Booster Advanced / Professional

Content EN

1. Description

The Booster in the Chameleon range is a completely functioning pumping station that supplies pressurised water to connected satellite hygiene stations. Therefore the Booster must be supplied with water in sufficient quantity and power according to specifications.

The station is then ready for hygiene duties.

The Booster is fitted with a frequency controlled pump which ensures a constant working pressure independent of usage pattern.

Important: Do not use the water from the system for applications other than cleaning.

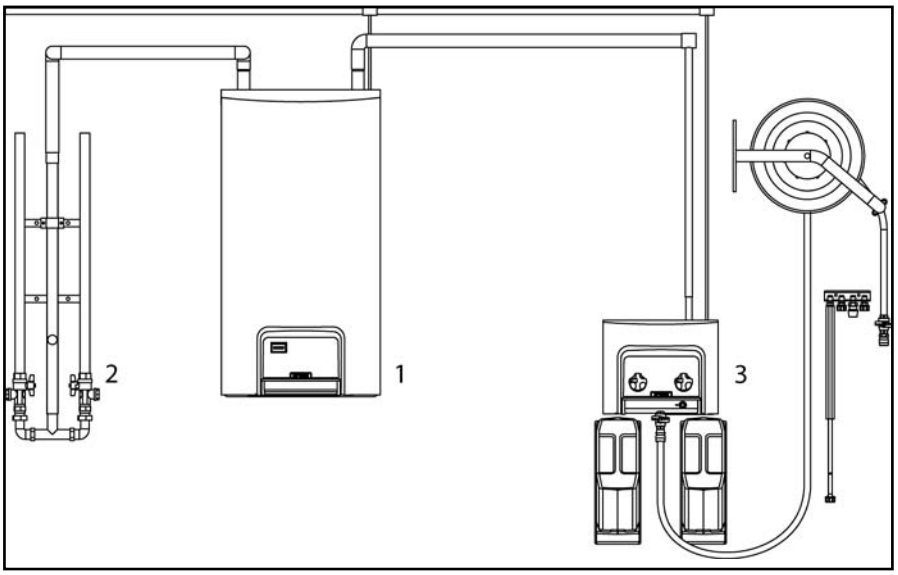


Fig. 1 0627273

A typical Wall Booster installation is shown in fig. 1

- Booster (1)
- Mixing system (2)
- Satellite (3)

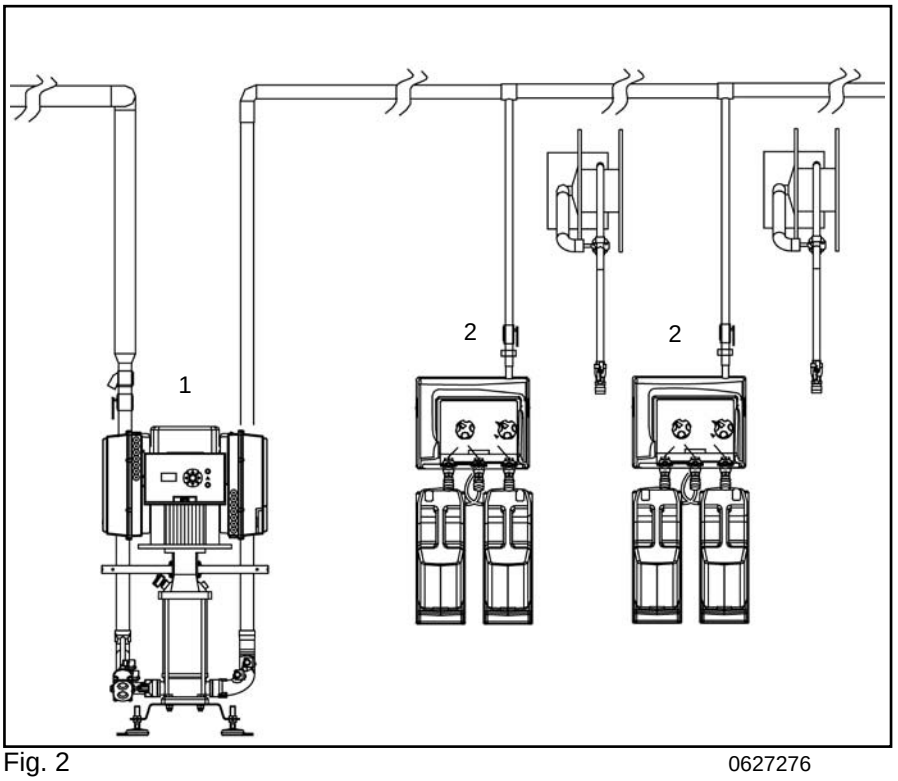


Fig. 2 0627276

A typical Floor Booster installation is shown in fig. 2

- Booster (1)
- Satellite (2)

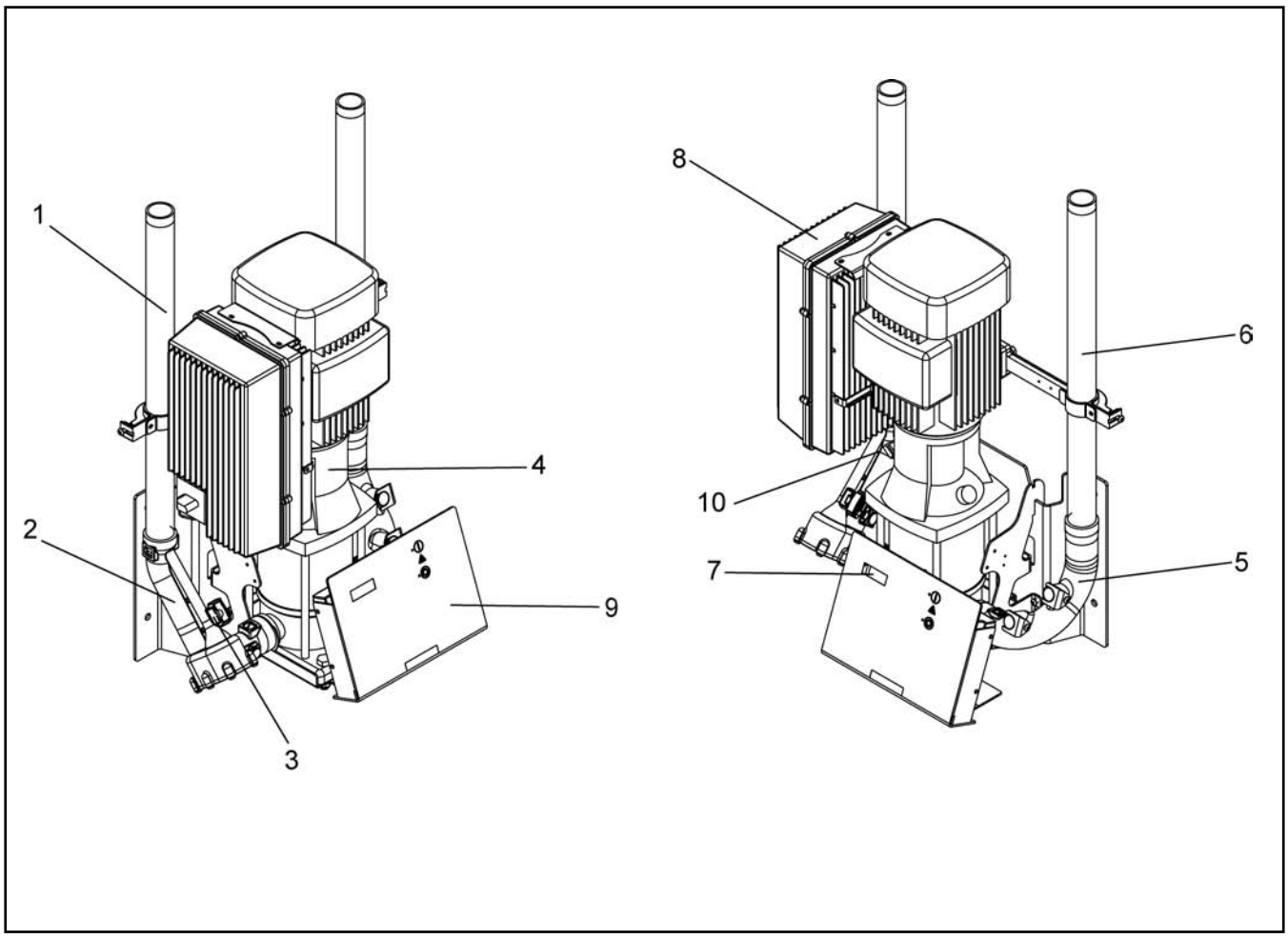
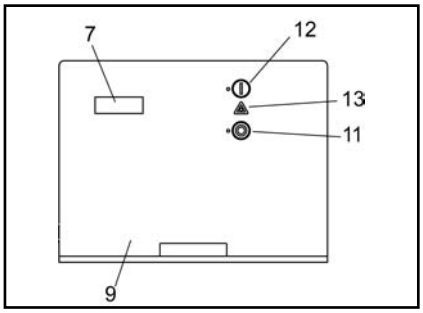


Fig. 4 0627186



0627187

1.1 Booster BW3

(Fig. 4).

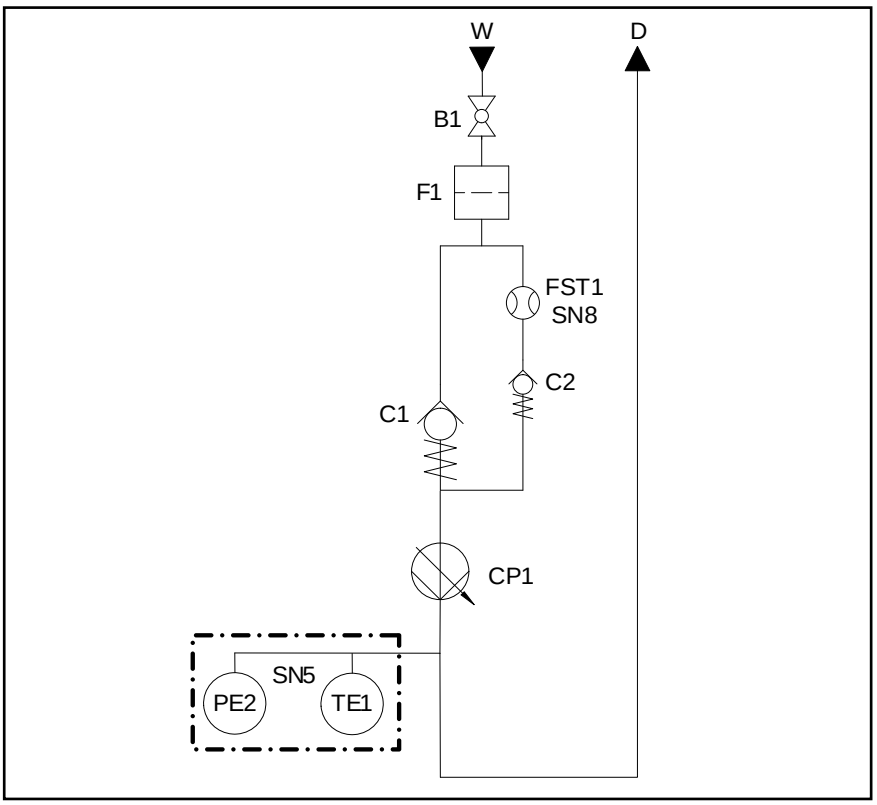
1. Water inlet
2. Manifold inlet
3. Trigger sensor, flow sensor
4. Pump
5. Manifold outlet
6. Outlet pipe
7. Display
8. El-box
9. Operation panel
10. • **O** Pushbutton.Stop
11. • **I** Pushbutton.Start
12. • Δ Lamp. Alight by error

1.2 Operating Diagrams iht. ISO14617

BW3 Booster

B. Ball valve.
F. Filter.
FS. *Flow sensor.
FST. Flowsensor and -trigger.
C. Check valve.
PE. Pressure sensor.
TE. Temperature sensor.
CP. Centrifugal pump.
D. Outlet.
W. Water inlet.
SN : Socket no.

* Has been suspended per 01.10.2007



0627268

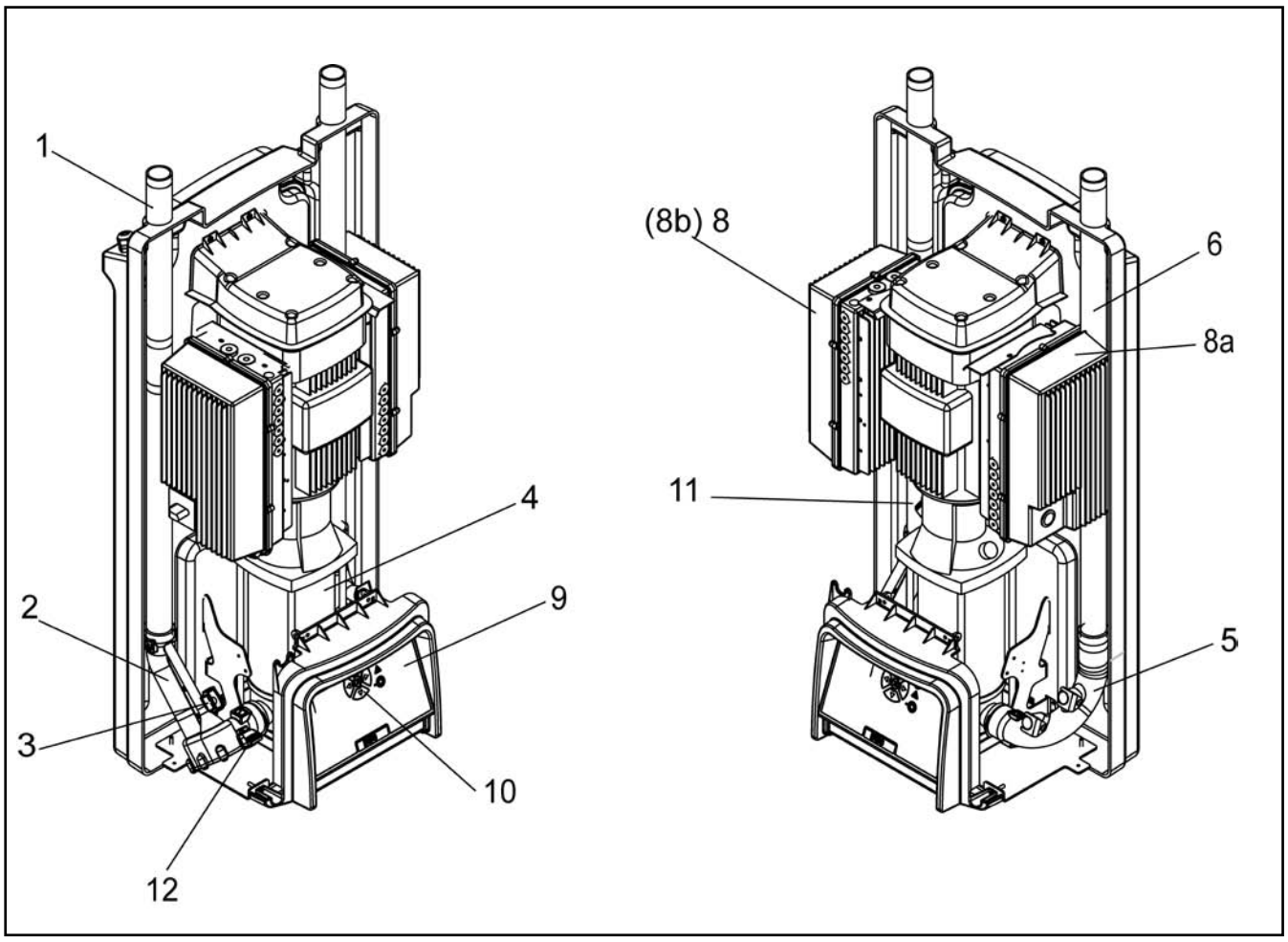
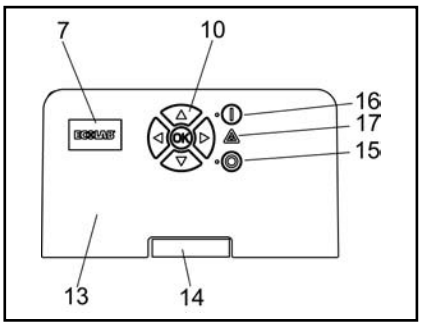


Fig. 5

0627262

1.3 Advanced Booster BW4 - BW8

(Fig. 5).



0627274

1. Water inlet
2. Manifold inlet
3. Trigger sensor, flow sensor
4. Pump
5. Manifold outlet
6. Outlet pipe
7. Display
8. El- box (BW4)

8a. Inverter box

8b. Filter box (only used on BW8)

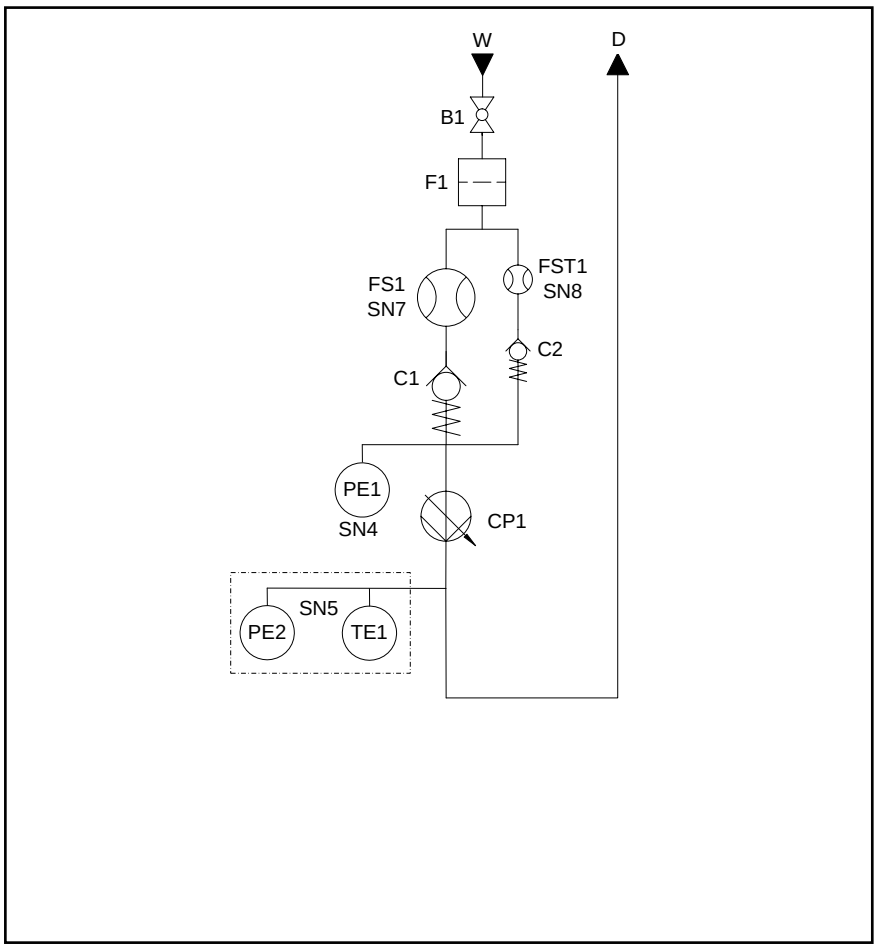
9. Operations panel
10. Navigation buttoms
11. Label
12. Name Label
13. • **O** Pushbutton.Stop
14. • **I** Pushbutton.Start
15. • Δ Lamp. Alight by error

1.4 Operating Diagrams iht. ISO14617

Advanced Booster BW4 - BW8

B. Ball valve.
F. Filter.
FS. *Flow sensor.
FST. Flowsensor and -trigger.
C. Check valve.
PE. Pressure sensor.
TE. Temperature sensor.
CP. Centrifugal pump.
D. Outlet.
W. Water inlet.
SN : Socket no.

* Has been suspended per 01.10.2007



0627269

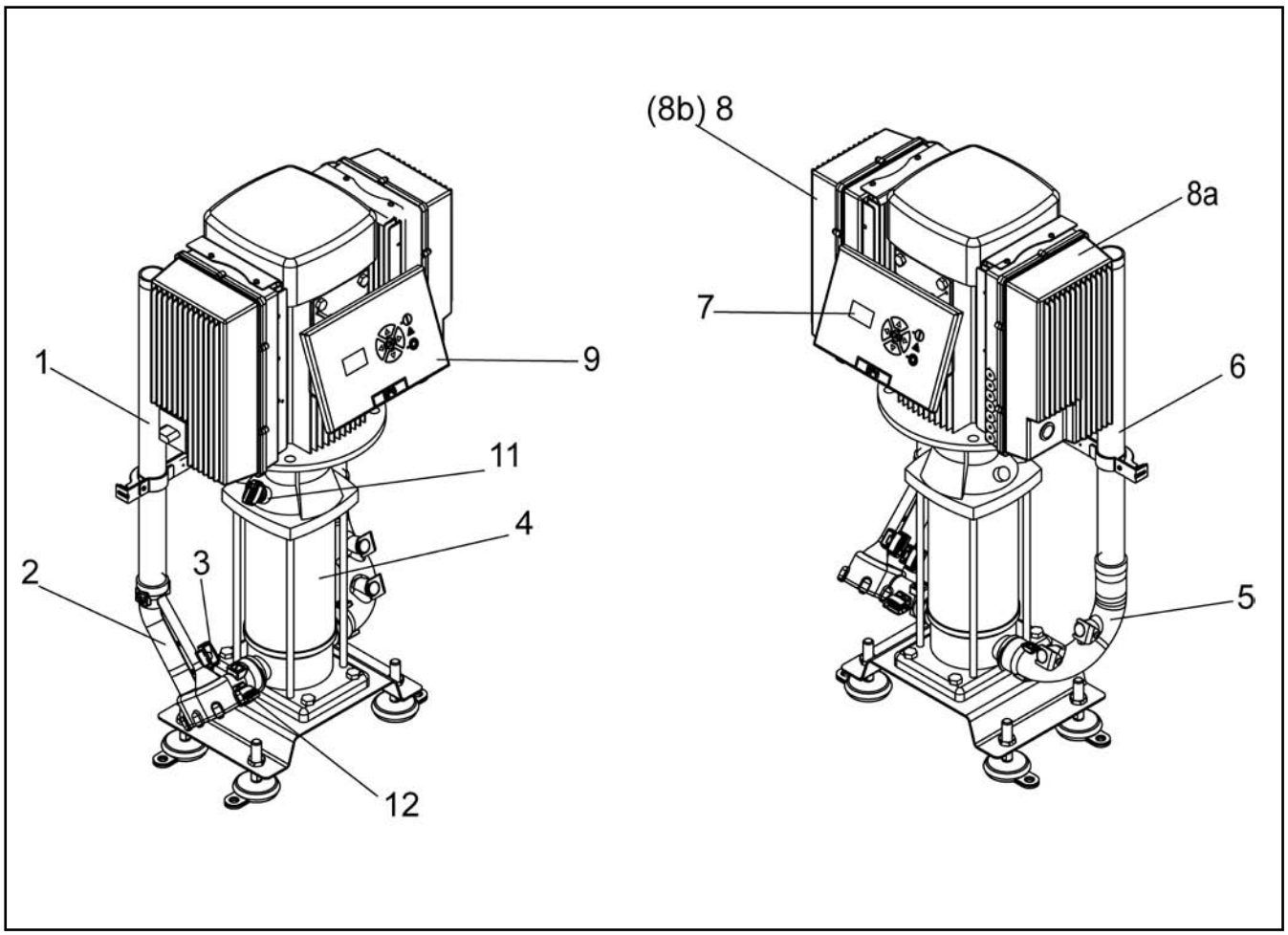
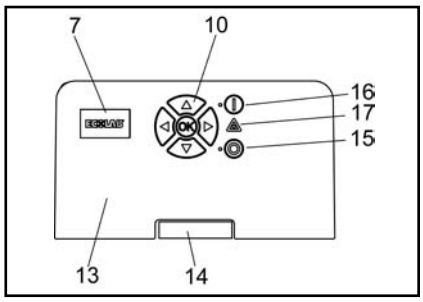


Fig. 6 0627265

1.5 Advanced Booster BF3 - BF4 - BF8

(Fig. 6).



0627274

1. Water inlet
2. Manifold inlet
3. Trigger sensor, flow sensor
4. Pump
5. Manifold outlet
6. Outlet pipe
7. Display
8. El- box (BF3 - BF4)

8a. Inverter box

8b. Filter box (only used on BF8 and bigger)

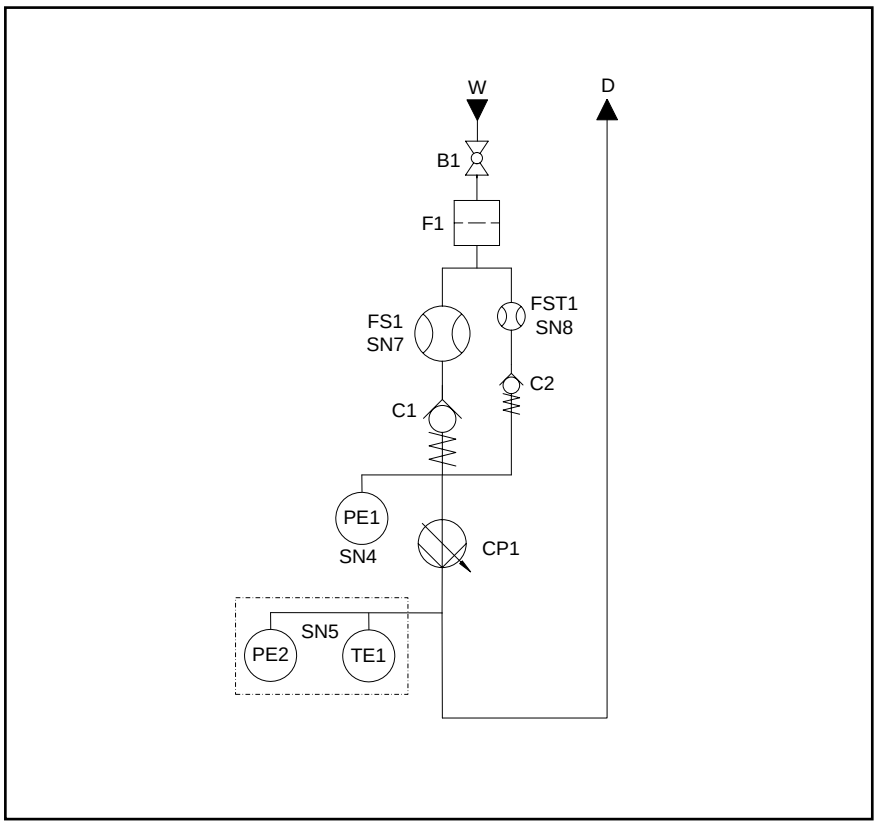
9. Operations panel
10. Navigation buttoms
11. Label
12. Name Label
13. • **O** Pushbutton.Stop
14. • **I** Pushbutton.Start
15. • Δ Lamp. Alight by error

1.6 Operating Diagrams iht. ISO14617

Advanced Booster BF3 - BF4 - BF8

B. Ball valve.
F. Filter.
FS. *Flow sensor.
FST. Flowsensor and -trigger.
C. Check valve.
PE. Pressure sensor.
TE. Temperature sensor.
CP. Centrifugal pump.
D. Outlet.
W. Water inlet.
SN : Socket no.

* Has been suspended per 01.10.2007



0627269

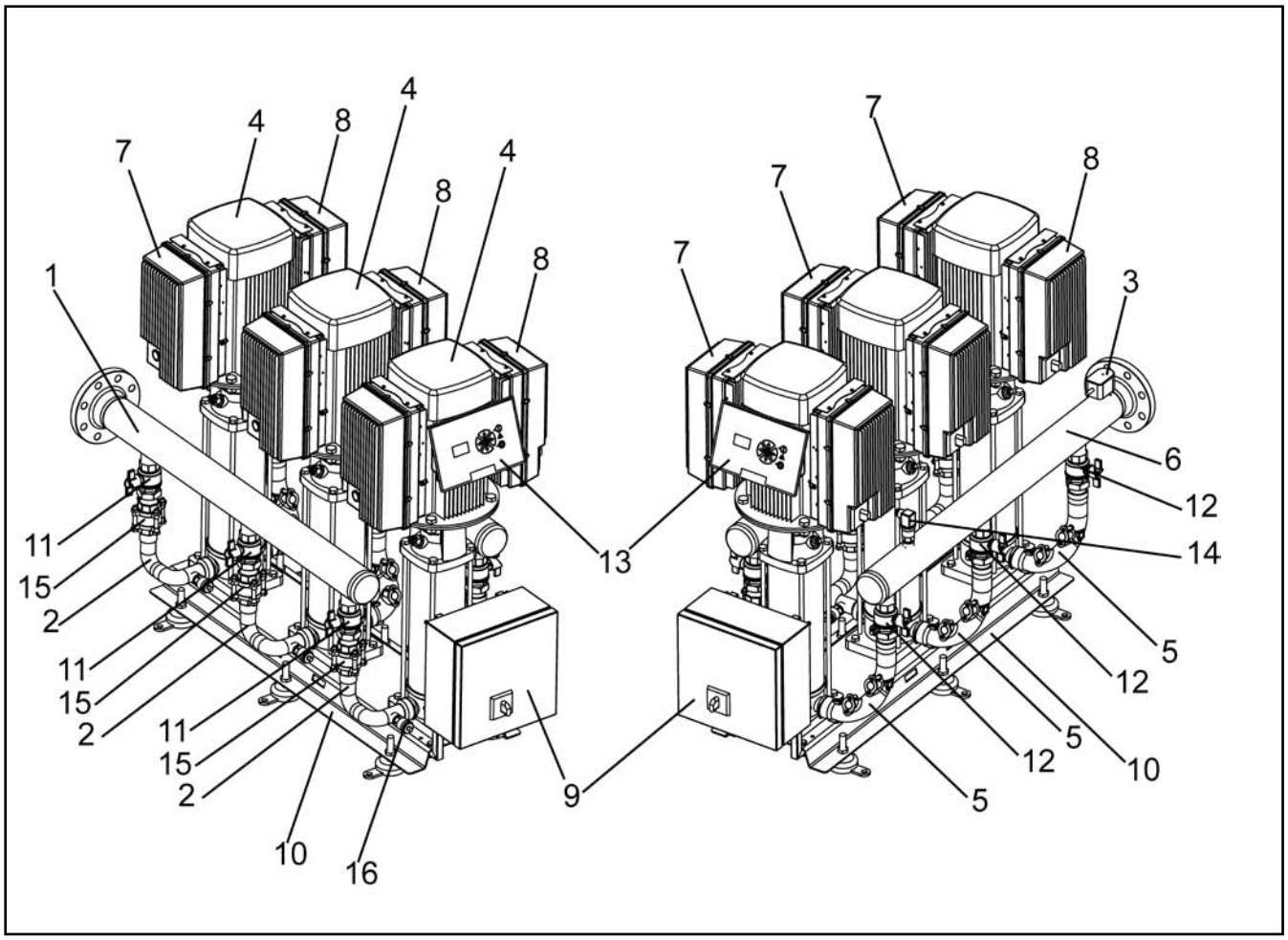
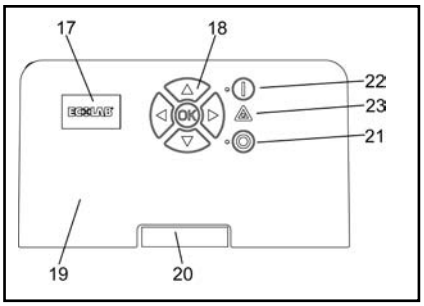


Fig. 7 110000484

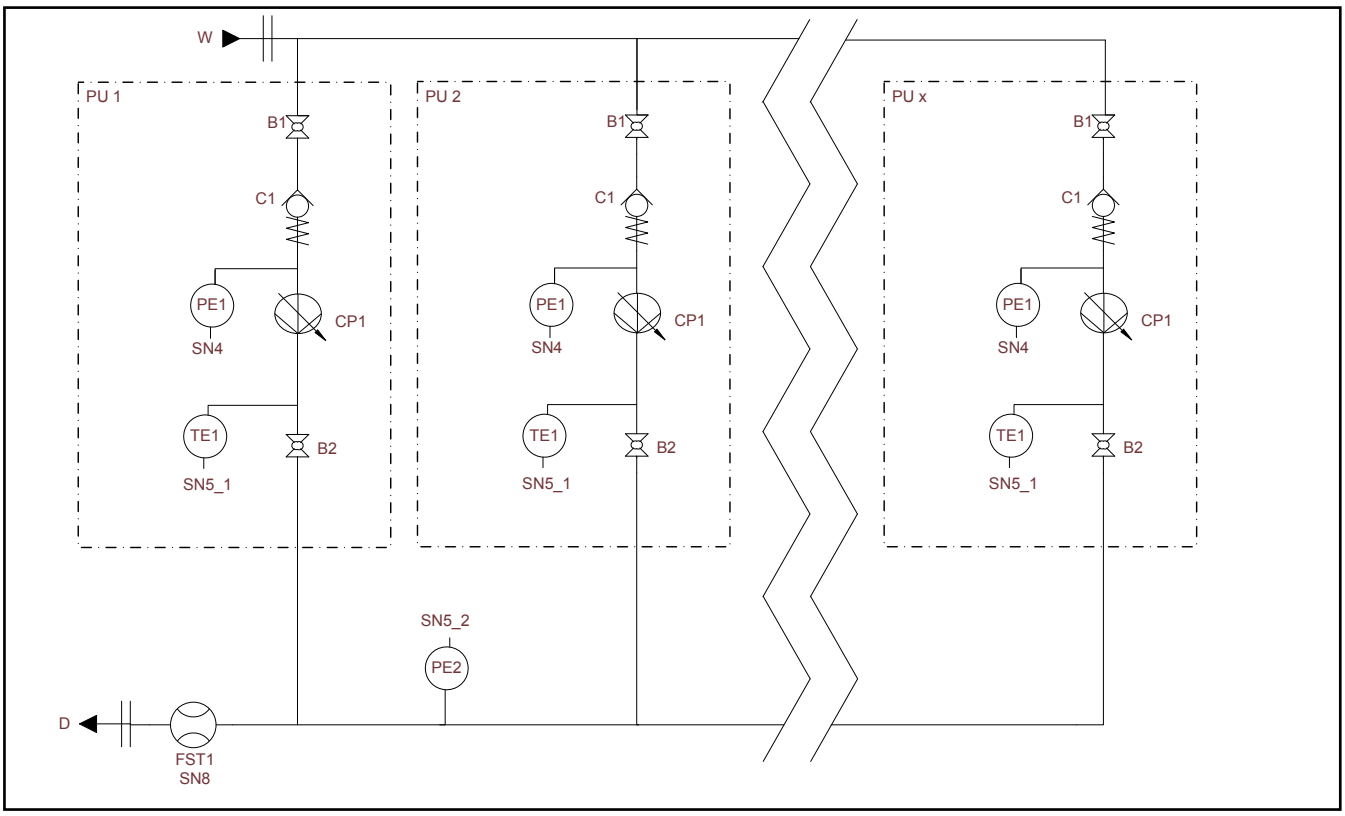
1.7 Advanced Booster BF16 - BF24.....BFXX

(Fig. 7).



0627275

1. Water inlet
2. Manifold inlet
3. Trigger sensor, flow sensor
4. Pump
5. Manifold outlet
6. Outlet pipe
7. Inverter box
8. Filter box
9. Electrical connection box
10. Floor bracket
11. Inlet ball valve
12. Outlet ball valve
13. Operation panel
14. Pressure transmitter
15. Non Return Valve
16. Pressure transmitter
17. Display
18. Navigation buttoms
19. Label
20. Name Label
21. • **O** Pushbutton.Stop
22. • **I** Pushbutton.Start
23. • Δ Lamp. Alight by error



0627270

1.8 Operating Diagrams iht. ISO14617

Advanced Booster BF16 - BF24.....- BFXX

B. Ball valve.
FST. Flowsensor and -trigger.
C. Check valve.
PE. Pressure sensor.
TE. Temperature switch.
CP. Centrifugal pump.
D. Outlet.
PU. Pump Unit
W. Water inlet.
SN. Socket no.

* Has been suspended per 01.10.2007

2. Maintenance

The Booster unit is maintenance free. However, we recommend cleaning the booster unit in connection with the occasional cleaning of the other equipment in the area. The filter must be cleaned at convenient intervals (approx. every 1-3 months) depending of the amount of impurities in the water.

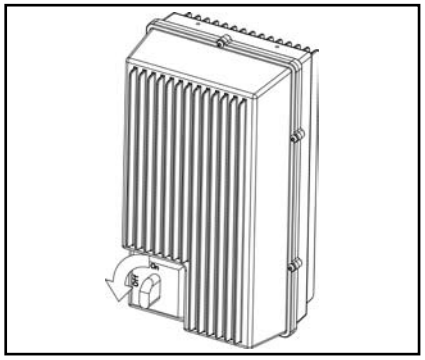


Fig. 13 0627106

2.1 Filter

1. Press **"0"** on the control panel to stop the Booster.
2. Interrupt the master switch (Fig. 13).
3. Close the water inlet .
4. Open a tap to release the system of pressure.
5. Remove the filter (A, Fig. 18) and place it in a descaling solution.
   Note: MB systems are not delivered with a factory mounted filter. In case a filter

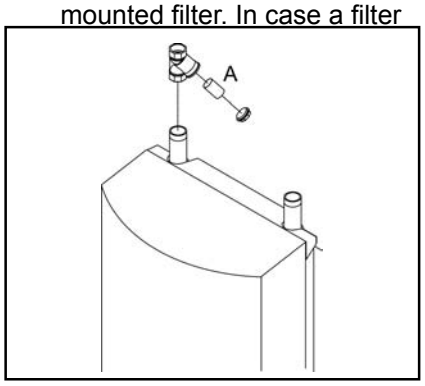


Fig. 18 0627117

   is mounted in a MB system, the descaling procedure is exactly the same. until the scale is dissolved.
6. Rinse the cleaned filter thoroughly and remount.

2.2 Before a long time produktion stop

If long productions stops are planned (more than 6 months) and the pump is emptied of water, it is recommended that the pump be secured as follows:

1. Remove the coupling safety guard.
2. Spray a couple of drops of silicone oil onto the axle between the top section and the coupling.

Carefully follow the instructions given in the manual provided by the pump supplier.

3. Start

3.1 New system

In order to ensure a problem-free start up of a new system the pipe system must be flushed and bled.

Bleeding the pipe system

1. Turn on the water supply to rinse and bleed the entire system. If satellites are installed open the tap furthest away until no air or dirt comes out. Then rinse and bleed the next tap and continue until the tap closest to you has been rinsed and bled.
2. Mount satellites, if any

Bleeding the pump

3. Loosen the relief plug (A, Fig 14) 1-2 revolutions until water and air begin to flow out.
   Note. Never loosen the relief plug while the pump is running as this may damage the packing and cause personal injury.
4. Tighten the relief plug again
5. Start the pump so that all remaining air pockets are forced up to the top of the pump.

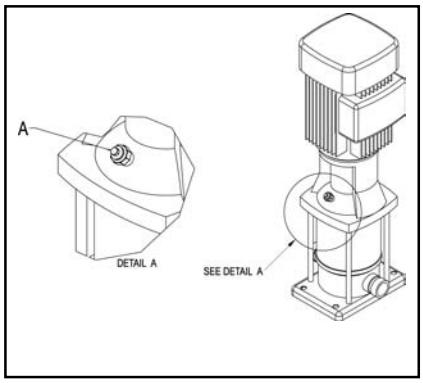


Fig. 14 0627131

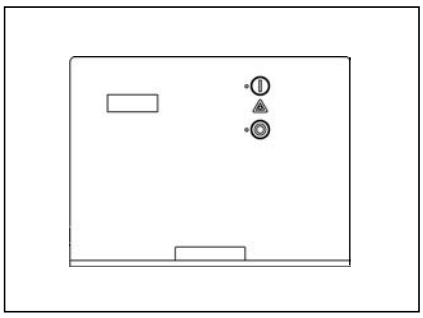


Fig. 16 0627277

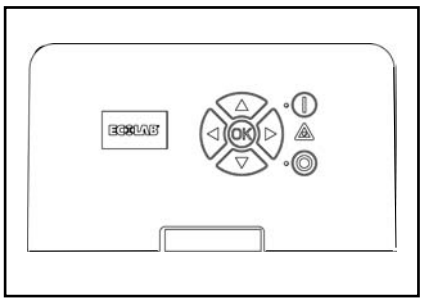


Fig. 17 0627278

6. Stop the pump.
7. Loosen the relief plug 1-2 revolutions again and bleed the system until only water flows out.
8. Tighten the relief plug once more.
9. The phase sequence is not important as the frequency converter always secures a correct direction of rotation.
10. Trigger adjustments.

The Booster is now ready for operation. Press **"I"** on the control panel. (see fig. 16 and 17).

4. Daily operation

4.1 Start

1. Check that water supplies for the system are open.
2. Press **"I"** on the control board in order to start up the unit.

4.2 Stop

1. Press **"0"** on the control panel to stop.
2. Turn off the water supply.
3. Switch off the air supply.

Note. Due to the following it is very important always to switch off both water and air supply after use:

- If the air supply is open when the main station or satellites are not in use, air might leak into the water line. If this happens, the system must be bled once more.

- The water separator, which is a part of the air regulator, is only to be emptied when the air supply is closed.

After a long time production stop (holidays etc) it might be necessary to bleed the piping system and the booster unit again.

5. Service

Service may only be carried out by authorized and qualified personnel.

Warning: The system must only be serviced when there is no voltage or pressure on the system.

1. Turn off the main switch at the control box (Fig. 13)
2. Open a water outlet to depressurise the system.

5.1 Components

5.1.1 Pump / motor

Pump/motor are maintenance free, see section 2.2

5.1.2 Control system

Maintenance free
If defective: Call service technician

5.1.3 Flow trigger

Maintenance-free.
If defective, replace the flow switch.

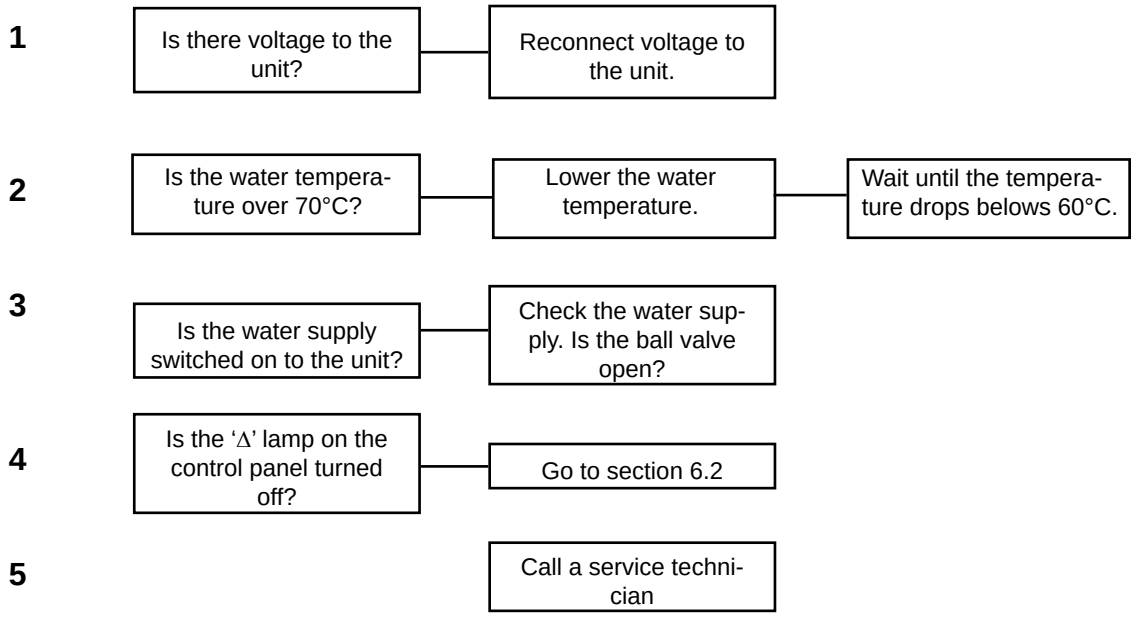
Attention ! For operation of the display menus see the software manual.

5.1.4 Non-return valve / intake side Maintenance - free.

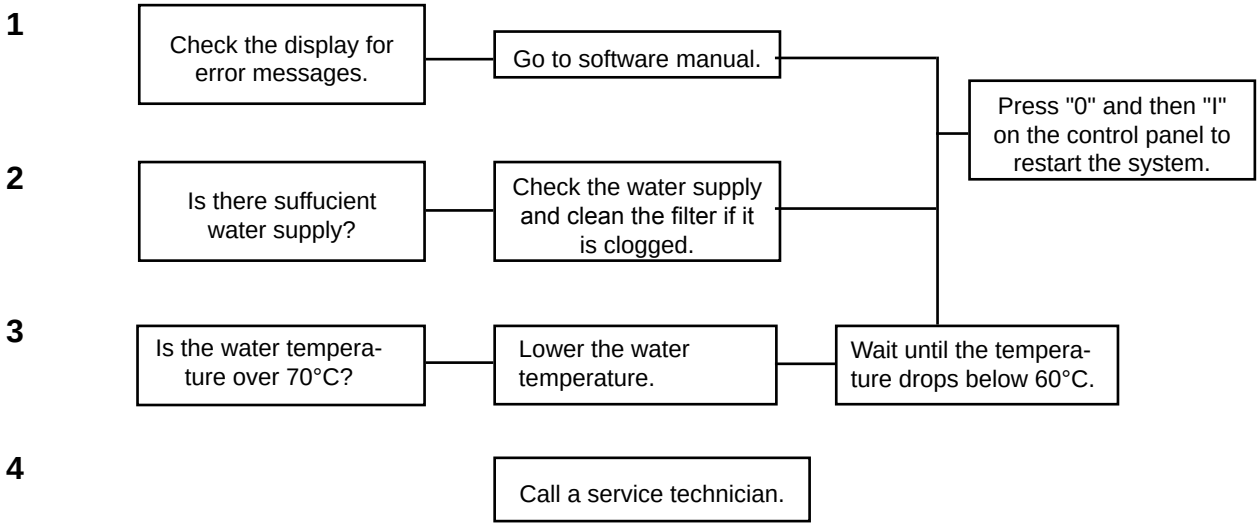
If defective, replace the non-return valve.

6. Troubleshooting

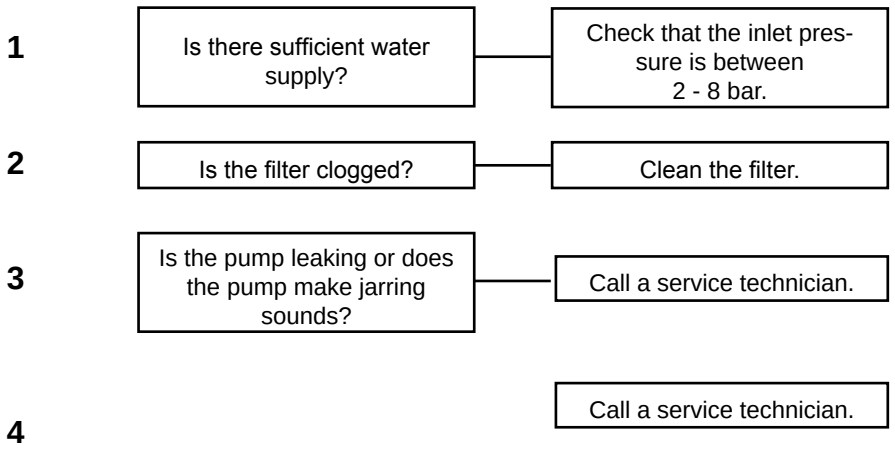
6.1 The unit does not start
Steps 1 - 5



6.2 The "Δ"- lamp on the control panel is on
Steps 1 - 4



6.3 Too low or unstable pressure
Steps 1 - 4



7. Recommended spare parts

The recommended spare parts are marked with * in the spare part manual.

8. Specifications

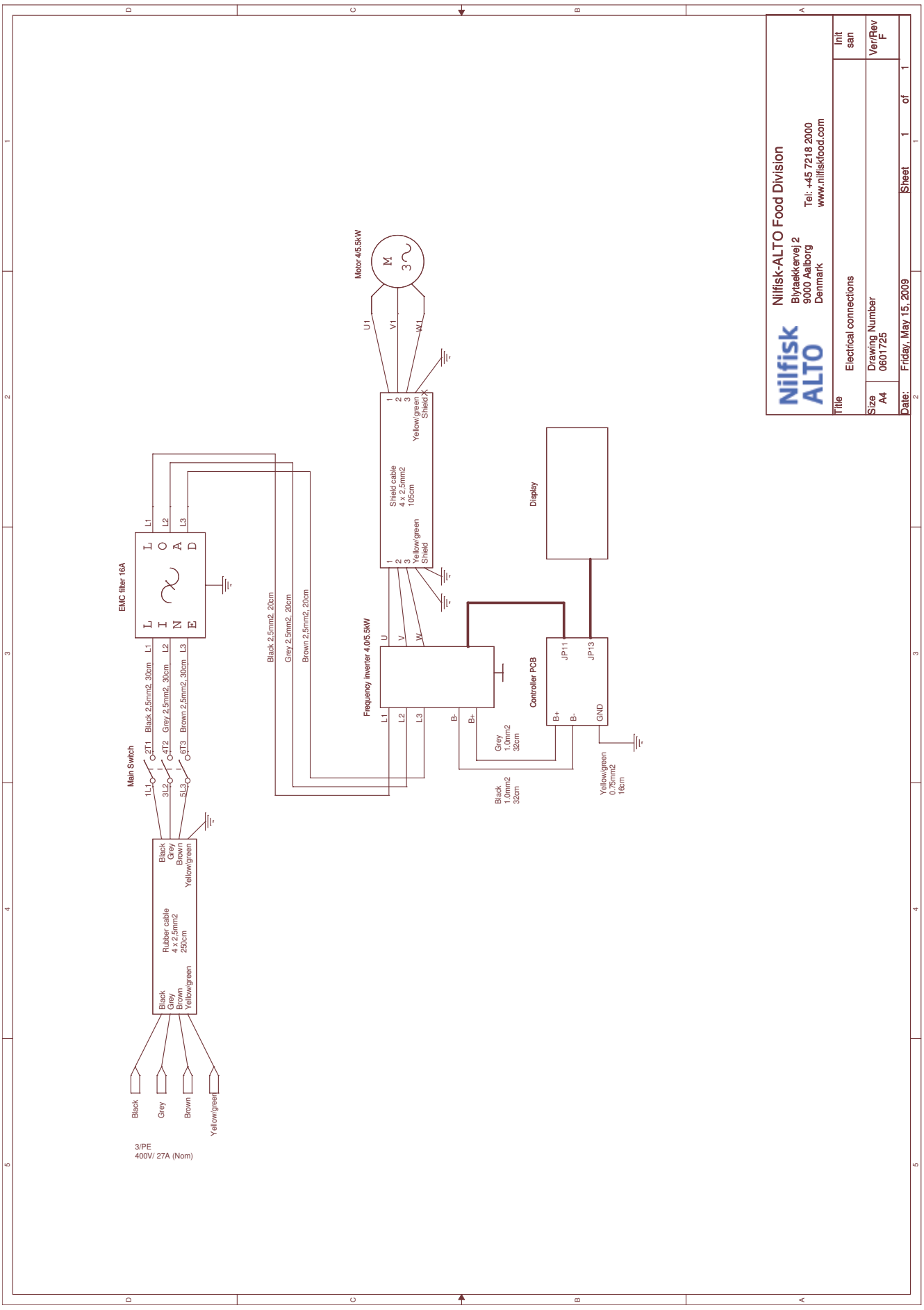
Technical Data		**Booster/Main station.**						
		Advanced*	**Proff.****					
Water	**Unit.**	**3 (4 kW)**	**3 (4 kW)**	**4 (5.5 kW)**	**DP 4 (5.5kW)******	**8 (10 kW)*****	**16 (22 kW)*****	**24 (33 kW)*****
Max. Outlet pressure.	bar	25	22	25	37	22	22	22
Consumption during rinsing. 1)	L/min	90	90	120	120	220	440	680
Consumption during foaming.	L/min	30	30	40	40	80	160	240
Min. supply pressure.	bar	2	2	2	2	2	2	2
Max. supply pressure.	bar	8	8	8	8	8	8	8
Min. water supply.	L/min	100	100	135	135	265	540	810
Pressure @ 90 [L/min]	bar	19,5	19,5		26,1			
Pressure @ 120 [L/min]	bar			19,5	17,7			
Pressure @ 220 [L/min]	bar					20,3		
Pressure @ 440 [L/min]	bar						20,3	
Pressure @ 680 [L/min]	bar							20,3
Flow @ 37 [bar]	L/min				48,4			
Max. water temp.	°C	70	70	70	70	70	70	70
Pipe dimension inlet Ø	inch	1.1/4"	1.1/4"	1.1/4"	1.1/4"	2"	2.1/2"	3"
Pipe dimension outlet Ø	inch	1.1/4"	1.1/4"	1.1/4"	1.1/4"	2"	2.1/2"	3"
Electricity								
Supply voltage	V	3/PE 400 V ±10% *BF162 booster 16 480V/60Hz US:* 3/PE 480 V ±10%						
Frequency	Hz	50/60 Hz 48 0%…62 +0%						
Motor load (kW)	kW	4	4	5.5	5.5	10	22	33
		Installation to EN 60204-1						
Nominal current	A	10.6	10.6	14.2	14.2	27	54	81
Fuse	A	16	16	20	20	35	70	
L1, L2, L3, PE	mm2	2.5	2.5	2.5	2.5	6	16	
General								
Sound level ISO 11202	dB	Below 70	Below 70	Below 70	Below 70	Below 70	Below 70	Below 70
Dimensions	mm	785 x 550 x 375		1074 x 557 x 382	1074 x 557 x 382	990 x 535 x 364	990 x 540 x 1050	990 x 600 x 1420
Weight (kg)	kg	60		75	81	80	120	325

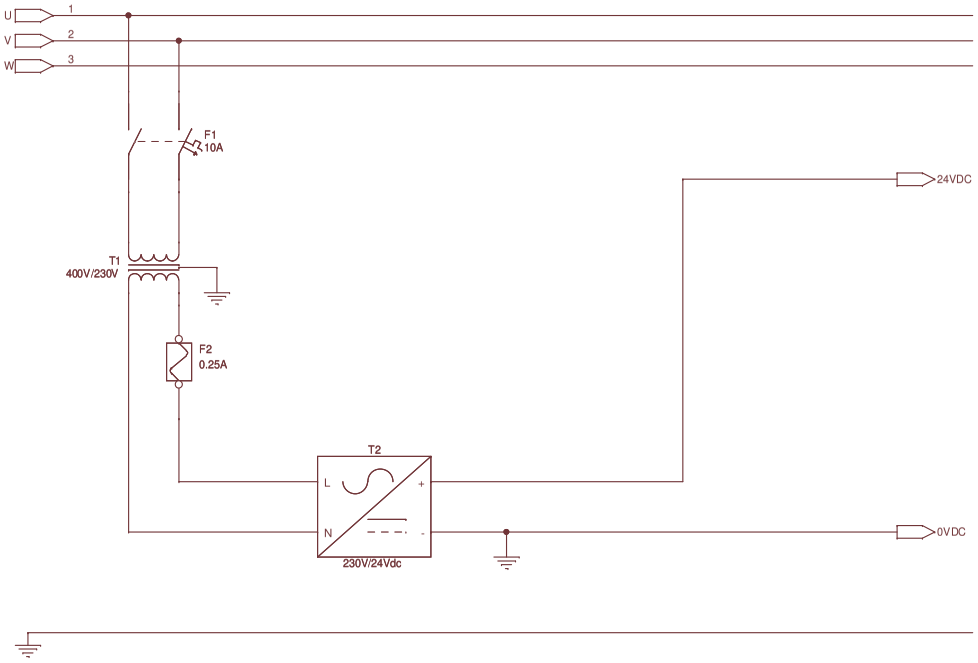
All specifications are based on 4 bar supply pressure

Note:
* Pump pressure 20 bar + inlet pressure max. 25 bar
** Pump pressure 22 bar
*** Pump pressure 20 bar + inlet pressure max. 22 bar
**** Pump pressure 33 bar + inlet pressure max. 37 bar

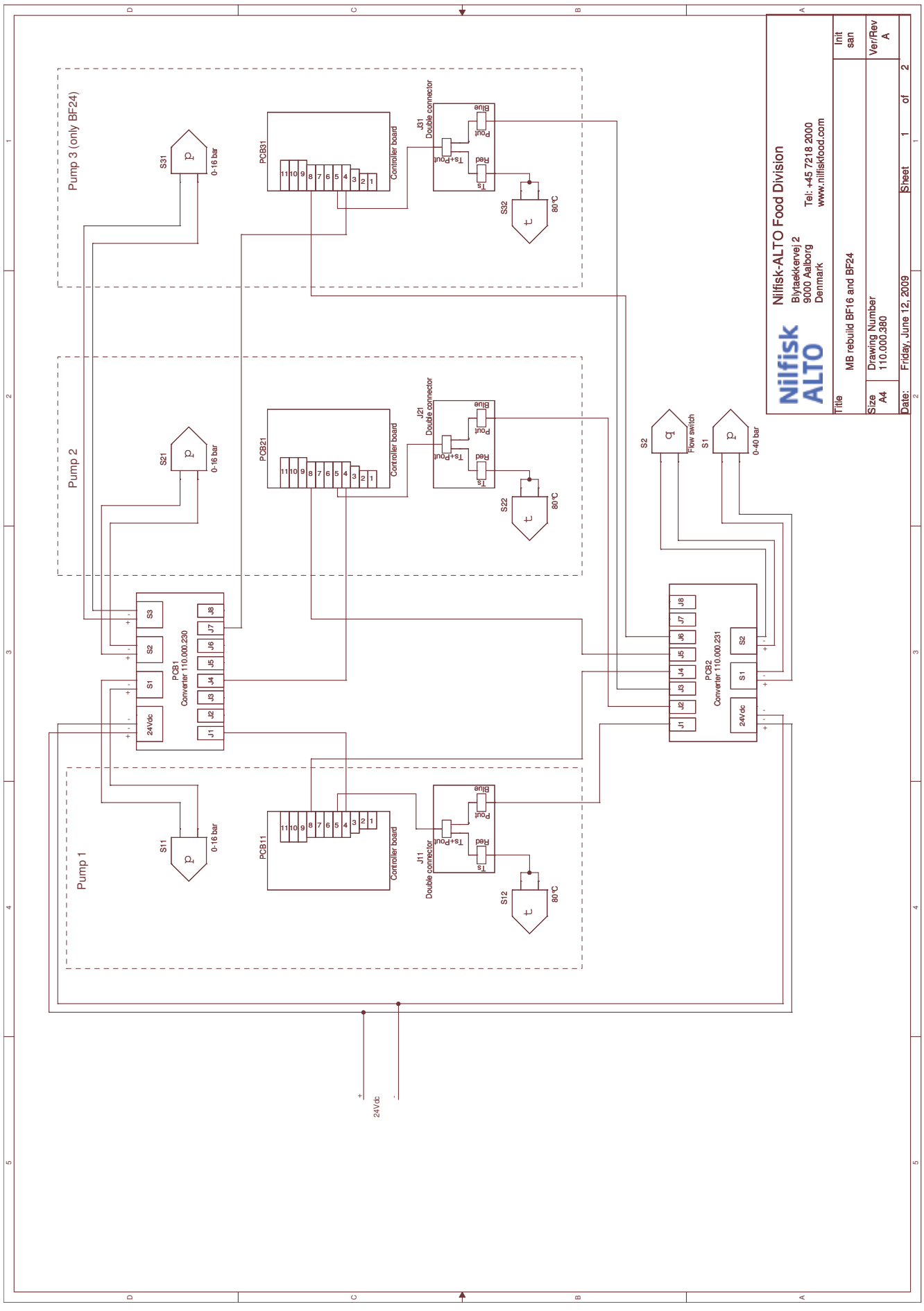
1) 1 user per 30l/min.

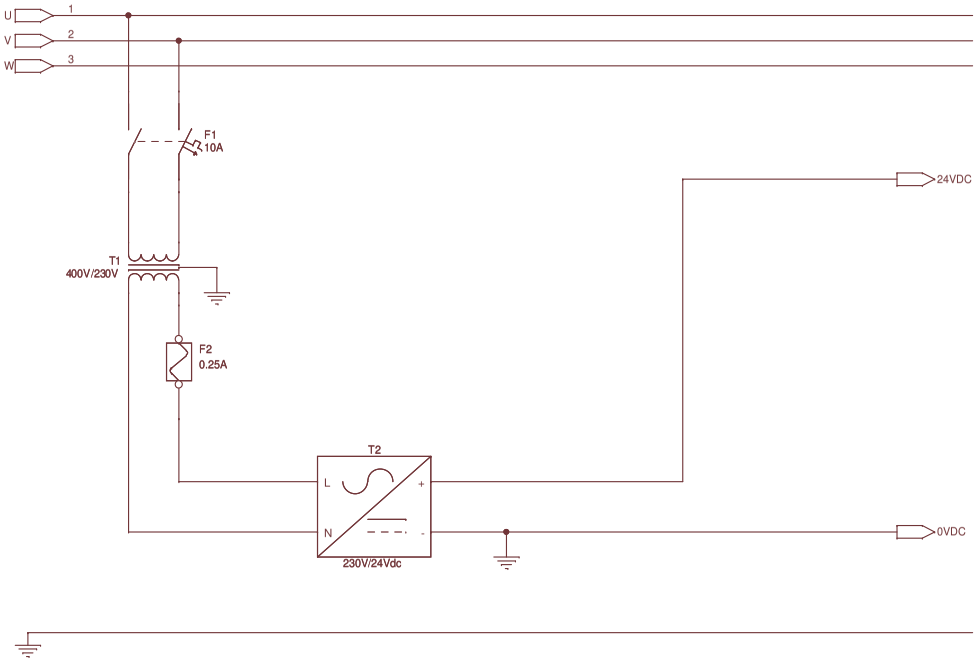
9. Electric diagram





Nilfisk ALTO	Nilfisk-ALTO Food Division Blytækkervej 2 9000 Aalborg Denmark Tel: +45 7218 2000 www.nilfiskfood.com	
Title: 24Vdc supply		Init: san
Size: A4	Drawing Number: 110.000.382	Ver/Rev: A
Date: Tuesday, June 02, 2009	Sheet 1 of 1	


Pump 3 (only BF24)
Pump 2
Pump 1
S31
S21
S11
0-16 bar
PCB31
PCB21
PCB11
Controller board
J31
J21
J11
Double connector
Blue
Pout
Red
Ts
Ts+Pout
S32
S22
S12
80°C
S2
Flow switch
S1
0-40 bar
PCB1
Converter 110.000.230
PCB2
Converter 110.000.231
S3
24Vdc
J1
J2
J3
J4
J5
J6
J7
J8
24Vdc
Nilfisk
ALTO
Nilfisk-ALTO Food Division
Blytaekkervej 2
9000 Aalborg
Denmark
Tel: +45 7218 2000
www.nilfiskfood.com
Title
MB rebuild BF16 and BF24
Size
A4
Drawing Number
110.000.380
Init
san
Ver/Rev
A
Date:
Friday, June 12, 2009
Sheet
1
of
2



Nilfisk ALTO	Nilfisk-ALTO Food Division Blytækkervej 2 9000 Aalborg Denmark Tel: +45 7218 2000 www.nilfiskfood.com	
Title: 24Vdc supply		Init: san
Size: A4	Drawing Number: 110.000.382	Ver/Rev: A
Date: Tuesday, June 02, 2009	Sheet 1 of 1	

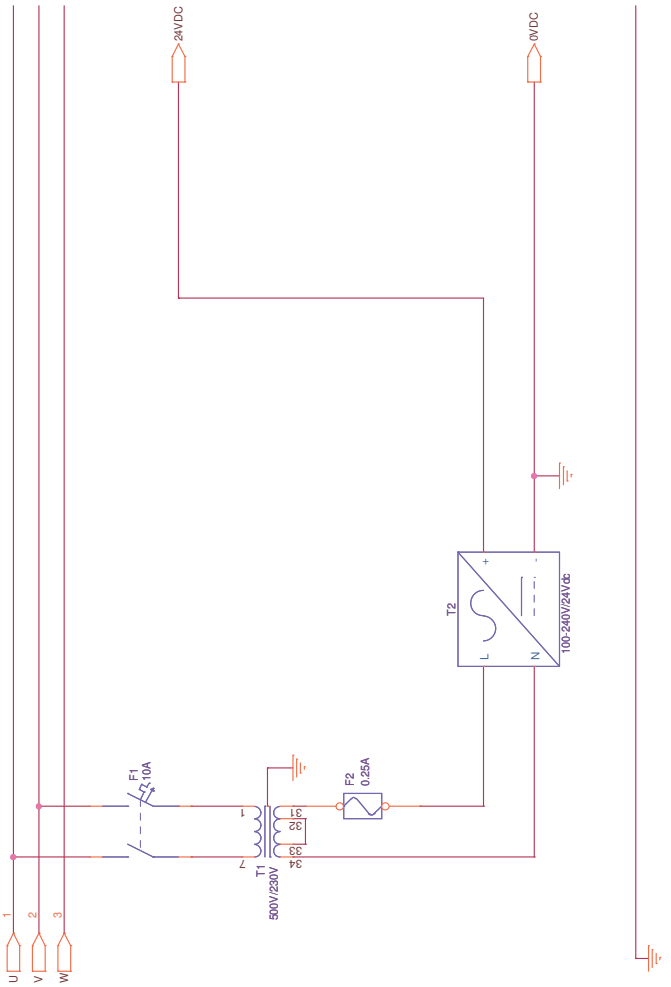
Only valid for BF162 Booster 16 480V/60 Hz US

Nur für BF162 Booster 16 480V/60 Hz US geltend.

Seulement valide pour BF162 Booster 16 480V/60 hertz USA.

Solamente válido para BF162 Booster 16 480V/60 hertzio los E.E.U.U.

Gælder kun for BF162 Booster 16 480/60Hz US



Nilfisk ALTO

Nilfisk-ALTO Food Division
Blytækkervej 2
9000 Aalborg
Denmark
Tel: +45 7218 2000
www.nilfiskfood.com

Init			
san			
Ver/Rev			
A			
Title	24Vdc supply		
Size	Drawing Number	Sheet	1 of 1
A4	110.000.382 US		
Date:	Friday, December 11, 2009		

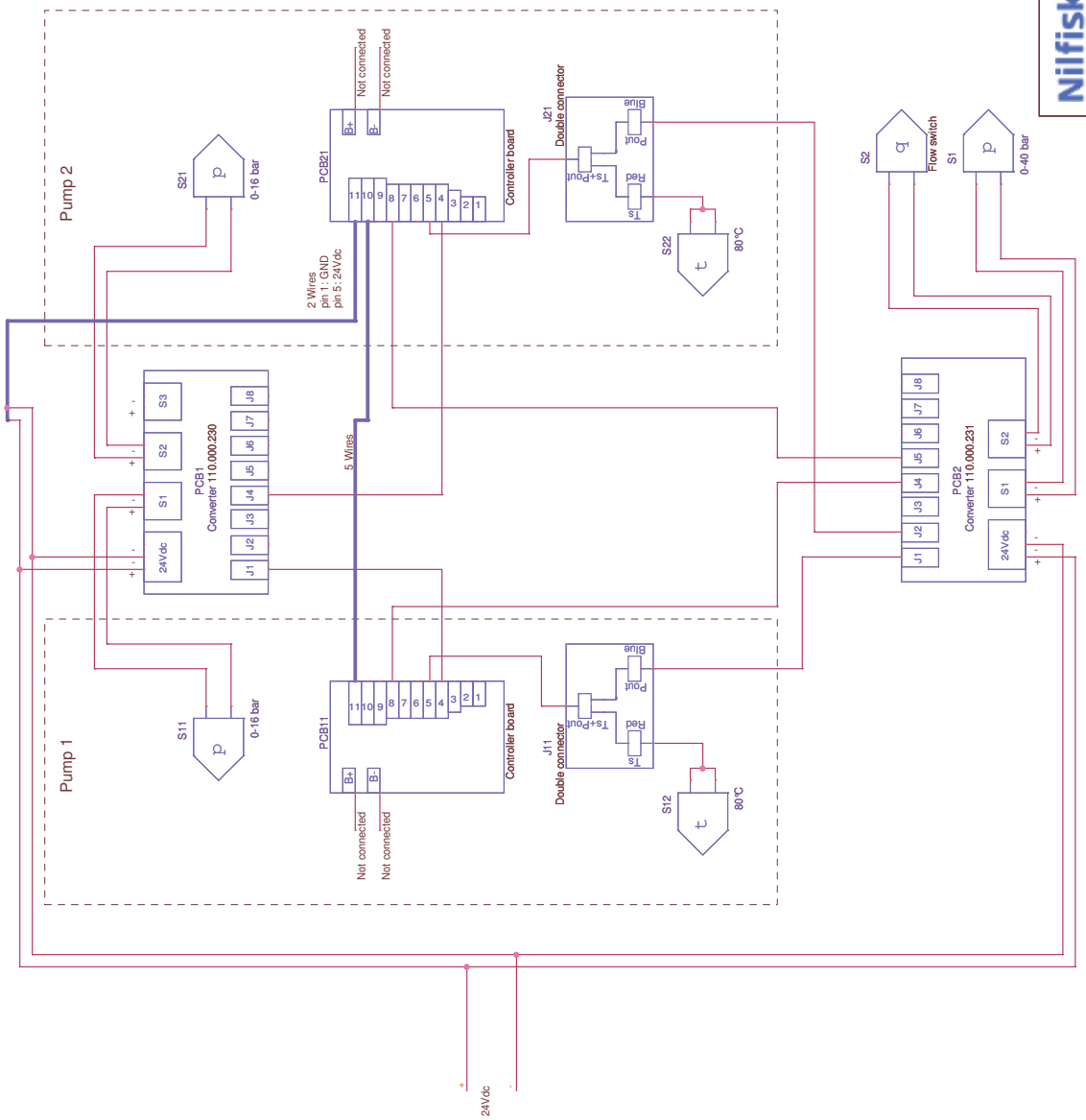
Only valid for BF162 Booster 16 480V/60 Hz US

Nur für BF162 Booster 16 480V/60 Hz US geltend.

Seulement valide pour BF162 Booster 16 480V/60 hertz USA.

Solamente válido para BF162 Booster 16 480V/60 hertzio los E.E.U.U.

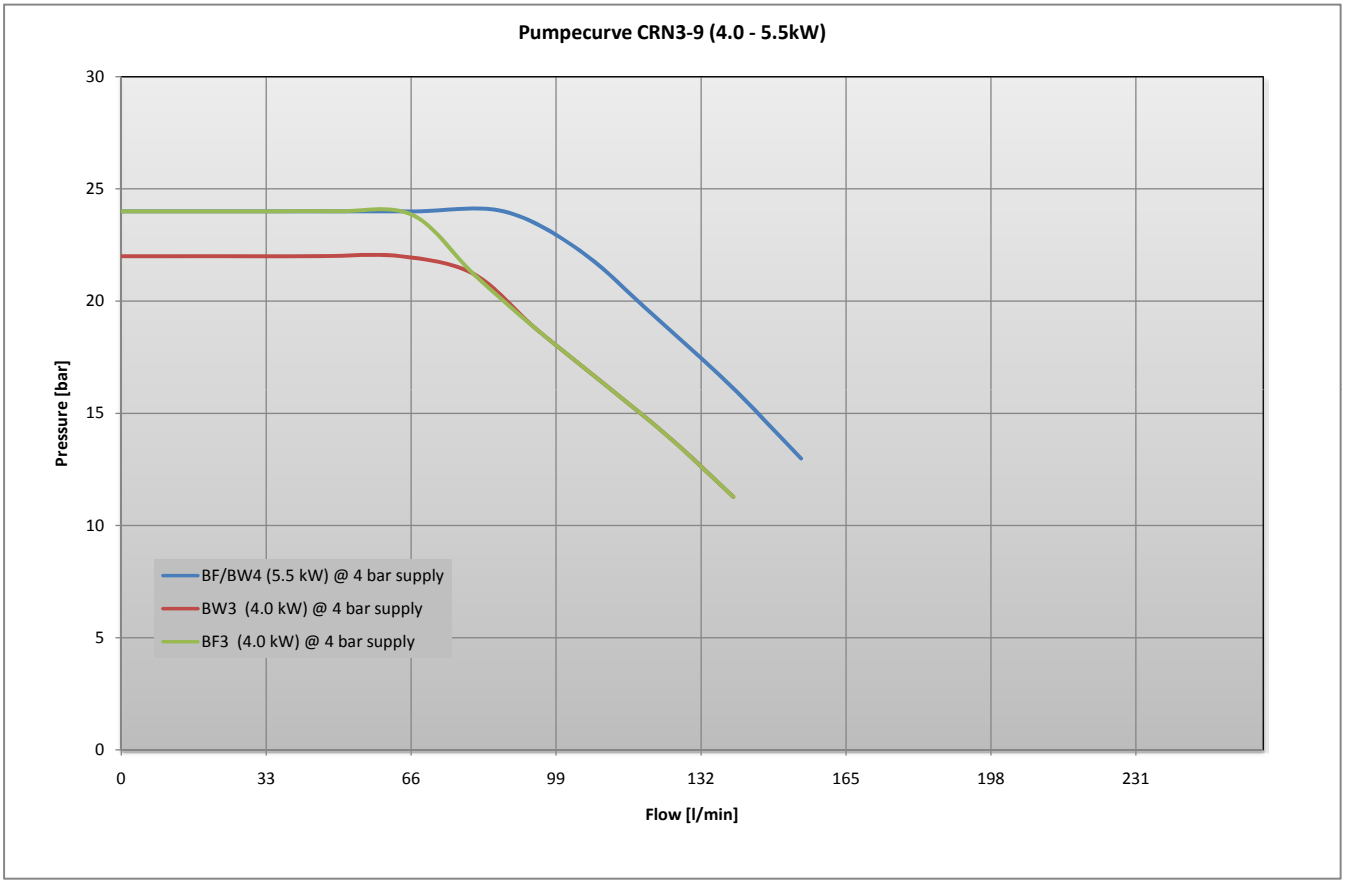
Gælder kun for BF162 Booster 16 480/60Hz US

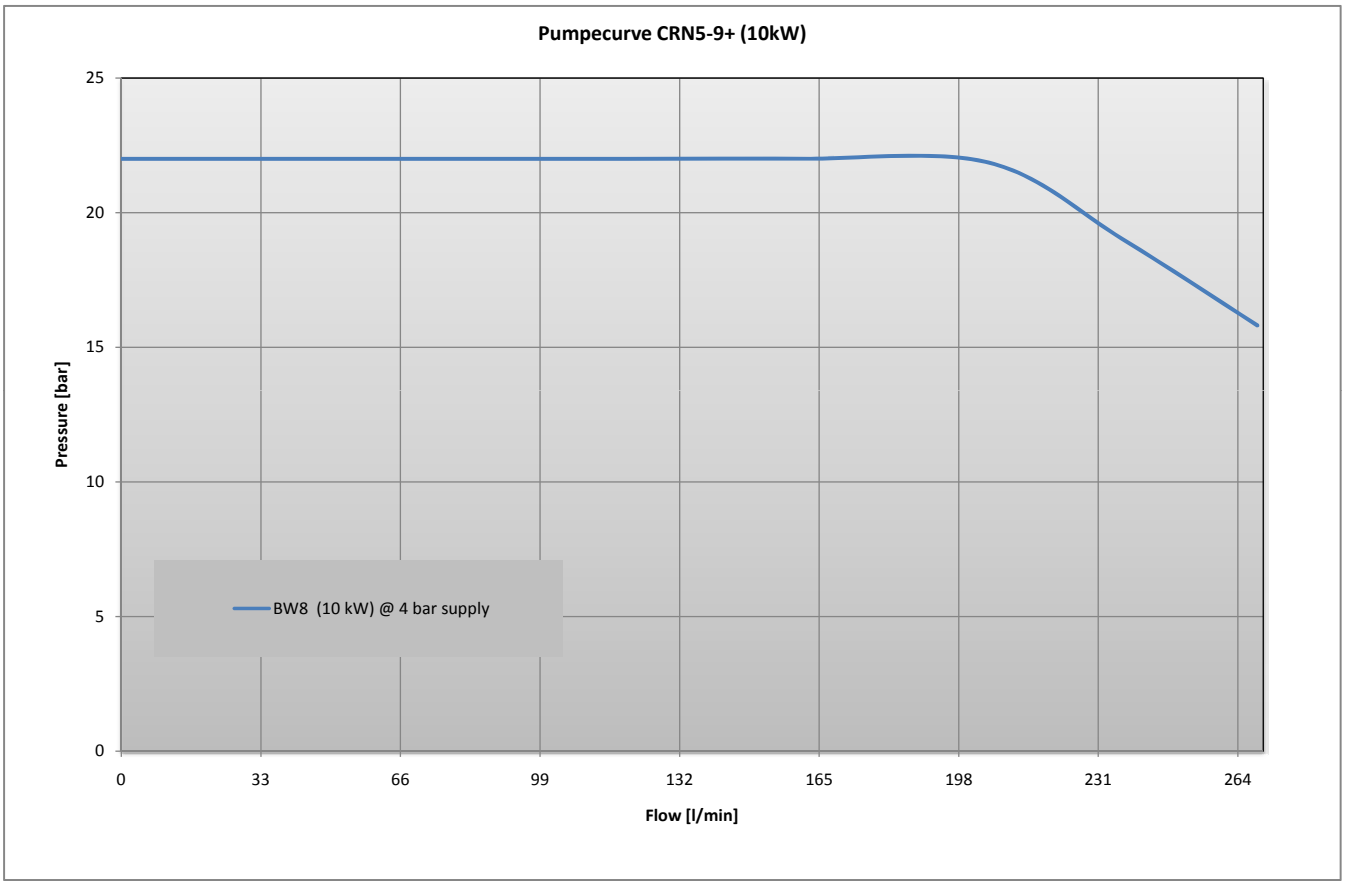


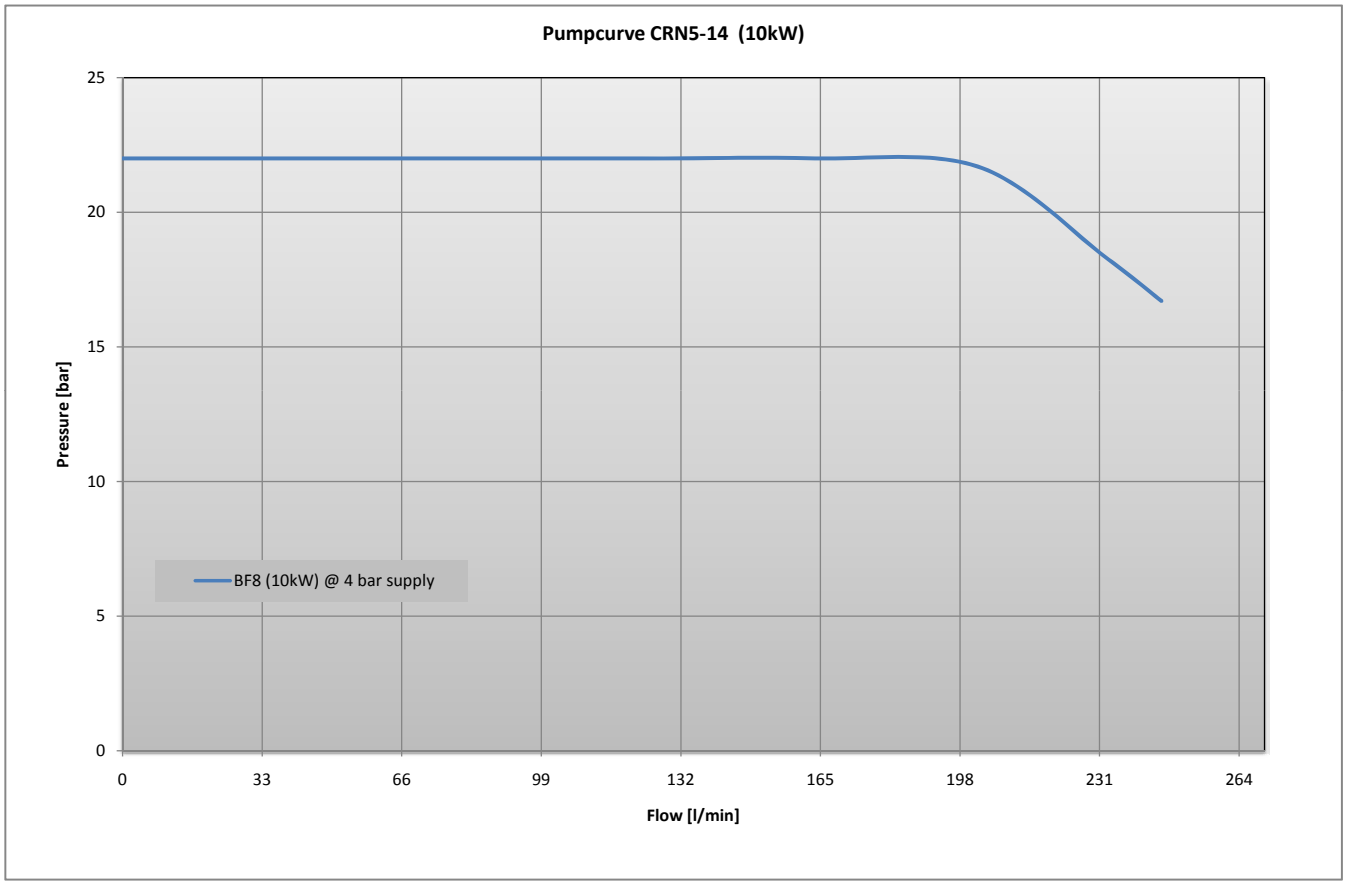
Nilfisk-ALTO Food Division
Blytaekkervej 2
9000 Aalborg
Denmark
Tel: +45 7218 2000
www.nilfiskfood.com

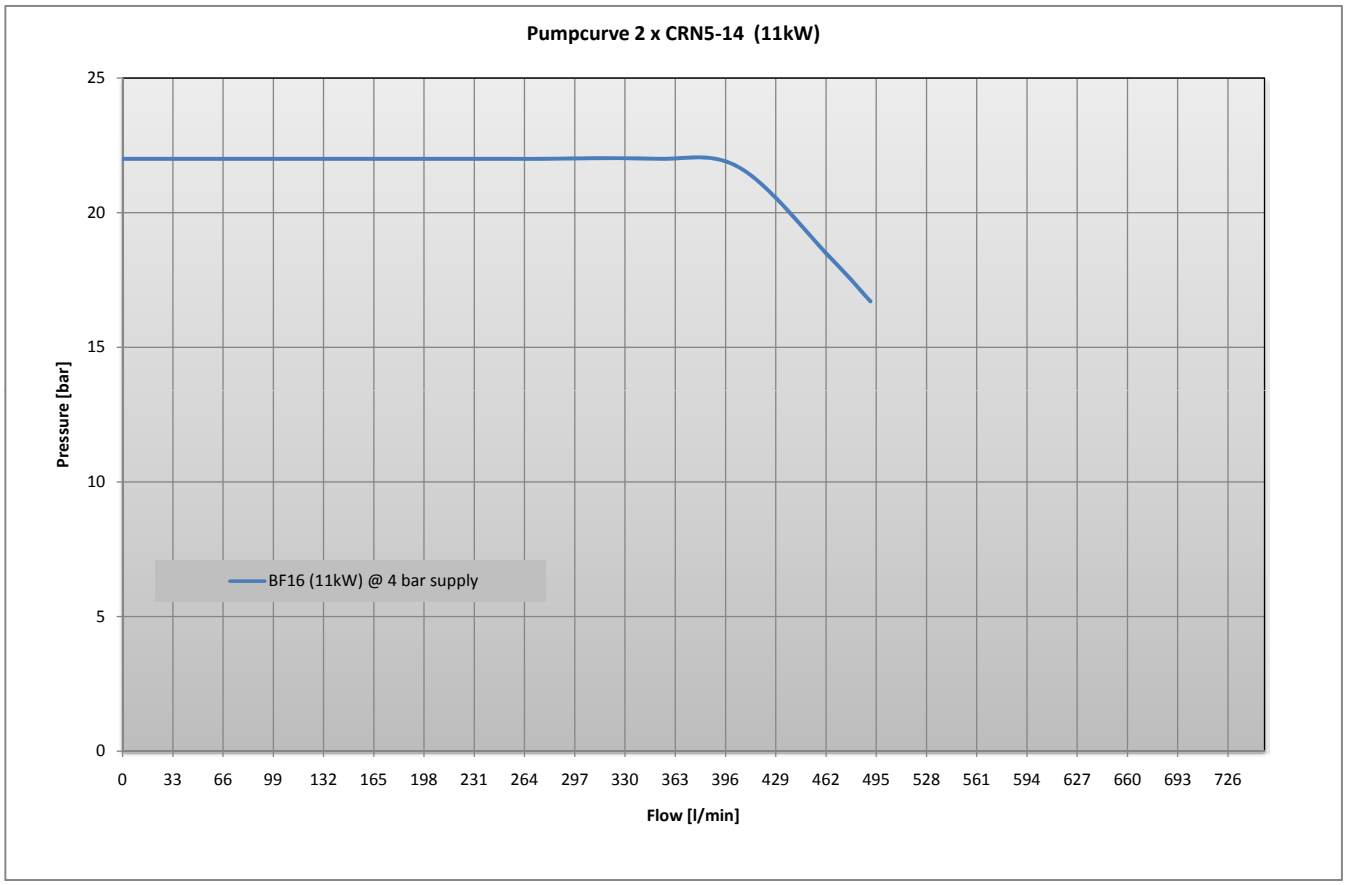
Title	MB rebuild BF16 and BF24	Init	san
Size	A4	Drawing Number	110.000.380 US
Ver/Rev	A		
Date:	Friday, November 27, 2009	Sheet	1 of 2

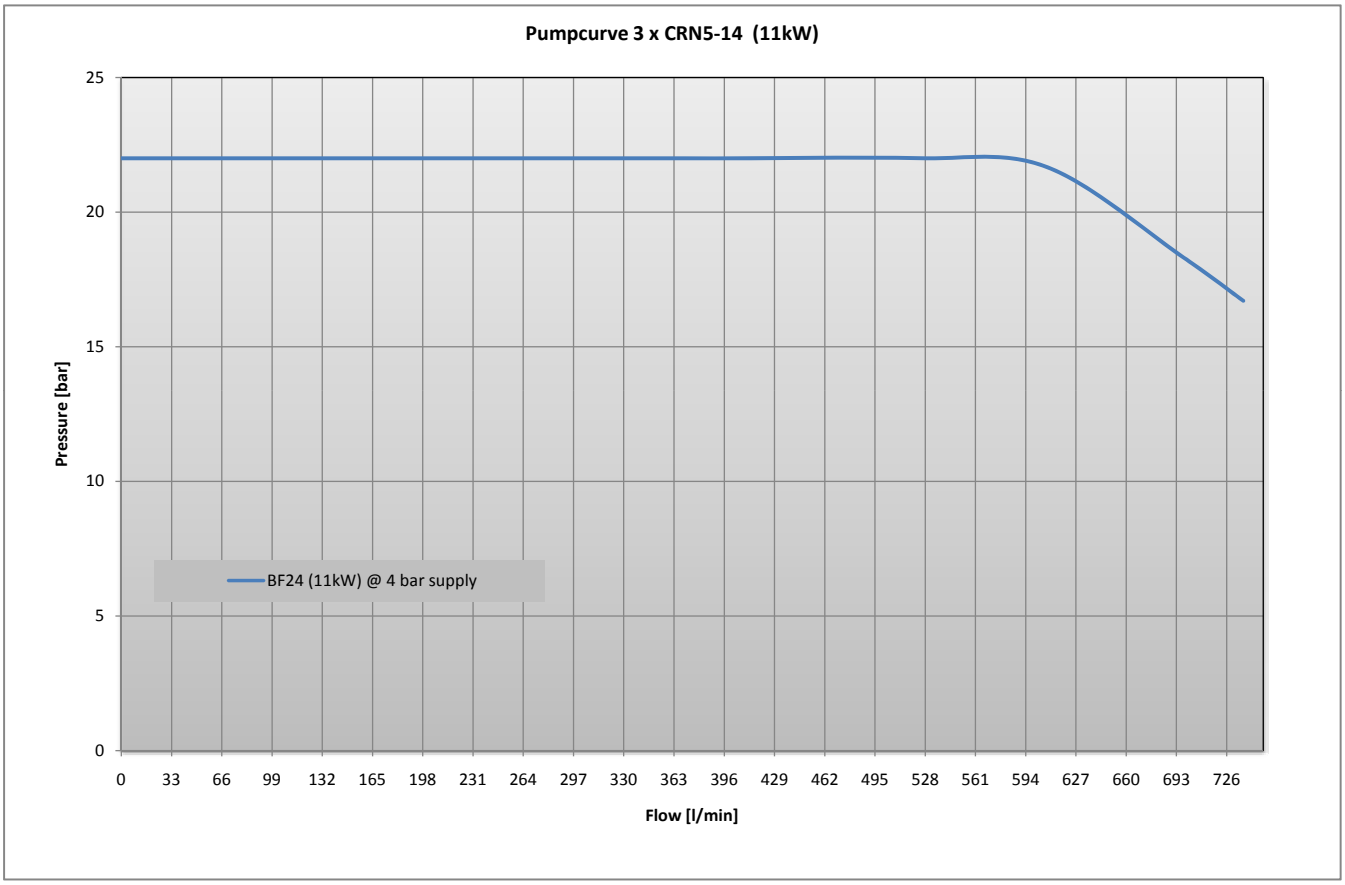
10. Pump curve






Pumpcurve CRN5-14 (10kW)
Pressure [bar]
25
20
15
10
5
0
0
33
66
99
132
165
198
231
264
Flow [l/min]
BF8 (10kW) @ 4 bar supply


Pumpcurve 2 x CRN5-14 (11kW)
Pressure [bar]
25
20
15
10
5
0
0
33
66
99
132
165
198
231
264
297
330
363
396
429
462
495
528
561
594
627
660
693
726
Flow [l/min]
BF16 (11kW) @ 4 bar supply


Pumpcurve 3 x CRN5-14 (11kW)
Pressure [bar]
25
20
15
10
5
0
0
33
66
99
132
165
198
231
264
297
330
363
396
429
462
495
528
561
594
627
660
693
726
Flow [l/min]
BF24 (11kW) @ 4 bar supply

Printed in Denmark

No.: 0617597G 12/2009

Ecolab GmbH & Co. OHG
P.O. Box 13 04 06
D-40554 Düsseldorf
www.ecolab.com
Tel.: +49 211 98 93 203 - Fax: +49 211 98 93 223

ECOLAB®

Printed in Denmark