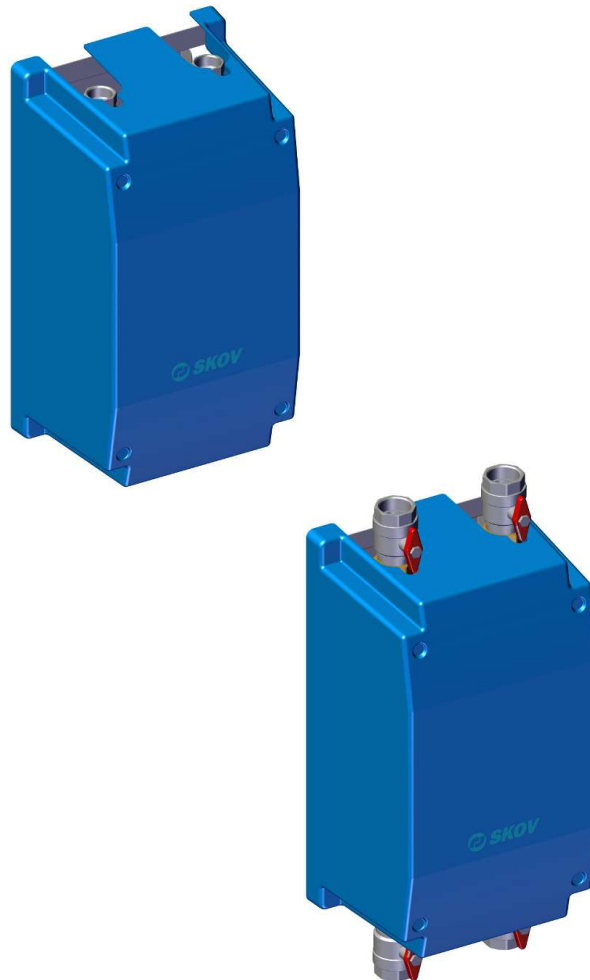


# DA 4200 Heating System

## Technical Info





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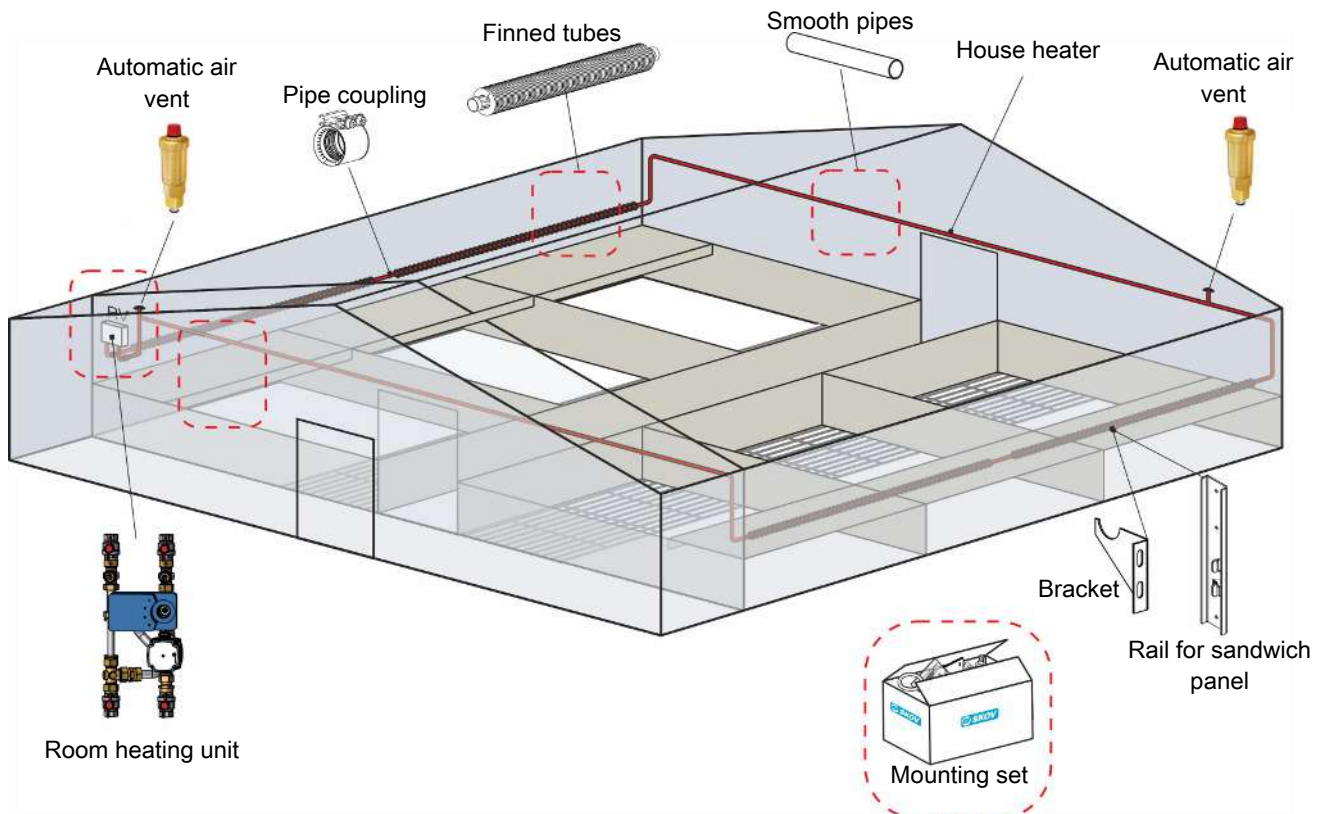
## 1 Product description

Heating system for at livestock house. The systems are water-based heating systems at section level. The components are of a very high quality and they are well suited for a harsh house environment.

The heating unit is controlled via a controller.

The heating system in the individual section typically includes some or all components mentioned below:

- Heating unit (heat control/mixing loop) for room heating.
- Heat sources for room heating, finned tubes/smooth pipes.
- Components for pipe system, supports, fittings, air vents, insulation, etc.



## 2 Product survey

### 2.1 Regulation



**439373 DA 4200 heating unit 15-70 450 DN 25**

**439374 DA 4200 heating unit 15-70 720 DN 25**

**439370 DA 4200 heating unit 15-70 1120 DN 25**

**439371 DA 4200 heating unit 15-70 1800 DN 25**

**439372 DA 4200 heating unit 15-70 2800 DN 25**

The heating unit 0-10 V for regulation of heating is mounted on a stainless plate and includes circulation pump, 0-10 V actuator, 3-way control valve, non-return valve, ball valve and 2 x DOL 12-100C temperature sensors.

The DOL 12-100C temperature sensors enable monitoring of flow temperature and return flow temperatures in the controller.

Use 1 heating unit per house/section.



**439369 DA 4200 heating unit 25-125 4500 DN 32**

The heating unit 0-10 V for regulation of heating is mounted on a stainless plate and includes circulation pump, 0-10 V actuator, 3-way control valve, non-return valve, ball valve and 2 x DOL 12-100C temperature sensors.

The DOL 12-100C temperature sensors enable monitoring of flow temperature and return flow temperatures in the controller.

Use 1 heating unit per house/section.

#### 2.1.1 Accessories



**439304 DA 4200 SmartHeat kit DN 25**

DA 4200 SmartHeat kit is an add-on that includes a flow sensor and a software extension of the controller. SmartHeat kit is used together with DA 4200 room heating/floor heating units DN 25.

After updating and mounting of a flow sensor, the controller can measure water flow and flow and return temperatures to a house/section. Based on these recordings, the controller and FarmOnline can calculate and record the instantaneous heat consumption in kilowatts (kW) and the number of used kilowatt-hours (kWh) for the current house/section.

The controller generates an alarm if the water flow is too low and if the flow temperature is too low.

The kit includes flow sensor and USB stick with SmartHeat software.

The SmartHeat software can only be installed on controllers with software version 8.0 or later.

**439305 DA 4200 SmartHeat kit DN 32**



DA 4200 SmartHeat kit is an add-on that includes a flow sensor and a software extension of the controller. SmartHeat kit is used together with DA 4200 room heating/floor heating units DN 32.

After updating and mounting of a flow sensor, the controller can measure water flow and flow and return temperatures to a house/section. Based on these recordings, the controller and FarmOnline can calculate and record the instantaneous heat consumption in kilowatts (kW) and the number of used kilowatt-hours (kWh) for the current house/section.

The controller generates an alarm if the water flow is too low and if the flow temperature is too low.

The kit includes flow sensor and USB stick with SmartHeat software.

The SmartHeat software can only be installed on controllers with software version 8.0 or later.



**135752 Power supply 24V, 2.1A in box**

An external power supply is used if the current consumption of the chosen 24 V components exceeds 0.8 A, as the maximum supply of the internal controller's power supply is 0.8 A.

Voltage 90–264 V  
 Frequency 47-63 Hz  
 Power 160 VA/80 W  
 Current 0.7 A

Output  
 Voltage 24 V +/- 10 %  
 Current 2.1 A



**439312 DA 4200 thermometer kit ø63 mm**

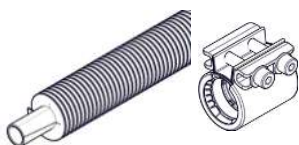
The DA 4200 thermometer kit ø63 mm is used for reading the flow and return temperature in heating units that are not controlled by a BlueControl controller.



**570746 Sleeve G. 1.1/2 - 1.1/4 Sleeve-Nipple**

The galvanized sleeve is used at transition from DN 32 (1¼) heating unit to (1½) pipe.

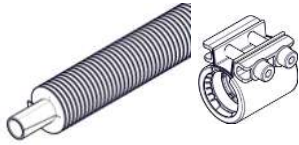
**2.2 Pipe**



**439411 Spiraflex 1" 1.12 m G w/pipe coupling**

Includes:

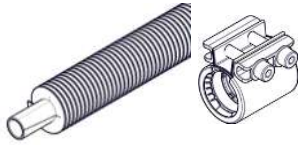
- 1 x 439421 Spiraflex 1" 1.12 m G f/pipe coupling
- 1 x 439408 Pipe coupling 1"

**439412 Spiraflex 1" 2.8 m G w/pipe coupling**

Includes:

1 x 439422 Spiraflex 1" 2.8 m G f/pipe coupling

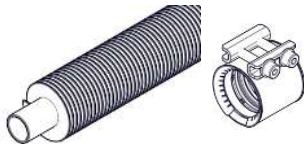
1 x 439408 Pipe coupling 1"

**439413 Spiraflex 1" 5.6 m G w/pipe coupling**

Includes:

1 x 439423 Spiraflex 1" 5.6 m G f/pipe coupling

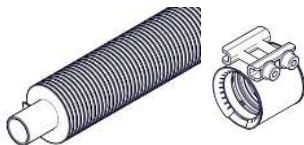
1 x 439408 Pipe coupling 1"

**439414 Spiraflex 1½" 1.12 m G w/pipe coupling**

Includes:

1 x 439424 Spiraflex 1½" 1.12 m G f/pipe coupling

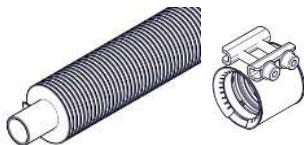
1 x 439409 Pipe coupling 1½"

**439415 Spiraflex 1½" 2.8 m G w/pipe coupling**

Includes:

1 x 439425 Spiraflex 1½" 2.8 m G f/pipe coupling

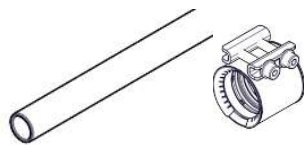
1 x 439409 Pipe coupling 1½"

**439416 Spiraflex 1½" 5.6 m G w/pipe coupling**

Includes:

1 x 439426 Spiraflex 1½" 5.6 m G f/pipe coupling

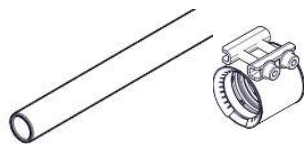
1 x 439409 Pipe coupling 1½"

**439431 Welded tube 1" 5.6 m galv. w/pipe coupling**

Includes:

1 x 439451 Welded tube 1" 2.3 mm 5,6 m galv.

1 x 439408 Pipe coupling 1"

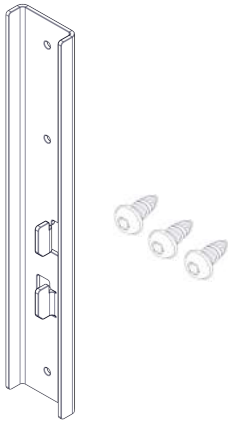
**439441 Welded tube 1½" 5.6 m galv. w/pipe coupling**

Includes:

1 x 439461 Welded tube 1½" 2.3 mm 5,6 m galv.

1 x 439408 Pipe coupling 1½"

## 2.3 Mounting on wall and rafter

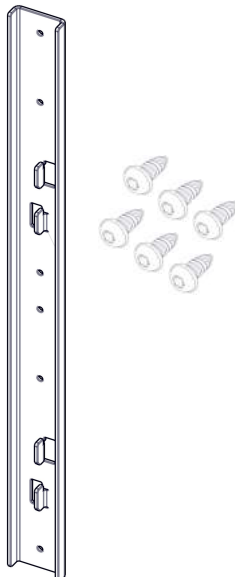


### **439401 Rail for sandwich panel f/1-suspension**

Includes:

1 x 504787 Rail for sandwich panel f/1-suspension

3 x 351582 Tapping screw 5x16 flange TX25 ZnNi spec.

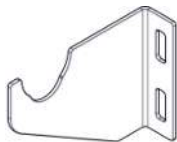


### **439402 Rail for sandwich panel f/2-suspension**

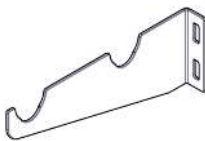
Includes:

1 x 504788 Rail for sandwich panel f/2-suspension

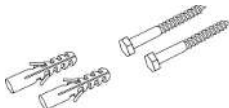
6 x 351582 Tapping screw 5x16 flange TX25 ZnNi spec.



### **439403 Wall mount bracket 1" and 1½" 1-tube**



### **439404 Wall mount bracket 1" and 1½" 2-tube**

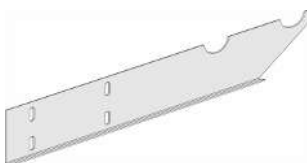


### **439406 Screw kit for suspension 1" and 1½"**

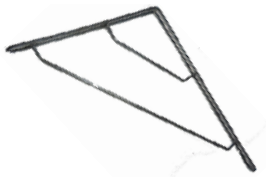
Includes:

2 x 570894 Hex wood screw 8x60 flange TX30 FZB

2 x 419336 Rawlplug 10 mm



### **439997 Concrete rafter bracket f. 1½" 2-pipe A2**

**439929 Top bracket 1" 1 pipe AISI304****439920 Top bracket 1½" 1 pipe AISI304****439053 Shelf bracket 25x35cm HG incl. cross braces****439054 Shelf bracket 35x45cm HG incl. cross braces****439050 Shelf bracket 45x60cm HG incl. 2-cross braces**

## 2.4 Mounting on ceiling

**439405 Ceiling bracket 1" and 1½" 1-pipe****439407 Screw kit for ceiling bracket 1" and 1½"**

Includes:

1 x 540053 Stainless chain 4x32 mm DIN 763

3 x 439817 S-hook, 6x60, A4

1 x 419326 Coach eye screw 8x80 FZB

**419326 Coach eye screw 8x80 FZB**



**439817 S-hook, 6x60, A4**



**540053 Stainless chain 4x32 mm DIN 763**



**352510 Anchor screw 6.3x64/M10 E16 TX30 A2**

Used when mounting in steel constructions, where items with M10 threads can subsequently be mounted.

During mounting, the following holes are pre-drilled:

2.0 – 4.9 mm steel = pre-drill a 5.3 mm hole.

5.0 – 6.9 mm steel = pre-drill a 5.5 mm hole.

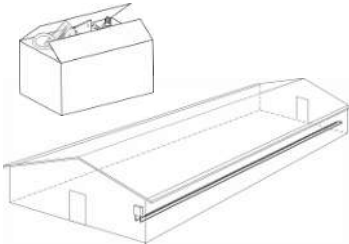
≥ 7.0 mm steel = pre-drill a 5.7 mm hole.

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## 2.5 Mounting set

If smooth tubes are inserted between the finned tubes and they are less than 5.6 meters long, the use of 1 pipe coupling is to be anticipated.

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**439484 1" Room heating mounting set no. 1**

Finned tubes in 1 row in 1 side.

Finned tubes in 2 rows in 1 side.

If the tube lengths exceed 35 meters, an expansion is inserted.

Number of wall fittings = the length of the livestock house / 2.

Requires application of finned and smooth tubes with pipe coupling.

Includes:

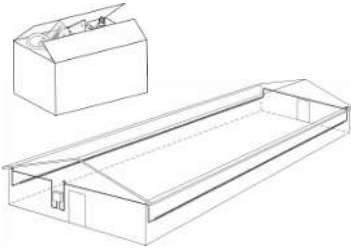
2 x 439459 Angle universal f/pipe connection 1" gal

1 x 439455 U-bend 150 mm f/pipe coupling 1" galv.

6 x 439408 Pipe coupling 1"

1 x 570013 Nipple galv. 1" - 200 mm

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**439485 1" Room heating mounting set no. 2**

Finned tubes in 1 row in 2 sides.

Smooth tubes above the door at 2 ends.

If the tube lengths exceed 35 meters, an expansion is inserted.

Number of wall brackets = the length of the livestock house + the width of the livestock house.

Requires application of finned and smooth tubes with pipe coupling.

Includes:

2 x 439459 Angle universal f/pipe connection 1" galv.

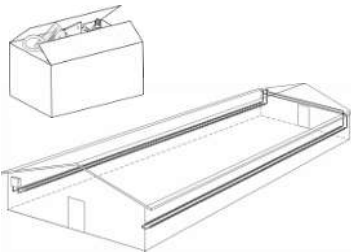
10 x 439453 Elbow f/pipe coupling 90° 1" galv.

3 x 439456 Elbow f/bleeder f/pipe coupling 1" galv.

30 x 439408 Pipe coupling 1"

1 x 570013 Nipple galv. 1" - 200 mm

3 x 439941 Aut. air vent 1/2"

**439487 1" Room heating mounting set no. 3**

Finned tubes in 2 rows in 2 sides.

Smooth tubes above the door at 1 end.

If the tube lengths exceed 35 meters, an expansion is inserted.

Number of wall brackets = the length of the livestock house + the width of the livestock house.

Requires application of finned and smooth tubes with pipe coupling.

Includes:

2 x 439459 Angle universal f/pipe connection 1" gal

6 x 439453 Elbow f/pipe coupling 90° 1" galv.

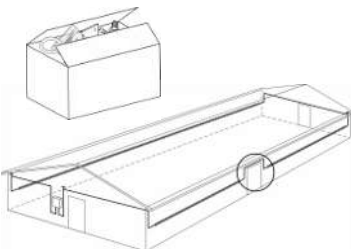
1 x 439455 U-bend 150 mm f/pipe coupling 1" galv.

2 x 439456 Elbow f/bleeder f/pipe coupling 1" galv.

24 x 439408 Pipe coupling 1"

1 x 570013 Nipple galv. 1" - 200 mm

2 x 439941 Aut. air vent 1/2"

**439489 1" Room heating mounting set no. 4**

Smooth tubes above the door/gate.

Number of wall brackets = depending on the size of the door/gate.

If brackets for 2 pipes are used 2 mounting sets are required.

Requires application of finned and smooth tubes with pipe coupling.

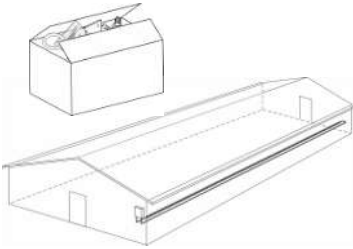
Includes:

3 x 439453 Elbow f/pipe coupling 90° 1" galv.

1 x 439456 Elbow f/bleeder f/pipe coupling 1" galv.

8 x 439408 Pipe coupling 1"

1 x 439941 Aut. air vent 1/2"



**439494 1½" Room heating mounting set no. 1**

Finned tubes in 1 row in 1 side.

Finned tubes in 2 rows in 1 side.

If the tube lengths exceed 35 meters, an expansion is inserted.

Number of wall fittings = the length of the livestock house / 2.

Requires application of finned and smooth tubes with pipe coupling.

Includes:

2 x 439469 Angle universal f/pipe connection 1½" galv.

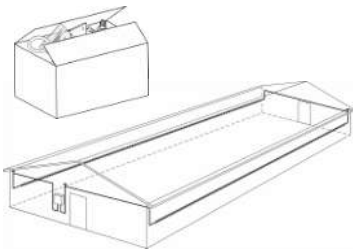
1 x 439465 U-bend 150 mm f/pipe coupling 1½" galv.

6 x 439409 Pipe coupling 1½".

2 x 439915 Red. sleeve G.1½ - 1" sleeve-nipple

1 x 570014 Nipple galv. 1½"- 200 mm

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**439495 1½" Room heating mounting set no. 2**

Finned tubes in 1 row in 2 sides.

Smooth tubes above the door at 2 ends.

If the tube lengths exceed 35 meters, an expansion is inserted.

Number of wall brackets = the length of the livestock house + the width of the livestock house.

Requires application of finned and smooth tubes with pipe coupling.

Includes:

2 x 439469 Angle universal f/pipe connection 1½" galv.

10 x 439463 Elbow f/pipe coupling 90° 1½" galv.

3 x 439466 Elbow f/bleeder f/pipe coupling 1½" galv.

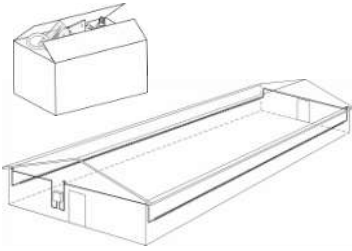
30 x 439409 Pipe coupling 1½"

2 x 439915 Red. sleeve G.1½ - 1" sleeve-nipple

1 x 570014 Nipple galv. 1½"- 200 mm

3 x 439941 Aut. air vent 1/2"

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### 439496 1½"-1" Room heating mounting set no. 2

Is used if the pipes ends above the doors are 1".

Finned tubes in 1 row in 2 sides.

Smooth tubes above the door at 2 ends.

If the tube lengths exceed 35 meters, an expansion is inserted.

Number of wall brackets = the length of the livestock house + the width of the livestock house.

Requires application of finned and smooth tubes with pipe coupling.

Includes:

2 x 439459 Angle universal f/pipe connection 1" gal

10 x 439453 Elbow f/pipe coupling 90° 1" galv.

3 x 439456 Elbow f/bleeder f/pipe coupl. 1" galv.

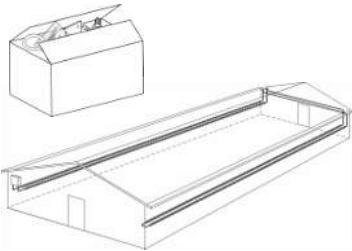
36 x 439408 Pipe coupling 1"

2 x 439409 Pipe coupling 1½"

1 x 570013 Nipple galv. 1" - 200 mm

4 x 439439 Reducer f/pipe coupling 1½"-1" galv.

3 x 439941 Aut. air vent 1/2"



### 439497 1½" Room heating mounting set no. 3

Finned tubes in 2 rows in 2 sides.

Smooth tubes above the door at 1 end.

If the tube lengths exceed 35 meters, an expansion is inserted.

Number of wall brackets = the length of the livestock house + the width of the livestock house.

Requires application of finned and smooth tubes with pipe coupling.

Includes:

2 x 439469 Angle universal f/pipe connection 1½" ga

6 x 439463 Elbow f/pipe coupling 90° 1½" galv.

1 x 439465 U-bend 150 mm f/pipe coupling 1½" galv.

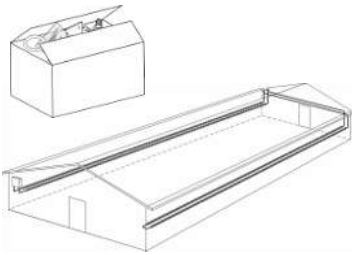
2 x 439466 Elbow f/bleeder f/pipe coupling 1½" galv.

24 x 439409 Pipe coupling 1½"

2 x 439915 Red. sleeve G. 1½ - 1" sleeve-nipple

1 x 570014 Nipple galv. 1½" - 200 mm

2 x 439941 Aut. air vent 1/2"



**439498 1½"-1" Room heating mounting set no. 3**

Is used if the pipes ends above the doors are 1".

Finned tubes in 2 rows in 2 sides.

Smooth tubes above the door at 1 end.

If the tube lengths exceed 35 meters, an expansion is inserted.

Number of wall brackets = the length of the livestock house + the width of the livestock house.

Requires application of finned and smooth tubes with pipe coupling.

Includes:

2 x 439459 Angle universal f/pipe connection 1" gal

8 x 439453 Elbow f/pipe coupling 90° 1" galv.

1 x 439465 U-bend 150 mm f/pipe coupling 1½" galv.

2 x 439456 Elbow f/bleeder f/pipe coupling 1" galv.

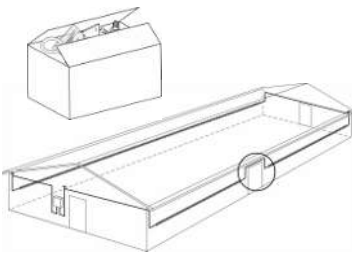
4 x 439409 Pipe coupling 1½"

32 x 439408 Pipe coupling 1"

1 x 570013 Nipple galv. 1½"- 200 mm

6 x 439439 Reducer f/pipe coupling 1½"-1" galv.

2 x 439941 Aut. air vent 1/2"



**439499 1½" Room heating mounting set no. 4**

Smooth tubes above the door/gate.

Number of wall brackets = length / 2.

If brackets for 2 pipes are used 2 mounting sets are required.

Requires application of finned and smooth tubes with pipe coupling.

Includes:

3 x 439463 Elbow f/pipe coupling 90° 1½" galv.

1 x 439466 Elbow f/bleeder f/pipe coupling 1½" galv.

8 x 439409 Pipe coupling 1½"

1 x 439941 Aut. air vent 1/2"

**2.6 Expansion, fittings etc.**



**439438 Expansion 1" L.400 mm incl. 2x45°**

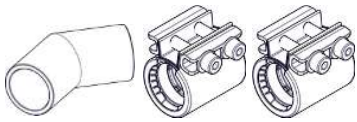
**439448 Expansion 1" L.600 mm incl. 2x45°**

The expansion is to absorb pipe expansion in the lengthwise direction as a result of heating and cooling of the steel pipes. Expansions are incorporated so that no straight pipe lengths exceed 35m.



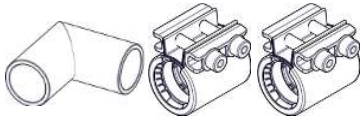
**439941 Aut. air vent 1/2"**

Automatic device for air bleed of the piping system. Is mounted and positioned on the piping where entrapped air may accumulate - that is to say in positions high up like for instance pipe overpasses at house ends, above doors, etc.

**439432 Elbow 45° 1" galv. w/2 pipe couplings**

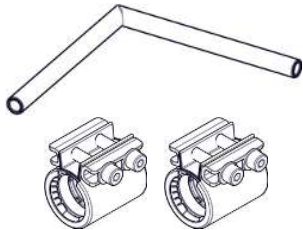
Includes:

- 1 x 439452 Elbow f/pipe coupling 45° 1" galv.
- 2 x 439408 Pipe coupling 1"

**439433 Elbow 90° 1" galv. w/2 pipe couplings**

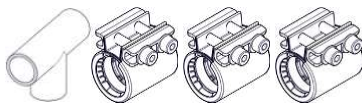
Includes:

- 1 x 439453 Elbow f/pipe coupling 90° 1" galv.
- 2 x 439408 Pipe coupling 1"

**439419 Angle universal 1" galv. w/2 pipe couplings**

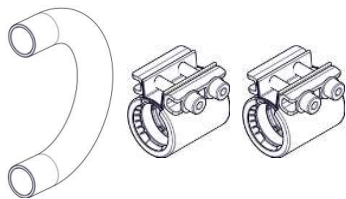
Includes:

- 1 x 439459 Angle universal f/pipe connection 1" galv.
- 2 x 439408 Pipe coupling 1"

**439434 Tee 1" galv. w/3 pipe couplings**

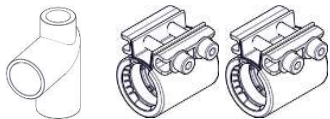
Includes:

- 1 x 439454 Tee f/pipe coupling 1" galv.
- 3 x 439408 Pipe coupling 1"

**439435 U-bend 150 mm 1" galv. w/2 pipe couplings**

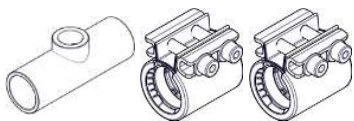
Includes:

- 1 x 439455 U-bend 150 mm f/pipe coupling 1" galv.
- 2 x 439408 Pipe coupling 1"

**439436 Elbow f/bleeder 1" galv. w/2 pipe couplings**

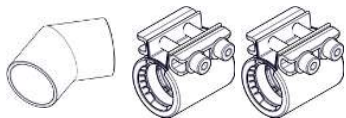
Includes:

- 1 x 439456 Elbow f/bleeder f/pipe coupling 1" galv.
- 2 x 439408 Pipe coupling 1"

**439437 Tee f/bleeder 1" galv. w/2 pipe couplings**

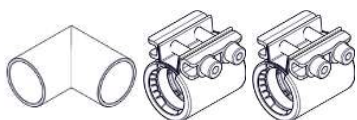
Includes:

- 1 x 439457 Tee f/bleeder f/pipe coupling 1" galv.
- 2 x 439408 Pipe coupling 1"

**439442 Elbow 45° 1½" galv. w/2 pipe couplings**

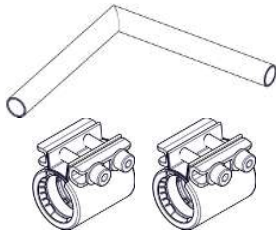
Includes:

- 1 x 439462 Elbow f/pipe coupling 45° 1½" galv.
- 2 x 439409 Pipe coupling 1½"

**439443 Elbow 1½" galv. w/2 pipe couplings**

Includes:

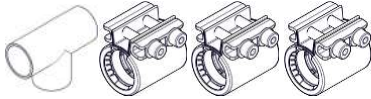
- 1 x 439463 Elbow f/pipe coupling 90° 1½" galv.
- 2 x 439409 Pipe coupling 1½"



**439429 Angle universal 1½" galv. w/2 pipe couplings**

Includes:

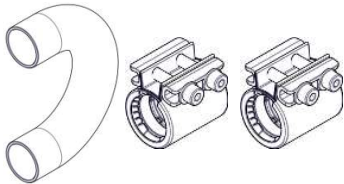
- 1 x 439469 Angle universal f/pipe connection 1½" galv.
  - 2 x 439409 Pipe coupling 1½"
- 



**439444 Tee 1½" galv. w/3 pipe couplings**

Includes:

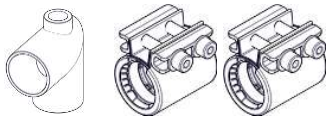
- 1 x 439464 Tee f/pipe coupling 1½" galv.
  - 2 x 439409 Pipe coupling 1½"
- 



**439445 U-bend 150 mm 1½" galv. w/2 pipe couplings**

Includes:

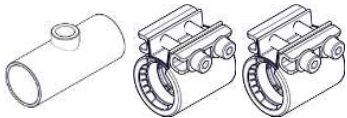
- 1 x 439465 U-bend 150 mm f/pipe coupling 1½" galv.
  - 2 x 439409 Pipe coupling 1½"
- 



**439446 Elbow f/bleeder 1½" galv. w/2 pipe couplings**

Includes:

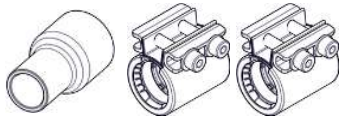
- 1 x 439466 Elbow f/bleeder f/pipe coupling 1½" galv.
  - 2 x 439409 Pipe coupling 1½"
- 



**439447 Tee f/bleeder 1½" galv. w/2 pipe couplings**

Includes:

- 1 x 439467 Tee f/bleeder f/pipe coupling 1½" galv.
  - 2 x 439409 Pipe coupling 1½"
- 



**439449 Reducer 1½"-1" galv. w/2 pipe couplings**

Includes:

- 1 x 439439 Reducer f/pipe coupling 1½"-1" galv.
  - 1 x 439408 Pipe coupling 1"
  - 1 x 439409 Pipe coupling 1½"
- 



**570013 Nipple galv. 1" - 200 mm**

**570014 Nipple galv. 1½"- 200 mm**

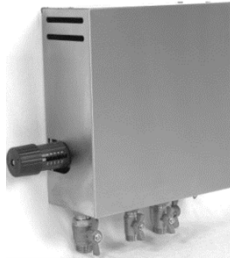
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**439839 Joint paste in tube&packing twine**

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## 2.7 Additional



### **439483 Heat exchanger XB04-1 60 plates w. hose**

Is only used by or in cooperation with the projecting department.

The SKOV heat exchanger unit, which should be positioned first in the system, is designed to preheat cleaning water for high-pressure cleaners, offering an attractive alternative to hot-water cleaners.

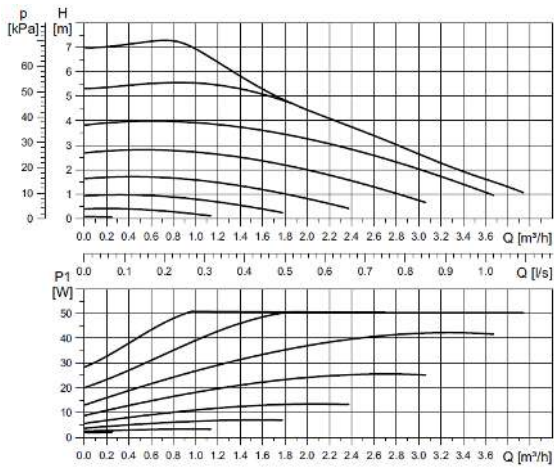
The heat exchanger has a water capacity of up to 60 l/min. Supplied ready-assembled on a stainless steel mounting plate with stainless steel casing and flexible connection hoses. The unit is service-optimized, with dirt collector and shut-off valves and Danfoss AVTB valve with coated capillary pipe to ensure a high degree of efficiency.

### 3 Technical data

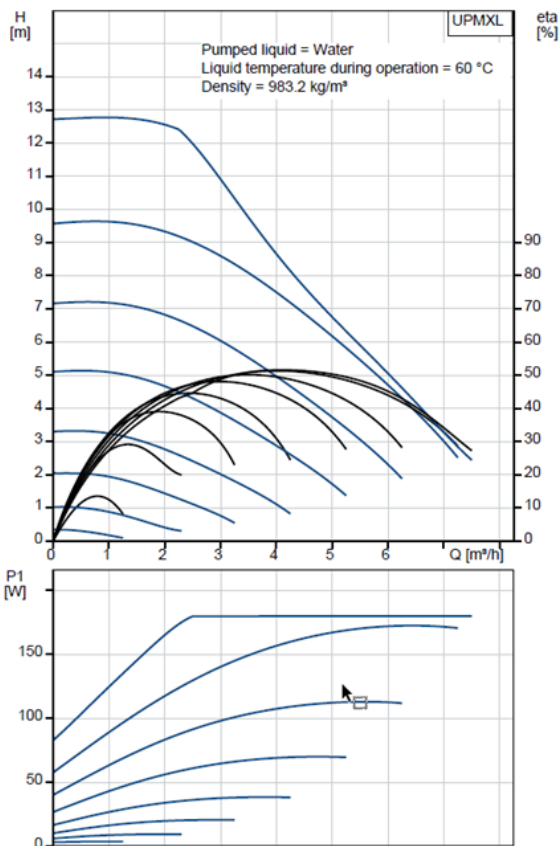
#### 3.1 Room heating unit

		DA 4200 heating unit DN 25	DA 4200 heating unit DN 32
<b>Electrical</b>		Circulation pump UPM3 15-70	Circulation pump UPMXL 25-125
Rated voltage	V AC	230 +10/-15 %	
Operating voltage	V AC	196 – 253	
Frequency	Hz	50/60	
Max. Initial fuse	A	13	
Max. current consumption	A	0.52	1.42
Max. power	W	52	180
Control signal	V DC	0 - 10	
<b>Water</b>			
Max. pass-through Q 1-2-3	m <sup>3</sup> /h	4	6.5
Max. total head H	m	7	10.5
Max. water pressure	bar	10	
<b>Mechanical</b>			
Material pump		Cast iron GG15, EN-GJL150	
Thread connection	"	1	1 ¼
<b>Environment</b>			
Max. operating temperature	°C	70	55
Temperature, storage	°C	-40 to +75	-40 to +70
Media temperature (water)	°C	+2 to +100	-10 to +95
Protection class	IP	44	IPX2D
Noise level	dB	43	38
<b>Shipment</b>			
Dimensions LxWxH	mm	515x285x231	644x285x231
Packing dimensions LxWxH	mm	545x314x280	669x343x280
Weight	g	11260	16336
Shipping weight	g	12290	17386

### 3.1.1 Performance diagram for pumps

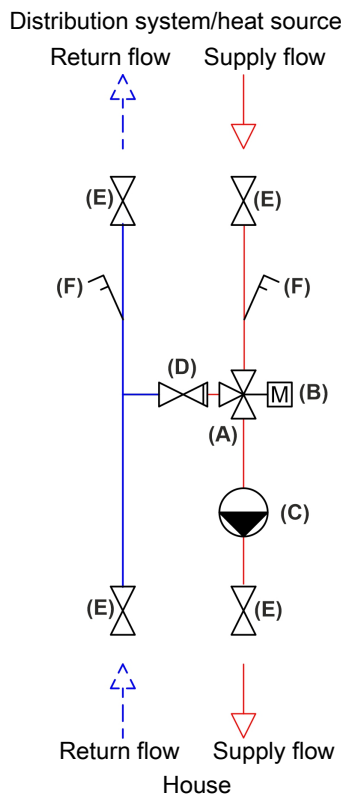


UPM3 15-70



UPMXL 25-125

### 3.1.2 Flow diagram



(A) 3-way control valve

(B) Actuator 0-10 V

(C) Circulation pump

(D) Non-retur valve

(E) Ball valve

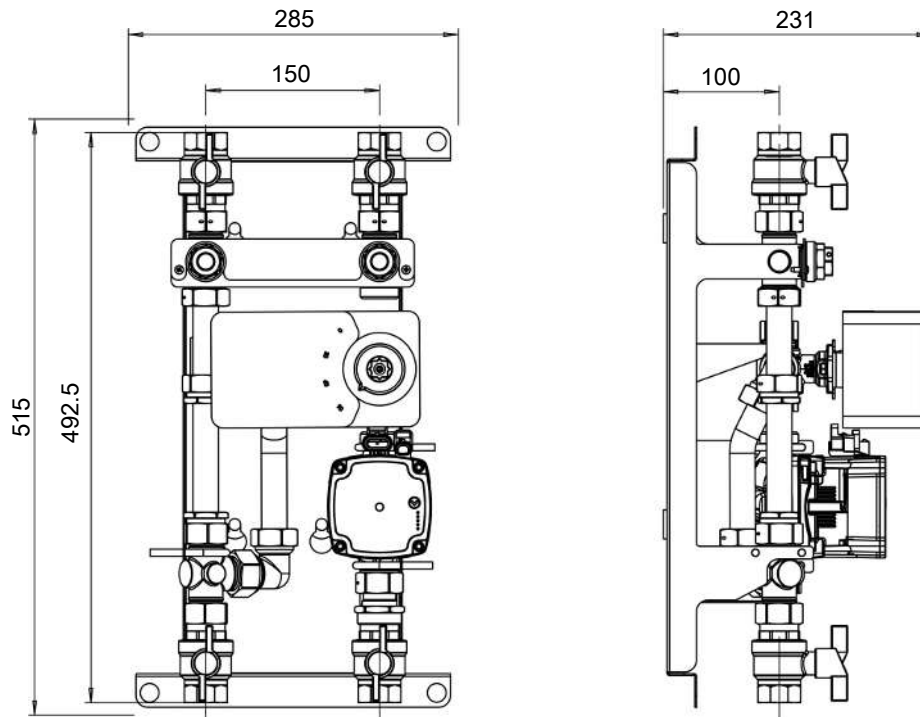
(F) DOL 12-100C temperature sensor

### 3.1.3 Dimensioned sketch

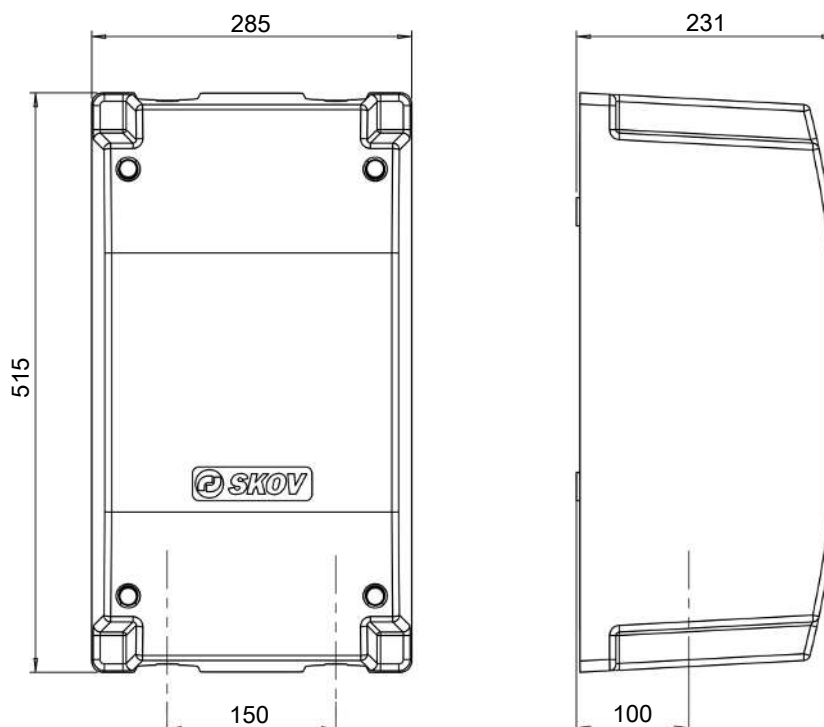
Dimensions in mm.

#### 3.1.3.1 DA 4200 heating unit DN 25

Without cover

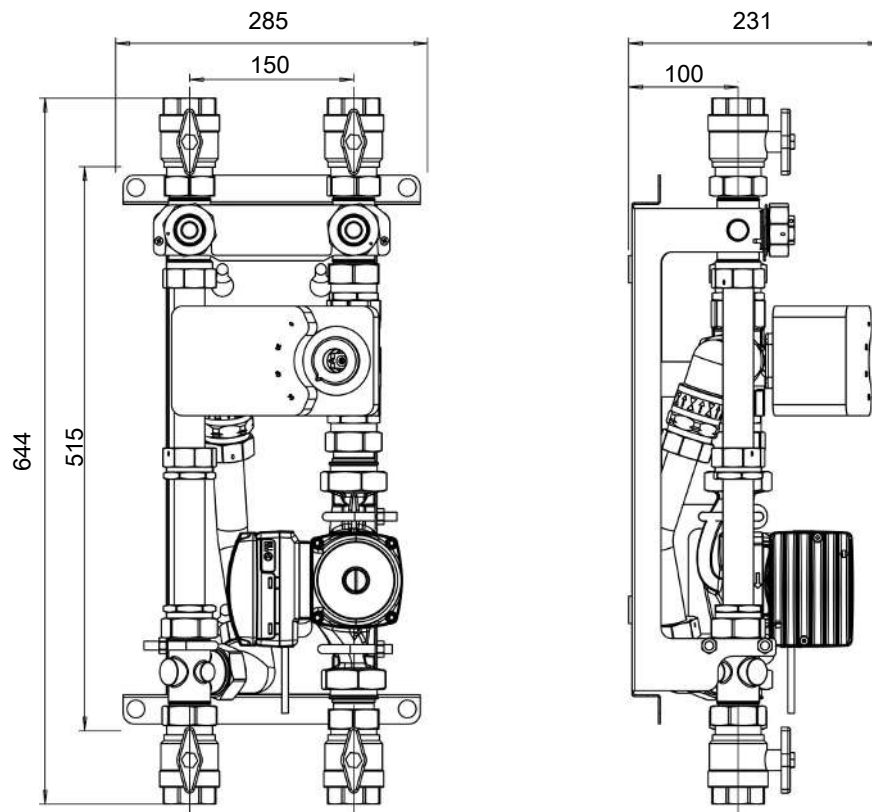


With cover

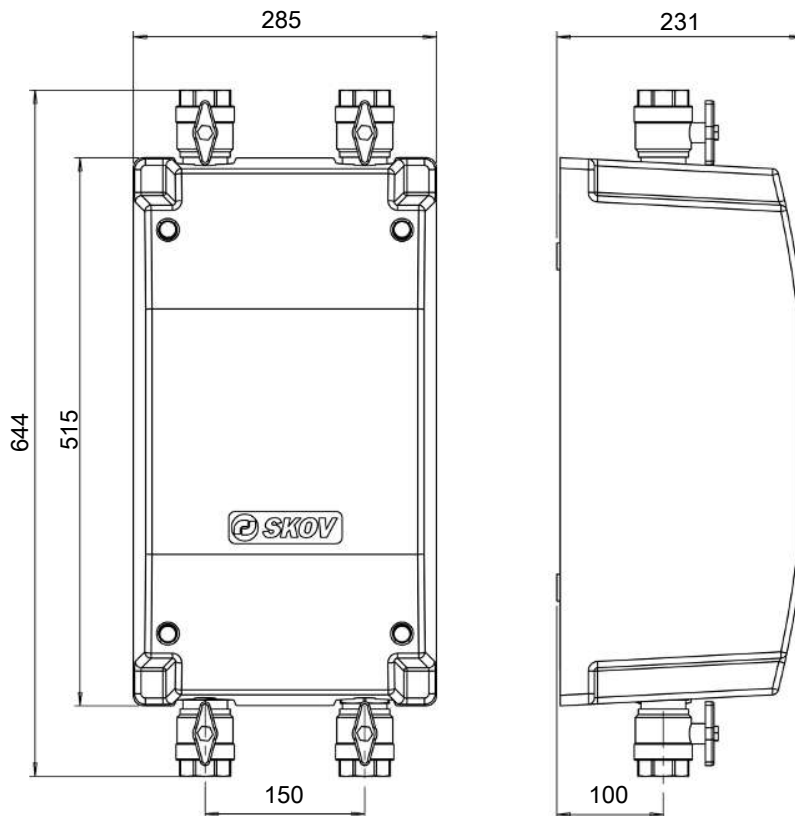


### 3.1.3.2 DA 4200 heating unit DN 32

Without cover



With cover



## 3.2 Actuator

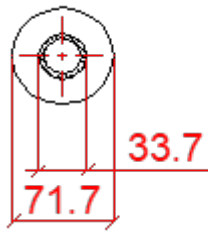
Actuator		
<b>Electrical</b>		
Rated voltage	V DC	24
Operating voltage	V DC	19 - 28
Max. power consumption	A	0.14
Effect	W	3
Control signal H2	V DC	0 - 10
<b>Relay switch H10a/11a, H12a</b>		
Max. current	A	3
Max. voltage	V	230
<b>Mechanical</b>		
Torque	Nm	24
Running time	Sec.	70 - 90
Angle of rotation		
Working angle	°	90
Relay activated at	°	>3
Cable glands		2 x M16 (max. ø7.5 mm cable)
<b>Environment</b>		
Operating temperature	°C	-20 to +50
Storage temperature	°C	-30 to +60
Ambient humidity, operation	% RH	10 - 95
Protection class	IP	54
<b>Shipment</b>		
Dimension HxWxD	mm	180x100x95
Dimensions when packed HxWxD	mm	200x110x80
Weight	g	1200
Shipping weight	g	1410

### 3.3 Finned tubes

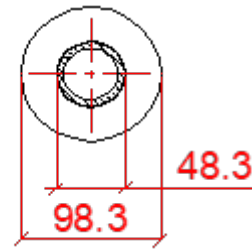
		Spiraflex finned tubes 1" (DN25)	Spiraflex finned tubes 1½" (DN40)
Outside diameter, tube	mm	33.7	48.3
Outside diameter, fin	mm	71.7	98.3
Material		Cold worked boiler steel (EN 10217-2)	
Length	m	1.12; 2.8; and 5.6	

#### 3.3.1 Dimensioned sketch

Spiraflex finned tubes 1" (DN25)



Spiraflex finned tubes 1½" (DN40)



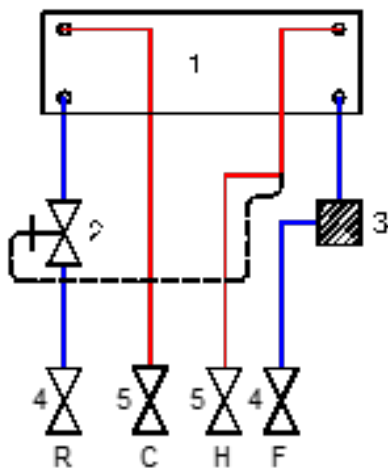
### 3.4 Pipe coupling

		Pipe coupling 1"	Pipe coupling 1½"
Max. pull force	kg	350	450
Max. pressure	bar/psi	9/130	
Material		Stainless steel (AISI 304/316L)	
Clamp ring support		Galvanized screw 10.9	
Allen screw		EDPM (operating temperature -30 °C – 110 °C)	
Rubber gasket		PP (Polypropylene)	
Distance piece			
Length	m	1.12; 2.8; and 5.6	

### 3.5 Heat exchanger

The capacity of the heat exchanger is 60 l/min.

### 3.5.1 Flow diagram



Pos. 1: Heat exchanger 60 plates

Pos. 2: Danfoss AVTB, DN25, 20 - 60 °C

Pos. 3: Filter

Pos. 4: Block valve DN25

Pos. 5: Block valve DN15

#### Symbols

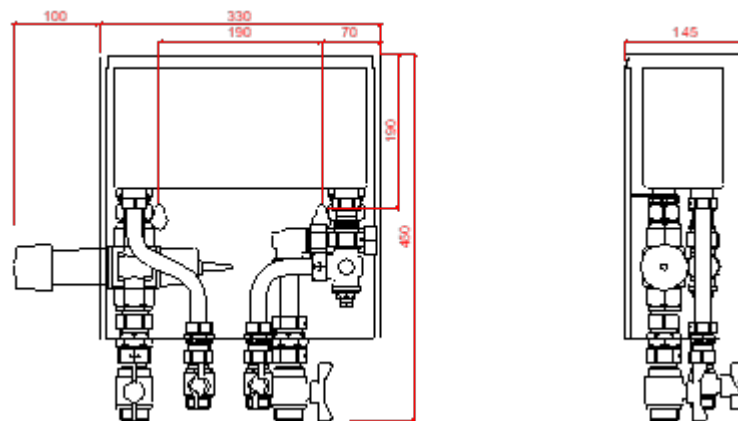
R: Return flow

F.: Supply flow

C: Cold water

H: Hot water

### 3.5.2 Dimensioned sketch







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