

BMS

BMS hs, BMS hp and BMSX

Installation and operating instructions



Original installation and operating instructions

These installation and operating instructions describe Grundfos BMS.

Sections 1-5 give the information necessary to be able to unpack, install and start up the product in a safe way.

Sections 6-12 give important information about the product, as well as information on service, fault finding and disposal of the product.

CONTENTS

	Page
1. General information	2
1.1 Hazard statements	2
1.2 Notes	2
2. Receiving the product	3
2.1 Transporting the product	3
2.2 Inspecting the product	3
3. Installation requirements	3
3.1 Reading the guide	3
3.2 Foundation	3
4. Mechanical installation	3
4.1 BMS hs pump	3
4.2 BMS hp pump	6
4.3 BMSX system	7
5. Electrical connection	8
5.1 BMS hs pump	8
5.2 Product range	9
5.3 BMS hp pump	11
5.4 BMSX system	11
6. Commissioning the product	12
6.1 Checking the power supply	12
6.2 BMS hs pump	13
6.3 BMS hp pump	14
6.4 BMSX system	15
6.5 Low-pressure flow control	17
7. Storing the product	17
8. Product introduction	17
8.1 Nameplate	17
8.2 Pumped liquids	17
8.3 Filtration	18
8.4 Flushing and salinity	18
9. Servicing the product	18
9.1 Motor bearings	18
9.2 Preventive maintenance	19
10. Starting up the product after standstill	19
10.1 Frequency of starts and stops	19
11. Taking the product out of operation	19
11.1 BMS hs pump	20
11.2 BMS hp pump	20
11.3 BMSX system	21
11.4 Flushing	21
12. Fault finding the product	22
12.1 BMS hs	22
12.2 BMS hp	23
12.3 Pressure exchanger of BMSX	24
13. Technical data	25
14. Disposing of the product	26

1. General information**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 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.



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

2. Receiving the product



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

2.1 Transporting the product

The pumps are supplied from the factory in proper packing in which they must remain until installation.

2.2 Inspecting the product

1. Check that the pump has not been damaged during transportation.
2. Check that the type designation corresponds to the order. See the pump nameplate.
3. Compare the motor voltage and frequency details on the motor and frequency converter nameplates with the power supply available.

3. Installation requirements

3.1 Reading the guide

When installing the products, read the instructions in the table below.

System/ pump	Step	Action	Section
BMS hs	1	Mechanical installation	4.1 BMS hs pump
	2	Electrical connection	5.1 BMS hs pump
	3	Commissioning	6.2 BMS hs pump
BMS hp	1	Mechanical installation	4.2 BMS hp pump
	2	Electrical connection	5.3 BMS hp pump
	3	Commissioning	6.3 BMS hp pump
BMSX	1	Mechanical installation	4.3 BMSX system
	2	Electrical connection	5.4 BMSX system
	3	Commissioning	6.4 BMSX system

3.2 Foundation

Construct the foundation to safely support the booster system or pumps under all conditions. The pump and motor must be installed on the same level.

The foundation must be strong enough to support the weight of both units.

3.2.1 Vibration damping

Use the vibration dampers supplied with the BMS hs pump.

4. Mechanical installation

4.1 BMS hs pump

The pump can be mounted directly on the floor or on a base frame (accessory).



TM05 9569 4113

Fig. 1 BMS hs pump

Location

To ensure sufficient cooling of the motor, leave a free space of minimum 100 mm behind the non-drive end of the motor.

Lifting and handling the motor

Use straps when lifting the motor, and lower it down slowly.

WARNING

Falling objects

Death or serious personal injury

- Observe local regulations concerning limits for manual lifting or handling.
- Use straps on the motor, and do not lift in the fan guard.
- Make sure that the crane is suitable for the job. Use certified and approved lifting equipment. See the nameplate.



TM05 9235 3613

Fig. 2 Example of how to lift the motor



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.

Motor installation



Use vibration dampers.

The motor must be levelled. If there is a gap between the foundation and the motor, use a spirit level, a feeler gauge and shims to level the motor. Then secure the motor by means of suitable screws depending on the foundation.

Direction of rotation

WARNING

Electric shock

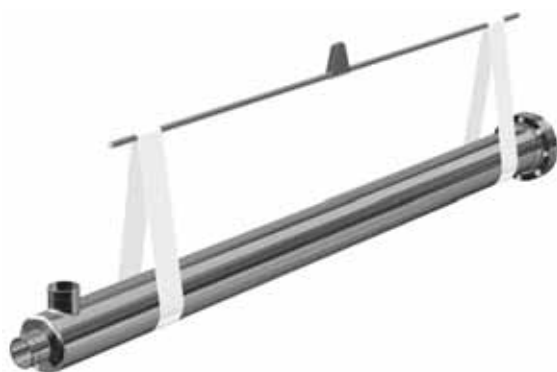


Death or serious personal injury
 - The electrical installation must be carried out by an authorised person in accordance with local regulations.

Connect the power supply and check the direction of rotation. See section 5. *Electrical connection*. The direction of rotation must correspond to the direction under normal operation. See the installation and operating instructions for the motor.

Lifting and handling the bare shaft pump

Hoist the bare shaft pump into place, and lower it down slowly.



TM05 9236 3613

Fig. 3 How to lift the pump

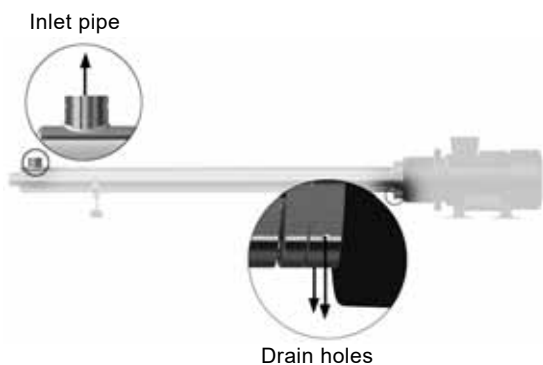
In order to make the pump fit the motor flange, fit the pump support foot delivered with the product. Lower the pump until the support foot reaches the floor.

Assembling the motor and the pump



When assembling the pump and motor, make sure the inlet pipe points up towards position 12 o'clock and the drain holes point downwards.

If necessary, you can change the position of the inlet pipe later. See section *Position of the inlet pipe*.



TM06 0964 1314

Fig. 4 Position of drain holes. Note that BMS hs 7-42 has no drain holes.

Assembly of the motor and the pump

Assemble the motor and pump before you tighten the screws. To ensure correct installation, follow this procedure.








Step	Description	Picture
1	Fit all four screws for motor and pump connection. Do not tighten the screws yet.	TM05 9234 3613
2	Adjust the gap by means of a feeler gauge or similar tool. Tighten one screw by hand.	TM05 9232 3613
3	Adjust the gap 180° opposite the screw you just tightened. Do not tighten the screw. Move the pump to adjust the gap.	TM05 9251 3613
4	Move the pump, and adjust the gap by means of the feeler gauge. Tighten the screw by hand. If the inlet pipe has to be turned, see section <i>Position of the inlet pipe</i> .	TM05 9345 3613
5	When the gap has been adjusted, cross-tighten all screws to 33 Nm.	TM05 9346 3613
6	Fasten the support foot to the foundation.	TM05 9345 3613




The support foot must not impose any tension on the pump.

Position of the inlet pipe

To change the position of the pipe, follow this procedure.

Step	Description	Picture
1a	All pumps, excluding BMS hs 7-42: mark up the pump sleeve and union nut, then loosen the screws.	 TM05 9573 4013
1b	BMS hs 7-42: mark up the pump sleeve and union nut, then loosen the screws.	 TM 07 7904 4720
2	Turn the inlet pipe to the required position, and make sure the union nut follows.	 TM05 9343 3613
3	Check that the markings are aligned.	 TM05 9342 3613
4a	Fit all screws again. All pumps excluding BMS hs 7-42: tighten all screws to 33 Nm	 TM05 9343 3613
4b	BMS hs 7-42: tighten the M8 screw marked in the photo to 24 Nm and all other screws to 33 Nm.	 TM07 7965 4820
5	Fasten the support foot to the foundation.	 TM05 9345 3613

Step	Description	Picture
6	Check that the drain holes are positioned correctly. Note that BMS hs 7-42 has no drain holes.	 TM06 5336 4715 Drain holes

Flushing the system



To avoid impurities in the pump, flush the pipes before you connect the pump inlet and outlet pipes.

Pipe connection

Both the inlet and the outlet pipes are fitted with clamp liners for Victaulic couplings and must be supported close to the end of the pipe.

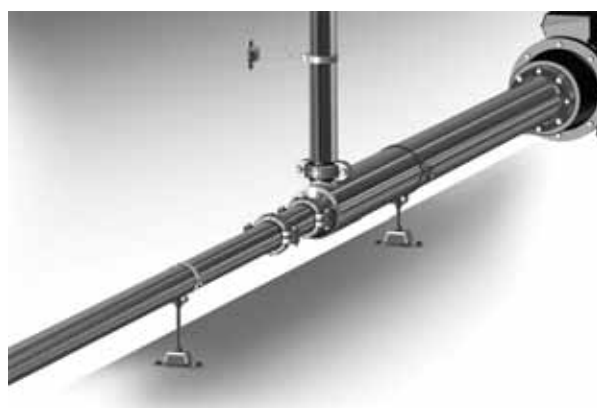


Fig. 5 Pipe support



WARNING Pressurised system

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

When fitting the Victaulic couplings, allow a gap of 3.5 mm between the two pipes.

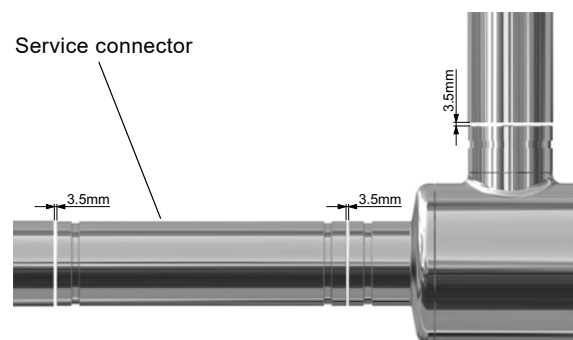


Fig. 6 Gap between the pipes

TM05 9230 3613

TM05 9344 3613

Service connector installation

In order to facilitate service of the pump and motor, install the delivered service connector in the system.

1. Fit the two rubber parts.
2. Install the service connector.



Fig. 7 Position of rubber parts

3. Move the two rubber parts over the service connector.



Fig. 8 Position of service connector and rubber parts

4. Fit the Victaulic couplings and tighten the bolts to 33 Nm.



Fig. 9 Victaulic couplings

In case of a BMS hs pump, you are now ready for electrical connection. See section [5.1 BMS hs pump](#).

In case of a BMSX system, see section [BMS hp pump installation](#).

4.2 BMS hp pump



Fig. 10 BMS hp pump

Motor and pump installation



We recommend that you use vibration dampers.

The pump and motor must be installed on the same level. If there is a gap between the foundation and the motor or the pump, use a spirit level, a feeler gauge and shims to level the motor. Then secure the motor and the pump by means of suitable screws (4 × M10) depending on the foundation.

Lifting and handling the pump

Hoist the pump into place.

WARNING

Falling objects

Death or serious personal injury




- Observe local regulations concerning limits for manual lifting or handling.
- Use straps for lifting the pump, and do not lift in the fan guard.
- Use certified and approved lifting equipment. See the nameplate.



Fig. 11 Example of how to lift the pump

Position of the inlet pipe

To change the position of the pipe, follow this procedure.

Step	Description	Picture
1	Loosen all eight bolts in the flange.	
2	Turn the inlet pipe to the required position. Tighten all screws to 33 Nm.	
3	Check the position of the drain holes, they must point downwards	

TM06 0962 1314

TM06 0963 1314

TM06 5336 4715

Flushing the system



To avoid impurities, flush the pipes before you connect the pump inlet and outlet pipes.

Pipe connection

Both the inlet and the outlet pipe are fitted with clamp liners for Victaulic couplings and must be supported close to the end of the pipe.



Fig. 12 Pipe support

TM06 0959 1214



WARNING Pressurised system

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

When fitting the Victaulic couplings, allow a gap of 3.5 mm between the two pipes.

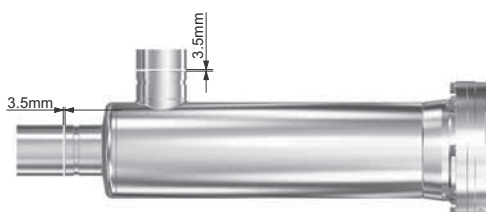


Fig. 13 Gap between the pipes

TM06 0960 1214

4.3 BMSX system

A BMSX system consists of a BMS hs pump as a high-pressure pump and a BMS hp pump as a booster pump. The pressure exchanger of BMSX is installed in order to recover energy from the high-pressure concentrate.



Fig. 14 BMSX system

TM05 9569 4113 - TM07 2946 4518
TM05 9571 4113 - TM06 1045 1414

BMS hs pump installation

See section 4.1 BMS hs pump.

BMS hp pump installation

See section 4.2 BMS hp pump.

Lifting and handling the pressure exchanger of BMSX



Fig. 15 Pressure exchanger of BMSX

Gr-1015354

WARNING

Falling objects



Death or serious personal injury
- Observe local regulations concerning limits for manual lifting or handling.
- Make sure that the crane is suitable for the job. Use certified and approved lifting equipment. See the nameplate.

Use suitable straps when lifting the unit. Carefully hoist the pressure exchanger into place, and lower it down. Secure the unit or units to a frame, and ensure a stress-free installation.



To avoid internal damage, do not lift the pressure exchanger by the ports or put undue strain on the port fittings.

Flushing the system



Thoroughly flush associated pipes with water filtered to 5 microns before installing the PX unit. Foreign material may cause damage.

Pipe connection of the pressure exchanger

Low-pressure and high-pressure inlet and outlet pipes are fitted with clamp liners for Victaulic couplings. See the pipe location on the unit.

Both the inlet and the outlet pipes must be supported close to the end of the pipes.

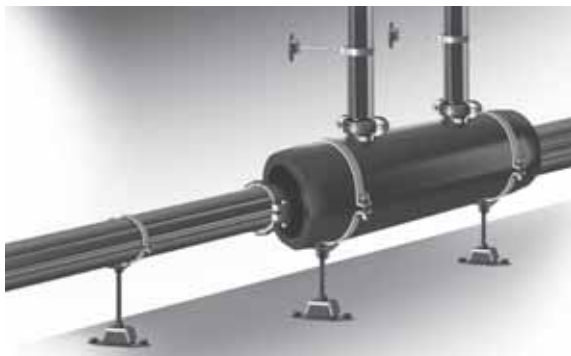


Fig. 16 Horizontal and vertical support of pipes

TMM05 9348 3613



WARNING

Pressurised system

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

When fitting the Victaulic couplings, allow a gap of 3.5 mm between the two pipes. See fig. 13.



The PX unit must not be supported by its pipe fittings nor must the PX unit be allowed to support pipes or manifolds.

5. Electrical connection

DANGER

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.



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.



The electrical connection must be carried out by an authorised electrician in accordance with local regulations and the wiring diagrams for the motor protection, starter and monitoring devices used. Make the electrical connections in the terminal box.

Wiring must be done according to the wiring diagram supplied with the Grundfos product.

5.1 BMS hs pump

Mains and signal cables

See the quick guide or installation and operating instructions for the drive or the motor.

In case of a BMS hs pump, you are now ready for commissioning. See section [6.2 BMS hs pump](#).

5.2 Product range

BMS hs PM booster system factory-supplied with frequency converter

BMS hs booster	Power P2		Max. speed	Frequency converter	Product number
	[kW]	[hp]	[rpm]		
BMS 17-22 HS-E-C-P-A	70	94	5500	CUE 3 × 380-500 V IP55 75 kW	99470789
BMS 17-22 HS-E-C-P-A	85	114	5500	CUE 3 × 380-500 V IP55 90 kW	99470792
BMS 17-22 HS-E-C-P-A	70	94	5000	CUE 3 × 380-500 V IP55 75 kW	99471122
BMS 17-22 HS-E-C-P-A	44	59	4500	CUE 3 × 380-500 V IP55 45 kW	99471131
BMS 17-22 HS-E-C-P-A	52	70	4500	CUE 3 × 380-500 V IP55 55 kW	99471148
BMS 30-14 HS-E-C-P-A	85	114	5500	CUE 3 × 380-500 V IP55 90 kW	99539742
BMS 30-26 HS-E-C-P-A	140	188	5500	CUE 3 × 380-500 V IP54 160 kW	99471199
BMS 30-26 HS-E-C-P-A	160	215	5500	CUE 3 × 380-500 V IP54 160 kW	99471213
BMS 30-26 HS-E-C-P-A	140	188	5000	CUE 3 × 380-500 V IP54 160 kW	99471220
BMS 30-26 HS-E-C-P-A	100	134	4500	CUE 3 × 380-500 V IP54 110 kW	99471222
BMS 46-17 HS-E-C-P-A	180	241	5500	CUE 3 × 380-500 V IP54 200 kW	99471243
BMS 46-17 HS-E-C-P-A	140	188	5000	CUE 3 × 380-500 V IP54 160 kW	99471246
BMS 46-17 HS-E-C-P-A	160	215	5000	CUE 3 × 380-500 V IP54 160 kW	99471248
BMS 60-17 HS-E-C-P-A	180	241	5000	CUE 3 × 380-500 V IP54 200 kW	99471276

BMS hs AC booster system

BMS hs booster	Power P2		Max. speed	Product number
	[kW]	[hp]	[rpm]	
BMS 7-42 HS-B-C-P-B	30	40	5000	99277174
BMS 17-22 HS-B-C-P-A	52	70	5000	99022832
BMS 17-22 HS-B-C-P-A	70	94	5500	99022843
BMS 17-22 HS-B-C-P-A	85	114	5500	99022844
BMS 30-14 HS-B-C-P-A	85	114	5500	99022845
BMS 30-26 HS-B-C-P-A	120	161	4500	99022846
BMS 30-26 HS-B-C-P-A	140	188	5500	99022847
BMS 30-26 HS-B-C-P-A	160	215	5500	99022848
BMS 46-17 HS-B-C-P-A	160	215	5500	99022849
BMS 46-17 HS-B-C-P-A	180	241	5500	99059893
BMS 60-17 HS-B-C-P-A	180	241	5000	99022850

Recommended frequency converter for BMS hs AC systems

Frequency converter	Part number
CUE 3 × 380-500 V IP55 30 kW	99616770
CUE 3 × 380-500 V IP55 45 kW	99616772
CUE 3 × 380-500 V IP55 55 kW	99616773
CUE 3 × 380-500 V IP55 75 kW	99616774
CUE 3 × 380-500 V IP55 90 kW	99616775
CUE 3 × 380-500 V IP54 110 kW	99616776
CUE 3 × 380-500 V IP54 132 kW	99616777
CUE 3 × 380-500 V IP54 160 kW	99616778
CUE 3 × 380-500 V IP54 200 kW	99616779

BMS hp MG booster system 6"

Type	Motor output [P2]		Rated current I_N [A]	Efficiency total η [%]	Length [L]		Weight [kg]		Ship. vol. [m ³]	Product number R-version
	[kW]	[hp]			[mm]	[in]	Net	Gross		
BMS 17-3 HP	3	4.0	6.8 - 5.4	64	1281.0	50.4	96.1	186.1	0.962	98872087
BMS 17-5 HP	5.5	7.5	10.6 - 9.3	66	1458.0	57.4	96.1	186.1	0.155	98872088
BMS 17-7 HP	7.5	10.0	14.2 - 12.0	67	1567.0	61.7	135.2	225.2	0.155	98872090
BMS 30-3 HP	5.5	7.5	10.6 - 9.3	66	1432.0	56.4	119.9	209.9	0.152	98872101
BMS 30-5 HP	7.5	10.0	14.2 - 12.0	68	1624.0	63.9	136.1	226.1	0.160	98872102
BMS 30-7 HP	11	15.0	20.8 - 17.2	68	2018.0	79.4	189.3	279.3	0.270	98872103
BMS 46-2 HP	5.5	7.5	10.6 - 9.3	63	1382.0	54.4	118.5	208.5	0.148	98872104
BMS 46-4 HP	11	15.0	20.8 - 17.2	66	1798.0	70.8	183.4	273.4	0.243	98872105
BMS 46-6A HP	15	20.0	28.0 - 22.4	67	2024.0	79.7	202.7	292.7	0.271	98872106
BMS 60-2 HP	7.5	10.0	14.2 - 12.0	60	1370.0	53.9	128.7	218.7	0.137	98872107
BMS 60-4 HP	11	15.0	20.8 - 17.2	66	1798.0	70.8	183.3	273.3	0.243	98872109
BMS 60-6 HP	18.5	25.0	34.5 - 28.0	69	2068.0	81.4	215.9	305.9	0.277	98872110

BMS hp MG is available for other voltages on request.

BMS hp MG booster system 8"

Type	Motor output [P2]		Rated current I_N [A]	Efficiency total η [%]	Length [L]		Weight [kg]		Ship. vol. [m ³]	Product number R-version
	[kW]	[hp]			[mm]	[in]	Net	Gross		
BMS 77-2A HP	11.0	15.0	20.8 - 17.2	64	1857.0	73.1	225.0	325.0	0.250	98872111
BMS 77-3 HP	18.5	25.0	34.5 - 28.0	70	2029.0	79.9	256.0	356.0	0.272	98872112
BMS 95-2 HP	15.0	20.0	28.0 - 22.4	69	1857.0	73.1	234.0	334.0	0.250	98872113
BMS 95-3 HP	22.0	30.0	40.0 - 32.5	71	2055.0	80.9	270.0	370.0	0.311	98872116
BMS 125-1 HP	18.5	25.0	34.5 - 28.0	68	1807.0	71.1	255.0	355.0	0.244	98872117
BMS 125-2AA HP	22.0	30.0	40.0 - 32.5	69	1988.0	78.3	281.0	381.0	0.302	98872119
BMS 160-1A HP	15.0	20.0	28.0 - 22.4	62	1763.0	69.4	208.0	308.0	0.239	98872120
BMS 160-1 HP	22.0	30.0	40.0 - 32.5	68	1833.0	72.2	271.0	371.0	0.280	98872121
BMS 160-2AA HP	30.0	41.0	56.0 - 50.0	76	2022.0	79.6	300.0	390.0	0.514	98494526
BMS 215-1A HP	30.0	41.0	56.0 - 50.0	78	2005.0	78.9	300.0	390.0	0.510	98494527
BMS 215-1 HP	37.0	50.0	68.0 - 61.0	79	2030.0	79.9	346.0	436.0	0.516	98494528

BMS hp MG is available for other voltages on request.

BMS hp MGE booster system 6"

Type	Motor output [P2]		Rated current I_N [A]	Efficiency total η [%]	Length [L]		Weight [kg]		Ship. vol. [m ³]	Product number R-version
	[kW]	[hp]			[mm]	[in]	Net	Gross		
BMS 17-3 HP	3	4	6.2 - 5.00	64	1281	50.4	101.4	191.4	0.399	98494496
BMS 17-5 HP	5.5	7.5	11.0 - 8.80	66	1458	57.4	103.0	192.8	0.399	98494497
BMS 17-7 HP	7.5	10	14.8 - 11.6	67	1567	61.7	145.6	235.6	0.234	98494498
BMS 30-3 HP	5.5	7.5	11.0 - 8.80	68	1432	56.4	126.6	216.6	0.399	98494499
BMS 30-5 HP	7.5	10.0	14.8 - 11.6	68	1624	63.9	146.5	236.6	0.399	98494500
BMS 30-7 HP	11.0	15	22.5 - 18.8	69	2018	79.4	219.9	309.8	0.441	98494511
BMS 46-2 HP	5.5	7.5	11.0 - 8.80	69	1382	54.4	125.0	215.0	0.399	98494512
BMS 46-4 HP	11.0	15	22.5 - 18.8	70	1798	70.8	213.8	303.8	0.399	98494513
BMS 46-6A HP	15	20	30.0 - 26.0	71	2024	79.7	235	325	0.442	98494514
BMS 60-2 HP	7.5	10	14.8 - 11.6	70	1370	53.9	139.0	229.1	0.399	98494515
BMS 60-4 HP	11.0	15.0	22.5 - 18.8	71	1798	70.8	213.7	303.7	0.399	98494516
BMS 60-6 HP	18.5	25.0	29.9 - 35.7	72	2068	81.4	248.3	338.3	0.500	98494517

BMS hp MGE is available for other voltages on request.

BMS hp MGE booster system 8"

Type	Motor output [P2]		Rated current	Efficiency total	Length [L]		Weight [kg]		Ship. vol.	Product number
	[kW]	[hp]	I _N [A]	η [%]	[mm]	[in]	Net	Gross	[m ³]	R-version
BMS 77-2A HP	11	15	22.5 - 18.8	70	1.822	71.7	153	243	0.388	98494518
BMS 77-3 HP	18.5	25	37-31	71	1.994	78.5	180	270	0.425	98494519
BMS 95-2 HP	15	20	30-26	72	1.822	71.7	167	257	0.388	98494520
BMS 95-3 HP	22	30	44-35	72	2.020	79.5	197	287	0.435	98494521
BMS 125-1 HP	18.5	25	37-31	74	1.771	69.7	180	270	0.378	98494522
BMS 125-2AA HP	22	30	44-35	74	1.952	76.9	197	287	0.42	98494523
BMS 160-1A HP	15	20	30-26	74	1.727	67.9	167	257	0.368	98494524
BMS 160-1 HP	22	30	44-35	75	1.797	70.7	197	287	0.387	98494525

BMS hp MGE is available for other voltages on request.

5.3 BMS hp pump

See the quick guide or installation and operating instructions supplied with the product.

See the nameplate to identify the motor type and type of control board.

Default settings for the BMS hp motor:

- minimum speed: 1700 rpm
- maximum speed: 3600 rpm
- setpoint input: 4-20 mA
- relay: alarm.



If not controlled by a 4-20 mA signal, the external setpoint input must be disabled by the remote control.

5.4 BMSX system

For electrical installation, see sections [5.1 BMS hs pump](#) and [5.3 BMS hp pump](#).

6. Commissioning the product

These commissioning guidelines concern both fresh-water installations and systems for desalination.

- BMS hs pump.
- BMS hp pump.
- BMSX system. See section [6.4 BMSX system](#).



WARNING

High sound pressure level

Death or serious personal injury
- Use hearing protection.



WARNING

Pressurised system

Death or serious personal injury
- Be aware of pressurised pipe systems even after shutdown.

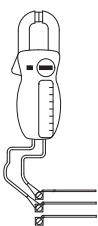
Commissioning of BMSX booster systems must be performed by Grundfos technicians or by audited partners acting as the service suppliers for Grundfos.

Furthermore, we recommend that commissioning of BMS hs and BMS hp systems is performed by Grundfos technicians or audited partners.

Commissioning includes report and on-site training of the people who will be responsible for maintaining and monitoring the system.

6.1 Checking the power supply

1. Supply voltage

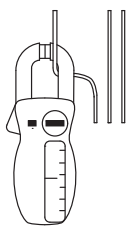


TM00 1371 3597

Measure the voltage between the phases with a voltmeter. Connect the voltmeter to the terminals of the frequency converter.

When the motor is loaded, the voltage must be within $\pm 5\%$ of the rated voltage. If the voltage varies more than that, the motor may burn. If the voltage is constantly too high or too low, replace the motor with a motor that corresponds to the supply voltage. Large variations in the supply voltage indicate poor power supply, and you must stop the pump until the defect has been found. It may be necessary to reset the frequency converter.

2. Current consumption



TM00 1372 3597

Measure the current of each phase while the pump is operating at a constant outlet pressure (if possible at the performance where the motor is most heavily loaded). For information on the normal operating current, see the nameplate of the motor.

The difference between the current of the phase with the highest current consumption and the one with the lowest current consumption must not exceed 10 % of the lowest current consumption.

If it does, or if the current exceeds the full-load current, check these possible faults:

- A damaged pump is causing the motor to be overloaded. Pull the pump out of the sleeve for overhaul.
- The motor windings are short-circuited or partly disjointed. The motor must be repaired.
- Too high or too low supply voltage.
- Poor connection in leads. Weak cables. Replace cables if necessary.

In case a further motor check is required, proceed as follows:

- BMS hs with PM or AC motor: Disconnect the frequency converter and lock the shaft of the PM motor. Even unpowered, a motor with permanent magnets will generate voltage if rotated.
- BMS hp with MG or MGE motor: Follow the instructions in the installation and operating instructions for the MG or MGE motor.

6.2 BMS hs pump

6.2.1 Before startup

Follow these instructions to ensure correct startup of the BMS hs pump.



WARNING

Description of hazard

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



For type, amount and interval of greasing, see the nameplate on the motor.

Check that the power supply is according to the nameplate.

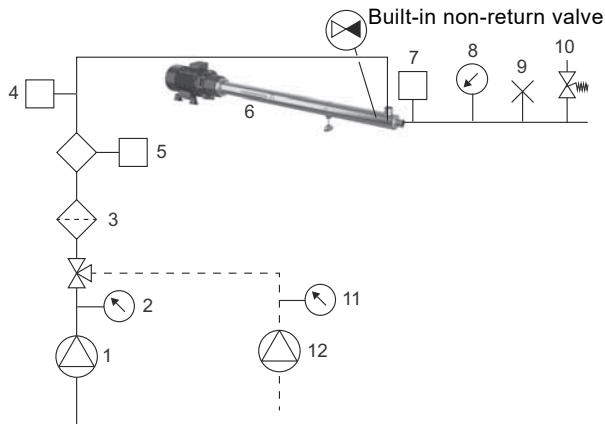


Fig. 17 Example of BMS hs pump

Pos.	Description
1	Raw-water feed pump
2	Pressure gauge (raw water)
3	Filter
4	Low-pressure switch
5	Flowmeter
6	BMS hs pump with built-in non-return valve
7	High-pressure switch
8	Pressure gauge (BMS hs outlet pressure)
9	Vent
10	Pressure-relief valve
11	Pressure gauge (fresh-water pump)
12	Fresh-water flush pump*

* A fresh-water flush pump must be installed in systems for seawater desalination or similar systems.

6.2.2 Startup

If an outlet valve is installed, we recommend that you open the valve 1/4 of a turn when starting the pump or system.



Do not operate pumps against a closed valve.

To start up a BMS hs pump, proceed as follows:

1. Start the feed pump (1), and check that the inlet pressure (2) of the BMS hs pump (6) is higher than 1.0 bar and lower than 35.0 bar.
2. Vent the BMS hs pump (6).
3. Start the BMS hs pump (6). Ramp up the BMS hs pump (6) according to factory settings. See fig. 18 (1 and 2).



Ramp up from 0 to 1700 rpm within three seconds.

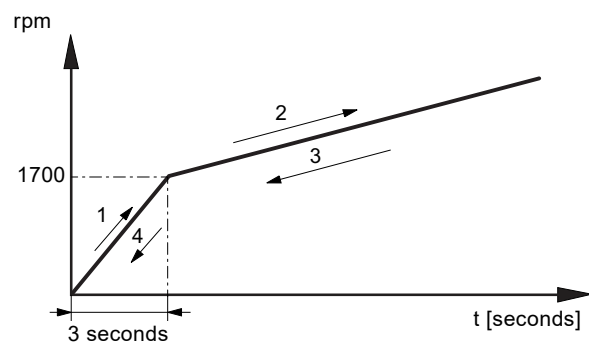


Fig. 18 Ramping up

Default ramp-up time:

- 0 to 1700 rpm in maximum three seconds (1). This setting must not be changed.
 - Ramp up from 1700 rpm is set to 1500 rpm/min (1000 rpm/40 seconds) (2). It can be changed according to application requirement.
4. Set the outlet pressure of the pump (8) to the desired value. See fig. 17.
 5. Check that the inlet pressure (2) of the pump is higher than 1.0 bar and lower than 35.0 bar.



Make sure that the BMS hs pump is dry-run protected.



Do not touch electrical connections if the pump has reverse flow.

6.3 BMS hp pump

6.3.1 Before startup

Follow these instructions to ensure correct startup of the BMS hp pump.

WARNING



Description of hazard

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



For type, amount and interval of greasing, see the nameplate on the motor.

Check that the power supply is according to the nameplate.

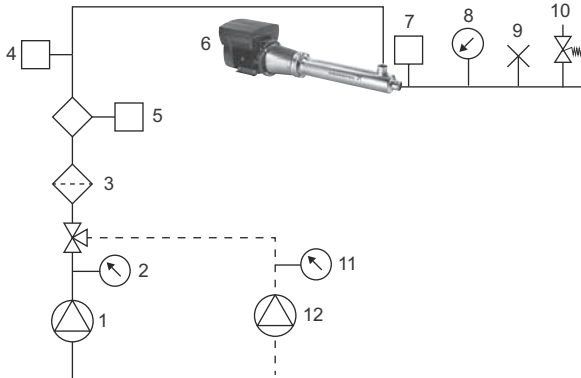


Fig. 19 Example of BMS hp pump

TM06 1078 1514

Pos.	Description
1	Raw-water feed pump
2	Pressure gauge (raw water)
3	Filter
4	Low-pressure switch
5	Flowmeter
6	BMS hp pump
7	High-pressure switch
8	Pressure gauge (BMS hp outlet pressure)
9	Vent
10	Pressure-relief valve
11	Pressure gauge (fresh-water pump)
12	Fresh-water flush pump*

* A fresh-water flush pump must be installed in systems for seawater desalination or similar systems.



BMS hp pumps with the motor sizes mentioned below must have lower inlet pressure during startup.

The motor sizes and maximum inlet pressure during startup can be found below.

Maximum inlet pressure during startup [bar]	
MG motors size	
3.0 kW	60
MGE motors size	
3.0 kW	15
5.5 kW	30
7.5 kW	40
11.0 kW	55

6.3.2 Startup

If an outlet valve is installed, we recommend that you open the valve 1/4 of a turn when starting the pump or the system.



Do not operate pumps against a closed valve.

To start up a BMS hp pump, proceed as follows:

1. Start the feed pump (1), and check that the inlet pressure (2) of the BMS hp pump (6) is higher than 0.5 bar (6" BMS hp) or 1.0 bar (8" BMS hp).
2. Vent the BMS hp pump.
3. Start the BMS hp pump.
4. Ramp up the BMS hp pump according to factory settings. See fig. 20 (1).



Ramp up from 0 to 1700 rpm within three seconds.

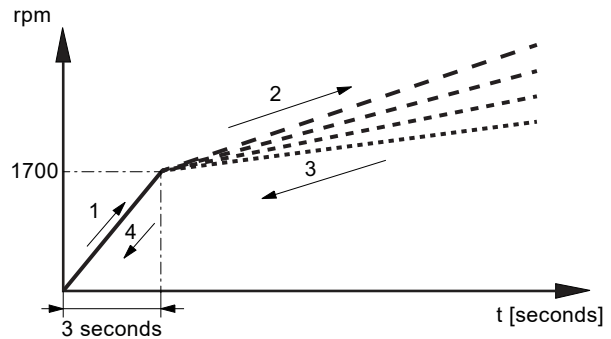


Fig. 20 Ramping up, BMS hp

TM06 1079 1614

Default ramp-up time:

- 0 to 1700 rpm in maximum three seconds. This setting must not be changed.
 - Ramp up from 1700 rpm to maximum speed of the system. It can be changed according to application requirement.
5. Set the outlet pressure of the BMS hp pump to the desired value. See fig. 19.
 6. Check that the inlet pressure of the pump is higher than 0.5 bar (6" BMS hp) or 1.0 bar (8" BMS hp) and lower than 82.7 bar.



Make sure that the BMS hp pump is dry-run protected.

6.4 BMSX system

6.4.1 Flow control and balancing

Flow rates and pressures in a typical BMSX system vary slightly over the life of the system due to temperature variations, membrane fouling and feed salinity variations. The rotor of the pressure exchanger is powered by the flow of fluid through the unit. The speed of the rotor is self-adjusting over the operating range of the pressure exchanger pump.

6.4.2 Before startup

Follow these instructions to ensure correct startup of the BMSX system.

WARNING



Description of hazard

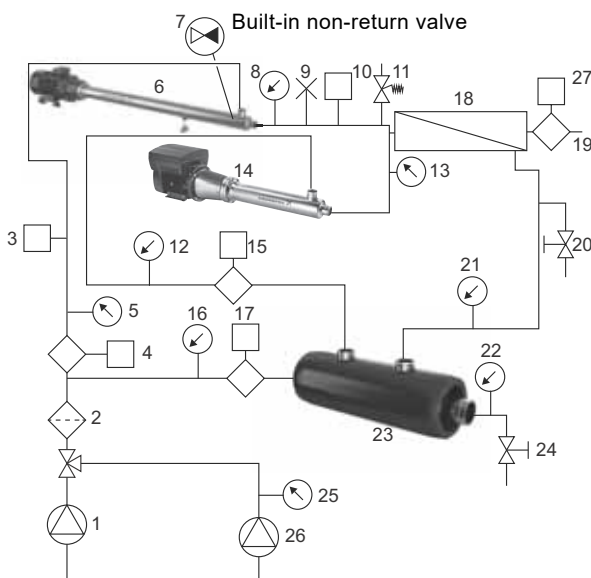
Death or serious personal injury

- Make sure that the pump and the system are fully vented before startup.

1. See section [6.2 BMS hs pump](#) and [6.3 BMS hp pump](#).
2. Check that the installation corresponds to the diagram.



A pressure gauge must be installed near each pipe connection of the PX unit or PX unit array to facilitate monitoring of PX unit performance.



TM05 9617 4213

Fig. 21 Example of BMSX booster system

Pos.	Description
1	Raw-water feed pump
2	Filter
3	Low-pressure switch
4	Flowmeter
5	Pressure gauge (raw water)
6	BMS hs pump with built-in non-return valve
7	Non-return valve
8	Pressure gauge (BMS hs outlet pressure)
9	Vent
10	High-pressure switch
11	Pressure-relief valve
12	Pressure gauge (BMS hp inlet pressure)
13	Pressure gauge (BMS hp outlet pressure)
14	BMS hp pump
15	Flowmeter (high-pressure raw water)
16	Pressure gauge (low-pressure raw water)
17	Flowmeter (low-pressure raw water)
18	Membrane filter
19	Permeate
20	Cleaning flush valve
21	Pressure gauge (high-pressure concentrate)
22	Pressure gauge (low-pressure concentrate)
23	Pressure exchanger of BMSX
24	Concentrate valve
25	Pressure gauge (fresh-water pump)
26	Fresh-water flush pump
27	Flowmeter

6.4.3 Startup

To start up a BMSX system, proceed as follows:

1. All valves must be in their normal operating positions.
2. Start the raw-water feed pump (1). When the raw-water feed pump is started, the system is filled with water. Make sure that the entire system is vented. The feed flow (17) through the pressure exchanger (23) may or may not cause the rotor to begin to rotate. Rotation will be confirmed by a humming noise.
3. Adjust the flow rate and pressure within the maximum and minimum values stated on the PX nameplate.



Never operate the main high-pressure pump without the BMS hp pump. An interlock must be installed, so the high-pressure pump will automatically shut down if the booster pump shuts down.

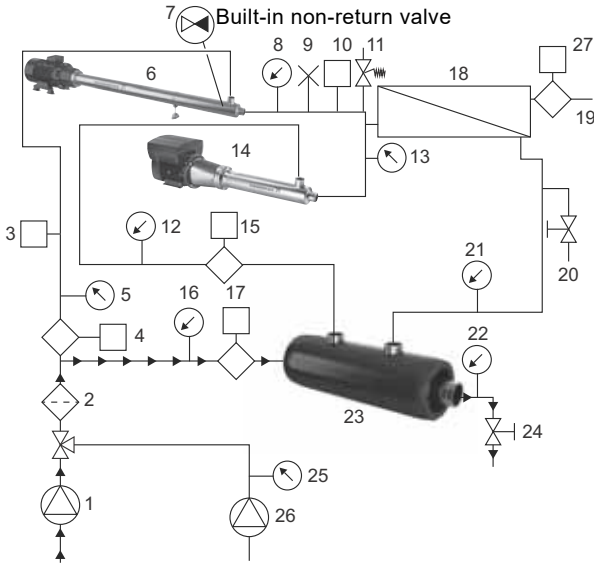


Fig. 22 Starting the seawater feed pump

4. Adjust the concentrate valve (24) to the system flow.
5. Vent the system.
6. When you have filled the system with water and vented it, see the BMS hp startup procedure.



The maximum flow rate of the pressure exchanger must never be exceeded. See the nameplate of the pressure exchanger.

WARNING

Pressurised system

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

7. Starting the BMS hp pump (14). See section 6.3.2 Startup.

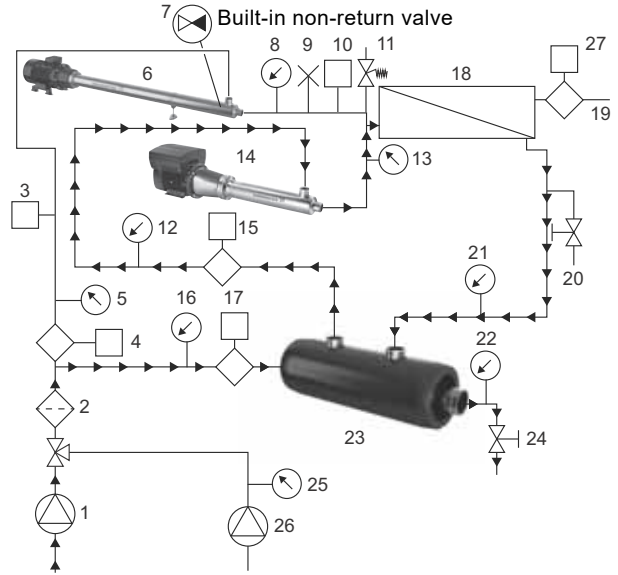


Fig. 23 System pressure and flow, BMS hp

The rotor speed will increase, and remaining air will be released from the pressure exchanger. Vent any remaining air from the system.

Adjust the frequency converter of the BMS hp pump (14) on the outlet side of the pressure exchanger (23) until the low-pressure seawater inlet flow (17) equals the calculated seawater flow (15).

TM05 9619 4213

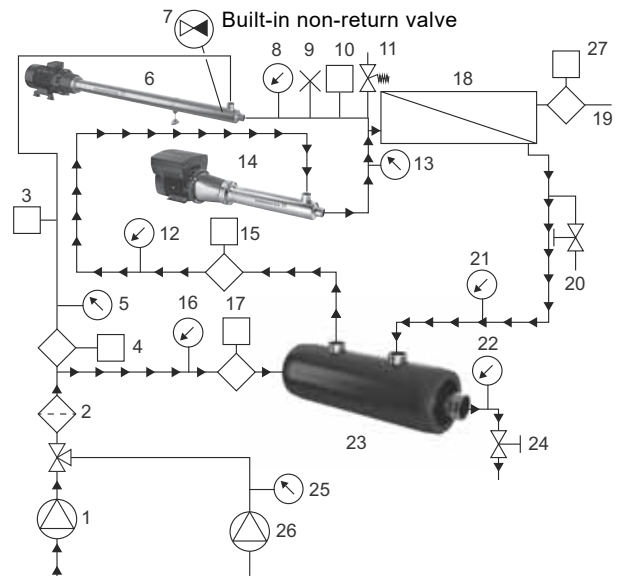


Fig. 24 Balanced flows

To achieve a balanced flow through the pressure exchanger (23), use the flowmeters installed on the low-pressure seawater inlet pipe (17) and the high-pressure seawater pipe (15). All flows in and out of the pressure exchanger (23) must be balanced to within 5 % for optimum operation.

TM05 9620 4213

TM05 9620 4213



Operating the pressure exchanger with unbalanced flows may result in contamination of the seawater feed by the concentrate and consequently lower efficiency.

A lower flow in the seawater inlet than the seawater outlet will result in lower-quality permeate, increased feed pressure and higher energy consumption. We recommend that you use a slightly oversized BMS hp pump (14) to handle projected membrane concentrate flows, taking seasonal variations, membrane fouling and manifold losses into account. The flow and pressure of the BMS hp pump (14) must be controlled with a frequency converter.



Neither the low-pressure nor the high-pressure flow through the pressure exchanger must ever exceed the rated maximum flow. The only reliable way to determine the flows is to use a low-pressure flowmeter (16) or a high-pressure flowmeter (14), respectively.

To start up a BMS hs pump (6), proceed as follows: See section [6.2.2 Startup](#).

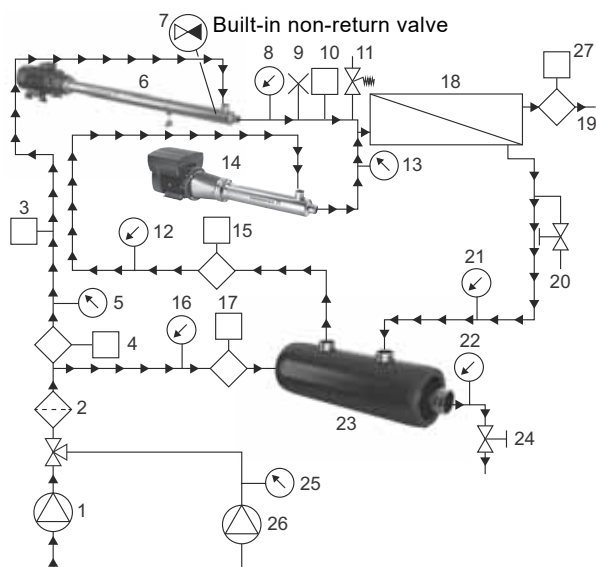


Fig. 25 System in operation

The BMSX system pressure will increase. The sound pressure level from the pressure exchanger (23) will increase. Small variations in sound pressure level and rotor speed are normal.

6.5 Low-pressure flow control

The concentrate valve (24) on the outlet side of the system must be adjusted to control the flow rate of the low-pressure seawater inlet (17) and low-pressure concentrate outlet (22) with a minimum 1 bar back pressure. This valve (24) also adds backpressure on the pressure exchanger (23) required to prevent destructive cavitation. The low-pressure seawater inlet flow (17) equals the high-pressure concentrate inlet flow (15).

7. Storing the product

If the pumps have to be stored, the location must be frost-free.

8. Product introduction

Grundfos BMS and BMSX booster systems are designed for high pressure boosting, filtration and desalination of seawater or brackish water in the so-called SWRO systems (SWRO = Sea Water Reverse Osmosis). The design of the systems ensures high energy recovery.

8.1 Nameplate

1	Type : BMS 30-26 HS-E-C-P-A	
2	Model : D-XXXXXX-07-310713	
3	Q nom : 50 m ³ /h 220 US GPM	
4	H nom : 804 m 2637 Feet	
5	n min/max : 1700 / 5500 rpm	
6	p inlet min/max : 1 / 35 bar 14,5 / 508 PSI	
7	p outlet max : 82,7 bar 1199 PSI	
8	t min/max : 0 / 40 °C 32 / 104 °F	
9	Weight : 500 Kg 1102 LB	
10	MEI ≥ N/A	
11	Made in Denmark	
12	CE ENEC UK	
13	WEEE marking	

Fig. 1 Nameplate

Pos.	Description
1	Type designation
2	Model designation: <ul style="list-style-type: none"> • generation • product number • production code (dd-mm-yy).
3	Rated flow rate
4	Rated head
5	Rated speed
6	Minimum and maximum inlet pressure
7	Maximum outlet pressure
8	Minimum and maximum liquid temperature
9	Net weight of booster module
10	Minimum efficiency index
11	Country of origin
12	Product conformity marks
13	WEEE marking

8.2 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.

TM05 9618.4213

TM05 9242 5020

8.3 Filtration

BMS hs, BMS hp: Filter the raw water to maximum 30 microns.
 BMSX: Filter the raw water to maximum 10 microns.

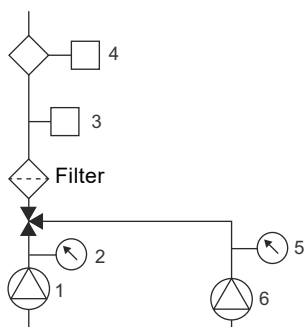


Fig. 2 Filtration

TM05 8862 2813

Pos.	Description
1	Raw-water feed pump
2	Pressure gauge (raw water)
3	Low-pressure switch
4	Flowmeter
5	Pressure gauge (fresh-water pump)
6	Fresh-water flush pump

Pump type	Filter [micron absolute]
BMS hs	30
BMS hp	
Pressure exchanger of BMSX	10

8.4 Flushing and salinity

When the booster system is stopped, it is very important to flush the system according to these guidelines.



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

See also periods of inactivity in section 10. *Starting up the product after standstill.*

Pump type	Fresh water p_{min} [bar]	Max. salinity [ppm TDS*]	Flushing time [min.]
BMS hs			Depends on pressure, flow, water quality and system design and size.
BMS hp			
Pressure exchanger of BMSX	2	1000	

* TDS: Total dissolved solids

9. Servicing the product

DANGER

Magnetic field



Death or serious personal injury

- Dismantling of the PM motors used for the BMS HS-E-C-P-A pumps must not be carried out by people with pacemakers or any other implanted medical devices. The rotor contains a very powerful magnetic field, which can affect pacemakers or disturb digital devices.

Check the following at suitable intervals, preferably daily:

- flow rate and pressure
- whether the noise level has changed.

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



Temperature variations can cause condensation inside the motor. We recommend that you remove the motor drain plug to let condensation water escape.



During prolonged storage or downtime, the interval between two greasing operations must never exceed 6 months.

9.1 Motor bearings

The pumps are factory-fitted with a manual motor-bearing greasing system. See the motor nameplate or the installation and operating instructions supplied with the motor for information such as greasing intervals.

9.1.1 Type of grease

See the motor nameplate.



Avoid mixing greases.

9.2 Preventive maintenance

The preventive maintenance tasks recommended in this section are common for all systems and for average operating conditions. In case the operating conditions are unfavourable, the maintenance tasks must be performed more frequently, and they can vary from installation to installation, for instance due to unexpected changes of the raw water quality.

	Check for leaks, noise or abnormal vibrations	Check thrust bearing and shaft seal	Lubricate motor bearings	Replace motor bearings	Clean filter mats on control panel
BMS hs (with PM motor)		No preventive maintenance required			
BMS hs (with AC motor)			According to motor nameplate		Monthly
BMS hp	Weekly				
Pressure exchanger of BMSX			No preventive maintenance required*		

* Use one gasket kit every time a pressure exchanger is opened for inspection.

For further information on maintenance and service, refer to the separate documents supplied for each component and to Grundfos Product Center.

10. Starting up the product after standstill

Follow the normal startup procedure step by step. For greasing of motor bearings, see section [9.1 Motor bearings](#).

10.1 Frequency of starts and stops

We recommend the following frequency:

- minimum 1 per year
- maximum 5 per hour
- maximum 20 per day.

11. 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. See section 8.4 Flushing and salinity .	x	x
Fill the pump with fresh water.	x	x
Preserve the pump.*		x

* Use the same solution that is used to preserve the membranes.



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

Carefully follow these instructions to safely shut down your booster system.

11.1 BMS hs pump

This procedure describes how to shut down the BMS hs pump.

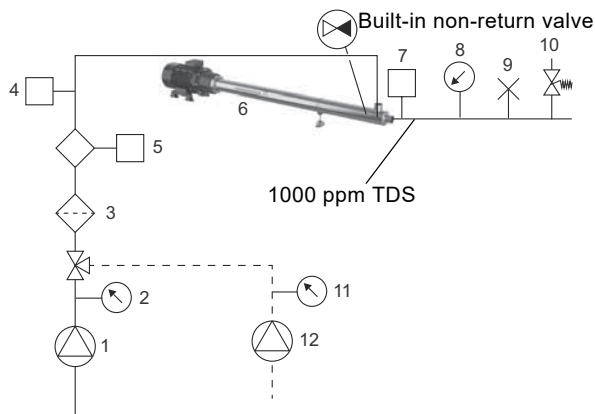


Fig. 3 Example of BMS hs pump

Procedure

1. Ramp down the BMS hs pump (6) according to the factory settings. See fig. 4 (3 and 4).

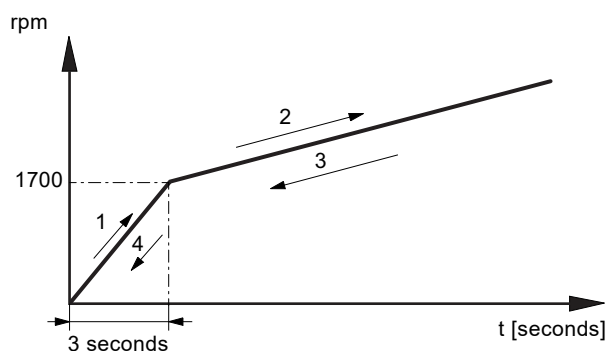


Fig. 4 Ramp down



Ramp down from 1700 to 0 rpm in three seconds.

2. Stop the feed pump (1).
 3. Start the fresh-water flush pump (12), and flush the system with fresh water (11) (minimum 2 bar for flushing).
 4. Flush the system until the salinity is lower than 1000 ppm TDS.
 5. Stop the fresh-water pump (12).
 6. Close all valves to keep the fresh water in the system during the shutdown.
- * Only flush desalination systems that pump seawater or similar aggressive liquids.



To flush the thrust bearing of the BMS hs pump, start the pump for 30 seconds to allow the fresh water to enter into the thrust bearing.



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



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

11.2 BMS hp pump

This procedure describes how to shut down the BMS hp pump.

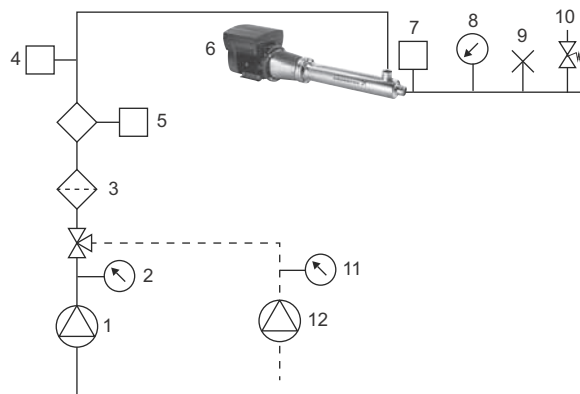


Fig. 5 Example of BMS hp system

Procedure

1. Ramp down the BMS hp pump (6) according to the factory settings. See fig. 6 (3 and 4).

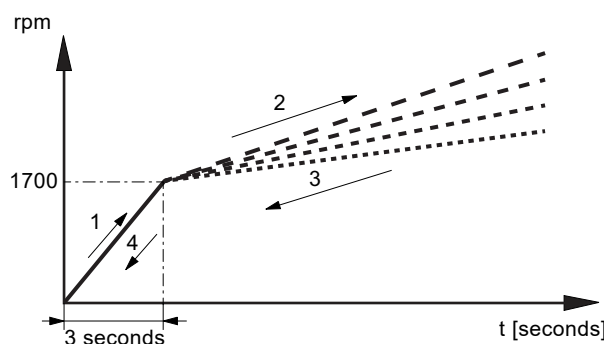


Fig. 6 Ramp down



Ramp down from 1700 to 0 rpm in three seconds.

2. Stop the feed pump (1).
3. Start the fresh-water flush pump (12), and flush the system with fresh water (11) (minimum 2 bar for flushing).
4. Flush the system until the salinity is lower than 1000 ppm TDS.
5. Stop the fresh-water pump (15).
6. Close all valves to keep the fresh water in the system during the shutdown.



To flush the thrust bearing of the BMS hp pump, start the pump for 30 seconds to allow the fresh water to enter into the thrust bearing.



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



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

11.3 BMSX system

This procedure describes how to shut down the BMSX system.

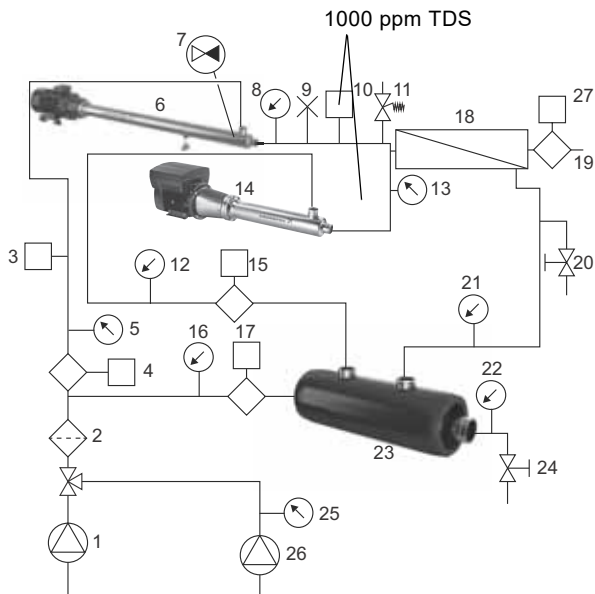


Fig. 7 Example of BMSX system

Procedure

1. Ramp down and stop the BMS hs pump (6). See section [11.1 BMS hs pump](#).
2. Ramp down and stop the BMS hp pump (14).
3. Stop the seawater feed pump (1).
4. Depressurise the system by opening the valve (20).
5. Start the fresh-water flush pump (26), and flush the system with fresh water (15) (minimum 2 bar for flushing).
6. Start the BMS hp pump (14), ramp it up to 1700 rpm and let it run until the salinity is lower than 1000 ppm TDS. To ensure efficient flushing of the system, open the valve (20).
7. Start the BMS hs pump (6) and ramp it up to minimum 1700 rpm or until the salinity is lower than 1000 ppm TDS.



To flush the thrust bearing and shaft seal of the BMS hs pump, start the pump to allow the fresh water to enter into the thrust bearing.



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



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

8. Stop the BMS hs pump (6), the BMS hp pump (14) and the fresh-water flush pump (26).
9. Close all valves to keep the fresh water in the system during shutdown.
10. If the system is taken out of operation for a long period, take precautions to inhibit biological growth. The system units must be given a final flush with the same solution used to preserve the membranes.

11.4 Flushing

BMS pumps can be flushed in the flow direction.

Flushing of the booster pumps is very important, especially when the pumps are used for pumping seawater or water with chemicals.

If seawater is left in the pumps while they are stopped, there is a risk of crevice corrosion of the stainless steel.

If water containing chemicals is left in the pumps while they are stopped, the rubber parts of the pump or motor may be affected.

In case the cleaning solution contains chemicals which may affect the rubber in the pump and pressure exchanger of BMSX, install a bypass. A pressure exchanger must be isolated during chemical cleaning.

12. Fault finding the product

12.1 BMS hs



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.

Fault	Possible cause	Remedy
1. The pump stops or starts occasionally during operation.	a) No water supply. The low-pressure switch has cut out.	Check that the low-pressure switch functions normally and is adjusted correctly. Check that the minimum inlet pressure is correct. If not, check if the feed pump is working and delivering the requested minimum pressure. See section 6.2.2 Startup .
2. The pump stops during operation.	a) The fuses are blown.	After a cut-out, find the cause of a possible short circuit. If the fuses are hot when they are replaced, check that the load of the individual phases does not exceed the motor current during operation. Identify the cause of the load. If the fuses are not hot immediately after the cut-out, then identify the cause of a possible short circuit. Check all fuses in the control circuit and replace defective fuses.
	b) The frequency converter has tripped.	Reset the frequency converter.
	c) The motor or power cable is defective.	Check the motor and cable for defects.
3. The pump runs, but generates no pressure and delivers no water.	a) No or insufficient water supply to the pump.	Check that the inlet pressure during operation is at least 1 bar for BMS hs. If so, the water supply is OK. Stop and vent the system. Restart the pump as described in sections 6.2 BMS hs pump and 6.3.2 Startup . Check the functioning of the pump.
	b) The pipe system or the pump is clogged.	Check the pipe system and the pump. Remove all obstacles.
	c) The prefilter is clogged.	Clean the prefilter.
4. The pump runs at reduced performance.	a) The valves on the outlet side are partly closed or blocked.	Check the valves. Put valve in correct position and remove all obstacles.
	b) The outlet pipe is partly blocked by impurities.	Clean or replace the outlet pipe. Measure the outlet pressure and compare the value with the calculated data. See the "Technical specifications" supplied with the system.
	c) The pump is partly blocked by impurities.	Pull the pump out of the sleeve. Dismantle, clean and check the pump. Replace any defective parts.
	d) The pump is defective.	Pull the pump out of the sleeve. Dismantle, clean and check the pump. Replace any defective parts.
	e) The prefilter is clogged.	Clean the prefilter.

12.2 BMS hp

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.

WARNING**Description of hazard**

Death or serious personal injury

- Make sure that the coupling guard is mounted correctly before start.

Fault	Possible cause	Remedy
1. The pump stops occasionally during operation.	a) 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.
	b) The capacity is too small. The flow switch has cut out.	The outlet pipe is totally or partly blocked due to incorrect adjustment of a manually operated valve or failure in the solenoid valve or the motor-operated valve. Check these valves. The flow switch is faulty or incorrectly adjusted. Check or adjust the switch.
2. The pump does not run.	a) The fuses are blown.	After a cut-out, the cause of a possible short circuit must be found. If the fuses are hot when they are replaced, check that the load of the individual phases does not exceed the motor current during operation. Identify the cause of the load. If the fuses are not hot immediately after the cut-out, then identify the cause of a possible short circuit. Check all fuses in the control circuit and replace defective fuses.
	b) The frequency converter has tripped.	Reset the frequency converter.
	c) The motor or power cable is defective.	Check the motor and cable. See section 5. Electrical connection .
3. The pump runs, but generates no pressure and delivers no water.	a) No or insufficient water supply to the pump or air in the system.	Check that the inlet pressure during operation is at least 1 bar. If so, the water supply is OK. Stop and vent the system. If the BMS hp is a part of a system, see section 6.4 BMSX system . If the pump is defective, dismantle and repair or replace it.
	b) The inlet parts are blocked.	Pull the pump out of the sleeve and clean the inlet parts.
4. The pump runs at reduced performance (flow and pressure).	a) The valves on the outlet side are partly closed or blocked.	Check the valves. Put valves in correct position and remove all obstacles.
	b) The outlet pipe is partly blocked by impurities.	Measure the outlet pressure and compare the value with the calculated data. Clean or replace the outlet pipe.
	c) The pump is partly blocked by impurities.	Pull the pump out of the sleeve. Dismantle, clean and check the pump. Replace defective parts.
	d) The pump is defective.	Pull the pump out of the sleeve. Dismantle, clean and check the pump. Replace defective parts.

12.3 Pressure exchanger of BMSX

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.

Fault	Possible cause	Remedy
1. Excessive sound pressure level.	a) The pressure exchanger is operating above the rated flow rates on the low-pressure side, high-pressure side or both.	Immediately reduce the flow rate by adjusting the BMS hp pump and control valve (13). Balance the system as described in section 6.4 BMSX system . To increase the system capacity, add one or more pressure exchanger pumps in parallel to the existing pumps.
	b) The pressure exchanger pump is operating with little or no back pressure.	Increase the back pressure by adjusting the concentrate valve. Balance the system as described in section 6.4 BMSX system .
	c) Air in the system.	Vent the system.
2. Excessively high recovery in the SWRO system.	a) The BMS hp pump is operating at a flow rate that is too high.	Check that the main BMS hp flow rate does not exceed the membrane array production capacity for a given temperature, salinity and fouling factor.
	b) Increased salinity or raw-water temperature.	Adjust flow rates in the system. See section 11.3 BMSX system .
3. High salinity in the high-pressure seawater feed stream.	a) Unbalanced system.	See section 6.4 BMSX system .
	b) A jammed or stalled rotor short-circuits the high-pressure concentrate with the high-pressure feed water. No exchange occurs; no audible rotation.	See fault number 5.
4. The low-pressure flow is lower than the high-pressure flow which entails mixing and high feed-water salinity.	a) Operating pressure exchanger pumps below the rated flow rate results in low rotor rotation and increased mixing.	Increase and balance the flows through the pressure exchanger pump. Do not exceed the recommended maximum flow rates. To increase the system capacity, add one or more pressure exchanger pumps in parallel to the existing pumps. See section 6.4 BMSX system .
	b) Malfunctioning and/or stalled BMS hp pump.	Check the rotation, operation, flow rates and pressures of the BMS hp pump.
5. Stalled rotor (no audible rotation).	a) The system is operating above the rated pressure or below the rated flow capacity.	See section 6.4 BMSX system .
	b) Debris or foreign particles in the device.	Contact Grundfos.
	c) The system is not properly flow-balanced.	See section 6.4 BMSX system .
6. Low concentrate flow.	a) Excessive pressure losses through the SWRO system.	Contact Grundfos.
	b) Malfunctioning and/or stalled BMS hp pump.	Check the operation, flow rates and pressures of the BMS hp pump.

13. Technical data

See the motor and pump nameplates.

Sound pressure level, inlet pressure and temperatures

Pump type	Sound pressure level [dB(A)]	Inlet pressure [bar]		Max. liquid and ambient temperature [°C]
		Min.	Max.	
BMS 17-22 HS-E-C-P-A	83-90	1	65	40*
BMS 30-26 HS-E-C-P-A	83-90			
BMS 46-17 HS-E-C-P-A	83-95			
BMS 60-17 HS-E-C-P-A	90			

Pump type	Sound pressure level [dB(A)]	Inlet pressure [bar]		Max. liquid and ambient temperature [°C]
		Min.	Max.	
BMS hp, 6"	< 72	0.5	82.7	40*
BMS hp, 8"	< 80	1	82.7	
Pressure exchanger of BMSX	76-91	Low pressure	High pressure	
		2-7	80	

* If the ambient temperature is higher than the values stated, please contact Grundfos.

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 wheellie 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.

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 product BMS hs, BMS hp, BMSX, BMST, to which the declaration below relates, is in conformity with the Council Directives listed below on the approximation of the laws of the EU member states.

DK: EU-overensstemmelseserklæring

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

FR: Déclaration de conformité UE

Nous, Grundfos, déclarons sous notre seule responsabilité, que le produit BMS hs, BMS hp, BMSX, BMST, auquel se réfère cette déclaration, est conforme aux Directives du Conseil concernant le rapprochement des législations des États membres CE/UE relatives aux normes énoncées ci-dessous.

IT: Dichiarazione di conformità UE

Grundfos dichiara sotto la sua esclusiva responsabilità che il prodotto BMS hs, BMS hp, BMSX, BMST, al quale si riferisce questa dichiarazione, è conforme alle seguenti direttive del Consiglio riguardanti il riavvicinamento delle legislazioni degli Stati membri UE.

PT: Declaração de conformidade UE

A Grundfos declara sob sua única responsabilidade que o produto BMS hs, BMS hp, BMSX, BMST, ao qual diz respeito a declaração abaixo, está em conformidade com as Directivas do Conselho sobre a aproximação das legislações dos Estados Membros da UE.

CN: 欧盟符合性声明

我们，格兰富，在我们的全权责任下声明，产品 BMS hs, BMS hp, BMSX, BMST 系列，其制造和性能完全符合以下所列欧盟委员会指令。

(EU) إقرار مطابقة الاتحاد الأوروبي

نقرر نحن، جرونډفوس، بمقتضى مسؤوليتنا الفردية بأن المنتج BMS hs, BMS hp, BMSX, BMST، الذي يختص به الإقرار أدناه، يكون مطابقاً لتوجيهات أوروبية المجلس المذكورة أدناه بشأن التقريب بين قوانين الدول أعضاء الاتحاد (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

BMS hs type HS-E-C-P-A, BMSX and BMST

— EMC Directive (2014/30/EU) Standards used: EN 61000-6-2:2005, EN 61000-6-3:2007 + A1:2012

BMS hp type HP-A-C-P-A (see pump nameplate)

— Ecodesign Directive (2009/125/EC) Water pumps: Applies only to water pumps marked with the minimum efficiency index MEI, see pump nameplate Commission Regulation No 547/2012.

DE: EU-Konformitätserklärung

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

ES: Declaración de conformidad de la UE

Grundfos declara, bajo su exclusiva responsabilidad, que el producto BMS hs, BMS hp, BMSX, BMST al que hace referencia la siguiente declaración cumple lo establecido por las siguientes Directivas del Consejo sobre la aproximación de las legislaciones de los Estados miembros de la UE.

GR: Δήλωση συμμόρφωσης ΕΕ

Εμείς, η Grundfos, δηλώνουμε με αποκλειστικά δική μας ευθύνη ότι το προϊόν BMS hs, BMS hp, BMSX, BMST, στο οποίο αναφέρεται η παρακάτω δήλωση, συμμορφώνεται με τις παρακάτω Οδηγίες του Συμβουλίου περί προσέγγισης των νομοθεσιών των κρατών μελών της ΕΕ.

NL: EU-conformiteitsverklaring

Wij, Grundfos, verklaren geheel onder eigen verantwoordelijkheid dat product BMS hs, BMS hp, BMSX, BMST, waarop de onderstaande verklaring betrekking heeft, in overeenstemming is met de onderstaande Richtlijnen van de Raad inzake de onderlinge aanpassing van de wetgeving van de EU-lidstaten.

TR: AB uygunluk bildirgesi

Grundfos olarak, aşağıdaki bildirim konusu olan BMS hs, BMS hp, BMSX, BMST ürünlerinin, AB üye ülkelerinin direktiflerinin yakınlaştırılmasıyla ilgili durumun aşağıdaki Konsey Direktifleriyle uyumlu olduğunu ve bununla ilgili olarak tüm sorumluluğun bize ait olduğunu beyan ederiz.

JP: EU 適合宣言

Grundfos は、その責任の下に、BMS hs, BMS hp, BMSX, BMST 製品が EU 加盟諸国の法規に関連する、以下の評議会指令に適合していることを宣言します。

BMS hp type HP-C-C-P-A 3 to 11 kW (see pump nameplate)

— Ecodesign Directive (2009/125/EC) Water pumps: Applies only to water pumps marked with the minimum efficiency index MEI, see pump nameplate Commission Regulation No 547/2012.

Declaration of conformity related to the motor is enclosed in manual (publication number 98247034)

BMS hp type HP-C-C-P-A 15 to 22 kW (see pump nameplate)

— EMC Directive (2014/30/EU) Standard used: EN 61800-3:2004 + A1:2012 - Ecodesign Directive (2009/125/EC) Water pumps: Applies only to water pumps marked with the minimum efficiency index MEI, see pump nameplate Commission Regulation No 547/2012.

This EC/EU declaration of conformity is only valid when published as part of the Grundfos installation and operating instructions (publication number 98567337)

Bjerringbro, 26th November 2020



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

Manufacturer and person empowered to sign the EU 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 Grundfos products: BMSHs, BMSHp, BMSX

- Supply of Machinery (Safety) Regulations 2008.
Standard used: BS EN 809:1998, A1:2009.
- The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2019.
Standard used: BS EN IEC 63000:2018

BMSHs type HS-E-C-P-A, BMSX and BMST

- Electromagnetic Compatibility Regulations 2016
Standard used: BS EN 61000-6-2:2005, EN61000-6-3:2007+A1:2012

BMSHp type HP-A-C-P-A (see pump nameplate)

- The Ecodesign for Energy-Related Products and Energy Information Regulations 2019.
Water pumps:
Regulation (EU) No 547/2012.
Applies only to water pumps marked with the minimum efficiency index MEI. See pump nameplate.

BMSHp type HP-C-C-P-A 3 to 11 kW (see pump nameplate)

- The Ecodesign for Energy-Related Products and Energy Information Regulations 2019.
Water pumps:
Regulation (EU) No 547/2012.
Applies only to water pumps marked with the minimum efficiency index MEI. See pump nameplate.
Declaration of conformity related to the motor is enclosed in manual (publication number 98247034)

BMSHp type HP-C-C-P-A 15 to 22 kW (see pump nameplate)

- Electromagnetic Compatibility Regulations 2016
Standard used: BS EN 61800-3:2004 + A1:2012
- The Ecodesign for Energy-Related Products and Energy Information Regulations 2019.
Water pumps:
Regulation (EU) No 547/2012.
Applies only to water pumps marked with the minimum efficiency index MEI. See pump nameplate.

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

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

Bjerringbro, November 26, 2020



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

Manufacturer and person empowered to sign the UK declaration of conformity.

10000339568

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:
BMSHs, BMSHp, BMSX, BMST

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 BMSX, BMST and BMSHs pumps type HS-E-C-P-A see pump nameplate.
Order No 2574-14, 2015 Electromagnetic Compatibility
Standards used: NM EN 61000-6-2:2015, NM EN 61000-6-3:2015

For BMSHp pumps type HP-C-C-P-A see pump nameplate.
Order No 2574-14, 2015 Electromagnetic Compatibility
Standards used: NM EN 61800-3:2018

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

Bjerringbro, 19th August 2020

Erik Andersen
Senior manager
GRUNDFOS Holding A/S
Poul Due Jensens Vej 7
8850 Bjerringbro, Denmark

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

10000270346

**FR: Déclaration de conformité marocaine**

Nous, Grundfos, déclarons sous notre seule responsabilité que les produits auxquels se réfère cette déclaration, sont conformes aux lois, ordonnances, normes et spécifications marocaines pour lesquelles la conformité est déclarée, comme indiqué ci-dessous :

Valable pour les produits Grundfos:
BMSHs, BMSHp, BMSX, BMST

Sécurité des produits et services, loi n° 24-09, 2011 et décrets suivants :
Exigences de sécurité pour les équipements électriques basse tension, ordonnance n° 2573-14, 2015
Normes utilisées: NM EN 809+A1:2015

Pour les pompes BMSX, BMST et BMSHs, type HS-E-C-P-A, voir plaque signalétique de la pompe.
Compatibilité électromagnétique, ordonnance n° 2574-14, 2015
Normes utilisées: NM EN 61000-6-2:2015, NM EN 61000-6-3:2015

Pour les pompes BMSHp, type HP-C-C-P-A, voir plaque signalétique de la pompe.
Compatibilité électromagnétique, ordonnance n° 2574-14, 2015
Normes utilisées: NM EN 61800-3:2018

Cette déclaration de conformité marocaine est uniquement valide lorsqu'elle accompagne la notice d'installation et de fonctionnement Grundfos.

Bjerringbro, 19th August 2020

Erik Andersen
Senior manager
Grundfos Holding A/S
Poul Due Jensens Vej 7
8850 Bjerringbro, Denmark

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

10000270346

**AR: إقرار المطابقة المغربي**

نحن، جرونډفوس، نقر تحت مسؤوليتنا وحدنا بأن المنتجات التي يتعلّق بها مغربية الإقرار أدناه، تتوافق مع القوانين والقرارات والمعايير والمواصفات التي تم إقرار المطابقة بشأنها، كما هو موضح أدناه:

سار على منتجات جرونډفوس:
BMSHs, BMSHp, BMSX, BMST

قانون رقم 09-24، 2011 بشأن سلامة المنتجات والخدمات والقرارات التالية:
القرار رقم 14-2573، 2015 متطلبات السلامة للمعدات الكهربائية ذات الجهد المنخفض
المعايير المستخدمة:
NM EN 809+A1:2015

بالنسبة للمضخات BMSX و BMST و BMSHs من نوع HS-E-C-P-A، راجع لوحة بيانات المضخة.
القرار رقم 14-2574، 2015 التوافق الكهرومغناطيسي
المعايير المستخدمة:
NM EN 61000-6-2:2015, NM EN 61000-6-3:2015

بالنسبة للمضخات BMSHp من نوع HP-C-C-P-A، راجع لوحة بيانات المضخة.
القرار رقم 14-2574، 2015 التوافق الكهرومغناطيسي
المعايير المستخدمة:
NM EN 61800-3:2018

يكون إقرار المطابقة المغربي صالحاً فقط عند نشره كجزء من تعليمات جرونډفوس.

Bjerringbro, 19th August 2020

Erik Andersen
Senior manager
GRUNDFOS Holding A/S
Poul Due Jensens Vej 7
8850 Bjerringbro, Denmark

الجهة المصنعة والشخص المفوض بتوقيع إقرار المطابقة المغربي.

10000270346

RUS

BMS**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:

Бустерные насосы (насосы повышения давления), тип BMS и системы на их основе, тип BMSX, BMST декларированы 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

BMS**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 тақтасында орналасқан шығарылған уақыты жөніндегі мәлімет Сертификаттау туралы ақпарат:

Күштік насостар (қысымды көтеретін сорғылар), BMS типі және оларға негізделген жүйелер, BMSX, BMST типі Кеден одағының Техникалық регламенттерінің талаптарына сәйкестігі үшін декларацияланған: TR CU 004/2011 «Төмен вольтты жабдықтың қауіпсіздігі туралы»; TR CU 010/2011 «Машиналар мен жабдықтардың қауіпсіздігі туралы»; TR CU 020/2011 «Техникалық жабдықтың электромагниттік үйлесімділігі».

KG

BMS**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

Күчөткүч насостор (басымды көтөрүүчү насостор), BMS түрү жана алардын негизиндеги тутумдар, BMSX, BMST түрлөрү Бажы бирлигинин Техникалык регламентинин талаптарына шайкештиги жөнүндө декларацияланган: TR CU 004/2011 "Төмөн чыңалуудагы шаймандардын коопсуздугу жөнүндө"; TR CU 010/2011 "Машиналардын жана жабдуулардын коопсуздугу жөнүндө"; TR CU 020/2011 "Техникалык шаймандардын электромагниттик шайкештиги".

ARM

BMS

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. տեղեկությունն արտադրման ամսաթվի վերաբերյալ՝ նշված սարքավորման պիտակի վրա:

Տեղեկություններ հավաստագրման մասին՝

Ամրապնդող պոմպեր (նշման բարձրացման պոմպեր), BMS տիպը և դրանց վրա հիմնված համակարգերը, BMSX տիպը, BMST տիպը հայտարարվում են Մաքսային միության Տեխնիկական կանոնակարգերի պահանջներին համապատասխանելու համար. TR CU 004/2011 «voltageածր լարման սարքավորումների անվտանգության մասին». TR CU 010/2011 «Մեքենաների և սարքավորումների անվտանգության մասին»; TR CU 020/2011 «Տեխնիկական սարքավորումների էլեկտրամագնիսական համատեղելիություն»:



<http://net.grundfos.com/qr/i/99950697>

10000350304	01.2021
-------------	---------

ECM: 1304797

Argentina

Bombas GRUNDFOS de Argentina S.A.
Ruta Panamericana km. 37.500 Centro
Industrial Garin
1619 Garin Pcia. de B.A.
Phone: +54-3327 414 444
Telefax: +54-3327 45 3190

Australia

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

Austria

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

Belgium

N.V. GRUNDFOS Bellux S.A.
Boomssesteenweg 81-83
B-2630 Aartselaar
Tél.: +32-3-870 7300
Télécopie: +32-3-870 7301

Belarus

Представительство ГРУНДФОС в
Минске
220125, Минск
ул. Шафарнянская, 11, оф. 56, БЦ
«Порт»
Тел.: +375 17 397 397 3
+375 17 397 397 4
Факс: +375 17 397 397 1
E-mail: minsk@grundfos.com

Bosnia and Herzegovina

GRUNDFOS Sarajevo
Zmaj od Bosne 7-7A,
BH-71000 Sarajevo
Phone: +387 33 592 480
Telefax: +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
Phone: +55-11 4393 5533
Telefax: +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
email: bulgaria@grundfos.bg

Canada

GRUNDFOS Canada Inc.
2941 Brighton Road
Oakville, Ontario
L6H 6C9
Phone: +1-905 829 9533
Telefax: +1-905 829 9512

China

GRUNDFOS Pumps (Shanghai) Co. Ltd.
10F The Hub, No. 33 Suhong Road
Minhang District
Shanghai 201106
PRC
Phone: +86 21 612 252 22
Telefax: +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
Phone: +57(1)-2913444
Telefax: +57(1)-8764586

Croatia

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

**GRUNDFOS Sales Czechia and
Slovakia s.r.o.**

Čajkovského 21
779 00 Olomouc
Phone: +420-585-716 111

Denmark

GRUNDFOS DK A/S
Martin Bachs Vej 3
DK-8850 Bjerringbro
Tlf.: +45-87 50 50 50
Telefax: +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
Phone: +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)
Tél.: +33-4 74 82 15 15
Télécopie: +33-4 74 94 10 51

Germany

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

Greece

GRUNDFOS Hellas A.E.B.E.
20th km. Athinon-Markopoulou Av.
P.O. Box 71
GR-19002 Peania
Phone: +0030-210-66 83 400
Telefax: +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
Phone: +852-27861706 / 27861741
Telefax: +852-27858664

Hungary

GRUNDFOS Hungária Kft.
Tópark u. 8
H-2045 Törökbálint,
Phone: +36-23 511 110
Telefax: +36-23 511 111

India

GRUNDFOS Pumps India Private Limited
118 Old Mahabalipuram Road
Thoraiakkam
Chennai 600 096
Phone: +91-44 2496 6800

Indonesia

PT. GRUNDFOS POMPA
Graha Intirub Lt. 2 & 3
Jln. Cililitan Besar No.454. Makasar,
Jakarta Timur
ID-Jakarta 13650
Phone: +62 21-469-51900
Telefax: +62 21-460 6910 / 460 6901

Ireland

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

Italy

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

Japan

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

Korea

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

Latvia

SIA GRUNDFOS Pumps Latvia
Deglava biznesa centrs
Augusta Deglava ielā 60, LV-1035, Rīga,
Tālr.: + 371 714 9640, 7 149 641
Fakss: + 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
Phone: +60-3-5569 2922
Telefax: +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
Phone: +52-81-8144 4000
Telefax: +52-81-8144 4010

Netherlands

GRUNDFOS Netherlands
Veluwezoom 35
1326 AE Almere
Postbus 22015
1302 CA ALMERE
Tel.: +31-88-478 6336
Telefax: +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
Phone: +64-9-415 3240
Telefax: +64-9-415 3250

Norway

GRUNDFOS Pumper A/S
Stremsveien 344
Postboks 235, Leirdal
N-1011 Oslo
Tlf.: +47-22 90 47 00
Telefax: +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
Telefax: +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
www.grundfos.ro

Russia

ООО Грундфос Россия
ул. Школьная, 39-41
Москва, RU-109544, Russia
Тел. (+7) 495 564-88-00 (495) 737-30-00
Факс (+7) 495 564 8811
E-mail grundfos.moscow@grundfos.com

Serbia

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

Singapore

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

Slovakia

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

Slovenia

GRUNDFOS LJUBLJANA, d.o.o.
Leskoškova 9e, 1122 Ljubljana
Phone: +386 (0) 1 568 06 10
Telefax: +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 Fuentequilla, s/n
E-28110 Algete (Madrid)
Tel.: +34-91-848 8800
Telefax: +34-91-628 0645

Sweden

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

Switzerland

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

Taiwan

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

Thailand

GRUNDFOS (Thailand) Ltd.
92 Chaloe Phrakiat Rama 9 Road,
Dokmai, Pravej, Bangkok 10250
Phone: +66-2-725 8999
Telefax: +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
Phone: +90 - 262-679 7979
Telefax: +90 - 262-679 7905
E-mail: satis@grundfos.com

Ukraine

Бізнес Центр Європа
Столицне шосе, 103
м. Київ, 03131, Україна
Телефон: (+38 044) 237 04 00
Факс.: (+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
Phone: +971 4 8815 166
Telefax: +971 4 8815 136

United Kingdom

GRUNDFOS Pumps Ltd.
Grovebury Road
Leighton Buzzard/Beds. LU7 4TL
Phone: +44-1525-850000
Telefax: +44-1525-850011

U.S.A.

GRUNDFOS Pumps Corporation
9300 Loiret Blvd.
Lenexa, Kansas 66219
Phone: +1-913-227-3400
Telefax: +1-913-227-3500

Uzbekistan

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

Addresses Revised 09.09.2020

98567337 01.2021

ECM: 1307770

Trademarks displayed in this material, including but not limited to Grundfos, the Grundfos logo and "be think innovate" are registered trademarks owned by The Grundfos Group. All rights reserved. © 2021 Grundfos Holding A/S. All rights reserved.