SYSTEM CLEANERS
Member of AxFlow Group

BS1-20, BS3-20, BS5-20, BS7-20

Translation of the original instructions

Table of contents

Description BS1-,3-,5-,7-20

A booster station has a built-in pump to increase the water pressure.

The selected outlet pressure is kept constant regardless of consumption provided the consumption remains below the maximum volume the system can deliver.

The pump is protected against dry-running in case of insufficient water supply.

The pump is protected against excessive water temperatures.

General information

For safety during installation and subsequent use, it is extremely important that the manual is followed carefully.
Please keep this user manual in a place where it is available at all times and hand it over to the person responsible for this product. If the user manual is lost, you are welcome to request a new one from your dealer.
If there is any doubt about the content of the instructions, contact the dealer for clarification.

Intended use

The System Cleaners system is designed for use with water.

- Boosted water.

Any other use besides this is considered inappropriate and a deviation from the provisions, and may lead to dangerous situations.

System Cleaners A/S is not liable for consequential damages caused in this respect.

Intended use means:

- The instructions, regulations and recommendations given in the user manual for the unit.
- Compliance with the prescribed inspection and maintenance intervals.
- Correct maintenance of the unit to keep it in good working order.
- Compliance with the prescribed environmental and operating conditions.
- Use of a detergent compatible with the materials in the unit.

Intended use also includes compliance with all the information provided in this user manual. This applies in particular to the specified safety instructions.

Liability provisions

It is the responsibility of the individual user to handle and use the unit in a safe manner. It is therefore extremely important that this user manual is available to the sanitation worker.

Safety precautions

The unit is designed in accordance with the generally accepted technical rules and regulations as well as working environment and accident prevention regulations. Nevertheless, risks may arise during use that could cause physical harm to the user or third parties or affect the machinery or other equipment. The unit must therefore be in optimal technical condition before use and may only be used in accordance with its intended use and in compliance with the safety regulations and operating instructions. In particular, faults that may affect safety must be rectified immediately.

Warranty provisions

Please refer to the current sales and delivery conditions.

Labelling

The unit is supplied with a type plate with technical data. The type plate is located on a fixed part of the unit.

Disposal

This product and its parts must be disposed of in an environmentally sound manner in accordance with local legislation.
Use the public or private recycling stations.
If the aforementioned is not possible, please contact your nearest System Cleaners representative.

Transport and handling

Care must be taken when lifting the unit due to its relatively high weight.
Use of the dedicated lifting brackets is recommended.

Storage

When storing the unit, the ambient temperature must be kept above freezing point.
After long-term storage, the unit must be rinsed before it is used in production.

Safety information

Safety symbols

	General warning. Read the documentation before using the system. Read the documentation before servicing the system.
	There may be hot surfaces. Take special care when servicing the system.
	Goggles must be worn when operating the system. Goggles must be worn when servicing the system.
	Gloves must be worn when operating the system. Gloves must be worn when servicing the system. Wear cut-resistant gloves when servicing.

General

This unit may only be operated by trained professionals or persons who have been properly instructed in how to operate it.
Service may only be carried out by trained professionals or maintenance personnel who have been properly instructed in how to service it.

Never point the outlet nozzle at other people or electrical installations.

Risks on the equipment (residual risk)

Operation

- Always wear safety goggles, gloves and appropriate work clothing when using the unit (PPE).
- Risk of getting high-pressure water in the eyes (HIGH RISK).
- Risk of scalding (HIGH RISK).
    - It is the user's/fitter's responsibility to ensure that water is not used at temperatures above 70 °C.

Service/maintenance:

- Always wear safety goggles, cut-resistant gloves and appropriate work clothing when servicing the system (PPE).
- Risk of getting high-pressure water in the eyes (HIGH RISK).
- Risk of cutting/striking yourself (HIGH RISK).

Before servicing the unit, the power supply must be disconnected and the inlet ball valve closed.
The first step afterwards is to depressurise the entire system.
Risk of high-pressure water if service is performed without relieving the pressure from the system (HIGH RISK)

Safety signs:
The following pictograms are placed on the equipment (size is 65x65 mm).
Scale displayed (1:1).

Declaration of conformity

Manufacturer:
System Cleaners A/S
Halkjærvej 17
DK-9200 Aalborg SV
Denmark

Product series: BS1-20/BS3-20/BS5-20/BS7-20.

We, System Cleaners A/S, declare that this product complies with the following directives and standards.

Machinery Directive 2006/42/EC.

Standards:
EN ISO 12100:2010 – Risk assessment and risk reduction.
EN 60204-1:2018 – Part 1: General requirements (IEC 60204-1:2016).
EN ISO 13849-2:2012 – Part 2: General requirements.
EN ISO 13732-1:2008 – Part 1: Hot surfaces.
EN ISO 13732-3:2008 – Part 3 Cold surfaces.
EN ISO 14118:2018 – Prevention of unexpected start-up.
EN ISO 13849-1:2023 – Part 1: General principles for design.
EN ISO 4414:2010 – General rules and safety requirements.

Responsible for the technical file:
Jørn Hansen
Development Manager
Aalborg, 16/06/2025

Installation

Mounting the unit

- The floor material should be of a stable quality that can support the weight of the unit.
- For servicing, we recommend that you allow 1m free space around the system.
- Must be bolted to the floor.

Mounting the pipe connections

In general, pipe connections must be made in accordance with local regulations.
It is the fitter's responsibility to ensure compliance with applicable legislation.

- All pipes must be rinsed through before they are connected to the unit.
- Lockable shut-off valves must be fitted to all pipe connections.
- The fitter must comply with any local requirements regarding pipe interrupters, if any exist.
- We recommend that you select pipe sizes that keep the flow velocity below 3 m/s. This normally provides an acceptable pressure loss and low flow noise.
- It must be ensured that the water temperature does not exceed 70 °C.

Electrical connection

- Connection to the electricity supply must be performed according to local regulations.
- It is the fitter's responsibility to ensure compliance with applicable legislation.
- A lockable service valve that can be operated from the floor without the use of a ladder or similar must always be fitted.
- For more information, see the manual supplied with the pump.

Start-up of operations

The unit must be bled before it is taken into use or after servicing.

Installation kits

Item number	Installation kit
96-010065	Installation kit BSx-20

Mounting instructions

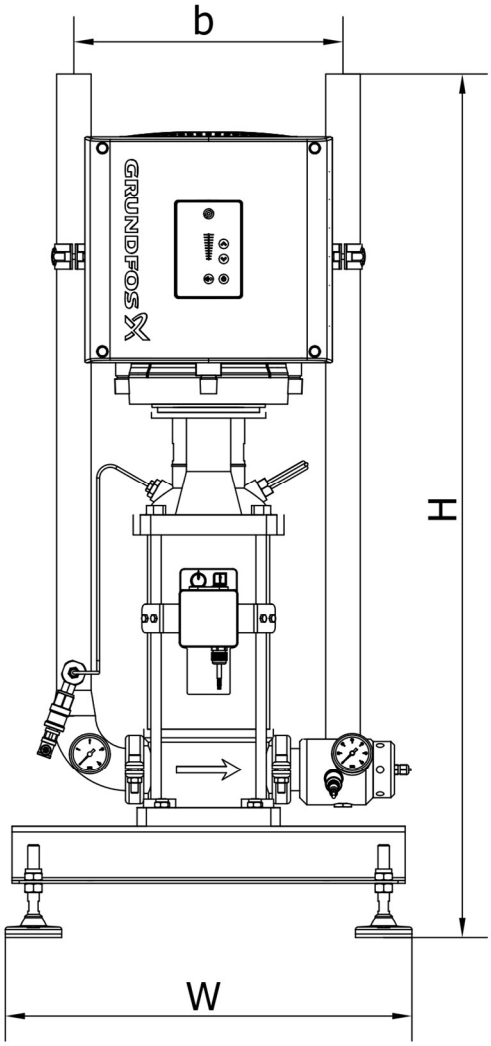
To avoid workplace accidents, your new booster station from System Cleaners must be installed in accordance with the instructions below.

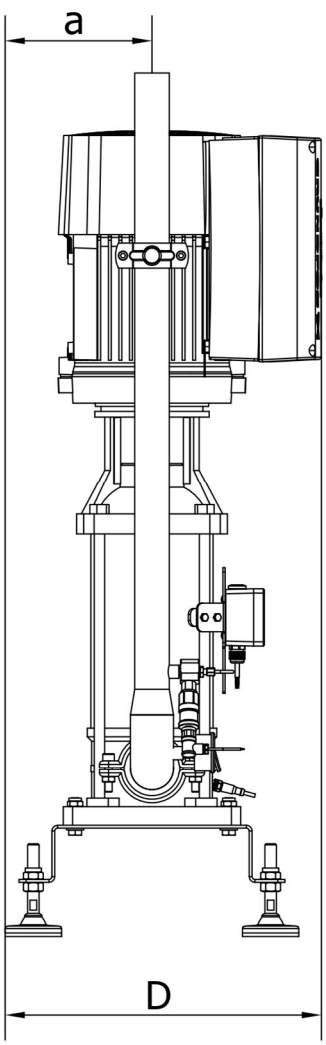
1. The unit must be lifted off the pallet using a forklift. It is recommended to secure the unit to the forks, as it has a high centre of gravity.

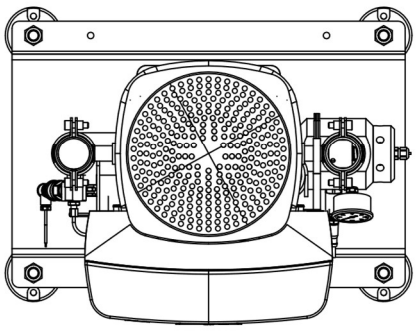
2. Place the unit on the floor and securely fasten it to the surface.

1. 	2. 

Mounting dimensions

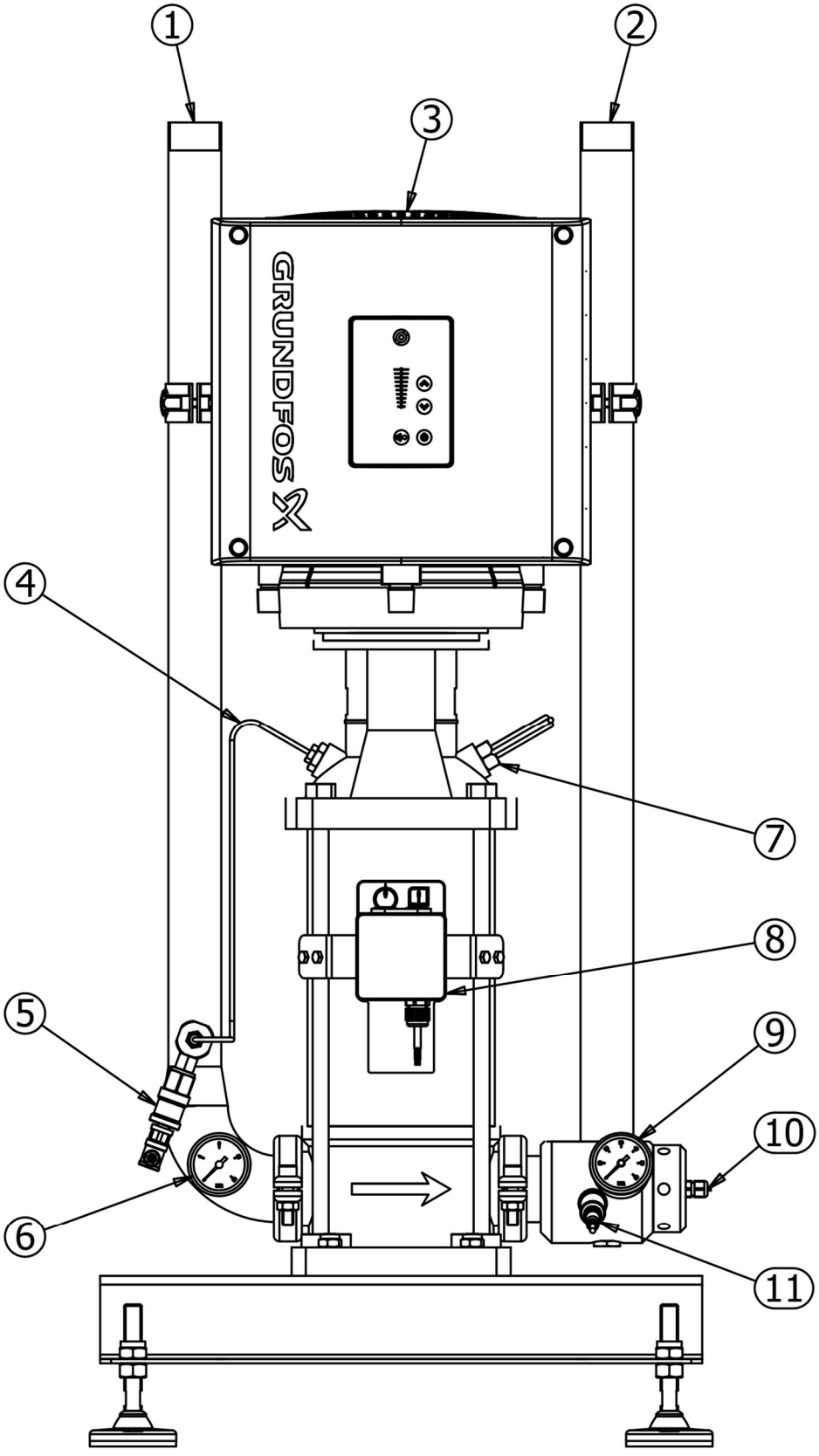






Item	Millimetres		Inches	
Unit	**BS1/3/5-20**	**BS7-20**	**BS1/3/5-20**	**BS7-20**
H	1184	1211	$46\ ^{39}/_{64}$	$47\ ^{43}/_{64}$
W	569		$22\ ^{13}/_{32}$	
D	442,6		$17\ ^{27}/_{64}$	
a	205,5		$8\ ^{3}/_{32}$	
b	376,5		$14\ ^{53}/_{64}$	

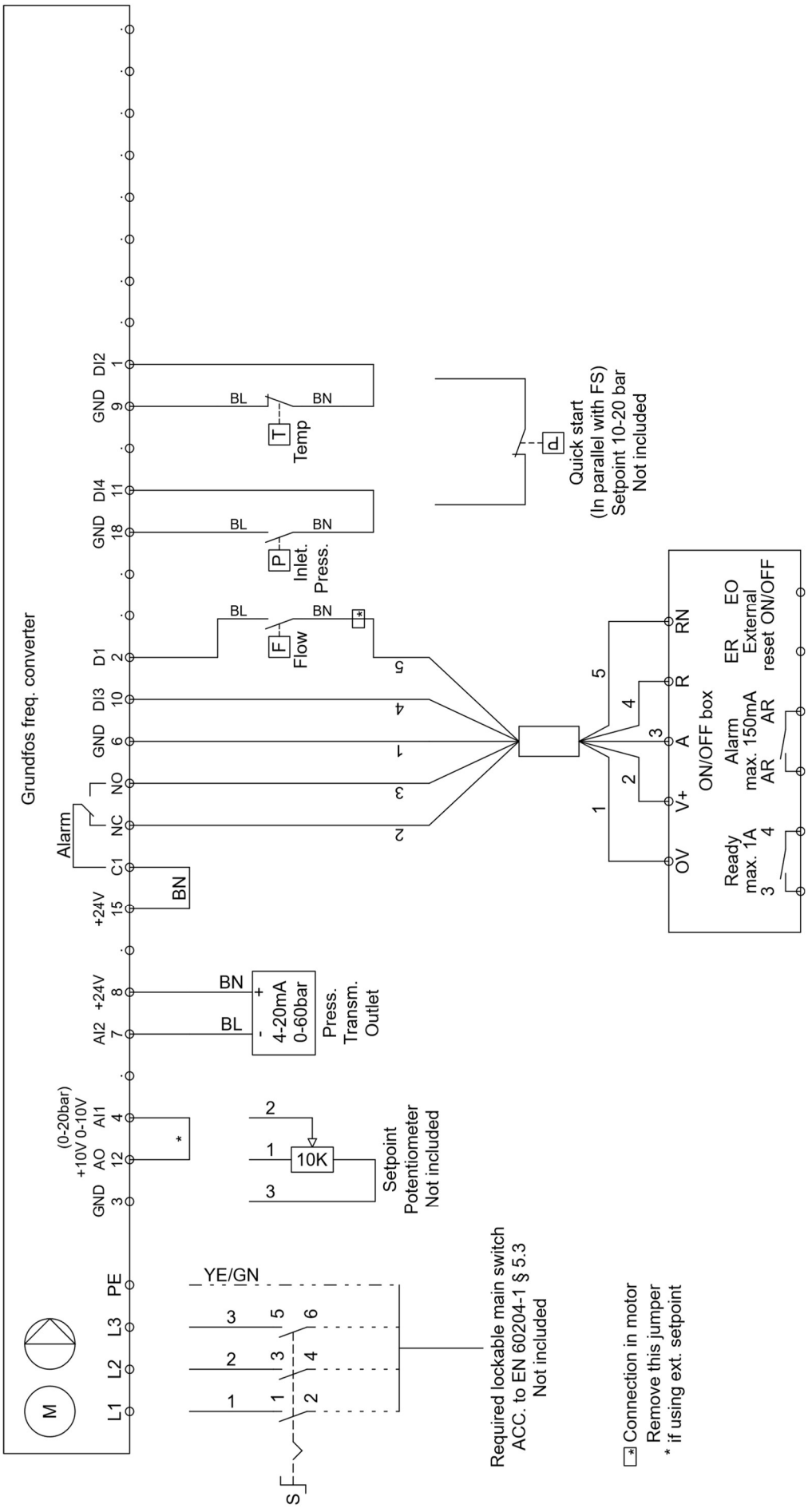
Main elements



Main elements list

Item	Description
1	Water inlet
2	Outlet
3	Pump
4	Pump exhaust system
5	Pressure switch, inlet
6	Manometer inlet
7	Temperature switch
8	Start/Stop
9	Manometer outlet
10	Check valve/flow switch
11	Pressure transmitter outlet

Wiring diagram



Technical specifications

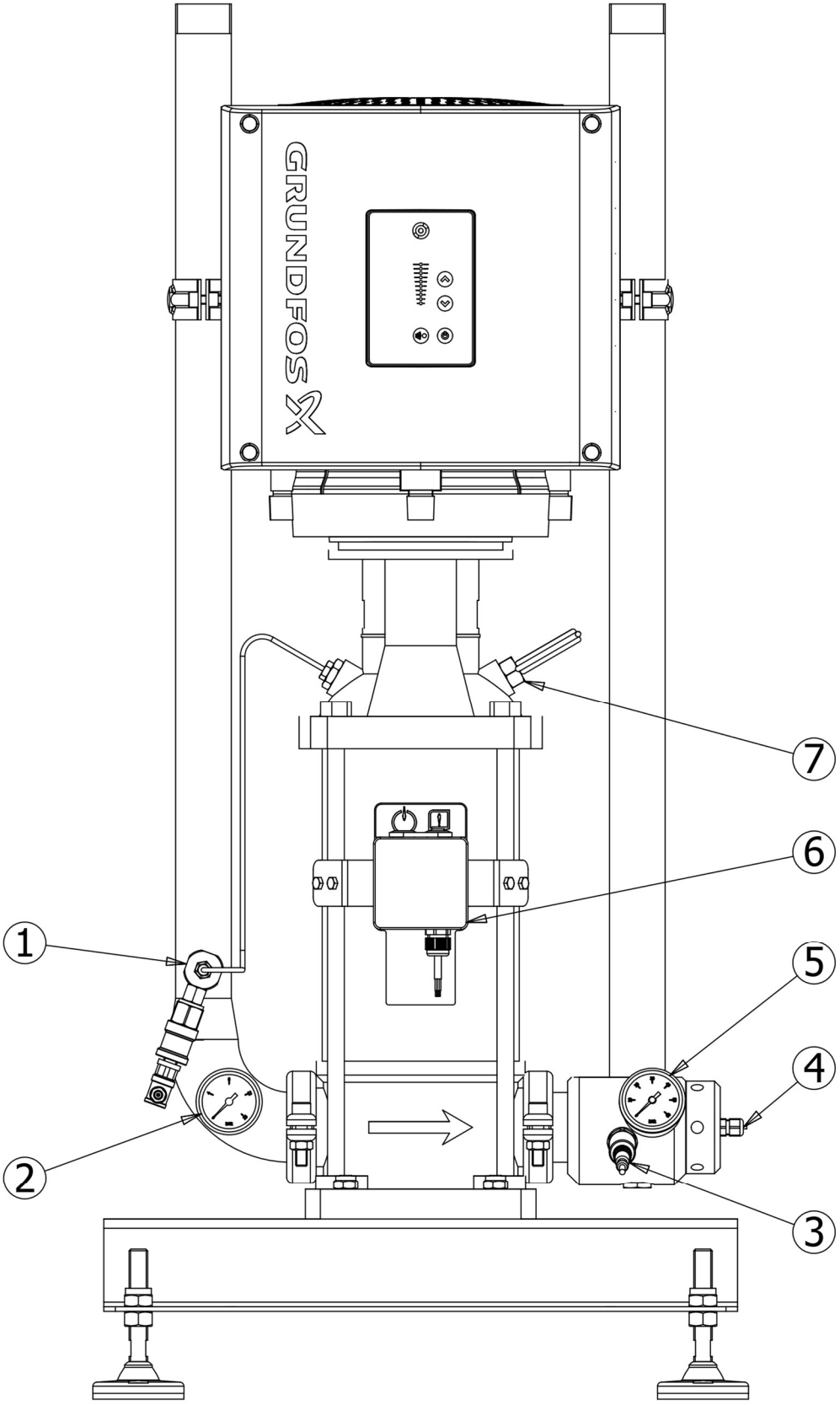
	BS1-20
Installation	
Ambient temperature	3-40 °C // 37-104 °F
Pump	
Pump type	CRNE 3-9
Energy class	IE5
Motor power	2,2 kW // 3 HP
Frequency converter	Integrated in pump motor
Water supply	
Connection	1.1/2" BSPT // 1.1/2" NPT
Inlet pressure	1,5-10 bar // 22-145 psi
Filtration rating	≤800 µ
Automatic pump stop at inlet pressure less than	1,5 bar // 22 psi
Temperature	3-70 °C // 37-160 °F
Automatic pump stop at liquid temperature higher than	85 °C // 185 °F
Recommended minimum inlet flow	3 m³/h // 13.2 US gal/min
Water outlet	
Connection	1.1/2" BSPT // 1.1/2" NPT
Set point range (0-10V external signal)	0-20 bar (STD. 20 bar)
Maximum flow at 20 bar/290 psi, incl. a 4 bar/58 psi inlet pressure	30 litres/min // 8 US gal/min
Electrical connection	
Voltage	3x380-500 V +/- 10%
Frequency	50-60 Hz
Current	4,5 -3,4 A
General	
Number of users/workstations	1
Width x height x depth	569 x 1211 x 442,6 mm // 23 x 48 x 18 inches
Maximum weight	90 kg // 198 lbs
IP class	54
Noise level	<70 dB

	BS3-20
Installation	
Ambient temperature	3-40 °C // 37-104 °F
Pump	
Pump type	CRNE 3-9
Energy class	IE5
Motor power	4 kW // 5.4 HP
Frequency converter	Integrated in pump motor
Water supply	
Connection	1.1/2" BSPT // 1.1/2" NPT
Inlet pressure	1,5-10 bar // 22-145 psi
Filtration rating	≤800 µ
Automatic pump stop at inlet pressure less than	1,5 bar // 22 psi
Temperature	3-70 °C // 37-160 °F
Automatic pump stop at liquid temperature higher than	85 °C // 185 °F
Recommended minimum inlet flow	7,5 m³/h // 33 US gal/min
Water outlet	
Connection	1.1/2" BSPT // 1.1/2" NPT
Set point range (0-10V external signal)	0-20 bar (STD. 20 bar)
Maximum flow at 20 bar/290 psi, incl. a 4 bar/58 psi inlet pressure	90 litres/min // 24 US gal/min
Electrical connection	
Voltage	3x380-500 V +/- 10%
Frequency	50-60 Hz
Current	7,6 - 6,2 A
General	
Number of users/workstations	1
Width x height x depth	569 x 1211 x 442,6 mm // 23 x 48 x 18 inches
Maximum weight	100 kg // 198 lbs
IP class	54
Noise level	<70 dB

	BS5-20
Installation	
Ambient temperature	3-40 °C // 37-104 °F
Pump	
Pump type	CRNE 5-14
Energy class	IE5
Motor power	6 kW // 8 HP
Frequency converter	Integrated in pump motor
Water supply	
Connection	1.1/2" BSPT // 1.1/2" NPT
Inlet pressure	1,5-10 bar // 22-145 psi
Filtration rating	≤800 µ
Automatic pump stop at inlet pressure less than	1,5 bar // 22 psi
Temperature	3-70 °C // 37-160 °F
Automatic pump stop at liquid temperature higher than	85 °C // 185 °F
Recommended minimum inlet flow	12 m³/h // 52.8 US gal/min
Water outlet	
Connection	1.1/2" BSPT // 1.1/2" NPT
Set point range (0-10V external signal)	0-20 bar (STD. 20 bar)
Maximum flow at 20 bar/290 psi, incl. a 4 bar/58 psi inlet pressure	150 litres/min // 40 US gal/min
Electrical connection	
Voltage	3x380-500 V +/- 10%
Frequency	50-60 Hz
Current	11,5 -9,0 A
General	
Number of users/workstations	1
Width x height x depth	569 x 1211 x 442,6 mm // 23 x 48 x 18 inches
Maximum weight	130 kg // 198 lbs
IP class	54
Noise level	<70 dB

	BS7-20
Installation	
Ambient temperature	3-40 °C // 37-104 °F
Pump	
Pump type	CRNE 10-09
Energy class	IE5
Motor power	7,5 kW // 10 HP
Frequency converter	Integrated in pump motor
Water supply	
Connection	1.1/2" BSPT // 1.1/2" NPT
Inlet pressure	1,5-10 bar // 22-145 psi
Filtration rating	≤800 µ
Automatic pump stop at inlet pressure less than	1,5 bar // 22 psi
Temperature	3-70 °C // 37-160 °F
Automatic pump stop at liquid temperature higher than	85 °C // 185 °F
Recommended minimum inlet flow	15 m³/h // 66 US gal/min
Water outlet	
Connection	1.1/2" BSPT // 1.1/2" NPT
Set point range (0-10V external signal)	0-20 bar (STD. 20 bar)
Maximum flow at 20 bar/290 psi, incl. a 4 bar/58 psi inlet pressure	210 litres/min // 17.4 US gal/min
Electrical connection	
Voltage	3x380-500 V +/- 10%
Frequency	50-60 Hz
Current	14,1 – 11,2 A
General	
Number of users/workstations	1
Width x height x depth	569 x 1211 x 442,6 mm // 23 x 48 x 18 inches
Maximum weight	150 kg // 198 lbs
IP class	54
Noise level	<70 dB

Description of functions
Operating elements



Item	Description
1	Pressure switch, inlet
2	Manometer, inlet pressure
3	Outlet pressure transmitter
4	Flow switch
5	Manometer, outlet pressure
6	Start/Stop
7	Temperature switch

Pos. 1 – Pressure switch, inlet
The function of the pressure switch is to ensure that there is sufficient inlet pressure to the system.

If the inlet pressure falls below 1.5 bar, a countdown of 5 seconds starts.
If the inlet pressure remains below 1.5 bar after the countdown, the pump will begin sounding an alarm and stop.

The alarm is reset by pressing the blue button.

Item 2 – Manometer, inlet pressure
Shows the inlet pressure.

Pos. 3 – Outlet pressure transmitter
The function of the pressure transmitter is to maintain a constant outlet pressure.
The pump regulates its speed based on the pressure transmitter's reading.

Pos. 4 – Flow switch
The function of the flow switch is to start the pump when there is flow.
This function is dependent on the white button having a constant white light.

Pos. 5 – Manometer outlet pressure
Shows the outlet pressure.

Pos. 6 – Start/Stop
The function of the white button is to switch between "standby" and "ready to run".
A flashing white light means that the pump is on but has not been granted permission to run.
A steady white light means that the pump is on and is permitted to run.

The function of the blue button is to reset the pump if there has been an error/alarm.
The blue button lights up if there has been an error/warning in the pump.

Pos. 7 – Temperature switch
The function of the temperature switch is to protect the system against excessive water temperatures.

If the water temperature is >70 °C, a countdown of 5 seconds starts.
If the temperature remains above 70 °C after the countdown, the pump will go into alarm mode and stop.

The pump temperature must be below 65 °C before the alarm can be reset by pressing the blue button.

Maintenance

Check valve
Check valve should be checked weekly.

The water check valve protects the fresh water supply against the backflow.

It is recommended that you service/replace the check valve once a year.

Pump
The shaft seal on the pump should be checked for leaks once weekly.
Repeated dry-running can reduce the life of the shaft seal.
We recommend that you replace the shaft seal every two years.

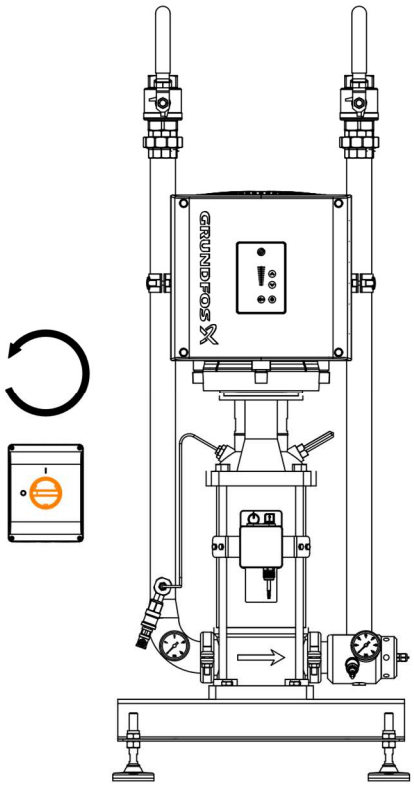
Service kits
Annual service kit, Machine – 96-010480
BS1-/BS3-/BS5-20 shaft seal EPDM (standard) – 32-300010
BS1-/BS3-/BS5-20 shaft seal Viton – 32-300011
BS7-20 shaft seal EPDM (standard) – 32-100020
BS7-20 shaft seal Viton – 32-100021

Service quick guides

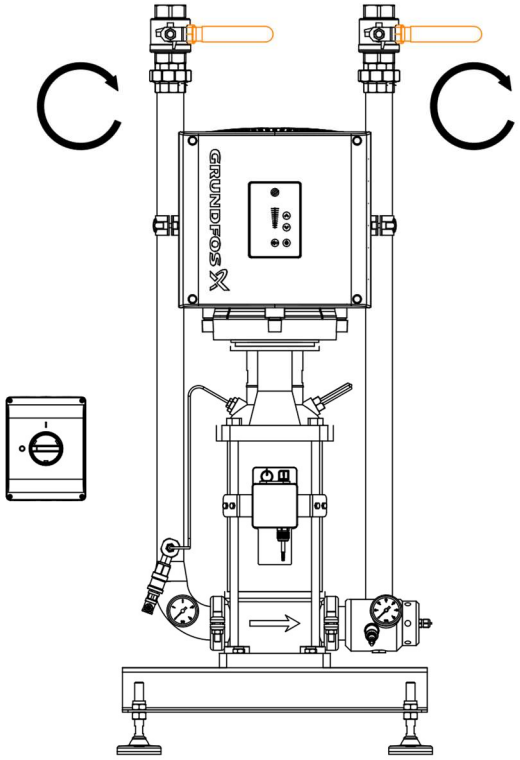
Depressurise the system before servicing.

For safety reasons, this must be done before disassembling internal components.

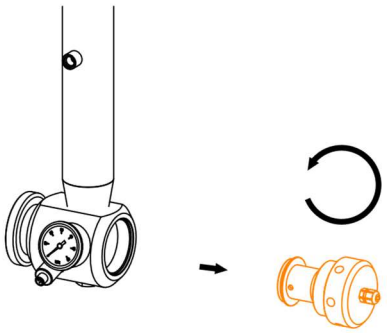
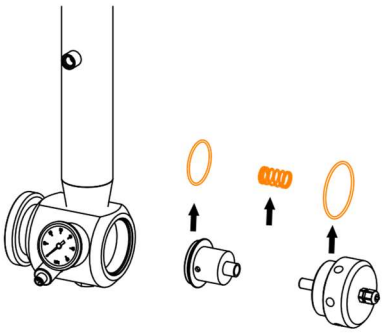
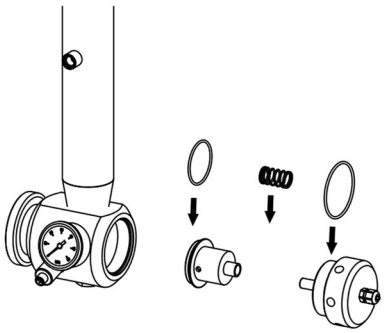
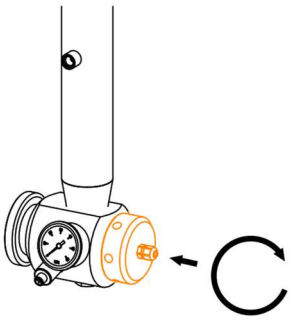
1. Turn off the service switch.



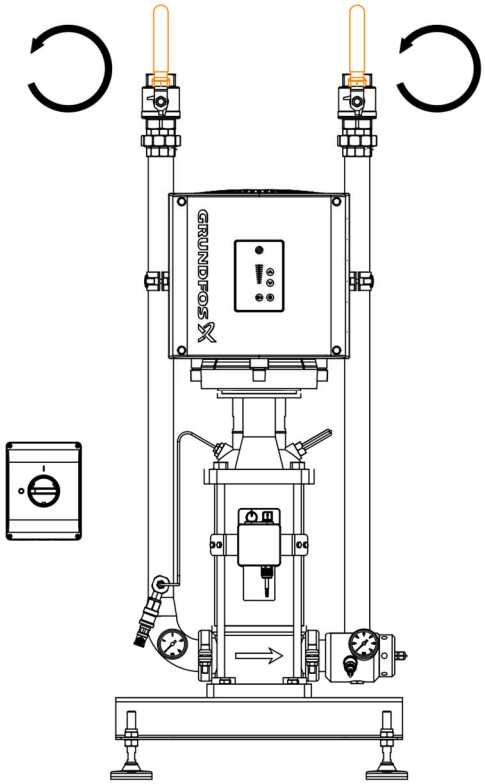
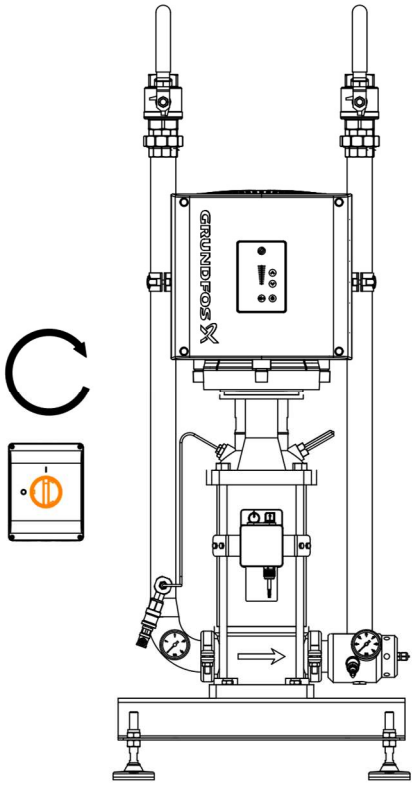
2. Shut off the fluid supply.



Check valve/flow switch

1. Remove the check valve/flow switch 	2. Remove the O-rings and spring 
3. Fit new O-rings and spring 	4. Fit the check valve/flow switch 

Restart after service.

1. Open fluid supply. 	2. Turn on the service switch. 

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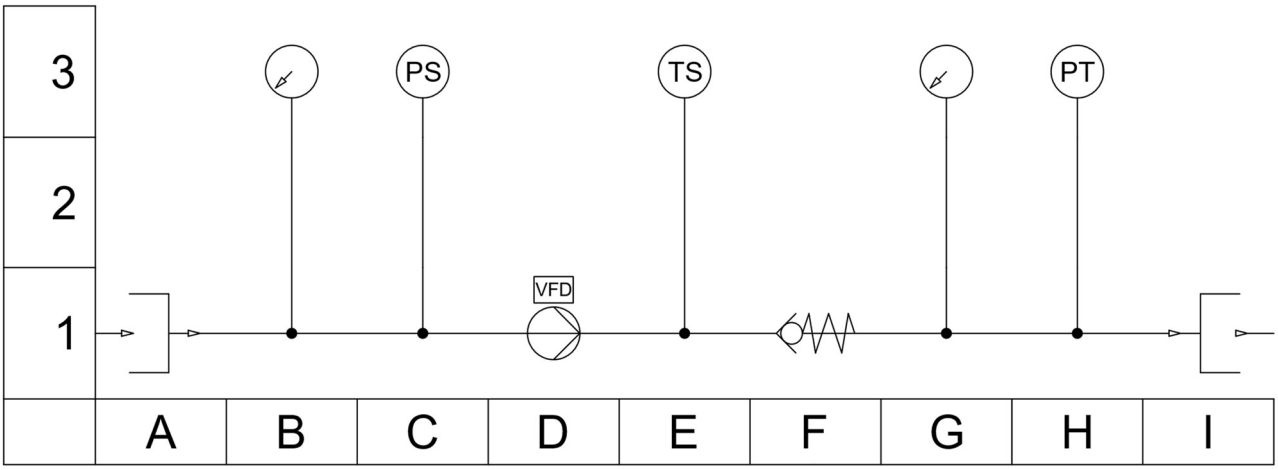

Row	Column	Description
1	A	Water inlet connection
1	D	Pump
1	F	Check valve/flow switch
1	I	Outlet
3	B	Manometer, inlet pressure
3	C	Pressure switch, inlet pressure
3	E	Temperature switch, water
3	G	Manometer, outlet pressure
3	H	Pressure transmitter, outlet pressure

Troubleshooting

Error	Cause	Solution
No rinse pressure.	No water pressure.	Start the pump station.
	Insufficient water supply to the unit	Make sure that the water supply is as described in the technical specifications
	Water pressure is too low	Make sure water supply is as described in the technical specifications

Manual revision

Rev.	Description	Date	Ini.
A	Manual created.	13/05/2025	JJA

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Please note that:
We reserve the right to make changes to the technical specifications without notice.