

Directions for Use

Topax Hygiene System

Pneumatically Operated

Main Station S 4100

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1. Preface

Topax Hygiene Systems are used for rinsing, foaming or spraying of detergents and sanitisers. The formation of foam is performed by mixing water, detergent or sanitiser and compressed air in a specially designed injector system.

It is important that your operational staff reads these directions for use prior to the installation and start of operation. Operation as laid down in these directions for use will ensure an optimum level of hygiene in your factory and a minimum level of maintenance and repair work.

1.0 Application

S 4100 cleaning stations are stationary units which normally are connected to a number of satellites - model S 3100. When connected to satellites, S 4100 serves as pressure booster for these satellites.

S 4100 is fitted with an injector device making it work as a complete cleaning station. The station is designed for the cleaning of walls and floors in factory rooms, of production machinery, of transport systems such as conveyors, transport trucks, transport boxes, containers, moulds etc. and can be used for internal and external cleaning of vehicles.

The station is made of corrosion resistant materials, mainly stainless steel, and is therefore especially suitable for application within the food industry. If you need information on further applications, please contact Henkel-Ecolab.

The combination of a centrifugal pump with an integrated injector makes it possible to:

- a) pre-rinse with water
- b) clean with foam
- c) rinse off with water
- d) sanitise with spray or foam
- e) final rinse with water

1.1 Special Warnings

The special warnings **CAUTION**, **ATTENTION** and **NOTE** used in this Technical Manual have the following meanings:

CAUTION: This term is used to highlight the fact that complete or even partial failure to properly adhere to operating instructions, working instructions, specified working sequences and similar can cause personal injuries or accidents.

ATTENTION: This term is used to highlight the fact that complete or even partial failure to properly adhere to operating instructions, working instructions, specified working sequences and similar can cause damage to the equipment.

NOTE: This term is used to draw attention to a particular feature.

1.2 Safety Instructions

S 4100 must be connected to 380 VAC supply only. Repairs must only be carried out when they have been turned off and depressurized.

2. Product Survey

2.0 Guidelines for Pipe Connections

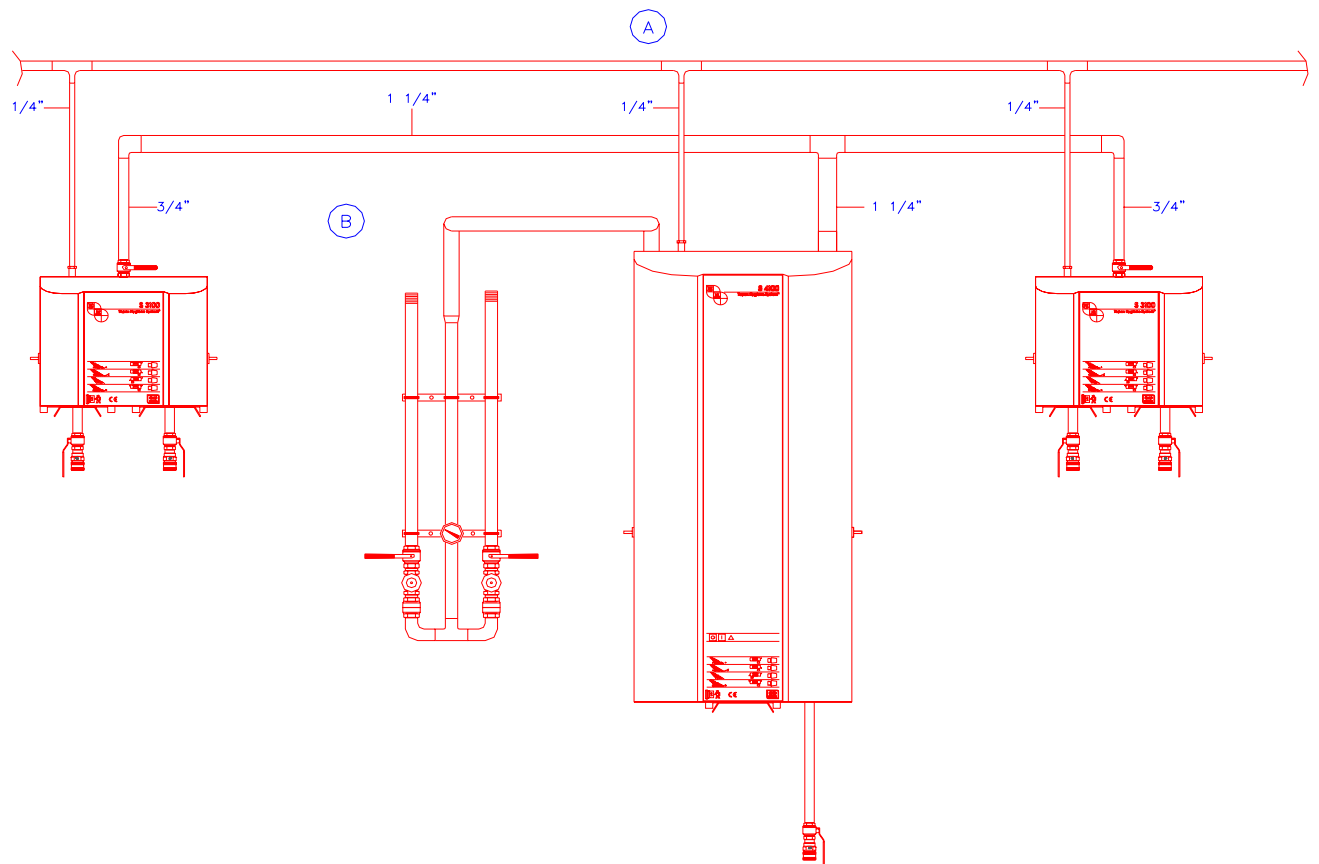


Fig. 2.0.1

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(A) Air supply min. 6 bar and 200 l/min.

(B) Water supply max. 4 bar and min. 2 bar. Max. temperature 70°C. Pipe dimensions min. 1 1/4" at a pressure of 3.5 bar. Pipe dimensions min. 1 1/2" at a pressure not exceeding 3.5 bar.

2.1 Basic Unit

The station consists of a S 4100 inclusive of the accessories listed in paragraph 2.2. The P3 Topax User Pack and extended outlet pipes are non-standard accessories and should therefore be ordered and purchased separately.

2.2 Accessories

S 4100 is equipped with the following standard accessories:

1. Wall bracket
2. Nozzle holder
3. Rinsing lance 750 mm with 30 l tornado nozzle and nozzle protection
4. Foam nozzle for detergents with 200 l nozzle and nozzle protection
- 4a. Foam nozzle for sanitisers with 200 l nozzle and nozzle protection (S 4100 with foam sanitising only)
5. Tornado rinsing nozzle with nozzle protection
- 5a. 30 l spray nozzle with nozzle protection (S 4100 with spray sanitising only)

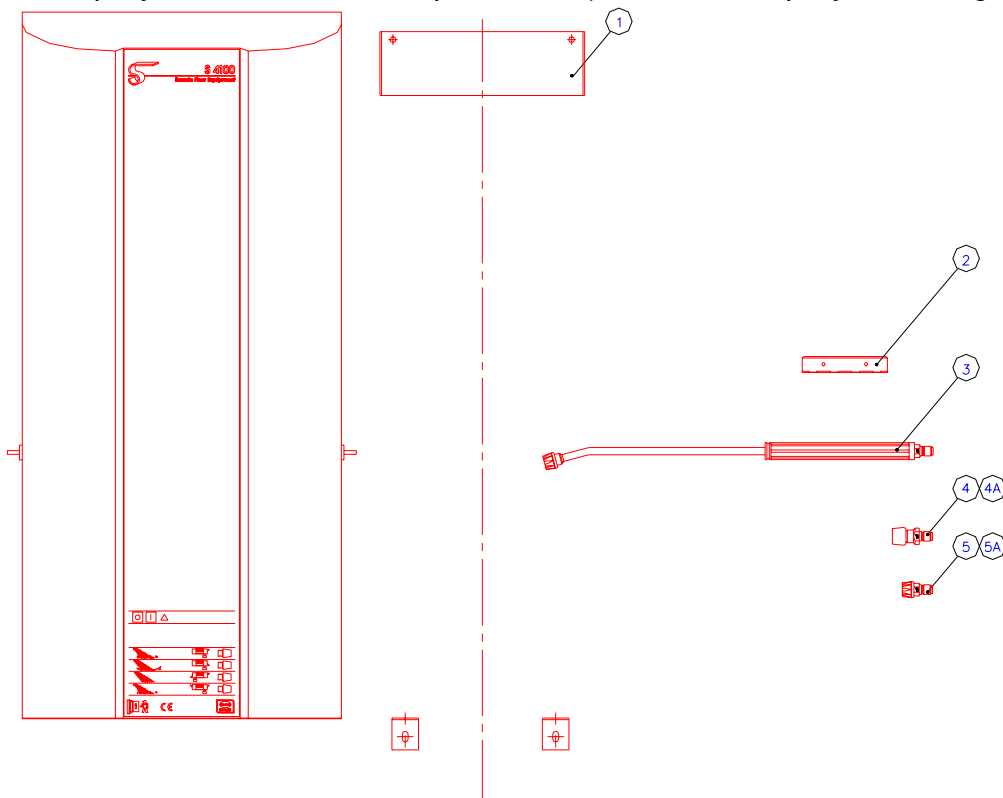


Fig. 2.2.1

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3. Description of Function

3.0 Flow Chart

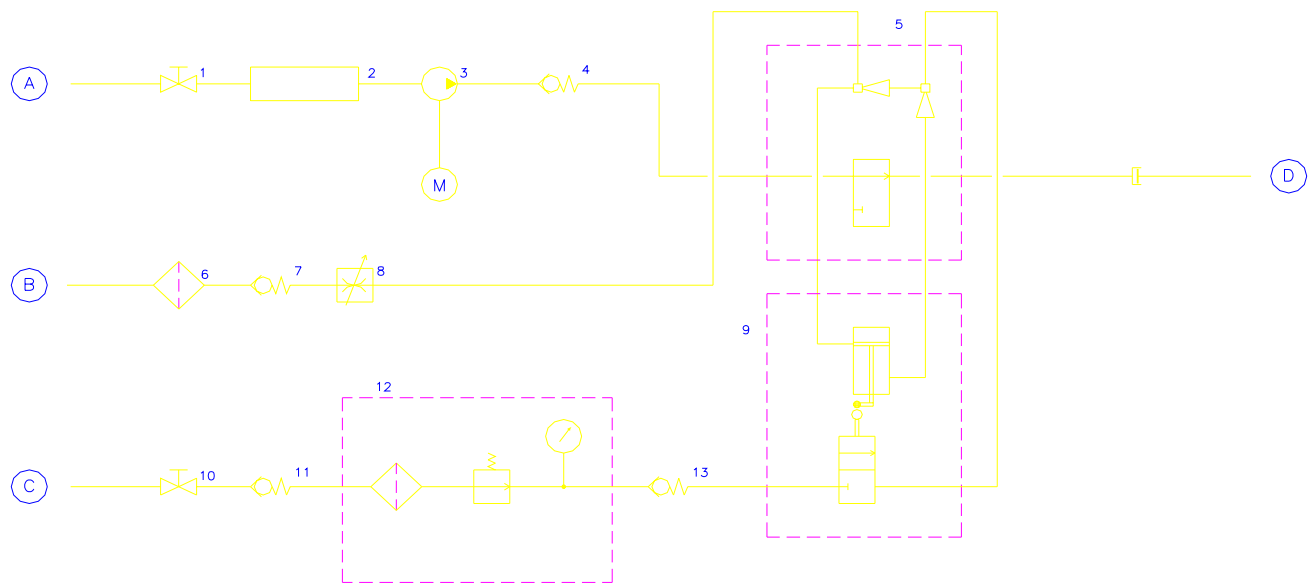


Fig. 3.0.1

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- (A) Water.
- (B) Detergent.
- (C) Air.
- (D) Hose outlet.

- | | | | |
|-----|--------------------------|-----|--|
| 1. | Water inlet valve | 8. | Tilting switch |
| 2. | Flow switch | 9. | Filter, -pressure regulator and -gauge for air |
| 3. | Pump | 10. | Non-return valve |
| 4. | Non-return valve | 11. | Air inlet valve |
| 5. | Injector valve | 12. | Filter |
| 5a. | Actuator | 13. | Non-return valve |
| 6. | Air nozzle | 14. | Chemical dosing valve |
| 7. | Non-return valve for air | | |

3.1 Electric Diagram

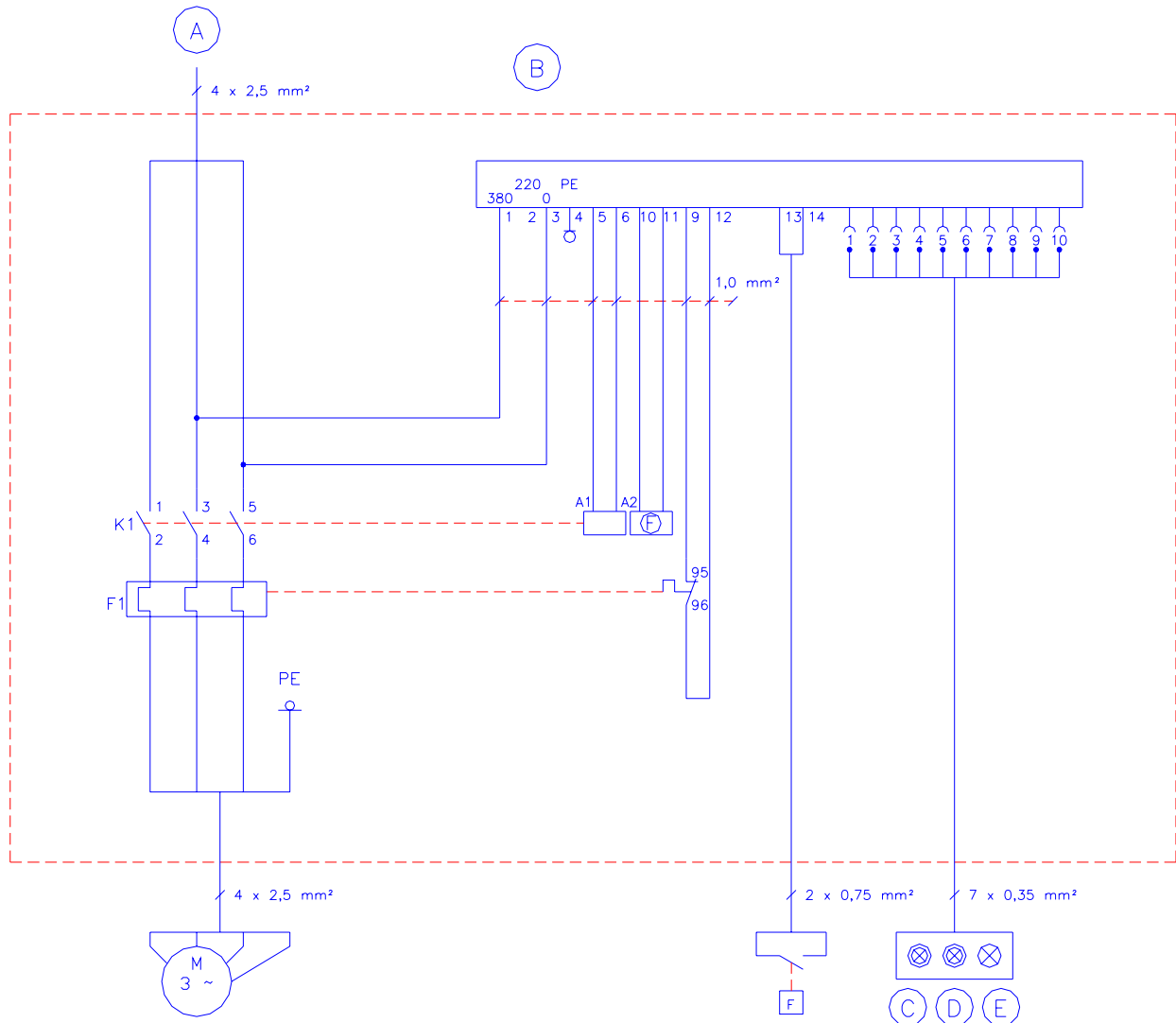


Fig. 3.1.1

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Control Box.

(A) Connection: 3 x 380 V + PE, 50 Hz. Max. fuse: 16 A.

(B) PIN 1 + PIN 3 = 380 V. PIN 2 + PIN 3 = 220 V.

(C) ON.

(D) OFF.

(E) Error.

(F) Optional.

3.2 Function of Injector System

Principle of operation when rinsing

The ball is positioned with the large passage hole in flow direction (figure 1, position 1). When the spray gun/outlet valve is open, the pump automatically starts after approx. 5 seconds and builds up water pressure.

Principle of operation when foaming

The ball is positioned with the built-in injector nozzle in flow direction (figure 2, position 1), and air is led to the air nozzle (figure 2, position 2). When the spray gun/outlet valve is open, the pump automatically starts, and P3 Topax product is sucked into the mixing chamber (figure 2, position 3). Air is added to the blend via the air nozzle (figure 2, position 4).

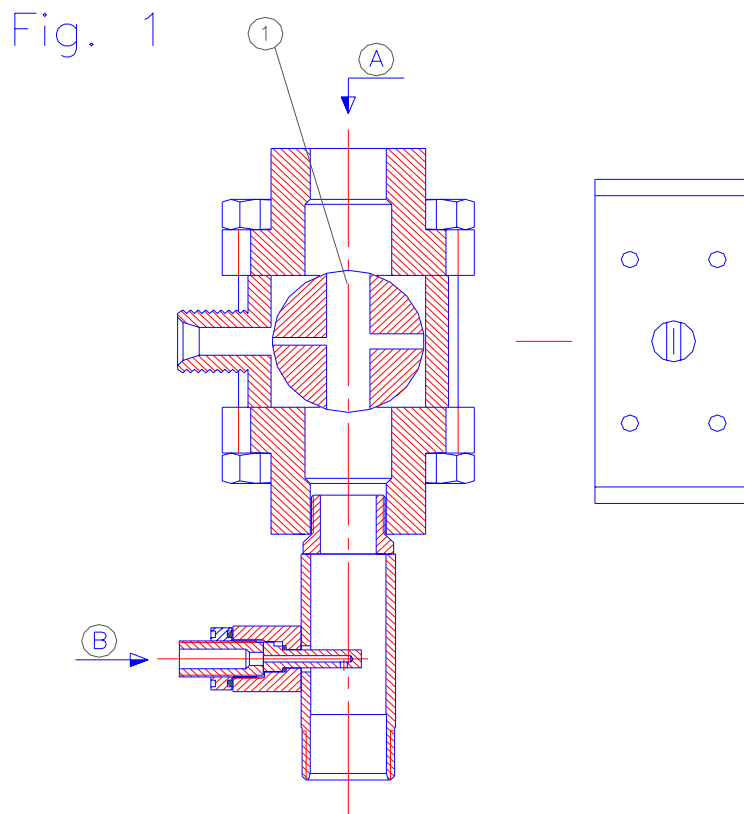


Fig. 3.2.1

Rinse Operation
(A) Water inlet.
(B) Air inlet.

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Fig.2

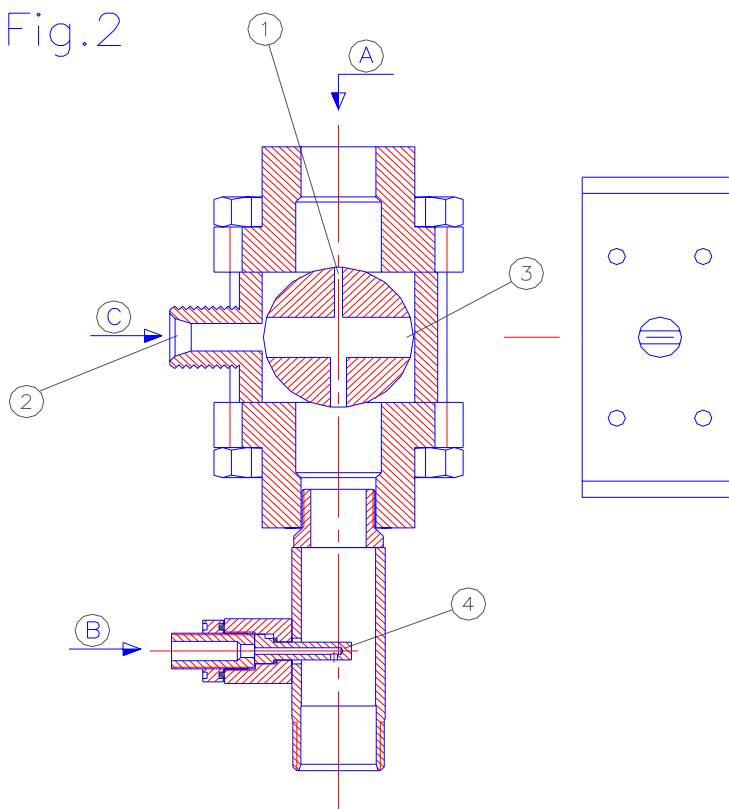


Fig. 3.2.2

Foam Operation
(A) Water inlet.
(B) Air inlet.
(C) Detergent inlet.

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3.3 Function of User Pack System (accessory)

Principle of operation

P3 User Pack is pushed into the holder under the station. The wide bracket on the right is intended for P3 Topax detergent and the narrow bracket on the left for P3 Topax sanitiser. The suction pipe, which is fixed on the inside of the lid, guides the P3 Topax product to the change-over block where it is mixed in the mixing chamber.

The level of P3 Topax product is indicated on the outside level tube.

CAUTION!

When changing between different products in the P3 User Pack, these have to be rinsed thoroughly with clean water. Further, the injector must also be rinsed.

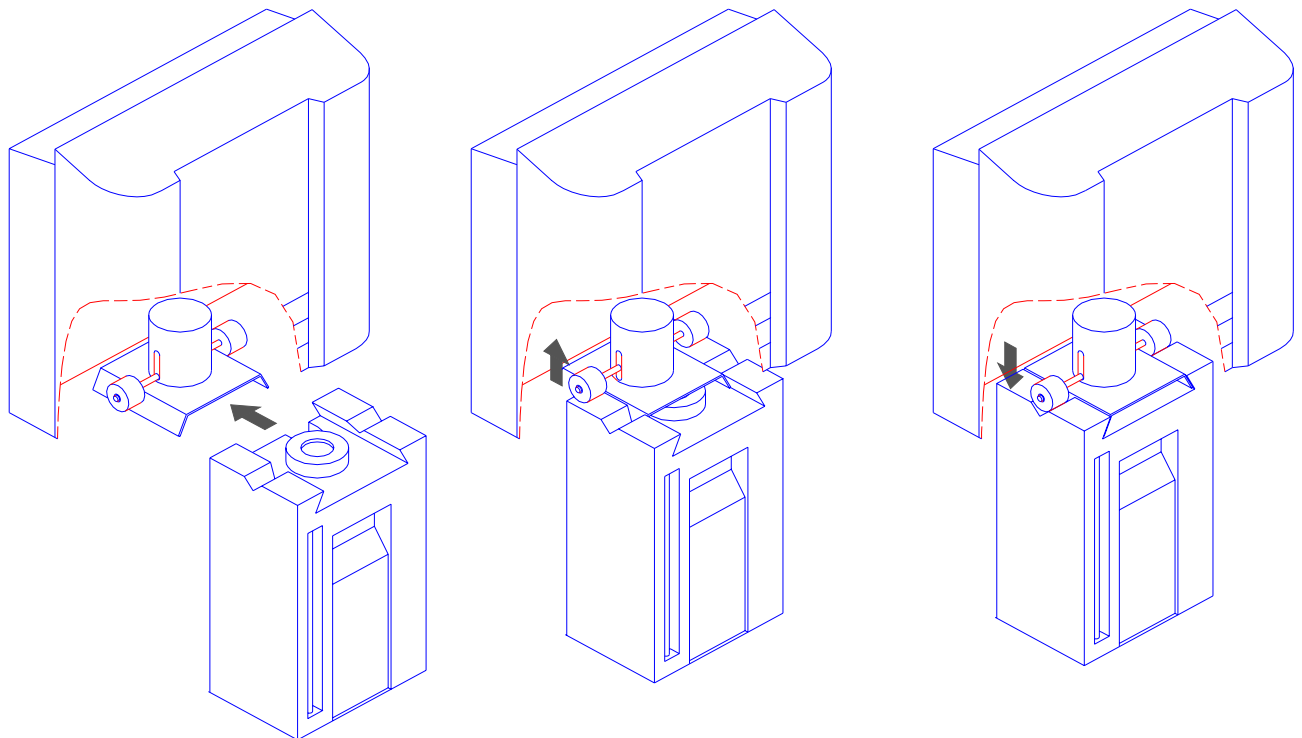


Fig. 3.3.1

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4. Installation

4.0 Directions for Mounting

ATTENTION!

- a) The main station should be mounted in frost-free rooms only.
- b) The station can be mounted on a wall or on a separate frame (Art. No. 370400), which may be installed in production areas and anchored to the floor.

For mounting on walls please note the following:

1. The wall for mounting should be either a stable brick wall or a wall made of concrete.
 2. The delivered bracket should be secured to the wall by means of the enclosed screws and corresponding dowels.
- c) The mounting holes for the wall bracket, the hose holder (Art. No. 652400) and the can holder (Art. No. 653000; not belonging to the User Pack System) should be drilled according to the dimensional sketch on page 11.
 - d) The wall bracket should be mounted on the wall according to the above description whereafter the station is hung on to the bracket. Afterwards, the delivered angle hinges on the rear part of the pump plate should be mounted so that the lower part of the frame is fastened. The hose and can holders should thereafter be mounted.
 - e) The station is delivered with two transport fittings which are removed when the station has been mounted on the wall bracket.

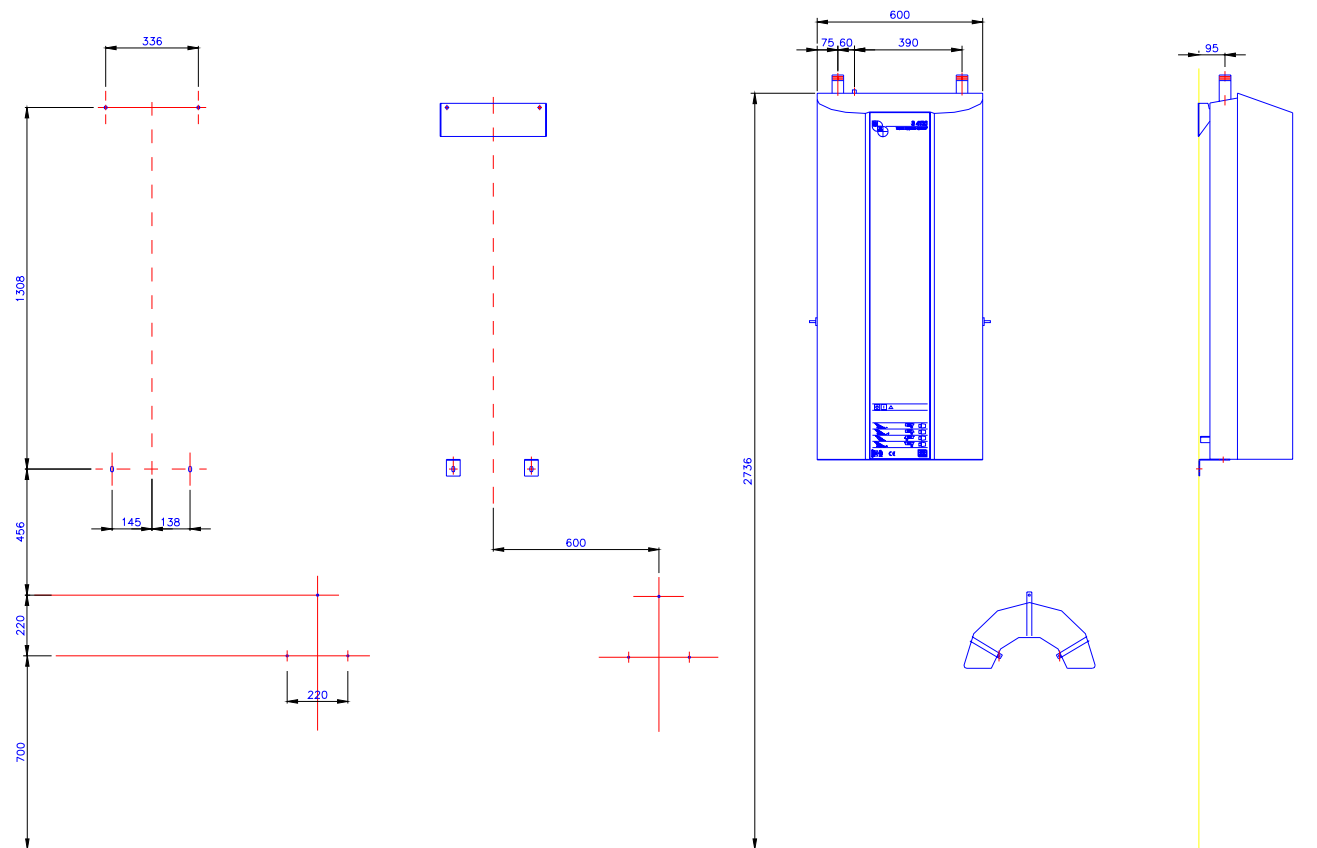


Fig. 4.0.1

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4.1 Water Connection

ATTENTION!

- a) **Before the station is connected to the water supply pipe, the supply line should be rinsed through carefully in order to remove coarse impurities and metal shavings.**
- b) The connection for water should be made at the top of the main station (A on layout drawings pages 17-19).
- c) Minimum internal diameter of the supply pipe must be at least 1 1/2" (40mm) at a minimum water pressure of 2 bar.

CAUTION:

- d) The connection to the water supply must comply with local legislation and all safety precautions must be observed.
- e) Internally the station is fitted with a filter in the supply line to the pump.
- f) The pressure loss in the supply line should be held as low as possible by
 - avoiding long supply pipes,
 - mounting low-pressure resistance ball valves, and
 - avoiding fittings with high pressure loss.

NOTE!

- g) When installing the piping, take care to avoid air traps.
- h) All pipe connections to the main station must be screwed connections in order ensuring simple servicing and dismantling of the station.
- i)

Maximum allowed temperature of supply water:	70° C
Maximum allowed pressure of supply water:	4 bar
Water consumption at ordinary cleaning modes:	30 - 40 l/min.

OPTION!

For an optimum functioning of the injector system, we recommend the fitting of a filter on the inlet to avoid impurities.

4.2 Connection between S 4100 and Satellite Station S 3100

- a) Remove screw cap from outlet (D on layout drawings pages 17-19).
- b) Install pipework with a minimum diameter of 1 1/4" (32mm) from the outlet to the required number of satellite stations and water taps and connect it to the satellite station with 3/4" pipework (21 mm), (see drawing on page 3).
- c) Connection to the satellite should be made by means of a union for easy dismantling of the station.
- d) It is recommendable to use the same diameter throughout the entire main piping. This allows the flow switch to operate efficiently and ensures the best flow characteristics.
- e) The pipework used must be approved for ambient conditions and a minimum pressure rate of 25 bar. It is recommended to use pipe holders with rubber lining.

4.3 Air Connection

ATTENTION!

- a) **Before the main station is connected to the air supply, the pipe must be carefully rinsed in order to remove coarse impurities.**
- b) The station requires an air supply providing:
 - an inlet pressure of minimum 6 bar
 - a minimum capacity of 200 l/min.
- c) The air supply pipe is connected directly with a union for easy dismantling. In all stations an inlet valve with 1/4" thread is fitted (B on layout drawings pages 17-19).

4.4 Electric Connection

CAUTION!

Electric connections are only to be made by authorised engineers.

- a) Electric requirements are specified on the identification plate (page 25). Electric connections must be made by a certified electrician.
- b) The pump connection must ensure correct direction of rotation. See arrow direction on pump.
- c) It is recommended to protect against earth leakage (0.03 A).

4.5 Supply of P3 Topax Products

Main station without User Pack System

- a) Place the can with P3 Topax product in the can holder (Art. No. 653000).
- b) Check the suction filter for impurities.
- c) Put the suction hose into the can below product level and avoid suction of air.

After pre-rinsing check again that the hose is sufficiently below product level and avoid suction of air during operation with foam or spray function.

- d) After use of and when changing P3 Topax and after use of the station, remove the hose from the can and rinse the suction and injector with water.

Main station with User Pack System

- a) Place the specially designed P3 User Pack in the automatic holder.
- b) If changing to a different P3 Topax product, rinse the suction with clean water as follows:

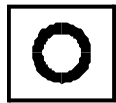
Replace the P3 User Pack containing P3 Topax product by one with clean water, place the foam nozzle and open the spray gun/outlet valve. The suction/ injector is now rinsed with water before another P3 Topax product is used.

4.6 Hose Connection

- a) The special hose fitted with spray gun/outlet valve is connected to the outlet quick coupling of the station (L on layout drawings pages 17-19).
- b) Maximum hose length: 30 m
- c) It is recommended to only use the special P3 Topax hoses, which have been tested for chemical resistance to all P3 Topax products and industrial conditions.

5. Operation Instructions

5.0 Symbols



OFF

Indicates when the station is switched off. Pump can not be activated. See also page 25 section No. 5.4. Push this device to stop the system.



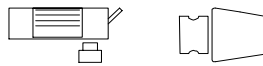
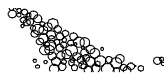
ON

Flashing: stand by.
Illuminated: pump is active.
Push this device to activate the system.



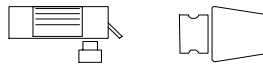
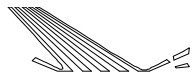
ERROR

Indicates when a fuse has blown or motor overload protector is defective.



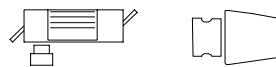
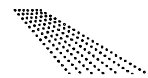
FOAM (WHITE)

Indicates use of outlet position of tilting switch and colour of nozzle.



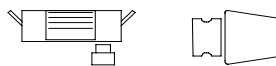
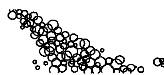
RINSE (BLUE)

Indicates use of outlet position of tilting switch and colour of nozzle.



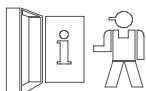
SPRAY SANITATION (YELLOW)

Indicates use of outlet position of tilting switch and colour of nozzle. (Only on models with double injector system).



FOAM SANITATION (YELLOW)

Indicates use of outlet position of tilting switch and colour of nozzle. (Only on models with double injector system and possibility of foam sanitising).



INFORMATION

Information is placed on the inside of the cabinet door. This manual should always be kept there.

5.1 Layout Drawings

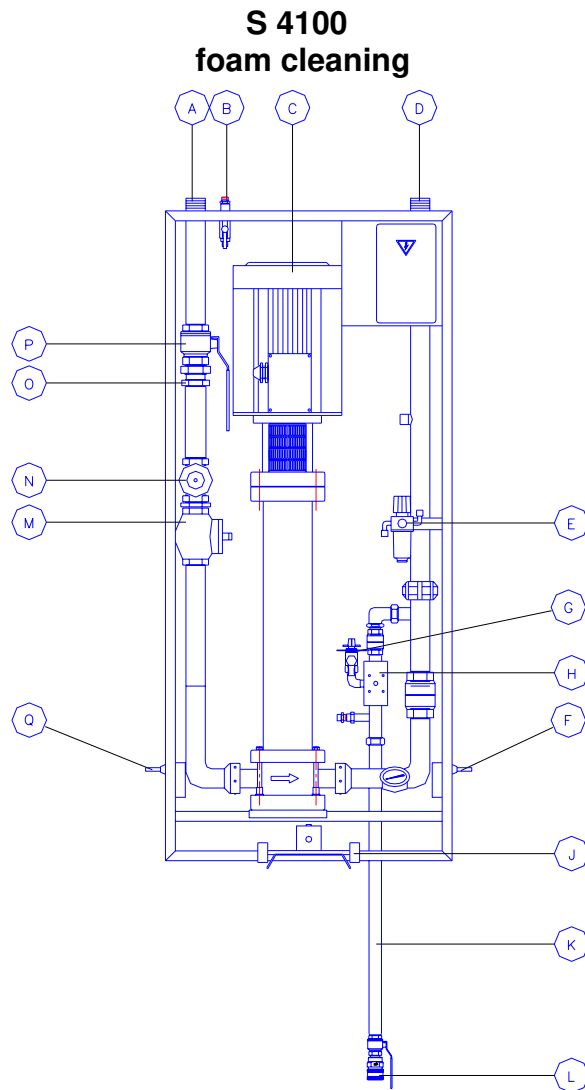


Fig. 5.1.1

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- | | |
|---|--|
| A. Supply water connection | J. Automatic holder for P3 User sanitiser (option) |
| B. Closing valve for air | K. Extension pipe for P3 User Pack |
| C. Pump | L. Quick coupling with closing valve |
| D. Water outlet connection | M. Flow switch |
| E. Filter, pressure regulator and gauge for air | N. Strainer |
| F. Tilting switch 5/2 | O. Union |
| G. Dosing valve f. P3 Topax prod. | P. Closing valve for water |
| H. Injector valve | Q. Tilting switch 3/2 |

S 4100D
foam cleaning and spray sanitising

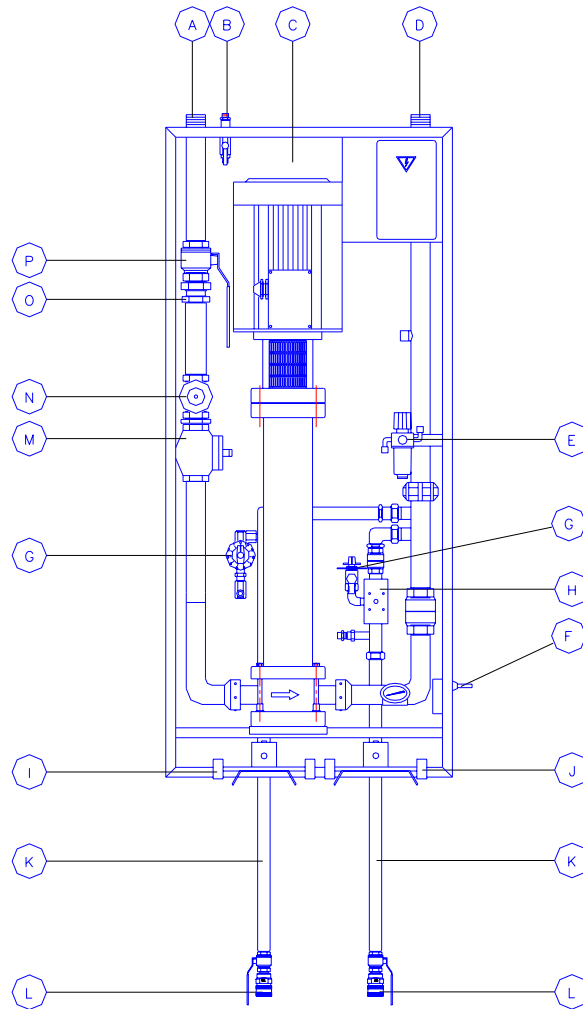


Fig. 5.1.2

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- | | |
|--|--|
| <ul style="list-style-type: none"> A. Supply water connection B. Closing valve for air C. Pump D. Water outlet connection E. Filter, pressure regulator and gauge for air F. Tilting switch 5/2 G. Dosing valve f. P3 Topax prod. H. Injector valve I. Automatic holder for P3 User Pack detergent (option) | <ul style="list-style-type: none"> J. Automatic holder for P3 User Pack sanitiser (option) K. Ext. pipe for P3 User Pack (option) L. Quick coupling with closing valve M. Flow switch N. Strainer O. Union P. Closing valve for water |
|--|--|

S 4100DF
foam cleaning and foam sanitising

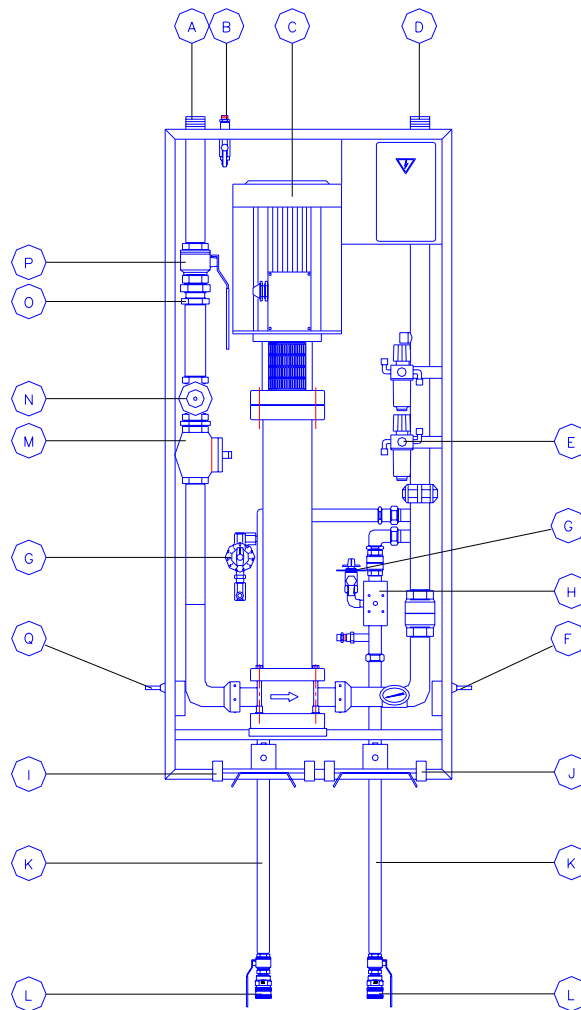


Fig. 5.1.3

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- | | |
|---|---|
| A. Supply water connection | J. Automatic holder for P3 User Pack sanitiser (option) |
| B. Closing valve for air | K. Extension pipe for P3 User Pack (option) |
| C. Pump | L. Quick coupling with closing valve |
| D. Water outlet connection | M. Flow switch |
| E. Filter, pressure regulator and gauge for air | N. Strainer |
| F. Tilting switch 5/2 | O. Union |
| G. Dosing valve f. P3 Topax prod. | P. Closing valve for water |
| H. Injector valve | Q. Tilting switch 3/2 |
| I. Automatic holder for P3 User | |

5.2 Start up Procedures

When all supply connections have been made as described in chapter 4, the main station is ready to put into service.

CAUTION!

- a) **Ensure that the spray gun/outlet valve is closed.**
- b) Connect the hose to the quick coupling (H on layout drawings pages 17-19), open the station outlet valve.
- c) Open the supply water valve (L on layout drawings pages 17-19) and fill the hose with water. The station is now ready to put into operation.
- d) The dosing valve for P3 Topax product (F on layout drawings pages 17-19) is set on a scale value of approx. "2". The final adjustment of the valve is made during operation.
- e) The air pressure is set at 6 bar on the air pressure regulator (D on layout drawings pages 17-19) and is checked on the pressure gauge (D on layout drawings pages 17-19).

NOTE!

When setting the regulator carefully pull up the knob and turn it right for pressure increase and left for pressure decrease.

- f) **Setting before rinsing:**
Turn the tilting switch in rinse position. Connect the required rinsing nozzle to the quick coupling of the spray gun/outlet valve and open the spray gun/outlet valve. After approx. 5 seconds, the pump starts automatically by means of the built-in flow switch.
- g) **Setting before foaming:**
Connect the required foam nozzle to the quick coupling of the spray gun/outlet valve. When changing from detergent to sanitiser or vice versa, close the valve of the station and open the spray gun/outlet valve to diminish hose pressure. Move the hose to the correct hose outlet. Set the tilting switch in foam position and open the spray gun/outlet valve. After approx. 5 seconds, the pump starts automatically by means of the built-in flow switch.
- h) **Setting before spray sanitising:**

CAUTION!

Connect the spray nozzle to the quick coupling of the spray gun/outlet valve. Close the valve of the S 4100 and open the spray gun/outlet valve to diminish hose pressure. Move the hose from the right to the left hose outlet. When foam sanitise is preferred set the tilting switch in position of foam/sanitiser (L on layout drawings pages 17-19).

5.3 Directions during Operation

- a) As soon as the spray gun/outlet valve is opened and the pump has started, a working pressure arises.
- b) When rinsing, connect the required nozzle and open the spray gun/outlet valve. After approx. 5 seconds, the rinsing pressure is set.
- c) When changing from rinsing to foaming, connect the foam nozzle and set the tilting switch in foam position (F on layout drawings pages 17-19). Open the spray gun/outlet valve, and the main station will automatically change to foam operation.
- d) When changing from foaming to rinsing, connect the rinsing nozzle and set the tilting switch in rinse position (F on layout drawings pages 17-19). Open the spray gun/outlet valve, and the main station will automatically change to rinse operation.

CAUTION!

After foam sanitising, the tilting switch must be set in position for spray sanitising (Q on layout drawings pages 17-19). When this is not observed, the function of the main station may be blocked meaning that it cannot start up next time you need to rinse or apply foam.

After foam operation, the tilting switch must be set in rinse position. If this is not observed, the start-up of the main station may be blocked and the piping may be filled with air after a while.

NOTE!

We recommend the use of rinse nozzles with max. consumption of 40 l/min. (at 20 bar).

Further, the use of original P3 Topax nozzles is recommendable.

5.4 Stop Procedures

- a) When the cleaning process has been completed or detergents have been changed, it is recommended to rinse the suction and injector system in the following way:
 - Replace the P3 Topax can by a can with water.
 - Put the suction hose for P3 Topax product into the water can.
 - Connect the foam nozzle.
 - Open the spray gun/outlet valve and keep it open until the injector has been rinsed through (approx. 30 sec.).
 - Remove the suction hose from the water can.
- b) If satellites are connected, the electricity supply should remain switched on. The main station automatically changes to "stand by" after approx. 40 sec. when all spray guns/outlet valves are closed and no flow occurs in the flow switch.

CAUTION!

- c) The spray gun trigger must be blocked with the safety catch provided to secure against accidental use.

5.5 System Safety

- a) Closing valve for supply water (P on layout drawings pages 17-19).

By means of this valve, it is possible to depressurize the station. Further, the main station boasts a built-in non-return valve.

- b) Closing valve for air supply (B on layout drawings pages 17-19).

A manual closing valve is built into the air inlet by means of which the air supply can be blocked. Further, two non-return valves for air are built in.

c) Spray gun

The spray gun handle is provided with a safety catch. Set at its locking position, this prevents accidental use when not in operation.

The spray gun is provided with a damper to avoid severe water shocks at closure.

d) A pressure gauge for air is installed inside the cabinet of the S 4100 together with the air pressure regulator.

NOTE!

The air pressure regulator/gauge only works when the closing valve (B on layout drawings pages 17-19) is open.

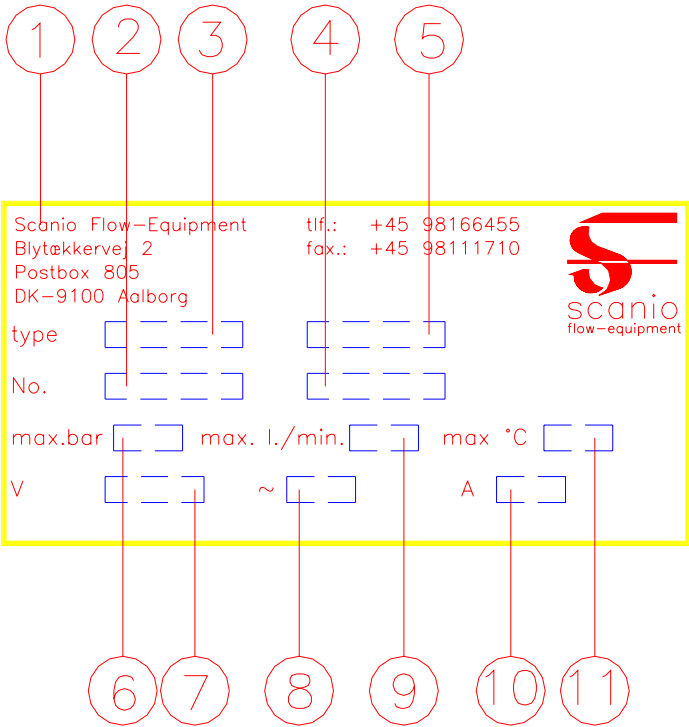
6. Technical Specifications

6.0 Technical Data

Model	S 4100
Pump pressure Max. operational pressure	21 bar + inlet pressure 25 bar
Water flow	10 - 100 l/min.
Min. pressure of water supply *	2 bar
Max. pressure of water supply *	4 bar
Min. pressure of air supply	6 bar
Max. pressure of air supply	10 bar
Max. temperature of water supply	70°C
Motor consumption	4 kW
Nom. current	9.7 A
Setting of overload	9.7 A
Control voltage	24 V
Security of electrical wiring	16 A
Electrical cable	4 x 2.5 mm ²
Rinsing nozzle	25/30
Foam nozzle	50/200
Spray nozzle	40/30
Max. hose length	30 m
Weight	120 kg
Dimensions H x W x D	1326 x 600 x 310 mm

***NOTE! The water supply must be at least 100 l/min. at a minimum pressure of 2 bar.**

6.1 Identification Plate



17158

Fig. 6.1.1

- 1. *Producer*
- 2. *Serial number*
- 3. *Type*
- 4. *Date*
- 5. *Order number*
- 6. *Maximum pressure*
- 7. *Voltage*
- 8. *Frequency*
- 9. *Water volume*
- 10. *Consumption of ampere*
- 11. *Maximum temperature*

7. Maintenance

7.0 Instructions

- a) If quick couplings leak, o-rings should be replaced.
- b) Depending on usage, at least once a year maintenance should be undertaken by an authorised service engineer in order to prevent defects and failure of operation. Authorised engineers are persons who due to their skills and experience have sufficient knowledge of P3 Topax Hygiene Systems and are confident with the state work safety regulations, accident preventing regulations, lines and generally acknowledged technical regulations such as DIN-norms and VDE-provisions. For your safety this cleaning unit has been manufactured according to all relevant regulations valid within the EU and it has therefore been fitted with the CE-mark. For further information, please refer to the service department of Henkel-Ecolab.

7.1 Troubleshooting and Remedy

Measures at trouble shooting

Symptoms

The station does not start up
 The pump does not build up pressure
 No pressure
 Insufficient foam creation
 No foam creation
 No suction of sanitiser
 No suction of detergent

Possible causes

Push button not activated
 Fuse blown
 Fuse in control box blown
 Motor overload disconnected
 No water supply
 Incorrect direction of rotation of pump
 Flow switch defective
 Manometer defective
 Insufficient water supply
 Filter in inlet pipe blocked up
 Tilting switch not in rinse position
 Insufficient water supply
 Rinsing nozzle not installed
 Chemical product unsuitable
 Insufficient air supply
 Air pressure in injector too high
 Incorrect nozzle installed
 No air supply
 Non-return valve blocked
 Tilting switch not in foam position
 Dosing valve blocked
 Filter/suction pipe for product blocked
 Injector nozzle blocked
 Insufficient product supply

Remedy

Activate push button
 Replace fuse
 Replace fuse
 Search error
 Ensure water supply
 Connect pump correctly
 Call for skilled persons
 Replace manometer
 Ensure water supply
 Clean filter
 Set tilting switch in rinse position
 Open supply water valve
 Place rinsing nozzle
 Choose suitable product
 Provide sufficient air supply
 Adjust air pressure setting
 Place foam nozzle 50/200
 Ensure air supply
 Clean or replace valve
 Set tilting switch in foam position
 Clean or replace valve
 Clean filter/suction pipe
 Clean injector nozzle
 Ensure product supply

Fig. 7.1.1

Fault	Cause	Remedy
The station does not start up	Main station not activated Fuse blown Power supply fault Fuse in the wiring box of the station blown Motor overload security in the wiring box of station	Activate push button Check fuse and replace, if necessary Power supply to be checked by an expert. Check fuse and replace, if necessary Before switching on again, check cause of disconnection
The station does not build up pressure	Tilting switch is not in rinse position No water supply Rinse nozzle not installed	Set tilting switch in rinse position Open supply valve for water Place rinse nozzle (max. 40 l/min.)
Unstable or too low pump pressure	Insufficient water supply Strainer on inlet blocked	Provide sufficient water supply. Min. 1 1/4" piping Clean or replace filter

Fault	Cause	Remedy
Quality of foam unsatisfactory	<p>Type of P3 Topax product not suitable</p> <p>Insufficient air supply to the station</p> <p>Incorrect air pressure to station</p> <p>Too high air pressure in injector (read air pressure on air pressure gauge)</p> <p>Incorrect nozzle installed</p> <p>Injector nozzle blocked</p>	<p>Change to correct type of product</p> <p>Provide sufficient air supply, 200 l./min. 6 bar</p> <p>Adjust air pressure to 6 bar on pressure regulator</p> <p>Reduce air pressure to 6 bar on pressure regulator</p> <p>Place foam nozzle 50/200</p> <p>Clean injector nozzle</p>
No spreading of foam	<p>Foam nozzle not installed</p> <p>Non-return valve for P3 Topax product blocked</p> <p>Tilting switch is not in foam position</p> <p>Dosing valve for P3 Topax product blocked</p> <p>Water consumption too high</p> <p>Suction filter for P3 Topax product blocked</p> <p>Suction hose is not below Topax product level</p>	<p>Place foam nozzle</p> <p>Clean or replace valve</p> <p>Set tilting switch in foam position</p> <p>Clean or replace valve</p> <p>Reduce No. of users</p> <p>Clean or replace filter</p> <p>Put suction hose below product level</p>

Fault	Cause	Remedy
No spreading of foam	No supply of P3 Topax product	Provide product
	Concentration of product too low	Increase the setting of dosing valve
Insufficient spray sanitising	No water supply	Open supply water valve of station
	Non-return valve for P3 Topax product blocked	Clean or replace valve
	Dosing valve for P3 Topax product blocked	Clean or replace valve
	Suction filter for P3 Topax product blocked	Clean or replace suction filter
	No supply of P3 Topax product	Provide product
	Suction hose is not below P3 Topax product level	Put suction hose below product level
	Injector nozzle blocked	Clean injector nozzle
The station does not build up air pressure	Inlet valve for compressed air is not open	Open inlet valve for compressed air

7.2 Recommended Spare Parts

For Pos. No.	Article No.	Description	Number
6	606050	Service kit for flow switch	1
10	850802	Service kit for CRN4-220 pump	1
11	659000	Pressure gauge for water	1
30	350250	Service kit for automatic holder	1
51	350250	Service kit for automatic holder	1

P3 User Pack

Pos. No.	Article No.	Description	Number
1	350211	VS-ring	1
4a	350602	Suction filter	1

8. Components

8.0 Exploded Drawings of S 4100 with Spare Parts List

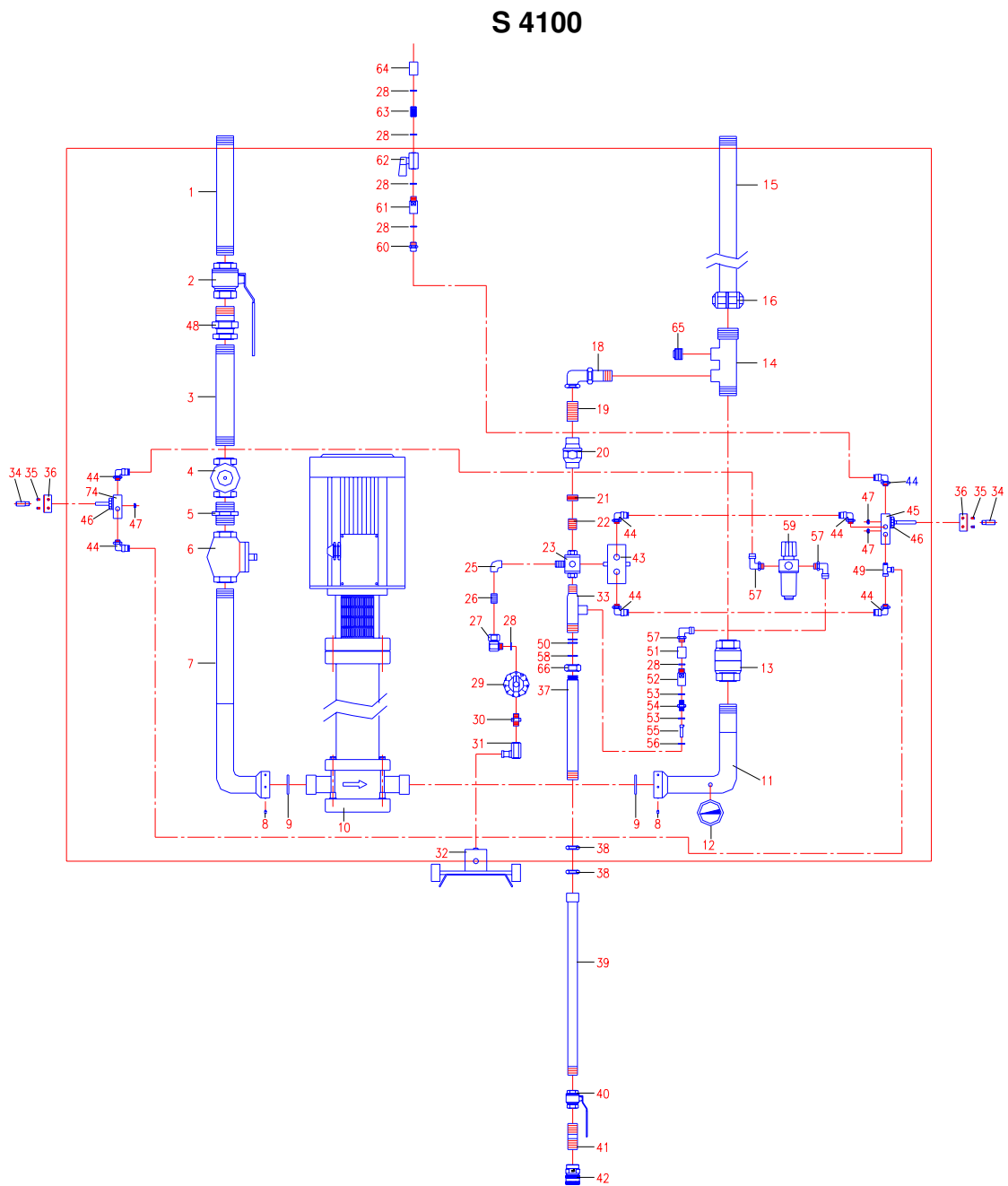


Fig. 8.0.1

17077

S 4100D separate sanitising

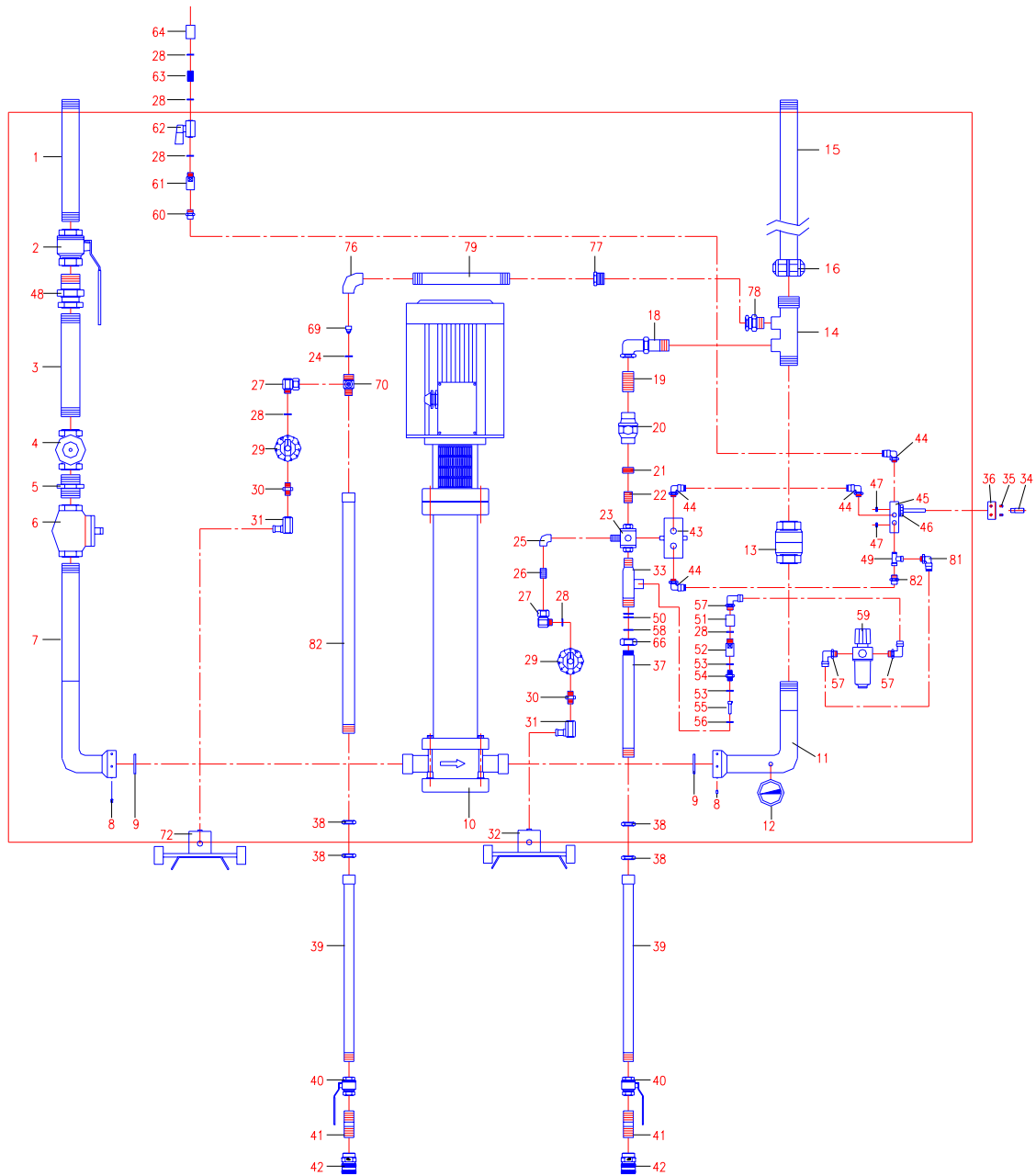


Fig. 8.0.2

17077

S 4100DF separate foam sanitising

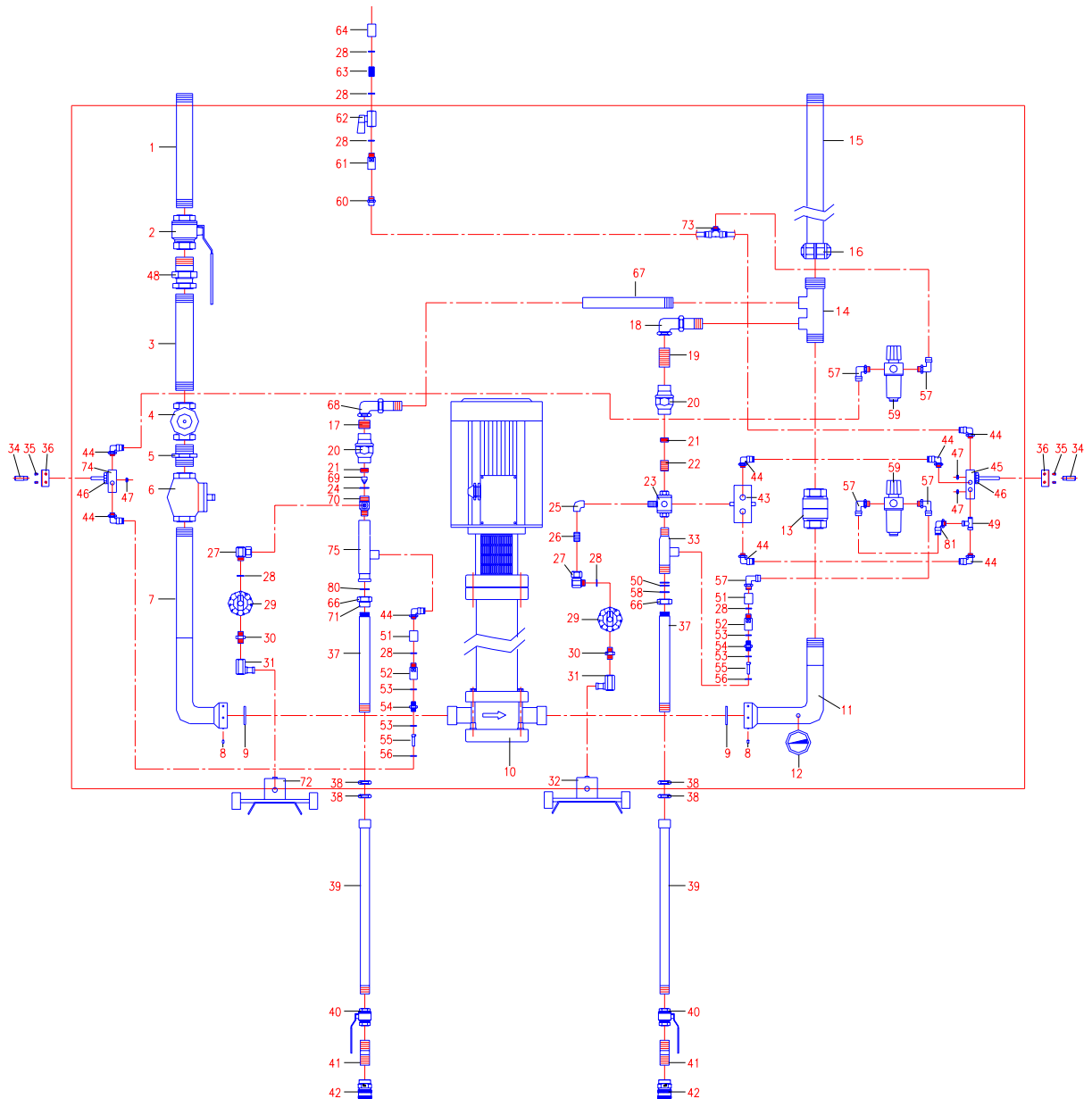


Fig. 8.0.3

17077

Pos. No.	Article No.	Description	Number
1	330300	Inlet pipe	1
2	600500	Ball valve 1 1/4"	1
3	330400	Distance pipe	1
4	601500	Strainer 1 1/4"	1
5	929000	Hexagon nipple 1 1/4" x 1 1/2"	1
6	606000	Flow switch	1
7	330500	Pump coupling, inlet	1
8	603600	Allen screw	4
9	603700	O-ring for pump coupling	2
10	850800	Pump CRN4-220	1
11	351300	Pump coupling, outlet	1
12	659000	Pressure gauge for water	1
13	630900	Non-return valve 1 1/4"	1
14	351400	Outlet pipe with 2 branches, standard	1
15	351500	Outlet pipe	1
16	601300	Union 1 1/4"	1
17	641006	3/4"x30 mm distance pipe	1
18	600200	3/4" angle union	1
19	641006	Nipple pipe 3/4" SMSK	1
20	600400	Non-return valve 3/4" SS	1 (2)
21	357700	Nipple 3/4" x 1/2"	1
22	641002	Nipple pipe 1/2" SMSK	1
23	352400	Injector valve 1/2" for actuator	1
24	350004	O-ring for nozzle	1
25	647500	Angle 1/4"	1

Note! The bracketed figures state number of parts fitted in S 4100D with separate sanitising.

Pos. No.	Article No.	Description	Number
26	380200	Special nipple 1/4"	1
27	647300	Elbow with union	1 (2)
28	638100	Gasket 1/4"	5 (6) (7)
29	647804	Dosing valve for P3 Topax detergent	1 (2)
30	648000	Non-return valve for P3 Topax detergent	1 (2)
31	647700	Elbow SS 1/4" x 12.5 mm	1 (2)
32	4-HOLD-R	Automatic holder for P3 Topax detergent	1
33	352700	Threaded union	1
34	677600	Handle for manual valve	1 (2)
35	156215	M4x6 umbracho	2 (4)
36	361603	Fitting for flap valve	1 (2)
37	352606	Outlet pipe	1 (2)
38	350705	Counter nut, special	2 (4)
39	350801	Pipe manifold for outlet	1 (2)
40	632800	Ball valve 1/2"	1 (2)
41	641002	Nipple pipe 1/2" SMSK	1 (2)
42	641900	Quick coupling 1/2"	1 (2)
43	352500	Actuator	1 (2)
44	359000	Quick fittings for air, angle 6 mm	6 (7) (8)
45	677910	Tilting switch 5/2	1
46	580094	Lock-nut for tilting switch	1 (2)
47	69930001	Silencer 1/8"	2 (3)
48	601300	Union 1 1/4"	1

Note! The bracketed figures state number of parts fitted in S 4100D with separate sanitising

Pos. No.	Article No.	Description	Number
49	359600	Tee 1/8" ext. x 1/8" internal thread	1
50	350108	O-ring	1
51	642200	Socket	1 (2)
52	640000	Non-return valve for air 1/4" SS	1 (2)
53	352800	O-ring	2 (4)
54	380500	Hexagon nipple 1/4" spec.	1 (2)
55	352900	Air nozzle	1 (2)
56	353500	O-ring for air nozzle	1 (2)
57	638500	Quick fittings for air, angle, 6 mm	3 (5)
58	350703	Spring ring	1 (2)
59	635650	Air filter, pressure regulator and gauge	1 (2)
60	639500	Air fittings 1/4" x 6 mm	1
61	640000	Non-return valve for air 1/4" SS	1
62	634000	Closing valve for air 1/4"	1
63	633500	Hexagon nipple 1/4"	1
64	920000	Socket 1/4"	1
65	380001	Plug 3/4"	1
66	357100	Union 1/2"	1 (2)
67	352601	Distance pipe 3/4"	1
68	600200	3/4" angle union	1
69	350003	P3 Topax Product nozzle 2.0 mm	1
70	350900	Special injector	1
71	352720	Union	1
72	4-HOLD-L	Automatic holder, P3 Topax sanitiser	1
73	359400	Quick fitting for air, tee, 6mm	1

Note! The bracketed figures state number of parts fitted in S 4100D with separate sanitising

Pos. No.	Article No.	Description	Number
74	677905	Tilting switch 3/2	1
75	352604	Threaded union for sanitiser outlet	1
76	922500	Angle 1/2" SS	1
77	646800	Reduction nipple 3/4"x1/2"	1
78	646400	Union 3/4"	1
79	351601	Threaded pipe 1/2"	1
80	356900	O-ring for union	1
81	359200	Quick fitting for air, 1/8"x 6mm	1
82	359300	Quick fittings for air 1/8"x6 mm	1
83	351800	Outlet pipe 3/8" x 1/2"	1

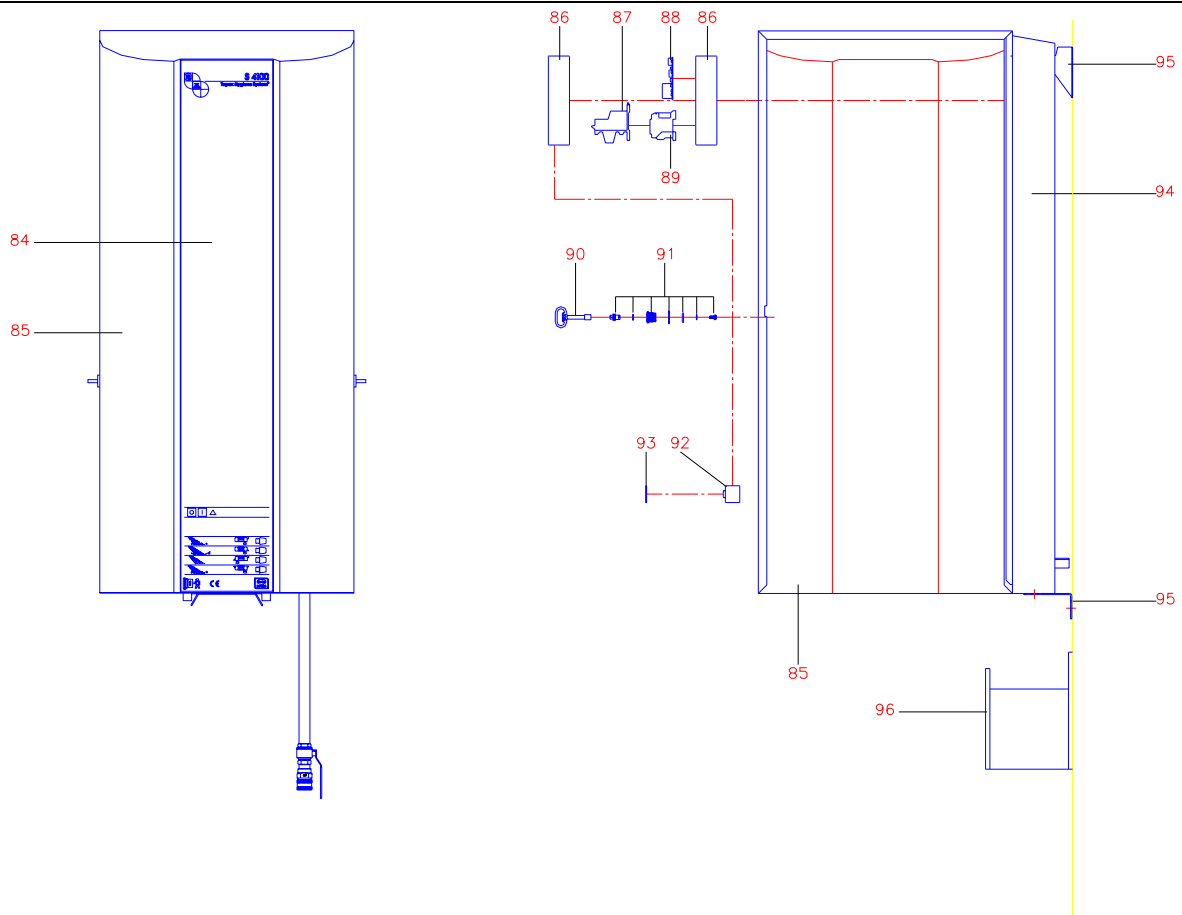


Fig. 8.0.4

17085

Pos. No.	Article No.	Description	Number
84	412300	Label for S 4100	1
85	361801	Cabinet door for S 4100	1
86	15610000	Electric box	1
87	15100001	Motor overload protection 9-13 A	1
88	310200	Print plate 3 x 380V, 50c/s	1
89	150500	Contacto 380V	1
90	652000	Key for lock	1
91	65185000	Lock for cabinet	1
92	310000	Control lamps	1
93	360500	Foil for push button	1
94	360002	Frame for S 4100	1
95	360100	Wall bracket for S 4100 cabinet	1
96	652400	Hose holder	1

8.1 Exploded Drawing of Injector Valve with Spare Parts List

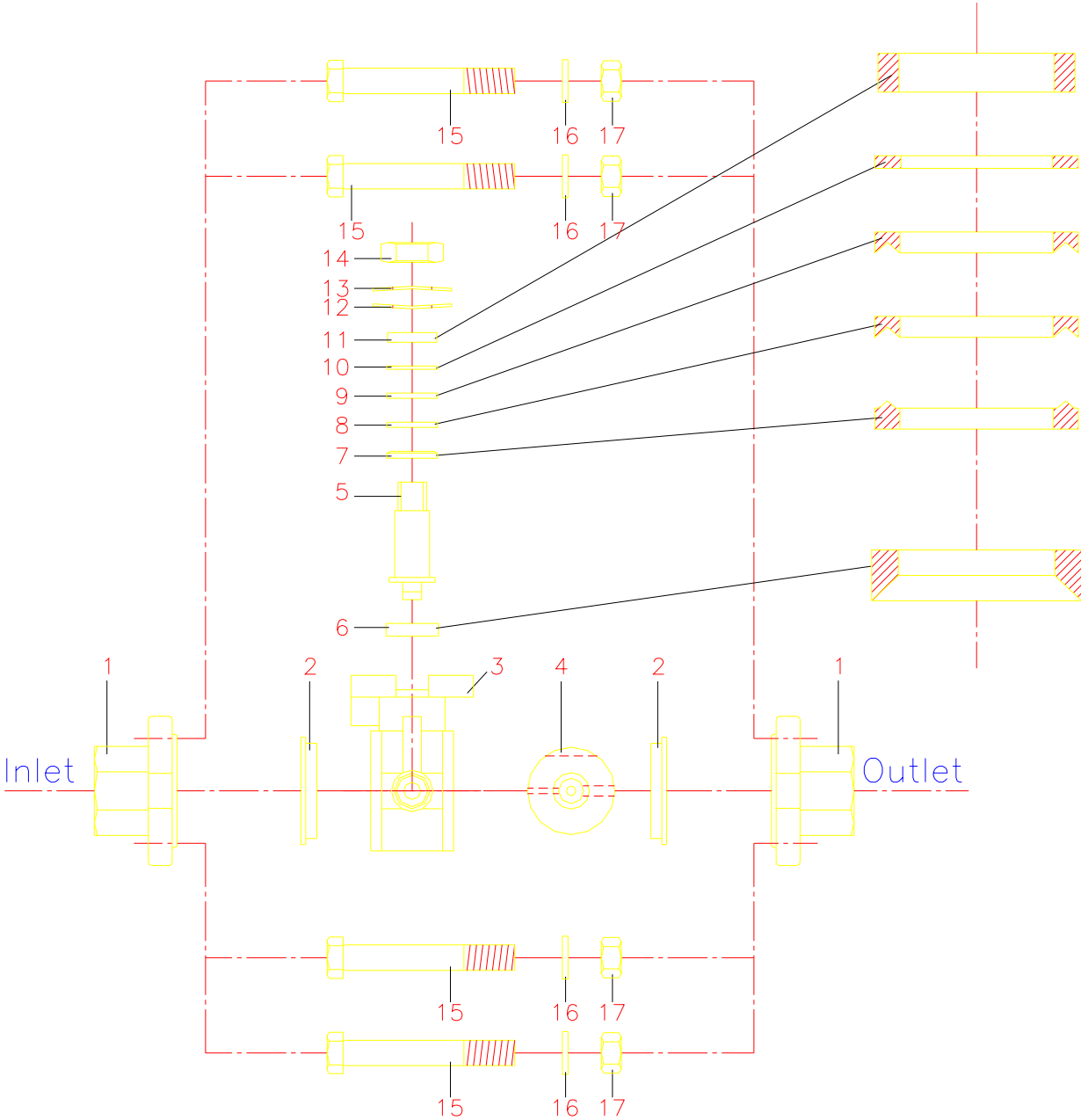


Fig. 8.1.1

17090

Pos. No.	Description	Number
1	Screwed connection	2
2	Teflon packing	2
3	Housing	1
4	Ball	1
5	Swivel	1
6	Packing	1
7	Packing	1
8	Packing	1
9	Packing	1
10	O-ring	1
11	Distance bearing	1
12	Disk spring	1
13	Disk spring	1
14	Nut for swivel	1
15	Bolt M8	4
16	Washer	4
17	Nut M8	4

8.2 Drawing of P3 User Pack with Spare Parts List

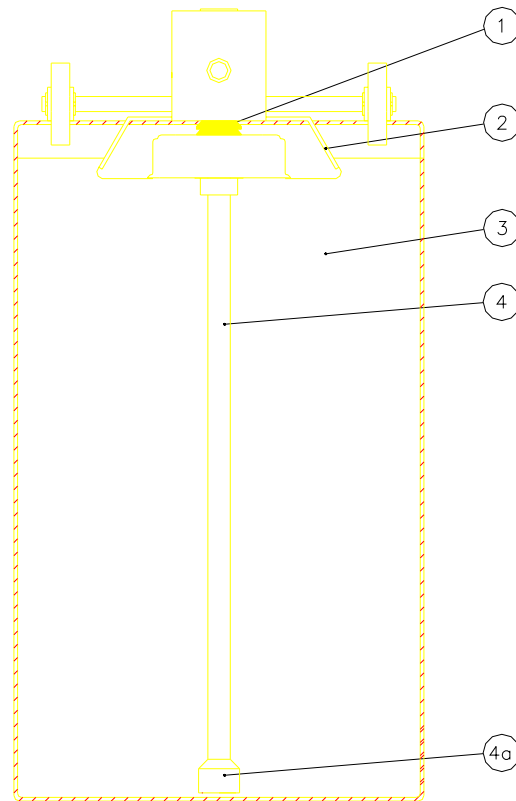


Fig. 8.2.1

17026

Pos. No.	Article No.	Description	Number
1	350211	VS-ring	1
2	4-HOLD-R	Holder for P3 User Pack detergent	1
2	4-HOLD-L	Holder for P3 User Pack sanitiser	1
3	S-CAN-R	P3 User Pack detergent	1
3	S-CAN-L	P3 User Pack sanitiser	1
4	350600	Suction pipe	1
4a	350602	Suction filter	1

9. Warranty

ATTENTION!

Our guarantee is given for a period of 12 months from delivery on all parts which have provable become unfit for use due to material, construction or manufacturing defects as well as inadequate work. The guarantee compensation will occur in the shape of either reimbursement, replacement or repair of the defective or damaged part at our works. Installation and freight costs are always on the purchaser's account. Any defective parts are to be placed at our disposal. Claims that may otherwise be raised for any legal reason will not be acknowledged. No liability will be accepted for damage occurred indirectly. The purchaser has no right to let any third party repair possible defects on our account.

All hoses, rubber parts or synthetic materials, natural wear and tear as well as damage caused by careless and inappropriate handling, including transport damage are not covered by the guarantee. Further, the guarantee does not apply if the system has been subjected to frost. The obligation of guarantee compensation also ceases if changes or repairs are made by non-authorized persons. Claims under the guarantee will only be acknowledged when they are placed immediately after the defect has been noticed. The guarantee ceases in case of change of ownership.

The dealer cannot be held responsible for personal injury, damage to equipment, working deficits, including production loss, loss of profits, loss of stock or the like which may occur by imperfect and delayed delivery of the sold product, regardless of the reason, including manufacturing and material defects. Please see our standard terms of sale and delivery.

10. User Service

10.0 International Henkel-Ecolab Address List

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Fax: (90) 21 22 75 09 99

EC Declaration of Conformity

Manufacturer:

Company Name: Alto Danmark A/S
Address: Blytækervej 2
9100 Aalborg
Danmark
Tel.: 98166455

hereby declare that

Machine:

No.: S4100
Name: P3-Topax Hygiene System
Type: S 4100
Year: 1998

- is in conformity with:

the COUNCIL DIRECTIVE of 14 June 1989 on mutual approximation of the laws of the Member States on the safety of machines (89/392/EEC as amended by directives 91/368/EEC, 93/44/EEC and 93/68/EEC) with special reference to Annex 1 of the Directive on essential safety and health requirements in relation to the construction and manufacture of machines.

- COUNCIL DIRECTIVE of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility (89/336/EEC)

- COUNCIL DIRECTIVE of 19 February 1973 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (73/23/EEC)

was manufactured in conformity with the following national standards that implements a harmonised standard:

EN 292-1
Basic terminology, methodology
EN 292-2
Technical principles and specification
EN 60204-1
Safety of Machinery. Electrical requirements of machines

Name: John Holm Espersen
Company: Alto Danmark A/S



Mar 9, 1998

Date

Signature