

Hang this document next
to the thermal store.

Technical documentation

Installation and operation manual

**Heat Center
S-WP-PD**

Attention!

Examine all connections
for leak tightness after the
heating up process and
retighten screws,
if necessary.

Tighten flange screws
crosswise.

**Have you already closed a
maintenance contract?**



III. S-WP-PD 750

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Note:

Subject to change without notice if it subserves the technical progress.

Please refer to our website for the latest technical documentation: www.capito-heiztechnik.de

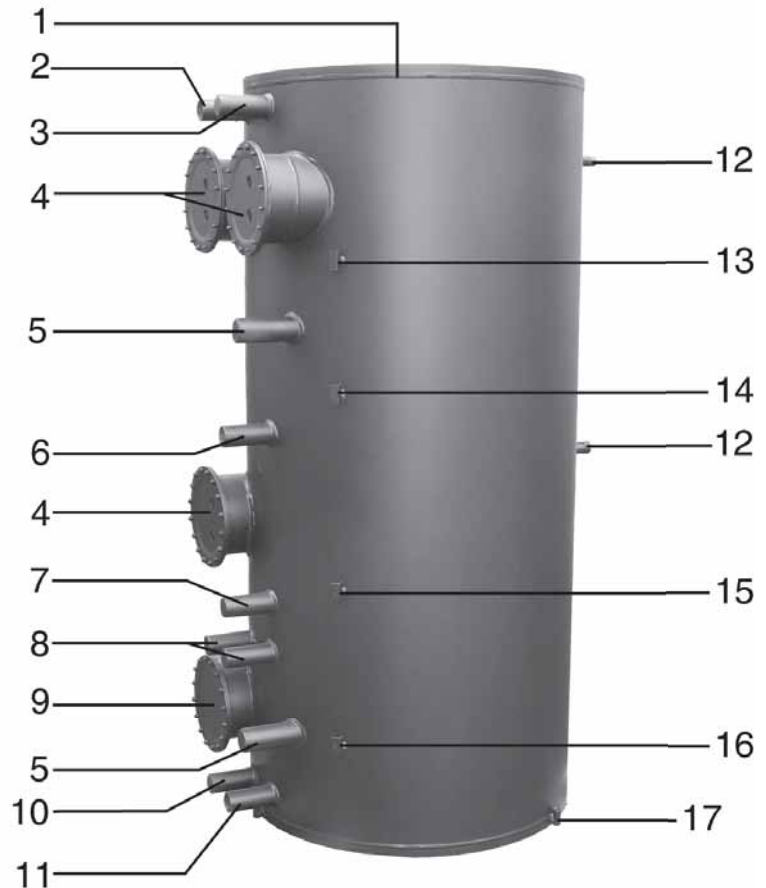
1. Scope of delivery

- 1x S-WP-PD 750, 900, 1250 or 1500 on a wooden pallet (outer varnish as a protection against corrosion, 3 pre-installed DHW heat exchangers type WT 50 with tin-coated inner skins for the fresh DHW production, 1 high-performance stratification stabiliser, 1 neck flange with blank cover for the optional connection of solar energy below the baffle)
- 1x 120 mm thick circumferential insulation made of CFC-free cellular plastic with silver-grey outer skin made of plastic
- 1x installation and operation manual
- 1x type plate

2. Illustration of the connections

S-WP-PD

- 1 = Ring bolt
- 2 = Vent socket Rp 1 1/4"
- 3 = Socket Rp 1 1/4" heat pump flow Domestic hot water
- 4 = Neck flange with heat exchanger without circulation
- 5 = Socket Rp 1 1/2" for immersion heater
- 6 = Socket Rp 1 1/4" for (optional)
- 7 = Socket Rp 1 1/4" for heat pump return Domestic hot water
- 8 = Socket Rp 1 1/4" for heating circuit flow
- 9 = Neck flange for optional solar heat exchanger
- 10 = Drain socket Rp 1 1/4"
- 11 = Socket Rp 1 1/4" for heat pump flow operation mode: heating
- 12 = Socket Rp 1/2" for thermometer
- 13 = Bracket for boiler sensor
- 14 = optional bracket
- 15 = Bracket for solar store sensor
- 16 = optional bracket
- 17 = Threaded bushing with adjusting screws



3. General information for installation and operation

The S-WP-PD is used for heating systems with flow temperatures up to 95° C and a maximum allowable working pressure of 3 bar.

The flow temperatures for low temperature heating systems may not exceed 75° C.

Every heating system must be built according to EN 12828.

The thermal store is only to be used in an oxygen-tight (DIN 4726) hydraulic heating system with a closed expansion vessel, i.e. open expansion vessels and diffusion permeable hydraulic tubes are not permissible.

Our warranty only applies if the latest versions of all norms mentioned above and this installation and operation manual are observed.

4. Quality control

In our plant, every S-WP-PD is tested for pressure and leaks.

5. Assembly of sheathing and heat insulation

1. Before assembling sheathing and heat insulation tighten all screws on the WT neck flanges crosswise.
2. Tighten all nuts for the heat exchanger fastening with a tightening torque of 40 Nm. The connection fitting of the heat exchangers is protected against overwinding by a locking plate on the inside of the flange cover.



In case of leakages of the WTs on site proceed as follows (also see illustration, chapter 7):

- Depressurise the thermal store (to prevent the store water from drenching the heat insulation, plastic foil should be put between the neck flanges and the heat insulation).
- Unscrew only one swivel nut of the heat exchanger.
- Slightly pull the o-ring forward and grease it with silicone grease; afterwards put the o-ring back in its former position.
- Tighten the swivel nut with a tightening torque of 40 Nm.
- Fill the thermal store with water and vent it.
- This procedure requires quick working.

ATTENTION: Use silicone grease only.

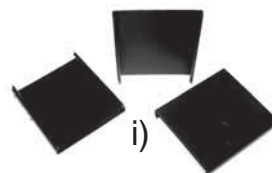
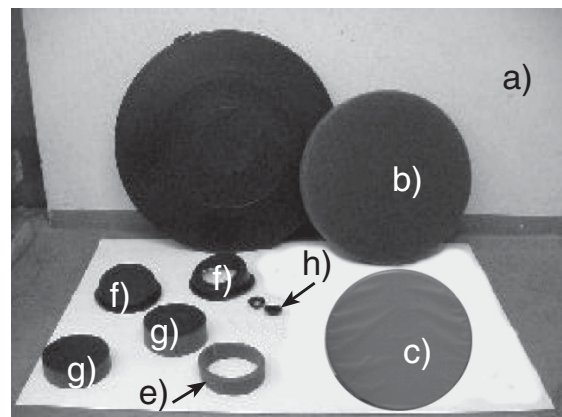
Other greases might destroy the o-ring gaskets.

3. Sheathing and heat insulation must be mounted before tubing the store.

Sheathing and insulation consist of:

- 2 pcs. side parts
- 1 pcs. cover insulation
- 1 pcs. bottom insulation
- 1 pcs. cover plate
- 4 pcs. insulation sleeve
- 4 pcs. neck flange cover
- 4 pcs. insulation for neck flange cover
- 8 pcs. rosettes
- 3 pcs. fit-up aid

- a)
- b)
- c)
- d)
- e)
- f)
- g)
- h)
- i)



4. Take all the parts of the insulation out of the packing.

If a solar heat exchanger is inserted into the store on site, the neck flange cover has to be adjusted in the area of the connections for flow and return (i.e. cut out with a carpet cutter).

- Put the bottom insulation c) – with its polythene sheet- under the thermal store.



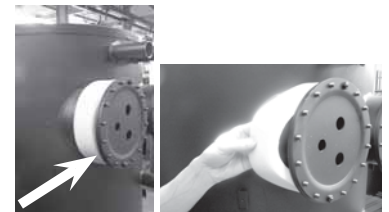
- Adjust the store by means of the 3 round-head screws (adjusting screws) and level it out.

ATTENTION:

Synthetic materials are subject to dimensional differences caused by thermal fluctuations. Do not install the insulation below 10°C. In case of low outside temperatures store insulation in a warm place beforehand.



- Slip the insulation sleeve e) onto the neck flange.

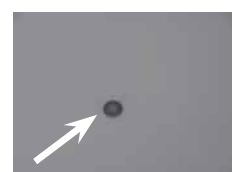


Insert the hot water sensor (13) into the upper bracket intended for this purpose and fix it with the clamp screw. Tighten screws only to an extent that the sensor and the sheathing are completely in contact with each other. (Attention: The sensor might be damaged if screwed too tightly!).



- Punching further holes into sheathing and heat insulation for additional connections.

Should you need further connections for existing sockets and neck flanges, cut them out. Use the existing hole in the insulation as a reference point for cutting out the neck flanges (see image).



Put the sheathing flat on the floor.
Cut out the circular hole in the polystyrene outer skin fir and remove the material. Then cut out the foam or fleece with a knife.



S-WP-PD 750



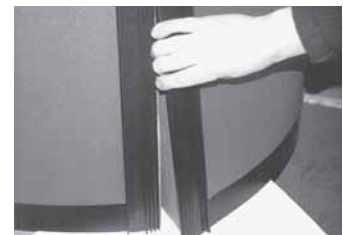
S-WP-PD 750

9. Apply the side parts (a) congruently to the store body; in so doing observe the store connections and the hole pattern of the neck flanges.

Note on the clip version:

Snap the fastening bar into the last root face (groove) on one side. Afterwards, attach the 3 mounting fit-up aids (U-profile) to the fastening bar.

Then snap the opposite fastening bar into the first root face (groove). Slight tapping onto the side parts makes the next grooves of the fastening bar snap in more easily (proceed from the top to the bottom).



10. Put the soft foam cover insulation on top of the store.



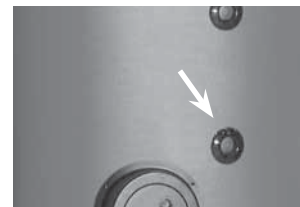
11. Put the cover plate d) over the sheathing.



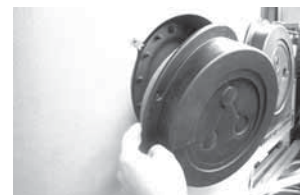
12. Screw in the immersion sleeve R 1/2" and insert the bimetal thermometer.



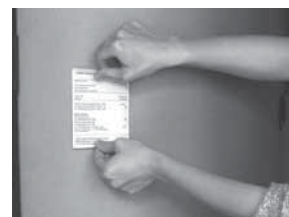
13. Attach the rosettes h).



14. Screw the neck flange covers f) onto the pre-installed mounting clips.



15. Stick the type plate onto the sheathing.



6. Hot water output

Hot water output									
Store temp. ¹⁾ [°C]	S-WP-PD 750 Operation mode:		S-WP-PD 900 Operation mode:		S-WP-PD 1250 Operation mode:		S-WP-PD 1500 Operation mode:		
	Bath tub ^{2),3)} [l]	Shower ²⁾ [l]	Bath tub ^{2),3)} [l]	Shower ²⁾ [l]	Bath tub ^{2),3)} [l]	Shower ²⁾ [l]	Bath tub ^{2),3)} [l]	Shower ²⁾ [l]	
53	405	295	480	370	625	520	740	620	
48	250	195	300	245	395	335	465	390	

Date: 12.04.06

1) Start temp. above the baffle

2) for average temp. = 40°C with a flow rate of 20 l/min;
in contrast to the bath tub mode the DHW temperature will not fall below 40°C at the outlet during the shower mode; cold water inlet = 10°C

3) Temperature of mixed hot and cold water **without** addition of cold water from the cold water tube at the output;
(e.g. in big whirlpools or medical bath tubs)
=> example for the calculation of the tapping period = (405 l) / (20 l/min) = 20 mins

7. Fresh DHW production in our S-WP-PD

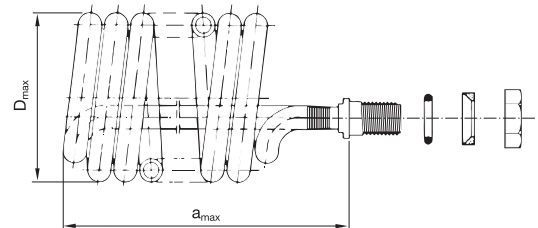
Description:

The heat exchanger type WT 50 is a helically wound heat exchanger consisting of a smoothly rolled ribbed copper tube with hard on-soldered connection fittings. The inner surfaces of the tubes have been chemically tin-plated.

Area of application:

Around the coils: Boiler water
 In the coils: Fresh domestic water from the water conduit
 Max. allowable working pressure inside: 20 bar
 Permissible working temperature: 120°C (it is recommended not to exceed a working temperature of 60°C in areas with calcareous water).

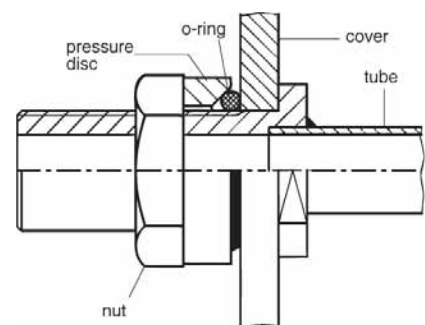
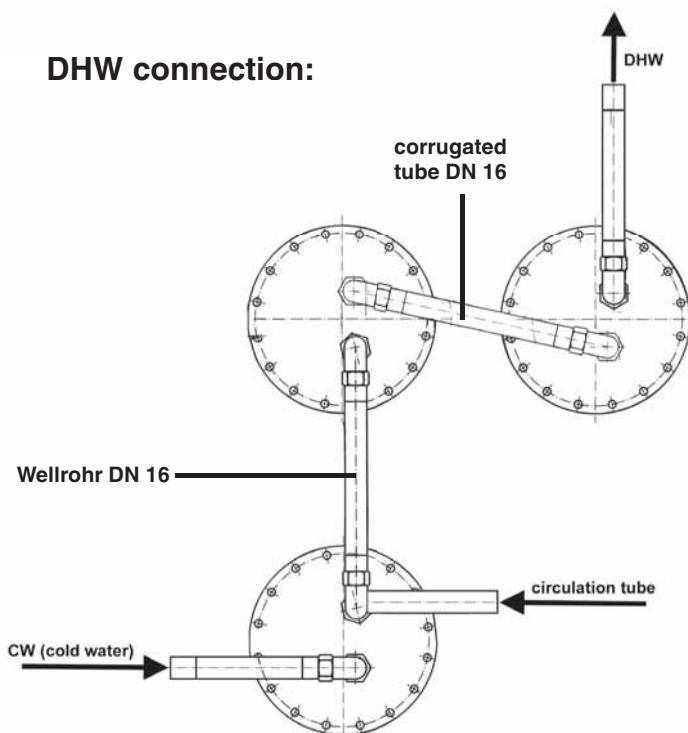
Type	a _{max} mm	D _{max} ø	hot inch	cold inch	circu- lation inch	weight kg
50	750	170	¾"	¾"	-	11,0



Installation:

It is absolutely crucial to carefully retighten all hex nuts (flange and coil) after the heating up phase.

DHW connection:



Attention: To make easy and cost-efficient rinsings of the heat exchanger possible in the future, a T-piece including a drain valve ¾" should be installed in both the hot and cold water connections for the connection of the rinsing device.

Cleaning: Decreases in the DHW quantity or the DHW temperature might be caused by a calcification of the tubes' inner surfaces.

In case of calcified heat exchangers, please proceed as follows:

- Use on-site decalcification devices with collecting box and circulation pump.
- Every heat exchanger (WT) must be rinsed separately.
- Use customary decalcifiers (Cielit, Sidolin, formic acid, Kalgolid (very aggressive)).

As there are many different types of limestone, use the decalcifier that has shown the best performance in the respective region.

- Rinse the WT for 15 minutes with a pH-value of 1,5; then raise/decrease the mixture to a pH-value of 2,0 (i.e. keep the pH-value constant at 2,0).

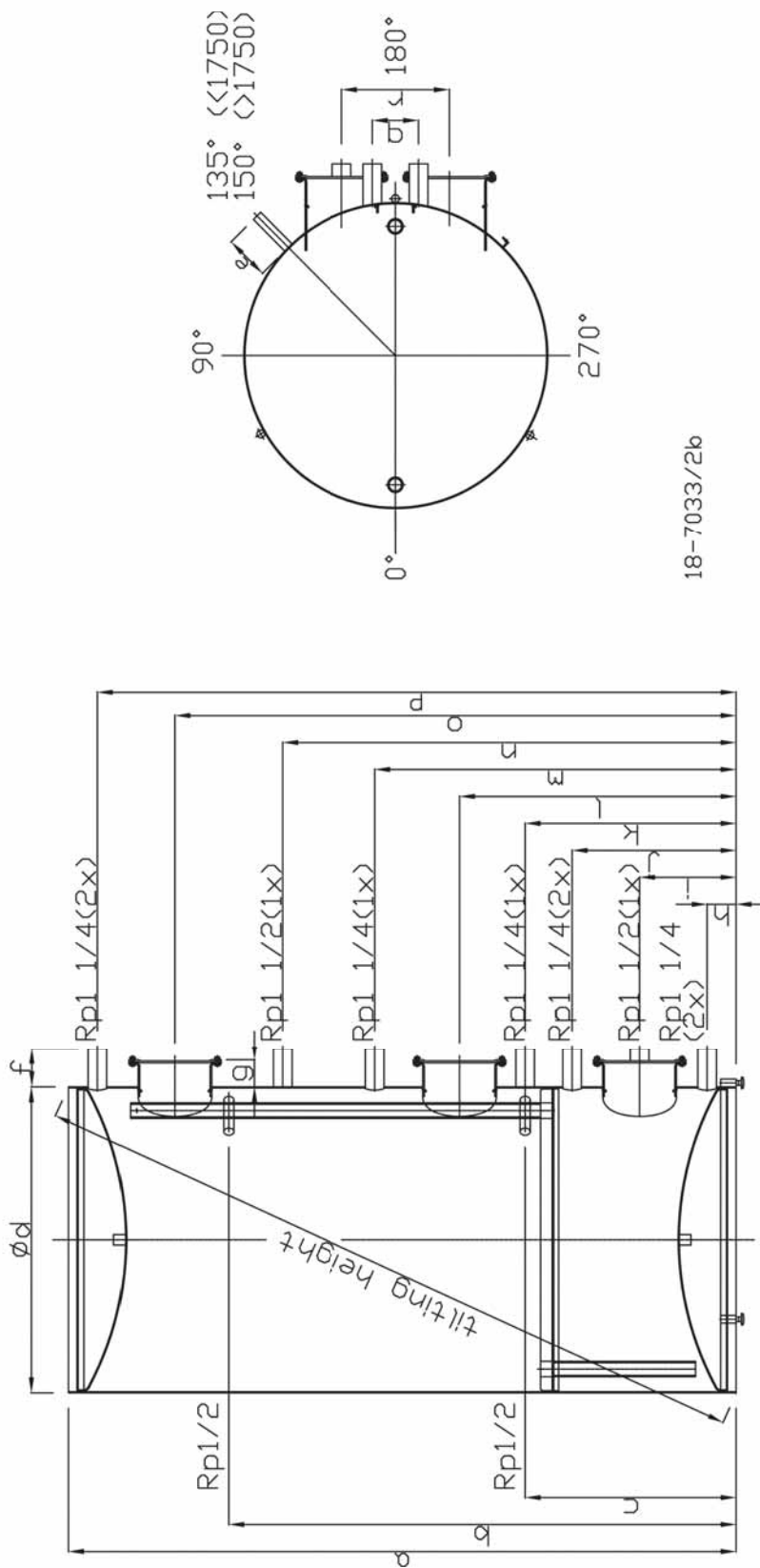
Attention: Do not let the pH-value drop below 1,5 to avoid damages to the tin layer.

- Rinse the coils until the bubble-free mixture (combined oxygen in the lime) flows out and the limestone has been removed.
- Alternative: Rinse the heat exchanger with an acetic water solution at the ratio of 1:2 to 1:3 with a temperature of approx. 100°C until the foam formation has been reduced significantly; renew the acetic water solution, if necessary.

After the cleaning process, rinse the coils with water. The cold water connection must be installed in compliance with DIN 1988; otherwise observe local regulations!

8. Geometric dimensions

S-WP-PD



18-7033/2b

Geometric dimensions S-WP-PD ... (without heat insulation, dimensions [mm]; tolerances +/- 10mm)

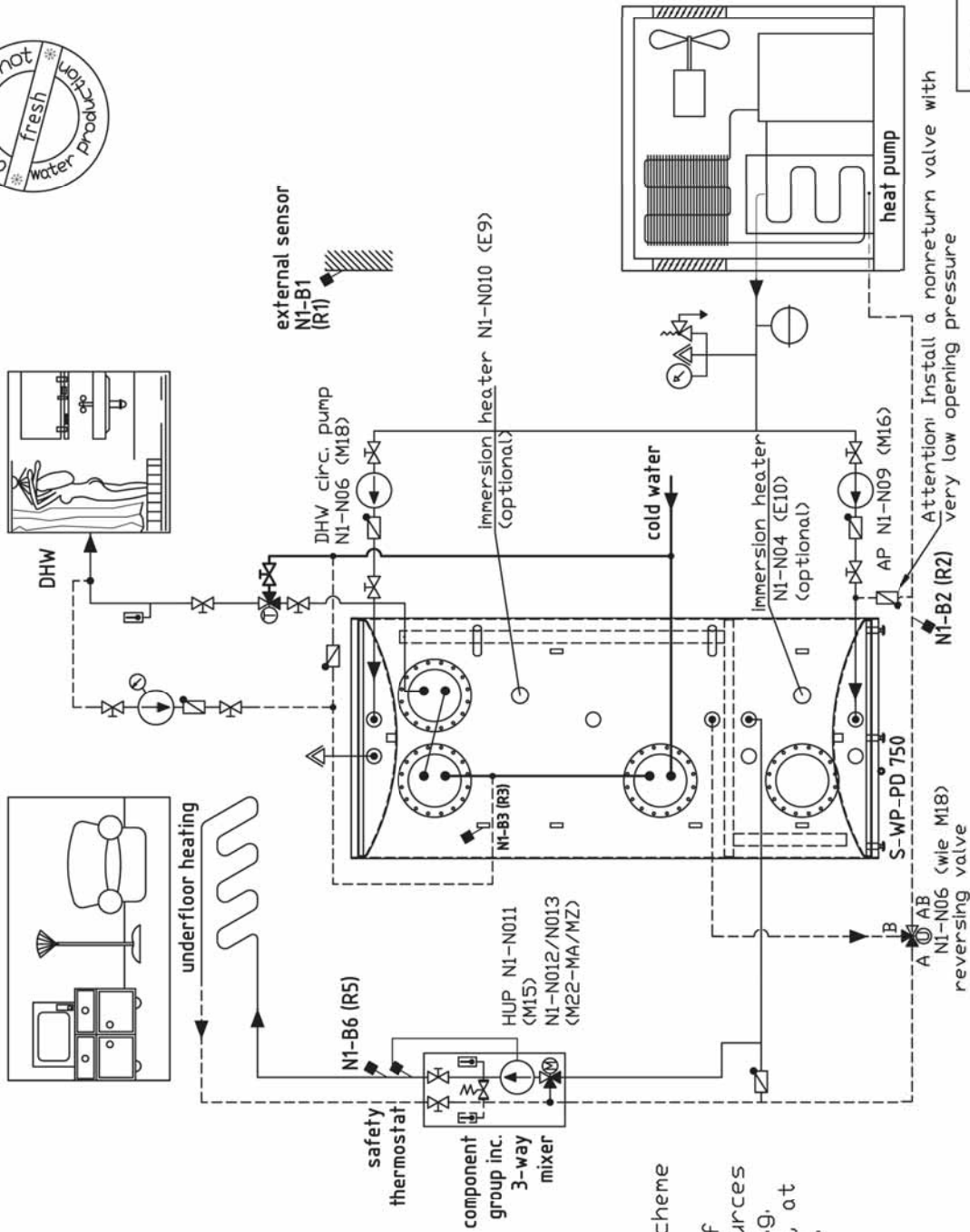
S-WP-PD	a	b	c	φd	e	f	g	h	i	j	k	l	m	n	o	p	q	r	weight (kg)	tilt. Height
S-WP-PD 750	1730	1315	545	790	115	100	70	75	250	425	545	715	935	1175	1455	1655	120	280	246	1920
S-WP-PD 900	2050	1635	545	790	115	100	70	75	250	425	545	835	1055	1495	1775	1975	120	280	271	2220
S-WP-PD 1250	1950	1470	635	1000	115	110	70	100	330	515	635	820	1090	1320	1620	1875	120	360	376	2200
S-WP-PD 1500	2230	1750	635	1000	115	110	70	100	330	515	635	850	1115	1600	1900	2155	120	360	416	2450

Thickness heat insulation approx. 120mm, Rp=internal thread, R=external thread

Date: 14.02.07

9. Connection schemes

Air-to-Water heat pump with optional integration of solar energy



- overflow valve
- deareator
- pressure indicator
- temperature sensor
- nonreturn valve
- expansion vessel
- hand drive
- circulating pump
- electromixer
- thermomixer
- reversing valve
- motor valve
- thermometer
- safety valve
- safety group
- circulating pump with clock timer
- flow restrictor
- thermal discharge safety device

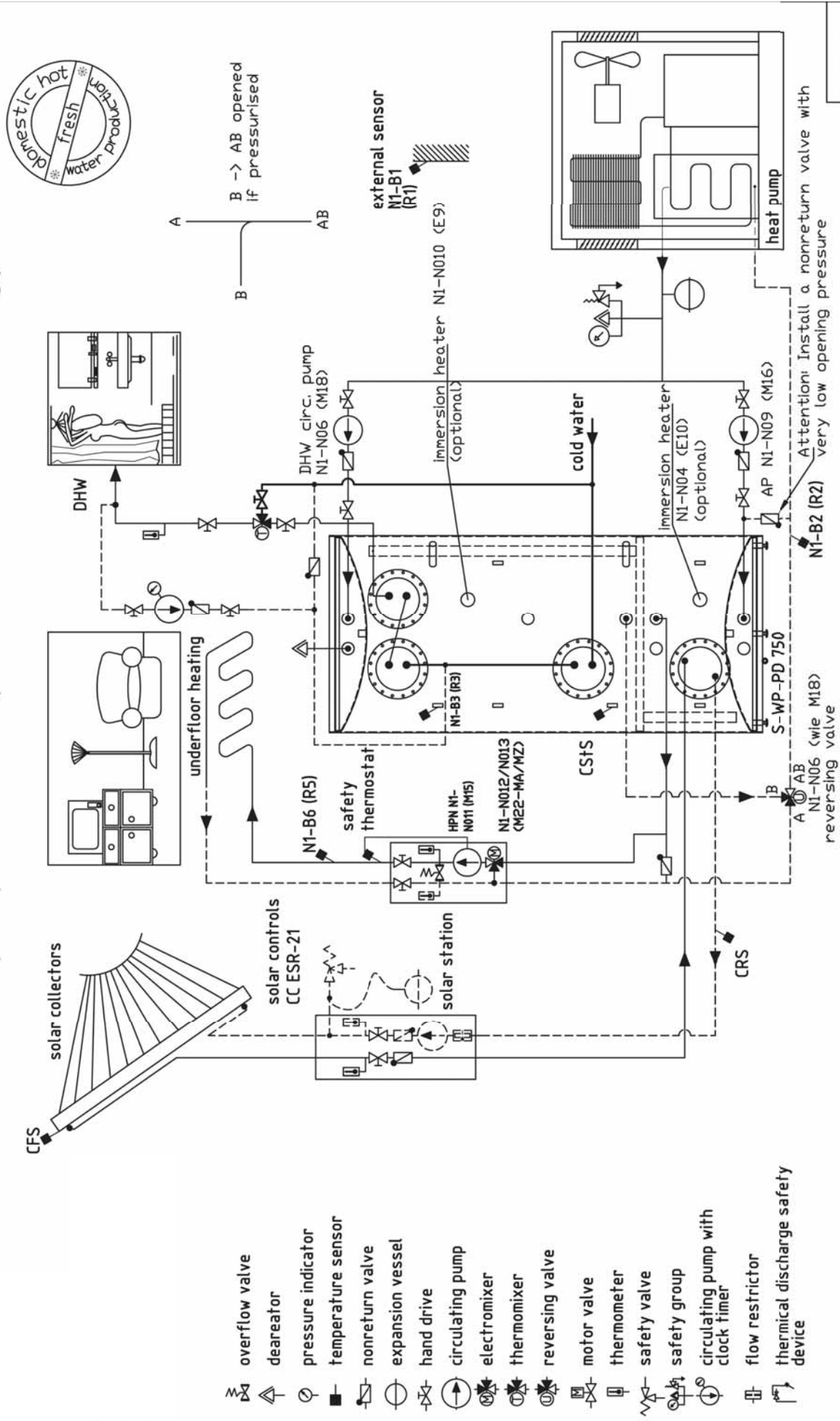
Connection scheme for the connection of additional sources of energy, e.g. solar energy, at a later date.

23.11.07

I-025/1

DHWS=domestic hot water sensor BS=boiler sensor StS=store sensor FS=flow sensor CFS=collector flow sensor CRS=collector return sensor CStS=collector store sensor CW=cold water DHW=domestic hot water C=circulation AP=additional pump

Air-to-Water heat pump with DHW production and solar energy



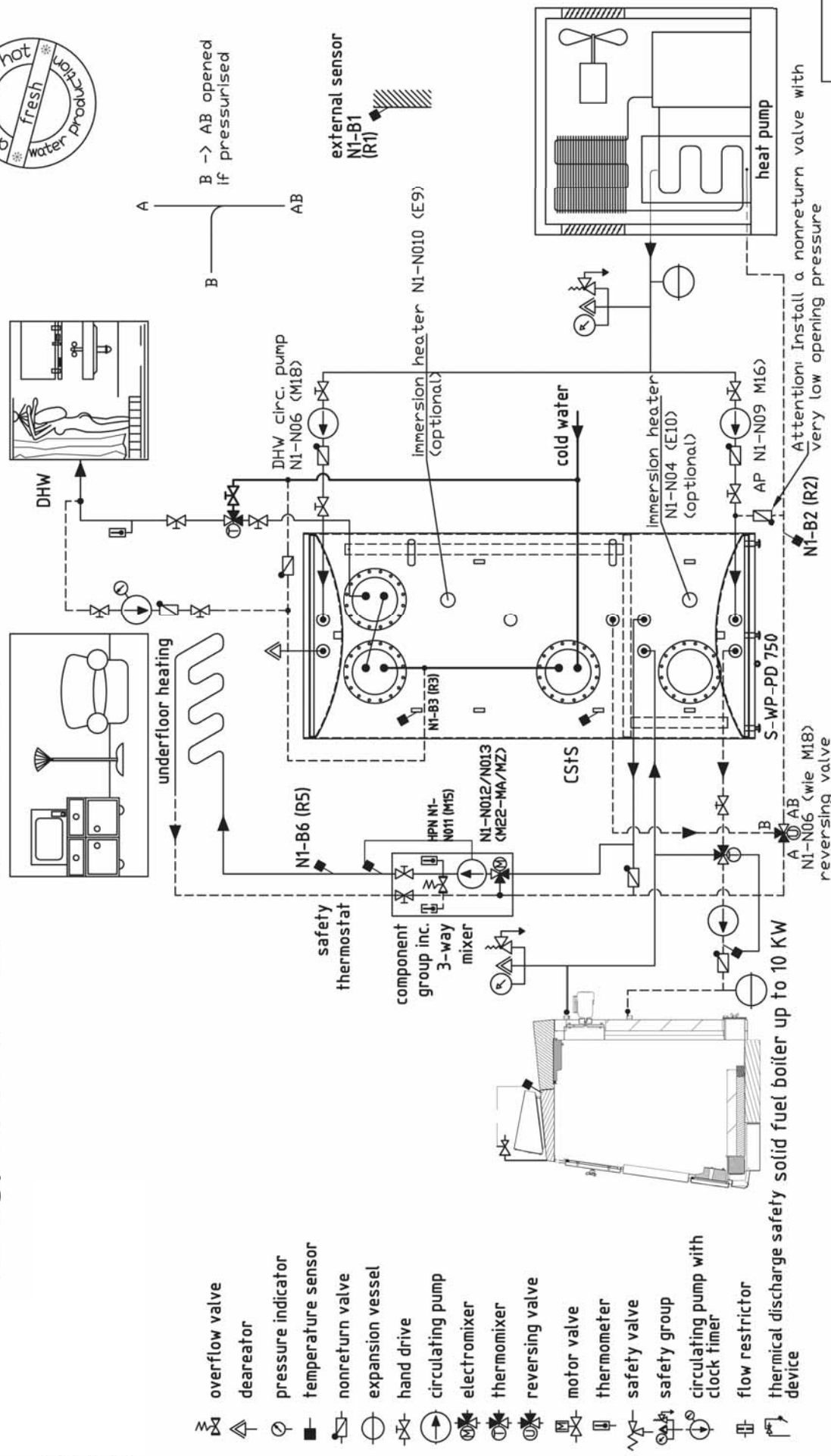
- overflow valve
- deareator
- pressure indicator
- temperature sensor
- nonreturn valve
- expansion vessel
- hand drive
- circulating pump
- electromixer
- thermomixer
- reversing valve
- motor valve
- thermometer
- safety valve
- safety group
- circulating pump with clock timer
- flow restrictor
- thermal discharge safety device

DHWS=domestic hot water sensor BS=boiler sensor StS=store sensor FS=flow sensor CFS=collector flow sensor CRS=collector return sensor CStS=collector store sensor CW=cold water DHW=domestic hot water C=circulation AP=additional pump

23.11.07

I-025/2

Air-to-Water heat pump with DHW production, optional integration of solar energy and solid fuel boiler < 10 KW

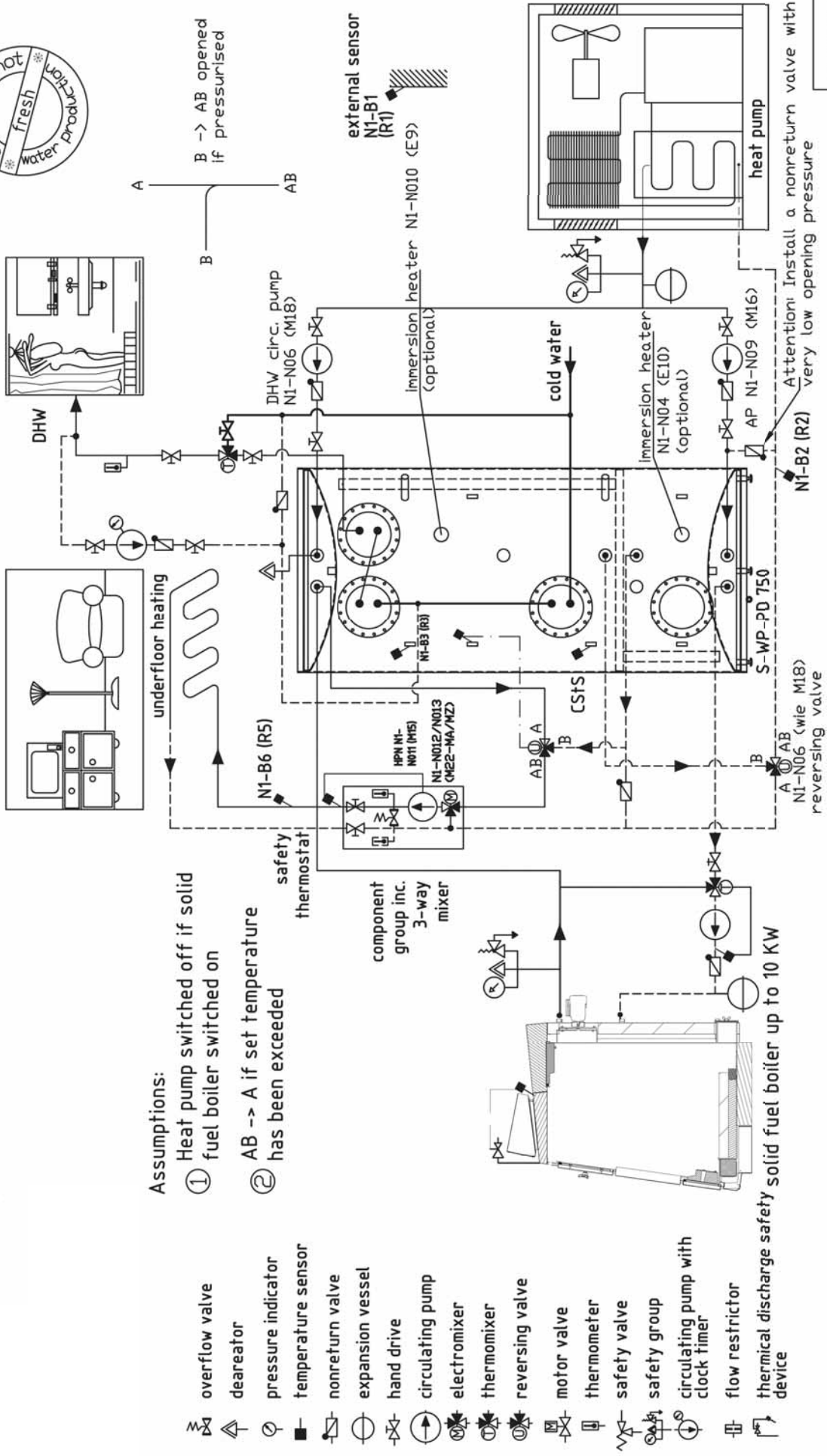


- overflow valve
- deaerator
- pressure indicator
- temperature sensor
- nonreturn valve
- expansion vessel
- hand drive
- circulating pump
- electromixer
- thermomixer
- reversing valve
- motor valve
- thermometer
- safety valve
- safety group
- circulating pump with clock timer
- flow restrictor
- thermal discharge safety device

23.11.07
I-025/3

DHWS=domestic hot water sensor BS=boiler sensor StS=store sensor FS=flow sensor CFS=collector flow sensor CRS=collector return sensor CStS=collector store sensor CW=cold water DHW=domestic hot water C=circulation AP=additional pump

Air-to-Water heat pump with DHW production, optional integration of solar energy and solid fuel boiler > 10 KW



- Assumptions:**
- ① Heat pump switched off if solid fuel boiler switched on
 - ② AB -> A if set temperature has been exceeded

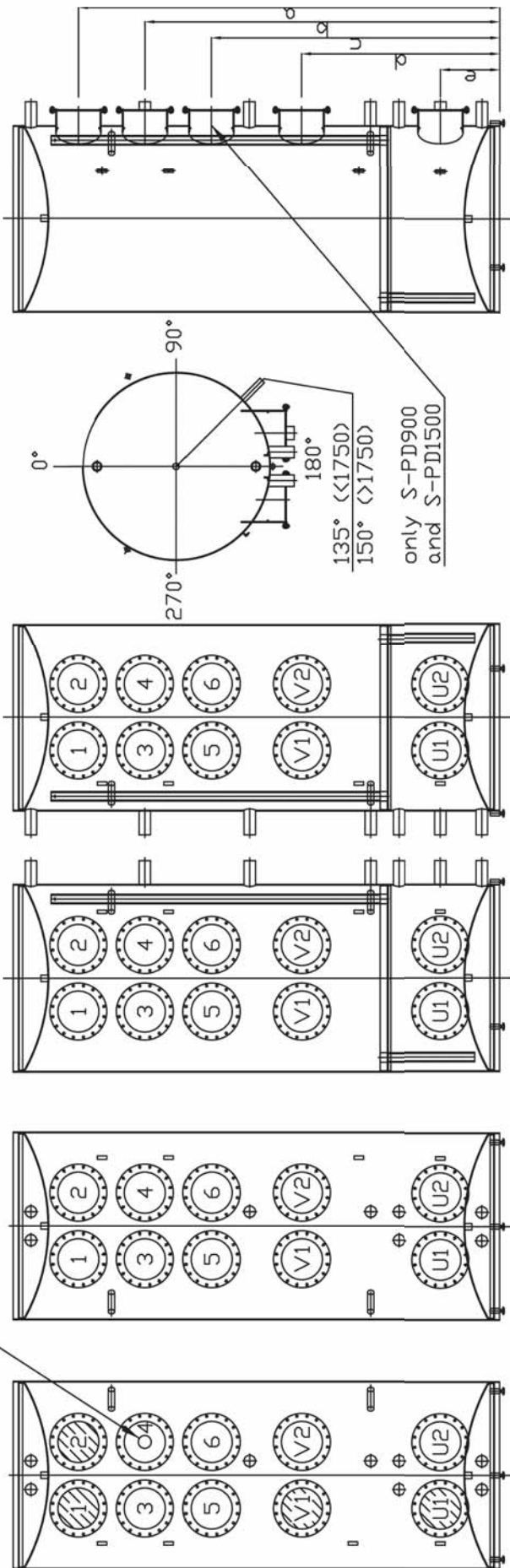
- overflow valve
- deareator
- pressure indicator
- temperature sensor
- nonreturn valve
- expansion vessel
- hand drive
- circulating pump
- electromixer
- thermomixer
- reversing valve
- motor valve
- thermometer
- safety valve
- safety group
- circulating pump with clock timer
- flow restrictor
- thermal discharge safety solid fuel boiler up to 10 KW device

23.11.07

I-025/4

DHWS=domestic hot water sensor BS=boiler sensor StS=store sensor FS=flow sensor CFS=collector flow sensor CRS=collector return sensor CStS=collector store sensor CW=cold water DHW=domestic hot water C=circulation AP=additional pump

socket will be omitted if optional neck flange is ordered!



18-7035/2b

⊘ = standard neck flange

Nr. 2/180°
ordering examples

Nr. 2/270°

Nr. 2/90°

Position of the neck flanges S-WP-PD ... (without heat insulation, dimensions [mm]; tolerances +/- 10mm)

Position	S-WP-PD 750		S-WP-PD 900		S-WP-PD 1250		S-WP-PD 1500		dimensions		S-WP-PD 750	S-WP-PD 900	S-WP-PD 1250	S-WP-PD 1500												
	serial	option	serial	option	serial	option	serial	option	a	b	c	d	e													
1	serial	option	serial	option	serial	option	serial	option	1455	1175	-	715	250	1775	1495	1215	835	250	330	1900	1600	1300	850	330		
2	serial	option	serial	option	serial	option	serial	option	1455	1175	-	715	250	1775	1495	1215	835	250	330	1900	1600	1300	850	330		
3	option	option	option	option	option	option	option	option	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	option	option	option	option	option	option	option	option	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
V1	serial	option	serial	option	serial	option	serial	option	serial	option	serial	option	serial	option	serial	option	serial	option	serial	option	serial	option	serial	option	serial	option
V2	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option
U1	serial	option	serial	option	serial	option	serial	option	serial	option	serial	option	serial	option	serial	option	serial	option	serial	option	serial	option	serial	option	serial	option
U2	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option	option

thickness heat insulation approx. 120mm, Rp=internal thread, R=external thread

Date 27.03.07



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