohlášení o shodě

My společnost Grundfos prohlašujeme na svou plnou odpovědnost, že výrobky BM, BM hp, YYY, na které se toto prohlášení vztahuje, jsou v souladu s níže uvedenými ustanoveními směrnice Rady pro sblížení právních předpisů členských států Evropské unie.

DE: EU-Konformitätserklärung

Wir, Grundfos, erklären in alleiniger Verantwortung, dass das Produkt BM, BM hp, auf das sich diese Erklärung bezieht, mit den folgenden Richtlinien des Rates zur Angleichung der Rechtsvorschriften der EG-/EU-Mitgliedsstaaten übereinstimmt.

DK: EU-overensstemmelseserklæring

Vi, Grundfos, erklærer under ansvar at produkterne BM, BM hp som erklæringen nedenfor omhandler, er i overensstemmelse med Rådets direktiver der er nævnt nedenfor, om indbyrdes tilnærmelse til EU-medlemsstaternes lovgivning.

EE: ELi vastavusdeklaratsioon

Meie, Grundfos, kinnitame ja kanname ainuisikulist vastutust selle eest, et tooted BM, BM hp, mille kohta allolev deklaratsioon käib, on kooskõlas Nõukogu Direktiividega, mis on nimetatud allpool vastavalt vastuvõetud õigusaktidele ühtlustamise kohta EÜ/ELi liikmesriikides.

ES: Declaración de conformidad UE

Grundfos declara, bajo su exclusiva responsabilidad, que los productos a los que concierne la presente declaración, marcados con la denominación BM, BM hp, son conformes con las Directivas del Consejo que figuran a continuación, basadas en la aproximación de las legislaciones correspondientes de los Estados miembros de la UE.

FI: EY-vaatimustenmukaisuusvakuutus

Grundfos vakuuttaa omalla vastuullaan, että tuotteet BM, BM hp, joita tämä vakuutus koskee, ovat EU:n jäsenvaltioiden lainsäädännön lähentämiseen tähtäävien Euroopan neuvoston direktiivien vaatimusten mukaisia seuraavasti.

FR : Déclaration de conformité UE

Nous, Grundfos, déclarons sous notre entière responsabilité que les produits BM, BM hp auxquels la déclaration ci-dessous fait référence, sont conformes aux directives du Conseil répertoriées ci-dessous, concernant le rapprochement des législations des États membres de l'UE.

GR: Δήλωση συμμόρφωσης ΕΕ

Εμείς, η Grundfos, δηλώνουμε με αποκλειστικά δική μας ευθύνη ότι τα προϊόντα BM, BM hp, στα οποία αναφέρεται η παρακάτω δήλωση, συμμορφώνονται με τις παρακάτω Οδηγίες του Συμβουλίου περί προσέγγισης των νομοθεσιών των κρατών μελών της ΕΕ.

HR: EU Izjava o usklađenosti

Mi, Grundfos, izjavljujemo s punom odgovornošću da su proizvodi BM, BM hp na koja se izjava odnosi u nastavku, u skladu s direktivama Vijeća dolje navedene o usklađivanju zakona država članica EZ-a/EU-a.

HU: EU megfelelőségi nyilatkozat

Mi, a Grundfos vállalat, teljes felelősséggel kijelentjük, hogy a(z) BM, BM hp termékek, amelyre az alábbi nyilatkozat vonatkozik, megfelelnek az Európai Unió tagállamainak jogi irányelveit összehangoló tanács alábbi előírásainak.

IT: Dichiarazione di conformità UE

Grundfos dichiara sotto la sua esclusiva responsabilità che i prodotti BM, BM hp, ai quali si riferisce questa dichiarazione, sono conformi alle seguenti direttive del Consiglio riguardanti il riavvicinamento delle legislazioni degli Stati membri UE.

LT: ES atitikties deklaracija

Mes, „Grundfos“, su visa atsakomybe pareiškiame, kad produktai BM, BM hp, kuriems skirta ši deklaracija, atitinka toliau nurodytas Tarybos Direktyvas dėl ES šalių narių įstatymų suderinimo.

LV: ES atbilstības deklarācija

Uzņēmums Grundfos ar pilnu atbildību paziņo, ka produkti BM, BM hp, uz kuriem attiecas tālāk redzamā deklarācija, atbilst tālāk norādītajām Padomes direktīvām par ES dalībvalstu normatīvo aktu tuvināšanu.

NL: EC Conformiteitsverklaring

Wij, Grundfos, verklaren geheel onder eigen verantwoordelijkheid dat de producten BM, BM hp, waarop de onderstaande verklaring betrekking heeft, in overeenstemming zijn met de onderstaande Richtlijnen van de Raad inzake de onderlinge aanpassing van de wetgeving van de EU-lidstaten.

PL: Deklaracja zgodności WE

Firma Grundfos oświadcza z pełną odpowiedzialnością, że jej produkty BM, BM hp, których dotyczy niniejsza deklaracja, są zgodne z następującymi dyrektywami Rady w sprawie zbliżenia przepisów prawnych państw członkowskich UE.

PT: Declaração de conformidade UE

A Grundfos declara sob sua única responsabilidade que os produtos BM, BM hp, aos quais diz respeito a declaração abaixo, estão em conformidade com as Diretivas do Conselho sobre a aproximação das legislações dos Estados Membros da UE.

RO: Declarație de conformitate UE

Subscrisa, Grundfos, declară pe propria răspundere că produsele BM, BM hp, la care se referă declarația de mai jos, sunt în conformitate cu Directivele Consiliului enumerate mai jos privind apropierea legislațiilor statelor membre UE.

SR: EU deklaracija o usklađenosti

Mi, Grundfos, izjavljujemo na našu isključivu odgovornost da su proizvodi BM, BM hp, na koje se dole navedena deklaracija odnosi, u skladu sa dole navedenim Direktivama Saveta o usklađivanju zakona zemalja članica EU.

SE: EU-försäkran om överensstämmelse

Vi, Grundfos, försäkrar under ansvar att produkterna BM, BM hp, som omfattas av nedanstående försäkran, är i överensstämmelse med de rådsdirektiv om inbördes närmande till EU-medlemsstaternas lagstiftning som listas nedan.

SI: Izjava o skladnosti EU

V Grundfosu s polno odgovornostjo izjavljamo, da so izdelki BM, BM hp, na katere se spodnja izjava nanaša, v skladu s spodnjimi direktivami Sveta o približevanju zakonodaje za izenačevanje pravnih predpisov držav članic EU.

SK: EÚ vyhlásenie o zhode

My, spoločnosť Grundfos, vyhlasujeme na svoju plnú zodpovednosť, že produkty BM, BM hp, na ktoré sa vyhlásenie uvedené nižšie vzťahuje, sú v súlade s ustanoveniami nižšie uvedených smerníc Rady pre zblíženie právnych predpisov členských štátov EÚ.

UA: Декларація відповідності ЕU

Ми, компанія Grundfos, під нашу одноосібну відповідальність заявляємо, що вироби BM, BM hp, до яких відноситься нижченаведена декларація, відповідають директивам Ради, переліченим нижче, щодо тотожності законів країн-членів ЄС.

AR: إقرار مطابقة الاتحاد الأوروبي (EU)

نقر نحن، جروندفوس، بمقتضى مسؤوليتنا الفردية بأن المنتجات BM, BM hp التي يختص بها الإقرار أدناه تكون مطابقة لتوجيهات المجلس المذكورة أدناه بشأن التقريب بين قوانين الدول أعضاء الاتحاد الأوروبي (EU).

- Machinery Directive (2006/42/EC)
  Standard used: EN 809:1998+A1:2009
- RoHS Directives: 2011/65/EU and 2015/863/EU
  Standard: EN IEC 63000:2018
- EMC Directive (2014/30/EU)
  Standard used : EN 60034-1:2010.
  (Applies only to pumps with Tempcon sensors)
- Ecodesign Directive (2009/125/EC)

This EC/EU declaration of conformity is only valid when published as part of the Grundfos installation and operating instructions(publication number 150095).

Bjerringbro, 20 September 2021

Jimm Feldborg
Head of PD IND
Grundfos Holding A/S
Poul Due Jensens Vej 7
8850 Bjerringbro, Denmark
www.grundfos.com
Person authorised to compile technical file and empowered to sign the EU declaration of conformity.

Declaration of conformity

UK declaration of conformity

We, Grundfos, declare under our sole responsibility that the products to which the declaration below relates, are in conformity with UK regulations, standards and specifications to which conformity is declared, as listed below:

Valid for products:

BM, BM hp

- Supply of Machinery (Safety) Regulations 2008.
  Standard used: EN 809:1998, A1:2009.
- The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2019.
  Standard used: EN IEC 63000:2018
- Electromagnetic Compatibility Regulations 2016
  Standard used: EN 60034-1:2010.
  (Applies only to pumps with Tempcon sensors)
- The Ecodesign for Energy-Related Products and Energy Information Regulations 2019 and 2021.

This UK declaration of conformity is only valid when accompanying Grundfos instructions.

UK Importer: Grundfos Pumps ltd. Grovebury Road, Leighton Buzzard, LU7 4TL.

Jimm Feldborg
Head of PD IND
Grundfos Holding A/S
Poul Due Jensens Vej 7
8850 Bjerringbro, Denmark
www.grundfos.com
Manufacturer and person empowered to sign the UK declaration of conformity.
10000339567

Declaration of conformity

GB: Ukrainian declaration of conformity

We, Grundfos, declare under our sole responsibility that the products to which the declaration below relates, are in conformity with Ukrainian resolutions, standards and specifications to which conformity is declared, as listed below:

Valid for Grundfos products:

BM, BM hp

Resolution No. 139, 2017 - Technical Regulations on Use of Certain Hazardous Substances in Electrical and Electronic Equipment

Standards used: ДСТУ EN IEC 63000:2020

Resolution No. 62, 2013 - Technical Regulations on Safety of Machines

Resolution No. 533, 2018 - Amendments to some provisions

Standards used: ДСТУ EN 809:2015

Resolution No 804, 2018 - Establishing a Framework for the Setting of Ecodesign Requirements for Energy-related Products

Only valid for products with Tempcon sensor

Resolution No. 1077, 2015 - Technical Regulations on Electromagnetic Compatibility

Resolution No. 533, 2018 - Amendments to some provisions

Standards used: ДСТУ EN 60034-1:2016

Importer address:

LLC Grundfos Ukraine, Business Center Europe

103, Stolychne Shose, UA-03026 Kyiv, Ukraine

Phone: (+380) 44 237 0400

Email: ukraine@grundfos.com

This Ukrainian declaration of conformity is only valid when accompanying Grundfos instructions.

UA: Українська декларація відповідності

Ми, Grundfos, заявляємо про свою виключну відповідальність за те, що продукція, до якої відноситься ця декларація, відповідає вимогам українським постановам, стандартам та технічним умовам, щодо яких заявлена відповідність, як зазначено нижче:

Дійсно для продуктів Grundfos:

BM, BM hp

Постанова № 139 від 2017 р., Технічний регламент обмеження використання деяких небезпечних речовин в електричному та електронному обладнанні

Застосовані стандарти: ДСТУ EN IEC 63000:2020

Постанова № 62 від 2013 р., Про затвердження Технічного регламенту безпеки машин

Постанова № 533 від 2018 р., Про внесення змін до деяких положень

Застосовані стандарти: ДСТУ EN 809:2015

Постанова № 804 від 2018 р., Встановлення системи для визначення вимог з екодизайну енергоспоживчих продуктів

Діє лише для продукції із датчиками Tempcon.

Постанова № 1077 від 2015 р., Технічний регламент з електромагнітної сумісності обладнання

Постанова № 533 від 2018 р., Про внесення змін до деяких положень

Застосовані стандарти: ДСТУ EN 60034-1:2016

Адреса імпортера:

ТОВ "Грундфос Україна", Бізнес Центр "Європа"

Столичне шосе, 103, м. Київ, 03026, Україна

Телефон: (+380) 44 237 0400

Ел. пошта: ukraine@grundfos.com

Ця українська декларація відповідності дійсна лише за наявності інструкцій Grundfos.

Bjerringbro, 15 March 2022

Jimm Feldborg
Head of PD IND
Grundfos Holding A/S
Poul Due Jensens Vej 7
8850 Bjerringbro, Denmark
www.grundfos.com

GB: Manufacturer and person empowered to sign the Ukrainian declaration of conformity
UA: Виробник та особа, уповноважена підписати українську декларацію відповідності
[10000413940]

Declaration of conformity

GB: Moroccan declaration of conformity

We, Grundfos, declare under our sole responsibility that the products to which the declaration below relates, are in conformity with Moroccan laws, orders, standards and specifications to which conformity is declared, as listed below:

Valid for Grundfos products:

BM, BM hp

Law No 24-09, 2011 Safety of products and services and the following orders:

Order No 2573-14, 2015 Safety Requirements for Low Voltage Electrical Equipment

Standards used: NM EN 809+A1:2015

For pumps with Tempcon sensors:

Order No 2574-14, 2015 Electromagnetic Compatibility

Standards used: NM EN 60034-1:2019

This Moroccan declaration of conformity is only valid when accompanying Grundfos instructions.

FR : Déclaration de conformité marocaine

Nous, Grundfos, déclarons sous notre seule responsabilité que les produits auxquels se réfère la déclaration ci-après sont conformes aux lois, arrêtés, normes et spécifications marocains pour lesquels la conformité est déclarée, tels qu'énumérés ci-dessous :

Valable pour les produits Grundfos :

BM, BM hp

Loi n° 24-09 de 2011 relative à la sécurité des produits et des services et les arrêtés suivants :

Arrêté n° 2573-14 de 2015 relatif au matériel électrique destiné à être utilisé dans certaines limites de tension

Normes utilisées : NM EN 809+A1:2015

Pour les pompes équipées de capteurs Tempcon:

Arrêté n° 2574-14 de 2015 relatif à la compatibilité électromagnétique des équipements

Normes utilisées : NM EN 60034-1:2019

Cette déclaration de conformité marocaine est uniquement valide lorsqu'elle accompagne les notices Grundfos.

بريطانيا العظمى: إقرار المطابقة المغربي

نقر نحن، جروندفوس، بمقتضى مسؤوليتنا وحدنا بأن المنتجات التي يتعلق بها الإقرار أدناه، تتوافق مع القوانين والقرارات والمعايير والمواصفات المغربية التي تم إقرار المطابقة بشأنها، كما هو موضح أدناه:

سارٍ على منتجات جروندفوس:

BM, BM hp

قانون رقم 24-09، 2011 بشأن سلامة المنتجات والخدمات والقرارات التالية:

القرار رقم 2573-14، 2015 بشأن متطلبات السلامة للمعدات الكهربائية ذات الجهد المنخفض

المعايير المستخدمة: NM EN 809+A1:2015

بالنسبة للمضخات المزودة بحساسات Tempcon:

القرار رقم 2574-14، 2015 بشأن التوافق الكهرومغناطيسي

المعايير المستخدمة: NM EN 60034-1:2019

يكون إقرار المطابقة المغربي هذا صالحًا فقط عند إرفاق تعليمات جروندفوس.

Bjerringbro, 19 August 2020

Erik Andersen
Senior Manager
Grundfos Holding A/S
Poul Due Jensens Vej 7
8850 Bjerringbro, Denmark
www.grundfos.com

GB: Manufacturer and person empowered to sign the Moroccan declaration of conformity.

FR : Fabricant et personne habilitée à signer la Déclaration de conformité marocaine.

بريطانيا العظمى: الجهة المصنعة والشخص المفوض بتوقيع إقرار المطابقة المغربي.

10000270344

RUS

BM, BMh

Руководство по эксплуатации

Руководство по эксплуатации на данное изделие является составным и включает в себя несколько частей:
Часть 1: настоящее «Руководство по эксплуатации».
Часть 2: электронная часть «Паспорт. Руководство по монтажу и эксплуатации» размещенная на сайте компании Грундфос. Перейдите по ссылке, указанной в конце документа.
Часть 3: информация о сроке изготовления, размещенная на фирменной табличке изделия.

Сведения о сертификации:

Насосы типа BM, BMh сертифицированы на соответствие требованиям Технических регламентов Таможенного союза: ТР ТС 004/2011 «О безопасности низковольтного оборудования»; ТР ТС 010/2011 «О безопасности машин и оборудования»; ТР ТС 020/2011 «Электромагнитная совместимость технических средств».

KAZ

BM, BMh

Пайдалану бойынша нұсқаулық

Атаулы өнімге арналған пайдалану бойынша нұсқаулық құрамалы болып келеді және келесі бөлімдерден тұрады:
1 бөлім: атаулы «Пайдалану бойынша нұсқаулық»
2 бөлім: Грундфос компаниясының сайтында орналасқан электронды бөлім «Төлқұжат, Құрастыру және пайдалану бойынша нұсқаулық». Құжат соңында көрсетілген сілтеме арқылы өтіңіз.
3 бөлім: өнімнің фирмалық тақташасында орналасқан шығарылған уақыты жөніндегі мәлімет

Сертификаттау туралы ақпарат:

BM, BMh типті сорғылары «Төмен вольты жабдықтардың қауіпсіздігі туралы» (ТР ТС 004/2011), «Машиналар және жабдықтар қауіпсіздігі туралы» (ТР ТС 010/2011) «Техникалық заттардың электрлі магниттік сәйкестілігі» (ТР ТС 020/2011) Кеден Одағының техникалық регламенттерінің талаптарына сәйкес сертификатталды.

KG

BM, BMh

Пайдалануу боюнча колдонмо

Аталган жабдууну пайдалануу боюнча колдонмо курамдык жана өзүнө бир нече бөлүкчөнү камтыйт:
1-Бөлүк: «Пайдалануу боюнча колдонмо»
2-Бөлүк: «Паспорт. Пайдалануу жана монтаж боюнча колдонмо» электрондук бөлүгү Грундфос компаниянын сайтында жайгашкан. Документтин аягында көрсөтүлгөн шилтемеге кайрылыңыз.
3-Бөлүк: жабдуунун фирмалык тактасында жайгашкан даярдоо мөөнөтү тууралуу маалымат.

Шайкештик жөнүндө декларация

BM, BMh түрүндөгү соргучтар Бажы Биримдиктин Техникалык регламенттин талаптарына ылайыктуу тастыкталган: ТР ТБ 004/2011 «Төмөн вольттук жабдуунун коопсуздугу жөнүндө»; ТР ТБ 010/2011 «Жабдуу жана машиналардын коопсуздугу жөнүндө»; ТР ТБ 020/2011 «Техникалык каражаттардын электрмагниттик шайкештиги».

ARM

BM, BMh

Շահագործման ձեռնարկ

Տվյալ սարքավորման շահագործման ձեռնարկը բաղկացած է մի քանի մասերից.
Մաս 1. սույն «Շահագործման ձեռնարկ»:
Մաս 2. Էլեկտրոնային մաս. այն է՝ «Անձնագիր: Մոնտաժման և շահագործման ձեռնարկ» տեղադրված «Գրունդֆոս». Անցեք փաստաթղթի վերջում նշված հղումով.
Մաս 3. տեղեկություն արտադրման ամսաթվի վերաբերյալ՝ նշված սարքավորման պիտակի վրա:

Տեղեկություններ հավաստագրման մասին՝
BM, BMh տիպի պոմպերը սերտիֆիկացված են համաձայն Մաքսային Միության տեխնիկական կանոնակարգի պահանջների՝ ТР ТС 004/2011 «Ցածրավոլտ սարքավորումների վերաբերյալ», ТР ТС 010/2011«Մեքենաների և սարքավորումների անվտանգության վերաբերյալ» ; ТР ТС 020/2011 «Տեխնիկական միջոցների էլեկտրամագնիսական համատեղելիության վերաբերյալ»:

http://net.grundfos.com/qr/i/99133244

10000113391	0916
ECM: 1193920	

Argentina
Bombas GRUNDFOS de Argentina S.A.
Ruta Panamericana km. 37.500industin 1619 - Garín Pcia. de B.A.
Tel.: +54-3327 414 444
Fax: +54-3327 45 3190

Australia
GRUNDFOS Pumps Pty. Ltd.
P.O. Box 2040
Regency Park
South Australia 5942
Tel.: +61-8-8461-4611
Fax: +61-8-8340-0155

Austria
GRUNDFOS Pumpen Vertrieb Ges.m.b.H.
Grundfosstraße 2
A-5082 Grödig/Salzburg
Tel.: +43-6246-883-0
Fax: +43-6246-883-30

Belgium
N.V. GRUNDFOS Bellux S.A.
Boomsesteenweg 81-83
B-2630 Aartselaar
Tel.: +32-3-870 7300
Fax: +32-3-870 7301

Bosnia and Herzegovina
GRUNDFOS Sarajevo
Zmaja od Bosne 7-7A
BiH-71000 Sarajevo
Tel.: +387 33 592 480
Fax: +387 33 590 465
www.ba.grundfos.com
E-mail: grundfos@bih.net.ba

Brazil
BOMBAS GRUNDFOS DO BRASIL
Av. Humberto de Alencar Castelo Branco, 630
CEP 09850 - 300
São Bernardo do Campo - SP
Tel.: +55-11 4393 5533
Fax: +55-11 4343 5015

Bulgaria
Grundfos Bulgaria EOOD
Slatina District
Iztochna Tangenta street no. 100
BG - 1592 Sofia
Tel.: +359 2 49 22 200
Fax: +359 2 49 22 201
E-mail: bulgaria@grundfos.bg

Canada
GRUNDFOS Canada inc.
2941 Brighton Road
Oakville, Ontario
L6H 6C9
Tel.: +1-905 829 9533
Fax: +1-905 829 9512

China
GRUNDFOS Pumps (Shanghai) Co. Ltd.
10F The Hub, No. 33 Suhong Road
Minhang District
Shanghai 201106 PRC
Tel.: +86 21 612 252 22
Fax: +86 21 612 253 33

Colombia
GRUNDFOS Colombia S.A.S.
Km 1.5 vía Siberia-Cota Conj. Potrero Chico,
Parque Empresarial Arcos de Cota Bod. 1A.
Cota, Cundinamarca
Tel.: +57(1)-2913444
Fax: +57(1)-8764586

Croatia
GRUNDFOS CROATIA d.o.o.
Buzinski prilaz 38, Buzin
HR-10010 Zagreb
Tel.: +385 1 6595 400
Fax: +385 1 6595 499
www.hr.grundfos.com

Czech Republic
GRUNDFOS Sales Czechia and Slovakia s.r.o.
Čajkovského 21
779 00 Olomouc
Tel.: +420-585-716 111

Denmark
GRUNDFOS DK A/S
Martin Bachs Vej 3
DK-8850 Bjerringbro
Tel.: +45-87 50 50 50
Fax: +45-87 50 51 51
E-mail: info_GDK@grundfos.com
www.grundfos.com/DK

Estonia
GRUNDFOS Pumps Eesti OÜ
Peterburi tee 92G
11415 Tallinn
Tel.: + 372 606 1690
Fax: + 372 606 1691

Finland
OY GRUNDFOS Pumput AB
Trukkikuja 1
FI-01360 Vantaa
Tel.: +358-(0) 207 889 500

France
Pompes GRUNDFOS Distribution S.A.
Parc d'Activités de Chesnes
57, rue de Malacombe
F-38290 St. Quentin Fallavier (Lyon)
Tel.: +33-4 74 82 15 15
Fax: +33-4 74 94 10 51

Germany
GRUNDFOS GMBH
Schlüterstr. 33
40699 Erkrath
Tel.: +49-(0) 211 929 69-0
Fax: +49-(0) 211 929 69-3799
E-mail: infoservice@grundfos.de
Service in Deutschland:
kundendienst@grundfos.de

Greece
GRUNDFOS Hellas A.E.B.E.
20th km. Athinon-Markopoulou Av.
P.O. Box 71
GR-19002 Peania
Tel.: +0030-210-66 83 400
Fax: +0030-210-66 46 273

Hong Kong
GRUNDFOS Pumps (Hong Kong) Ltd.
Unit 1, Ground floor, Siu Wai industrial Centre
29-33 Wing Hong Street & 68 King Lam Street, Cheung Sha Wan
Kowloon
Tel.: +852-27861706 / 27861741
Fax: +852-27858664

Hungary
GRUNDFOS South East Europe Kft.
Tópark u. 8
H-2045 Törökbálint
Tel.: +36-23 511 110
Fax: +36-23 511 111

India
GRUNDFOS Pumps India Private Limited
118 Old Mahabalipuram Road
Thoraipakkam
Chennai 600 097
Tel.: +91-44 2496 6800

Indonesia
PT GRUNDFOS Pompa
Graha intirub Lt. 2 & 3
Jln. Cililitan Besar No.454. Makasar,
Jakarta Timur
ID-Jakarta 13650
Tel.: +62 21-469-51900
Fax: +62 21-460 6910 / 460 6901

Ireland
GRUNDFOS (Ireland) Ltd.
Unit A, Merrywell Business Park
Ballymount Road Lower
Dublin 12
Tel.: +353-1-4089 800
Fax: +353-1-4089 830

Italy
GRUNDFOS Pompe Italia S.r.l.
Via Gran Sasso 4
I-20060 Truccazzano (Milano)
Tel.: +39-02-95838112
Fax: +39-02-95309290 / 95838461

Japan
GRUNDFOS Pumps K.K.
1-2-3, Shin-Miyakoda, Kita-ku
Hamamatsu
431-2103 Japan
Tel.: +81 53 428 4760
Fax: +81 53 428 5005

Kazakhstan
Grundfos Kazakhstan LLP
7' Kyz-Zhibek Str., Kok-Tobe micr.
KZ-050020 Almaty Kazakhstan
Tel.: +7 (727) 227-98-55/56

Korea
GRUNDFOS Pumps Korea Ltd.
6th Floor, Aju Building 679-5
Yeoksam-dong, Kangnam-ku, 135-916
Seoul, Korea
Tel.: +82-2-5317 600
Fax: +82-2-5633 725

Latvia
SIA GRUNDFOS Pumps Latvia
Deglava biznesa centrs
Augusta Deglava ielā 60
LV-1035, Rīga,
Tel.: + 371 714 9640, 7 149 641
Fax: + 371 914 9646

Lithuania
GRUNDFOS Pumps UAB
Smolensko g. 6
LT-03201 Vilnius
Tel.: + 370 52 395 430
Fax: + 370 52 395 431

Malaysia
GRUNDFOS Pumps Sdn. Bhd.
7 Jalan Peguam U1/25
Glenmarie industrial Park
40150 Shah Alam, Selangor
Tel.: +60-3-5569 2922
Fax: +60-3-5569 2866

Mexico
Bombas GRUNDFOS de México
S.A. de C.V.
Boulevard TLC No. 15
Parque industrial Stiva Aeropuerto
Apodaca, N.L. 66600
Tel.: +52-81-8144 4000
Fax: +52-81-8144 4010

Netherlands
GRUNDFOS Netherlands
Veluwezoom 35
1326 AE Almere
Postbus 22015
1302 CA ALMERE
Tel.: +31-88-478 6336
Fax: +31-88-478 6332
E-mail: info_gnl@grundfos.com

New Zealand
GRUNDFOS Pumps NZ Ltd.
17 Beatrice Tinsley Crescent
North Harbour Industrial Estate
Albany, Auckland
Tel.: +64-9-415 3240
Fax: +64-9-415 3250

Norway
GRUNDFOS Pumper A/S
Strømsveien 344
Postboks 235, Leirdal
N-1011 Oslo
Tel.: +47-22 90 47 00
Fax: +47-22 32 21 50

Poland
GRUNDFOS Pompy Sp. z o.o.
ul. Klonowa 23
Baranowo k. Poznania
PL-62-081 Przeźmierowo
Tel.: (+48-61) 650 13 00
Fax: (+48-61) 650 13 50

Portugal
Bombas GRUNDFOS Portugal, S.A.
Rua Calvet de Magalhães, 241
Apartado 1079
P-2770-153 Paço de Arcos
Tel.: +351-21-440 76 00
Fax: +351-21-440 76 90

Romania
GRUNDFOS Pompe România SRL
S-PARK BUSINESS CENTER, Clădirea A2, etaj 2
Str. Tipografilor, Nr. 11-15, Sector 1, Cod 013714
Bucuresti, Romania
Tel.: 004 021 2004 100
E-mail: romania@grundfos.ro

Serbia
Grundfos Srbija d.o.o.
Omladinskih brigada 90b
11070 Novi Beograd
Tel.: +381 11 2258 740
Fax: +381 11 2281 769
www.rs.grundfos.com

Singapore
GRUNDFOS (Singapore) Pte. Ltd.
25 Jalan Tukang
Singapore 619264
Tel.: +65-6681 9688
Faxax: +65-6681 9689

Slovakia
GRUNDFOS s.r.o.
Prievozská 4D 821 09 BRATISLAVA
Tel.: +421 2 5020 1426
sk.grundfos.com

Slovenia
GRUNDFOS LJUBLJANA, d.o.o.
Leskoškova 9e, 1122 Ljubljana
Tel.: +386 (0) 1 568 06 10
Fax: +386 (0)1 568 06 19
E-mail: tehnika-si@grundfos.com

South Africa
GRUNDFOS (PTY) LTD
16 Lascelles Drive, Meadowbrook Estate
1609 Germiston, Johannesburg
Tel.: (+27) 10 248 6000
Fax: (+27) 10 248 6002
E-mail: lgradidge@grundfos.com

Spain
Bombas GRUNDFOS España S.A.
Camino de la Fuentecilla, s/n
E-28110 Algete (Madrid)
Tel.: +34-91-848 8800
Fax: +34-91-628 0465

Sweden
GRUNDFOS AB
Box 333 (Lunnagårdsgatan 6)
431 24 Mölndal
Tel.: +46 31 332 23 000
Fax: +46 31 331 94 60

Switzerland
GRUNDFOS Pumpen AG
Bruggacherstrasse 10
CH-8117 Fällanden/ZH
Tel.: +41-44-806 8111
Fax: +41-44-806 8115

Taiwan
GRUNDFOS Pumps (Taiwan) Ltd.
7 Floor, 219 Min-Chuan Road
Taichung, Taiwan, R.O.C.
Tel.: +886-4-2305 0868
Fax: +886-4-2305 0878

Thailand
GRUNDFOS (Thailand) Ltd.
92 Chaloem Phrakiat Rama 9 Road
Dokmai, Pravej, Bangkok 10250
Tel.: +66-2-725 8999
Fax: +66-2-725 8998

Turkey
GRUNDFOS POMPA San. ve Tic. Ltd. Sti.
Gebze Organize Sanayi Bölgesi
Ihsan dede Caddesi
2. yol 200. Sokak No. 204
41490 Gebze/ Kocaeli
Tel.: +90 - 262-679 7979
Fax: +90 - 262-679 7905
E-mail: satis@grundfos.com

Ukraine
ТОВ "ГРУНДФОС УКРАЇНА"
Бізнес Центр Європа
Столичне шосе, 103
м. Київ, 03131, Україна
Tel.: (+38 044) 237 04 00
Fax: (+38 044) 237 04 01
E-mail: ukraine@grundfos.com

United Arab Emirates
GRUNDFOS Gulf Distribution
P.O. Box 16768
Jebel Ali Free Zone, Dubai
Tel.: +971 4 8815 166
Fax: +971 4 8815 136

United Kingdom
GRUNDFOS Pumps Ltd.
Grovebury Road
Leighton Buzzard/Beds. LU7 4TL
Tel.: +44-1525-850000
Fax: +44-1525-850011

U.S.A.
Global Headquarters for WU
856 Koomey Road
Brookshire, Texas 77423 USA
Phone: +1-630-236-5500

Uzbekistan
Grundfos Tashkent, Uzbekistan
The Representative Office of Grundfos Kazakhstan in Uzbekistan
38a, Oybek street, Tashkent
Tel.: (+998) 71 150 3290 / 71 150 3291
Fax: (+998) 71 150 3292

150095 **05.2024**

ECM: 1423435

www.grundfos.com

GRUNDFOS