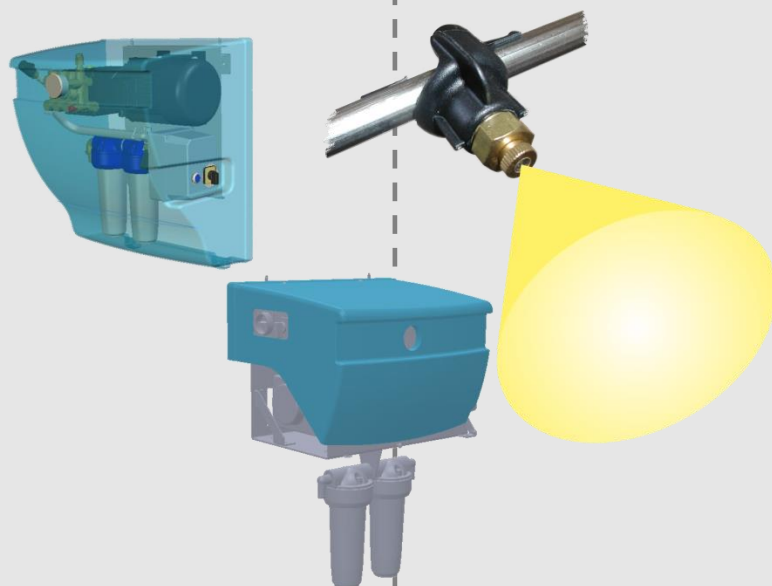


High-pressure Cooling

Technical Info



1 Product description

The principle of high-pressure cooling is to spray atomised water out into the warm air in the house. When the water evaporates, the air will be cooled. By controlling the combination of air circulation and water supply, the temperature in the house can be reduced in relation to the surroundings.

The system consists of a high-pressure pump that supplies water under high pressure 70 bar, and a piping system with FlexClamp nozzles that atomise the water into a very fine mist.

The pump is supplied as a complete unit for mounting on the wall, or alternatively, the pump is mounted on the floor using a floor stand. Depending on the quality of the water on site, it is possible to equip the pump with various filters and other auxiliary equipment to ensure a seamless operation.

The piping system consists of a number of stainless steel pipes in which holes are punched at a suitable distance from each other for FlexClamp nozzles which are easily mounted on the pipe. The steel pipes can be mounted either on the wall with nozzles on one side, or hanging from the ceiling where FlexClamp nozzles can be mounted on both sides.

The pump is controlled by means of a temperature sensor and a humidity sensor via a climate computer. The pumps should not be used in greenhouses or for high-pressure cleaning.

The DA 2000 high-pressure pump without frequency converter is specially designed for application in poultry houses in which the requirement to the pump capacity is dependent on the size of the house and thus constant.

The DA 2000 high-pressure pump including frequency converter is specially designed for cooling in pig houses in which the requirement to the pump output varies with the production. There is thus a requirement for a flexible pump.

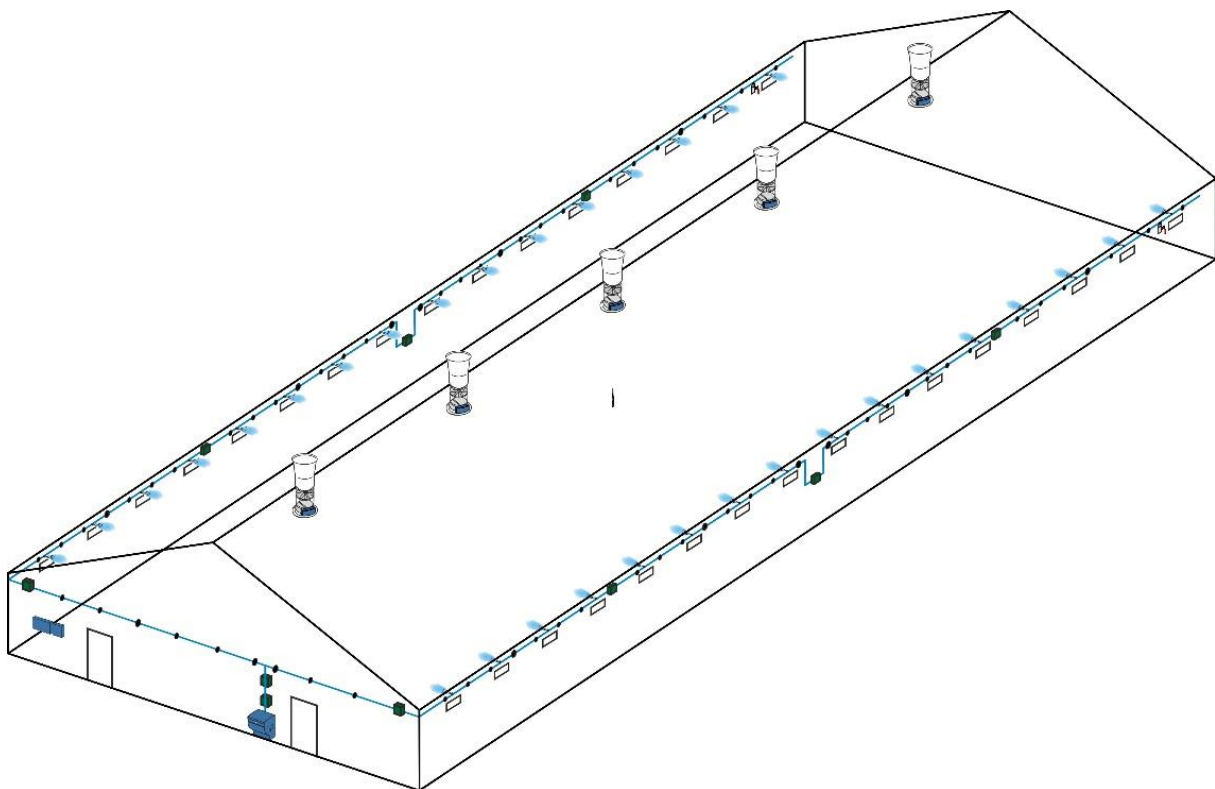


Figure 1: Overview of high-pressure cooling in a LPV system.

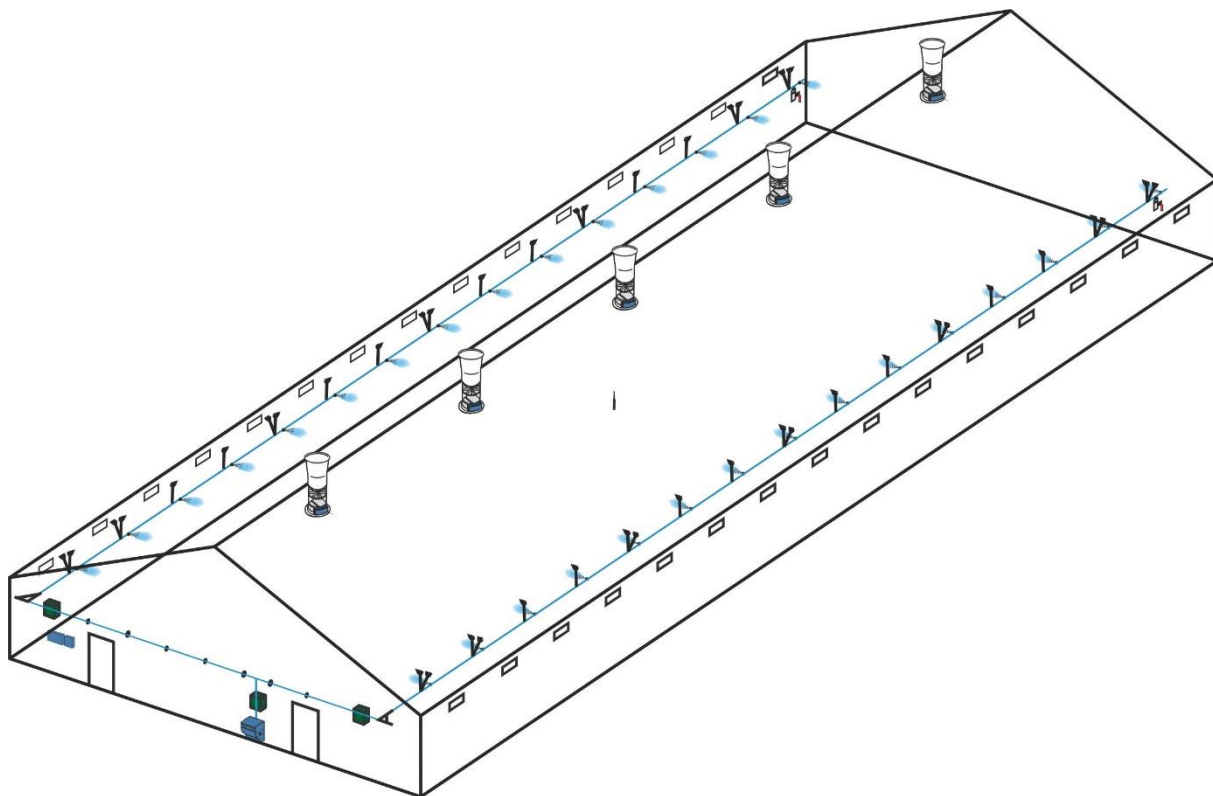


Figure 2: Overview of high-pressure cooling in a LPV system with ceiling mounting.

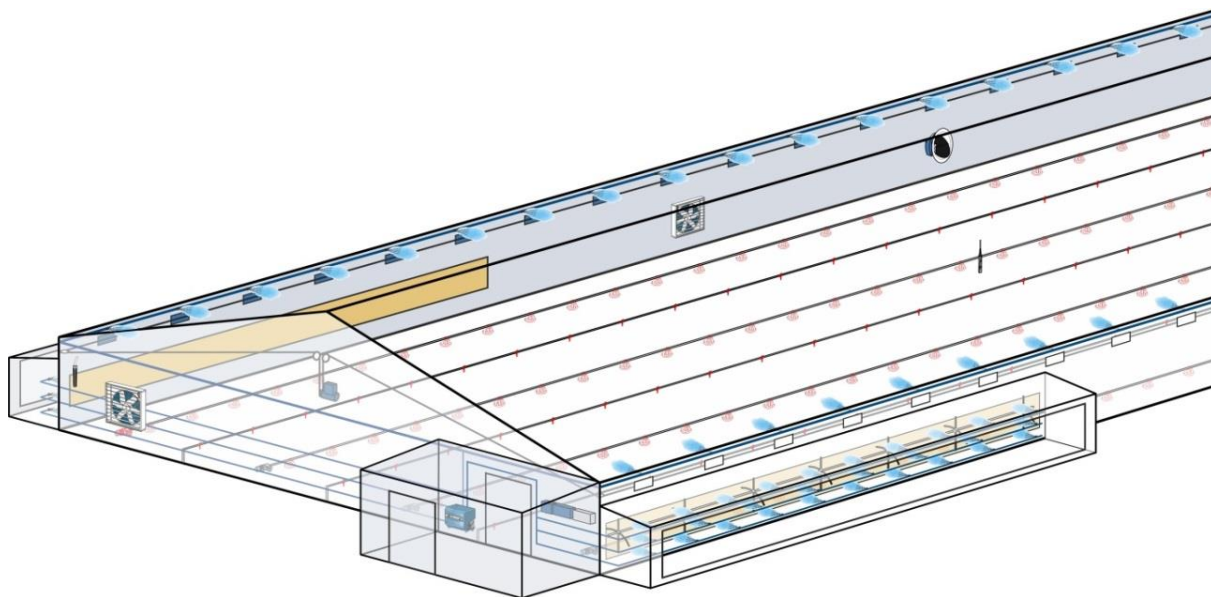
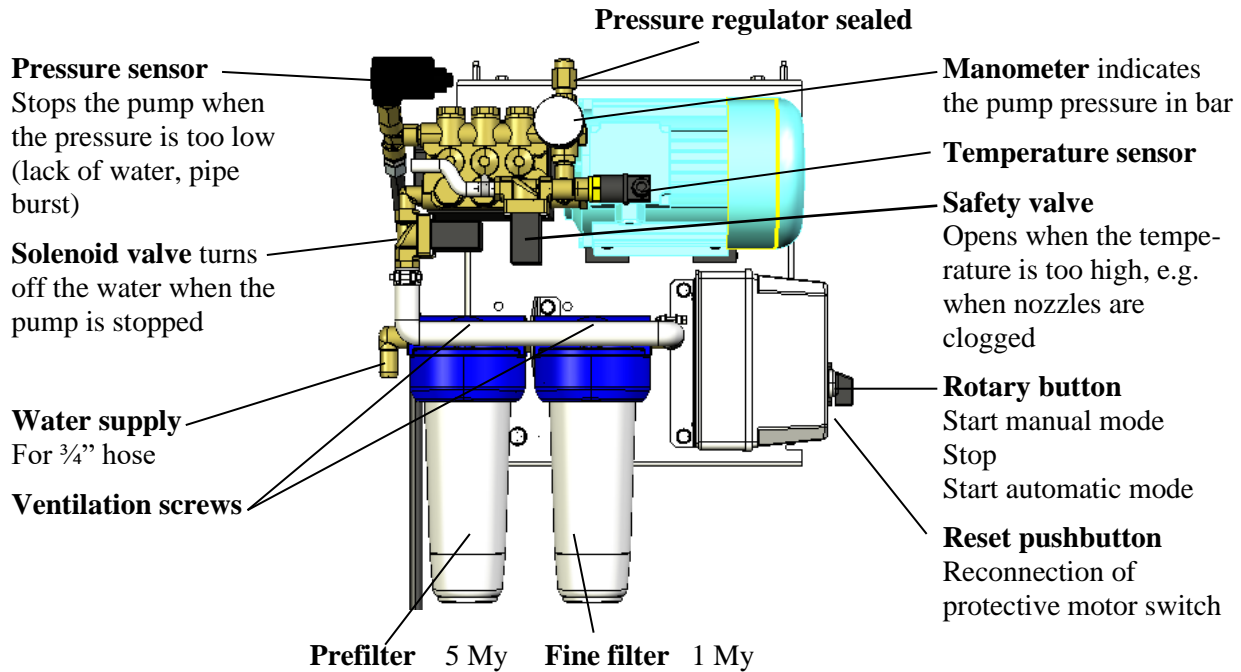
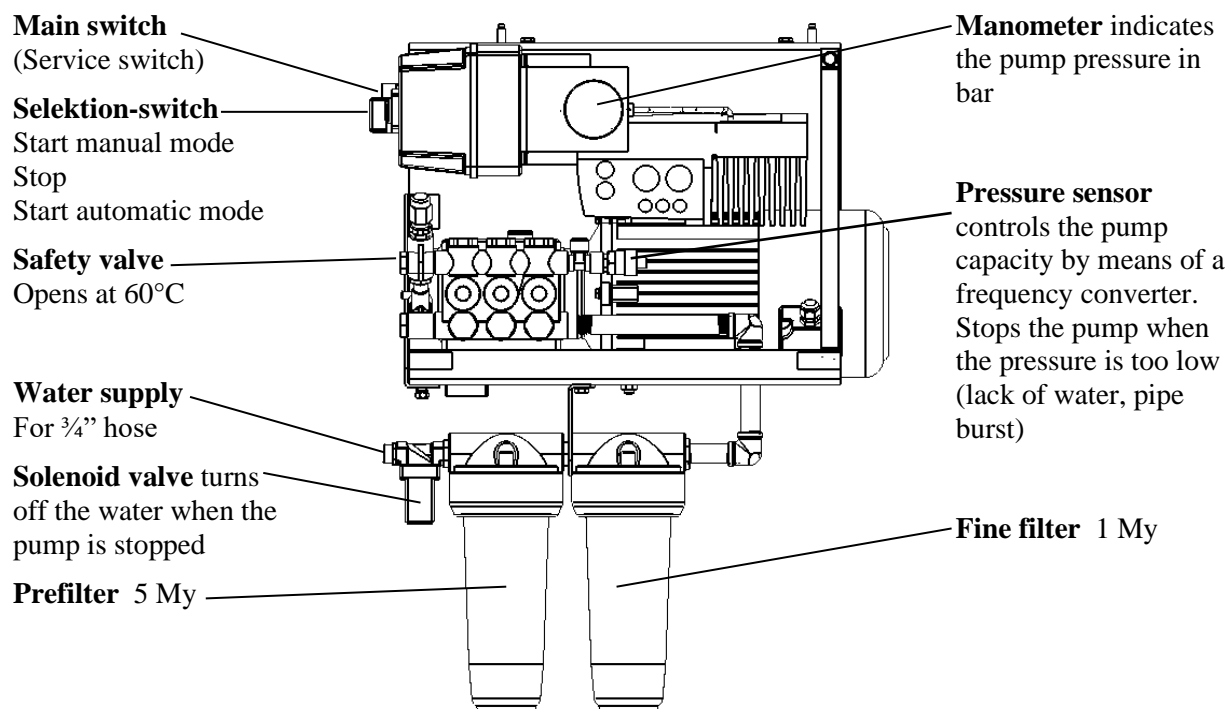


Figure 3: Overview of high-pressure cooling in a Combi-tunnel system.

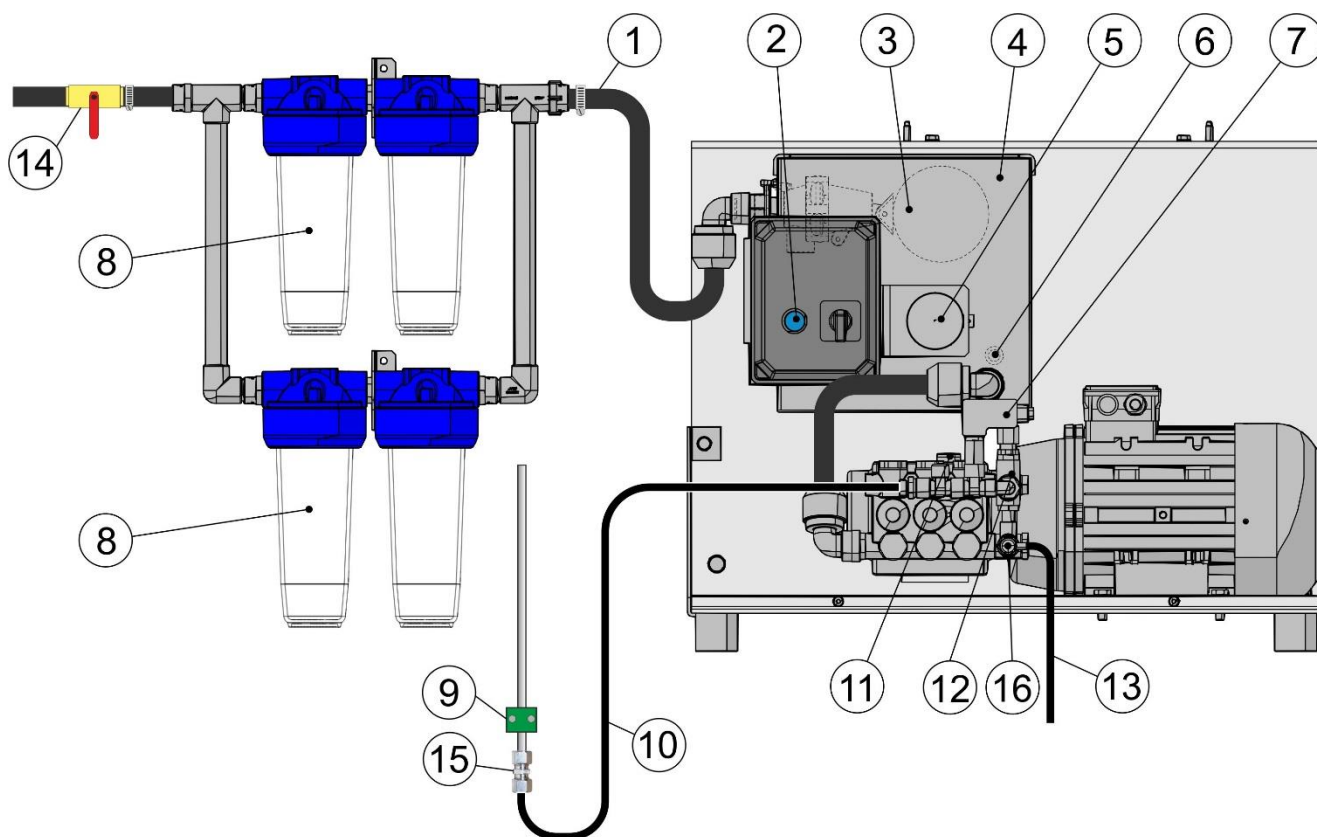
1.1 DA 2000 high-pressure pump ex. frequency converter



1.2 DA 2000 high-pressure pump incl. frequency converter



1.3 DA 2500 high-pressure pump

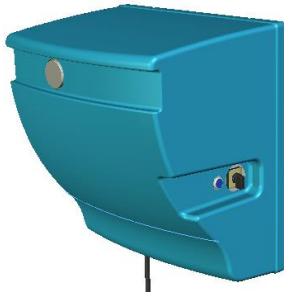


- | | |
|---|-------------------------------------|
| 1 Water supply – 3/4" hose | 9 Wall bracket |
| 2 Reset push button – reconnection of protective motor switch | 10 Pressure relief hose |
| 3 Float | 11 Oil stick |
| 4 Buffertank – 16 litres | 12 Pressure regulator sealed |
| 5 Manometer – indicates the pump pressure in bar | 13 Hose for drainage |
| 6 Niveau switch | 14 Drain ball valve |
| 7 Pressure sensor – stops the pump when the pressure is too low. | 15 Straight connector |
| 8 Filters 2 × 5 my and 2 × 1 my | 16 Nonreturn valve |

2 Product survey

2.1 Pump variants

Pump variants



- 437150** Pump V2 6 l/min 1x230V 50Hz
- 437151** Pump V2 6/7 l/min 3x400V 50/60Hz
- 437152** Pump V2 12 l/min 1x230V 50Hz
- 437153** Pump V2 12/14 l/min 3x230V 50/60Hz
- 437154** Pump V2 12/14 l/min 3x400V 50/60Hz
- 437155** Pump V2 18.5 l/min 1x220V 60Hz
- 437156** Pump V2 18.5 l/min 3x230V 60Hz
- 437158** Pump V2 18.5 l/min 3x400V 60Hz
- 437157** Pump V2 21 l/min 3x400V 50Hz

The pump is an on/off pump and is supplied as a complete unit for mounting on a wall and includes filters, electronic thermal circuit breaker, pressure sensor, safety valve, bleed screws, manometer, solenoid valve, high-pressure hose, etc.

The pump is used where the lowest rate of flow at partial load exceeds 15% (6/7/12/14 litre) or 20% (18.5/21 litre pump) of the max. capacity. This means, for example, that the minimum flow is 0.9, 1.8 and 4.2 l/min. for the pumps supplying 6, 12 and 21 l/min. respectively at 50 Hz. If this cannot be met, choose a pump with frequency converter - listed below.

The pump is supplied including mounting kit.

The mounting kit includes:

- 2 pcs. drain ball valve, 12 mm pipe
- 1 pcs. straight connector
- 1 pcs. T-connector
- 1 pcs. drain valve 3/4"
- 2 pcs. threaded rod M10, 495 mm
- 3 pcs. dowel 10 mm
- 3 pcs. coach screw 10x70
- 2 pcs. washer 6x14
- 4 pcs. nut M10
- 1 pcs. hose 3/4 with collar band
- 1 pcs. hose 5/8 with collar band
- 4 pcs. spacer Ø20/Ø5x20 mm
- 4 pcs. chip board screw 5x70
- 4 pcs. pipe holder 10 mm
- 4 pcs. dowel 6 mm



Pump variants



437591 Pump 5,5 l, 70 bar, 3x400V, 50/60 Hz, frequency

437577 Pump 12 l, 70 bar, 3x400V, 50/60 Hz, frequency

437162 Pump V2 21 l/min 3x230V 50/60Hz frequency

437163 Pump V2 21 l/min 3x400V 50/60Hz frequency

The pump - includes a frequency converter - is supplied as a complete unit for mounting on the wall and includes filters, mechanical thermal circuit breaker, pressure sensor, safety valve, bleed screws, manometer, solenoid valve, high-pressure hose, etc.

The pump is used where the lowest rate of flow at partial load exceeds 5% of the max. capacity at 70 bars. This means, for example, that the minimum flow is 0.6 and 1.1 l/min. for the pumps supplying 12 and 21 l/min. respectively at 70 bars.

The pump is supplied including mounting kit.

The mounting kit includes:



2 pcs. drain ball valve, 12 mm pipe

1 pcs. straight connector

1 pcs. T-connector

1 pcs. drain valve 3/4"

2 pcs. threaded rod M10, 495 mm

3 pcs. dowel 10 mm

3 pcs. coach screw 10x70

2 pcs. washer 6x14

4 pcs. nut M10

1 pcs. hose 3/4 with collar band

1 pcs. hose 5/8 with collar band

4 pcs. spacer Ø20/Ø5x20 mm

4 pcs. chip board screw 5x70

4 pcs. pipe holder 10 mm

4 pcs. dowel 6 mm

Pump variants



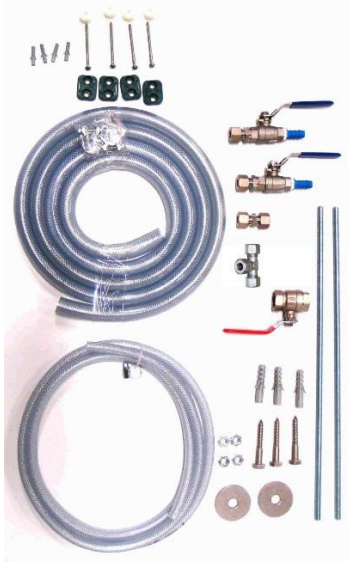
437626 DA 2500 V2 pump 21l/min, 3x400V 50Hz

The pump is an on/off pump and is supplied as a complete unit for mounting on the wall and includes thermal valve, pressure sensor, pressure controller, pressure gauge, high-pressure hose and buffer tank with control of high and low water level.

The pump is used where the lowest rate of flow at partial load exceeds 20% of the max. capacity. This means, for example, that the minimum flow is 4.2 l/min.

The pump is supplied including mounting kit.

The mounting kit includes:



2 pcs. drain ball valve, 12 mm pipe

1 pcs. straight connector

1 pcs. T-connector

1 pcs. drain valve 3/4"

2 pcs. threaded rod M10, 495 mm

3 pcs. dowel 10 mm

3 pcs. coach screw 10x70

2 pcs. washer 6x14

4 pcs. nut M10

1 pcs. hose 3/4 with collar band

1 pcs. hose 5/8 with collar band

4 pcs. spacer Ø20/Ø5x20 mm

4 pcs. chip board screw 5x70

4 pcs. pipe holder 10 mm

4 pcs. dowel 6 mm

2.2 Nozzels

Nozzels



437475 FlexClamp nozzle complete 0.2mm

437424 FlexClamp nozzle complete 0.3mm

Supplied complete with built-in filter, antidrip function and mounting coupling.

Can be used in all high-pressure cooling systems for agriculture where water hardness is below 10-15 dH. If the water contains brass-corrosive substances, use stainless steel nozzles instead.

0.2mm yields 4.0 l/h at 70 bar

0.3mm yields 6.3 l/h at 70 bar

Seals and non-return valve in EPDM rubber.

It is recommended ordering 10% additional spare nozzles when purchasing.



437476 FlexClamp nozzle complete anti-lime 0.2mm

437425 FlexClamp nozzle complete anti-lime 0.3mm

Supplied complete with built-in filter, antidrip function and mounting coupling.

If water hardness exceeds 15-20 dH, measures should be taken to reduce calcification; alternatively, nozzles with an anticalcium coating should be used. If the water contains brass-corrosive substances, use stainless steel nozzles instead.

The nozzle end has an anticalcium coating to reduce calcareous deposits significantly.

0.2mm yields 3.5 l/h at 70 bar.

0.3mm yields 6.3 l/h at 70 bar.

Seals and non-return valve in EPDM rubber.

It is recommended ordering 10% additional spare nozzles when purchasing.



437477 FlexClamp nozzle cpl. stainl. st. 0.2mm

437466 FlexClamp nozzle cpl. stainl. st. 0.3mm

Supplied complete with built-in filter, antidrip function and mounting coupling. Water hardness may not exceed 10-15.

FlexClamp stainless nozzle can be used when water quality places particularly high requirements on the material.

Stainless nozzle.

0.2mm yields 3.5 l/h at 70 bar.

0.3mm yields 5.6 l/h at 70 bar.

Seals and non-return valve in EPDM rubber.

It is recommended ordering 10% additional spare nozzles when purchasing.



437556 DA 2000 end nozzle 0.2mm rf

437557 DA 2000 end nozzle 0.3mm rf

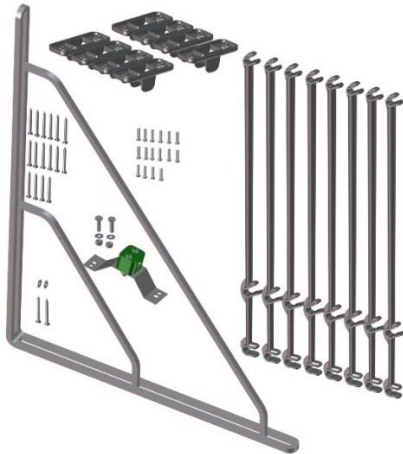
Place the DA 2000 end nozzle as the last nozzle on the piping in the section to avoid air between the drain ball valve and the nozzle.

Nozzels

Stainless nozzle.

2.3 Pipes and fittings

Pipes and fittings



437675 Cool pipe suspension for ceiling start

Used when mounting cooling pipes in the ceiling.

Order one mounting set per piping.

The screws in the mounting kit are for mounting the suspension on the sandwich panel.

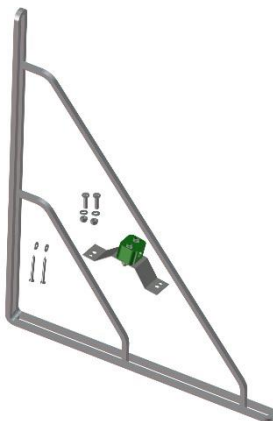


437676 Cool pipe suspension for ceiling next

Used when mounting cooling pipes in the ceiling.

Order two mounting set per 2 m piping.

The screws in the mounting kit are for mounting the suspension on the sandwich panel.



437642 Cool pipe suspension f/ceil.extra pipe-start

Use if an extra set of cooling pipes is desired in the ceiling over/under.

Order one mounting set per piping set (1 piping set consists of two pipes over/under each other).

The screws in the mounting kit are for mounting the suspension on the sandwich panel.



437679 Cool pipe suspension f/ceiling w/wire, start

Is applied when mounting the cooling pipes in the ceiling if it is not possible to use cooling pipe suspension, item no. 437675.

Is used for mounting in brick and concrete.

Order one mounting set for every string of piping.

Pipes and fittings



437680 Cool pipe suspension f/ceiling w/wire, next

Is applied when mounting the cooling pipes in the ceiling if it is not possible to use cooling pipe suspension, item no. 437676.

Is used for mounting in brick, concrete, and sandwich walls.

Order one mounting set for every 3 metres of piping.

Note that steel wire (413104) must be ordered for both mounting the cooling pipe from the ceiling and for mounting the wire over the cooling pipe from one end of the house to the other.



413104 Steel wire 2.0 mm 7x7 A4

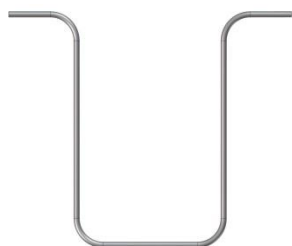
Is used when mounting the cooling pipe suspension from the ceiling with wire.

Order the number of meter steel wire corresponding the length of the cooling pipe. In addition, steel wire must be ordered for mounting the cooling pipe from the ceiling.



437472 Acid-proof pipe 12mm A4, 5.5m

Stainless, acid-proof A4 quality (AISI 316).



437558 DA 2000 U expansion

Stainless, acid-proof A4 quality (AISI 316).

Used to control the thermal expansion of the pipes at wall mounting. To be mounted at a max. spacing of 50m.

At a temperature increase of 20°C, 50m pipe expands approx. 18mm (9mm/side).

At side mode mount the U-expansion using wall bracket and two pipe holders with clips.



437561 Splicing sleeve straight press 12mm A4

Stainless, acid-proof splicing sleeve with sealing ring in EPDM rubber that ensures a tight joint.

Requires special tool no. 437553/437559 for mounting.

It is then very easy to mount the unit. Cannot be disassembled after assembly.



437560 Splicing sleeve 90 degrees 12mm A4

Stainless, acid-proof splicing sleeve with sealing ring in EPDM rubber that ensures a tight joint.

Requires special tool no. 437553/437559 for mounting.

It is then very easy to mount the unit. Cannot be disassembled after assembly.

Pipes and fittings



437562 Splicing sleeve T-connector press 12mm A4

Stainless, acid-proof splicing sleeve with sealing ring in EPDM rubber that ensures a tight joint.

Requires special tool no. 437553/437559 for mounting.

It is then very easy to mount the unit. Cannot be disassembled after assembly.



437646 Acidproof straight joiner 2x12mm A4

Complete, stainless acid-proof fitting with special stainless, acid-proof sealing cone. Supplied packed and greased with assembly grease.



437647 Acidproof angle joiner 2x12mm A4

Complete, stainless acid-proof fitting with special stainless, acid-proof sealing cone. Supplied packed and greased with assembly grease.



437648 Acidproof T-joiner 3x12mm A4

Complete, stainless acid-proof fitting with special stainless, acid-proof sealing cone. Supplied packed and greased with assembly grease.

One T-assembler is supplied with the pump.



437426 Pipe holder set for 5.5m pipe

Four pipe holders for 5.5m pipes. The distance from the centre of the pipe to the wall is 36mm.

The max. distance between pipe holders is 1.5m.

Typically used for mounting on wall.

The set consists of:

522095 4 pipe holder ø12mm x h36mm

351737 4 chipboard screw 5x70 pan TX25 A2

419334 4 rawl plugs 6mm

437519 1 DA 2000 clips for pipe holder



437554 DA 2000 pipe holder set f/sandw panel

Four pipe holders for 5.5m pipes. The distance from the centre of the pipe to the wall is 36mm.

The max. distance between pipe holders is 1.5m.

Used for mounting on sandwich panels.

The set consists of:

522095 4 pipe holder ø12mm x h36mm

351583 4 tapp. screw 5x40 pan TX25 ZnNi spec.

437519 1 DA 2000 clips for pipe holder

Pipes and fittings



437595 Pipe holder set with magnet

Four pipe holders for 5.5m pipes. The distance from the centre of the pipe to the wall is 36mm.

The max. distance between pipe holders is 1.5m.

The set is used in houses with panel walls or where you cannot drill holes.

The set consists of:

437571 4 pipe holder for 5.5 m pipe, magnet

437519 1 DA 2000 clips for pipe holder



437519 DA 2000 Clips for pipe holder

Used to secure cooling pipes in pipe holders on the wall.

Every four pipe holders must be equipped with clips.

A pipe holder with clips on both sides is used for U expansions.



437482 DA 1500/1800 pipe holder

A special pipe holder has been developed for the DA 1500/1800 ceiling inlet which can be used for securing the SKOV high-pressure cooling pipes if a high-pressure cooling system has been installed.

Use one unit per inlet.

If the distance between the inlets exceeds approx. 1.5m, supplement with article no. 437480 DA 1500/DA 1800 pipe holder with adapter.

If the length of the cooling piping exceeds 40m, the pressure impact from the start/stop of pump may cause breakage of the rather long pipe holder. It is therefore recommended to mount one 437433 high-pressure hose as vibration absorber for each 40m piping.



437435 Acid-proof 12 mm A4 nozzle ring f. DA 40



437594 DA 2000 wall bracket complet f brick/concrete

Used to fix pipes on brick and concrete walls to control the thermal expansion of the pipes. To be mounted at a max. spacing of 25m and used to lock the pipes at the ends.

The set consists of:

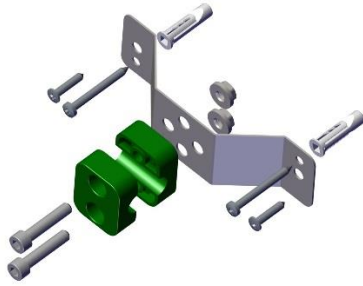
510122 2 spacer Ø20/5 x 25 mm

510152 2 single pipe clip Ø12 mm

419334 2 rawlplug 6 mm

351737 2 stk. Chipboard screw 5x70/T25 int. hexagon A2

Pipes and fittings



437555 Wall bracket for coolpipe sandwich/brick/concrete

Used to fix the pipes on sandwich panels, brick and concrete walls to control the thermal expansion of the pipes. To be mounted at a max. spacing of 25m and used to lock the pipes at the ends.

The set consists of:

504750 1 DA 2000 fitting for wall bracket

510152 2 single pipe clip Ø12 mm

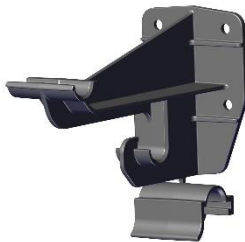
352029 2 locknut M6, incl. flange, A2

357001 2 cylinder screw M6x30, A2

351582 2 Tapp. screw 5x16 flange TX25 ZnNi spec.

351737 2 Chipboard screw 5x70 pan TX25 A2

419334 2 Rawlplug 6 mm

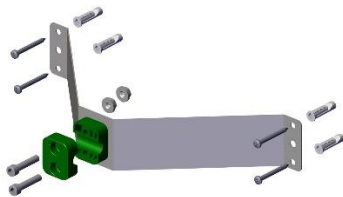


433368 DA 3800 holder for pull rod/cooling pipe

Used when mounting cooling pipe with DA 3800 wall inlet.

Distance from the middle of the pipe to the wall is 120 mm.

Max. distance between holders is 2.0 m. Must be placed asymmetrical to the inlet and pull direction to allow for working space for the pull wire and spring system. Is used for mounting in brick, concrete, and sandwich walls.



437689 Wall lock cool pipe 120 sandw/brick/conc

Used when mounting cooling pipe with DA 3800 wall inlet..

Used to fix the pipes on sandwich panels, brick and concrete walls to control the thermal expansion of the pipes. To be mounted at a max. spacing of 25m and used to lock the pipes at the ends.

The set consists of:

504756 1 Bracket for wall lock 120 mm

510152 2 single pipe clip Ø12 mm

352029 2 locknut M6, incl. flange, M6 A2 DIN6923

357001 2 cylinder screw M6x30, A2

351582 4 Tapp. screw 5x16 flange TX25 ZnNi spec.

351737 4 Chipboard screw 5x70 pan TX25 A2

419334 4 Rawlplug 6 mm



437628 Drain ball valve 1/4", 12 mm pipe, end adapter

1/4" stainless steel ball plug valve fitted with a acid-proof screwed-end connection and a hose connector.

Position the ball plug valve at the end of the piping in the section.

Fits Ø12 mm stainless cooling pipes and 509301 PVC hose.

Intended only for draining.



437627 Drain ball valve 1/4", 12 mm pipe, pressfitting

1/4" stainless steel drain ball valve fitted with a hose connector.

Position the drain ball valve at the end of the piping in the section.

Fits Ø12 mm stainless cooling pipes and 509301 PVC hose.

Intended only for draining.

Pipes and fittings



509303 PVC hose uniflex 1/4" (6mm)

509301 PVC hose uniflex 1/2" (13mm)

509303 fits the safety valve on the high-pressure pump.

509301 fits the drain connector on the drain ball valve mounted at the end of the piping.

Can be used to guide cooling pipes through a wall.



510010 Hose connector outer thread 3/4" x 19mm brass

One hose connector 3/4" (510010) is mounted on the pump. If additional hose connectors are required, they must be ordered separately.



510128 Clip, stainless, type ASFA Ø8-16mm

510131 Clip, stainless, type ASFA Ø16-27

To be ordered separately for fastening of hose on hose connector.

One or two ends, as required.



437433 High press. hose 1m w.pipe connection A4

Hydraulic hose with stainless acid-proof adapter at both ends for mounting of 12mm pipe.

Is used as vibration absorber among other things, if the length of the piping exceeds 40m and pipe holders of 0.3m or more are used; e.g. item number 437471, 437480 or 437482.

2.4 Components for systems with several sections

Components for systems with several sections



437489 High-pressure valve two-way 3 l/min 230V

Supplied complete with two A4 cutting fittings.

Use one valve per section when more sections are connected to the same cooling system.



437490 High-pressure valve two-way 30 l/min 230V

Supplied complete with two A4 cutting fittings.

Use one valve per section when more sections are connected to the same cooling system.

Power should not be supplied to the valve from a DOL 278.



437631 High-pr. valve two-way 15l/min 230V 50Hz

437632 High-pr. valve two-way 15l/min 230V 60Hz

High-pressure valve that opens/closes for individual piping components.

Components for systems with several sections

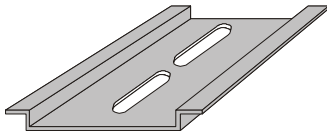


280060 Contactor 50/60 Hz

Used when a pump is to supply water to several house sections. The contactor activates the high-pressure valve.

To be mounted in the climate computer on a DIN rail.

Use one contactor for each house section/high-pressure valve.

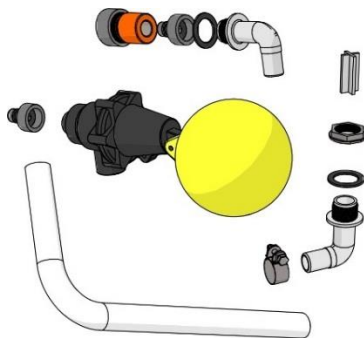


340937 DIN rail

Used when an additional contactor is to be mounted in the climate computer.

2.5 Auxiliary equipment and mounting parts

Auxiliary equipment and mounting parts



437502 DA 2000 kit for external tank connection

If an external tank is used before the pump, the DA 2000 kit can be used to ensure a safe water supply to the pump.

The mounting set consists of:

- 2 pcs. Sheet cross profile
- 3 m PVC hose Ø19x26
- 1 pcs. hose clamp 3/4"
- 2 pcs. connector 3/4" 901-50
- 1 pcs. float valve 3/4"
- 2 pcs. 90 ° elbow, thread 3/4" for tube 3/4"
- 2 pcs. washer 3/4"
- 1 pcs. plastic nut 3/4"
- 1 pcs. water stop 3/4"



510122 Distance bushing Ø20/Ø5x25 mm

352896 Chipboard screw 5x80 pan TX25 A2

351586 Tapp. screw 5x60 pan TX25 ZnNi spec.

The distance bushing is used when a pipe holder with a distance of 36mm is to be increased by +25 mm.

For mounting of distance bushing use

- screw 352896 at brick and concrete walls or
- screw 351586 at sandwich walls.

A 6 mm rawl plug is supplied with the pipe holder. It may be necessary also to order the 8mm 419335 rawl plug.



437137 Sleeve for cooling pipe

Used where holes are drilled through steel rafters, etc. for pipe lead-ins.



437527 Electronic lime decomposer complete

Auxiliary equipment and mounting parts

Use of an electronic lime decomposer is recommended if water hardness exceeds 20 dH.

Lime decomposers do not remove the lime, they break the lime crystals down into smaller particles.

Most effective when the system is running continuously and not turned off.

To be mounted on the pipe after the pump and connected to 230V.

Counteracts calcareous deposits in pipes and nozzles.



437540 External filter unit 25-10 micron

Complete with installation fittings and ventilation screws.

To be mounted in front of the pump, standard filters, a phosphate filter, if any, if the water contains particularly many impurities. The glass is clear in order to be able to check the degree of clogging visually.



437637 DA 2500 external filter unit 2x5+2x1 µm

Filter unit that removes impurities from the water.

Depending on the quality of the water on site, the pump can be equipped with different filters.



437504 Coarse filter 20 mic. w. glass incl. bracket

This is an alternative to 437540 and has only one filter instead of two.

Complete with installation fittings and ventilation screws.

No bracket is shown in the photo.

437438 Coarse filter 20 mic. w. glass excl. bracket



437441 Filter cartridge 1 micron

437442 Filter cartridge 5 micron

437443 Filter cartridge 20 micron

It is recommended buying additional filters for the user so that they are available the first time filters are to be serviced.

Auxiliary equipment and mounting parts



437439 Chemical filter w/clear glass nonreturn valve

Filter housing with 2 x 3/4" inside pipe thread and bleed port + statutory automatic nonreturn valve in front of the filter housing.

It is fitted with 437444 Phosphate cartridge which slowly releases phosphate and thus reduces the limescale on the nozzles quite substantially.

Phosphate filters are intended only for continuous use.

If the cooling unit is not running, the phosphate rock will dissolve into a thick mass, which will damage the system.

The filter housing has a clear window to allow one to visually check any level of congestion, but the product is generally seen as relatively complicated to use.



437444 Phosphate cartridge 5 my

To be fitted in 437439 where it slowly releases phosphate and thus reduces the limescale on the nozzles quite substantially.

Phosphate filters are intended only for continuous use.

If the cooling unit is not running, the phosphate rock will dissolve into a thick mass, which will damage the system.

Dependent on the lime content, etc. the lifetime is estimated to approx 200 m³ or approx one year.



437134 Nozzle hole plug

Used to block nozzles.

Remove the nozzle end and mount the nozzle hole plug.



437649 Acidproof end adapter 12 mm x 3/8" BSP, A4

437650 Acidproof end adapter 12 mm x 1/2" BSP, A4

437651 Acidproof end adapter 12 mm x 1/4" BSP, A4



437636 DA 2500 floor rack f. pump

Floor stand in galvanized steel.

Floor stand is used, if it is not possible to mount the pump on the wall.



437638 Mounting profile f. nozzles in Tunnel opening

Is used for mounting of nozzles in the Rack & Pinion opening.

Max. distance between the mounting profiles is 1.5m.

2.6 Tools and mounting equipment

Tools and mounting equipment



437446 Punch pliers for FlexClamp nozzles

Nozzle punch pliers for making holes in pipes after installation of pipes in the house.

Allows optimum positioning of nozzles at the right angle and location exactly above inlet valves, etc.

Can make holes in both types of SKOV pipes.



437690 Rems mini Akku press incl. V12 jaw

Rems Akku-Press tool with battery.

Rems Akku press is used for joining Ø12 mm stainless cooling pipes with press fittings.

Tool with V12 jaws closes the joint in approximately 10 seconds so that it is stable and sealed.



437692 Press jaw V12 for Rems mini Akku-press

V-notch press jaws which press the sleeve together in approx. 10 seconds so that the sleeve is stable and 100% tight.

The press jaw fits 437690 Rems mini Akku press incl. V12 jaw.



437579 Rems Power-Press 230V w. V12 jaw

Rems press tool for 230 V supply.

Rems press is used for joining Ø12 mm stainless cooling pipes with press fittings.

Tool with V12 jaws closes the joint in approximately 10 seconds so that it is stable and sealed.



437559 Sleeve press tool - V12 notch f. splicing sleeve

V-notch press jaws which press the sleeve together in approx. 10 seconds so that the sleeve is stable and 100% tight.

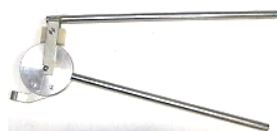
The press jaw fits 437579 Rems Power-Press 230V w. V12 jaw.



437600 DA 2000 manual press tool with V12 jaws

This manual tool is used for joining Ø12 mm stainless cooling pipes with press fittings.

This tool with V12 jaws uses manual power to close the joint so that it is stable and sealed.



437448 Pipe bending tool

Designed for bending 12mm pipes.



437449 Chamfer tool

A practical tool for chamfering pipes after shortening.

Tools and mounting equipment



437450 Pipe cutter

The REMS pipe cutter is used to shorten thin-walled, stainless pipes.



437451 Chop for 12mm adapter

A practical tool for assembling sealing cone fittings.

Works as a ratchet box wrench.

Constantly engaged.



437478 Assembling tool for FlexClamp

Used to mount FlexClamp nozzles on pipes.



437453 Grease for pipe assembling, 130g

530950 Silicone grease Kema SC-4 a 100g

All stainless fittings are factory-greased; grease should therefore only be used in connection with special requirements.

Silicone grease 530950 MUST be used for greasing O-rings as mineral grease decomposes the O-ring material.



437546 Hand pump for oil change

Can be used when changing oil on the pump. See *Technical User Guide* regarding change of oil.



777071 Oil 1.0 litres, 15W40

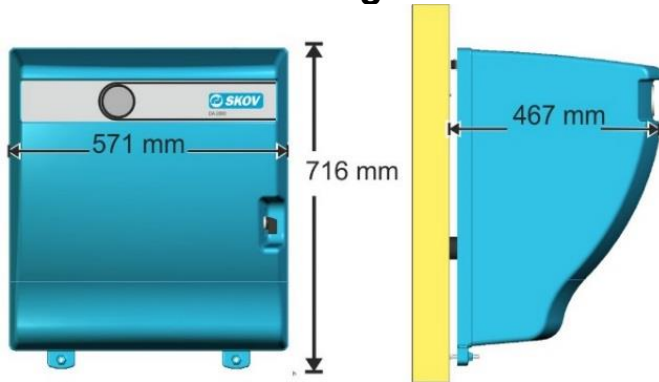
Can be used when changing oil on the pump. See *Technical User Guide* regarding change of oil.

3 Technical data

3.1 DA 2000 pumps without frequency converter

DA 2000 pumps	437150	437151	437152	437153	437154	437155	437156	437158	437157
Electric	See Error! Reference source not found.	See Error! Reference source not found.	See Error! Reference source not found.	See Error! Reference source not found.	See Error! Reference source not found.	See Error! Reference source not found.	See Error! Reference source not found.	See Error! Reference source not found.	See Error! Reference source not found.
Voltage [V AC]	1x230	3x400	1x230	3x230	3x400	1x220	3x230	3x400	3x400
Operating voltage [V AC]	220-240	380-415	220-240	220-240	380-415	210-230	220-240	380-415	380-415
Frequency [Hz]	50	50/60	50	50/60	50/60	60	60	60	50
Current [A]	9.5	3.6	14	9.4	5.4	17	11.1	6.4	6.4
Input power (P1) shaft [kW]	2.2	1.9	3.2	3	3	3.7	3.6	3.6	3.6
Power (P2) shaft [kW]	1.5	1.5	2.2	2.2	2.2	3	3	3	3
Mechanical									
Volume [l/min]	6	6/7	12	12/14	12/14	18.5	18.5	18.5	21
Min. flow [%]	15	15	15	15	15	20	20	20	20
Max. pressure [bar]	70								
Working pressure [bar]	70								
Capacitor [µF]	40	-	65	-	-	80	-	-	-
Min. pressure water supply at max. capacity [bar]	2								
Standard filters [my]	1 and 5								
Coarse filter, auxiliary equipment [my]	25 - 10								
Sound pressure level (incl. cover) at 100 % performance [dB(A)]	79								
Oil type (mineral oil)	SAE 15W-40								
Environment									
Operating temp. [°C]	0 to +40								
Storage temperature [°C]	0 to +40								
Ambient humidity, operation [RH %]	85								
Protection class	IP54								
Shipping									
Dimensions H x B x D [mm]	716 x 571 x 467								
Dimensions crated H x B x D [mm]	800 x 600 x 550								
Weight [kg]	41	41	50.5	43.6	43.6	49.2	49.6	49.6	49.6
Shipping weight [kg]	43	43	52.5	45.6	45.6	51.2	51.6	51.6	51.6

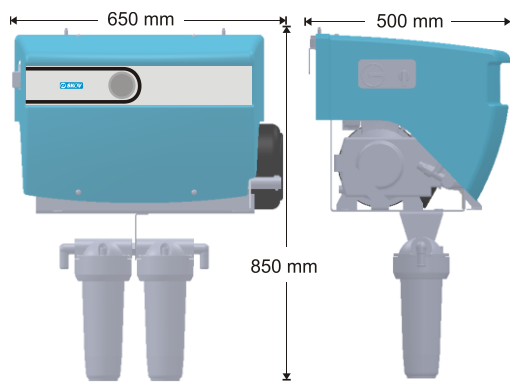
3.1.1 Dimensioning sketch



3.2 DA 2000 pumps with frequency converter

DA 2000 pumps	437591	437577	437162	437163
Electric	See chapter Error! Reference source not found.	See chapter Error! Reference source not found.	See chapter Error! Reference source not found.	See chapter Error! Reference source not found.
Voltage [V AC]	3x400	3x400	3x230	3x400
Operating voltage [V AC]	380-415	380-415	220-240	380-415
Earth leak circuit breaker	To be mounted according to laws and regulations. PFI 300 mA (type B can be used in front of power supply for frequency-controlled pumps.			
Frequency [Hz]	50/60			
Current [A]	5.2	5.2	15.1	8.9
Input power (P1) shaft [kW]	-	-	6.2	6.2
Power (P2) shaft [kW]	2.2	2.2	4	4
Mechanical				
Volume [l/min]	5.5	12	21	21
Min. flow [%]	5			
Max. pressure [bar]	50/70			
Working pressure [bar]	70			
Min. pressure water supply at max. capacity [bar]	2			
Standard filters [my]	1 and 5			
Coarse filter, auxiliary equipment [my]	25 - 10			
Sound pressure level (incl. cover) [dB(A)]	74.5			
at 100 % performance	59			
at 50 % performance	58			
at 20 % performance	55			
Oil type (mineral oil)	SAE 15W-40			
Environment				
Operating temperature [°C]	0 to +40			
Storage temperature [°C]	0 to +40			
Ambient humidity, operation [RH %]	85			
Protection class	IP54			
Shipping				
Dimensions H x W x D [mm]	850 × 650 × 500			
Dimensions crated H x W x D [mm]	1200 × 800 × 600			
Weight [kg]	46.2	47.8	64	61.2
Shipping weight [kg]	61.2	62.8	79	76.2

3.2.1 Dimensioning sketch



3.3 DA 2500 pump

DA 2500 V2 pump 21l/min (motor IE3) 437626		
Electric	DA 2500 pump 21l/min	Connection box
Voltage [V]	3x400	230
Frequency [Hz]	50	50
Current [A]	7	0.0016
Power consumption [kW]	3	0.37
Mechanical		
Volume [l/min]	21/25	
Max. pressure [bar]	70	
Working pressure [bar]	70	
Min. pressure water supply at max. capacity [bar]	2	
Standard filters [my]	2 × 1 og 2 × 5	
Coarse filter, auxiliary equipment [my]	25 - 10	
Sound pressure level (incl. cover) at 100 % performance [dB(A)]	79	
Oil type (mineral oil)	SAE 15W-40	
Environment		
Operating temperature [°C]	0 to +50	
Storage temperature [°C]	0 to +50	
Ambient humidity, operation [RH]	85 %	
Protection class	IP65	
Shipping		
Dimensions H × W × D [mm]	649 × 774 × 481	
Dimensions crated H × W × D [mm]	800 × 1200 × 750	
Weight [kg]	78.4	
Shipment weight [kg]	93.4	

3.3.1 Dimensioning sketch

