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GB

Installation and Operating Instructions

Fresh-water, combined and buffer storage tanks

GB

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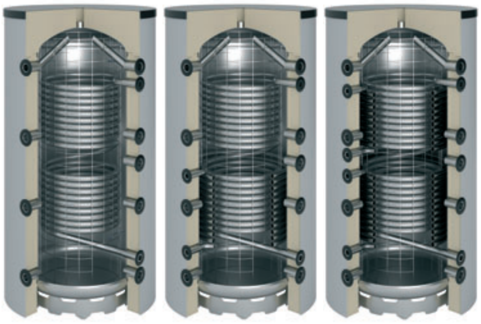
All previous installation and operating instructions lose their validity with the release of this version.

Fresh-water storage tanks

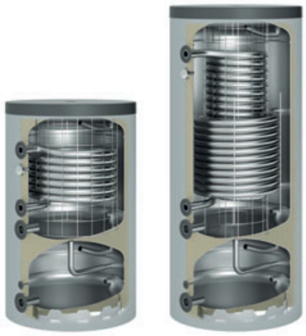


Fresh-water storage tanks
150 – 500 litres, page 38
800 – 1,500 litres, page 39
2,250 – 5,000 litres, page 40

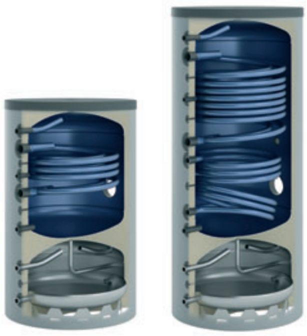
Built-under fresh-water storage tanks
Vertical: 80 – 200 litres, page 41
Horizontal: 120 – 500 litres, page 43

Reverse+

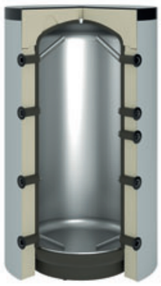
Storage tanks for heating and cooling



Fresh-water combination storage tanks
300 – 500 litres, page 50



Heat pump combination tanks
300 – 500 litres, page 46



Buffer storage tanks for cold and heat storage
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Standard storage tanks

Combined storage tanks
500 litres, page 44
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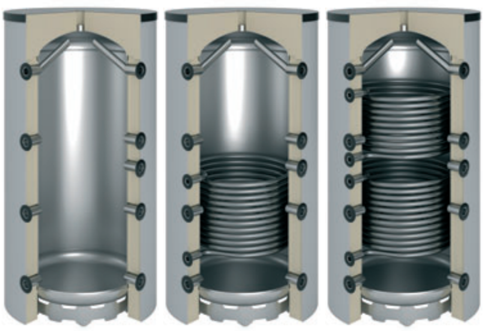


Buffer storage tanks
150 – 500 litres, page 35
800 – 1,500 litres, page 36
2,250 – 5,000 litres, page 37

Horizontal buffer storage tank
120 – 500 litres, page 42

2 Notes on safety and use

2.1 Documentation

This installation and operation manual is absolutely necessary to read before commissioning and use of the storage tank!

It is part of the scope of delivery, has to be handed over to the user and should always be kept near the place where the storage tank is located.

We accept no liability for any damage caused by failure to observe these instructions.

Technical data subject to change without notice.
No liability is accepted for printing errors.

2.2 Regulations

The relevant provisions of DIN, DIN EN, DVGW, VDI, TRF and VDE standards as well as all local and country-specific regulations, directives and standards for heating and water heating systems as well as for drinking water installations must be complied with.

If any specifications in this manual are in contradiction to the country-specific provisions, the latter are preferable.

2.3 Work on the storage tank

Installation and commissioning as well as maintenance and repairs must be carried out by authorised specialists (heating contractor / contract installation company).
The high-efficiency insulation of storage tanks of up to 1,500 litres is made of vacuum panels embedded in a PU foam jacket.
The PU foam must not be sawed at, pierced or cut into as otherwise the subjacent vacuum panel can be damaged.
Vacuum panels have a core that is wrapped in foil and made of grey silicate. The silicate is harmless to health, not ecotoxic and can be disposed of in your household waste. If, due to external force, silicate may leak, we recommend the use of gloves and a dust mask despite the silicate being harmless.

2.4 Place of installation

The storage tanks may only be installed in frost-protected areas. If there is the risk of frost, the tank as well as all water-bearing fittings and connection pipes have to be drained.
The location for installation must be accessible for maintenance and repairs, and it must be ensured that the ground is level with a sufficient load capacity.
Refer to the manufacturers' documents for distances to firing installation systems.

2.5 Intended use

OEG fresh-water, combined and buffer storage tanks are used for heating, storage and supply of heating water (acc. to VDI 2035) to or in the desired temperature in closed systems.

Fresh-water and combined storage tanks are also used for indirect heating of drinking water.

Optionally, the storage tanks can be equipped with screw-in immersion heaters of different makes and performances. They have to fulfill the following requirements:

- suitability for use in heating and DHW systems
- a length suitable for the respective storage tank diameter
- German TÜV- or respectively VDE-tested version

The installation and electrical connection of the immersion heaters must only be carried out by qualified technical personnel and in accordance with the installation instructions of the manufacturer.
Screw-in immersion heaters are subject to the warranty conditions of the manufacturer.

Reverse+ buffer storage tanks can be used for space cooling and space heating. The insulation of the tanks is designed to prevent condensation under certain boundary conditions. The permissible temperatures as well as the max. rel. air humidity specified in the technical data (see chapter 7) are mandatory. Unused ports as well as pipework and extensions must be insulated impermeably against condensation and in sufficient thickness.
With the seasonal changeover from cooling to heating operation, the storage tank should be inspected for possible moisture below the plastic lid. During heating operation the lid should be lifted for a few days, if necessary, in order to dry the insulation.

3 Installation / Commissioning

3.1 Connection

All storage tanks may only be used in closed systems. All connections must be pressure-resistant. Connections that are not required must be sealed. In order to minimise heat losses, all pipes should be insulated.

The storage tank must be installed in a way that it can be drained without disassembly.

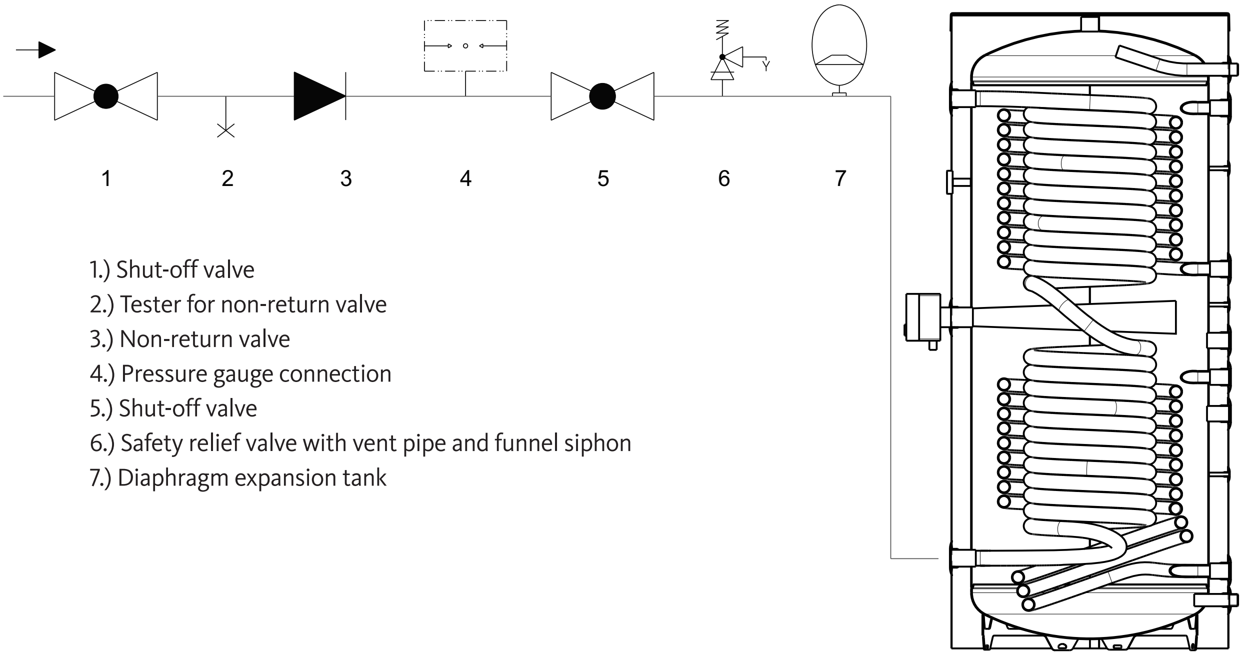
⚠ If a smooth-pipe heat exchanger is not required, it has to be sealed to prevent the ingress of oxygen. Otherwise, due to the formation of condensing water in conjunction with oxygen, this might lead to corrosion.

⚠ The smooth-pipe heat exchangers must not be shut off on both ends if filled because overpressure might otherwise occur.

3.2 DHW connection

The valid standards and regulations have to be complied with. The cold water connection must comply with DIN 1988 / DIN EN 1717 and DIN 4753-1.

In areas with a water hardness of over 20° dH we recommend the use of softening units or the installation of flush taps in combination with fresh-water storage tanks in order to facilitate the cleaning of the domestic hot water heat exchanger.



1.) Shut-off valve
2.) Tester for non-return valve
3.) Non-return valve
4.) Pressure gauge connection
5.) Shut-off valve
6.) Safety relief valve with vent pipe and funnel siphon
7.) Diaphragm expansion tank

3.3 Mixed installation

According to technical rules, an appropriate electrical separation of the conductive connection between the different materials has to be provided for mixed installations.

3.4 Pressure shocks / water hammers

When using fast-closing shut-off and water-tapping valves (solenoid valves, ball valves, single-lever mixers) for the installation, it might come to short-term pressure shocks in DHW installations becoming noticeable in the form of disturbing noises and eventually leading to wear and break of pipes and storage tanks. When using such components, appropriate water hammer dampers are to be provided. We assume no liability for damages caused by pressure shocks and water hammers.

Commissioning 3.5

Commissioning the storage tank is done in the following steps:
- flushing storage tank and all pipes
- filling storage tank until operating pressure is reached (open tapping points for the potable water for this until the water runs out in full stream)
- open the safety relief valve
- heating up the storage tank after filling is completed

⚠ All pre-assembled connections must be checked for tightness before commissioning. After the initial heating up, all connections must be rechecked for correct seating and retightened if required.

⚠ For fresh-water and combined storage tanks, it is important to fill the potable water side first.

⚠ Open vent valve on the heating water side.

⚠ The pressure of the drinking water side must always be higher than the pressure of the heating water.

⚠ For an optimal insulating effect, there must not be any condensing humidity within the insulation. A damp insulation can be dried by raising the upper cover of the storage tank temporarily in warm-up mode.

Control, maintenance and cleaning 4

Draining 4.1

⚠ Draining of fresh-water and combined storage tanks is performed in reverse order to commisssioning. Before maintaining the potable water side, the heating water side must be made pressureless first.

The potable water is drained after closing the shut-off valve in the cold water supply line via the drain valve of the safety valve combination while simultaneously opening all hot water valves of the connected consumer taps.

Safety valve 4.2

When commissioning, and at least once a year, you must check the correct operation of the safety valve. If the safety is dripping constantly, this is probably caused by contamination, the pressure in the water pipe exceeds the permitted value or the safety valve is defective. If the pressure in the water pipe exceeds the permitted value, a pressure reducer has to be installed.

⚠ During the heating, expansion water visibly leaks from the safety valve. It must not be closed!

4.3 Corrosion protection

All combined and heat pump combination storage tanks are enamelled on the potable water side in accordance with DIN 4753-3 and are supplied including a pre-assembled magnesium protective anode. According to DIN 4753-6, magnesium protective anodes must be checked yearly and replaced every two years.

Optionally, maintenance-free impressed-current anodes of different makes can be retrofitted. It is of utmost importance that all magnesium protective anodes integrated in the storage tank are removed to prevent a disruption or malfunction of the impressed-current anode. The impressed-current anodes may only be connected by qualified personnel and according to the installation instructions of the manufacturer. The impressed-current anodes are subject to the warranty conditions of the manufacturer.

Fresh-water storage tanks are equipped with a corrugated stainless steel pipe (1.4404) on the potable water side and require no further measures regarding the protection against corrosion. On the heating water side, no further measures have to be taken regarding the protection against corrosion due to the oxygen-free water (acc. to VDI 2035).

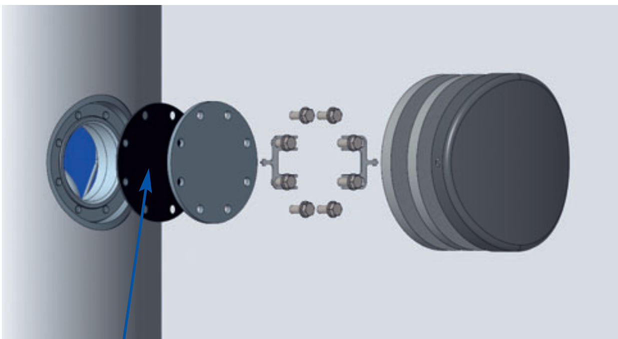
Reverse+ storage tanks are externally protected against corrosion by a zinc phosphate coating. This paintwork provides a good protection against occasional condensation water. This coating, however, is definitely unsuitable for permanently stagnant water. Reverse+ storage tanks must be regularly inspected for condensation and pools of water. Particularly during cooling operation all pipe connections, unused ports as well as the areas around the lifting lugs need to be inspected for moisture and, if required, be dried and insulated again.

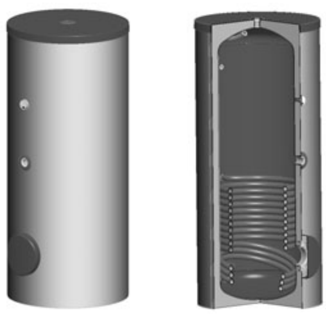
4.4 Flanged aperture

If storage tanks are fitted with service hatches, the flange seal has to be checked in regular intervals. A yearly interval is recommended.

After opening the flange, a new seal must be installed.

The nuts have to be tightened by hand first and then fastened diagonally with a torque between 18 and 22 Nm.





Art. 516 005 211
Storage tank flange seal EPDM
for service hatch

Cleaning 4.5

Required cleaning intervals are different depending on the water quality and the temperature of the storage tank. A yearly interval is recommended.

With a drinking water hardness of over 20° dH, a yearly cleaning interval is a requirement for asserting any warranty claims.

Storage tanks with enamelled potable water vessels are cleaned through the flanged aperture. The enamelled internal surface prevents limestone formation as far as possible and allows for a quick cleaning of loose lime deposits by means of a sharp water jet. Incrustations may only be crushed with a wooden stick before the flushing out. Sharp and/or metal objects must not be used for cleaning as there is the risk of damaging the tank or the enamel coating.

The cleaning of the drinking water heat exchanger in fresh-water storage pipes is done by rinsing with a suitable descaling agent (e.g. citric acid). OEG offers special rinsing pumps for such tasks.

After the cleaning, the connections have to be checked for tightness again before and after the reheating and they have to be retightened if necessary. We assume no liability for damages caused by water.

List of spare parts 4.6

Magnesium protection anodes

			
	R1¼" x 500, Ø 33	R1¼" x 700, Ø 33	M8 x 500, Ø 33
Combined storage tanks			
500			517 807 340, 517 807 380, 516 005 212
800			517 807 340, 517 807 380, 516 005 212
1000			517 807 340, 517 807 380, 516 005 212
1500			517 807 340, 517 807 380, 516 005 212
			517 807 340, 517 807 380, 516 005 212
Heat pump combination storage tanks			
300	517 807 400		
400		517 807 402	
500		517 807 402	517 807 340, 517 807 380, 516 005 209

517 807 380 Accessories
Assembly kit for insulated installation of a magnesium anode

516 005 209
Gasket for service hatch

516 005 212
Set of gaskets for combined storage tanks

4.6 List of spare parts

Impressed current anode sets

For combined storage tanks 500 - 1,500 litres
CORREX® impressed current anode set up to a tank capacity of 300 litres and max. 2 heat exchangers
Art. No. 517 807 730

For heat pump combination storage tanks 300 - 500 litres
CORREX® impressed current anode set up to a tank capacity of 500 litres and max. 2 heat exchangers
Art. No. 517 807 700

5 Warranty

OEG GmbH grants a warranty on parts and products supplied by OEG based on their general terms and conditions.

Prerequesite for any warranty claims on OEG storage tanks is the compliance with the following conditions:

- Checking the scope of delivery and the state of the delivered items.
- In case of doubt, immediate consultation with the supplier and/or OEG
- Frostproof installation
- Operation only in closed systems
- Compliance with the maximum permissible temperatures and pressures (see type plate)
- Correct installation
- Regular tightness control of the storage tank as well as all connections
- Annual cleaning if the drinking water hardness is above 20° dH
- Annual inspection of the magnesium protective anode and its replacement every two years if the drinking water tanks are enamelled.

6 Disposal

Disposal of packaging
Transport and packaging material are reintroduced to the recycling cycles by the installation company via local waste disposal and recycling facilities.

Disposal and recycling of products after final decommissioning
The components and operating materials of OEG storage tanks must not be disposed of with domestic waste. They have to be reintroduced to the recycling cycles in compliance with the local waste disposal and recycling facilities. If you have any questions regarding the individual tank components, contact info@oeg.net or the OEG hotline with the telephone number 00 800 / 63 43 66 24.

7 Technical data and connections

Buffer storage tanks without, with one (-1) or with two (-2) smooth-pipe heat exchangers		150 / 150-1 / 150-2	200 / 200-1 / 200-2	300 / 300-1 / 300-2	400 / 400-1 / 400-2	500 / 500-1 / 500-2
Real volume according to EN 12897	[l]	158 / 157 / 156	206 / 203 / 202	300 / 297 / 296	419 / 415 / 412	516 / 512 / 509
Fire protection class of insulation according to DIN 4102-1	[-]	B2	B2	B2	B2	B2
Total height including insulation	[mm]	1,020	1,265	1,750	1,725	1,770
Diameter without insulation	[mm]	500	500	500	600	650
Diameter with insulation	[mm]	610	610	610	710	760
Tilt height	[mm]	1,170	1,375	1,830	1,865	1,925
Weight	[kg]	48 / 60 / 70	60 / 77 / 87	71 / 88 / 100	88 / 119 / 145	96 / 127/ 153
Energy efficiency class according to EU regulation no. 812 / 2013	[-]	A+	A+	A+	A+	A+
Standing loss acc. to EN 12897	[W]	28	31	36	40	43
Storage tank pmax / tmax	[bar] / [°C]	3 / 95	3 / 95	3 / 95	3 / 95	3 / 95
Smooth-pipe heat exchanger* bottom surface / volume	[m²] / [l]	0.77 / 5	1.15 / 7.5	1.15 / 7.5	1.88 / 12.3	1.88 / 12.4
Smooth-pipe heat exchanger* top surface / volume	[m²] / [l]	0.63 / 4.2	0.63 / 4.2	0.77 / 5	1.73 / 11.3	1.74 / 11.4
Smooth-pipe heat exchanger* pmax / tmax	[bar] / [°C]	10 / 130	10 / 130	10 / 130	10 / 130	10 / 130
Return heat generator (R 1")	A [mm]	132	132	132	130	137
Return smooth-pipe heat exchanger ** bottom (Rp 1")	B [mm]	207	219	222	210	217
Sensor sleeve (Ø 6 mm)	C [mm]	277	415	415	474	481
Freely available (Rp 1")	D [mm]	-	-	-	640	647
Flow smooth-pipe heat exchanger** bottom (Rp 1")	E [mm]	468	619	622	740	747
Freely available (Rp 1")	F [mm]	-	-	-	840	847
Sensor sleeve (Ø 6 mm)	G [mm]	-	-	-	932	945
Return smooth-pipe heat exchanger** top (Rp 1")	H [mm]	542	772	1,217	1,025	1,042
Sensor sleeve (Ø 6 mm)	I [mm]	682	878	1,347	1,265	1,317
Flow smooth-pipe heat exchanger** top (Rp 1")	J [mm]	752	982	1,487	1,465	1,482
Flow heat generator (R 1")	K [mm]	-	-	-	1,565	1,587
Flow heat exchanger (R 1") / ventilation (Rp 1¼")	L [mm]	1,019 / -	1,264 / -	1,749 / -	- / 1,695	- / 1,731
Freely available (Rp 1½")	M [mm]	792	1,032	1,517	1,485	1,508
Thermometer (Ø 9 mm)	N [mm]	682	910	1,423	1,265	1,279
Heating element (Rp 1½")	O [mm]	500	689	1,145	895	910
Freely available (Rp 1½")	P [mm]	242	242	242	245	252

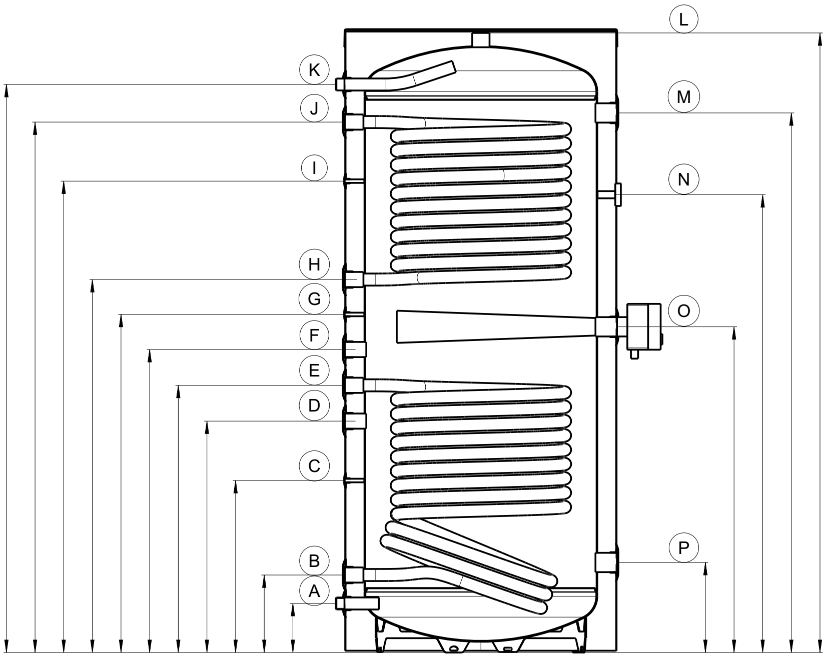
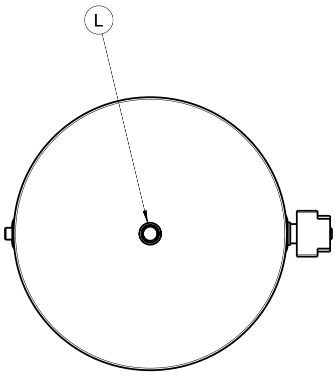


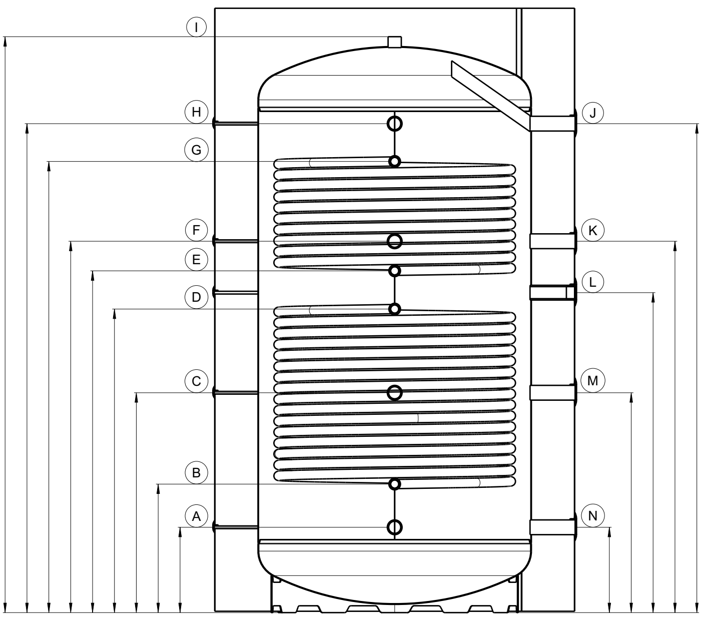
Illustration shows the maximum equipment.

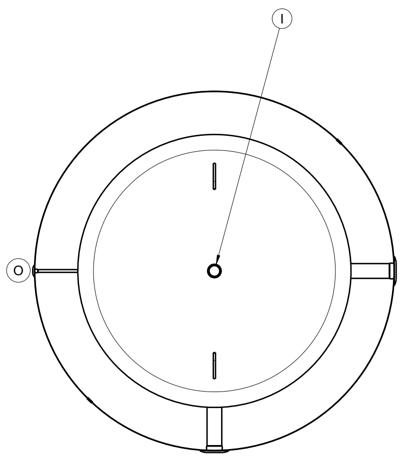


* if there is one
** if there is one, otherwise freely available (Rp 1")

7.2 Buffer storage tanks 800 – 1,500

Buffer storage tanks without, with one (-1) or two (-2) smooth-pipe heat exchangers		800 / 800-1 / 800-2	1,000 / 1,000-1 / 1,000-2	1,500 / 1,500-1 / 1,500-2
Real volume according to EN 12897	[l]	804 / 800 / 795	999 / 993 / 988	1.480 / 1.473 /
1.467				
Fire protection class of insulation according to DIN 4102-1	[-]	B2	B2	B2
Total height including insulation	[mm]	1,930	2,350	2,210
Diameter without insulation	[mm]	790	790	1,000
Diameter with insulation	[mm]	1,015	1015	1,315
Tilt height	[mm]	1,900	2,280	2,190
Weight	[kg]	171 / 211 / 244	243 / 293 / 333	232 / 300 / 343
Heat retaining loss according to EN 12897	[W]	51	55	63
Storage tank pmax / tmax	[bar] / [°C]	3 / 95	3 / 95	3 / 95
Smooth-pipe heat exchanger* bottom surface / volume	[m²] / [l]	2.6 / 17	3.3 / 21.3	4.5 / 29.7
Smooth-pipe heat exchanger* top surface / volume	[m²] / [l]	2.2 / 14.2	2.6 / 17	2.8 / 18.6
Smooth-pipe heat exchanger* pmax / tmax	[bar] / [°C]	10 / 130	10 / 130	10 / 130
Return heat generator (Rp 1½")	A [mm]	255	255	312
Return smooth-pipe heat exchanger* bottom (Rp 1")	B [mm]	413	363	470
Freely available (Rp 1½")	C [mm]	694	832	804
Flow smooth-pipe heat exchanger* bottom (Rp 1")	D [mm]	893	1,063	1,110
Return smooth-pipe heat exchanger* top (Rp 1")	E [mm]	1,025	1,293	1,250
Freely available (Rp 1½")	F [mm]	1,133	1,409	1,358
Flow smooth-pipe heat exchanger* top (Rp 1")	G [mm]	1,425	1,773	1,650
Flow heat generator (Rp 1½")	H [mm]	1,572	1,985	1,788
Ventilation (Rp 1¼")	I [mm]	1,833	2,246	2,106
Freely available (Rp 1½")	J [mm]	1,572	1,985	1,788
Freely available (Rp 1½")	K [mm]	1,133	1,409	1,358
Heating element (Rp 1½")	L [mm]	963	1,170	1,170
Freely available (Rp 1½")	M [mm]	694	832	804





* if there is one

Illustration shows the maximum equipment.

Buffer storage tanks without, with one (-1) or with 2 (-2) smooth-pipe heat exchangers		2,250 / 2,250-1 / 2,250-2	2,600 / 2,600-1 / 2,600-2	3,000 / 3,000-1 / 3,000-2	4,000 / 4,000-1 / 4,000-2	5,000 / 5,000-1 / 5,000-2
Real volume according	[l]	2,261 / 2,252 / 2,247	2,596 / 2,585 / 2,576	3,003 / 2,993 / 2,982	3,886 / 3,873 / 3,860	5,056 / 5,041 / 5,026
Fire protection class of insulation according to DIN 4102-1	[-]	B2	B2	B2	B2	B2
Total height including insulation	[mm]	2,165	2,440	2,300	3,000	3,000
Diameter without insulation	[mm]	1,250	1,250	1,400	1,400	1,600
Diameter with insulation	[mm]	1,450	1,450	1,600	1,600	1,800
Tilt height	[mm]	2,165	2,500	2,405	2,935	3,100
Weight	[kg]	275 / 348 / 385	310 / 400 / 470	345 / 430 / 515	425 / 527 / 630	502 / 621 / 740
Storage tank pmax / tmax	[bar] / [°C]	3 / 95	3 / 95	3 / 95	3 / 95	3 / 95
Smooth-pipe heat exchanger* bottom surface / volume	[m²] / [l]	4.9 / 32	5.9 / 39	5.5 / 36	6.8 / 44	7.8 / 51
Smooth-pipe heat exchanger* top surface / volume	[m²] / [l]	2.5 / 16	4.6 / 30	5.5 / 36	6.8 / 44	7.8 / 51
Smooth-pipe heat exchanger* pmax / tmax	[bar] / [°C]	10 / 130	10 / 130	10 / 130	10 / 130	10 / 130
Return heat generator (Rp 1½")	A [mm]	343	339	405	465	440
Return smooth-pipe heat exchanger ** bottom (Rp 1")	B [mm]	331	369	- / 440 / 440	465	440
Freely available (Rp 1½")	C [mm]	343	339	405	465	440
Freely available (Rp 1½")	D [mm]	1,033	769	1,109	1,095	1,070
Flow smooth-pipe heat exchanger** bottom (Rp 1")	E [mm]	891	1,089	- / 960 / 960	1,095	1,070
Freely available (Rp 1½")	F [mm]	1,048	1,324	-	1,690	1,665
Heating element (Rp 1½") / Freely available (Rp 1½")	G [mm]	1,033 / -	- / 769	1,109 / -	- / 1,095	- / 1,070
Freely available (Rp 1½")	H [mm]	1,348	1,519	1,341	1,745	1,720
Return smooth-pipe heat exchanger** top (Rp 1“)	I [mm]	1,348	1,439	- / - / 1,254	1,745	1,720
Freely available (Rp 1½")	J [mm]	1,348	1,519	1,341	1,745	1,720
Flow heat generator (Rp 1½")	K [mm]	1,733	2,019	1,809	2,375	2,350
Flow smooth-pipe heat exchanger** top (Rp 1“)	L [mm]	1,648	1,989	- / - / 1774	2,375	2,350
Freely available (Rp 1½")	M [mm]	1,750	2,024	-	2,390	2,365
Freely available (Rp 1½")	N [mm]	1,733	2,019	1,809	2,375	2,350
Ventilation (Rp 1¼")	O [mm]	2,112	2,391	2,245	2,840	2,828
Sensor sleeve (Ø 6 mm)	P [mm]	various heights	various heights	various heights	various heights	various heights

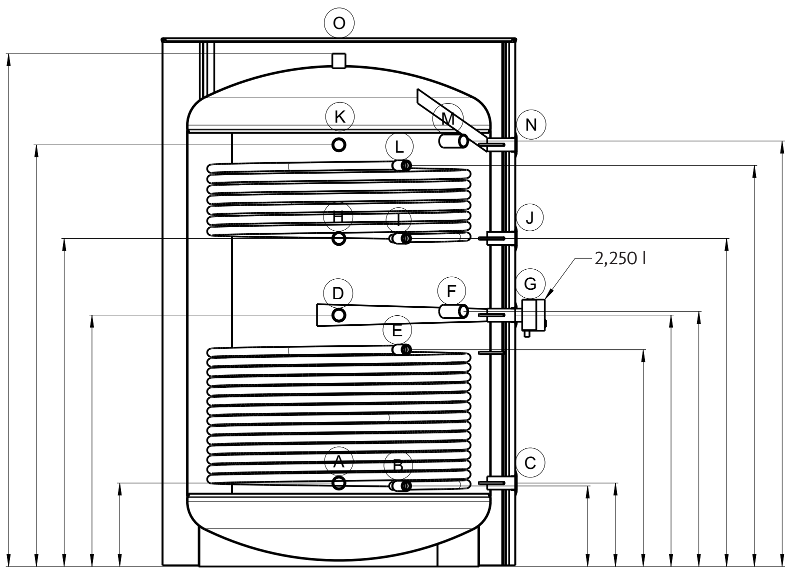
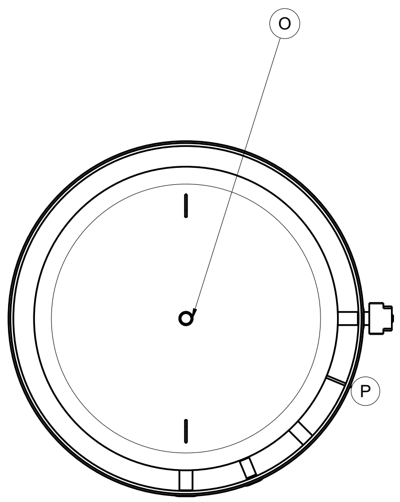


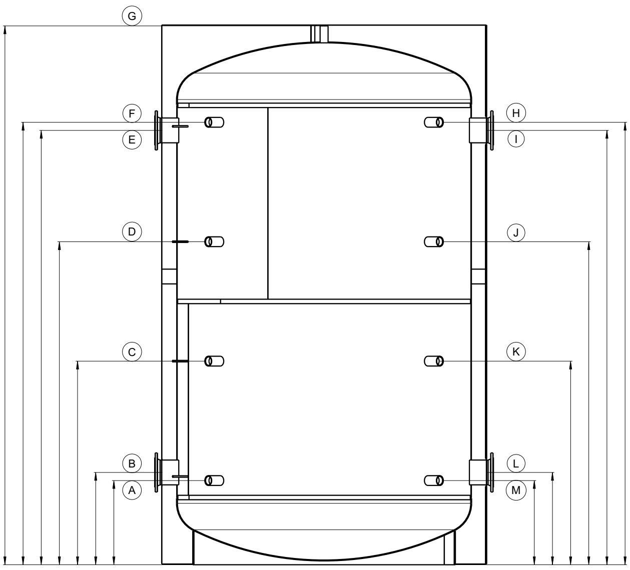
Illustration shows the maximum equipment.

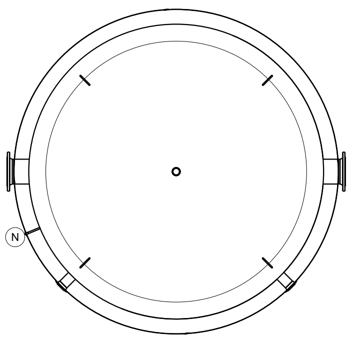


* if there is one
** if there is one, otherwise freely available (Rp 1")

7.4 Buffer storage tank 10,000

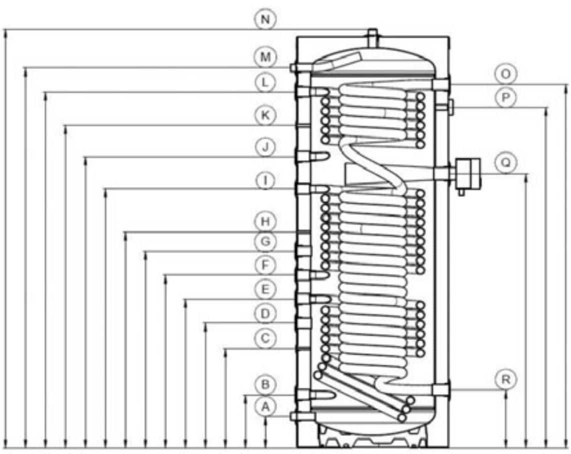
Buffer storage tank without smooth-pipe heat exchanger		10,000
Real volume according	[l]	10,083
Fire protection class of insulation according to DIN 4102-1	[-]	B2
Total height including insulation	[mm]	3,660
Diameter without insulation	[mm]	2,000
Diameter with insulation	[mm]	2,200
Tilt height	[mm]	3,900
Weight	[kg]	1,010
Storage tank pmax / tmax	[bar]/[°C]	3/95
Return heat generator (Rp 2")	A [mm]	571
Freely available (flange DN150 PN6)	B [mm]	626
Freely available (Rp 2")	C [mm]	1,381
Freely available (Rp 2")	D [mm]	2,191
Freely available (flange DN150 PN6)	E [mm]	2,946
Flow heat generator (Rp 2")	F [mm]	3,001
Ventilation (Rp 1 ½")	G [mm]	3,655
Freely available (Rp 2")	H [mm]	3,001
Freely available (flange DN150 PN6)	I [mm]	2,946
Freely available (Rp 2")	J [mm]	2,191
Freely available (Rp 2")	K [mm]	1,381
Freely available (flange DN150 PN6)	L [mm]	626
Freely available (Rp 2")	M [mm]	571
Sensor sleeves (Ø 6 mm)	N [mm]	various heights





* if there is one
** if there is one, otherwise freely available (Rp 1")

Fresh-water storage tanks without, with one (-1), with two (-2) or with three (-3) smooth-pipe heat exchangers		150 / 150-1 / 150-2	200 / 200-1 / 200-2	300 / 300-1 / 300-2 / 300-3	400 / 400-1 / 400-2	500 / 500-1 / 500-2
Real volume according to EN 12897	[l]	158 / 156 / 155	205 / 202 / 201	298 / 296 / 294 / 291	417 / 413 / 410	514 / 510 / 507
Fire protection class of insulation according to DIN 4102-1	[-]	B2	B2	B2	B2	B2
Total height including insulation	[mm]	1,020	1,265	1,750	1,725	1,770
Diameter without insulation	[mm]	500	500	500	600	650
Diameter with insulation	[mm]	610	610	610	710	760
Tilt height	[mm]	1,170	1,375	1,830	1,865	1,925
Weight	[kg]	53 / 65 / 75	53 / 85 / 95	81 / 98 / 110 / 138	103 / 134 / 160	111 / 142 / 168
Energy efficiency class according to EU regulation no. 812/2013	[-]	A+	A+	A+	A+	A+
Standing loss acc. to EN 12897	[W]	28	31	36	40	43
Output capacity 45 °C (storage tank 65 °C, cold water 10 °C, no reheating)	[l]	85	115	175	230	285
Performance factor NL following DIN 4708	[-]	1	1,2	1,6	2	3
Storage tank pmax / tmax	[bar] / [°C]	3 / 95	3 / 95	3 / 95	3 / 95	3 / 95
DHW heat exchanger surface / volume	[m²] / [l]	1.9 / 8.2	2.8 / 12.2	4.4 / 19.3	6 / 27	6 / 27
DHW heat exchanger pmax / tmax	[bar] / [°C]	6 / 95	6 / 95	6 / 95	6 / 95	6 / 95
Smooth-pipe heat exchanger* bottom surface / volume	[m²] / [l]	0.77 / 5	1.15 / 7.5	1.15 / 7.5	1.88 / 12.3	1.88 / 12.4
Smooth-pipe heat exchanger* middle surface / volume	[m²] / [l]	-	-	1.15 / 7.5	-	-
Smooth-pipe heat exchanger* top surface / volume	[m²] / [l]	0.63 / 4.2	0.63 / 4.2	0.77 / 5	1.73 / 11.3	1.74 / 11.4
Smooth-pipe heat exchanger* pmax / tmax	[bar] / [°C]	10 / 130	10 / 130	10 / 130	10 / 130	10 / 130
Return heat generator (R 1")	A [mm]	132	132	132	130	137
Return smooth-pipe heat exchanger** bottom (Rp 1")	B [mm]	207	219	222	210	217
Sensor sleeve (Ø 6 mm)	C [mm]	277	415	415	474	481
Freely available (Rp 1")	D [mm]	-	-	-	640	647
Flow smooth-pipe heat exchanger** bottom (Rp 1")	E [mm]	468	619	622	740	747
Return smooth-pipe heat exchanger* middle* (Rp 1")	F [mm]	-	-	´- / - / - / 722	-	-
Freely available (Rp 1")	G [mm]	-	-	-	840	847
Sensor sleeve (Ø 6 mm)	H [mm]	-	-	-	932	945
Flow smooth-pipe heat exchanger* middle (Rp 1")	I [mm]	-	-	´- / - / - / 1,082	-	-
Return smooth-pipe heat exchanger** top (Rp 1")	J [mm]	542	772	1,217	1,025	1,042
Sensor sleeve (Ø 6 mm)	K [mm]	682	878	1,347	1,265	1,317
Flow smooth-pipe heat exchanger** top (Rp 1")	L [mm]	752	982	1,487	1,465	1,482
Flow heat generator (R 1")	M [mm]	-	-	-	1,565	1,587
Flow heat generator (R 1") / ventilation (Rp 1¼")	N [mm]	1,019 / -	1,264 / -	1,749 / -	- / 1,695	- / 1,731
Hot water connection (Rp 1¼")	O [mm]	792	1,032	1,517	1,485	1,508
Thermometer (Ø 9 mm)	P [mm]	682	910	1,423	1,265	1,279
Heating element (Rp 1½")	Q [mm]	500	689	1,145	895	910
Cold water connection (Rp 1¼")	R [mm]	242	242	242	245	252



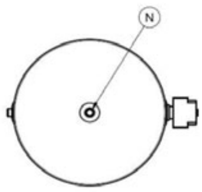


Illustration shows the maximum equipment.

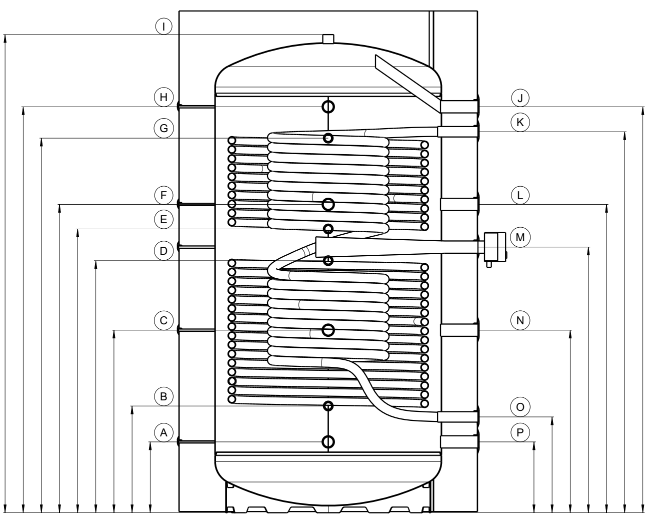
* if there is one

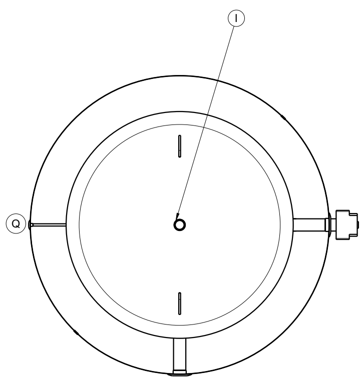
** if there is one, otherwise freely available (Rp 1")

7.6

Fresh-water storage tanks 800 – 1,500

Fresh-water storage tanks without, with one (-1) or with two (-2) smooth-pipe heat exchangers		800 / 800-1 / 800-2	1,000 / 1,000-1 / 1,000-2	1,500 / 1,500-1 / 1,500-2
Real volume according to EN 12897	[l]	801 / 796 / 792	996 / 990 / 985	1,477 / 1,470 / 1,464
Fire protection class of insulation according to DIN 4102-1	[-]	B2	B2	B2
Total height including insulation	[mm]	1,930	2,350	2,210
Diameter without insulation	[mm]	790	790	1,000
Diameter with insulation	[mm]	1,015	1,015	1,315
Tilt height	[mm]	1,900	2,280	2,190
Weight	[kg]	192 / 232 / 265	265 / 315 / 355	275 / 322 / 365
Standing loss acc. to EN 12897	[W]	51	55	63
Output capacity 45°C (storage tanks 65°C, cold water 10°C, no reheating)	[l]	457	571	857
Performance factor NL following DIN 4708	[-]	4.5	6.4	8.4
Storage tank pmax / tmax	[bar] / [°C]	3 / 95	3 / 95	3 / 95
DHW heat exchanger surface / volume	[m²] / [l]	8 / 34	8 / 34	8 / 34
DHW heat exchanger pmax / tmax	[bar] / [°C]	6 / 95	6 / 95	6 / 95
Smooth-pipe heat exchanger* bottom surface / volume	[m²] / [l]	2.6 / 17	3.3 / 21.3	4.5 / 29.7
Smooth-pipe heat exchanger* top surface / volume	[m²] / [l]	2.2 / 14.2	2.6 / 17	2.8 / 18.6
Smooth-pipe heat exchanger* pmax / tmax	[bar] / [°C]	10 / 130	10 / 130	10 / 130
Return heat generator (Rp 1½")	A [mm]	255	255	312
Return smooth-pipe heat exchanger* bottom (Rp 1")	B [mm]	413	363	470
Freely available (Rp 1½")	C [mm]	694	832	804
Flow smooth-pipe heat exchanger* bottom (Rp 1")	D [mm]	893	1,063	1,110
Return smooth-pipe heat exchanger* top (Rp 1")	E [mm]	1,025	1,293	1,250
Freely available (Rp 1½")	F [mm]	1,133	1,409	1,358
Flow smooth-pipe heat exchanger* top (Rp 1")	G [mm]	1,425	1,773	1,650
Flow heat generator (Rp 1½)	H [mm]	1,572	1,985	1,788
Ventilation (Rp 1¼")	I [mm]	1,833	2,246	2,106
Freely available (Rp 1½")	J [mm]	1,572	1,985	1,788
Hot water connection (Rp 1¼")	K [mm]	1,462	1,875	1,678
Freely available (Rp 1½")	L [mm]	1,133	1,409	1,358
Heating element (Rp 1½")	M [mm]	963	1,170	1,170
Freely available (Rp 1½")	N [mm]	694	832	804
Cold water connection (Rp 1¼")	O [mm]	365	498	422
Freely available (Rp 1½")	P [mm]	255 / -	- / 255	- / 312
Sensor sleeve (Ø 6 mm)	Q [mm]	various heights	various heights	various heights





* if there is one

Illustration shows the maximum equipment.

Fresh-water storage tanks without, with one (-1) or with two (-2) smooth-pipe heat exchangers		2,250 / 2,250-1 / 2,250-2	2,600 / 2,600-1 / 2,600-2	3,000 / 3,000-1 / 3,000-2	4,000 / 4,000-1 / 4,000-2	5,000 / 5,000-1 / 5,000-2
Real volume according	[l]	2,258 / 2,249 / 2,244	2,593 / 2,582 / 2,573	3,000 / 2,990 / 2,979	3,883 / 3,870 / 3,857	5,053 / 5,038 / 5,023
Fire protection class of insulation according to DIN 4102-1	[-]	B2	B2	B2	B2	B2
Total height including insulation	[mm]	2,165	2,440	2,300	3,000	3,000
Diameter without insulation	[mm]	1,250	1,250	1,400	1,400	1,600
Diameter with insulation	[mm]	1,450	1,450	1,600	1,600	1,800
Tilt height	[mm]	2,165	2,500	2,405	2,935	3,100
Weight	[kg]	341 / 378 / 415	340 / 430 / 500	375 / 460 / 545	454 / 557 / 660	532 / 651 / 770
Output capacity 45 °C (storage tank 65 °C, cold water 10 °C, no reheating)	[l]	1,142	1,480	1,714	2,285	2,857
Performance factor NL following DIN 4708	[-]	10	12	15	20	25
Storage tank pmax / tmax	[bar] / [°C]	3 / 95	3 / 95	3 / 95	3 / 95	3 / 95
DHW heat exchanger surface / volume	[m²] / [l]	9 / 39.5	9 / 39.5	9 / 39.5	9 / 39.5	9 / 39.5
DHW heat exchanger pmax / tmax	[bar] / [°C]	6 / 95	6 / 95	6 / 95	6 / 95	6 / 95
Smooth-pipe heat exchanger* bottom surface / volume	[m²] / [l]	4.9 / 32	5.9 / 39	5.5 / 36	6.8 / 44	7.8 / 51
Smooth-pipe heat exchanger* top surface / volume	[m²] / [l]	2.5 / 16	4.6 / 30	5.5 / 36	6.8 / 44	7.8 / 51
Smooth-pipe heat exchanger* pmax / tmax	[bar] / [°C]	10 / 130	10 / 130	10 / 130	10 / 130	10 / 130
Return heat generator (Rp 1½")	A [mm]	343	339	405	465	440
Return smooth-pipe heat exchanger** bottom (Rp 1")	B [mm]	331	369	- / 440 / 440	465	440
Freely available (Rp 1½")	C [mm]	343	339	405	465	440
Freely available (Rp 1½")	D [mm]	1,033	769	1,109	1,095	1,070
Flow smooth-pipe heat exchanger** bottom (Rp 1")	E [mm]	891	1,089	- / 960 / 960	1,095	1,070
Cold water connection (Rp 1¼")	F [mm]	1,048	1,324	1,109	1,690	1,665
Heating element (Rp 1½") / Freely available (Rp 1½")	G [mm]	1,033 / -	- / 769	1,109 / -	- / 1,095	- / 1,070
Freely available (Rp 1½")	H [mm]	1,348	1,519	1,341	1,745	1,720
Return smooth-pipe heat exchanger** top (Rp 1")	I [mm]	1,348	1,439	- / - / 1,254	1,745	1,720
Freely available (Rp 1½")	J [mm]	1,348	1,519	1,341	1,745	1,720
Flow heat generator (Rp 1½")	K [mm]	1,733	2,019	1,809	2,375	2,350
Flow smooth-pipe heat exchanger** top (Rp 1")	L [mm]	1,648	1,989	- / - / 1,774	2,375	2,350
Hot water connection (Rp 1¼")	M [mm]	1,750	2,024	1,809	2,390	2,365
Freely available (Rp 1½")	N [mm]	1,733	2,019	1,809	2,375	2,350
Ventilation (Rp 1¼")	O [mm]	2,112	2,391	2,245	2,840	2,828
Sensor sleeve (Ø 6 mm)	P [mm]	various heights	various heights	various heights	various heights	various heights

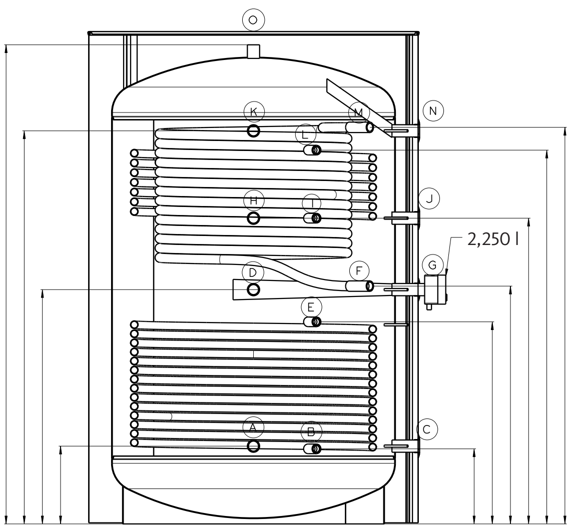
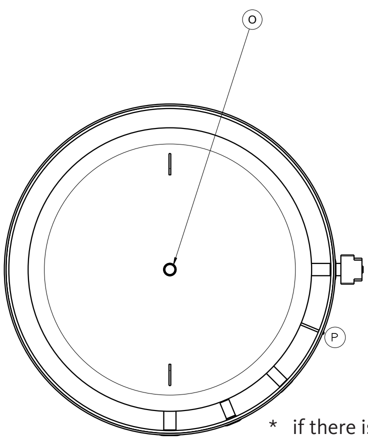


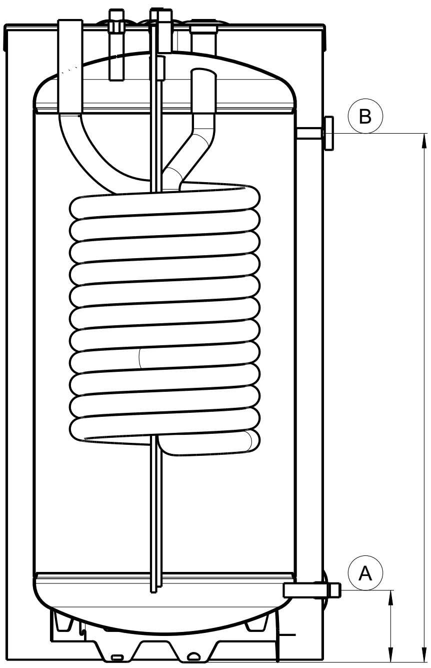
Illustration shows the maximum equipment.

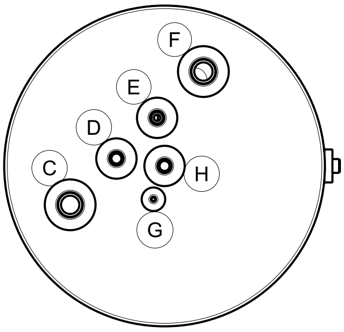


* if there is one
** if there is one, otherwise freely available (Rp 1")

7.8 Built-under fresh-water storage tanks (vertical) 80 – 200

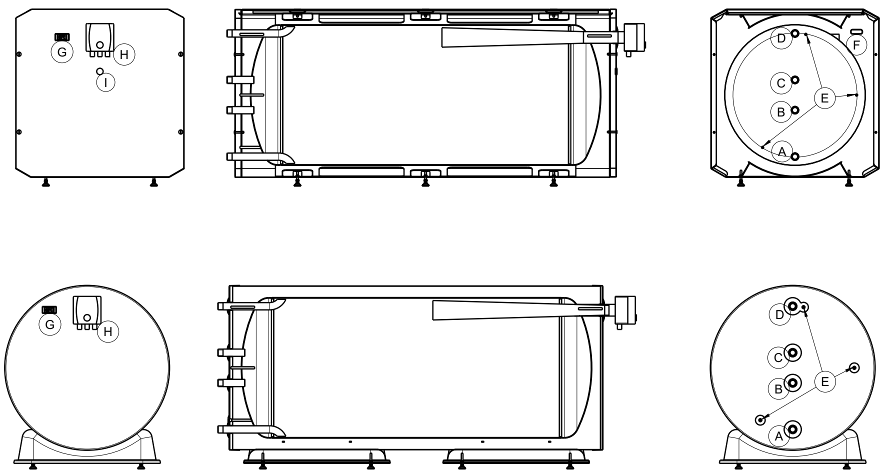
Built-under fresh-water storage tanks (vertical)		80	120	150	200
Real volume according to EN 12897	[l]	80	120	150	200
Fire protection class of insulation according to DIN 4102-1	[-]	B2	B2	B2	B2
Total height including insulation	[mm]	620	830	985	1,245
Diameter without insulation	[mm]	500	500	500	600
Diameter with insulation	[mm]	610	610	610	710
Tilt height	[mm]	850	950	1,130	1,350
Weight	[kg]	35	45	55	65
Energy efficiency class according to EU regulation no. 812/2013	[-]	A+	A+	A+	A+
Standing loss acc. to EN 12897	[W]	23	26	28	31
Output capacity 45°C (storage tanks 65°C, cold water 10°C, no reheating)	[l]	50	68	85	115
Performance factor NL following DIN 4708	[-]	0.6	0.8	1	1.2
Storage tank pmax / tmax	[bar] / [°C]	3 / 95	3 / 95	3 / 95	3 / 95
DHW heat exchanger surface / volume	[m²] / [l]	1.4 / 6	2.5 / 11	3 / 14	3.1 / 14
DHW heat exchanger pmax / tmax	[bar] / [°C]	6 / 95	6 / 95	6 / 95	6 / 95
Draining (R ¾")	A [mm]	137	137	137	137
Thermometer (Ø 9 mm)	B [mm]	455	663	748	1,008
Hot water connection (Rp 1¼")	C [mm]	600	808	964	1,224
Flow heat generator (R ¾")	D [mm]	620	828	984	1,244
Return heat generator (R ¾")	E [mm]	620	828	984	1,244
Cold water connection (Rp 1¼")	F [mm]	600	808	964	1,224
Sensor sleeve (Ø 6 mm)	G [mm]	589	797	954	1,213
Ventilation (R ¾")	H [mm]	620	828	984	1,244





Horizontal and built-under buffer storage tanks		120	150	200	300	400	500
Real volume according to EN 12897	[l]	117	158	208	302	457	500
Fire protection class of insulation according to DIN 4102-1	[-]	B2	B2	B2	B2	B2	B2
Total height* including insulation	[mm]	700	700	700	700	850	850
Width	[mm]	610	610	610	610	760	760
Length	[mm]	785	995	1,260	1,750	1,600	1,730
Weight	[kg]	49	57	69	93	105	123
Energy efficiency class according EU regulation no. 812/2013	[-]	A+	A+	A+	A+	A+	A+
Standing loss acc. to EN 12897	[W]	26	29	31	36	41	43
Storage tank pmax / tmax	[bar] / [°C]	3 / 95	3 / 95	3 / 95	3 / 95	3 / 95	3 / 95

Return heat generator (R 1")	A [mm]
Freely available (R 1")	B [mm]
Freely available (R 1")	C [mm]
Flow heat generator (R 1")	D [mm]
Sensor sleeve** (Ø 6 mm)	E [mm]
Sensor cable feed-through (45x18 mm)	F [mm]
Thermometer (Clip)	G [mm]
Heating element (Rp 1½")	H [mm
Cable feed-through heating element (Ø 26 mm)	I [mm]



* feet adjustable by ±13mm

** Caution: Install the temperature sensors before mounting the steel jacket. Use the sensor cable feed-through (F) for guiding the temperature sensors.

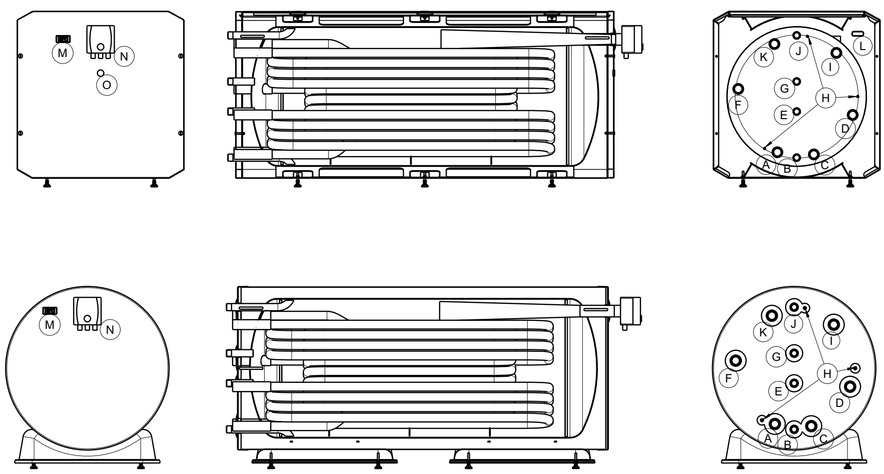
7.10

PURE+

Horizontal and built-under fresh-water storage tanks 120 – 500

Horizontal and built-under fresh-water storage tanks without, with one (-1) or with two (-2) additional heat exchangers		120 / 120-1 / 120-2	150 / 150-1 / 150-2	200 / 200-1 / 200-2	300 / 300-1 / 300-2	400 / 400-1 / 400-2	500 / 500-1 / 500-2
Real volume according to EN 12897	[l]	117 / 116 / 115	157 / 156 / 155	206 / 205 / 204	301 / 300 / 298	455 / 454 / 452	498 / 496 / 494
Fire protection class of insulation according to DIN 4102-1	[-]	B2	B2	B2	B2	B2	B2
Total height* including insulation	[mm]	700	700	700	700	850	850
Width	[mm]	610	610	610	610	760	760
Length	[mm]	785	995	1,260	1,750	1,600	1,730
Weight	[kg]	55 / 60 / 65	65 / 72/ 79	79 / 87 / 96	103 / 111 / 120	123 / 136 / 150	141 / 154 / 167
Energy efficiency class according to EU regulation no. 812/2013	[-]	A+	A+	A+	A+	A+	A+
Standing loss acc. to EN 12897	[W]	26	29	31	36	41	43
Output capacity 45°C (storage tanks 65°C, cold water 10°C, no reheating)	[l]	70	85	115	175	230	290
Performance factor NL following DIN 4708	[-]	0.8	1	1.2	1.6	2	3
Storage tank pmax / tmax	[bar] / [°C]	3 / 95	3 / 95	3 / 95	3 / 95	3 / 95	3 / 95
DHW heat exchanger surface / volume	[m²] / [l]	1.52 / 6.92	2.1 / 9.6	2.5 / 11	2.5 / 11	5.1 / 23	5.1 / 23
DHW heat exchanger pmax / tmax	[bar] / [°C]	6 / 95	6 / 95	6 / 95	6 / 95	6 / 95	6 / 95
Additional heat exchanger** bottom surface / volume	[m²] / [l]	1 / 4.69	1.4 / 6.2	1.7 / 8	1.7 / 8	3 / 14	3 / 14
Additional heat exchanger** top surface / volume	[m²] / [l]	1 / 4.55	1.4 / 6.1	1.7 / 8	1.7 / 8	3 / 14	3 / 14
Additional heat exchanger** pmax / tmax	[bar] / [°C]	6 / 95	6 / 95	6 / 95	6 / 95	6 / 95	6 / 95

Return additional heat exchanger bottom** (Rp 1¼")	A [mm]
Return heat generator (R 1")	B [mm]
Cold water connection (Rp 1¼")	C [mm]
Flow additional heat exchanger** bottom (Rp 1¼")	D [mm]
Freely available (R 1")	E [mm]
Return additional heat exchanger** top (Rp 1¼")	F [mm]
Freely available (R 1")	G [mm]
Sensor sleeve*** (Ø 6 mm)	H [mm]
Flow additional heat exchanger** topn (Rp 1¼")	I [mm]
Flow heat generator (R 1")	J [mm]
Hot water connection (Rp 1¼")	K [mm]
Sensor cable feed-through (45x18 mm)	L [mm]
Thermometer (clip)	M [mm]
Heating element (Rp 1½")	N [mm]
cable feed-through heating element (Ø 26 mm)	O [mm]



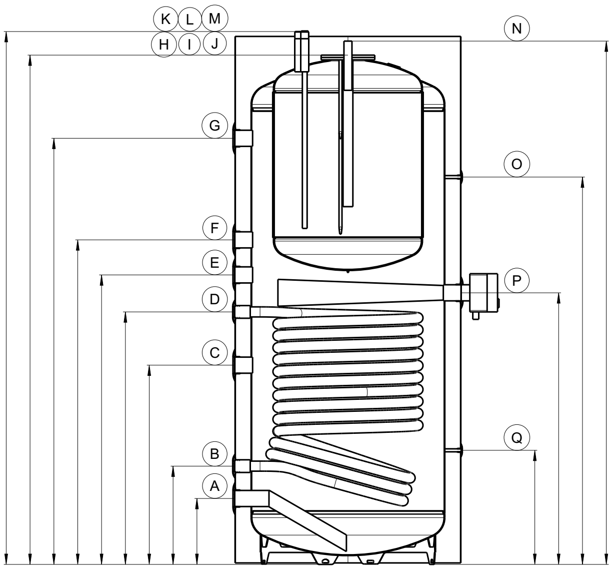
Illustrations show the maximum equipment.

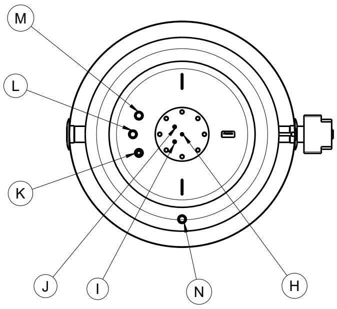
* feet adjustable by ±13mm

** if there is one

*** Caution: Install the temperature sensors before mounting the steel jacket. Use the sensor cable feed-through (L) for guiding the temperature sensors.

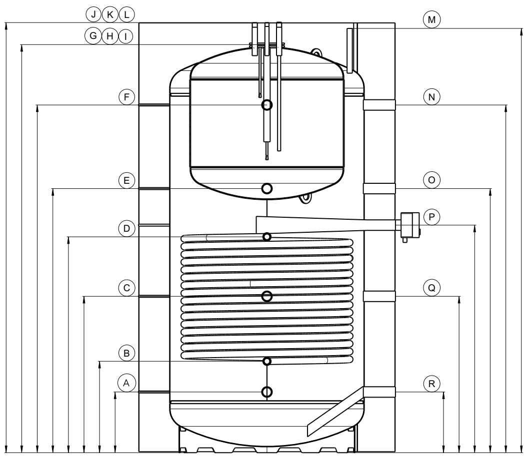
Combined storage tank		500
Real volume according to EN 12897	[l]	502
Volume DHW tank (part of the real volume)	[l]	121
Fire protection class of insulation according to DIN 4102-1	[-]	B2
Total height including insulation	[mm]	1,790
Diameter without insulation	[mm]	650
Diameter with insulation	[mm]	760
Tilt height	[mm]	1,925
Weight	[kg]	165
Energy efficiency class according to EU regulation no. 812/2013	[-]	A+
Standing loss acc. to EN 12897	[W]	43
Output capacity 45°C (storage tanks 65°C, cold water 10°C, no reheating)	[l]	236
Performance factor NL following DIN 4708	[-]	3
Buffer tank pmax / tmax	[bar] / [°C]	3 / 95
DHW tank pmax / tmax	[bar] / [°C]	10 / 95
Smooth-pipe heat exchanger bottom surface / volume	[m²] / [l]	2 / 13
Smooth-pipe heat exchanger pmax / tmax	[bar] / [°C]	10 / 130
Return heat generator (Rp 1½)	A [mm]	221
Return smooth-pipe heat exchanger bottom (Rp 1")	B [mm]	329
Freely available (Rp 1½")	C [mm]	668
Flow smooth-pipe heat exchanger bottom (Rp 1")	D [mm]	846
Freely available (Rp 1½")	E [mm]	970
Freely available (Rp 1½")	F [mm]	1,088
Flow heat generator (Rp 1½")	G [mm]	1,428
Anode connection (M8)	H [mm]	1,700
Sensor sleeve DHW tank top (Ø 6 mm)	I [mm]	1,700
Sensor sleeve DHW tank bottom (Ø 6 mm)	J [mm]	1,700
Cold water connection (R ¾")	K [mm]	1,786
Circulation connection (R ¾")	L [mm]	1,786
Hot water connection (R ¾")	M [mm]	1,786
Ventilation (Rp ½")	N [mm]	1,754
Sensor sleeve (Ø 6 mm)	O [mm]	1,299
Heating element (Rp 1½")	P [mm]	910
Sensor sleeve (Ø 6 mm)	Q [mm]	383

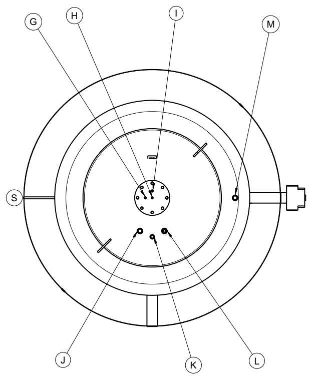




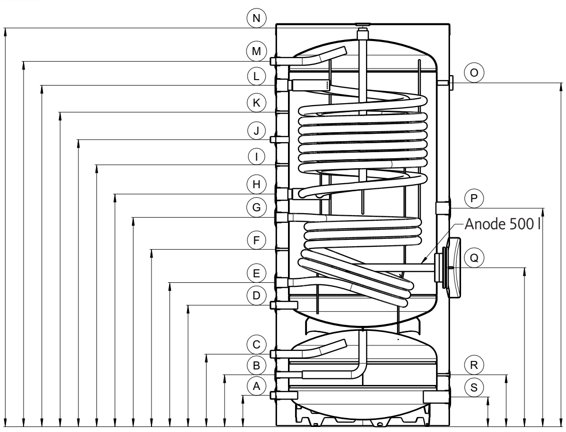
7.12 Combined storage tanks 800 – 1,500

Combined storage tanks		800	1,000	1,500
Real volume according to EN 12897	[l]	788	993	1,464
Volume DHW tank (part of the real volume)	[l]	206	206	322
Fire protection class of insulation according to DIN 4102-1	[-]	B2	B2	B2
Total height including insulation	[mm]	1,945	2,355	2,215
Diameter without insulation	[mm]	790	790	1,000
Diameter with insulation	[mm]	1,015	1,015	1,315
Tilt height	[mm]	2,010	2,410	2,250
Weight	[kg]	260	350	380
Standing loss acc. to EN 12897	[W]	50	55	63
Output capacity 45°C (storage tanks 65°C, cold water 10°C, no reheating)	[l]	315	350	471
Performance factor NL following DIN 4708	[-]	6	7	12
Buffer tank pmax / tmax	[bar] / [°C]	3 / 95	3 / 95	3 / 95
DHW heat exchanger pmax / tmax	[bar] / [°C]	10 / 95	10 / 95	10 / 95
Smooth-pipe heat exchanger bottom surface / volume	[m²] / [l]	2.6 / 17	3.3 / 21.3	4.5 / 29.7
Smooth-pipe heat exchanger pmax / tmax	[bar] / [°C]	10 / 130	10 / 130	10 / 130
Return heat generator (Rp 1 ½")	A [mm]	255	255	312
Return smooth-pipe heat exchanger bottom (Rp 1")	B [mm]	413	363	470
Freely available (Rp 1½")	C [mm]	694	832	804
Flow smooth-pipe heat exchanger bottom (Rp 1")	D [mm]	893	1063	1110
Freely available (Rp 1½")	E [mm]	1,133	1,409	1,358
Flow heat generator (Rp 1½")	F [mm]	1,572	1,985	1,788
Sensor sleeve drinking water tank top (Ø 6 mm)	GI [mm]	1,822	2,230	2,093
Anode connection (M8)	H [mm]	1,822	2,230	2,093
Sensor sleeve drinking water tank bottom (Ø 6mm)	I [mm]	1,822	2,230	2,093
Hot water connection (R ¾")	J [mm]	1,939	2,352	2,211
Circulation connection (R ½")	K [mm]	1,939	2,352	2,211
Cold water connection (R ¾")	L [mm]	1,939	2,352	2,211
Ventilation (Rp ½")	M [mm]	1,927	2,340	2,181
Freely available (Rp 1½")	N [mm]	1,572	1,985	1,788
Freely available (Rp 1½")	O [mm]	1,133	1,409	1,358
Heating element (Rp 1½")	P [mm]	963	1,170	1,170
Freely available (Rp 1½")	Q [mm]	694	832	804
Freely available (Rp 1½")	R [mm]	255	255	312
Sensor sleeve (Ø 6 mm)	S [mm]	various heights	various heights	various heights



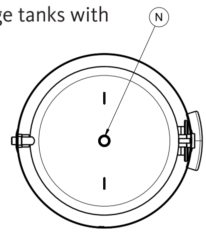


Heat pump combination storage tanks – Reverse+		300	400	500
Real volume according to EN 12897	[l]	301	399	468
Volume DHW tank (part of the real volume)	[l]	203	300	370
Fire protection class of insulation according to DIN 4102-1	[-]	B2	B2	B2
Total height including insulation	[mm]	1,235	1,540	1,762
Diameter with insulation	[mm]	760	760	760
Tilt height	[mm]	1,445	1,710	1,910
Weight	[kg]	125	155	185
Energy efficiency class according to EU regulation no. 812/2013	[-]	A+	A+	A+
Standing loss acc. to EN 12897	[W]	36	39	42
Output capacity 45°C (storage tanks 65°C, cold water 10°C, no reheating)	[l]	259	439	599
Performance factor NL following DIN 4708	[-]	5	9	12
Buffer tank pmax / tmax	[bar] / [°C]	3 / 95	3 / 95	3 / 95
DHW tank pmax / tmax	[bar] / [°C]	10 / 95	10 / 95	10 / 95
Smooth-pipe heat exchanger bottom surface / volume	[m²] / [l]	- / -	1 / 6	1 / 6
Smooth-pipe heat exchanger top surface / volume	[m²] / [l]	1.2 / 8	1.2 / 8	2.4 / 16
Smooth-pipe heat exchanger pmax / tmax	[bar] / [°C]	10 / 130	10 / 130	10 / 130
Freely available (R 1")	A [mm]	137	137	137
Ventilation (Rp ½")	B [mm]	227	227	227
Freely available (R 1")	C [mm]	317	317	317
Cold water connection (R 1")	D [mm]	531	531	531
Return smooth-pipe heat exchanger bottom (Rp 1")	E [mm]	-	630	630
Sensor sleeve (Ø 6 mm)	F [mm]	630	775	775
Flow smooth-pipe heat exchanger bottom (Rp 1")	G [mm]	-	915	915
Return smooth-pipe heat exchanger top (Rp 1½")	H [mm]	725	1,017	1,017
Sensor sleeve (Ø 6 mm)	I [mm]	-	-	1,145
Circulation connection (R ¾")	J [mm]	821	1,113	1,255
Sensor sleeve (Ø 6 mm)	K [mm]	888	1,180	1,375
Flow smooth-pipe heat exchanger top (Rp 1½")	L [mm]	970	1,262	1,493
Hot water connection (R 1")	M [mm]	1,069	1,375	1,597
Anode connection (Rp 1¼")	N [mm]	1,203	1,509	1,731
Thermometer (Ø9 mm)	O [mm]	965	1,265	1,503
Heating element (Rp 1½")	P [mm]	-	-	955
Inspection hutch, also serves as heating element connection! (hole circle Ø 150 mm, 8 x M12)	Q [mm]	695	695	695
Sensor sleeve (Ø 6 mm)	R [mm]	227	227	227
Heating element (Rp 1½")	S [mm]	130	130	130
Max. ambient temperature	[°C]	30	30	30
Max. rel. humidity	[%]	80	80	80



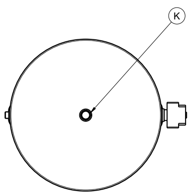
When using the storage tank as cold storage tank, all connections, also the ones currently not used, must be insulated impermeably.*

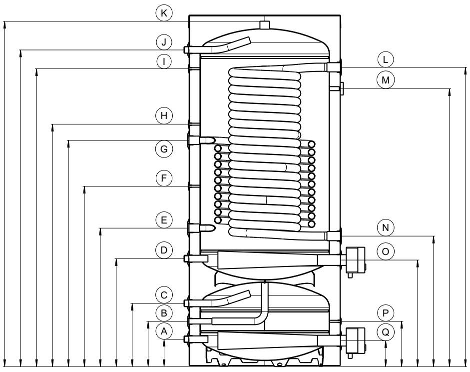
*Suitable accessories:
516210100 – connection insulation for storage tank sensor sleeves
516210105 – connection insulation kit for storage tanks with connections from ½" to 1"
516210110 – connection insulation kit for storage tanks with connections from 1 ¼" to 1 ½"



7.14 Fresh-water combination storage tanks 300 – 500

Fresh-water combination storage tanks – Reverse+		300	400	500
Real volume acc. to EN 12897	[l]	309	405	478
Volume buffer tank (part of the real volume)	[l]	100	100	100
Fire protection class of insulation acc. to DIN 4102-1	[-]	B2	B2	B2
Total height including insulation	[mm]	1,232	1,540	1,762
Diameter without insulation	[mm]	650	650	650
Diameter with insulation	[mm]	760	760	760
Tilt height	[mm]	1,445	1,710	1,910
Weight	[kg]	115	135	165
Energy efficiency class acc. to EU regulation no. 812/2013	[-]	A+	A+	A+
Standing loss acc. to EN 12897	[W]	36	39	42
Output capacity 45 °C (storage tanks 65 °C, cold water 10 °C, no reheating)	[l]	119	174	216
Performance factor NL following DIN 4708	[-]	1,2	1,6	2
Storage tank pmax / tmin / tmax	[bar] / [°C] / [°C]	3 / 10 / 95	3 / 10 / 95	3 / 10 / 95
DHW heat exchanger surface / vlume	[m²] / [l]	2.6 / 15	3.4 / 19	4.7 / 27
DHW heat exchanger pmax / tmax	[bar] / [°C]	6 / 95	6 / 95	6 / 95
Smooth-pipe heat exchanger pmax / tmax	[bar] / [°C]	10 / 130	10 / 130	10 / 130
Freely available (R 1")	A [mm]	137	137	137
Ventilation (Rp ½")	B [mm]	227	227	227
Freely available (R 1")	C [mm]	317	317	317
Return heat generator (R 1")	D [mm]	541	541	541
Return smooth-pipe heat exchanger bottom (Rp 1")	E [mm]	-	686	694
Sensor sleeve (Ø 6 mm)	F [mm]	635	896	904
Flow smooth-pipe heat exchanger bottom (Rp 1")	G [mm]	-	1,126	1,134
Sensor sleeve (Ø 6 mm)	H [mm]	-	-	1,215
Sensor sleeve (Ø 6 mm)	I [mm]	965	1,271	1,493
Flow heat generator (R 1")	J [mm]	1,059	1,365	1,587
Ventilation (Rp 1¼")	K [mm]	1,203	1,509	1,731
Hot water connection (R 1¼")	L [mm]	974	1,268	1,500
Thermometer (Ø9 mm)	M [mm]	865	1,175	1,393
Cold water connection (R 1¼")	N [mm]	654	654	654
Heating element (Rp 1½")	O [mm]	534	534	534
Sensor sleev (Ø 6 mm)	P [mm]	227	227	227
Heating element (Rp 1½")	Q [mm]	130	130	130
Max. ambient temperature	[°C]	30	30	30
Max. rel. humidity	[%]	80	80	80



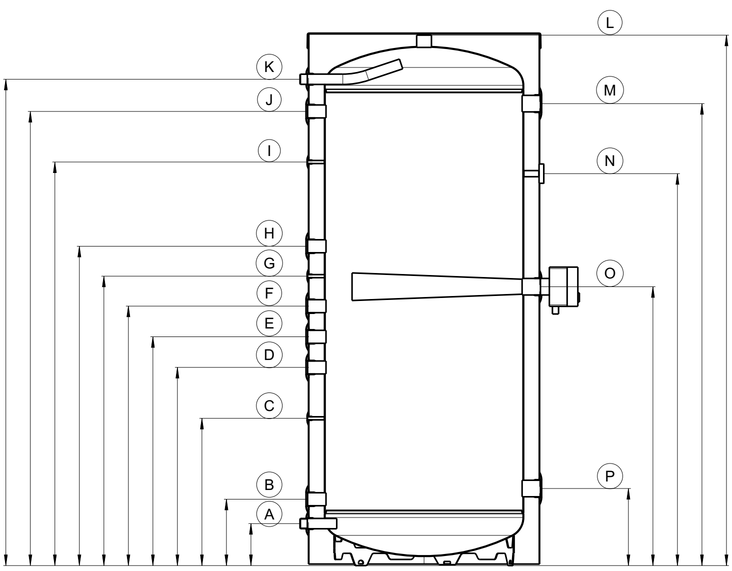


When using the storage tank as cold storage tank, all connections, also the ones currently not used, must be insulated impermeably.*

*Suitable accessories:
516210100 – connection insulation for storage tank sensor sleeves
516210105 – connection insulation set for storage tanks with connections from ½" to 1"
516210110 – connection insulation set for storage tanks with connections from 1 ¼" to 1 ½"

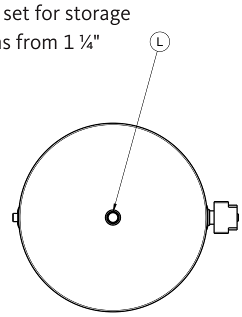
Illustration shows the maximum equipment.

Buffer storage tanks – Reverse+		200	300	400	500
Real volume acc. to EN 12897	[l]	206	300	419	516
Fire protection class of insulation acc. to DIN 4102-1	[-]	B2	B2	B2	B2
Total height including insulation	[mm]	1,265	1,750	1,725	1,770
Diameter without insulation	[mm]	500	500	600	650
Diameter with insulation	[mm]	610	610	710	760
Tilt height	[mm]	1,375	1,830	1,865	1,925
Weight	[kg]	60	71	88	96
Energy efficiency class acc. to EU regulation no. 812/2013	[-]	A+	A+	A+	A+
Standing loss acc. to EN 12897	[W]	31	36	40	43
Storage tank pmax / tmin / tmax	[bar] / [°C] / [°C]	3 / 10 / 95	3 / 10 / 95	3 / 10 / 95	3 / 10 / 95
Return heat generator or flow cold generator (R 1")	A [mm]	132	132	130	137
Freely available (Rp 1")	B [mm]	219	222	210	217
Sensor sleeve (Ø 6 mm)	C [mm]	415	415	474	481
Freely available (Rp 1")	D [mm]	-	-	640	647
Freely available (Rp 1")	E [mm]	619	622	740	747
Freely available (Rp 1")	F [mm]	-	-	840	847
Sensor sleeve (Ø 6 mm)	G [mm]	-	-	932	945
Freely available (Rp 1")	H [mm]	772	1217	1,025	1,042
Sensor sleeve (Ø 6 mm)	I [mm]	878	1347	1,265	1,317
Freely available (Rp 1")	J [mm]	982	1,487	1,465	1,482
Flow heat generator or return cold generator (R 1")	K [mm]	-	-	1,565	1,587
Flow heat generator or return cold generator (R 1") / ventilation (Rp 1¼")	L [mm]	1,264 / -	1,749 / -	- / 1,695	- / 1,731
Freely available ((Rp 1½")	M [mm]	1,032	1,517	1,485	1,508
Thermometer (Ø 9 mm)	N [mm]	910	1,423	1,265	1,279
Heating element (Rp 1½")	O [mm]	689	1,145	895	910
Freely available ((Rp 1½")	P [mm]	242	242	245	252
Max. ambient temperature	[°C]	30	30	30	30
Max. rel. humidity	[%]	80	80	80	80



When using the storage tank as cold storage tank, all connections, also the ones currently not used, must be insulated impermeably.*

*Suitable accessories:
516210100 – connection insulation for storage tank sensor sleeves
516210105 – connection insulation set for storage tanks with connections from ½" to 1"
516210110 – connection insulation set for storage tanks with connections from 1 ¼" to 1 ½"



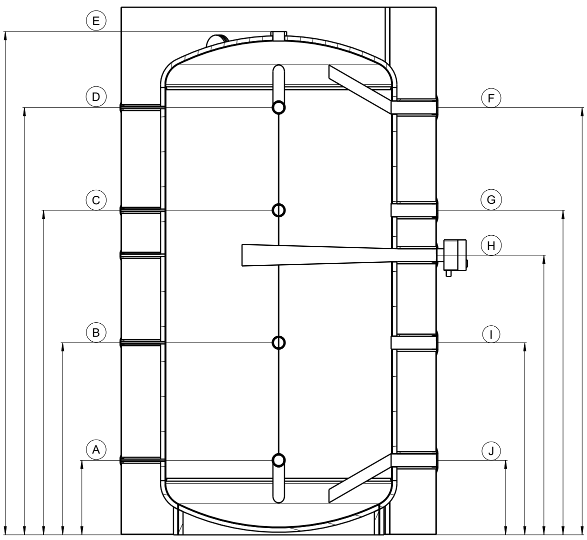
7.16

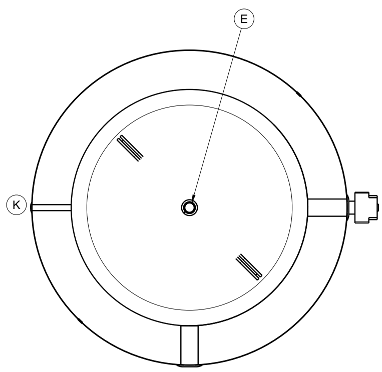
Buffer storage tanks 725 – 1325

Buffer storage tanks – Reverse+		725	1,325
Real volume acc. to EN 12897	[l]	724	1,324
Fire protection class of insulation acc. to DIN 4102-1	[-]	B2	B2
Total height including insulation	[mm]	1,930	2,210
Diameter without insulation	[mm]	790	990
Diameter with insulation	[mm]	1,015	1,315
Tilt height	[mm]	1,880	2,170
Weight	[kg]		
Standing loss acc. to EN 12897	[W]	51	63
Storage tank pmax / tmin / tmax	[bar] / [°C] / [°C]	3 / 10 / 95	3 / 10 / 95
Return heat generator or flow cold generator (Rp 1½)	A [mm]	255	312
Freely available (Rp 1½")	B [mm]	694	804
Freely available (Rp 1½")	C [mm]	1,133	1,358
Flow heat generator or return cold generatorr (Rp 1½)	D [mm]	1,.572	1,788
Ventilation (Rp 1¼")	E [mm]	1,833	2,106
Freely available (Rp 1½")	F [mm]	1,572	1,788
Freely available (Rp 1½")	G [mm]	1,133	1.358
Heating element (Rp 1½")	H [mm]	963	1,170
Freely available (Rp 1½")	I [mm]	694	804
Freely available (Rp 1½")	J [mm]	255	312
Sensor sleeve (Ø 6 mm)	K [mm]	various heights	various heights
Max. ambient temperature	[°C]	30	30
Max. rel. humidity	[%]	80	80

When using the storage tank as cold storage tank, all connections, also the ones currently not used, must be insulated impermeably.*

*Suitable accessories:
516210100 – connection insulation for storage tank sensor sleeves
516210105 – connection insulation set for storage tanks with connections from ½" to 1"
516210110 – connection insulation set for storage tanks with connections from 1 ¼" to 1 ½"





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